GENERAL INFORMATION

GENERAL NOTES

1. *ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION JUNE 2008, OR LATEST.*

2. *NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS, BUT NOT INCLUDED IN THE BID PROPOSAL. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PAY ITEM TO WHICH IT RELATES.*

3. *THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE. 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING FENCES, CONCRETE ISLANDS, STREET PAVING, CURBS, SHRUBS, BUSHES OR DRIVEWAYS. (NO SEPARATE PAY ITEM).*

4. *IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". THE CITY'S CONSTRUCTION INSPECTOR AND TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF, IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED.*

5. *IF THE NEED ARISES, ADDITIONAL BARRICADES AND DIRECTIONAL DEVICES MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.*

6. *DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.171 C.P.S. MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.*

7. *CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR TWENTY FOUR (24) HOURS PRIOR TO BACKFILL OF ANY UTILITY TRENCHES TO SCHEDULE FOR DENISITY TEST AS REQUIRED.*

8. *CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES, THEY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.*

9. *CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO EXCAVATION OPERATION:*

SAN ANTONIO WATER SYSTEM (SAWS)	*233-2010*
BEXAR METROPOLITAN WATER DISTRICT (BEXAR MET)	*354-6538 / 357-5741*
COSA DRAINAGE	*207-8048*
COSA SIGNAL OPERATIONS	*207-7720 / 207-7765*
TEXAS STATE WIDE ONE CALL LOCATOR	*1-800-344-8377*
CITY PUBLIC SERVICE ENERGY - TIME WARNER - AT&T - MCI	

10. *THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED, BUT SHALL BE INVESTIGATED AND VERIFIED BY THE CONTRACTOR BEFORE STARTING WORK. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR THE MAINTENANCE AND PROTECTION OF THE EXISTING UTILITIES EVEN IF THEY ARE NOT SHOWN ON THE PLANS. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HERE ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND HE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME DURING CONSTRUCTION.*

11. *ALL WASTE MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE PROJECT. NO WASTE MATE- RIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING ARTIFICIAL OR NATURAL DRAINAGE.*

12. *THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.*

13. *THE CONTRACTOR SHALL MAINTAIN ALL ADJOINING STREETS AND TRAVELED ROUTES FREE FROM SPILLED AND / OR TRACKED CONSTRUCTION MATERIALS AND / OR DEBRIS.*

14. *IF THE CONTRACTOR ENCOUNTERS ANY ARCHAEOLOGICAL DEPOSITS DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST STOP EXCAVATION IMMEDIATELY, CONTACT THE CITY INSPECTOR, AND CALL THE CITY HISTORIC PRESERVATION OFFICE AT 207-7306 OR 207-3327 FOR AN ARCHAEOLOGICAL INVESTIGATION. THE CONTRACTOR CANNOT BEGIN EXCAVATION AGAIN WITHOUT WRITTEN PERMISSION FROM THE CITY. IF MORE THAN THREE (3) DAYS ARE REQUIRED FOR INVESTIGATION (NOT INCLUDING HOLIDAY AND WEEKENDS) AND IF THE CONTRACTOR IS UNABLE TO WORK IN OTHER AREAS, THEN THE CONTRACTOR WILL BE ALLOWED TO NEGOTIATE FOR ADDITIONAL CONSTRUCTION TIME UPON WRITTEN REQUEST WITHIN TEN (10) DAYS AFTER THE FIRST NOTICE TO THE CITY OF ARCHAEOLOGICAL INVESTIGATION FOR EACH EVENT. IF THE TIME REQUIRED FOR INVESTIGATION IS LESS THAN OR EQUAL TO THREE (3) DAYS FOR EACH EVENT, CONTRACT DURATION WILL NOT BE EXTENDED.*

15. *IF SUSPECTED CONTAMINATION IS ENCOUNTERED DURING CONSTRUCTION OPERATIONS, C.O.S.A. SHALL BE NOTIFIED IMMEDIATELY WHEN CONTAMINATED SOILS AND / OR GROUNDWATER ARE ENCOUNTERED AT LOCATIONS NOT IDENTIFIED IN THE PLANS. THE NOTIFICATION SHOULD INCLUDE THE STATION NUMBER, TYPE OF CONTAMINATED MEDIA, EVIDENCE OF CONTAMINATION AND MEASURES TAKEN TO CONTAIN THE CONTAMINATED MEDIA AND PREVENT PUBLIC ACCESS. THE CONTAMINATED SOIL AND / OR GROUNDWATER SHALL NOT BE REMOVED FROM THE LOCATION WITHOUT PRIOR C.O.S.A. APPROVAL. THE CONTRACTOR MUST STOP THE EXCAVATION IMMEDIATELY AND CONTACT THE C.O.S.A. INSPECTOR. THE CONTRACTOR CANNOT BEGIN EXCAVATION ACTIVITIES WITHOUT WRITTEN PERMISSION FROM THE CITY.*

16. *CONTRACTOR IS TO INCLUDE A MAILBOX POST BLOCKOUT FOR VACANT LOTS AND ALL RESIDENCES WHICH DO NOT HAVE MAILBOXES AT THE CURB. BLOCKOUTS ARE PROVIDED FOR FUTURE USE BY THE POST OFFICE.*

17. *CONTRACTOR SHALL NOT REMOVE OR ADJUST ANY VIA FACILITIES. THE CONTRACTOR MUST CONTACT VIA FOURTEEN DAYS PRIOR, FOR THE REMOVAL OF BENCHES, STOP POLES OR ANY OTHER VIA FACILITIES THAT MAY BE PRESENT. PLEASE PROVIDE THIRTY DAYS PRIONE NOTICE. FOR SHELTER REMOVAL (TELEPHONE NOS: (210) 363-2155 OR (210) 362-2096). THE CONTRACT- OR WILL BE LIABLE FOR ANY DAMAGES TO VIA FACILITIES NOT REMOVED BY VIA. THE CONTRACTOR IS REQUIRED TO REPLACE ALL FLATWORK REMOVED OR DAMAGED IN THE COURSE OF EXECUTING THE CONTRACT UNLESS OTHERWISE NOTED BY VIA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING VIA FACILITIES IF ADJACENT TO WORK AREA.*

TREE PROTECTION AND PRESERVATION GENERAL NOTES

1. *NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.*

2. *TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION. DURING CONSTRUCTION ACTIVITY, AT LEAST A SIX-INCH LAYER OF COARSE MULCH SHALL BE PLACED AND MAINTAINED OVER THE ROOT PROTECTION ZONE (NO SEPARATE PAY ITEM).*

3. *THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE.*

4. *ROOTS WILL BE CUT WITH A ROCK SAW OR BY HAND, NOT BY AN EXCAVATOR OR OTHER ROAD CONSTRUCTION EQUIPMENT.*

5. *ALL CURB AND SIDEWALK WORK SHALL USE ALTERNATIVE CONSTRUCTION METHODS TO MINIMIZE EXTENSIVE ROOT DAMAGE TO TREES (REFER TO DETAILS).*

6. *EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH, OR WET BURLAP.*

7. *NO EQUIPMENT, VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS 1 FOOT OF RADIUS PER INCH OF TREE'S DIAMETER. A 10-INCH DIAMETER TREE WOULD HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. OAK WOUNDS SHALL BE PAINTED OVER WITHIN 30 MINUTES TO PREVENT OAK WILT.*

8. *SAPLINGS, SHRUBS OR BUSHES TO BE CLEARED FROM THE PROTECTED ROOT ZONE AREA OF A LARGE TREE SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR.*

9. *NO WIRES, NAILS OR OTHER MATERIAL MAY BE ATTACHED TO PROTECTED TREES.*

10. *TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE CITY STREET OR ALLEY RIGHT-OF-WAY OR PERMANENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES SHALL BE PROPERLY PRUNED FOLLOWING THE ANSI A-300 STANDARDS FOR PRUNING. ALL TREE PRUNING SHALL BE COMPLETED BY A CITY OF SAN ANTONIO TREE MAINTENANCE LICENSED CONTRACTOR (ARTICLE 21-171, CITY CODE) ONLY AFTER APPROVAL FROM THE CAPITAL PROJECTS MANAGEMENT THROUGH THE INSPECTOR.*

11. *NO EXCESSIVE TREE TRIMMING WILL BE PERMITTED.*

12. *ALL DEBRIS GENERATED BY THE PRUNING AND TRIMMING OF THE TREES AND / OR BUSHES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY (NO SEPARATE PAY ITEM).*

13. *TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE, BUT NOT LIMITED TO: WATERING THE ROOT PROTECTION ZONE, WASHING FOLIAGE, FERTILIZATION, PRUNING, ADDITIONAL MULCH APPLICATIONS AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT.*

14. *ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST. (207-0278).*

15. *TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.*

16. *TREE PLANTING FOR MITIGATION OR ENHANCEMENT: ALL PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATION, FERTILIZING, PRUNING AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT. TREES THAT DIE WITHIN TWELVE (12) MONTHS SHALL BE REPLACED WITH A TREE OF EQUAL SIZE AND SPECIES.*

ACCESSIBILITY REQUIREMENTS

1. *THE CONTRACTOR SHALL PROVIDE AND MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS AT ALL TIMES TO LOCAL RESIDENCES AND BUSINESSES.*

2. *WHEN THE WORK REQUIRES THE EXCAVATION OF THE STREET AND THE REMOVAL OF THE EXISTING DRIVEWAY APPROACHES AND SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY, ALL-WEATHER ACCESS TO THE BUSINESSES AND RESIDENCES. THE TEMPORARY DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH FLEXIBLE BASE OR GRAVEL MATERIAL AT NO SEPARATE COST TO THE CITY.*

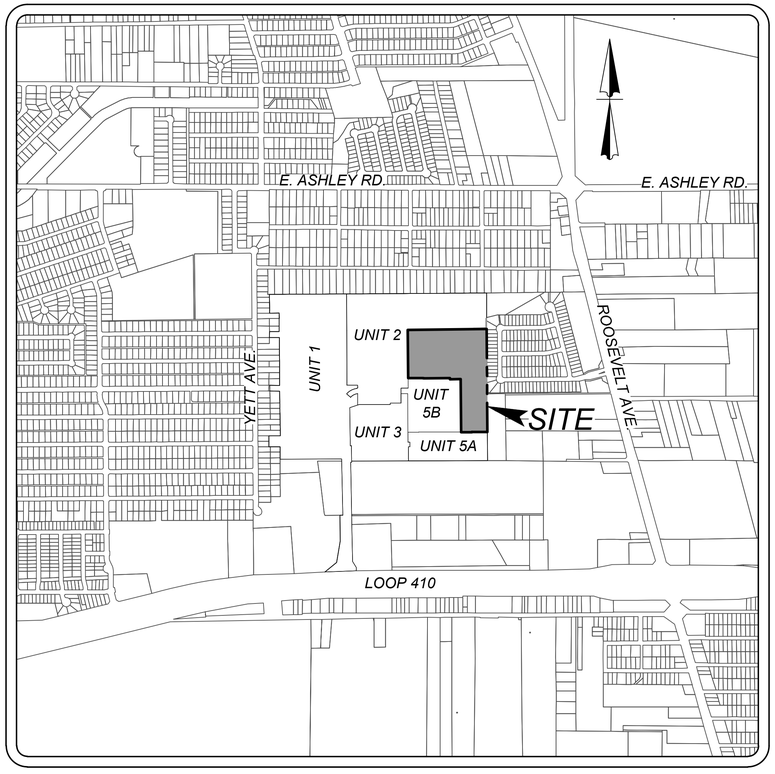
3. *PRIOR TO INITIATING THE CONSTRUCTION OF NEW DRIVEWAY APPROACHES, THE CONTRACTOR SHALL GIVE ADVANCE WARNING IN PERSON, OR IN WRITING, OF AT LEAST 48 HOURS TO EACH RESIDENCE THAT WILL BE IMMEDIATELY AFFECTED, SO THAT ALTERNATE PLANS MAY BE MADE BY THE RESIDENTS.*

4. *FOR BUSINESSES WITH MORE THAN ONE DRIVEWAY, AT LEAST ONE DRIVEWAY SHALL REMAIN OPEN WHILE THE OTHER NEW DRIVEWAY APPROACHES ARE CONSTRUCTED. FOR BUSINESSES WITH ONLY ONE DRIVEWAY, THE NEW DRIVEWAY APPROACH SHALL BE CONSTRUCTED IN HALF WIDTHS, UNLESS A TEMPORARY ASPHALT DRIVEWAY IS FIRST INSTALLED AT NO SEPARATE COST TO THE CITY.*

HARLANDALE SUBDIVISION UNIT 4

SAN ANTONIO, TEXAS

STREET, DRAINAGE, WATER, SANITARY SEWER, AND UTILITY IMPROVEMENTS



LOCATION MAP
NOT-TO-SCALE

OWNER INFORMATION
KB HOME LONE STAR, INC
4800 FREDERICKSBURG RD.
SAN ANTONIO, TX 78229
PHONE: (210) 301 - 5485

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STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

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AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: C-CVER

SHEET TITLE: COVER SHEET

SHEET NUMBER: 1.0

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

By: BELSETH
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TRENCH EXCAVATION SAFETY PROTECTION

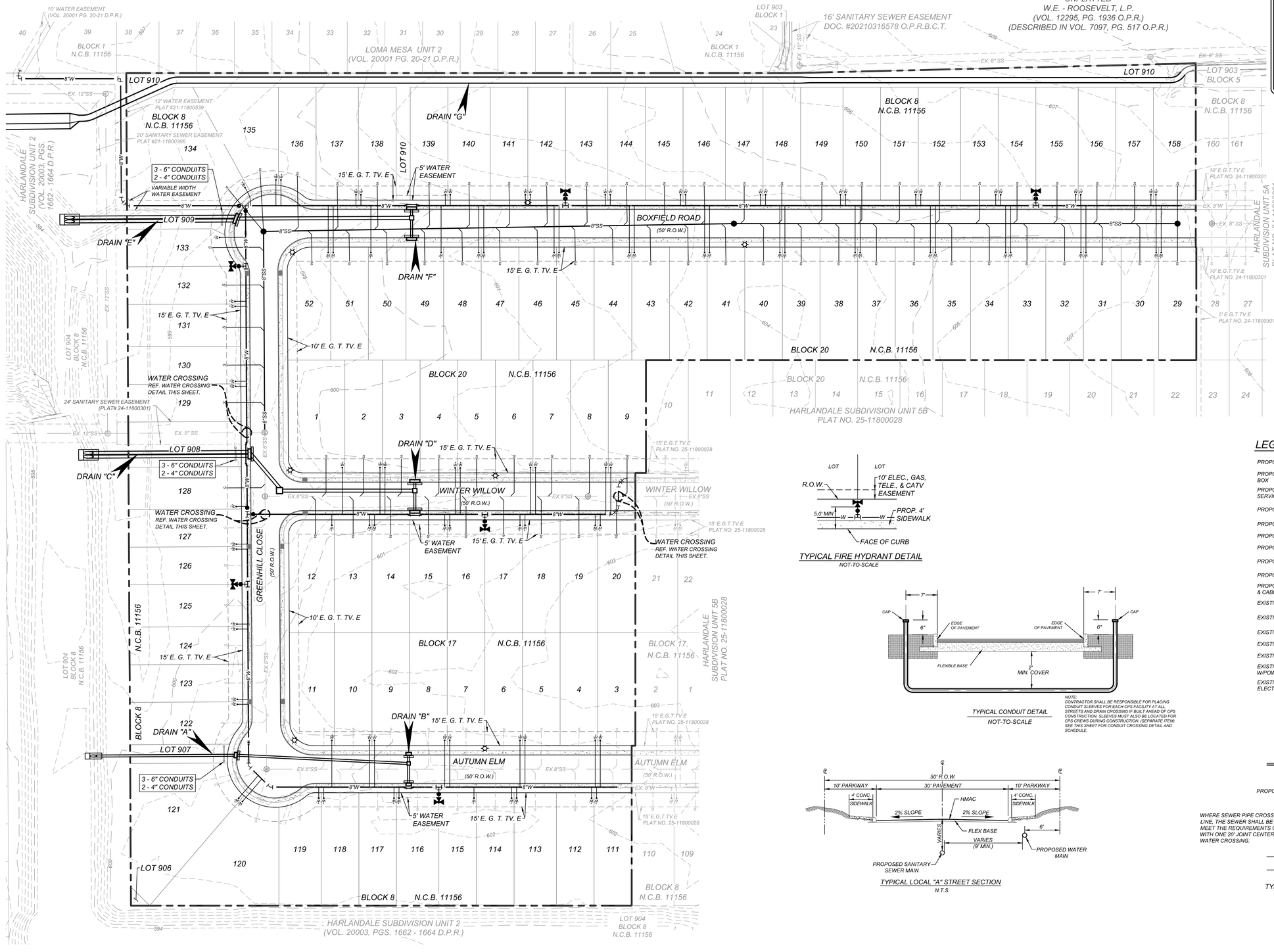
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

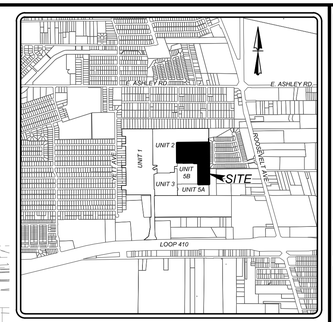
COMPACTION NOTE:

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

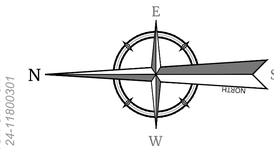
DRY UTILITY CONDUIT NOTE:

CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S PLAN.





LOCATION MAP
NOT-TO-SCALE



50 0 50 100

SCALE : 1" = 50'

Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE

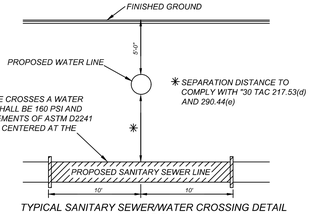
TYPICAL CONDUIT DETAIL
NOT-TO-SCALE

NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH CPS FACILITY AT ALL STREETS AND DRAIN CROSSING IF BUILT AHEAD OF CPS CONSTRUCTION. SLEEVES MUST ALSO BE LOCATED FOR CPS CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.

TYPICAL LOCAL "A" STREET SECTION
N.T.S.

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX	=	W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED 100W STREETLIGHT	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED SANITARY SEWER LATERAL	=	
PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT	=	E. G. T. TV. E
EXISTING WATER MAIN	=	E.W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E.SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

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LICENSED PROFESSIONAL ENGINEER
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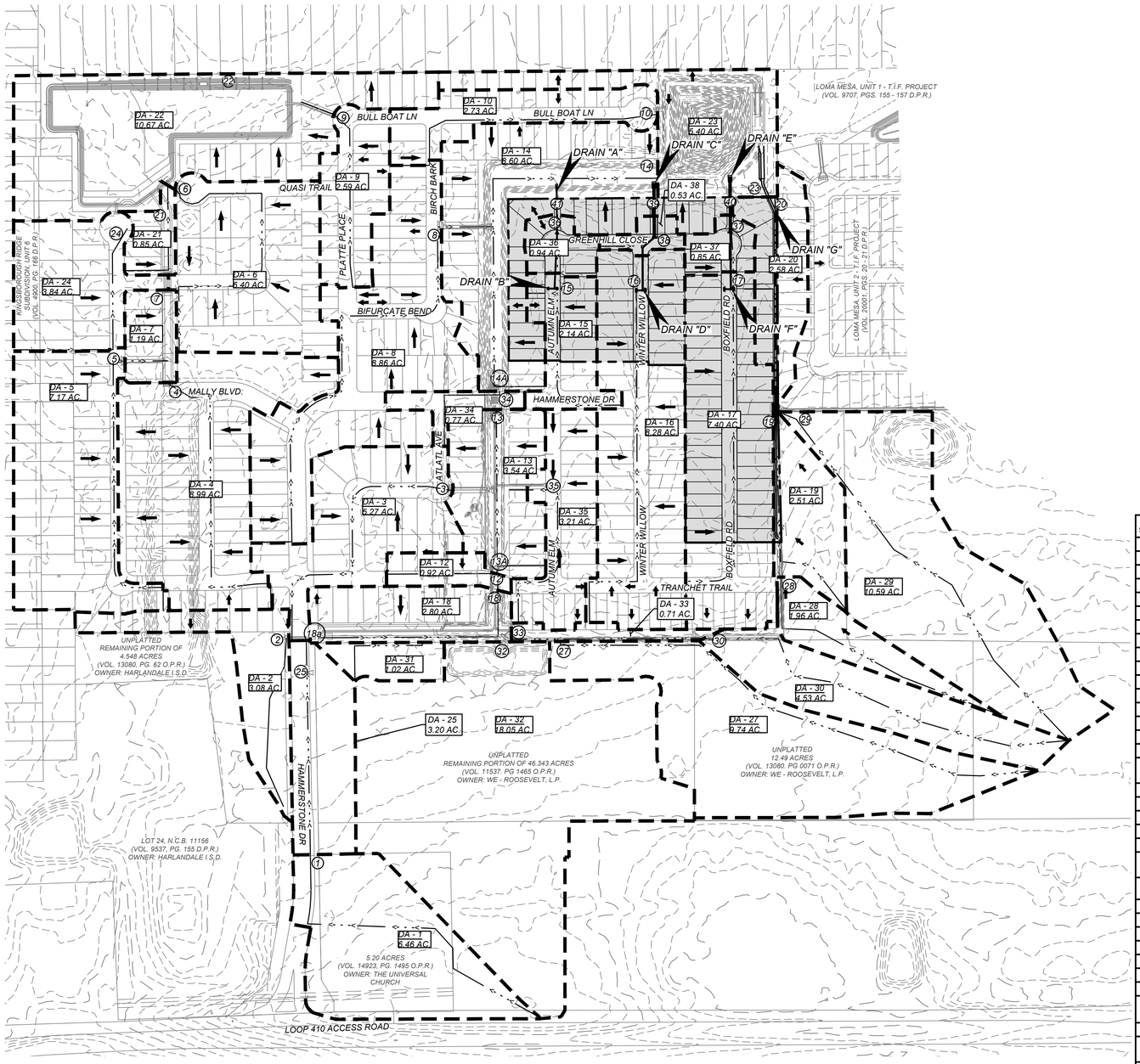
PROJECT NUMBER: 418-15-10
DRAWING NAME: C-UTIL

SHEET TITLE: OVERALL UTILITY PLAN

SHEET NUMBER: 2.1

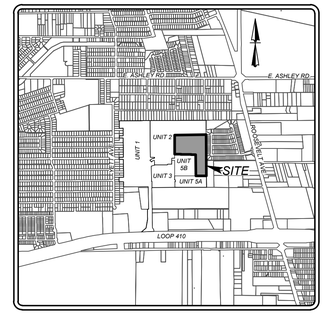
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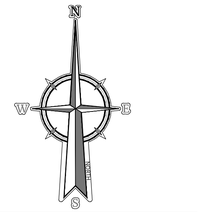


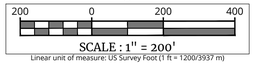
LEGEND

- STUDY POINT
- DRAINAGE AREA BOUNDARY
- 802 EXISTING CONTOURS
- PROPOSED UNIT
- FLOW ARROW
- FLOW PATH



LOCATION MAP
NOT-TO-SCALE





Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

Study Point	AREA	(Acres)	C	Tovrl (min)	Carryover	Tsc (min)	Tch (min)	Ttot (min)	I5 (in/hr)	I25 (in/hr)	I100 (in/hr)	Q5 (ft3/s)	Q25 (ft3/s)	Q100 (ft3/s)
1	DA-1	6.46	0.93	20		10	2	32	3.58	4.93	6.11	21.61	29.79	36.88
2	DA-2	3.08	0.77	20		8	0	28	3.83	5.28	6.54	9.09	12.53	15.51
3	DA-3	5.27	0.77	14		2	6	22	4.33	5.98	7.41	17.57	24.25	30.06
4	DA-4	8.99	0.77	10.00		2.00	6.00	18	4.80	6.63	8.24	33.20	45.92	57.05
5	DA-5	7.17	0.77	10.00		2.00	6.00	18	4.80	6.63	8.24	26.48	36.62	45.50
6	DA-6	6.40	0.77	10.00		3.00	6.00	19	4.66	6.45	8.00	22.98	31.77	39.45
	DA-7	1.19	0.77	10.00		1.00	4.00	15						
7	Pt. 4, Pt. 5, DA-7	17.35	0.77	18.00	From pt. 4	0.00	4.00	22	4.33	5.98	7.41	57.83	79.83	98.97
8	DA-8	8.86	0.77	10.00		4.00	14.00	28	3.83	5.28	6.54	26.15	36.04	44.63
9	DA-9	2.59	0.77	10.00		2.00	3.00	15	5.28	7.32	9.12	10.53	14.60	18.18
10	DA-10	2.73	0.77	10.00		2.00	6.00	18	4.80	6.63	8.24	10.08	13.94	17.32
12	DA-12	0.92	0.77	10.00		2.00	0.00	12	5.86	8.19	10.24	4.15	5.80	7.25
	DA-13	3.54	0.77	10.00		3.00	3.00	16						
13	Pt. 3, Pt. 13A, DA-13, Pt. 35	62.53	0.79	20.00	From pt. 18	34.00	3.00	57	2.53	3.52	4.39	124.95	173.94	217.21
13A	Pt. 12, Pt. 18	50.51	0.80	20.00	From pt. 18	34.00	0.00	54	2.63	3.65	4.55	105.62	146.73	182.92
	DA-14	8.53	0.77	10.00		1.00	18.00	29						
14	Pt. 8, Pt. 14A, DA-14, Pt. 15, Pt. 16	92.05	0.78	20.00	From pt. 13	37.00	18.00	75	2.43	3.39	4.24	175.38	244.67	306.14
14A	Pt. 13, Pt. 34	63.30	0.79	20.00	From pt. 13	37.00	0.00	57	2.53	3.52	4.39	126.45	176.03	219.82
15	DA-15	2.14	0.77	14.00		4.00	1.00	19	4.66	6.45	8.00	7.69	10.62	13.19
16	DA-16	8.28	0.77	10.00		2.00	8.00	20	4.54	6.28	7.79	28.97	40.02	49.66
17	DA-17	7.40	0.77	10.00		2.00	8.00	20	4.54	6.28	7.79	25.89	35.76	44.38
	DA-18	2.80	0.77	0.00		0.00	11.00	11						
18	Pt. 18A, DA-18, Pt. 31, Pt. 33, Pt. 32	49.59	0.80	20.00	carry over from pt. 33	23.00	11.00	54	2.63	3.65	4.55	103.75	144.15	179.69
18A	Pt. 2, Pt. 25	12.74	0.85	20.00	carry over from pt. 25	14.00	0.00	34	3.47	4.78	5.92	37.70	51.97	64.35
	DA-19	2.51	0.96	20.00		2.00	6.00	28	3.83	5.28	6.54	9.24	12.73	15.76
19	DA-19, Pt. 28	4.47	0.88	20.00		9.00	6.00	35	3.41	4.71	5.83	13.40	18.47	22.87
	DA-20	2.58	0.77	5.00		0.00	8.00	13						
20	Pt. 19, DA-20, Pt. 29	17.64	0.83	20.00	From pt. 29	18.00	8.00	46	2.92	4.04	5.02	42.98	59.46	73.84
	DA-21	0.85	0.77	10.00		1.00	4.00	15						
21	Pt. 4, Pt. 5, Pt. 7, DA-21	18.20	0.77	10.00	From pts. 4 & 7	0.00	19.00	29	3.76	5.19	6.42	52.76	72.72	90.04
	DA-22	10.67	0.77	HYDROGRAPH										
22	Pt. 4, Pt. 5, Pt. 6, Pt. 7, Pt. 9, Pt. 21, DA-22, Pt. 24	41.70	0.77											
	DA-23	5.35	0.77	HYDROGRAPH										
23	Pt. 10, Pt. 14, Pt. 17, Pt. 20, DA-23	125.17	0.79											
24	DA-24	3.84	0.77	10.00		3.00	3.00	16	5.10	7.07	8.79	15.08	20.89	25.99
	DA-25	3.20	0.77	0.00		4.00	2.00	6						
25	Pt. 1,DA-25	9.66	0.88	20.00	From pt. 1	12.00	2.00	34	3.47	4.78	5.92	29.47	40.64	50.32
26	DA-26	0.48	0.77	14.00		4.00	0.00	18	4.80	6.63	8.24	1.77	2.45	3.05
27	DA-27	9.74	0.78	19.00		11.00	9.00	39	3.22	4.44	5.50	24.32	33.57	41.60
28	DA-28	1.96	0.77	19.00		8.00	2.00	29	3.76	5.19	6.42	5.70	7.86	9.73
29	DA-29	10.59	0.83	19.00		11.00	8.00	38	3.26	4.50	5.58	28.74	39.65	49.13
30	DA-30	4.53	0.81	20.00		13.00	3.00	36	3.36	4.64	5.74	12.30	16.97	21.01
31	DA-31	1.02	0.77	16.00		3.00	0.00	19	4.66	6.45	8.00	3.66	5.06	6.29
32	DA-32	18.05	0.77	FROM WALKER TRACT BASIN OUTFALL								26.59	35.32	47.07
	DA-33	0.71	0.77	0.00		0.00	7.00	7						
33	Pt. 27, Pt. 30, DA-33	14.98	0.79	20.00	From Pt. 30	16.00	7.00	43	3.04	4.20	5.21	35.79	49.45	61.35
34	DA-34	0.77	0.77	19.00		2.00	0.00	21	4.43	6.12	7.59	2.63	3.63	4.50
35	DA-35	3.21	0.77	14.00		4.00	2.00	20	4.54	6.28	7.79	11.23	15.51	19.25
36	DA-36	0.94	0.77	10.00		2.00	0.00	12	5.86	8.19	10.24	4.24	5.92	7.41
37	DA-37	0.85	0.77	10.00		3.00	0.00	13	5.66	7.89	9.85	3.71	5.16	6.45
38	DA-38	0.53	0.77	10.00		3.00	0.00	13	5.66	7.89	9.85	2.31	3.22	4.02
39	PT. 16 + PT. 38	8.81	0.77	20.00	From Pt. 16	0.00	1.00	21	4.43	6.12	7.59	30.07	41.52	51.50
40	PT. 17 + PT. 37	8.25	0.77	20.00	From Pt. 17	0.00	1.00	21	4.43	6.12	7.59	28.15	38.88	48.22
41	PT. 15 + PT. 36	3.08	0.77	19.00	From Pt. 15	0.00	1.00	20	4.54	6.28	7.79	10.77	14.89	18.47

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14809
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER:	DRAWING NAME:
418-15-10	MD-LAYT

SHEET TITLE:
MASTER DRAINAGE PLAN

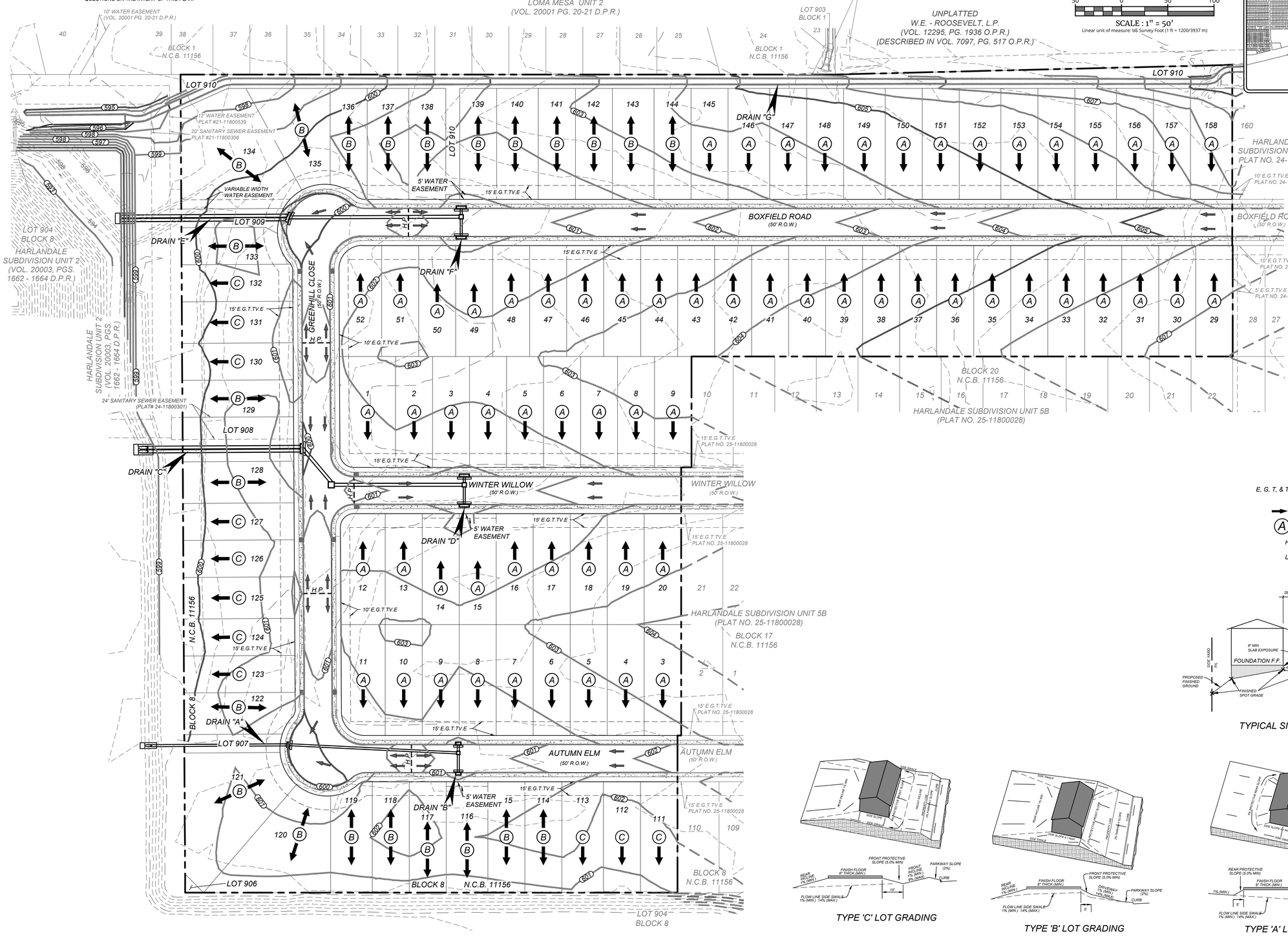
SHEET NUMBER:
3.1

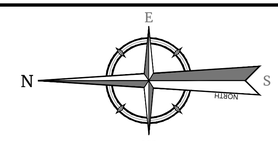
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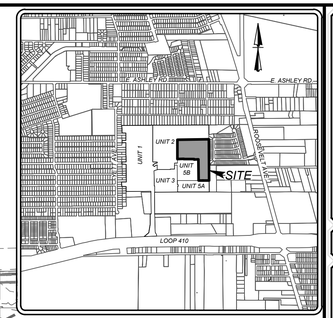
I:\CIVIL\D-LAYT.dwg\Layout1 By: BELSETH

GENERAL NOTES:

1. ELEVATION SHOWN ON FOUNDATION IS FOR FINISHED FLOOR.
2. CONTRACTOR SHALL PROVIDE OWNER ALL NECESSARY DENSITY TESTS FOR FILL LOTS AS REQUIRED BY HUD SPECIFICATIONS.
3. HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK.
4. AS SOON AS PRACTICAL HOME BUILDER SHALL ESTABLISH VEGETATION (HYDROMULCH, SEEDING, SODDING, ETC...) TO PREVENT EROSION FROM OCCURRING.
5. CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF THIS PLAN.
6. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS AND TOWARDS THE PROPER DRAINAGE EASEMENT OR STREET RIGHT OF WAY ACCORDING TO THE MASTER DRAINAGE PLAN FOR THE PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW PONDING OF WATER.
7. ALL ELEVATIONS AND CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVEMENT, CURBS, AND SIDEWALKS MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
8. GRADING PLAN IS INTENDED FOR USE IN LOT GRADING ONLY. CONTRACTOR SHOULD REFER TO CONSTRUCTION DRAWINGS FOR ALL OTHER GRADES, INCLUDING, BUT NOT LIMITED TO, CHANNELS, ROADS, AND DETENTION PONDS.
9. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES.



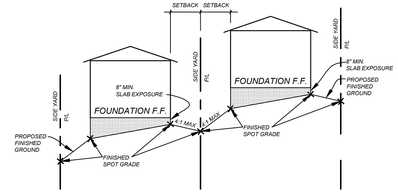




LOCATION MAP
NOT-TO-SCALE

LEGEND

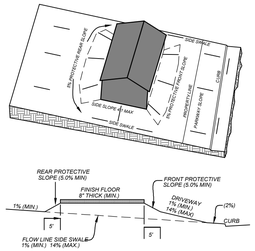
E, G, T, & TV. E. = GAS, ELECTRIC, TELEPHONE, CABLE T.V. EASEMENT
→ = FLOW ARROW
(A) = LOT GRADE TYPE
H.P. = HIGH POINT
L.P. = LOW POINT



TYPICAL SIDE YARD GRADING
N.T.S.

TYPE 'C' LOT GRADING

TYPE 'B' LOT GRADING



TYPE 'A' LOT GRADING

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REV	DATE	DRAWN BY	DESCRIPTION

8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME
LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14070
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: C-GRAD

SHEET TITLE: OVERALL GRADING PLAN
SHEET NUMBER: 4.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\Civil\C-GRAD.dwg\4.1 By: BELSETH

TRENCH EXCAVATION SAFETY PROTECTION

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

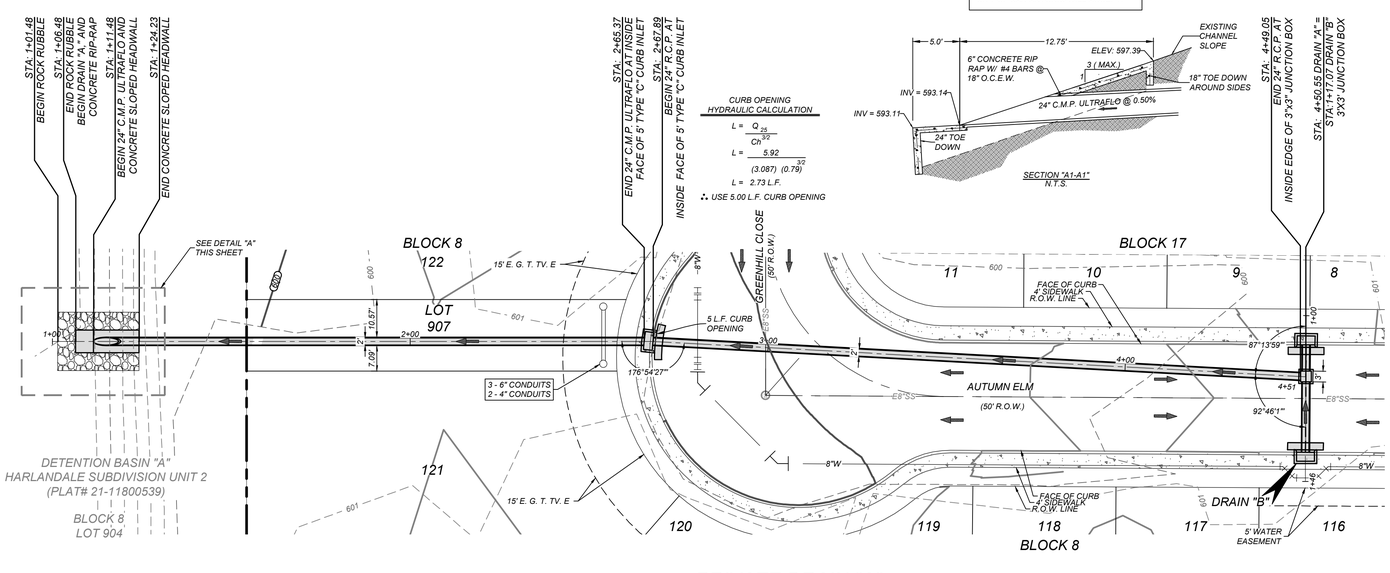
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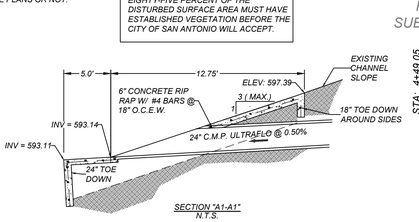
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT 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 SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

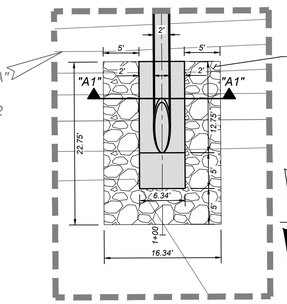
NOTE:

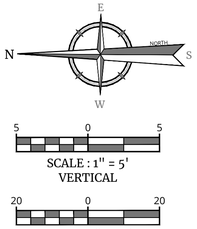
1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.

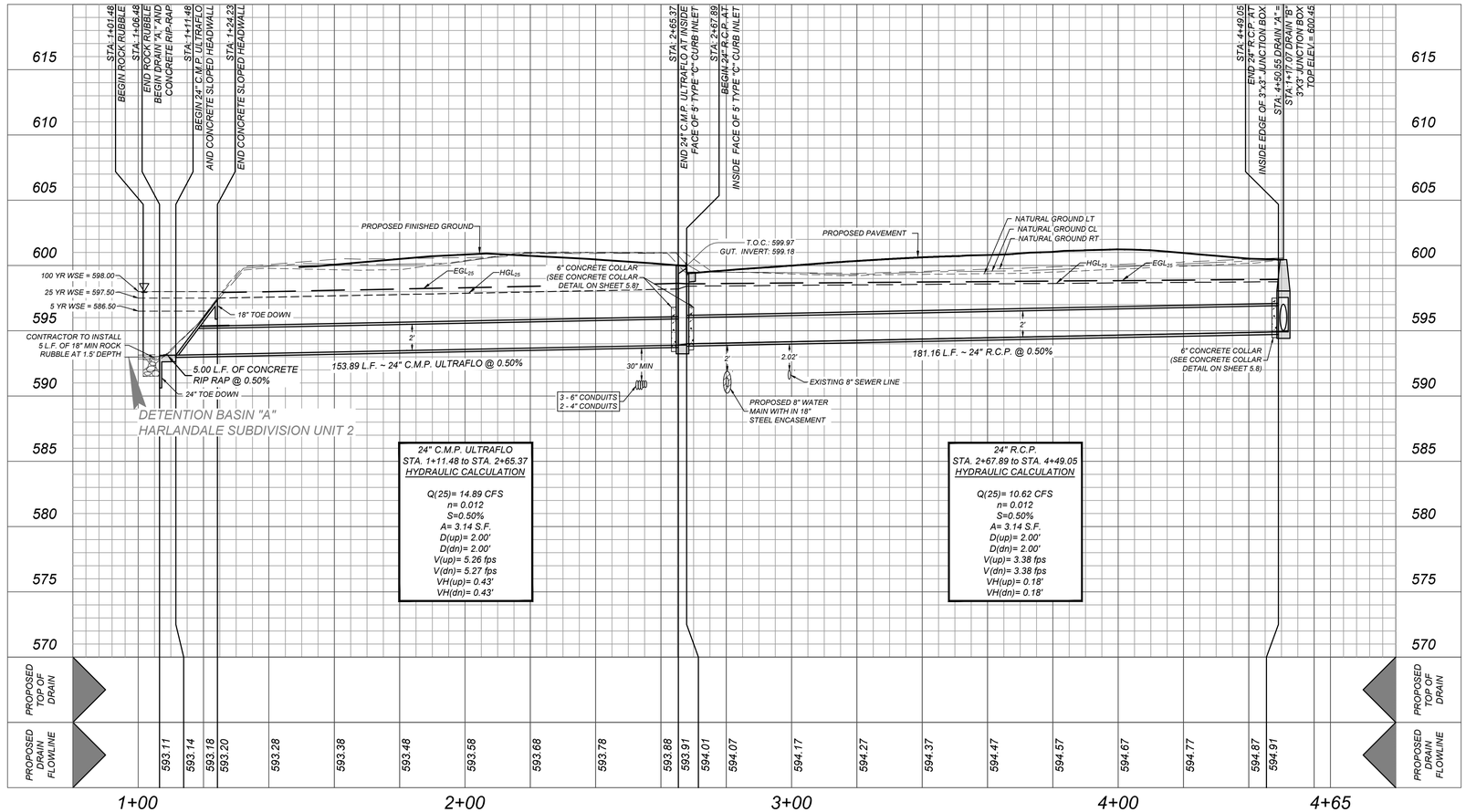


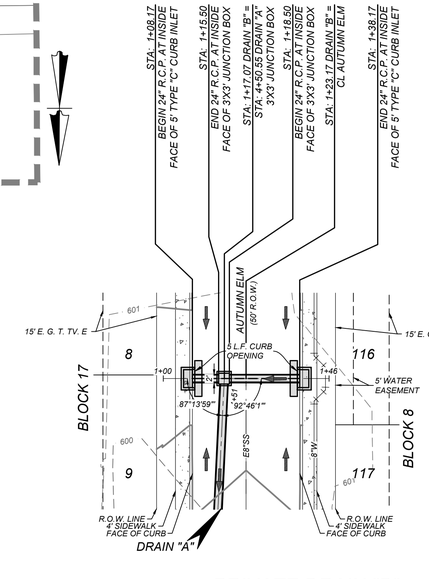


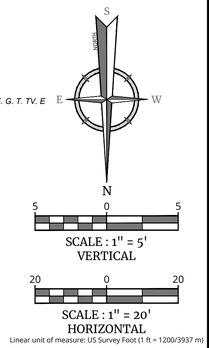




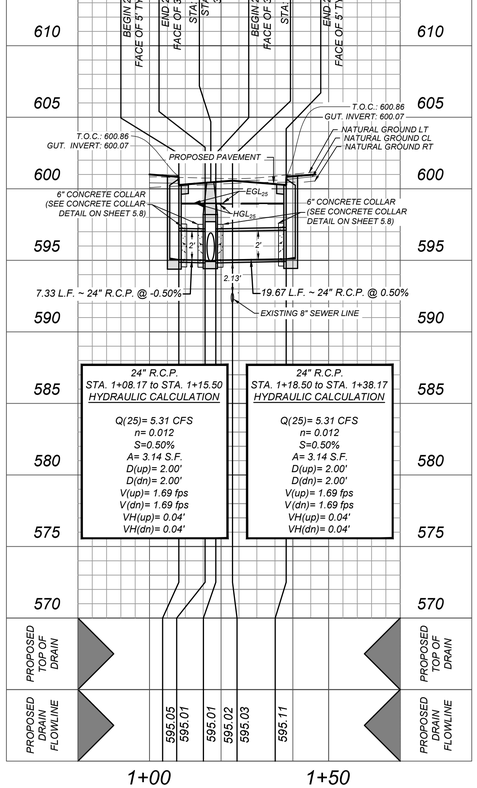
PRIVATE DRAIN "A"
STA: 1+06.48 - END







PRIVATE DRAIN "B"
STA: 1+08.17 - END



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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
9/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14905
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	---	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: DR-PROF4181510

SHEET TITLE: DRAIN "A" & "B" PLAN & PROFILE

SHEET NUMBER: 5.1

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\Civil\Drawings\DR-PROF4181510.dwg\S1.1 By: BELSETH

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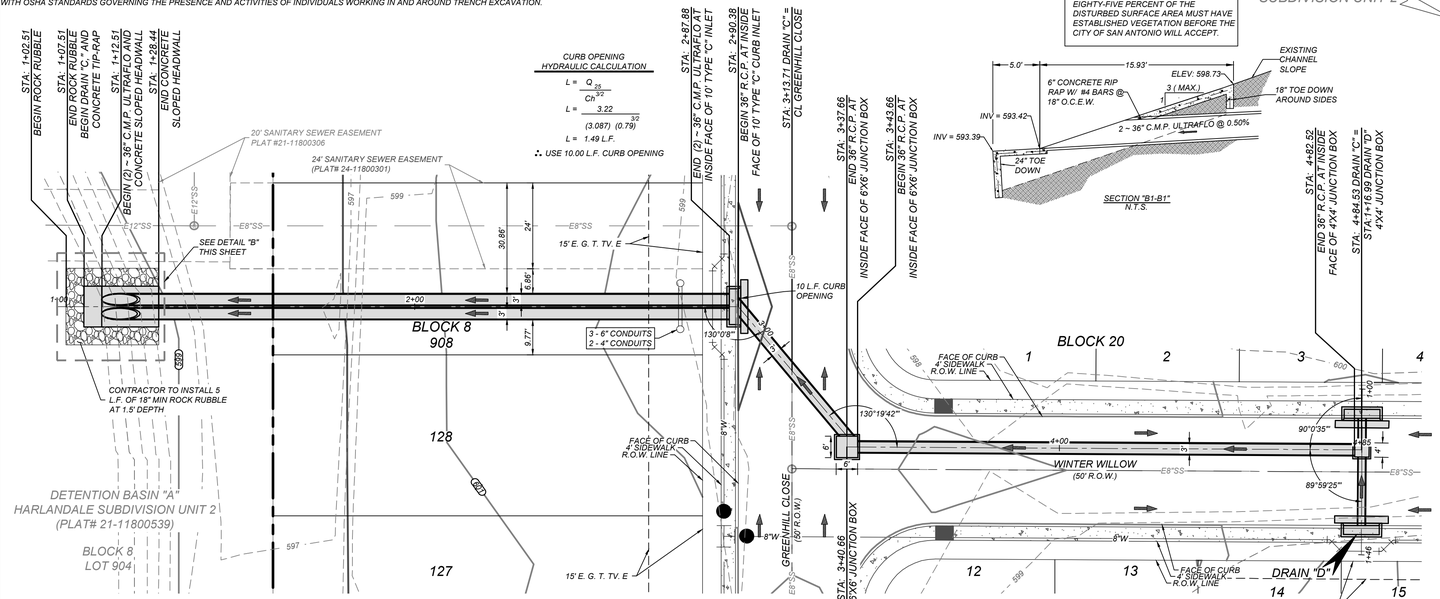
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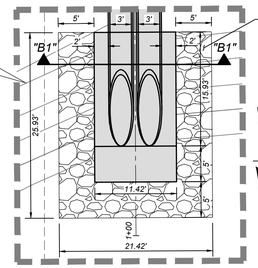
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NOTE:

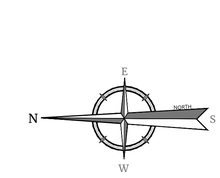
1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.





DETAIL "B"
SCALE: 1"=10"

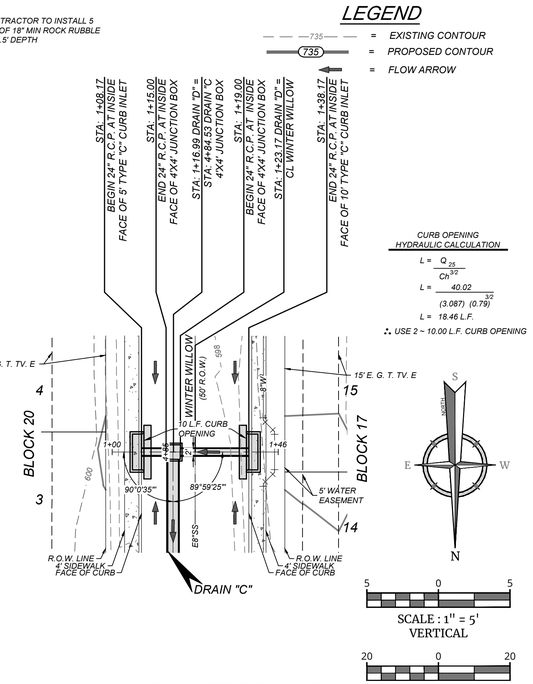


5 0 5
SCALE : 1" = 5'
VERTICAL

20 0 20
SCALE : 1" = 20'
HORIZONTAL

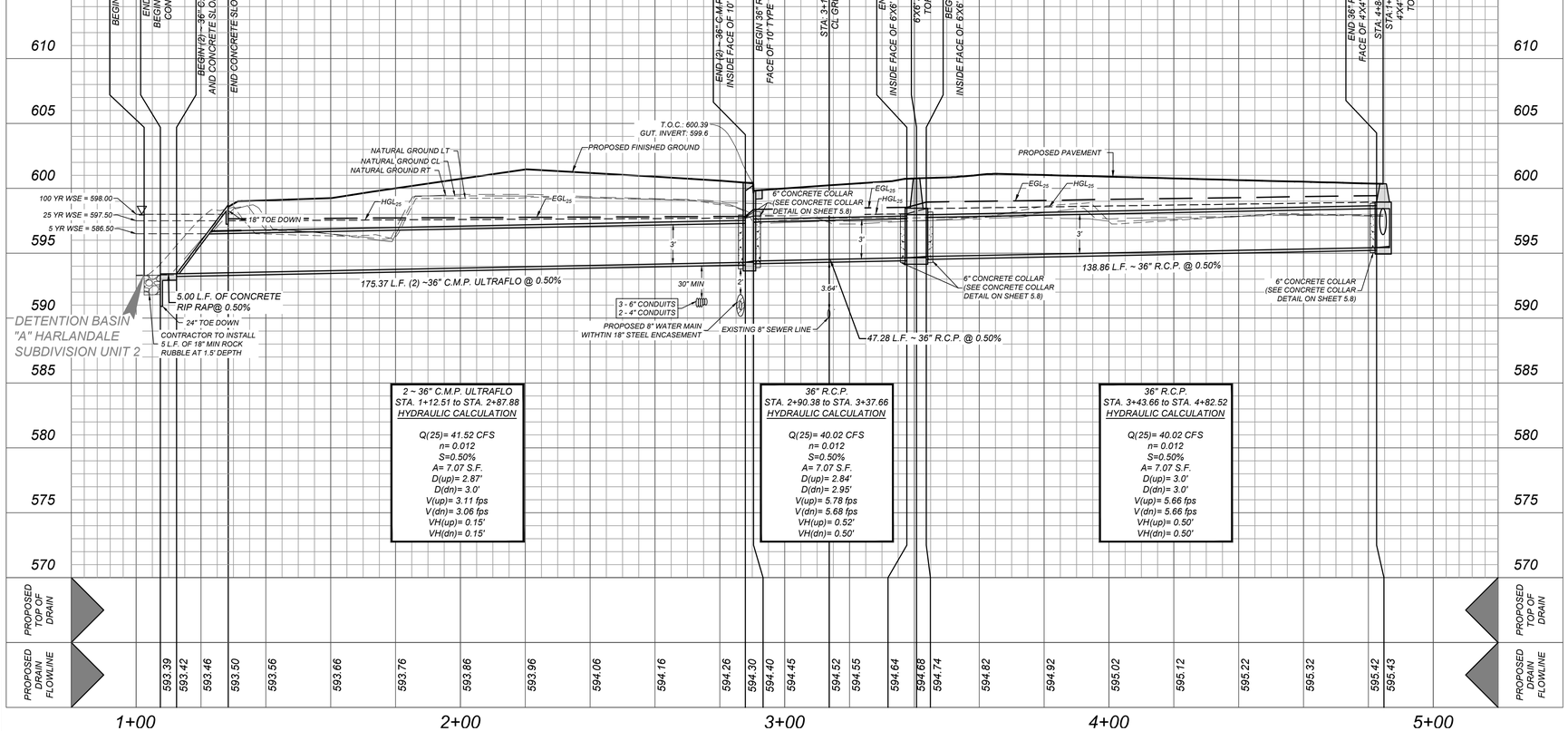
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

PRIVATE DRAIN "C"
STA: 1+07.51 - END



PRIVATE DRAIN "D"
STA: 1+08.17 - END

Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



2 ~ 36" C.M.P. ULTRAFLO
STA. 1+12.51 to STA. 2+87.88
HYDRAULIC CALCULATION

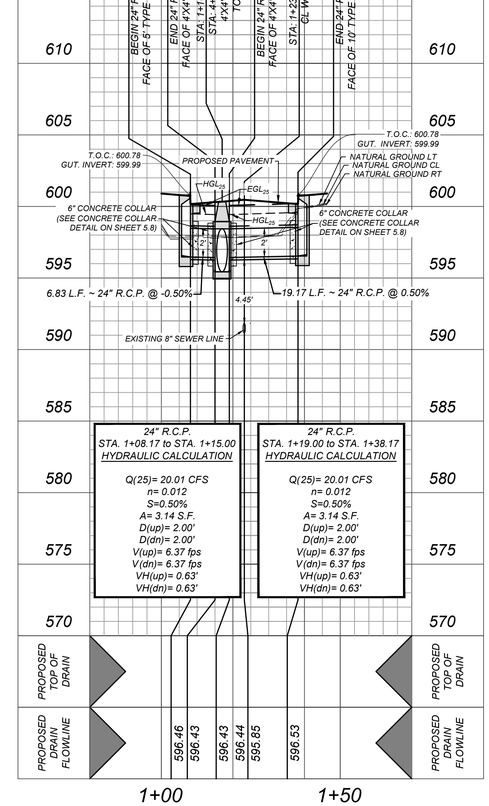
Q(25)= 41.52 CFS
n= 0.012
S=0.50%
A= 7.07 S.F.
D(up)= 2.87'
D(dn)= 3.0'
V(up)= 3.11 fps
V(dn)= 3.06 fps
VH(up)= 0.15'
VH(dn)= 0.15'

36" R.C.P.
STA. 2+90.38 to STA. 3+37.66
HYDRAULIC CALCULATION

Q(25)= 40.02 CFS
n= 0.012
S=0.50%
A= 7.07 S.F.
D(up)= 2.84'
D(dn)= 2.95'
V(up)= 5.78 fps
V(dn)= 5.68 fps
VH(up)= 0.52'
VH(dn)= 0.50'

36" R.C.P.
STA. 3+43.66 to STA. 4+82.52
HYDRAULIC CALCULATION

Q(25)= 40.02 CFS
n= 0.012
S=0.50%
A= 7.07 S.F.
D(up)= 3.0'
D(dn)= 3.0'
V(up)= 5.66 fps
V(dn)= 5.66 fps
VH(up)= 0.50'
VH(dn)= 0.50'



24" R.C.P.
STA. 1+08.17 to STA. 1+15.00
HYDRAULIC CALCULATION

Q(25)= 20.01 CFS
n= 0.012
S=0.50%
A= 3.14 S.F.
D(up)= 2.00'
D(dn)= 2.00'
V(up)= 6.37 fps
V(dn)= 6.37 fps
VH(up)= 0.63'
VH(dn)= 0.63'

24" R.C.P.
STA. 1+19.00 to STA. 1+38.17
HYDRAULIC CALCULATION

Q(25)= 20.01 CFS
n= 0.012
S=0.50%
A= 3.14 S.F.
D(up)= 2.00'
D(dn)= 2.00'
V(up)= 6.37 fps
V(dn)= 6.37 fps
VH(up)= 0.63'
VH(dn)= 0.63'

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
9/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: DR-PROF4181510

SHEET TITLE:
DRAIN "C" & "D" PLAN & PROFILE

SHEET NUMBER: 5.2

\Civil\Drains\DR-PROF4181510.dwg\5.2 By: BELSETH

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION

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

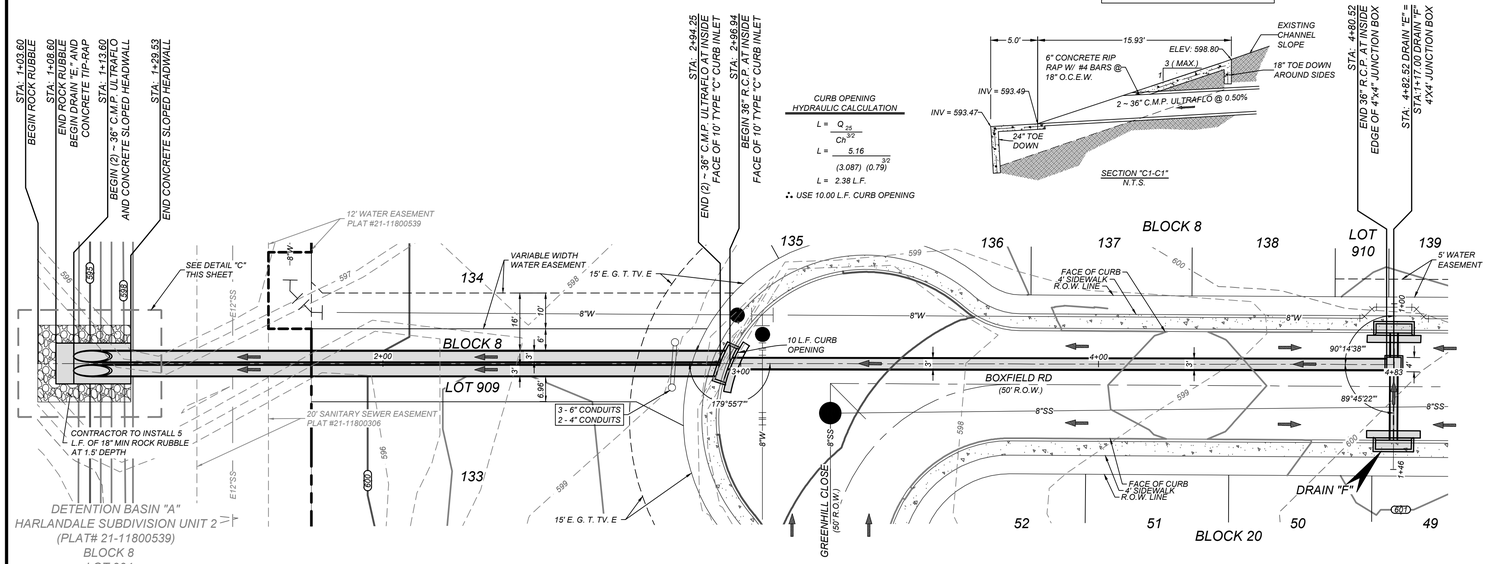
CAUTION!!:

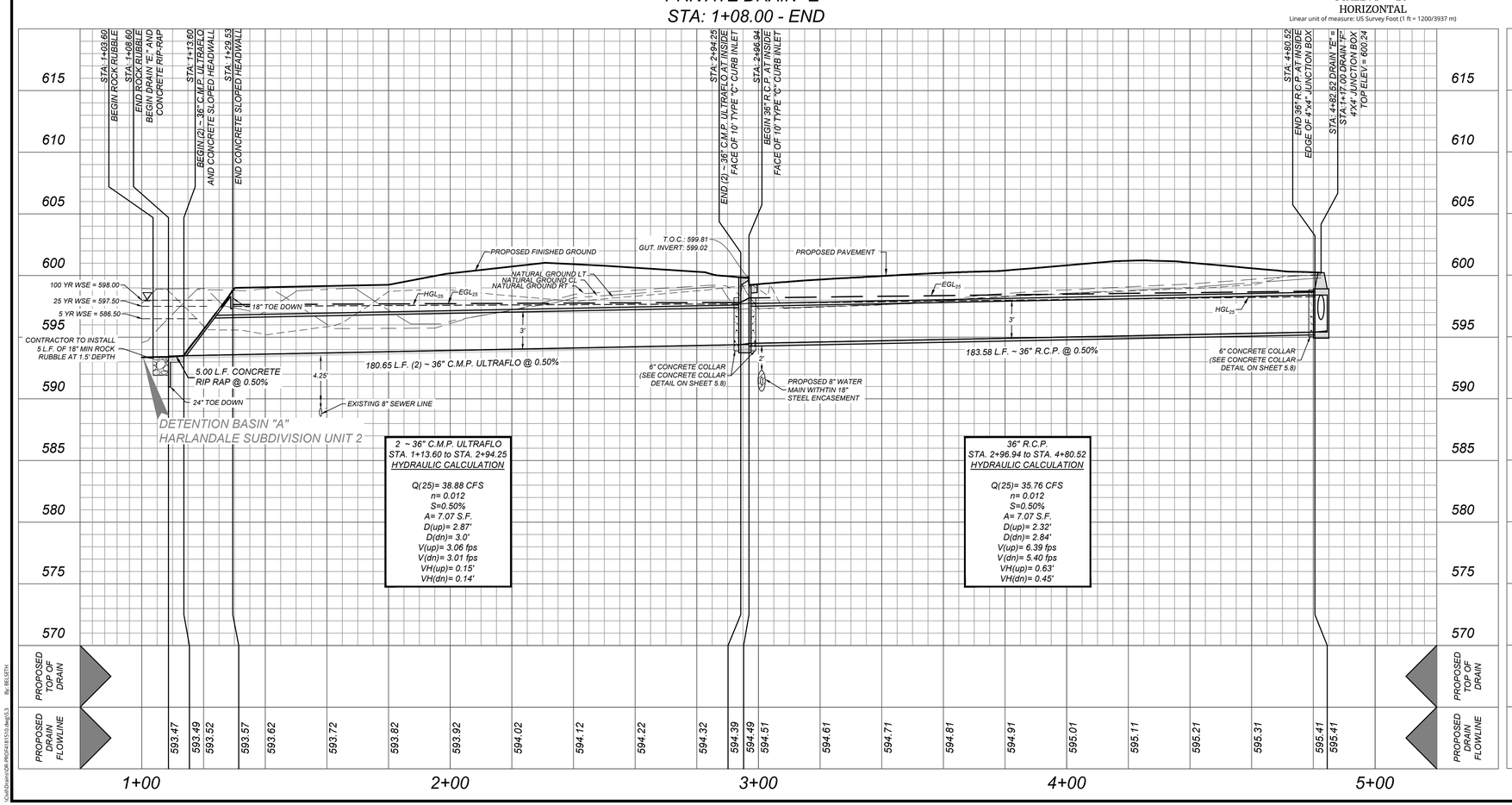
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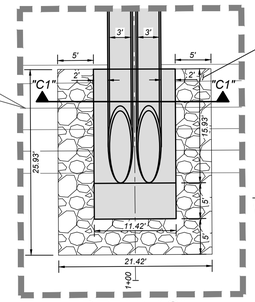
NOTE:

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

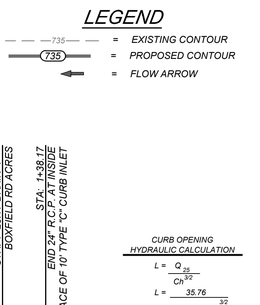
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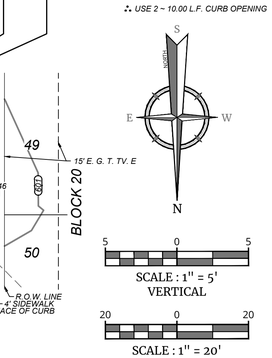


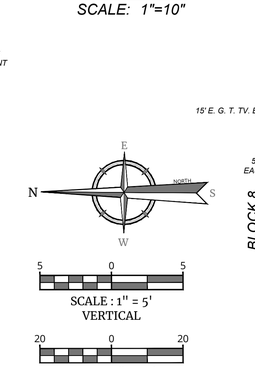




DETAIL "C"
SCALE: 1"=10"

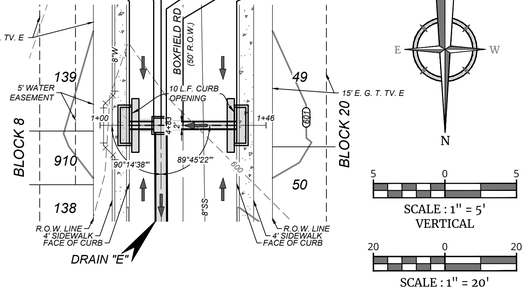






SECTION "C1-C1"
N.T.S.

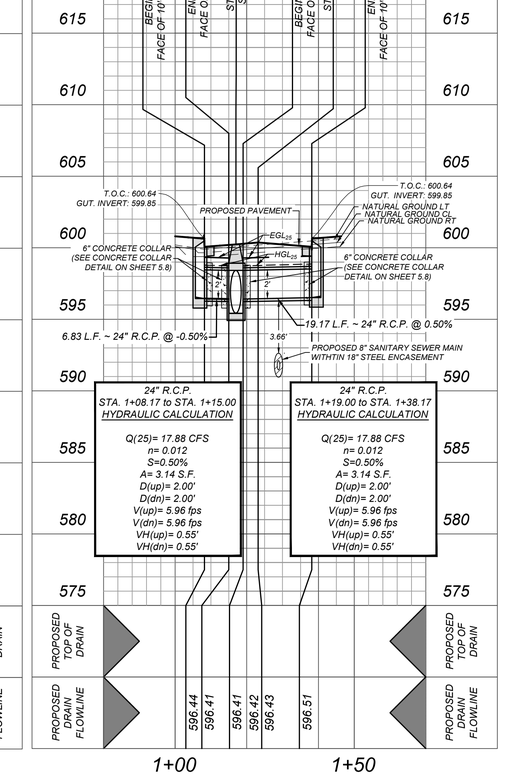
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

PRIVATE DRAIN "E"
STA: 1+08.00 - END

PRIVATE DRAIN "F"
STA: 1+08.17 - END



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REV	DATE	DRAWN BY	DESCRIPTION

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JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
9/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: DR-PROF4181510

SHEET TITLE: DRAIN "E" & "F" PLAN & PROFILE

SHEET NUMBER: 5.3

\Civil\Drawing\DR-PROF4181510.dwg\S3 By: BELSETH

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TRENCH EXCAVATION SAFETY PROTECTION

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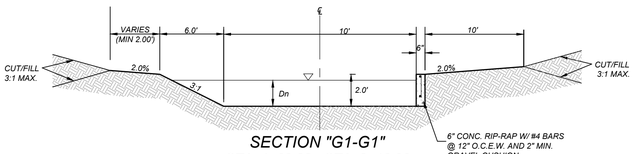
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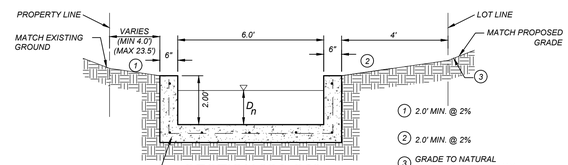
NOTE:

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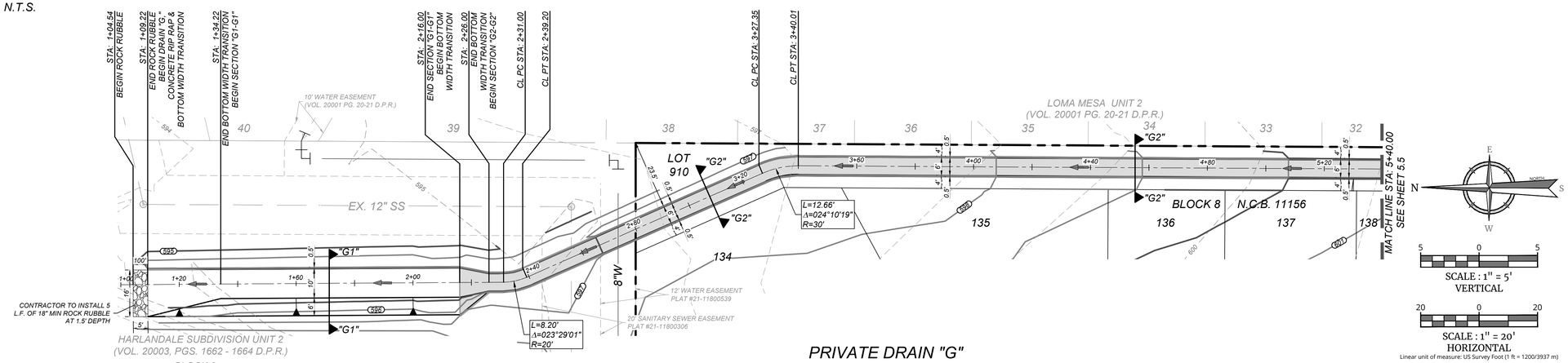
SECTION "G1-G1"
STA. 1+09.22 - STA. 2+16.00
N.T.S.



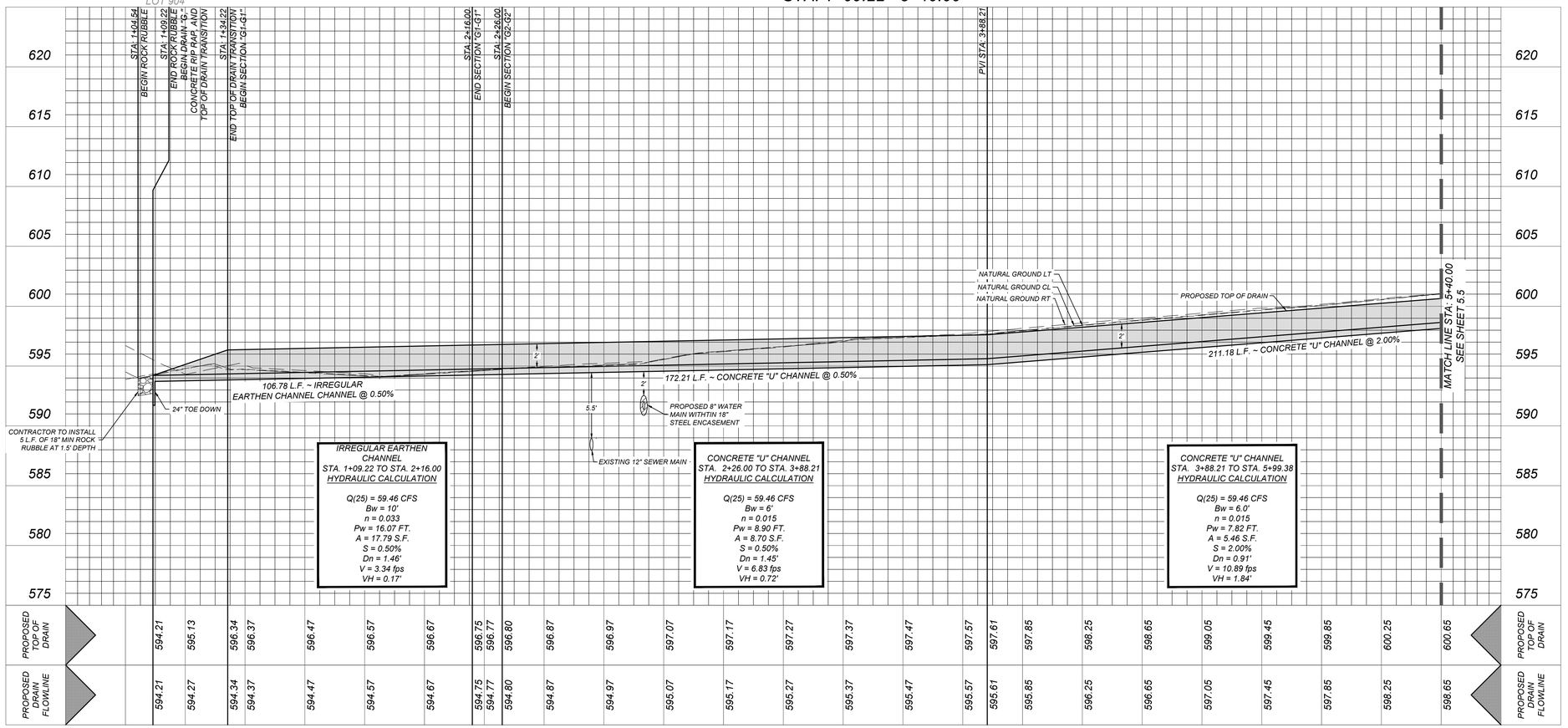
SECTION "G2-G2"
STA. 2+26.00 - STA. 10+01.07
N.T.S.

LEGEND

735 = *EXISTING CONTOUR*
735 = *PROPOSED CONTOUR*
= *FLOW ARROW*



PRIVATE DRAIN "G"
STA: 1+09.22 - 5+40.00



IRREGULAR EARTHEN CHANNEL
STA. 1+09.22 TO STA. 2+16.00
HYDRAULIC CALCULATION

Q(25) = 59.46 CFS
Bw = 10'
n = 0.033
Pw = 16.07 FT.
A = 17.79 S.F.
S = 0.50%
Dn = 1.46'
V = 3.34 fps
VH = 0.17'

CONCRETE "U" CHANNEL
STA. 2+26.00 TO STA. 3+88.21
HYDRAULIC CALCULATION

Q(25) = 59.46 CFS
Bw = 6'
n = 0.015
Pw = 8.90 FT.
A = 8.70 S.F.
S = 0.50%
Dn = 1.45'
V = 6.83 fps
VH = 0.72'

CONCRETE "U" CHANNEL
STA. 3+88.21 TO STA. 5+99.38
HYDRAULIC CALCULATION

Q(25) = 59.46 CFS
Bw = 6.0'
n = 0.015
Pw = 7.82 FT.
A = 5.46 S.F.
S = 2.00%
Dn = 0.91'
V = 10.89 fps
VH = 1.84'

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REV	DATE	DRAWN BY	DESCRIPTION

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JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
9/15/25

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SAN ANTONIO TEXAS

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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194350

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	---	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: DR-PROF4181510

SHEET TITLE: DRAIN "G" PLAN & PROFILE (1 OF 3)

SHEET NUMBER: 5.4

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\\Civil\Drawings\DR-PROF4181510.dwg5.4 By: BELSETH

TRENCH EXCAVATION SAFETY PROTECTION

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NOTE:

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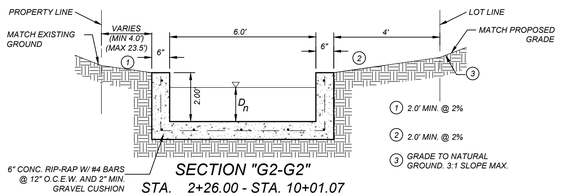
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LEGEND

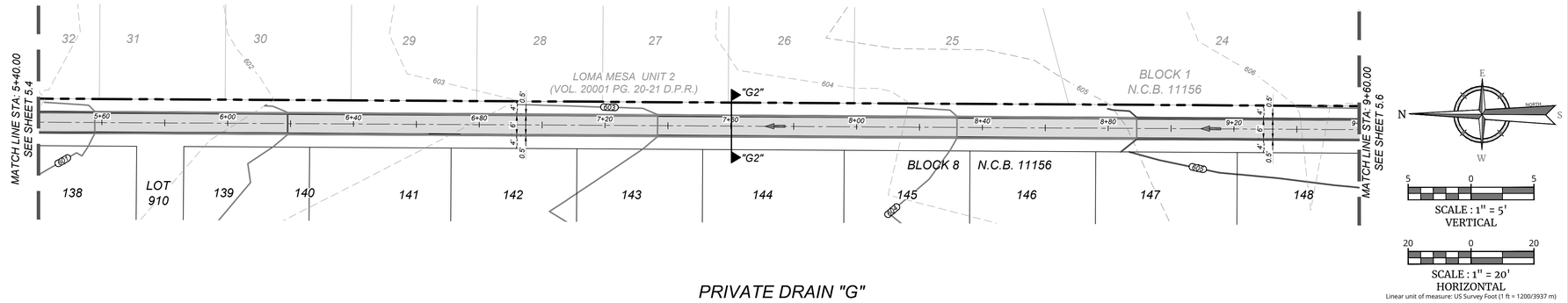
= EXISTING CONTOUR (735)

= PROPOSED CONTOUR (735)

= FLOW ARROW

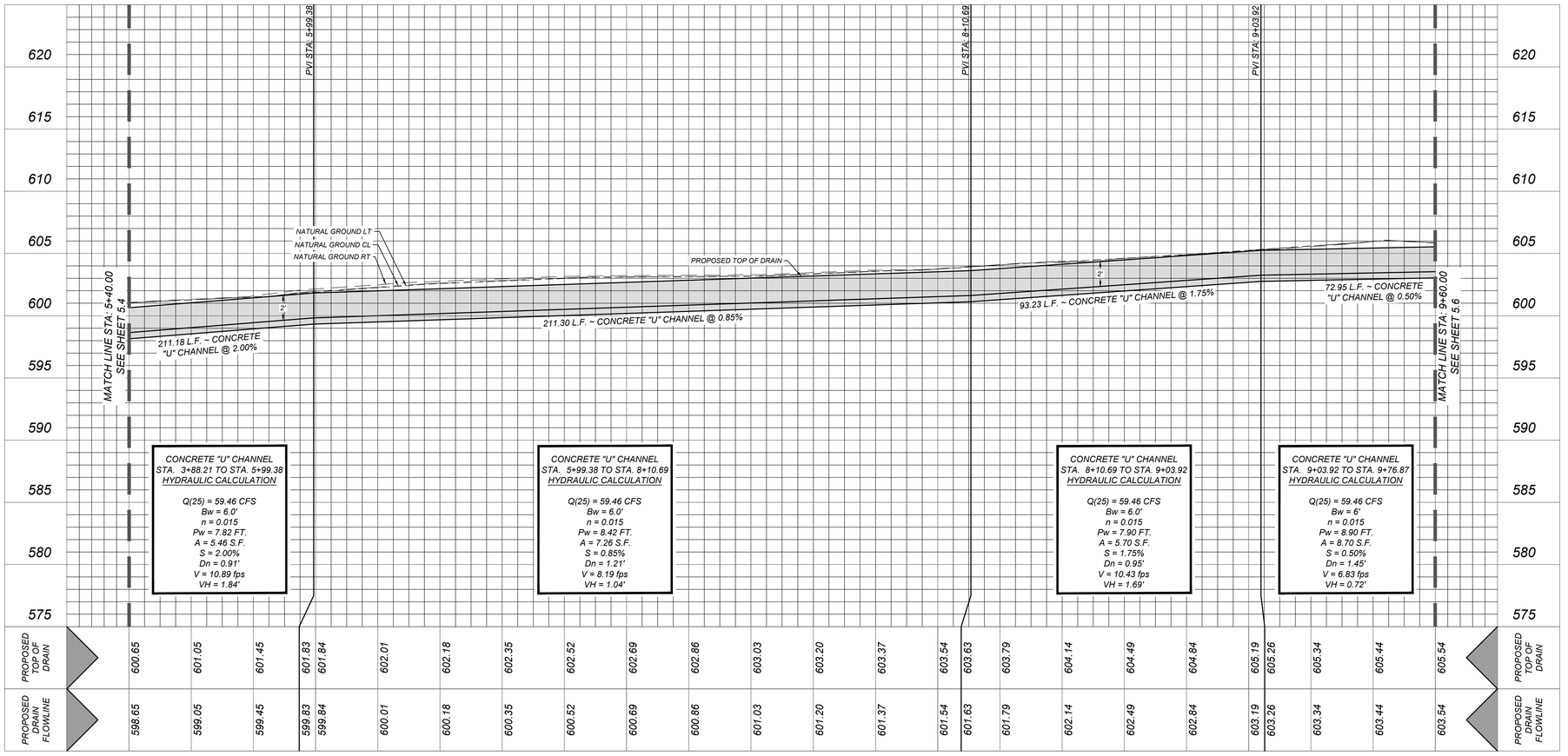


SECTION "G2-G2"
STA. 2+26.00 - STA. 10+01.07
N.T.S.



Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

PRIVATE DRAIN "G"
STA: 5+40.00 - 9+60.00



	5+40			6+00					7+00					8+00					9+00			9+60
PROPOSED TOP OF DRAIN	600.65	601.05	601.45	601.83	601.84	602.01	602.18	602.35	602.52	602.69	602.86	603.03	603.20	603.37	603.54	603.63	603.79	604.14	604.49	604.84	605.19	605.26	605.34	605.44	605.54
PROPOSED DRAIN FLOWLINE	598.65	599.05	599.45	599.83	599.84	600.01	600.18	600.35	600.52	600.69	600.86	601.03	601.20	601.37	601.54	601.63	601.79	602.14	602.49	602.84	603.19	603.26	603.34	603.44	603.54

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ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
9/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194350

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	---	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: DR-PROF4181510

SHEET TITLE: DRAIN "G" PLAN & PROFILE (2 OF 3)

SHEET NUMBER: 5.5

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\\Civil\Drains\DR-PROF4181510.dwg 5.5 By: BELSETH

TRENCH EXCAVATION SAFETY PROTECTION

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

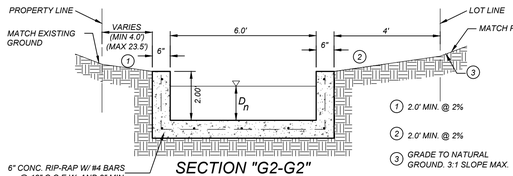
CAUTION!!:

THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. 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 SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

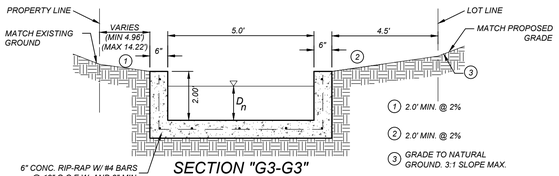
NOTE:

1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.

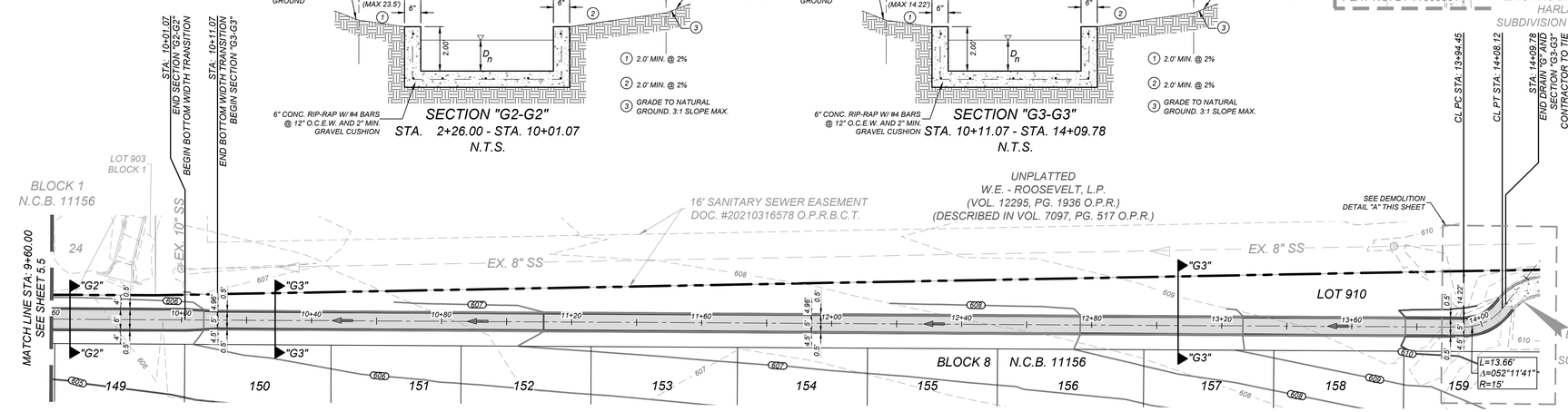
2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.

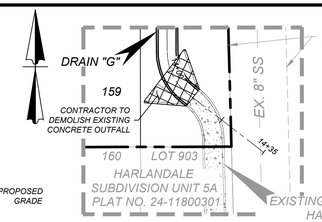


SECTION "G2-G2"
STA. 2+26.00 - STA. 10+01.07
N.T.S.



SECTION "G3-G3"
STA. 10+11.07 - STA. 14+09.78
N.T.S.





DETAIL "A" DEMOLITION PLAN

SCALE: 1" = 20'

MATERIAL	UNITS	QUANTITIES
CONCRETE RIP-RAP	S.Y.	14

LEGEND

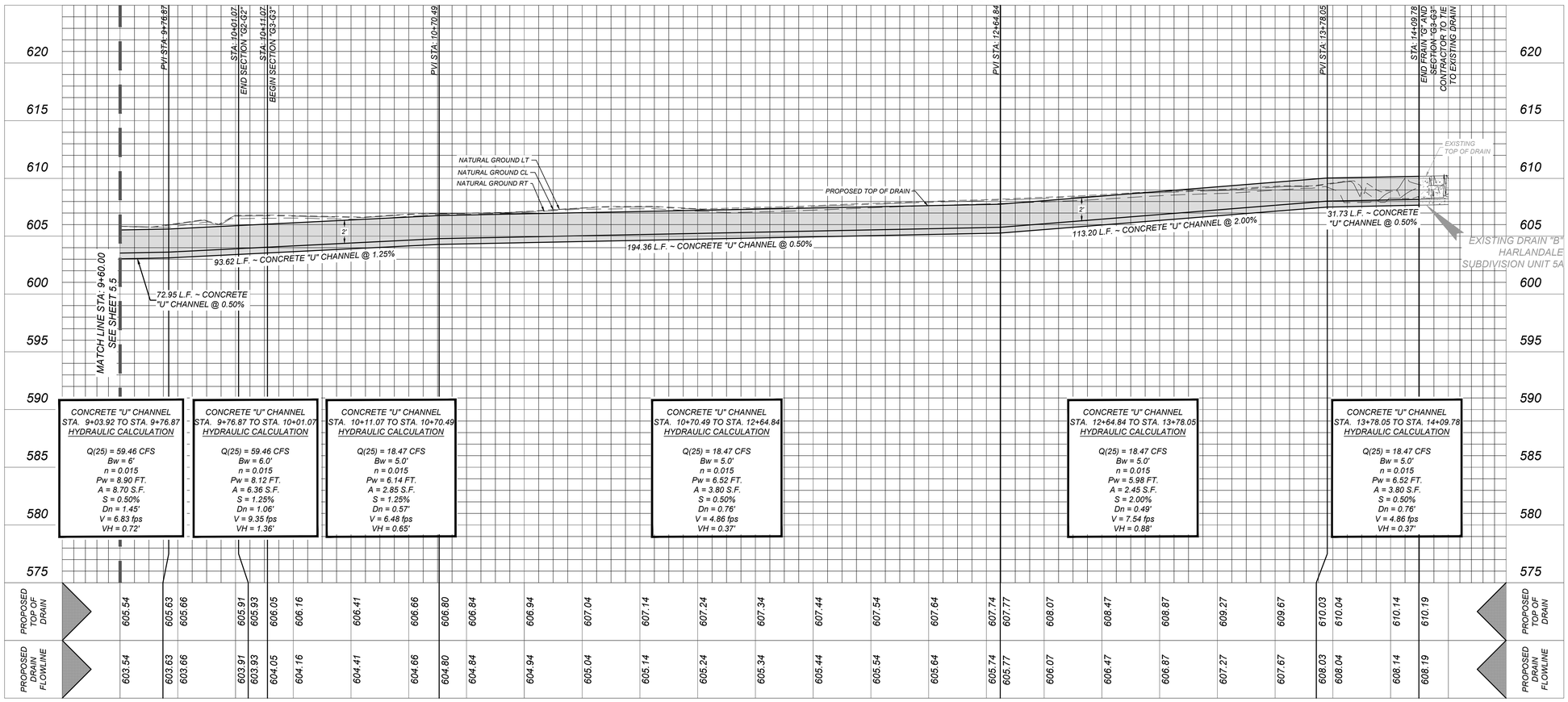
- 735 = EXISTING CONTOUR
- 735 = PROPOSED CONTOUR
- = FLOW ARROW

SCALE : 1" = 5' VERTICAL

SCALE : 1" = 20' HORIZONTAL

Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

PRIVATE DRAIN "G"
STA: 9+60.00 - END



CONCRETE "U" CHANNEL
STA. 9+03.92 TO STA. 9+76.87
HYDRAULIC CALCULATION
Q(25) = 59.46 CFS
Bw = 6'
n = 0.015
Pw = 8.90 FT.
A = 8.70 S.F.
S = 0.50%
Dn = 1.45'
V = 6.83 fps
VH = 0.72'

CONCRETE "U" CHANNEL
STA. 9+76.87 TO STA. 10+01.07
HYDRAULIC CALCULATION
Q(25) = 59.46 CFS
Bw = 6.0'
n = 0.015
Pw = 8.12 FT.
A = 6.36 S.F.
S = 1.25%
Dn = 1.06'
V = 9.35 fps
VH = 1.36'

CONCRETE "U" CHANNEL
STA. 10+11.07 TO STA. 10+70.49
HYDRAULIC CALCULATION
Q(25) = 18.47 CFS
Bw = 5.0'
n = 0.015
Pw = 6.14 FT.
A = 2.85 S.F.
S = 1.25%
Dn = 0.57'
V = 6.48 fps
VH = 0.65'

CONCRETE "U" CHANNEL
STA. 10+70.49 TO STA. 12+64.84
HYDRAULIC CALCULATION
Q(25) = 18.47 CFS
Bw = 5.0'
n = 0.015
Pw = 6.52 FT.
A = 3.80 S.F.
S = 0.50%
Dn = 0.76'
V = 4.86 fps
VH = 0.37'

CONCRETE "U" CHANNEL
STA. 12+64.84 TO STA. 13+78.05
HYDRAULIC CALCULATION
Q(25) = 18.47 CFS
Bw = 5.0'
n = 0.015
Pw = 5.98 FT.
A = 2.45 S.F.
S = 2.00%
Dn = 0.49'
V = 7.54 fps
VH = 0.88'

CONCRETE "U" CHANNEL
STA. 13+78.05 TO STA. 14+09.78
HYDRAULIC CALCULATION
Q(25) = 18.47 CFS
Bw = 5.0'
n = 0.015
Pw = 6.52 FT.
A = 3.80 S.F.
S = 0.50%
Dn = 0.76'
V = 4.86 fps
VH = 0.37'

	9+03.92	9+60	9+76.87	10+00	10+01.07	10+11.07	10+40	10+70.49	10+80	11+00	11+20	11+60	12+00	12+40	12+64.84	12+80	13+00	13+20	13+60	13+78.05	14+00	14+09.78	14+20
PROPOSED TOP OF DRAIN		605.54	605.63	605.66	605.91	605.93	606.05	606.16	606.41	606.66	606.80	606.84	606.94	607.04	607.14	607.24	607.34	607.44	607.54	607.64	607.74	607.77	608.07	608.47	608.87	609.27	609.67	610.03	610.04	610.14	610.19	
PROPOSED DRAIN FLOWLINE		603.54	603.63	603.66	603.91	603.93	604.05	604.16	604.41	604.66	604.80	604.84	604.94	605.04	605.14	605.24	605.34	605.44	605.54	605.64	605.74	605.77	606.07	606.47	606.87	607.27	607.67	608.03	608.04	608.14	608.19	

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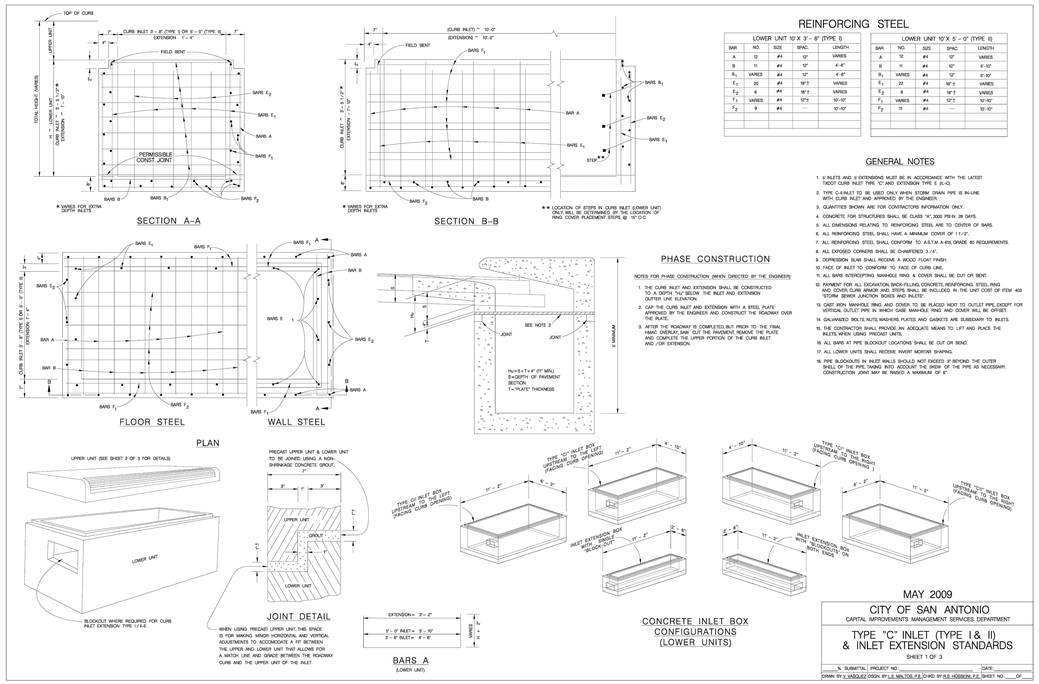
PROJECT NUMBER: 418-15-10
DRAWING NAME: DR-PROF4181510

SHEET TITLE: DRAIN "G" PLAN & PROFILE (3 OF 3)

SHEET NUMBER: 5.6

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\\Civil\Drains\DR-PROF4181510.dwg\5.6 By: BELSETH



REINFORCING STEEL

LOWER UNIT 10' X 3' - 8" (TYPE I)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'-8"
B_1	VARIES	#4	12"	4'-8"
E_1	20	#4	18"±	VARIES
E_2	6	#4	18"±	VARIES
F_1	VARIES	#4	17"±	10'-10"
F_2	9	#4	----	10'-10"

LOWER UNIT 10' X 5' - 0" (TYPE II)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	17	#4	12"	VARIES
B	11	#4	12"	5'-10"
B_1	VARIES	#4	12"	5'-10"
E_1	22	#4	18"±	VARIES
E_2	8	#4	18"±	VARIES
F_1	VARIES	#4	17"±	10'-10"
F_2	11	#4	----	10'-10"

GENERAL NOTES

1. 6" INLETS AND 9" EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE II, G, C).
2. TYPE C-8 INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN-LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONSTRUCTIONS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615 GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACK-FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
14. GALVANIZED BOLTS, NUTS, WASHERS, PLATES AND GASKETS ARE SUBSIDIARY TO INLETS.
15. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS WHEN USING PRECAST UNITS.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BENT.
17. ALL LOWER UNITS SHALL RECEIVE INVERT MORTAR SHAPING.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 9" BEYOND THE OUTER SHELL OF THE PIPE, TAKING INTO ACCOUNT THE SWEW OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".

PHASE CONSTRUCTION

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

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

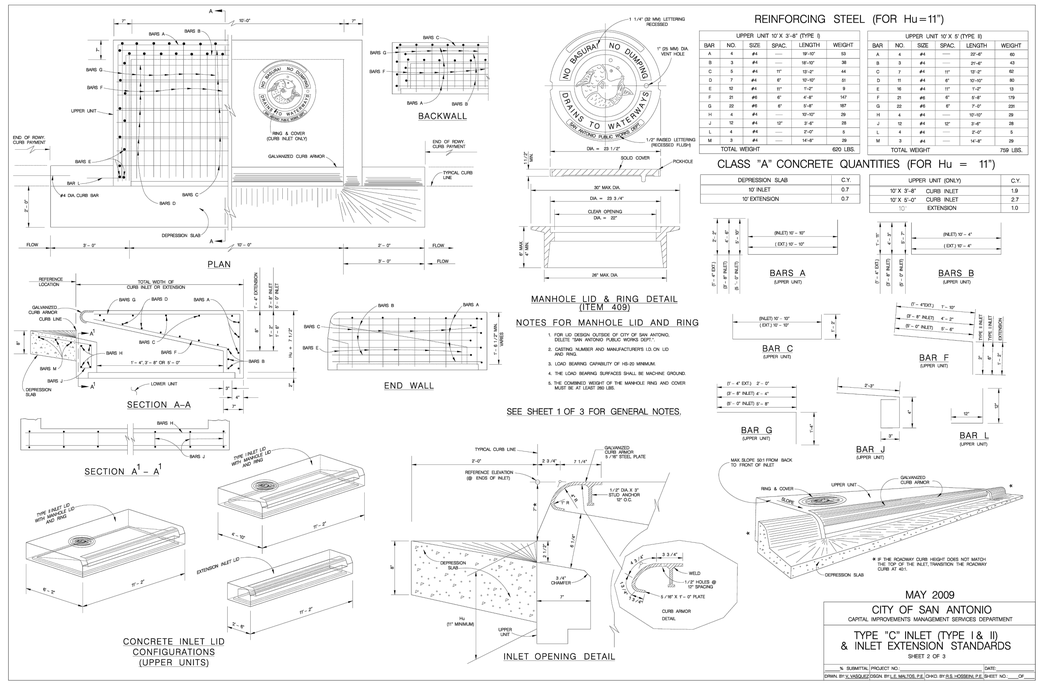
SEE BOTTOM 2'
JOINT
JOINT
H_U=5'-7"+4"-(1/2" MIN.)
5"-DEPTH OF PAVEMENT SECTION
T=1"PLATE THICKNESS
5" MINIMUM

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 1 OF 3

% SUBMITTAL PROJECT NO.: _____ DATE: _____
DRWN. BY V. VASQUEZ DSGN. BY L.E. MALTOS, P.E. CHKD. BY R.S. HOSEIN, P.E. SHEET NO. ____OF____



UPPER UNIT 10' X 3'-8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	6	#4	----	9'-0"	53
B	3	#4	----	16'-10"	38
C	7	#4	11"	13'-2"	141
D	7	#4	6"	10'-10"	51
E	12	#4	11"	1'-2"	9
F	21	#6	6"	4'-8"	147
G	22	#6	6"	5'-8"	187
H	6	#4	----	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	----	2'-0"	5
M	3	#4	----	14'-8"	29
TOTAL WEIGHT					620 LBS.

UPPER UNIT 10' X 5' (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	6	#4	----	9'-0"	60
B	3	#4	----	21'-6"	43
C	7	#4	11"	13'-2"	82
D	11	#4	6"	10'-10"	80
E	16	#4	11"	1'-2"	13
F	21	#6	6"	5'-8"	179
G	22	#6	6"	7'-0"	231
H	6	#4	----	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	----	2'-0"	5
M	3	#4	----	14'-8"	29
TOTAL WEIGHT					759 LBS.

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

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

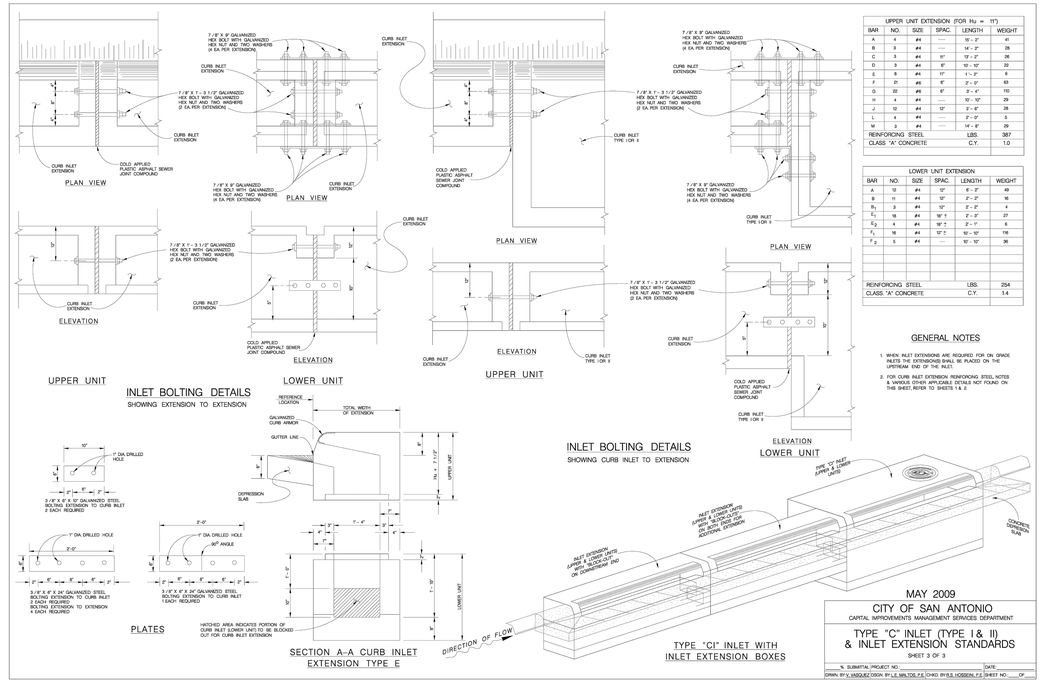
UPPER UNIT (ONLY)	C.Y.
10' X 3'-8" CURB INLET	1.9
10' X 5'-0" CURB INLET	2.7
EXTENSION	1.0

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 2 OF 3

% SUBMITTAL PROJECT NO.: _____ DATE: _____
DRWN. BY V. VASQUEZ DSGN. BY L.E. MALTOS, P.E. CHKD. BY R.S. HOSEIN, P.E. SHEET NO. ____OF____

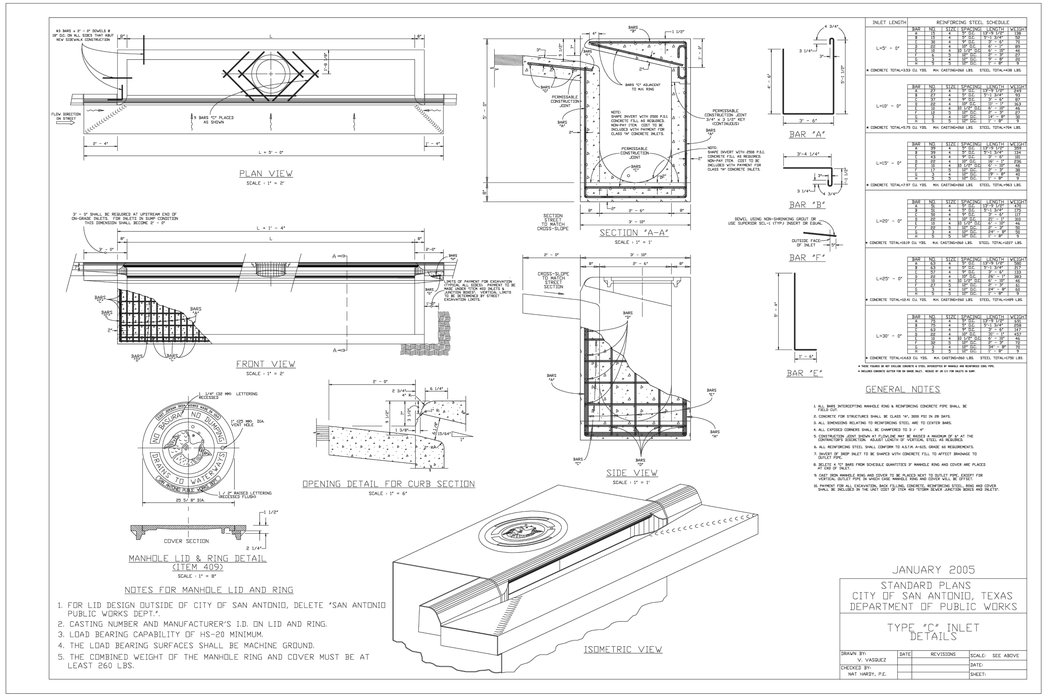


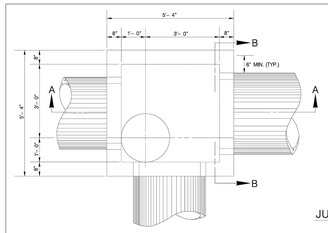
UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	----	10'- 2"	41
B	2	#4	----	14'- 2"	28
C	3	#4	11"	13'- 2"	26
D	3	#4	6"	10'- 10"	22
E	8	#4	11"	1'- 2"	6
F	21	#6	6"	2'- 0"	63
G	22	#6	6"	3'- 4"	110
H	4	#4	----	10'- 10"	29
J	12	#4	12"	3'- 6"	28
L	4	#4	----	2'- 0"	5
M	3	#4	----	14'- 8"	29
REINFORCING STEEL				LBS.	387
CLASS "A" CONCRETE				C.Y.	1.0

LOWER UNIT EXTENSION					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	9'- 2"	49
B	11	#4	12"	9'- 2"	16
B_1	3	#4	12"	9'- 2"	4
E_1	18	#4	18"±	9'- 2"	27
E_2	4	#4	18"±	9'- 2"	6
F_1	16	#4	12"±	10'- 10"	116
F_2	5	#4	----	10'- 10"	36
REINFORCING STEEL				LBS.	254
CLASS "A" CONCRETE				C.Y.	1.4

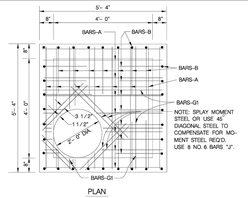
GENERAL NOTES

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


#5 BARS x 2' - 0" SPACED @ 6" CENTERS AT CURB INLET AND 4EA SIDEWALK CONSTRUCTION
PLAN VIEW
SCALE - 1" = 1'
FLOW DIRECTION (TYPICAL)
5 BARS "C" PLACED AS SHOWN
2'-4"
2'-0"
L = 5'-0"
PERMEABLE CONSTRUCTION JOINT (TYPICAL CONSTRUCTION)
NOTE: SHAPE INVERT WITH 2500 PSI CONCRETE FILL AS REQUIRED. NON-PAY ITEM. COST TO BE INCLUDED WITH PAYMENT FOR CLASS "A" CONCRETE INLETS.
BARS "C" ADJACENT TO RAIL RING
SECTION "A-A"
SCALE - 1" = 1'
BAR "A"
BAR "B"
BAR "F"
BAR "E"
3 1/4"
3'-8"
3'-4 1/4"
2'-0"
2'-4"
BEVEL LEDGE NON-SHRINKING GROUT OR USE SUPERIOR SELL-1 (TYP.) GROUT OR EQUAL
OUTSIDE FACE OF INLET
FRONT VIEW
SCALE - 1" = 1'
5'-0" SHALL BE REQUIRED AT UPSTREAM END OF DEPRESSED CURB SECTION. ALL OTHER LOCATIONS THIS DIMENSION SHALL BE 2'-0"
L = 7'-0" + 4"
L
4"
2'-0"
A
A
BARS
BARS
2"
2"
BARS
BARS
1 1/2" CLR FOR MIN. LETTERING RECESSED
1" DIA WEEP HOLE
(5 SLOTS @ 6" EA)
1/2" MINIMUM RADIUS FOR LETTERING
COVER SECTION
2 1/4"
MANHOLE LID & RING DETAIL (ITEM 409)
SCALE - 1" = 8"
NOTES FOR MANHOLE LID AND RING
1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT."
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.
2'-0"
6"
2'-0"
2'-0"
2'-0

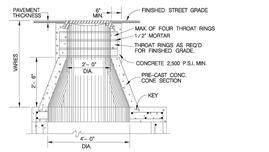


PLAN



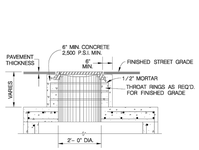
JUNCTION BOX TOP SLAB SHOWING STEEL

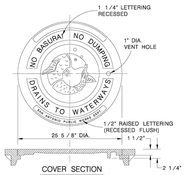




VARIATION OF VERTICAL STACK

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





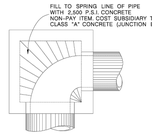
COVER SECTION

MANHOLE LID & RING DETAIL

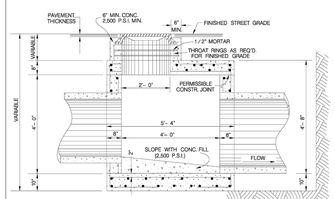
SCALE: 1 : 16

NOTES FOR MANHOLE LID AND RING

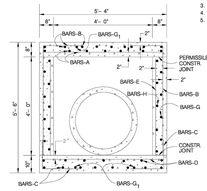
1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER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



CURVED DEFLECTOR DETAIL



SECTION A–A



SECTION B–B

JANUARY 2005

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

4'x4'x4' JUNCTION BOX STANDARDS

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

SHEET NO. ____ OF ____

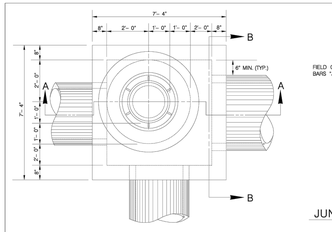
SCHEDULE FOR REINFORCING STEEL

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

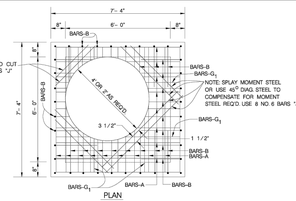
CLASS "A" CONCRETE– 3.43 CU. YDS. (DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

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

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



PLAN



JUNCTION BOX TOP SLAB SHOWING STEEL



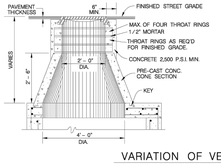
SCHEDULE FOR REINFORCING STEEL

SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	21	4	9" O.C.	7'- 1"	99
	B	46	5	8" O.C.	8'- 6"	408
	C	46	5	8" O.C.	5'- 3"	252
STRAIGHT	D	21	4	9" O.C.	7'- 1"	99
STRAIGHT	E	28	3	12" O.C.	5'- 11"	62
STRAIGHT	G	20	4	12" O.C.	7'- 1"	95
STRAIGHT	G_1	8	4	AS SHOWN	6'- 1"	33
STRAIGHT	H	27	3	12" O.C.	7'- 1"	72
STRAIGHT	J	8	6	3 1/2" O.C.	4'- 11"	59
					TOTAL	1,179 LBS.

CLASS "A" CONCRETE – 6.84 CU. YDS. (DOES NOT EXCLUDE MANHOLE OPENINGS OR PIPE OPENING)

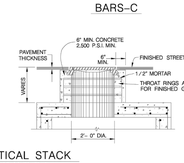
★ NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN – ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE–DESIGN OR STEEL REQ'D.

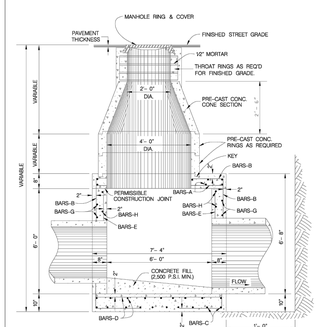
1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3 /4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE ASTM A–15. THE DEFORMATION SHALL CONFORM TO ASTM A–305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER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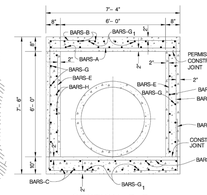
VARIATION OF VERTICAL STACK

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

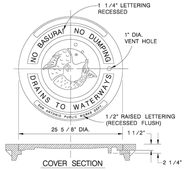




SECTION A–A



SECTION B–B



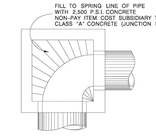
COVER SECTION

MANHOLE LID & RING DETAIL

SCALE: 1 : 16

NOTES FOR MANHOLE LID AND RING

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



CURVED DEFLECTOR DETAIL

JANUARY 2005

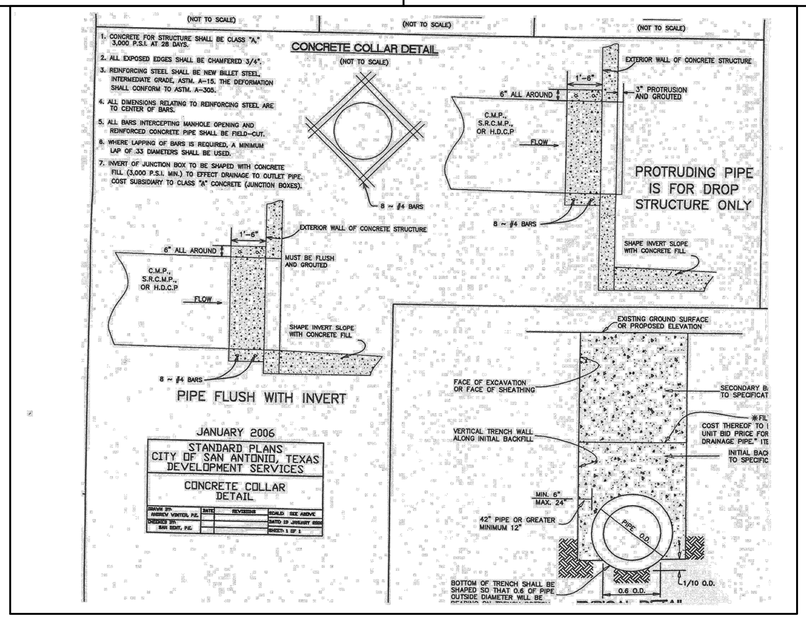
CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

6'x6'x6' JUNCTION BOX STANDARDS

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

SHEET NO. ____ OF ____



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Formerly Known as KFW

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STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER

8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME
LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#:F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10

DRAWING NAME: DR-DETAILS4181510

SHEET TITLE: DRAINAGE DETAILS (2 OF 3)

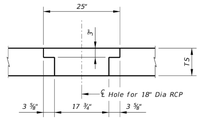
SHEET NUMBER: 5.8

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

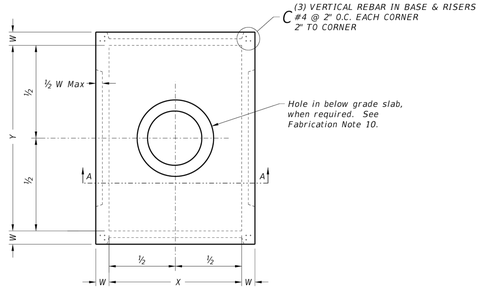
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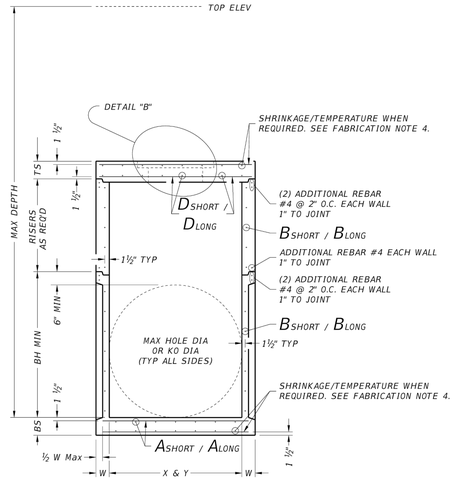
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FILE:



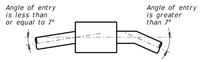
DETAIL "B"



PLAN VIEW



SECTION A-A



PIPE CONNECTION DETAIL

Connect pipes within 7° of normal to PJB wall.
If necessary, use pipe elbow or curved approach
alignment to stay within this limit.

FABRICATION NOTES:
1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 ½" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 2" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.
10. Provide hole in below grade slab only when PJB is installed with inlet type POD.

INSTALLATION NOTES:
1. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to junction box.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

GENERAL NOTES:
1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for junction box is per Item 465 "Junction Boxes, Manholes, and Inlets" by type and size.

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

PRECAST JUNCTION BOX

PJB

FILE: CD-PJB-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

DATE:
FILE:

Size	Base Slab: Short Span Steel Area	Base Slab: Long Span Steel Area	Base Slab: Thickness	Base Unit or Riser Walls: Short Span Steel Area	Base Unit or Riser Walls: Long Span Steel Area	Base Unit or Riser Walls: Thickness	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Reduced Riser Size	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Short Span Steel Area	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Long Span Steel Area	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Thickness
X x Y	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS
ft.	in²/ft	in²/ft	in.	in²/ft	in²/ft	in.	ft. **	in²/ft	in²/ft	in.
Precast Junction Box (PJB) 3x3	0.23	0.23	6	0.19	0.19	6	N/A	0.37	0.37	9
4x4	0.29	0.29	6	0.24	0.24	6	N/A	0.41	0.41	9
3x5	0.29	0.18	6	0.19	0.35	6	N/A	0.48	0.48	9
4x5	0.36	0.18	6	0.22	0.34	6	N/A	0.42	0.42	9
5x5	0.36	0.36	6	0.34	0.34	6	N/A	0.43	0.43	9
5x6	0.27	0.27	9	0.34	0.45	6	N/A	0.48	0.48	9
6x6	0.27	0.27	9	0.45	0.45	6	N/A	0.56	0.56	9
8x8	0.46	0.46	9	0.51	0.51	8	N/A	0.45	0.45	12
Precast Base (PB) 3x3	0.23	0.23	6	0.19	0.19	6	N/A	N/A	N/A	N/A
4x4	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A
3x5	0.29	0.18	6	0.19	0.35	6	3x3	0.30	0.34	9
4x5	0.36	0.18	6	0.22	0.34	6	3x3	0.30	0.30	9
4x5	0.36	0.18	6	0.22	0.34	6	4x4	0.30	0.30	9
4x5	0.36	0.18	6	0.22	0.34	6	48"	0.39	0.39	9
4x5	0.36	0.18	6	0.22	0.34	6	3x5	0.33	0.40	9
5x5	0.36	0.36	6	0.34	0.34	6	3x3	0.34	0.34	9
5x5	0.36	0.36	6	0.34	0.34	6	4x4	0.36	0.36	9
5x5	0.38	0.38	6	0.34	0.34	6	48"	0.36	0.36	9
5x5	0.36	0.36	6	0.34	0.34	6	3x5	0.34	0.40	9
5x6	0.31	0.31	9	0.34	0.45	6	3x3	0.34	0.34	9
5x6	0.27	0.27	9	0.34	0.45	6	4x4	0.36	0.45	9
5x6	0.29	0.29	9	0.34	0.45	6	48"	0.36	0.45	9
5x6	0.29	0.29	9	0.34	0.45	6	3x5	0.45	0.45	9
6x6	0.29	0.29	9	0.45	0.45	6	3x3	0.41	0.41	9
6x6	0.27	0.27	9	0.45	0.45	6	4x4	0.45	0.45	9
6x6	0.29	0.29	9	0.45	0.45	6	48"	0.45	0.45	9
6x6	0.29	0.29	9	0.45	0.45	6	3x5	0.45	0.45	9
8x8	0.52	0.52	9	0.51	0.51	8	3x3	0.61	0.61	12
8x8	0.52	0.52	9	0.51	0.51	8	4x4	0.70	0.70	12
8x8	0.52	0.52	9	0.51	0.51	8	48"	0.70	0.70	12
8x8	0.52	0.52	9	0.51	0.51	8	3x5	0.70	0.85	12

Size	MAX DEPTH = 25 ft. to top of BASE SLAB: Base Slab: Short Span Steel Area	Base Slab: Long Span Steel Area	Base Slab: Thickness	Base Unit or Riser Walls: Short Span Steel Area	Base Unit or Riser Walls: Long Span Steel Area	Base Unit or Riser Walls: Thickness	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Reduced Riser Size	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Short Span Steel Area	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Long Span Steel Area	Below Grade Slab (w/PJB) Reducing Slab (w/PB): Thickness	Min Height (See Gen Note 3)	Max HOLE DIA (See Fab Note 2)	Max KO DIA (See Fab Note 2)
X x Y	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS	BH MIN	HOLE DIA	KO DIA
ft.	in²/ft	in²/ft	in.	in²/ft	in²/ft	in.	ft. **	in²/ft	in²/ft	in.	ft.	in.	in.
Precast Junction Box (PJB) 3x3	0.29	0.29	6	0.24	0.24	6	N/A	0.37	0.37	9	3.5	36	36
4x4	0.47	0.47	6	0.38	0.38	6	N/A	0.41	0.41	9	4.5	48	48
3x5	0.39	0.18	6	0.23	0.59	6	N/A	0.48	0.48	9	3.5	36/60	36/60
4x5	0.53	0.26	6	0.39	0.59	6	N/A	0.42	0.42	9	4.5	48/60	48/60
5x5	0.62	0.62	6	0.59	0.59	6	N/A	0.43	0.43	9	5.5	60	60
5x6	0.47	0.45	9	0.38	0.54	8	N/A	0.48	0.48	9	5.5	60/72	60/72
6x6	0.52	0.52	9	0.54	0.54	8	N/A	0.56	0.56	9	6.5	72	72
8x8	0.87	0.87	9	0.59	0.59	10	N/A	0.45	0.45	12	8.5	96	72
Precast Base (PB) 3x3	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	3.5	36	36
4x4	0.47	0.47	6	0.38	0.38	6	N/A	N/A	N/A	N/A	4.5	48	48
3x5	0.39	0.18	6	0.23	0.59	6	3x3	0.40	0.40	9	3.5	36/60	36/60
4x5	0.53	0.26	6	0.39	0.59	6	3x3	0.46	0.37	9	4.5	48/60	48/60
4x5	0.53	0.26	6	0.39	0.59	6	4x4	0.39	0.39	9	4.5	48/60	48/60
4x5	0.53	0.26	6	0.39	0.59	6	48"	0.47	0.47	9	4.5	48/60	48/60
4x5	0.53	0.26	6	0.39	0.59	6	3x5	0.48	0.48	9	4.5	48/60	48/60
5x5	0.62	0.62	6	0.59	0.59	6	3x3	0.53	0.53	9	5.5	60	60
5x5	0.62	0.62	6	0.59	0.59	6	4x4	0.64	0.64	9	5.5	60	60
5x5	0.62	0.62	6	0.59	0.59	6	48"	0.64	0.64	9	5.5	60	60
5x5	0.62	0.62	6	0.59	0.59	6	3x5	0.53	0.53	9	5.5	60	60
5x6	0.47	0.45	9	0.38	0.54	8	3x3	0.61	0.50	9	5.5	60/72	60/72
5x6	0.47	0.45	9	0.38	0.54	8	4x4	0.74	0.57	9	5.5	60/72	60/72
5x6	0.47	0.45	9	0.38	0.54	8	48"	0.74	0.57	9	5.5	60/72	60/72
5x6	0.47	0.45	9	0.38	0.54	8	3x5	0.61	0.61	9	5.5	60/72	60/72
6x6	0.52	0.52	9	0.54	0.54	8	3x3	0.74	0.74	9	6.5	72	72
6x6	0.52	0.52	9	0.54	0.54	8	4x4	0.87	0.87	9	6.5	72	72
6x6	0.52	0.52	9	0.54	0.54	8	48"	0.87	0.87	9	6.5	72	72
6x6	0.52	0.52	9	0.54	0.54	8	3x5	0.87	0.87	9	6.5	72	72
8x8	0.91	0.91	9	0.70	0.70	10	3x3	0.85	0.85	12	8.5	96	72
8x8	0.87	0.87	9	0.70	0.70	10	4x4	1.01	1.01	12	8.5	96	72
8x8	0.87	0.87	9	0.70	0.70	10	48"	1.01	1.01	12	8.5	96	72
8x8	0.87	0.87	9	0.70	0.70	10	3x5	1.01	1.01	12	8.5	96	72

** Unless otherwise indicated.

FABRICATION NOTES:
1. Maximum spacing of reinforcement is 8".
2. At manufacturer's option, provide cast or cored holes or thin wall panels (KO) to the maximum diameter shown for each. When no penetration is required, it is acceptable to provide a wall with no sectional reduction.

GENERAL NOTES:
1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PJB for details.
2. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PB for details.
3. Min Height shown is for stock base units. Use stock base units whenever practical. Smaller height base units can be used in special installation circumstances, when noted elsewhere in the plans. Absolute minimum height of base units is 2'-6".

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX

PDD

FILE: CD-PDD-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

CivilDrawn\DR.DETAILS4181510.dwg\5.9 By: BELSETH

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STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO
TEXAS

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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: DR-DETAILS4181510

SHEET TITLE: DRAINAGE DETAILS (3 OF 3)

SHEET NUMBER: 5.9

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION

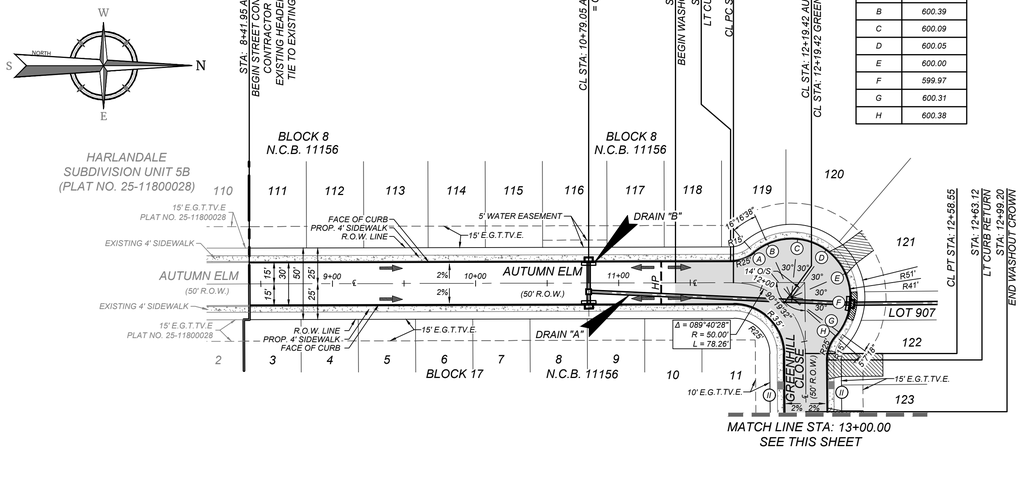
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

CAUTION!!:

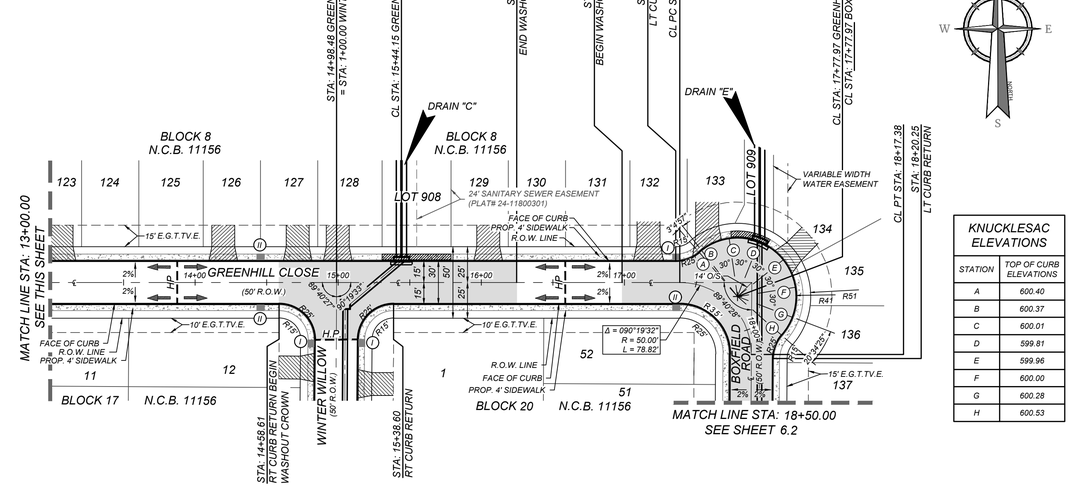
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LEGEND

- R.O.W. = RIGHT OF WAY
- E.G.T.V.E. = GAS, ELECTRIC, TELEPHONE & CABLE EASEMENT
- = FLOW ARROW
- = WASHOUT CROWN
- (I) = WHEELCHAIR RAMP TYPE I SEE SHEET 6.5
- (II) = WHEELCHAIR RAMP TYPE II SEE SHEET 6.5
- = SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
- = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
- = PROPOSED DRIVEWAY LOCATION
- H.P. = HIGH POINT
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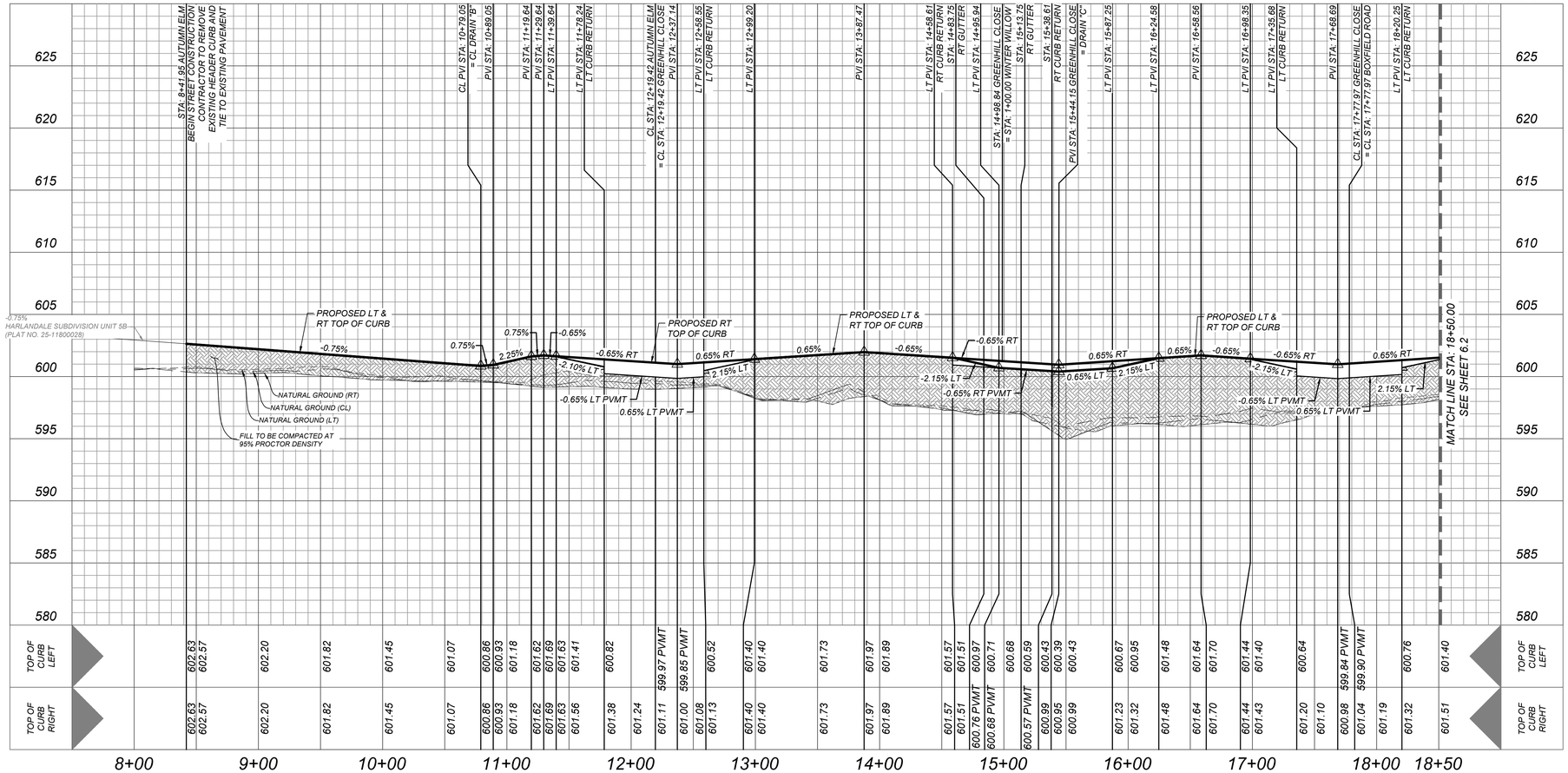
KNUCKLESAC ELEVATIONS	
STATION	TOP OF CURB ELEVATIONS
A	600.78
B	600.39
C	600.09
D	600.05
E	600.00
F	599.97
G	600.31
H	600.38



KNUCKLESAC ELEVATIONS	
STATION	TOP OF CURB ELEVATIONS
A	600.40
B	600.37
C	600.01
D	599.81
E	599.96
F	600.00
G	600.28
H	600.53

AUTUMN ELM / GREENHILL CLOSE / BOXFIELD ROAD
STA: 8+41.95 - 18+50.00

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



	8+00	9+00	10+00	11+00	12+00	13+00	14+00	15+00	16+00	17+00	18+00	18+50
TOP OF CURB LEFT	602.63 602.57	602.20	601.82	601.45	601.07	600.86 600.93	601.18	601.62 601.69	601.63 601.41	600.82	599.97 PVMT 599.85 PVMT	601.00 601.08	601.13	601.40 601.40	601.73	601.97 601.89	601.57 601.51	600.76 PVMT 600.68 PVMT	600.71 600.68	600.59 600.57 PVMT	600.43 600.39	600.95 600.99	600.43	600.67 601.23	600.95 601.32	601.48	601.64 601.70	601.44 601.43	601.40 601.44	600.64 601.20	601.10	599.84 PVMT 600.98	599.90 PVMT 601.04	601.19	600.76 601.32	601.40 601.51	TOP OF CURB LEFT
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TOP OF CURB RIGHT																																				

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JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: C-STRT-PROF

SHEET TITLE: AUTUMN ELM & GREENHILL CLOSE PLAN & PROFILE (1 OF 2)

SHEET NUMBER: 6.1

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TRENCH EXCAVATION SAFETY PROTECTION

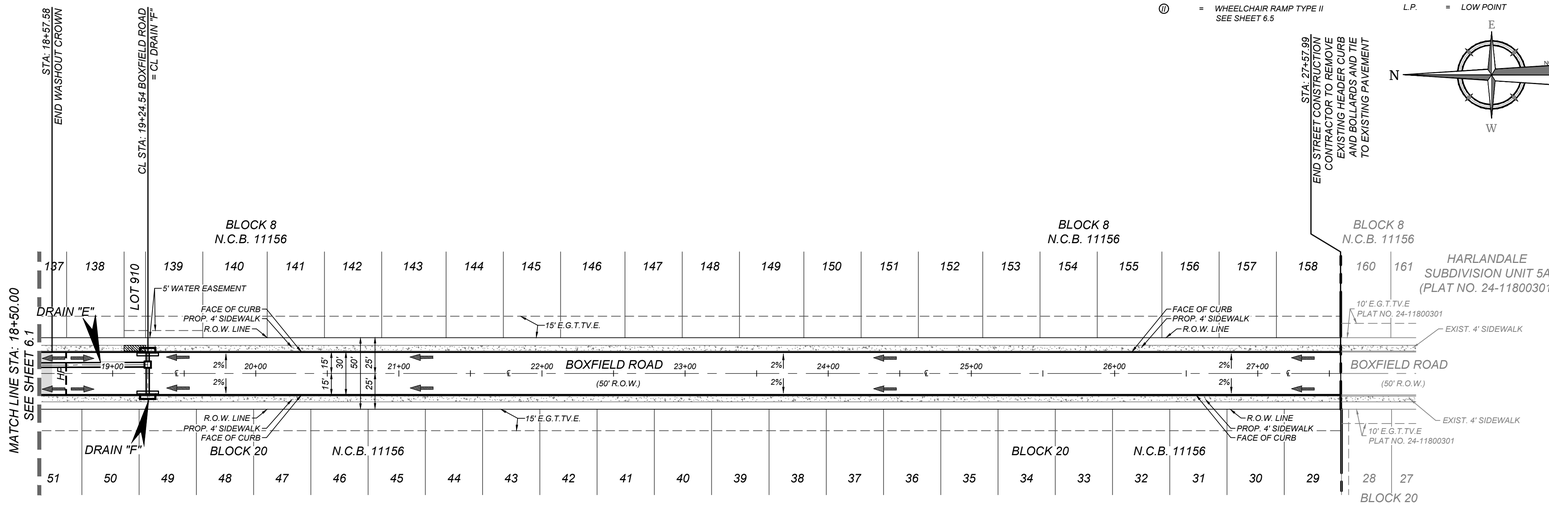
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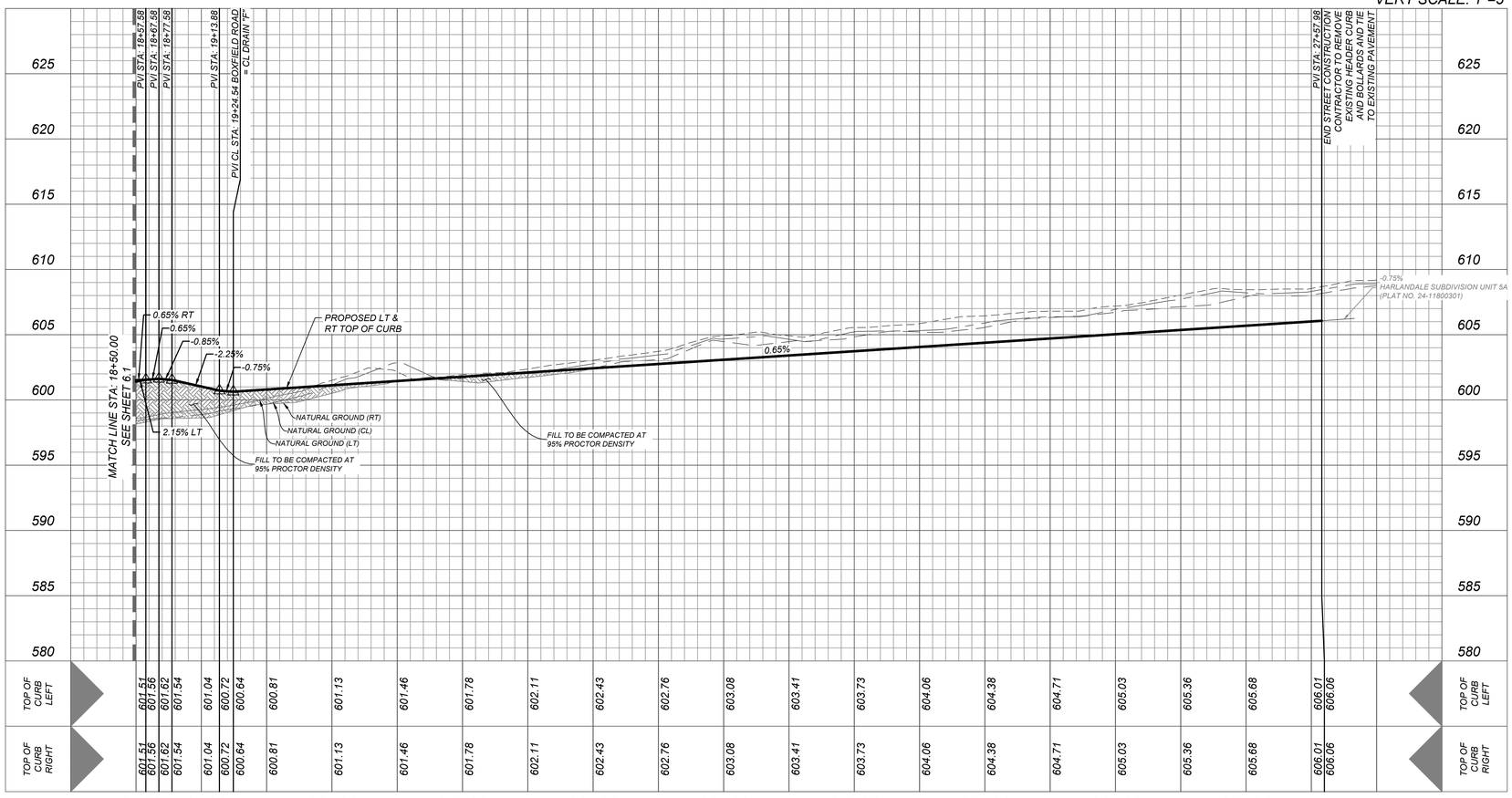
LEGEND

- R.O.W. = RIGHT OF WAY
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- = FLOW ARROW
- = WASHOUT CROWN
- (I) = WHEELCHAIR RAMP TYPE I SEE SHEET 6.5
- (II) = WHEELCHAIR RAMP TYPE II SEE SHEET 6.5
- = SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
- = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
- = PROPOSED DRIVEWAY LOCATION
- H.P. = HIGH POINT
- L.P. = LOW POINT



BOXFIELD ROAD
STA: 18+50.00 TO END

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



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FOR
KB HOME
LONE STAR, LLC.

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TBPE Firm#: F-14909
TBPLS Firm#: 10194550

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AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: C-STRT-PROF

SHEET TITLE: BOXFIELD ROAD PLAN & PROFILE (2 OF 2)

SHEET NUMBER: 6.2

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TRENCH EXCAVATION SAFETY PROTECTION

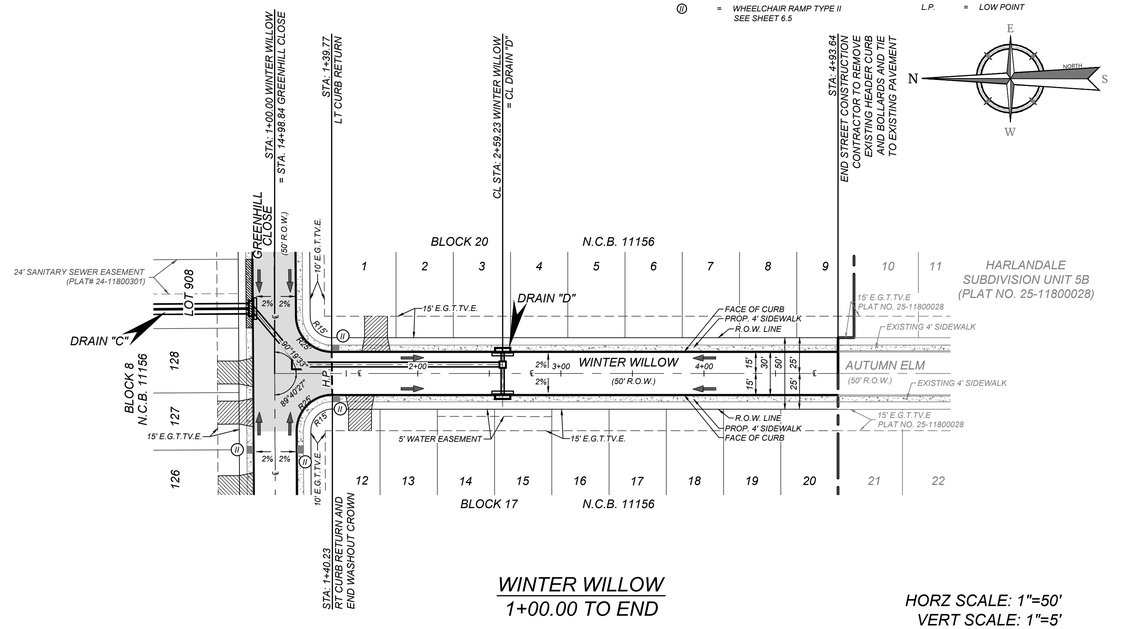
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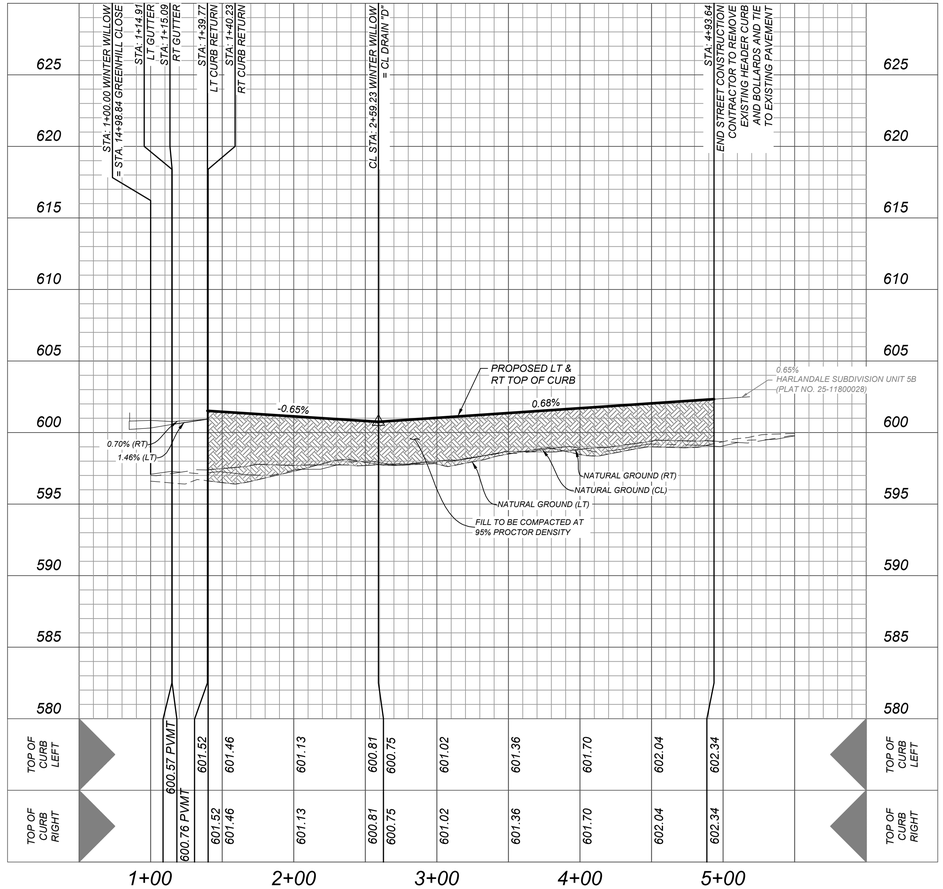
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WINTER WILLOW
1+00.00 TO END

HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



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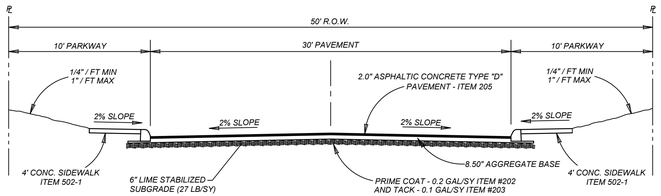
PROJECT NUMBER: 418-15-10
DRAWING NAME: C-STRT-PROF

SHEET TITLE: WINTER WILLOW PLAN & PROFILE

SHEET NUMBER: 6.3

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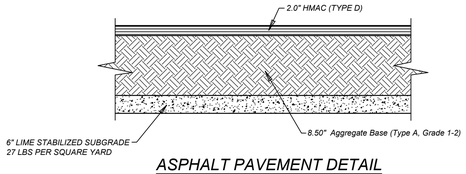
TYPICAL LOCAL "A" STREET SECTION

NOT TO SCALE

USE LOCAL "A" STREET SECTION FOR STREETS BELOW:

AUTUMN ELM / GREENHILL CLOSE/ BOXFIELD RD: STA. 8+41.95 - END
WINTER WILLOW: STA. 1+00.00 - END

Pavement Section
2.0" HMAC Type "D"
8.50" Aggregate Base (Type A, Grade 1-2)
6.0" LIME STABILIZED SUBGRADE (27 LB/SY)
Total: 16.50"
Structural No: 2.55
CBR: 3.0



ASPHALT PAVEMENT DETAIL

NOT-TO-SCALE

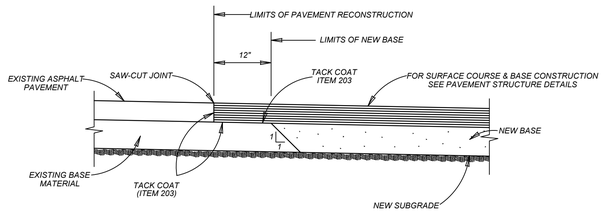
DETAIL FOR ALL LOCAL TYPE A

NOTES:
1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC, L.P., PROJECT NO. S201230-P DATED AUGUST 13, 2020 (SIGNED & SEALED: AUGUST 13, 2020)

2. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.

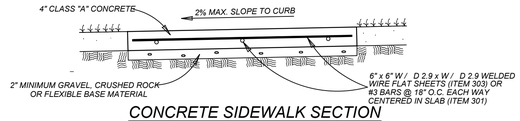
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.

4. CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.



PAVEMENT JUNCTION DETAILS

NOT TO SCALE



CONCRETE SIDEWALK SECTION

ITEM 502

NOT TO SCALE

FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:

1. AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2 - 3) DAYS. MAINTAIN MOISTURE DURING MELLOWING;

2. AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE ½ INCH SIEVE FROM THE SAMPLE):

MINIMUM PASSING 1 ½" SIEVE	100
MINIMUM PASSING ¼" SIEVE	85
MINIMUM PASSING NO. 4 SIEVE	60

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 ABOVE FOR MIXTURE DESIGN.

4. COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED)

5. CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).

6. VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN ± 1.0 INCH.

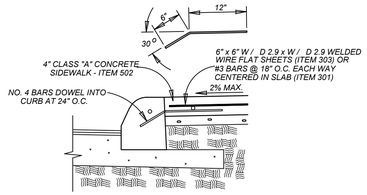
NOTES:

ANY FILL USED TO RAISE THE SUBGRADE:
- SHOULD NOT CONTAIN ANY DELETERIOUS MATERIAL.
- SHOULD HAVE A CBR VALUE OF 3.0 OR GREATER
- SHOULD HAVE THE "LIME PERCENTAGE/APPLICATION RATE" RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF FILL MATERIAL
- MAXIMUM PLASTICITY INDEX VALUE OF 45
- GRAVEL SIZE NOT TO EXCEED 3 INCHES IN SIZE
- MATERIAL PLACED AND COMPACTED AS PER APPLICABLE CITY/COUNTY GUIDELINES

GENERAL NOTES:

1. THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.

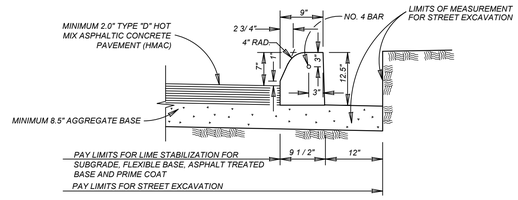
2. THE APPLICATION RATE OF LIME SHALL BE DETERMINED BASED ON LABORATORY TESTING AND SHALL BE THE LOWEST PERCENTAGE OF LIME THAT PROVIDES AN UNCONFINED COMPRESSIVE STRENGTH (UCS) AT 7-DAYS OF AT LEAST 160 PSI IN ACCORDANCE WITH ASTM D5102 STANDARD TEST METHODS FOR UNCONFINED COMPRESSIVE STRENGTH OF COMPACTED SOIL-LIME MIXTURES (PROCEDURE B) (IN ADDITION, CURING SHOULD OCCUR FOR 7 DAYS AT 40° AND SPECIMENS SHOULD BE SUBJECT TO 24-HR CAPILLARY SOAK PRIOR TO TESTING.



CONCRETE SIDEWALK ABUTTING CURB SECTION

ITEM 502

NOT TO SCALE



CONCRETE CURB

ITEM 500 ON ASPHALT TREATED BASE OR ASPHALTIC CONCRETE BASE

NOT TO SCALE

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER

8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

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AS SHOWN	----	MS	CG

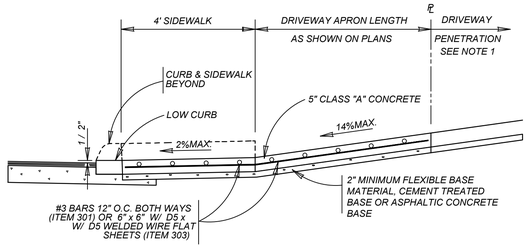
PROJECT NUMBER: 418-15-10
DRAWING NAME: C-STRT-DETL

SHEET TITLE: TYPICAL STREET DETAILS

SHEET NUMBER: 6.4

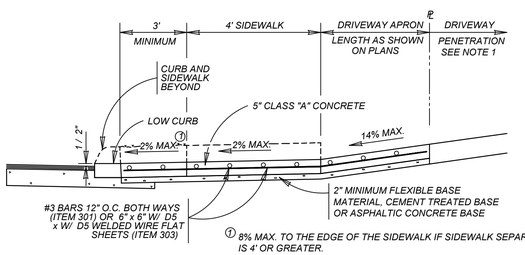
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\\CivilSTREET\C-STRT-DETL.dwg By: BELSETH



TYPICAL RESIDENTIAL DRIVEWAY SECTION

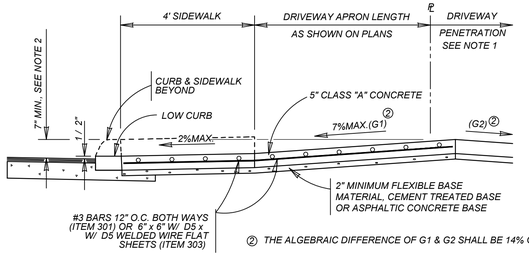
WITH SIDEWALK ABUTTING CURB
ITEM 503.1



① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

TYPICAL RESIDENTIAL DRIVEWAY SECTION

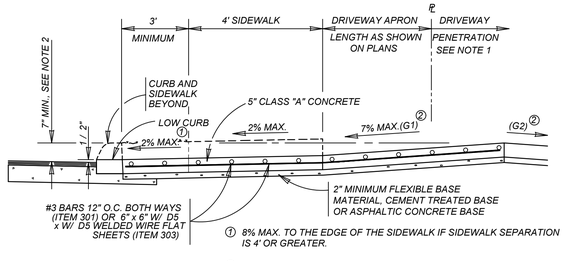
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1



② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

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

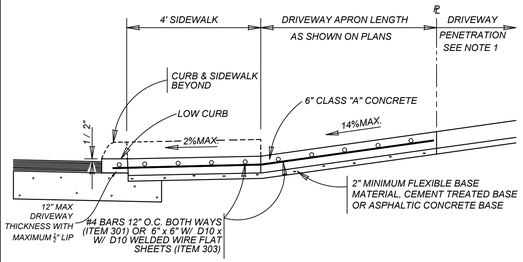


① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

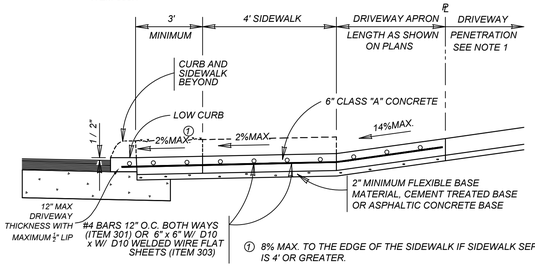
TYPICAL RESIDENTIAL DRIVEWAY SECTION

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



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.2



① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

TYPICAL COMMERCIAL DRIVEWAY SECTION

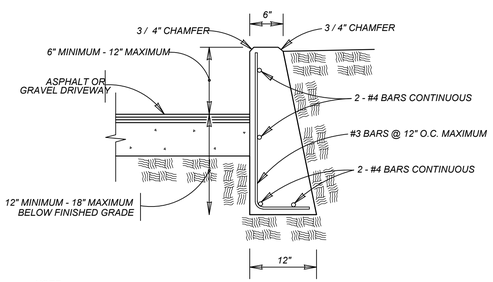
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2

CONCRETE DRIVEWAY NOTES

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

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

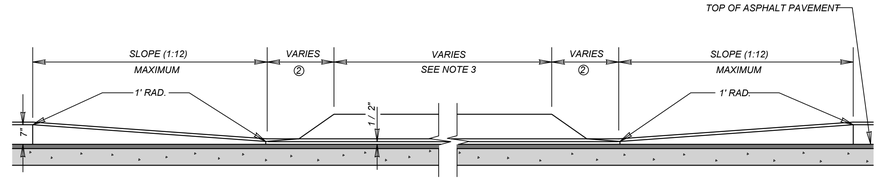
4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3 /8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



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

DRIVEWAY - CONCRETE RETAINING WALL

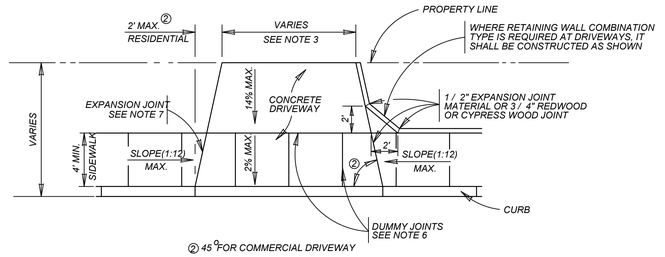
ON COMPACTED SUBGRADE
ITEM 307.1



② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

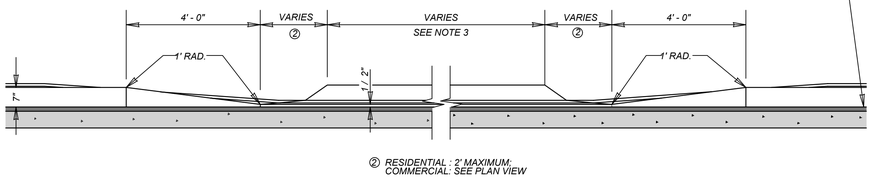
WITH SIDEWALK ABUTTING CURB



② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

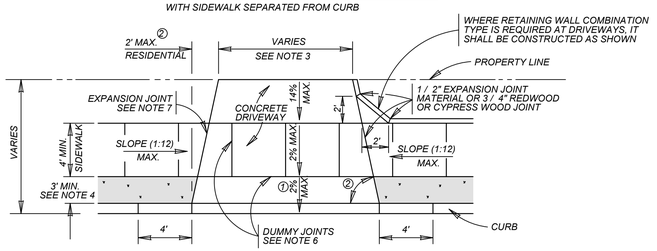
WITH SIDEWALK ABUTTING CURB



② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

____% SUBMITTAL	PROJECT NO.:____	DATE:____
DRWN. BY: V. VASQUEZ	DSGN. BY:____	CHKD. BY: R.S. HOSSEINI, P.E.

SHEET NO.:____OF____

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
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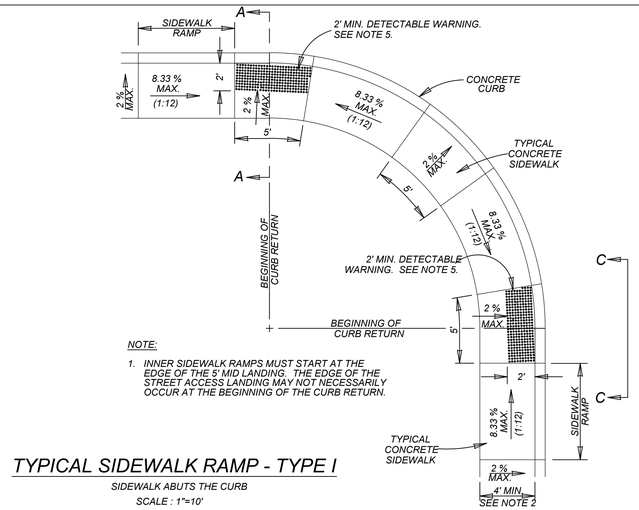
PROJECT NUMBER: 418-15-10
DRAWING NAME: C-STRT-DETL

SHEET TITLE: CONCRETE DRIVEWAY STANDARDS

SHEET NUMBER: 6.5

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\CivilSTREET\C-STRT-DETL.dwg6.5 By: BELSETH



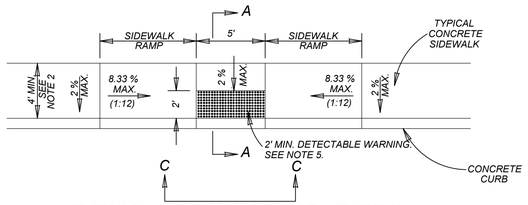
TYPICAL SIDEWALK RAMP - TYPE I

SIDEWALK ABUTS THE CURB

SCALE : 1"=10'

NOTE:

1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.



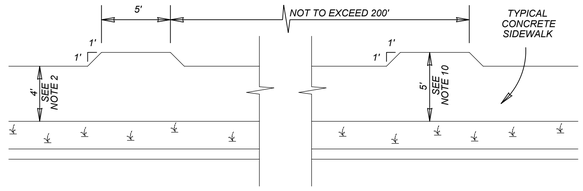
TYPICAL SIDEWALK RAMP - TYPE II

USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB

SCALE : 1"=10'

GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB-RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23 MM), A HEIGHT OF NOMINAL 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE PAVERS CONFORMING TO TXDOT STANDARD PED-18, PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "500 - CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER" AND / OR "502 - CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" - W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(-2.67)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
16. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.

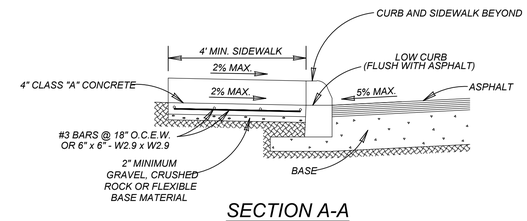


SIDEWALK PASSING SPACE

SCALE : 1"=10'

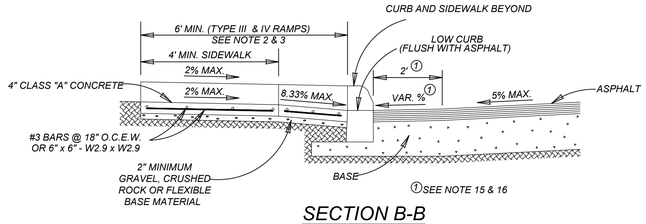
NOTE:

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



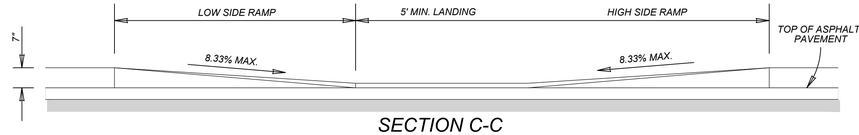
SECTION A-A

SCALE : 1"=4'



SECTION B-B

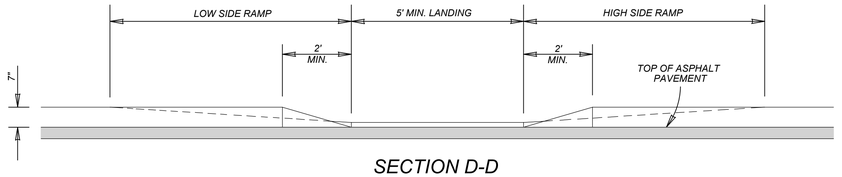
SCALE : 1"=4'



SECTION C-C

CURB PROFILE WHERE SIDEWALK ABUTS CURB

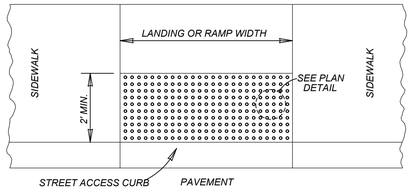
SCALE : 1"=4'



SECTION D-D

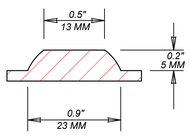
CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB

SCALE : 1"=4'



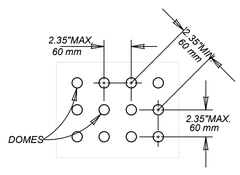
DETECTABLE WARNING SURFACE

SCALE : 1"=4'



DOME SECTION

NO SCALE



PLAN DETAIL

NO SCALE

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

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

____% SUBMITTAL	PROJECT NO.:____	DATE:____
DRWN. BY: V. VASQUEZ	DSGN. BY:____	CHKD. BY: R.S. HOSSEINI, P.E.
		SHEET NO.:____OF____

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ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER

8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#:F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10

DRAWING NAME: C-STRT-DETL

SHEET TITLE: WHEELCHAIR RAMP STANDARDS

SHEET NUMBER: 6.6

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

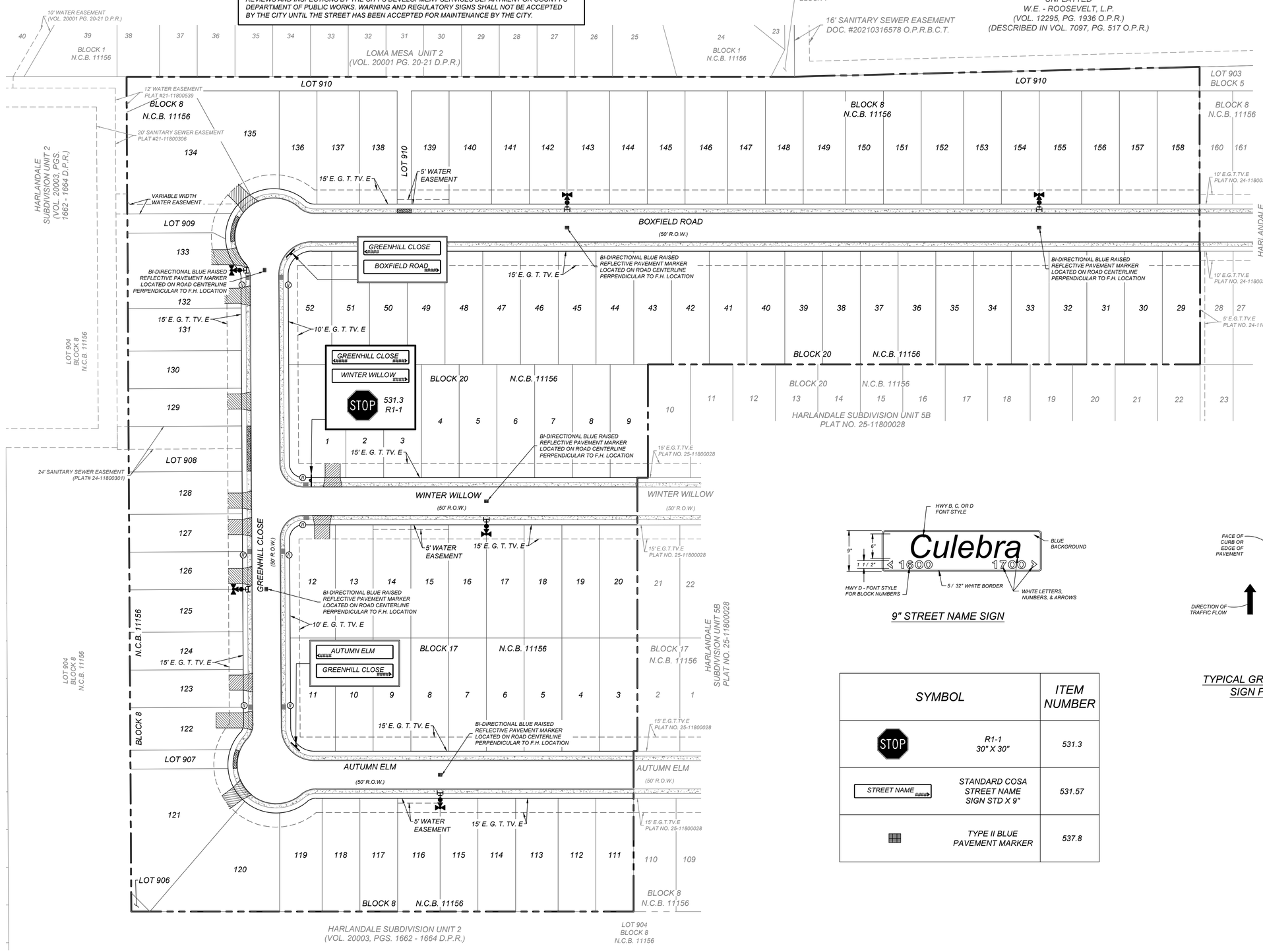
\CAD\STREETS\C-STRT-DETL.dwg6.6 By: BEGSETH

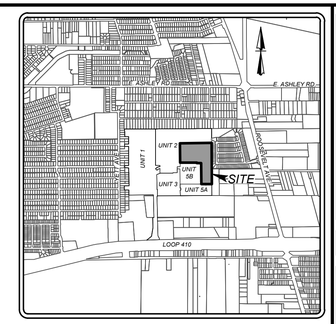
TRENCH EXCAVATION SAFETY PROTECTION

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

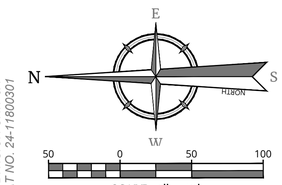
NOTES:
1) WITHIN THE CITY'S EXTRATERRITORIAL JURISDICTION, STREET NAME SIGNS SHALL BE INSTALLED AT ALL INTERSECTIONS WITHIN AND ABUTTING THE SUBDIVISION. SUCH SIGNS SHALL BE MANUFACTURED AND INSTALLED BY THE SUBDIVIDER IN ACCORDANCE TO SPECIFICATIONS OF, AND SUBJECT TO PLAN REVIEWS AND INSPECTIONS BY THE COUNTY DEPARTMENT OF PUBLIC WORKS.

2) REGULATORY AND WARNING TRAFFIC SIGNS SHALL BE INSTALLED WITHIN AND ABUTTING THE SUBDIVISION IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)," AS REQUIRED BY THE CITY'S DEVELOPMENT SERVICES DEPARTMENT OR COUNTY'S DEPARTMENT OF PUBLIC WORKS. SUCH SIGNS SHALL BE MANUFACTURED AND INSTALLED BY THE SUBDIVIDER IN ACCORDANCE TO SPECIFICATIONS OF, AND SUBJECT TO PLAN REVIEWS AND INSPECTIONS BY THE CITY'S DEVELOPMENT SERVICES DEPARTMENT OR COUNTY'S DEPARTMENT OF PUBLIC WORKS. WARNING AND REGULATORY SIGNS SHALL NOT BE ACCEPTED BY THE CITY UNTIL THE STREET HAS BEEN ACCEPTED FOR MAINTENANCE BY THE CITY.





LOCATION MAP
NOT-TO-SCALE

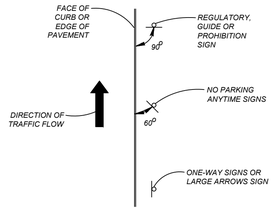


LEGEND

NEW CITY BLOCK	=	N.C.B
ELECTRIC, GAS, TELEPHONE & CABLE TV EASEMENT	=	E.G.T.TV.E
WHEELCHAIR RAMP TYPE I SEE SHEET 6.6	=	(I)
WHEELCHAIR RAMP TYPE II SEE SHEET 6.6	=	(II)
SIDEWALK TO BE CONSTRUCTED BY DEVELOPER	=	
SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION	=	
DRIVEWAY LOCATION	=	

9" STREET NAME SIGN

SYMBOL		ITEM NUMBER
STOP	R1-1 30" X 30"	531.3
STREET NAME #####	STANDARD COSA STREET NAME SIGN STD X 9"	531.57
	TYPE II BLUE PAVEMENT MARKER	537.8



TYPICAL GROUND MOUNTED SIGN PLACEMENT

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
8/15/25

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PLAT# 25-11800230
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KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

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COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14905
TBPLS Firm#: 10194500

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: C-TSP

SHEET TITLE: TRAFFIC SIGNAGE & PEDESTRIAN ACCESSIBILITY PLAN

SHEET NUMBER: 6.7

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\Civil\STREETS\C-TSP.dwg 6.7 By: BELSETH

GENERAL INFORMATION

SAWS STANDARD GENERAL CONSTRUCTION NOTES
ASSOCIATED WITH 2022 SAWS STANDARD SPECS
UPDATED JANUARY, 2022

GENERAL SECTION

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

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

2. *THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT AN APPROVED COUNTER PERMIT AND/OR A GCP WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.*
3. *THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE. HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.*
4. *THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.*
5. *LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.*
6. *THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:*

- *SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES*
- *COSA DRAINAGE (210) 207-0724 OR (210) 207-6026*
- *COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480*
- *COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951*
- *TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811*

7. *THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.*
8. *ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.*
9. *THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITYS TREE ORDINANCES WHEN EXCAVATING NEAR TREES.*
10. *THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.*
11. *HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG. WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG. ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.*
12. *COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.*
13. *A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.*

SEWER NOTES

1. *THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:*

A. *IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT (210) 233-3014. PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.*
B. *ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE*
C. *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 TELEVISING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.*

SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA, TCEQ AND/OR ANY OTHER FEDERAL, STATE OR LOCAL AGENCIES.

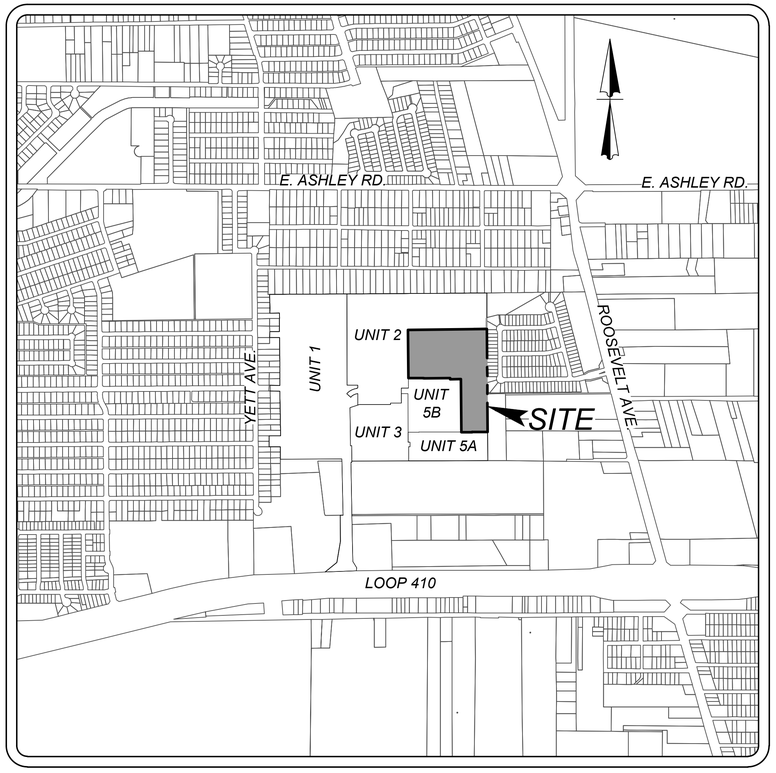
NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.

2. *IF BYPASS PUMPING IS REQUIRED, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 864, "BYPASS PUMPING".*
3. *PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973 AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS. THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.*
4. *SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241, TAC 217.53 AND TCEQ 290.44(E)(4)(B). CONTRACTOR SHALL CENTER A 20' JOINT OF 160 PSI PRESSURE RATED PVC AT THE PROPOSED WATER CROSSING.*
5. *ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY; IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS. (NSPI)*
6. *SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE SAWS INSPECTOR ASSIGNED TO THE COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE REGARDLESS OF SIZE.*
7. *MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE BY SAWS CONSTRUCTION INSPECTION DIVISION, AS PER THE SAWS SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.*
8. *ALL PVC PIPE OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH WITH MINIMUM PIPE STIFFNESS OF 115 PSI.*

HARLANDALE SUBDIVISION UNIT 4

SAN ANTONIO, TEXAS

SANITARY SEWER IMPROVEMENTS CONSTRUCTION PLANS



LOCATION MAP NOT-TO-SCALE

OWNER INFORMATION
KB HOME LONE STAR, INC
4800 FREDERICKSBURG RD.
SAN ANTONIO, TX 78229
PHONE: (210) 301 - 5485

Sheet List Table

Sheet Number	*Sheet Title*
7.1	*SANITARY SEWER COVER SHEET*
7.2	*OVERALL SANITARY SEWER PLAN*
7.3	*LINE "B" PLAN & PROFILE*
7.4	*EX. SEWER "A" PLAN & PROFILE*
7.5	*EX. SEWER "A1" PLAN & PROFILE*

SEWER:
Lower - Central Sewershed - Dos Rios/Leon Creek

DEVELOPER'S NAME: KB HOME LONESTAR INC.
DEVELOPER'S ADDRESS: 4800 FREDERICKSBURG RD.
CITY: SAN ANTONIO *STATE: TEXAS* *ZIP: 78229*
PHONE#: (210) 301 - 5485 *FAX#:* *TOTAL ACREAGE: 7.29 AC.*
SAWS BLOCK MAP#: 162544, 162542, 162540, 164544 *TOTAL EDU'S: 73*
TOTAL LINEAR FOOTAGE OF PIPE: 1,185 L.F. ~ SDR 26 PIPE *PLAT NO.: 25-11800230*
NUMBER OF LOTS: 99 *SAWS JOB#: 25-1580*

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
9/12/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME
LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
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TBPE Firm#: F-14909
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: C-CVER

SHEET TITLE: SANITARY SEWER COVER SHEET

SHEET NUMBER: 7.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

C:\civil\C-CVER.dwg|7.1 By: BELSETH

TRENCH EXCAVATION SAFETY PROTECTION

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

CAUTION!!: THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. 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 SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE:

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

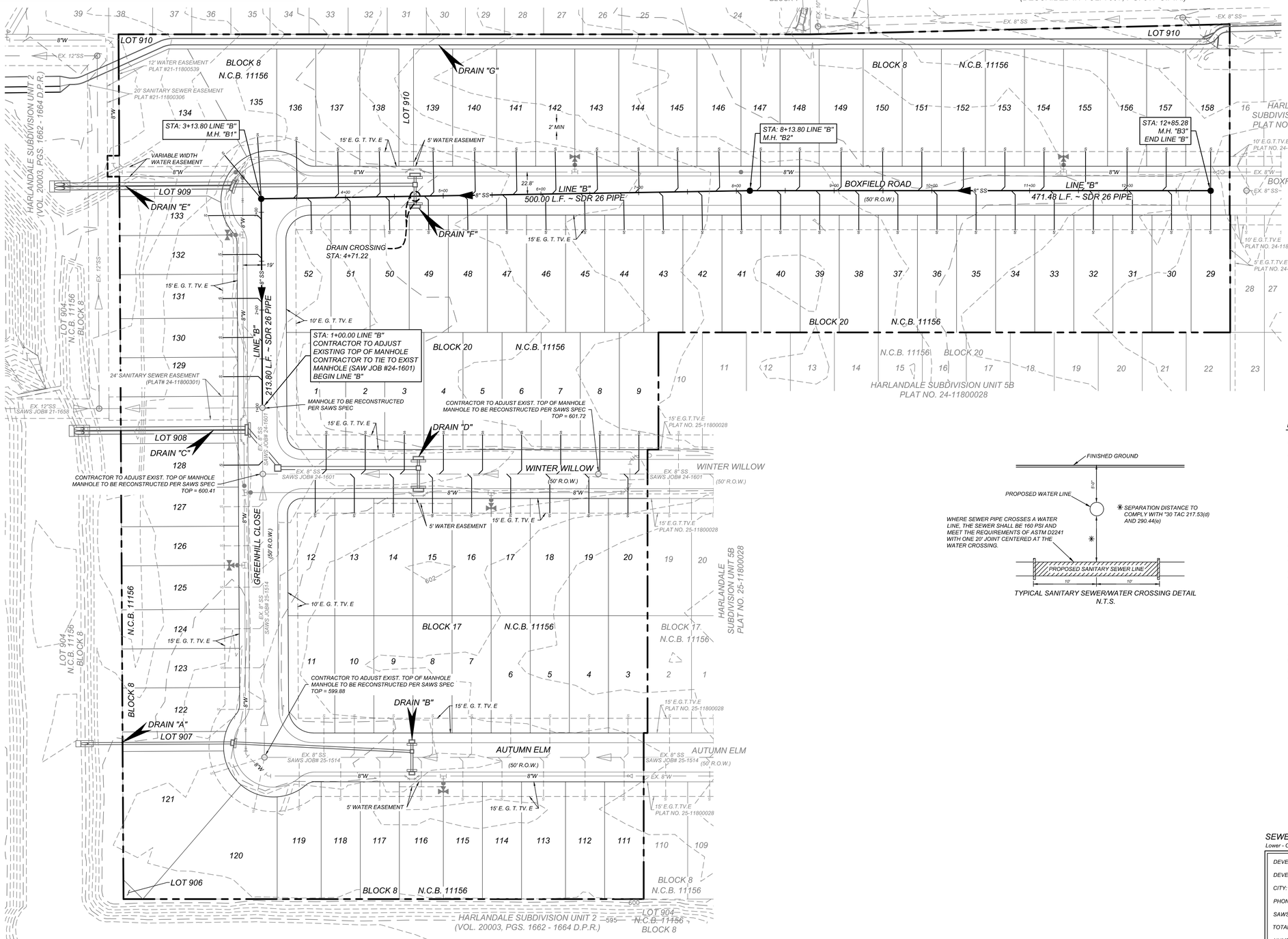
MANHOLE NOTE:
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DDBS2-02.

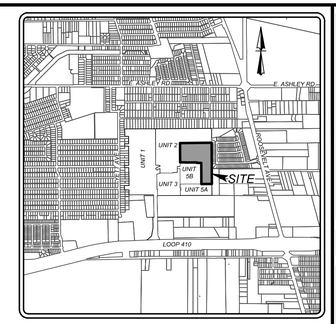
NOTE:

1. *ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.*
2. *SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEET 7.0, SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.*
3. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
4. *SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
5. *ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER.*

REFERENCE S.A.W.S. DETAILS

DD-804-01 SANITARY SEWER PIPE LAID IN TRENCH
DD-804-02 TRENCH COMPACTION DETAIL
DD-848-01 GO, NO GO DEFLECTION TESTING MANDREL
DD-852-01 STANDARD PRECAST MANHOLE
DD-852-02 VENTED MANHOLE RING AND COVER DETAIL (WHEN SPECIFIED)
DD-852-03 MANHOLE RING ENCASEMENT DETAIL
DD-854-ERZD HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)
DD-858-01 TYPICAL CONCRETE ENCASEMENT DETAILS
DD-858-02 TYPICAL CONCRETE DETAILS
DD-860-01 TYPICAL VERTICAL STACK DETAILS
DD-852-06 PRECAST MANHOLE BASE 45° ANGLE
DD-852-08 DROP MANHOLE DETAIL
DD-852-07 MANHOLE RING AND COVER DETAIL





LOCATION MAP
NOT-TO-SCALE

SCALE : 1" = 50'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX	=	W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED SANITARY SEWER LATERAL	=	
PROPOSED ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT	=	*E. G. T. TV. E*
EXISTING WATER MAIN	=	E.W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E.SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE

TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

SEWER:
Lower - Central Sewershed - Dos Rios/Leon Creek

DEVELOPER'S NAME: KB HOME LONESTAR INC.
DEVELOPER'S ADDRESS: 4800 FREDERICKSBURG RD.
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78229
PHONE#: (210) 301 - 5485 FAX#: TOTAL ACREAGE: 7.29 AC.
SAWS BLOCK MAP#: 162544, 162542, 162540, 164544 TOTAL EDU'S: 73
TOTAL LINEAR FOOTAGE OF PIPE: 1,185 L.F. ~ SDR 26 PIPE PLAT NO.: 25-11800230
NUMBER OF LOTS: 99 SAWS JOB#: 25-1580

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REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
9/12/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14305
TBPLS Firm#: 10194500

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	—	MS	CG

PROJECT NUMBER:	DRAWING NAME:
418-15-10	SSWR-LAYT

SHEET TITLE:
OVERALL SANITARY SEWER PLAN

SHEET NUMBER:
7.2

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\\Civil\SEWER\SSWR-LAYT.dwg\7.2 By: BELSETH

TRENCH EXCAVATION SAFETY PROTECTION

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

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

MANHOLE NOTE:
ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.

COMPACTION NOTE:

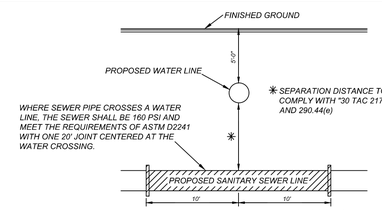
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REFERENCE S.A.W.S. DETAILS

DD-804-01	SANITARY SEWER PIPE LAID IN TRENCH
DD-804-02	TRENCH COMPACTION DETAIL
DD-848-01	GO, NO GO DEFLECTION TESTING MANDREL
DD-852-01	STANDARD PRECAST MANHOLE
DD-852-02	VENTED MANHOLE RING AND COVER DETAIL (WHEN SPECIFIED)
DD-852-03	MANHOLE RING ENCASEMENT DETAIL
DD-854-ERZD	HOUSE LATERAL DETAIL (IN THE E.A.R.Z.)
DD-858-01	TYPICAL CONCRETE ENCASEMENT DETAILS
DD-858-02	TYPICAL CONCRETE DETAILS
DD-860-01	TYPICAL VERTICAL STACK DETAILS
DD-852-06	PRECAST MANHOLE BASE 45° ANGLE
DD-852-08	DROP MANHOLE DETAIL
DD-852-07	MANHOLE RING AND COVER DETAIL

NOTE:

1. *ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.*
2. *SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEET ###, SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.*
3. *SEE THIS SHEET FOR BENCHMARK INFORMATION*
4. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
5. *SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
6. *ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER.*

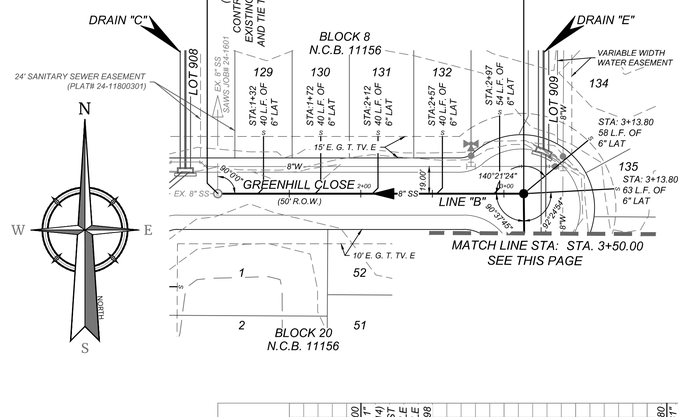


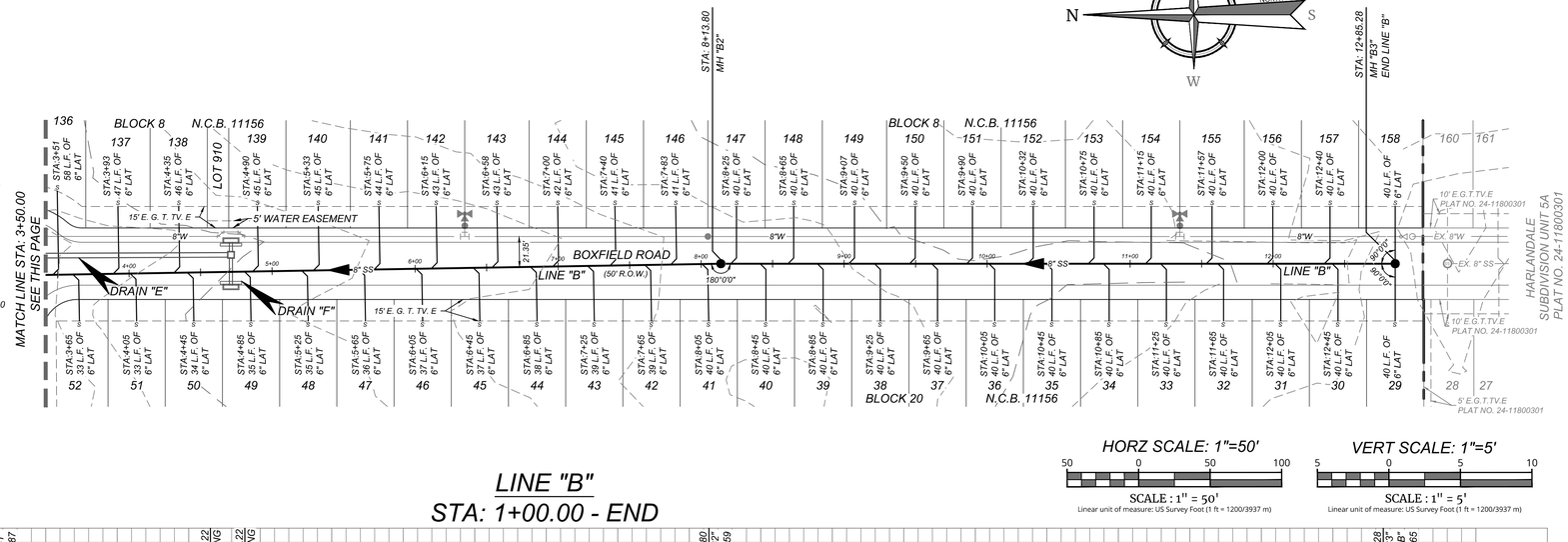
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

SEWER:

Lower - Central Sewershed - Dos Rios/Leon Creek

DEVELOPER'S NAME: KB HOME LONESTAR INC.		
DEVELOPER'S ADDRESS: 4800 FREDERICKSBURG RD.		
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78229
PHONE#: (210) 301 - 5485	FAX#:	TOTAL ACREAGE: 7.29 AC.
SAWS BLOCK MAP#: 162544, 162542, 162540, 164544		TOTAL EDU'S: 73
TOTAL LINEAR FOOTAGE OF PIPE: 1,185 L.F. ~ SDR 26 PIPE		PLAT NO.: 25-11800230
NUMBER OF LOTS: 99	SAWS JOB#: 25-1580	





HORZ SCALE: 1"=50'

50 0 50 100

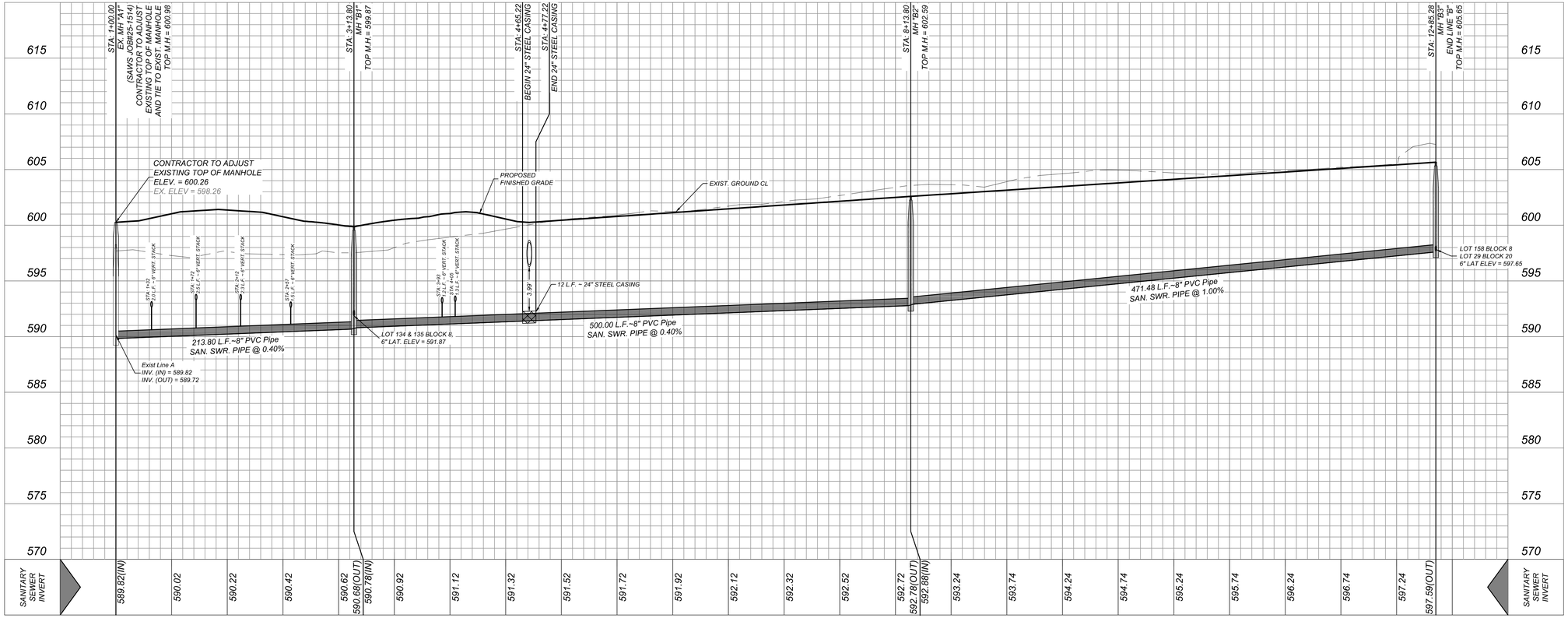
SCALE : 1" = 50'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

VERT SCALE: 1"=5'

5 0 5 10

SCALE : 1" = 5'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

LINE "B"
STA: 1+00.00 - END



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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	—	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: SSWR-PROF

SHEET TITLE: LINE "B" PLAN & PROFILE

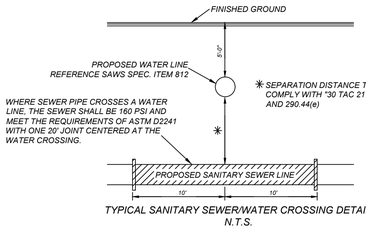
SHEET NUMBER: 7.3

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

C:\ref\SEWER\SSWR-PROF.dwg\7.3 By: BELSETH

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TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

TRENCH EXCAVATION SAFETY PROTECTION
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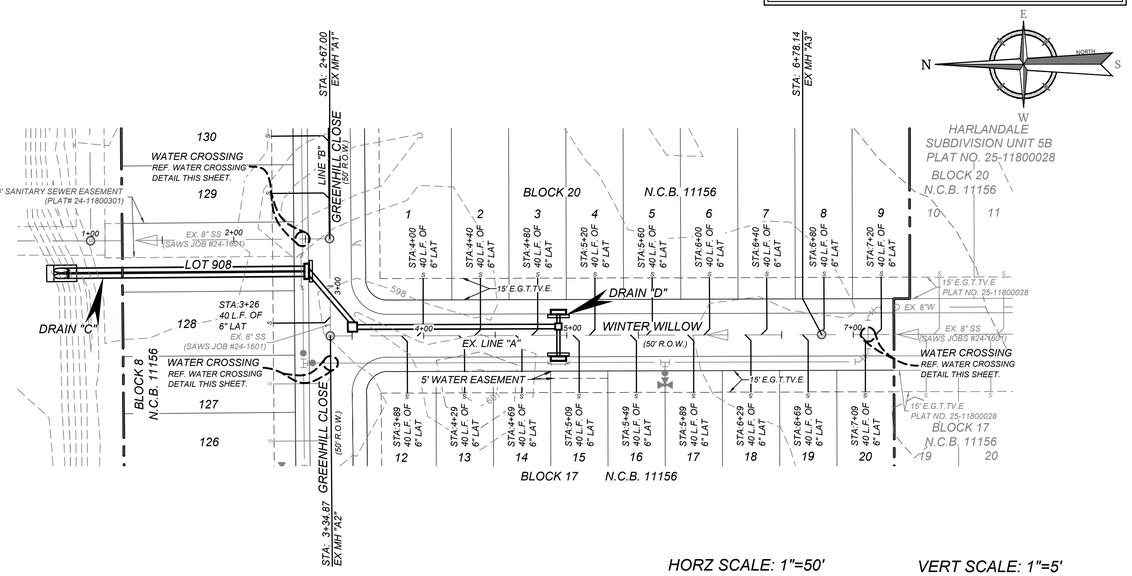
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3. PIPE TYPE DESIGNATIONS ARE SDR 26.
4. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
5. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER.

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SEWER:
Lower - Central Sewershed - Dos Rios/Leon Creek

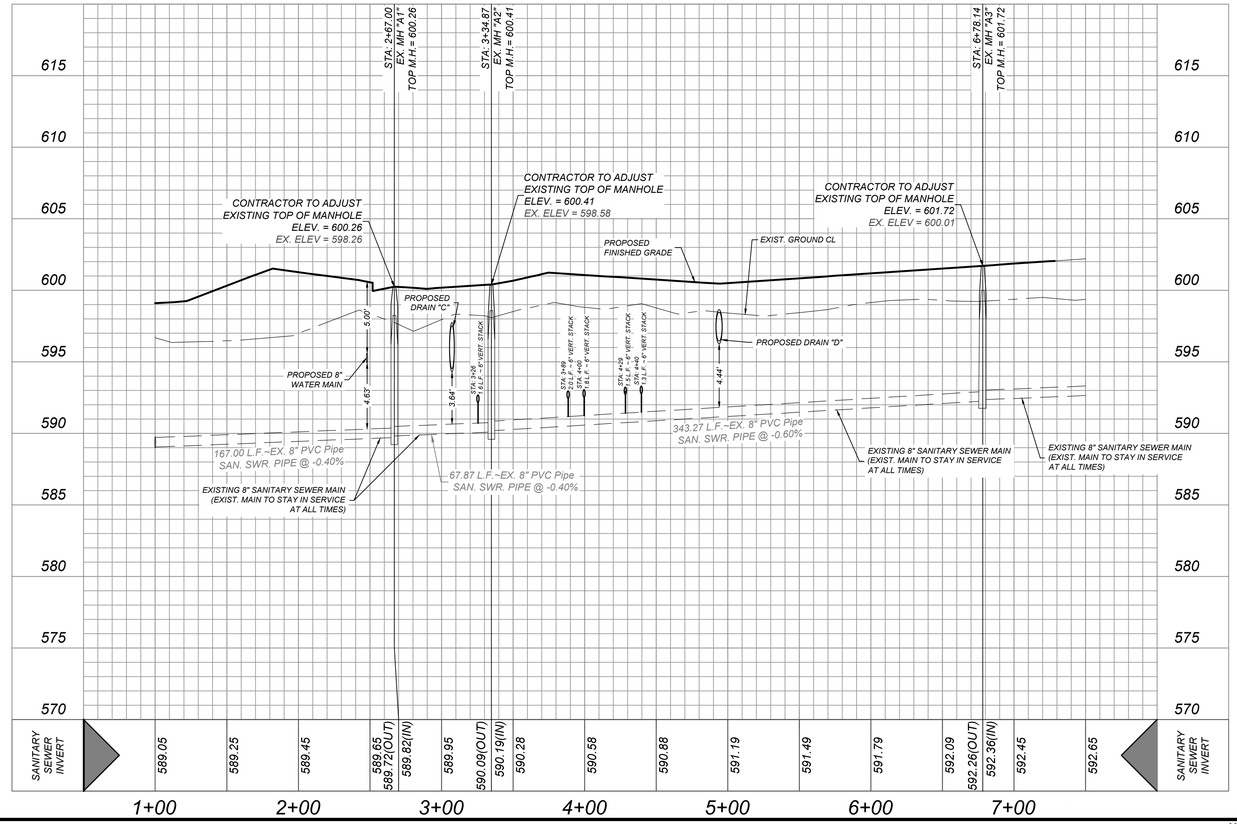
DEVELOPER'S NAME: KB HOME LONESTAR INC.
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TOTAL LINEAR FOOTAGE OF PIPE: 1,185 L.F. ~ SDR 26 PIPE PLAT NO.: 25-11800230
NUMBER OF LOTS: 99 SAWS JOB#: 25-1580



EX. LINE "A"
STA: 1+00.00 - STA: 7+50.00

HORZ SCALE: 1"=50'
50 0 50 100
SCALE : 1" = 50'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

VERT SCALE: 1"=5'
5 0 5 10
SCALE : 1" = 5'
Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)



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TBPE Firm#: F-14909
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	5/27/25	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: EX-SSWR-PP

SHEET TITLE: EX. SEWER "A" PLAN & PROFILE

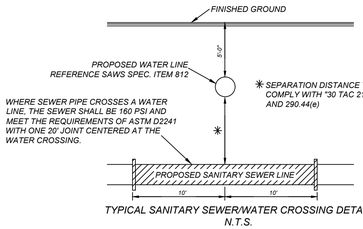
SHEET NUMBER: 7.4

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\Civil\SEWER\EX-SSWR-PP.dwg(7.4 By: BELSETH

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TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

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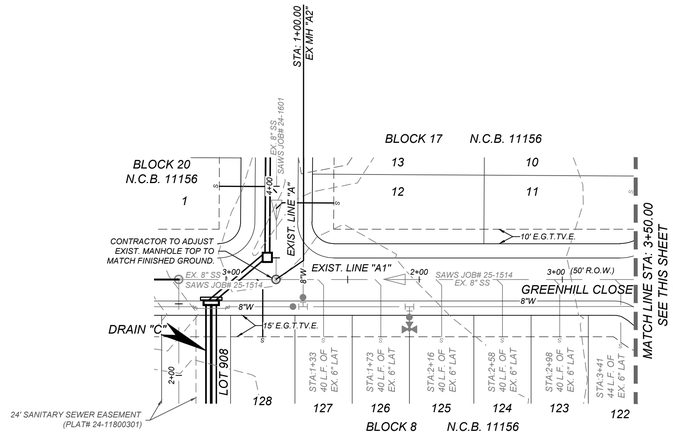
NOTE:

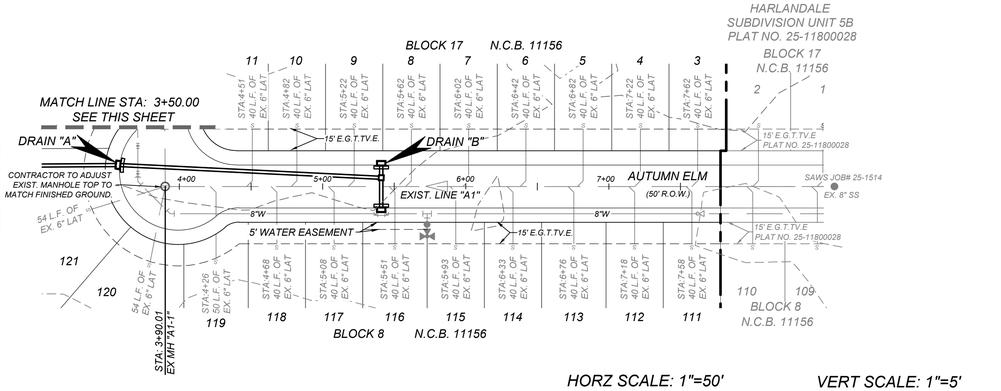
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3. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
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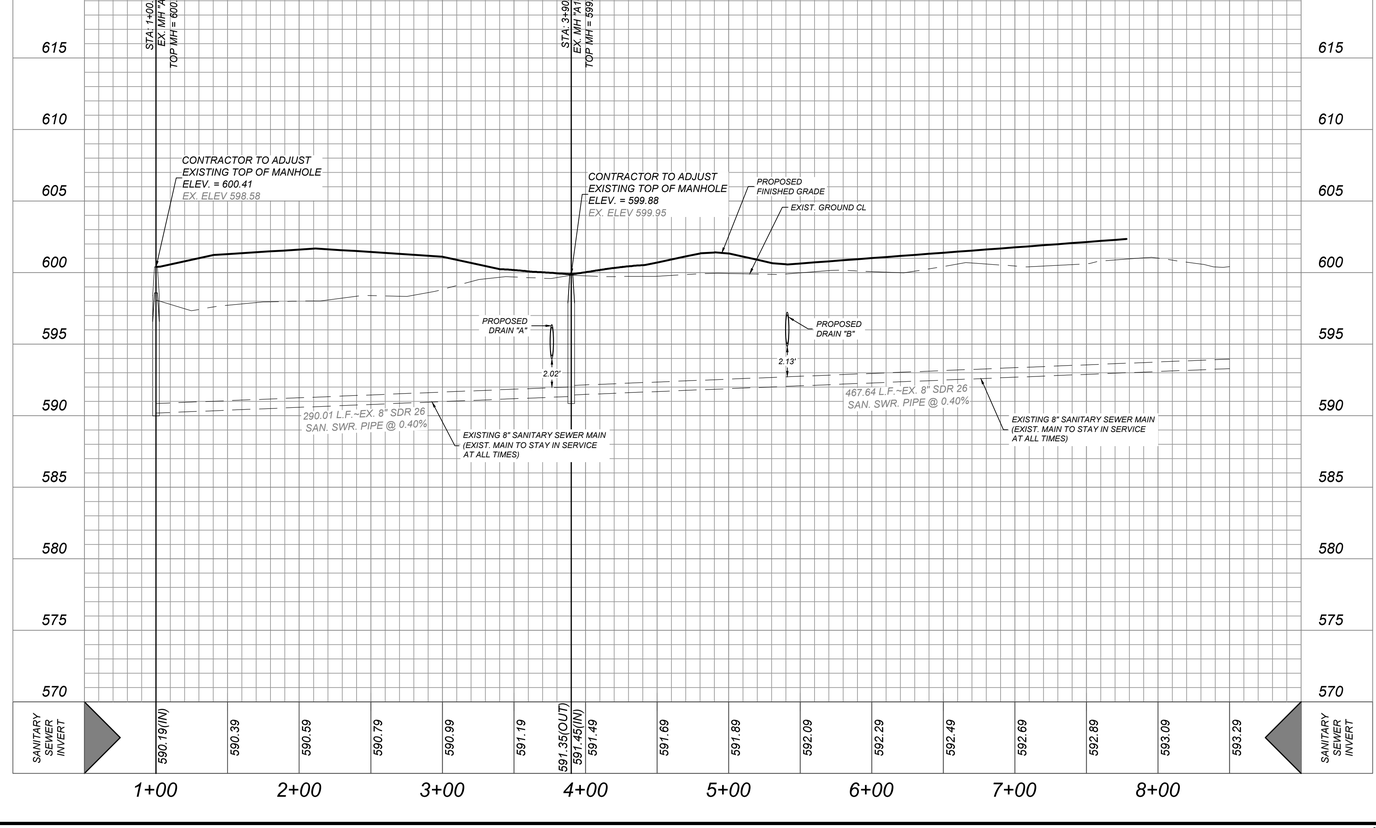




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SCALE : 1" = 50'
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SCALE : 1" = 5'
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EXIST. LINE "A1"
STA: 1+00.00 TO 8+50.00



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Formerly Known as KFW

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DESCRIPTION	DRAWN BY	DATE

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED
PROFESSIONAL ENGINEER
9/12/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME
LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	5/27/25	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: EX-SSWR-B-PP

SHEET TITLE: EX. SEWER "A1" PLAN & PROFILE

SHEET NUMBER: 7.5

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

I:\Civil\SEWER\EX-SSWR-B-PP.dwg7.4 By: BELSETH

GENERAL INFORMATION

SAWS STANDARD GENERAL CONSTRUCTION NOTES
ASSOCIATED WITH 2021 SAWS STANDARD SPECS
Updated JANUARY, 2022

GENERAL SECTION

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

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

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

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

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

E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

2. *THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT AN APPROVED COUNTER PERMIT AND/OR A GCP WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.*
3. *THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.*
4. *THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT (210) 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.*
5. *LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.*
6. *THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:*

- *SAWS UTILITY LOCATES: HTTP://WWW.SAWS.ORG/SERVICE/LOCATES*
- *COSA DRAINAGE (210) 207-0724 OR (210) 207-6026*
- *COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8480 • COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951*
- *TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811*

7. *THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.*
8. *ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.*
9. *THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.*
10. *THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.*
11. *HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG. WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG. ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.*
12. *COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE SAWS INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.*
13. *A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.*

WATER SECTION

1. *PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS. THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.*

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

2. *ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOSCONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE".*
3. *VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP/PLUG. (INSPI)*
4. *SUITABLE ANCHORAGE/THRUST BLOCKING OR JOINT RESTRAINT SHALL BE PROVIDED AT ALL OF THE FOLLOWING MAIN LOCATIONS: DEAD ENDS, PLUGS, CAPS, TEES, CROSSES, VALVES, AND BENDS, IN ACCORDANCE WITH THE STANDARD DRAWINGS DD-839 SERIES AND ITEM NO. 839, IN THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.*
5. *ALL VALVES SHALL READ "OPEN RIGHT".*
6. *PRVS REQUIRED: CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 605 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS 605 BELOW 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).*
7. *PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3): MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR, AND SHALL NOT EXCEED A TOTAL LENGTH OF 800 FEET. THIS METHOD OF DISINFECTION WILL ALSO BE FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE ALL APPROPRIATE SAFETY MEASURE TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.*
8. *BACKFLOW PREVENTION DEVICES:*

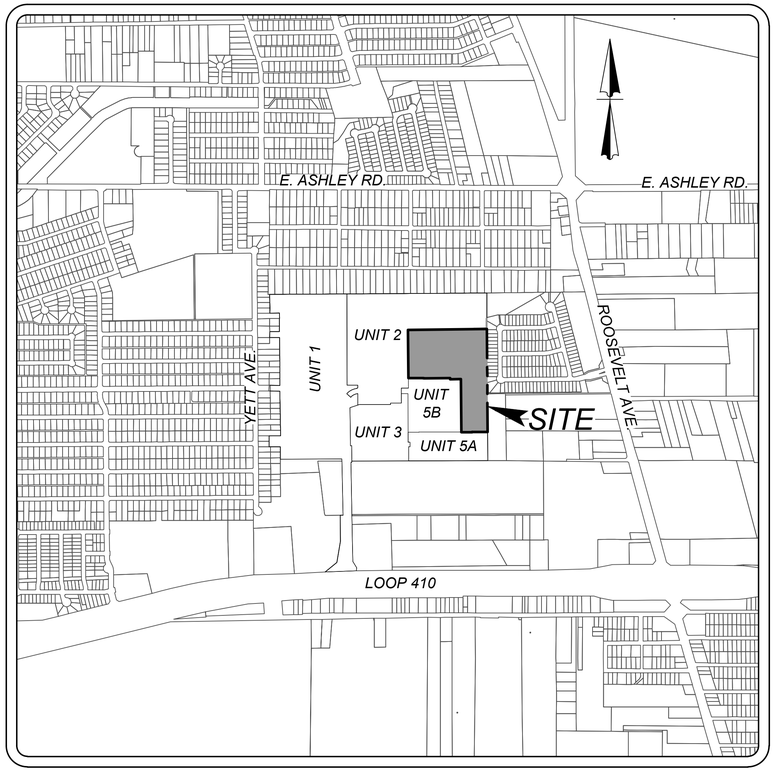
- *ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.*
- *ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.*

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

HARLANDALE SUBDIVISION UNIT 4

SAN ANTONIO, TEXAS

WATER IMPROVEMENTS



LOCATION MAP
NOT-TO-SCALE

OWNER INFORMATION
KB HOME LONE STAR, INC
4800 FREDERICKSBURG RD.
SAN ANTONIO, TX 78229
PHONE: (210) 301 - 5485

INDEX

SHEET NO.	DESCRIPTION
8.1	WATER DISTRIBUTION COVER SHEET
8.2	WATER DISTRIBUTION PLAN

SAWS PRESSURE ZONE: 790 HGL

DEVELOPER'S NAME: KB HOME LONESTAR INC.
DEVELOPER'S ADDRESS: 4800 FREDERICKSBURB RD.
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78229
PHONE#: (210) 301 - 5485 FAX#: TOTAL ACREAGE: 8.50 AC.
SAWS BLOCK MAP#: 162544, 162542, 162540, 164544 TOTAL EDU'S: 99
TOTAL LINEAR FOOTAGE OF PIPE: 2,813.5 L.F. ~ 8" C-900 PVC PLAT NO.: 25-11800230
NUMBER OF LOTS: 99 SAWS JOB#: 25-1082

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
9/12/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO
TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: C-CVER

SHEET TITLE: WATER DISTRIBUTION COVER SHEET

SHEET NUMBER: 8.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

C:\civil\C-CVER.dwg, 8.1 By: BELSETH

TRENCH EXCAVATION SAFETY PROTECTION

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

PRESSURE REDUCING VALVE (PRV) NOTE:

*CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 605 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 605 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. WATER SERVICES WHERE PRV'S REQUIRED ARE DESIGNATED BY AN ASTERISK (*).*

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

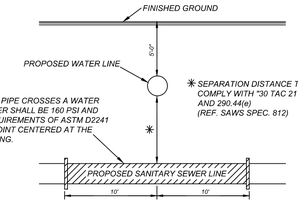
JOINT RESTRAINT NOTE:

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESS OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE 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 HARNESS AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

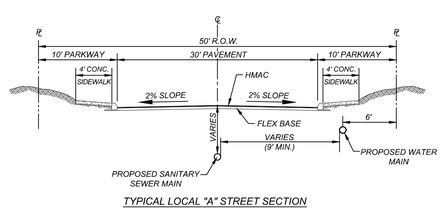
FIRE FLOW NOTE:

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 1,000 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.

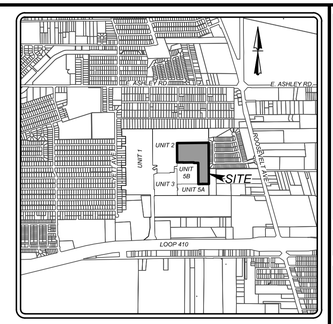
***CAUTION!!:** THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY 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 SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.*



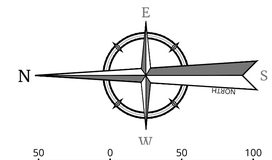
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.



TYPICAL LOCAL "A" STREET SECTION
N.T.S.



LOCATION MAP
NOT-TO-SCALE



WATER PLAN NOTES:

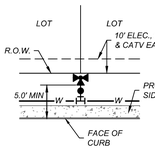
1. *FOR TYPICAL STREET SECTIONS SEE DETAIL THIS SHEET.*
2. *WATER METER BY LOCATIONS BY LOCATIONS ARE SHOWN SYMBOLICALLY TO SERVICE THE LOTS BUT SHALL BE LOCATED IN ACCORDANCE WITH THE STANDARD S.A.W.S. WATER DETAILS & SPECIFICATIONS.*
3. *WHERE WATER SERVICES AND LIGHT POLE FOUNDATIONS ARE PROPOSED TO BE AT THE SAME LOT CORNERS, SERVICE TAPS AND LEADS SHOULD BE AT LEAST 3 FEET FROM THE LIGHT POLE FOUNDATION.*
4. *ALL VALVES SHALL READ "OPEN RIGHT"*
5. *ALL PVC PIPE TO BE C-900 CLASS 235 (DR 18.)*

NOTE:

1. *ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (S.A.W.S.) STANDARD SPECIFICATION.*

SAWS NOTE:

1. *"SAWS REQUIRES GCPs AND COUNTER PERMIT TO USE LEAD FREE (<0.25% LEAD) FIRE HYDRANTS."*



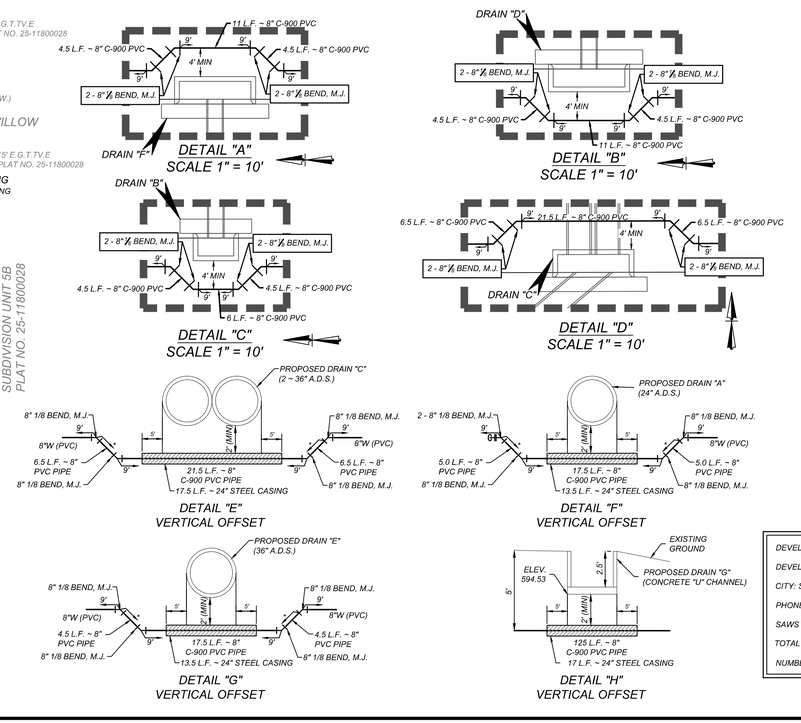
TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE

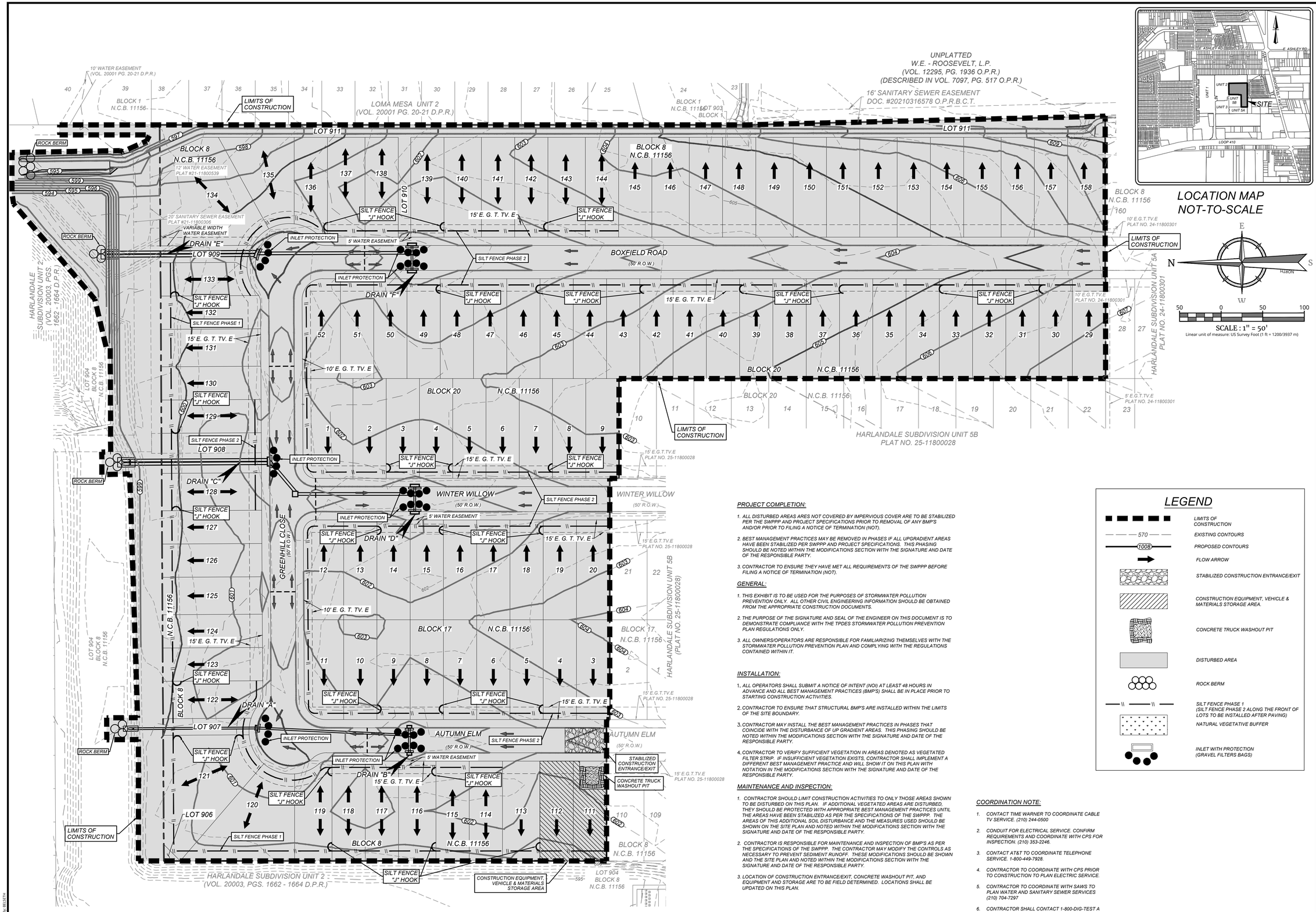
LEGEND

PROPOSED WATER MAIN	=	W
PROPOSED WATER SERVICE & METER BOX	=	W
PROPOSED WATER 3/4" IRRIGATION SERVICE & METER BOX	=	3/4"W
PROPOSED FIRE HYDRANT	=	
PROPOSED WATER VALVE	=	
PROPOSED SANITARY SEWER MAIN	=	SS
PROPOSED SANITARY SEWER MANHOLE	=	
PROPOSED ELECTRIC, GAS, TELE., & CABLE TV EASEMENT	=	E, G, T, & TV ESMT
EXISTING WATER MAIN	=	E ?"W
EXISTING FIRE HYDRANT	=	
EXISTING WATER VALVE	=	
EXISTING SANITARY SEWER MAIN	=	E ?"SS
EXISTING SANITARY SEWER MANHOLE	=	
EXISTING OVERHEAD ELECTRIC W/POWER POLE	=	OHE OHE
EXISTING GUY WIRE/OVERHEAD ELECTRIC	=	OHE

SAWS PRESSURE ZONE: 790 HGL

DEVELOPER'S NAME: KB HOME LONESTAR INC.			
DEVELOPER'S ADDRESS: 4800 FREDERICKSBURB RD.			
CITY: SAN ANTONIO	*STATE: TEXAS*	*ZIP: 78229*	
PHONE#: (210) 301 - 5485	*FAX#:*	*TOTAL ACREAGE: 8.50 AC.*	
SAWS BLOCK MAP#: 162544, 162542, 162540, 164544		*TOTAL EDU'S: 99*	
TOTAL LINEAR FOOTAGE OF PIPE: 2,813.5 L.F. ~ 8" C-900 PVC		*PLAT NO.: 25-11800230*	
NUMBER OF LOTS: 99	*SAWS JOB#: 25-1082*		


LOT 910
BLOCK 8
N.C.B. 11156
LOT 909
LOT 908
LOT 907
LOT 904
BLOCK 20
N.C.B. 11156
BLOCK 17
N.C.B. 11156
DRAIN "G"
DRAIN "E"
DRAIN "F"
DRAIN "D"
DRAIN "C"
DRAIN "B"
DRAIN "A"
BOXFIELD ROAD
(50' R.O.W.)
WINTER WILLOW
(50' R.O.W.)
GREENHILL CLOSE
(50' R.O.W.)
AUTUMN ELM
(50' R.O.W.)
HARLANDALE SUBDIVISION UNIT 2
(VOL. 20003, PGS. 1662 - 1664 D.P.R.)
LOMA MESA UNIT 2
(VOL. 20001 PG. 20-21 D.P.R.)
HARLANDALE SUBDIVISION UNIT 5B
PLAT NO. 24-11800028
HARLANDALE SUBDIVISION UNIT 5A
PLAT NO. 24-11800301
DRAIN CROSSING
REF. DETAIL "H" THIS SHEET.
DRAIN CROSSING
REF. DETAIL "G" THIS SHEET.
DRAIN CROSSING
REF. DETAIL "E" THIS SHEET.
DRAIN CROSSING
REF. DETAIL "F" THIS SHEET.
SEWER CROSSING
REF. SEWER CROSSING DETAIL THIS SHEET.
SEWER CROSSING
REF. SEWER CROSSING DETAIL THIS SHEET.
DETAIL "A" THIS SHEET
DETAIL "B" THIS SHEET
DETAIL "C" THIS SHEET
DETAIL "D" THIS SHEET
DETAIL "E" THIS SHEET
DETAIL "F" THIS SHEET
DETAIL "G" THIS SHEET
DETAIL "H" THIS SHEET
6 L.F. ~ 8" C-900 PVC
104 L.F. ~ 8" C-900 PVC
6 L.F. ~ 8" C-900 PVC
EX. 12"SS
2 - 8"¼ BEND, M.J.
1 - 8"¼ BEND, M.J.
1 - 8"⅛ BEND, M.J.
1 - 8"⅛ BEND, M.J.
1 - 8" x 6" ANCHOR TEE, M.J.
1 - 6" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 6"¼ ANCHOR BEND, M.J.
1 - STANDARD FIRE HYDRANT
6" D.I. PIPE CUT AS REQUIRED
SEE S.A.W.S. STD. DETAIL DD-834-01
1 - 8" x 8" ANCHOR TEE, M.J.
2 - 8" GATE VALVE, M.J.
2 - 6" VALVE BOX, COMPLETE
1 - 8" x 6" ANCHOR TEE, M.J.
1 - 6" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
1 - 6"¼ ANCHOR BEND, M.J.
1 - STANDARD FIRE HYDRANT
6" D.I. PIPE CUT AS REQUIRED
SEE S.A.W.S. STD. DETAIL DD-834-01
CONTRACTOR TO REMOVE EXISTING BLOW OFF & TIE NEW 8" PVC MAIN TO EXISTING 8" PVC PIPE AFTER CHLORINATION AND ACCEPTANCE BY S.A.W.S. (S.A.W.S. JOB# 24-1130)
1 - 8" SOLID SLEEVE, M.J.
INSTALL FOR CHLORINATION INJECTION
1 - 2" BLOW OFF (TEMP.) ASSEMBLY
SEE S.A.W.S. STD. DETAIL DD-844.01
2 - 1" CORPORATION STOP, C.C. x I.P.
2 - 1" COPPER TUBING, CUT AS REQUIRED
2 - 1¼" THD. SOLID CAPS, THR.
2 - 1" COMP. x 1¼" COUPLING, CURB STOP
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN.
CONTRACTOR TO REMOVE EXISTING BLOW OFF & TIE NEW 8" PVC MAIN TO EXISTING 8" PVC PIPE AFTER CHLORINATION AND ACCEPTANCE BY S.A.W.S. (S.A.W.S. JOB# 25-1024)
1 - 8" SOLID SLEEVE, M.J.
INSTALL FOR CHLORINATION INJECTION
1 - 2" BLOW OFF (TEMP.) ASSEMBLY
SEE S.A.W.S. STD. DETAIL DD-844.01
2 - 1" CORPORATION STOP, C.C. x I.P.
2 - 1" COPPER TUBING, CUT AS REQUIRED
2 - 1¼" THD. SOLID CAPS, THR.
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1 - 8" x 6" ANCHOR TEE, M.J.
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1 - 6" VALVE BOX, COMPLETE
1 - 6"¼ ANCHOR BEND, M.J.
1 - STANDARD FIRE HYDRANT
6" D.I. PIPE CUT AS REQUIRED
SEE S.A.W.S. STD. DETAIL DD-834-01
1 - 8" GATE VALVE, M.J.
1 - 6" VALVE BOX, COMPLETE
168 L.F. ~ 8" C-900 PVC
155 L.F. ~ 8" C-900 PVC
170 L.F. ~ 8" C-900 PVC
330 L.F. ~ 8" C-900 PVC
155 L.F. ~ 8" C-900 PVC
34 L.F. ~ 8" C-900 PVC
186 L.F. ~ 8" C-900 PVC
169 L.F. ~ 8" C-900 PVC
136 L.F. ~ 8" C-900 PVC
74 L.F. ~ 8" C-900 PVC
167 L.F. ~ 8" C-900 PVC
141 L.F. ~ 8" C-900 PVC
189 L.F. ~ 8" C-900 PVC
32 L.F. ~ 8" C-900 PVC
26 L.F. ~ 8" C-900 PVC
8 L.F. ~ 8" C-900 PVC
26 L.F. ~ 8" C-900 PVC
8 L.F. ~ 8" C-900 PVC
50 L.F. ~ 8" C-900 PVC
66 L.F. ~ 8" C-900 PVC
125 L.F. ~ 8" C-900 PVC
9 L.F. ~ 8" C-900 PVC
126 L.F. ~ 8" C-900 PVC
4 L.F. ~ 8" C-900 PVC
1 - 8"⅛ BEND, M.J.
1 - 8"⅛ BEND, M.J.
1 - 8"⅛ BEND, M.J.
1 - 8"⅛ BEND, M.J.
1 - 8"⅛ BEND, M.J.
1 - 8"⅛ BEND, M.J.
1 - 8"⅛ BEND, M.J.
1 - 8"⅛ BEND, M.J.
2 - 8"⅛ BEND, M.J.
2 - 8"⅛ BEND, M.J.
2



LOCATION MAP
NOT-TO-SCALE

N E S W

50 0 50 100

SCALE : 1" = 50'

Linear unit of measure: US Survey Foot (1 ft = 1200/3937 m)

LEGEND

- LIMITS OF CONSTRUCTION
- 570 — EXISTING CONTOURS
- 1008 PROPOSED CONTOURS
- FLOW ARROW
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA.
- CONCRETE TRUCK WASHOUT PIT
- DISTURBED AREA
- ROCK BERM
- SILT FENCE PHASE 1 (SILT FENCE PHASE 2 ALONG THE FRONT OF LOTS TO BE INSTALLED AFTER PAVING)
- NATURAL VEGETATIVE BUFFER
- INLET WITH PROTECTION (GRAVEL FILTERS BAGS)

PROJECT COMPLETION:

1. ALL DISTURBED AREAS ARES NOT COVERED BY IMPERVIOUS COVER ARE TO BE STABILIZED PER THE SWPPP AND PROJECT SPECIFICATIONS PRIOR TO REMOVAL OF ANY BMP'S AND/OR PRIOR TO FILING A NOTICE OF TERMINATION (NOT).
2. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN PHASES IF ALL UPGRADIENT AREAS HAVE BEEN STABILIZED PER SWPPP AND PROJECT SPECIFICATIONS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.
3. CONTRACTOR TO ENSURE THEY HAVE MET ALL REQUIREMENTS OF THE SWPPP BEFORE FILING A NOTICE OF TERMINATION (NOT).

GENERAL:

1. THIS EXHIBIT IS TO BE USED FOR THE PURPOSES OF STORMWATER POLLUTION PREVENTION ONLY. ALL OTHER CIVIL ENGINEERING INFORMATION SHOULD BE OBTAINED FROM THE APPROPRIATE CONSTRUCTION DOCUMENTS.
2. THE PURPOSE OF THE SIGNATURE AND SEAL OF THE ENGINEER ON THIS DOCUMENT IS TO DEMONSTRATE COMPLIANCE WITH THE TPDES STORMWATER POLLUTION PREVENTION PLAN REGULATIONS ONLY.
3. ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT.

INSTALLATION:

1. ALL OPERATORS SHALL SUBMIT A NOTICE OF INTENT (NOI) AT LEAST 48 HOURS IN ADVANCE AND ALL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IN PLACE PRIOR TO STARTING CONSTRUCTION ACTIVITIES.
2. CONTRACTOR TO ENSURE THAT STRUCTURAL BMP'S ARE INSTALLED WITHIN THE LIMITS OF THE SITE BOUNDARY.
3. CONTRACTOR MAY INSTALL THE BEST MANAGEMENT PRACTICES IN PHASES THAT COINCIDE WITH THE DISTURBANCE OF UP GRADIENT AREAS. THIS PHASING SHOULD BE NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.
4. CONTRACTOR TO VERIFY SUFFICIENT VEGETATION IN AREAS DENOTED AS VEGETATED FILTER STRIP. IF INSUFFICIENT VEGETATION EXISTS, CONTRACTOR SHALL IMPLEMENT A DIFFERENT BEST MANAGEMENT PRACTICE AND WILL SHOW IT ON THIS PLAN WITH NOTATION IN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

MAINTENANCE AND INSPECTION:

1. CONTRACTOR SHOULD LIMIT CONSTRUCTION ACTIVITIES TO ONLY THOSE AREAS SHOWN TO BE DISTURBED ON THIS PLAN. IF ADDITIONAL VEGETATED AREAS ARE DISTURBED, THEY SHOULD BE PROTECTED WITH APPROPRIATE BEST MANAGEMENT PRACTICES UNTIL THE AREAS HAVE BEEN STABILIZED AS PER THE SPECIFICATIONS OF THE SWPPP. THE AREAS OF THIS ADDITIONAL SOIL DISTURBANCE AND THE MEASURES USED SHOULD BE SHOWN ON THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF BMP'S AS PER THE SPECIFICATIONS OF THE SWPPP. THE CONTRACTOR MAY MODIFY THE CONTROLS AS NECESSARY TO PREVENT SEDIMENT RUNOFF. THESE MODIFICATIONS SHOULD BE SHOWN AND THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.
3. LOCATION OF CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND EQUIPMENT AND STORAGE ARE TO BE FIELD DETERMINED. LOCATIONS SHALL BE UPDATED ON THIS PLAN.

COORDINATION NOTE:

1. CONTACT TIME WARNER TO COORDINATE CABLE TV SERVICE. (210) 244-0500
2. CONDUIT FOR ELECTRICAL SERVICE. CONFIRM REQUIREMENTS AND COORDINATE WITH CPS FOR INSPECTION. (210) 353-2246.
3. CONTACT AT&T TO COORDINATE TELEPHONE SERVICE. 1-800-449-7928.
4. CONTRACTOR TO COORDINATE WITH CPS PRIOR TO CONSTRUCTION TO PLAN ELECTRIC SERVICE.
5. CONTRACTOR TO COORDINATE WITH SAWS TO PLAN WATER AND SANITARY SEWER SERVICES (210) 704-7297
6. CONTRACTOR SHALL CONTACT 1-800-DIG-TEST A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

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Formerly Known as KFW

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ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DESCRIPTION	DRAWN BY	DATE

STATE OF TEXAS
JEFFREY W. MARTIN
139094
LICENSED PROFESSIONAL ENGINEER
8/15/25

HARLANDALE SUBDIVISION, UNIT 4
PLAT# 25-11800230
FOR
KB HOME LONE STAR, LLC.

SAN ANTONIO TEXAS

Colliers Engineering & Design
SAN ANTONIO (KFW)
3421 Paesanos Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC.
TBPE Firm#:F-14809
TBPLS Firm#: 10194550

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	----	MS	CG

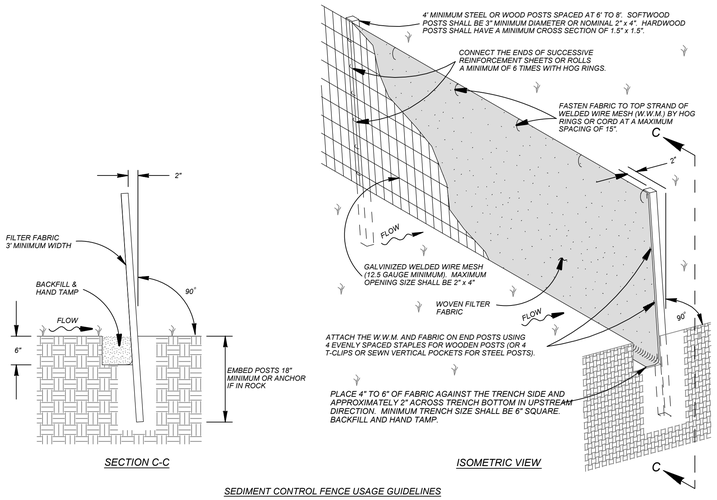
PROJECT NUMBER: 418-15-10
DRAWING NAME: C-SWPPP

SHEET TITLE:
STORM WATER POLLUTION PREVENTION PLAN

SHEET NUMBER:
9.1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

I:\Civil\C-SWPPP.dwg9.1 By: BELSETH



SECTION C-C

ISOMETRIC VIEW

SEDIMENT CONTROL FENCE USAGE GUIDELINES

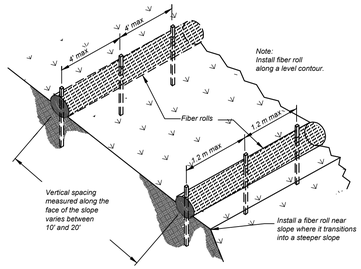
A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUN-OFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM / FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

GENERAL NOTES

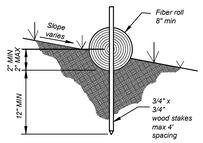
1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

TEMPORARY SEDIMENT CONTROL FENCE



TYPICAL FIBER ROLL INSTALLATION

N.T.S.



ENTRENCHMENT DETAIL

N.T.S.

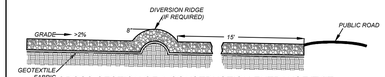
THE MATERIAL, INSTALLATION, INSPECTION, AND MAINTENANCE OF FIBER ROLLS WILL BE PER THE MANUFACTURE'S SPECIFICATIONS AND SHALL ALSO COMPLY WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY CURRENT "TECHNICAL GUIDANCE ON BEST MANAGEMENT PRACTICES" AS NOTED BELOW.

Material:
(1) Core material: Core material should be biodegradable or recyclable. Material may be compost, mulch, aspen wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, 100% recyclable fibers, or similar materials.
(2) Containment Mesh: Containment mesh should be 100% biodegradable, photodegradable or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or similar material. When the fiber role will remain in place as part of a vegetative system use biodegradable or photodegradable mesh. For temporary installation recyclable mesh is recommended.

Implementation:
(1) Locate fiber rolls on level contours spaced as follows:
Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
(2) Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
(3) Stake fiber rolls into a 2 to 4 in. deep trench with a width equal to the diameter of the fiber roll.
(4) Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
(5) Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
(6) If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.

Inspection and Maintenance Guidelines:
(1) Inspect weekly.
(2) Repair or replace split, torn, unraveling, or slumping fiber rolls.
(3) If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates behind the role must be periodically removed in order to maintain its effectiveness. Sediment should be removed when the accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed of at an appropriate location.

FIBER ROLL



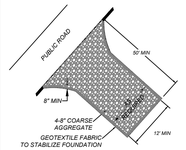
CROSS-SECTION OF A CONSTRUCTION ENTRANCE/EXIT

Materials:

(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.

(3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd2, a mullen burst

50 sieve.
(4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.



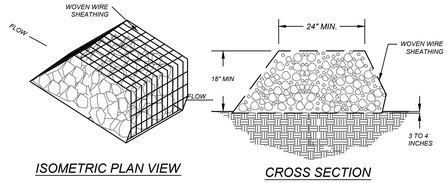
TEMPORARY CONSTRUCTION ENTRANCE/EXIT

Installation: (North Carolina, 1993)
(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
(3) The construction entrance should be at least 50 feet long.
(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.
(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.
(8) Install pipe under pad as needed to maintain proper public road drainage.

Inspection and Maintenance Guidelines:
(1) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.

trap or sediment basin.
(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

STABILIZED CONSTRUCTION ENTRANCE / EXIT



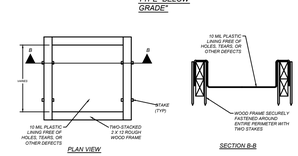
ISOMETRIC PLAN VIEW

CROSS SECTION

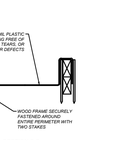
Materials:
(1) The berm structure should be. secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoat rings.
(2) Clean, open graded 3- to 5-inch diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5- to 8-inch diameter rocks may be used.

Installation:
(1) Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings.
(2) Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter.
(3) Place the rock along the sheathing as shown in the diagram Figure 1-28), to a height not less than 18".
(4) Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, airl the berm retains its shape when walked upon.
(5) Berm should be built along the contour at zero percent grade or as near as possible.
(6) The ends of the berm should be tied into existing upslope grade and the berm should be buried in a trench approximately 3 to 4 inches deep to prevent failure of the control.

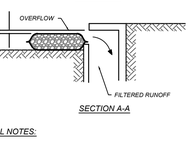
Inspection and Maintenance Guidelines:
(1) Inspection should be made weekly by the responsible party. For installations in streambeds, additional daily inspections should be made.
(2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
(3) Repair any loose wire sheathing.
(4) The berm should be reshaped as needed during inspection.
(5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
(6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.



PLAN VIEW



SECTION A-A



PLAN VIEW

TYPE "BELOW GRADE"

PLAN VIEW

SECTION B-B

TYPE "ABOVE GRADE"

GENERAL NOTES:

- DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
- WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
- WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF AND AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.

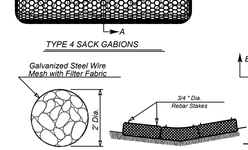
CONCRETE TRUCK WASHOUT PIT

SECTION A-A

GENERAL NOTES:

- ALL STORM DRAINAGE SYSTEMS INLETS SHOULD FILTER RUNOFF BEFORE THE WATER IS DISCHARGED INTO STREAMS OR ONTO ADJACENT PROPERTIES, UNLESS TREATMENT IS PROVIDED ELSEWHERE.
- IF NO ADDITIONAL DOWNSTREAM TREATMENT EXISTS, THE MAXIMUM DRAINAGE AREA TRIBUTARY TO AN AREA DRAIN INSTALLED WITH A GRAVEL FILTER SHOULD BE ONE ACRE.
- ALL CURB INLET GRAVEL FILTERS SHOULD BE INSPECTED AND REPAIRED AFTER EACH RUNOFF EVENT. SEDIMENT SHOULD BE REMOVED WHEN MATERIAL IS WITHIN THREE INCHES OF THE TOP OF THE CONCRETE BLOCKS. PERIODICALLY, THE GRAVEL SHOULD BE RAKED TO INCREASE INFILTRATION AND FILTERING OF RUNOFF WATERS.

CURB INLET PROTECTION GRAVEL FILTER BAGS



SECTION A-A

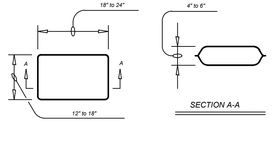
SECTION B-B

PLAN VIEW

GENERAL NOTES:

- THE TOP OF THE SACK GABIONS SHOULD BE LEVEL AND ORIENTED PERPENDICULAR TO THE DIRECTION OF FLOW.
- FILTER FABRIC MATERIAL SHALL BE FASTENED TO WOVEN WIRE SUPPORT.
- FILTER FABRIC MATERIAL SHOULD MEET THE FOLLOWING SPECIFICATIONS: RESISTANT TO ULTRAVIOLET LIGHT, FABRIC SHOULD BE NON-WOVEN GEOTEXTILE WITH MINIMUM WEIGHT OF 3.5 OUNCES PER SQUARE YARD, MINIMUM MULLEN BURST STRENGTH OF 200 POUNDS PER SQUARE INCH AND A FLOW THRU RATE OF 120 GALLONS PER MINUTE PER SQUARE FOOT OF FRONTAL AREA.
- STONE SIZE: x4"-8" OPEN GRADED CRUSHED LIMESTONE.
- INSPECT WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACE AS NEEDED.
- WHEN SILT REACHES A DEPTH OF 6 INCHES OR MORE ABOVE NATURAL GROUND, SILT SHALL BE REMOVED AND DISPOSED IN AN APPROVED MANNER THAT WILL NOT CONTRIBUTE TO RESILTATION. CONTAMINATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.

TYPE 4 SACK GABIONS

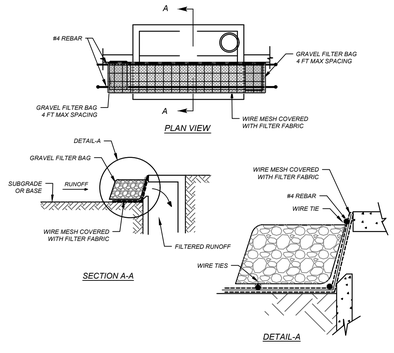


SECTION A-A

GENERAL NOTES:

- THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN UNIT WEIGHT OF 4 OUNCES/SY, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.
- THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

GRAVEL FILTER BAG DETAIL

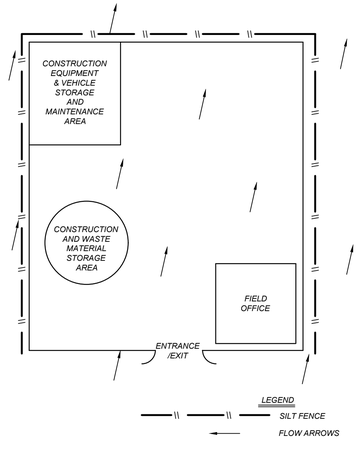


PLAN VIEW

SECTION A-A

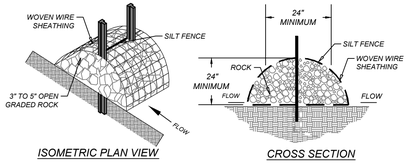
DETAIL-A

CURB INLET PROTECTION (ALTERNATE)



TYPICAL CONSTRUCTION STAGING AREA

ROCK BERM



ISOMETRIC PLAN VIEW

CROSS SECTION

MATERIALS:
(1) SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES. WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD. MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2. ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
(2) FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR YBAR CROSS SECTION. SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FL2, AND BRINDELL HARDNESS EXCEEDING 140. REBAR (EITHER #5 OR #6) MAY ALSO BE USED TO ANCHOR THE BERM.
(3) WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.
(4) THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH. AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.
(5) CLEAN, OPEN GRADED 3- TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5- TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION:
(1) LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1-INCH OPENINGS.
(2) INSTALL THE SILT FENCE ALONG THE CENTER OF THE PROPOSED BERM PLACEMENT, AS WITH A NORMAL SILT FENCE DESCRIBED IN SECTION 2.4.3.
(3) PLACE THE ROCK ALONG THE SHEATHING ON BOTH SIDES OF THE SILT FENCE AS SHOWN IN THE DIAGRAM (FIGURE 1-29); TO A HEIGHT NOT LESS THAN 24 INCHES. CLEAN, OPEN GRADED 3- 5" DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5- TO 8-INCH DIAMETER ROCK MAY BE USED.
(4) WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
(5) THE HIGH SERVICE ROCK BERM SHOULD BE REMOVED WHEN THE SITE IS REVEGETATED OR OTHERWISE STABILIZED OR IT MAY REMAIN IN PLACE AS A PERMANENT BMP IF DRAINAGE IS ADEQUATE.

INSPECTION AND MAINTENANCE GUIDELINES:
(1) INSPECTION SHOULD BE MADE WEEKLY BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE ON ROCK BERM.
(2) REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT OF IN AN APPROVED MANNER.
(3) REPAIR ANY LOOSE WIRE SHEATHING.
(4) THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
(5) THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
(6) THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

HIGH SERVICE ROCK BERM

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AS SHOWN	----	MS	CG

PROJECT NUMBER: 418-15-10
DRAWING NAME: C-SW3P-DET

SHEET TITLE: STORM WATER POLLUTION PREVENTION PLAN DETAILS

SHEET NUMBER: 9.2

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

\Civil\C-SW3P-DET.dwg 9.2 By: BELSETH