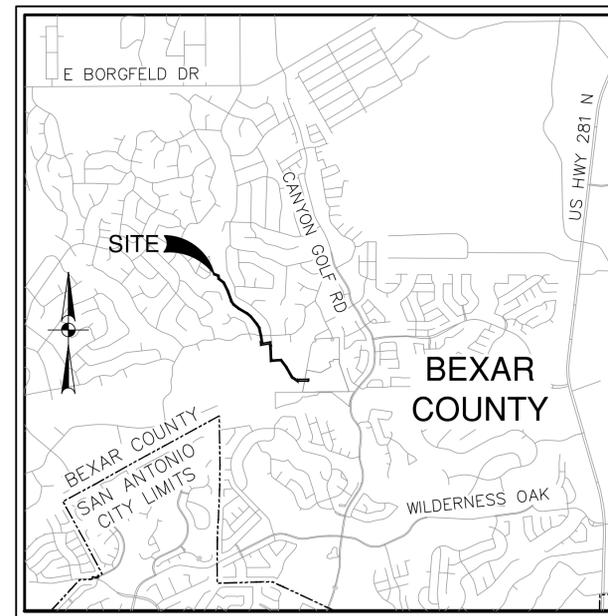


THE VILLAS AT TIMBERWOOD OFFSITE SANITARY SEWER EXTENSION

SAN ANTONIO, TEXAS

CIVIL CONSTRUCTION PLANS



LOCATION MAP
NOT-TO-SCALE

PREPARED FOR:

THE VILLAS AT TIMBERWOOD HOMEOWNERS ASSOCIATION, INC
20540 STATE HIGHWAY 46 W, STE 115 C/O 497
SPRING BRANCH, TEXAS 78070

JANUARY 2025
REVISED: OCTOBER 2025



2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

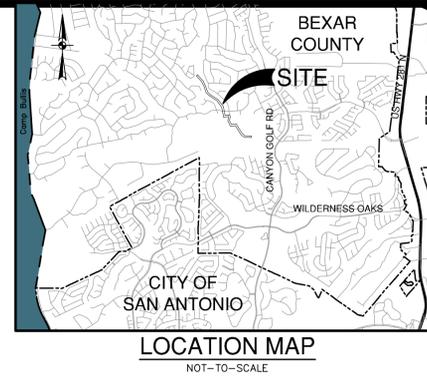
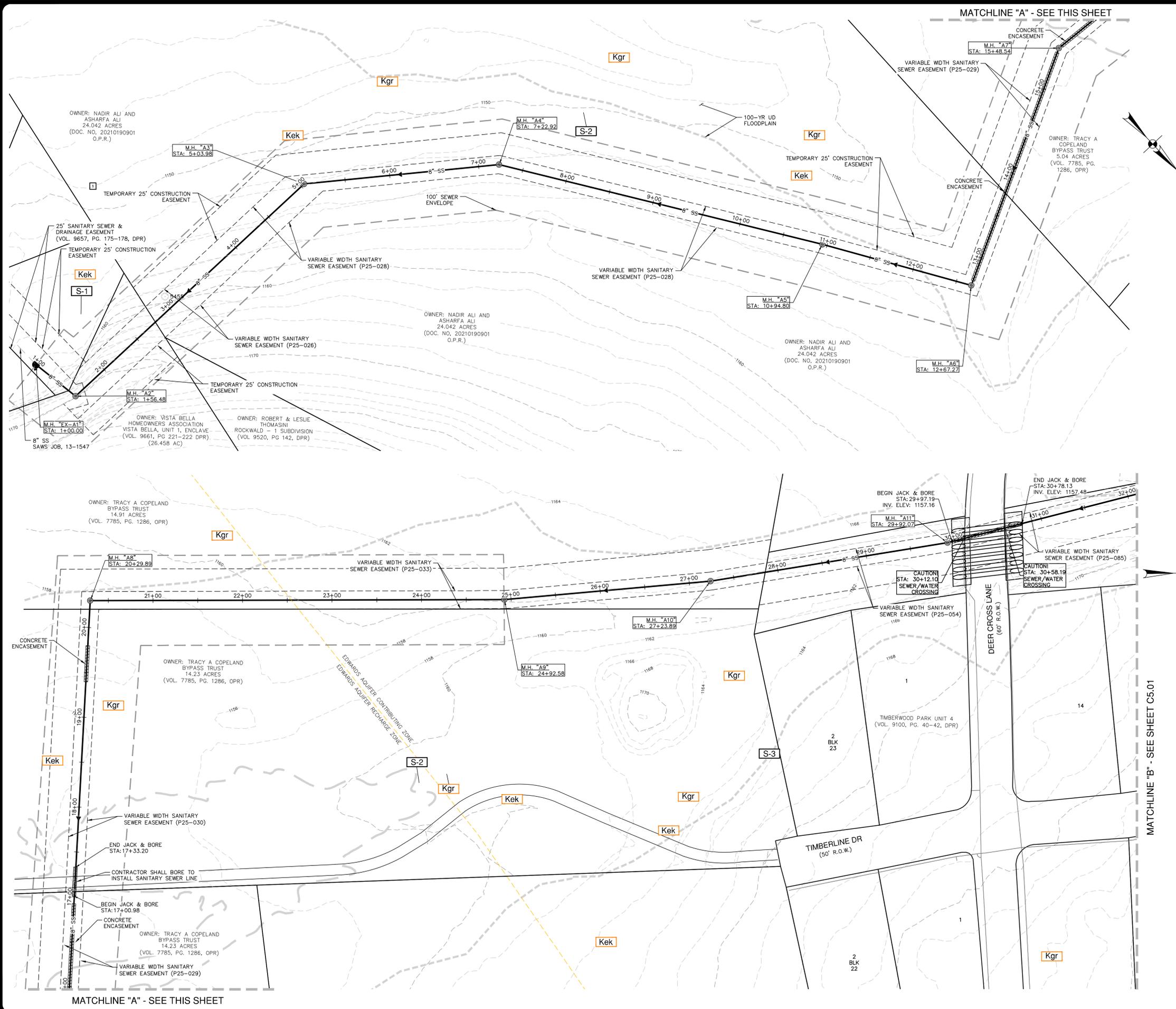


Sheet List Table

Sheet Title	Sheet Description	Sheet Number
COVER SHEET		C0.00
OVERALL SANITARY SEWER PLAN		C5.00
OVERALL SANITARY SEWER PLAN		C5.01
SANITARY SEWER LINE A PLAN & PROFILE	STA. 1+00.00 TO 12+00.00	C5.02
SANITARY SEWER LINE A PLAN & PROFILE	STA. 12+00.00 TO 23+00.00	C5.03
SANITARY SEWER LINE A PLAN & PROFILE	STA. 23+00.00 TO 34+00.00	C5.04
SANITARY SEWER LINE A PLAN & PROFILE	STA. 34+00.00 TO 45+00.00	C5.05
SANITARY SEWER LINE A PLAN & PROFILE	STA. 45+00.00 TO END	C5.06
SANITARY SEWER DETAILS		C5.10
SANITARY SEWER NOTES		C5.11
STORM WATER POLLUTION PREVENTION PLAN		C8.00
STORM WATER POLLUTION PREVENTION PLAN		C8.01
STORM WATER POLLUTION PREVENTION PLAN		C8.10

SEWER

DEVELOPER'S NAME: THE VILLAS AT TIMBERWOOD HOMEOWNERS ASSOCIATION, INC.
 ADDRESS: 20540 STATE HIGHWAY 46 W, STE 115 C/O 497
 CITY: SPRING BRANCH STATE: TEXAS ZIP: 78070
 PHONE# - - FAX# - -
 SAWS BLOCK MAP# 164670 TOTAL EDU'S 0 TOTAL ACREAGE 3.05
 TOTAL LINEAR FOOTAGE OF PIPE: 8" 5497 LF PLAT NO. - -
 NUMBER OF LOTS 0 SAWS JOB NO. 24-1631



SEWER LEGEND

PROJECT LIMITS	---
EXISTING WATER	---
EXISTING SEWER	---
PROPOSED SEWER	---
100' SEWER ENVELOPE	---
GEOLOGIC FORMATIONS	
Kek	KAINER
Kgr	GLEN ROSE
SYMBOLS AND LINES	
S-1	POTENTIAL RECHARGE FEATURE

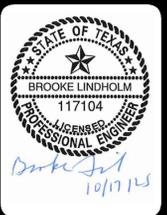
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SEWER

DEVELOPER'S NAME:	CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS:	5419 N LOOP 1604 E
CITY:	SAN ANTONIO STATE: TX ZIP: 78247
PHONE#	PHONE # FAX# FAX #
SAWS BLOCK MAP#	XXX-XXX TOTAL EDU'S 132 TOTAL ACREAGE 3.05
TOTAL LINEAR FOOTAGE OF PIPE:	8' XXXX LF PLAT NO. 25-1180041
NUMBER OF LOTS	XX SAWS JOB NO. 24-1631

NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS

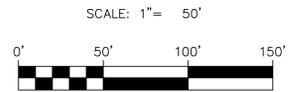
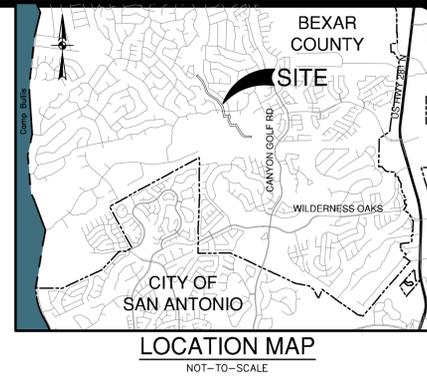
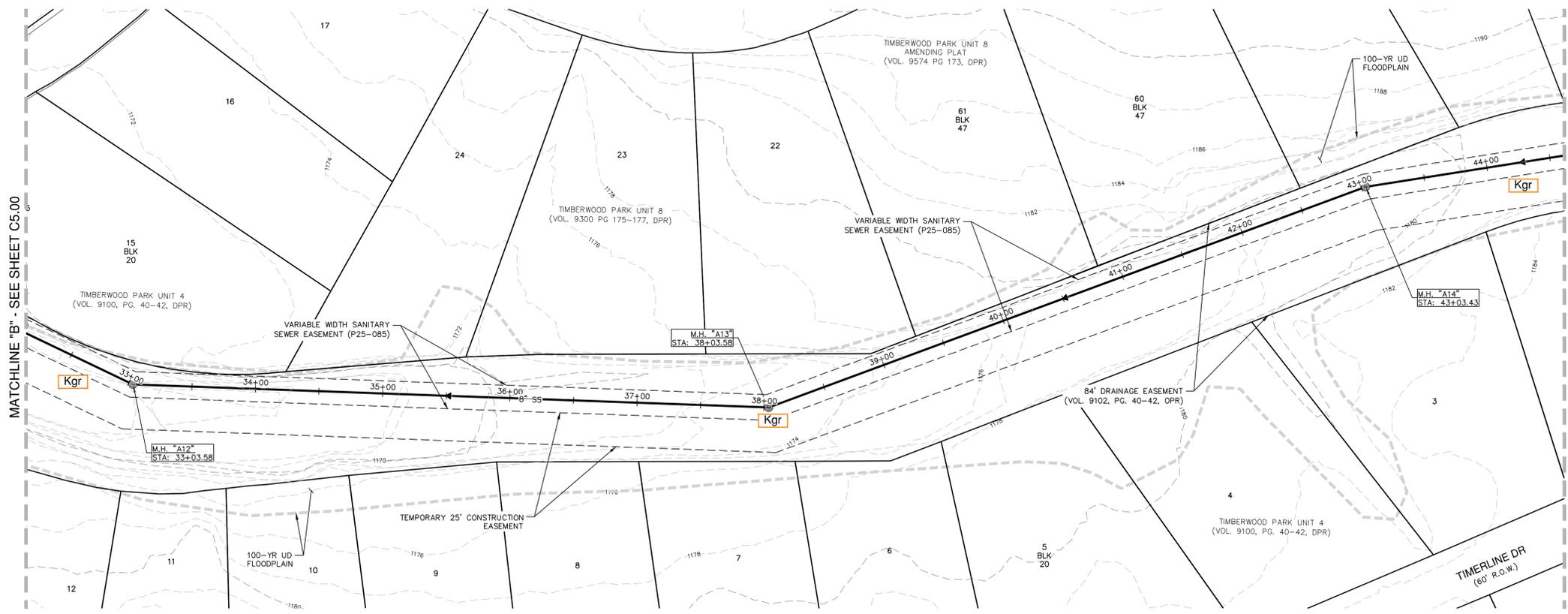
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #479 | TEXAS SURVEYING FIRM #1008800

**THE VILLAS AT TIMBERWOOD OFFSITE
SANITARY SEWER EXTENSION
SAN ANTONIO, TEXAS
OVERALL SANITARY SEWER PLAN**

PLAT NO.	-
JOB NO.	13370-00
DATE	MAY 2025
DESIGNER	RA
CHECKED	BL DRAWN RA
SHEET	C5.00

Date: July 26, 2024, 11:12 AM - User ID: rdvareza
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SEWER LEGEND

PROJECT LIMITS: ---

EXISTING WATER: ---

EXISTING SEWER: ---

PROPOSED SEWER: ---

100' SEWER ENVELOPE: ---

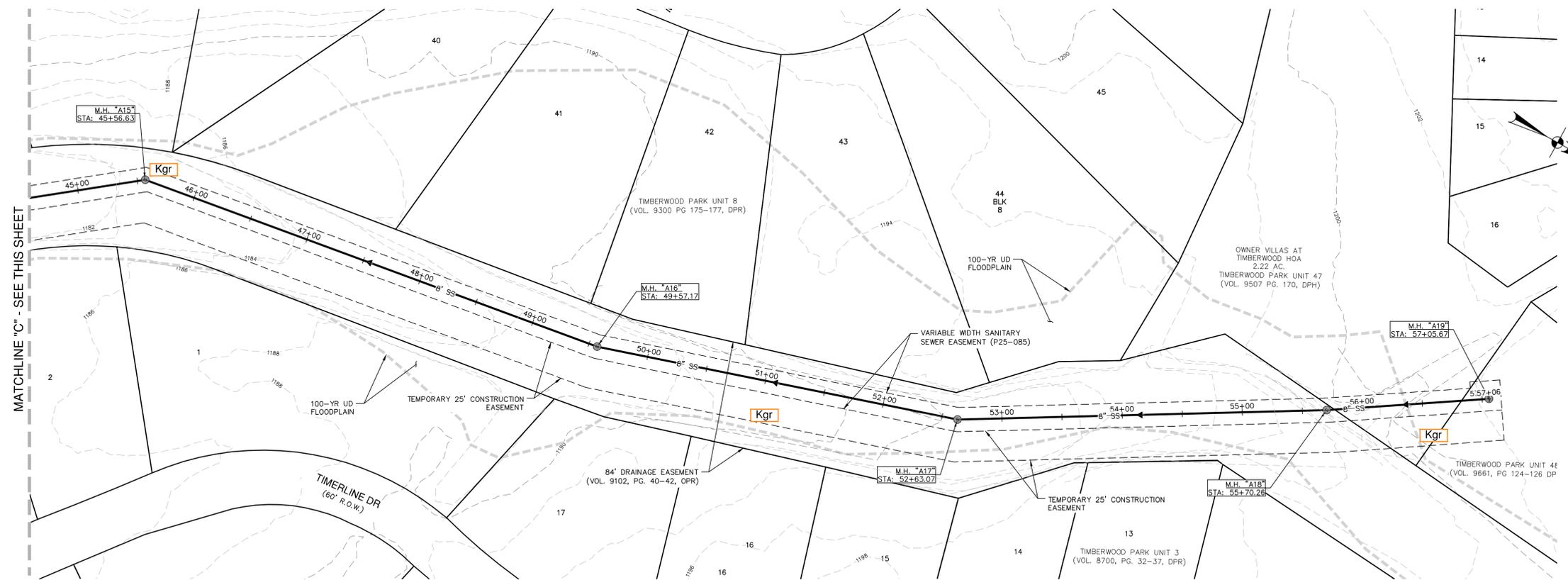
GEOLOGIC FORMATIONS

Kek KAINER

Kgr GLEN ROSE

SYMBOLS AND LINES

S-1 POTENTIAL RECHARGE FEATURE



CAUTION!!

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ADDRESS: 5419 N LOOP 1604 E

CITY: SAN ANTONIO STATE: TX ZIP: 78247

PHONE# PHONE # FAX# FAX #

SAWS BLOCK MAP# XXX-XXX TOTAL EDU'S 132 TOTAL ACREAGE 3.05

TOTAL LINEAR FOOTAGE OF PIPE: 8' XXXX LF PLAT NO. 25-1180041

NUMBER OF LOTS XX SAWS JOB NO. 24-1631

DATE	
NO.	REVISION



PAPE-DAWSON ENGINEERS

2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

THE VILLAS AT TIMBERWOOD OFFSITE

SANITARY SEWER EXTENSION

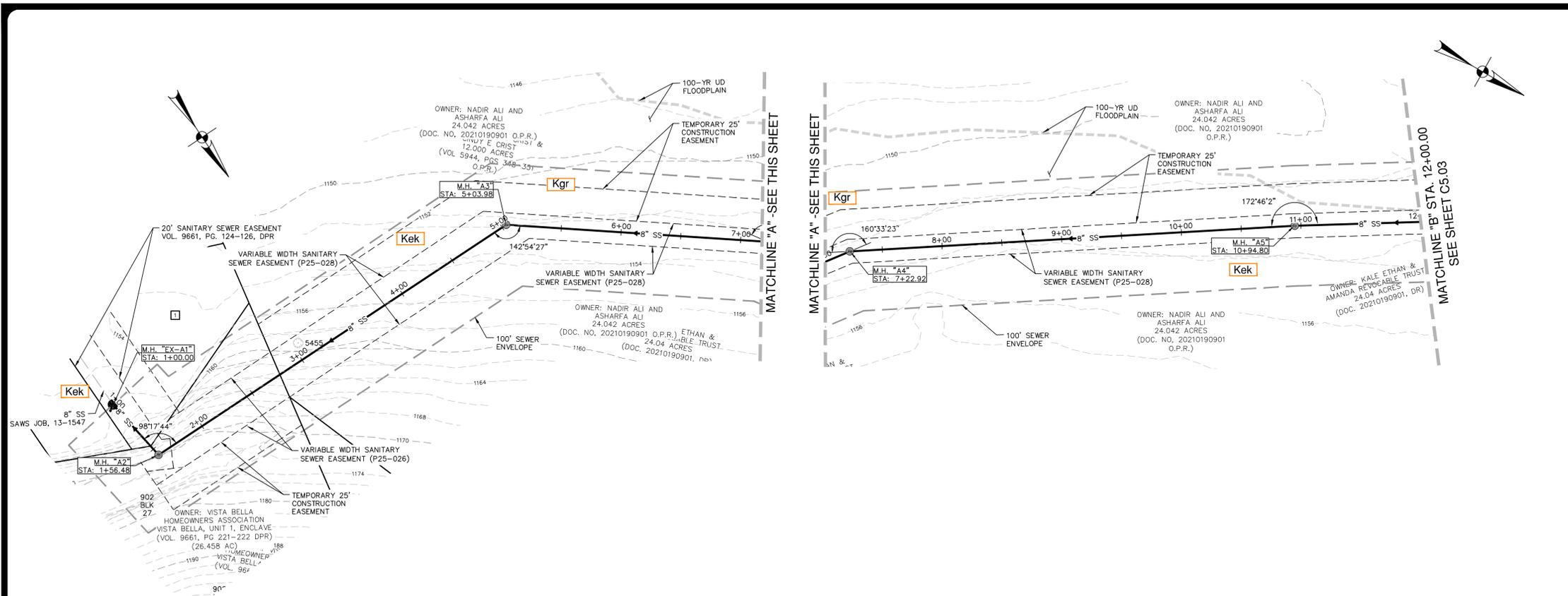
SAN ANTONIO, TEXAS

OVERALL SANITARY SEWER PLAN

PLAT NO.	-
JOB NO.	13370-00
DATE	MAY 2025
DESIGNER	RA
CHECKED	BL DRAWN RA
SHEET	C5.01

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SCALE: 1" = 50'

SEWER LEGEND

PROJECT LIMITS: ---

EXISTING WATER: ---

EXISTING SEWER: ---

PROPOSED SEWER: ---

100' SEWER ENVELOPE: ---

GEOLOGIC FORMATIONS

Kek KAINER

Kgr GLEN ROSE

SYMBOLS AND LINES

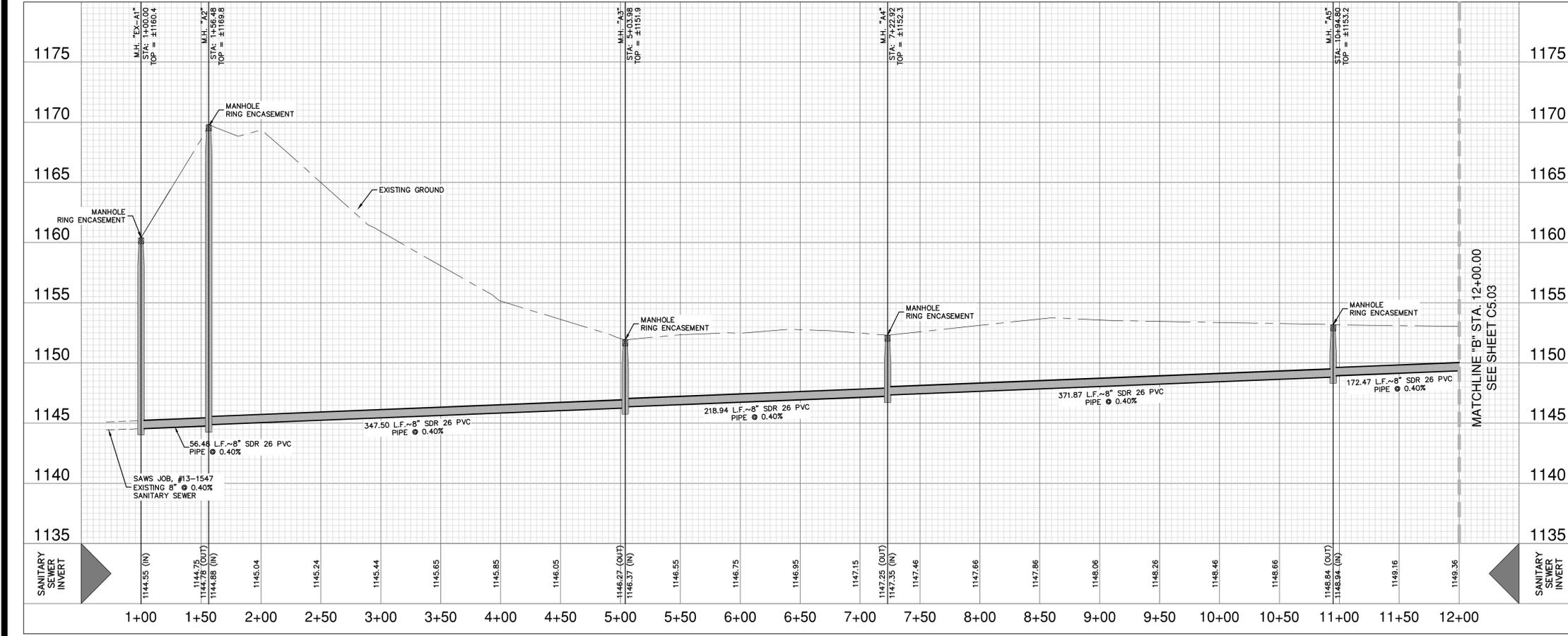
S-1 POTENTIAL RECHARGE FEATURE

OWNERSHIP KEY MAP

MUVA INTERNATIONAL LLC
LOT 20, BLOCK 27
VISTA BELLA UNIT 1

SANITARY SEWER LINE "A"
STA. 1+00.00 TO 12+00.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



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SEWER

DEVELOPER'S NAME: THE VILLAS AT TIMBERWOOD HOMEOWNERS ASSOCIATION, INC.
ADDRESS: 20540 STATE HIGHWAY 46 W. STE 115 C/O 497
CITY: SPRING BRANCH STATE: TEXAS ZIP: 78070
PHONE# - FAX# -
SAWS BLOCK MAP# 164670 TOTAL EDU'S 0 TOTAL ACREAGE 3.05
TOTAL LINEAR FOOTAGE OF PIPE: 8" 5497 LF PLAT NO. -
NUMBER OF LOTS 0 SAWS JOB NO. 24-1631

DATE: _____

NO. REVISION: _____

STATE OF TEXAS
BROOKE LINDHOLM
117104
PROFESSIONAL ENGINEER
10/17/14

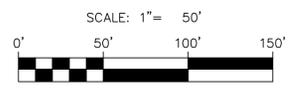
PAPE-DAWSON ENGINEERS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

THE VILLAS AT TIMBERWOOD OFFSITE
SANITARY SEWER EXTENSION
SAN ANTONIO, TEXAS
SANITARY SEWER LINE A PLAN & PROFILE
STA. 1+00.00 TO 12+00.00

PLAT NO. -
JOB NO. 13370-00
DATE MAY 2025
DESIGNER RA
CHECKED BL DRAWN RA
SHEET C5.02

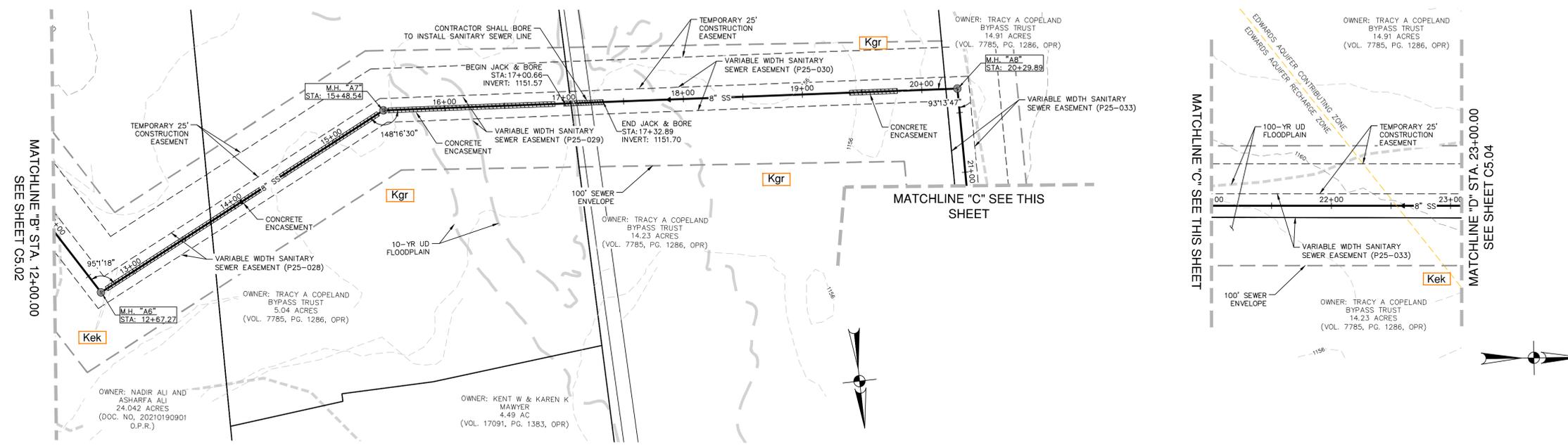
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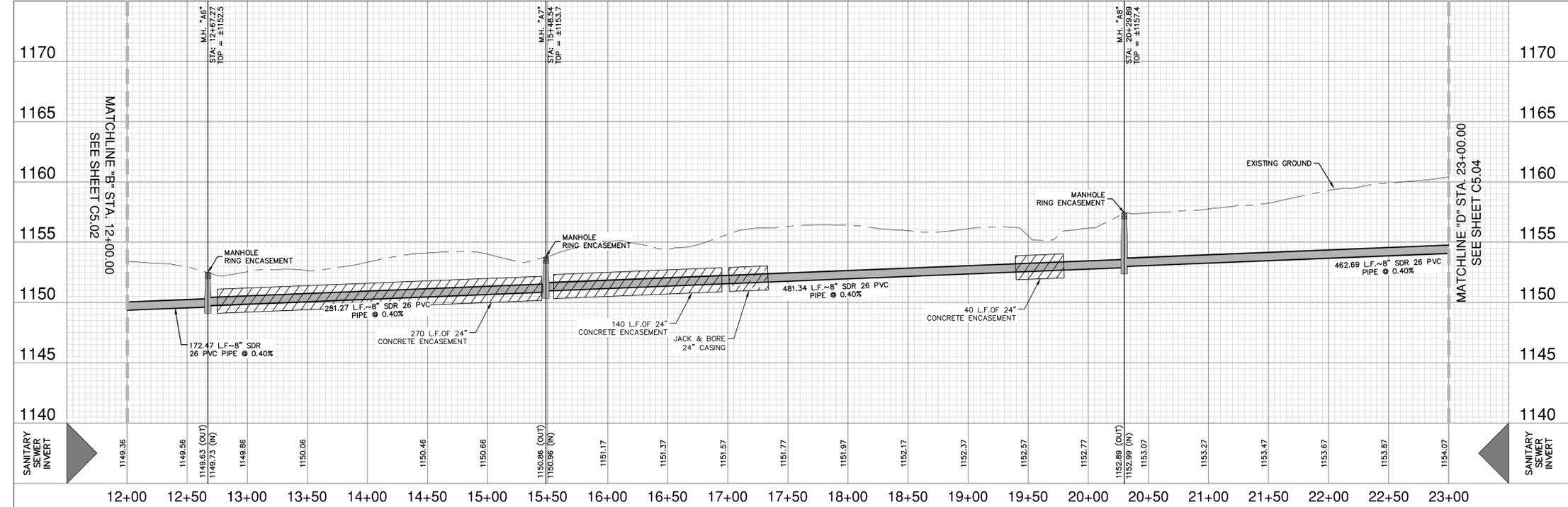
SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- 100' SEWER ENVELOPE
- GEOLOGIC FORMATIONS
 - Kek** KAINER
 - Kgr** GLEN ROSE
- SYMBOLS AND LINES
 - S-1** POTENTIAL RECHARGE FEATURE



SANITARY SEWER LINE "A"
STA. 12+00.00 TO 23+00.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



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SEWER

DEVELOPER'S NAME: THE VILLAS AT TIMBERWOOD HOMEOWNERS ASSOCIATION, INC.
 ADDRESS: 20540 STATE HIGHWAY 46 W. STE 115 C/O 497
 CITY: SPRING BRANCH STATE: TEXAS ZIP: 78070
 PHONE# - FAX# -
 SAWS BLOCK MAP# 164670 TOTAL EDU'S 0 TOTAL ACREAGE 3.05
 TOTAL LINEAR FOOTAGE OF PIPE: 8" 5497 LF PLAT NO. -
 NUMBER OF LOTS 0 SAWS JOB NO. 24-1631

DATE

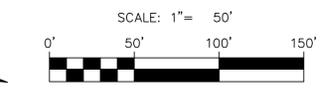
NO. REVISION

PAPE-DAWSON ENGINEERS

2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

THE VILLAS AT TIMBERWOOD OFFSITE
 SANITARY SEWER EXTENSION
 SAN ANTONIO, TEXAS
 SANITARY SEWER LINE A PLAN & PROFILE
 STA. 12+00.00 TO 23+00.00

PLAT NO. -
 JOB NO. 13370-00
 DATE MAY 2025
 DESIGNER RA
 CHECKED BL DRAWN RA
 SHEET C5.03



SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- 100' SEWER ENVELOPE
- PAVEMENT REMOVAL AND REPLACEMENT
- S-1 POTENTIAL RECHARGE FEATURE
- SYMBOLS AND LINES
- KEK KAINER
- KGR GLEN ROSE

DATE: _____

NO. REVISION: _____

Brooke Lindholm
10/17/24

PAPE-DAWSON ENGINEERS

2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

THE VILLAS AT TIMBERWOOD OFFSITE

SANITARY SEWER EXTENSION

SAN ANTONIO, TEXAS

SANITARY SEWER LINE A PLAN & PROFILE

STA. 23+00.00 TO 34+00.00

PLAT NO. _____

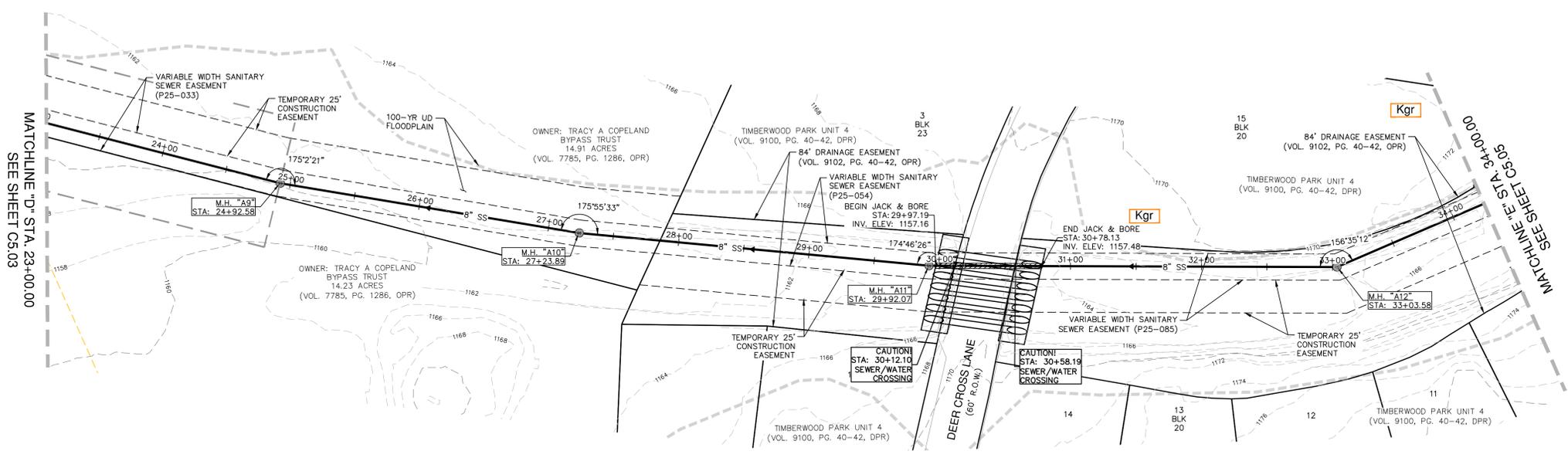
JOB NO. 13370-00

DATE MAY 2025

DESIGNER RA

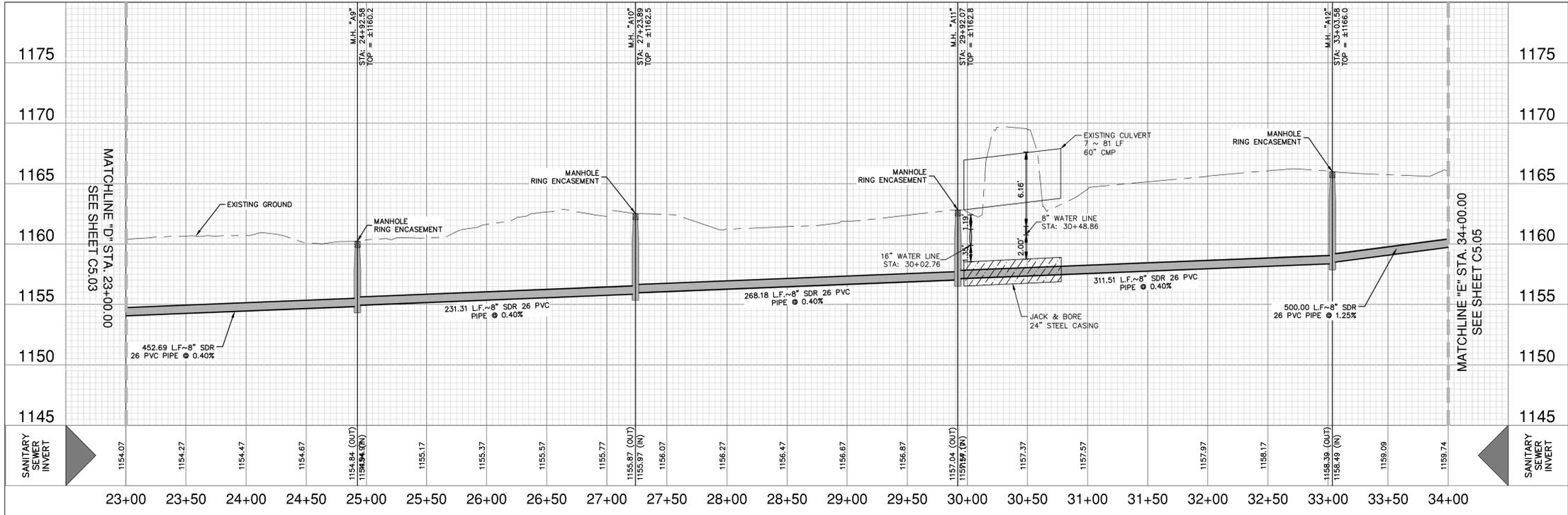
CHECKED BL DRAWN RA

SHEET C5.04



SANITARY SEWER LINE "A"
STA. 23+00.00 TO 34+00.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



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CITY: SPRING BRANCH STATE: TEXAS ZIP: 78070

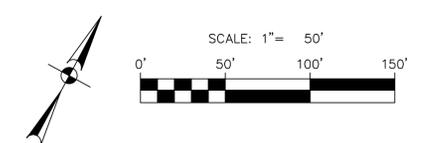
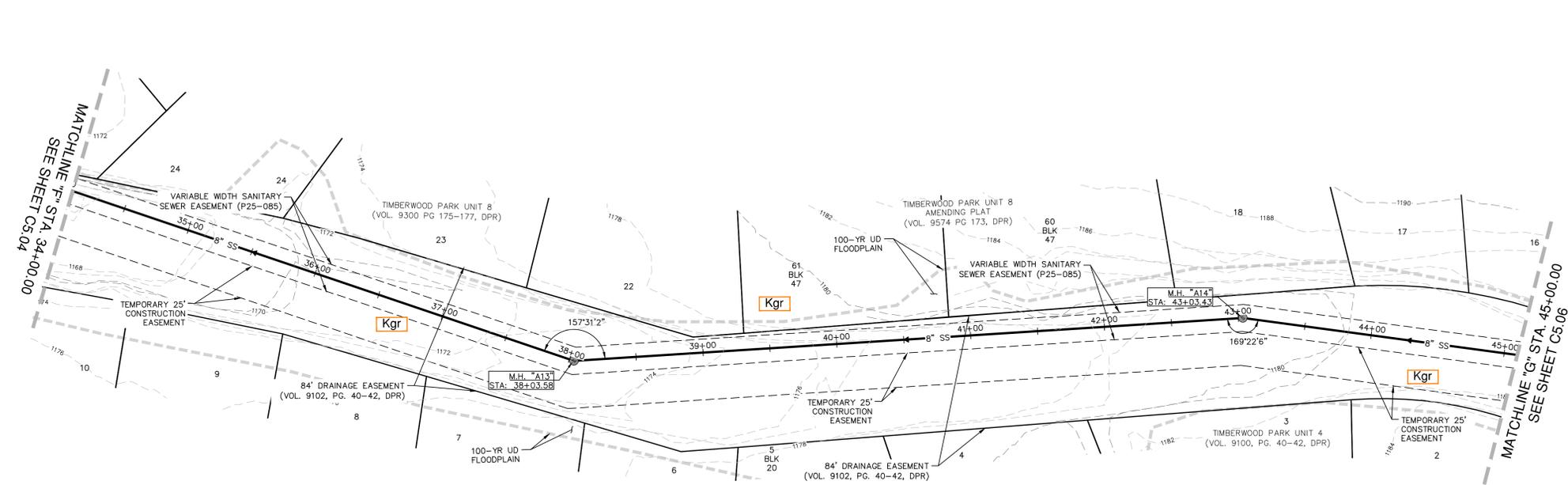
PHONE# _____ FAX# _____

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TOTAL LINEAR FOOTAGE OF PIPE: 8" 5497 LF PLAT NO. _____

NUMBER OF LOTS 0 SAWS JOB NO. 24-1631

Date: July 26, 2024, 11:13 AM - User ID: rlvarez
File: P:\3370\00\Design\Chal\SSA-1337000.dwg



SEWER LEGEND

PROJECT LIMITS: ---

EXISTING WATER: ---

EXISTING SEWER: ---

PROPOSED SEWER: ---

100' SEWER ENVELOPE: ---

PAVEMENT REMOVAL AND REPLACEMENT: [Hatched Box]

SYMBOLS AND LINES

S-1 POTENTIAL RECHARGE FEATURE

GEOLOGIC FORMATIONS

Kek KAINER

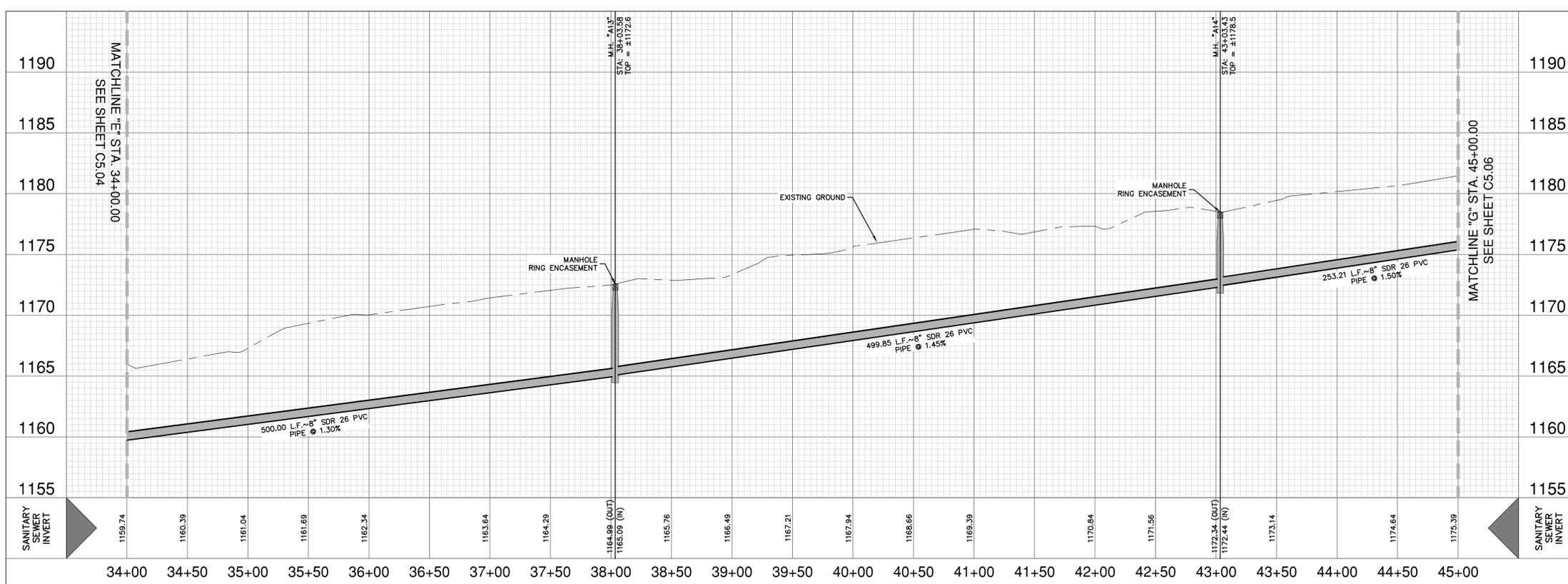
Kgr GLEN ROSE

DATE	
NO.	REVISION



SANITARY SEWER LINE "A"
STA. 34+00.00 TO 45+00.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



CAUTION!!
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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

SEWER

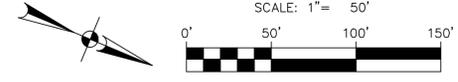
DEVELOPER'S NAME: THE VILLAS AT TIMBERWOOD HOMEOWNERS ASSOCIATION, INC.
ADDRESS: 20540 STATE HIGHWAY 46 W. STE 115 C/O 497
CITY: SPRING BRANCH STATE: TEXAS ZIP: 78070
PHONE# - FAX# -
SAWS BLOCK MAP# 164670 TOTAL EDU'S 0 TOTAL ACREAGE 3.05
TOTAL LINEAR FOOTAGE OF PIPE: 8" 5497 LF PLAT NO. -
NUMBER OF LOTS 0 SAWS JOB NO. 24-1631

THE VILLAS AT TIMBERWOOD OFFSITE
SANITARY SEWER EXTENSION
SAN ANTONIO, TEXAS
SANITARY SEWER LINE A PLAN & PROFILE
STA. 34+00.00 TO 45+00.00

PLAT NO.	-
JOB NO.	13370-00
DATE	MAY 2025
DESIGNER	RA
CHECKED	BL DRAWN RA
SHEET	C5.05

Date: July 26, 2024, 11:13 AM - User ID: revarez
File: P:\3370\00\Design\Civil\SSA-1337000.dwg

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE UNLESS OTHERWISE NOTED. Imagery © 2016, CAPOOL Digital Globe, Texas Orthology Program, USDA Farm Service Agency.



SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER
- EXISTING SEWER
- PROPOSED SEWER
- 100' SEWER ENVELOPE
- 100-YR UD FLOODPLAIN
- GEOLOGIC FORMATIONS
 - Kek** KAINER
 - Kgr** GLEN ROSE
- SYMBOLS AND LINES
 - S-1** POTENTIAL RECHARGE FEATURE

CAUTION!!

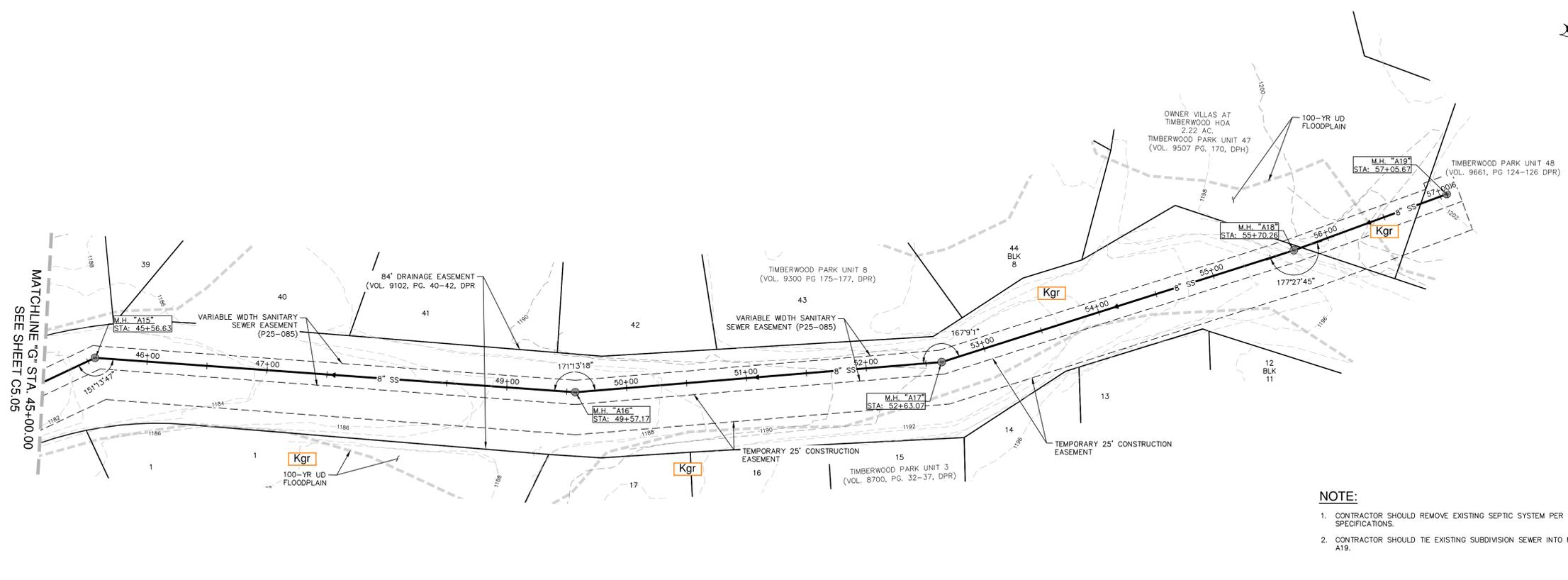
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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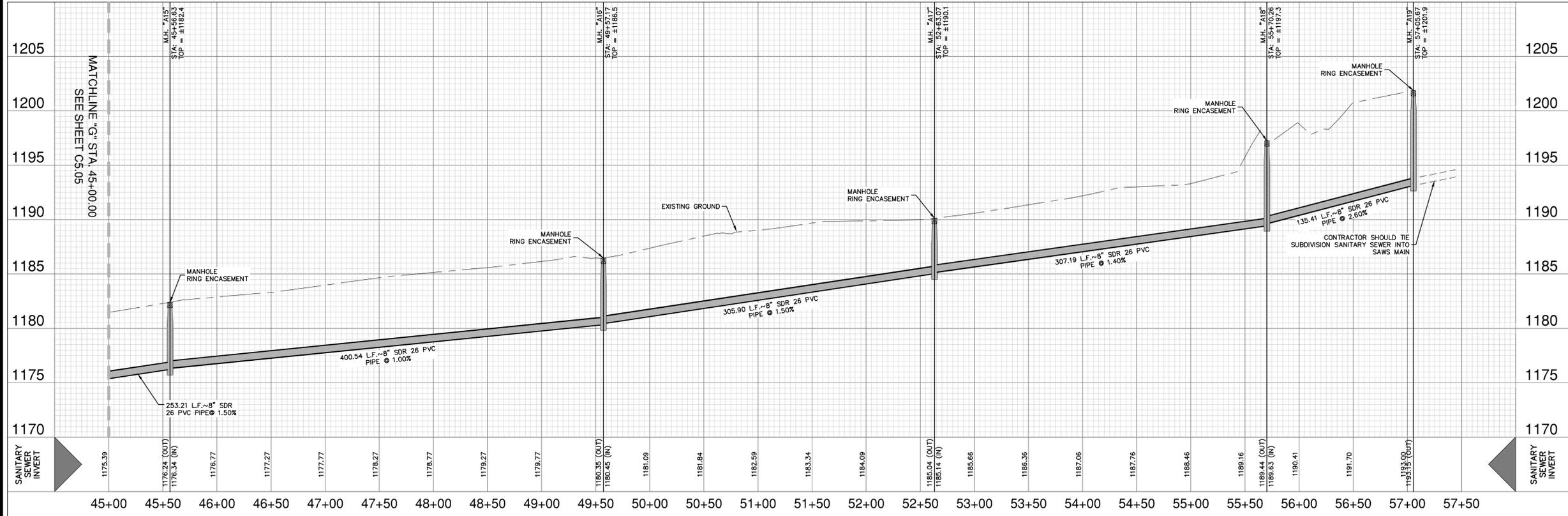
NOTE:

1. CONTRACTOR SHOULD REMOVE EXISTING SEPTIC SYSTEM PER TCEQ SPECIFICATIONS.
2. CONTRACTOR SHOULD TIE EXISTING SUBDIVISION SEWER INTO MANHOLE A19.



SANITARY SEWER LINE "A"
STA. 45+00.00 TO END

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



SEWER

DEVELOPER'S NAME: THE VILLAS AT TIMBERWOOD HOMEOWNERS ASSOCIATION, INC.
 ADDRESS: 20540 STATE HIGHWAY 46 W. STE 115 C/O 497
 CITY: SPRING BRANCH STATE: TEXAS ZIP: 78070
 PHONE# - FAX# -
 SAWS BLOCK MAP# 164670 TOTAL EDU'S 0 TOTAL ACREAGE 3.05
 TOTAL LINEAR FOOTAGE OF PIPE: 8" SDR LF PLAT NO. -
 NUMBER OF LOTS 0 SAWS JOB NO. 24-1631

DATE	
NO.	REVISION

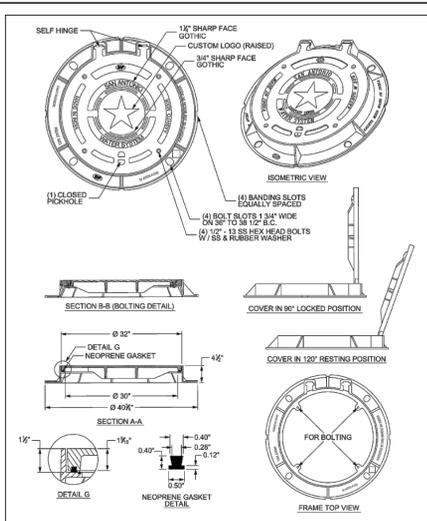
PAPE-DAWSON ENGINEERS
 BROOKE LINDHOLM
 LICENSED PROFESSIONAL ENGINEER
 117104
 2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

THE VILLAS AT TIMBERWOOD OFFSITE
 SANITARY SEWER EXTENSION
 SAN ANTONIO, TEXAS
 SANITARY SEWER LINE A PLAN & PROFILE
 STA. 45+00.00 TO END

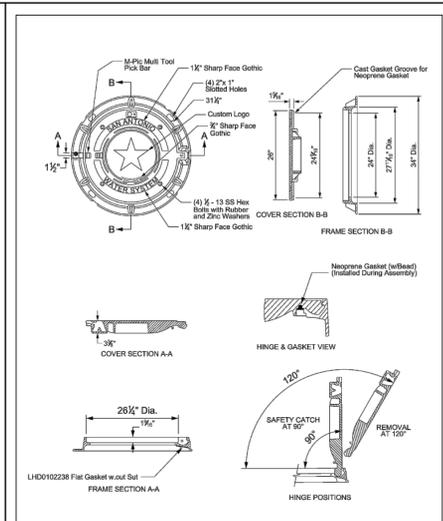
PLAT NO.	-
JOB NO.	13370-00
DATE	MAY 2025
DESIGNER	RA
CHECKED	BL DRAWN RA
SHEET	C5.06

Date: July 26, 2024, 11:13 AM - User ID: relvarez
 File: P:\3370\00\Design\Civil\SSA-1337000.dwg

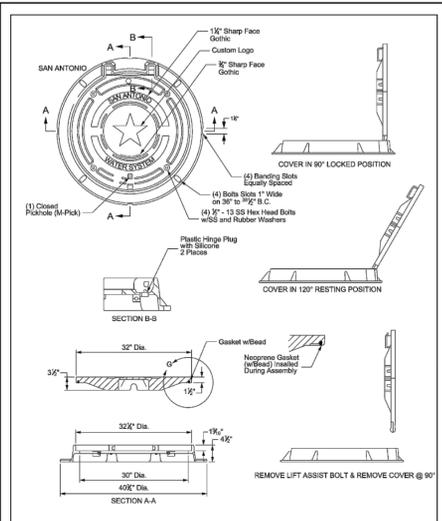
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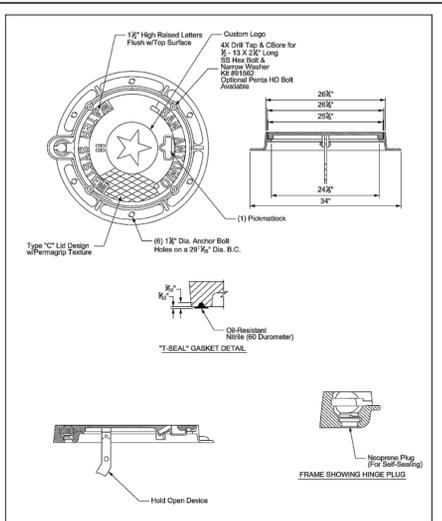
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	30" MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 5
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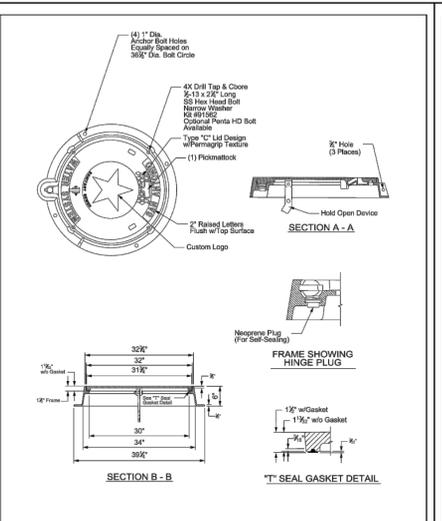
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 2 OF 5
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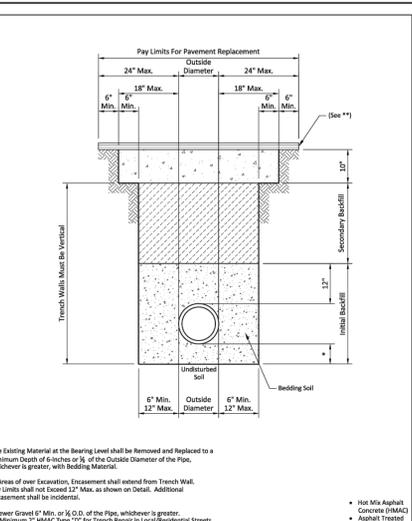
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 3 OF 5
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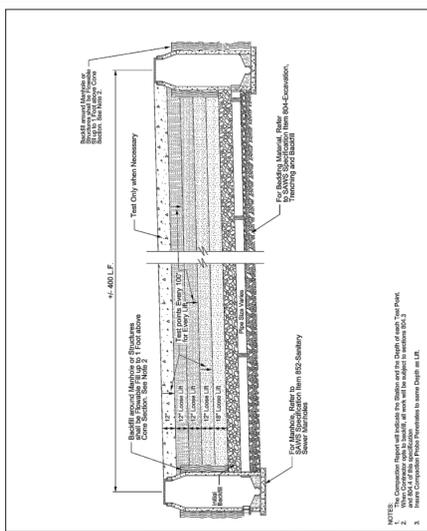
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 4 OF 5
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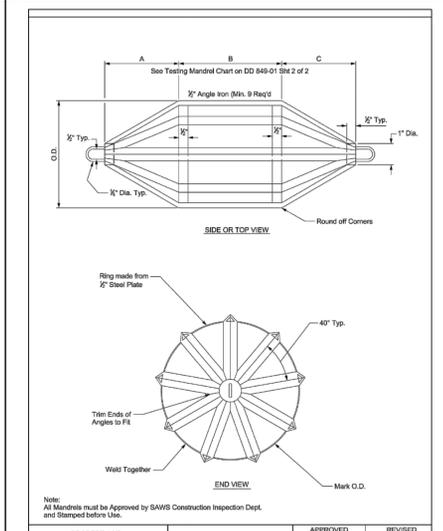
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING AND COVER DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 5 OF 5
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE LAID IN TRENCH	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 1
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TRENCH COMPACTION DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 1
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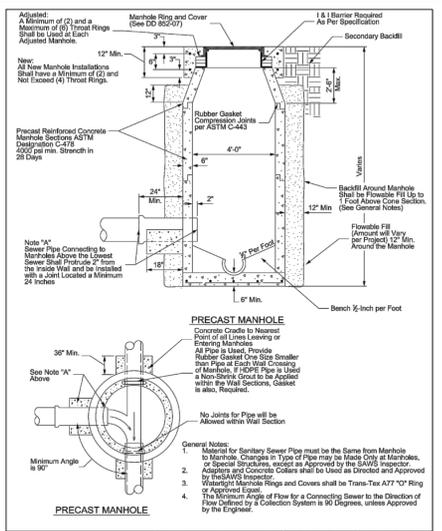


PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF 1\"/>
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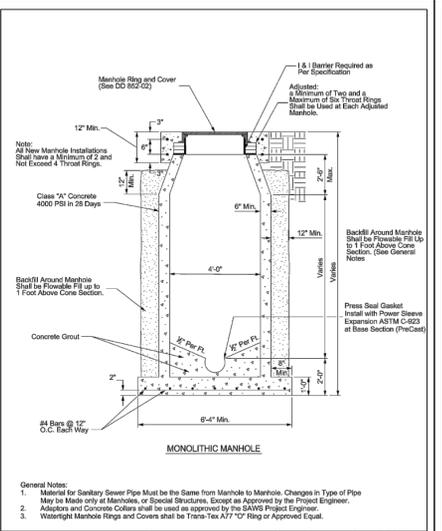
SIZE	MANDREL O.D.		RING O.D.
	PVC (SDR 26)	PVC (SDR 21)	
6"	4.0"	4.0"	5.50
8"	5.0"	5.0"	6.66
10"	6.0"	6.0"	8.21
12"	7.0"	7.0"	10.06
15"	8.0"	8.0"	12.71
18"	9.0"	9.0"	15.36
21"	10.0"	10.0"	18.01
24"	11.0"	11.0"	20.66
27"	12.0"	12.0"	23.31

Notes:
1. All Mandrels must be Approved by SAWS Construction Inspection Dept. and Stamped before Use.
2. PVC Pipes and Fittings 6" to 12" in Diameter shall Conform to ASTM D-3034-08.
3. PVC Pipes and Fittings 15" to 27" in Diameter shall Conform to ASTM F-678-05.
4. This information is provided as a reference. All deflection testing shall be done in accordance with TCEQ Chapter 217.

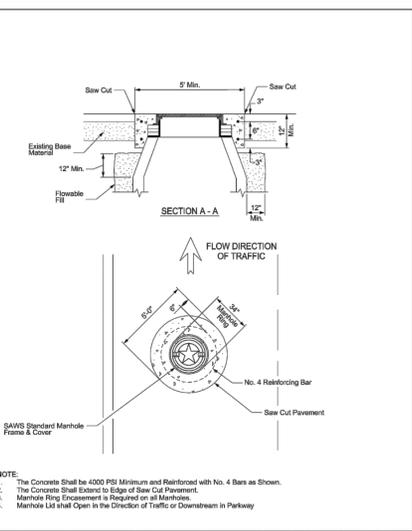
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	NO GO NO DEFLECTION TESTING MANDREL CHART	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 2 OF 2
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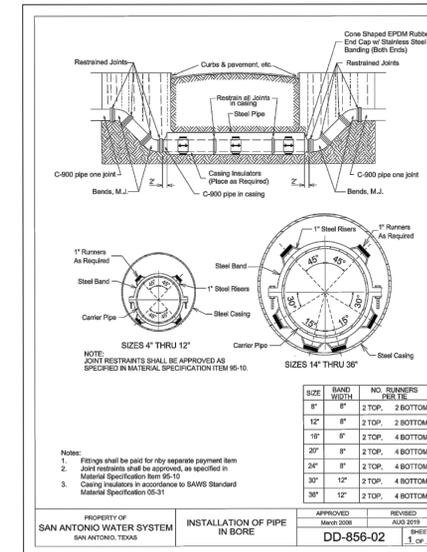
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD PRECAST MANHOLE	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 2
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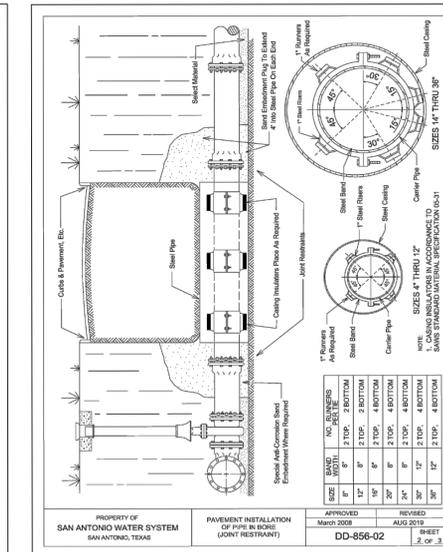
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD MONOLITHIC MANHOLE	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 2 OF 2
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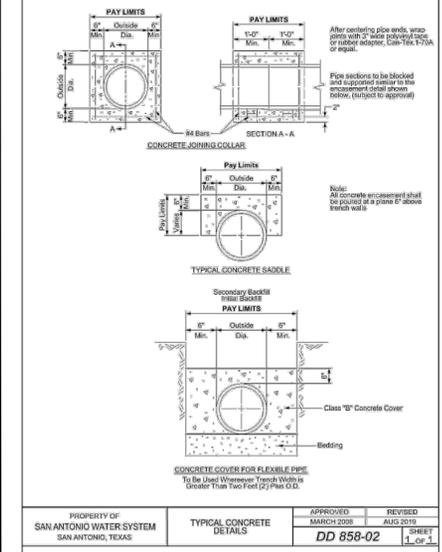
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	MANHOLE RING ENCASUREMENT DETAIL	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 2
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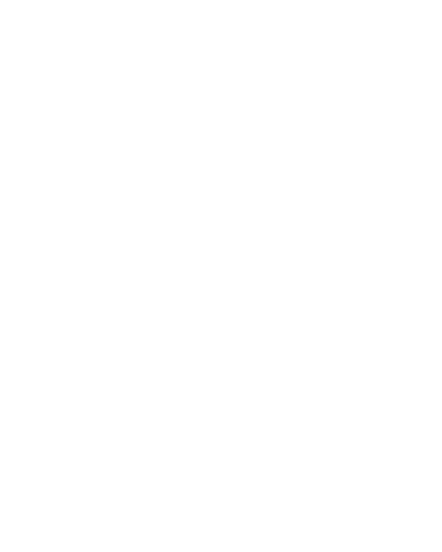
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF PIPE IN BORE	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 3
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	PAVEMENT INSTALLATION OVER PIPE IN BORE (JOINT RESTRAINT)	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 2 OF 3
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CONCRETE DETAILS	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 1
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CONCRETE DETAILS	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 1
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL CONCRETE DETAILS	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 1
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SEWER	APPROVED MARCH 2008	REVISED AUG 2019	SHEET 1 OF 1
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DATE: _____

NO. REVISION: _____

STATE OF TEXAS
BROOKE LINDHOLM
117104
LICENSED PROFESSIONAL ENGINEER
Dante J. 10/17/14

PAPE-DAWSON ENGINEERS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #479 | TEXAS SURVEYING FIRM #100890

THE VILLAS AT TIMBERWOOD OFFSITE
SANITARY SEWER EXTENSION
SAN ANTONIO, TEXAS

PLAT NO. _____
JOB NO. 13370-00
DATE MAY 2025
DESIGNER RA
CHECKED BL DRAWN RA
SHEET C5.10

SAWS CONSTRUCTION NOTES

(LAST REVISED JANUARY 2022)

SAWS 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 SYSTEMS" 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 PUBLIC WORKS CONSTRUCTION".
E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT AN APPROVED COUNTER PERMIT AND/OR A GCP WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.
3. THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.
4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.
5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK 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 AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
• SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES
• COSA DRAINAGE (210) 207-0724 OR (210) 207-8026
• COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480
• COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
• TEXAS STATE WIDE 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 IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.
8. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.
9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
11. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWKR@SAWS.ORG.
WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWKR@SAWS.ORG.
ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.
12. COMPACTION NOTE (ITEM 804): 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 ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR AND/OR THE TEST ADMINISTRATOR. PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
13. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.

SAWS SEWER NOTES

- 1. 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) 233-2014. 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) 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 TELEVISIONING 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, TCEQ AND/OR ANY OTHER FEDERAL, STATE OR LOCAL AGENCIES.
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.
2. IF BYPASS PUMPING IS REQUIRED, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864, "BYPASS PUMPING".
3. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973 AT LEAST ONE WEEK 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.
4. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241, TAC 217.53 AND TCEQ 230.44C(4)(E). CONTRACTOR SHALL CENTER A 20" JOINT OF 160 PSI PRESSURE RATED PVC AT THE PROPOSED WATER CROSSING.
5. 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)
6. SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE SAWS INSPECTOR ASSIGNED TO THE COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE REGARDLESS OF SIZE.
7. MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE BY SAWS CONSTRUCTION INSPECTION DIVISION, AS PER THE SAWS SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
8. ALL PVC PIPE OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH WITH MINIMUM PIPE STIFFNESS OF 115 PSI.

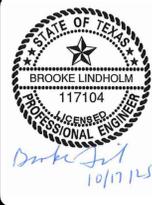
PROJECT SEWER NOTES

- 1. ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND SHALL BE EXTENDED TO 10' PAST THE PROPERTY LINE AND GAPPED AND SEALED. CONTRACTOR SHALL INSTALL A 2" X 4" STAKE, FOUR (4) FEET LONG, TWO (2) FEET DEEP INTO THE GROUND AT THE END OF EACH SERVICE. NO SEPARATE PAY ITEM.
2. CONTRACTOR TO INSTALL CLEANOUTS AT THE END OF ALL SEWER LATERALS, PER LATERAL DETAIL SHEET C5.XX
3. NO VERTICAL STACKS ALLOWED FOR ANY LOTS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
4. ALL 6" SEWER LATERALS WILL BE SET AT 2% GRADE FROM THE MAIN TO THE PROPERTY LINE.
5. WHEN HORIZONTAL DISTANCE BETWEEN SEWER PIPES AND WATER MAIN IS LESS THAN 9 FOOT OF SEPARATION, SEWER MAIN SHALL BE INSTALLED WITH 150 PSI (MIN) PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH SAWS CONSTRUCTION CRITERIA FOR CONSTRUCTION OF SEWER MAINS IN THE VICINITY OF WATER MAINS.
6. CONTRACTOR SHALL ENSURE THAT MANHOLES OUTSIDE OF PAVED AREAS ARE SET WITH TOP ELEVATIONS 6" ABOVE FINISHED GRADE WITH CONCRETE RING ENCASEMENT.
7. ALL SEWER PIPES SHALL BE 8" PVC (SDR 26), UNLESS OTHERWISE NOTED.
8. CONTRACTOR IS TO VERIFY EXISTING INVERT OF EXISTING SANITARY SEWER MAINS AND ALERT ENGINEER IMMEDIATELY OF ANY DIFFERENCE FROM INVERT SHOWN ON PLANS.
9. CONTRACTOR SHALL PROTECT ALL EXISTING FENCES. ANY FENCE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
10. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
11. CONCRETE RING ENCASEMENT TO BE INSTALLED ON ALL MANHOLES AND, WITHIN LIMITS OF PAVEMENT, BE INSTALLED TO THE TOP OF THE BASE LAYER WITH A MINIMUM OF 2" OF ASPHALT ON TOP OF THE RING ENCASEMENT.
12. MANHOLE OPENING INCREASED TO 30" AS PER TAC CHAPTER 217.55.
13. ALL SEWER PIPE LATERALS SHALL BE SDR 26 (CLASS 160) PVC PIPE.
14. IF THE GIVEN TOP OF MANHOLE ELEVATION DOES NOT AGREE ON ACTUAL GROUND SURFACE OR FINISH PAVEMENT, THE CONTRACTOR SHALL ADJUST ELEVATIONS SUCH THAT THE TOP OF MANHOLE SHALL BE 0.5' ABOVE EXISTING GROUND, OR FLUSH TO FINISH ASPHALT PAVEMENT.
15. ALL MANHOLES CONSTRUCTED OVER THE EDWARDS AQUIFER RECHARGE ZONE SHOULD BE WATERTIGHT.

SEWER

DEVELOPER'S NAME: THE VILLAS AT TIMBERWOOD HOMEOWNERS ASSOCIATION, INC.
ADDRESS: 20540 STATE HIGHWAY 46 W. STE 115 C/O 497
CITY: SPRING BRANCH STATE: TEXAS ZIP: 78070
PHONE# - FAX# -
SAWS BLOCK MAP# 164670 TOTAL EDU'S 0 TOTAL ACREAGE 3.05
TOTAL LINEAR FOOTAGE OF PIPE: 8" 5497 LF PLAT NO. -
NUMBER OF LOTS 0 SAWS JOB NO. 24-1631

Table with columns for NO., REVISION, and DATE.

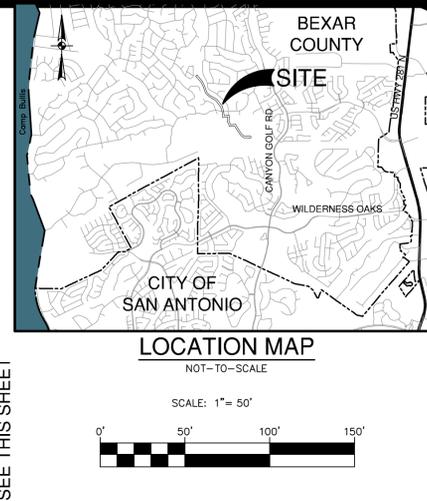


PAPE-DAWSON ENGINEERS
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TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

THE VILLAS AT TIMBERWOOD OFFSITE
SANITARY SEWER EXTENSION
SAN ANTONIO, TEXAS
SANITARY SEWER NOTES

PLAT NO. -
JOB NO. 13370-00
DATE MAY 2025
DESIGNER RA
CHECKED BL DRAWN RA
SHEET C5.11

Date: July 26, 2024, 11:14 AM - User ID: rlvarez
 File: P:\3370\00\Design\Civil\SWPPP-137000.dwg



NO.	REVISION	DATE



SWPPP LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	- - - - -
PROPOSED CONTOUR	- - - - -
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
SILT FENCE	- - - -
ROCK BERM	■ ■ ■ ■
GRAVEL FILTER BAGS	● ● ● ●
GRATE INLET PROTECTION	■ ■ ■ ■
SEDIMENT CONTROL ROLLS	■ ■ ■ ■
LIMITS OF DISTURBED AREA (6.18 ACRES)	■ ■ ■ ■
AREA TO BE PERMANENTLY RE-VEGETATED PER TPDES PERMIT REQUIREMENTS (29,920.6 SQUARE YARDS)	■ ■ ■ ■
STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)	■ ■ ■ ■
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)	■ ■ ■ ■
CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)	■ ■ ■ ■

- ### GENERAL NOTES
- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
 - CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
 - STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
 - RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
 - ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
 - FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.
 - STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
 - AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
 - BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADE AREAS.
 - BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.
 - UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
 - WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.
 - SHADED AREA ■ DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
 - PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITH TxDOT RIGHT-OF-WAY WITH TxDOT.
 - GPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 2

PAPE-DAWSON ENGINEERS

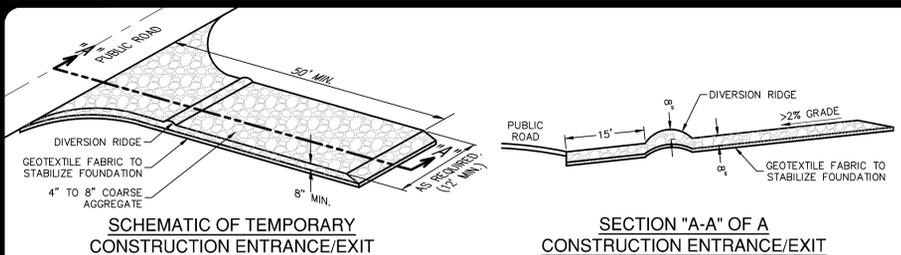
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
 TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

**THE VILLAS AT TIMBERWOOD OFFSITE
 SANITARY SEWER EXTENSION
 SAN ANTONIO, TEXAS**

STORM WATER POLLUTION PREVENTION PLAN

PLAT NO.	-
JOB NO.	13370-00
DATE	MAY 2025
DESIGNER	RA
CHECKED	BL DRAWN RA
SHEET	C8.01

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SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT

SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT

MATERIALS

1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD², A MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

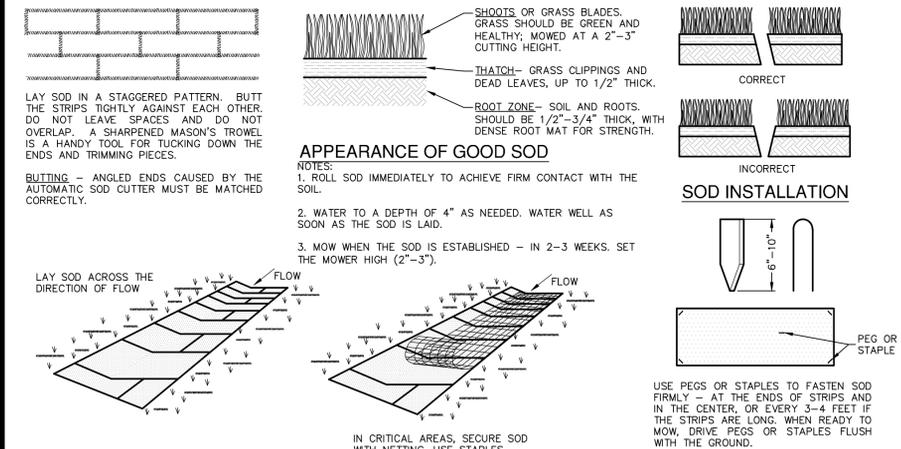
COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL—SEDIMENT WASHES ONTO PUBLIC ROAD.
2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.
3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC—EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.
4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.
5. UNSTABLE FOUNDATION — USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL



GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992)

1. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.
2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.
3. THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).
4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).
5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.
6. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS THOROUGHLY WET.
7. UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES.
8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

SILT FENCE

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER-BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

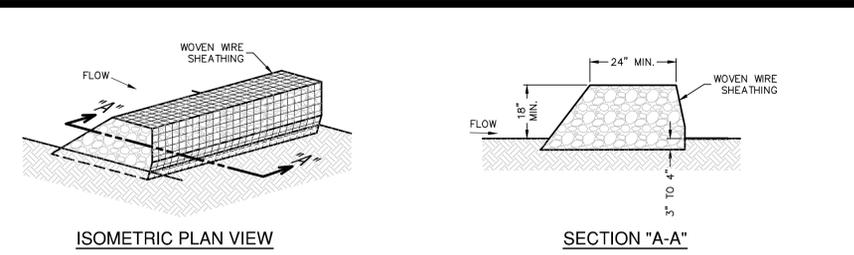
MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN², ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.
2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.
3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.
2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS 1/4 ACRE/100 FEET OF FENCE.

SOD INSTALLATION DETAIL



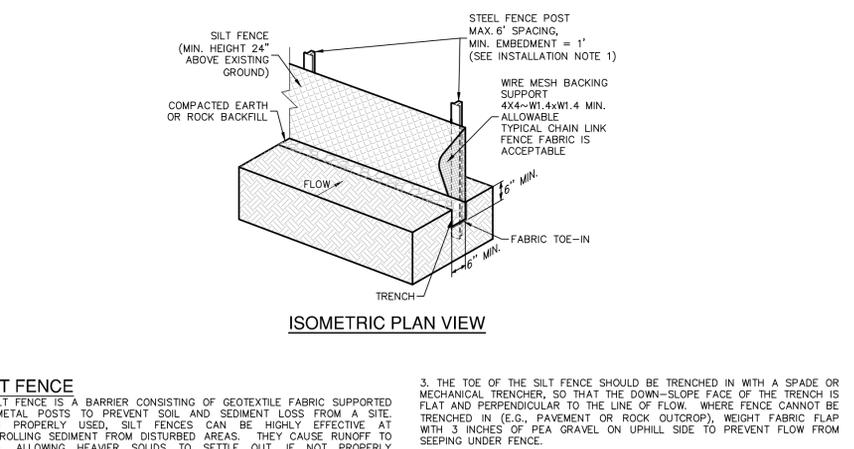
ROCK BERMS

THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BERG LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

COMMON TROUBLE POINTS

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).
2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

ROCK BERM DETAIL



COMMON TROUBLE POINTS

1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.
2. FENCE NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE).
3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES).
4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

INSPECTION AND MAINTENANCE GUIDELINES

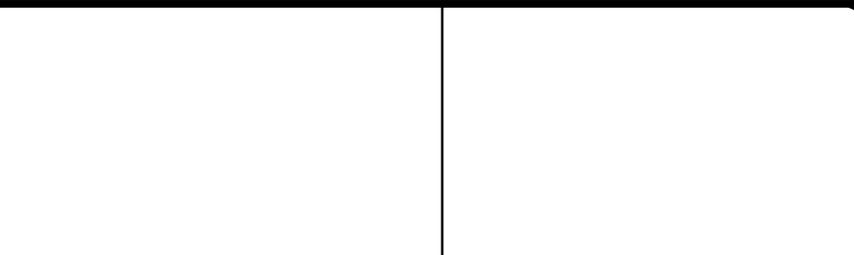
1. INSPECT ALL FENCING WEEKLY, AND AFTER RAINFALL.
2. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.
3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
4. REPLACE OR REPAIR SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FENCE DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.
5. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT-TO-SCALE

CONSTRUCTION STAGING AREA

NOT-TO-SCALE



GENERAL NOTES

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.
4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.
5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

MATERIALS

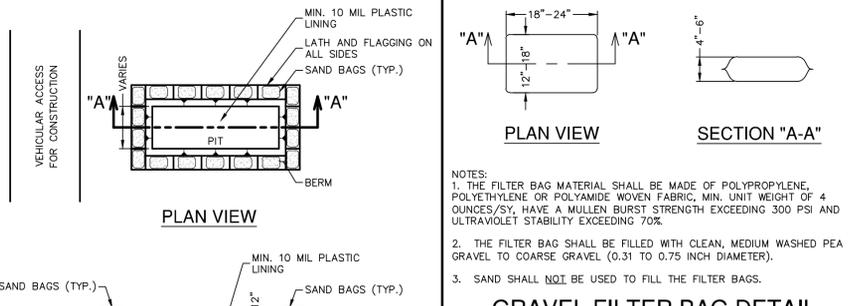
PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

MAINTENANCE

1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.
2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT-TO-SCALE



CONCRETE TRUCK WASHOUT PIT DETAIL

NOT-TO-SCALE

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT-TO-SCALE

NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS

2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

**THE VILLAS AT TIMBERWOOD OFFSITE
SANITARY SEWER EXTENSION
SAN ANTONIO, TEXAS**

STORM WATER POLLUTION PREVENTION PLAN DETAILS

PLAT NO. -
JOB NO. 13370-00
DATE SEPTEMBER 2024
DESIGNER RA
CHECKED BL DRAWN RA
SHEET C8.10