

SAPPHIRE GROVE PHASE 2D

BEXAR COUNTY, TEXAS

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

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GENERAL NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION JUNE 2008, OR LATEST.
- 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.
- 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).
- 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.
- IF THE NEED ARISES, ADDITIONAL BARRICADES AND DIRECTIONAL DEVICES MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- 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.
- CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR TWENTY FOUR (24) HOURS PRIOR TO BACKFILL OF ANY UTILITY TRENCHES TO SCHEDULE FOR DENSITY TEST AS REQUIRED.
- 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.
- 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)	233-2019
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	1-800-344-6377
CITY PUBLIC SERVICE ENERGY - TIME WARNER - AT&T - MCI	
- 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.
- 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 MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING ARTIFICIAL OR NATURAL DRAINAGE.
- THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.
- THE CONTRACTOR SHALL MAINTAIN ALL ADJOINING STREETS AND TRAVELED ROUTES FREE FROM SPILLED AND/ OR TRACKED CONSTRUCTION MATERIALS AND/ OR DEBRIS.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL NOT REMOVE OR ADJUST ANY VIA FACILITIES. THE CONTRACTOR MUST CONTRACT VIA FOURTEEN DAYS PRIOR, FOR THE REMOVAL OF BENCHES, STOP POLES OR ANY OTHER VIA FACILITIES THAT MAY BE PRESENT. PLEASE PROVIDE THIRTY DAYS PRIOR NOTICE FOR SHELTER REMOVAL TELEPHONE NOS. (210) 362-2165 OR (210) 362-2098. THE CONTRACTOR 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.

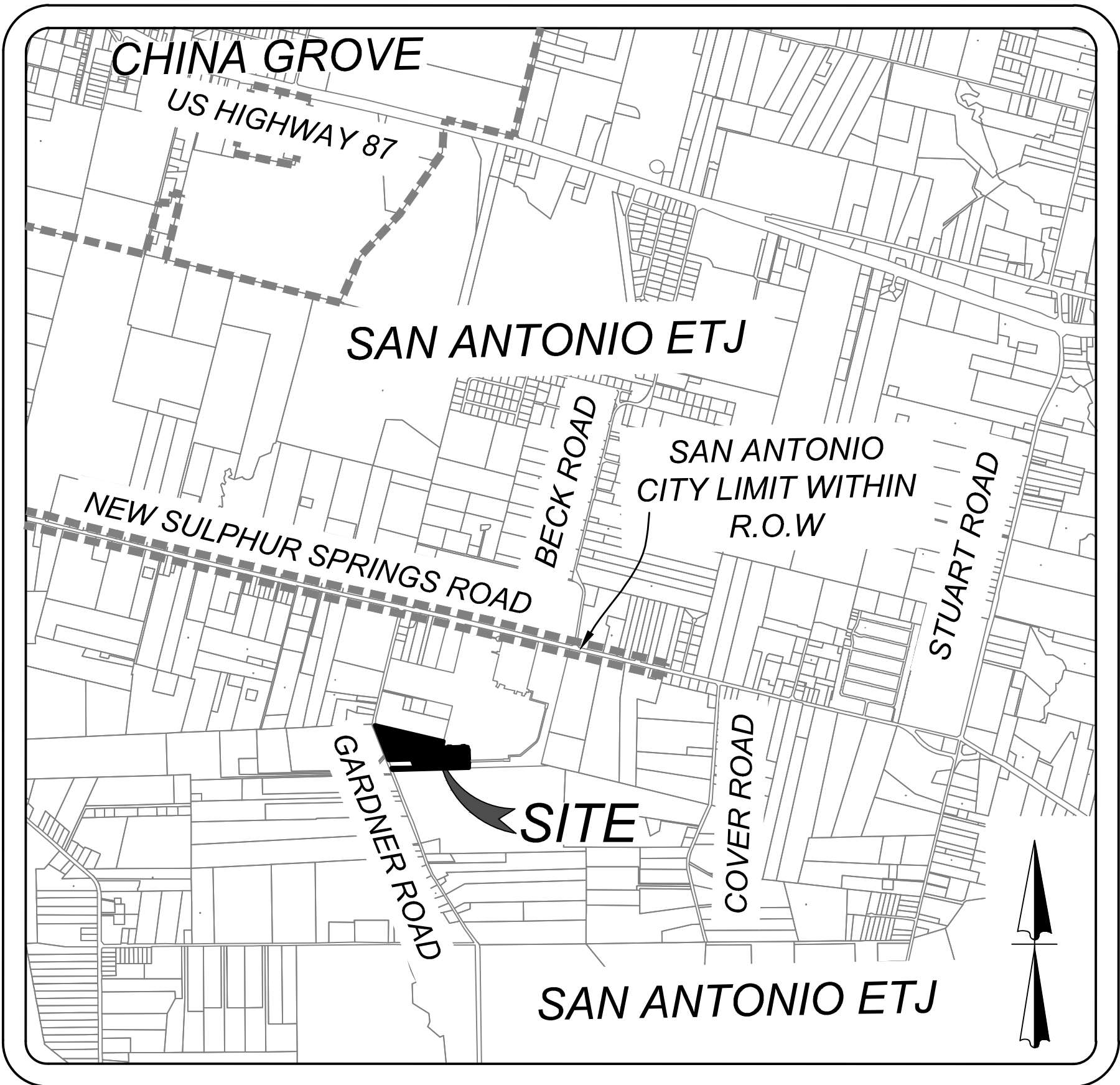
TREE PROTECTION AND PRESERVATION GENERAL NOTES

- NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
- 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).
- 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.
- ROOTS WILL BE CUT WITH A ROCK SAW OR BY HAND, NOT BY AN EXCAVATOR OR OTHER ROAD CONSTRUCTION EQUIPMENT.
- ALL CURB AND SIDEWALK WORK SHALL USE ALTERNATIVE CONSTRUCTION METHODS TO MINIMIZE EXTENSIVE ROOT DAMAGE TO TREES (REFER TO DETAILS).
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH, OR WET BURLAP.
- 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.
- 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.
- NO WIRES, NAILS OR OTHER MATERIAL MAY BE ATTACHED TO PROTECTED TREES.
- 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.
- NO EXCESSIVE TREE TRIMMING WILL BE PERMITTED.
- 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).
- 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.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST. (207-0278).
- TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.
- 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

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

DECEMBER 2009			
CITY OF SAN ANTONIO			
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT			
CITY OF SAN ANTONIO			
GENERAL NOTES			
1% SUBMITTAL		PROJECT NO.	DATE
DRAWN BY	DESIGN BY	CHECK BY	SHEET NO. OF



LOCATION MAP
N.T.S.

KFW

ENGINEERS + SURVEYING

3421 Pleasanton Pkwy, Suite 200, San Antonio, TX 78231

Phone #: (210) 979-8444 • Fax #: (210) 979-8444

TBPE Firm #: 9513 • TBPLS Firm #: 10122300



7/24/24

DEVELOPER:

LENNAR HOMES OF TEXAS LAND & CONSTRUCTION, LTD.

100 NE LOOP 410, SUITE 1155

SAN ANTONIO, TEXAS 78216

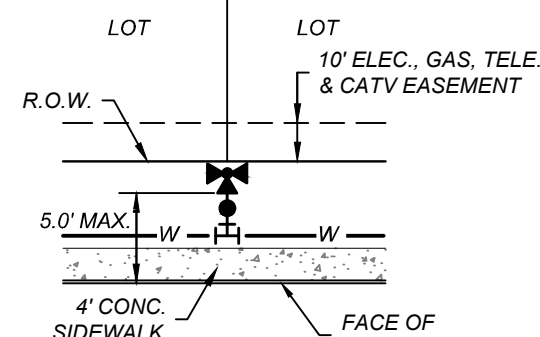
PHONE: (210) 403-6282

TRENCH EXCAVATION SAFETY PROTECTION

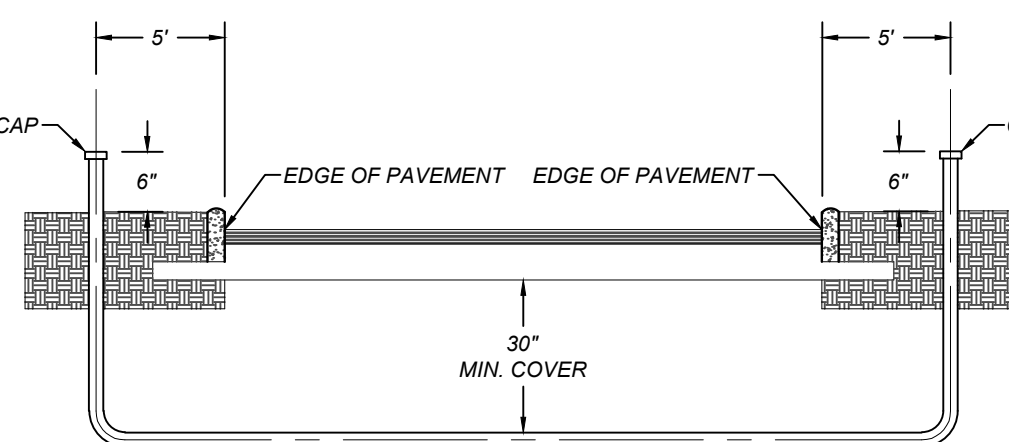
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

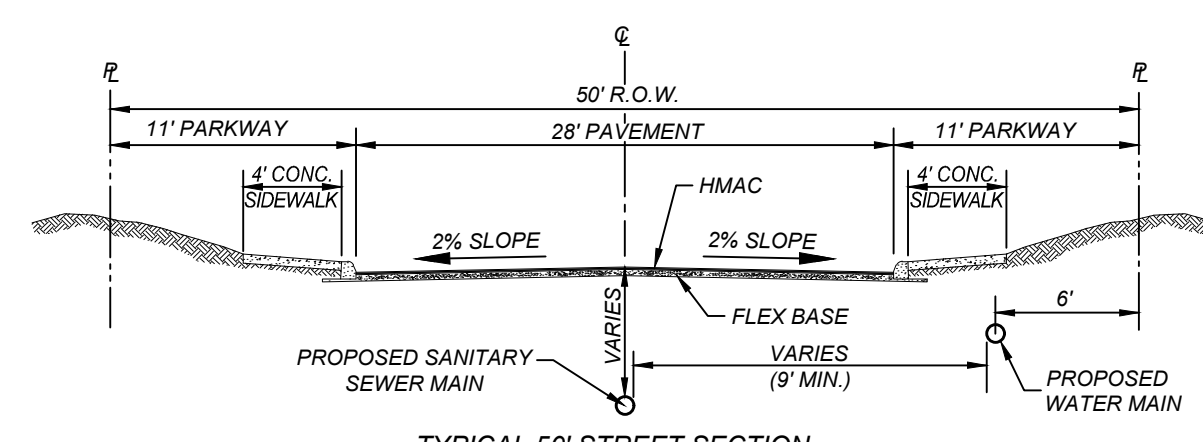


TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE



***PVC SCHEDULE 80 CONDUIT**
SEE PLAN SHEETS FOR SIZE LOCATION AND NUMBER OF CONDUITS

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 50' STREET SECTION
NOT TO SCALE

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:

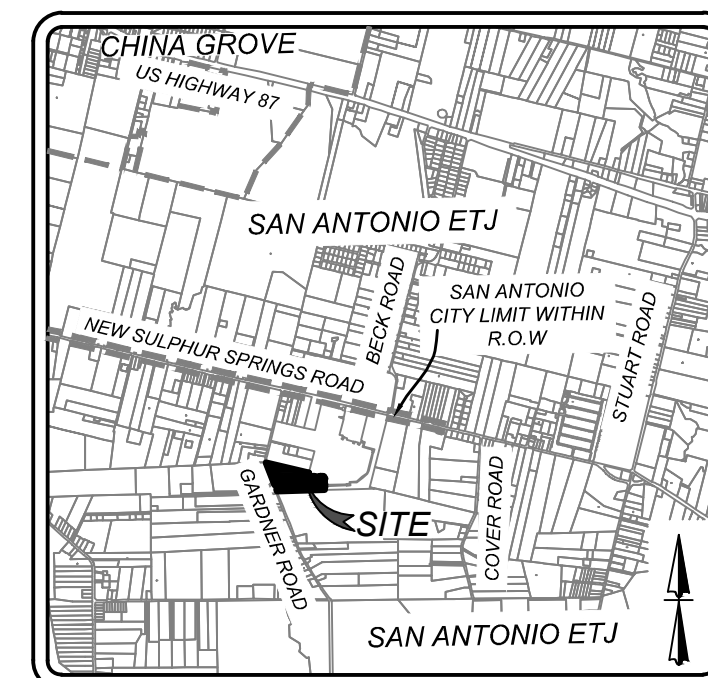
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYORS SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYORS PLAN.

NOTE:

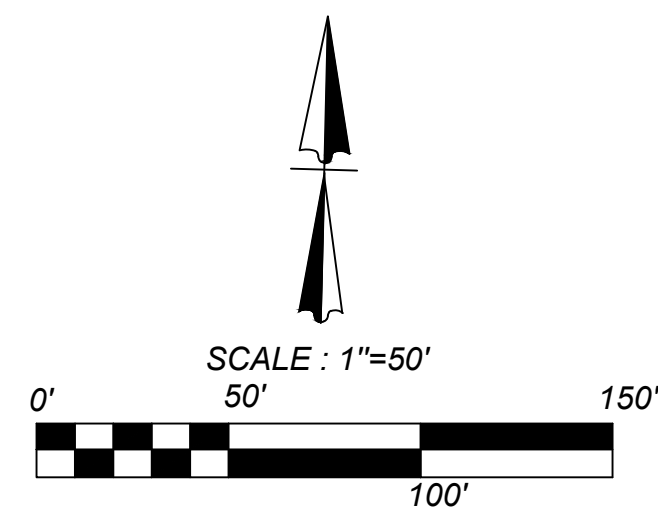
ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS.

WATER / SEWER CROSSING NOTE:

ALL WATER / SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 812 SANITARY SEWER / WATER DETAIL.

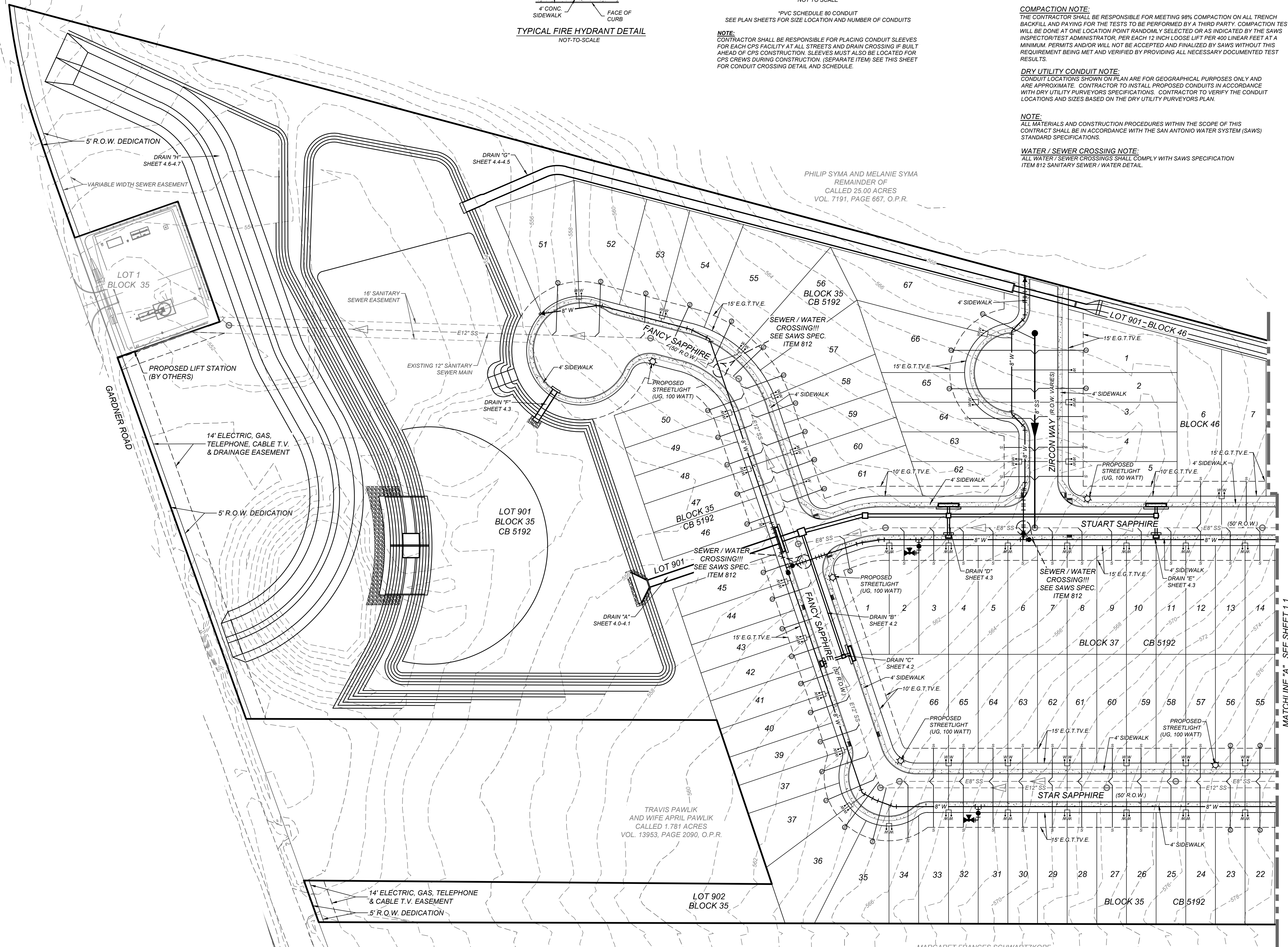


LOCATION MAP
N.T.S.



LEGEND

PROPOSED WATER MAIN AND STRUCTURES	= 8" W
PROPOSED WATER SERVICE AND METER BOX	=
PROPOSED FIRE HYDRANT	=
PROPOSED STREETLIGHT 100W LED (UG)	=
PROPOSED SANITARY SEWER MAIN	= 8" SS
PROPOSED SANITARY SEWER MANHOLE	=
PROPOSED SANITARY SEWER LATERAL	=
PROPOSED SANITARY SEWER LATERAL WITH VERTICAL STACK	=
RIGHT-OF-WAY	= R.O.W.
PROPOSED ELECTRIC, GAS, TELEPHONE AND CABLE TELEVISION EASEMENT	= E.G.T.T.V.E
WATER MAIN (ADJACENT UNITS, CONCURRENT PLATTING)	= 8" W
FIRE HYDRANT (ADJACENT UNITS, CONCURRENT PLATTING)	=
SANITARY SEWER MAIN (ADJACENT UNITS, CONCURRENT PLATTING)	= 8" SS



MARGARET FRANCES SCHWARTZKOPF
REMAINDER OF
CALLED 127.057 ACRES
DOC. NO. 20190191334, O.P.R.
(DESCRIBED IN VOL. 13839, PG. 699, O.P.R.)

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
OVERALL UTILITY PLAN (1 OF 2)

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

1.0

TRENCH EXCAVATION SAFETY PROTECTION

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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 DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

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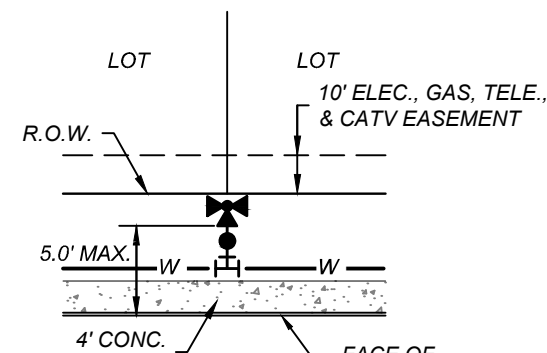
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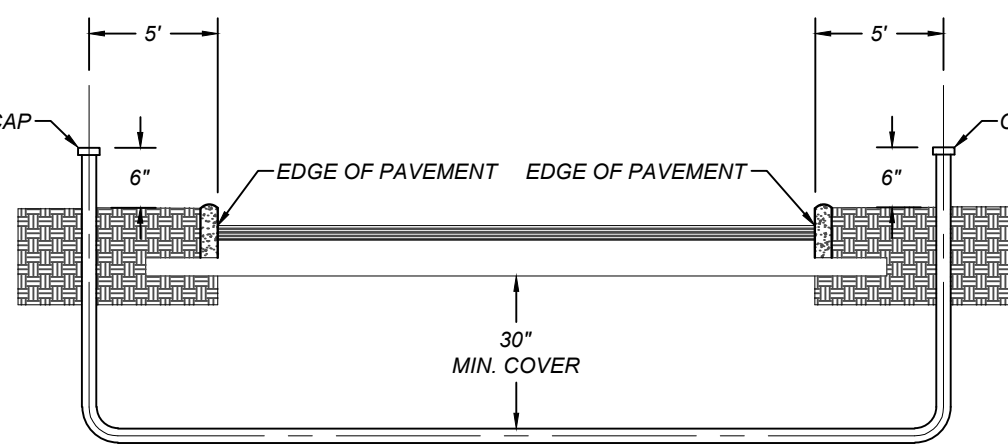
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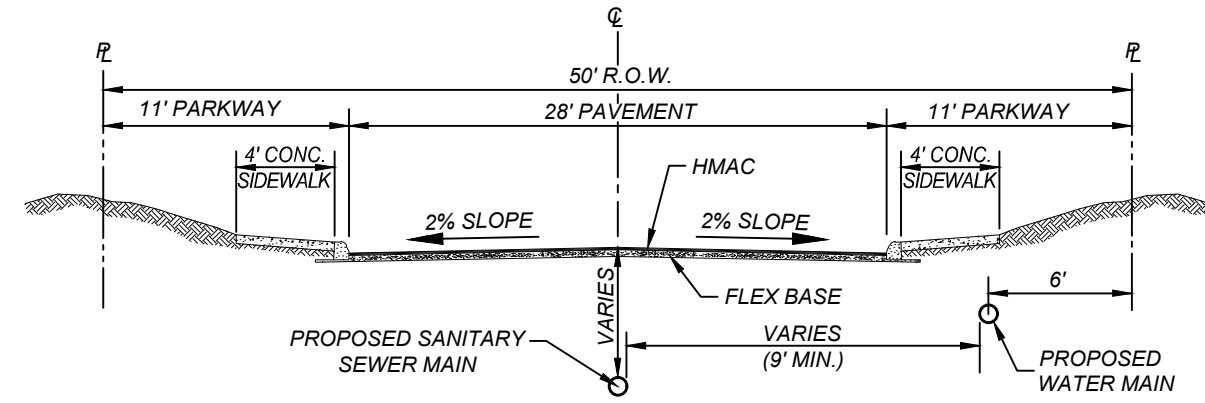


TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE

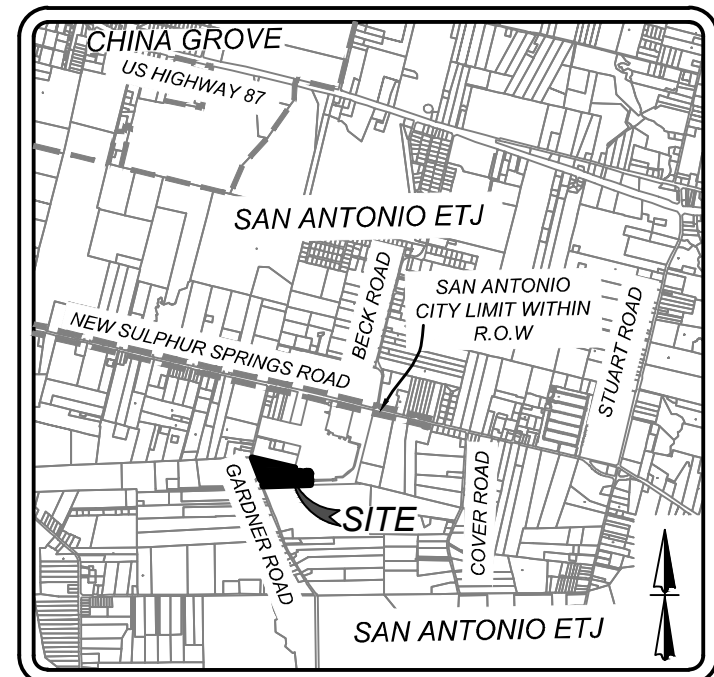


*PVC SCHEDULE 80 CONDUIT
SEE PLAN SHEETS FOR SIZE LOCATION AND NUMBER OF CONDUITS

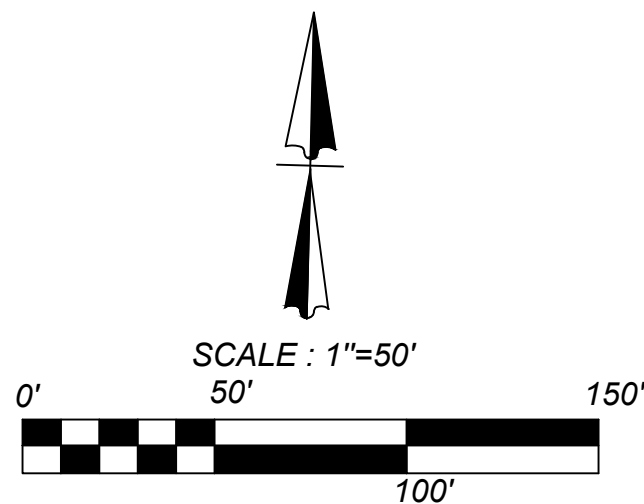
NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH CPS FACILITY AT ALL STREETS AND DRAIN CROSSING IF BUILT AHEAD OF CPS CONSTRUCTION. SLEEVES MUST ALSO BE LOCATED FOR CPS CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.



TYPICAL 50' STREET SECTION
NOT TO SCALE

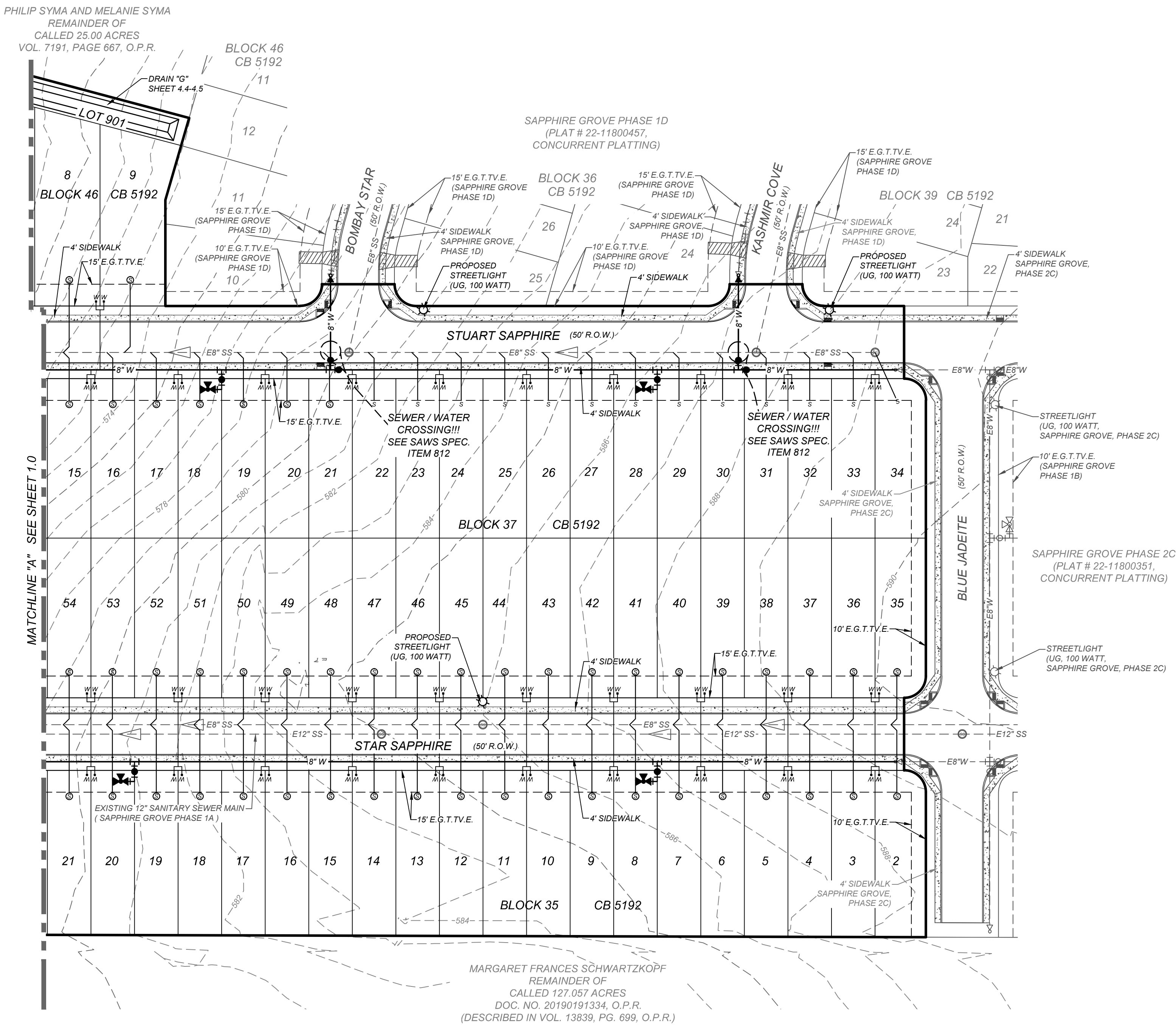


LOCATION MAP
N.T.S.



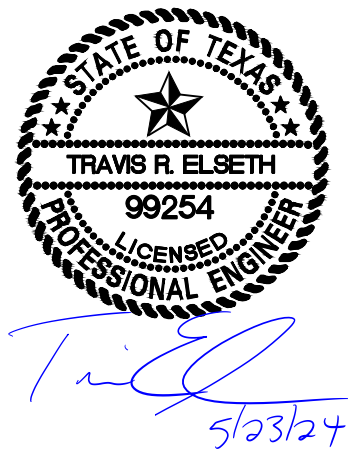
LEGEND

PROPOSED WATER MAIN AND STRUCTURES	= 8" W
PROPOSED WATER SERVICE AND METER BOX	=
PROPOSED FIRE HYDRANT	=
PROPOSED STREETLIGHT 100W LED (UG)	=
PROPOSED SANITARY SEWER MAIN	= 8" SS
PROPOSED SANITARY SEWER MANHOLE	=
PROPOSED SANITARY SEWER LATERAL	=
PROPOSED SANITARY SEWER LATERAL WITH VERTICAL STACK	=
RIGHT-OF-WAY	= R.O.W.
PROPOSED ELECTRIC, GAS, TELEPHONE AND CABLE TELEVISION EASEMENT	= E.G.T.V.E
WATER MAIN (ADJACENT UNITS, CONCURRENT PLATTING)	= 8" W
FIRE HYDRANT (ADJACENT UNITS, CONCURRENT PLATTING)	=
SANITARY SEWER MAIN (ADJACENT UNITS, CONCURRENT PLATTING)	= 8" SS



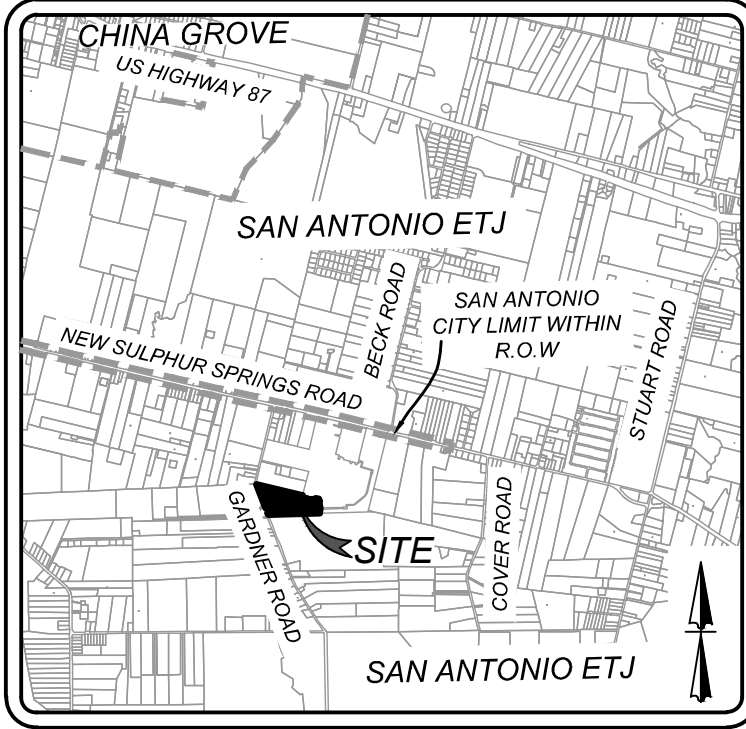
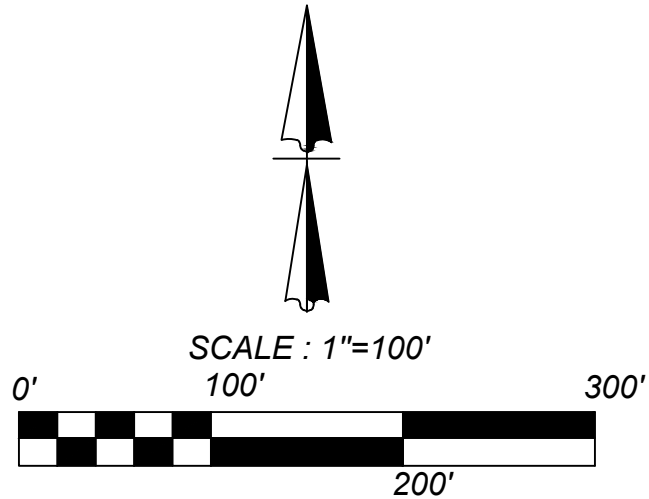
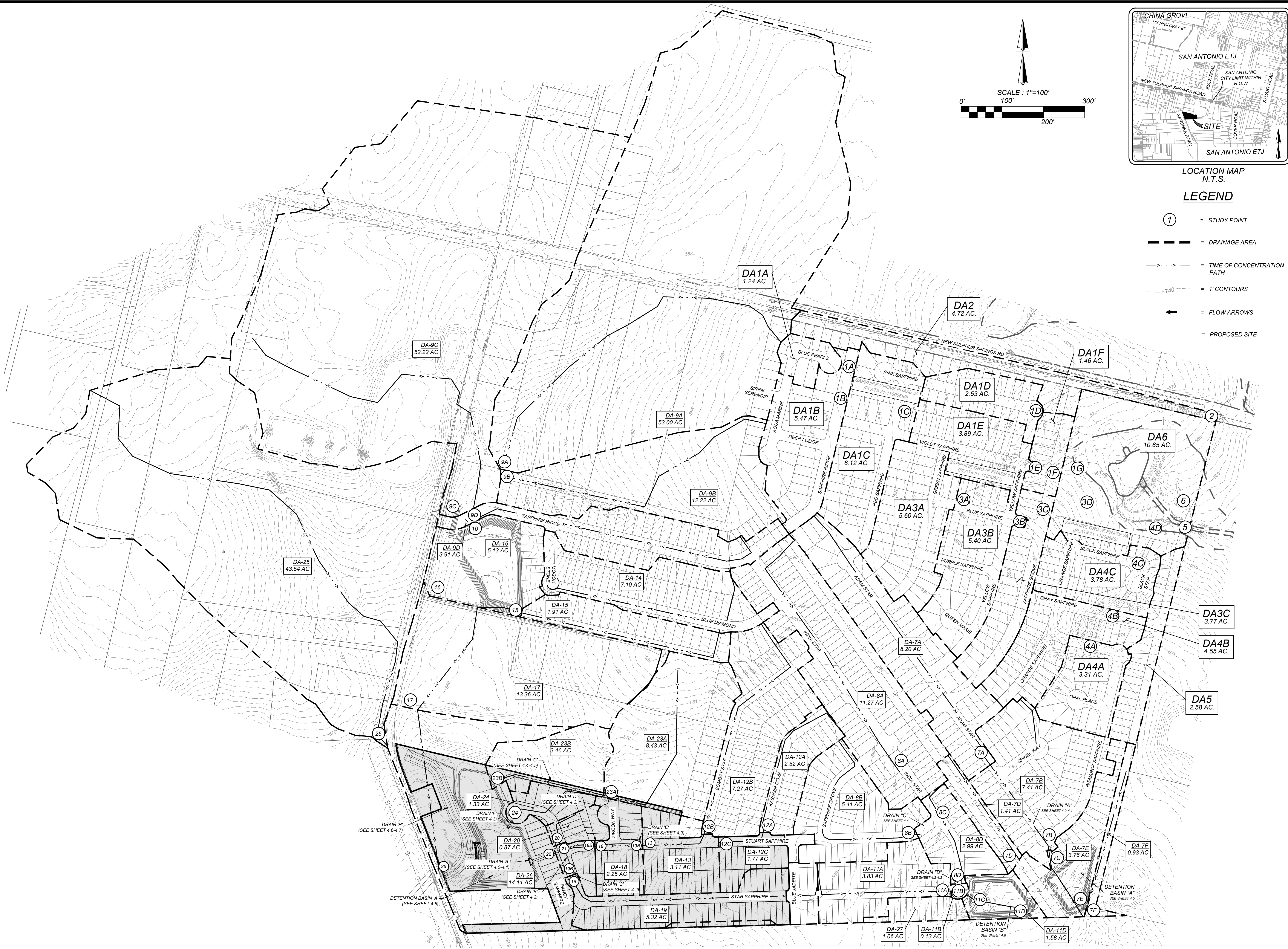
MARGARET FRANCES SCHWARTZKOPF
REMAINDER OF
CALLED 127.057 ACRES
DOC. NO. 20190191334, O.P.R.
(DESCRIBED IN VOL. 13839, PG. 699, O.P.R.)

K&W
ENGINEERS + SURVEYING
10010 Highway 87, Suite 100
San Antonio, TX 78251
Phone # (210) 978-8444 • Fax # (210) 978-8441
TBE# S Firm #: 9513 • TBE# S Firm #: 10122903



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
OVERALL UTILITY PLAN (2 OF 2)

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:
1.1



LOCATION MAP
N.T.S.

LEGEND

- ① = STUDY POINT
- = DRAINAGE AREA
- >->- = TIME OF CONCENTRATION PATH
- - 740 - - = 1' CONTOURS
- ← = FLOW ARROWS
- - - - = PROPOSED SITE

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX

MASTER DRAINAGE PLAN (1 OF 2)

PLAT NO.
22-11800456

JOB NO. 314-39-13
DATE: FEBRUARY 2024

DRAWN/AD CHECKED/TE

SHEET NUMBER:

2.0

K&W
ENGINEERS & SURVEYING
Phone #: (210) 878-8444 • Fax #: (210) 878-8441
TBPE Firm #: 9513 • TBPE S Firm #: 1012300

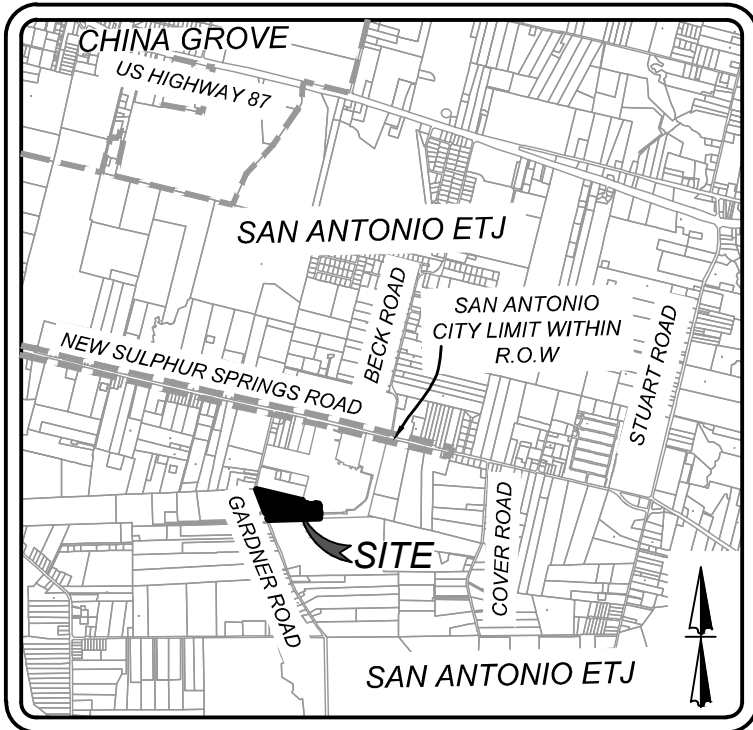
ISSUE DATE: _____
REVISIONS: _____

STATE OF TEXAS
TRAVIS R. ELSETH
99254
LICENSED PROFESSIONAL ENGINEER

Travis R. Elseth
5/23/24

Date: May 20, 2024, 11:42am User ID: zfruh
File: N:\314\381\3\Design\CA\WD_3143813.dwg

PROPOSED/ULTIMATE CONDITIONS - HYDROLOGY SUMMARY														
RATIONAL METHOD														
Study Pt.	Drainage	Area	C	TCARRYOVE R	Tovrl	Tsc	Tch	Tc	I5	I25	I100	Q5	Q25	Q100
	Area	(Acres)		(min)	(min)	(min)	(min)	(min)	(in/hr)	(in/hr)	(in/hr)	(ft3/s)	(ft3/s)	(ft3/s)
1A	DA1A	1.24	0.77		14.5	2.1	0.0	16.6	4.97	6.85	8.53	4.74	6.54	8.15
	DA1B	5.47	0.77											
1B	DA1A+DA1B	6.71	0.77		14.5	5.8	0.0	20.3	4.48	6.16	7.65	23.15	31.82	39.55
1C	DA1C	6.12	0.77				0.0	18.1	4.75	6.54	8.14	22.39	30.82	38.35
1D	DA1D	2.53	0.77		11.1	2.7	0.0	13.8	5.46	7.58	9.46	10.64	14.77	18.44
1E	DA1E	3.89	0.77		14.5	3.5	0.0	18.0	4.76	6.56	8.16	14.27	19.65	24.45
	Amount of Runoff Captured by On-Grade Inlets @ 1.55% (2 - 15' Inlets)											7.30	8.96	10.30
	Amount of Runoff Not Captured by On-Grade Inlets @ 1.55% (2 - 15' Inlets)											6.97	10.69	14.15
1F	DA1F w/ Runoff from DA1E	1.46	0.77		14.5	2.6	0.0	17.1	4.89	6.74	8.39	12.47	18.27	23.58
1G	DA1A THRU DA1F	20.71	0.57	20.3	0.0	0.0	3.6	23.9	4.13	5.66	7.03	48.73	66.83	82.95
2	DA2	4.72	0.95		12.5	13.0	0.0	25.5	4.00	5.48	6.80	17.92	24.56	30.47
3A	DA3A	5.60	0.77		14.5	5.0	0.0	19.5	4.57	6.29	7.82	19.72	27.12	33.72
	Amount of Runoff Captured by On-Grade Inlets @ 1.0% (2 - 20' Inlets)											16.98	20.96	24.02
	Amount of Runoff Not Captured by On-Grade Inlets @ 1.0% (2 - 20' Inlets)											2.74	6.16	9.70
3B	DA3B w/ Runoff from DA3A	5.40	0.77		14.5	5.1	0.0	19.6	4.56	6.27	7.80	21.71	32.25	42.13
	Amount of Runoff Captured by On-Grade Inlets @ 2.95% (2 - 15' Inlets)											12.20	15.10	17.18
	Amount of Runoff Not Captured by On-Grade Inlets @ 2.95% (2 - 15' Inlets)											9.51	17.15	24.95
3C	DA3C w/ Runoff from DA3B	3.77	0.77		19.6	0.0	0.4	20.0	4.51	6.21	7.71	22.62	35.16	47.34
3D	DA3A THRU DA3C	14.77	0.77											
4A	DA4A	3.31	0.77		14.5	5.7	0.0	20.2	4.49	6.17	7.67	11.45	15.74	19.56
4B	DA4B	4.55	0.77		14.5	5.2	0.0	19.7	4.55	6.26	7.78	15.94	21.92	27.25
4C	DA4C	3.78	0.77		14.5	3.2	0.0	17.7	4.81	6.62	8.24	13.99	19.27	23.98
4D	DA4A THRU DA4C	11.64	0.77											
5	DA5	2.58	0.77		14.5	7.0	0.0	21.5	4.35	5.98	7.43	8.65	11.88	14.75
	DA6	10.85	0.77											
6	DA1 THRU DA6	65.27	0.72		23.9	0.0	2.5	26.4	3.93	5.38	6.68	184.44	252.74	313.53
7A	DA7A	8.20	0.77		14.0	2.0	3.1	19.1	4.62	6.36	7.91	29.18	40.14	49.92
7B	DA7B	7.41	0.77		14.0	1.0	2.0	17.0	4.91	6.76	8.42	27.99	38.58	48.04
7C	DA7A + DA7B	15.61	0.77		19.0	0.0	2.0	21.0	4.40	6.05	7.52	52.94	72.72	90.35
7D	DA7D	1.41	0.41		14.0	4.0	0.0	18.0	4.76	6.56	8.16	2.75	3.79	4.72
	DA7E	3.76	0.77											
7E	PT.7C + DA7E	19.37	0.77		21.0	0.0	1.0	22.0	4.30	5.91	7.34	44.80	0.00	103.10
	DA7F	0.93	0.77											
7F	DA5+DA7F	3.51	0.77		14.0	5.0	0.0	19.0	4.63	6.37	7.93	12.52	17.23	21.42
8A	DA8A	11.27	0.70		14.0	1.0	3.0	18.0	4.76	6.56	8.16	37.58	51.74	64.38
8B	DA8B	5.41	0.77		14.0	0.0	2.0	16.0	5.06	6.99	8.71	21.10	29.11	36.27
8C	DA8A + DA8B	16.68	0.77		14.0	1.0	1.0	16.0	5.06	6.99	8.71	65.04	89.75	111.82
8D	DA8D	2.99	0.77		10.0	1.0	1.0	12.0	5.81	8.12	10.14	13.38	18.69	23.35
9A	DA9A	53.00	0.72		14.0	4.0	3.0	21.0	4.40	6.05	7.52	168.08	230.88	286.85
9B	DA9B	10.73	0.72		14.0	4.0	2.0	20.0	4.51	6.21	7.71	34.88	47.94	59.59
9C	DA9C	52.22	0.72					SEE HMS JUNCTION RESULTS				241.70	367.60	516.10
9D	DA9D	5.77	0.77		12.0	3.0	3.0	18.0	4.76	6.56	8.16	21.16	29.14	36.26
10	DA10	121.72	0.77		22.0	0.0	0.0	22.0	4.30	5.91	7.34	403.28	553.60	687.54
11A	DA11A	5.07	0.77		14.0	0.0	2.0	16.0	5.06	6.99	8.71	19.77	27.28	33.99
	DA11B	0.13	0.96											
11B	PT.8D + PT.11A + DA11B	8.19	0.77		16.0	0.0	0.0	16.0	5.06	6.99	8.71	32.06	44.24	55.12
11C	DA11C	41.55	0.77		16.0	0.0	0.0	16.0	5.06	6.99	8.71	162.02	223.57	278.55
11D	DA11D	1.58	0.77		16.0	0.0	1.0	17.0	4.91	6.76	8.42	60.30	0.00	139.20
12A	DA12A	2.52	0.77		14.0	0.0	2.0	16.0	5.06	6.99	8.71	9.83	13.56	16.89
12B	DA12B	7.27	0.77		14.0	1.0	3.0	18.0	4.76	6.56	8.16	26.67	36.72	45.69
	DA12C	1.77	0.77											
12C	PT.12A + DA12C	4.29	0.77		16.0	0.0	1.0	17.0	4.91	6.76	8.42	16.21	22.34	27.81
	DA13	3.11	0.77											
13	PT.12B + PT.12C + DA13	14.67	0.77		18.0	0.0	1.0	19.0	4.63	6.37	7.93	52.34	72.00	89.54
13A	DA13B	5.15	0.77		RUNNOFF CAPTURED FROM 2 - TYPE 'C' INLETS ON GRADE								25.30	
13B	DA13C	9.52	0.77		REMAINING RUNOFF FROM CURB INLETS ON GRADE								46.70	
14	DA14	5.95	0.77		14.0	2.0	2.0	18.0	4.76	6.56	8.16	21.82	30.05	37.39
15	DA15	3.34	0.77		14.0	10.0	0.0	24.0	4.12	5.65	7.01	10.59	14.53	18.03
16	DA16	155.97	0.77		SEE HMS JUNCTION RESULTS							262.40	409.20	603.00
17	DA17	13.36	0.72		25.0	0.0	1.0	26.0	3.96	5.42	6.73	38.06	52.16	64.71
	DA18	2.25	0.77											
18	PT. 13B+DA18	11.77	0.77		19.0	0.0	1.0	20.0	4.51	6.21	7.71	40.91	56.24	69.90
18A		5.20	0.77		RUNNOFF CAPTURED FROM 2 - TYPE 'C' INLETS ON GRADE								24.86	
18B		6.57	0.77		REMAINING RUNOFF FROM CURB INLETS ON GRADE								31.38	
19	DA19	5.32	0.77		14.0	0.0	3.0	17.0	4.91	6.76	8.42	20.10	27.70	34.49
19A		2.89	0.77		RUNNOFF CAPTURED FROM 2 - TYPE 'C' INLETS ON GRADE								15.06	
19B		2.43	0.77		REMAINING RUNOFF FROM CURB INLETS ON GRADE								12.64	
20	DA20	1.21	0.77		14.0	1.0	0.0	15.0	5.24	7.24	9.03	4.88	6.75	8.41
	DA21	0.77	0.77											
21	PT.18B + PT.19B + PT.20 + DA21	10.98	0.77		20.0	0.0	0.0	20.0	4.51	6.21	7.71	38.17	52.46	65.21
22	PT.13A + PT. 18A + PT.19A + PT.21	24.22	0.77		20.0	0.0	0.0	20.0	4.51	6.21	7.71	84.19	115.73	143.85
23A	DA23A	8.43	0.72		14.0	5.0	1.0	20.0	4.51	6.21	7.71	27.40	37.66	46.82
	DA23B	3.46	0.72											
23B	DA23B + DA23A	11.89	0.72		20.0	0.0	2.0	22.0	4.30	5.91	7.34	36.84	50.57	62.80
24	DA24	1.33	0.77		14.0	2.0	1.0	17.0	4.91	6.76	8.42	5.02	6.93	8.62
25	DA25	43.54	0.72		14.0	4.0	6.0	24.0	4.12	5.65	7.01	129.13	177.09	219.80
26	DA26	262.66	0.77		SEE HMS JUNCTION RESULTS							419.10	647.00	939.90
27	DA27	1.06	0.77		14.0	0.0	0.0	14.0	5.42	7.53	9.39	4.43	6.14	7.66



LOCATION MAP
N.T.S.

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX
MASTER DRAINAGE PLAN (2 OF 2)

PLAT NO.
22-11800456

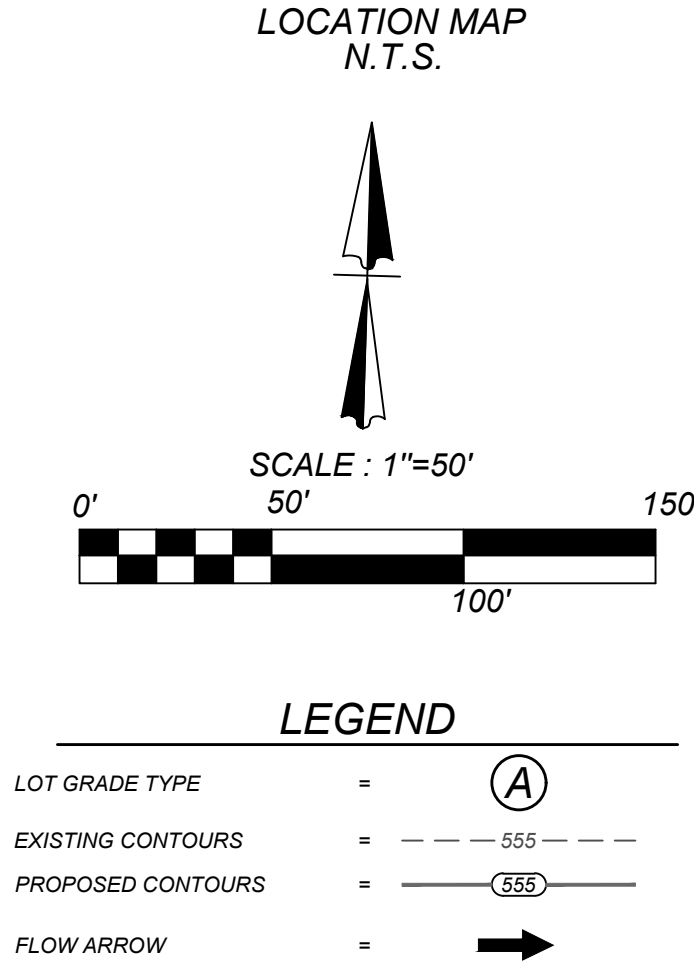
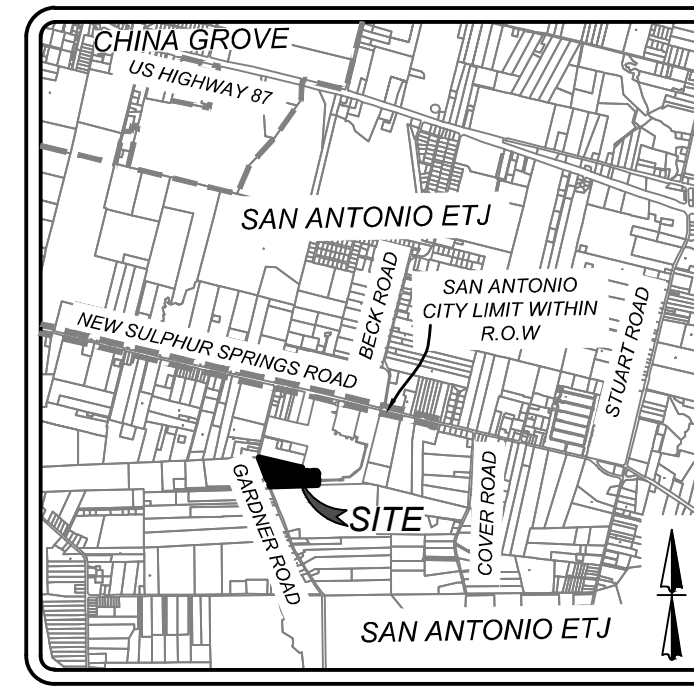
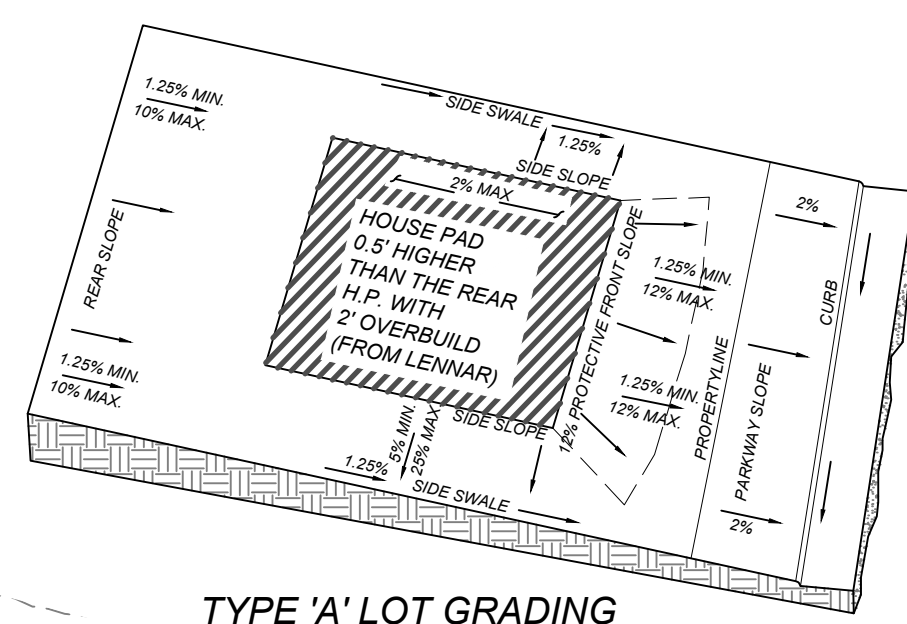
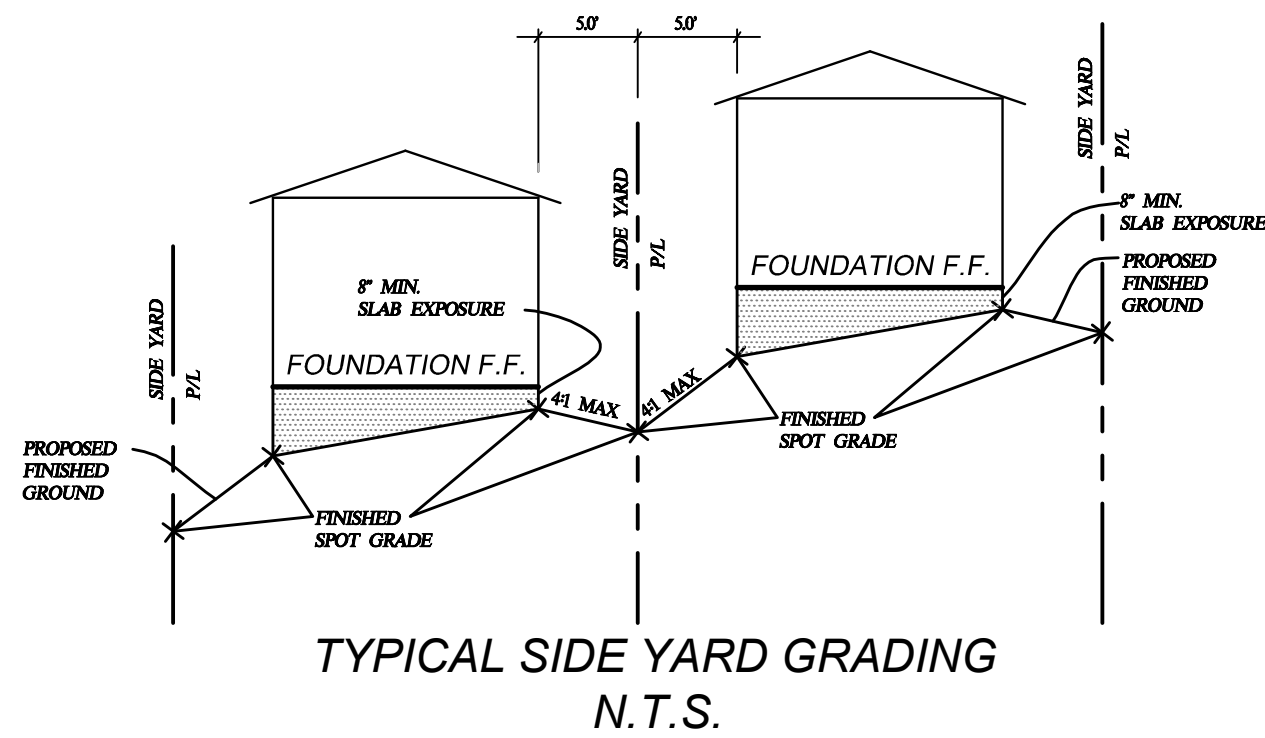
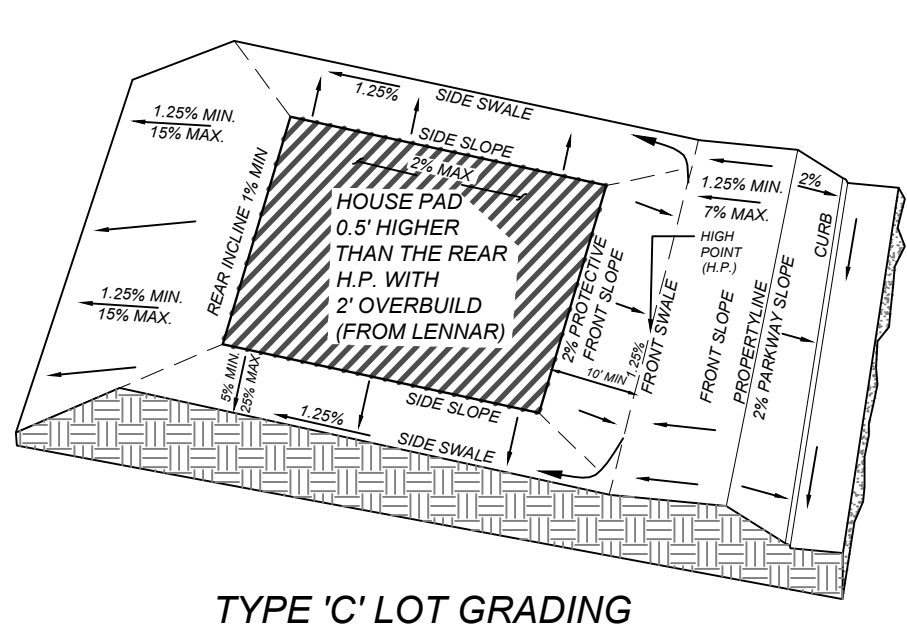
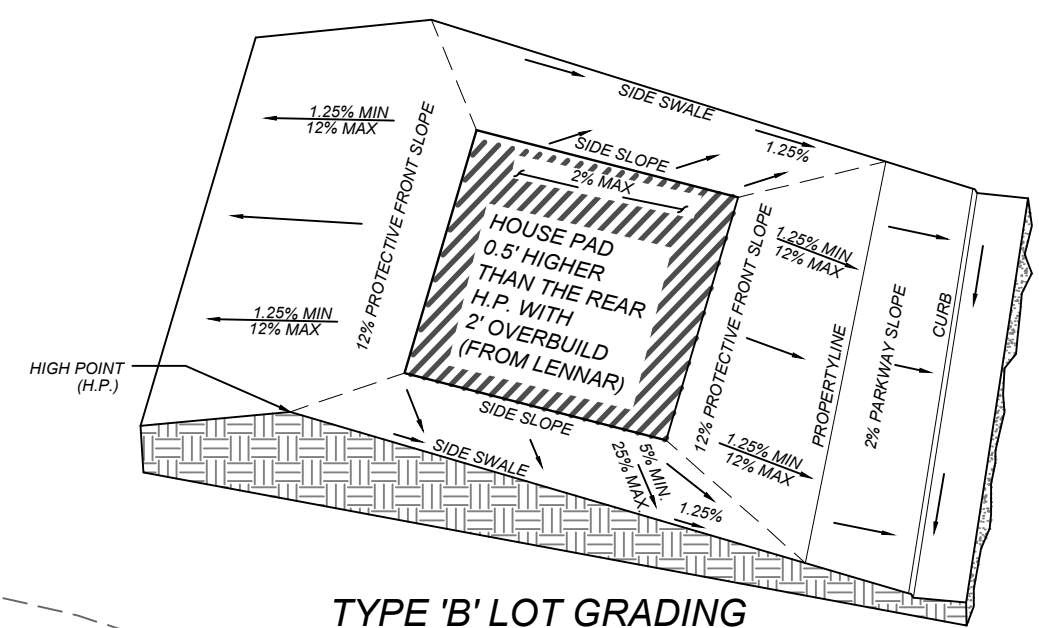
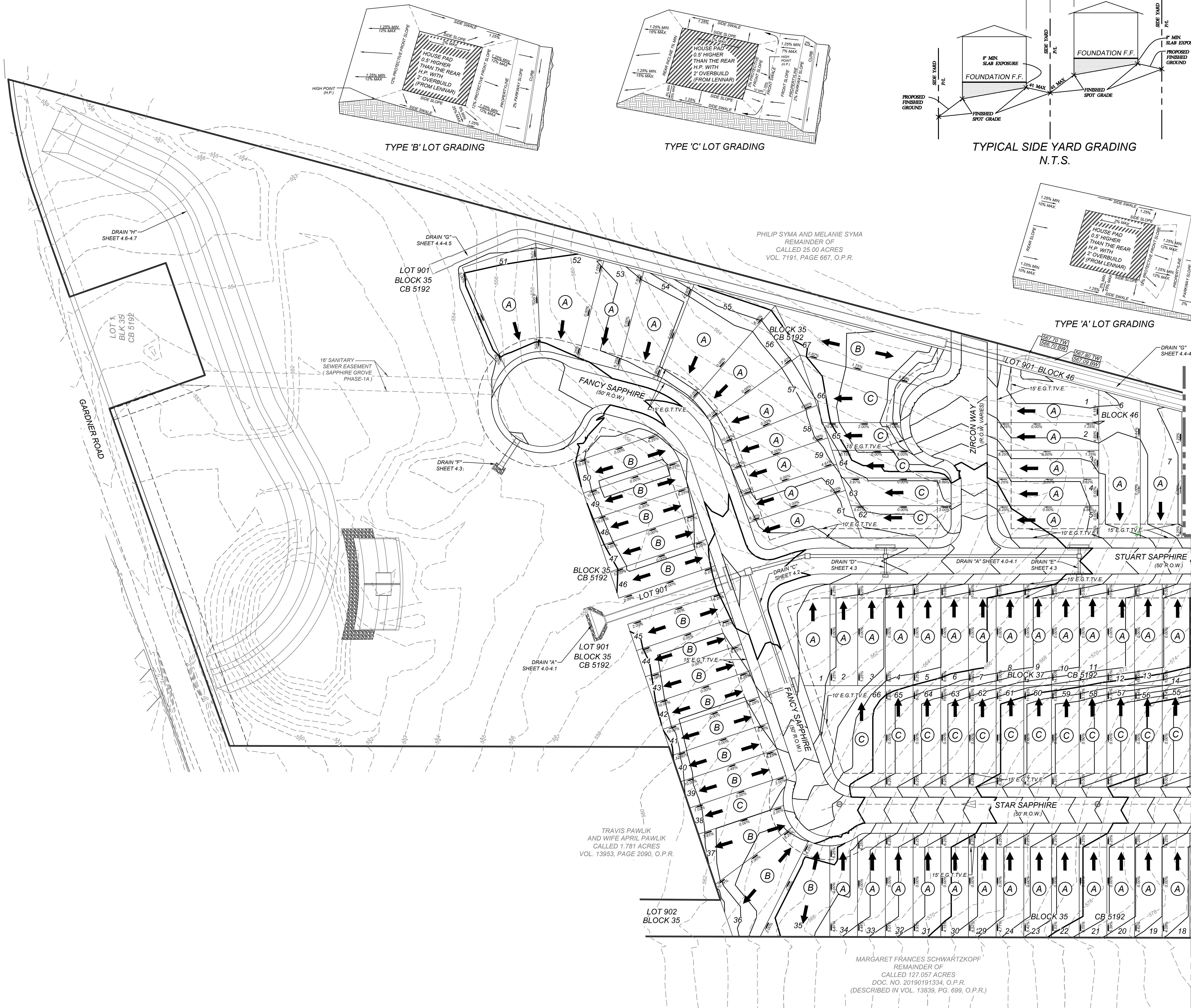
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/TE
SHEET NUMBER:

ISSUE DATE:

REVISIONS:



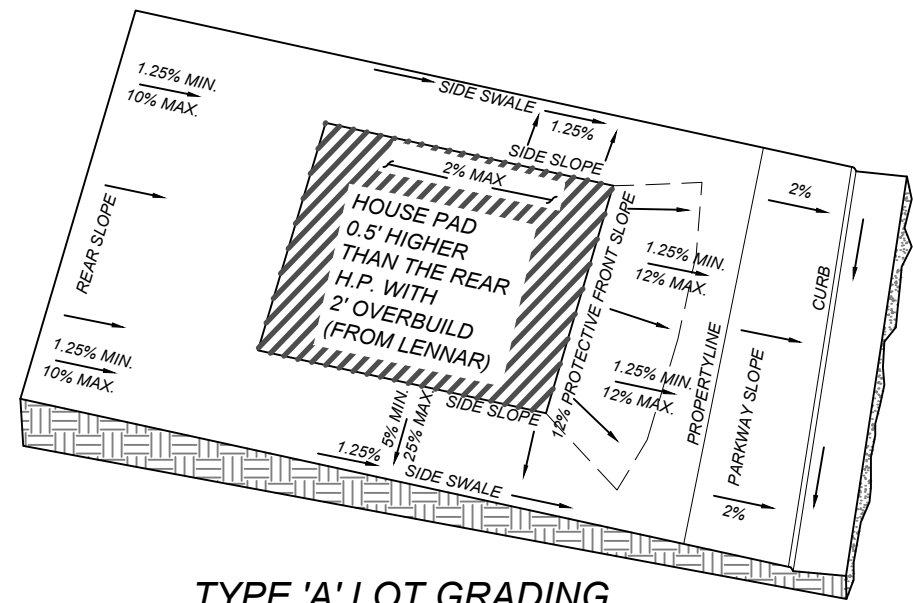
KFW
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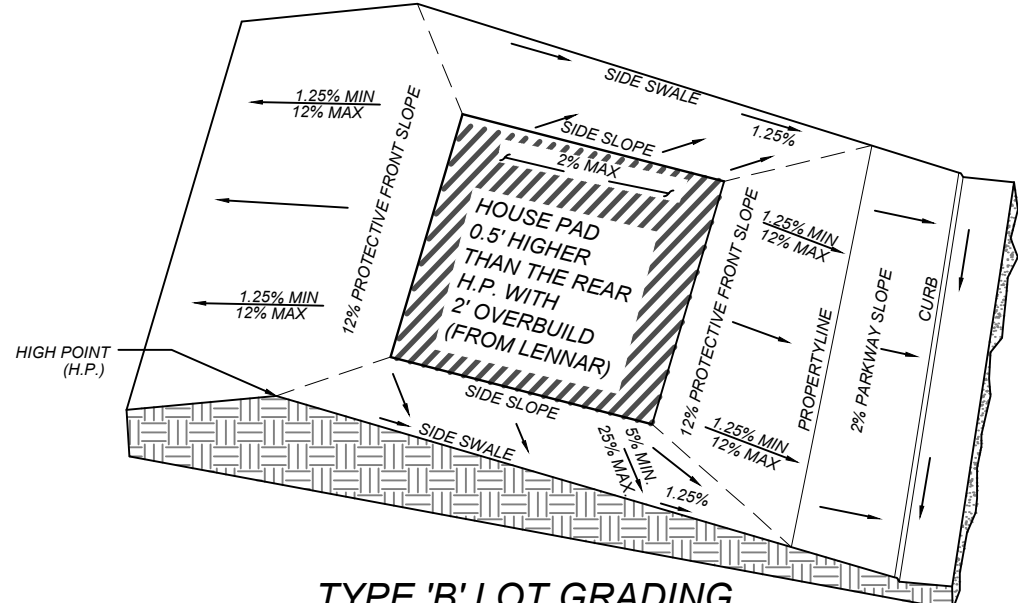
- GENERAL NOTES:
- ELEVATION SHOWN ON FOUNDATION IS FOR FINISHED FLOOR.
 - CONTRACTOR SHALL PROVIDE OWNER ALL NECESSARY DENSITY TESTS FOR FILL LOTS AS REQUIRED BY HUD SPECIFICATIONS.
 - HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK.
 - AS SOON AS PRACTICAL HOME BUILDER SHALL ESTABLISH VEGETATION (HYDROMULCH, SEEDING, SODDING, ETC.) TO PREVENT EROSION FROM OCCURRING.
 - CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF THIS PLAN.
 - 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.
 - 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.
 - 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.
 - CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES.

COMPACTION NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAVING 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.

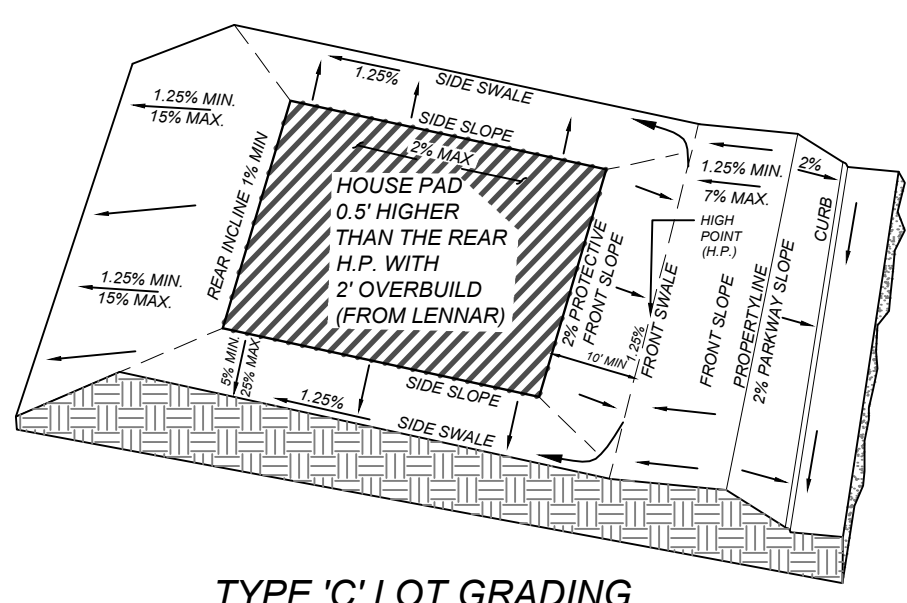
TRENCH EXCAVATION SAFETY PROTECTION
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK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



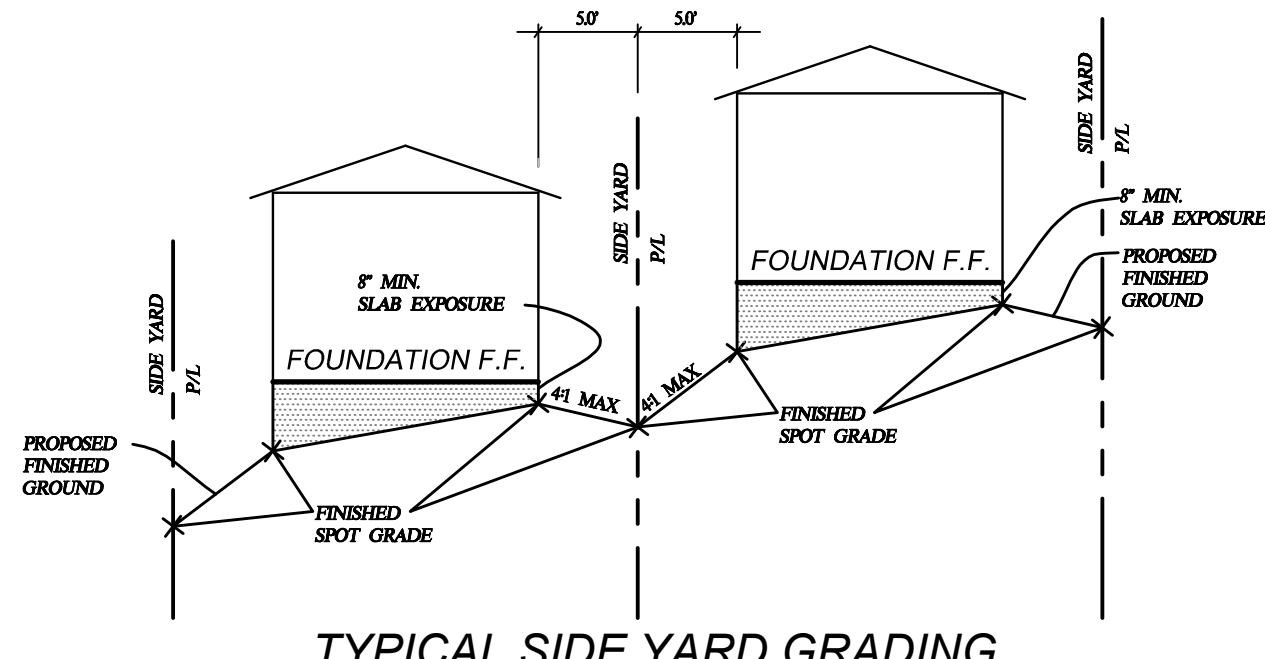
TYPE 'A' LOT GRADING



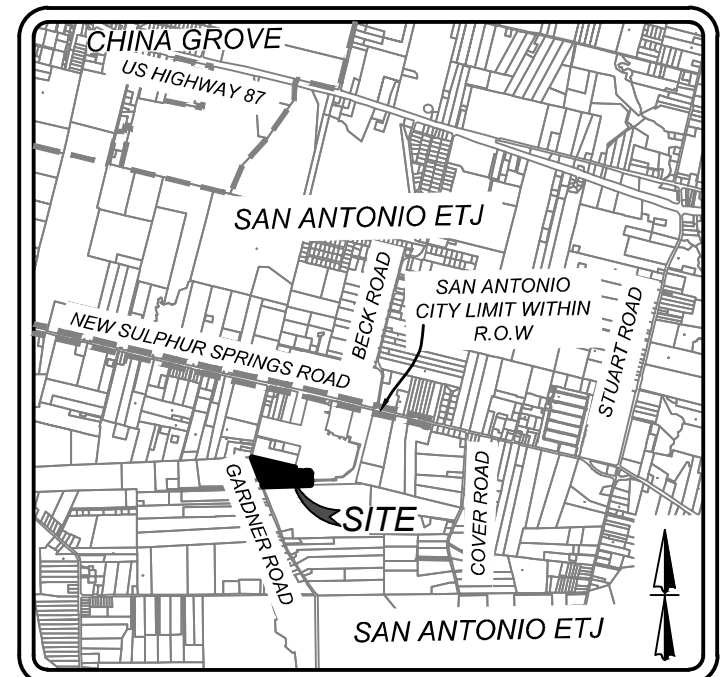
TYPE 'B' LOT GRADING



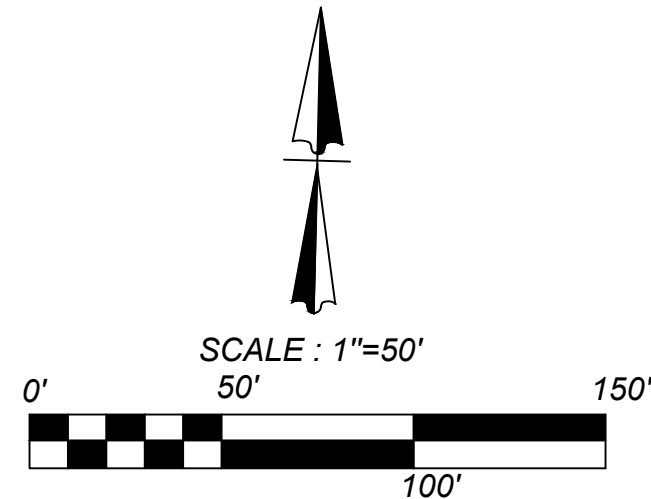
TYPE 'C' LOT GRADING



TYPICAL SIDE YARD GRADING
N.T.S.



LOCATION MAP
N.T.S.



LEGEND

- LOT GRADE TYPE = (A)
EXISTING CONTOURS = --- 555 ---
PROPOSED CONTOURS = --- 555 ---
FLOW ARROW = →

GENERAL NOTES:

- ELEVATION SHOWN ON FOUNDATION IS FOR FINISHED FLOOR.
- CONTRACTOR SHALL PROVIDE OWNER ALL NECESSARY DENSITY TESTS FOR FILL LOTS AS REQUIRED BY HUD SPECIFICATIONS.
- HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK.
- AS SOON AS PRACTICAL HOME BUILDER SHALL ESTABLISH VEGETATION (HYDROMULCH, SEEDING, SODDING, ETC.) TO PREVENT EROSION FROM OCCURRING.
- CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF THIS PLAN.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES.

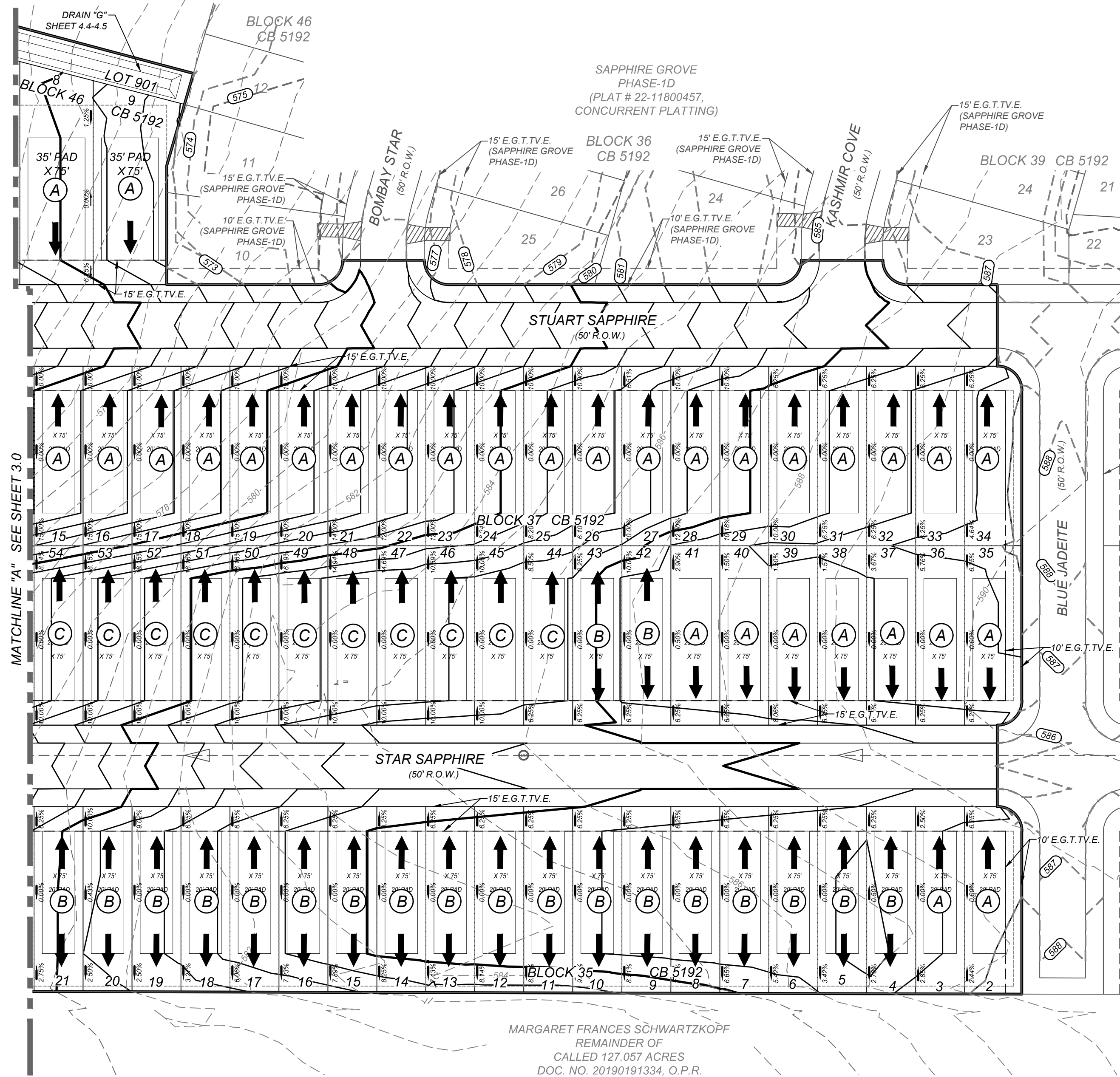
COMPACTION NOTE:

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.

TRENCH EXCAVATION SAFETY PROTECTION

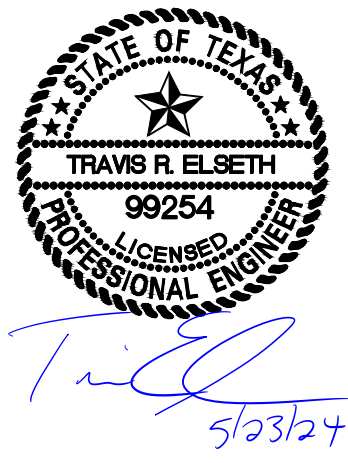
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PHILIP SYMA AND MELANIE SYMA
REMAINDER OF
CALLED 25.00 ACRES
VOL. 7191, PAGE 667, O.P.R.



MARGARET FRANCES SCHWARTZKOPF
REMAINDER OF
CALLED 127.067 ACRES
DOC. NO. 20190191334, O.P.R.
(DESCRIBED IN VOL. 13839, PG. 699, O.P.R.)

K&W
ENGINEERS + SURVEYING
12231
Phone # (210) 979-8444 • Fax # (210) 979-8441
TBPE Firm #: 9513 • TBPE S Firm #: 1012300



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
OVERALL GRADING PLAN (2 OF 2)

PLAT NO.
22-11800456

JOB NO. 314-39-13

DATE: FEBRUARY 2024

DRAWN/AD CHECKED/SC

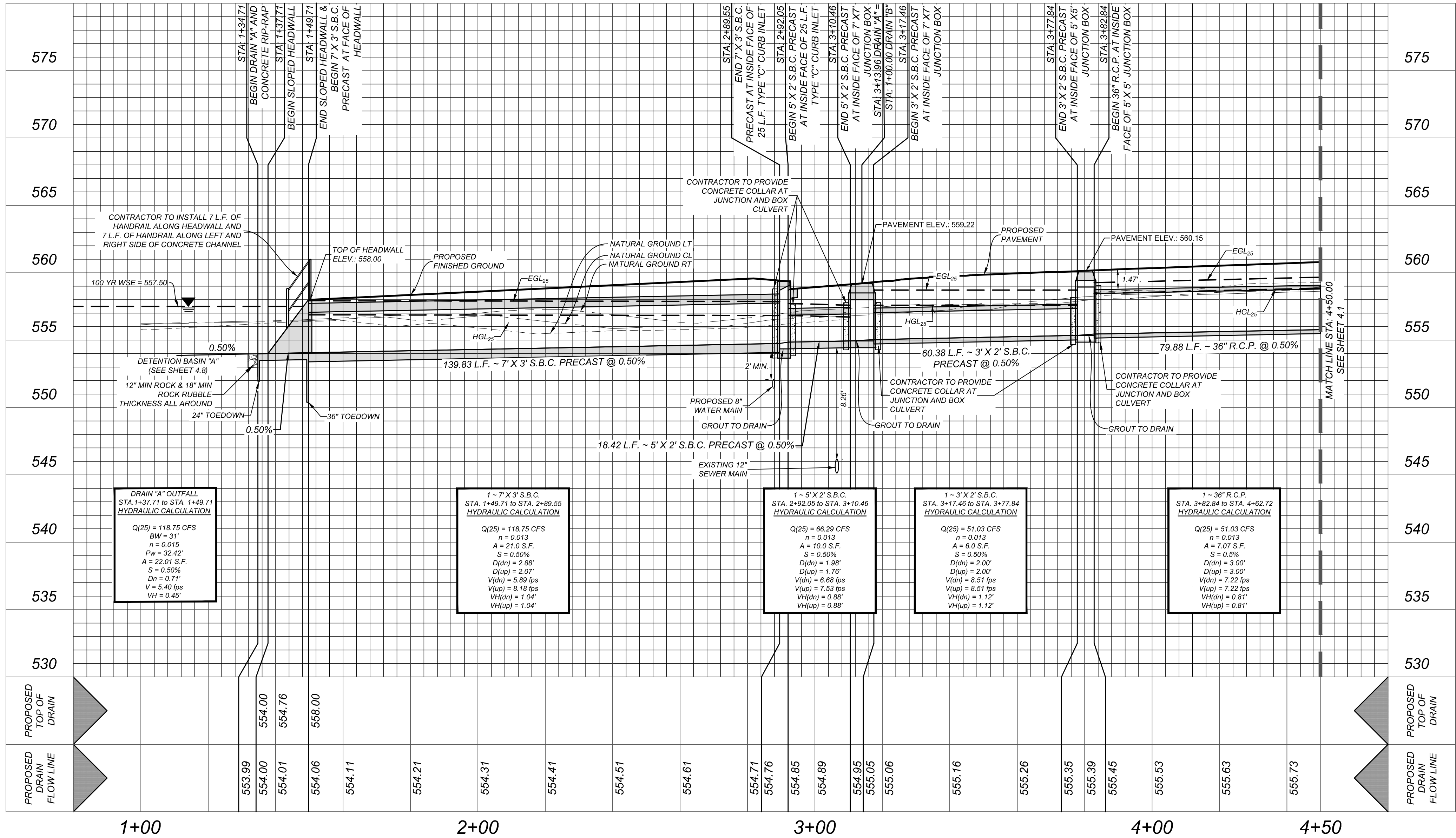
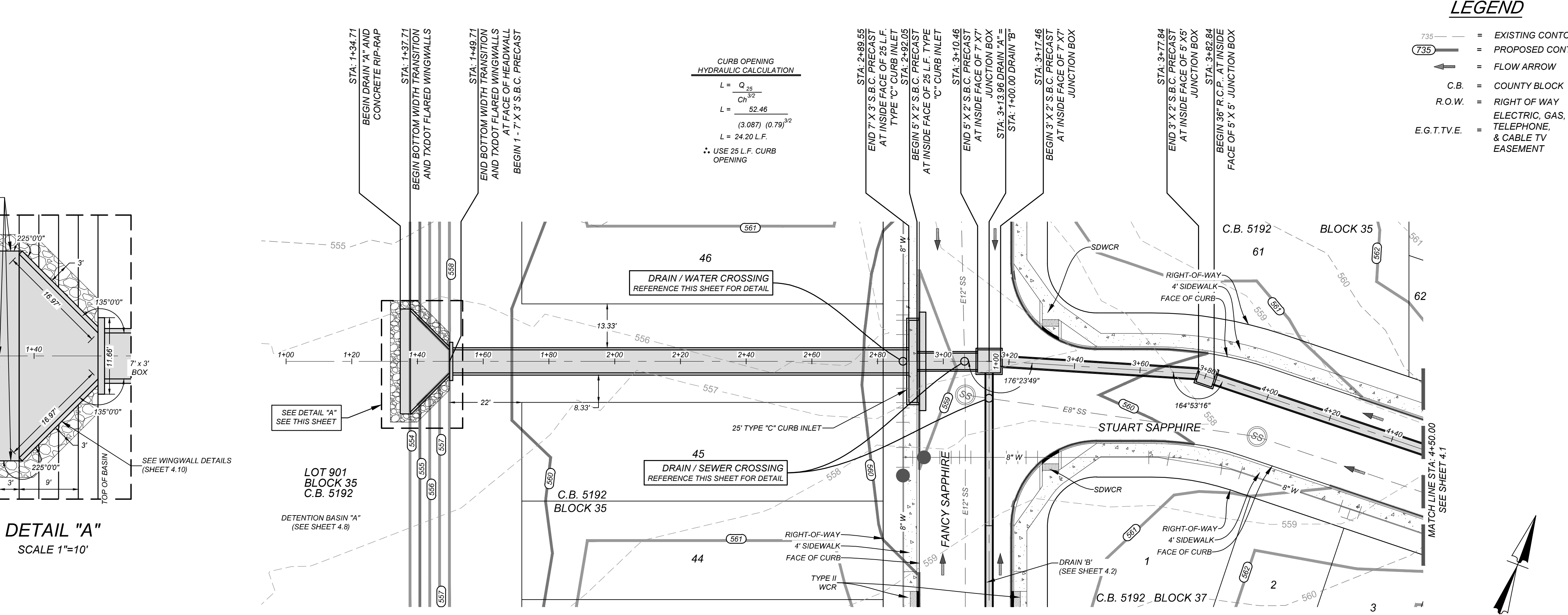
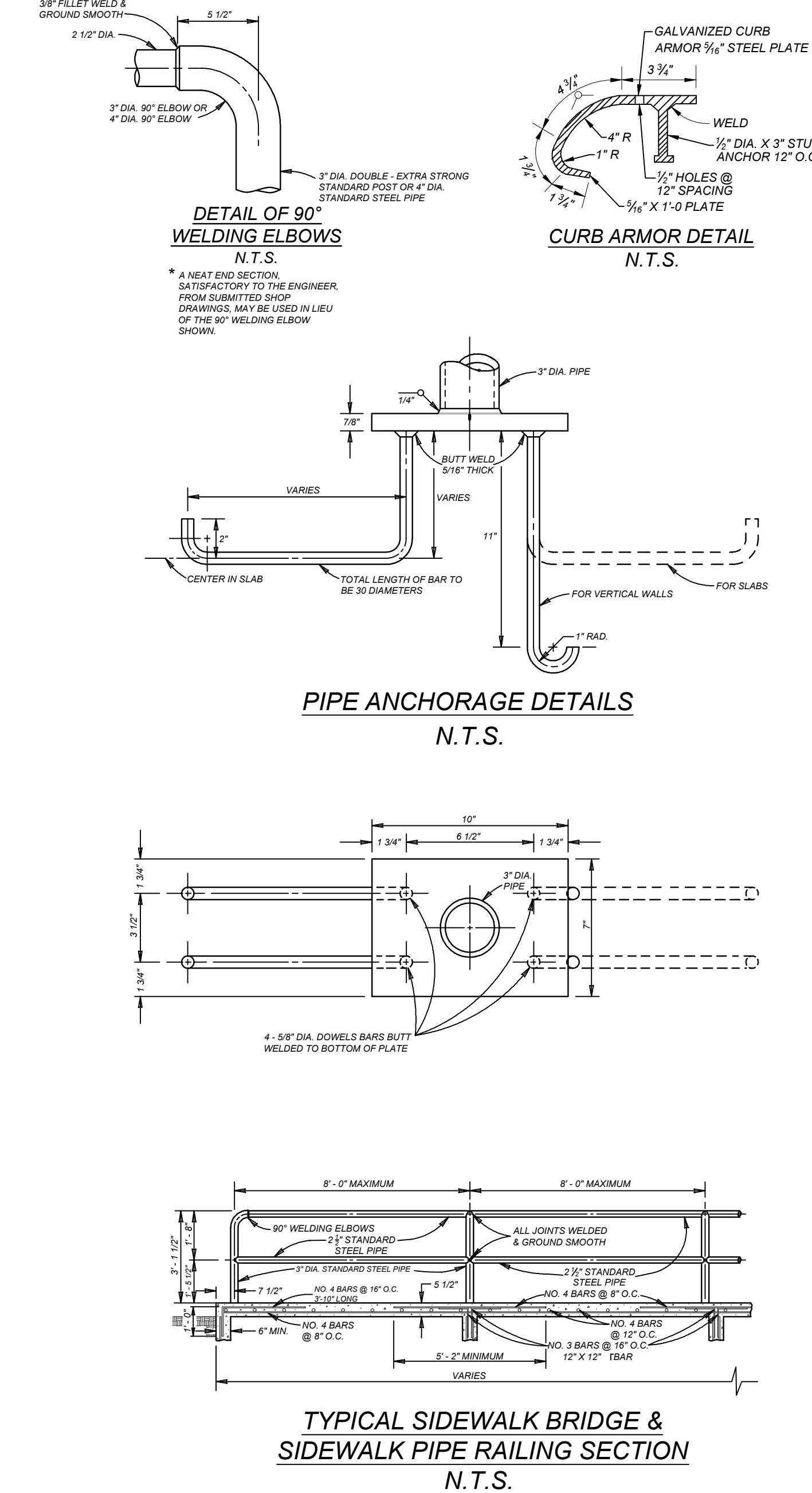
SHEET NUMBER:

3.1

CAUTION!!
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NOTE:
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ENGINEERS + SURVEYING
92251
Phone # (210) 978-8444 • Fax # (210) 978-8441
TBPE Firm # 0513 • TBPE S Firm # 1012230

STATE OF TEXAS
TRAVIS R. ELSETH
99254
LICENSED PROFESSIONAL ENGINEER

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS

DRAIN "A" PLAN & PROFILE (SHEET 1 OF 2)

PLAT NO.
22-11800456

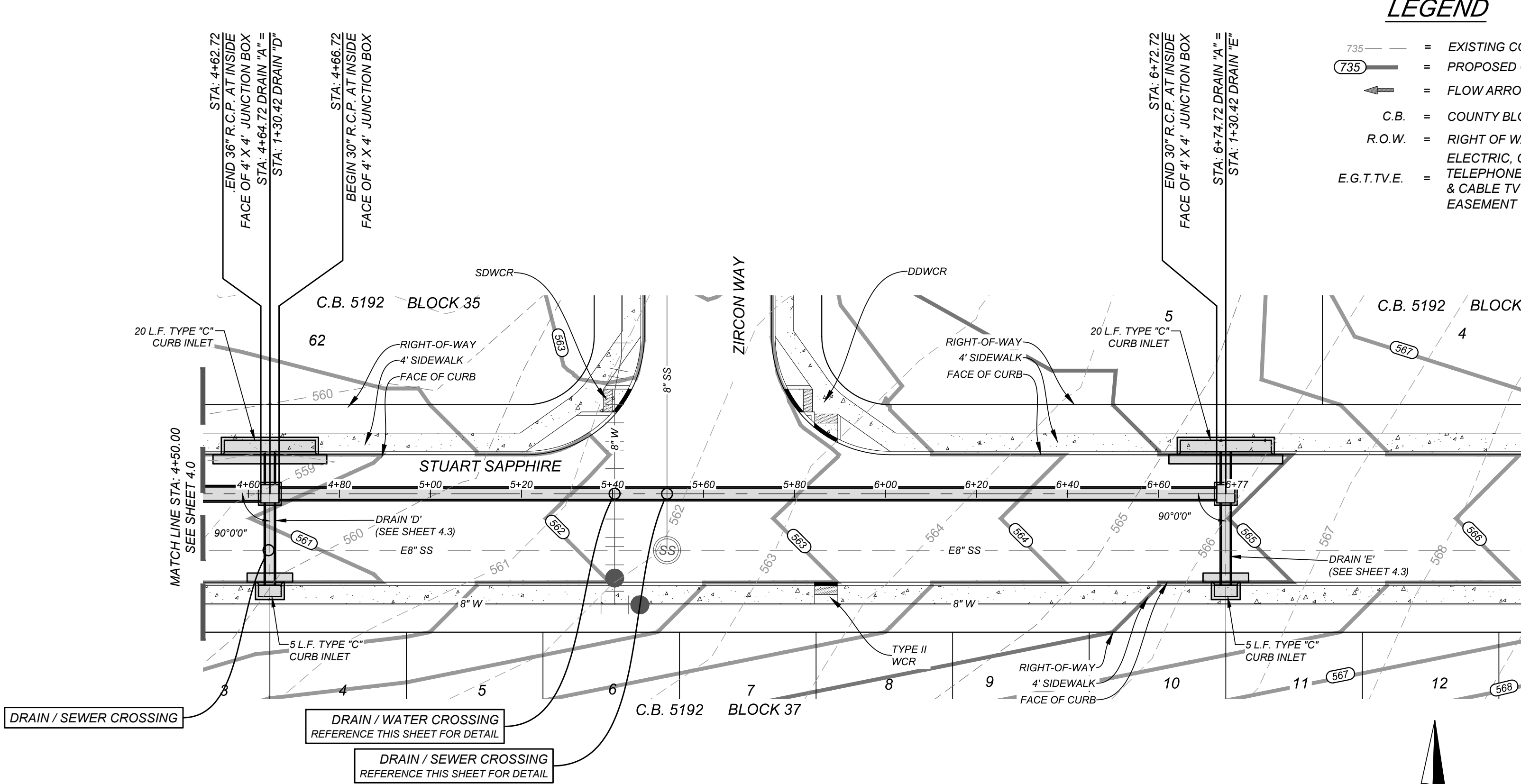
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

4.0

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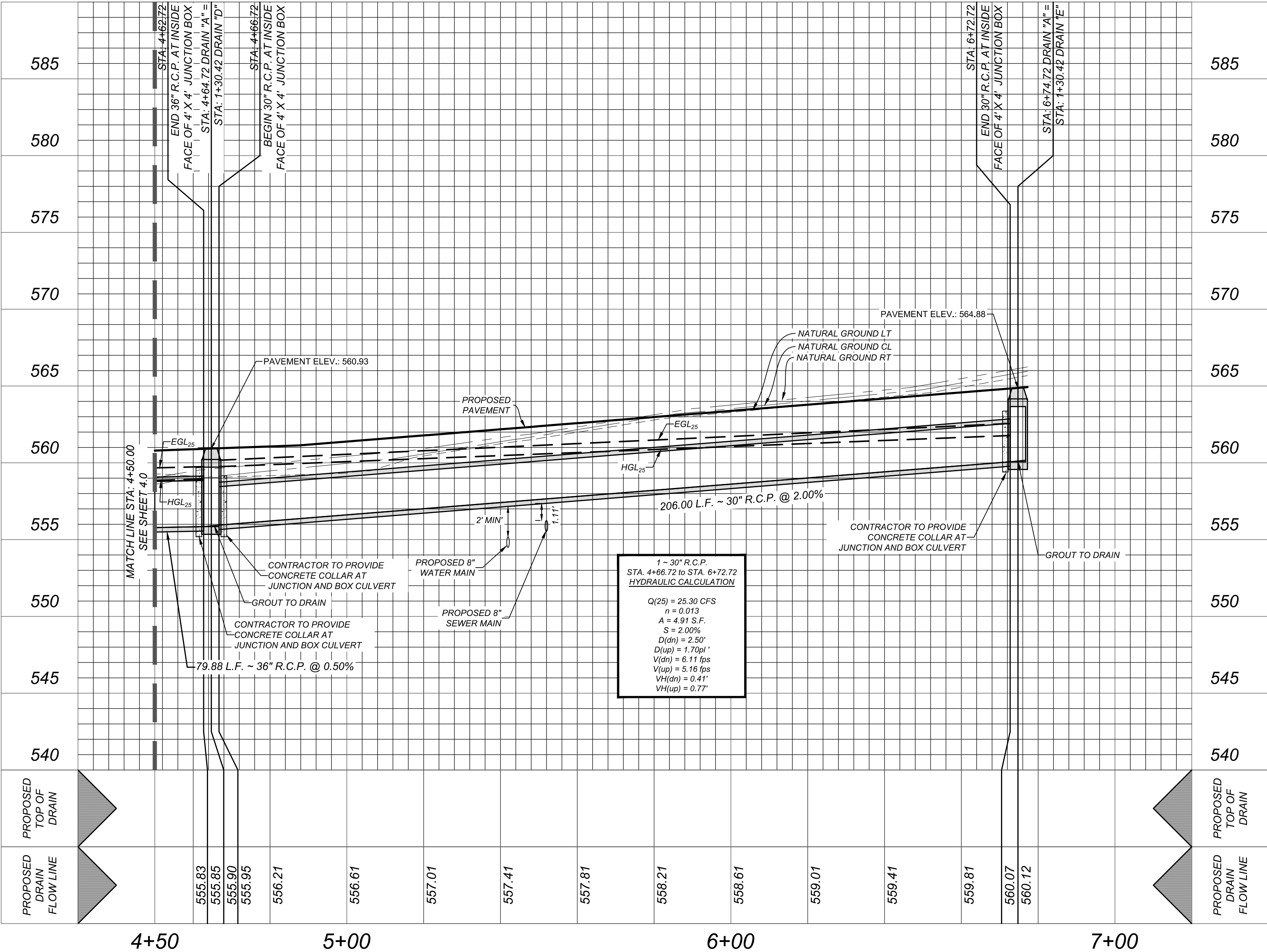
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- LEGEND**
- EXISTING CONTOUR
 - PROPOSED CONTOUR
 - FLOW ARROW
 - C.B. = COUNTY BLOCK
 - R.O.W. = RIGHT OF WAY
 - ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT

DRAIN "A"
STA: 4+50.00 TO STA: 6+74.72

HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'



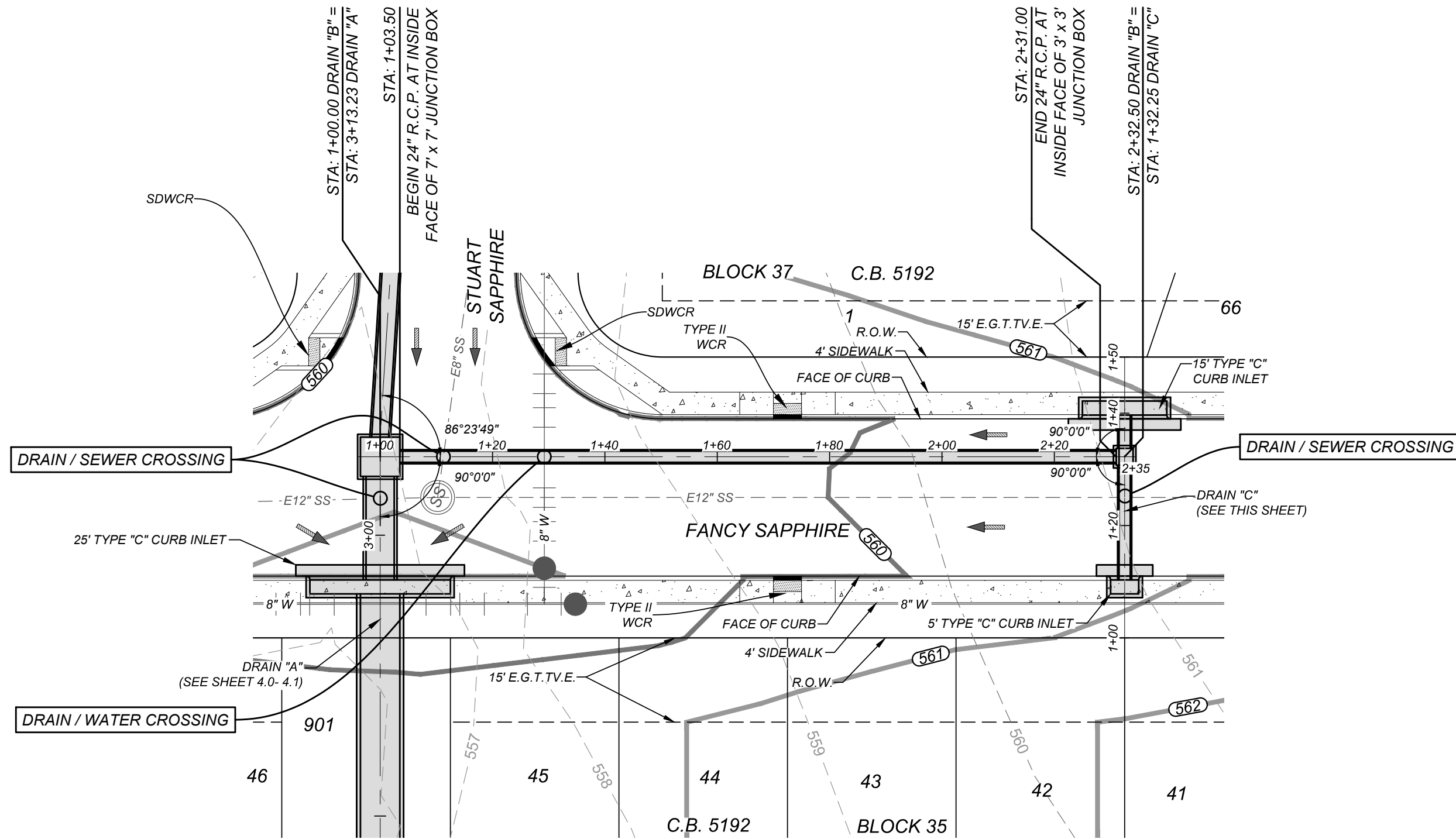
SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
DRAIN "A" PLAN & PROFILE (SHEET 2 OF 2)

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD **CHECKED/SC**
SHEET NUMBER:

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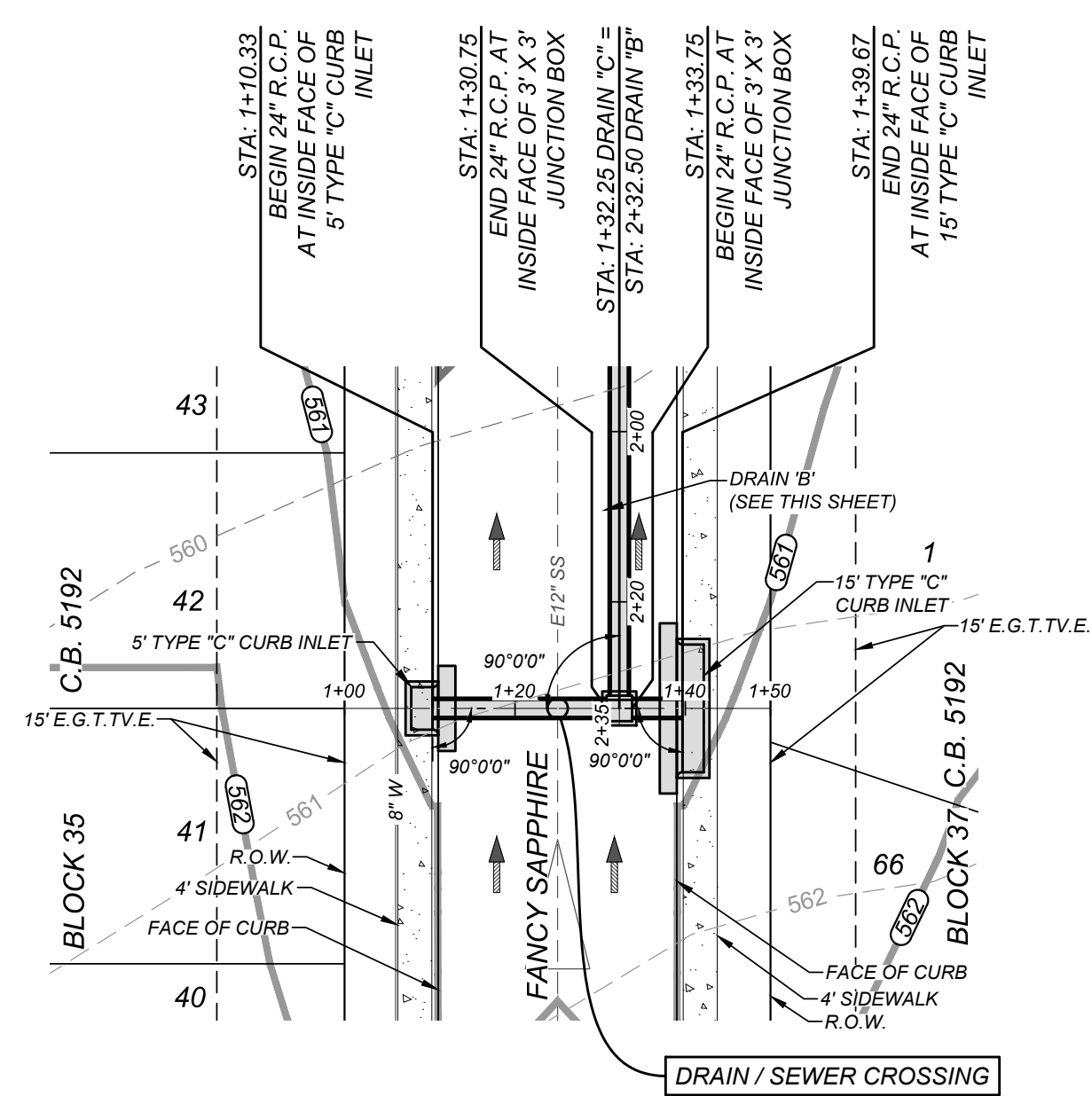
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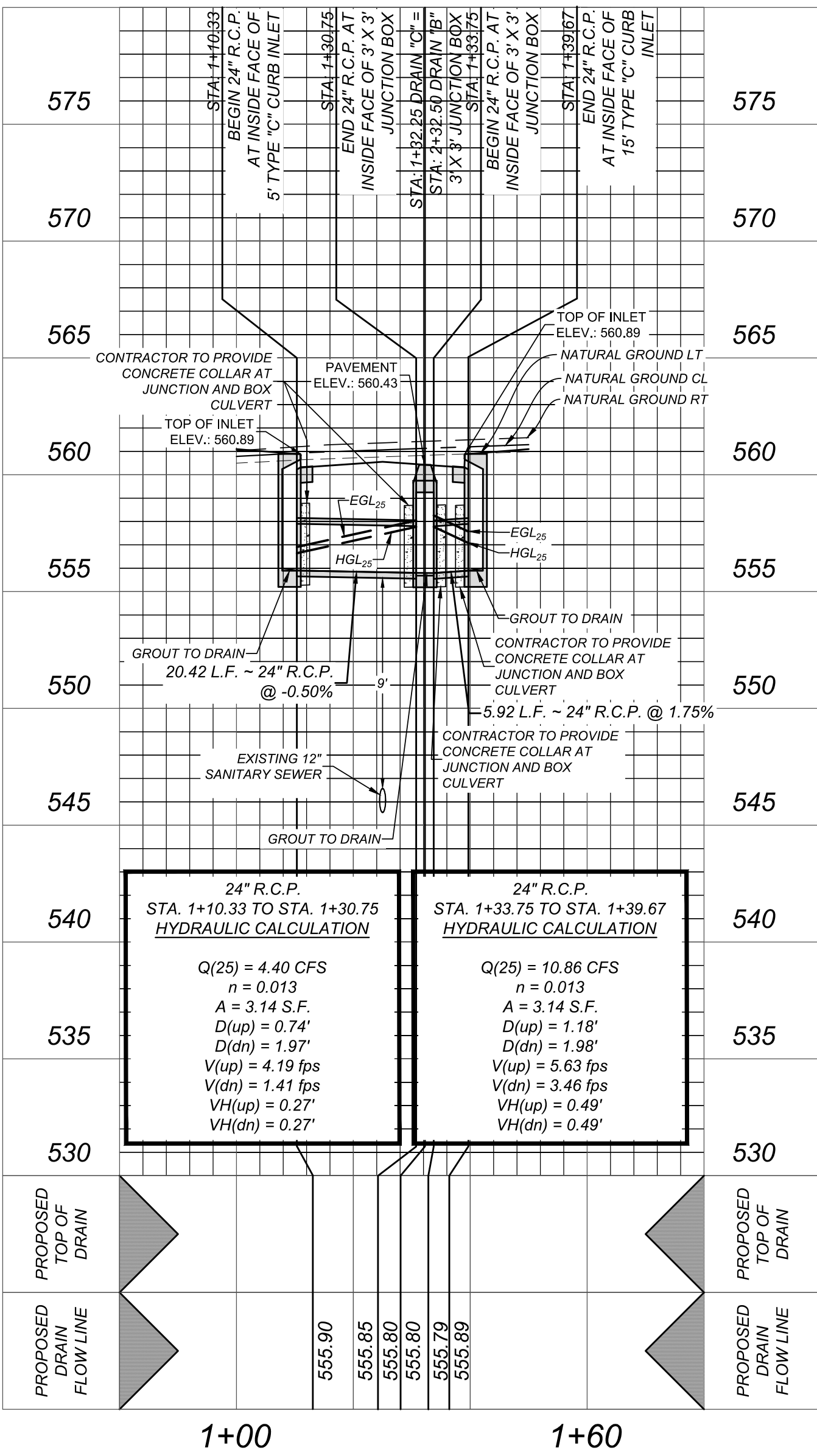
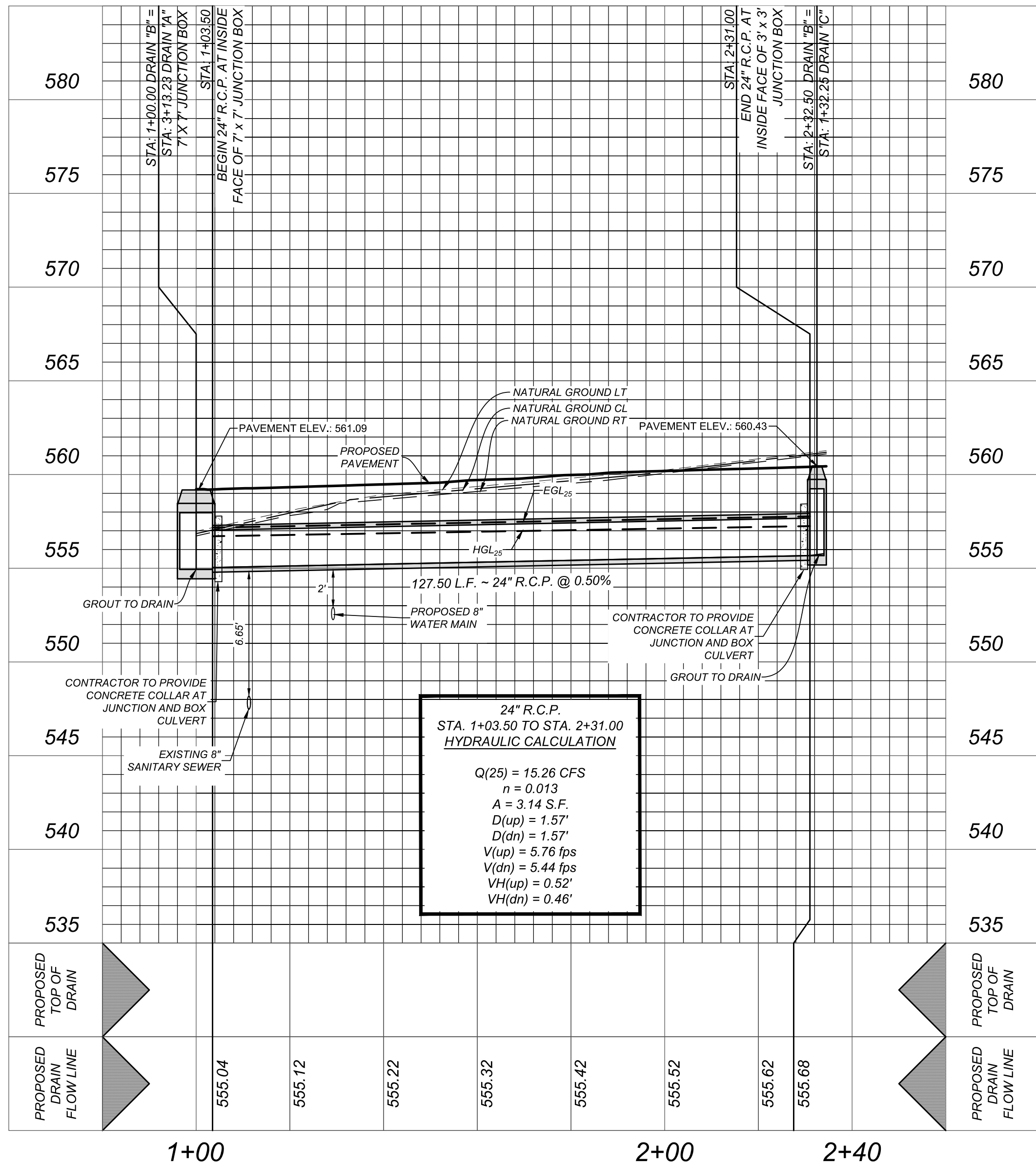
DRAIN "B"
STA. 1+00.00 TO END

HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'



DRAIN "C"
STA. 1+00.00 TO END

HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'



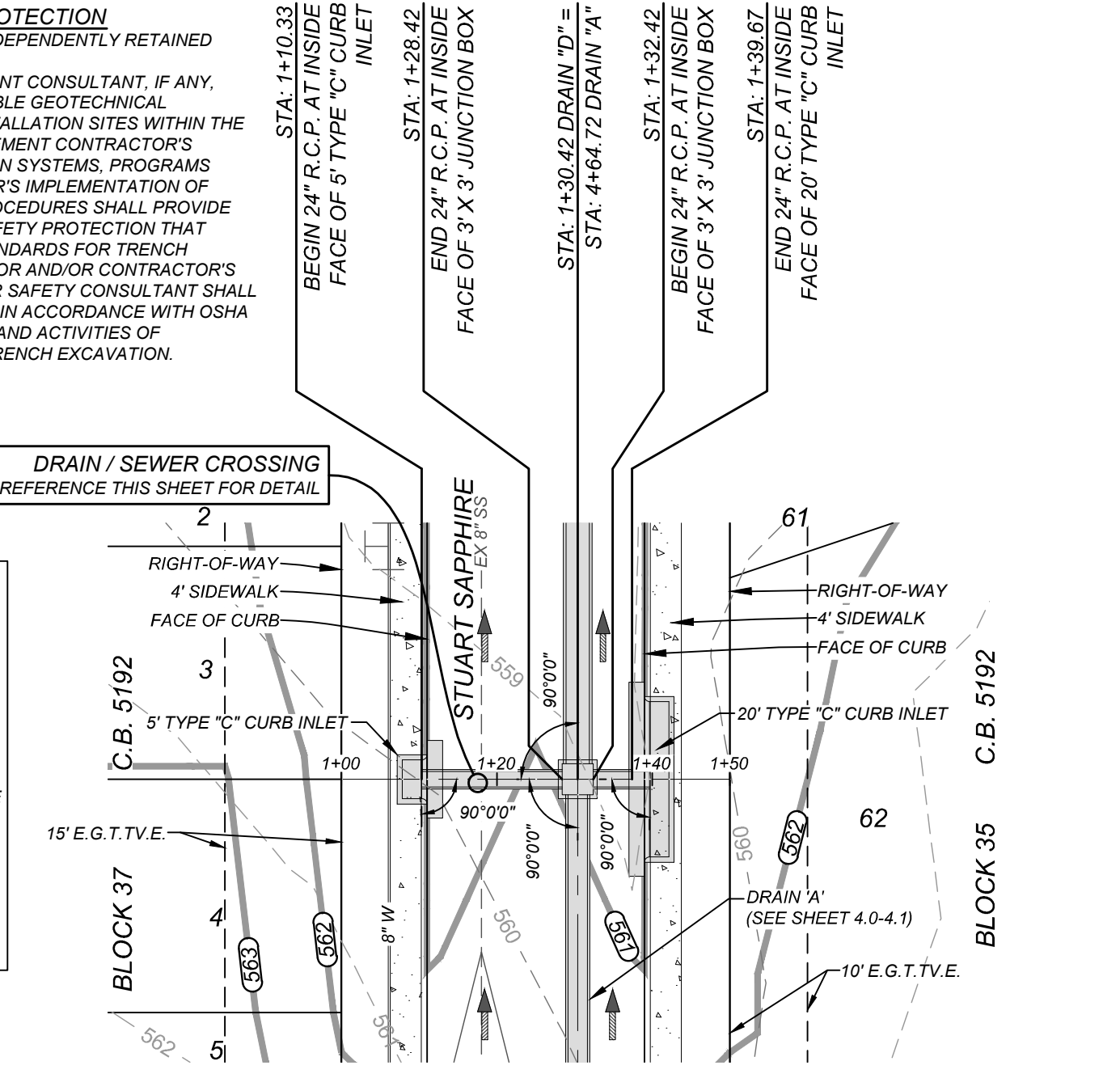
SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
DRAINS "B" & "C" PLAN & PROFILE

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

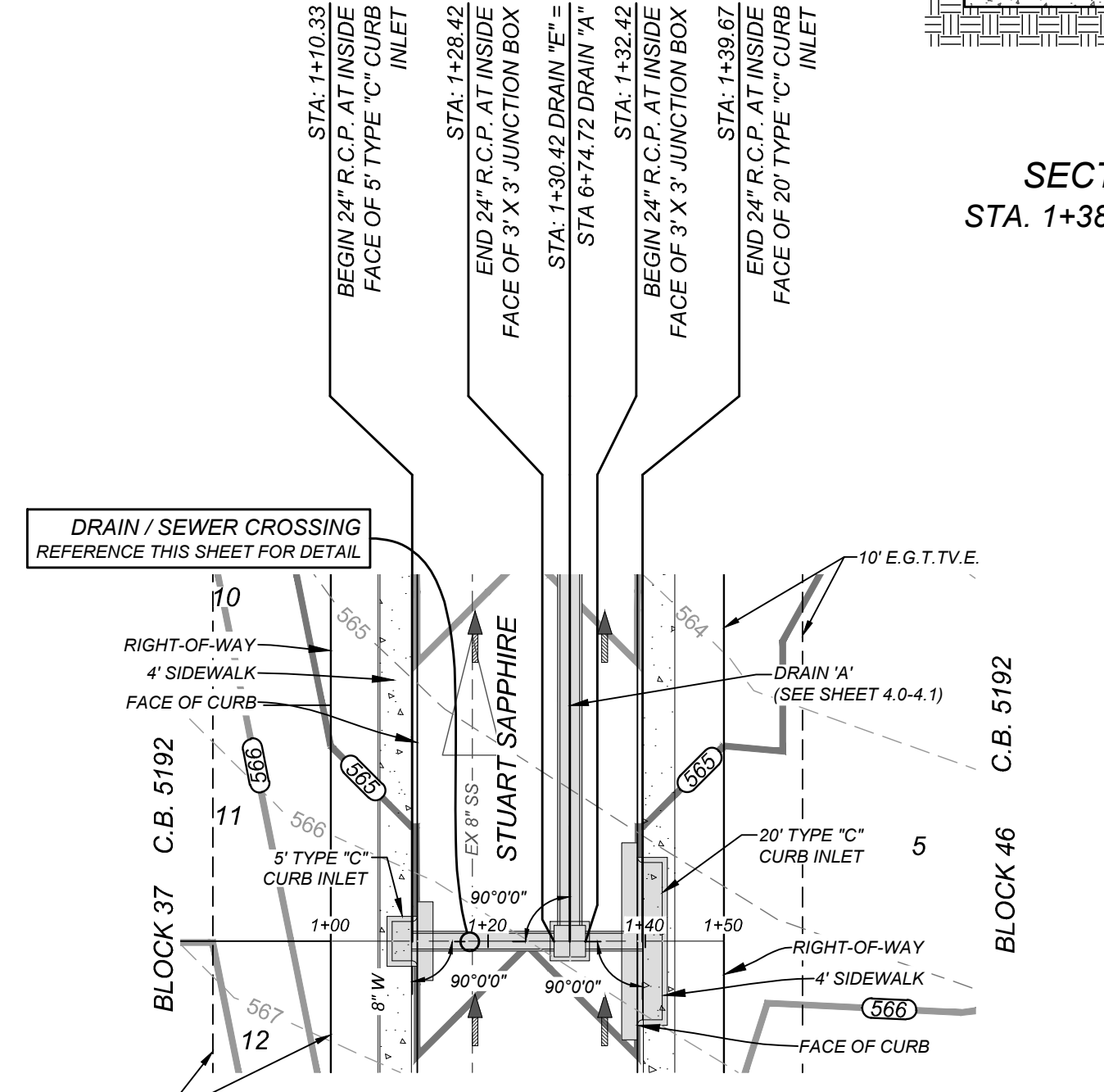
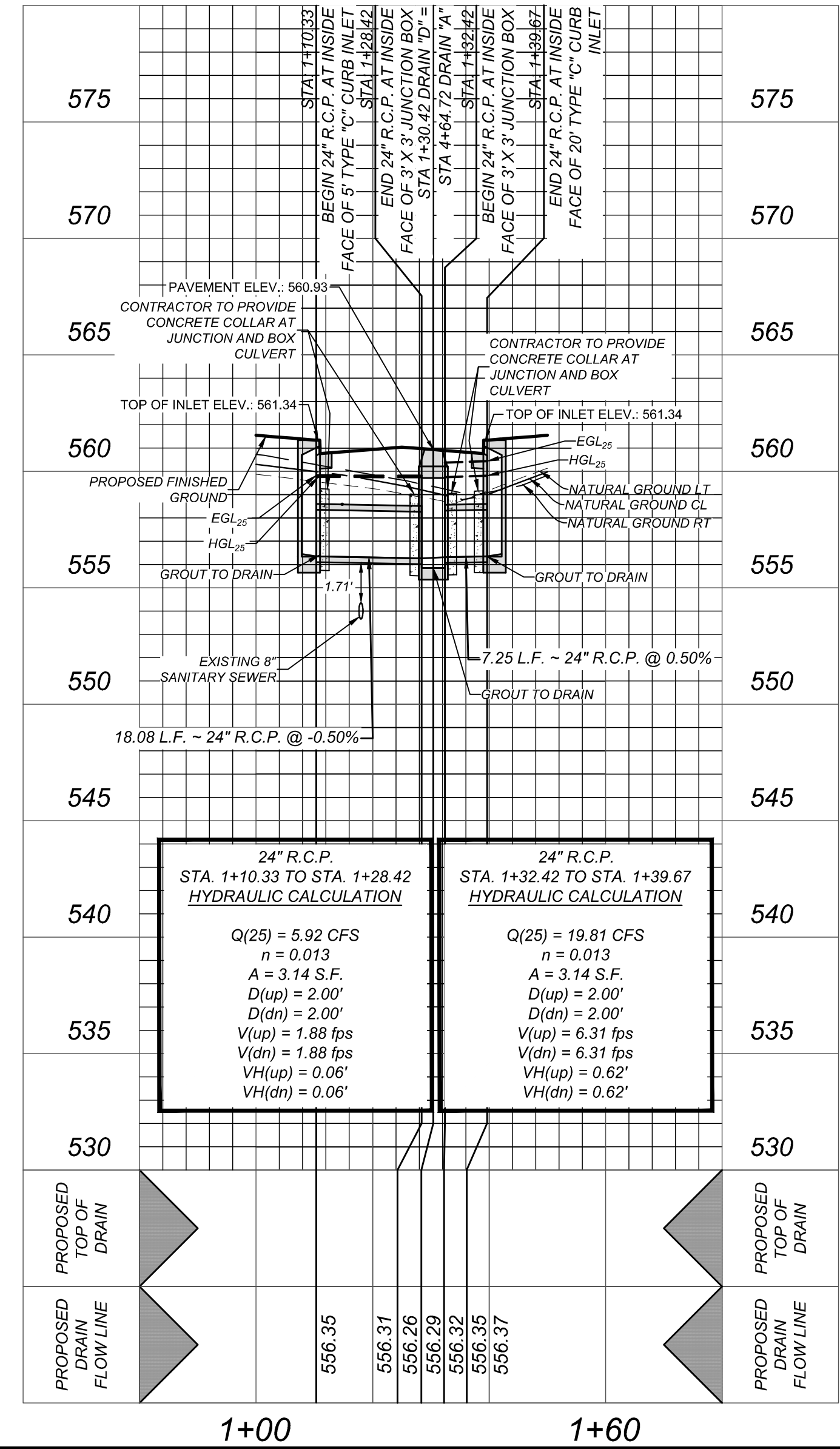
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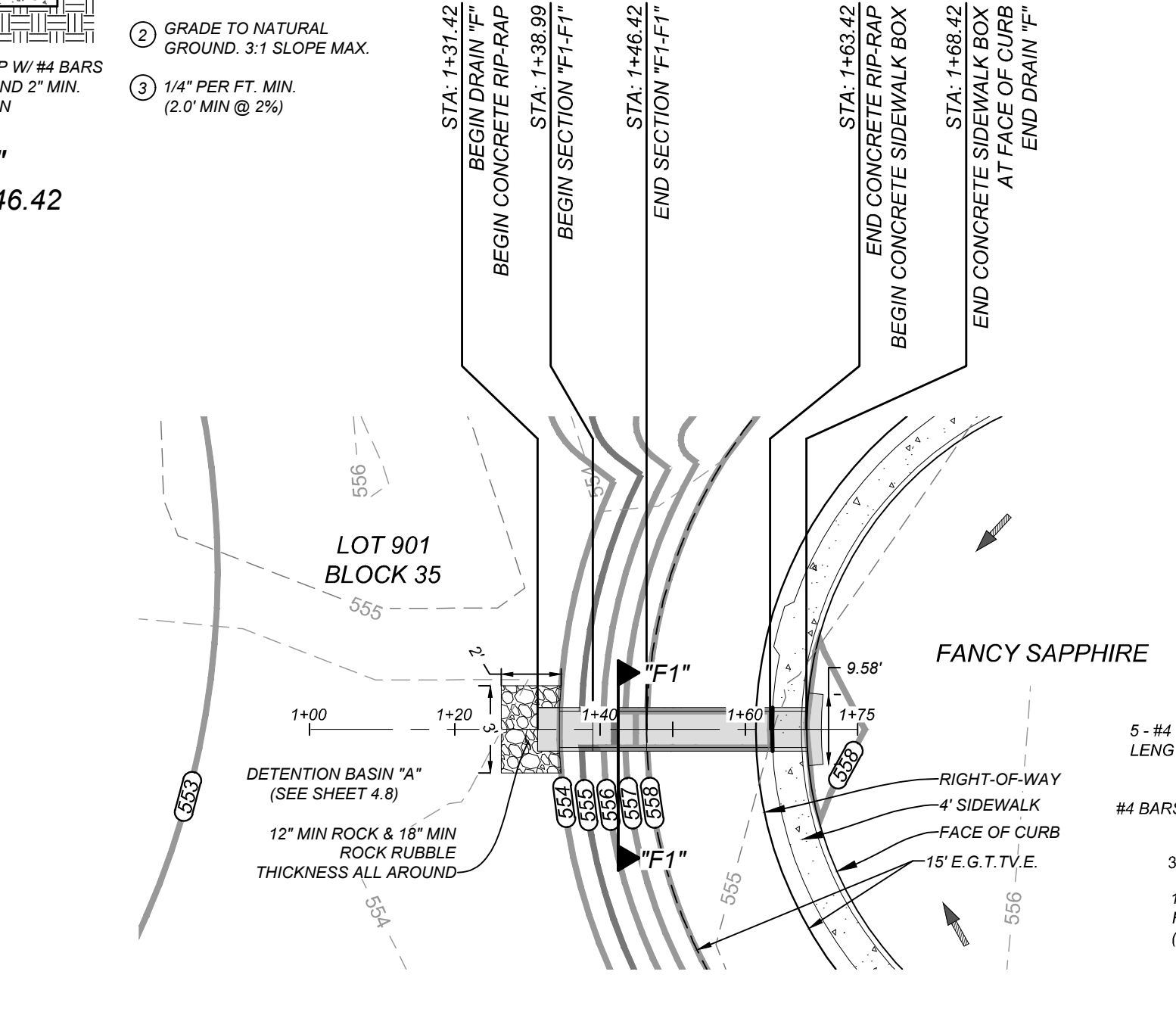
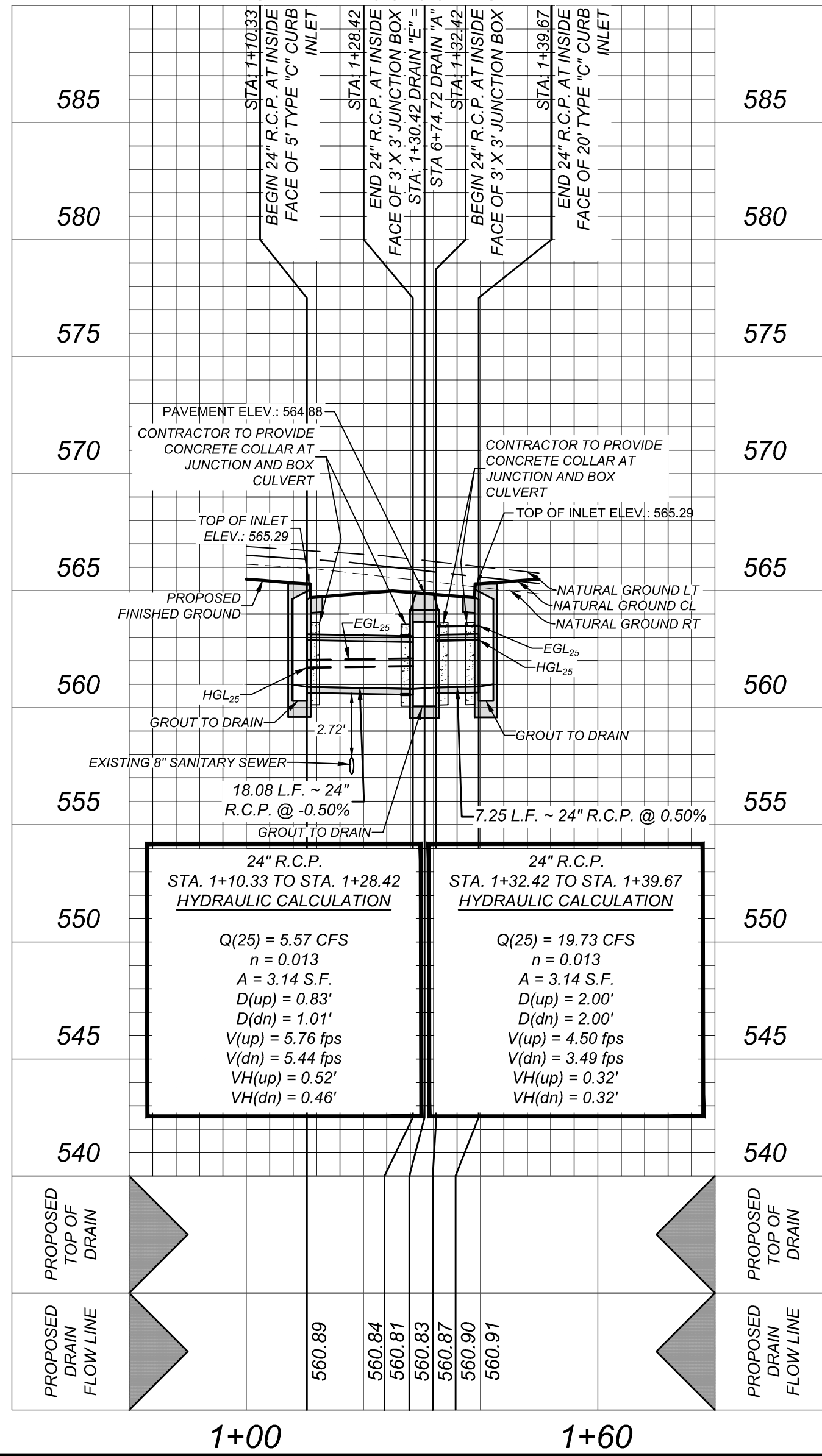
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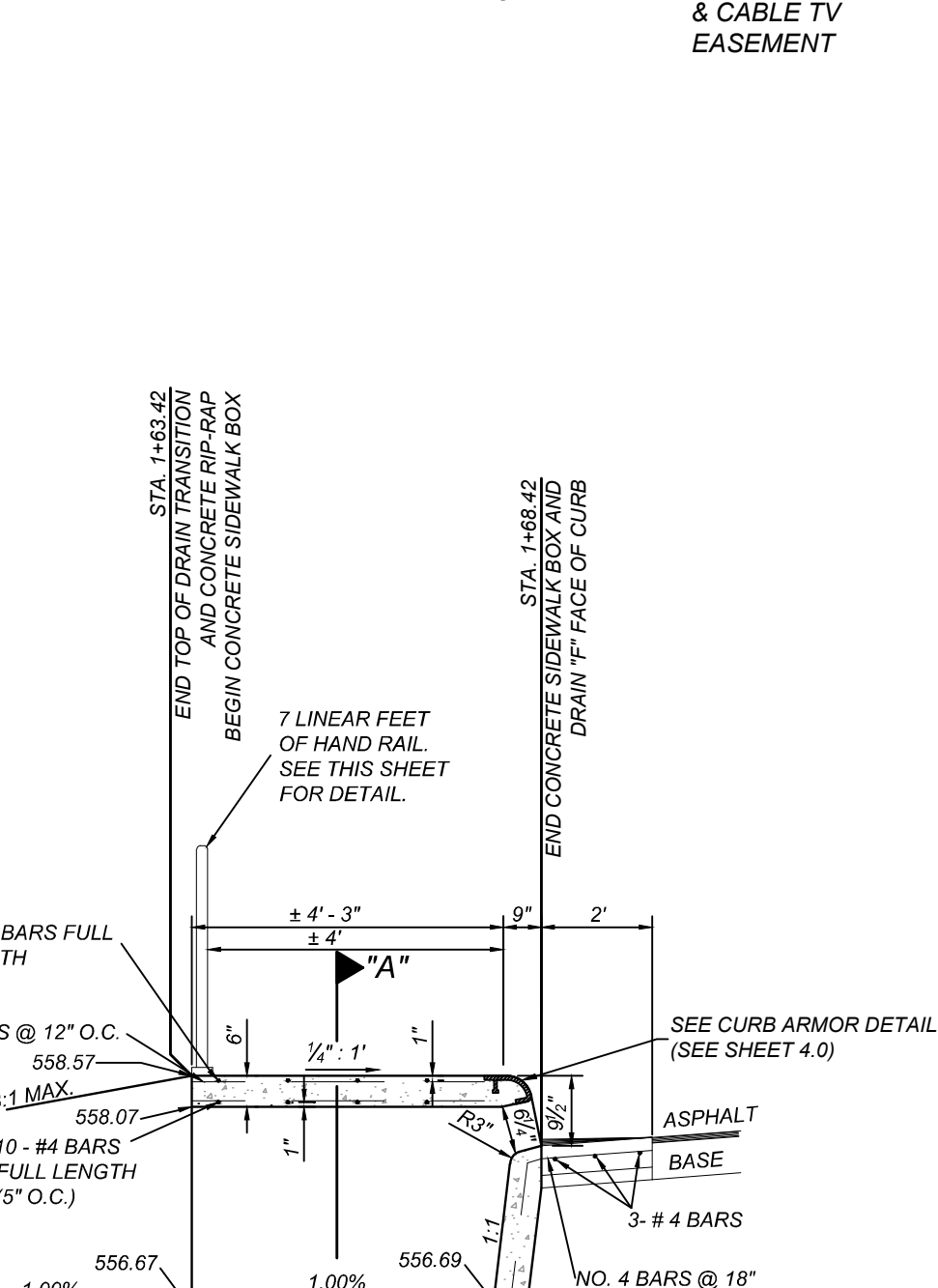
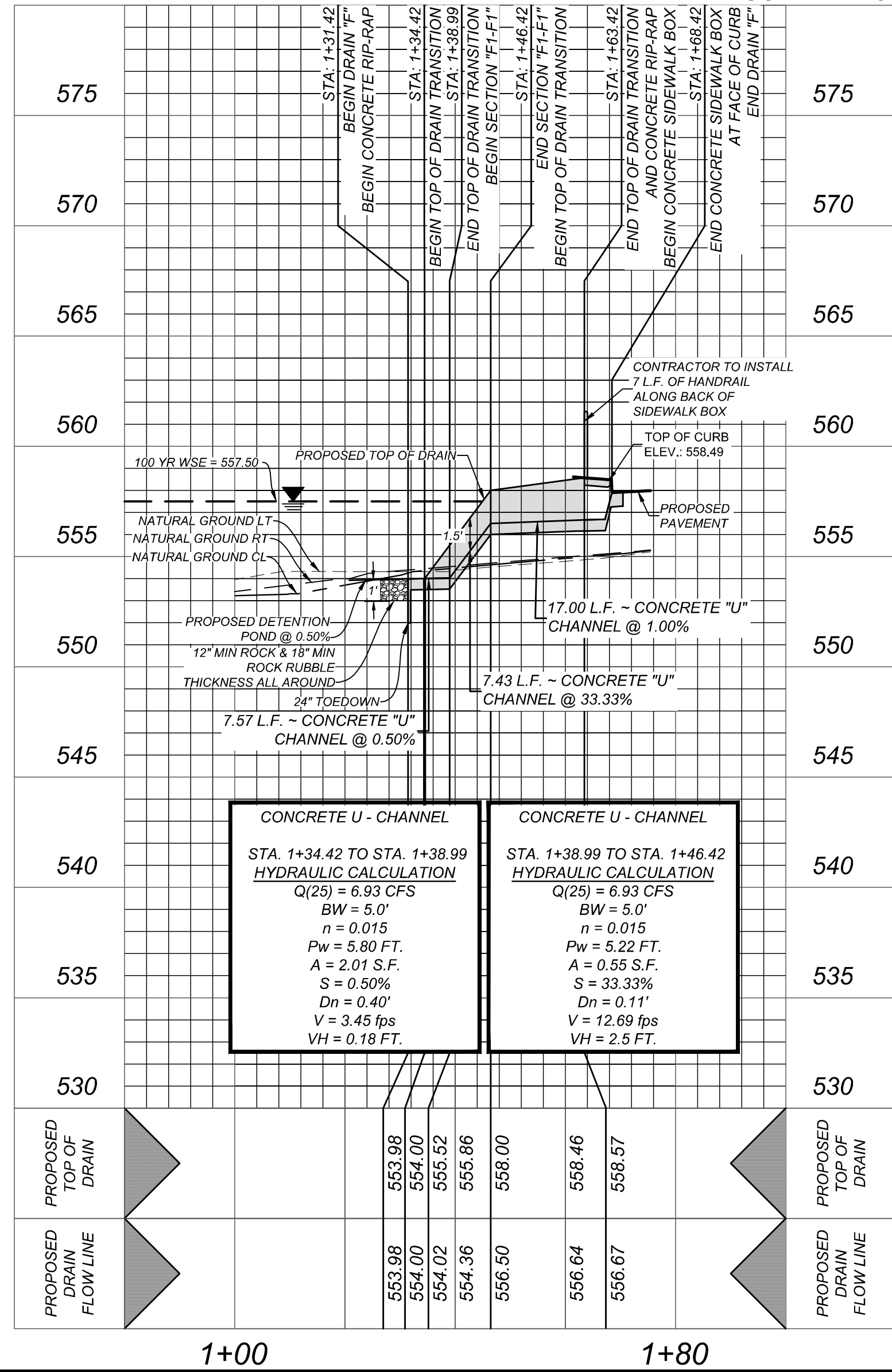
DRAIN "D" HORZ SCALE: 1"=20'
STA. 1+00.00 TO END VERT SCALE: 1"=5'



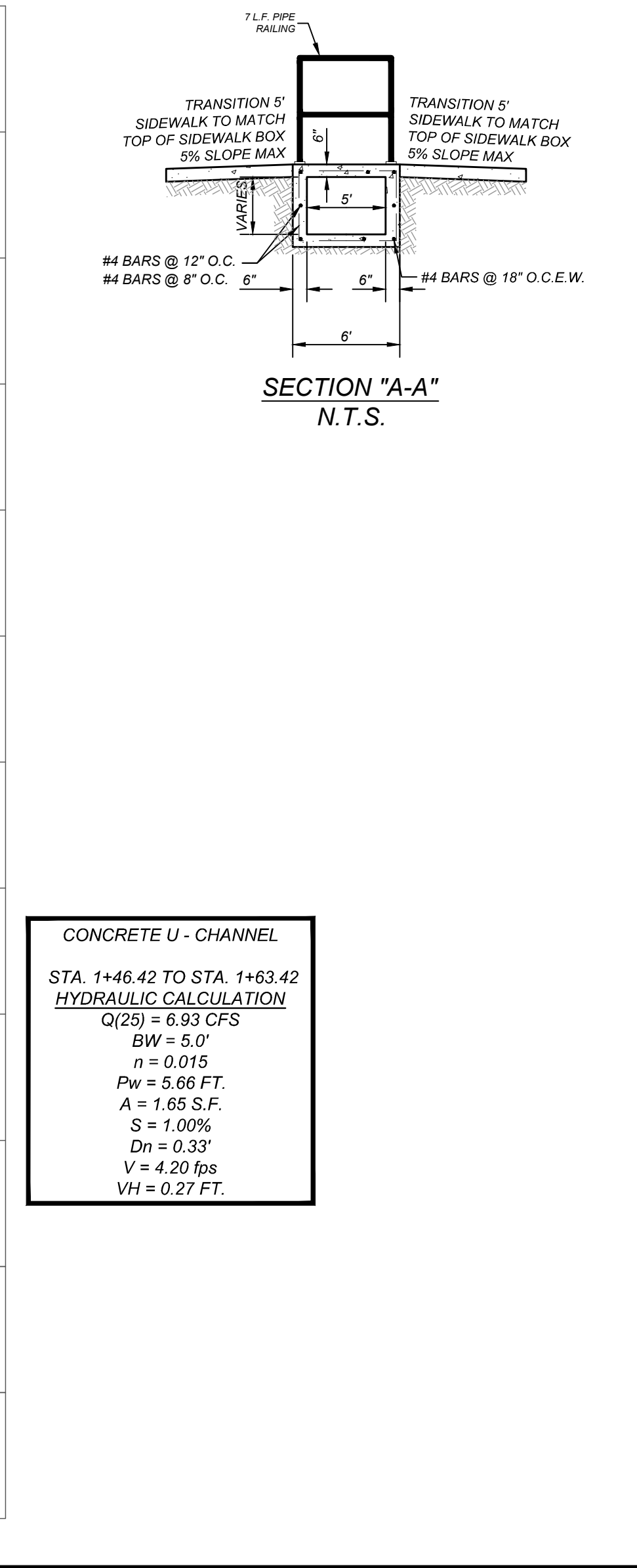
DRAIN "E" HORZ SCALE: 1"=20'
STA. 1+00.00 TO END VERT SCALE: 1"=5'



DRAIN "F" HORZ SCALE: 1"=20'
STA. 1+00.00 TO END VERT SCALE: 1"=5'

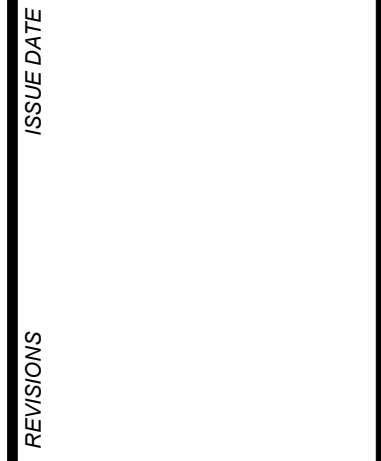


SECTION "A-A"
N.T.S.



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- FLOW ARROW
- C.B. = COUNTY BLOCK
- RIGHT OF WAY
- ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT



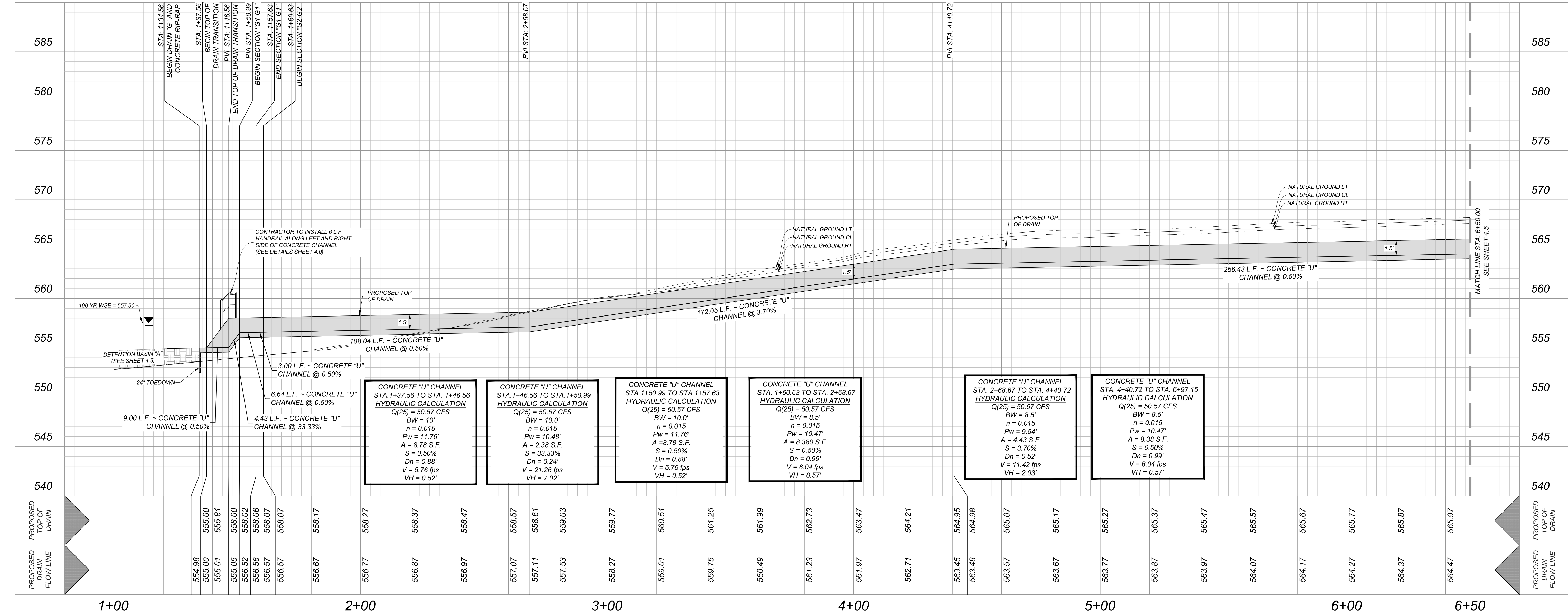
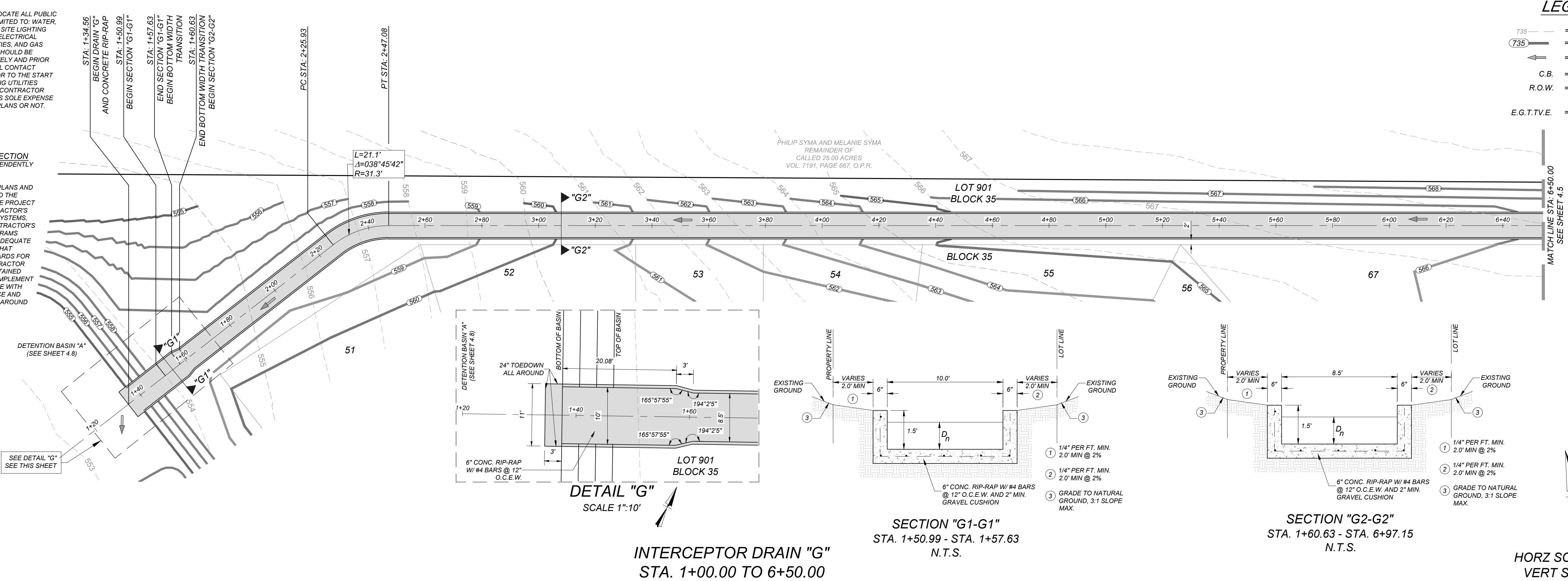
SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
DRAINS "D", "E", & "F" PLAN & PROFILE

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:
4.3

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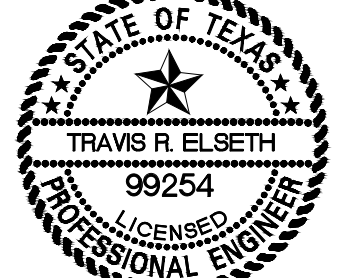
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- FLOW ARROW
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- E.G.T.V.E. = ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT

K&W
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CITY OF SAN ANTONIO, TEXAS
Phone # (210) 978-8444 • Fax # (210) 978-8441
TBE# Firm #: 9513 • TBE# S Firm #: 1012900

ISSUE/DATE

REVISIONS



5/23/24

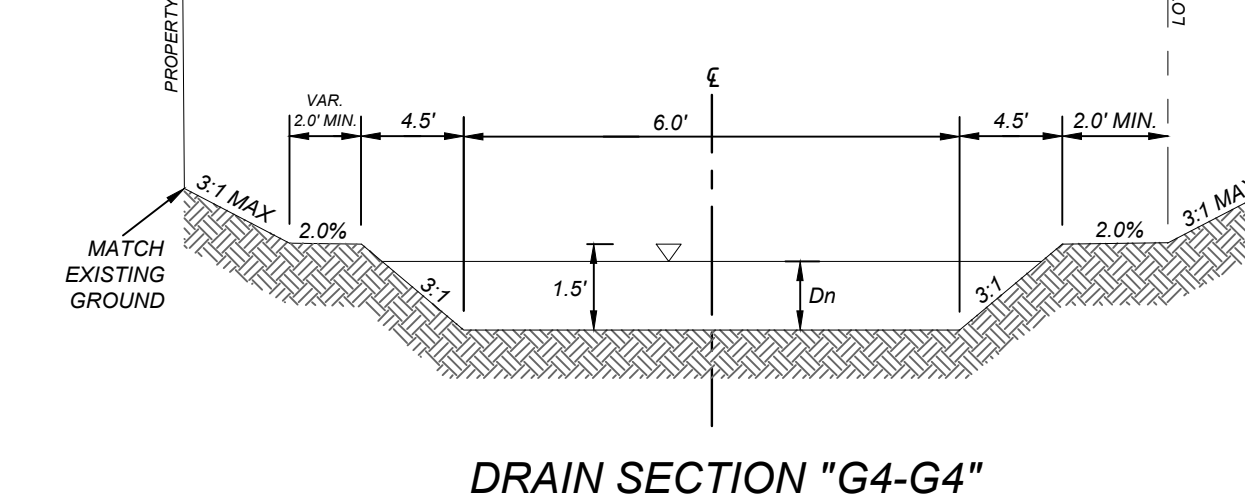
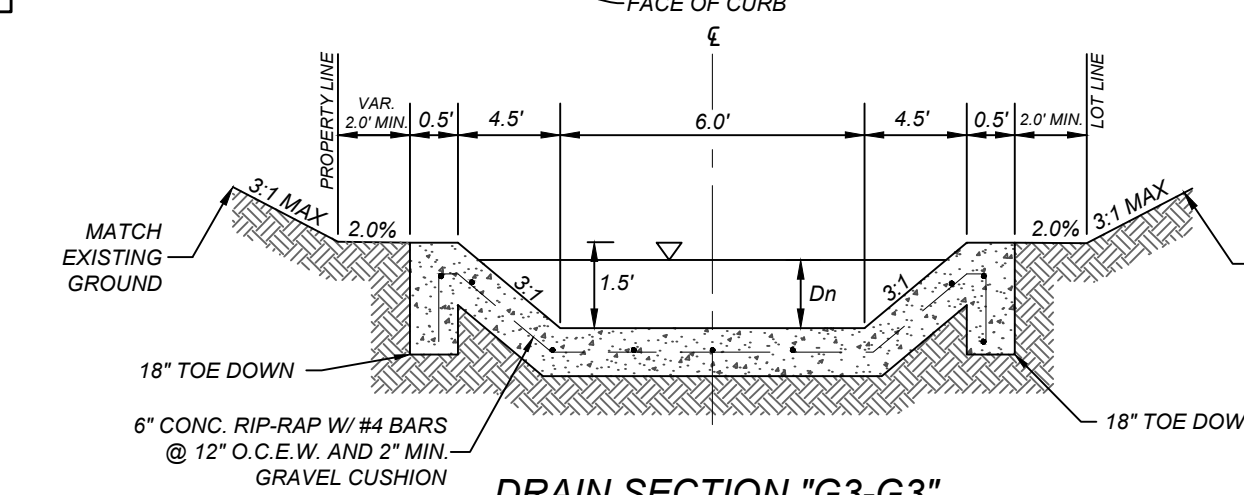
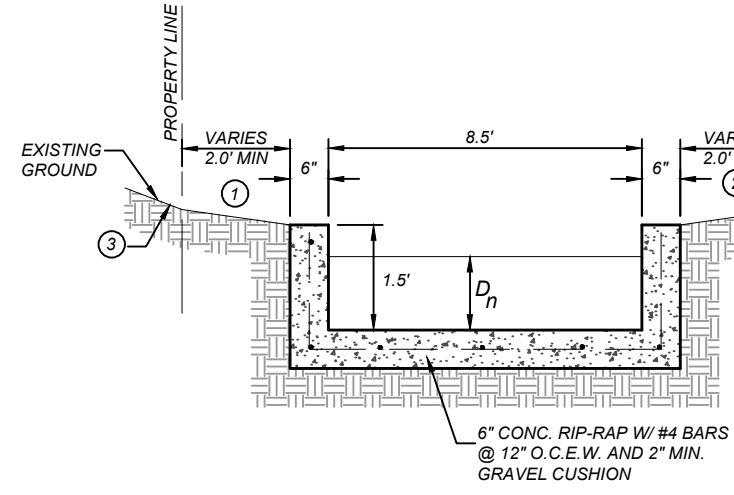
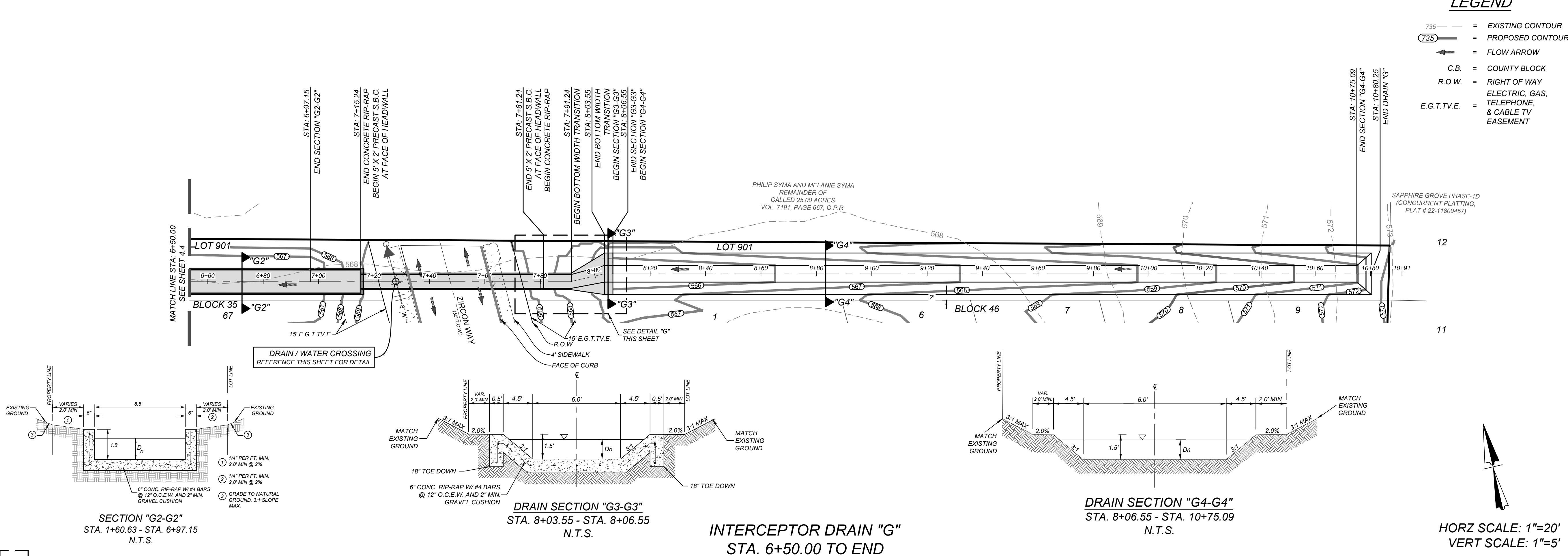
SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
INTERCEPTOR DRAIN "G" PLAN & PROFILE
(SHEET 1 OF 2)

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

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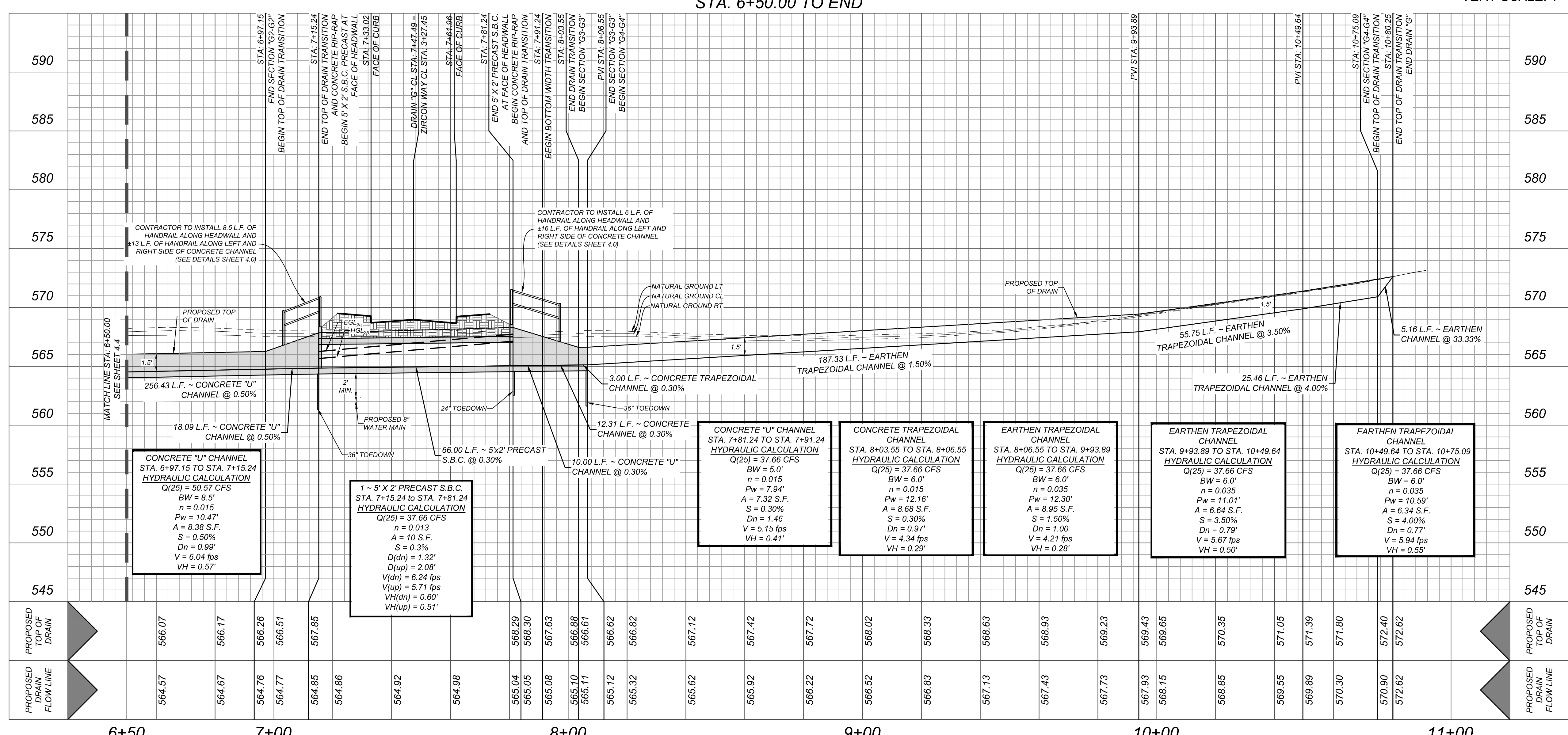
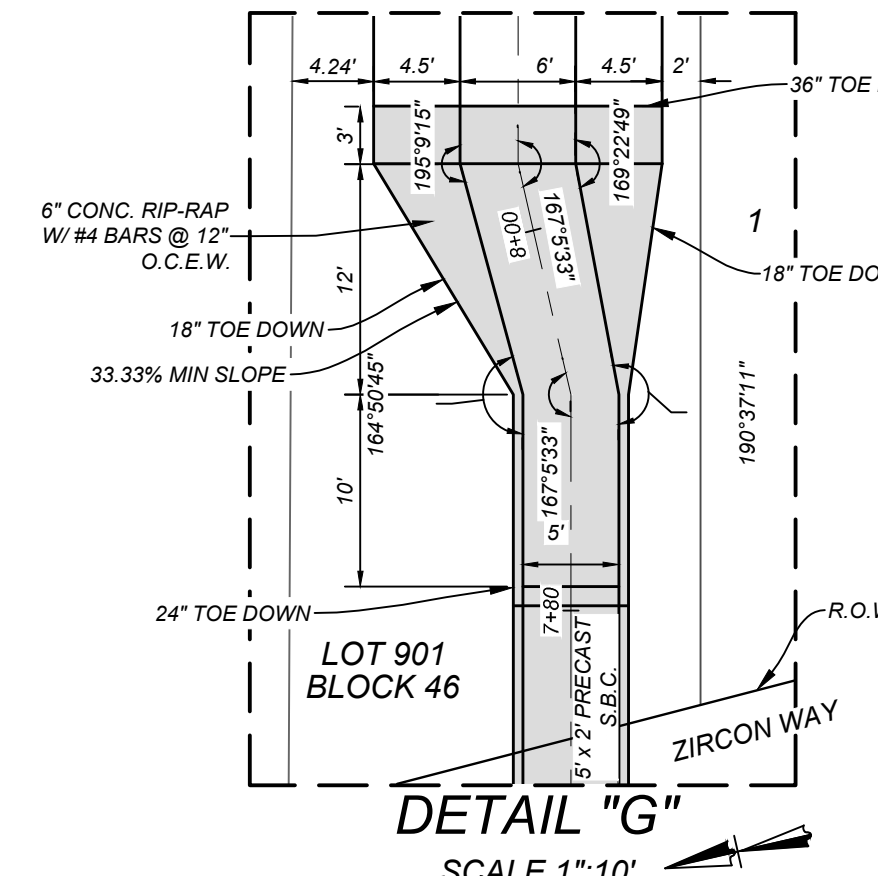
TRENCH EXCAVATION SAFETY PROTECTION
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- NOTE:
1. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.
 2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.



INTERCEPTOR DRAIN "G"
STA. 6+50.00 TO END

HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'



CONCRETE "U" CHANNEL
STA. 6+97.15 TO STA. 7+15.24
HYDRAULIC CALCULATION
Q(25) = 50.57 CFS
BW = 8.5'
n = 0.015
Pw = 10.47'
A = 8.38 S.F.
S = 0.50%
Dn = 0.99'
V = 6.04 fps
VH = 0.57'

1 - 5' X 2' PRECAST S.B.C.
STA. 7+15.24 TO STA. 7+81.24
HYDRAULIC CALCULATION
Q(25) = 37.66 CFS
n = 0.013
A = 10.5 S.F.
S = 0.3%
D(dn) = 1.32'
D(up) = 2.08'
V(dn) = 6.24 fps
V(up) = 5.71 fps
VH(dn) = 0.60'
VH(up) = 0.51'

CONCRETE "U" CHANNEL
STA. 7+81.24 TO STA. 7+91.24
HYDRAULIC CALCULATION
Q(25) = 37.66 CFS
BW = 5.0'
n = 0.015
Pw = 7.94'
A = 7.32 S.F.
S = 0.30%
Dn = 1.46'
V = 5.15 fps
VH = 0.41'

CONCRETE TRAPEZOIDAL CHANNEL
STA. 8+03.55 TO STA. 8+06.55
HYDRAULIC CALCULATION
Q(25) = 37.66 CFS
BW = 6.0'
n = 0.015
Pw = 12.16'
A = 8.68 S.F.
S = 0.30%
Dn = 0.97'
V = 4.34 fps
VH = 0.29'

EARTHEN TRAPEZOIDAL CHANNEL
STA. 8+06.55 TO STA. 9+93.89
HYDRAULIC CALCULATION
Q(25) = 37.66 CFS
BW = 6.0'
n = 0.035
Pw = 12.30'
A = 8.95 S.F.
S = 1.50%
Dn = 1.00'
V = 5.67 fps
VH = 0.28'

EARTHEN TRAPEZOIDAL CHANNEL
STA. 9+93.89 TO STA. 10+49.64
HYDRAULIC CALCULATION
Q(25) = 37.66 CFS
BW = 6.0'
n = 0.035
Pw = 11.01'
A = 6.64 S.F.
S = 4.00%
Dn = 0.79'
V = 5.94 fps
VH = 0.50'

EARTHEN TRAPEZOIDAL CHANNEL
STA. 10+49.64 TO STA. 10+75.09
HYDRAULIC CALCULATION
Q(25) = 37.66 CFS
BW = 6.0'
n = 0.035
Pw = 10.59'
A = 6.34 S.F.
S = 4.00%
Dn = 0.77'
V = 5.94 fps
VH = 0.55'

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- FLOW ARROW
- C.B. = COUNTY BLOCK
- R.O.W. = RIGHT OF WAY
- ELECTRIC, GAS, & CABLE TV EASEMENT

ENGINEERS + SURVEYING

TRAVIS R. ELSETH
99254
LICENSED PROFESSIONAL ENGINEER

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
INTERCEPTOR DRAIN "G" PLAN & PROFILE
(SHEET 2 OF 2)

PLAT NO.
22-11800456

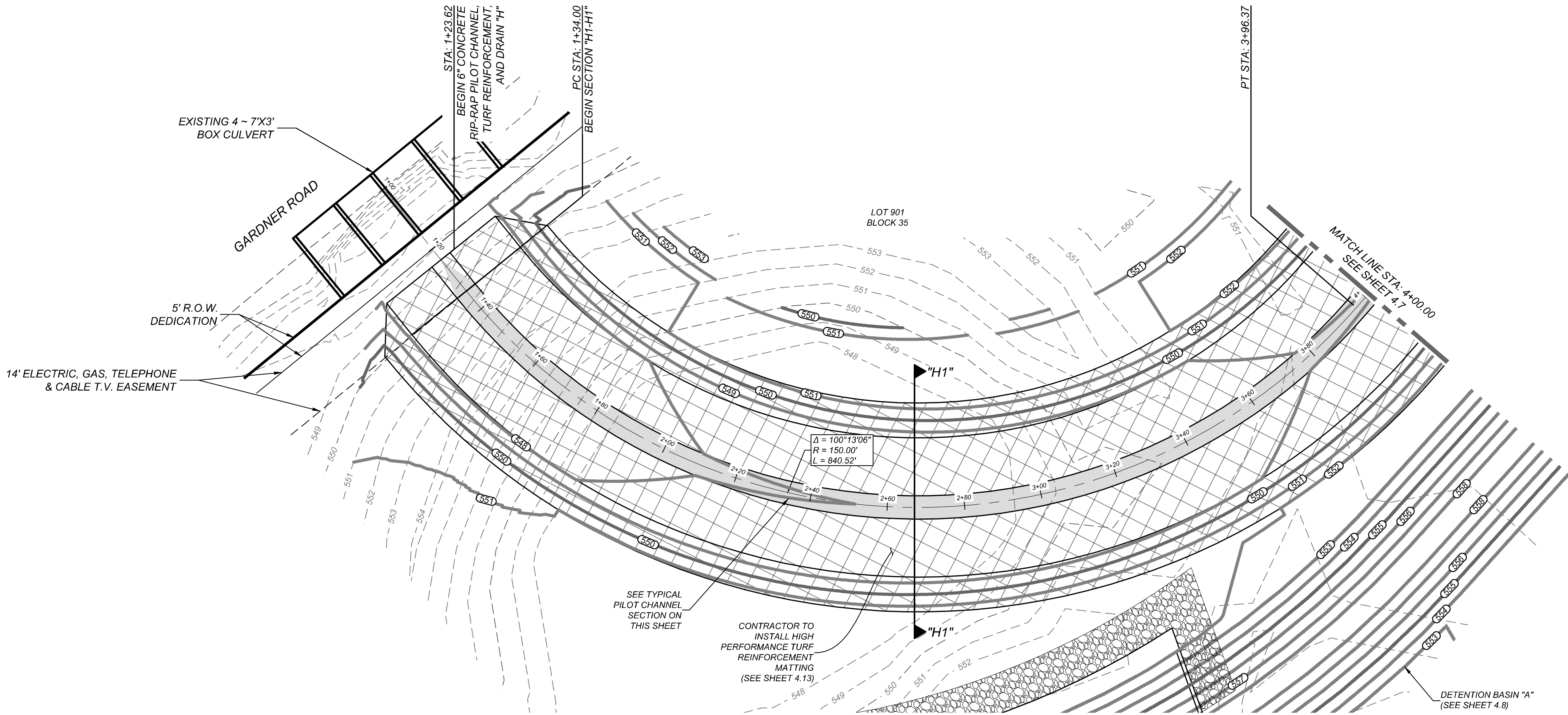
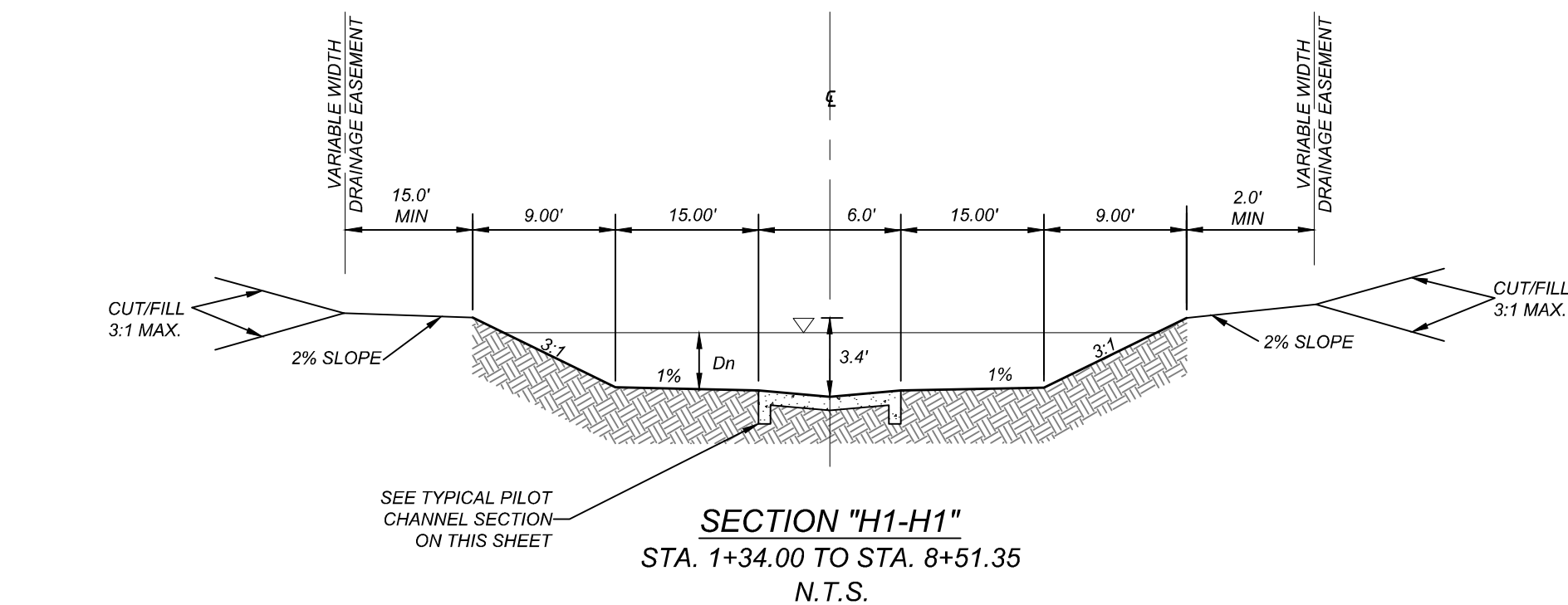
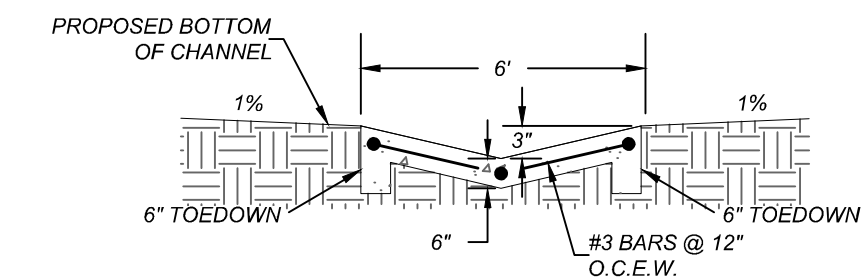
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

4.5

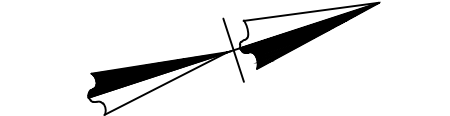
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TRENCH EXCAVATION SAFETY PROTECTION
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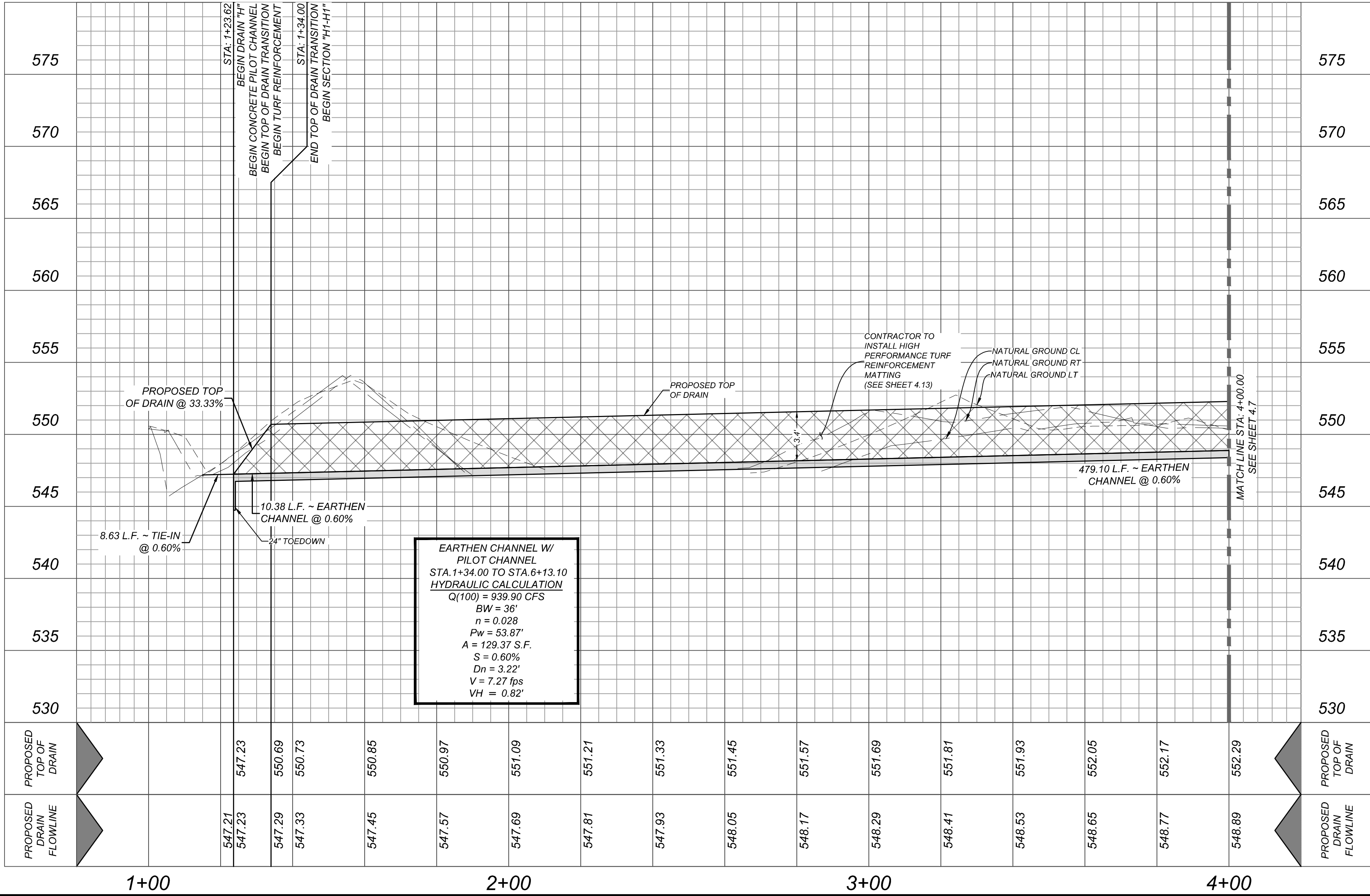
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 2. ANY DISTURBED AREAS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY-FIVE PERCENT OF THE DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
 3. AT THE PRE-FINAL INSPECTION, THE ENGINEER MUST ISSUE CERTIFICATION TO THE CITY INSPECTOR THAT THE TURF REINFORCEMENT MAT (TRM) WAS INSTALLED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE CERTIFICATION MUST ALSO NOTE THAT THE MATERIAL AND INSTALLATION HAS MET CITY AND MANUFACTURER SPECIFICATIONS.



- LEGEND**
- 735 = EXISTING CONTOUR
 - 735 = PROPOSED CONTOUR
 - ← = FLOW ARROW
 - C.B. = COUNTY BLOCK
 - R.O.W. = RIGHT OF WAY
 - E.G.T.V.E. = ELECTRIC, GAS, TELEPHONE, & CABLE TV EASEMENT



HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'

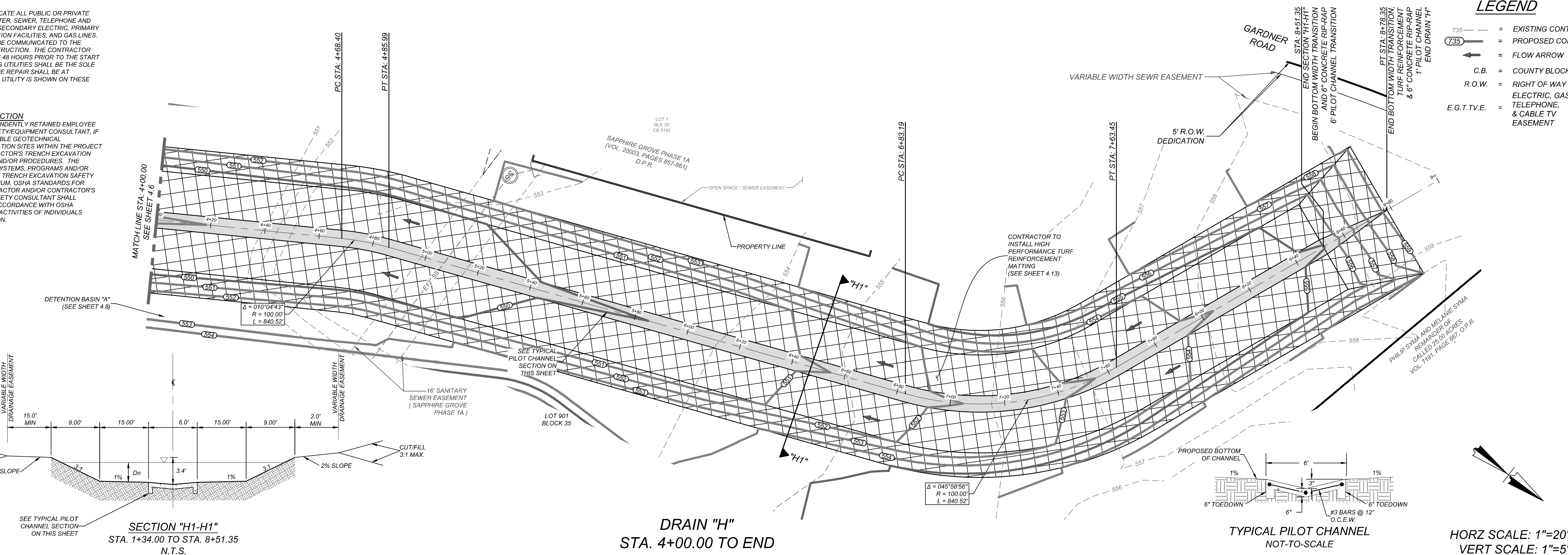


**EARTHEN CHANNEL W/
PILOT CHANNEL
STA. 1+34.00 TO STA. 6+13.10
HYDRAULIC CALCULATION**
Q(100) = 939.90 CFS
BW = 36'
n = 0.028
PW = 53.87'
A = 129.37 S.F.
S = 0.60%
Dn = 3.22'
V = 7.27 fps
VH = 0.82'

CAUTION!!
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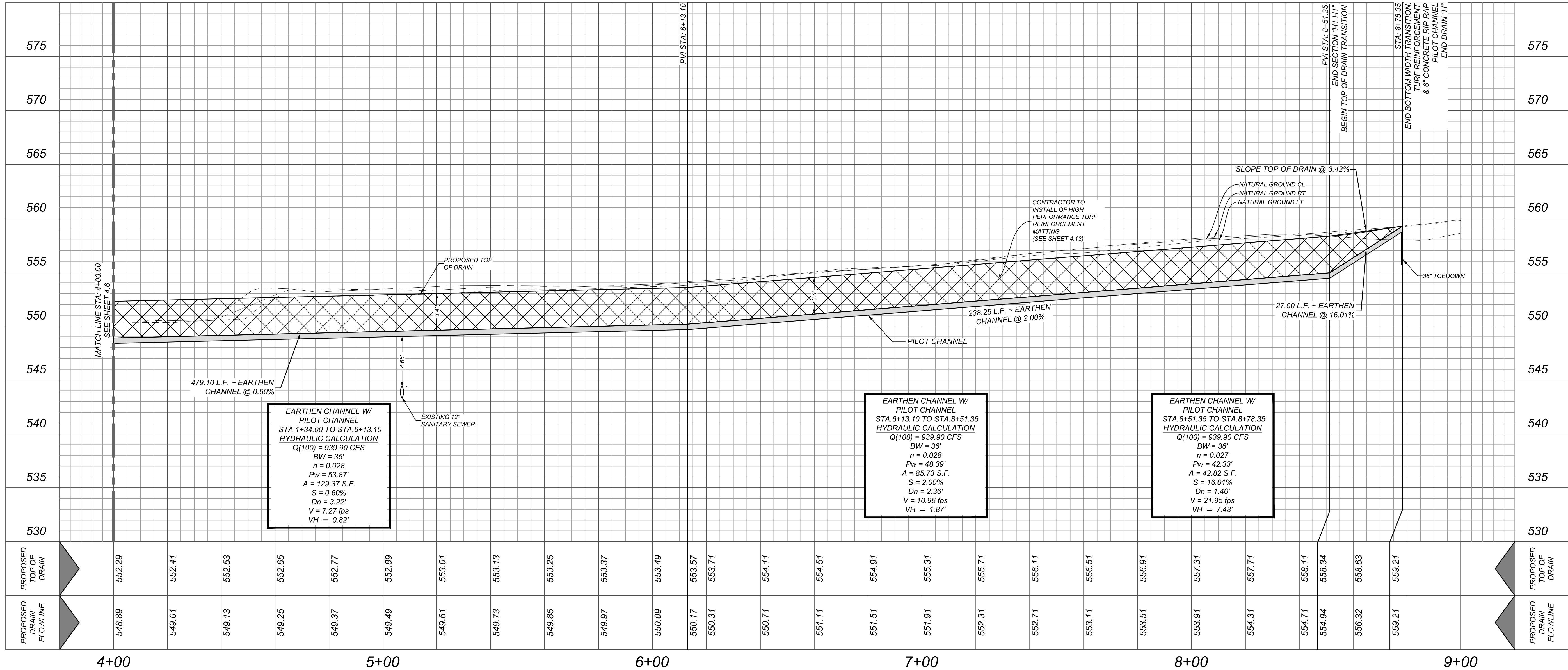
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DRAIN "H"
STA. 4+00.00 TO END

TYPICAL PILOT CHANNEL
NOT-TO-SCALE

HORZ SCALE: 1"=20'
VERT SCALE: 1"=5'

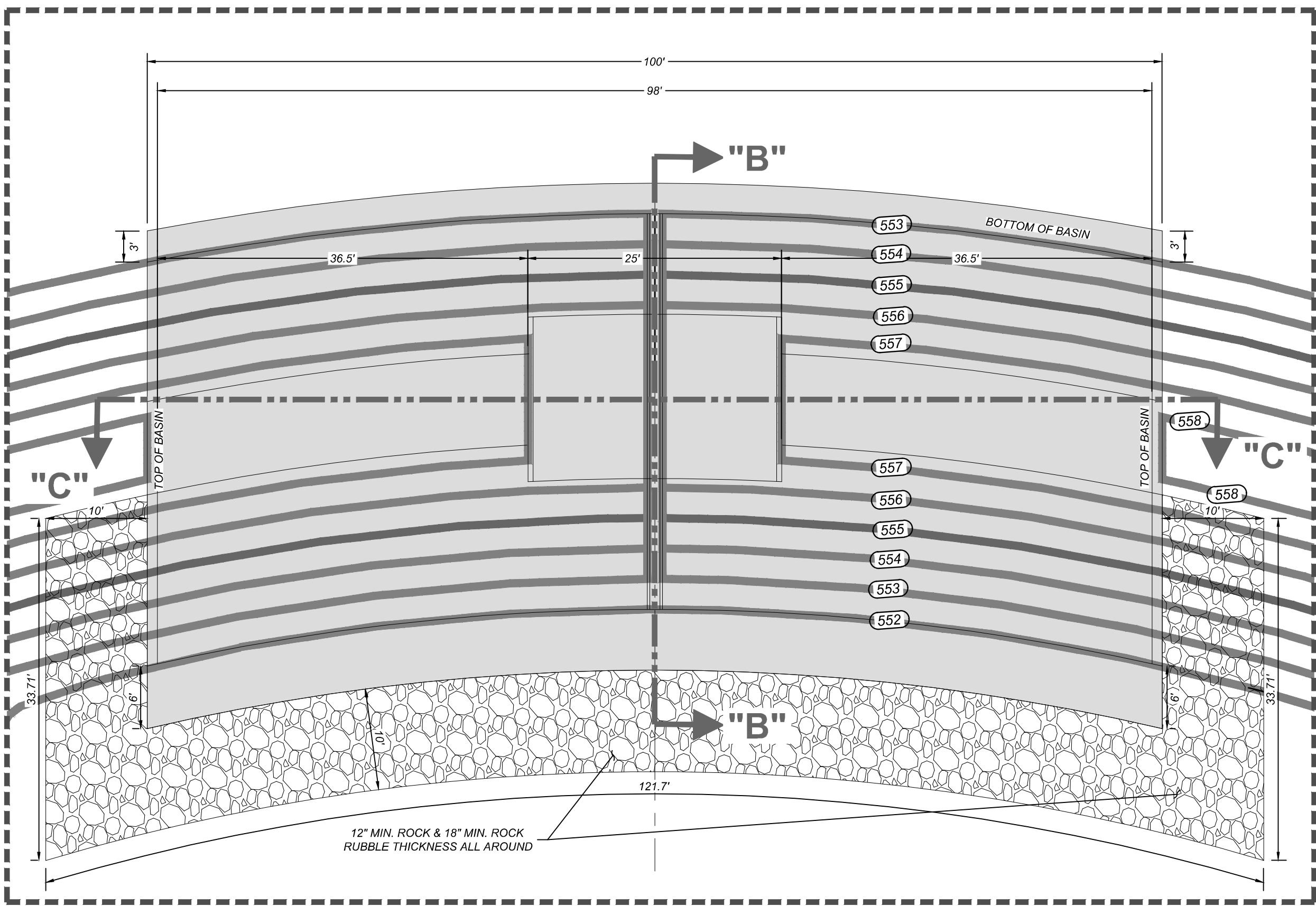


SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX

DRAIN "H" PLAN & PROFILE (SHEET 2 OF 2)

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

Date: Jun 25, 2024, 5:38pm User ID: orodriguez
File: N:\314\391\3\Design\Civil\Draws\BAS143913.dwg



BASIN "A" CONCRETE
OUTFALL

HYDRAULIC CALCULATION
 $Q(25) = 45.30$ CFS
 $Bw = 100'$
 $n = 0.015$
 $Pw = 100.40$ FT.
 $A = 20.00$ S.F.
 $S = 0.50\%$
 $Dn = 0.20'$
 $V = 2.27$ fps
 $VH = 0.08'$

NOTE:

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3. CONTRACTOR TO INSTALL CONCRETE COLLARS AT ALL UPSTREAM AND DOWNSTREAM JUNCTION BOX CONNECTIONS AND ALL PIPE TRANSITIONS.

TRENCH EXCAVATION SAFETY PROTECTION

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3. ALL DRAINAGE EASEMENTS WILL BE OWNED AND MAINTAINED BY THE DEVELOPER.

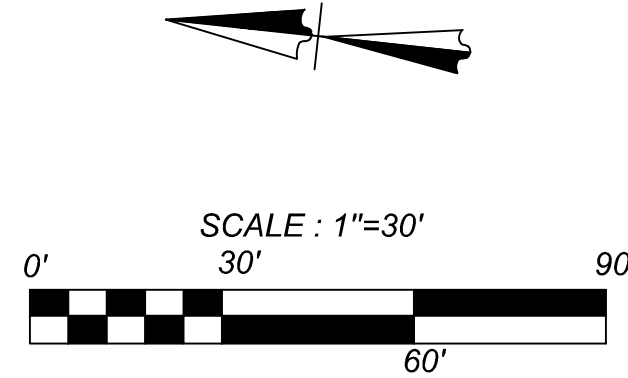
4. ALL EARTHEN CHANNELS MUST NOT EXCEED 3:1 SIDE SLOPES (MAX).

LEGEND

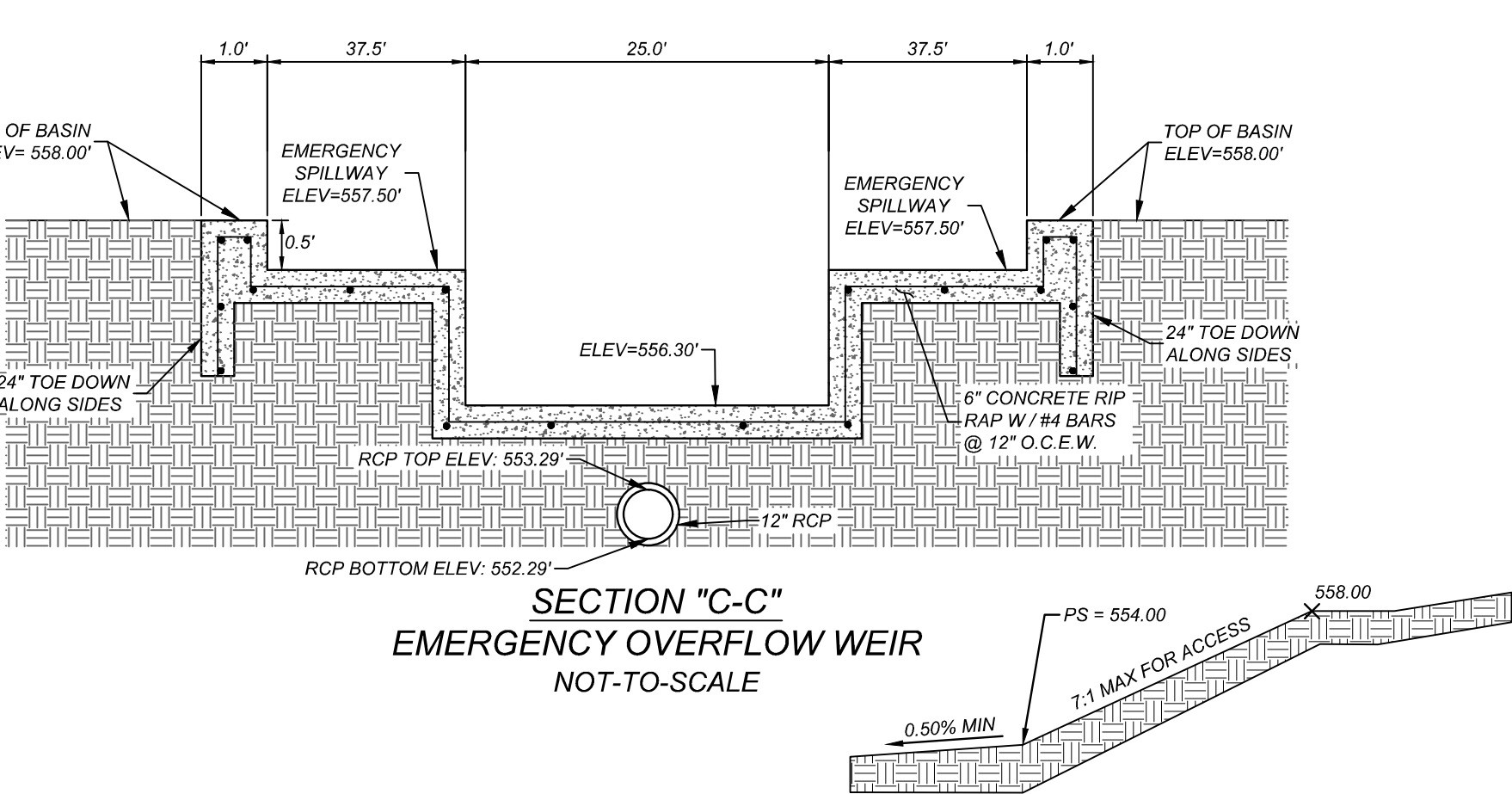
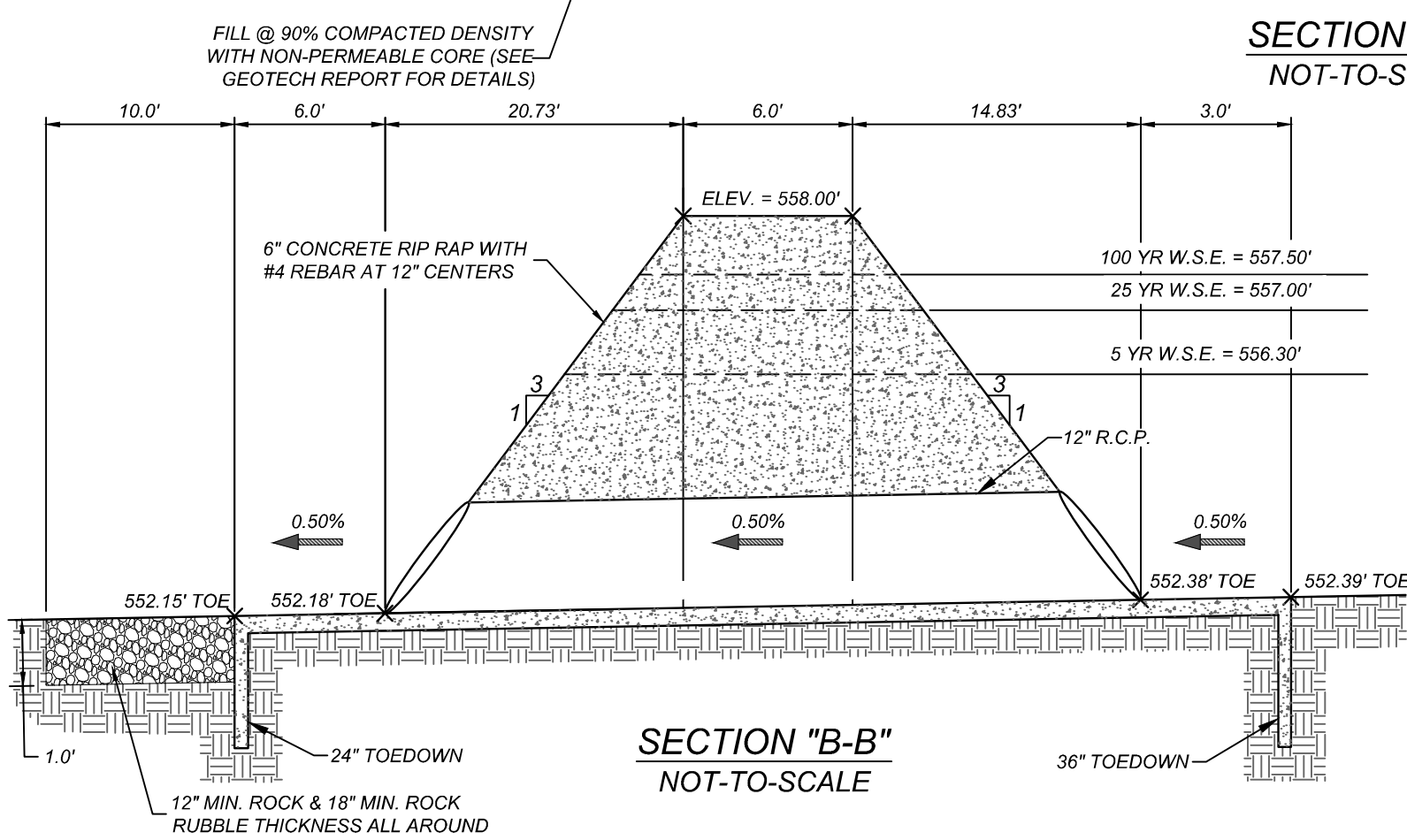
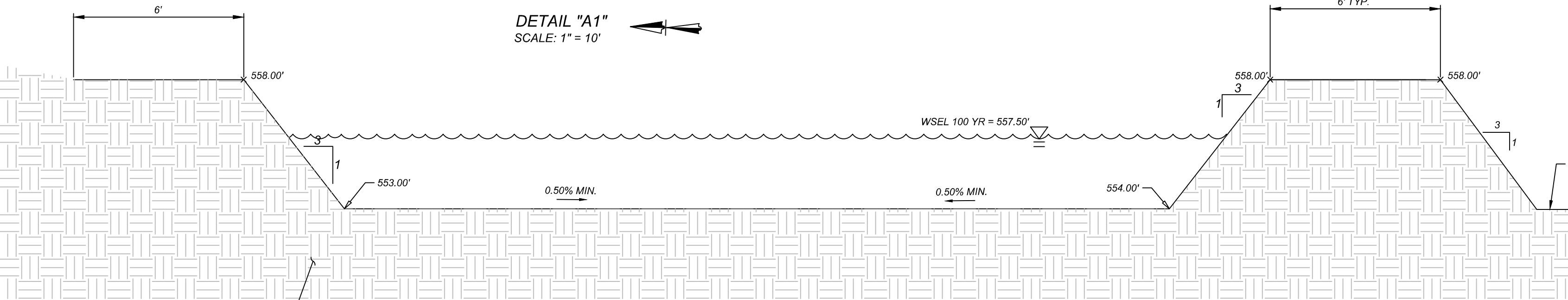
EXISTING CONTOURS	=	---	625	---
PROPOSED CONTOURS	=	---	625	---
ROCK RUBBLE	=	[Pattern]		
FLOW ARROW	=	[Arrow]		
CONCRETE RIP-RAP	=	[Pattern]		
WATER SURFACE ELEVATION	=	[Symbol]		

PROPOSED DISCHARGE

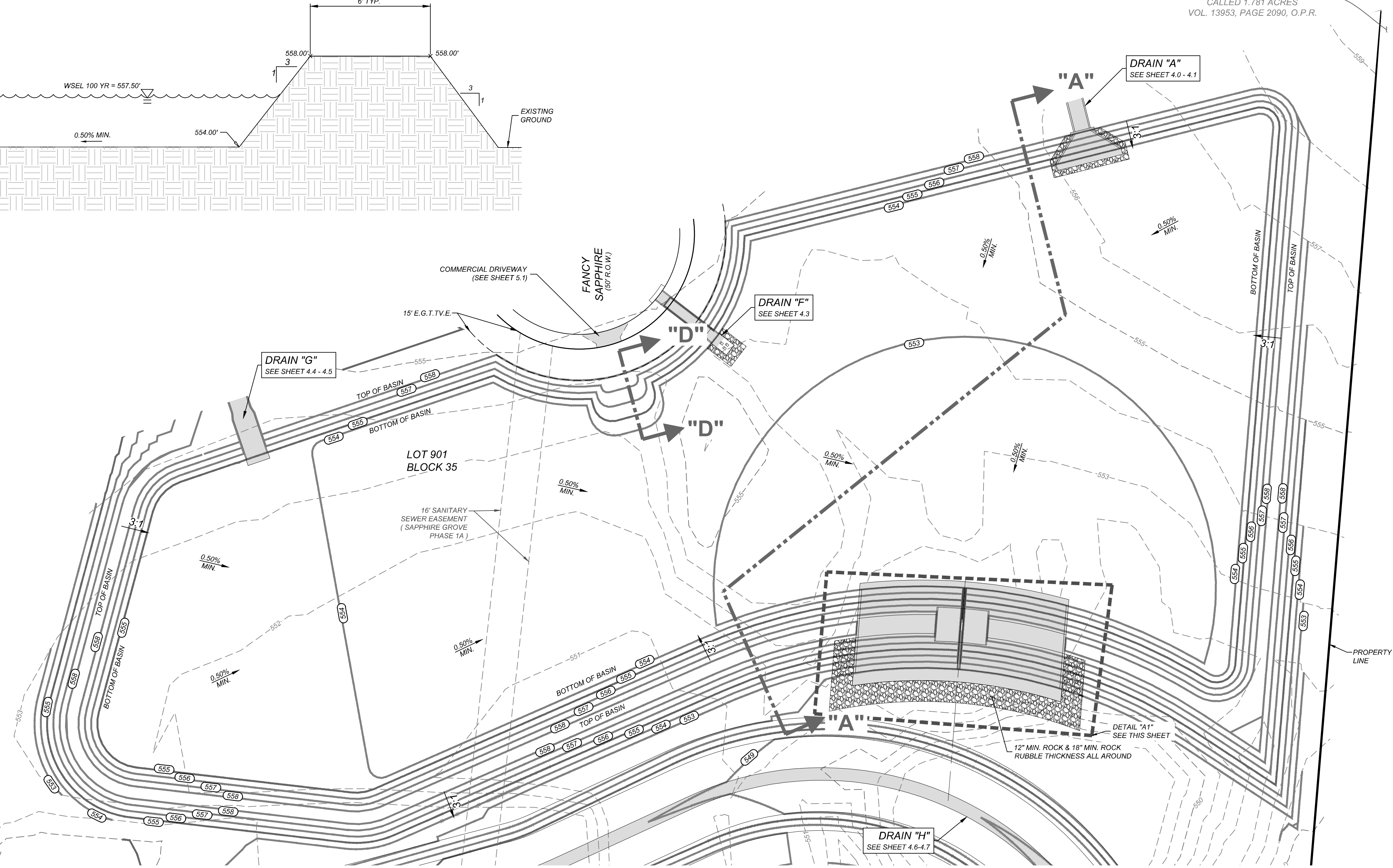
Q5	=	8.60	WSEL5	=	556.30
Q25	=	45.30	WSEL25	=	557.00
Q100	=	91.80	WSEL100	=	557.50



TRAVIS PAWLAK
AND WIFE APRIL PAWLAK
CALLED 1.781 ACRES
VOL. 13953, PAGE 2090, O.P.R.



SECTION "D-D"
NOT-TO-SCALE



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
DETENTION BASIN "A"

PLAT NO.
22-11800456

JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

4.8



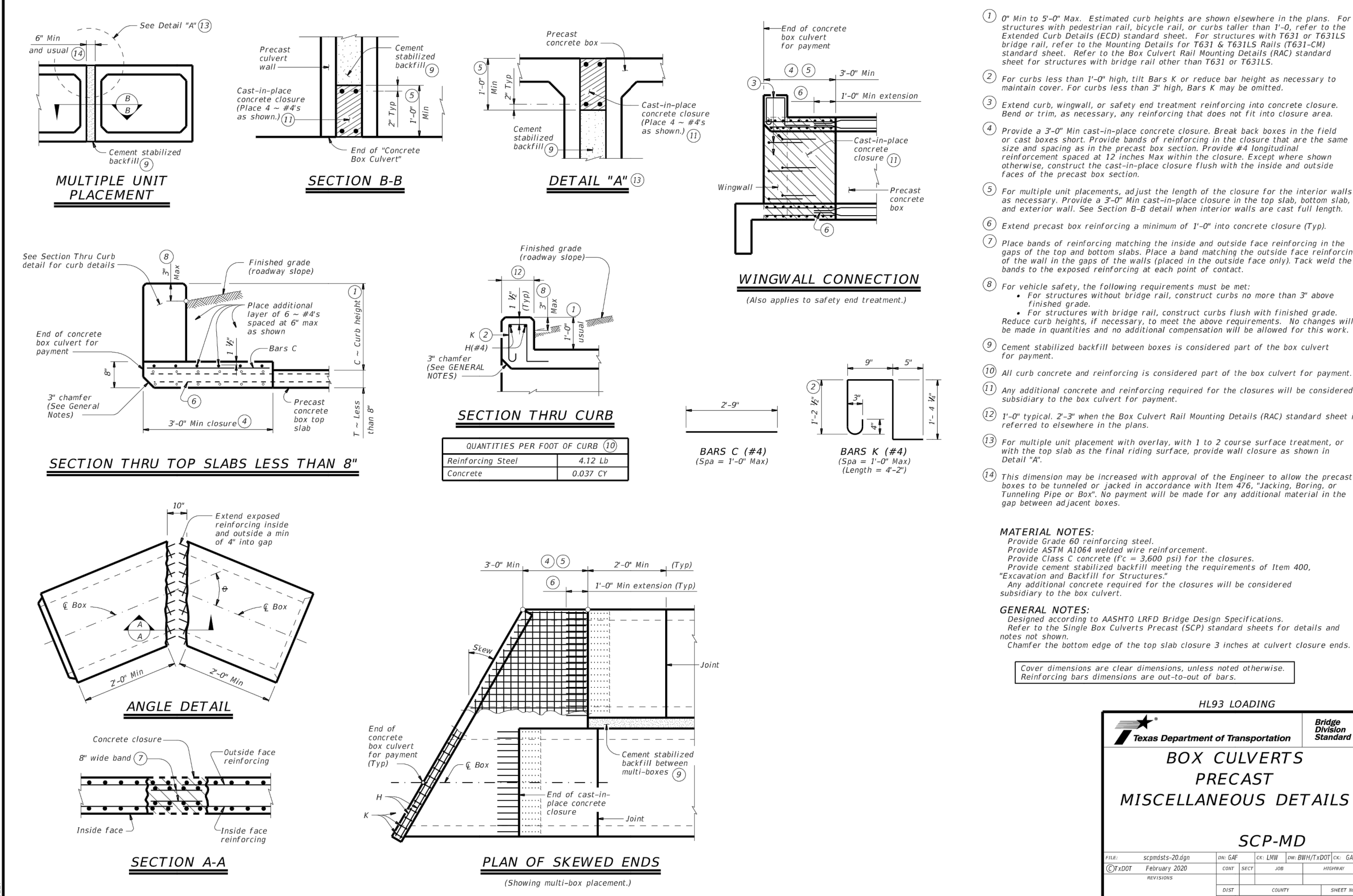
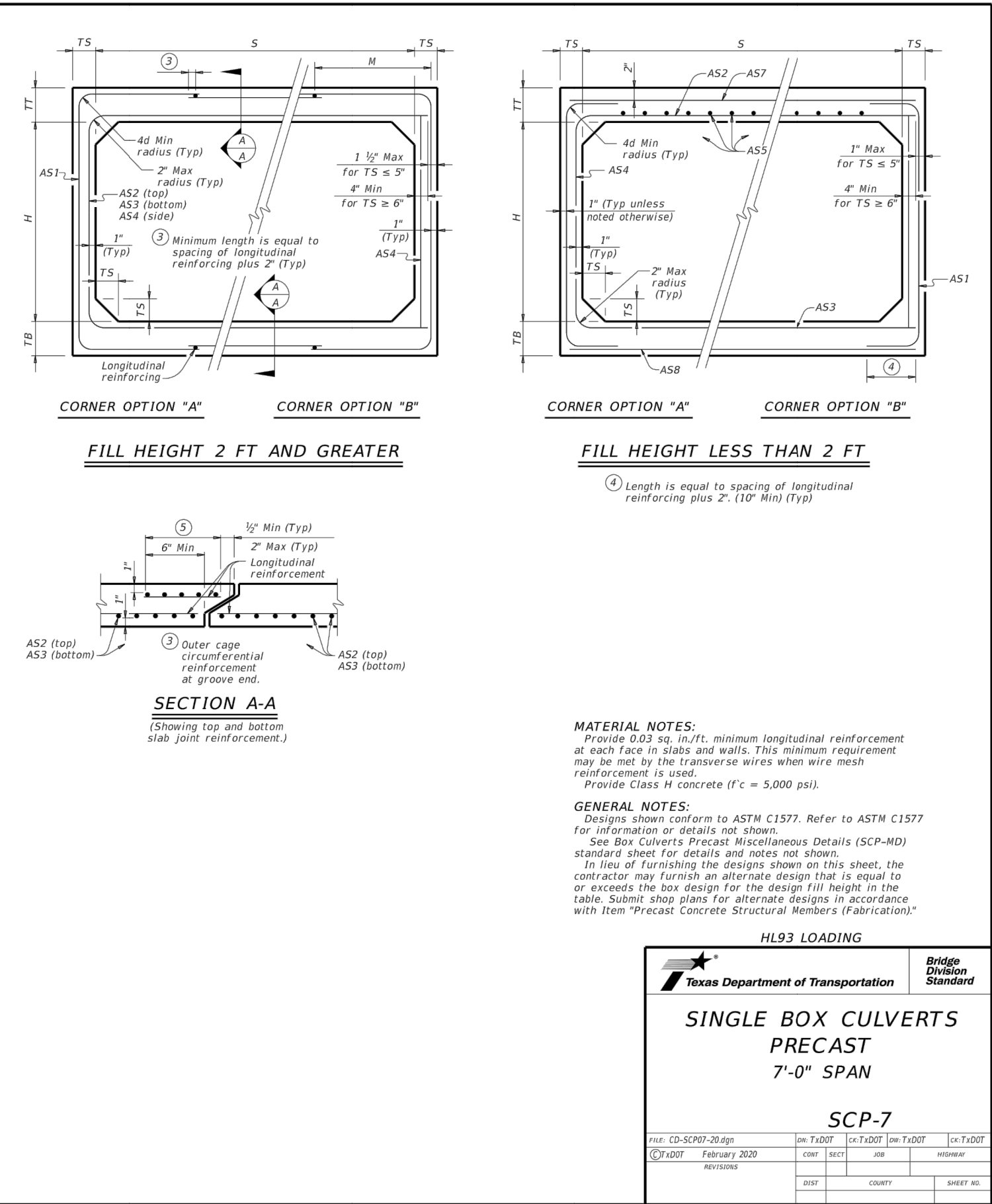
ENGINEERS + SURVEYING

Phone # (210) 878-8444 • Fax # (210) 878-8441
TBPE Firm #: 9513 • TBPE.S Firm #: 1012300

BOX DATA													
SECTION DIMENSIONS				Fill Height (ft.)	M (in.)	REINFORCING (sq. in. / ft.) ⁽²⁾							
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Height (ft.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Weight (tons)
3	2	7	6	4	<2	0.17	0.25	0.16	0.10	0.17	0.17	0.14	3.3
3	2	4	4	4	2<3	0.13	0.19	0.18	0.10	-	-	-	2.4
3	2	4	4	4	3-5	0.10	0.11	0.12	0.10	-	-	-	2.4
3	2	4	4	4	10	0.10	0.10	0.10	0.10	-	-	-	2.4
3	2	4	4	4	15	0.10	0.13	0.13	0.10	-	-	-	2.4
3	2	4	4	4	20	0.11	0.17	0.17	0.10	-	-	-	2.4
3	2	4	4	4	25	0.14	0.21	0.21	0.10	-	-	-	2.4
3	2	4	4	4	30	0.17	0.25	0.25	0.10	-	-	-	2.4
3	2	4	4	4	35	0.20	0.30	0.30	0.10	-	-	-	2.4
3	3	7	6	4	<2	-	0.17	0.27	0.17	0.10	0.17	0.14	3.7
3	3	4	4	4	2<3	0.10	0.22	0.21	0.10	-	-	-	2.8
3	3	4	4	4	3-5	0.10	0.14	0.14	0.10	-	-	-	2.8
3	3	4	4	4	10	0.10	0.11	0.11	0.10	-	-	-	2.8
3	3	4	4	4	15	0.10	0.14	0.15	0.10	-	-	-	2.8
3	3	4	4	4	20	0.10	0.18	0.19	0.10	-	-	-	2.8
3	3	4	4	4	25	0.10	0.23	0.23	0.10	-	-	-	2.8
3	3	4	4	4	30	0.12	0.27	0.28	0.10	-	-	-	2.8
3	3	4	4	4	35	0.14	0.32	0.32	0.10	-	-	-	2.8

1 For box length = 8'-0"

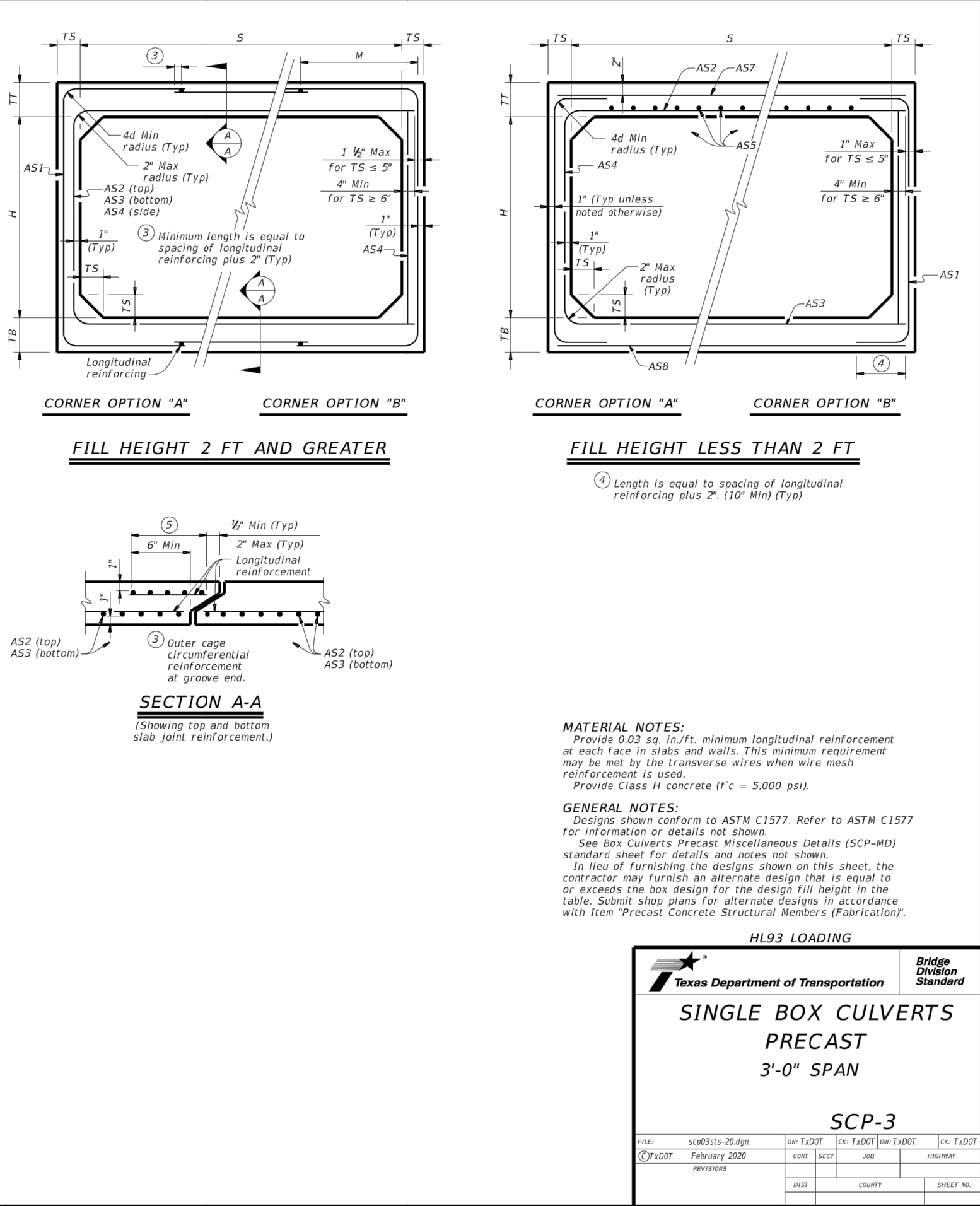
2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



BOX DATA													
SECTION DIMENSIONS				Fill Height (ft.)	M (in.)	REINFORCING (sq. in. / ft.) ⁽²⁾							
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Height (ft.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Weight (tons)
3	2	7	6	4	<2	0.17	0.25	0.16	0.10	0.17	0.17	0.14	3.3
3	2	4	4	4	2<3	0.13	0.19	0.18	0.10	-	-	-	2.4
3	2	4	4	4	3-5	0.10	0.11	0.12	0.10	-	-	-	2.4
3	2	4	4	4	10	0.10	0.10	0.10	0.10	-	-	-	2.4
3	2	4	4	4	15	0.10	0.13	0.13	0.10	-	-	-	2.4
3	2	4	4	4	20	0.11	0.17	0.17	0.10	-	-	-	2.4
3	2	4	4	4	25	0.14	0.21	0.21	0.10	-	-	-	2.4
3	2	4	4	4	30	0.17	0.25	0.25	0.10	-	-	-	2.4
3	2	4	4	4	35	0.20	0.30	0.30	0.10	-	-	-	2.4
3	3	7	6	4	<2	-	0.17	0.27	0.17	0.10	0.17	0.14	3.7
3	3	4	4	4	2<3	0.10	0.22	0.21	0.10	-	-	-	2.8
3	3	4	4	4	3-5	0.10	0.14	0.14	0.10	-	-	-	2.8
3	3	4	4	4	10	0.10	0.11	0.11	0.10	-	-	-	2.8
3	3	4	4	4	15	0.10	0.14	0.15	0.10	-	-	-	2.8
3	3	4	4	4	20	0.10	0.18	0.19	0.10	-	-	-	2.8
3	3	4	4	4	25	0.10	0.23	0.23	0.10	-	-	-	2.8
3	3	4	4	4	30	0.12	0.27	0.28	0.10	-	-	-	2.8
3	3	4	4	4	35	0.14	0.32	0.32	0.10	-	-	-	2.8

1 For box length = 8'-0"

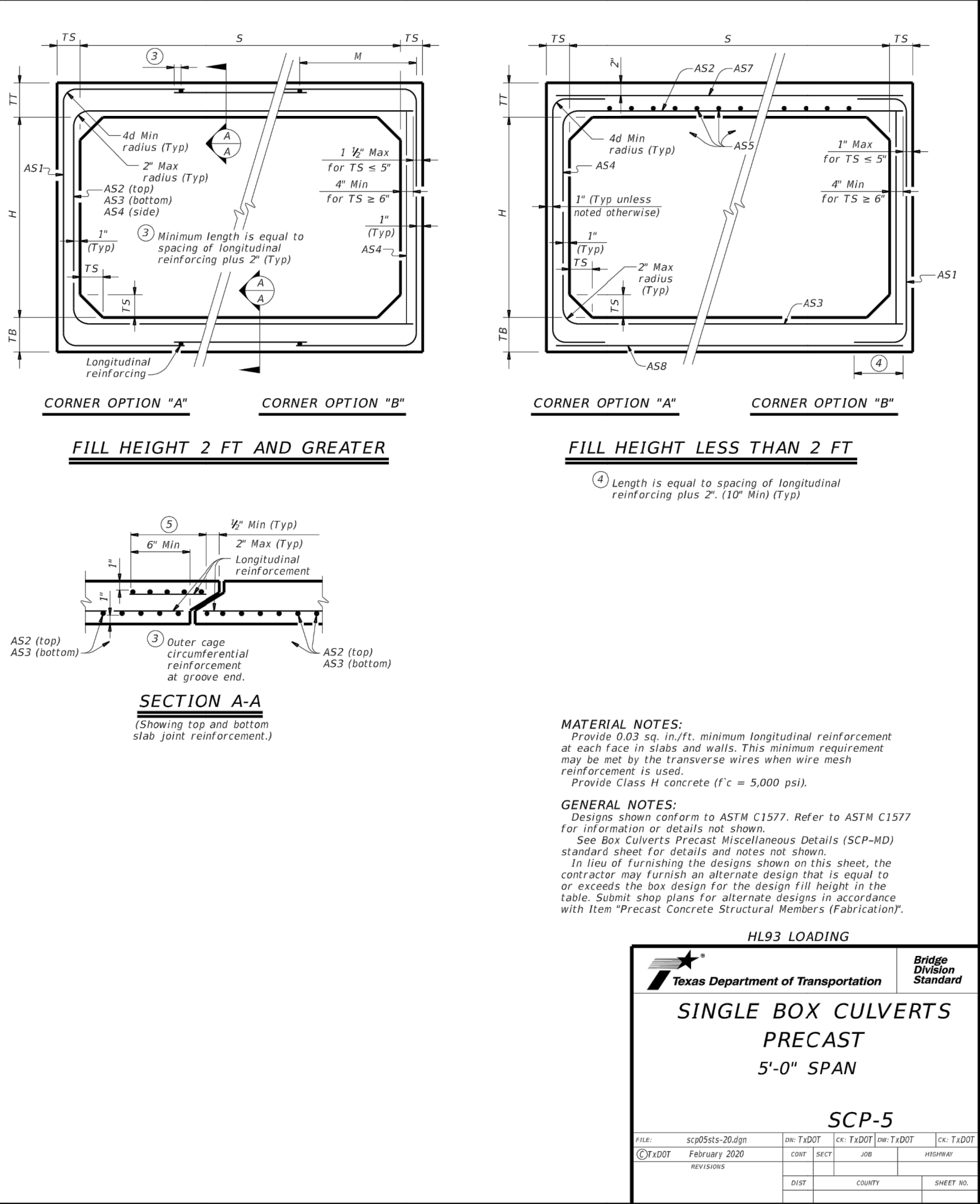
2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



BOX DATA													
SECTION DIMENSIONS				Fill Height (ft.)	M (in.)	REINFORCING (sq. in. / ft.) ⁽²⁾							
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Height (ft.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Weight (tons)
5	2	8	7	6	<2	0.19	0.27	0.18	0.14	0.19	0.17	0.17	6.0
5	2	6	6	6	2<3	0.22	0.20	0.16	0.14	-	-	-	5.1
5	2	6	6	6	3-5	0.16	0.14	0.14	0.14	-	-	-	5.1
5	2	6	6	6	10	0.16	0.14	0.14	0.14	-	-	-	5.1
5	2	6	6	6	15	0.20	0.18	0.18	0.14	-	-	-	5.1
5	2	6	6	6	20	0.26	0.23	0.24	0.14	-	-	-	5.1
5	2	6	6	6	25	0.33	0.29	0.29	0.14	-	-	-	5.1
5	2	6	6	6	30	0.39	0.34	0.35	0.14	-	-	-	5.1
5	3	8	7	6	<2	-	0.19	0.31	0.21	0.14	0.19	0.17	6.6
5	3	6	6	6	2<3	0.45	0.18	0.24	0.19	0.14	-	-	5.7
5	3	6	6	6	3-5	0.36	0.14	0.17	0.16	0.14	-	-	5.7
5	3	6	6	6	10	0.36	0.14	0.16	0.17	0.14	-	-	5.7
5	3	6	6	6	15	0.35	0.16	0.21	0.22	0.14	-	-	5.7
5	3	6	6	6	20	0.41	0.21	0.27	0.28	0.14	-	-	5.7
5	3	6	6	6	25	0.46	0.26	0.34	0.34	0.14	-	-	5.7
5	3	6	6	6	30	0.51	0.31	0.41	0.41	0.14	-	-	5.7
5	4	8	7	6	<2	-	0.19	0.33	0.24	0.14	0.19	0.17	7.2
5	4	6	6	6	2<3	0.45	0.16	0.27	0.22	0.14	-	-	6.3
5	4	6	6	6	3-5	0.45	0.14	0.19	0.18	0.14	-	-	6.3
5	4	6	6	6	10	0.36	0.14	0.18	0.18	0.14	-	-	6.3
5	4	6	6	6	15	0.35	0.14	0.23	0.24	0.14	-	-	6.3
5	4	6	6	6	20	0.35	0.17	0.30	0.31	0.14	-	-	6.3
5	4	6	6	6	25	0.35	0.21	0.37	0.38	0.14	-	-	6.3
5	4	6	6	6	30	0.35	0.25	0.44	0.45	0.14	-	-	6.3
5	5	8	7	6	<2	-	0.19	0.35	0.26	0.14	0.19	0.17	7.8
5	5	6	6	6	2<3	0.45	0.14	0.29	0.24	0.14	-	-	6.9
5	5	6	6	6	3-5	0.45	0.14	0.21	0.20	0.14	-	-	6.9
5	5	6	6	6	10	0.45	0.14	0.19	0.20	0.14	-	-	6.9
5	5	6	6	6	15	0.38	0.14	0.24	0.25	0.14	-	-	6.9
5	5	6	6	6	20	0.35	0.15	0.31	0.32	0.14	-	-	6.9
5	5	6	6	6	25	0.38	0.18	0.38	0.39	0.14	-	-	6.9
5	5	6	6	6	30	0.41	0.21	0.46	0.47	0.14	-	-	6.9

1 For box length = 8'-0"

2 AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



DATE:



K&W
ENGINEERS + SURVEYING
3421 Paessens Pkwy, Suite 200, San Antonio, TX 78241
Phone #: (210) 979-8444 • Fax #: (210) 979-8441
TPE Firm #: 9513 • TPE L.S. Firm #: 10122300

REVISIONS



PLAT NO.
22-11800456

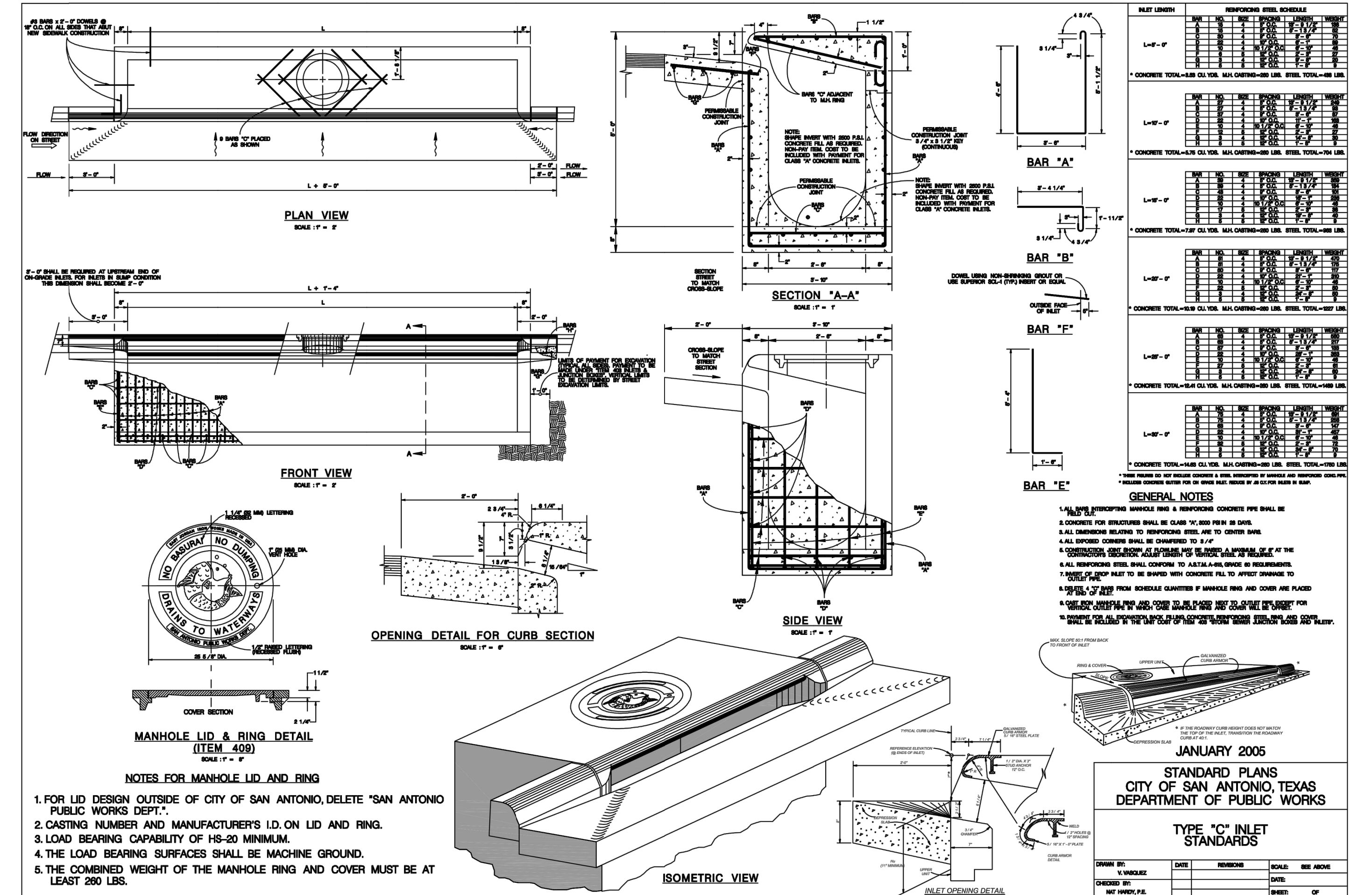
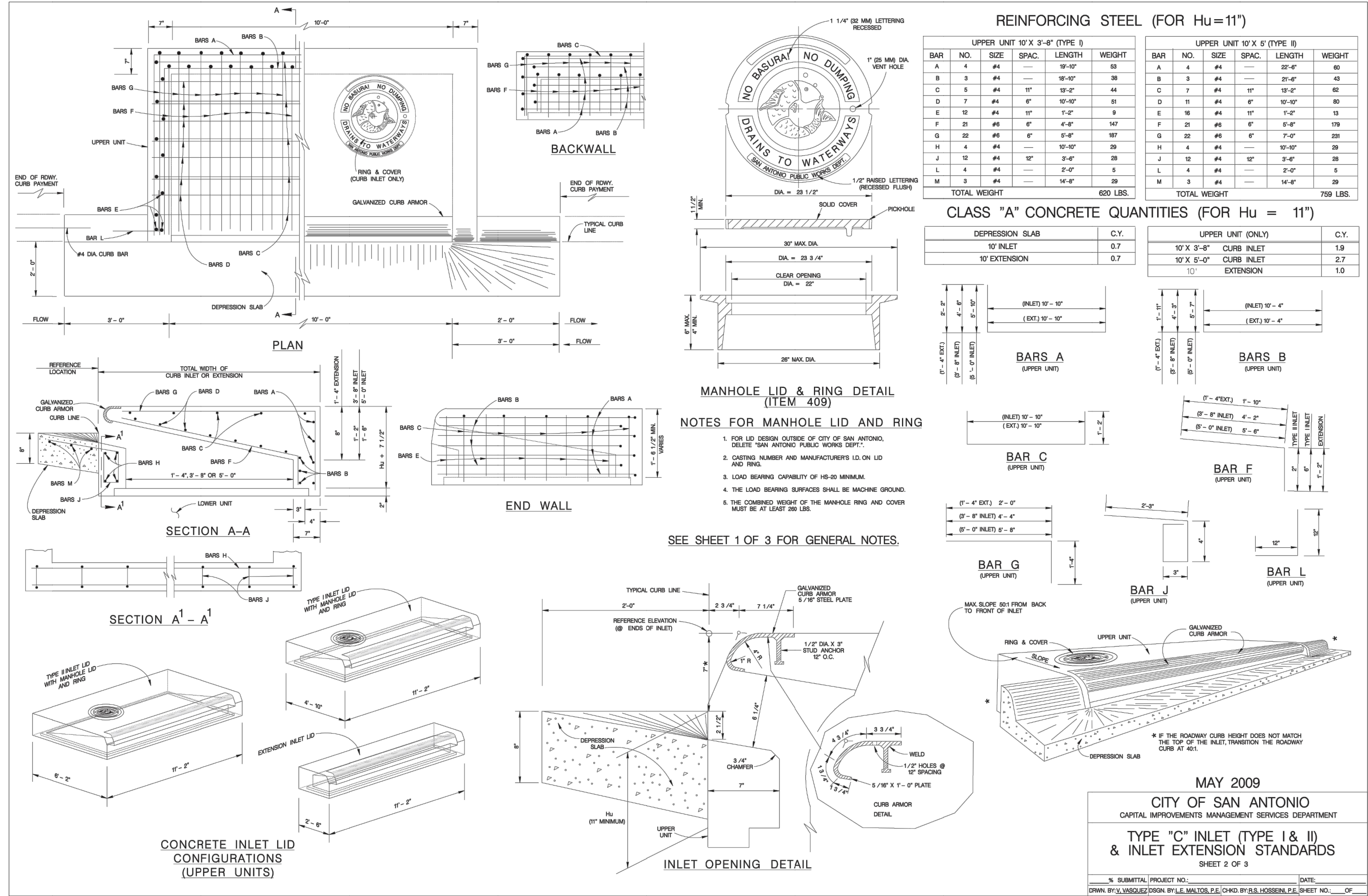
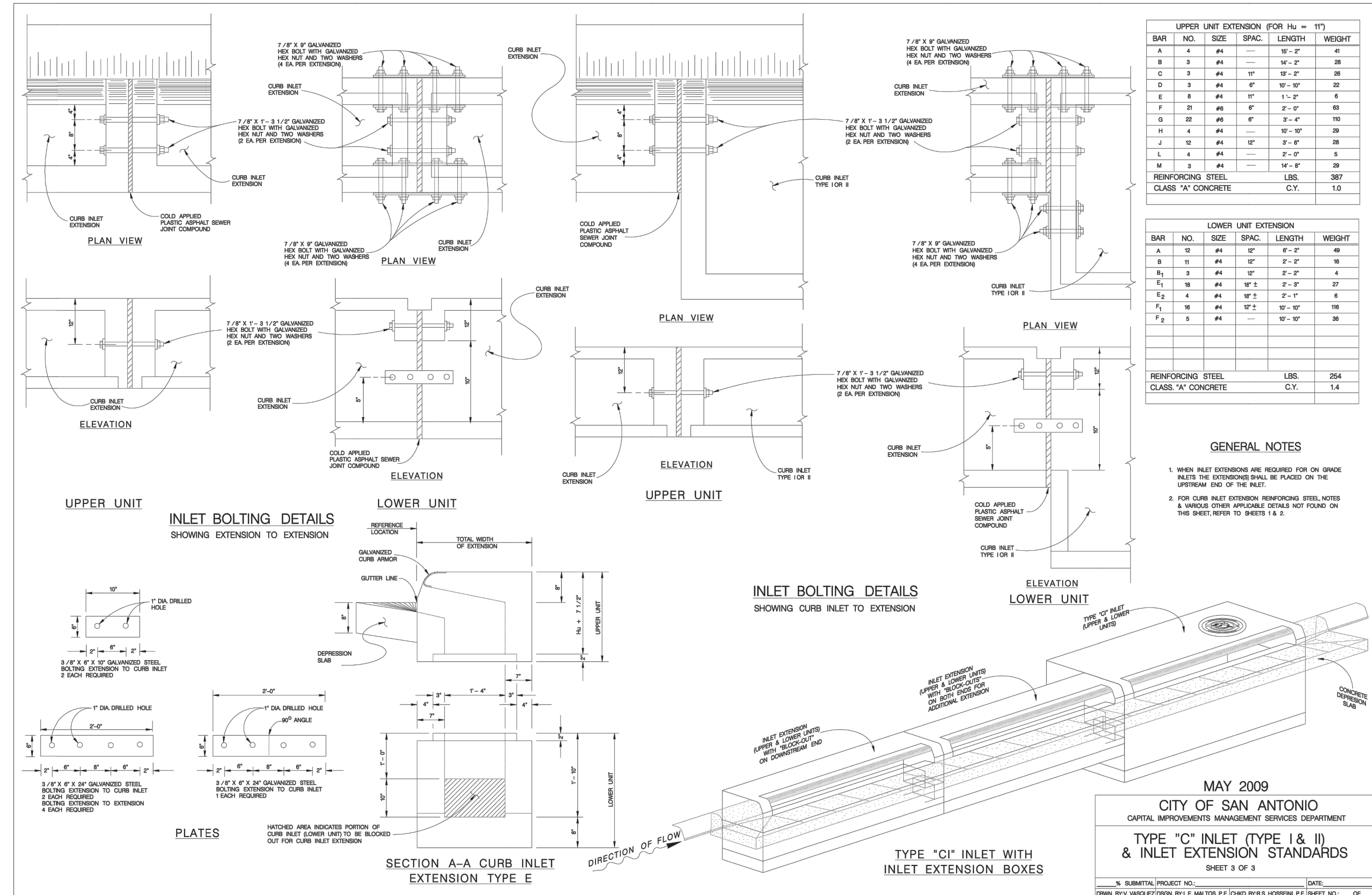
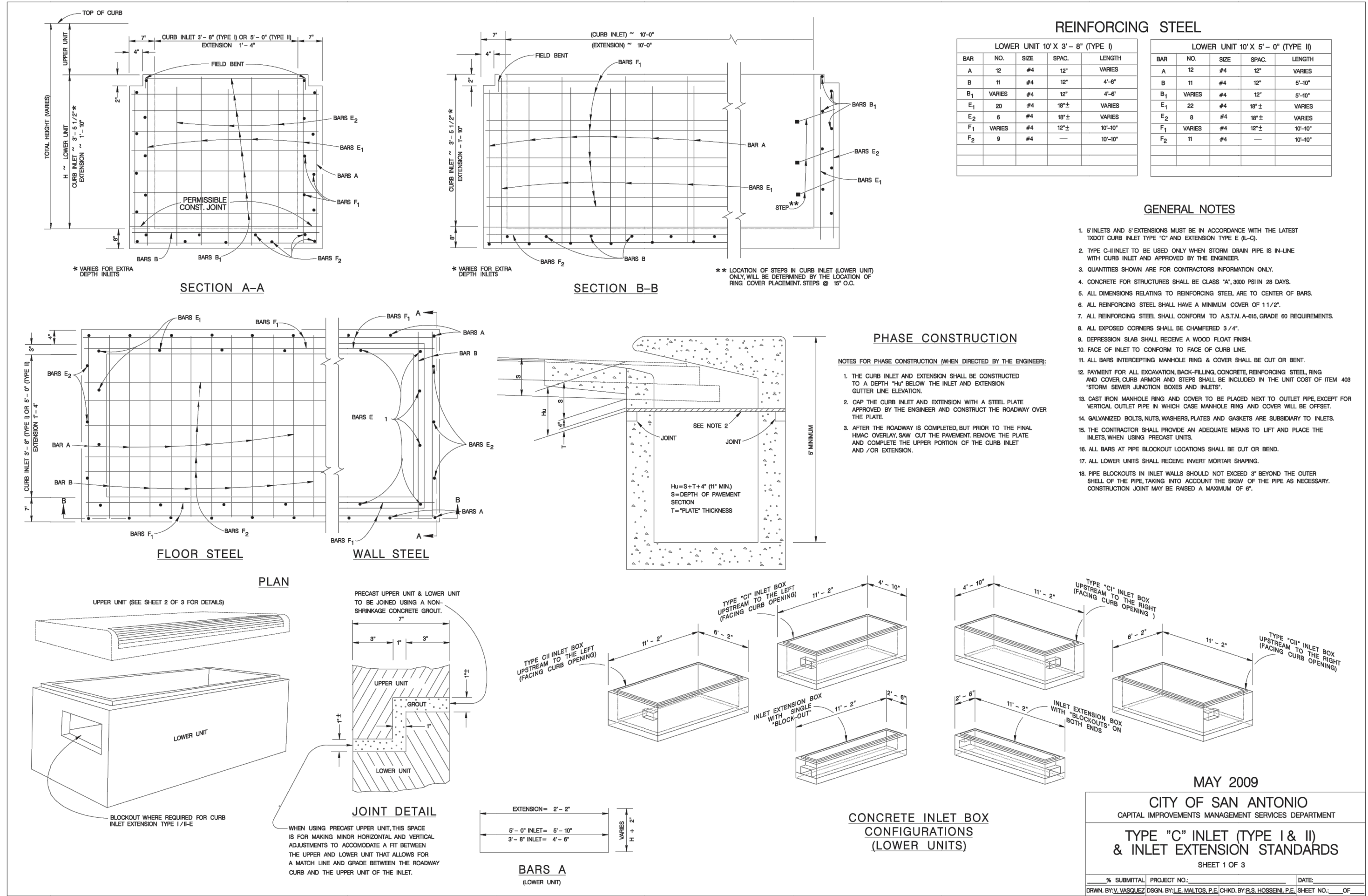
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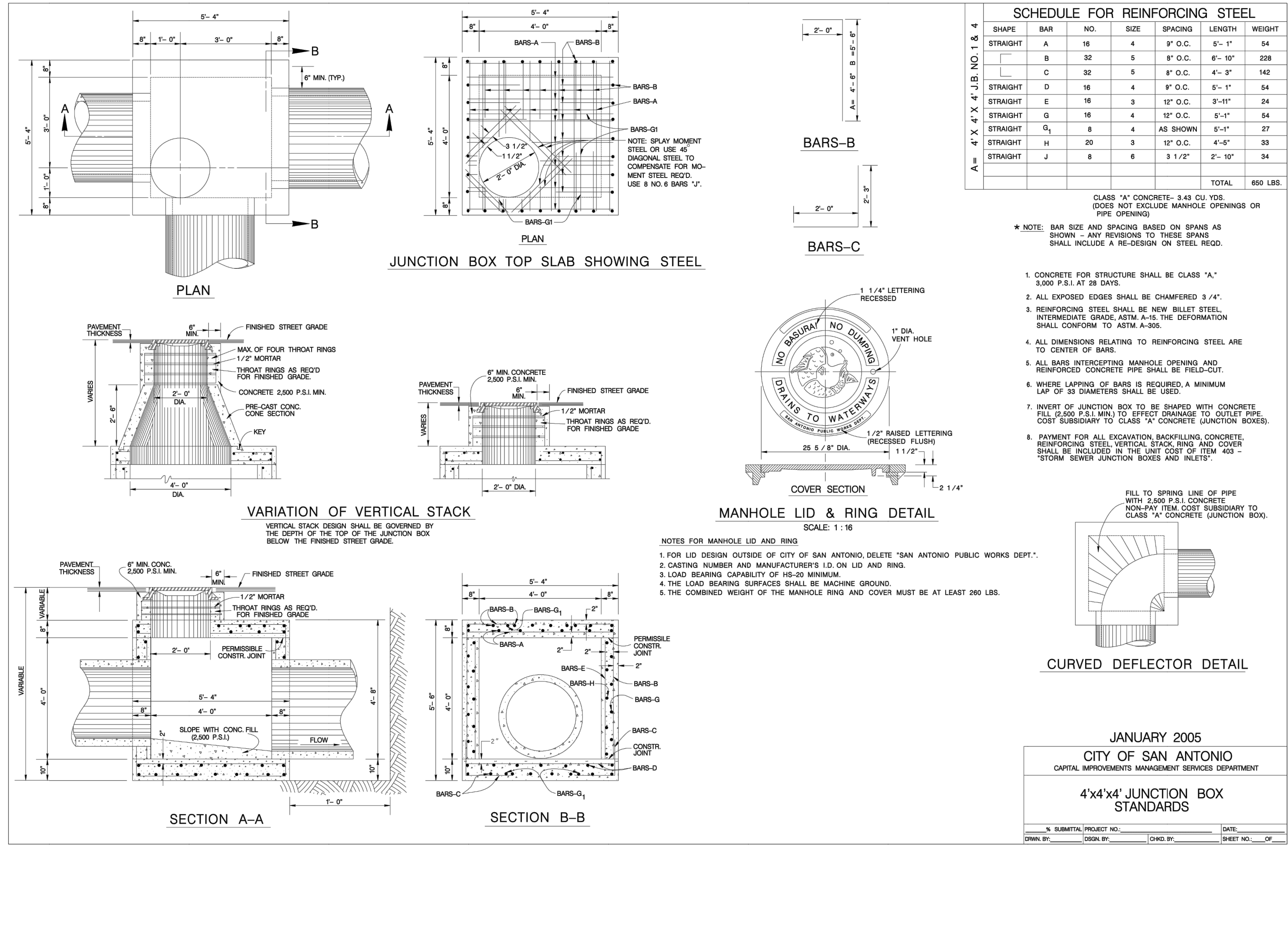
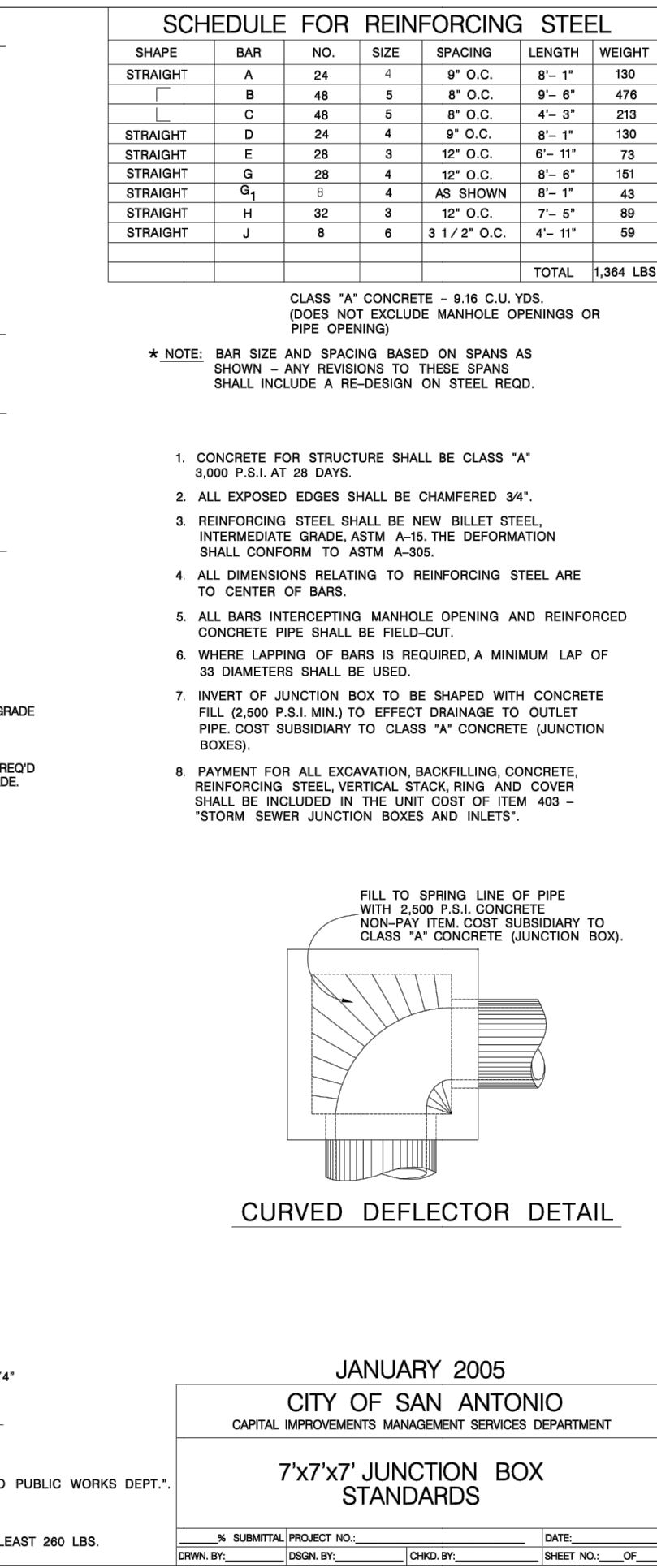
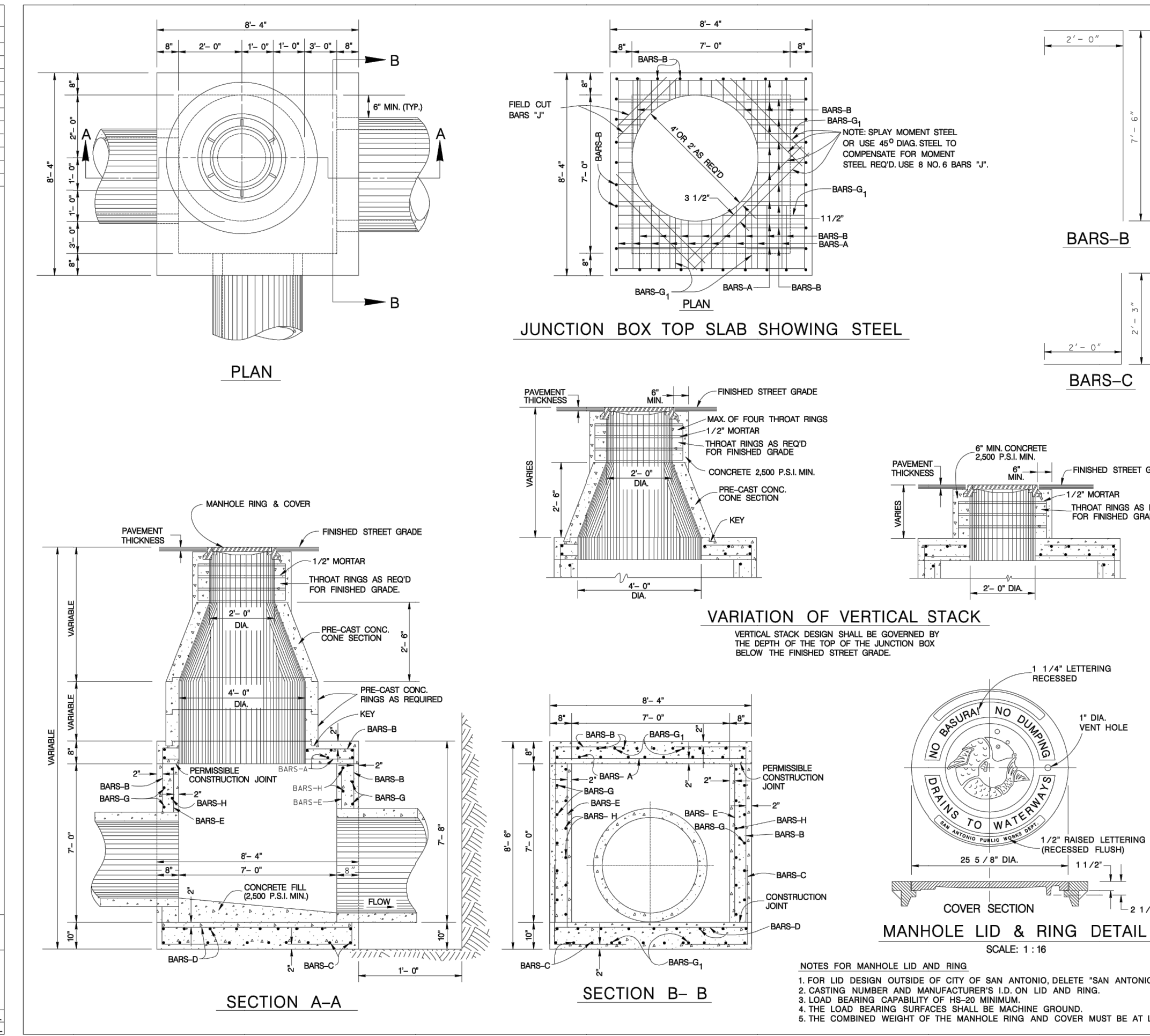
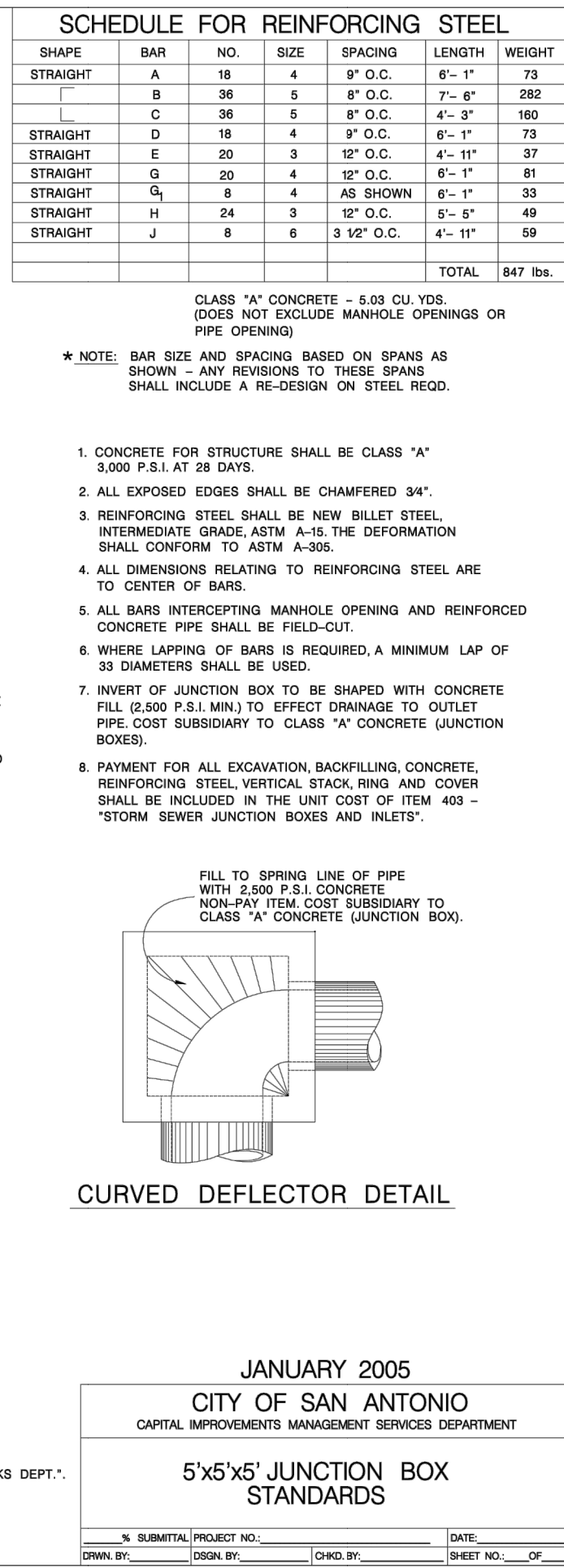
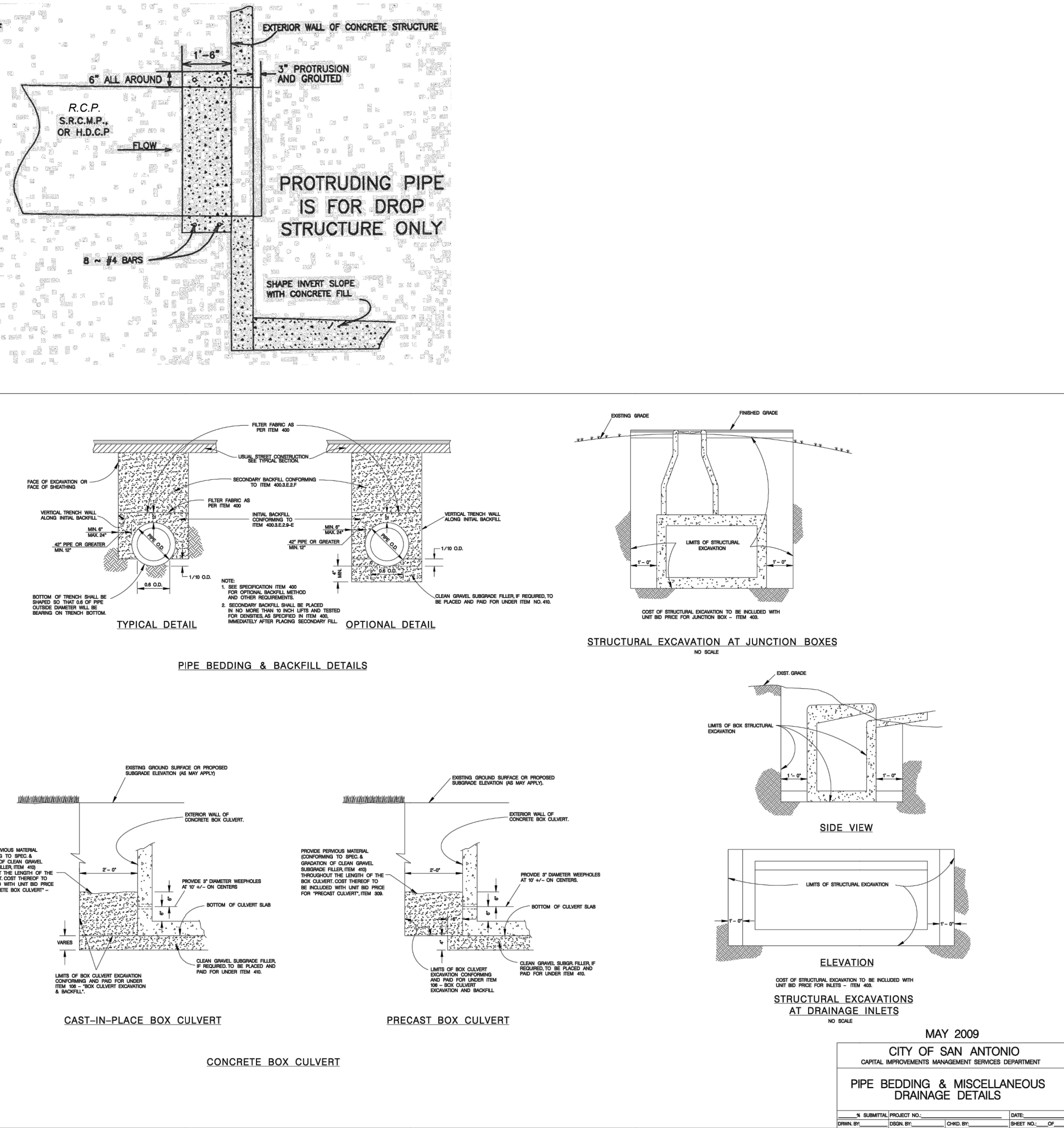
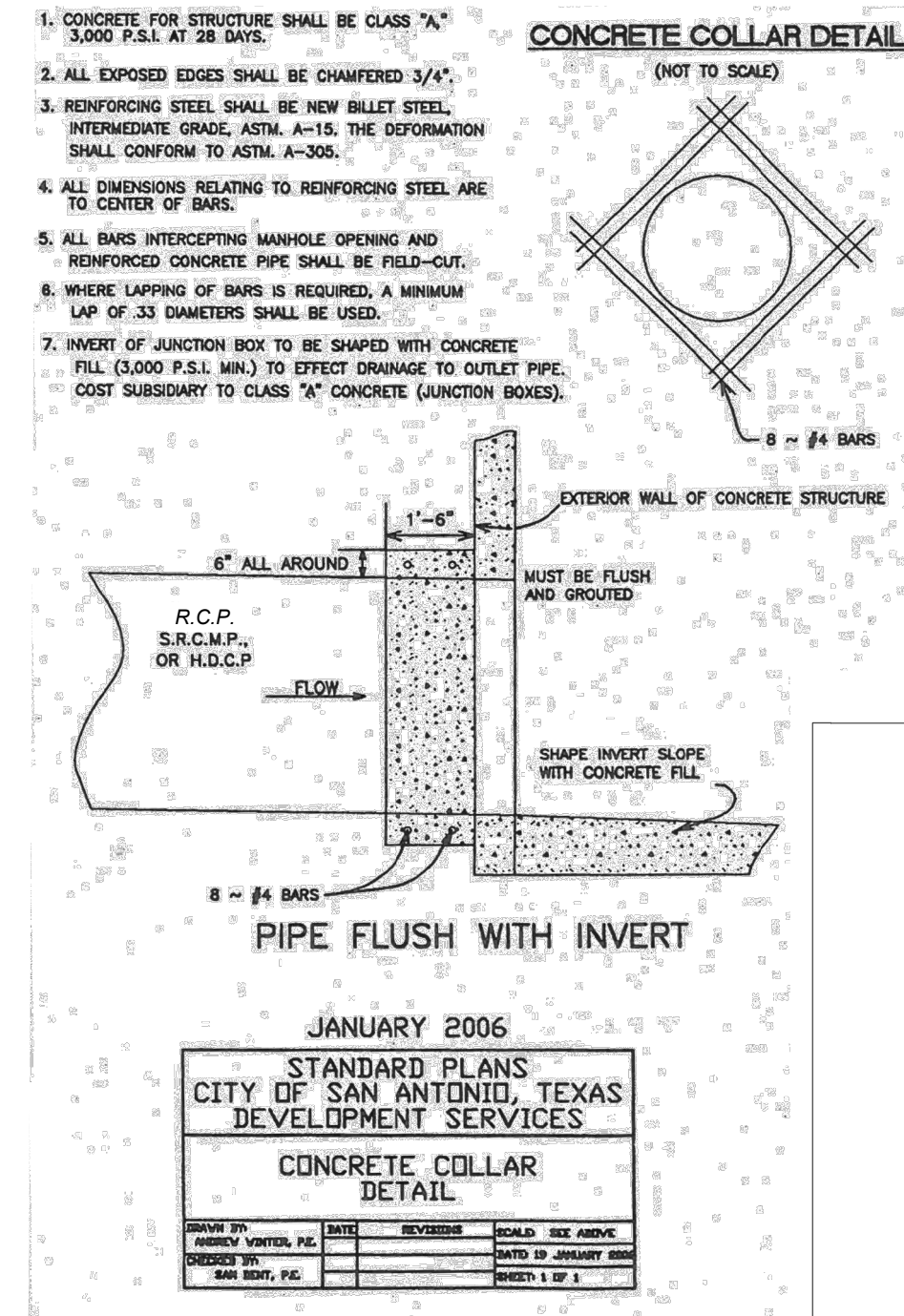
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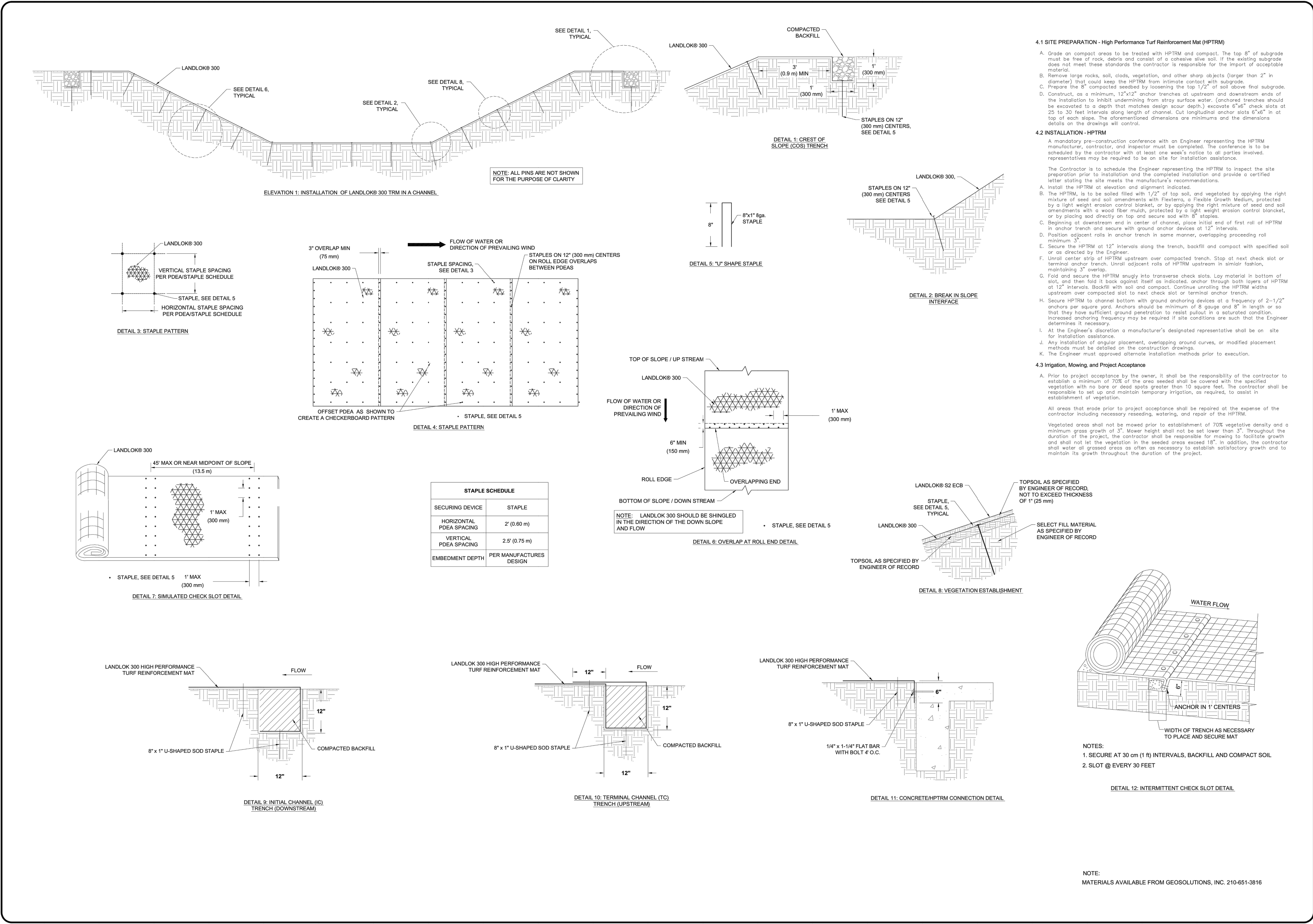
 HIS ORIGINAL SIGNATURE AND SEAL

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





PROPERTY	TEST METHOD	ENGLISH	METRIC
ORIGIN OF MATERIALS			
% U.S. Manufactured Inputs		100%	100%
% U.S. Manufactured		100%	100%
PHYSICAL			
Mass/Unit Area	ASTM D-6566	7.5 oz/yd ²	254.3 g/m ²
Thickness	ASTM D-6525	0.3 in	6.35 mm
Light Penetration (% Passing)	ASTM D-6567	50% (Max)	50%
Color	Visual	Green or Tan	
MECHANICAL			
Tensile Strength (Grab)	ASTM D-6818	2000 x 1800 lb/ft	29.2 x 26.3 kN/m
Elongation	ASTM D-6818	50% (max)	50% (max)
Resiliency	ASTM D-6524	70%	70%
Flexibility	ASTM D-6575	0.195 in-lb (avg)	10.8 mg-cm (avg)
ENDURANCE			
UV Resistance % Retained 3000 hrs	ASTM D-4355	90%	90%
PERFORMANCE			
Velocity ³ (Vegetated)	Large Scale	20 ft/sec	6.10 m/sec
Shear Stress ³ (Vegetated)	Large Scale	12 lb/ft ²	575 Pa
Manning's n ⁴ (Unvegetated)	Calculated	0.030	0.030
Seeding Emergence ⁴	ECTC Draft Method #4	-	-
ROLL SIZES		8.5 ft x 106 ft	2.6 m x 32.3 m

[illegible]

LANDLOK 300 INSTALLATION DETAILS
CHANNEL DETAILS

GEO
8165 BRACKEN CREEK DRIVE
SAN ANTONIO, TEXAS 78266
Phone: 210-651-3816
www.geosolutionsinc.com
SOLUTIONS Reg. Eng. Firm #F-4189

Scale: NOT TO SCALE
Date: 02/02/15
Drawn by: JY
Project No.: LANDLOK 300

Date: Mar 21, 2024, 1:35pm User ID: alex.droddy
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TRENCH EXCAVATION SAFETY PROTECTION

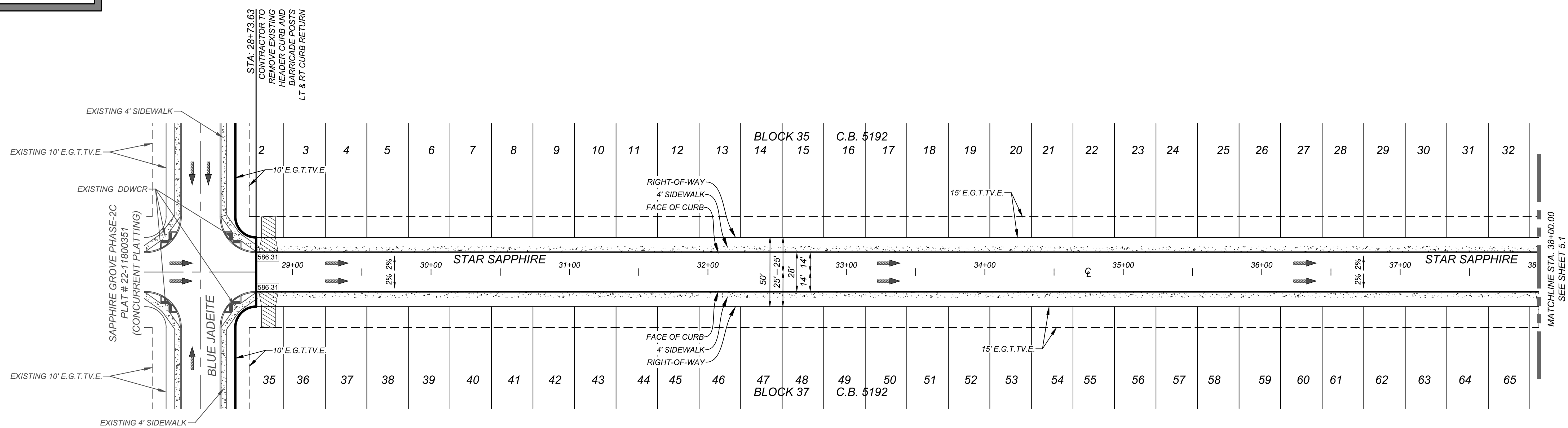
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.

CAUTION:

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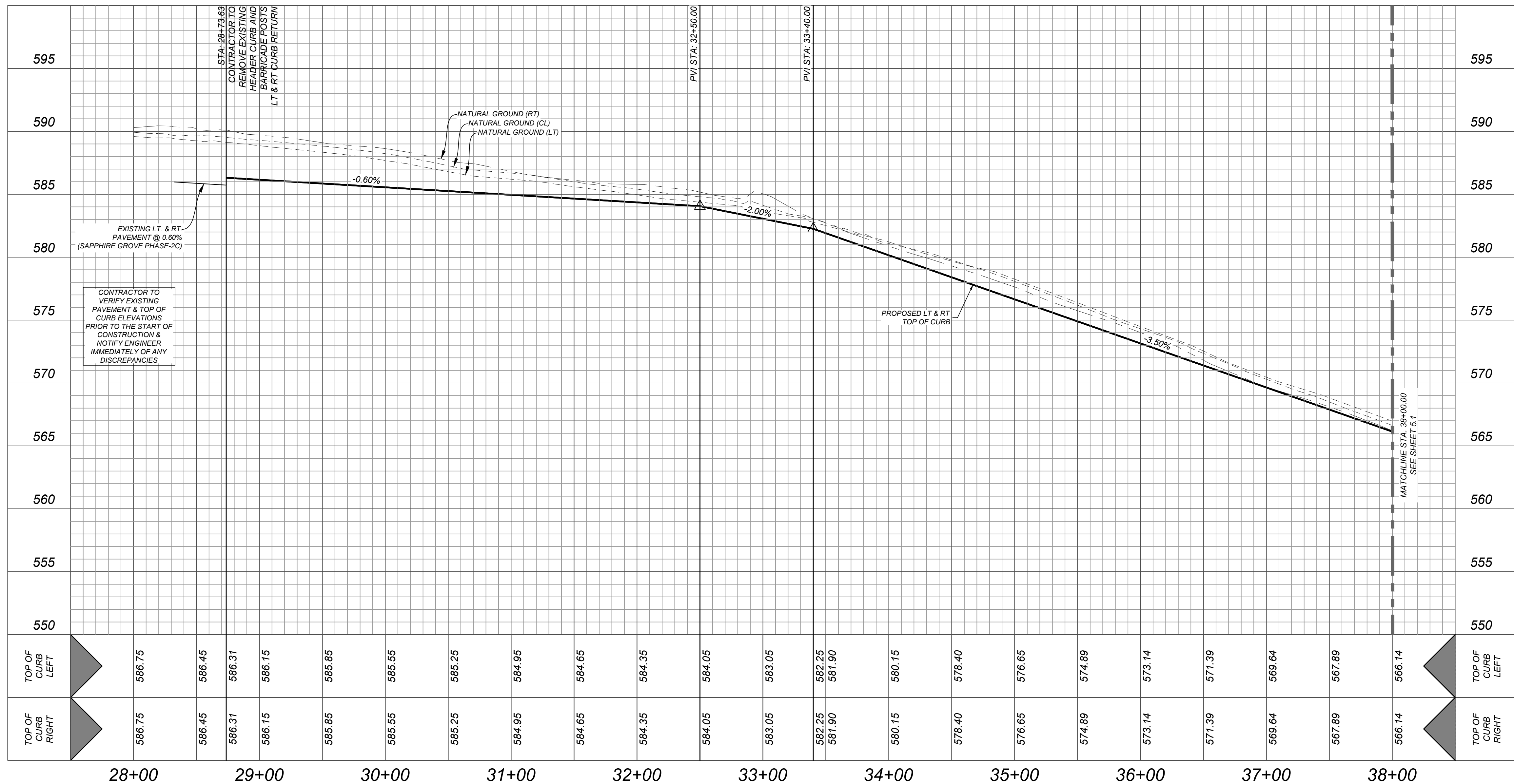


LEGEND

ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT	=	E.G.T.V.E.
SINGLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7)	=	SDWCR
DOUBLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7)	=	DDWCR
HIGH POINT	=	H.P.
WHEELCHAIR RAMP TYPE "1" (SEE SHEET 5.7)	=	①
STREET CENTERLINE	=	CL
PROPOSED FLOW ARROW	=	→
TOP OF CURB ELEVATIONS	=	552.00
SIDWALK TO BE CONSTRUCTED BY DEVELOPER	=	CONSTRUCTED BY DEVELOPER
SIDWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION	=	BUILT AT THE TIME OF HOME CONSTRUCTION
PROPOSED DRIVEWAY LOCATIONS	=	DRIVEWAY LOCATIONS
WASHOUT CROWN	=	WASHOUT CROWN

STAR SAPPHIRE
STA: 28+73.63 - 38+00.00

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



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX
STAR SAPPHIRE PLAN & PROFILE

PLAT NO.
22-11800456

JOB NO. 314-39-13

DATE: FEBRUARY 2024

DRAWN/AD CHECKED/SC

SHEET NUMBER:

5.0

K&W
ENGINEERS + SURVEYING
Travis R. Elseth, P.E.
Phone # (210) 878-8444 • Fax # (210) 878-8441
TBPE Firm #: 9813 • TBALS Firm #: 1012300

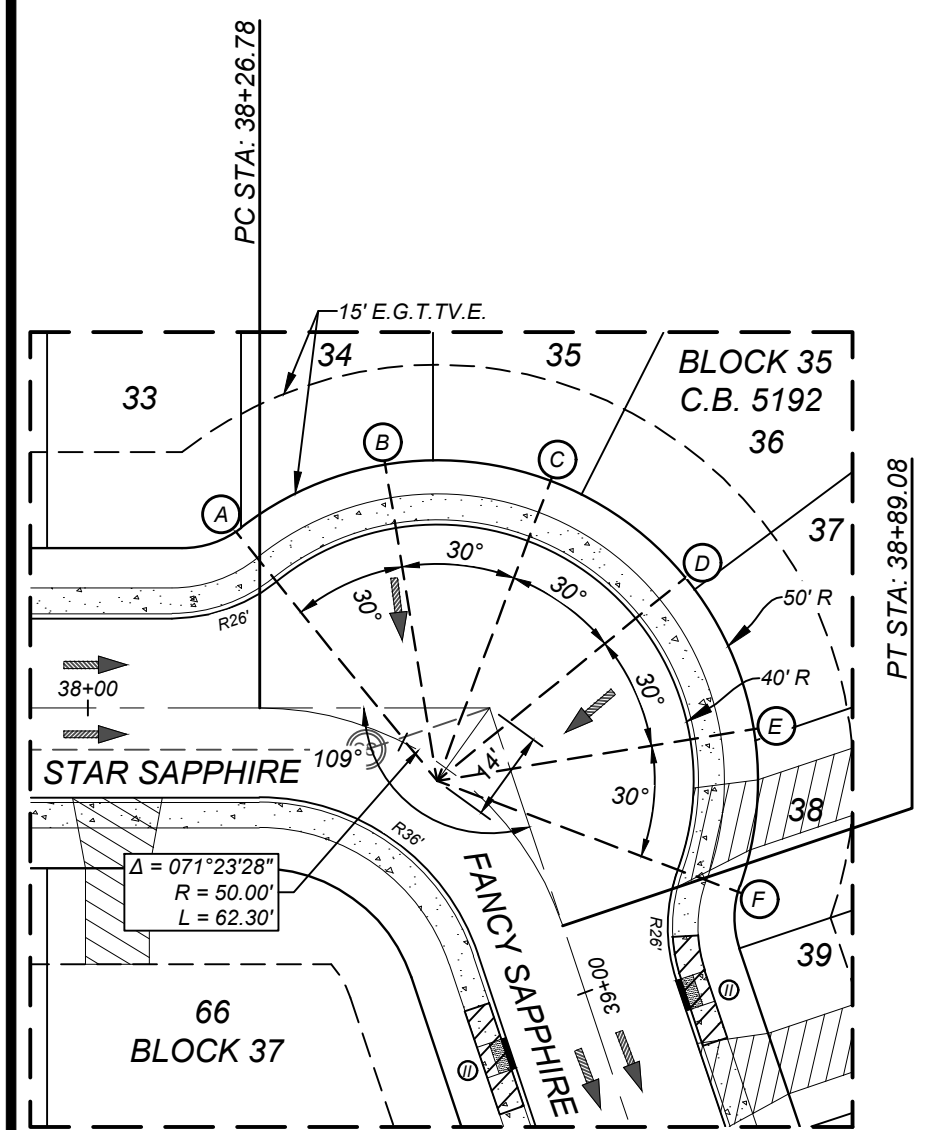
ISSUE DATE

REVISIONS

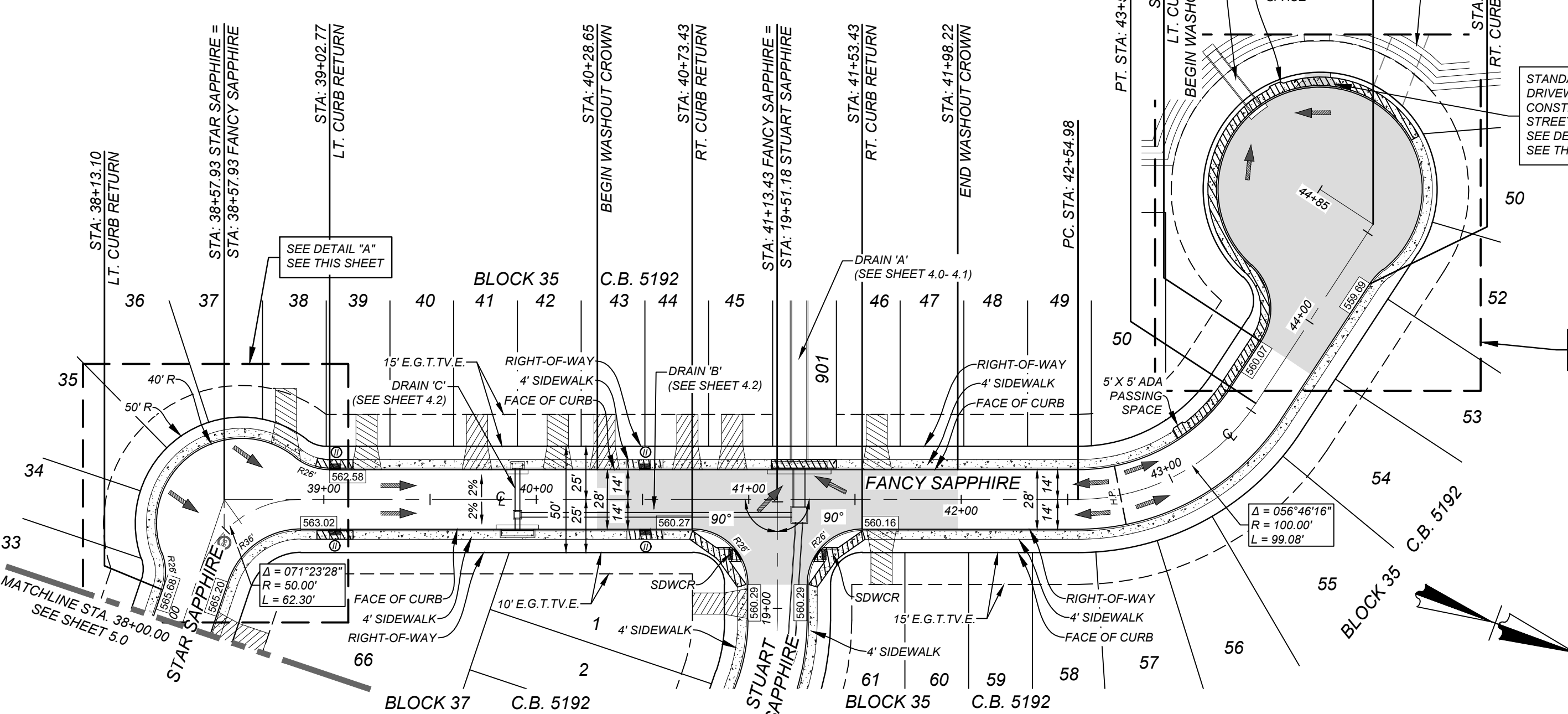


TRENCH EXCAVATION SAFETY PROTECTION
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA 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 DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



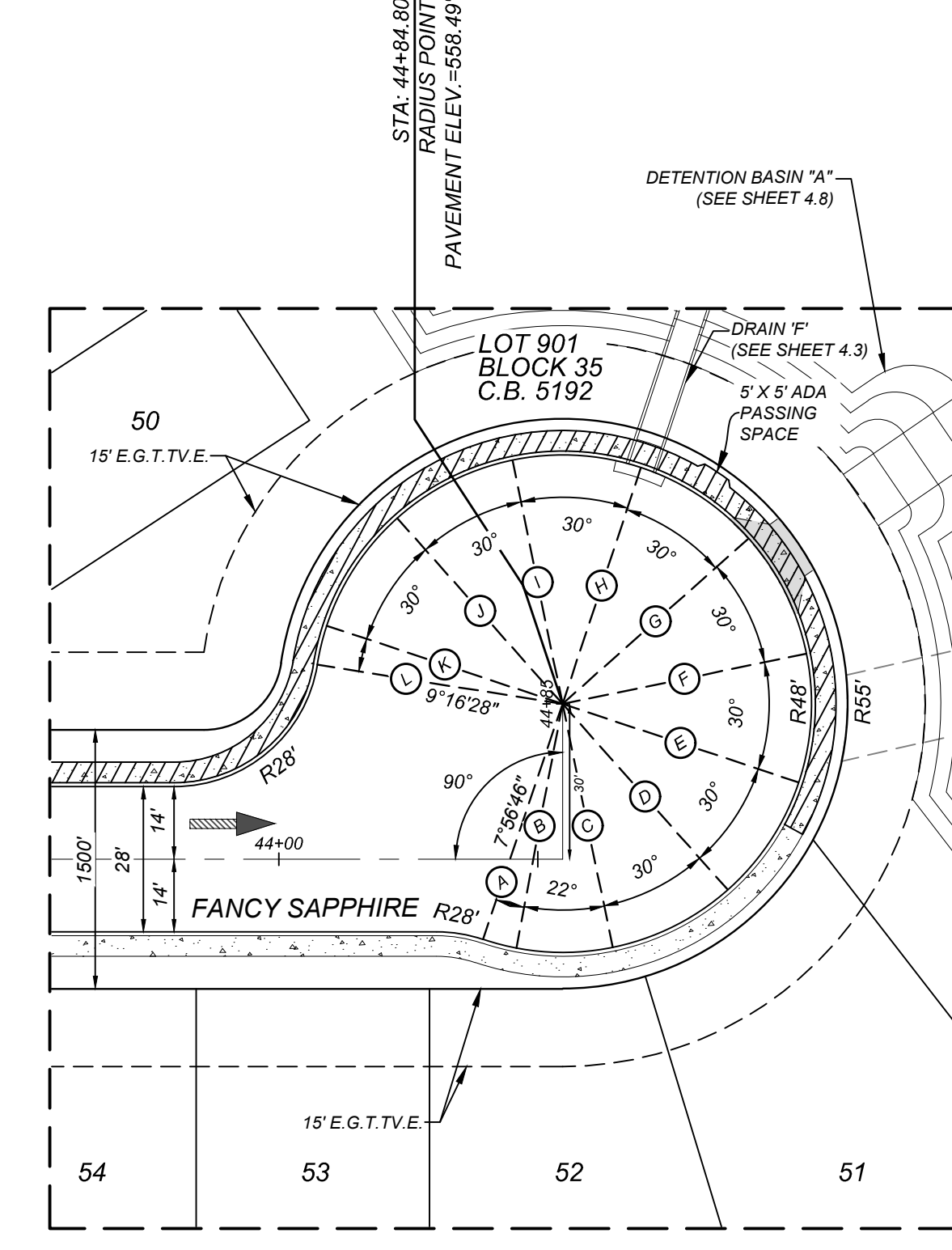
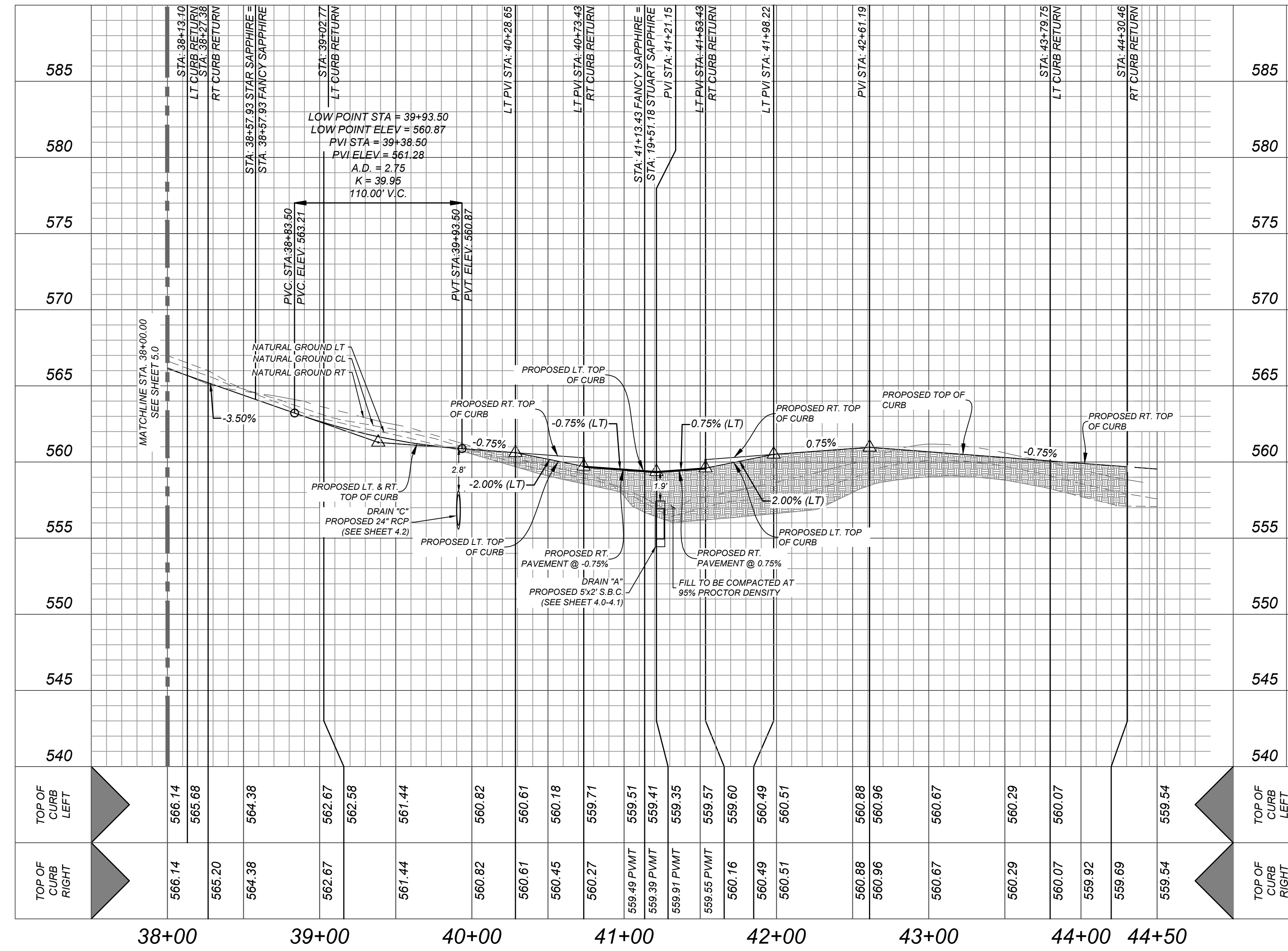
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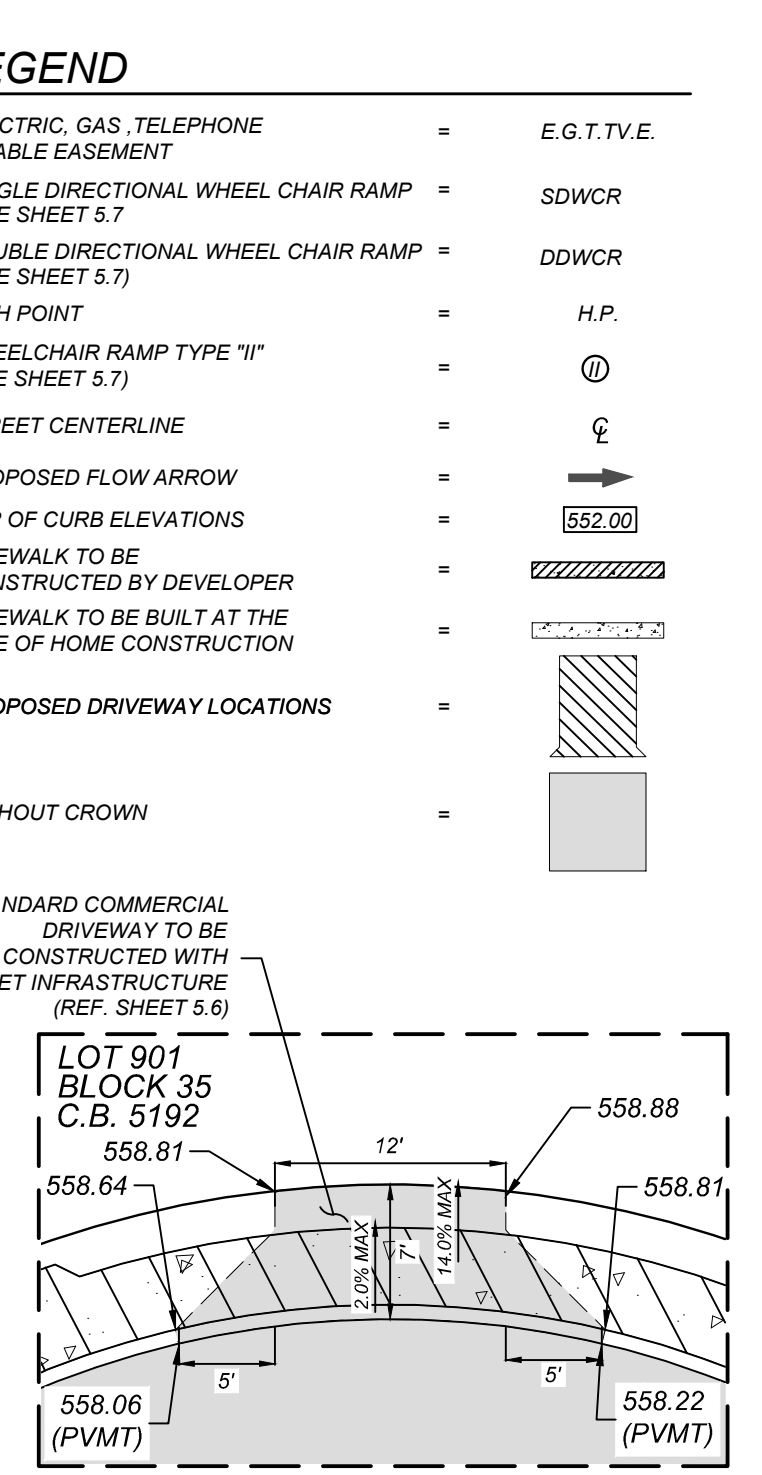
STAR SAPPHIRE & FANCY SAPPHIRE
STA: 38+00.00 - END

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

KNUCKLESAC ELEVATIONS	
STATION	TOP OF CURB ELEVATION
A	565.25
B	565.07
C	564.77
D	564.35
E	563.82
F	563.20



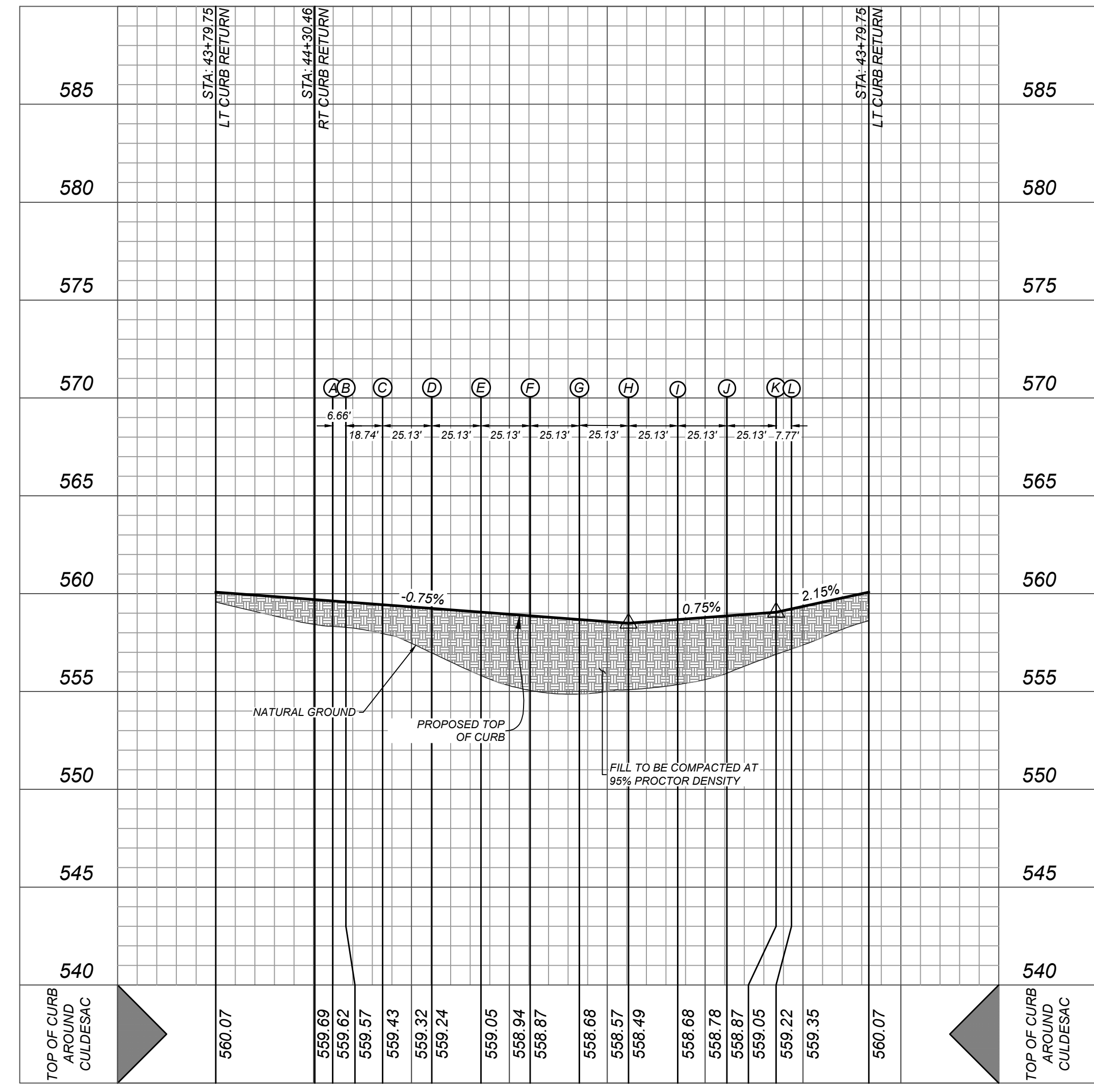
DETAIL "B"
SCALE: 1" = 30'



DETAIL "C"
SCALE: 1" = 10'

CUL-DE-SAC DETAIL

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



LEGEND

- ELECTRIC, GAS, TELEPHONE AND CABLE EASEMENT = E.G.T.V.E.
- SINGLE DIRECTIONAL WHEEL CHAIR RAMP = SDWCR
- DOUBLE DIRECTIONAL WHEEL CHAIR RAMP = DDWCR
- HIGH POINT = H.P.
- WHEELCHAIR RAMP TYPE "1" = SEE SHEET 5.7
- STREET CENTERLINE =
- PROPOSED FLOW ARROW =
- TOP OF CURB ELEVATIONS =
- SIDEWALK TO BE CONSTRUCTED BY DEVELOPER =
- SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION =
- PROPOSED DRIVEWAY LOCATIONS =
- WASHOUT CROWN =
- STANDARD COMMERCIAL DRIVEWAY TO BE CONSTRUCTED WITH STREET INFRASTRUCTURE (SEE SHEET 5.6) =

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
STAR SAPPHIRE & FANCY SAPPHIRE PLAN & PROFILE

PLAT NO.
22-11800456

JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

Date: Jun 25, 2024, 6:33pm User ID: orodriguez
File: N:\314\39\1\3\Design\City Streets\313143913_Stuart.dwg

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.

BEXAR COUNTY R.O.W. NOTE

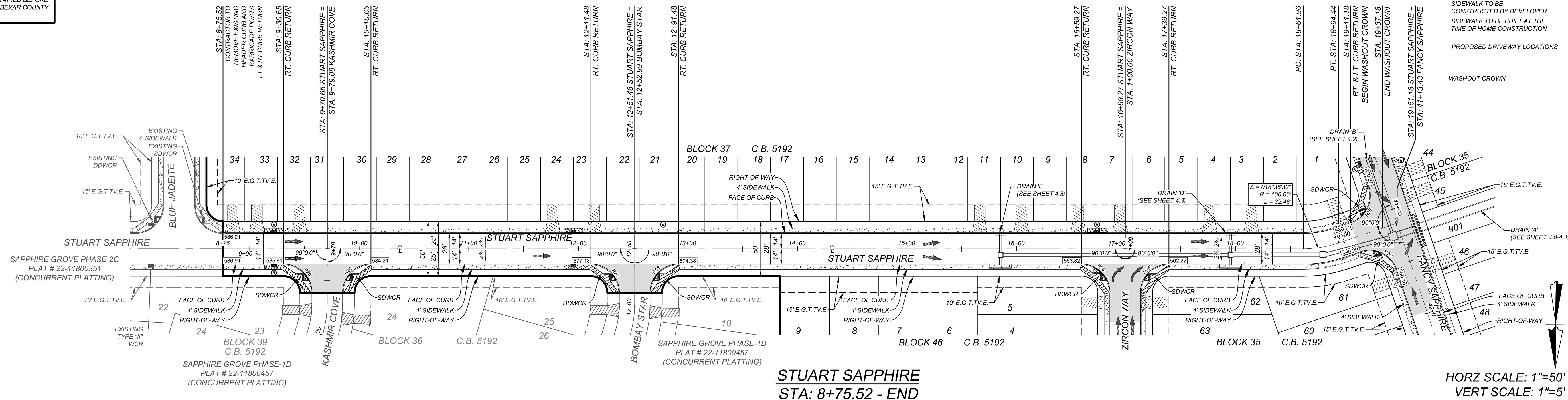
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CAUTION:

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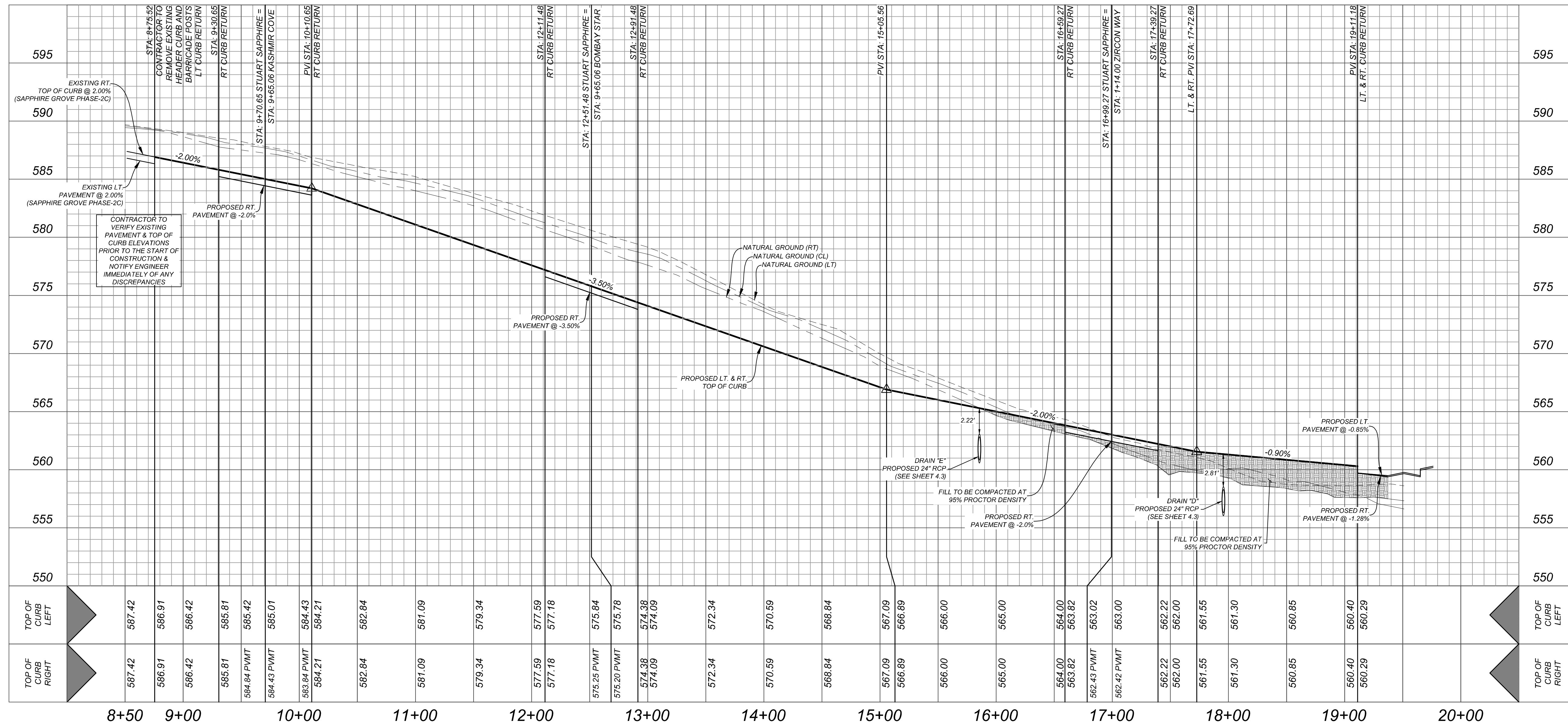
LEGEND

ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT	=	E.G.T.V.E.
SINGLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7)	=	SDWCR
DOUBLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7)	=	DDWCR
HIGH POINT	=	H.P.
WHEELCHAIR RAMP TYPE "1" (SEE SHEET 5.7)	=	①
STREET CENTERLINE	=	⊕
PROPOSED FLOW ARROW	=	→
TOP OF CURB ELEVATIONS	=	552.00
SIDEWALK TO BE CONSTRUCTED BY DEVELOPER	=	4'-0" SIDEWALK
SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION	=	4'-0" SIDEWALK
PROPOSED DRIVEWAY LOCATIONS	=	DRIVEWAY
WASHOUT CROWN	=	WASHOUT CROWN



STUART SAPPHIRE
STA: 8+75.52 - END

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



SAPPHIRE GROVE PHASE 2D BEXAR COUNTY, TX STUART SAPPHIRE PLAN & PROFILE

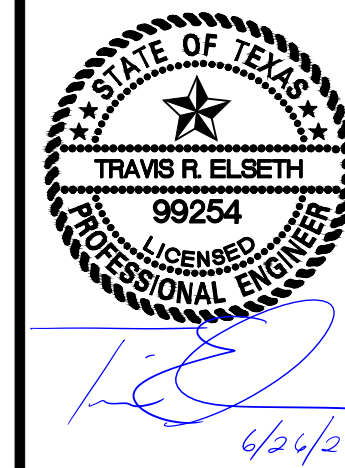
PLAT NO.
22-1800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

5.2

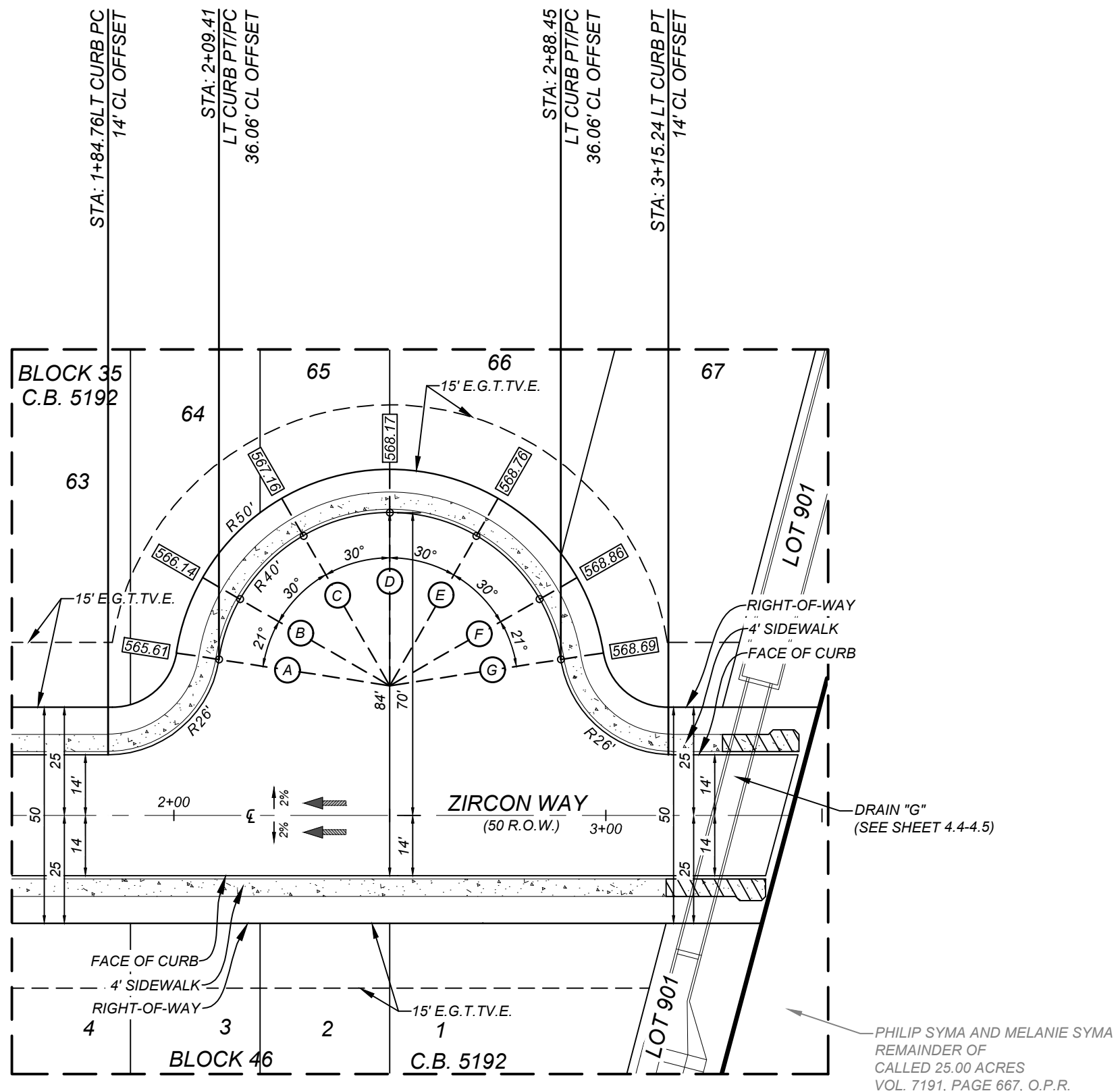
K&W
ENGINEERS + SURVEYING
Phone # (210) 878-8444 • Fax # (210) 878-8441
TBES Firm # 9513 • TBES Firm # 1012300

ISSUE DATE

REVISIONS



KNUCKLESAC ELEVATIONS	
STATION	TOP OF CURB ELEVATION
A	566.19
B	566.72
C	567.74
D	568.75
E	569.34
F	569.44
G	569.27

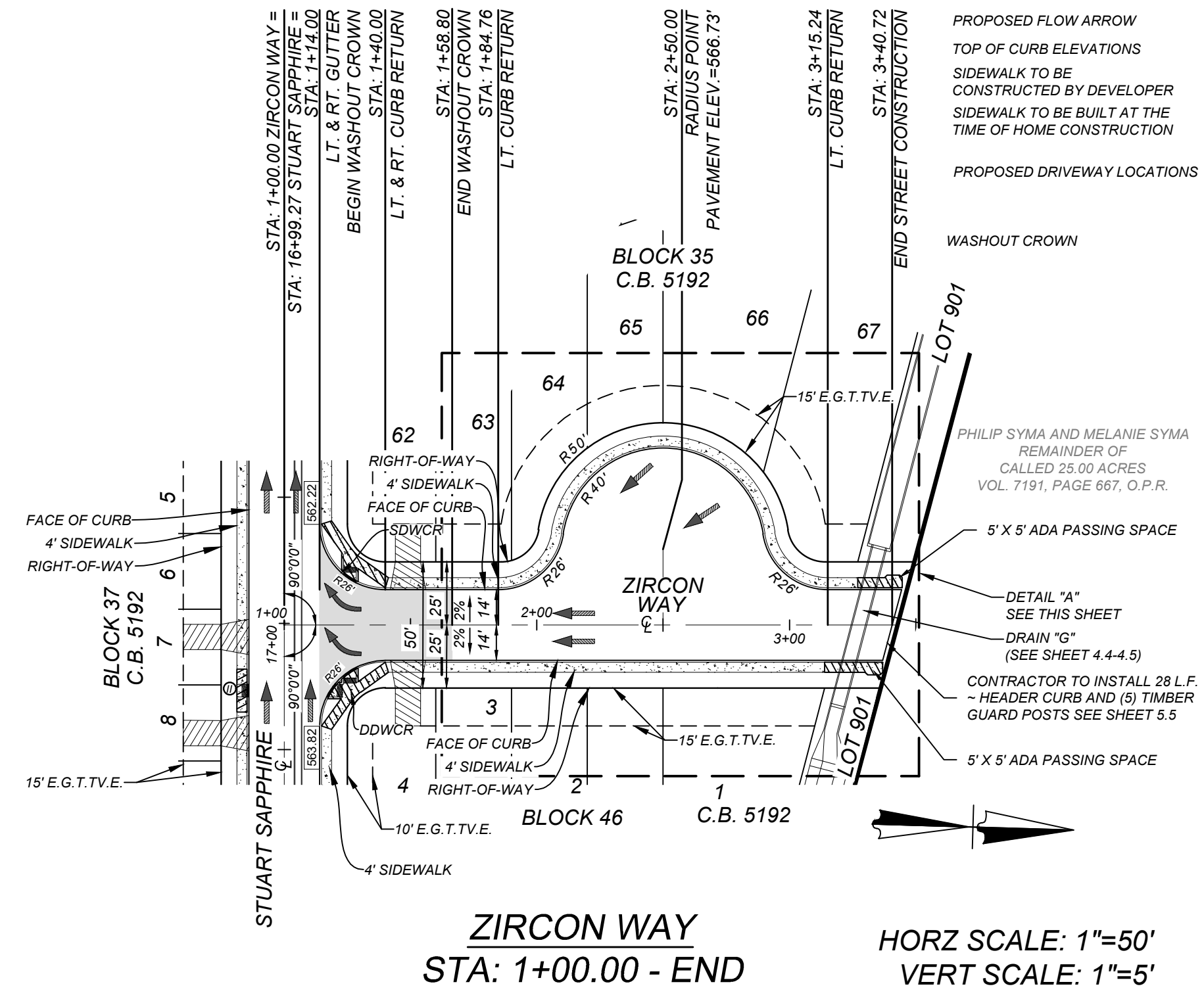


DETAIL "A"
SCALE: 1" = 30'

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 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.

- LEGEND**
- ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT = E.G.T.V.E.
 - SINGLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7) = SDWCR
 - DOUBLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7) = DDWCR
 - HIGH POINT = H.P.
 - WHEEL CHAIR RAMP TYPE "1" (SEE SHEET 5.7) =
 - STREET CENTERLINE =
 - PROPOSED FLOW ARROW =
 - TOP OF CURB ELEVATIONS =
 - SIDEWALK TO BE CONSTRUCTED BY DEVELOPER =
 - SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION =
 - PROPOSED DRIVEWAY LOCATIONS =
 - WASHOUT CROWN =



585	STA: 1+00.00 ZIRCON WAY = STA: 16+99.27 STUART SAPPHIRE = LT & RT GUTTER STA: 1+14.00 LT & RT CURB RETURN PVI STA: 1+58.90 STA: 1+84.76 LT CURB RETURN PVI STA: 2+07.67 STA: 3+15.24 LT CURB RETURN STA: 3+40.72 LT CURB RETURN	585
580	HIGH POINT STA = 3+20.31 HIGH POINT ELEV = 569.22 PVI STA = 2+75.31 PVI ELEV = 568.99 A.D. = -4.50 K = 20.00 90.00' V.C.	580
575	PVC STA 2+30.31 PVC ELEV 566.74 PVT STA 3+20.31 PVT ELEV 569.22	575
570	CONTRACTOR TO GRADE TO NATURAL GROUND AT 6:1 SLOPE	570
565	PROPOSED LT & RT TOP OF CURB 0.75% RT PVT 2.25% (RT) 3.50% 3.50% (LT) 2.00% LT PVT DRAIN "A" PROPOSED 30" RCP (SEE SHEET 4.0)	565
560	FILL TO BE COMPACTED AT 95% PROCTOR DENSITY NATURAL GROUND RT NATURAL GROUND CL NATURAL GROUND LT DRAIN "G" PROPOSED 5'x2' PRECAST S.B.C. (SEE SHEET 4.5)	560
555		555
550		550
545		545
540		540
TOP OF CURB LEFT	562.98 563.24 563.59 563.90 565.34 565.61 567.63 569.01 569.29	TOP OF CURB LEFT
TOP OF CURB RIGHT	562.42 563.48 563.70 563.90 565.34 565.61 567.63 569.01 569.29	TOP OF CURB RIGHT
1+00	2+00	3+00 3+50

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
ZIRCON WAY PLAN & PROFILE

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

K&W
ENGINEERS & SURVEYING
PHILIP SYMA AND MELANIE SYMA
REMAINDER OF
CALLED 25.00 ACRES
VOL. 7191, PAGE 667, O.P.R.
5' X 5' ADA PASSING SPACE
DETAIL "A"
SEE THIS SHEET
DRAIN "G"
(SEE SHEET 4.4-4.5)
CONTRACTOR TO INSTALL 28 L.F.
- HEADER CURB AND (5) TIMBER
GUARD POSTS SEE SHEET 5.5
5' X 5' ADA PASSING SPACE
LOT 901
END STREET CONSTRUCTION
STATION 3+40.72
STATION 3+15.24
PAVEMENT ELEV = 566.73
RADIUS POINT
STA: 2+50.00
STA: 1+84.76
END WASHOUT CROWN
STA: 1+40.00
STA: 16+99.27 STUART SAPPHIRE = LT & RT GUTTER
STA: 1+14.00
STA: 1+40.00
STA: 1+58.90
STA: 1+84.76
STA: 3+15.24
STA: 3+40.72
LOT 901
BLOCK 35 C.B. 5192
BLOCK 36 C.B. 5192
BLOCK 37 C.B. 5192
BLOCK 46 C.B. 5192
ZIRCON WAY
STATION 1+00.00 - END
HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5'

STATE OF TEXAS
TRAVIS R. ELSETH
99254
LICENSED PROFESSIONAL ENGINEER
6/7/24

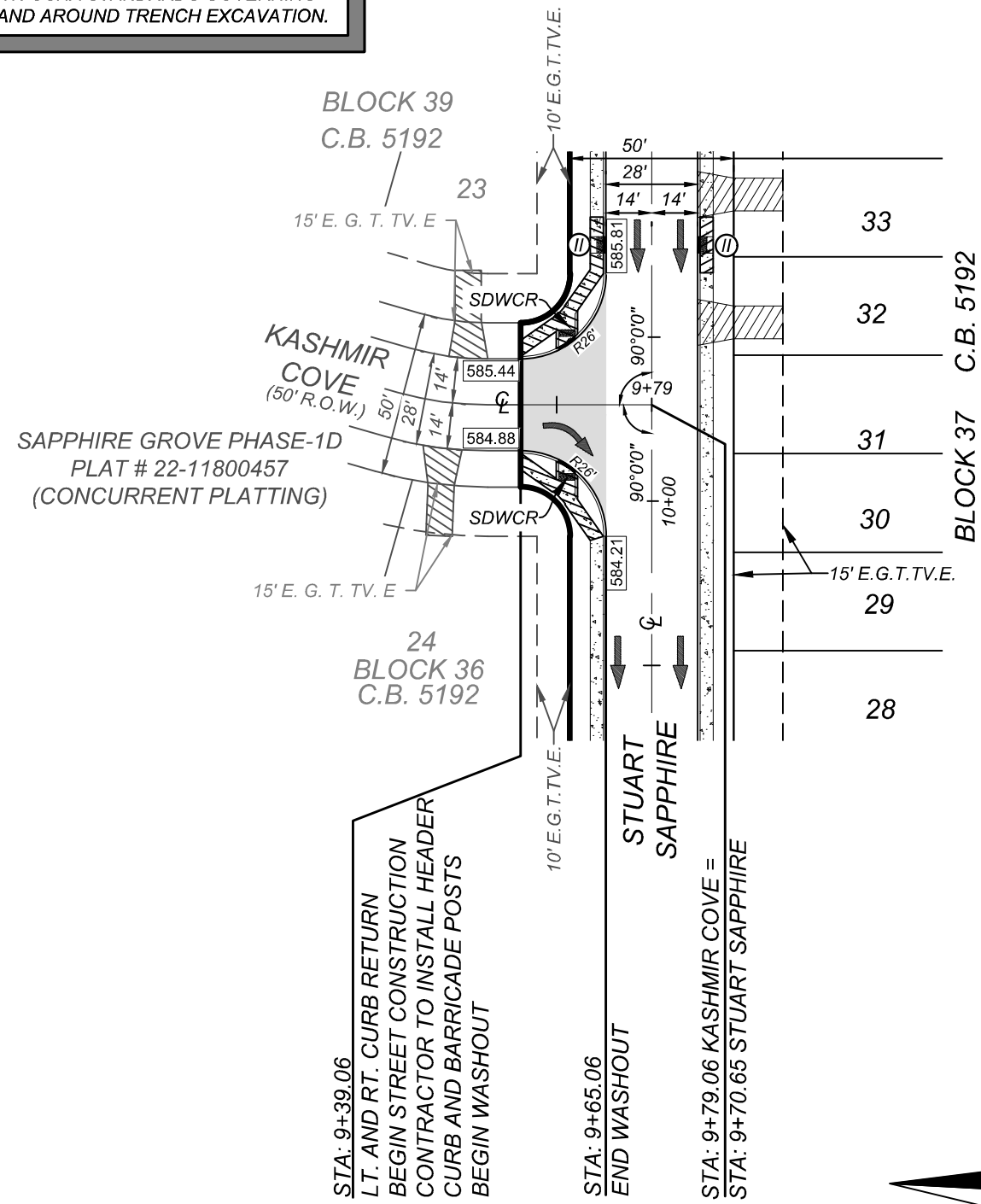
TRENCH EXCAVATION SAFETY PROTECTION

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.

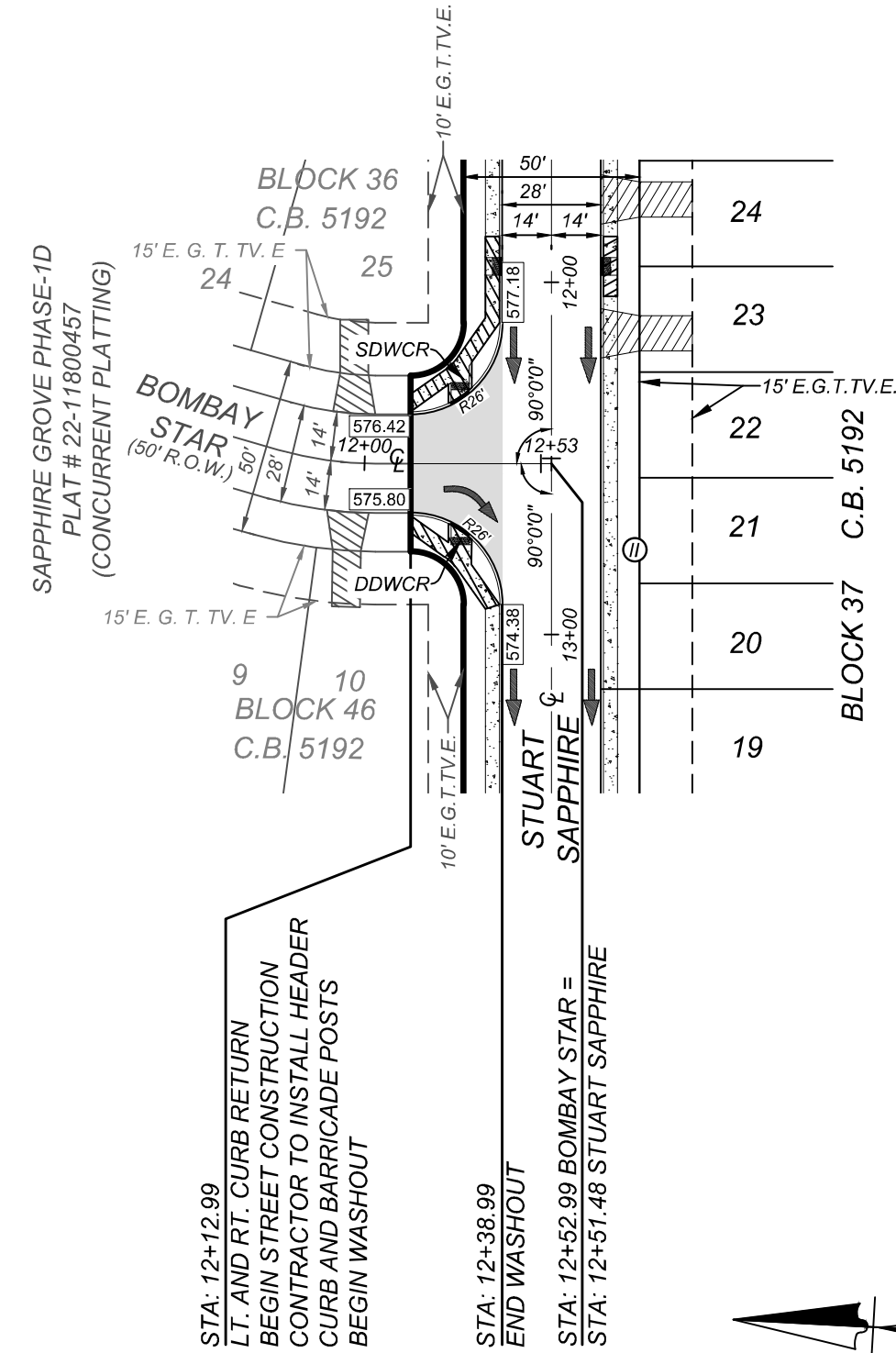
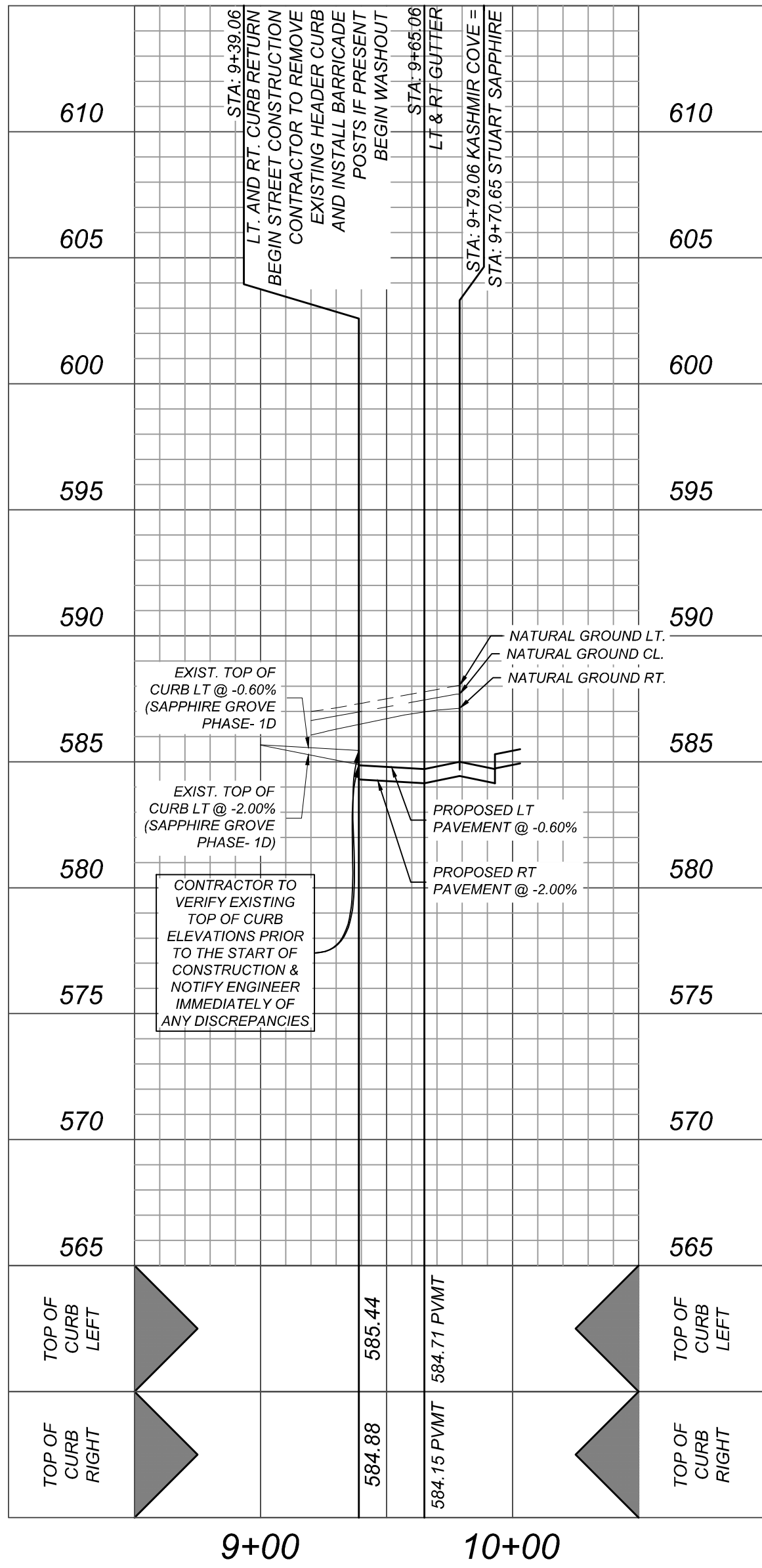
BEXAR COUNTY R.O.W. NOTE

A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.

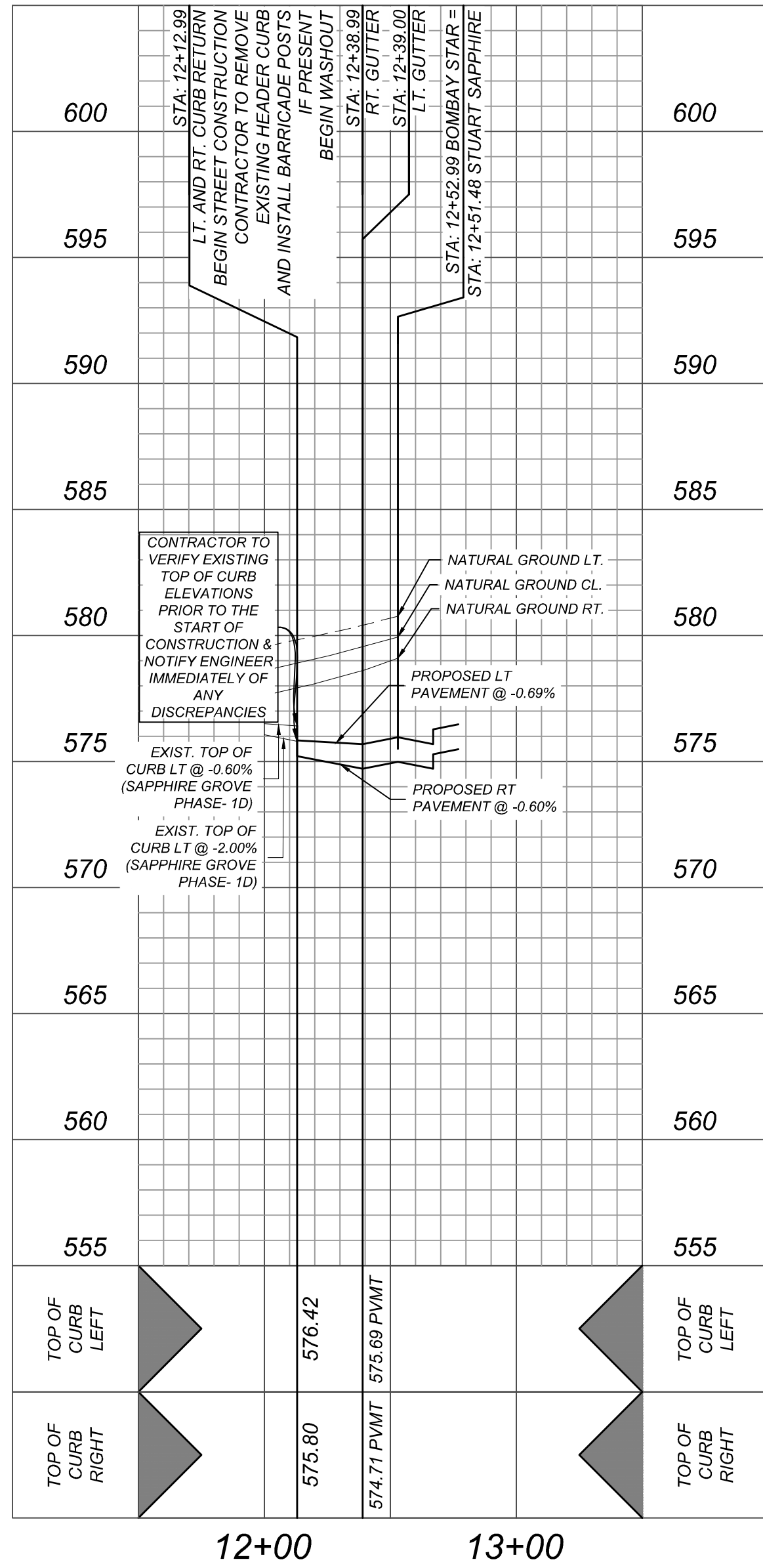
CAUTION:
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS 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.



KASHMIR COVE
STA: 9+39.06 - END
HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



BOMBAY STAR
STA: 12+12.99 - END
HORZ SCALE: 1"=50'
VERT SCALE: 1"=5'



LEGEND

ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT	=	E.G.T.V.E.
SINGLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7)	=	SDWCR
DOUBLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7)	=	DDWCR
HIGH POINT	=	H.P.
WHEEL CHAIR RAMP TYPE "1" (SEE SHEET 5.7)	=	⊙
STREET CENTERLINE	=	℄
PROPOSED FLOW ARROW	=	→
TOP OF CURB ELEVATIONS	=	562.00
SIDEWALK TO BE CONSTRUCTED BY DEVELOPER	=	▨
SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION	=	▨
PROPOSED DRIVEWAY LOCATIONS	=	▨
WASHOUT CROWN	=	▨

SAPPHIRE GROVE PHASE 2D

BEXAR COUNTY, TX

KASHMIR COVE & BOMBAY STAR PLAN & PROFILE

PLAT NO.
22-11800456

JOB NO. 314-39-13

DATE: FEBRUARY 2024

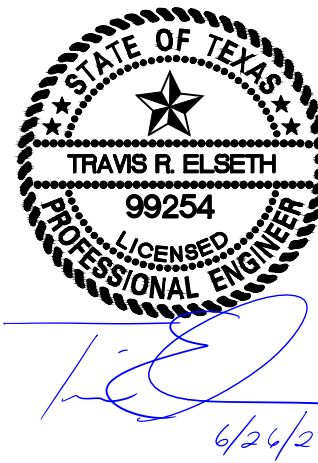
DRAWN/AD CHECKED/SC

SHEET NUMBER:

5.4

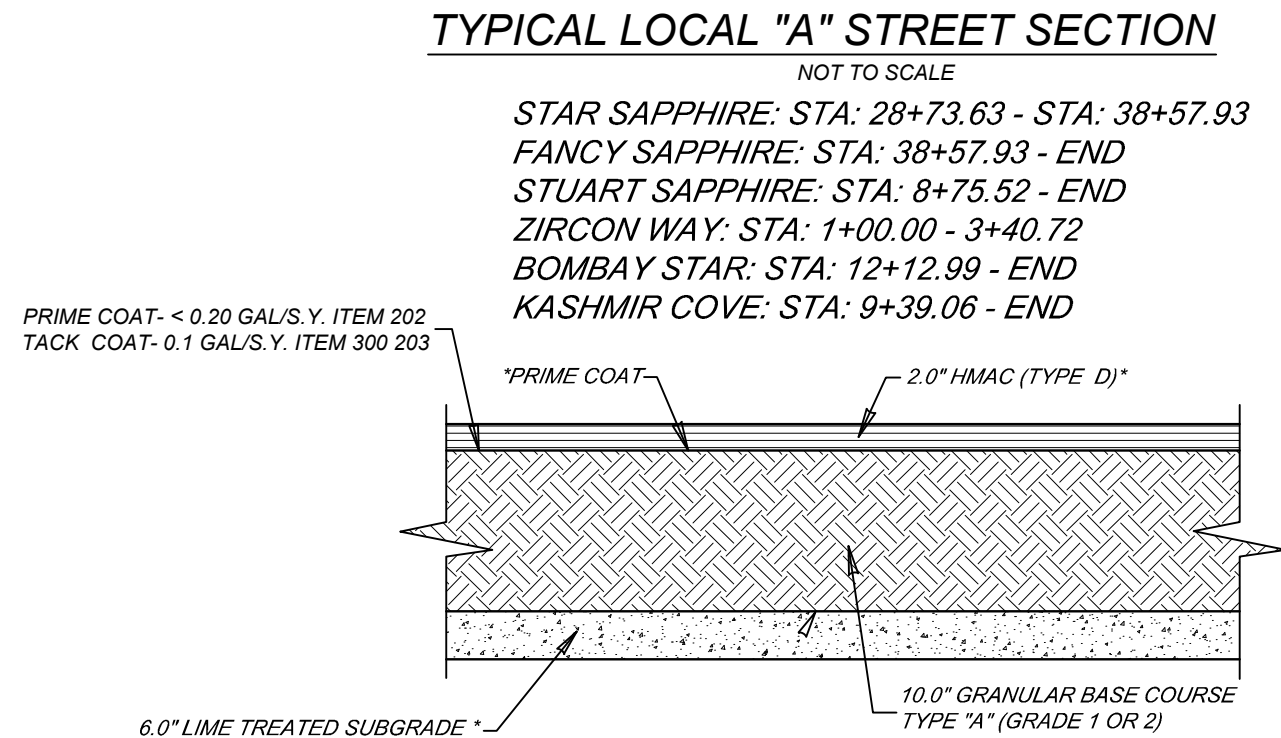
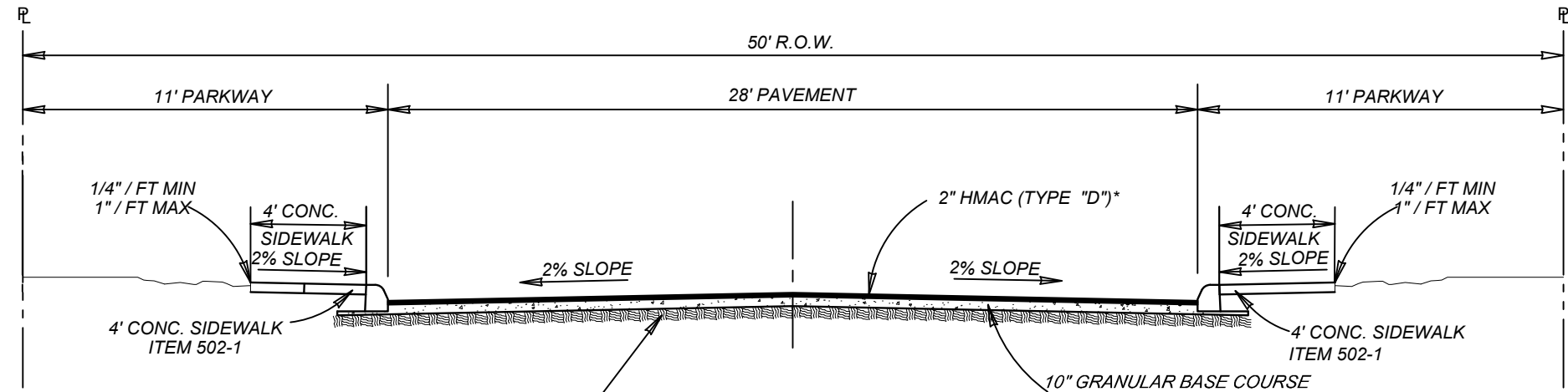
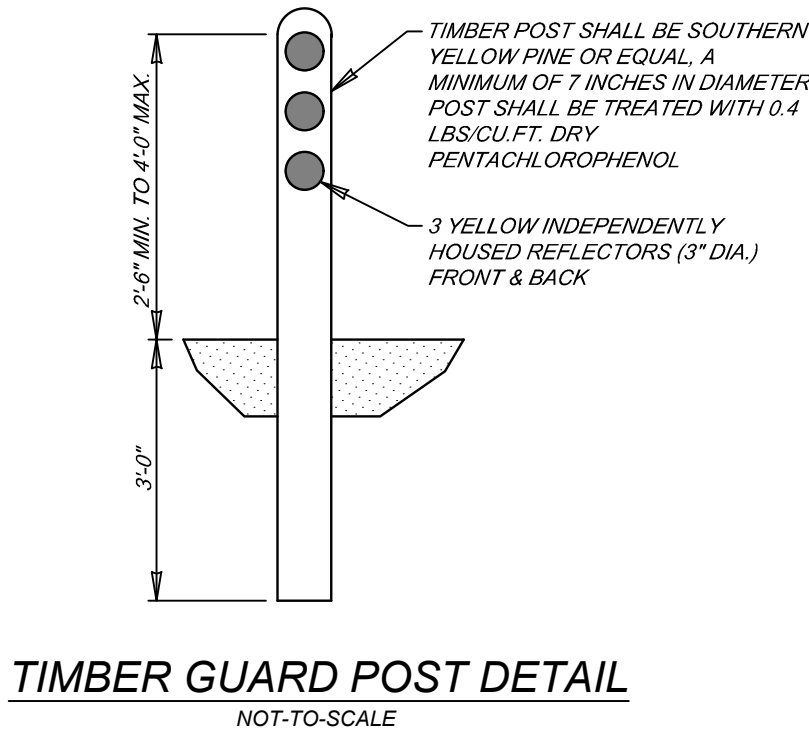
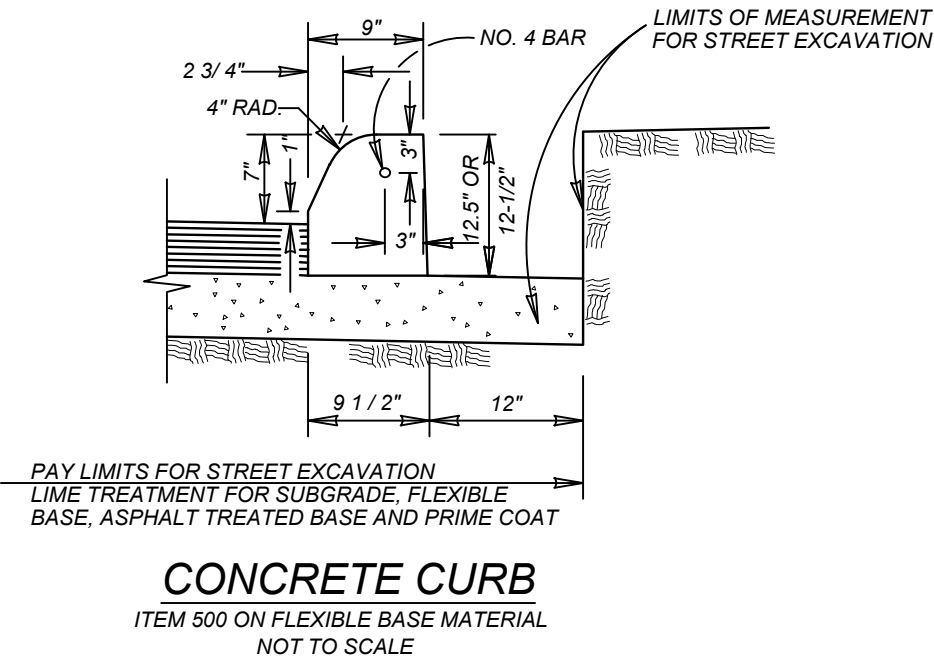
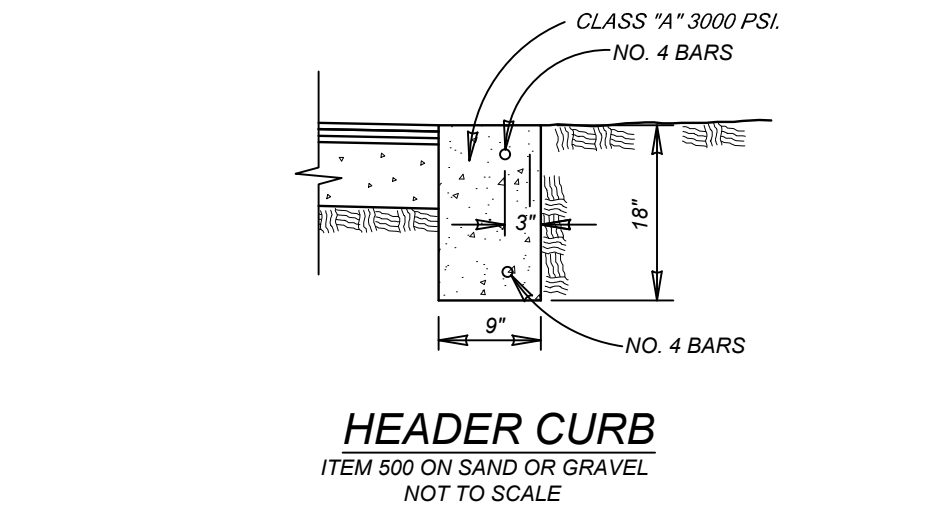
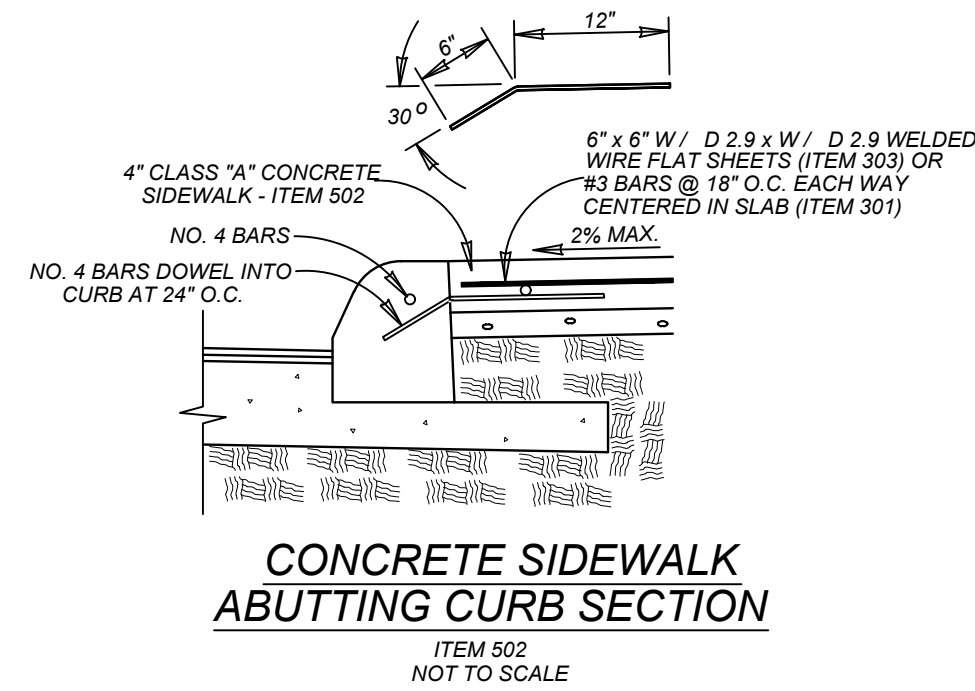
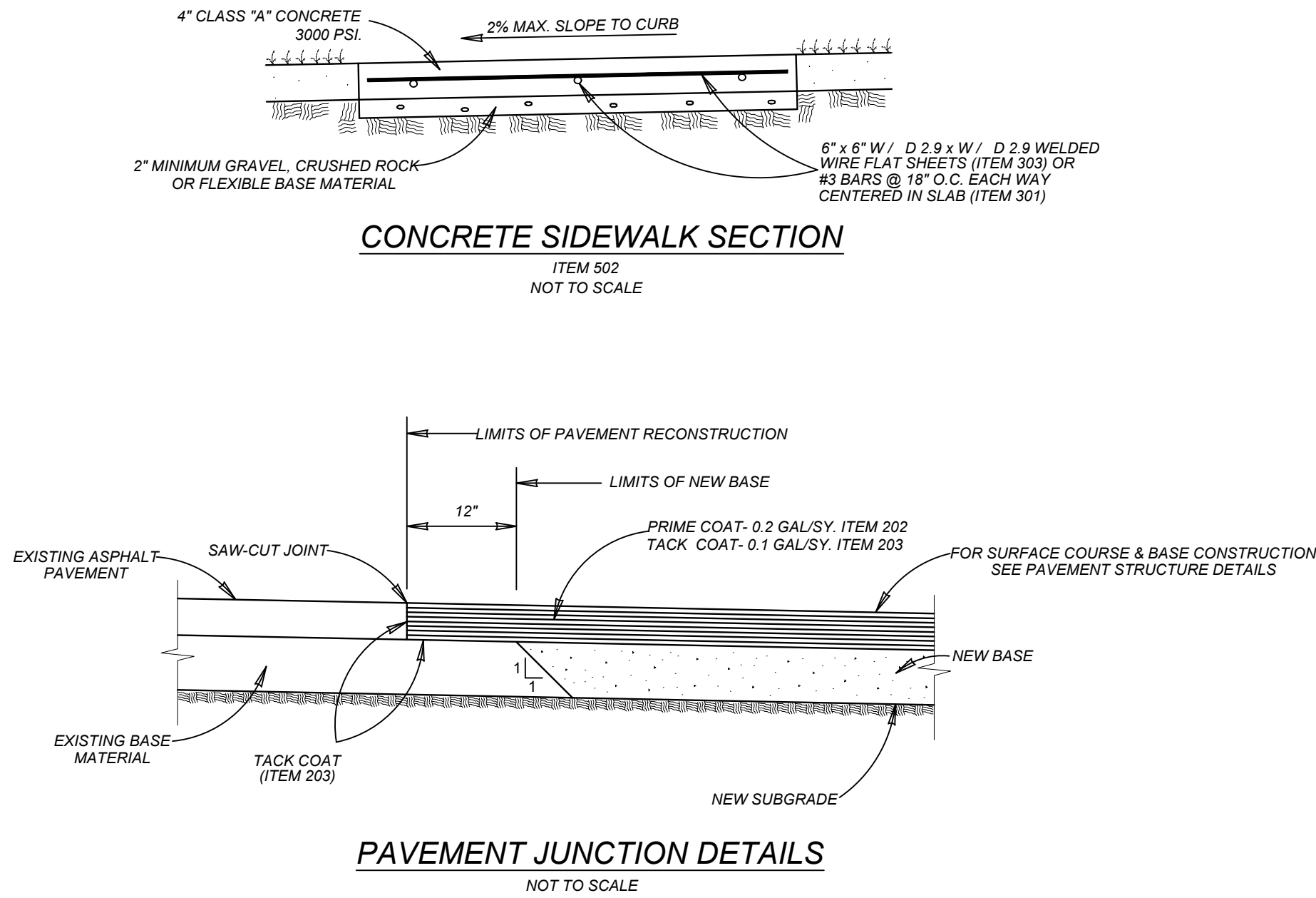
ISSUE DATE

REVISIONS



K&E
ENGINEERS + SURVEYING
10000 N. Loop West, Suite 1000
Houston, Texas 77040
Phone #: (281) 878-8444 • Fax #: (281) 878-8441
TBE#S Firm #: 10122300

Date: Jun 06, 2024, 2:34pm User ID: zfrueb1
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FLEXIBLE PAVEMENT SYSTEM
Pavement Section
2.0" HMAc (Type "D")
10.0" GRANULAR BASE COURSE (Type "A" GRADE 1 OR 2)
6.0" LIME TREATED SUBGRADE (35 LBS/SY)
Total: 18.0"
Structural No: 2.28
C.B.R = 4.0

TTL PROJECT NO. 00200902069.01 JANUARY 24, 2022

- NOTES:
1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY TTL, INC. OF SAN ANTONIO, REPORT NO. 00200902069.01 DATED JANUARY 24, 2022
 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. THERE SHALL BE NO SUBSTITUTION OF LIME.

*NOTE: LIME OR CEMENT CONTENT OF 6.0 PERCENT OF THE DRY WEIGHT OF THE SOIL TO BE TREATED SHOULD BE USED. SUBGRADE TREATMENT SHALL BE APPLIED AT A RATE OF 35 LBS/SY, AS PER GEOTECHNICAL REPORT BY TTL, INC.

*NOTE: ASPHALT PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION, ITEMS NO. 200, 202, 203, 204, AND 205 (PRIME COAT APPLIED AT A RATE NOT TO EXCEED 0.20 GAL/SY, AND TACK COAT APPLIED AT A RATE NOT TO EXCEED 0.10 GAL/SY).

*NOTE: GEOTECHNICAL ENGINEER TO BE ON SITE TO MAKE FINAL SUBGRADE DETERMINATION. CHANGES TO THIS PAVEMENT DESIGN SHALL BE SUBMITTED TO COSA-OSD & BEXAR COUNTY PRIOR TO PLACEMENT OF BASE MATERIAL.

GENERAL NOTES:

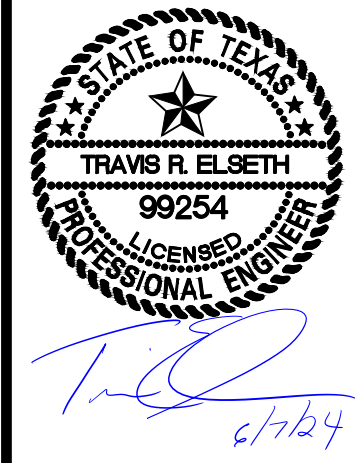
1. THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.
- FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:
- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING.
 - MINIMUM PASSING 1/4" SIEVE 100
 - MINIMUM PASSING 3/8" SIEVE 85
 - MINIMUM PASSING NO. 4 SIEVE 60
 - 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.
 - COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED).
 - CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
 - VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.

NOTES:

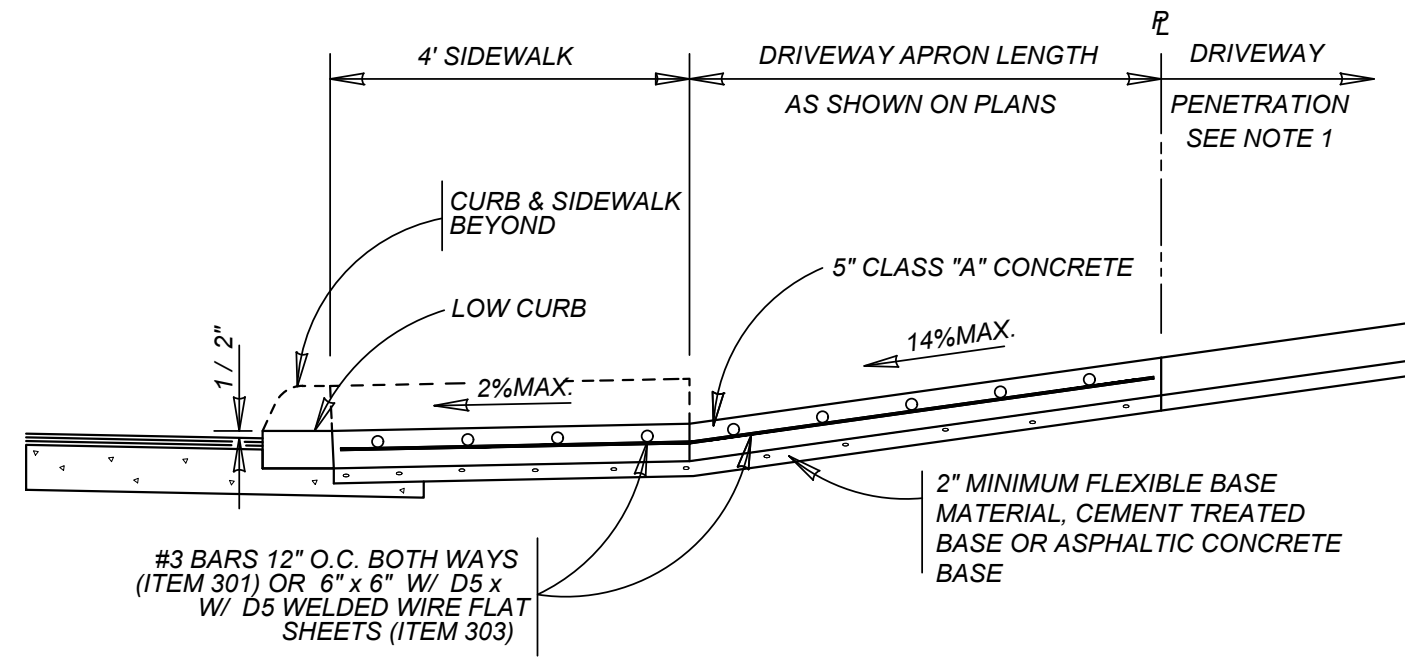
- ANY FILL USED TO RAISE THE SUBGRADE:
- SHOULD NOT CONTAIN ANY DELETERIOUS MATERIAL.
 - SHOULD HAVE A CBR VALUE OF 4.0 OR GREATER
 - SHOULD NOT HAVE GRAVELS LARGER THAN 3 INCH IN SIZE
 - SHOULD HAVE THE "LIME PERCENTAGE/APPLICATION RATE" RE-RUN PRIOR TO INSTALLATION
 - PI SHOULD BE LESS THAN 20

ISSUE DATE

REVISIONS

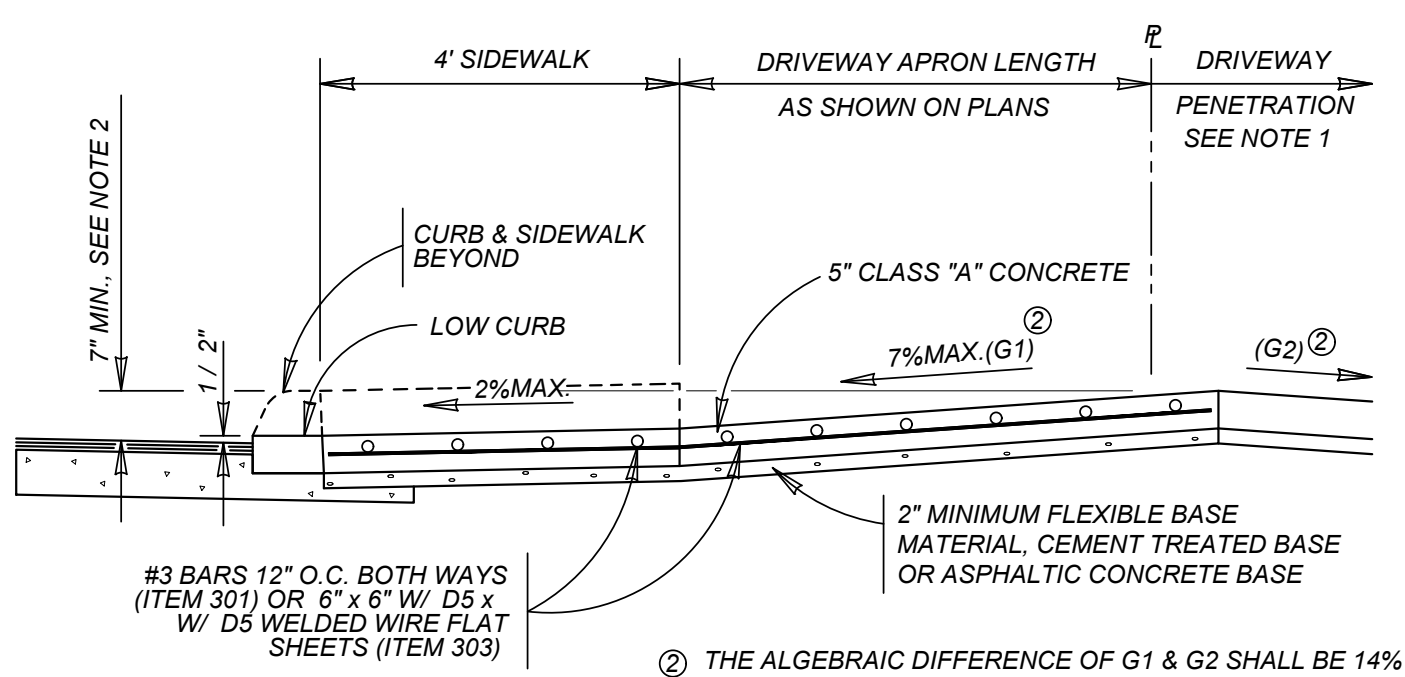


Date: May 02, 2024, 8:59am User ID: alex.creddy
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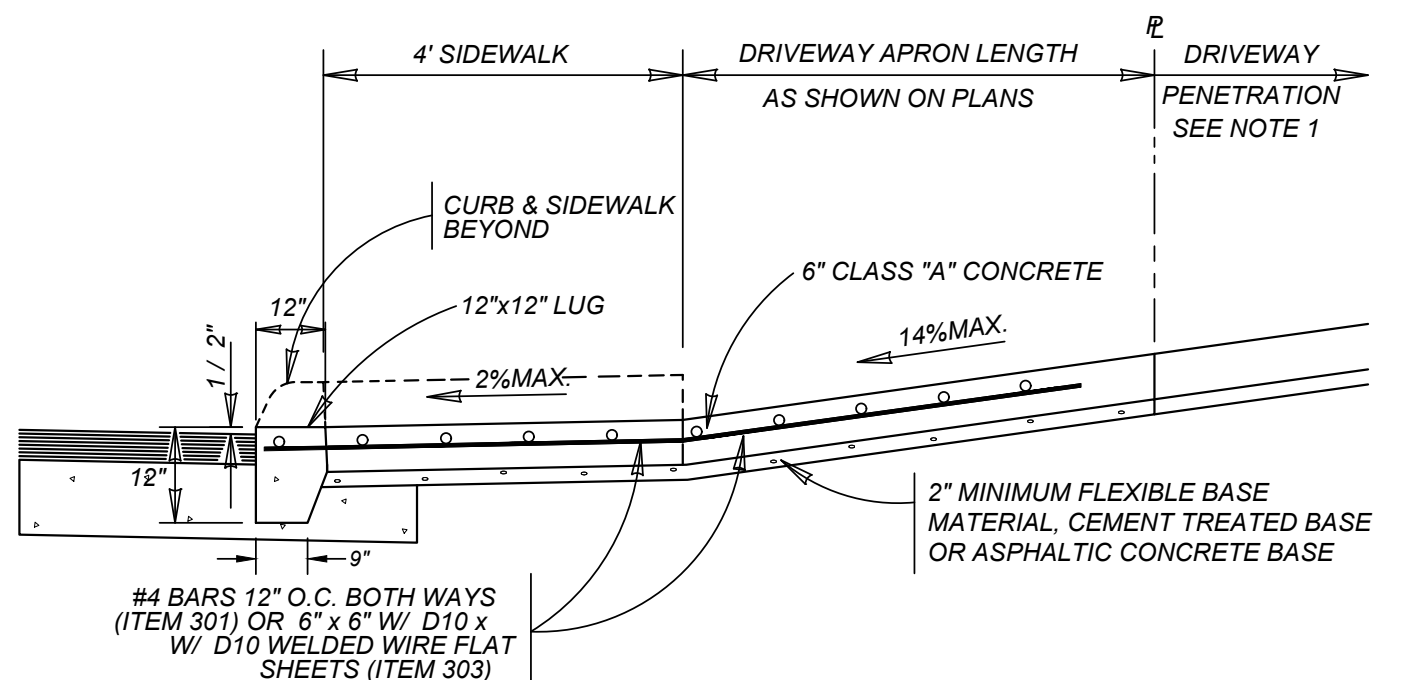
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.1



TYPICAL RESIDENTIAL DRIVEWAY SECTION

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



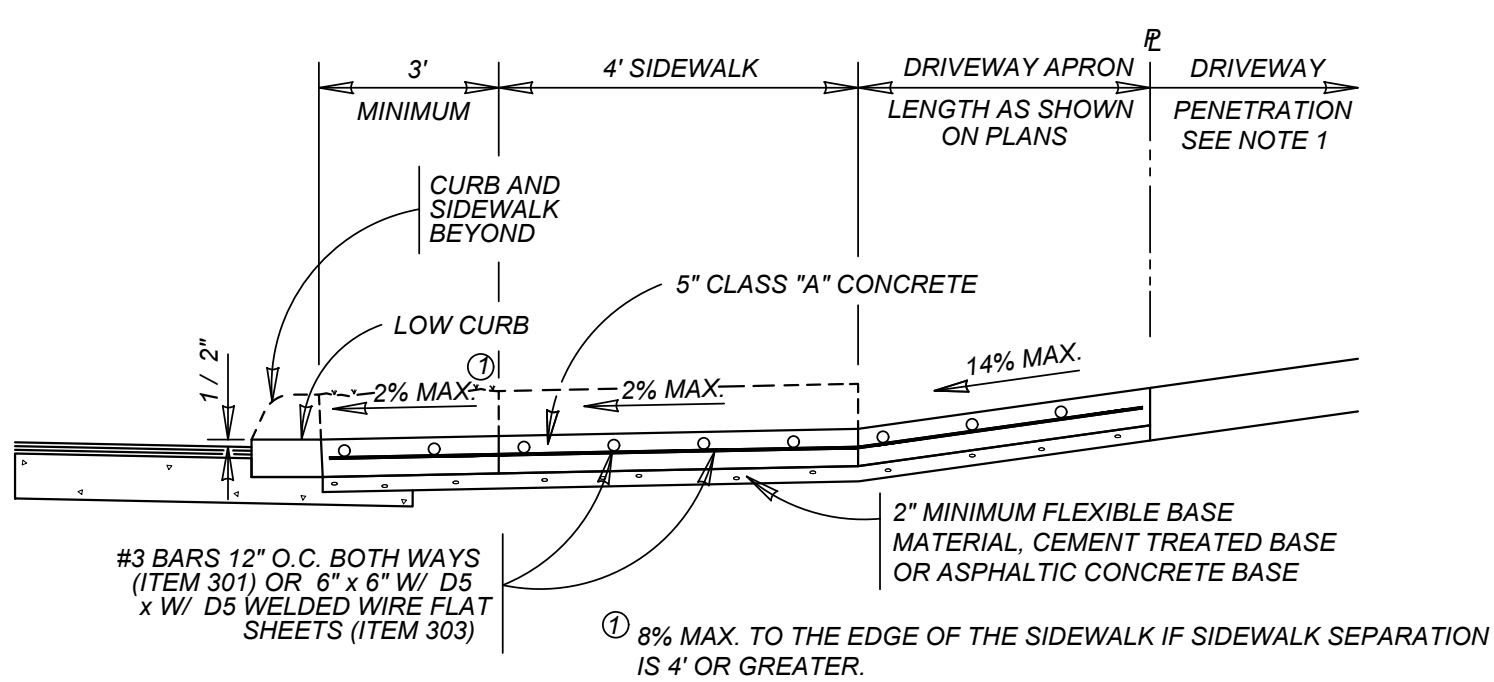
TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.2

CONCRETE DRIVEWAY NOTES

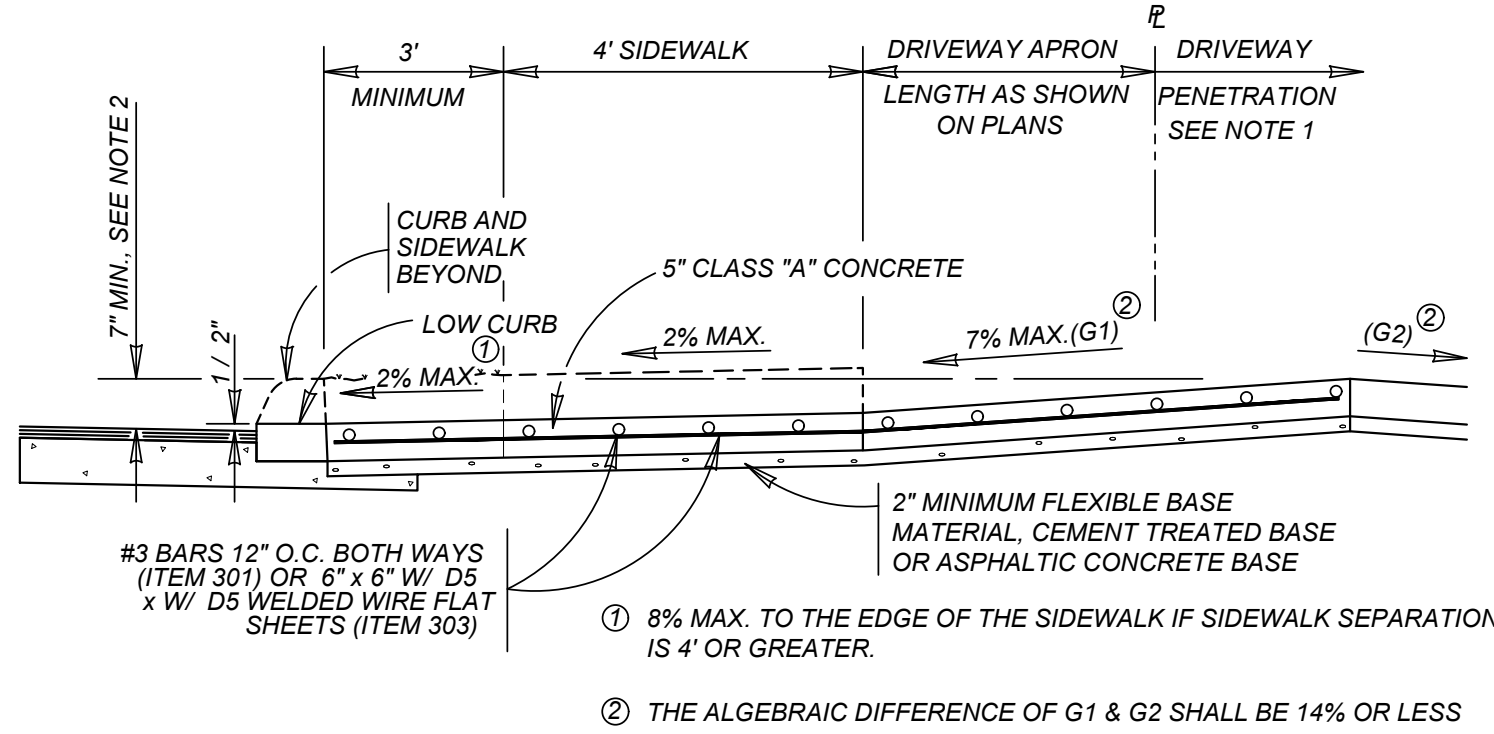
- DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 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
- 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.
- 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'
- 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.
- 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.
- 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.
- 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.
- 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%.
- SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



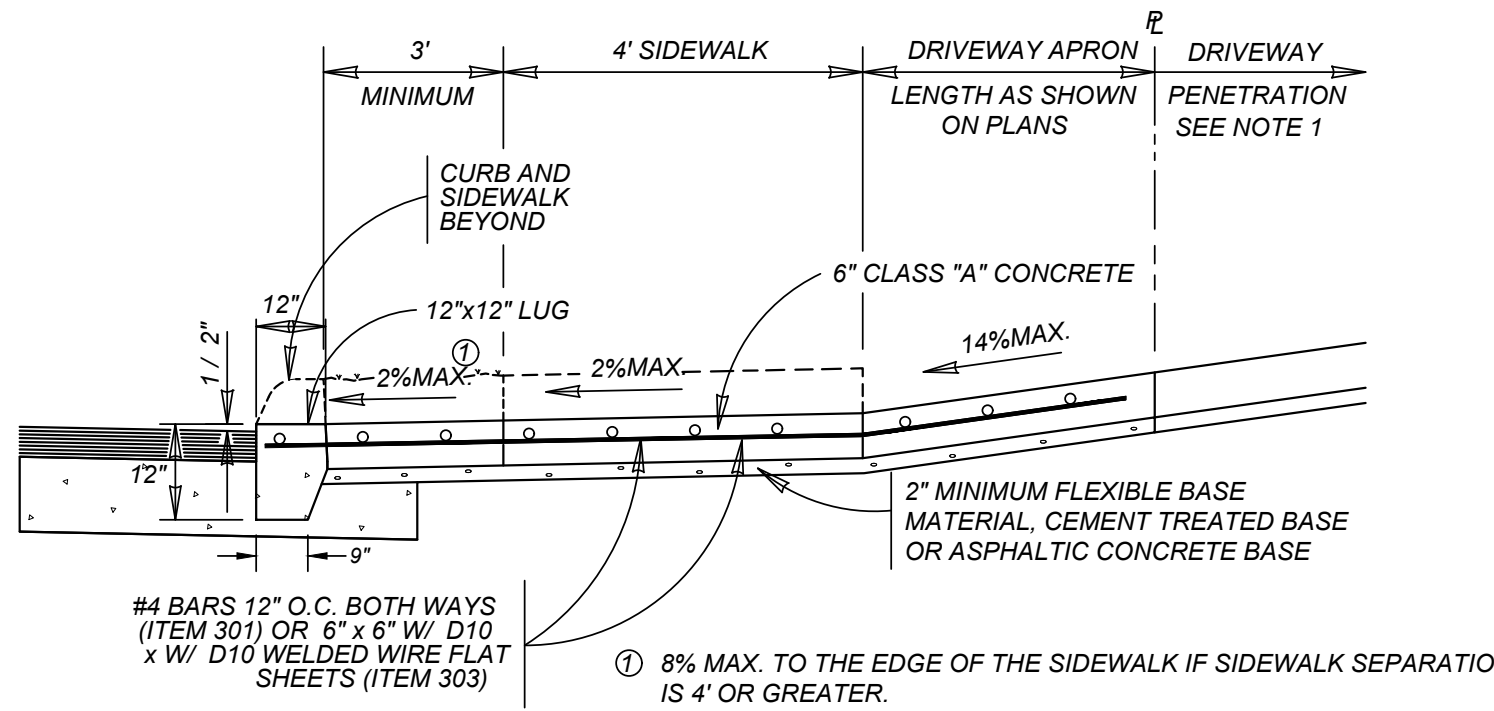
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1



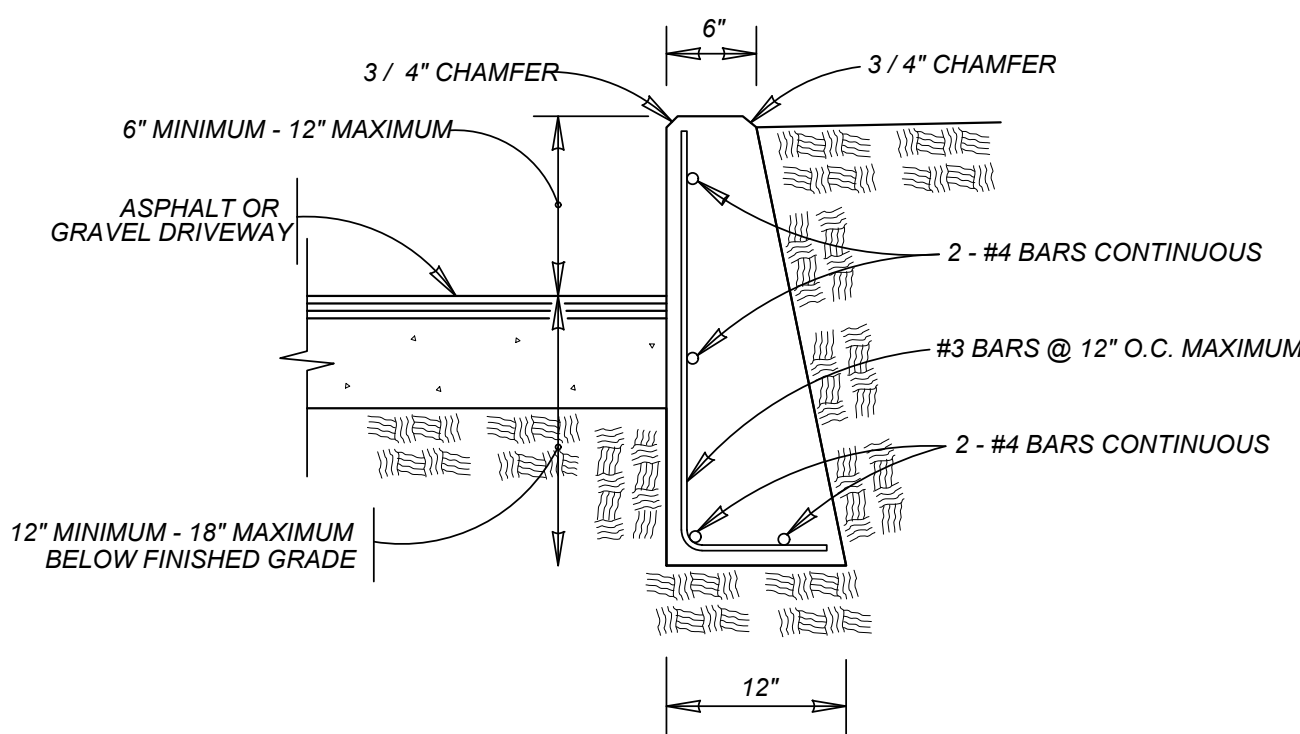
TYPICAL RESIDENTIAL DRIVEWAY SECTION

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



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2

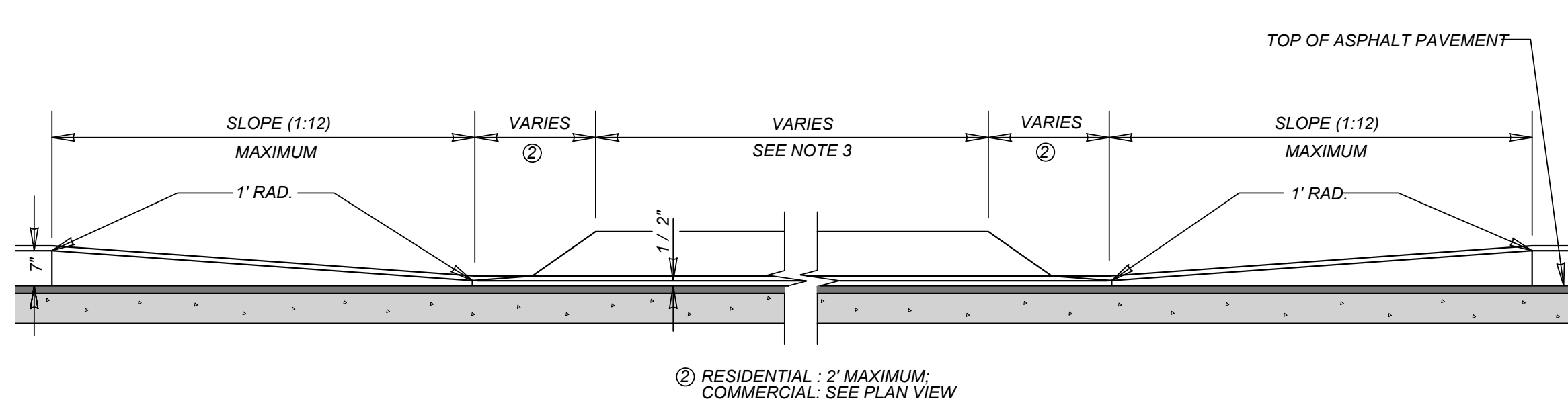


NOTE:

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

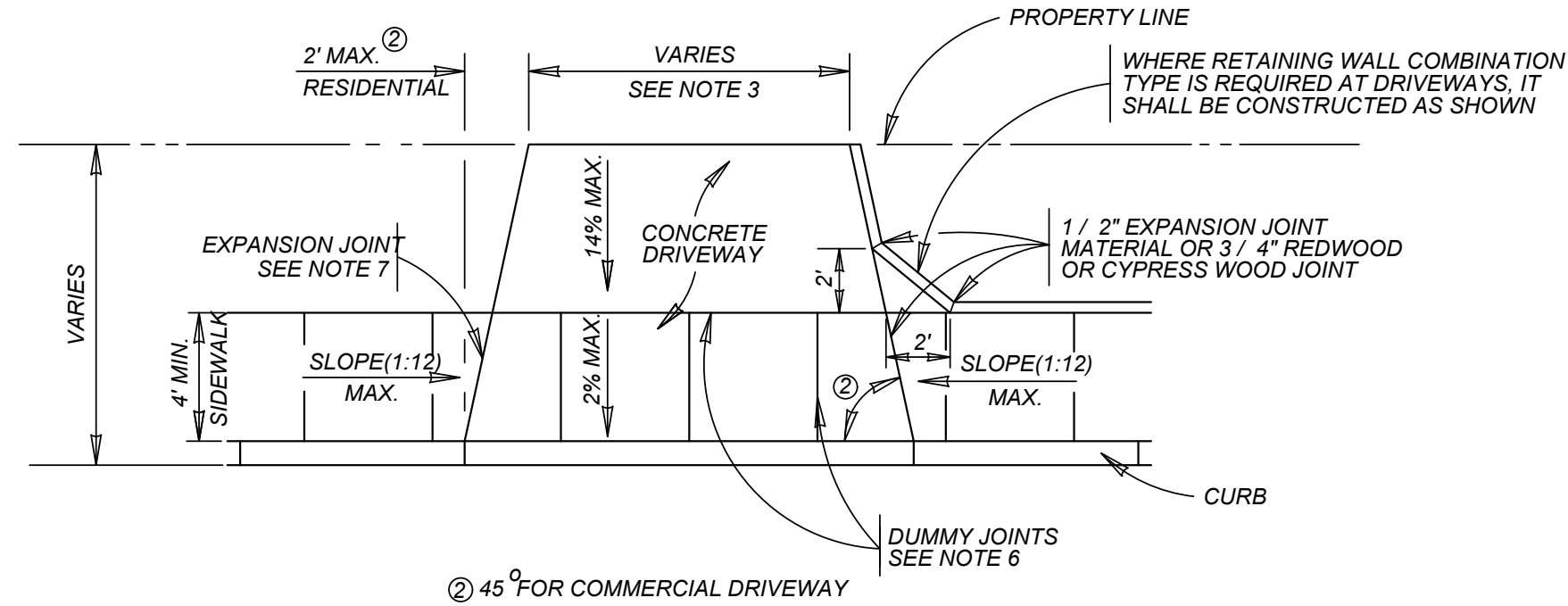
DRIVEWAY - CONCRETE RETAINING WALL

ON COMPACTED SUBGRADE
ITEM 307.1



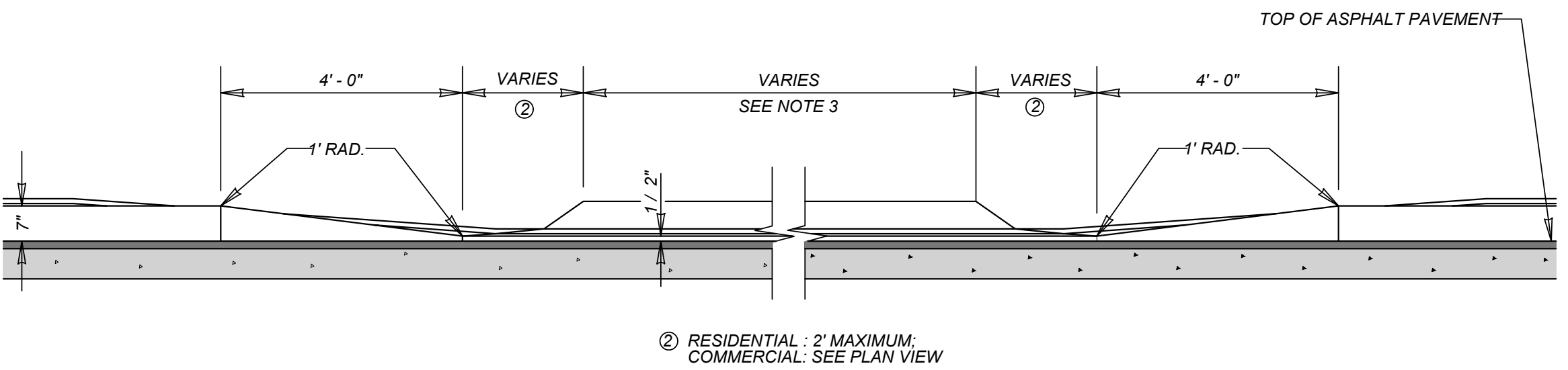
CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB



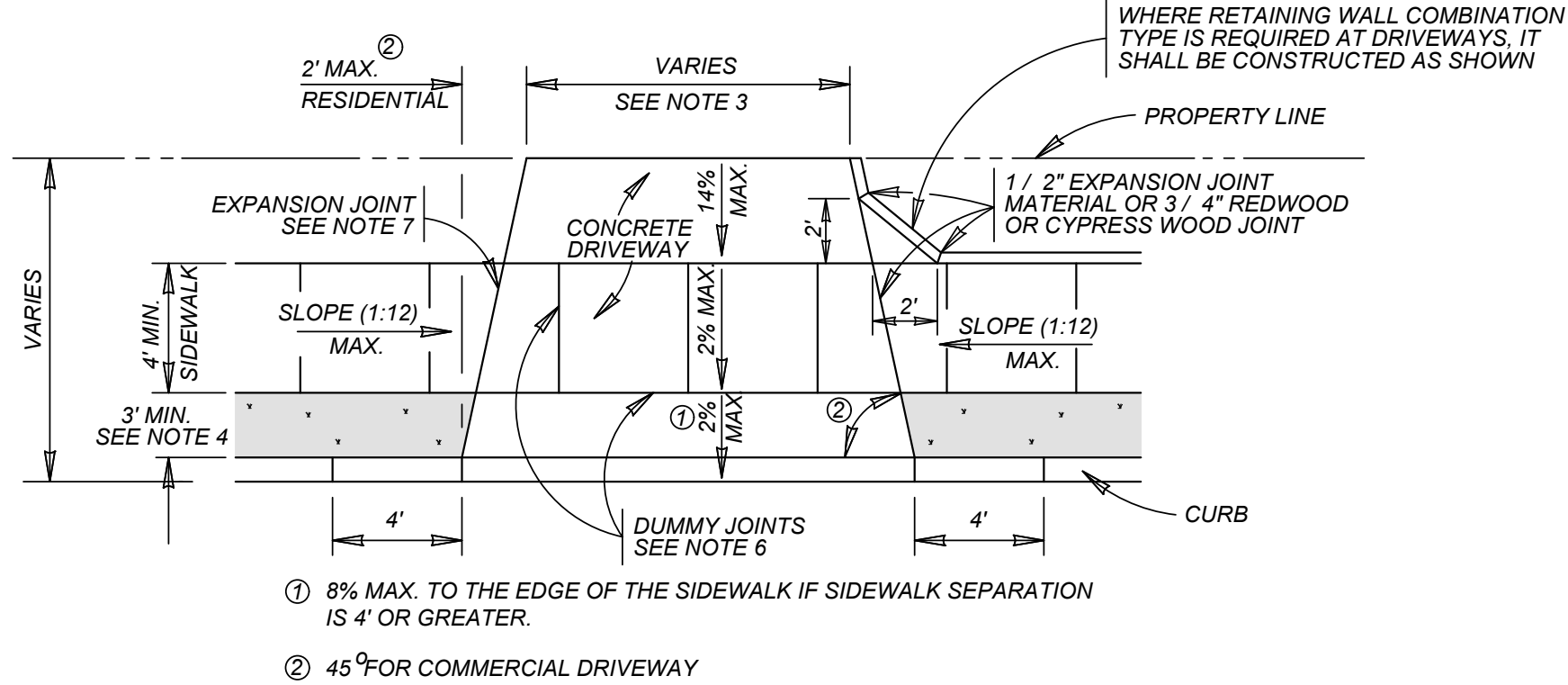
TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK ABUTTING CURB



CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB



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.

PLAT NO.
22-11800456

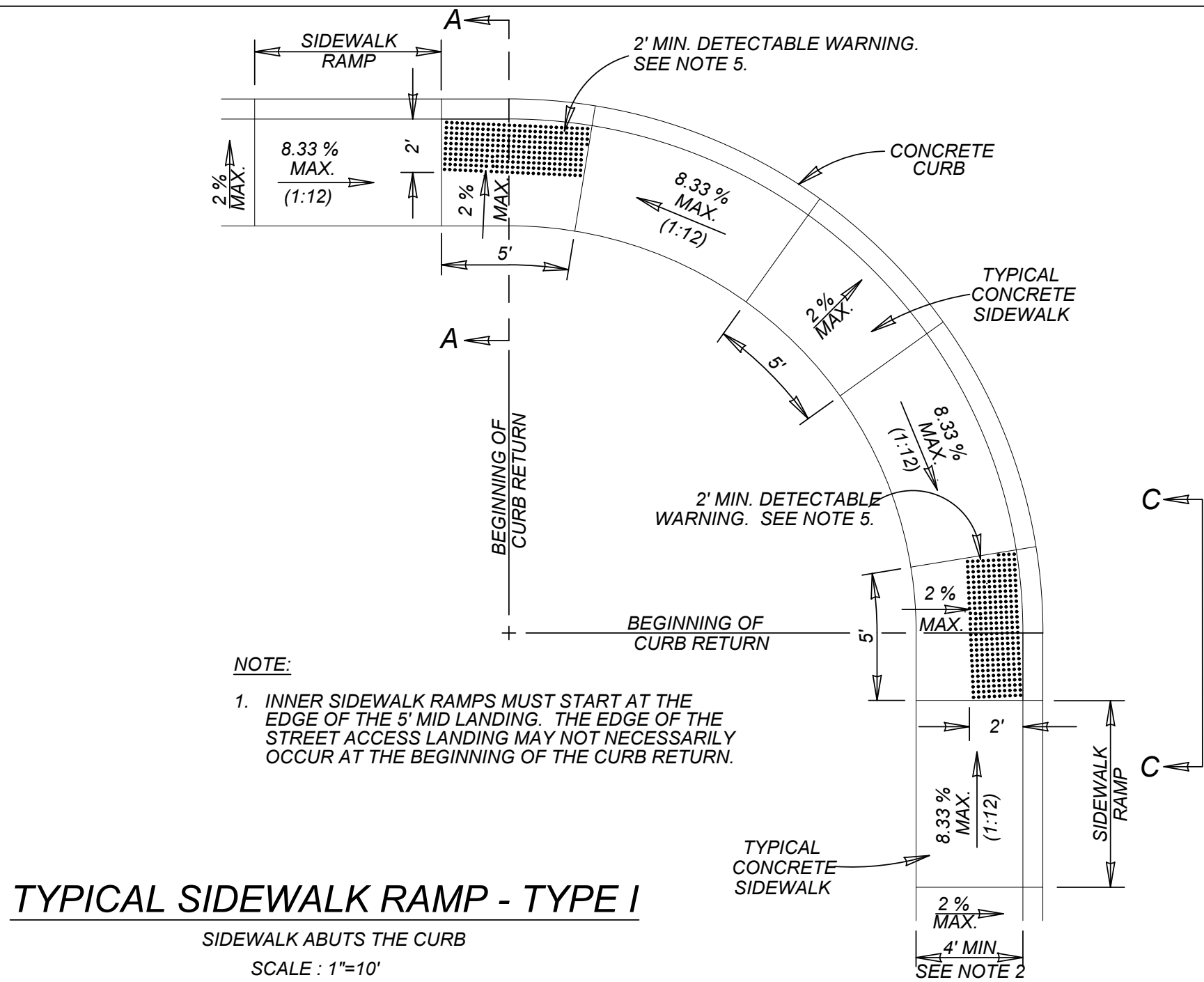
JOB NO. 314-39-13

DATE: FEBRUARY 2024

DRAWN/AD CHECKED/SC

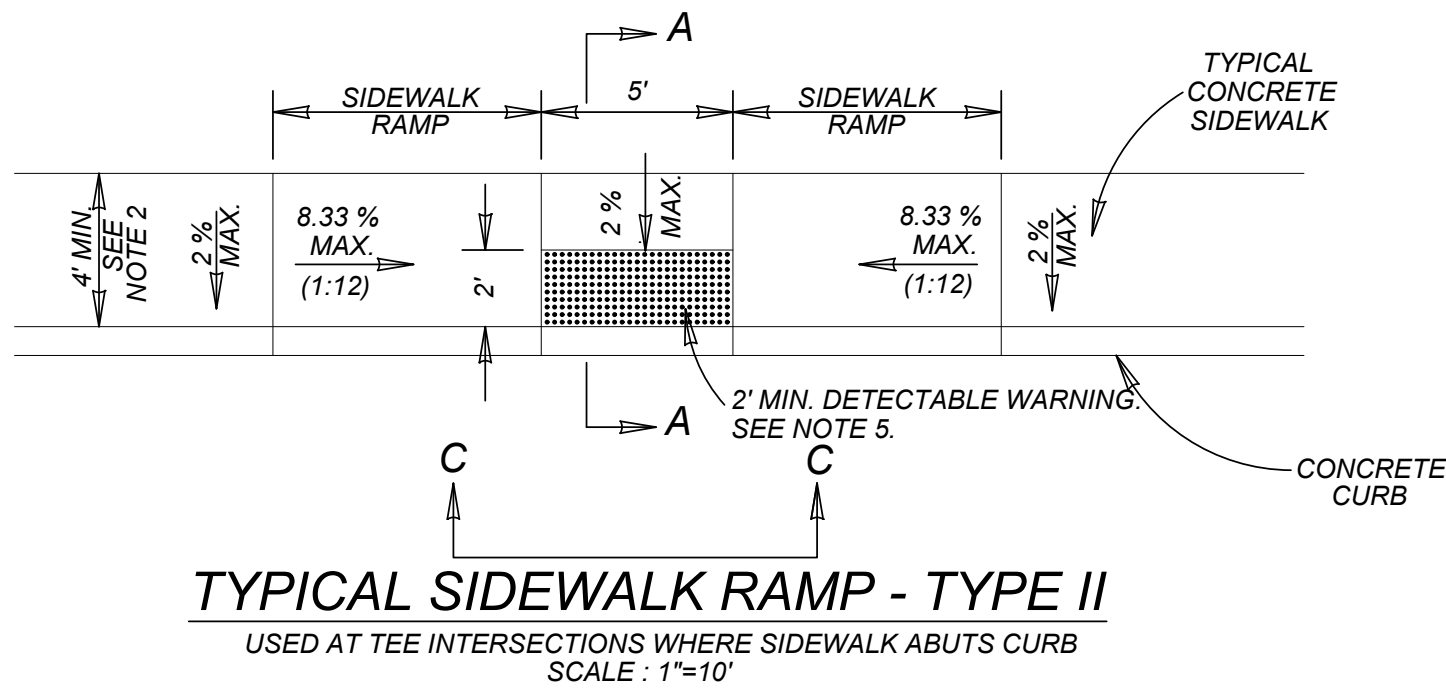
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TYPICAL SIDEWALK RAMP - TYPE I

SIDEWALK ABUTS THE CURB
SCALE: 1"=10'

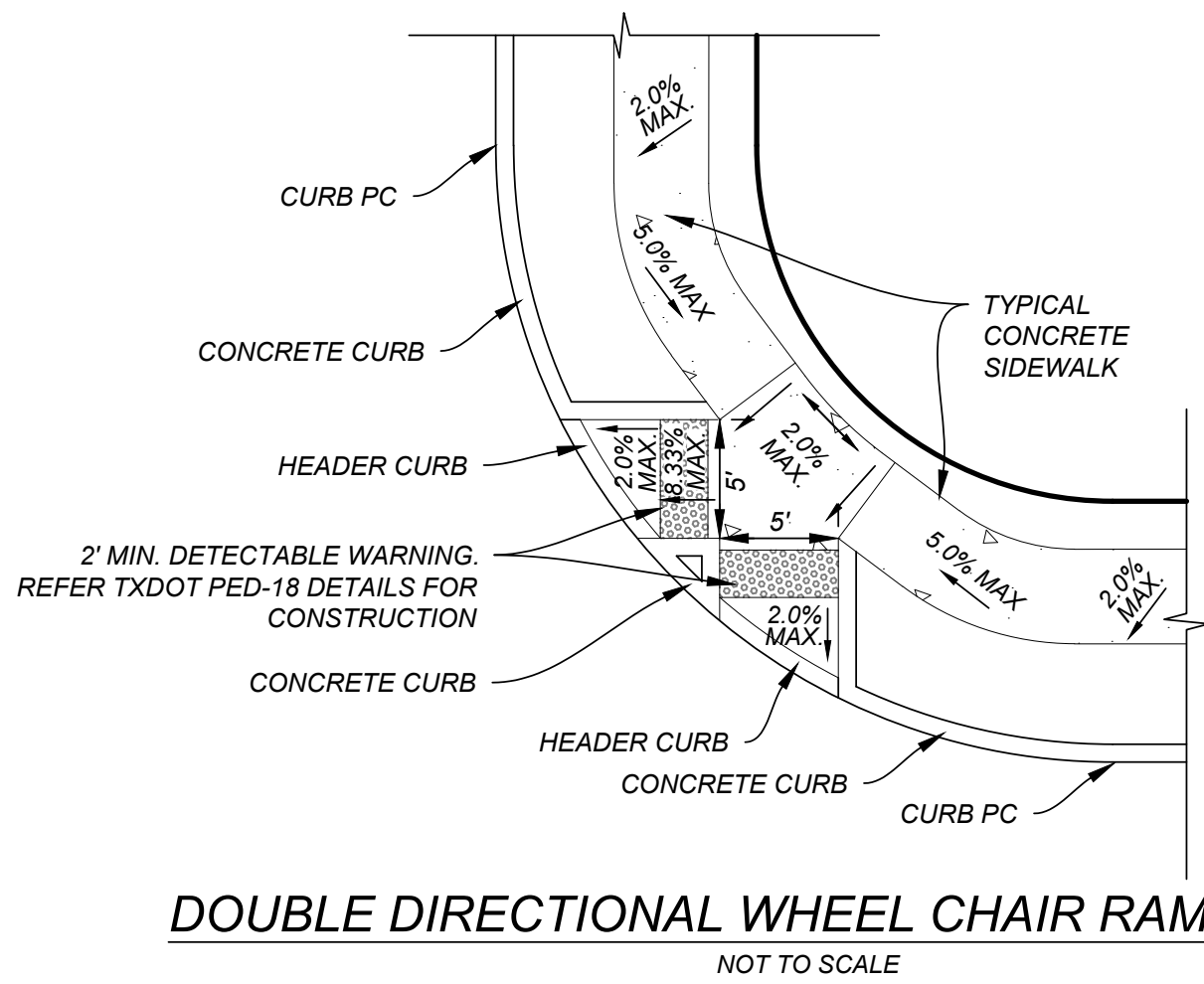


TYPICAL SIDEWALK RAMP - TYPE II

USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE: 1"=10'

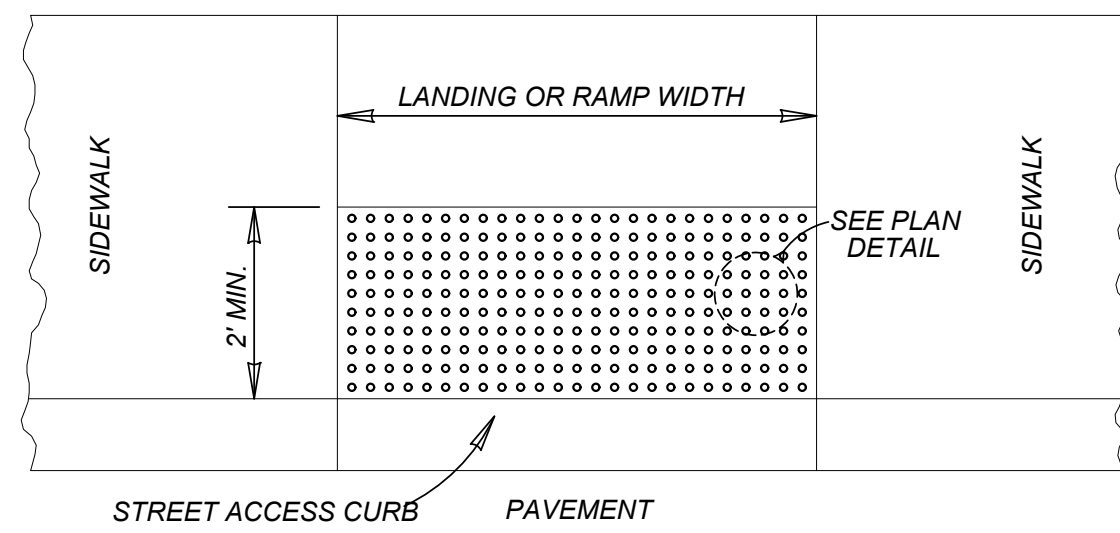
GENERAL NOTES

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.



DOUBLE DIRECTIONAL WHEEL CHAIR RAMP (DDWCR)

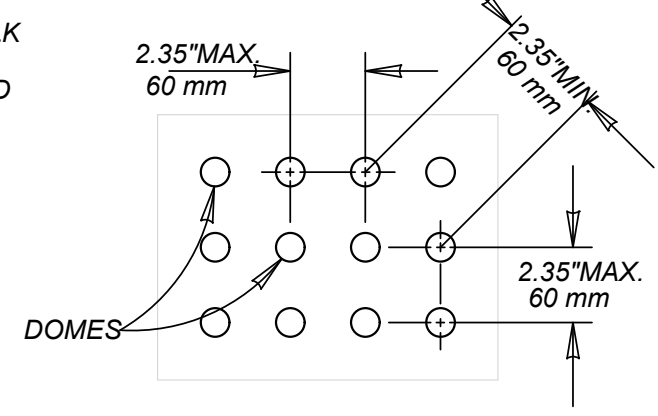
NOT TO SCALE



STREET ACCESS CURB PAVEMENT

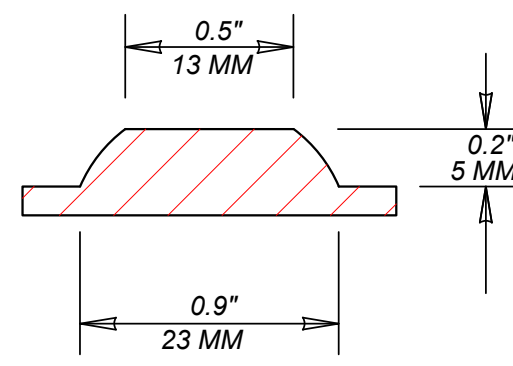
DETECTABLE WARNING SURFACE

SCALE: 1"=4'



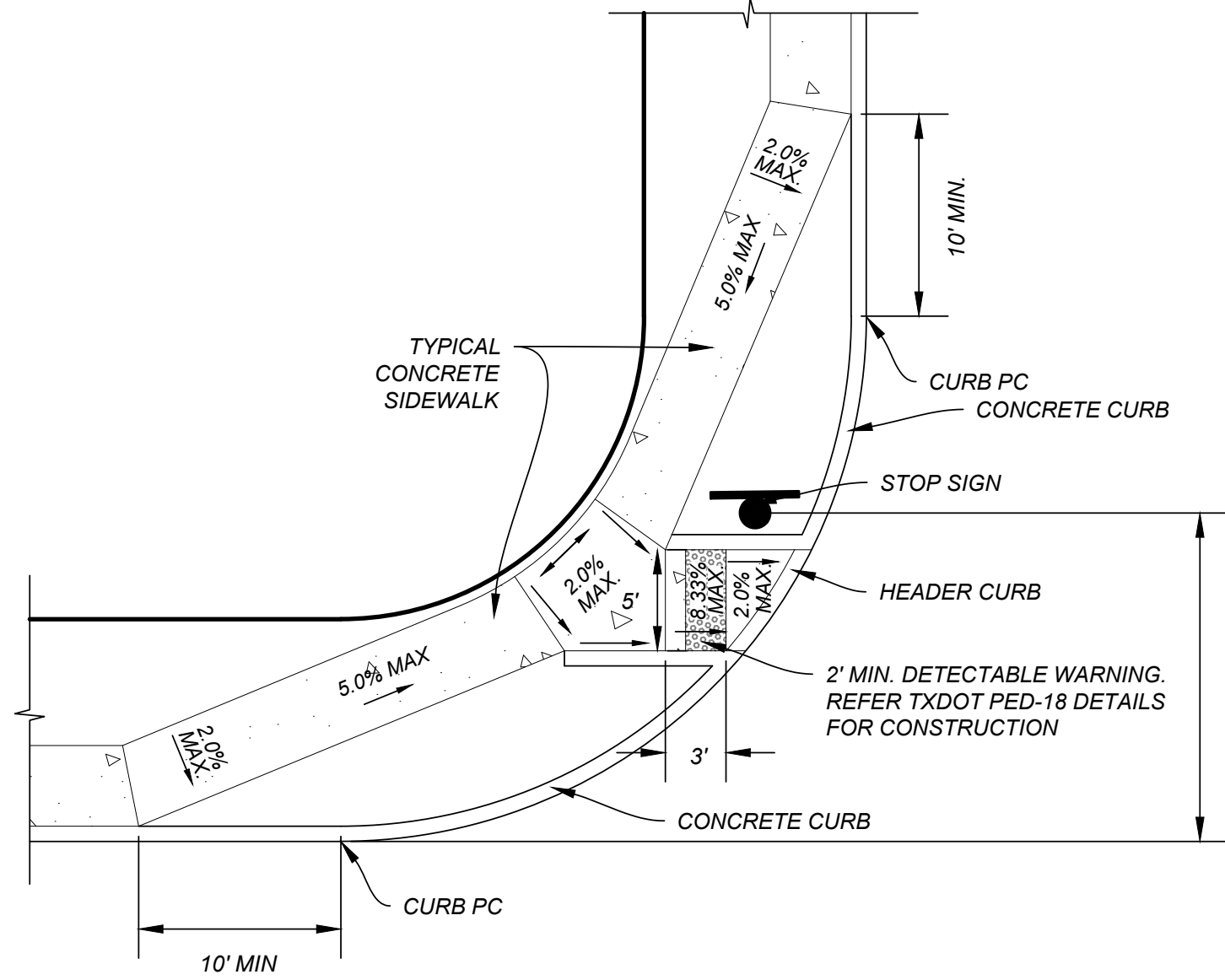
PLAN DETAIL

NO SCALE



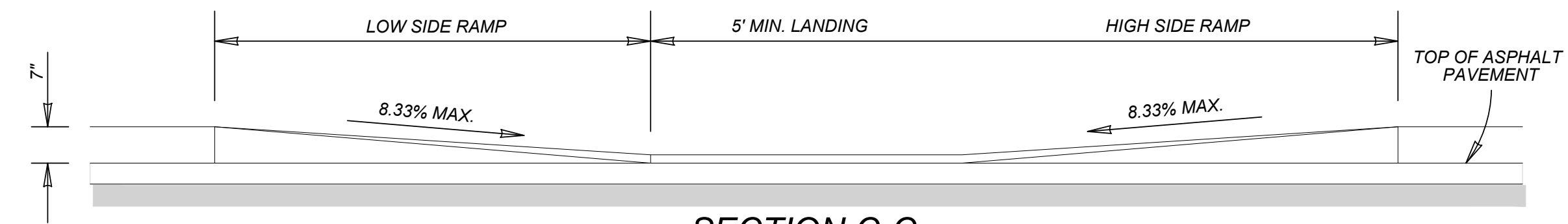
DOMES SECTION

NO SCALE



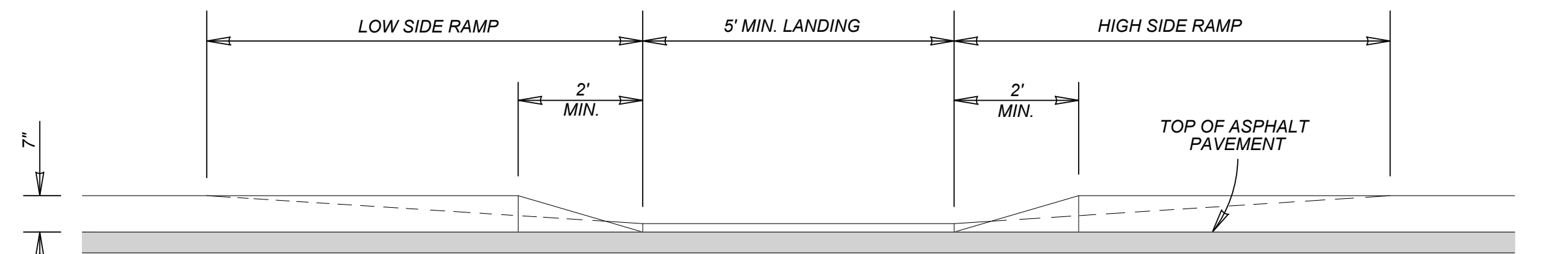
SINGLE DIRECTIONAL WHEEL CHAIR RAMP (SDWCR)

NOT TO SCALE



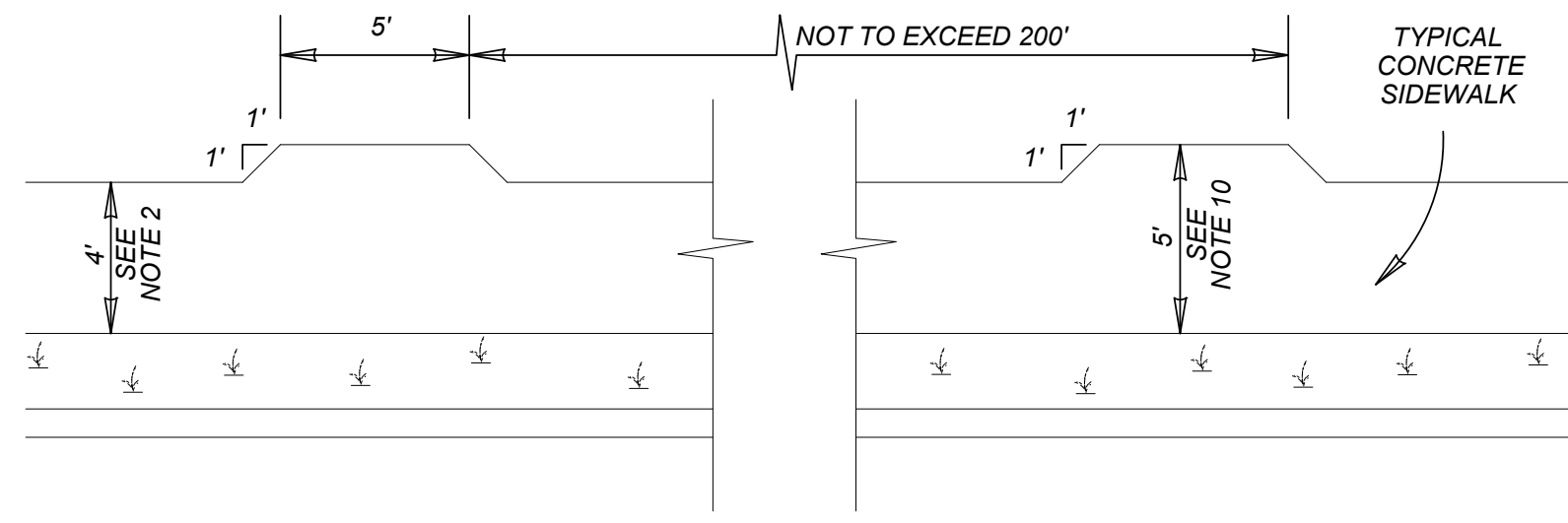
SECTION C-C

CURB PROFILE WHERE SIDEWALK ABUTS CURB
SCALE: 1"=4'



SECTION D-D

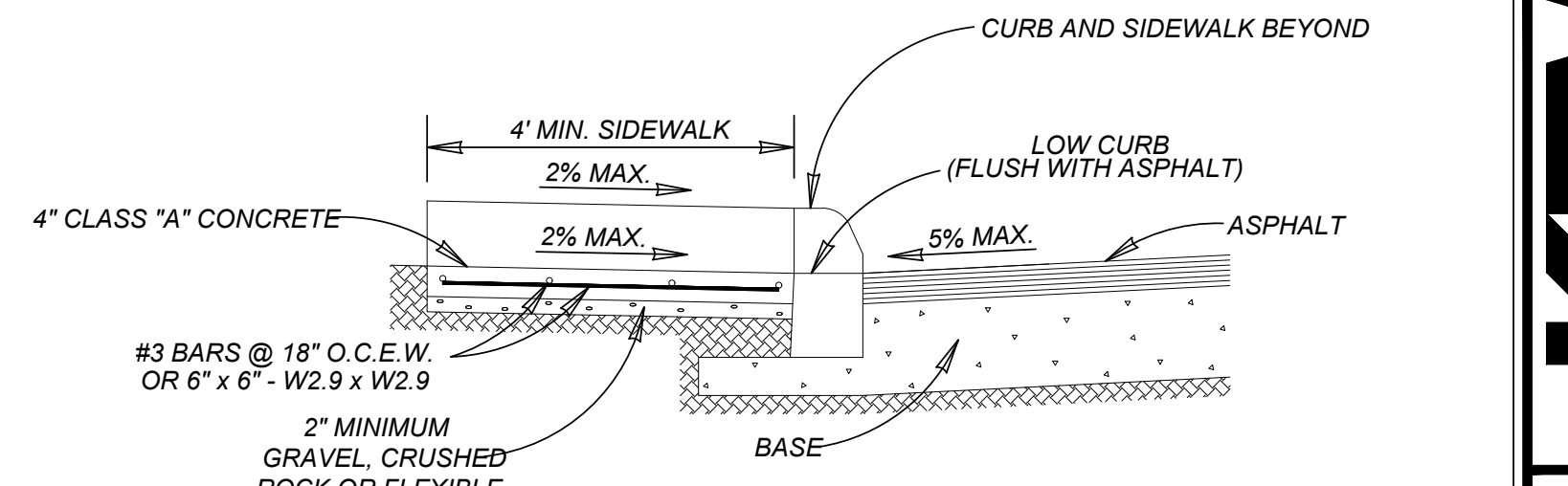
CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE: 1"=4'



SIDEWALK PASSING SPACE

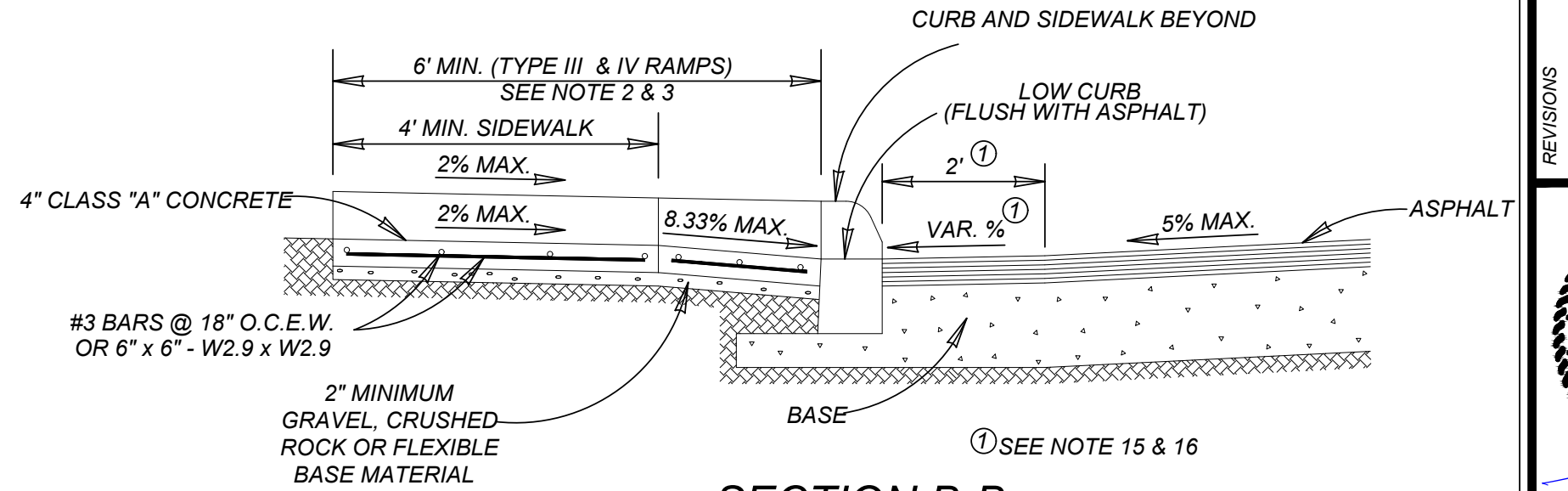
SCALE: 1"=10'

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'

GUTTER SLOPE	TABLE 1 (SEE NOTE 4) 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

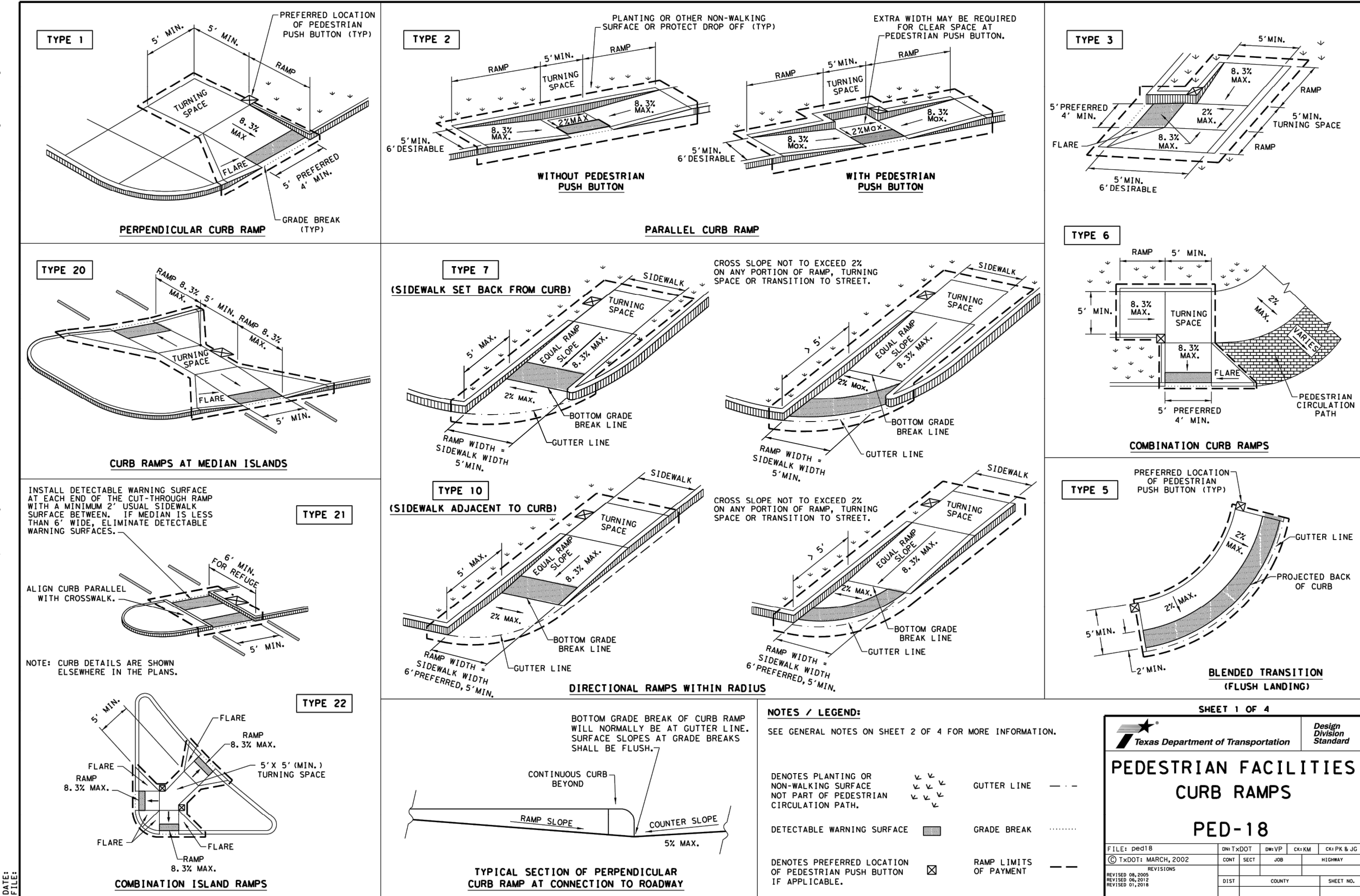
WHEELCHAIR RAMP STANDARDS

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

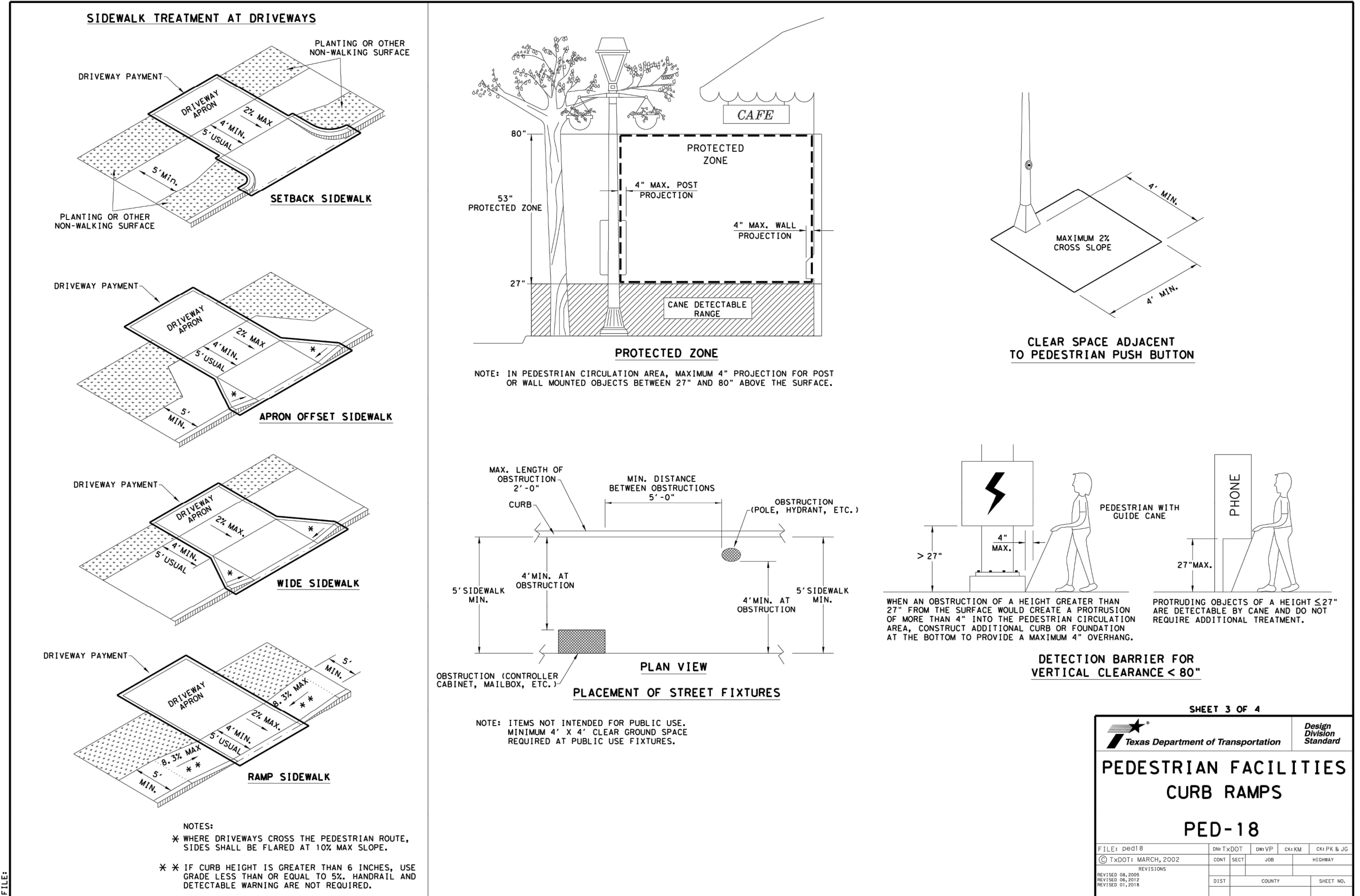
PLAT NO.
22-11800456

JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:

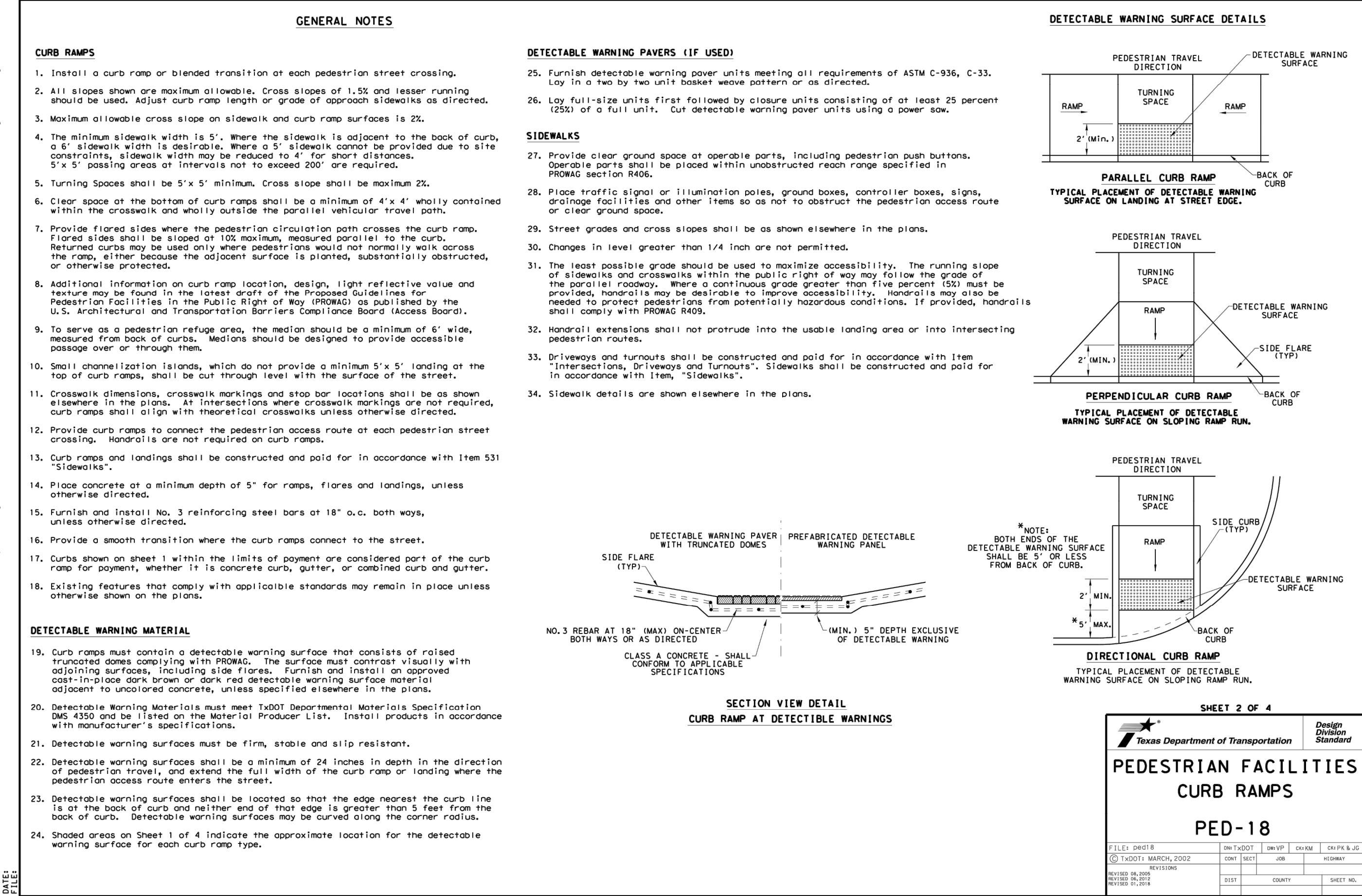
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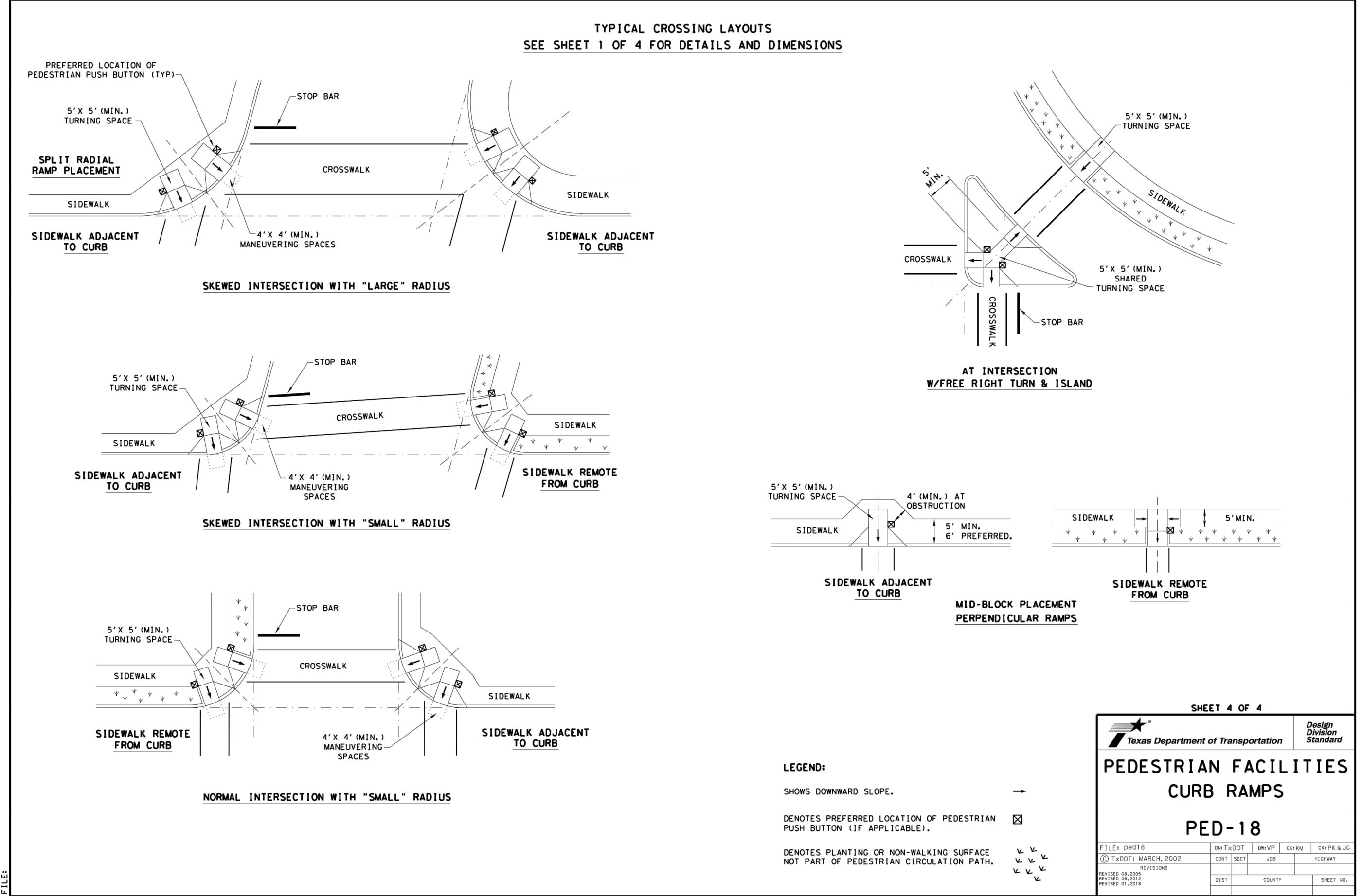
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TRENCH EXCAVATION SAFETY PROTECTION

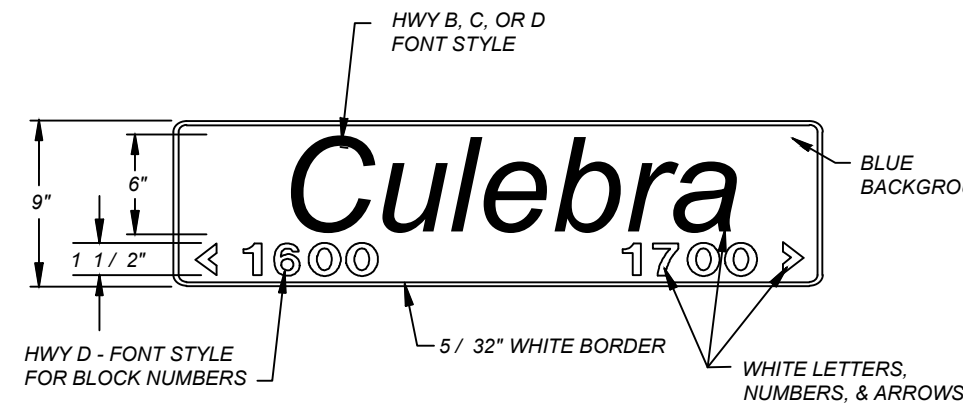
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S 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!

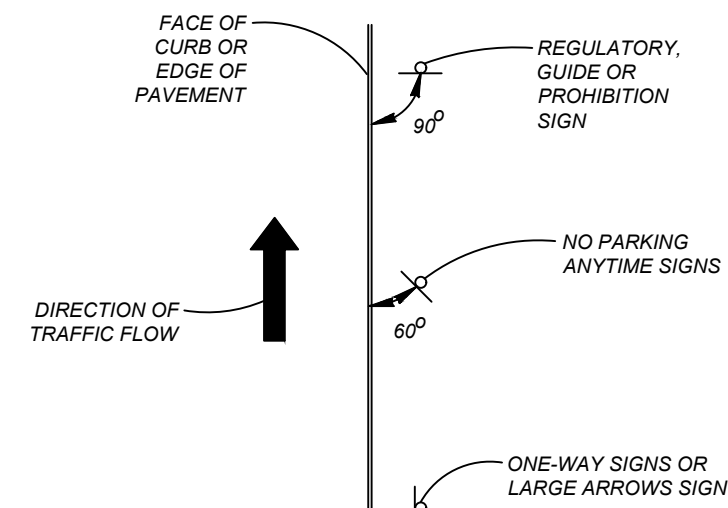
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT 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.

BEXAR COUNTY R.O.W. NOTE

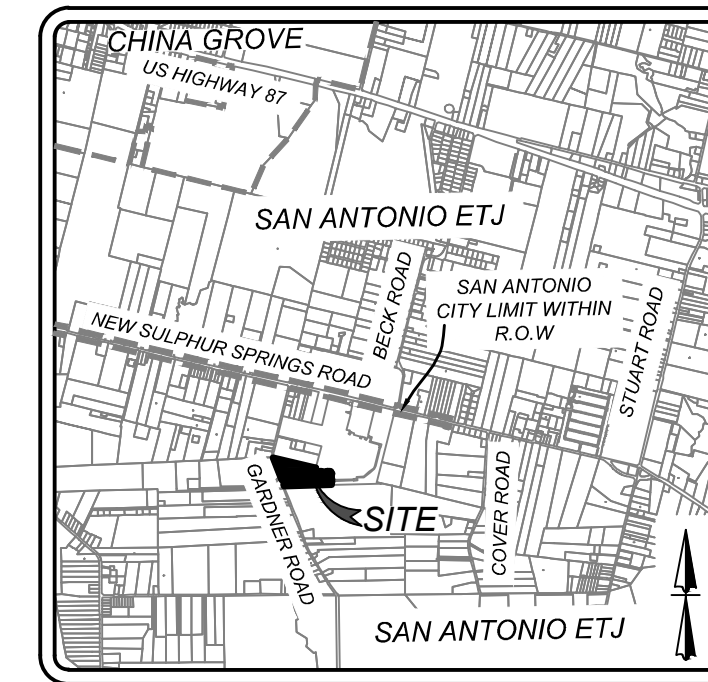
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



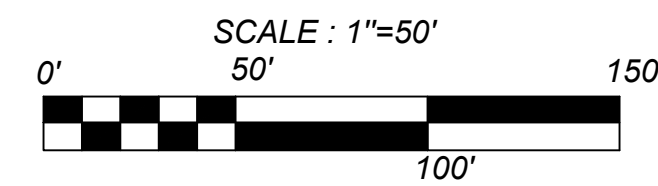
9" STREET NAME SIGN



TYPICAL GROUND MOUNTED SIGN PLACEMENT

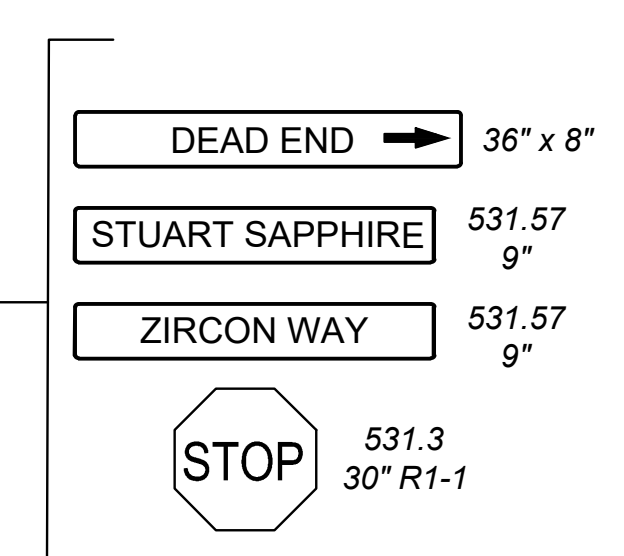
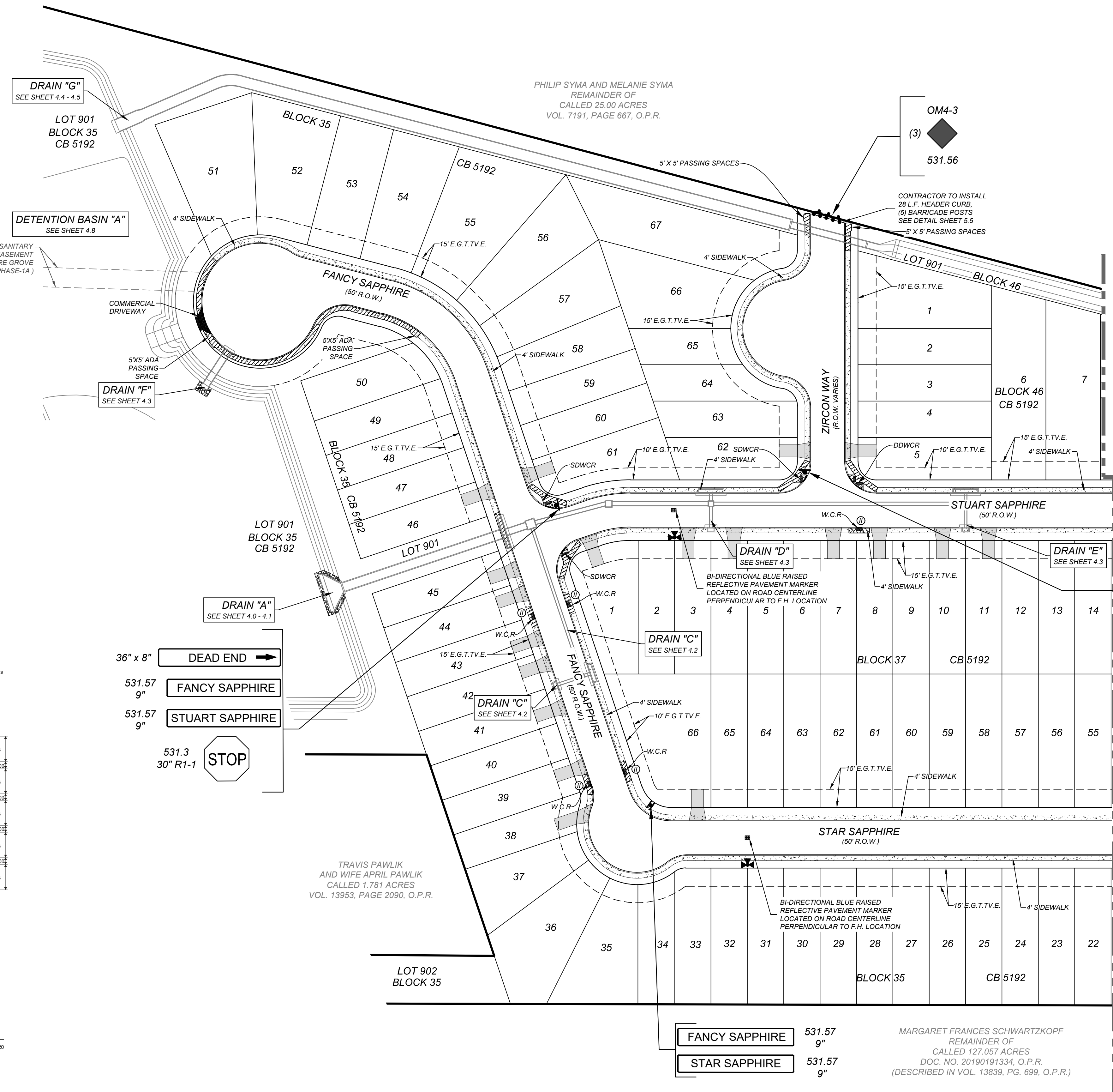


LOCATION MAP N.T.S.

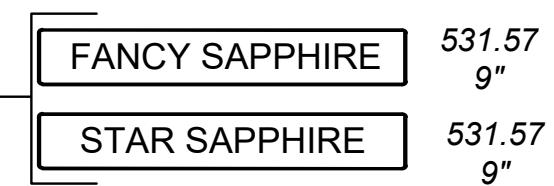
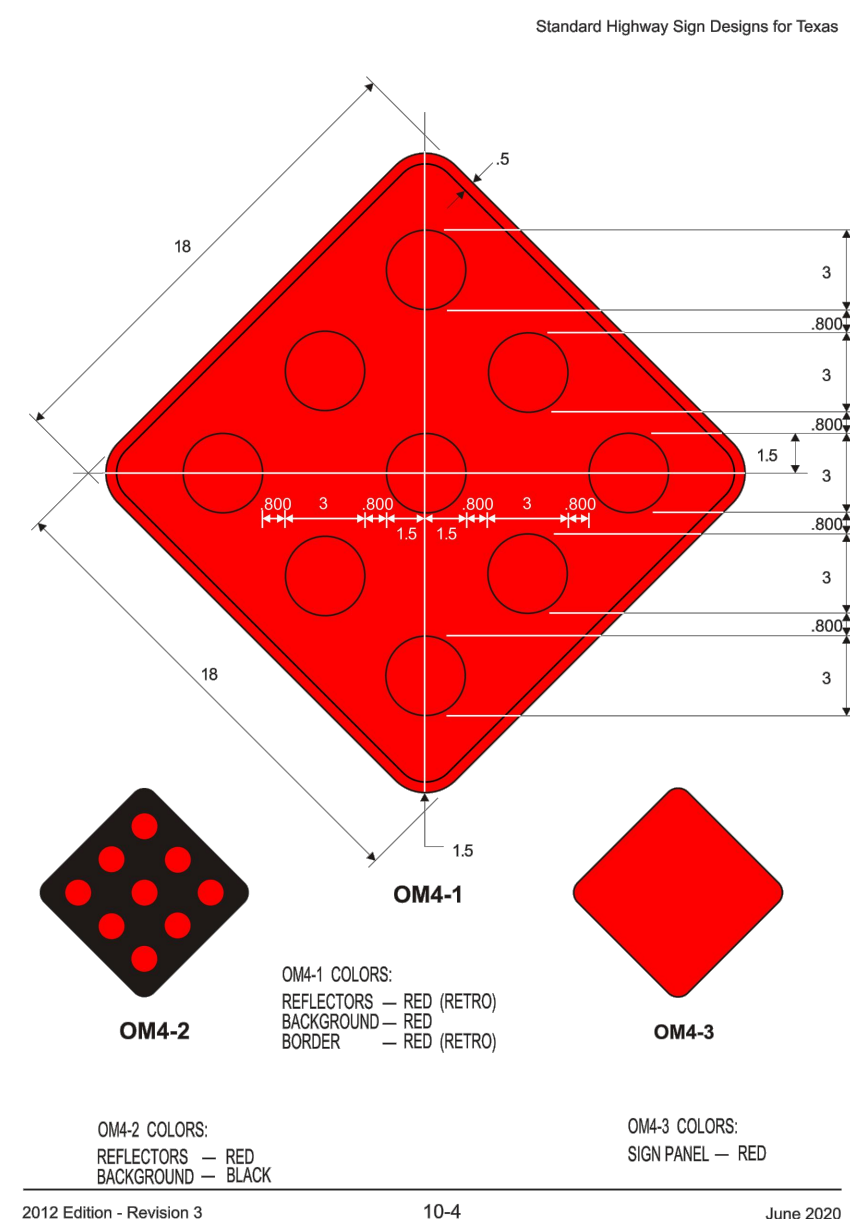


LEGEND

- E.G.T.T.V.E. = ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT
- V.N.A.E. = VEHICULAR NON-ACCESS EASEMENT
- SDWCR = SINGLE DIRECTIONAL WHEEL CHAIR RAMP (SEE SHEET 5.7)
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- Ⓢ = WHEEL CHAIR RAMP TYPE II (SEE SHEET 5.7)
- ////// = SIDEWALK TO BE CONSTRUCTED BY DEVELOPER.
- - - - = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
- [Shaded Area] = PROPOSED DRIVEWAY LOCATIONS

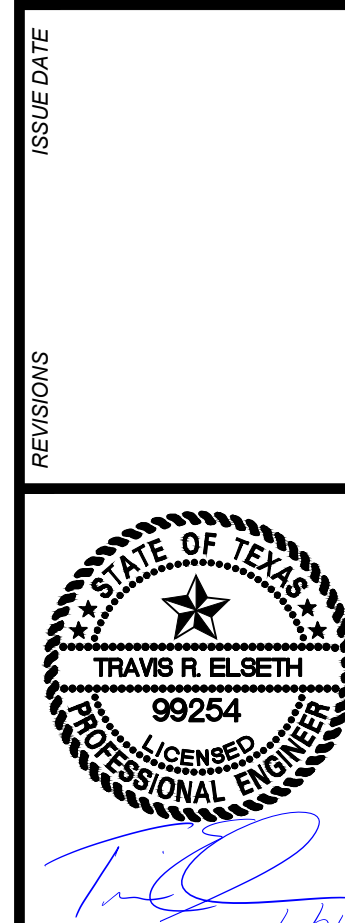


SYMBOL	ITEM NUMBER
	R1-1 30" X 30" 531.3
	STANDARD COSA STREET NAME SIGN STD X 9" 531.57
	OM4-3 END-OF-ROADWAY MARKER 531.56
	TYPE II BLUE PAVEMENT MARKER 537.8
	W14-1A STANDARD COSA DEAD END STREET MARKER (36" x 8") 531.58



MARGARET FRANCES SCHWARTZKOPF
REMAINDER OF
CALLED 127.057 ACRES
DOC. NO. 20190101334, O.P.R.
(DESCRIBED IN VOL. 13839, PG. 699, O.P.R.)

K&W
ENGINEERS & SURVEYING
12251
Phone # (210) 878-8444 • Fax # (210) 878-8441
TBPE Firm #: 9513 • TBPE S Firm #: 1012300



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
TRAFFIC SIGNAGE & PEDESTRIAN PLAN (1 OF 2)

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:
5.9

TRENCH EXCAVATION SAFETY PROTECTION

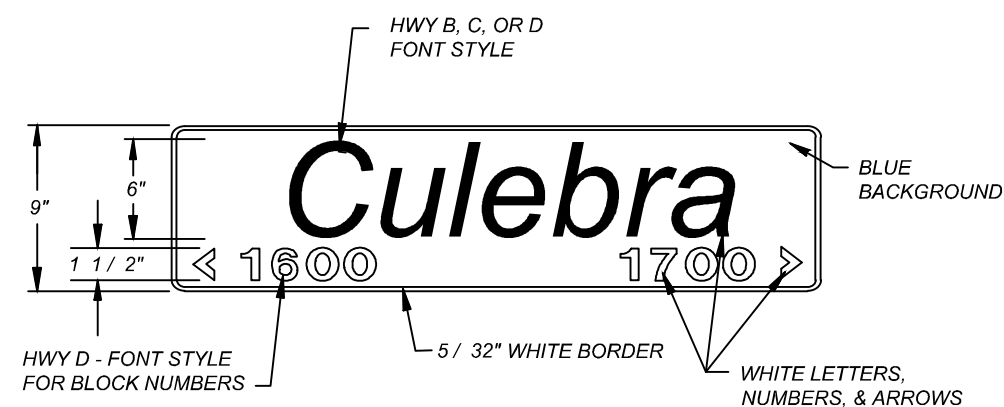
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CAUTION:

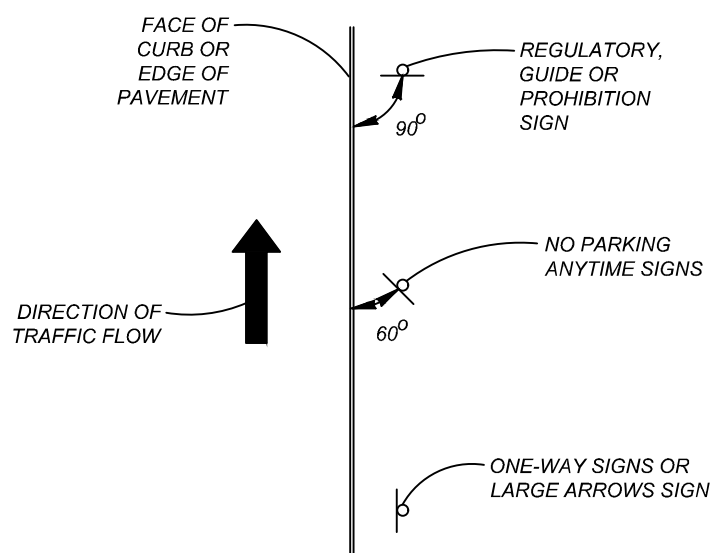
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BEXAR COUNTY R.O.W. NOTE

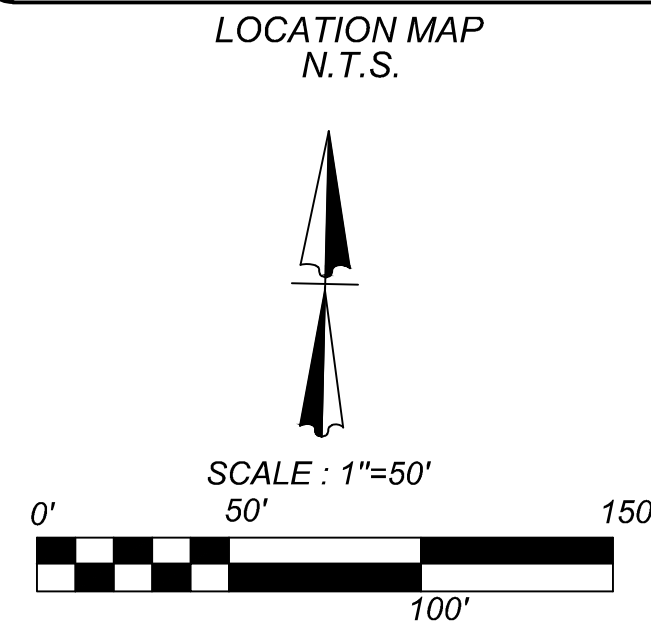
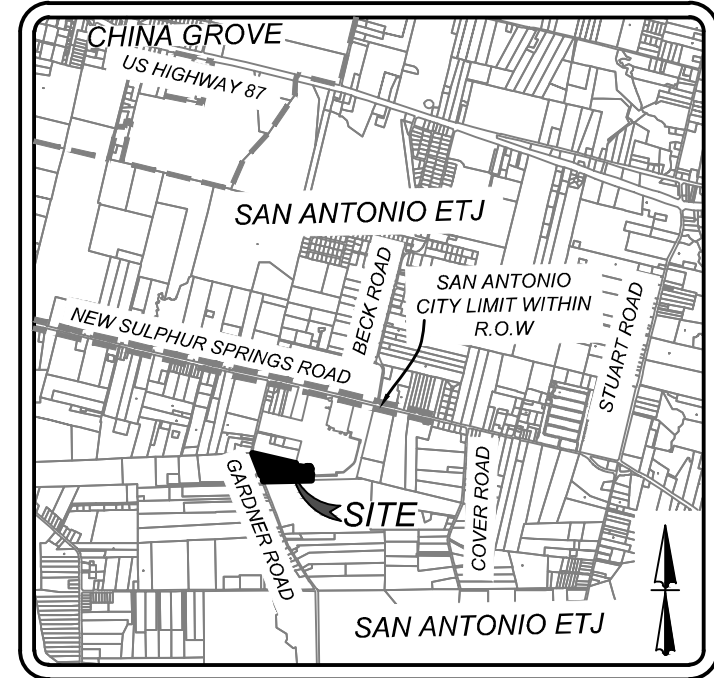
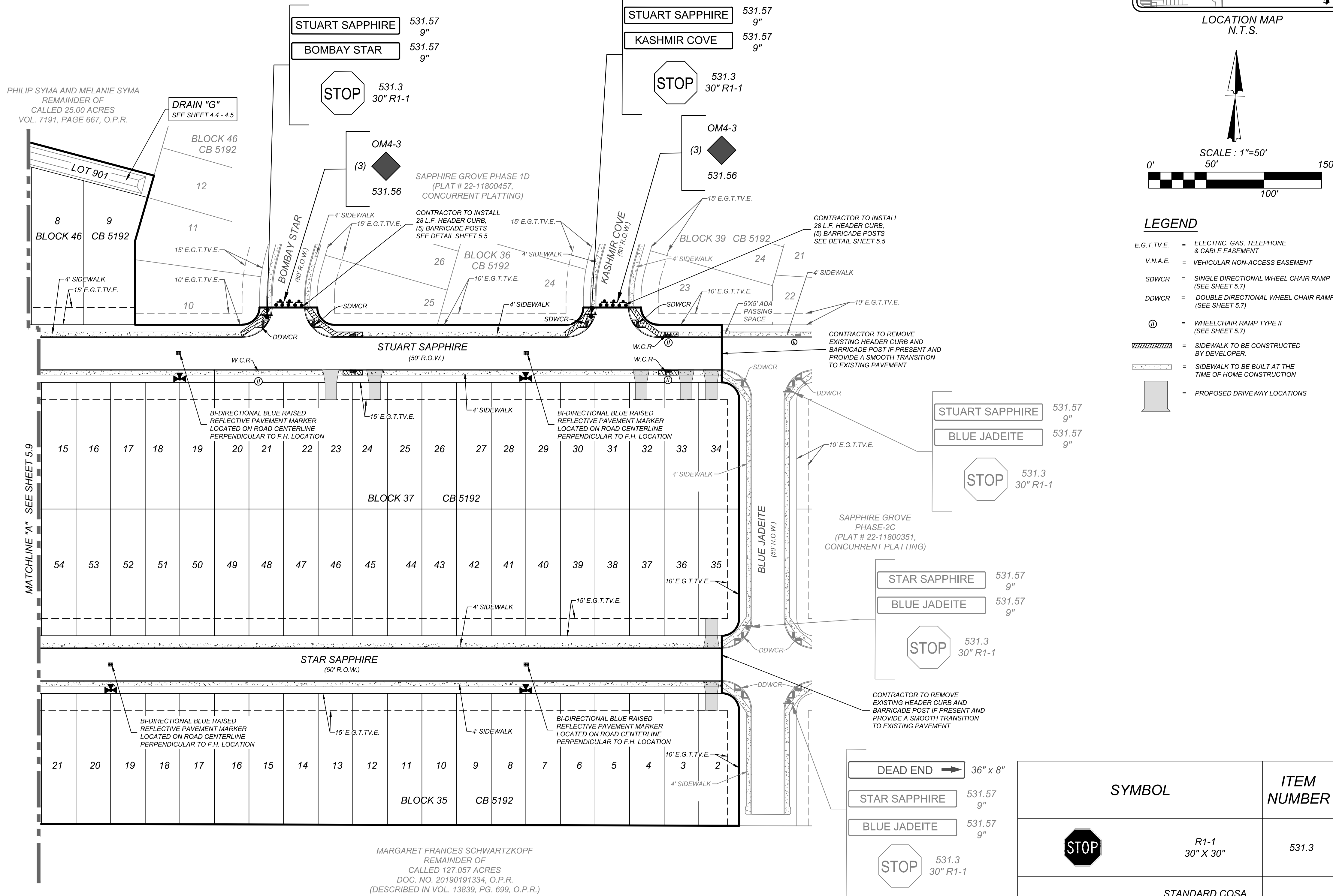
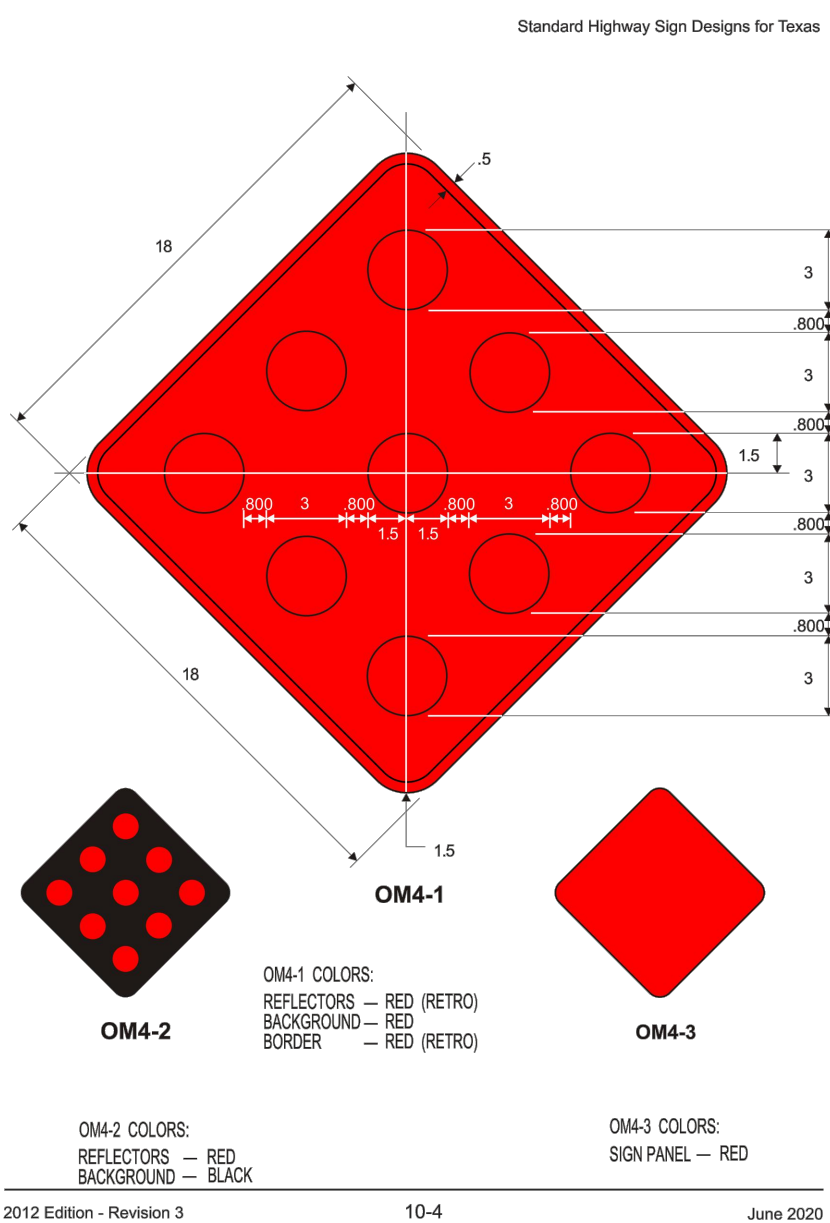
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY R.O.W.



9" STREET NAME SIGN



TYPICAL GROUND MOUNTED SIGN PLACEMENT



- LEGEND**
- E.G.T.V.E. = ELECTRIC, GAS, TELEPHONE & CABLE EASEMENT
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 - ▨ = SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
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SYMBOL	ITEM NUMBER
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	TYPE II BLUE PAVEMENT MARKER 537.8
	W14-1A STANDARD COSA DEAD END STREET MARKER (36" X 8") 531.58

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
TRAFFIC SIGNAGE & PEDESTRIAN PLAN (2 OF 2)

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
SHEET NUMBER:
5.10

[illegible]

****Capital = 6"**
Lower case = 4 1/2"

LENGTH 2'-0" MIN. 4'-0" MAX.

MAINTAIN 1" FROM EDGE OF SIGN

BLUE BACKGROUND

WHITE LETTERS, NUMBERS & ARROWS

9" GROUND MOUNT STREET NAME SIGNS

****Capital = 6"**
Lower case = 4 1/2"

LENGTH 2'-0" MIN. 4'-0" MAX.

MAINTAIN 1" FROM EDGE OF SIGN

BLUE BACKGROUND

WHITE LETTERS, NUMBERS & ARROWS

9" GROUND MOUNT STREET NAME SIGNS
WITH STREET DESIGNATION

****Capital = 8"**
Lower case = 6"

LENGTH 2'-0" MIN. 6'-0" MAX.

MAINTAIN 1" FROM EDGE OF SIGN

BLUE BACKGROUND

WHITE LETTERS, NUMBERS & ARROWS

18" OVERHEAD STREET NAME SIGNS

	18" OVERHEAD SIGN	9" GROUND MOUNT SIGN
HEIGHT	18" (381 mm)	9" (228 mm)
LENGTH	48" (1200 mm) MIN. 72" (1800 mm) MAX. <small>(LENGTH IS A FUNCTION OF LAYOUT)</small>	24" (600 mm) MIN. 48" (1200 mm) MAX. <small>(LENGTH IS A FUNCTION OF LAYOUT)</small>
THICKNESS	0.125" (3 mm)	
SUBSTRATE	ALUMINUM ALLOY, 5053-H36 (ASTM B-209) GOLD CHROMATE FINISH	
SIGN FACE MATERIALS	BLUE FILM * OVER DIAMOND GRADE - ASTM Type XI Non-Fluorescent	BLUE FILM * OVER HIGH INTENSITY PRISMATIC-ASTM Type IV
LEGENDS AND SYMBOLS	SERIES D, B OR C IF NAME OTHERWISE EXCEEDS MAXIMUM SIGN LENGTH	
COLOR	WHITE LEGEND ON BLUE BACKGROUND	
LETTER TRACKING	17% (USUAL) 10% (MIN.)	10%

* ACRYLIC ELECTRONIC CUTTABLE FILM

SPAN WIRE INSTALLATION

MAST ARM INSTALLATION

SIGN FACE MATERIALS SHALL CONFORM TO:

- STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - FPD-001.5.
- GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-5-306C
- ASTM D 4958 - 09a

SAPPHIRE GROVE PHASE-2D

SAN ANTONIO, TEXAS

SANITARY SEWER IMPROVEMENTS

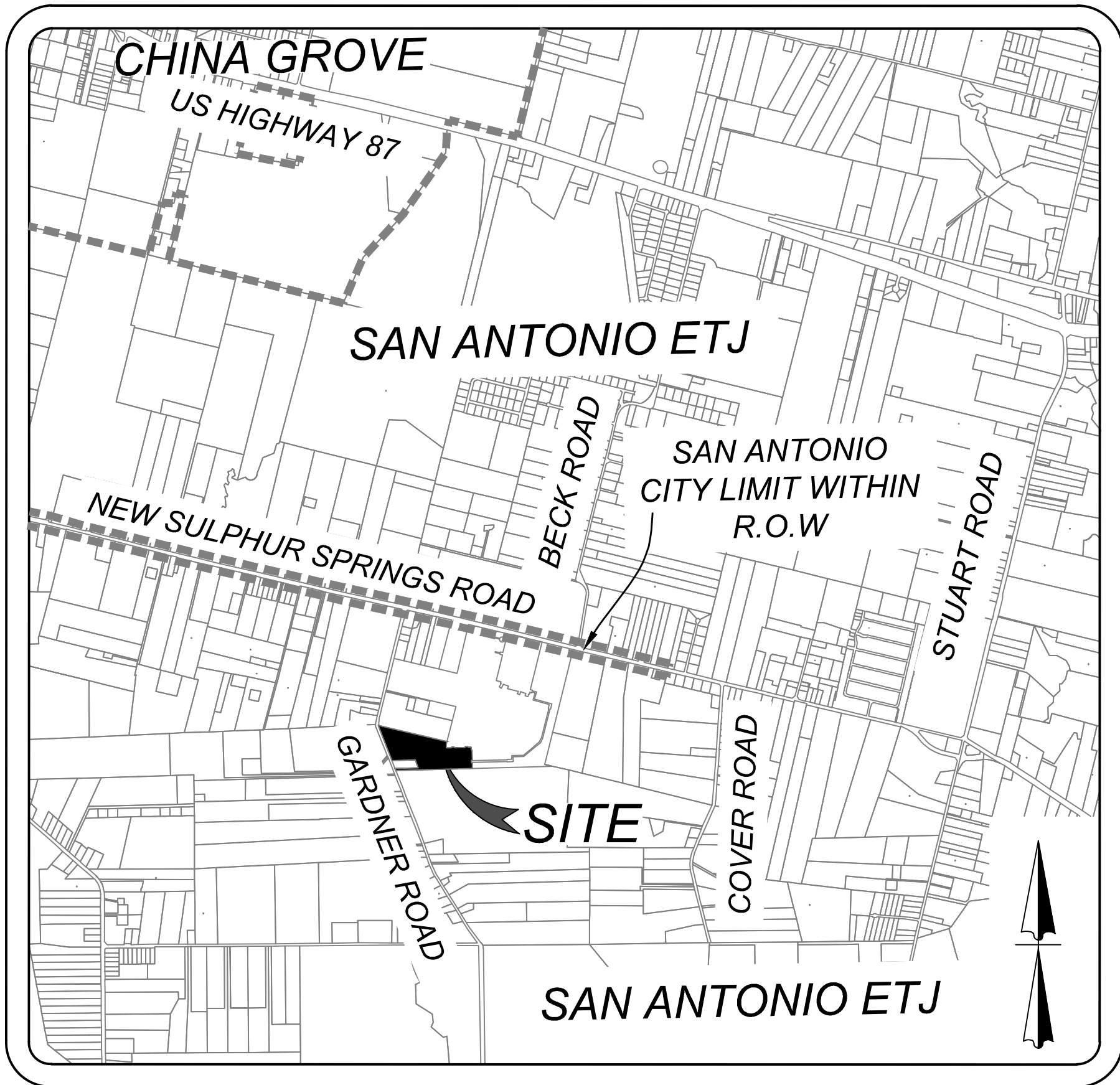
- SAWS CONSTRUCTION NOTE**
COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT
- General Section**
- All materials and construction procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with the Plans, Specifications, General Conditions and with the following as applicable:
 - 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.
 - Current TxDOT "Standard Specifications for Construction of Highways, Streets and Drainage".
 - Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".
 - Current City of San Antonio "Standard Specifications for Public Works Construction".
 - Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).
 - 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.
 - 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.
 - 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.
 - 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.
 - 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 locating 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
 - 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.
 - 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.
 - The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.
 - The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.
 - Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should be sent to constrworkreg@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 constrworkreg@saws.org. Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.
 - 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.
 - A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.

- Water Section**
- 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 of 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
 - Asbestos Cement (AC) pipe, also known as transite pipe which is known to contain asbestos containing material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".
 - Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSPI)
 - Suitable anchorage/trust 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.
 - All valves shall read "open right".
 - PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of .809 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below .809 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 lots. If PRV is required for such lots, only single service connections shall be allowed. *Note: A pressure regulator is also known as a pressure reducing valve (PRV).
 - 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.
 - 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.
 - 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.

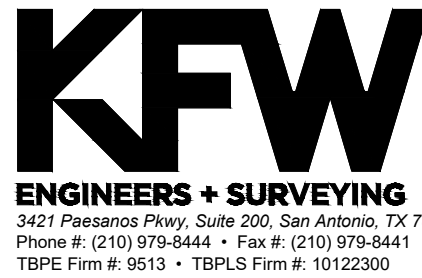
- Sewer Notes**
- The Contractor is responsible for ensuring that no Sanitary Sewer Overflow (SSO) occurs as a result of their work. All contractor personnel responsible for SSO prevention and control shall be trained on proper response. Should an SSO occur, the contractor shall:
 - Identify the source of the SSO and notify SAWS Emergency Operations Center (EOC) immediately at (210) 233-2014. Provide the address of the spill and an estimated volume or flow.
 - Attempt to eliminate the source of the SSO.
 - Contain sewage from the SSO to the extent of preventing a possible contamination of waterways.
 - Clean up spill site (return contained sewage to the collection system if possible) and properly dispose of contaminated soil/materials.
 - Clean the affected sewer mains and remove any debris.
 - 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.
 - 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".
 - 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.
 - Sewer pipe where water line crosses shall be 160 psi and meet the requirements of ASTM D2241, TAC 217.53 and TCEQ 290.44(a)(4)(B). Contractor shall center a 20' joint of 160 psi pressure rated PVC at the proposed water crossing.

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)
 - 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.
 - 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.
 - All PVC pipe over 14 feet of cover shall be extra strength with minimum pipe stiffness of 115 psi.



LOCATION MAP
N.T.S.

OWNER/DEVELOPER:
LENNAR HOMES OF TEXAS LAND
AND CONSTRUCTION LTD.
100 NE LOOP 410,. SUITE 1155
SAN ANTONIO, TX 78216
PHONE: (210) 403-6282



SEWER: LOWER EAST SEWERSHED - DOS RIOS W.R.C

DEVELOPER'S NAME: <u>LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION LTD.</u>			
DEVELOPER'S ADDRESS: <u>100 NE LOOP 410, SUITE 1155</u>			
CITY: <u>SAN ANTONIO</u>	STATE: <u>TEXAS</u>	ZIP: <u>78216</u>	
PHONE#: <u>(210) 403-6282</u>	FAX#: _____	TOTAL ACREAGE: <u>.23.31 Ac.</u>	
SAWS BLOCK MAP#: <u>212550 & 214550</u>		TOTAL EDU'S: <u>141</u>	
TOTAL LINEAR FOOTAGE OF PIPE: <u>197 L.F. - 8" SDR 26 PIPE</u>			
NUMBER OF LOTS: <u>141</u>	SAWS JOB#: <u>24-1530</u>	PLAT NO.: <u>22-11800456</u>	

GENERAL CONSTRUCTION
PERMIT S.A.W.S. JOB# 24-1530

PLAT NO. 22-11800456

SHEET 6.0

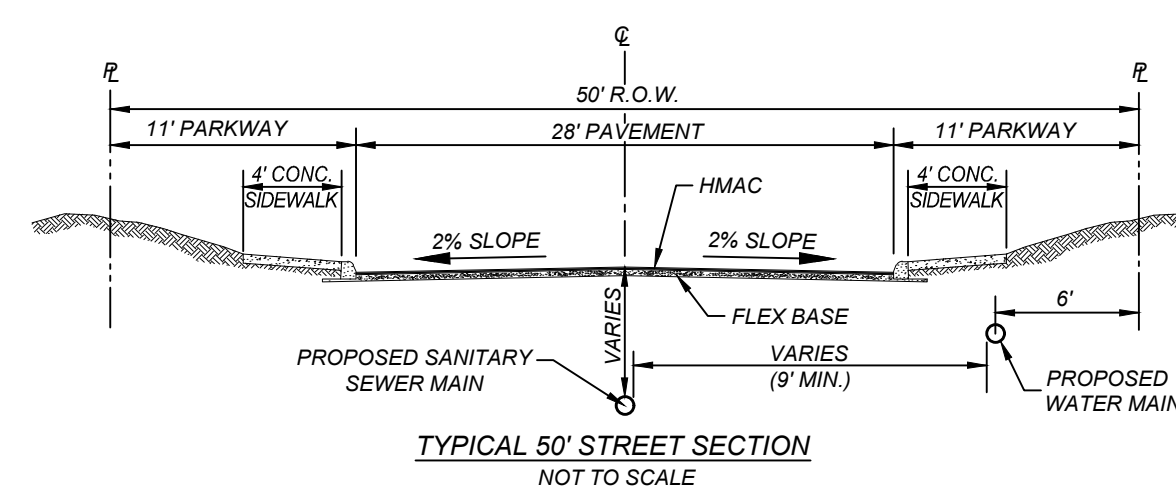
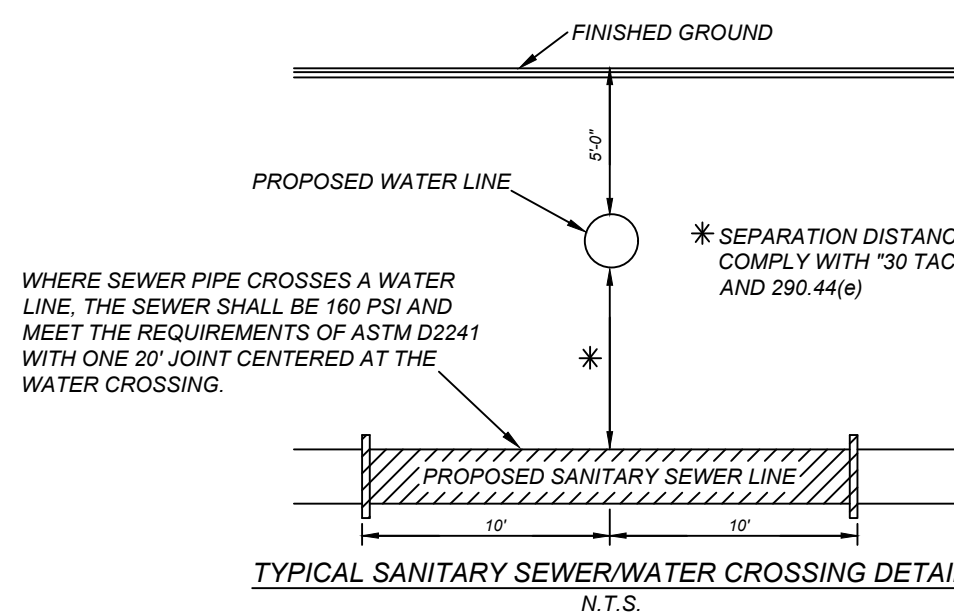
Date: Jun 13, 2024, 2:01pm User ID: zfrush
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TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND 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 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.



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 PURVEYORS SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYORS PLAN.

NOTE:

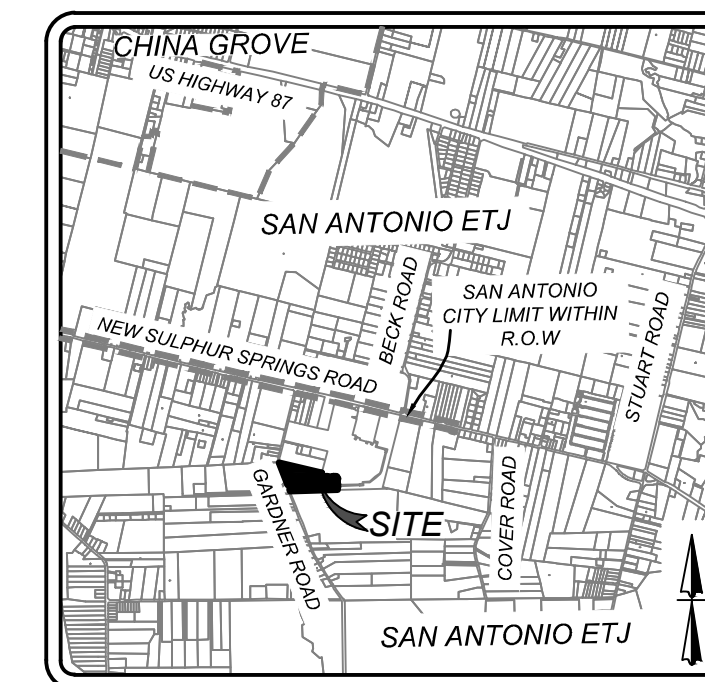
ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM (SAWS) STANDARD SPECIFICATIONS.

WATER / SEWER CROSSING NOTE:

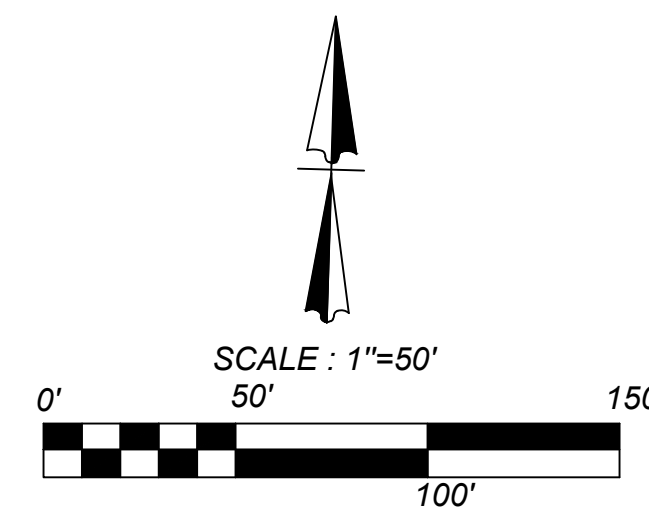
ALL WATER / SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 812 SANITARY SEWER / WATER DETAIL.

NOTE:

- 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 SHEETS 6.0, SANITARY SEWER GENERAL NOTES.
- SEE THIS SHEET FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26.
- ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER. SEE SAWS STANDARD SPECIFICATIONS.



LOCATION MAP
N.T.S.



LEGEND

PROPOSED WATER MAIN AND STRUCTURES	8" W
PROPOSED FIRE HYDRANT	8" SS
PROPOSED SANITARY SEWER MAIN	8" SS
PROPOSED SANITARY SEWER MANHOLE	8" SS
PROPOSED SANITARY SEWER LATERAL	8" SS
PROPOSED SANITARY SEWER LATERAL WITH VERTICAL STACK	8" SS
RIGHT-OF-WAY	R.O.W.
PROPOSED ELECTRIC, GAS, TELEPHONE AND CABLE TELEVISION EASEMENT	E.G.T.V.E.
WATER MAIN (ADJACENT UNITS, CONCURRENT PLATTING)	8" W
FIRE HYDRANT (ADJACENT UNITS, CONCURRENT PLATTING)	8" SS
SANITARY SEWER MAIN (ADJACENT UNITS, CONCURRENT PLATTING)	8" SS



BENCH MARK LOCATION MAP
NOT-TO-SCALE

BENCHMARKS

BM 396	BM 397	BM 399
SBM LEVELED	SBM LEVELED	SBM LEVELED
ELEVATION 596.60'	ELEVATION 582.65'	ELEVATION 573.32'
NORTHING: 13680268.032	NORTHING: 13682492.625	NORTHING: 13683095.299
EASTING: 2180993.9810	EASTING: 2172906.7340	EASTING: 2169762.715

NOTE:

CONTRACTOR TO RUN LEVEL LOOP THROUGH BMS PROVIDED TO CONFIRM BEFORE CONSTRUCTION. CONTACT ENGINEER/SURVEYOR IMMEDIATELY IF ELEVATIONS DO NOT MATCH THOSE SHOWN.

SEWER: LOWER EAST SEWERSHED - DOS RIOS W.R.C

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION LTD.	
DEVELOPER'S ADDRESS: 100 NE LOOP 410, SUITE 1155	
CITY: SAN ANTONIO	STATE: TEXAS
PHONE#: (210) 403-6282	FAX#: 210-403-6282
SAWS BLOCK MAP#: 212550 & 214550	TOTAL ACRES: 23.31 AC.
TOTAL LINEAR FOOTAGE OF PIPE: 197 L.F. - 8" SDR 26 PIPE	TOTAL EDUS: 141
NUMBER OF LOTS: 141	SAWS JOB#: 24-1530
	PLAT NO.: 22-11800456

GENERAL CONSTRUCTION
PERMIT S.A.W.S. JOB# 24-1530

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX

OVERALL SANITARY SEWER PLAN (1 OF 2)

PLAT NO.
22-11800456

JOB NO. 314-39-13

DATE: FEBRUARY 2024

DRAWN/AD CHECKED/TE

SHEET NUMBER:

6.1

Date: Jun 12, 2024, 1:14pm User ID: zfrueh
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TRENCH EXCAVATION SAFETY PROTECTION

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NOTE:

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WATER / SEWER CROSSING NOTE:

ALL WATER / SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 812 SANITARY SEWER / WATER DETAIL.

NOTE:

- 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 SHEETS 6.0, SANITARY SEWER GENERAL NOTES.
- SEE SHEET 6.1 FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26.
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PHILIP SYMA AND MELANIE SYMA
REMAINDER OF
CALLED 25.00 ACRES
VOL. 7191, PAGE 667, O.P.R.

DRAIN "G"
SHEET 4.4-4.5

BLOCK 46
CB 5192

8" SEWER MAIN
SAWS JOB # 22-1625
SAPPHIRE GROVE PHASE
1B (PLAT # 22-11800301)

SAPPHIRE GROVE PHASE 1D
(PLAT # 22-11800457,
CONCURRENT PLATTING)

8" SEWER MAIN
SAWS JOB # 24-1517
(SAPPHIRE GROVE
PHASE 1D CONCURRENT
CONSTRUCTION)

MATCHLINE "A" SEE SHEET 6.1

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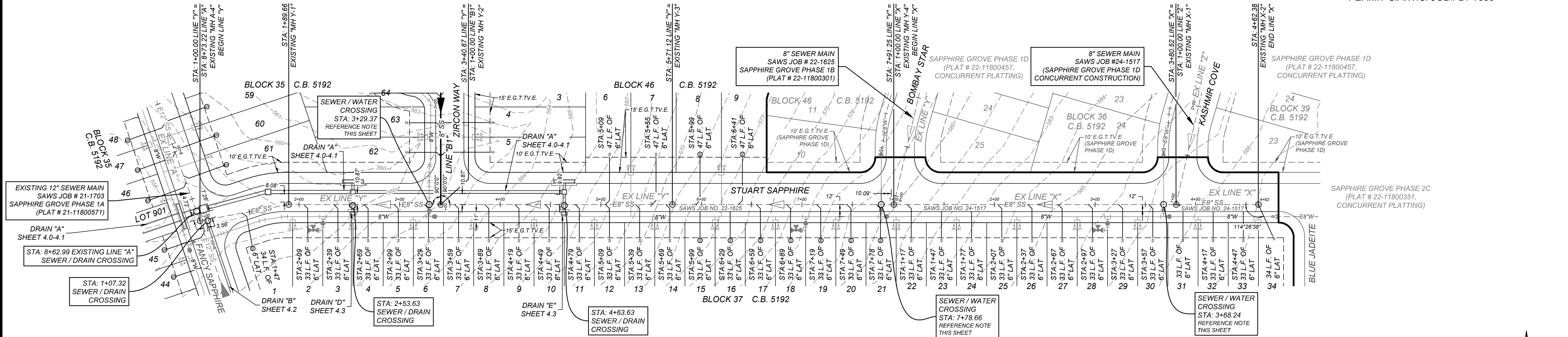
WATER / SEWER CROSSING NOTE:

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SEWER: LOWER EAST SEWERSHED - DOS RIOS W.R.C.

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION LTD.
DEVELOPER'S ADDRESS: 100 NE LOOP 410, SUITE 1155
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
PHONE#: (210) 403-6282 FAX#: TOTAL ACREAGE: 23.31 Ac.
SAWS BLOCK MAP#: 212550 & 214550 TOTAL EDUS: 141
TOTAL LINEAR FOOTAGE OF PIPE: 197 L.F. - 8" SDR 26 PIPE
NUMBER OF LOTS: 141 SAWS JOB#: 24-1530 PLAT NO.: 22-11800456

GENERAL CONSTRUCTION
PERMIT S.A.W.S. JOB# 24-1530

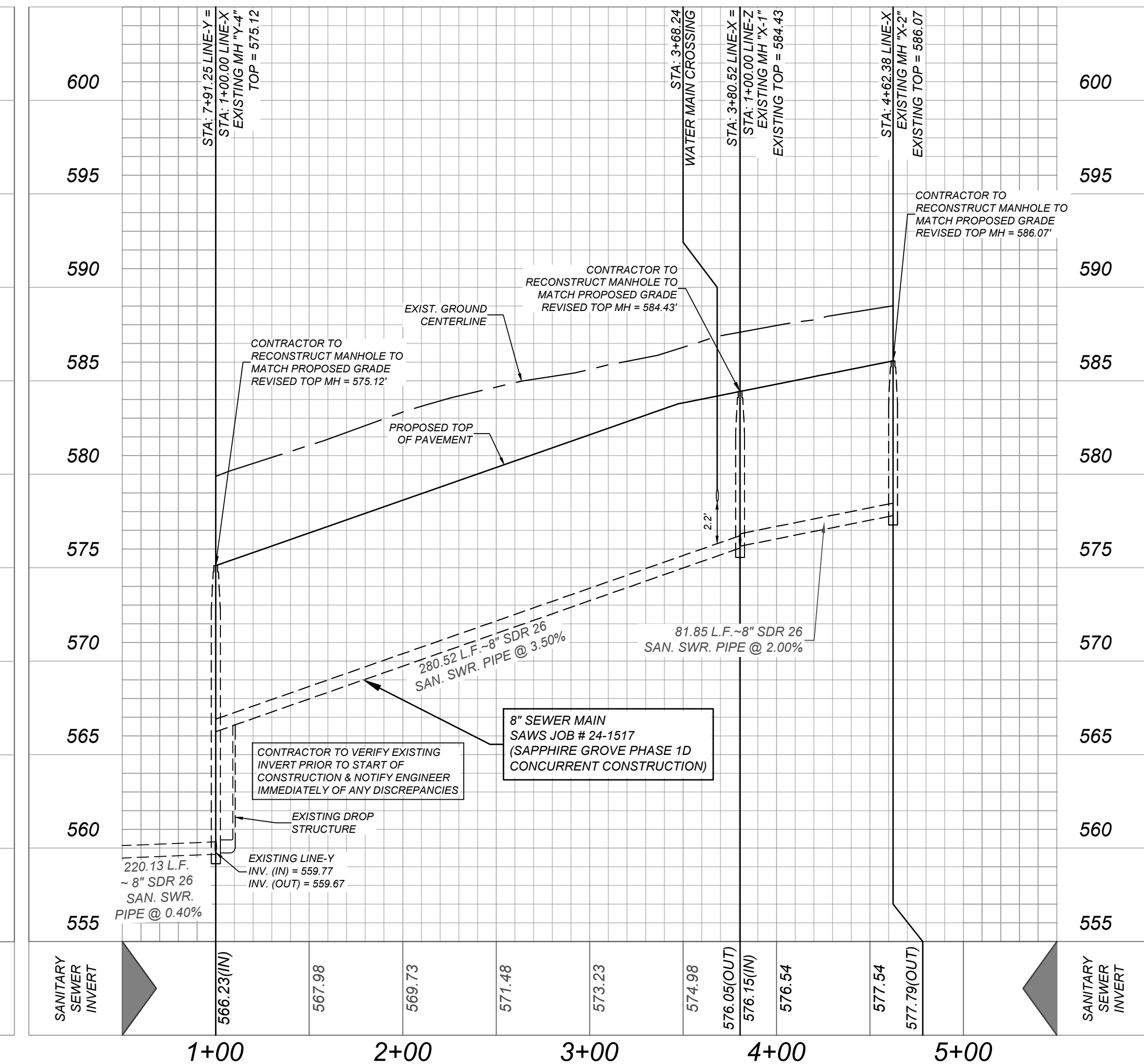
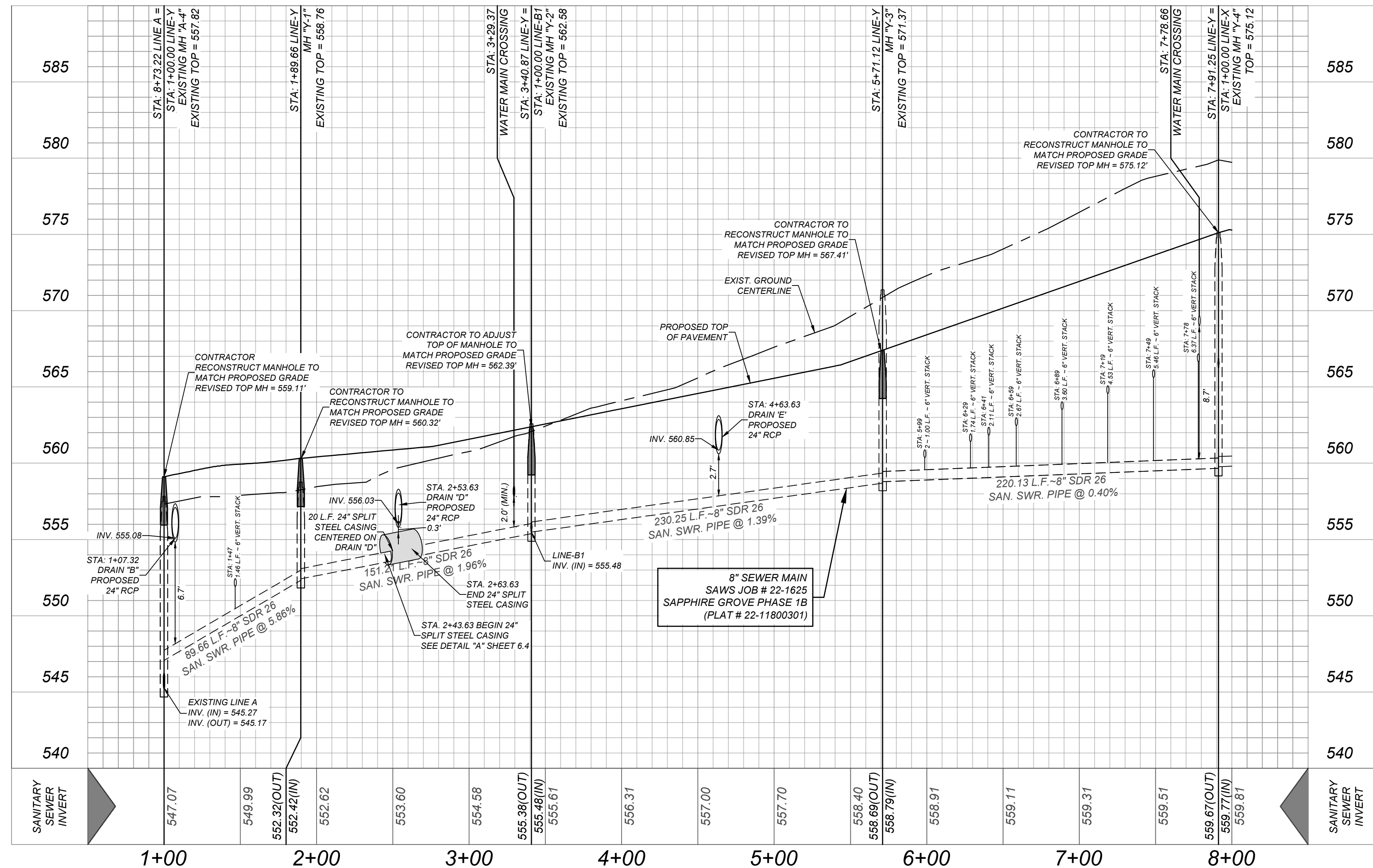


EXISTING LINE "Y"
STA: 1+00.00 - STA: 7+91.25

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

EXISTING LINE "X"
STA: 1+00.00 - END

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



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX
SANITARY SEWER PLAN & PROFILE
EX. LINE 'Y' STA. 1+00.00-7+91.25 & EX. LINE 'X' STA. 1+00.00-END

PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/TE
SHEET NUMBER:

6.3

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 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.

NOTE:

- SEWER PIPE WHERE WATER LINE CROSSES SHALL 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).
- SEE SHEET 6.1 FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26.
- ALL MANHOLES SHALL HAVE CONCRETE RING ENCASUREMENT AND A WATER TIGHT RING AND COVER. SEE STANDARD SPECIFICATIONS.

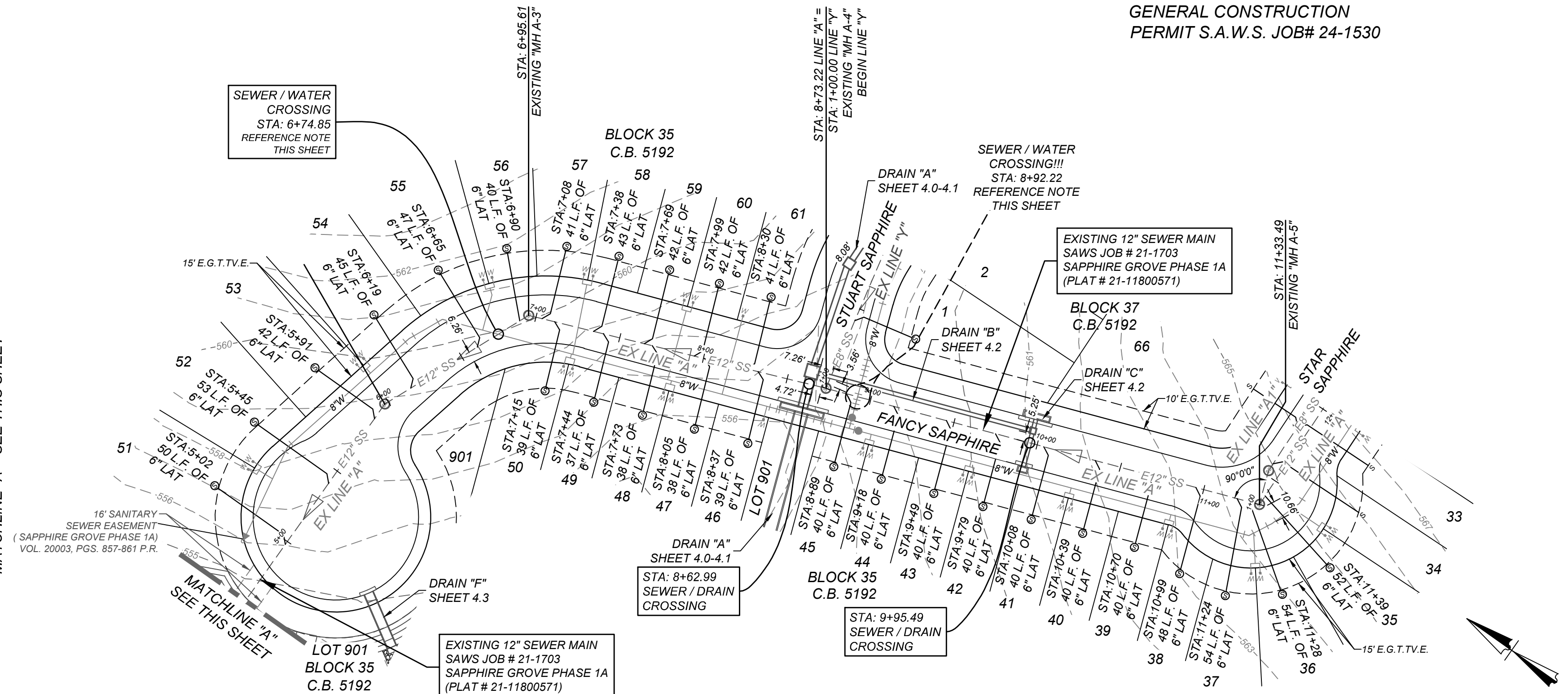
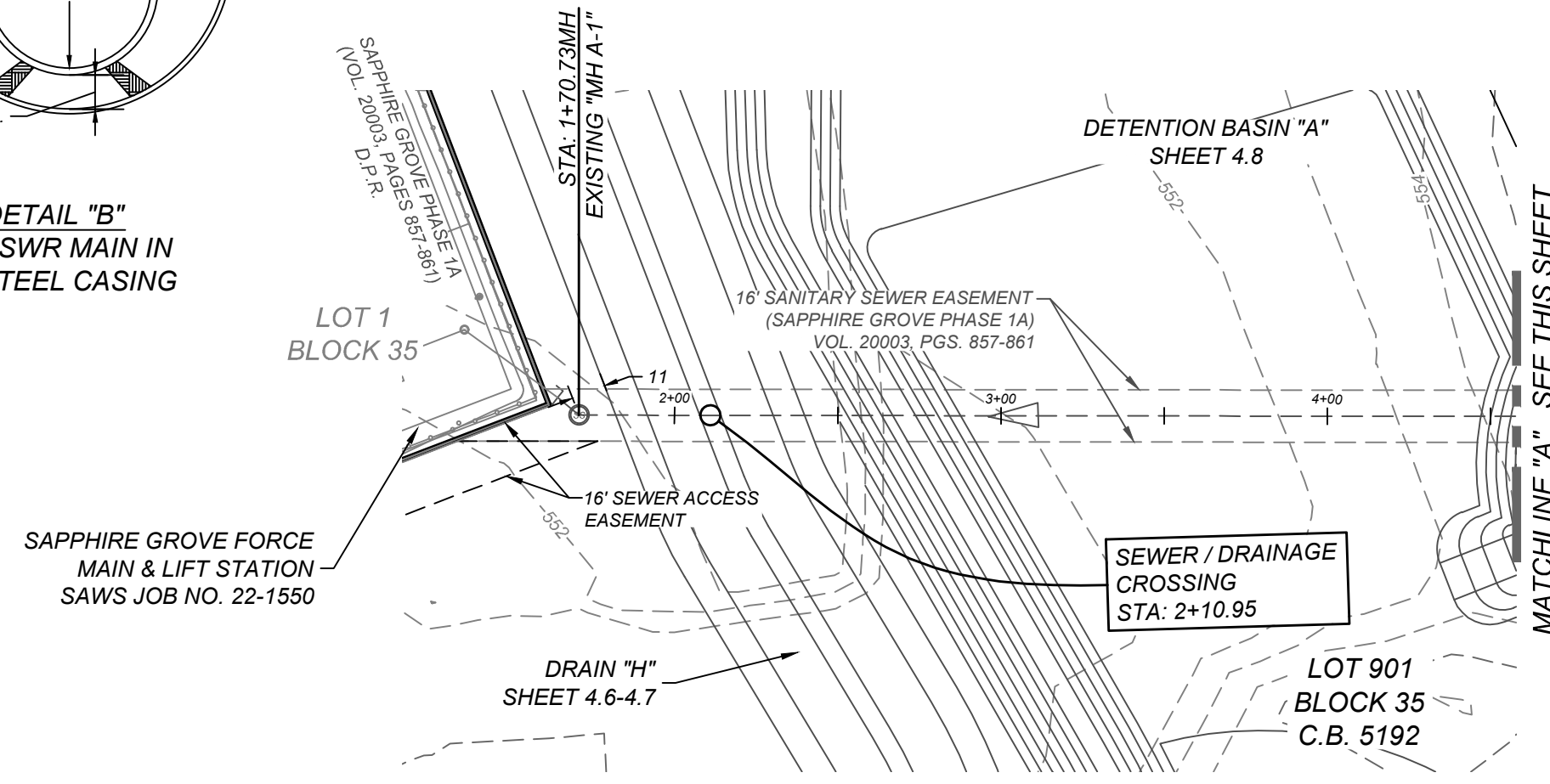
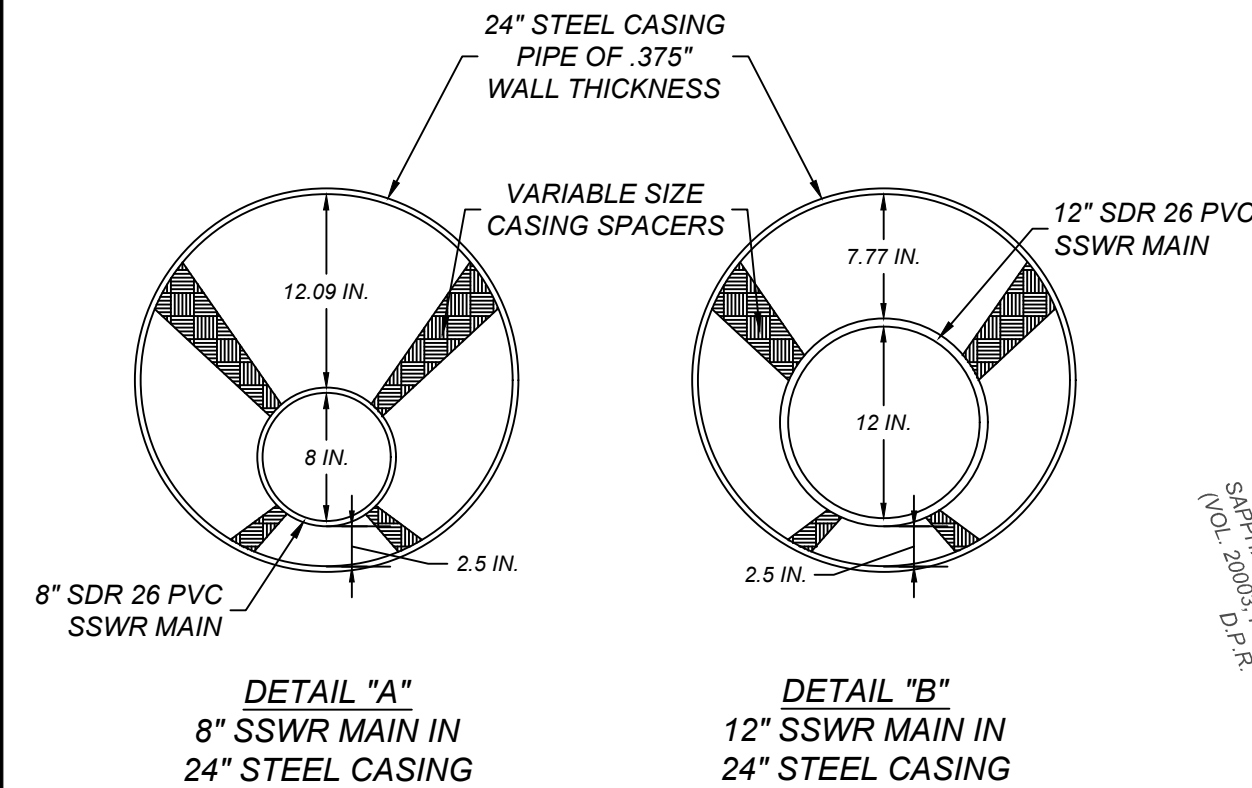
WATER / SEWER CROSSING NOTE:

ALL WATER / SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 612 SANITARY SEWER / WATER DETAIL.

SEWER: LOWER EAST SEWERSHED - DOS RIOS W.R.C.

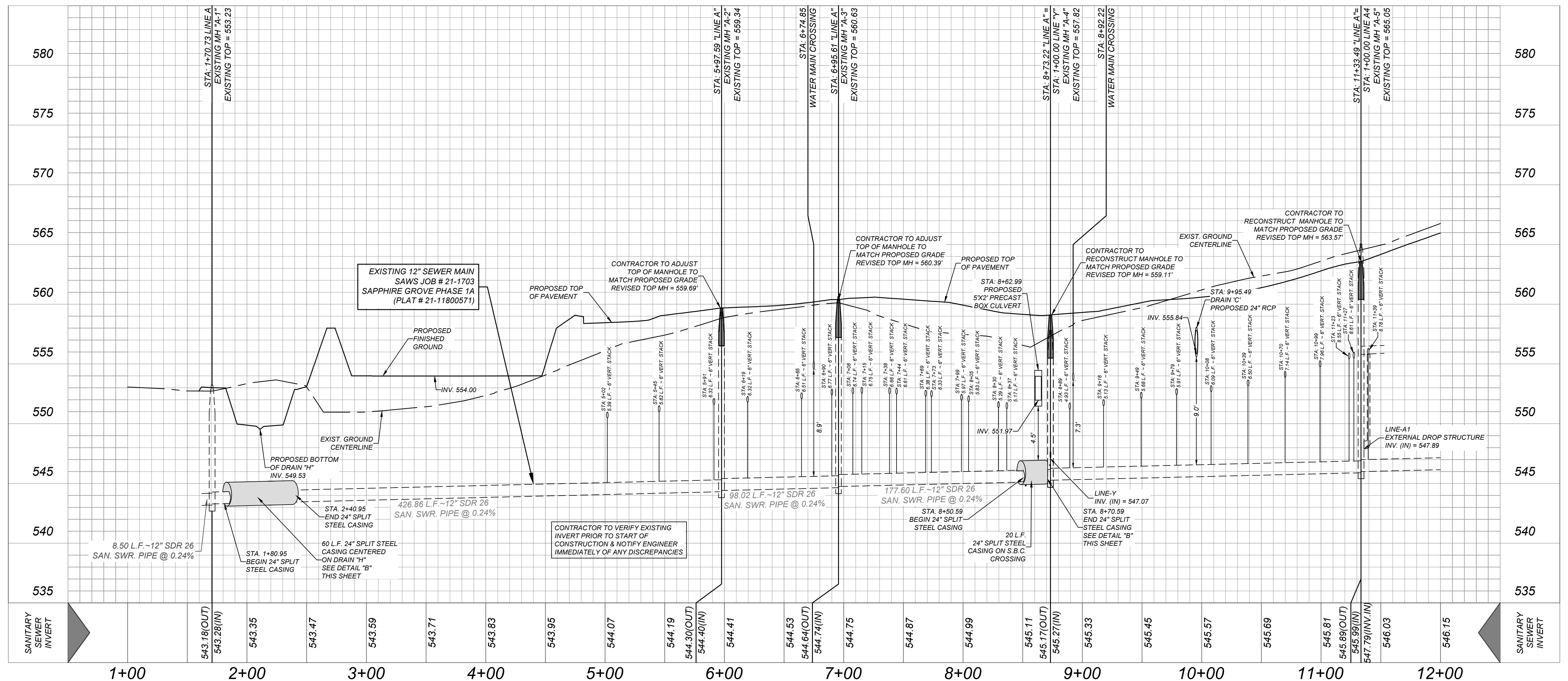
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CITY: SAN ANTONIO STATE: TEXAS ZIP: 78216
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SAWS BLOCK MAP#: 212550 & 214550 TOTAL EDUS: 141
TOTAL LINEAR FOOTAGE OF PIPE: 197 L.F. - 8" SDR 26 PIPE
NUMBER OF LOTS: 141 SAWS JOB#: 24-1530 PLAT NO.: 22-11800456

GENERAL CONSTRUCTION
PERMIT S.A.W.S. JOB# 24-1530



EXISTING LINE "A"
STA: 4+00.00 - STA: 12+00.00

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



SAPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX
SANITARY SEWER PLAN & PROFILE
LINE 'B1' STA. 1+00.00 - END & EX. LINE 'A' STA. 4+00.00 - 12+00.00

PLAT NO. 22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/TE
SHEET NUMBER:

Date: Jun 14, 2024, 9:21am User ID: wbratcher
File: N:\314\39\1\3\Design\Civil\Sewer\SSPP3143913.dwg

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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- SEE SHEET 6.1 FOR BENCHMARK INFORMATION.
- PIPE TYPE DESIGNATIONS ARE SDR 26
- ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER. SEE STANDARD SPECIFICATIONS.

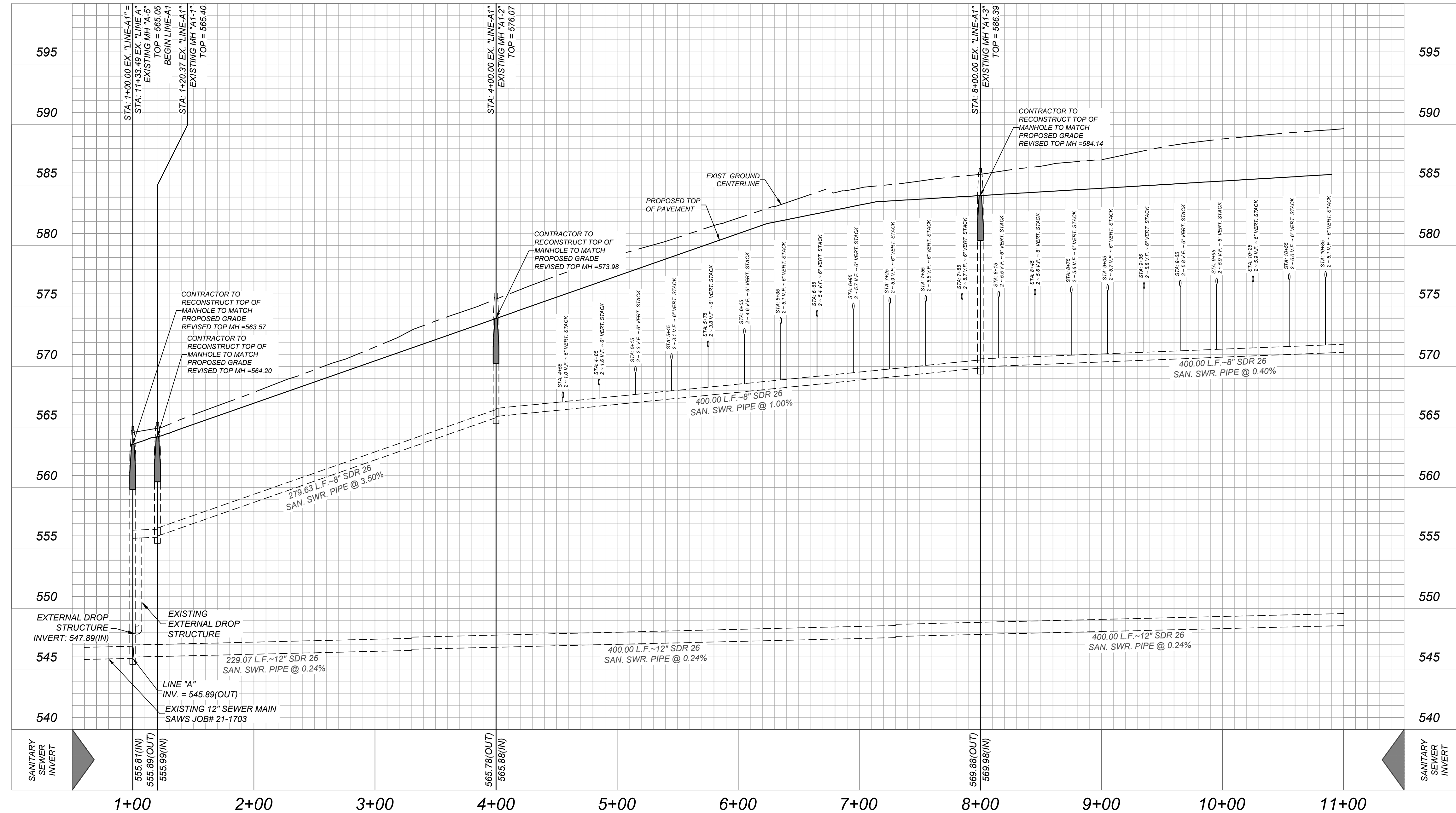
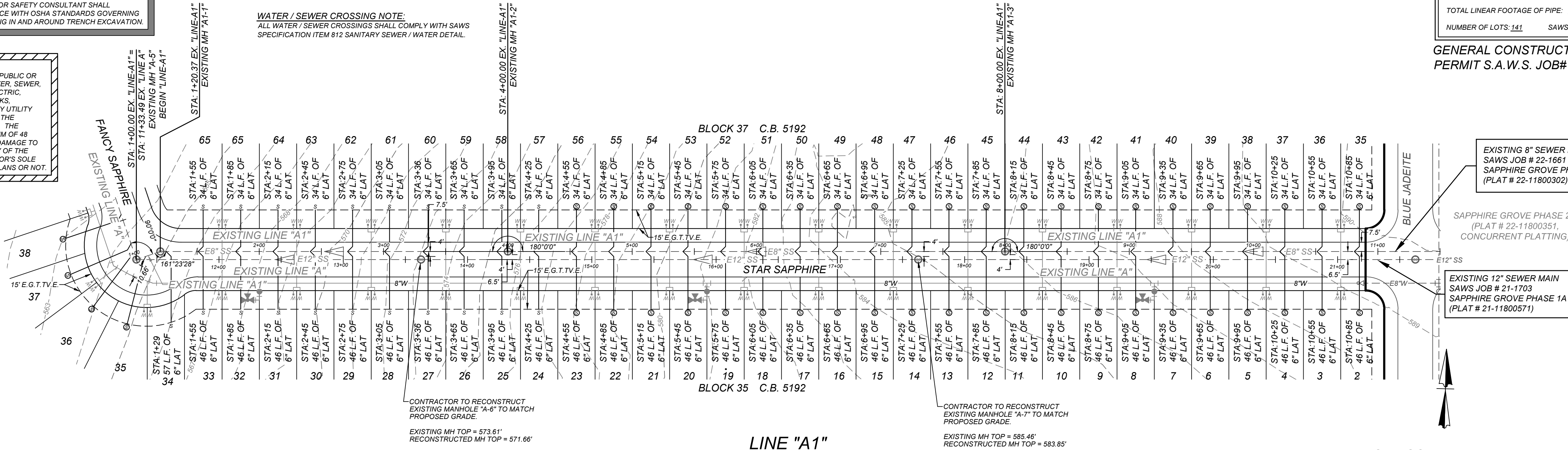
WATER / SEWER CROSSING NOTE:

ALL WATER / SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 812 SANITARY SEWER / WATER DETAIL.

SEWER: LOWER EAST SEWERSHED - DOS RIOS W.R.C.

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GENERAL CONSTRUCTION
PERMIT S.A.W.S. JOB# 24-1530



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX
SANITARY SEWER PLAN & PROFILE
LINE "A4" STA. 1+00.00 - END

PLAT NO.
22-11800456

JOB NO. 314-39-13

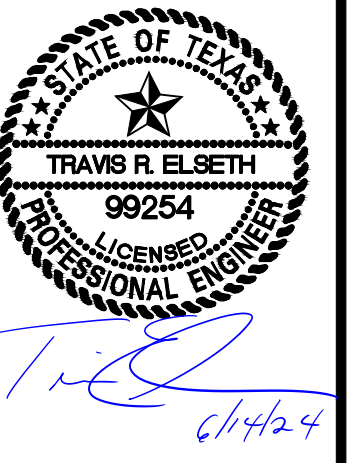
DATE: FEBRUARY 2024

DRAWN/AD CHECKED/TE

SHEET NUMBER:

6.5

ISSUE DATE:
REVISIONS:



TRENCH EXCAVATION SAFETY PROTECTION

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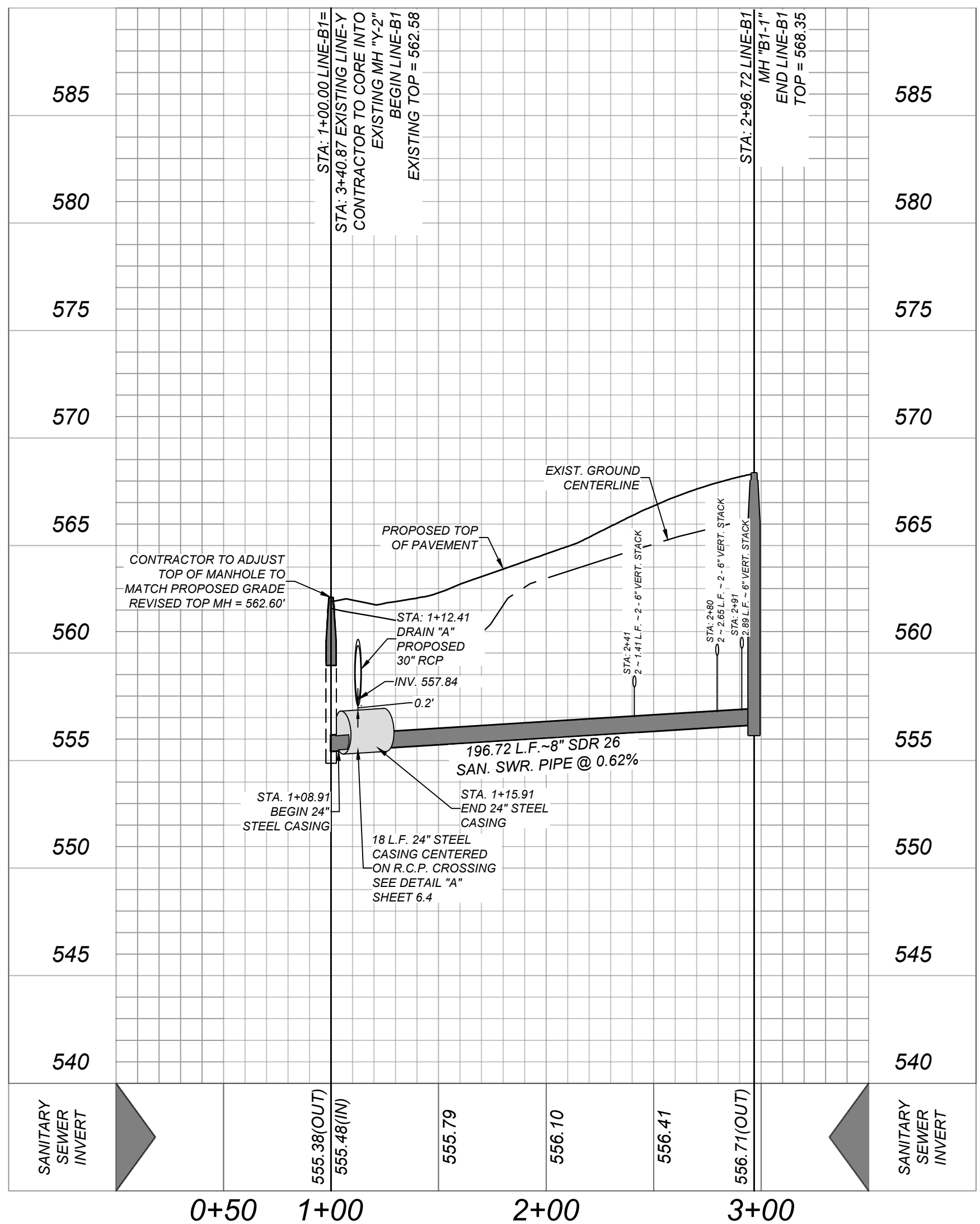
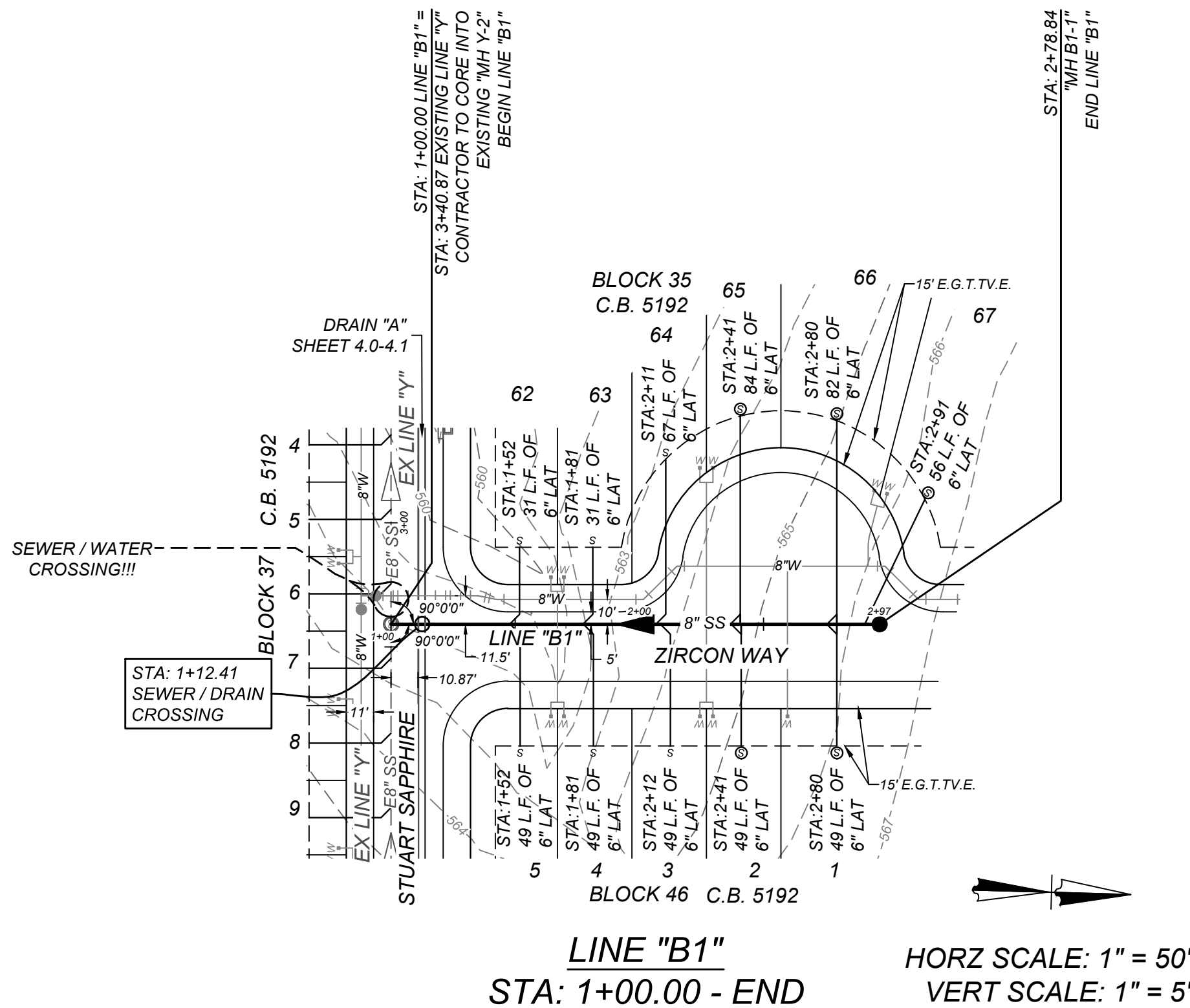
WATER / SEWER CROSSING NOTE:

ALL WATER / SEWER CROSSINGS SHALL COMPLY WITH SAWS SPECIFICATION ITEM 612 SANITARY SEWER / WATER DETAIL.

SEWER: LOWER EAST SEWERSHED - DOS RIOS W.R.C.

DEVELOPER'S NAME: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION LTD.
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GENERAL CONSTRUCTION
PERMIT S.A.W.S. JOB# 24-1530



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TX
SANITARY SEWER PLAN & PROFILE
LINE 'B1' STA. 1+00.00 - END

PLAT NO.
22-11800456

JOB NO. 314-39-13

DATE: FEBRUARY 2024

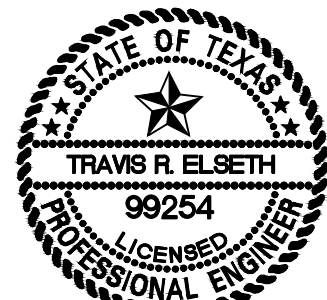
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SHEET NUMBER:

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ISSUE DATE

REVISIONS



6/14/24

PLAT NO.
22-11800456

JOB NO. 314-39-13

DATE: FEBRUARY 2024

DRAWN/AD CHECKED/TE

SHEET NUMBER:

6.6

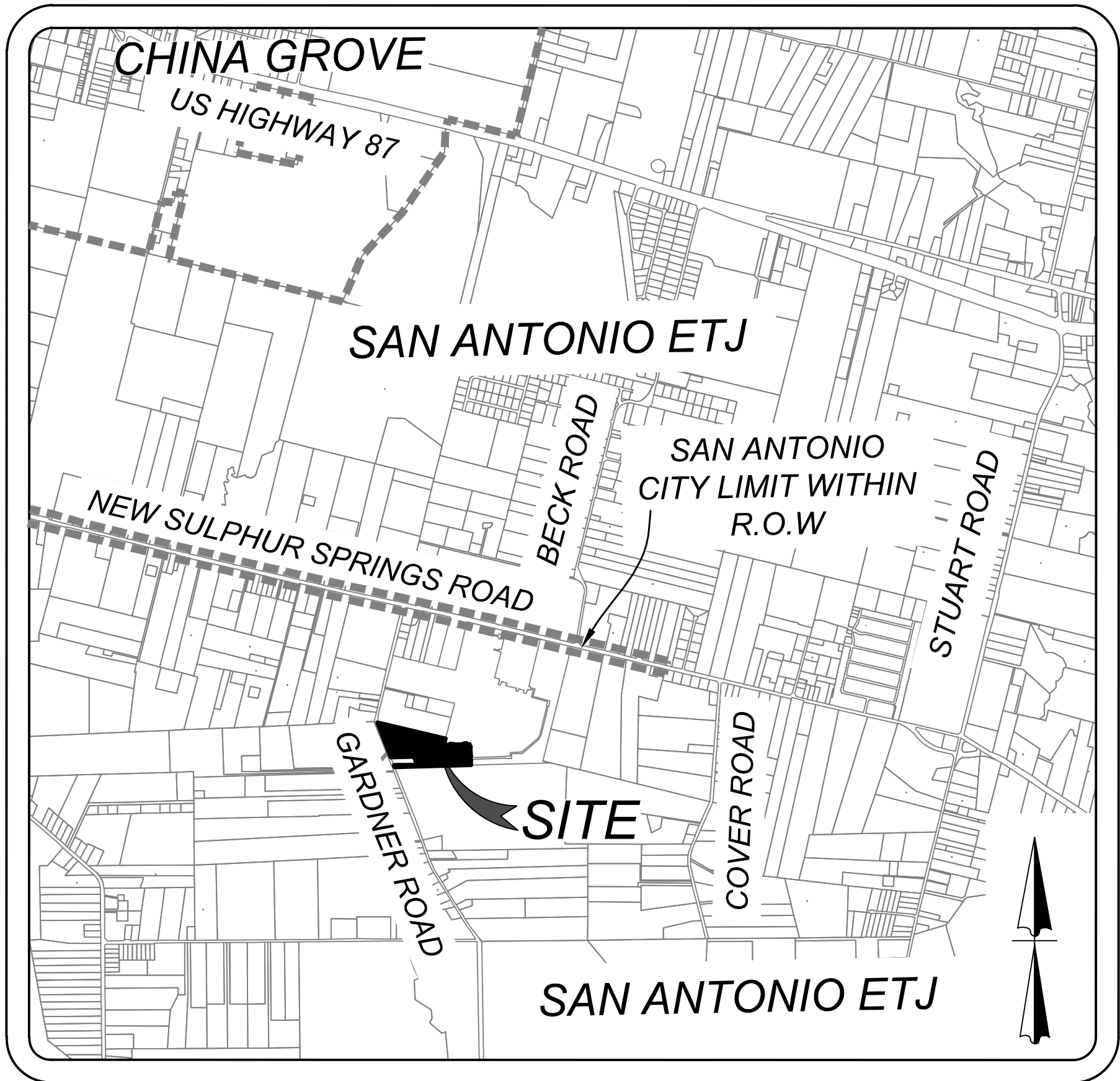
SAPPHIRE GROVE PHASE 2D

BEXAR COUNTY, TEXAS

WATER IMPROVEMENTS

GENERAL NOTES

- ALL VALVES SHALL REMAIN CLOSED UNTIL MAINS HAVE BEEN DISINFECTED, FLUSHED, AND RELEASED FOR PUBLIC USE BY THE ENGINEER.
- EXISTING UTILITIES SHOWN ARE TAKEN FROM VARIOUS UTILITY COMPANY RECORDS. CONTRACTORS SHALL VERIFY THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO BEGINNING CONSTRUCTION. CONTRACTORS SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND DRAINAGE STRUCTURES DURING CONSTRUCTION.
- ALL EXCAVATION SHALL BE UNCLASSIFIED REGARDLESS OF MATERIAL ENCOUNTERED.
- BIDDERS ARE NOTIFIED TO MAKE SUBSURFACE INVESTIGATIONS AS THEY DEEM NECESSARY. NO ADDITIONAL PAYMENT WILL BE MADE FOR WATER, SAND, GRAVEL OR OTHER UNSTABLE CONDITIONS ENCOUNTERED IN EXCAVATIONS.
- DETOUR OF TRAFFIC AROUND WORK ACTIVITIES, MAINTENANCE OF TRAFFIC CONTROL SIGNS, AND FLAGMEN ARE THE CONTRACTOR'S RESPONSIBILITY. NO SEPARATE PAYMENT WILL BE MADE.
- THE CONTRACTOR SHALL PROTECT ALL OPEN EXCAVATIONS AND EQUIPMENT FROM CHILDREN, PEDESTRIANS, AND VEHICLES IN THE AREA.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ALL FENCES IN THE WORK AREA TO THEIR ORIGINAL CONDITION PRIOR TO COMPLETION OF THE CONTRACT. THIS SHALL APPLY TO ALL FENCES IN THE WORK AREA WHETHER THEY ARE SHOWN ON THE PLANS OR NOT.
- CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. ANY CONSTRUCTION STAKES, MARKS, ETC., DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL CONFER WITH EACH INDIVIDUAL PROPERTY OWNER AS TO THE LOCATION OF EACH INDIVIDUAL METER BOX.
- CONTRACTOR SHALL DISINFECT ALL NEW WATER MAINS BEFORE TYING INTO EXISTING WATER MAINS.
- ALL VALVES SHALL BE PERMANENTLY MARKED BY THE USE OF A VALVE MARKER. NO SEPARATE PAY ITEM.
- 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(S) 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.
- CONTRACTOR SHALL MAINTAIN FENCING FOR THE CONTAINMENT OF LIVESTOCK DURING CONSTRUCTION. ALL FENCES REMOVED FOR CONSTRUCTION SHALL BE REPLACED. ALL REQUIRED FENCING SHALL BE INCIDENTAL TO CONSTRUCTION AND NOT A SEPARATE PAY ITEM.
- ALL DRIVEWAYS, INCLUDING DRAIN PIPES, CULVERTS AND HEADWALLS, DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR TO EQUAL OR BETTER THAN PRECONSTRUCTION CONDITION. ASPHALT DRIVES ARE NOT ALLOWED TO BE CUT WITHOUT OWNERS PERMISSION. INSTALLATION OF WATER MAINS CROSSING CONCRETE DRIVES WILL BE BORED. ALL DRAIN PIPE, CULVERT AND HEADWALL REPAIR SHALL BE INCIDENTAL TO CONSTRUCTION AND NOT A SEPARATE PAY ITEM. DRIVEWAY PAVEMENT REPAIR SHALL BE PAID FOR AS PER ITEM NO. 02950, "CUTTING AND PATCHING ASPHALT PAVEMENT, ASPHALT DRIVES, CONCRETE DRIVES, OR GRAVEL ROADS AND DRIVES". PAYMENT FOR BORES UNDER CONCRETE DRIVES DRIVES SHALL BE PAID FOR AS PER ITEM 02445 "BORING AND CASING PIPE UNDER HIGHWAYS, RAILROADS, OR OTHER AREAS".
- LOCATIONS OF COMBINATION AIR VALVES WHERE SHOWN ON PLANS ARE APPROXIMATE. FINAL LOCATIONS TO BE ADJUSTED IN FIELD AT TIME OF CONSTRUCTION AT THE DIRECTION OF THE ENGINEER.
- ALL WORK SHALL BE SCHEDULED TO TAKE PLACE ON MONDAY THROUGH FRIDAY, DURING NORMAL WORK HOURS. CONTRACTOR SHALL NOTIFY ECSUD 48 HOURS PRIOR TO SERVICE SHUT OFF AFFECTING CUSTOMERS. SERVICE SHALL NOT BE SHUT OFF FOR MORE THAN EIGHT (8) HOURS AT A TIME.
- THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PROPERTY, INCLUDING, BUT NOT LIMITED TO, FENCES, PAVEMENT, DRIVEWAYS, LAWNS, CULVERTS, AND TREES, AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL PROVIDE EROSION CONTROL AT ALL CULVERT, STREAM AND DRAINAGE SWALE CROSSINGS. EROSION CONTROL MEASURES SHALL INCLUDE AS A MINIMUM SILT FENCES. SILT FENCES SHALL BE INSTALLED PRIOR TO DISTURBANCE OF THE WORK AREAS AND SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION OF THE DISTURBED AREAS UPSTREAM. EROSION CONTROL SHALL BE COORDINATED WITH THE ENGINEER.
- THE CONTRACTOR SHALL REMOVE AND REPLACE ANY MAILBOXES, TRAFFIC OR ROAD SIGNS ENCOUNTERED. NO SEPARATE PAY ITEM.
- CONTRACTOR SHALL SUBMIT TO ENGINEER PROPOSED CONSTRUCTION SEQUENCE PRIOR TO BEGINNING CONSTRUCTION.
- ALL FITTINGS ARE TO BE DUCTILE IRON, MECHANICAL JOINT TYPE, UNLESS OTHERWISE NOTED ON PLANS.
- ALL THRUST BLOCKS SHALL BE INSPECTED BY OWNER AND/OR ENGINEER PRIOR TO BACKFILLING.
- ALL EXISTING VALVES SHOWN ON PLANS TO BE ABANDONED, SHALL HAVE BOXES REMOVED AND SHALL BE BACKFILLED ACCORDING TO SPECIFICATIONS. NO SEPARATE PAY ITEM.
- CONTRACTOR SHALL CONTAIN ALL CONSTRUCTION AND STAGING WITHIN EXISTING UTILITY EASEMENTS, UNLESS OTHER ARRANGEMENTS ARE MADE WITH OWNER AND/OR TxDOT.
- WHERE THE NEW WATER MAIN SHOWN ON THE PLANS REQUIRES CROSSING AN EXISTING WATER MAIN OR OTHER UTILITY, THE CONTRACTOR SHALL VERTICALLY DEFLECT THE PROPOSED WATER MAIN. DEFLECTION SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS. FITTINGS ARE NOT PERMISSIBLE, UNLESS OTHERWISE SHOWN ON THE PLANS. NO SEPARATE PAY ITEM.
- WATER MAINS SHALL BE INSTALLED WITH 48" MINIMUM COVER OVER THE TOP OF THE PIPE, UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER.
- CONTRACTOR TO PROVIDE POSITIVE DRAINAGE AWAY FROM ALL CONCRETE FOUNDATIONS, VAULT BOXES AND OVERFLOW BOXES THROUGHOUT THE PROJECT SITE.
- CONTRACTOR TO INSTALL DIRECT BURIAL ELECTRICALLY CONTINUOUS TRACER WIRE WITH ACCESS POINTS, ADJACENT TO ALL WATER MAINS. N.S.P.I.

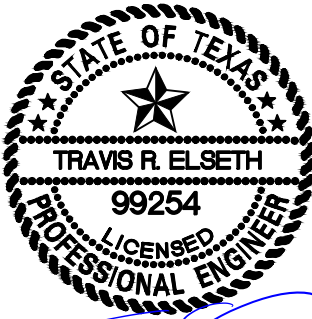


LOCATION MAP
N.T.S.

OWNER/DEVELOPER:
LENNAR HOMES OF TEXAS LAND
AND CONSTRUCTION LTD.
100 NE LOOP 410,. SUITE 1155
SAN ANTONIO, TX 78216
PHONE: (210) 403-6282

Sheet List Table

Sheet Title	Sheet Number
WATER IMPROVEMENTS COVER SHEET	7.0
OVERALL WATER DISTRIBUTION PLAN (1 OF 2)	7.1
OVERALL WATER DISTRIBUTION PLAN (2 OF 2)	7.2
WATER DISTRIBUTION DETAIL SHEET	7.3
WATER DISTRIBUTION DETAIL SHEET	7.4
WATER DISTRIBUTION DETAIL SHEET	7.5



7/24/24

TRENCH EXCAVATION SAFETY PROTECTION

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CAUTION!!!

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NOTE:

PRESSURE REDUCING VALVES TO BE THE RESPONSIBILITY OF THE HOME BUILDER WHERE REQUIRED

NOTE:

CONTRACTOR SHALL COORDINATE WITH EAST CENTRAL WATER DISTRICT TO VERIFY THE LOCATION OF ISOLATION VALVES. OPERATION OF ISOLATION VALVES SHALL ONLY BE MADE WITH THE APPROVAL AND PRESENCE OF EAST CENTRAL WATER DISTRICT PERSONNEL

WATER PLAN NOTES:

1. ALL VALVES SHALL READ "OPEN RIGHT"
2. ALL PVC PIPES 1" THROUGH 4" DIAMETER SHALL BE CLASS 235 (DR 18)
3. ALL PVC PIPES 8" AND ABOVE DIAMETER SHALL BE CLASS 235 (DR 18) C-909
4. LONG WATER SERVICES REQUIRE 2" PVC CASING

FIRE FLOW NOTE:

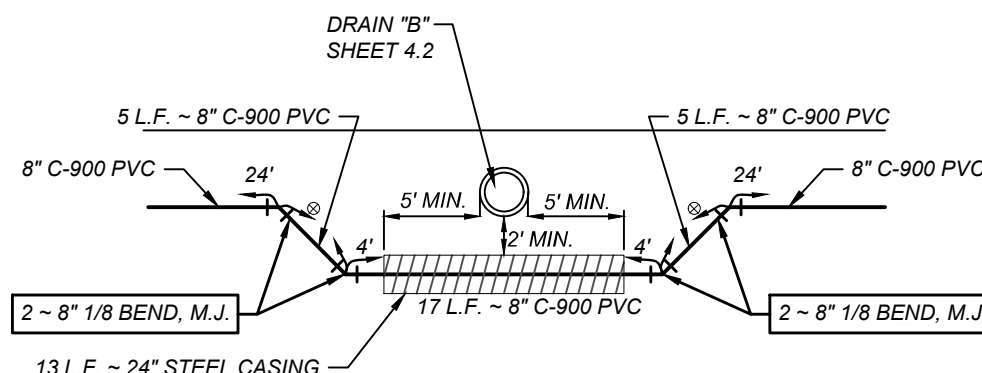
IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1,000 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED 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.

COMPACTION NOTE:

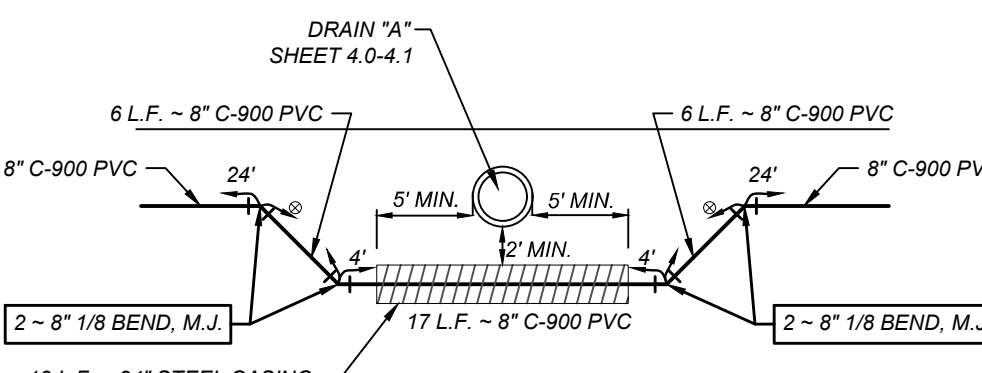
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT 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:

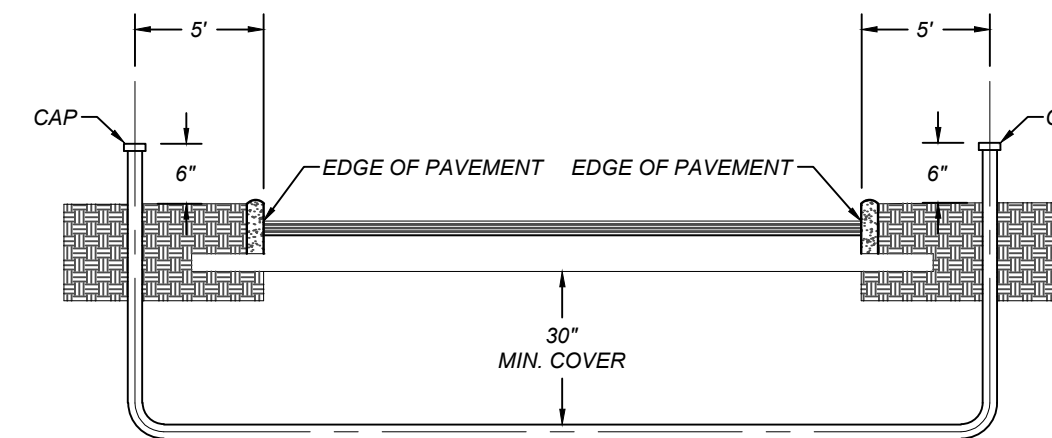
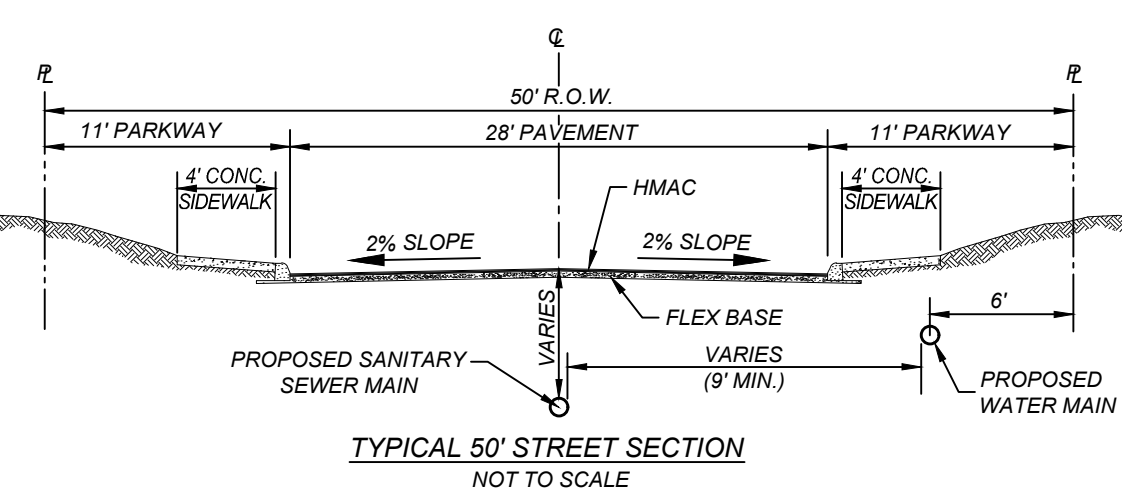
CONDUIT LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYORS SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYORS PLAN.



DETAIL "B"
VERTICAL OFFSET
WATER/RAIN CROSSING
N.T.S

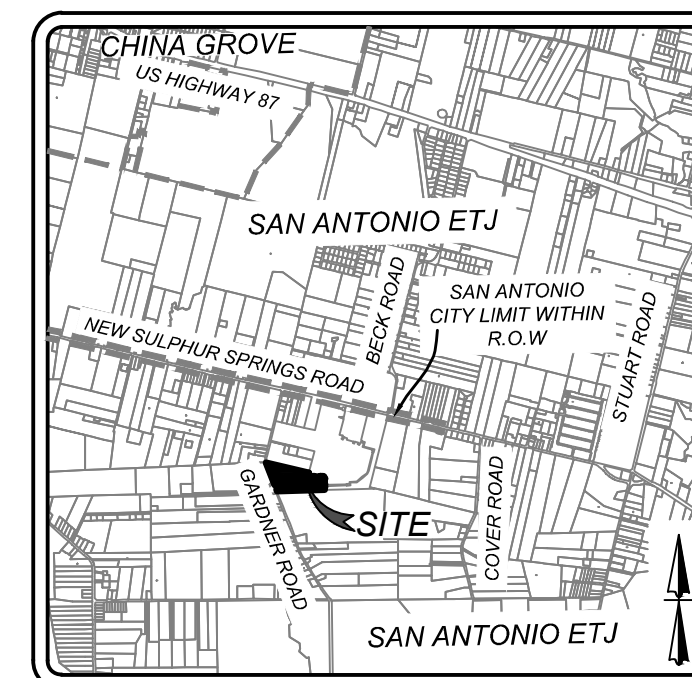


DETAIL "C"
VERTICAL OFFSET
WATER/RAIN CROSSING
N.T.S

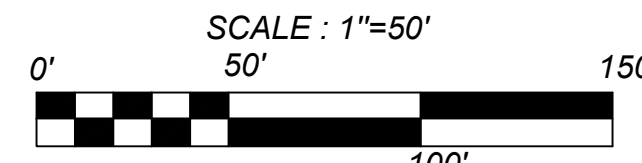


*PVC SCHEDULE 80 CONDUIT
SEE PLAN SHEETS FOR SIZE LOCATION AND NUMBER OF CONDUITS

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.

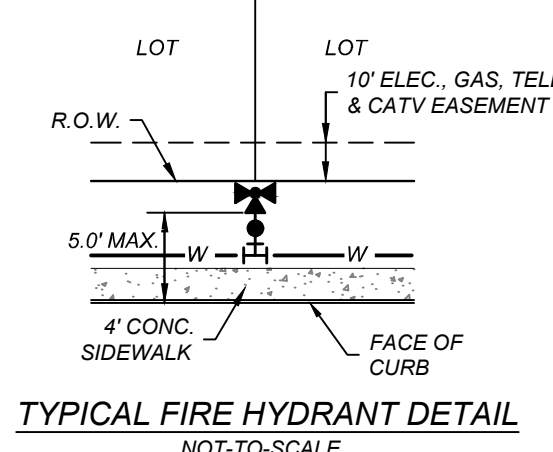


LOCATION MAP
N.T.S.

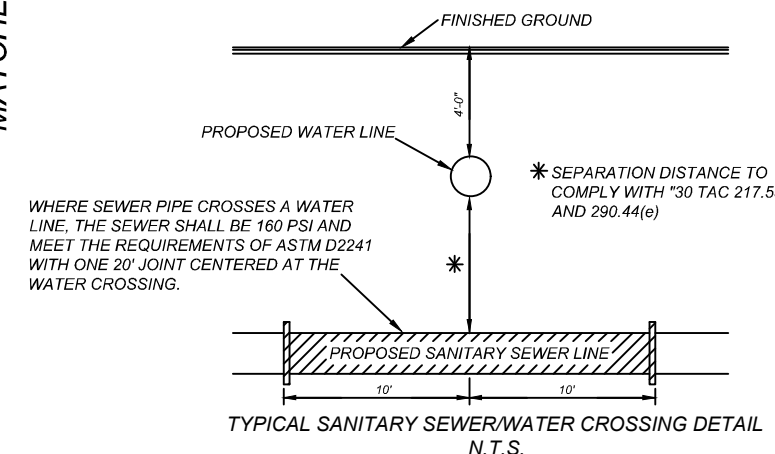


LEGEND

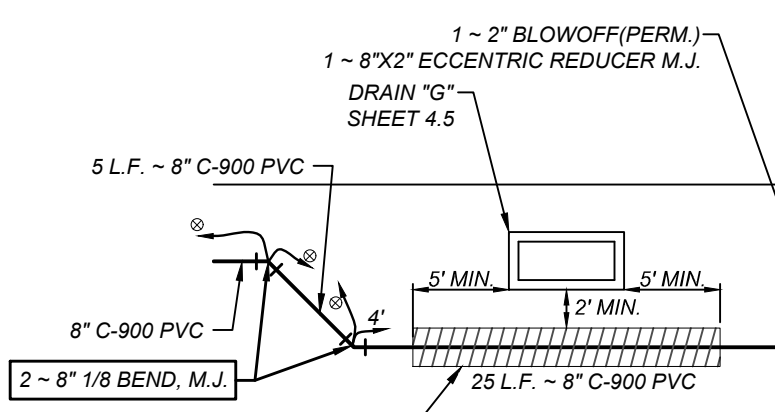
- PROPOSED WATER MAIN AND STRUCTURES = 8" W
- PROPOSED WATER SERVICE AND METER BOX = 8" W
- PROPOSED FIRE HYDRANT = 8" W
- PROPOSED SANITARY SEWER MAIN = 8" SS
- PROPOSED SANITARY SEWER MANHOLE = 8" SS
- RIGHT-OF-WAY = R.O.W.
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- FIRE HYDRANT (ADJACENT UNITS, CONCURRENT PLATTING) = 8" W
- SANITARY SEWER MAIN (ADJACENT UNITS, CONCURRENT PLATTING) = 8" SS
- RESTRAINED LENGTH = 7'
- ENTIRE LENGTH OF PIPE TO BE RESTRAINED = 7'



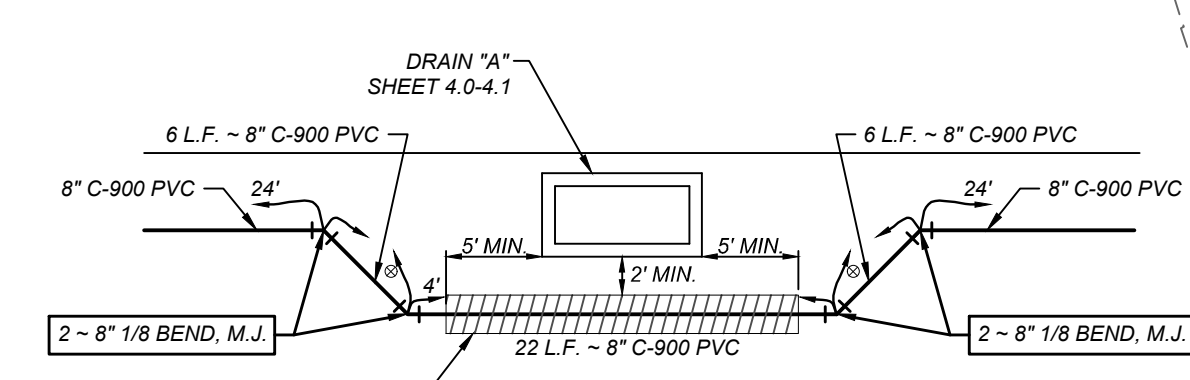
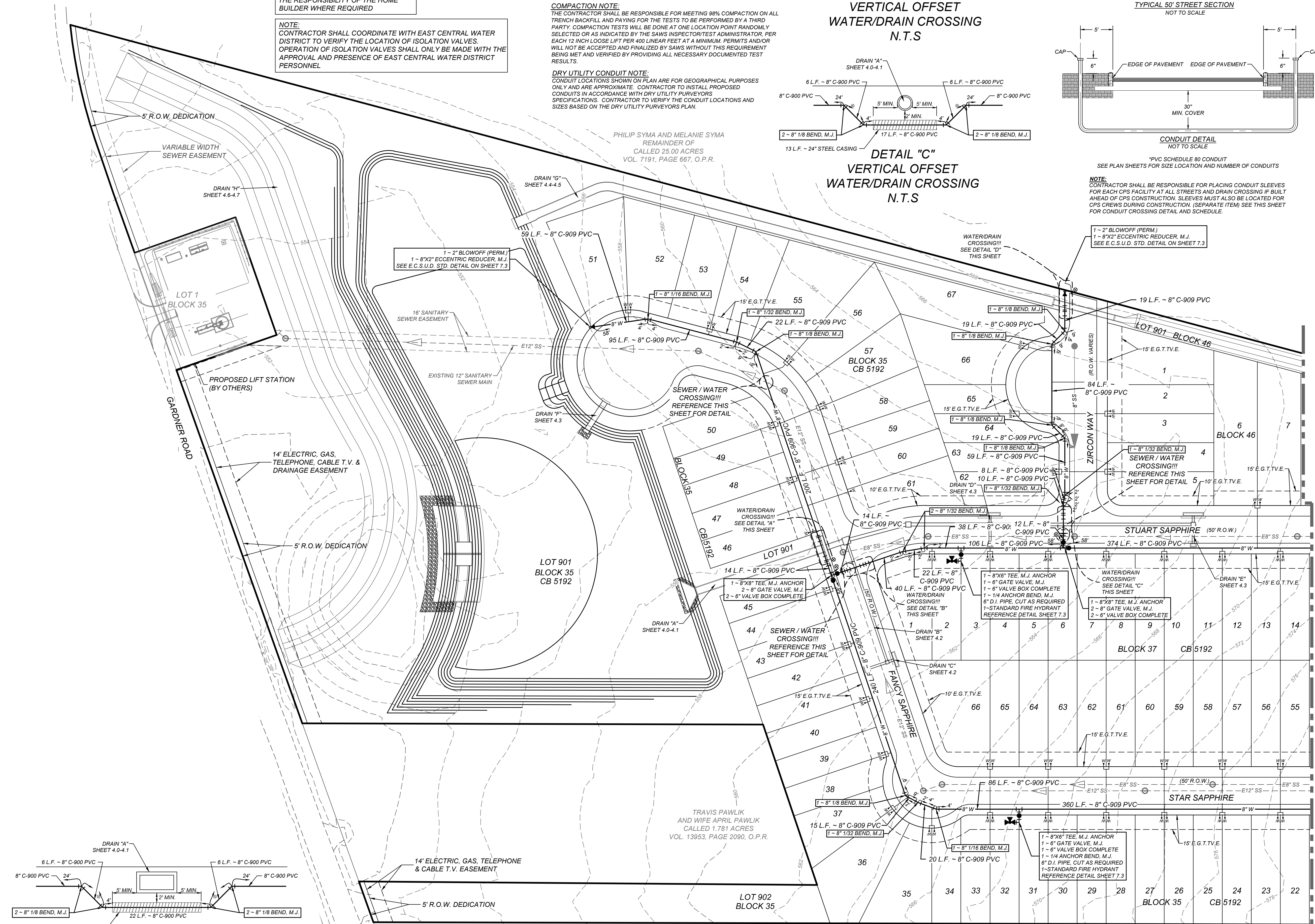
TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE



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



DETAIL "D"
VERTICAL OFFSET
WATER/RAIN CROSSING
N.T.S



DETAIL "A"
VERTICAL OFFSET
WATER/RAIN CROSSING
N.T.S

TRAVIS PAWLK AND WIFE APRIL PAWLK
CALLED 1.781 ACRES
VOL. 13953, PAGE 2090, O.P.R.

MARGARET FRANCES SCHWARTZKOPF
REMAINDER OF
CALLED 127.057 ACRES
DOC. NO. 20190191334, O.P.R.
(DESCRIBED IN VOL. 13839, PG. 699, O.P.R.)

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS

OVERALL WATER DISTRIBUTION PLAN (1 OF 2)

PLAT NO.
22-11800456

JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD **CHECKED/SC**

SHEET NUMBER:

7.1

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.

WATER PLAN NOTES:

1. ALL VALVES SHALL READ "OPEN RIGHT"
2. ALL PVC PIPES 1" THROUGH 4" DIAMETER SHALL BE CLASS 235 (DR 18)
3. ALL PVC PIPES 6" AND ABOVE DIAMETER SHALL BE CLASS 235 (DR 18) C-909.
4. LONG WATER SERVICES REQUIRE 2" PVC CASING

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.

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NOTE:

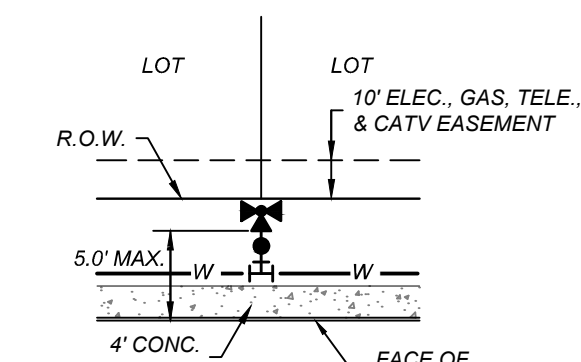
PRESSURE REDUCING VALVES TO BE THE RESPONSIBILITY OF THE HOME BUILDER WHERE REQUIRED

NOTE:

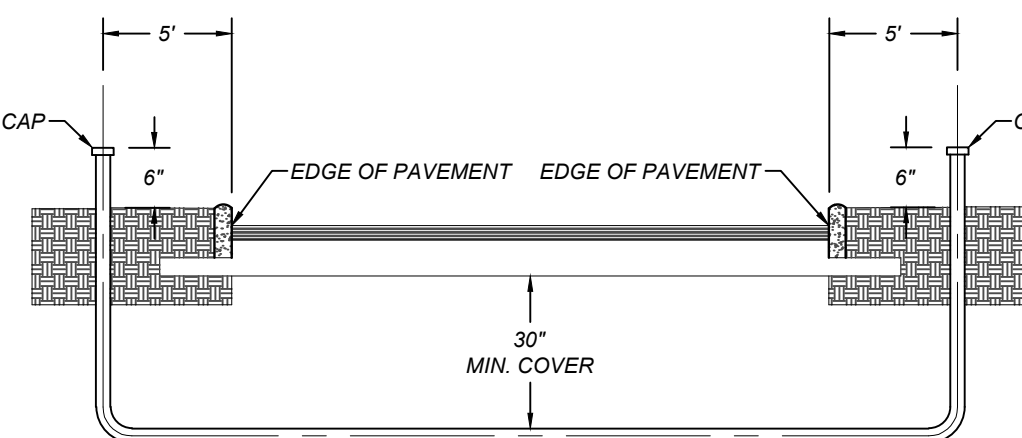
CONTRACTOR SHALL COORDINATE WITH EAST CENTRAL WATER DISTRICT TO VERIFY THE LOCATION OF ISOLATION VALVES. OPERATION OF ISOLATION VALVES SHALL ONLY BE MADE WITH THE APPROVAL AND PRESENCE OF EAST CENTRAL WATER DISTRICT PERSONNEL

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 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.

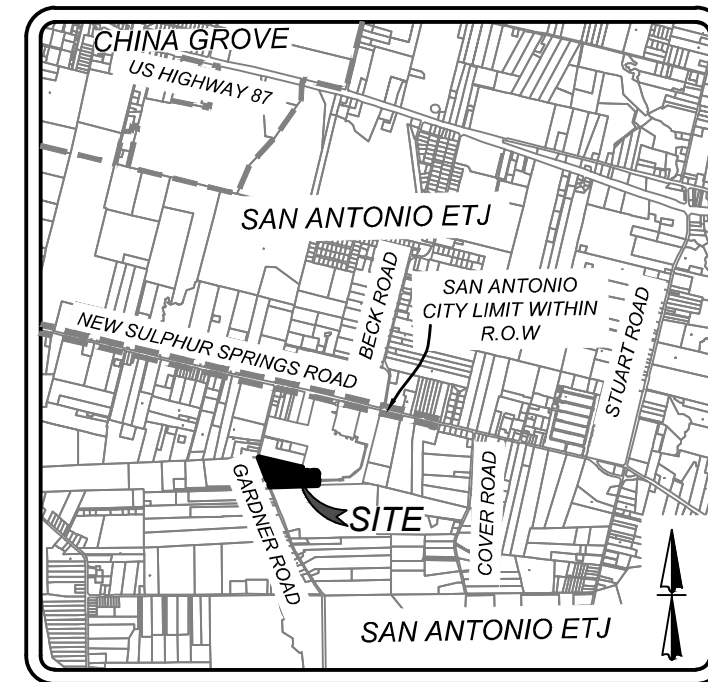
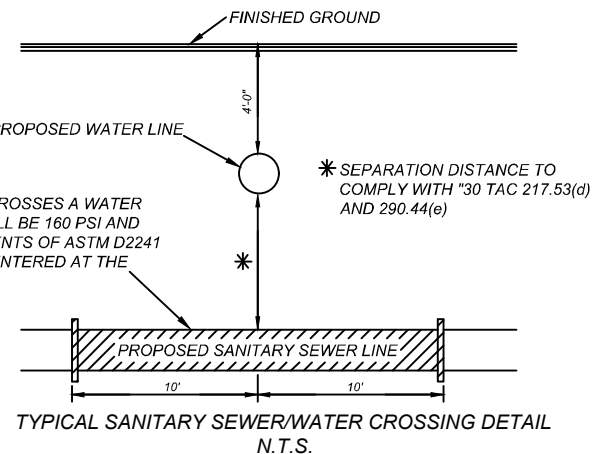
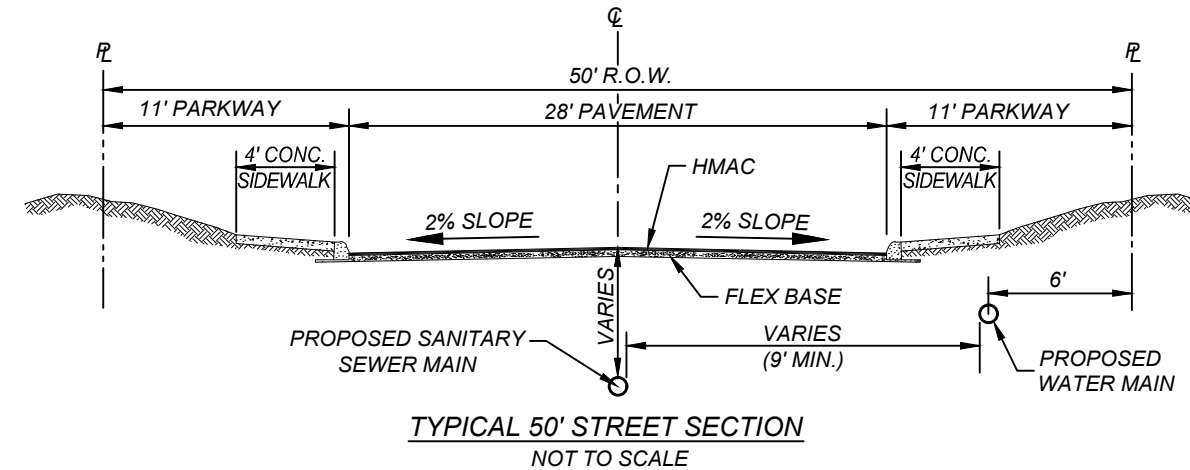


TYPICAL FIRE HYDRANT DETAIL
NOT-TO-SCALE

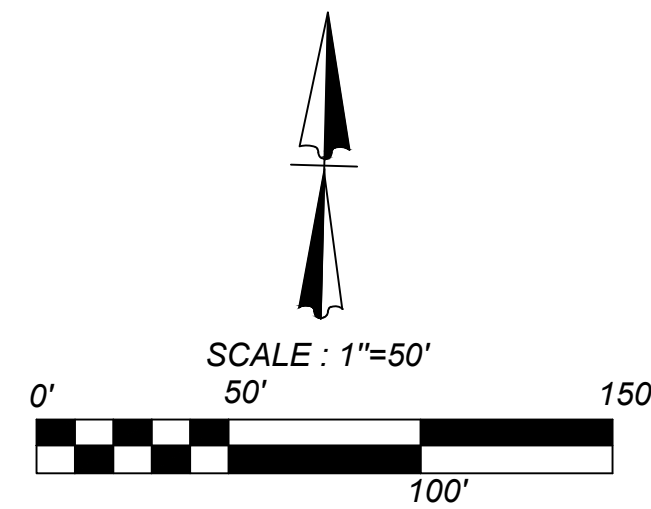


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LOCATION MAP
N.T.S.



LEGEND

- PROPOSED WATER MAIN AND STRUCTURES = 8" W
- PROPOSED WATER SERVICE AND METER BOX = E
- PROPOSED FIRE HYDRANT = F
- PROPOSED SANITARY SEWER MAIN = 8" SS
- PROPOSED SANITARY SEWER MANHOLE = M
- RIGHT-OF-WAY = R.O.W.
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- RESTRAINED LENGTH = 7'
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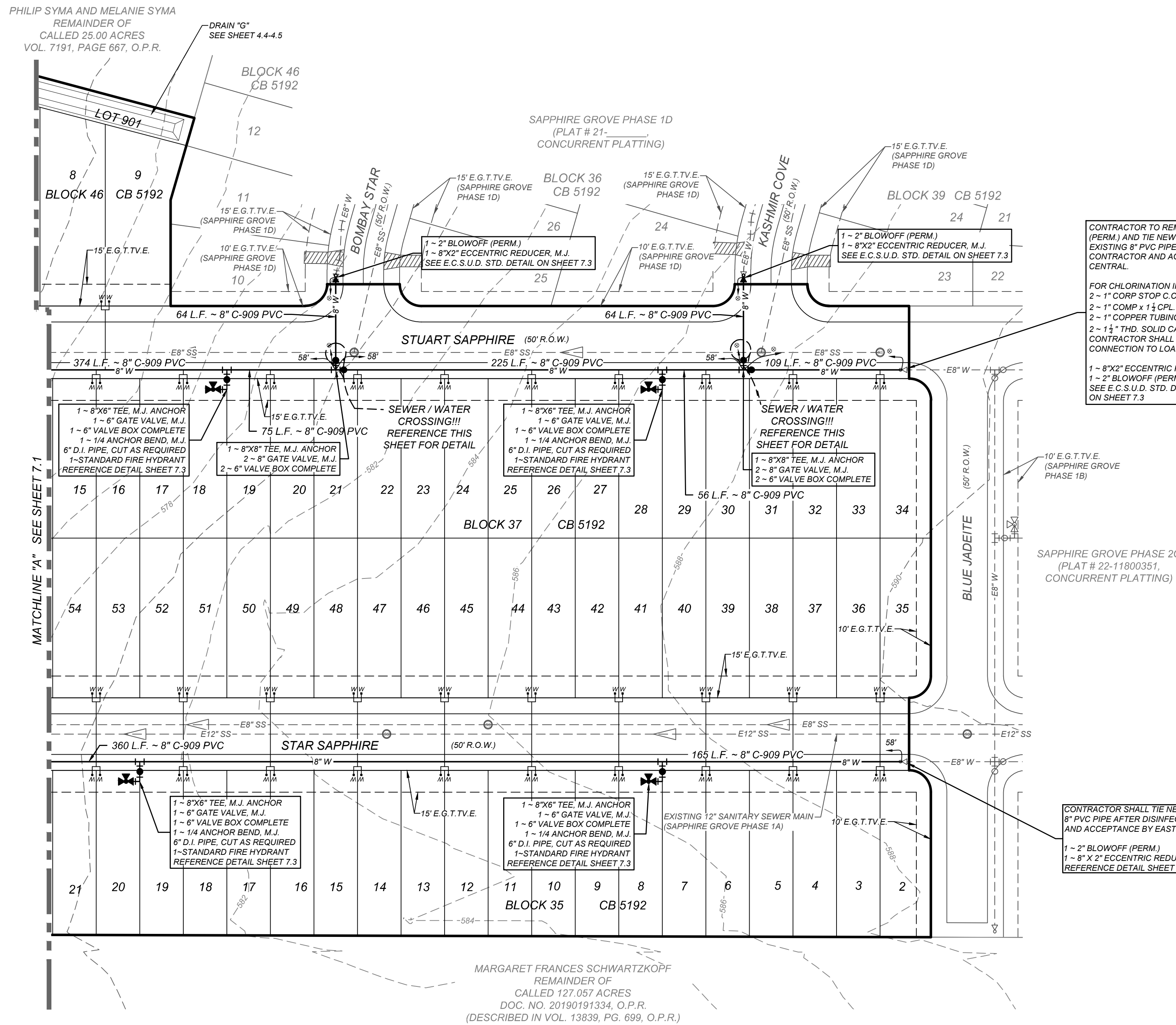
CONTRACTOR TO REMOVE EXISTING BLOWOFF (PERM.) AND TIE NEW 8" PVC PIPE TO EXISTING 8" PVC PIPE AFTER DISINFECTION BY CONTRACTOR AND ACCEPTANCE BY EAST CENTRAL.

FOR CHLORINATION INJECTION
2 ~ 1" CORP STOP C.C. x 1/2"
2 ~ 1" COMP x 1 1/4" CPL CURB STOP
2 ~ 1" COPPER TUBING, CUT AS REQUIRED
2 ~ 1 1/2" THD. SOLID CAPS, THR.
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN

1 ~ 8"x2" ECCENTRIC REDUCER, M.J.
1 ~ 2" BLOWOFF (PERM.)
SEE E.C.S.U.D. STD. DETAIL ON SHEET 7.3

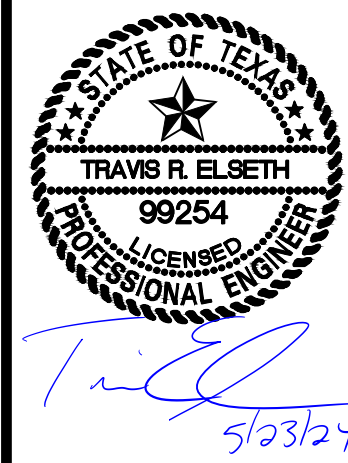
CONTRACTOR SHALL TIE NEW 8" PVC PIPE TO EXIST 8" PVC PIPE AFTER DISINFECTION BY CONTRACTOR AND ACCEPTANCE BY EAST CENTRAL.

1 ~ 2" BLOWOFF (PERM.)
1 ~ 8" x 2" ECCENTRIC REDUCER, M.J.
REFERENCE DETAIL SHEET 7.3



MARGARET FRANCES SCHWARTZKOPF
REMAINDER OF
CALLED 127.057 ACRES
DOC. NO. 20190191334, O.P.R.
(DESCRIBED IN VOL. 13839, PG. 699, O.P.R.)

K&W
ENGINEERS + SURVEYING
Phone # (210) 878-8444 • Fax # (210) 878-8441
TBE Firm # 9513 • TBE S Firm # 10122903



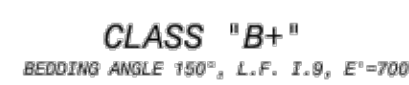
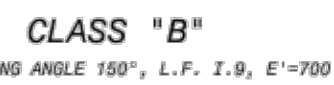
SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS

OVERALL WATER DISTRIBUTION PLAN (2 OF 2)

PLAT NO.
22-11800456

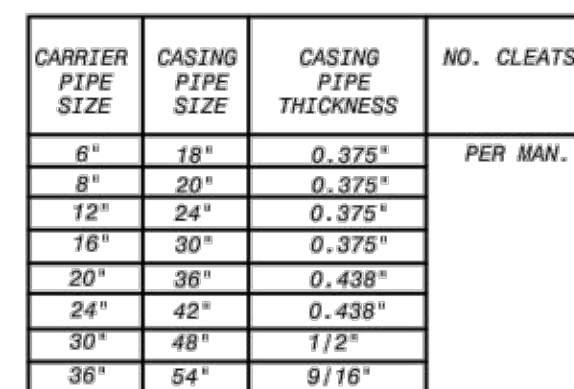
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC

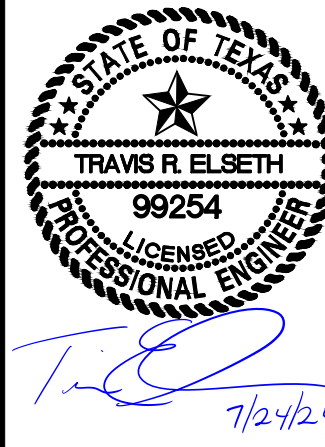
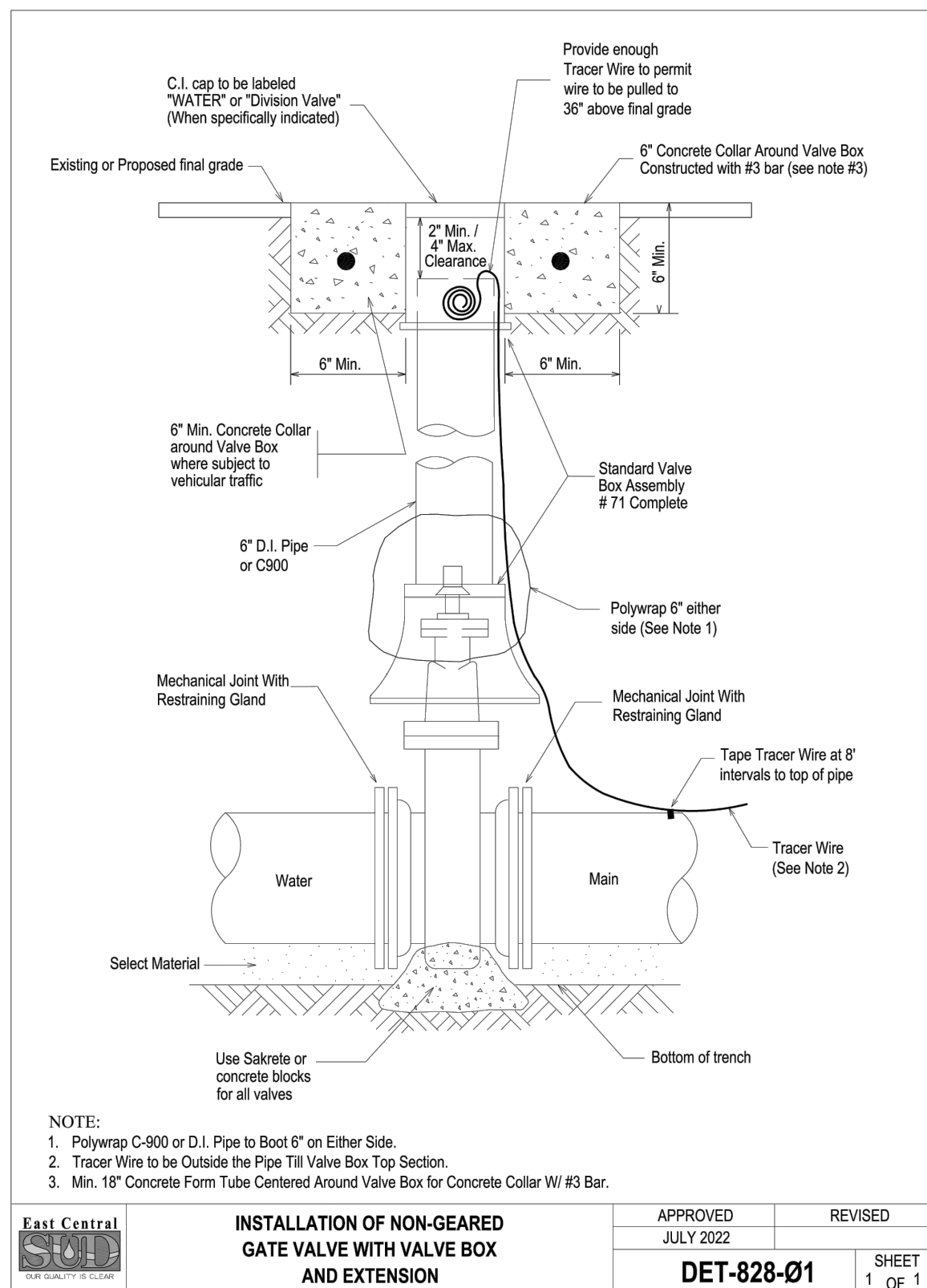
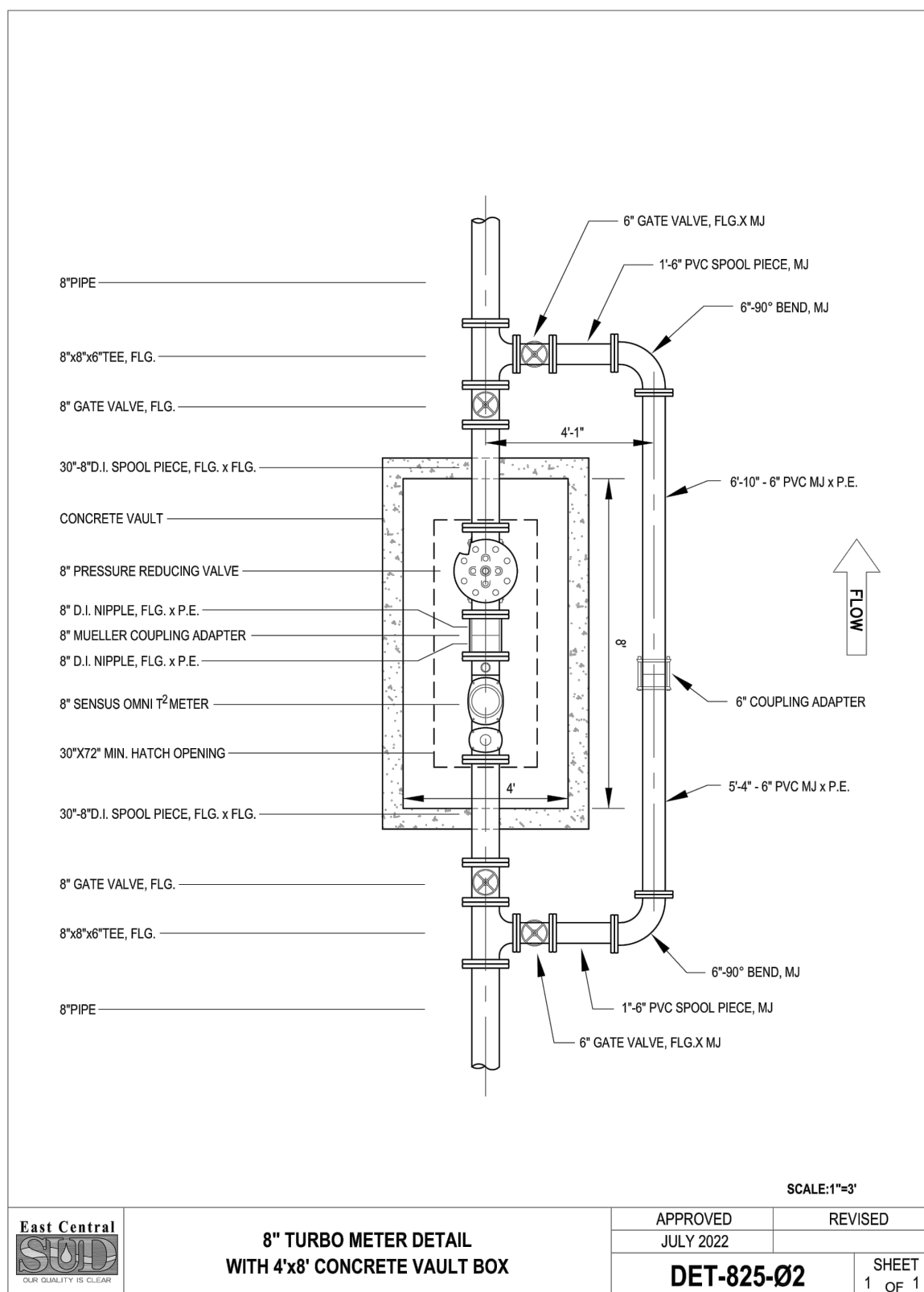
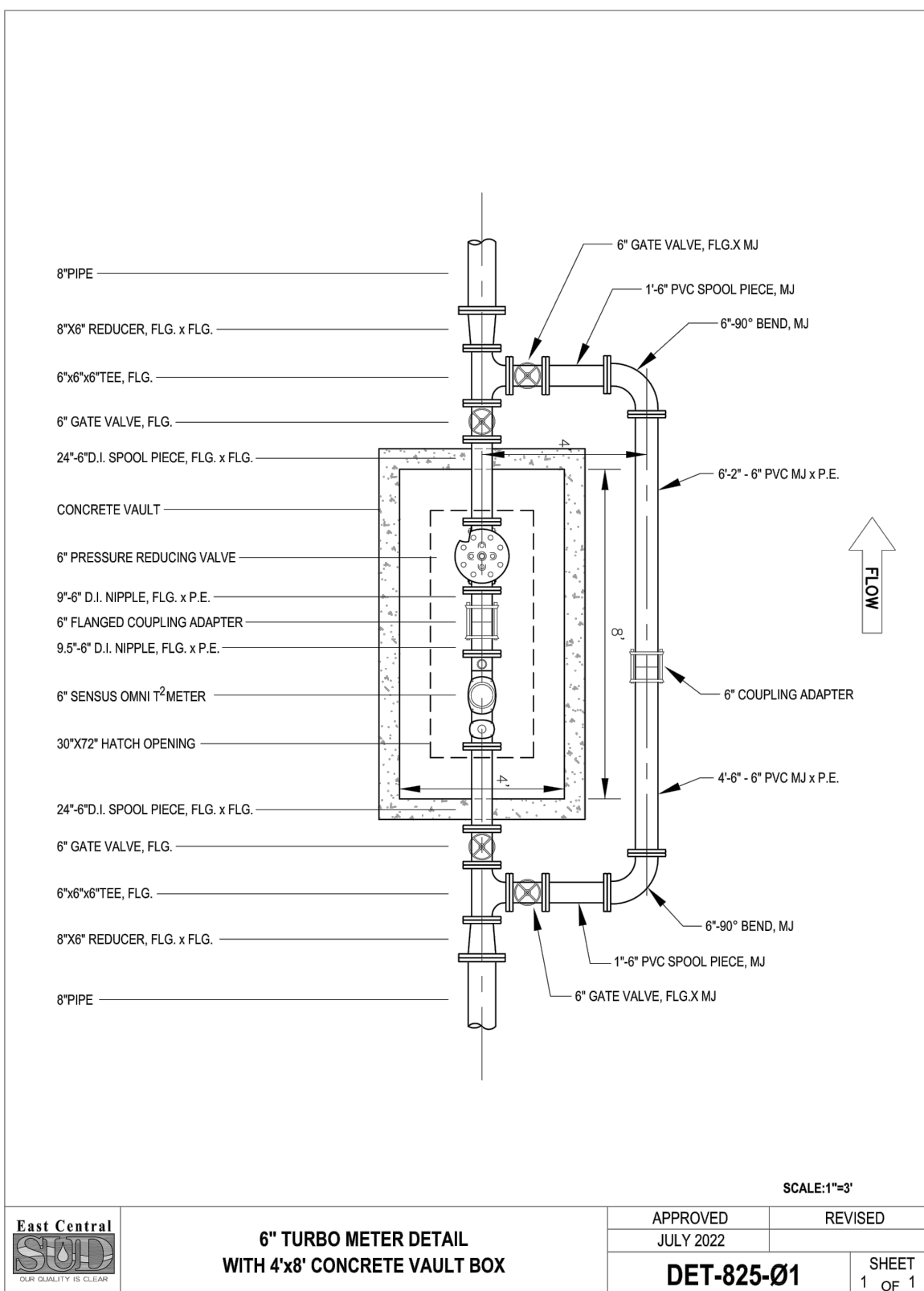
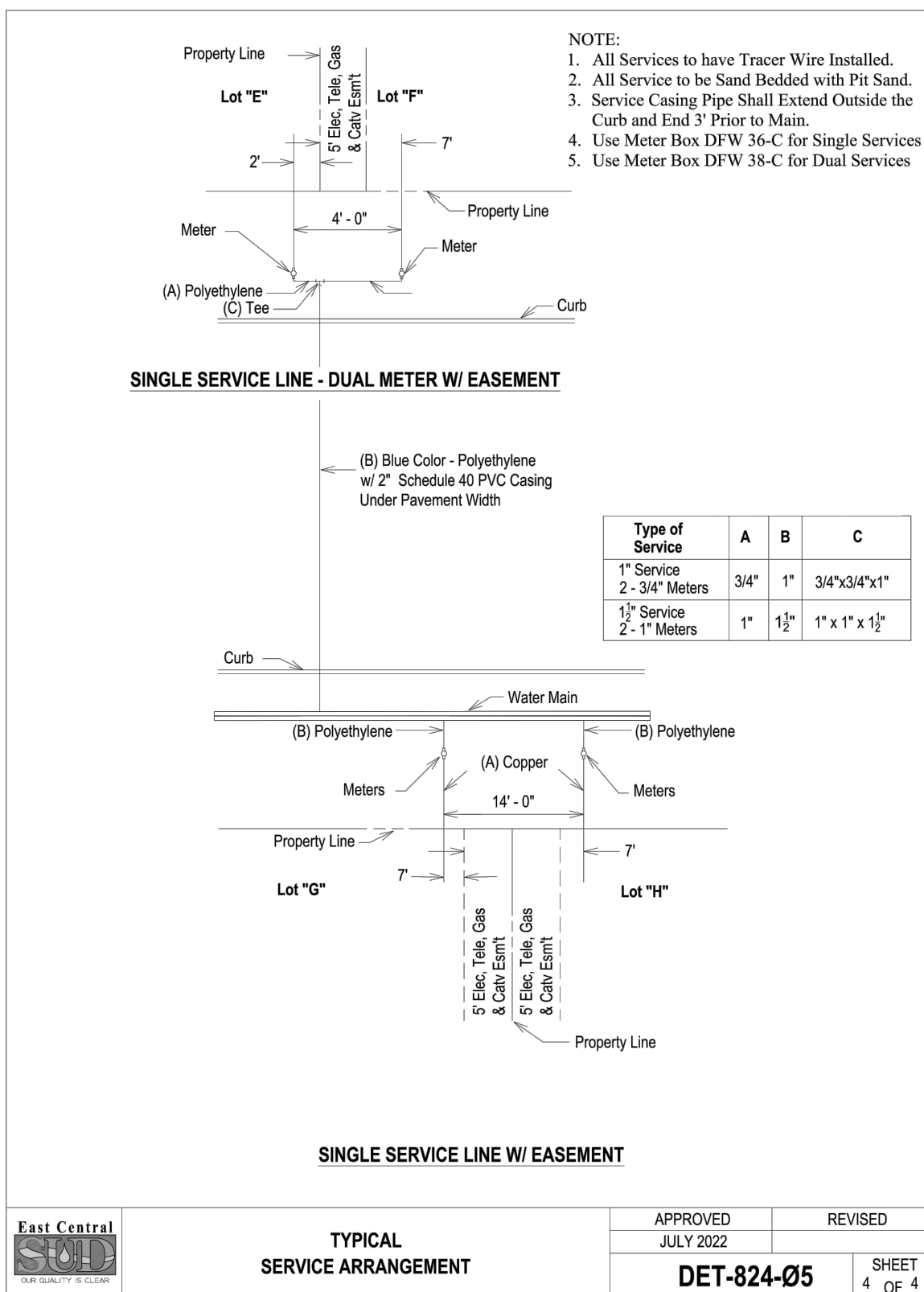
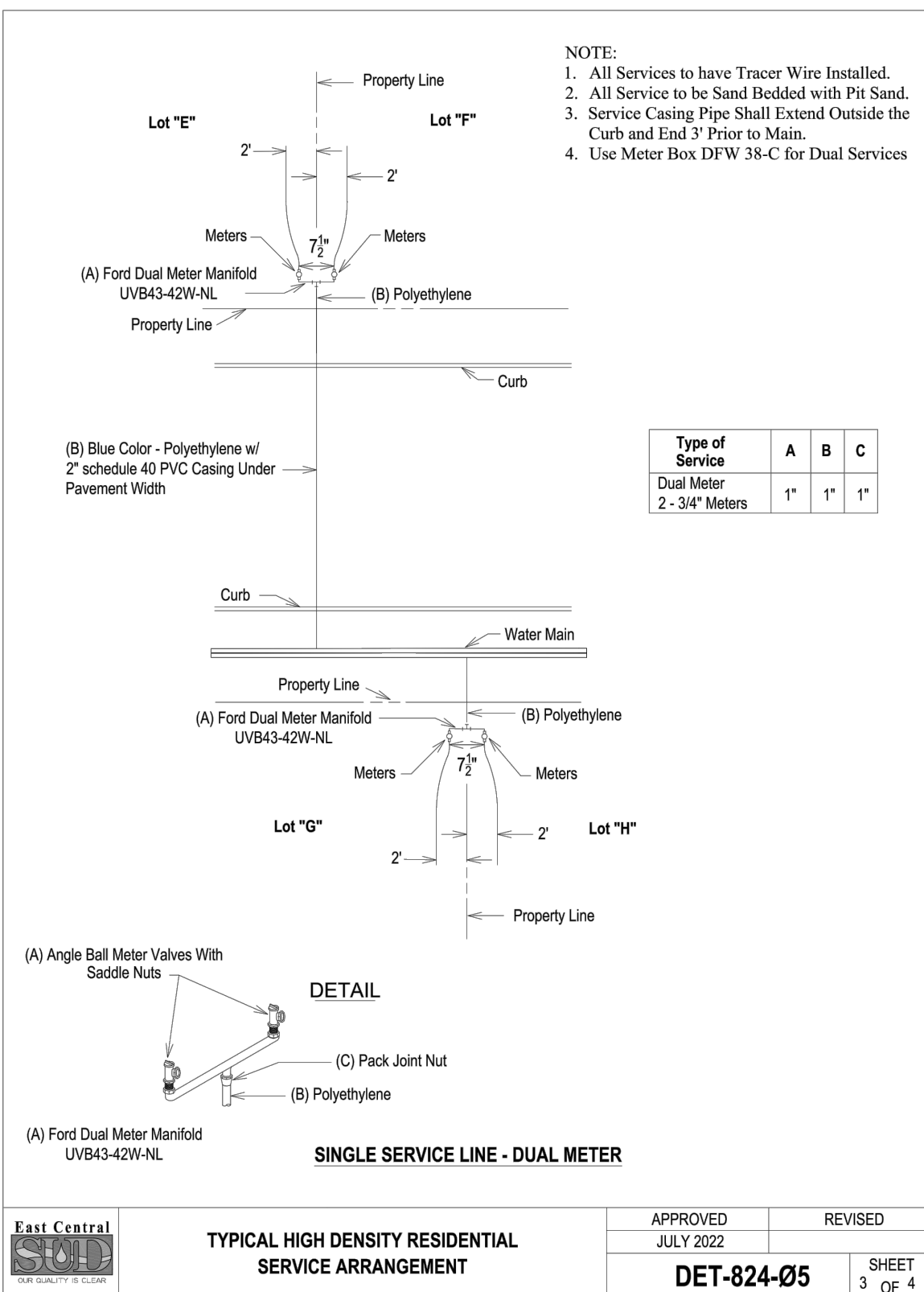
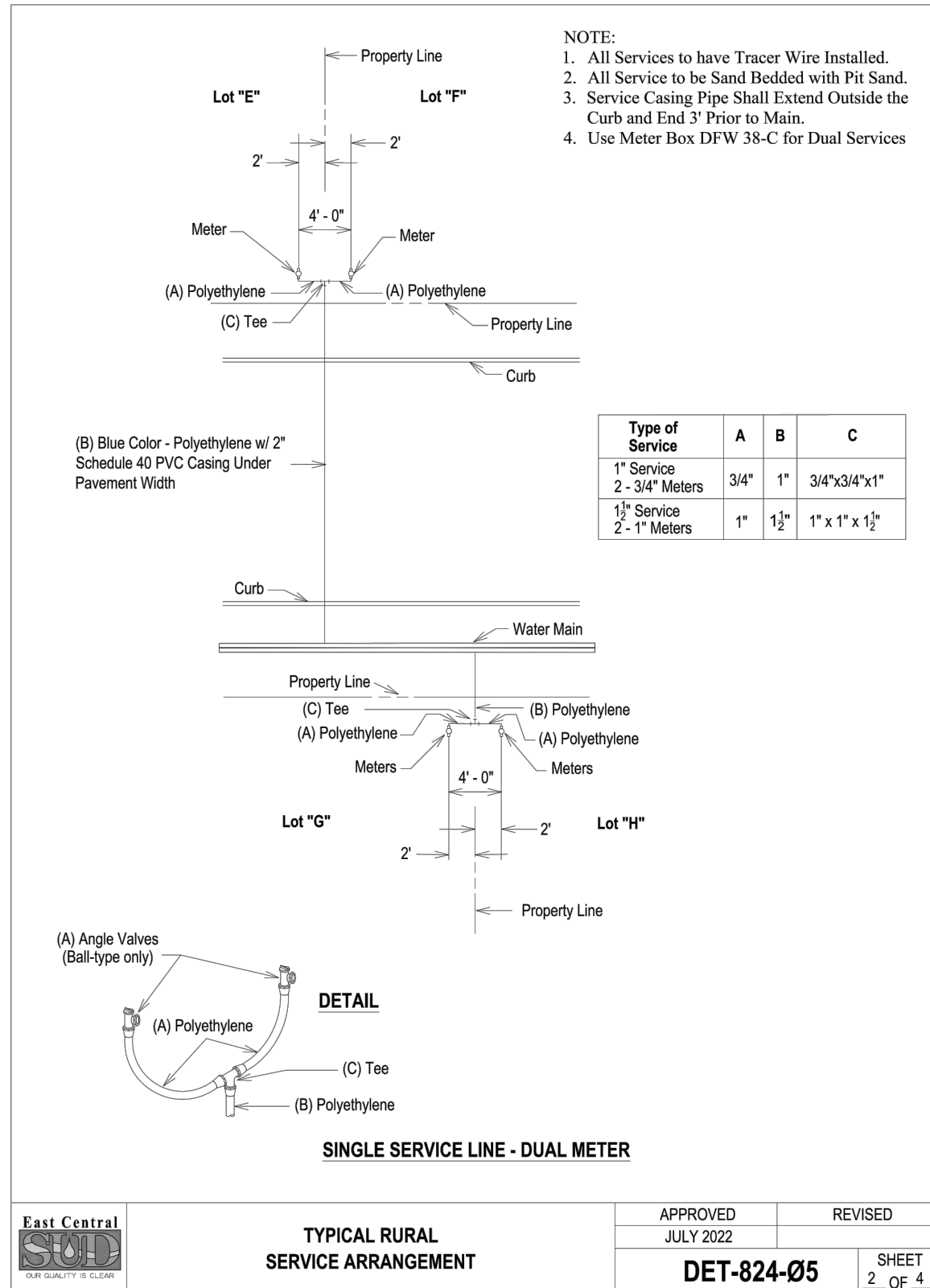
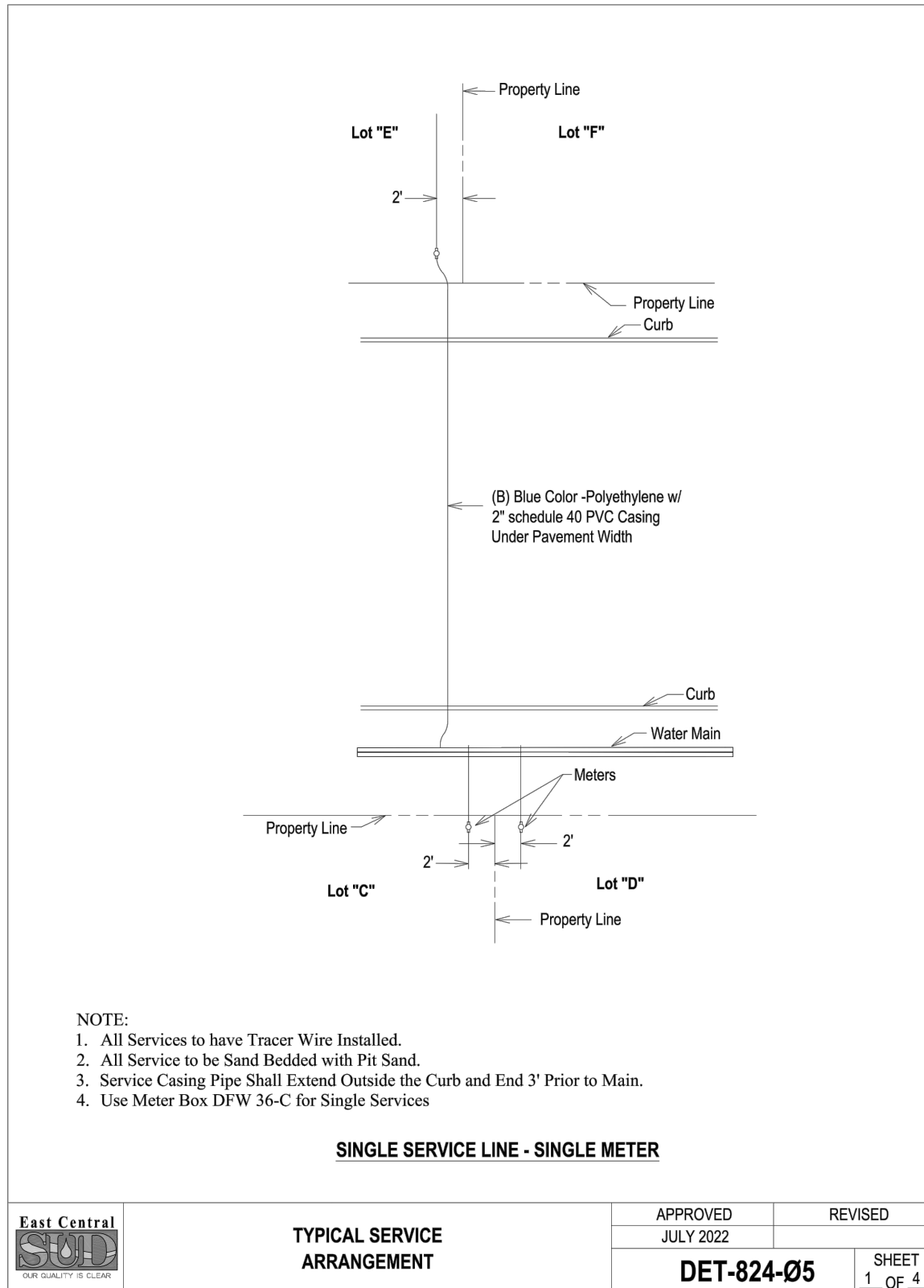
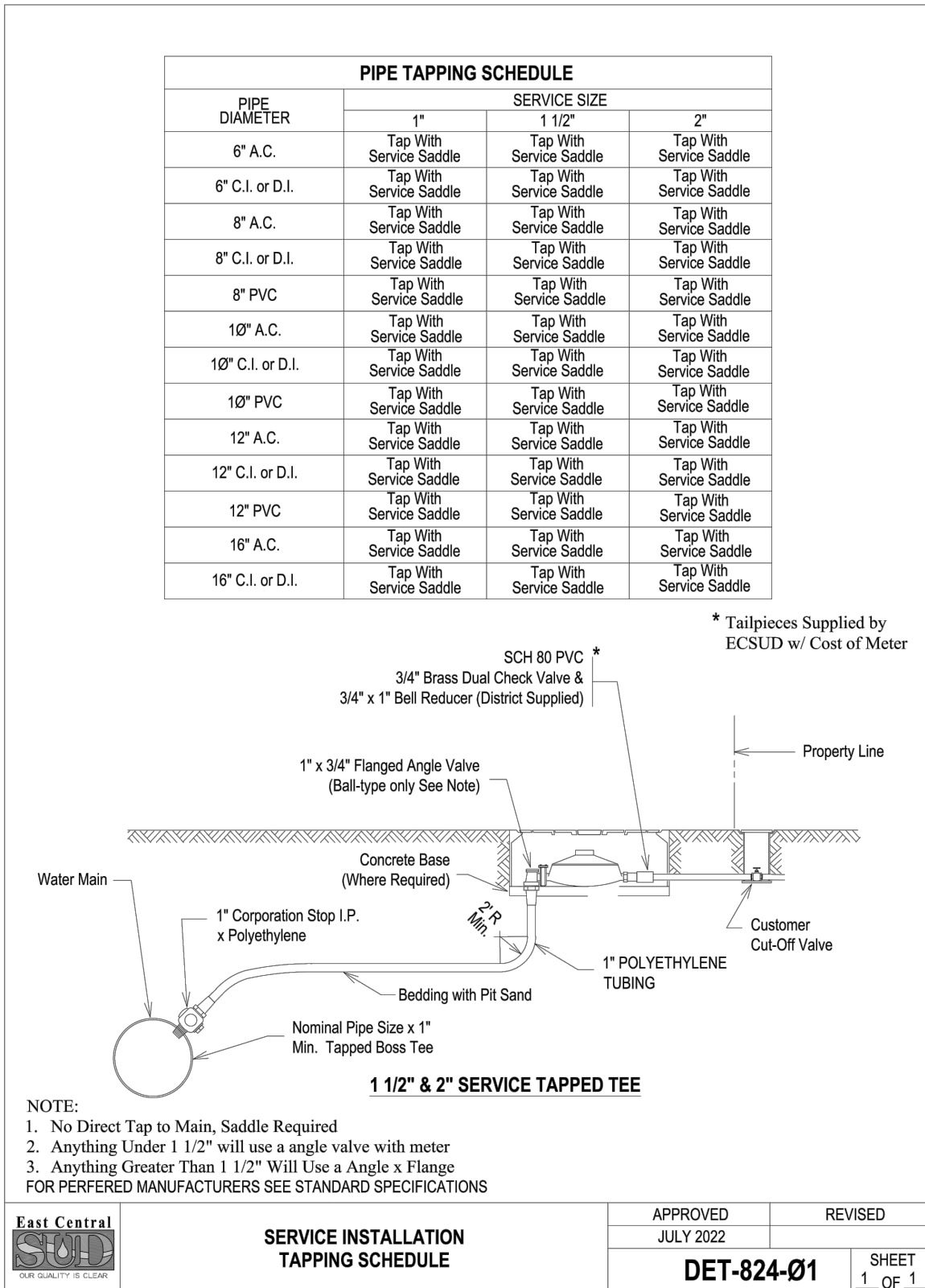
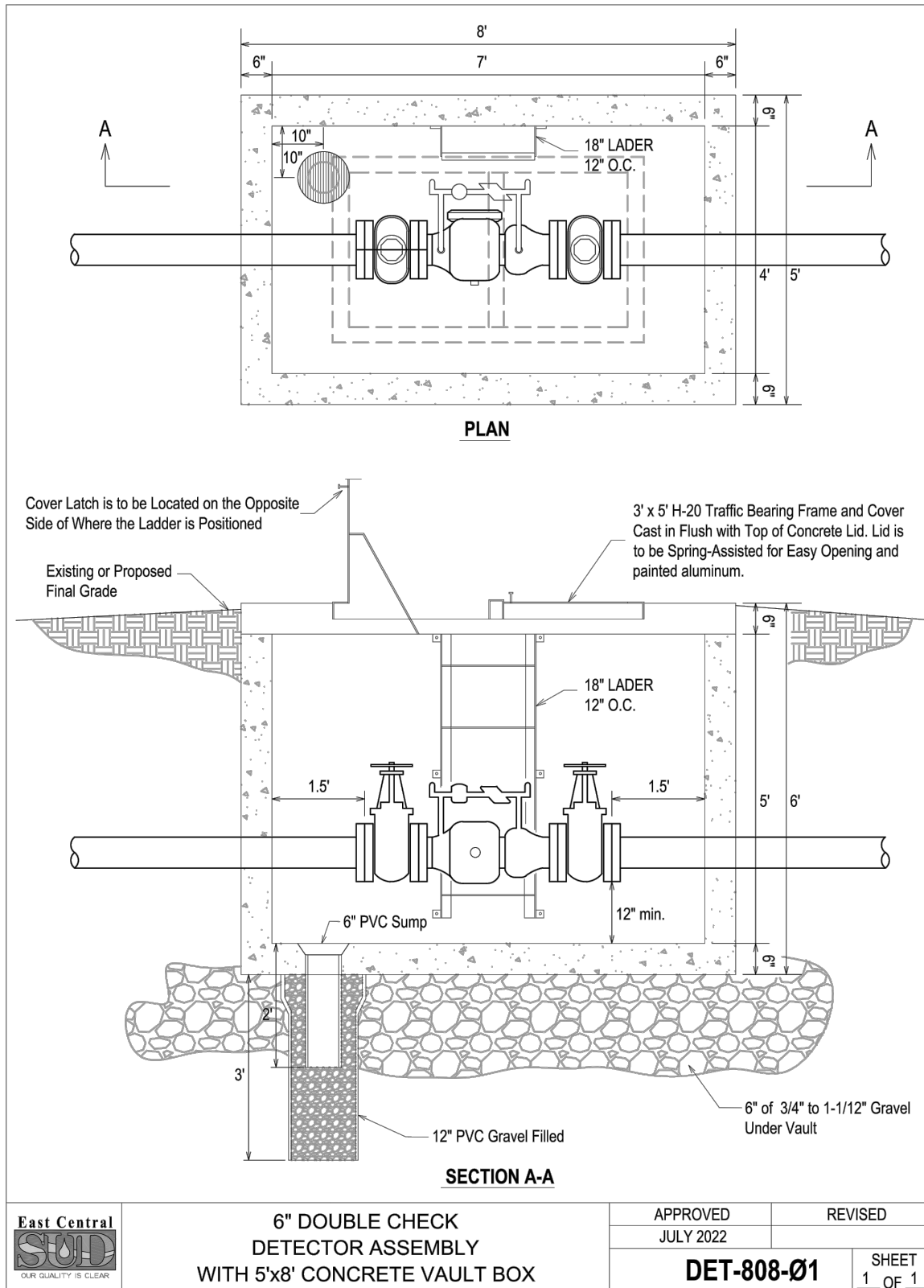
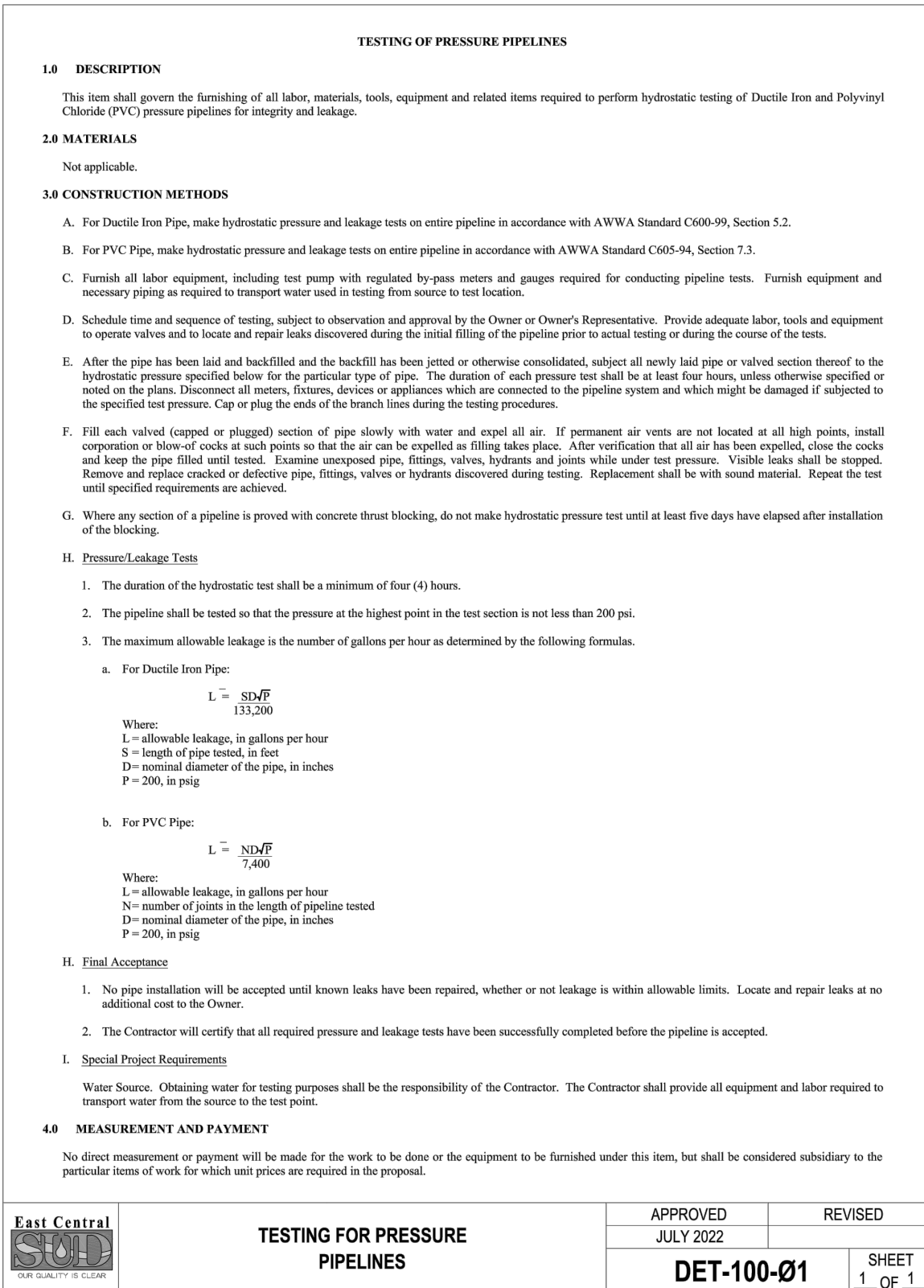
SHEET NUMBER:
7.2



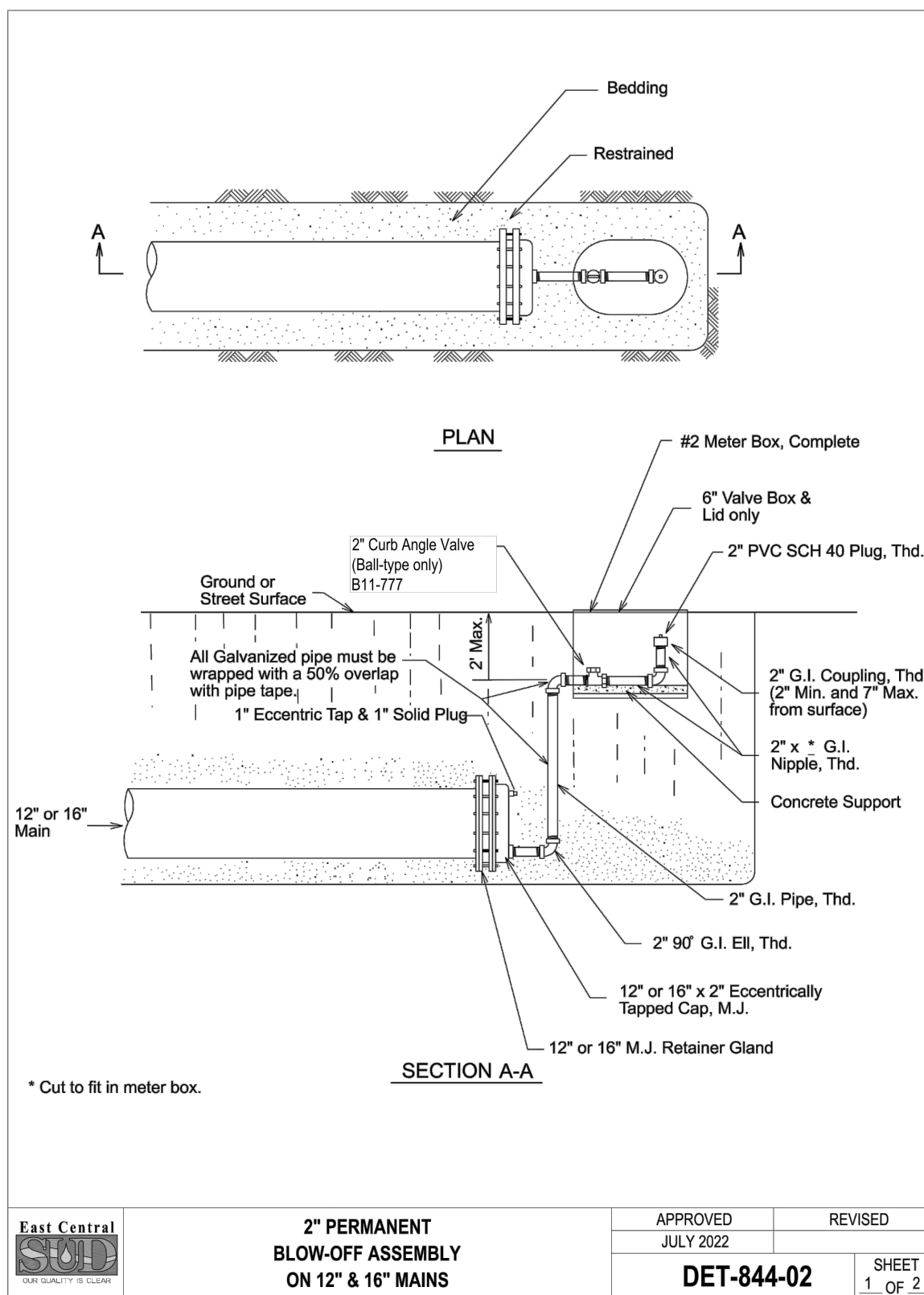
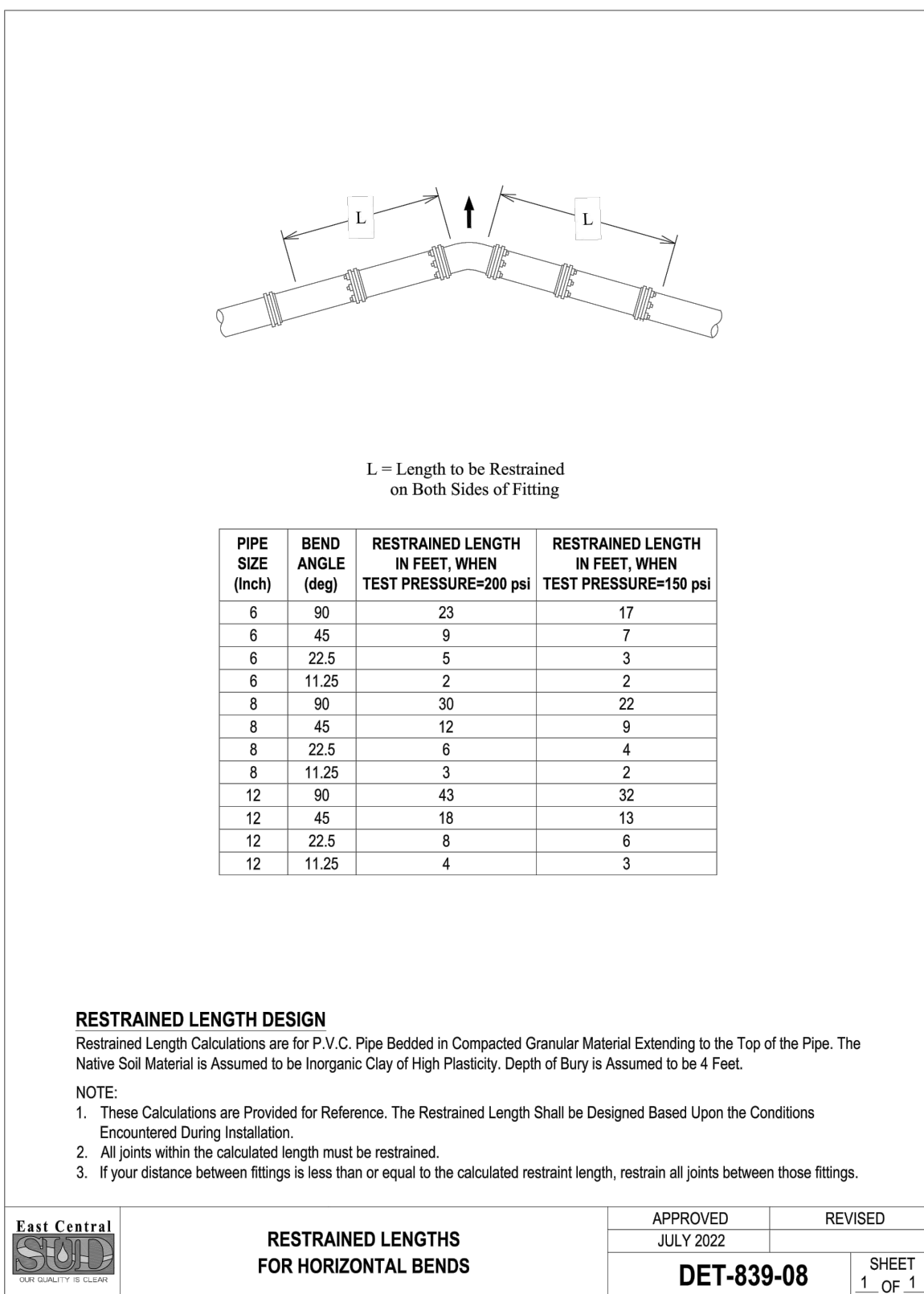
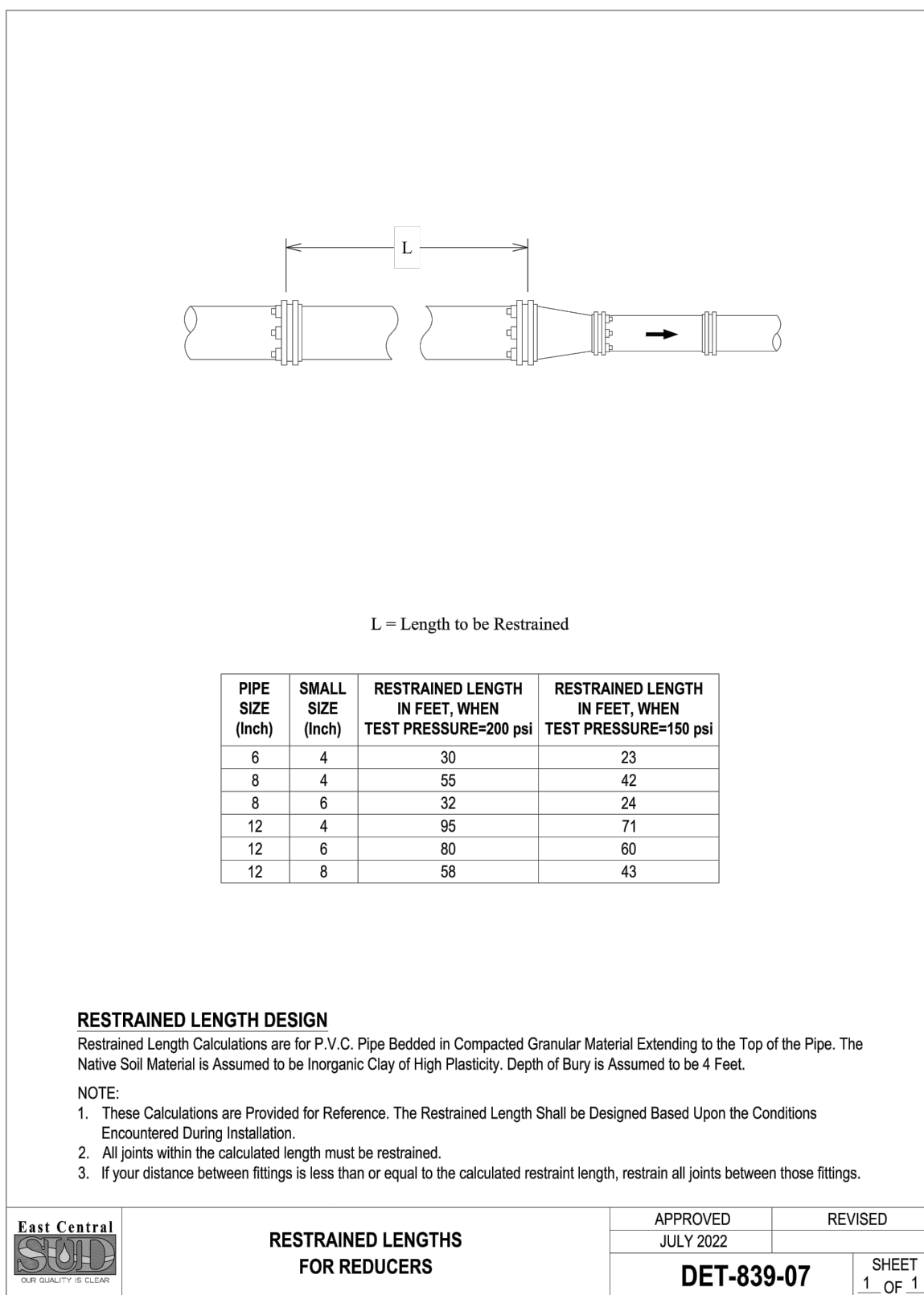
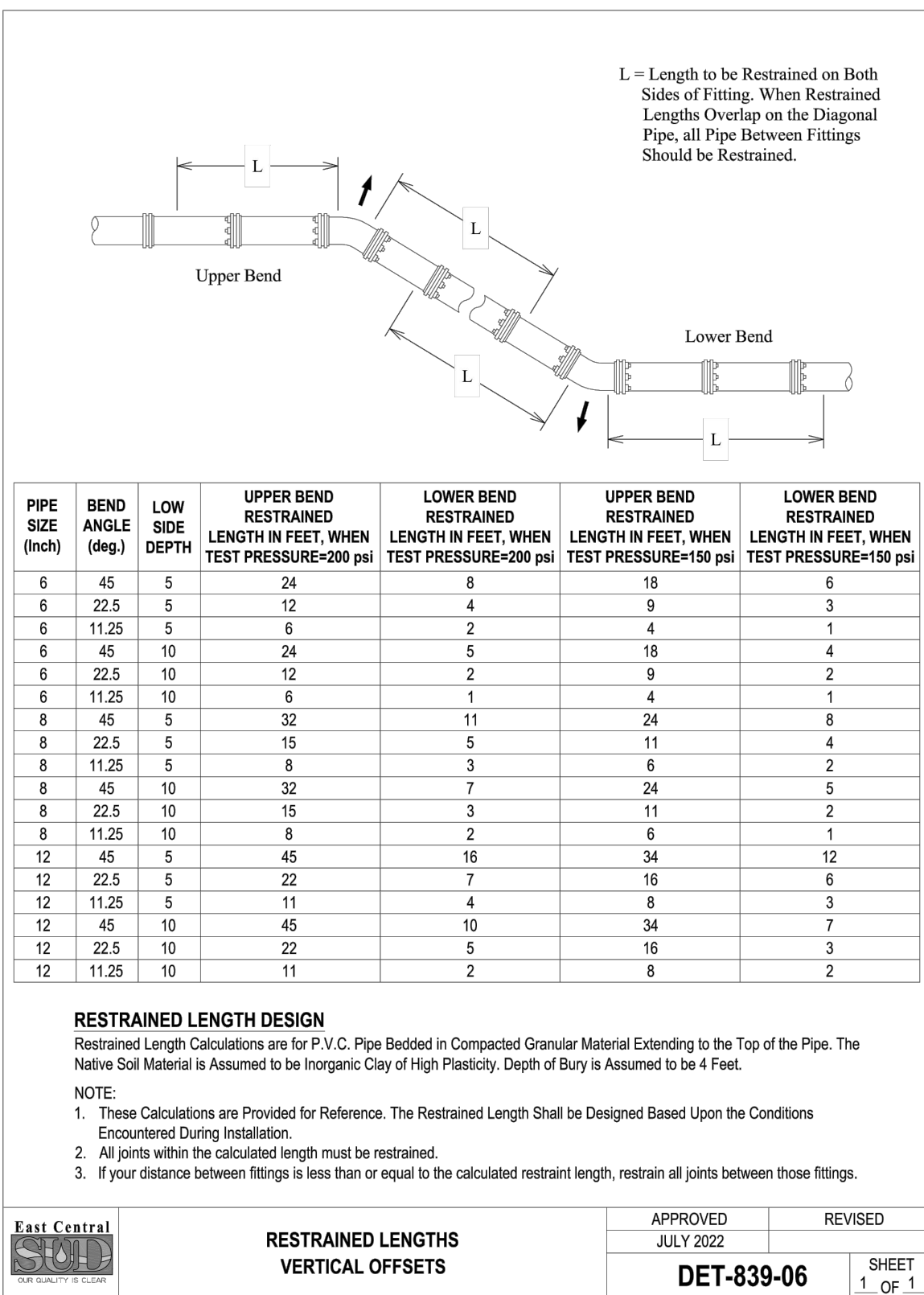
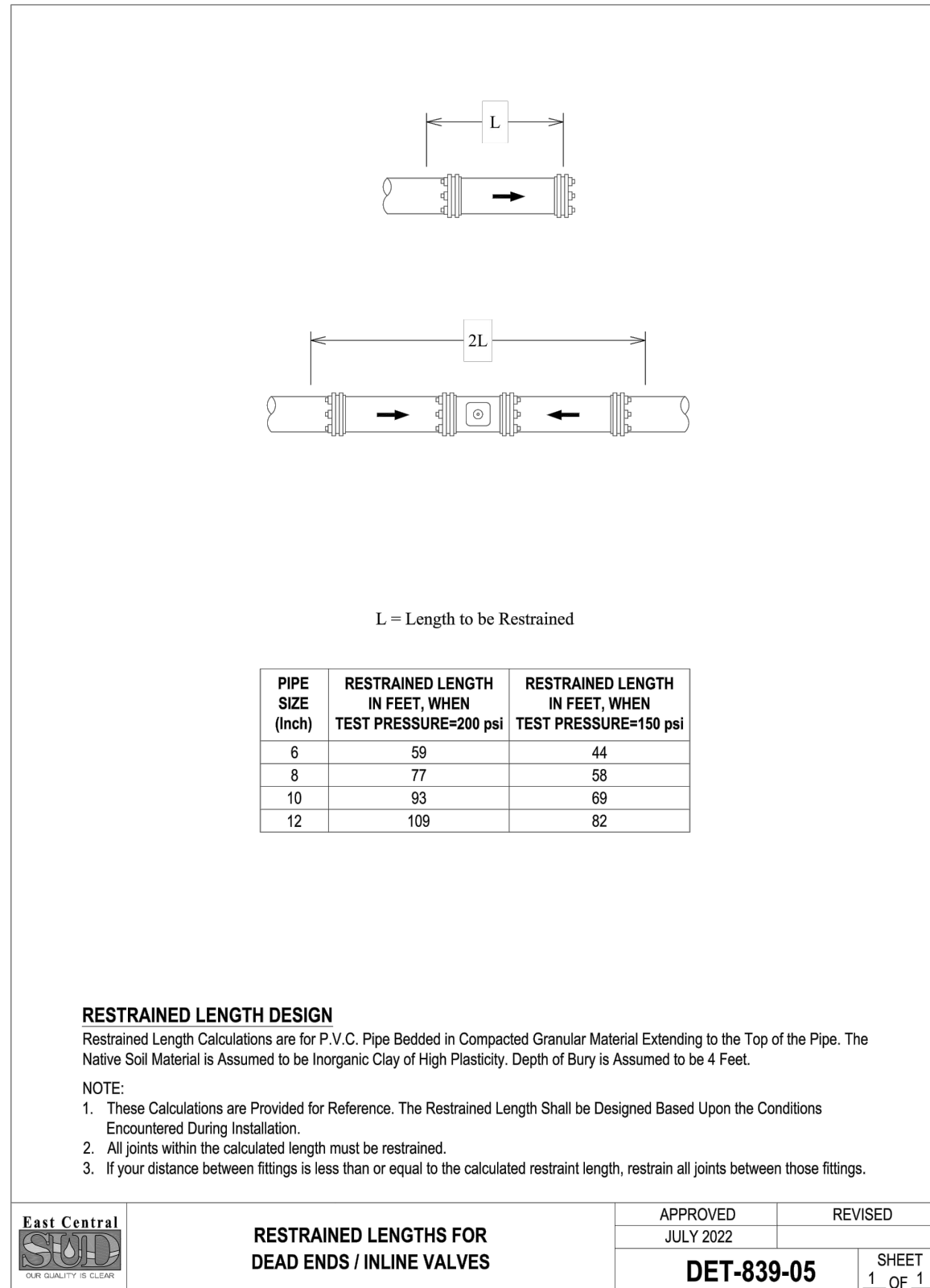
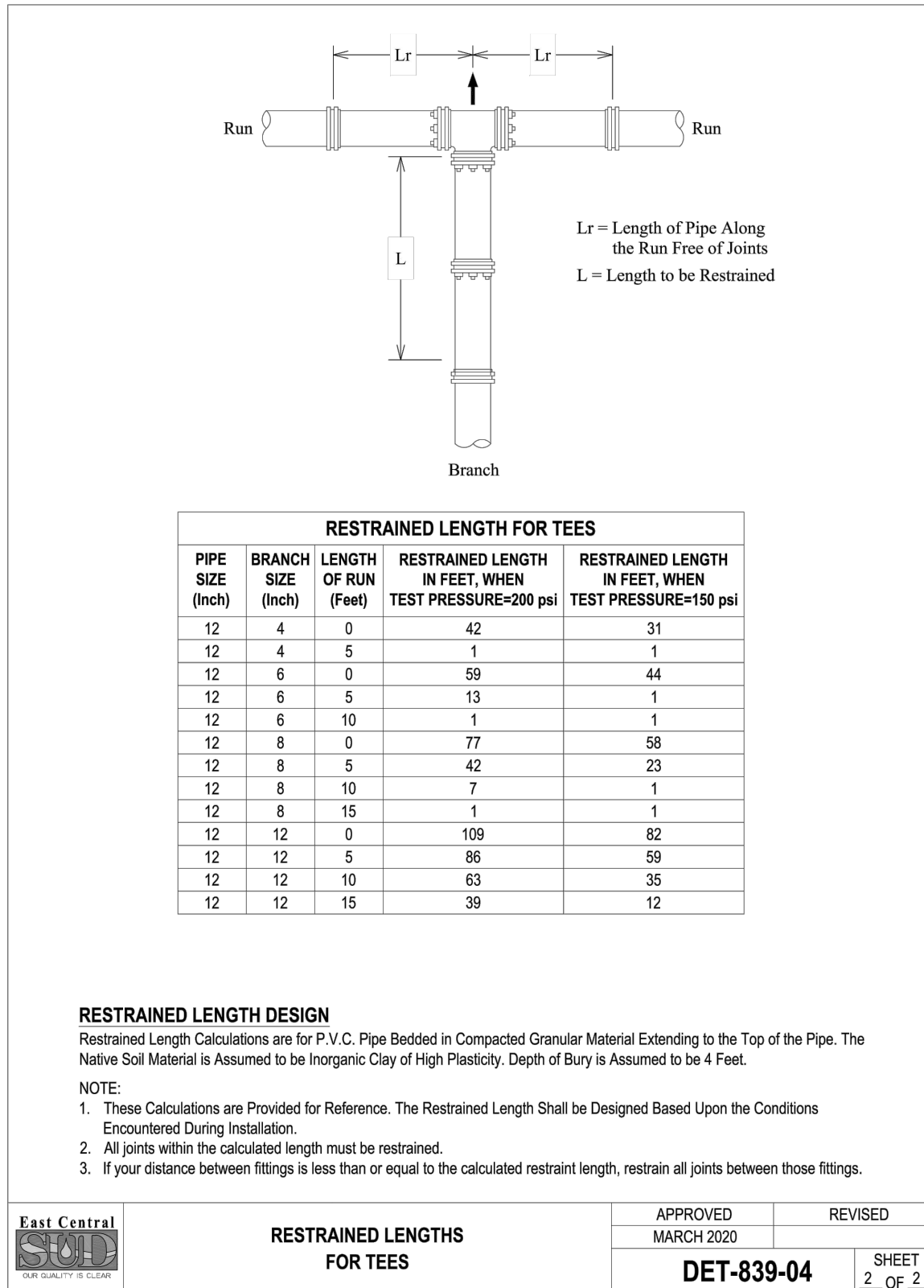
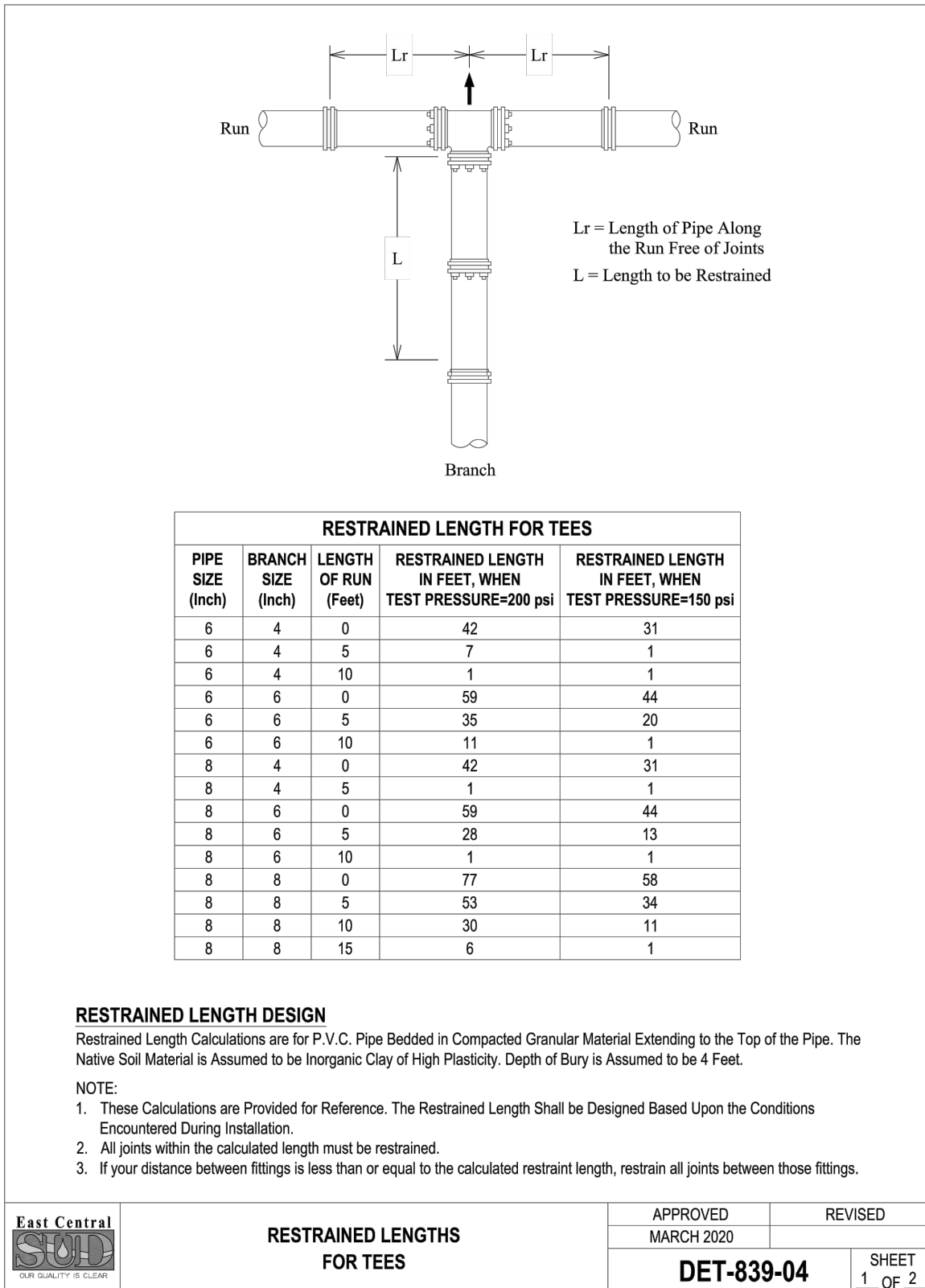
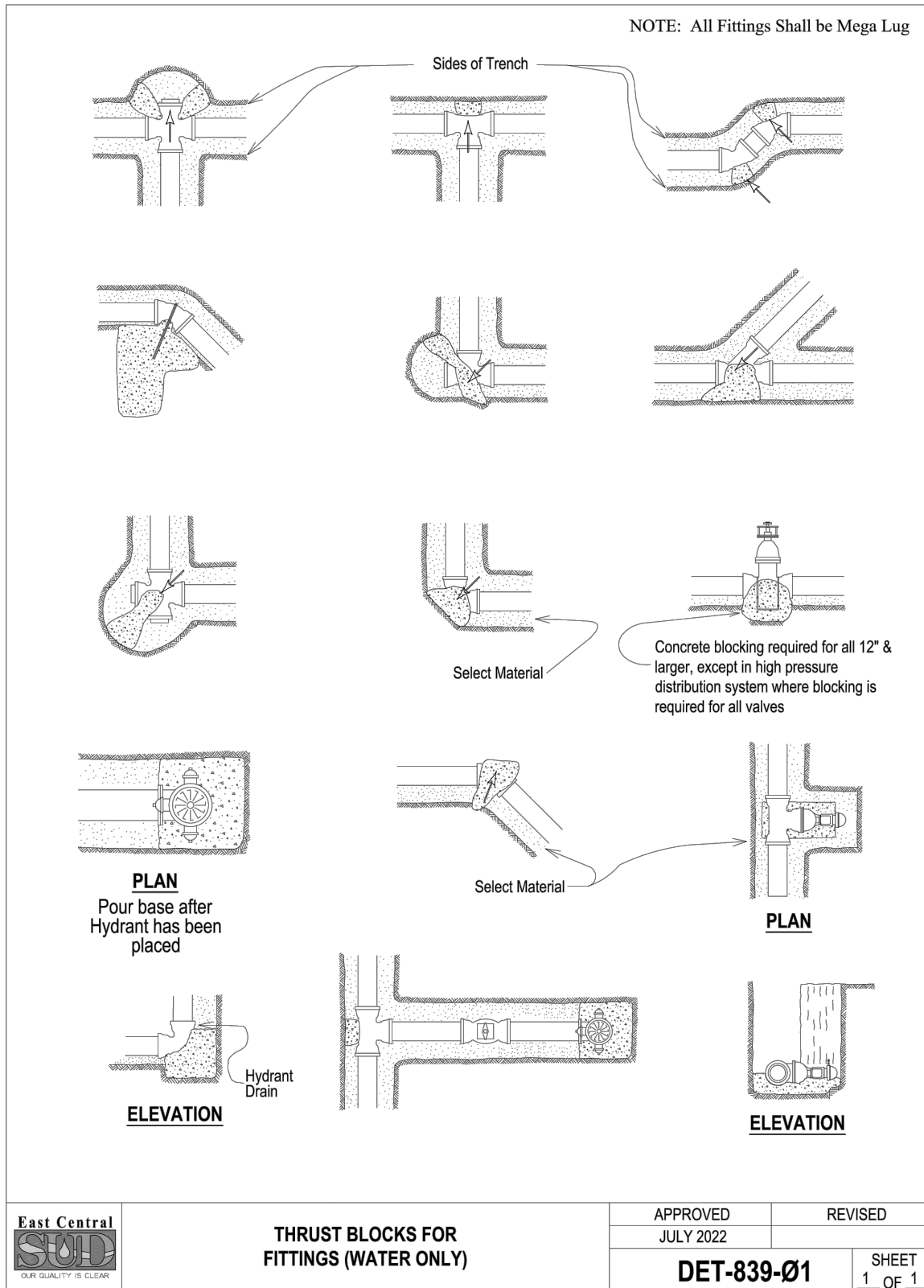
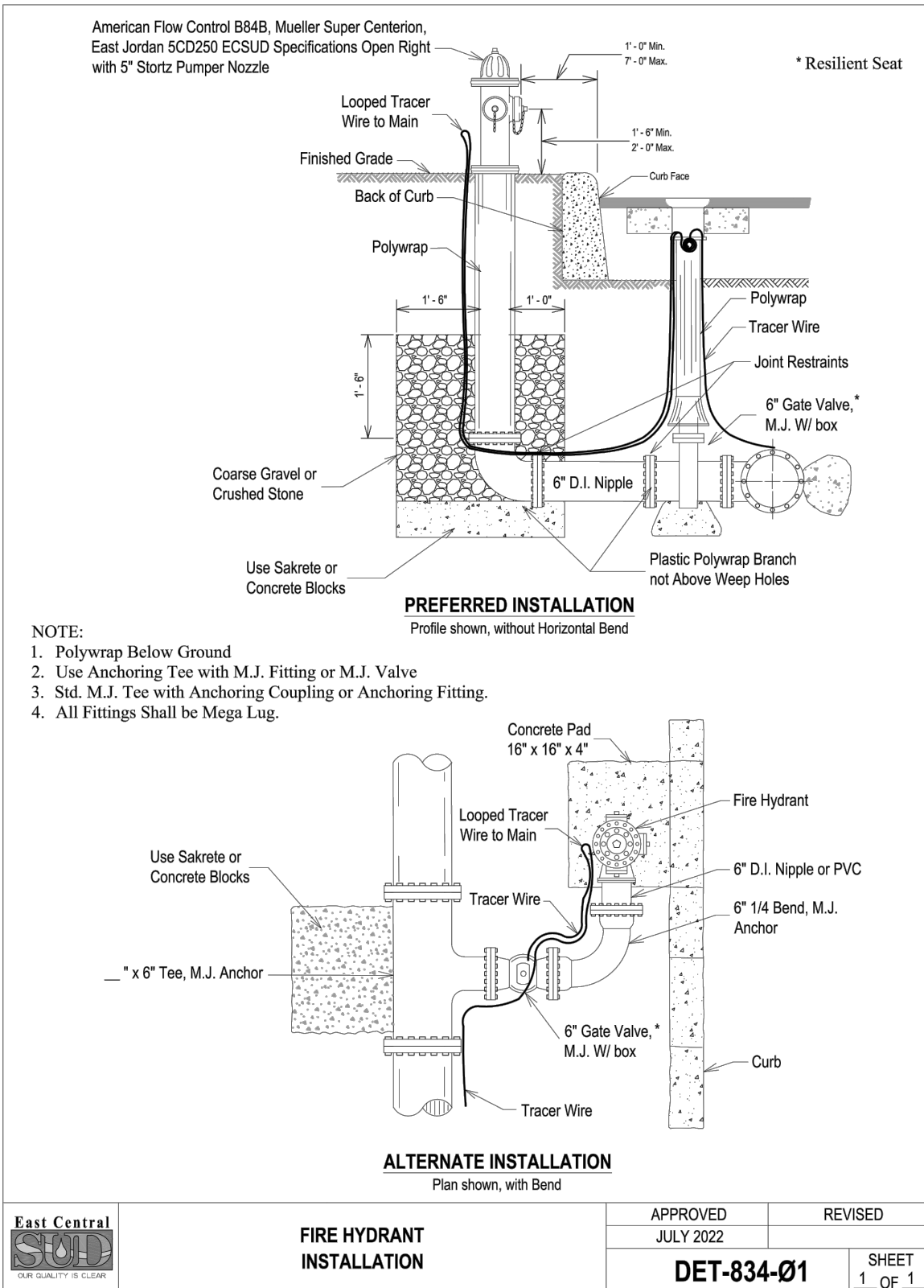
EMBEDMENT DETAILS N.T.S.

INSTALLATION OF PIPE IN CONDUIT N.T.S.

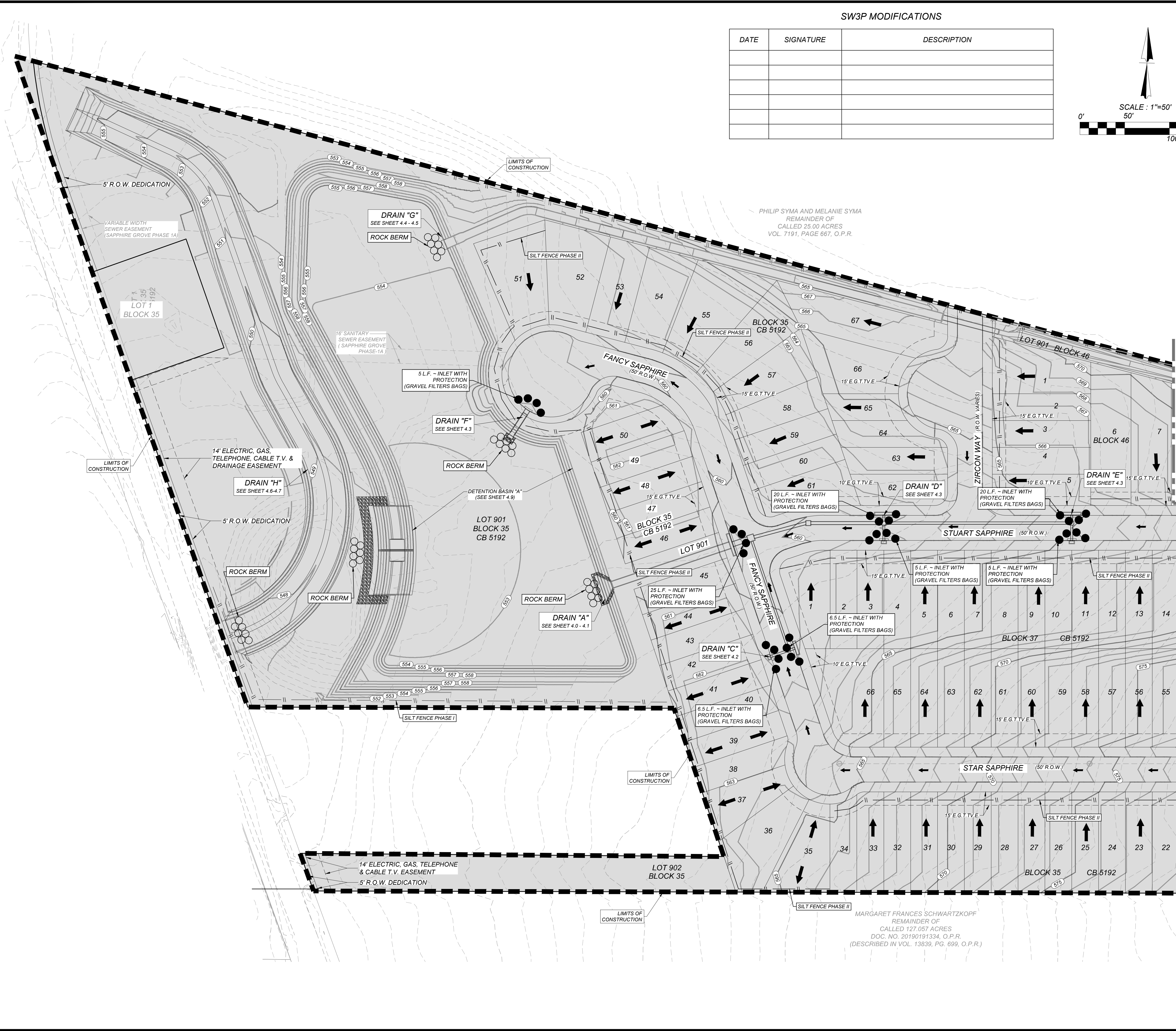




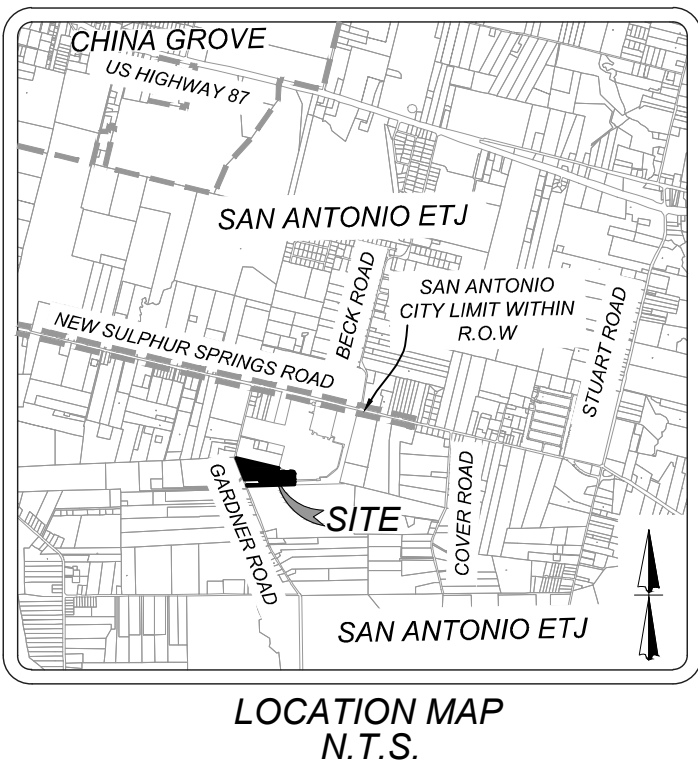
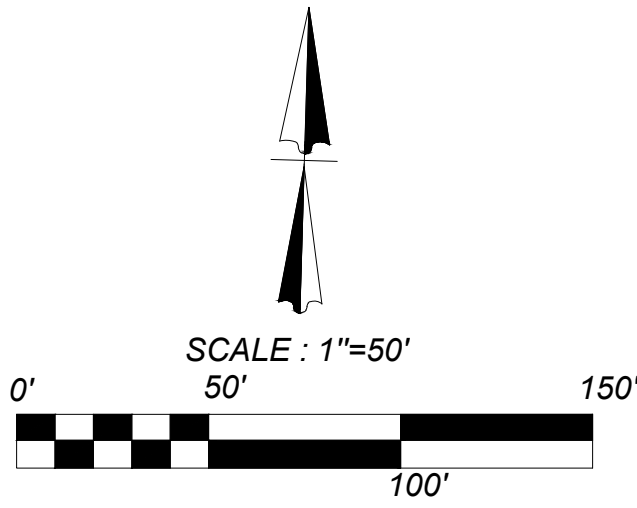
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SW3P MODIFICATIONS		
DATE	SIGNATURE	DESCRIPTION



LEGEND

- LIMITS OF CONSTRUCTION
- 570- EXISTING CONTOURS
- 570- PROPOSED CONTOURS
- FLOW ARROW
- [Symbol] STABILIZED CONSTRUCTION ENTRANCE/EXIT
- [Symbol] CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA
- [Symbol] CONCRETE TRUCK WASHOUT PIT
- [Symbol] DISTURBED AREA
- [Symbol] ROCK BERM
- SILT FENCE (PHASE II TO BE INSTALLED AFTER PAVING)
- [Symbol] INLET WITH PROTECTION (GRAVEL FILTERS BAGS)
- [Symbol] NATURAL VEGETATIVE BUFFER

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.

PROJECT COMPLETION:

1. ALL DISTURBED AREAS ARE 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 UP GRADIENT 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:

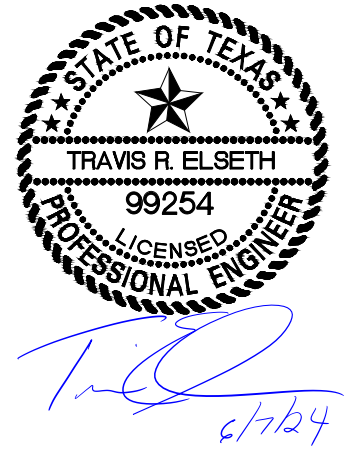
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2. THE PURPOSE OF THE SIGNATURE AND SEAL OF THE ENGINEER ON THIS DOCUMENT IS TO DEMONSTRATE COMPLIANCE WITH THE TPO'S STORMWATER POLLUTION PREVENTION PLAN REGULATIONS ONLY.
3. ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT.
4. CPS IS A SECONDARY OPERATOR IN THIS PROJECT. THEY WILL BE INSTALLING THE GAS AND ELECTRIC UTILITIES.

MATCHLINE "A" - SEE SHEET 8.1

SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS
STORMWATER POLLUTION PREVENTION PLAN (1 OF 2)

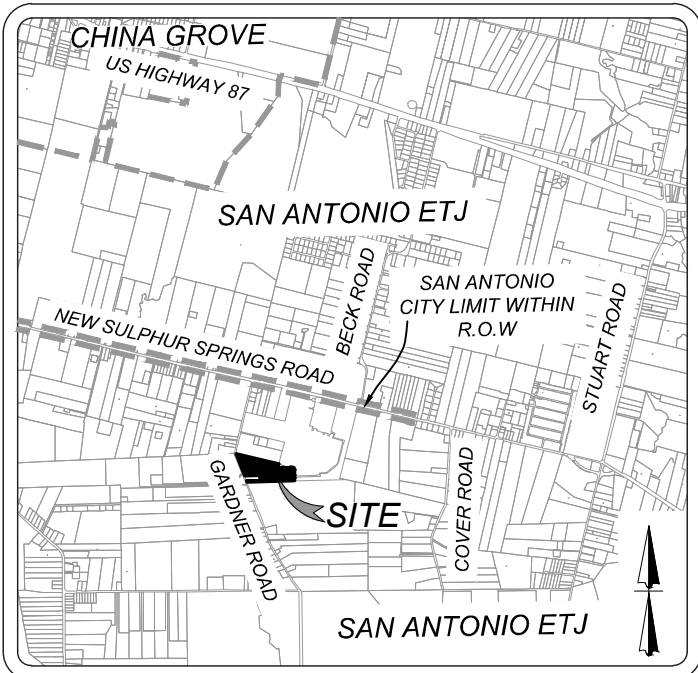
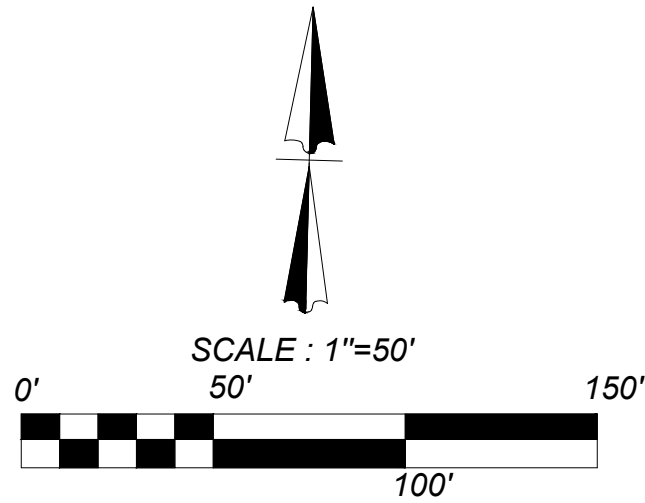
PLAT NO.
22-11800456
JOB NO. 314-39-13
DATE: FEBRUARY 2024
DRAWN/AD CHECKED/SC
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K&W
ENGINEERS & SURVEYING
19251
Phone #: (210) 878-8444 • Fax #: (210) 878-8441
TBE Firm #: 9513 • TBE S Firm #: 1012300

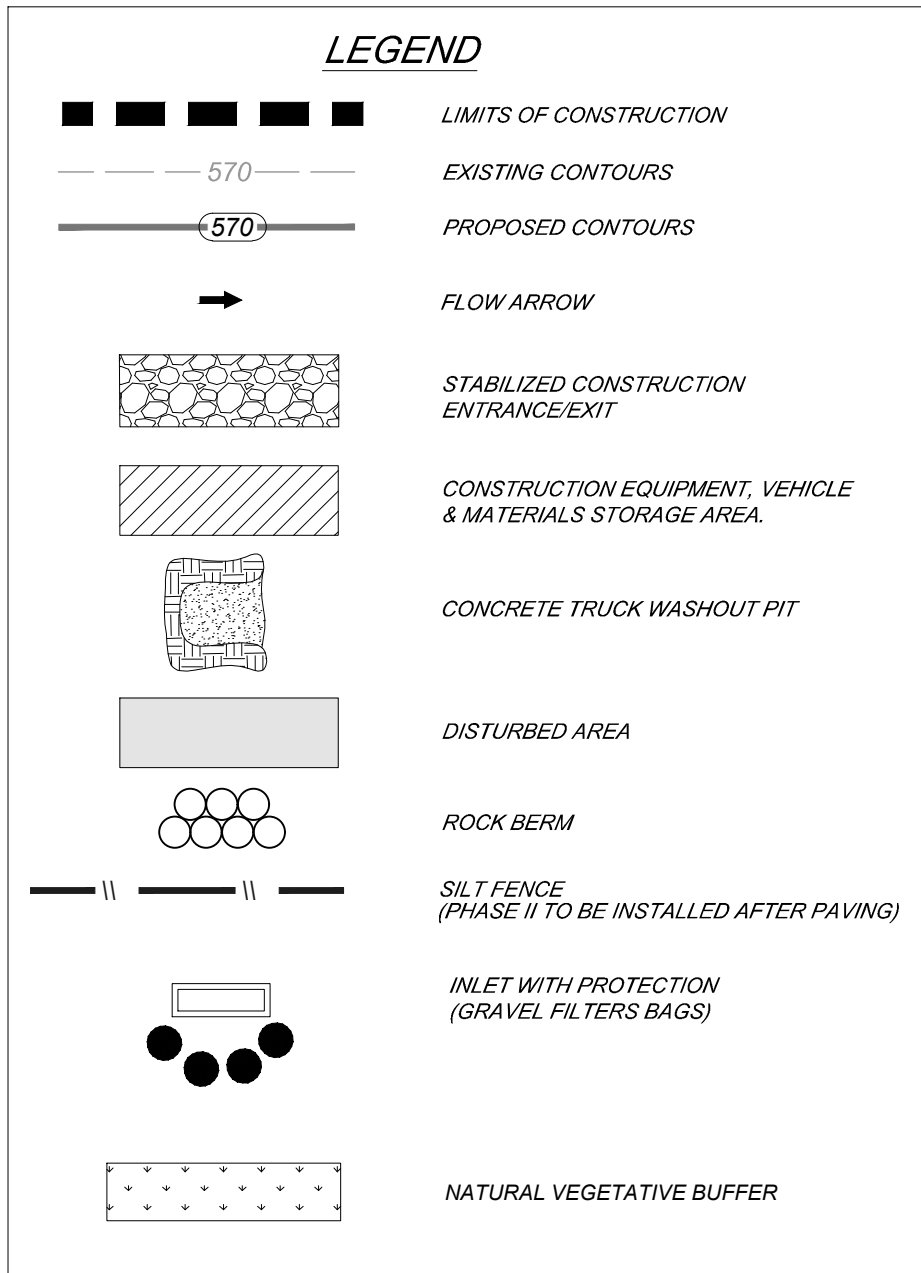


SW3P MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION



LOCATION MAP
N.T.S.



INSTALLATION:

- 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.
- CONTRACTOR TO ENSURE THAT STRUCTURAL BMP'S ARE INSTALLED WITHIN THE LIMITS OF THE SITE BOUNDARY.
- 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.
- 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:

- 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.
- 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.
- LOCATION OF CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND EQUIPMENT AND STORAGE ARE TO BE FIELD DETERMINED. LOCATIONS SHALL BE UPDATED ON THIS PLAN.

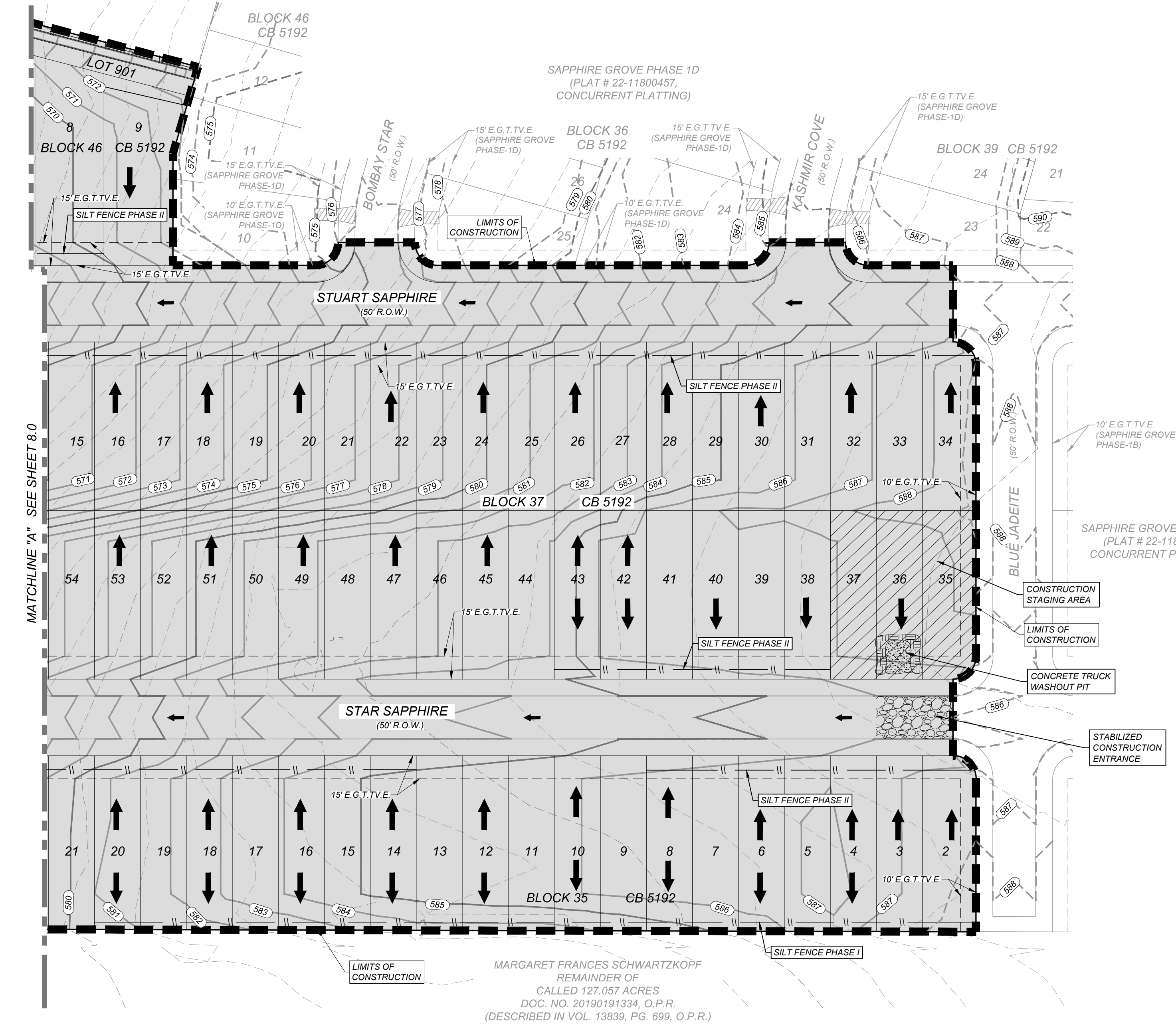
PROJECT COMPLETION:

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GENERAL:

- 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.
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- ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT.
- CPS IS A SECONDARY OPERATOR IN THIS PROJECT. THEY WILL BE INSTALLING THE GAS AND ELECTRIC UTILITIES.

PHILIP SYMA AND MELANIE SYMA
REMAINDER OF
CALLED 25.00 ACRES
VOL. 7191, PAGE 667, O.P.R.



SAPPHIRE GROVE PHASE 2D
BEXAR COUNTY, TEXAS

STORMWATER POLLUTION PREVENTION PLAN (2 OF 2)

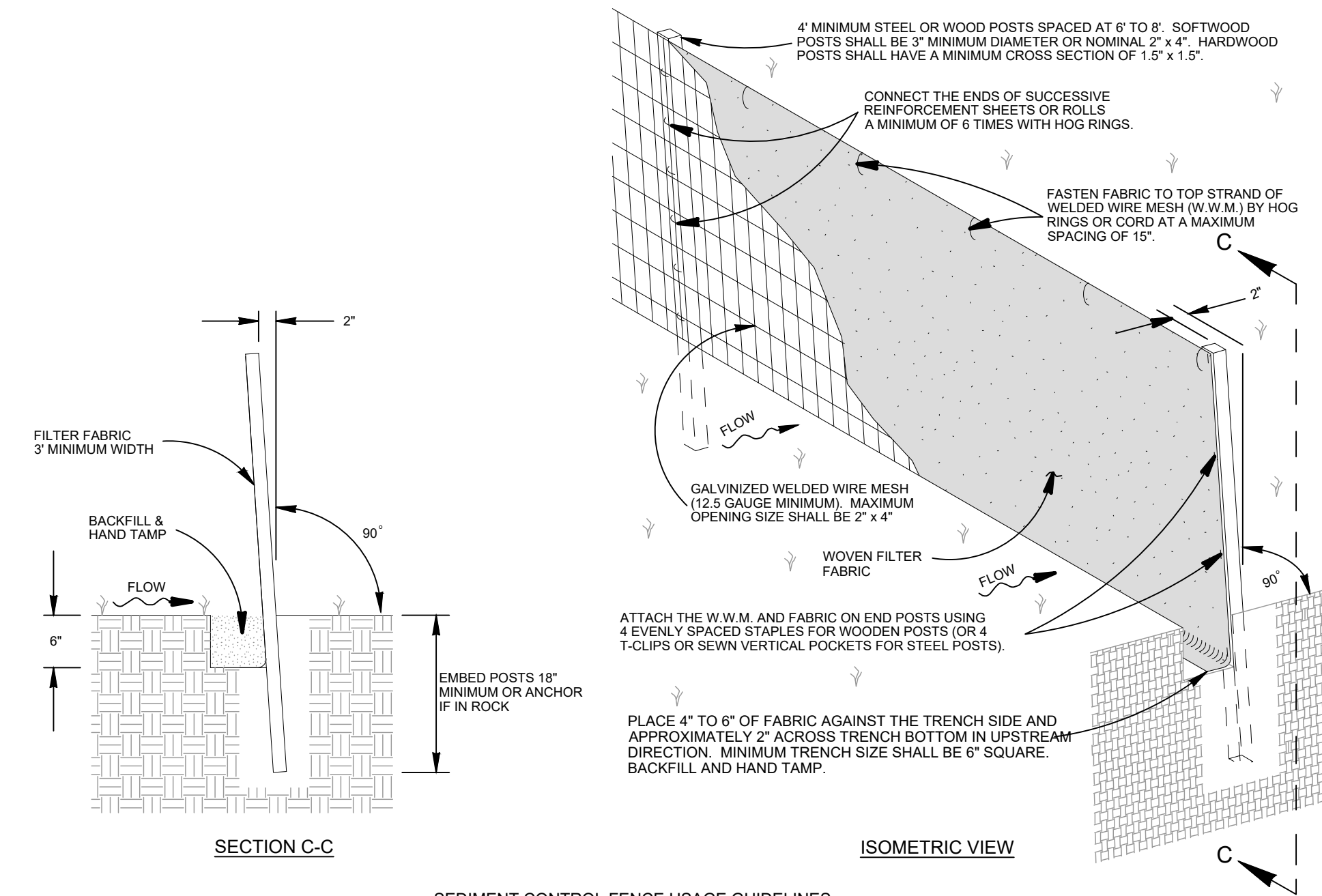
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SEDIMENT CONTROL FENCE USAGE GUIDELINES

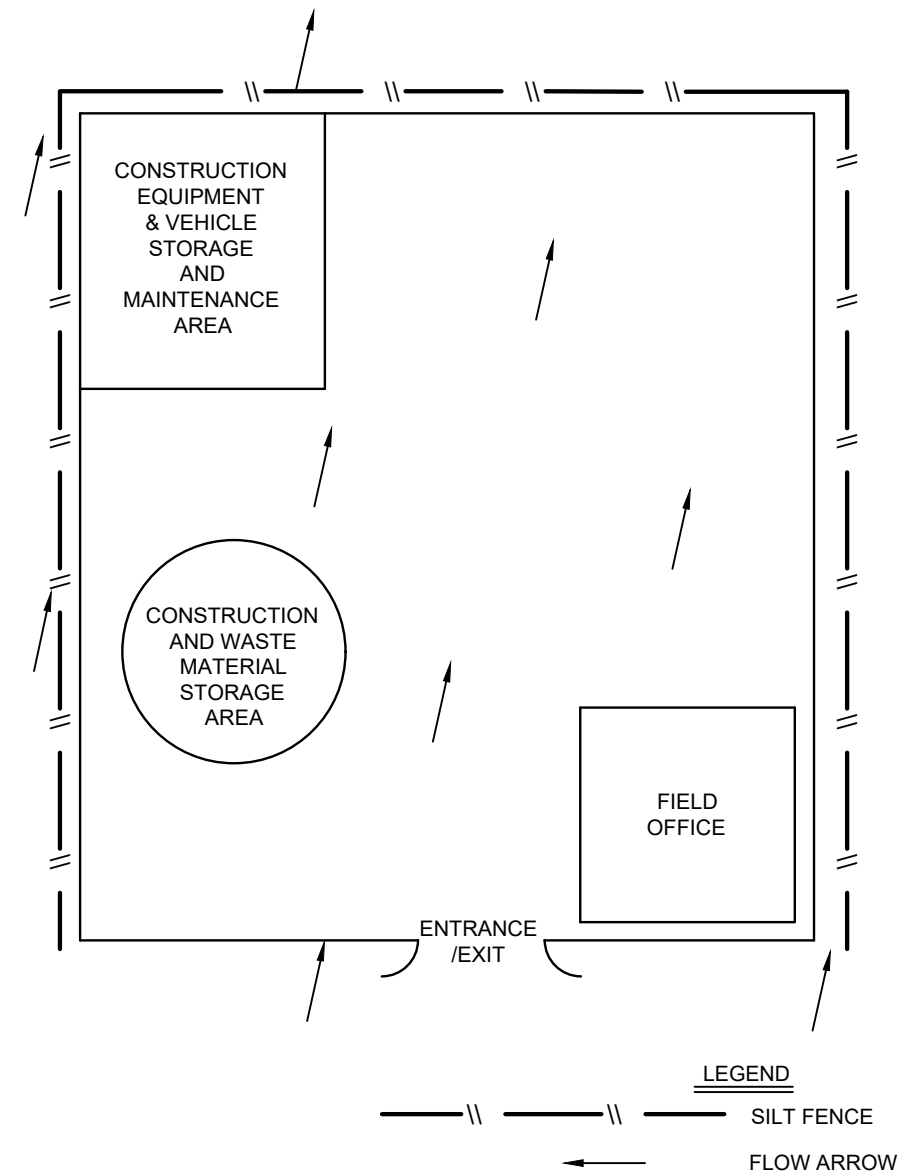
A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

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.

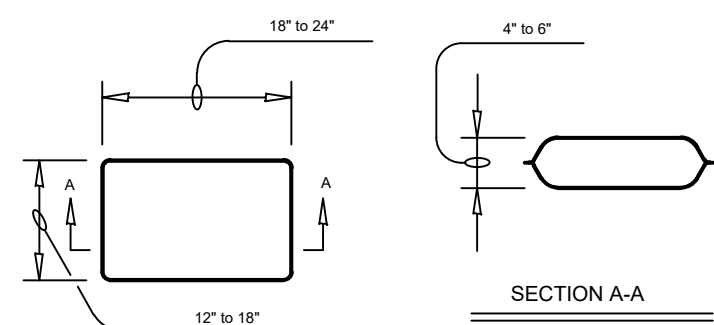
GENERAL NOTES

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

TEMPORARY SEDIMENT CONTROL FENCE



TYPICAL CONSTRUCTION STAGING AREA

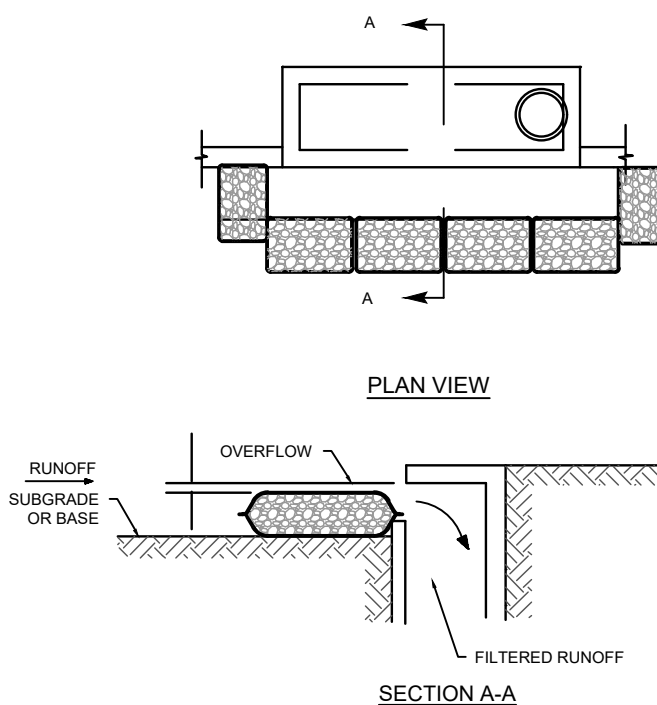


GENERAL NOTES:

1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC. MIN UNIT WEIGHT OF 4 OUNCES PER SQUARE YARD. MINIMUM MULLER BURST STRENGTH OF 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

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

GRAVEL FILTER BAG DETAIL



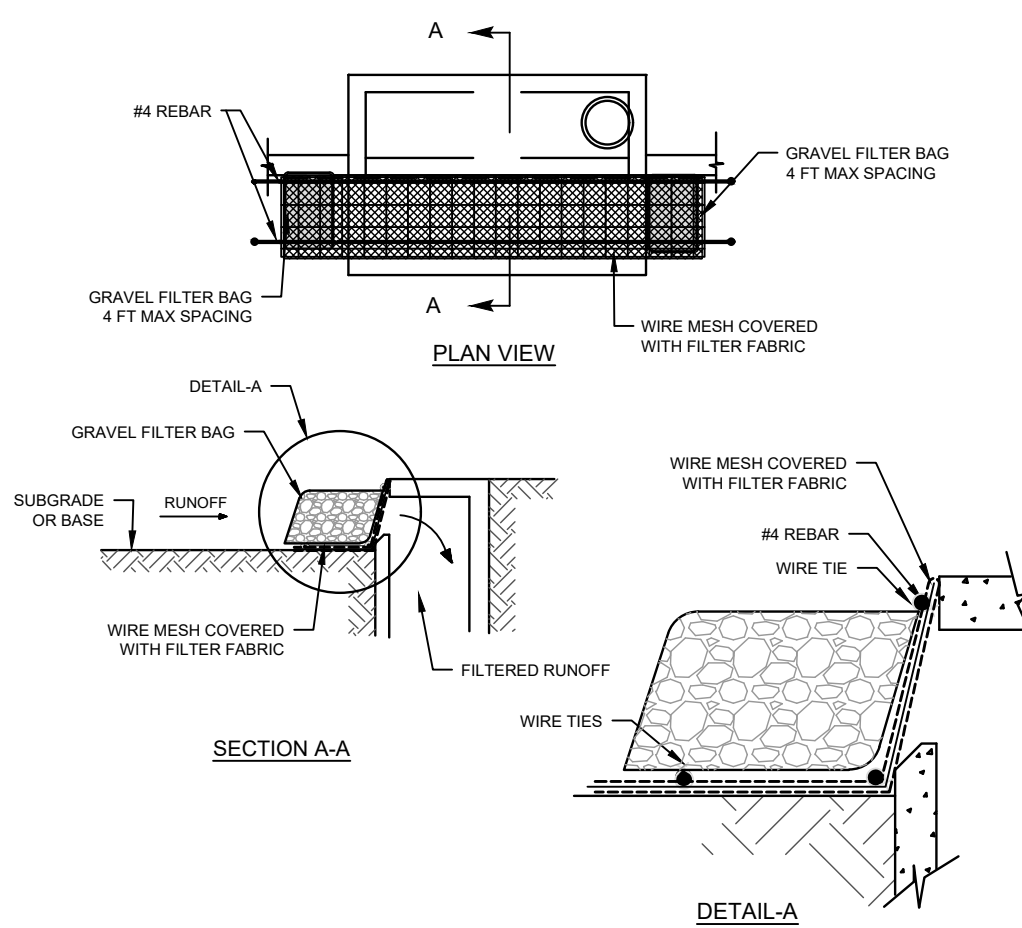
GENERAL NOTES:

1. ALL STORM DRAINAGE SYSTEMS INLETS SHOULD FILTER RUNOFF BEFORE THE WATER IS DISCHARGED INTO STREAMS OR ONTO ADJACENT PROPERTIES, UNLESS TREATMENT IS PROVIDED ELSEWHERE.

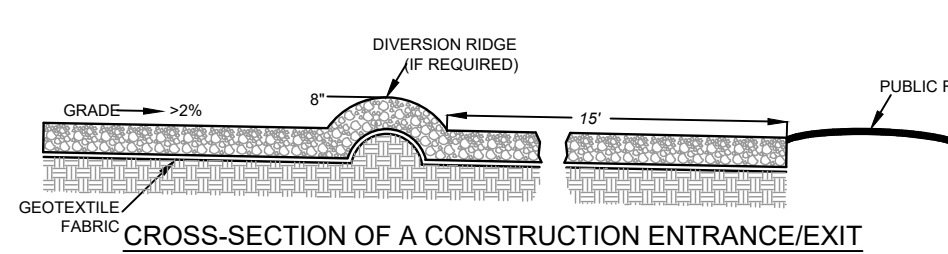
2. IF NO ADDITIONAL DOWNSTREAM TREATMENT EXISTS, THE MAXIMUM DRAINAGE AREA TRIBUTARY TO AN AREA DRAIN INSTALLED WITH A GRAVEL FILTER SHOULD BE ONE ACRE.

3. 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.

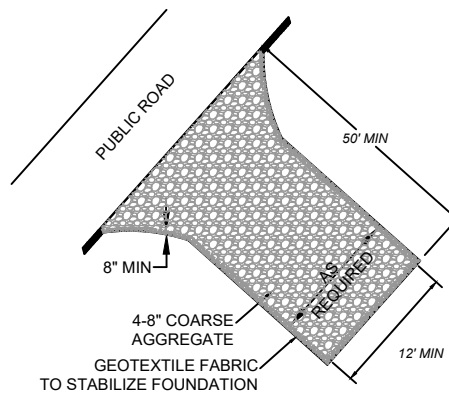
CURB INLET PROTECTION GRAVEL FILTER BAGS



CURB INLET PROTECTION (ALTERNATE)



CROSS-SECTION OF A CONSTRUCTION ENTRANCE/EXIT



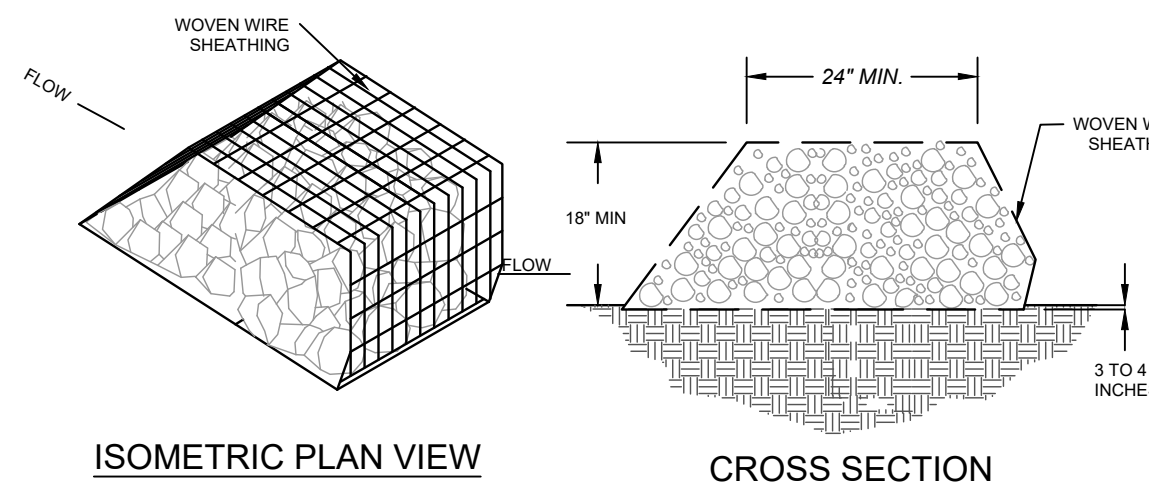
TEMPORARY CONSTRUCTION ENTRANCE/EXIT

- 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.
- (4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
- (5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

STABILIZED CONSTRUCTION ENTRANCE / EXIT



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 shoot 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.

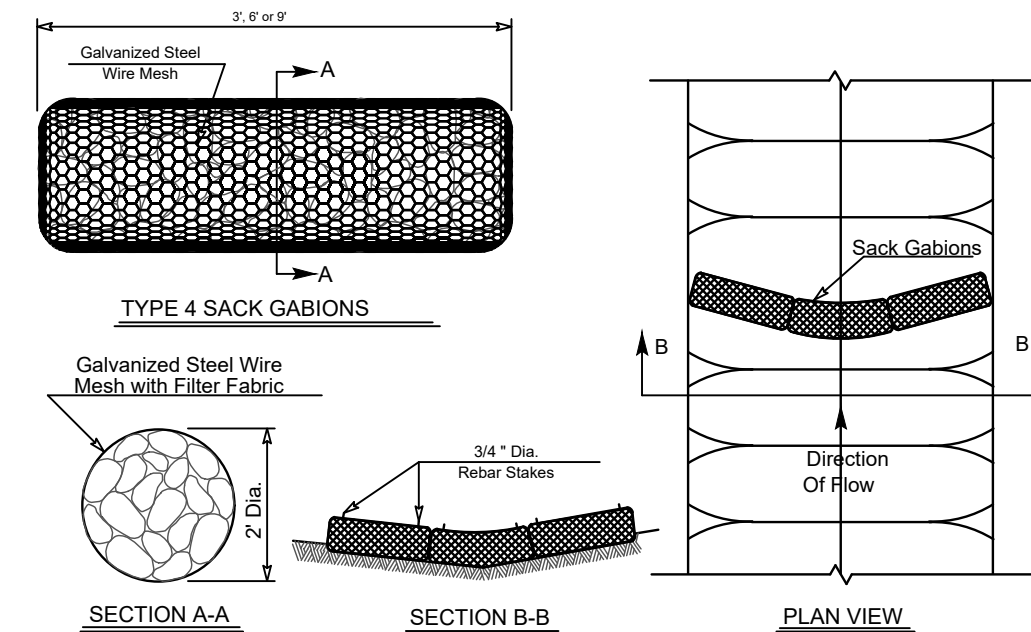
Installation:

- (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, and the berm retains its shape when walked upon.
- (5) Berm should be built along the contour at zero percent grade or as near as possible.
- (6) The ends of the berm should be tied into existing upslope grade and the berm should be buried in a trench approximately 3 to 4 inches deep to prevent failure of the control.

Inspection and Maintenance Guidelines:

- (1) Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.
- (2) Remove sediment and other debris when buildup reaches 50% 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.

ROCK BERM



TYPE 4 SACK GABBIONS

GENERAL NOTES:

1. THE TOP OF THE SACK GABBIONS SHOULD BE LEVEL AND ORIENTED PERPENDICULAR TO THE DIRECTION OF FLOW.
2. FILTER FABRIC MATERIAL SHALL BE FASTENED TO WOVEN WIRE SUPPORT.
3. 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 MULLER BURST STRENGTH OF 200 POUNDS PER SQUARE INCH AND A FLOW THRU RATE OF 120 GALLONS PER MINUTE PER SQUARE FOOT OF FRONTAL AREA.
4. STONE SIZE: 4"-8" OPEN GRADED CRUSHED LIMESTONE.
5. INSPECT WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACE AS NEEDED.
6. WHEN SILT REACHES A DEPTH OF 50% OR MORE ABOVE NATURAL GROUND, SILT SHALL BE REMOVED AND DISPOSED IN AN APPROVED MANNER THAT WILL NOT CONTRIBUTE TO RESILIATION. CONTAMINATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.

SAPPHIRE GROVE PHASE 2D BEXAR COUNTY, TEXAS STORM WATER POLLUTION PREVENTION PLAN DETAILS

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22-11800456

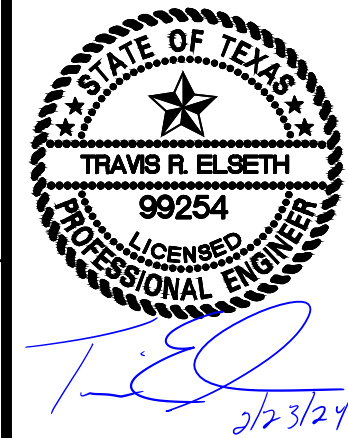
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ISSUE DATE

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TBPE Firm #: 0513 • TBPE Firm #: 1012300