

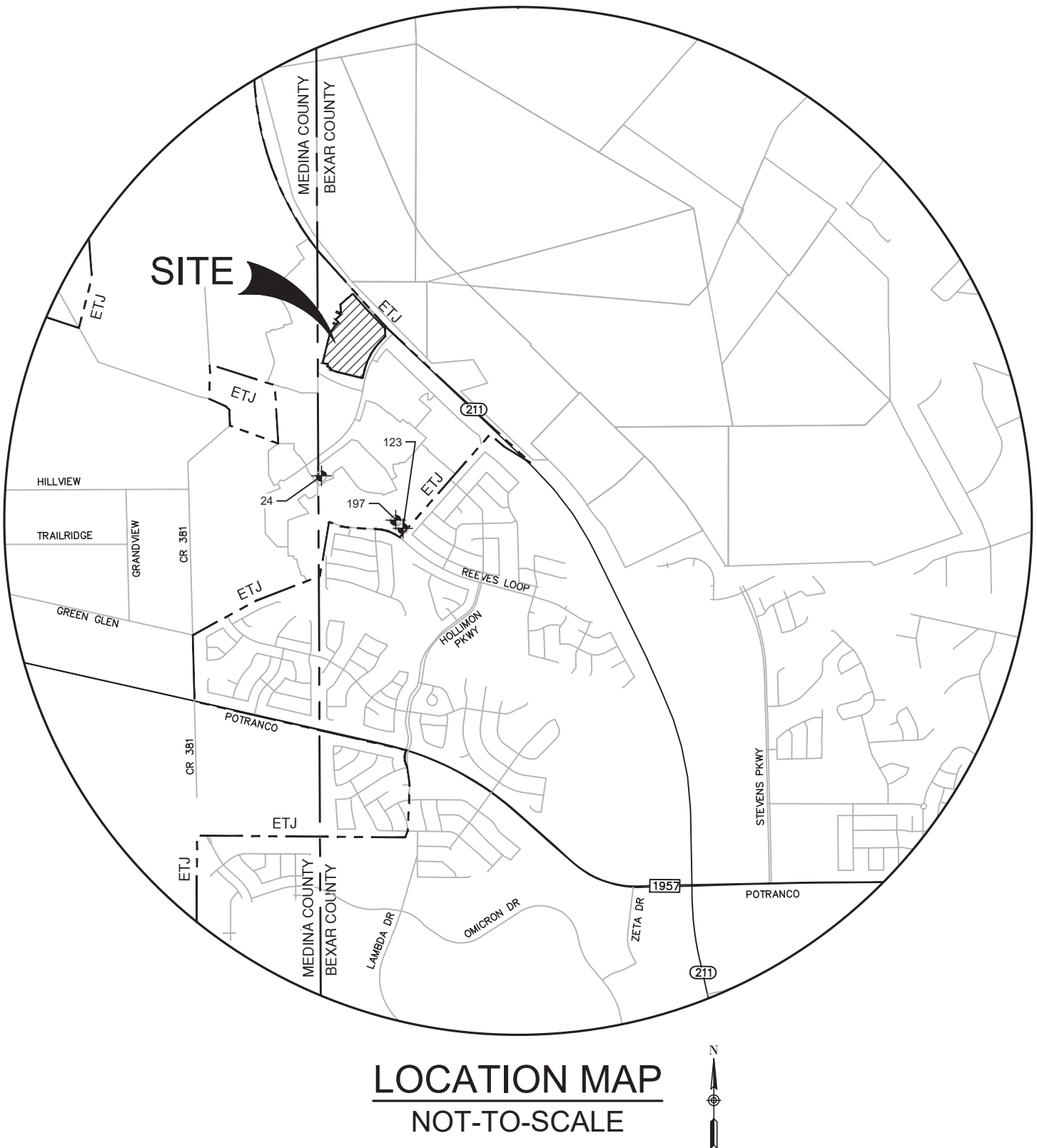
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REDBIRD RANCH, UNIT 2M-1

SAN ANTONIO, TEXAS

CIVIL CONSTRUCTION PLANS

REV	DATE	DESCRIPTION
	10/23/2023	OVERALL QA



NOVEMBER 2, 2023

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



WATER: SAWS PRESSURE ZONE 1170

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 # (210) 496-2668
SAWS BLOCK MAP # 062586	TOTAL EDUS: 147 TOTAL ACREAGE: 30.90
TOTAL LINEAR FOOTAGE OF PIPE: 4,279 L.F. (8") PLAT NO: CP202307	
NUMBER OF LOTS: 147	SAWS JOB NO: 23-1063

SEWER: SAWS MEDIO CREEK 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 # (210) 496-2668
SAWS BLOCK MAP # 062586	TOTAL EDUS: 147 TOTAL ACREAGE: 30.90
TOTAL LINEAR FOOTAGE OF PIPE: 2,573 L.F. (8") PLAT NO: CP202307	
NUMBER OF LOTS: 147	SAWS JOB NO: 23-1533

BENCHMARKS				
POINT	NORTHING	EASTING	ELEVATION	FULL DESCRIPTION
24	13,710,759.16	2,030,892.83	1018.44	SET MAG NAIL (TRAV)
123	13,709,660.22	2,032,593.76	968.92	SET MAG NAIL (TRAV)
197	13,709,835.28	2,032,443.01	970.45	SET MAG NAIL & WASHER (TRAV)

DHI

DHI Engineering, LLC.

5419 N. LOOP 1604 EAST
SAN ANTONIO, TX 78247
(210) 496-2668 | dhiengineering.com
TBP REG. NO. F-19561

REVISED

3:22 pm, Nov 03, 2023

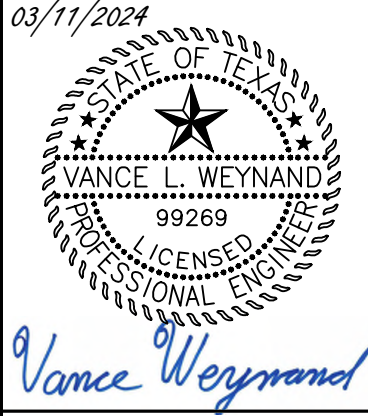
SHEET NO.

C0.00

REDBIRD RANCH, UNIT 2M-1 PLAT NO. CP202307 Date: Nov 02, 2023, 9:16am User ID: SDW File: E:\PROJECT\2023\REDBIRD RANCH UNIT 2M-1\0301 - Sewer\0301 COVER SHEET.dwg - Design\0301 - Sewer\0301 COVER SHEET.dwg

C-VALUE CALCULATIONS

TIME OF CONCENTRATION AND FLOW RATE CALCULATIONS

$$Q = CIA$$


REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
EXISTING DRAINAGE
AREA MAP

DESIGNED BY:	SQV
DRAWN BY:	JFM/JWS
DATE:	03/11/2024
JOB NO.:	20220500
SHEET NO.	C1.00

DHI ENGINEERING, LLC

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C-Value Table		
A1	Area	C
Roadway	0.69	0.97
Residential	1.56	0.84
Range	0.13	0.53
Total	2.38	0.86

A2	Area	C
Roadway	0.32	0.97
Residential	0.22	0.84
Range	0.00	0.53
Total	0.54	0.92

A3	Area	C
Roadway	0.24	0.97
Residential	0.80	0.84
Range	0.00	0.53
Total	1.04	0.87

A4	Area	C
Roadway	0.34	0.97
Residential	0.53	0.84
Range	0.00	0.53
Total	0.87	0.89

A5	Area	C
Roadway	0.62	0.97
Residential	3.87	0.84
Range	0.00	0.53
Total	4.49	0.86

A6	Area	C
Roadway	0.23	0.84
Residential	0.00	0.53
Range	0.00	0.53
Total	0.32	0.88

C-VALUE CALCULATIONS

A7	Area	C
Roadway	0.74	0.97
Residential	2.74	0.84
Range	0.26	0.53
Total	3.74	0.84

A8	Area	C
Roadway	0.79	0.97
Residential	4.51	0.84
Range	0.00	0.53
Total	5.30	0.86

A9	Area	C
Roadway	0.00	0.97
Residential	0.36	0.84
Range	0.00	0.53
Total	0.36	0.84

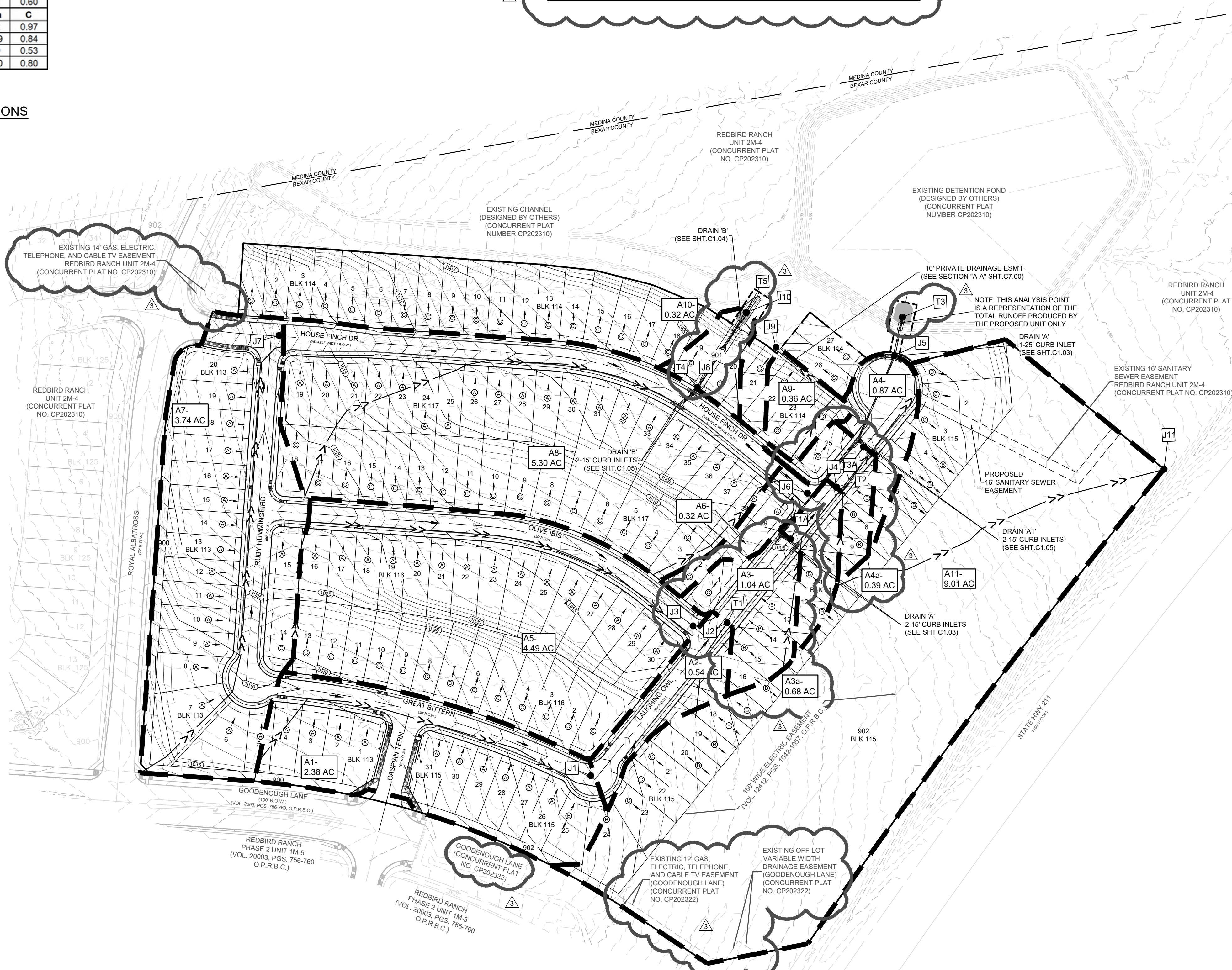
A10	Area	C
Roadway	0.00	0.97
Residential	0.29	0.84
Range	0.03	0.53
Total	0.32	0.81

A11	Area	C
Roadway	0.00	0.97
Residential	2.07	0.84
Range	6.94	0.53
Total	9.01	0.60

Total Site	Area	C
Roadway	3.92	0.97
Residential	21.29	0.84
Range	5.69	0.53
Total	30.90	0.80

Redbird Ranch Unit 2M-1 Atlas14 Ultimate Time of Concentration Table PA_3															Redbird Ranch Unit 2M-1 Atlas14 Ultimate Q Flow Table PA_3														
Drainage Basin(s)	Sheet Flow (max length = 150')					Shallow Concentrated Flow					Channel Flow			Total	Analysis Points	Drainage Area		Coefficient	Intensity			Flow							
	n	L _s (ft)	P ₂ (in)	S ₁ (%)	T ₁ (min)	Paved/Unpaved	L _{sc} (ft)	S _{sc} (%)	k	T _{sc} (min)	L _t (ft)	V _t (ft/sec)	T _{ch} (min)	T _c (min)		Area(s)	A (ac.)		C	I ₅ (in/hr)	I ₂₅ (in/hr)	I ₁₀₀ (in/hr)	Q ₅ (ft³/s)	Q ₂₅ (ft³/s)	Q ₁₀₀ (ft³/s)				
A1	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	559	6	1.6	19.1	J1	A1	2.38	0.86	4.66	6.44	7.99	9.54	13.18	16.37					
A2	0.24	118	3.96	5.0	10.2	Unpaved	0	5.0	16.13	0.0	70	6	0.2	10.3	J2	A2	0.54	0.92	6.22	8.71	10.91	3.08	4.31	5.40					
A3	0.24	150	3.96	5.0	12.3	Unpaved	97	5.0	16.13	0.4	103	6	0.3	13.0	J4	A3	1.04	0.87	5.66	7.88	9.84	5.12	7.13	8.91					
A4	0.24	150	3.96	5.0	12.3	Unpaved	7	5.0	16.13	0.0	245	6	0.7	13.0	J5	A4	0.87	0.89	5.66	7.89	9.85	4.39	6.11	7.63					
A5	0.24	150	3.96	7.6	10.4	Unpaved	103	7.6	16.13	0.4	684	6	1.9	12.7	J3	A5	4.49	0.86	5.72	7.98	9.97	22.05	30.75	38.42					
A6	0.24	150	3.96	7.6	10.4	Unpaved	106	7.6	16.13	0.4	112	6	0.3	11.1	J6	A6	0.32	0.88	6.05	8.46	10.59	1.70	2.38	2.98					
A7	0.24	150	3.96	3.8	13.7	Unpaved	54	3.8	16.13	0.3	597	6	1.7	15.7	J7	A7	3.74	0.84	5.16	7.15	8.90	16.29	22.57	28.09					
A8	0.24	150	3.96	4.2	13.1	Unpaved	275	4.2	16.13	1.4	343	6	1.0	15.5	J8	A8	5.30	0.86	5.19	7.20	8.96	23.65	32.78	40.80					
A9	0.24	131	3.96	4.6	11.4	Unpaved	0	4.6	16.13	0.0	120	6	0.3	11.7	J9	A9	0.36	0.84	5.92	8.27	10.34	1.79	2.50	3.13					
A10	0.24	150	3.96	4.8	12.5	Unpaved	50	4.8	16.13	0.2	0	6	0.0	12.7	J10	A10	0.32	0.81	5.72	7.97	9.95	1.48	2.07	2.58					
A11	0.24	150	3.96	3.3	14.5	Unpaved	433	3.3	16.13	2.5	0	6	0.0	17.0	J11	A11	9.01	0.60	4.94	6.84	8.50	26.76	37.04	46.05					
Analysis Point T1 (A1:A2:A5)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	907	6	2.5	20.0	T1	A1, A2, A5	7.41	0.86	4.54	6.27	7.78	29.03	40.11	49.77					
Analysis Point T1a (T1: A3a)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	959	6	2.7	20.2	T1a	A1, A2a, A5	8.09	0.86	4.52	6.25	7.75	31.47	43.47	53.95					
Analysis Point T2 (T1:A3:A6)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	1197	6	3.3	20.8	T2	A1, A2, A3, A5, A6	8.77	0.86	4.45	6.15	7.62	33.74	46.59	57.80					
Analysis Point T3a(T1:T2:A4a)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	1242	6	3.5	21.0	T3a	A1,A2,A3,A4a,A5,A6	9.16	0.86	4.44	6.13	7.60	34.94	48.25	59.85					
Analysis Point T3 (T1:T2:A4)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	1442	6	4.0	21.5	T3	A1, A2, A3, A4, A5, A6	9.64	0.87	4.38	6.04	7.50	36.59	50.52	62.64					
Analysis Point T4 (A7:A8)	0.24	150	3.96	3.8	13.7	Unpaved	54	3.8	16.13	0.3	1310	6	3.6	17.7	T4	A7,A8	9.04	0.85	4.85	6.70	8.33	37.37	51.70	64.25					
Analysis Point T5 (A7,A8,A10)	0.24	150	3.96	3.8	13.7	Unpaved	54	3.8	16.13	0.3	1461	6	4.1	18.1	T5	A7, A8, A10	9.36	0.85	4.79	6.62	8.22	38.15	52.77	65.55					
Analysis Point (Total Site)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	1442	6	4.0	21.5		Total Site	30.90	0.80	4.38	6.04	7.50	108.15	149.31	185.16					
	Eq 5.4.1 $T_1 = \frac{0.007(nL_s)^{0.8}}{(P_2)^{0.5} S^{0.4}}$					Eq 5.4.2 $T_{sc} = \frac{L_{sc}}{3600K S^{0.5}}$					Eq 5.4.3 $T_{ch} = \frac{L_{ch}}{3600 \cdot V}$			Eq 5.4 $T_t = T_{sc} + T_{ch}$		Eq 5.3.1 $Q = CIA$													

TIME OF CONCENTRATION AND FLOW RATE CALCULATIONS



- NOTE: THIS IS THE TYPICAL LOT GRADING PLAN BASED ON THE TYPE OF LOT BEING PROPOSED.
- **TYPE A** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE STREET.
 - **TYPE B** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE STREET AND THE BACK OF THE LOT. (AWAY FROM THE HOUSE)
 - **TYPE C** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE BACK OF THE LOT.

TYPICAL LOT GRADING
NOT TO SCALE

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
PROPOSED DRAINAGE
AREA MAP

DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 03/11/2024
JOB NO.: 20220500
SHEET NO.

C1.01

DHI Engineering, LLC.
4419 LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78217
(210) 482-2988 | dhiengineering.com
TBP REG. NO. F-19561



REDBIRD RANCH, UNIT 2M-1
PLAT NO. CP202307

DHI ENGINEERING, LLC

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C-Value Table		
A1	Area	C
Roadway	0.69	0.97
Residential	1.56	0.84
Range	0.13	0.53
Total	2.38	0.86

A2	Area	C
Roadway	0.32	0.97
Residential	0.22	0.84
Range	0.00	0.53
Total	0.54	0.92

A3	Area	C
Roadway	0.24	0.97
Residential	0.80	0.84
Range	0.00	0.53
Total	1.04	0.87

A4	Area	C
Roadway	0.34	0.97
Residential	0.53	0.84
Range	0.00	0.53
Total	0.87	0.89

A5	Area	C
Roadway	0.62	0.97
Residential	3.87	0.84
Range	0.00	0.53
Total	4.49	0.86

A6	Area	C
Roadway	0.23	0.84
Residential	0.00	0.53
Range	0.00	0.53
Total	0.32	0.88

C-VALUE CALCULATIONS

A7	Area	C
Roadway	0.74	0.97
Residential	2.74	0.84
Range	0.26	0.53
Total	3.74	0.84

A8	Area	C
Roadway	0.79	0.97
Residential	4.51	0.84
Range	0.00	0.53
Total	5.30	0.86

A9	Area	C
Roadway	0.00	0.97
Residential	0.36	0.84
Range	0.00	0.53
Total	0.36	0.84

A10	Area	C
Roadway	0.00	0.97
Residential	0.29	0.84
Range	0.03	0.53
Total	0.32	0.81

A11	Area	C
Roadway	0.00	0.97
Residential	2.07	0.84
Range	6.94	0.53
Total	9.01	0.60

Total Site	Area	C
Roadway	3.92	0.97
Residential	21.29	0.84
Range	5.69	0.53
Total	30.90	0.80

Redbird Ranch Unit 2M-1 Atlas14 Ultimate Time of Concentration Table PA_3														Redbird Ranch Unit 2M-1 Atlas14 Ultimate Q Flow Table PA_3									
Drainage Basin(s)	Sheet Flow (max length = 150')					Shallow Concentrated Flow				Channel Flow			Total	Analysis Points	Drainage Area		Coefficient	Intensity			Flow		
	n	L _f (ft)	P ₂ (in)	S ₁ %	T _f (min)	L _{sc} (ft)	S _{sc} %	k	T _{sc} (min)	L _t (ft)	V _t (ft/sec)	T _{ch} (min)	T _c (min)		Area(s)	A ₁ (ac.)		I ₂ (in/hr)	I ₂₅ (in/hr)	I ₁₀₀ (in/hr)	Q _s (ft ³ /s)	Q ₂₅ (ft ³ /s)	Q ₁₀₀ (ft ³ /s)
A1	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	559	6	1.6	J1	A1	2.38	0.86	4.66	6.44	7.99	9.54	13.18	16.37
A2	0.24	118	3.96	5.0	10.2	Unpaved	0	5.0	16.13	0.0	70	6	0.2	J2	A2	0.54	0.92	6.22	8.71	10.91	3.08	4.31	5.40
A3	0.24	150	3.96	5.0	12.3	Unpaved	97	5.0	16.13	0.4	103	6	0.3	J4	A3	1.04	0.87	5.66	7.88	9.84	5.12	7.13	8.91
A4	0.24	150	3.96	5.0	12.3	Unpaved	7	5.0	16.13	0.0	245	6	0.7	J5	A4	0.87	0.89	5.66	7.89	9.85	4.39	6.11	7.63
A5	0.24	150	3.96	7.6	10.4	Unpaved	103	7.6	16.13	0.4	684	6	1.9	J3	A5	4.49	0.86	5.72	7.98	9.97	22.05	30.75	38.42
A6	0.24	150	3.96	7.6	10.4	Unpaved	106	7.6	16.13	0.4	112	6	0.3	J6	A6	0.32	0.88	6.05	8.46	10.59	1.70	2.38	2.98
A7	0.24	150	3.96	3.8	13.7	Unpaved	54	3.8	16.13	0.3	597	6	1.7	J7	A7	3.74	0.84	5.16	7.15	8.90	16.29	22.57	28.09
A8	0.24	150	3.96	4.2	13.1	Unpaved	275	4.2	16.13	1.4	343	6	1.0	J8	A8	5.30	0.86	5.19	7.20	8.96	23.65	32.78	40.80
A9	0.24	131	3.96	4.6	11.4	Unpaved	0	4.6	16.13	0.0	120	6	0.3	J9	A9	0.36	0.84	5.92	8.27	10.34	1.79	2.50	3.13
A10	0.24	150	3.96	4.8	12.5	Unpaved	50	4.8	16.13	0.2	0	6	0.0	J10	A10	0.32	0.81	5.72	7.97	9.95	1.48	2.07	2.58
A11	0.24	150	3.96	3.3	14.5	Unpaved	433	3.3	16.13	2.5	0	6	0.0	J11	A11	9.01	0.60	4.94	6.84	8.50	26.76	37.04	46.05
Analysis Point T1 (A1-A2-A5)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	907	6	2.5	T1	A1, A2, A5	7.41	0.86	4.54	6.27	7.78	29.03	40.11	49.77
Analysis Point T1a (T1: A3a)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	959	6	2.7	T1a	A1, A2a, A5	8.09	0.86	4.52	6.25	7.75	31.47	43.47	53.95
Analysis Point T2 (T1: A3-A6)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	1197	6	3.3	T2	A1, A2, A3, A5, A6	8.77	0.86	4.45	6.15	7.62	33.74	46.59	57.80
Analysis Point T3a(T1: T2-A4a)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	1242	6	3.5	T3a	A1, A2, A3, A4a, A5, A6	9.16	0.86	4.44	6.13	7.60	34.94	48.25	59.85
Analysis Point T3 (T1: T2-A4)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	1442	6	4.0	T3	A1, A2, A3, A4, A5, A6	9.64	0.87	4.38	6.04	7.50	36.59	50.52	62.64
Analysis Point T4 (A7-A8)	0.24	150	3.96	3.8	13.7	Unpaved	54	3.8	16.13	0.3	1310	6	3.6	T4	A7, A8	9.04	0.85	4.85	6.70	8.33	37.37	51.70	64.25
Analysis Point T5 (A7, A8, A10)	0.24	150	3.96	3.8	13.7	Unpaved	54	3.8	16.13	0.3	1461	6	4.1	T5	A7, A8, A10	9.36	0.85	4.79	6.62	8.22	38.15	52.77	65.55
Analysis Point (Total Site)	0.24	150	3.96	2.1	17.4	Unpaved	16	2.1	16.13	0.1	1442	6	4.0		Total Site	30.90	0.80	4.38	6.04	7.50	108.15	149.31	185.16

Eq 5.4.1
 $T_f = \frac{0.007(nL_f)^{0.8}}{(P_2)^{0.5} S_1^{0.4}}$

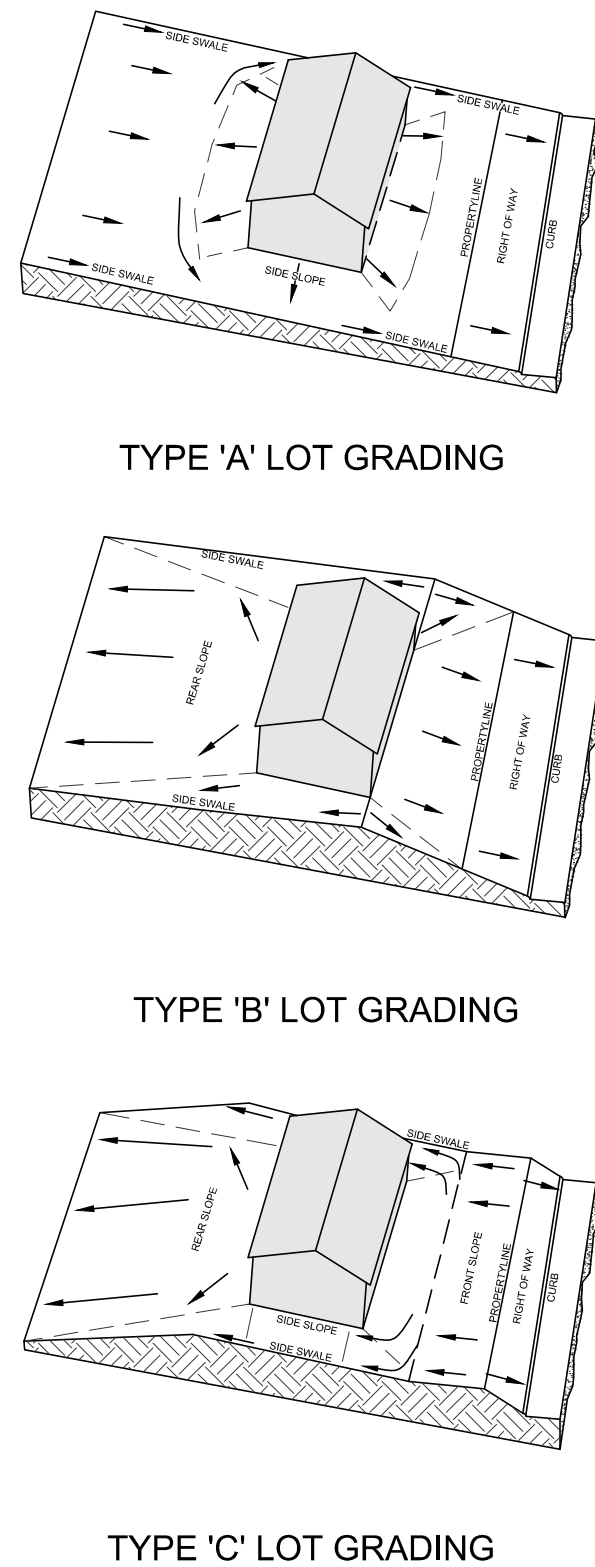
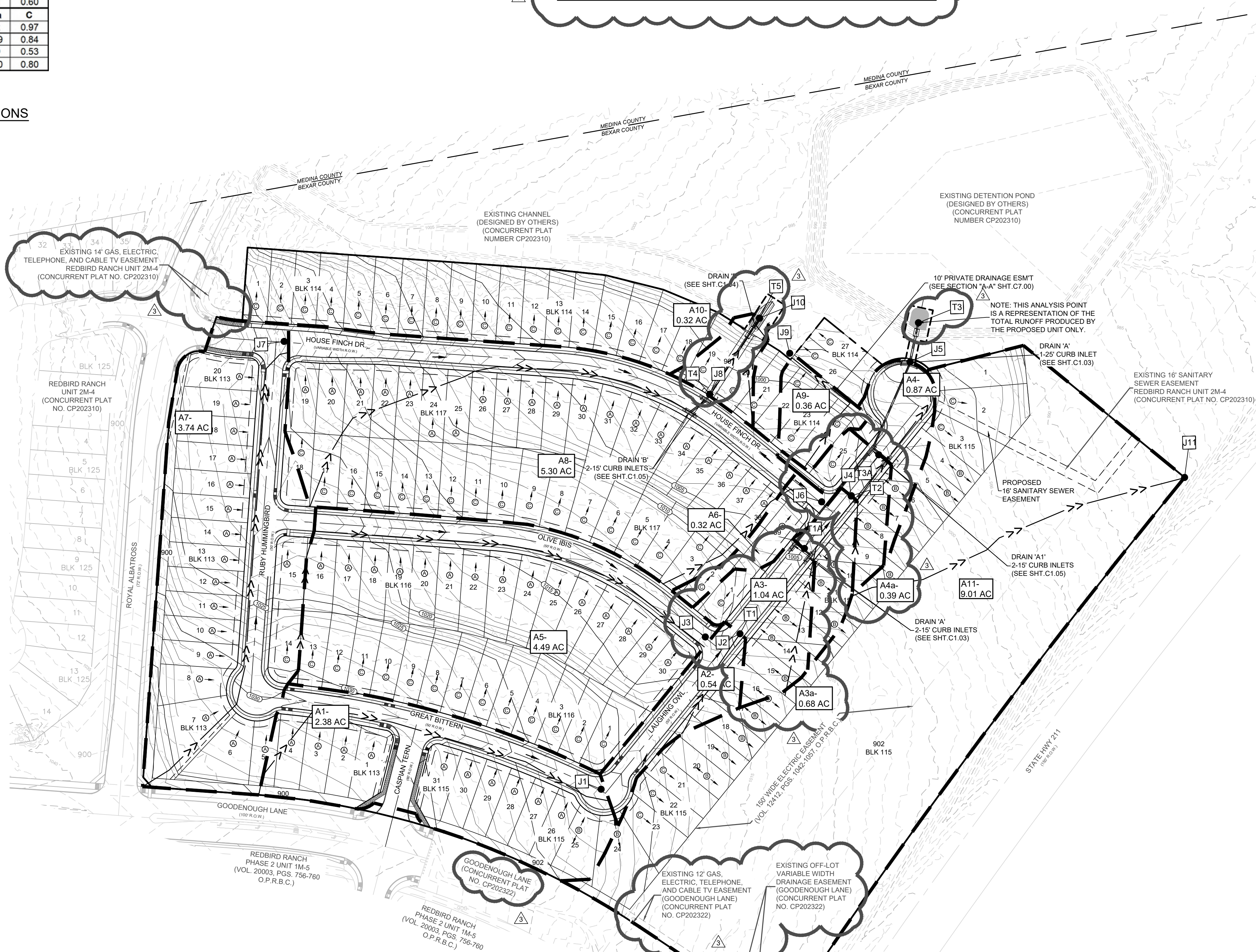
Eq 5.4.2
 $T_{sc} = \frac{L_{sc}}{3600 K S_{sc}^{0.5}}$

Eq 5.4.3
 $T_{ch} = \frac{L_{ch}}{3600 * V}$

Eq 5.4
 $T_c = T_{sc} + T_{ch}$

Eq 5.3.1
 $Q = CIA$

TIME OF CONCENTRATION AND FLOW RATE CALCULATIONS



NOTE: THIS IS THE TYPICAL LOT GRADING PLAN BASED ON THE TYPE OF LOT BEING PROPOSED.

- **TYPE A** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE STREET.
- **TYPE B** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE STREET AND THE BACK OF THE LOT. (AWAY FROM THE HOUSE)
- **TYPE C** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE BACK OF THE LOT.

TYPICAL LOT GRADING
NOT TO SCALE

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
ULTIMATE DRAINAGE
AREA MAP

DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 03/11/2024
JOB NO.: 20220500
SHEET NO. C1.02

DATE: 03/11/2024
REV: 1
DESCRIPTION: UPDATE CALCULATIONS, DETAILS, CALCULATIONS, AND EASEMENTS.

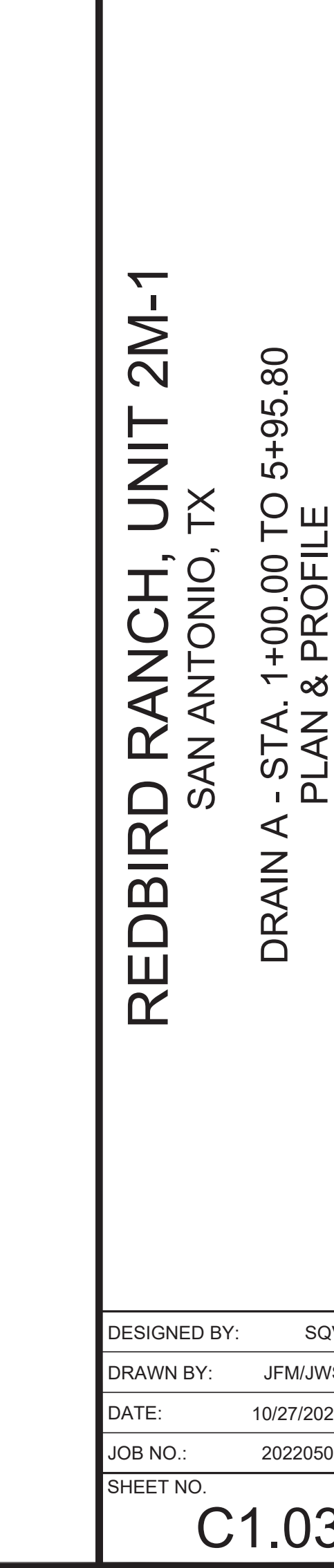
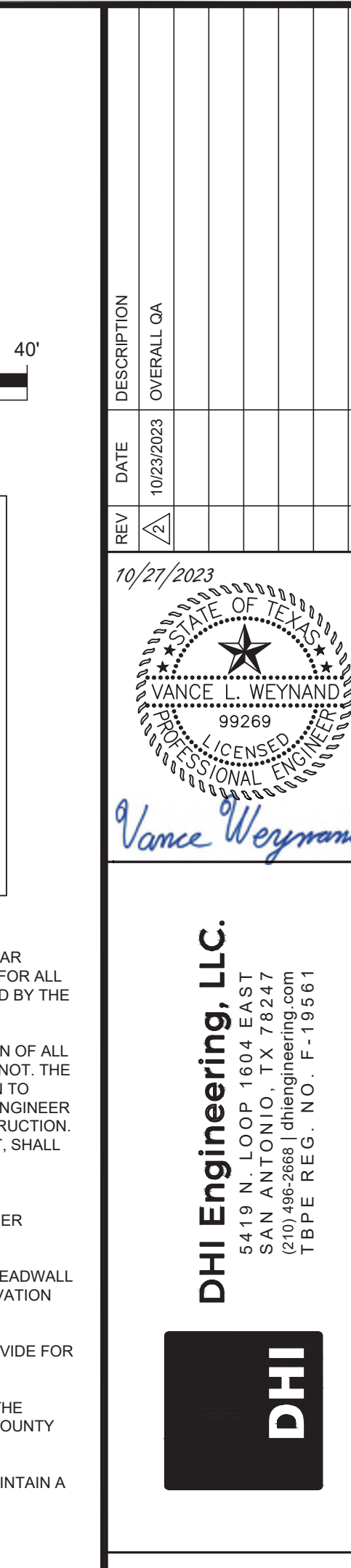
OVERALL QA: 10/23/2023
DATE: 3/11/2024

DHI Engineering, LLC.
4419 LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78217
(210) 482-2988 | dhiengineering.com
TBP REG. NO. F-19561

STATE OF TEXAS
99269
VANCE L. WEYLAND
PROFESSIONAL ENGINEER
Vance Weyland

PLAT NO. CP202307
REDBIRD RANCH, UNIT 2M-1

DATE: 03/11/2024
JOB NO.: 20220500
SHEET NO. C1.02



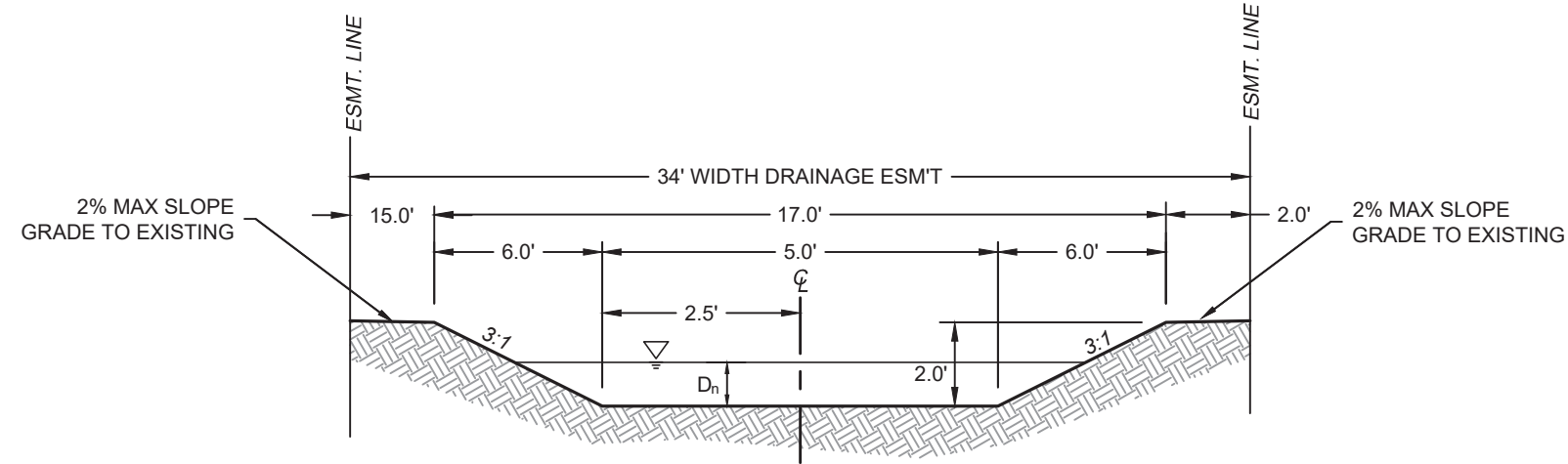
- CPS NOTES:**
1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WORKING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
 2. THE CONTRACTOR WILL BE RESPONSIBLE 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.
 3. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
 4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, WINGWALL, CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
 5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
 6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE BEXAR COUNTY WILL ACCEPT.
 7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

TRENCH EXCAVATION PROTECTION

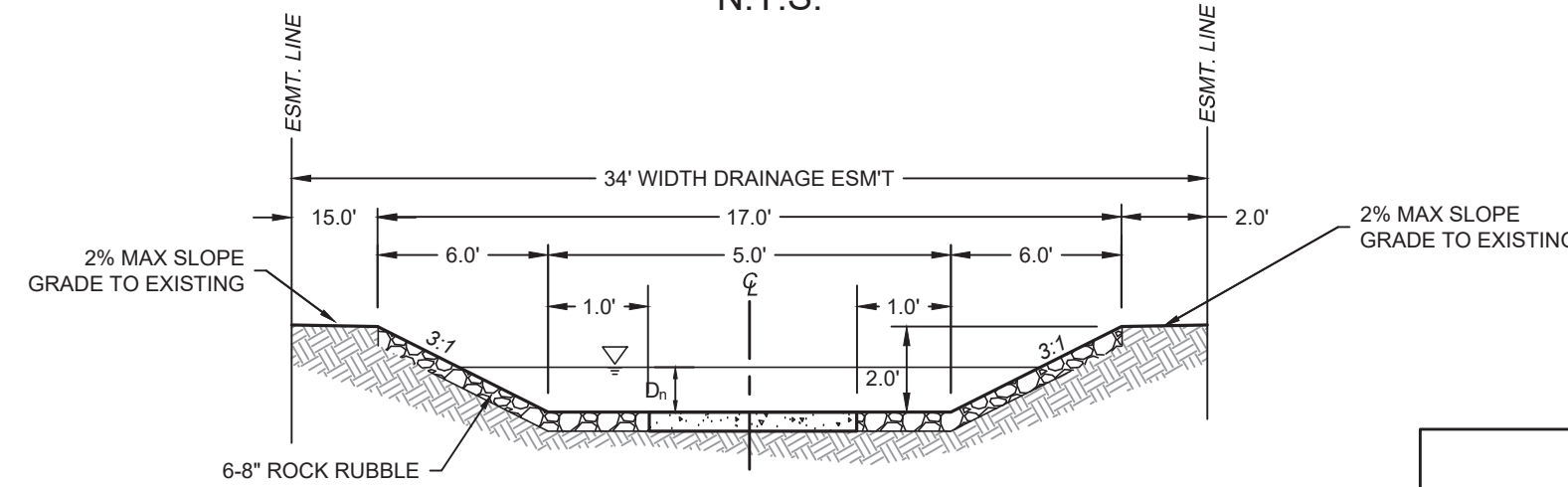
CONTRACTOR AND CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN, GEOTECHNICAL SAFETY, EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE WITHIN THE PROJECT'S WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM. PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS, AND PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS SPECIFICALLY. CONTRACTOR AND 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!!!

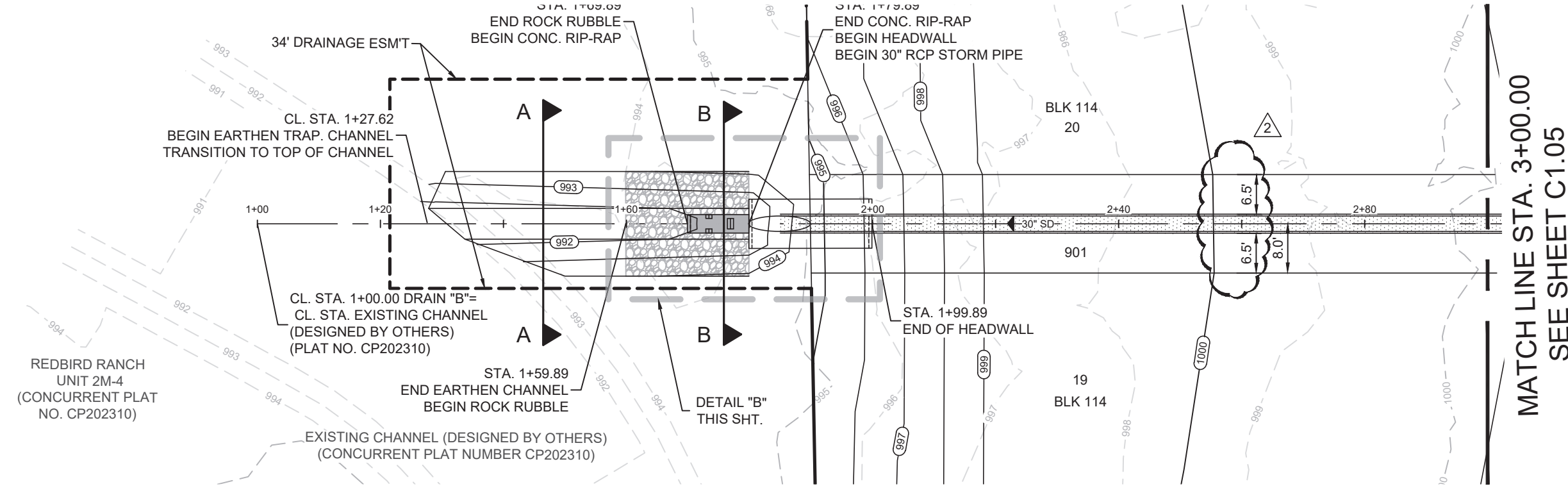
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TEST 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 EXPENSE, WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



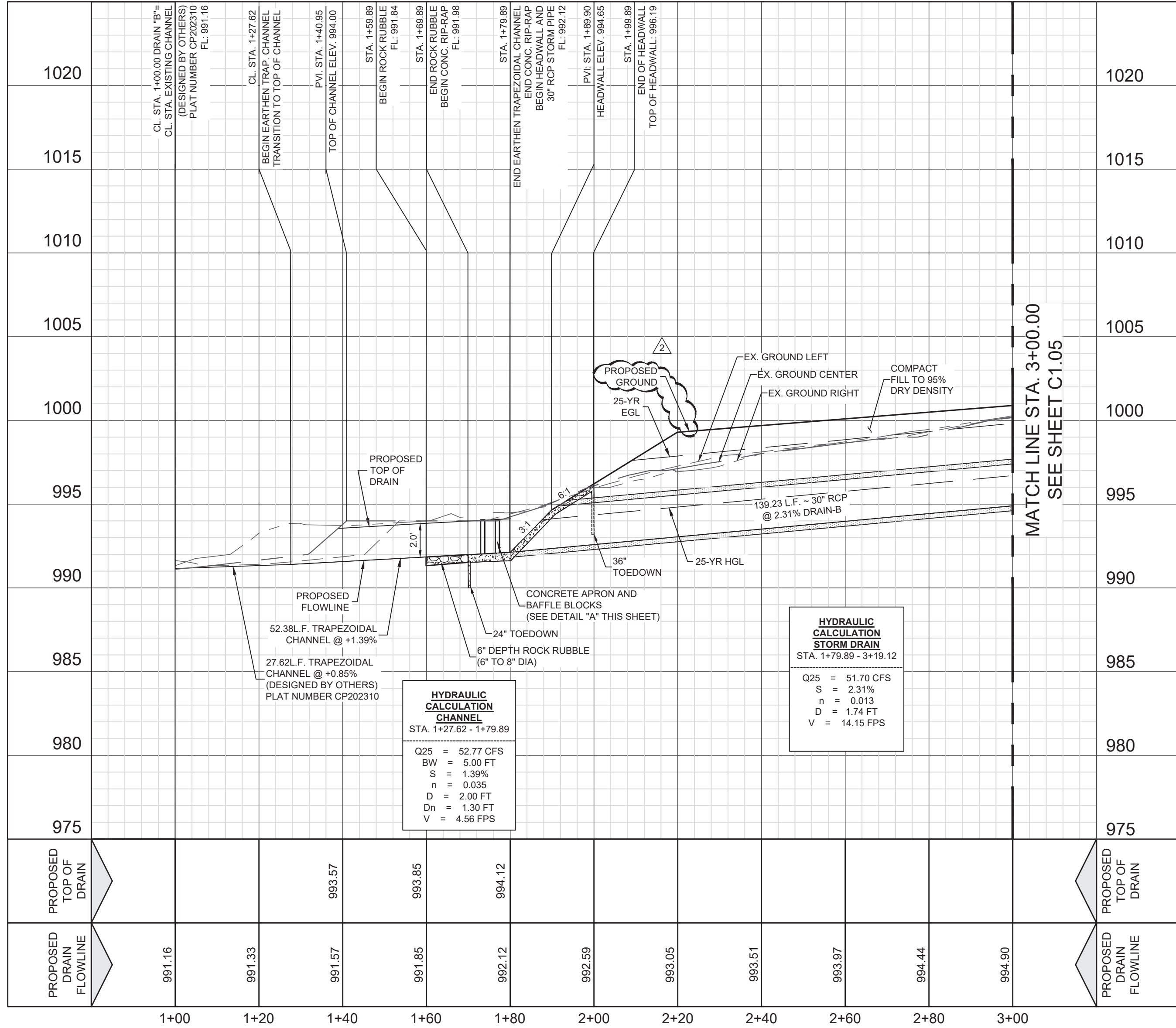
SECTION "A-A"
STA. 1+27.62 - STA. 1+69.89
N.T.S.



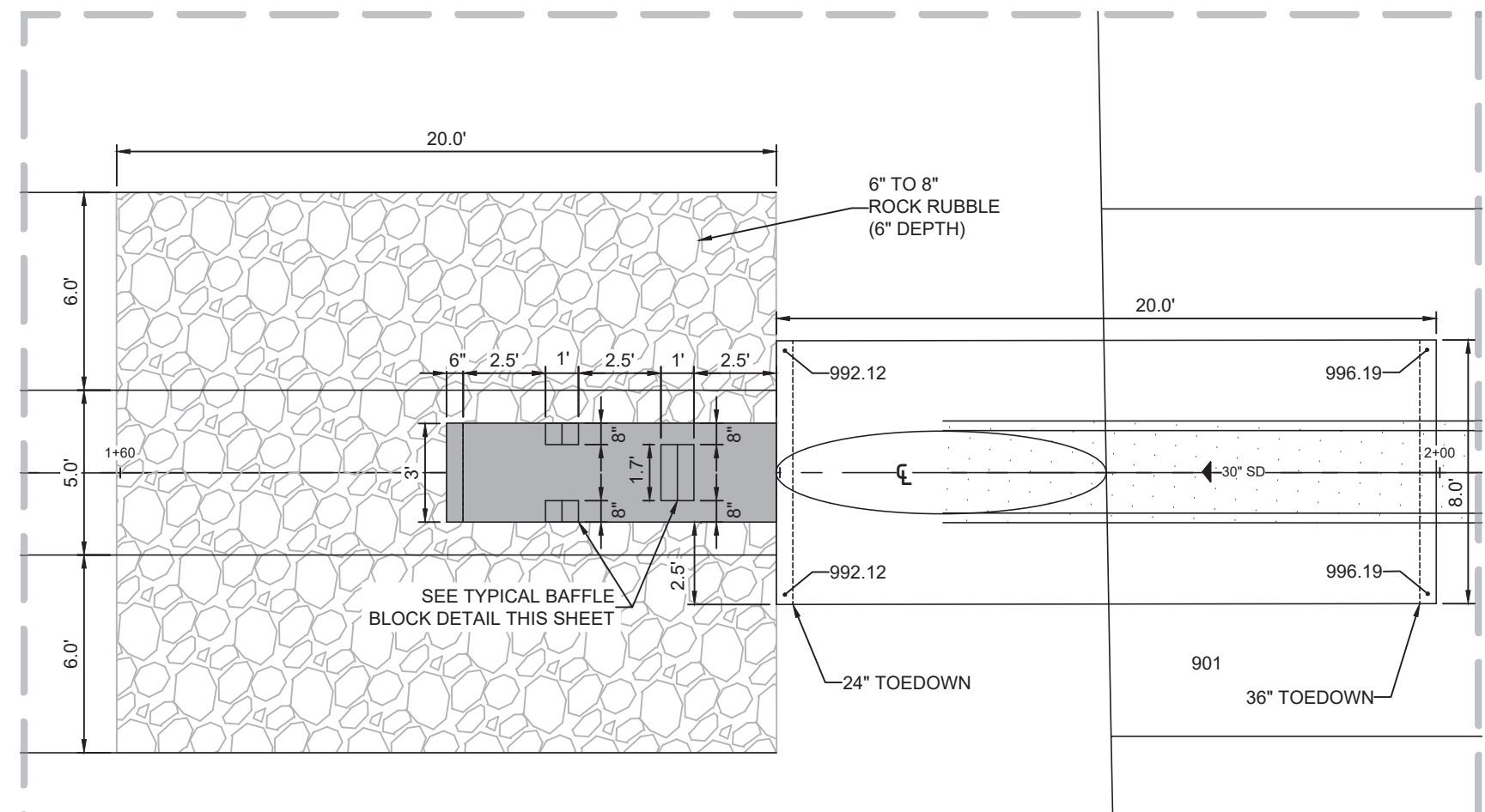
SECTION "B-B"
STA. 1+69.89 - STA. 1+79.89
N.T.S.



DRAIN-B
STA. 1+00.00 TO 3+00.00



Drain B DISSIPATER CALCULATIONS			
Q (cfs)=	51.70	Wb (Basin Width)	2.50
Froude Number (Fr)=	1.890	Lb (Length of Basin)	7.28
Culvert Span or Bottom Width of Channel (ft)	2.5	Bw (Width of Baffle Block)	1.3
Culvert Rise or Top of Channel (ft)	2	Space Between Blocks	1.3
Number of Barrels	1	Nb (Number Of Blocks)	1
n	0.013	Height of Blocks	1.74
Slope (ft/ft)	0.0248	Distance to Floor Blocks	2.43
Velocity (ft/s)	14.15	Depth of Tail Water above the Stilling Basin Floor	3.00
Y1 (Depth Before Jump)	1.74	Height of Max Tail Water	3.94
Y2 (Sequent Depth Downstream)	2.81	Velocity after Baffle Blocks (fps)	1.57
C	1.07	Height of Sill End	0.18
YZ	3.00	Thickness of Baffle Blocks	0.348
z	0.94	C=1.1-(Fr) ² /120	When 1.7< Fr<5.5
		C=0.85	When 5.5< Fr<11
		C=1.0-(Fr) ² /800	When 11< Fr<17



DETAIL "A"
STA. 1+59.89 - STA. 1+99.89
N.T.S.

REVISED
3:22 pm, Nov 03, 2023

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
DRAIN B - STA. 1+00.00 TO 3+00.00
PLAN & PROFILE

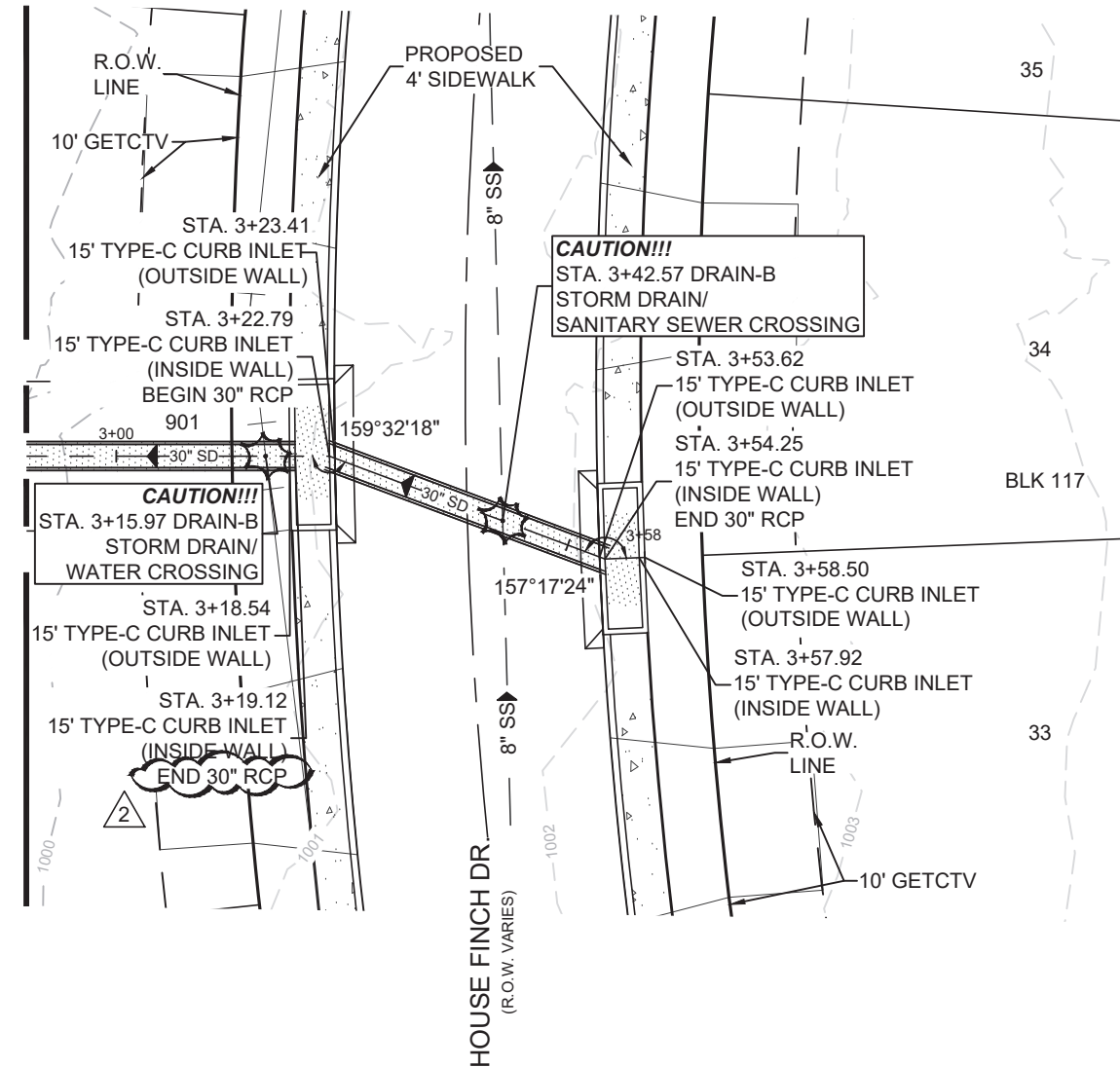
DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 10/27/2023
JOB NO.: 20220500
SHEET NO. **C1.04**

DHI Engineering, LLC.
4419 N. LOOP 1604 EAST
SUITE 700
SAN ANTONIO, TEXAS 78207
(210) 482-2988 | dhiengineering.com
TBP REG. NO. F-195661

REV	DATE	DESCRIPTION
1	10/23/2023	OVERALL QA



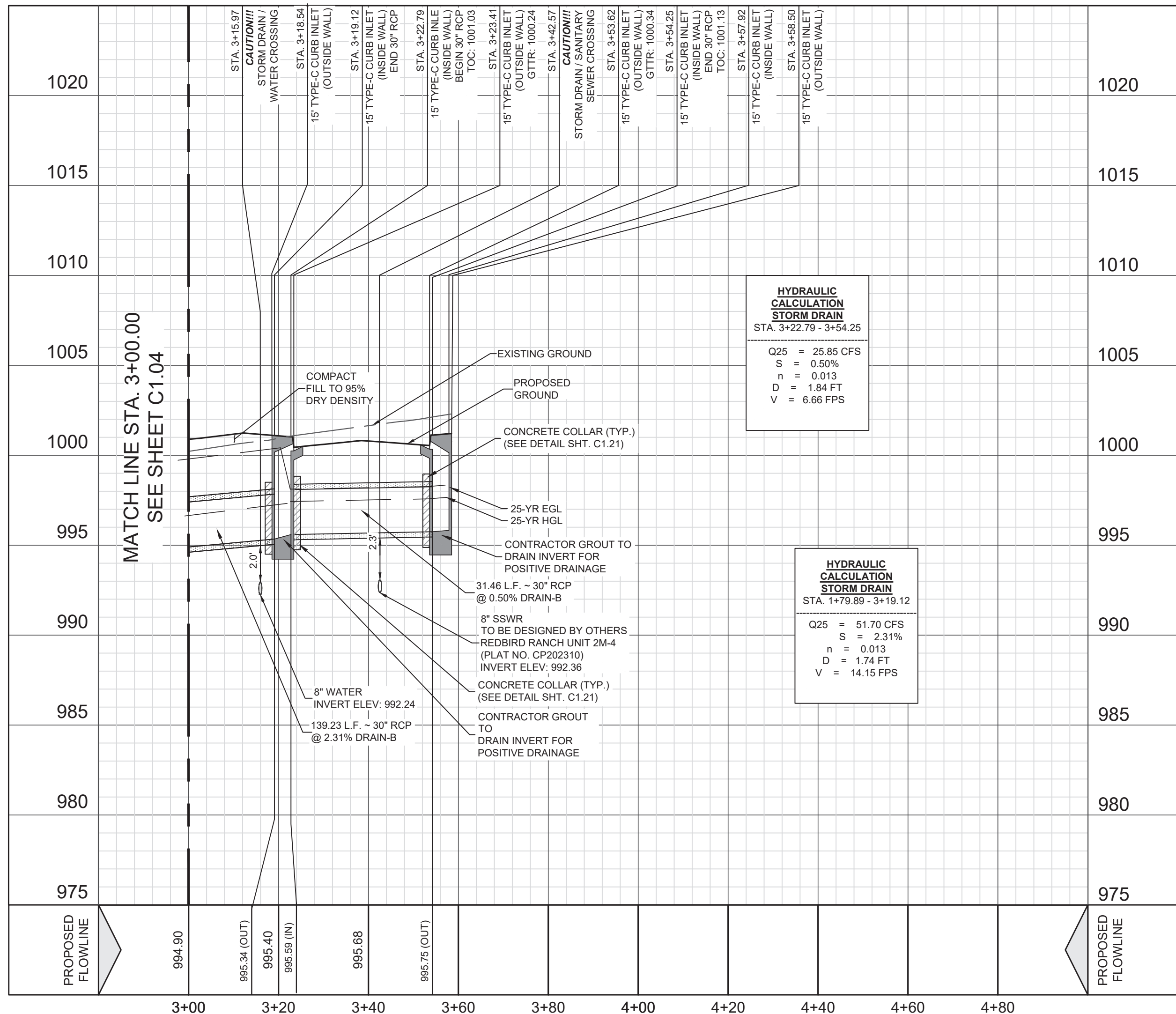
MATCH LINE STA. 3+00.00
SEE SHEET C1.04



HYDRAULIC CALCULATION 2-15' CURB INLET (SUMP)	
$L = \frac{Q_{25} (CFS)}{C(n^{1.49})}$	
$L = 51.7$	
$L = 3.087(0.79^{1.49})$	
$L = 23.85'$	

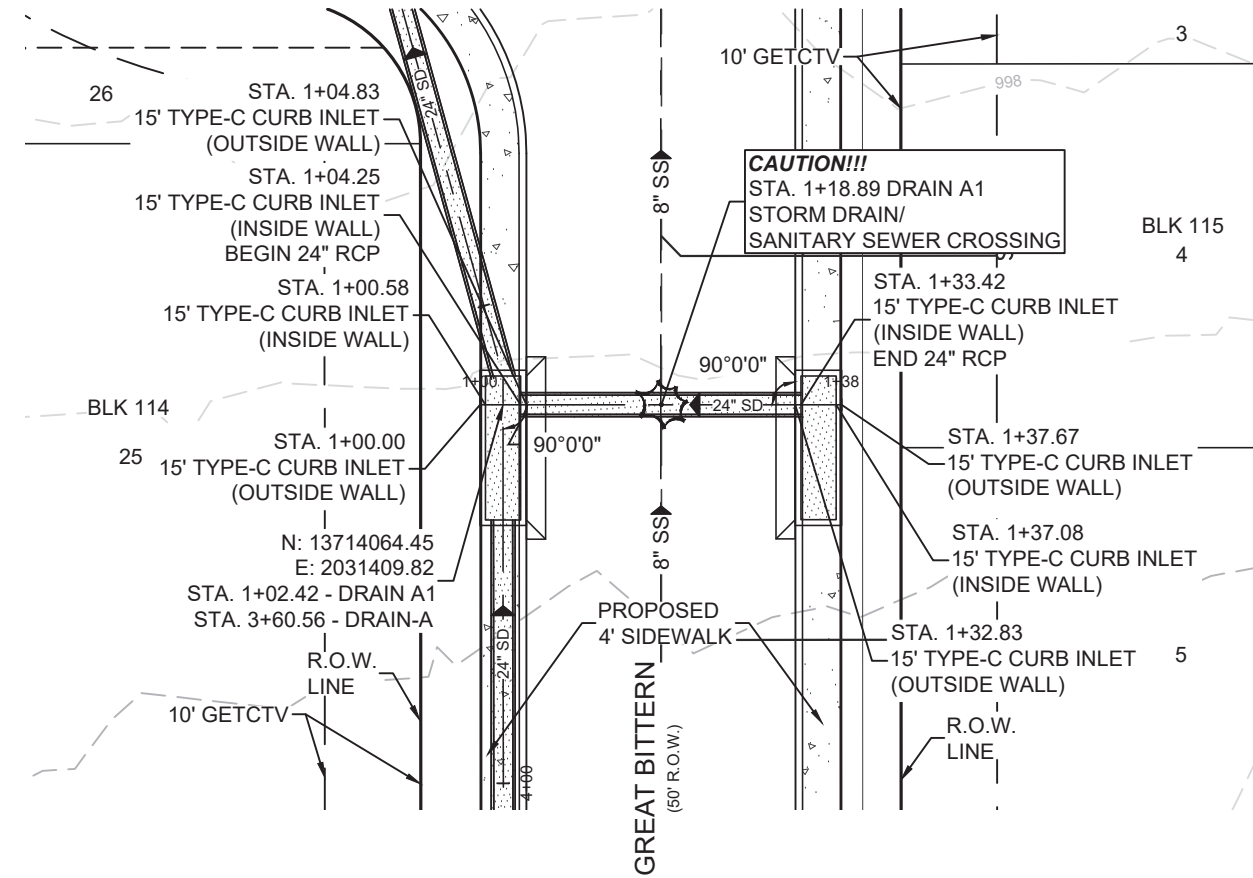
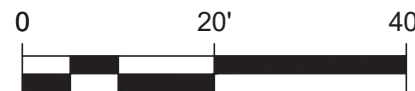
*USE INLETS WITH
A TOTAL LENGTH
OF 30' OPENING MIN

DRAIN-B
3+00.00 - 3+58.50



HYDRAULIC CALCULATION STORM DRAIN STA. 3+22.79 - 3+54.25	
$Q_{25} = 25.85 \text{ CFS}$	
$S = 0.50\%$	
$n = 0.013$	
$D = 1.84 \text{ FT}$	
$V = 6.66 \text{ FPS}$	

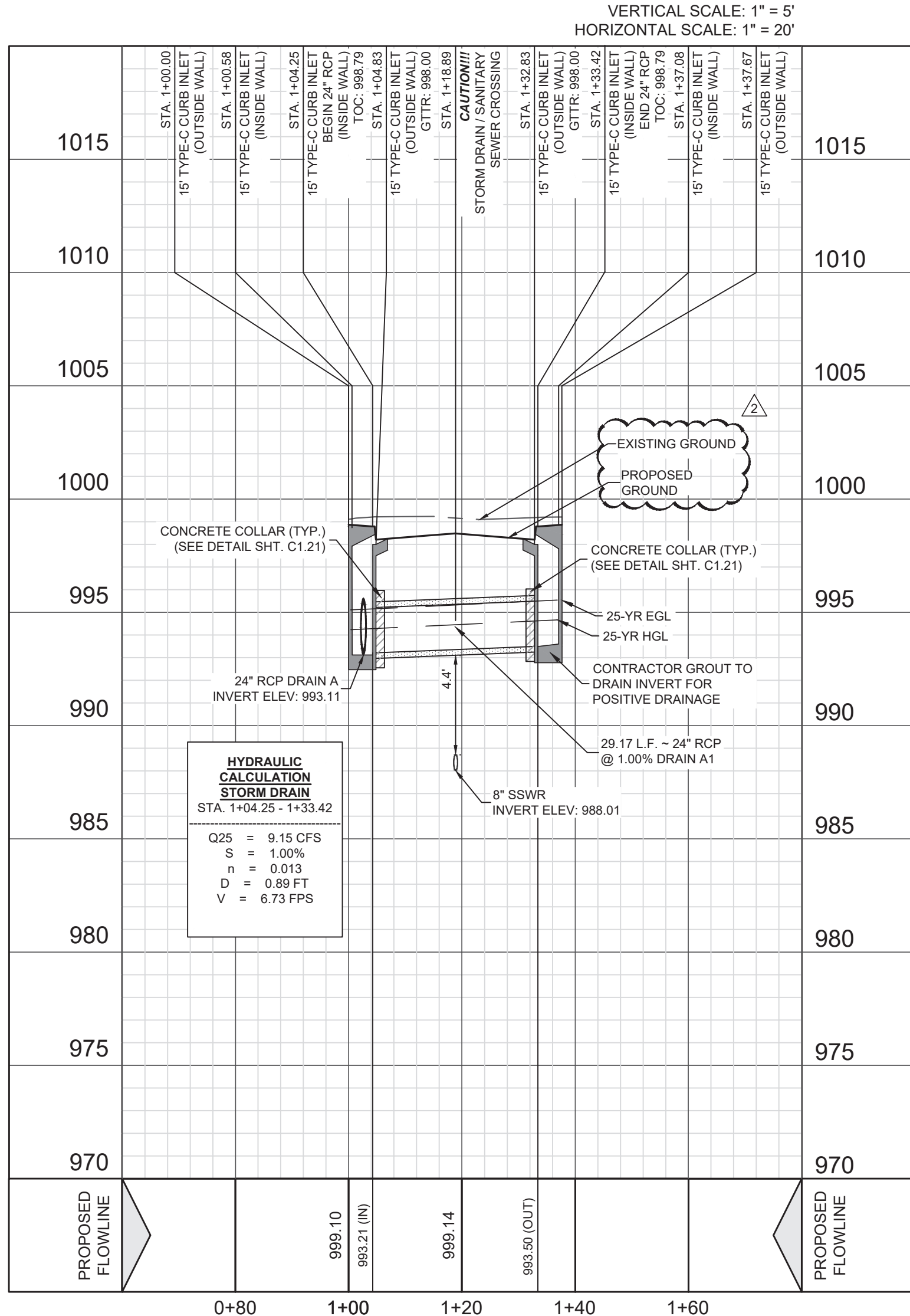
HYDRAULIC CALCULATION STORM DRAIN STA. 1+79.89 - 1+39.12	
$Q_{25} = 51.70 \text{ CFS}$	
$S = 2.31\%$	
$n = 0.013$	
$D = 1.74 \text{ FT}$	
$V = 14.15 \text{ FPS}$	



HYDRAULIC CALCULATION 2-15' CURB INLET (ON GRADE)	
$L = \frac{Q_{25} (CFS)}{C(n^{1.49})}$	
$L = 136.04'$	

*13' OF CURB INLET IS REQUIRED TO
COMPLETE CAPTURE THE 25-YEAR STORM
EVENT. THE PURPOSE OF THESE INLETS ARE
TO REDUCE THE FLOW CONVEYED TO THE 25'
CURB INLET (SUMP) AT THE END OF DRAIN 'A'.
EACH INLET INTERCEPTS 9.68 CFS FROM THE
ROADWAY.

DRAIN A1
1+00.00 - 1+37.67



HYDRAULIC CALCULATION STORM DRAIN STA. 1+04.25 - 1+33.42	
$Q_{25} = 9.15 \text{ CFS}$	
$S = 1.00\%$	
$n = 0.013$	
$D = 0.89 \text{ FT}$	
$V = 6.73 \text{ FPS}$	

REVISED
3:22 pm, Nov 03, 2023

- CPS NOTES:
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TRENCH EXCAVATION PROTECTION

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CAUTION!!!

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REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
DRAIN B STA. 3+00.00 TO 3+58.50 &
DRAIN A1 1+00.00 TO 1+37.67
PLAN & PROFILE

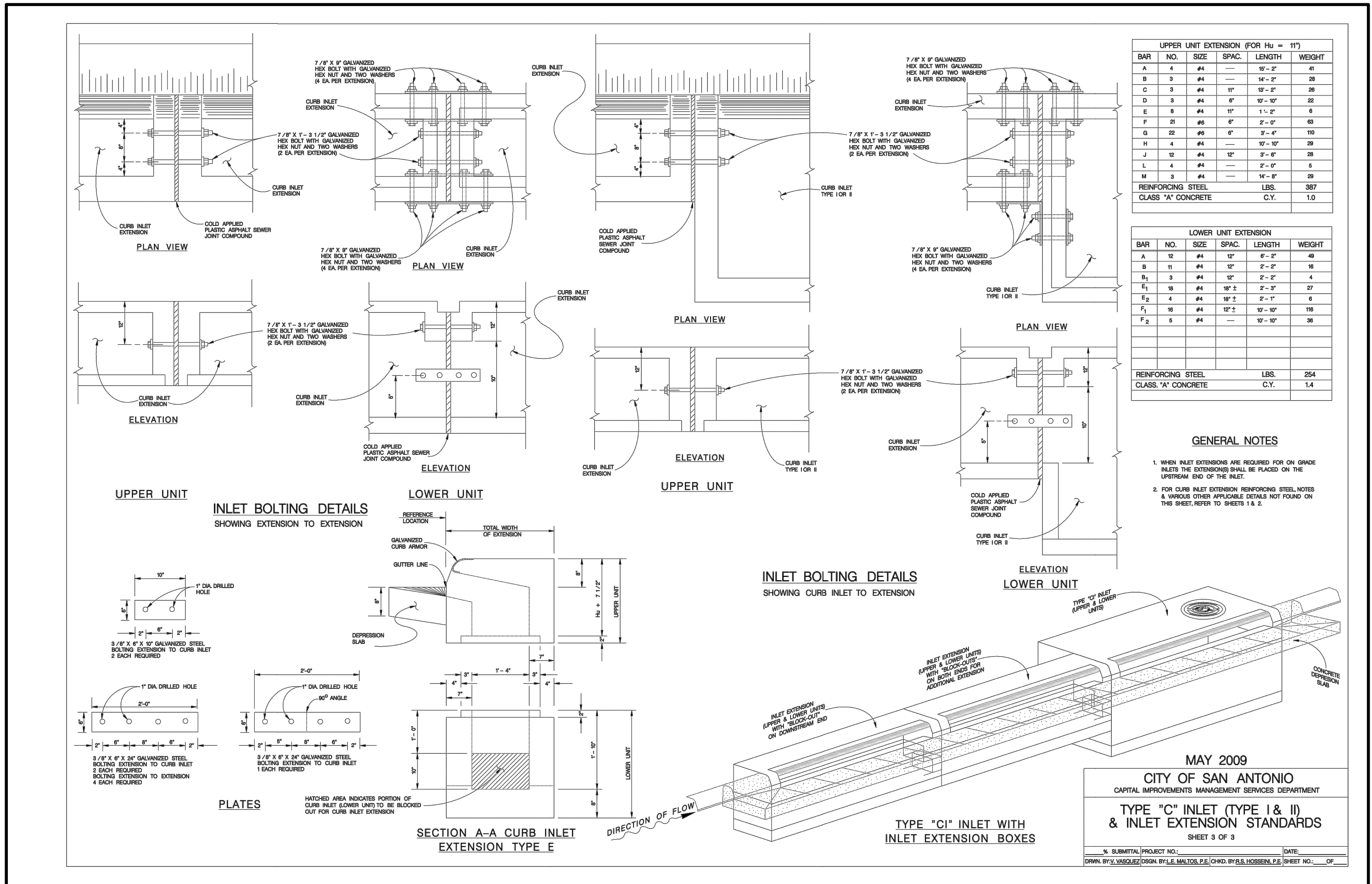
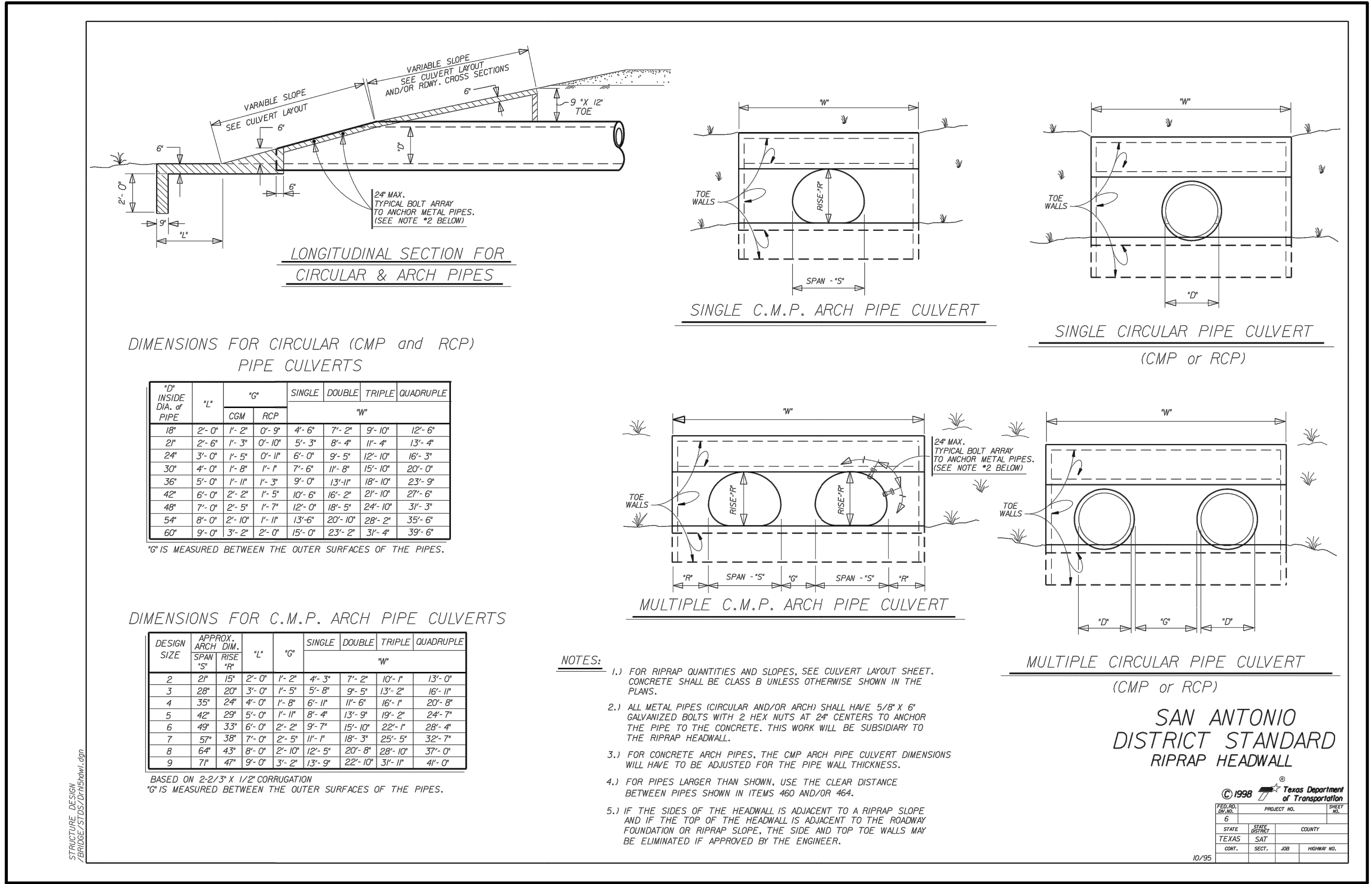
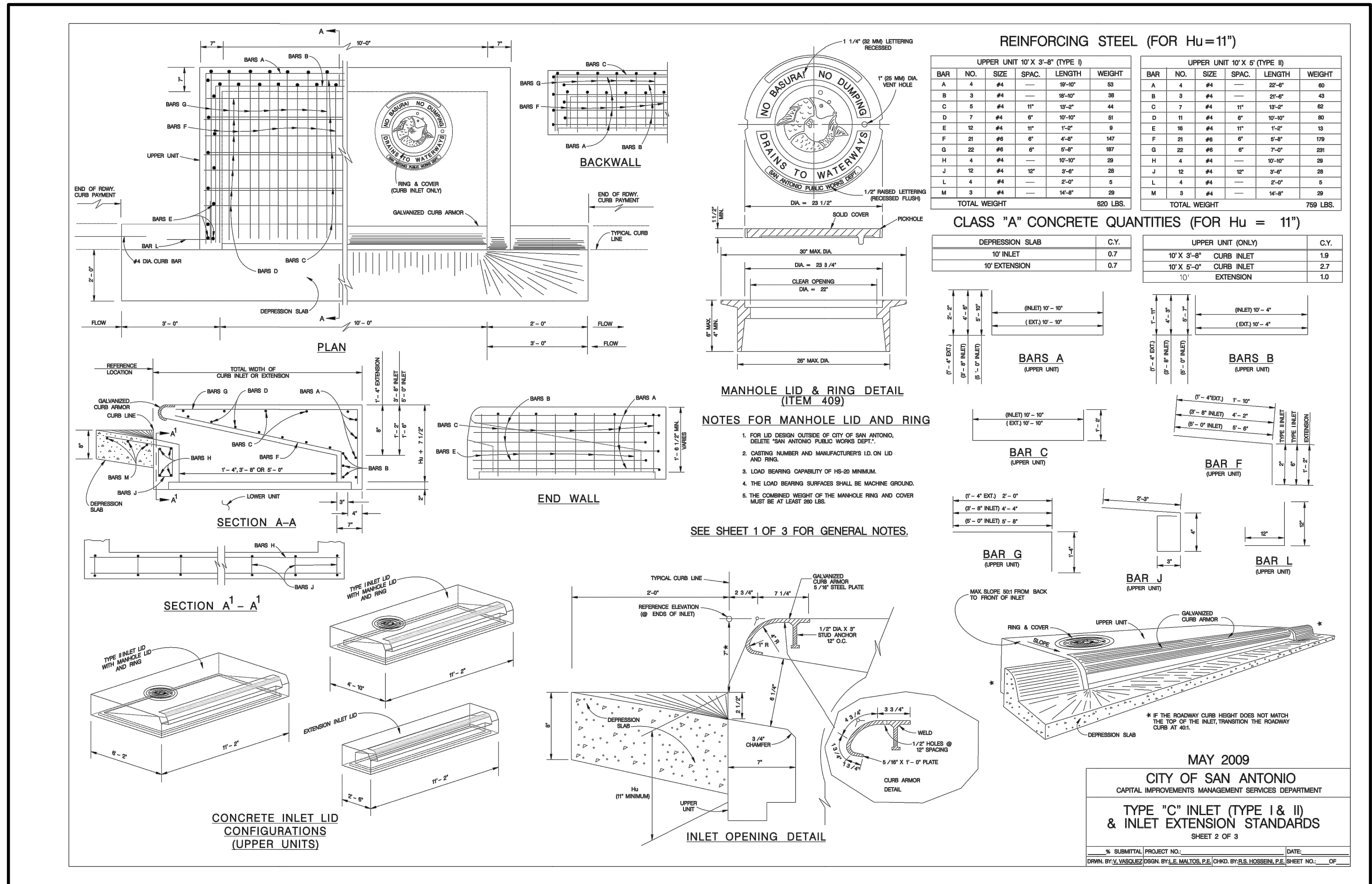
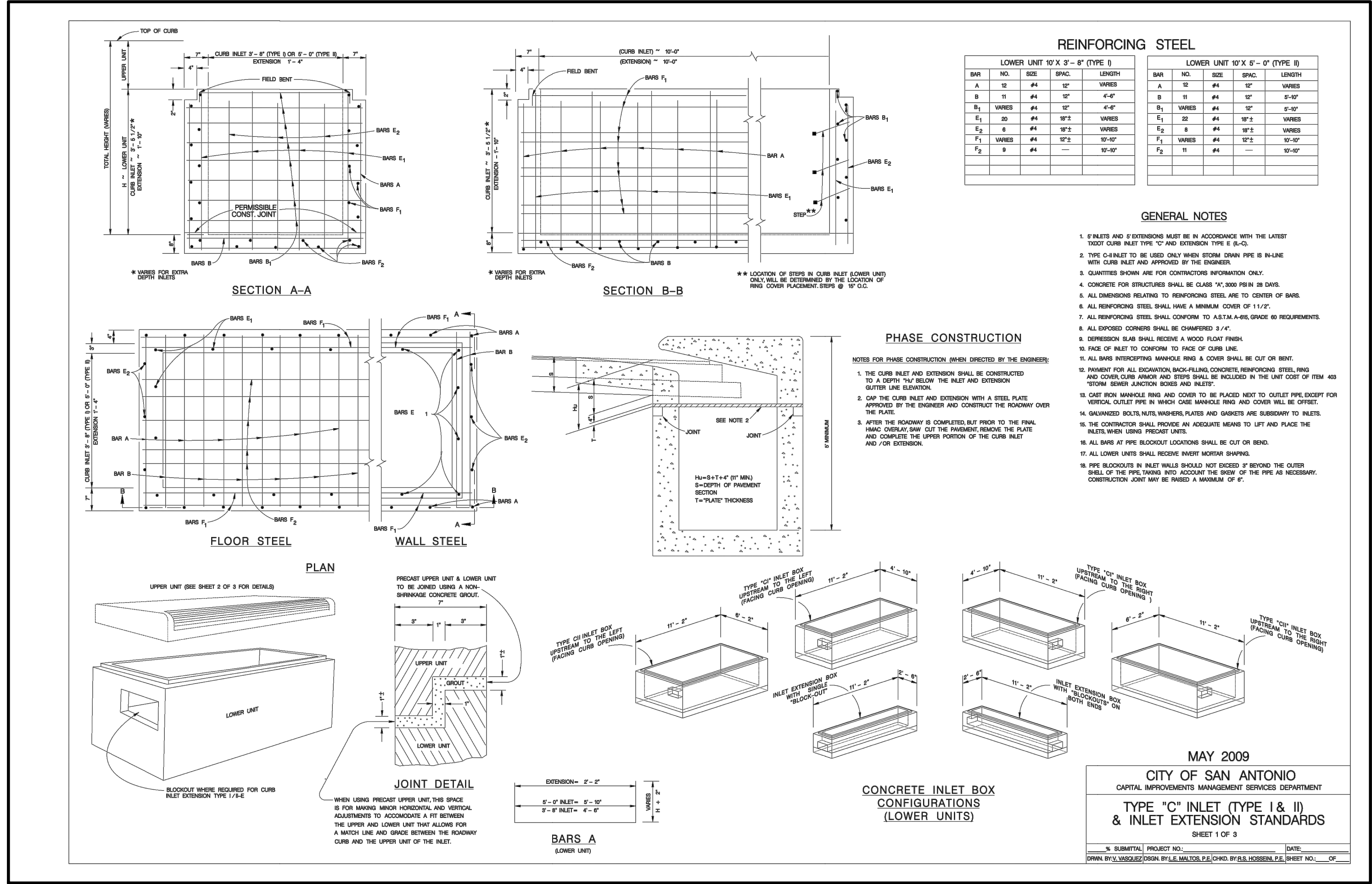
DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 10/27/2023
JOB NO.: 20220500
SHEET NO. C1.05

REV	DATE	DESCRIPTION
1	10/23/2023	OVERALL QA

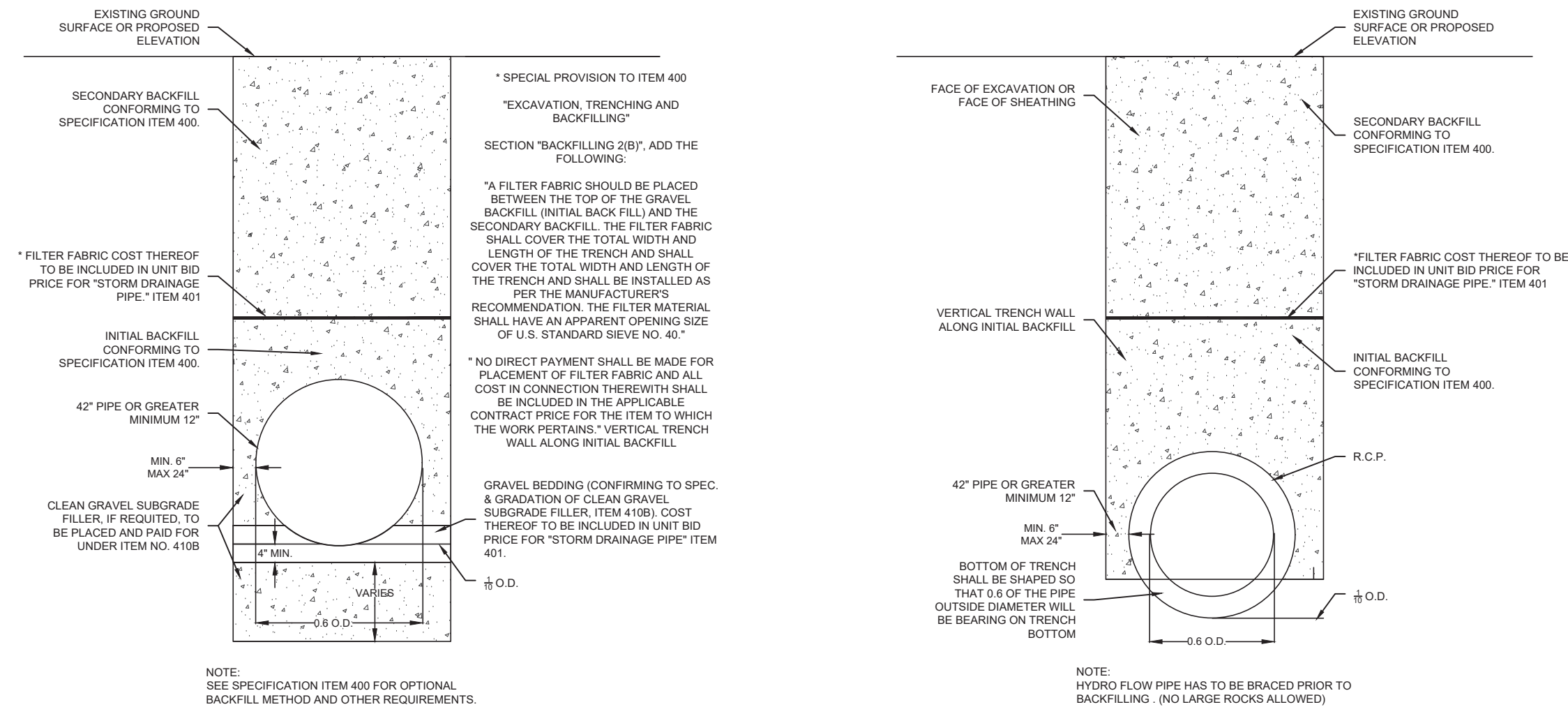


DHI Engineering, LLC.
4419 ALCOOP 1604 EAST
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(210) 482-2988 | dhiengineering.com
TBP REG. NO. F-19561

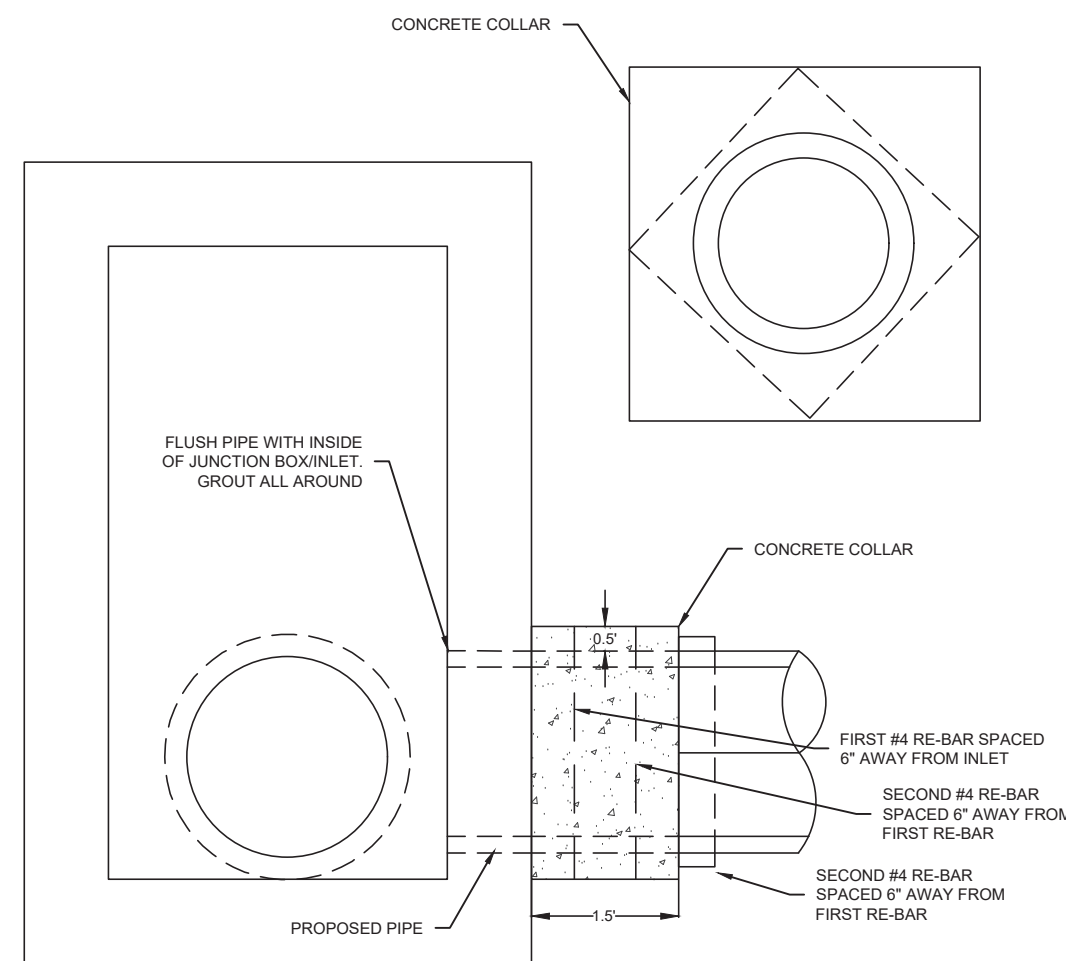
DHI



TYPICAL DETAIL

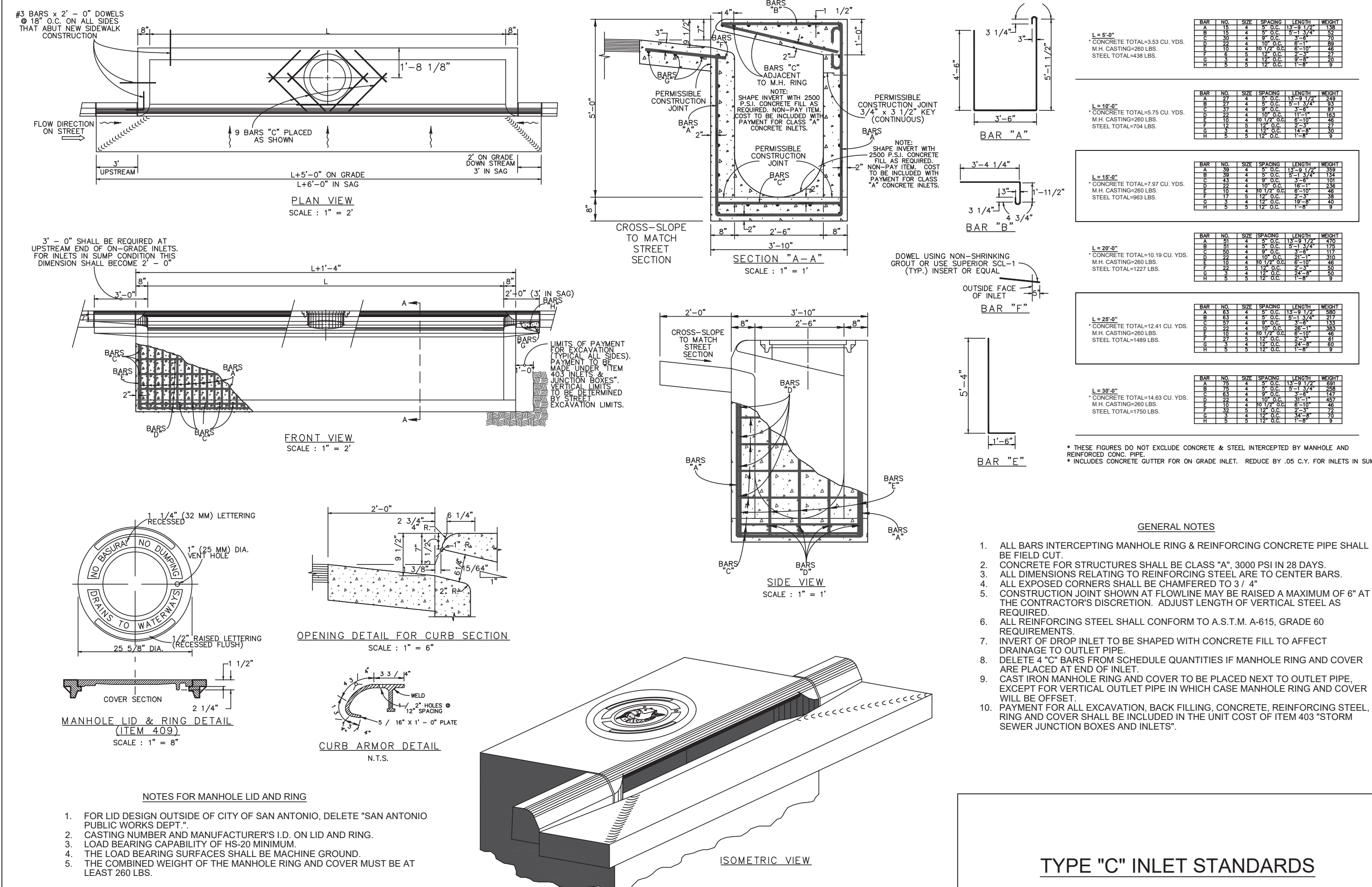


PIPE BEDDING AND BACKFILL DETAILS

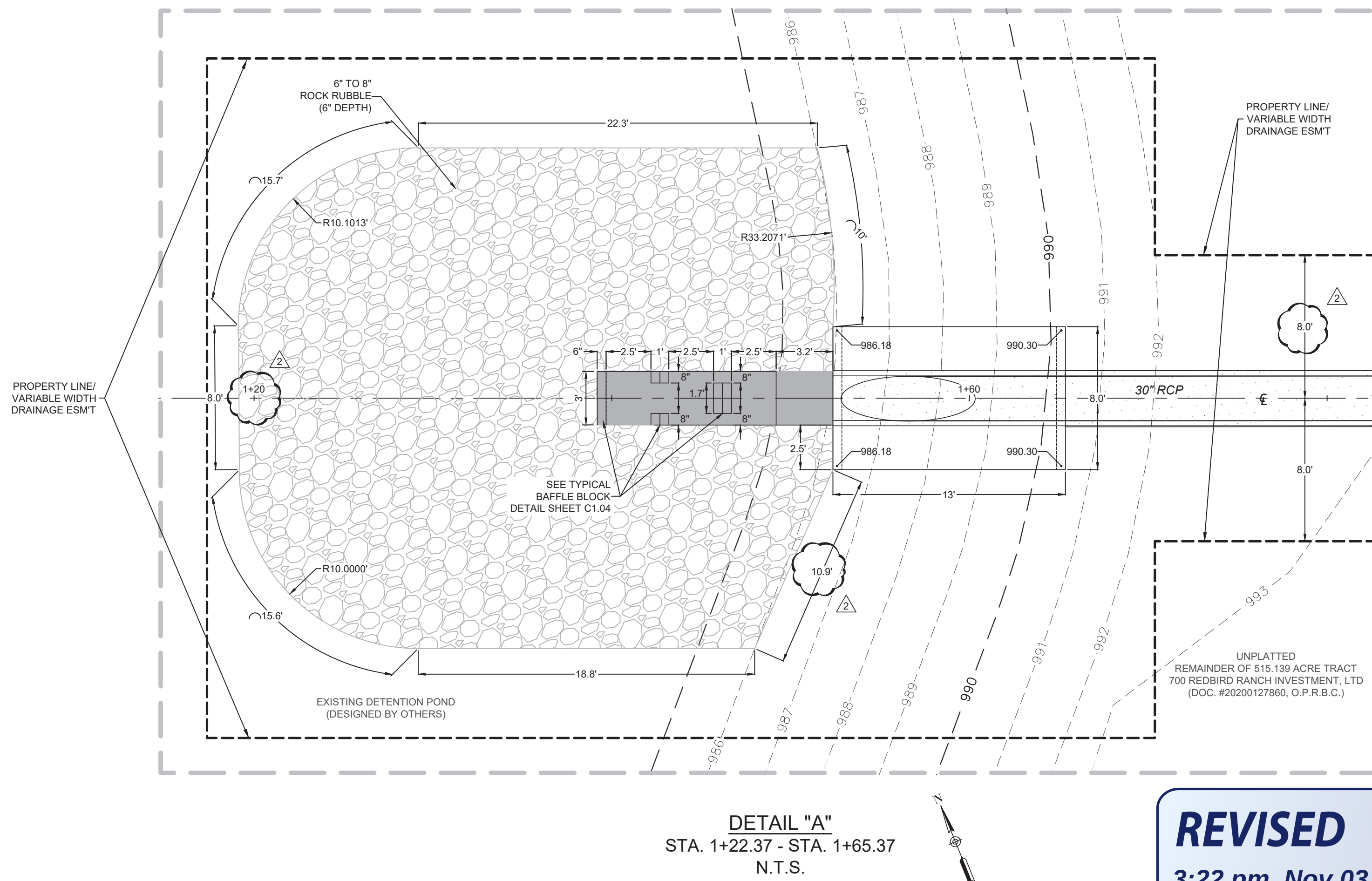


CONCRETE COLLAR DETAIL
NOT TO SCALE

Drain A DISSIPATER CALCULATIONS			
Q (cfs)=	50.52	Wb (Basin Width)	3.00
Froud Number (Fr)=	2.071	Lb (Length of Basin)	6.69
Culvert Span or Bottom Width of Channel (ft)	3	Bw (Width of Baffle Block)	1.2
Culvert Rise or Top of Channel (ft)	3	Space Between Blocks	1.2
Number of Barrels	1	Nb (Number Of Blocks)	1
n	0.013	Height of Blocks	1.62
Slope (ft/ft)	0.027	Distance to Floor Blocks	2.23
Velocity (ft/s)	14.96	Depth of Tail Water above the Stilling Basin Floor	2.93
Y1 (Depth Before Jump)	1.62	Height of Max Tail Water	3.85
Y2 (Sequent Depth Downstream)	2.75	Velocity after Baffle Blocks (fps)	4.35
C	1.06	Height of Sill End	0.18
Y2'	2.93	Thickness of Baffle Blocks	0.324
z	0.92	C=1.1-((Fr) ² /120)	When 1.7 < Fr<5.5
		C=0.85	When 5.5< Fr<11
		C=1.0-((Fr) ² /800)	When 11< Fr<17

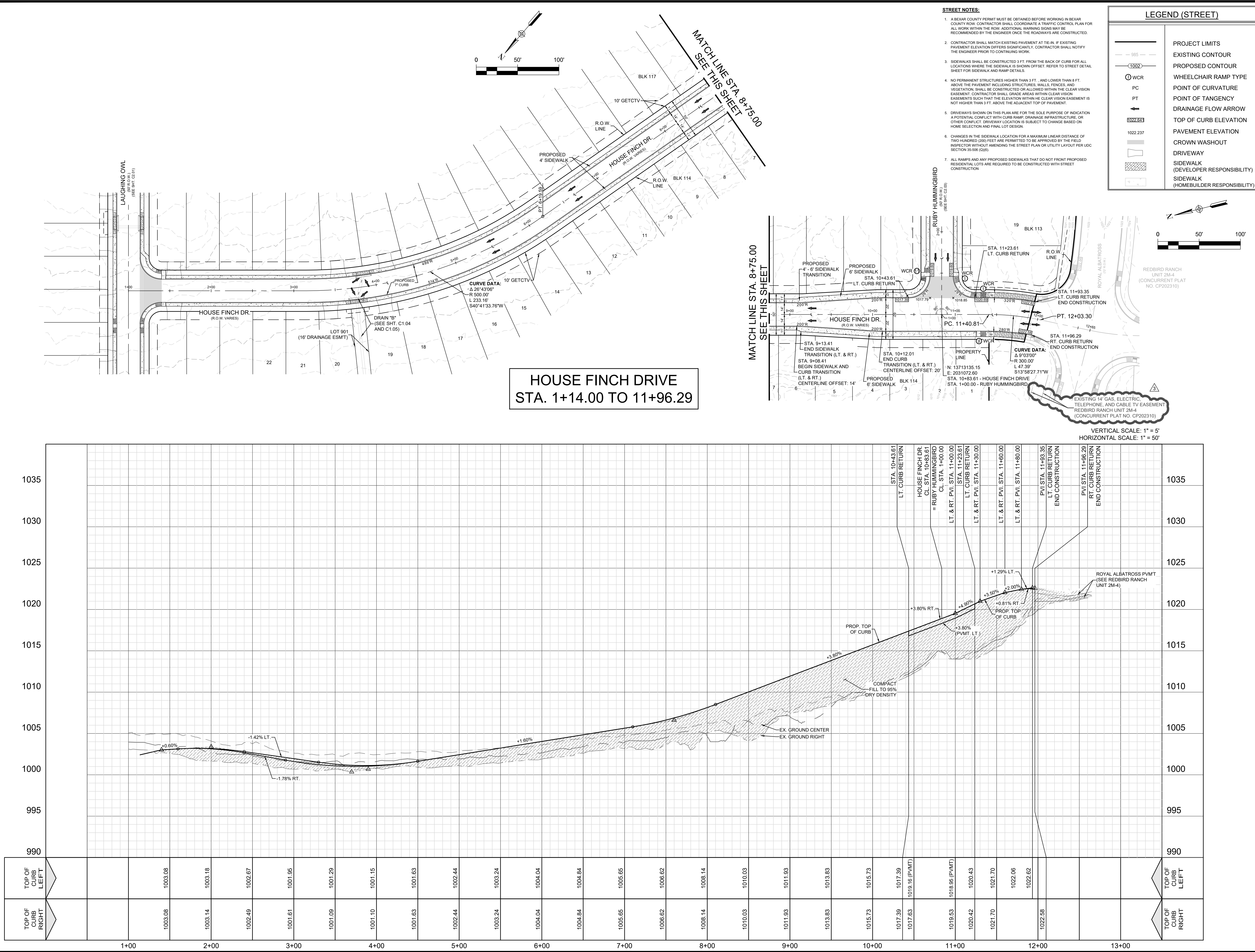


TYPE "C" INLET STANDARDS



DETAIL "A"
STA. 1+22.37 - STA. 1+65.37
N.T.S.

REVISED
3:22 pm, Nov 03, 2023



REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX

HOUSE FINCH DR. - STA. 1+14.00 TO 11+96.29
PLAN & PROFILE

DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 03/11/2024
JOB NO.: 20220500
SHEET NO. C2.00

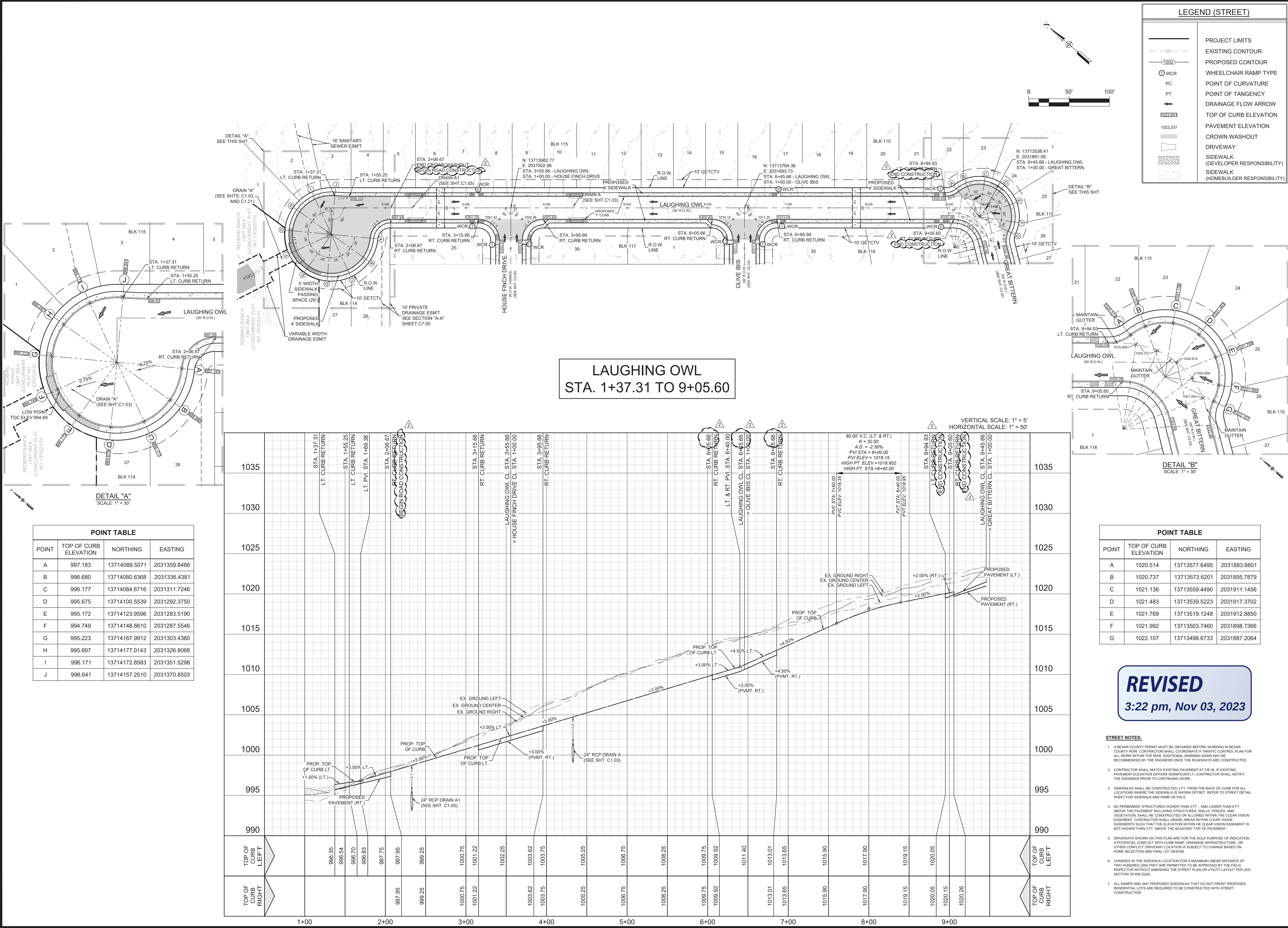
DHI Engineering, LLC.
4419 LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78237
(210) 482-2988 | dhiengineering.com
TBP REG. NO. F-19561

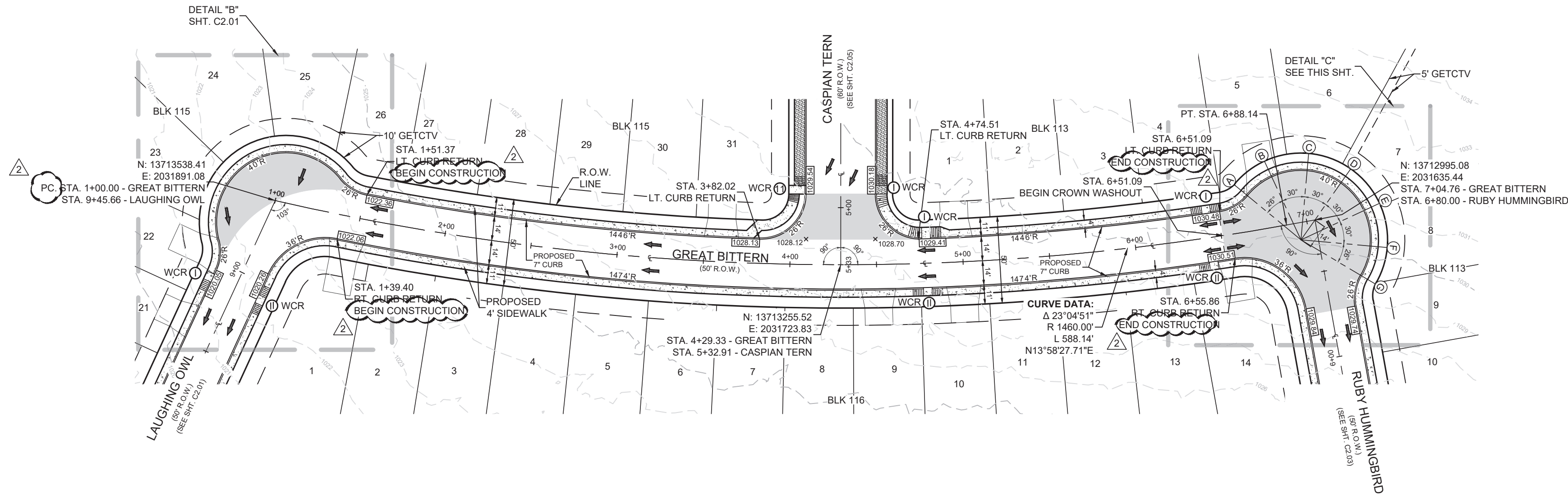
DHI

Vance L. Weynand
99269
PROFESSIONAL ENGINEER
STATE OF TEXAS

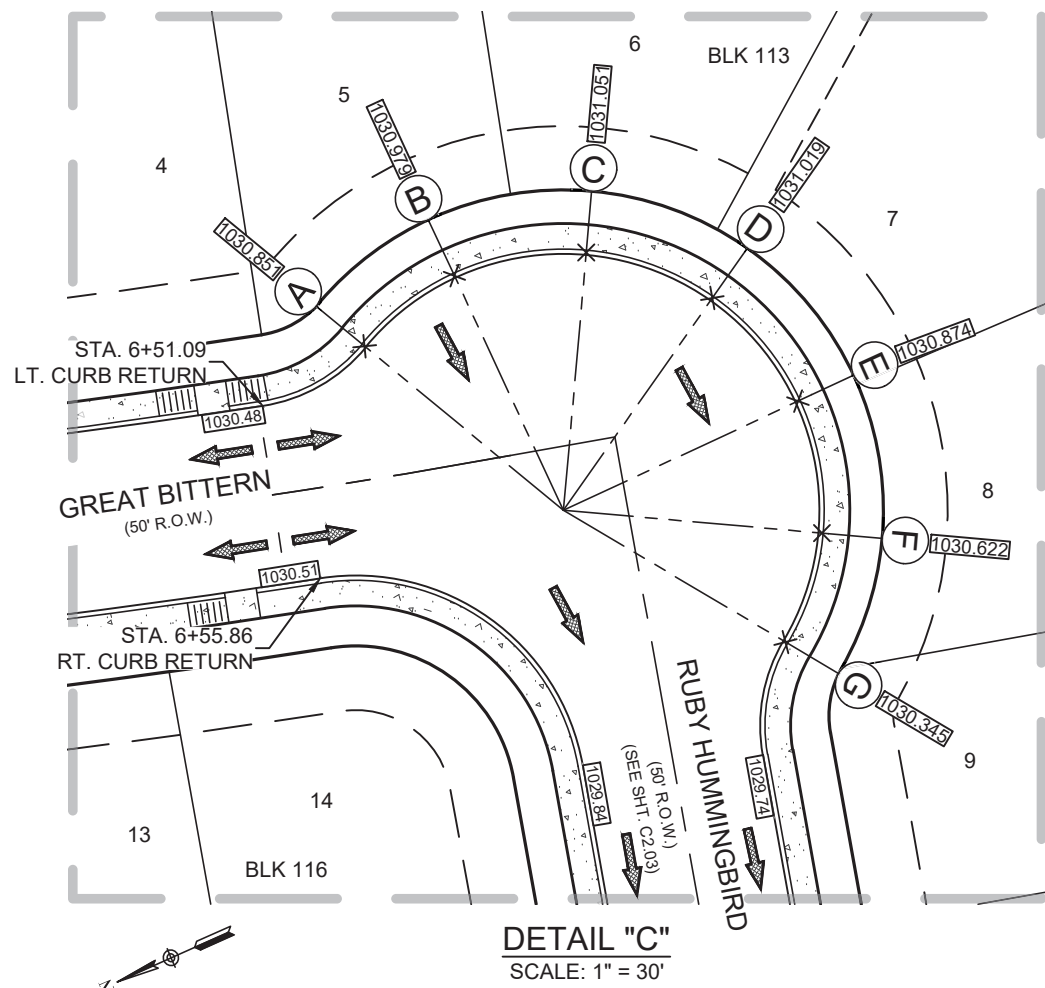
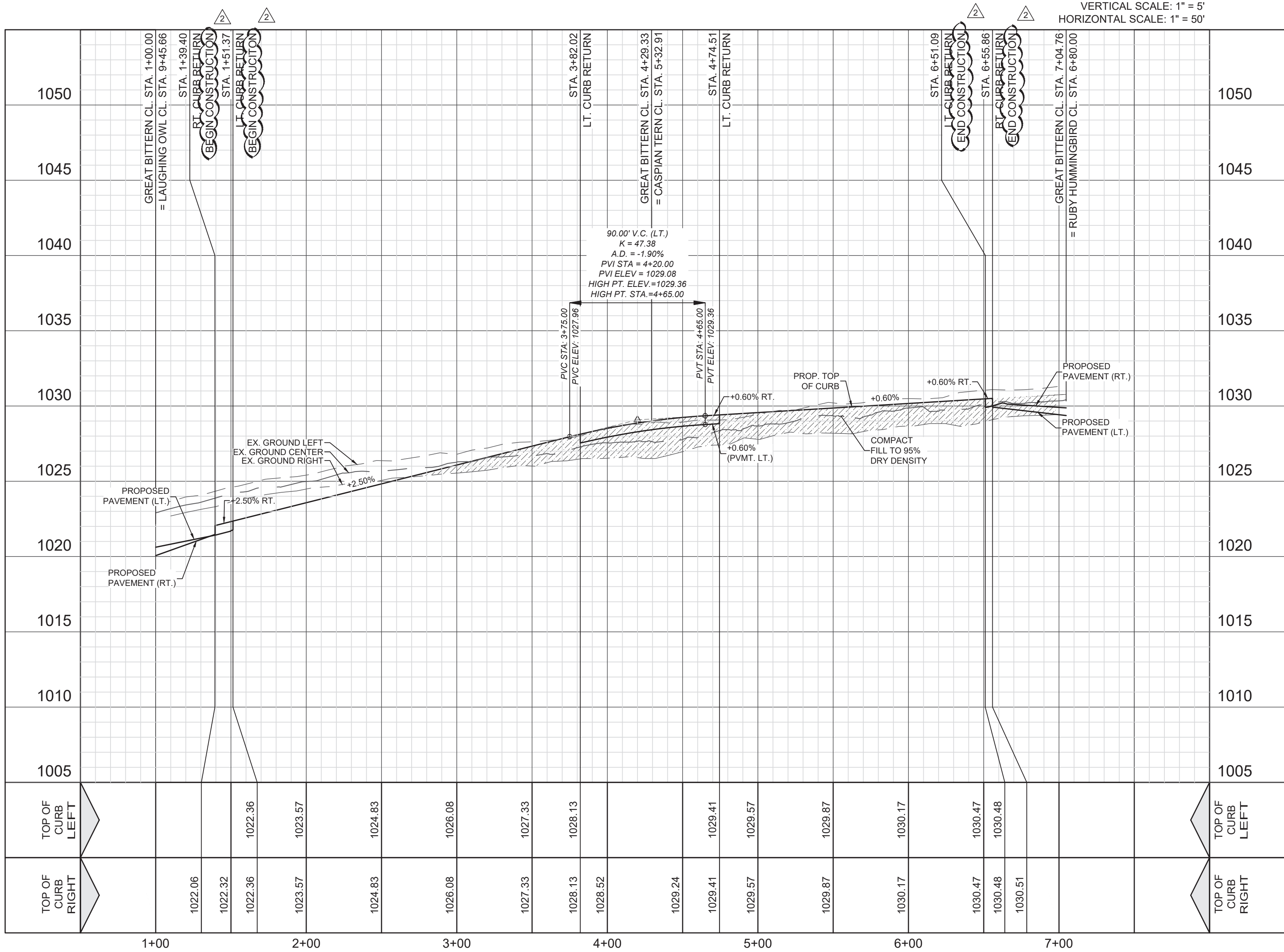
03/11/2024
REV
DATE
DESCRIPTION
OVERALL QA
10/23/2023
3/11/2024
UPDATE CALCULATIONS, DETAILS, CALLOUTS,
AND EASEMENTS.

PLAT NO. CP202307
REDBIRD RANCH, UNIT 2M-1





GREAT BITTERN
STA. 1+39.40 TO 6+55.86



REVISED
3:22 pm, Nov 03, 2023

POINT TABLE			
POINT	TOP OF CURB ELEVATION	NORTHING	EASTING
A	1030.851	13713024.9767	2031664.3460
B	1030.979	13713007.6815	2031668.6590
C	1031.051	13712987.3865	2031663.5736
D	1031.019	13712972.3342	2031649.0071
E	1030.874	13712966.7079	2031628.8403
F	1030.622	13712971.7277	2031608.5042
G	1030.345	13712983.8651	2031595.3076

LEGEND (STREET)	
	PROJECT LIMITS
	EXISTING CONTOUR
	PROPOSED CONTOUR
	WHEELCHAIR RAMP TYPE
	POINT OF CURVATURE
	POINT OF TANGENCY
	DRAINAGE FLOW ARROW
	TOP OF CURB ELEVATION
	PAVEMENT ELEVATION
	CROWN WASHOUT
	DRIVEWAY
	SIDEWALK (DEVELOPER RESPONSIBILITY)
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)

- STREET NOTES:**
- A BEKAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEKAR 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.
 - CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
 - 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.
 - NO PERMANENT STRUCTURES HIGHER THAN 3 FT. AND LOWER THAN 8 FT. 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 HE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FT. ABOVE THE ADJACENT TOP OF PAVEMENT.
 - DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATION 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.
 - 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 (GWS).
 - ALL RAMPS AND ANY PROPOSED SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
GREAT BITTERN - STA. 1+39.40 TO 6+55.86
PLAN & PROFILE

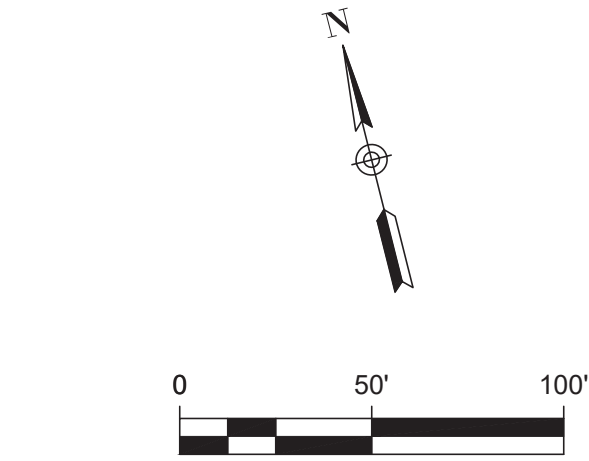
DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 10/27/2023
JOB NO.: 20220500
SHEET NO.

C2.02

DHI Engineering, LLC.
4419 ANTONIO LOOP 1604 EAST
SAN ANTONIO, TEXAS 78217
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DHI

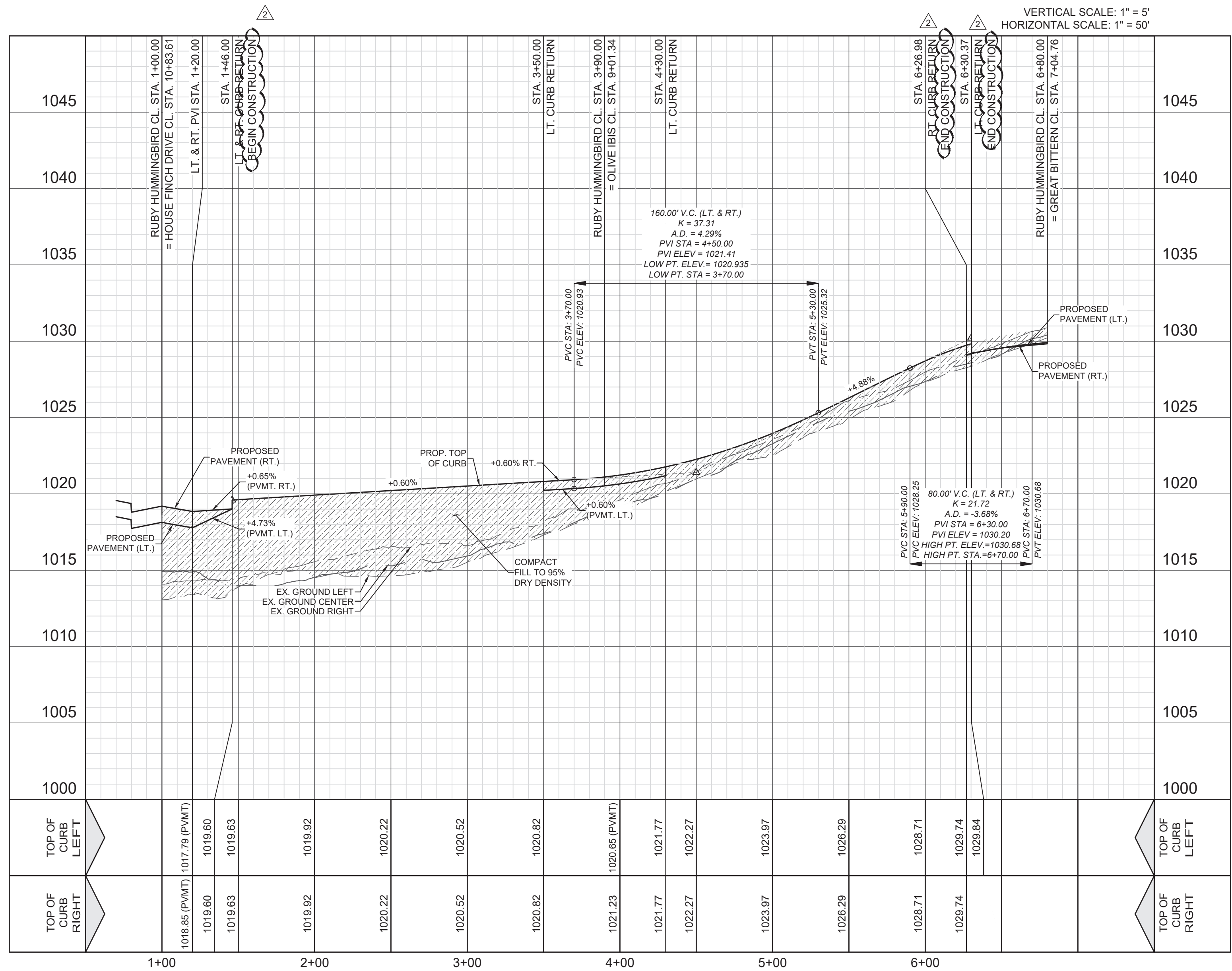
10/27/2023
VANCE L. WEYLAND
VANCE L. WEYLAND
PROFESSIONAL ENGINEER
99269
STATE OF TEXAS
10/23/2023
DATE
REV
DESCRIPTION
OVERALL QA



LEGEND (STREET)	
	PROJECT LIMITS
	EXISTING CONTOUR
	PROPOSED CONTOUR
	WHEELCHAIR RAMP TYPE
	POINT OF CURVATURE
	POINT OF TANGENCY
	DRAINAGE FLOW ARROW
	TOP OF CURB ELEVATION
	PAVEMENT ELEVATION
	CROWN WASHOUT
	DRIVEWAY
	SIDEWALK (DEVELOPER RESPONSIBILITY)
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)

STREET NOTES:

3. A BEAR CANYON PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR CANYON ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK IN THE ROW. THE ROW SHALL BE MAINTAINED AND NOT TO BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
4. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT THE IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
5. SIDEWALKS SHALL BE CONSTRUCTED 3 FT. FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFF-SHEET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
6. NO PERMANENT STRUCTURES HIGHER THAN 3 FT. AND LOWER THAN 8 FT. SHALL BE CONSTRUCTED INCLUDING SIGNAGE, WALLS, FENCES, AND VEGETATION. SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VIEW EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VIEW EASEMENT TO MATCH EXISTING GRADE. IF THE CLEAR VIEW EASEMENT IS NOT HIGHER THAN 3 FT. ABOVE THE ADJACENT TOP OF PAVEMENT.
7. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR EXISTING SIDEWALKS. DRIVEWAYS ARE NOT TO BE SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
8. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE ADJUSTED BY THE FIELD INSPECTOR TO MAINTAIN THE STREET PLAN OR UTILITY LAYOUT PER LDC SECTION 35-06 (02).
9. ALL RAMPS AND ANY PROPOSED SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.

**REVISED**

3:22 pm, Nov 03, 2023

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX

DESIGNED BY:	SQV
DRAWN BY:	JFM/JWS
DATE:	10/27/2023
JOB NO.:	20220500
SHEET NO.	

C2.03

DHI Engineering, LLC.

DHI

REV	DATE	DESCRIPTION
2	10/23/2023	OVERALL QA

10/27/2023

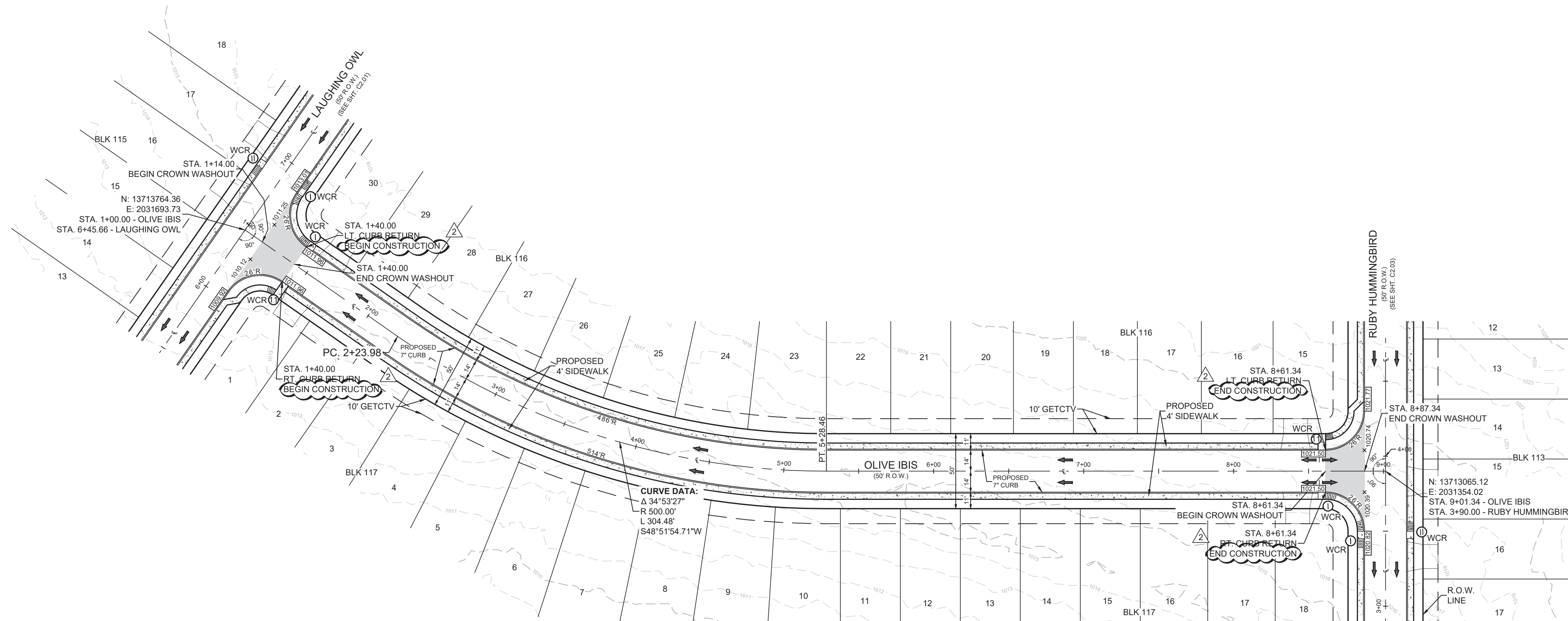


Vance Weynand

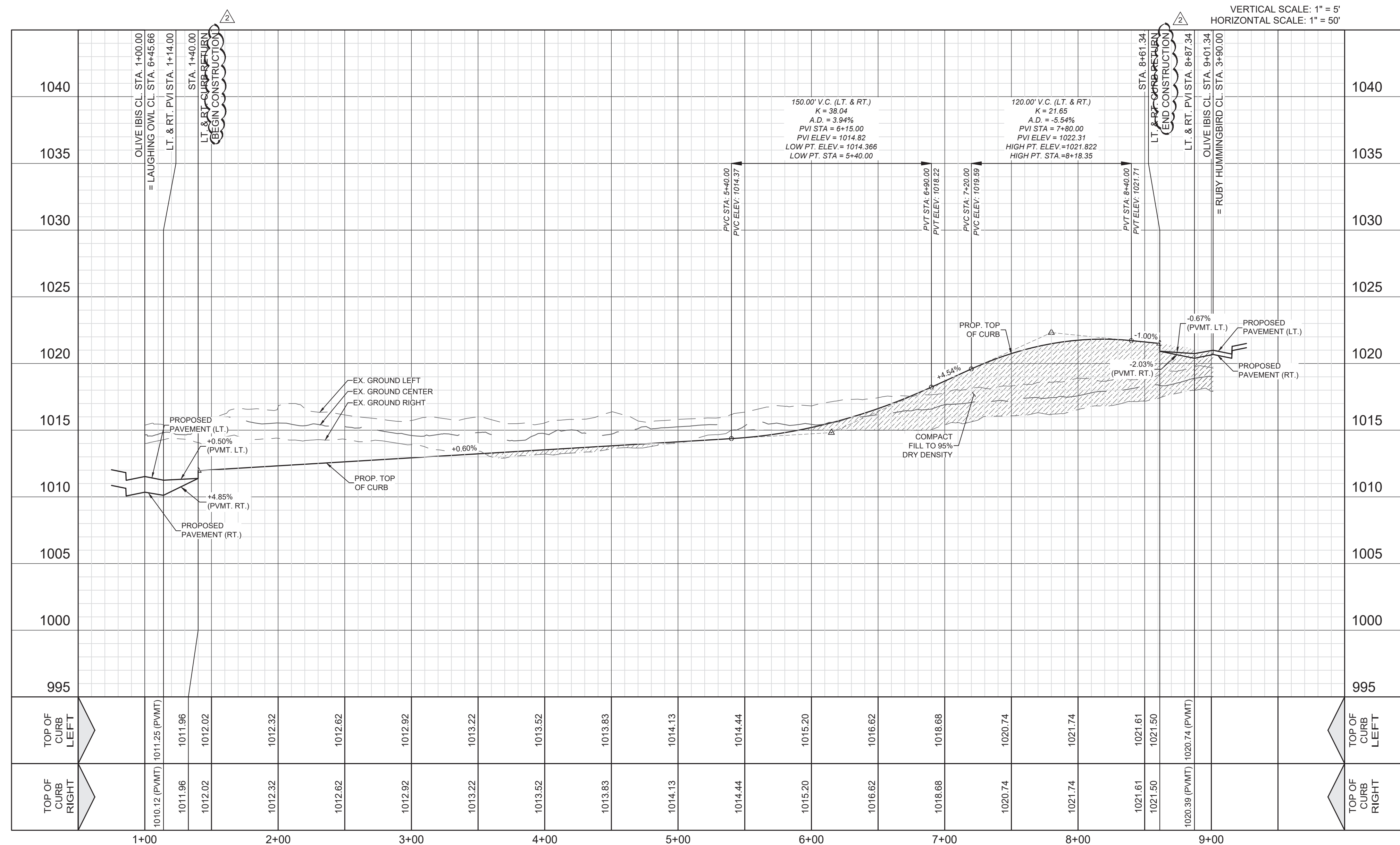
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REDBIRD RANCH. UNIT 2M-1

PLAT NO. CP202307



OLIVE IBIS
STA. 1+14.00 TO 8+87.34



REVISED
3:22 pm, Nov 03, 2023

RED BIRD RANCH, UNIT 2M-
SAN ANTONIO, TX
OLIVE IBIS - STA. 1+14.00 TO 8+87.34
PLAN & PROFILE

DHI Engineering, LLC.
5419 N. LOOP, 1604 EAST
SAN ANTONIO, TX 78247
(210) 496-2668 | dhiengineering.com
TUBE REG. NO. F-19561

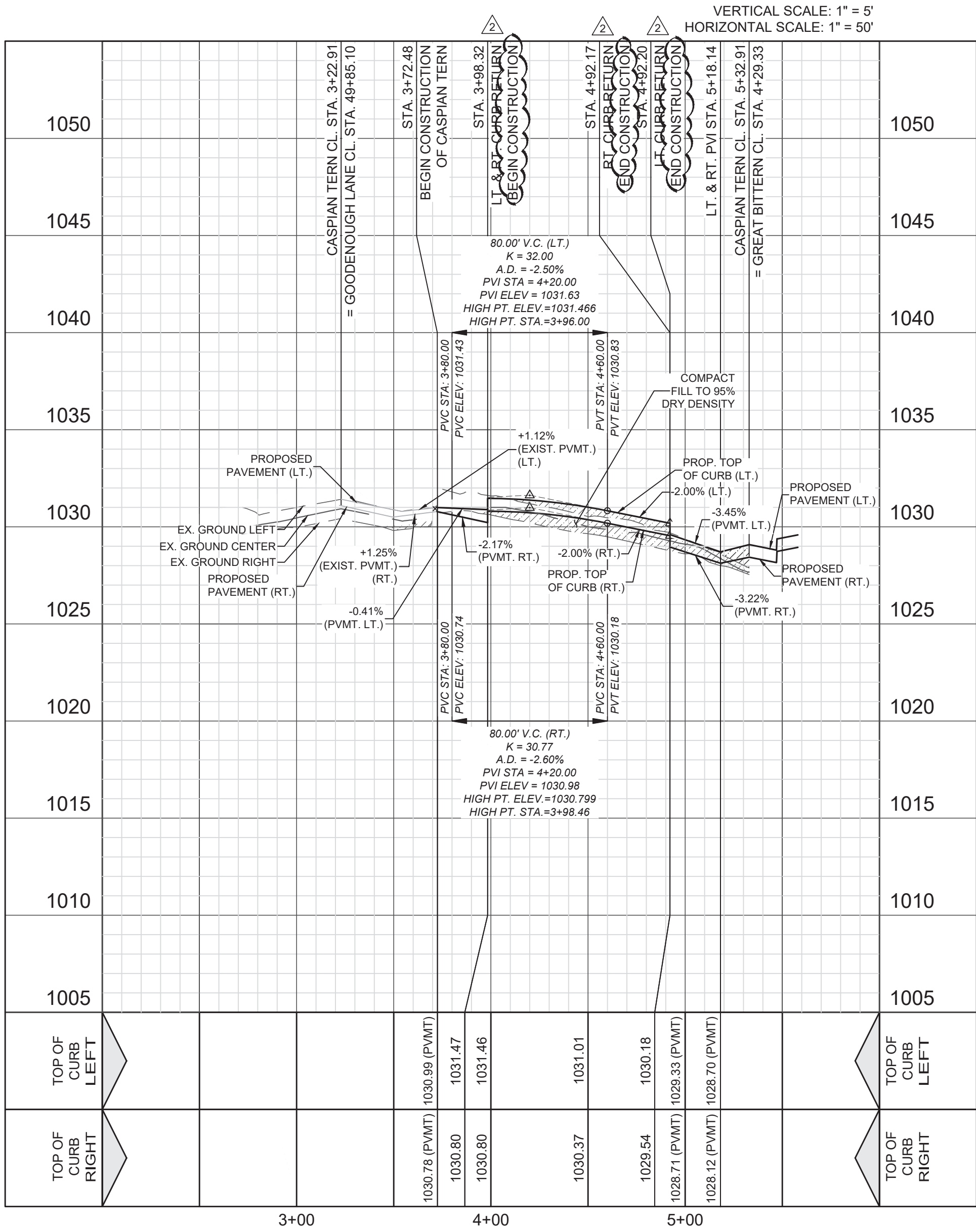
	OVERALL QA
10/23/2023	

1/27/2023

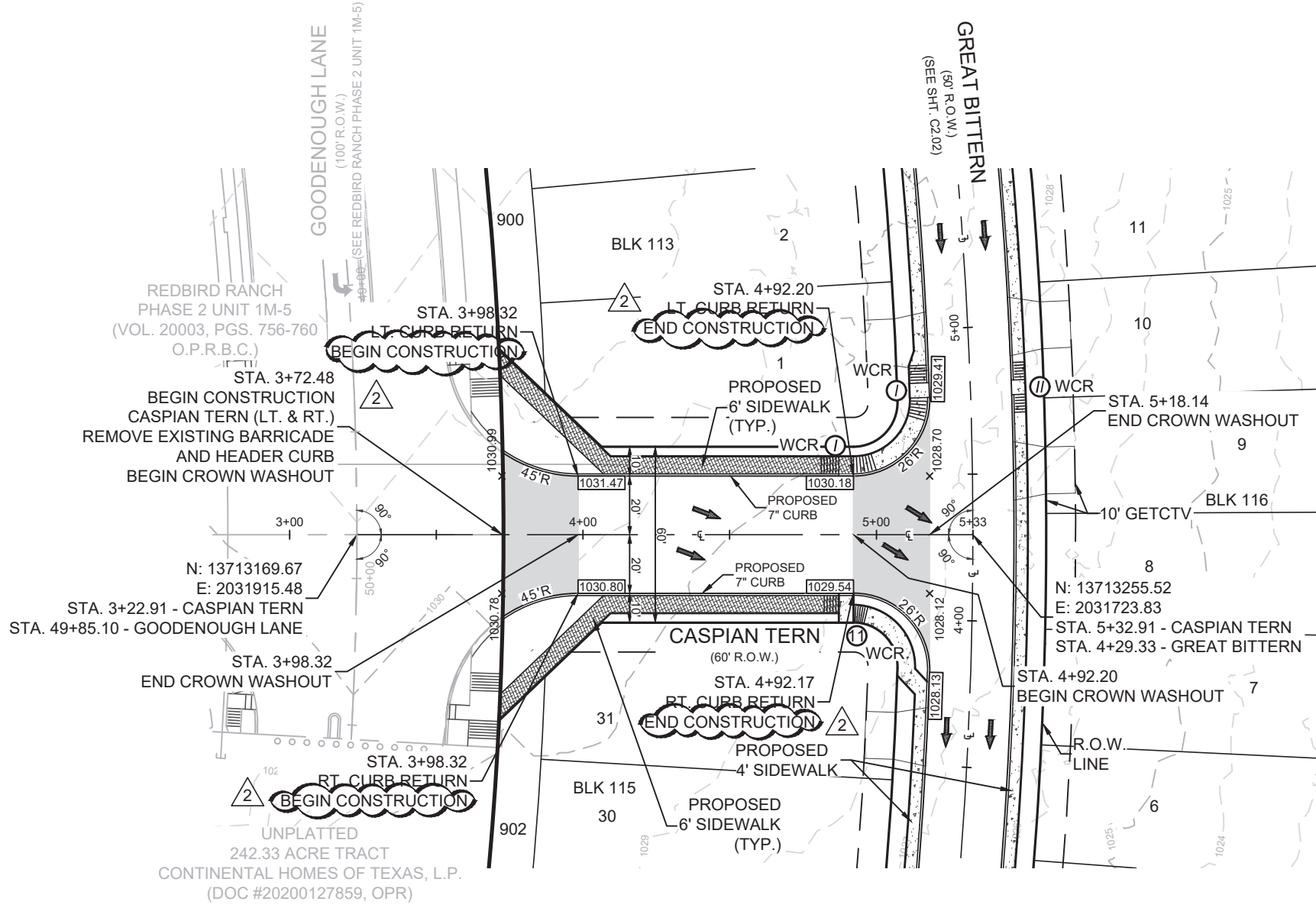


Vance Weynand

DATE: NOV 02, 2023, 3:19PM
USER ID: SONY FILE: E:\PROJECT\ZUZU\REDBIRD RANCH UNIT ZM-1\360 - design\360 - sheets\ZUZU WVC TABS - STA. #+0.0\360.dwg
REDBIRD RANCH, UNIT ZM-1
PLAT NO. CP202301



CASPIAN TERN
STA. 3+72.48 TO 5+18.14



LEGEND (STREET)		
	PROJECT LIMITS	
	EXISTING CONTOUR	
	PROPOSED CONTOUR	
	WHEELCHAIR RAMP TYPE	
	POINT OF CURVATURE	
	POINT OF TANGENCY	
	DRAINAGE FLOW ARROW	
	TOP OF CURB ELEVATION	
	PAVEMENT ELEVATION	
	CROWN WASHOUT	
	DRIVEWAY	
	SIDEWALK (DEVELOPER RESPONSIBILITY)	
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)	

- STREET NOTES:**
- A BEAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR 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.
 - CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
 - 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.
 - NO PERMANENT STRUCTURES HIGHER THAN 3 FT. AND LOWER THAN 8 FT. 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 FT. ABOVE THE ADJACENT TOP OF PAVEMENT.
 - DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATION 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.
 - 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 ICD SECTION 35-506 (Q)(6).
 - ALL RAMP AND ANY PROPOSED SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.

REVISED
3:22 pm, Nov 03, 2023

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
CASPIAN TERN - STA. 3+72.48 TO 5+18.14
PLAN & PROFILE

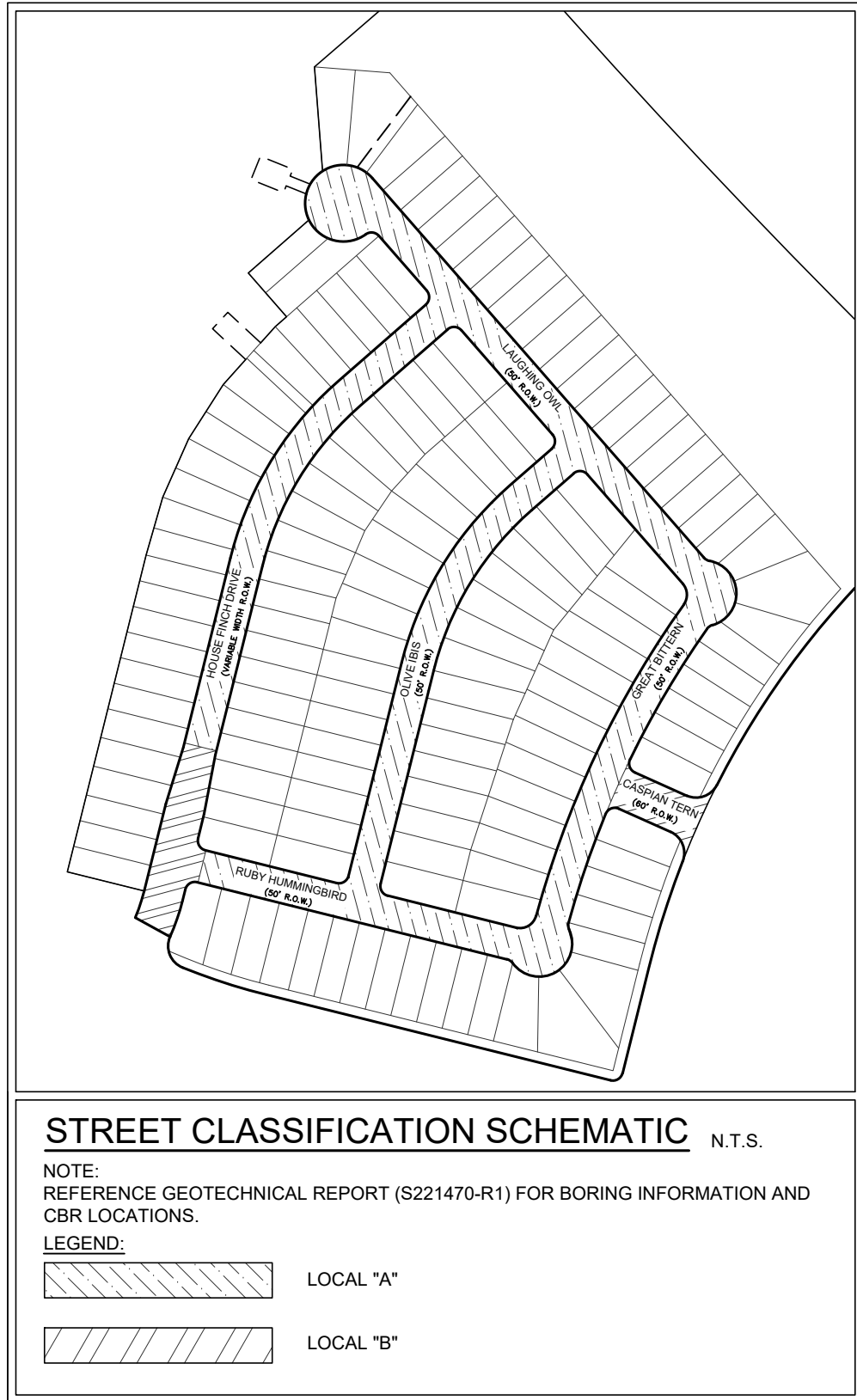
DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 10/27/2023
JOB NO.: 20220500
SHEET NO. C2.05

DHI Engineering, LLC.
4419 LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78217
(210) 486-2988 | dhiengineering.com
TBP REG. NO. F-19561

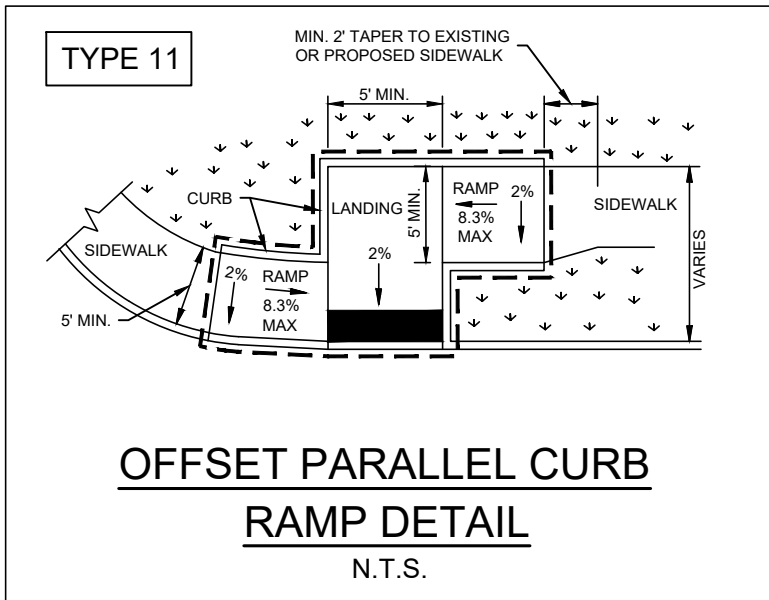
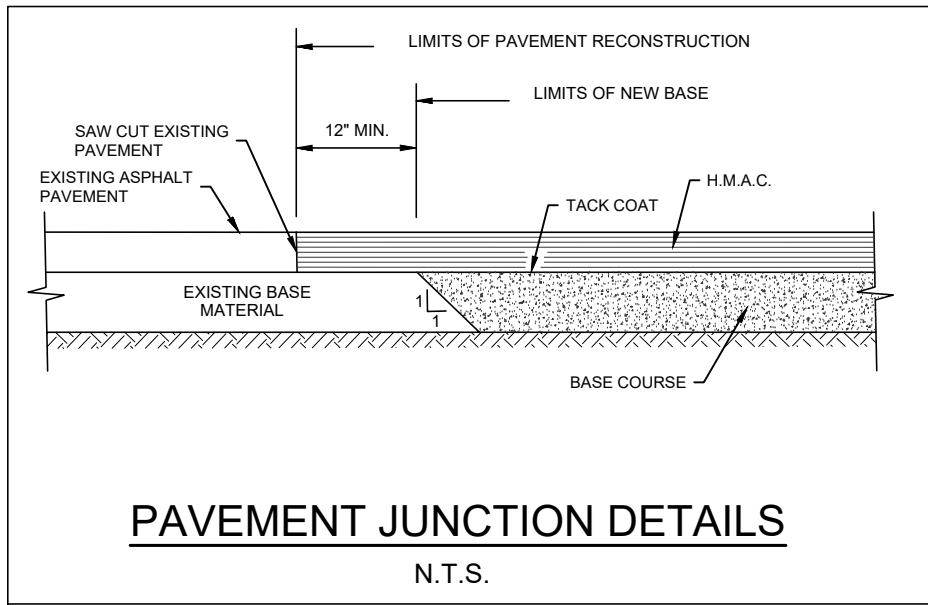
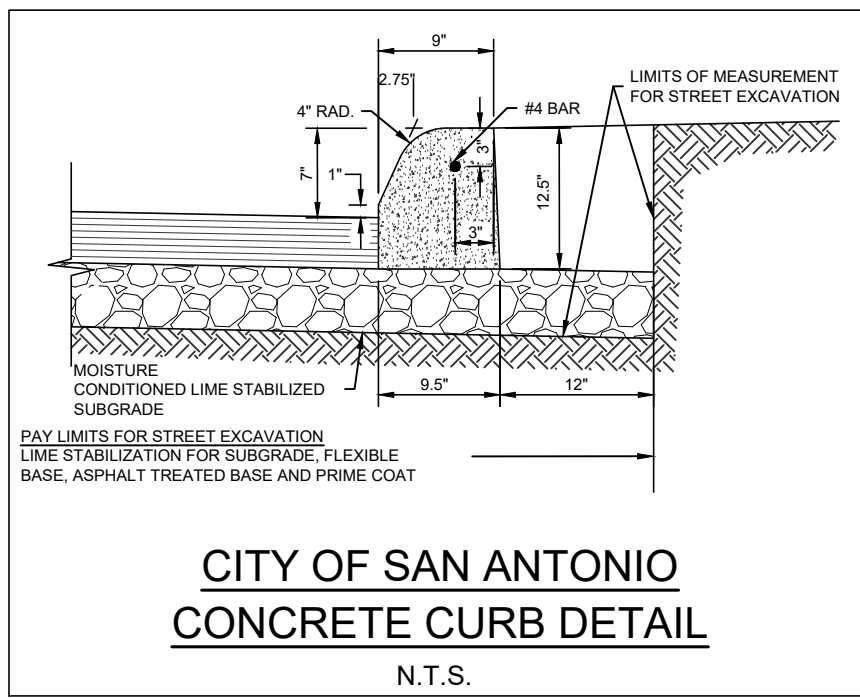
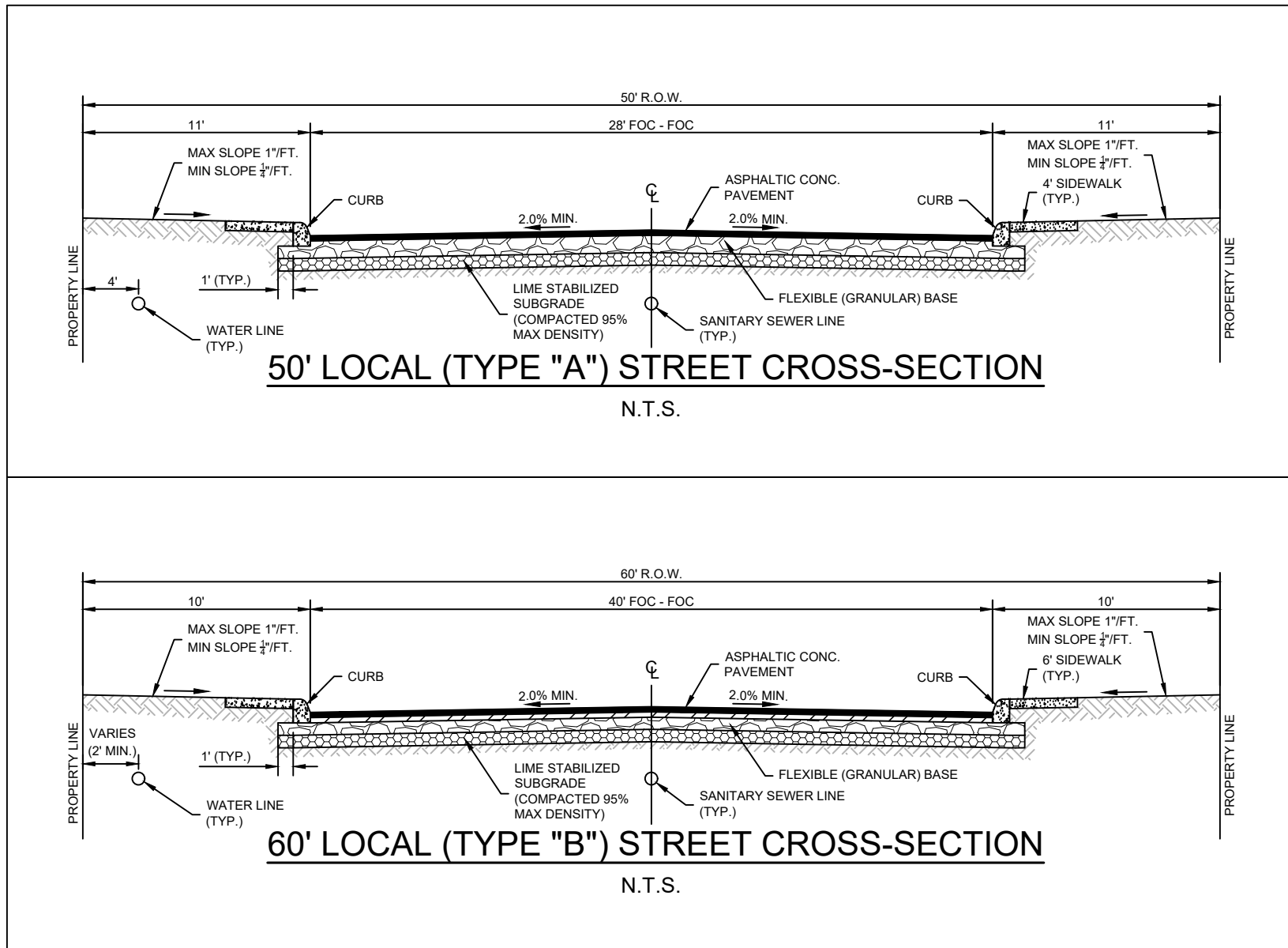
DHI

10/27/2023
Vance L. Weynand
Professional Engineer
No. 99269
State of Texas

REV	DATE	DESCRIPTION
1	09/13/2023	UPDATED SIDEWALK TO MATCH WHEELCHAIR RAMP
2	10/23/2023	OVERALL QA



PAVEMENT SECTION DESIGN								
STREET NAME	STATION	TYPE "D" HMAC	TYPE "C" HMAC	FLEXIBLE/ AGGREGATE BASE	STABILIZED LIME SUBGRADE	GEOGRID (TENSAR TRIAX TXs)	CBR	STRUCTURAL NUMBER
HOUSE FINCH DR. (LOCAL "A")	1+14.00 TO 9+08.41	2"	--	10"	6"	NO	2.5	2.76
HOUSE FINCH DR. (LOCAL "B")	9+08.41 TO 11+92.85	2"	2"	16"	8"	NO	2.5	4.64
LAUGHING OWL (LOCAL "A")	1+00.00 TO 9+45.66	2"	--	10"	6"	NO	2.5	2.76
GREAT BITTERN (LOCAL "A")	1+00.00 TO 7+04.76	2"	--	10"	6"	NO	2.5	2.76
RUBY HUMMINGBIRD (LOCAL "A")	1+20.00 TO 6+80.00	2"	--	10"	6"	NO	2.5	2.76
OLIVE IBIS (LOCAL "A")	1+14.00 TO 8+87.34	2"	--	10"	6"	NO	2.5	2.76
CASPIAN TERN (LOCAL "B")	3+72.48 TO 5+18.14	2"	2"	16"	8"	NO	2.5	4.64
CONTRACTOR SHALL REFERENCE GEOTECH STUDY/REPORT BY InTEC, DATED 07/13/2023, PROJECT NO. S221470-R1.								



GENERAL NOTES:

1. CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT **NO.S221470-R1** PREPARED BY **INTEC** DATED **07/13/2023**.
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 2 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED.
6. IN THE EVENT THAT THE CLAY FILL 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 FT. 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.

SUBGRADE NOTES:

1. THE SUBGRADE PLASTICITY INDEX VALUE IS EXPECTED TO BE LESS THAN OR EQUAL TO 20 OR GREATER THAN 20.
2. IF THE SUBGRADE PLASTICITY INDEX VALUES ARE LESS THAN OR EQUAL TO 20, AS PER CITY OF SAN ANTONIO OR BEAR COUNTY REQUIREMENTS, SUBGRADE STABILIZATION IS NOT NEEDED.
3. IF THE FINAL STREET SUBGRADE PLASTICITY INDEX VALUES ARE GREATER THAN 20, THEN THE SUBGRADE SHOULD BE LIME STABILIZED.
4. LIME STABILIZED TO A DEPTH OF 6 OR 8 INCHES AS NOTED ABOVE BASED ON AN APPLICATION RATE OF 7% OF THE DRY WEIGHT (INITIAL RECOMMENDATIONS) OF THE SOIL TO BE STABILIZED. THE LIME APPLICATION RATE WILL BE PRESENTED AFTER THE FIELD TESTS ARE COMPLETED.
5. THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO STABILIZATION. IF THE SOIL SULFATE CONTENT IS HIGHER THAN 3000 PPM PER PAVEMENT DESIGN REPORT NO. 327/10-R-1, AN ALTERNATIVE PROCEDURE WILL BE NEEDED.
6. LIME APPLICATION RATE OF 33 LBS. PER SQUARE YARD FOR 6 INCH DEPTH OF STABILIZATION IS RECOMMENDED.
7. LIME APPLICATION RATE OF 44 LBS. PER SQUARE YARD FOR 8 INCH DEPTH OF STABILIZATION IS RECOMMENDED.
8. THE SUBGRADE SHOULD BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE STABILIZATION.
9. IF FILL IS USED TO RAISE THE GRADE, APPROVED FILL MATERIAL UNDERNEATH THE PAVEMENT SHOULD BE USED. THE FILL SHOULD BE FREE OF DELETERIOUS MATERIAL. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN SIZE, WITH A MINIMUM CRB VALUE OF 2.5, AND A MAXIMUM PLASTICITY INDEX VALUE OF 45. LIME APPLICATION RATES SHOULD BE RE-EVALUATED AND LIME CONTENT TESTED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.

LIME NOTES:

FOR LIME STABILIZATION CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED ON THE FIELD:

- | | | | | | | | |
|--|---|-----|------------------------------|----|------------------------------|----|--|
| <p>1. AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE DAYS. MAINTAIN MOISTURE DURING MELLOWING.</p> | <p>4. COMPACT AND CHECK FIELD DENSITY (MIN. OF 95% OF MDD REQUIRED).</p> | | | | | | |
| <p>2. AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE 7/8 INCH SIEVE FROM THE SAMPLE)</p> <table border="0" style="margin-left: 40px;"> <tr> <td>* MINIMUM PASSING 1 3/4" SIEVE</td> <td style="text-align: right;">100</td> </tr> <tr> <td>* MINIMUM PASSING 3/4" SIEVE</td> <td style="text-align: right;">85</td> </tr> <tr> <td>* MINIMUM PASSING NO.4 SIEVE</td> <td style="text-align: right;">60</td> </tr> </table> | * MINIMUM PASSING 1 3/4" SIEVE | 100 | * MINIMUM PASSING 3/4" SIEVE | 85 | * MINIMUM PASSING NO.4 SIEVE | 60 | <p>5. CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).</p> |
| * MINIMUM PASSING 1 3/4" SIEVE | 100 | | | | | | |
| * MINIMUM PASSING 3/4" SIEVE | 85 | | | | | | |
| * MINIMUM PASSING NO.4 SIEVE | 60 | | | | | | |
| <p>3. SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED IN THE BEAR COUNTY FLEXIBLE PAVEMENT DESIGN CRITERIA GUIDE FOR MIXTURE DESIGN.</p> | <p>6. VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.</p> <p>7. LIME APPLICATION RATE OF 43 LBS. PER SQUARE YARD FOR 8 INCH DEPTH OF STABILIZATION IS RECOMMENDED.</p> <p>8. THE SUBGRADE SHOULD BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE STABILIZATION.</p> | | | | | | |

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX

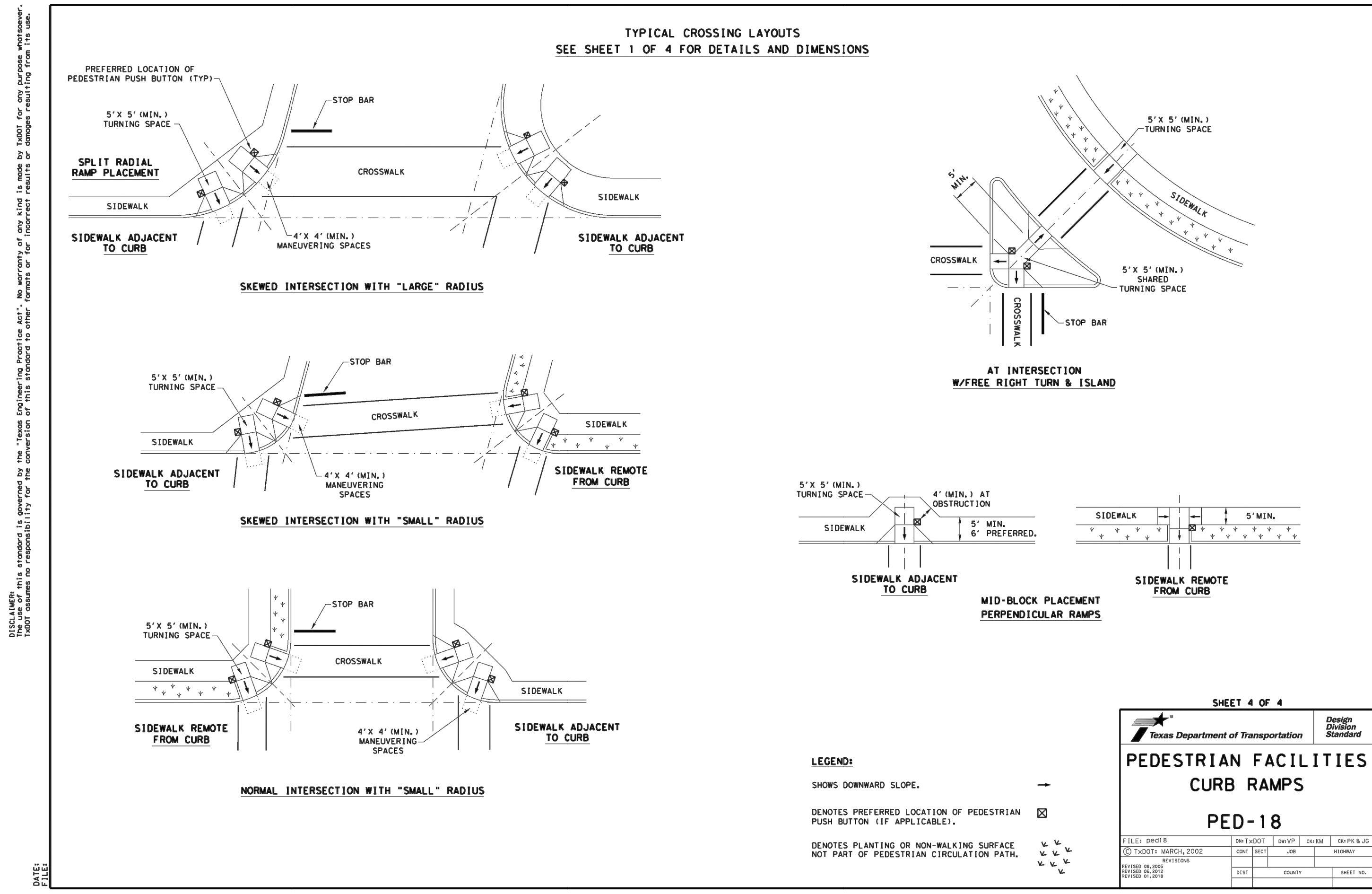
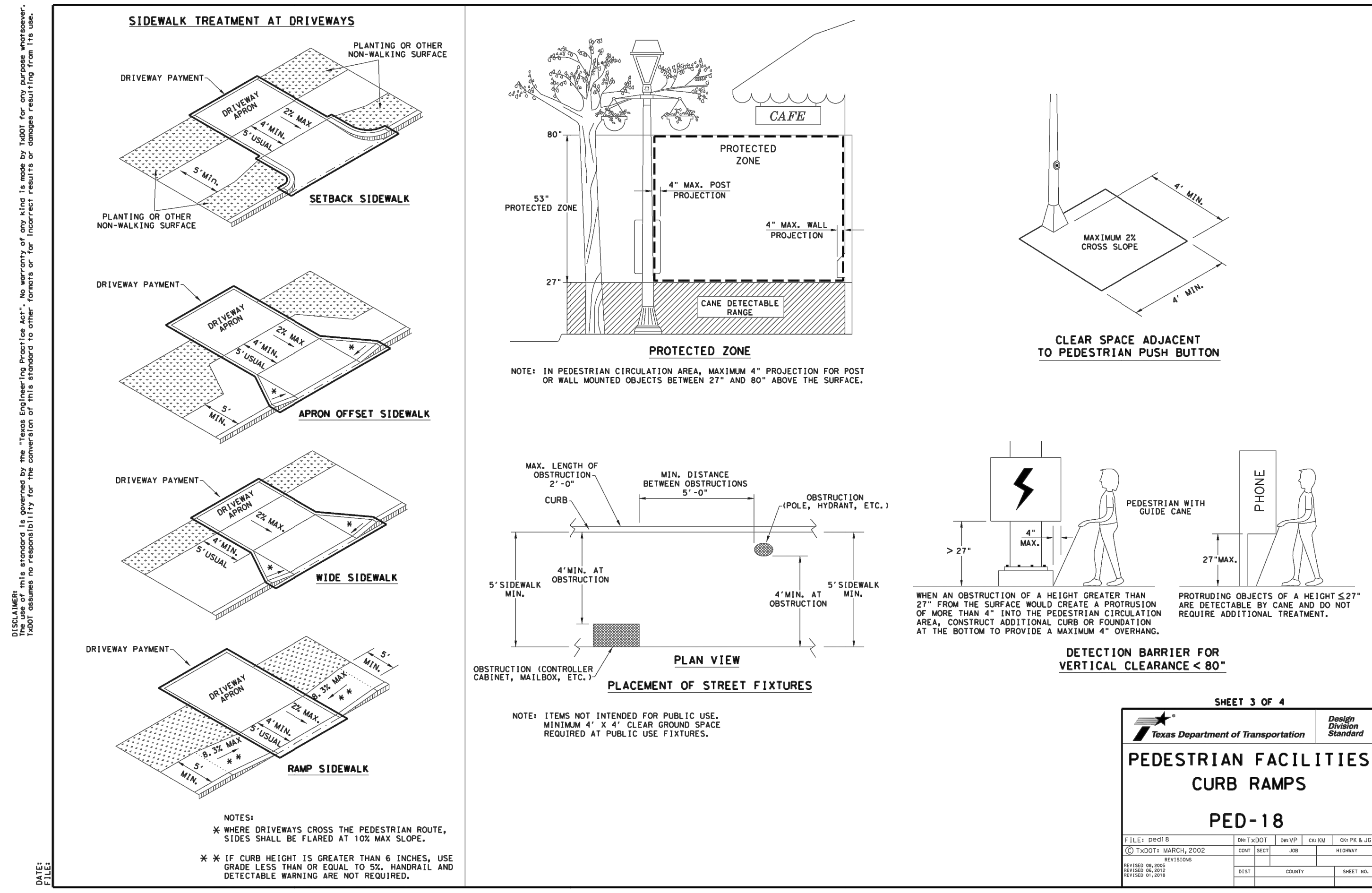
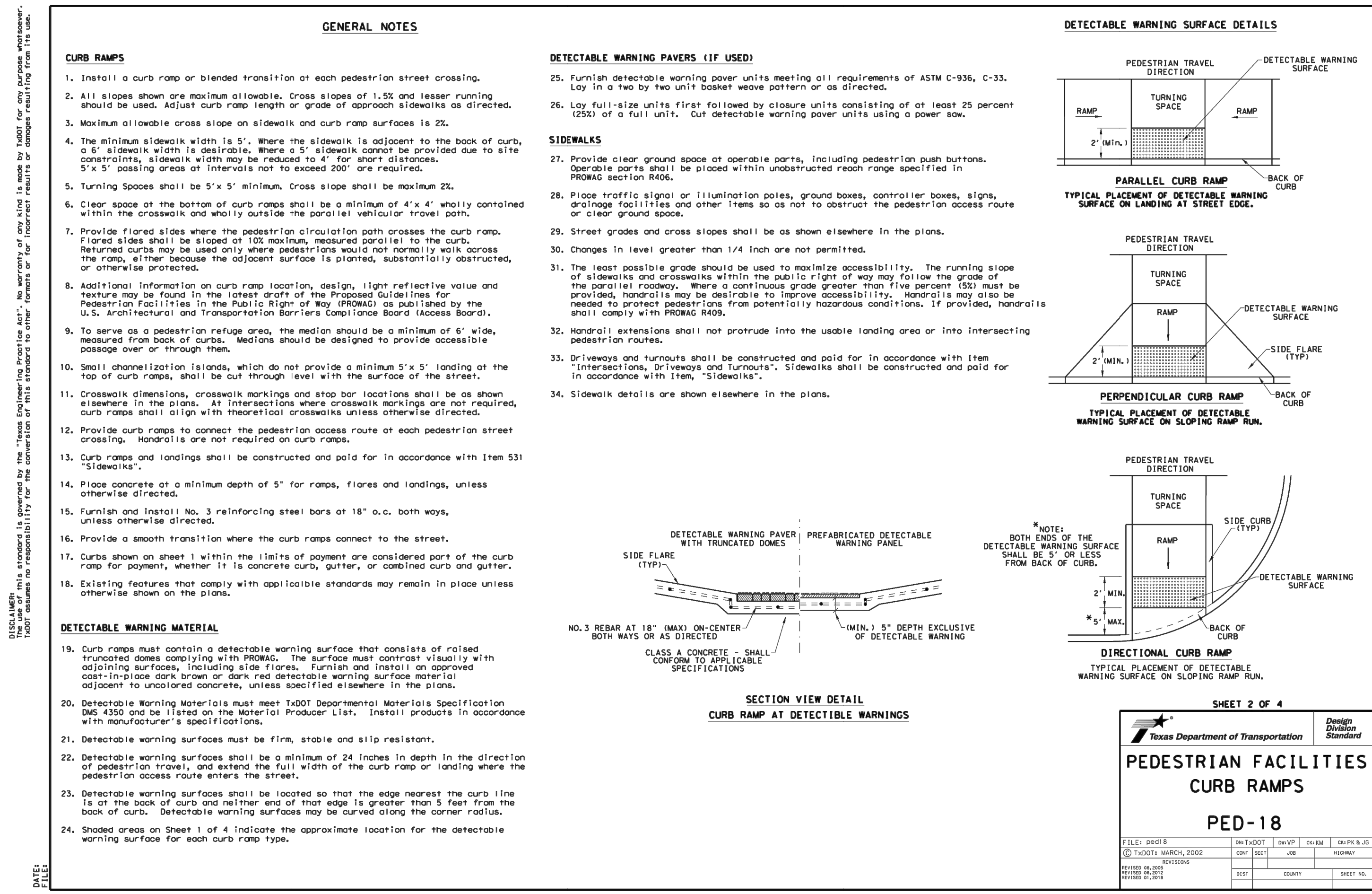
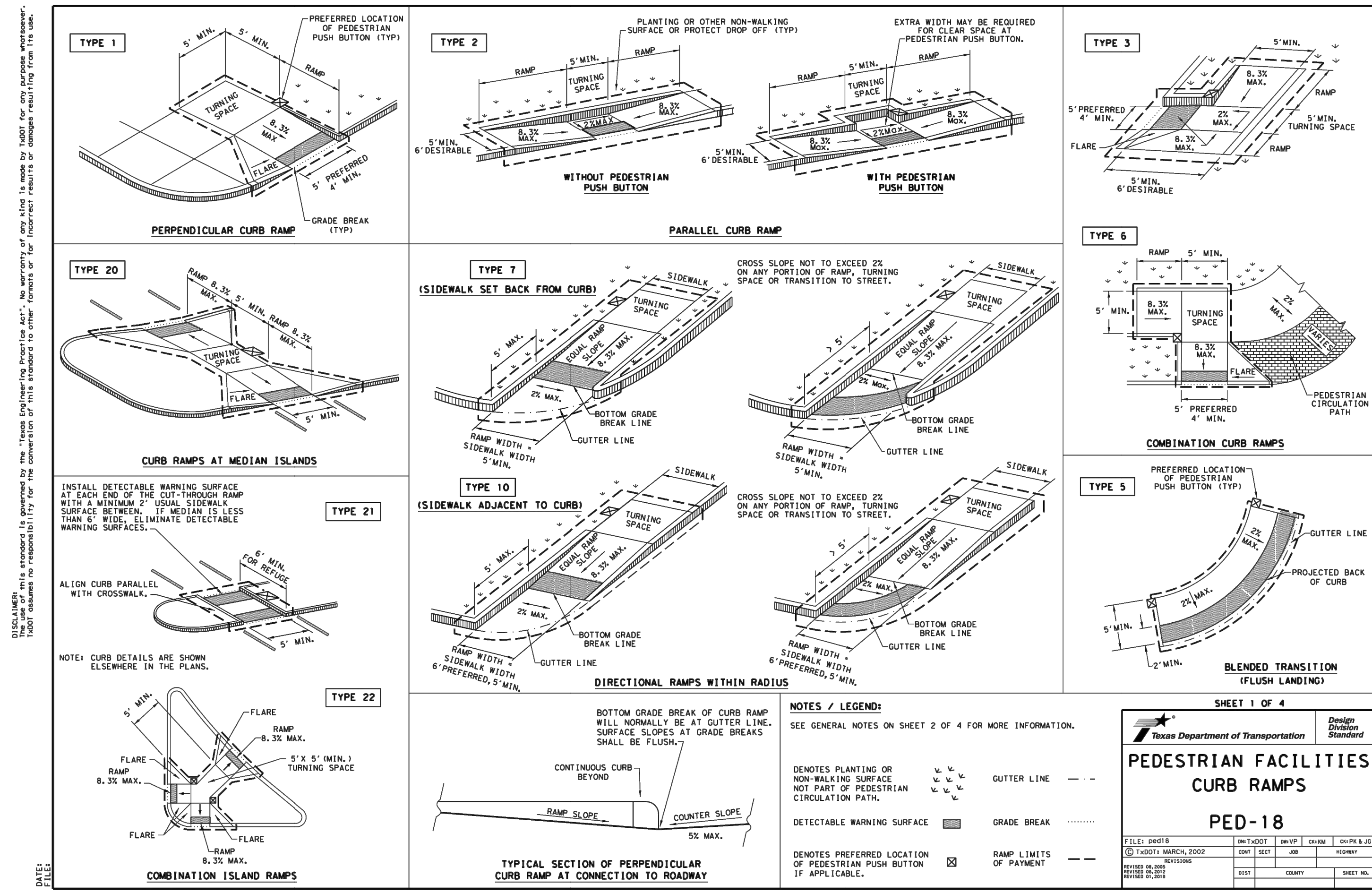
TYPICAL STREET DETAILS

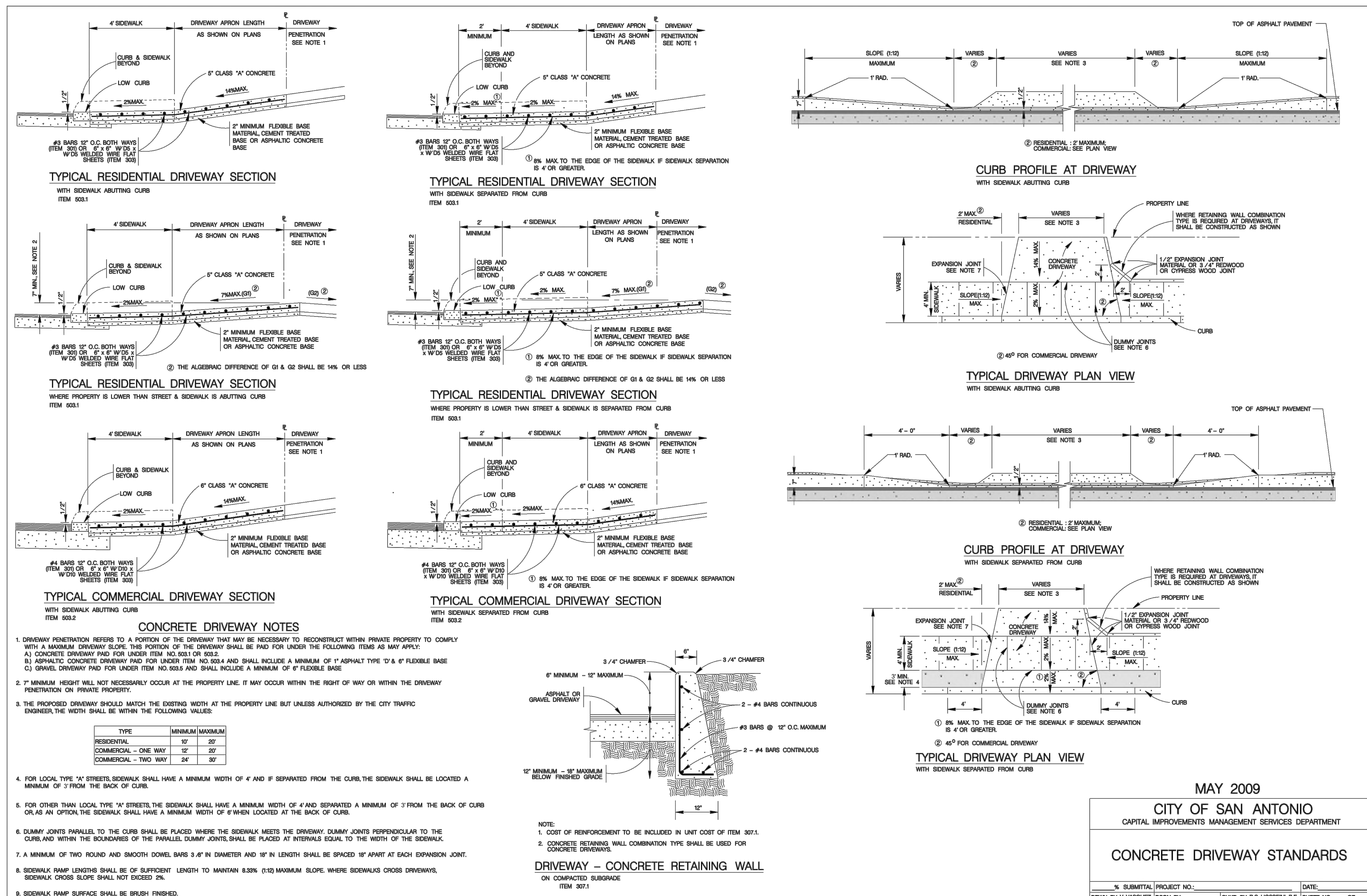
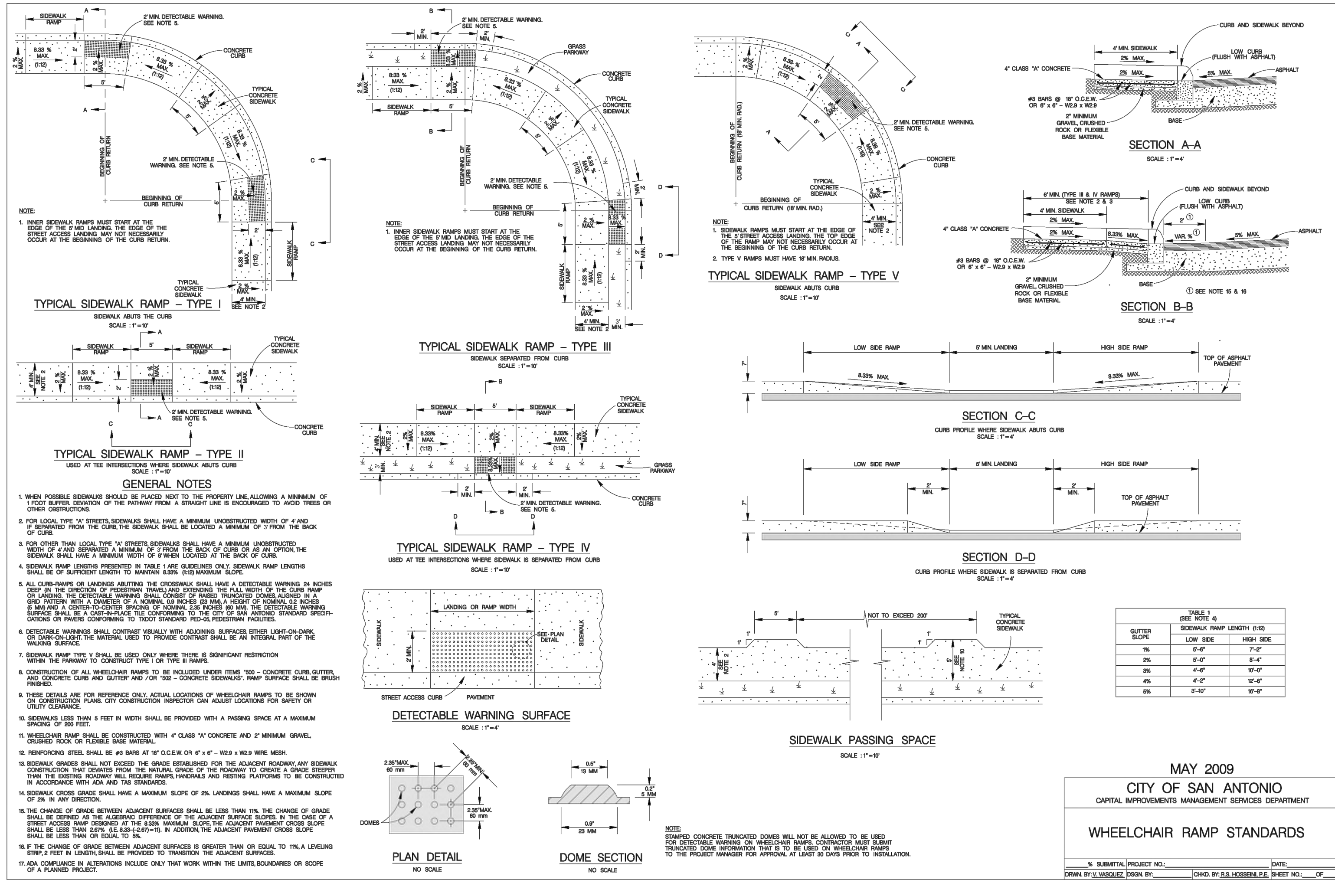
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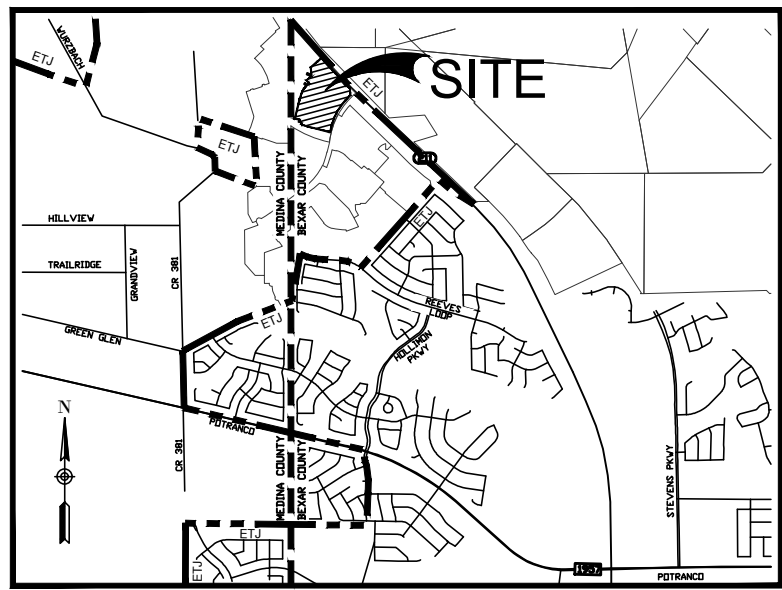
DHI Engineering, LLC.
5419 N. LOOP 1604 EAST
SAN ANTONIO, TX 78247
(210) 486-2668 | dhiengineering.com
TBPB REG. NO. F-19561

DESIGNED BY:	SQV
DRAWN BY:	JFM/JWS
DATE:	9/8/2023
JOB NO.:	20220500
SHEET NO.	



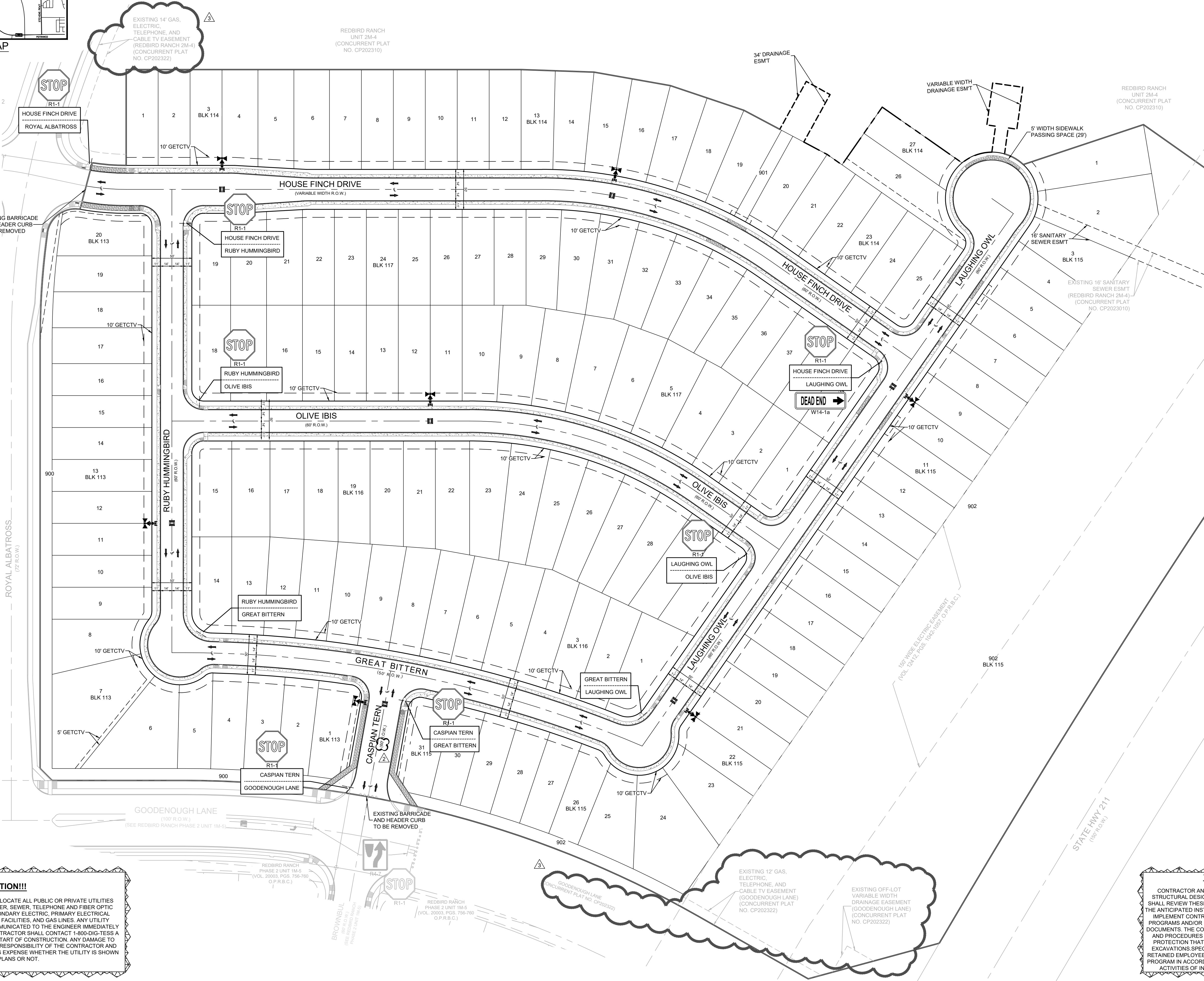


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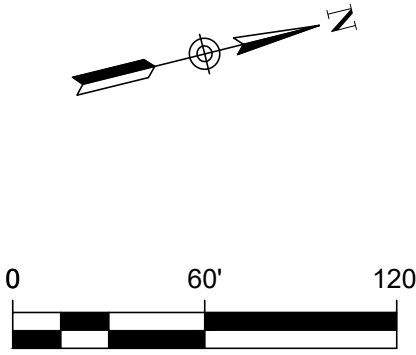
REDBIRD RANCH
UNIT 2M-4
(CONCURRENT PLAT
NO. CP202310)

REDBIRD RANCH
UNIT 2M-4
(CONCURRENT PLAT
NO. CP202310)



BEXAR COUNTY ROW NOTES:
A BEXAR COUNTY 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 INDICATION 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.



LEGEND (SIGNS)	
	PROJECT LIMITS
	CURB INLET
	STREET NAME 1
	STREET NAME 2
	STOP SIGN (30" X 30") SIGN ITEM NO. 531.3
	TYPE II BLUE PVMT MARKER
	SIDEWALK (DEVELOPER RESPONSIBILITY)
	SIDEWALK (HOMEBUILDER RESPONSIBILITY)
	OM4-3 (531.56) END OF ROAD MARKER
	DEAD END STREET MARKER SIGN ITEM NO. 531.58

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 ELECTRICAL, 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 EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION PROTECTION

CONTRACTOR AND 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 SITE WITHIN THE PROJECT'S WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM. PROGRAMS AND PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS, AND PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS SPECIFICALLY. CONTRACTOR AND 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.

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
OVERALL SIGNAGE PLAN

DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 03/11/2024
JOB NO.: 20220500
SHEET NO. C3.00

DATE: 03/11/2024
REV: 01/13/2023
DESCRIPTION: UPDATED SIDEWALK TO MATCH WHEELCHAIR RAMP
OVERALL QA
10/23/2023
3/11/2024
UPDATE CALCULATIONS, DETAILS, CALLOUTS, AND EASEMENTS.

Vance L. Weynand

DHI Engineering, LLC.
4419 LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78217
(210) 486-2988 | dhiengineering.com
TBP# REG. NO. F-19561

03/11/2024

REDBIRD RANCH, UNIT 2M-1

PLAT NO. CP202307

[illegible]

DISCLAIMER: The use of this Standard is governed by the Texas Department of Transportation. No warranty is made by the State of Texas or the Texas Department of Transportation for any liability resulting from the use of this Standard. The user of this Standard is advised to consult the Texas Department of Transportation for any changes resulting from the use of this Standard.

DATE: 01/01/00
BY: 01/01/00

GENERAL NOTES

1. SIGN SUPPORT = H OF POSTS MAX. SIGN AREA
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BMS where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be so loaded except where shown.
4. Sign support posts shall not be so loaded.
5. A minimum sign blank shall conform to Departmental Material Specification 360-1110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
6. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
7. 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.
8. When the triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other and shall pass through the sign panel. This will allow each support to act independently when subjected to an overloading condition.
9. Excess clip, 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). Signs shall not be painted or coated on cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the size and shape shown on the plans.
11. Additional sign clips required on the T-bracket support for 24 inch high signs. Place the clip 3 inches above bottom of sign when posted.
12. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT

SIGN DESCRIPTION	SUPPORT	
	TY	ITEM
48-Inch STOP sign (R1-1)	TY 10BMS (1)XXX(P-360)	10 BMS
60-Inch YIELD sign (R1-2)	TY 10BMS (1)XXX(P-360)	10 BMS
48x16-Inch ONE-WAY sign (R6-1)	TY 10BMS (1)XXX(P-360)	10 BMS
36x48, 48x36, and 48x48-Inch signs	TY 10BMS (1)XXX(P-360)	10 BMS
48x60-Inch signs	TY 580 (1)XXX(P-360)	580
48x60-Inch signs (diamond or square)	TY 10BMS (1)XXX(P-360)	10 BMS
48x60-Inch signs	TY 580 (1)XXX(P-360)	580
48-Inch Advance School X-ing sign (S1-1)	TY 10BMS (1)XXX(P-360)	10 BMS
48-Inch Advance School X-ing sign (S2-1)	TY 10BMS (1)XXX(P-360)	10 BMS
Large Arrow sign (R1-6 & W1-7)	TY 10BMS (1)XXX(P-360)	10 BMS

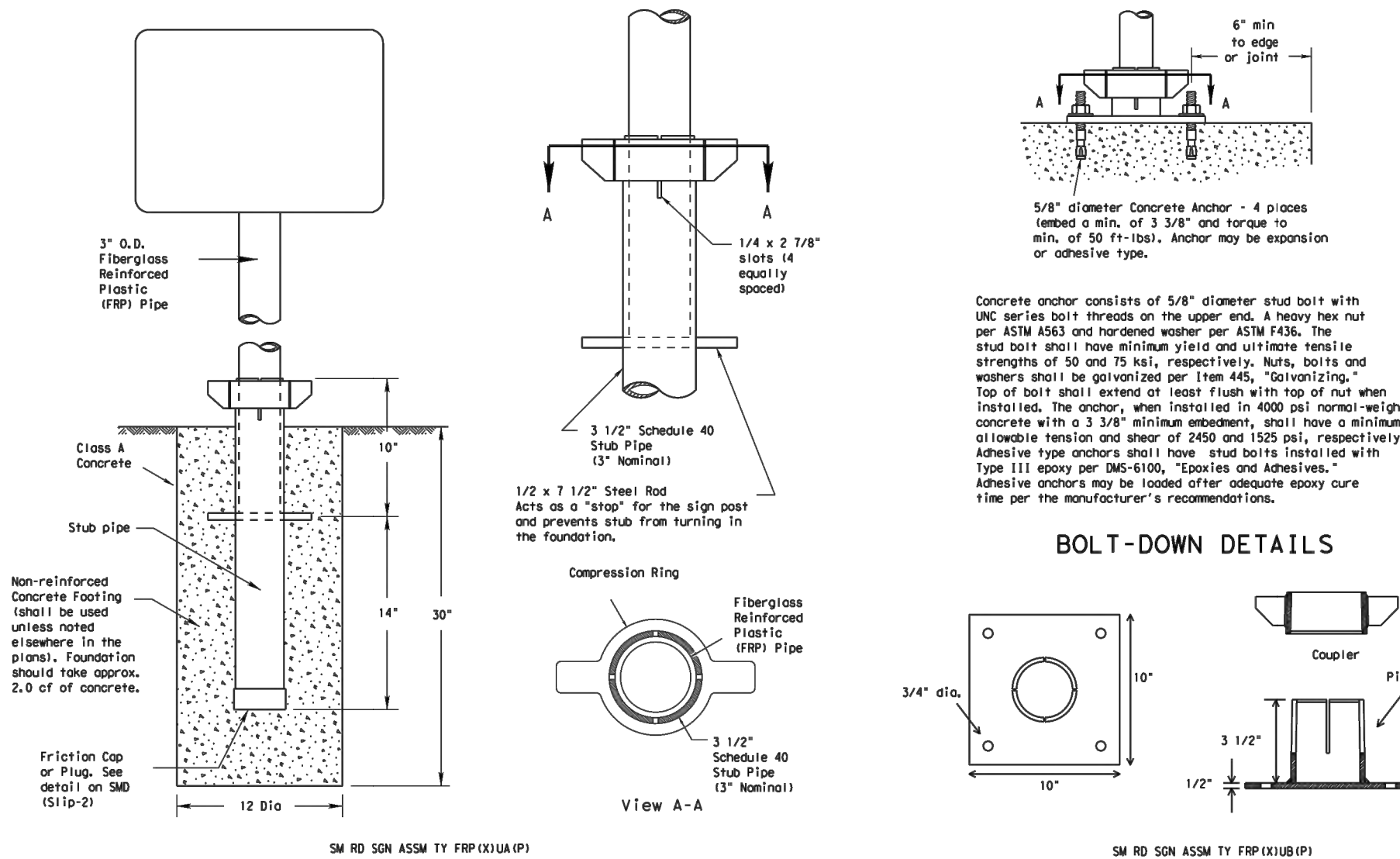
SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM
SMD (SLIP-3) - 08

01/0001 July 2002		01/0001	01/0001	01/0001	01/0001
DATE	REVISION	BY	CHK	APP	APPROVED
9-08	REVISED	JOB	JOB	JOB	JOB
		DESIGN	COUNTY		SHEET NO.

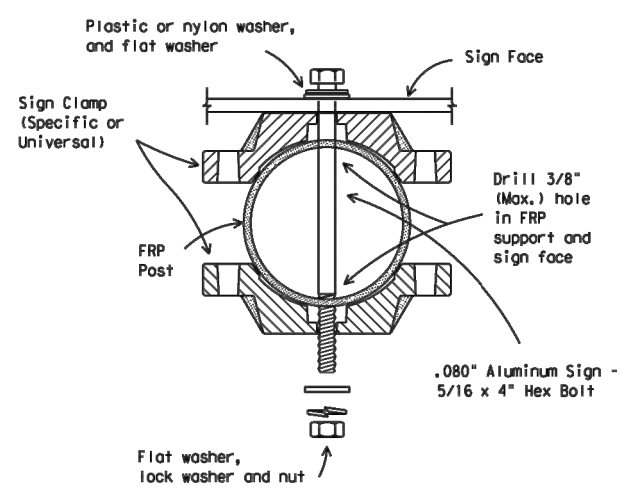
DISCLAIMER: The use of this information is governed by the "Texas Engineering Practice Act," which requires that any person who uses this information for any purpose other than that for which it was prepared, or who reproduces or adapts this information, shall be responsible for any errors or omissions. The user of this information shall be responsible for obtaining any necessary permits or approvals from the appropriate authorities.

DATE: 9/8/2023

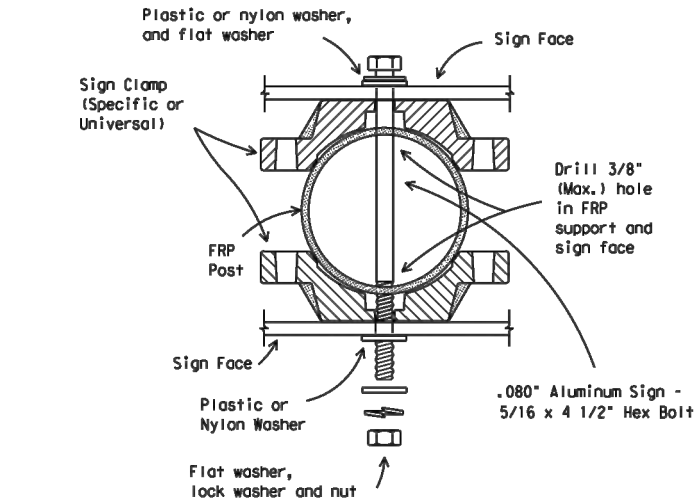
Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



Typical Sign Mounting Detail
for FRP Support with Single Sign



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



GENERAL NOTES:

- FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
- All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
- See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: <http://www.tdot.org/publications/traffic.htm>

FRP POST REQUIREMENTS:

- Materials shall conform to the requirements of Departmental Material Specification (SMD-4810) and will be furnished in a yellow or gray color as specified elsewhere in the plans.
- Thickness of FRP sign support is 1/2" x 3/8" x 6.0" x 6.0".
- 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:

- 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/shub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/shub shall be from the bottom and the clearance requirements given on SMD(GSI) must be followed. The inner surfaces of the socket/shub must remain free of concrete or other debris.
- 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.
- 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.
- 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.
- Attach sign to FRP post. Lower until the post comes to rest on the steel rod.
- Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
- Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

BOLT-DOWN SIGN SUPPORT:

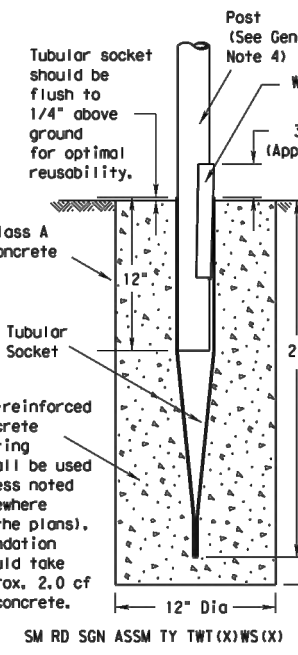
- Position base plate with coupler on existing concrete.
- Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
- Attach sign to FRP post.
- Insert bottom of sign post into pipe shub.
- Use hammer to ensure the coupler is firmly seated. Top of coupler should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

Texas Department of Transportation Traffic Operations Division SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST SMD (FRP) -08

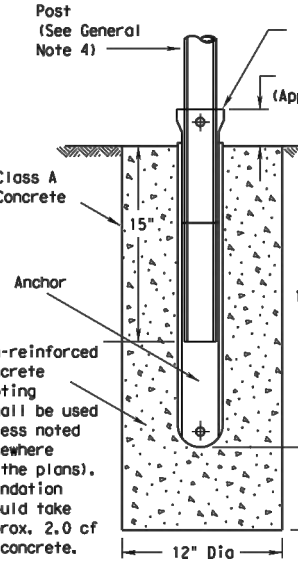
REV	DATE	DESCRIPTION	BY	CHK	APP	DATE
9-08	REVISIONS					

268

Wedge Anchor Steel System

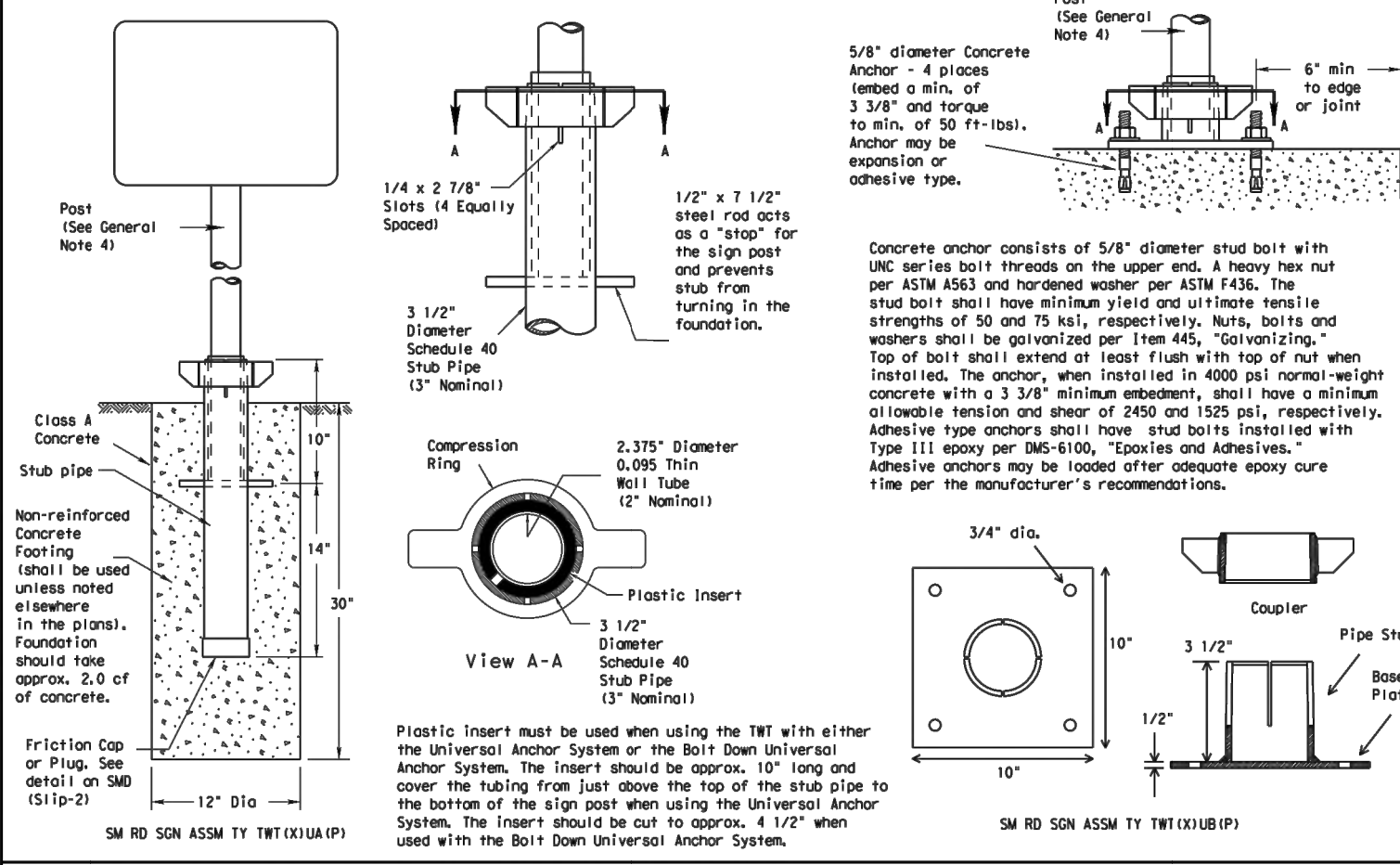


Wedge Anchor High Density Polyethylene (HDPE) System

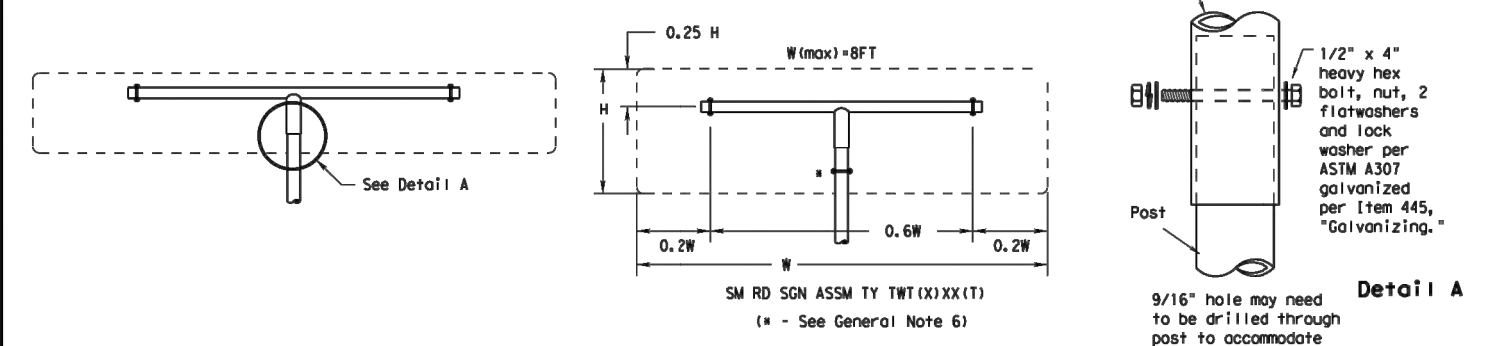


DATE: 9/8/2023

Universal Anchor System with Thin-Walled Tubing Post



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



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

GENERAL NOTES:

- The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
- The rubber sockets, 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 Engineering Division.
- Except for posts (13 BW 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: <http://www.tdot.org/publications/traffic.htm>
- Material used as post with this system shall conform to the following specifications: 13 BW Tubing (12.75" outside diameter) (TWI) 0.095" nominal wall thickness. Seamless or electric-resistance welded steel tubing. Steel shall be A501 or 55 per ASTM A501 or ASTM A508. Other steels may be used if they meet the following: 50,000 PSI minimum yield strength 70,000 PSI minimum tensile strength 18 minimum elongation in 2"
- Sign blanks shall be the sizes and shapes shown on the plans.
- Additional sign clamp required on the "T-bracket" post for 24" high signs. Wire clamp or least 3" above bottom of sign when possible.
- Sign supports shall not be spliced where shown. Sign support posts shall not be spliced.
- See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: <http://www.tdot.org/publications/traffic.htm>

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE:

- 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/shub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/shub shall be from the bottom and the clearance requirements given on SMD(GSI) must be followed. The inner surfaces of the socket/shub must remain free of concrete or other debris.
- 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.
- Insert tubing post into concrete until top of socket is approximately 1/4" above the concrete footing.
- Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer.
- Attach the sign to the sign post.
- Insert the sign post into socket and align sign face with roadway.
- Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

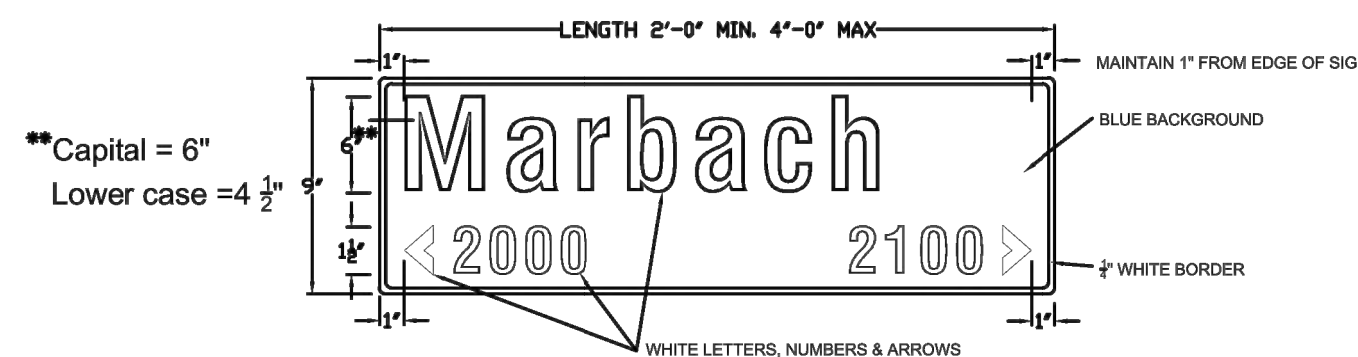
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE:

- 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/shub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/shub shall be from the bottom and the clearance requirements given on SMD(GSI) must be followed. The inner surfaces of the socket/shub must remain free of concrete or other debris.
- Insert base post in foundation hole to depths shown and backfill hole with concrete.
- 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.
- Attach the sign to the sign post.
- Install plastic insert around bottom of post.
- Insert sign post into base post. Lower until the post comes to rest on steel rod.
- Insert compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
- Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

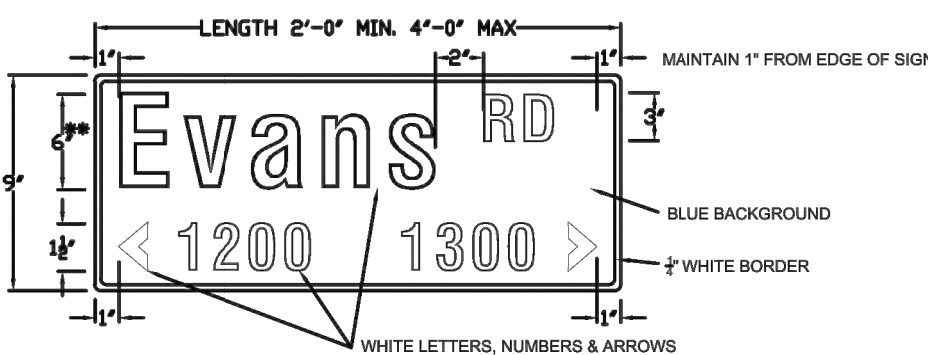
Texas Department of Transportation Traffic Operations Division SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST SMD (TWT) -08

REV	DATE	DESCRIPTION	BY	CHK	APP	DATE
9-08	REVISIONS					

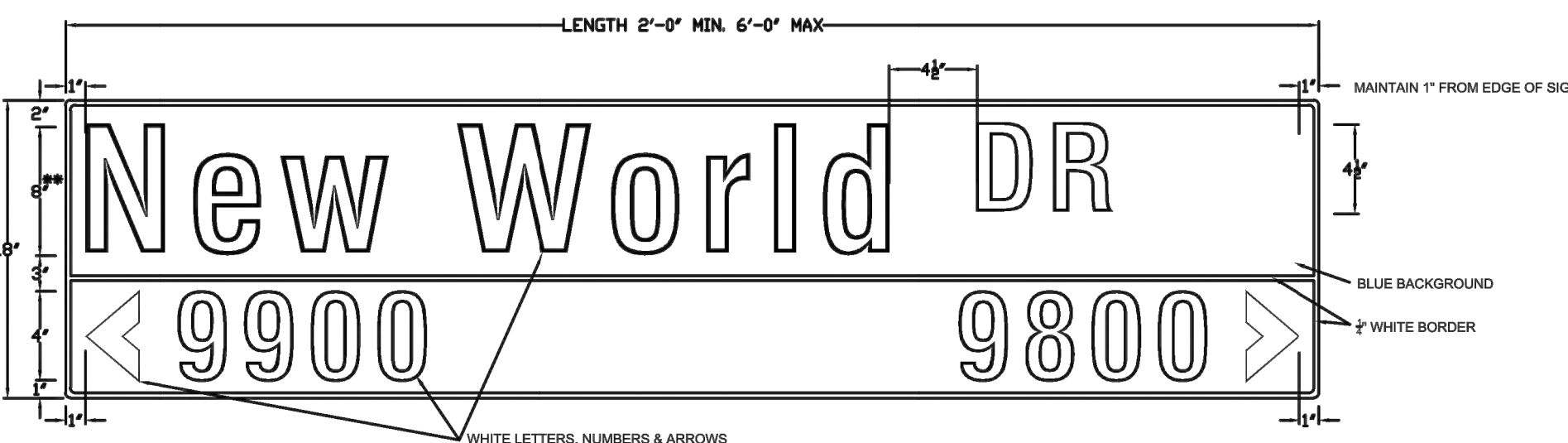
269



9' GROUND MOUNT STREET NAME SIGNS



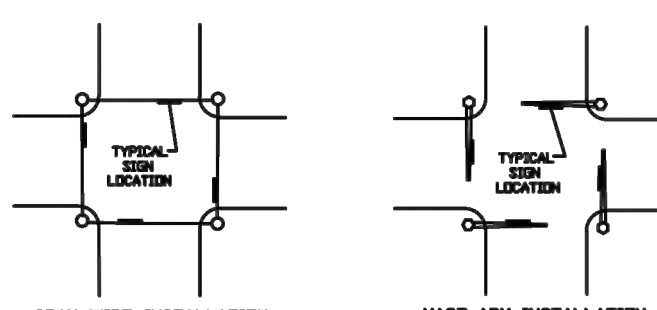
9' GROUND MOUNT STREET NAME SIGNS
WITH STREET DESIGNATION



18' OVERHEAD STREET NAME SIGNS

	18" OVERHEAD SIGN 18" (381 mm)	9" GROUND MOUNT SIGNS 9" (228 mm)
HEIGHT	48" (1200 mm) MIN. 72" (1800 mm) MAX. * (SEE REQUIREMENTS OF LENGTH)	24" (600 mm) MIN. 48" (1200 mm) MAX. * (SEE REQUIREMENTS OF LENGTH)
THICKNESS	0.125" (3 mm)	
SUBSTRATE	ALUMINUM ALLOY, 6062-T3 (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



TYPICAL SIGN LOCATION

TYPICAL SIGN LOCATION

SIGN FACE MATERIALS SHALL CONFORM TO:

- STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - PP-03 U.S. CUSTOMARY UNITS SECTION 718
- GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-3-300C
- ASTM D 4856 - 09e1

Bexar County Public Works



Street Name Sign Details

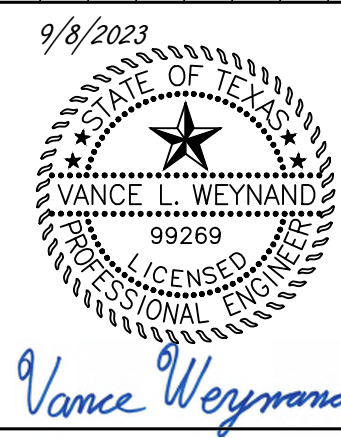
SHEET 1

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX

TXDOT SIGN MOUNTING
DETAILS

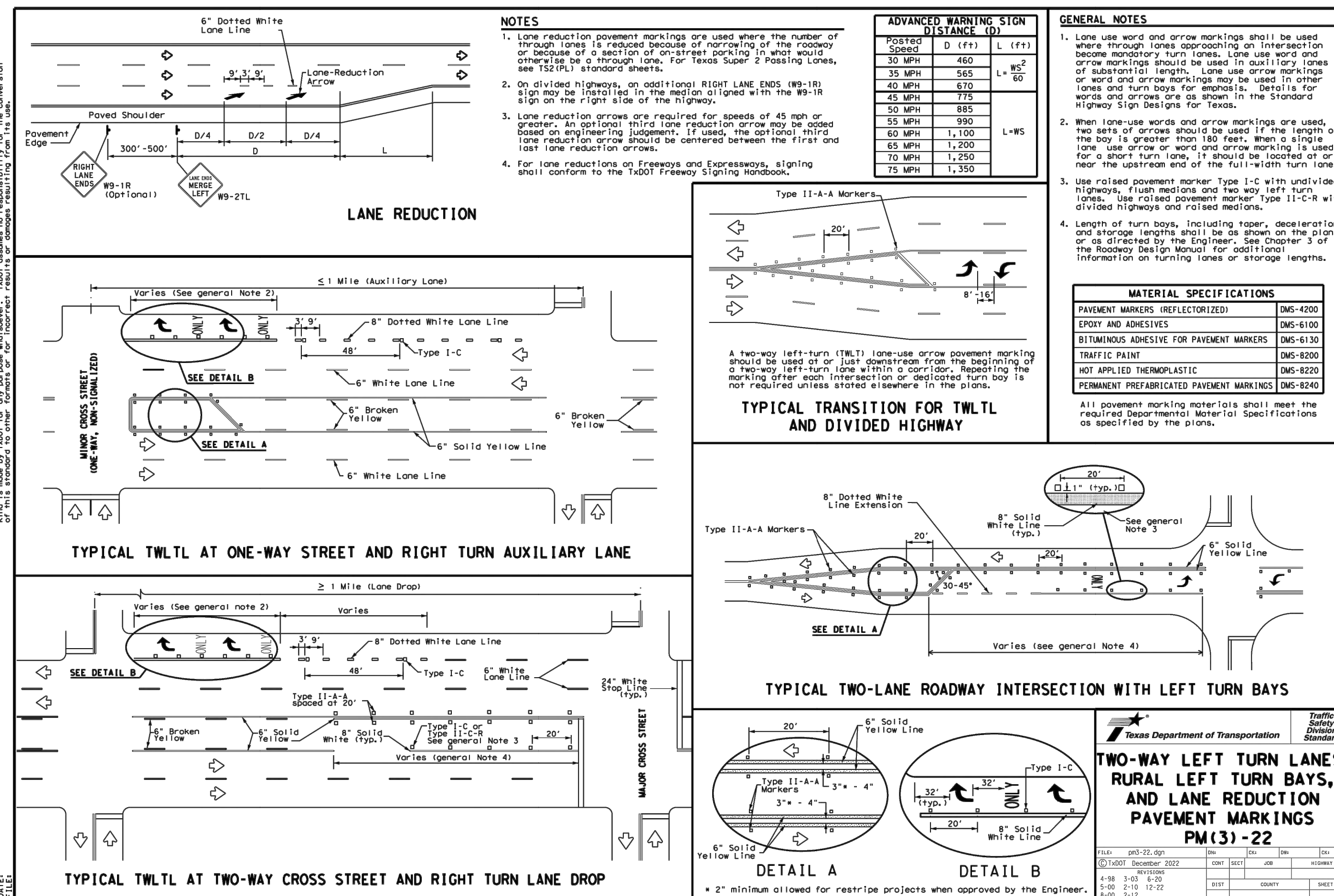
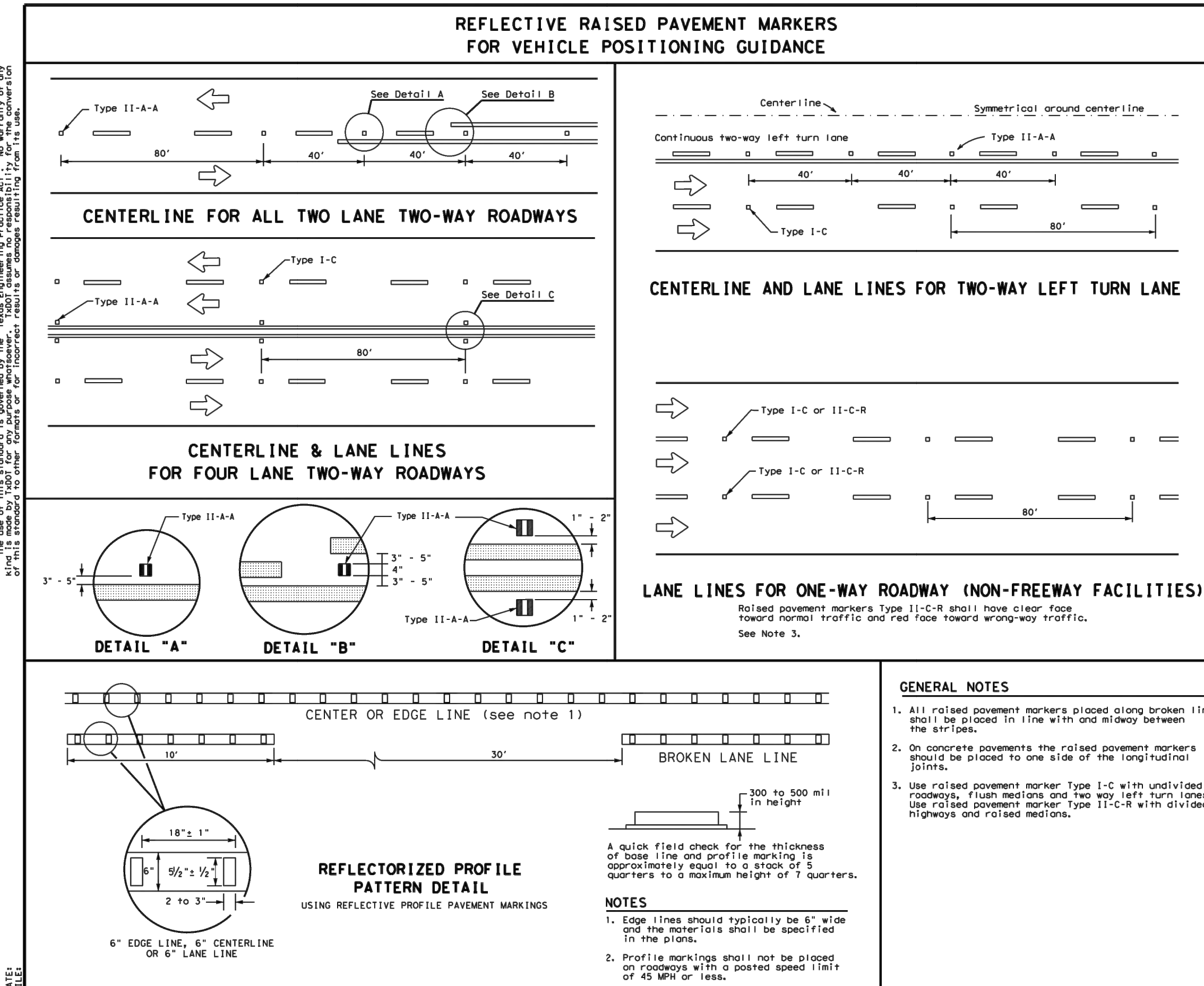
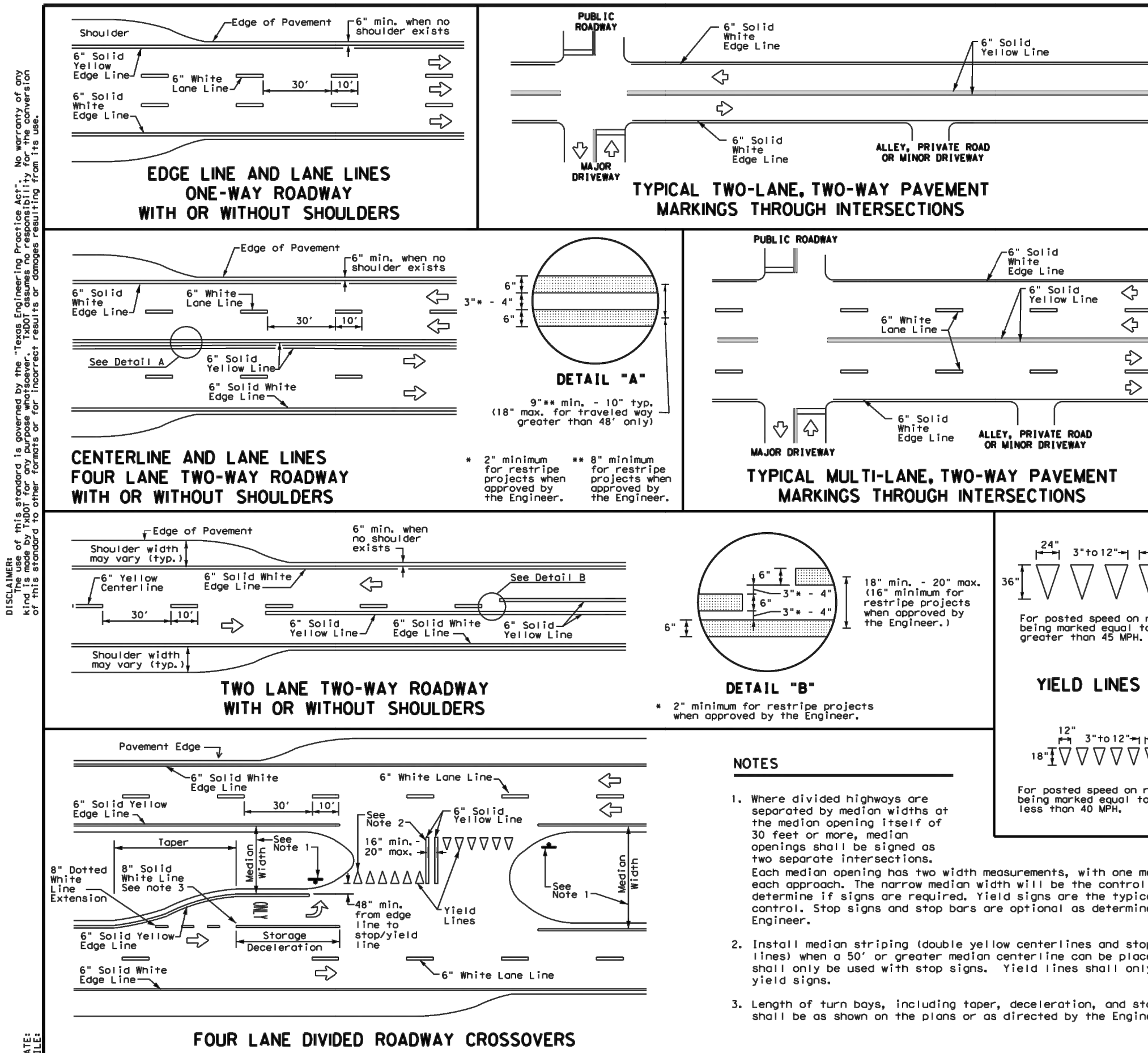
DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 9/8/2023
JOB NO.: 20220500
SHEET NO.

C3.11



DHI Engineering, LLC.
4419 LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78217
(210) 482-2988 | info@dhiengineering.com
TXBPE REG. NO. F-19561

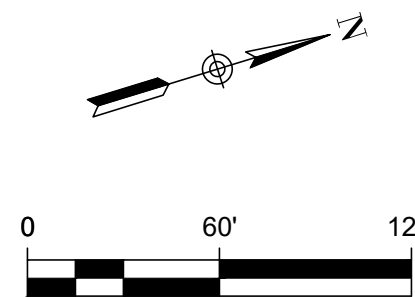
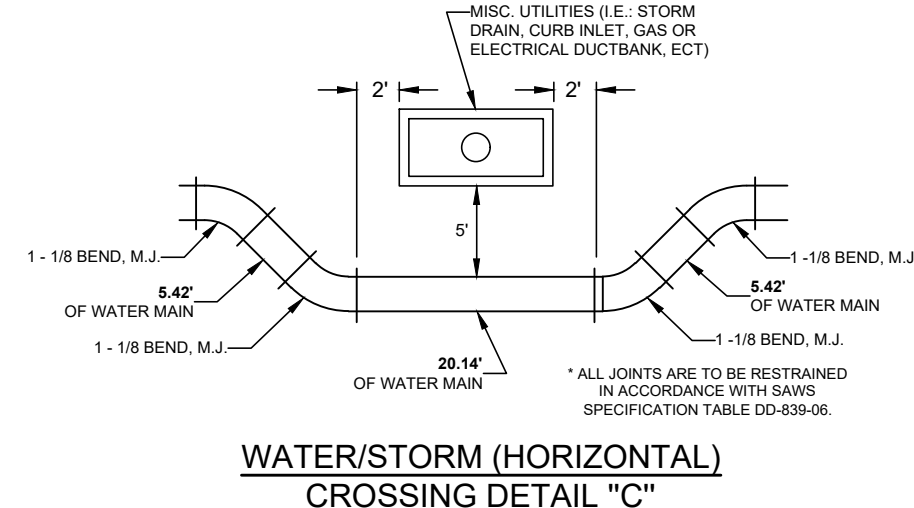
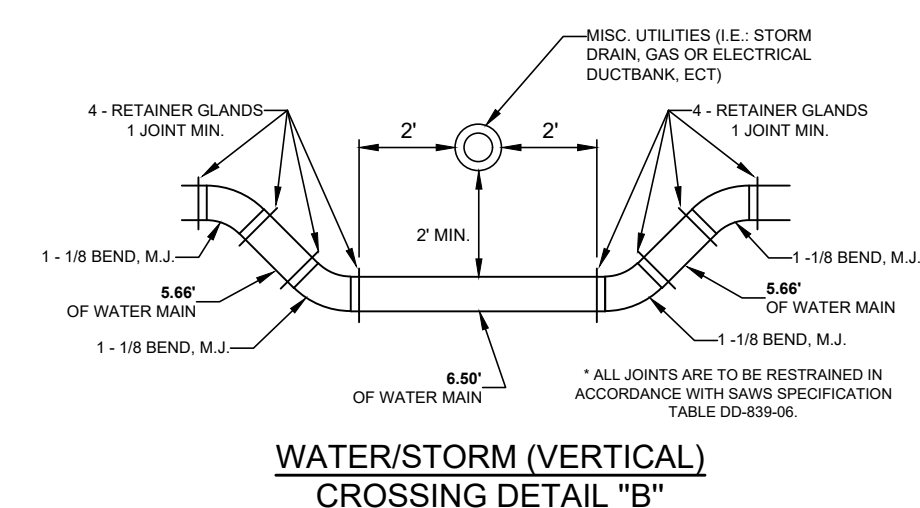
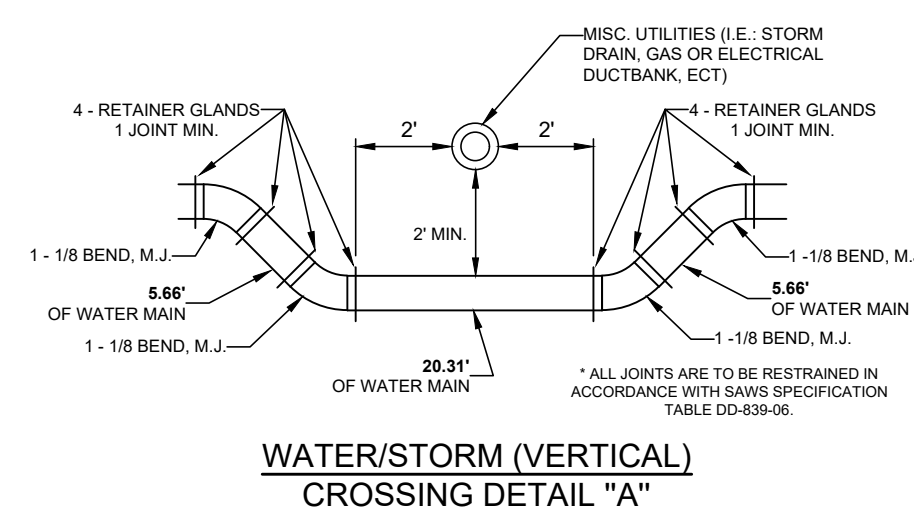
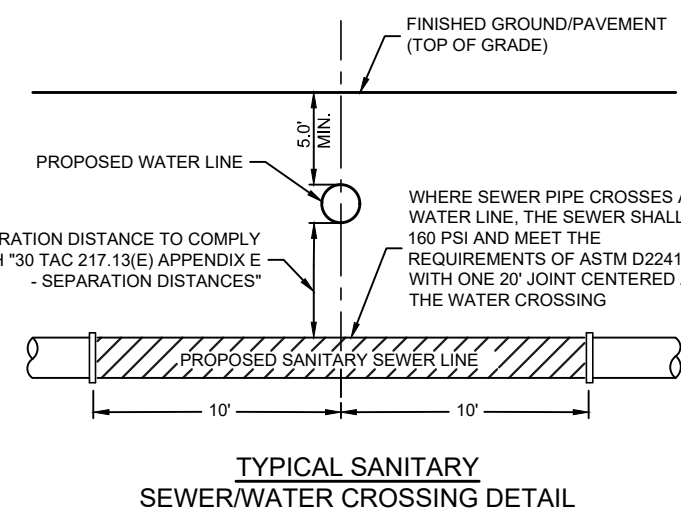
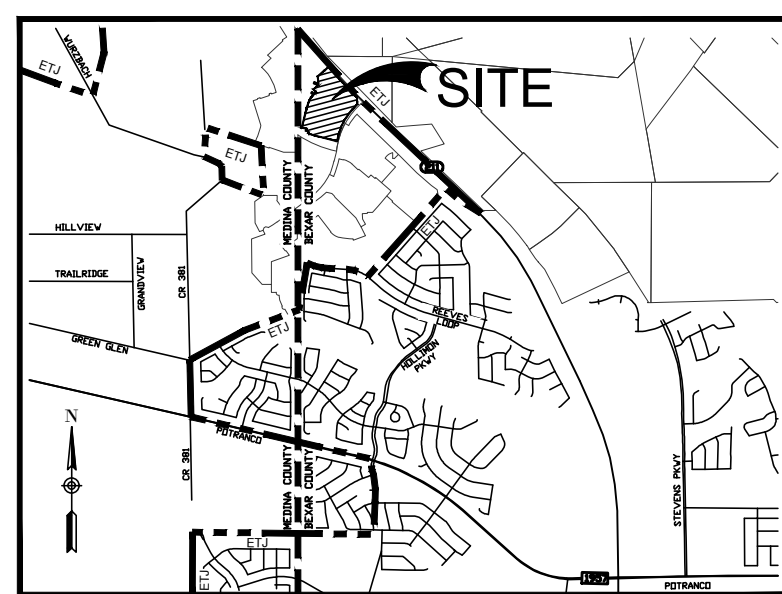
DHI

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TXTXDOT PAVEMENT
MARKING DETAILSDESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 9/8/2023
JOB NO.: 20220500
SHEET NO.

C3.12

DESCRIPTION
DATE
REVDHI Engineering, LLC.
5419 ANTONIO LOOP, SUITE 100
SAN ANTONIO, TEXAS 78217
(210) 482-2988 | dhiengineering.com
TXBPE REG. NO. F-19561

DHI



LEGEND (WATER DISTRIBUTION)	
	PROJECT LIMITS
	PROPOSED WATER
	PROPOSED SEWER
	EXISTING WATER
	EXISTING SEWER
	MANHOLE
	FIRE HYDRANT
	PROPOSED WYE & LATERAL
	PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER
	PROPOSED 1" DUAL SERVICE WITH 5/8" METER
	STREET LIGHT
GET/CTV	GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT
	JOINT RESTRAINTS

FIRE FLOW NOTE

IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1000 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

ROW PERMIT NOTE

ROW PERMIT NOTE:
A BEXAR COUNTY 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.

PRESSURE REDUCING VALVE NOTE

PRESSURE REDUCING VALVE NOTE:
PRESSURE REDUCING VALVE TO BE INSTALLED ON CUSTOMER'S SIDE OF METER BY
HOMEBUILDER.

PRESSURE NOTE:

PRE-ISSUE NOTE:

CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 985 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATION WHERE THE GROUND LEVEL IS BELOW 985 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: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

JOINT RESTRAINT NOTE

JOINT RESTRAINT NOTE:
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ECT. HAVE A MINIMUM OF TWO JOINTS WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESSES AND GASKETS, BUT WILL BE SUBSIDIARY TO THE UNIT COST PER LINEAR FOOT OF PIPE INSTALLED.

TRENCH EXCAVATION PROTECTION

CONTRACTOR A 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 CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE SYSTEMS TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND PROCEDURES SHALL BE IN ACCORDANCE WITH THE TRENCH EXCAVATION PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS SPECIFICALLY, CONTRACTOR AND CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH THE TRENCH EXCAVATION PROTECTION 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 DISTRIBUTION, GAS, TELECOMMUNICATION FACILITIES, AND GAS LINES. ALL UTILITIES LOCATED SHALL BE REPAIRED OR PROTECTED PRIOR TO CONSTRUCTION. 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 EXPENSE. WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

WATER: SAWS PRESSURE ZONE 1170

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 # (210) 496-2668

SAWS BLOCK MAP # 0623584 TOTAL DEEDS: 147 TOTAL ACREAGE: 30.90
97 L.F. (12' PWC), 303 L.F. (2' HDPE)

TOTAL LINEAR FOOTAGE OF PIPE: 4,021 L.F. (8' PWC) PLAT NO.: CP202307

NUMBER OF LOTS: 147 SAWS JOB NO.: 23-1063

DHI Engineering, LLC.

DHI

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX

OVERALL WATER DISTRIBUTION PLAN

SAWS STANDARD GENERAL CONSTRUCTION NOTES
ASSOCIATED WITH 2021 SAWS STANDARD SPECS
Updated December 14, 2021

GENERAL CONSTRUCTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:

A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.

B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."

C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."

D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR CONSTRUCTION."

E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2. THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, https://apps.saws.org/business_center/specs/constspecs/ UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.

3. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 (DURING REGULAR SAWS WORKING HOURS) AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS TWO (2) WEEKS PRIOR TO EXCAVATION. OUTSIDE OF REGULAR SAWS WORKING HOURS THE SAWS EOC SHOULD BE CONTACTED AT 210-704-7297.

4. IF NECESSARY, CONTRACTOR WILL COORDINATE USE OF SAWS PREMISES AT NO ADDITIONAL COST TO SAWS. SUCH EFFORTS INCLUDE, BUT ARE NOT LIMITED TO, OBTAINING SECURITY IDENTIFICATION BADGES REQUIRED FOR ACCESS TO SAWS FACILITIES.

5. LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.

6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. AS-BUILTS FOR SAWS INFRASTRUCTURE CAN BE OBTAINED AT WEBSITE BELOW. CONTRACTOR SHALL COORDINATE PHYSICAL LOCATES FOR SAWS INFRASTRUCTURE THROUGH THE SAWS INSPECTOR. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS INFRASTRUCTURE. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

SAN ANTONIO WATER SYSTEM:
REQUEST AS-BUILTS: <https://www.saws.org/service/locates-service/>
COSA DRAINAGE 210-206-8433
COSA TRAFFIC SIGNAL OPERATIONS 210-207-7720
TEXAS STATEWIDE ONE CALL LOCATOR 1-800-545-6005 OR 811

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING, AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.

8. CONTRACTOR SHALL NOT MAKE USE OF DUMPSTERS OR WASTE BINS THAT ARE INTENDED TO SERVE RESIDENTS AND/OR BUSINESSES.

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

10. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

11. ALL WORK WITHIN THE 100-YEAR FLOODPLAIN SHALL BE DONE IN ACCORDANCE WITH FLOODPLAIN DEVELOPMENT PERMIT.

12. ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.

13. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS.

WEEKEND WORK: CONTRACTORS ARE REQUIRED TO SUBMIT REQUEST TO THE SAWS INSPECTION CONSTRUCTION DEPARTMENT BY 12:00PM ON THE WEDNESDAY PRIOR TO THE WEEKEND BEING REQUESTED. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.

ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION AT NO COST TO SAWS.
14. PRE-CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION. THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS (NSPI).

15. POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.

16. CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.

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

18. TRENCH EXCAVATION SAFETY PROTECTION: CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREAS IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
- WATER
19. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS INSPECTION AND/OR SAWS PRODUCTION GROUPS AT LEAST TWO WEEKS OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY. SAWS PRODUCTION CONTROL CENTER 210-233-2016

20. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), MAYBE 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. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER ITEM NO. 3000, "HANDLING ASBESTOS CEMENT PIPE".

AC PIPE REMOVED ON CONSTRUCTION PROJECTS FOR TIE-IN(S) SHOULD BE IN LENGTH OF 26 LINEAR FEET (LF). LENGTHS OF 13 LF SHOULD BE REMOVED WHERE AC PIPE IS BEING REMOVED AND CROSSING PIPES, CONDUITS, OR BOXES.

21. 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)

22. 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" AND 12" 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 THE 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 $\frac{3}{4}$ " WITH $\frac{5}{8}$ " METER.
- REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
WATER DISTRIBUTION PLAN NOTES
- DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 9/8/2023
JOB NO.: 20220500
SHEET NO.
- C4.10
- | DESCRIPTION | DATE | REV |
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-
- DHI Engineering, LLC.
4419 N. LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78207
(210) 482-2988 | dhiengineering.com
TBP# REG. NO. F-19561

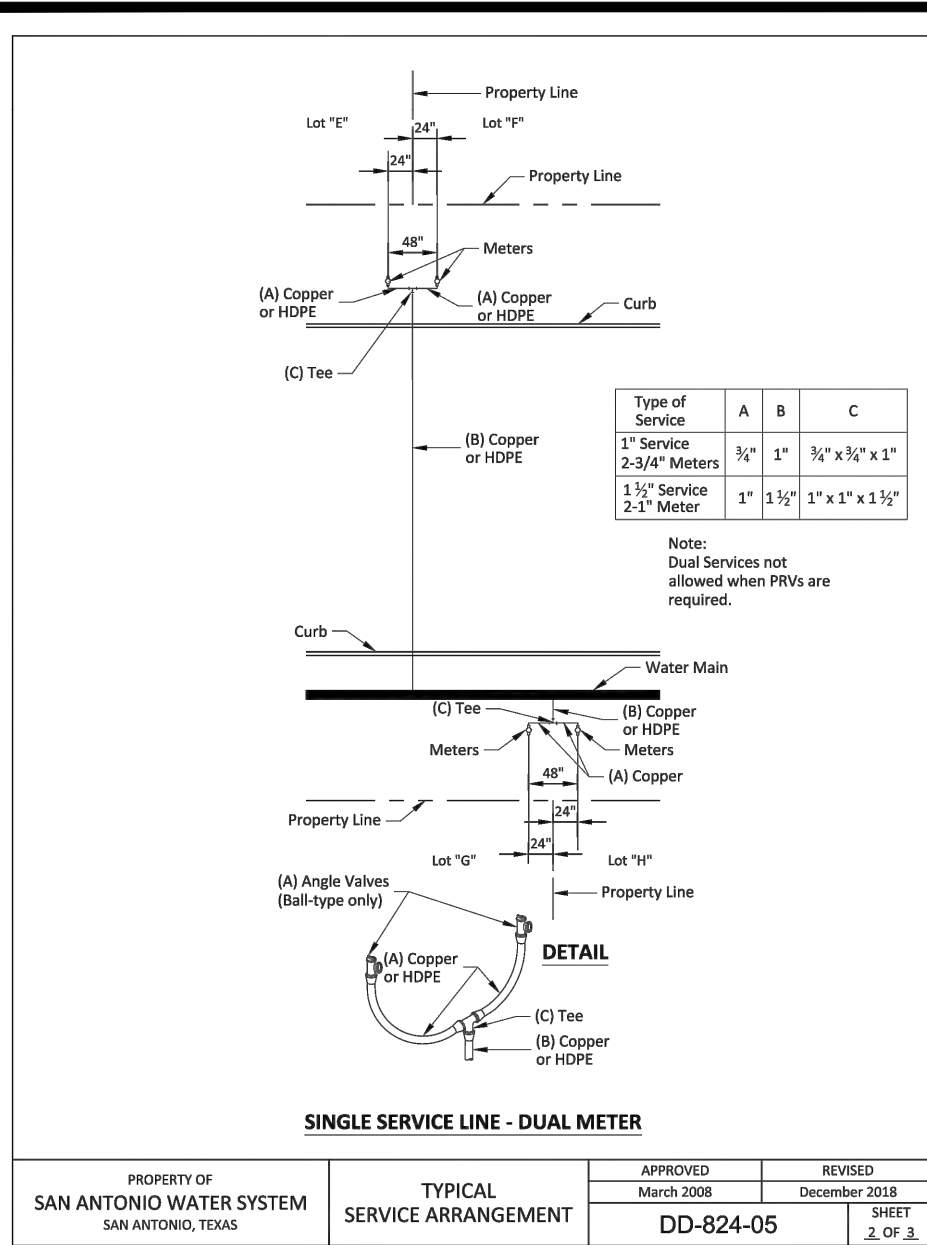
DHI
- DATE: Sep 08, 2023, 2:17pm User: G:\Saw Files\E:\PROJECT\2022\REDBIRD RANCH\UNIT 2M-1\0502 - Design\030 - Shared\CA-10 WATER DISTRIBUTION PLAN NOTES.dwg

REDBIRD RANCH, UNIT 2M-1

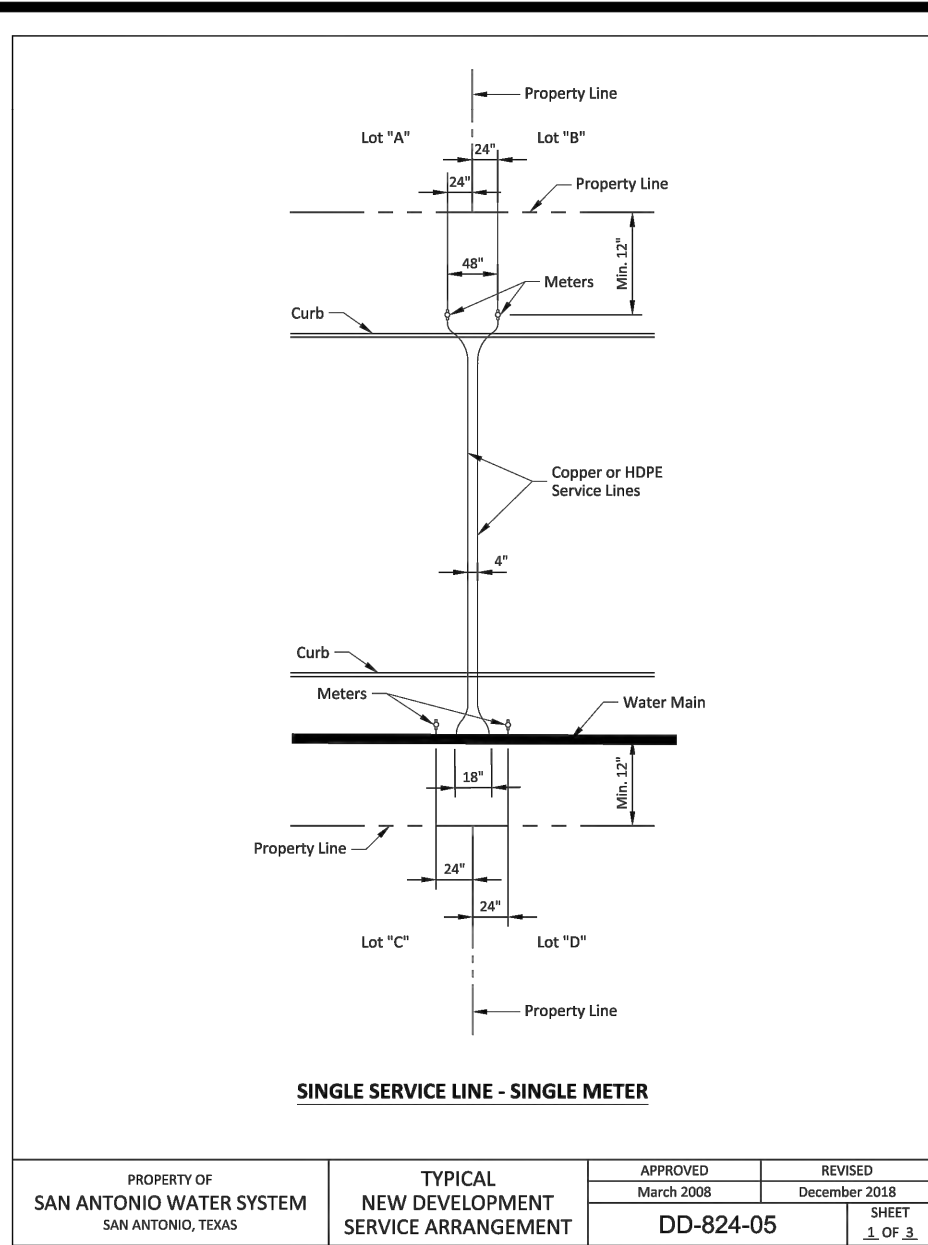
PLAT NO. CP202307

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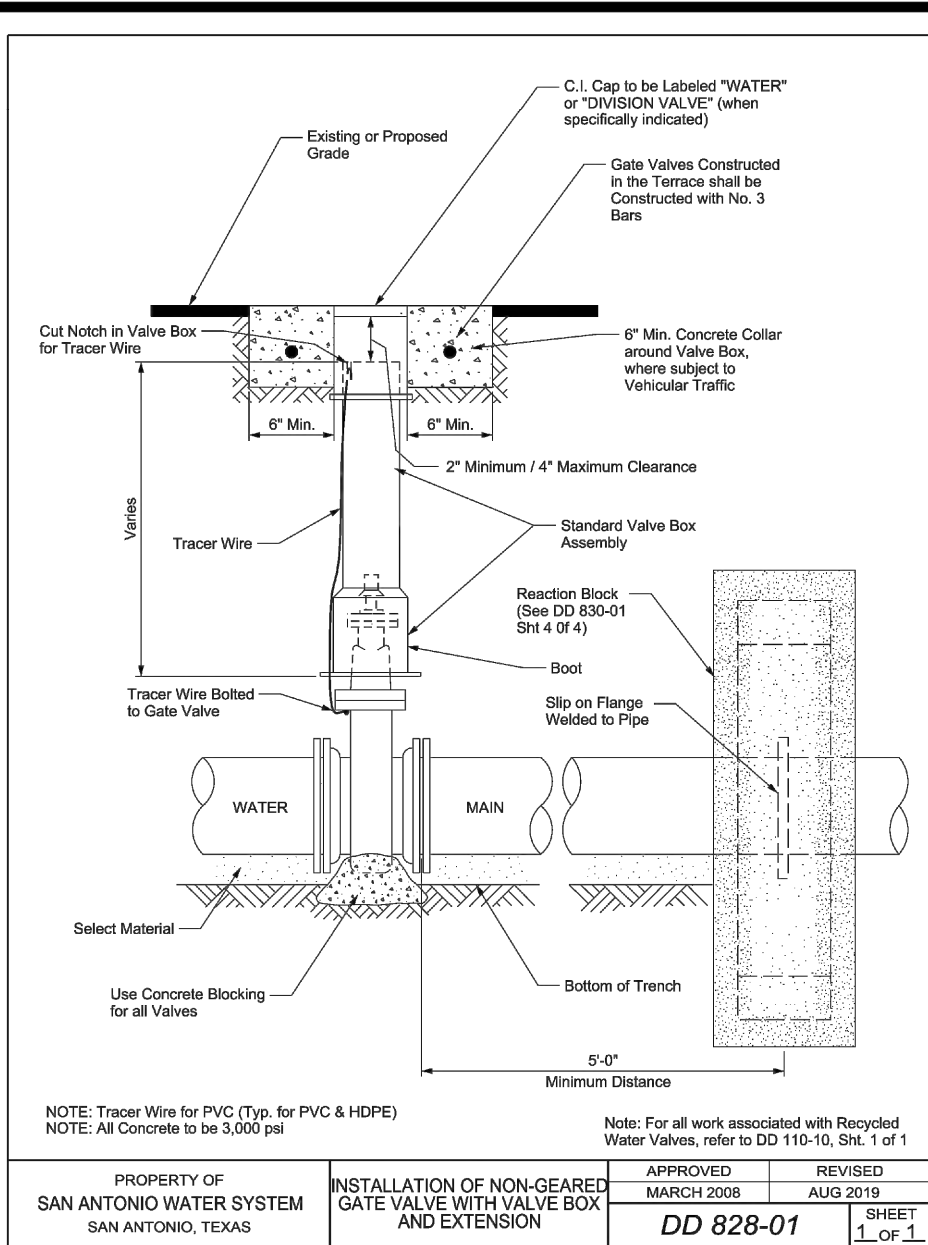
DHI ENGINEERING, LLC



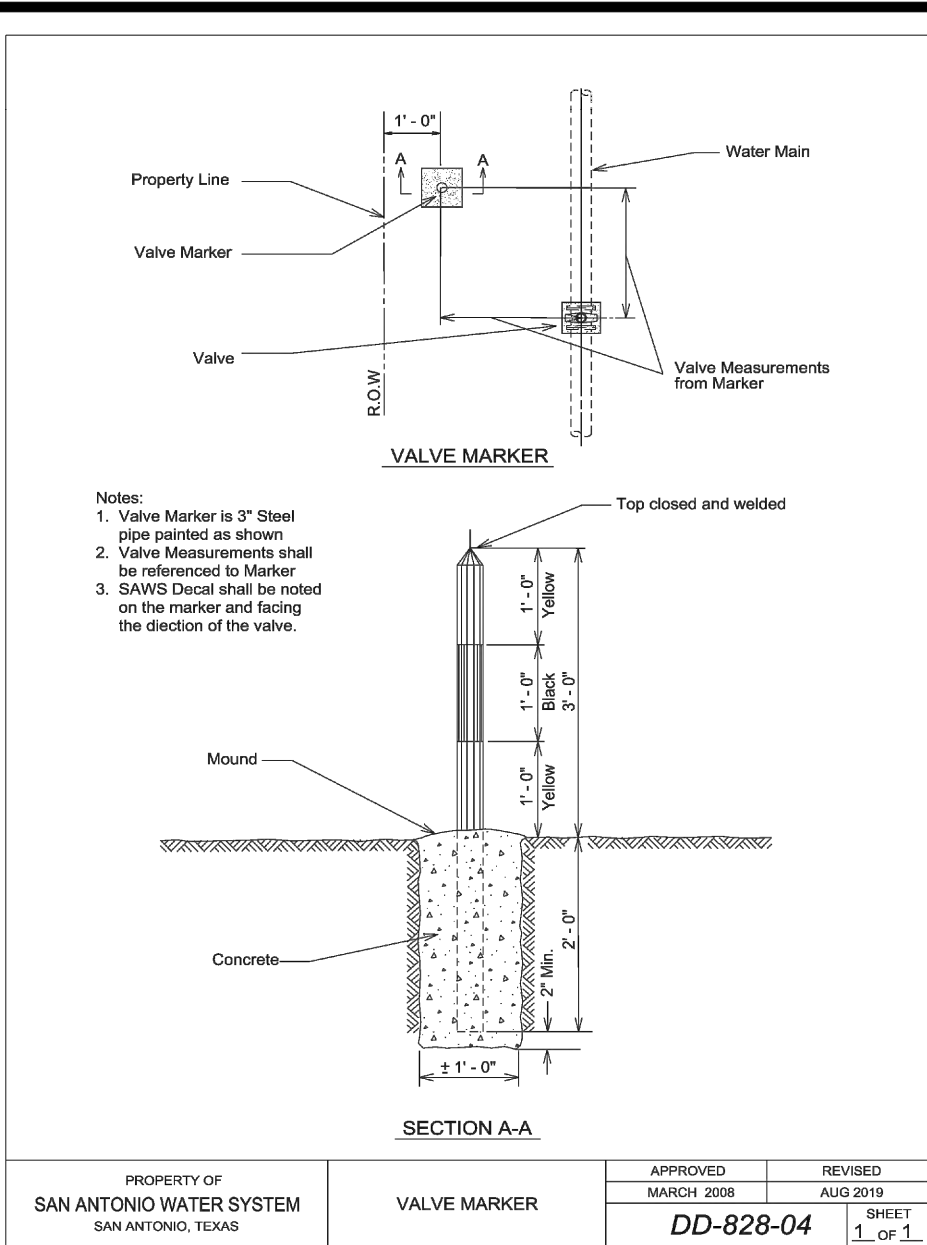
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL SERVICE ARRANGEMENT	APPROVED MARCH 2008	REVISED DECEMBER 2018
	DD-824-05		SHEET 2 OF 3



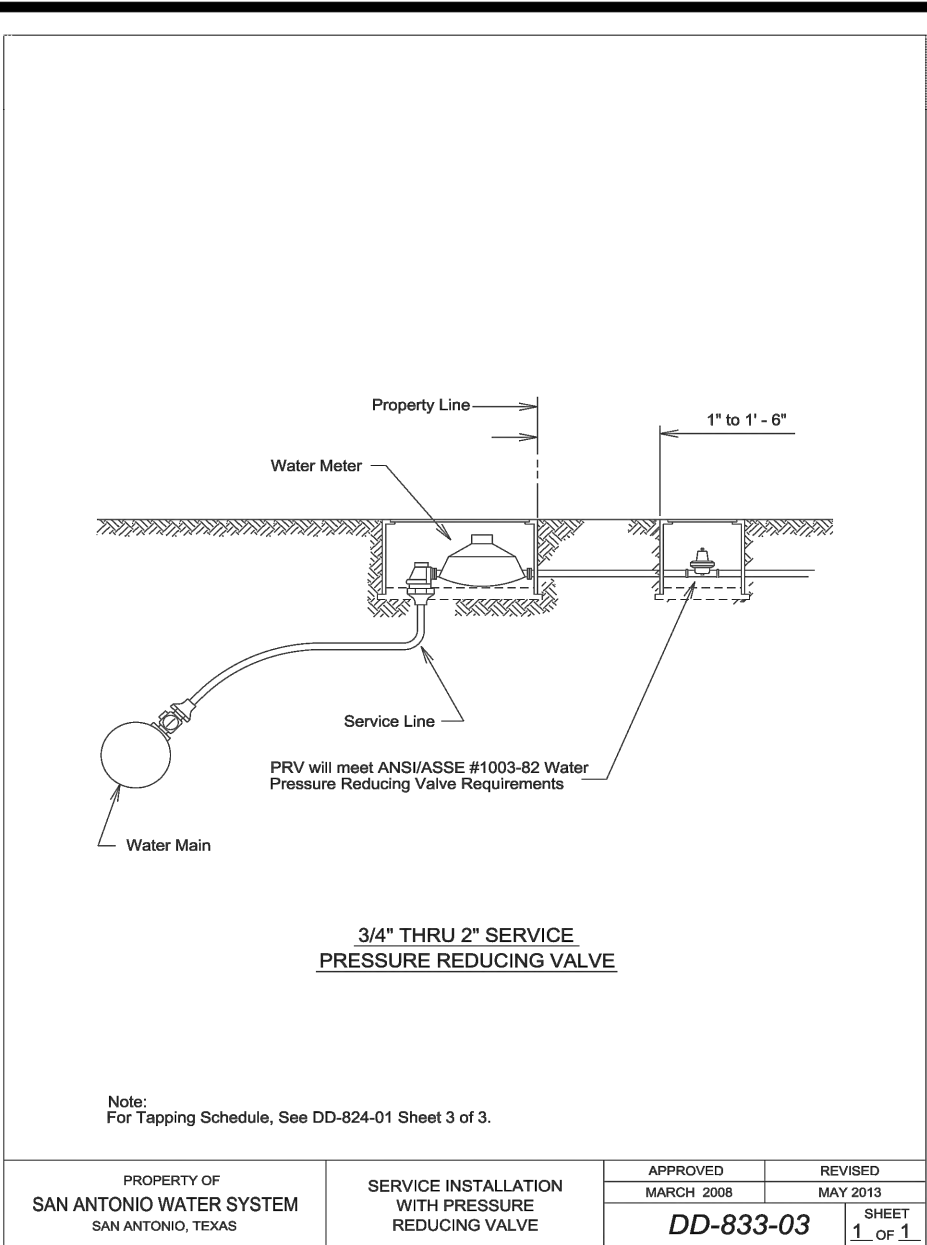
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL NEW DEVELOPMENT SERVICE ARRANGEMENT	APPROVED MARCH 2008	REVISED DECEMBER 2018
	DD-824-05		SHEET 3 OF 3



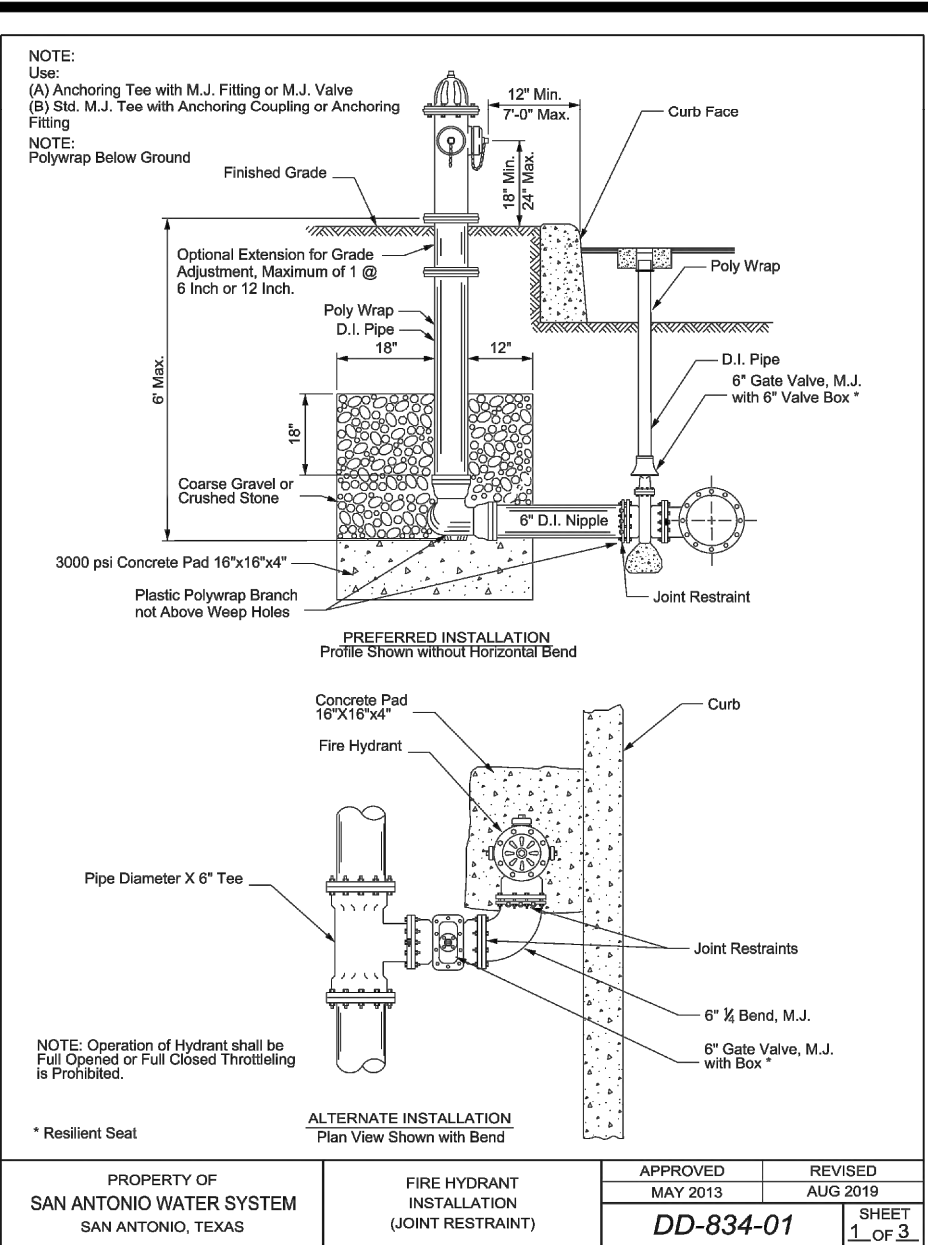
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD 828-01		SHEET 1 OF 1



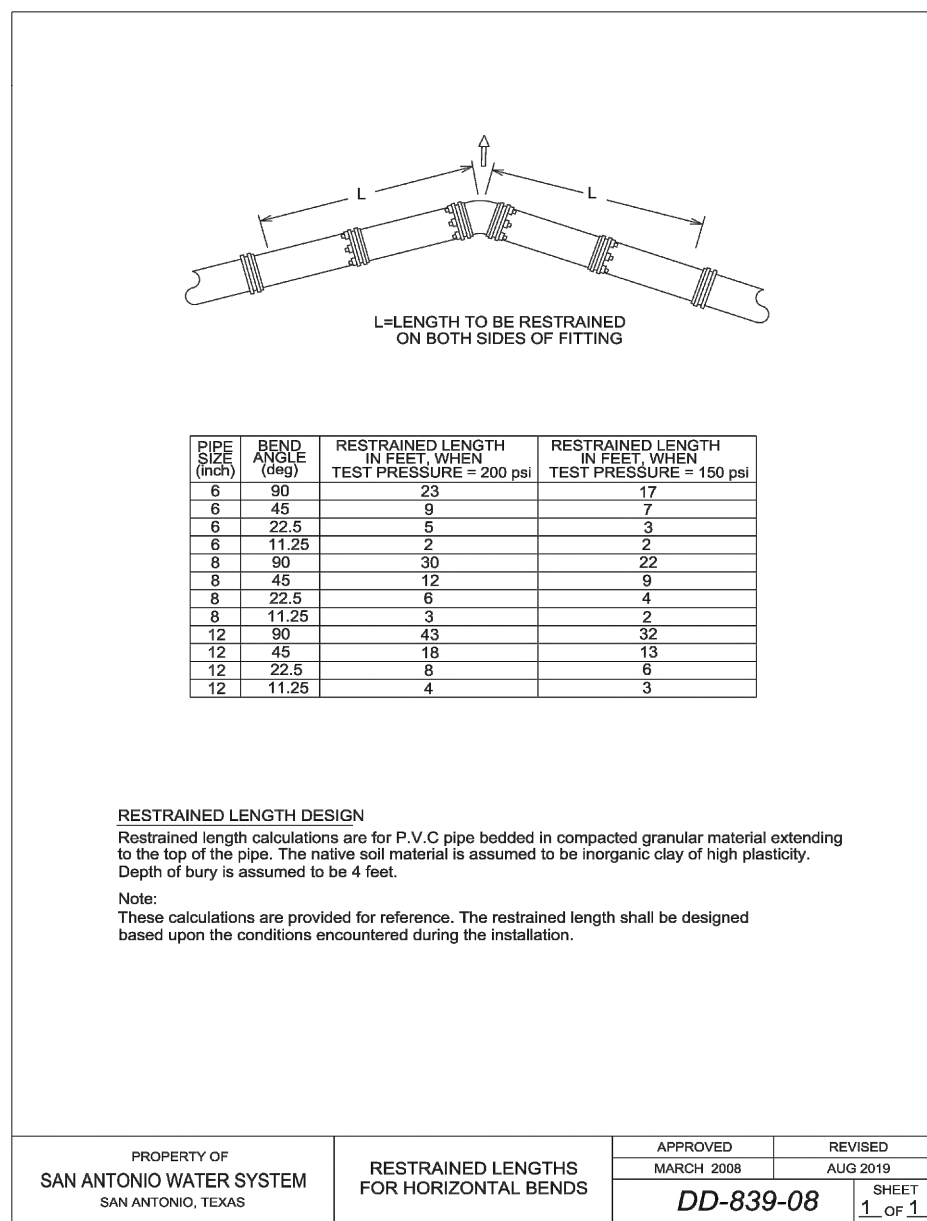
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	VALVE MARKER	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD-828-04		SHEET 1 OF 1



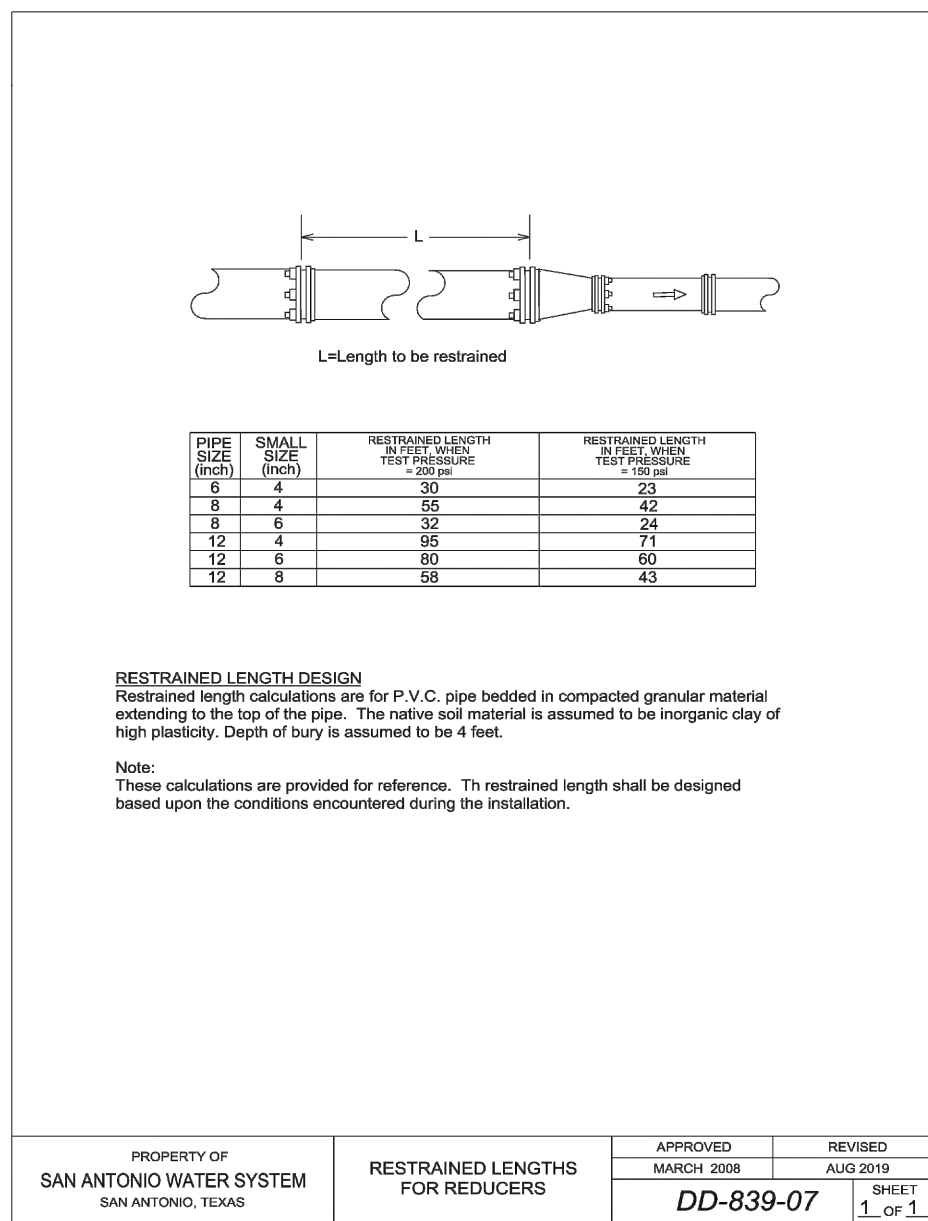
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SERVICE INSTALLATION WITH PRESSURE REDUCING VALVE	APPROVED MARCH 2008	REVISED MAY 2013
	DD-833-03		SHEET 1 OF 1



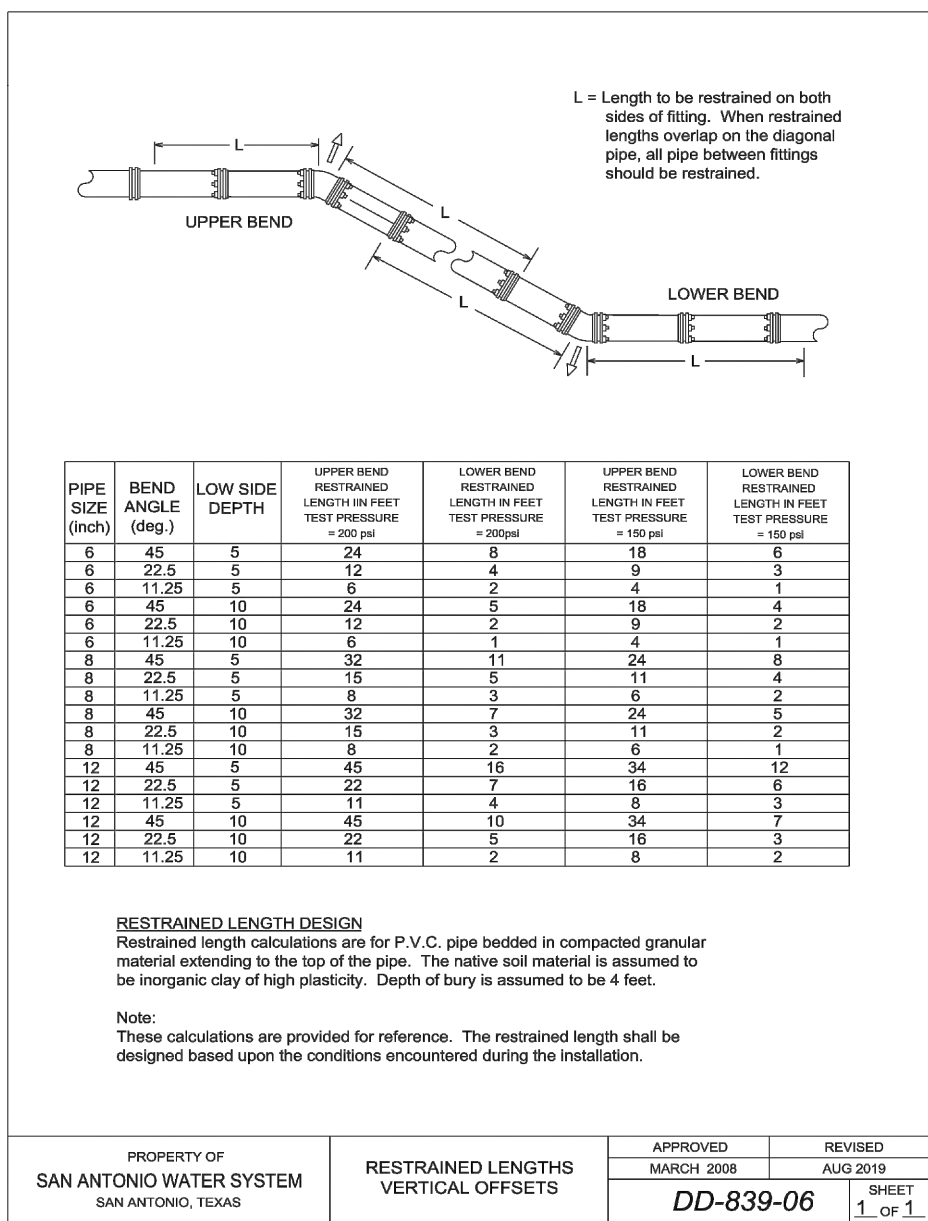
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)	APPROVED MAY 2013	REVISED AUGUST 2019
	DD-834-01		SHEET 1 OF 2



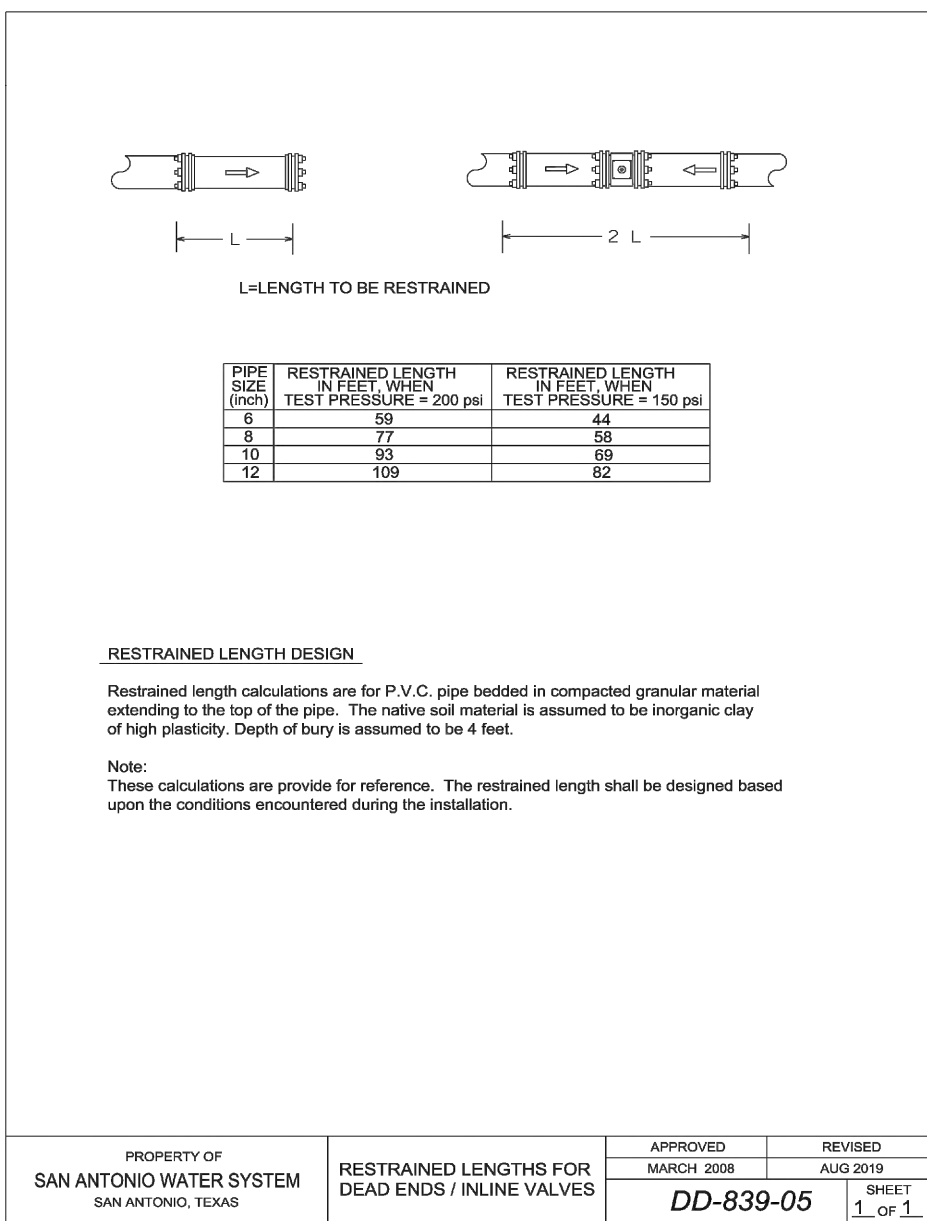
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD-839-08		SHEET 1 OF 1



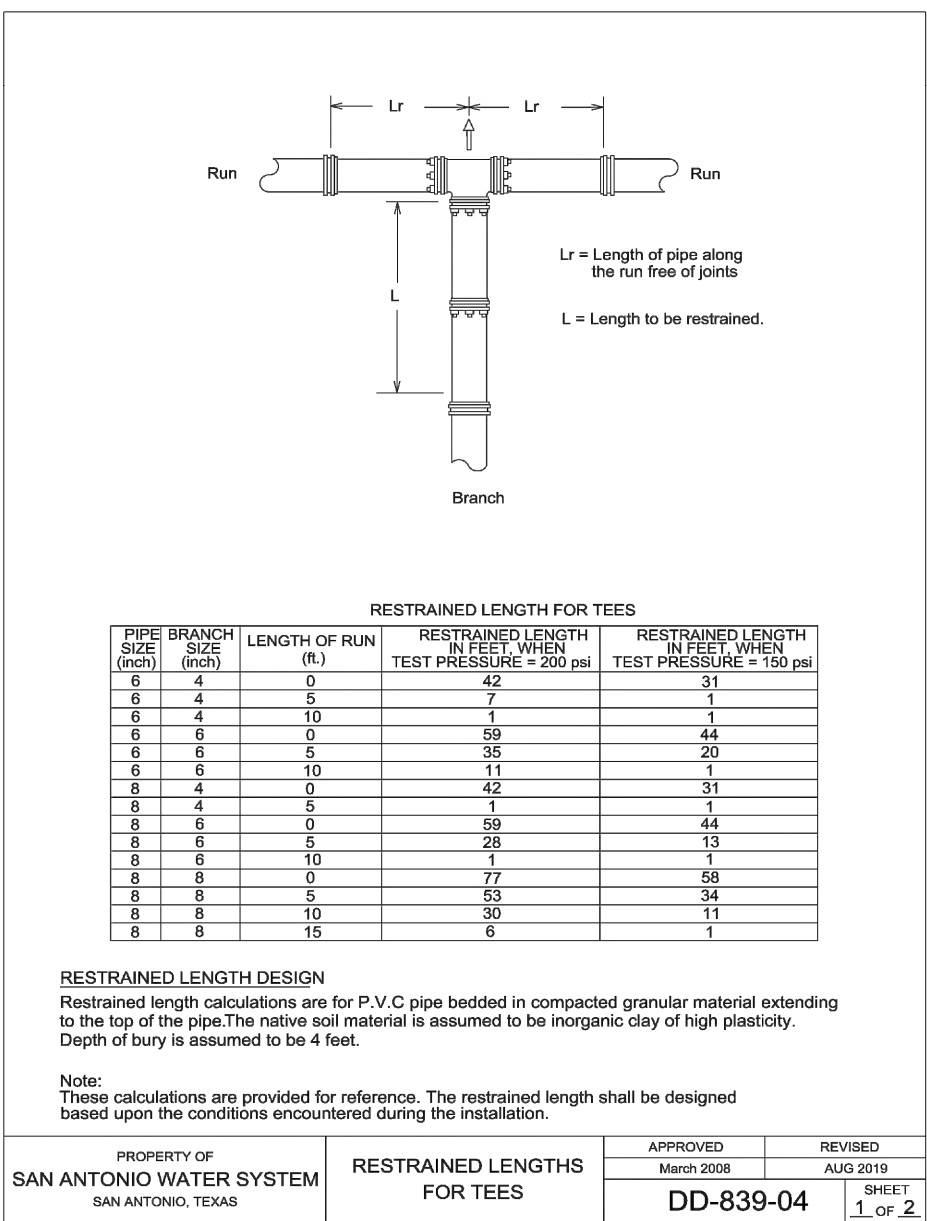
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR REDUCERS	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD-839-07		SHEET 1 OF 1



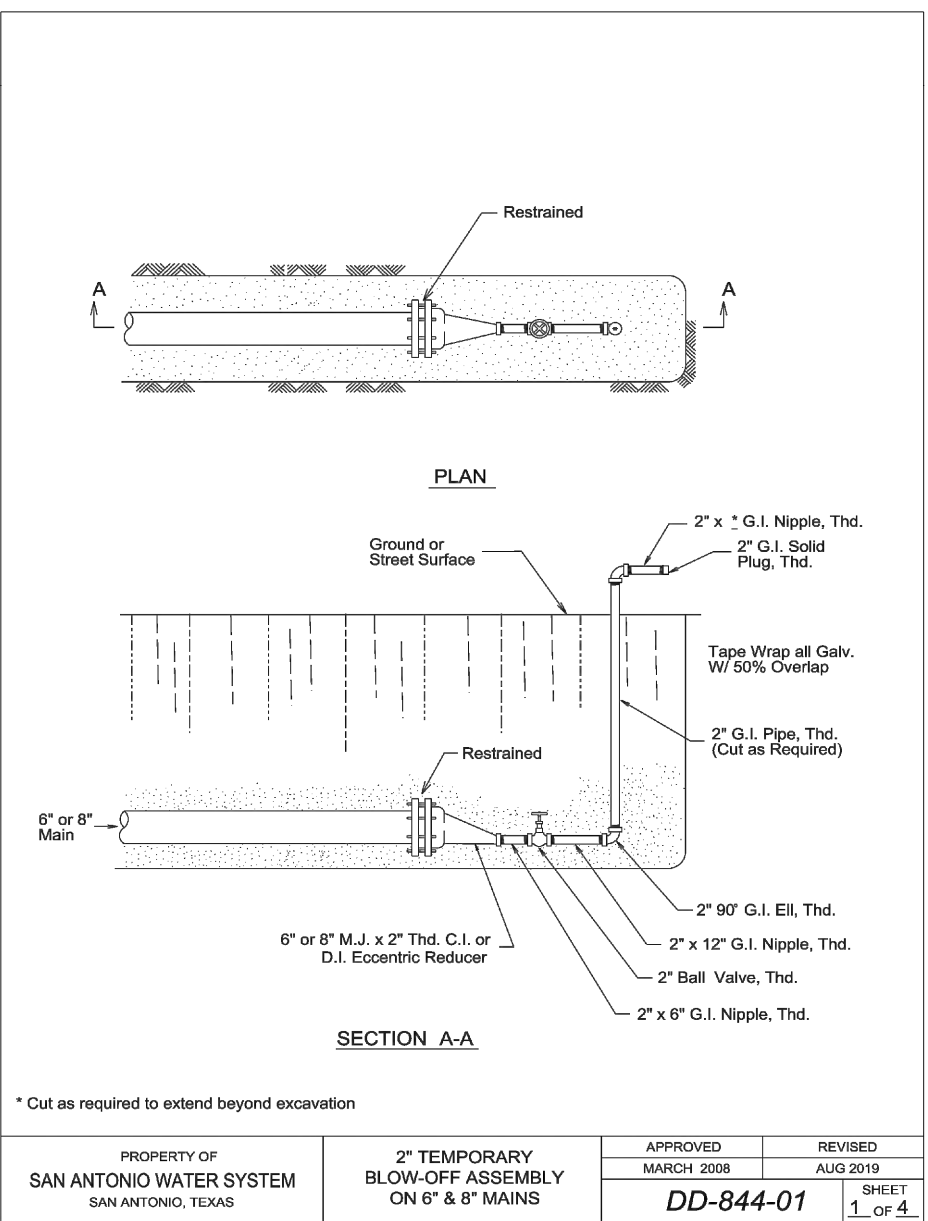
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS VERTICAL OFFSETS	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD-839-06		SHEET 1 OF 1



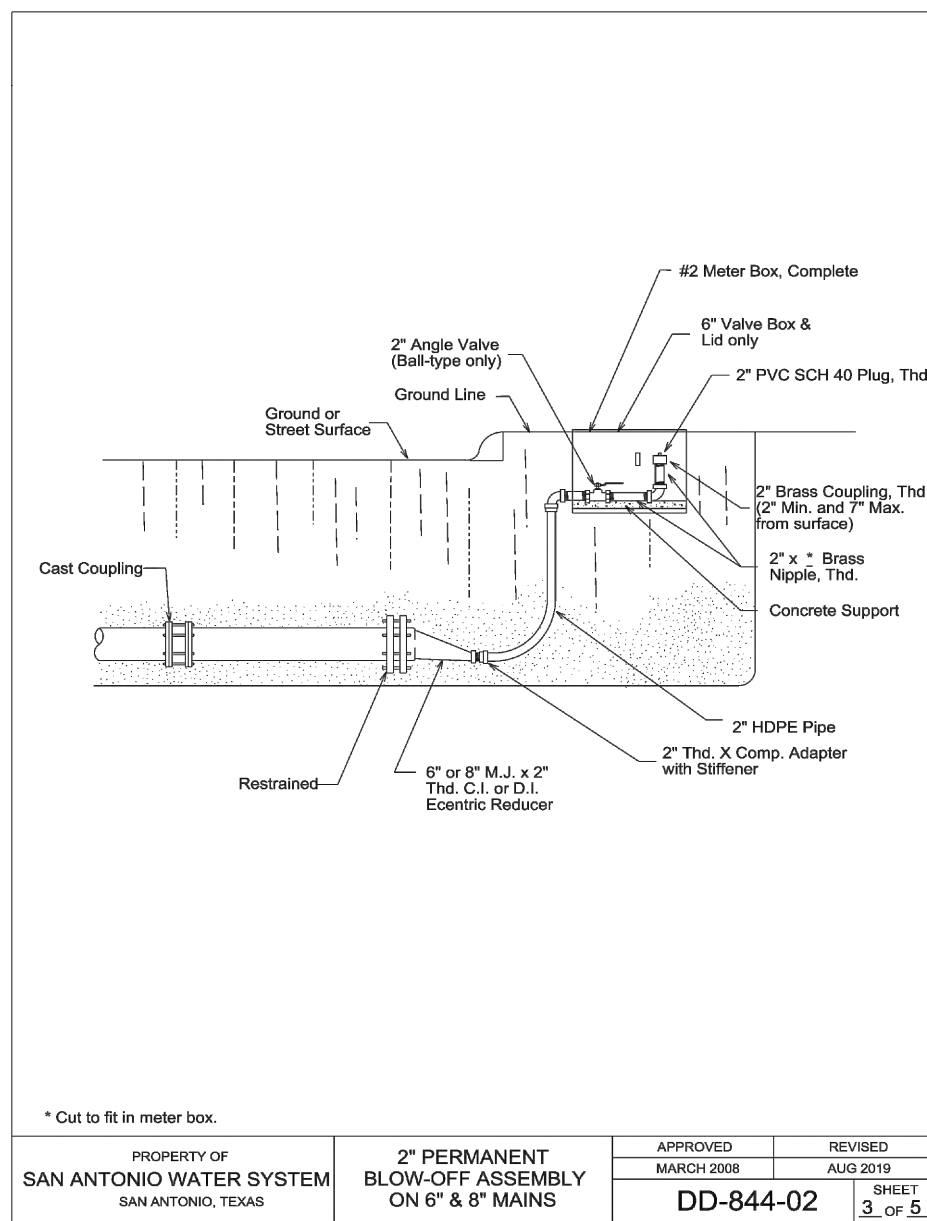
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR DEAD ENDS / IN-LINE VALVES	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD-839-05		SHEET 1 OF 1



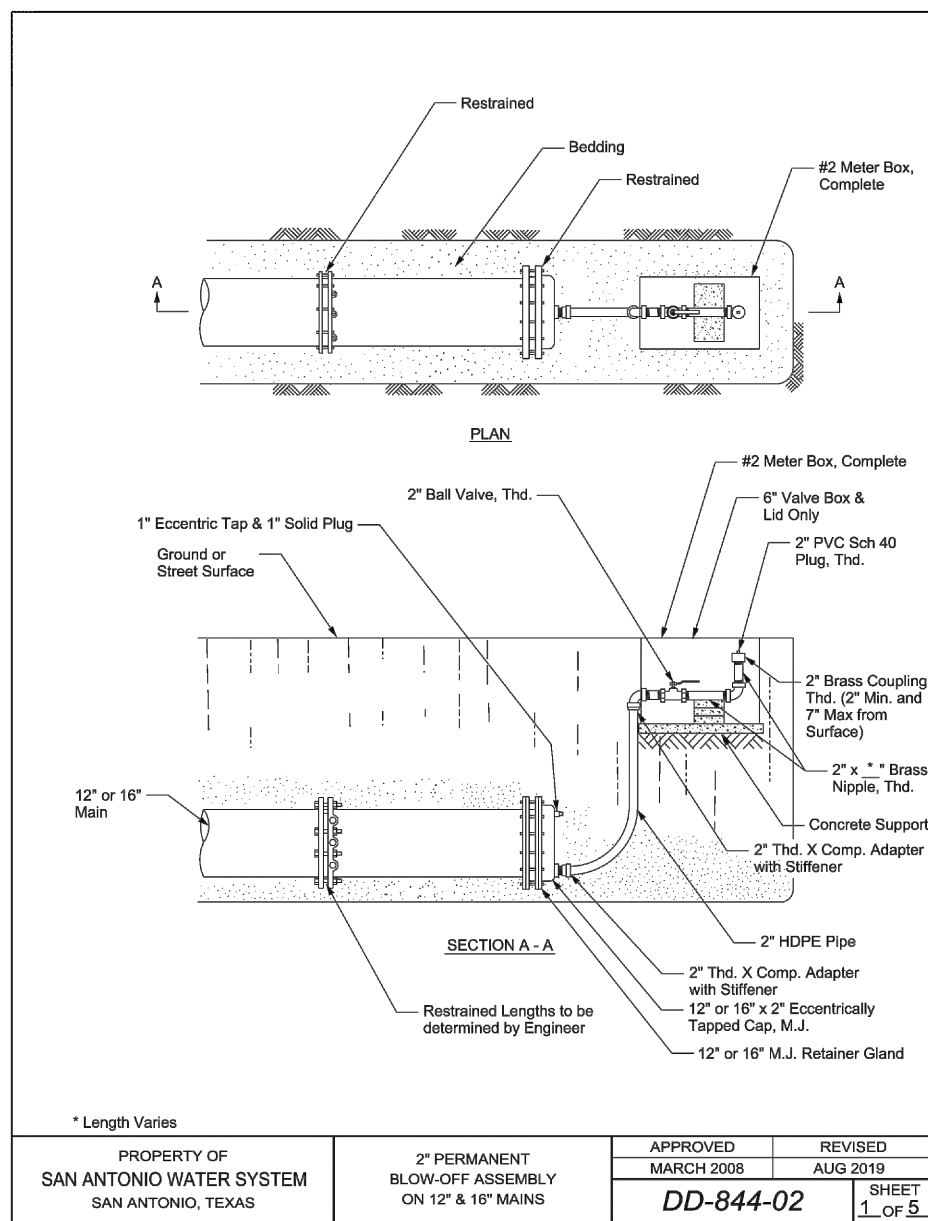
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR TEES	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD-839-04		SHEET 1 OF 2



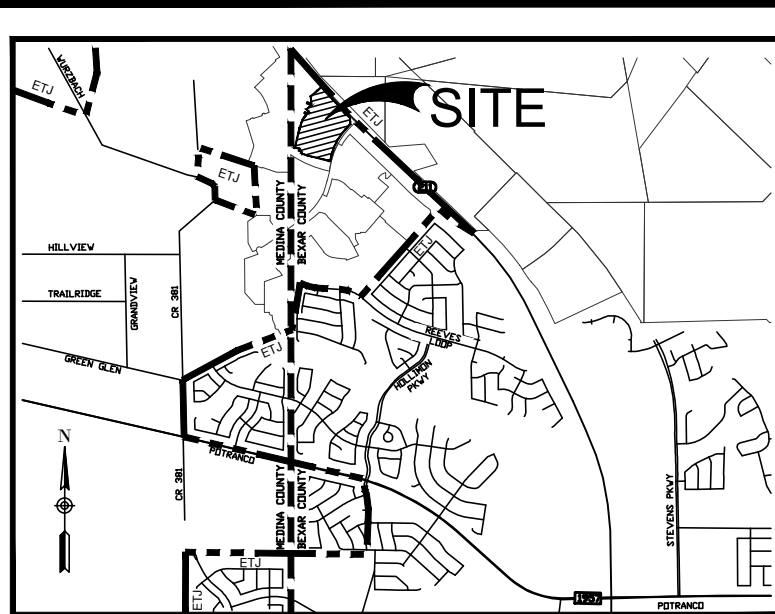
PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" TEMPORARY BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD-844-01		SHEET 1 OF 4



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED MARCH 2008	REVISED AUGUST 2019
	DD-844-02		SHEET 3 OF 5



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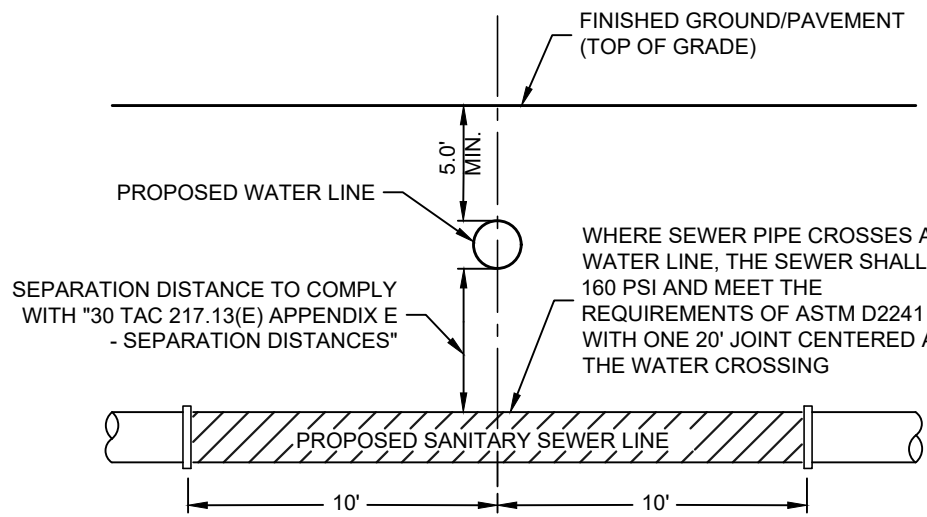


TRENCH EXCAVATION PROTECTION

CONTRACTOR AND 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 SITE WITHIN THE PROJECT'S WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS, AND PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS SPECIFICALLY. CONTRACTOR AND 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 EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



LEGEND (SANITARY SEWER)	
---	PROJECT LIMITS
---	PROPOSED WATER
---	PROPOSED SEWER
---	EXISTING WATER
---	EXISTING SEWER
⊙	PROPOSED MANHOLE
⊙	EXISTING MANHOLE
⊙	FIRE HYDRANT
---	PROPOSED WYE & LATERAL
---	SINGLE WATER SERVICE
---	DUEL WATER SERVICE
⊙	STREET LIGHT
---	GAS, ELECTRIC, TELEPHONE & CABLE TELEVISION EASEMENT
FF=XXXX.XX	FINISHED FLOOR ELEVATION FOR SEWER



FINISHED FLOOR NOTES:

1. THE FINISHED FLOOR ELEVATIONS (FF) REPRESENT THE MINIMUM POSSIBLE FLOOR ELEVATION TO PROVIDE SANITARY SEWER SERVICE TO EACH LOT. ACTUAL FF FOR EACH LOT ARE TO BE DETERMINED BY THE BUILDER AND SHALL TAKE INTO CONSIDERATION AS-BUILT FOR FINAL 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 THE HOME FOUNDATION CONSTRUCTION TAKING INTO CONSIDERATION SITE DRAINAGE, STREET ACCESS AND SANITARY SEWER SERVICE ELEVATION.

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.

BEXAR COUNTY ROW NOTES:

A BEXAR COUNTY 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 INDICATION 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.

SEWER: SAWS MEDIO CREEK 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 #: (210) 496-2668
SHEET BLOCK MAP # 062586 TOTAL EDUS: 147 TOTAL ACREAGE: 30.90
TOTAL LINEAR FOOTAGE OF PIPE: 2,573 L.F. (8") PLAT NO.: CP202307
NUMBER OF LOTS: 147 SAWS JOB NO.: 23-1553

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
OVERALL SANITARY SEWER PLAN

DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 03/11/2024
JOB NO.: 20220500
SHEET NO.

C5.00

DHI Engineering, LLC.
419 N. LOOP 1604 EAST
SAN ANTONIO, TEXAS 78247
(210) 496-2668 | dhiengineering.com
TBP REG. NO. F-19561

03/11/2024

REV

DATE

DESCRIPTION

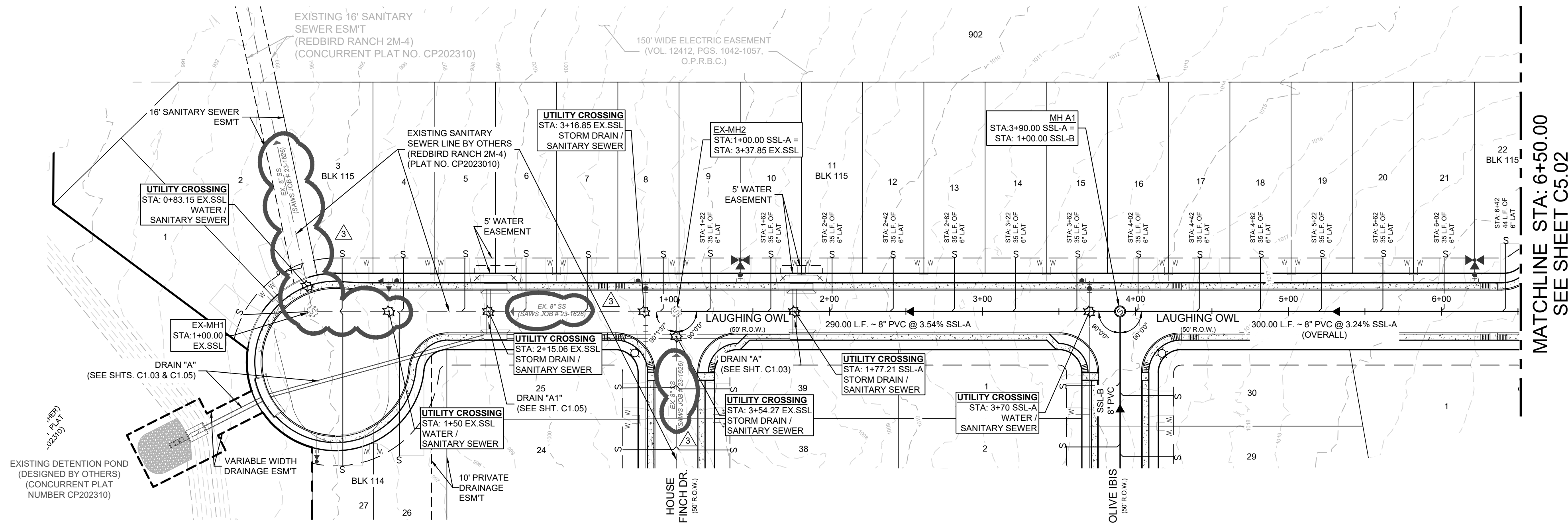
3/11/2024

UPDATE CALCULATIONS, CALLOUTS, AND EASEMENTS.

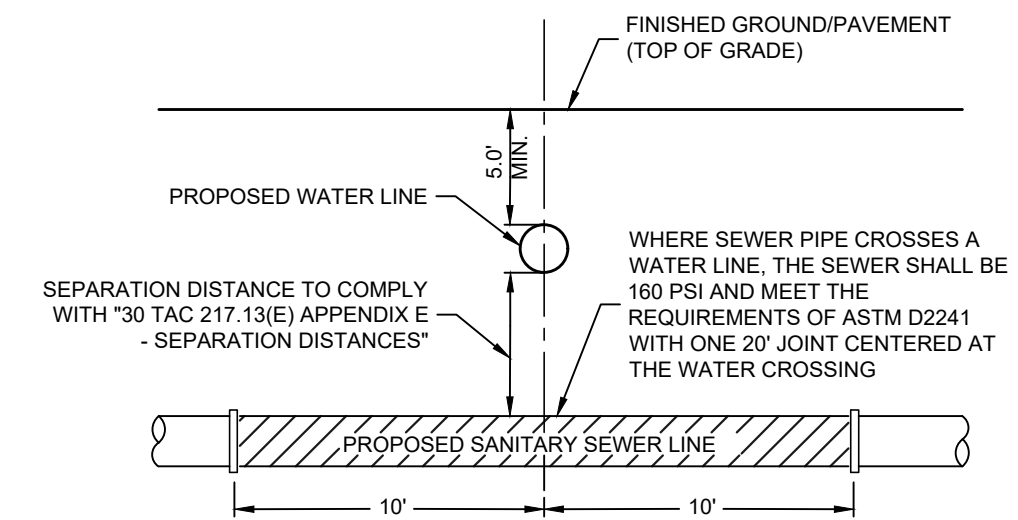
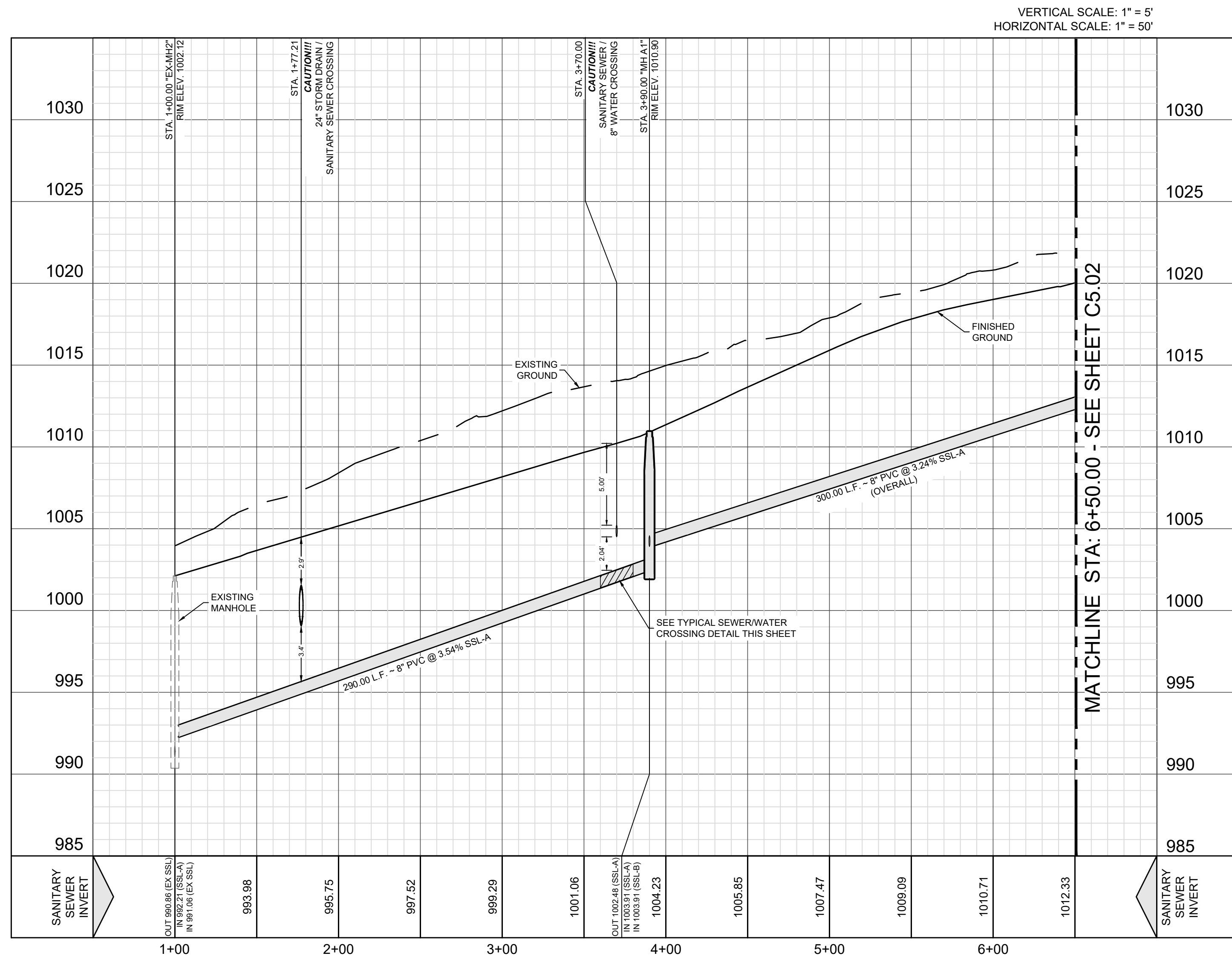
STATE OF TEXAS
99269
PROFESSIONAL
Vance Weyrand

PLAT NO. CP202307

REDBIRD RANCH, UNIT 2M-1



SSL-A
STA. 1+00.00 TO 6+50.00



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

BEXAR COUNTY ROW NOTES:
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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 EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

SEWER: SAWS MEDIO CREEK WRC

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

ADDRESS: 5419 N. LOOP 1604 EAST

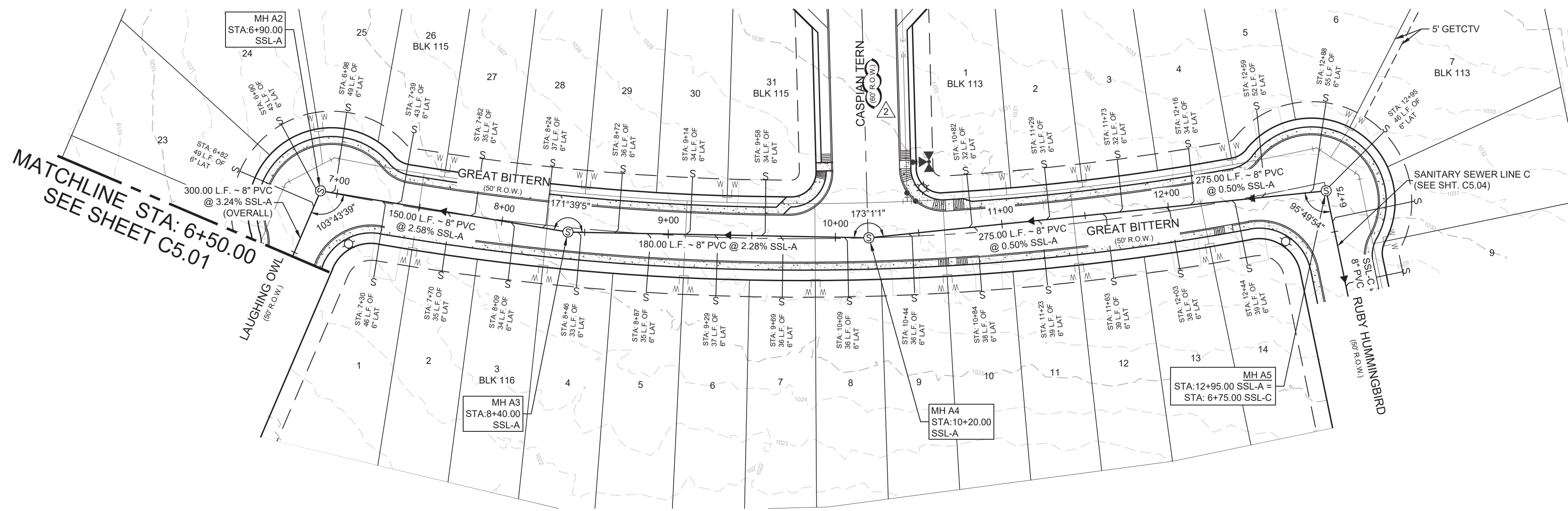
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247

PHONE # (210) 496-2668 FAX # (210) 496-2668

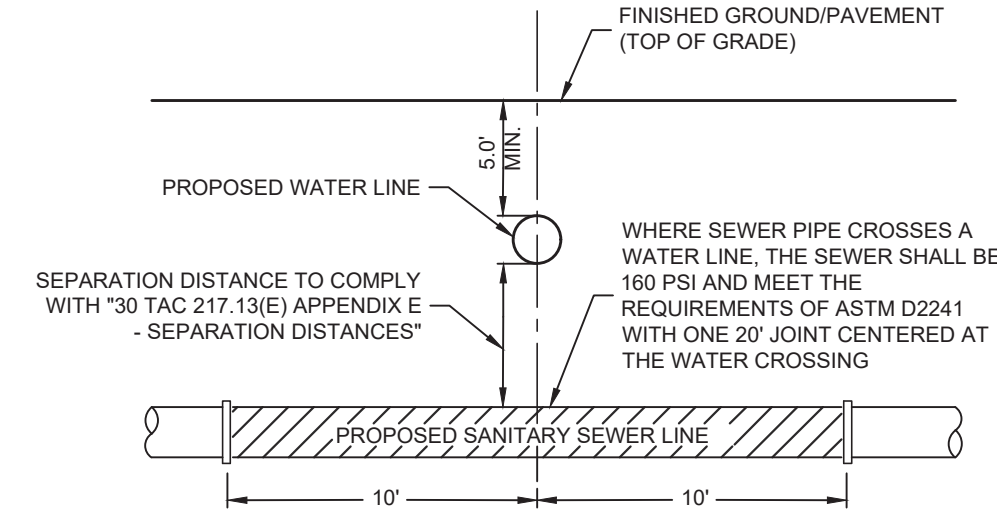
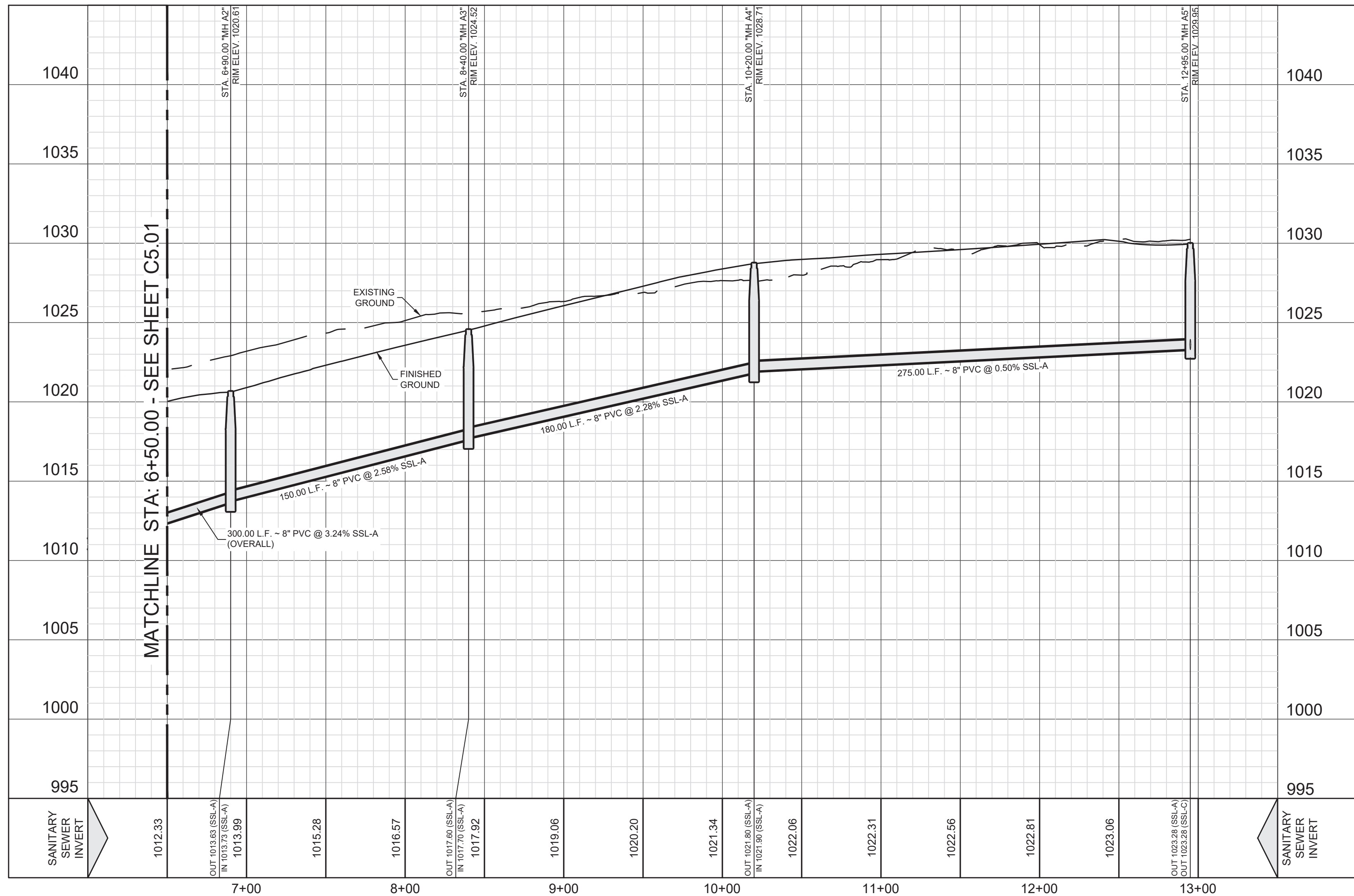
062386
SAWS BLOCK MAP # 062388 TOTAL EDUS: 147 TOTAL ACREAGE: 30.90

TOTAL LINEAR FOOTAGE OF PIPE: 2,573 LF. (8") PLAT NO: CP202307

NUMBER OF LOTS: 147 SAWS JOB NO: 23-1553



SSL-A
STA. 6+50.00 TO 12+95.00



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

BEXAR COUNTY ROW NOTES:
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DRIVEWAY NOTE:
DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATION 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 PROTECTION

CONTRACTOR AND 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 SITE WITHIN THE PROJECT'S WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS, AND PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND 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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SEWER: SAWS MEDIO CREEK WRC

DEVELOPER'S NAME: CONTINENTAL HOMES OF TEXAS, L.P.	
ADDRESS: 5419 N. LOOP 1604 EAST	
CITY: SAN ANTONIO	STATE: TEXAS
PHONE #: (210) 496-2668	FAX #: (210) 496-2668
SAWS BLOCK MAP #: 062586	TOTAL EDITS: 147
TOTAL LINEAR FOOTAGE OF PIPE: 2,573 L.F. (8")	PLAT NO.: CP202307
NUMBER OF LOTS: 147	SAWS JOB NO.: 23-1553

REVISED
3:22 pm, Nov 03, 2023

DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 10/27/2023
JOB NO.: 20220500
SHEET NO. C5.02

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
SANITARY SEWER LINE A - STA. 6+50.00 TO 12+95.00
PLAN & PROFILE

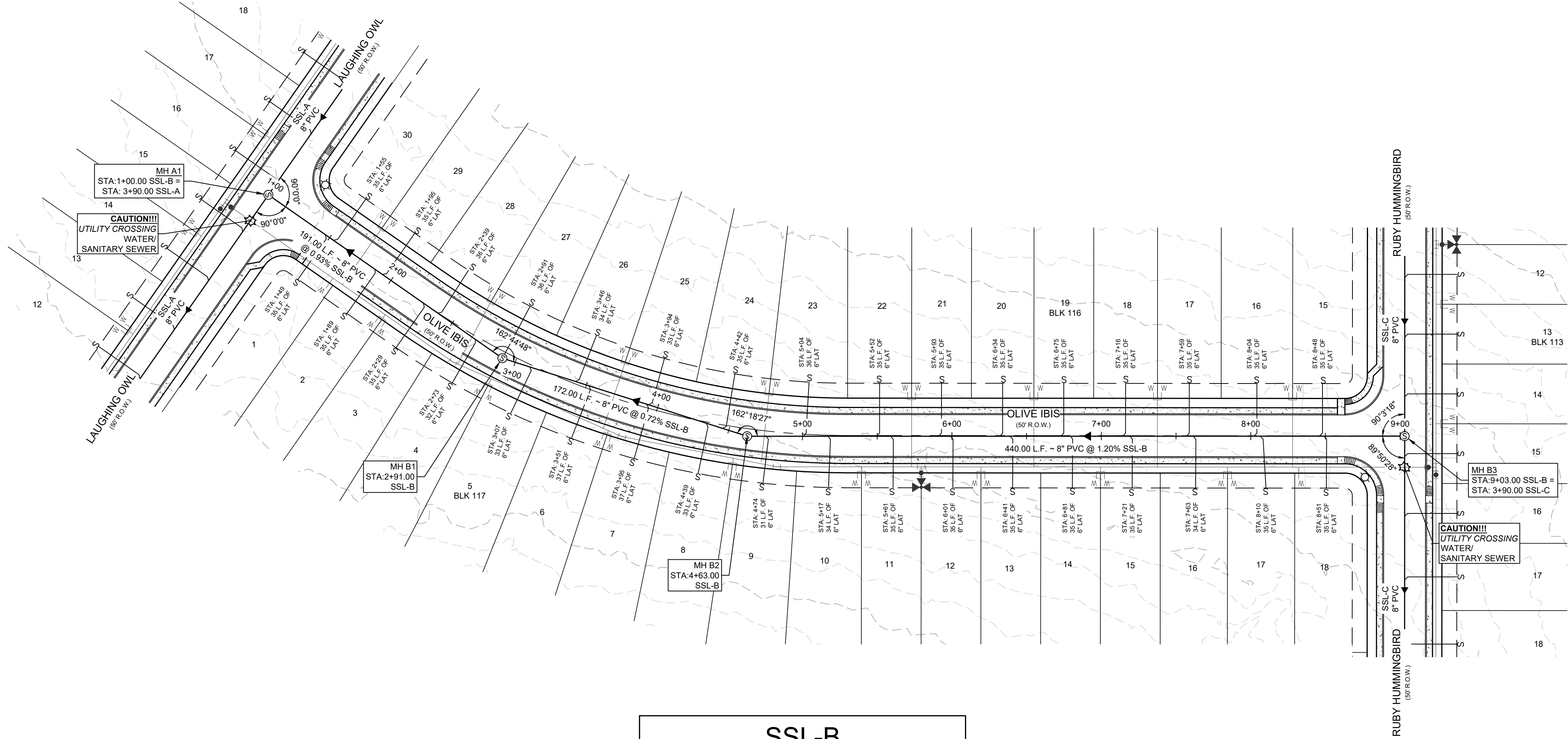
DHI Engineering, LLC.
4419 N. LOOP 1604 EAST
SAN ANTONIO, TEXAS 78247
(210) 496-2668 | dhiengineering.com
TBP REG. NO. F-19561

DHI

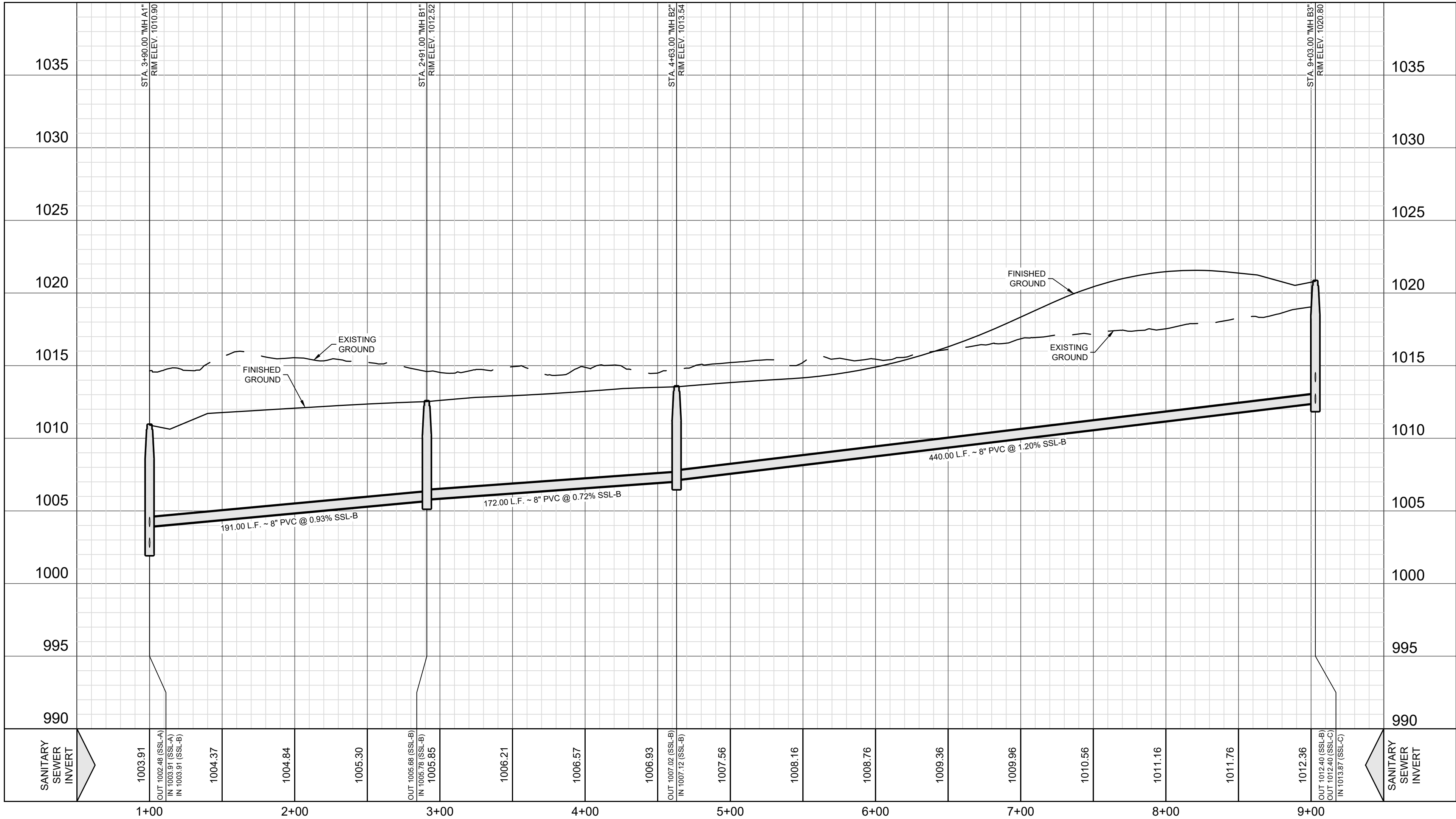
10/27/2023
VANCE L. WEYLAND
99269
LICENSED PROFESSIONAL ENGINEER

DATE: 10/23/2023
DESCRIPTION: OVERALL QA

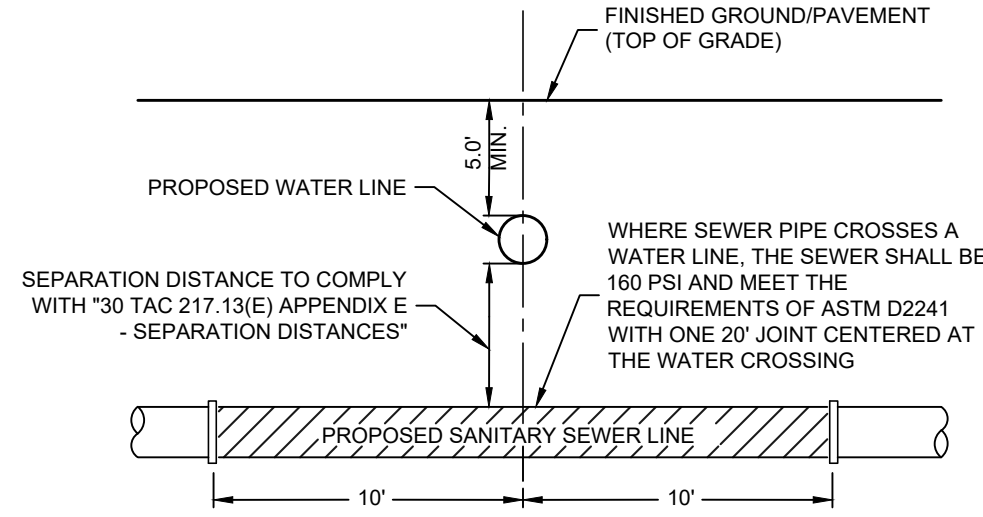
PLAT NO. CP202307



SSL-B
STA. 1+00.00 TO 9+03.00



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



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

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ADDRESS: 5419 N. LOOP 1604 EAST
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78247
PHONE #: (210) 496-2668 FAX #: (210) 496-2668
SAWS BLOCK MAP #: 062586 TOTAL EDITS: 147 TOTAL ACREAGE: 30.90
TOTAL LINEAR FOOTAGE OF PIPE: 2,573.1 LF (8') PLAT NO.: CP202307
NUMBER OF LOTS: 147 SAWS JOB NO.: 23-1553

DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 9/8/2023
JOB NO.: 20220500
SHEET NO.

C5.03

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
SANITARY SEWER LINE B - STA. 1+00.00 TO 9+03.00
PLAN & PROFILE

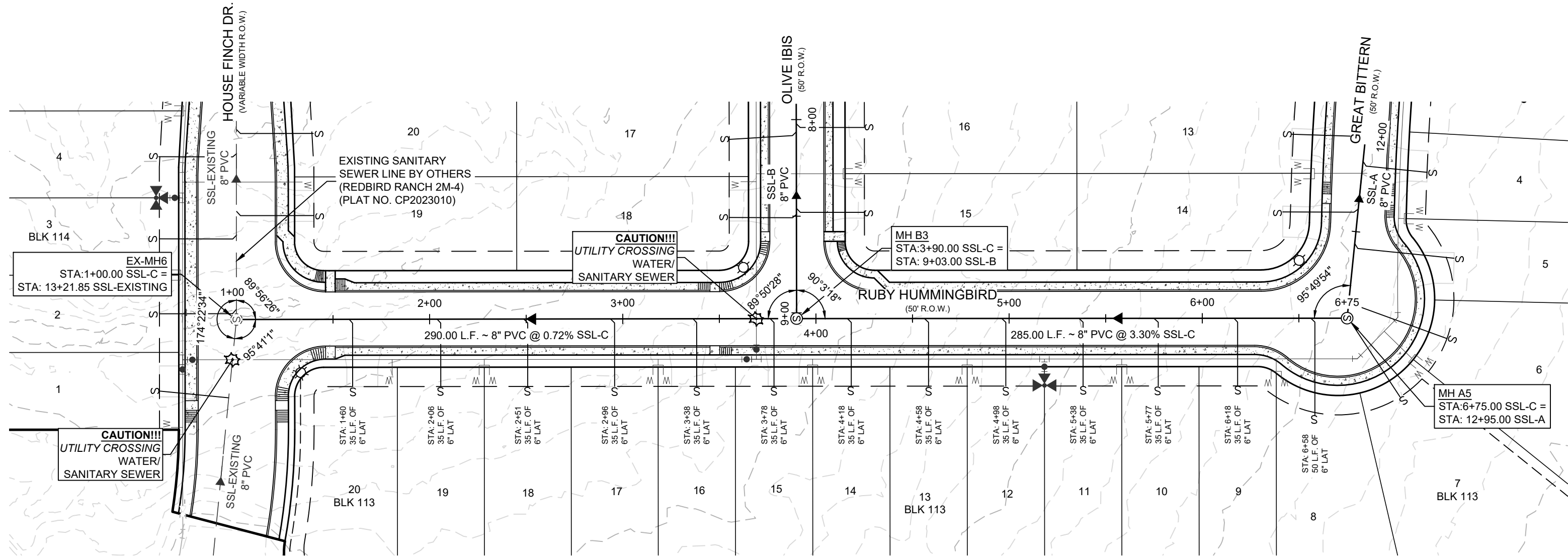
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9/8/2023
VANCE L. WEYLAND
LICENSED PROFESSIONAL ENGINEER
99269

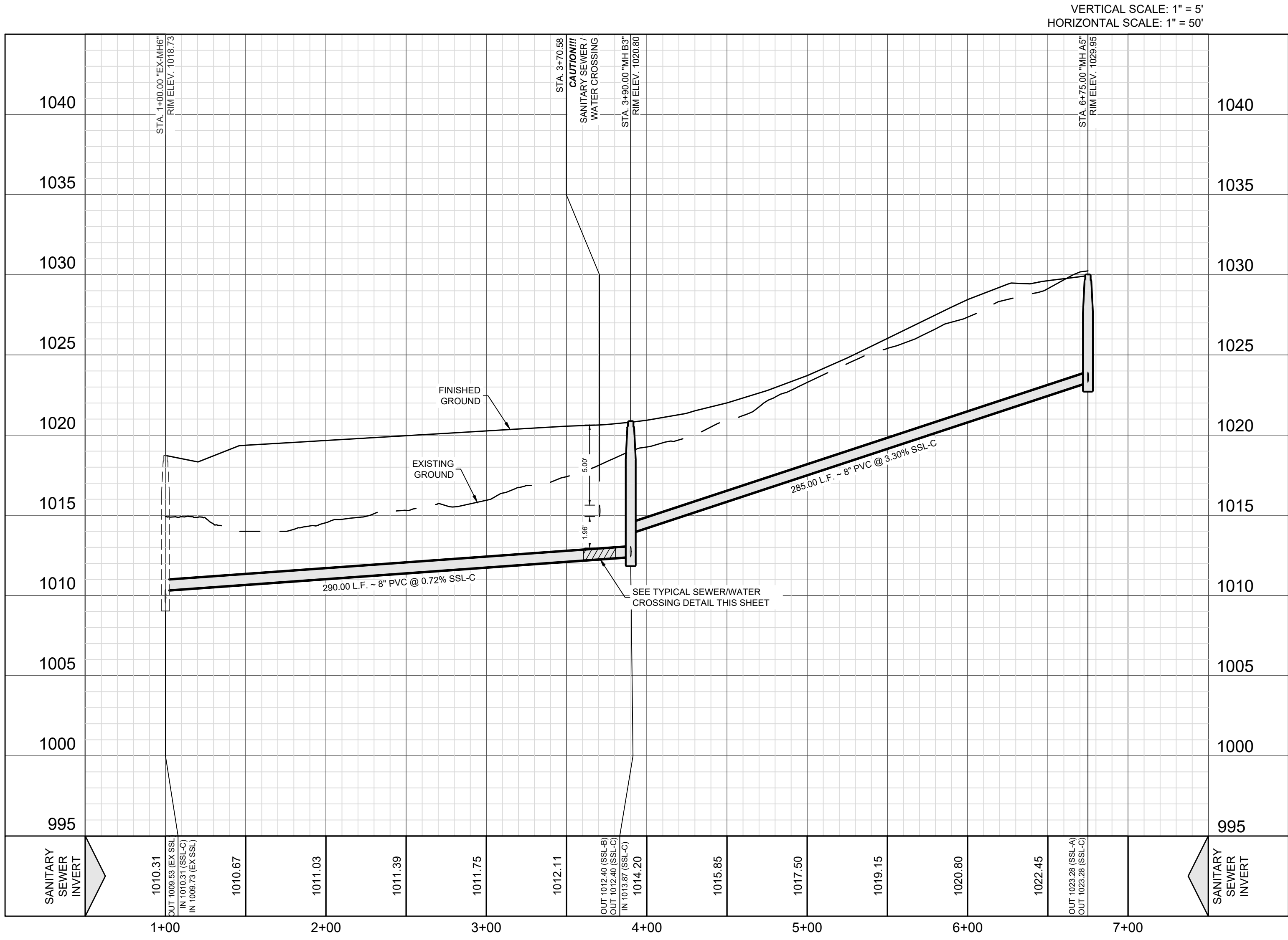
REV. DATE. DESCRIPTION

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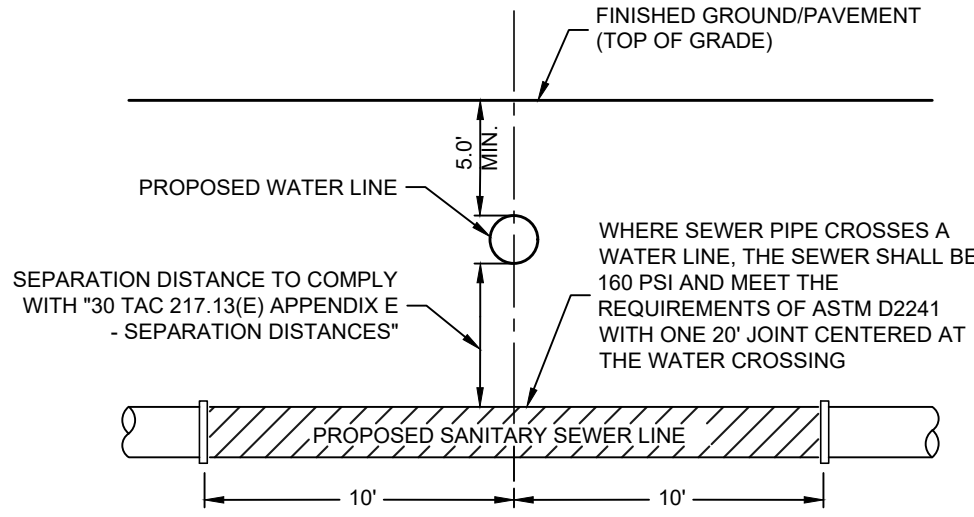
REDBIRD RANCH, UNIT 2M-1
PLAT NO. CP202307



SSL-C
STA. 1+00.00 TO 6+75.00



LEGEND (SANITARY SEWER)	
	PROJECT LIMITS
	PROPOSED WATER
	PROPOSED SEWER
	EXISTING WATER
	EXISTING SEWER
	PROPOSED MANHOLE
	EXISTING MANHOLE
	FIRE HYDRANT
	PROPOSED WYE & LATERAL
	SINGLE WATER SERVICE
	DUEL WATER SERVICE



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SEWER: SAWS MEDIO CREEK 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 #:	(210) 496-2668
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DRAWN BY: JFM/JWS
DATE: 9/8/2023
JOB NO.: 20220500
SHEET NO.

C5.04

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
SANITARY SEWER LINE C - STA. 1+00.00 TO 6+75.00
PLAN & PROFILE

DHI Engineering, LLC.
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SAN ANTONIO, TEXAS 78247
(210) 496-2668 | dhiengineering.com
TBP REG. NO. F-19561

Vance L. Weynand
Professional Engineer

REV

DATE

DESCRIPTION

9/8/2023

OF TEXAS

99269

PROFESSIONAL ENGINEER

Vance L. Weynand

PLAT NO. CP202307

REDBIRD RANCH, UNIT 2M-1

SAWS STANDARD GENERAL CONSTRUCTION NOTES
ASSOCIATED WITH 2021 SAWS STANDARD SPECS

Updated December 14, 2021

SAWS GENERAL CONSTRUCTION

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:
- A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.
- B. CURRENT TxDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
- C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
- D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR CONSTRUCTION."
- E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2. THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, https://apps.saws.org/business_center/specs/constspecs/ UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.
3. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 (DURING REGULAR SAWS WORKING HOURS) AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS TWO (2) WEEKS PRIOR TO EXCAVATION. OUTSIDE OF REGULAR SAWS WORKING HOURS THE SAWS EOC SHOULD BE CONTACTED AT 210-704-7297.
4. IF NECESSARY, CONTRACTOR WILL COORDINATE USE OF SAWS PREMISES AT NO ADDITIONAL COST TO SAWS. SUCH EFFORTS INCLUDE, BUT ARE NOT LIMITED TO, OBTAINING SECURITY IDENTIFICATION BADGES REQUIRED FOR ACCESS TO SAWS FACILITIES.
5. LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.
6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. AS-BUILTS FOR SAWS INFRASTRUCTURE CAN BE OBTAINED AT WEBSITE BELOW. CONTRACTOR SHALL COORDINATE PHYSICAL LOCATES FOR SAWS INFRASTRUCTURE THROUGH THE SAWS INSPECTOR. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS INFRASTRUCTURE. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
- SAN ANTONIO WATER SYSTEM:
REQUEST AS-BUILTS: <https://www.saws.org/service/locates-service/>
COSA DRAINAGE 210-206-8433
COSA TRAFFIC SIGNAL OPERATIONS 210-207-7720
TEXAS STATEWIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING, AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.
8. CONTRACTOR SHALL NOT MAKE USE OF DUMPSTERS OR WASTE BINS THAT ARE INTENDED TO SERVE RESIDENTS AND/OR BUSINESSES.
9. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.
10. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
11. ALL WORK WITHIN THE 100-YEAR FLOODPLAIN SHALL BE DONE IN ACCORDANCE WITH FLOODPLAIN DEVELOPMENT PERMIT.
12. ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.
13. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS.
- WEEKEND WORK: CONTRACTORS ARE REQUIRED TO SUBMIT REQUEST TO THE SAWS INSPECTION CONSTRUCTION DEPARTMENT BY 12:00PM ON THE WEDNESDAY PRIOR TO THE WEEKEND BEING REQUESTED. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG.
- ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION AT NO COST TO SAWS.
14. PRE-CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION. THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS (NSPI).
15. POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS.

16. CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.
17. CONTRACTOR SHALL COMPLY WITH APPLICABLE REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE OVERSEEN BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA INFORMATION AND RELATED MATERIALS MAY BE OBTAINED AT <https://www.osha.gov/> OR AT THE OSHA SAN ANTONIO OFFICE LOCATED AT FOUNTAINHEAD TOWER, SUITE 605 8200 W. INTERSTATE 10 SAN ANTONIO, TX 78230 WHICH IS ALSO REACHABLE BY PHONE AT (210) 472-6040.
18. TRENCH EXCAVATION SAFETY PROTECTION: CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREAS IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

SAWS SEWER

19. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:
- A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT 210-704-SAWS (210-704-7297). PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
- B. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
- C. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.
- D. CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
- E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.
- F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISIONING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.
- SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA.
- NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.
20. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED, IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION ITEM NO. 865, "BYPASS PUMPING SMALL DIAMETER SANITARY SEWER MAINS" AND STANDARD SPECIFICATION ITEM NO. 864, "BYPASS PUMPING LARGE DIAMETER SANITARY SEWER MAINS" AS APPLICABLE. PAYMENT FOR SUCH WORK WILL BE MADE UNDER THE APPROPRIATE BID ITEM ASSOCIATED WITH SANITARY SEWER BYPASS PUMPING IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS 865 AND 864.
21. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 AND/OR SAWS PRODUCTION GROUPS AT LEAST TWO WEEKS OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
22. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS (NSPI).
23. MANHOLE REMOVAL: WHERE EXISTING MANHOLES ARE TO BE REPLACED BY THE CONTRACTOR, THE EXISTING MANHOLES SHALL BE REMOVED. (NSPI)
24. SMART MANHOLE COVERS: THE CONTRACTOR SHALL NOTIFY SAWS EOC AT 210-704SAWS (210-233-7297) AND EITHER AMERICA ESPINOZA AT 210-233-2934 OR JOSE A. MARTINEZ AT 210-233-3071 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE SMART COVER. ANY DAMAGE DONE TO THE SMART COVER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.
25. FLOW METERS IN MANHOLES: THE CONTRACTOR SHALL NOTIFY BOBBY JOHNSON AT 210233-3493 OR ABEL BORUNDA AT 210-233-3704 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE FLOW METER IN THE MANHOLE. ANY DAMAGE DONE TO THE FLOW METER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.

PROJECT SEWER NOTES

1. ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND SHALL BE EXTENDED TO 10' PAST THE PROPERTY LINE AND CAPPED AND SEALED. CONTRACTOR SHALL INSTALL A 2" X 4" STAKE, FOUR FEET LONG AND 2 FEET DEEP INTO THE GROUND AT THE END OF EACH SERVICES. NO SEPARATE PAY ITEM.
2. CONTRACTOR TO INSTALL CLEANOUTS AT THE END OF ALL SEWER LATERALS, PER LATERAL DETAIL SHEET C5.10.
3. NO VERTICAL STACKS ALLOWED FOR ANY LOTS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
4. ALL 6" SEWER LATERALS WILL BE SET AT 2% GRADE FROM THE MAIN TO THE PROPERTY LINE.
5. WHEN HORIZONTAL DISTANCE BETWEEN SEWER PIPES AND WATER MAIN IS LESS THAN 9 FOOT SEPARATION, SEWER MAIN SHALL BE INSTALLED WITH 150 PSI (MIN) PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH SAWS CONSTRUCTION CRITERIA FOR CONSTRUCTION OF SEWER MAINS IN THE VICINITY OF WATER MAINS.
6. CONTRACTOR SHALL ENSURE THAT MANHOLES OUTSIDE OF PAVED AREAS ARE SET WITH TOP ELEVATION 6" ABOVE FINISHED GRADE WITH CONCRETE RING ENCASEMENT.
7. ALL SEWER PIPES SHALL BE 8" PVC(SDR 26), UNLESS OTHERWISE NOTED.
8. CONTRACTOR IS TO VERIFY EXISTING INVERT OF EXISTING SANITARY SEWER MAINS AND ALERT ENGINEER IMMEDIATELY OF ANY DIFFERENCE FROM INVERT SHOWN ON PLANS.
9. CONTRACTOR SHALL PROTECT ALL EXISTING FENCES, ANY FENCE DAMAGE BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
10. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
11. CONCRETE RING ENCASEMENT TO BE INSTALLED ON ALL MANHOLES AND, WITHIN LIMITS OF PLACEMENT, BE INSTALLED TO THE TOP OF THE BASE LAYER WITH A MINIMUM OF 2" OF ASPHALT ON TOP OF THE RING ENCASEMENT.
12. MANHOLE OPENING INCREASED TO 630" AS PER TAC CHAPTER 217.55.
13. ALL SEWER PIPE LATERALS SHALL BE SDR 26 (CLASS 160) PVC PIPE.
14. IF THE GIVEN TOP OF MANHOLE ELEVATION DOES NOT AGREE ON ACTUAL GROUND SURFACE OR FINISHED PAVEMENT, THE CONTRACTOR SHALL ADJUST ELEVATIONS SUCH THAT THE TOP OF THE MANHOLE SHALL BE 0.5' ABOVE EXISTING GROUND, OR FLUSH TO FINISH ASPHALT PAVEMENT.
15. ALL MANHOLES CONSTRUCTED OVER THE EDWARDS AQUIFER RECHARGE ZONE SHOULD BE WATERTIGHT.

SEWER: SAWS MEDIO CREEK 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 # (210) 496-2668
SAWS BLOCK MAP # 062586 TOTAL EDU'S: 147 TOTAL ACREAGE: 30.90
TOTAL LINEAR FOOTAGE OF PIPE: 2,573 L.F. (87) PLAT NO.: CP202307
NUMBER OF LOTS: 147 SAWS JOB NO: 23-1553

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX
SANITARY SEWER NOTES

DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 9/8/2023
JOB NO.: 20220500
SHEET NO.

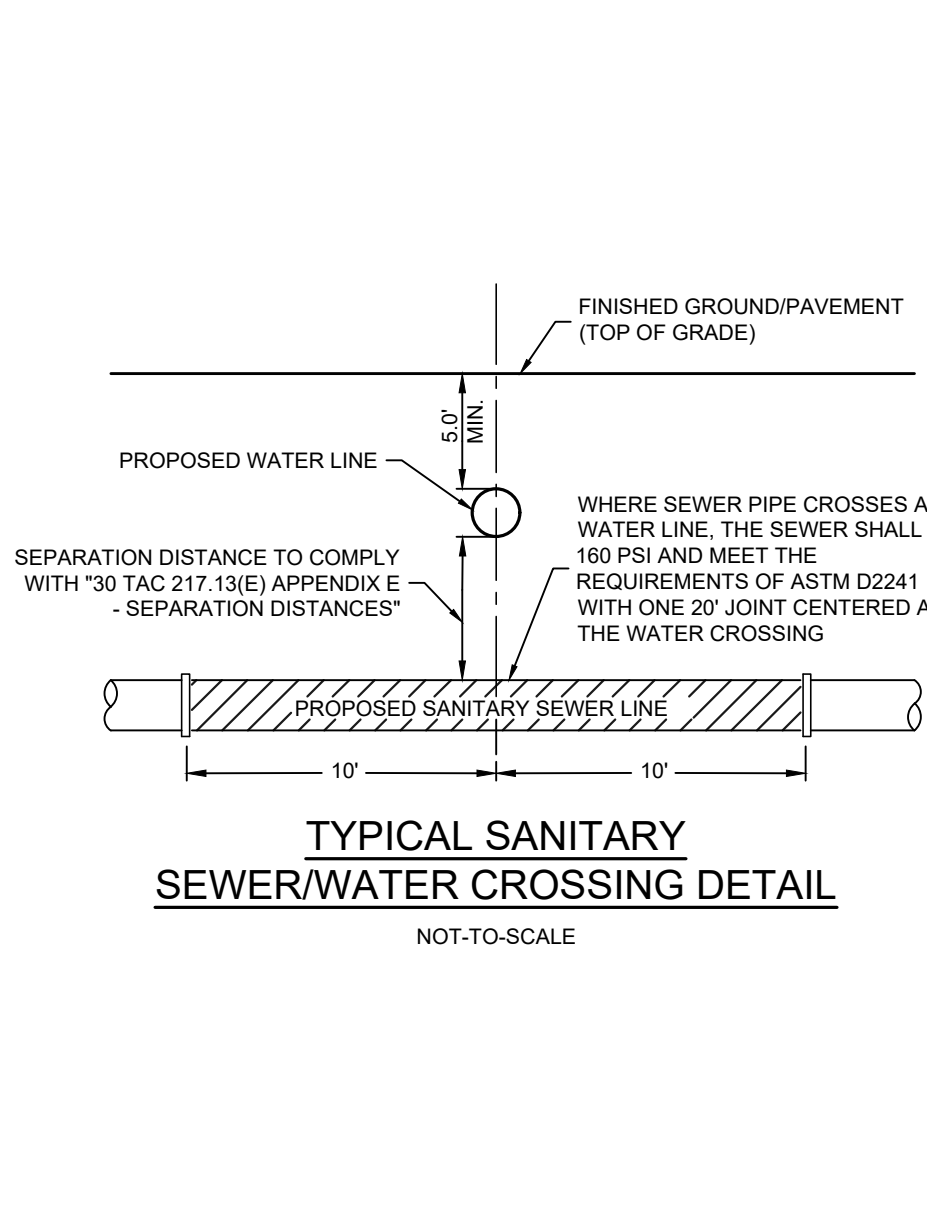
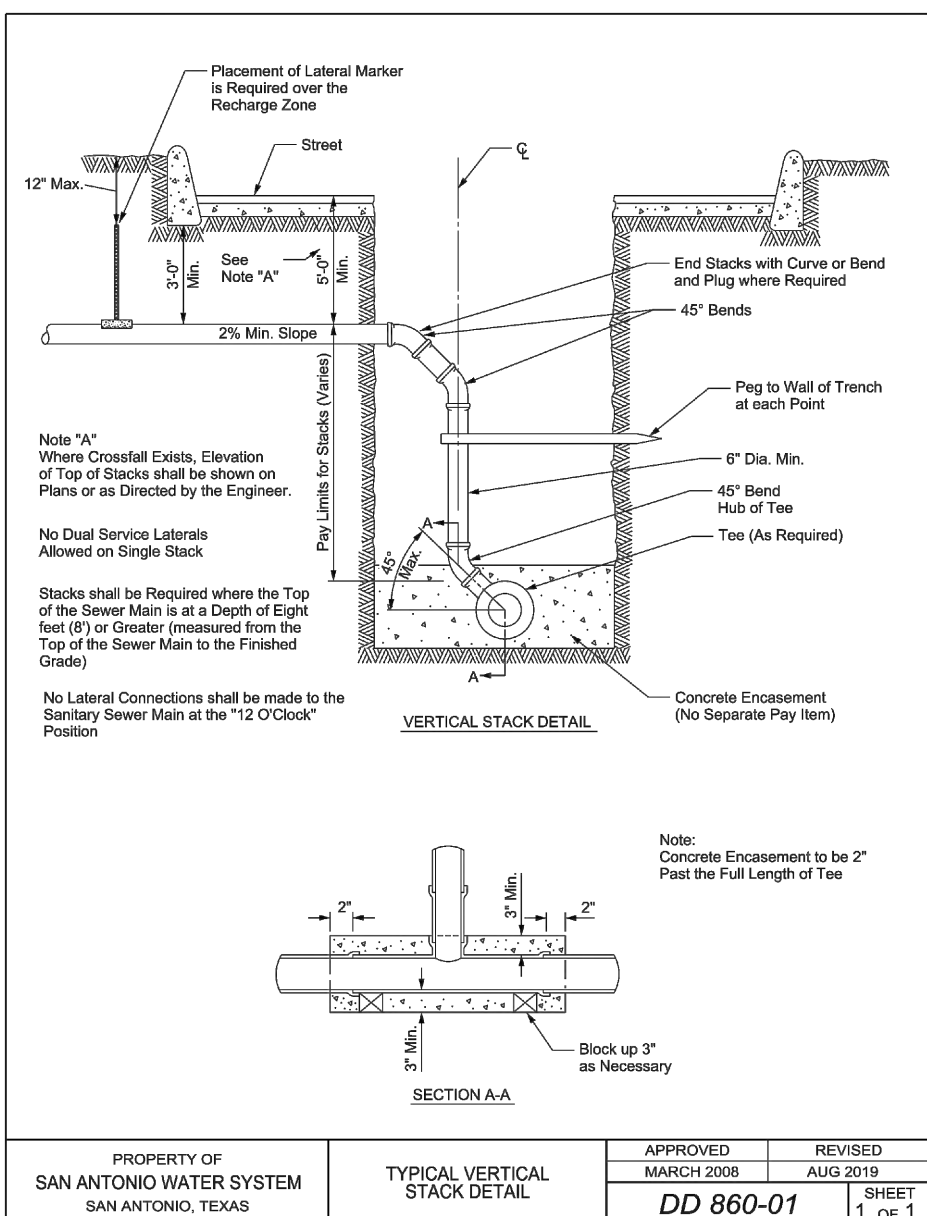
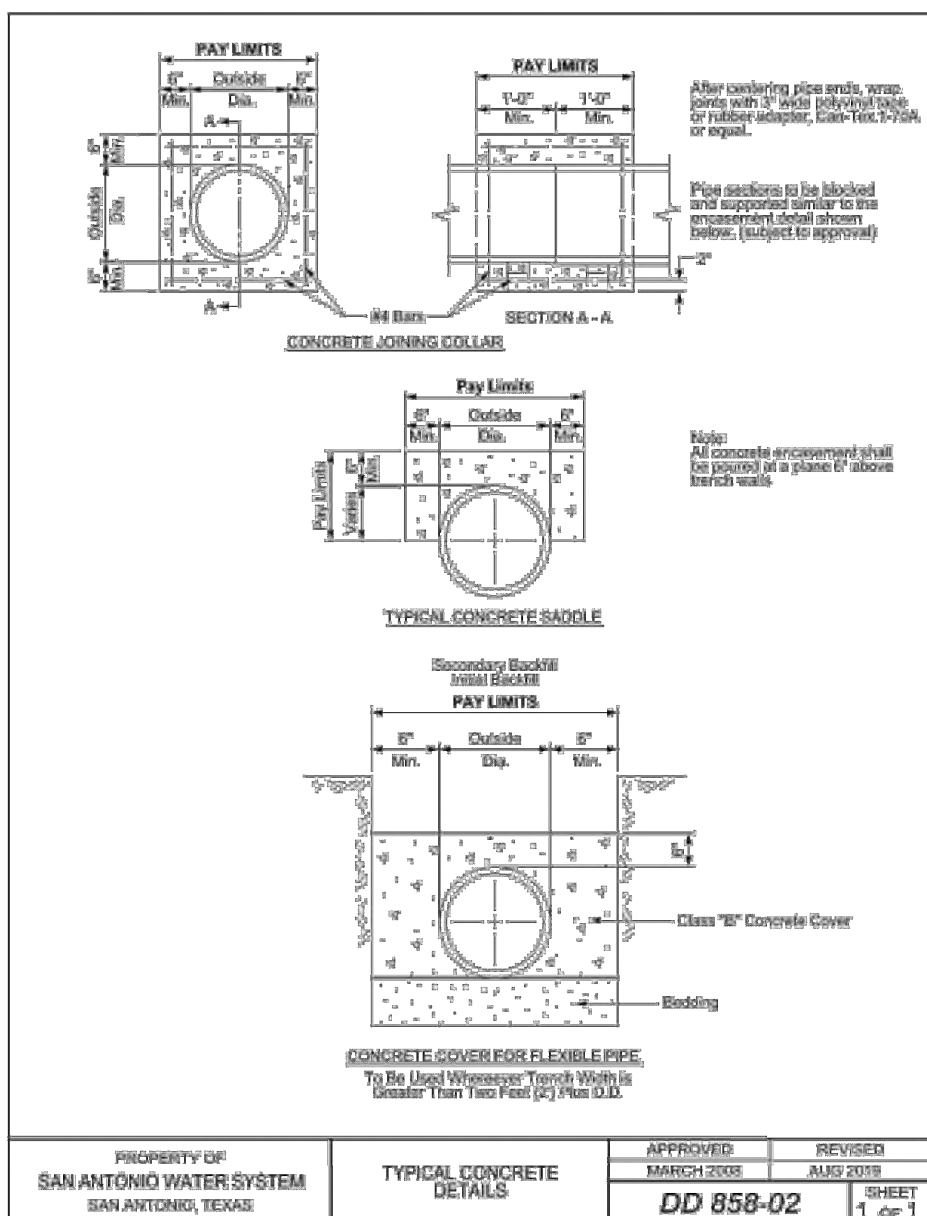
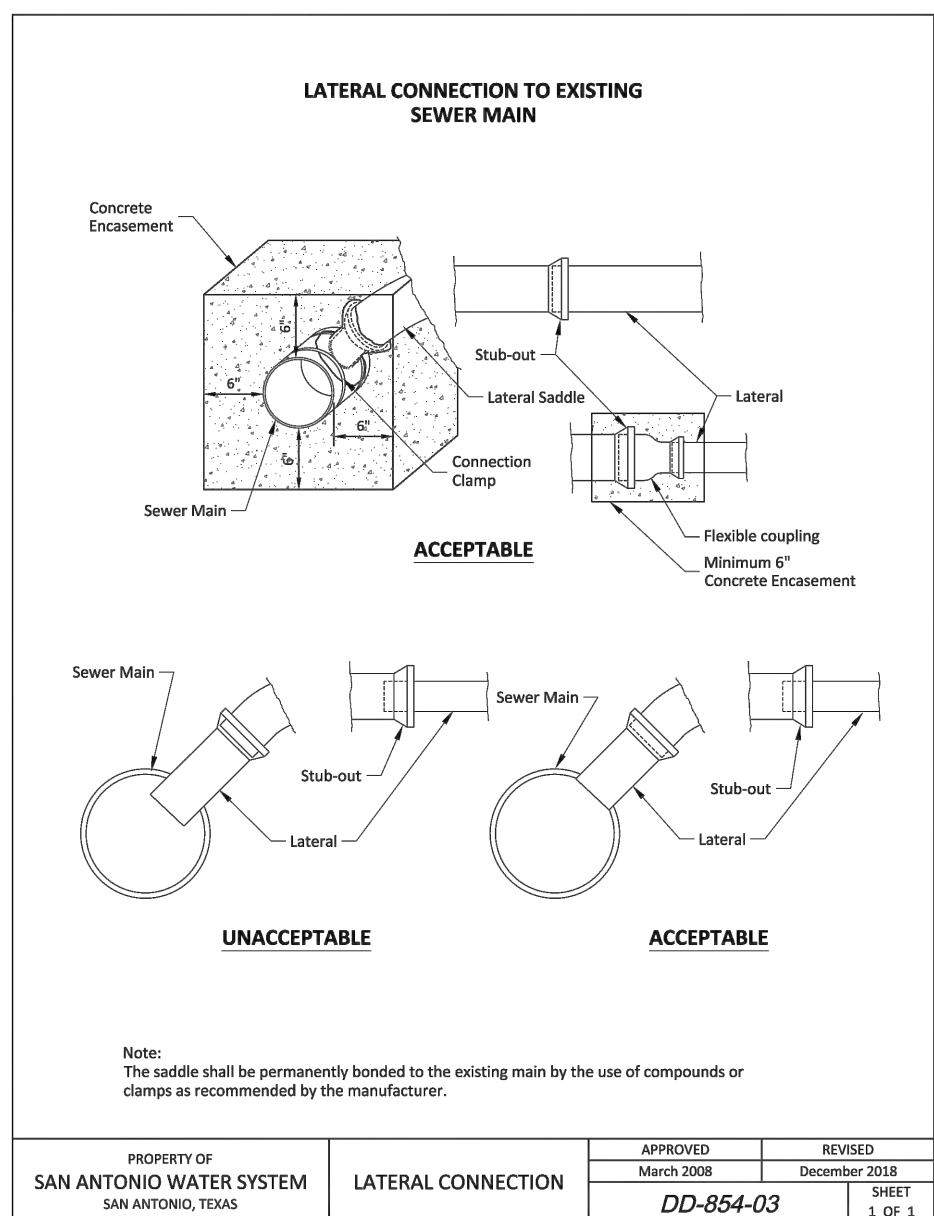
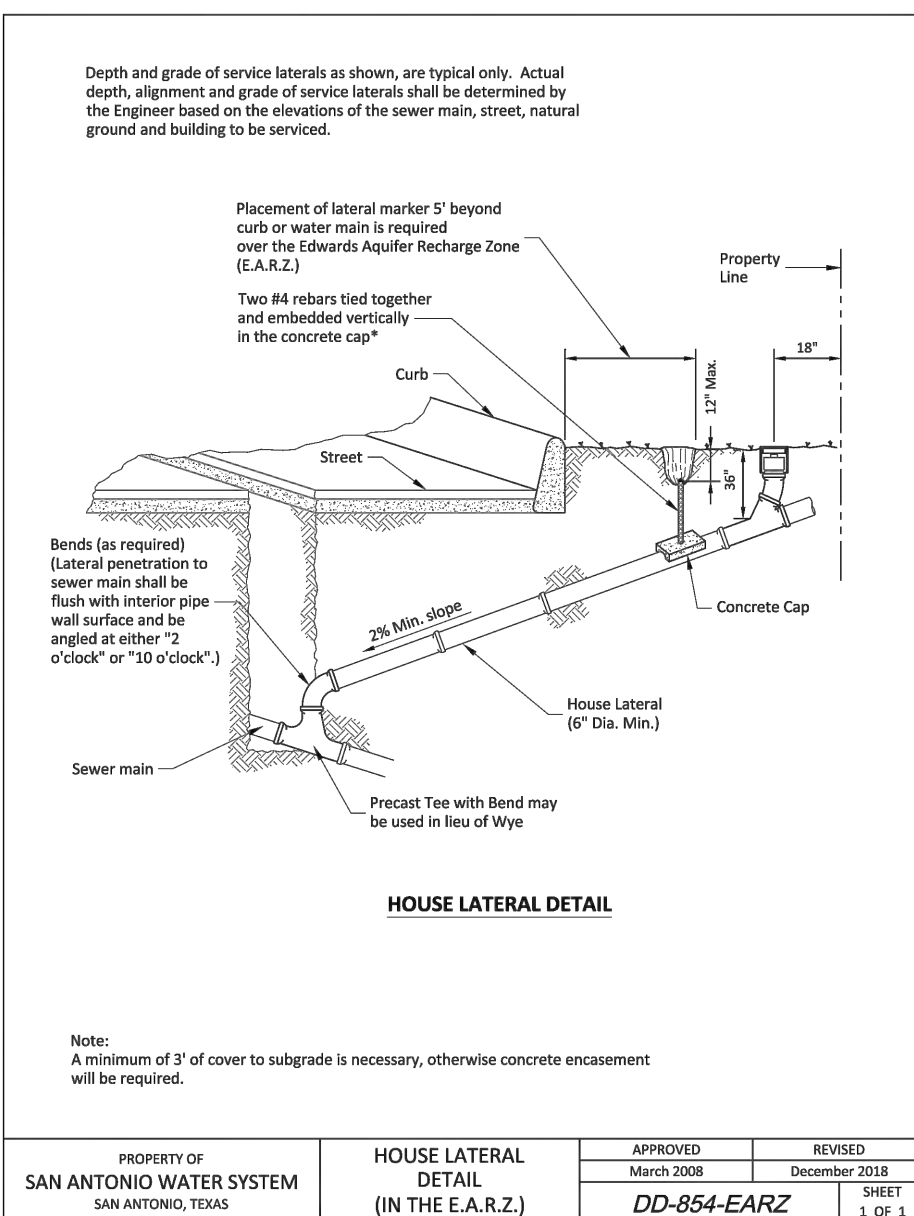
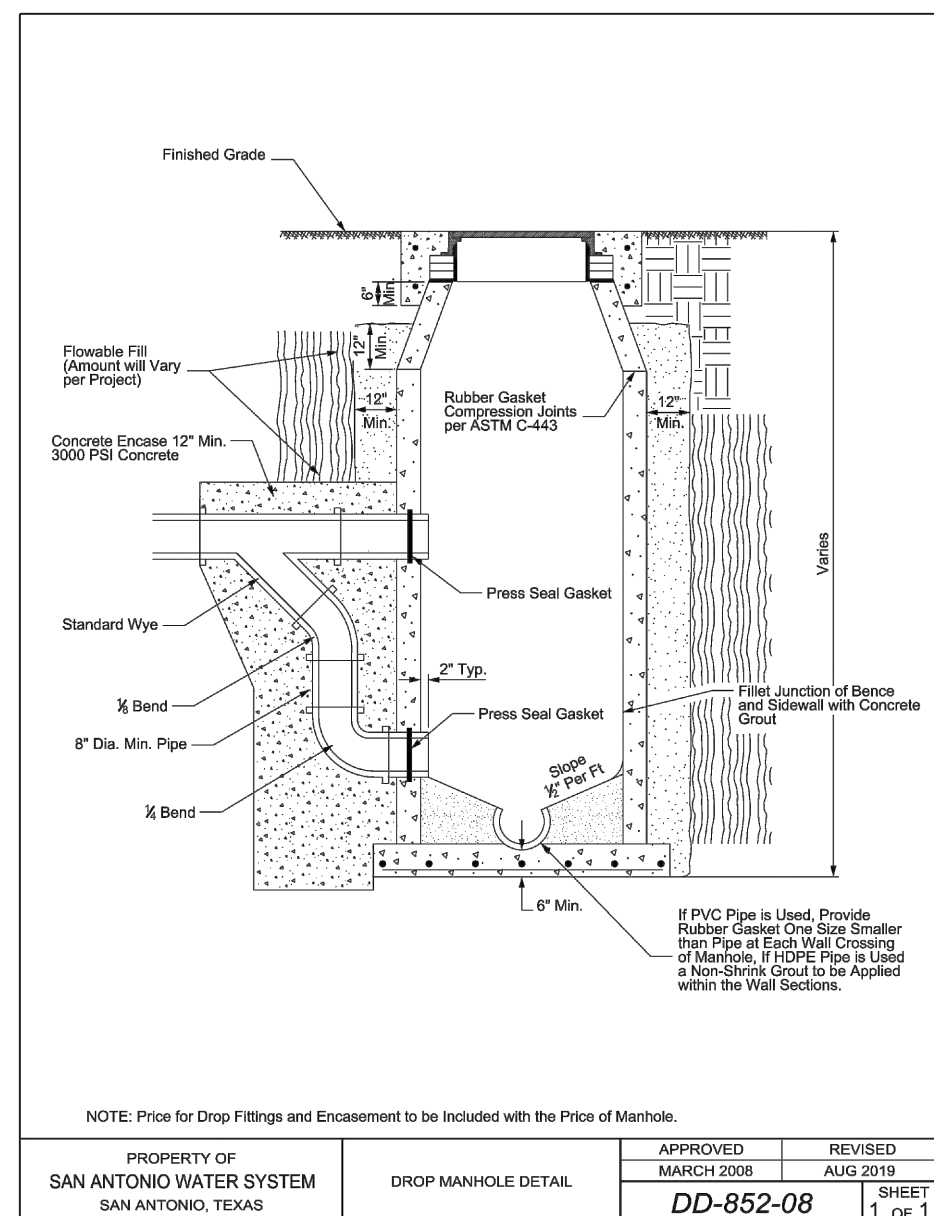
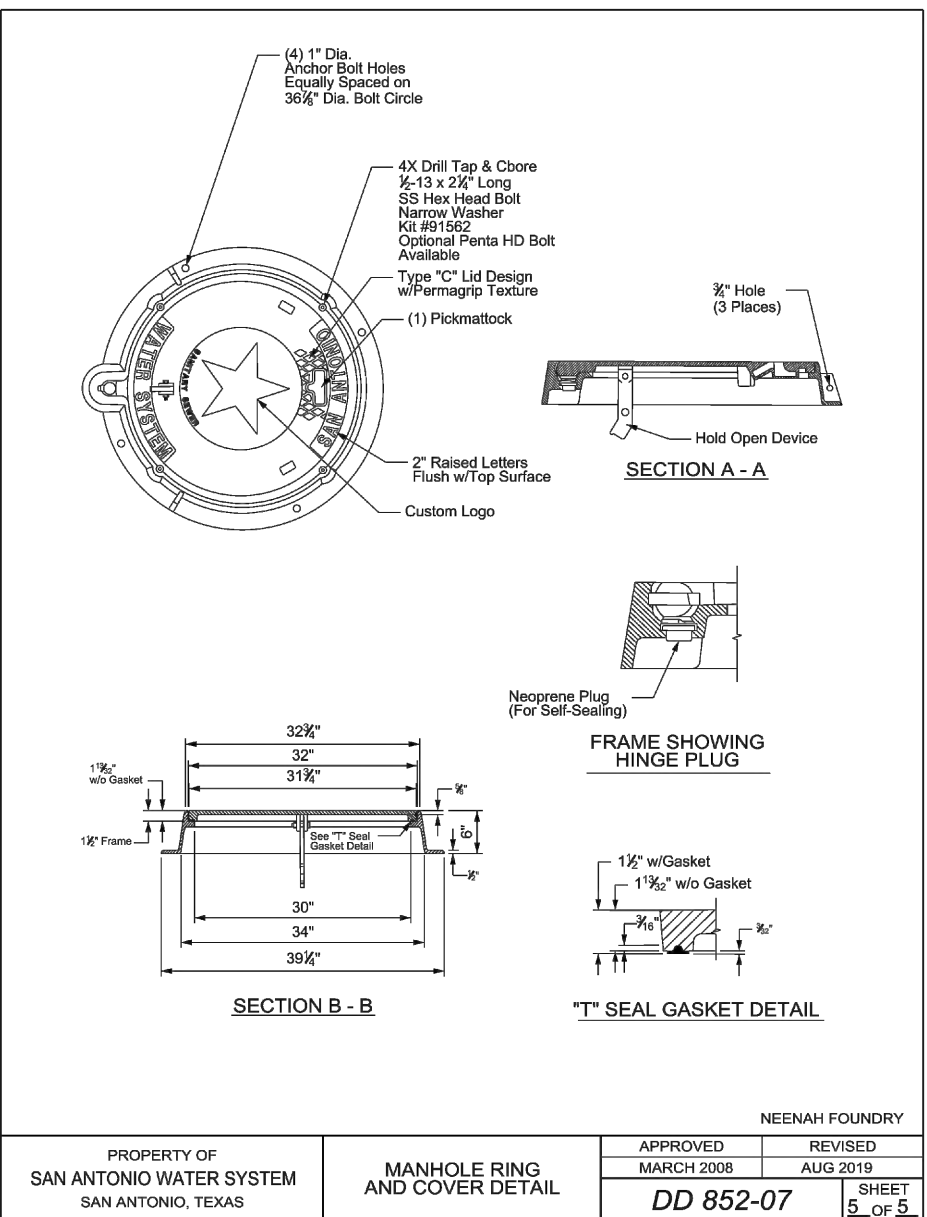
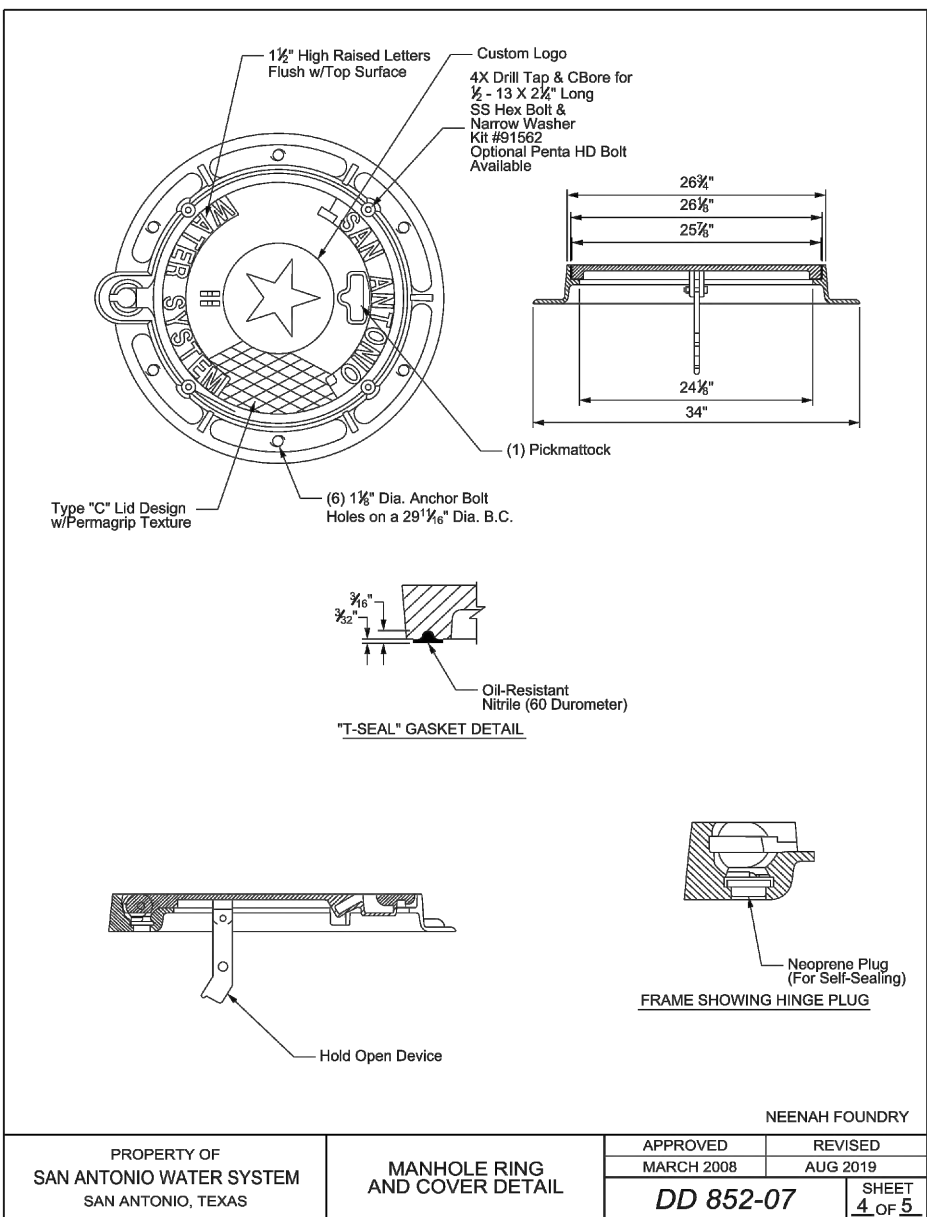
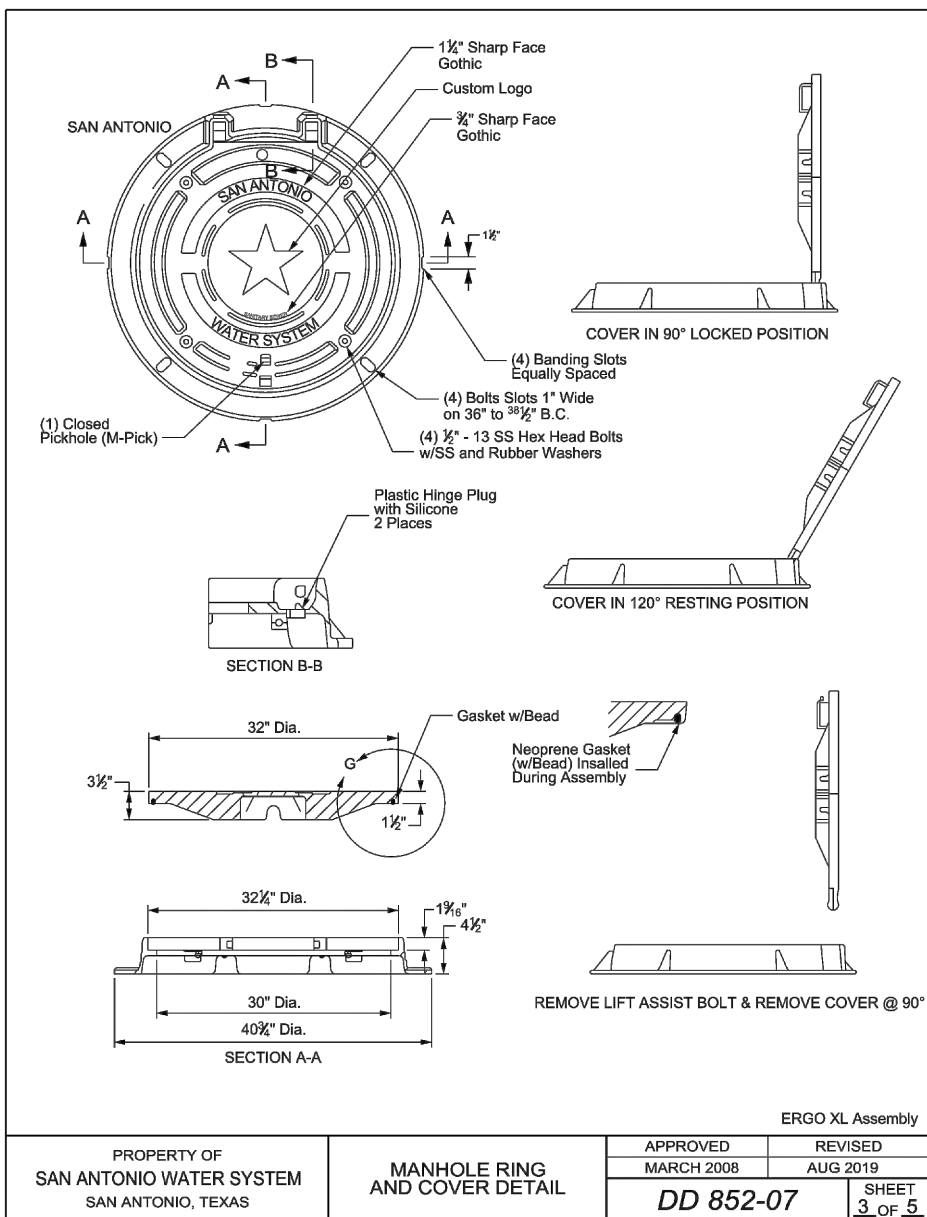
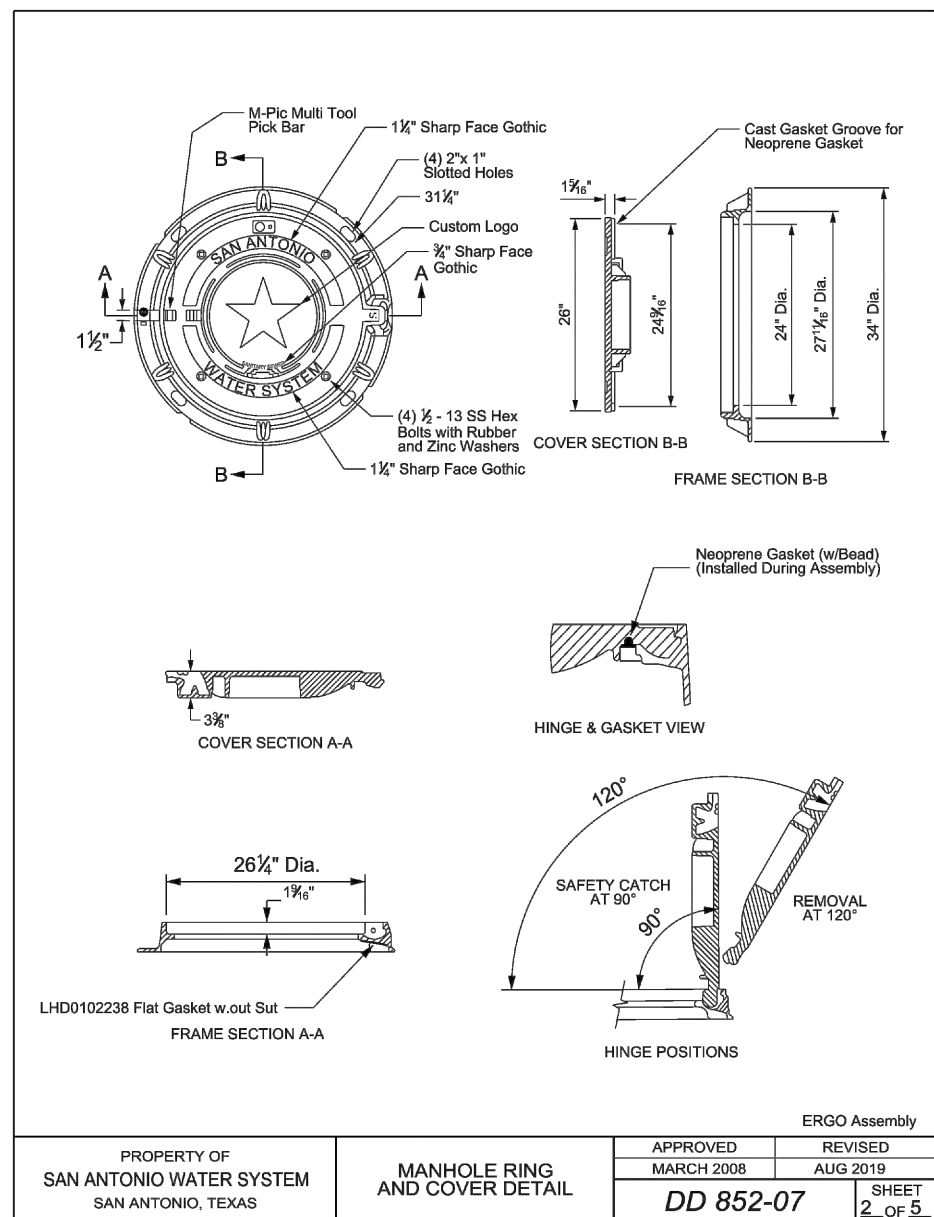
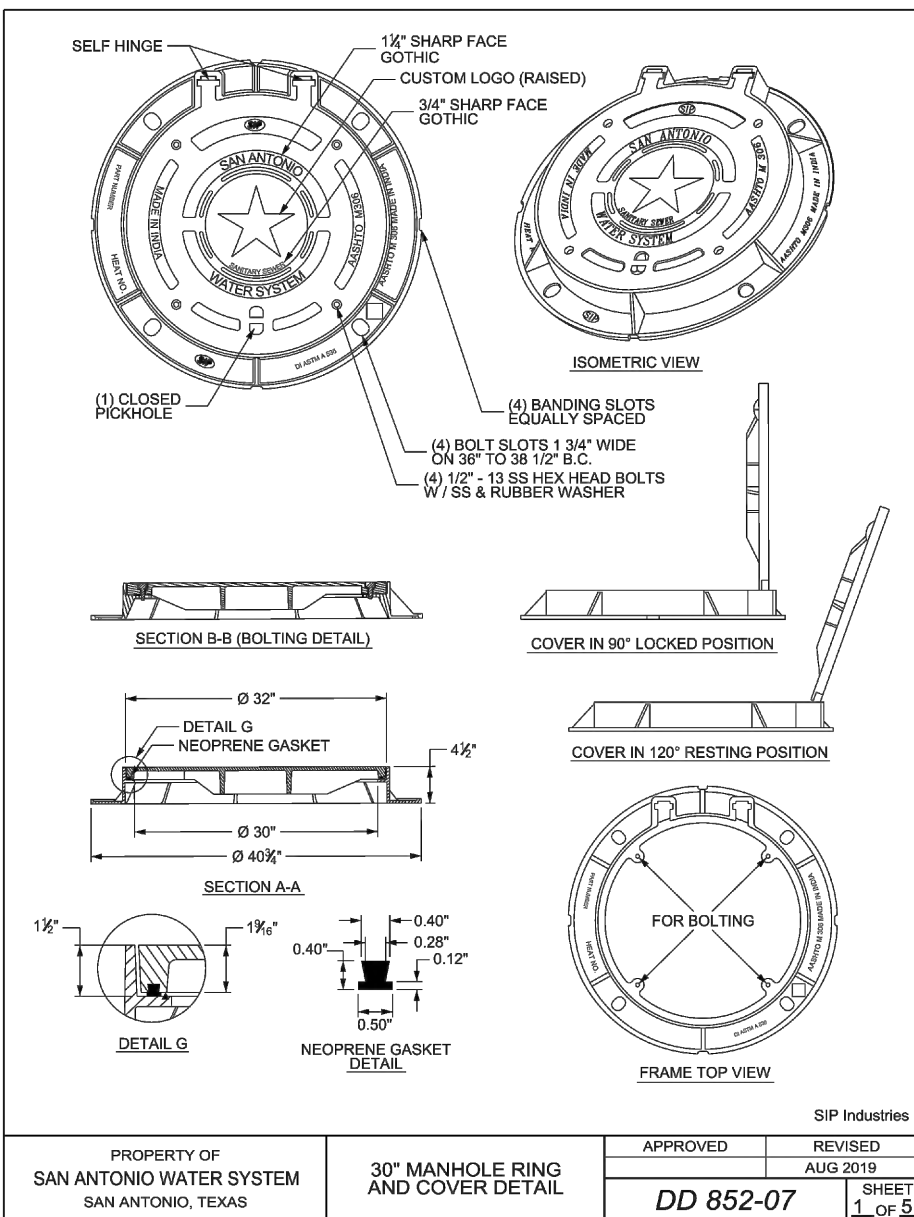
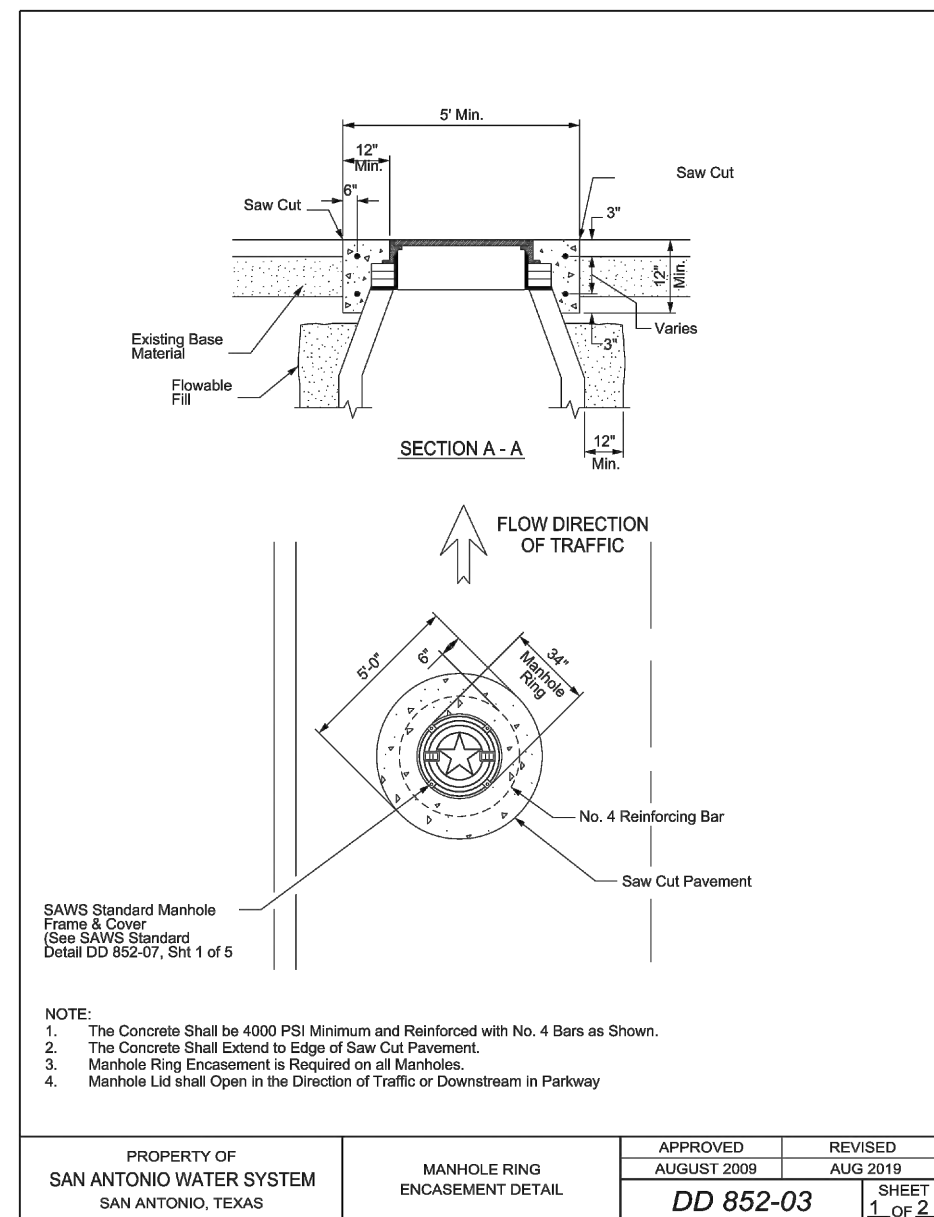
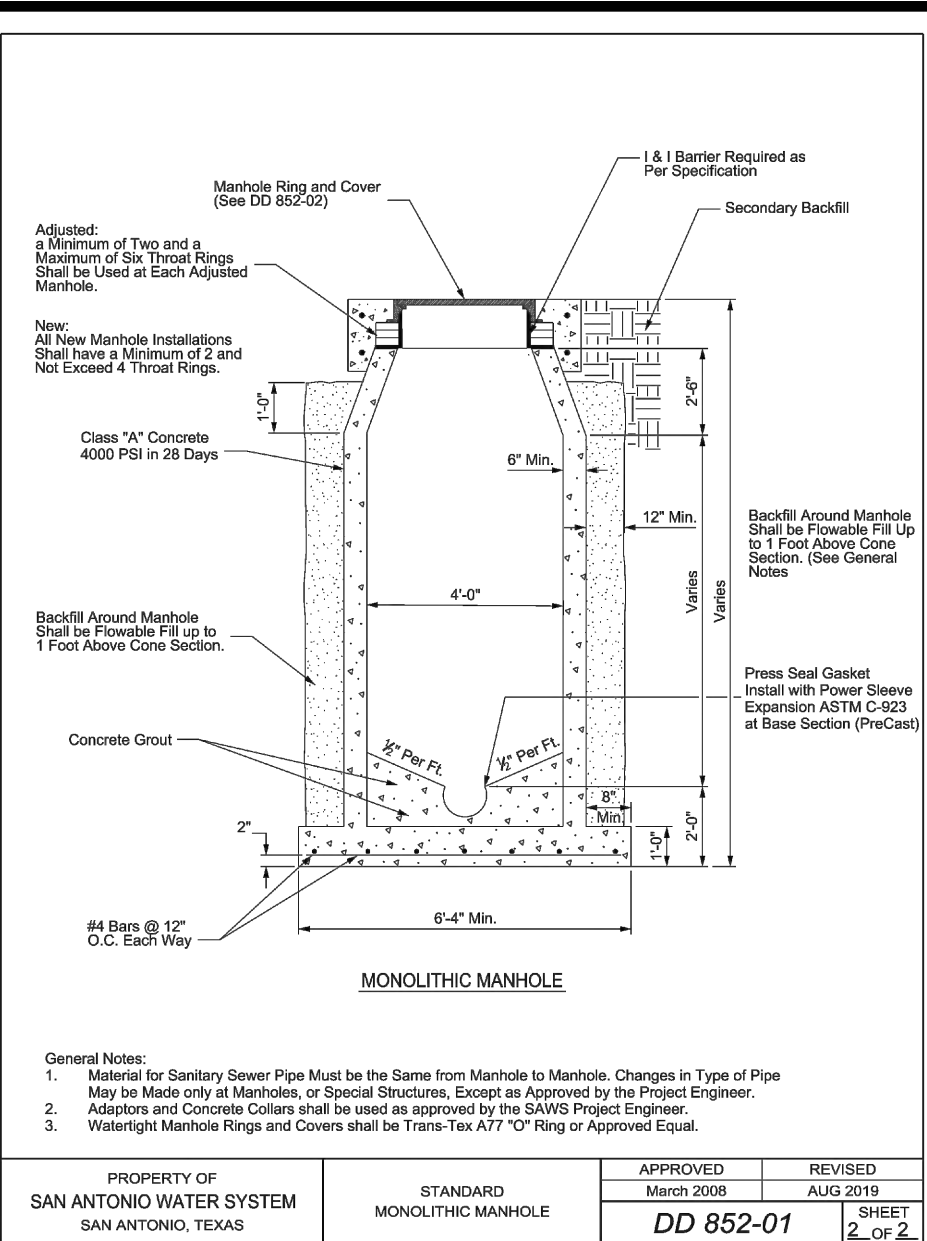
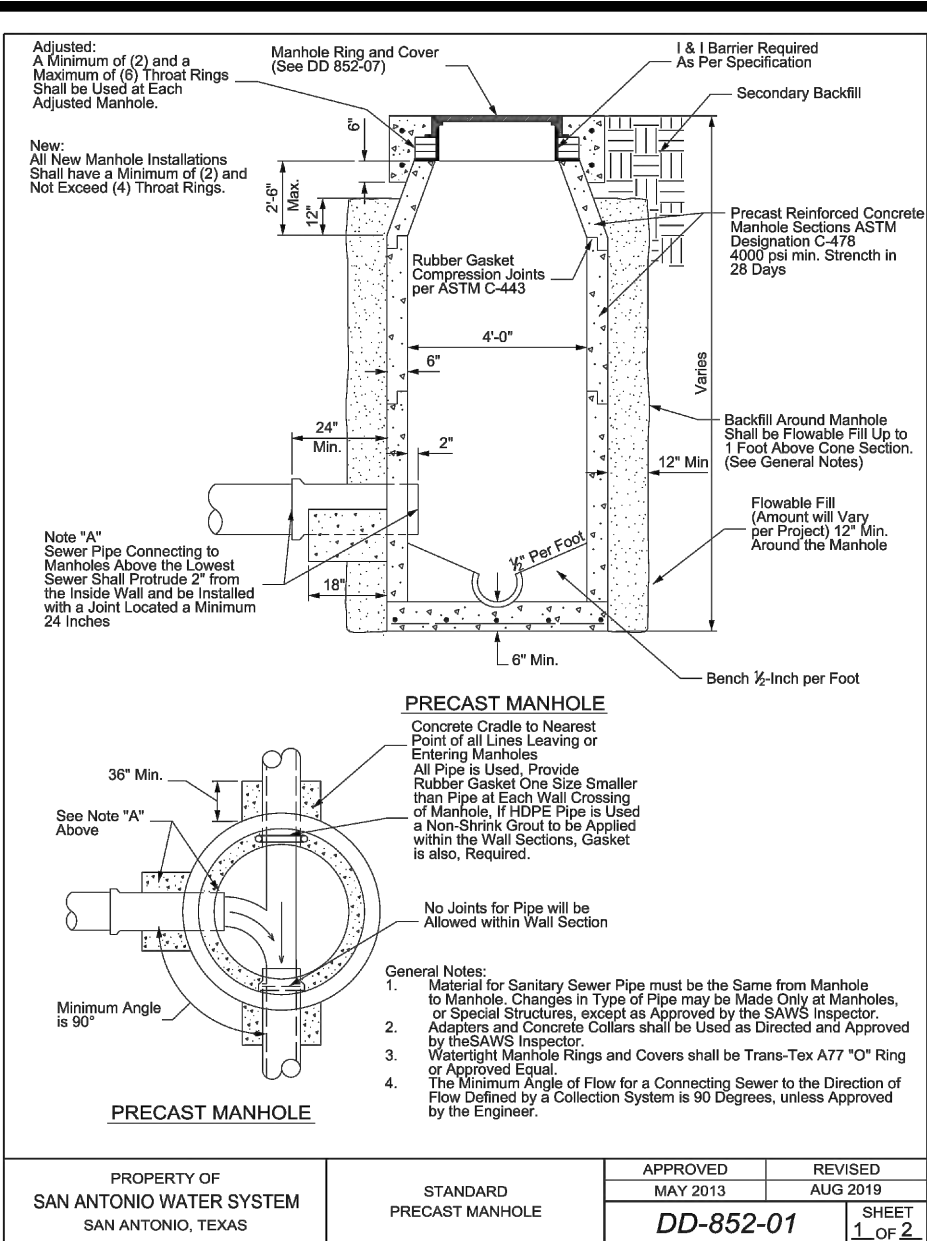
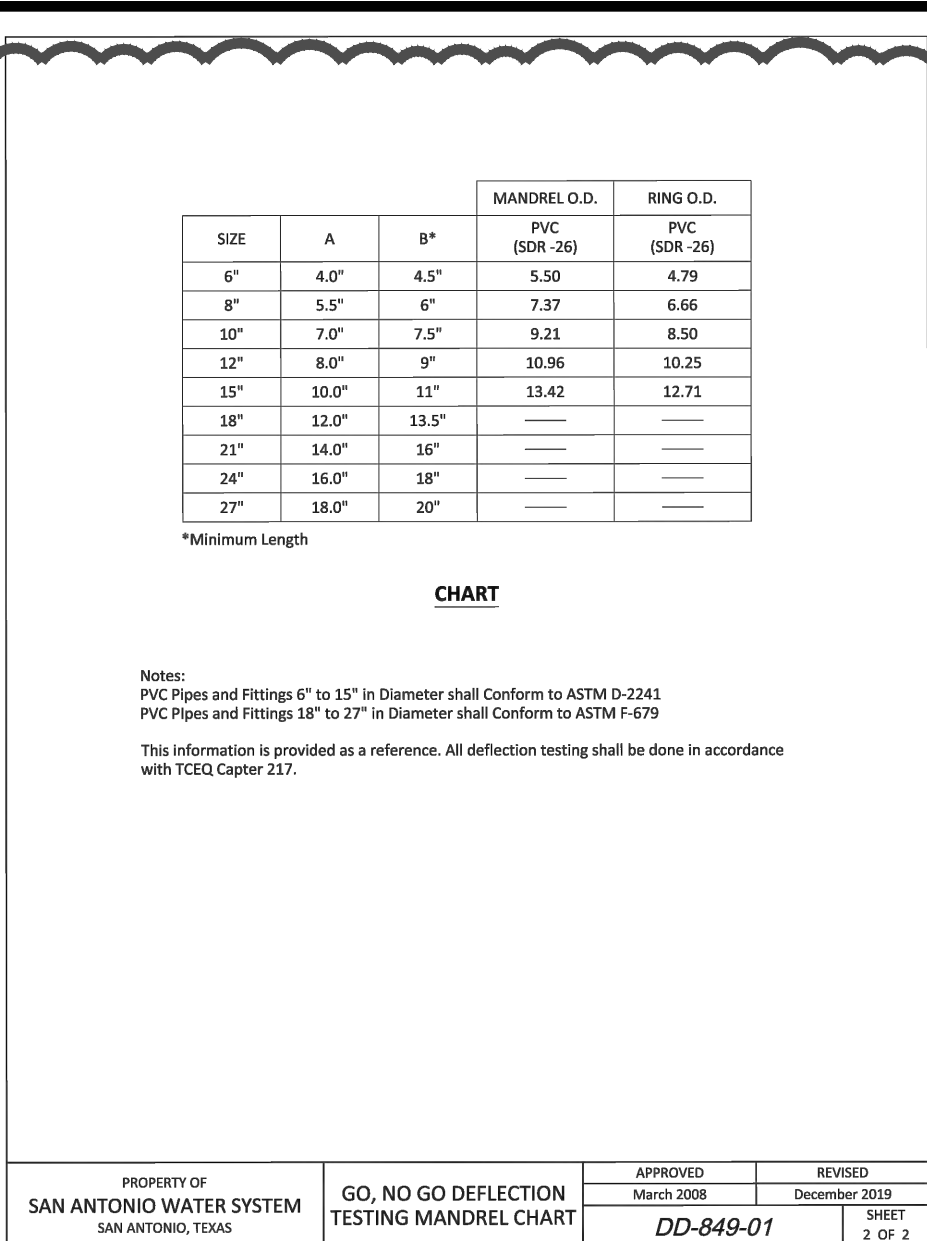
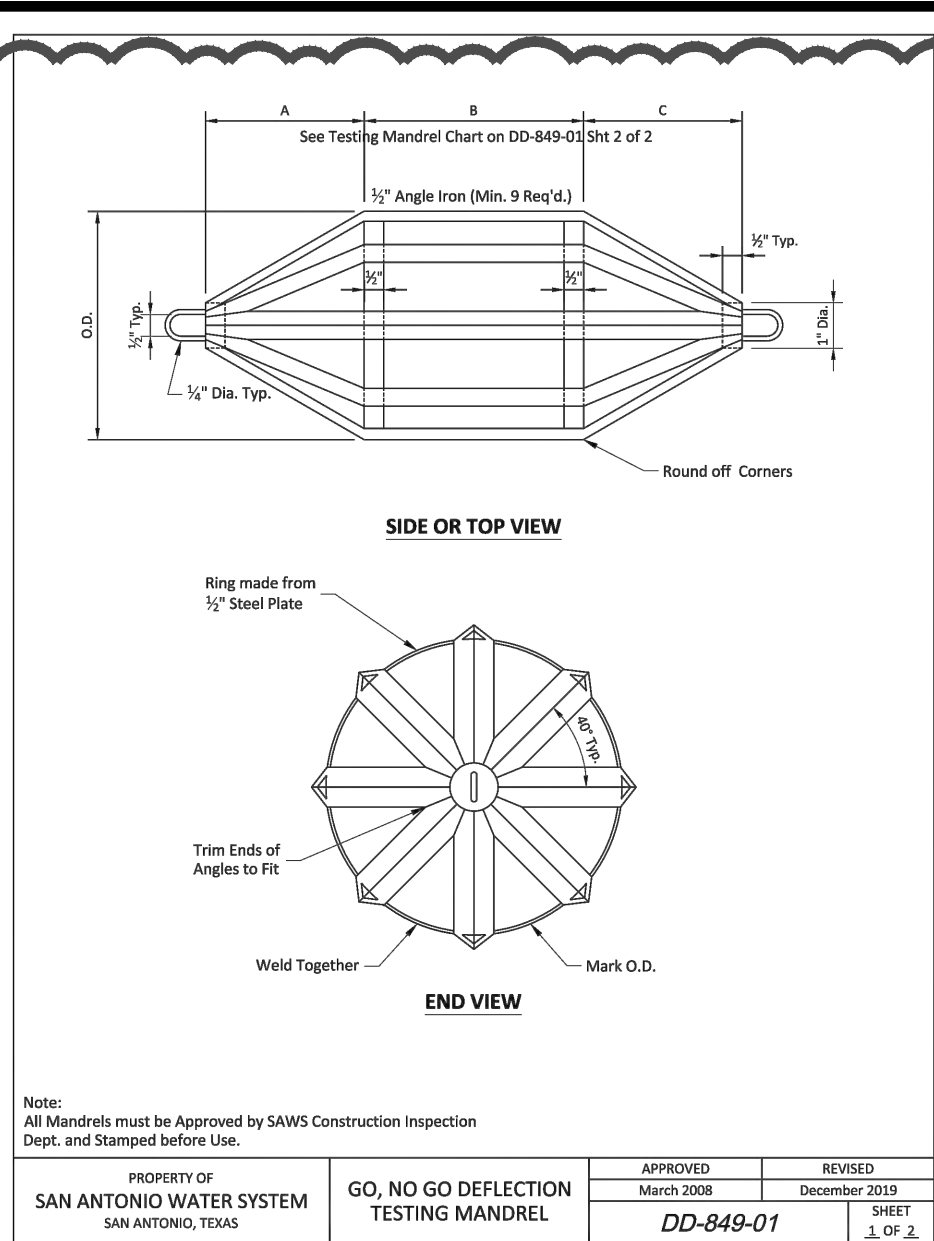
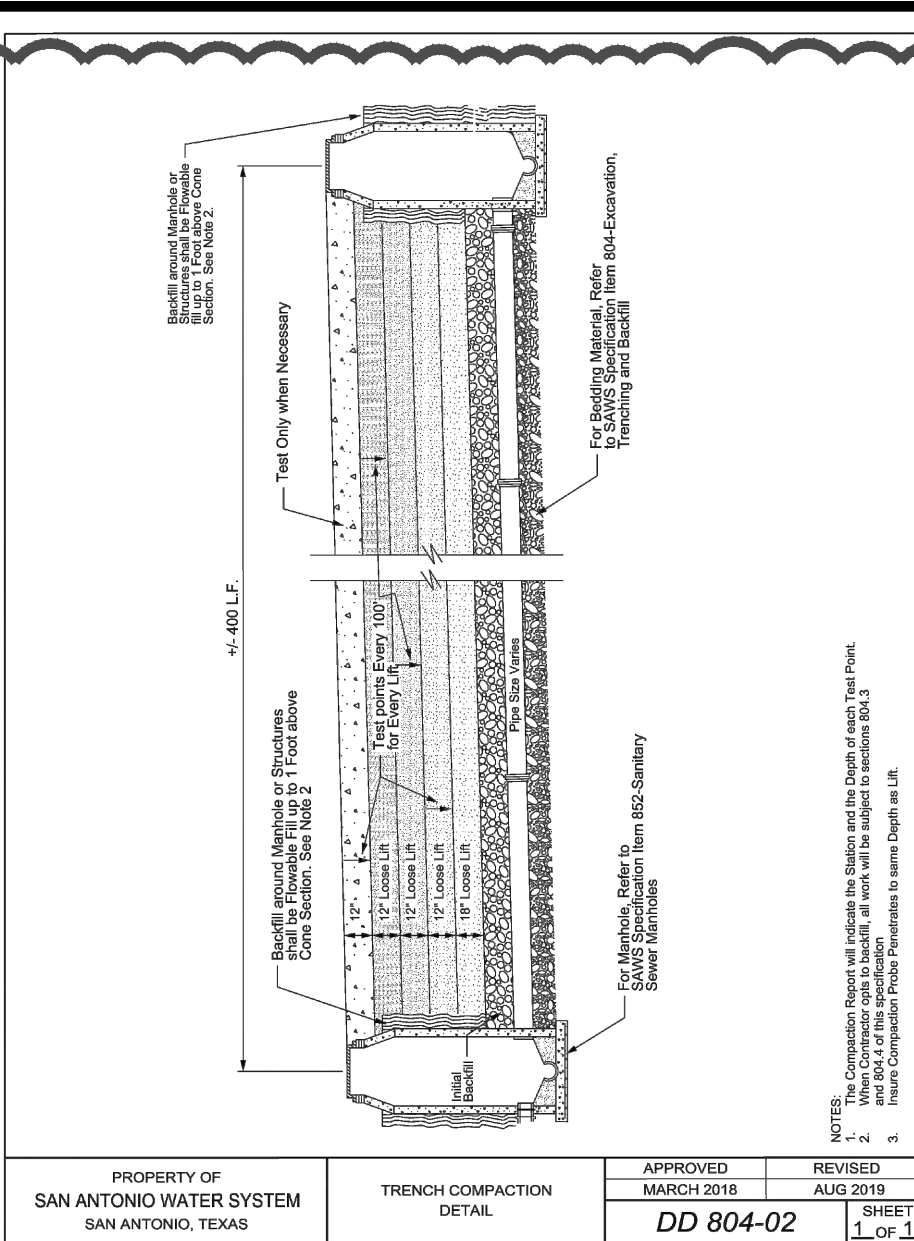
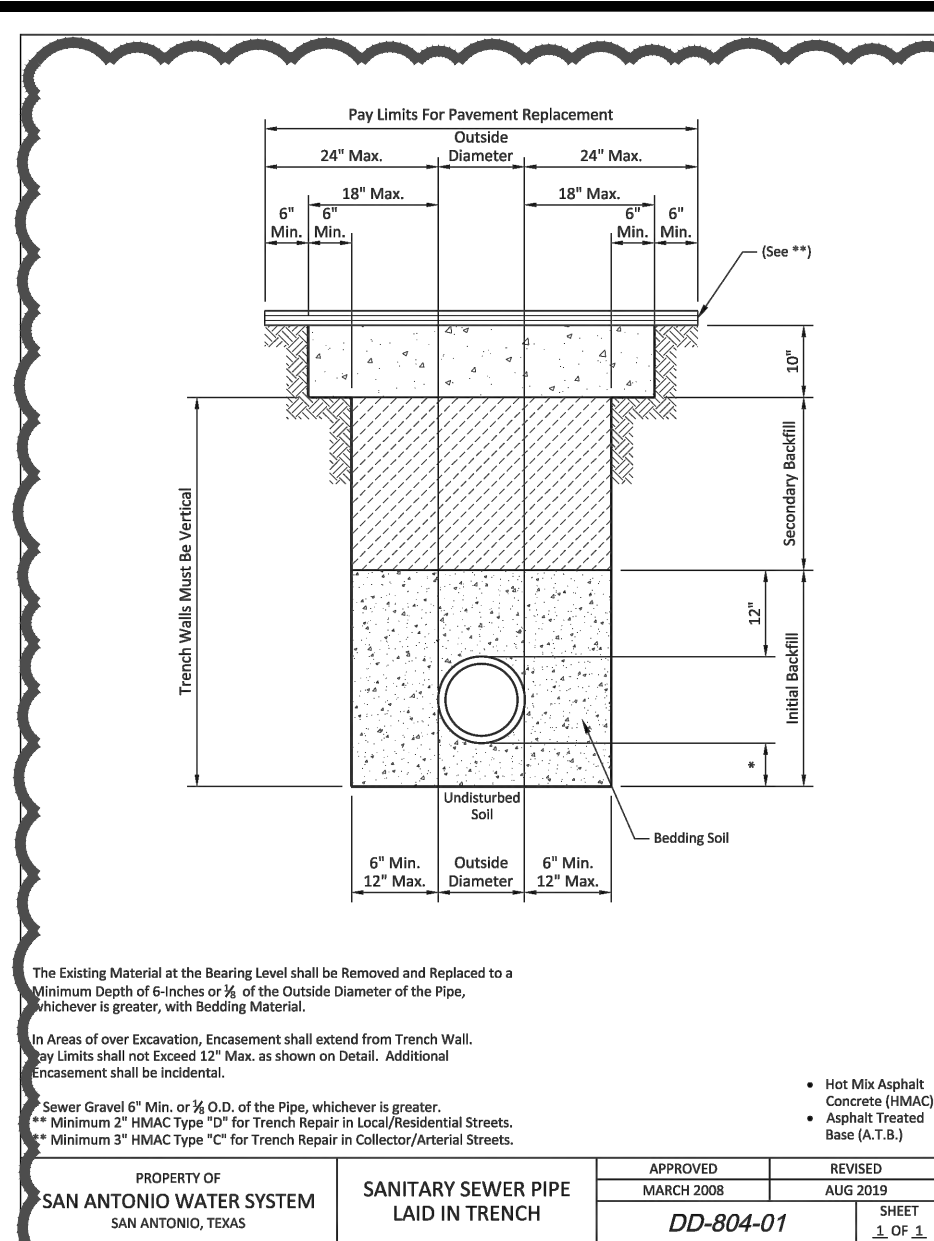
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REV	DATE	DESCRIPTION



DHI Engineering, LLC.
4419 N. LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78247
(210) 496-2668 | ldhiengineering.com
TXBPE REG. NO. F-19561

DHI



SEWER: SAWS MEDIO CREEK 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) 426-2668 FAX # (210) 426-2668

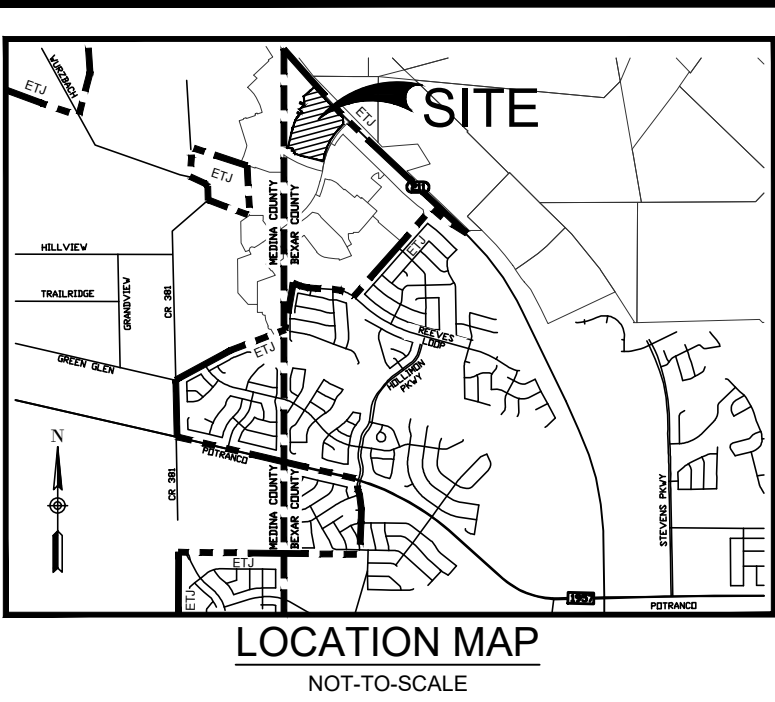
SAWS BLOCK MAP # 062588 TOTAL EDUS: 147 TOTAL ACREAGE: 30.90

TOTAL LINEAR FOOTAGE OF PIPE: 2,573 L.F. (87) PLAT NO.: CP202307

NUMBER OF LOTS: 147 SAWS JOB NO.: 23-1533

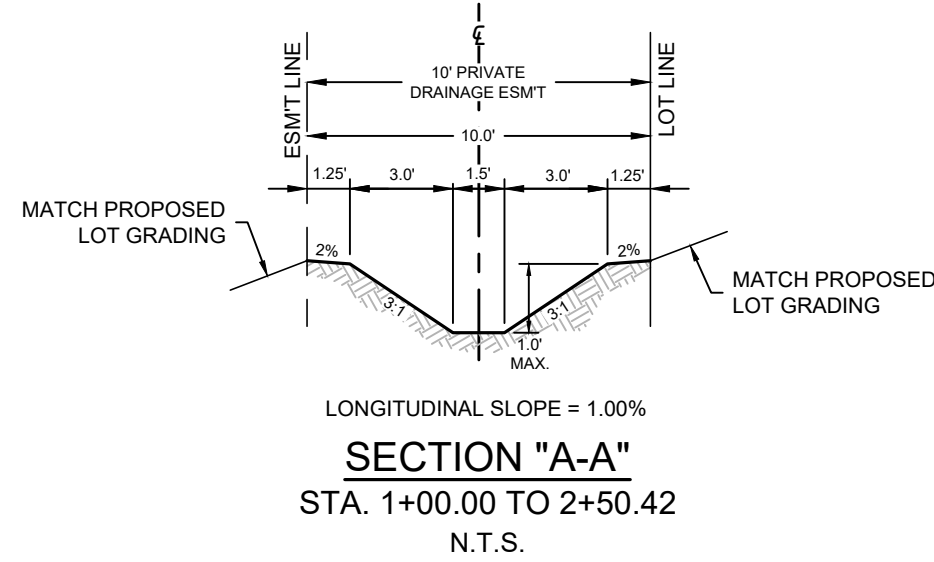


DHI ENGINEERING, LLC
THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON THE HARD COPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

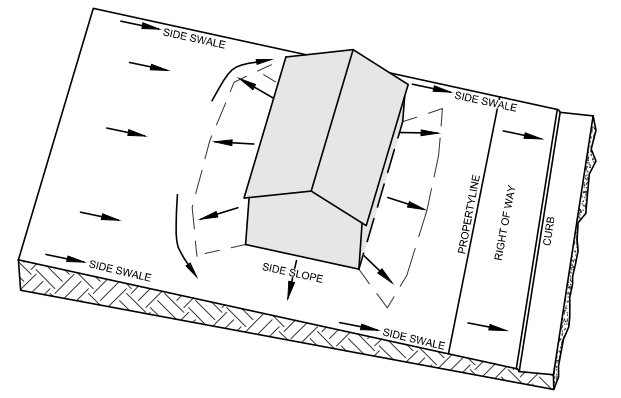


GENERAL GRADING NOTES:

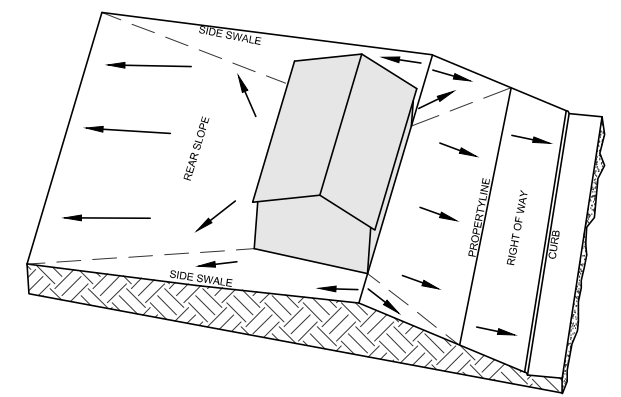
- ALL CONSTRUCTION PROCEDURES AND MATERIALS WITHIN THE SCOPE OF THE PROJECT THAT IS NOT SPECIFICALLY COVERED IN THE PLANS OF GEOTECHNICAL REPORT SHALL BE CONFORMED TO ALL APPLICABLE CITY, COUNTY AND TxDOT STANDARD REQUIREMENTS FOR PUBLICS WORKS CONSTRUCTION.
- SITE PREPARATION AND GRADING SHALL BE COMPLETED IN ACCORDANCE WITH THE PROJECTS GEOTECHNICAL REPORT AND SPECIFICATIONS.
- ALL SELECT FILL MATERIALS PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
- ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS PLAN REFLECTS FINISHED GRADES, THE THICKNESS OF PAVEMENT, BASE, GRASS, AND TOP SOIL MUST BE SUBTRACTED TO OBTAINED SUBGRADE ELEVATIONS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY QUESTIONS THEY HAVE REGARDING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE THE START OF CONSTRUCTION. IF THERE ARE ANY DISCREPANCIES, CONTACT THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TEST, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OF THOSE ITEMS THAT ARE NOT SUITABLE FOR EMBANKMENT AND TOPSOIL. CLEAN STRIPPING AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR REVEGETATE ALL DISTURBED AREAS IN ACCORDANCE WITH PROJECT SPECIFICATION AND TPDES/SWPPP REQUIREMENTS. REFER TO THE LANDSCAPE ARCHITECT'S PLAN IF APPLICABLE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGE WAY. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT DEBRIS THAT WASHES OFF-SITE OR INTO EXISTING STORM DRAIN SYSTEMS. REFER TO THE SWPPP PLAN.
- THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREIN WITHIN $\pm$ ONE TENTH OF A FOOT.
- IN PROPOSED PAVED AREAS AND STREET DESIGN PLANS SHALL CONTROL. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE STATED.
- THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING AND PROPOSED SITE CONDITIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS BACK TO EXISTING CONDITIONS OR BETTER. (NO SEPARATE PAY ITEMS.)
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES PRIOR TO PERFORMING ANY EXCAVATION. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE IDENTIFIED.
- UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATIONS OF ALL UTILITIES. WEATHER SHOWN ON THE PLANS OR NOT, THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES BEFORE CONSTRUCTION TO CONFIRM SIZE, GRADE AND LOCATION AND WILL CONTACT THE ENGINEER OF ANY DEVIATIONS FROM THE PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND THEIR OWN EXPENSE.
- POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHALL TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
- FILL PLACED ON HILL SIDES OR STEEP SLOPED AREAS, THE CONTRACTOR SHALL REFER TO THE PROJECTS SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTION REGARDING BENCHING.
- A BEAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW.



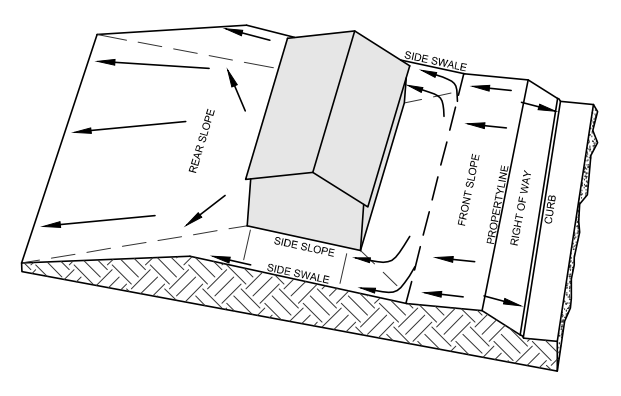
LEGEND (GRADING)			
	PROJECT LIMITS		EXISTING CONTOUR
	PROPOSED CONTOUR		FLOW ARROW
	TYPICAL LOT GRADING		PROPOSED ELEVATION



TYPE 'A' LOT GRADING



TYPE 'B' LOT GRADING



TYPE 'C' LOT GRADING

NOTE: THIS IS THE TYPICAL LOT GRADING PLAN BASED ON THE TYPE OF LOT BEING PROPOSED.

- TYPE A** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE STREET.
- TYPE B** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE STREET AND THE BACK OF THE LOT. (AWAY FROM THE HOUSE)
- TYPE C** LOTS ARE GRADED SO THE OVERLAND FLOW OF RUNOFF WILL DRAIN TOWARDS THE BACK OF THE LOT.

TYPICAL LOT GRADING

NOT TO SCALE

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-TEST 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 EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION PROTECTION

CONTRACTOR AND 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 SITE WITHIN THE PROJECT'S WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM. PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS SPECIFICALLY. CONTRACTOR AND 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.

DHI Engineering, LLC.
4419 LOOP 1604 EAST
SUITE 100
SAN ANTONIO, TEXAS 78247
(210) 482-2988 | dhiengineering.com
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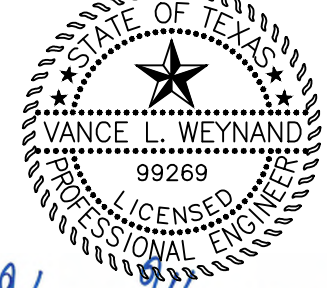
REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX

OVERALL GRADING PLAN

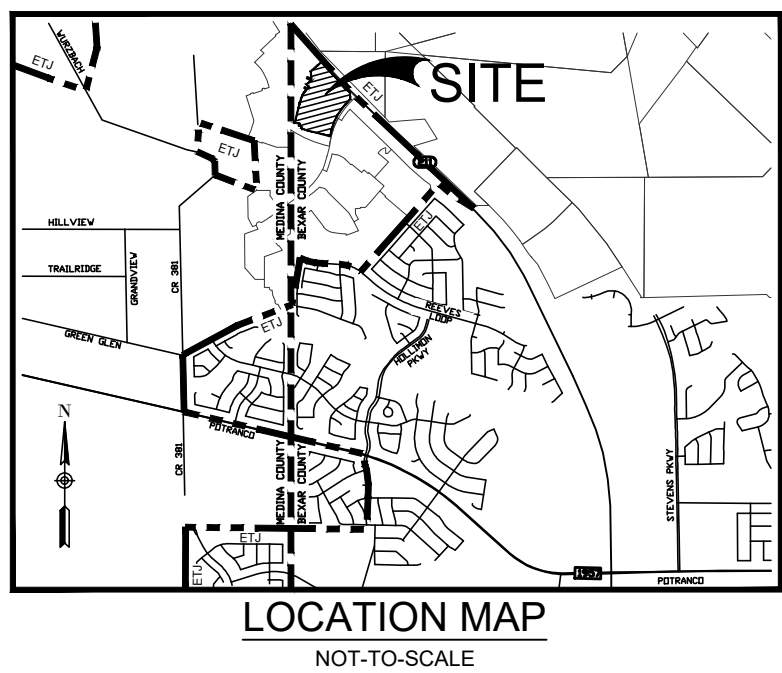
DESIGNED BY: SQV
DRAWN BY: JFM/JWS
DATE: 03/11/2024
JOB NO.: 20220500
SHEET NO.

C7.00

REV	DATE	DESCRIPTION
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2	03/11/2024	UPDATE CALCULATIONS, DETAILS, CALLOUTS, AND EASEMENTS.

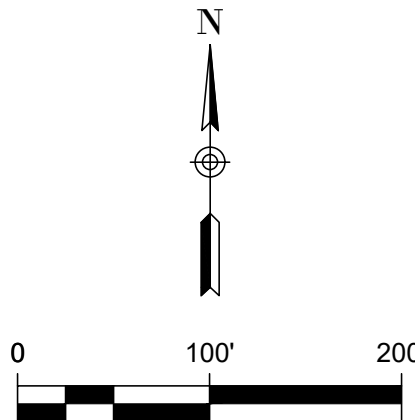


Vance L. Weyand



1. 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. STORMWATER 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. RESIDENTIAL ENTRANCES TO BE PROTECTED TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING IF NECESSARY.
 5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND WORKING CONDITIONS TO BE MAINTAINED THROUGHOUT THE PROJECT.
 6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFERENCE TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.
 7. STORMWATER 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. SLOPES, AS POSSIBLE, SHOULD BE STABILIZED WITH GRASS OR BE COVERED WITH IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENTS 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 UNGRADED AREAS.
 10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WAYNEASSED FOR THE PROJECT HAS BEEN COMPLETED BY THE BEST MANAGEMENT PRACTICE HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.

1. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
2. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCE OR OTHER MEASURES TO PREVENT EROSION.
3. SHADED AREA DENOTING LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXPECTATION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE AREA, SHALL BE CONSIDERED AS A DISTURBED AREA. POLLUTION PREVENTION PLAN (SW3P) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES; HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
4. CONTRACTOR SHALL COORDINATE WITH THE CITY OF CHICAGO TO OBTAIN PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN XD20T RIGHT-OF-WAY WITH XD20T.
5. CIVIL OPERATOR SHALL ACT AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.
6. THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SW3P) REGULATIONS.
7. THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SW3P ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION WILL BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENTS PLANS.



LEGEND (SW3P)	
	PROJECT LIMITS
	EXISTING CONTOUR
	PROPOSED CONTOUR
	FLOW ARROW (EXISTING)
	FLOW ARROW (PROPOSED)
	MEDIO CREEK
	LIMITS OF DISTURBED AREA
	STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)
	CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)
	CONCRETE TRUCK WASH-OUT (FIELD LOCATE)
	SILT FENCE
	ROCK BERM
	GRAVEL FILTER BAGS

BEXAR COUNTY ROW NOTES:
A BEXAR COUNTY 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 INDICATION 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 PROTECTION

CONTRACTOR OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN, GEOTECHNICAL, SAFETY, EQUIPMENT CONSULTANT, IF ANY, DEVELOP THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE INFORMATION BEING PROVIDED TO THE CONTRACTOR SHALL BE REVIEWED AND APPROVED BY THE CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN, GEOTECHNICAL, SAFETY, EQUIPMENT CONSULTANT, IF ANY, TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEM, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL BE IN ACCORDANCE WITH THE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS SPECIFICALLY. CONTRACTOR AND CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM TO PROTECT ALL INDIVIDUALS WORKING IN AND AROUND TRENCH 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 EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

[illegible]

REDBIRD RANCH, UNIT 2M-1
SAN ANTONIO, TX

DESIGNED BY:	SQV
DRAWN BY:	JFM/JWS
DATE:	03/11/2024
JOB NO.:	20220500
SHEET NO.	C8.00

[illegible]