



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: Will 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

1. 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.

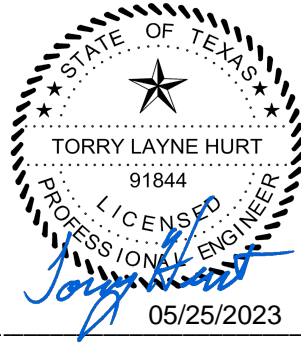
END OF ADDENDUM

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



Torry Hurt, P.E.
LJA Engineering

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 **180** 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						
Line 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		
19	866	Concrete Encasement, Cradles, Saddles, and Collars	CY	332		
SUBTOTAL (ITEMS 1 - 19)						

20	100	Mobilization Maximum 10% of line items 1-19	LS	1		
21	100	Intermediate Mobilization and Demobilization	LS	1		
22	101	Preparation of Right-of-Way - This item shall include preparing the right-of-way for construction operations by removing and disposing all obstructions from the right-of-way and from designated easements where removal of such obstructions is not otherwise provided for in the contract documents. Maximum 5% of line items 1-19	LS	1		

MOBILIZATION LUMP SUM BID SHALL BE LIMITED TO A MAXIMUM OF 10% OF THE LINE ITEM "1-19" SUB-TOTAL BASE BID AMOUNT. PREPARING RIGHT-OF-WAY LUMP SUM BID SHALL BE LIMITED TO A MAXIMUM OF 5% OF THE LINE 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.

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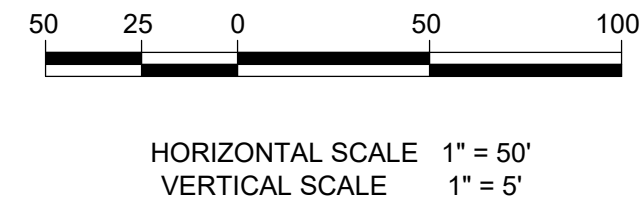
GENERAL NOTES

- 1. 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.

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:
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.

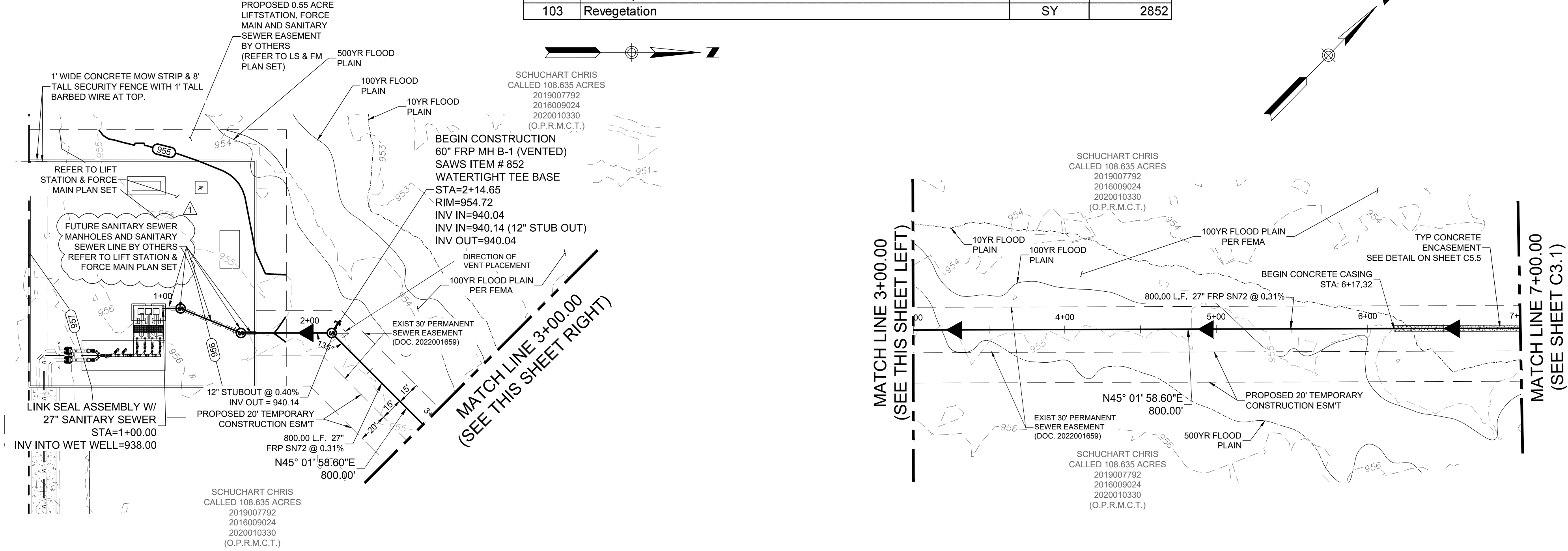


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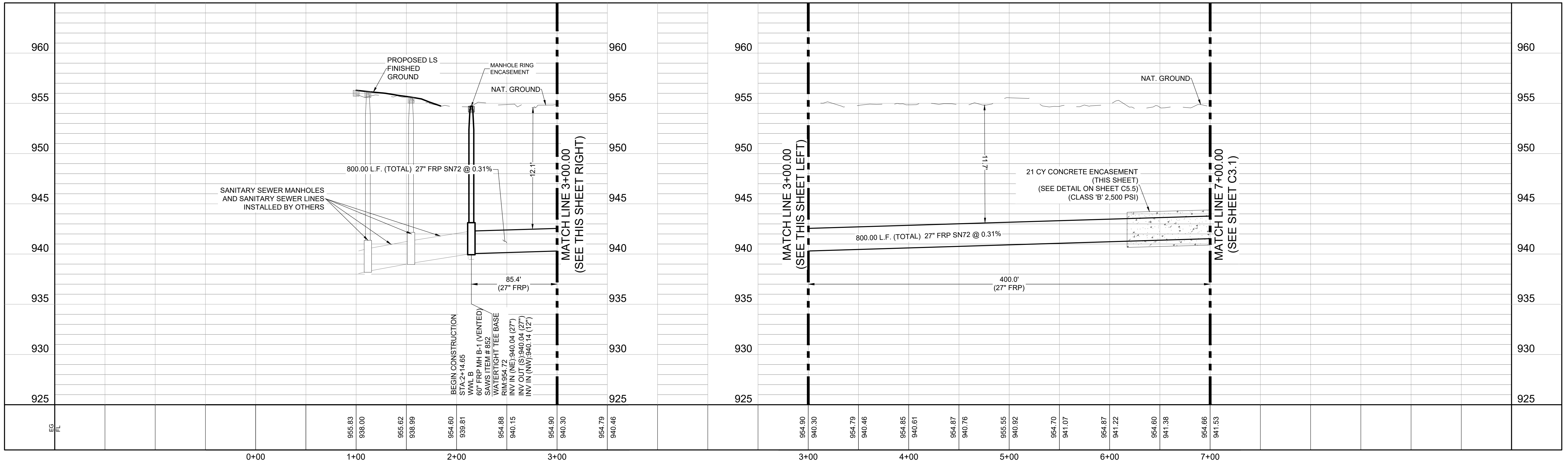
Table with columns for PROPOSED and EXISTING symbols and their corresponding descriptions: SANITARY SEWER MANHOLE, SANITARY SEWER LINE, WATER LINE, FIRE HYDRANT, GAS VALVE, GAS LINE, POWER POLE, STREET LIGHT (100 WATT LED), GUY WIRE, OVERHEAD ELECTRIC, BENCHMARK, GAS, ELEC, TELE & CABLE TV ESMT., EASEMENT, VOLUME PAGE, SIGNIFICANT TREE PRESERVED, HERITAGE TREE PRESERVED, TREE OUT OF BOUNDS, TREE REMOVE, HERITAGE TREE (REMOVE), FORCE MAIN, 10YR FLOOD PLAIN, 100YR FLOOD PLAIN, PROPERTY LINE, CONCRETE CASING, STEEL CASING, APPROXIMATE BORE PIT SIZE & LOCATION.

CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

ESTIMATED QUANTITIES table with columns: Item No., Description, Unit, Quantity. Includes items for 12" SDR-26 Pipe, 27" FRP SN72 Pipe, Trench Excavation Safety Protection, Post Sanitary Sewer Television Inspection, Concrete Encasement, 60" FRP Tee Base Manhole, Extra Depth Manhole, and Revegetation.

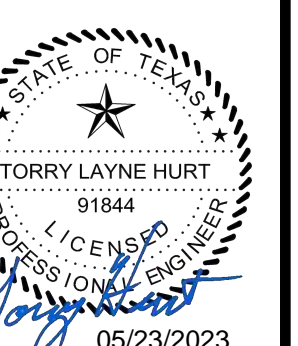


SANITARY SEWER LINE 'B' STA. 1+00.00 TO 7+00.00



THE WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B'
SANITARY SEWER LINE 'B' STA. 1+00 TO 7+00
PLAN & PROFILE

REVISIONS table with columns: NO., DATE, DESCRIPTION, BY, TH. Includes a section for ANNOTATION/QUANTITIES REVISION.



LJA Engineering, Inc.
Phone 210-503-2700
8930 Colomade Blvd
Suite 300
San Antonio, Texas 78230
TYPE No. F-1986

JOB NUMBER: SA190-0404.426
SHEET NO. C3.0

K:\SA190_Lines_Terms_LJC\0404_Woodlands_Offsite_Sewer\0305_Site_Development_Plan\0305-Street\Draw B_Sheet_Sat and File\0305-Submittal_Plan_0305.dwg
User: mmanitas
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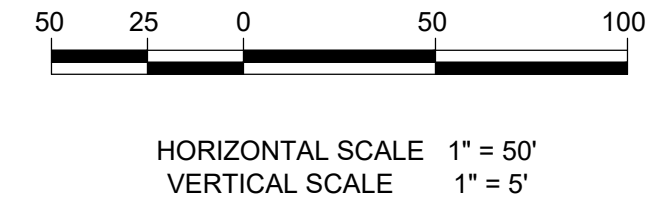
GENERAL NOTES

- 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.
- 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.
- ANY TESTING PERFORMED MUST HAVE SAWS' INSPECTOR AND/OR THE ENGINEER PRESENT.
- 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.
- 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.
- REFER TO SHEET C4.0 FOR WATER & WASTEWATER CROSSING DETAILS.

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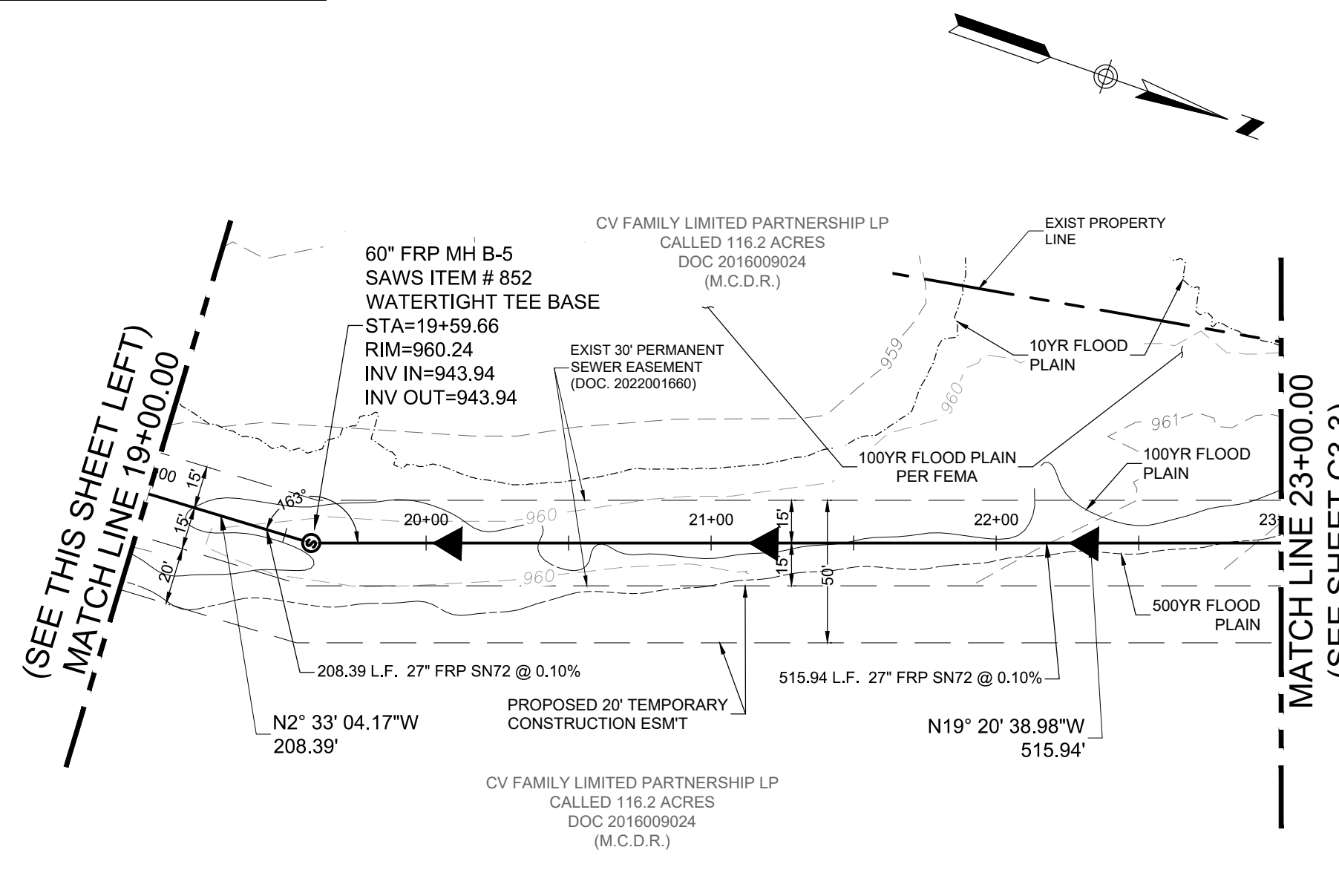
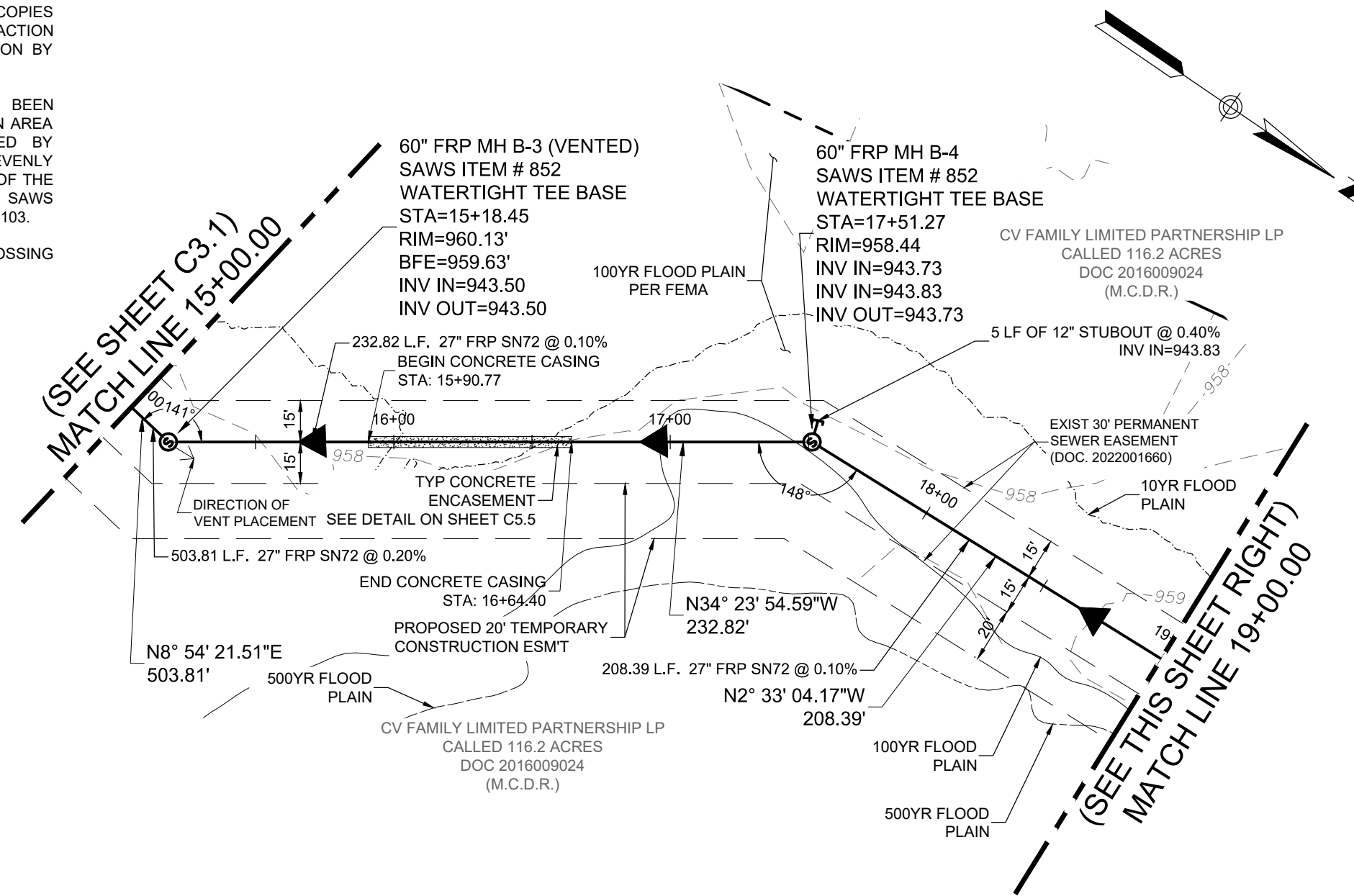


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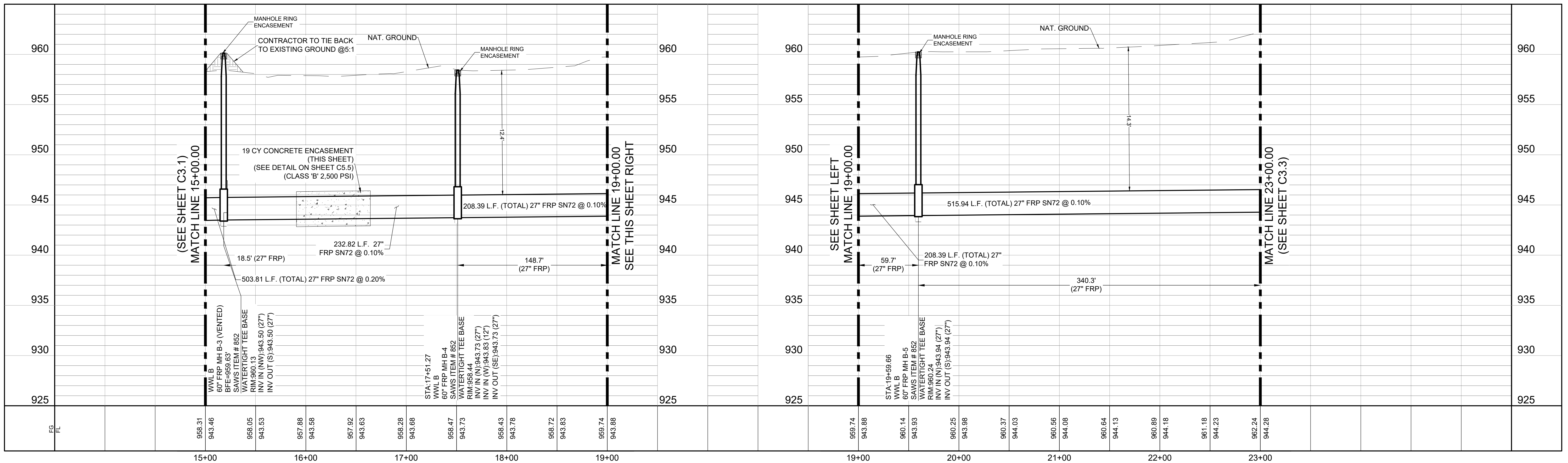
PROPOSED	EXISTING	
		SANITARY SEWER MANHOLE
		SANITARY SEWER LINE
		WATER LINE
		FIRE HYDRANT
		GAS VALVE
		GAS LINE
		POWER POLE
		STREET LIGHT (100 WATT LED)
		GUY WIRE
		OVERHEAD ELECTRIC
		BENCHMARK
		GAS, ELEC, TELE & CABLE TV ESMT.
		EASEMENT
		VOLUME PAGE
		SIGNIFICANT TREE PRESERVED
		HERITAGE TREE PRESERVED
		TREE OUT OF BOUNDS
		TREE REMOVE
		HERITAGE TREE (REMOVE)
		FORCE MAIN
		10YR FLOOD PLAIN
		100YR FLOOD PLAIN
		500YR FLOOD PLAIN
		PROPERTY LINE
		CONCRETE CASING
		STEEL CASING
		APPROXIMATE BORE PIT SIZE & LOCATION

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ESTIMATED QUANTITIES			
Item No.	DESCRIPTION	UNIT	QUANTITY
848	12" SDR-26 Pipe (12'-16") (STUBOUT)	LF	5
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (12'-16")	LF	459
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (16'-20")	LF	341
550	Trench Excavation Safety Protection	LF	800
866	Post Sanitary Sewer Television Inspection	LF	800
858	Concrete Encasement, Cradles, Saddles 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



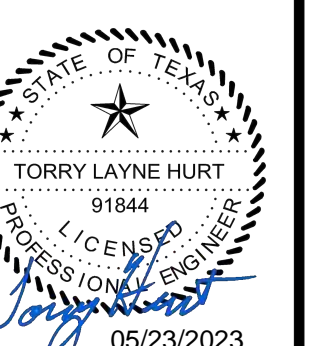
SANITARY SEWER LINE 'B' STA. 15+00.00 TO 23+00.00



THE WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B' PLAN & PROFILE

NO.	DATE	BY	DESCRIPTION
1	05/23/2023	TH	ANNOTATION/QUANTITIES REVISION.

DATE:	05/23/2023
DESIGNED BY:	PJR
DRAWN BY:	MAS, P.J.R., JD
CHECKED BY:	TH
DRAWING NAME:	DRG_WWLB_P&P_STA1+00.00.P&P



LJA Engineering, Inc.
 Phone 210-503-2700
 9830 Colomade Blvd
 Suite 300
 San Antonio, Texas 78230

JOB NUMBER:
 SA190-0404.426

SHEET NO.
C3.2

K:\SA190_Lucas_Terco_LJC\0404_Woodlands_Offsite_Sewer\030_0404_Sewer\Drawings\DWG\030-0404_P&P_030-0404.dwg
 User: mmantra
 Last Modified: May 23, 2023 10:52
 Plot Date/Time: May 23, 2023 12:27:01

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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 MANUFACTURER'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.
- ANY TESTING PERFORMED MUST HAVE SAWS INSPECTOR AND/OR THE ENGINEER PRESENT.
- 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.
- 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.
- REFER TO SHEET C4.0 FOR WATER & WASTEWATER CROSSING DETAILS.

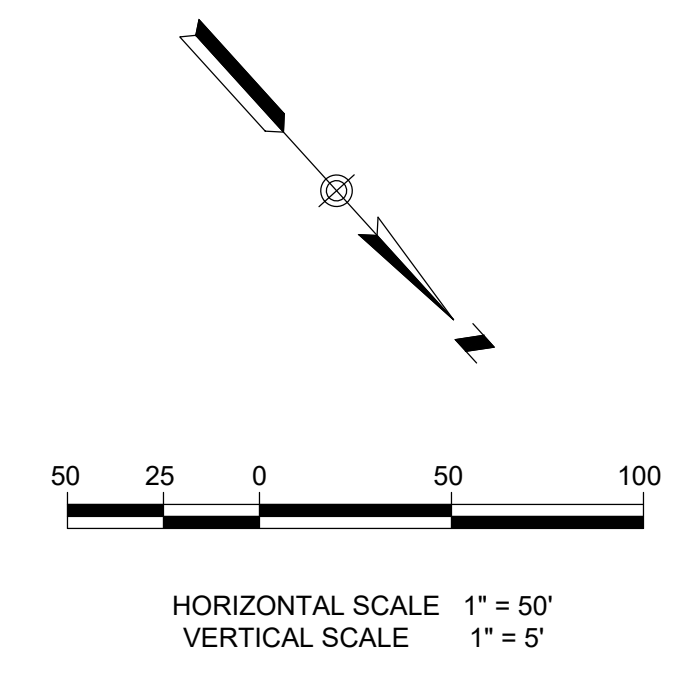
TRENCH EXCAVATION SAFETY PROTECTION
 CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA 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:

- ALL BORE PIT SIZE AND LOCATIONS ARE APPROXIMATE AND ARE TO BE USED FOR PLANNING PURPOSES ONLY.
- BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED IN EFFORTS TO PRESERVE TREES SHOWN TO BE PRESERVED.

ESTIMATED QUANTITIES			
Item No.	DESCRIPTION	UNIT	QUANTITY
848	12" SDR-26 Pipe (12'-16") (STUBOUT)	LF	5
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (12'-16")	LF	221
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (16'-20")	LF	679
550	Trench Excavation Safety Protection	LF	900
866	Post Sanitary Sewer Television Inspection	LF	900
858	Concrete Encasement, Cradles, Saddles 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

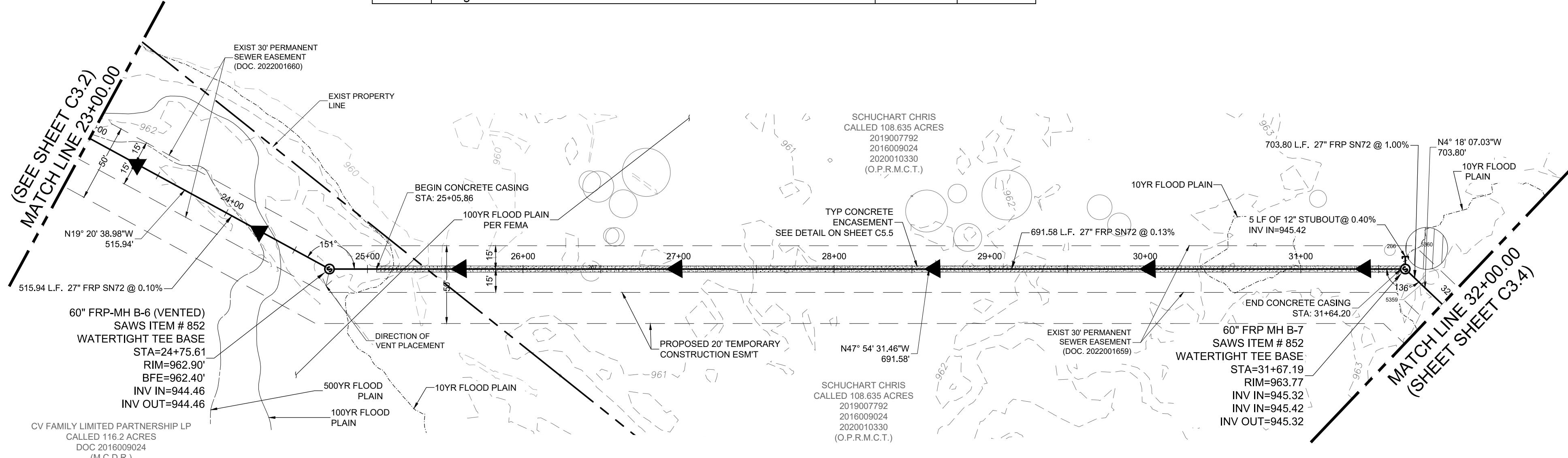


LEGEND

PROPOSED	EXISTING	DESCRIPTION
⊙	⊙	SANITARY SEWER MANHOLE
→	→	SANITARY SEWER LINE
→	→	WATER LINE
→	→	SANITARY SEWER LATERAL
→	→	CLEAN OUT
→	→	WATER VALVE
→	→	FIRE HYDRANT
→	→	GAS VALVE
→	→	GAS LINE
→	→	STORM SEWER MANHOLE
→	→	POWER POLE
→	→	STREET LIGHT (100 WATT LED)
→	→	GUY WIRE
→	→	OVERHEAD ELECTRIC
→	→	BENCHMARK
→	→	GAS, ELEC, TELE & CABLE TV ESMT.
→	→	EASEMENT
→	→	VOLUME
→	→	PAGE
→	→	SIGNIFICANT TREE PRESERVED
→	→	HERITAGE TREE PRESERVED
→	→	TREE OUT OF BOUNDS
→	→	TREE REMOVE
→	→	FORCE MAIN
→	→	10YR FLOOD PLAIN
→	→	100YR FLOOD PLAIN
→	→	500YR FLOOD PLAIN
→	→	CONCRETE CASING
→	→	STEEL CASING
→	→	APPROXIMATE BORE PIT SIZE & LOCATION

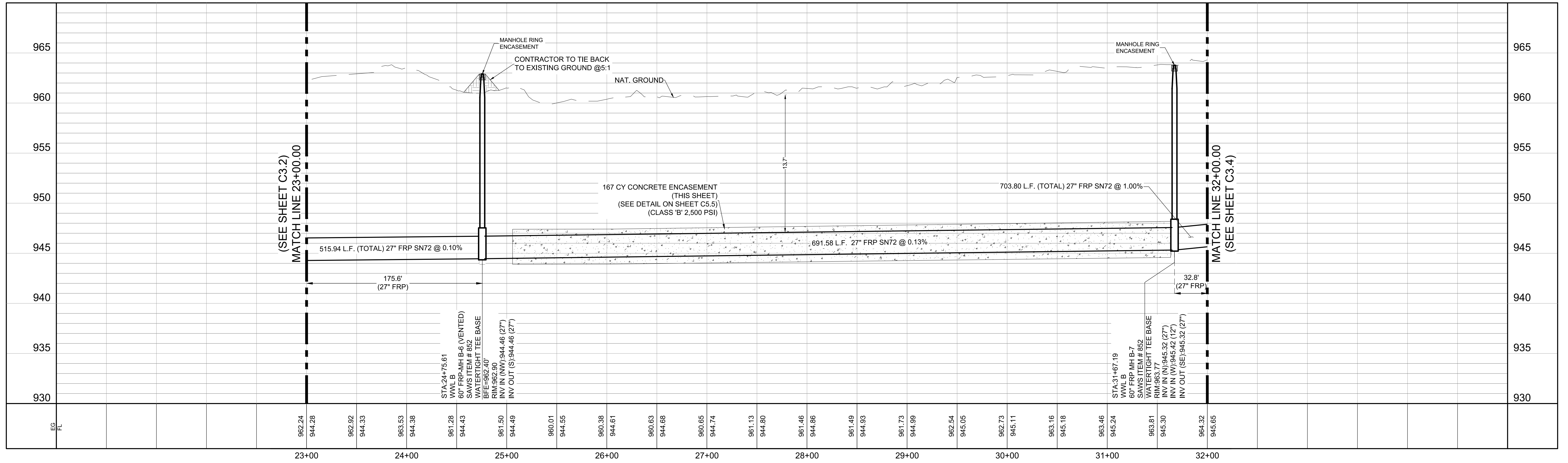
SEWER: THE WOODLANDS OFF-SITE GRAVITY SEWER LINE 'B'

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 #: 830-837-2349
 SAWS BLOCK MAP #: 0565.02006 TOTAL EDUS: 0 TOTAL ACRES: NA
 TOTAL LINEAR FOOTAGE OF PIPE: 27' PLAT NO.: NA
 NUMBER OF LOTS: 0 SAWS JOB NO.: 22-1720



SANITARY SEWER LINE 'B' STA. 23+00.00 TO 32+00.00

CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.



THE WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B' PLAN & PROFILE

DATE: 05/23/2023
 DESIGNED BY: PJR
 DRAWN BY: MAS, P.J.R., J.D.
 CHECKED BY: TH
 DRAFTING NAME: TH
 Job: WWLB S&P STA23+00.00-32+00.00

REVISIONS

NO.	DATE	BY	DESCRIPTION
1	05/23/2023	TH	ANNOTATION QUANTITIES REVISION.

SA190-0404.426

LJA Engineering, Inc.
 Phone 210-503-2700
 9830 Colomade Blvd
 Suite 300
 San Antonio, Texas 78230

C3.3

K:\S\190_Lucas_Terra_LJA\0404_Woodlands_OffSite_Sewer\0305-Draw_Development_Plan\0305-Street\Draw_B_Sheet_S&P.dwg
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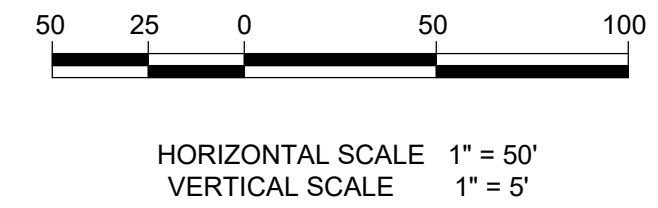
GENERAL NOTES

- 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.
- 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.
- ANY TESTING PERFORMED MUST HAVE SAWS' INSPECTOR AND/OR THE ENGINEER PRESENT.
- 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.
- 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.
- 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 SITES 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:
 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.

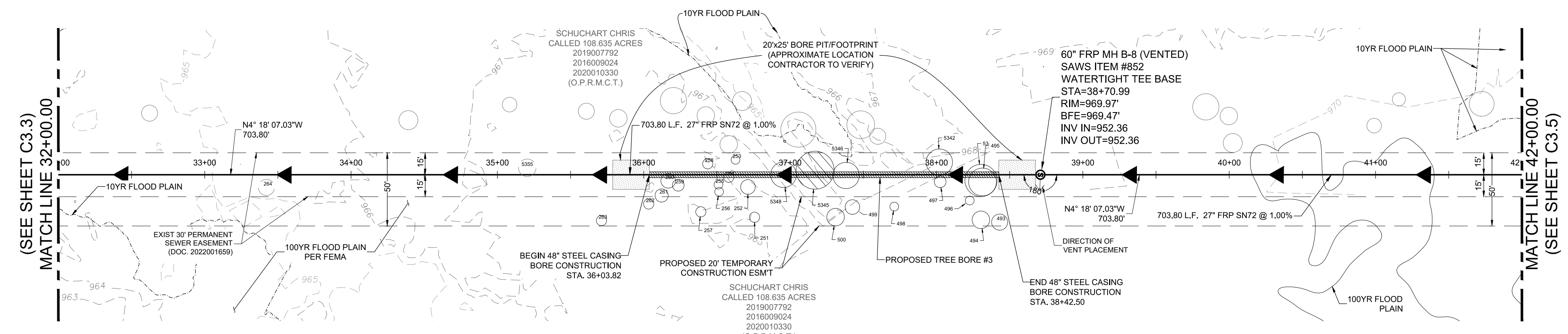


LEGEND

PROPOSED	EXISTING	
⊙	⊙	SANITARY SEWER MANHOLE
→	→	SANITARY SEWER LINE
	EX W	WATER LINE
	⊗	FIRE HYDRANT
	G	GAS VALVE
	G	GAS LINE
	⊙	POWER POLE
	⊙	STREET LIGHT (100 WATT LED)
	→	GUY WIRE
	OU	OVERHEAD ELECTRIC
	⊙	BENCHMARK
	G.E.T.C.A	GAS, ELEC, TELE & CABLE TV ESMT.
	ESMT.	EASEMENT
	VOL	VOLUME
	PG	PAGE
	○	SIGNIFICANT TREE PRESERVED
	○	HERITAGE TREE PRESERVED
	○	TREE OUT OF BOUNDS
	○	TREE REMOVE
	○	HERITAGE TREE (REMOVE)
	FM	FORCE MAIN
	---	10YR FLOOD PLAIN
	---	100YR FLOOD PLAIN
	---	500YR FLOOD PLAIN
	---	PROPERTY LINE
	---	CONCRETE CASING
	---	STEEL CASING
	---	APPROXIMATE BORE PIT SIZE & LOCATION

ESTIMATED QUANTITIES

Item No.	Description	UNIT	QUANTITY
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

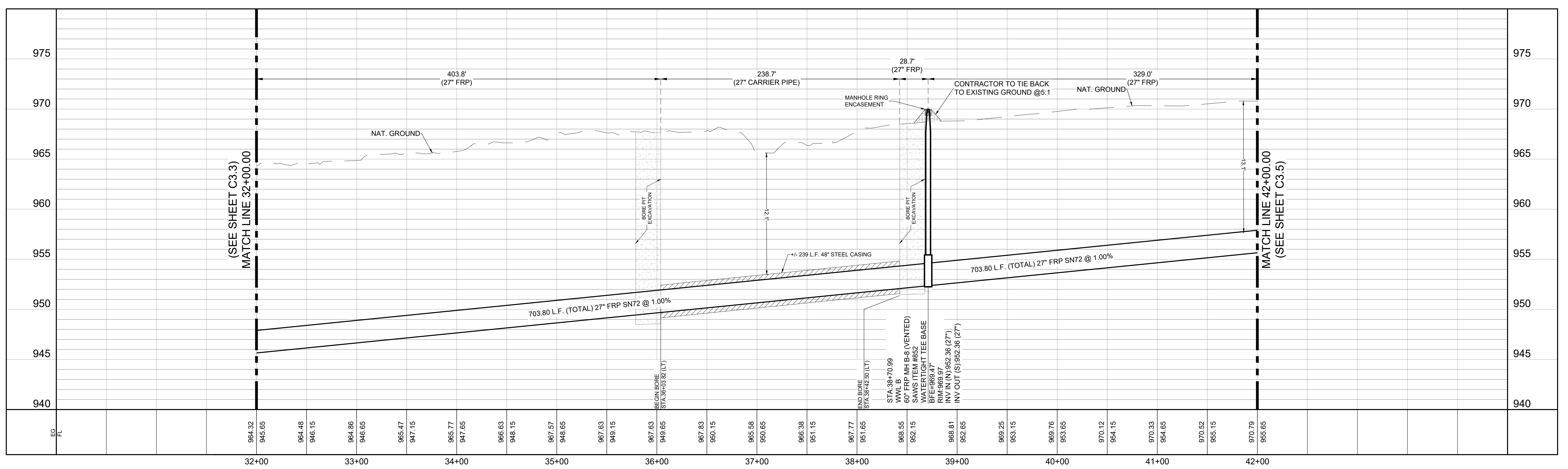


SEWER: THE WOODLANDS OFF-SITE GRAVITY SEWER LINE 'B'

DEVELOPER'S NAME: LUCRATERA, LLC
 DEVELOPER'S ADDRESS: 15720 BANDERA RD, STE 103
 CITY: HELOTES, STATE: TEXAS, ZIP: 78103
 PHONE #: 830-837-2349, FAX #:
 SAWS BLOCK MAP #: 25695, 020906, TOTAL EDUS: 0, TOTAL ACRES: NA
 TOTAL LINEAR FOOTAGE OF PIPE: 774.12', PLAT NO.: NA
 NUMBER OF LOTS: 0, SAWS JOB NO.: 22-1720

SANITARY SEWER LINE 'B' STA. 32+00.00 TO 42+00.00

CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.



THE WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B' PLAN & PROFILE

DATE: 05/23/2023
 DESIGNED BY: PJR
 DRAWN BY: MAS, P.J.R., J.D.
 CHECKED BY: TH
 DRAFTING NAME:
 Job: WWLB SAP STA32+00.00-42+00.00

REVISIONS

NO.	DATE	DESCRIPTION
1	05/23/2023	ANNOTATION QUANTITIES REVISION.

LJA Engineering, Inc.
 Phone 210-503-2700
 9830 Colomade Blvd
 Suite 300
 San Antonio, Texas 78230
 TPE No. T-1986

JOB NUMBER: SA190-0404.426

SHEET NO. **C3.4**

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GENERAL NOTES

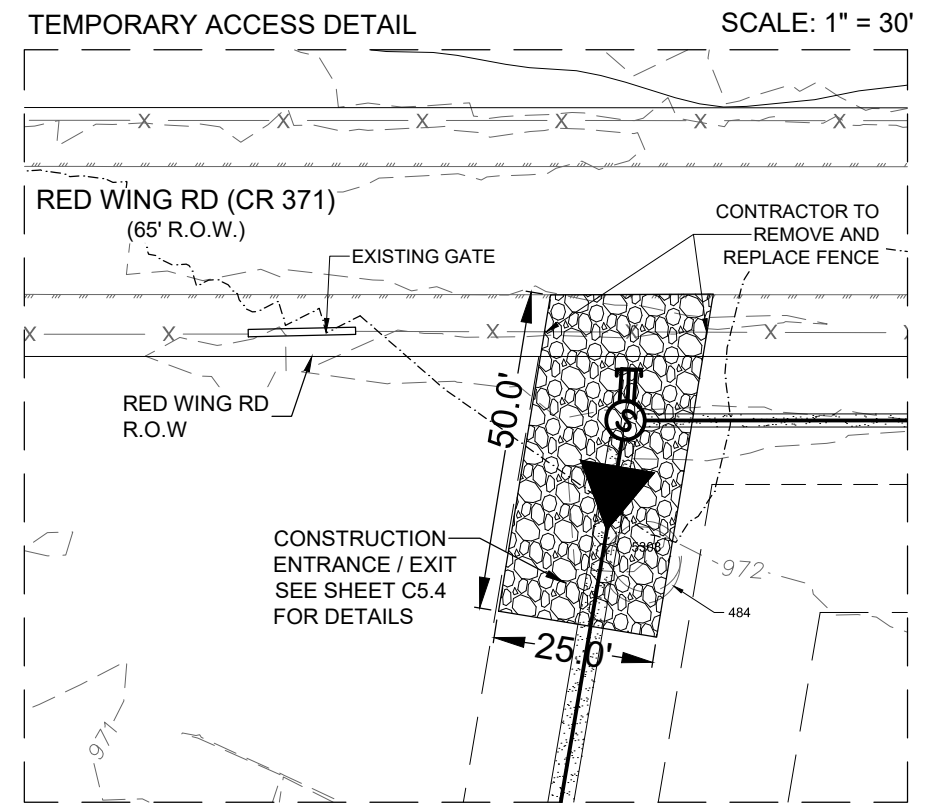
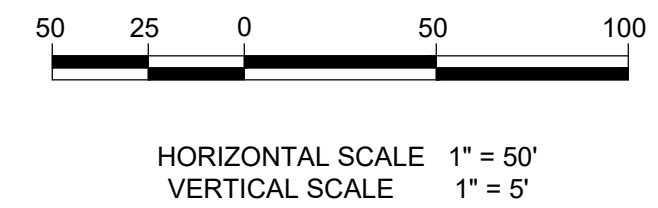
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- THE CONTRACTOR MUST PROVIDE CERTIFICATION UPON REQUEST OF THE ENGINEER THAT ALL MATERIALS FOR THE CONSTRUCTION OF THE SANITARY SEWER SYSTEM MEET TCEQ AND SAWS SPECIFICATIONS.
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- ANY TESTING PERFORMED MUST HAVE SAWS' INSPECTOR AND/OR THE ENGINEER PRESENT.
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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.

ESTIMATED QUANTITIES				
Item No.	Description	UNIT	QUANTITY	
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')	LF	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, Saddles and Collars	CY	49	
852	60" FRP Manhole with Tee Base	EA	1	
852	Extra Depth Manhole	VF	18	
103	Revegetation	SY	3656	

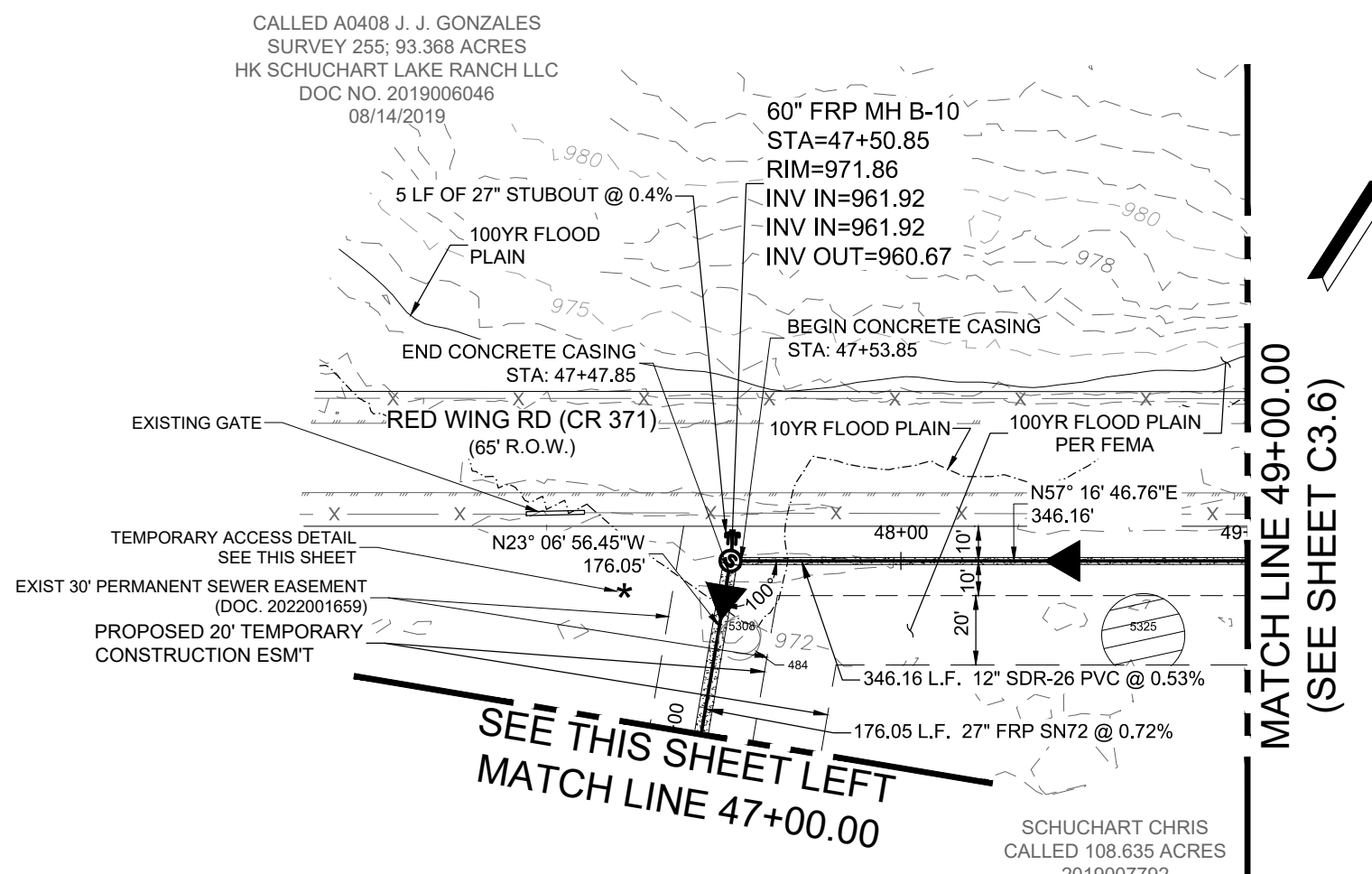
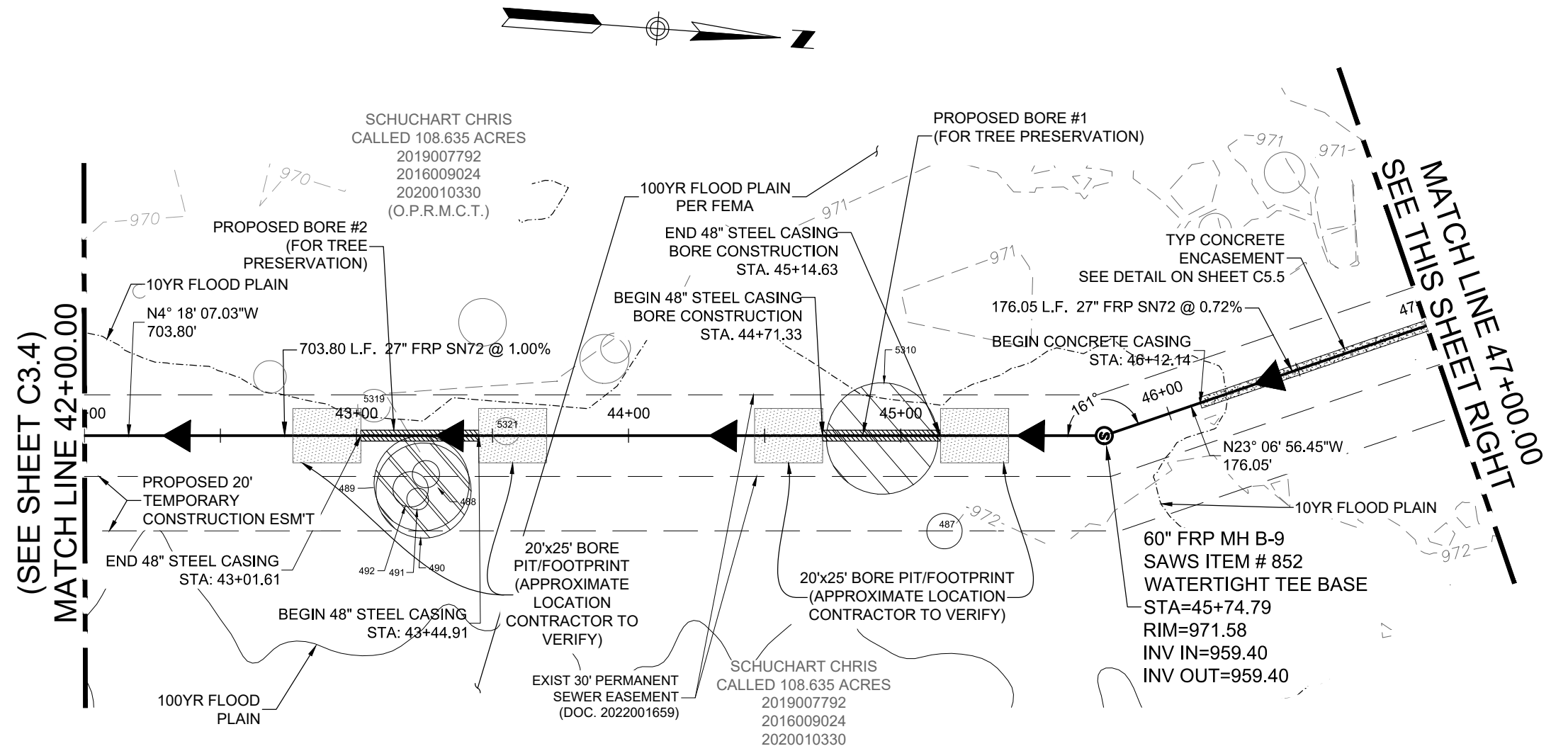


LEGEND		
PROPOSED	EXISTING	
⊙	⊙	SANITARY SEWER MANHOLE
→	→	SANITARY SEWER LINE
→	→	WATER LINE
→	→	SANITARY SEWER LATERAL
→	→	CLEAN OUT
→	→	WATER VALVE
→	→	FIRE HYDRANT
→	→	GAS VALVE
→	→	GAS LINE
→	→	STORM SEWER MANHOLE
→	→	POWER POLE
→	→	STREET LIGHT (100 WATT LED)
→	→	GUY WIRE
→	→	BENCHMARK
→	→	GAS, ELEC. TELE & CABLE TV ESMT.
→	→	EASEMENT
→	→	VOLUME
→	→	PAGE
→	→	SIGNIFICANT TREE PRESERVED
→	→	HERITAGE TREE PRESERVED
→	→	TREE OUT OF BOUNDS
→	→	TREE REMOVE
→	→	FORCE MAIN
→	→	100YR FLOOD PLAIN
→	→	100YR FLOOD PLAIN
→	→	500YR FLOOD PLAIN
→	→	CONCRETE CASING
→	→	STEEL CASING
→	→	APPROXIMATE BORE PIT SIZE & LOCATION
→	→	EXISTING FENCE
→	→	PROPERTY LINE

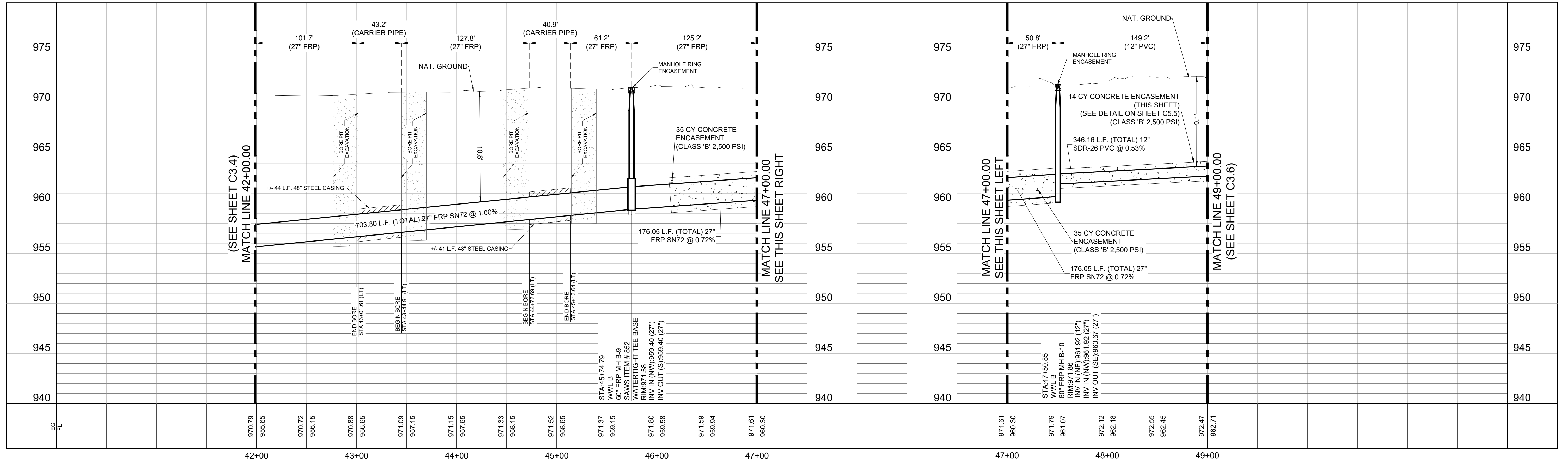
CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4545 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

SEWER: THE WOODLANDS OFF-SITE SANITARY SEWER LINE 'B'

DEVELOPER'S NAME:	LUCRATERRA, LLC
DEVELOPER'S ADDRESS:	15720 BANDERA RD, STE 103
CITY:	HELOTES, TEXAS, ZIP 78103
PHONE #:	830-837-2349
FAX #:	
SAWS BLOCK MAP #:	26465, 02066
TOTAL EDUS:	0
TOTAL ACREAGE:	NA
TOTAL LINEAR FOOTAGE OF PIPE:	4,524.1208'
PLAT NO.:	NA
NUMBER OF LOTS:	0
SAWS JOB NO.:	22-1720



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



THE WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B' PLAN & PROFILE

DATE: 05/23/2023
 DESIGNED BY: PJR
 DRAWN BY: MAS, P.J.R., J.D.
 CHECKED BY: TH
 DRAFTER: TH
 NAME: TH
 Job: WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B' STA. 42+00.00 TO 49+00.00

NO.	DATE	DESCRIPTION
1	05/23/2023	ANNOTATION/QUANTITIES REVISION

DATE: 05/23/2023
 DESIGNED BY: PJR
 DRAWN BY: MAS, P.J.R., J.D.
 CHECKED BY: TH
 DRAFTER: TH
 NAME: TH
 Job: WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B' STA. 42+00.00 TO 49+00.00

LJA Engineering, Inc.
 Phone 210-503-2700
 9830 Colomade Blvd
 Suite 300
 San Antonio, Texas 78230

JOB NUMBER: SA190-0404.426

SHEET NO. **C3.5**

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GENERAL NOTES

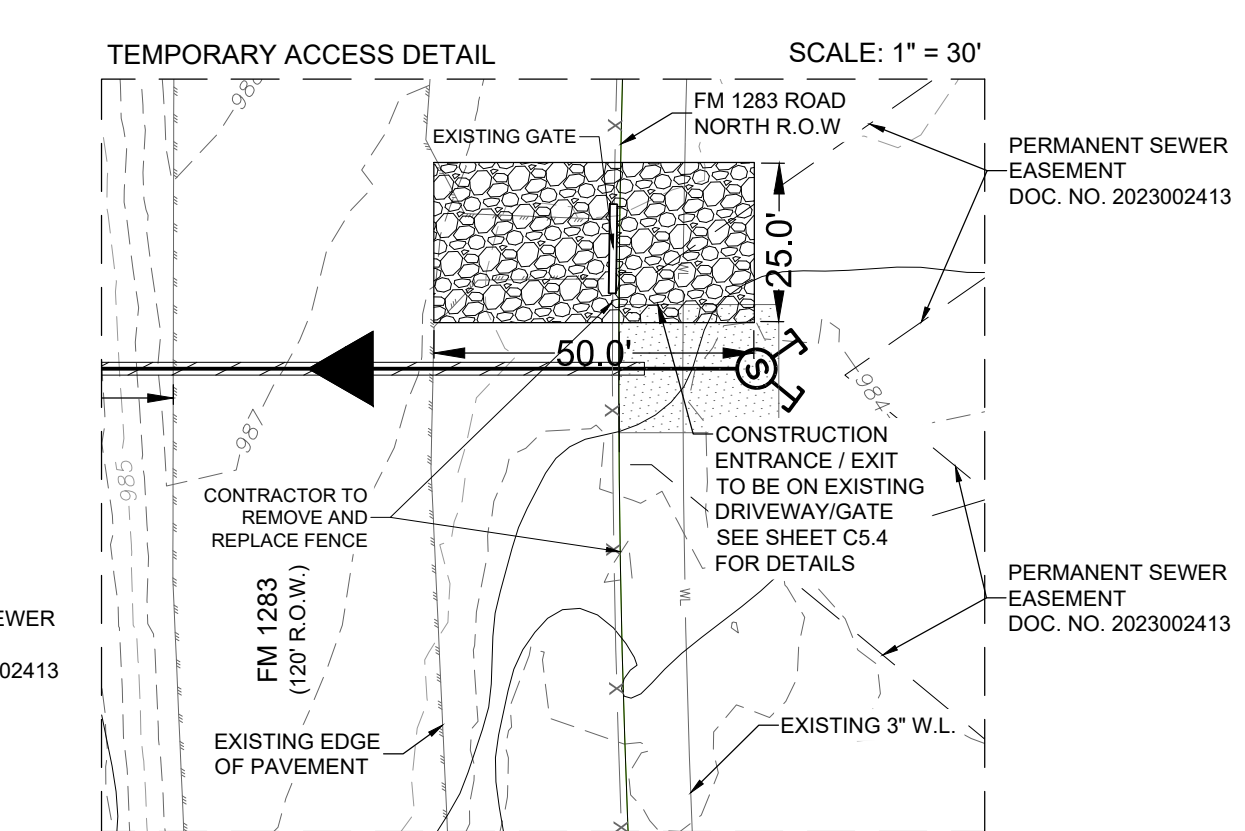
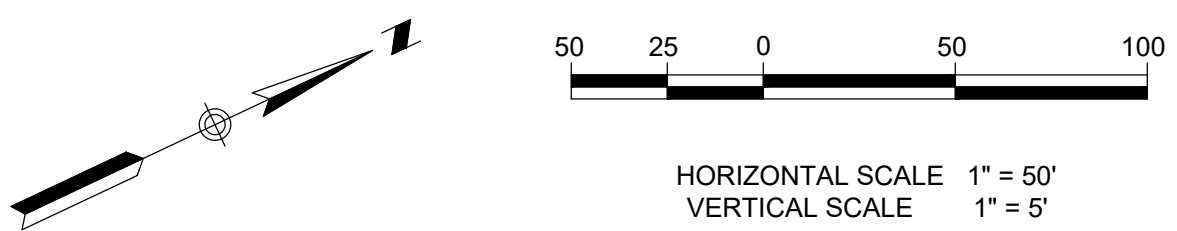
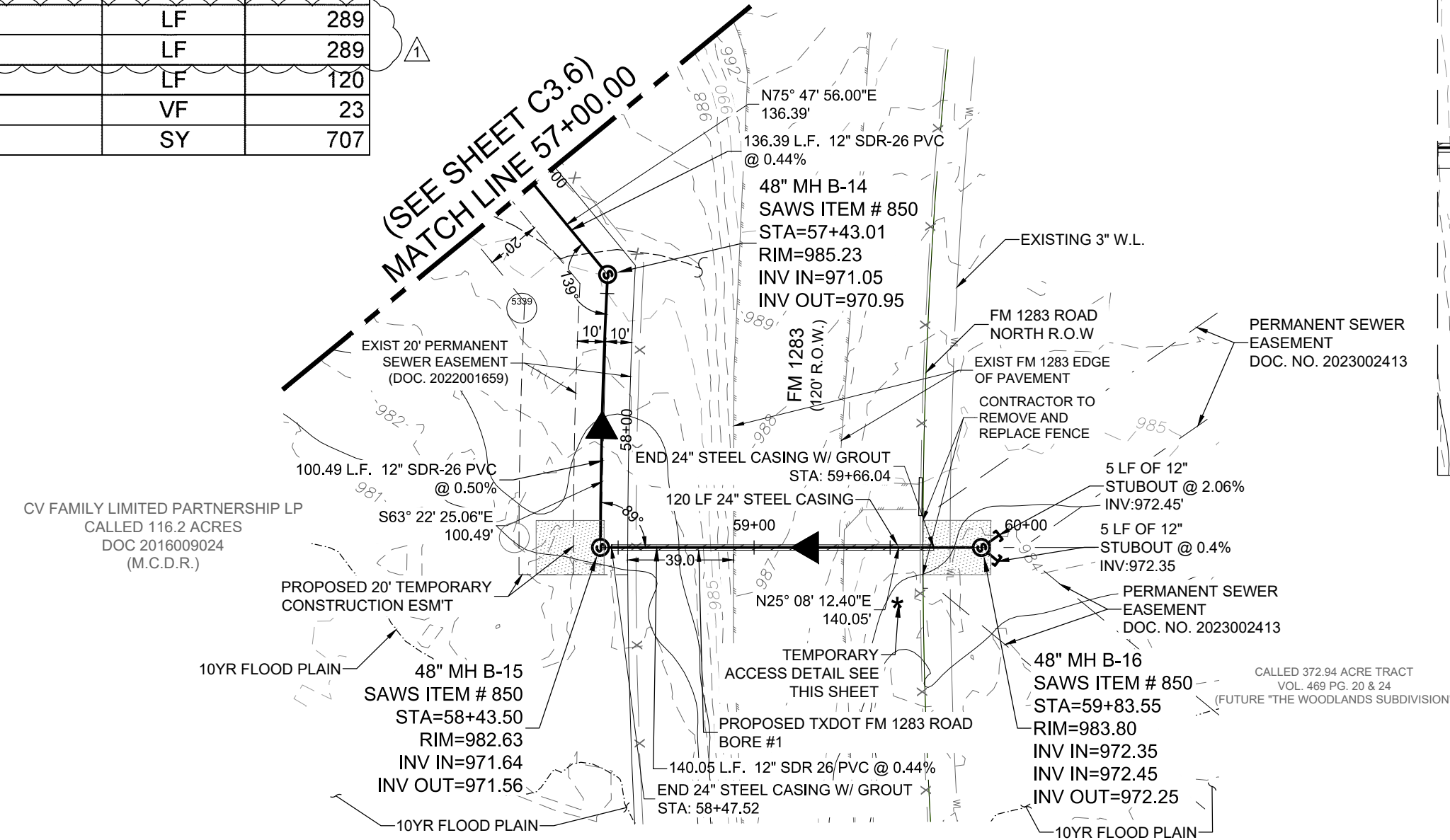
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT LOCATION POINTS RANDOMLY SELECTED OR AS INDICATED BY SAWS' INSPECTOR/TEST ADMINISTRATOR. PER EACH 18' FIRST LIFT 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.
- 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.
- ANY TESTING PERFORMED MUST HAVE SAWS' INSPECTOR AND/OR THE ENGINEER PRESENT.
- 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.
- 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.
- 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(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:
 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.

ESTIMATED QUANTITIES			
Item No.	Description	UNIT	QUANTITY
848	12" SDR-26 Pipe (8'-12')	LF	110
848	12" SDR-26 Pipe (12'-16')	LF	79
850	48" MH w/ Watertight Ring & Cover	EA	3
856	24" Jacking (12" SDR-26 Carrier Pipe 8'-16')	LF	120
550	Trench Excavation Safety Protection	LF	289
866	Post Sanitary Sewer Television Inspection	LF	289
856	24" Steel Casing	LF	120
852	Extra Depth Manhole	VF	23
103	Revegetation	SY	707



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

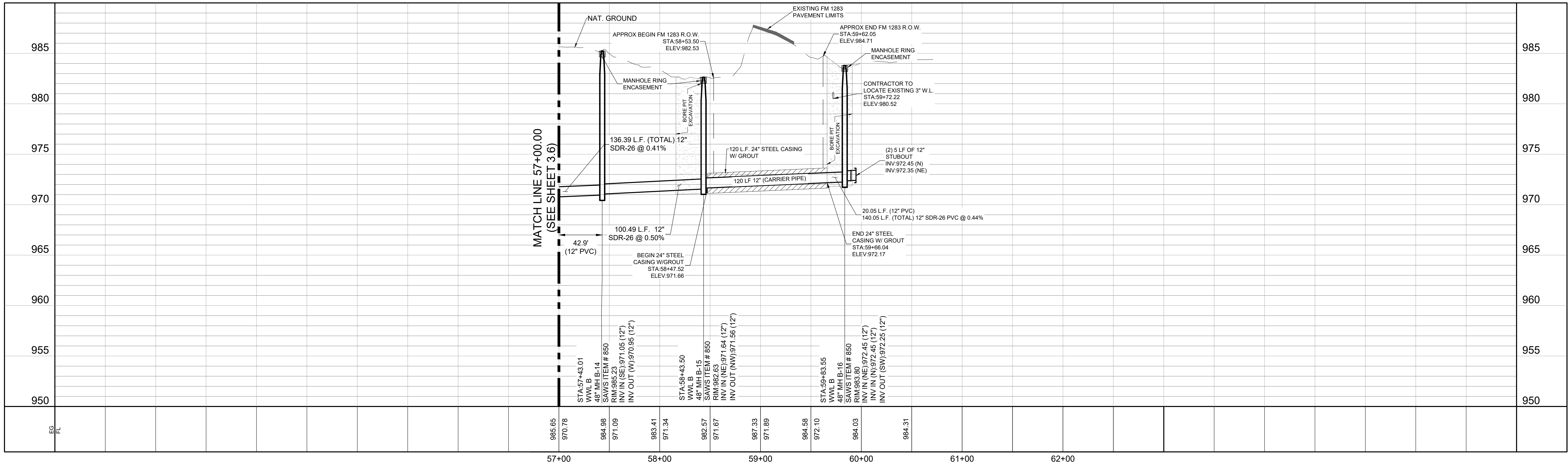
DEVELOPER'S NAME:	LUCRATERRA, LLC
DEVELOPER'S ADDRESS:	15720 BANDERA RD, STE 103
CITY:	HELOTES, STATE TEXAS, ZIP 78103
PHONE #:	830-837-2349 FAX #
SAWS BLOCK MAP #:	26465, 02066 TOTAL EDUS 0 TOTAL ACREAGE .NA
TOTAL LINEAR FOOTAGE OF PIPE:	274.27' PLAT NO. NA
NUMBER OF LOTS:	0 SAWS JOB NO. 22-1720

LEGEND

PROPOSED	EXISTING	
⊙	⊙	SANITARY SEWER MANHOLE
→	→	SANITARY SEWER LINE
	EX W	WATER LINE
	CO	SANITARY SEWER LATERAL
	+	CLEAN OUT
	+	WATER VALVE
	+	FIRE HYDRANT
	+	GAS VALVE
	+	GAS LINE
	+	STORM SEWER MANHOLE
	+	POWER POLE
	+	STREET LIGHT (100 WATT LED)
	+	GUY WIRE
	+	OVERHEAD ELECTRIC
	+	BENCHMARK
	G.E.T.C.A	GAS, ELEC, TELE & CABLE TV ESMT.
	ESMT.	EASEMENT
	VOL	VOLUME
	PG	PAGE
	○	SIGNIFICANT TREE PRESERVED
	○	HERITAGE TREE PRESERVED
	○	TREE OUT OF BOUNDS
	○	TREE REMOVE
	— FM —	FORCE MAIN
	---	10YR FLOOD PLAIN
	---	100YR FLOOD PLAIN
	---	500YR FLOOD PLAIN
	---	CONCRETE CASING
	---	STEEL CASING
	---	APPROXIMATE BORE PIT SIZE & LOCATION
	---	EXISTING FENCE
	---	PROPERTY LINE

CAUTION: CONTRACTOR TO NOTIFY TEXAS ONE CALL AT 1-800-245-4548 48 HOURS PRIOR TO CONSTRUCTION FOR UTILITY LINE LOCATE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY SIGNIFICANT DISCREPANCIES OR REQUIRED DESIGN CHANGES. EXISTING UTILITIES SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

SANITARY SEWER LINE 'B' STA. 57+00.00 TO END



THE WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B' SANITARY SEWER LINE 'B' STA. 57+00 TO END PLAN & PROFILE

REVISIONS

NO.	DATE	DESCRIPTION
1	05/23/2023	ANNOTATION QUANTITIES REVISION.

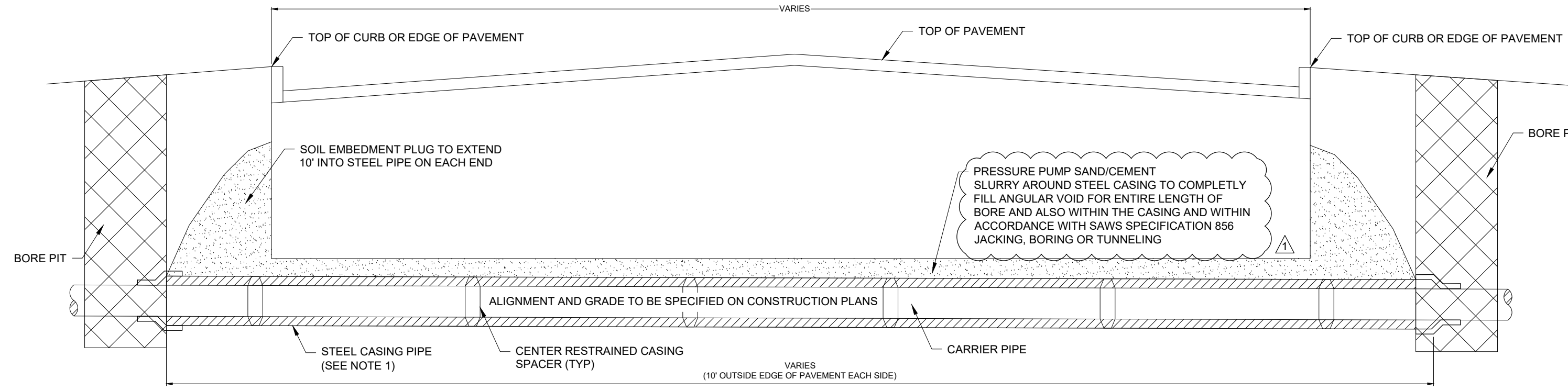
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 DESIGNED BY: PJR
 DRAWN BY: MAS, P.J.R., J.D.
 CHECKED BY: TH
 DRAFTER: TH
 NAME: TH
 Job: WWLB S&P STA 57+00.00-0.00



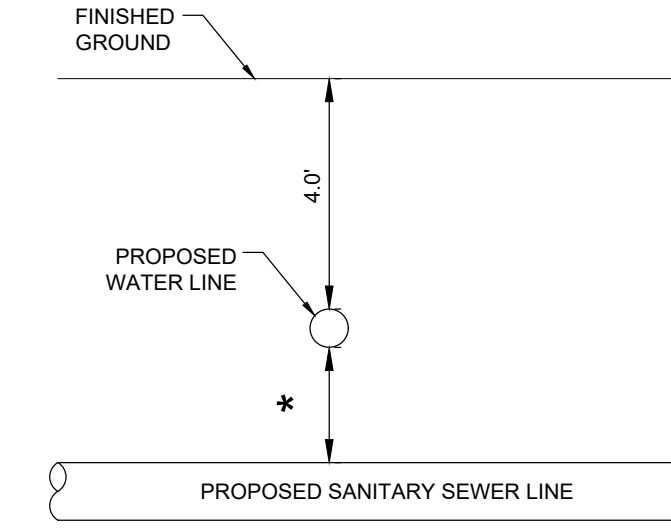
LJA Engineering, Inc.
 Phone 210-503-2700
 9830 Colonnade Blvd
 Suite 300
 San Antonio, Texas 78230

JOB NUMBER: SA190-0404.426
 SHEET NO. **C3.7**

K:\SA190_Lucas_Terra_LUCRATERRA_Woodlands_Offsite_Sewer_V03_20a_Development_Plan\DWG-Stream\Draw_B_Sheet_S&P.dwg
 User: mmanfria
 Last Modified: May 23, 2023 10:07 AM
 Plot Date/Time: May 23, 2023 10:07 AM



INSTALLATION OF PIPE IN CASING OPEN CUT OR JACK & BORE

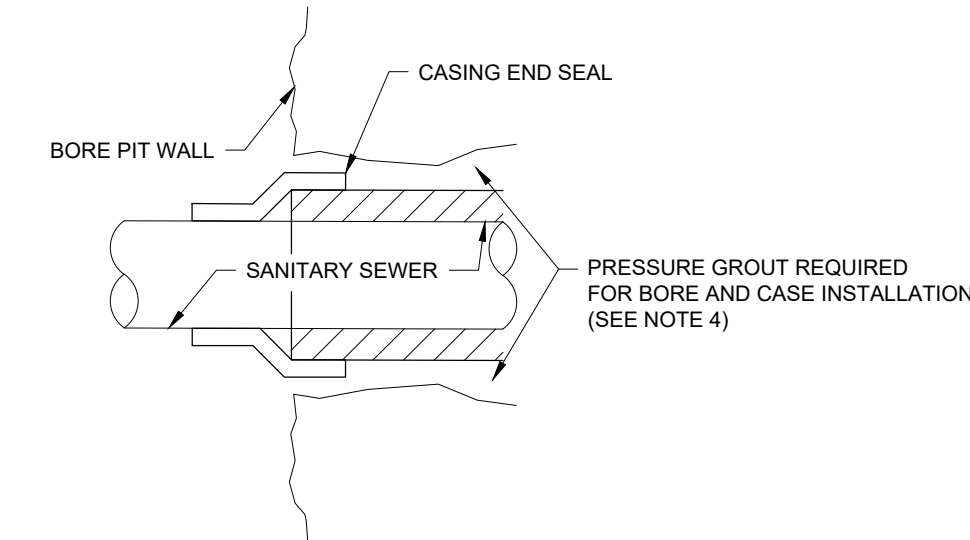


TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
NTS

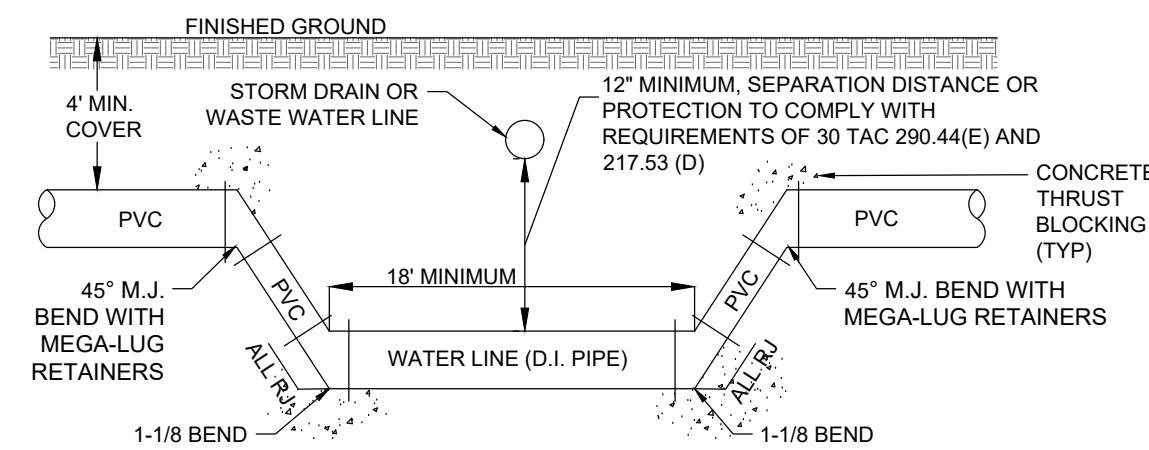
CASING DIMENSIONS				
MAIN SIZE, IN.	NOM. DIA. RCP* (I.D.) OR STEEL (O.D.) CONDUIT, IN.	STEEL PIPE THICKNESS, IN.	WEIGHT OF STEEL LBS/FT	NO. RUNNERS PER TIE
12	24	0.438	110.22	2 TOP, 4 BOTTOM
27	48	0.625	316.53	2 TOP, 4 BOTTOM
30	48	0.625	316.53	2 TOP, 4 BOTTOM

NOTES:

- CASING PIPE SHALL BE NEW STEEL PIPE MANUFACTURED IN ACCORDANCE WITH CASING DIMENSION TABLE SHOWN ON THIS DETAIL.
- THE DISTANCE BETWEEN THE BACK OF THE CURB OR EDGE OF ASPHALT AND THE END OF THE CASING SHALL CONFORM TO THE REQUIREMENTS AND DISTANCES APPROVED IN THE BORING PERMIT.
- CASING INSULATORS SHALL BE IN ACCORDANCE WITH SAWS STANDARD MATERIAL SPECIFICATION 05-31. INSULATORS SHALL BE SPACED PER PIPE MANUFACTURER'S RECOMMENDATION.
- FOR BORE AND CASE INSTALLATIONS THE ANNULAR SPACE BETWEEN THE CASING PIPE AND THE BOREHOLE SHALL BE COMPLETELY PRESSURE GROUTED USING SAND-CEMENT SLURRY. GROUTING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SAWS SPECIFICATION 856.
- ALL PIPE JACKING SHALL BE IN ACCORDANCE WITH SAWS 2021 STANDARD SPECIFICATIONS FOR CONSTRUCTION ITEM NO. 856 PIPE JACKING. NOTE SHALL BE TAKEN THAT THE JACK/BORING/TUNNELING & CARRIER PIPE HAS BEEN SEPARATED FROM THE STEEL CASING AS SEPARATE LINE ITEMS (YET SAME ITEM NUMBER) FOR THE PURPOSE OF QUANTIFYING THE MATERIALS.
- CONTRACTOR TO REFER TO SAWS SPECS FOR CONSTRUCTION.



CASING END SEAL FOR JACK & BORE INSTALLATION
NTS



TYPICAL WATER CROSSING DETAIL
NTS

- NOTE:
- 18" MINIMUM WATER PIPE SEGMENT TO BE CENTERED UNDER WASTEWATER LINE.
 - WASTEWATER PIPE WITHIN NINE FEET OF WATER PIPE ON EITHER SIDE SHALL BE CONSTRUCTED USING AT LEAST 150 PSI PRESSURE RATED PIPE.
 - STEEL CASING TO BE USED UNDER STORM DRAIN.

NO.	REVISIONS	DESCRIPTION	BY		DATE
			TH	TH	
1		ANNOTATION QUANTITIES REVISION.			05/12/23

DATE	05/12/2023
DESIGNED BY:	PJR & BFB
DRAWN BY:	PJR
CHECKED BY:	TH
DRAWING NAME	sh_sewer_details.dwg

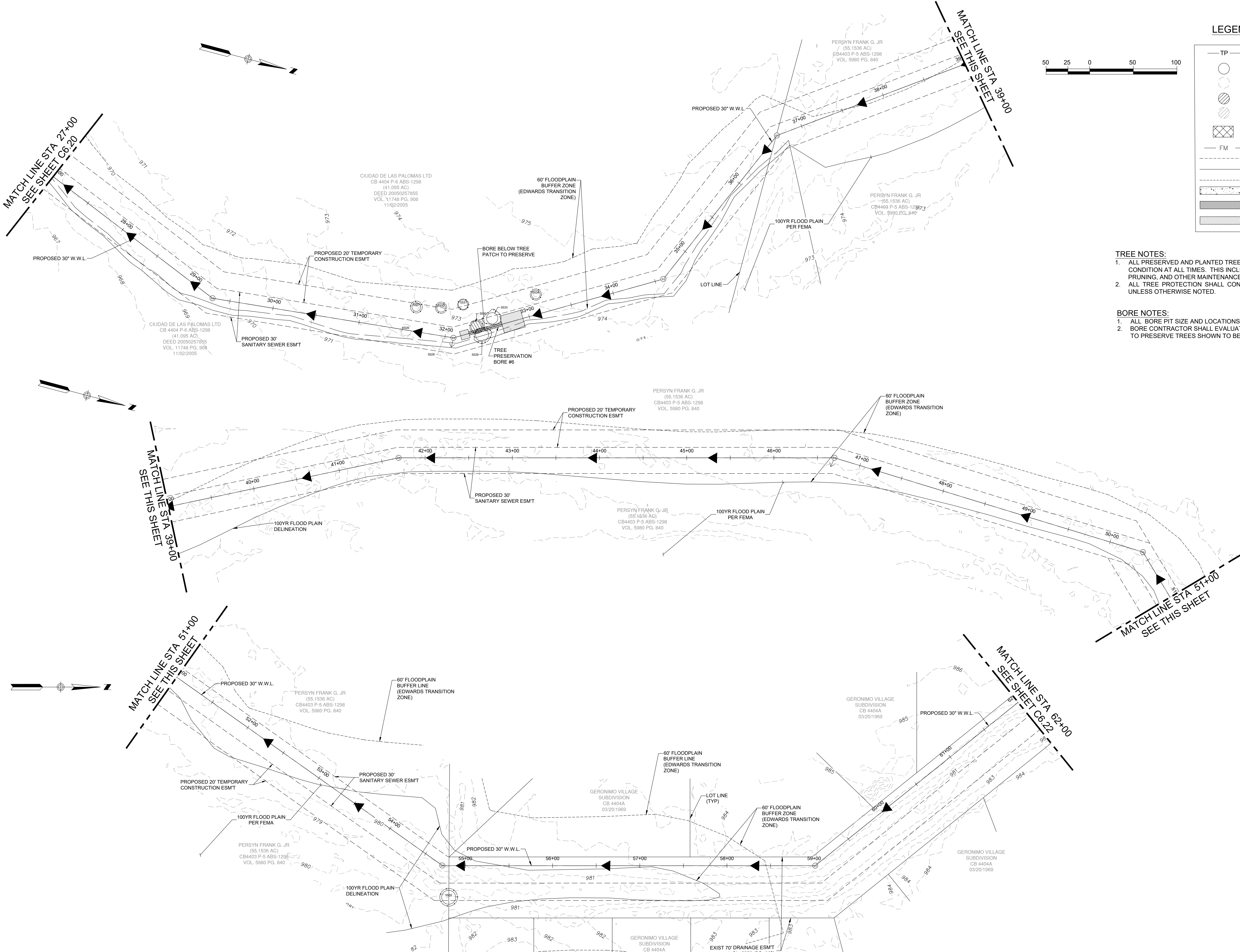


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 TBE No. F-1366

JOB NUMBER:
SA190-0404.426

SHEET NO.
C4.0

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 Plot Date/Time: May 23, 2023 12:58:20



LEGEND

- TP: TREE PROTECTION (LINE DELINEATION AROUND TREES)
- : TREE (PRESERVE)
- : TREE (REMOVE)
- ◐: HERITAGE TREE (PRESERVE)
- ◐: HERITAGE TREE (REMOVE)
- ▣: EXISTING AREA TO BE DEMOLISHED
- FM: FORCE MAIN
- : 10YR FLOOD PLAIN
- : 100YR FLOOD PLAIN
- : 500YR FLOOD PLAIN
- : CONCRETE CASING
- : STEEL CASING
- : APPROXIMATE BORE PIT SIZE & LOCATION



TREE NOTES:

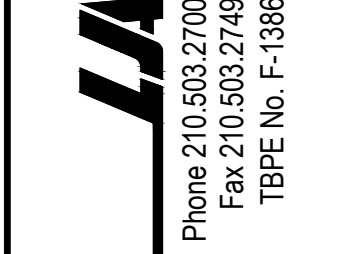
- ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED.
- ALL TREE PROTECTION SHALL CONSIST OF LEVEL 1 FENCE PROTECTION UNLESS OTHERWISE NOTED.

BORE NOTES:

- ALL BORE PIT SIZE AND LOCATIONS ARE APPROXIMATE.
- BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED TO PRESERVE TREES SHOWN TO BE PRESERVED.

NO.	DATE	BY	REVISIONS DESCRIPTION

DATE: 09/20/2022	DESIGNED BY: PUR	DRAWN BY: MAS_PUR_ID	CHECKED BY: TH	FRANKING NAME: (SEE TREE PLANS 1-10)
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JOB NUMBER: SA190-0404.426
SHEET NO. C6.21

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Plot: 31502/Tree_Plan_08_28 - 10:30:11



LEGEND

- TP TREE PROTECTION (LINE DELINEATION AROUND TREES)
- TREE (PRESERVE)
- TREE (REMOVE)
- HERITAGE TREE (PRESERVE)
- HERITAGE TREE (REMOVE)
- EXISTING AREA TO BE DEMOLISHED
- FM FORCE MAIN
- 10YR FLOOD PLAIN
- 100YR FLOOD PLAIN
- 500YR FLOOD PLAIN
- CONCRETE CASING
- STEEL CASING
- APPROXIMATE BORE PIT SIZE & LOCATION

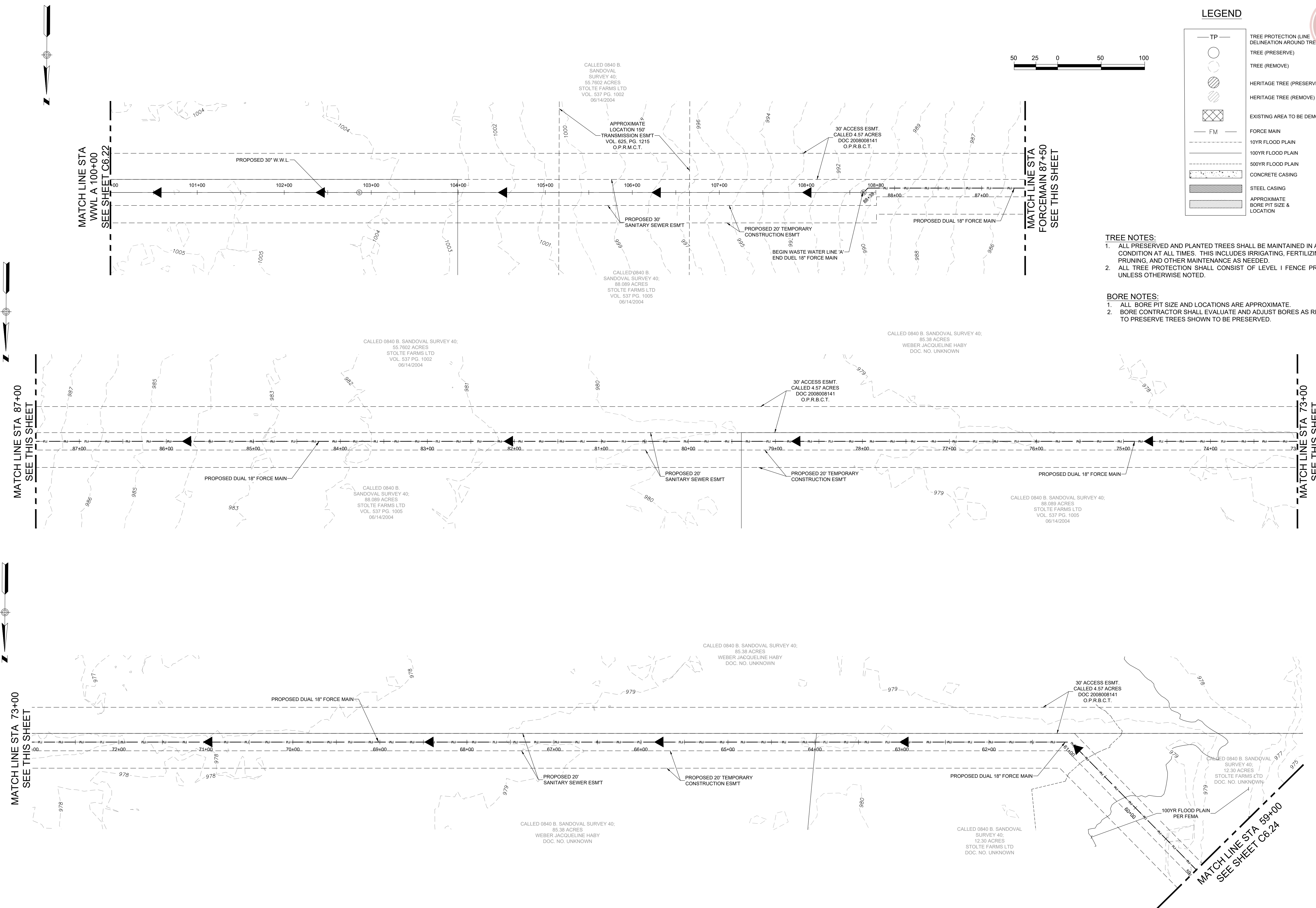


TREE NOTES:

- ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED.
- ALL TREE PROTECTION SHALL CONSIST OF LEVEL I FENCE PROTECTION UNLESS OTHERWISE NOTED.

BORE NOTES:

- ALL BORE PIT SIZE AND LOCATIONS ARE APPROXIMATE.
- BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED TO PRESERVE TREES SHOWN TO BE PRESERVED.



NO.	DATE	BY	REVISIONS DESCRIPTION

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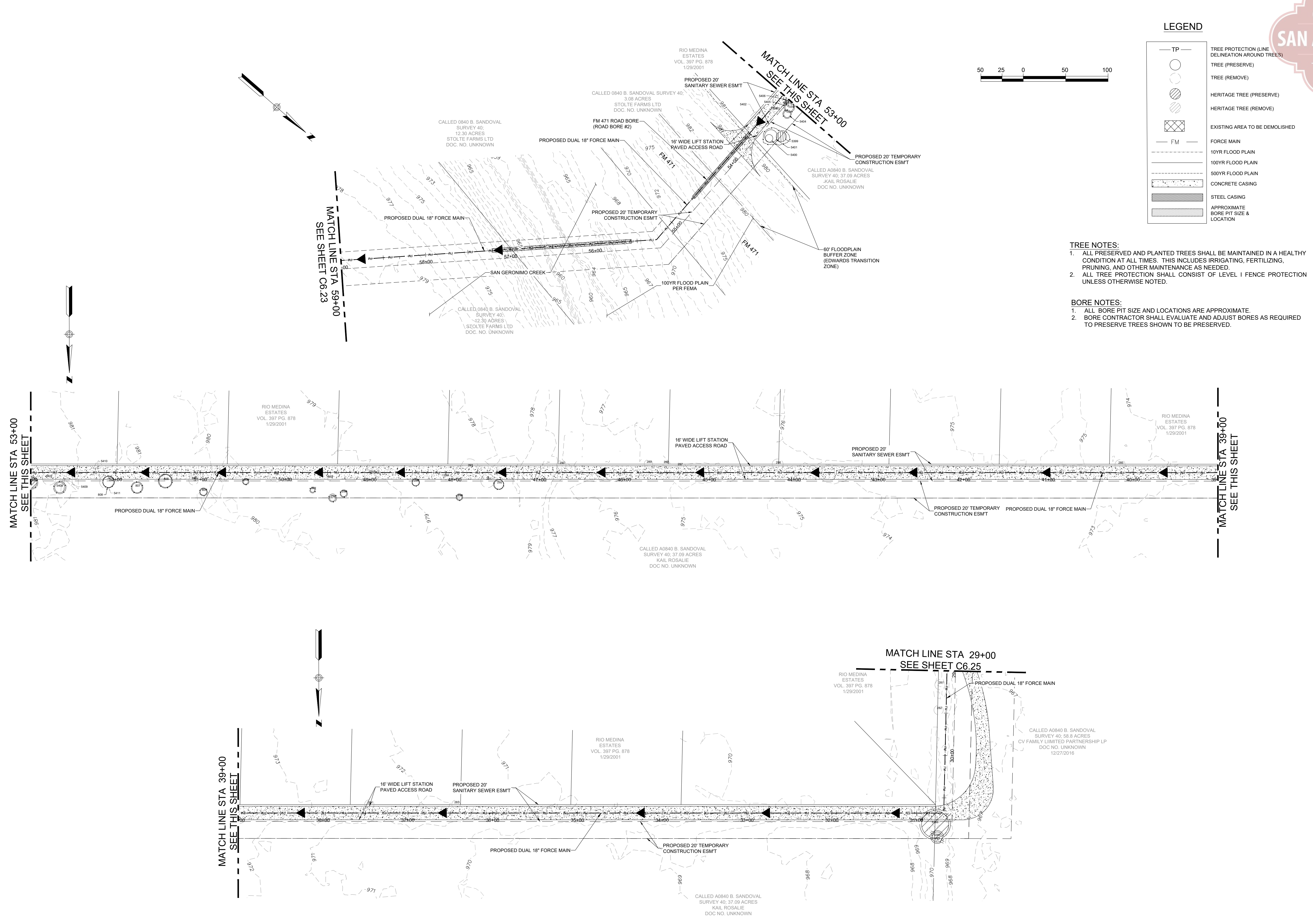


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JOB NUMBER:
SA190-0404.426

SHEET NO.
C6.23

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 Plot Date/Time: Sep 08 2022 12:26:46



LEGEND

- TP TREE PROTECTION (LINE DELINEATION AROUND TREES)
- TREE (PRESERVE)
- TREE (REMOVE)
- HERITAGE TREE (PRESERVE)
- HERITAGE TREE (REMOVE)
- EXISTING AREA TO BE DEMOLISHED
- FM FORCE MAIN
- 10YR FLOOD PLAIN
- 100YR FLOOD PLAIN
- 500YR FLOOD PLAIN
- CONCRETE CASING
- STEEL CASING
- APPROXIMATE BORE PIT SIZE & LOCATION



- TREE NOTES:**
- ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED.
 - ALL TREE PROTECTION SHALL CONSIST OF LEVEL 1 FENCE PROTECTION UNLESS OTHERWISE NOTED.

- BORE NOTES:**
- ALL BORE PIT SIZE AND LOCATIONS ARE APPROXIMATE.
 - BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED TO PRESERVE TREES SHOWN TO BE PRESERVED.

NO.	DATE	BY	REVISIONS DESCRIPTION

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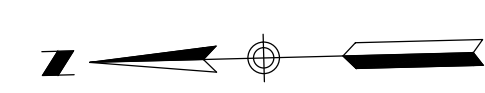
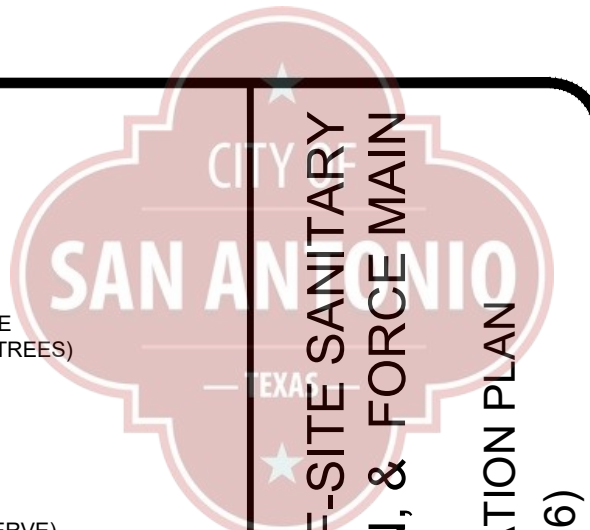


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JOB NUMBER:
SA190-0404.426

SHEET NO.
C6.24

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 Plot Date/Time: Sep 08 24 - 13:27:15



LEGEND

- TP TREE PROTECTION (LINE DELINEATION AROUND TREES)
- TREE (PRESERVE)
- TREE (REMOVE)
- HERITAGE TREE (PRESERVE)
- HERITAGE TREE (REMOVE)
- EXISTING AREA TO BE DEMOLISHED
- FM FORCE MAIN
- 10YR FLOOD PLAIN
- 100YR FLOOD PLAIN
- 500YR FLOOD PLAIN
- CONCRETE CASING
- STEEL CASING
- APPROXIMATE BORE PIT SIZE & LOCATION

TREE NOTES:

- ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED.
- ALL TREE PROTECTION SHALL CONSIST OF LEVEL 1 FENCE PROTECTION UNLESS OTHERWISE NOTED.

BORE NOTES:

- ALL BORE PIT SIZE AND LOCATIONS ARE APPROXIMATE.
- BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED TO PRESERVE TREES SHOWN TO BE PRESERVED.



MATCH LINE STA 17+50 SEE THIS SHEET

MATCH LINE STA 3+50 SEE THIS SHEET

MATCH LINE STA 29+00 SEE SHEET C6.24

MATCH LINE STA 17+50 SEE THIS SHEET

MATCH LINE STA 3+50 FM MAIN SEE THIS SHEET

MATCH LINE STA 5+00 WWL 'B' SEE SHEET C6.26

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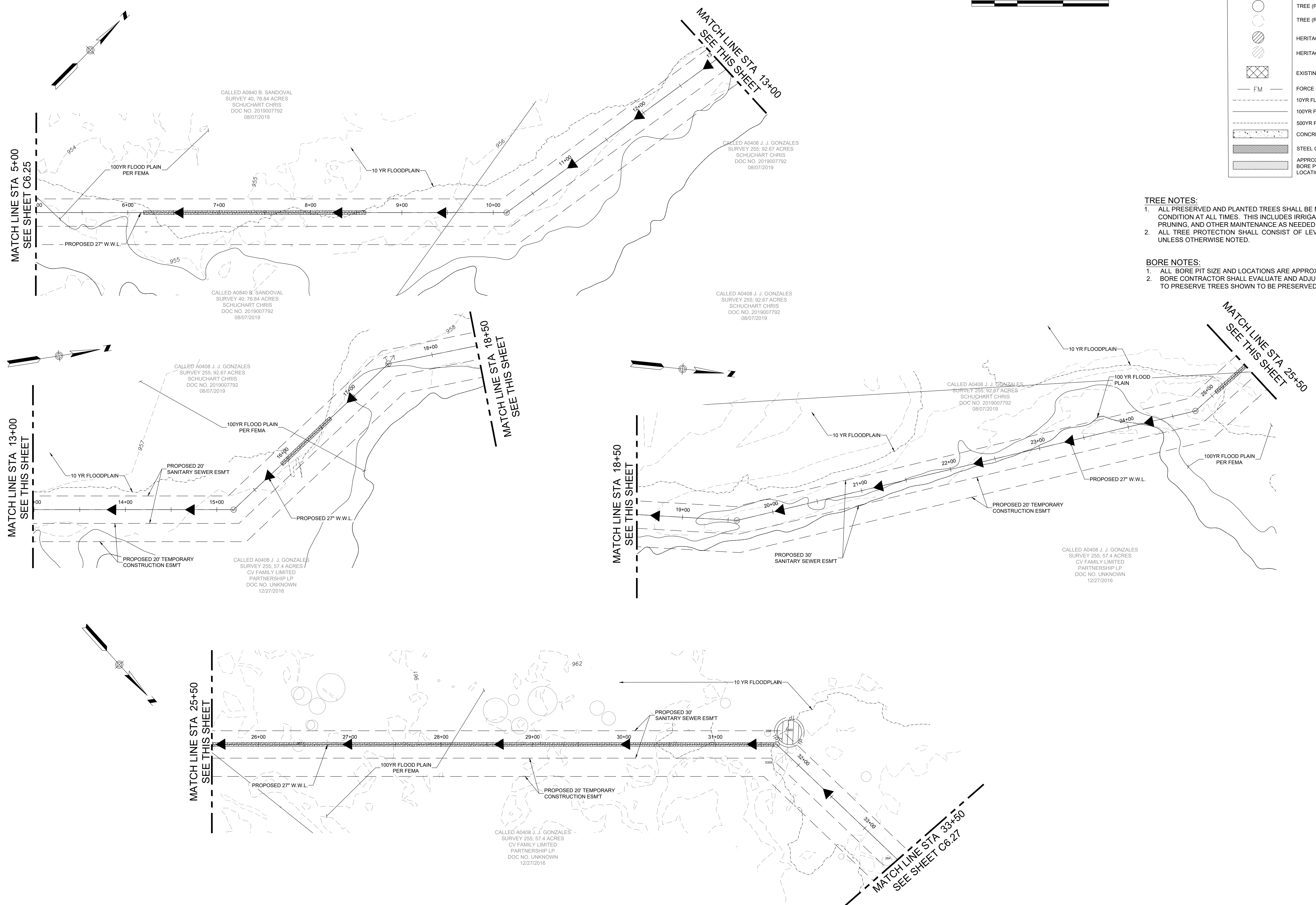
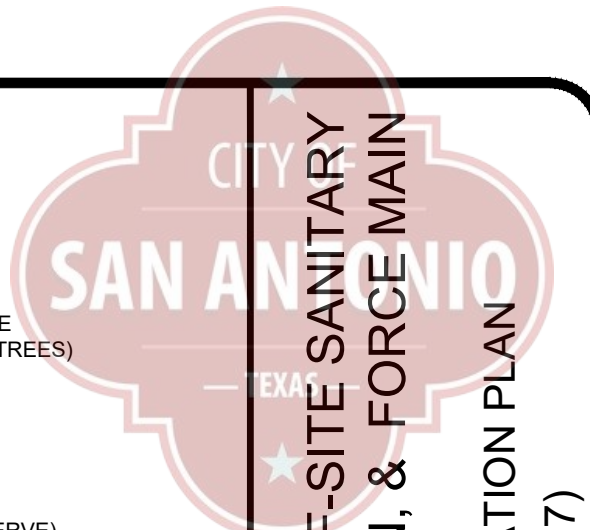
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JOB NUMBER:
SA190-0404.426

SHEET NO.
C6.25



LEGEND

- TP TREE PROTECTION (LINE DELINEATION AROUND TREES)
- TREE (PRESERVE)
- TREE (REMOVE)
- HERITAGE TREE (PRESERVE)
- HERITAGE TREE (REMOVE)
- EXISTING AREA TO BE DEMOLISHED
- FM FORCE MAIN
- 10YR FLOOD PLAIN
- 100YR FLOOD PLAIN
- 500YR FLOOD PLAIN
- CONCRETE CASING
- STEEL CASING
- APPROXIMATE BORE PIT SIZE & LOCATION

TREE NOTES:

- ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED.
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BORE NOTES:

- ALL BORE PIT SIZE AND LOCATIONS ARE APPROXIMATE.
- BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED TO PRESERVE TREES SHOWN TO BE PRESERVED.

NO.	REVISIONS	DESCRIPTION	BY	DATE

DATE: 08/07/2022	DESIGNED BY: PUR	DRAWN BY: MMS, PUR_ID	CHECKED BY: TH	FRANKING NAME: (Sht. Tree Plans 3.dwg)
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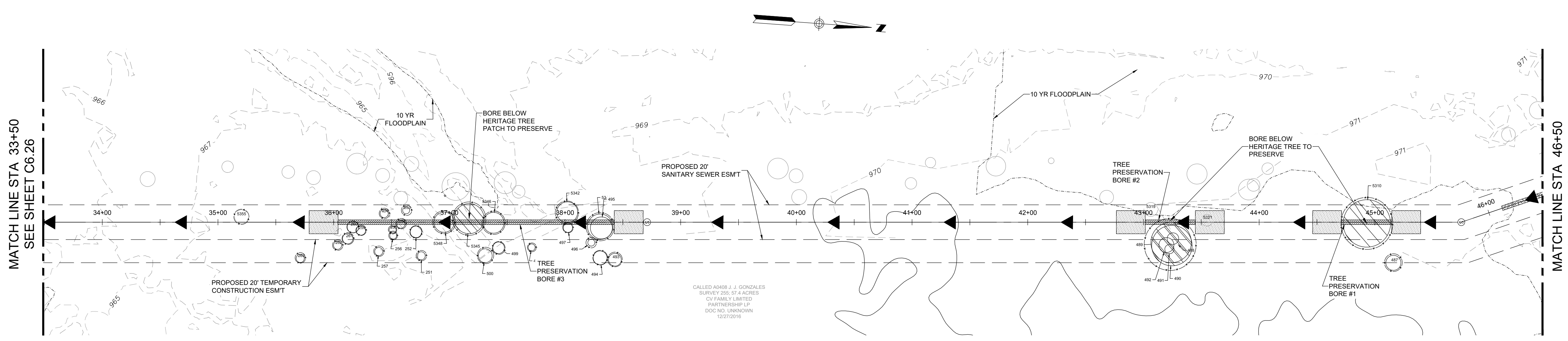


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 Phone: 210-503-2700
 Fax: 210-503-2749
 1100 NE Loop 410, Suite 850, San Antonio, Texas 78209

JOB NUMBER: SA190-0404.426

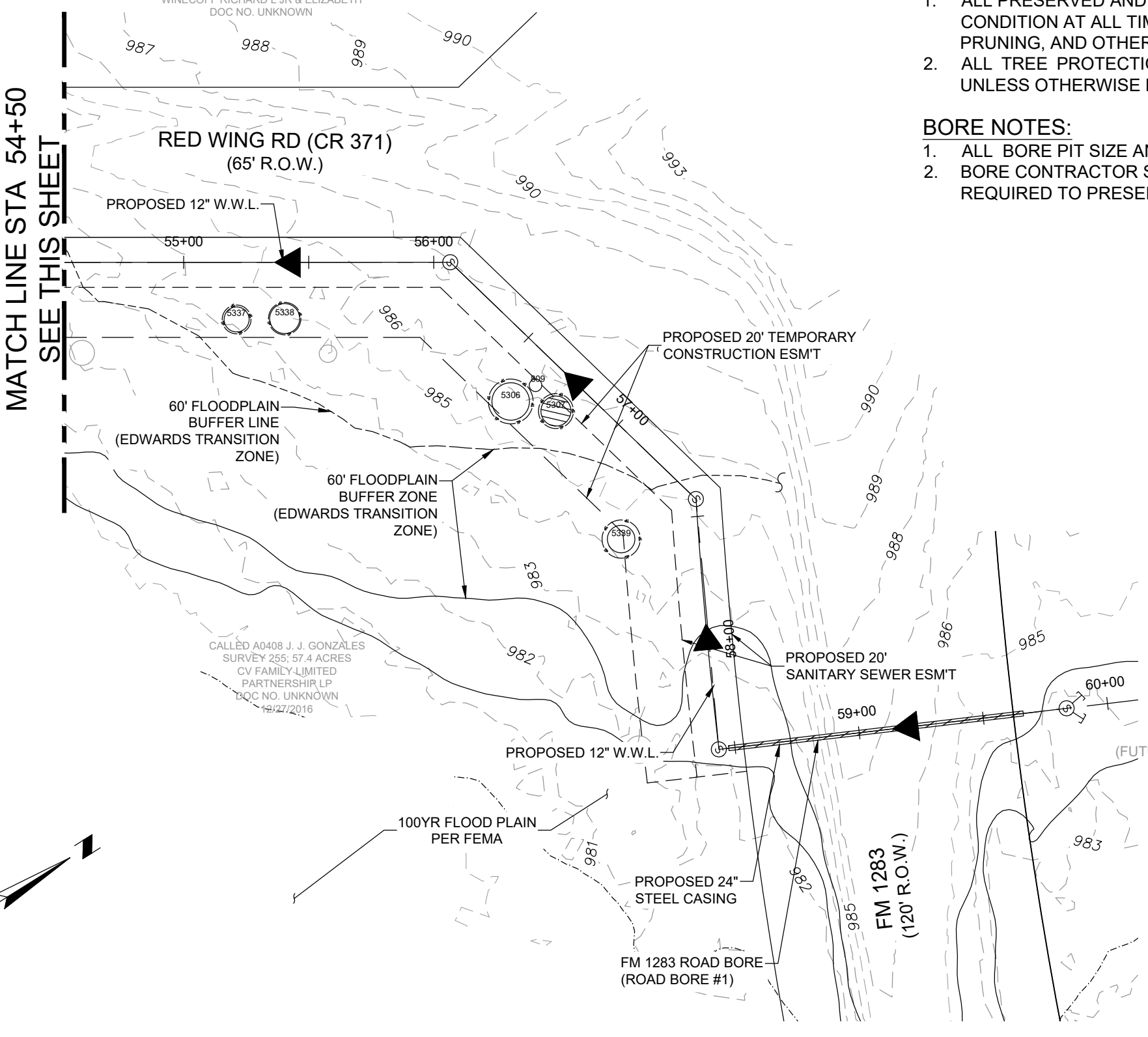
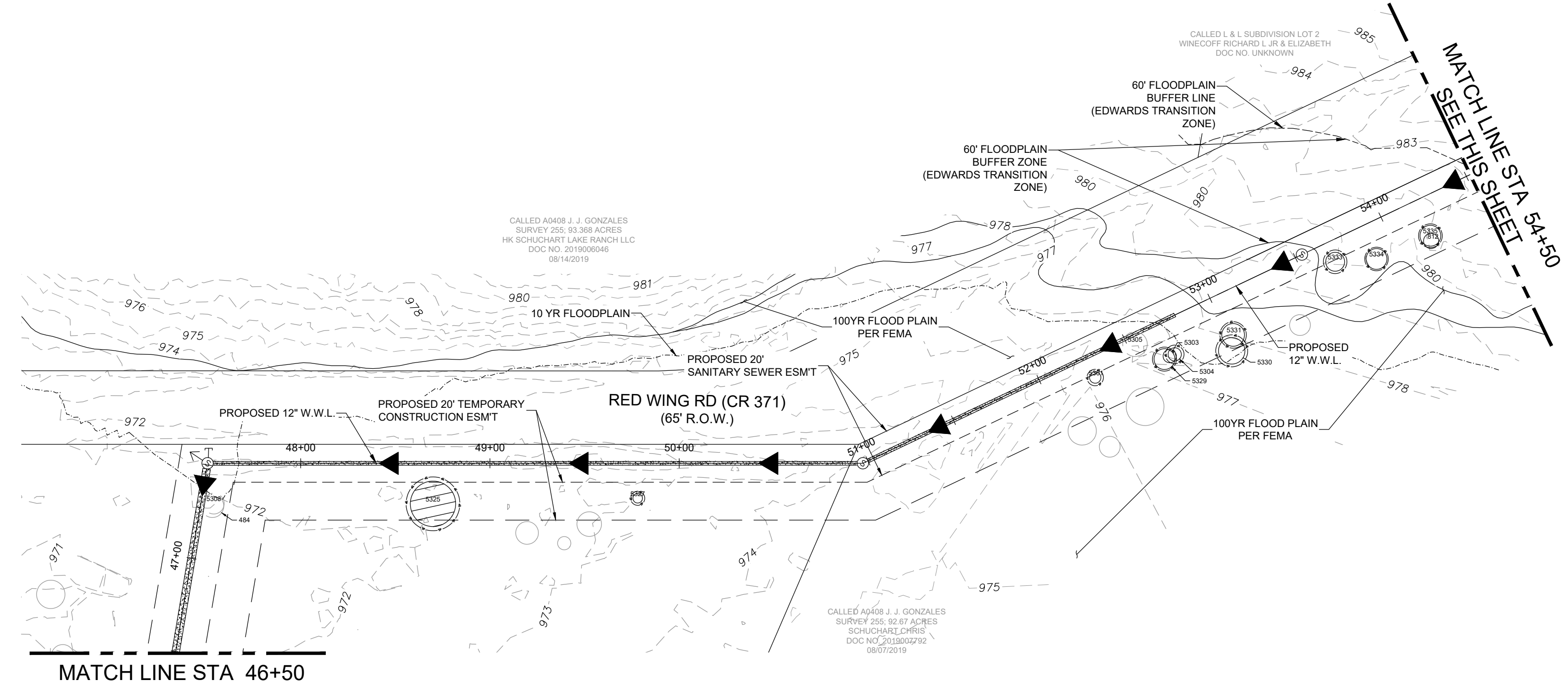
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 Plot Date/Time: Sep 08 22 - 12:28:51



LEGEND

TP	TREE PROTECTION (LINE DELINEATION AROUND TREES)
○	TREE (PRESERVE)
○	TREE (REMOVE)
⊗	HERITAGE TREE (PRESERVE)
⊗	HERITAGE TREE (REMOVE)
⊗	EXISTING AREA TO BE DEMOLISHED
FM	FORCE MAIN
---	10YR FLOOD PLAIN
---	100YR FLOOD PLAIN
---	500YR FLOOD PLAIN
---	CONCRETE CASING
---	STEEL CASING
---	APPROXIMATE BORE PIT SIZE & LOCATION



- GENERAL NOTES:**
- ENTIRE ALIGNMENT FALLS WITHIN THE EDWARDS AQUIFER TRANSITION ZONE.
- TREE NOTES:**
- ALL PRESERVED AND PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATING, FERTILIZING, PRUNING, AND OTHER MAINTENANCE AS NEEDED.
 - ALL TREE PROTECTION SHALL CONSIST OF LEVEL 1 FENCE PROTECTION UNLESS OTHERWISE NOTED.
- BORE NOTES:**
- ALL BORE PIT SIZE AND LOCATIONS ARE APPROXIMATE.
 - BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED TO PRESERVE TREES SHOWN TO BE PRESERVED.

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NO.	REVISIONS	DESCRIPTION	BY	DATE

DATE:	09/07/2022
DESIGNED BY:	PLR
DRAWN BY:	MAS_PLR_ID
CHECKED BY:	TH
DRAWING NAME:	081_Tree Plans 3.dwg



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C6.27

