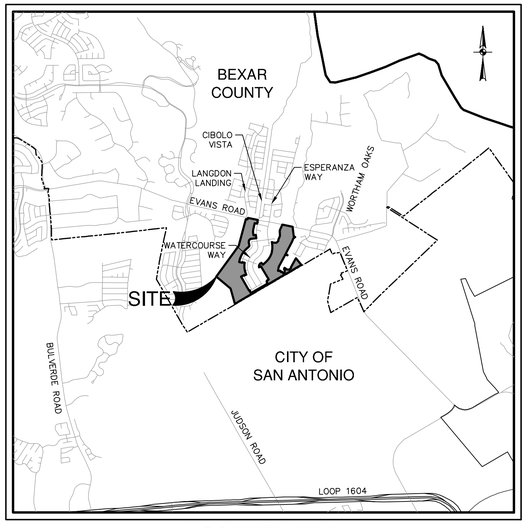
BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

CIVIL CONSTRUCTION PLANS

Sheet List Table

Sheet Title	Sheet Description	Sheet No.
COVER SHEET		C0.00
MASTER DRAINAGE PLAN		C1.00
DRAIN A	PLAN AND PROFILE	C1.01
DRAIN B	PLAN AND PROFILE (STA. 1+00.00 TO 7+50.00)	C1.02
DRAIN B	PLAN AND PROFILE (STA. 7+50.00 TO END)	C1.03
DRAIN C	PLAN AND PROFILE	C1.04
DRAIN D	PLAN AND PROFILE	C1.05
DRAIN E	PLAN AND PROFILE	C1.06
DRAIN F	PLAN AND PROFILE	C1.07
DRAIN G	PLAN AND PROFILE	C1.08
DRAINAGE DETAILS	(SHEET 1 OF 3)	C1.10
DRAINAGE DETAILS	(SHEET 2 OF 3)	C1.20
DRAINAGE DETAILS	(SHEET 3 OF 3)	C1.30
MILLSTREAM BEND	PLAN AND PROFILE (STA. 22+69.46 TO 29+52.64)	C2.00
RUNLET CREST	PLAN AND PROFILE	C2.01
MIDDLE RIDGE DRIVE	PLAN AND PROFILE	C2.02
STREAMLET END	PLAN AND PROFILE (STA. 10+00.00 TO 17+50.00)	C2.03
STREAMLET END	PLAN AND PROFILE (STA. 17+50.00 TO 23+50.00)	C2.04
STREAMLET END	PLAN AND PROFILE (STA. 23+50.00 TO END)	C2.05
ROBERT FLATS	PLAN AND PROFILE	C2.06
GIBBER BAY	PLAN AND PROFILE	C2.07
SHINGLE HOLLOW	PLAN AND PROFILE	C2.08
BROOKLET PLACE	PLAN AND PROFILE	C2.09
GEM PARKWAY	PLAN AND PROFILE	C2.10
CAIRN STATION	PLAN AND PROFILE	C2.11
STREET DETAILS	(SHEET 1 OF 2)	C2.20
STREET DETAILS	(SHEET 2 OF 2)	C2.30
SIGNAGE PLAN	(SHEET 1 OF 2)	C3.00
SIGNAGE PLAN	(SHEET 2 OF 2)	C3.01
SIGNAGE DETAILS	(SHEET 1 OF 2)	C3.10
SIGNAGE DETAILS	(SHEET 2 OF 2)	C3.20



LOCATION MAP
NOT-TO-SCALE

Sheet List Table

Sheet Title	Sheet Description	Sheet No.
OVERALL SANITARY SEWER PLAN	(SHEET 1 OF 2)	C4.00
OVERALL SANITARY SEWER PLAN	(SHEET 2 OF 2)	C4.01
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 1+00.00 TO 12+50.00)	C4.02
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 12+50.00 TO 21+50.00)	C4.03
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 21+50.00 TO 27+50.00)	C4.04
SANITARY SEWER LINE A	PLAN AND PROFILE (STA. 27+50.00 TO END)	C4.05
SANITARY SEWER LINE B	PLAN AND PROFILE	C4.06
SANITARY SEWER LINE C	PLAN AND PROFILE	C4.07
SANITARY SEWER LINE D	PLAN AND PROFILE	C4.08
SANITARY SEWER LINE E	PLAN AND PROFILE	C4.09
SANITARY SEWER LINE F	PLAN AND PROFILE	C4.10
SANITARY SEWER DETAILS		C4.20
SANITARY SEWER NOTES AND DETAILS		C4.30
OVERALL WATER DISTRIBUTION PLAN	(SHEET 1 OF 2)	C5.00
OVERALL WATER DISTRIBUTION PLAN	(SHEET 2 OF 2)	C5.01
WATER DISTRIBUTION DETAILS		C5.10
WATER DISTRIBUTION NOTES		C5.20
OVERALL UTILITY PLAN	(SHEET 1 OF 2)	C6.00
OVERALL UTILITY PLAN	(SHEET 2 OF 2)	C6.01
OVERALL GRADING PLAN	(SHEET 1 OF 2)	C7.00
OVERALL GRADING PLAN	(SHEET 2 OF 2)	C7.01
STORM WATER POLLUTION PREVENTION PLAN		C8.00
STORM WATER POLLUTION PREVENTION PLAN DETAILS		C8.10
BASIN L		C9.00
BASIN DETAILS		C9.10

PREPARED FOR:

CONTINENTAL HOMES OF TEXAS, L.P.
5419 N LOOP 1604 EAST
SAN ANTONIO, TEXAS 78247

JULY 2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

7/8/2024

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

OVER THE EARZ
SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-654 & 192-656 TOTAL EDU'S 158 TOTAL ACREAGE 138.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

WATER (SAWS PRESSURE ZONE 1258)

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-654 & 192-656 TOTAL EDU'S 158 TOTAL ACREAGE 138.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,503 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1040

SHEET C0.00

PLAT NO. 22-11800769 PD JOB NO. 12093-11 BROOK STONE CREEK-UNIT 2E

Date: Jul 01, 2024, 11:56am User ID: saepulveda
File: P:\120\93\11\Design\Civil\CV120931l.dwg

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Pre-Development Conditions Calculations

Ref. Point	Structure / Description	Drainage Areas #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (Seelye) L_O (FT)	S_O (ft/ft)	T_O* (MN)	Shallow Concentrated Flow** L_{SC} (FT)	Condition***	Slope (ft/ft)	V_{SC} (FPS)	T_{SC}** (MN)	Channelized Flow** L_{CH} (FT)	V_{CH} (FPS)	T_{CH}** (MN)	$T_{C\text{-}TOT}$	Rational Method Q=CIA IDF Curve: CoSA_A14_PA2 Return Year	Intensity (in/hr)	Q (cfs)
26	DRAIN'STREET CAPACITY	S+Z	8.16	0.49	2,019	120	0.02	15	1,664	U	0.02	2.0	14.0	235	6.0	0.7	29	5	3.79	15.2
																	29	25	5.25	21.0
																	29	100	6.53	26.1
29	DRAIN'STREET CAPACITY	DD	5.40	0.49	540	120	0.02	15	420	U	0.01	1.7	4.1	-	-	-	19	5	4.69	12.4
																	19	25	6.52	17.3
																	19	100	8.14	21.5
30	DRAIN'STREET CAPACITY	CC	4.81	0.49	1,140	185	0.02	16	955	U	0.02	2.5	6.4	-	-	-	22	5	4.35	10.3
																	22	25	6.04	14.2
																	22	100	7.53	17.7
31	DRAIN'STREET CAPACITY	FF	4.29	0.49	1,075	120	0.02	14	955	U	0.04	3.0	5.3	-	-	-	19	5	4.69	9.9
																	19	25	6.52	13.7
																	19	100	8.14	17.1
35	DRAIN'STREET CAPACITY	EE	6.99	0.49	915	240	0.06	15	675	U	0.04	3.1	3.6	-	-	-	18	5	4.83	16.5
																	18	25	6.71	23.0
																	18	100	8.38	28.7
36	DRAIN	EE+FF	11.28	0.49	1,420	120	0.02	14	955	U	0.04	3.0	5.3	345	6.0	1.0	20	5	4.57	25.3
																	20	25	6.35	35.1
																	20	100	7.92	43.8
37	DRAIN'STREET CAPACITY	JJ	2.15	0.49	445	240	0.03	17	205	U	0.02	2.3	1.5	-	-	-	18	5	4.83	5.1
																	18	25	6.71	7.1
																	18	100	8.38	8.8
38	DRAIN	DD+KK	8.49	0.49	635	190	0.02	17	310	U	0.02	2.1	2.5	135	6.0	0.4	19	5	4.69	19.5
																	19	25	6.52	27.1
																	19	100	8.14	33.9
39	DRAIN	CC+DD+KK	13.30	0.49	1,140	185	0.02	16	955	U	0.02	2.5	6.4	-	-	-	22	5	4.35	28.3
																	22	25	6.04	39.4
																	22	100	7.53	49.1
40	DRAIN	CC+DD+JJ+KK	15.45	0.49	1,340	185	0.02	16	955	U	0.02	2.5	6.4	200	6.0	0.6	22	5	4.35	32.9
																	22	25	6.04	45.7
																	22	100	7.53	57.0
41	DRAIN	BB+CC+DD+JJ+KK	18.70	0.49	1,420	185	0.02	16	955	U	0.02	2.5	6.4	280	6.0	0.8	23	5	4.26	39.0
																	23	25	5.91	54.2
																	23	100	7.36	67.4
42	DRAIN'STREET CAPACITY	BB	3.25	0.49	520	240	0.02	18	280	U	0.02	2.2	2.2	-	-	-	20	5	4.57	7.3
																	20	25	6.35	10.1
																	20	100	7.92	12.6
43	DRAIN'STREET CAPACITY	KK	3.09	0.49	500	190	0.02	17	310	U	0.02	2.1	2.5	-	-	-	19	5	4.69	7.1
																	19	25	6.52	9.9
																	19	100	8.14	12.3
44	DRAIN'STREET CAPACITY	AA	4.90	0.49	980	190	0.03	16	790	U	0.03	2.8	4.7	-	-	-	20	5	4.57	11.0
																	20	25	6.35	15.2
																	20	100	7.92	19.0

Rational Method Time of Concentration
*Seelye Chart or TR-55 Eqn. 3-3
**As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s

From TR-55 Figure 3-1**

$$T_o = \frac{(0.007(nL)^{0.8})}{(P_2^{0.5}S^{0.4})} + 60\frac{L}{k\,R^{2/3}\,S_o^{1/2}}$$

$k = 1.486\ ft^{1/3}/s$

S: For Streets: n = 0.018, R = 0.2 (Adapted from Mannings)
P: For Paved: n = 0.025, R = 0.2
U: For Unpaved: n = 0.05, R = 0.4
D: For Default: v = 6 fps

Master Drainage Plan Calculations

(Ultimate Development)

Ref. Point	Structure / Description	Drainage Areas #	Area (Ac)	C	Total Flowpath (ft)	Overland/Sheet Flow (Seelye) L_O (FT)	S_O (ft/ft)	T_O* (MN)	Shallow Concentrated Flow** L_{SC} (FT)	Condition***	Slope (ft/ft)	V_{SC} (FPS)	T_{SC}** (MN)	Channelized Flow** L_{CH} (FT)	V_{CH} (FPS)	T_{CH}** (MN)	$T_{C\text{-}TOT}$	Rational Method Q=CIA IDF Curve: CoSA_A14_PA2 Return Year	Intensity (in/hr)	Q (cfs)
26	DRAIN'STREET CAPACITY	S+Z	8.16	0.69	2,019	120	0.015	15	1,664	S	0.015	3.5	8.0	235	6.0	0.7	23	5	4.26	24.0
																	23	25	5.91	33.3
																	23	100	7.36	41.4
29	DRAIN'STREET CAPACITY	DD	5.40	0.69	540	120	0.015	15	420	S	0.011	3.0	2.4	-	-	-	17	5	4.98	18.6
																	17	25	6.91	25.7
																	17	100	8.64	32.2
30	DRAIN'STREET CAPACITY	CC	4.81	0.69	1,140	185	0.023	16	955	S	0.024	4.4	3.6	-	-	-	19	5	4.69	15.6
																	19	25	6.52	21.6
																	19	100	8.14	27.0
31	DRAIN'STREET CAPACITY	FF	4.29	0.69	1,075	120	0.018	14	955	S	0.035	5.3	3.0	-	-	-	17	5	4.98	14.7
																	17	25	6.91	20.5
																	17	100	8.64	25.6
35	DRAIN'STREET CAPACITY	EE	6.99	0.69	915	240	0.060	15	675	S	0.038	5.5	2.0	-	-	-	17	5	4.98	24.0
																	17	25	6.91	33.3
																	17	100	8.64	41.7
36	DRAIN	EE+FF	11.28	0.69	1,420	120	0.018	14	955	S	0.035	5.3	3.0	345	6.0	1.0	17	5	4.98	38.8
																	17	25	6.91	53.8
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37	DRAIN'STREET CAPACITY	JJ	2.15	0.69	445	240	0.029	17	205	S	0.020	4.0	0.9	-	-	-	17	5	4.98	7.4
																	17	25	6.91	10.3
																	17	100	8.64	12.8
38	DRAIN	DD+KK	8.49	0.69	635	190	0.017	17	310	S	0.017	3.7	1.4	135	6.0	0.4	18	5	4.83	28.3
																	18	25	6.71	39.3
																	18	100	8.38	49.1
39	DRAIN	CC+DD+KK	13.30	0.69	1,140	185	0.023	16	955	S	0.024	4.4	3.6	-	-	-	19	5	4.69	43.0
																	19	25	6.52	59.8
																	19	100	8.14	74.7
40	DRAIN	CC+DD+JJ+KK	15.45	0.69	1,340	185	0.023	16	955	S	0.024	4.4	3.6	200	6.0	0.6	20	5	4.57	48.7
																	20	25	6.35	67.7
																	20	100	7.92	84.4
41	DRAIN	BB+CC+DD+JJ+KK	18.70	0.69	1,420	185	0.023	16	955	S	0.024	4.4	3.6	280	6.0	0.8	20	5	4.57	59.0
																	20	25	6.35	81.9
																	20	100	7.92	102.2
42	DRAIN'STREET CAPACITY	BB	3.25	0.69	520	240	0.018	18	280	S	0.018	3.8	1.2	-	-	-	19	5	4.69	10.5
																	19	25	6.52	14.6
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Rational Method Time of Concentration
*Seelye Chart or TR-55 Eqn. 3-3
**As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s

From TR-55 Figure 3-1**

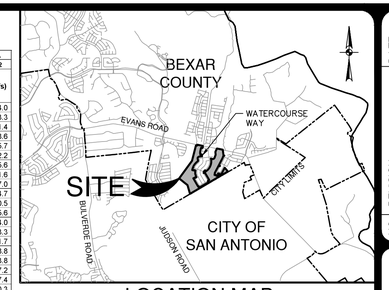
$$T_o = \frac{(0.007(nL)^{0.8})}{(P_2^{0.5}S^{0.4})} + 60\frac{L}{k\,R^{2/3}\,S_o^{1/2}}$$

$k = 1.486\ ft^{1/3}/s$

S: For Streets: n = 0.018, R = 0.2 (Adapted from Mannings)
P: For Paved: n = 0.025, R = 0.2
U: For Unpaved: n = 0.05, R = 0.4
D: For Default: v = 6 fps

MASTER DRAINAGE LEGEND

- UNIT BOUNDARY
- TEMPORARY DRAINAGE AREA BOUNDARY
- DRAINAGE AREA BOUNDARY
- Lo=250' — OVERLAND FLOW PATH
- Lsc=250' — SHALLOW CONCENTRATED FLOW PATH
- Lc=250' — CONCENTRATED FLOW PATH
- 690 — EXISTING CONTOUR
- (11) — DRAINAGE CALCULATION POINT
- A,B,C — LOT GRADING



LOCATION MAP
NOT–TO–SCALE

SCALE: 1"= 100'
0' 100' 200' 300'

NO.	REVISION	DATE

8/14/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

MASTER DRAINAGE PLAN

PLAT NO. 22-11800769
JOB NO. 12093–11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.00

Date: Aug 14, 2024, 1:15pm User ID: ssepulveda
File: P:\120\93\11\Design\Civil\DRMP\12093111.dwg

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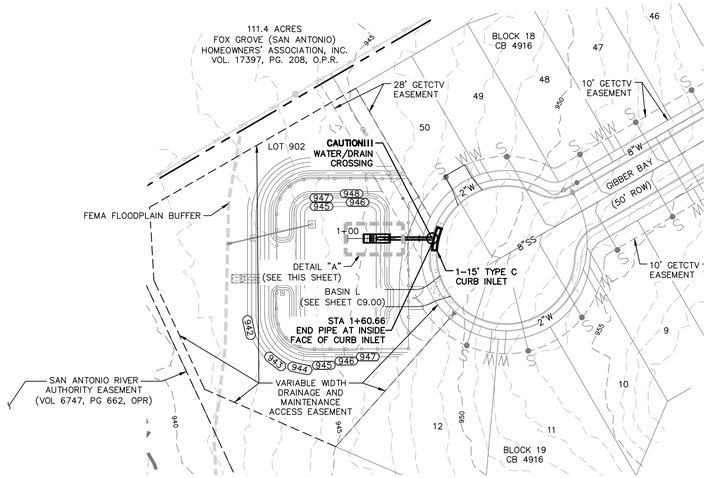
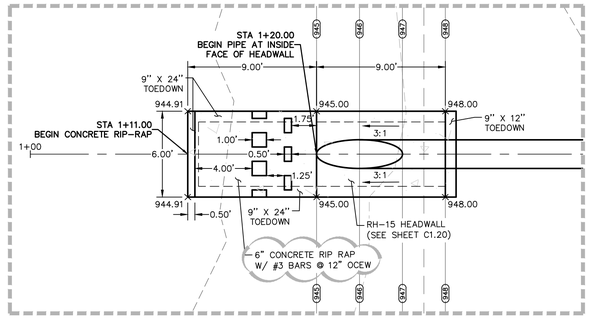
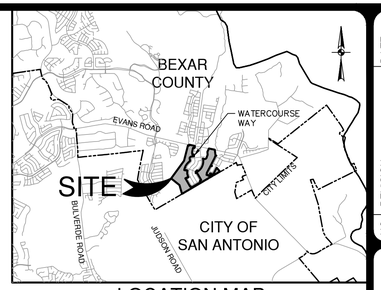




DETAIL "A"

SCALE: 1" = 5'



LOCATION MAP

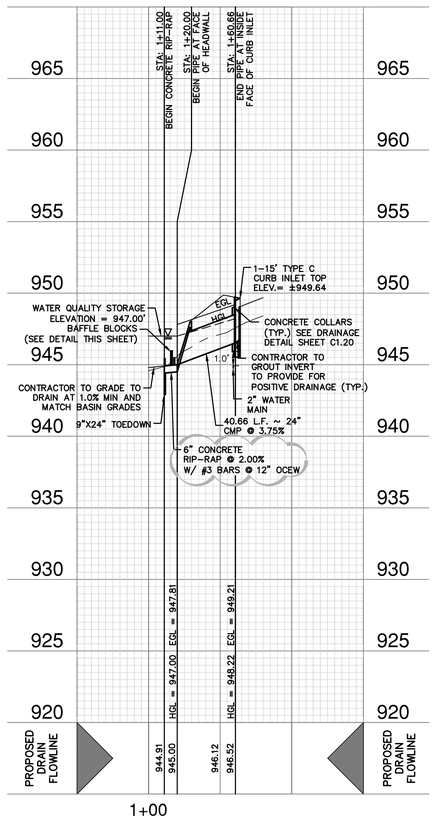
NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

DRAIN A
STA. 1+00.00 TO END

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



1 - 24" CMP HYDRAULIC CALCULATION
STA. 1+20.00 TO STA. 1+60.66

Qm = 22.70 CFS
n = 0.024
S = 3.75%
Sf = 3.43%
dn = 2.00'
Vn = 7.23 FPS

CURB INLET CALCULATIONS-DRAIN "A"

TOTAL Q_{25} = 22.7 CFS

Q_{25} = 22.7 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.50, g = 32.2, c = 0.70

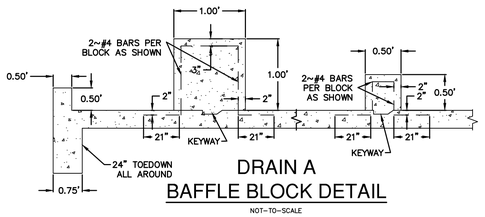
$$L = \frac{22.7 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.50)}$$

L = 10.99 FT USE 1 ~ 15 FT CURB INLET

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{22.7}{(3.087)\ (15)}\right)^{2/3} = 0.62 \text{ FT.}$$

h = 0.62 < 0.79 OK



DRAIN A
BAFFLE BLOCK DETAIL

NOT-TO-SCALE

DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- EXISTING WATER — W
- EXISTING SEWER — SS
- 100-YEAR LOMR DFIRM FLOODPLAIN
- 100-YEAR (ATLAS-14) ULTIMATE DEVELOPMENT FLOODPLAIN

DRAINAGE & GRADING NOTES:

1. 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.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

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.

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.

NO.	REVISION	SIZE	DATE
1.	REVISED BAR		08/30/24

9/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

DRAIN A
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.01

Date: Sep 06, 2024, 1:53pm User ID: ssepulveda
File: P:\120\93\11\Design\Civil\DRA120931l.dwg

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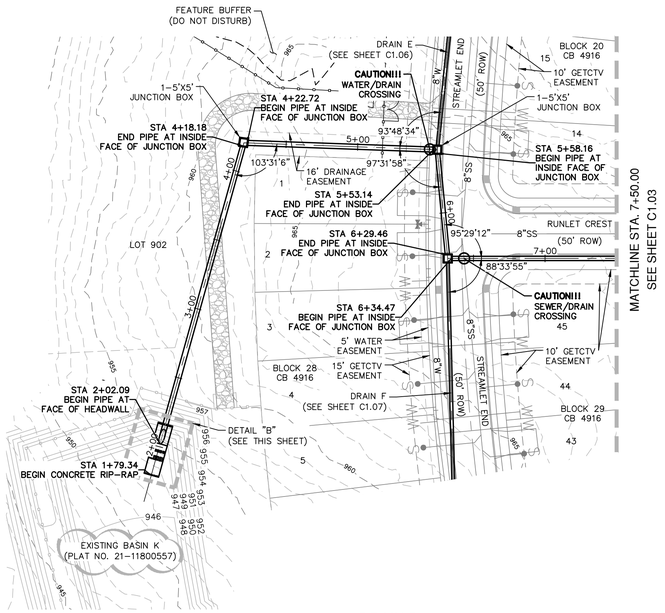
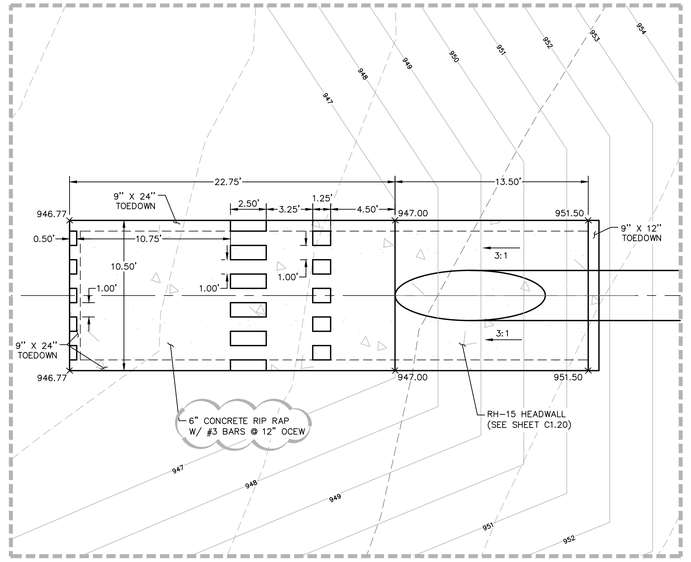




DETAIL "B"

SCALE: 1" = 5'

1 - 42" UFCMP
HYDRAULIC CALCULATION
STA. 2+02.09 TO STA. 4+18.18

Q_{25} = 81.90 CFS
n = 0.013
S = 3.30%
Sf = 0.66%
dn = 3.00'
Vn = 9.33 FPS

1 - 42" UFCMP
HYDRAULIC CALCULATION
STA. 4+22.72 TO STA. 5+53.14

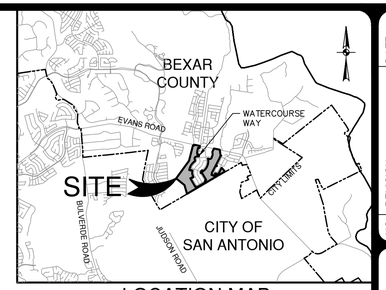
Q_{25} = 81.90 CFS
n = 0.013
S = 2.00%
Sf = 0.66%
dn = 2.93'
Vn = 9.51 FPS

1 - 36" RCP
HYDRAULIC CALCULATION
STA. 5+58.16 TO STA. 6+29.46

Q_{25} = 67.70 CFS
n = 0.013
S = 1.00%
Sf = 1.03%
dn = 2.50'
Vn = 10.75 FPS

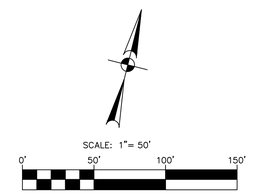
1 - 36" RCP
HYDRAULIC CALCULATION
STA. 6+34.47 TO STA. 8+16.73

Q_{25} = 59.80 CFS
n = 0.013
S = 1.05%
Sf = 0.80%
dn = 2.58'
Vn = 9.25 FPS



LOCATION MAP

NOT-TO-SCALE

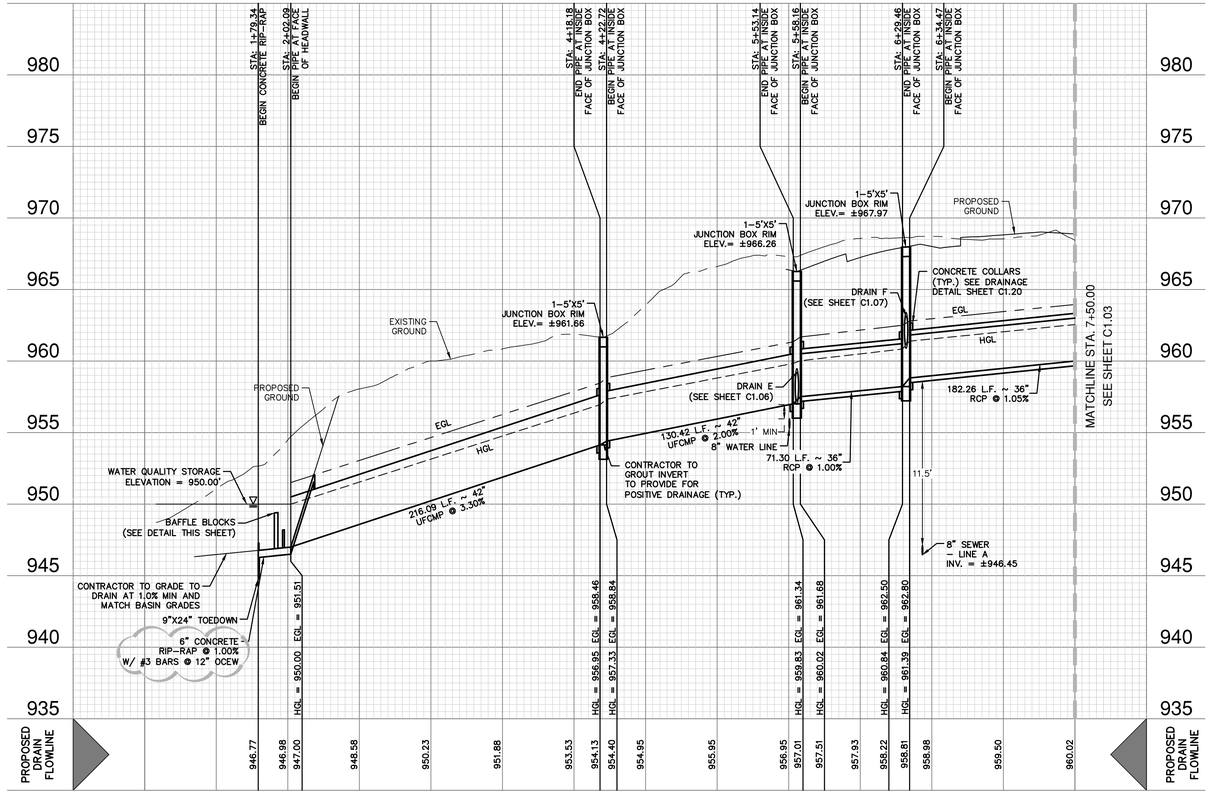


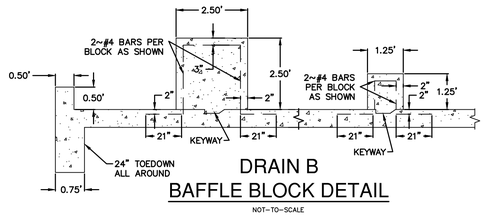
DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- EXISTING WATER — W
- EXISTING SEWER — SS
- 100-YEAR LOMR DFIRM FLOODPLAIN
- 100-YEAR (ATLAS-14) ULTIMATE DEVELOPMENT FLOODPLAIN

DRAIN B
STA. 1+00.00 TO 7+50.00

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





DRAIN B
BAFFLE BLOCK DETAIL

NOT-TO-SCALE

DRAINAGE & GRADING NOTES:

1. 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.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

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.

CAUTION!!

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NO.	REMSION	DATE
1.	REVISED LABELS	09/25/24

9/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

DRAIN B
PLAN AND PROFILE (STA. 1+00.00 TO 7+50.00)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.02

Date: Sep 06, 2024, 1:51pm User ID: saepulveda
File: P:\120\93\11\Design\Civil\DRB120931l.dwg

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1 - 36" RCP
HYDRAULIC CALCULATION
STA. 6+34.47 TO STA. 8+16.73

Q_{25} = 59.80 CFS
n = 0.013
S = 1.05%
Sf = 0.80%
dn = 2.58'
Vn = 9.25 FPS

1 - 30" RCP
HYDRAULIC CALCULATION
STA. 8+26.73 TO STA. 9+43.39

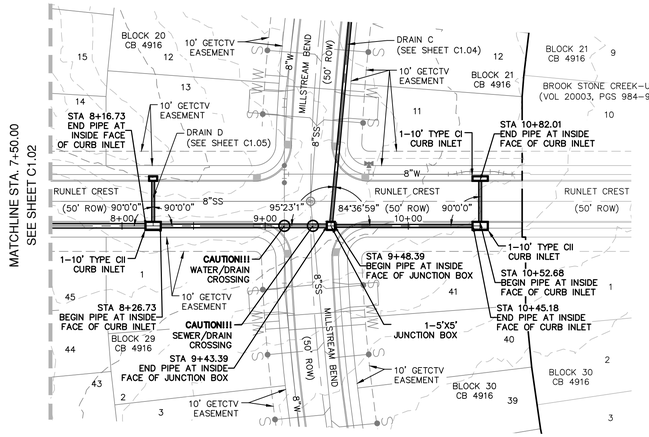
Q_{25} = 39.30 CFS
n = 0.013
S = 0.60%
Sf = 0.92%
dn = 2.50'
Vn = 8.01 FPS

1 - 24" RCP
HYDRAULIC CALCULATION
STA. 9+48.39 TO STA. 10+45.18

Q_{25} = 25.70 CFS
n = 0.013
S = 0.60%
Sf = 1.30%
dn = 2.00'
Vn = 8.18 FPS

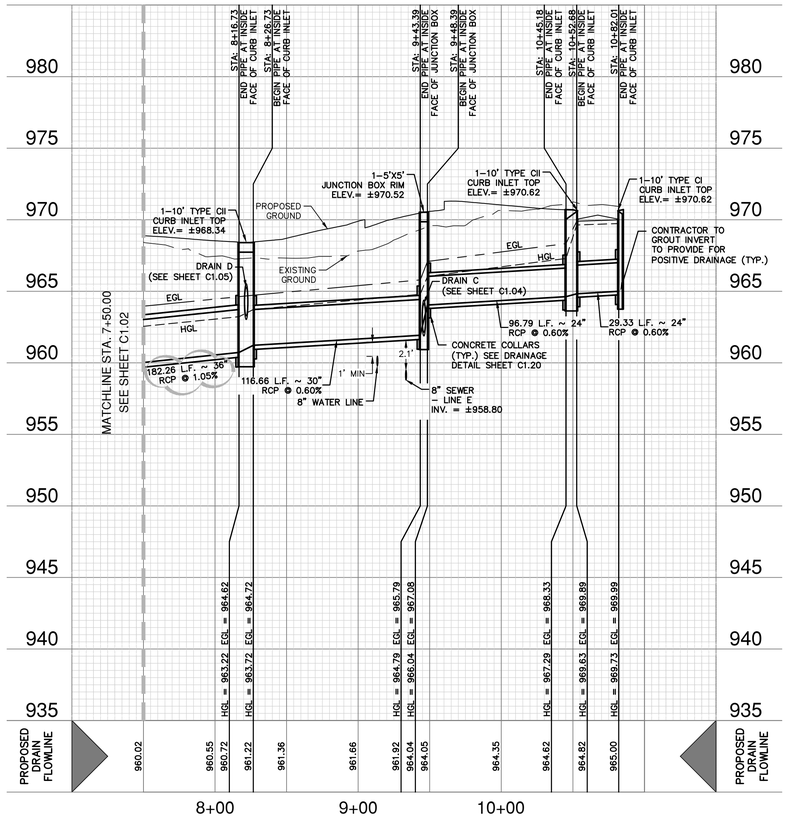
1 - 24" RCP
HYDRAULIC CALCULATION
STA. 10+52.68 TO STA. 10+82.01

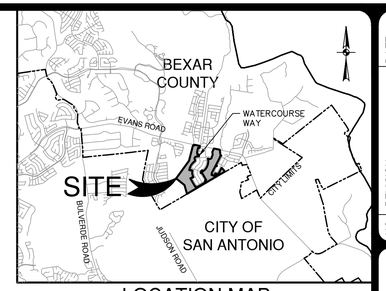
Q_{25} = 25.70/2 = 12.85 CFS
n = 0.013
S = 0.60%
Sf = 0.32%
dn = 2.00'
Vn = 4.09 FPS



DRAIN B
STA. 7+50.00 TO END

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





LOCATION MAP
NOT-TO-SCALE

CURB INLET CALCULATIONS-DRAIN "B"

TOTAL Q_{25} = 25.7 CFS

Q_{25} = 25.7 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.50, g = 32.2, c = 0.70

$$L = \frac{25.7 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.50)}$$

L = 12.44 FT USE 2 ~ 10 FT CURB INLETS

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{25.7}{(3.087)\ (20)}\right)^{2/3} = 0.56 \text{ FT.}$$

h = 0.56 < 0.79 OK

SCALE: 1"= 50'

0' 50' 100' 150'

DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- EXISTING WATER — W
- EXISTING SEWER — SS
- 100-YEAR LOMR DFIRM FLOODPLAIN
- 100-YEAR (ATLAS-14) ULTIMATE DEVELOPMENT FLOODPLAIN

DRAINAGE & GRADING NOTES:

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2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

TRENCH EXCAVATION SAFETY PROTECTION:

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CAUTION!!

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NO.	REMSION	DATE
1	CORRECTED SLOPE LABEL	08/28/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

DRAIN B
PLAN AND PROFILE (STA. 7+50.00 TO END)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.03

Date: Aug 28, 2024, 9:35am User ID: saepulveda
File: P:\120\83\11\Design\Civil\DRB120931l.dwg

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1 - 24" RCP
HYDRAULIC CALCULATION
STA. 1+00.00 TO STA. 3+02.44

Q_{25} = 14.30 CFS
n = 0.013
S = 0.50%
Sf = 0.40%
dn = 2.00'
Vn = 4.55 FPS

1 - 24" RCP
HYDRAULIC CALCULATION
STA. 3+07.45 TO STA. 3+36.78

Q_{25} = 14.30/2 = 7.15 CFS
n = 0.013
S = 0.50%
Sf = 0.10%
dn = 2.00'
Vn = 2.28 FPS

CURB INLET CALCULATIONS-DRAIN "C"

TOTAL Q_{25} = 14.3 CFS

Q_{25} = 14.3 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.50, g = 32.2, c = 0.70

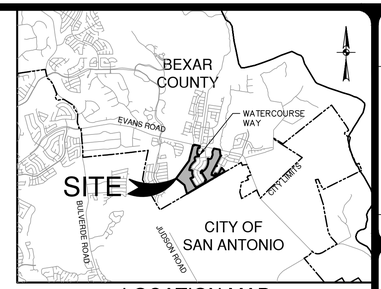
$$L = \frac{14.3 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.50)}$$

L = 6.92 FT USE 2 ~ 5 FT CURB INLETS

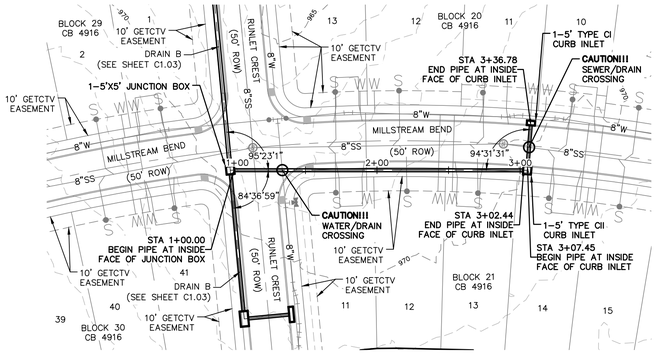
CHECK WITH WEIR FORMULA

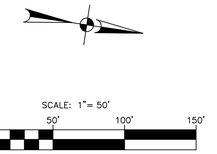
$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{14.3}{(3.087)\ (10)}\right)^{2/3} = 0.60 \text{ FT.}$$

h = 0.60 < 0.79 OK



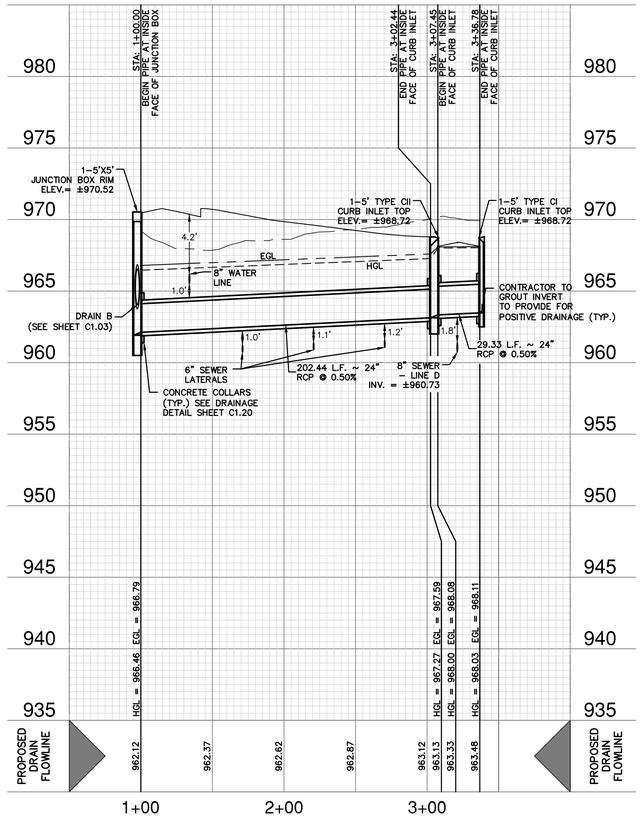
LOCATION MAP
NOT-TO-SCALE





DRAIN C
STA. 1+00.00 TO END

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



DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- EXISTING WATER — W
- EXISTING SEWER — SS
- 100-YEAR LOMR DFIRM FLOODPLAIN
- 100-YEAR (ATLAS-14) ULTIMATE DEVELOPMENT FLOODPLAIN

DRAINAGE & GRADING NOTES:

1. 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.
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3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
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6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

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.

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.

NO.	REVISION	DATE

8/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

DRAIN C
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.04

Date: Aug 06, 2024, 10:34am User ID: SSepulveda
File: P:\T20\93\11\Design\Civil\DRC120931l.dwg

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1 - 24" RCP
HYDRAULIC CALCULATION
STA. 1+00.00 TO STA. 1+29.33

Q_{25} = 21.60/2 = 10.80 CFS
n = 0.013
S = 0.50%
Sf = 0.48%
dn = 1.22'
Vn = 5.37 FPS

CURB INLET CALCULATIONS-DRAIN "D"

TOTAL Q_{25} = 21.6 CFS

Q_{25} = 21.6 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.50, g = 32.2, c = 0.70

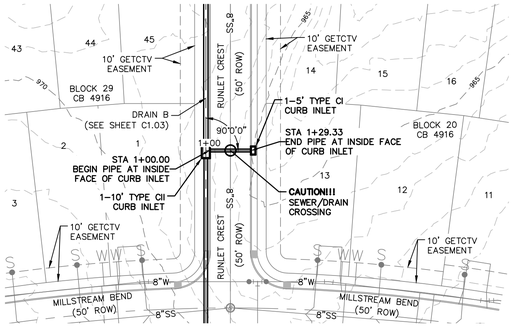
$$L = \frac{21.6 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.50)}$$

L = 10.46 FT USE 1 ~ 10 FT AND 1 ~ 5 FT CURB INLET

CHECK WITH WEIR FORMULA

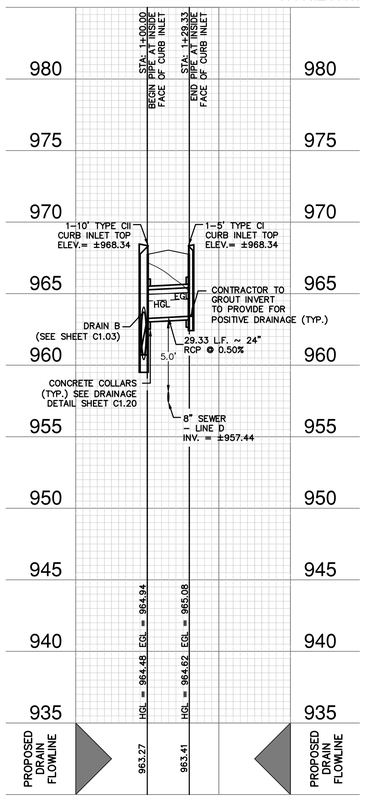
$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{21.6}{(3.087)\ (15)}\right)^{2/3} = 0.60 \text{ FT.}$$

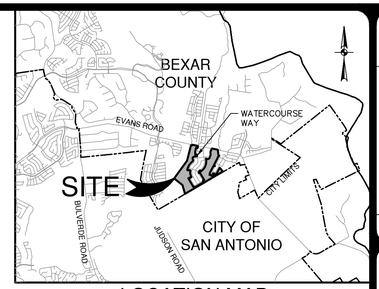
h = 0.60 < 0.79 OK



DRAIN D
STA. 1+00.00 TO END

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





LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

DRAINAGE LEGEND

- PROJECT LIMITS
- EXISTING CONTOUR — 690
- PROPOSED WATER — W
- PROPOSED SEWER — SS
- EXISTING WATER — W
- EXISTING SEWER — SS
- 100-YEAR LOMR DFIRM FLOODPLAIN
- 100-YEAR (ATLAS-14) ULTIMATE DEVELOPMENT FLOODPLAIN

DRAINAGE & GRADING NOTES:

1. 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.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS, ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

DRAIN D
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.05

Date: Aug 06, 2024, 11:25am User ID: SSepulveda
File: P:\120\a3\v11\Design\Civil\DR01\293311.dwg

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1 - 24" RCP
HYDRAULIC CALCULATION
STA. 1+00.00 TO STA. 2+47.33

Q_{25} = 14.60 CFS
n = 0.013
S = 0.50%
Sf = 0.42%
dn = 2.00'
Vn = 4.65 FPS

1 - 24" RCP
HYDRAULIC CALCULATION
STA. 2+52.33 TO STA. 2+81.67

Q_{25} = 14.60/2 = 7.30 CFS
n = 0.013
S = 0.50%
Sf = 0.10%
dn = 2.00'
Vn = 2.32 FPS

CURB INLET CALCULATIONS-DRAIN "E"

TOTAL Q_{25} = 14.6 CFS

Q_{25} = 14.6 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.50, g = 32.2, c = 0.70

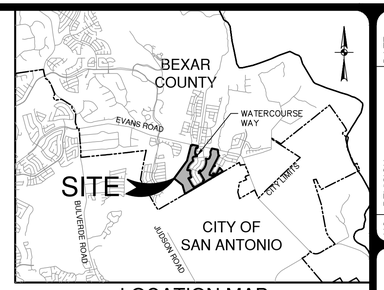
$$L = \frac{14.6 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.50)}$$

L = 7.07 FT USE 2 ~ 5 FT CURB INLETS

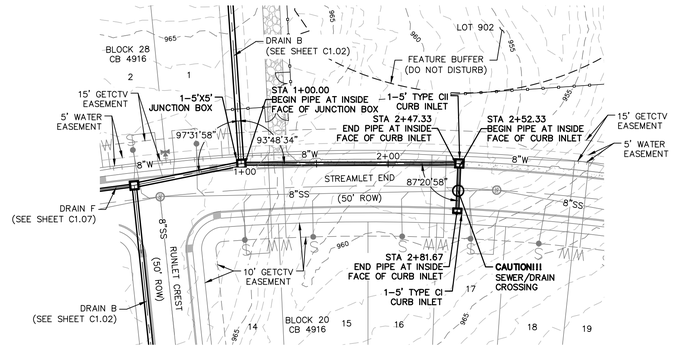
CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{14.6}{(3.087)\ (10)}\right)^{2/3} = 0.61 \text{ FT.}$$

h = 0.61 < 0.79 OK

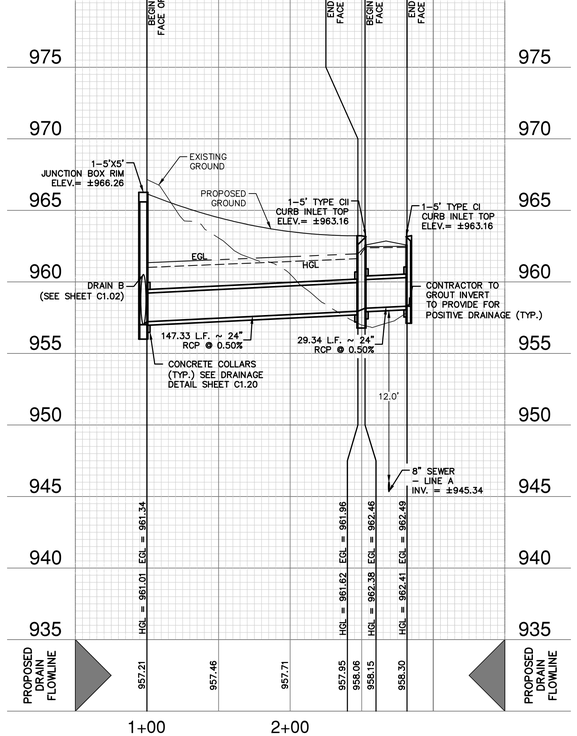


LOCATION MAP
NOT-TO-SCALE



DRAIN E
STA. 1+00.00 TO END

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



DRAINAGE LEGEND

PROJECT LIMITS	
EXISTING CONTOUR	690
PROPOSED WATER	W
PROPOSED SEWER	SS
EXISTING WATER	W
EXISTING SEWER	SS
100-YEAR LOMR DFIRM FLOODPLAIN	
100-YEAR (ATLAS-14) ULTIMATE DEVELOPMENT FLOODPLAIN	

SCALE: 1"= 50'

0' 50' 100' 150'

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8/6/2024

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PROFESSIONAL ENGINEER

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

DRAIN E
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.06

Date: Aug 06, 2024, 11:19am User ID: SSepulveda
File: P:\12093\11\Design\Civil\DRE12093I1.dwg

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1 - 24" RCP
HYDRAULIC CALCULATION
STA. 1+02.50 TO STA. 2+60.77

Q_{25} = 10.30 CFS
n = 0.013
S = 0.50%
Sf = 0.45%
dn = 1.20'
Vn = 5.21 FPS

1 - 24" RCP
HYDRAULIC CALCULATION
STA. 2+65.77 TO STA. 2+95.11

Q_{25} = 10.30/2 = 5.15 CFS
n = 0.013
S = 0.50%
Sf = 0.05%
dn = 2.00'
Vn = 1.64 FPS

CURB INLET CALCULATIONS-DRAIN "F"

TOTAL Q_{25} = 10.3 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.50, g = 32.2, c = 0.70

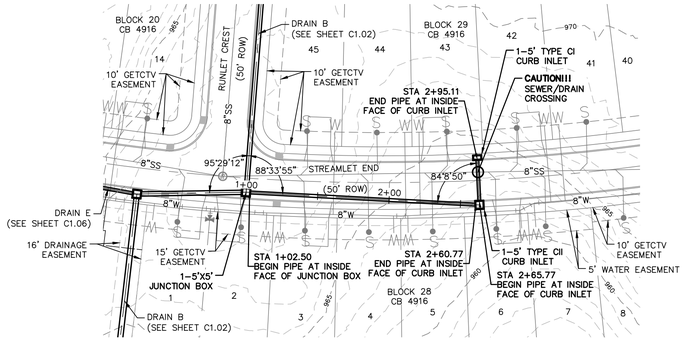
$$L = \frac{10.3 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2}\ (32.2)\ (0.50)}$$

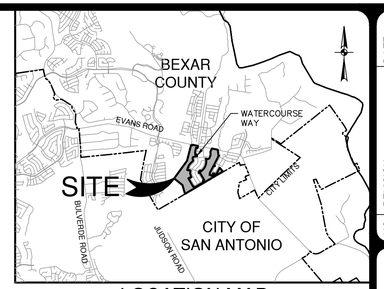
L = 4.99 FT USE 2 ~ 5 FT CURB INLETS

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{10.3}{(3.087)\ (10)}\right)^{2/3} = 0.48 \text{ FT.}$$

h = 0.48 < 0.79 OK



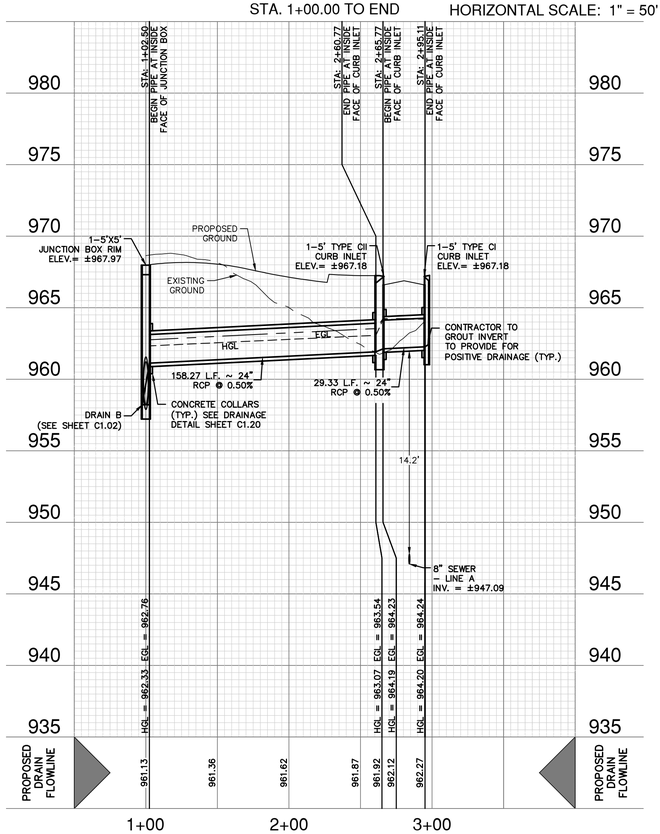


LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

DRAIN F
STA. 1+00.00 TO END

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



DRAINAGE LEGEND

PROJECT LIMITS	
EXISTING CONTOUR	690
PROPOSED WATER	W
PROPOSED SEWER	SS
EXISTING WATER	W
EXISTING SEWER	SS
100-YEAR LOMR DFIRM FLOODPLAIN	
100-YEAR (ATLAS-14) ULTIMATE DEVELOPMENT FLOODPLAIN	

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LICENSED
PROFESSIONAL ENGINEER

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

DRAIN F
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.07

Date: Aug 06, 2024, 4:14pm User ID: arodriguez
File: P:\T20\93\11\Design\Civil\DRF1209311.dwg

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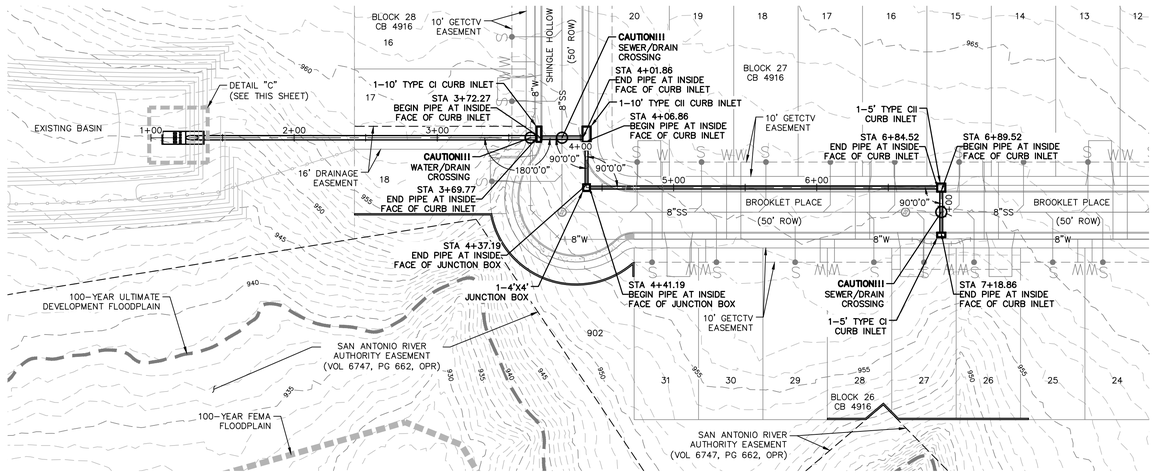
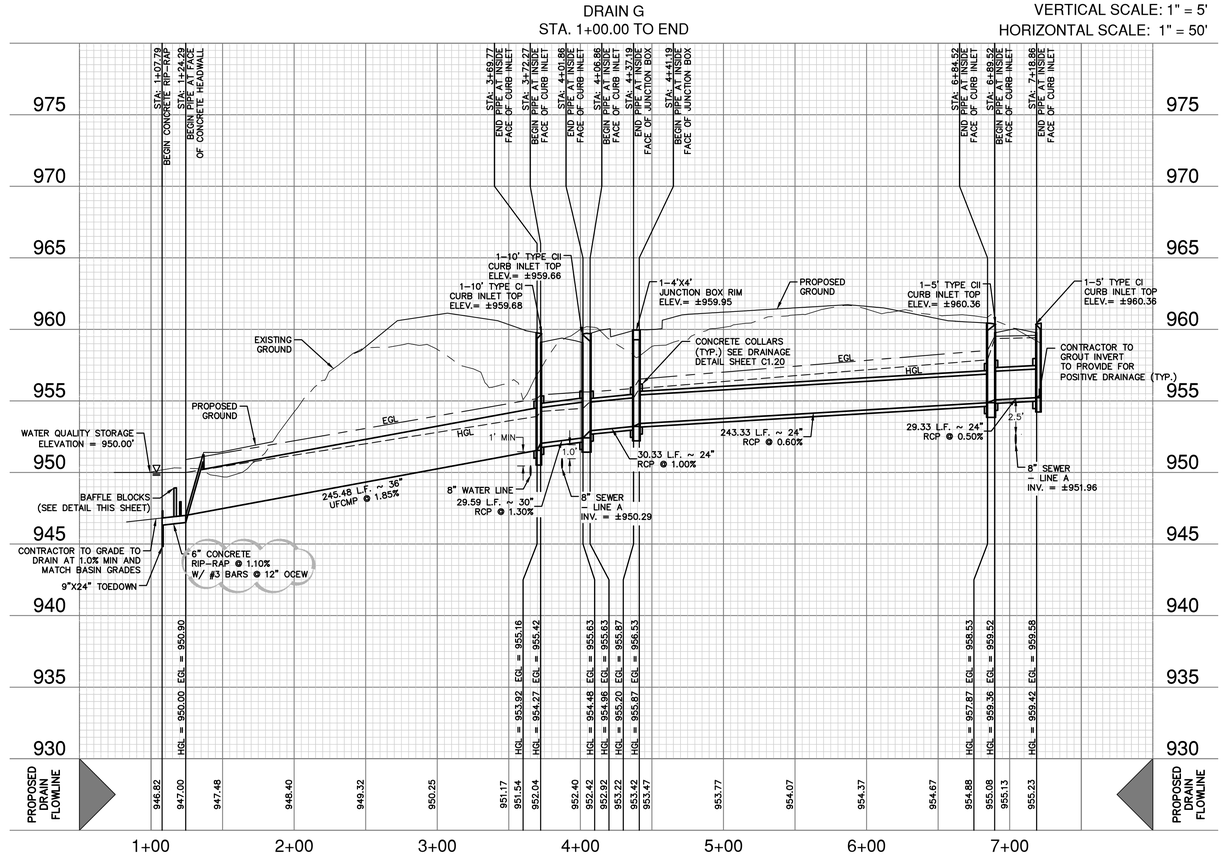


DRAIN G
STA. 1+00.00 TO END

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



CURB INLET CALCULATIONS-DRAIN "G"

TOTAL Q_{25} = 20.5 CFS

Q_{25} = 20.5 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.50, g = 32.2, c = 0.70

$$L = \frac{20.5 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2\ (32.2)\ (0.50)}}$$

L = 9.92 FT USE 2 ~ 5 FT CURB INLETS

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{20.5}{(3.087)\ (10)}\right)^{2/3} = 0.76 \text{ FT.}$$

h = 0.76 < 0.79 OK

CURB INLET CALCULATIONS-DRAIN "G"

TOTAL Q_{25} = 33.3 CFS

Q_{25} = 33.3 CFS

$Q_{25} = CA\sqrt{2gh}$ (ORIFICE FLOW EQN.)

A = L(0.52), h = 0.50, g = 32.2, c = 0.70

$$L = \frac{33.3 \text{ CFS}}{(0.70)\ (0.52)\sqrt{2\ (32.2)\ (0.50)}}$$

L = 16.12 FT USE 2 ~ 10 FT CURB INLETS

CHECK WITH WEIR FORMULA

$$h = \left(\frac{Q}{(CL)}\right)^{2/3} = \left(\frac{33.3}{(3.087)\ (20)}\right)^{2/3} = 0.66 \text{ FT.}$$

h = 0.66 < 0.79 OK

1 - 36" UFCMP HYDRAULIC CALCULATION STA. 1+24.29 TO STA. 3+69.77

Q_{25} = 53.80 CFS
n = 0.013
S = 1.85%
Sf = 0.65%
dn = 3.00'
Vn = 7.61 FPS

1 - 30" RCP HYDRAULIC CALCULATION STA. 3+72.27 TO STA. 4+01.86

$Q_{25} = (33.3/2) + 20.5 = 37.15$ CFS
n = 0.013
S = 1.30%
Sf = 0.82%
dn = 2.23'
Vn = 8.03 FPS

1 - 24" RCP HYDRAULIC CALCULATION STA. 4+06.86 TO STA. 4+37.19

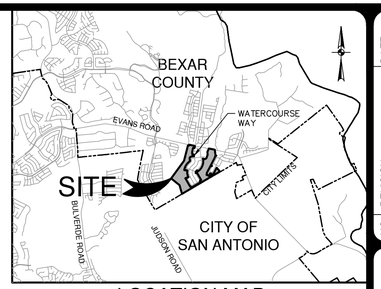
Q_{25} = 20.50 CFS
n = 0.013
S = 1.00%
Sf = 0.82%
dn = 2.00'
Vn = 6.53 FPS

1 - 24" RCP HYDRAULIC CALCULATION STA. 4+41.19 TO STA. 6+84.52

Q_{25} = 20.50 CFS
n = 0.013
S = 0.60%
Sf = 0.21%
dn = 2.00'
Vn = 6.53 FPS

1 - 24" RCP HYDRAULIC CALCULATION STA. 6+89.52 TO STA. 7+18.86

Q_{25} = 20.50/2 = 10.25 CFS
n = 0.013
S = 0.50%
Sf = 0.82%
dn = 2.00'
Vn = 3.26 FPS

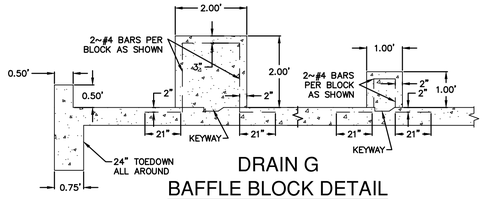


LOCATION MAP
NOT-TO-SCALE

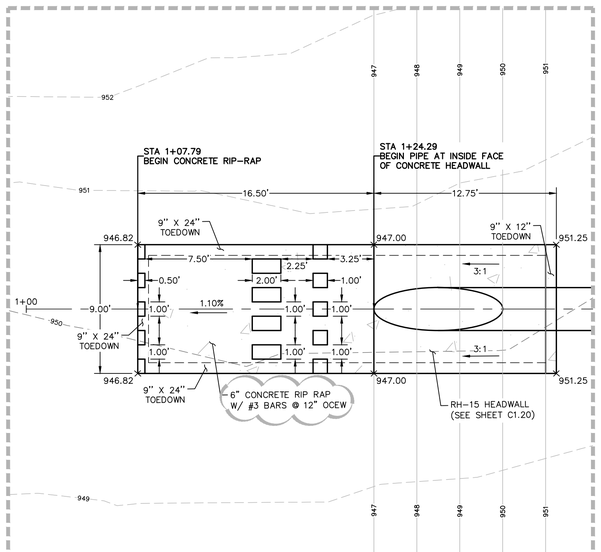
SCALE: 1"= 50'
0' 50' 100' 150'

DRAINAGE LEGEND

PROJECT LIMITS
EXISTING CONTOUR 690
PROPOSED WATER W
PROPOSED SEWER SS
EXISTING WATER W
EXISTING SEWER SS
100-YEAR LOMR DFIRM FLOODPLAIN
100-YEAR (ATLAS-14) ULTIMATE DEVELOPMENT FLOODPLAIN



DRAIN G
BAFFLE BLOCK DETAIL
NOT-TO-SCALE



DETAIL "C"
SCALE: 1" = 5'

DRAINAGE & GRADING NOTES:

1. 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.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS, ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

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.

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.

NO.	REMISION	DATE
1.	REVISED LABELS	09/20/24

9/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH I DALLAS
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

DRAIN G
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.08

Date: Sep 06, 2024, 1:55pm User ID: sespulveda
File: P:\120\83\11\Design\Civil\DR01209311.dwg

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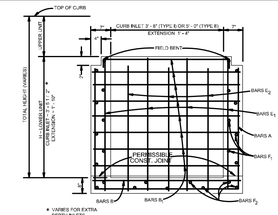
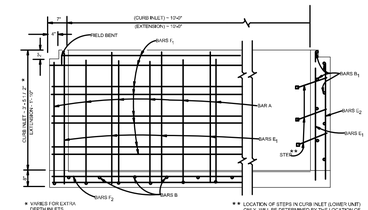


SECTION A-A



SECTION B-B

REINFORCING STEEL

LOWER UNIT 10' X 3' - 8" (TYPE II)

BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'-6"
B_1	VARIES	#4	12"	4'-6"
E_1	20	#7	18" ±	VARIES
E_2	8	#3	10" ±	VARIES
F_1	VARIES	#4	12" ±	10'-10"
F_2	9	#4	—	10'-10"

LOWER UNIT 10' X 5' - 0" (TYPE III)

BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#3	12"	5'-10"
B_1	VARIES	#4	12"	5'-10"
E_1	32	#4	18" ±	VARIES
E_2	9	#3	18" ±	VARIES
F_1	VARIES	#4	12" ±	10'-10"
F_2	11	#4	—	10'-10"

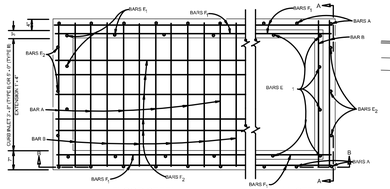
GENERAL NOTES

1. S INLETS AND S EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE "S" (M.C).
2. TYPE "C-R" INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS INLINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1 / 2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615, GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3 / 4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
14. GALVANIZED BOLTS, NUTS, WASHERS, PLATES AND GASKETS ARE SUBSIDIARY TO INLETS.
15. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS, WHEN USING PRECAST UNITS.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BENT.
17. ALL LOWER UNITS SHALL RECEIVE INVERT MORTAR SHAPING.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 3" BEYOND THE OUTER SHELL OF THE PIPE, TAKING INTO ACCOUNT THE SKEW OF THE PIPE, AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".

PHASE CONSTRUCTION

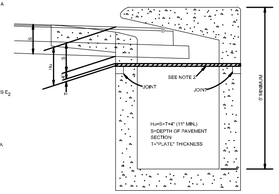
NOTES FOR PHASE CONSTRUCTION (WHEN DIRECTED BY THE ENGINEER):

1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "H1" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL HMAC OVERLAY, SAW CUT THE PAVEMENT, REMOVE THE PLATE, AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND/OR EXTENSION.

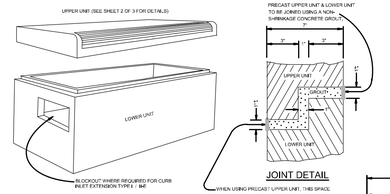


FLOOR STEEL

WALL STEEL

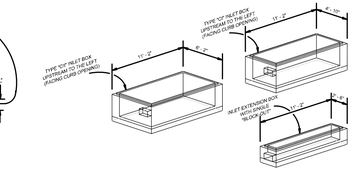


PLAN



JOINT DETAIL

WHEN USING PRECAST UPPER UNIT, THIS SPACE IS FOR MAKING MINOR HORIZONTAL AND VERTICAL ADJUSTMENTS TO ACCOMMODATE A FIT BETWEEN THE UPPER AND LOWER UNIT THAT ALLOWS FOR A MATCH LINE AND GRADE BETWEEN THE ROADWAY CURB AND THE UPPER UNIT OF THE INLET.



CONCRETE INLET BOX CONFIGURATIONS (LOWER UNITS)

MAY 2009

CITY OF SAN ANTONIO

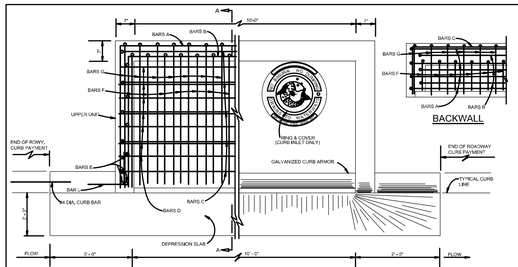
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS

SHEET 1 OF 3

% SUBMITTAL	PROJECT NO.	DATE
DRWN. BY: D.VASQUEZ	DSGN. BY: J.R. MILTON, P.E.	CHKD. BY: R.A. HOSSEINI, P.E.

SHEET NO. ___OF___



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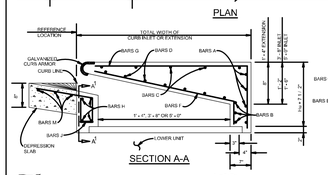
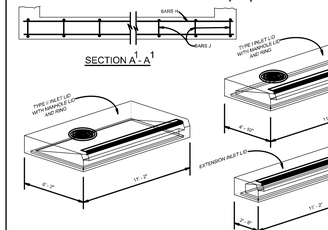


SECTION A-A

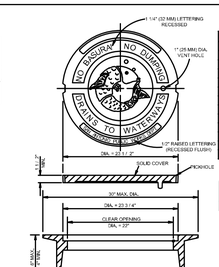


SECTION A - A[1]

CONCRETE INLET LID CONFIGURATIONS (UPPER UNITS)

BACKWALL

END WALL

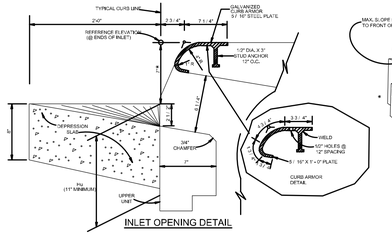


MANHOLE LID & RING DETAIL (ITEM 409)

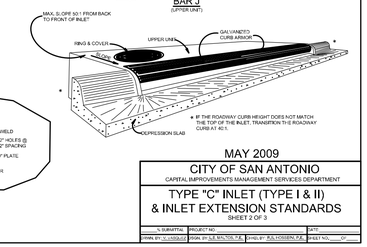
NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.

SEE SHEET 1 OF 3 FOR GENERAL NOTES.



INLET OPENING DETAIL



REINFORCING STEEL (FOR Hu=11")

UPPER UNIT 10' X 3'-8" (TYPE I)

BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	10'-0"	53
B	3	#4	—	18'-10"	38
C	3	#4	11"	13'-2"	44
D	7	#4	6"	10'-10"	51
E	12	#4	11"	1'-6"	9
F	21	#6	9"	4'-8"	147
G	22	#6	6"	5'-6"	187
H	4	#4	—	10'-10"	29
J	12	#4	12"	3'-6"	28
K	4	#4	—	2'-0"	5
L	3	#4	—	14'-6"	29
TOTAL WEIGHT					620 LBS.

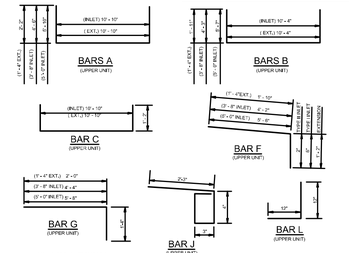
UPPER UNIT 10' X 3'-0" (TYPE II)

BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	10'-0"	53
B	3	#4	—	18'-10"	38
C	3	#4	11"	13'-2"	44
D	7	#4	6"	10'-10"	51
E	12	#4	11"	1'-6"	9
F	21	#6	9"	4'-8"	147
G	22	#6	6"	5'-6"	187
H	4	#4	—	10'-10"	29
J	12	#4	12"	3'-6"	28
K	4	#4	—	2'-0"	5
L	3	#4	—	14'-6"	29
TOTAL WEIGHT					759 LBS.

CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

DEPRESSION SLAB	C.Y.
10' INLET	0.7
10' EXTENSION	0.7

UPPER UNIT (ONLY)	C.Y.
10' X 3'-8" CURB INLET	1.9
10' X 5'-0" CURB INLET	2.7
10' EXTENSION	1.0



MAY 2009

CITY OF SAN ANTONIO

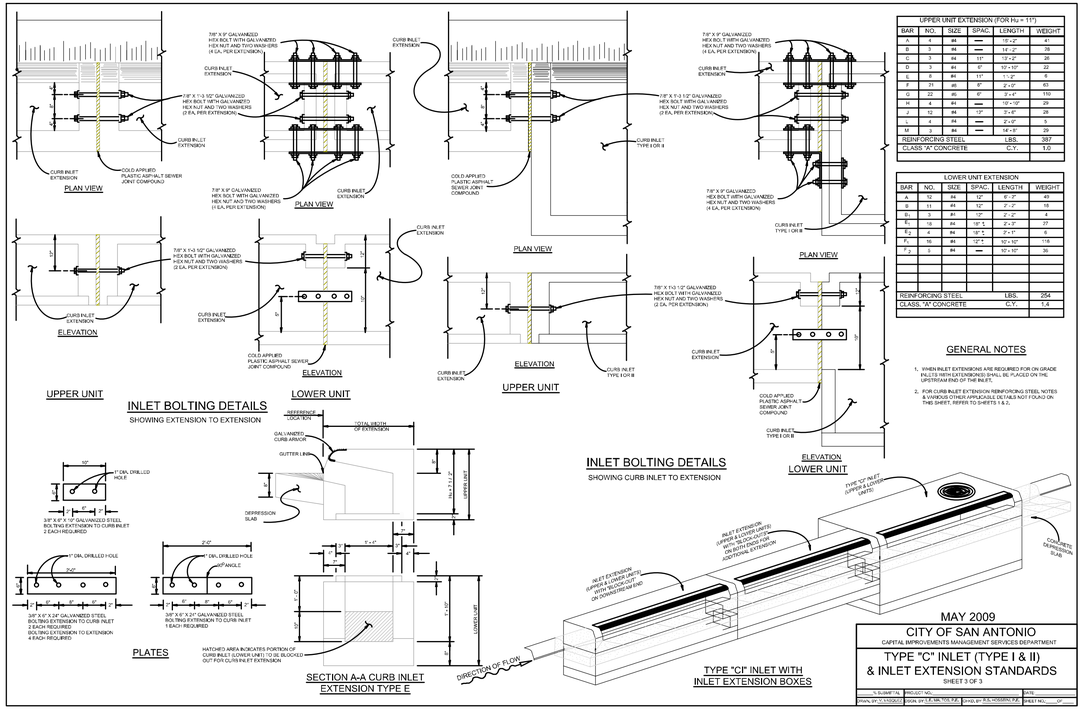
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS

SHEET 2 OF 3

% SUBMITTAL	PROJECT NO.	DATE
DRWN. BY: D.VASQUEZ	DSGN. BY: J.R. MILTON, P.E.	CHKD. BY: R.A. HOSSEINI, P.E.

SHEET NO. ___OF___



UPPER UNIT EXTENSION (FOR Hu = 11")

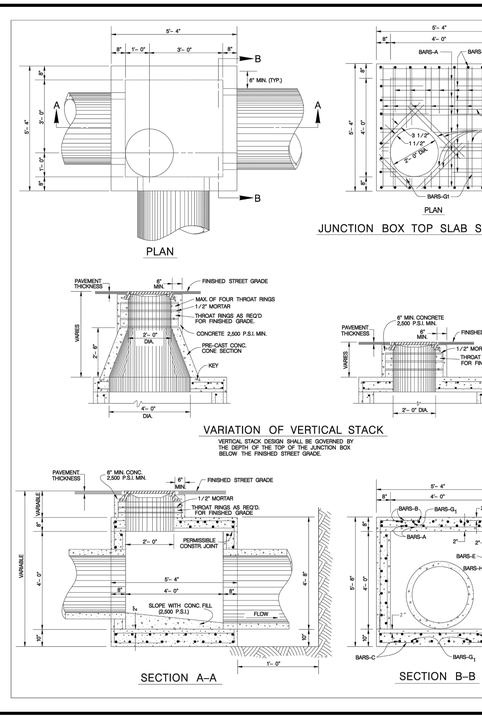
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	10'-2"	41
B	3	#4	—	18'-2"	28
C	3	#4	11"	13'-2"	26
D	3	#4	6"	10'-10"	22
E	8	#4	11"	1'-2"	6
F	21	#6	9"	2'-0"	63
G	22	#6	6"	2'-4"	110
H	4	#4	—	10'-10"	29
J	12	#4	12"	3'-4"	26
K	4	#4	—	2'-0"	5
M	3	#4	—	14'-8"	29
REINFORCING STEEL				LBS.	387
CLASS "A" CONCRETE				C.Y.	1.0

LOWER UNIT EXTENSION

BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	6'-7"	49
B	11	#4	12"	2'-2"	16
B_1	3	#4	12"	2'-2"	4
E_1	18	#4	18" ±	2'-7"	27
E_2	4	#4	18" ±	2'-4"	6
F_1	16	#6	12" ±	10'-10"	116
F_2	3	#4	—	10'-10"	33
REINFORCING STEEL				LBS.	254
CLASS "A" CONCRETE				C.Y.	1.4

GENERAL NOTES

1. WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS WITH EXTENSIONS SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
2. FOR CURB INLET EXTENSION REINFORCING STEEL NOTES & VARIOUS OTHER APPLICABLE DETAILS NOT FOUND ON THIS SHEET, REFER TO SHEETS 1 & 2.



VARIATION OF VERTICAL STACK

VERTICAL STACK DESIGN SHALL BE GOVERNED BY THE DEPTH OF THE TOP OF THE JUNCTION BOX BELOW THE FINISHED STREET GRADE.

MANHOLE LID & RING DETAIL

SCALE: 1 : 16

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.

SCHEDULE FOR REINFORCING STEEL

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	16	4	9" O.C.	5'- 1"	54
	B	32	5	8" O.C.	6'- 10"	228
	C	32	5	8" O.C.	4'- 3"	142
STRAIGHT	D	16	4	9" O.C.	5'- 1"	54
STRAIGHT	E	16	3	12" O.C.	3'-11"	24
STRAIGHT	G	16	4	12" O.C.	5'-1"	54
STRAIGHT	G_1	8	4	AS SHOWN	5'-1"	27
STRAIGHT	H	20	3	12" O.C.	4'-6"	33
STRAIGHT	J	8	6	3 1/2"	2'- 10"	34
					TOTAL	650 LBS.

CLASS "A" CONCRETE= 3.43 CU. YDS. (DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

★ NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN - ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQ'D.

1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3 /4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM. A-15. THE DEFORMATION SHALL CONFORM TO ASTM. A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. PAVEMENT OR JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (2,500 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).
8. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, VERTICAL STACK, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 - "STORM SEWER JUNCTION BOXES AND INLETS".

CURVED DEFLECTOR DETAIL

JANUARY 2005

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

4'x4'x4' JUNCTION BOX STANDARDS

% SUBMITTAL	PROJECT NO.	DATE
DRWN. BY:	DSGN. BY:	CHKD. BY:

SHEET NO. ___OF___

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,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

Date: Feb 29, 2024, 8:26am User ID: ssepulveda
File: P:\120\93\11\Design\Civil\DRD11209311.dwg

NO.	REVISION	DATE

2/29/2024

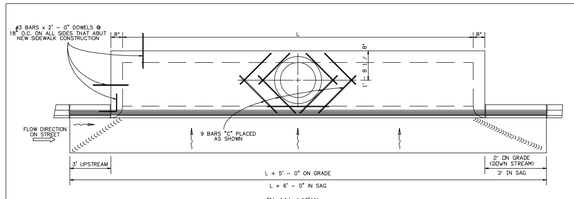
STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

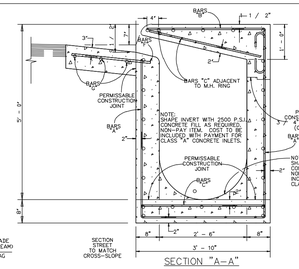
BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

DRAINAGE DETAILS
(SHEET 1 OF 3)

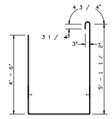
PLAT NO. 22-11800769
JOB NO. 12093-11
DATE FEBRUARY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.10



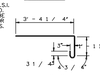
PLAN VIEW
SCALE : 1" = 2'



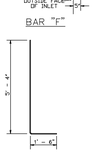
SECTION "A-A"
SCALE : 1" = 1'



BAR "A"



BAR "B"

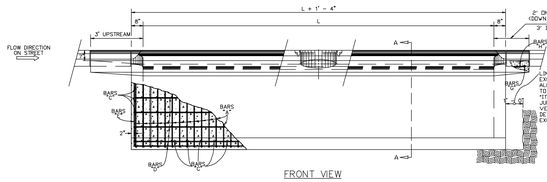


BAR "F"

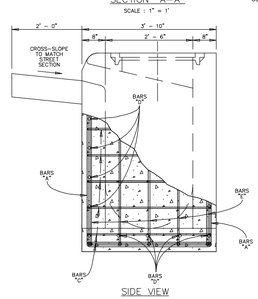
BAR "E"

INLET LENGTH	REINFORCING STEEL SCHEDULE					
	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=5' - 0"	A	10	4	5" O.C.	5' - 1 1/4"	135
	B	15	4	5" O.C.	5' - 1 1/4"	203
	C	30	5	6" O.C.	5' - 1"	95
	D	22	4	10" O.C.	6' - 1"	88
	E	6	4	12" O.C.	6' - 1"	24
	F	6	4	12" O.C.	6' - 1"	24
	G	5	4	12" O.C.	5' - 8"	20
	H	2	4	12" O.C.	2' - 8"	9
* CONCRETE TOTAL=3.53 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=438 LBS.						
L=10' - 0"	A	20	4	5" O.C.	10' - 1 1/4"	270
	B	29	4	5" O.C.	5' - 1 1/4"	243
	C	30	5	6" O.C.	5' - 1"	95
	D	22	4	10" O.C.	11' - 1"	110
	E	6	4	12" O.C.	6' - 1"	24
	F	6	4	12" O.C.	6' - 1"	24
	G	5	4	12" O.C.	5' - 8"	20
	H	2	4	12" O.C.	2' - 8"	9
* CONCRETE TOTAL=5.75 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=704 LBS.						
L=15' - 0"	A	30	4	5" O.C.	15' - 1 1/4"	405
	B	43	4	5" O.C.	5' - 1 1/4"	358
	C	30	5	6" O.C.	5' - 1"	95
	D	22	4	10" O.C.	16' - 1"	352
	E	6	4	12" O.C.	6' - 1"	24
	F	6	4	12" O.C.	6' - 1"	24
	G	5	4	12" O.C.	5' - 8"	20
	H	2	4	12" O.C.	2' - 8"	9
* CONCRETE TOTAL=7.97 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=963 LBS.						
L=20' - 0"	A	40	4	5" O.C.	20' - 1 1/4"	540
	B	57	4	5" O.C.	5' - 1 1/4"	475
	C	30	5	6" O.C.	5' - 1"	95
	D	22	4	10" O.C.	21' - 1"	462
	E	6	4	12" O.C.	6' - 1"	24
	F	6	4	12" O.C.	6' - 1"	24
	G	5	4	12" O.C.	5' - 8"	20
	H	2	4	12" O.C.	2' - 8"	9
* CONCRETE TOTAL=10.19 CU. YDS. M.H. CASTING=260 LBS. STEEL TOTAL=1227 LBS.						

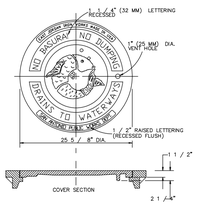
* THESE FIGURES DO NOT EXCLUDE CONCRETE & STEEL INTERCEPTED BY MANHOLE AND REINFORCED CONC. PIPE.
* INCLUDES CONCRETE GUTTER FOR ON GRADE INLET. REDUCE BY .05 C.Y. FOR INLETS IN SUMP.



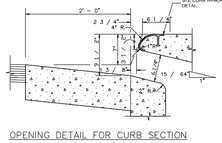
FRONT VIEW
SCALE : 1" = 2'



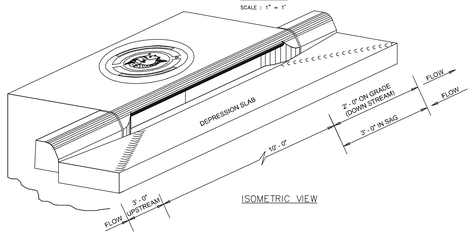
SIDE VIEW
SCALE : 1" = 1'



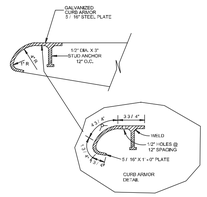
MANHOLE LID & RING DETAIL
(ITEM 409)
SCALE : 1" = 8"



OPENING DETAIL FOR CURB SECTION
SCALE : 1" = 6"



ISOMETRIC VIEW



CURB ARMOR DETAIL

GENERAL NOTES:

1. ALL BARS INTERCEPTING MANHOLE RING & REINFORCING CONCRETE PIPE SHALL BE FIELD CUT.
2. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER BARS.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED TO 3 / 4".
5. CONSTRUCTION JOINT SHOWN AT FLOWLINE MAY BE RAISED A MAXIMUM OF 6" AT THE CONTRACTOR'S DISCRETION. ADJUST LENGTH OF VERTICAL STEEL AS REQUIRED.
6. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 REQUIREMENTS.
7. INVERT OF DROP INLET TO BE SHAPED WITH CONCRETE FILL TO AFFECT DRAINAGE TO OUTLET PIPE.
8. DELETE 4 "C" BARS FROM SCHEDULE QUANTITIES IF MANHOLE RING AND COVER ARE PLACED AT END OF INLET.
9. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
10. PAYMENT FOR ALL EXCAVATION, BACK FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE " SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTOR'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.

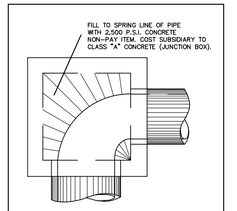
CURB INLET DETAILS

N.T.S.

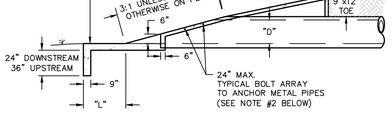
STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEPARTMENT OF PUBLIC WORKS

TYPE "C" INLET STANDARDS

DRAWN BY: V. VASQUEZ	DATE	REVISIONS	SCALE: SEE ABOVE
CHECKED BY: NAT HARDY, P.E.			DATE:
			SHEET:



CURVED DEFLECTOR DETAIL
(NOT TO SCALE)



LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES
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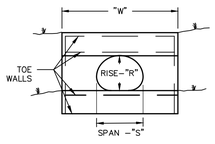
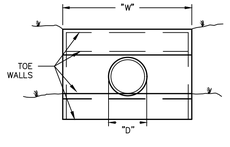


SINGLE C.M.P. ARCH PIPE CULVERT
NOT-TO-SCALE

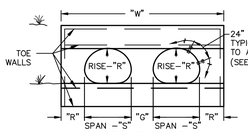


SINGLE CIRCULAR PIPE CULVERT
(CMP OR RCP)
NOT-TO-SCALE

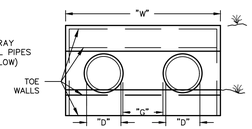
DIMENSIONS FOR CIRCULAR (CMP AND RCP) PIPE CULVERT

"D" INSIDE DIA. OF PIPE	"L"	"G"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		CCM	RCP	"W"			
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"
21"	2'-6"	1'-3"	0'-10"	5'-3"	8'-4"	11'-4"	13'-4"
24"	3'-0"	1'-5"	0'-11"	6'-0"	9'-5"	12'-10"	16'-3"
30"	4'-0"	1'-8"	1'-1"	7'-6"	11'-8"	15'-10"	20'-0"
36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-11"	18'-10"	23'-9"
42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"	21'-10"	27'-6"
48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-5"	24'-10"	31'-3"
54"	8'-0"	2'-10"	1'-11"	13'-6"	20'-10"	28'-2"	35'-5"
60"	9'-0"	3'-2"	2'-0"	15'-0"	23'-2"	31'-4"	39'-6"

"G" IS MEASURED BETWEEN THE OTHER SURFACES OF THE PIPES.



MULTIPLE C.M.P. ARCH PIPE CULVERT
NOT-TO-SCALE



MULTIPLE CIRCULAR PIPE CULVERT
(CMP OR RCP)
NOT-TO-SCALE

DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

DESIGN SIZE	APPROX ARCH DIM. RISE "R"	SPAN "S"	"L"	"G"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
					"W"			
2	21"	15"	2'-0"	1'-2"	4'-3"	7'-2"	10"-1"	13'-0"
3	28"	20"	3'-0"	1'-5"	5'-8"	9'-5"	13'-2"	16'-11"
4	35"	24"	4'-0"	1'-8"	6'-11"	11'-6"	16'-1"	20'-8"
5	42"	29"	5'-0"	1'-11"	8'-4"	13'-9"	19'-2"	24'-7"
6	49"	33"	6'-0"	2'-2"	9'-7"	15'-10"	22'-1"	28'-4"
7	57"	38"	7'-0"	2'-5"	11'-1"	18'-3"	25'-5"	32'-7"
8	64"	43"	8'-0"	2'-10"	12'-5"	20'-8"	28'-10"	37'-0"
9	71"	47"	9'-0"	3'-2"	13'-9"	22'-10"	31'-11"	41'-0"

BASED ON 2-2/3" X 1/2" CORRUGATION
"G" IS MEASURED BETWEEN THE OTHER SURFACES OF THE PIPES.

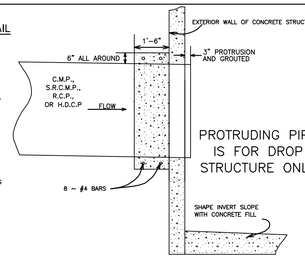
NOTES:

1. CONCRETE SHALL BE CLASS "A" 3000 PSI
2. ALL METAL PIPES (CIRCULAR AND/OR ARCH) SHALL HAVE 5/8" X 6" GALVANIZED BOLTS WITH 2 HEX NUTS AT 24" CENTERS TO ANCHOR THE PIPE TO THE CONCRETE. THIS WILL BE SUBSIDIARY TO THE RIPRAP HEADWALL.
3. FOR CONCRETE ARCH PIPES THE CMP ARCH PIPE CULVERT DIMENSIONS WILL HAVE TO BE ADJUSTED FOR THE PIPE WALL THICKNESS.
4. FOR PIPES LARGER THAN SHOWN, USE THE CLEAR DISTANCE BETWEEN PIPES SHOWN IN TXDOT ITEMS 460 AND/OR 464.
5. IF THE SIDES OF THE HEADWALL IS ADJACENT TO A RIPRAP SLOPE AND IF THE TOP OF THE HEADWALL IS ADJACENT TO THE ROADWAY FOUNDATION OR RIPRAP SLOPE. THE SIDE AND TOP TOE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.

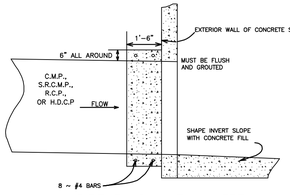
RH-15 HEADWALL

CONCRETE COLLAR DETAIL
(NOT TO SCALE)

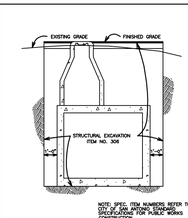
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM. A-15. THE DEFORMATION SHALL CONFORM TO ASTM. A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (3,000 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).



PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY

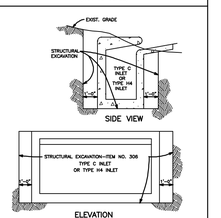


PIPE FLUSH WITH INVERT

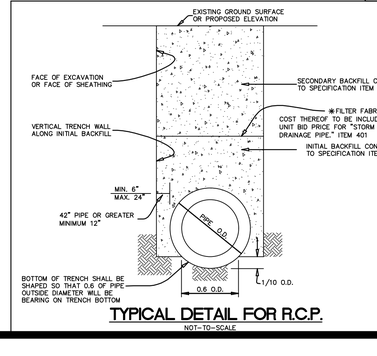


NOTE: SPEC. ITEM NUMBERS REFER TO CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

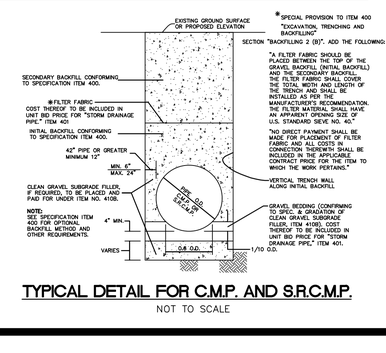
STRUCTURAL EXCAVATION AT JUNCTION BOXES
(NOT TO SCALE)



STRUCTURAL EXCAVATION AT DRAINAGE INLETS
(NOT TO SCALE)



TYPICAL DETAIL FOR R.C.P.
NOT-TO-SCALE



TYPICAL DETAIL FOR C.M.P. AND S.R.C.M.P.
NOT TO SCALE

* SPECIAL PROVISION TO ITEM 400 "EXCAVATION, TRENCHING AND BACKFILLING"

SECTION "BACKFILLING 2 (B)". ADD THE FOLLOWING:

"A FILTER FABRIC SHOULD BE PLACED BETWEEN THE TOP OF THE GRAVEL BACKFILL (INITIAL BACKFILL) AND THE SECONDARY BACKFILL. THE FILTER FABRIC SHALL COVER THE ENTIRE WIDTH AND LENGTH OF THE TRENCH AND SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATION. THE FILTER MATERIAL SHALL HAVE AN APPARENT OPENING SIZE OF U.S. STANDARD SIEVE NO. 40."

"NO DIRECT PAYMENT SHALL BE MADE FOR PLACEMENT OF FILTER FABRIC AND ALL COSTS IN CONNECTION THEREWITH SHALL BE INCLUDED IN THE APPLICABLE CONTRACT PRICE FOR THE ITEM TO WHICH THE WORK PERTAINS."

JANUARY 2006

STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEVELOPMENT SERVICES

CONCRETE COLLAR DETAIL

DRAWN BY: ANDREW WINTER, P.E.	DATE	REVISIONS	SCALE: SEE ABOVE
CHECKED BY: SAM BENT, P.E.			DATE: 29 JANUARY 2006
			SHEET: 2 OF 2

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Date: Feb 29, 2024, 8:33am User ID: saepulveda
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NO.	REVISION	DATE

2/29/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

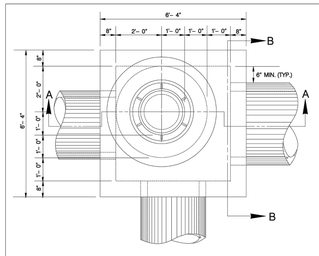
PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

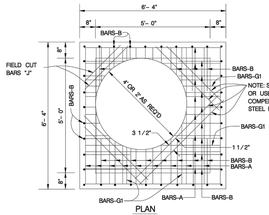
BEXAR COUNTY, TEXAS

DRAINAGE DETAILS
(SHEET 2 OF 3)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE FEBRUARY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C1.20

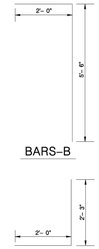


PLAN



PLAN

OF JUNCTION BOX TOP SLAB SHOWING STEEL



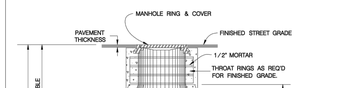
SCHEDULE FOR REINFORCING STEEL

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	18	4	9" O.C.	6'- 1"	73
	B	36	5	8" O.C.	7'- 6"	282
	C	36	5	8" O.C.	4'- 3"	160
STRAIGHT	D	18	4	9" O.C.	6'- 1"	73
STRAIGHT	E	20	3	12" O.C.	4'- 11"	37
STRAIGHT	G	20	4	12" O.C.	6'- 1"	81
STRAIGHT	G_1	8	4	AS SHOWN	6'- 1"	33
STRAIGHT	H	24	3	12" O.C.	5'- 5"	49
STRAIGHT	J	8	6	3 1/2" O.C.	4'- 11"	59
					TOTAL	847 lbs.

CLASS "A" CONCRETE – 5.03 CU. YDS.
(DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

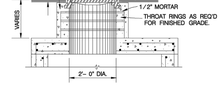
★ NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN – ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQD.

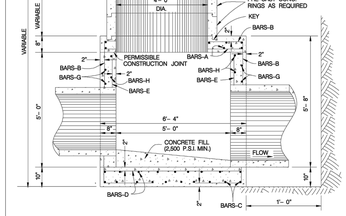
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE ASTM A-15. THE DEFORMATION SHALL CONFORM TO ASTM A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (2,500 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).
8. PAYMENT FOR ALL EXCAVATION, BACKFILLING, CONCRETE, REINFORCING STEEL, VERTICAL STACK, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 – "STORM SEWER JUNCTION BOXES AND INLETS".



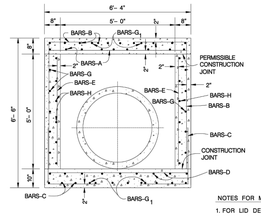
VARIATION OF VERTICAL STACK

VERTICAL STACK DESIGN SHALL BE GOVERNED BY THE DEPTH OF THE TOP OF THE JUNCTION BOX BELOW THE FINISHED STREET GRADE.

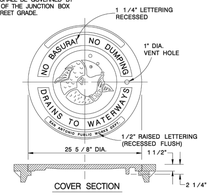




SECTION A–A



SECTION B–B



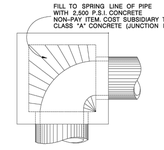
COVER SECTION

MANHOLE LID & RING DETAIL

SCALE: 1 : 16

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.



CURVED DEFLECTOR DETAIL

JANUARY 2005

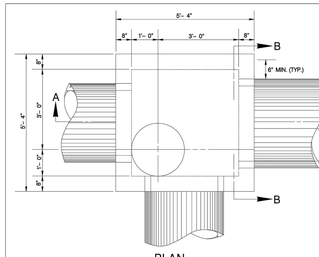
CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

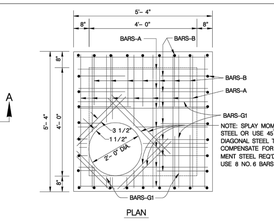
5'x5'x5' JUNCTION BOX STANDARDS

% SUBMITTAL PROJECT NO.: DATE:

DRAWN BY: DSGN BY: CHKD BY: SHEET NO.: OF

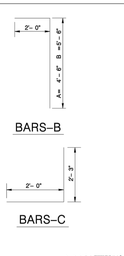


PLAN



PLAN

JUNCTION BOX TOP SLAB SHOWING STEEL



SCHEDULE FOR REINFORCING STEEL

A = 4'X 4'X 4' J.B. NO. 1 & 4

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	16	4	9" O.C.	5'- 1"	54
	B	32	5	8" O.C.	6'- 10"	228
	C	32	5	8" O.C.	4'- 3"	142
STRAIGHT	D	16	4	9" O.C.	5'- 1"	54
STRAIGHT	E	16	3	12" O.C.	3'-11"	24
STRAIGHT	G	16	4	12" O.C.	5'-1"	54
STRAIGHT	G_1	8	4	AS SHOWN	5'-1"	27
STRAIGHT	H	20	3	12" O.C.	4'-5"	33
STRAIGHT	J	8	6	3 1/2"	2'- 10"	34
					TOTAL	650 LBS.

CLASS "A" CONCRETE– 3.43 CU. YDS.
(DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

★ NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN – ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQD.

1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3 /4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM. A-15. THE DEFORMATION SHALL CONFORM TO ASTM. A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
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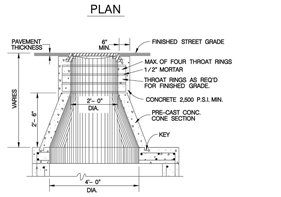

VARIATION OF VERTICAL STACK

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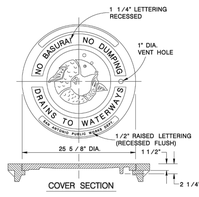


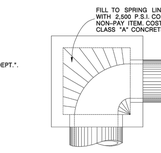
COVER SECTION

MANHOLE LID & RING DETAIL

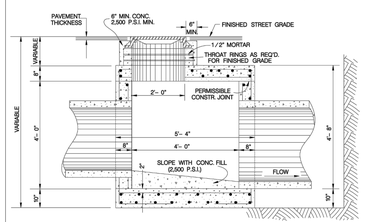
SCALE: 1 : 16

NOTES FOR MANHOLE LID AND RING

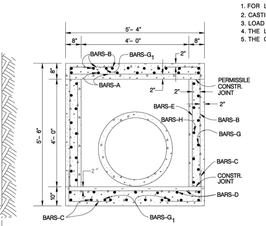
1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.



CURVED DEFLECTOR DETAIL



SECTION A–A



SECTION B–B

JANUARY 2005

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

4'x4'x4' JUNCTION BOX STANDARDS

% SUBMITTAL PROJECT NO.: DATE:

DRAWN BY: DSGN BY: CHKD BY: SHEET NO.: OF

NO.	REVISION	DATE

2/29/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

DRAINAGE DETAILS
(SHEET 3 OF 3)

PLAT NO. 22-11800769

JOB NO. 12093-11

DATE FEBRUARY 2024

DESIGNER SS

CHECKED BAC DRAWN GK

SHEET C1.30

Date: Feb 29, 2024, 8:36am User ID: ssepulveda
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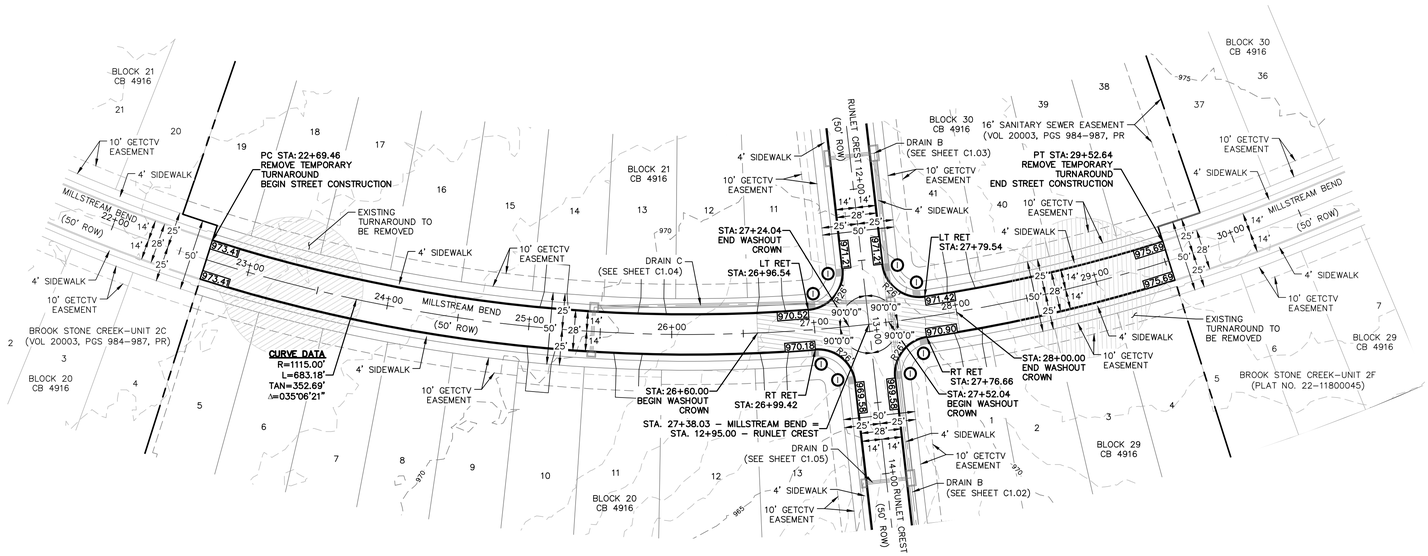
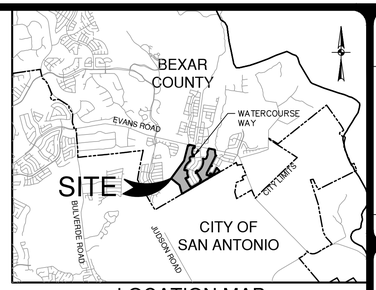




LOCATION MAP
NOT-TO-SCALE

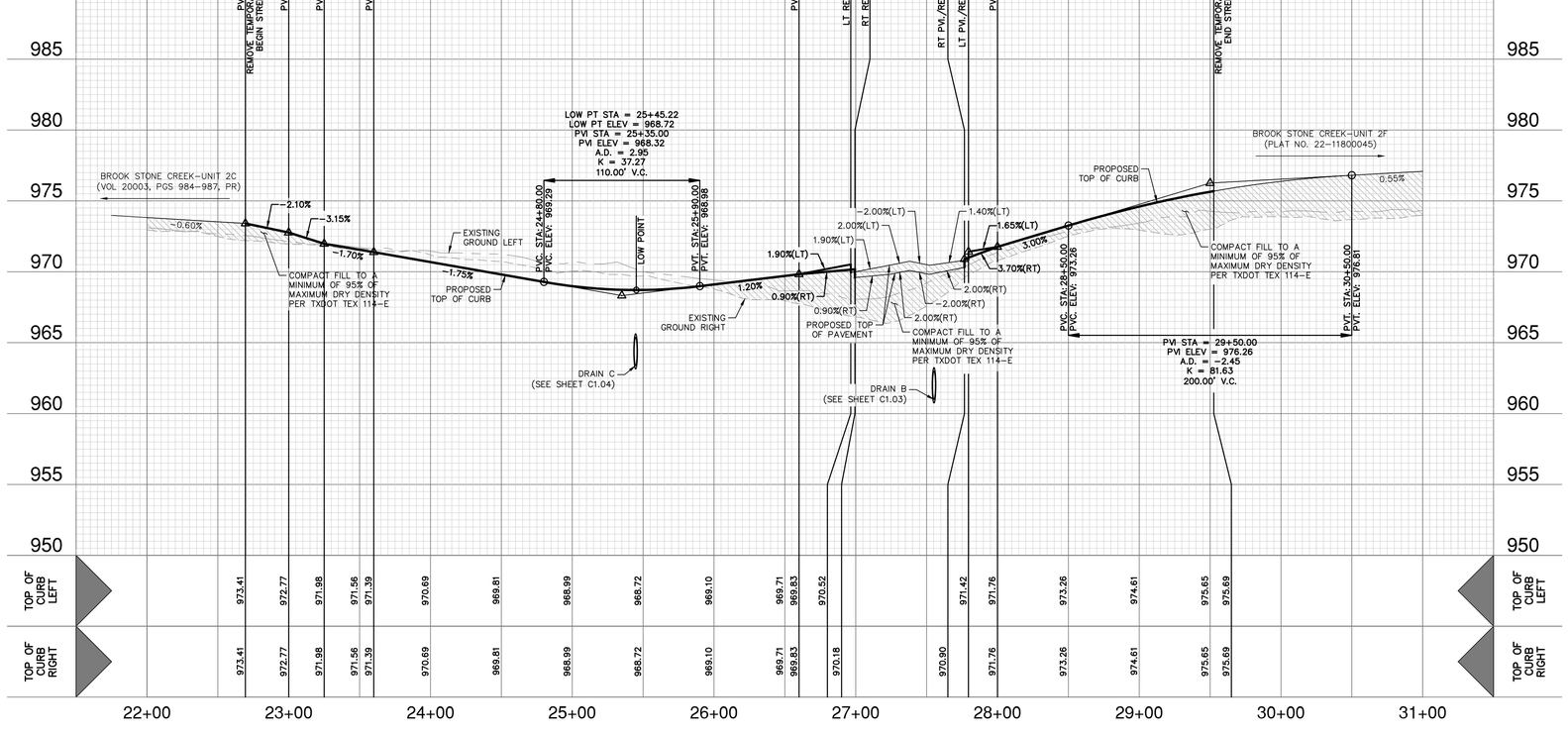
SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

MILLSTREAM BEND
STA. 22+69.46 TO 29+52.64

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



STREET NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE–IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3–FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35–506 (Q)(6).
7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	ADDED DEMOLITION NOTE	08/29/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

MILLSTREAM BEND
PLAN AND PROFILE (STA. 22+69.46 TO 29+52.64)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.00

Date: Aug 28, 2024, 4:23pm User ID: sespulveda
File: P:\120\93\11\Design\Civil\ST-MILLSTREAM BEND-1209311.dwg
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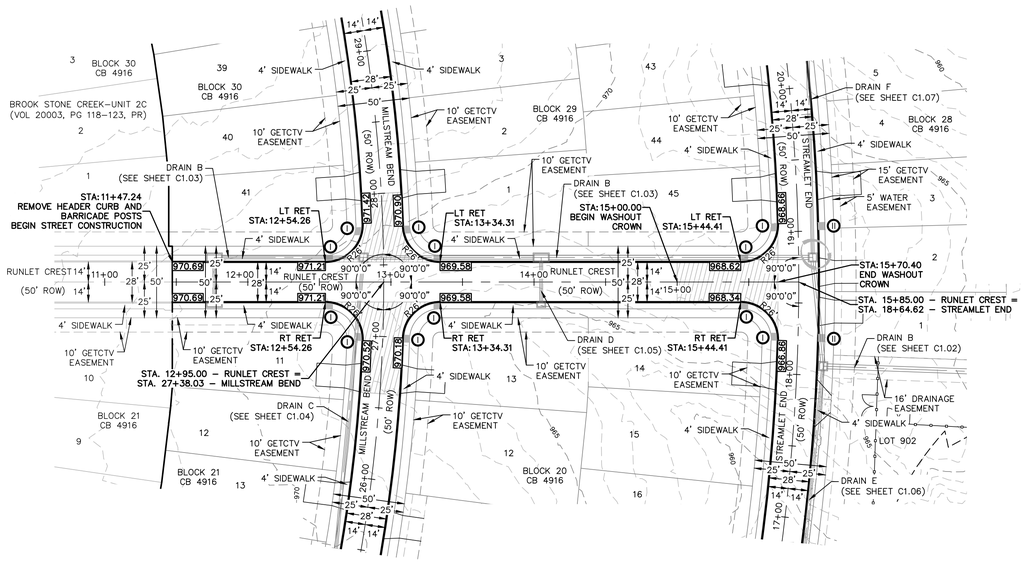
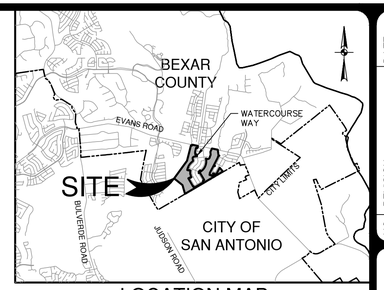




LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

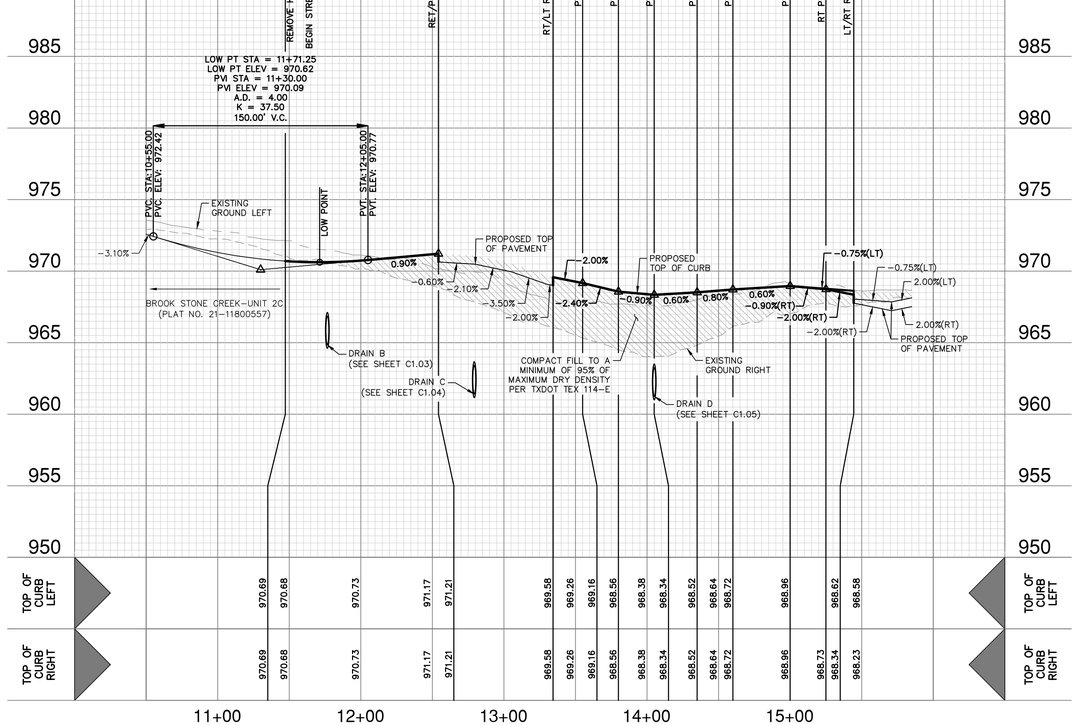
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

RUNLET CREST
STA. 11+47.24 TO END

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



STREET NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).
7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	MOVED JUNCTION BOX	08/29/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

RUNLET CREST
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.01

Date: Aug 28, 2024, 4:35pm User ID: sespulveda
File: P:\12093\11\Design\Civil\ST-RUNLET CREST-120931l.dwg
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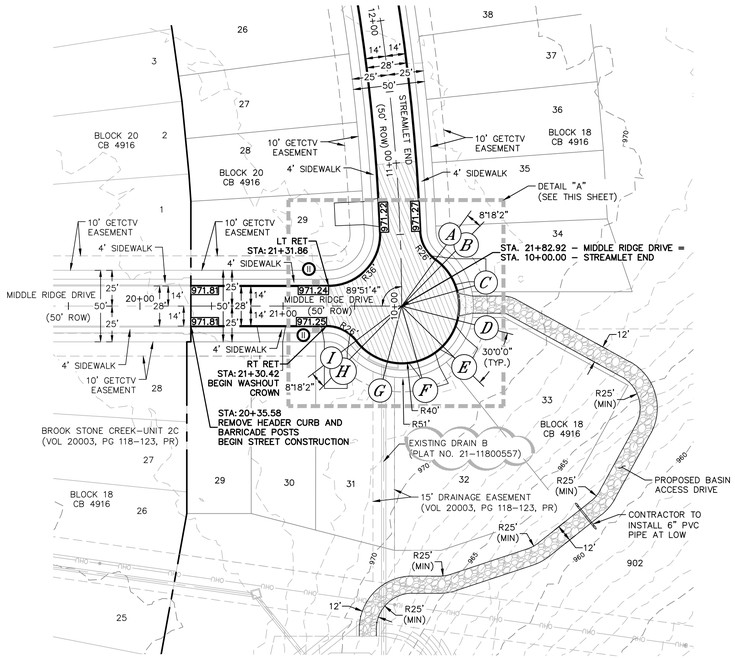
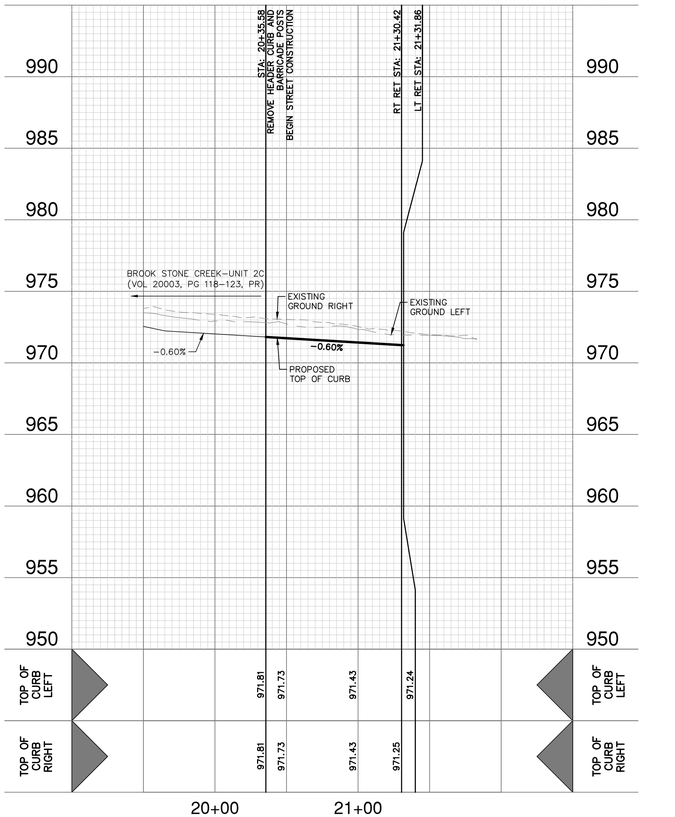
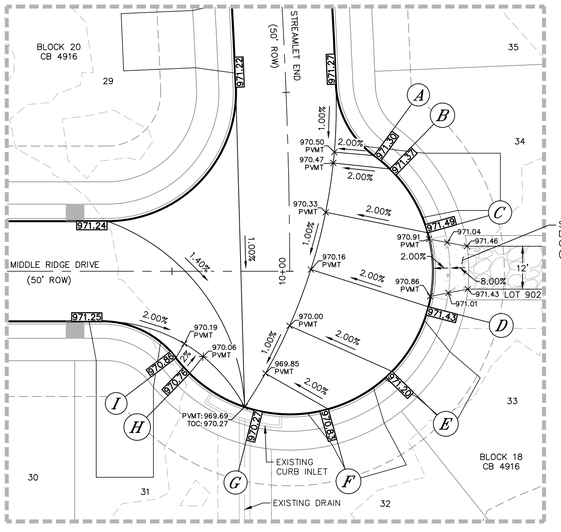


MIDDLE RIDGE DRIVE STA. 20+35.58 TO END

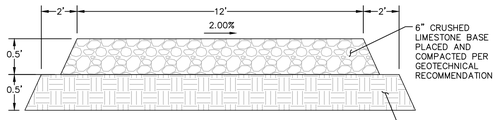
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'





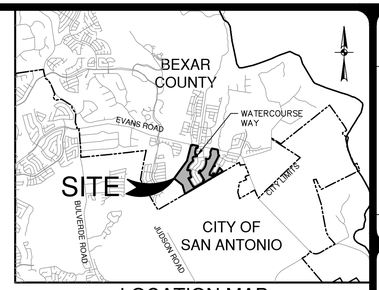
DETAIL "A"

SCALE: 1" = 20'



CRUSHED LIMESTONE ACCESS ROAD SECTION

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

STREET NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
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7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REMSION	DATE
1.	REVISED LABELS	08/29/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

MIDDLE RIDGE DRIVE
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.02

Date: Aug 28, 2024, 10:00am User ID: arodriguez
File: P:\120\93\11\Design\Civil\ST-MIDDLE RIDGE DRIVE-120931.dwg

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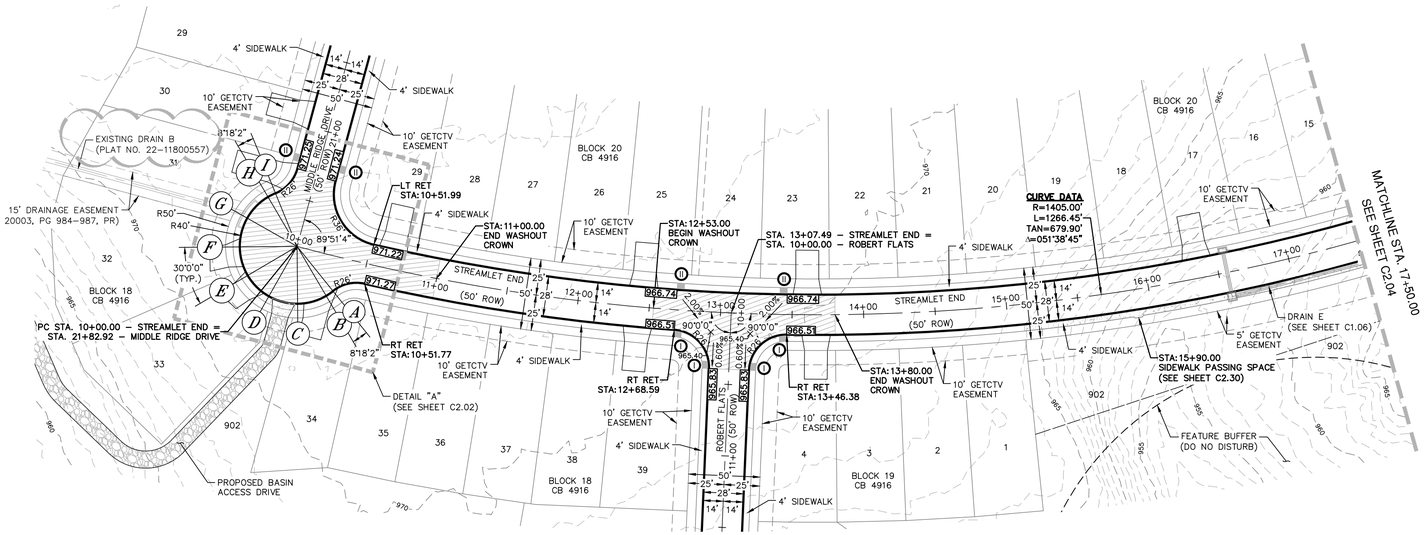
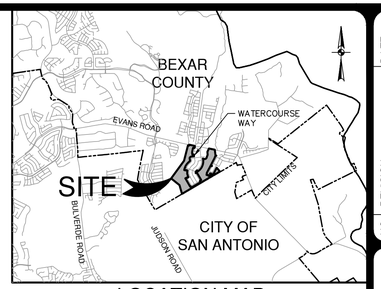




LOCATION MAP
NOT-TO-SCALE

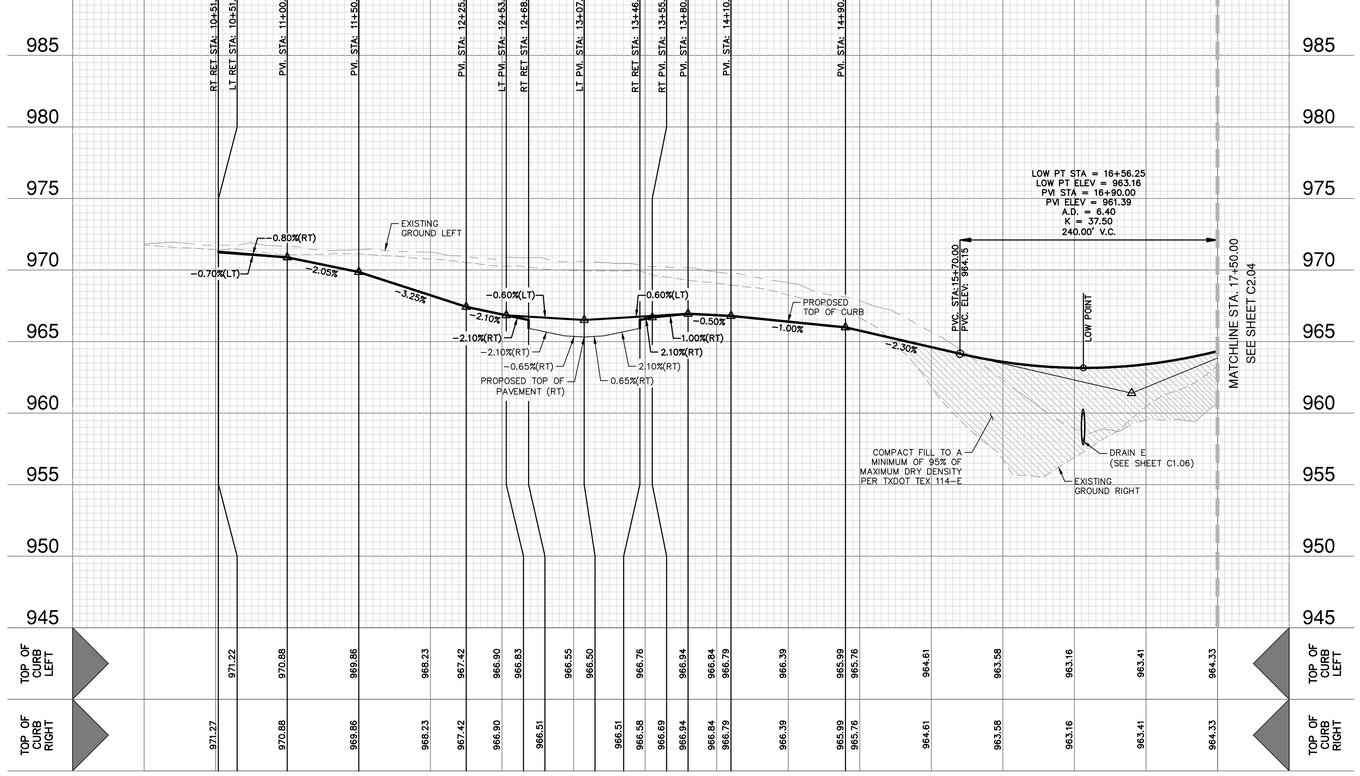
SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

STREAMLET END
STA. 10+00.00 TO 17+50.00

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



STREET NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
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7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED LABELS	08/29/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

STREAMLET END
PLAN AND PROFILE (STA. 10+00.00 TO 17+50.00)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.03

Date: Aug 28, 2024, 9:48am User ID: arodriguez
File: P:\120\093\11\Design\Civil\ST-STREAMLET END-12093I1.dwg
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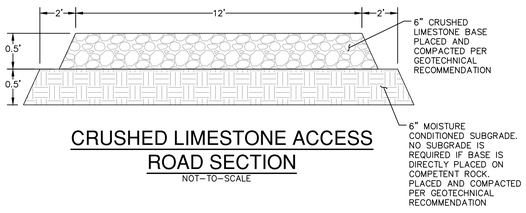
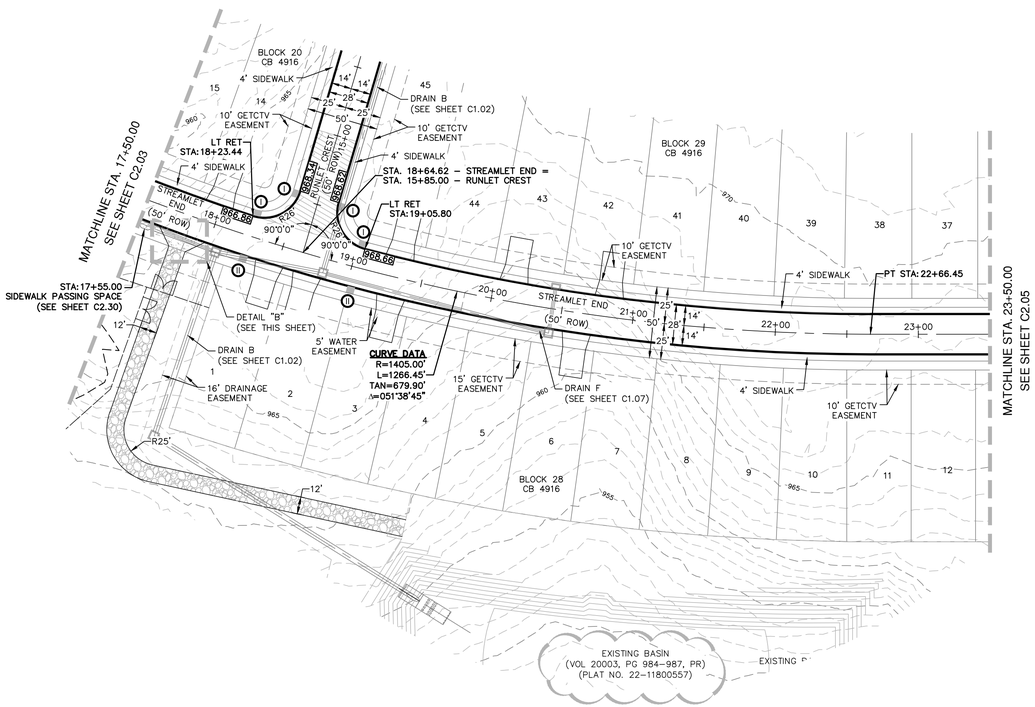


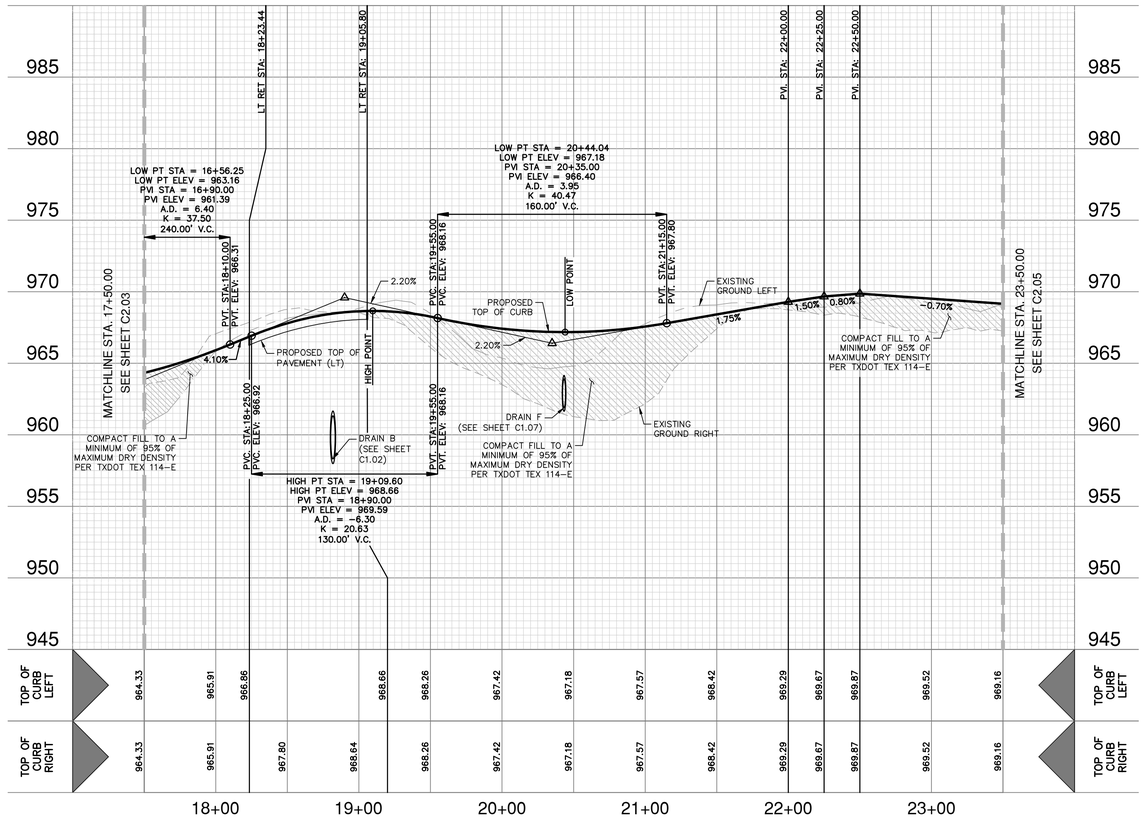
CRUSHED LIMESTONE ACCESS ROAD SECTION

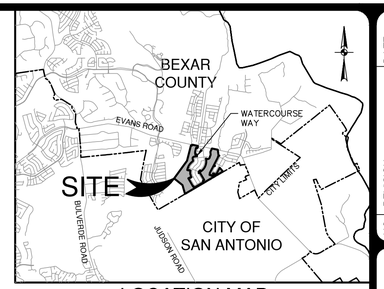
NOT-TO-SCALE



STREAMLET END
STA. 17+50.00 TO 23+50.00

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





LOCATION MAP

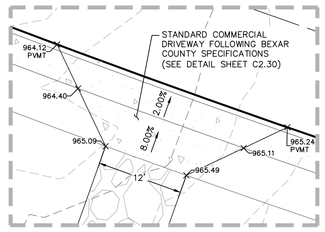
NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	



DETAIL "B"

SCALE: 1" = 10'

STREET NOTES:

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7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED LABELS	08/29/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

STREAMLET END
PLAN AND PROFILE (STA. 17+50.00 TO 23+50.00)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.04

Date: Aug 28, 2024, 9:40am User ID: arodriguez
File: P:\120\93\11\Design\Civil\ST-STREAMLET END-1209311.dwg
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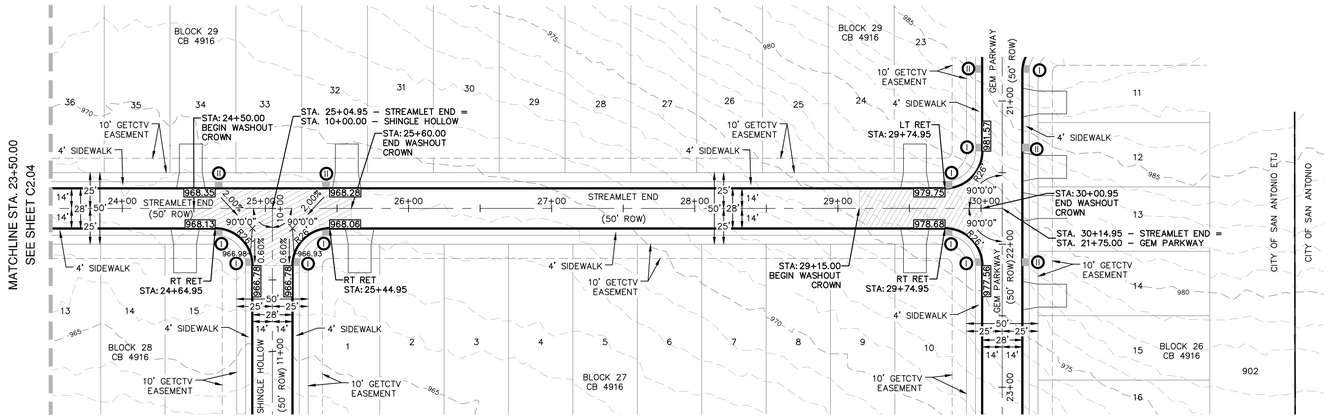

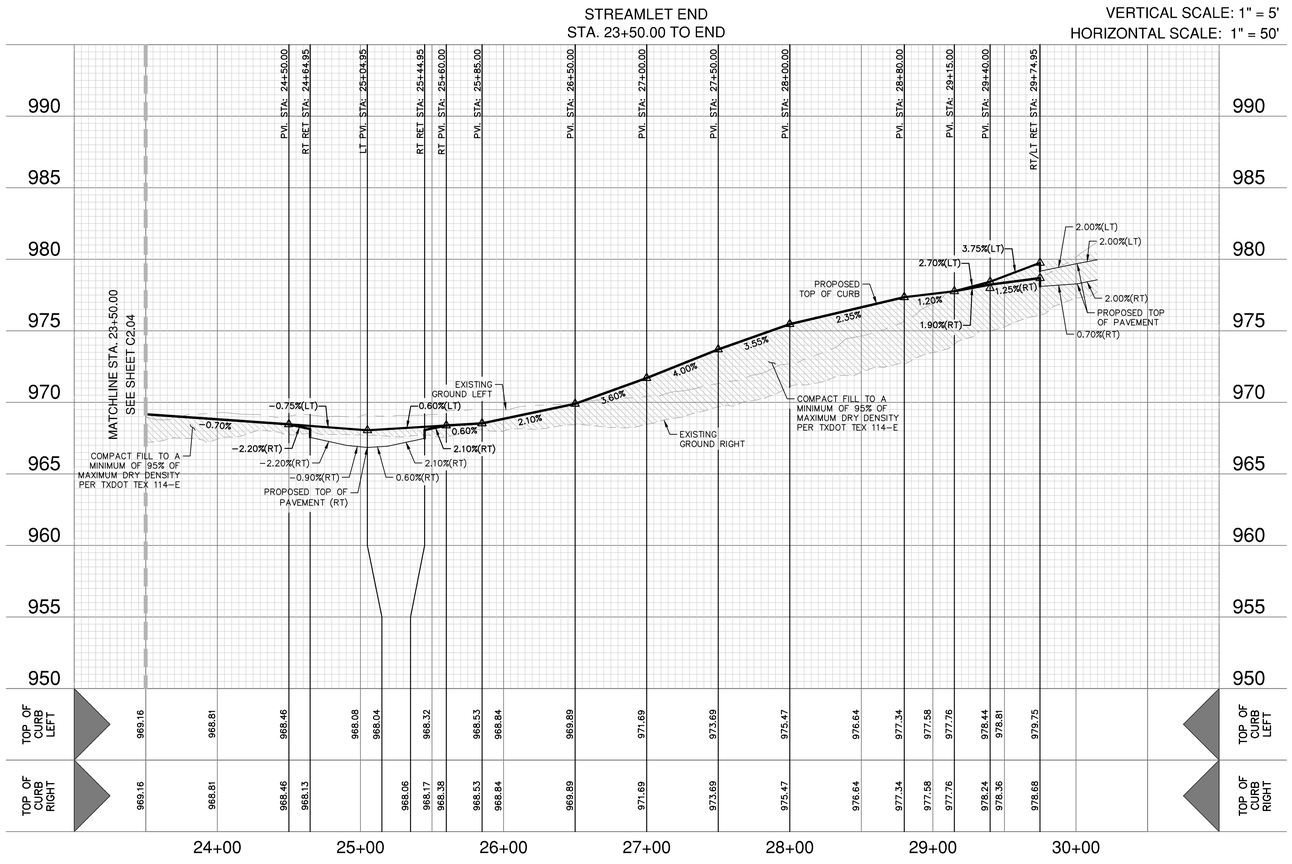

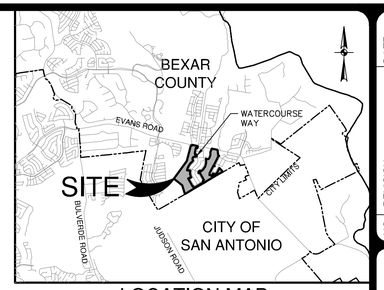

LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

STREET NOTES:

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NO.	REVISION	DATE

3/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

STREAMLET END
PLAN AND PROFILE (STA. 23+50.00 TO END)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MARCH 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.05

Date: Mar 06, 2024, 2:08pm User ID: ssepulveda
File: P:\120\93\11\Design\Civil\ST-STREAMLET END-12093111.dwg
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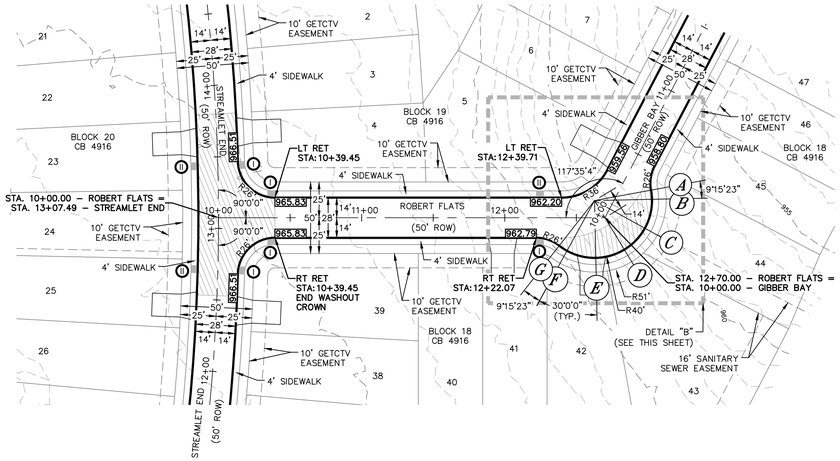
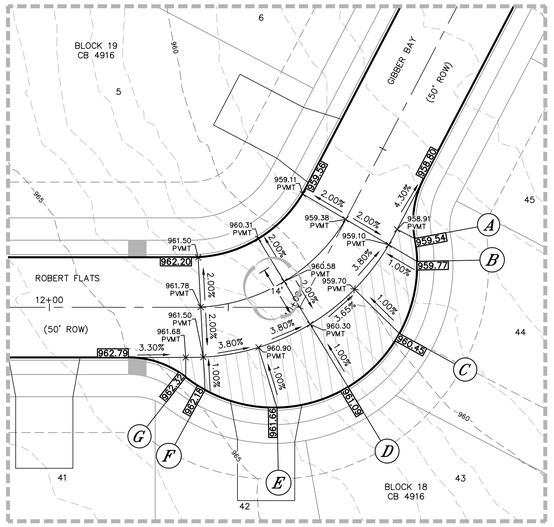
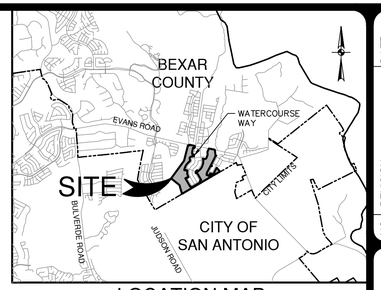




DETAIL "B"

SCALE: 1" = 20'



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

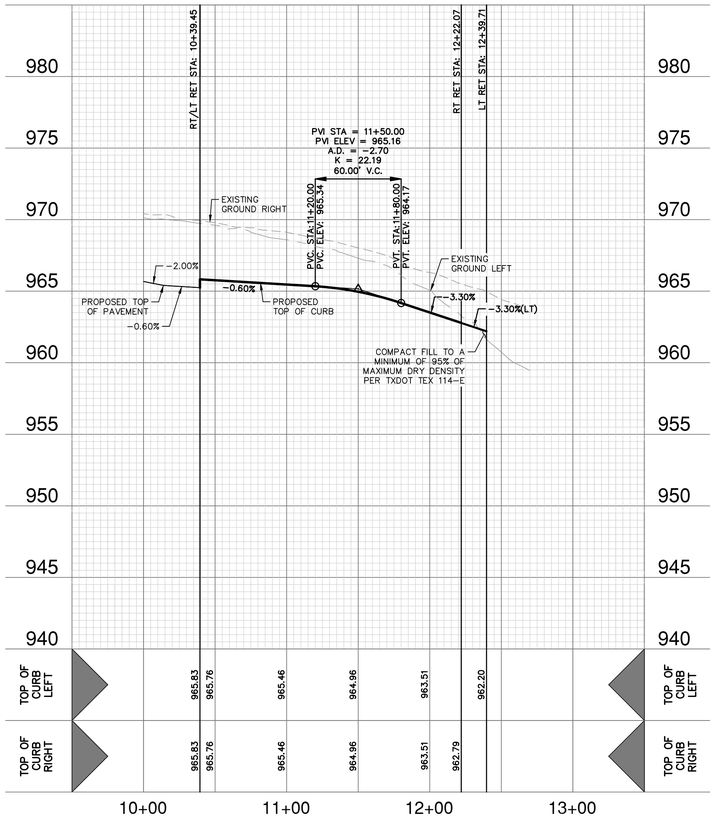
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓓ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

ROBERT FLATS
STA. 10+00.00 TO END

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



STREET NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE–IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3–FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35–506 (Q)(6).
7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED LABELS	08/29/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

ROBERT FLATS
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.06

Date: Aug 28, 2024, 9:35am User ID: arodriguez
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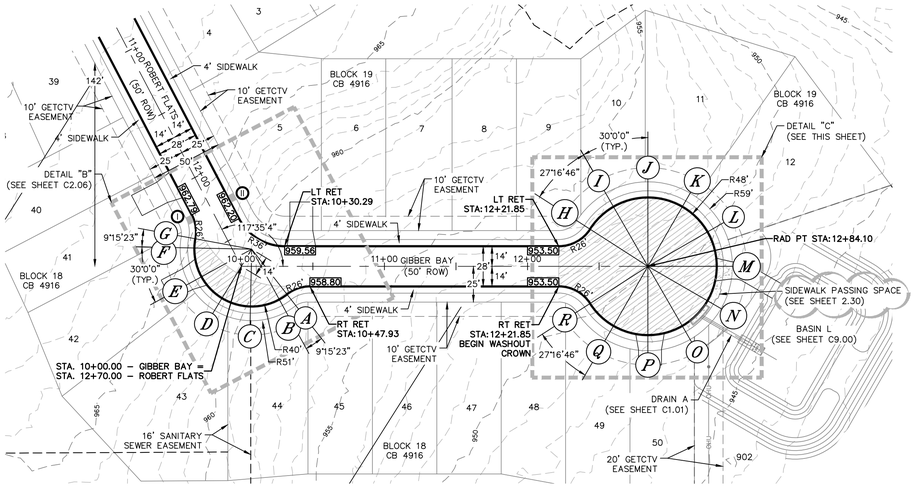
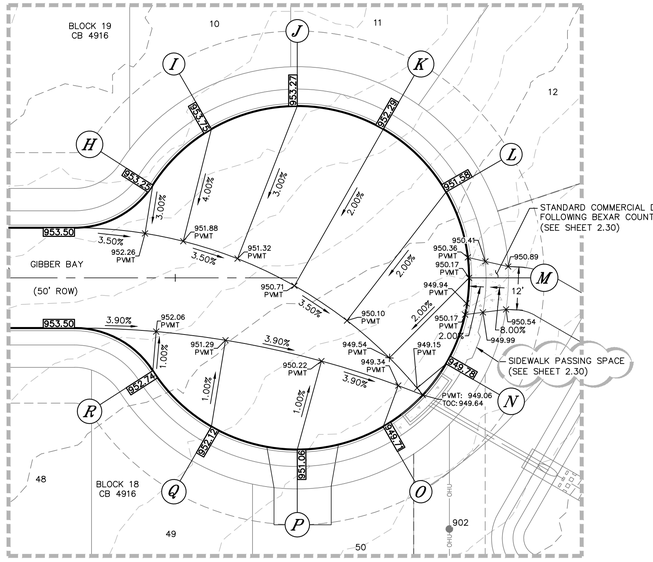
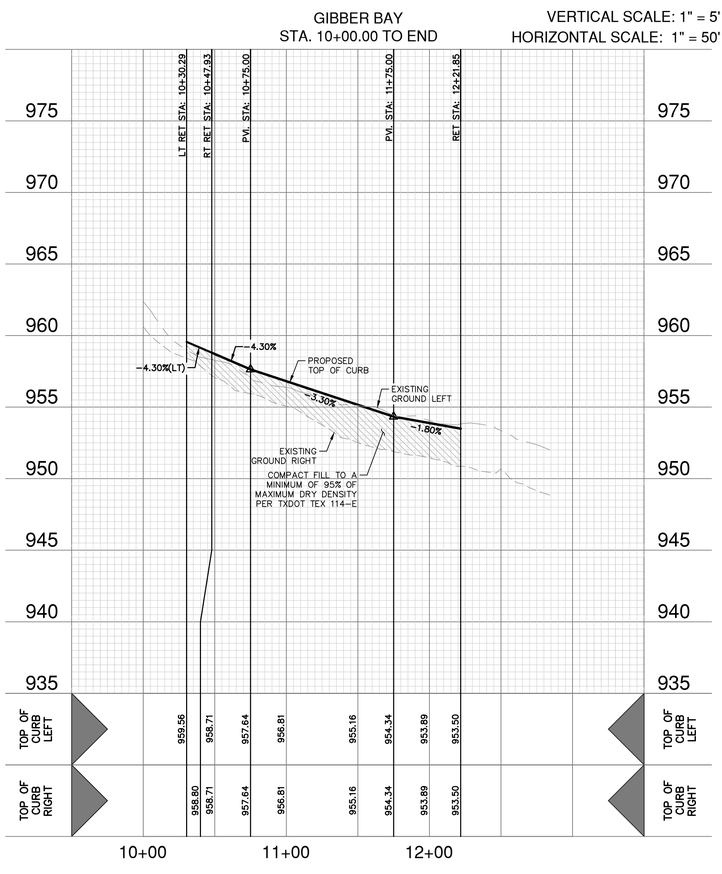
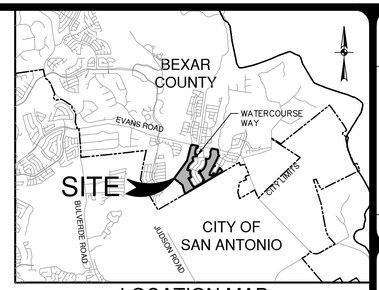


DETAIL "C"

SCALE: 1" = 20'







LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

STREET NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
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7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	ADDED SIDEWALK PASSING SPACE	08/29/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

GIBBER BAY
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.07

Date: Aug 28, 2024, 2:25pm User ID: asepulveda
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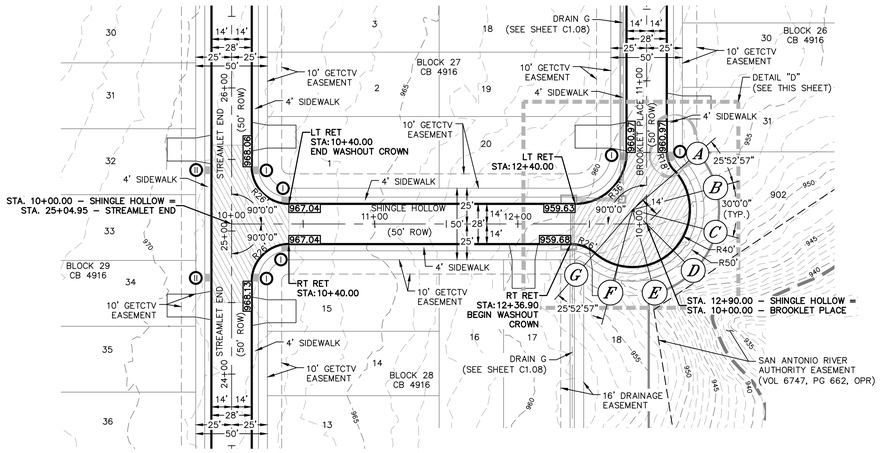
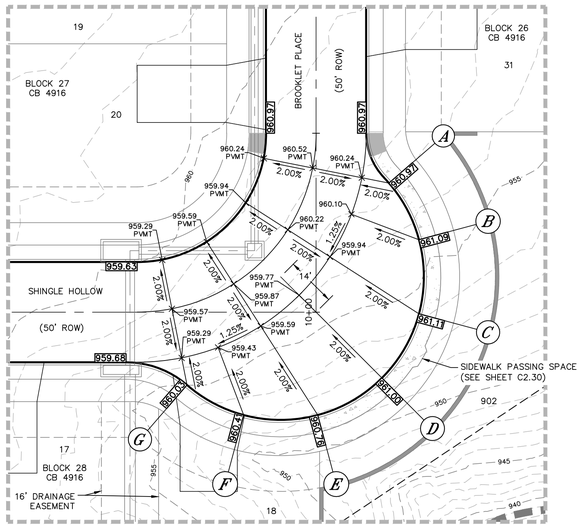
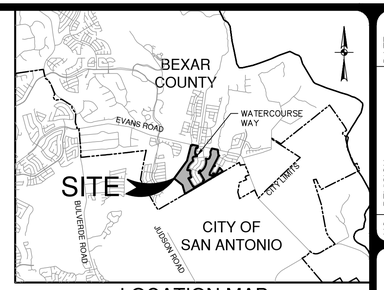




DETAIL "D"

SCALE: 1" = 20'



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

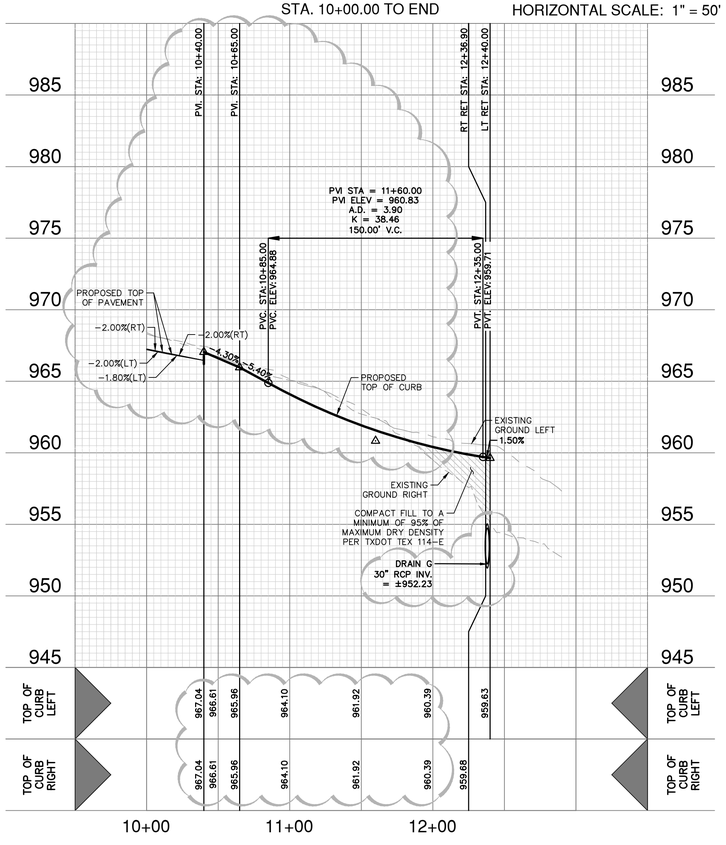
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

SHINGLE HOLLOW
STA. 10+00.00 TO END

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



STREET NOTES:

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7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED PROFILE AND RAMPS	09/25/24

9/5/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL
ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SHINGLE HOLLOW
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.08

Date: Sep 05, 2024, 3:31pm User ID: asepulveda
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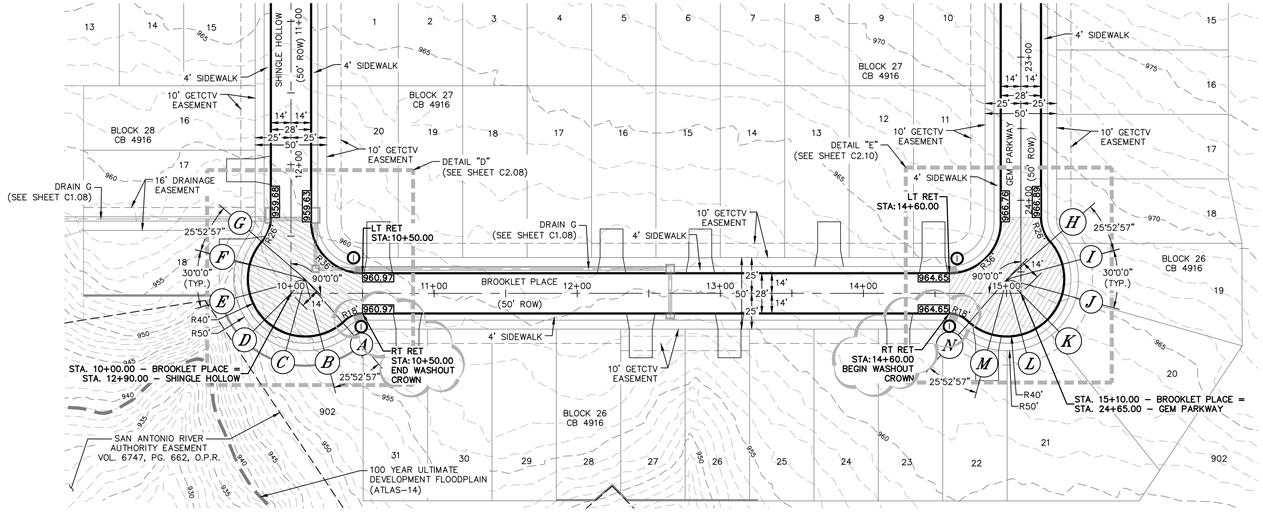

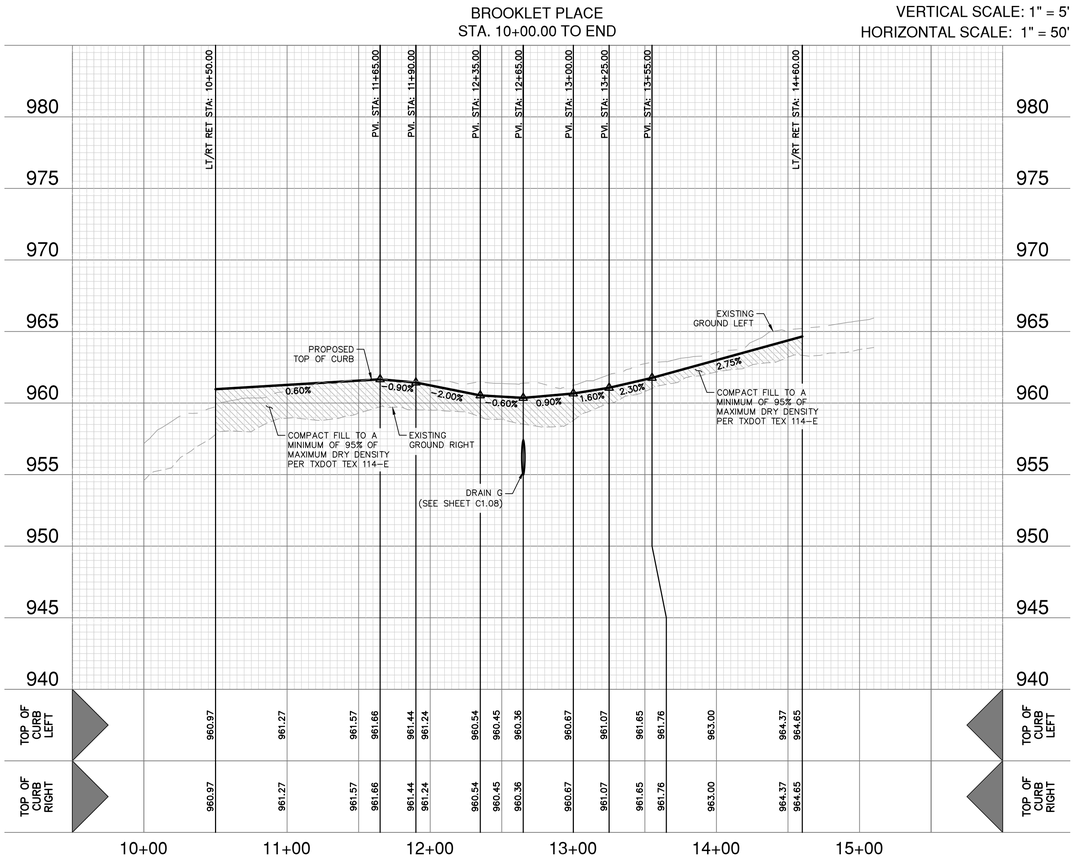

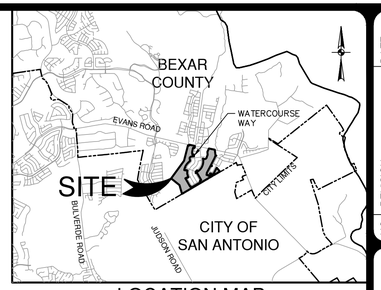

LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

STREET NOTES:

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4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
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7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED CURB RADII	09/25/24

9/5/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

BROOKLET PLACE
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.09

Date: Sep 05, 2024, 3:32pm User ID: asepulveda
File: P:\120\93\11\Design\Civil\ST-BROOKLET PLACE-120911.dwg
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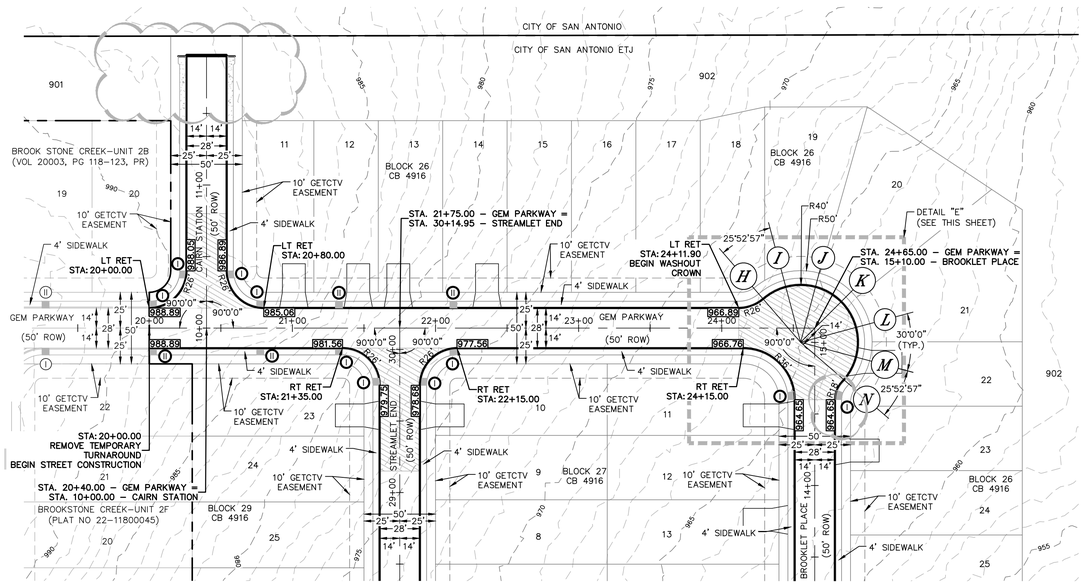
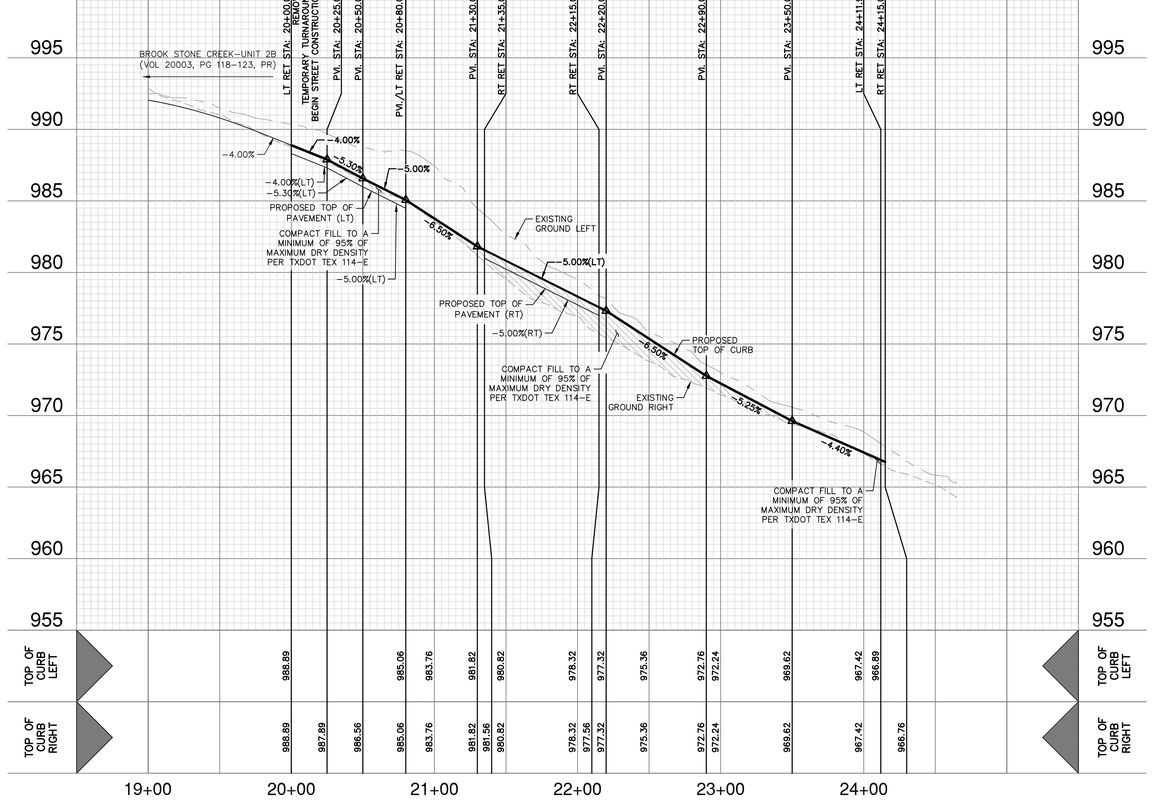
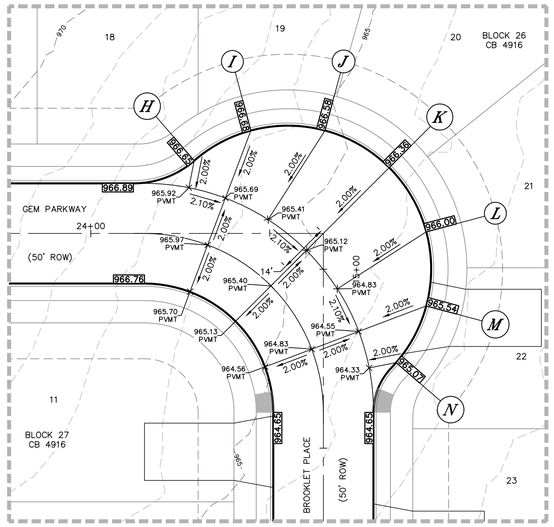


GEM PARKWAY
STA. 20+00.00 TO END

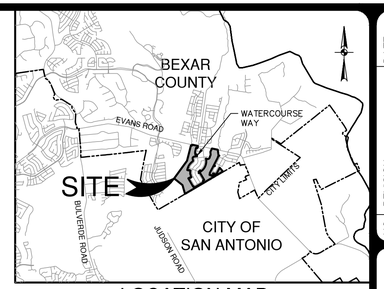
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'





DETAIL "E"

SCALE: 1" = 20'



LOCATION MAP

NOT–TO–SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

STREET NOTES:

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4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35–506 (Q)(6).
7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED CURB RADIUS	08/30/24

9/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

GEM PARKWAY
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093–11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.10

Date: Sep 06, 2024, 8:40am User ID: sepulmedo
File: P:\120\93\11\Design\Civil\ST–GEM PARKWAY–1209311.dwg

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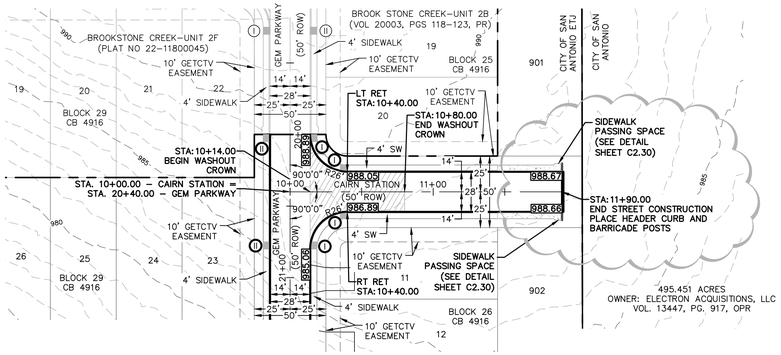

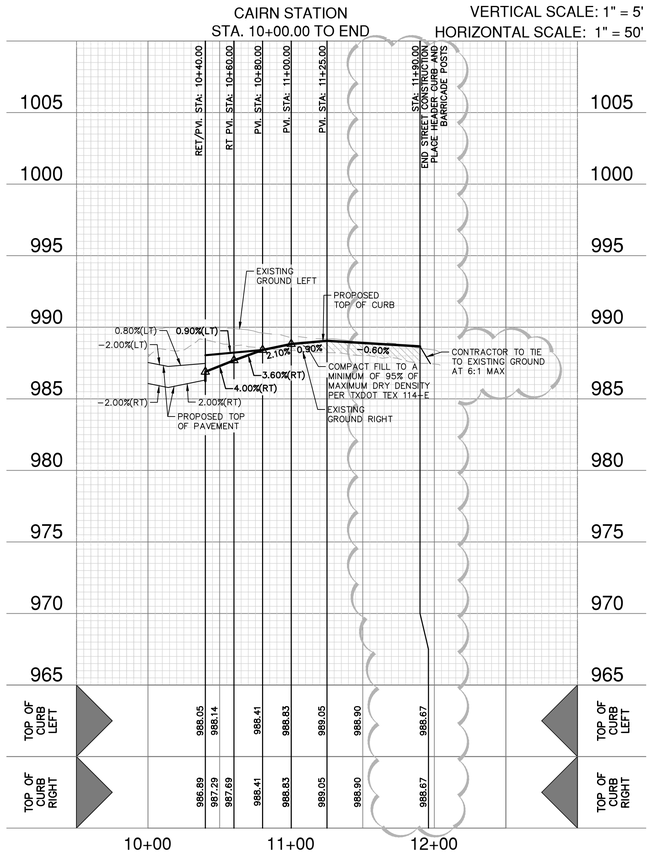

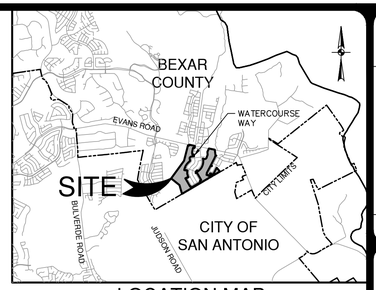

LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	Ⓘ
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

STREET NOTES:

1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
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7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

NO.	REVISION	DATE
1.	REVISED TURNAROUND	08/30/24

9/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

CAIRN STATION
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.11

Date: Sep 06, 2024, 8:42am User ID: asepulveda
File: P:\120\93\11\Design\Civil\ST-CAIRN STATION-1209311.dwg

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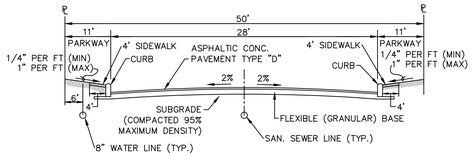
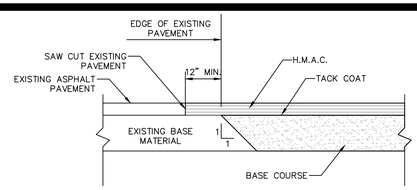


50' (LOCAL TYPE "A") ROW STREET SECTION

NOT-TO-SCALE



ASPHALT/ASPHALT JUNCTURE DETAIL

NOT-TO-SCALE

PAVEMENT SECTION DETAIL					
STREET NAME	STATION	TYPE "D" HMAC	AGGREGATE BASE, in. (TxDOT ITEM 247 TYPE A GRADE 1 OR 2)	STABILIZED SUBGRADE	STRUCTURAL NUMBER
MILLSTREAM BEND	22+69.46 TO 29+52.64	2"	8.50"	*	2.07
RUNLET CREST	11+47.24 TO END	2"	8.50"	*	2.07
MIDDLE RIDGE DRIVE	20+35.58 TO END	2"	8.50"	*	2.07
STREAMLET END	10+00.00 TO END	2"	8.50"	*	2.07
ROBERT FLATS	10+00.00 TO END	2"	8.50"	*	2.07
GIBBER BAY	10+00.00 TO END	2"	8.50"	*	2.07
SHINGLE HOLLOW	10+00.00 TO END	2"	8.50"	*	2.07
BROOKLET PLACE	10+00.00 TO END	2"	8.50"	*	2.07
GEM PARKWAY	20+00.00 TO END	2"	8.50"	*	2.07
CAIRN STATION	10+00.00 TO END	2"	8.50"	*	2.07

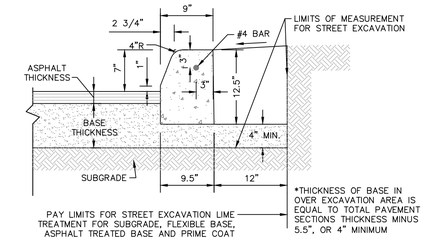
*BASED ON THE THICKNESS OF THE CLAYS ENCOUNTERED IN THE BORINGS, WE ANTICIPATE THE FINAL PAVEMENT SUBGRADE PLASTICITY INDEX TO BE LESS THAN 20. SUBGRADE TREATMENT/ STABILIZATION IS NOT NEEDED IF THE PLASTICITY INDEX VALUES ARE LESS THAN OR EQUAL TO 20.

GENERAL NOTES:

1. CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT NO. S191560-P PREPARED BY InTEC, L.P. DATED FEBRUARY 28, 2020.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER TO VERIFY THE SUB GRADE CONDITION PRIOR TO PLACING ANY BASE MATERIAL. GEOTECHNICAL ENGINEER SHALL DETERMINE THE SUB GRADE CONDITION AND IF LIME STABILIZATION IS REQUIRED.
3. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE.
4. THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TXDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
5. THE MOISTURE CONTENT OF THE FILL SHOULD BE MAINTAINED WITHIN THE RANGE OF OPTIMUM WATER CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED.
6. IN THE EVENT THAT THE CLAY FILL USED IS DIFFERENT THAN THE EXISTING SUBGRADE, THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT COULD BE INVALIDATED AND THE DESIGN ENGINEER MUST BE CONSULTED TO DETERMINE IF ADDITIONAL CBR TESTING AND THICKER PAVEMENT SECTIONS ARE REQUIRED.
7. WHERE PAVEMENT SUBGRADE IS LOCATED WITHIN 2-FEET OF THE EXISTING GROUND SURFACE (STRATUM 1 CLAYS), MOISTURE CONDITIONED SUBGRADE WILL BE REQUIRED. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE TO DETERMINE WHERE THE MOISTURE CONDITIONED SUBGRADE IS NEEDED. REFERENCE GEOTECHNICAL ENGINEERING REPORT FOR MORE INFORMATION.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL MATERIAL TESTING WITH THE PROJECT GEOTECHNICAL ENGINEER. TESTING SHALL BE PAID FOR BY THE OWNER.
9. FILL MATERIAL SHOULD BE NATIVE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 5.0 AND PLASTICITY INDEX VALUES OF 20 OR LESS. ANY STRATUM I CLAYS (ANY CLAYS WITH PLASTICITY INDEX VALUES GREATER THAN 20) SHOULD BE REMOVED PRIOR TO FILL PLACEMENT. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES. CONTRACTOR TO VERIFY EXACT SPECIFICATIONS WITH PROJECT GEOTECHNICAL ENGINEERING REPORT.
10. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN THE BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

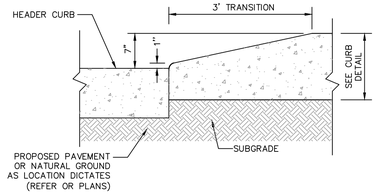
STREET SUBGRADE NOTES:

1. IF THE STREET SUBGRADE PLASTICITY INDEX VALUE IS GREATER THAN 20, SUBGRADE STABILIZATION IS NEEDED AS PER CITY OF SAN ANTONIO REQUIREMENTS.
2. IF THE SUBGRADE PLASTICITY INDEX VALUE IS 20 OR LESS. SUBGRADE STABILIZATION IS NOT NEEDED. THE SUBGRADE SHOULD BE MOISTURE CONDITIONED (COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AT A MINIMUM MOISTURE CONTENT OF OPTIMUM PLUS 2 PERCENT (TEX114E)).
3. THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO STABILIZATION. IF THE SOIL SULFATE CONTENT IS HIGH, AN ALTERNATE PROCEDURE / RECOMMENDATION WILL BE NEEDED.
4. APPROVED FILL MATERIAL SHOULD BE USED TO RAISE THE GRADE. THE FILL SHOULD BE FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 5.0. LIME APPLICATION RATES SHOULD BE RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.
5. THE SUBGRADE SHOULD BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE STABILIZATION.
6. STRATUM I CLAYS SHOULD BE REMOVED TO EXPOSE THE LIMESTONE STRATUM.



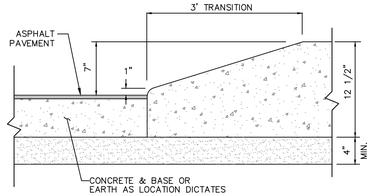
CONCRETE CURB DETAIL

NOT-TO-SCALE



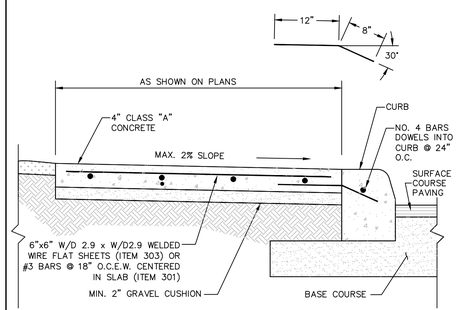
CURB TRANSITION DETAIL (FROM HEADER CURB TO STANDARD CURB)

NOT-TO-SCALE



CURB TRANSITION DETAIL (FROM PAVEMENT TO STANDARD CURB)

NOT-TO-SCALE



SIDEWALK DETAIL

NOT-TO-SCALE

NO.	REVISION	DATE

8/14/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

STREET DETAILS
(SHEET 1 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.20

Date: Aug 14, 2024, 2:00pm User ID: saepulveda
File: P:\120\93\11\Design\Civil\STD11209311.dwg

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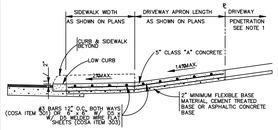
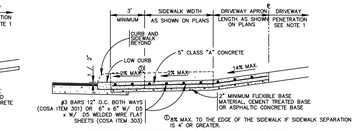


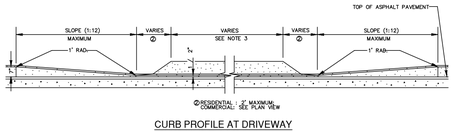
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
COSA ITEM 503.1



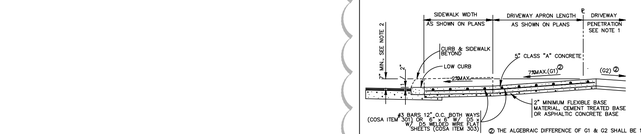
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
COSA ITEM 503.1



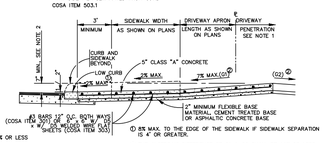
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB



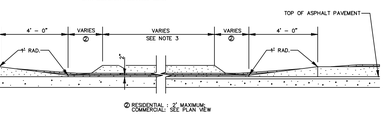
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB
COSA ITEM 503.1



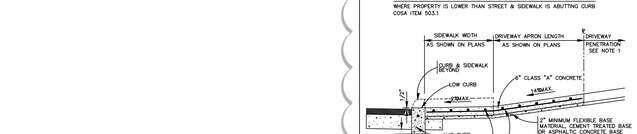
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB
COSA ITEM 503.1



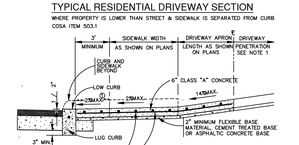
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



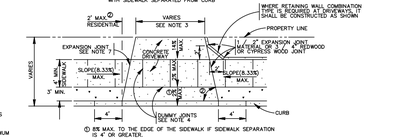
TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
COSA ITEM 503.2



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
COSA ITEM 503.2



TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB

TYPICAL DRIVEWAY PLAN VIEW

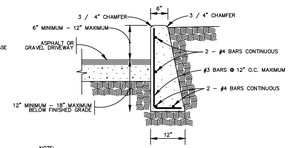
WITH SIDEWALK SEPARATED FROM CURB

CONCRETE DRIVEWAY NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
   A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2.
   B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER COSA ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
   C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE
2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE COUNTY ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MAXIMUM
RESIDENTIAL (UP TO 2 CAR GARAGE)	20'
RESIDENTIAL (MORE THAN 2 CAR GARAGE)	28'
COMMERCIAL	40'
INDUSTRIAL	40'

4. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
5. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3 /8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
6. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
7. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



NOTE:
1. COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF COSA ITEM 307.1.
2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE DRIVEWAYS.

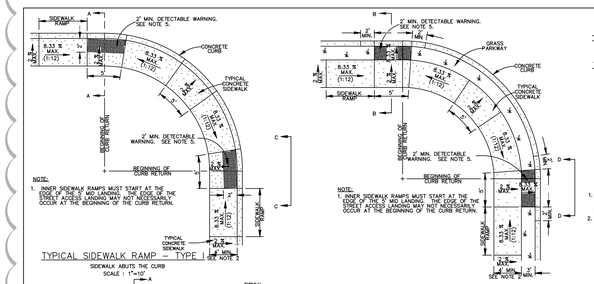
DRIVEWAY - CONCRETE RETAINING WALL

ON COMPACTED SUBGRADE
COSA ITEM 307.1

BEXAR COUNTY

CONCRETE DRIVEWAY STANDARDS

DATE: FEBRUARY 2024



TYPICAL SIDEWALK RAMP – TYPE I

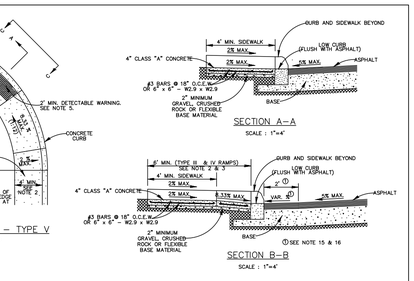
SIDEWALK ABUTS THE CURB
SCALE : 1"=10'

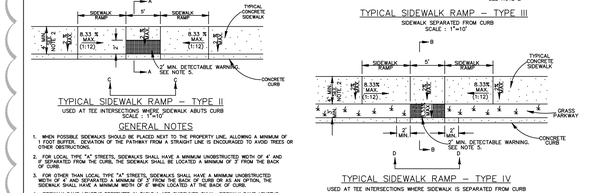
TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB
SCALE : 1"=10'

TYPICAL SIDEWALK RAMP – TYPE V

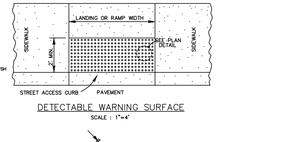
SIDEWALK ABUTS CURB
SCALE : 1"=10'

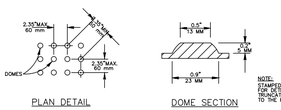




GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND BE SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 5' AND SEPARATED A MINIMUM OF 2' FROM THE BACK OF CURB OR AT THE OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE SUGGESTED ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB-RAMPS OR LANDINGS ABUTTING THE GROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES WIDE, EXTENDING THE FULL WIDTH OF THE RAMP OR LANDING, LOCATED AT THE BACK OF CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23 MM), A HEIGHT OF NOMINAL 0.2 INCHES (5 MM), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE RAMPS CONFORMING TO TXDOT STANDARD PED-15, PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "500 – CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER" AND / OR "502 – CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" – W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK GRADE THAT EXCEEDS 5% OR ANY RAMP THAT HAS A RISE GREATER THAN 6" OR HAS A RUN GREATER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2% LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 3.0% (-8.67%+11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5.0%.
16. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 5 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE





NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED FOR DETECTABLE WARNING ON WHEELCHAIR RAMPS. CONTRACTOR MUST SUBMIT TRUNCATED DOME INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

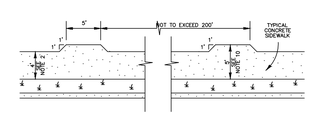
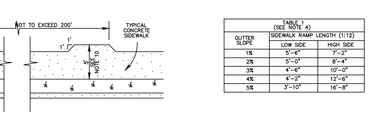


TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-3"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"



MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

PROJECT NO.: DATE:
DESIGN BY: CHKD BY: R.S. HOSSEINI, P.E. SHEET NO.: OF

NO.	REMSON	DATE
1.	REVISED DETAILS	08/30/24

8/30/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

STREET DETAILS
(SHEET 2 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C2.30

Date: Aug 30, 2024, 4:14pm User ID: saepulveda
File: P:\120\93\11\Design\Civil\STD11209311.dwg

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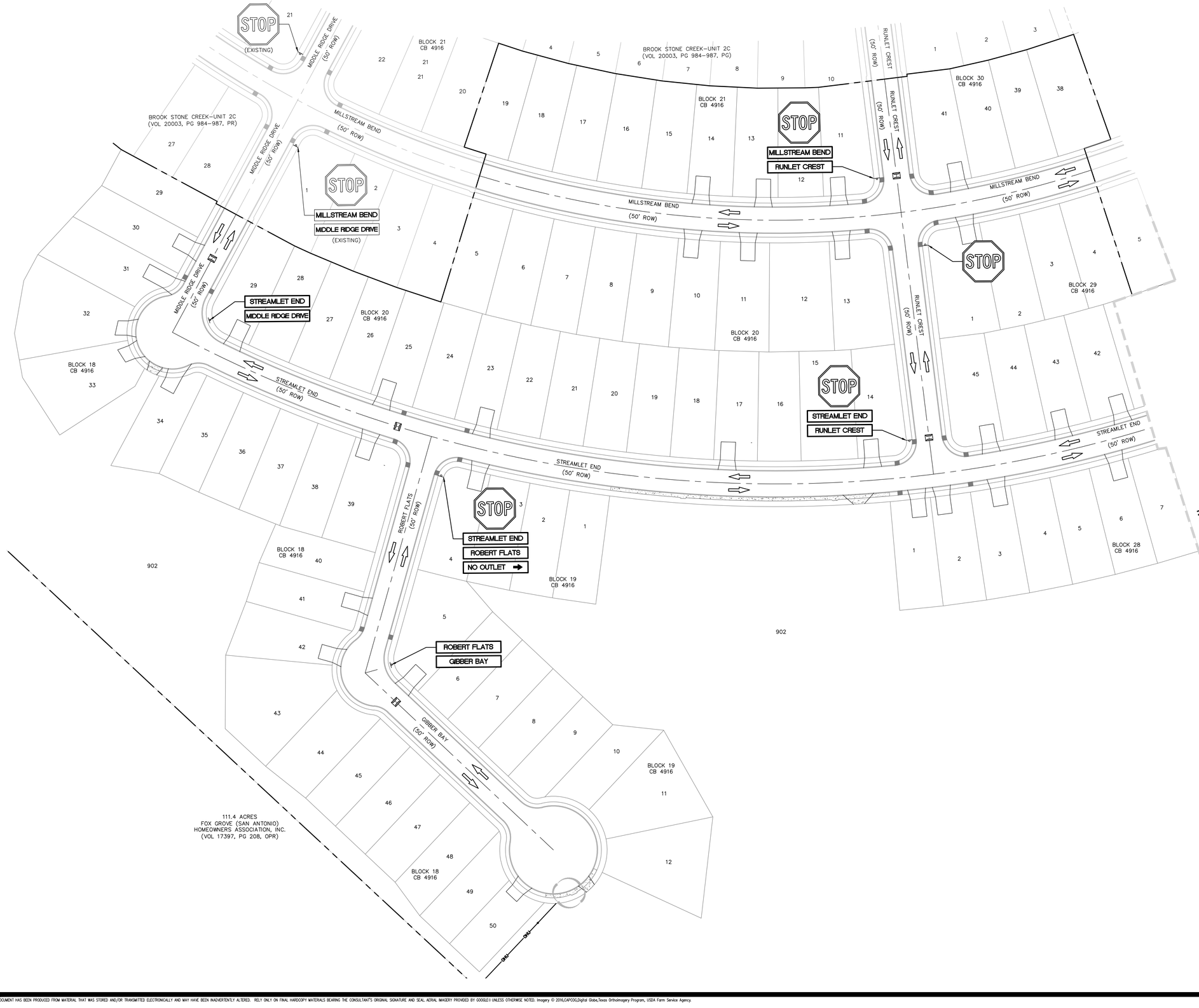

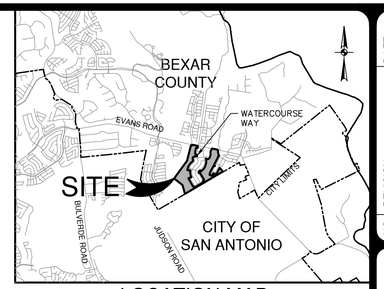

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

LEGEND:

- UNIT BOUNDARY
- R1-1 30"X30" ITEM 531.3
- STREET NAME — STANDARD BEXAR COUNTY STREET NAME SIGN 9XSTD (NOTE: STREET SIGNS MUST SHOW BLOCK NUMBERS) ITEM 531.57
- TRAFFIC FLOW ARROW
- TYPE II BB (BLUE) RAISED PAVEMENT MARKERS – NO SEPARATE PAY ITEM (N.T.S.)
- PROPOSED DRIVEWAY (SEE NOTE)
- OM4-3 END OF ROAD MARKER ITEM 531.56
- NO OUTLET — TMUTCD NO. W14-2A WITH HIGH INTENSITY PRISMATIC TXDOT TYPE C-ASTM D4956-09 RETROFLECTIVE SHEETING

BEXAR COUNTY ROW NOTES:

A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

DRIVEWAY NOTE:

DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.

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.

NO.	REVISION	DATE
1.	REVISED SIDEWALKS	08/29/24

8/28/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SIGNAGE PLAN
(SHEET 1 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C3.00

Date: Aug 28, 2024, 9:57am User ID: arodriguez
File: P:\120\93\11\Design\Civil\SG120931l.dwg

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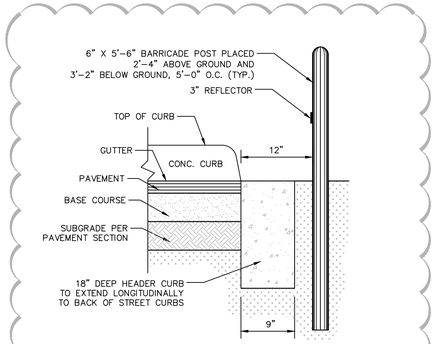
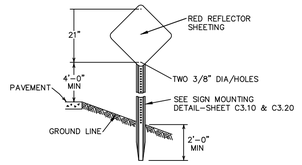


HEADER CURB & BARRICADE POST DETAIL

NOT-TO-SCALE

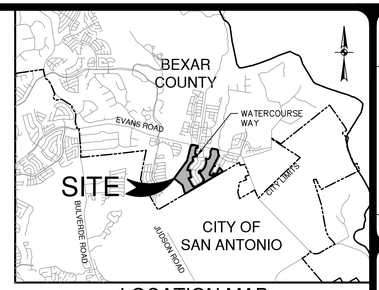


UNITS MOUNTED ON 0.080" THICK SHEET ALUMINUM CONFORMING WITH ASTM B-209 ALLOY 6061-T6.

TYPE 4 OM4-3
18" x 18"

OBJECT MARKER TYPE 4

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

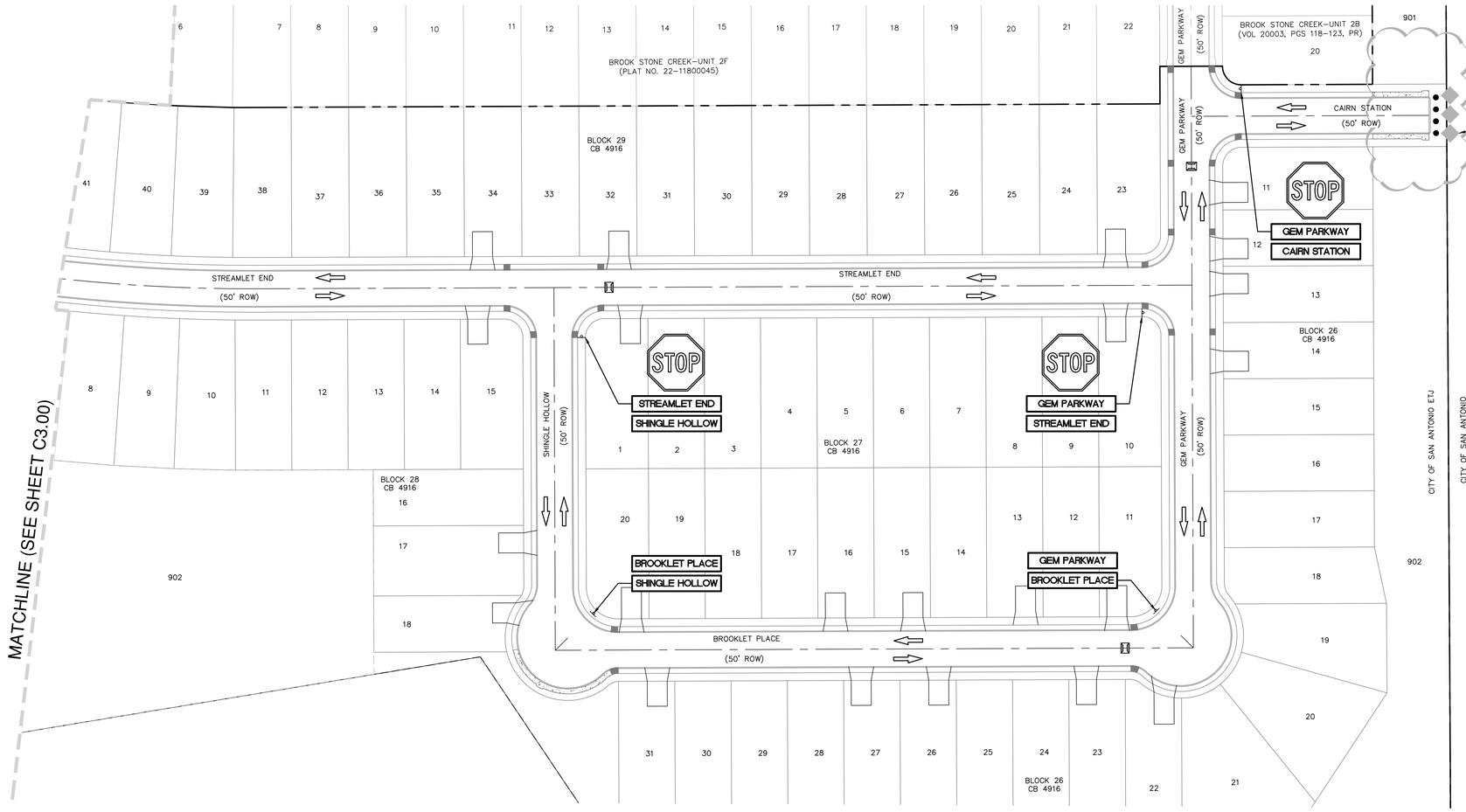
SCALE: 1"= 50'

0' 50' 100' 150'

NO.	REMISION	DATE
1.	REMOVED TURNAROUND	08/30/24

9/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER



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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SIGNAGE PLAN
(SHEET 2 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C3.01

Date: Sep 06, 2024, 8:44am User ID: saepulveda
File: P:\120\93\11\Design\Civil\SG12093l11.dwg

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DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any purpose whatsoever. The Texas Department of Transportation assumes no responsibility for the use of this standard as to any application not agreed to in writing by the Texas Department of Transportation.

DATE: FILE:

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- SR0 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

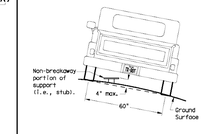
Number of Posts (1 or 2)

Anchor Type
- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- WS = Wedge Anchor Steel - (see SMD(TWT))
- WP = Wedge Anchor Plastic (see SMD(TWT))
- SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
- SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

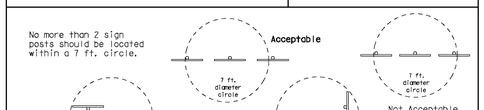
Sign Mounting Designation
- P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
- T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
- U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))

IF REQUIRED:
- (EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- WC = 1.12 ft/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT

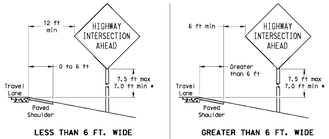


To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).



SIGN LOCATION

PAVED SHOULDERS



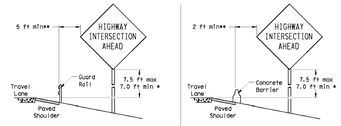
LESS THAN 6 FT. WIDE

When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.

GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

BEHIND BARRIER

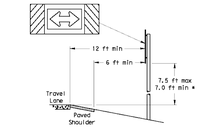


BEHIND GUARDRAIL

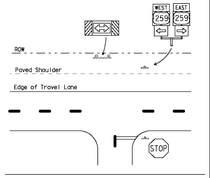
BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 ft to a maximum of 7.5 feet above the edge of the travel lane or

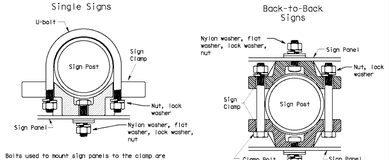
(2) a minimum of 7 ft to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is: http://www.txdot.gov/publications/traffic.htm

TYPICAL SIGN ATTACHMENT DETAIL

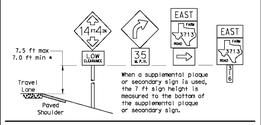


Bolts used to mount sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

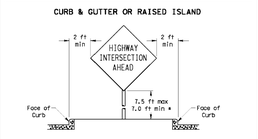
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

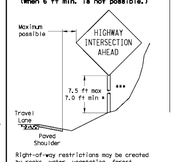


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY (When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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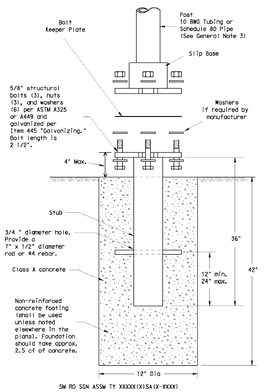
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

264

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

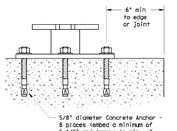
1. Slip base shall be permanently marked to indicate manufacturer, method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   0.134" nominal wall thickness
   Seamless or electric-resistance welded steel tubing or pipe
   Steel shall be HSLAS GF 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the followings
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Steel tubing per ASTM A500 Gr C
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the followings
   46,000 PSI minimum yield strength
   62,000 PSI minimum tensile strength
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 1 cubic yards to be mixed with a portable, mortar-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by the Engineer. Concrete shall be Class A.
3. Push the pipe and of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the traveleay (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the traveleay. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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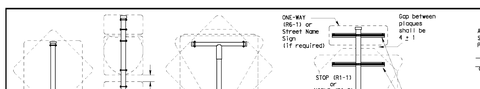
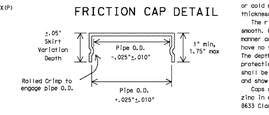
268

DATE: FILE:



FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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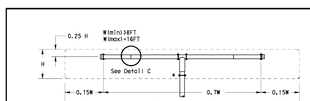
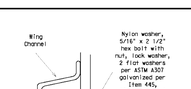
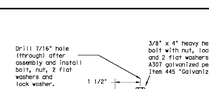
	DIST	COUNTY		SHEET NO.

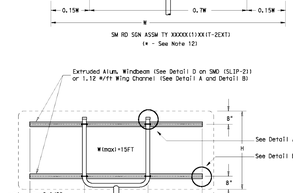
266

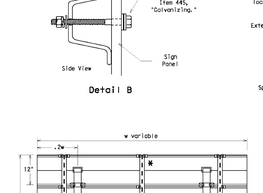


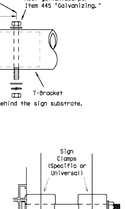




Splices shall only be allowed behind the sign substrate.







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   Other steels may be used if they meet the followings
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   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Steel tubing per ASTM A500 Gr C
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the followings
   46,000 PSI minimum yield strength
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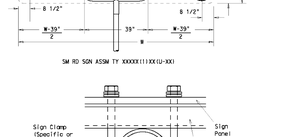
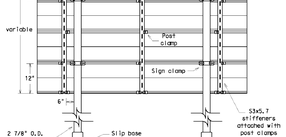
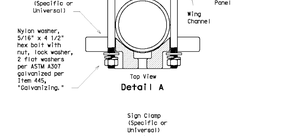
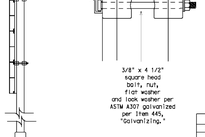
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamps required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB0(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	60x60-inch signs	TY SB0(1)XX(T)
Warning	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)









REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY SB0(1)XX(T)
	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	60x60-inch signs	TY SB0(1)XX(T)
Warning	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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	DIST	COUNTY		SHEET NO.

265

NO.	REVISION	DATE

2/29/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SIGNAGE DETAILS (SHEET 1 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE FEBRUARY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C3.10

Date: Feb 29, 2024, 8:42am User ID: saepulveda
File: P:\12093\11\Design\Civil\SIGN\12093111.dwg

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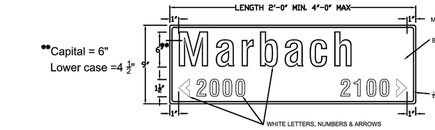
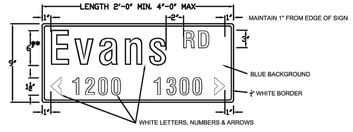
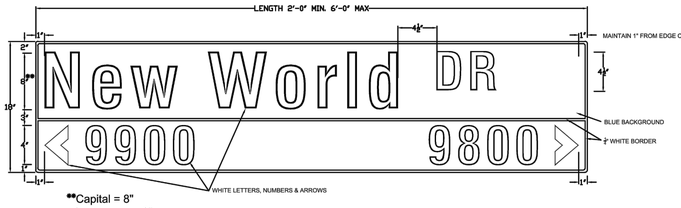


9" GROUND MOUNT STREET NAME SIGNS



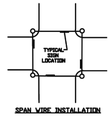
9" GROUND MOUNT STREET NAME SIGNS
WITH STREET DESIGNATION



18" OVERHEAD STREET NAME SIGNS

	18" OVERHEAD SIGN	9" GROUND MOUNT SIGNS
HEIGHT	18" (381 mm)	9" (228 mm)
LENGTH	48" (1200 mm) MIN. 72" (1800 mm) MAX. 6" (150mm) INCREMENTS OF LENGTH	24" (600 mm) MIN. 48" (1200 mm) MAX. 6" (150mm) INCREMENTS OF LENGTH
THICKNESS	0.125" (3 mm)	
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209 GOLD CHROMATE FINISH	
SIGN FACE MATERIALS	BLUE FILM ✱ OVER DIAMOND GRADE - ASTM Type XI Non-Fluorescent	BLUE FILM ✱ OVER HIGH INTENSITY PRISMATIC- ASTM Type IV
LEGENDS AND SYMBOLS	SERIES D, B OR C IF NAME OTHERWISE EXCEEDS MAXIMUM SIGN LENGTH	
COLOR	WHITE LEGEND ON BLUE BACKGROUND	
LETTER TRACKING	17% (USUAL) 10% (MIN.)	10%

✱ ACRYLIC ELECTRONIC CUTTABLE FILM



SPAN WIRE INSTALLATION

MAST ARM INSTALLATION

SIGN FACE MATERIALS SHALL CONFORM TO:

1. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - FP-03 U.S. CUSTOMARY UNITS SECTION 718
2. GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-S-300C
3. ASTM D 4956 - 05a1

Bexar County Public Works

Street Name Sign Details

ISSUED TO: ISSUED BY:
ISSUED ON: SIGNED:
PAUL Miller
SHEET 1

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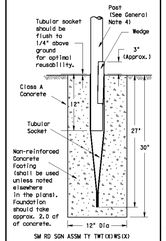
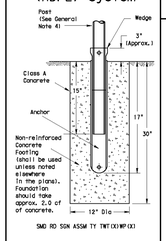
DATE: 2/1/24

Wedge Anchor Steel System



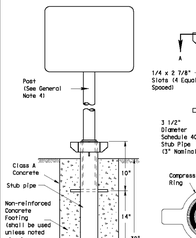
SM RD SGN ASSM TY TWT(X)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System

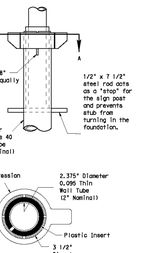


SM RD SGN ASSM TY TWT(X)WP(X)

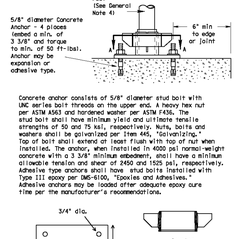
Universal Anchor System with Thin-Walled Tubing Post



SM RD SGN ASSM TY TWT(X)UA(P)



Plastic Insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The Insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The Insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.



SM RD SGN ASSM TY TWT(X)UB(P)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 13 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer, method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts 113 BWG tubing, clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: https://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS or 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the followings:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamps required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

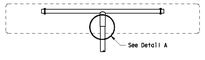
WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

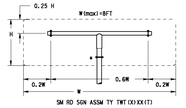
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be free the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximately 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer.
5. Attach the sign to the sign post.
6. Insert the sign post into socket.
7. Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE

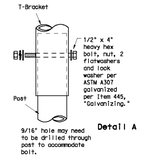
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be free the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. Install plastic insert around bottom of post.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Test compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post





SM RD SGN ASSM TY TWT(X)XX(T)
(* - See General Note 6)



Detail A

NOTE

The devices shall be installed per manufacturer's recommendations. Installation procedures shall be provided to the Engineer by Contractor.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
WEDGE & UNIVERSAL ANCHOR
WITH THIN WALL TUBING POST
SMD(TWT)-08

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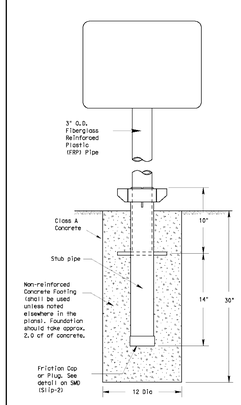
26E

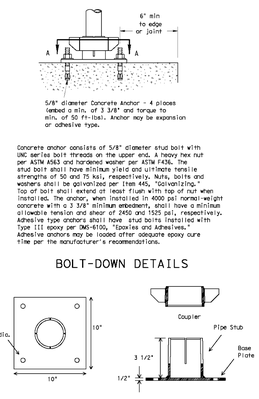
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility and shall not be liable for any damages resulting from the reuse of this standard or for any modification or adaptation hereof.

DATE: 2/1/24

Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



SM RD SGN ASSM TY FRP(X)UA(P)



SM RD SGN ASSM TY FRP(X)UB(P)

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GENERAL NOTES:

1. FRP sign supports for a single type sign support may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: https://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS

1. Materials shall conform to the requirements of Departmental Material Specification DMS-4610 and will be furnished in a yellow or gray color as specified elsewhere in the plans.
2. Thickness of FRP sign support is 0.125" + 0.031", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division. Prequalification procedures are obtained by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

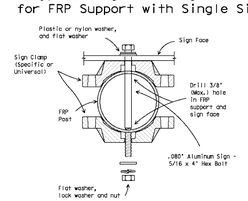
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be free the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if installed in solid rock.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set a minimum of 4 days, unless otherwise directed by Engineer. Bottom of base post slots shall be above the concrete footing.
5. Attach sign to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the steel rod.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
8. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

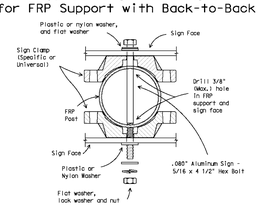
BOLT DOWN SIGN SUPPORT

1. Position base plate with coupler on existing concrete.
2. Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
3. Attach sign to FRP post.
4. Insert bottom of sign post into pipe stub.
5. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
6. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

Typical Sign Mounting Detail for FRP Support with Single Sign



Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs



Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
UNIVERSAL ANCHOR SYSTEM
WITH FRP POST
SMD(FRP)-08

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26F

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

SIGNAGE DETAILS
(SHEET 2 OF 2)

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

NO. REVISION DATE

2/29/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE FEBRUARY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C3.20

Date: Feb 29, 2024, 8:43am User ID: ssepulveda
File: P:\120\93\11\Design\Civil\SIGN\T1209311.dwg

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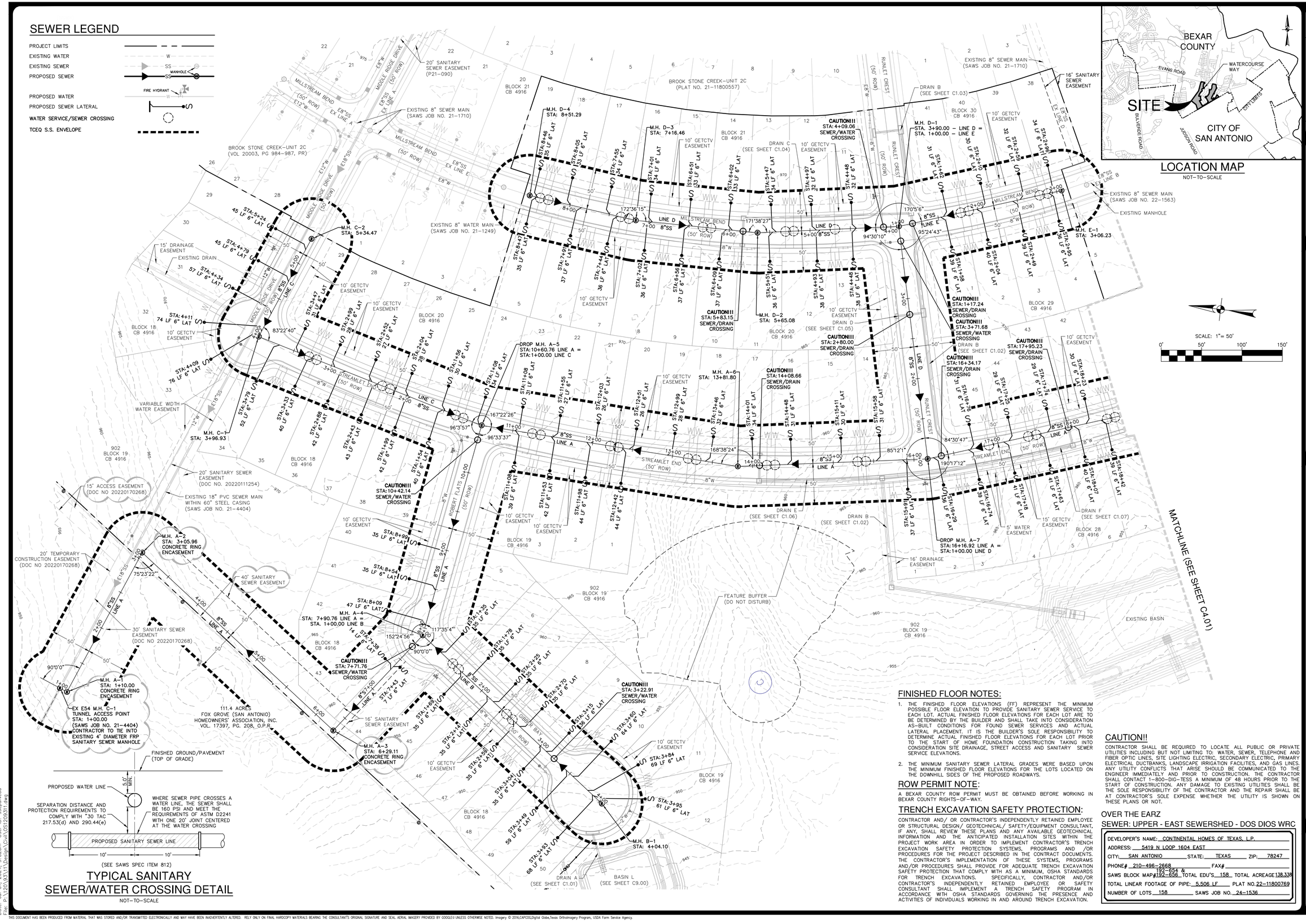
SEWER LEGEND

PROJECT LIMITS
EXISTING WATER
EXISTING SEWER
PROPOSED SEWER
PROPOSED WATER
PROPOSED SEWER LATERAL
WATER SERVICE/SEWER CROSSING
TCEQ S.S. ENVELOPE

MANHOLE
FIRE HYDRANT



LOCATION MAP

NOT–TO–SCALE

SCALE: 1"= 50'
0' 50' 100' 150'

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

(SEE SAWS SPEC ITEM 812)

NOT–TO–SCALE

FINISHED FLOOR NOTES:

1. THE FINISHED FLOOR ELEVATIONS (FF) REPRESENT THE MINIMUM POSSIBLE FLOOR ELEVATION TO PROVIDE SANITARY SEWER SERVICE TO EACH LOT. ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT ARE TO BE DETERMINED BY THE BUILDER AND SHALL TAKE INTO CONSIDERATION AS–BUILT CONDITIONS FOR FOUND SEWER SERVICES AND ACTUAL LATERAL PLACEMENT. IT IS THE BUILDER'S SOLE RESPONSIBILITY TO DETERMINE ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT PRIOR TO THE START OF HOME FOUNDATION CONSTRUCTION TAKING INTO CONSIDERATION SITE DRAINAGE, STREET ACCESS AND SANITARY SEWER SERVICE ELEVATIONS.
2. THE MINIMUM SANITARY SEWER LATERAL GRADES WERE BASED UPON THE MINIMUM FINISHED FLOOR ELEVATIONS FOR THE LOTS LOCATED ON THE DOWNHILL SIDES OF THE PROPOSED ROADWAYS.

ROW PERMIT NOTE:

A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS–OF–WAY.

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.

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.

OVER THE EARZ

SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210–496–2668 FAX#
SAWS BLOCK MAP#192–656 & 192–554 TOTAL EDU'S 158 TOTAL ACREAGE 138.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22–11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24–1536

NO.	REVISION	DATE
1.	REVISED LABELS	07/01/24

7/1/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
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BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

OVERALL SANITARY SEWER PLAN (SHEET 1 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE JULY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.00

Date: Jul 01, 2024, 9:02am User ID: sseguiveda
File: P:\120\93\11\Design\Civil\OS\1209311.dwg

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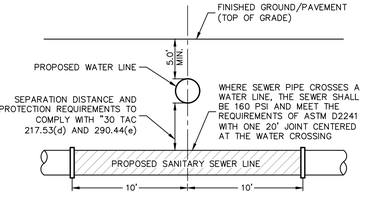
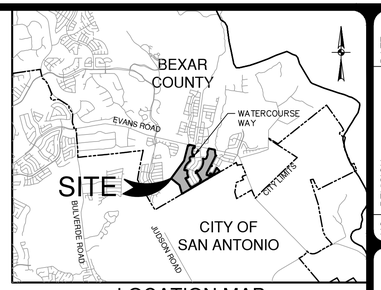


(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



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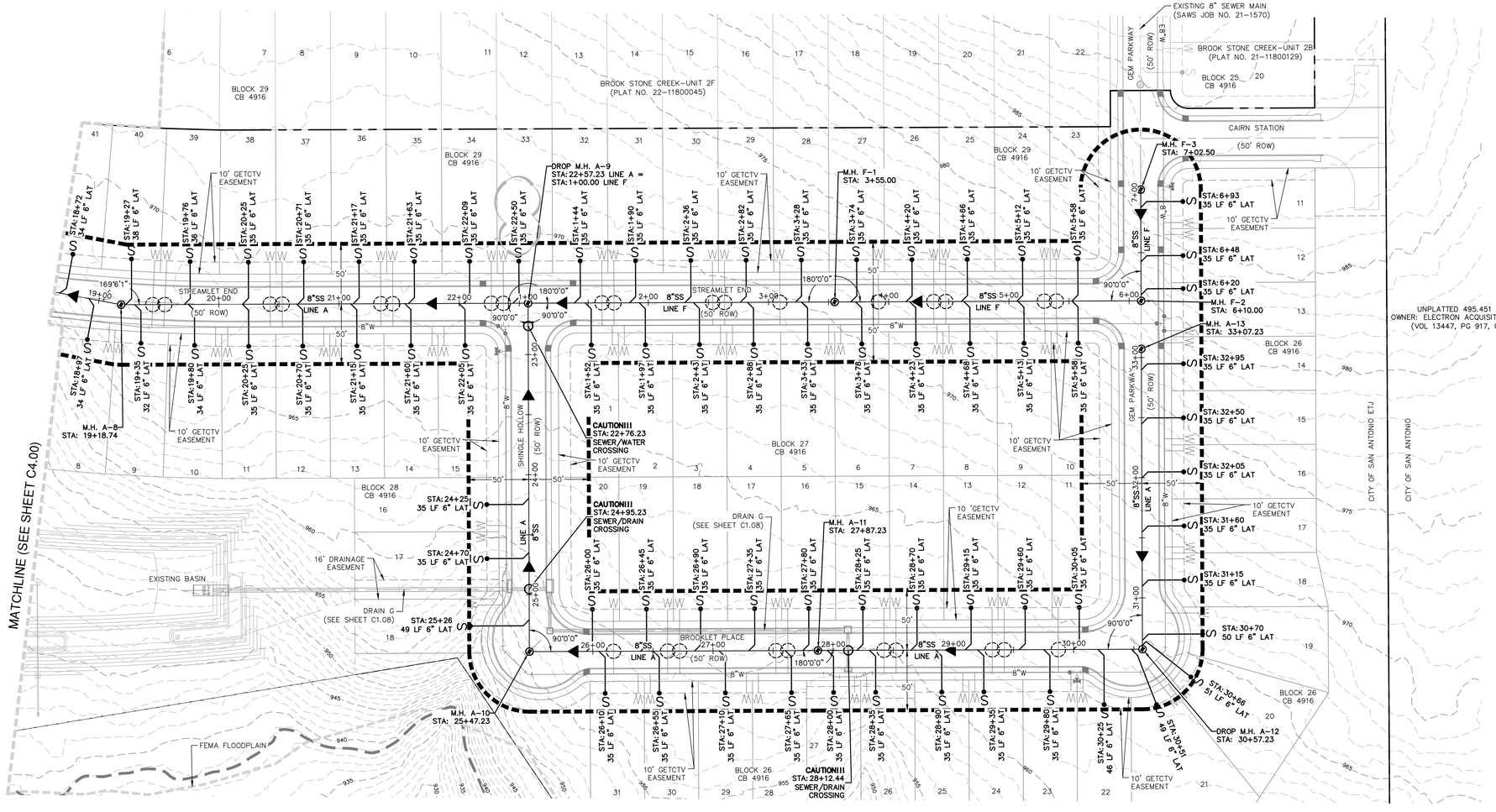

SEWER LEGEND

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EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

WATER SERVICE/SEWER CROSSING

TCEQ S.S. ENVELOPE

MANHOLE

FIRE HYDRANT

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7/8/2024

STATE OF TEXAS
REBECCA ANN CARROLL
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LICENSED PROFESSIONAL ENGINEER

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BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

OVERALL SANITARY SEWER PLAN (SHEET 2 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE JULY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.01

Date: Jul 08, 2024, 10:59am User ID: saepulveda
File: P:\120\93\11\Design\Civil\OS\20931l.dwg

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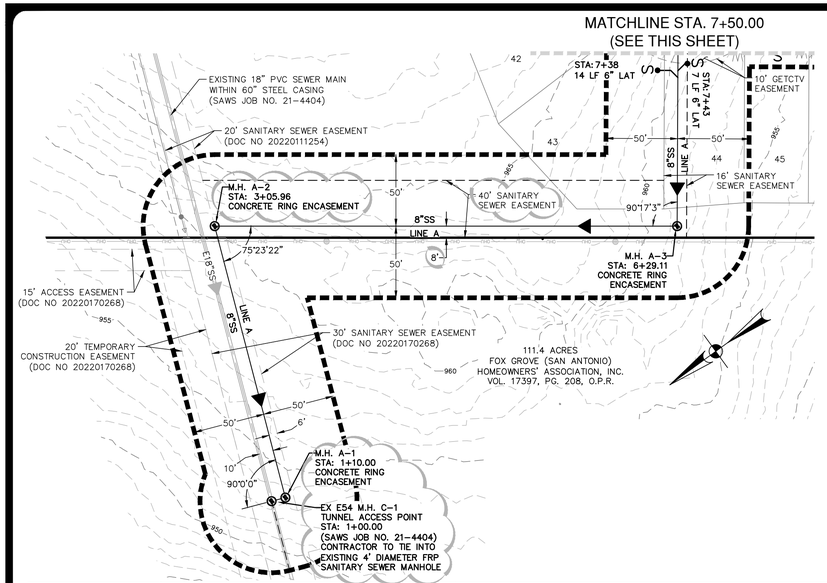
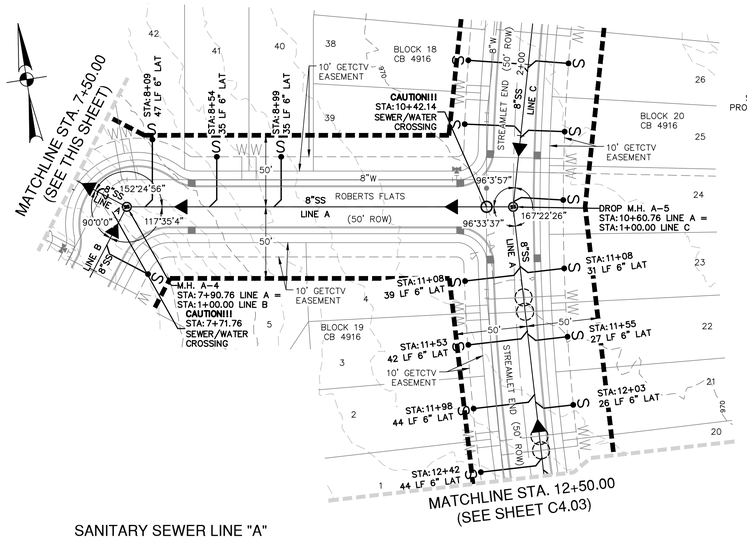
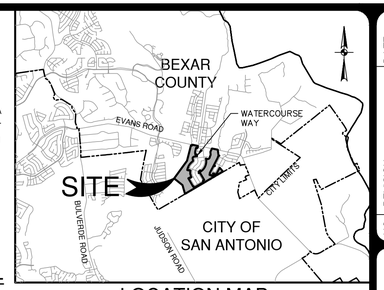




TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1" = 50'

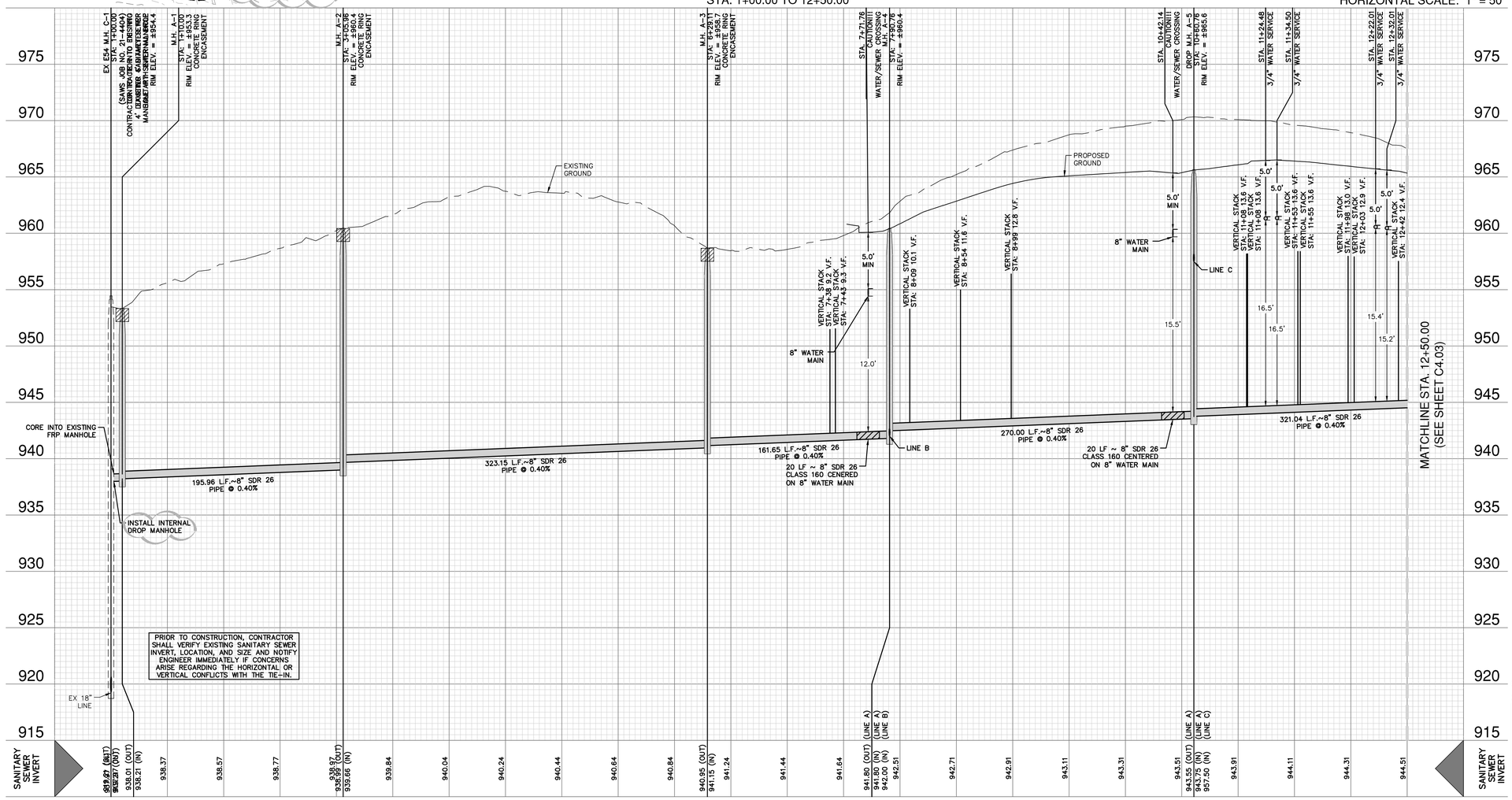
0' 50' 100' 150'

SEWER LEGEND

- PROJECT LIMITS
- EXISTING WATER (W)
- EXISTING SEWER (SS, MANHOLE)
- PROPOSED SEWER (SS, MANHOLE)
- PROPOSED WATER (W, FIRE HYDRANT)
- PROPOSED SEWER LATERAL
- WATER SERVICE/SEWER CROSSING
- TCEQ S.S. ENVELOPE

SANITARY SEWER LINE "A"
STA. 1+00.00 TO 12+50.00

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



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OVER THE EARZ

SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-554 & 192-555 TOTAL EDU'S 158 TOTAL ACREAGE 138.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DATE
1.	REVISED TIE-IN	07/01/24

7/8/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SANITARY SEWER LINE A
PLAN AND PROFILE (STA. 1+00.00 TO 12+50.00)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE JULY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.02

Date: Jul 08, 2024, 11:30am User ID: ssepulveda
File: P:\120\93\11\Design\Civil\SNA12093I1.dwg

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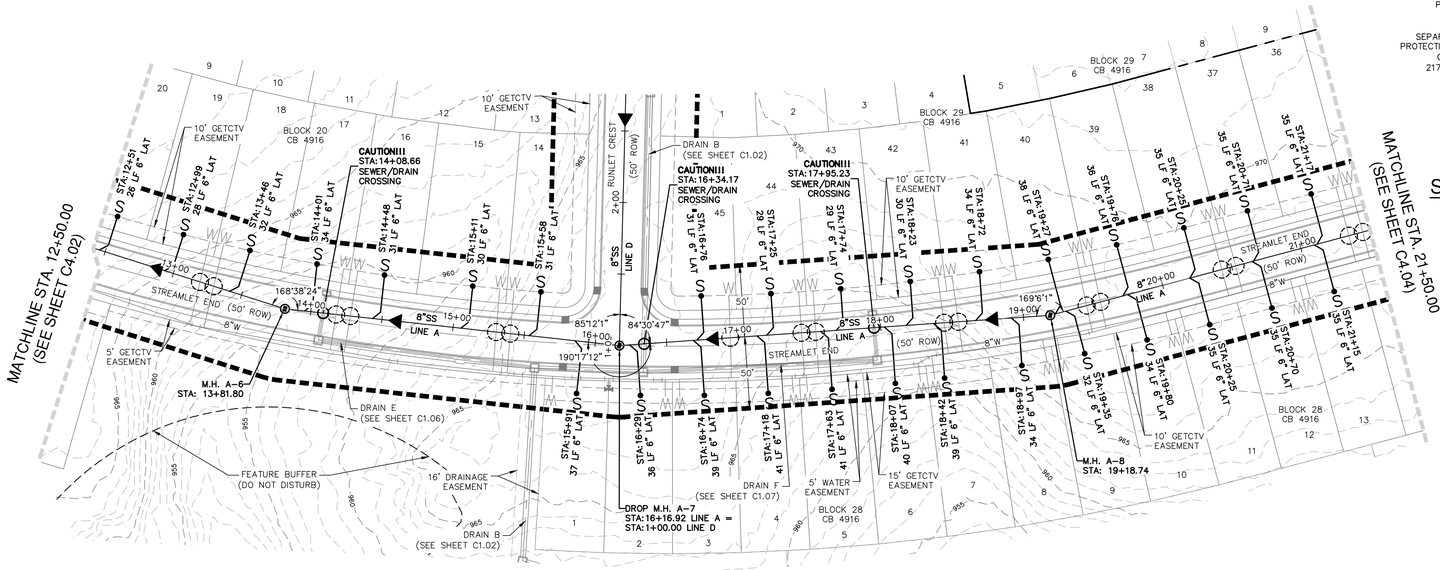
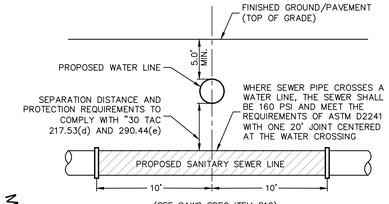
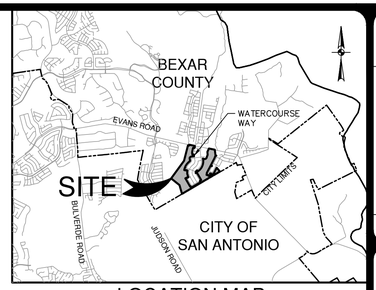




(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

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SCALE: 1"= 50'

0' 50' 100' 150'

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- WATER SERVICE/SEWER CROSSING
- TCEQ S.S. ENVELOPE

SANITARY SEWER LINE "A"
STA. 12+50.00 TO 21+50.00

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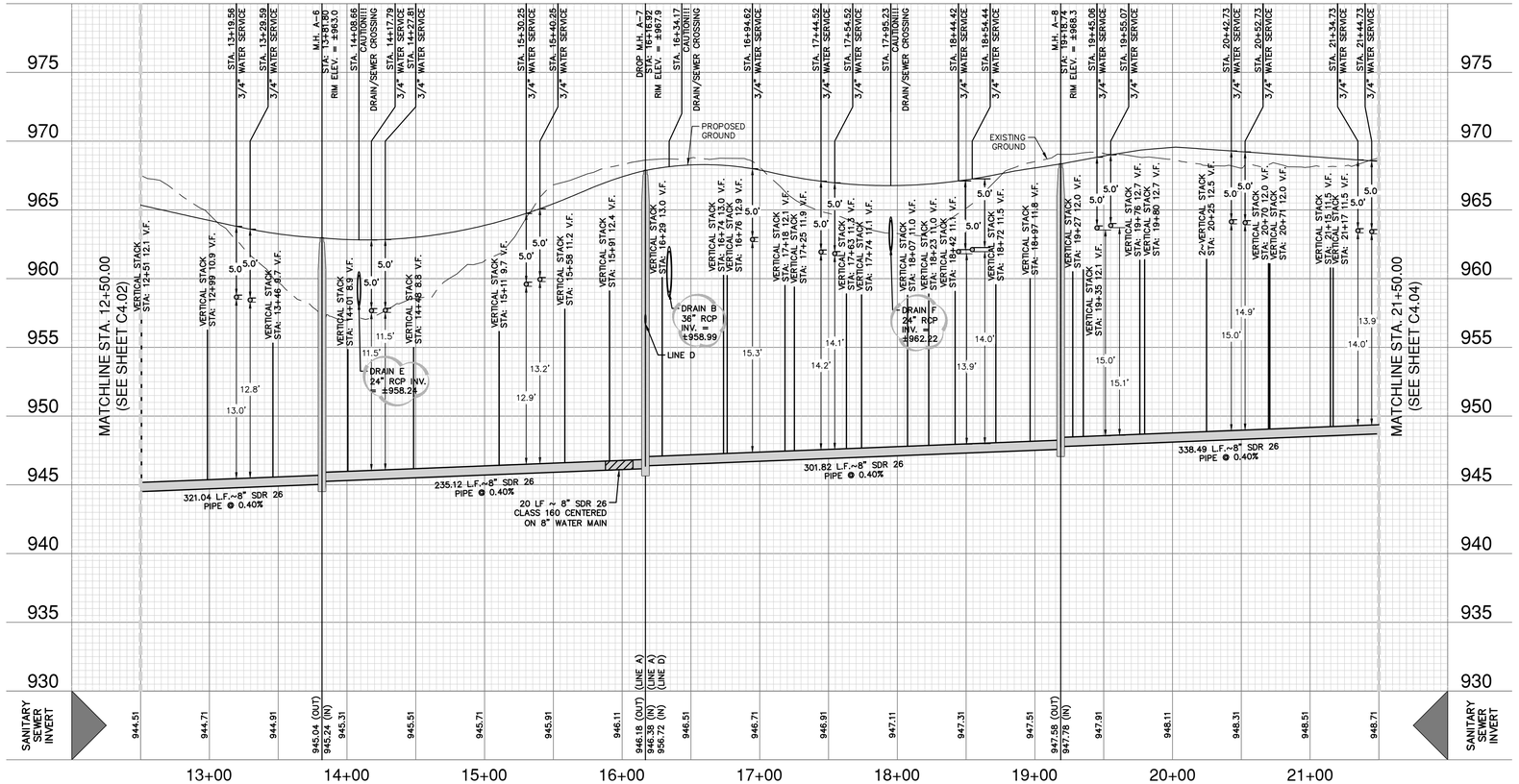

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DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
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PHONE# 210-496-2668 FAX#
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TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DATE
1.	ADDED DRAIN SIZES	07/01/24

7/8/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
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BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

SANITARY SEWER LINE A
PLAN AND PROFILE (STA. 12+50.00 TO 21+50.00)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE JULY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.03

Date: Jul 08, 2024, 11:31am User ID: ssepulveda
File: P:\120\93\11\Design\Civil\SNA120931.dwg

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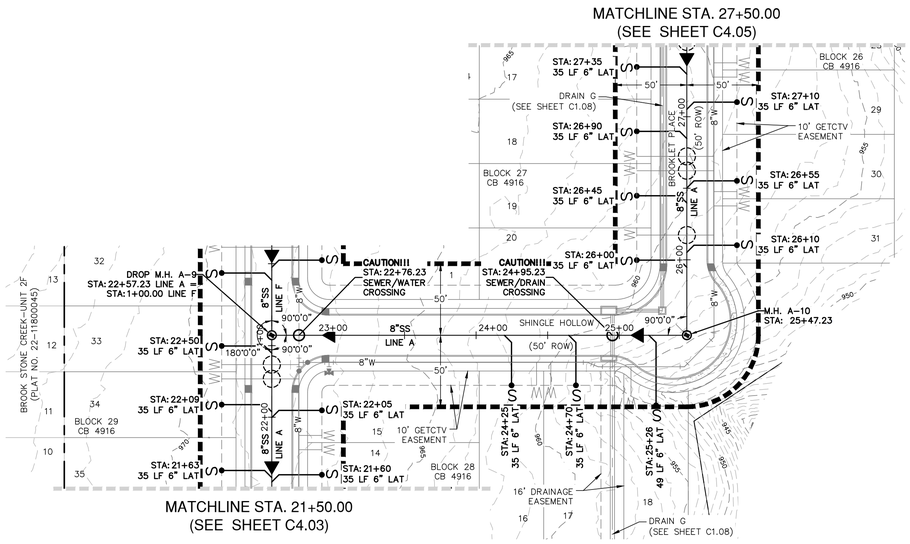
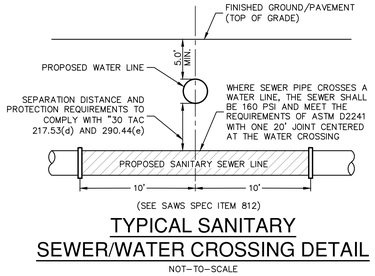
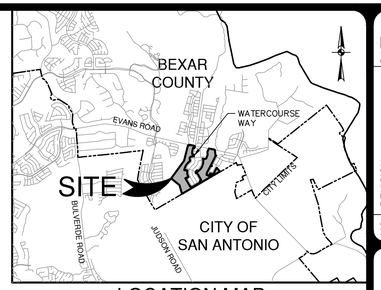




(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

WATER SERVICE/SEWER CROSSING

TCEQ S.S. ENVELOPE

MANHOLE

FIRE HYDRANT

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STA. 21+50.00 TO 27+50.00

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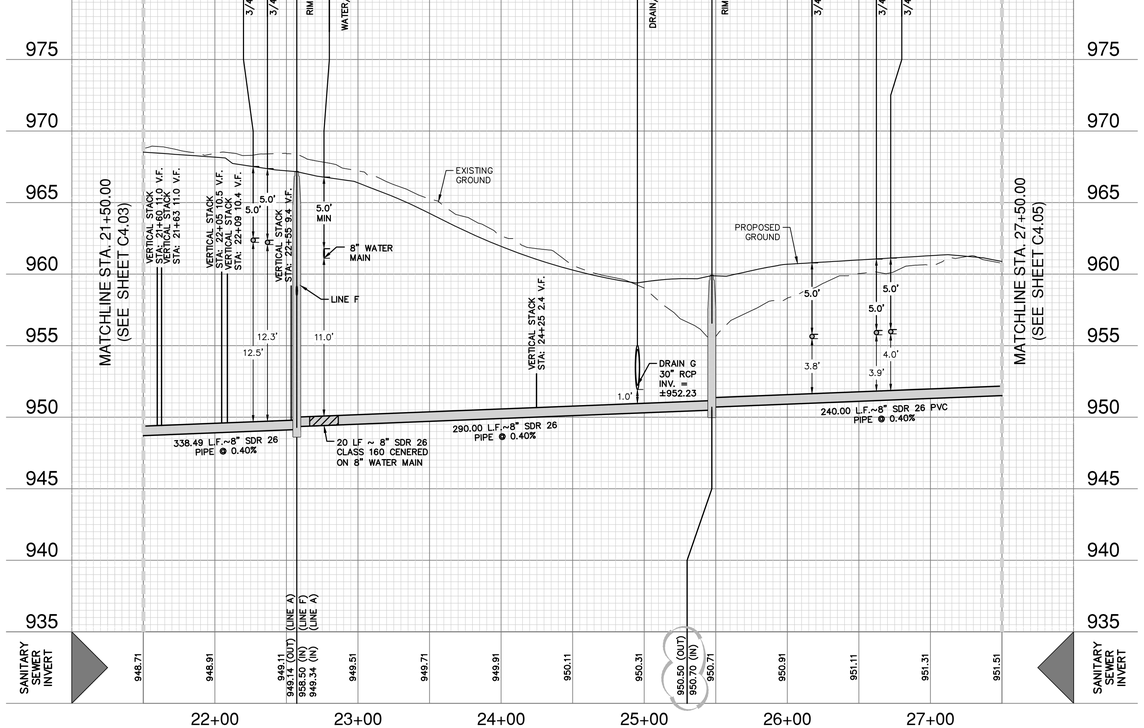

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PHONE# 210-496-2668 FAX#

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TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769

NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DATE
1.	REVISED LATERAL	07/01/24
2.	UPDATED MANHOLE INVERTS	08/15/24

8/15/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SANITARY SEWER LINE A

PLAN AND PROFILE (STA. 21+50.00 TO 27+50.00)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.04

Date: Aug 15, 2024, 2:31pm User ID: arodriguez
File: P:\120\93\11\Design\Civil\SNA1209311.dwg
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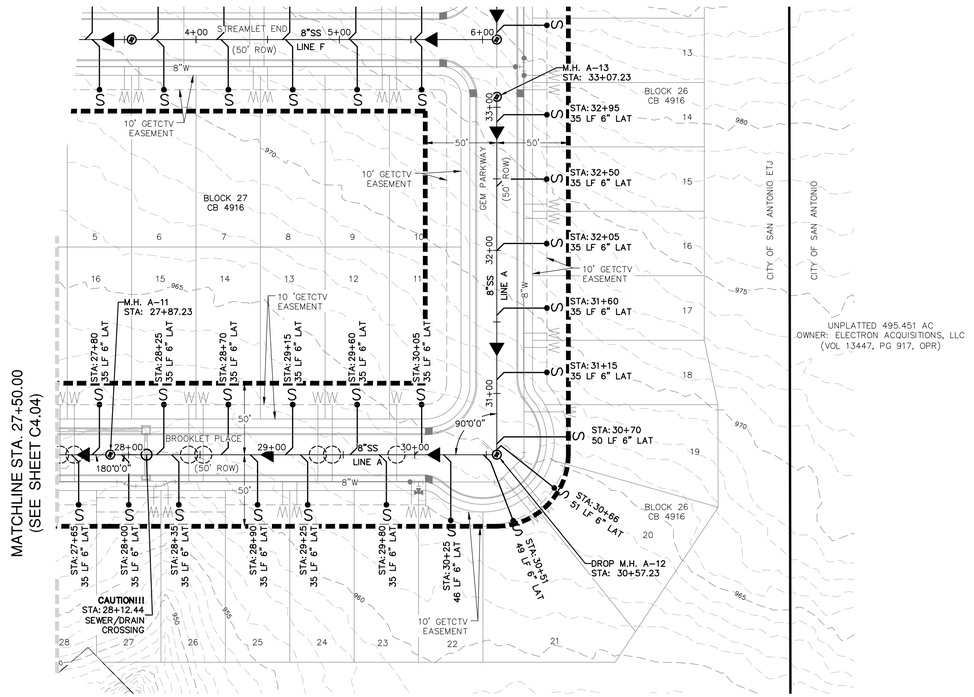
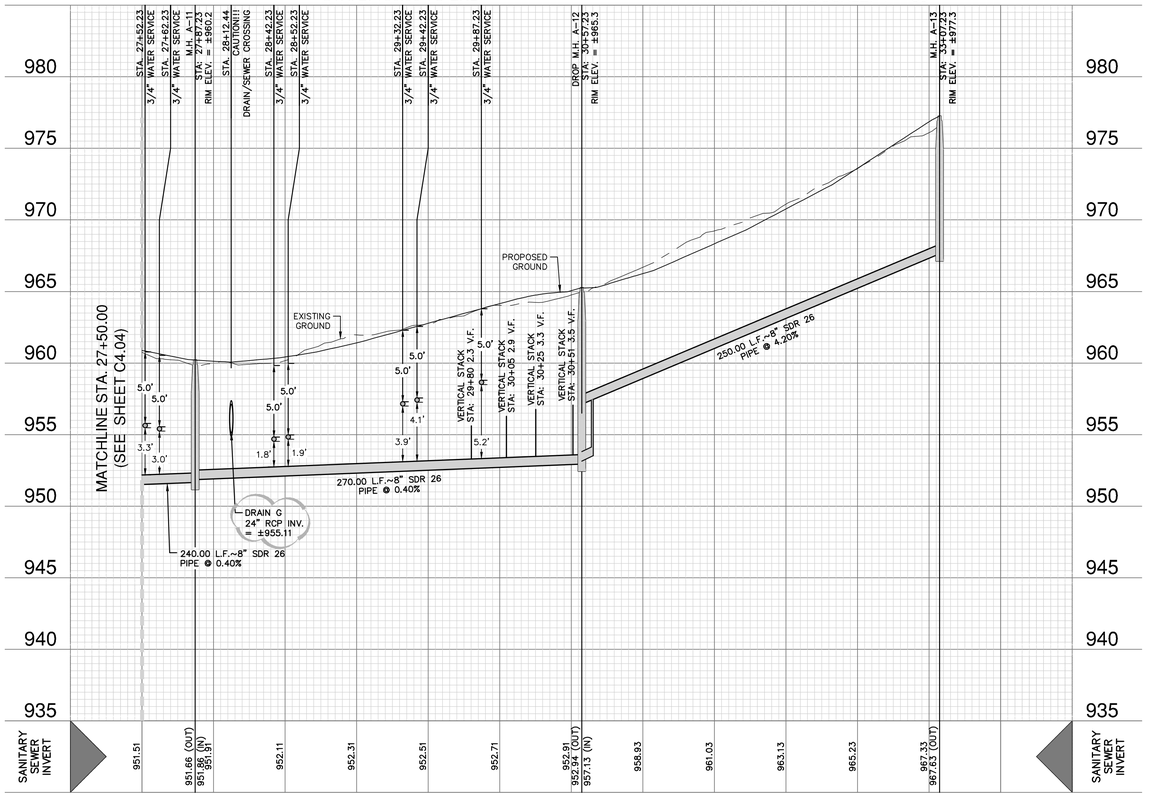
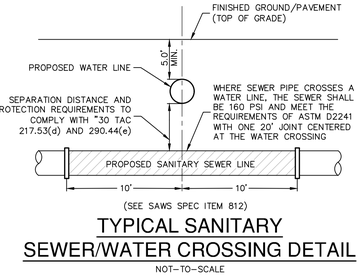


SANITARY SEWER LINE "A"
STA. 27+50.00 TO END

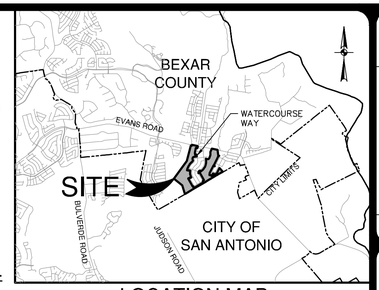
VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'





TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER — W

EXISTING SEWER — SS — MANHOLE

PROPOSED SEWER — SS

PROPOSED WATER — FIRE HYDRANT

PROPOSED SEWER LATERAL

WATER SERVICE/SEWER CROSSING

TCEQ S.S. ENVELOPE

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OVER THE EARZ

SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.

ADDRESS: 5419 N LOOP 1604 EAST

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247

PHONE# 210-496-2668 FAX#

SAWS BLOCK MAP# 192-554 & 192-556 TOTAL EDU'S 158 TOTAL ACREAGE 138.338

TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769

NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DRAWN	SIZE	DATE
1.	ADDED DRAWN			07/01/24

7/1/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SANITARY SEWER LINE A
PLAN AND PROFILE (STA. 27+50.00 TO END)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE JULY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.05

Date: Jul 01, 2024, 10:54am User ID: saepulveda
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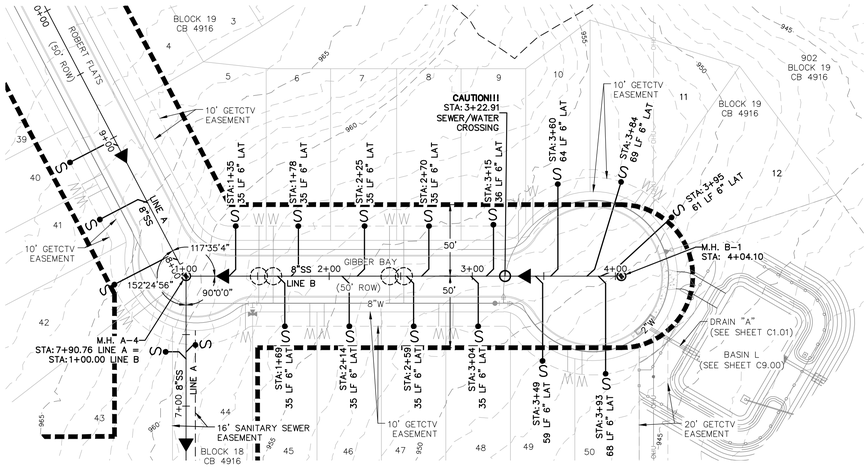
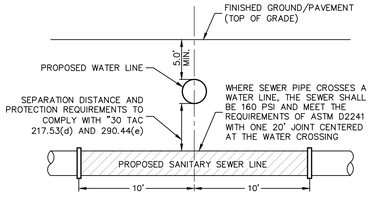
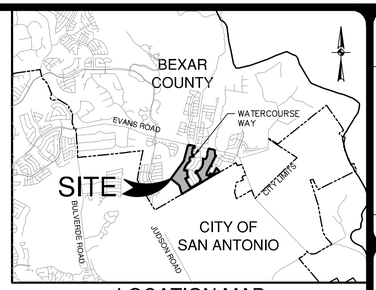




(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

PROPOSED WATER

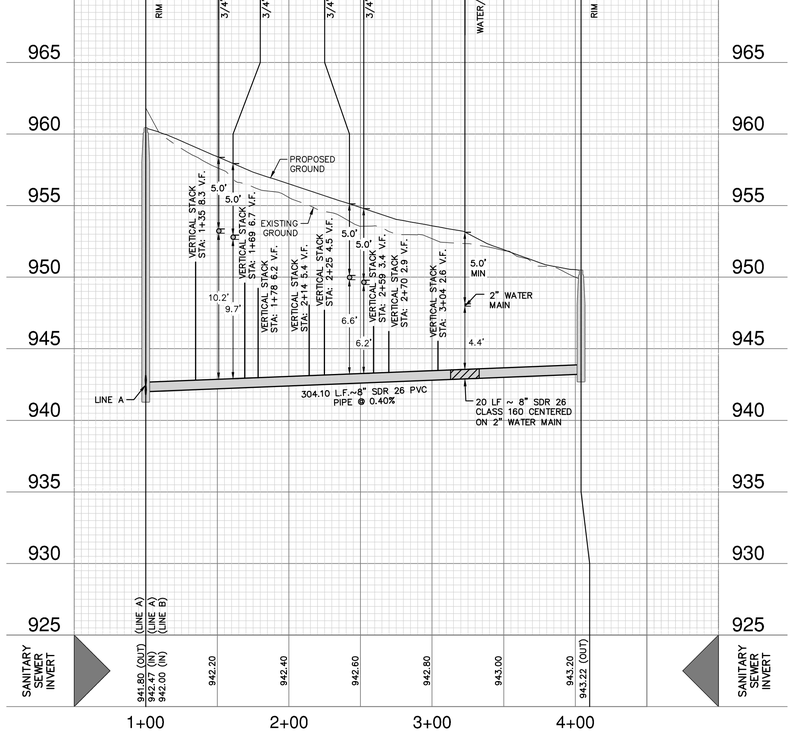
PROPOSED SEWER LATERAL

WATER SERVICE/SEWER CROSSING

TCEQ S.S. ENVELOPE

SANITARY SEWER LINE "B"
STA. 1+00.00 TO END

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



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OVER THE EARZ

SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.

ADDRESS: 5419 N LOOP 1604 EAST

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247

PHONE# 210-496-2668 FAX#

SAWS BLOCK MAP#192-654 & 192-656 TOTAL EDU'S 158 TOTAL ACREAGE 138.338

TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769

NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DATE
1.	REVISED SAWS BLOCK	07/01/24

7/1/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SANITARY SEWER LINE B
PLAN AND PROFILE

PLAT NO. 22-11800769

JOB NO. 12093-11

DATE JULY 2024

DESIGNER SS

CHECKED BAC DRAWN GK

SHEET C4.06

Date: Jul 01, 2024, 10:57am User ID: asepulveda
File: P:\120\93\11\Design\Civil\SNB1209311.dwg
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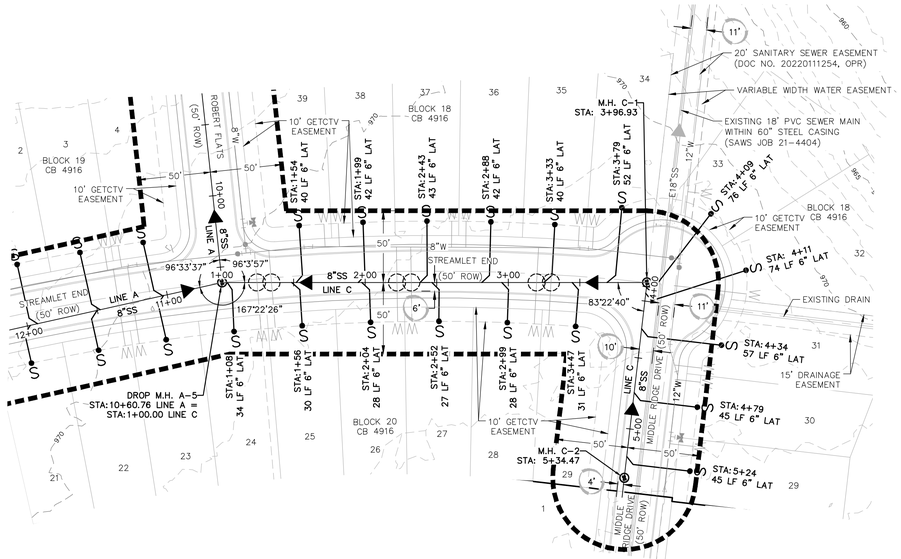

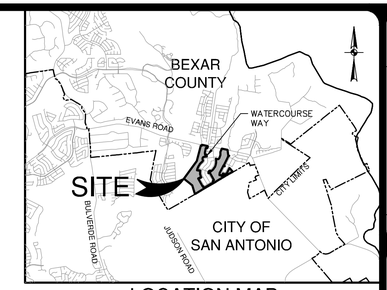

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS
EXISTING WATER
EXISTING SEWER
PROPOSED SEWER
PROPOSED WATER
PROPOSED SEWER LATERAL
WATER SERVICE/SEWER CROSSING
TCEQ S.S. ENVELOPE
MANHOLE
FIRE HYDRANT

SANITARY SEWER LINE "C" STA. 1+00.00 TO END

VERTICAL SCALE: 1" = 5'
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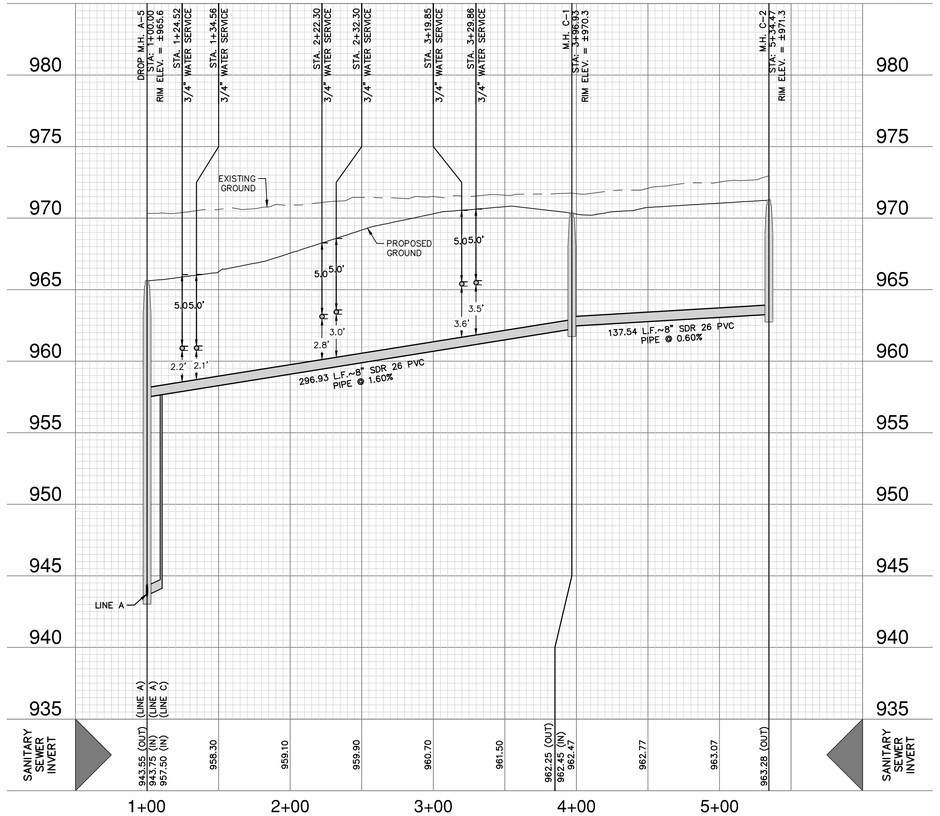

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OVER THE EARZ

SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-654 & 192-656 TOTAL EDU'S 158 TOTAL ACREAGE 138.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DATE
1.	ADDED DIMENSIONS	07/01/24

7/1/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SANITARY SEWER LINE C
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE JULY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.07

Date: Jul 01, 2024, 11:20am User ID: saepulveda
File: P:\120\93\11\Design\Civil\SNC1209311.dwg

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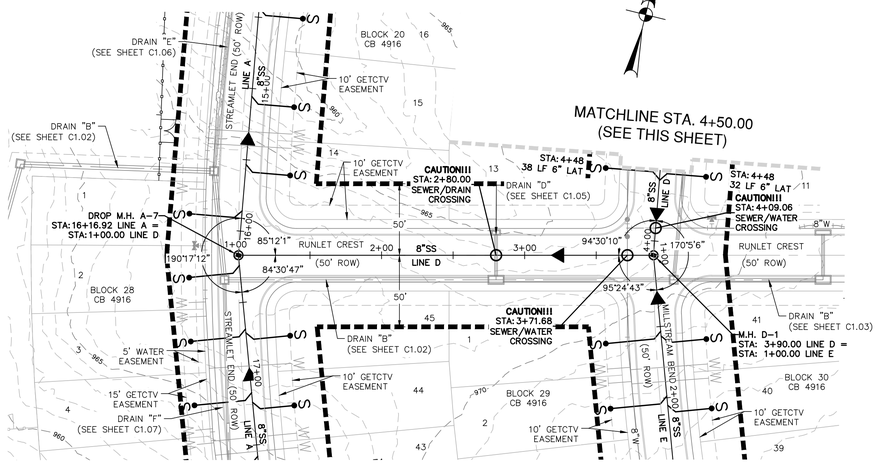
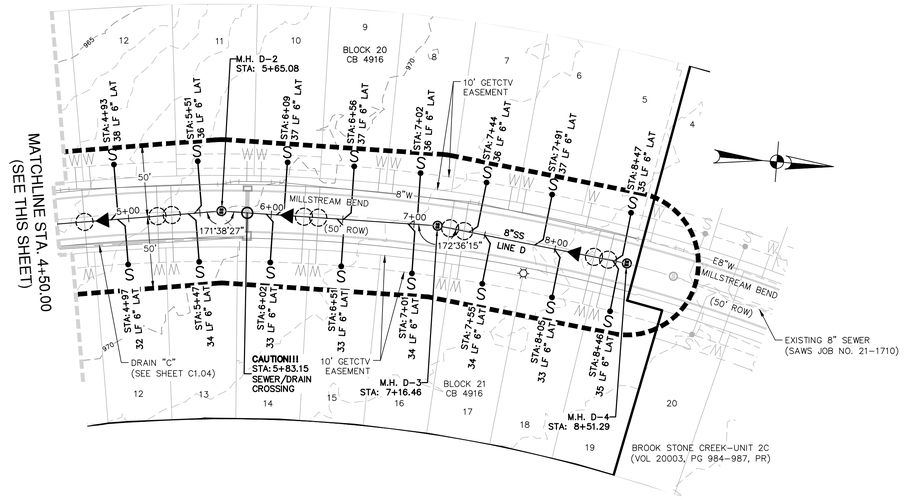
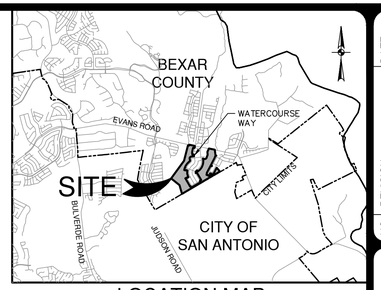






LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

WATER SERVICE/SEWER CROSSING

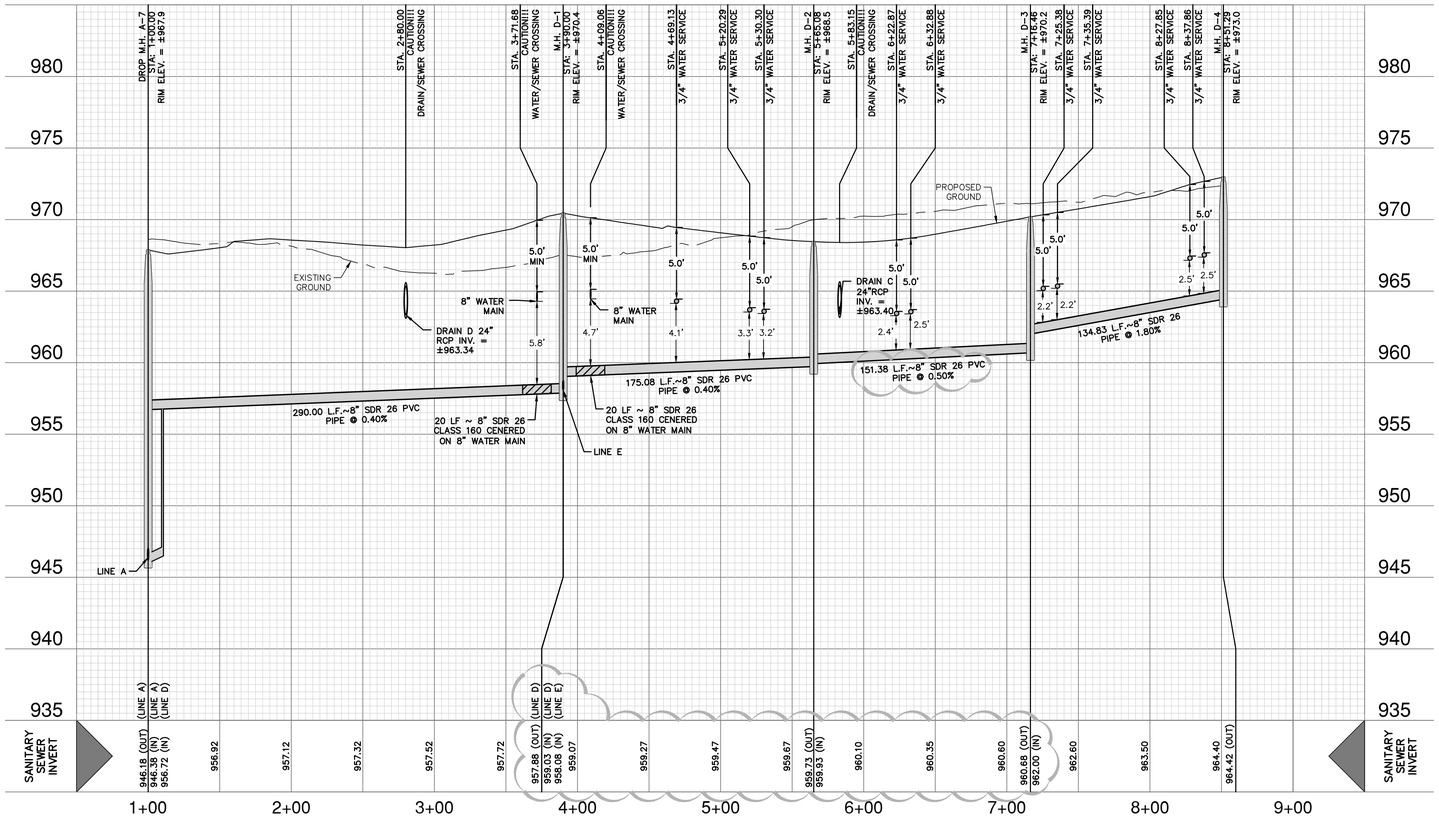
TCEQ S.S. ENVELOPE

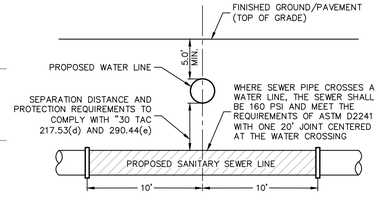
MANHOLE

FIRE HYDRANT

SANITARY SEWER LINE "D"
STA. 1+00.00 TO END

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





(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

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DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
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TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DATE
1.	ADDED DRAIN SIZES	07/01/24

8/6/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL
ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

SANITARY SEWER LINE D
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.08

Date: Aug 06, 2024, 11:59am User ID: SSepulveda
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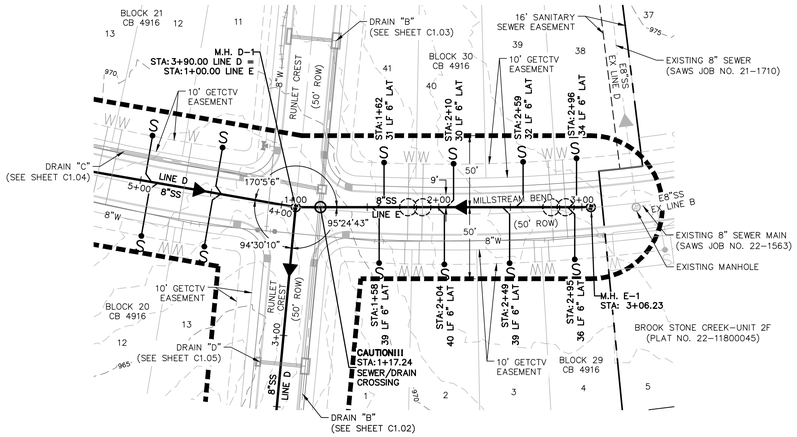
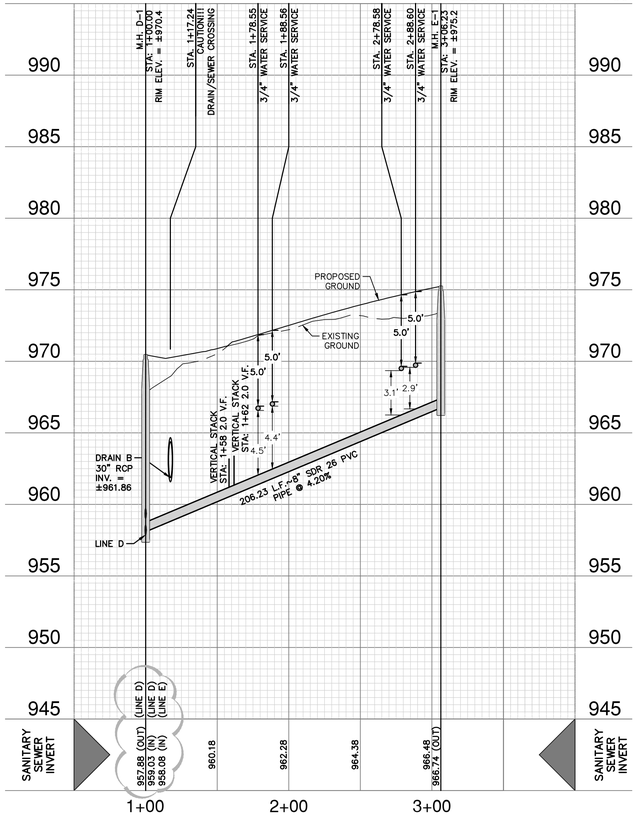
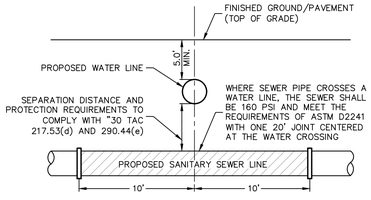


SANITARY SEWER LINE "E"
STA. 1+00.00 TO END

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

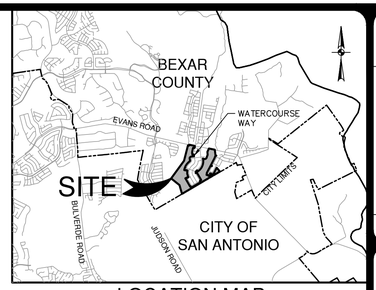




(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1" = 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS
EXISTING WATER (W)
EXISTING SEWER (SS) MANHOLE
PROPOSED SEWER (SS)
PROPOSED WATER
PROPOSED SEWER LATERAL
WATER SERVICE/SEWER CROSSING
TCEQ S.S. ENVELOPE
FIRE HYDRANT

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.

FINISHED FLOOR NOTES:

1. THE FINISHED FLOOR ELEVATIONS (FF) REPRESENT THE MINIMUM POSSIBLE FLOOR ELEVATION TO PROVIDE SANITARY SEWER SERVICE TO EACH LOT. ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT ARE TO BE DETERMINED BY THE BUILDER AND SHALL TAKE INTO CONSIDERATION AS-BUILT CONDITIONS FOR FOUND SEWER SERVICES AND ACTUAL LATERAL PLACEMENT. IT IS THE BUILDER'S SOLE RESPONSIBILITY TO DETERMINE ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT PRIOR TO THE START OF HOME FOUNDATION CONSTRUCTION TAKING INTO CONSIDERATION SITE DRAINAGE, STREET ACCESS AND SANITARY SEWER SERVICE ELEVATIONS.
2. THE MINIMUM SANITARY SEWER LATERAL GRADES WERE BASED UPON THE MINIMUM FINISHED FLOOR ELEVATIONS FOR THE LOTS LOCATED ON THE DOWNHILL SIDES OF THE PROPOSED ROADWAYS.

ROW PERMIT NOTE:

A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.

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.

OVER THE EARZ

SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-554 & 192-555 TOTAL EDU'S 158 TOTAL ACREAGE 138.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DATE
1.	ADDED DRAIN SIZE	07/01/24
2.	REVISED LINE D INVERT	08/14/24

8/14/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL
ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SANITARY SEWER LINE E
PLAN AND PROFILE

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE AUGUST 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.09

Date: Aug 14, 2024, 11:12am User ID: saepulveda
File: P:\120\93\11\Design\Civil\SNE120931l.dwg

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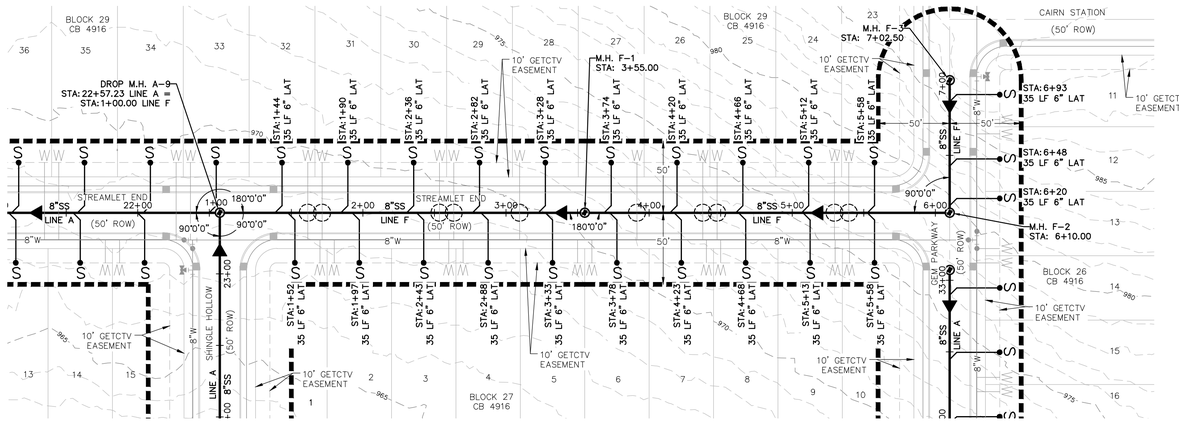
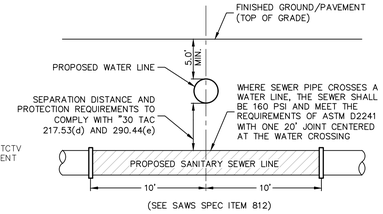
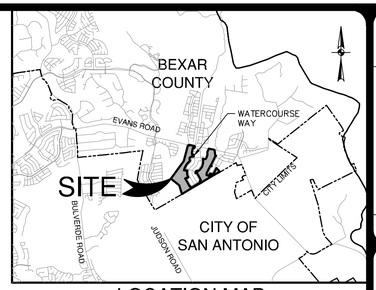




TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

SEWER LEGEND

PROJECT LIMITS

EXISTING WATER

EXISTING SEWER

PROPOSED SEWER

PROPOSED WATER

PROPOSED SEWER LATERAL

WATER SERVICE/SEWER CROSSING

TCEQ S.S. ENVELOPE

MANHOLE

FIRE HYDRANT

SANITARY SEWER LINE "F"
STA. 1+00.00 TO END

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

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OVER THE EARZ

SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.

ADDRESS: 5419 N LOOP 1604 EAST

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247

PHONE# 210-496-2668 FAX#

SAWS BLOCK MAP# 192-654 & 192-656 TOTAL EDU'S 158 TOTAL ACREAGE 138.338

TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769

NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

NO.	REVISION	DATE
1.	REVISED SAWS BLOCK	07/01/24

7/1/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH I DALLAS
2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

SANITARY SEWER LINE F
PLAN AND PROFILE

PLAT NO. 22-11800769

JOB NO. 12093-11

DATE JULY 2024

DESIGNER SS

CHECKED BAC DRAWN GK

SHEET C4.10

Date: Jul 01, 2024, 11:41am User ID: ssepulveda
File: P:\120\83\11\Design\Civil\SNF120311.dwg

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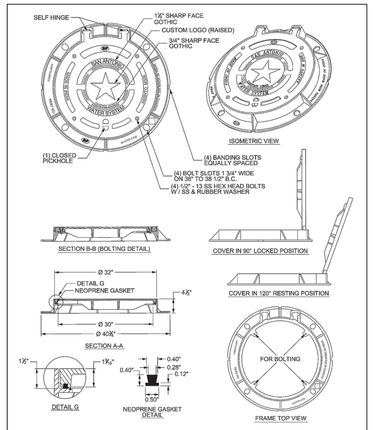
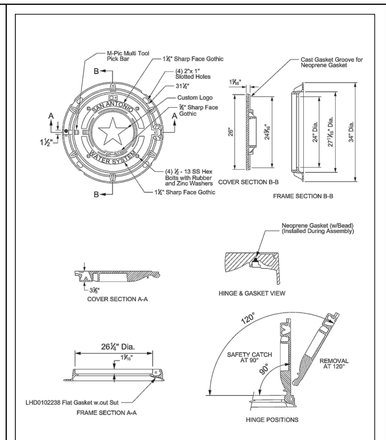
NO.	REVISION	DATE
1.	REVISED SAWS BLOCK	07/01/24



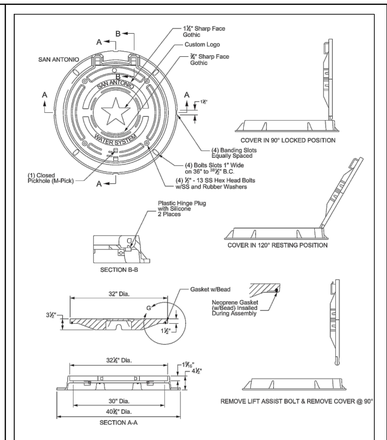
SIP Industries

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	30" MANHOLE RING AND COVER DETAIL	AUG 2019	
SAN ANTONIO, TEXAS		DD 852-07	SHEET 1 OF 5



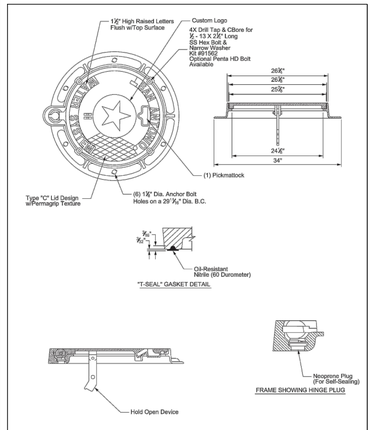
ERGO Assembly

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	MANHOLE RING AND COVER DETAIL	MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD 852-07	SHEET 4 OF 5



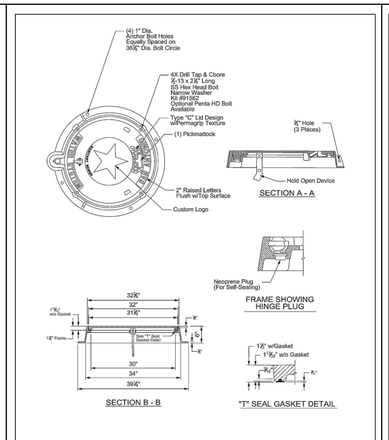
ERGO XL Assembly

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	MANHOLE RING AND COVER DETAIL	MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD 852-07	SHEET 3 OF 5



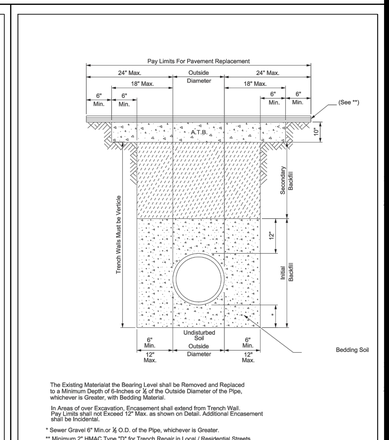
NEENAH FOUNDRY

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	MANHOLE RING AND COVER DETAIL	MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD 852-07	SHEET 5 OF 5



NEENAH FOUNDRY

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	MANHOLE RING AND COVER DETAIL	MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD 852-07	SHEET 5 OF 5

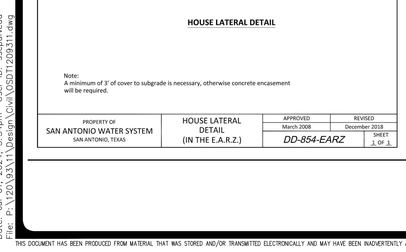


The Existing Materialat the Bearing Level shall be Removed and Replaced to a Minimum Depth of 6-Inches or ¼ of the Outside Diameter of the Pipe, whichever is Greater, with Bedding Material.

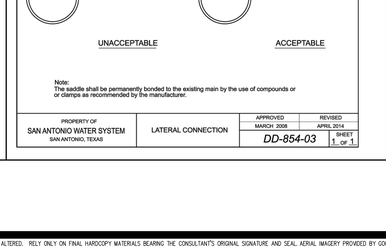
In Areas of over Excavation, Encasement shall extend from Trench Wall. Pay Limits shall not Exceed 12" Max. as shown on Detail. Additional Encasement shall be Incidental.

* Sewer Gravel 6" Min.or ¼ O.D. of the Pipe, whichever is Greater.
** Minimum 2" HMAC Type "D" for Trench Repair in Local / Residential Streets.
** Minimum 3" HMAC Type "C" for Trench Repair in Collector / Arterial Streets.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	SANITARY SEWER PIPE LAID IN TRENCH	MARCH 2008	DEC 2018
SAN ANTONIO, TEXAS		DD-804-01	SHEET 1 OF 1



PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	TRENCH COMPACTION DETAIL	MARCH 2018	DEC 2018
SAN ANTONIO, TEXAS		DD 804-02	SHEET 1 OF 1



Note:
All mandrels must be approved by SAWS Construction Inspections and stamped before use.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	GO, NO GO DEFLECTION TESTING MANDREL	March 2008	APRIL 2014
SAN ANTONIO, TEXAS		DD-848-01	SHEET 1 of 2

SIZE	A	B*	MANDREL O.D. PVC (SDR-26)	RING O.D. PVC (SDR-26)
6"	4.0"	4.5"	5.50	4.79
8"	5.5"	6"	7.37	6.66
10"	7.0"	7.5"	9.21	8.50
12"	8.0"	9"	10.96	10.25
15"	10.0"	11"	13.42	12.71
18"	12.0"	13.5"	——	——
21"	14.0"	16"	——	——
24"	16.0"	18"	——	——
27"	18.0"	20"	——	——

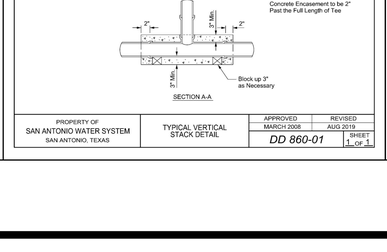
* Minimum Length

CHART

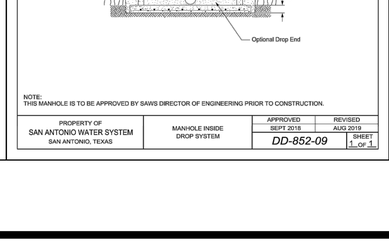
Notes:
PVC pipes and fittings 6" to 15" in diameter shall conform to ASTM D-3034-08.
PVC pipes and fittings 18" to 27" in diameter shall conform to ASTM F-679-08.

This information is provided as a reference. All deflection testing shall be done in accordance with TCEQ Chapter 217.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	GO, NO GO DEFLECTION TESTING MANDREL CHART	MARCH 2008	APRIL 2014
SAN ANTONIO, TEXAS		DD-848-01	SHEET 2 of 2

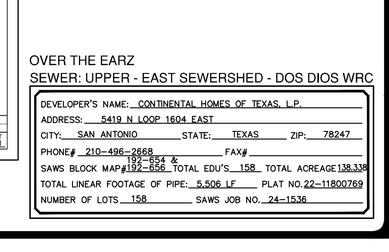


PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	STANDARD PRECAST MANHOLE	MAY 2013	AUG 2019
SAN ANTONIO, TEXAS		DD-852-01	SHEET 1 OF 2



General Notes:
1. Material for Sanitary Sewer Pipe Must be the Same from Manhole to Manhole. Changes in Type of Pipe may be Made only at Manholes, or Special Structures, Except as Approved by the Project Engineer.
2. Adaptors and Concrete Collars shall be used as approved by the SAWS Project Engineer.
3. Watertight Manhole Rings and Covers shall be Trans-Tex A77 "O" Ring or Approved Equal.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	STANDARD MONOLITHIC MANHOLE	March 2008	AUG 2019
SAN ANTONIO, TEXAS		DD 852-01	SHEET 2 OF 2



NOTE:
1. The Concrete Shall be 4000 PSI Minimum and Reinforced with No. 4 Bars as Shown.
2. The Concrete Shall Extend to Edge of Saw Cut Pavement.
3. Manhole Ring Encasement is Required on all Manholes.
4. Manhole Lid shall Open in the Direction of Traffic or Downstream in Parkway

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	MANHOLE RING ENCASEMENT DETAIL	AUGUST 2009	AUG 2019
SAN ANTONIO, TEXAS		DD 852-03	SHEET 1 OF 2

Depth and grade of service laterals as shown, are typical only. Actual depth, alignment and grade of service laterals shall be determined by the Engineer based on the elevations of the sewer main, street, natural ground and building to be serviced.

HOUSE LATERAL DETAIL

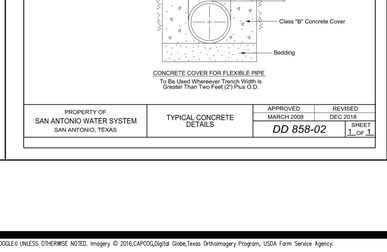
Note:
A minimum of 3' of cover to subgrade is necessary, otherwise concrete encasement will be required.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)	March 2008	December 2018
SAN ANTONIO, TEXAS		DD-854-EARZ	SHEET 1 OF 1

LATERAL CONNECTION TO EXISTING SEWER MAIN

Note:
The saddle shall be permanently bonded to the existing main by the use of compounds or clamps as recommended by the manufacturer.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	LATERAL CONNECTION	MARCH 2008	APRIL 2014
SAN ANTONIO, TEXAS		DD-854-03	SHEET 1 OF 1



PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	TYPICAL CONCRETE DETAILS	MARCH 2008	DEC 2018
SAN ANTONIO, TEXAS		DD 858-02	SHEET 1 OF 1

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	TYPICAL VERTICAL STACK DETAIL	MARCH 2008	AUG 2019
SAN ANTONIO, TEXAS		DD 860-01	SHEET 1 OF 1

NOTE:
THIS MANHOLE IS TO BE APPROVED BY SAWS DIRECTOR OF ENGINEERING PRIOR TO CONSTRUCTION.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM	MANHOLE INSIDE DROP SYSTEM	SEPT 2018	AUG 2019
SAN ANTONIO, TEXAS		DD-852-09	SHEET 1 OF 1

OVER THE EARZ
SEWER: UPPER - EAST SEWERSHED - DOS DIOS WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP#192-654 & 192-656 TOTAL EDU'S 158 TOTAL ACREAGE 38.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,506 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1536

7/1/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS
SANITARY SEWER DETAILS

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE JULY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C4.20

Date: Jul 01, 2024, 3:34pm User ID: saepulveda
File: P:\12093\11\Design\Civil\05071209311.dwg

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TCEQ - ORGANIZED SEWAGE COLLECTION SYSTEM GENERAL CONSTRUCTION NOTES

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM (SCS) MUST BE CONSTRUCTED IN ACCORDANCE WITH 30 TEXAS ADMINISTRATIVE CODE (TAC) §213.5(C), THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS AQUIFER RULES AND ANY LOCAL GOVERNMENT STANDARD SPECIFICATIONS.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SCS PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON-SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.

3. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE PRESIDING TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF AN SCS APPLICATION TO MODIFY THIS APPROVAL INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.

5. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

6. IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TCEQ OF THE FEATURE DISCOVERED. A GEOLOGIST'S ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING AND THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.

7. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE CAPPED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES.

8. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND RETESTED.

9. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.

   THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET C4.05.

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

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

11. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE ALL CURVATURE OF SEWER PIPE MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER: N/A

   IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: N/A

   SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.

12. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.

    IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON SHEET C4.20. (FOR POTENTIAL FUTURE LATERALS).

    THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET C4.02 TO C4.10 AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAIL ON PLAN SHEET C4.20

13. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.

14. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(C)(3)(E).

15. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:

(a) FOR A COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY FLOW, THE DESIGN MUST SPECIFY AN INFILTRATION AND EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:

(1) LOW PRESSURE AIR TEST.

(A) A LOW PRESSURE AIR TEST MUST FOLLOW THE PROCEDURES DESCRIBED IN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) C-828, ASTM C-924, OR ASTM F-1417 OR OTHER PROCEDURE APPROVED BY THE EXECUTIVE DIRECTOR, EXCEPT AS TO TESTING TIMES AS REQUIRED IN TABLE C.3 INSUBPARAGRAPH (C) OF THIS PARAGRAPH OR EQUATION C.3 IN SUBPARAGRAPH (B)(II) OF THIS PARAGRAPH.

(B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.

(i) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.

(ii) ONCE THE PRESSURE IS STABILIZED, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSI GAUGE TO 2.5 PSI GAUGE IS COMPUTED FROM THE FOLLOWING EQUATION:

EQUATION C.3

WHERE: T= (0.085 * D * K)/Q

T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS
K = 0.000419 X D X L, BUT NOT LESS THAN 1.0
D = AVERAGE INSIDE PIPE DIAMETER IN INCHES
L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET
Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE

(C) SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:

PIPE DIAMETER (INCHES)	MIN. TIME (SECONDS)	LENGTH FOR MIN. (FEET)	TIME, LONGER LENGTH (SECONDS)
6	340	398	0.855(L)
8	454	298	1.520(L)
10	567	239	2.374(L)
12	680	199	3.419(L)
15	850	159	5.342(L)
18	1020	133	7.693(L)
21	1190	114	10.471(L)
24	1360	100	13.676(L)
27	1530	88	17.309(L)
30	1700	80	21.369(L)
33	1870	72	25.856(L)

(D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.

(E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.

(F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.

(G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.

(2) INFILTRATION/EXFILTRATION TEST.

(A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2.0 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.

(B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.

(C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.

(D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARAGRAPH (C) OF THIS PARAGRAPH.

(E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION.

(b) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING PROCEDURES MUST BE FOLLOWED:

(1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.

(A) MANDREL SIZING.

(i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTMS, AMERICAN WATER WORKS ASSOCIATION, UNI-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.

(ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF A PIPE. IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.

(iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.

(B) MANDREL DESIGN.

(i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.

(ii) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.

(iii) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.

(iv) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.

(C) METHOD OPTIONS.

(i) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.

(ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.

(iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.

(2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION. A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.

(3) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.

(4) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).

(5) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

16. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.

(a) ALL MANHOLES MUST PASS A LEAKAGE TEST.

(b) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.

(1) HYDROSTATIC TESTING.

(A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.

(B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.

(C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.

(2) VACUUM TESTING.

(A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.

(B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.

(C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.

(D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.

(E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

(F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY INSIDE A MANHOLE TO PERFORM A VALID TEST.

(G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.

(H) A MANHOLE PASSES THE TEST IF AFTER 2.0 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

17. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I), AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

AUSTIN REGIONAL OFFICE
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AUSTIN, TEXAS 78753-1808
PHONE (512) 339-2929
FAX (512) 339-3795

SAN ANTONIO REGIONAL OFFICE
14250 JUDSON ROAD
SAN ANTONIO, TEXAS 78233-4480
PHONE (210) 490-3096
FAX (210) 545-4329

SAWS NOTES FOR EDWARDS AQUIFER RECHARGE ZONE

(JANUARY 26, 2006)

1. THIS PROJECT IS WITHIN THE EDWARDS AQUIFER RECHARGE ZONE. ALL MATERIAL AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH CURRENT SPECIFICATIONS.

2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED G.C.P. 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.

3. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES, TO INCLUDE SERVICE LATERALS, SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES 48 HOURS PRIOR TO EXCAVATION AND TO PROTECT THE SAME DURING CONSTRUCTION.

SAN ANTONIO WATER SYSTEM	233-2010
(WATER, SEWER & RECYCLED WATER)	
DRAINAGE	1-800-545-6005
TELEPHONE	1-800-545-6005
CITY PUBLIC SERVICE	1-800-545-6005
PARAGON CABLE TV	1-800-545-6005
VALERO ENERGY CO.	1-800-545-6005

4. THE CONTRACTOR SHALL MAINTAIN SERVICE TO ALL EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION.

5. ALL WORK IN TEXAS HIGHWAY DEPARTMENT AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.

6. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CITY PUBLIC SERVICE MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND GAS VALVES THAT ARE IN THE PROJECT AREAS.

7. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST FOUR INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND EXCEPT WHEN LOCATED IN PAVED AREAS. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH PAVEMENT.

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

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

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

11. SEWER PIPE CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS AS APPROVED BY SAWS. MECHANICAL JOINT "BOOT TYPE" CONNECTIONS ALONE WILL NOT BE ALLOWED. "BOOT TYPE JOINTS MAY BE USED IN CONJUNCTION WITH COMPRESSION JOINTS AS APPROVED BY SAWS. ANY CHANGES FROM THESE METHODS MUST BE APPROVED BY SAWS.

12. ALL RESIDENTIAL SEWER SERVICE LATERAL SHALL BE EXTENDED TO THE PROPERTY LINE AND CAPPED AND SEALED. (ITEM. NO. DD-854-01).

13. WHERE REQUIRED, CONCRETE ENCASEMENT SHALL BE PLACED FOR FULL WIDTH OF THE TRENCH TO A PLANE 6" ABOVE THE TOP OF THE PIPE, WITH PAY LIMITS AS SHOWN ON THE ITEM NO. DD-858-01.

14. A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER MAIN AND LATERALS AT SUBGRADE, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.

15. NO BLASTING SHALL BE PERFORMED WITHIN 75 FEET OF EXISTING UTILITIES.

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

17. THE CONTRACTOR SHALL NOT PLACE ANY MATERIALS ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER WITHOUT AN APPROVED WATER POLLUTION ABATEMENT PLAN FROM THE TCEQ.

18. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEM, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS TO GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

19. A. THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF SEWER COLLECTION SYSTEMS. DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTED ON THE PROJECT'S PLAN AND PROFILE SHEETS.

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

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

20. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY THE SAN ANTONIO WATER SYSTEM.

21. PLACEMENT OF SUCH CONTROLS SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS. ACTUAL LOCATIONS MAY VARY SLIGHTLY FROM THE PLANS, BUT WILL BE VERIFIED BY THE ENGINEER/INSPECTOR IN THE FIELD PRIOR TO SEWER LINE CONSTRUCTION. THE CONTRACTOR AND CITY INSPECTOR SHALL INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY SIGNIFICANT RAINFALL TO INSURE SIGNIFICANT DISTURBANCE TO THE STRUCTURES HAS NOT OCCURRED. SEDIMENT DEPOSITED AFTER A SIGNIFICANT RAINFALL SHALL BE REMOVED FROM THE SITE OR PLACED IN AN APPROVED DESIGNATED SOIL DISPOSAL AREA.

22. A DEFLECTION TEST SHALL BE PERFORMED ON ALL FLEXIBLE PIPE. THE TEST SHALL BE CONDUCTED AFTER INITIAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. ITEM NO. 849 23. ALL MAINS MUST PASS AIR TESTING PER ITEM NO. 849 IN THE STANDARD SPECIFICATIONS PRIOR TO ACCEPTANCE BY THE SAN ANTONIO WATER SYSTEM.

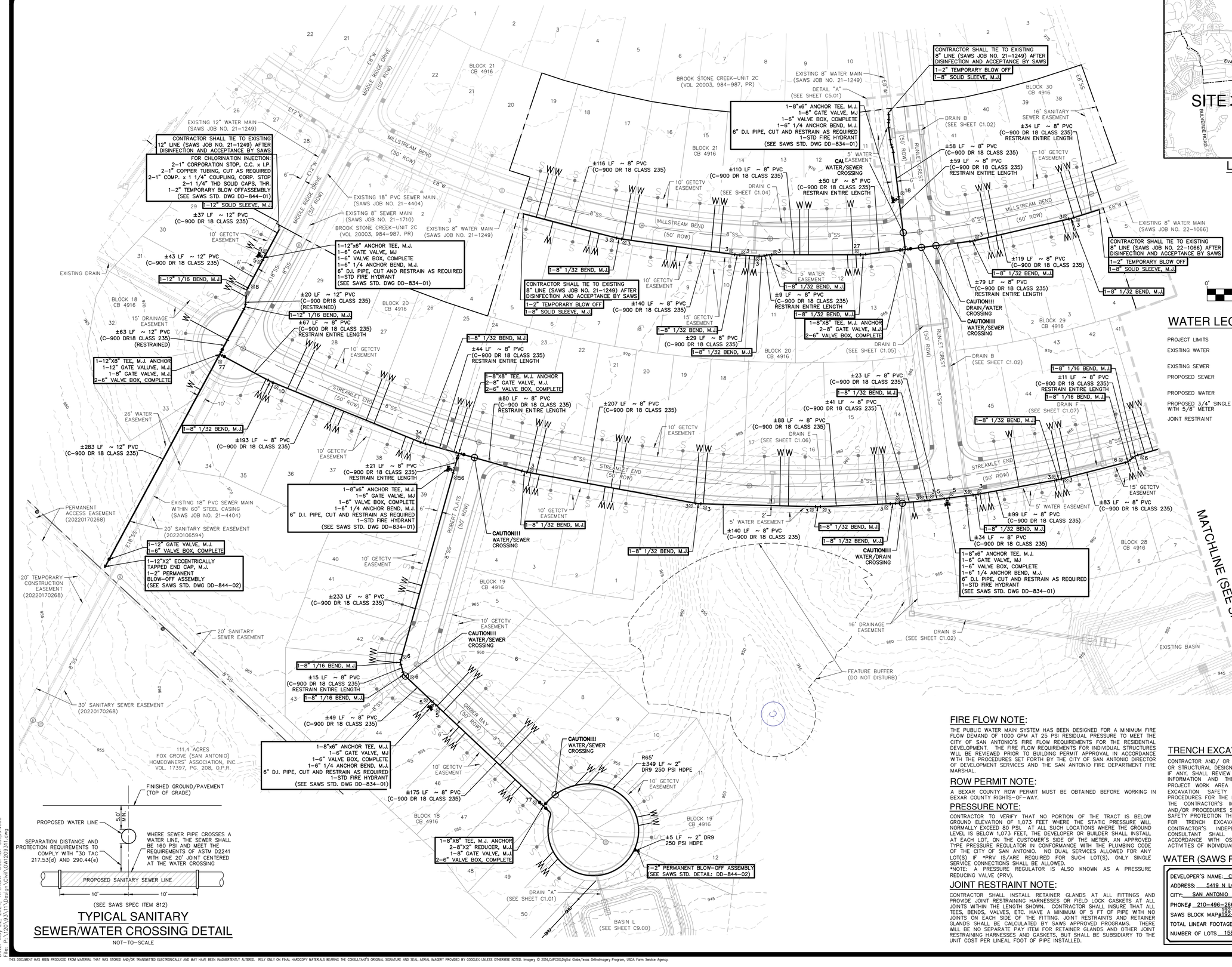
24. ALL MAINS MUST COMPLY WITH ITEM NO. 868 OF SEWER MAIN CLEANING.

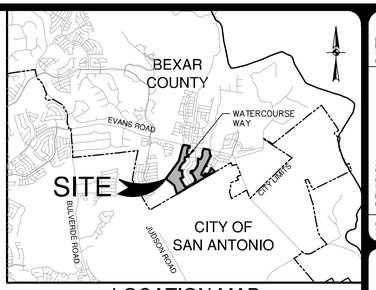
25. WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. SANITARY SEWER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND SAWS ITEM 804.

26. SANITARY SEWER MAIN CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WILL REQUIRE SUCCESSFUL TESTING OF THE MANHOLES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS ITEM 849.

27. AFTER CONSTRUCTION, TESTING WILL BE DONE BY T.V. CAMERA BY THE CONTRACTOR AND OBSERVED BY INSPECTOR, AND WASTEWATER ENGINEERING PERSONNEL AS THE CAMERA IS RUN THROUGH THE LINES. ANY ABNORMALITIES, SUCH AS BROKEN PIPE OR MISALIGNED JOINTS, MUST BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.

28. A COPY OF ALL TESTING REPORTS SHALL BE FOR





LOCATION MAP
NOT-TO-SCALE

WATER LEGEND

- PROJECT LIMITS
- EXISTING WATER — FIRE HYDRANT W
- EXISTING SEWER — SS MANHOLE
- PROPOSED SEWER — SS MANHOLE
- PROPOSED WATER — FIRE HYDRANT W
- PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER
- JOINT RESTRAINT ⊠5

(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

FIRE FLOW NOTE:

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ROW PERMIT NOTE:

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PRESSURE NOTE:

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*NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

JOINT RESTRAINT NOTE:

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WATER (SAWS PRESSURE ZONE 1258)

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-555 & 192-556 TOTAL EDU'S 158 TOTAL ACREAGE 138.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,503 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1040

NO.	REVISION	DATE
1.	ADDED EASEMENTS	05/22/24

5/22/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS

OVERALL WATER DISTRIBUTION PLAN
(SHEET 1 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MAY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C5.00

Date: May 22, 2024, 11:54am User ID: saquilweda
File: P:\120\83\11\Design\Civil\OWI209311.dwg

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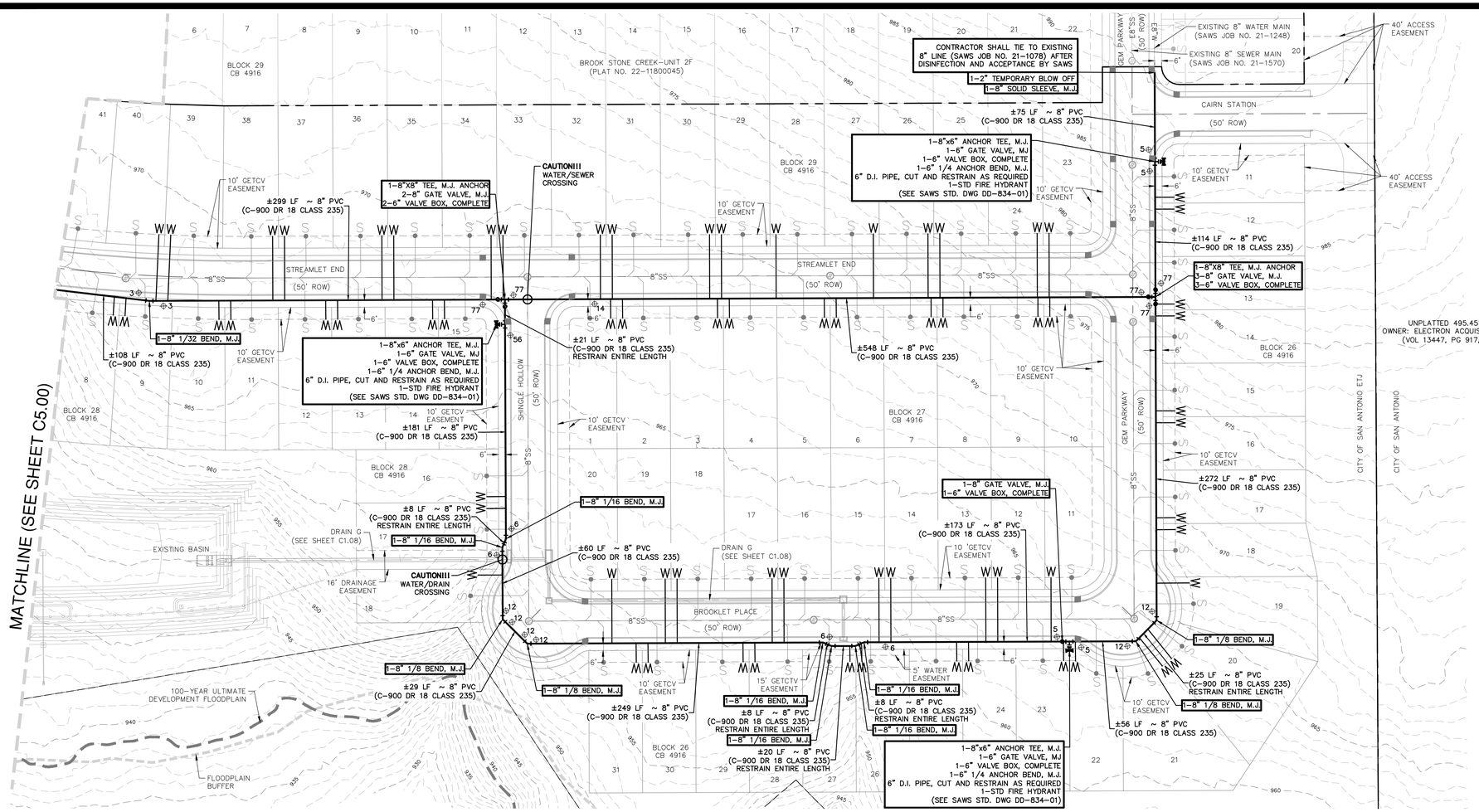
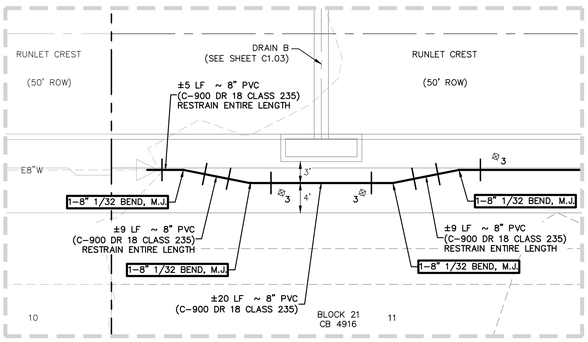
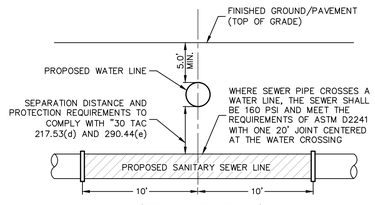




DETAIL "A"

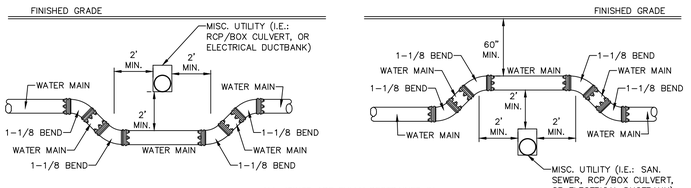
SCALE: 1" = 10'



(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

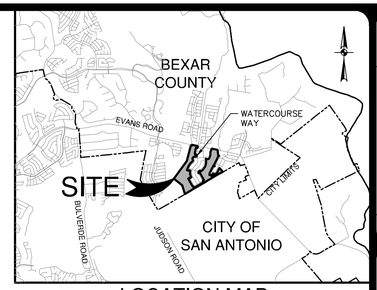
NOT-TO-SCALE



ALL JOINTS ARE FULLY RESTRAINED IN ACCORDANCE WITH SAWS SPECIFICATION TABLE DD-839-06.

TYPICAL UTILITY/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1" = 50'

0' 50' 100' 150'

WATER LEGEND

PROJECT LIMITS	
EXISTING WATER	FIRE HYDRANT W
EXISTING SEWER	SS
PROPOSED SEWER	MANHOLE SS
PROPOSED WATER	FIRE HYDRANT W
PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER	
JOINT RESTRAINT	⊠5

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ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-554 & 192-556 TOTAL EDU'S 158 TOTAL ACREAGE 38.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,503 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1040

NO.	REVISION	DATE
1.	ADDED EASEMENTS	05/22/24

5/22/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

OVERALL WATER DISTRIBUTION PLAN (SHEET 2 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MAY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C5.01

Date: May 22, 2024, 1:09pm User ID: saepulveda
File: P:\120\93\11\Design\Civil\OW\209311.dwg

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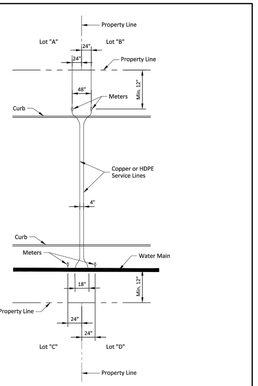
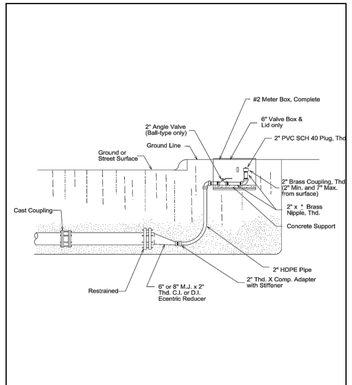


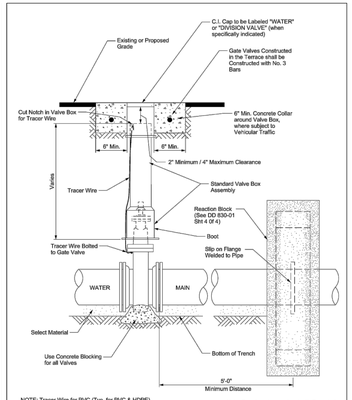
SINGLE SERVICE LINE - SINGLE METER

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL NEW DEVELOPMENT SERVICE ARRANGEMENT	March 2008	December 2018
		DD-824-05	SHEET 3 OF 3



* Cut to fit in meter box.

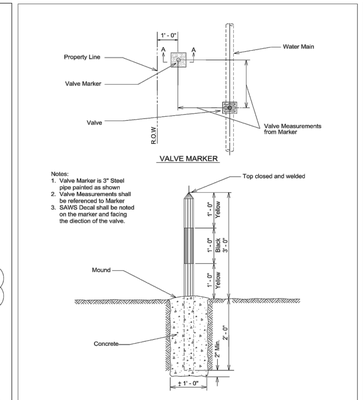
PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	MARCH 2008	AUG 2019
		DD-844-02	SHEET 3_OF_5



NOTE: Tracer Wire for PVC (Typ. for PVC & HDPE)
NOTE: All Concrete to be 3,000 psi

Note: For all work associated with Recycled Water Valves, refer to DD 110-10, Sht. 1 of 1

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION	MARCH 2008	AUG 2019
		DD 828-01	SHEET 1_OF_1



VALVE MARKER

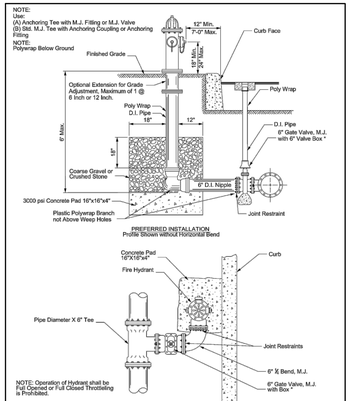
Notes:
1. Valve Marker is 3" Steel pipe painted as shown
2. Valve Measurements shall be referenced to Marker
3. SAWS Decal shall be noted on the marker and facing the diection of the valve.

SECTION A-A

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	VALVE MARKER	MARCH 2008	AUG 2019
		DD-828-04	SHEET 1_OF_1

NOTE:
Use:
(A) Anchoring Tee with M.J. Fitting or M.J. Valve
(B) Std. M.J. Tee with Anchoring Coupling or Anchoring Fitting

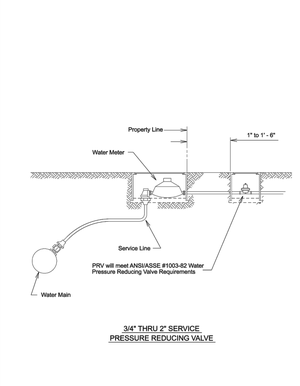
NOTE:
Polywrap Below Ground



* Resilient Seat

NOTE: Operation of Hydrant shall be Full Opened or Full Closed Throttleing is Prohibited.

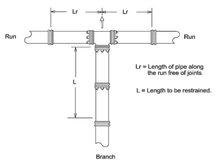
PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)	MAY 2013	AUG 2019
		DD-834-01	SHEET 1_OF_3



3/4" THRU 2" SERVICE
PRESSURE REDUCING VALVE

Note:
For Tapping Schedule, See DD-824-01 Sheet 3 of 3.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SERVICE INSTALLATION WITH PRESSURE REDUCING VALVE	MARCH 2008	APRIL 2014
		DD-833-03	SHEET 1_OF_1



RESTRAINED LENGTH FOR TEES

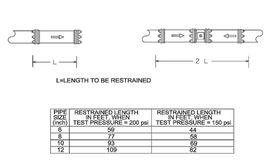
PIPE SIZE (inch)	BRANCH SIZE	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	2	7	1
6	4	10	1	1
6	6	0	59	44
6	6	0	56	20
8	4	10	11	1
8	4	0	42	31
8	4	5	1	1
8	6	0	59	44
8	6	6	28	13
8	6	10	1	1
8	8	0	77	58
8	8	5	53	34
8	8	10	30	11
8	8	15	6	1

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe.The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR TEES	March 2008	AUG 2019
		DD-839-04	SHEET 1_OF_2



L=LENGTH TO BE RESTRAINED

PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
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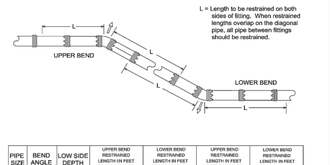
PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES	MARCH 2008	AUG 2019
		DD-839-05	SHEET 1_OF_1



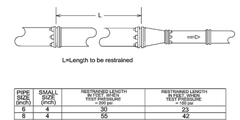
PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	24	6	19	5
6	22.5	5	12	4	9	3
6	11.25	5	6	2	4	1
6	45	10	24	5	18	4
6	22.5	10	12	2	9	2
6	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	16	5	11	4
8	11.25	5	8	3	6	2
8	45	10	32	7	24	5
8	22.5	10	15	3	11	2
8	11.25	10	8	2	6	1
12	45	5	45	16	34	12
12	22.5	5	22	7	16	6
12	11.25	5	11	4	8	3
12	45	10	45	10	34	7
12	22.5	10	22	5	16	3
12	11.25	10	11	2	8	2

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provide for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS VERTICAL OFFSETS	MARCH 2008	AUG 2019
		DD-839-06	SHEET 1_OF_1



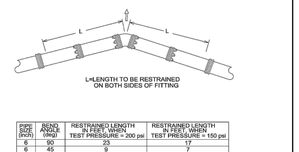
PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
8	4	55	42
8	6	32	24
12	4	80	60
12	6	80	60
12	8	58	43

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. Th restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR REDUCERS	MARCH 2008	AUG 2019
		DD-839-07	SHEET 1_OF_1



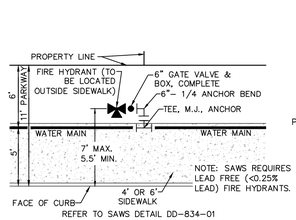
PIPE SIZE (inch)	BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

RESTRAINED LENGTH DESIGN

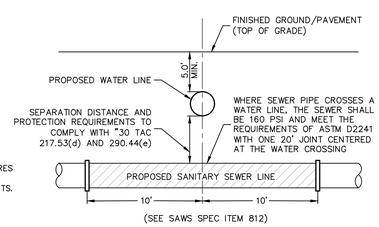
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	MARCH 2008	AUG 2019
		DD-839-08	SHEET 1_OF_1

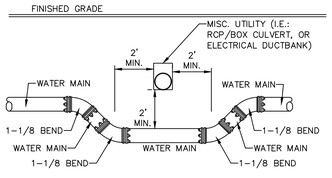


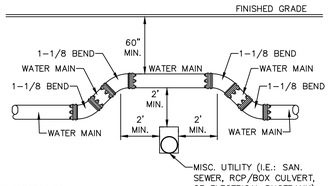
FIRE HYDRANT INSTALLATION
NOT-TO-SCALE



(SEES SAWS SPEC ITEM 812)

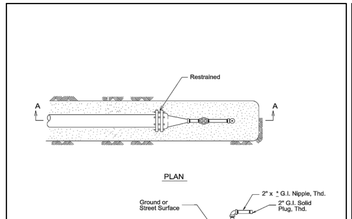
TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL
NOT-TO-SCALE





ALL JOINTS ARE FULLY RESTRAINED IN ACCORDANCE WITH SAWS SPECIFICATION TABLE DD-839-06.

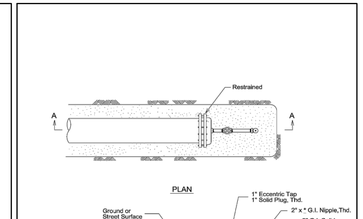
TYPICAL UTILITY/WATER
CROSSING DETAIL
NOT-TO-SCALE



SECTION A-A

* Cut as required to extend beyond excavation

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" TEMPORARY BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	MARCH 2008	AUG 2019
		DD-844-01	SHEET 1_OF_4



SECTION A-A

* Cut as required to extend beyond excavation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" TEMPORARY BLOW-OFF ASSEMBLY ON 12" & 16" MAINS	March 2008	AUG 2019
		DD-844-01	SHEET 2_OF_4

WATER (SAWS PRESSURE ZONE 1258)

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-656 & 192-654 TOTAL EDU'S 158 TOTAL ACREAGE 38.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,503 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1040

DATE
NO. REVISION

5/22/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E
BEXAR COUNTY, TEXAS
WATER DISTRIBUTION DETAILS

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MAY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C5.10

Date: May 22, 2024, 11:37am User ID: sasquivedo
File: P:\120\93\11\Design\Civil\GW01209311.dwg

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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 SYSTEM"; TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER"; TAC TITLE 30 PART 1 CHAPTER 290.
   B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE";
   C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION";
   D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR 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 DIVISON 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) 207-6026
   - 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 CONSTWORKREQ@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 CONSTWORKREQ@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 WATER NOTES

1. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION 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.

   - FOR WATER MAINS 12" OR HIGHER: SAWS EMERGENCY OPERATIONS CENTER (210) 233-2014

2. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS- CONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".

3. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (NSPI)

4. SUITABLE ANCHORAGE/THRUST BLOCKING OR JOINT RESTRAINT SHALL BE PROVIDED AT ALL OF THE FOLLOWING MAIN LOCATIONS: DEAD ENDS, PLUGS, CAPS, TEES, CROSSES, VALVES, AND BENDS, IN ACCORDANCE WITH THE STANDARD DRAWINGS DD-839 SERIES AND ITEM NO. 839, IN THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.

5. ALL VALVES SHALL READ "OPEN RIGHT".

6. PRVS REQUIRED: CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 1073 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 1073 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF *PRV IS/ARE REQUIRED FOR SUCH LOT(S), ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. *NOTE: PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

7. PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3): MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR, AND SHALL NOT EXCEED A TOTAL LENGTH OF 800 FEET. THIS METHOD OF DISINFECTION WILL ALSO BE FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE ALL APPROPRIATE SAFETY MEASURE TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.

8. BACKFLOW PREVENTION DEVICES:

   - ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.
   - ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.

9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND SAWS HAS RELEASED THE MAIN FOR TIE-IN AND USE.

10. DIVISION VALVES: DIVISION VALVES SHOWN ON PLANS OR NOT SHOWN ON PLANS BUT FOUND IN THE FIELD SHALL ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND PROPER COORDINATION WITH ALL SAWS DEPARTMENTS. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE INSPECTOR A MINIMUM OF TWO WEEKS IN ADVANCE TO START THE COORDINATION PROCESS AND WILL BE INFORMED BY THE INSPECTOR WHEN THE DIVISION VALVE WILL BE OPERATED BY THE SAWS DISTRIBUTION AND COLLECTION STAFF. THE DIVISION VALVE CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF MEMBER NOT THE INSPECTOR OR THE CONTRACTOR. OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE SAWS DISTRIBUTION AND COLLECTION STAFF WILL CONSTITUTE A MATERIAL BREACH OF ANY WRITTEN SAWS CONTRACT OR PERMIT IN ADDITION TO SUBJECTING THE CONTRACTOR TO LIABILITY FOR ANY AND ALL FINES, FEES, OR OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, THAT MAY ARISE FROM OR BE CAUSED BY THE OPERATION OF THE VALVE WITHOUT PRIOR WRITTEN PERMISSION. PLEASE BE INFORMED THAT THE APPROVAL OF THE OPERATION OR OPENING OR CLOSING OF A DIVISION VALVE CAN TAKE SEVERAL WEEKS FOR APPROVAL. DIVISION VALVES WILL ALSO HAVE A VALVE LID LABELED DIVISION VALVE AND A LOCKING MECHANISM INSTALLED WITH A KEY. THE LOCK AND KEY MECHANISM WILL BE PAID FOR BY THE CONTRACTOR BUT WILL BE INSTALLED BY SAWS DISTRIBUTION AND COLLECTION STAFF.

PROJECT WATER NOTES

1. MACHINE CHLORINATION BY THE S.A.W.S.
2. ALL 8", 12" AND 16" PIPE SHALL BE P.V.C. C-900 CLASS 235 DR 18.
3. ALL MAINS SHALL BE HYDROSTATICALLY TESTED BY THE CONTRACTOR, AS PROVIDED FOR IN THE SPECIAL CONDITIONS.
4. THE WATER LINES WILL BE SET FROM THE STREET HUBS BEFORE THIS CONTRACT BEGINS. STREET CUT SHEETS WILL BE SUPPLIED TO THE CONTRACTOR. THERE SHOULD BE NO ADDITIONAL STAKES REQUIRED, AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE SITE AND VERIFY THAT ALL STAKES REQUIRED FOR HIS WORK ARE IN PLACE AT THE TIME THE CONSTRUCTION BEGINS. IF ANY STAKES ARE MISSING THE ENGINEER SHOULD BE NOTIFIED IMMEDIATELY. AFTER CONSTRUCTION BEGINS, ALL CONSTRUCTION STAKES, MARKS, ETC., SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR, AND IN CASE OF DESTRUCTION OR REMOVAL BY THE CONTRACTOR, HIS EMPLOYEE OR ANY OTHER MEANS, SUCH STAKES, MARKS, ETC., SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL THE FINAL MEASUREMENTS, TAPS AND LENGTH OF SERVICE CONNECTIONS.
6. THE LOT CORNERS WILL BE SET BY THE ENGINEER FOR INSTALLATION OF ALL WATER SERVICES. THESE LOT CORNERS SHALL BE CAREFULLY PRESERVED BY THE CONTRACTOR SO THE METER BOXES CAN BE SET IN PHASE II. ANY LOT CORNER DESTROYED OR REMOVED BY THE CONTRACTOR, HIS EMPLOYEES, OR BY ANY OTHER MEANS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
7. STREETS WILL HAVE BEEN EXCAVATED DOWN TO SUBGRADE AND THE PARKWAY WILL BE CUT DOWN TO TOP OF CURB BY THE STREET CONTRACTOR, PRIOR TO CONSTRUCTION OF THE WATER MAINS. IT WILL BE THE UTILITY CONTRACTOR'S RESPONSIBILITY TO PROVIDE A PAD FOR HIS EQUIPMENT.
8. WATER METER BOXES IF APPLICABLE SHALL BE INSTALLED NINE FEET FROM FACE OF CURB TO CENTER OF THE METER BOX.
9. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR, AT HIS EXPENSE.
10. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED AND THE S.A.W.S. RELEASES THE MAIN FOR TIE-IN AND USE.
11. UNIT PRICE BID FOR "STANDARD FIRE HYDRANT ASSEMBLY" SHALL INCLUDE FIRE HYDRANT, 6-INCH GATE VALVE AND 6-INCH VALVE BOX COMPLETE, ANCHOR BEND, AND ALL 6-INCH DI PIPE REQUIRED (DI PIPE REQUIRED SHALL INCLUDE ALL PIPE FROM THE TEE ON THE MAIN LINE TO THE FIRE HYDRANT).
12. WHEN SEWER LINES ARE INSTALLED IN THE VICINITY OF WATER MAINS, SUCH INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS" (1988 OR ANY REVISIONS THERETO).
13. A CLEAR SPACE SHALL BE PROVIDED AROUND ALL FIRE HYDRANTS. THIS AREA SHOULD HAVE A MINIMUM DIAMETER OF 3.0' AND BE CLEAN OF VERTICAL OBSTRUCTIONS, VALVES, AND METER BOXES.
14. SAWS REQUIRES LEAD FREE (< 0.25%) FIRE HYDRANTS.
15. UNLESS OTHERWISE NOTED ALL SERVICES SHALL BE 3/4" WITH 5/8" METER.

WATER (SAWS PRESSURE ZONE 1258)

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.
ADDRESS: 5419 N LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE# 210-496-2668 FAX#
SAWS BLOCK MAP# 192-654 & 192-656 TOTAL EDU'S 158 TOTAL ACREAGE 38.338
TOTAL LINEAR FOOTAGE OF PIPE: 5,503 LF PLAT NO. 22-11800769
NUMBER OF LOTS 158 SAWS JOB NO. 24-1040

NO.	REVISION	DATE

5/22/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

WATER DISTRIBUTION NOTES

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MAY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C5.20

Date: May 22, 2024, 11:37am User ID: saepulveda
File: P:\12093\11\Design\Civil\DWDT12093I1.dwg

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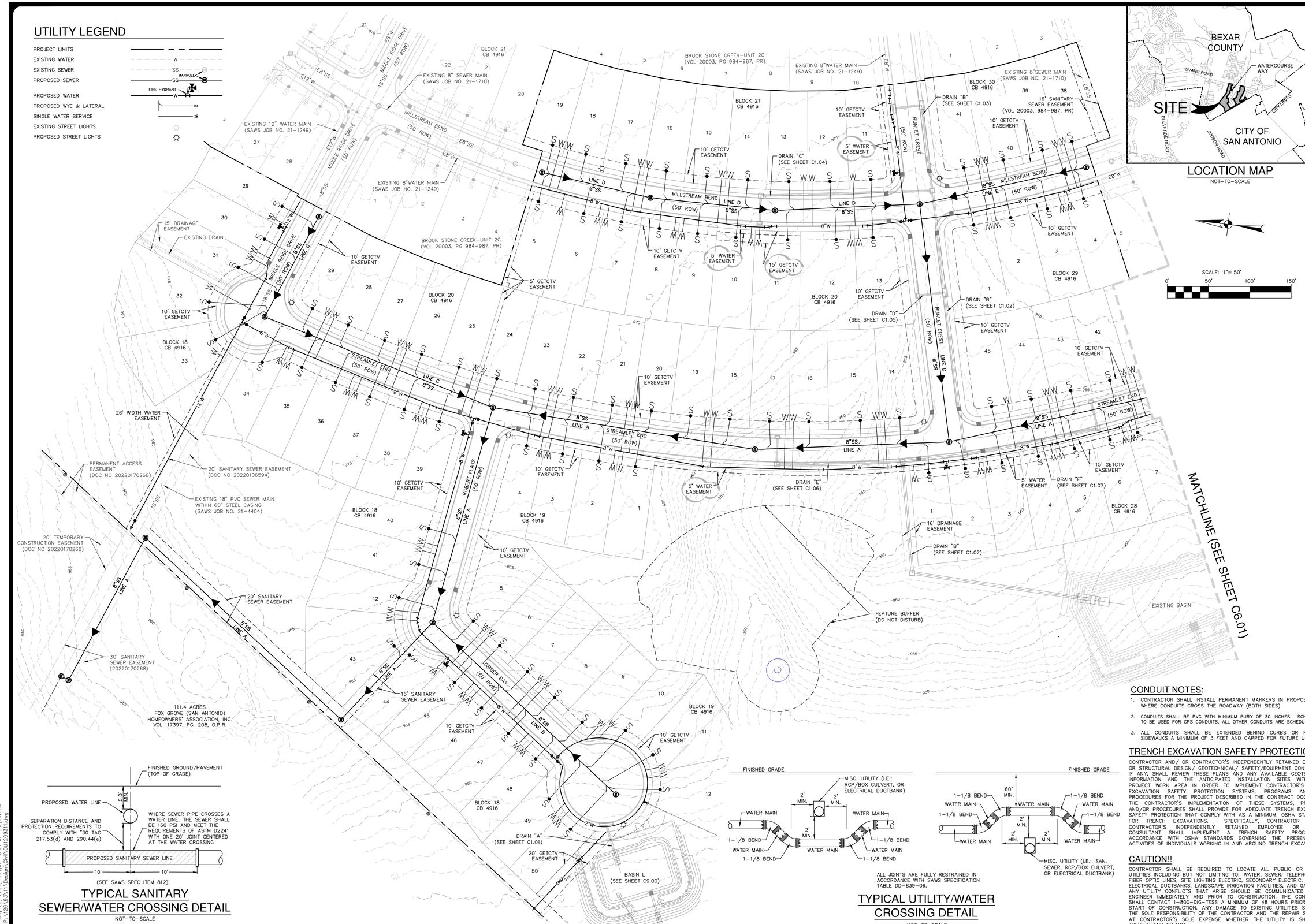
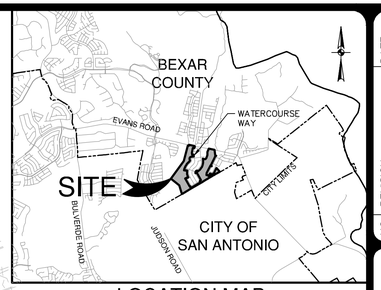
UTILITY LEGEND

PROJECT LIMITS
EXISTING WATER
EXISTING SEWER
PROPOSED SEWER
PROPOSED WATER
PROPOSED WYE & LATERAL
SINGLE WATER SERVICE
EXISTING STREET LIGHTS
PROPOSED STREET LIGHTS

MANHOLE
FIRE HYDRANT





LOCATION MAP
NOT–TO–SCALE

NO.	REVISION	DATE
1.	ADDED EASEMENTS	05/14/24

5/22/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

OVERALL UTILITY PLAN
(SHEET 1 OF 2)

(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT–TO–SCALE

ALL JOINTS ARE FULLY RESTRAINED IN ACCORDANCE WITH SAWS SPECIFICATION TABLE DD–839–06.

TYPICAL UTILITY/WATER CROSSING DETAIL

NOT–TO–SCALE

CONDUIT NOTES:

1. CONTRACTOR SHALL INSTALL PERMANENT MARKERS IN PROPOSED CURB WHERE CONDUITS CROSS THE ROADWAY (BOTH SIDES).
2. CONDUITS SHALL BE PVC WITH MINIMUM BURY OF 30 INCHES. SCHEDULE 80 TO BE USED FOR CPS CONDUITS, ALL OTHER CONDUITS ARE SCHEDULE 40.
3. ALL CONDUITS SHALL BE EXTENDED BEHIND CURBS OR PROPOSED SIDEWALKS A MINIMUM OF 3 FEET AND CAPPED FOR FUTURE USE.

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.

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.

PLAT NO.	22-11800769
JOB NO.	12093–11
DATE	MAY 2024
DESIGNER	SS
CHECKED BAC	DRAWN GK
SHEET	C6.00

Date: May 22, 2024, 1:12pm User ID: saepulveda
File: P:\120\93\11\Design\Civil\OU1209311.dwg

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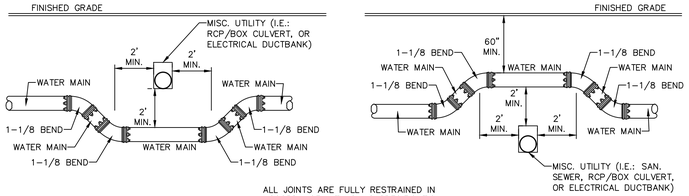

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TYPICAL UTILITY/WATER CROSSING DETAIL

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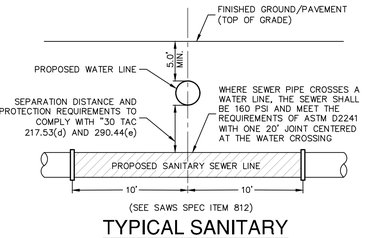
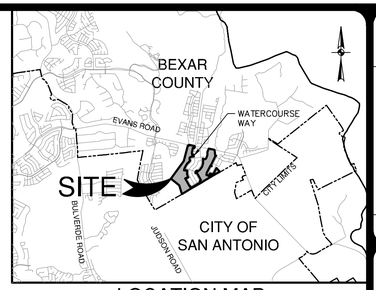


(SEE SAWS SPEC ITEM 812)

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

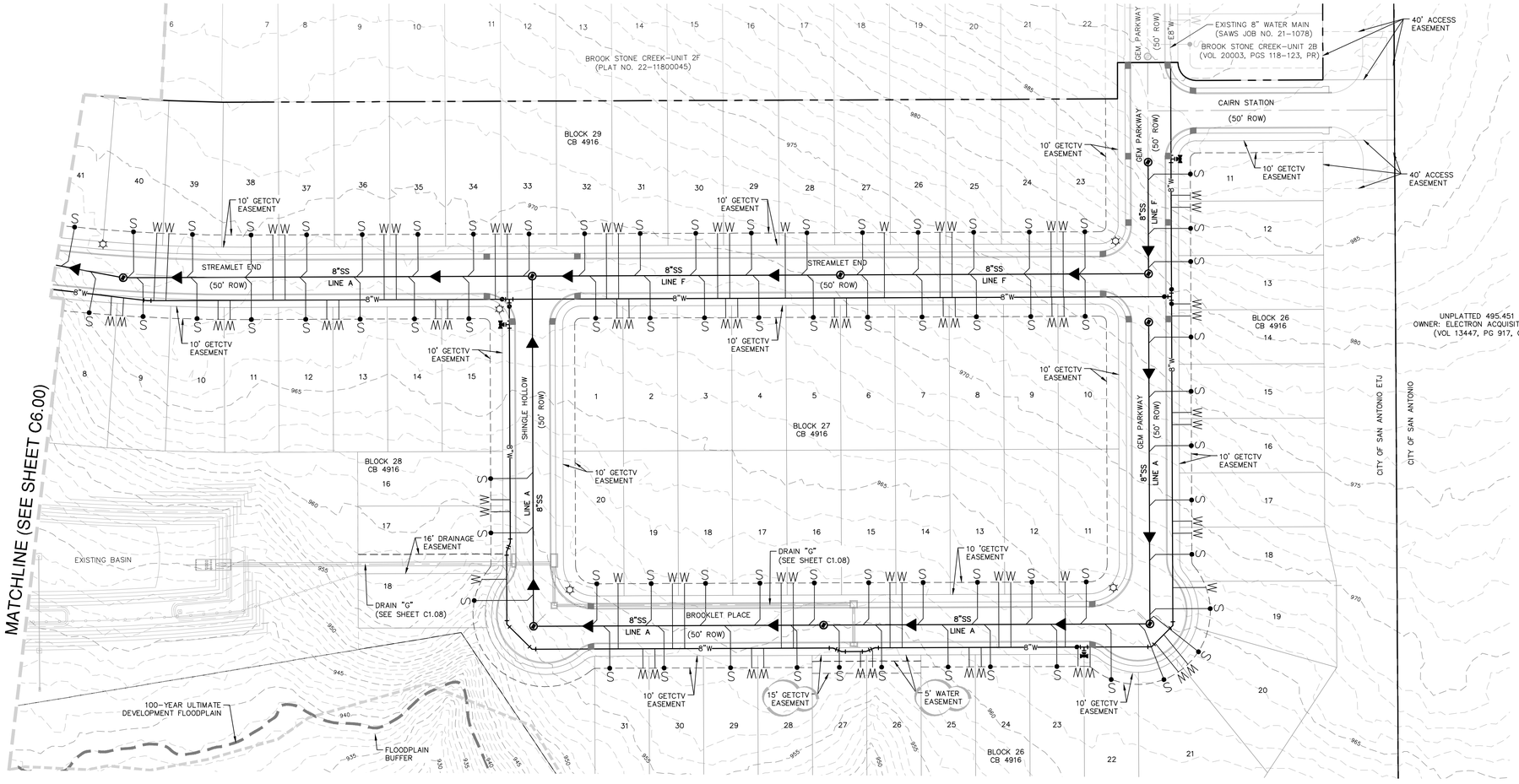


LOCATION MAP

NOT-TO-SCALE

SCALE: 1" = 50'

0' 50' 100' 150'



UTILITY LEGEND

PROJECT LIMITS	
EXISTING WATER	W
EXISTING SEWER	SS
PROPOSED SEWER	SS (MANHOLE)
PROPOSED WATER	W (FIRE HYDRANT)
PROPOSED WYE & LATERAL	
SINGLE WATER SERVICE	
EXISTING STREET LIGHTS	
PROPOSED STREET LIGHTS	

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NO.	REVISION	DATE

5/22/2024

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REBECCA ANN CARROLL
92666
LICENSED
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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

OVERALL UTILITY PLAN (SHEET 2 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MAY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C6.01

Date: May 22, 2024, 1:13pm User ID: saepulveda
File: P:\120\93\11\Design\Civil\DU120931l.dwg

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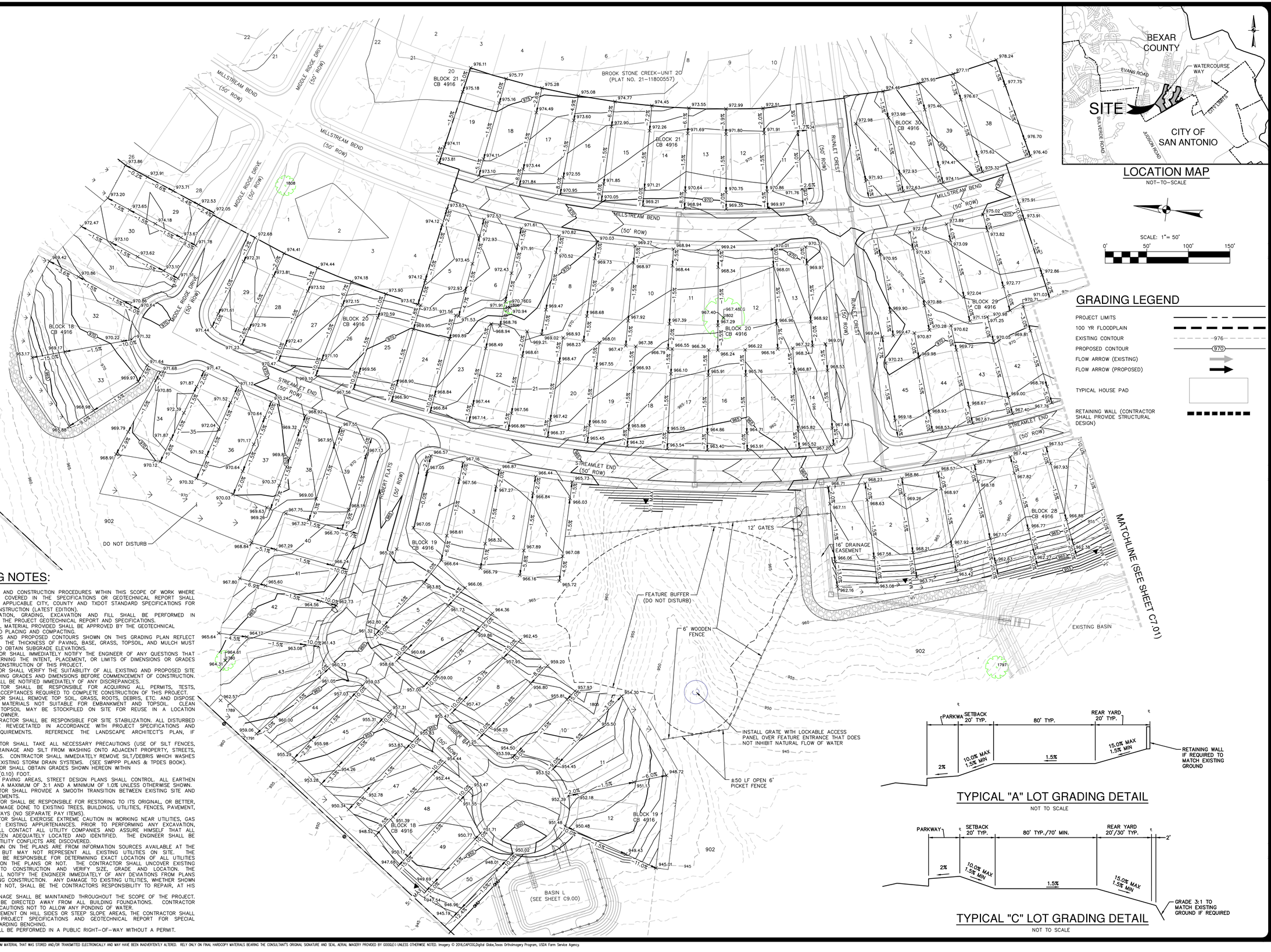

LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'

0' 50' 100' 150'

GRADING LEGEND

- PROJECT LIMITS
- 100 YR FLOODPLAIN
- EXISTING CONTOUR 976
- PROPOSED CONTOUR 970
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- TYPICAL HOUSE PAD
- RETAINING WALL (CONTRACTOR SHALL PROVIDE STRUCTURAL DESIGN)

GRADING NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY AND TXDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
3. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
4. ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
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9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
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19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT–OF–WAY WITHOUT A PERMIT.

TYPICAL "A" LOT GRADING DETAIL

NOT TO SCALE

TYPICAL "C" LOT GRADING DETAIL

NOT TO SCALE

NO.	REVISION	DATE

9/9/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

OVERALL GRADING PLAN (SHEET 1 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C7.00

Date: Sep 09, 2024, 11:38am User ID: SSepulveda
File: P:\120\83\11\Design\Civil\GR120931.dwg

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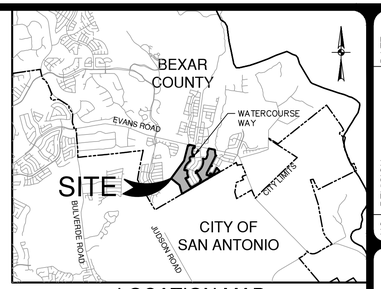

LOCATION MAP

NOT-TO-SCALE

SCALE: 1" = 50'

0' 50' 100' 150'

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- PROJECT LIMITS
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- PROPOSED CONTOUR — 970
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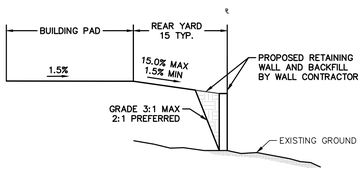
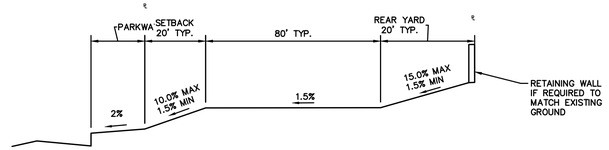


GRADING DETAIL AT RETAINING WALLS

NOT TO SCALE



TYPICAL "A" LOT GRADING DETAIL

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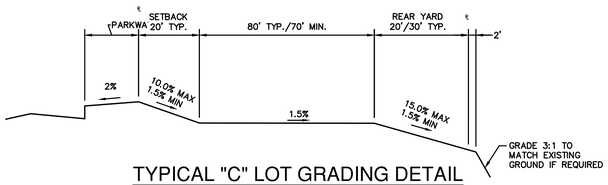

TYPICAL "C" LOT GRADING DETAIL

NOT TO SCALE

NO.	REVISION	DATE

9/9/2024

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BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

OVERALL GRADING PLAN
(SHEET 2 OF 2)

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE SEPTEMBER 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C7.01

Date: Sep 09, 2024, 11:46am User ID: SSepulveda
File: P:\12093\11\Design\Civil\GR12093311.dwg

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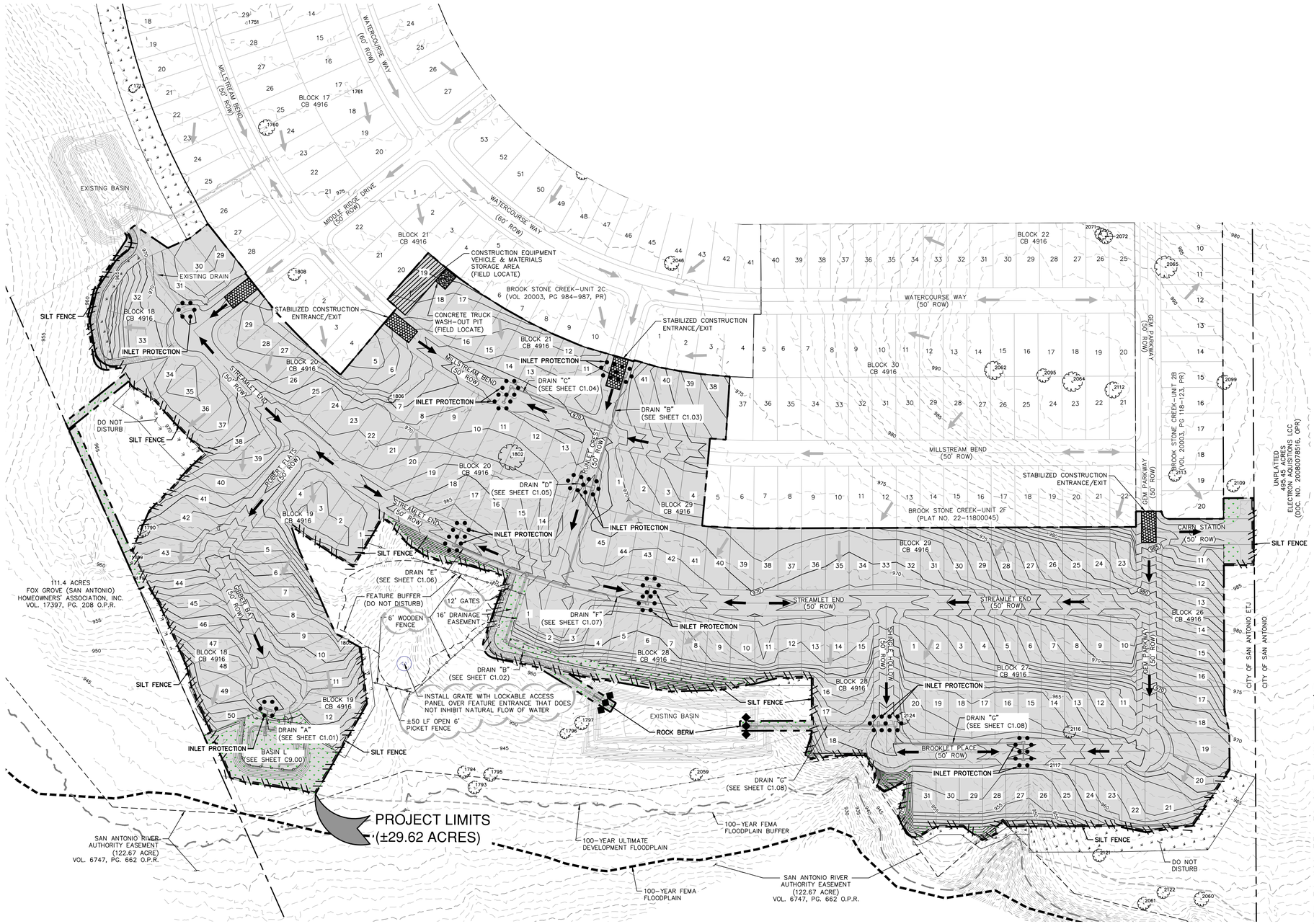

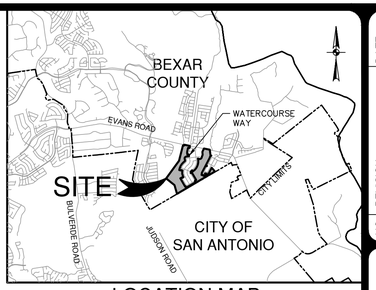

LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 100'
0' 100' 200' 300'

SWPPP LEGEND

- PROJECT LIMITS
- UNIT BOUNDARY
- EXISTING CONTOUR (976)
- PROPOSED CONTOUR (970)
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- SILT FENCE
- ROCK BERM
- GRAVEL FILTER BAGS
- GRATE INLET PROTECTION
- SEDIMENT CONTROL ROLLS
- LIMITS OF DISTURBED AREA
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)
- CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)
- 50' NATURAL VEGETATIVE BUFFER
- AREA TO BE REVEGETATED PER TPDES PERMIT REQUIREMENTS (PERMANENT)
- AREA TO BE REVEGETATED PER TPDES PERMIT REQUIREMENTS (TEMPORARY)

GENERAL NOTES

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.

2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.

3. 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.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.

6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.

7. 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.

8. 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.

9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

10. 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.

11. 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.

12. 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.

13. 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.

15. CPS 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.

16. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN ANY BEXAR COUNTY ROW.

SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

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.

TPDES EXHIBIT 2

NO.	REVISION	DATE
1.	ADED FENCING AND GATE	07/30/24

7/30/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE JULY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C8.00

Date: Jul 30, 2024, 4:15pm User ID: sesquivedo
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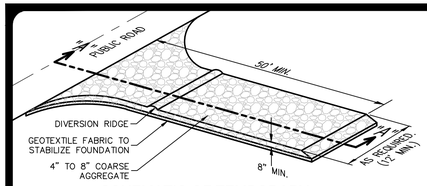
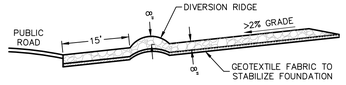


SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



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.

INSTALLATION

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.

2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.

3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.

4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6–INCHES TO 8–INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.

5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.

6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.

7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.

8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

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.

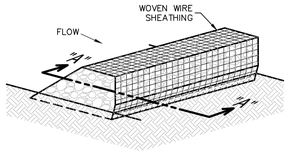
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.

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.

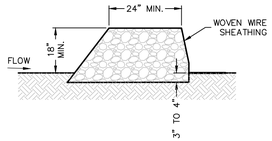
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT–TO–SCALE



ISOMETRIC PLAN VIEW



SECTION "A-A"

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 BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.

2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.

3. REPAIR ANY LOOSE WIRE SHEATHING.

4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.

5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

MATERIALS

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

2. CLEAN, OPEN GRADED 3–INCH TO 5–INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5–INCH TO 8–INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.

2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.

3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".

4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.

5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.

6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

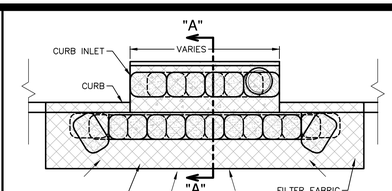
COMMON TROUBLE POINTS

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

NOT–TO–SCALE



PLAN VIEW

SECTION "A-A"

GENERAL NOTES

1. CONTRACTOR TO INSTALL 2"x4"–W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE GUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.

2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

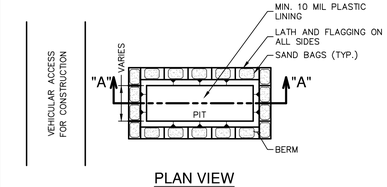
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

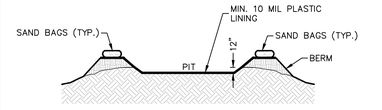
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT–TO–SCALE



PLAN VIEW



SECTION "A-A"

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

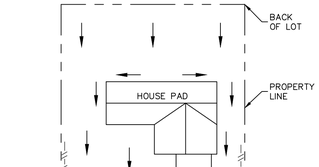
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

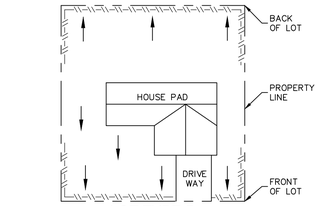
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

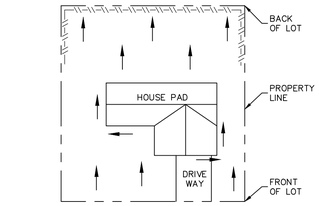
NOT–TO–SCALE



LOT TYPE-A



LOT TYPE-B



LOT TYPE-C

NOTE: SILT FENCE TO BE INSTALLED PER THESE DETAILS AND LOCATED ON THE DOWNGRADIENT SIDE OF EACH LOT LINE OR LIMITS OF CLEARING AS GENERALLY SHOWN ON THE OVERALL SITE PLAN.

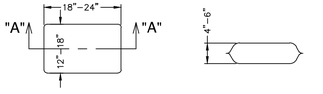
LEGEND

SILT FENCE

DRAINAGE FLOW

TYPICAL HOUSE LOT LAYOUTS

NOT–TO–SCALE



PLAN VIEW

SECTION "A-A"

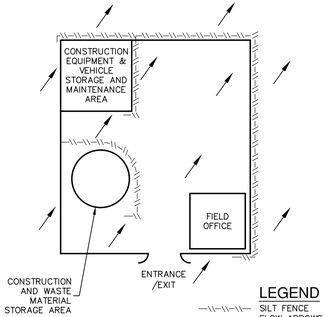
NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT–TO–SCALE



CONSTRUCTION STAGING AREA

NOT–TO–SCALE

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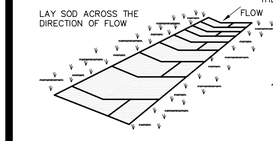
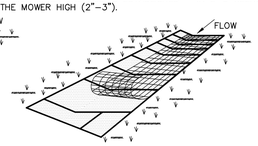
TPDES EXHIBIT 3

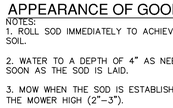




IN CRITICAL AREAS, SECURE SOD WITH NETTING. USE STAPLES.

LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

BUTTING – ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.

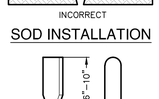


APPEARANCE OF GOOD SOD

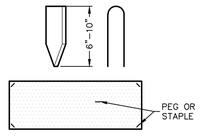
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

3. MOW WHEN THE SOD IS ESTABLISHED – IN 2–3 WEEKS. SET THE MOWER HIGH (2"–3").



SOD INSTALLATION



USE PEGS OR STAPLES TO FASTEN SOD FIRMLY – AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3–4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH WITH THE GROUND.

MATERIALS

1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.

2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

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.

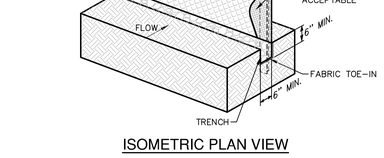
INSPECTION AND MAINTENANCE GUIDELINES

1. SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.

2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL

NOT–TO–SCALE



ISOMETRIC PLAN VIEW

SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE, WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

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 ¼ ACRE/100 FEET OF FENCE.

3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN–SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3–FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS

1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC 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 FILTER 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.

SILT FENCE DETAIL

NOT–TO–SCALE

NO.	REVISION	DATE

3/4/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN DETAILS

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MARCH 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C8.10

Date: Mar 04, 2024, 9:46am User ID: saepulveda
File: P:\120\93\11\Design\Civil\SWPPT\12093111.dwg

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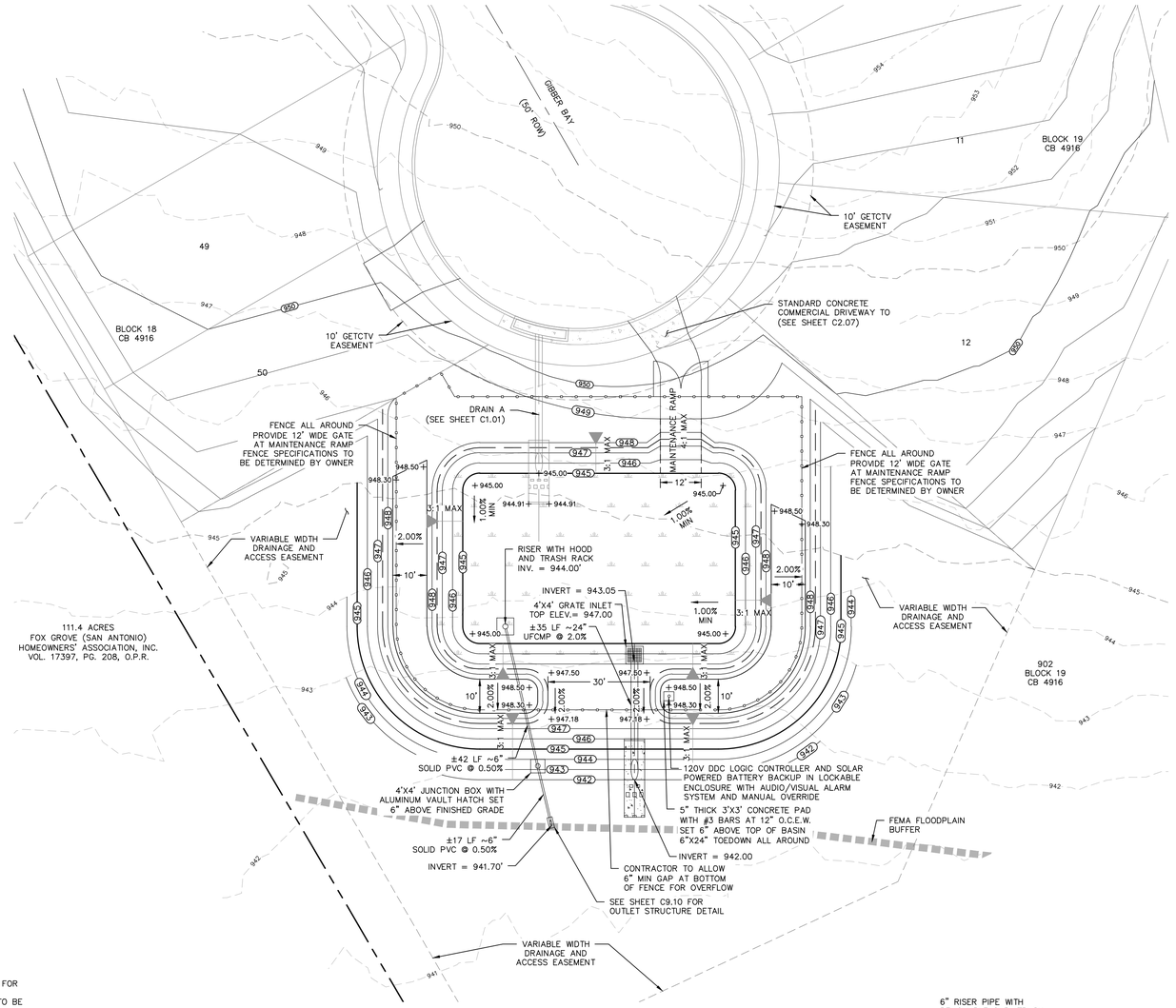


NOTES

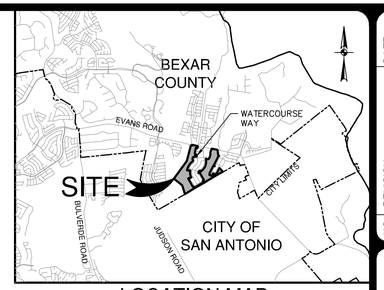
1. CONTRACTOR SHALL ENGAGE A TEXAS LICENSED STRUCTURAL ENGINEER TO PROVIDE A SIGNED AND SEALED SET OF STRUCTURAL PLANS, DETAILS AND SPECIFICATION FOR THE STRUCTURAL COMPONENTS OF THE POLLUTION ABATEMENT BASIN INCLUDING INLET DISCHARGE AND BYPASS COMPONENTS. CONTRACTOR SHALL ALSO PROVIDE FOR STRUCTURAL ENGINEER'S INSPECTION DURING BASIN CONSTRUCTION AND STRUCTURAL ENGINEER'S CONSTRUCTION CERTIFICATION UPON COMPLETION OF BASIN.

2. UPON COMPLETION OF CONSTRUCTION, AND IN ACCORDANCE WITH TCEQ REGULATIONS, ALL PERMANENT BMP'S MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

3. ALL AREAS DISTURBED AS PART OF CONSTRUCTION OF BASIN SHALL BE REVEGETATED PRIOR TO COMPLETION.

4. BASIN HAS BEEN DESIGNED USING TSS REMOVAL AND BMP SIZING CALCULATIONS AS PER THE TCEQ TGM RG-348 (2005).

5. BASIN PLAN DEPICTS MINIMUM INTERIOR DIMENSIONS (LENGTH, WIDTH & HEIGHT FOR TCEQ REVIEW & APPROVAL. ACTUAL STRUCTURAL PLANS FOR CONSTRUCTION TO BE DESIGNED BY STRUCTURAL ENGINEER AT A LATER DATE.



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 20'

0' 20' 40' 60'

BASIN DESIGN DATA

BASIN WATERSHED AREA	=	4.83 AC.
RUN OFF DEPTH	=	1.44 IN
REQUIRED CAPTURE VOLUME	=	15,542 CF
BASIN STORM WATER DEPTH	=	3.00 FT
BASIN CAPTURE VOLUME	=	16,374 CF

OVERFLOW WEIR CALCULATIONS

Q_{25}	=	$(Cw)(L)(h)^{3/2}$
Q_{25}	=	29.5 cfs
C	=	3.087
L	=	30 ft
29.5	=	$(3.087)(30)(h)^{3/2}$
h	=	0.50 ft

GRATE INLET CALCULATIONS

Q_{25}	=	$C(0.5A)(2gh)^{1/2}$
Q_{25}	=	23.8 CFS
C	=	0.70
h	=	0.50 ft
23.8	=	$(0.70)(0.5A)(2*32.2*0.50)^{1/2}$
A	=	12 ft^2

LEGEND

- UNIT BOUNDARY
- 1000 EXISTING CONTOURS
- 1000 PROPOSED CONTOURS
- + 1000.00 PROPOSED SPOT ELEVATION
- PROPOSED FENCE (SPECIFICATIONS BY OWNER)
- 6" TOPSOIL W/ VEGETATION AND 1' THICK CLAY LINER THROUGHOUT ENTIRE BASIN

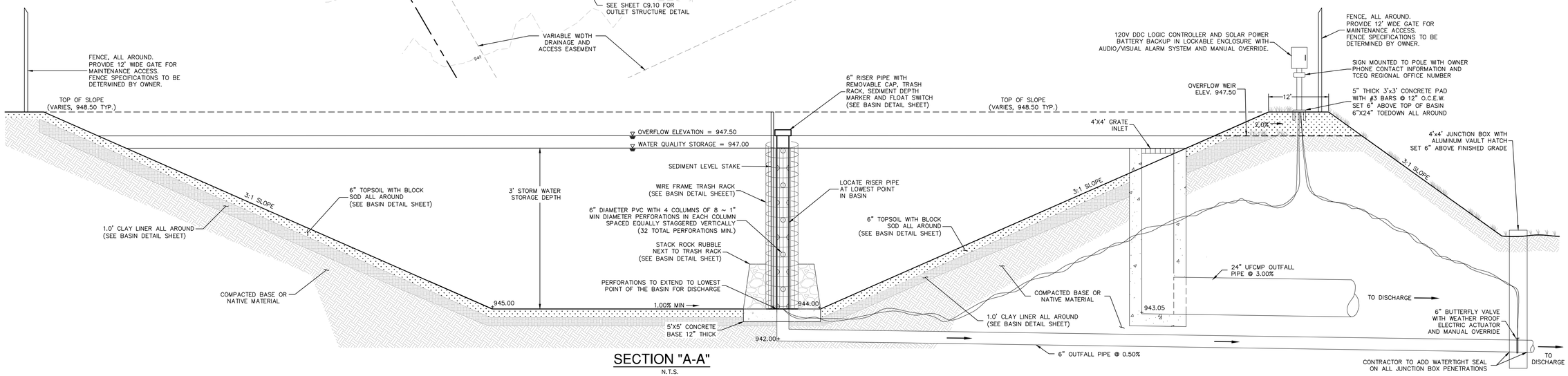
SEQUENCE OF OPERATION

BASIN DRAWDOWN IS CONTROLLED BY THE HORIZONTAL OUTFALL PIPE. BASIN DRAWDOWN WILL OCCUR IN APPROXIMATELY 9.00 HOURS.

CONTRACTOR TO SET VALVE TO THE FULLY CLOSED POSITION.

UPON ACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #1.

6. DETENTION TIMER #1 TO BE MANUALLY SET TO 12.00 HOURS AND TO BE USER ADJUSTABLE VALUE.
7. WHEN DETENTION TIMER #1 HAS ELAPSED, A 6" BUTTERFLY VALVE IS TO OPEN AND RELEASE DETAINED WATER BASIN.
8. UPON DEACTIVATION OF FLOAT SWITCH, DDC CONTROLLER TO START DETENTION TIMER #2.
9. DETENTION TIMER #2 TO BE MANUALLY SET TO 9.00 HOURS AND TO BE USER ADJUSTABLE.
10. WHEN DETENTION TIMER #2 HAS ELAPSED, THE 6" BUTTERFLY VALVE IS TO CLOSE.
11. VALVE TO BE ACTUATED PERIODICALLY TO SHOW ACTIVE REGARDLESS OF FLOAT SWITCH OPERATION.



SECTION "A-A"

N.T.S.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

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

WPAP EXHIBIT 4

NO.	REVISION	DATE

5/7/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

BASIN L

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MAY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C9.00

Date: May 07, 2024, 3:28pm User ID: ssepulveda
File: P:\120\93\11\Design\Civil\BASIN-12093111.dwg

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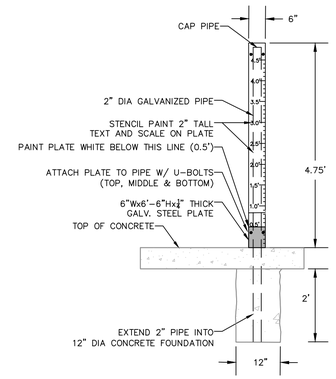


SEDIMENT DEPTH MARKER

NOT-TO-SCALE

NOTE: ONCE SEDIMENT IS ABOVE THE 6" DESIGNATION, THE BASIN MUST BE CLEANED OUT TO DESIGN ELEVATIONS AND VOLUMES PER PLAN.

NOTES TO CONTRACTOR

FOR EACH PHASE OF BASIN CONSTRUCTION

1. CONTRACTOR IS ADVISED THAT TCEQ DOES NOT ALLOW CHANGES TO PERMANENT POLLUTION ABATEMENT MEASURES WITHOUT THEIR PRIOR APPROVAL.

2. CONTRACTOR SHALL NOTIFY CERTIFYING ENGINEER WHEN BASIN CONSTRUCTION HAS PROGRESSED TO THE FOLLOWING MILESTONES:

a.) REINFORCING STEEL FOR BASIN OVERFLOW WALL OR RIP-RAP LINER HAS BEEN SET. CONCRETE HAS NOT BEEN PLACED AND DRAIN AND RISER PIPE IS IN PLACE. CONTRACTOR SHALL PROVIDE ENGINEER WITH SURVEY DATA WHICH DEMONSTRATES THE RISER PIPE HAS BEEN SET AT PROPER ELEVATION AND GRADE.

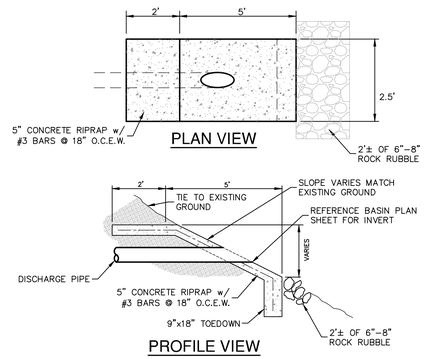
b.) BASIN HAS BEEN COMPLETELY FINISHED INCLUDING SOD OR SEED PLACEMENT ON SIDE SLOPES (WHERE APPLICABLE).

3. WORK SHALL NOT CONTINUE ON THE BASIN UNTIL THE ENGINEER HAS HAD AN OPPORTUNITY TO OBSERVE THE STATUS OF CONSTRUCTION AT EACH STAGE. CONTRACTOR SHALL PROVIDE ENGINEER A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO TIME THE BASIN WILL BE AT THE REQUIRED STAGE.

4. UPON SUBSTANTIAL COMPLETION, OR AS REQUESTED BY ENGINEER, CONTRACTOR TO PROVIDE CERTIFYING ENGINEER WITH FIELD SHOTS VERIFYING ELEVATIONS OF THE FOLLOWING:

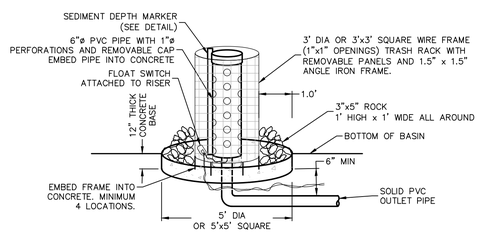
- TOP OF BANK/WALL AT EACH CORNER OF BASIN
- TOE OF SLOPE AT EACH CORNER OF BASIN (INSIDE BASIN TOE)
- SPLASH PAD/INLET PIPES
- OVERFLOW WEIR

5. BEFORE FINAL ACCEPTANCE OF CONSTRUCTION BY THE OWNER, THE CONTRACTOR WILL REMOVE ALL TRASH, DEBRIS, AND ACCUMULATED SILT FROM THE BASINS AND REESTABLISH THEM TO THE PROPER OPERATING CONDITION.



DISCHARGE HEADWALL DETAIL

NOT-TO-SCALE



OUTLET STRUCTURE DETAIL WITH BURIED OUTFALL PIPE

NOT-TO-SCALE

CLAY LINER SPECIFICATIONS

PROPERTY	TEST METHOD	UNIT	SPECIFICATION
PERMEABILITY	ASTM D-2434	CM/SEC	1×10^{-6}
PLASTICITY INDEX OF CLAY	ASTM D-423 & D-424	%	NOT LESS THAN 15
LIQUID LIMIT OF CLAY	ASTM D-2216	%	NOT LESS THAN 30
CLAY PARTICLES PASSING	ASTM D-422	%	NOT LESS THAN 30
CLAY COMPACTION	ASTM D-2216	%	95% OF STANDARD PROCTOR DENSITY

THE CLAY LINER SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12) INCHES.

IF A GEOMEMBRANE LINER IS USED IT SHALL HAVE A MINIMUM THICKNESS OF FORTY (40) MILS. AND BE ULTRAVIOLET RESISTANT. A GEOTEXTILE FABRIC SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

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WPAP EXHIBIT 7

NO.	REVISION	DATE

5/3/2024

STATE OF TEXAS
REBECCA ANN CARROLL
92666
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

BROOK STONE CREEK-UNIT 2E

BEXAR COUNTY, TEXAS

BASIN DETAILS

PLAT NO. 22-11800769
JOB NO. 12093-11
DATE MAY 2024
DESIGNER SS
CHECKED BAC DRAWN GK
SHEET C9.10

Date: May 03, 2024, 10:04am User ID: saepulveda
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