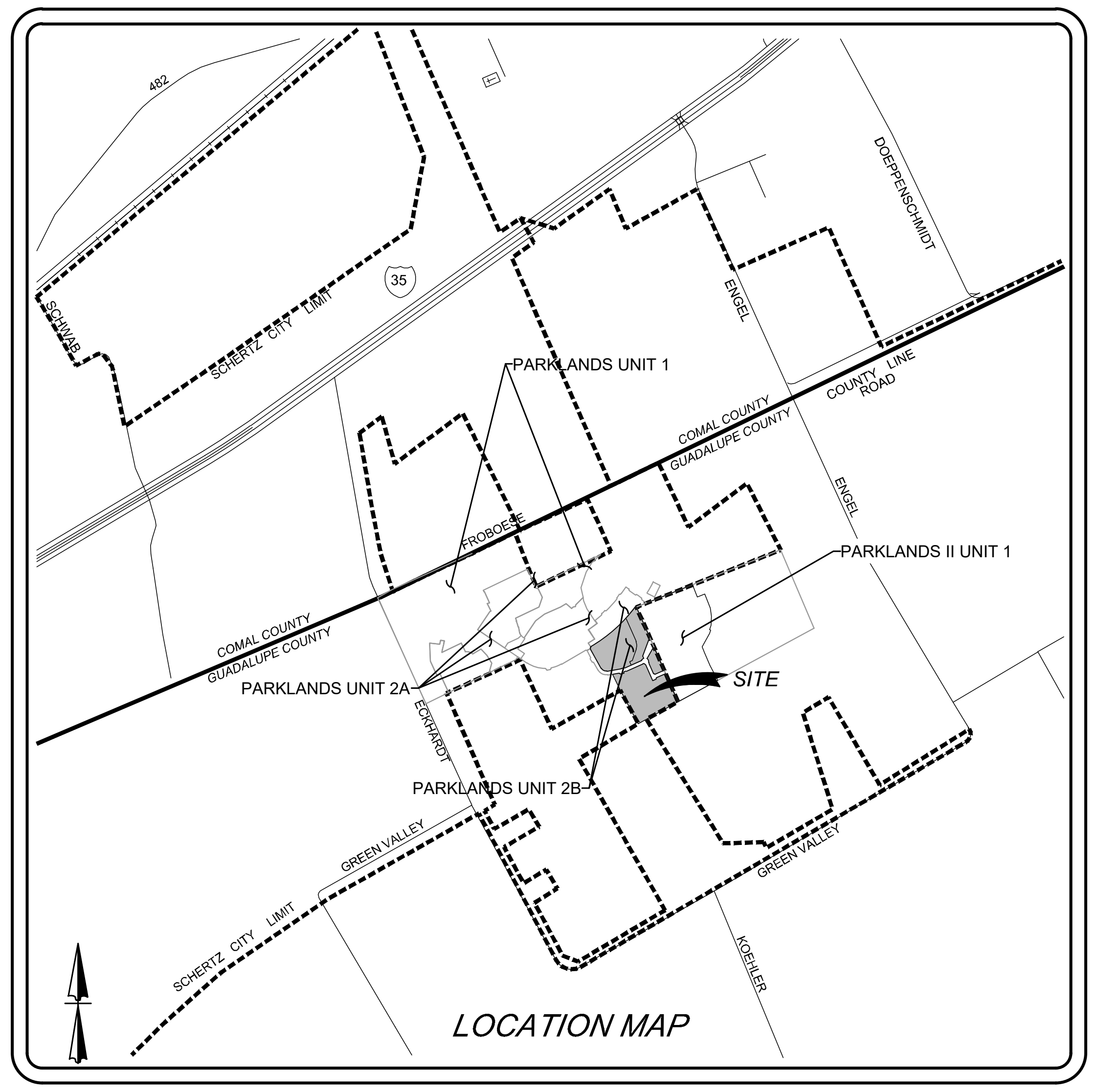
THE PARKLANDS SUBDIVISION - UNIT 3A

SCHERTZ, TEXAS

STREET, DRAINAGE, WATER, SANITARY SEWER & UTILITY IMPROVEMENTS



LOCATION MAP
N.T.S.

OWNER / APPLICANT:
PARKLANDS UNIT 1 & 2 LTD.
11 LYNN BATTS LANE, SUITE 100
SAN ANTONIO, TX 78218
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2/2/23
A. NICHOLAS REYNOLDS
111666
P.E.

JOB NO. - 171-23-06

Date: Feb 01, 2023, 1:00pm User ID: davendano
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GENERAL NOTES

1. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

2. CONTRACTOR SHALL NOTIFY THE ENGINEER AND ALL RESPECTIVE GOVERNMENTAL OR UTILITY AGENCIES AFFECTED BY CONSTRUCTION 72 HOURS PRIOR TO STARTING CONSTRUCTION. ANY TIE-IN SHALL BE COORDINATED BY THE CONTRACTOR WITH THE PUBLIC WORKS DEPARTMENT, AT LEAST 48 HOURS IN ADVANCE.

3. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY VERTICAL AND HORIZONTAL ALIGNMENT.

4. ANY DISCREPANCY OR CONFLICT WITHIN THE DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE CITY. DISCREPANCIES OR CONFLICTS NOT BROUGHT TO THE ENGINEERS ATTENTION AND CLARIFIED DURING BIDDING OF THE PROJECT WILL BE DEEMED TO HAVE BEEN BID OR PROPOSED IN THE MORE COSTLY MANNER, AND THE BETTER QUALITY OR GREATER QUANTITY OF THE WORK SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH ENGINEERS INTERPRETATION. ALL ITEMS, WORK, AND IMPROVEMENTS SHOWN OR INDICATED IN THE CONSTRUCTION DOCUMENTS SHALL BE COMPLETED FOR THE PRICES BID, WHETHER OR NOT A SEPARATE PAY ITEM IS INCLUDED IN THE CONTRACT.

5. THE CONTRACTOR SHALL MAINTAIN "AS-BUILT" DRAWINGS THROUGH THE COURSE OF CONSTRUCTION AND SHALL SUBMIT SAME TO THE ENGINEER FOR APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE WORK BY OWNER.

6. THE CONTRACTOR WILL SELECT, EMPLOY, AND PAY FOR SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM INSPECTION AND TESTING IDENTIFIED IN THE PUBLIC WORKS TECHNICAL SPECIFICATION SECTION 01452. EMPLOYMENT OF A TESTING LABORATORY BY THE CONTRACTOR SHALL NOT RELIEVE CONTRACTOR OF ITS OBLIGATION TO PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS. COPIES OF REPORTS TO BE SUBMITTED TO THE CITY FOR REVIEW.

7. THE CONTRACTOR SHALL FURNISH ALL ASSISTANCE REQUIRED OF HIM BY ALL INSPECTORS IN OBTAINING SAMPLES AT THE EXPENSE OF THE CONTRACTOR.

8. IF IN THE OPINION OF THE INSPECTOR, BASED ON TESTING SERVICE REPORTS AND INSPECTION, MATERIALS, COMPACTION OR ANY OTHER SPECIFICATIONS ARE BELOW THE SPECIFIED REQUIREMENTS THE CONTRACTOR SHALL CORRECT THE DEFICIENCY AND RE-TEST TO OBTAIN THE SPECIFIED PARAMETERS AT NO ADDITIONAL EXPENSE.

9. FOR ALL PAVEMENT LAYERS, A PASSING TEST RESULT IS REQUIRED WITHIN 48 HOURS OF PLACING THE NEXT LAYER OR RETESTING WILL BE REQUIRED.

10. DESIGN AND CONSTRUCTION STANDARDS REQUIRED:
    - A. PROJECT CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS, & DESIGN REPORTS.
    - B. CITY OF SCHERTZ PUBLIC WORKS SPECIFICATION MANUAL.
        1. PUBLIC WORKS DESIGN GUIDE.
        2. PUBLIC WORKS TECHNICAL SPECIFICATIONS.
        3. STANDARD DETAILS.

11. UNLESS OTHERWISE SHOWN IN THESE PLANS, SIDEWALKS WILL BE CONSTRUCTED CONCURRENT WITH MAIN LOT STRUCTURE.

12. ROUGH GRADING MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.

13. ALL PAVEMENTS, DRIVEWAYS, SIDEWALKS, CURBING, GUTTERS, FENCES, POLES, MAILBOXES, SIGNS, TREES, SHRUBBERY, LAWNS, SOD OR OTHER PROPERTY AND SURFACE STRUCTURES ON OR ADJACENT TO THE PROJECT SITE NOT SHOWN TO BE REMOVED IN PLANS, THAT ARE DAMAGED, DISTURBED, REMOVED OR DESTROYED BY THE CONTRACTOR DURING THE WORK SHALL BE REPLACED OR RETURNED TO A CONDITION EQUAL TO THAT BEFORE THE WORK BEGAN. CONTRACTOR TO SUPPORT AND KEEP INTACT STORM DRAINS AND INLET STRUCTURES. ANY DAMAGES INCURRED WILL BE AT CONTRACTOR'S EXPENSE.

SCHERTZ
COMMUNITY ✱ SERVICE ✱ OPPORTUNITY

GENERAL NOTES
PUBLIC WORKS CONSTRUCTION SPECIFICATIONS
ENGINEERING AND PUBLIC WORKS

SCALE: N.T.S.		DATE: 7/1/19
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UTILITIES

14. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, 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.

15. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED IN THESE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE 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 MAINTENANCE AND PROTECTION OF THE EXISTING UTILITIES EVEN IF THEY ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL CONTACT ANY UTILITIES ENCOUNTERED FORTY-EIGHT HOURS (48) HOURS PRIOR TO EXCAVATION OPERATION.

16. THE FOLLOWING IS A LIST OF TELEPHONE NUMBERS OF THE UTILITY LOCATORS FOR THE VARIOUS UTILITIES THAT MAY BE ENCOUNTERED:

TEXAS ONE CALL	1-800-245-4545 (1-800-DIG-TESS)
C.C.MA	210-658-6241
CITY PUBLIC SERVICE	1-800-545-6005
CENTERPOINT ENERGY ENTEX	(210)-659-6788
G.V.E.C	(210)-672-2871
NEW BRAUNFELS UTILITY	(830)-629-8400
TIME WARNER CABLE	(210)-352-4472
AT&T	1-800-828-5127
TxDOT NEW BRAUNFELS	1-800-644-4773
CITY OF SCHERTZ PUBLIC WORKS DEPT	(210)-619-1800
GREEN VALLEY WATER DISTRICT	(830)-914-2330
SCHERTZ SEGUIN LOCAL GOV'T CORP	(830)-401-2409
GREEN VALLEY TELEPHONE COMPANY	(830)-885-8277
GREEN VALLEY SPECIAL UTILITY DISTRICT	(831)-914-2330

17. NO VALVES IN THE OWNER'S WATER DISTRIBUTION SYSTEM SHALL BE OPERATED BY THE CONTRACTOR WITHOUT PRIOR PERMISSION OF THE OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN A VALVE IS TO BE OPERATED AND SHALL ONLY OPERATE THE VALVE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. COORDINATE ALL SHUTDOWN OF MAINS FOR TIE-INS WITH OWNER 72 HOURS PRIOR TO WORK BEING COMPLETED. THE CONTRACTOR SHALL INSPECT THE MATERIALS FOR DEFECTS AT THE TIME THEY ARE UNLOADED, AND ANY MATERIALS FOUND DEFECTIVE SHALL BE REMOVED FROM THE SITE. ALL WATER WORKS MATERIAL OR SCRAP OF WHATEVER NATURE REMOVED BY THE CONTRACTOR IN THE COURSE OF THE WORK SHALL REMAIN THE PROPERTY OF THE OWNER. SALVAGED MATERIALS SHALL BE DELIVERED TO AND UNLOADED AT THE CITY PUBLIC WORKS DEPARTMENT BY THE CONTRACTOR UNDER OBSERVATION OF AND AT THE DIRECTION OF THE OWNER. ITEMS TOO HEAVY TO BE HANDLED MANUALLY WILL BE UNLOADED BY EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS UNTIL THEY HAVE BEEN TURNED IN TO THE OWNER AND UNTIL A RECEIPT FOR THEM HAS BEEN ISSUED BY THE OWNER.

18. NO TIE-IN SHALL BE MADE TO THE EXISTING UTILITY SYSTEM UNTIL ALL TEST RESULTS HAVE BEEN PROVIDED TO THE CITY AND ARE VERIFIED.

19. PRIOR TO TESTING, ANY CONNECTION TO THE CITY'S WATER SUPPLY SHALL BE THROUGH AN APPROVED AND TESTED BACKFLOW DEVICE.

20. PLUG EXISTING SEWER BEFORE INSTALLING ANY NEW SEWER MAIN.

21. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT EXISTING SANITARY SEWER LATERALS AND WATER SERVICES SHOWN IN PLANS. ANY REPAIRS TO BE MADE AT CONTRACTORS EXPENSE.

22. PROVIDE BLUE PANTED "V" ETCHED IN CURB TO IDENTIFY VALVES.
PROVIDE BLUE PANTED "X" ETCHED IN CURB TO IDENTIFY METER BOXES.

23. NEW WATER MAINS TO BE PVC C900 DR14, UNLESS OTHERWISE SHOWN IN PLANS AND APPROVED BY PUBLIC WORKS OR ENGINEERING. HYDROSTATIC TESTING WILL BE PERFORMED UNDER THE SUPERVISION OF THE CITY INSPECTOR, PER STANDARD SPECIFICATION 02515 AT 200 PSI FOR 4 HOURS.

24. CONTRACTORS SHOULD USE HTH FOR DISINFECTION OF WATER LINES (NOT CHLORINE INJECTION) UNLESS APPROVED OTHERWISE PRIOR TO ISSUANCE OF PERMIT.

25. NEW WATERLINES SHALL BE TIED INTO EXISTING WATER SYSTEM UNDER THE SUPERVISION OF CITY PERSONNEL NO LATER THAN 14 DAYS AFTER PASSING BACTERIOLOGICAL TESTS.

26. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO OVERFLOWS OR SPILLAGE OF SEWER OCCURS. SHOULD THIS OCCUR, THE CONTRACTOR SHALL:
    - A. IDENTIFY THE SOURCE OF THE SPILL AND ATTEMPT TO ELIMINATE ANY ADDITIONAL SPILLAGE.
    - B. NOTIFY THE CITY OF SCHERTZ PUBLIC WORKS.
    - C. CONTAIN THE SPILL IN PLACE AND AVOID CONTAMINATION OF STREAMS.
    - D. DISINFECT THE AREA OF THE SPILL WITH A MIXTURE OF HTH CHLORINE AND WATER.
    - E. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND THE CITY OF SCHERTZ.

27. CONTRACTOR TO PROVIDE NOTICE TO RESIDENTS OF SHUTDOWN OF MAIN. CONTRACTOR TO NOTIFY RESIDENTS OF WORK WITHIN THEIR PROPERTY AND OF THE RELOCATION OF METERS. ANY COMPLAINTS BY RESIDENTS ARE TO BE PASSED IMMEDIATELY TO THE CITY INSPECTOR OR TO THE MAIN PUBLIC WORKS OFFICE. TAKE APPROPRIATE MEASURES TO PROTECT EXISTING SANITARY SEWER LATERALS SHOWN IN PLANS. ANY REPAIRS TO BE MADE AT CONTRACTORS EXPENSE.

28. ABANDONED CUSTOMER LINES SHALL BE CAPPED OR PLUGGED AT THE PROPERTY LINE.

29. ASBESTOS PIPE REMOVAL AND DISPOSAL IS THE CONTRACTORS RESPONSIBILITY.

SCHERTZ
COMMUNITY ✱ SERVICE ✱ OPPORTUNITY

GENERAL NOTES - UTILITIES
TECHNICAL SPECIFICATION SECTION 01732
ENGINEERING AND PUBLIC WORKS

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TREES & VEGETATION

30. THE CONTRACTOR SHALL VERIFY WHICH TREES ARE TO BE SAVED AND PROTECTED PRIOR TO COMMENCING CONSTRUCTION. DURABLE FENCE PROTECTION BARRIERS SHALL BE INSTALLED AROUND ALL TREES TO BE SAVED WITH FENCE PLACEMENT A MINIMUM OF 10 FEET FROM TREE CANOPY OR THE DRIP LINE, WHICHEVER IS GREATER.

31. THE CONTRACTOR SHALL NOT DISTURB AREAS AROUND EXISTING TREES TO BE SAVED.

32. THE CONTRACTOR SHALL PROTECT EXISTING GRASS, LANDSCAPING AND TREES NOT IN DIRECT CONFLICT WITH PROPOSED IMPROVEMENTS DURING CONSTRUCTION. GRASSED AREAS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR WITH TOPSOIL AND SODDED.

33. THE CONTRACTOR SHALL REMOVE ALL VEGETATION, TREES, STUMPS, GRASSES, ORGANIC SOIL, DEBRIS, AND DELETERIOUS MATERIALS IN CONFLICT WITH IMPROVEMENTS.

34. AFTER THE CONTRACTOR HAS REMOVED MATERIALS AS DESCRIBED ABOVE, HE SHALL STRIP SUITABLE TOPSOIL AND STOCKPILE FOR LANDSCAPING USE.

35. THE CONTRACTOR SHALL EXERCISE EXTRA CARE TO AVOID DAMAGE TO TREES AND ORNAMENTAL SHRUBS PLANTED AND MAINTAINED BY PROPERTY OWNERS IN THE TERRACES FRONTING THEIR PROPERTY.

36. CONTRACTOR SHALL COMPENSATE OWNER FOR DAMAGE TO TREES NOT SHOWN TO BE REMOVED IN PLANS.

37. OAK TREES DAMAGED DURING CONSTRUCTION SHALL BE SEALED WITHIN SIX HOURS OF DAMAGE TO PREVENT INFECTION BY OAK WILT.

NPDES

38. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND IMPLEMENTATION OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), INCLUDING COMPLYING WITH ALL APPLICABLE REGULATIONS RELATED TO NPDES & TPDES, AND SUBMITTING REQUIRED NOTIFICATION OF INTENT AND TERMINATION. THIS IS TO BE PAID FOR UNDER "STORM WATER POLLUTION PREVENTION PLAN" ITEM.

39. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SITE CONDITIONS DURING CONSTRUCTION AND UNTIL THE PROJECT IS ACCEPTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE STORMWATER POLLUTION PREVENTION PLAN, UNDERSTAND THE REQUIREMENTS FOR THE PLAN, AND SHALL BE RESPONSIBLE FOR IMPLEMENTING THE PLAN. THIS IS TO BE INCLUDED UNDER SECTION 01410 "STORM WATER POLLUTION PREVENTION PLAN". ALL FINES IMPOSED FOR NOT IMPLEMENTING OR MAINTAINING SWPPP MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SITE RESTORATION:

40. RESTORATION OF PROJECT AREA AFFECTED BY CONSTRUCTION ACTIVITIES IN PUBLIC AND PRIVATE PROPERTY, INCLUDING RIGHT-OF-WAYS AND EASEMENTS (TOPSOIL AND HYDROMULCH), PAVEMENT, DRIVEWAYS, DRAINAGE STRUCTURES, FENCES, LAWNS (TOPSOIL AND BLOCK SODDING), AND LANDSCAPING WILL BE COVERED BY SPECIFICATION AND BID ITEM "SITE RESTORATION" AND SPECIFICATION 01740 .

41. PAYMENT FOR RESTORATION OF PROJECT SITE DISTURBED BY UTILITY CONSTRUCTION OPERATIONS IS ON A LINEAR FOOT.

42. MEASUREMENT WILL BE AS PROVIDED FOR CORRESPONDING UTILITY IN EACH SPECIFICATION SECTION. NO SEPARATE PAYMENT MADE FOR BRANCH PIPE, VALVES, SERVICES, YARD PIPING AND OTHER ASSOCIATED WORK FOR UTILITIES. MEASUREMENT FOR RESTORATION WITH MULTIPLE UTILITIES WITHIN THE SAME RIGHT-OF-WAY WILL BE ON A LINEAR FOOT BASIS FOR ONLY ONE UTILITY.

43. PAYMENT INCLUDES REQUIRED SITE RESTORATION WITHIN THE RIGHT-OF-WAY OR EASEMENT REGARDLESS OF SIZE OR TYPE OF PIPE, METHOD OF CONSTRUCTION, PAVED OR UNPAVED AREAS OR THICKNESS AND WIDTH OF PAVEMENT.

44. NO SEPARATE PAYMENT MADE FOR SITE RESTORATION FOR SERVICE CONNECTIONS OR YARD PIPING UNDER THIS SECTION. INCLUDE COST IN APPROPRIATE ITEM.

45. ALL DISTURBED AREAS TO BE RE-VEGETATED TO 85% OF APPROVED GRASSES ACCORDING TO THE UDC PRIOR TO THE ACCEPTANCE OF PERMIT CLOSEOUT.

46. ROUGH GRADING, INCLUDING TREE REMOVAL MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.

SCHERTZ
COMMUNITY ✱ SERVICE ✱ OPPORTUNITY

TPDES
TECHNICAL SPECIFICATION SECTION 01410 & 01740
ENGINEERING AND PUBLIC WORKS

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TRAFFIC

47. THE CONTRACTOR SHALL PROVIDE ACCESS FOR RESIDENCES AND BUSINESSES.

48. THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE.

49. THE CONTRACTOR WILL BE REQUIRED TO FURNISH BARRICADES, WARNING SIGNS, LIGHTS, FLARES, FLAGS, FLAGMEN, ETC. WHERE NECESSARY AND AS DIRECTED BY THE ENGINEER, PARTICULARLY IN THOSE AREAS OF IMMEDIATE WORK.

50. BATTERY FLASHERS SHALL BE USED AND NUMBER SHALL BE EQUAL OR GREATER THAN INDICATED ON BARRICADING STANDARDS. WHEN A CLASS I BARRICADE PANEL OR CLASS II BARRICADE IS USED, EACH SHOULD BE EQUIPPED WITH A MINIMUM OF TWO (2) LIGHTS. ALL WARNING SIGNS NOT MOUNTED ON BARRICADES SHALL HAVE ONE (1) LIGHT.

51. BATTERY FLASHERS SHALL CONFORM TO PART V, SECTION D, LIGHTING DEVICES, TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

52. CONTRACTOR RESPONSIBLE FOR SUBMITTING A TRAFFIC CONTROL PLAN, PREPARED BY A REGISTERED PROFESSIONAL ENGINEER, TO THE CITY FOR APPROVAL 5 WORKING DAYS PRIOR TO COMMENCING WORK. PLAN SHOULD FOLLOW REQUIREMENTS OF TMUTCD, LATEST EDITION.

53. ALL TRENCHING AND CUT PAVEMENT SHALL BE RESTORED SUCH THAT LOCAL ACCESS MAY BE RESUMED AS SOON AS POSSIBLE.

54. RESTRICT TOTAL LENGTH OF DISTRIBUTED MATERIALS ALONG THE ROUTE OF CONSTRUCTION TO 1,000 LINEAR FEET UNLESS OTHERWISE APPROVED IN WRITING BY PUBLIC WORKS.

55. MAINTAIN THROUGH TRAFFIC ALONG ALONG ANY PUBLIC ROADWAYS FOR THE DURATION OF THE PROJECT.

56. COORDINATE SHUT DOWN ROAD WITH CITY OF SCHERTZ 5 DAYS PRIOR TO SHUTDOWN. SEE SPEC 01555.

TxDOT NOTE:

57. NO WORK AND NO STORAGE OF MATERIALS WILL BE PERFORMED IN TxDOT RIGHT-OF-WAY, UNLESS THE APPROPRIATE DENSITIES HAVE BEEN OBTAINED.

58. ALL TxDOT REQUIRED PERMITS MUST BE OBTAINED AND PROVIDED BY THE CITY BY THE CONTRACTOR. ALL PERMITS FOR UTILITY WORK WITHIN THE TxDOT R.O.W. WILL BE OBTAINED AND PROVIDED TO THE CITY. ALL PLANS AND REQUIRED SUBMITTALS WILL BE PROVIDED BY THE CONTRACTOR AT REQUEST OF THE CITY.

SCHERTZ
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TRAFFIC
TECHNICAL SPECIFICATION SECTION 01555
ENGINEERING AND PUBLIC WORKS

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CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES

THE FOLLOWING MEASURES REPRESENT MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

59. NO DISTURBANCE OF PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING. BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR A MINIMUM OF 10 FEET FROM TREE CANOPY OR THE DRIP LINE, WHICHEVER IS GREATER.

60. SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.

61. WHERE A CHANGE OF GRADE OCCURS AT THE DRIP LINE OF A SPECIMEN TREE, SILT FENCES WILL BE REQUIRED DURING CONSTRUCTION AND RETAINING WALLS MUST BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY THE CITY.

62. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, SYNTHETIC JUTE BALES, WATTLES, &/OR HAVE BEST MANAGEMENT PRACTICES (BMP'S) AS REQUIRED, SILT FENCES, AND FLOATING TURBIDITY BARRIERS. FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES.

63. PRIOR TO THE INSTALLATION OF ANY FILL MATERIALS ON SUBJECT SITE, SILT FENCES SHALL BE INSTALLED (1) ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES, (2) AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS, (3) ADJACENT TO NATURAL LANDSCAPE BUFFERS, (4) AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES, AND (5) AT ANY ADDITIONAL AREAS THAT THE CITY DEEMS NECESSARY TO BE PROTECTED FROM POTENTIAL EROSION IMPACTS DURING CONSTRUCTION. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS. WHILE THESE ITEMS REPRESENT THE MINIMUM REQUIREMENTS, THE CITY RESERVES THE RIGHT TO IMPOSE ADDITIONAL PROTECTIVE MEASURES, AS DETERMINED DURING ACTUAL SITE VISITS CONDUCTED AS PART OF THE STANDARD REVIEW OF THE SITE THROUGHOUT PROJECT CONSTRUCTION.

64. AT A MINIMUM, THE CONTRACTOR SHALL SEED AND/OR MULCH ALL DISTURBED AREAS. **85% SUFFICIENT GRASS** COVERAGE IS TO BE ESTABLISHED BEFORE PERMIT EXPIRATION.

65. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE. WITHIN SEVEN (7) DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE OR INACTIVITY IN CONSTRUCTION, THE CONTRACTOR SHALL INSTALL SEED AND MULCH OR SOD, AS REQUIRED. ANY PROJECT THAT IS INACTIVE FOR A PERIOD OF 30 DAYS OR MORE SHALL BE STABILIZED TO THE SATISFACTION OF THE CITY OF SCHERTZ.

66. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED. IF THE GRASS IS NOT ESTABLISHED WITHIN **TWO WEEKS** THE CITY MAY REQUIRE THE CONTRACTOR TO RE-SEED OR A NON-VEGETATIVE OPTION MAY BE EMPLOYED.

67. ABSOLUTELY NO BURYING OF CLEARED MATERIALS IS PERMITTED.

68. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED.

69. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (95% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER ASTM D-698).

70. DURING SUBDIVISION DEVELOPMENT WHEN FUTURE BUILDING LOTS ARE FILLED AS PART OF THE OVERALL SUBDIVISION IMPROVEMENTS, COMPACTION TEST REPORTS MUST BE PERFORMED ON THE BUILDING LOTS AT 300 FOOT INTERVALS. THESE TESTS ARE TO BE PERFORMED IN ONE-FOOT VERTICAL INCREMENTS. THE RESULTS OF THESE TESTS ARE TO BE SUBMITTED TO THE CITY UPON COMPLETION OF THE TESTS.

71. IF ANY MUCK MATERIAL IS DISCOVERED, IT SHALL BE REQUIRED TO BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.

72. STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, **STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT** MEASURED FROM THE ORIGINAL GRADE. AT A MINIMUM, STOCK PILES THAT WILL REMAIN IN PLACE IN EXCESS OF TWENTY DAYS SHOULD BE SEEDED AND MULCHED IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT.

73. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO, WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS, TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION PONDS, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED ATOP STOCKPILE AREAS, AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.

SCHERTZ
COMMUNITY ✱ SERVICE ✱ OPPORTUNITY

CLEARING & GRADING
TECHNICAL SPECIFICATION SECTION 01410 & 01570
ENGINEERING AND PUBLIC WORKS

SCALE: N.T.S.		DATE: 7/1/19
DSGN. BY: ENG.	DRAWN BY: BCP	SHEET NO.: 5 of 6

CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES

THE FOLLOWING MEASURES REPRESENT MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

74. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.

75. ALL FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 6.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.

76. OWNER/CONTRACTOR SHALL FILE A "**NOTICE OF INTENT**" TO USE GENERAL PERMIT FOR STORM WATER DISCHARGE FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES" WITH THE TEXAS POLLUTION DISCHARGE ELIMINATION SYSTEM" IN COORDINATION WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY. CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH ALL PROVISIONS OF THE GENERIC PERMIT INCLUDING BUT NOT LIMITED TO:
    - A. PROVIDE SUCH EROSION AND SEDIMENT CONTROL MEASURES AS MAY BE NECESSARY TO PREVENT DISCHARGE OF POLLUTANTS FROM THE SITE FROM THE START OF CONSTRUCTION UNTIL THE FINAL GROUND COVER HAS BEEN ESTABLISHED.
    - B. WORK WITH CITY INSPECTORS TO MAKE WEEKLY INSPECTIONS/REPORTS OF THE CONDITION OF EROSION AND SEDIMENT CONTROL MEASURES.
    - C. WORK WITH CITY INSPECTORS TO MAKE INSPECTIONS/REPORTS OF THE CONDITION OF EROSION AND SEDIMENT CONTROL MEASURES WITHIN 24 HOURS OF EVERY RAINFALL EVENT EXCEEDING ONE-HALF INCH.
    - D. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT CONSTRUCTION.
    - E. ADD EROSION AND SEDIMENT CONTROL MEASURES AS SITE CONDITIONS CHANGE.
    - F. REMOVE TEMPORARY EROSION/SEDIMENT CONTROL MEASURES AFTER SUBSTANTIAL RE-VEGETATION AND/OR PRIOR TO THE END OF THE PERMIT EXPIRATION.

SCHERTZ
COMMUNITY ✱ SERVICE ✱ OPPORTUNITY

CLEARING & GRADING
TECHNICAL SPECIFICATION SECTION 01410 & 01570
ENGINEERING AND PUBLIC WORKS

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TBPE Firm #: 9513 • TBPLS Firm #: 10122300

REVISIONS
ISSUE DATE

1/26/22
A. NICHOLAS REYNOLDS
111666
P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
GENERAL NOTES

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR
SHEET NUMBER:
0.1

Date: Aug 03, 2021, 11:58am User ID: tvoter
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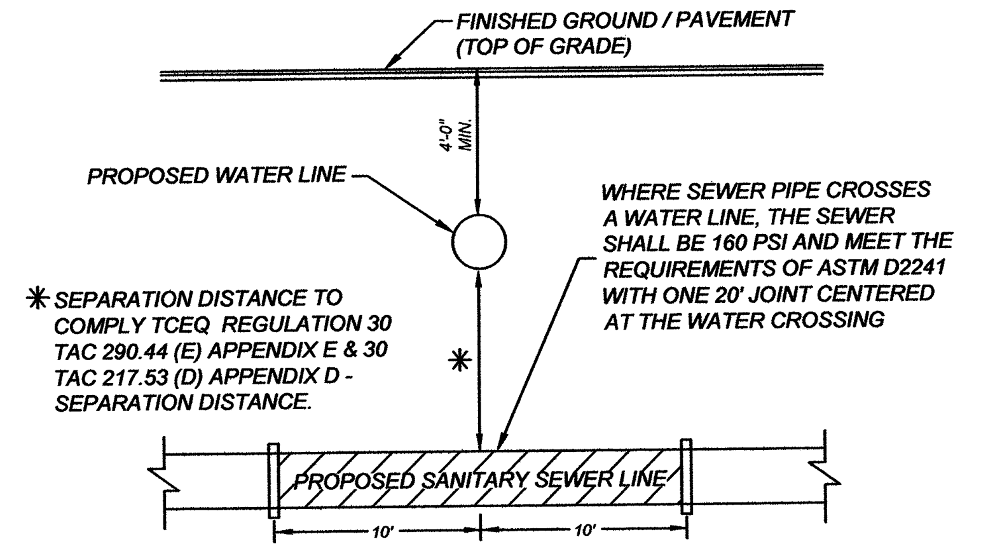
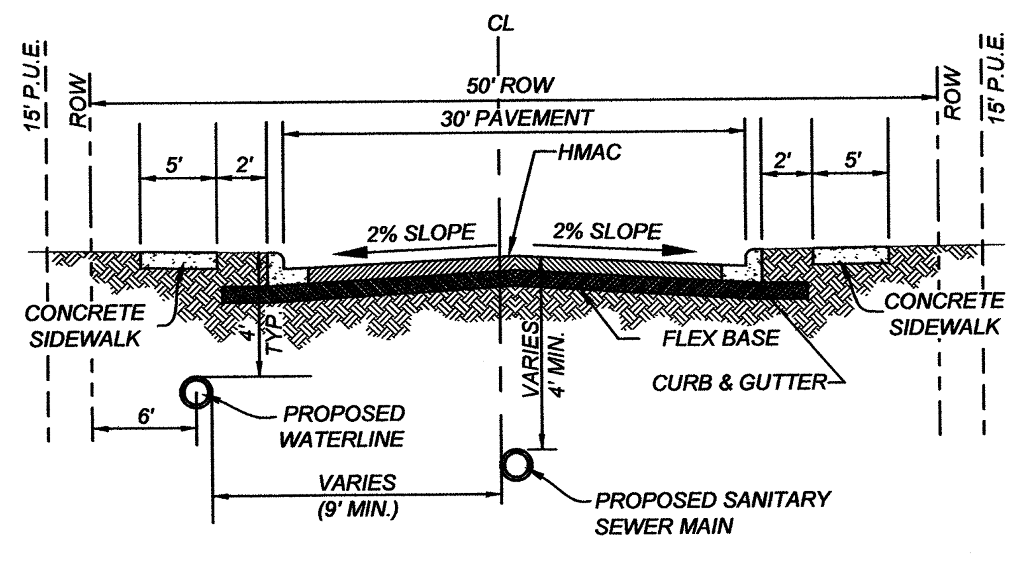
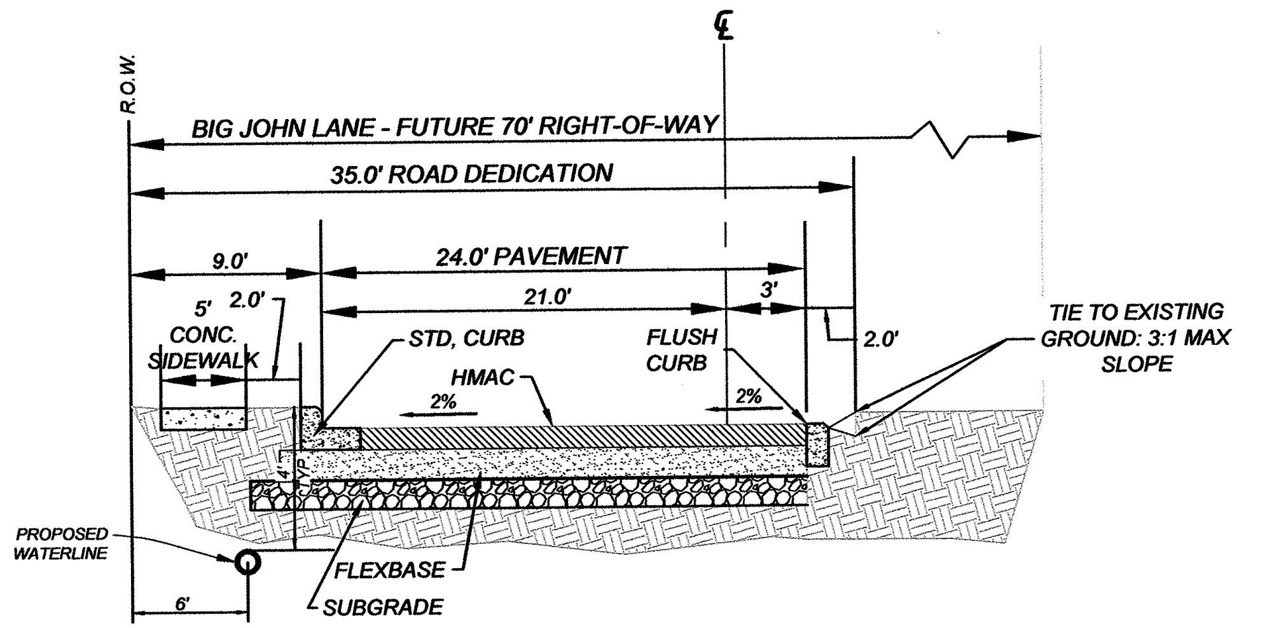

FINISHED GROUND / PAVEMENT (TOP OF GRADE)
PROPOSED WATER LINE
4'-0" MIN.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
* SEPARATION DISTANCE TO COMPLY TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
PROPOSED SANITARY SEWER LINE
10'
10'

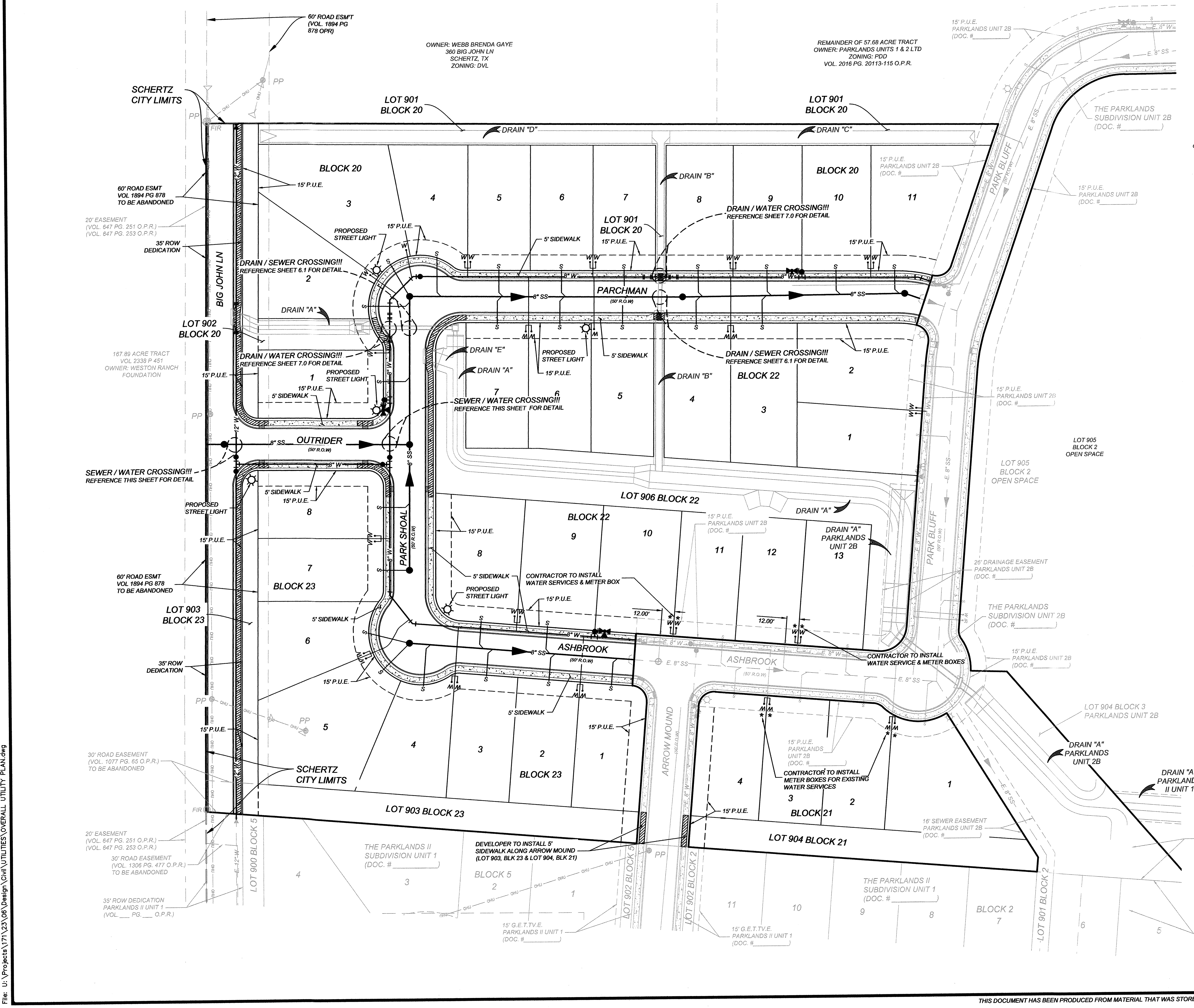
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.



TYPICAL 50' ROW STREET CROSS SECTION - LOCAL ST.
N.T.S.

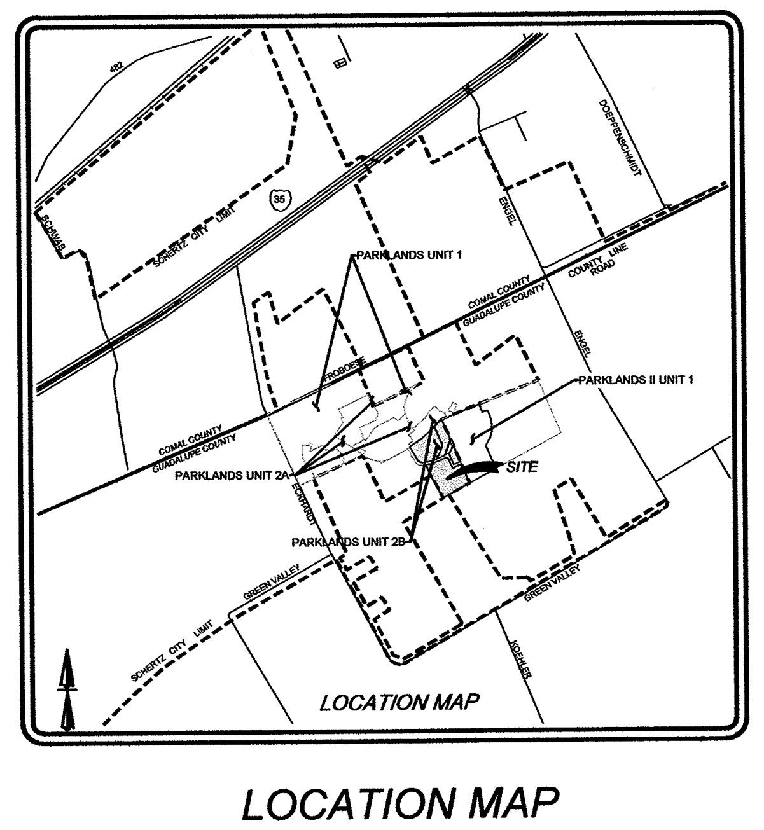


BIG JOHN LN TYPICAL SECTION

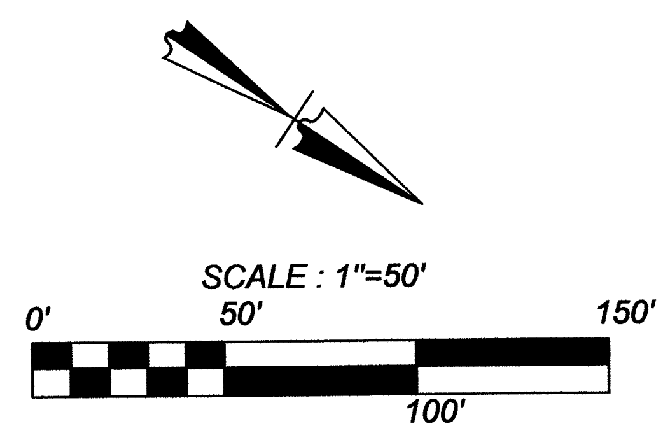

60' ROAD ESM'T (VOL. 1894 PG 878 OPR)
OWNER: WEBB BRENDA GAYE 360 BIG JOHN LN SCHERTZ, TX ZONING: DVL
REMAINDER OF 57.68 ACRE TRACT OWNER: PARKLANDS UNITS 1 & 2 LTD ZONING: PDD VOL. 2016 PG. 20113-115 O.P.R.
SCHERTZ CITY LIMITS
LOT 901 BLOCK 20
DRAIN "D"
DRAIN "C"
DRAIN "B"
BLOCK 20
60' ROAD ESMT (VOL. 1894 PG 878 TO BE ABANDONED
20' EASEMENT (VOL. 647 PG. 251 O.P.R.) (VOL. 647 PG. 253 O.P.R.)
35' ROW DEDICATION
BIG JOHN LN
PROPOSED STREET LIGHT
5' SIDEWALK
15' P.U.E.
DRAIN / SEWER CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
DRAIN / WATER CROSSING!!! REFERENCE SHEET 7.0 FOR DETAIL
PARCHMAN (50' R.O.W)
LOT 902 BLOCK 20
DRAIN "A"
DRAIN "E"
167.89 ACRE TRACT VOL 2335 P 451 OWNER: WESTON RANCH FOUNDATION
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
BLOCK 22
OUTRIDER (50' R.O.W)
LOT 906 BLOCK 22
LOT 905 BLOCK 2 OPEN SPACE
PARK BLUFF
PARK SHOAL (50' R.O.W)
BLOCK 23
LOT 903 BLOCK 23
DRAIN "A" PARKLANDS UNIT 2B
CONTRACTOR TO INSTALL WATER SERVICES & METER BOX
12.00'
ASHBROOK (50' R.O.W)
CONTRACTOR TO INSTALL WATER SERVICE & METER BOXES
CONTRACTOR TO INSTALL METER BOXES FOR EXISTING WATER SERVICES
26' DRAINAGE EASEMENT PARKLANDS UNIT 2B
THE PARKLANDS SUBDIVISION UNIT 2B
LOT 904 BLOCK 3 PARKLANDS UNIT 2B
DRAIN "A" PARKLANDS II UNIT 1
30' ROAD EASEMENT (VOL. 1077 PG. 65 O.P.R.) TO BE ABANDONED
ARROW MOUND
BLOCK 21
LOT 904 BLOCK 21
16' SEWER EASEMENT PARKLANDS UNIT 2B
DEVELOPER TO INSTALL 5' SIDEWALK ALONG ARROW MOUND (LOT 903, BLK 23 & LOT 904, BLK 21)
THE PARKLANDS II SUBDIVISION UNIT 1
30' ROAD EASEMENT (VOL. 1306 PG. 477 O.P.R.) TO BE ABANDONED
35' ROW DEDICATION PARKLANDS II UNIT 1
LOT 900 BLOCK 5
LOT 902 BLOCK 5
LOT 902 BLOCK 2
LOT 901 BLOCK 2
BLOCK 5
BLOCK 2
15' G.E.T.T.V.E. PARKLANDS II UNIT 1
8" W
8" SS
E. 8" W
E. 8" SS
PP

LEGEND

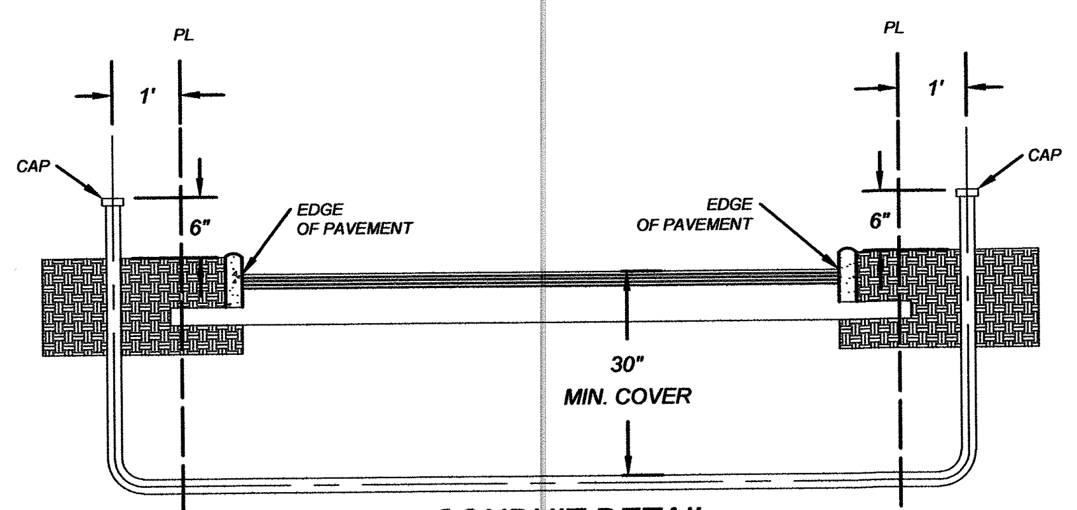
PROPOSED WATER MAIN	8"W
PROPOSED WATER SERVICE & METER BOX (TIE TO EXISTING WATER SERVICE)	W *
PROPOSED WATER SERVICE & METER BOX	W
PROPOSED WATER 1" IRRIGATION SERVICE & W/ 3/4" WATER METER & METER BOX	IRR 3/4"
PROPOSED FIRE HYDRANT	
GAS, ELECTRIC, TELEPHONE, CABLE T.V., EASEMENT	G.E.T.TV. E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
RIGHT OF WAY	R.O.W.
PROPOSED 8" SANITARY SEWER MAIN	8"SS
PROPOSED 8" SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER LATERAL	S
PROPOSED STREET LIGHT POLE (SUBJECT TO GVEC APPROVAL)	☼
PROPOSED TEE & WATER VALVE	●
PROPOSED SIDEWALK	▨
SIDEWALK TO BE CONSTRUCTED BY DEVELOPER	▨
EXISTING WATER VALVE	⋈
EXISTING FIRE HYDRANT	
EXISTING WATER MAIN	E. 8" W
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	(SS)
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	● PP



LOCATION MAP
N.T.S.



NICHOLAS REYNOLDS
111666
1/10/23



CONDUIT DETAIL

N.T.S.

*PVC SCHED. 40 OR 80 CONDUIT
SEE PLAN SHEETS FOR SIZE, LOCATION, AND NUMBER OF CONDUITS

NOTE:

- CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH GVEC FACILITY AT ALL STREET AND DRAIN CROSSINGS CONSTRUCTION SLEEVES MUST ALSO BE LOCATED FOR GVEC CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.
- CONTRACTOR TO CONTACT ENGINEER FOR APPROPRIATE NUMBER AND SIZE OF CONDUITS FOR TELECOMMUNICATIONS
- CONTRACTOR TO CONTACT ENGINEER FOR ELECTRICAL PLANS

DRY UTILITY CONDUIT NOTE:

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

*** WATER METER NOTE:**

ALL ELECTRIC IMPROVEMENTS INCLUDING STREET LIGHTS MUST BE PLACED A MINIMUM OF 4 FEET FROM THE METER BOX.

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.

KFW
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TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

OVERALL UTILITY PLAN

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
1.0

Date: Jan 10, 2023, 9:35am User ID: nreynolds
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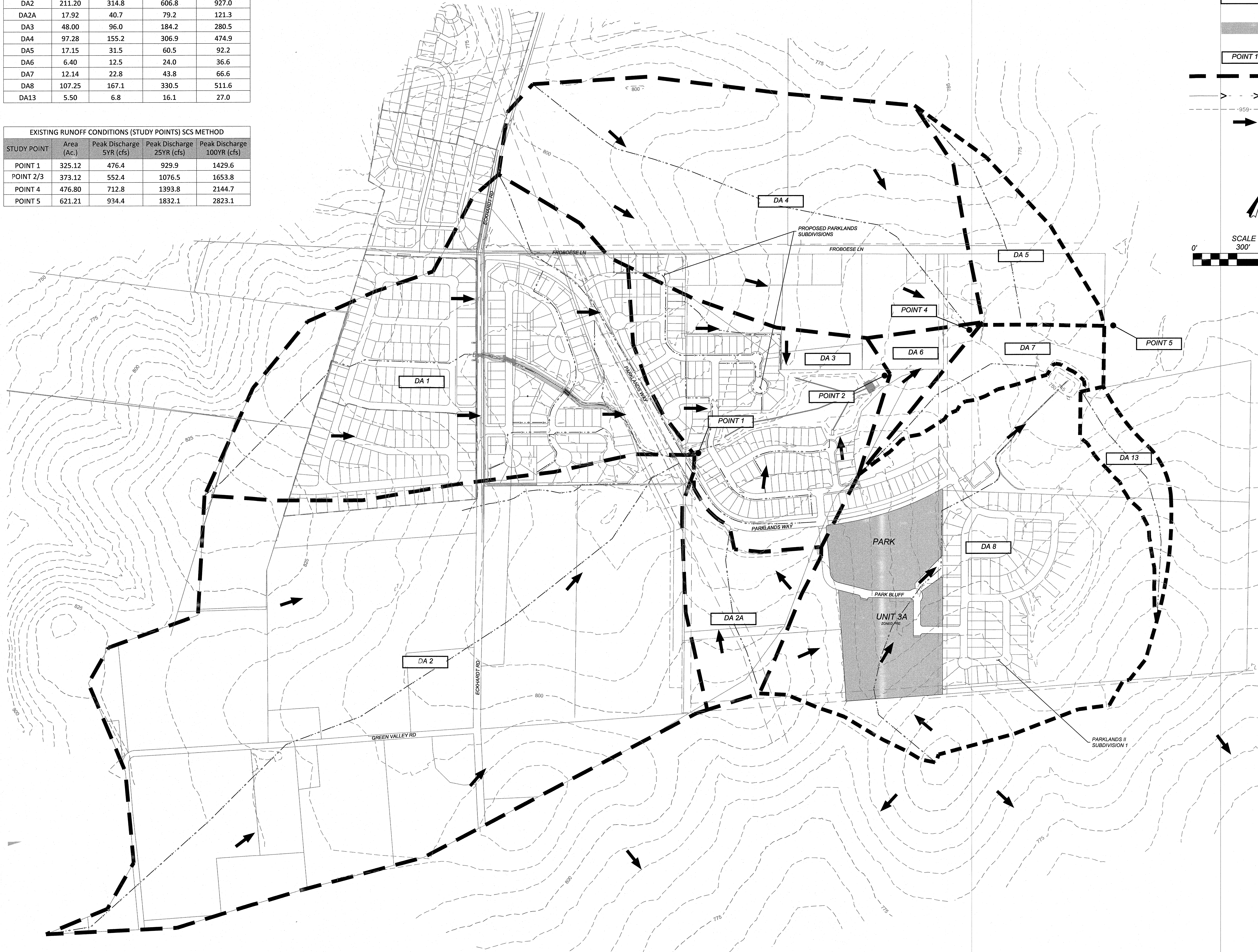
EXISTING RUNOFF CONDITIONS (DRAINAGE AREAS) SCS METHOD				
Drainage Area	Area (Ac.)	Peak Discharge 5YR (cfs)	Peak Discharge 25YR (cfs)	Peak Discharge 100YR (cfs)
DA1	96.00	147.8	296.3	462.0
DA2	211.20	314.8	606.8	927.0
DA2A	17.92	40.7	79.2	121.3
DA3	48.00	96.0	184.2	280.5
DA4	97.28	155.2	306.9	474.9
DA5	17.15	31.5	60.5	92.2
DA6	6.40	12.5	24.0	36.6
DA7	12.14	22.8	43.8	66.6
DA8	107.25	167.1	330.5	511.6
DA13	5.50	6.8	16.1	27.0

EXISTING RUNOFF CONDITIONS (STUDY POINTS) SCS METHOD				
STUDY POINT	Area (Ac.)	Peak Discharge 5YR (cfs)	Peak Discharge 25YR (cfs)	Peak Discharge 100YR (cfs)
POINT 1	325.12	476.4	929.9	1429.6
POINT 2/3	373.12	552.4	1076.5	1653.8
POINT 4	476.80	712.8	1393.8	2144.7
POINT 5	621.21	934.4	1832.1	2823.1



LEGEND

DA 4	WATERSHED IDENTIFIER
▨	PROPOSED SITE
POINT 1	STUDY POINT
— — —	DRAINAGE AREA BOUNDARY
——> - - -> ——	FLOW PATH
- - -959- - -	EXISTING CONTOURS
➡	FLOW ARROW

SCALE : 1"=300'
0' 300' 600' 900'

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TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

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1/26/22

A. NICHOLAS REYNOLDS
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Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
EXISTING MASTER DRAINAGE PLAN

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
2.0

Date: Aug 03, 2021, 10:43am User ID: tvater
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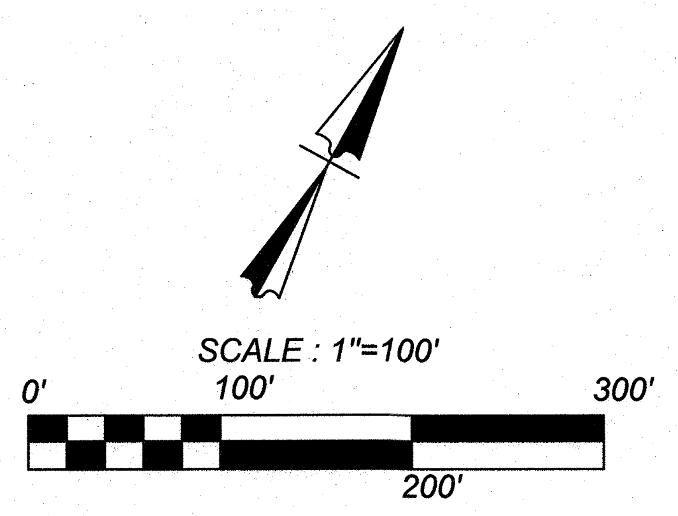
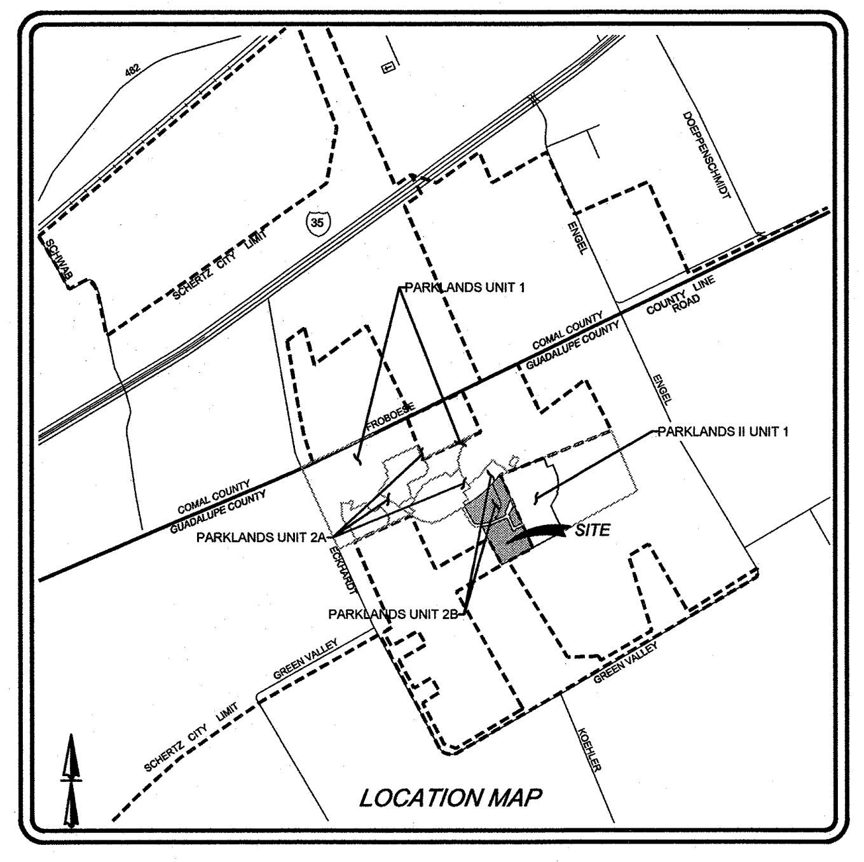


LEGEND

DA 3 12.0 ACRES	WATERSHED IDENTIFIER AREA (ACRES)
▬ ▬ ▬ ▬ ▬	DRAINAGE AREA BOUNDARY
——>- - -> ——>- - -> ——	FLOW PATH
— — — -659- — — —	EXISTING CONTOURS
➡	FLOW ARROW
▨	PROPOSED SITE
①	STUDY POINT



LOCATION MAP
N.T.S.

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THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

PROPOSED ONSITE DRAINAGE PLAN

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

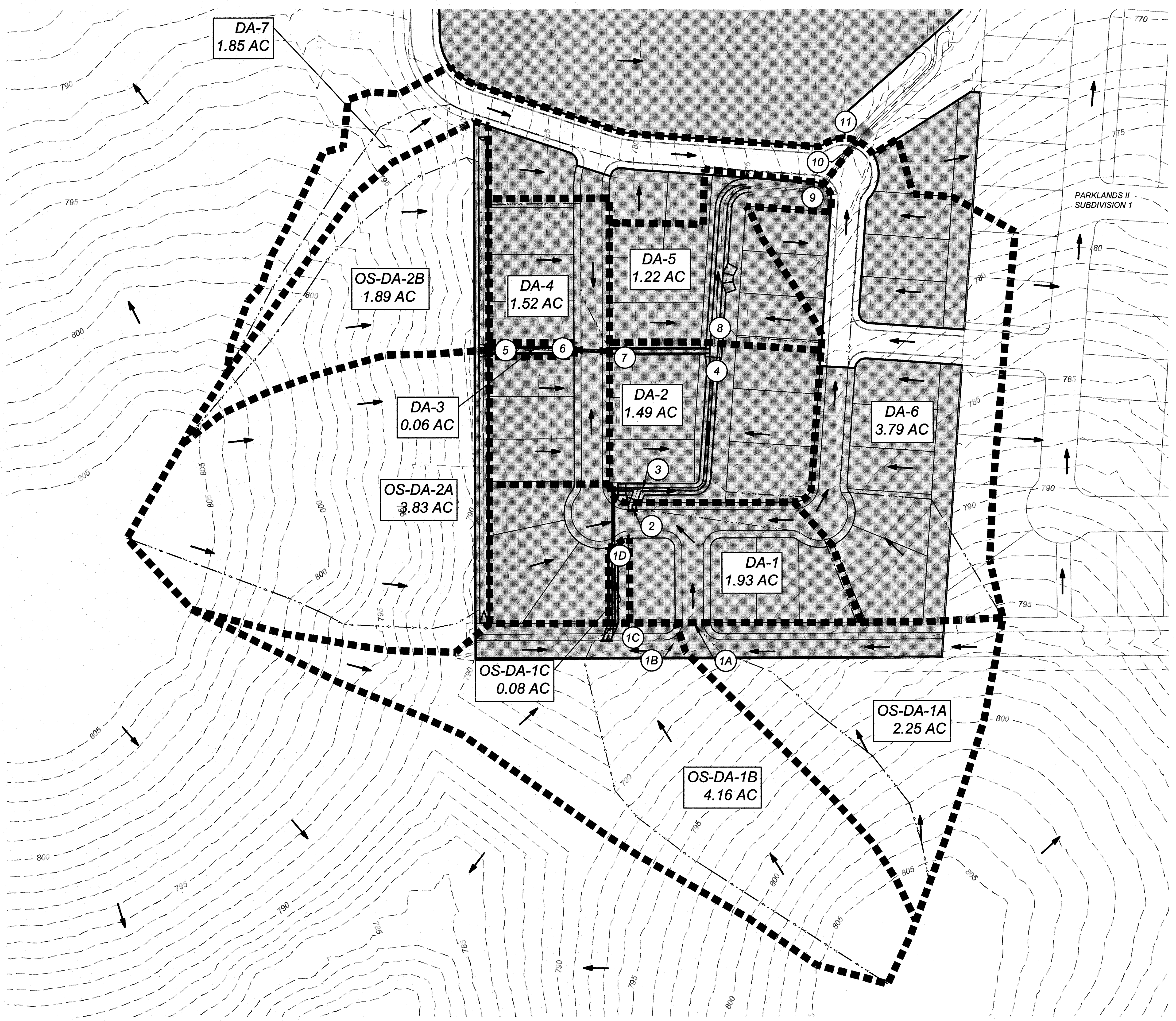
SHEET NUMBER:
2.1

PROPOSED RUNOFF CALCULATIONS - RATIONAL METHOD

Study Point	Drainage Area(s)	(Acres)	C	$T_{carryover}$	(min)	T_{ovrl} (min)	T_{sc} (min)	T_{ch} (min)	T_{tot} (min)	I_5 (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_5 (ft^3/s)	Q_{25} (ft^3/s)	Q_{100} (ft^3/s)
	OS-DA-1A	2.25	0.67			16.30	1.10		17.4	4.84	6.16	7.42	7.30	9.29	11.19
1A	OS-DA-1A (INTERCEPTED FLOW)												7.30	9.26	10.96
1B	OS-DA-1A (BYPASS FLOW)												0.00	0.03	0.23
	OS-DA-1B	4.16	0.67			17.60	2.70	0.30	20.6	4.56	5.86	7.09	12.71	16.33	19.76
1C	SP1B + OS-DA-1B												12.71*	16.36*	19.99*
	OS-DA-1C	0.08	0.67												
1D	OS-DA-1B + OS-DA-1C (+SP1B)	4.24	0.67	OS-DA-1B	20.60				20.6	4.56	5.86	7.09	12.95*	16.68*	20.37*
	DA-1	1.93	0.67			7.60	2.60		10.2	5.88	7.44	8.88	7.60	9.62	11.48
2	DA-1 + SP1A												14.90	18.88	22.44
3	OS-DA-1A + OS-DA-1B + OS-DA-1C + DA-1	8.42	0.67	SP-1D	20.6			0.30	20.9	4.56	5.86	7.09	25.72	33.06	40.00
	DA-2	1.49	0.67			9.10		0.60	9.7	6.08	7.69	9.17	6.07	7.68	9.15
4	SP-3 + DA-2	9.91	0.67	SP-3	20.9			0.80	21.7	4.48	5.77	6.99	29.75	38.31	46.41
	OS-DA-2A	3.83	0.67			18.10	1.10	1.00	20.2	4.56	5.86	7.09	11.70	15.04	18.19
	OS-DA-2B	1.89	0.67			19.90	1.70	0.80	22.4	4.39	5.68	6.88	5.56	7.19	8.71
	DA-3	0.06	0.67												
5	OS-DA-2A + OS-DA-2B + DA-3	5.78	0.67	OS-DA-2A	20.2				20.2	4.56	5.86	7.09	17.66	22.69	27.46
	DA-4	1.52	0.67			7.70	2.50		10.2	5.88	7.44	8.88	5.99	7.58	9.04
6	SP5 + (1/2)DA-4	6.54	0.67	SP5	20.2			0.30	20.5	4.56	5.86	7.09	19.98	25.68	31.07
7	SP5 + DA-4	7.30	0.67	SP6	20.5			0.10	20.6	4.56	5.86	7.09	22.30	28.66	34.68
8	SP7 + SP4	17.21	0.67	SP4	21.7				21.7	4.48	5.77	6.99	51.66	66.53	80.60
	DA-5	1.22	0.67			8.80	0.00	1.00	9.8	6.08	7.69	9.17	4.97	6.29	7.50
9	SP8 + DA5	18.43	0.67	SP8	21.7			1.00	22.7	4.39	5.68	6.88	54.21	70.14	84.95
	DA-6	3.79	0.67			19.00	2.30		21.3	4.48	5.77	6.99	11.38	14.65	17.75
	DA-7	1.85	0.67			19.00	4.00		23.0	4.30	5.59	6.78	5.33	6.93	8.40
10	DA-6 + DA-7	5.64	0.67	DA-6	21.3				21.3	4.48	5.77	6.99	16.93	21.80	26.41
11	SP10 + SP9	24.07	0.67	SP9	22.7			0.20	22.9	4.39	5.68	6.88	70.80	91.60	110.95

**NOTE:*

1. *FLOWRATES FROM STUDY 1B WERE SIMPLY ADDED TO DOWNSTREAM STUDY POINT AS A CONSERVATIVE APPROACH.*
2. *STUDY POINT 1C INCLUDES THE BYPASS FLOW OF STUDY POINT 1B (SIMPLY SUMMED).*
3. *RUNOFF RATES FOR STUDY POINT 1D INCLUDE THE BYPASS FLOW OF STUDY POINT 1B (SIMPLY SUMMED).*



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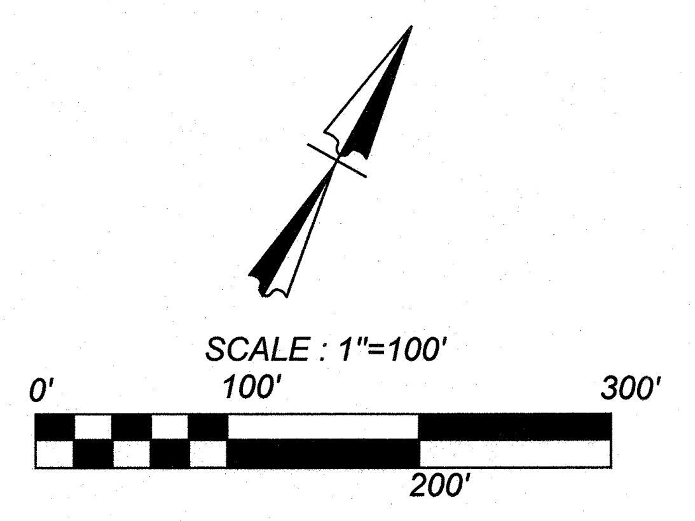
File: U:\Projects\171\23\06\Design\Civil\Drainage\2.1—PROPOSED ON SITE DRAINAGE MAP.dwg

ULTIMATE RUNOFF CALCULATIONS - RATIONAL METHOD

Study Point	Drainage Area(s)	(Acres)	C	$T_{carryover}$	(min)	T_{ovrl} (min)	T_{sc} (min)	T_{ch} (min)	T_{tot} (min)	I_5 (in/hr)	I_{25} (in/hr)	I_{100} (in/hr)	Q_5 (ft^3/s)	Q_{25} (ft^3/s)	Q_{100} (ft^3/s)
	OS-DA-1A	2.25	0.67			16.30	1.10		17.4	4.84	6.16	7.42	7.30	9.29	11.19
1A	OS-DA-1A (INTERCEPTED FLOW)												7.30	9.26	10.96
1B	OS-DA-1A (BYPASS FLOW)												0.00	0.03	0.23
	OS-DA-1B	4.16	0.67			17.60	2.70	0.30	20.6	4.56	5.86	7.09	12.71	16.33	19.76
1C	SP1B + OS-DA-1B												12.71 *	16.36 *	19.99 *
	OS-DA-1C	0.08	0.67												
1D	OS-DA-1B + OS-DA-1C (+SP1B)	4.24	0.67	OS-DA-1B	20.60				20.6	4.56	5.86	7.09	12.95 *	16.68 *	20.37 *
	DA-1	1.93	0.67			7.60	2.60		10.2	5.88	7.44	8.88	7.60	9.62	11.48
2	DA-1 + SP1A												14.90	18.88	22.44
3	OS-DA-1A + OS-DA-1B + OS-DA-1C + DA-1	8.42	0.67	SP-1D	20.6			0.30	20.9	4.56	5.86	7.09	25.72	33.06	40.00
	DA-2	1.49	0.67			9.10		0.60	9.7	6.08	7.69	9.17	6.07	7.68	9.15
4	SP-3 + DA-2	9.91	0.67	SP-3	20.9			0.80	21.7	4.48	5.77	6.99	29.75	38.31	46.41
	OS-DA-2A	3.83	0.67			18.10	1.10	1.00	20.2	4.56	5.86	7.09	11.70	15.04	18.19
	OS-DA-2B	1.72	0.67			17.60	0.90		18.5	4.75	6.06	7.31	5.47	6.98	8.42
	DA-3	0.06	0.67												
5	OS-DA-2A + OS-DA-2B + DA-3	5.61	0.67	OS-DA-2A	20.2				20.2	4.56	5.86	7.09	17.14	22.03	26.65
	DA-4	1.52	0.67			7.70	2.50		10.2	5.88	7.44	8.88	5.99	7.58	9.04
6	SP5 + (1/2)DA-4	6.37	0.67	SP5	20.2			0.30	20.5	4.56	5.86	7.09	19.46	25.01	30.26
7	SP5 + DA-4	7.13	0.67	SP6	20.5			0.10	20.6	4.56	5.86	7.09	21.78	27.99	33.87
8	SP7 + SP4	17.04	0.67	SP4	21.7				21.7	4.48	5.77	6.99	51.15	65.87	79.80
	DA-5	1.22	0.67			8.80	0.00	1.00	9.8	6.08	7.69	9.17	4.97	6.29	7.50
9	SP8 + DA5	18.26	0.67	SP8	21.7			1.00	22.7	4.39	5.68	6.88	53.71	69.49	84.17
	DA-6	3.79	0.67			19.00	2.30		21.3	4.48	5.77	6.99	11.38	14.65	17.75
	DA-7	1.73	0.67			14.20	3.10		17.3	4.84	6.16	7.42	5.61	7.14	8.60
10	DA-6 + DA-7	5.52	0.67	DA-6	21.3				21.3	4.48	5.77	6.99	16.57	21.34	25.85
11	SP10 + SP9	23.78	0.67	SP9	22.7			0.20	22.9	4.39	5.68	6.88	69.94	90.50	109.62

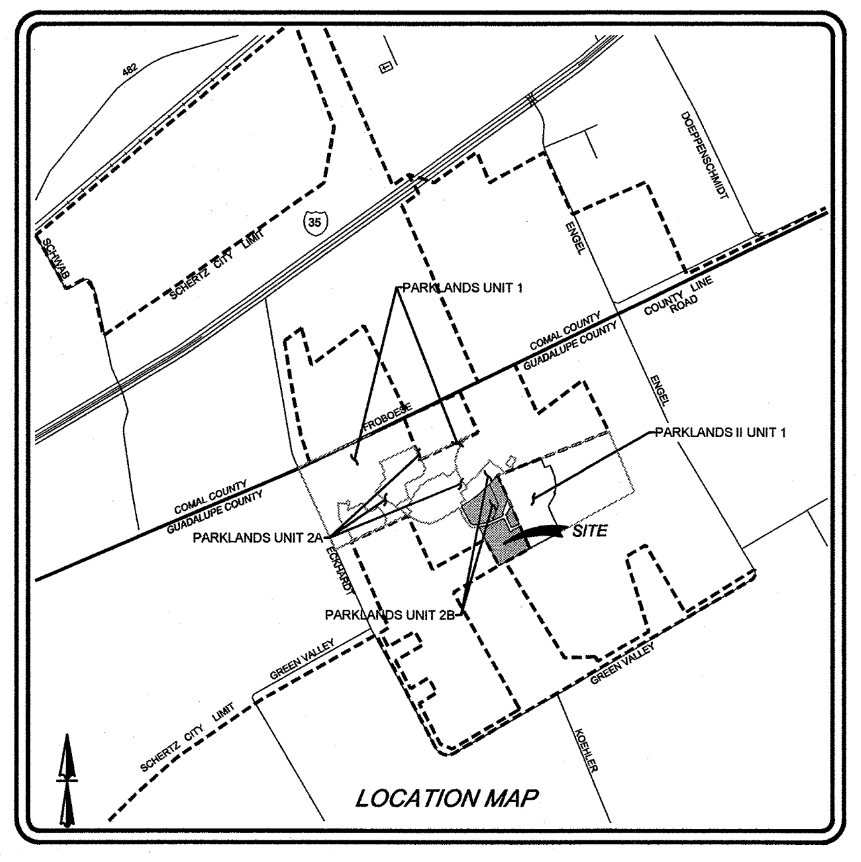
**NOTE:*

1. *FLOWRATES FROM STUDY 1B WERE SIMPLY ADDED TO DOWNSTREAM STUDY POINT AS A CONSERVATIVE APPROACH.*
2. *STUDY POINT 1C INCLUDES THE BYPASS FLOW OF STUDY POINT 1B (SIMPLY SUMMED).*
3. *RUNOFF RATES FOR STUDY POINT 1D INCLUDE THE BYPASS FLOW OF STUDY POINT 1B (SIMPLY SUMMED).*

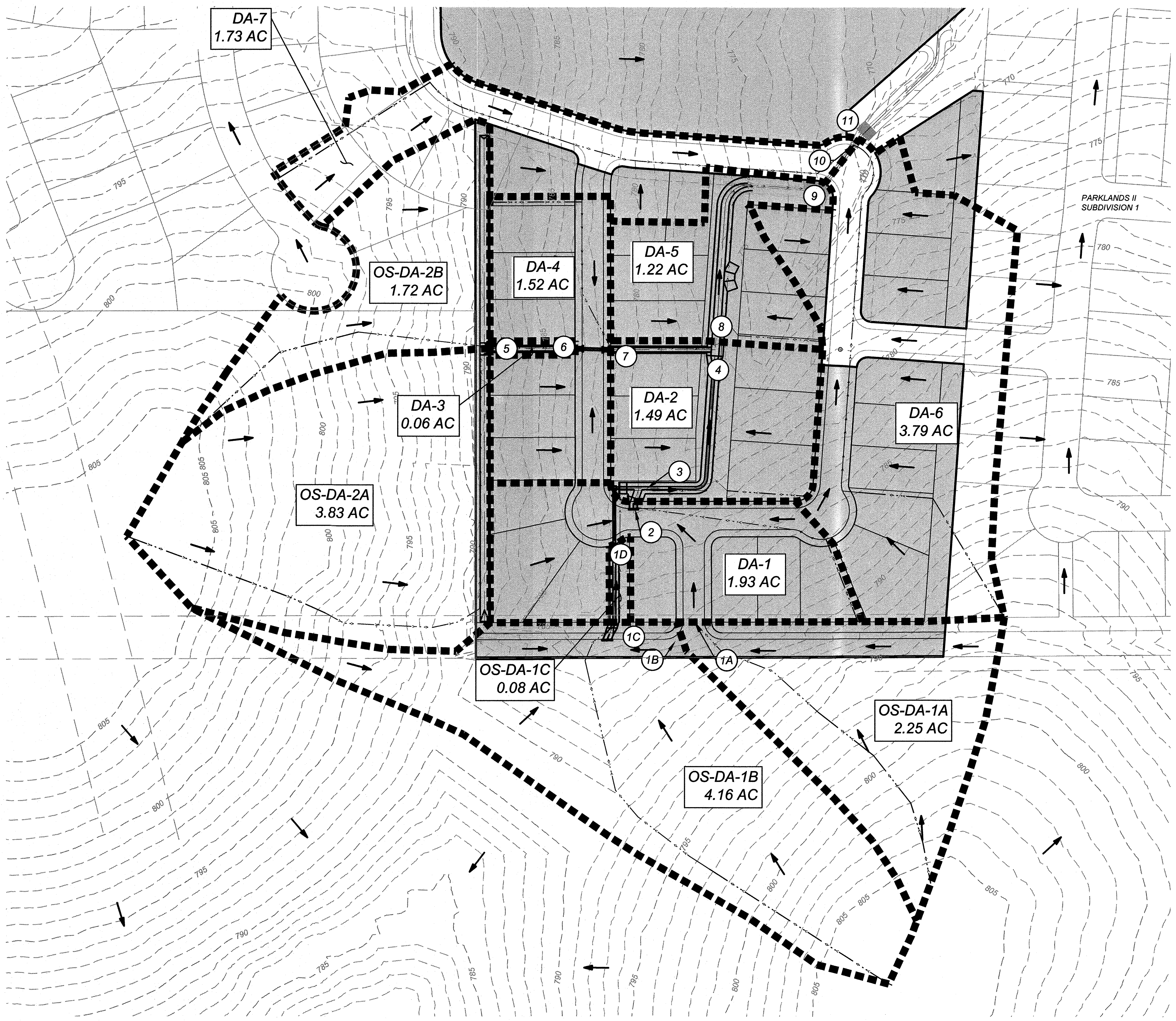


LEGEND

DA 3 12.0 ACRES	WATERSHED IDENTIFIER AREA (ACRES)
▬ ▬ ▬ ▬ ▬	DRAINAGE AREA BOUNDARY
——>·· ·> ——>·· ·> ——	FLOW PATH
— — — 659 — — —	EXISTING CONTOURS
➡	FLOW ARROW
▨	PROPOSED SITE
①	STUDY POINT



LOCATION MAP
N.T.S.



KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

6/6/22
STATE OF TEXAS
A. NICHOLAS REYNOLDS
111666
LICENSED PROFESSIONAL ENGINEER
P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

ULTIMATE ONSITE DRAINAGE PLAN

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
2.2

Date: Jun 03, 2022, 11:06am User ID: dgonzalez
File: U:\Projects\171\23\06\Design\Civil\Drainage\PROPOSED - ULTIMATE ONSITE DRAINAGE PLAN.dwg

GENERAL NOTES:

1. ELEVATION SHOWN ON FOUNDATION IS FOR FINISHED FLOOR.

2. CONTRACTOR SHALL PROVIDE OWNER ALL NECESSARY DENSITY TESTS AND 79G LETTERS FOR FILL LOTS AS REQUIRED BY HUD SPECIFICATIONS.

3. HOME BUILDER SHALL REFER TO THE APPROVED SUBDIVISION PLAT TO CONFIRM ALL BUILDING SETBACKS PRIOR TO ANY FOUNDATION WORK.

4. AS SOON AS PRACTICAL HOME BUILDER SHALL ESTABLISH VEGETATION TO 85% (HYDROMULCH, SEEDING, SODDING, ETC...) TO PREVENT EROSION FROM OCCURRING.

5. CONTRACTOR SHALL CONTACT ENGINEER REGARDING ANY QUESTIONS ON THE INTENT OF THIS PLAN.

6. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS AND TOWARDS THE PROPER DRAINAGE EASEMENT OR STREET RIGHT OF WAY ACCORDING TO THE MASTER DRAINAGE PLAN FOR THE PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW PONDING OF WATER.

7. ALL ELEVATIONS AND CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVEMENT, CURBS, SIDEWALKS, MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.

8. GRADING PLAN IS INTENDED FOR USE IN LOT GRADING ONLY. CONTRACTOR SHOULD REFER TO CONSTRUCTION DRAWINGS FOR ALL OTHER GRADES, INCLUDING, BUT NOT LIMITED TO, CHANNELS, ROADS, AND DETENTION PONDS.

9. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ALL SWALES.

10. ALL LOTS SHALL BE IN GENERAL CONFORMANCE WITH THE INTENDED GRADING PLAN. AS REQUIRED BY THE CITY, ANY LOT NOT IN GENERAL CONFORMANCE WITH THE LOT GRADING TYPES (AS SHOWN) SHALL BE ROUGH GRADED PRIOR TO PRELIMINARY ACCEPTANCE OF PUBLIC INFRASTRUCTURE.

11. ALL DISTURBED AREAS SHALL BE REVEGETATED TO A MINIMUM OF 85% WITH THE EXCEPTION OF BUILDABLE RESIDENTIAL LOTS. EROSION AND SEDIMENTATION FROM BUILDABLE LOTS SHOULD BE PREVENTED THROUGH THE USE OF SILT FENCE, CONTROL MATTING, OR OTHER BMPS AS APPROPRIATE.

12. ROUGH GRADING, INCLUDING TREE REMOVAL, MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.

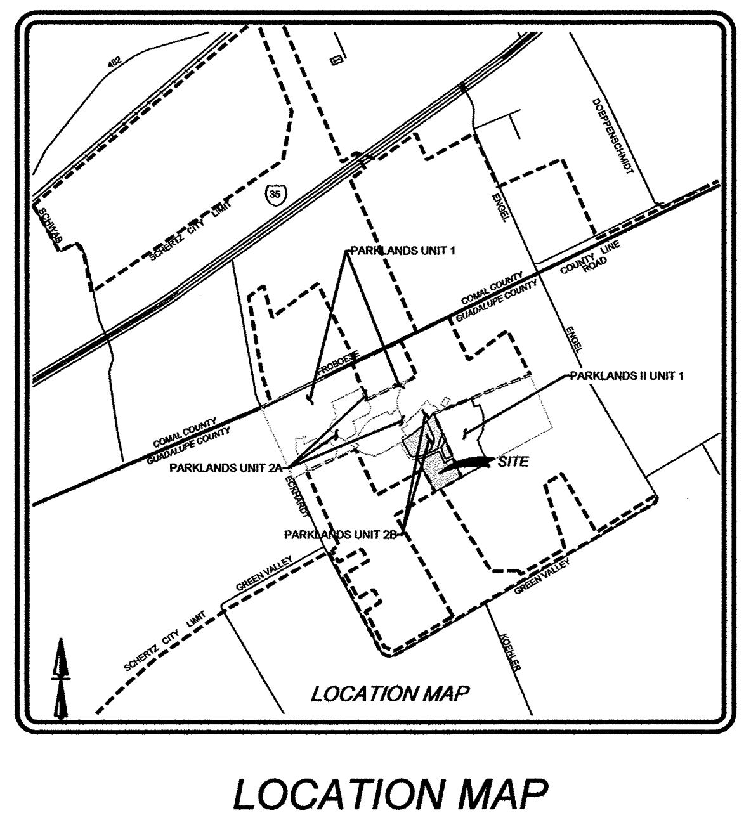
TRENCH EXCAVATION SAFETY PROTECTION

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.

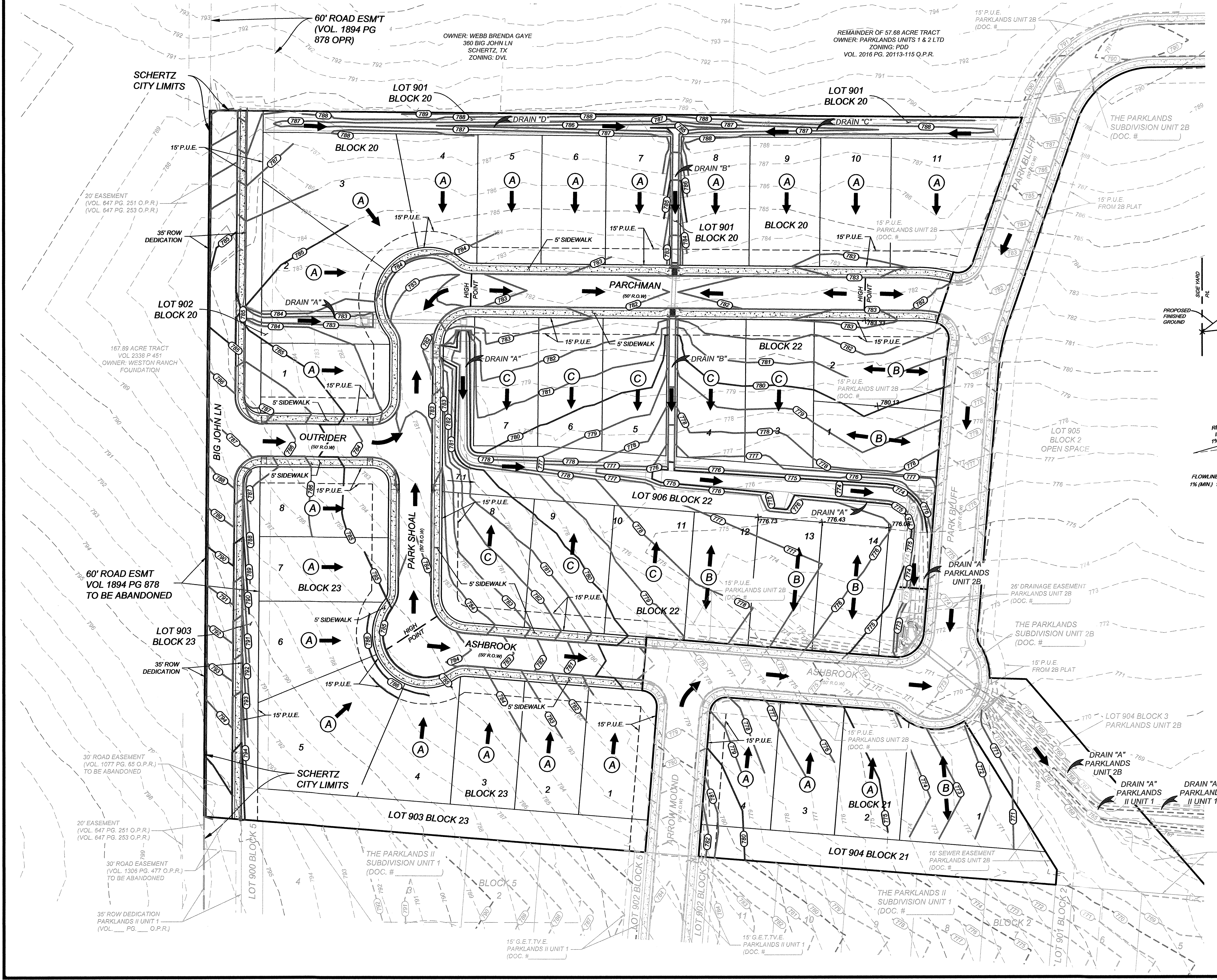
CAUTION!!:
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS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

EXIST.	=	EXISTING
P.U.E.	=	PUBLIC UTILITY EASEMENT
←	=	FLOW ARROW
Ⓐ	=	LOT GRADE TYPE
▨	=	PROPOSED DRIVEWAY LOCATION
— — 717 — —	=	EXISTING CONTOUR
—(717)—	=	PROPOSED CONTOUR
- - (717) - -	=	ADJACENT UNIT CONTOUR

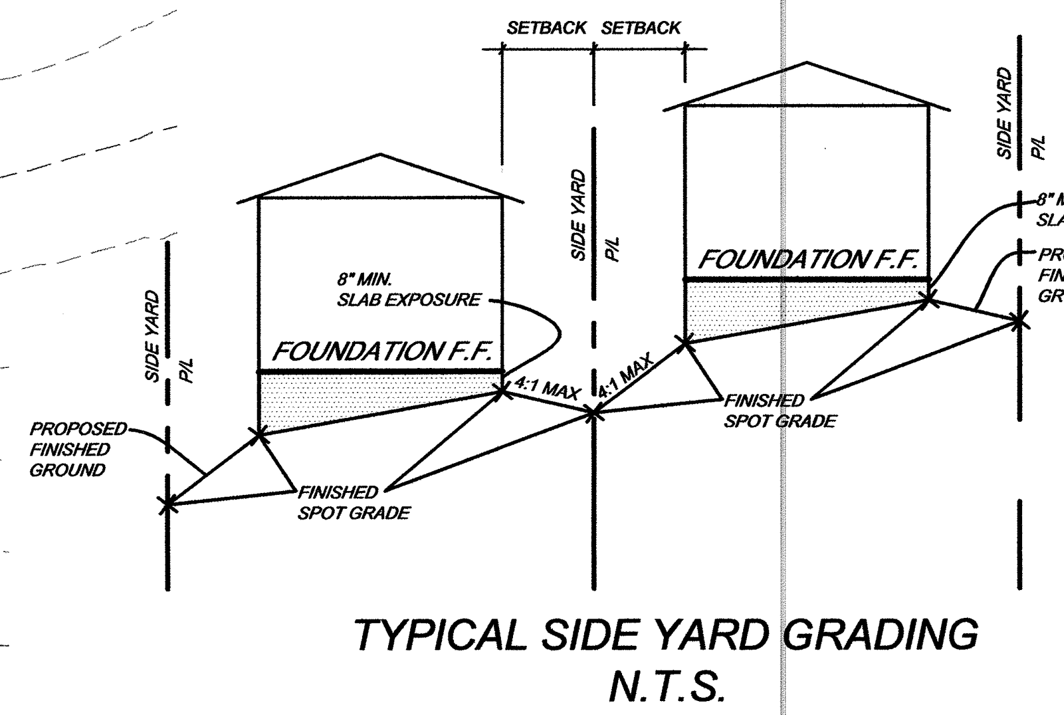


LOCATION MAP
N.T.S.

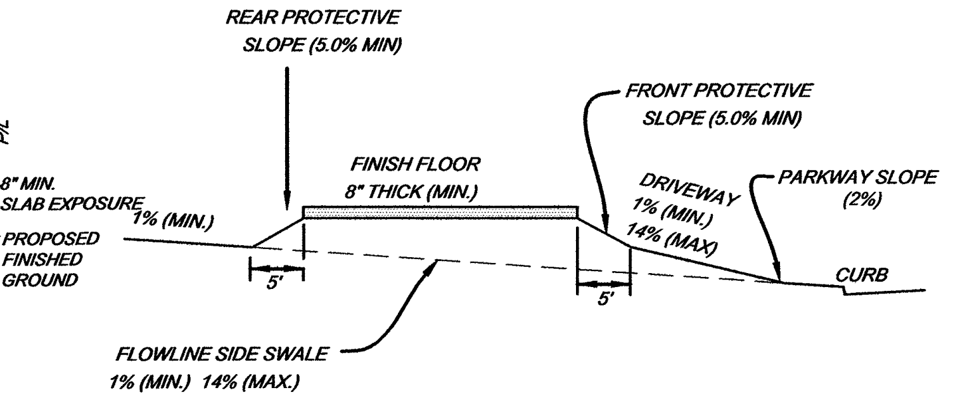


60' ROAD ESM'T (VOL. 1894 PG 878 OPR)
OWNER: WEBB BRENDA GAYE 360 BIG JOHN LN SCHERTZ, TX ZONING: DVL
REMAINDER OF 57.68 ACRE TRACT OWNER: PARKLANDS UNITS 1 & 2 LTD ZONING: PDD VOL. 2016 PG. 20113-115 O.P.R.
SCHERTZ CITY LIMITS
LOT 901 BLOCK 20
DRAIN "D"
DRAIN "C"
DRAIN "B"
BLOCK 20
LOT 901 BLOCK 20
15' P.U.E.
5' SIDEWALK
35' ROW DEDICATION
20' EASEMENT (VOL. 647 PG. 251 O.P.R.) (VOL. 647 PG. 253 O.P.R.)
LOT 902 BLOCK 20
DRAIN "A"
PARCHMAN (50' R.O.W)
HIGH POINT
167.89 ACRE TRACT VOL 2338 P 451 OWNER: WESTON RANCH FOUNDATION
BIG JOHN LN
OUTRIDER (50' R.O.W)
BLOCK 22
LOT 905 BLOCK 2 OPEN SPACE
PARK BLUFF
PARK SHOAL (50' R.O.W)
LOT 906 BLOCK 22
DRAIN "A" 776.43
BLOCK 23
60' ROAD ESMT VOL 1894 PG 878 TO BE ABANDONED
LOT 903 BLOCK 23
DRAIN "A" PARKLANDS UNIT 2B
26' DRAINAGE EASEMENT PARKLANDS UNIT 2B
THE PARKLANDS SUBDIVISION UNIT 2B (DOC. #)
15' P.U.E. FROM 2B PLAT
ASHBROOK (50' R.O.W)
ARROW MOUND
LOT 904 BLOCK 3 PARKLANDS UNIT 2B
DRAIN "A" PARKLANDS II UNIT 1
BLOCK 21
LOT 904 BLOCK 21
16' SEWER EASEMENT PARKLANDS UNIT 2B
30' ROAD EASEMENT (VOL. 1077 PG. 65 O.P.R.) TO BE ABANDONED
30' ROAD EASEMENT (VOL. 1306 PG. 477 O.P.R.) TO BE ABANDONED
35' ROW DEDICATION PARKLANDS II UNIT 1 (VOL. ___ PG. ___ O.P.R.)
THE PARKLANDS II SUBDIVISION UNIT 1 (DOC. #)
15' G.E.T.TV.E. PARKLANDS II UNIT 1 (DOC. #)
LOT 900 BLOCK 5
LOT 902 BLOCK 5
LOT 902 BLOCK 2
LOT 901 BLOCK 2
BLOCK 5
BLOCK 2

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

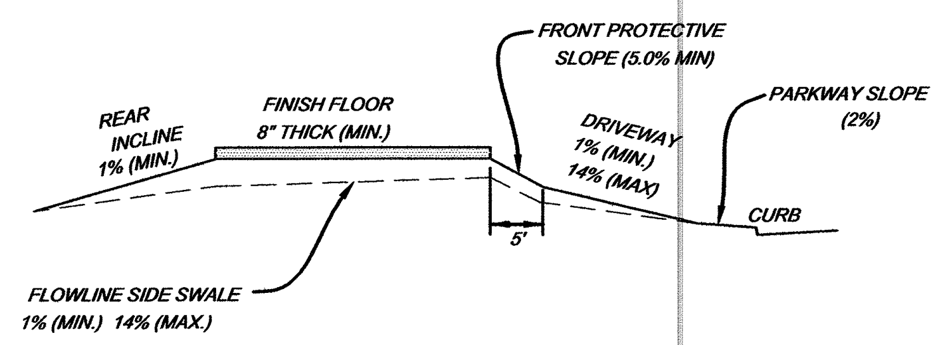


TYPICAL SIDE YARD GRADING
N.T.S.



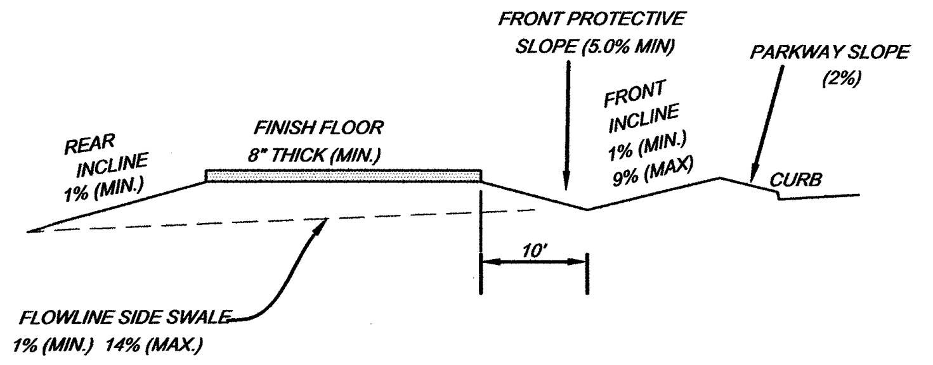
REAR PROTECTIVE SLOPE (5.0% MIN)
FINISH FLOOR 8" THICK (MIN.)
1% (MIN.)
FRONT PROTECTIVE SLOPE (5.0% MIN)
DRIVEWAY 1% (MIN.) 14% (MAX)
PARKWAY SLOPE (2%)
CURB
5'
5'
FLOWLINE SIDE SWALE 1% (MIN.) 14% (MAX.)

TYPE 'A' LOT GRADING



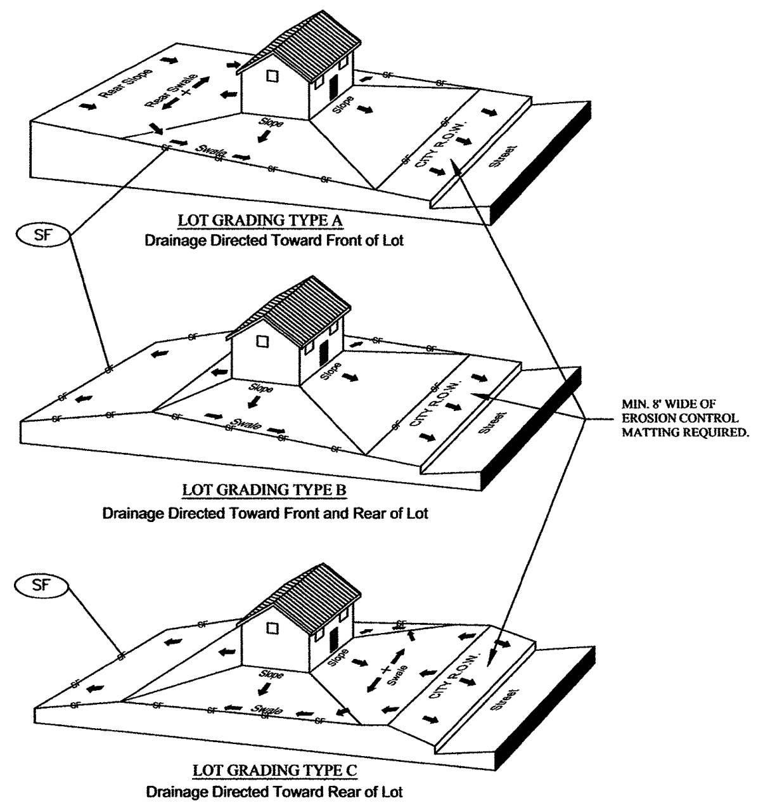
REAR INCLINE 1% (MIN.)
FINISH FLOOR 8" THICK (MIN.)
FRONT PROTECTIVE SLOPE (5.0% MIN)
DRIVEWAY 1% (MIN.) 14% (MAX)
PARKWAY SLOPE (2%)
CURB
5'
FLOWLINE SIDE SWALE 1% (MIN.) 14% (MAX.)

TYPE 'B' LOT GRADING



REAR INCLINE 1% (MIN.)
FINISH FLOOR 8" THICK (MIN.)
FRONT PROTECTIVE SLOPE (5.0% MIN)
FRONT INCLINE 1% (MIN.) 9% (MAX)
PARKWAY SLOPE (2%)
CURB
10'
FLOWLINE SIDE SWALE 1% (MIN.) 14% (MAX.)

TYPE 'C' LOT GRADING



LOT GRADING TYPE A
Drainage Directed Toward Front of Lot

LOT GRADING TYPE B
Drainage Directed Toward Front and Rear of Lot

LOT GRADING TYPE C
Drainage Directed Toward Rear of Lot

Note:
1. Engineer shall identify subdivision lot numbers associated with each Lot Grading Type.
2. All graded lot surfaces and swales shall have minimum 0.5% slope.
3. Rough grading of lots shall match ultimate lot grading type: A,B, or C, at the time of Public Infrastructure acceptance.
4. SWPPP Required on all lots, (erosion control, wattles, etc. as appropriate).
5. Construction Entrance Required on all Residential Lots to prevent sediment from being deposited after equipments leaves the site. Locate where permanent driveway will be.

SCHERTZ
COMMUNITY ⋆ SERVICE ⋆ OPPORTUNITY

RESIDENTIAL LOT GRADING

ENGINEERING AND PUBLIC WORKS | SCALE: | DATE: 7/19/19 | DSGN. BY: ENG. | DRAWN BY: BCP | SHEET NO.: 1

L:\Engineer\Standard Details and Technical Specifications\Standard Details\2019\DRAINAGE & ENVIRONMENTAL\DRAINAGE AND ENVIRONMENTAL DETAILS 5.2019.dwg

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

1/10/23

A. NICHOLAS REYNOLDS
111666

Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

OVERALL GRADING PLAN

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
3.0

Date: Aug 16, 2022, 4:13pm User ID: davendano
File: U:\Projects\171\23\06\Design\Civil\GRADING\OVERALL GRADING PLAN.dwg

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.

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.

NOTE:

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

2. ALL DISTURBED AREAS SHALL BE REVEGETATED TO A MINIMUM OF 85% WITH THE EXCEPTION OF BUILDABLE RESIDENTIAL LOTS. EROSION AND SEDIMENTATION FROM BUILDABLE LOTS SHOULD BE PREVENTED THROUGH THE USE OF SILT FENCE, CONTROL MATTING, OR OTHER BMPS AS APPROPRIATE.

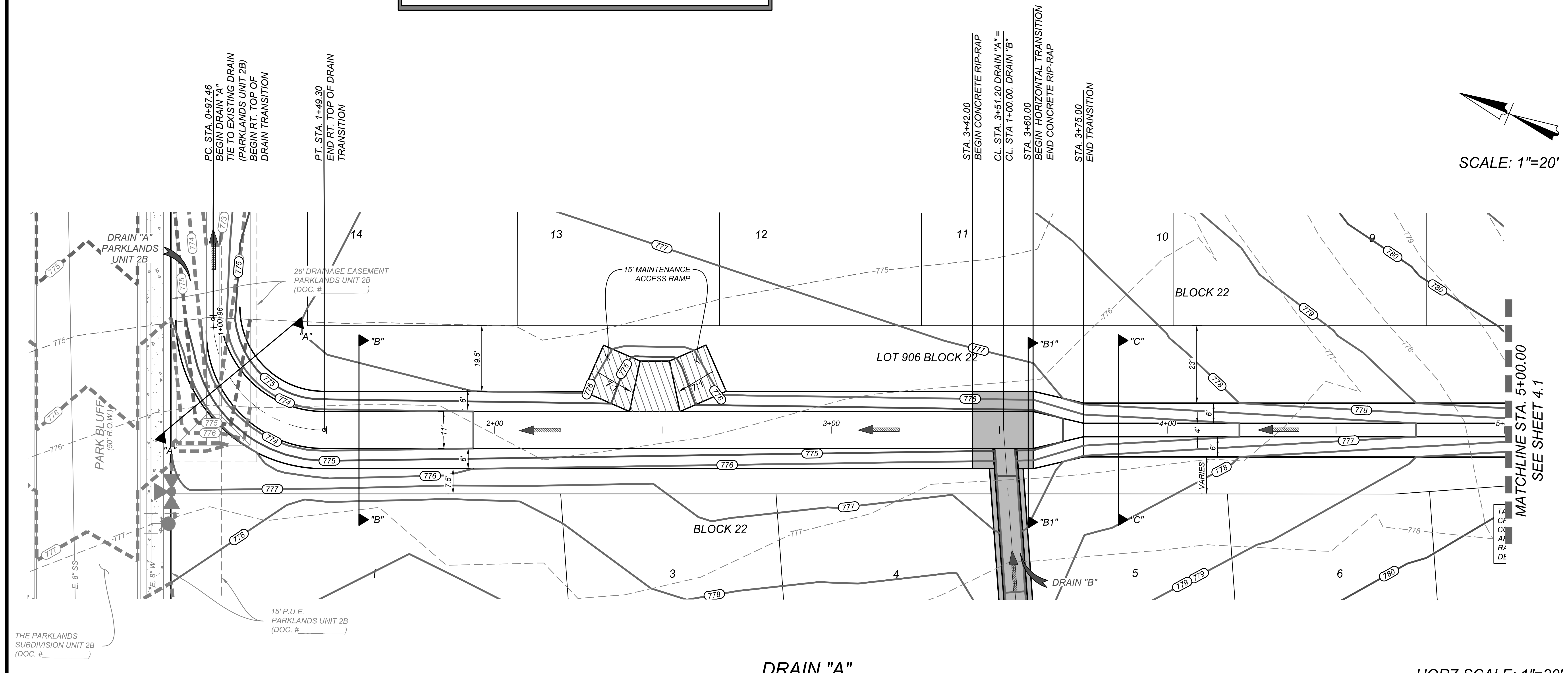
3. ALL DRAINAGE EASEMENTS WILL BE OWNED AND MAINTAINED BY THE DEVELOPER.

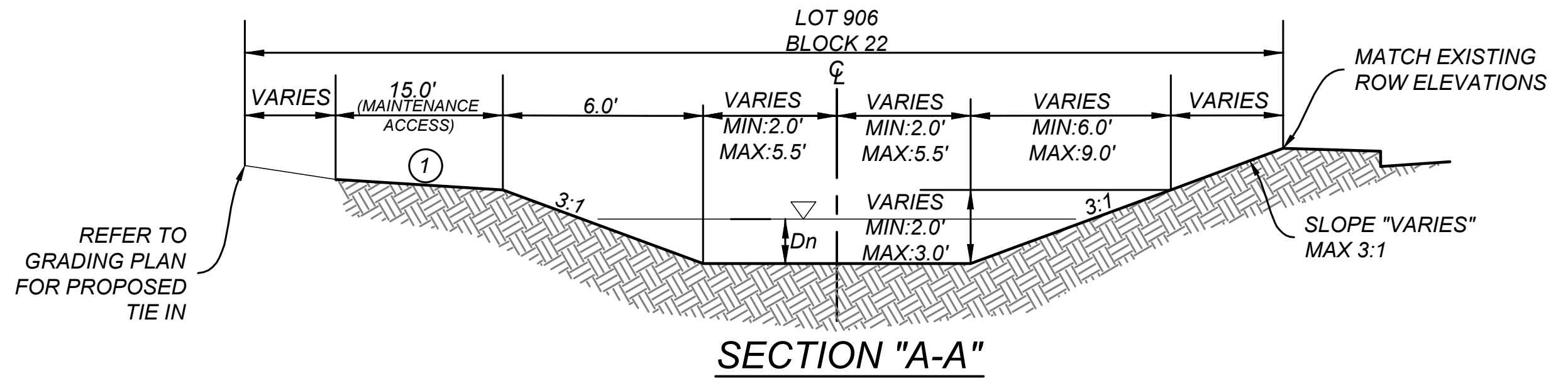
4. ALL EARTHEN CHANNELS MUST NOT EXCEED 3:1 SIDE SLOPES (MAX).

5. ROUGH GRADING, INCLUDING TREE REMOVAL, MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.

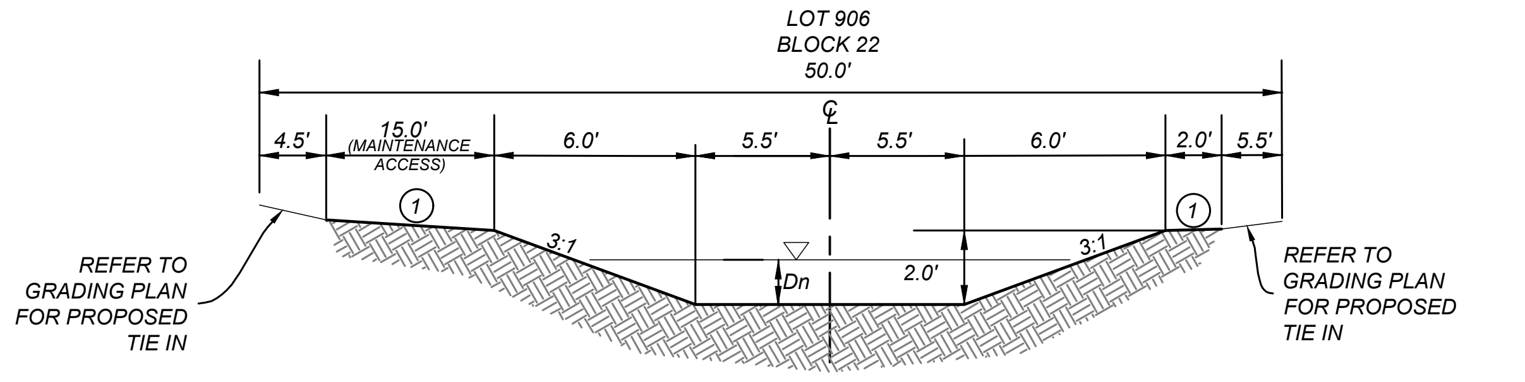
LEGEND

◄	=	FLOW ARROW
— — 715 — —	=	EXISTING CONTOUR
—(713)—	=	PROPOSED CONTOUR
■ ■ (713) ■ ■	=	ADJACENT CONTOUR
▨	=	MAINTENANCE RAMP



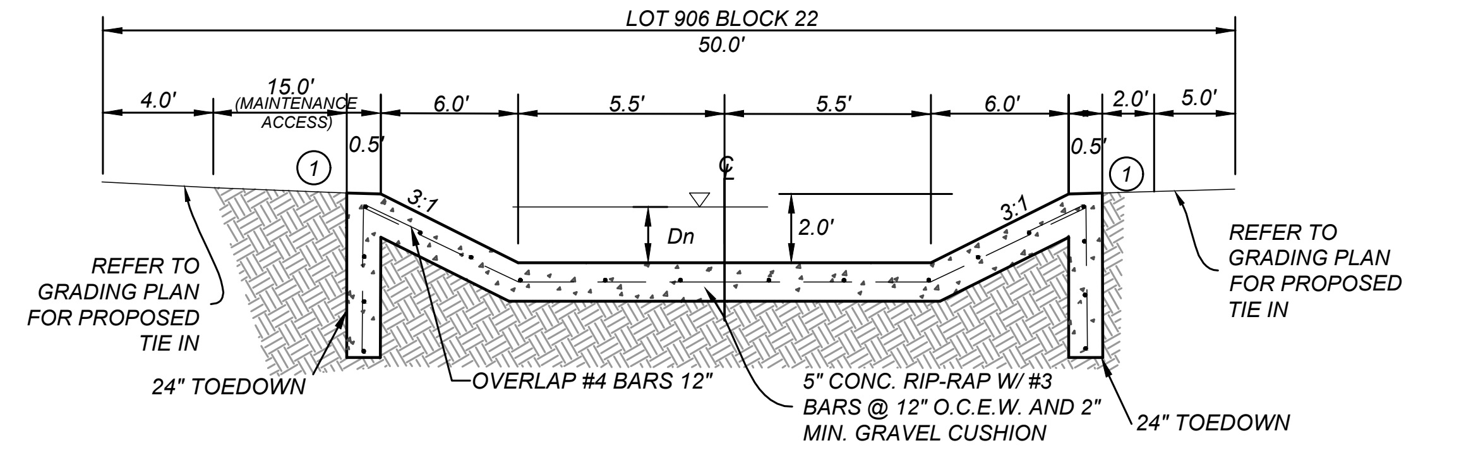


SECTION "A-A"
STA. 0+97.46 TO 1+49.30



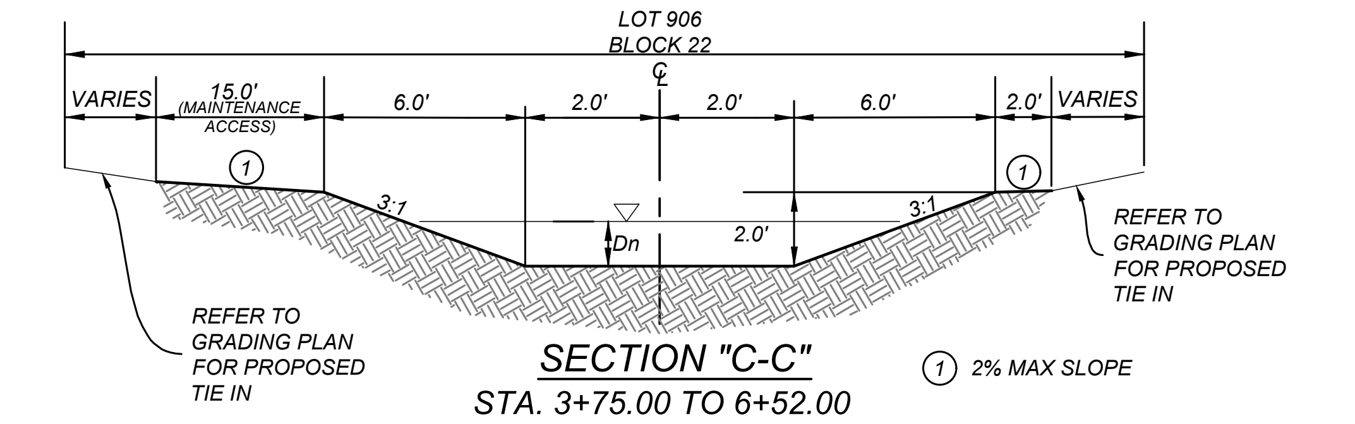
SECTION "B-B"
STA. 1+49.30 TO STA. 3+42.00

① 2% MAX SLOPE



SECTION "B1-B1"
STA. 3+42.00 TO STA 3+60.00
N.T.S.

① 2% MAX SLOPE

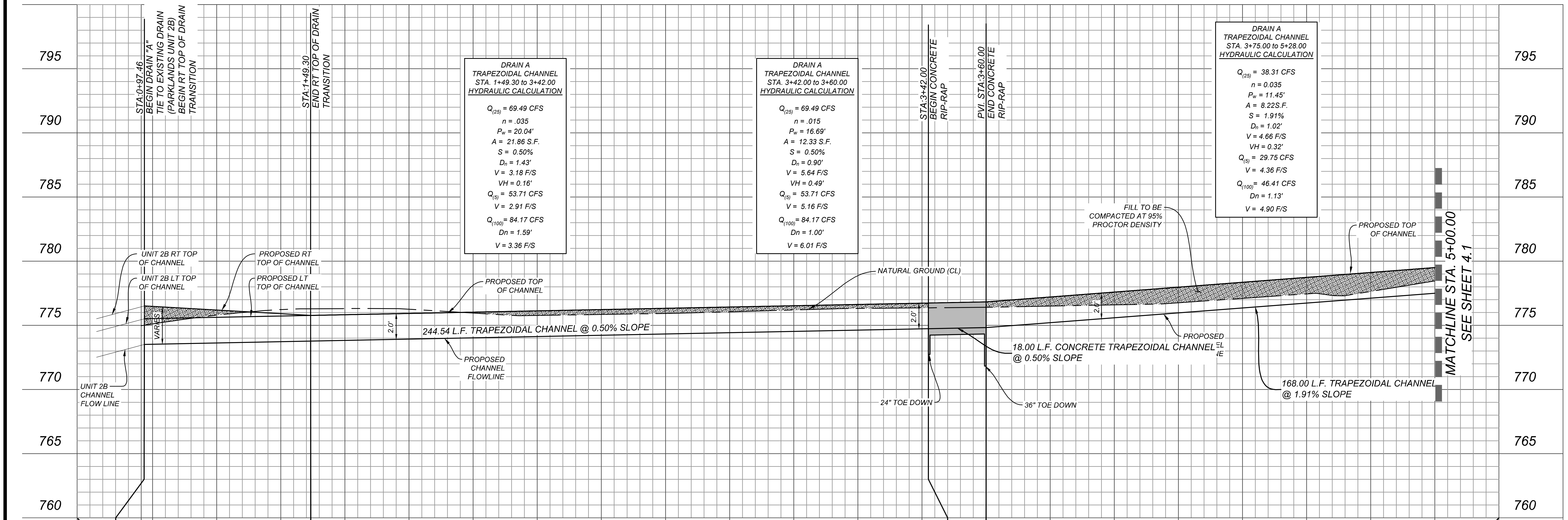


SECTION "C-C"
STA. 3+75.00 TO 6+52.00

① 2% MAX SLOPE

DRAIN "A"
STA: 1+00.00 - STA: 5+00.00

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



DRAIN A
TRAPEZOIDAL CHANNEL
STA. 1+49.30 to 3+42.00
HYDRAULIC CALCULATION

$Q_{(25)}$ = 69.49 CFS
n = .035
P_w = 20.04'
A = 21.86 S.F.
S = 0.50%
D_n = 1.43'
V = 3.18 F/S
VH = 0.16'
$Q_{(5)}$ = 53.71 CFS
V = 2.91 F/S
$Q_{(100)}$ = 84.17 CFS
Dn = 1.59'
V = 3.36 F/S

DRAIN A
TRAPEZOIDAL CHANNEL
STA. 3+42.00 to 3+60.00
HYDRAULIC CALCULATION

$Q_{(25)}$ = 69.49 CFS
n = .015
P_w = 16.69'
A = 12.33 S.F.
S = 0.50%
D_n = 0.90'
V = 5.64 F/S
VH = 0.49'
$Q_{(5)}$ = 53.71 CFS
V = 5.16 F/S
$Q_{(100)}$ = 84.17 CFS
Dn = 1.00'
V = 6.01 F/S

DRAIN A
TRAPEZOIDAL CHANNEL
STA. 3+75.00 to 5+28.00
HYDRAULIC CALCULATION

$Q_{(25)}$ = 38.31 CFS
n = 0.035
P_w = 11.45'
A = 8.22S.F.
S = 1.91%
D_n = 1.02'
V = 4.66 F/S
VH = 0.32'
$Q_{(5)}$ = 29.75 CFS
V = 4.36 F/S
$Q_{(100)}$ = 46.41 CFS
Dn = 1.13'
V = 4.90 F/S

PROPOSED TOP OF DRAIN	776.52 (RT) 775.52 (LT)	776.48 (RT) 775.53 (LT)	776.20 (RT) 775.63 (LT)	775.91 (RT) 775.73 (LT)	775.70	775.83	775.93	776.03	776.13	776.23	776.33	776.43	776.53	776.63	776.73	776.74	776.83	777.21	777.59	777.97	778.36	778.74	779.12	779.50
PROPOSED DRAIN FLOWLINE	773.52	773.53	773.63	773.73	773.78	773.83	773.93	774.03	774.13	774.23	774.33	774.43	774.53	774.63	774.73	774.74	774.83	775.21	775.59	775.97	776.36	776.74	777.12	777.50

Date: Feb 02, 2023, 9:49am User ID: davendano
File: U:\Projects\171\23\06\Design\Civil\Drains\4.1 DRAIN A STA. 5+00.00 – END.dwg

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

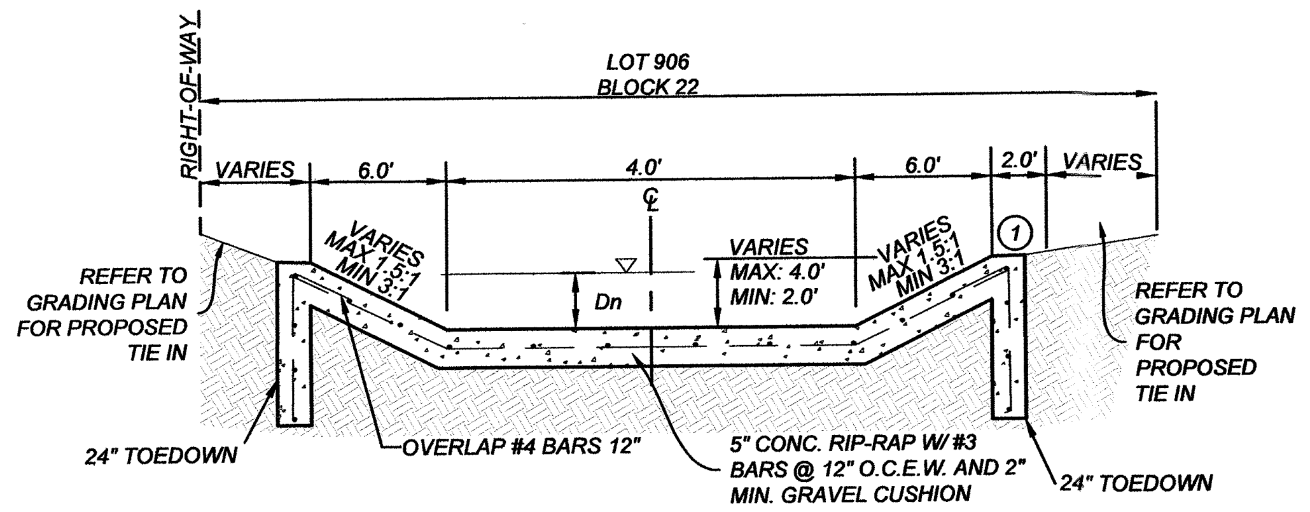
2/2/23
A. NICHOLAS REYNOLDS
111666
P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

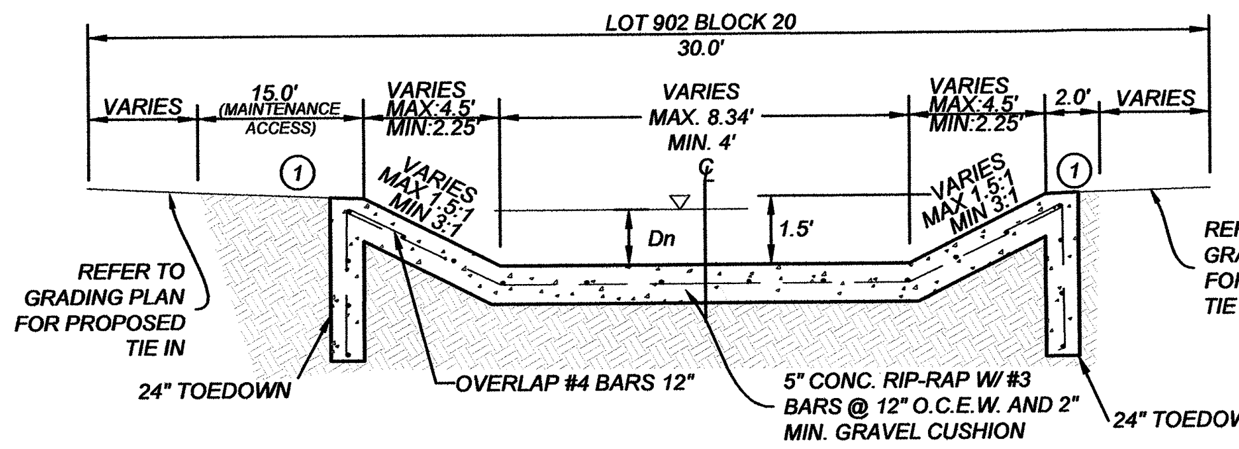
DRAIN A STA. 1+00.00 - 5+00.00

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

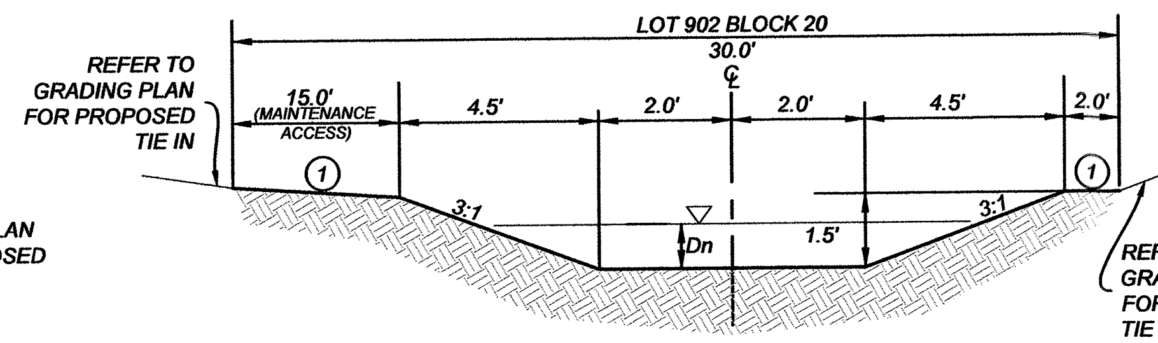
SHEET NUMBER:
4.0



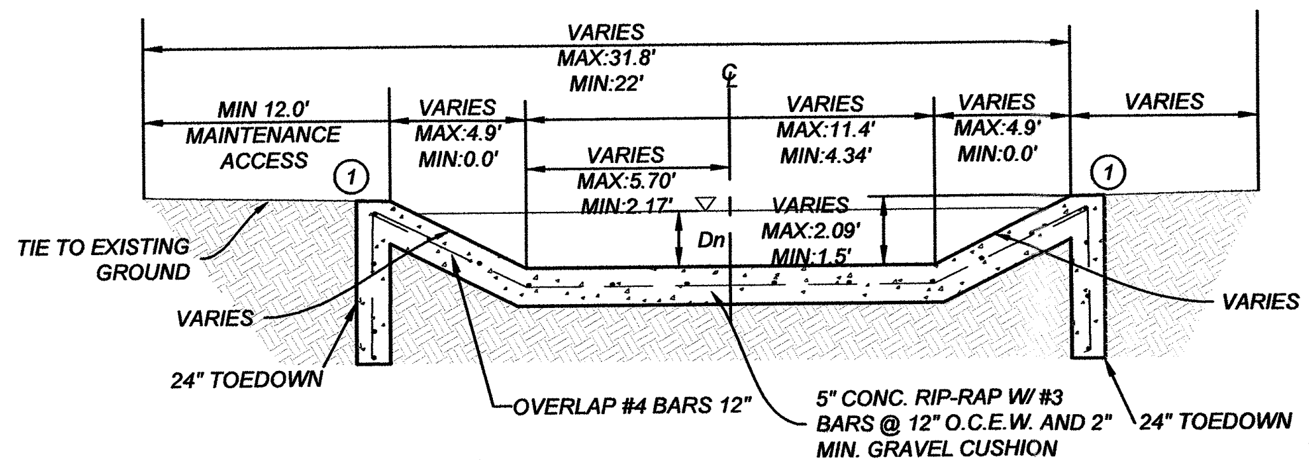
SECTION "D - D"
STA. 6+52.00 TO STA 6+62.00
N.T.S.


LOT 902 BLOCK 20
30.0'
VARIES
15.0' (MAINTENANCE ACCESS)
VARIES MAX:4.5' MIN:2.25'
VARIES MAX. 8.34' MIN. 4.0'
2.0'
VARIES
1.5'
Dn
REFER TO GRADING PLAN FOR PROPOSED TIE IN
24" TOEDOWN
OVERLAP #4 BARS 12"
5" CONC. RIP-RAP W/ #3 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
① 2% MAX SLOPE

SECTION "E-E"
STA. 7+66.30 TO STA 7+71.30
N.T.S.


LOT 902 BLOCK 20
30.0'
REFER TO GRADING PLAN FOR PROPOSED TIE IN
15.0' (MAINTENANCE ACCESS)
4.5'
2.0'
2.0'
4.5'
2.0'
3:1
3:1
Dn
1.5'
① 2% MAX SLOPE

SECTION "F-F"
STA. 7+71.30 to 8+54.81


VARIES MAX:31.8' MIN:22'
MIN 12.0' MAINTENANCE ACCESS
VARIES MAX:4.9' MIN:0.0'
VARIES MAX:5.70' MIN:2.17'
VARIES MAX:11.4' MIN:4.34'
VARIES MAX:4.9' MIN:0.0'
VARIES
Dn
VARIES MAX:2.09' MIN:1.5'
TIE TO EXISTING GROUND
VARIES
24" TOEDOWN
OVERLAP #4 BARS 12"
5" CONC. RIP-RAP W/ #3 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
24" TOEDOWN
1 2% MAX SLOPE

SECTION "G-G"
STA. 8+67.46 TO STA 8+77.46
N.T.S.

NOTE:

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

2. ALL DISTURBED AREAS SHALL BE REVEGETATED TO A MINIMUM OF 85% WITH THE EXCEPTION OF BUILDABLE RESIDENTIAL LOTS. EROSION AND SEDIMENTATION FROM BUILDABLE LOTS SHOULD BE PREVENTED THROUGH THE USE OF SILT FENCE, CONTROL MATTING, OR OTHER BMPS AS APPROPRIATE.

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

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

5. ROUGH GRADING, INCLUDING TREE REMOVAL, MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.

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.

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.

LEGEND

⬅	=	FLOW ARROW
— — 715 — —	=	EXISTING CONTOUR
—(713)—	=	PROPOSED CONTOUR
TC:783.13	=	TOP OF CONCRETE ELEVATION
BC:782.13	=	BOTTOM OF CONCRETE ELEVATION
EL:783.70	=	ELEVATION

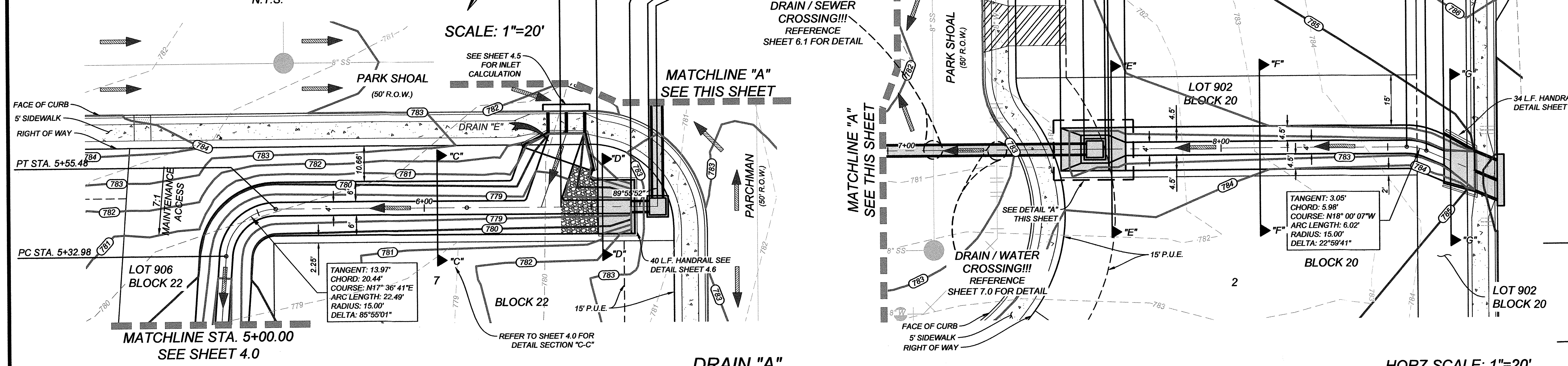
CURB OPENING HYDRAULIC CALCULATION

$$L = \frac{Q_{25}}{Ch^{3/2}}$$

$$L = \frac{16.36}{(3.087)\ (0.79)^{3/2}}$$

$L = 7.55$ L.F.

USE 10 L.F. CURB OPENING


STA. 6+42.00 BEGIN ROCK RIP-RAP
STA. 6+52.00 END ROCK RIP-RAP BEGIN CONC. RIP-RAP BEGIN TOP OF DRAIN TRANSITION
STA. 6+62.00 END CONC. RIP-RAP END TOP OF DRAIN TRANSITION BEGIN 3'X2' S.B.C AT INSIDE FACE OF HEADWALL
P.I. STA. 6+67.43 END 3'X2' S.B.C AT INSIDE FACE OF 5'X5' JUNCTION BOX
PI. STA. 6+72.43 BEGIN 3'X2' S.B.C AT INSIDE FACE OF 5'X5' JUNCTION BOX
STA. 7+51.98 BEGIN CONC. RIP-RAP
STA. 7+58.96 BEGIN 5'X5' JUNCTION BOX WITH 4-WAY INLET
STA. 7+65.30 END 5'X5' JUNCTION BOX WITH 4-WAY INLET
STA. 7+66.30 BEGIN TRANSITION TO EARTHEN TRAPEZOIDAL CHANNEL
STA. 7+71.30 END TRANSITION END CONCRETE RIP RAP
PT STA. 8+55.76
PC STA. 8+61.78
STA. 8+67.46 BEGIN HORIZONTAL TRANSITION BEGIN CONC. RIP-RAP
STA. 8+77.46 END HORIZONTAL TRANSITION BEGIN SIDEWALK BOX DRAIN
STA. 8+84.74 END SIDEWALK BOX DRAIN AT FACE OF CURB
SCALE: 1"=20'
SCALE: 1"=20'
DRAIN / SEWER CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
DRAIN / WATER CROSSING!!! REFERENCE SHEET 7.0 FOR DETAIL
SEE SHEET 4.5 FOR INLET CALCULATION
MATCHLINE "A" SEE THIS SHEET
MATCHLINE "A" SEE THIS SHEET
MATCHLINE STA. 5+00.00 SEE SHEET 4.0
PARK SHOAL (50' R.O.W.)
PARK SHOAL (50' R.O.W.)
PARCHMAN (50' R.O.W.)
FACE OF CURB
5' SIDEWALK
RIGHT OF WAY
PT STA. 5+55.48
PC STA. 5+32.98
MAINTENANCE ACCESS
7:1
DRAIN "E"
LOT 906 BLOCK 22
BLOCK 22
LOT 902 BLOCK 20
BLOCK 20
LOT 902 BLOCK 20
TANGENT: 13.97' CHORD: 20.44' COURSE: N17° 36' 41"E ARC LENGTH: 22.49' RADIUS: 15.00' DELTA: 85°55'01"
TANGENT: 3.05' CHORD: 5.98' COURSE: N18° 00' 07"W ARC LENGTH: 6.02' RADIUS: 15.00' DELTA: 22°59'41"
40 L.F. HANDRAIL SEE DETAIL SHEET 4.6
34 L.F. HANDRAIL SEE DETAIL SHEET 4.7
REFER TO SHEET 4.0 FOR DETAIL SECTION "C-C"
SEE DETAIL "A" THIS SHEET
15' P.U.E.
15' P.U.E.
89°55'52"
"C" "D" "E" "F" "G" "H"
6+00
7+00
8+00
779 780 781 782 783 784 785

DRAIN "A"
STA: 5+00.00 - END

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

DRAIN A TRAPEZOIDAL CHANNEL STA. 6+52.00 to 6+62.00 HYDRAULIC CALCULATION

$Q_{(25)}$ = 16.68 CFS
n = 0.015
P_w = 8.67'
A = 3.91 S.F.
S = 0.55 %
D_n = 0.58'
V = 4.27 F/S
VH = 0.28'
$Q_{(5)}$ = 12.95 CFS
V = 3.89 F/S
$Q_{(100)}$ = 20.37 CFS
Dn = 0.65
V = 4.51 F/S

3'X2' S.B.C. DRAIN A STA. 6+62.00 to STA. 6+67.43 HYDRAULIC CALCULATION

n = 0.013
S = 0.25 %
$Q_{(25)}$ = 16.68 CFS
A_{up} = 4.26 S.F.
A_{dn} = 4.26 S.F.
$D_{(up)}$ = 1.42'
$D_{(dn)}$ = 1.42'
$V_{(up)}$ = 3.91 FPS
$V_{(dn)}$ = 3.92 FPS
$VH_{(up)}$ = 0.24'
$VH_{(dn)}$ = 0.24'
$Q_{(5)}$ = 12.95 CFS
$V_{(up)}$ = 3.66 FPS
$V_{(dn)}$ = 3.66 FPS
$Q_{(100)}$ = 20.37 CFS
Dn = 1.64'
$V_{(up)}$ = 4.14 FPS
$V_{(dn)}$ = 4.14 FPS

DRAIN A TRAPEZOIDAL CHANNEL STA. 5+28.00 to 6+52.00 HYDRAULIC CALCULATION

$Q_{(25)}$ = 38.31 CFS
n = 0.035
P_w = 13.49'
A = 12.75 S.F.
S = 0.55 %
D_n = 1.50'
V = 3.00 F/S
VH = 0.14'
$Q_{(5)}$ = 29.75 CFS
V = 2.78 F/S
$Q_{(100)}$ = 46.41 CFS
Dn = 1.54
V = 3.13 F/S

3'X2' S.B.C. DRAIN A STA. 6+72.43 to STA. 7+51.98 HYDRAULIC CALCULATION

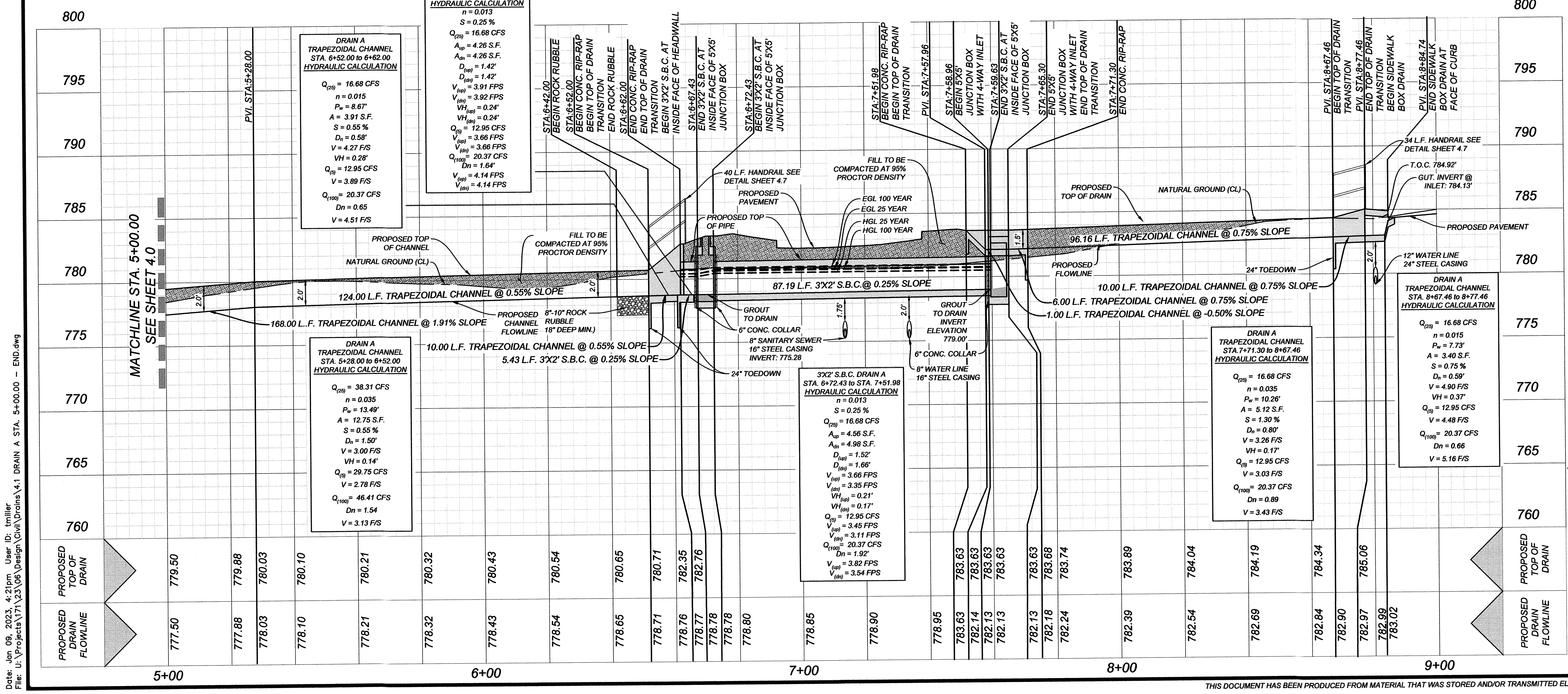
n = 0.013
S = 0.25 %
$Q_{(25)}$ = 16.68 CFS
A_{up} = 4.56 S.F.
A_{dn} = 4.98 S.F.
$D_{(up)}$ = 1.52'
$D_{(dn)}$ = 1.66'
$V_{(up)}$ = 3.66 FPS
$V_{(dn)}$ = 3.35 FPS
$VH_{(up)}$ = 0.21'
$VH_{(dn)}$ = 0.17'
$Q_{(5)}$ = 12.95 CFS
$V_{(up)}$ = 3.45 FPS
$V_{(dn)}$ = 3.11 FPS
$Q_{(100)}$ = 20.37 CFS
Dn = 1.92'
$V_{(up)}$ = 3.82 FPS
$V_{(dn)}$ = 3.54 FPS

DRAIN A TRAPEZOIDAL CHANNEL STA.7+71.30 to 8+67.46 HYDRAULIC CALCULATION

$Q_{(25)}$ = 16.68 CFS
n = 0.035
P_w = 10.26'
A = 5.12 S.F.
S = 1.30 %
D_n = 0.80'
V = 3.26 F/S
VH = 0.17'
$Q_{(5)}$ = 12.95 CFS
V = 3.03 F/S
$Q_{(100)}$ = 20.37 CFS
Dn = 0.89
V = 3.43 F/S

DRAIN A TRAPEZOIDAL CHANNEL STA. 8+67.46 to 8+77.46 HYDRAULIC CALCULATION

$Q_{(25)}$ = 16.68 CFS
n = 0.015
P_w = 7.73'
A = 3.40 S.F.
S = 0.75 %
D_n = 0.59'
V = 4.90 F/S
VH = 0.37'
$Q_{(5)}$ = 12.95 CFS
V = 4.48 F/S
$Q_{(100)}$ = 20.37 CFS
Dn = 0.66
V = 5.16 F/S


800
795
790
785
780
775
770
765
760
MATCHLINE STA. 5+00.00 SEE SHEET 4.0
PVI. STA 5+28.00
STA:6+42.00 BEGIN ROCK RUBBLE
STA:6+52.00 BEGIN CONC. RIP-RAP BEGIN TOP OF DRAIN TRANSITION END ROCK RUBBLE
STA:6+62.00 END TOP OF DRAIN TRANSITION BEGIN 3'X2' S.B.C. AT INSIDE FACE OF HEADWALL
STA:6+67.43 END 3'X2' S.B.C. AT INSIDE FACE OF 5'X5' JUNCTION BOX
STA:6+72.43 BEGIN 3'X2' S.B.C. AT INSIDE FACE OF 5'X5' JUNCTION BOX
STA:7+51.98 BEGIN CONC. RIP-RAP BEGIN TOP OF DRAIN TRANSITION
PVI. STA:7+57.96
STA:7+58.96 BEGIN 5'X5' JUNCTION BOX WITH 4-WAY INLET
STA:7+59.63 END 3'X2' S.B.C. AT INSIDE FACE OF 5'X5' JUNCTION BOX
STA:7+65.30 END 5'X5' JUNCTION BOX WITH 4-WAY INLET END TOP OF DRAIN TRANSITION
STA:7+71.30 END CONC. RIP-RAP
PVI. STA:8+67.46 BEGIN TOP OF DRAIN TRANSITION
PVI. STA:8+77.46 END TOP OF DRAIN TRANSITION BEGIN SIDEWALK BOX DRAIN
STA:8+84.74 END SIDEWALK BOX DRAIN AT FACE OF CURB
40 L.F. HANDRAIL SEE DETAIL SHEET 4.7
34 L.F. HANDRAIL SEE DETAIL SHEET 4.7
T.O.C. 784.92'
GUT. INVERT @ INLET: 784.13'
PROPOSED PAVEMENT
PROPOSED PAVEMENT
PROPOSED TOP OF PIPE
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
EGL 100 YEAR
EGL 25 YEAR
HGL 25 YEAR
HGL 100 YEAR
PROPOSED TOP OF DRAIN
NATURAL GROUND (CL)
PROPOSED TOP OF CHANNEL
NATURAL GROUND (CL)
96.16 L.F. TRAPEZOIDAL CHANNEL @ 0.75% SLOPE
PROPOSED FLOWLINE
24" TOEDOWN
12" WATER LINE 24" STEEL CASING
124.00 L.F. TRAPEZOIDAL CHANNEL @ 0.55% SLOPE
87.19 L.F. 3'X2' S.B.C.@ 0.25% SLOPE
10.00 L.F. TRAPEZOIDAL CHANNEL @ 0.75% SLOPE
6.00 L.F. TRAPEZOIDAL CHANNEL @ 0.75% SLOPE
1.00 L.F. TRAPEZOIDAL CHANNEL @ -0.50% SLOPE
168.00 L..F. TRAPEZOIDAL CHANNEL @ 1.91% SLOPE
PROPOSED CHANNEL FLOWLINE
8"-10" ROCK RUBBLE 18" DEEP MIN.)
10.00 L.F. TRAPEZOIDAL CHANNEL @ 0.55% SLOPE
5.43 L.F. 3'X2' S.B.C. @ 0.25% SLOPE
GROUT TO DRAIN
6" CONC. COLLAR
8" SANITARY SEWER 16" STEEL CASING INVERT: 775.28
24" TOEDOWN
GROUT TO DRAIN INVERT ELEVATION 779.00'
6" CONC. COLLAR
8" WATER LINE 16" STEEL CASING
2.0'
1.75'
1.5'
PROPOSED TOP OF DRAIN
779.50 779.88 780.03 780.10 780.21 780.32 780.43 780.54 780.65 780.71 782.35 782.76 783.63 783.63 783.63 783.63 783.63 783.68 783.74 783.89 784.04 784.19 784.34 785.06
PROPOSED DRAIN FLOWLINE
777.50 777.88 778.03 778.10 778.21 778.32 778.43 778.54 778.65 778.71 778.76 778.77 778.78 778.78 778.80 778.85 778.90 778.95 783.63 782.14 782.13 782.13 782.13 782.18 782.24 782.39 782.54 782.69 782.84 782.90 782.97 782.99 783.02
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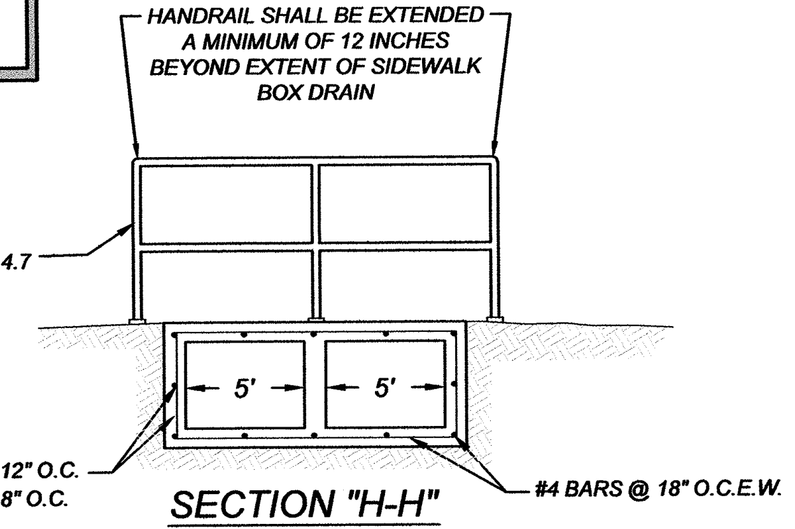
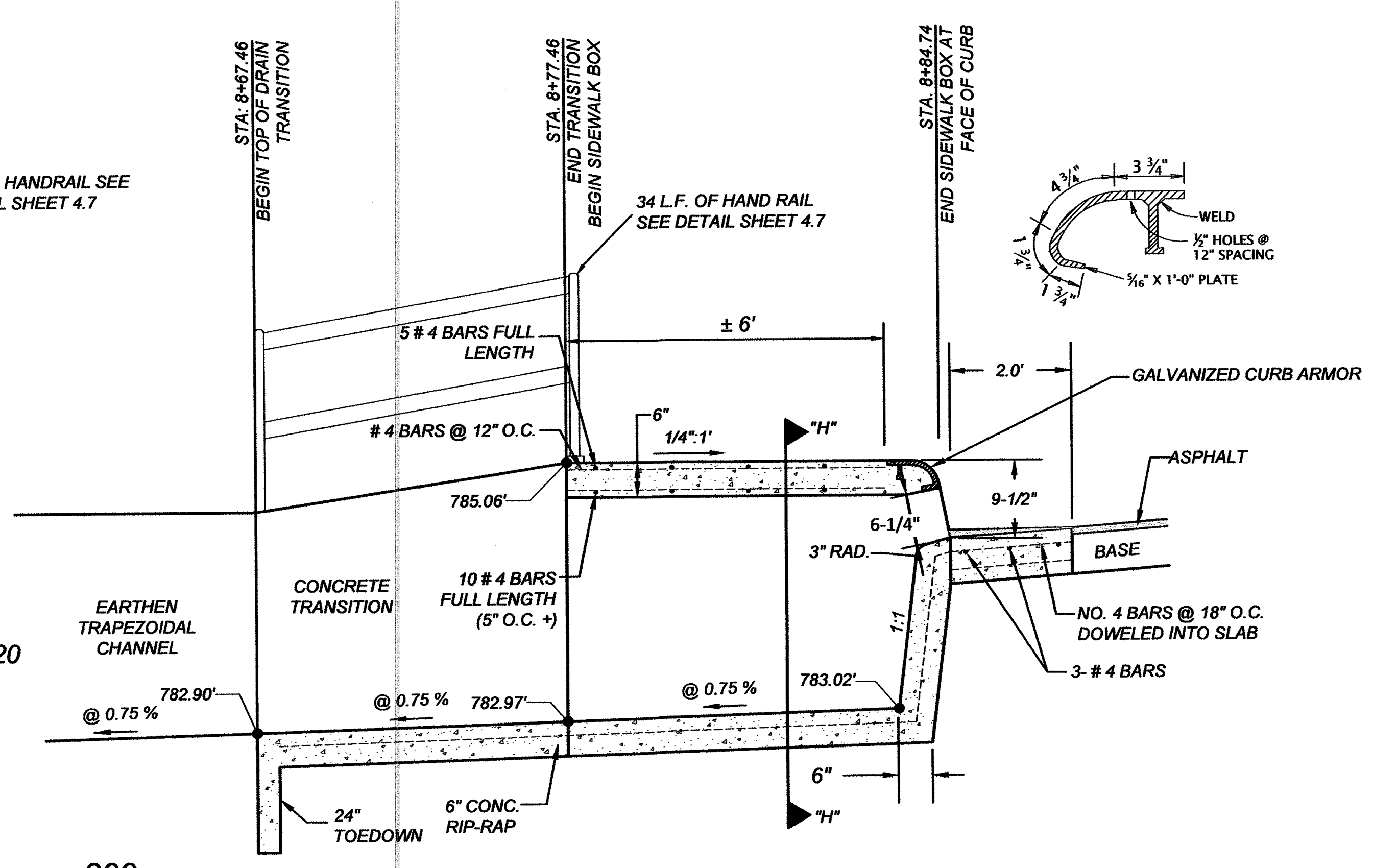
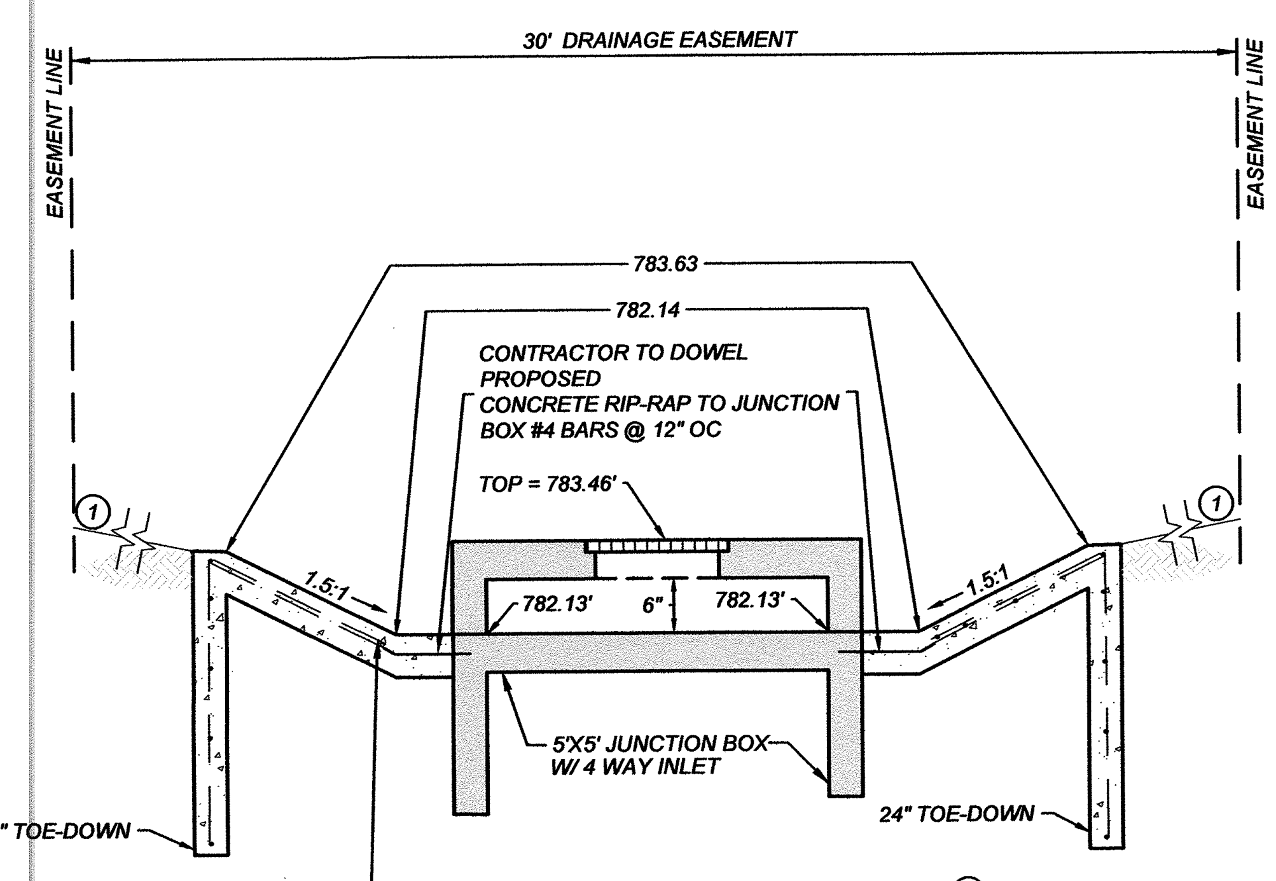
6+00
7+00
8+00
9+00


HANDRAIL SHALL BE EXTENDED A MINIMUM OF 12 INCHES BEYOND EXTENT OF SIDEWALK BOX DRAIN
34 L.F. HANDRAIL SEE DETAIL SHEET 4.7
5'
5'
#4 BARS @ 12" O.C.
#4 BARS @ 8" O.C.
#4 BARS @ 18" O.C.E.W.

SECTION "H-H"
N.T.S.


STA: 8+67.46 BEGIN TOP OF DRAIN TRANSITION
STA. 8+77.46 END TRANSITION BEGIN SIDEWALK BOX
STA. 8+84.74 END SIDEWALK BOX AT FACE OF CURB
34 L.F. HANDRAIL SEE DETAIL SHEET 4.7
34 L.F. OF HAND RAIL SEE DETAIL SHEET 4.7
4 3/4"
3 3/4"
1 3/4"
1 3/4"
WELD
1/2" HOLES @ 12" SPACING
5/16" X 1'-0" PLATE
5 # 4 BARS FULL LENGTH
± 6'
2.0'
GALVANIZED CURB ARMOR
6"
1/4":1'
"H"
"H"
# 4 BARS @ 12" O.C.
785.06'
ASPHALT
9-1/2"
6-1/4"
3" RAD.
BASE
CONCRETE TRANSITION
10 # 4 BARS FULL LENGTH (5" O.C. +)
NO. 4 BARS @ 18" O.C. DOWELED INTO SLAB
1:1
3- # 4 BARS
EARTHEN TRAPEZOIDAL CHANNEL
782.90'
@ 0.75 %
@ 0.75 %
782.97'
@ 0.75 %
783.02'
6"
24" TOEDOWN
6" CONC. RIP-RAP


30' DRAINAGE EASEMENT
EASEMENT LINE
EASEMENT LINE
783.63
782.14
CONTRACTOR TO DOWEL PROPOSED CONCRETE RIP-RAP TO JUNCTION BOX #4 BARS @ 12" OC
TOP = 783.46'
1.5:1
1.5:1
782.13'
6"
782.13'
5'X5' JUNCTION BOX W/ 4 WAY INLET
24" TOE-DOWN
24" TOE-DOWN
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
① MATCH GRADING PLAN

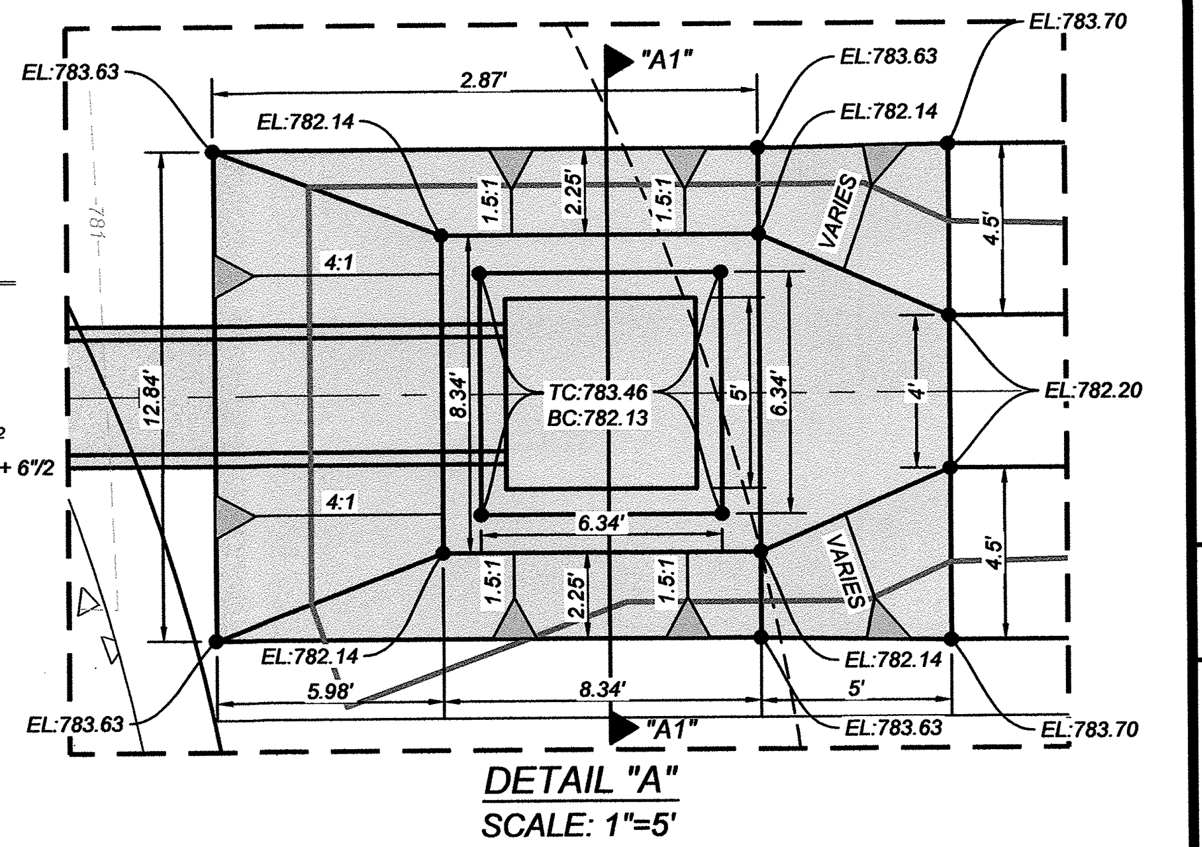
SECTION "A1-A1"
N.T.S.

4-WAY INLET HYDRAULIC CALCULATION

Q_{25} = 16.68 cfs
$L_{provided}$ = 25ft
Opening = 6"

$$H = \left[\frac{Q_{25}}{(0.7)(A)((2g)^{0.5})}\right]^2 + 6''/2$$

H = 0.31



DETAIL "A"
SCALE: 1"=5'

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE
REVISIONS

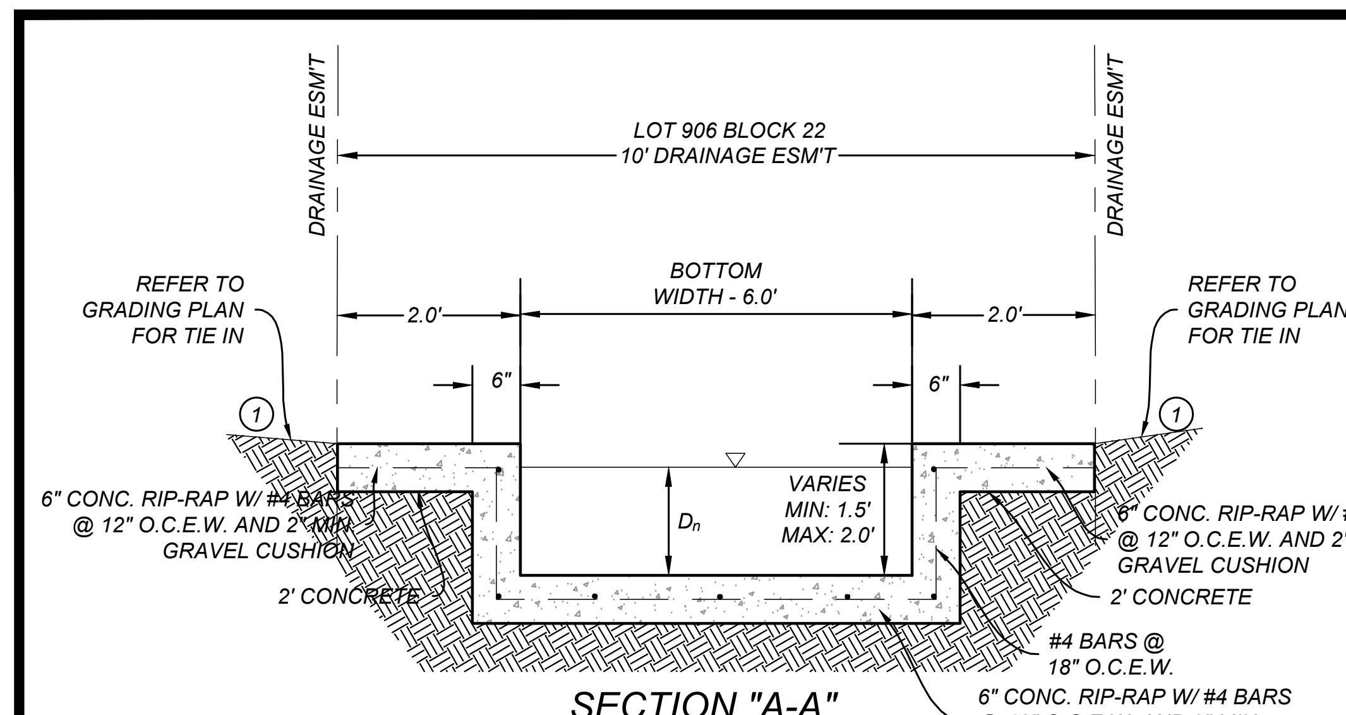
1/10/23
STATE OF TEXAS
A. NICHOLAS REYNOLDS
111666
LICENSED PROFESSIONAL ENGINEER
Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

DRAIN A STA. 5+00.00 - END

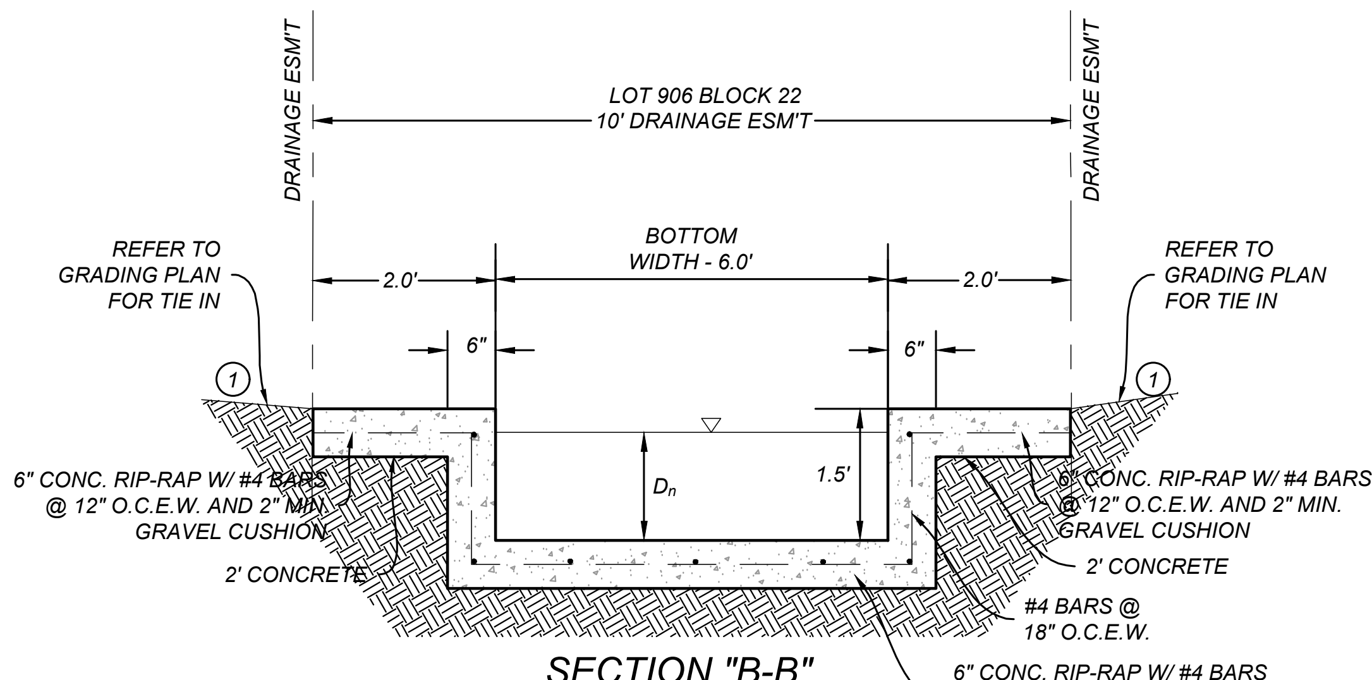
JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR
SHEET NUMBER:
4.1

Date: Jan 09, 2023, 4:21pm User ID: lmiller
File: U:\Projects\171\23\06\Design\Civil\Drains\4.1 DRAIN A STA. 5+00.00 - END.dwg


DRAINAGE ESMT
DRAINAGE ESMT
LOT 906 BLOCK 22
10' DRAINAGE ESM'T
REFER TO GRADING PLAN FOR TIE IN
REFER TO GRADING PLAN FOR TIE IN
2.0'
2.0'
BOTTOM WIDTH - 6.0'
6"
6"
①
①
VARIES MIN: 1.5' MAX: 2.0'
Dn
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
2' CONCRETE
2' CONCRETE
#4 BARS @ 18" O.C.E.W.
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION

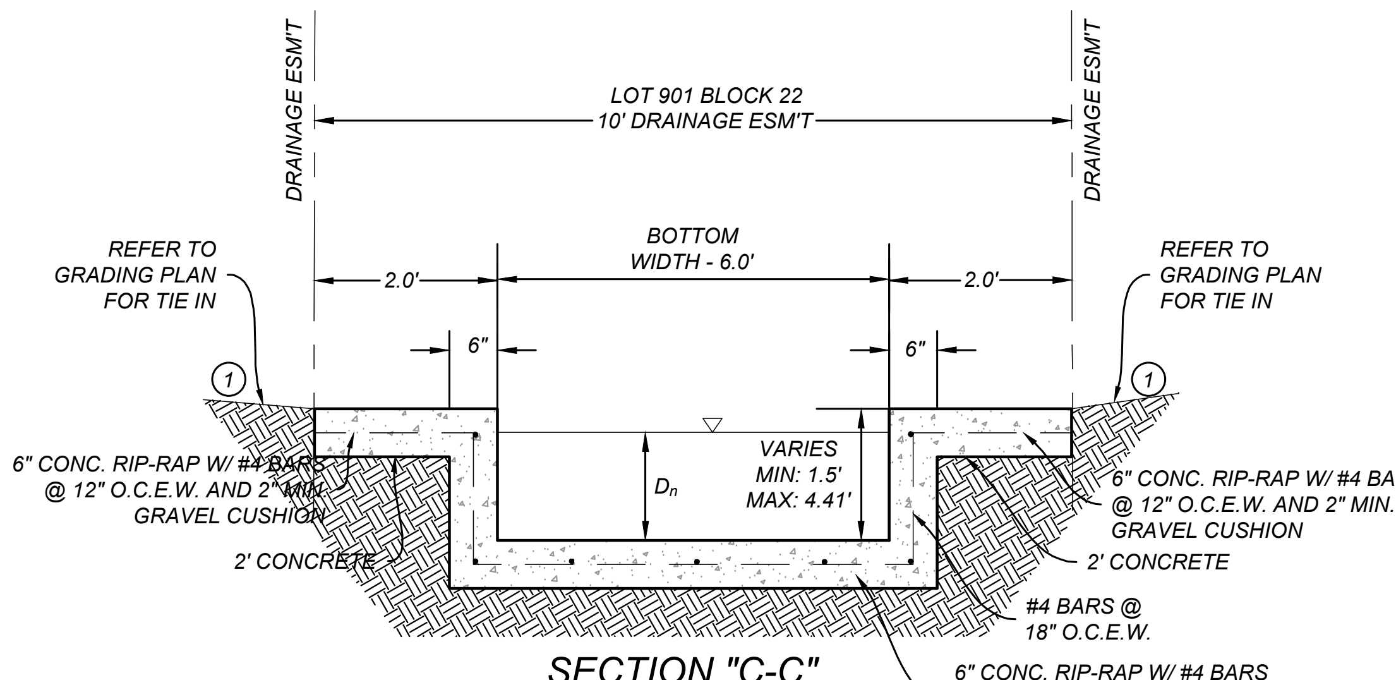
① 4:1 MAX SLOPE

SECTION "A-A"
STA. 1+05.51 TO 1+23.15
N.T.S.


DRAINAGE ESMT
DRAINAGE ESMT
LOT 906 BLOCK 22
10' DRAINAGE ESM'T
REFER TO GRADING PLAN FOR TIE IN
REFER TO GRADING PLAN FOR TIE IN
2.0'
2.0'
BOTTOM WIDTH - 6.0'
6"
6"
①
①
Dn
1.5'
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
2' CONCRETE
2' CONCRETE
#4 BARS @ 18" O.C.E.W.
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION

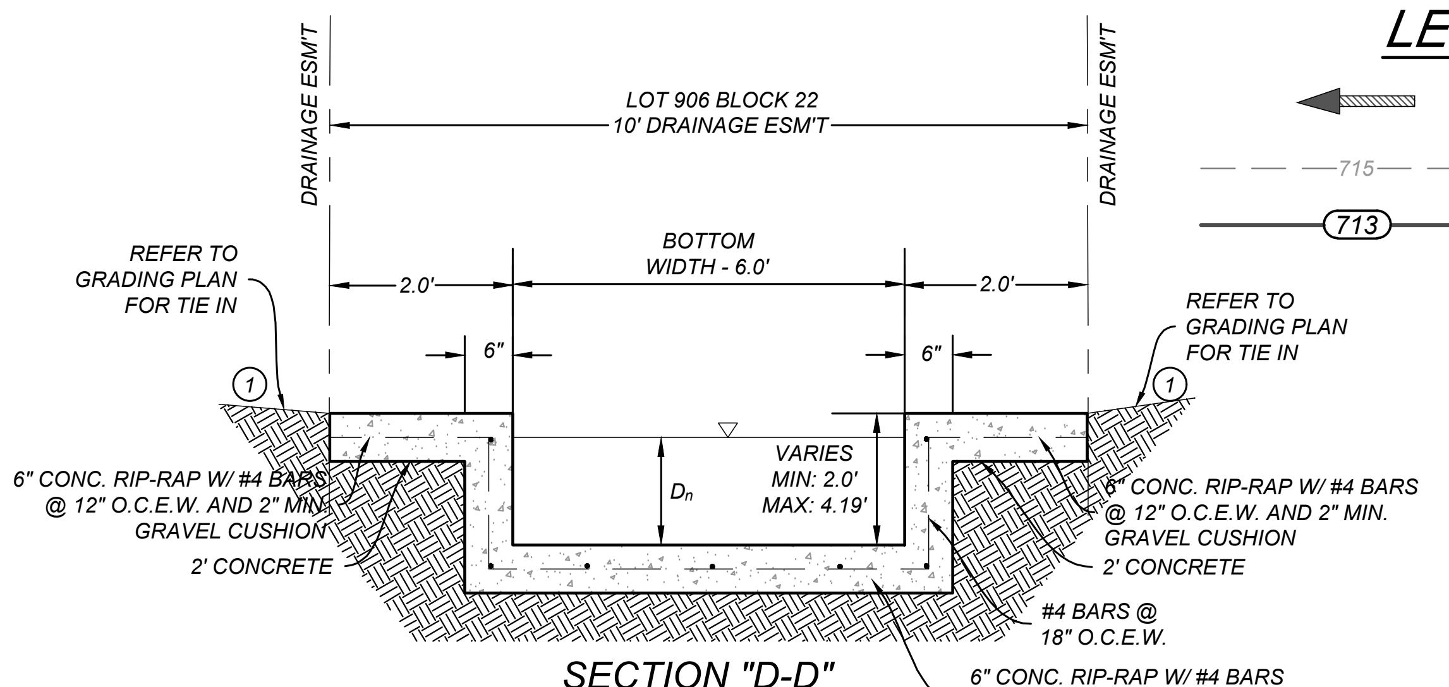
① 4:1 MAX SLOPE

SECTION "B-B"
STA. 1+23.15 TO 2+27.92
N.T.S.


DRAINAGE ESMT
DRAINAGE ESMT
LOT 901 BLOCK 22
10' DRAINAGE ESM'T
REFER TO GRADING PLAN FOR TIE IN
REFER TO GRADING PLAN FOR TIE IN
2.0'
2.0'
BOTTOM WIDTH - 6.0'
6"
6"
①
①
VARIES MIN: 1.5' MAX: 4.41'
Dn
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
2' CONCRETE
2' CONCRETE
#4 BARS @ 18" O.C.E.W.
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION

① 4:1 MAX SLOPE

SECTION "C-C"
STA. 2+27.92 TO 2+49.46
N.T.S.

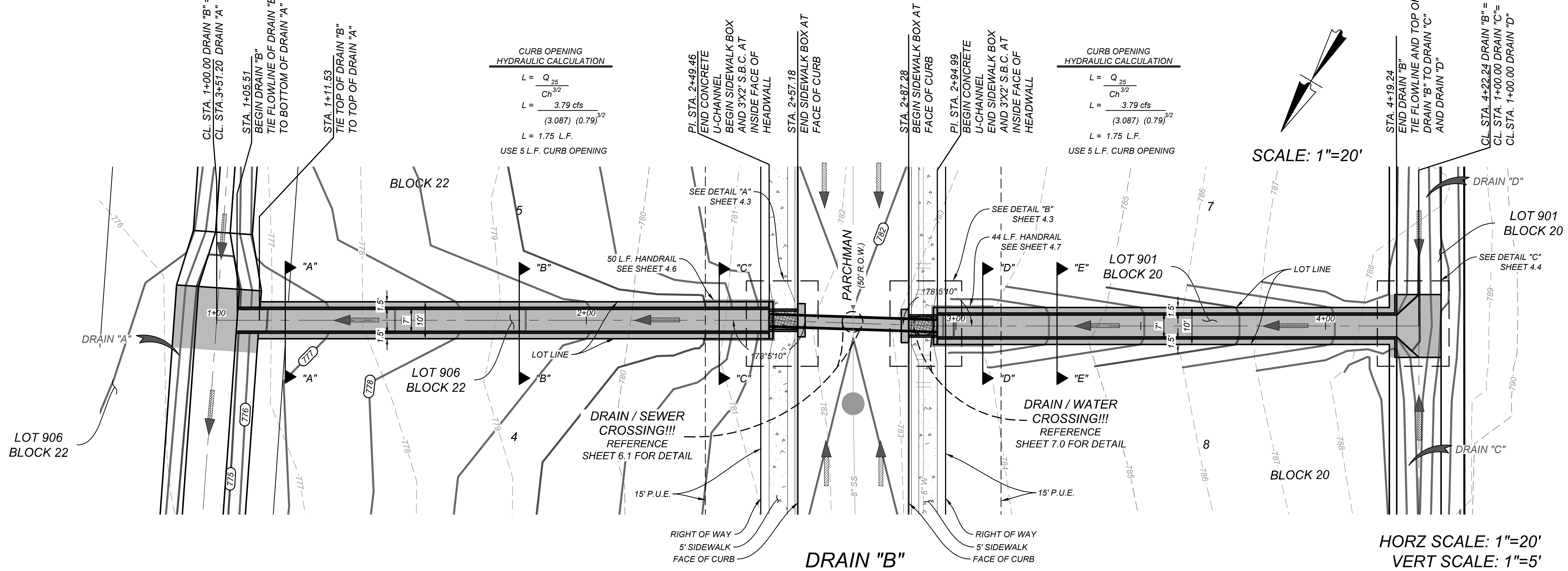

DRAINAGE ESMT
DRAINAGE ESMT
LOT 906 BLOCK 22
10' DRAINAGE ESM'T
REFER TO GRADING PLAN FOR TIE IN
REFER TO GRADING PLAN FOR TIE IN
2.0'
2.0'
BOTTOM WIDTH - 6.0'
6"
6"
①
①
VARIES MIN: 2.0' MAX: 4.19'
Dn
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
2' CONCRETE
2' CONCRETE
#4 BARS @ 18" O.C.E.W.
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION

① 4:1 MAX SLOPE

SECTION "D-D"
STA. 2+94.99 TO 3+09.90
N.T.S.

LEGEND

⬅	= FLOW ARROW
--715--	= EXISTING CONTOUR
713	= PROPOSED CONTOUR


CL. STA. 1+00.00 DRAIN "B" = CL. STA. 3+51.20 DRAIN "A"
STA. 1+05.51 BEGIN DRAIN "B" TIE FLOWLINE OF DRAIN "B" TO BOTTOM OF DRAIN "A"
STA. 1+11.53 TIE TOP OF DRAIN "B" TO TOP OF DRAIN "A"
PI. STA. 2+49.46 END CONCRETE U-CHANNEL BEGIN SIDEWALK BOX AND 3'X2' S.B.C. AT INSIDE FACE OF HEADWALL
STA. 2+57.18 END SIDEWALK BOX AT FACE OF CURB
STA. 2+87.28 BEGIN SIDEWALK BOX AT FACE OF CURB
PI. STA. 2+94.99 BEGIN CONCRETE U-CHANNEL END SIDEWALK BOX AND 3'X2' S.B.C. AT INSIDE FACE OF HEADWALL
STA. 4+19.24 END DRAIN "B" TIE FLOWLINE AND TOP OF DRAIN "B" TO DRAIN "C" AND DRAIN "D"
CL. STA. 4+22.24 DRAIN "B" = CL. STA. 1+00.00 DRAIN "C" = CL. STA. 1+00.00 DRAIN "D"
SCALE: 1"=20'
BLOCK 22
5
4
7
8
LOT 906 BLOCK 22
LOT 906 BLOCK 22
LOT 901 BLOCK 20
LOT 901 BLOCK 20
BLOCK 20
DRAIN "A"
DRAIN "C"
DRAIN "D"
"A"
"A"
"B"
"B"
"C"
"C"
"D"
"D"
"E"
"E"
1+00
2+00
3+00
4+00
1.5'
1.5'
7'
10'
1.5'
1.5'
7'
10'
SEE DETAIL "A" SHEET 4.3
SEE DETAIL "B" SHEET 4.3
SEE DETAIL "C" SHEET 4.4
50 L.F. HANDRAIL SEE SHEET 4.6
44 L.F. HANDRAIL SEE SHEET 4.7
LOT LINE
LOT LINE
PARCHMAN (50' R.O.W.)
178°5'10"
178°5'10"
DRAIN / SEWER CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
DRAIN / WATER CROSSING!!! REFERENCE SHEET 7.0 FOR DETAIL
15' P.U.E.
15' P.U.E.
RIGHT OF WAY
5' SIDEWALK
FACE OF CURB
RIGHT OF WAY
5' SIDEWALK
FACE OF CURB
8" SS
775
776
777
778
779
780
781
782
783
785
786
787
788
789
790

CURB OPENING
HYDRAULIC CALCULATION

$$L = \frac{Q_{25}}{Ch^{3/2}}$$

$$L = \frac{3.79\ cfs}{(3.087)\ (0.79)^{3/2}}$$

L = 1.75 L.F.

USE 5 L.F. CURB OPENING

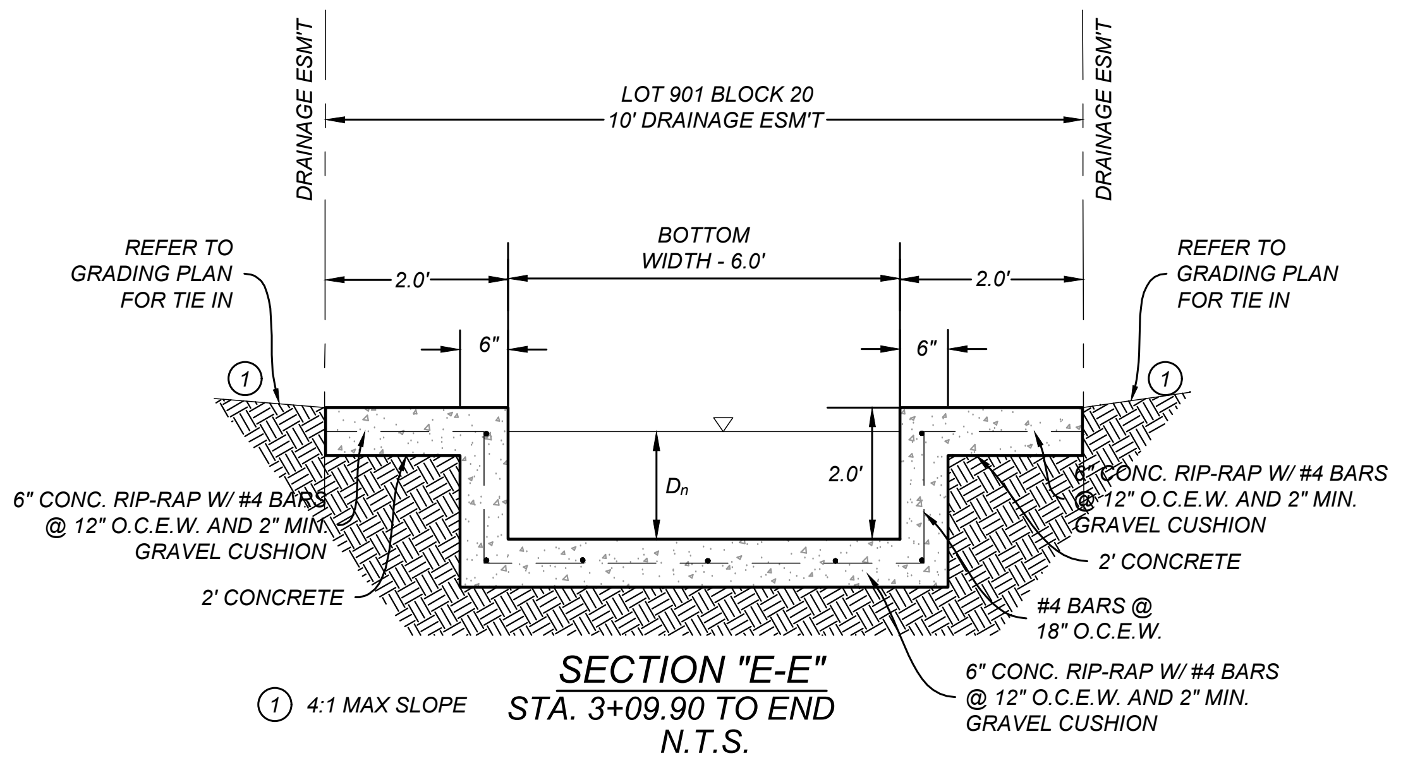
CURB OPENING
HYDRAULIC CALCULATION

$$L = \frac{Q_{25}}{Ch^{3/2}}$$

$$L = \frac{3.79\ cfs}{(3.087)\ (0.79)^{3/2}}$$

L = 1.75 L.F.

USE 5 L.F. CURB OPENING

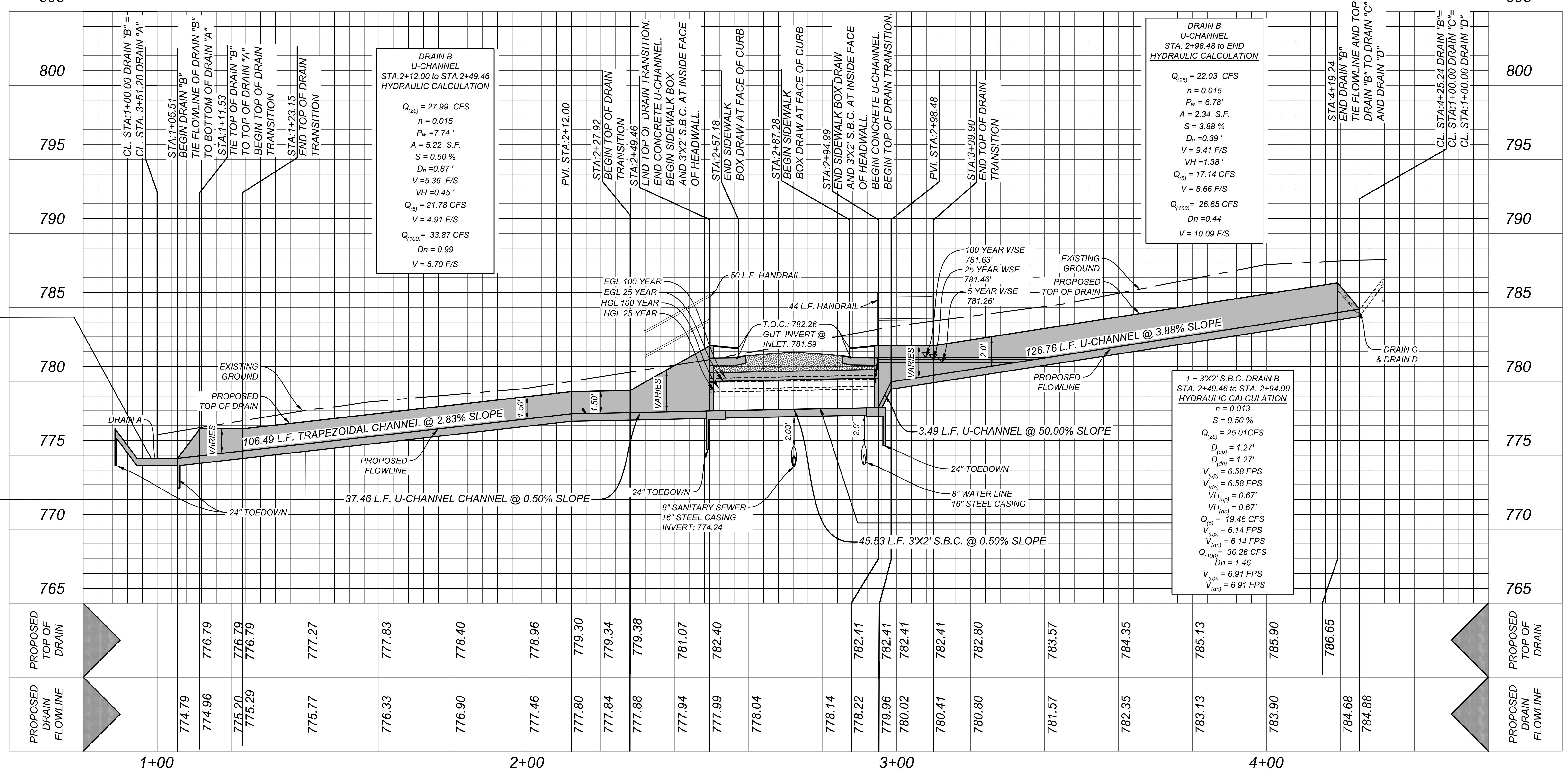

DRAINAGE ESMT
DRAINAGE ESMT
LOT 901 BLOCK 20
10' DRAINAGE ESM'T
REFER TO GRADING PLAN FOR TIE IN
REFER TO GRADING PLAN FOR TIE IN
2.0'
2.0'
BOTTOM WIDTH - 6.0'
6"
6"
①
①
Dn
2.0'
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
2' CONCRETE
2' CONCRETE
#4 BARS @ 18" O.C.E.W.
6" CONC. RIP-RAP W/ #4 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION

① 4:1 MAX SLOPE

SECTION "E-E"
STA. 3+09.90 TO END
N.T.S.

DRAIN "B"
STA: 1+00.00 - END

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


805
800
795
790
785
780
775
770
765
CL. STA:1+00.00 DRAIN "B" = CL. STA. 3+51.20 DRAIN "A"
STA:1+05.51 BEGIN DRAIN "B" TIE FLOWLINE OF DRAIN "B" TO BOTTOM OF DRAIN "A"
STA:1+11.53 TIE TOP OF DRAIN "B" TO TOP OF DRAIN "A" BEGIN TOP OF DRAIN TRANSITION
STA:1+23.15 END TOP OF DRAIN TRANSITION
PVI. STA:2+12.00
STA:2+27.92 BEGIN TOP OF DRAIN TRANSITION
STA:2+49.46 END TOP OF DRAIN TRANSITION. END CONCRETE U-CHANNEL. BEGIN SIDEWALK BOX AND 3'X2' S.B.C. AT INSIDE FACE OF HEADWALL.
STA:2+57.18 END SIDEWALK BOX DRAW AT FACE OF CURB
STA:2+87.28 BEGIN SIDEWALK BOX DRAW AT FACE OF CURB
STA:2+94.99 END SIDEWALK BOX DRAW AND 3'X2' S.B.C. AT INSIDE FACE OF HEADWALL. BEGIN CONCRETE U-CHANNEL. BEGIN TOP OF DRAIN TRANSITION.
PVI. STA:2+98.48
STA:3+09.90 END TOP OF DRAIN TRANSITION
STA:4+19.24 END DRAIN "B" TIE FLOWLINE AND TOP OF DRAIN "B" TO DRAIN "C" AND DRAIN "D"
CL. STA:4+25.24 DRAIN "B" = CL. STA:1+00.00 DRAIN "C" = CL. STA:1+00.00 DRAIN "D"
DRAIN A
EXISTING GROUND
PROPOSED TOP OF DRAIN
PROPOSED FLOWLINE
VARIES
1.50'
1.50'
VARIES
106.49 L.F. TRAPEZOIDAL CHANNEL @ 2.83% SLOPE
24" TOEDOWN
37.46 L.F. U-CHANNEL CHANNEL @ 0.50% SLOPE
EGL 100 YEAR
EGL 25 YEAR
HGL 100 YEAR
HGL 25 YEAR
50 L.F. HANDRAIL
44 L.F. HANDRAIL
T.O.C.: 782.26
GUT. INVERT @ INLET: 781.59
24" TOEDOWN
8" SANITARY SEWER 16" STEEL CASING INVERT: 774.24
2.03'
2.0'
45.53 L.F. 3'X2' S.B.C. @ 0.50% SLOPE
3.49 L.F. U-CHANNEL @ 50.00% SLOPE
24" TOEDOWN
8" WATER LINE 16" STEEL CASING
100 YEAR WSE 781.63'
25 YEAR WSE 781.46'
5 YEAR WSE 781.26'
EXISTING GROUND
PROPOSED TOP OF DRAIN
PROPOSED FLOWLINE
VARIES
2.0'
126.76 L.F. U-CHANNEL @ 3.88% SLOPE
DRAIN C & DRAIN D
1+00
2+00
3+00
4+00

PROPOSED TOP OF DRAIN	PROPOSED DRAIN FLOWLINE
	774.79
776.79	774.96
776.79	775.20
776.79	775.29
777.27	775.77
777.83	776.33
778.40	776.90
778.96	777.46
779.30	777.80
779.34	777.84
779.38	777.88
781.07	777.94
782.40	777.99
	778.04
	778.14
782.41	778.22
782.41	779.96
782.41	780.02
782.41	780.41
782.80	780.80
783.57	781.57
784.35	782.35
785.13	783.13
785.90	783.90
786.65	784.68
	784.88

DRAIN A - DRAIN B
TRAPEZOIDAL CHANNEL
CL. STA. 3+51.20 DRAIN "A"
CL. STA. 1+00.00 DRAIN "B"
HYDRAULIC CALCULATION

$Q_{(25)}$ = 69.49 CFS
n = .015
P_w = 16.69'
A = 12.33 S.F.
S = 0.50%
D_n = 0.90'
V = 5.64 F/S
VH = 0.49'
$Q_{(5)}$ = 53.71 CFS
V = 5.16 F/S
$Q_{(100)}$= 84.17 CFS
Dn = 1.00'
V = 6.01 F/S

DRAIN B
U-CHANNEL
STA. 1+05.51 to STA. 2+12.00
HYDRAULIC CALCULATION

$Q_{(25)}$ = 27.99 CFS
n = 0.015
P_w = 7.00'
A = 3.00 S.F.
S = 2.83 %
D_n =0.50 '
V = 9.33 F/S
VH =1.35 '
$Q_{(5)}$ = 21.78 CFS
V = 8.44 F/S
$Q_{(100)}$= 33.87 CFS
Dn = 0.56
V = 10.08 F/S

DRAIN B
U-CHANNEL
STA.2+12.00 to STA.2+49.46
HYDRAULIC CALCULATION

$Q_{(25)}$ = 27.99 CFS
n = 0.015
P_w =7.74 '
A = 5.22 S.F.
S = 0.50 %
D_n =0.87 '
V =5.36 F/S
VH =0.45 '
$Q_{(5)}$ = 21.78 CFS
V = 4.91 F/S
$Q_{(100)}$= 33.87 CFS
Dn = 0.99
V = 5.70 F/S

DRAIN B
U-CHANNEL
STA. 2+98.48 to END
HYDRAULIC CALCULATION

$Q_{(25)}$ = 22.03 CFS
n = 0.015
P_w = 6.78'
A = 2.34 S.F.
S = 3.88 %
D_n =0.39 '
V = 9.41 F/S
VH =1.38 '
$Q_{(5)}$ = 17.14 CFS
V = 8.66 F/S
$Q_{(100)}$= 26.65 CFS
Dn =0.44
V = 10.09 F/S

1 ~ 3'X2' S.B.C. DRAIN B
STA. 2+49.46 to STA. 2+94.99
HYDRAULIC CALCULATION
n = 0.013
S = 0.50 %
$Q_{(25)}$ = 25.01CFS
$D_{(up)}$ = 1.27'
$D_{(dn)}$ = 1.27'
$V_{(up)}$ = 6.58 FPS
$V_{(dn)}$ = 6.58 FPS
$VH_{(up)}$ = 0.67'
$VH_{(dn)}$ = 0.67'
$Q_{(5)}$ = 19.46 CFS
$V_{(up)}$ = 6.14 FPS
$V_{(dn)}$ = 6.14 FPS
$Q_{(100)}$= 30.26 CFS
Dn = 1.46
$V_{(up)}$ = 6.91 FPS
$V_{(dn)}$ = 6.91 FPS

NOTE:

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

2. ALL DISTURBED AREAS SHALL BE REVEGETATED TO A MINIMUM OF 85% WITH THE EXCEPTION OF BUILDABLE RESIDENTIAL LOTS. EROSION AND SEDIMENTATION FROM BUILDABLE LOTS SHOULD BE PREVENTED THROUGH THE USE OF SILT FENCE, CONTROL MATTING, OR OTHER BMPS AS APPROPRIATE.

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

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

5. ROUGH GRADING, INCLUDING TREE REMOVAL, MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.

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.

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.

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

REVISIONS
ISSUE DATE

A. NICHOLAS REYNOLDS
111666
2/2/23

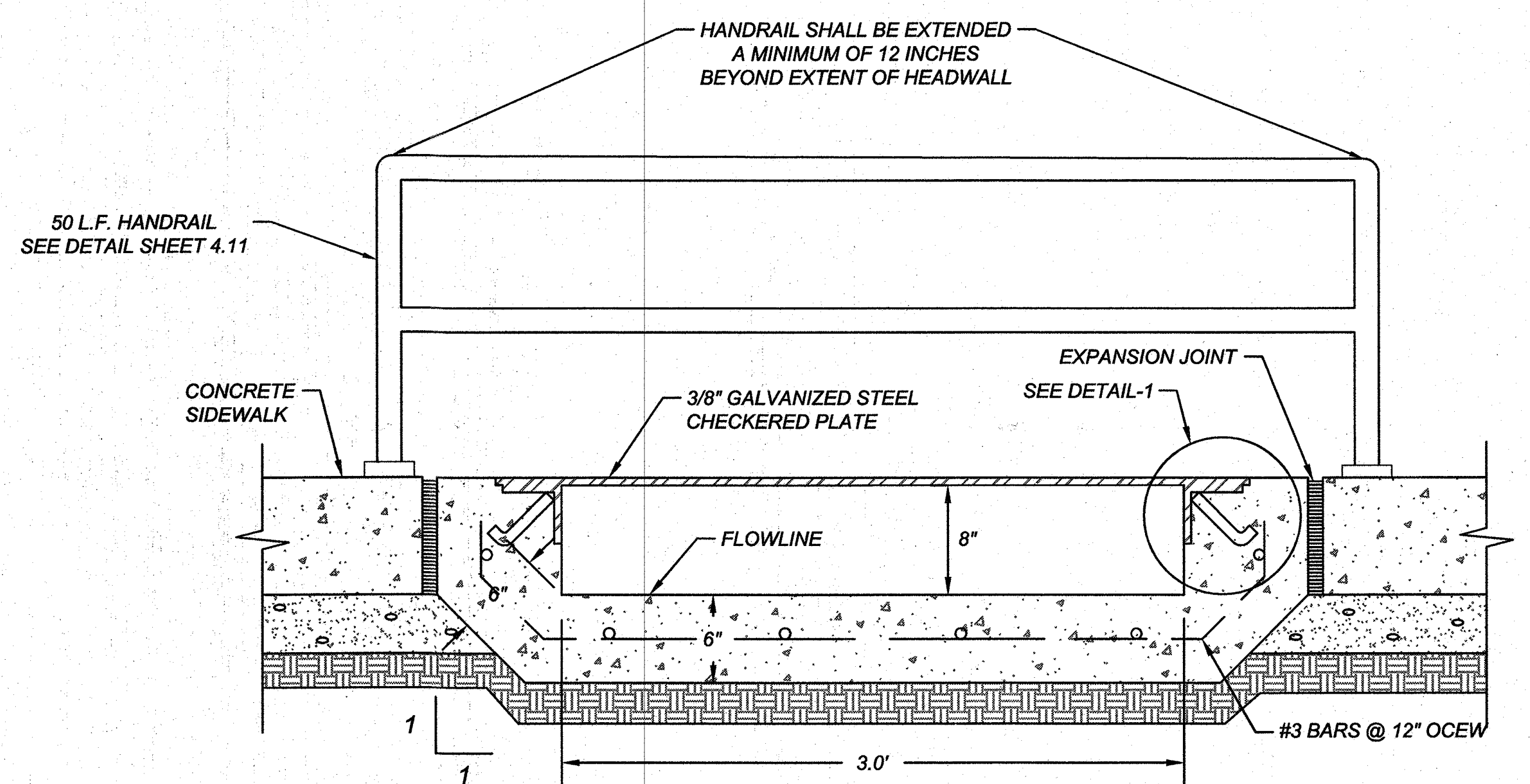
THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

DRAIN B STA. 1+00.00 - END

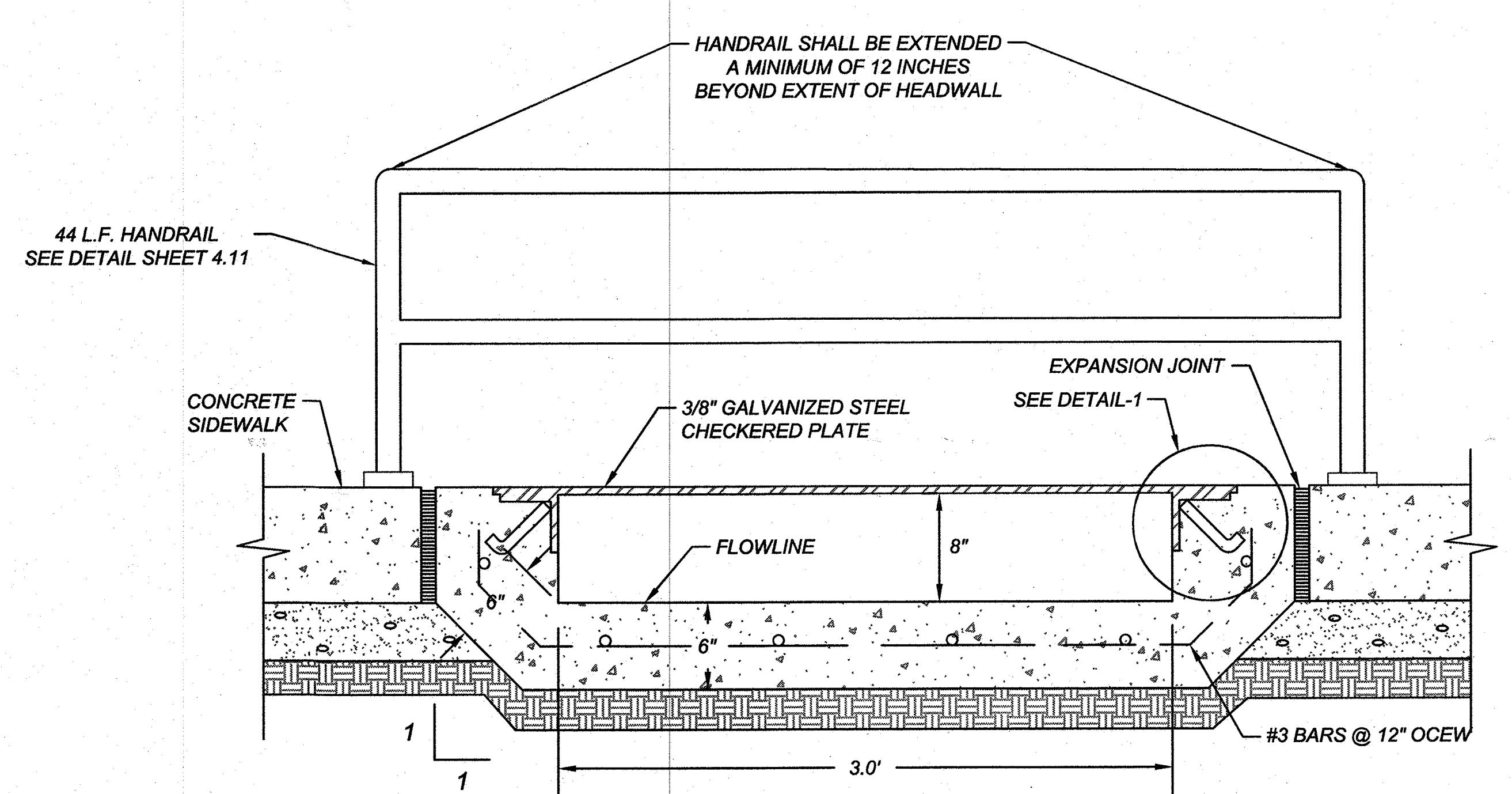
JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
4.2

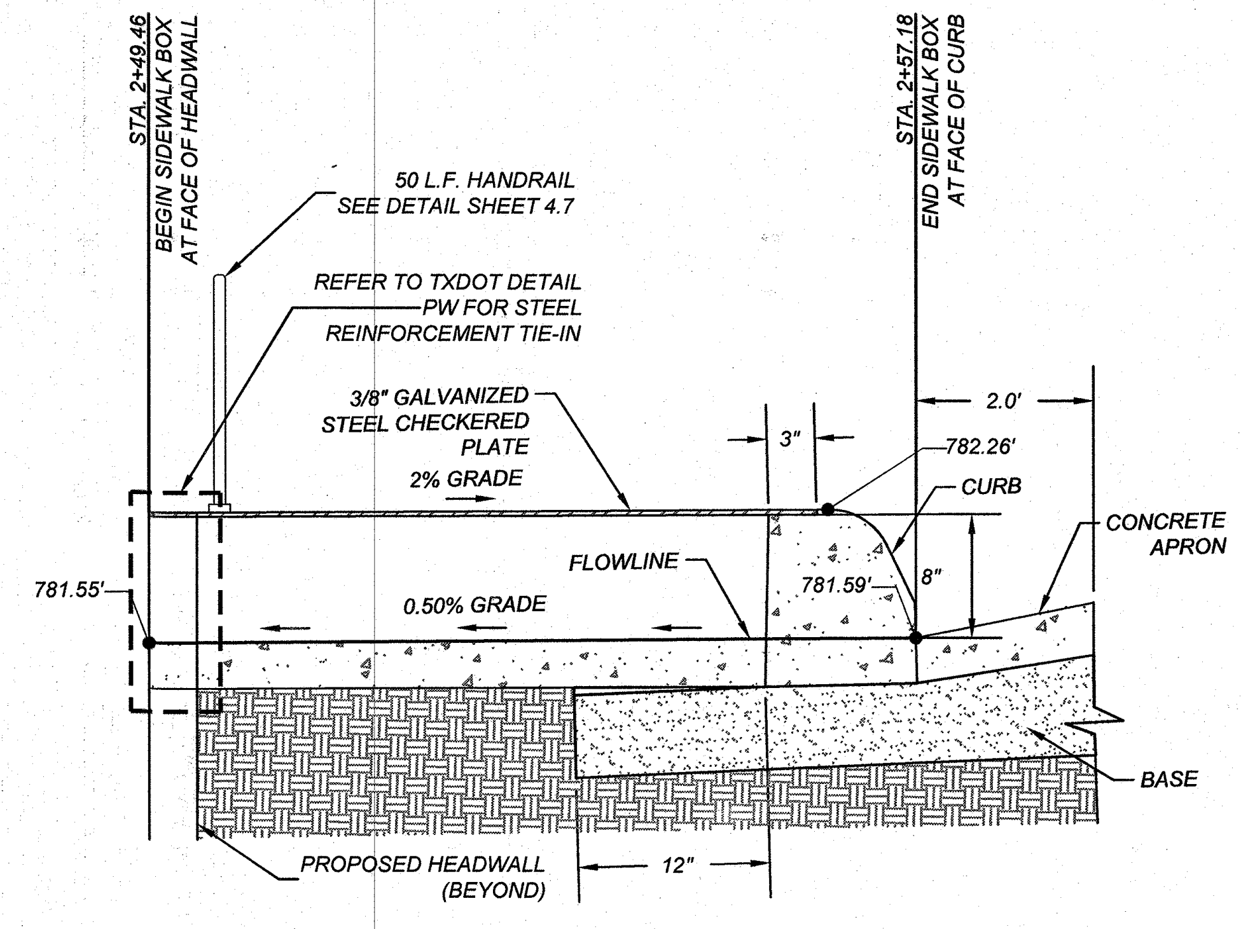
Date: Feb 01, 2023, 3:06pm User ID: davendano
File: U:\Projects\171\23\06\Design\Civil\Drains\4.2 DRAIN B STA. 1+00.00 — END.dwg


HANDRAIL SHALL BE EXTENDED A MINIMUM OF 12 INCHES BEYOND EXTENT OF HEADWALL
50 L.F. HANDRAIL SEE DETAIL SHEET 4.11
CONCRETE SIDEWALK
3/8" GALVANIZED STEEL CHECKERED PLATE
EXPANSION JOINT SEE DETAIL-1
FLOWLINE
8"
6"
#3 BARS @ 12" OCEW
1
1
3.0'

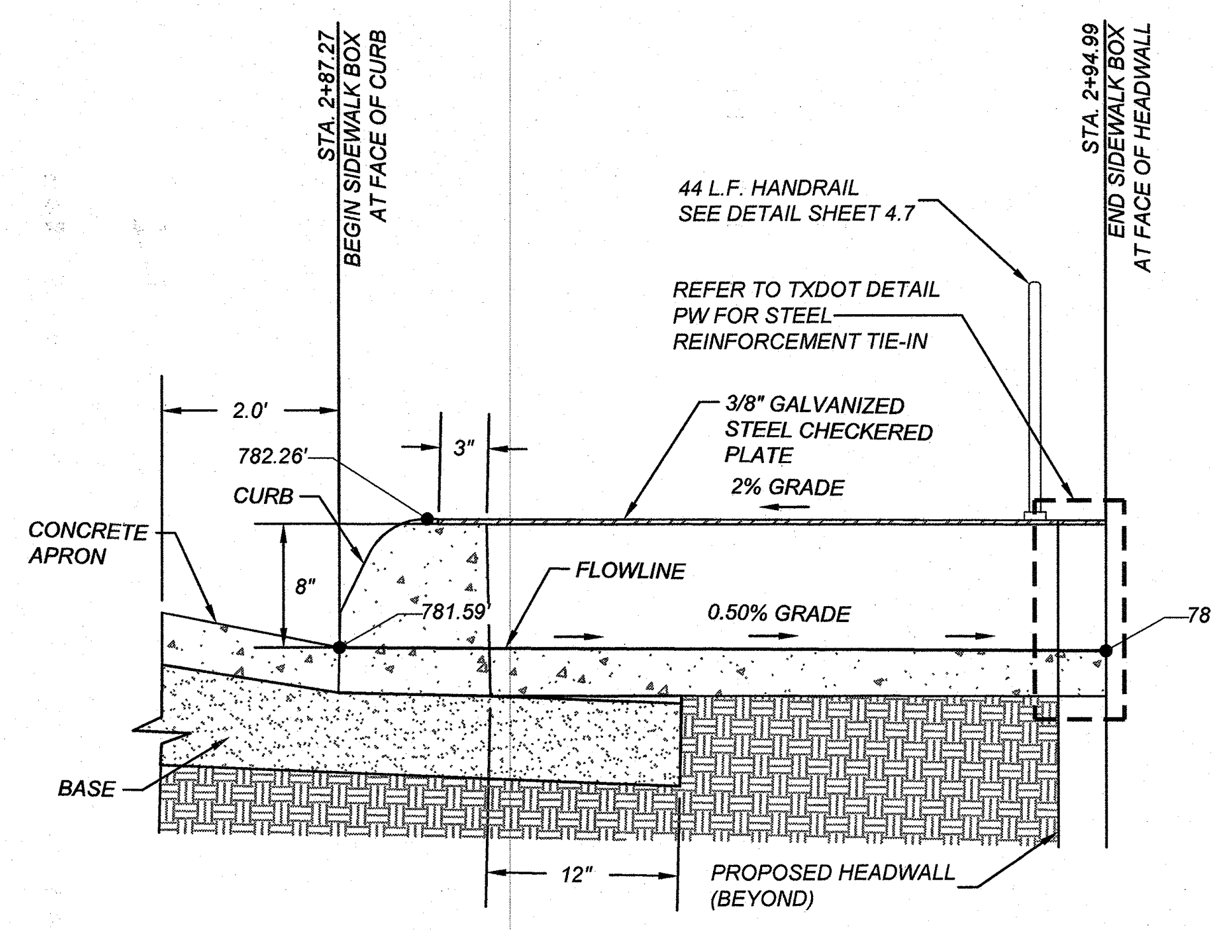
SECTION "A1-A1"
N.T.S.


HANDRAIL SHALL BE EXTENDED A MINIMUM OF 12 INCHES BEYOND EXTENT OF HEADWALL
44 L.F. HANDRAIL SEE DETAIL SHEET 4.11
CONCRETE SIDEWALK
3/8" GALVANIZED STEEL CHECKERED PLATE
EXPANSION JOINT SEE DETAIL-1
FLOWLINE
8"
6"
#3 BARS @ 12" OCEW
1
1
3.0'

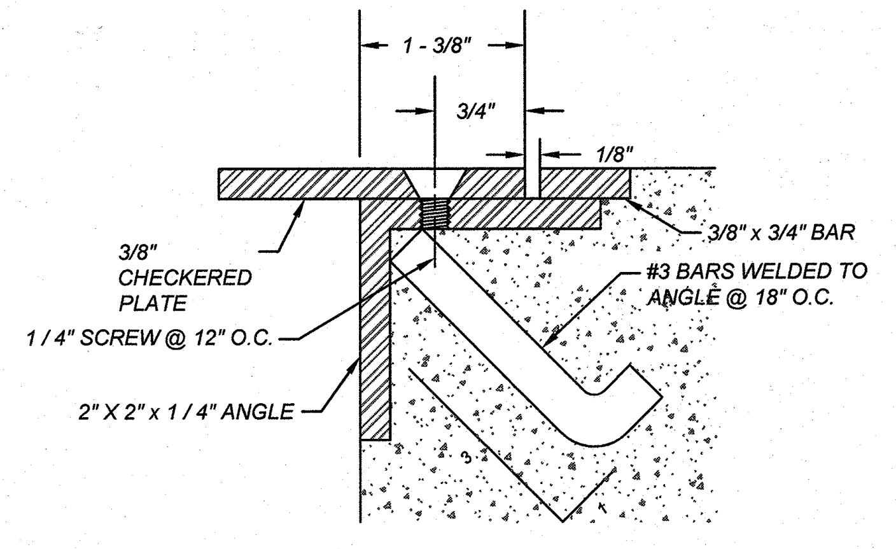
SECTION "A2-A2"
N.T.S.


STA. 2+49.46 BEGIN SIDEWALK BOX AT FACE OF HEADWALL
STA. 2+57.18 END SIDEWALK BOX AT FACE OF CURB
50 L.F. HANDRAIL SEE DETAIL SHEET 4.7
REFER TO TXDOT DETAIL PW FOR STEEL REINFORCEMENT TIE-IN
3/8" GALVANIZED STEEL CHECKERED PLATE
2% GRADE
3"
2.0'
782.26'
CURB
CONCRETE APRON
FLOWLINE
781.59'
8"
781.55'
0.50% GRADE
BASE
PROPOSED HEADWALL (BEYOND)
12"

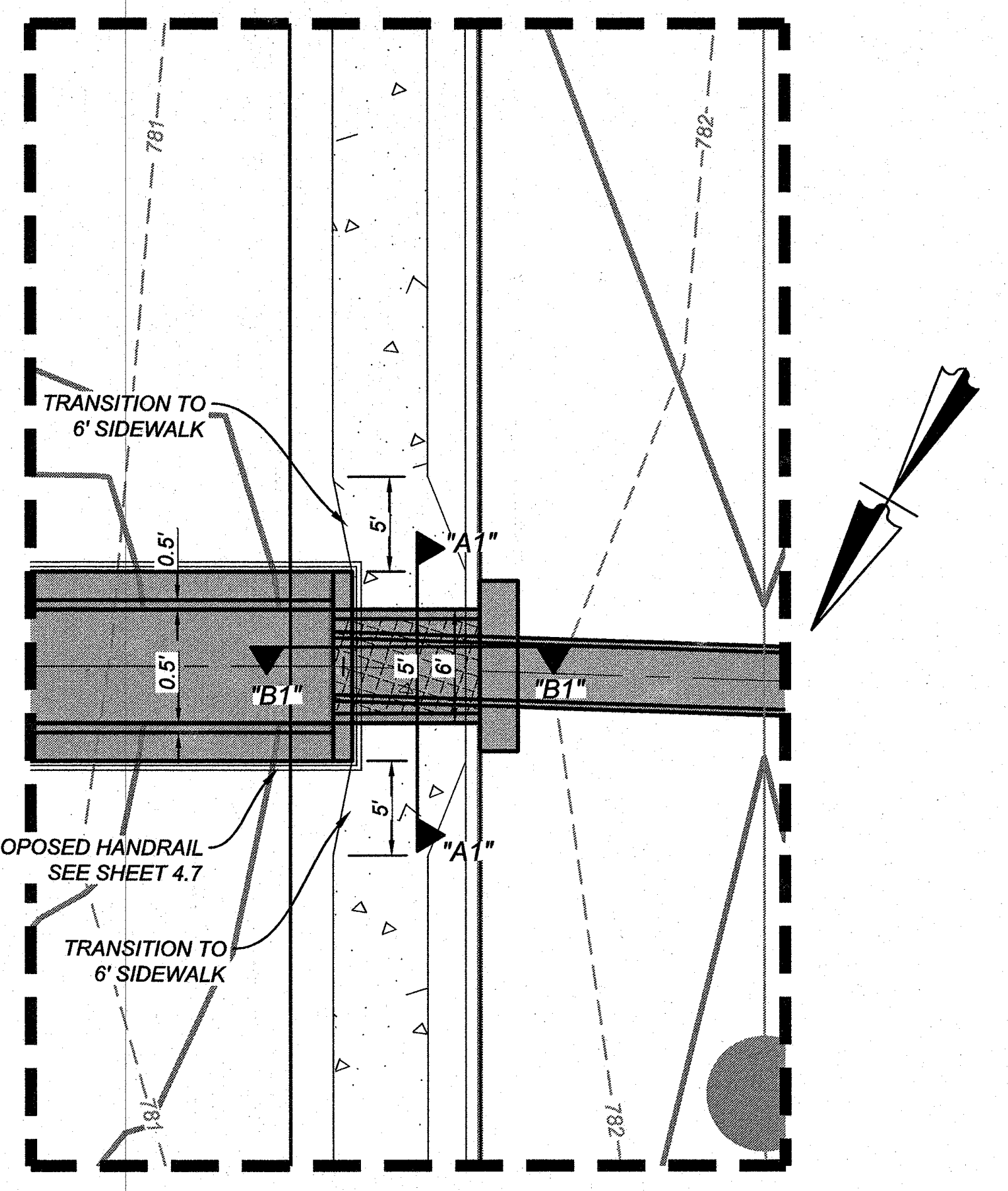
SECTION "B1-B1"
N.T.S.


STA. 2+87.27 BEGIN SIDEWALK BOX AT FACE OF CURB
STA. 2+94.99 END SIDEWALK BOX AT FACE OF HEADWALL
44 L.F. HANDRAIL SEE DETAIL SHEET 4.7
REFER TO TXDOT DETAIL PW FOR STEEL REINFORCEMENT TIE-IN
3/8" GALVANIZED STEEL CHECKERED PLATE
2% GRADE
2.0'
782.26'
3"
CURB
CONCRETE APRON
8"
781.59'
FLOWLINE
0.50% GRADE
781.55'
BASE
12"
PROPOSED HEADWALL (BEYOND)

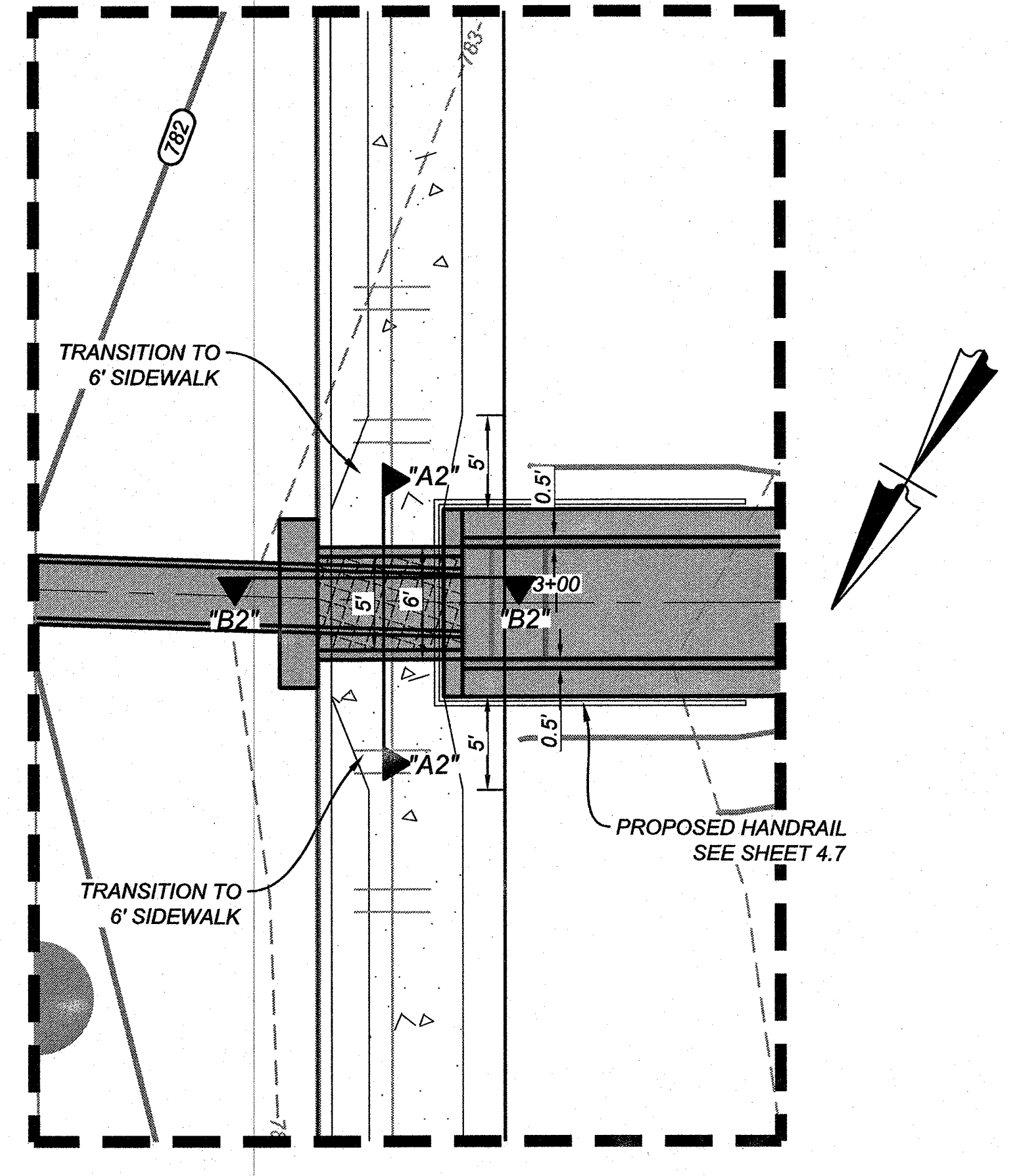
SECTION "B2-B2"
N.T.S.



DETAIL-1
N.T.S.


781
782
TRANSITION TO 6' SIDEWALK
5'
"A1"
0.5'
0.5'
"B1"
5'
6'
"B1"
5'
"A1"
PROPOSED HANDRAIL SEE SHEET 4.7
TRANSITION TO 6' SIDEWALK
781
782

DETAIL "A"
SCALE: 1"=10'


782
783
TRANSITION TO 6' SIDEWALK
"A2"
5'
0.5'
"B2"
5'
6'
3+00
"B2"
0.5'
5'
"A2"
PROPOSED HANDRAIL SEE SHEET 4.7
TRANSITION TO 6' SIDEWALK

DETAIL "B"
SCALE: 1"=10'

ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
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REVISIONS
ISSUE DATE

1/26/22
A. NICHOLAS REYNOLDS
111666

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

DRAIN B DETAILS

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

SHEET NUMBER:
4.3

Date: Jan 26, 2022, 4:05pm User ID: tvater
File: U:\Projects\171\23\06\Design\Civil\Drains\4.2 DRAIN B STA. 1+00.00 - END.dwg

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.

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.

NOTE:

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

2. ALL DISTURBED AREAS SHALL BE REVEGETATED TO A MINIMUM OF 85% WITH THE EXCEPTION OF BUILDABLE RESIDENTIAL LOTS. EROSION AND SEDIMENTATION FROM BUILDABLE LOTS SHOULD BE PREVENTED THROUGH THE USE OF SILT FENCE, CONTROL MATTING, OR OTHER BMPS AS APPROPRIATE.

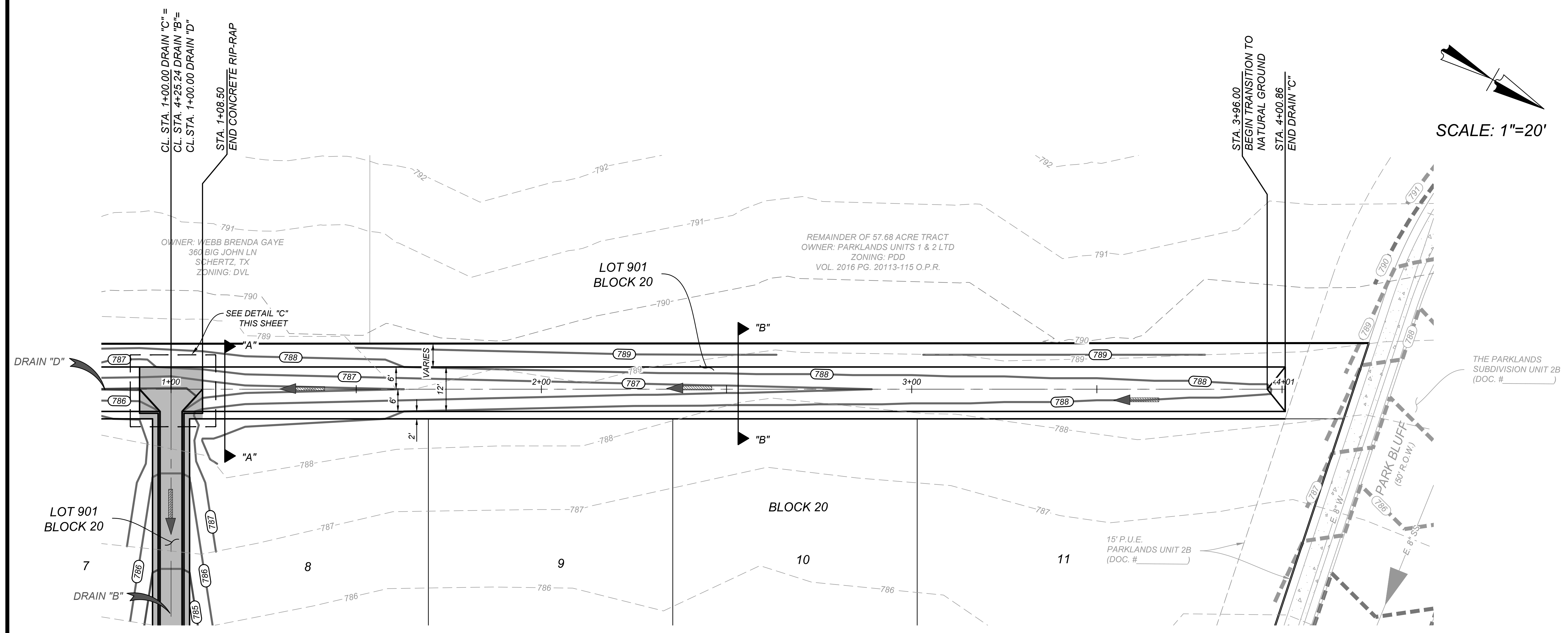
3. ALL DRAINAGE EASEMENTS WILL BE OWNED AND MAINTAINED BY THE DEVELOPER.

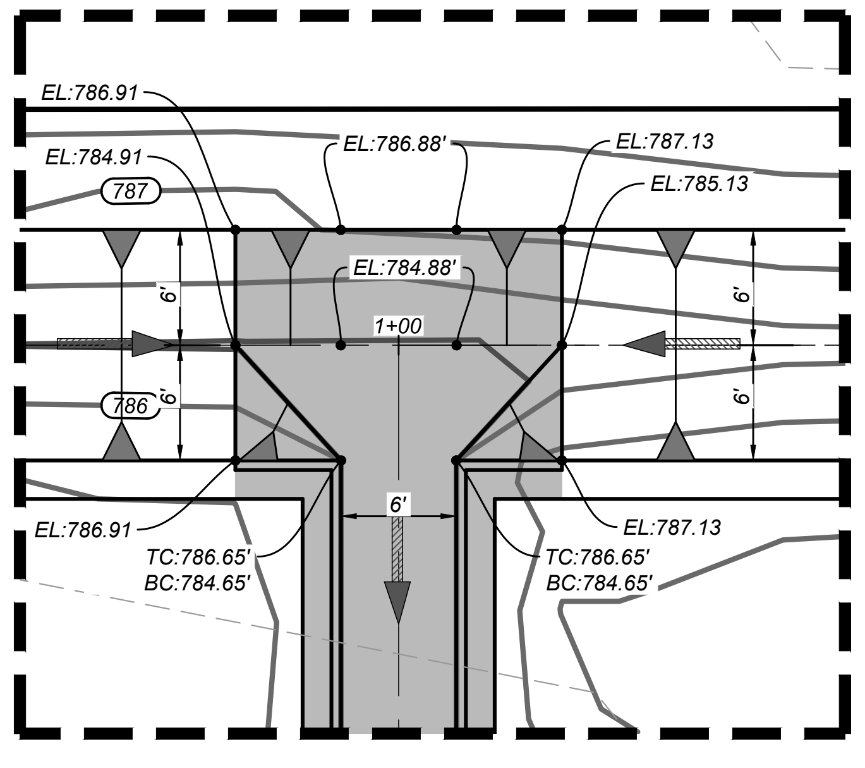
4. ALL EARTHEN CHANNELS MUST NOT EXCEED 3:1 SIDE SLOPES (MAX).

5. ROUGH GRADING, INCLUDING TREE REMOVAL, MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.

LEGEND

- ◄ = FLOW ARROW
- —715— = EXISTING CONTOUR
- (713) = PROPOSED CONTOUR
- (713) = ADJACENT CONTOUR

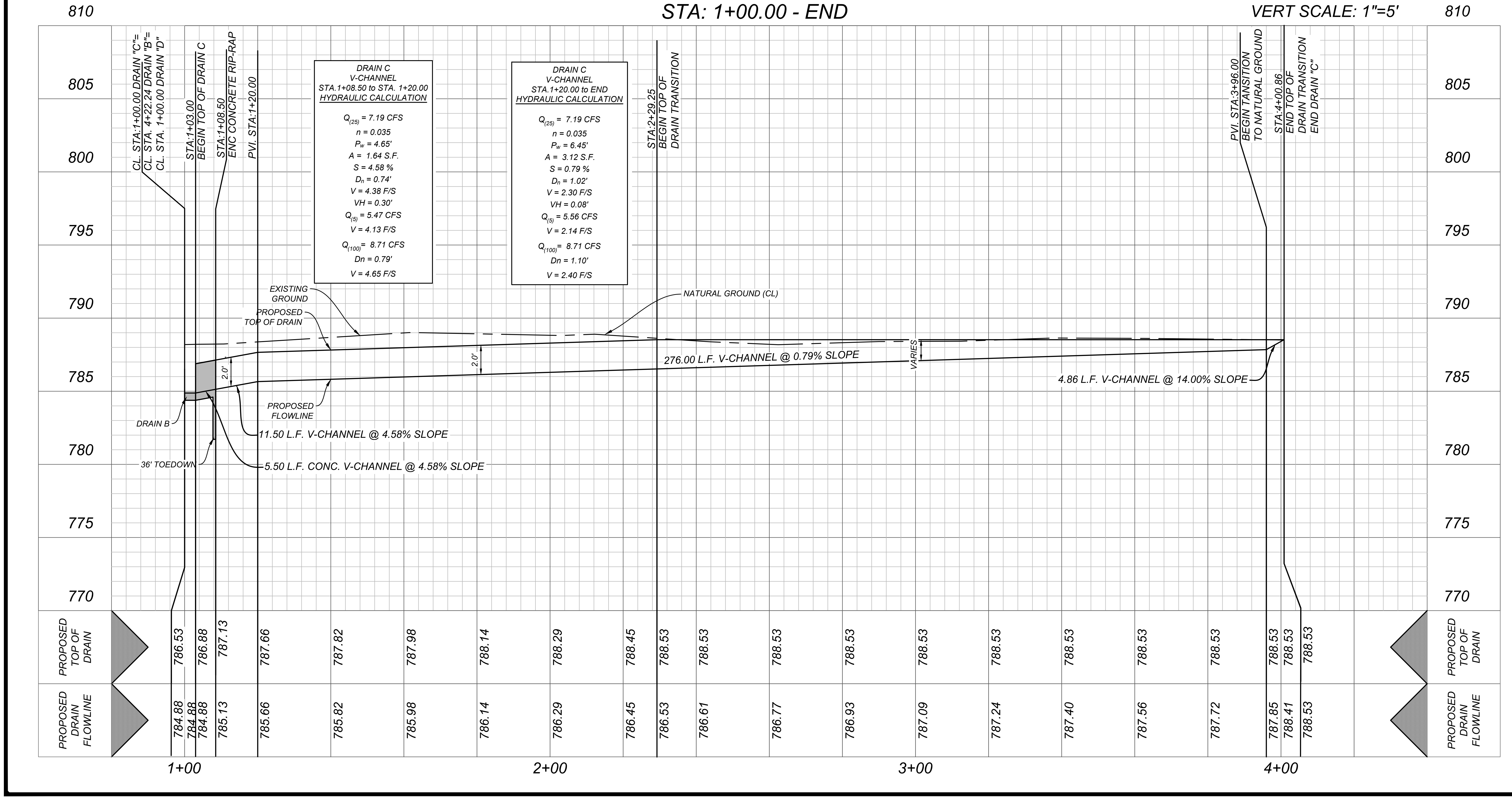




DETAIL "C"
SCALE: 1"=10'

DRAIN "C"
STA: 1+00.00 - END

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

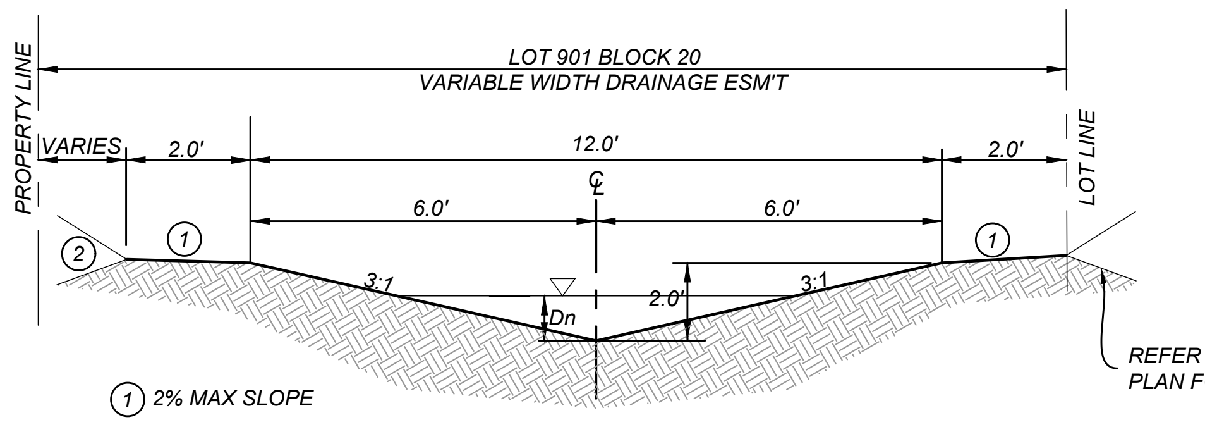


DRAIN C
V-CHANNEL
STA.1+08.50 to STA. 1+20.00
HYDRAULIC CALCULATION

$Q_{(25)}$ = 7.19 CFS
n = 0.035
P_w = 4.65'
A = 1.64 S.F.
S = 4.58 %
D_n = 0.74'
V = 4.38 F/S
VH = 0.30'
$Q_{(5)}$ = 5.47 CFS
V = 4.13 F/S
$Q_{(100)}$ = 8.71 CFS
Dn = 0.79'
V = 4.65 F/S

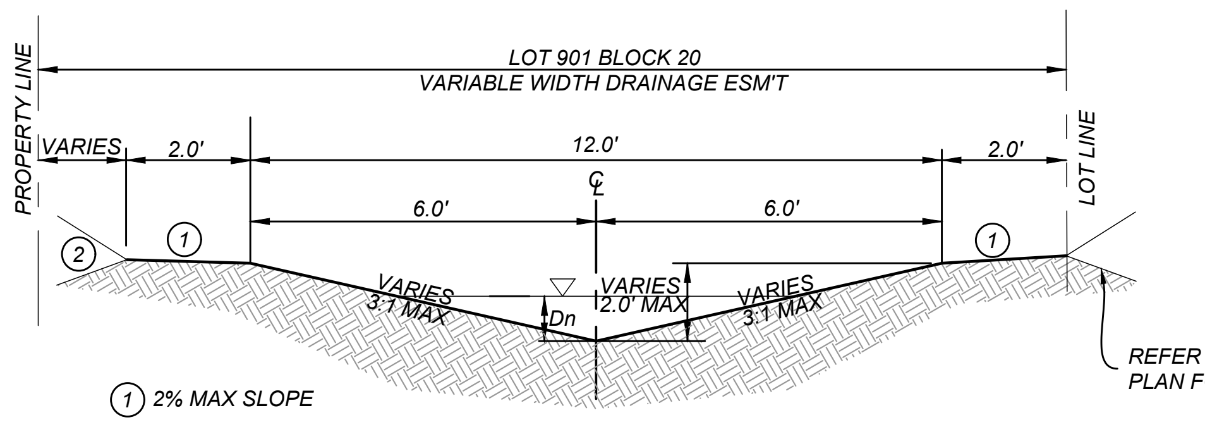
DRAIN C
V-CHANNEL
STA.1+20.00 to END
HYDRAULIC CALCULATION

$Q_{(25)}$ = 7.19 CFS
n = 0.035
P_w = 6.45'
A = 3.12 S.F.
S = 0.79 %
D_n = 1.02'
V = 2.30 F/S
VH = 0.08'
$Q_{(5)}$ = 5.56 CFS
V = 2.14 F/S
$Q_{(100)}$ = 8.71 CFS
Dn = 1.10'
V = 2.40 F/S



① 2% MAX SLOPE
② 3:1 MAX SLOPE

SECTION "A-A"
STA. 1+08.50 TO STA. 2+29.25



① 2% MAX SLOPE
② 3:1 MAX SLOPE

SECTION "B-B"
STA. 2+29.25 TO END

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

REVISIONS
ISSUE DATE

1/10/23
A. NICHOLAS REYNOLDS
111666
Nick Reynolds, P.E.

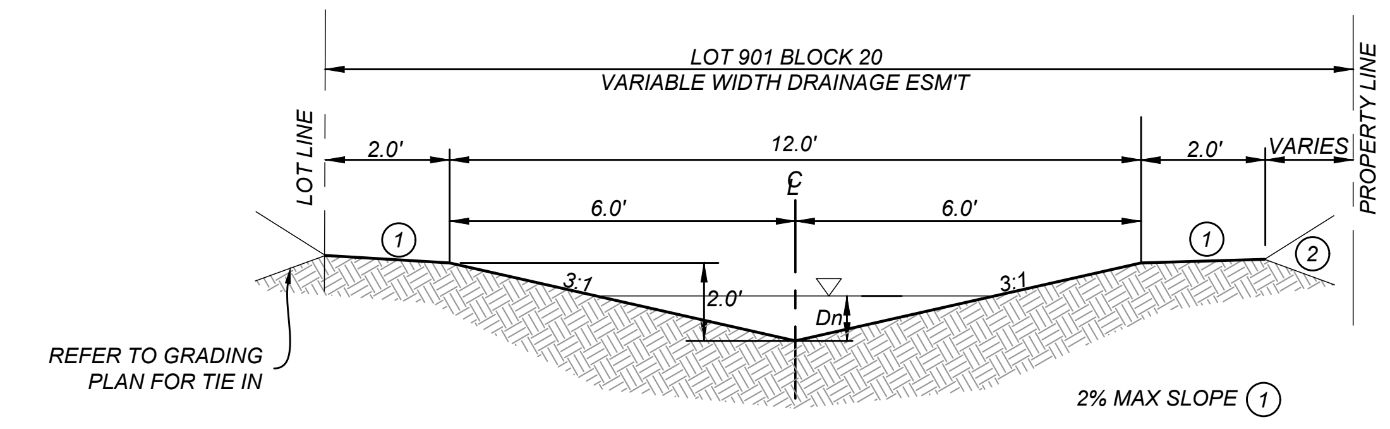
THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

DRAIN C STA. 1+00.00 - END

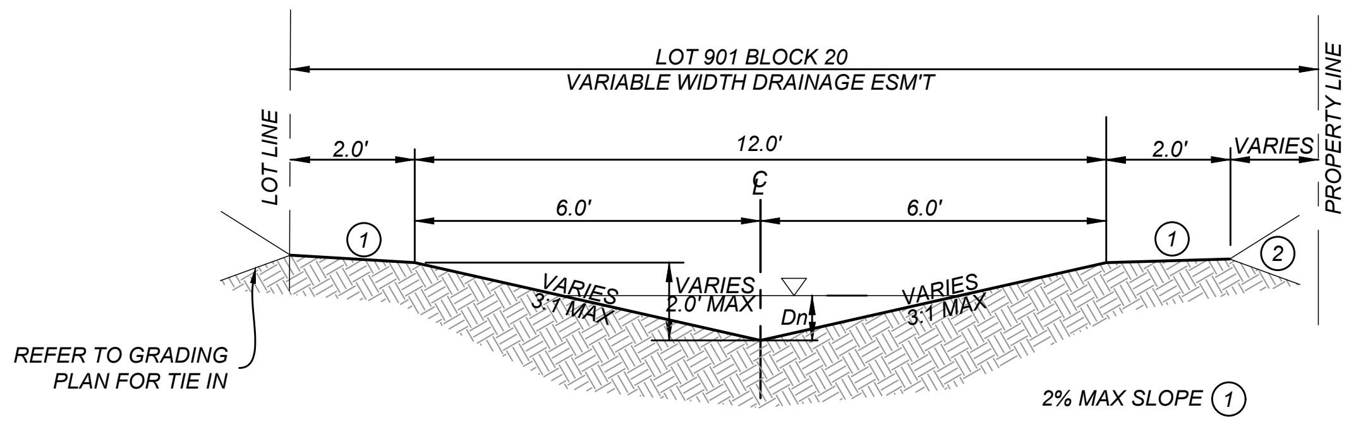
JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

SHEET NUMBER:
4.4

Date: Jan 11, 2023, 8:17am User ID: rwalden
File: U:\Projects\171\23\06\Design\Civil\Drains\DRAIN C STA. 1+00.00 - END.dwg



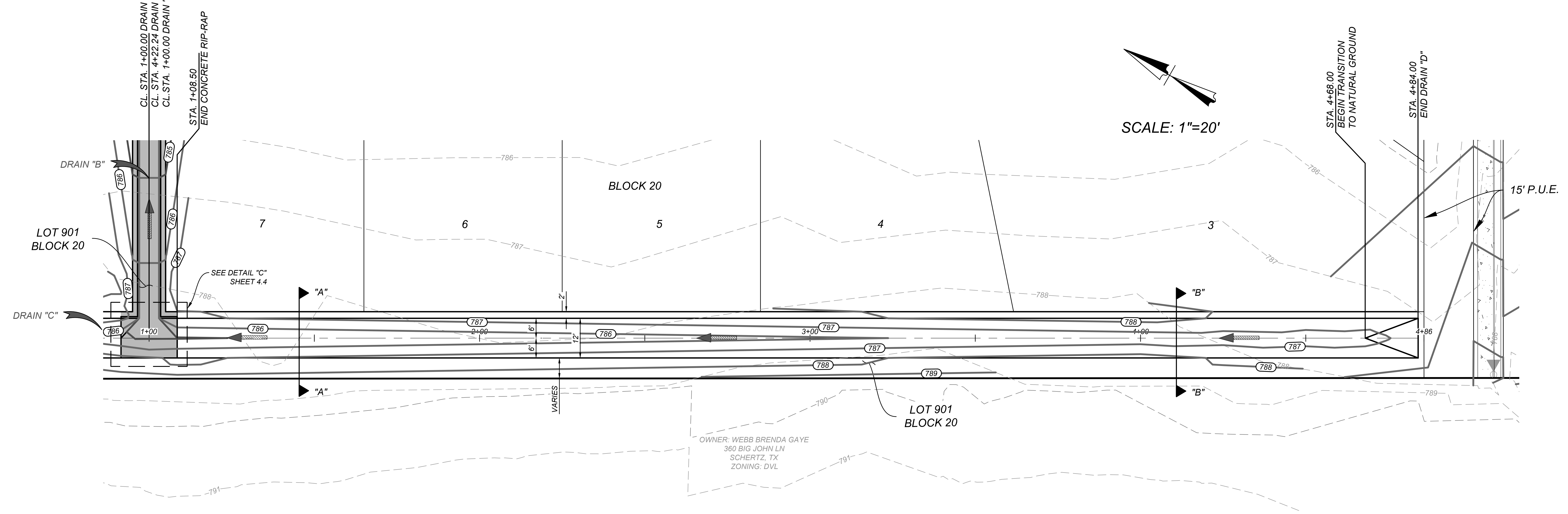
SECTION "A-A"
STA. 1+08.50 TO STA. 4+00.00



SECTION "B-B"
STA. 4+00.00 TO END

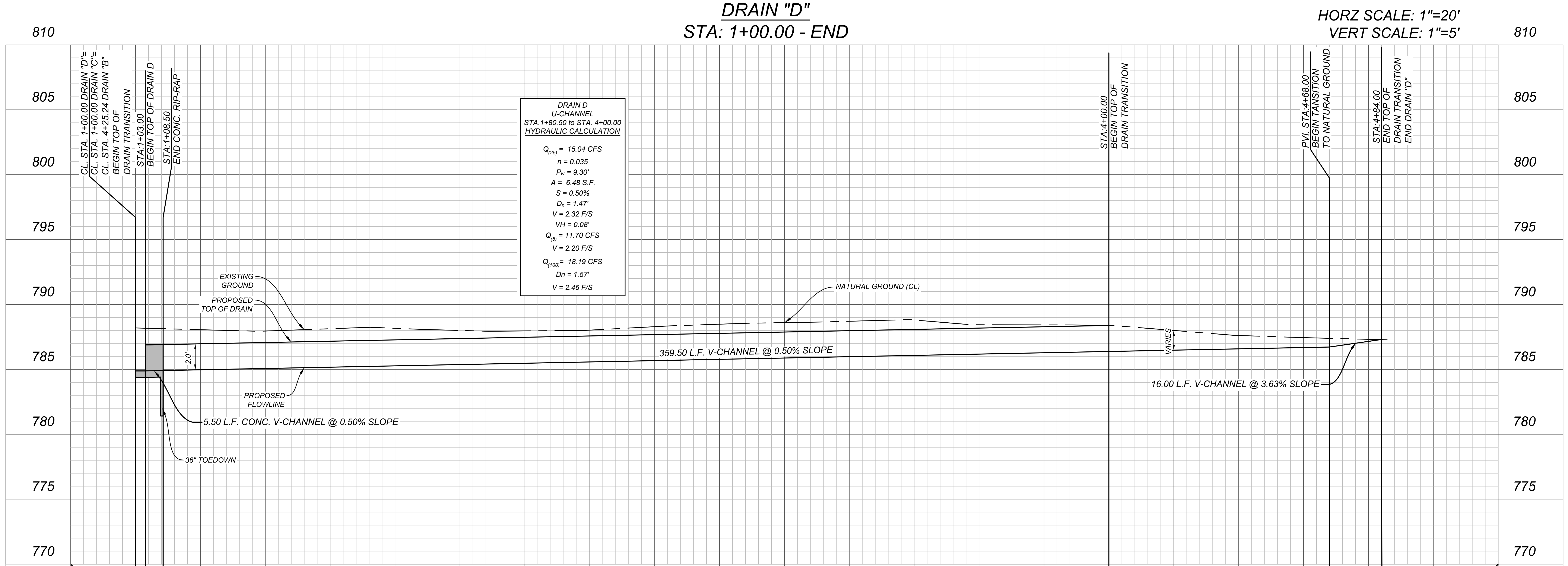
LEGEND

- ◄ = FLOW ARROW
- —715— = EXISTING CONTOUR
- —(713)— = PROPOSED CONTOUR



DRAIN "D"
STA: 1+00.00 - END

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



DRAIN D
U-CHANNEL
STA.1+80.50 to STA. 4+00.00
HYDRAULIC CALCULATION

$Q_{(25)}$ = 15.04 CFS
n = 0.035
P_W = 9.30'
A = 6.48 S.F.
S = 0.50%
D_n = 1.47'
V = 2.32 F/S
VH = 0.08'
$Q_{(5)}$ = 11.70 CFS
V = 2.20 F/S
$Q_{(100)}$ = 18.19 CFS
Dn = 1.57'
V = 2.46 F/S

PROPOSED TOP OF DRAIN		786.88	786.91	786.97	787.07	787.17	787.27	787.37	787.47	787.57	787.67	787.78	787.88	787.98	788.08	788.18	788.28	788.38				787.39		787.30
PROPOSED DRAIN FLOWLINE	784.88	784.88	784.91	784.97	785.07	785.17	785.27	785.37	785.47	785.57	785.67	785.77	785.87	785.98	786.08	786.18	786.28	786.38	786.48	786.58	786.68	786.72	787.16	787.30

1+00 2+00 3+00 4+00 5+00

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ISSUE DATE

REVISIONS

1/10/23
A. NICHOLAS REYNOLDS
111666

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

DRAIN D STA. 1+00.00 - END

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

SHEET NUMBER:
4.5

Date: Jan 11, 2023, 8:26am User ID: rwalden
File: U:\Projects\171\23\06\Design\Civil\Drains\DRAIN D STA. 1+00.00 — END.dwg

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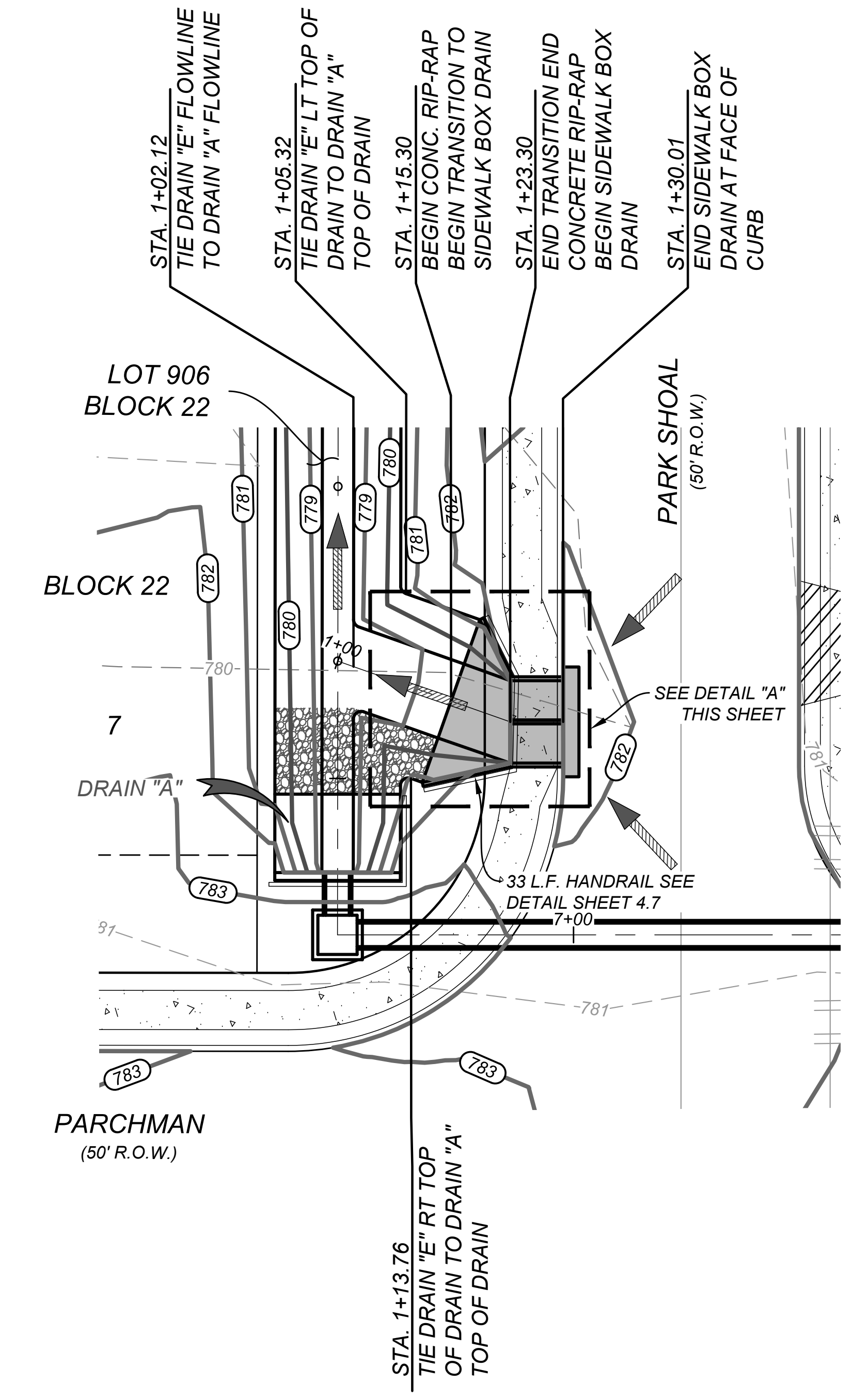
5. *ROUGH GRADING, INCLUDING TREE REMOVAL, MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.*


STA. 1+02.12 TIE DRAIN "E" FLOWLINE TO DRAIN "A" FLOWLINE
STA. 1+05.32 TIE DRAIN "E" LT TOP OF DRAIN TO DRAIN "A" TOP OF DRAIN
STA. 1+15.30 BEGIN CONC. RIP-RAP BEGIN TRANSITION TO SIDEWALK BOX DRAIN
STA. 1+23.30 END TRANSITION END CONCRETE RIP-RAP BEGIN SIDEWALK BOX DRAIN
STA. 1+30.01 END SIDEWALK BOX DRAIN AT FACE OF CURB
LOT 906
BLOCK 22
BLOCK 22
PARK SHOAL
(50' R.O.W.)
7
DRAIN "A"
781
782
780
779
779
780
781
782
782
783
783
783
780
781
1+00
SEE DETAIL "A" THIS SHEET
33 L.F. HANDRAIL SEE DETAIL SHEET 4.7
7+00
PARCHMAN
(50' R.O.W.)
STA. 1+13.76 TIE DRAIN "E" RT TOP OF DRAIN TO DRAIN "A" TOP OF DRAIN

SCALE: 1"=20'

CURB OPENING
HYDRAULIC CALCULATION

$$L = \frac{Q_{25}}{Ch^{3/2}}$$

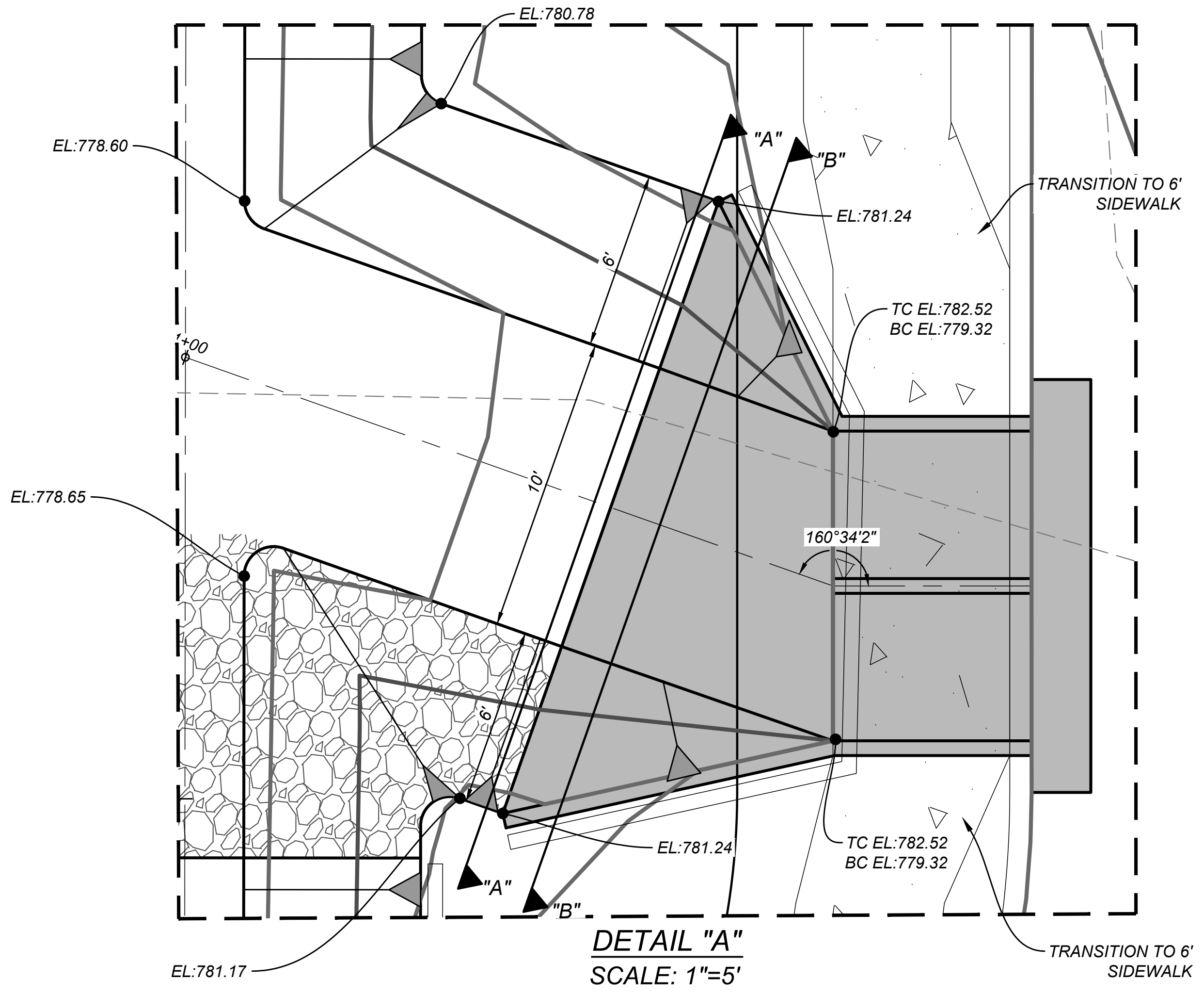
$$L = \frac{18.88\ \text{cfs}}{(3.087)\ (0.79)^{3/2}}$$

$$L = 8.71\ \text{L.F.}$$

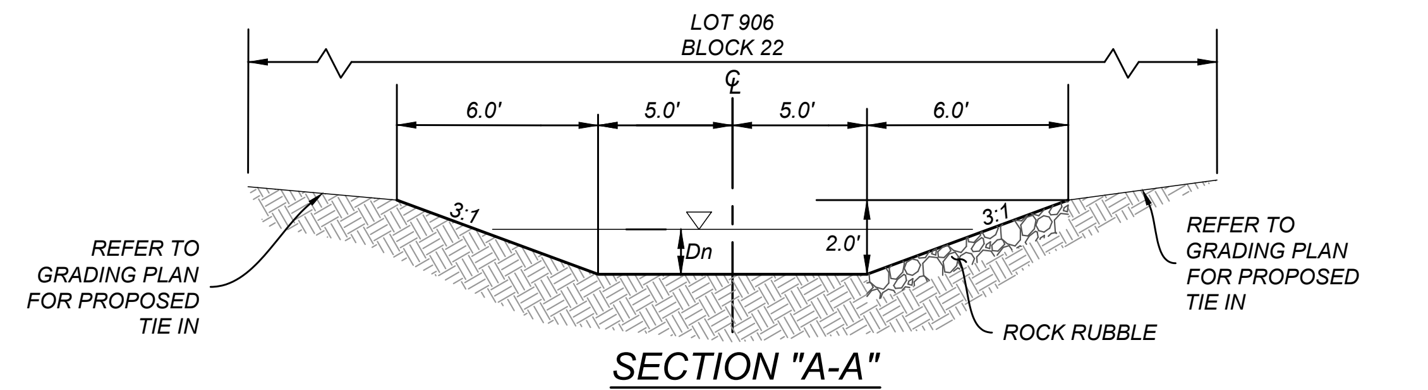
USE 10 L.F. CURB OPENING

LEGEND

◄	=	FLOW ARROW
— — 715 — —	=	EXISTING CONTOUR
—(713)—	=	PROPOSED CONTOUR
● TC:783.13	=	TOP OF CONCRETE ELEVATION
● BC:782.13	=	BOTTOM OF CONCRETE ELEVATION
● EL:783.70	=	ELEVATION



DETAIL "A"
SCALE: 1"=5'


LOT 906
BLOCK 22
6.0'
5.0'
5.0'
6.0'
℄
3:1
3:1
Dn
2.0'
REFER TO GRADING PLAN FOR PROPOSED TIE IN
REFER TO GRADING PLAN FOR PROPOSED TIE IN
ROCK RUBBLE

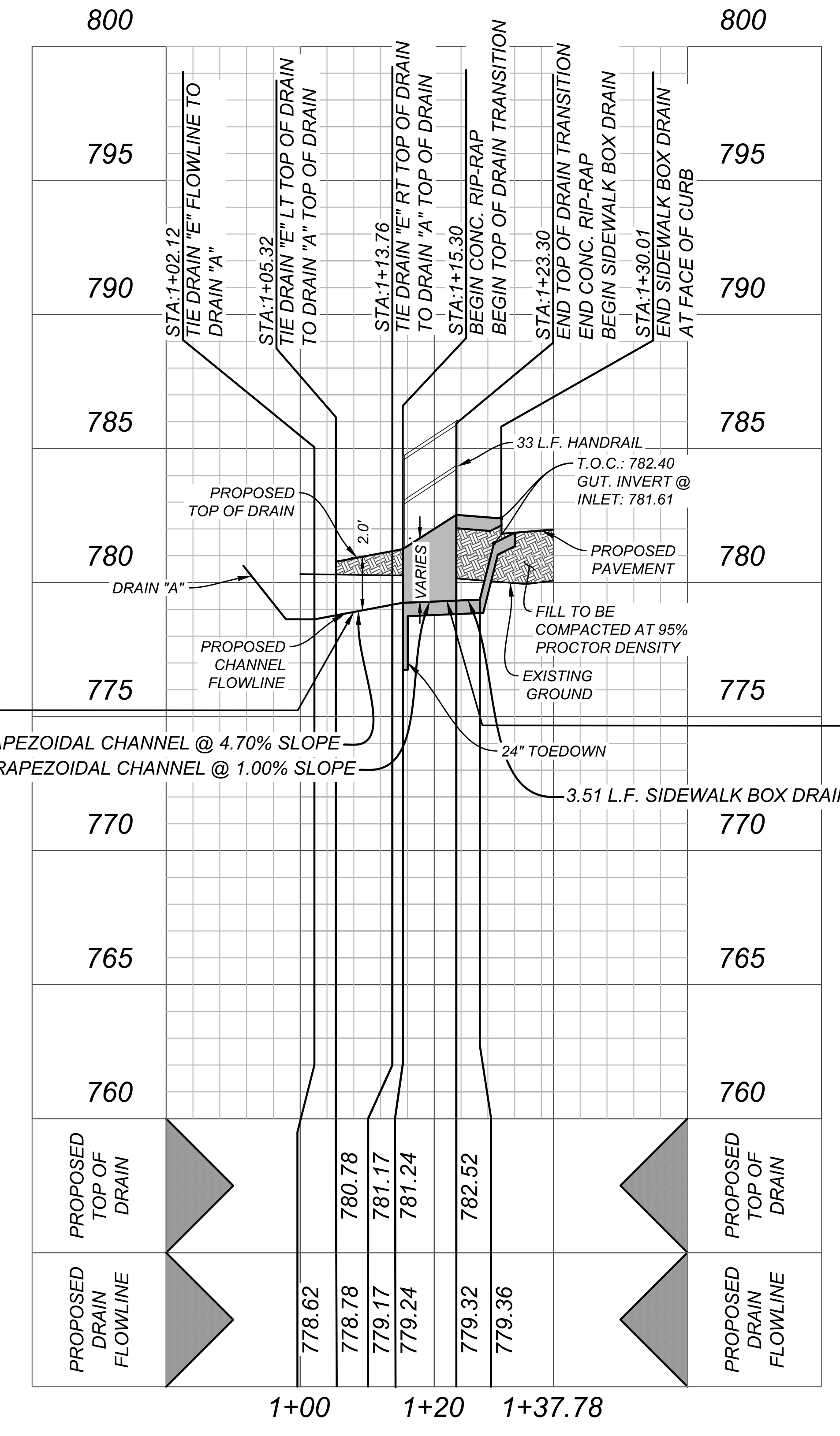
SECTION "A-A"
STA. 1+13.76 TO 1+15.30

DRAIN "E"
STA: 1+00.00 - END

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

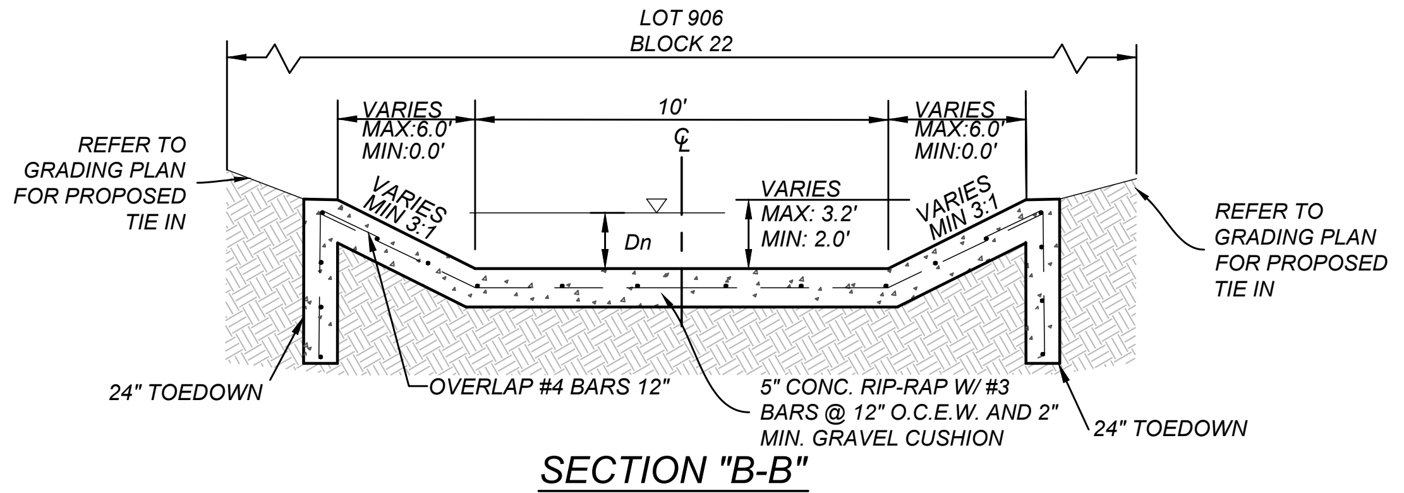
DRAIN E
TRAPEZOIDAL CHANNEL
STA.1+13.76 to 1+15.30
HYDRAULIC CALCULATION

$Q_{(25)}$ = 18.88 CFS
n = 0.035
P_w = 12.40'
A = 4.23 S.F.
S = 4.70 %
D_n = 0.38'
V = 4.46 F/S
VH = 0.31'
$Q_{(5)}$ = 14.90 CFS
V = 4.11 F/S
$Q_{(100)}$ = 22.44 CFS
Dn = 0.42
V = 4.74 F/S

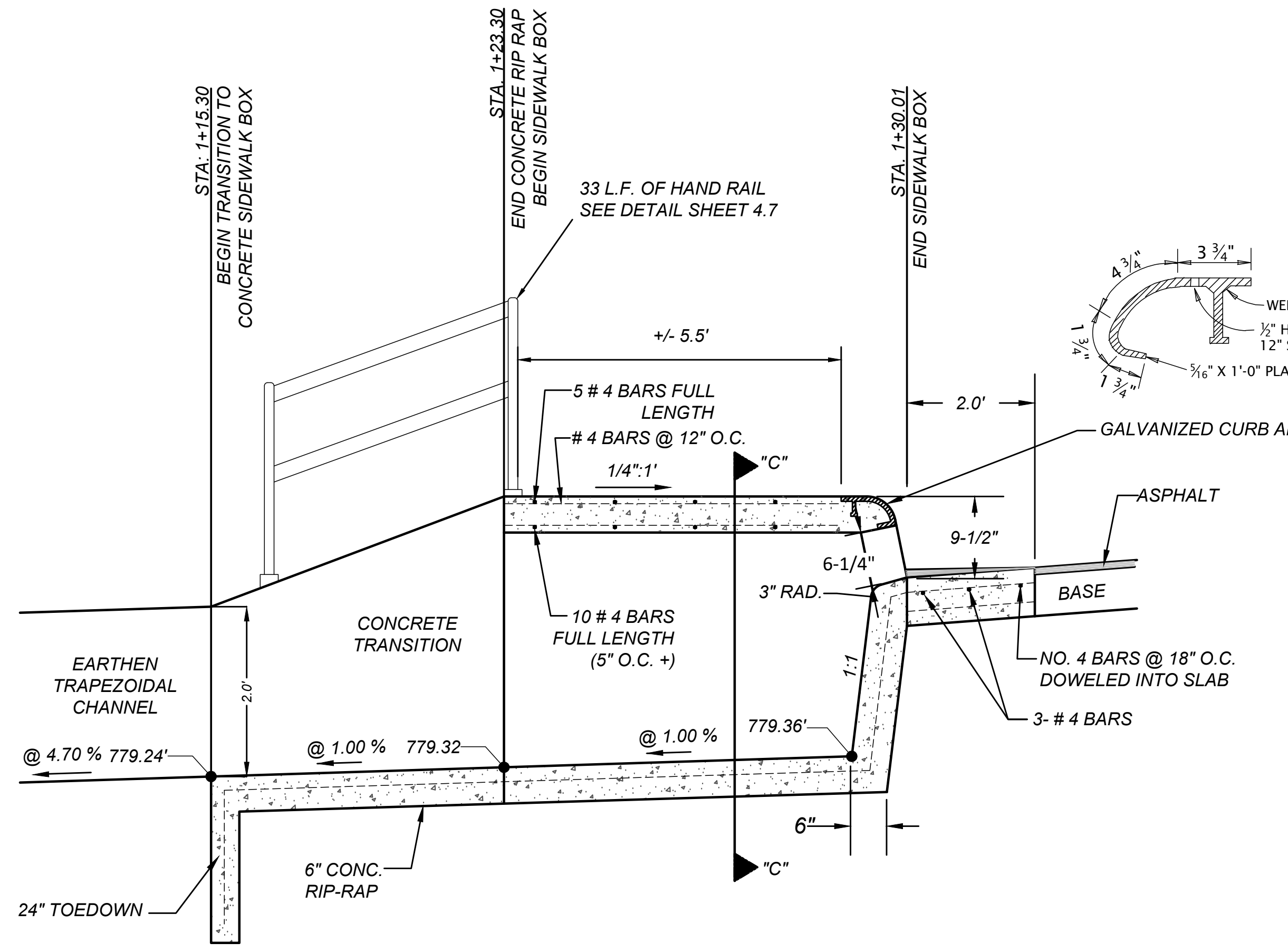

800
795
790
785
780
775
770
765
760
800
795
790
785
780
775
770
765
760
STA:1+02.12 TIE DRAIN "E" FLOWLINE TO DRAIN "A"
STA:1+05.32 TIE DRAIN "E" LT TOP OF DRAIN TO DRAIN "A" TOP OF DRAIN
STA:1+13.76 TIE DRAIN "E" RT TOP OF DRAIN TO DRAIN "A" TOP OF DRAIN
STA:1+15.30 BEGIN CONC. RIP-RAP BEGIN TOP OF DRAIN TRANSITION
STA:1+23.30 END TOP OF DRAIN TRANSITION END CONC. RIP-RAP BEGIN SIDEWALK BOX DRAIN
STA:1+30.01 END SIDEWALK BOX DRAIN AT FACE OF CURB
33 L.F. HANDRAIL
T.O.C.: 782.40 GUT. INVERT @ INLET: 781.61
PROPOSED TOP OF DRAIN
2.0'
VARIES
PROPOSED PAVEMENT
DRAIN "A"
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
PROPOSED CHANNEL FLOWLINE
EXISTING GROUND
24" TOEDOWN
13.18 L.F. TRAPEZOIDAL CHANNEL @ 4.70% SLOPE
8.00 L.F. TRAPEZOIDAL CHANNEL @ 1.00% SLOPE
3.51 L.F. SIDEWALK BOX DRAIN @ 1.00% SLOPE
PROPOSED TOP OF DRAIN
780.78
781.17
781.24
782.52
PROPOSED TOP OF DRAIN
PROPOSED DRAIN FLOWLINE
778.62
778.78
779.17
779.24
779.32
779.36
PROPOSED DRAIN FLOWLINE
1+00
1+20
1+37.78

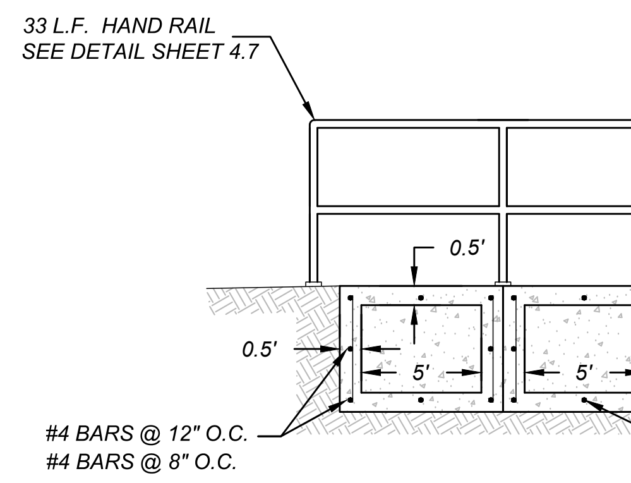
DRAIN E
TRAPEZOIDAL CHANNEL
STA.1+15.30 to 1+23.30
HYDRAULIC CALCULATION

$Q_{(25)}$ = 18.88 CFS
n = 0.015
P_w = 12.34'
A = 4.11 S.F.
S = 1.00 %
D_n = 0.37'
V = 4.59 F/S
VH = 0.33'
$Q_{(5)}$ = 14.90 CFS
V = 4.25 F/S
$Q_{(100)}$ = 22.44 CFS
Dn = 0.41
V = 5.01 F/S


LOT 906
BLOCK 22
10'
VARIES MAX:6.0' MIN:0.0'
VARIES MAX:6.0' MIN:0.0'
℄
VARIES MIN 3:1
VARIES MIN 3:1
VARIES MAX: 3.2' MIN: 2.0'
Dn
REFER TO GRADING PLAN FOR PROPOSED TIE IN
REFER TO GRADING PLAN FOR PROPOSED TIE IN
24" TOEDOWN
OVERLAP #4 BARS 12"
5" CONC. RIP-RAP W/ #3 BARS @ 12" O.C.E.W. AND 2" MIN. GRAVEL CUSHION
24" TOEDOWN

SECTION "B-B"
STA. 1+15.30 TO STA 1+23.30
N.T.S.





SECTION "C-C"
N.T.S.

KFW
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Phone #: (830) 220-6042 • Fax #: (830) 627-9097
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THE PARKLANDS SUBDIVISION - UNIT 3A
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DRAIN E STA. 1+00.00 - END

JOB NO. 171-23-06
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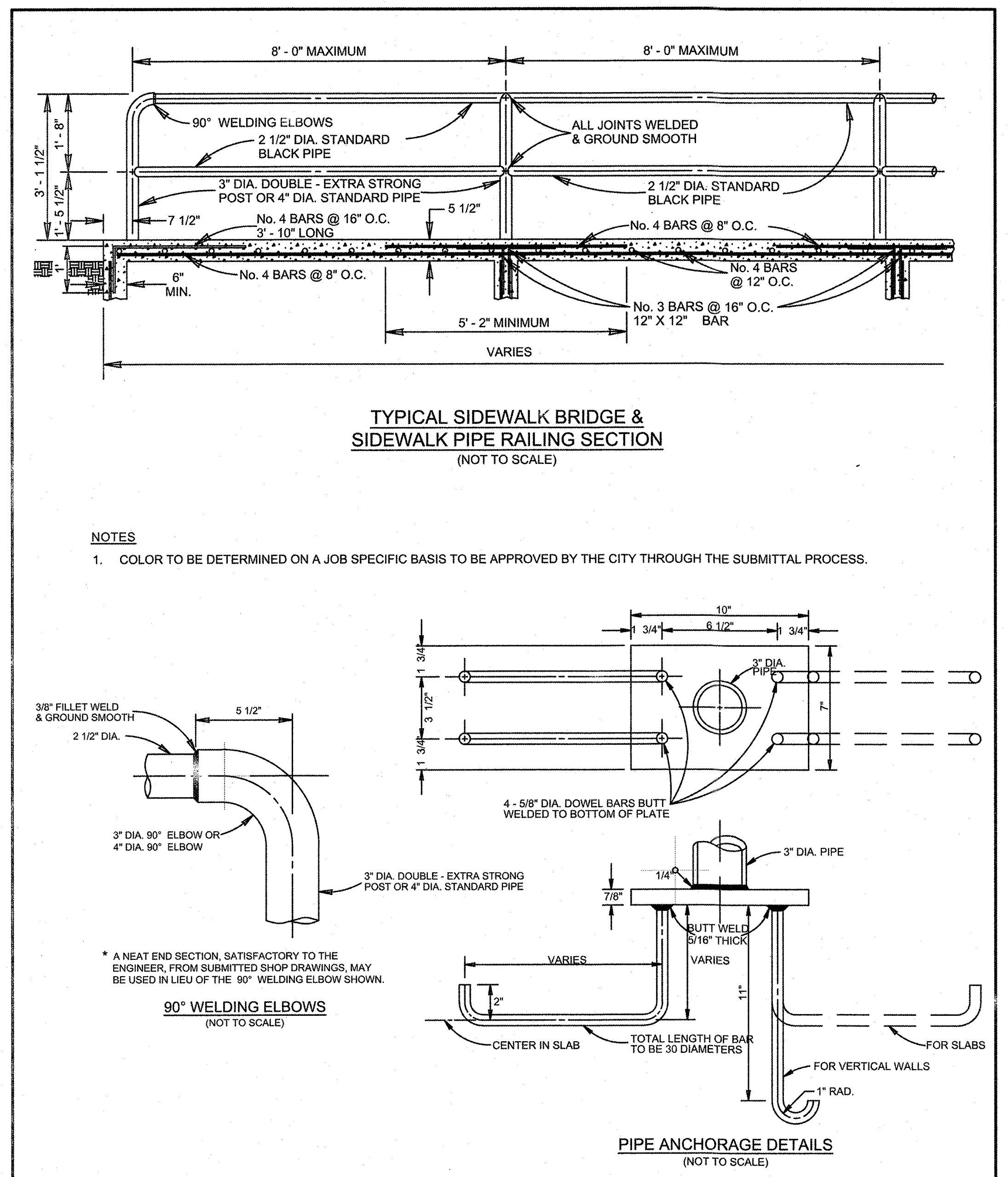
CHECKED: NR

SHEET NUMBER:
4.6

Date: Jan 11, 2023, 8:27am User ID: rwalden
File: U:\Projects\171\23\06\Design\Civil\Drains\DRAIN E STA. 1+00.00 - END.dwg


8' - 0" MAXIMUM
8' - 0" MAXIMUM
90° WELDING ELBOWS
2 1/2" DIA. STANDARD BLACK PIPE
ALL JOINTS WELDED & GROUND SMOOTH
3" DIA. DOUBLE - EXTRA STRONG POST OR 4" DIA. STANDARD PIPE
2 1/2" DIA. STANDARD BLACK PIPE
No. 4 BARS @ 18" O.C.
No. 4 BARS @ 8" O.C.
No. 4 BARS @ 12" O.C.
No. 3 BARS @ 16" O.C. 12" X 12" BAR
5' - 2" MINIMUM
VARIES
3/8" FILLET WELD & GROUND SMOOTH
2 1/2" DIA.
5 1/2"
3" DIA. 90° ELBOW OR 4" DIA. 90° ELBOW
3" DIA. DOUBLE - EXTRA STRONG POST OR 4" DIA. STANDARD PIPE
10"
1 3/4"
6 1/2"
3" DIA. PIPE
7"
4 - 5/8" DIA. DOWEL BARS BUTT WELDED TO BOTTOM OF PLATE
3" DIA. PIPE
1/4"
7/8"
BUTT WELD 5/16" THICK
VARIES
11"
2"
CENTER IN SLAB
TOTAL LENGTH OF BAR TO BE 30 DIAMETERS
FOR SLABS
FOR VERTICAL WALLS
1" RAD.

TYPICAL SIDEWALK BRIDGE & SIDEWALK PIPE RAILING SECTION
(NOT TO SCALE)

NOTES

1. COLOR TO BE DETERMINED ON A JOB SPECIFIC BASIS TO BE APPROVED BY THE CITY THROUGH THE SUBMITTAL PROCESS.

* A NEAT END SECTION, SATISFACTORY TO THE ENGINEER, FROM SUBMITTED SHOP DRAWINGS, MAY BE USED IN LIEU OF THE 90° WELDING ELBOW SHOWN.

90° WELDING ELBOWS
(NOT TO SCALE)

PIPE ANCHORAGE DETAILS
(NOT TO SCALE)

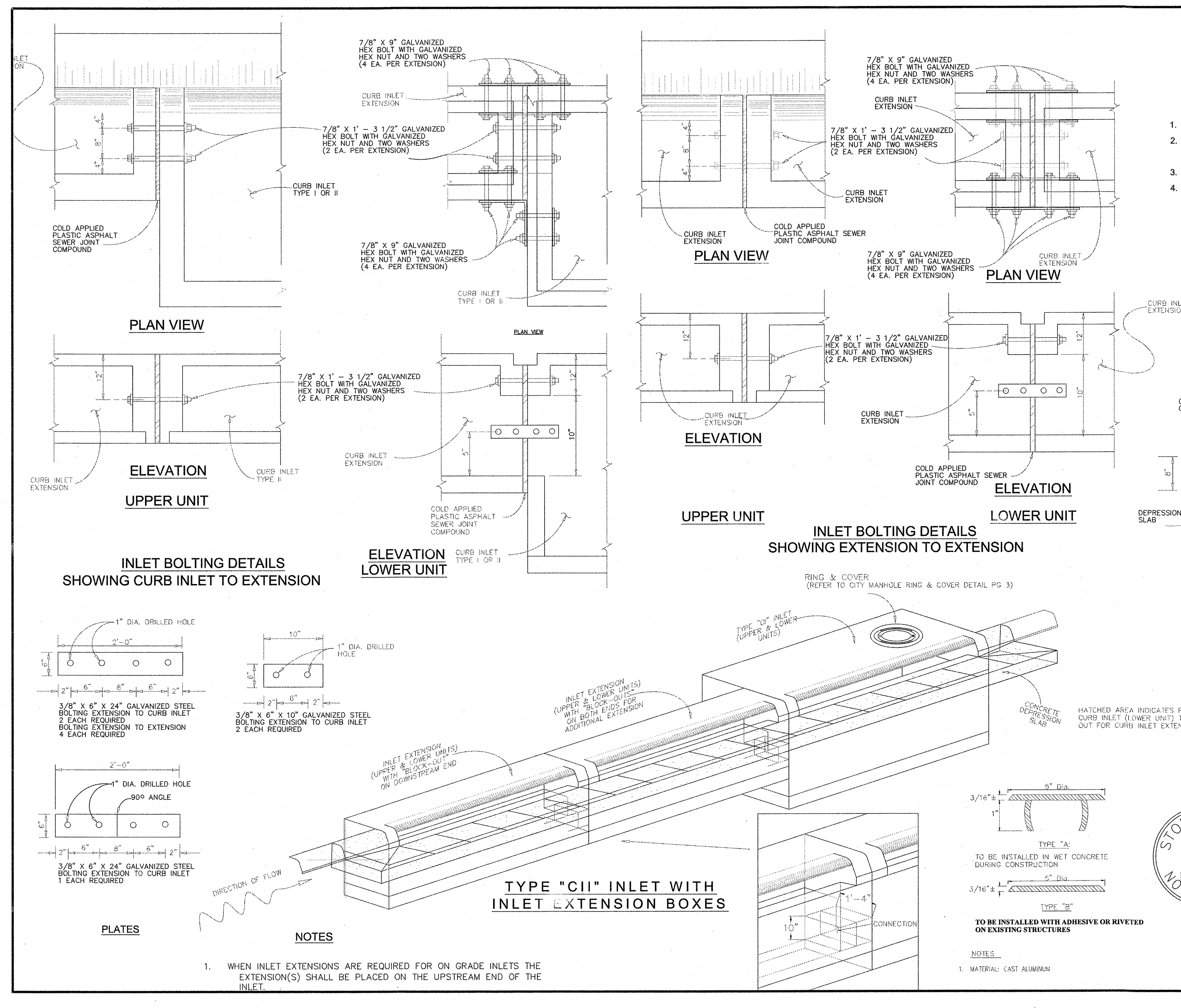
SCHERTZ
COMMUNITY ✶ SERVICE ✶ OPPORTUNITY

PIPE RAILING

TECHNICAL SPECIFICATION SECTION 03200

ENGINEERING AND PUBLIC WORKS

SCALE: N.T.S.		DATE: 6/28/19
DSGN. BY: ENG.	DRAWN BY: BCP	SHEET NO.: 1


7/8" X 9" GALVANIZED HEX BOLT WITH GALVANIZED HEX NUT AND TWO WASHERS (4 EA. PER EXTENSION)
CURB INLET EXTENSION
7/8" X 1' – 3 1/2" GALVANIZED HEX BOLT WITH GALVANIZED HEX NUT AND TWO WASHERS (2 EA. PER EXTENSION)
CURB INLET TYPE I OR II
COLD APPLIED PLASTIC ASPHALT SEWER JOINT COMPOUND
PLAN VIEW
ELEVATION
UPPER UNIT
ELEVATION
LOWER UNIT
PLAN VIEW
ELEVATION
UPPER UNIT
ELEVATION
LOWER UNIT
1" DIA. DRILLED HOLE
3/8" X 6" X 24" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 4 EACH REQUIRED
3/8" X 6" X 10" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 2 EACH REQUIRED
1" DIA. DRILLED HOLE
90° ANGLE
3/8" X 6" X 24" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 1 EACH REQUIRED
PLATES
RING & COVER (REFER TO CITY MANHOLE RING & COVER DETAIL PG 3)
INLET EXTENSION
DIRECTION OF FLOW
CONNECTION
TO BE INSTALLED IN WET CONCRETE DURING CONSTRUCTION
TO BE INSTALLED WITH ADHESIVE OR RIVETED ON EXISTING STRUCTURES
STORM DRAIN NO DUMPING

INLET BOLTING DETAILS SHOWING CURB INLET TO EXTENSION

INLET BOLTING DETAILS SHOWING EXTENSION TO EXTENSION

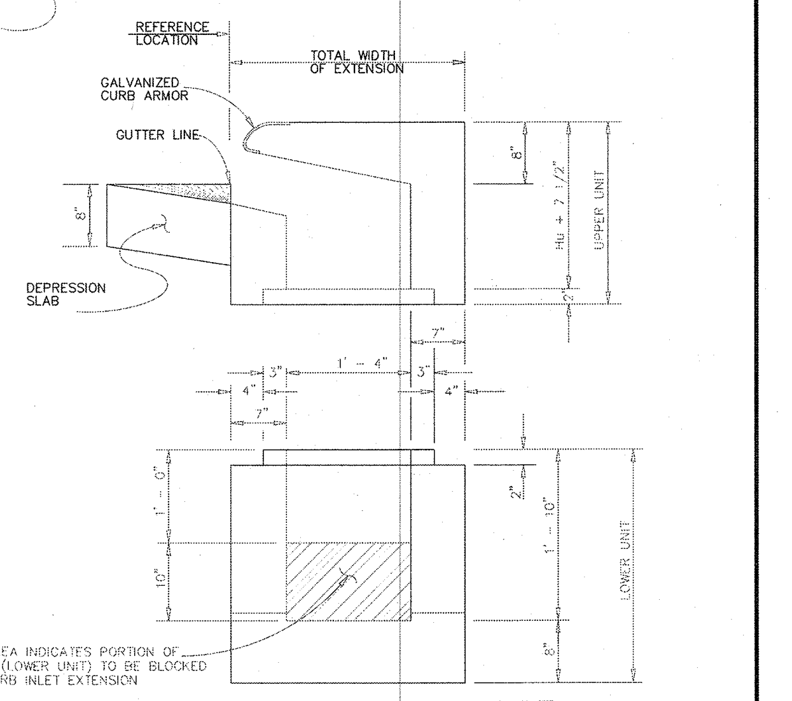
TYPE "CII" INLET WITH INLET EXTENSION BOXES

NOTES

1. WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS THE EXTENSION(S) SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.

NOTE:

1. CURB SEDIMENT INLET PROTECTION TO BE INSTALLED AND MAINTAINED UNTIL ACCEPTED BY THE CITY.
2. THE INLETS SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT SEDIMENT, TRASH OR DEBRI FROM FLOWING INTO THE STORM DRAIN. THIS MAY REQUIRE ADDITIONAL SEDIMENT CONTROL MEASURES.
3. APPROVED CURB INLET MARKERS MUST BE INSTALLED AT ALL INLETS
4. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.



SECTION A-A CURB INLET EXTENSION TYPE E

16-MAY-2019

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS

DRAINAGE INLET DETAIL
N.T.S.

SCHERTZ
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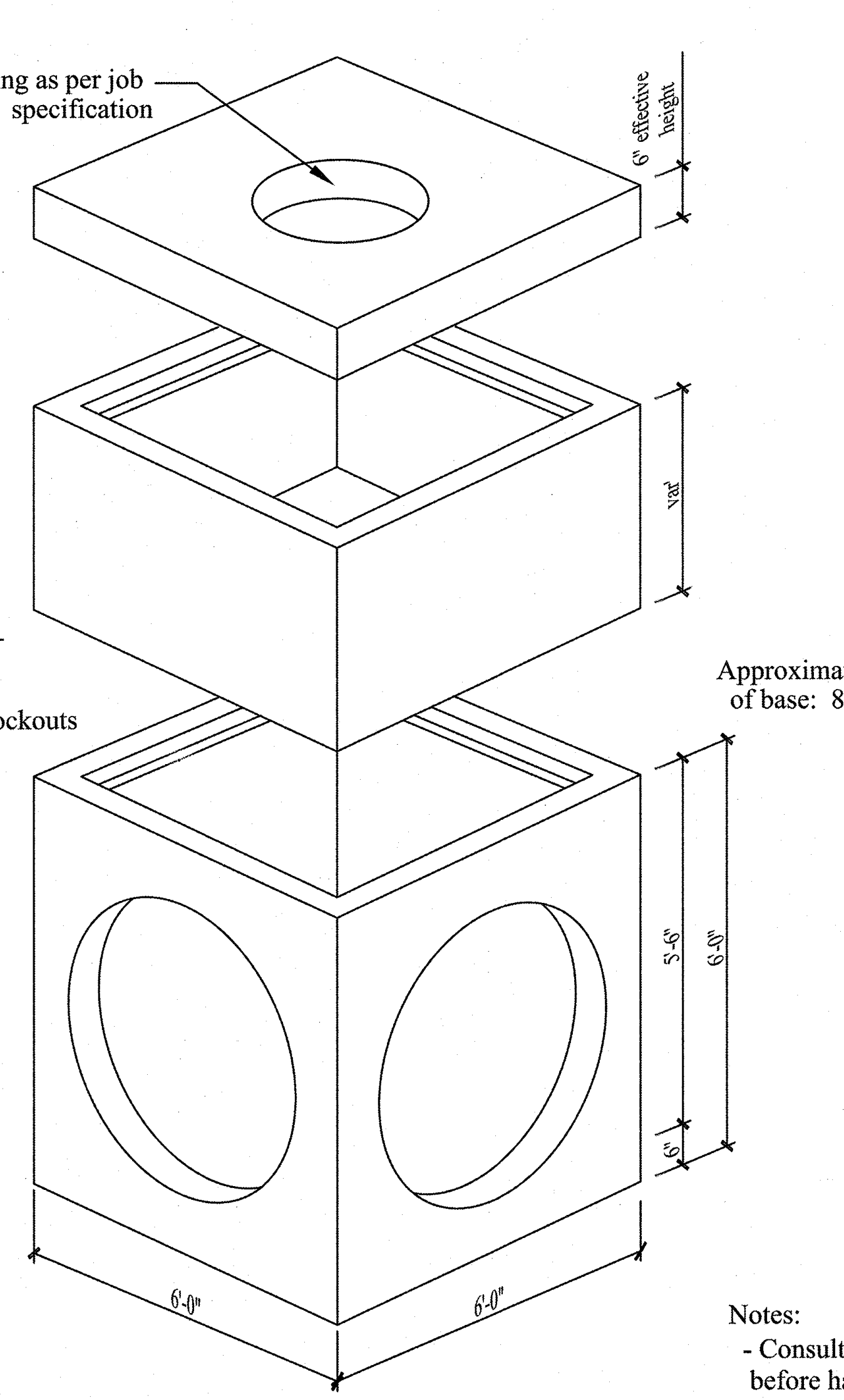
NOTE:
ALL RAMPS AND ANY PROPOSED SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH THE STREET CONSTRUCTION.

5' x 5' x var Junction Box



Bottom Section
6" walls
6" floor
60" dia. thinwall knockouts
all four sides

Approximate weight of base: 8,000 lbs

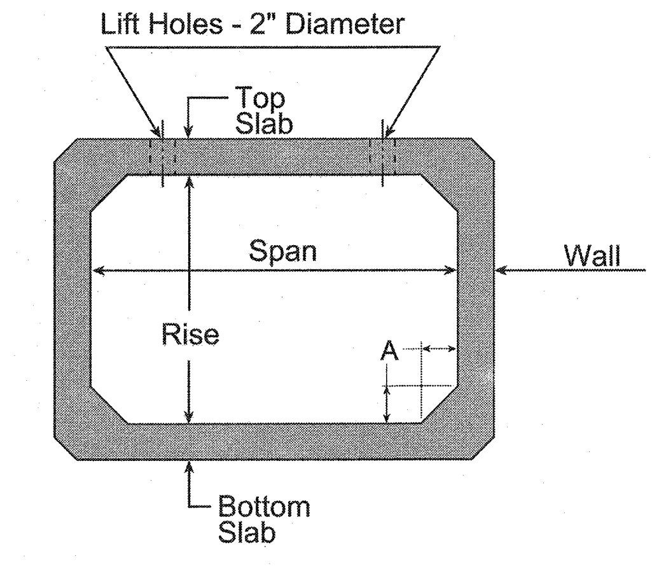
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC.
6905 SOUTH OLD BASTROP HWY
SAN MARCOS, TEXAS 78666
PH. (830) 606-6200

FOR 5' x 5' x var Junction Box			
JOB			
DRAWN RW	DATE 12/1/2015	Rev. No.	SHEET 1 OF 1
FILE catalog/junction boxes/5x5JB			

Precast Box Culverts



Typical Section

Standard Box Dimensions

Span (Ft.)	Rise (Ft.)	Top Slab (In.)	Bottom Slab (In.)	Wall (In.)	Weight (Lbs./ft.)
3	2	7	6	4	848
3	3	7	6	4	952
4	2	7 1/2	6	5	1146
4	3	7 1/2	6	5	1276
4	4	7 1/2	6	5	1405
5	2	8	7	6	1541
5	3	8	7	6	1696
5	4	8	7	6	1851
5	5	8	7	6	2006
6	2	8	7	7	1821
6	3	7	7	7	1870
6	4	7	7	7	2050
6	5	7	7	7	2225
6	6	7	7	7	2400
7	3	8	8	8	2230
7	4	8	8	8	2525
7	5	8	8	8	2725
7	6	8	8	8	2925
7	7	8	8	8	3125

Standard Box Dimensions

Span (Ft.)	Rise (Ft.)	Top Slab (In.)	Bottom Slab (In.)	Wall (In.)	Weight (Lbs./ft.)
8	3	8	8	8	2595
8	4	8	8	8	2795
8	5	8	8	8	2995
8	6	8	8	8	3195
8	7	8	8	8	3395
8	8	8	8	8	3595
9	3	9	9	9	3255
9	4	9	9	9	3425
9	5	9	9	9	3650
9	6	9	9	9	3875
9	7	9	9	9	4100
9	8	9	9	9	4325
9	9	9	9	9	4550
10	3	10	10	10	3870
10	4	10	10	10	4120
10	5	10	10	10	4370
10	6	10	10	10	4620
10	7	10	10	10	4870
10	8	10	10	10	5120
10	9	10	10	10	5370
10	10	10	10	10	5620

Standard Box Dimensions

Span (Ft.)	Rise (Ft.)	Top Slab (In.)	Bottom Slab (In.)	Wall (In.)	Weight (Lbs./ft.)
11	3	11	11	11	4610
11	4	11	11	11	4890
11	5	11	11	11	5160
11	6	11	11	11	5430
11	7	11	11	11	5705
11	8	11	11	11	5980
11	9	11	11	11	6250
11	10	11	11	11	6530
11	11	11	11	11	6805
12	3	12	12	12	5400
12	4	12	12	12	5700
12	5	12	12	12	6000
12	6	12	12	12	6300
12	7	12	12	12	6600
12	8	12	12	12	6900
12	9	12	12	12	7200
12	10	12	12	12	7500
12	11	12	12	12	7800
12	12	12	12	12	8100

Note: (a.) A = 12" (West Memphis plant) or 8" (Ft. Smith plant).
(b.) Contact manufacturer for standard joint lengths.

-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION.PAGE	DATE
Reinforced Concrete Precast Box Section		AR	5.2	2-1-05

FORTERRA

TABLE OF DIMENSIONS & REINFORCING STEEL
(Wings for One Structure End)

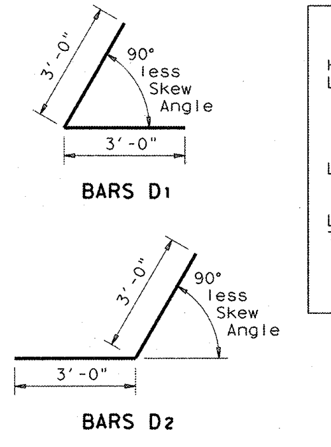
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities ④ per ft of wing (2~Wings) Reinf (Lb/Ft)	Estimated Quantities ④ per ft of wing (2~Wings) Conc (CY/Ft)	Estimated Quantities per ft of Toewall (1~Toewall) Reinf (Lb/Ft)	Estimated Quantities per ft of Toewall (1~Toewall) Conc (CY/Ft)
2'-6"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'- 2"	1'- 2"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'- 2"	1'- 2"	1'- 0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'- 9"	1'- 7"	1'- 2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'- 9"	1'- 7"	1'- 2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'- 4"	2'- 0"	1'- 4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'- 4"	2'- 0"	1'- 4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'- 0"	2'- 3"	1'- 9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'- 0"	2'- 3"	1'- 9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'- 6"	2'- 8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'- 6"	2'- 8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-6"	6'- 0"	2'-10"	2'- 2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'- 5"	3'- 0"	2'- 5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'- 2"	3'- 6"	2'- 8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'- 8"	3'- 9"	2'-11"	1'- 0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'- 2"	4'- 0"	3'- 2"	1'- 2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'- 5"	3'- 5"	1'- 4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'- 6"	4'-10"	3'- 8"	1'- 6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'- 0"	3'-11"	1'- 7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

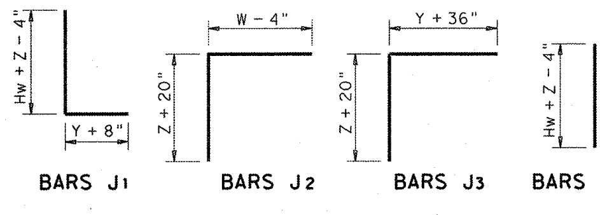
TABLE OF WINGWALL REINFORCING (2~Wings)

Bar	Size	No.	Spa
D_1	#6	~	1'-0"
D_2	#6	~	1'-0"
E_1	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	8"
M_1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No	Spa
J_3	#4	~	1'-0"
M_2	#4	2	~
E_2	#4	~	1'-0"





WING DIMENSION CALCULATIONS:

Formulas: (All values are in Feet)

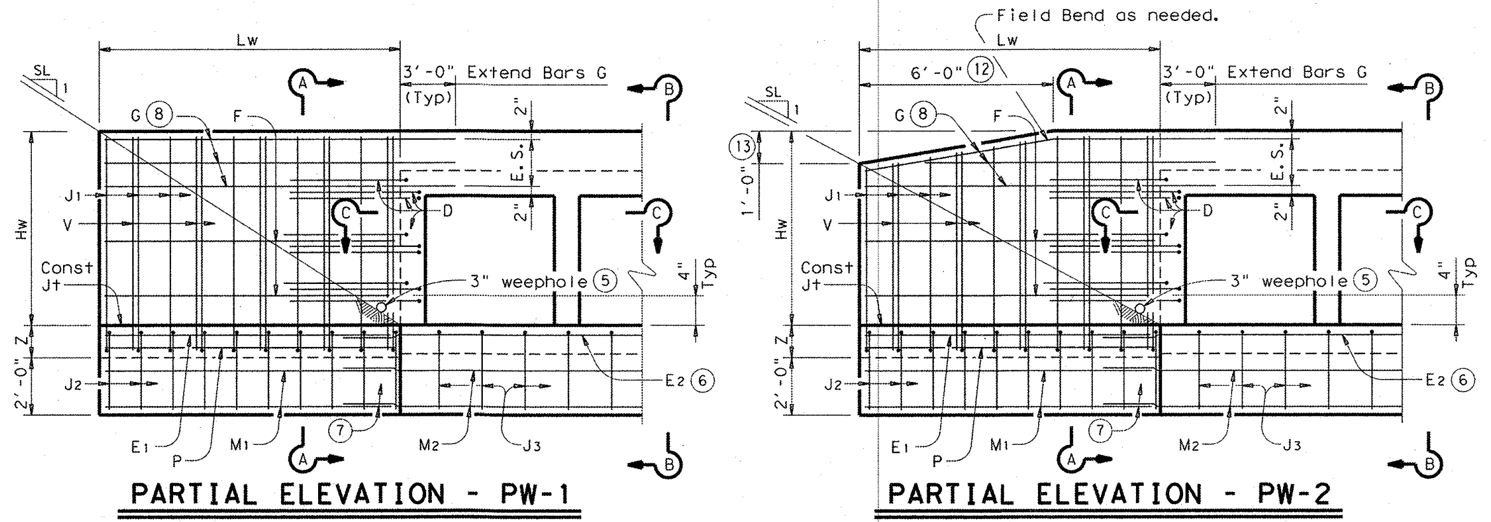
Hw = H + T + C
Lw = (Hw) (SL) ÷ Cosine θ for Ty PW-1
= (Hw - 1') (SL) ÷ Cosine θ for Ty PW-2 and Hw ≥ 4'
= (Hw - 0.5') (SL) ÷ Cosine θ for Ty PW-2 and Hw < 4'

For Cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (U)] ÷ Cosine θ

For Precast culverts:
Ltw = [(N) (2 U + S) + (N - 1) (0.5')] ÷ Cosine θ
Total Wingwall Area (Two Wings ~ SF)
= (2)(Hw)(Lw) for Ty PW-1
= (2)(Hw)(Lw) - 6 SF for Ty PW-2 and Hw ≥ 4'
= (2)(Hw)(Lw) - 1.5 SF for Ty PW-2 and Hw < 4'

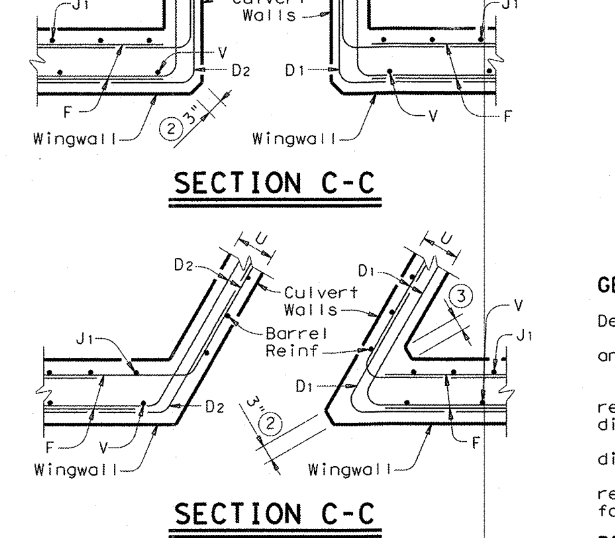
Hw = Height of Wingwall
Lw = Length of Wingwall
Ltw = Culvert Toewall Length
N = Number of Culvert Spans
SL:1 = Channel Slope ratio. (Horizontal: 1 Vertical, Usual value is 2:1)
θ = Culvert Skew

See applicable box culvert standard for S, H, T and U values.

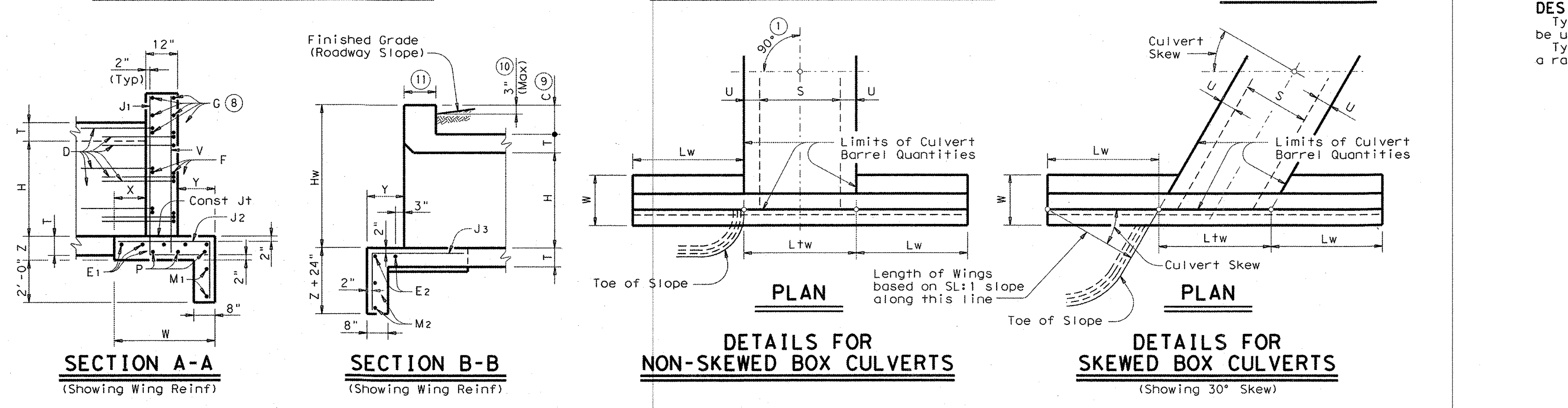


PARTIAL ELEVATION - PW-1

PARTIAL ELEVATION - PW-2



SECTION C-C


12"
2" (Typ)
J1
G ⑧
D
V
F
X
Y
T
H
Const Jt
J2
Z
2'-0"
E1
P
M1
2"
8"
W
Finished Grade (Roadway Slope)
⑪
⑩ 3" (Max)
⑨ C
Hw
Y
3"
J3
2"
Z + 24"
E2
M2
8"
T
H
① 90°
U
S
U
Lw
Limits of Culvert Barrel Quantities
W
Ltw
Lw
Toe of Slope
Length of Wings based on SL:1 slope along this line
Culvert Skew
Limits of Culvert Barrel Quantities
Culvert Skew
Toe of Slope

SECTION A-A
(Showing Wing Reinf)

SECTION B-B
(Showing Wing Reinf)

PLAN

DETAILS FOR NON-SKEWED BOX CULVERTS

PLAN

DETAILS FOR SKEWED BOX CULVERTS
(Showing 30° Skew)

① Skew Angle = 0°

② At discharge end, chamfer may be ¾".

③ For 15° Skew ~ 1"
For 30° Skew ~ 2"
For 45° Skew ~ 3"

④ Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.

⑤ Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.

⑥ Extend Bars E_2 1'-6" minimum into the wingwall footing.

⑦ Lap Bars M_1 1'-6" minimum with Bars M_2.

⑧ Bars G equally spaced at 8" maximum, place as shown. Provide at least two pair Bars G per wing.

⑨ 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.

⑩ For vehicle safety, the following requirements must be met:
- For structures without bridge rail, curbs cannot project more than 3" above finished grade.
- For structures with bridge rail, build curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

⑪ 1'-0" typical. 2'-0" typical when RAC standard is referenced elsewhere in the plans.

⑫ 3'-0" for Hw < 4'.

⑬ 6" for Hw < 4'.

GENERAL NOTES:

Designed in accordance with AASHTO LRFD Bridge Design Specifications.

Provide Class "C" Concrete (f'c = 3,600 psi Min) and Grade 60 reinforcing steel.

Provide 1 ¼" Min clear cover to reinforcing steel.

Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.

See BCS sheet for wingwall type and additional dimensions and information.

The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

DESIGNER NOTES:

Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.

Type PW-2 can only be used for applications without a railing mounted to the wingwall.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

Texas Department of Transportation | Bridge Division Standard

CONCRETE WINGWALLS
WITH PARALLEL WINGS FOR
BOX CULVERTS
TYPES PW-1 AND PW-2

PW

FILE: pw1stde1.dgn | DN: GAF | CK: CAT | DW: TxDOT | CK: GAF
©TxDOT February 2012
11-10: Reinforcing
01-12: PW-1 & PW-2

DATE:
FILE:

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

1/26/22

A. NICHOLAS REYNOLDS
111666

Nick Reynolds, P.E.

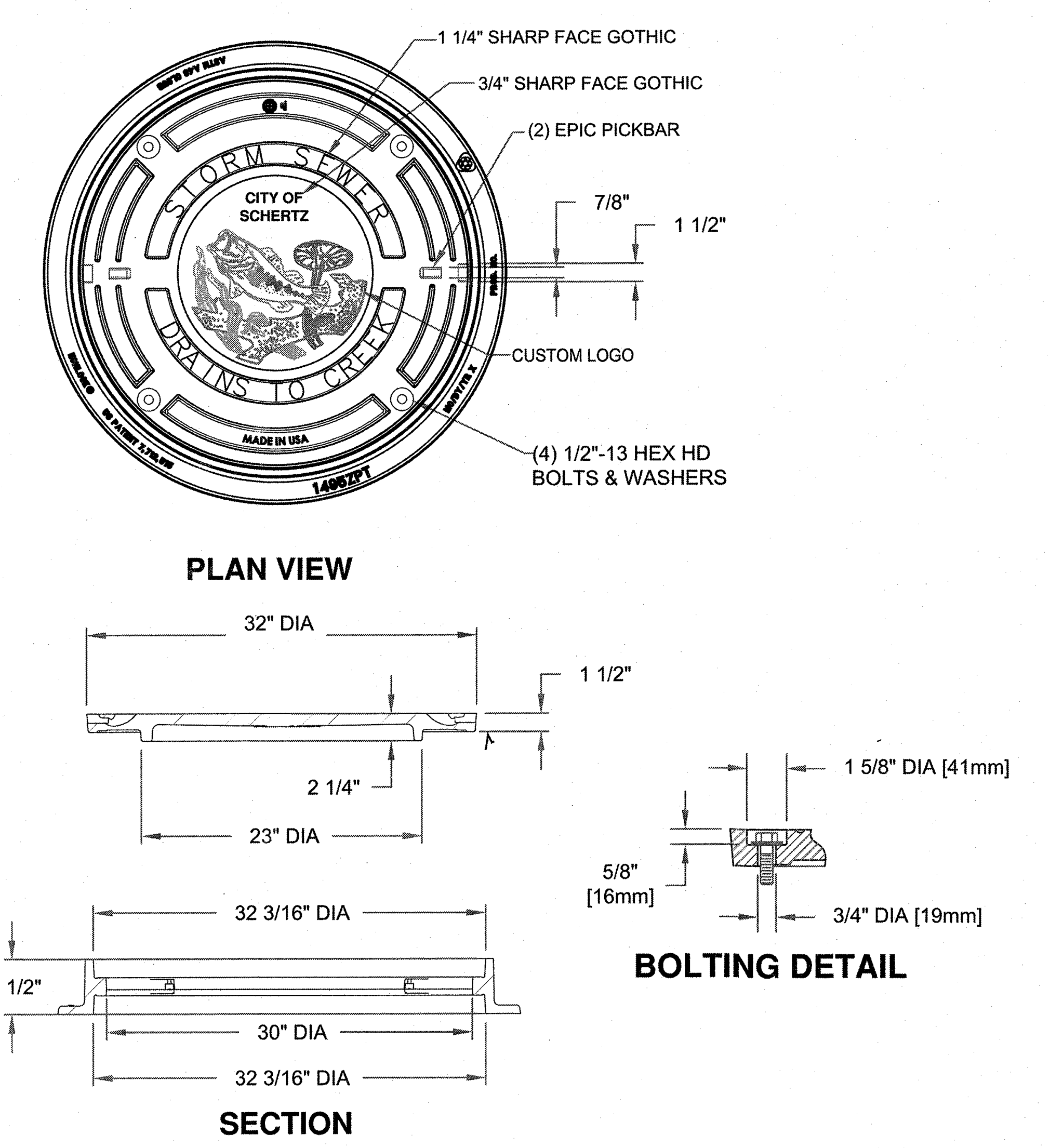
THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

DRAIN DETAILS

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
4.7

Date: Aug 03, 2021, 2:54pm User ID: tvater
File: U:\Projects\171\23\06\Design\Civil\Drains\DRAIN DETAILS.dwg



PLAN VIEW

SECTION

BOLTING DETAIL

NOTE: FRAME IS REVERSIBLE CAN BE INSTALLED AS TOP OR BOTTOM FLANGE UNIT.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

STORM SEWER MANHOLE
RING & COVER

TECHNICAL SPECIFICATION SECTION 02081

ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DATE: 5/10/19
DSGN. BY: ENG. | DRAWN BY: BCP | SHEET NO.: 1 of 2

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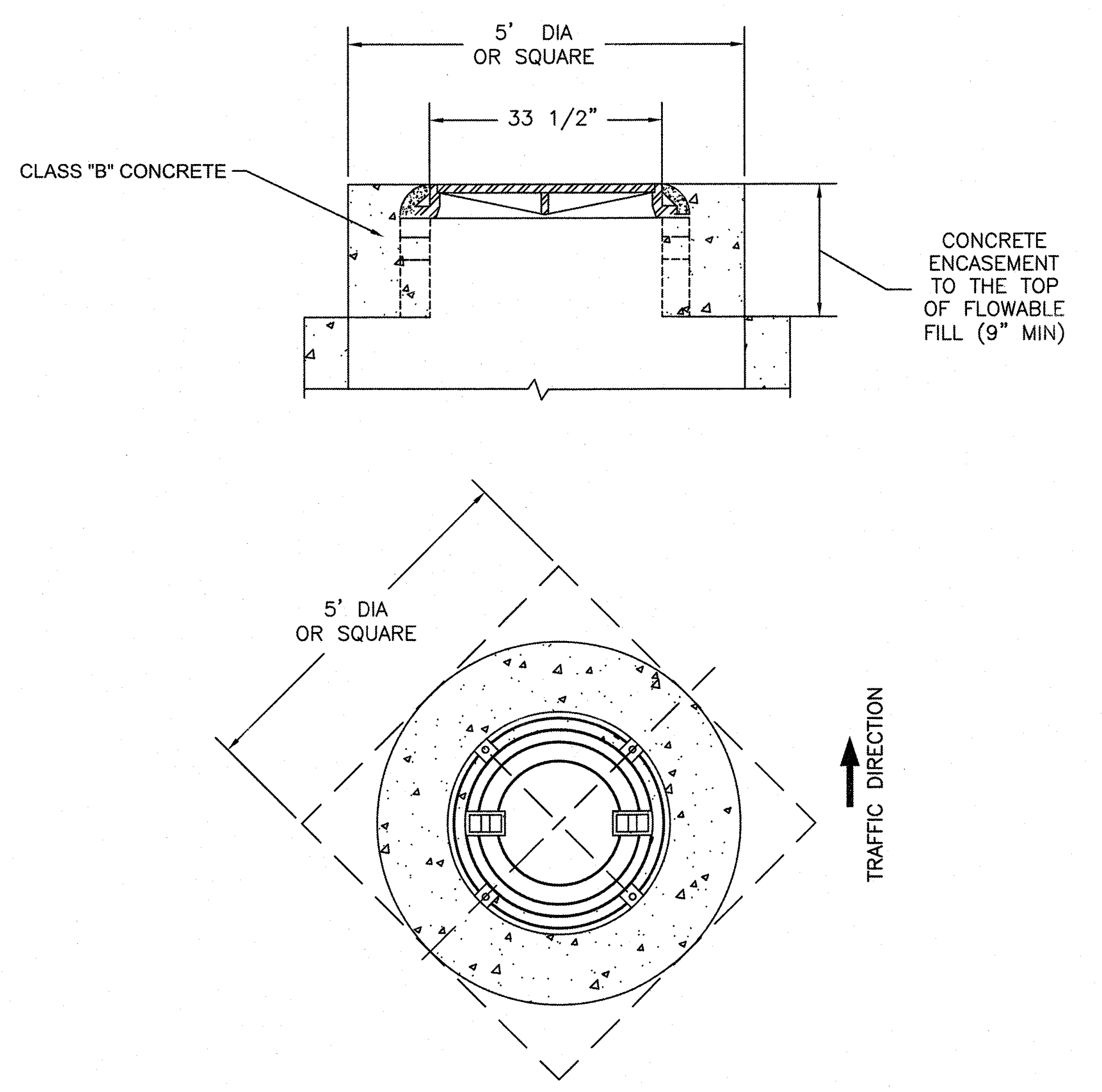

NOTE:
1. MANHOLE RING ENCASEMENT IS REQUIRED ON ALL MANHOLES.
2. PAYMENT FOR MANHOLE RING ENCASEMENT SHALL BE INCLUDED IN THE COST OF THE MANHOLE

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

MANHOLE RING ENCASEMENT

TECHNICAL SPECIFICATION SECTION 02081 & 02082

ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DATE: 5/10/19
DSGN. BY: ENG. | DRAWN BY: BCP | SHEET NO.: 1

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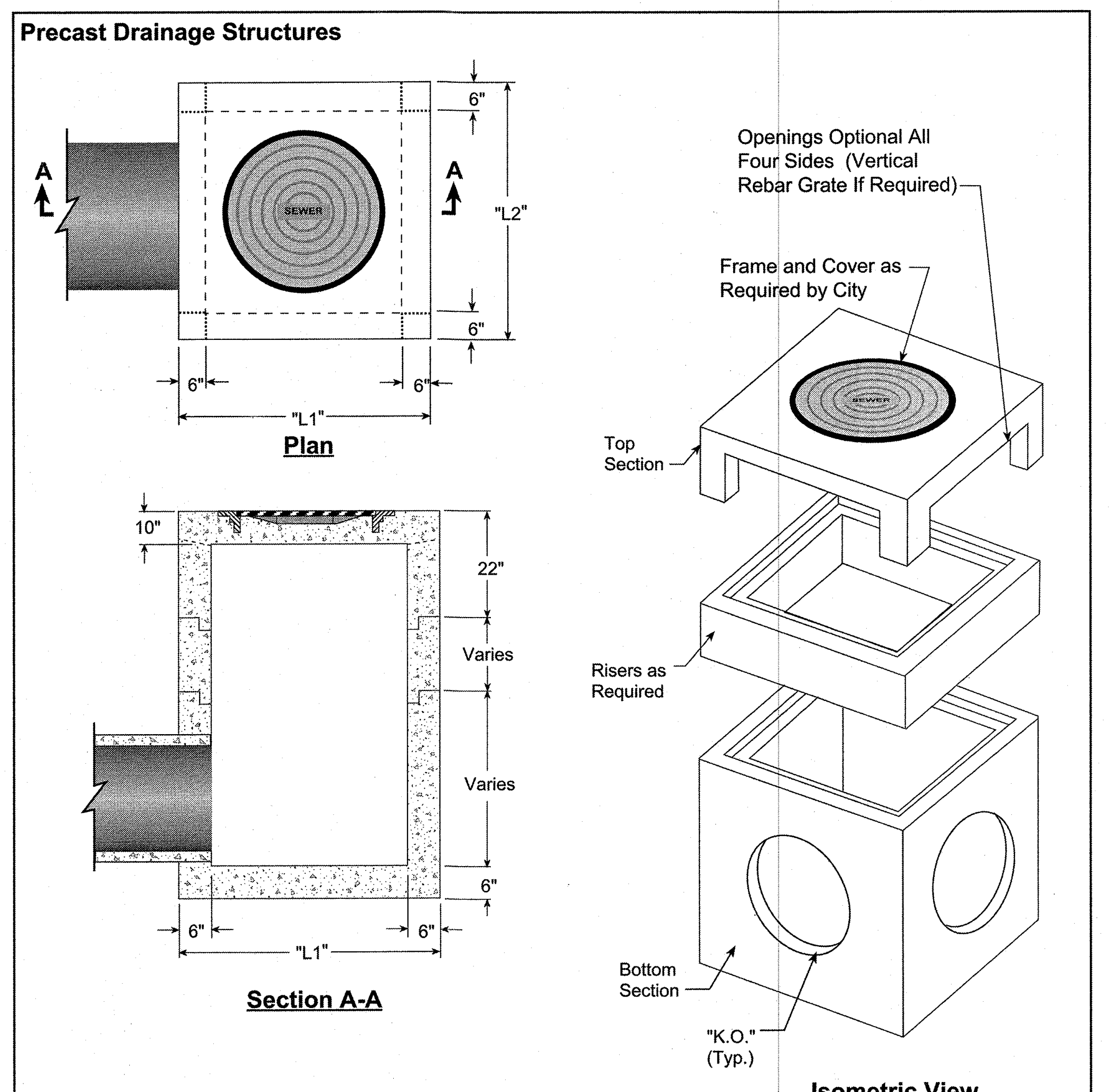
Precast Drainage Structures



Plan

Section A-A

Isometric View

Materials & Features

CONCRETE: 5,000 PSI

REINFORCING: per ASTM A-615 or A-185

MAXIMUM PIPE SIZE: 24" I.D.

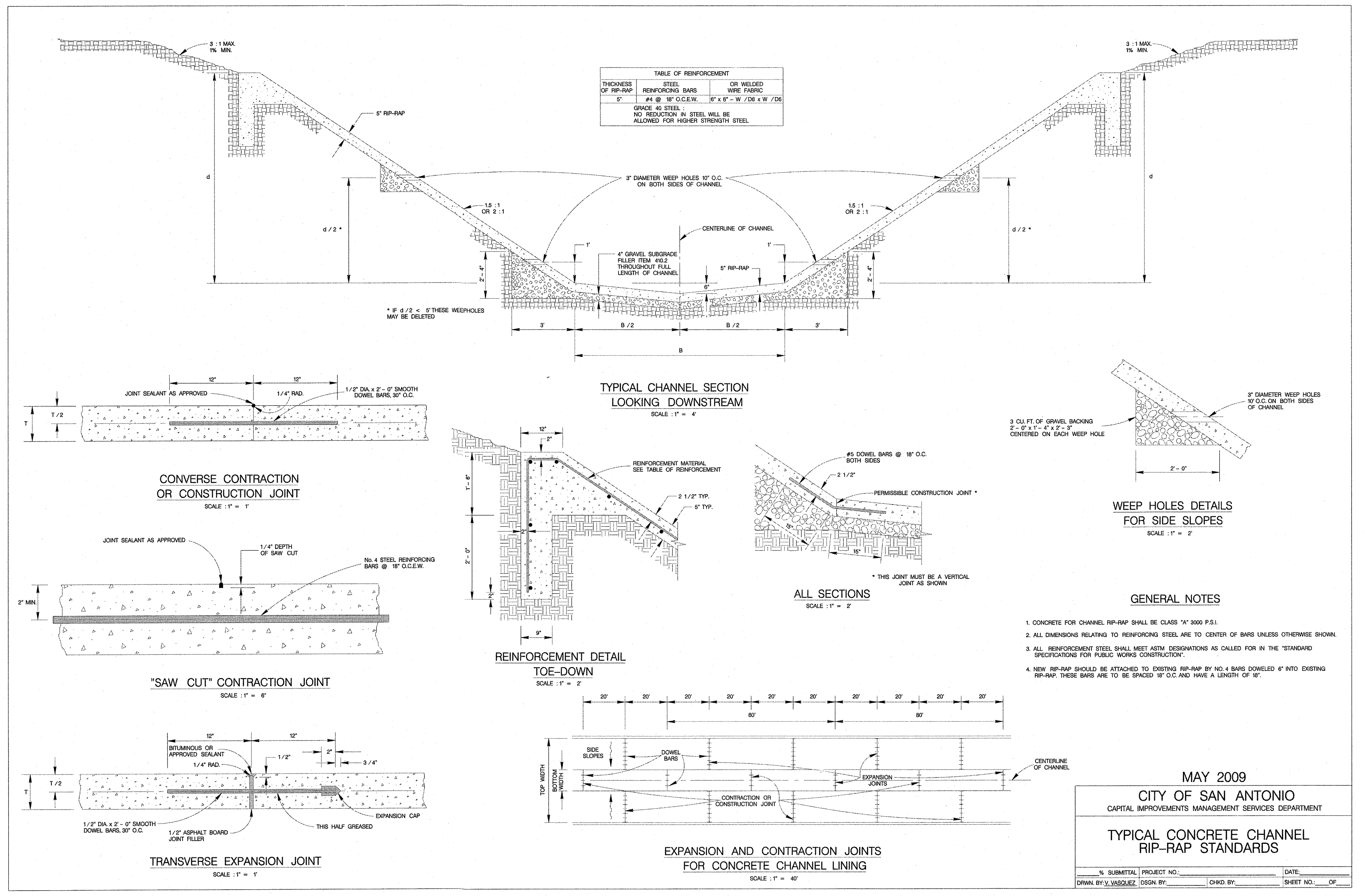
WEIGHT:
E-3' BASE - 3,600 Lbs. E-4' BASE - 5,223 Lbs.
E-3' TOP - 2,800 Lbs. E-4' TOP - 4,415 Lbs.
6,400 Lbs. Total 9,638 Lbs. Total

Type	"L1"	"L2"	"KO"
E-3'	4' - 0"	4' - 0"	32"
E-4'	5' - 0"	5' - 0"	48"

-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION.PAGE	DATE
Type "E" Curb Inlet City of Houston	Houston	TX	10.d.18	Feb 2016

FORTERRA


3 : 1 MAX. 1% MIN.
5" RIP-RAP
TABLE OF REINFORCEMENT
THICKNESS OF RIP-RAP
STEEL REINFORCING BARS
OR WELDED WIRE FABRIC
5"
#4 @ 18" O.C.E.W.
6" x 6" - W /D6 x W /D6
GRADE 40 STEEL : NO REDUCTION IN STEEL WILL BE ALLOWED FOR HIGHER STRENGTH STEEL
3" DIAMETER WEEP HOLES 10' O.C. ON BOTH SIDES OF CHANNEL
1.5 : 1 OR 2 : 1
CENTERLINE OF CHANNEL
4" GRAVEL SUBGRADE FILLER ITEM 410.2 THROUGHOUT FULL LENGTH OF CHANNEL
5" RIP-RAP
d
d / 2 *
2' - 4"
1'
6"
3'
B / 2
B
* IF d / 2 < 5' THESE WEEPHOLES MAY BE DELETED
TYPICAL CHANNEL SECTION LOOKING DOWNSTREAM
SCALE : 1" = 4'
JOINT SEALANT AS APPROVED
1/4" RAD.
1/2" DIA x 2' - 0" SMOOTH DOWEL BARS, 30" O.C.
12"
T / 2
T
CONVERSE CONTRACTION OR CONSTRUCTION JOINT
SCALE : 1" = 1'
1/4" DEPTH OF SAW CUT
No. 4 STEEL REINFORCING BARS @ 18" O.C.E.W.
2" MIN.
"SAW CUT" CONTRACTION JOINT
SCALE : 1" = 6'
BITUMINOUS OR APPROVED SEALANT
1/2"
2"
3 / 4"
1/2" DIA. x 2' - 0" SMOOTH DOWEL BARS, 30" O.C.
1/2" ASPHALT BOARD JOINT FILLER
THIS HALF GREASED
EXPANSION CAP
TRANSVERSE EXPANSION JOINT
SCALE : 1" = 1'
REINFORCEMENT MATERIAL SEE TABLE OF REINFORCEMENT
2 1/2" TYP.
5" TYP.
1' - 6"
2' - 0"
9"
REINFORCEMENT DETAIL TOE-DOWN
SCALE : 1" = 2'
#5 DOWEL BARS @ 18" O.C. BOTH SIDES
PERMISSIBLE CONSTRUCTION JOINT *
15°
* THIS JOINT MUST BE A VERTICAL JOINT AS SHOWN
ALL SECTIONS
SCALE : 1" = 2'
3 CU. FT. OF GRAVEL BACKING 2' - 0" x 1' - 4" x 2' - 3" CENTERED ON EACH WEEP HOLE
3" DIAMETER WEEP HOLES 10' O.C. ON BOTH SIDES OF CHANNEL
2' - 0"
WEEP HOLES DETAILS FOR SIDE SLOPES
SCALE : 1" = 2'
20'
80'
SIDE SLOPES
DOWEL BARS
EXPANSION JOINTS
CONTRACTION OR CONSTRUCTION JOINT
TOP WIDTH
BOTTOM WIDTH
CENTERLINE OF CHANNEL
EXPANSION AND CONTRACTION JOINTS FOR CONCRETE CHANNEL LINING
SCALE : 1" = 40'

GENERAL NOTES

1. CONCRETE FOR CHANNEL RIP-RAP SHALL BE CLASS "A" 3000 P.S.I.
2. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS UNLESS OTHERWISE SHOWN.
3. ALL REINFORCEMENT STEEL SHALL MEET ASTM DESIGNATIONS AS CALLED FOR IN THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
4. NEW RIP-RAP SHOULD BE ATTACHED TO EXISTING RIP-RAP BY NO. 4 BARS DOWELED 6" INTO EXISTING RIP-RAP. THESE BARS ARE TO BE SPACED 18" O.C. AND HAVE A LENGTH OF 18".

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPICAL CONCRETE CHANNEL
RIP-RAP STANDARDS

______% SUBMITTAL	PROJECT NO.:______		DATE:______
DRWN. BY: V. VASQUEZ	DSGN. BY:______	CHKD. BY:______	SHEET NO.:____OF____

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
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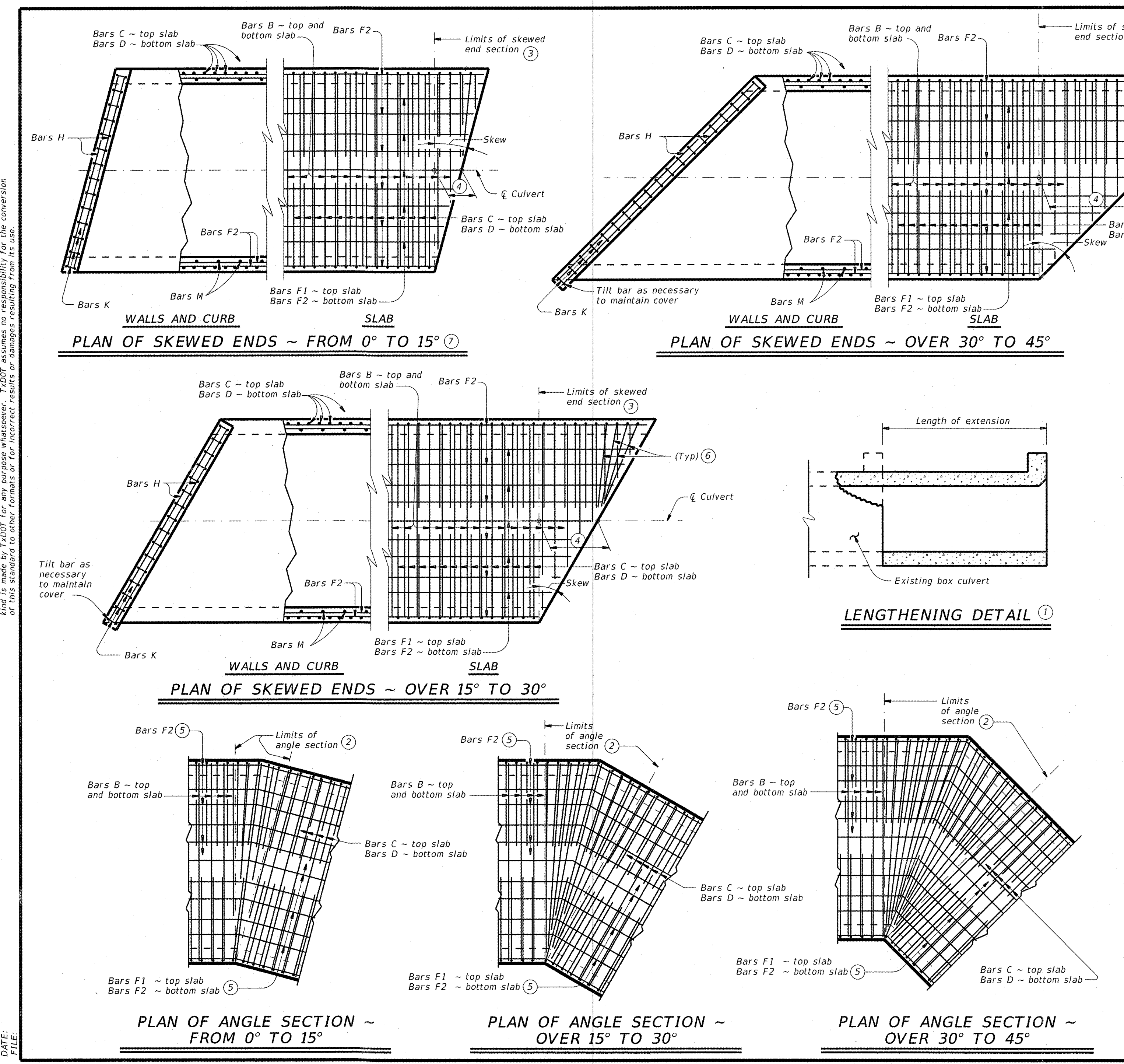

Bars C ~ top slab
Bars D ~ bottom slab
Bars B ~ top and bottom slab
Bars F2
Limits of skewed end section ③
Skew
℄ Culvert
Bars H
Bars K
Bars M
Bars F1 ~ top slab
Bars F2 ~ bottom slab
Tilt bar as necessary to maintain cover
WALLS AND CURB
SLAB
(Typ) ⑥
④
PLAN OF SKEWED ENDS ~ FROM 0° TO 15° ⑦
PLAN OF SKEWED ENDS ~ OVER 30° TO 45°
PLAN OF SKEWED ENDS ~ OVER 15° TO 30°
Length of extension
Existing box culvert
LENGTHENING DETAIL ①
Bars F2 ⑤
Limits of angle section ②
Bars F1 ~ top slab
Bars F2 ~ bottom slab ⑤
PLAN OF ANGLE SECTION ~ FROM 0° TO 15°
PLAN OF ANGLE SECTION ~ OVER 15° TO 30°
PLAN OF ANGLE SECTION ~ OVER 30° TO 45°

① For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.
For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, C, D , E, or F ancher adhesive into the existing walls, top and bottom slab at 1'-6" center-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, Nba, of 26.4 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.
Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an uninterrupted flow line. Field bend existing and new reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.

② When the spacing between Bars B becomes less than half of the normal spacing, cut bars to avoid conflict.

③ The length of Bars B vary in the skewed end sections.

④ [One half of overall width] x [tangent of the skew angle]

⑤ Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.

⑥ When necessary to avoid conflictin acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.

⑦ At the Contractor's option, for skews of 15° or less, place Bars B, C, and D parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B shown on the Single Box Culverts Cast-In-Place (SCC) standards sheets to accommodate the skew.

CONSTRUCTION NOTES:
Do not use permanent forms.
When required, lap Bars H 1'-8" for uncoated or galvanized bars.
Provide a minimum of 1 ½" clear cover.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel, if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) with these exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Refer to Single Box Culverts Cast-in-Place (SCC) standard sheets for details of straight sections of culvert.
For skewed sections and angle sections, refer to Single Box Culverts Cast-in-Place (SCC) standard sheets for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown.
For skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume, and reinforcing steel weight by dividing the values shown on the culvert Single Box Culverts Cast-In-Place (SCC) standard sheets by the cosine of the skew angle.

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation
Bridge Division Standard

SINGLE BOX CULVERTS
CAST-IN-PLACE
MISCELLANEOUS DETAILS

SCC-MD

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

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

REVISIONS | ISSUE DATE

1/26/22
A. NICHOLAS REYNOLDS
111666
Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

DRAIN DETAILS

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
4.8

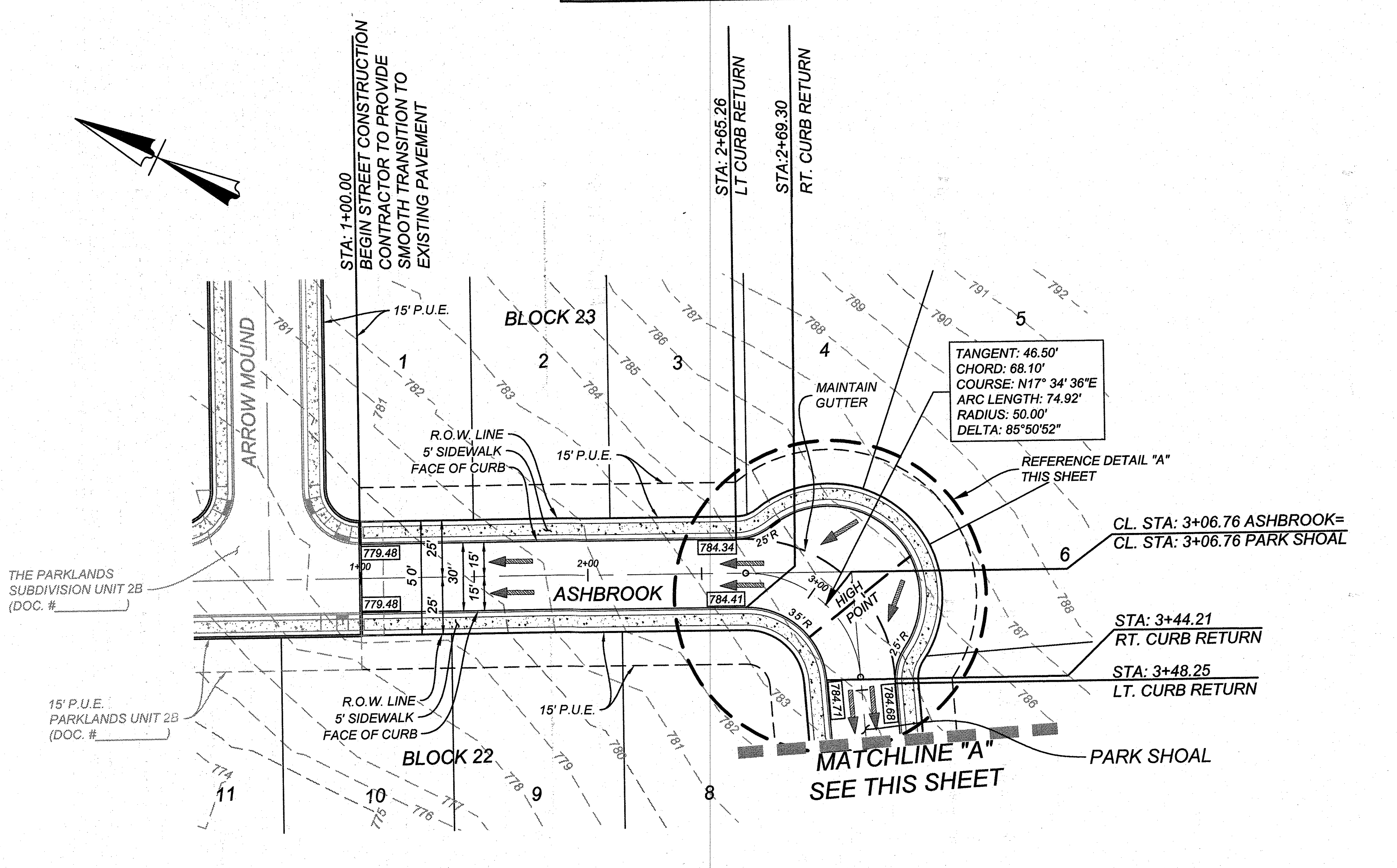
Date: Aug 03, 2021, 2:54pm User ID: tvoter
File: U:\Projects\171\23\06\Design\Civil\Drains\DRAIN DETAILS.dwg

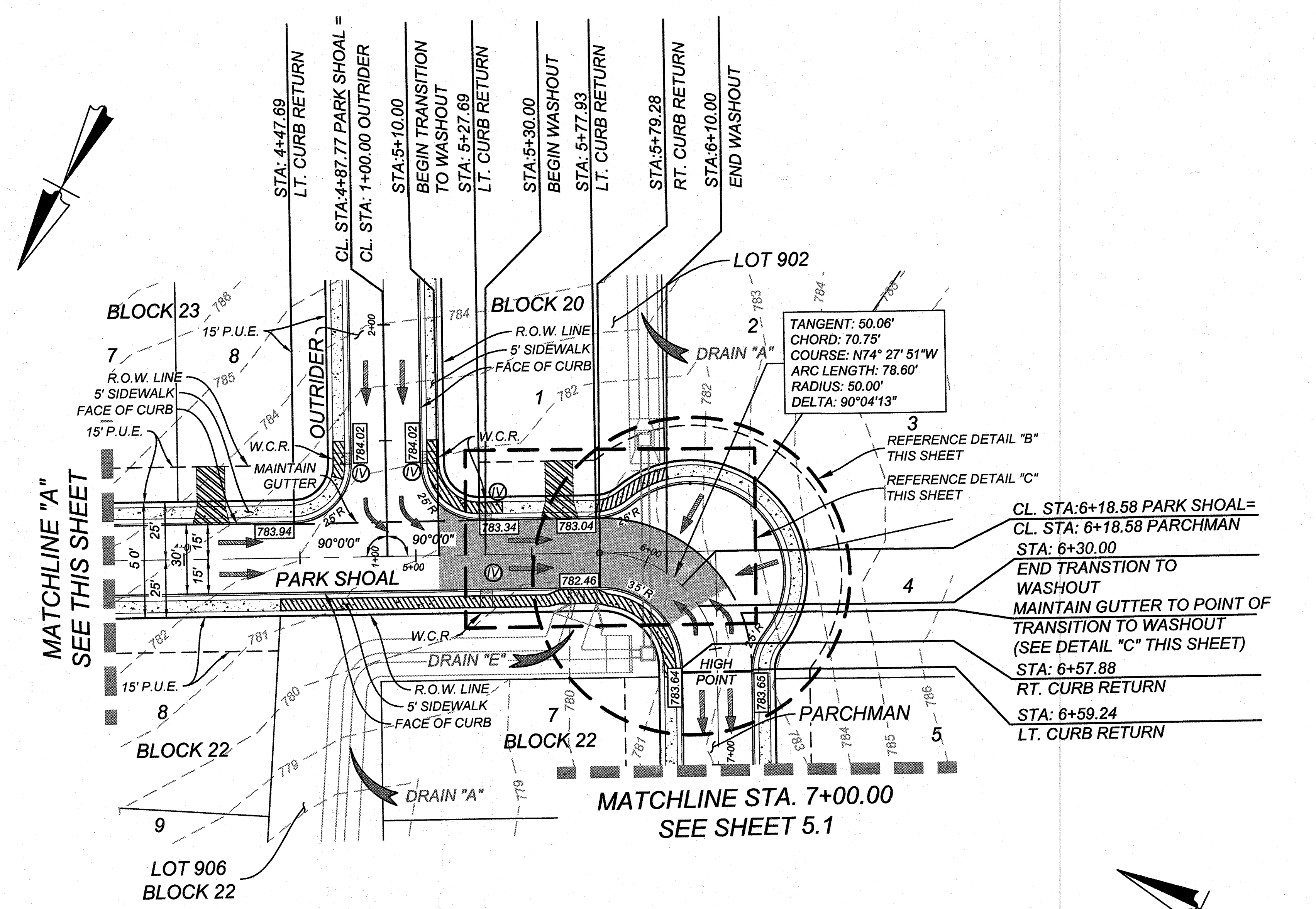
CAUTION!!:
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS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

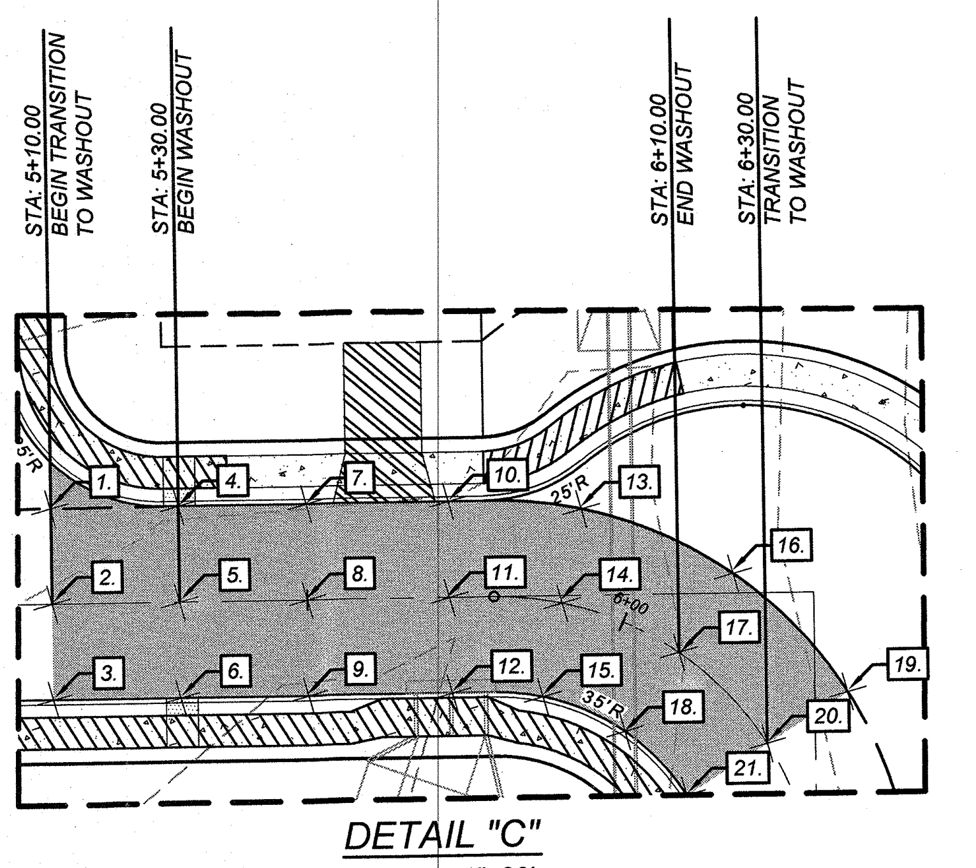
TRENCH EXCAVATION SAFETY PROTECTION

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.

NOTE:
ALL RAMPS AND ANY PROPOSED SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH THE STREET CONSTRUCTION.





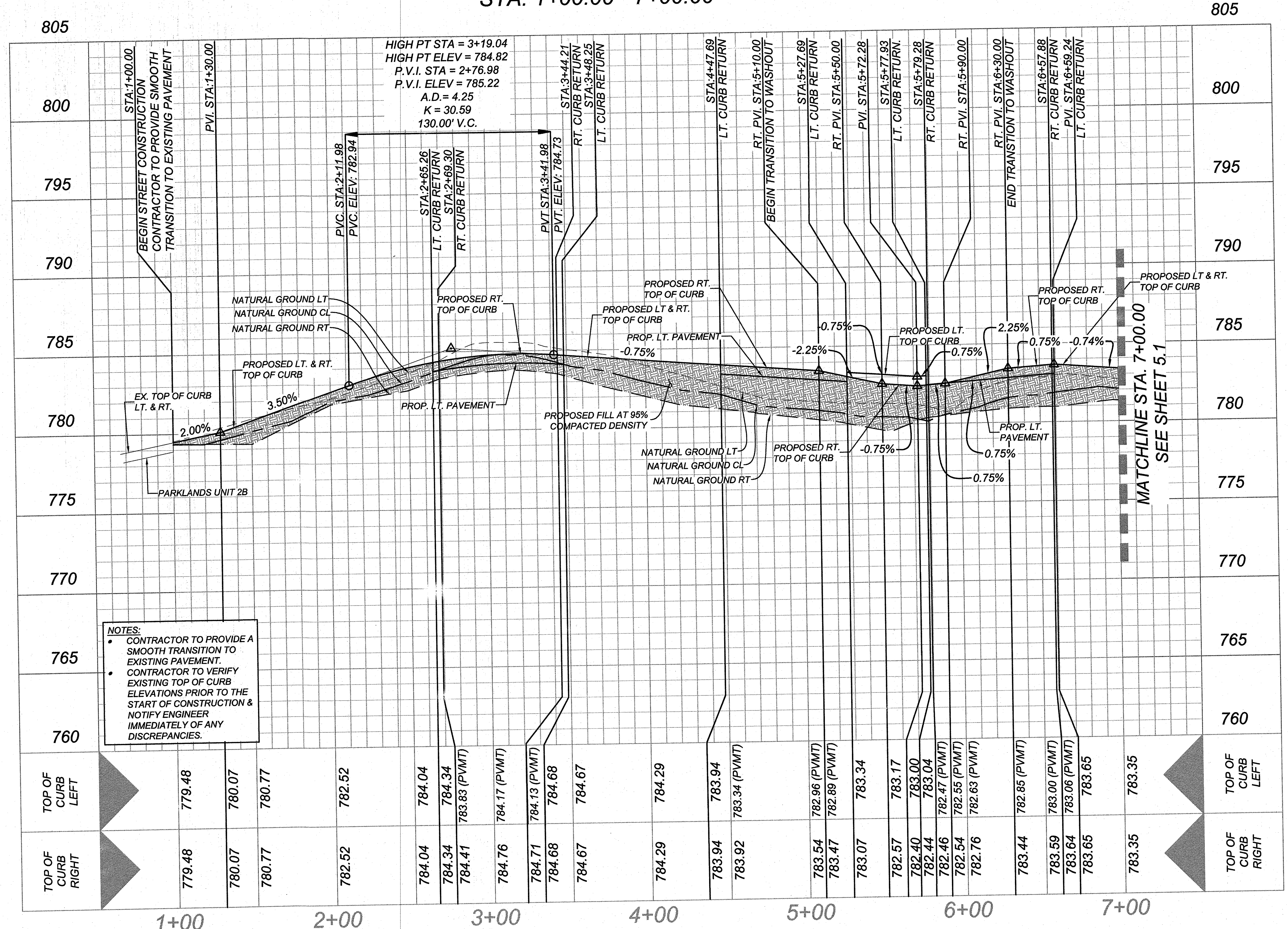


DETAIL "C"
SCALE : 1"=30'

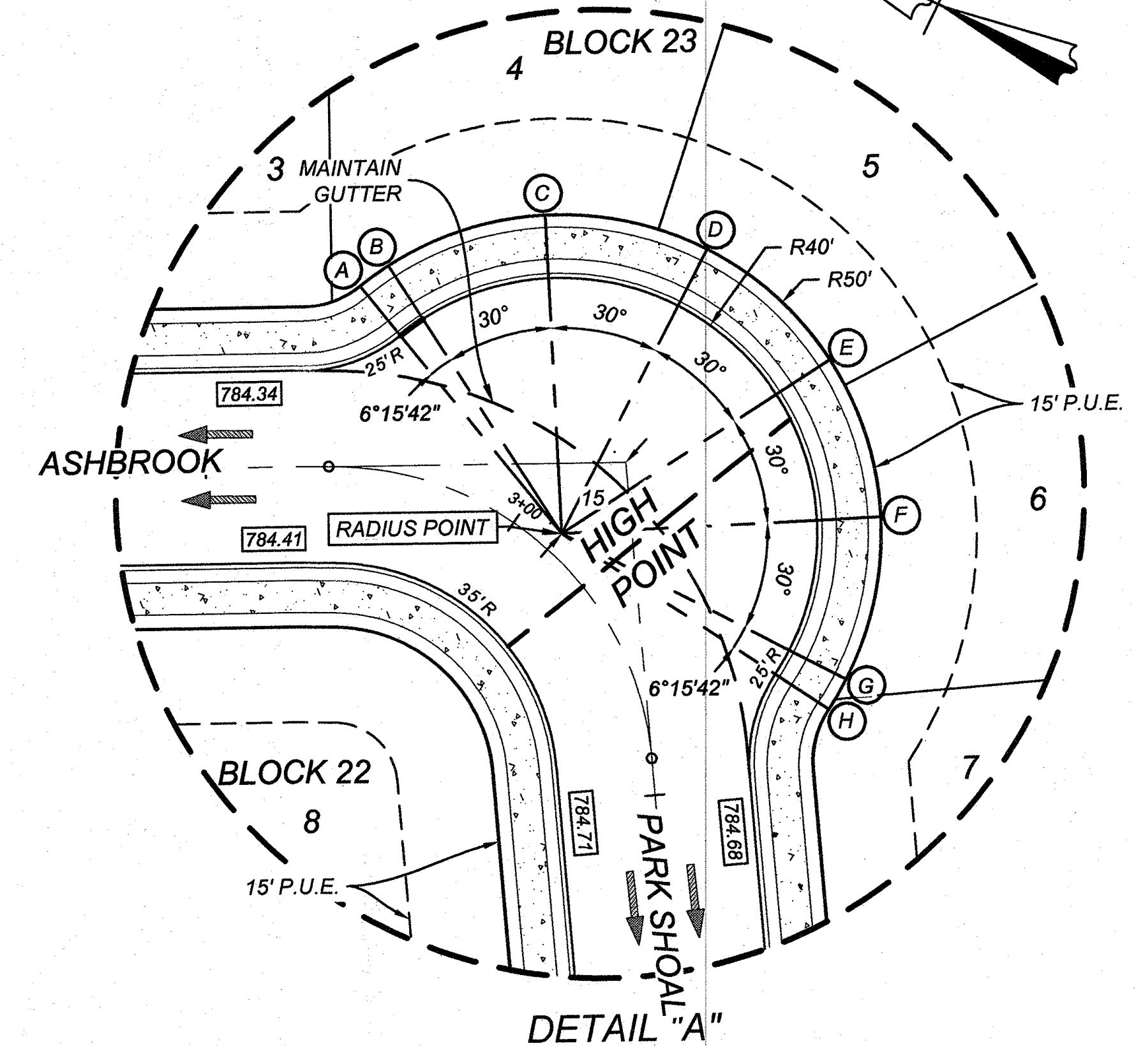
POINT #	PAVEMENT ELEVATION	NORTHING	EASTING
1	782.890	13780487.5645	2226024.8136
2	783.190	13780500.4964	2226017.3999
3	782.890	13780513.5518	2226010.0137
4	782.740	13780477.5927	2226007.3788
5	782.590	13780490.6481	2225999.9926
6	782.440	13780503.7036	2225992.6064
7	782.590	13780467.7444	2225989.9716
8	782.290	13780480.7999	2225982.5854
9	781.990	13780493.8553	2225975.1992
10	782.420	13780456.7735	2225970.5800
11	782.120	13780469.8289	2225963.1938
12	781.820	13780482.7592	2225955.5864
13	782.550	13780447.8127	2225951.7218
14	782.250	13780462.1403	2225947.2811
15	781.950	13780476.4679	2225942.8403
16	782.700	13780445.2219	2225926.0074
17	782.550	13780460.1473	2225927.5007
18	782.400	13780475.0728	2225928.9941
19	782.850	13780452.8403	2225901.3448
20	783.150	13780466.0077	2225908.5295
21	782.850	13780479.1750	2225915.7142

ASHBROOK - PARK SHOAL
STA. 1+00.00 - 7+00.00

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

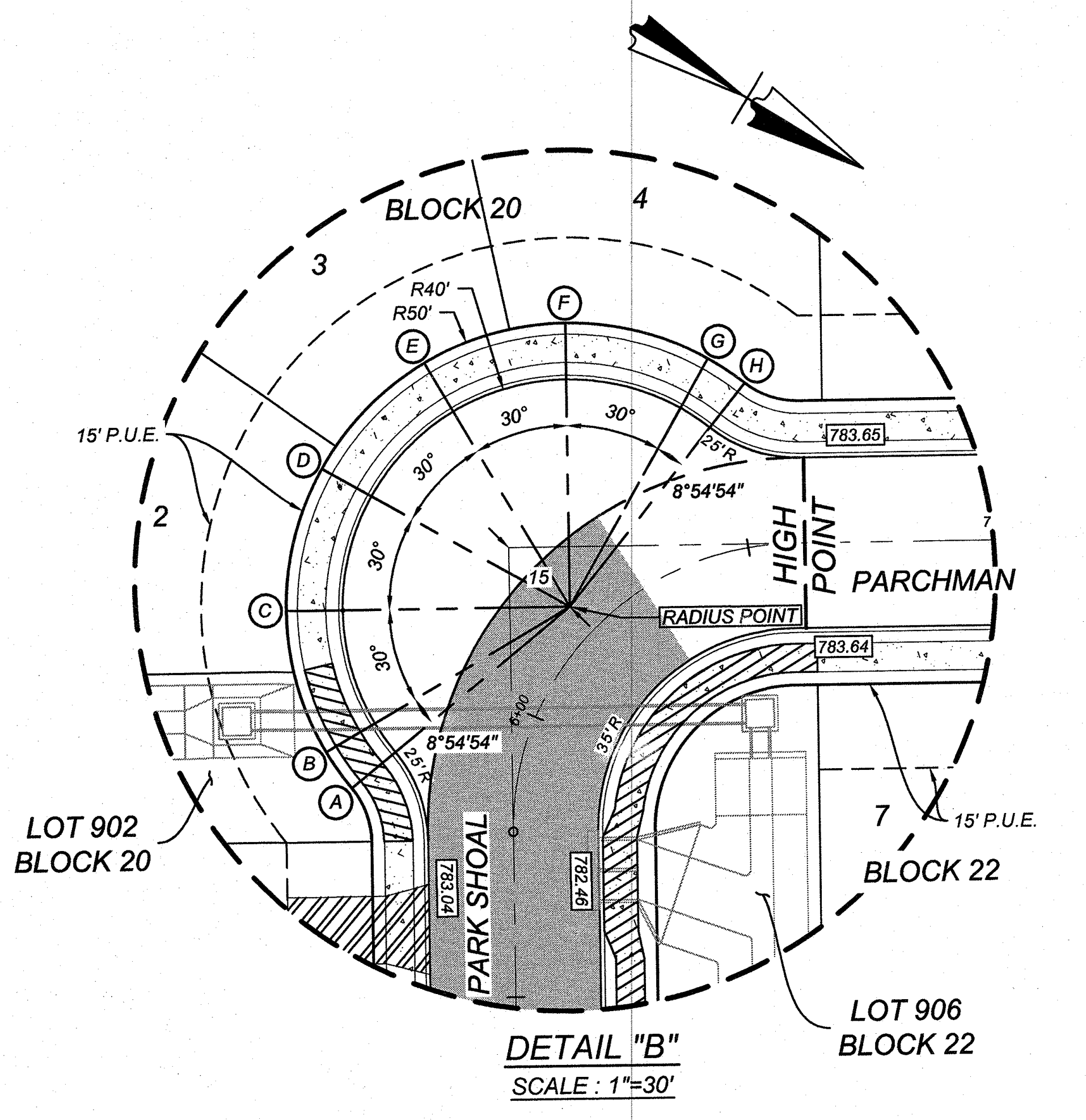


NOTES:
- CONTRACTOR TO PROVIDE A SMOOTH TRANSITION TO EXISTING PAVEMENT.
- CONTRACTOR TO VERIFY EXISTING TOP OF CURB ELEVATIONS PRIOR TO THE START OF CONSTRUCTION & NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.



DETAIL "A"
SCALE : 1"=30'

CUL-DE-SAC STATION	TOP OF CURB ELEVATION
A	784.80
B	784.92
C	785.23
D	785.34
E	785.36
F	785.30
G	785.08
H	784.99



DETAIL "B"
SCALE : 1"=30'

CUL-DE-SAC STATION	TOP OF CURB ELEVATION
A	783.42
B	783.58
C	783.86
D	783.94
E	783.97
F	783.96
G	783.83
H	783.75

LEGEND

R.O.W. = RIGHT OF WAY
P.U.E. = PUBLIC UTILITY EASEMENT
→ = FLOW ARROW
W.C.R. = WHEELCHAIR RAMP, SEE SHEET 5.3
Ⓘⓥ = WHEELCHAIR RAMP TYPE IV SEE SHEET 5.3
▭ = SIDEWALK TO BE INSTALLED AT THE TIME OF HOME CONSTRUCTION
▨ = DEVELOPER INSTALLED SIDEWALK
732.87 = TOP OF CURB ELEVATIONS
▨ = PROPOSED DRIVEWAY LOCATION
⌖ 688.24 = PROPOSED CONCRETE GUTTER & PAVEMENT ELEVATION WITHIN WASHOUT AREA

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

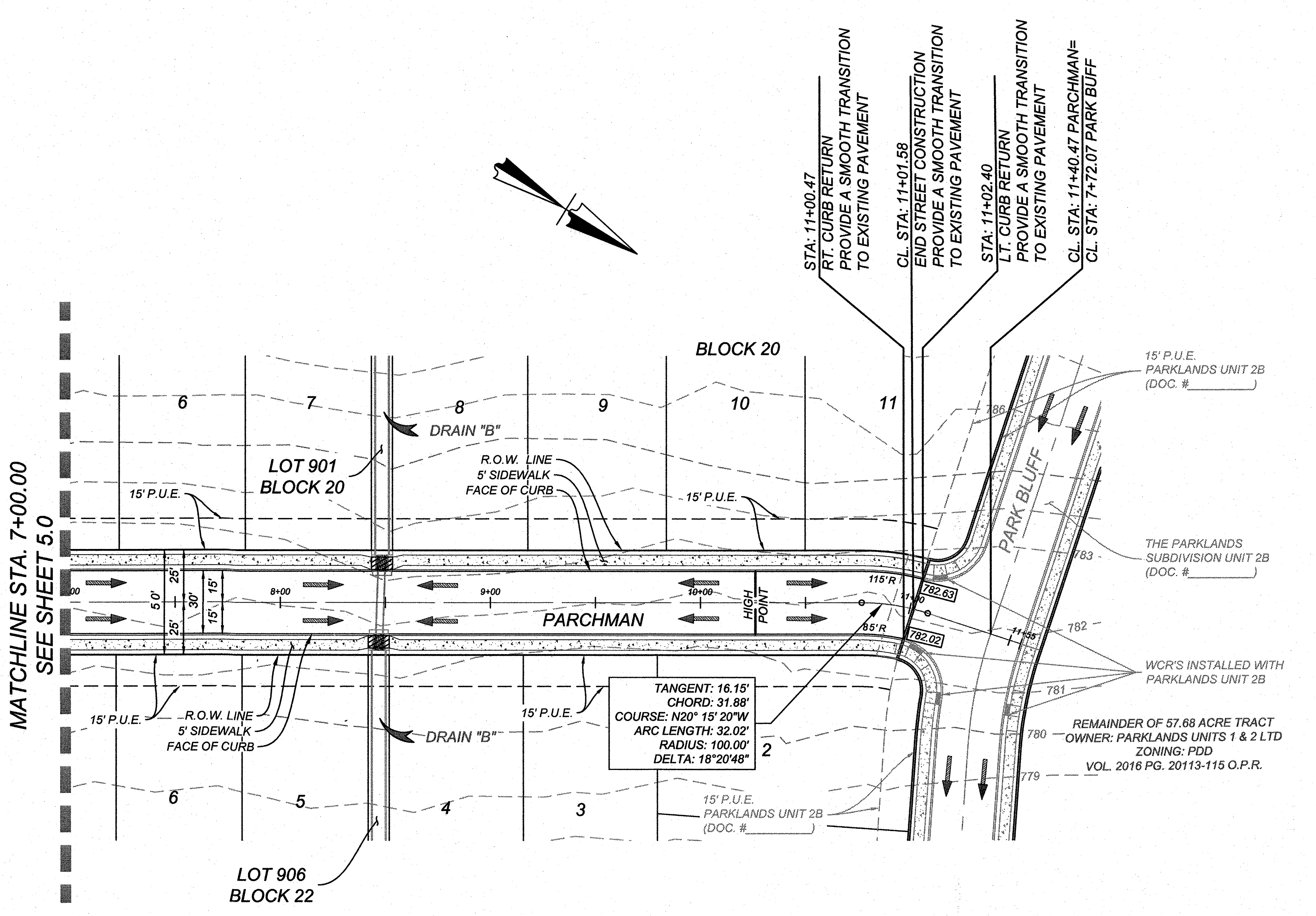
REVISIONS
ISSUE DATE

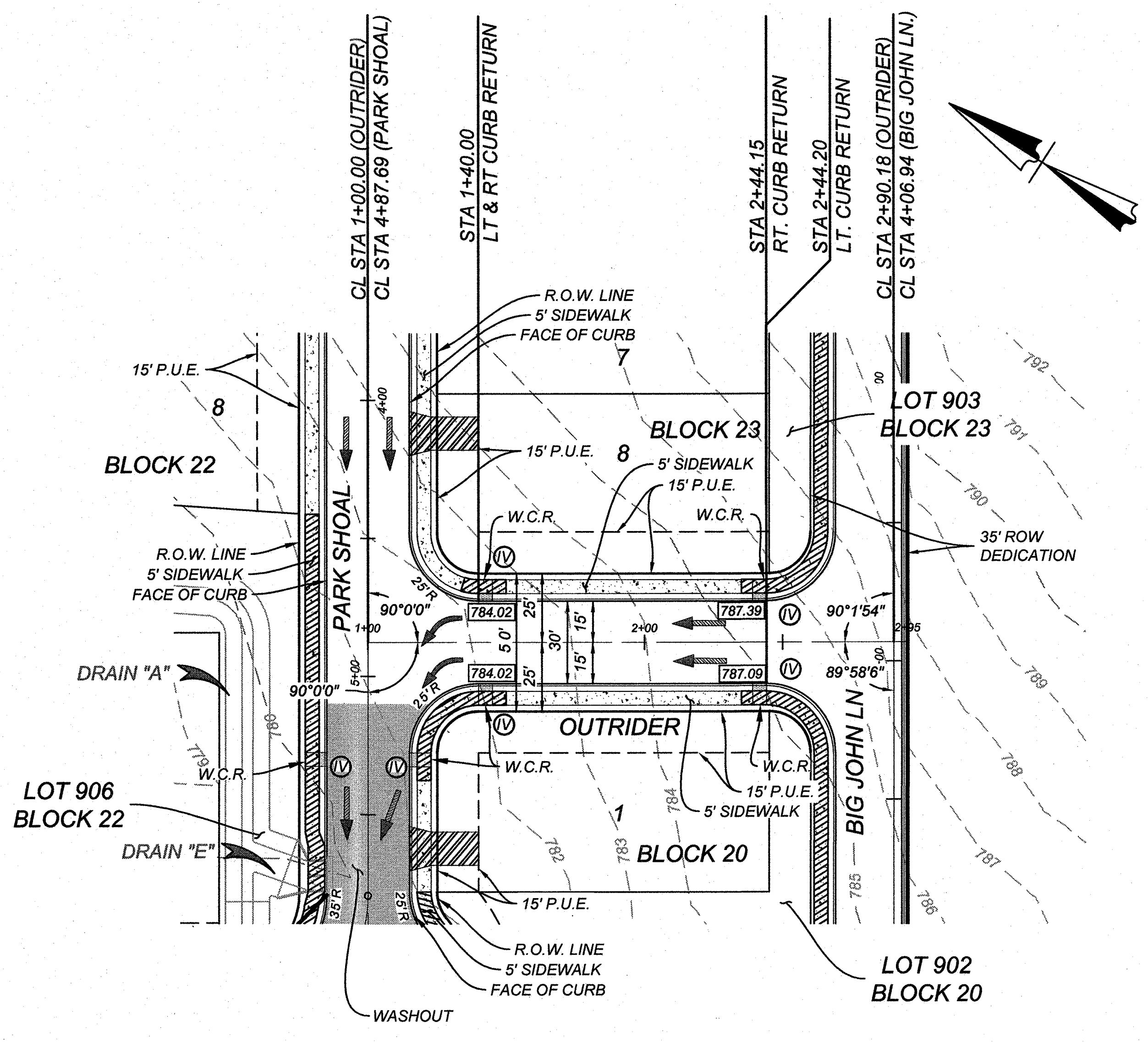
1/26/22
STATE OF TEXAS
A. NICHOLAS REYNOLDS
111666
LICENSED PROFESSIONAL ENGINEER
Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
ASHBROOK - PARK SHOAL - PARCHMAN
STA. 1+00.00 - 7+00.00

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

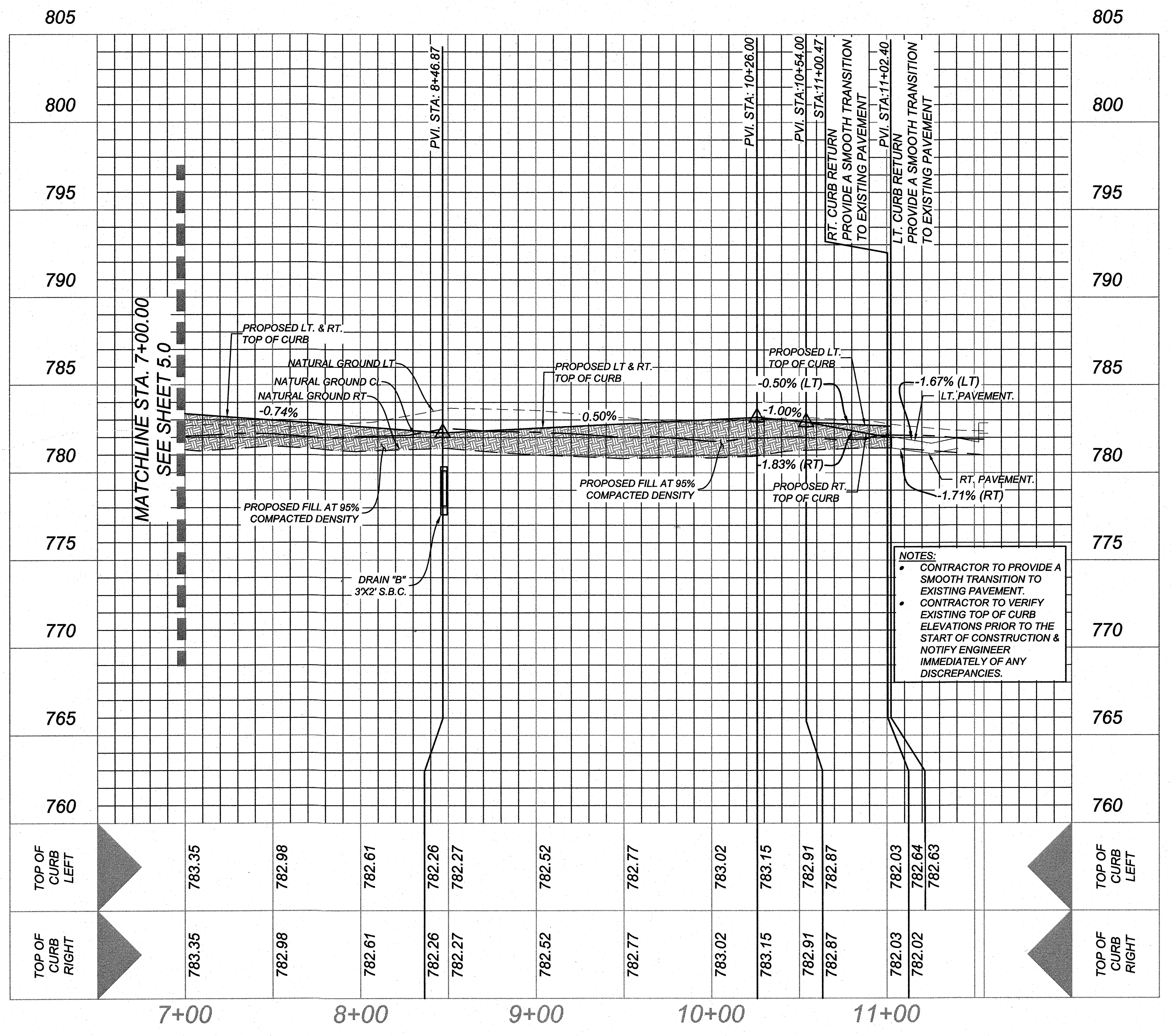
SHEET NUMBER:
5.0





PARCHMAN
STA. 7+00.00 - END

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



NOTES:
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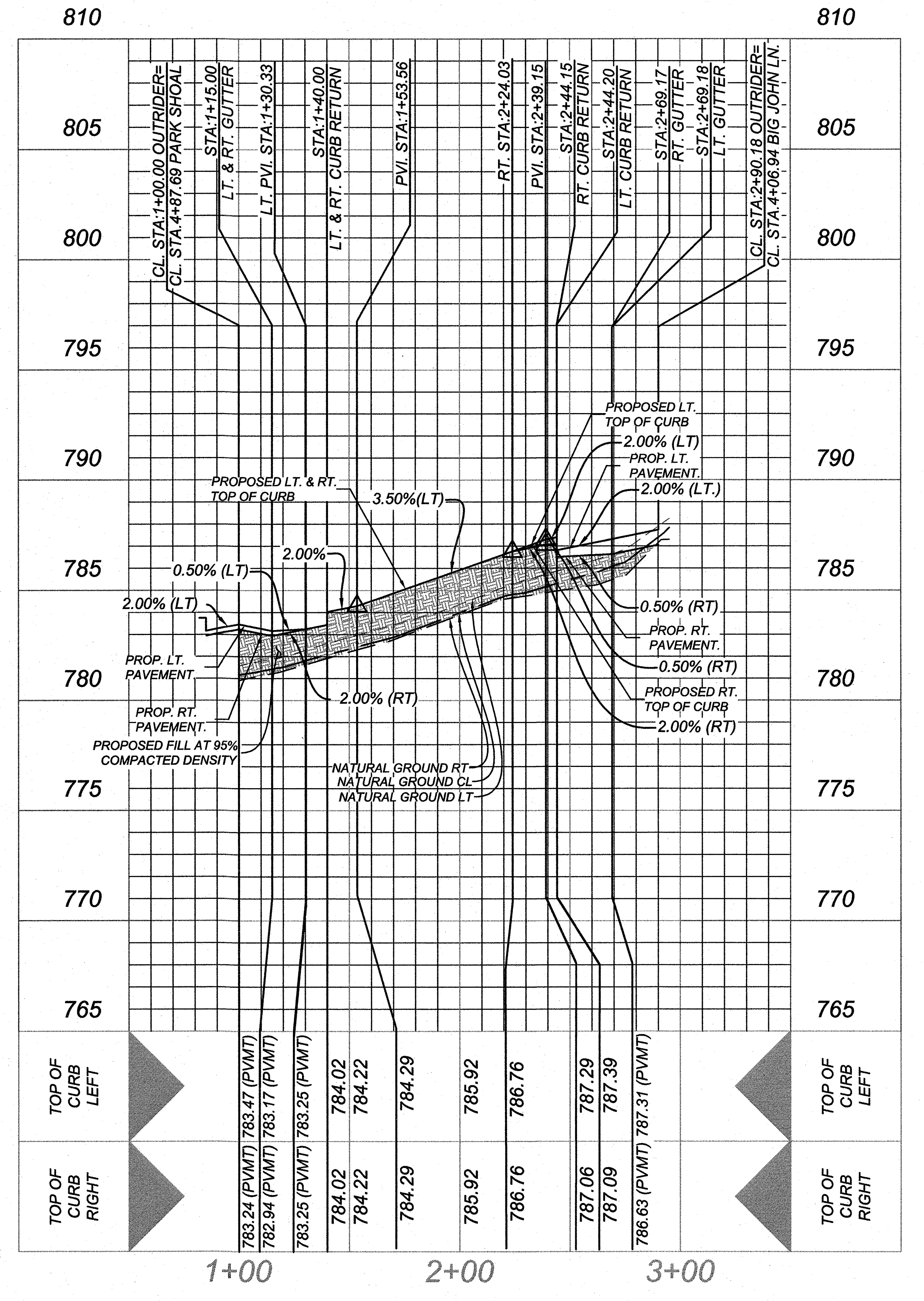
TOP OF CURB LEFT	783.35	782.98	782.61	782.26	782.27	782.52	782.77	783.02	783.15	782.91	782.87	782.03	782.64	782.63
TOP OF CURB RIGHT	783.35	782.98	782.61	782.26	782.27	782.52	782.77	783.02	783.15	782.91	782.87	782.03	782.02	

OUTRIDER
STA. 1+00.00 - END

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



TOP OF CURB LEFT	783.47 (PVMT)	783.17 (PVMT)	783.25 (PVMT)	784.02	784.22	784.29	785.92	786.76	787.29	787.39	787.31 (PVMT)
TOP OF CURB RIGHT	783.24 (PVMT)	782.94 (PVMT)	783.25 (PVMT)	784.02	784.22	784.29	785.92	786.76	787.06	787.09	786.63 (PVMT)

LEGEND

R.O.W. = RIGHT OF WAY
P.U.E. = PUBLIC UTILITY EASEMENT
➡ = FLOW ARROW
W.C.R. = WHEELCHAIR RAMP, SEE SHEET 5.3
Ⓘⓥ = WHEELCHAIR RAMP TYPE IV SEE SHEET 5.3
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ISSUE DATE

REVISIONS

6/6/22
A. NICHOLAS REYNOLDS
111666

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
PARCHMAN STA. 7+00.00 - END &
OUTRIDER STA. 1+00.00 - END

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

SHEET NUMBER:
5.1

Date: Jun 06, 2022, 8:22am User ID: jtrujillo
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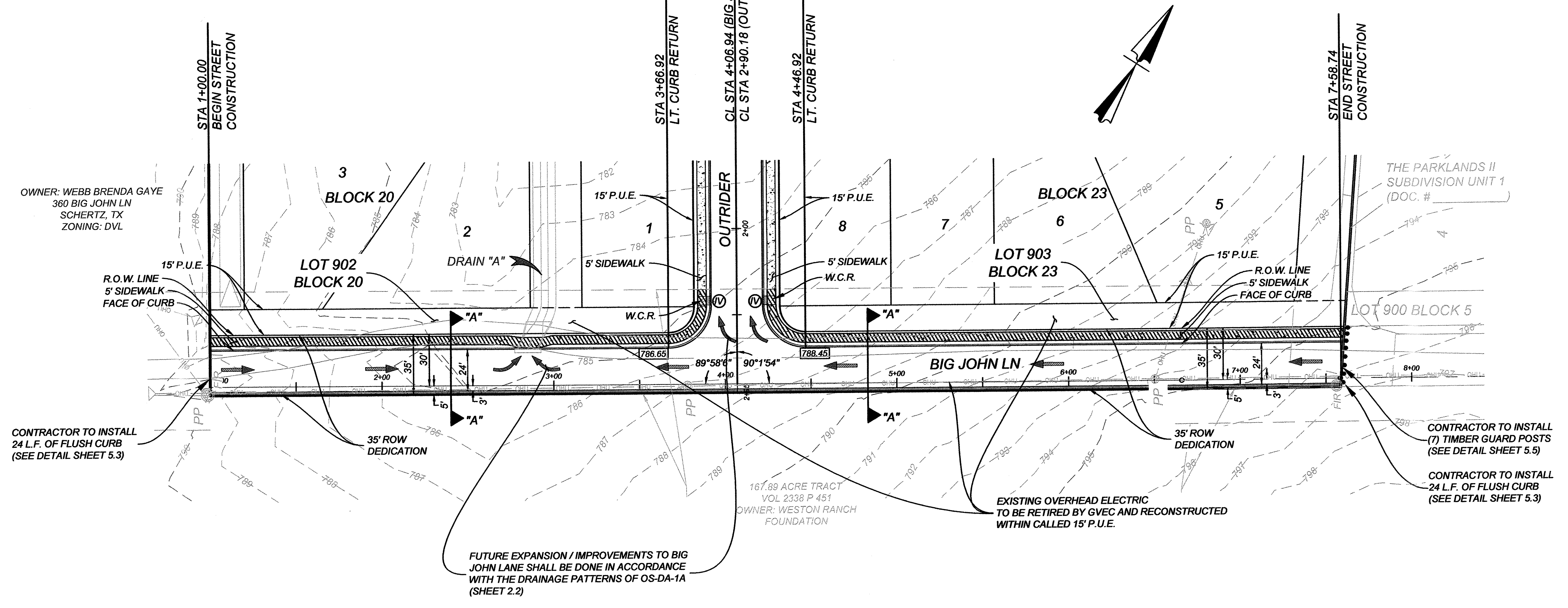

LEGEND

R.O.W.	=	RIGHT OF WAY
P.U.E.	=	PUBLIC UTILITY EASEMENT
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░	=	SIDEWALK TO BE INSTALLED AT THE TIME OF HOME CONSTRUCTION
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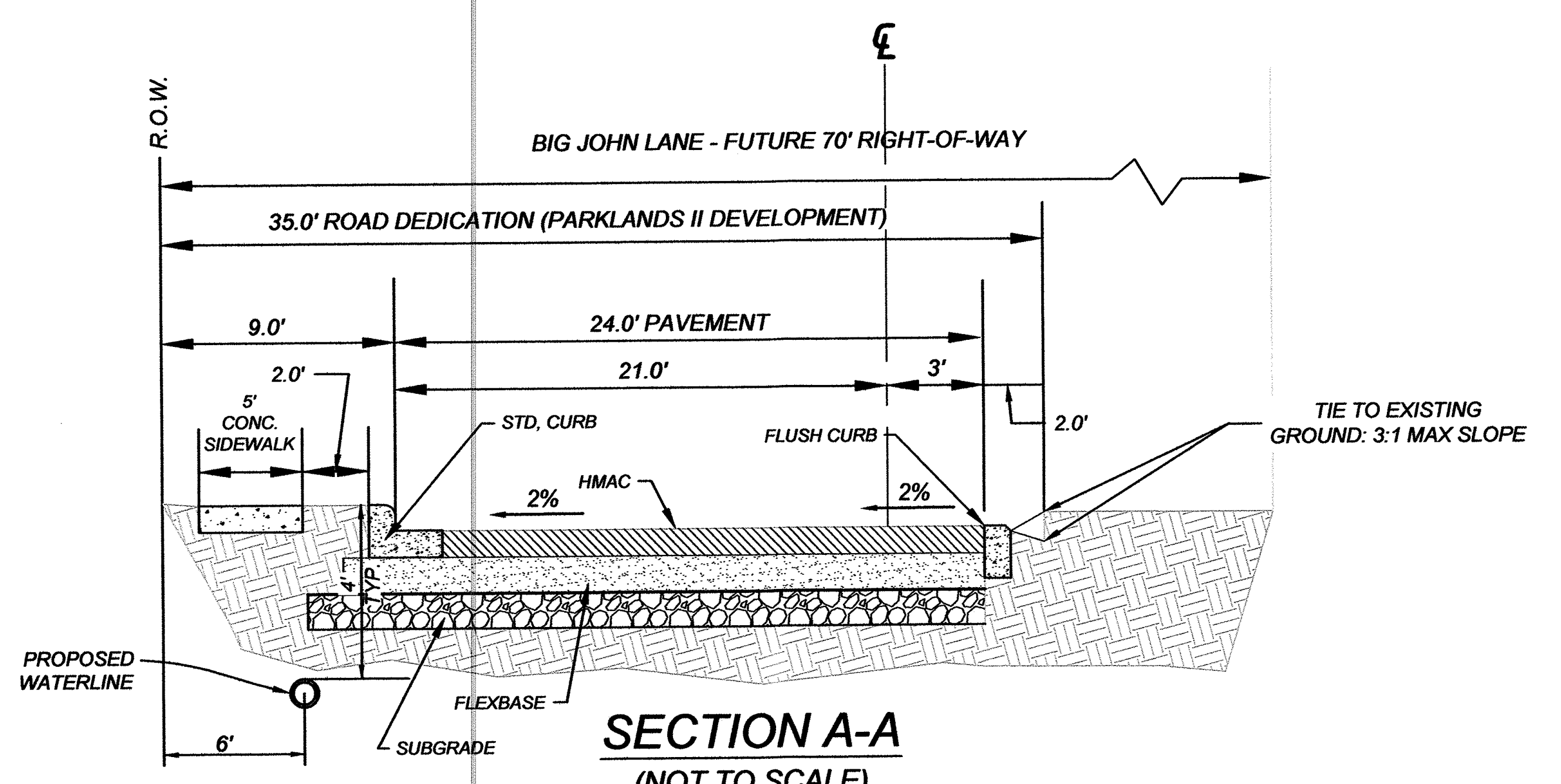
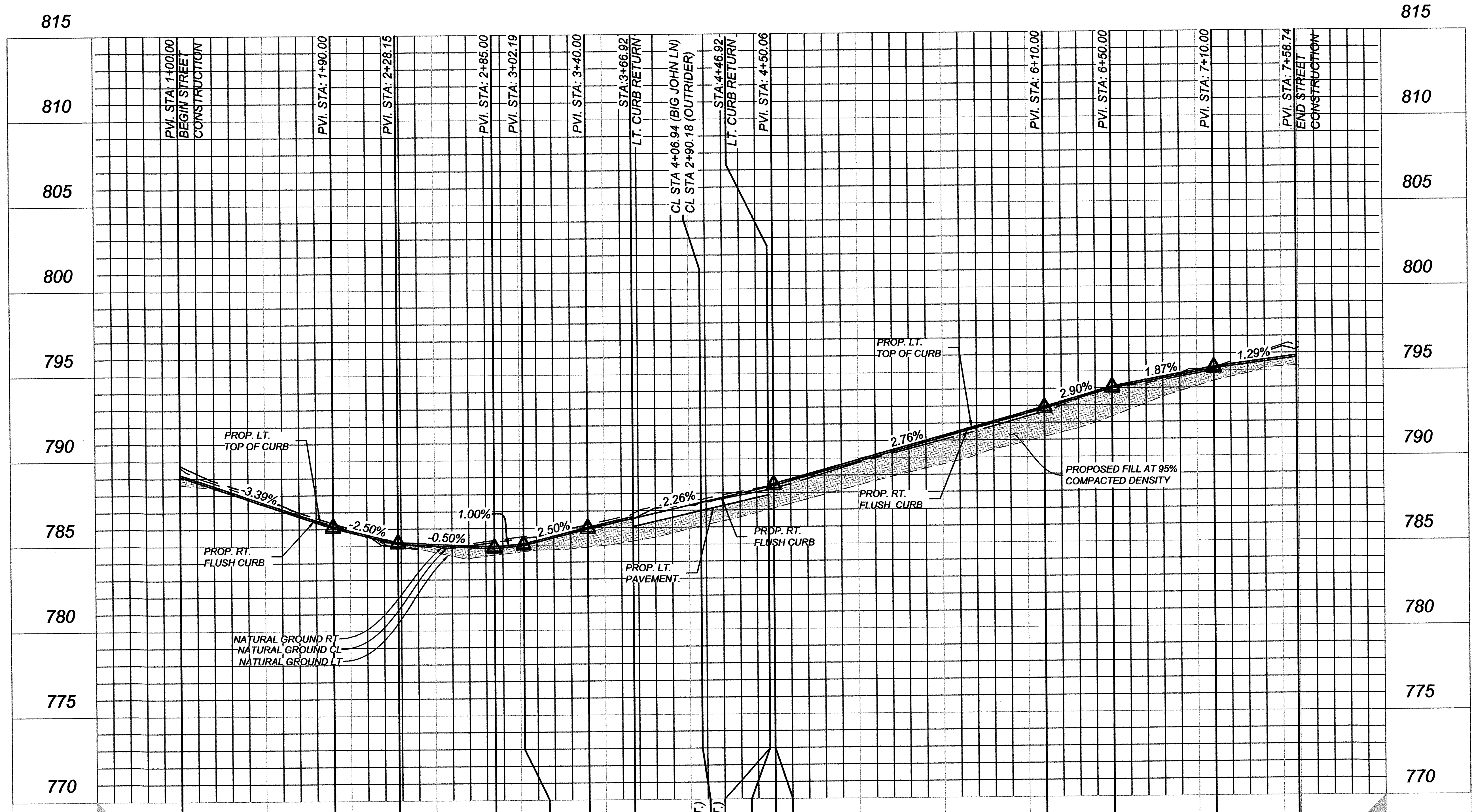


SECTION A-A
(NOT TO SCALE)

NOTE:
PLEASE REFER TO THE COLLECTOR STREET DETAILS ON SHEET 5.5 FOR STREET SECTION STANDARDS

BIG JOHN LN
STA. 1+00.00 - END

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



TOP OF CURB LEFT	TOP OF CURB RIGHT
789.55	789.45
787.52	787.42
786.16	786.06
785.91	785.81
785.21	785.10
785.10	785.00
784.92	784.82
785.07	784.97
785.10	784.99
786.04	785.94
786.27	786.16
786.65	786.55
786.81(PVMT.)	787.29
786.97(PVMT.)	787.45
788.45	788.35
788.52	788.42
788.53	
789.90	789.80
791.28	791.18
792.66	792.56
792.94	792.84
794.10	794.00
795.03	794.93
795.22	795.12
795.74	795.64
796.40	796.30

1+00 2+00 3+00 4+00 5+00 6+00 7+00 7+60

NOTE:
ALL RAMPS AND ANY PROPOSED SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH THE STREET CONSTRUCTION.

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.

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.

1/10/23
A. NICHOLAS REYNOLDS
111666
Nick Reynolds, P.E.

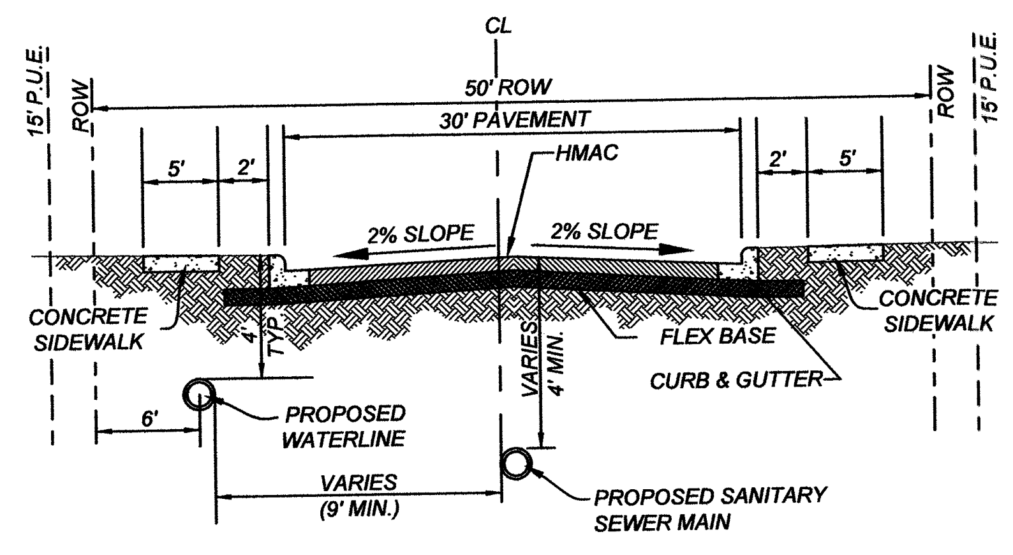
THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

BIG JOHN LN STA. 1+00.00 - END

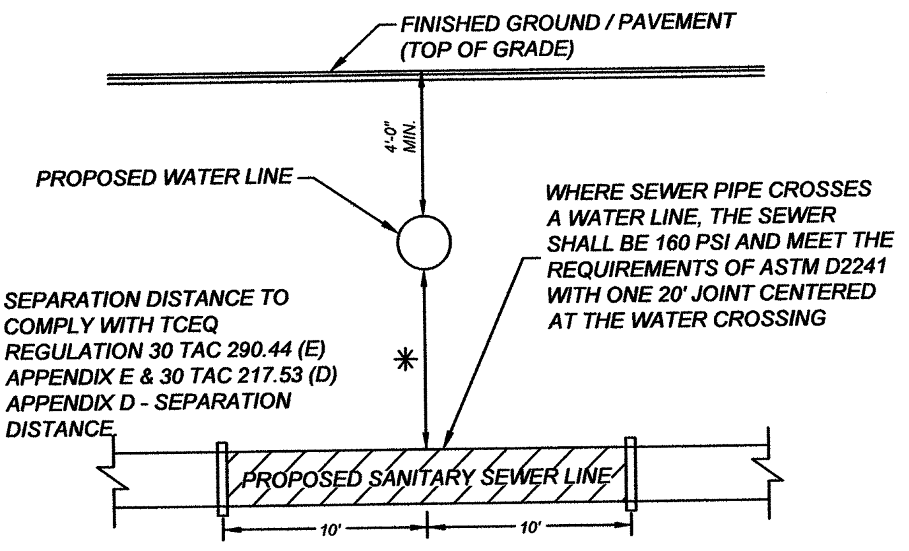
JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
5.2

Date: Aug 16, 2022, 7:00pm User ID: davendano
File: U:\Projects\171\23\06\Design\Civil\STREETS\BIG JOHN LN.dwg



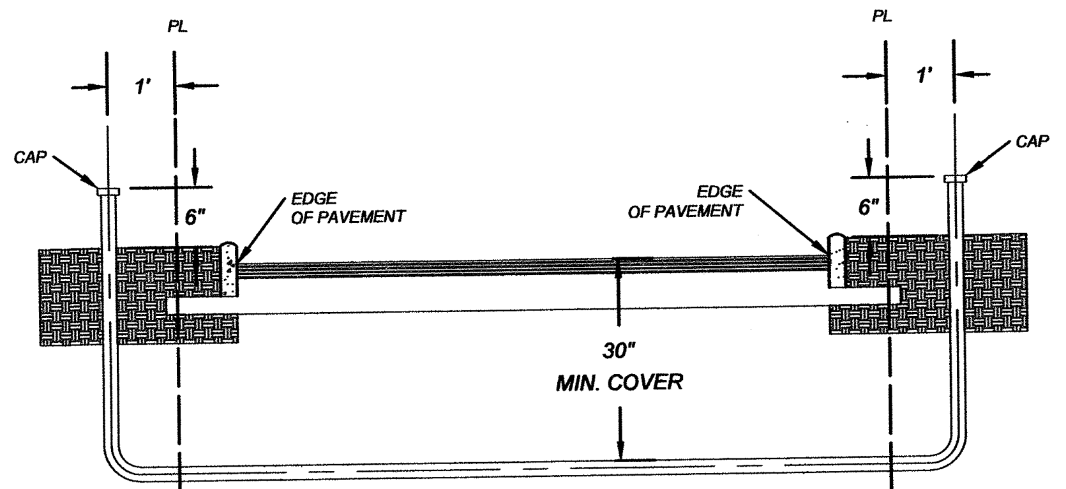
TYPICAL 50' ROW STREET CROSS SECTION - LOCAL ST.
N.T.S.


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
4'-0" MIN.
PROPOSED WATER LINE
✱
PROPOSED SANITARY SEWER LINE
10'
10'

WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING

✱ SEPARATION DISTANCE TO COMPLY WITH TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.

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



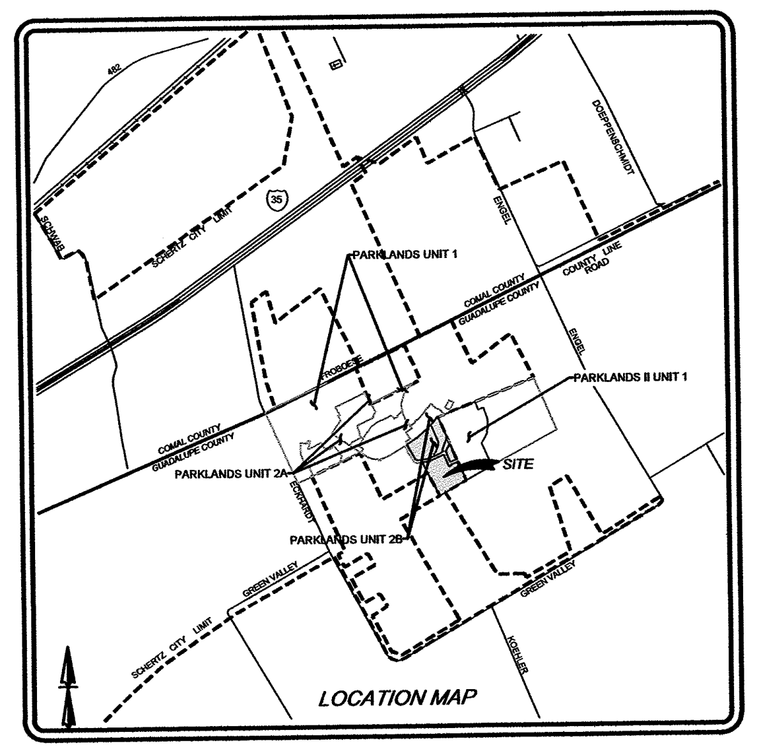
CONDUIT DETAIL
N.T.S.
*PVC SCHED. 40 OR 80 CONDUIT
SEE PLAN SHEETS FOR SIZE, LOCATION, AND NUMBER OF CONDUITS

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

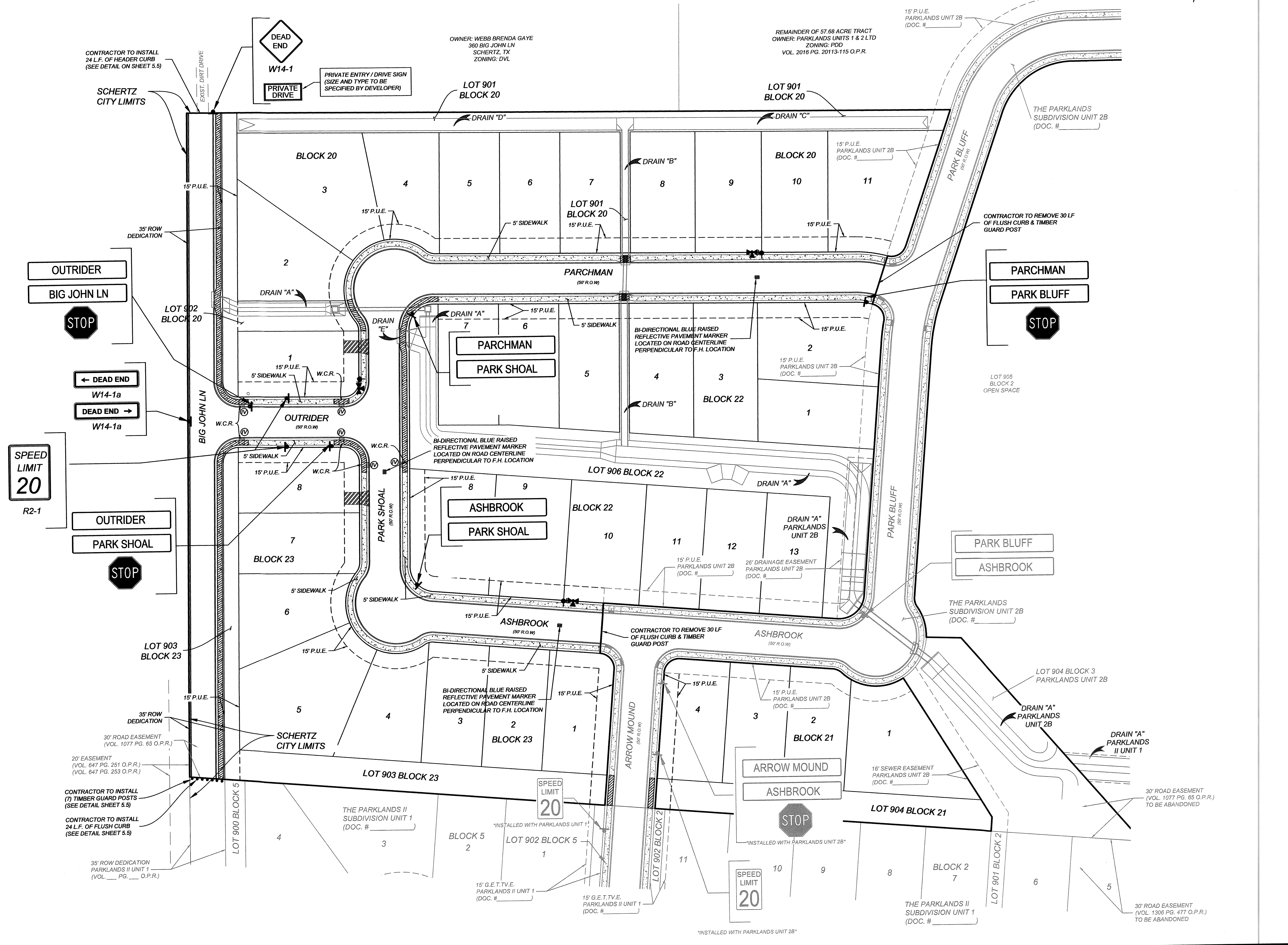
DRY UTILITY CONDUIT NOTE:
CONDUITS LOCATIONS SHOWN ON PLAN ARE FOR GEOGRAPHICAL PURPOSES ONLY AND ARE APPROXIMATE. CONTRACTOR TO INSTALL PROPOSED CONDUITS IN ACCORDANCE WITH DRY UTILITY PURVEYOR'S SPECIFICATIONS. CONTRACTOR TO VERIFY THE CONDUIT LOCATIONS AND SIZES BASED ON THE DRY UTILITY PURVEYOR'S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

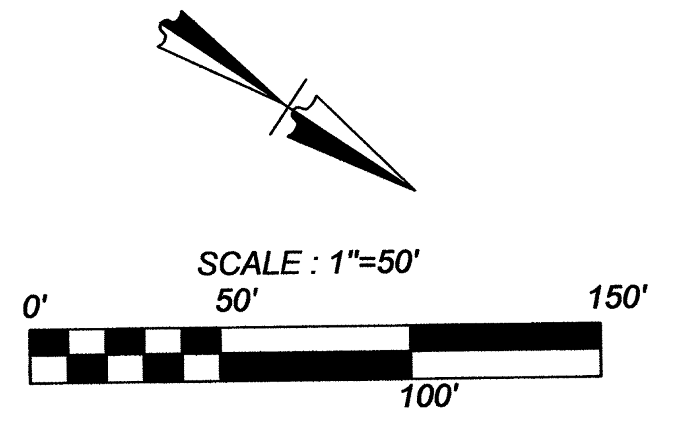
LEGEND

W.C.R.	=	WHEELCHAIR RAMP SEE SHEET 5.4
Ⓘⓥ	=	WHEELCHAIR RAMP TYPE IV SEE SHEET 5.4
▨	=	DEVELOPER INSTALLED SIDEWALK
▭	=	SIDEWALK TO BE INSTALLED AT THE TIME OF HOME CONSTRUCTION
▦	=	BLUE RAISED REFLECTIVE PAVEMENT MARKER
⚲	=	PROPOSED FIRE HYDRANT
▧	=	PROPOSED DRIVEWAY LOCATION



LOCATION MAP
N.T.S.





NOTES:
1) ALL SIGNAGE WITHIN SUBDIVISION SHALL COMPLY WITH THE CITY OF SCHERTZ STANDARD SIGN SPECIFICATIONS.

2) CONTRACTOR SHALL PURCHASE ALL STREET SIGNS PRIOR TO FINAL INSPECTION THROUGH THE CITY OF SCHERTZ PUBLIC WORKS DEPARTMENT BY CALLING (210) 619 1800.

3.) ALL SIGNAGE TO BE INSTALLED BY CITY OF SCHERTZ AFTER PURCHASED BY CONTRACTOR.

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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KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

1/10/23
A. NICHOLAS REYNOLDS
111666
P.E.

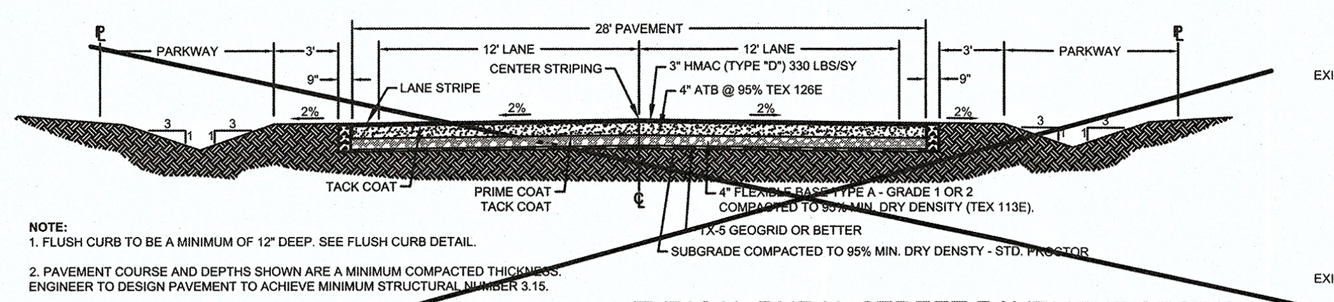
THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

TRAFFIC SIGNAGE AND PEDESTRIAN ACCESSIBILITY PLAN

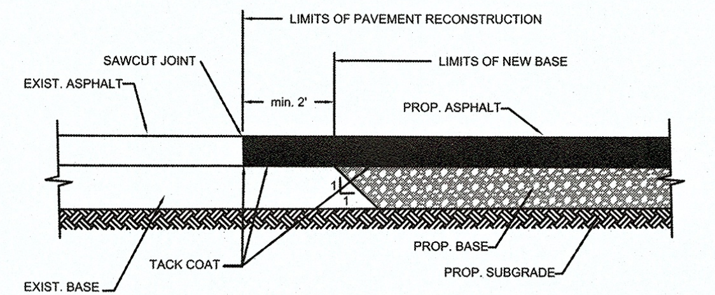
JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
5.3

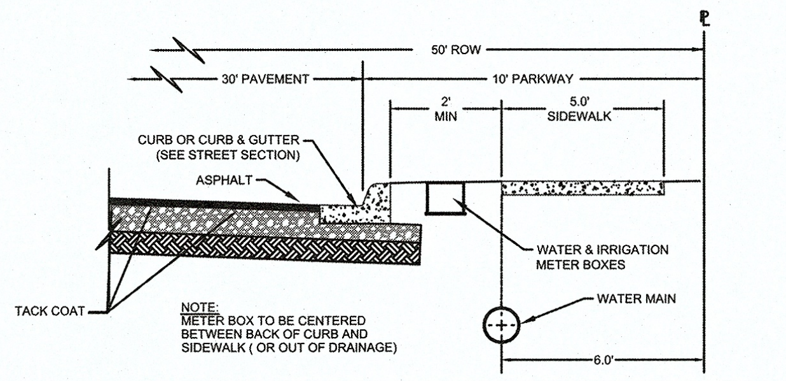
Date: Jan 09, 2023, 4:21pm User ID: tmiller
File: U:\Projects\171\23\06\Design\Civil\STREETS\5.2 TRAFFIC SIGNAGE AND PEDESTRIAN ACCESSIBILITY PLAN.dwg



TYPICAL RURAL STREET PAVEMENT SECTION
(NOT TO SCALE)

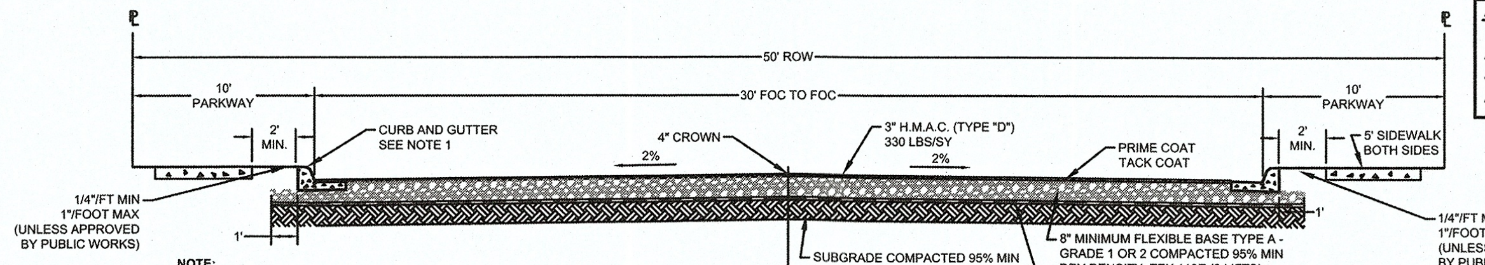


PAVEMENT JUNCTION
(NOT TO SCALE)



TYPICAL PARKWAY LAYOUT FOR 50' R.O.W.
(NOT TO SCALE)

NOTE:
THE TYPICAL STREET SECTIONS (AS SHOWN) ARE MINIMUM STANDARDS ONLY. PLEASE REFER TO THE STREET SECTION DETAILS ON SHEET 5.5 AS THE REQUIREMENT FOR THIS UNIT

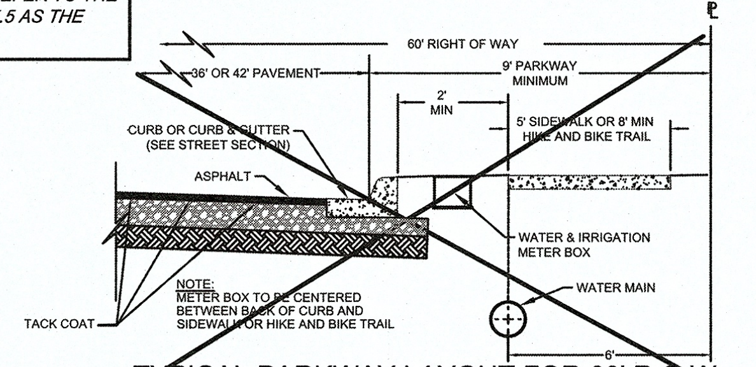

50' ROW
10' PARKWAY
30' FOC TO FOC
2' MIN.
CURB AND GUTTER SEE NOTE 1
4" CROWN
2%
3" H.M.A.C. (TYPE "D") 330 LBS/SY
PRIME COAT TACK COAT
5' SIDEWALK BOTH SIDES
1/4"/FT MIN 1"/FOOT MAX (UNLESS APPROVED BY PUBLIC WORKS)
1'
SUBGRADE COMPACTED 95% MIN DRY DENSITY, STD. PROCTOR
8" MINIMUM FLEXIBLE BASE TYPE A - GRADE 1 OR 2 COMPACTED 95% MIN DRY DENSITY, TEX 113E (2 LIFTS)
TX-5 GEOGRID OR BETTER

NOTE:
1. CURB AND GUTTER USED ON ALL STREETS UNLESS MATCHING EXISTING STREET SECTION MEETING CLASSIFICATION ON CURRENT MASTER THOROUGHFARE PLAN AND APPROVED BY PUBLIC WORKS AND ENGINEERING.

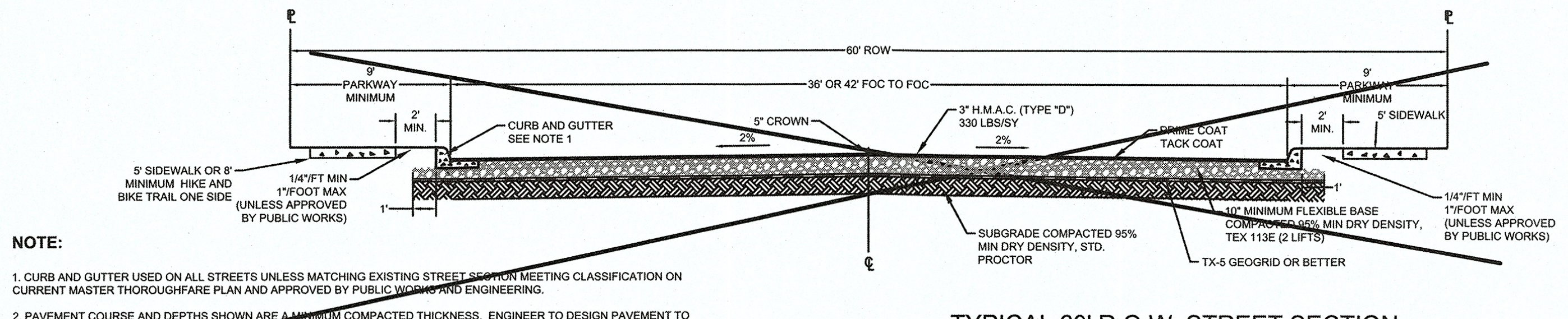
2. PAVEMENT COURSE AND DEPTHS SHOWN ARE A MINIMUM COMPACTED THICKNESS. ENGINEER TO DESIGN PAVEMENT TO ACHIEVE MINIMUM STRUCTURAL NUMBER = 2.50.

3. SWELLING SOILS, SOILS WITH P.I. OF 20 OR MORE, SHALL BE TREATED BY REMOVAL AND REPLACEMENT, OR GEOGRID, OR CEMENT SOIL TREATMENT, OR DRAINS/BARRIERS, OR COMBINATION AS DETERMINED BY A PAVEMENT DESIGN.

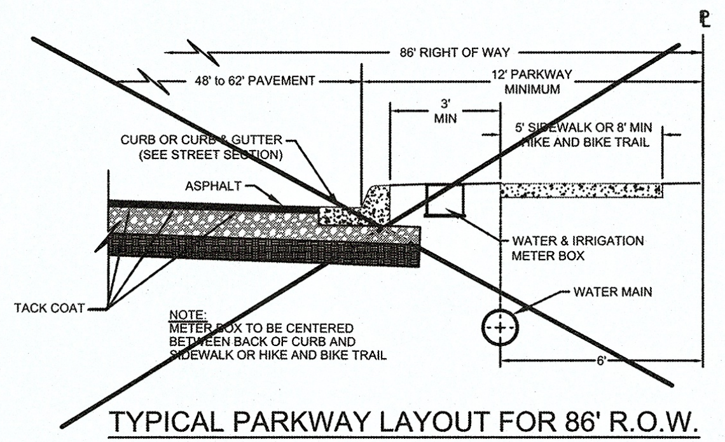
TYPICAL 50' R.O.W. STREET SECTION
(NOT TO SCALE)



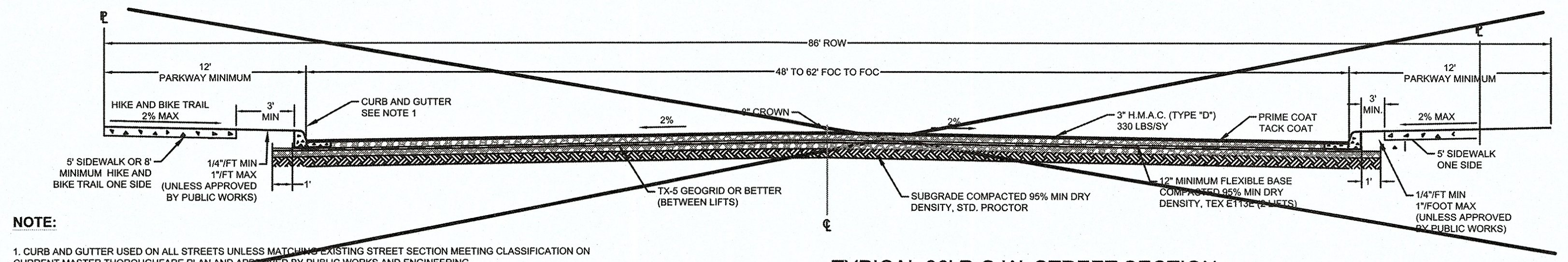
TYPICAL PARKWAY LAYOUT FOR 60' R.O.W.
(NOT TO SCALE)



TYPICAL 60' R.O.W. STREET SECTION
(NOT TO SCALE)



TYPICAL PARKWAY LAYOUT FOR 86' R.O.W.
(NOT TO SCALE)

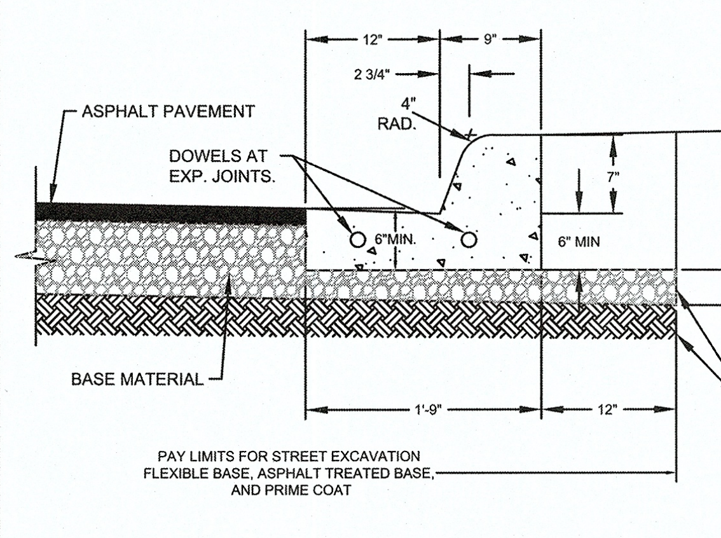


TYPICAL 86' R.O.W. STREET SECTION
(NOT TO SCALE)

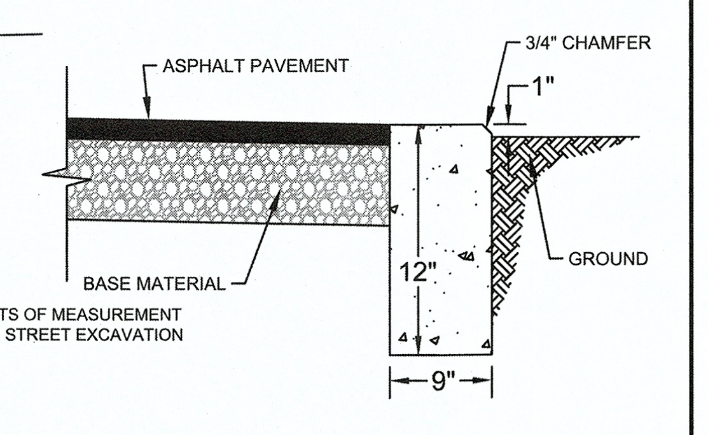
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS

STREET SECTIONS

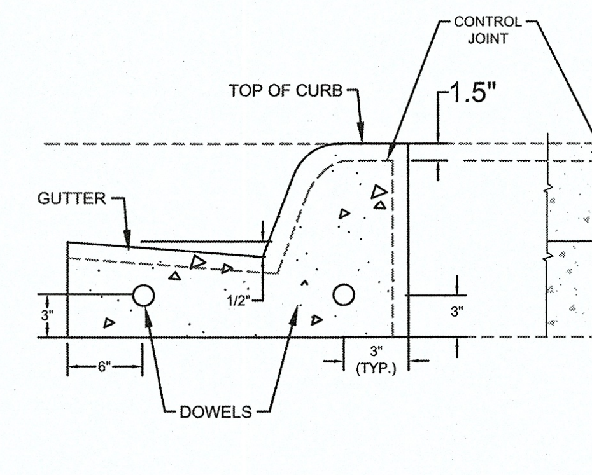
SHEET NO.: 1 of 2



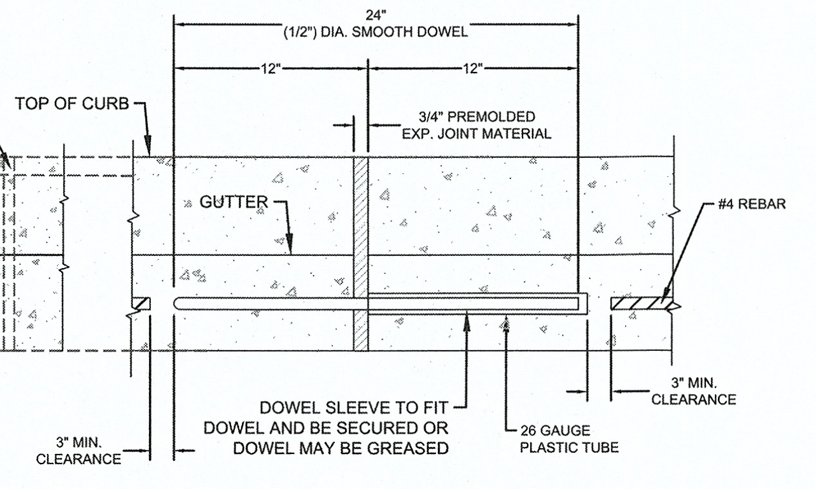
SPILL CURB
(NOT TO SCALE)



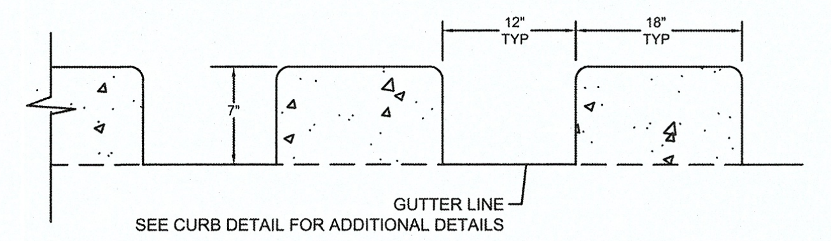
FLUSH CURB
(NOT TO SCALE)



CROSS SECTION



FRONT VIEW



SAWTOOTH CURB & GUTTER

CURB AND GUTTER NOTES

1. STEEL TO MEET ASTM STD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. PLACE PREFORMED EXPANSION JOINTS THROUGH CURB AND GUTTERS AT LOCATIONS OF EXPANSION AND CONTRACTION JOINTS IN PAVEMENT, AT END OF RADIUS RETURNS AT STREET INTERSECTIONS AND DRIVEWAYS, AND AT CURB INLETS. MAXIMUM SPACING SHALL BE 120 FEET.
3. MAXIMUM SPACING FOR CONTROL JOINTS 10 FEET.
4. CENTER DOWEL HORIZONTALLY ON JOINT.
5. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN 2" MIN. COVER.
6. REINFORCING STEEL SHALL BE #4 BARS (INLINE WITH DOWELS).
7. CONTROL JOINTS TO HAVE A DEPTH OF 1.5" INCLUDING DOWN BACK OF CURB.

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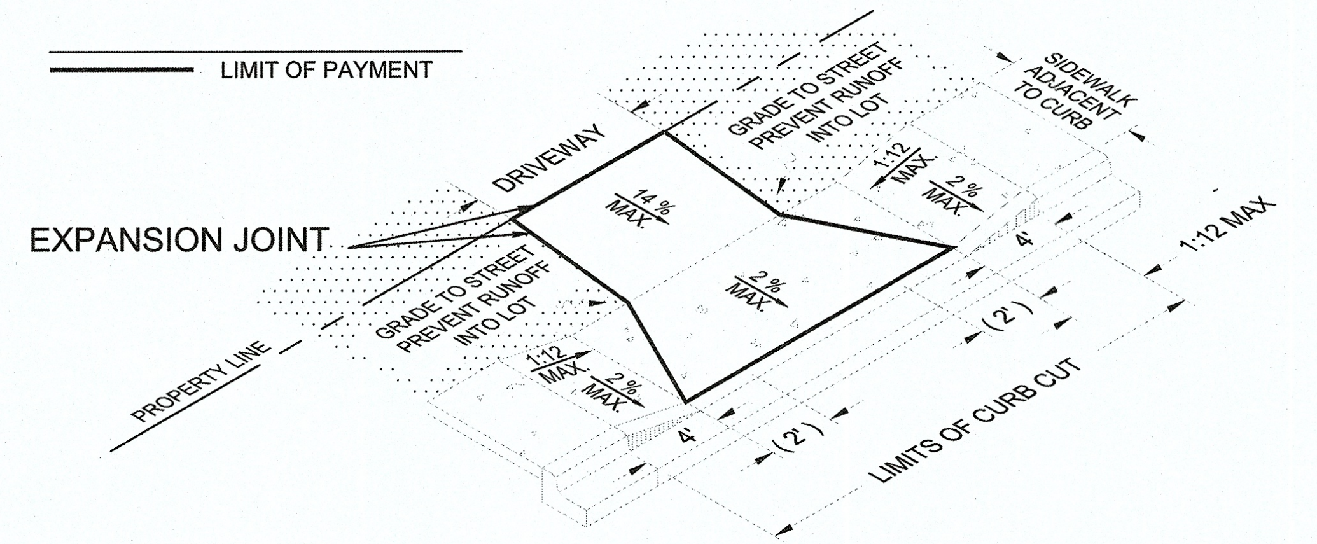
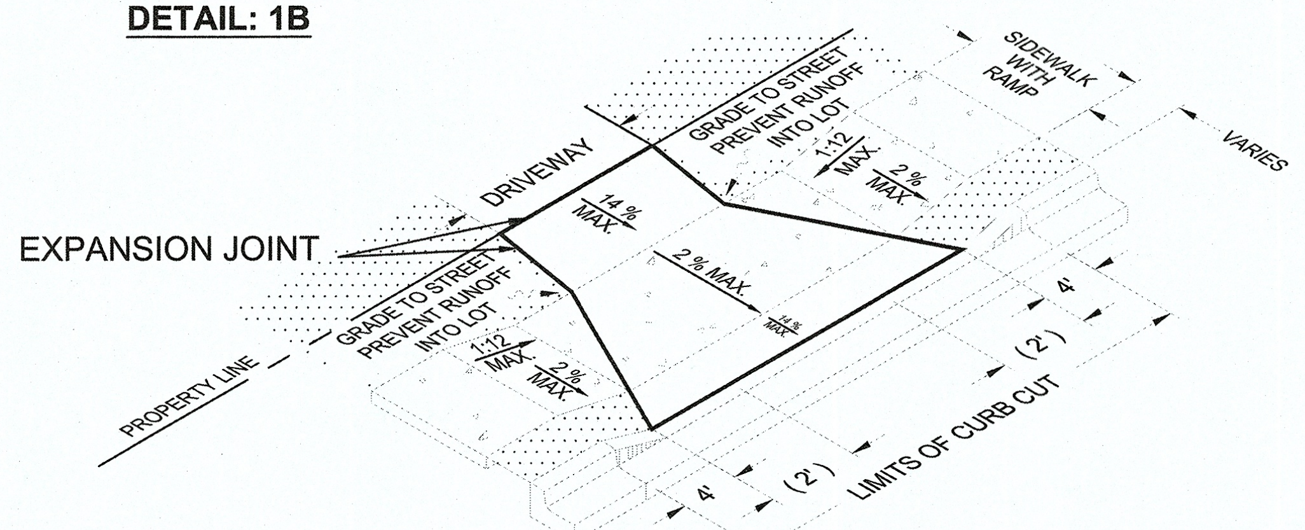
CURB & GUTTER DETAIL

TECHNICAL SPECIFICATION SECTION 02771

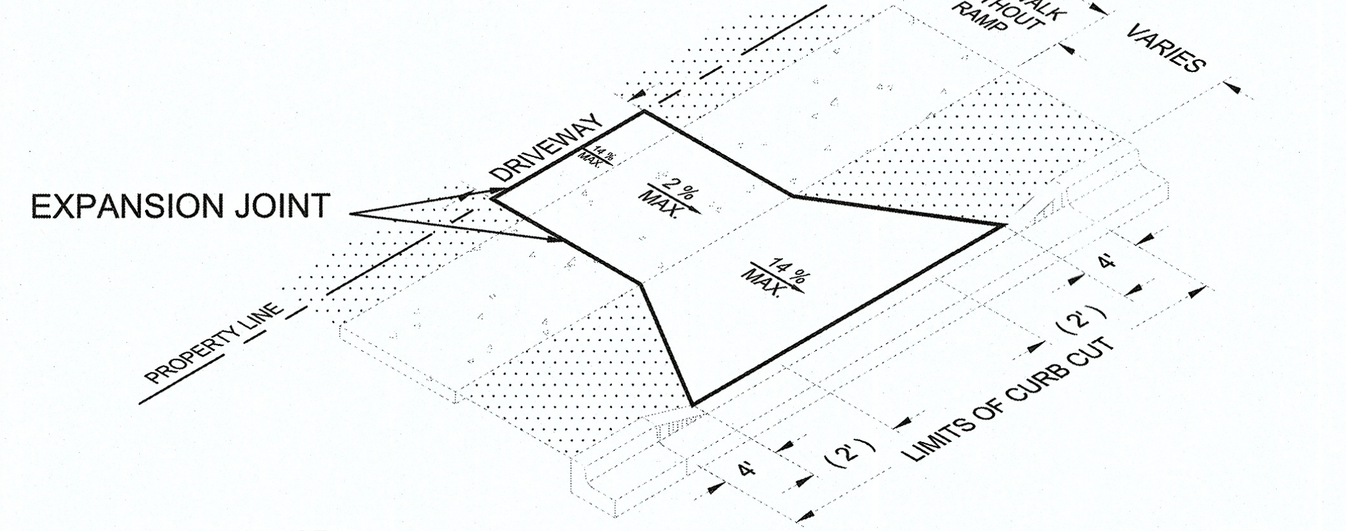
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DATE: 10/23/19
DSGN. BY: ENG. | DRAWN BY: BCP | SHEET NO.: 1



DETAIL: 1B



DETAIL: 2B



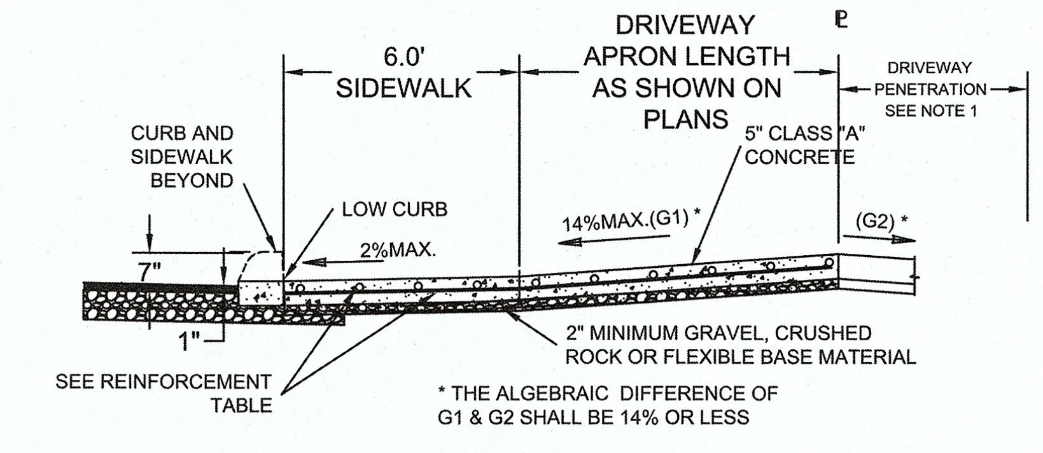
DETAIL: 3B

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

DRIVEWAY

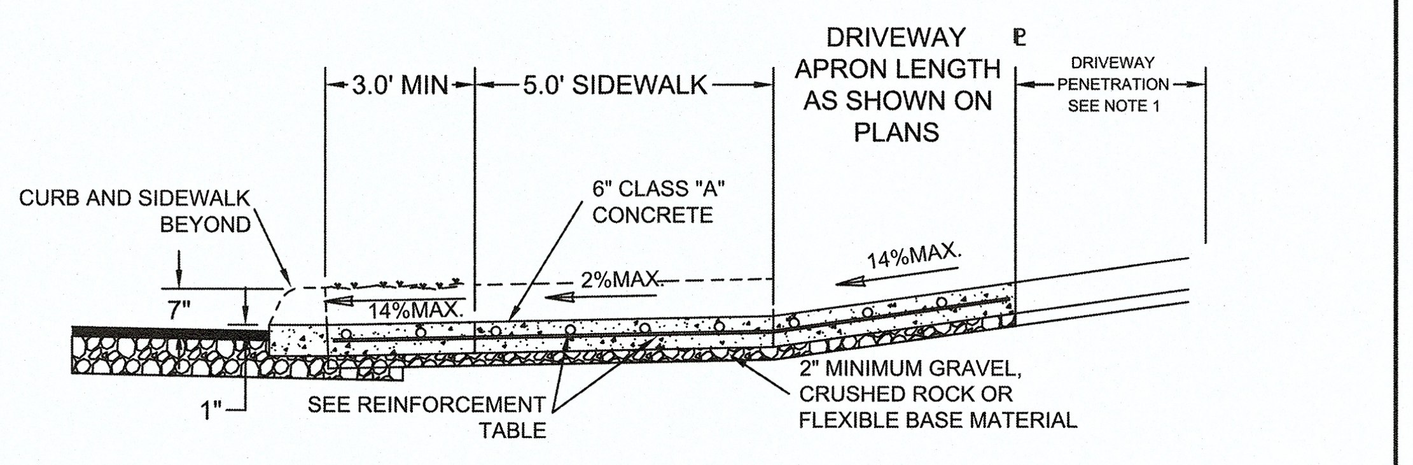
TECHNICAL SPECIFICATION SECTION 02771

ENGINEERING AND PUBLIC WORKS | DATE: 10/20/20
DSGN. BY: ENG. | DRAWN BY: BCP | SHEET NO.: 1 of 2


6.0' SIDEWALK
DRIVEWAY APRON LENGTH AS SHOWN ON PLANS
DRIVEWAY PENETRATION SEE NOTE 1
CURB AND SIDEWALK BEYOND
LOW CURB
2%MAX.
5" CLASS "A" CONCRETE
14%MAX.(G1)
(G2)
7"
1"
SEE REINFORCEMENT TABLE
2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL

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

TYPICAL RESIDENTIAL DRIVEWAY SECTION
WHERE SIDEWALK IS ABUTTING CURB


3.0' MIN
5.0' SIDEWALK
DRIVEWAY APRON LENGTH AS SHOWN ON PLANS
DRIVEWAY PENETRATION SEE NOTE 1
CURB AND SIDEWALK BEYOND
6" CLASS "A" CONCRETE
2%MAX.
14%MAX.
7"
1"
SEE REINFORCEMENT TABLE
2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL

TYPICAL DRIVEWAY SECTION
WITH SIDEWALK SEPARATED FROM CURB

TYPE		WIDTHS (MEASURED AT PROPERTY LINE)		MINIMUM CONCRETE THICKNESS	REINFORCEMENT	DRIVEWAY BASE
		MIN.	MAX.			
RESI-DENTIAL	SINGLE	10'	12'	5" CLASS A 4,000 PSI	#3 BARS 12" O.C. BOTH WAYS OR 6" x 6" W/ D4.7 x W/ D4.7 WELDED WIRE FLAT SHEETS	2" GRAVEL, CRUSHED ROCK OR FLEX BASE
	DOUBLE	10'	24'			
COMMERCIAL		24'	40'	6" CLASS C 4,000 PSI	#4 BARS 12" O.C. BOTH WAYS OR 6" x 6" W/ D7.5 x W/ D7.5 WELDED WIRE FLAT SHEETS	2" GRAVEL, CRUSHED ROCK OR FLEX BASE

DRIVEWAY AND CURB NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE.
2. 7" CURB MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY.
3. CURB SHALL BE TAPERED TO FINISH FLUSH WITH SIDEWALK.
4. BEGINNING RADIUS SHALL NOT ENCROACH ON ADJACENT PROPERTIES BASED ON A PROJECTION OF THE PROPERTY LINE FROM THE RIGHT OF WAY TO THE CURB LINE.

SCHERTZ
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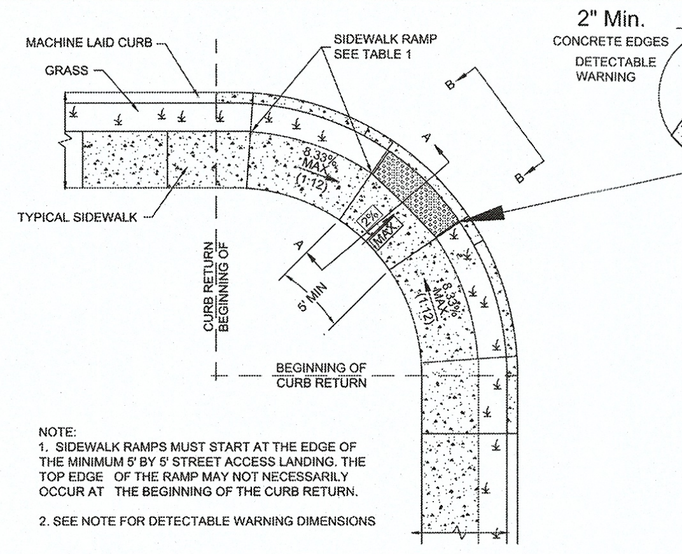
DRIVEWAY

TECHNICAL SPECIFICATION SECTION 02771

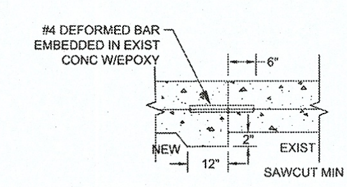
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DATE: 10/20/20
DSGN. BY: ENG. | DRAWN BY: BCP | SHEET NO.: 2 of 2



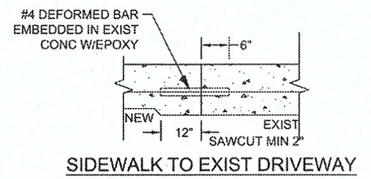
NOTE:
1. SIDEWALK RAMPS MUST START AT THE EDGE OF THE MINIMUM 5' BY 5' STREET ACCESS LANDING. THE TOP EDGE OF THE RAMP MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

2. SEE NOTE FOR DETECTABLE WARNING DIMENSIONS

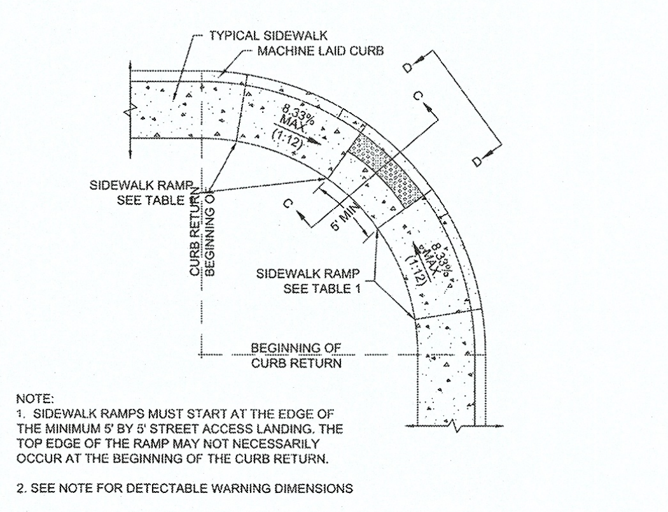
TYPICAL SIDEWALK RAMP
SIDEWALK SEPARATED FROM CURB
(NOT TO SCALE)



SIDEWALK TO EXIST SIDEWALK
(NOT TO SCALE)



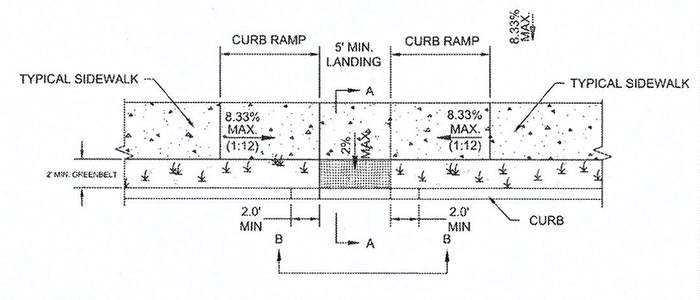
SIDEWALK TO EXIST DRIVEWAY
(NOT TO SCALE)



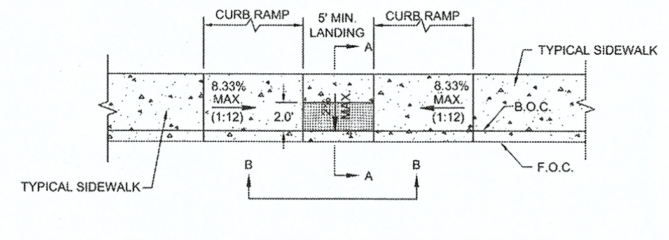
NOTE:
1. SIDEWALK RAMPS MUST START AT THE EDGE OF THE MINIMUM 5' BY 5' STREET ACCESS LANDING. THE TOP EDGE OF THE RAMP MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

2. SEE NOTE FOR DETECTABLE WARNING DIMENSIONS

ALTERNATIVE SIDEWALK RAMP
SIDEWALK ABUTS CURB
(NOT TO SCALE)



TYPICAL SIDEWALK RAMP - TYPE IV
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
(NOT TO SCALE)

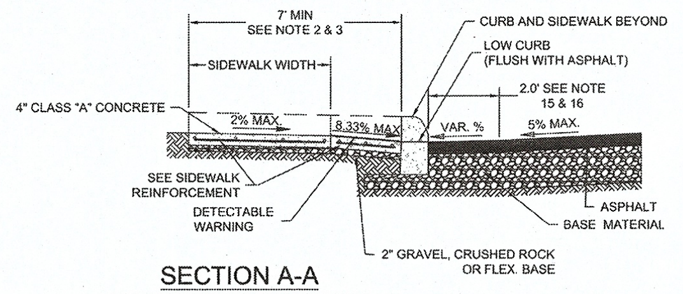


TYPICAL SIDEWALK RAMP - TYPE II
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
(NOT TO SCALE)

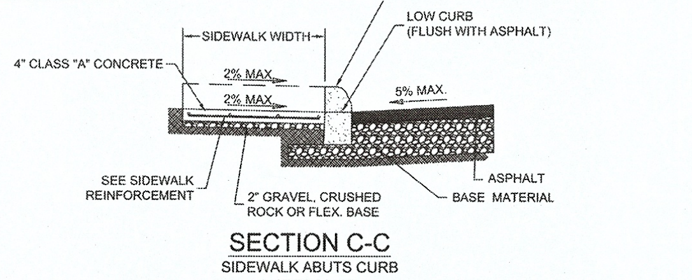
NOTES:
1. CURB SHALL BE TAPERED TO FINISH FLUSH WITH SIDEWALK.
2. BEGINNING RADIUS SHALL NOT ENCROACH ON ADJACENT PROPERTIES BASED ON A PROJECTION OF THE PROPERTY LINE FROM THE RIGHT OF WAY TO THE CURB LINE.
3. SIDEWALK SECTION SHALL BE REQUIRED ALONG ALL STREETS.
4. THE TOWN IS NOT RESPONSIBLE FOR VEHICLES THAT DRAG DUE TO GRADE OF DRIVEWAY. THE DRIVEWAY IS PRIVATELY MAINTAINED.

TABLE 1 - (SEE NOTE 4)

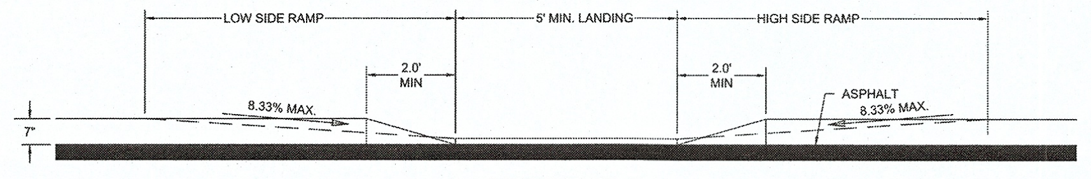
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"



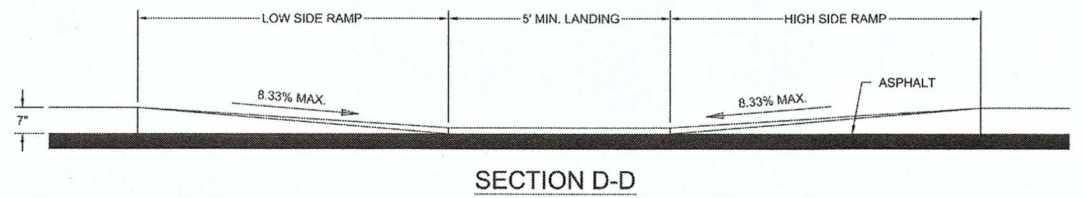
SECTION A-A
SIDEWALK SEPARATED FROM CURB
(NOT TO SCALE)



SECTION C-C
SIDEWALK ABUTS CURB
(NOT TO SCALE)

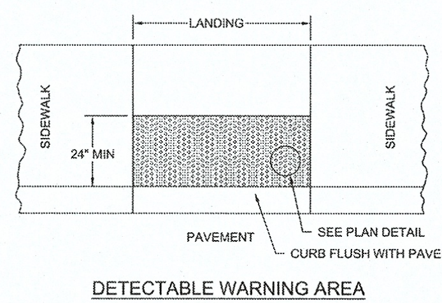


SECTION B-B
CURB PROFILE WHERE SIDEWALK SEPARATED FROM CURB
(NOT TO SCALE)

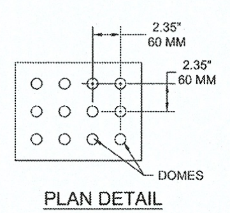


SECTION D-D
CURB PROFILE WHERE SIDEWALK ABUTS CURB
(NOT TO SCALE)

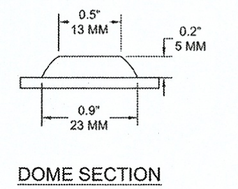
GENERAL NOTES
1. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 5' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 5' AND SEPARATED A MINIMUM OF 2' 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).
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. TYPICAL SIDEWALK RAMP TO BE USED IN ALL NEW CONSTRUCTION
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS FOR "CONCRETE CURBING", "MACHINE LAID CURB" AND/OR "CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" 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 2%.
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.



DETECTABLE WARNING AREA
(NOT TO SCALE)



PLAN DETAIL
(NOT TO SCALE)



DOME SECTION
(NOT TO SCALE)

APPROVED CAST-IN-PLACE DETECTABLE WARNINGS
1. CAST-IN-PLACE DETECTABLE WARNING SYSTEMS MUST BE POLYMER COMPOSITE
2. MATERIAL MUST BE "WET SET" INTO FRESHLY POURED CONCRETE.
3. PROTECT PRODUCT FROM DAMAGE UNTIL MATERIAL IS FULLY SET OR CURED.
4. PRODUCT MUST BE APPROVED BY THE ENGINEERING DEPARTMENT.

01-OCTOBER-2015

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS

SIDEWALK DETAILS

PROJECT NO.: | DATE: FEBRUARY, 1 2015
DRWN. BY: LBJ | DSGN. BY: LBJ | CHKD. BY: LBJ | SHEET NO.: 5 of 6

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

6/6/22

A. NICHOLAS REYNOLDS
111666

Nick Reynolds, P.E.

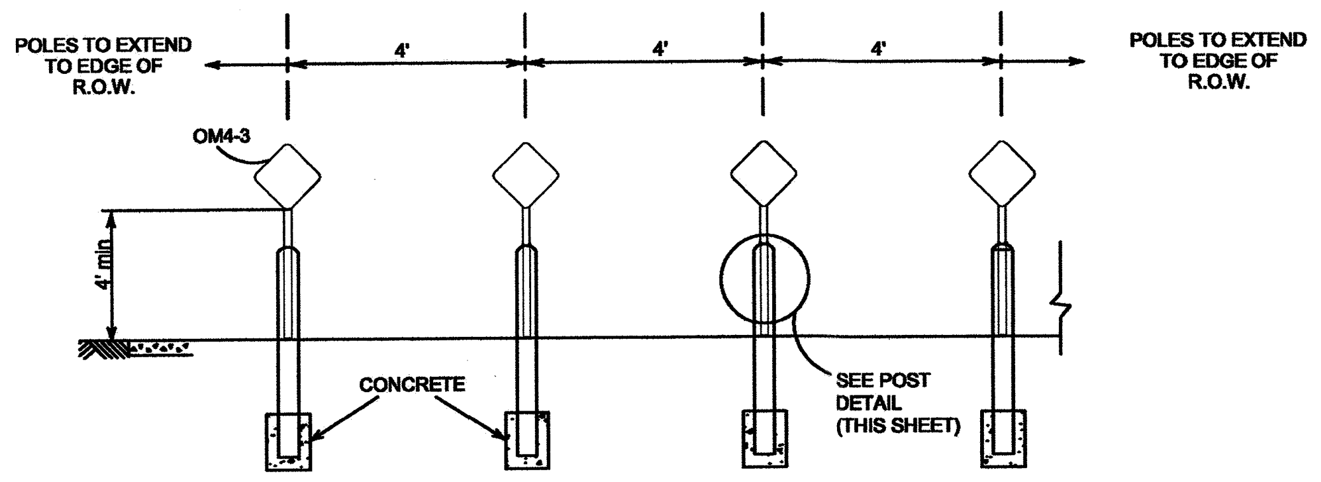
THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

STREET DETAIL SHEET

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

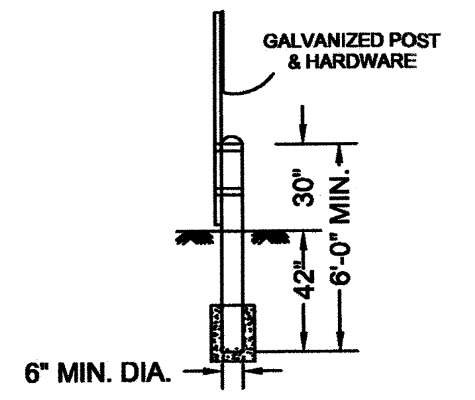
SHEET NUMBER:
5.4

Date: Jun 02, 2022, 2:06pm User ID: dgonzalez
File: U:\Projects\171\23\06\Design\Civil\STREETS\STREET DETAIL SHEET.dwg


POLES TO EXTEND TO EDGE OF R.O.W.
4'
4'
4'
POLES TO EXTEND TO EDGE OF R.O.W.
OM4-3
4' min
CONCRETE
SEE POST DETAIL (THIS SHEET)

TYPICAL ELEVATION VIEW

(NOT TO SCALE)



OM4-3 SIGN TO ROUND WOOD POST DETAIL

(NOT TO SCALE)

GENERAL NOTES

1. ALL DEAD END STREETS MUST HAVE APPROPRIATE BARRICADE AND HEADER CURB.
2. THE POSTS SHALL BE SET IN A MINIMUM OF 1' DEEP CLASS "A" CONCRETE (UNLESS OTHERWISE SHOWN ON PLANS) IN ACCORDANCE WITH ITEM, "PORTLAND CEMENT CONCRETE". CONCRETE SHALL BE SUBSIDIARY TO THE BID ITEM.
3. WHERE SOLID ROCK IS ENCOUNTERED OR WHERE SHOWN ON THE PLANS, THE DIAMETER OF THE HOLES SHALL BE APPROXIMATELY 12 INCHES, THE BACKFILLING SHALL BE WITH A COHESIONLESS MATERIAL, AND EMBEDMENT DEPTH SHALL BE 1'- 6" OR MORE AS DIRECTED BY THE CITY ENGINEER.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

STANDARD DETAIL 01504
END OF STREET BARRICADE - TYPE 1
TECHNICAL SPECIFICATION SECTION 01504
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DATE: 7/02/2021
DSGN. BY: ENG | DRAWN BY: JRS | SHEET NO.: 1 of 1

C:\Users\JS1155\City of Schertz\Engineering Department - Documents\Standards and Details\Standard Details\2021\SCHERTZ STANDARD DETAILS.dwg

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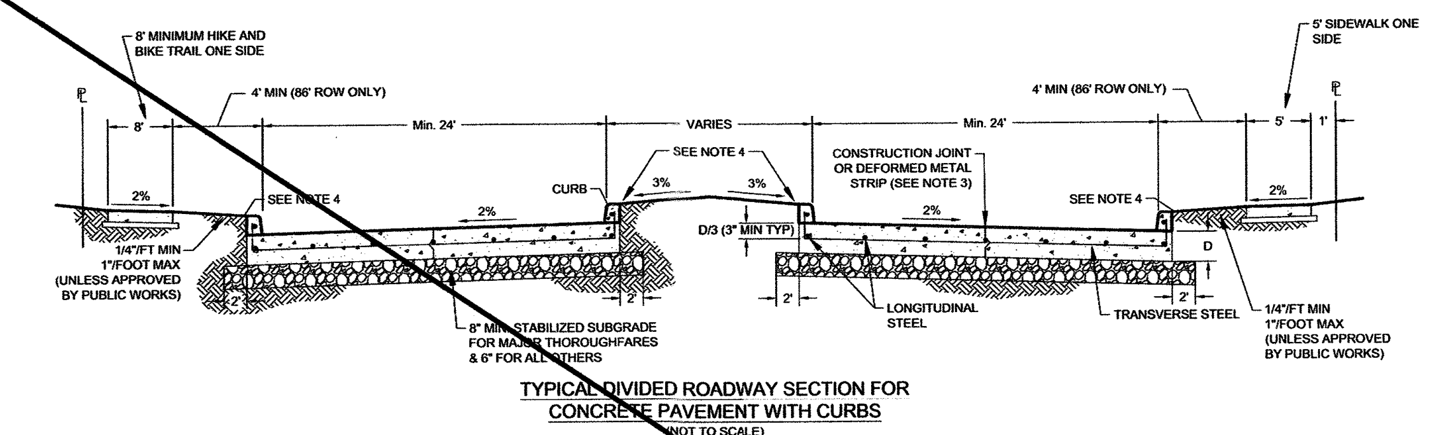
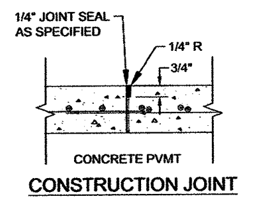

8' MINIMUM HIKE AND BIKE TRAIL ONE SIDE
4' MIN (86' ROW ONLY)
℄
8'
Min. 24'
VARIES
Min. 24'
4' MIN (86' ROW ONLY)
5' SIDEWALK ONE SIDE
5'
1'
2%
SEE NOTE 4
CURB
SEE NOTE 4
3%
3%
CONSTRUCTION JOINT OR DEFORMED METAL STRIP (SEE NOTE 3)
2%
SEE NOTE 4
2%
D/3 (3" MIN TYP)
D
1/4"/FT MIN 1"/FOOT MAX (UNLESS APPROVED BY PUBLIC WORKS)
2'
2'
2'
2'
8" MIN. STABILIZED SUBGRADE FOR MAJOR THOROUGHFARES & 6" FOR ALL OTHERS
LONGITUDINAL STEEL
TRANSVERSE STEEL
1/4"/FT MIN 1"/FOOT MAX (UNLESS APPROVED BY PUBLIC WORKS)

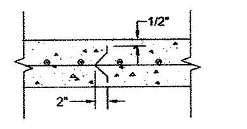
TYPICAL DIVIDED ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

(NOT TO SCALE)



CONSTRUCTION JOINT

(NOT TO SCALE)

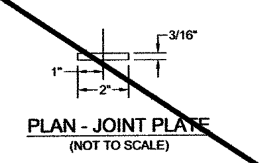


DEFORMED METAL STRIP

(NOT TO SCALE)

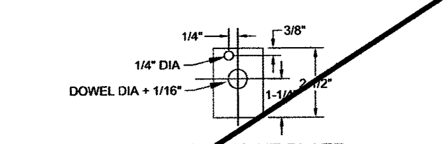
CONCRETE PAVEMENT NOTE:

1. THE MAXIMUM WIDTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 15'-0".
2. ALL EARTHEN AREAS ARE TO BE HYDROMULCHED UNLESS OTHERWISE SHOWN ON DRAWINGS.
3. CONTRACTOR MAY SAWCUT IN LIEU OF DEFORMED METAL STRIP.
4. USE STRIP OF SOD GRASS TO PREVENT EROSION UNTIL STAND OF GRASS IS ESTABLISHED.
5. AN EQUAL OR LARGER AREA OF WELDED REINFORCEMENT BAR CONFORMING TO ASTM A497 MAY BE SUBSTITUTED FOR REBARS LISTED TABLE 1.



PLAN - JOINT PLATE

(NOT TO SCALE)



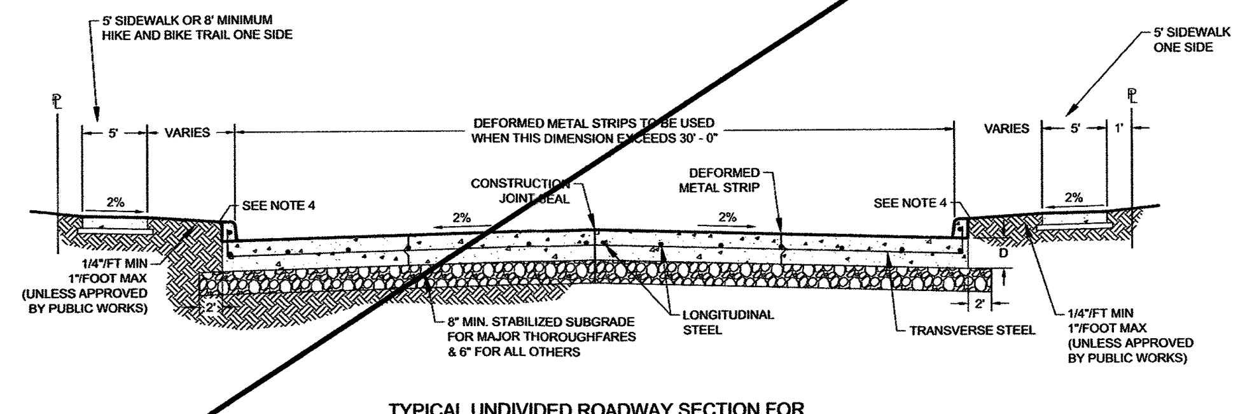
ELEV - JOINT PLATE

(NOT TO SCALE)

TABLE 1
REINFORCING STEEL BAR SIZES AND SPACINGS FOR VARIOUS PAVEMENT THICKNESSES (D) WITH MAXIMUM EXPANSIONS JOINT SPACING = 80'.
f'c - 3500 PSI/28 DAYS AND Fy = 60,000 PSI.

PAVEMENT THICKNESS, D (IN)	PAVEMENT WIDTH (FT)	LONGITUDINAL STEEL									TRANSVERSE STEEL		
		#4 BARS			#5 BARS			#6 BARS			#4 BARS	#5 BARS	#6 BARS
		NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	SPACING (IN)	SPACING (IN)	SPACING (IN)
6	28	17	20.50	4.00	-	-	-	-	-	-	36	-	-
7	25	17	18.25	4.00	-	-	-	-	-	-	36	-	-
7	35	24	18.00	3.00	-	-	-	-	-	-	36	-	-
7	38	25	17.75	3.00	-	-	-	-	-	-	36	-	-
7	37	25	18.25	3.00	-	-	-	-	-	-	36	-	-
7	41	28	18.00	3.00	-	-	-	-	-	-	36	-	-
7	45	31	17.75	3.75	-	-	-	-	-	-	36	-	-
8	25	20	15.50	2.75	13	24.50	3.00	-	-	-	36	36	-
8	34	27	15.50	2.50	17	25.00	4.00	-	-	-	36	36	-
8	35	27	16.00	2.00	18	24.25	4.00	-	-	-	36	36	-
8	38	28	15.75	3.25	18	25.00	[illegible]	-	-	-	30	36	-
8	44	34	15.75	4.00	22	24.75	4.00	-	-	-	30	36	-
8	45	35	15.75	2.25	23	24.25	3.00	-	-	-	30	36	-
9	25	22	14.00	3.00	14	22.50	4.00	-	-	-	36	36	-
9	34	31	13.50	2.00	19	22.25	3.50	-	-	-	30	36	-
9	35	31	13.75	3.75	[illegible]	21.75	3.50	-	-	-	30	36	-
9	38	32	13.75	3.00	21	21.25	3.50	-	-	-	30	36	-
9	44	39	13.75	2.75	25	21.75	3.00	-	-	-	24	36	-
9	45	39	14.00	[illegible]	26	21.25	4.50	-	-	-	24	36	-
10	25	24	12.75	3.50	17	18.25	4.00	-	-	-	36	36	36
10	34	33	12.50	4.00	21	20.00	4.00	-	-	-	30	36	36
10	35	34	12.50	3.75	23	18.75	4.00	-	-	-	30	36	36
10	38	38	12.50	3.50	24	18.50	3.00	-	-	-	30	36	36
10	44	[illegible]	12.00	4.00	25	18.50	4.50	-	-	-	24	36	36
10	45	44	12.50	3.00	28	18.00	3.00	-	-	-	24	36	36
11	25	27	11.25	3.00	17	18.25	4.00	4.0	12	3	36	36	36
11	34	38	11.50	2.75	24	17.50	2.50	2.5	17	4	24	36	36
11	35	37	11.50	3.00	24	18.00	3.00	3.0	17	4	24	36	36
11	38	40	11.00	2.00	25	17.75	3.00	3.0	17	4	24	36	36
11	44	48	11.125	2.50	30	18.00	3.00	3.0	21	4	24	36	36
11	45	49	11.125	3.00	31	17.75	4.00	4.0	22	3	24	36	36
12	25	-	-	-	19	16.25	4.00	4.0	13	3	36	36	36
12	34	-	-	-	25	16.00	4.00	4.0	18	4	24	36	36
12	35	-	-	-	26	16.50	4.00	4.0	19	3	24	36	36
12	38	-	-	-	27	16.25	4.50	4.5	20	4.5	24	36	36
12	44	-	-	-	33	16.25	4.00	4.0	24	5	24	30	36
12	45	-	-	-	35	15.75	3.00	3.0	25	3	24	30	36

MINIMUM LAP LENGTHS (L):
A: #4 BARS: L = 22 INCHES
B: #5 BARS: L = 27 INCHES
C: #6 BARS: L = 32 INCHES


5' SIDEWALK OR 8' MINIMUM HIKE AND BIKE TRAIL ONE SIDE
℄
5'
VARIES
DEFORMED METAL STRIPS TO BE USED WHEN THIS DIMENSION EXCEEDS 30' - 0"
VARIES
5'
1'
5' SIDEWALK ONE SIDE
2%
SEE NOTE 4
CONSTRUCTION JOINT SEAL
DEFORMED METAL STRIP
2%
2%
SEE NOTE 4
2%
D
1/4"/FT MIN 1"/FOOT MAX (UNLESS APPROVED BY PUBLIC WORKS)
2'
2'
8" MIN. STABILIZED SUBGRADE FOR MAJOR THOROUGHFARES & 6" FOR ALL OTHERS
LONGITUDINAL STEEL
TRANSVERSE STEEL
1/4"/FT MIN 1"/FOOT MAX (UNLESS APPROVED BY PUBLIC WORKS)

TYPICAL UNDIVIDED ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

(NOT TO SCALE)

TABLE 2

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
4 1/2	1/2	18	12
5	1/2	18	12
6	3/4	18	12
7	1	18	12
8	1	18	12
9	1 1/4	18	12
10	1 1/4	18	12
11	1 1/4	18	12
12	1 1/4	18	12

PAVEMENT EXPANSION JOINT NOTES
1. STEEL TO MEET ASTM STD SPECIFICATIONS FOR CONC. REFINF. BARS. UNITS TO BE SPACED ON 12" CENTERS
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS.
3. CENTER DOWEL HORIZONTALLY ON JOINT
4. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN 3" MIN. COVER.
5. CITY OF SCHERTZ MAY APPROVE JOINT PLATE ALTERNATE

01-OCTOBER-2015

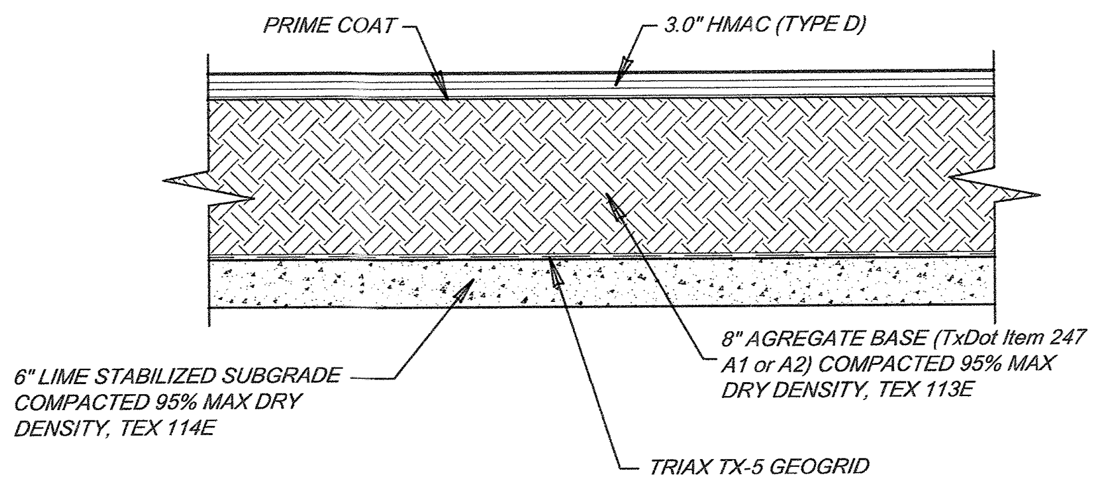
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS

STANDARD CONCRETE
PAVEMENT SECTION DETAILS
PROJECT NO.: | DATE: 2015
DRWN. BY: LBJ | DSGN. BY: LBJ | CHKD. BY: LBJ | SHEET NO.: 2 of 6

Pavement Section

3.0" HMAC (TYPE "D")
8" Agregate Base (TxDot Item 247 A1 or A2)
TRIAX TX-5 GEOGRID
6" Lime Stabilized Subgrade
Total: 17"
Structural No: 2.92
C.B.R = 2.0

NOTES:
1. PAVEMENT DESIGN THICKNESS BASED ON MINIMUM STREET STANDARD FOR 50' ROW STREET SECTION (SHOWN ABOVE), AND MEETS DESIGN THICKNESS FOR LOCAL STREET (WITHOUT BUS TRAFFIC) BASED ON GEOTECHNICAL REPORT BY INTEGRATED TESTING AND ENGINEERING COMPANY OF SAN ANTONIO, L.P. PROJECT NO. S221437 DATED NOVEMBER 18, 2022.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.


PRIME COAT
3.0" HMAC (TYPE D)
6" LIME STABILIZED SUBGRADE COMPACTED 95% MAX DRY DENSITY, TEX 114E
8" AGREGATE BASE (TxDot Item 247 A1 or A2) COMPACTED 95% MAX DRY DENSITY, TEX 113E
TRIAX TX-5 GEOGRID

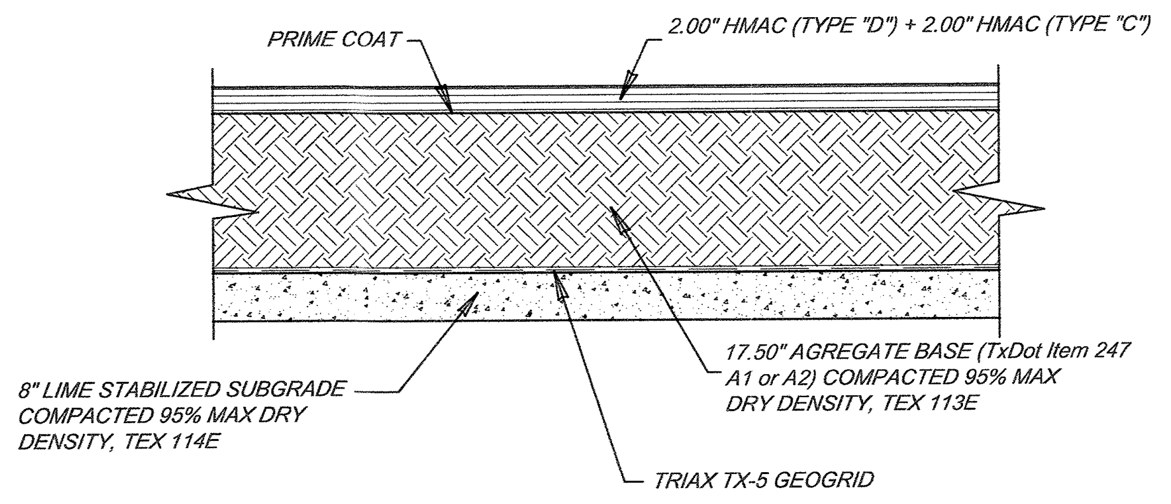
LOCAL STREET DETAIL (50' ROW)

NOT-TO-SCALE

Pavement Section

2.00" HMAC (TYPE "D") + 2.00" HMAC (TYPE "C")
17.5" Agregate Base (TxDot Item 247 A1 or A2)
TRIAX TX-5 GEOGRID
8" Lime Stabilized Subgrade
Total: 29.50"
Structural No: 4.85
C.B.R = 2.0

NOTES:
1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEGRATED TESTING AND ENGINEERING COMPANY OF SAN ANTONIO, LP. PROJECT NO S221437 DATED NOVEMBER 18, 2022.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.


PRIME COAT
2.00" HMAC (TYPE "D") + 2.00" HMAC (TYPE "C")
8" LIME STABILIZED SUBGRADE COMPACTED 95% MAX DRY DENSITY, TEX 114E
17.50" AGREGATE BASE (TxDot Item 247 A1 or A2) COMPACTED 95% MAX DRY DENSITY, TEX 113E
TRIAX TX-5 GEOGRID

COLLECTOR STREET DETAIL

NOT-TO-SCALE

BIG JOHN LANE

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

REVISIONS | ISSUE DATE

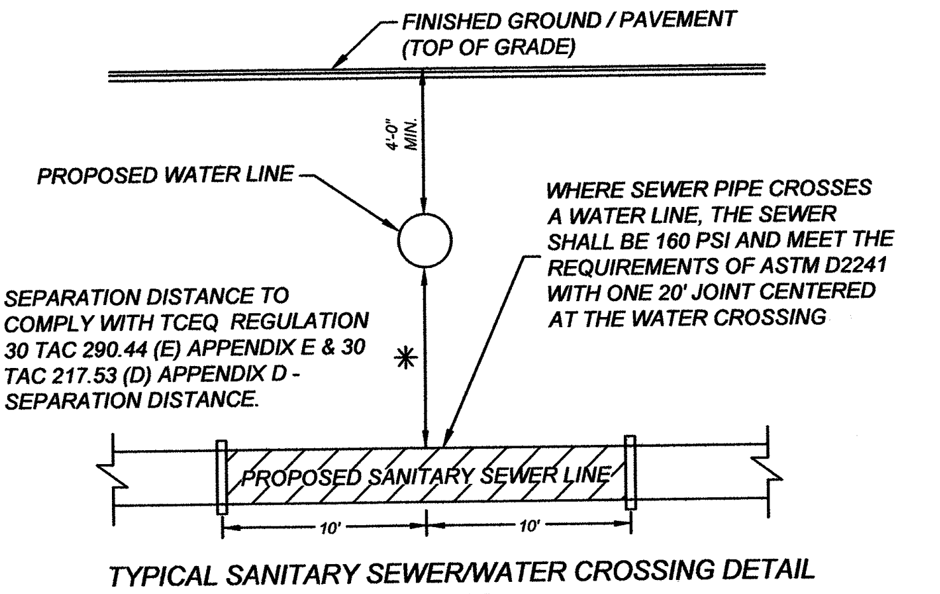
1/10/23
A. NICHOLAS REYNOLDS
111666

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

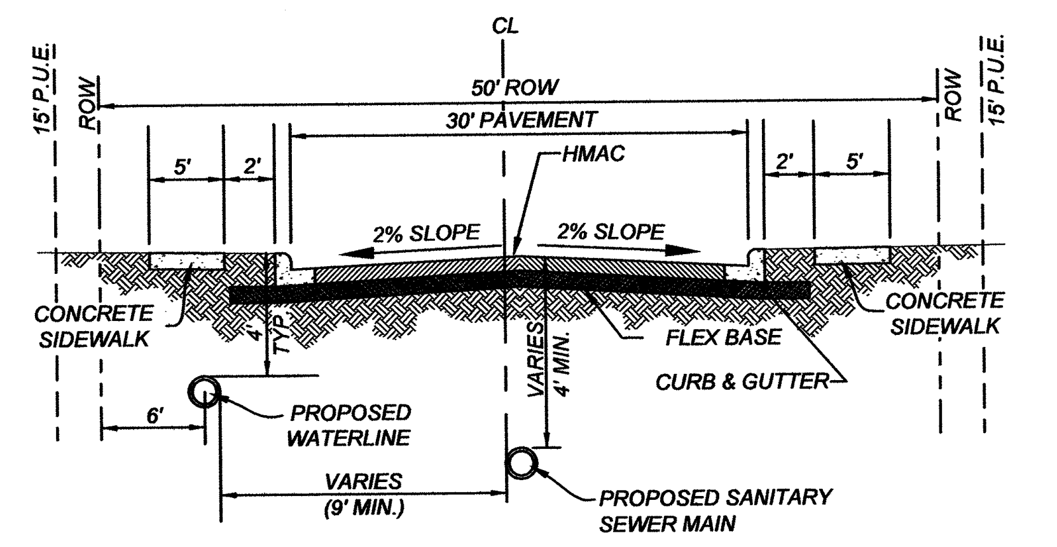
STREET DETAIL SHEET

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR
SHEET NUMBER:
5.5

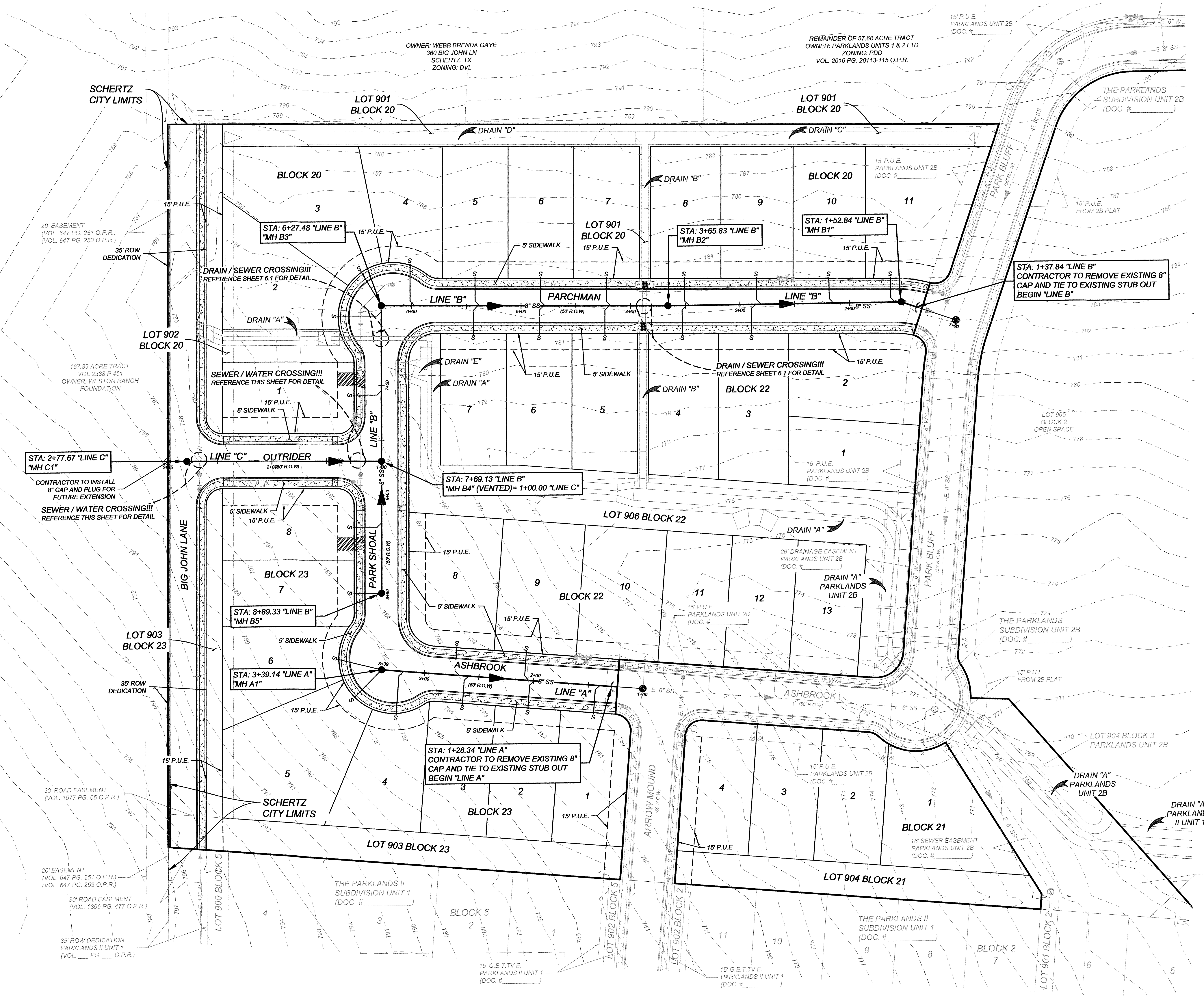
Date: Jun 09, 2023, 4:22pm User ID: tmiller
File: U:\Projects\171\23\06\Design\Civil\STREETS\STREET DETAIL SHEET.dwg


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
4'-0" MIN.
PROPOSED WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
✳ SEPARATION DISTANCE TO COMPLY WITH TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
✳
PROPOSED SANITARY SEWER LINE
10'
10'

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

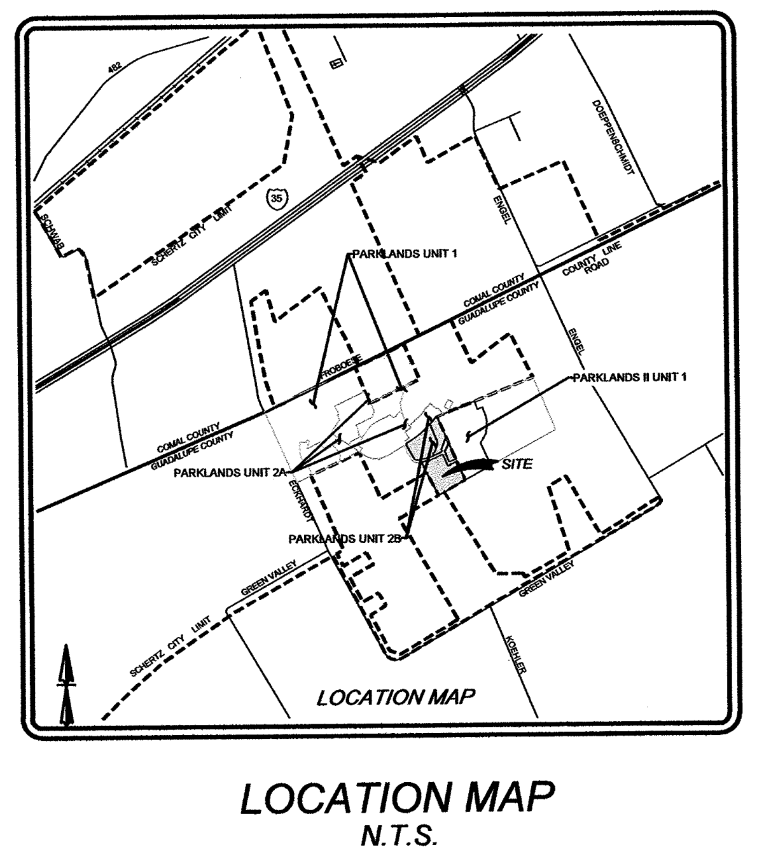


TYPICAL 50' ROW STREET CROSS SECTION - LOCAL ST.
N.T.S.

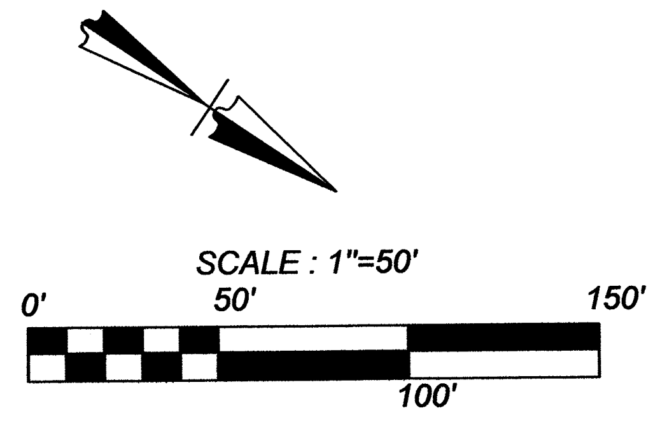

OWNER: WEBB BRENDA GAYE
360 BIG JOHN LN
SCHERTZ, TX
ZONING: DVL
REMAINDER OF 57.68 ACRE TRACT
OWNER: PARKLANDS UNITS 1 & 2 LTD
ZONING: PDD
VOL. 2016 PG. 20113-115 O.P.R.
SCHERTZ CITY LIMITS
LOT 901 BLOCK 20
LOT 901 BLOCK 20
DRAIN "D"
DRAIN "C"
BLOCK 20
BLOCK 20
DRAIN "B"
STA: 6+27.48 "LINE B" "MH B3"
STA: 3+65.83 "LINE B" "MH B2"
STA: 1+52.84 "LINE B" "MH B1"
LOT 901 BLOCK 20
35' ROW DEDICATION
DRAIN / SEWER CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
STA: 1+37.84 "LINE B" CONTRACTOR TO REMOVE EXISTING 8" CAP AND TIE TO EXISTING STUB OUT BEGIN "LINE B"
LINE "B"
PARCHMAN (50' R.O.W)
LOT 902 BLOCK 20
DRAIN "A"
DRAIN "E"
DRAIN / SEWER CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
167.89 ACRE TRACT VOL 2338 P 451 OWNER: WESTON RANCH FOUNDATION
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
BLOCK 22
LOT 905 BLOCK 2 OPEN SPACE
STA: 2+77.67 "LINE C" "MH C1"
LINE "C"
OUTRIDER
CONTRACTOR TO INSTALL 8" CAP AND PLUG FOR FUTURE EXTENSION
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
STA: 7+69.13 "LINE B" "MH B4" (VENTED)= 1+00.00 "LINE C"
LOT 906 BLOCK 22
DRAIN "A"
26' DRAINAGE EASEMENT PARKLANDS UNIT 2B
BIG JOHN LANE
PARK SHOAL
BLOCK 23
BLOCK 22
DRAIN "A" PARKLANDS UNIT 2B
PARK BLUFF
STA: 8+89.33 "LINE B" "MH B5"
THE PARKLANDS SUBDIVISION UNIT 2B
LOT 903 BLOCK 23
STA: 3+39.14 "LINE A" "MH A1"
35' ROW DEDICATION
ASHBROOK
LINE "A"
STA: 1+28.34 "LINE A" CONTRACTOR TO REMOVE EXISTING 8" CAP AND TIE TO EXISTING STUB OUT BEGIN "LINE A"
LOT 904 BLOCK 3 PARKLANDS UNIT 2B
DRAIN "A" PARKLANDS UNIT 2B
DRAIN "A" PARKLANDS II UNIT 1
SCHERTZ CITY LIMITS
BLOCK 23
BLOCK 21
ARROW MOUND
LOT 903 BLOCK 23
LOT 904 BLOCK 21
16' SEWER EASEMENT PARKLANDS UNIT 2B
30' ROAD EASEMENT (VOL. 1077 PG. 65 O.P.R.) TO BE ABANDONED
THE PARKLANDS II SUBDIVISION UNIT 1
LOT 900 BLOCK 5
LOT 902 BLOCK 5
LOT 902 BLOCK 2
LOT 901 BLOCK 2
BLOCK 5
BLOCK 2
35' ROW DEDICATION PARKLANDS II UNIT 1 (VOL. ___ PG. ___ O.P.R.)
15' G.E.T.T.V.E. PARKLANDS II UNIT 1 (DOC. #___)

LEGEND

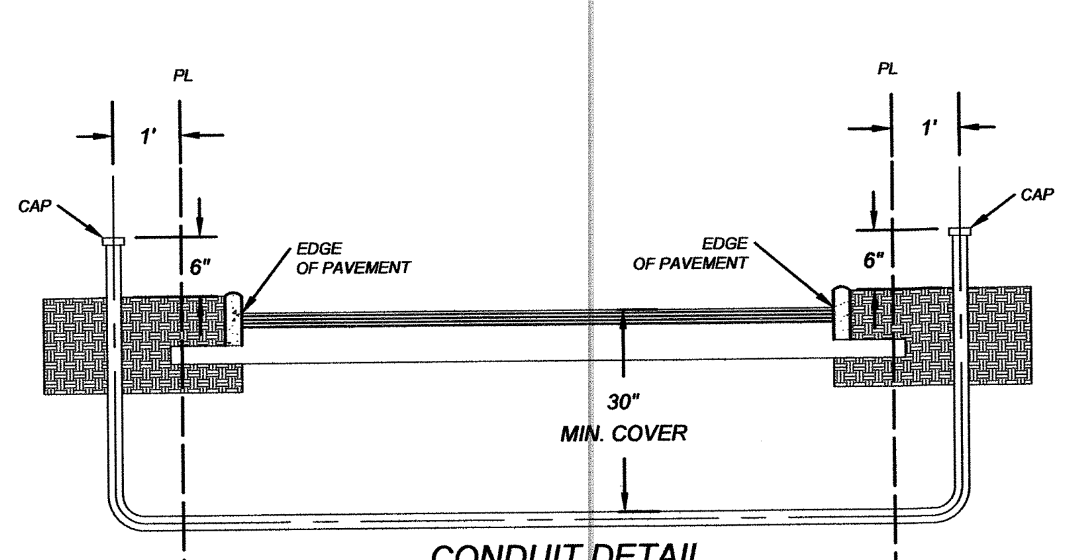
PROPOSED WATER MAIN	8"W
PROPOSED WATER SERVICE & METER BOX	W
PROPOSED WATER 1" IRRIGATION SERVICE & W/ 3/4" WATER METER & METER BOX	3/4" IRR
PROPOSED FIRE HYDRANT	
PUBLIC UTILITY EASEMENT	P.U.E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
RIGHT OF WAY	R.O.W.
PROPOSED 8" SANITARY SEWER MAIN	
PROPOSED 8" SANITARY SEWER MANHOLE	
PROPOSED TEE & WATER VALVE	
PROPOSED SANITARY SEWER LATERAL	S
EXISTING SANITARY SEWER LATERAL	S
EXISTING WATER VALVE	
EXISTING FIRE HYDRANT	
EXISTING WATER MAIN	E. 8" W
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	SS
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	PP
FINISHED FLOOR MINIMUM ELEVATION REQUIRED FOR SANITARY SEWER	F.F. MIN. ELEV. 671.70'



LOCATION MAP
N.T.S.



STATE OF TEXAS
A. NICHOLAS REYNOLDS
111666
LICENSED PROFESSIONAL ENGINEER
1/10/23
Nick Reynolds, P.E.



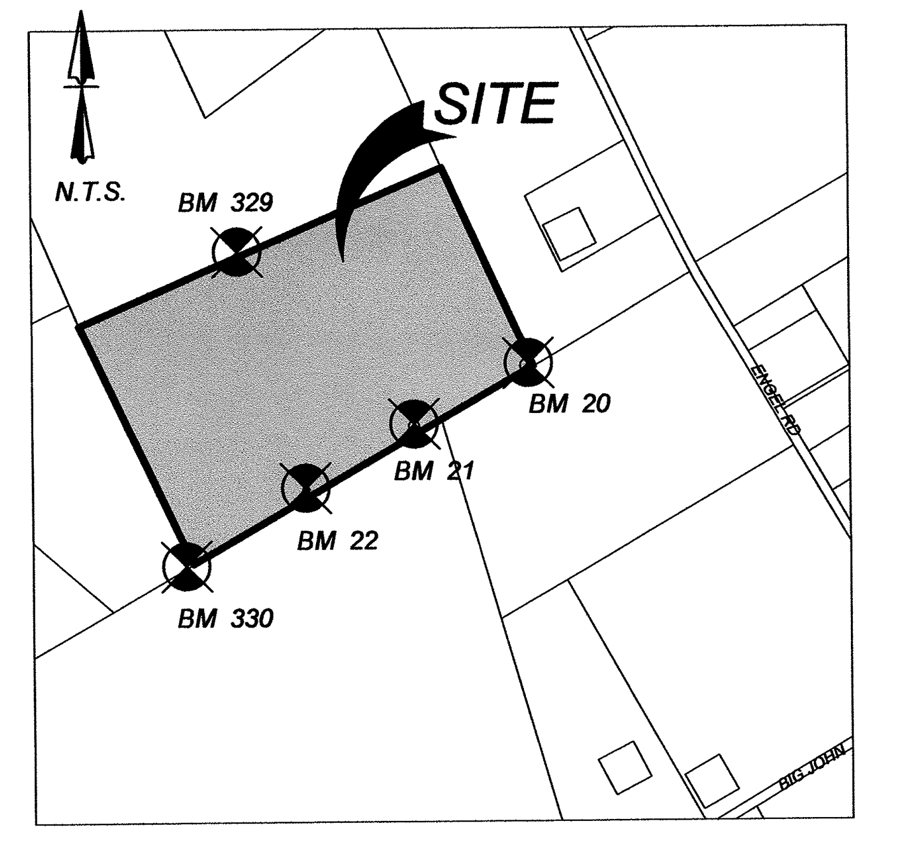
CONDUIT DETAIL
N.T.S.
*PVC SCHED. 40 OR 80 CONDUIT
SEE PLAN SHEETS FOR SIZE, LOCATION,
AND NUMBER OF CONDUITS

NOTE:

- CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH GVEC FACILITY AT ALL STREETS AND DRAIN CROSSING CONSTRUCTION SLEEVES MUST ALSO BE LOCATED FOR GVEC CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.
- CONTRACTOR TO CONTACT ENGINEER FOR APPROPIATE NUMBER AND SIZE OF CONDUITS FOR TELECOMMUNICATIONS
- CONTRACTOR TO CONTACT ENGINEER FOR ELECTRICAL PLANS

DRY UTILITY CONDUIT NOTE:

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



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 CITY OF SCHERTZ 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 THE CITY OF SCHERTZ WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

NOTE:

1. 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).
2. PIPE TYPE DESIGNATIONS ARE SDR 26.
3. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
4. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER ALL MANHOLES SHALL BE 5' IN DIAMETER. SEE SHEET 6.3 FOR DETAILS.
5. SEE SHEET 6.0 FOR BENCHMARK INFORMATION.
6. ALL SANITARY SEWER LATERALS SHALL BE INSTALLED AT 2% UNLESS OTHERWISE SPECIFIED.

⊗SITE BENCHMARKS (SURFACE)

BM #	ELEV.	DESCRIPTION
BM 20	780.29	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13781553.04, E: 2228215.38 (SURFACE)
BM 21	797.88	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13781235.65, E: 2227613.02 (SURFACE)
BM 22	784.17	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13780902.86, E: 2227039.13 (SURFACE)
BM 329	763.37	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13782144.45, E: 2226687.56
BM 330	796.04	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13780498.43, E: 2226408.86

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.

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

OVERALL SANITARY SEWER PLAN

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
6.0

Date: Jan 09, 2023, 4:22pm User ID: tmiller
File: U:\Projects\171\23\06\Design\Civil\SEWER\OVERALL SANITARY SEWER PLAN.dwg

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.

TRENCH EXCAVATION SAFETY PROTECTION

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NOTE:

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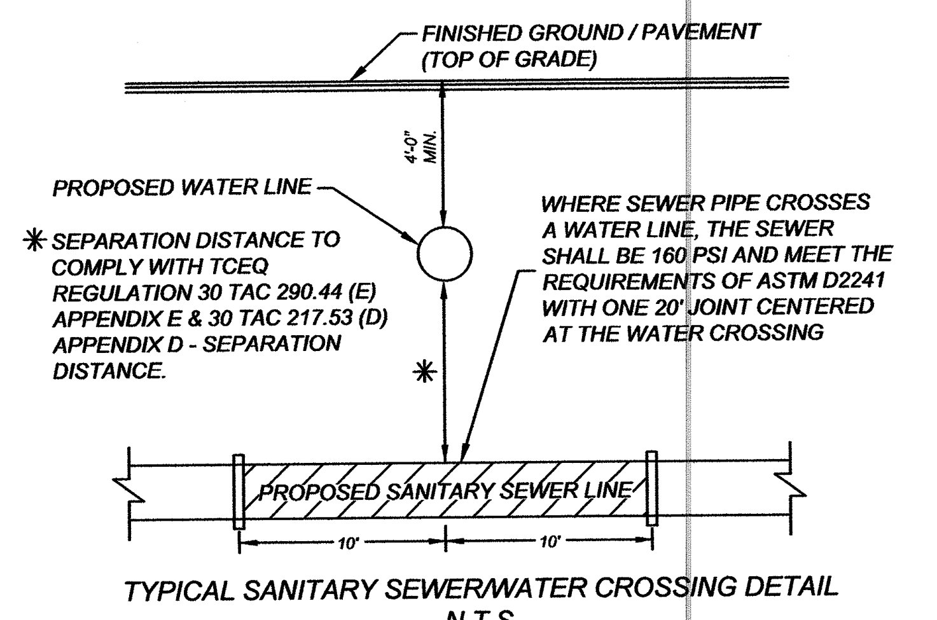
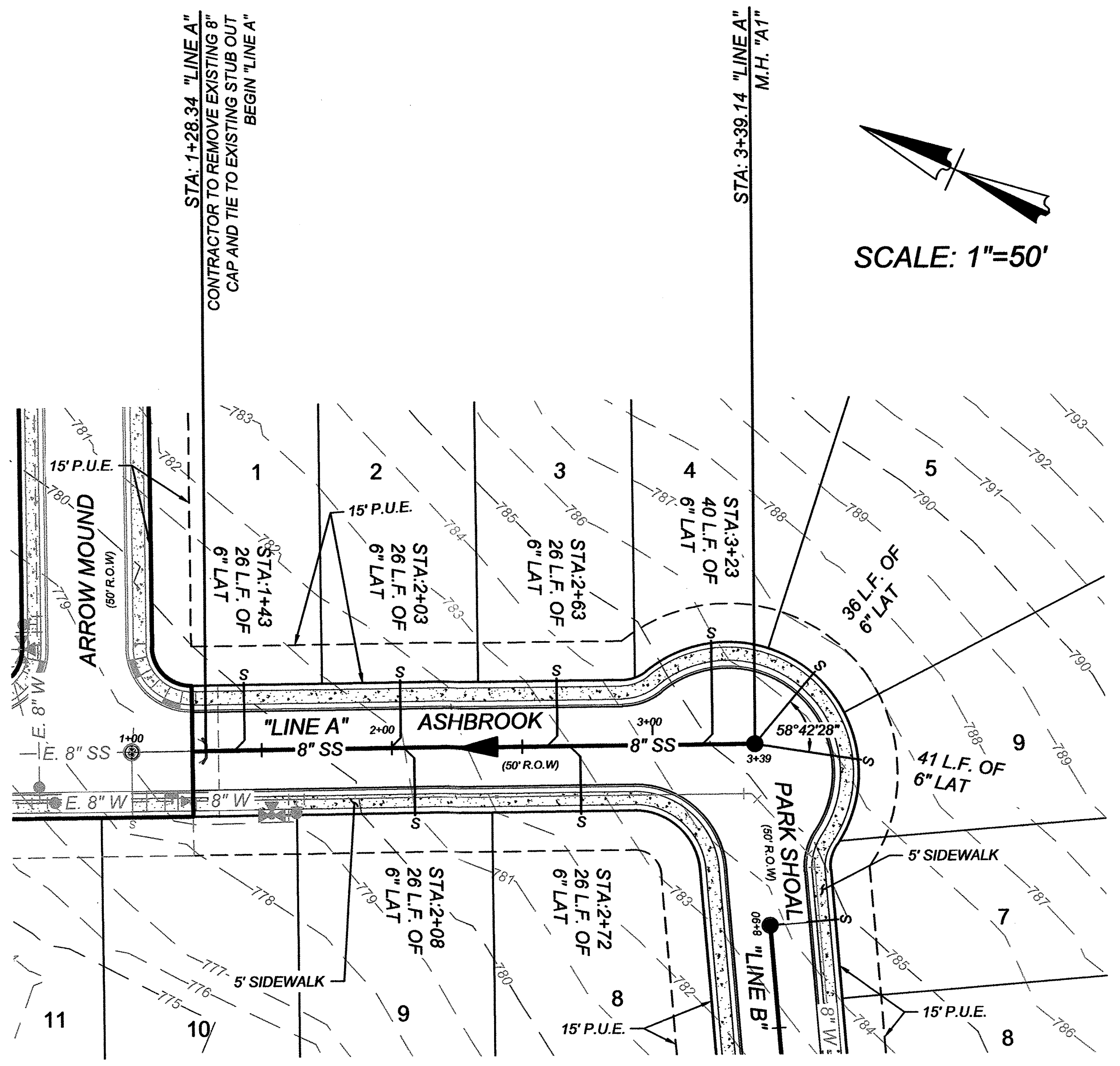
2. *PIPE TYPE DESIGNATIONS ARE SDR 26.*
3. *SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.*
4. *ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER ALL MANHOLES SHALL BE 5' IN DIAMETER. SEE SHEET 6.3 FOR DETAILS.*
5. *SEE SHEET 6.0 FOR BENCHMARK INFORMATION.*
6. *ALL SANITARY SEWER LATERALS SHALL BE INSTALLED AT 2% UNLESS OTHERWISE SPECIFIED.*

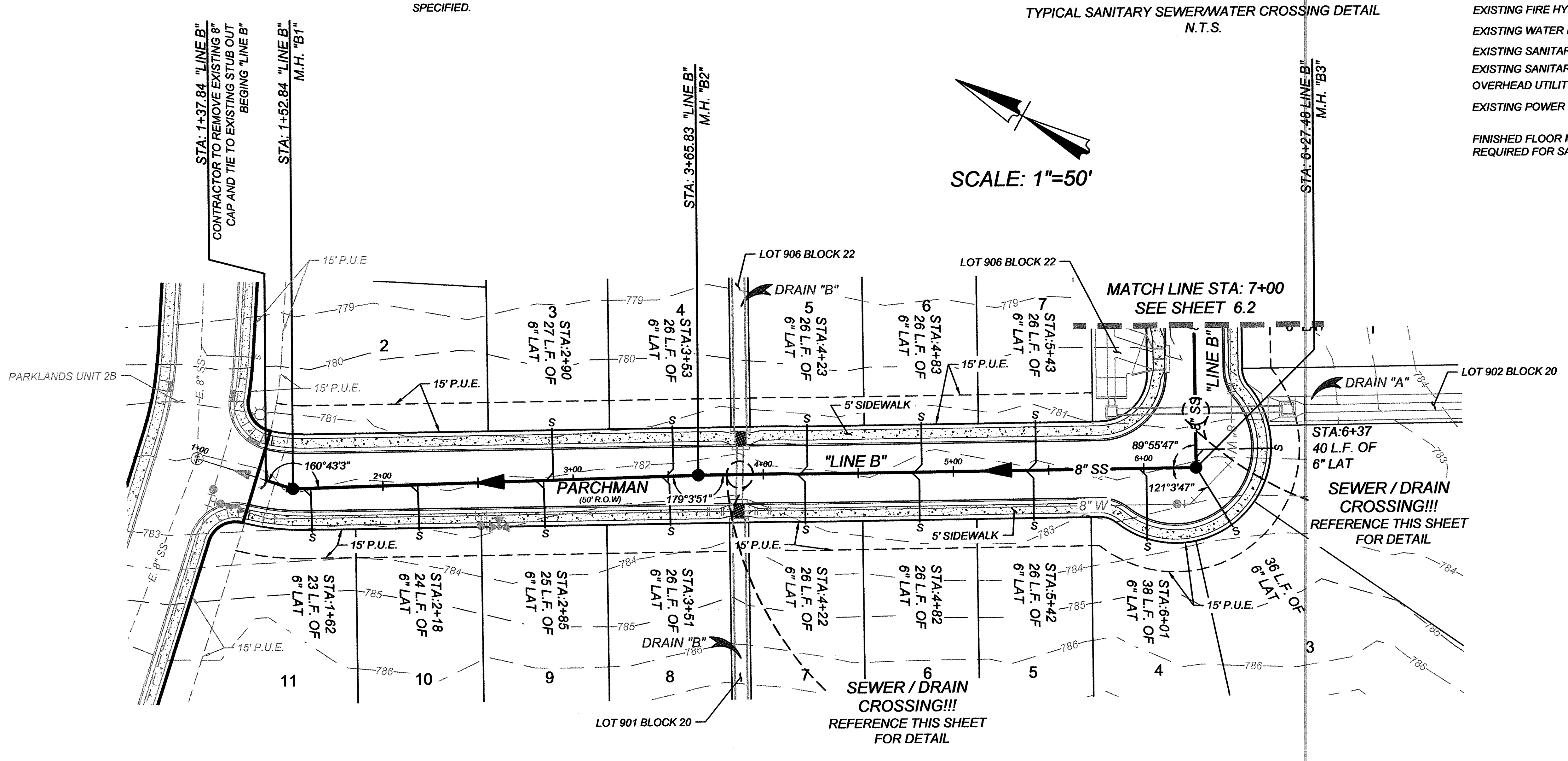

FINISHED GROUND / PAVEMENT (TOP OF GRADE)
4'-0" MIN.
PROPOSED WATER LINE
✳ SEPARATION DISTANCE TO COMPLY WITH TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
✳
PROPOSED SANITARY SEWER LINE
10'
10'

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

LEGEND

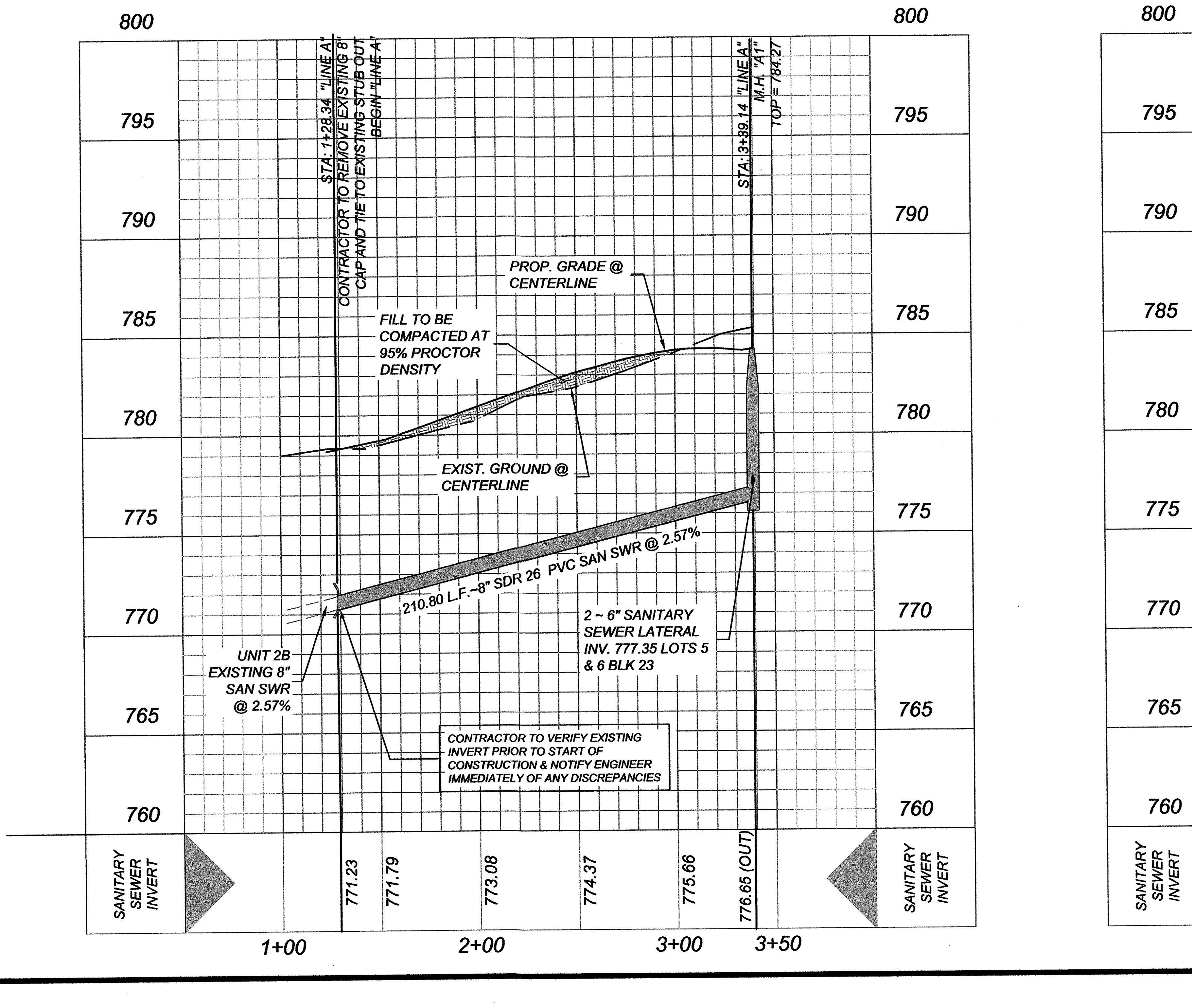
PROPOSED WATER MAIN	8"W
PROPOSED WATER SERVICE & METER BOX	W
PROPOSED WATER 1" IRRIGATION SERVICE & W/ 3/4" WATER METER & METER BOX	3/4" W IRR
PROPOSED FIRE HYDRANT	
PUBLIC UTILITY EASEMENT	P.U.E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
RIGHT OF WAY	R.O.W.
PROPOSED 8" SANITARY SEWER MAIN	
PROPOSED 8" SANITARY SEWER MANHOLE	●
PROPOSED TEE & WATER VALVE	
PROPOSED SANITARY SEWER LATERAL	S
EXISTING SANITARY SEWER LATERAL	S
EXISTING WATER VALVE	
EXISTING FIRE HYDRANT	
EXISTING WATER MAIN	E. 8" W
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	SS
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	● PP
FINISHED FLOOR MINIMUM ELEVATION REQUIRED FOR SANITARY SEWER	F.F. MIN. ELEV. 671.70'


STA: 1+28.34 "LINE A"
CONTRACTOR TO REMOVE EXISTING 8" CAP AND TIE TO EXISTING STUB OUT BEGIN "LINE A"
STA: 3+39.14 "LINE A"
M.H. "A1"
SCALE: 1"=50'
ARROW MOUND
ASHBROOK
PARK SHOAL
"LINE A"
"LINE B"
8" SS
E. 8" SS
E. 8" W
15' P.U.E.
5' SIDEWALK
STA:1+43 26 L.F. OF 6" LAT
STA:2+03 26 L.F. OF 6" LAT
STA:2+63 26 L.F. OF 6" LAT
STA:3+23 40 L.F. OF 6" LAT
36 L.F. OF 6" LAT
41 L.F. OF 6" LAT
STA:2+08 26 L.F. OF 6" LAT
STA:2+72 26 L.F. OF 6" LAT
58°42'28"
1
2
3
4
5
6
7
8
9
10
11


STA: 1+37.84 "LINE B"
CONTRACTOR TO REMOVE EXISTING 8" CAP AND TIE TO EXISTING STUB OUT BEGIN "LINE B"
STA: 1+52.84 "LINE B"
M.H. "B1"
STA: 3+65.83 "LINE B"
M.H. "B2"
STA: 6+27.48 LINE B"
M.H. "B3"
SCALE: 1"=50'
PARKLANDS UNIT 2B
PARCHMAN
"LINE B"
8" SS
MATCH LINE STA: 7+00
SEE SHEET 6.2
LOT 906 BLOCK 22
LOT 902 BLOCK 20
LOT 901 BLOCK 20
DRAIN "A"
DRAIN "B"
SEWER / DRAIN CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
15' P.U.E.
5' SIDEWALK
160°43'3"
179°3'51"
89°55'47"
121°3'47"
STA:2+90 27 L.F. OF 6" LAT
STA:3+53 26 L.F. OF 6" LAT
STA:4+23 26 L.F. OF 6" LAT
STA:4+83 26 L.F. OF 6" LAT
STA:5+43 26 L.F. OF 6" LAT
STA:6+37 40 L.F. OF 6" LAT
STA:1+62 23 L.F. OF 6" LAT
STA:2+18 24 L.F. OF 6" LAT
STA:2+85 25 L.F. OF 6" LAT
STA:3+51 26 L.F. OF 6" LAT
STA:4+22 26 L.F. OF 6" LAT
STA:4+82 26 L.F. OF 6" LAT
STA:5+42 26 L.F. OF 6" LAT
STA:6+01 38 L.F. OF 6" LAT
36 L.F. OF 6" LAT
1
2
3
4
5
6
7
8
9
10
11

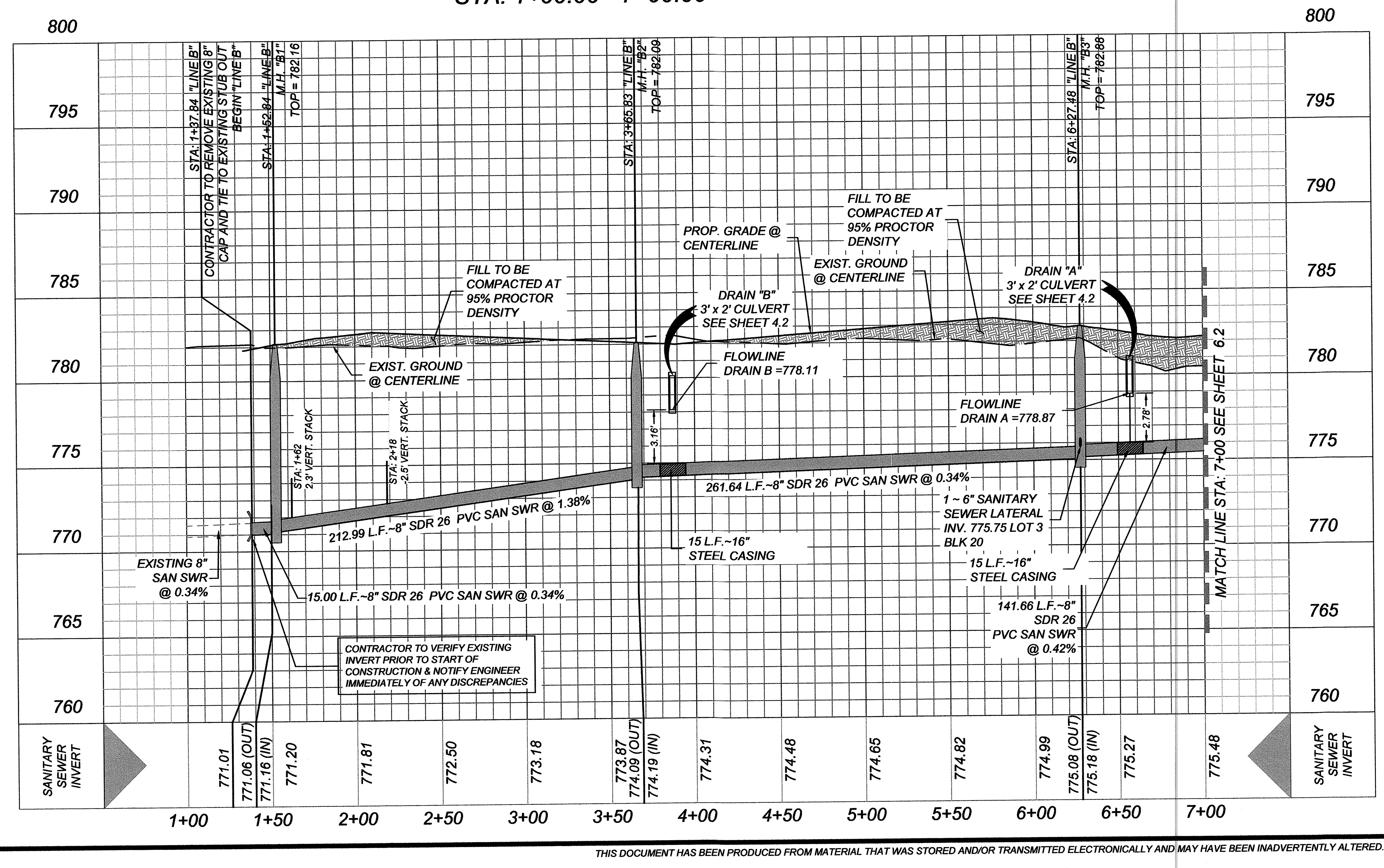
LINE A
STA: 1+00.00 - END

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


800
795
790
785
780
775
770
765
760
STA: 1+28.34 "LINE A"
CONTRACTOR TO REMOVE EXISTING 8" CAP AND TIE TO EXISTING STUB OUT BEGIN "LINE A"
STA: 3+39.14 "LINE A"
M.H. "A1"
TOP = 784.27
PROP. GRADE @ CENTERLINE
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
EXIST. GROUND @ CENTERLINE
210.80 L.F.~8" SDR 26 PVC SAN SWR @ 2.57%
2 ~ 6" SANITARY SEWER LATERAL INV. 777.35 LOTS 5 & 6 BLK 23
UNIT 2B EXISTING 8" SAN SWR @ 2.57%
CONTRACTOR TO VERIFY EXISTING INVERT PRIOR TO START OF CONSTRUCTION & NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES
SANITARY SEWER INVERT
771.23
771.79
773.08
774.37
775.66
776.65 (OUT)
1+00
2+00
3+00
3+50

LINE B
STA: 1+00.00 - 7+00.00

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


800
795
790
785
780
775
770
765
760
STA: 1+37.84 "LINE B"
CONTRACTOR TO REMOVE EXISTING 8" CAP AND TIE TO EXISTING STUB OUT BEGIN "LINE B"
STA: 1+52.84 "LINE B"
M.H. "B1"
TOP = 782.16
STA: 3+65.83 "LINE B"
M.H. "B2"
TOP = 782.09
STA: 6+27.48 "LINE B"
M.H. "B3"
TOP = 782.88
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
PROP. GRADE @ CENTERLINE
EXIST. GROUND @ CENTERLINE
DRAIN "B" 3' x 2' CULVERT SEE SHEET 4.2
DRAIN "A" 3' x 2' CULVERT SEE SHEET 4.2
FLOWLINE DRAIN B =778.11
FLOWLINE DRAIN A =778.87
STA: 1+62 2.3' VERT. STACK
STA: 2+18 2.5' VERT. STACK
3.16'
2.78'
212.99 L.F.~8" SDR 26 PVC SAN SWR @ 1.38%
261.64 L.F.~8" SDR 26 PVC SAN SWR @ 0.34%
15.00 L.F.~8" SDR 26 PVC SAN SWR @ 0.34%
15 L.F.~16" STEEL CASING
1 ~ 6" SANITARY SEWER LATERAL INV. 775.75 LOT 3 BLK 20
141.66 L.F.~8" SDR 26 PVC SAN SWR @ 0.42%
EXISTING 8" SAN SWR @ 0.34%
CONTRACTOR TO VERIFY EXISTING INVERT PRIOR TO START OF CONSTRUCTION & NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES
MATCH LINE STA: 7+00 SEE SHEET 6.2
SANITARY SEWER INVERT
771.01
771.06 (OUT)
771.16 (IN)
771.20
771.81
772.50
773.18
773.87
774.09 (OUT)
774.19 (IN)
774.31
774.48
774.65
774.82
774.99
775.08 (OUT)
775.18 (IN)
775.27
775.48
1+00
1+50
2+00
2+50
3+00
3+50
4+00
4+50
5+00
5+50
6+00
6+50
7+00

KFW
ENGINEERS + SURVEYING
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Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

1/10/23
STATE OF TEXAS
A. NICHOLAS REYNOLDS
111666
LICENSED PROFESSIONAL ENGINEER
Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

LINE A STA. 1+00.00 - END & LINE B STA. 1+00.00 - 7+00.00

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

SHEET NUMBER:
6.1

Date: Jan 10, 2023, 10:31am User ID: nreynolds
File: U:\Projects\171\23\06\Design\Civil\SEWER\SSPP1712306.dwg

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.

TRENCH EXCAVATION SAFETY PROTECTION

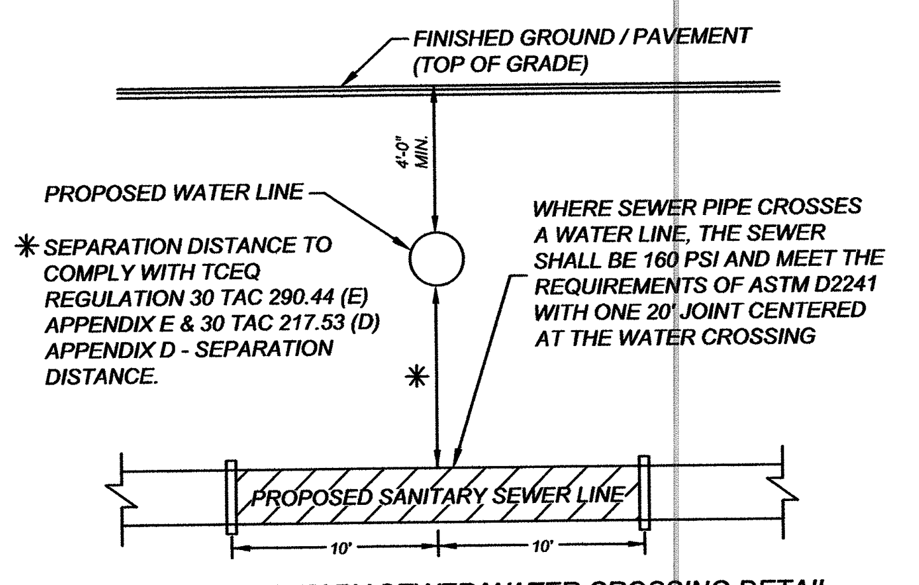
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

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 CITY OF SCHERTZ INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR INSPECTIONS WILL NOT BE ACCEPTED AND FINALIZED BY THE CITY OF SCHERTZ WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

NOTE:

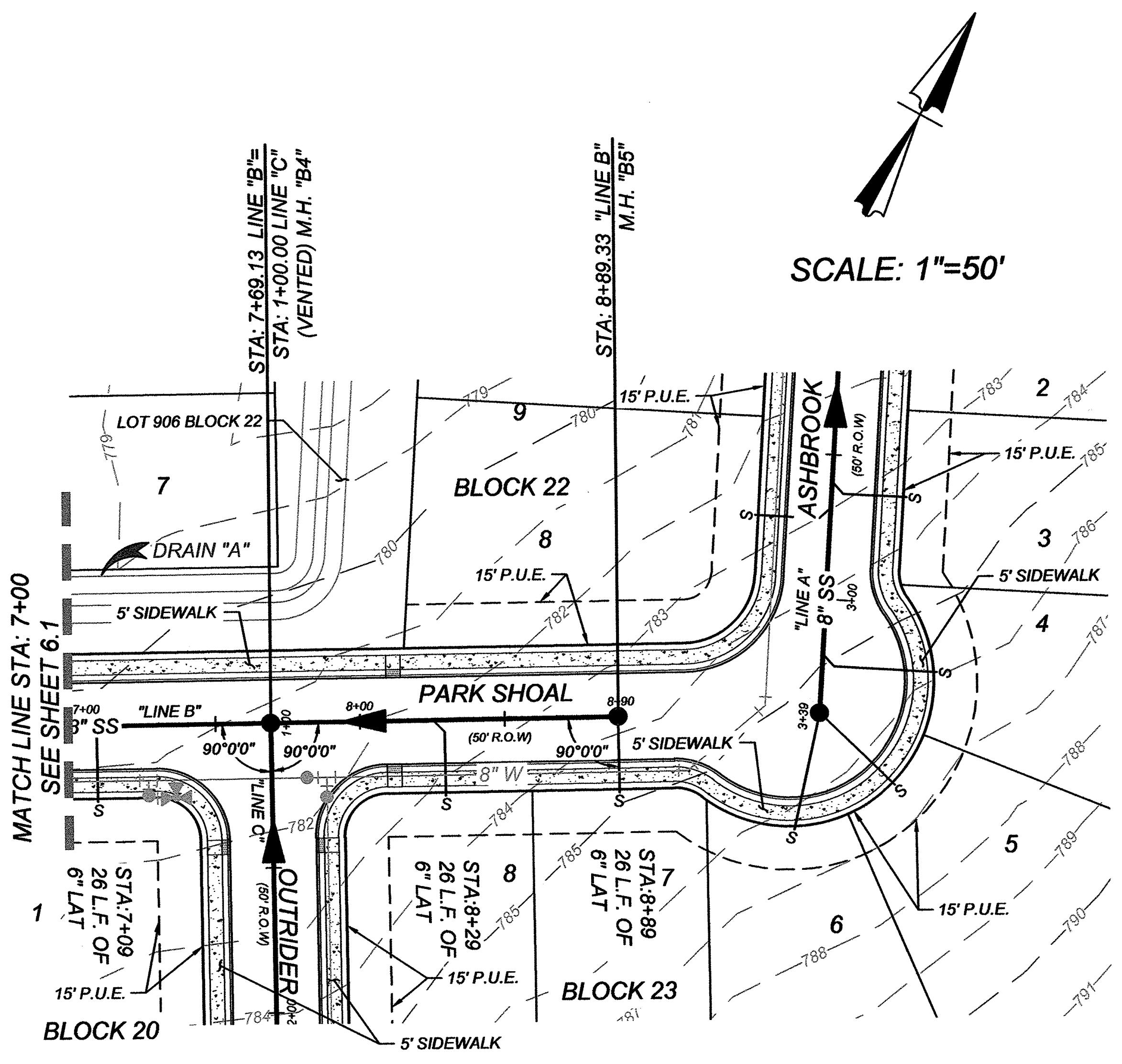
1. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM).
2. PIPE TYPE DESIGNATIONS ARE SDR 26.
3. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL.
4. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER ALL MANHOLES SHALL BE 5' IN DIAMETER. SEE SHEET 6.3 FOR DETAILS.
5. SEE SHEET 6.0 FOR BENCHMARK INFORMATION.
6. ALL SANITARY SEWER LATERALS SHALL BE INSTALLED AT 2% UNLESS OTHERWISE SPECIFIED.

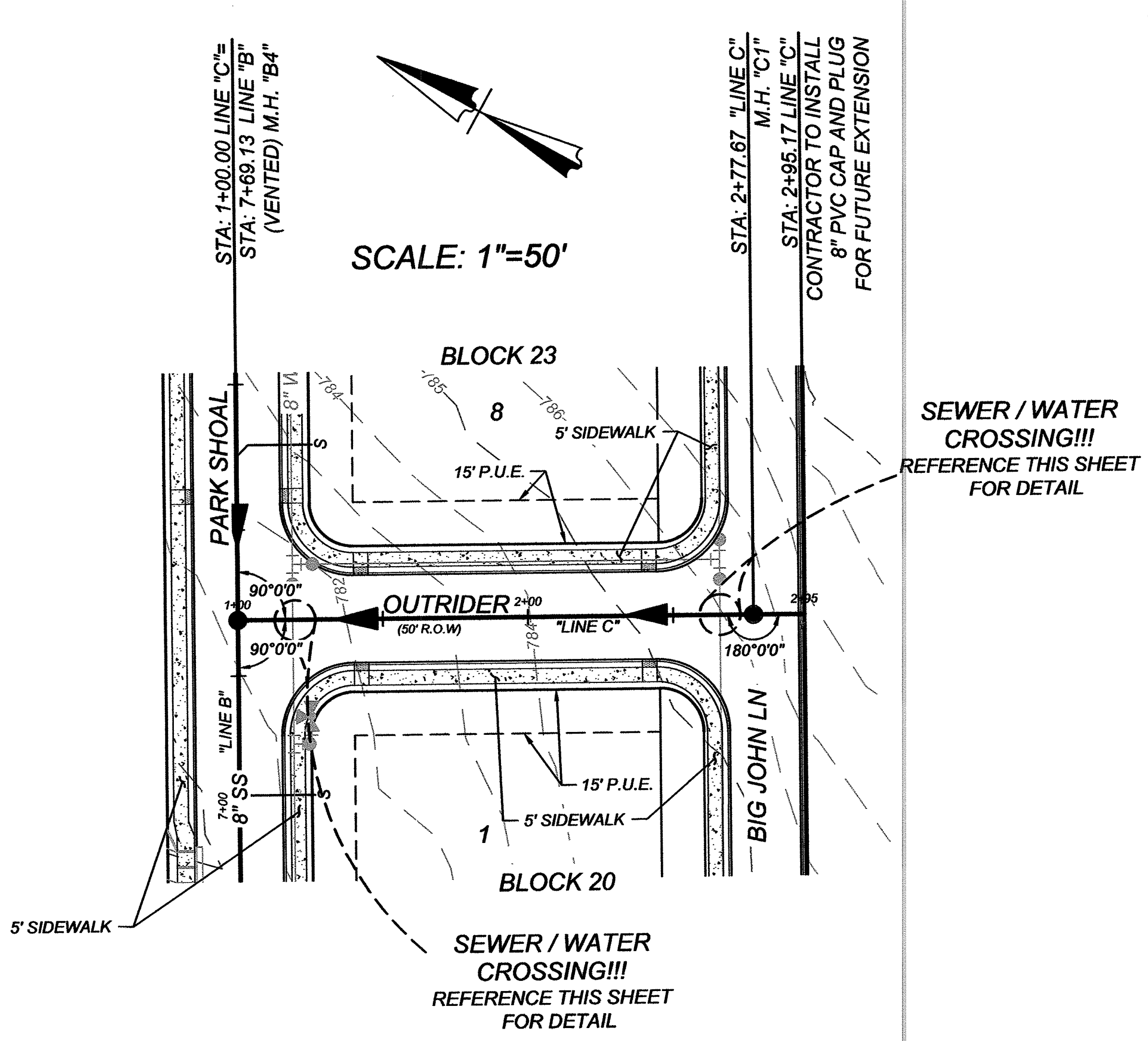

FINISHED GROUND / PAVEMENT (TOP OF GRADE)
4'-0" MIN.
PROPOSED WATER LINE
✱ SEPARATION DISTANCE TO COMPLY WITH TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE.
✱
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10'
10'

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

LEGEND

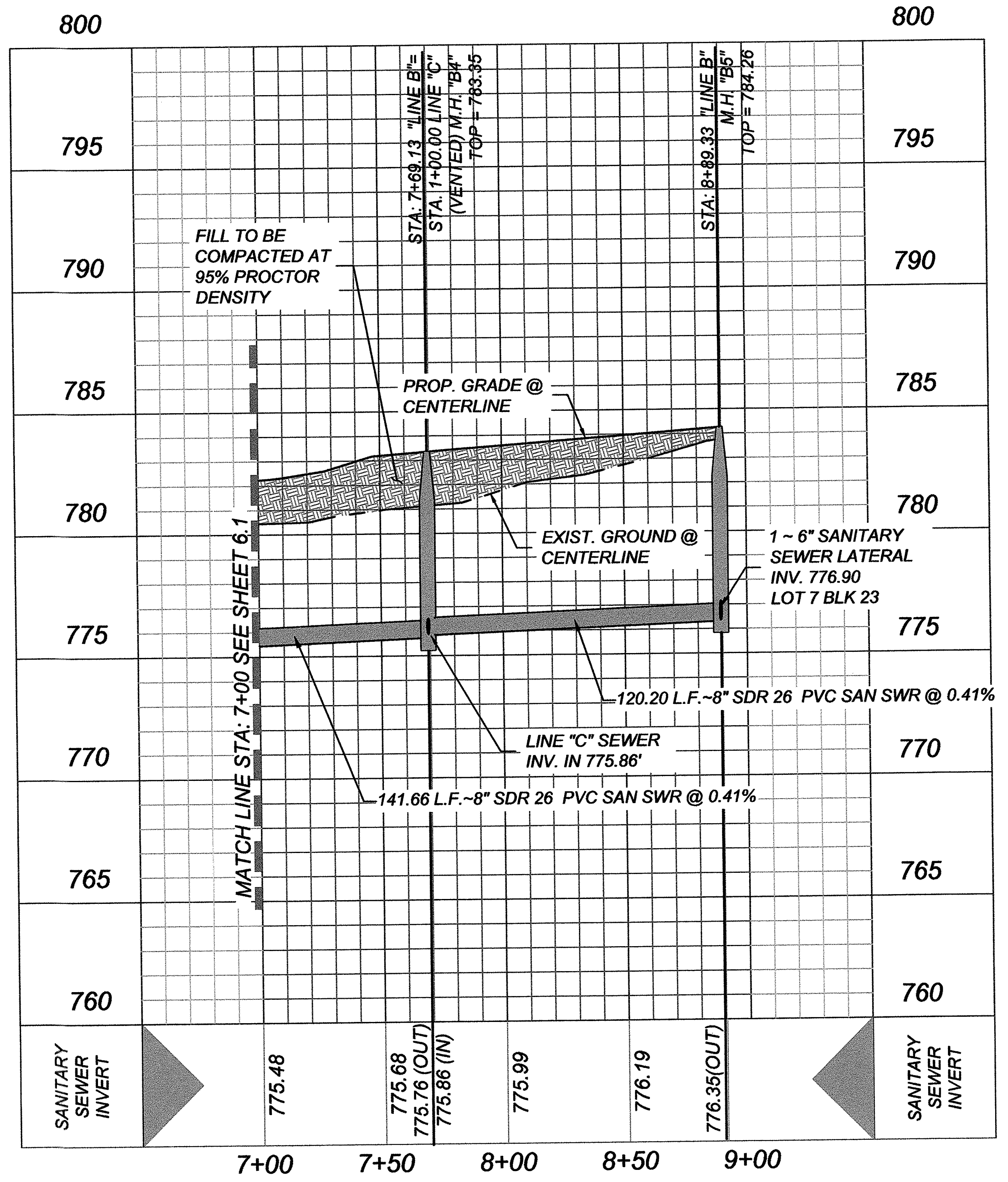
PROPOSED WATER MAIN	8"W
PROPOSED WATER SERVICE & METER BOX	W
PROPOSED WATER 1" IRRIGATION SERVICE & W/ 3/4" WATER METER & METER BOX	3/4" IRR
PROPOSED FIRE HYDRANT	
PUBLIC UTILITY EASEMENT	P.U.E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
RIGHT OF WAY	R.O.W.
PROPOSED 8" SANITARY SEWER MAIN	
PROPOSED 8" SANITARY SEWER MANHOLE	●
PROPOSED TEE & WATER VALVE	●
PROPOSED SANITARY SEWER LATERAL	S
EXISTING SANITARY SEWER LATERAL	S
EXISTING WATER VALVE	⋈
EXISTING FIRE HYDRANT	
EXISTING WATER MAIN	E. 8" W
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	SS
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	● PP
FINISHED FLOOR MINIMUM ELEVATION REQUIRED FOR SANITARY SEWER	F.F. MIN. ELEV. 671.70'




STA: 1+00.00 LINE "C"= STA: 7+69.13 LINE "B" (VENTED) M.H. "B4"
STA: 2+77.67 "LINE C" M.H. "C1"
STA: 2+95.17 LINE "C" CONTRACTOR TO INSTALL 8" PVC CAP AND PLUG FOR FUTURE EXTENSION
SCALE: 1"=50'
BLOCK 23
8
5' SIDEWALK
15' P.U.E.
PARK SHOAL
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
OUTRIDER
(50' R.O.W)
"LINE C"
90°0'0"
90°0'0"
180°0'0"
"LINE B" 8" SS
15' P.U.E.
5' SIDEWALK
1
BLOCK 20
BIG JOHN LN
5' SIDEWALK
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL

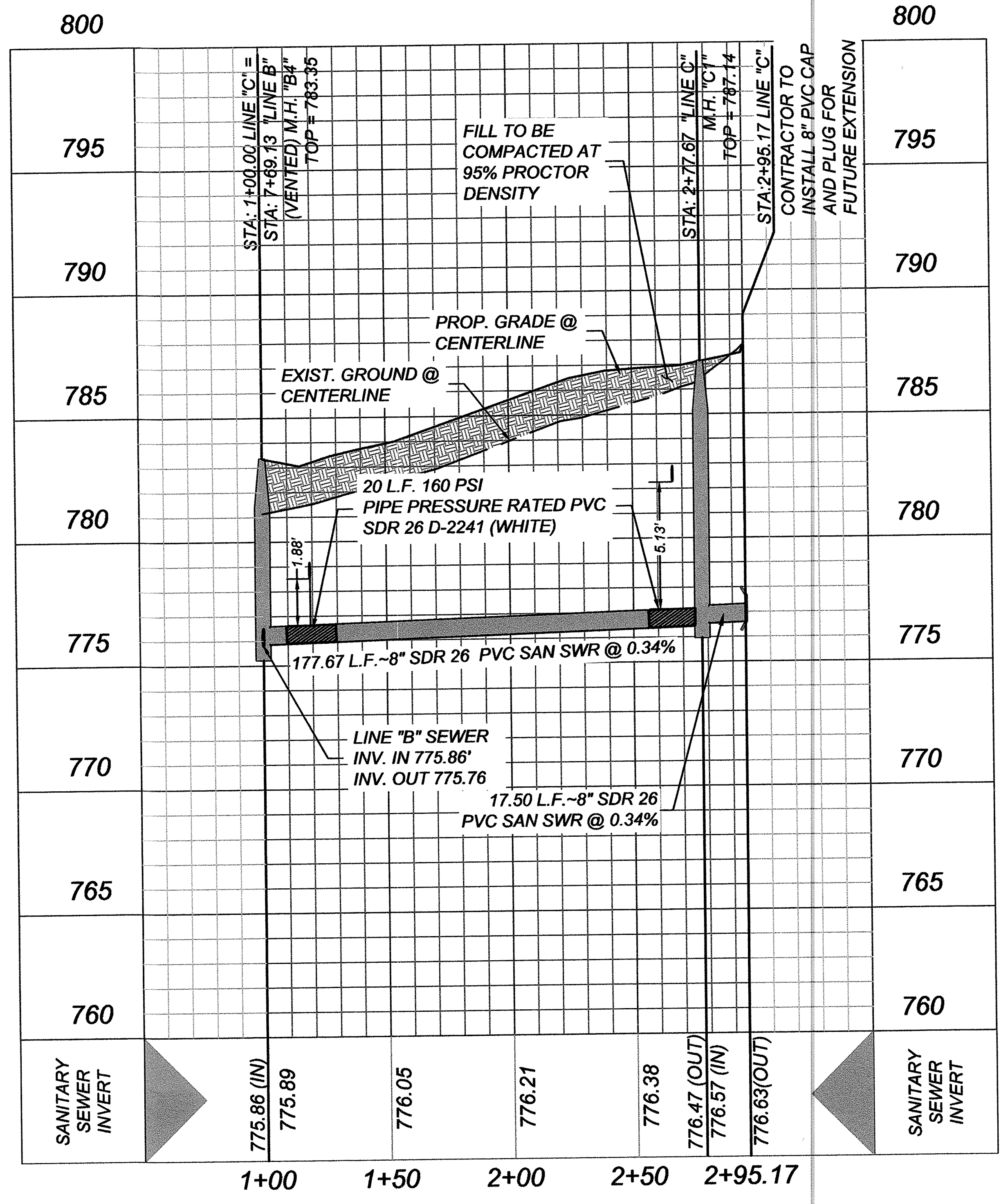
LINE B
STA: 7+00.00 - END

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


800
795
790
785
780
775
770
765
760
STA: 7+69.13 "LINE B"= STA: 1+00.00 LINE "C" (VENTED) M.H. "B4" TOP = 783.35
STA: 8+89.33 "LINE B" M.H. "B5" TOP = 784.26
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
PROP. GRADE @ CENTERLINE
EXIST. GROUND @ CENTERLINE
1 ~ 6" SANITARY SEWER LATERAL INV. 776.90 LOT 7 BLK 23
MATCH LINE STA: 7+00 SEE SHEET 6.1
120.20 L.F.~8" SDR 26 PVC SAN SWR @ 0.41%
LINE "C" SEWER INV. IN 775.86'
141.66 L.F.~8" SDR 26 PVC SAN SWR @ 0.41%
SANITARY SEWER INVERT
775.48
775.68
775.76 (OUT)
775.86 (IN)
775.99
776.19
776.35(OUT)
7+00
7+50
8+00
8+50
9+00

LINE C
STA: 1+00.00 - END

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


800
795
790
785
780
775
770
765
760
STA: 1+00.00 LINE "C"= STA: 7+69.13 "LINE B" (VENTED) M.H. "B4" TOP = 783.35
STA: 2+77.67 "LINE C" M.H. "C1" TOP = 787.14
STA: 2+95.17 LINE "C" CONTRACTOR TO INSTALL 8" PVC CAP AND PLUG FOR FUTURE EXTENSION
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
PROP. GRADE @ CENTERLINE
EXIST. GROUND @ CENTERLINE
20 L.F. 160 PSI PIPE PRESSURE RATED PVC SDR 26 D-2241 (WHITE)
1.88'
5.13'
177.67 L.F.~8" SDR 26 PVC SAN SWR @ 0.34%
LINE "B" SEWER INV. IN 775.86' INV. OUT 775.76
17.50 L.F.~8" SDR 26 PVC SAN SWR @ 0.34%
SANITARY SEWER INVERT
775.86 (IN)
775.89
776.05
776.21
776.38
776.47 (OUT)
776.57 (IN)
776.63(OUT)
1+00
1+50
2+00
2+50
2+95.17

KFW
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OSHA TRENCH SAFETY

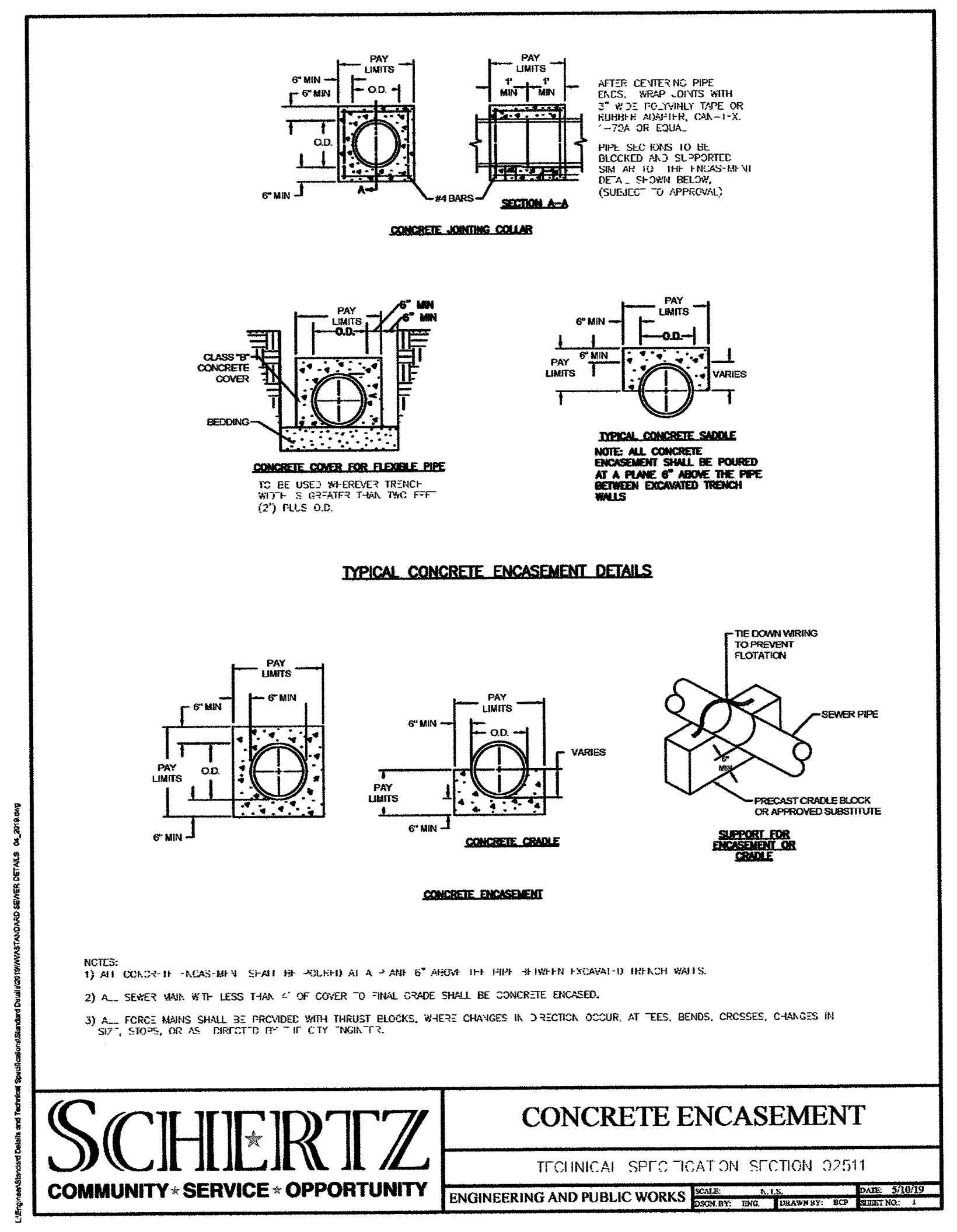
1. TRENCH EXCAVATION SHALL COMPLY WITH MINIMUM STANDARDS AS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, REGULATIONS STANDARDS – 29 CFR – "EXCAVATION" – 1926 SUBPART P.

2. TRENCH SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SHOP DRAWINGS FOR DETAIL PLANS AND SPECIFICATIONS TO PROVIDE ADEQUATE SHORING AND SHEETING STANDARDS THAT MEET THE OSHA STANDARDS AS SET OUT BY STANDARDS – 29 CFR – EXCAVATION" – 1926 SUBPART P FOR TRENCH SAFETY.

3. CONTINUOUS INSPECTION OF ALL TRENCH EXCAVATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR JOB SUPERINTENDENT. THE CONTRACTOR CONTROLS THE SIZE, WEIGHT, AND SPEED OF OPERATION OF EQUIPMENT AND PIPE INSTALLATION, WHICH DIRECTLY AFFECTS ALL SAFETY MEASURES IN A TRENCH. IF PROBABLE CAUSE OF UNSAFE TRENCH CONDITIONS EXIST, ALL WORK SHALL CEASE IMMEDIATELY UNTIL NECESSARY PRECAUTIONS TO SAFEGUARD EMPLOYEES ARE TAKEN.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

OSHA TRENCH SAFETY
TECHNICAL SPECIFICATION SECTION 02260
ENGINEERING AND PUBLIC WORKS


CONCRETE JOINTING COLLAR
SECTION A-A
CONCRETE COVER FOR FLEXIBLE PIPE
TYPICAL CONCRETE ENCASEMENT
TYPICAL CONCRETE ENCASEMENT DETAILS
CONCRETE ENCASEMENT
CONCRETE CRADLE
SUPPORT FOR CROSSING OF CONDUIT
SEWER PIPE

CONCRETE ENCASEMENT
TECHNICAL SPECIFICATION SECTION 02511
ENGINEERING AND PUBLIC WORKS

TCEQ RULES AND REGULATIONS, TAC TITLE 30 PART I CHAPTER 217.53.D. "SEPARATION DISTANCES".

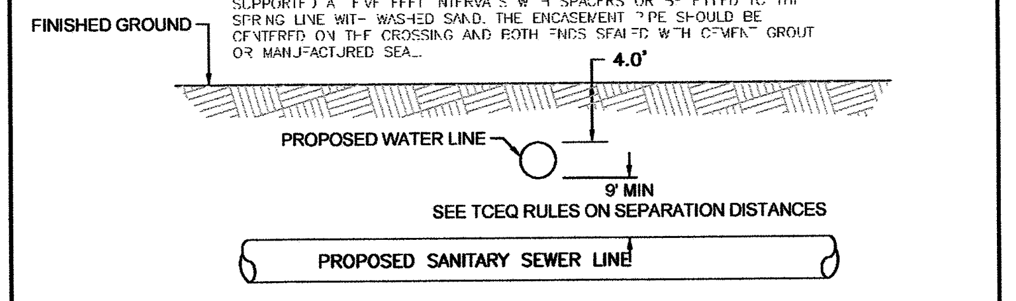
WHEN NEW SANITARY SEWERS ARE INSTALLED, THEY SHALL BE INSTALLED NO CLOSER TO WATERLINES THAN NINE FEET IN ALL DIRECTIONS. SEWERS THAT PARALLEL WATERLINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING GUIDELINES WILL APPLY.

(A) WHERE A SANITARY SEWER PARALLELS A WATERLINE, THE SEWER SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC MEETING ASTM SPECIFICATIONS WITH A PRESSURE RATING FOR BOTH THE PIPE AND JOINTS OF 150 PSI. THE VERTICAL SEPARATION SHALL BE A MINIMUM OF TWO FEET BETWEEN OUTSIDE DIAMETERS AND THE HORIZONTAL SEPARATION SHALL BE A MINIMUM OF FOUR FEET BETWEEN OUTSIDE DIAMETERS. THE SEWER SHALL BE LOCATED BELOW THE WATERLINE.

(B) WHERE A SANITARY SEWER CROSSES A WATERLINE AND THE SEWER IS CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI, AN ABSOLUTE MINIMUM DISTANCE OF SIX INCHES BETWEEN OUTSIDE DIAMETERS SHALL BE MAINTAINED. IN ADDITION, THE SEWER SHALL BE LOCATED BELOW THE WATERLINE WHERE POSSIBLE AND ONE LENGTH OF THE SEWER PIPE MUST BE CENTERED ON THE WATERLINE.

(C) WHERE A SEWER CROSSES UNDER A WATERLINE AND THE SEWER IS CONSTRUCTED OF ABS TRUSS PIPE, SIMILAR SEMI-RIGID PLASTIC COMPOSITE PIPE, CLAY PIPE, OR CONCRETE PIPE WITH GASKETED JOINTS, A MINIMUM TWO-FOOT SEPARATION DISTANCE SHALL BE MAINTAINED. THE INITIAL BACKFILL SHALL BE CEMENT STABILIZED SAND (TWO OR MORE BAGS OF CEMENT PER CUBIC YARD OF SAND) FOR ALL SECTIONS OF SEWER WITHIN NINE FEET OF THE WATERLINE. THIS INITIAL BACKFILL SHALL BE FROM ONE QUARTER DIAMETER BELOW THE CENTERLINE OF THE PIPE TO ONE PIPE DIAMETER (BUT NOT LESS THAN 12 INCHES) ABOVE THE TOP OF THE PIPE.

(D) WHERE A SEWER CROSSES OVER A WATERLINE, ALL PORTIONS OF THE SEWER WITHIN NINE FEET OF THE WATERLINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON, OR PVC PIPE WITH A PRESSURE RATING OF AT LEAST 150 PSI USING APPROPRIATE ADAPTERS. IN LIEU OF THIS PROCEDURE THE NEW CONVEYANCE MAY BE ENCASED IN A JOINT OF 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE FEET INTERVALS WITH SPACERS OR BE FILLED TO THE SPRING LINE WITH WASHED SAND. THE ENCASEMENT PIPE SHOULD BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEAL.

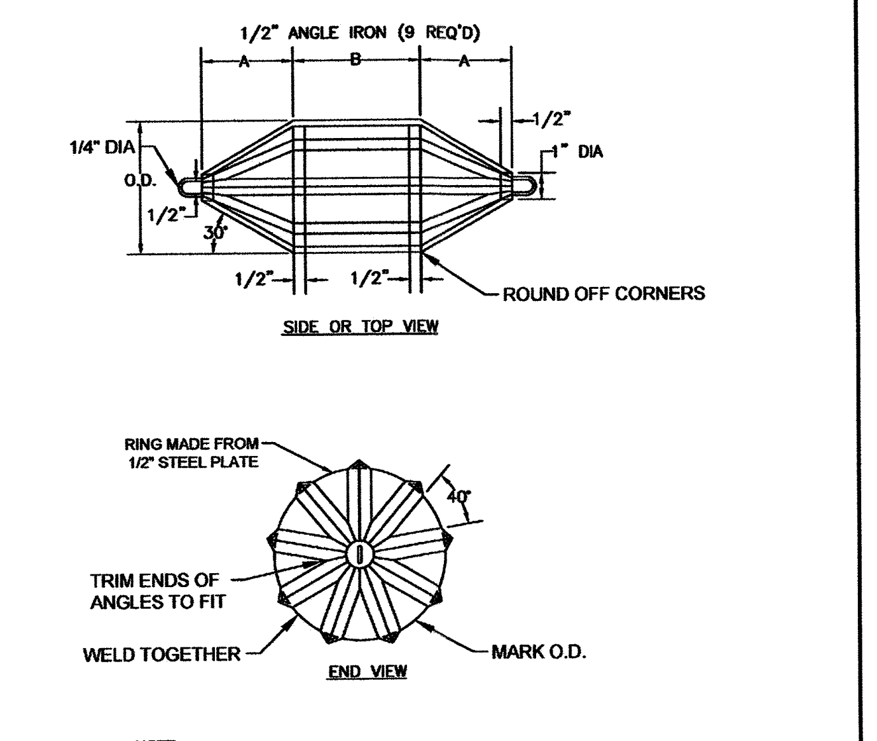

FINISHED GROUND
4.0'
PROPOSED WATER LINE
9' MIN
SEE TCEQ RULES ON SEPARATION DISTANCES
PROPOSED SANITARY SEWER LINE

TCEQ WW/WTR CROSSING
TECHNICAL SPECIFICATION SECTION 02511D
ENGINEERING AND PUBLIC WORKS

SIZE	A	B*	MANDREL O.D. PSM (SDR-26)	RING O.D. PSM (SDR-26)
6"	4.0"	4.5"	5.50	4.79
8"	5.5"	6.0"	7.37	6.66
10"	7.0"	7.5"	9.21	8.50
12"	8.0"	9.0"	10.96	10.25
15"	10.0"	11.0"	13.42	12.71
18"	12.0"	13.5"	—	—
21"	14.0"	16.0"	—	—
*24"	16.0"	18.0"	—	—
27"	18.0"	20.0"	—	—

MINIMUM LENGTH
CHART

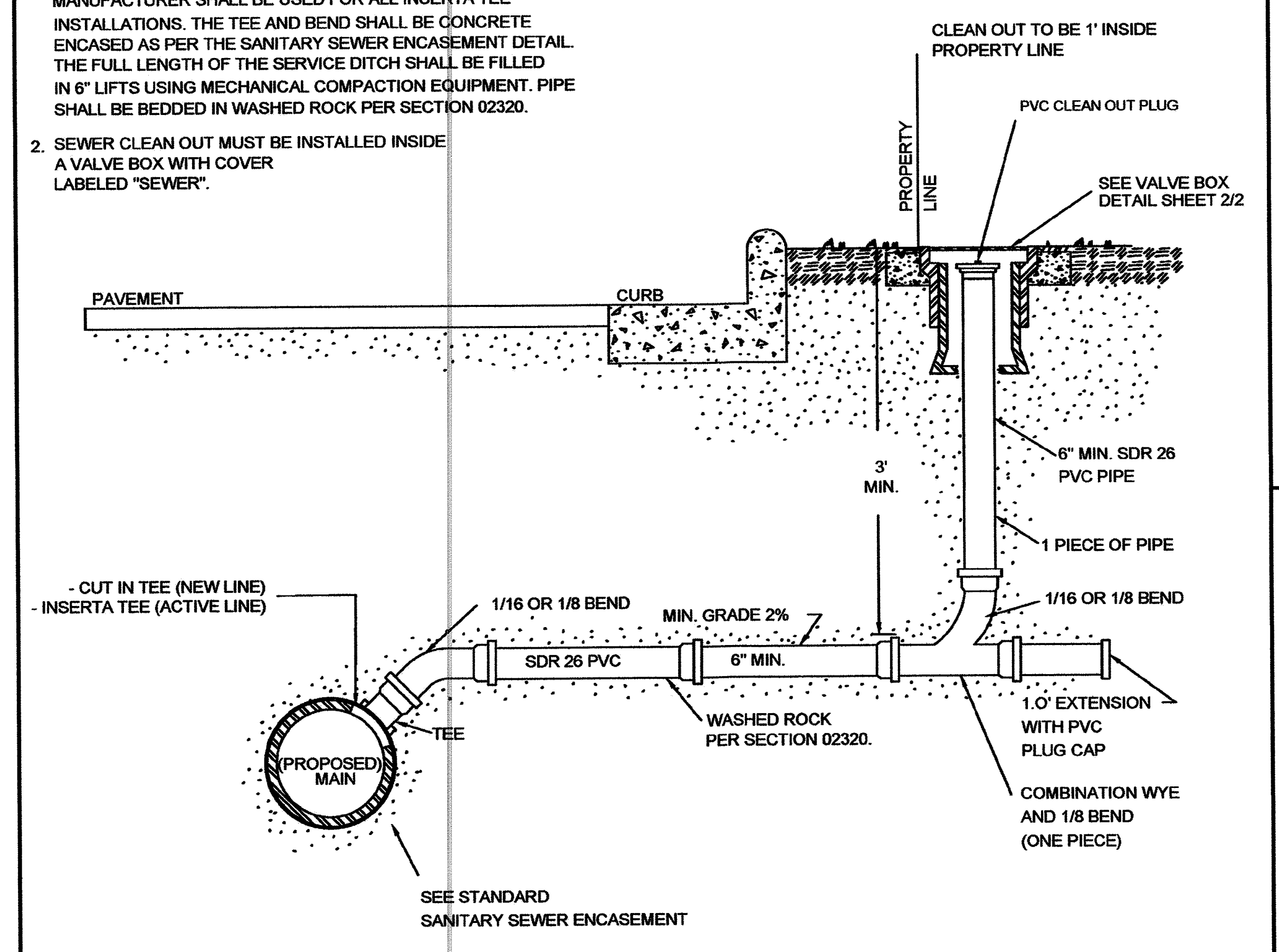
NOTES:
PVC PIPES AND FITTINGS SIX INCHES (6") TO FIFTEEN INCHES (15") IN DIAMETER SHALL CONFORM TO ASTM D-3034.
PVC PIPES AND FITTINGS EIGHTEEN INCHES (18") TO TWENTY-SEVEN INCHES (27") IN DIAMETER SHALL CONFORM TO ASTM F-679.
THIS INFORMATION IS PROVIDED AS A REFERENCE. ALL DEFLECTION TESTING SHALL BE DONE IN ACCORDANCE WITH TCEQ RULES AND REGULATIONS, TAC TITLE 30 PART I CHAPTER 217.57.



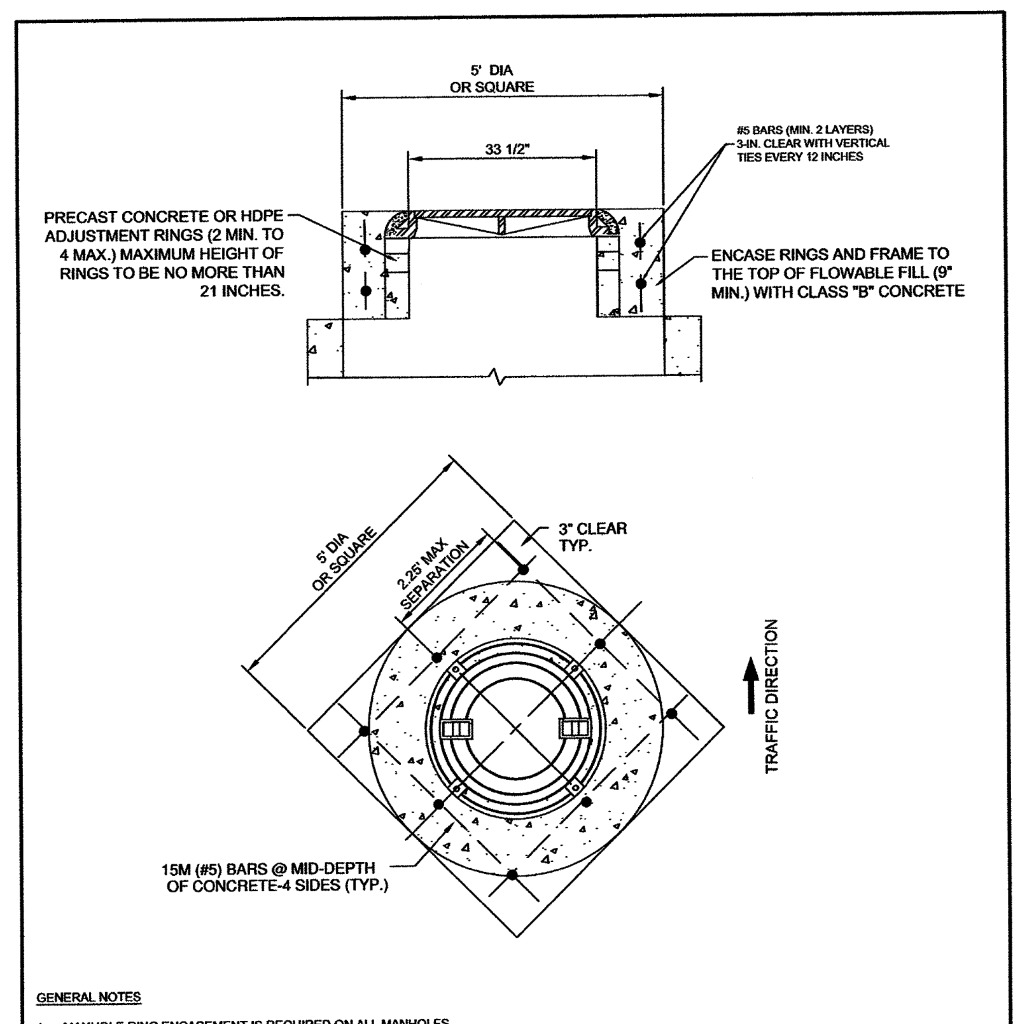
NOTE:
ALL MANDRELS MUST BE APPROVED BY CONSTRUCTION INSPECTIONS AND STAMPED BEFORE USE.

DEFLECTION TESTING MANDREL
TECHNICAL SPECIFICATION SECTION 02260
ENGINEERING AND PUBLIC WORKS

NOTE:
1. A HOLE SAW OF THE DIAMETER SPECIFIED BY THE MANUFACTURER SHALL BE USED FOR ALL INSERTA TEE INSTALLATIONS. THE TEE AND BEND SHALL BE CONCRETE ENCASED AS PER THE SANITARY SEWER ENCASEMENT DETAIL. THE FULL LENGTH OF THE SERVICE DITCH SHALL BE FILLED IN 6" LIFTS USING MECHANICAL COMPACTION EQUIPMENT. PIPE SHALL BE BEDDED IN WASHED ROCK PER SECTION 02320.
2. SEWER CLEAN OUT MUST BE INSTALLED INSIDE A VALVE BOX WITH COVER LABELED "SEWER".

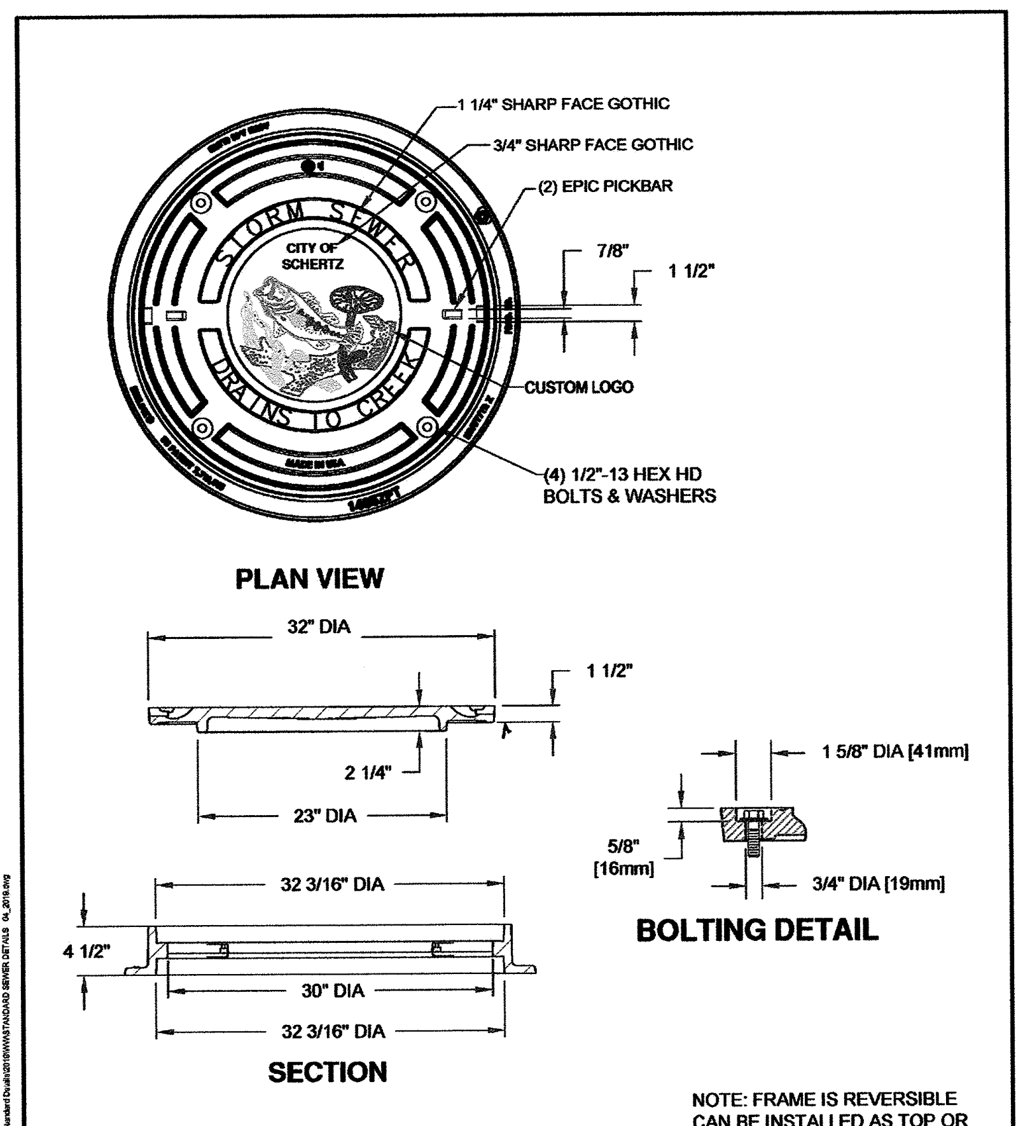

CLEAN OUT TO BE 1' INSIDE PROPERTY LINE
PROPERTY LINE
PVC CLEAN OUT PLUG
SEE VALVE BOX DETAIL SHEET 2/2
PAVEMENT
CURB
3' MIN.
6" MIN. SDR 26 PVC PIPE
1 PIECE OF PIPE
1/16 OR 1/8 BEND
- CUT IN TEE (NEW LINE)
- INSERTA TEE (ACTIVE LINE)
1/16 OR 1/8 BEND
MIN. GRADE 2%
SDR 26 PVC
6" MIN.
1.0' EXTENSION WITH PVC PLUG CAP
PROPOSED MAIN
TEE
WASHED ROCK PER SECTION 02320.
COMBINATION WYE AND 1/8 BEND (ONE PIECE)
SEE STANDARD SANITARY SEWER ENCASEMENT

SANITARY SEWER LATERAL
TECHNICAL SPECIFICATION SECTION 02085
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DSGN. BY: ENG. DRAWN BY: BCP DATE: 5/10/19 SHEET NO.: 1


5' DIA OR SQUARE
33 1/2"
PRECAST CONCRETE OR HDPE ADJUSTMENT RINGS (2 MIN. TO 4 MAX.) MAXIMUM HEIGHT OF RINGS TO BE NO MORE THAN 21 INCHES.
#5 BARS (MIN. 2 LAYERS) 3-IN. CLEAR WITH VERTICAL TIES EVERY 12 INCHES
ENCASE RINGS AND FRAME TO THE TOP OF FLOWABLE FILL (9" MIN.) WITH CLASS "B" CONCRETE
3" CLEAR TYP.
TRAFFIC DIRECTION
15M (#5) BARS @ MID-DEPTH OF CONCRETE-4 SIDES (TYP.)

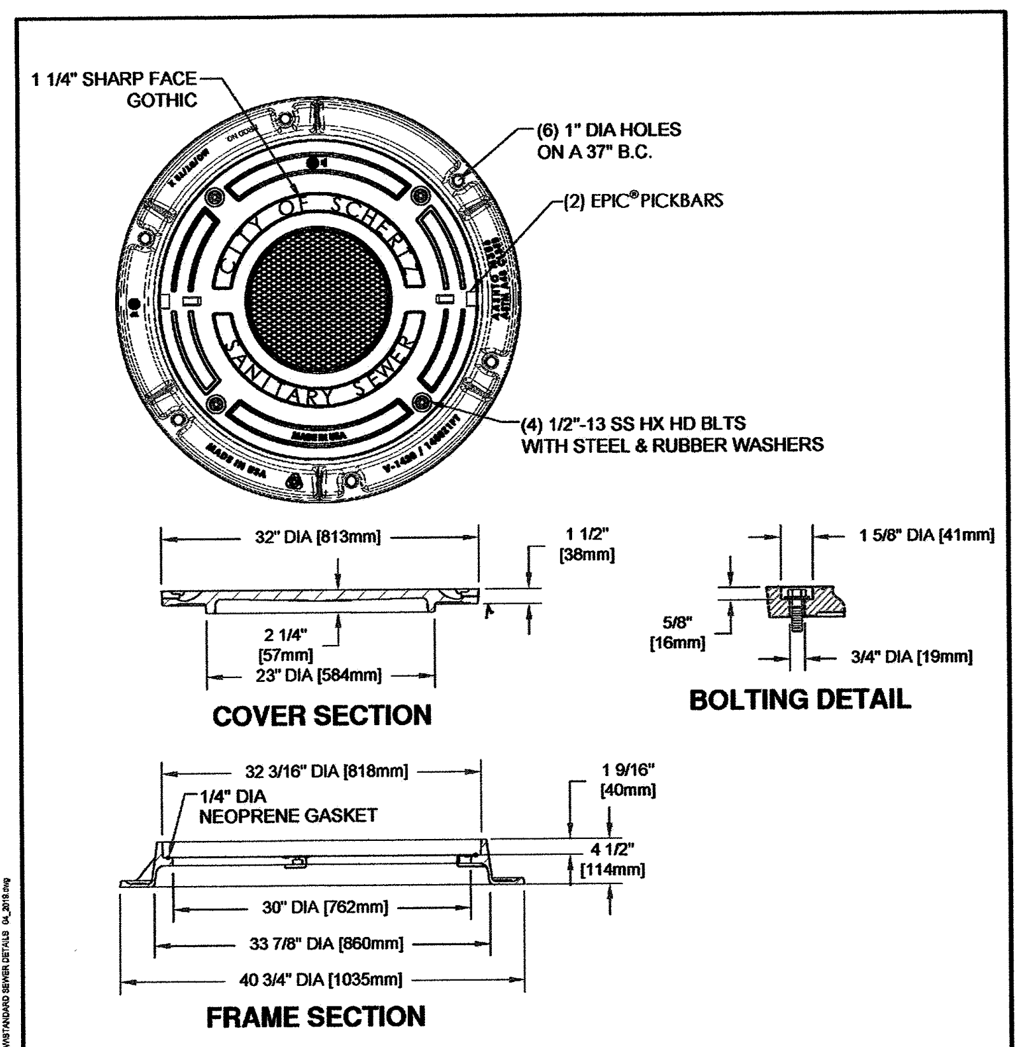
GENERAL NOTES
1. MANHOLE RING ENCASEMENT IS REQUIRED ON ALL MANHOLES.
2. PAYMENT FOR MANHOLE RING ENCASEMENT SHALL BE INCLUDED IN THE COST OF THE MANHOLE

STANDARD DETAIL 02081.2
MANHOLE RING ENCASEMENT
TECHNICAL SPECIFICATION SECTIONS 02081, 02082, & 02083
ENGINEERING AND PUBLIC WORKS

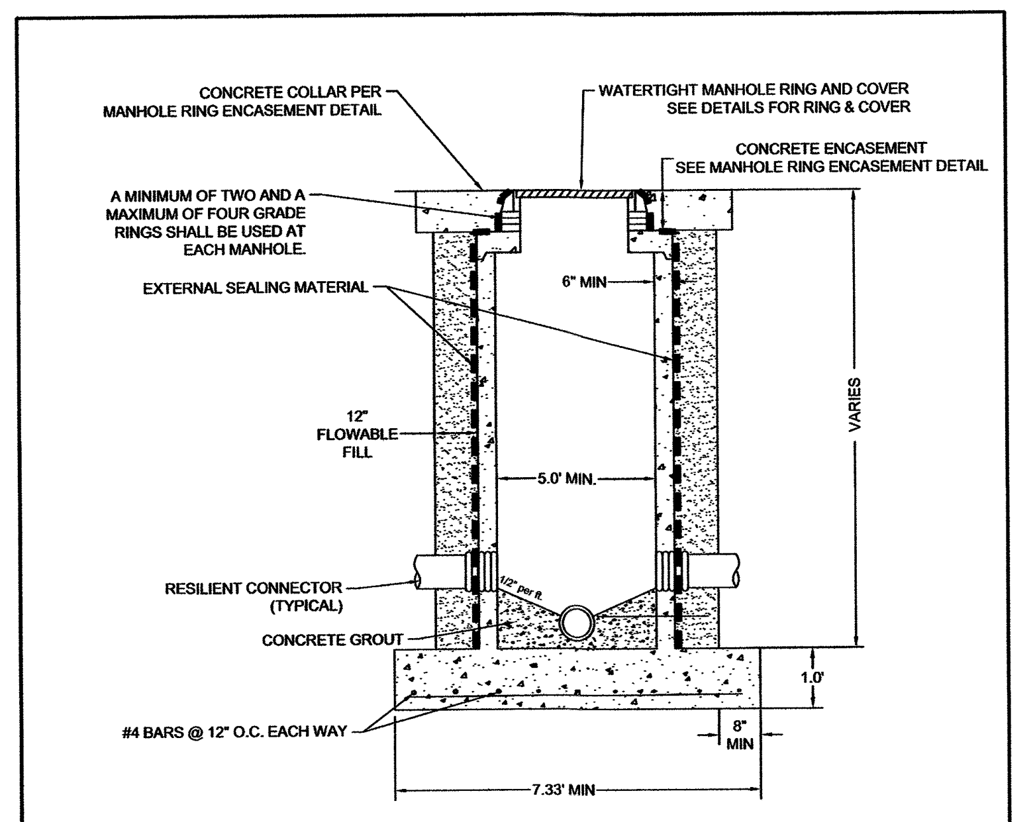


NOTE: FRAME IS REVERSIBLE CAN BE INSTALLED AS TOP OR BOTTOM FLANGE UNIT.

STORM SEWER MANHOLE RING & COVER
TECHNICAL SPECIFICATION SECTION 02084
ENGINEERING AND PUBLIC WORKS

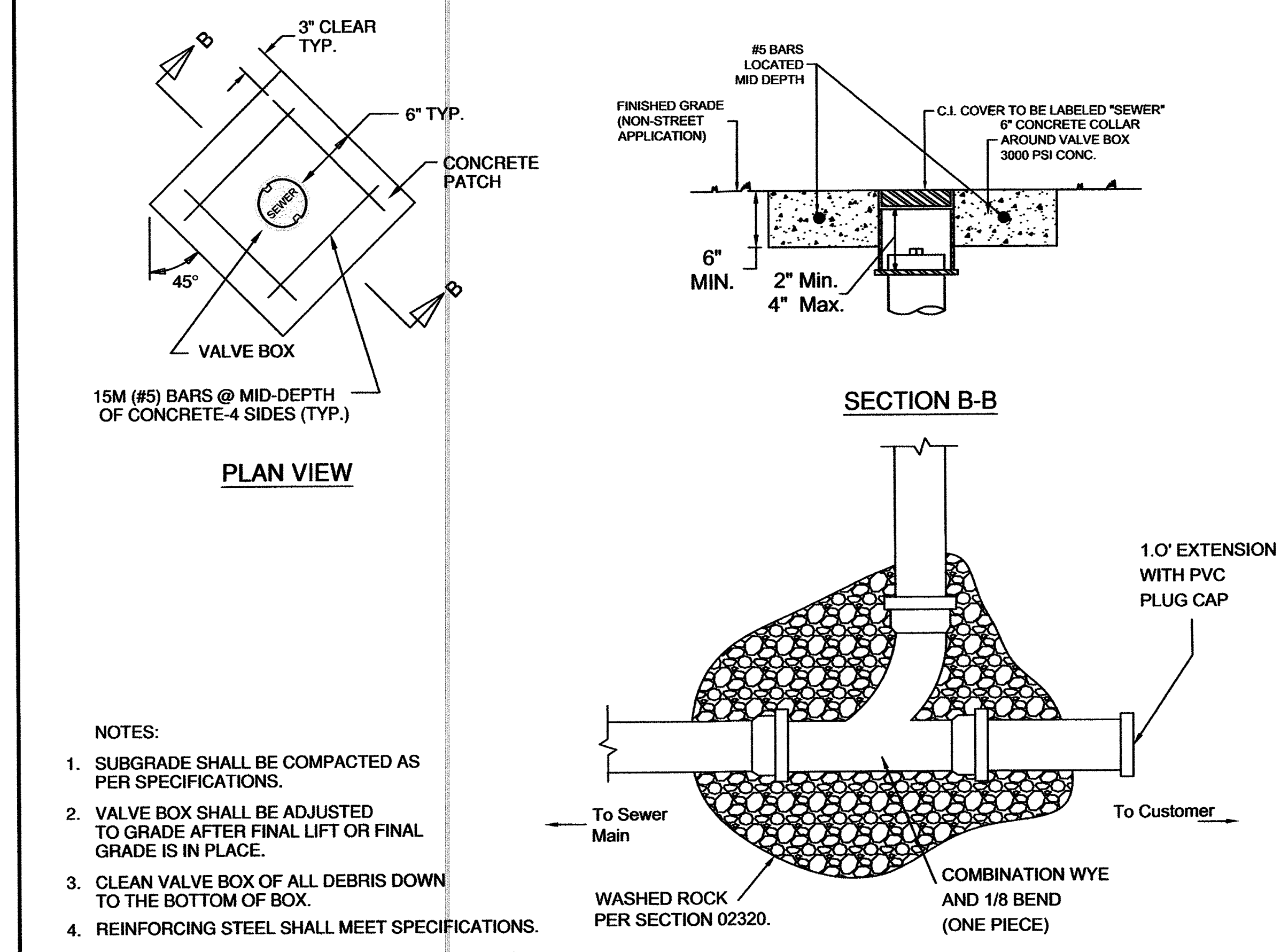


MANHOLE RING & COVER
TECHNICAL SPECIFICATION SECTION 02084
ENGINEERING AND PUBLIC WORKS


CONCRETE COLLAR PER MANHOLE RING ENCASEMENT DETAIL
WATERTIGHT MANHOLE RING AND COVER SEE DETAILS FOR RING & COVER
CONCRETE ENCASEMENT SEE MANHOLE RING ENCASEMENT DETAIL
A MINIMUM OF TWO AND A MAXIMUM OF FOUR GRADE RINGS SHALL BE USED AT EACH MANHOLE.
EXTERNAL SEALING MATERIAL
6" MIN
12" FLOWABLE FILL
VARIES
5.0' MIN
RESILIENT CONNECTOR (TYPICAL)
CONCRETE GROUT
1.0'
8" MIN
#4 BARS @ 12" O.C. EACH WAY
7.33' MIN

GENERAL NOTES
1. THE CONTRACTOR SHALL PLACE FLOWABLE FILL A MINIMUM OF 1-FT. AROUND WALLS, FROM THE BOTTOM OF BASE UP TO THE BOTTOM OF CONCRETE COLLAR. PER SPEC. 02081 AND 02082.
2. TOP SECTION SHALL BE FLAT TOP WITH CONCENTRIC HOLE.
3. WALL REINFORCEMENT SHALL BE DESIGNED BY ENGINEER FOR CAST-IN-PLACE MANHOLES.
4. PROVIDE WATERTIGHT SEAL BETWEEN PRECAST CONCRETE ADJUSTMENT RINGS AND MANHOLE COVER FRAME, AROUND MANHOLE, HDPE RINGS, AND MANHOLE RISER JOINTS PER SPEC 02081, 02082, AND 02083 (GATORWRAP OR APPROVED EQUAL).
5. INTERIOR MANHOLE WALLS SHALL BE COATED WITH AN APPROVED LINER PER SPEC 02081 AND 02082 IN AREAS WHICH EXPERIENCE CORROSION. .

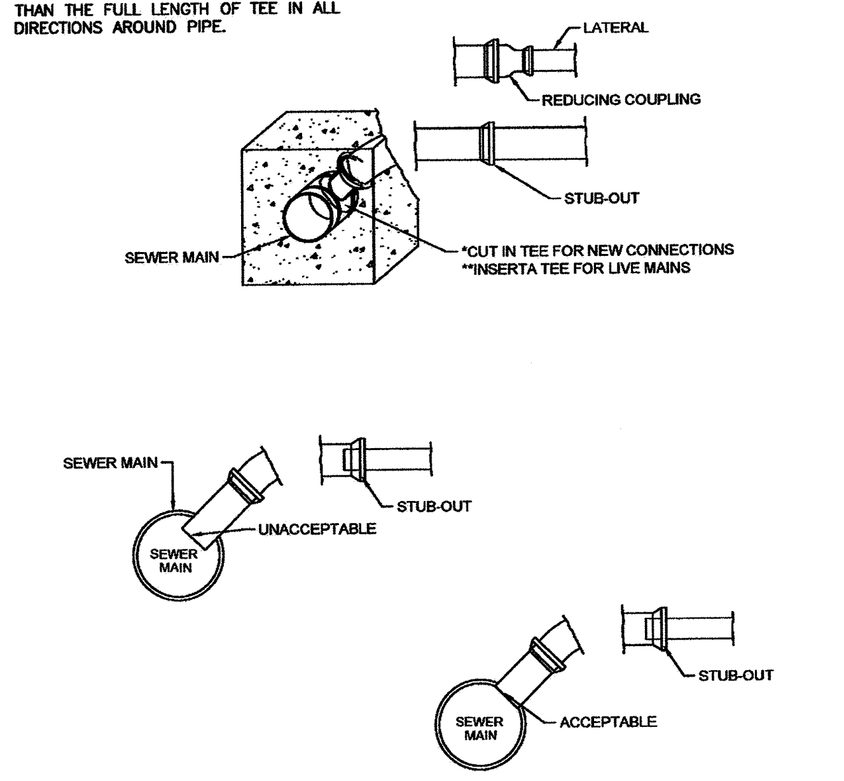
STANDARD DETAIL 02081.1
MANHOLES
TECHNICAL SPECIFICATION SECTIONS 02081, 02082, & 02083
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DSGN. BY: ENG DRAWN BY: TGW DATE: 12/07/2022 SHEET NO.: 1 of 1


3" CLEAR TYP.
6" TYP.
CONCRETE PATCH
B
B
45°
VALVE BOX
15M (#5) BARS @ MID-DEPTH OF CONCRETE-4 SIDES (TYP.)
PLAN VIEW
#5 BARS LOCATED MID DEPTH
FINISHED GRADE (NON-STREET APPLICATION)
C.I. COVER TO BE LABELED "SEWER"
6" CONCRETE COLLAR AROUND VALVE BOX 3000 PSI CONC.
6" MIN.
2" Min. 4" Max.
SECTION B-B
1.0' EXTENSION WITH PVC PLUG CAP
To Sewer Main
To Customer
WASHED ROCK PER SECTION 02320.
COMBINATION WYE AND 1/8 BEND (ONE PIECE)

NOTES:
1. SUBGRADE SHALL BE COMPACTED AS PER SPECIFICATIONS.
2. VALVE BOX SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OR FINAL GRADE IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE BOTTOM OF BOX.
4. REINFORCING STEEL SHALL MEET SPECIFICATIONS.
5. CONCRETE COLLAR MUST BE ROUND OR SQUARE.

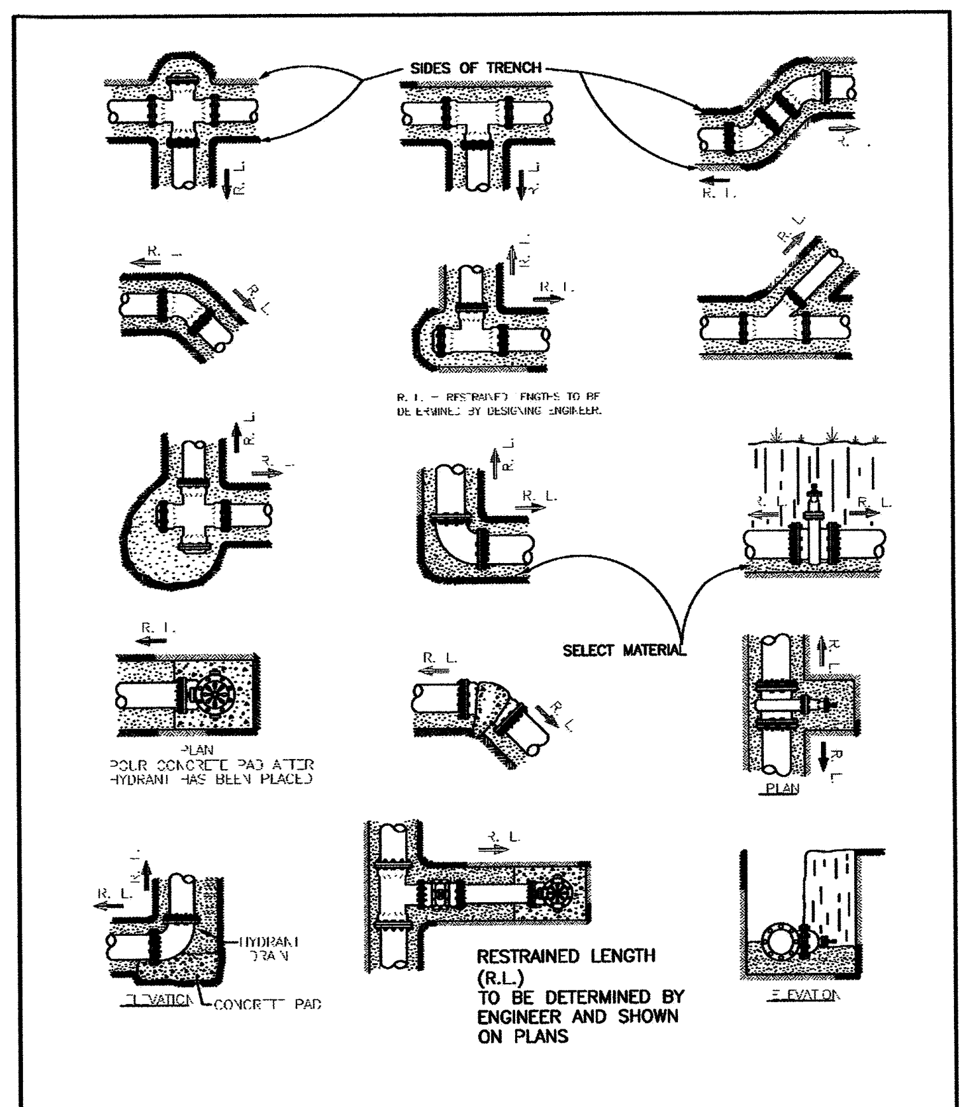
LATERAL VALVE BOX
ENGINEERING AND PUBLIC WORKS

NOTE:
CONCRETE ENCASEMENT TO BE 6" GREATER THAN THE FULL LENGTH OF TEE IN ALL DIRECTIONS AROUND PIPE.

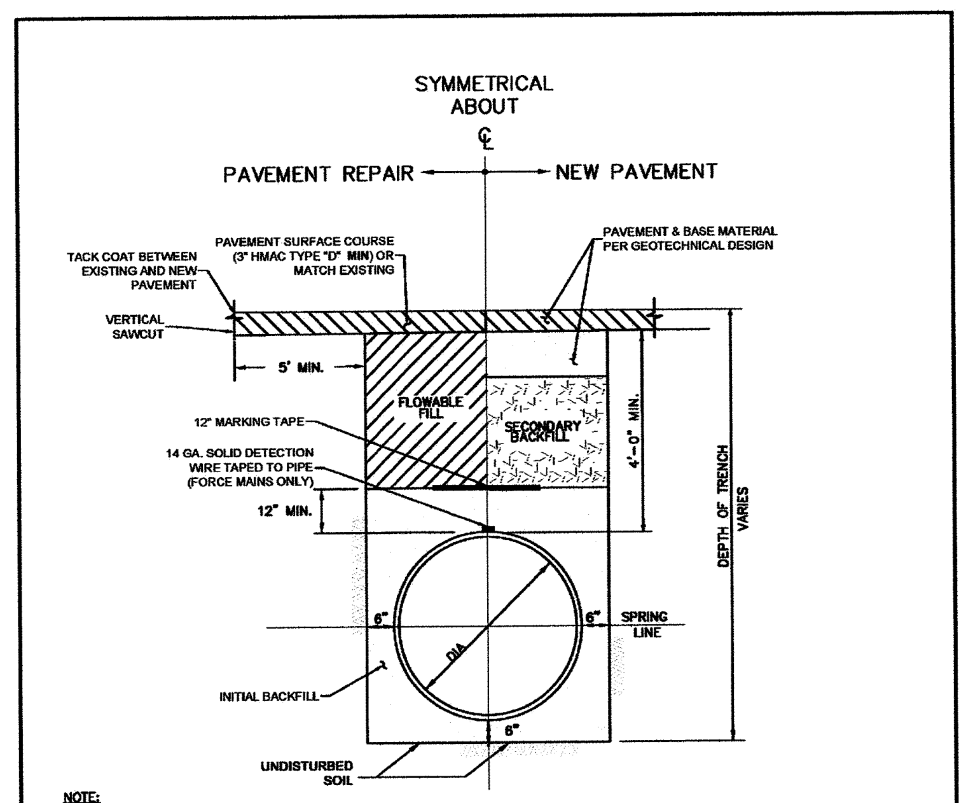


NOTE:
*INSERTA TEE SHOULD BE INSTALLED USING PROPER SIZED HOLE SAW TO CORE INTO MAIN.

MAIN IN TRENCH
TECHNICAL SPECIFICATION SECTION 02531 & 02532
ENGINEERING AND PUBLIC WORKS


SIDES OF TRENCH
SELECT MATERIAL
RESTRAINED LENGTH (R.L.) TO BE DETERMINED BY ENGINEER AND SHOWN ON PLANS

RESTRAINTS FOR FITTINGS
TECHNICAL SPECIFICATION SECTION 025
ENGINEERING AND PUBLIC WORKS

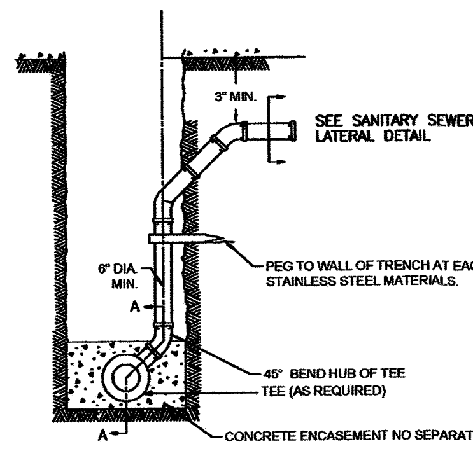

SYMMETRICAL ABOUT ℄
PAVEMENT REPAIR
NEW PAVEMENT
PAVEMENT SURFACE COURSE (3" HMAC TYPE "D" MIN) OR MATCH EXISTING
PAVEMENT & BASE MATERIAL PER GEOTECHNICAL DESIGN
TACK COAT BETWEEN EXISTING AND NEW PAVEMENT
VERTICAL SAWCUT
5" MIN.
12" MARKING TAPE
14 GA. SOLID DETECTION WIRE TAPED TO PIPE (FORCE MAINS ONLY)
12" MIN.
FLOWABLE FILL
SECONDARY BACKFILL
DEPTH OF TRENCH VARIES
6"
SPRING LINE
DIA
INITIAL BACKFILL
UNDISTURBED SOIL

NOTE:
1. PUBLIC WORKS PERMIT REQUIRED FOR ALL STREET CUTS OR TAPS.
2. SAW CUTS SHALL BE STRAIGHT AND PERPENDICULAR TO THE FLOW OF TRAFFIC.
3. TACK ALL VERTICAL SURFACES.
4. IN UNPAVED AREAS, EXTEND SECONDARY BACKFILL UP TO REQUIRED TOP SOIL.
5. SUBMITTALS—PROVIDE DELIVERY TICKETS INCLUDING SOURCE LOCATION FOR EACH DELIVERY OF MATERIAL.

INITIAL BACKFILL:
$\frac{3}{4}$" WASHED ROCK AROUND PIPE COMPACTED PER SPEC 02320 – UTILITY BACKFILL MATERIALS

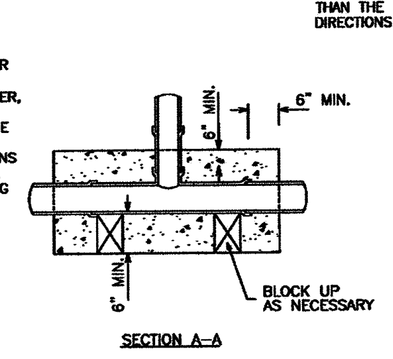
SECONDARY BACKFILL:
NATIVE MATERIAL FROM TRENCH PLACED IN MAXIMUM 8" LOOSE LIFTS, FREE OF DEBRIS AND STONES LARGER THAN 4". COMPACTION TO 95% STD PROCTOR DENSITY (ASTM D 698). PER SPEC 02317

MAIN IN TRENCH
TECHNICAL SPECIFICATION SECTION 02531 & 02532
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DSGN. BY: ENG. DRAWN BY: BCP DATE: 5/10/19 SHEET NO.: 1

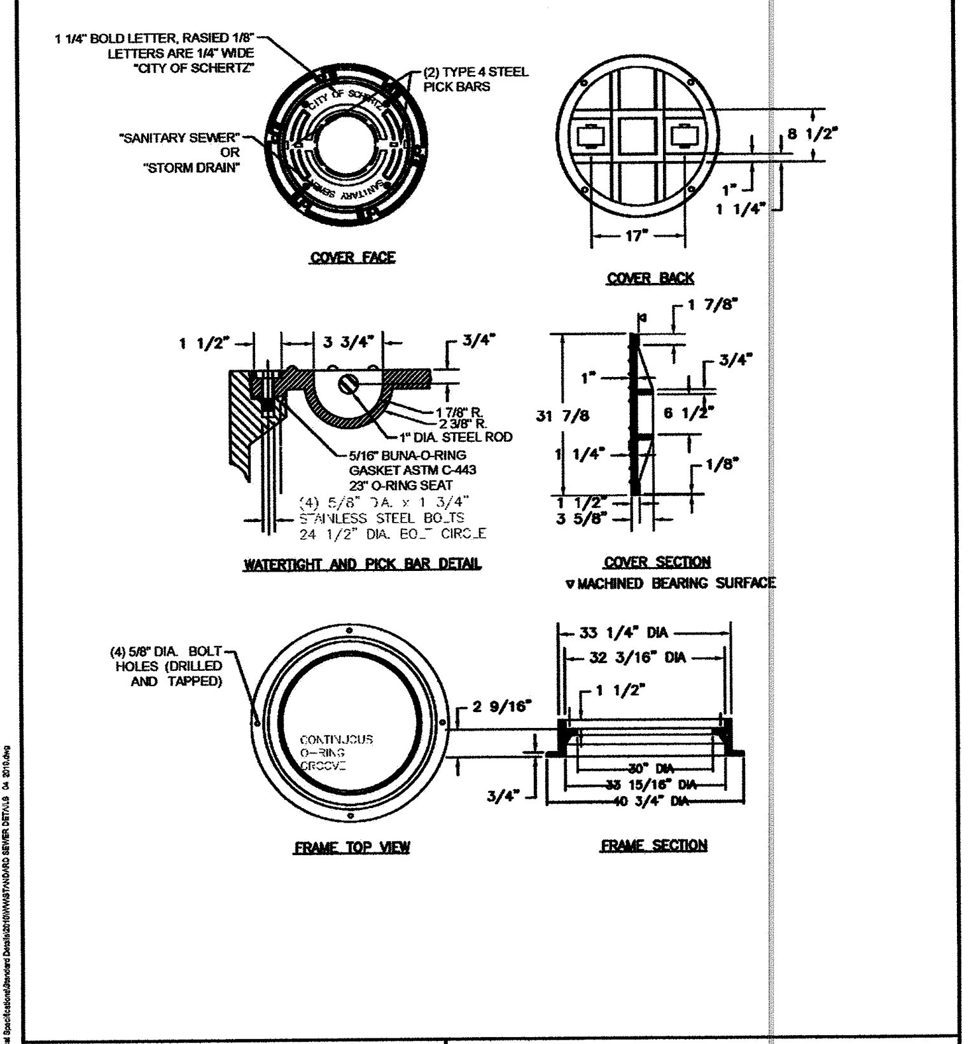

3" MIN.
SEE SANITARY SEWER LATERAL DETAIL
PEG TO WALL OF TRENCH AT EACH JOINT WITH STAINLESS STEEL MATERIALS.
6" DIA. MIN.
A
45° BEND HUB OF TEE
TEE (AS REQUIRED)
A
CONCRETE ENCASEMENT NO SEPARATE PAY ITEM

NOTE:
CONCRETE ENCASEMENT TO BE 6" GREATER THAN THE FULL LENGTH OF TEE IN ALL DIRECTIONS AROUND PIPE.

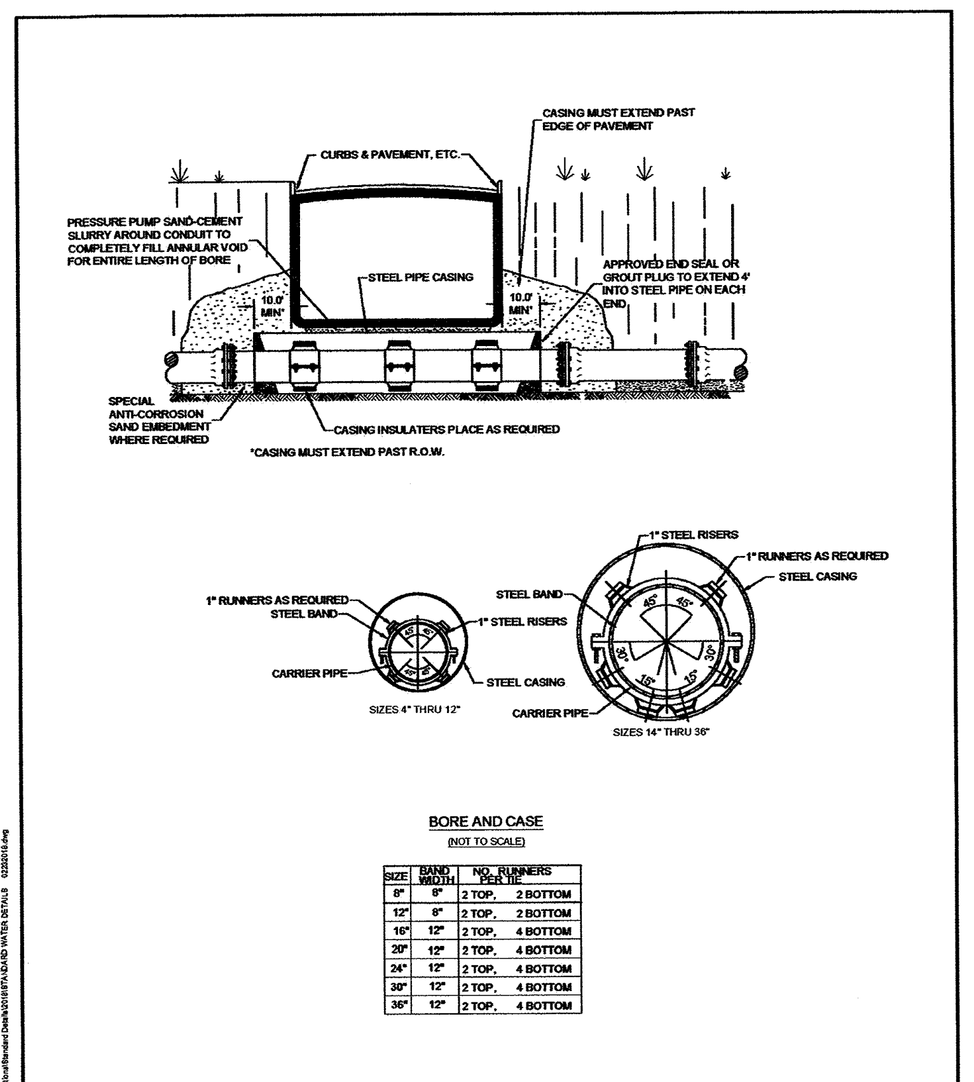
STACKS SHALL BE REQUIRED WHERE THE TOP OF THE SEWER MAIN IS AT A DEPTH OF EIGHT FEET (8') OR GREATER, HOWEVER, WHERE STACKS ARE REQUIRED, THEY SHALL BE SHOWN ON THE PLANS, AS DIRECTED BY THE ENGINEER, BASED ON ELEVATIONS OF THE SEWER MAIN, STREETS, NATURAL GROUND AND BUILDING TO BE SERVED



LATERAL TO MAIN
TECHNICAL SPECIFICATION SECTION 02534
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DSGN. BY: ENG. DRAWN BY: BCP DATE: 5/10/19 SHEET NO.: 1


1 1/4" BOLD LETTER, RAISED 1/8" LETTERS ARE 1/4" WIDE "CITY OF SCHERTZ"
(2) TYPE 4 STEEL PICK BARS
"SANITARY SEWER" OR "STORM DRAIN"
COVER FACE
COVER BACK
WATERTIGHT AND PICK BAR DETAIL
COVER SECTION
MACHINED BEARING SURFACE
FRAME TOP VIEW
FRAME SECTION

MANHOLE RING AND COVER
TECHNICAL SPECIFICATION SECTION 02084
ENGINEERING AND PUBLIC WORKS


CURB & PAVEMENT, ETC.
CASING MUST EXTEND PAST EDGE OF PAVEMENT
PRESSURE PUMP SAND-CEMENT SLURRY AROUND CONDUIT TO COMPLETELY FILL ANNULAR VOID FOR ENTIRE LENGTH OF BORE
STEEL PIPE CASING
CASING INSULATORS PLACE AS REQUIRED
*CASING MUST EXTEND PAST R.O.W.
STEEL BAND
STEEL RISERS
STEEL CASING
CARRIER PIPE
BORE AND CASE
BOLTS SOLID

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
BORE AND CASE
PW SPECIFICATION SECTION 02447

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
SANITARY SEWER DETAIL SHEET

ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE
REVISIONS

A. NICHOLAS REYNOLDS
111666
1/10/23

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR
SHEET NUMBER:
6.3

Date: Jan 10, 2023, 9:38am User ID: tmiller
File: U:\Projects\171\23\06\Design\Civil\SEWER\SANITARY SEWER DETAIL SHEET.dwg

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

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.

OSHA TRENCH SAFETY

1. TRENCH EXCAVATION SHALL COMPLY WITH MINIMUM STANDARDS AS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, REGULATIONS STANDARDS - 29 CFR - "EXCAVATION" - 1926 SUBPART P.

2. TRENCH SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SHOP DRAWINGS FOR DETAIL PLANS AND SPECIFICATIONS TO PROVIDE ADEQUATE SHORING AND SHEETING STANDARDS THAT MEET THE OSHA STANDARDS AS SET OUT BY STANDARDS - 29 CFR - EXCAVATION" - 1926 SUBPART P FOR TRENCH SAFETY. COST OF TRENCH SAFETY SHALL BE INCLUDED IN THE UNIT PRICE COST PER LINEAR FOOT OF PIPE AS BID.

3. CONTINUOUS INSPECTION OF ALL TRENCH EXCAVATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR JOB SUPERINTENDENT. THE CONTRACTOR CONTROLS THE SIZE, WEIGHT, AND SPEED OF OPERATION OF EQUIPMENT AND PIPE INSTALLATION, WHICH DIRECTLY AFFECTS ALL SAFETY MEASURES IN A TRENCH. IF PROBABLE CAUSE OF UNSAFE TRENCH CONDITIONS EXIST, ALL WORK SHALL CEASE IMMEDIATELY UNTIL NECESSARY PRECAUTIONS TO SAFEGUARD EMPLOYEES ARE TAKEN.

WATER PLAN NOTES:

1. ALL PVC PIPE 8" AND 12" TO BE C-900 DR 14 CLASS 305.

2. FOR TYPICAL STREET SECTIONS SEE DETAIL THIS SHEET.

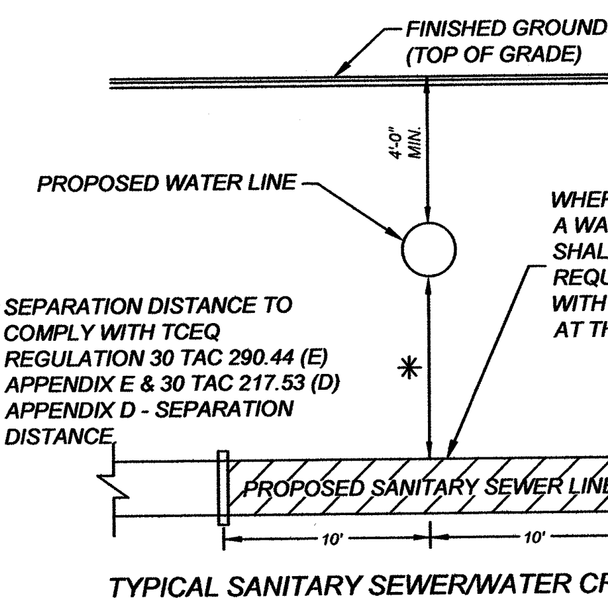
3. FOR ADDITIONAL WATER NOTES AND DETAILS SEE SHEET 7.1

4. WATER METER BY LOCATIONS ARE SHOWN SYMBOLICALLY TO SERVICE THE LOTS BUT SHALL BE LOCATED IN ACCORDANCE WITH THE STANDARD WATER DETAILS, SEE SHEET 7.1

⊗ ENTIRE LENGTH OF PIPE TO BE RESTRAINT

JOINT RESTRAINT NOTE:

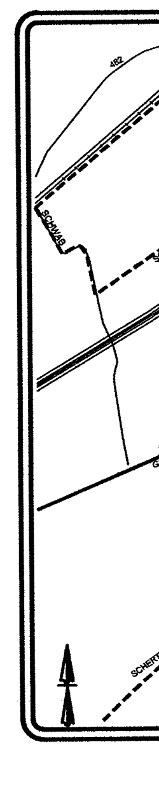
CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESS OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESS AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
4'-0" MIN.
PROPOSED WATER LINE
✱ SEPARATION DISTANCE TO COMPLY WITH TCEQ REGULATION 30 TAC 290.44 (E) APPENDIX E & 30 TAC 217.53 (D) APPENDIX D - SEPARATION DISTANCE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10'
10'

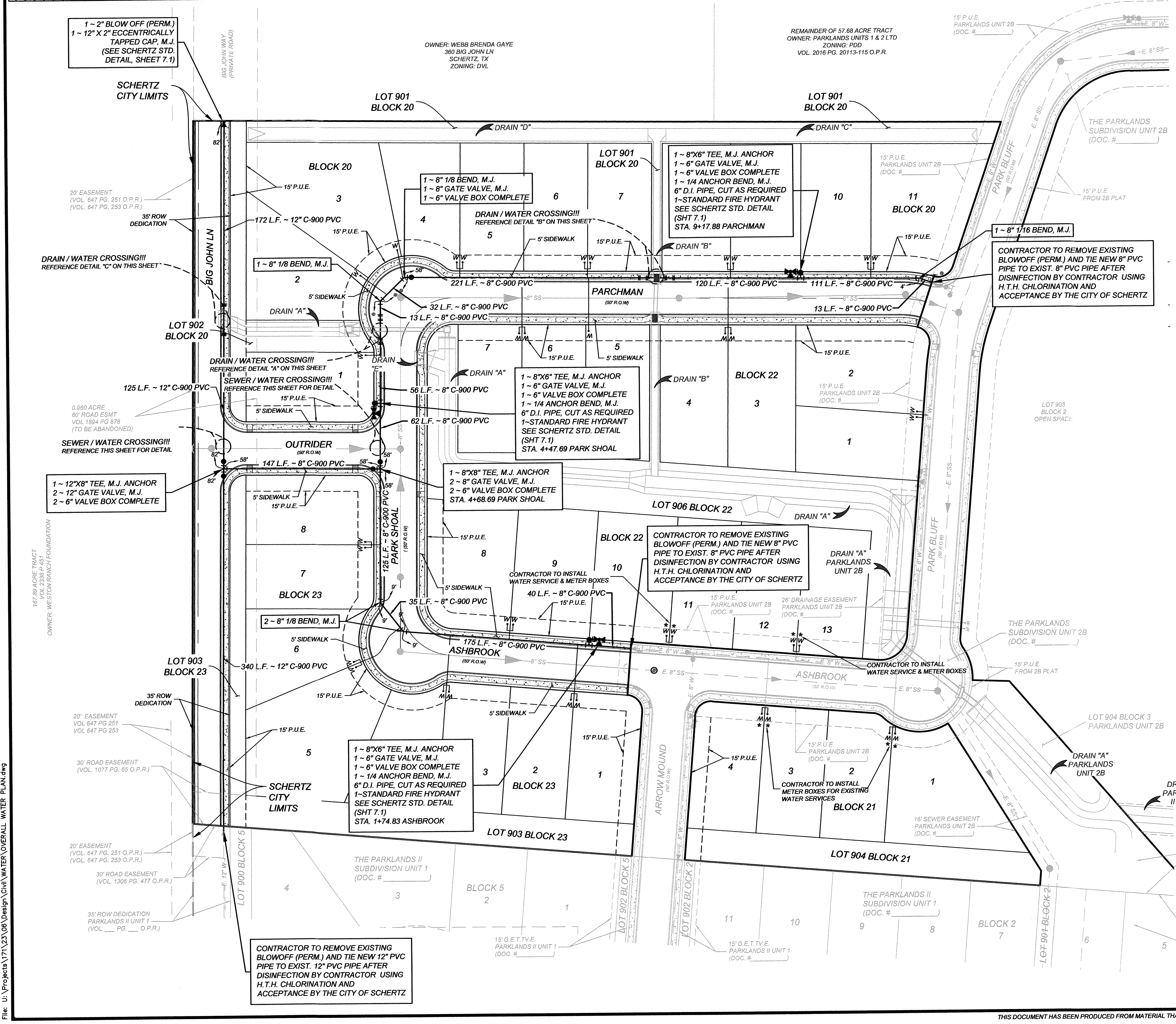
TYPICAL SANITARY SEWER/WATER CROSSING DETAIL
N.T.S.

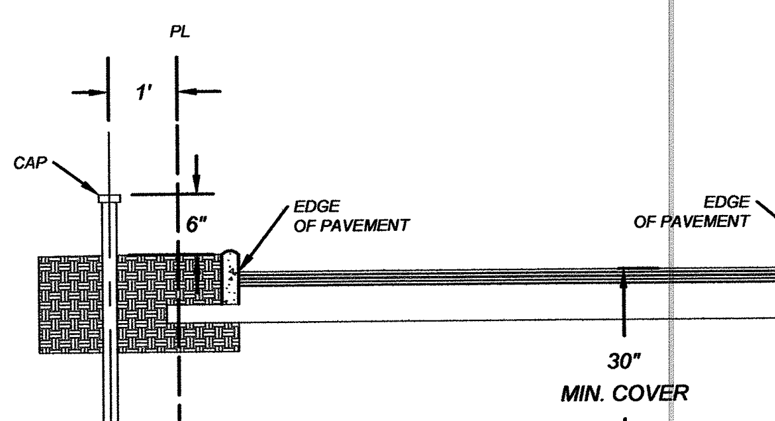
LEGEND

PROPOSED WATER MAIN	8"W
PROPOSED WATER SERVICE & METER BOX (TIE TO EXISTING WATER SERVICE)	W *
PROPOSED WATER SERVICE & METER BOX	W
PROPOSED WATER 1" IRRIGATION SERVICE & W/ 3/4" WATER METER & METER BOX	3/4" IRR
PROPOSED FIRE HYDRANT	
PUBLIC UTILITY EASEMENT	P.U.E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
RIGHT OF WAY	R.O.W.
PROPOSED 8" SANITARY SEWER MAIN	8"SS
PROPOSED 8" SANITARY SEWER MANHOLE	●
PROPOSED SANITARY SEWER FORCE MAIN	FM
PROPOSED TEE & WATER VALVE	
PROPOSED SANITARY SEWER LATERAL	S
EXISTING SANITARY SEWER LATERAL	S
EXISTING WATER VALVE	
EXISTING FIRE HYDRANT	
EXISTING WATER MAIN	E. 8" W
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	SS
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	● PP



LOCATION MAP
N.T.S.


1 ~ 2" BLOW OFF (PERM.)
1 ~ 12" X 2" ECCENTRICALLY TAPPED CAP, M.J. (SEE SCHERTZ STD. DETAIL, SHEET 7.1)
SCHERTZ CITY LIMITS
BIG JOHN WAY (PRIVATE ROAD)
OWNER: WEBB BRENDA GAYE
360 BIG JOHN LN
SCHERTZ, TX
ZONING: DVL
REMAINDER OF 57.68 ACRE TRACT
OWNER: PARKLANDS UNITS 1 & 2 LTD
ZONING: PDD
VOL. 2016 PG. 20113-115 O.P.R.
LOT 901 BLOCK 20
BLOCK 20
DRAIN "D"
DRAIN "C"
20' EASEMENT (VOL. 647 PG. 251 O.P.R.) (VOL. 647 PG. 253 O.P.R.)
35' ROW DEDICATION
172 L.F. ~ 12" C-900 PVC
BIG JOHN LN
DRAIN / WATER CROSSING!!! REFERENCE DETAIL "C" ON THIS SHEET
1 ~ 8" 1/8 BEND, M.J.
1 ~ 8" 1/8 BEND, M.J.
1 ~ 8" GATE VALVE, M.J.
1 ~ 6" VALVE BOX COMPLETE
DRAIN / WATER CROSSING!!! REFERENCE DETAIL "B" ON THIS SHEET
1 ~ 8"X6" TEE, M.J. ANCHOR
1 ~ 6" GATE VALVE, M.J.
1 ~ 6" VALVE BOX COMPLETE
1 ~ 1/4 ANCHOR BEND, M.J.
6" D.I. PIPE, CUT AS REQUIRED
1~STANDARD FIRE HYDRANT
SEE SCHERTZ STD. DETAIL (SHT 7.1)
STA. 9+17.88 PARCHMAN
1 ~ 8" 1/16 BEND, M.J.
CONTRACTOR TO REMOVE EXISTING BLOWOFF (PERM.) AND TIE NEW 8" PVC PIPE TO EXIST. 8" PVC PIPE AFTER DISINFECTION BY CONTRACTOR USING H.T.H. CHLORINATION AND ACCEPTANCE BY THE CITY OF SCHERTZ
THE PARKLANDS SUBDIVISION UNIT 2B (DOC. #___)
PARK BLUFF
221 L.F. ~ 8" C-900 PVC
120 L.F. ~ 8" C-900 PVC
111 L.F. ~ 8" C-900 PVC
32 L.F. ~ 8" C-900 PVC
13 L.F. ~ 8" C-900 PVC
13 L.F. ~ 8" C-900 PVC
PARCHMAN
LOT 902 BLOCK 20
DRAIN "A"
DRAIN "B"
DRAIN / WATER CROSSING!!! REFERENCE DETAIL "A" ON THIS SHEET
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
125 L.F. ~ 12" C-900 PVC
56 L.F. ~ 8" C-900 PVC
62 L.F. ~ 8" C-900 PVC
1 ~ 8"X6" TEE, M.J. ANCHOR
1 ~ 6" GATE VALVE, M.J.
1 ~ 6" VALVE BOX COMPLETE
1 ~ 1/4 ANCHOR BEND, M.J.
6" D.I. PIPE, CUT AS REQUIRED
1~STANDARD FIRE HYDRANT
SEE SCHERTZ STD. DETAIL (SHT 7.1)
STA. 4+47.69 PARK SHOAL
BLOCK 22
0.960 ACRE 60' ROAD ESMT VOL 1894 PG 878 (TO BE ABANDONED)
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
OUTRIDER
147 L.F. ~ 8" C-900 PVC
1 ~ 12"X8" TEE, M.J. ANCHOR
2 ~ 12" GATE VALVE, M.J.
2 ~ 6" VALVE BOX COMPLETE
1 ~ 8"X8" TEE, M.J. ANCHOR
2 ~ 8" GATE VALVE, M.J.
2 ~ 6" VALVE BOX COMPLETE
STA. 4+68.69 PARK SHOAL
LOT 906 BLOCK 22
LOT 905 BLOCK 2 OPEN SPACE
CONTRACTOR TO REMOVE EXISTING BLOWOFF (PERM.) AND TIE NEW 8" PVC PIPE TO EXIST. 8" PVC PIPE AFTER DISINFECTION BY CONTRACTOR USING H.T.H. CHLORINATION AND ACCEPTANCE BY THE CITY OF SCHERTZ
DRAIN "A" PARKLANDS UNIT 2B
125 L.F. ~ 8" C-900 PVC
PARK SHOAL
BLOCK 23
167.89 ACRE TRACT OWNER: WESTON RANCH FOUNDATION
CONTRACTOR TO INSTALL WATER SERVICE & METER BOXES
40 L.F. ~ 8" C-900 PVC
35 L.F. ~ 8" C-900 PVC
2 ~ 8" 1/8 BEND, M.J.
175 L.F. ~ 8" C-900 PVC
ASHBROOK
LOT 903 BLOCK 23
340 L.F. ~ 12" C-900 PVC
35' ROW DEDICATION
CONTRACTOR TO INSTALL WATER SERVICE & METER BOXES
THE PARKLANDS SUBDIVISION UNIT 2B (DOC. #___)
1 ~ 8"X6" TEE, M.J. ANCHOR
1 ~ 6" GATE VALVE, M.J.
1 ~ 6" VALVE BOX COMPLETE
1 ~ 1/4 ANCHOR BEND, M.J.
6" D.I. PIPE, CUT AS REQUIRED
1~STANDARD FIRE HYDRANT
SEE SCHERTZ STD. DETAIL (SHT 7.1)
STA. 1+74.83 ASHBROOK
SCHERTZ CITY LIMITS
ARROW MOUND
CONTRACTOR TO INSTALL METER BOXES FOR EXISTING WATER SERVICES
BLOCK 21
LOT 904 BLOCK 3 PARKLANDS UNIT 2B
DRAIN "A" PARKLANDS UNIT 2B
DRAIN "A" PARKLANDS II UNIT 1
LOT 903 BLOCK 23
LOT 904 BLOCK 21
30' ROAD EASEMENT (VOL. 1077 PG. 65 O.P.R.) TO BE ABANDONED
20' EASEMENT (VOL. 647 PG. 251 O.P.R.) (VOL. 647 PG. 253 O.P.R.)
30' ROAD EASEMENT (VOL. 1306 PG. 477 O.P.R.)
35' ROW DEDICATION PARKLANDS II UNIT 1
THE PARKLANDS II SUBDIVISION UNIT 1 (DOC. #___)
LOT 900 BLOCK 5
LOT 902 BLOCK 5
LOT 902 BLOCK 2
LOT 901 BLOCK 2
BLOCK 5
BLOCK 2
CONTRACTOR TO REMOVE EXISTING BLOWOFF (PERM.) AND TIE NEW 12" PVC PIPE TO EXIST. 12" PVC PIPE AFTER DISINFECTION BY CONTRACTOR USING H.T.H. CHLORINATION AND ACCEPTANCE BY THE CITY OF SCHERTZ

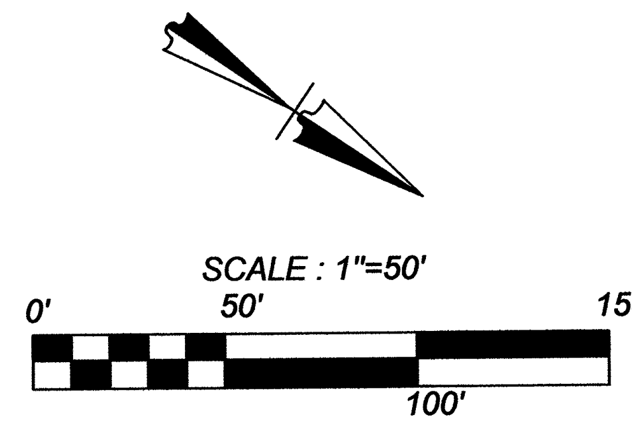


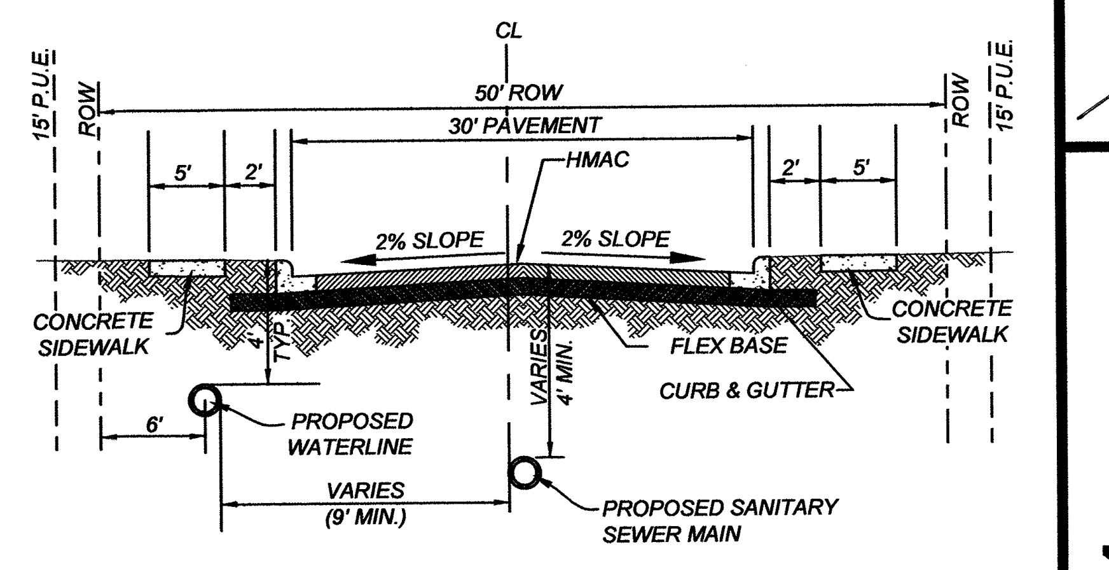
CONDUIT DETAIL
N.T.S.
*PVC SCHED. 40 OR 80 CONDUIT
SEE PLAN SHEETS FOR SIZE, LOCATION, AND NUMBER OF CONDUITS

NOTE:

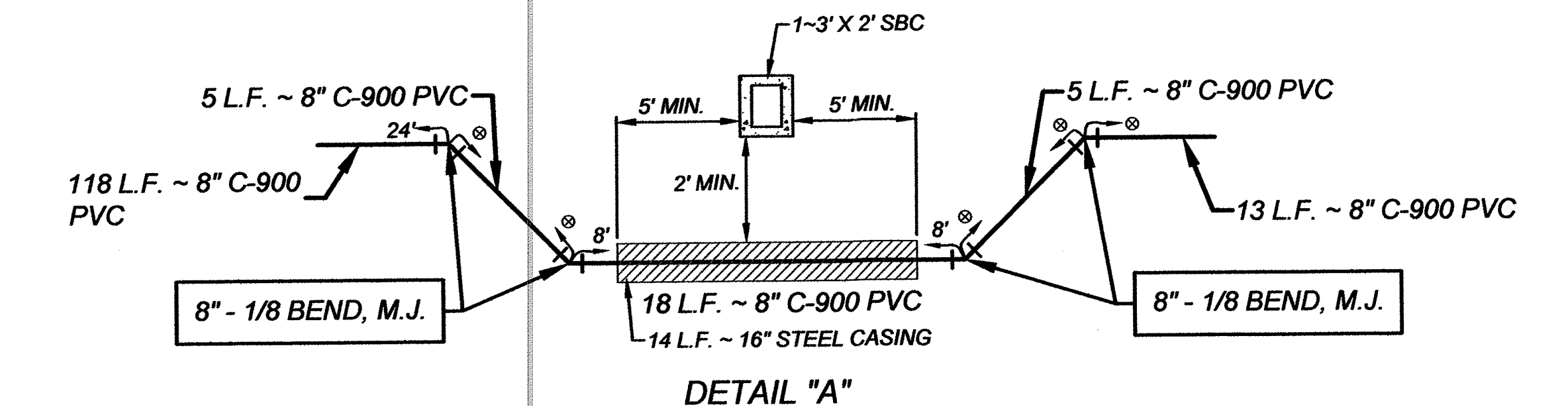
- CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH GVEC FACILITY AT ALL STREETS AND DRAIN CROSSING CONSTRUCTION SLEEVES MUST ALSO BE LOCATED FOR GVEC CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.
- CONTRACTOR TO CONTACT ENGINEER FOR APPROPRIATE NUMBER AND SIZE OF CONDUITS FOR TELECOMMUNICATIONS
- CONTRACTOR TO CONTACT ENGINEER FOR ELECTRICAL PLANS

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

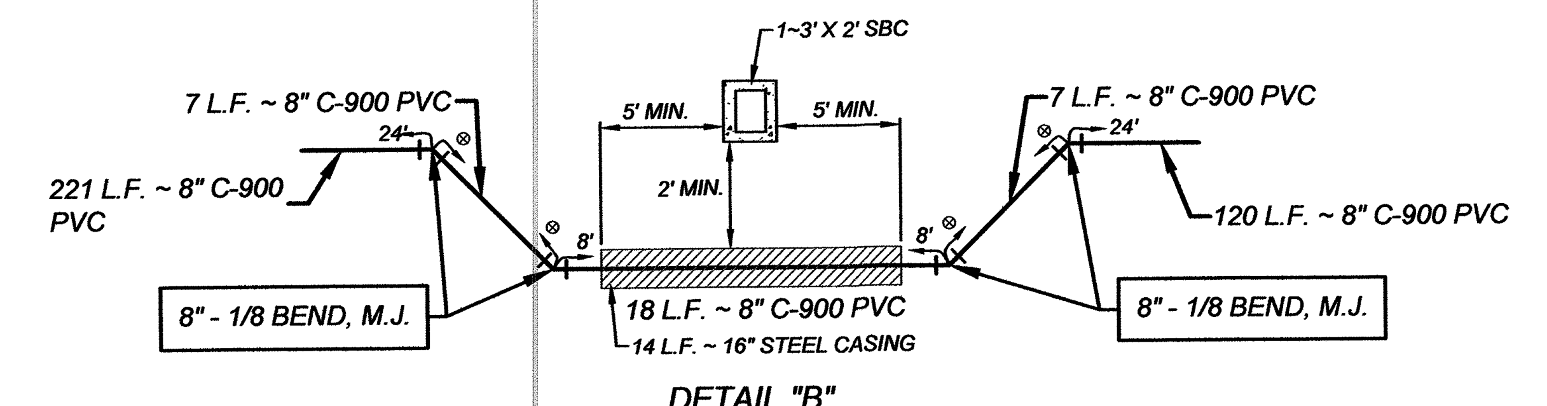




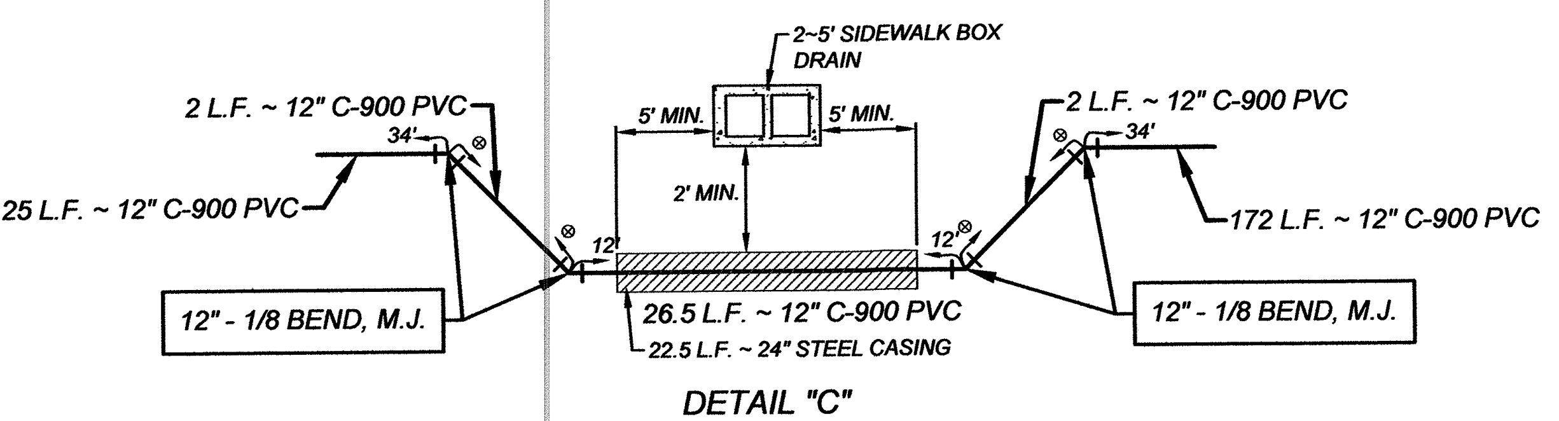
TYPICAL 50' ROW STREET CROSS SECTION - LOCAL ST.
N.T.S.



DETAIL "A"
VERTICAL OFFSET



DETAIL "B"
VERTICAL OFFSET



DETAIL "C"
VERTICAL OFFSET

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE
REVISIONS

1/10/23
A. NICHOLAS REYNOLDS
111666
Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
OVERALL WATER PLAN

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:
7.0

Date: Jan 10, 2023, 10:48am User ID: nreynolds
File: U:\Projects\171\23\06\Design\Civil\WATER\OVERALL WATER PLAN.dwg

GENERAL WATER NOTES

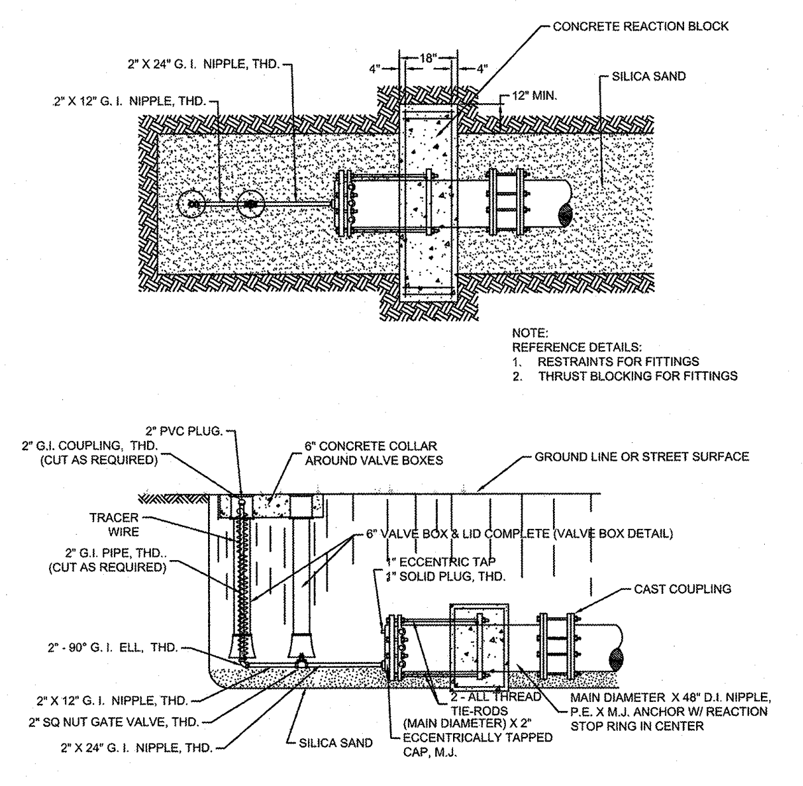
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL BE APPROVED BY THE CITY OF SCHERTZ AND COMPLY WITH THE FOLLOWING AS APPLICABLE:
   a. CURRENT CITY OF SCHERTZ "UNIFIED DEVELOPMENT CODE"
   b. CURRENT CITY OF SCHERTZ "PUBLIC WORKS SPECIFICATION MANUAL"
   c. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND DRAINAGE."
2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY HAVE NOTIFIED CITY OF SCHERTZ PUBLIC WORKS WITH AT LEAST **3 WORKING DAYS (72 HOURS) NOTICE.** ANY TIE-IN SHALL BE COORDINATED BY THE CONTRACTOR WITH PUBLIC WORKS.
3. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES, INCLUDING SERVICE LATERALS, AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.
   a. CITY OF SCHERTZ PUBLIC WORKS (210) 619-1800
   b. TEXAS STATE WIDE ONE CALL 1-800-245-4545
   c. CITY PUBLIC SERVICE 210-353-5952
   d. SPECTRUM 866-874-2389
   e. GUADALUPE VALLEY ELECTRIC CO. 210-658-7033
   f. GREEN VALLEY WATER SUPPLY CORP. (830-914-2330)
   g. SSLGC 830-401-2409
   h. NEW BRAUNFELS UTILITY 830-606-2074
   i. CANYON LAKE REGIONAL WATER AUTHORITY 830-609-0543
   j. CENTER POINT 888-876-5786
   k. SAN ANTONIO RIVER AUTHORITY (866-345-7272)
   l. CCMA 210-658-6241
4. **NO METER BOXES TO BE SET IN DRIVEWAYS. ANY METER BOXES SET IN DRIVEWAYS WILL BE RELOCATED AT THE CONTRACTOR'S AND / OR DEVELOPER'S EXPENSE.**
5. 2", SCHEDULE 40, PVC CASING TO BE USED FOR ALL WATER SERVICE LINES BENEATH ROADWAYS.
6. CONTRACTORS SHOULD USE HTH GRANULAR FOR DISINFECTION OF WATER LINES (NOT CHLORINE INJECTION).

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
CONSTRUCTION PLAN NOTES
PW TECH. SPEC. SECTION 01145
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 1 of 2

GENERAL WATER NOTES CON'T:

7. NEW WATERLINES SHALL BE TIED INTO EXISTING WATER SYSTEM UNDER THE SUPERVISION OF CITY PERSONNEL NO LATER THAN 14 DAYS AFTER PASSING BACTERIOLOGICAL TESTS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION FROM DAMAGE DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES PER SPECIFICATION 01740.
9. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY ARBORIST AND THE CITY OF SCHERTZ CONSTRUCTION INSPECTOR FOR GUIDANCE.
10. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.
11. THE DEVELOPER DEDICATES THE WATERMAINS UPON COMPLETION BY THE DEVELOPER AND ACCEPTANCE BY THE CITY OF SCHERTZ. THE CITY OF SCHERTZ WILL OWN AND MAINTAIN SAID WATER MAINS WHICH ARE LOCATED WITHIN THIS PARTICULAR SUBDIVISION (AS APPLICABLE).
12. THE CONTRACTOR AND/OR THE CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE 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 EXCAVATIONS.
13. WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE NOTICE TO PROCEED WITH THE CITY OF SCHERTZ CONSTRUCTION INSPECTOR WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
14. THE CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE METER BOX FREE OF ALL OBJECTS AND DEBRIS

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
CONSTRUCTION PLAN NOTES
PW TECH. SPEC. SECTION 01145
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 2of2


CONCRETE REACTION BLOCK
2" X 24" G. I. NIPPLE, THD.
2" X 12" G. I. NIPPLE, THD.
4"
18"
4"
12" MIN.
SILICA SAND
2" PVC PLUG.
2" G.I. COUPLING, THD. (CUT AS REQUIRED)
6" CONCRETE COLLAR AROUND VALVE BOXES
GROUND LINE OR STREET SURFACE
TRACER WIRE
2" G.I. PIPE, THD.. (CUT AS REQUIRED)
6" VALVE BOX & LID COMPLETE (VALVE BOX DETAIL)
1" ECCENTRIC TAP
1" SOLID PLUG, THD.
CAST COUPLING
2" - 90° G. I. ELL, THD.
2" X 12" G. I. NIPPLE, THD.
2" SQ NUT GATE VALVE, THD.
2" X 24" G. I. NIPPLE, THD.
SILICA SAND
2 - ALL THREAD TIE-RODS
(MAIN DIAMETER) X 2" ECCENTRICALLY TAPPED CAP, M.J.
MAIN DIAMETER X 48" D.I. NIPPLE, P.E. X M.J. ANCHOR W/ REACTION STOP RING IN CENTER

NOTE:
REFERENCE DETAILS:
1. RESTRAINTS FOR FITTINGS
2. THRUST BLOCKING FOR FITTINGS

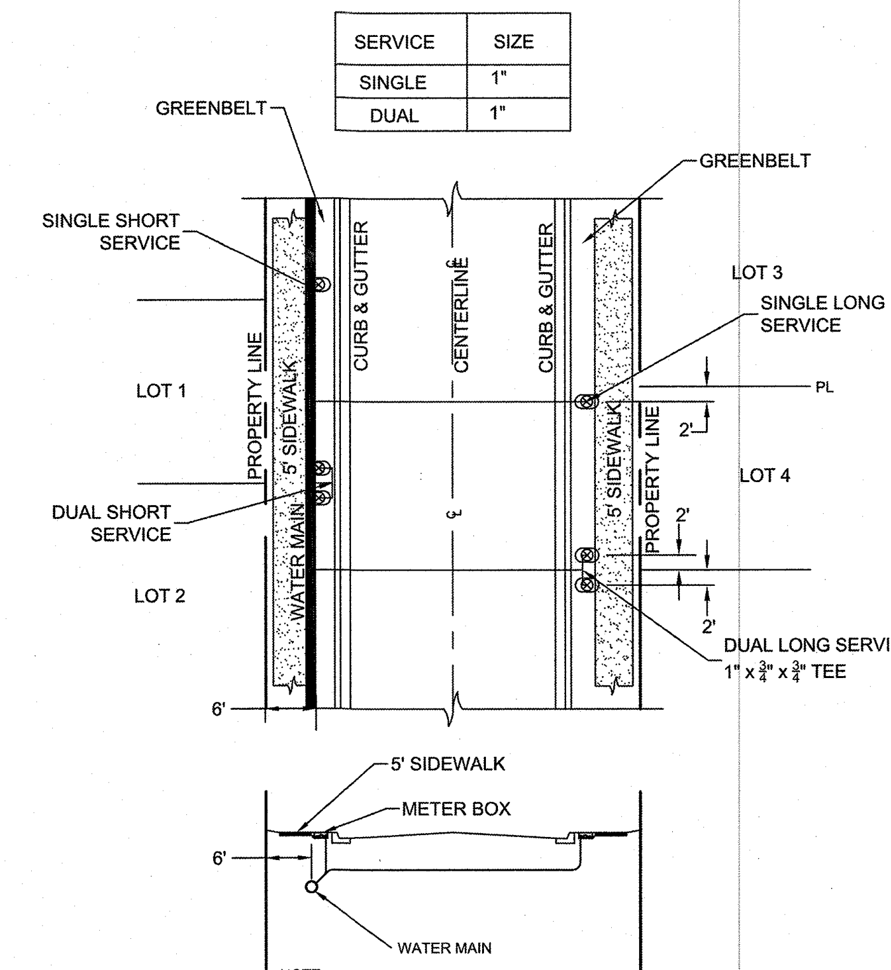
NOTE:

1. EMBED ALL EXTERIOR METAL SURFACES IN SILICA SAND
2. ALL REINFORCE BARS IN THE CONCRETE REACTION BLOCK SHALL BE #4.
3. ALL FERROUS METAL SURFACES TO BE IN ACCORDANCE WITH CITY OF SCHERTZ SPECIFICATIONS.
4. ALL BURIED METAL SURFACES, INCLUDING GALVANIZED PIPE AND STEEL RODS, ARE TO BE PROTECTED FROM SOIL EXPOSURE BY POLYBAGGING AND POLYTAPING (SPEC. 02528).

PERMANENT 2" BLOW-OFF ASSEMBLY

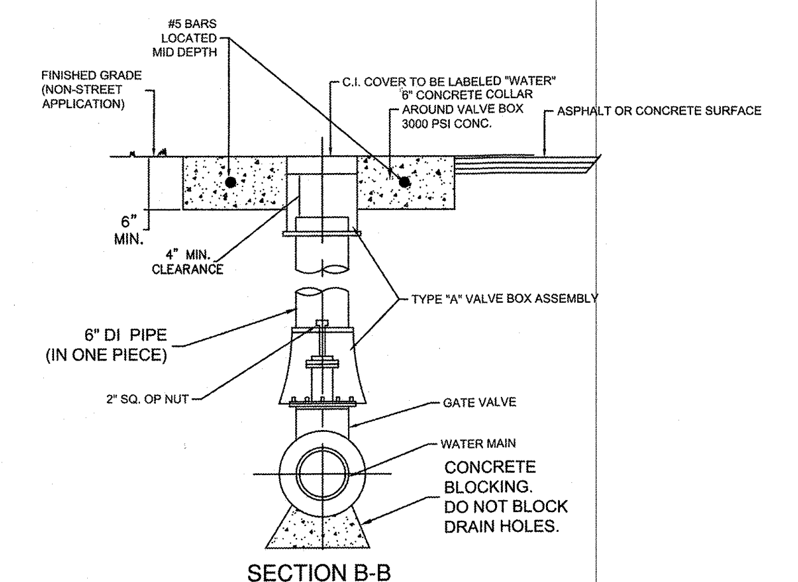
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
BLOW-OFF ASSEMBLY
PW TECH. SPEC. SECTION 02085
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 1

SERVICE	SIZE
SINGLE	1"
DUAL	1"

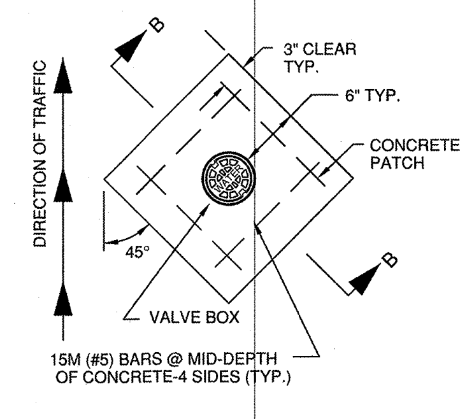


NOTE:
ALL SERVICES ARE TYPE "K" COPPER

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
METER BOX LOCATION
PW TECH. SPEC. SECTION 02085
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 1of1


#5 BARS LOCATED MID DEPTH
FINISHED GRADE (NON-STREET APPLICATION)
C.I. COVER TO BE LABELED "WATER"
6" CONCRETE COLLAR AROUND VALVE BOX 3000 PSI CONC.
ASPHALT OR CONCRETE SURFACE
6" MIN.
4" MIN. CLEARANCE
TYPE "A" VALVE BOX ASSEMBLY
6" DI PIPE (IN ONE PIECE)
2" SQ. OP NUT
GATE VALVE
WATER MAIN
CONCRETE BLOCKING. DO NOT BLOCK DRAIN HOLES.

SECTION B-B
(NOT TO SCALE)



PLAN VIEW

NOTES:

1. SUBGRADE SHALL BE COMPACTED AS PER SPECIFICATIONS.
2. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OR FINAL GRADE IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE BASE OF THE VALVE.
4. EXISTING RISER PIPE SHALL BE REPLACED WITH DUCTILE IRON ELEVATION USING NEW PIPE AND A COLLAR CASTING.
5. REINFORCING STEEL SHALL MEET SPECIFICATIONS.
6. VALVES WILL BE ACCOMPANIED BY A "V" ETCHED INTO CURB FACE PAINTED BLUE

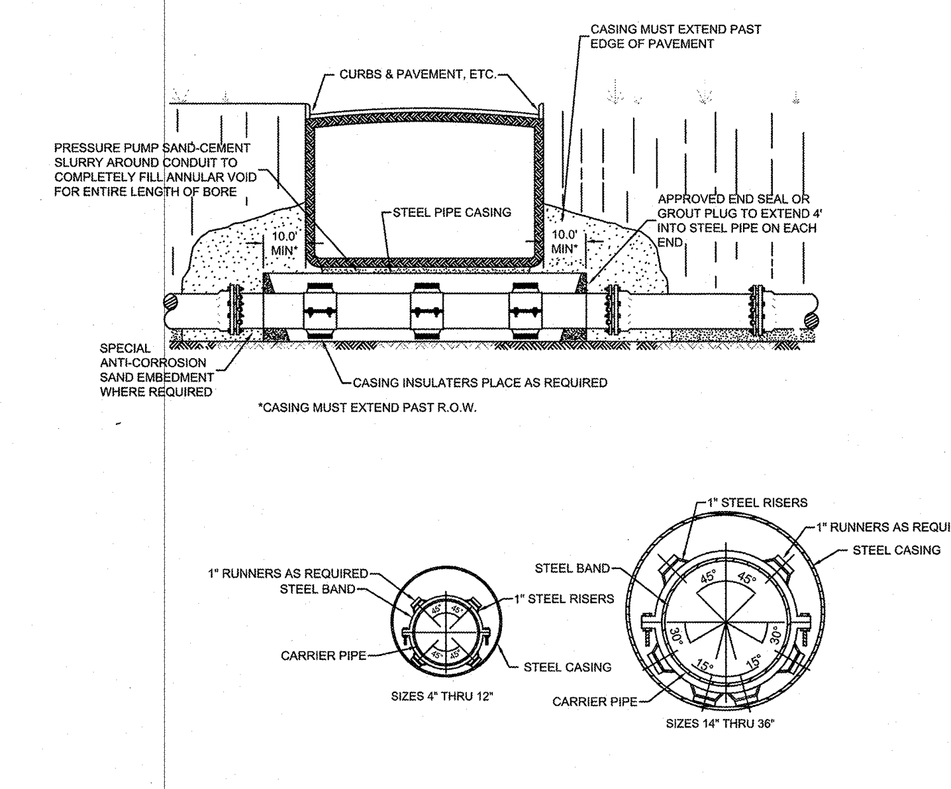
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
VALVE BOX
PW SPECIFICATION SECTION 02085
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: XX

OSHA TRENCH SAFETY

1. TRENCH EXCAVATION SHALL COMPLY WITH MINIMUM STANDARDS AS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, REGULATIONS STANDARDS - 29 CFR - "EXCAVATION" - 1926 SUBPART P.
2. TRENCH SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SHOP DRAWINGS FOR DETAIL PLANS AND SPECIFICATIONS TO PROVIDE ADEQUATE SHORING AND SHEETING STANDARDS THAT MEET THE OSHA STANDARDS AS SET OUT BY STANDARDS - 29 CFR - EXCAVATION" - 1926 SUBPART P FOR TRENCH SAFETY.
3. CONTINUOUS INSPECTION OF ALL TRENCH EXCAVATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR JOB SUPERINTENDENT. THE CONTRACTOR CONTROLS THE SIZE, WEIGHT, AND SPEED OF OPERATION OF EQUIPMENT AND PIPE INSTALLATION, WHICH DIRECTLY AFFECTS ALL SAFETY MEASURES IN A TRENCH. IF PROBABLE CAUSE OF UNSAFE TRENCH CONDITIONS EXIST, ALL WORK SHALL CEASE IMMEDIATELY UNTIL NECESSARY PRECAUTIONS TO SAFEGUARD EMPLOYEES ARE TAKEN.

TRENCH SAFETY SYSTEM

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
OSHA TRENCH SAFETY NOTES
PW TECH. SPEC. SECTION 02260
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 01


CASING MUST EXTEND PAST EDGE OF PAVEMENT
CURBS & PAVEMENT, ETC.
PRESSURE PUMP SAND-CEMENT SLURRY AROUND CONDUIT TO COMPLETELY FILL ANNULAR VOID FOR ENTIRE LENGTH OF BORE
STEEL PIPE CASING
10.0' MIN*
10.0' MIN*
APPROVED END SEAL OR GROUT PLUG TO EXTEND 4' INTO STEEL PIPE ON EACH END
SPECIAL ANTI-CORROSION SAND EMBEDMENT WHERE REQUIRED
CASING INSULATERS PLACE AS REQUIRED
*CASING MUST EXTEND PAST R.O.W.
1" STEEL RISERS
1" RUNNERS AS REQUIRED
STEEL CASING
1" RUNNERS AS REQUIRED
STEEL BAND
STEEL BAND
1" STEEL RISERS
CARRIER PIPE
STEEL CASING
45°
30°
15°
SIZES 4" THRU 12"
CARRIER PIPE
SIZES 14" THRU 36"

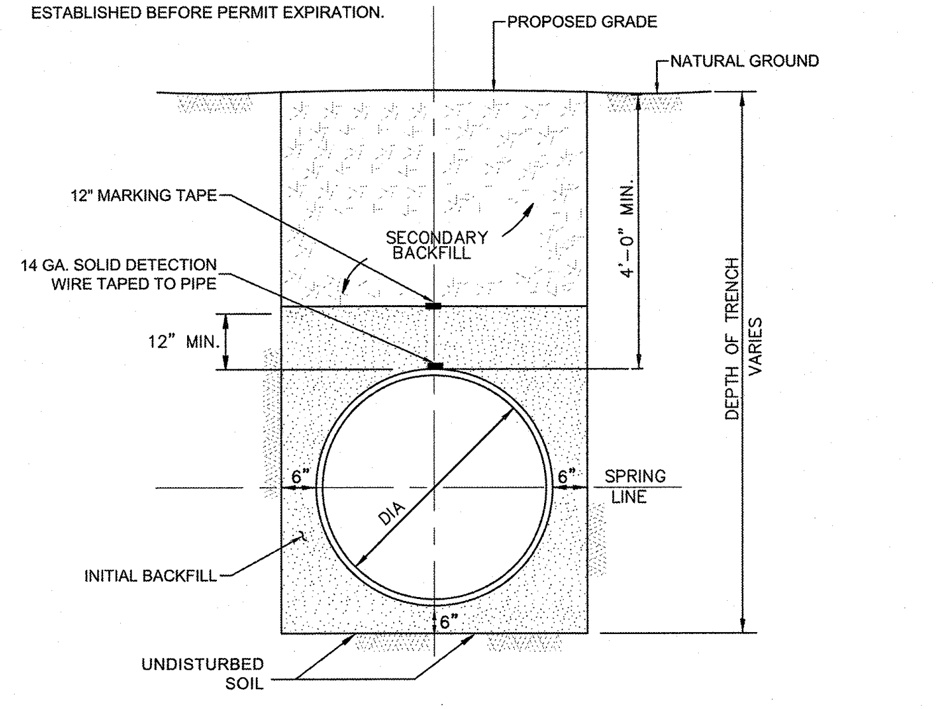
BORE AND CASE
(NOT TO SCALE)

SIZE	BAND WIDTH	NO. RUNNERS PER TIE	
8"	8"	2 TOP,	2 BOTTOM
12"	8"	2 TOP,	2 BOTTOM
16"	12"	2 TOP,	4 BOTTOM
20"	12"	2 TOP,	4 BOTTOM
24"	12"	2 TOP,	4 BOTTOM
30"	12"	2 TOP,	4 BOTTOM
36"	12"	2 TOP,	4 BOTTOM

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
BORE AND CASE
PW SPECIFICATION SECTION 02447
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/2018
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 1

SYMMETRICAL ABOUT ℄

** 85%SUFFICIENT GRASS COVERAGE IS TO BE ESTABLISHED BEFORE PERMIT EXPIRATION.

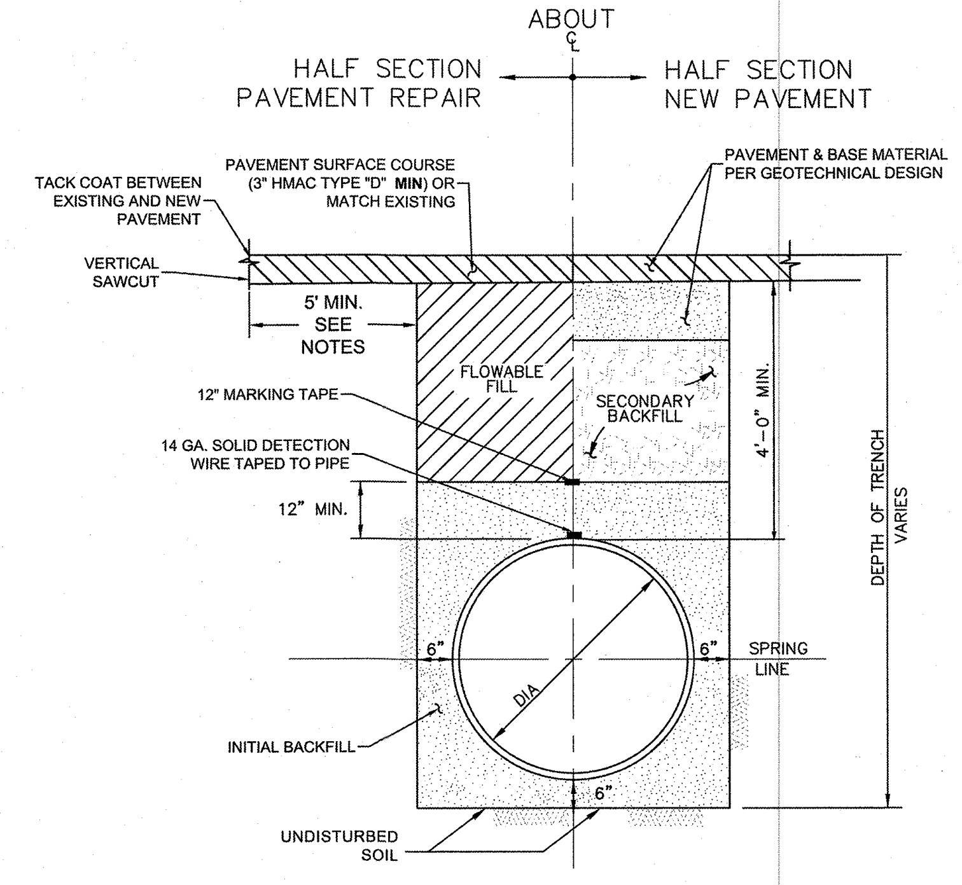


INITIAL BACKFILL:
SAND AROUND PIPE COMPACTED PER SPEC 02320 - UTILITY BACKFILL MATERIALS

SECONDARY BACKFILL:
NATIVE MATERIAL FROM TRENCH PLACED IN MAXIMUM 8" LOOSE LIFTS, FREE OF DEBRIS AND STONES LARGER THAN 4". COMPACTION TO 95% STD PROCTOR DENSITY (ASTM D 698). PER SPEC 02317

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
WATER MAIN TRENCH IN UNPAVED AREA
PW SPECIFICATION SECTION 02511
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 1OF2

SYMMETRICAL ABOUT ℄


HALF SECTION PAVEMENT REPAIR
HALF SECTION NEW PAVEMENT
TACK COAT BETWEEN EXISTING AND NEW PAVEMENT
PAVEMENT SURFACE COURSE (3" HMAC TYPE "D" MIN) OR MATCH EXISTING
PAVEMENT & BASE MATERIAL PER GEOTECHNICAL DESIGN
VERTICAL SAWCUT
5' MIN. SEE NOTES
FLOWABLE FILL
SECONDARY BACKFILL
12" MARKING TAPE
14 GA. SOLID DETECTION WIRE TAPED TO PIPE
12" MIN.
4'-0" MIN.
DEPTH OF TRENCH VARIES
6"
6"
SPRING LINE
DIA
INITIAL BACKFILL
6"
UNDISTURBED SOIL

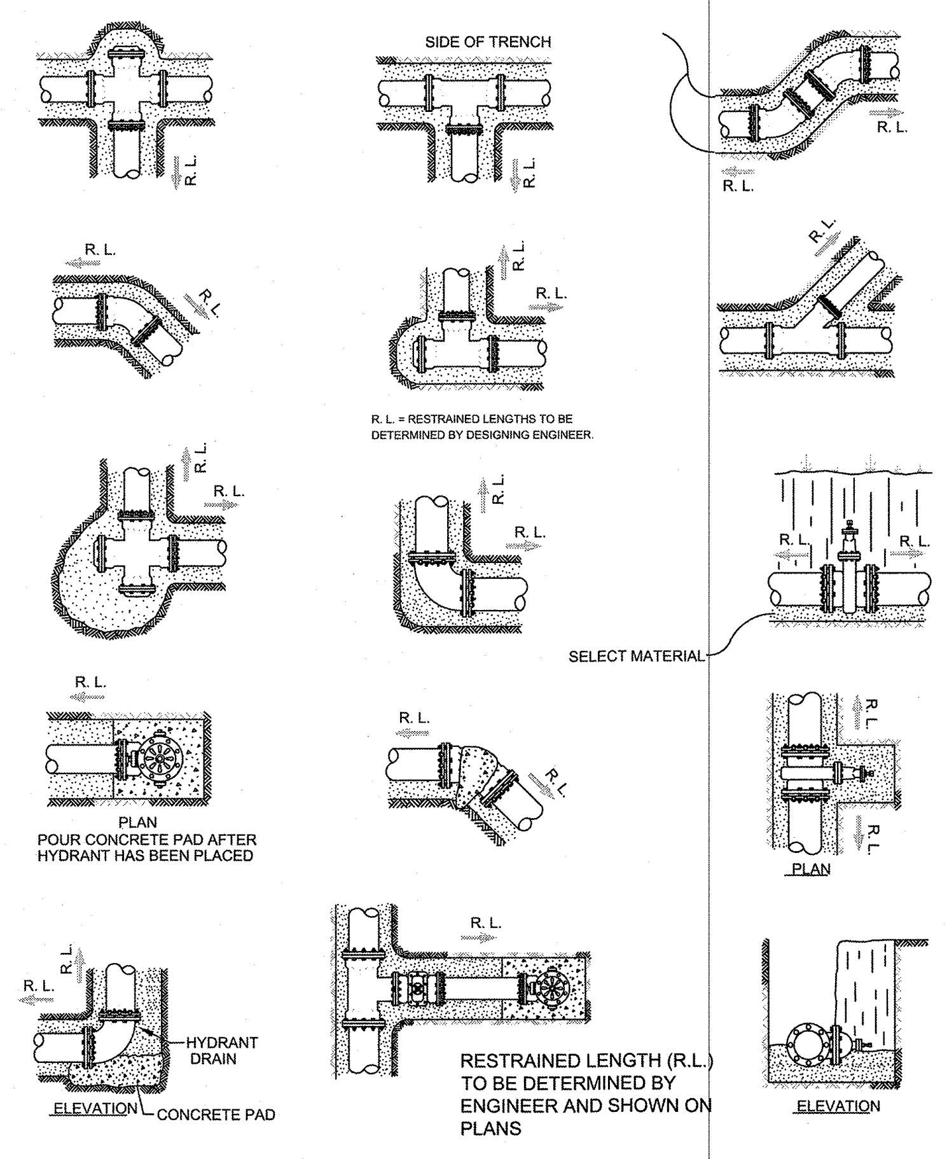
NOTE:

1. PUBLIC WORKS PERMIT REQUIRED FOR ALL STREET CUTS OR TAPS.
2. SAW CUTS SHALL BE STRAIGHT AND PERPENDICULAR TO THE FLOW OF TRAFFIC.
3. TACK ALL VERTICAL SURFACES.

INITIAL BACKFILL:
SAND AROUND PIPE COMPACTED PER SPEC 02320 - UTILITY BACKFILL MATERIALS

SECONDARY BACKFILL:
NATIVE MATERIAL FROM TRENCH PLACED IN MAXIMUM 8" LOOSE LIFTS, FREE OF DEBRIS AND STONES LARGER THAN 4". COMPACTION TO 95% STD PROCTOR DENSITY (ASTM D 698). PER SPEC 02317

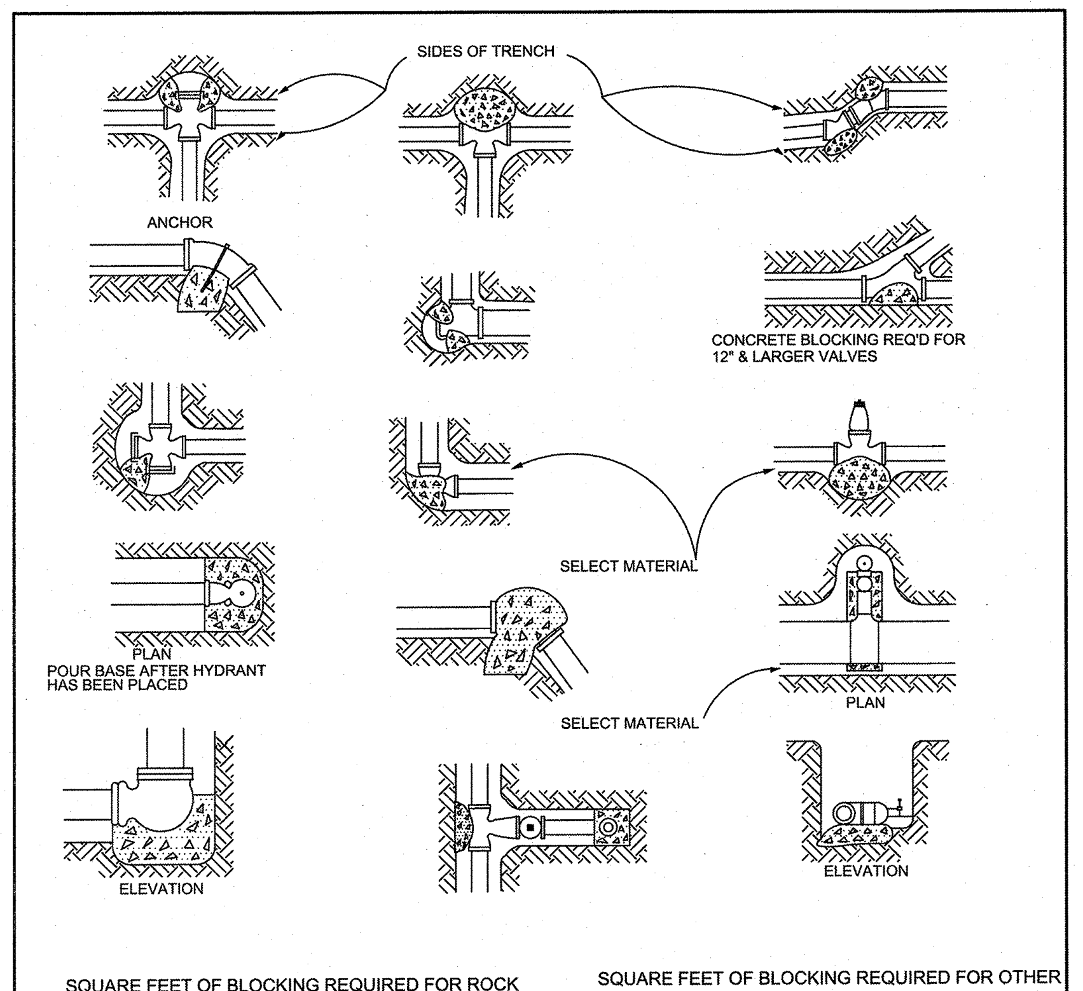
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
WATER MAIN TRENCH IN STREET
PW TECH. SPEC. SECTION 02511
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 2OF2


SIDE OF TRENCH
R. L.
R. L. = RESTRAINED LENGTHS TO BE DETERMINED BY DESIGNING ENGINEER.
SELECT MATERIAL
PLAN
POUR CONCRETE PAD AFTER HYDRANT HAS BEEN PLACED
PLAN
HYDRANT DRAIN
ELEVATION
CONCRETE PAD
ELEVATION

RESTRAINED LENGTH (R.L.) TO BE DETERMINED BY ENGINEER AND SHOWN ON PLANS

RESTRAINTS FOR FITTING
(NOT TO SCALE)

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
RESTRAINTS FOR FITTINGS
PW TECH. SPEC. SECTION 02511
SHEETNUMBER | PROJECT NO.: | DATE: 2/15/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 1of2


SIDES OF TRENCH
ANCHOR
CONCRETE BLOCKING REQ'D FOR 12" & LARGER VALVES
SELECT MATERIAL
POUR BASE AFTER HYDRANT HAS BEEN PLACED
SELECT MATERIAL
PLAN
ELEVATION
ELEVATION

SQUARE FEET OF BLOCKING REQUIRED FOR ROCK EXCAVATION (3000 psi concrete)

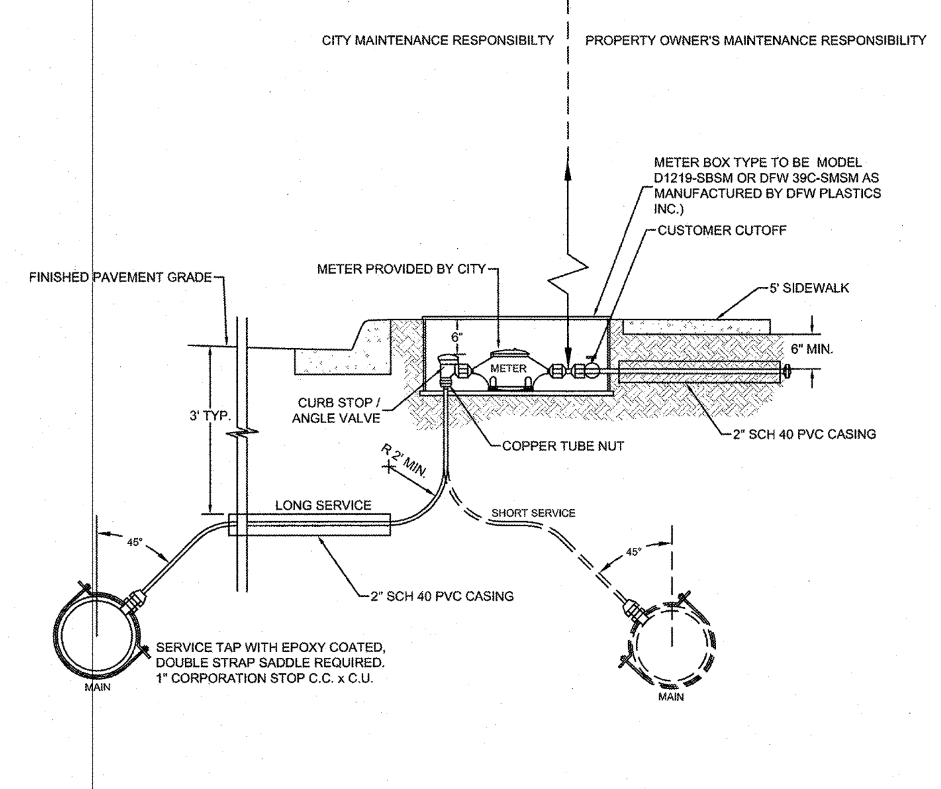
SIZE PIPE	TEES & DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS
6"	2	2	1	1
8"	3	4	2	1
12"	6	9	5	2
16"	11	15	8	4
18"	14	20	10	5

SQUARE FEET OF BLOCKING REQUIRED FOR OTHER THAN ROCK EXCAVATION (3000 psi concrete)

SIZE PIPE	TEES & DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS
6"	3	4	2	1
8"	4	6	4	2
12"	10	14	8	4
16"	18	25	14	7
18"	21	31	17	10

THRUST BLOCKING FOR FITTINGS
(NOT TO SCALE)

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
THRUST BLOCKING FOR FITTINGS
PW TECH. SPEC. SECTION 02511
SHEETNUMBER | PROJECT NO.: | DATE: 1/18/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 2 of 2


CITY MAINTENANCE RESPONSIBILTY
PROPERTY OWNER'S MAINTENANCE RESPONSIBILITY
METER BOX TYPE TO BE MODEL D1219-SBSM OR DFW 39C-SMSM AS MANUFACTURED BY DFW PLASTICS INC.)
CUSTOMER CUTOFF
FINISHED PAVEMENT GRADE
METER PROVIDED BY CITY
5' SIDEWALK
6"
METER
6" MIN.
CURB STOP / ANGLE VALVE
3' TYP.
COPPER TUBE NUT
2" SCH 40 PVC CASING
R 2' MIN.
LONG SERVICE
SHORT SERVICE
45°
45°
2" SCH 40 PVC CASING
SERVICE TAP WITH EPOXY COATED, DOUBLE STRAP SADDLE REQUIRED. 1" CORPORATION STOP C.C. x C.U.
MAIN
MAIN

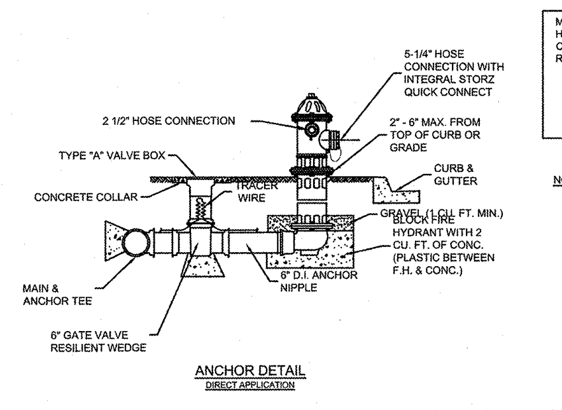
NOTES:

1. CONTRACTORS SHOULD USE HTH FOR DISINFECTION OF WATER LINES (NOT CHLORINE INJECTION) UNLESS APPROVED OTHERWISE PRIOR TO ISSUANCE OF PERMIT.
2. NEW WATERLINES SHALL BE TIED INTO EXISTING WATER SYSTEM UNDER THE SUPERVISION OF CITY PERSONNEL NO LATER THAN 14 DAYS AFTER PASSING BACTERIOLOGICAL TESTS.
3. ALL SERVICES ARE TYPE "K" COPPER.
4. METER BOXES WILL BE ACCOMPANIED BY AN "X" ETCHED INTO CURB FACE PAINTED BLUE.

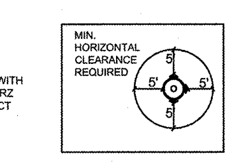
SCHERTZ
COMMUNITY ✶ SERVICE ✶ OPPORTUNITY
STANDARD DETAIL 02512
WATER TAP AND SERVICE
TECHNICAL SPECIFICATION SECTION 02512
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DATE: 2/09/2021
DSGN. BY: ENG. | DRAWN BY: JRS | SHEET NO.: 1 of 1

PUBLIC FIRE HYDRANTS
BONNET AND CAPS TO BE FACTORY PAINTED WHITE (NO ON-SITE PAINTING)

PRIVATE FIRE HYDRANTS
PAINTED RED FROM THE FACTORY (NO ON-SITE PAINTING)


5-1/4" HOSE CONNECTION WITH INTEGRAL STORZ QUICK CONNECT
2 1/2" HOSE CONNECTION
2" - 6" MAX. FROM TOP OF CURB OR GRADE
TYPE "A" VALVE BOX
CURB & GUTTER
CONCRETE COLLAR
TRACER WIRE
GRAVEL (1 CU. FT. MIN.)
BLOCK FIRE HYDRANT WITH 2 CU. FT. OF CONC. (PLASTIC BETWEEN F.H. & CONC.)
6" D.I. ANCHOR NIPPLE
MAIN & ANCHOR TEE
6" GATE VALVE RESILIENT WEDGE

ANCHOR DETAIL
DIRECT APPLICATION



NOTES:

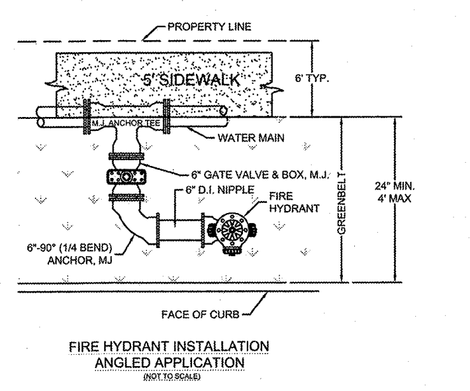
1. APPOVED MANUFACTURERS: MUELLER, KENNEDY, CLOW & EAST JORDAN.
2. ALL FIRE HYDRANTS ARE TO BE EQUIPPED WITH AN **INTEGRAL** STORZ HYDRANT QUICK CONNECT ON THE STEAMER OUTLET.
3. A BLUE TYPE II REFLECTOR PAVEMENT MARKER SHALL BE PLACED 2 TO 3 FEET (0.6 to 0.9 meters) OFFSET FROM THE CENTERLINE OF PAVED STREETS. SPEC 02764
4. REFURBISHED HYDRANTS WILL NOT BE ACCEPTED
5. HYDRANTS SHALL BE FACTORY PAINTED ONLY.
6. ALL JOINTS RESTRAINED (SEE RESTRAINTS DETAILS).

COLOR CODE PUBLIC HYDRANTS

FIRE HYDRANT PRIMER	RED OXIDE W/B PRIMER (FORMULA NO. 41U-517)
FIRE HYDRANT BONNET	PPG PAINT NO. 95-3301/01 (WHITE)
FIRE HYDRANT CAPS	SAME AS BONNET COLOR
FIRE HYDRANT BARREL	PPG PAINT NO. FL15-793 (VERMILLION RED)

COLOR CODE PRIVATE HYDRANTS

FIRE HYDRANT PRIMER	RED OXIDE W/B PRIMER (FORMULA NO. 41U-517)
FIRE HYDRANT COMPLETE	PPG PAINT NO. FL15-793 (VERMILLION RED)



FIRE HYDRANT INSTALLATION
ANGLED APPLICATION
(NOT TO SCALE)

CONSTRUCTION KEY NOTES:

1. PUMPER NOZZLE TO BE FACING THE TRAVELED WAY, PERPENDICULAR TO THE ROAD.
2. NO HYDRANT SHALL PROTRUDE PAST BACK OF CURB.
3. DO NOT CUT TRACER WIRE IN VALVE BOX.
4. POLYETHYLENE WRAP BETWEEN ALL CONCRETE AND MECHANICAL BENDS (SPEC. 02528).
5. ANY TIE-IN SHALL BE COORDINATED BY THE CONTRACTOR WITH THE PUBLIC WORKS DEPT.
6. NO OBSTRUCTIONS WILL BE PERMITTED WITHIN 5 FT. IN ALL DIRECTIONS OF FIRE HYDRANT. (PER PW DESIGN GUIDE & TECH. SPECIFICATIONS).
7. PRESSURE TEST OF ALL WATER LINES SHALL BE AT 200 PSI FOR A DURATION OF 4 HOURS.
8. LOCATE PUMPER NOZZLE CENTER LINE MINIMUM OF 18" ABOVE GRADE, MAXIMUM 24".

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
FIRE HYDRANT
PW TECH. SPEC. SECTION 02520
SHEETNUMBER | PROJECT NO.: | DATE: 4/17/20
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: XX

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

REVISIONS | ISSUE DATE

1/26/22
A. NICHOLAS REYNOLDS
111666
Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX

WATER NOTES AND DETAILS

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR
SHEET NUMBER:
7.1

Date: Aug 03, 2021, 2:14pm User ID: acruz
File: U:\Projects\171\23\06\Design\Civil\WATER\7.1 WATER NOTES AND DETAILS.dwg

SW3P MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

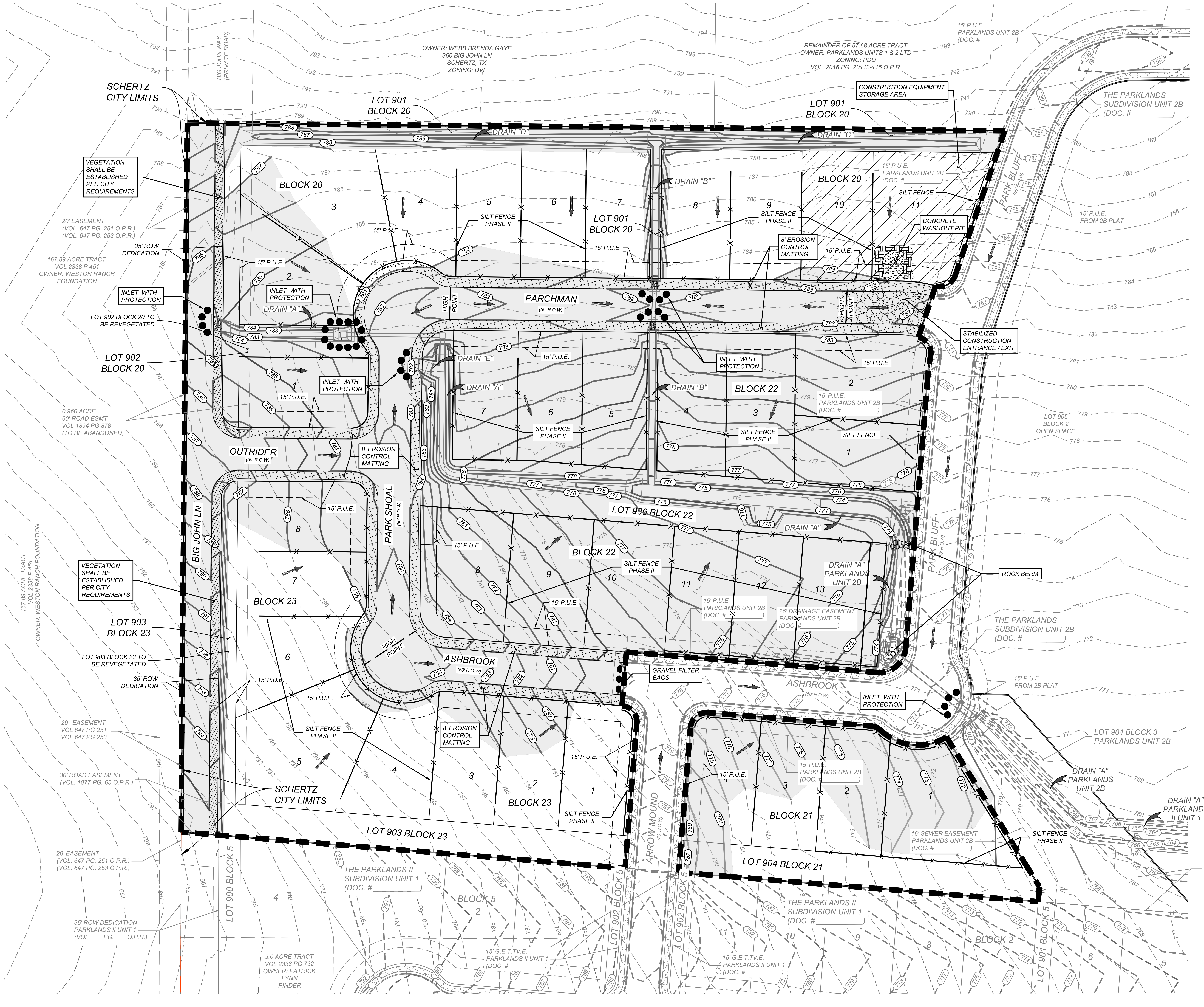
COORDINATION NOTE:

1. CONTACT SPECTRUM TO COORDINATE CABLE TV SERVICE. (210) 244-0500
2. CONDUIT FOR ELECTRICAL SERVICE. CONFIRM REQUIREMENTS AND COORDINATE WITH GUADALUPE VALLEY ELECTRIC COOPERATIVE FOR INSPECTION. (830) 379-2114.
3. CONTACT AT&T TO COORDINATE TELEPHONE SERVICE. 1-800-449-7928.
4. CONTRACTOR TO COORDINATE WITH GUADALUPE VALLEY ELECTRIC COOPERATIVE PRIOR TO CONSTRUCTION TO PLAN ELECTRIC SERVICE.
5. CONTRACTOR TO COORDINATE WITH CITY OF SCHERTZ TO PLAN WATER & SANITARY SEWER SERVICES. (210)619-1000.
6. CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

SEQUENCE OF CONSTRUCTION:

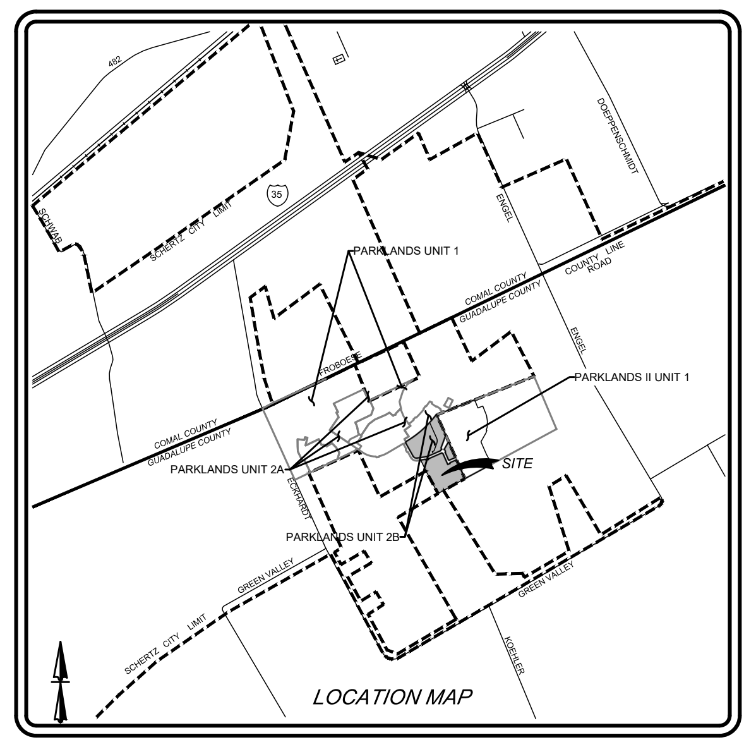
CONSTRUCTION ACTIVITY WILL INCLUDE:

1. INSTALLATION OF TEMPORARY BMP's
2. SITE CLEARING AND GRUBBING ACTIVITIES FOR STREETS.
3. ROUGH SUBGRADE PREPARATION: EARTHWORK, GRADING, STREETS, EXCAVATION AND EMBANKMENT.
4. UTILITY TRENCHING AND INSTALLATION.
5. FINAL STREET PREPARATION, CURBING, AND PAVING ACTIVITIES.
6. HOME CONSTRUCTION.
7. SITE CLEAN UP AND REMOVAL OF TEMPORARY BMP's.

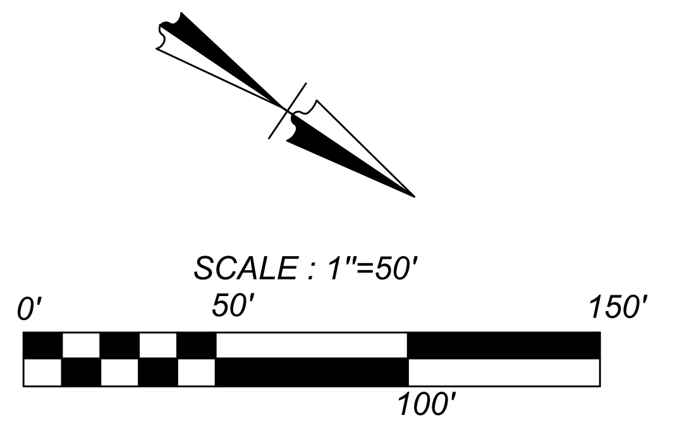

SCHERTZ CITY LIMITS
BIG JOHN WAY (PRIVATE ROAD)
OWNER: WEBB BRENDA GAYE 360 BIG JOHN LN SCHERTZ, TX ZONING: DVL
REMAINDER OF 57.68 ACRE TRACT OWNER: PARKLANDS UNITS 1 & 2 LTD ZONING: PDD VOL. 2016 PG. 20113-115 O.P.R.
CONSTRUCTION EQUIPMENT STORAGE AREA
15' P.U.E. PARKLANDS UNIT 2B (DOC. #
THE PARKLANDS SUBDIVISION UNIT 2B (DOC. #
LOT 901 BLOCK 20
DRAIN "D"
DRAIN "C"
DRAIN "B"
VEGETATION SHALL BE ESTABLISHED PER CITY REQUIREMENTS
BLOCK 20
20' EASEMENT (VOL. 647 PG. 251 O.P.R.) (VOL. 647 PG. 253 O.P.R.)
35' ROW DEDICATION
167.89 ACRE TRACT VOL 2338 P 451 OWNER: WESTON RANCH FOUNDATION
SILT FENCE PHASE II
8' EROSION CONTROL MATTING
SILT FENCE
CONCRETE WASHOUT PIT
PARK BLUFF
15' P.U.E. FROM 2B PLAT
INLET WITH PROTECTION
DRAIN "A"
LOT 902 BLOCK 20 TO BE REVEGETATED
PARCHMAN (50' R.O.W)
HIGH POINT
STABILIZED CONSTRUCTION ENTRANCE / EXIT
LOT 902 BLOCK 20
DRAIN "E"
BLOCK 22
0.960 ACRE 60' ROAD ESMT VOL 1894 PG 878 (TO BE ABANDONED)
OUTRIDER (50' R.O.W)
LOT 905 BLOCK 2 OPEN SPACE
PARK SHOAL (50' R.O.W)
LOT 906 BLOCK 22
DRAIN "A" PARKLANDS UNIT 2B
ROCK BERM
BIG JOHN LN
BLOCK 23
26' DRAINAGE EASEMENT PARKLANDS UNIT 2B
LOT 903 BLOCK 23
LOT 903 BLOCK 23 TO BE REVEGETATED
ASHBROOK (50' R.O.W)
GRAVEL FILTER BAGS
LOT 904 BLOCK 3 PARKLANDS UNIT 2B
20' EASEMENT VOL. 647 PG 251 VOL. 647 PG 253
30' ROAD EASEMENT (VOL. 1077 PG. 65 O.P.R.)
ARROW MOUND
BLOCK 21
16' SEWER EASEMENT PARKLANDS UNIT 2B
DRAIN "A" PARKLANDS UNIT 2B
DRAIN "A" PARKLANDS II UNIT 1
30' ROAD EASEMENT (VOL. 1077 PG. 65 O.P.R.) TO BE ABANDONED
LOT 904 BLOCK 21
THE PARKLANDS SUBDIVISION UNIT 1 (DOC. #
THE PARKLANDS II SUBDIVISION UNIT 1 (DOC. #
35' ROW DEDICATION PARKLANDS II UNIT 1 (VOL. PG. O.P.R.)
3.0 ACRE TRACT VOL 2338 PG 732 OWNER: PATRICK LYNN PINDER
15' G.E.T.T.V.E. PARKLANDS II UNIT 1 (DOC. #
LOT 900 BLOCK 5
LOT 902 BLOCK 5
LOT 901 BLOCK 5
BLOCK 5
BLOCK 2

LEGEND

▬ ▬ ▬ ▬	LIMITS OF CONSTRUCTION
— — 780 — —	EXISTING CONTOURS
━(780)━	PROPOSED CONTOURS
⟶	FLOW ARROW
▨	STABILIZED CONSTRUCTION ENTRANCE/EXIT
▨	CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA.
▨	CONCRETE TRUCK WASHOUT PIT
●	INLET WITH PROTECTION (GRAVEL FILTER BAGS)
▨	DISTURBED AREA
○○○	ROCK BERM
—\\—	SILT FENCE
—X—	SILT FENCE PHASE II
▨	NATURAL VEGETATIVE BUFFER
▨	EROSION CONTROL MATTING ORIGINAL CURLEX ECB OR EQUAL



LOCATION MAP
N.T.S.



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 UPGRADIENT 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:

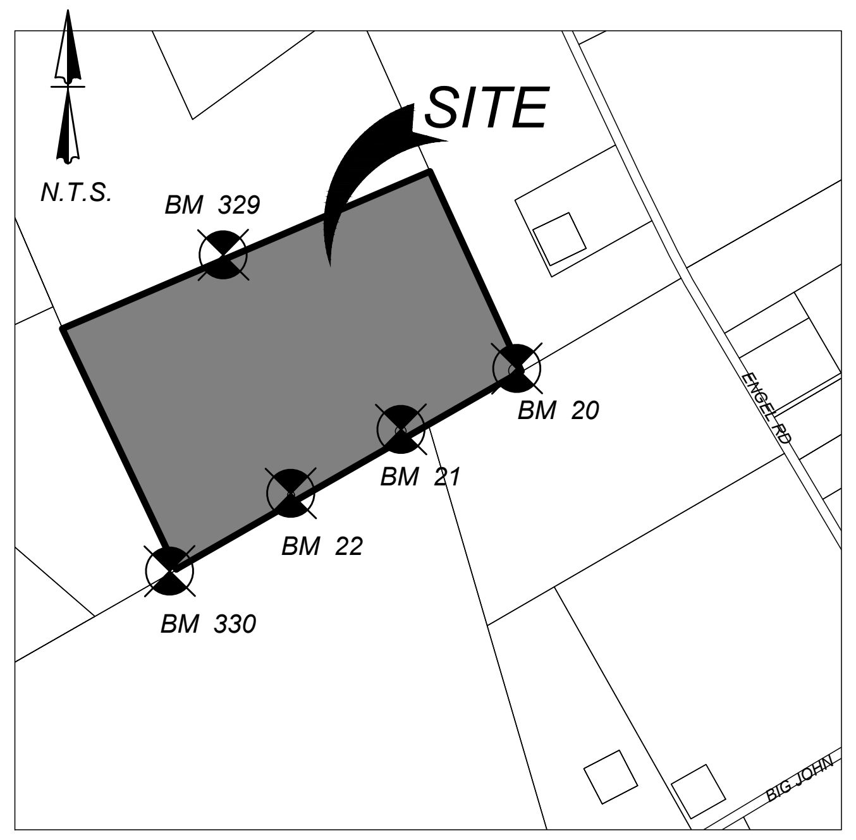
1. CONTRACTOR SHOULD LIMIT CONSTRUCTION ACTIVITIES TO ONLY THOSE AREAS SHOWN TO BE DISTURBED ON THIS PLAN. IF ADDITIONAL VEGETATED AREAS ARE DISTURBED, THEY SHOULD BE PROTECTED WITH APPROPRIATE BEST MANAGEMENT PRACTICES UNTIL THE AREAS HAVE BEEN STABILIZED AS PER THE SPECIFICATIONS OF THE SWPPP. THE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

GENERAL:

1. THIS EXHIBIT IS TO BE USED FOR THE PURPOSES OF STORMWATER POLLUTION PREVENTION ONLY. ALL OTHER CIVIL ENGINEERING INFORMATION SHOULD BE OBTAINED FROM THE APPROPRIATE CONSTRUCTION DOCUMENTS.
2. THE PURPOSE OF THE SIGNATURE AND SEAL OF THE ENGINEER ON THIS DOCUMENT IS TO DEMONSTRATE COMPLIANCE WITH THE TPDES STORMWATER POLLUTION PREVENTION PLAN REGULATIONS ONLY.
3. ALL OWNERS/OPERATORS ARE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH THE STORMWATER POLLUTION PREVENTION PLAN AND COMPLYING WITH THE REGULATIONS CONTAINED WITHIN IT
4. CITY INSPECTOR MAY REQUIRE ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURE AS APPROPRIATE.
5. ALL DISTURBED AREAS SHALL BE REVEGETATED TO A MINIMUM OF 85% WITH THE EXCEPTION OF BUILDABLE RESIDENTIAL LOTS. EROSION AND SEDIMENTATION FROM BUILDABLE LOTS SHOULD BE PREVENTED THROUGH THE USE OF SILT FENCE, CONTROL MATTING, OR OTHER BMP'S AS APPROPRIATE.



SITE BENCHMARKS (SURFACE)

BM #	ELEV.	DESCRIPTION
BM 20	780.29	SET ½" IRON ROD WITH "KFW" CAP N: 13781553.04, E: 2228215.38 (SURFACE)
BM 21	797.88	SET ½" IRON ROD WITH "KFW" CAP N: 13781235.65, E: 2227613.02 (SURFACE)
BM 22	784.17	SET ½" IRON ROD WITH "KFW" CAP N: 13780902.86, E: 2227039.13 (SURFACE)
BM 329	763.37	SET ½" IRON ROD WITH "KFW" CAP N: 13782144.45, E: 2226687.56
BM 330	796.04	SET ½" IRON ROD WITH "KFW" CAP N: 13780498.43, E: 2226408.86

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.

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.

Date: Jan 11, 2023, 10:58am User ID: rwolden
File: U:\Projects\171\23\06\Design\Civil\SW3P\8.0 STORMWATER POLLUTION PREVENTION PLAN.dwg

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

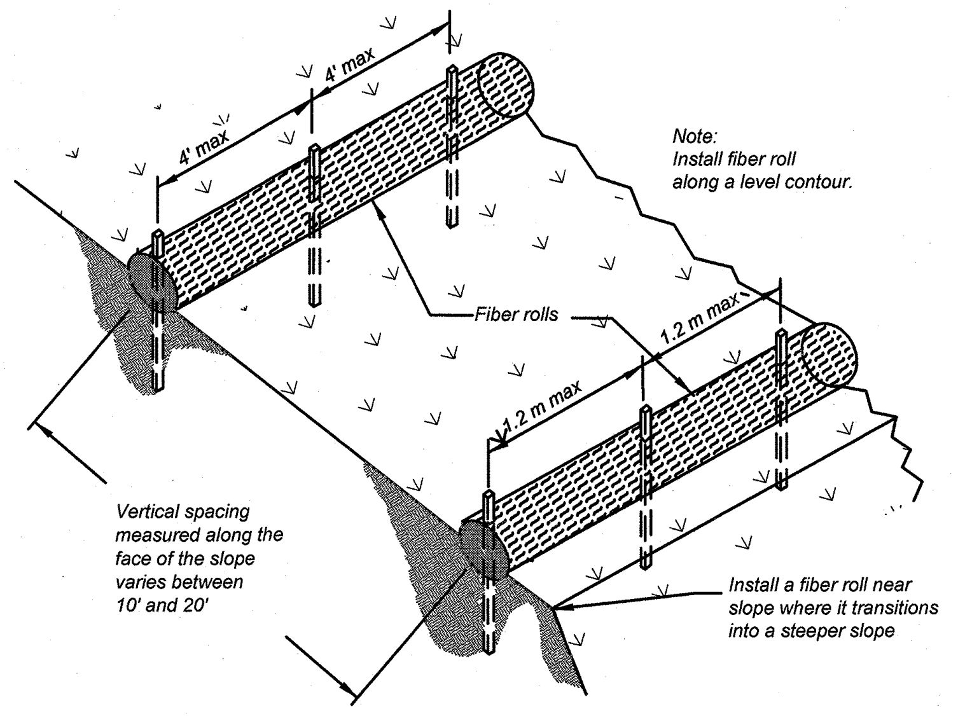
REVISIONS

1/10/23
A. NICHOLAS REYNOLDS
111666
Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
STORMWATER POLLUTION PREVENTION PLAN

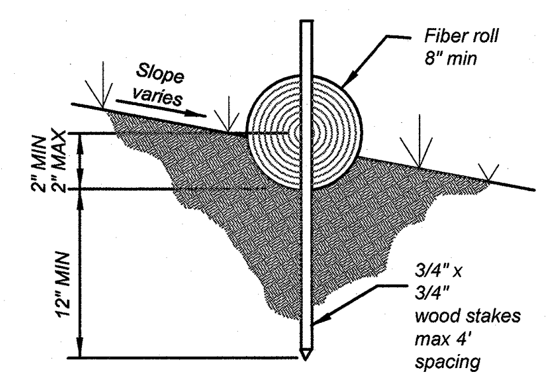
JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN:
CHECKED: NR

SHEET NUMBER:
8.0



TYPICAL FIBER ROLL INSTALLATION

N.T.S.



ENTRENCHMENT DETAIL

N.T.S.

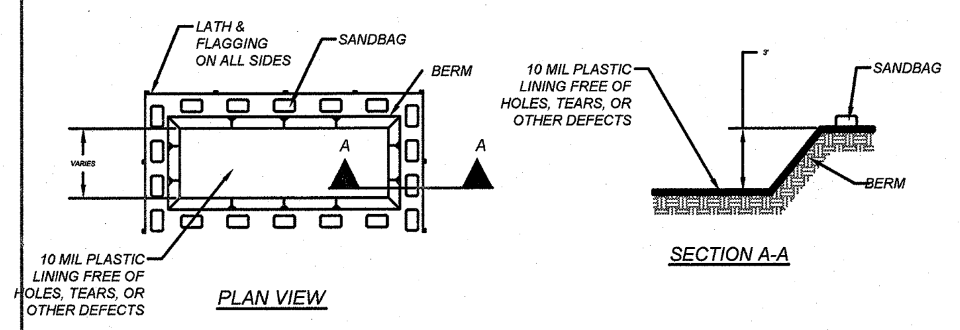
THE MATERIAL, INSTALLATION, INSPECTION, AND MAINTENANCE OF FIBER ROLLS WILL BE PER THE MANUFACTURE'S SPECIFICATIONS AND SHALL ALSO COMPLY WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY CURRENT "TECHNICAL GUIDANCE ON BEST MANAGEMENT PRACTICES" AS NOTED BELOW.

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

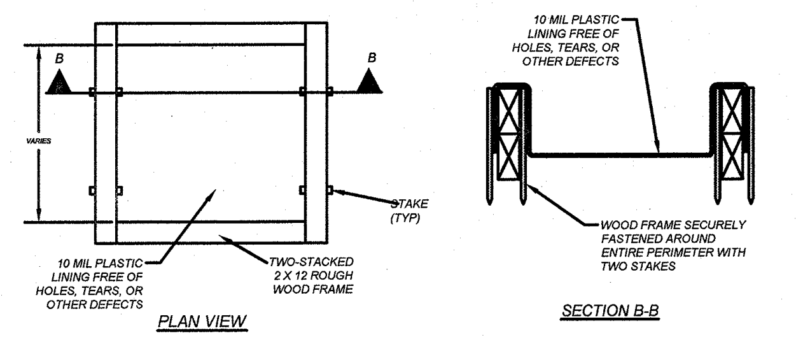
Implementation:
(1) Locate fiber rolls on level contours spaced as follows:
Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing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

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

FIBER ROLL



TYPE "BELOW GRADE"

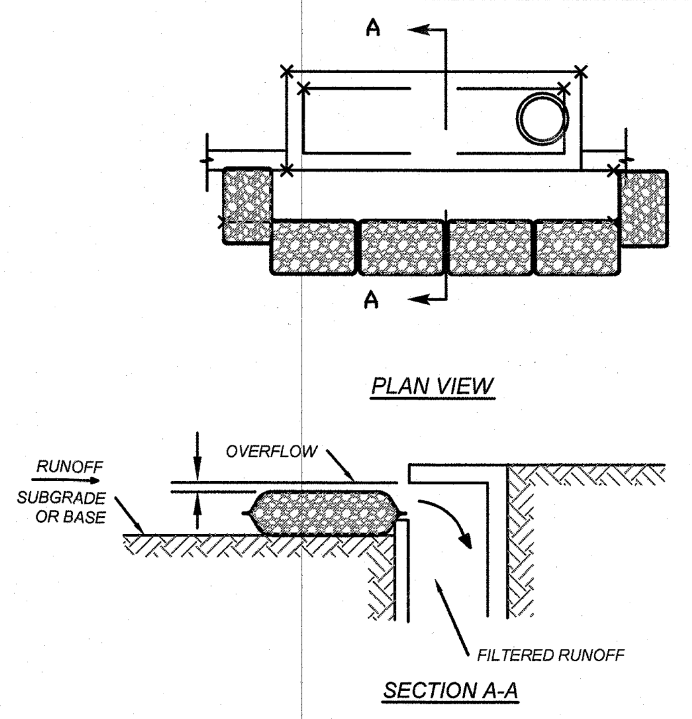


TYPE "ABOVE GRADE"

GENERAL NOTES:

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

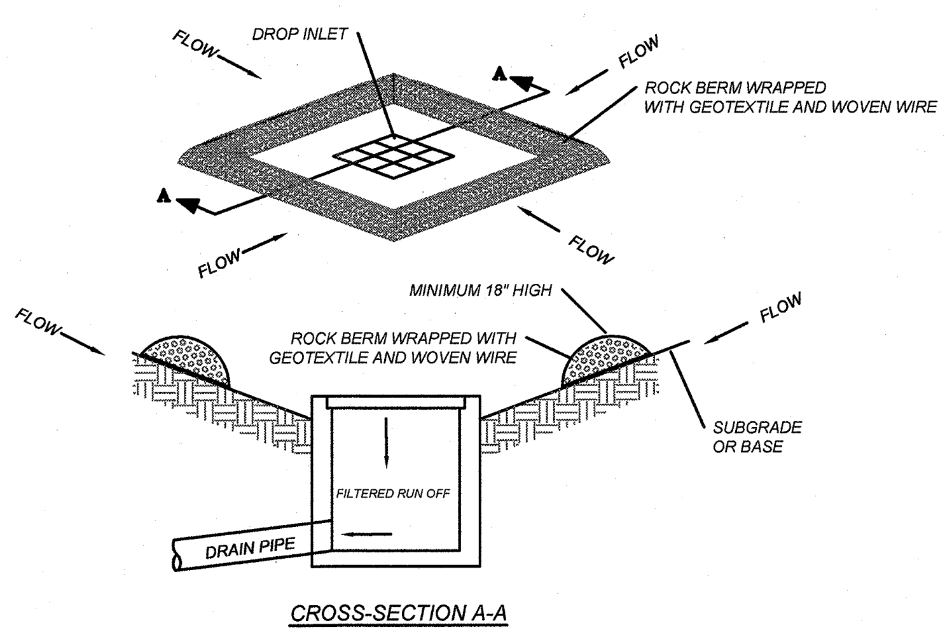
CONCRETE TRUCK WASHOUT PIT



GENERAL NOTES:

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

CURB INLET PROTECTION GRAVEL FILTER BAGS

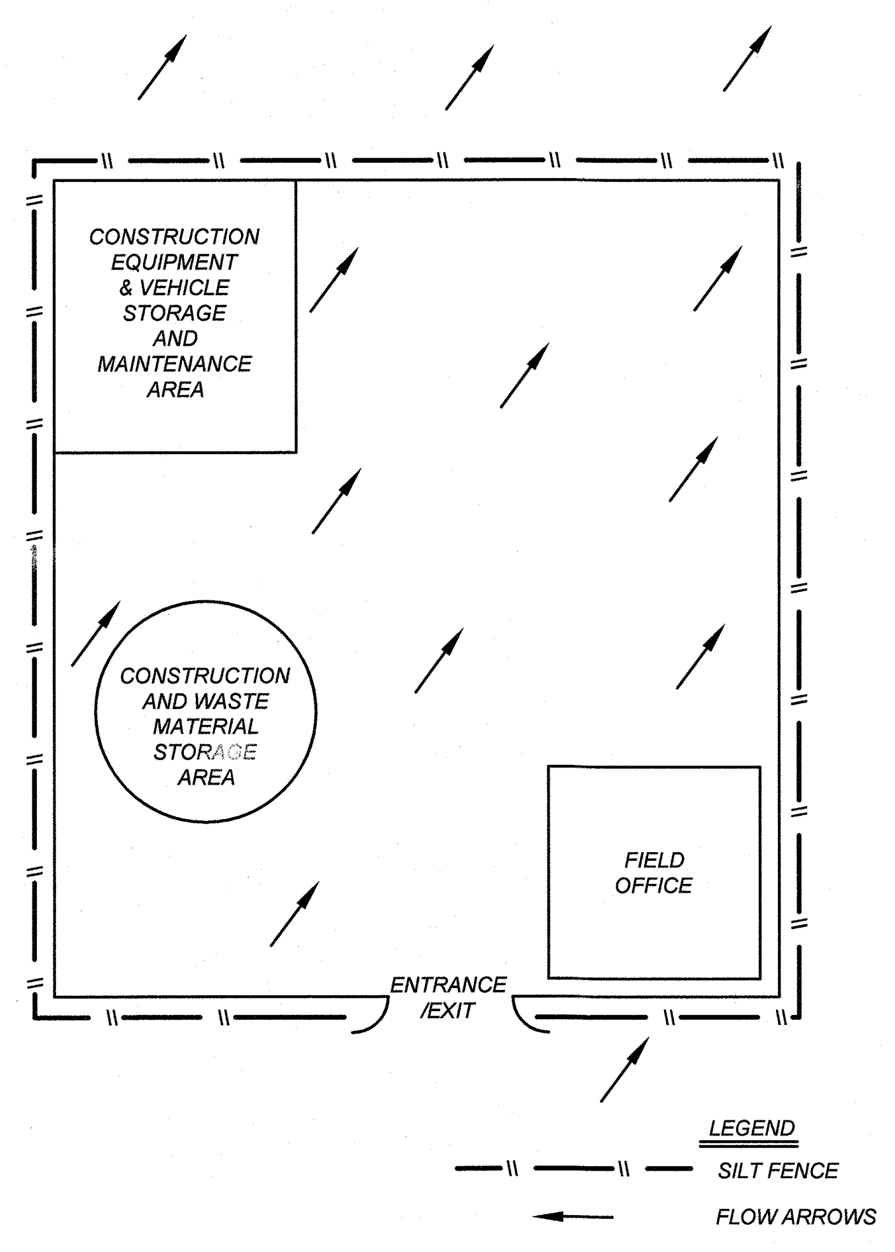


CROSS-SECTION A-A

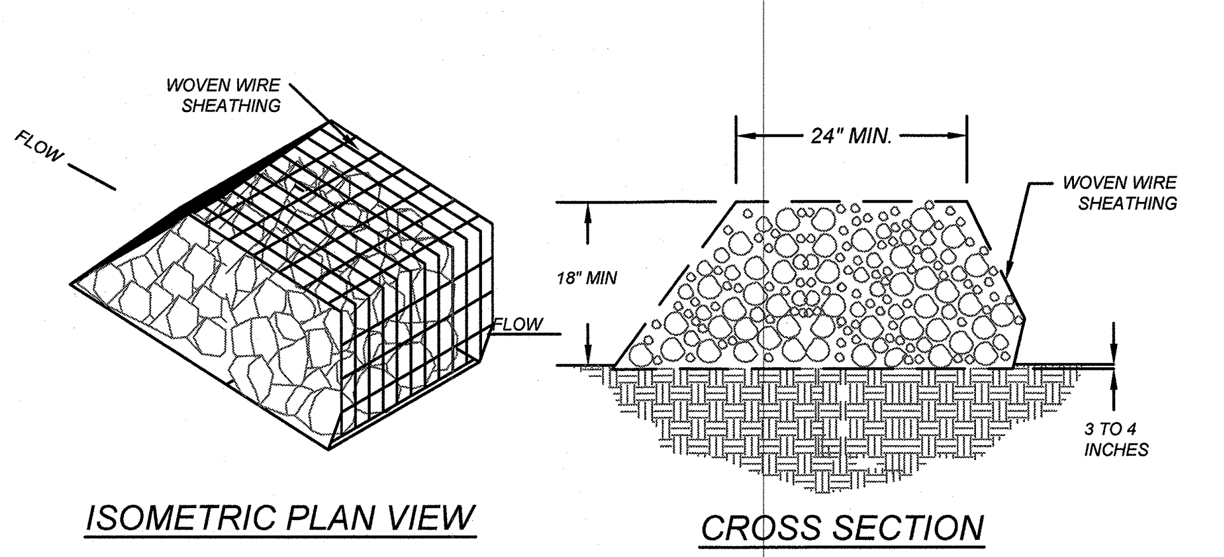
GENERAL NOTES:

- USE OPEN GRADED CLEAN STONE.
- THE ROCK SHOULD BE ENCLOSED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE AND WRAPPED IN GEOTEXTILE WITH 300 PSI BURST STRENGTH FILTER FABRIC.
- INSPECTION SHOULD BE MADE FREQUENTLY ON SEVERE SERVICE ROCK BERMS; SILT SHOULD BE REMOVED WHEN ACCUMULATION REACHES 4 INCHES OR MORE.
- WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHOULD BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

GRATE INLET PROTECTION



TYPICAL CONSTRUCTION STAGING AREA



ISOMETRIC PLAN VIEW

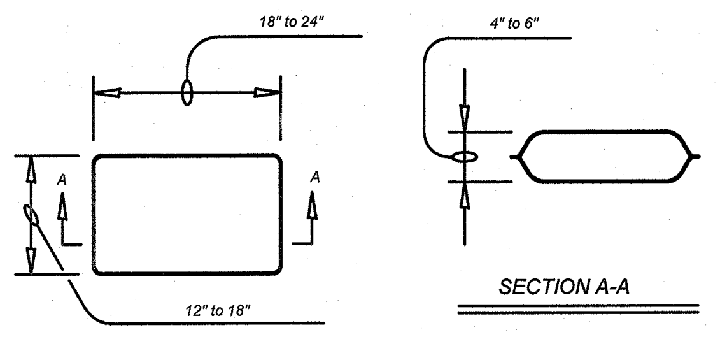
CROSS SECTION

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

Installation:
(1) Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings.
(2) Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter.
(3) Place the rock along the sheathing as shown in the diagram, 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 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
(3) Repair any loose wire sheathing.
(4) The berm should be reshaped as needed during inspection.
(5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
(6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

ROCK BERM

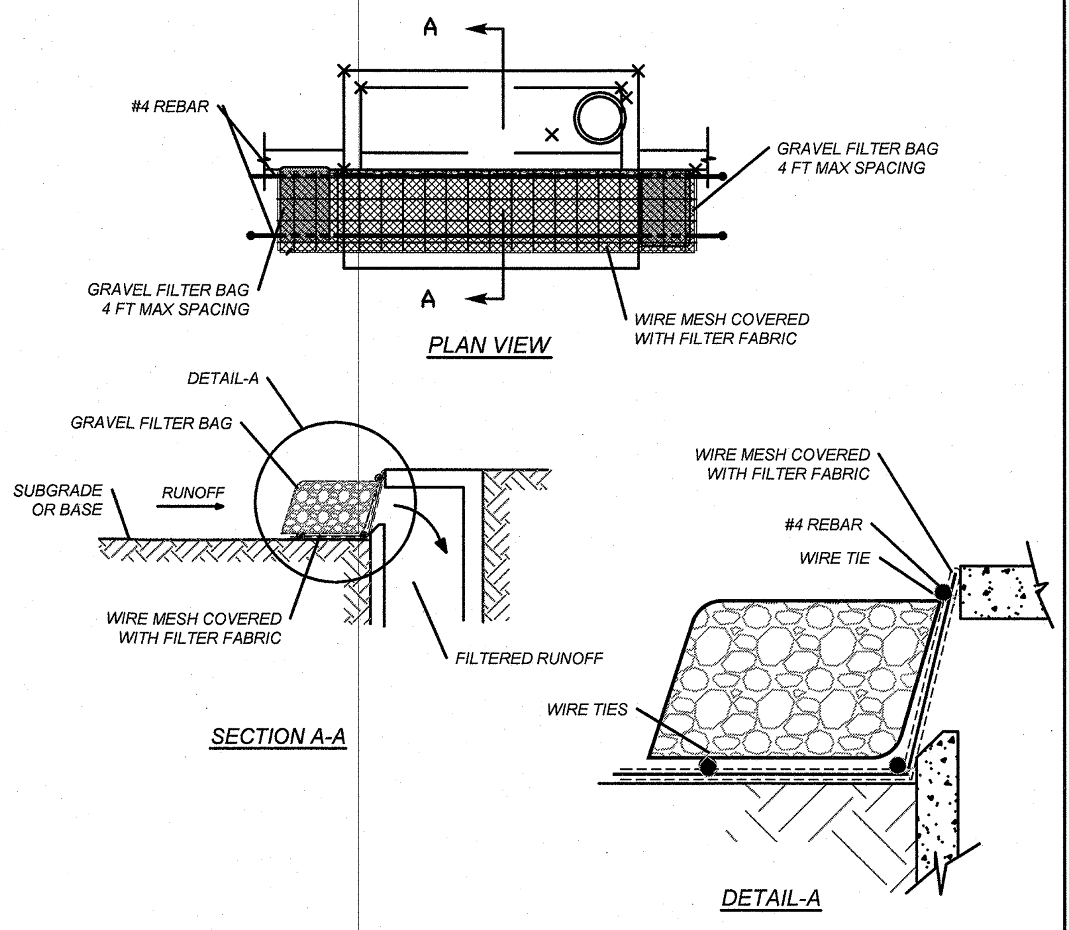


SECTION A-A

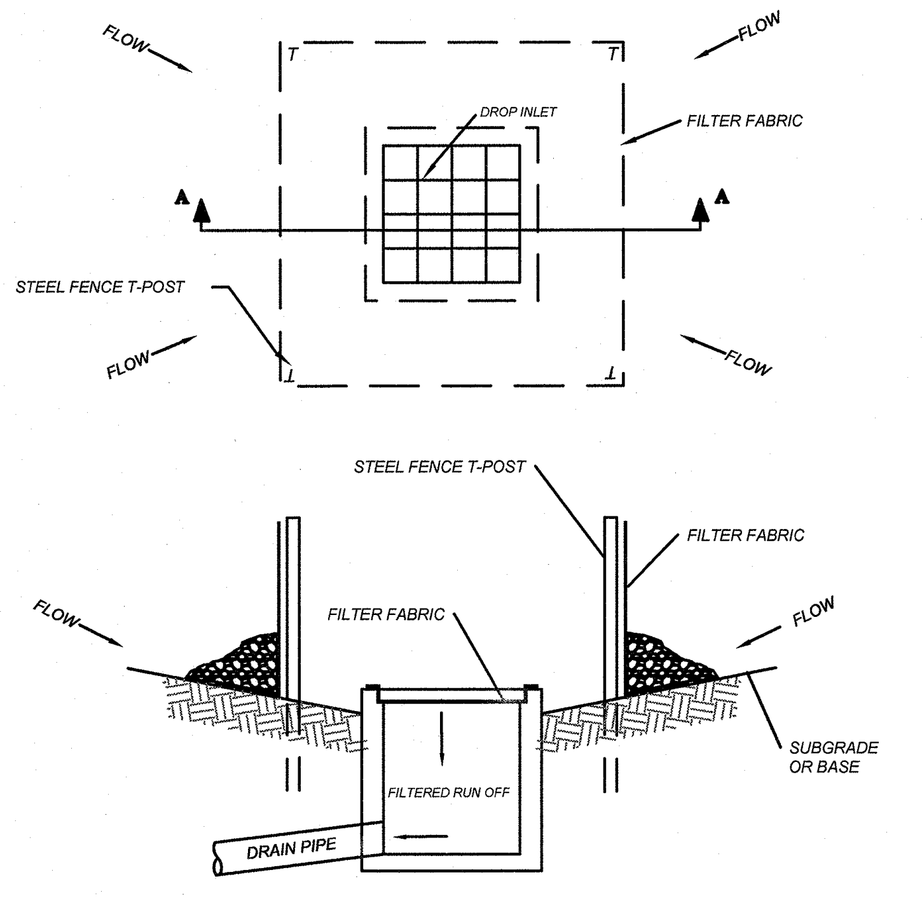
GENERAL NOTES:

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

GRAVEL FILTER BAG DETAIL



CURB INLET PROTECTION (ALTERNATE)

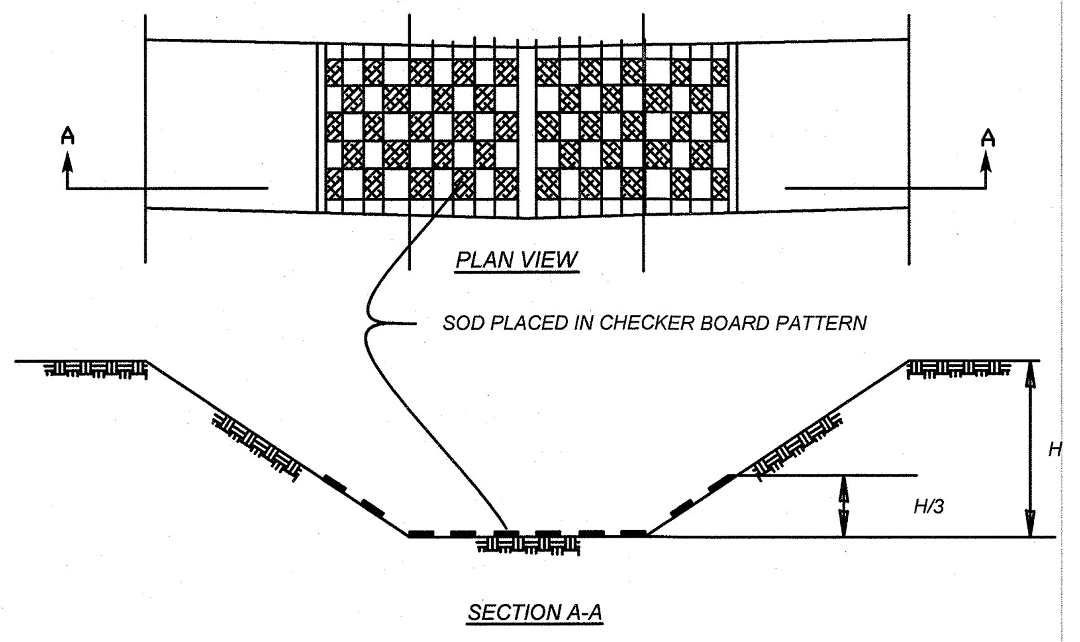


CROSS-SECTION A-A

GENERAL NOTES:

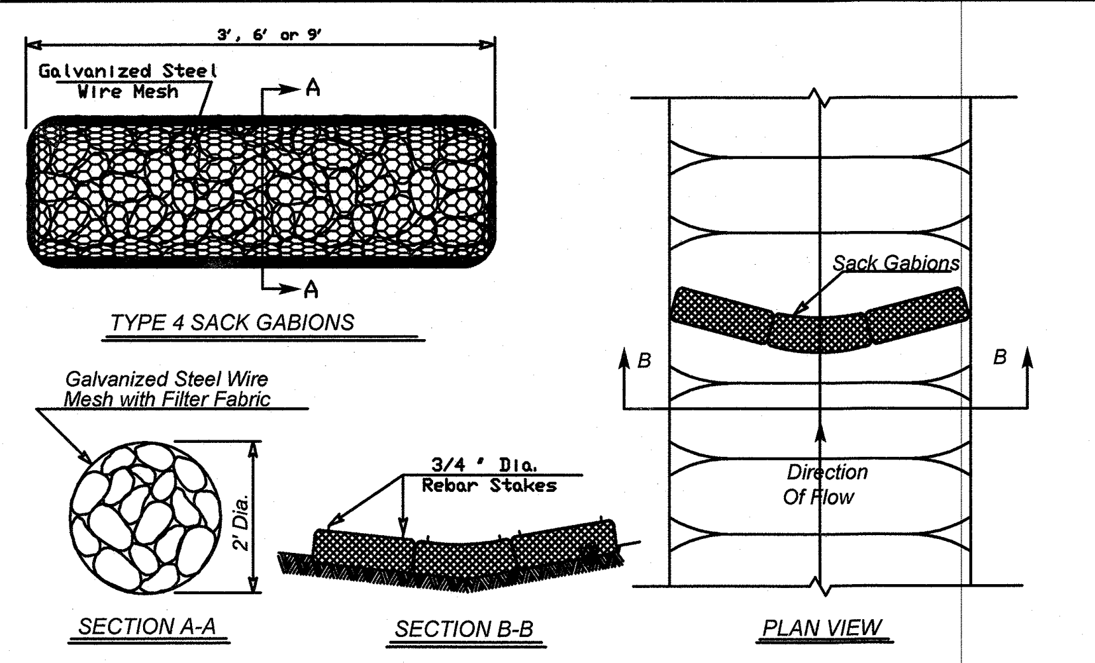
- ALL MATERIALS AND ERECTION PROCEDURES WILL BE THE SAME AS DESCRIBED IN THE STANDARD SILT FENCE REQUIREMENTS.

GRATE INLET PROTECTION (ALTERNATE)



- CHANNEL TO BE STABILIZED WITH SOD PLACED IN A CHECKER BOARD PATTERN TON THE CHANNEL BOTTOM AND ON THE SIDES UP TO 1/3 THE DEPTH OF CHANNEL.

CHANNEL LINING



GENERAL NOTES:

- THE TOP OF THE SACK GABIONS SHOULD BE LEVEL AND ORIENTED PERPENDICULAR TO THE DIRECTION OF FLOW.
- FILTER FABRIC MATERIAL SHALL BE FASTENED TO WOVEN WIRE SUPPORT.
- FILTER FABRIC MATERIAL SHOULD MEET THE FOLLOWING SPECIFICATIONS: RESISTANT TO ULTRAVIOLET LIGHT, FABRIC SHOULD BE NON-WOVEN GEOTEXTILE WITH MINIMUM WEIGHT OF 3.5 OUNCES PER SQUARE YARD, MINIMUM MULLEN BURST STRENGTH OF 200 POUNDS PER SQUARE INCH AND A FLOW THRU RATE OF 120 GALLONS PER MINUTE PER SQUARE FOOT OF FRONTAL AREA.
- STONE SIZE: ±4"-8" OPEN GRADED CRUSHED LIMESTONE.
- INSPECT WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACE AS NEEDED.
- WHEN SILT REACHES A DEPTH OF 6 INCHES OR MORE ABOVE NATURAL GROUND, SILT SHALL BE REMOVED AND DISPOSED IN AN APPROVED MANNER THAT WILL NOT CONTRIBUTE TO RESILTATION. CONTAMINATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.

TYPE 4 SACK GABIONS

KFW
ENGINEERS + SURVEYING
162 W Mill St., New Braunfels, Tx. 78130
Phone #: (830) 220-6042 • Fax #: (830) 627-9097
TBPE Firm #: 9513 • TBPLS Firm #: 10122300

REVISIONS | ISSUE DATE

1/26/22

A. NICHOLAS REYNOLDS
111666

, P.E.

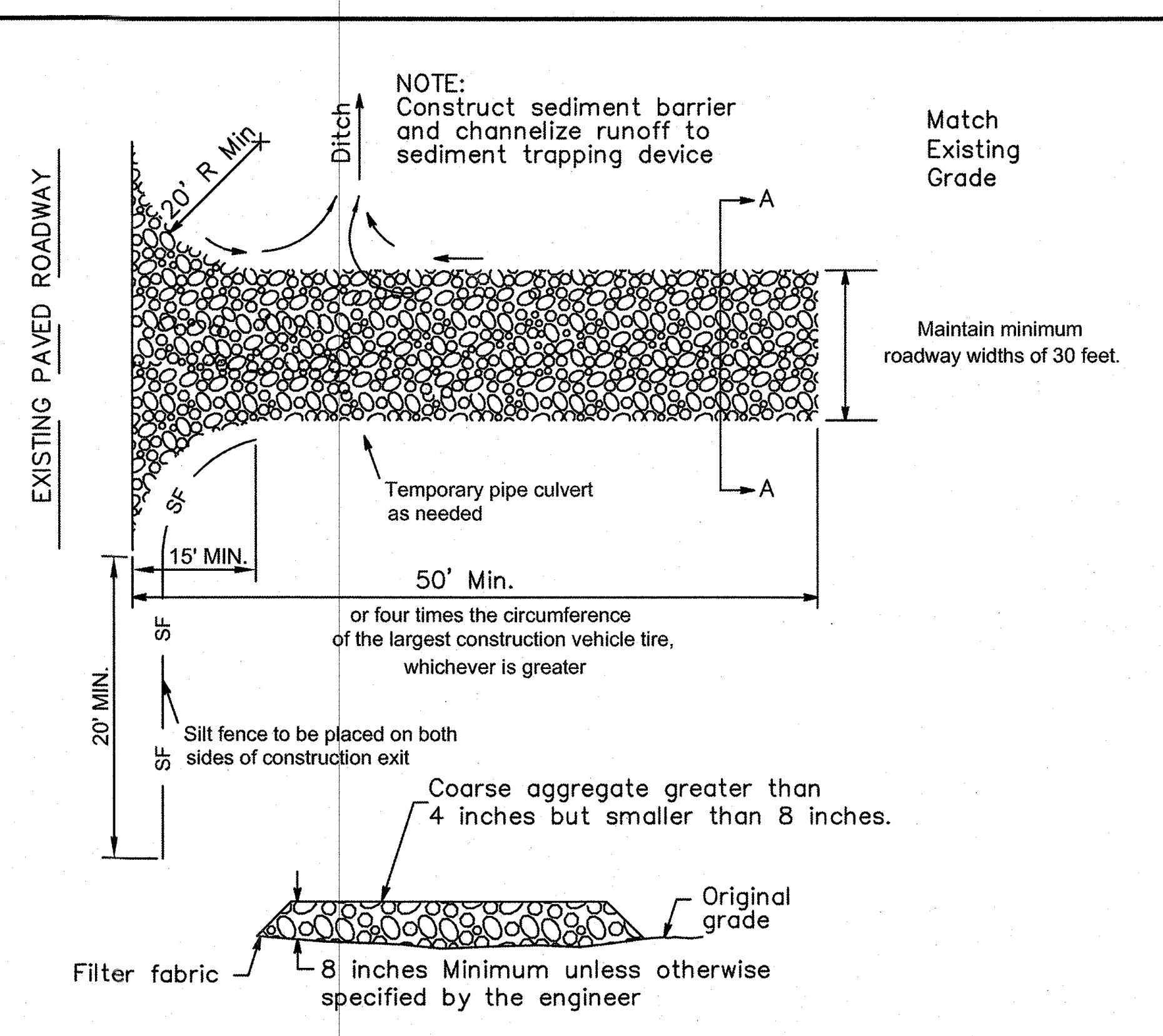
THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
STORMWATER POLLUTION PREVENTION PLAN
TYPICAL DETAILS

JOB NO. 171-23-06
DATE: JUNE 2021
DRAWN: CHECKED: NR

SHEET NUMBER:

8.1

Date: Aug 03, 2021, 2:17pm User ID: acruz
File: U:\Projects\171\23\06\Design\Civil\SW3P\8.1 STORMWATER POLLUTION PREVENTION PLAN TYPICAL DETAILS.dwg


NOTE:
Construct sediment barrier and channelize runoff to sediment trapping device
Ditch
20' R Min
Match Existing Grade
EXISTING PAVED ROADWAY
A
A
Maintain minimum roadway widths of 30 feet.
Temporary pipe culvert as needed
SF
15' MIN.
50' Min.
or four times the circumference of the largest construction vehicle tire, whichever is greater
20' MIN.
SF
Silt fence to be placed on both sides of construction exit
Coarse aggregate greater than 4 inches but smaller than 8 inches.
Original grade
Filter fabric
8 inches Minimum unless otherwise specified by the engineer

SECTION A–A

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
3. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.
4. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN A STABILIZED AREA THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
5. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.
6. PLACE GEOTEXTILE FABRIC AS A PERMEABLE SEPERATOR TO PREVENT MIXING OF COARSE AGGREGATE AND UNDERLYING SOIL.
7. REUSABLE TRACKOUT CONTROL SYSTEMS ARE ENCOURAGED. INCLUDE TRACKOUT CONTROL SYSTEMS WITH CLEARING AND GRADING PERMIT SUBMITTAL.

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STANDARD DETAIL 01575.1
STABILIZED CONSTRUCTION EXIT
TECHNICAL SPECIFICATION SECTION 01575
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DSGN. BY: ENG | DRAWN BY: JRS | DATE: 07/02/2021 | SHEET NO.: 1 of 1

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CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES

THE FOLLOWING MEASURES REPRESENT MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

1. NO DISTURBANCE OF PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING. BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR A MINIMUM OF 10 FEET FROM TREE CANOPY OR THE DRIP LINE, WHICHEVER IS GREATER.
2. SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.
3. WHERE A CHANGE OF GRADE OCCURS AT THE DRIP LINE OF A SPECIMEN TREE, SILT FENCES WILL BE REQUIRED DURING CONSTRUCTION AND RETAINING WALLS MUST BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, SYNTHETIC JUTE BALES, WATTLES, &/OR HAVE BEST MANAGEMENT PRACTICES (BMP'S) AS REQUIRED, SILT FENCES, AND FLOATING TURBIDITY BARRIERS. FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES.
5. PRIOR TO THE INSTALLATION OF ANY FILL MATERIALS ON SUBJECT SITE, SILT FENCES SHALL BE INSTALLED (1) ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES, (2) AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS, (3) ADJACENT TO NATURAL LANDSCAPE BUFFERS, (4) AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES, AND (5) AT ANY ADDITIONAL AREAS THAT THE CITY DEEMS NECESSARY TO BE PROTECTED FROM POTENTIAL EROSION IMPACTS DURING CONSTRUCTION. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS. WHILE THESE ITEMS REPRESENT THE MINIMUM REQUIREMENTS, THE CITY RESERVES THE RIGHT TO IMPOSE ADDITIONAL PROTECTIVE MEASURES, AS DETERMINED DURING ACTUAL SITE VISITS CONDUCTED AS PART OF THE STANDARD REVIEW OF THE SITE THROUGHOUT PROJECT CONSTRUCTION.
6. AT A MINIMUM, THE CONTRACTOR SHALL SEED AND/OR MULCH ALL DISTURBED AREAS. 85% SUFFICIENT GRASS COVERAGE IS TO BE ESTABLISHED WITHIN TWO WEEKS.
7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE. WITHIN SEVEN (7) DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE OR INACTIVITY IN CONSTRUCTION, THE CONTRACTOR SHALL INSTALL SEED AND MULCH OR SOD, AS REQUIRED. ANY PROJECT THAT IS INACTIVE FOR A PERIOD OF 30 DAYS OR MORE SHALL BE STABILIZED TO THE SATISFACTION OF THE CITY OF SCHERTZ.
8. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED. IF THE GRASS IS NOT ESTABLISHED WITHIN TWO WEEKS THE CITY MAY REQUIRE THE CONTRACTOR TO RE–SEED OR A NON–VEGETATIVE OPTION MAY BE EMPLOYED.
9. ABSOLUTELY NO BURYING OF CLEARED MATERIALS IS PERMITTED.

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COMMUNITY ★ SERVICE ★ OPPORTUNITY

CLEARING & GRADING
GENERAL NOTES
TECHNICAL SPECIFICATION SECTION 01410
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DSGN. BY: ENG. | DRAWN BY: BCP | DATE: 5/15/19 | SHEET NO.: 1 of 2

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CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES

10. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED.
11. A SIGNED, DATED, AND SEALED LETTER FROM A SOILS ENGINEER OR THE ENGINEER OF RECORD CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIALS, MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.
10. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (95% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER ASTM D–698).
11. DURING SUBDIVISION DEVELOPMENT WHEN FUTURE BUILDING LOTS ARE FILLED AS PART OF THE OVERALL SUBDIVISION IMPROVEMENTS, COMPACTION TEST REPORTS MUST BE PERFORMED ON THE BUILDING LOTS AT 300 FOOT INTERVALS. THESE TESTS ARE TO BE PERFORMED IN ONE–FOOT VERTICAL INCREMENTS. THE RESULTS OF THESE TESTS ARE TO BE SUBMITTED TO THE CITY UPON COMPLETION OF THE TESTS.
12. IF ANY MUCK MATERIAL IS DISCOVERED, IT SHALL BE REQUIRED TO BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T–180 MODIFIED PROCTOR METHOD.
13. STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE. AT A MINIMUM, STOCK PILES THAT WILL REMAIN IN PLACE IN EXCESS OF TWENTY DAYS SHOULD BE SEEDED AND MULCHED IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT.
14. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO, WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS, TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION PONDS, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED ATOP STOCKPILE AREAS, AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.
15. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.
16. ALL FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 6.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.
17. OWNER/CONTRACTOR SHALL FILE A "NOTICE OF INTENT TO USE GENERAL PERMIT FOR STORM WATER DISCHARGE FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES" WITH THE TEXAS POLLUTION DISCHARGE ELIMINATION SYSTEM" IN COORDINATION WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY. CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH ALL PROVISIONS OF THE GENERIC PERMIT INCLUDING BUT NOT LIMITED TO:
    - A. PROVIDE SUCH EROSION AND SEDIMENT CONTROL MEASURES AS MAY BE NECESSARY TO PREVENT DISCHARGE OF POLLUTANTS FROM THE SITE FROM THE START OF CONSTRUCTION UNTIL THE FINAL GROUND COVER HAS BEEN ESTABLISHED.
    - B. WORK WITH CITY INSPECTORS TO MAKE WEEKLY INSPECTIONS/REPORTS OF THE CONDITION OF EROSION AND SEDIMENT CONTROL MEASURES.
    - C. WORK WITH CITY INSPECTORS TO MAKE INSPECTIONS/REPORTS OF THE CONDITION OF EROSION AND SEDIMENT CONTROL MEASURES WITHIN 24 HOURS OF EVERY RAINFALL EVENT EXCEEDING ONE–HALF INCH.
    - D. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT CONSTRUCTION.
    - E. ADD EROSION AND SEDIMENT CONTROL MEASURES AS SITE CONDITIONS CHANGE.

SCHERTZ
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CLEARING & GRADING
GENERAL NOTES
TECHNICAL SPECIFICATION SECTION 01410
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DSGN. BY: ENG. | DRAWN BY: BCP | DATE: 5/15/19 | SHEET NO.: 2 of 2

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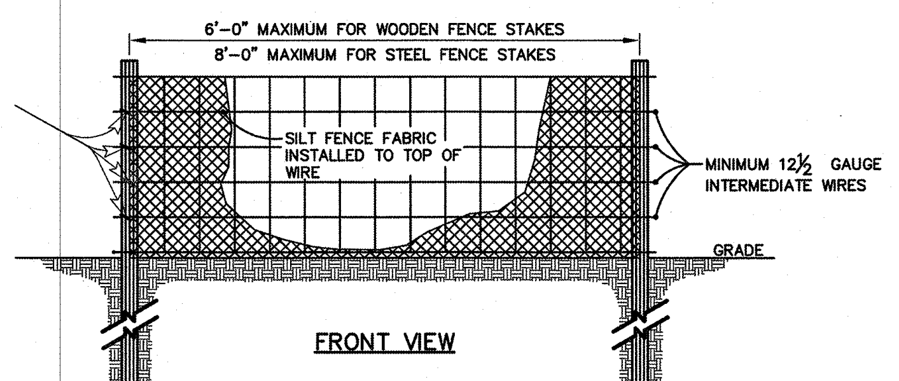
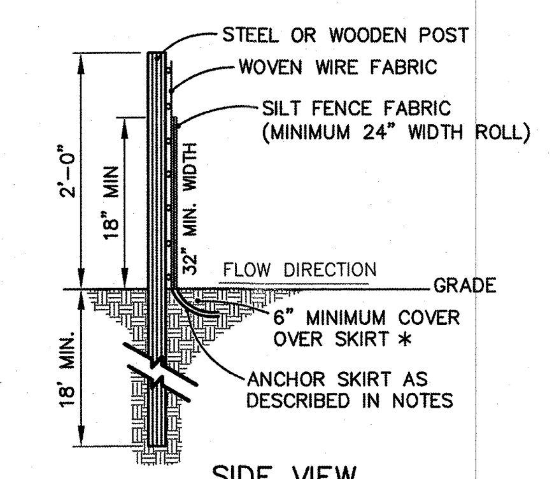
Attach the wire mesh & fabric on end posts using 4 T–Clips or sewn vertical pockets for steel posts.


6'–0" MAXIMUM FOR WOODEN FENCE STAKES
8'–0" MAXIMUM FOR STEEL FENCE STAKES
SILT FENCE FABRIC INSTALLED TO TOP OF WIRE
MINIMUM 12½ GAUGE INTERMEDIATE WIRES
GRADE

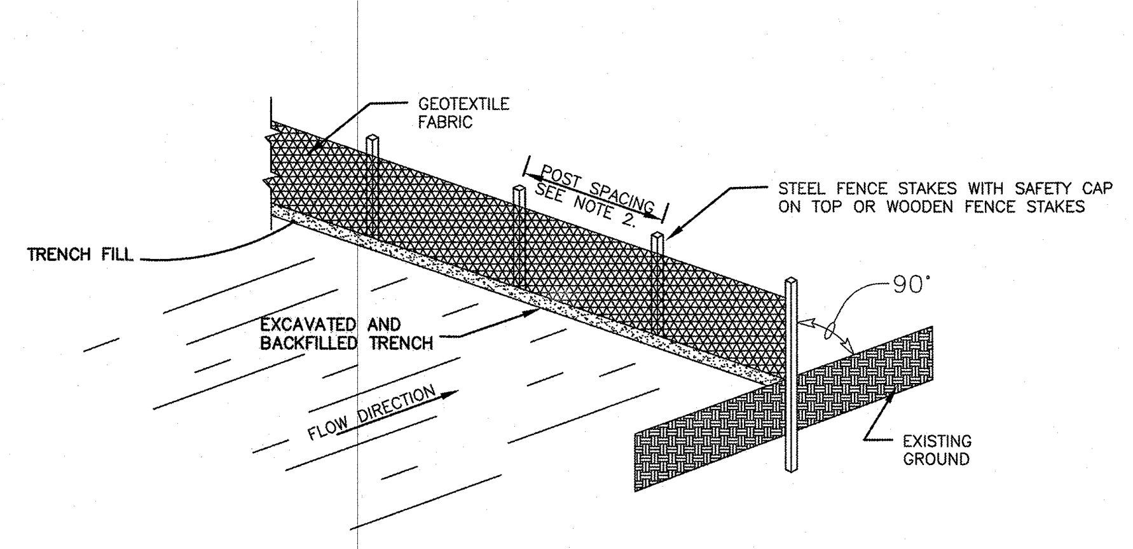
FRONT VIEW

* INSTALL STAKES AT A SLIGHT ANGLE TOWARD SOURCE OF ANTICIPATED RUNOFF.


STEEL OR WOODEN POST
WOVEN WIRE FABRIC
SILT FENCE FABRIC (MINIMUM 24" WIDTH ROLL)
2'–0"
18" MIN
32" MIN. WIDTH
FLOW DIRECTION
GRADE
6" MINIMUM COVER OVER SKIRT *
18' MIN.
ANCHOR SKIRT AS DESCRIBED IN NOTES

SIDE VIEW

GENERAL NOTES
1. THE GEOTEXTILE FABRIC SHALL BE PLACE IN THE THE EXCAVATED TRENCH, BACKFILLED, AND COMPACTED TO THE EXISTING GROUND SURFACE. THE TRENCH MUST BE A MINIMUM OF 6" DEEP AND 6" WIDE. {WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3" OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.}
2. STEEL STAKES MAXIMUM OF 8' APART, IMBEDDED A MINIMUM OF 18' INTO GROUND. LENGTH OF STAKES AS REQUIRED FOR MINIMUM OF 18" BURY AND FULL HEIGHT OF FILTER FABRIC.
3. TRENCH THE TOE OF THE FENCE LINES SO THE DOWNWARD FACE OF THE TRENCHES IS FLAT AND PERPENDICULAR TO DIRECTION OF FLOW.
4. SECURELY FASTEN FILTER FABRIC MATERIAL TO WIRE FENCE WITH TIE WIRES AT SPACING OF 15" MINIMUM.
5. FILTER FABRIC SHALL HAVE A MINIMUM HEIGHT OF 18" AND A MAXIMUM OF 36" OF HEIGHT ABOVE NATURAL GROUND.
6. TRENCH IN TOE OF FILTER FABRIC SO THAT THE DOWNWARD FACE OF TRENCH IS FLAT AND PERPENDICULAR TO THE DIRECTION OF FLOW, 4" MINIMUM AGAINST TRENCH WALL AND 2" MINIMUM AGAINST TRENCH FLOOR.
7. CONNECT SUCCESSIVE REINFORCEMENT SHEETS/ROLLS A MINIMUM OF 6 TIMES WITH HOG RINGS.
8. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ON–THIRD HEIGHT OF BARRIER OR 6", WHICHEVER IS LESS.
9. REMOVE SILT FENCING ONCE FINAL STABILIZATION IS ESTABLISHED.


GEOTEXTILE FABRIC
POST SPACING SEE NOTE 2.
STEEL FENCE STAKES WITH SAFETY CAP ON TOP OR WOODEN FENCE STAKES
TRENCH FILL
EXCAVATED AND BACKFILLED TRENCH
90°
FLOW DIRECTION
EXISTING GROUND

ISOMETRIC VIEW
NTS

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STANDARD DETAIL 01570.2
SILT FENCE
TECHNICAL SPECIFICATION SECTION 01570
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DSGN. BY: ENG | DRAWN BY: JRS | DATE: 07/02/2021 | SHEET NO.: 1 of 1

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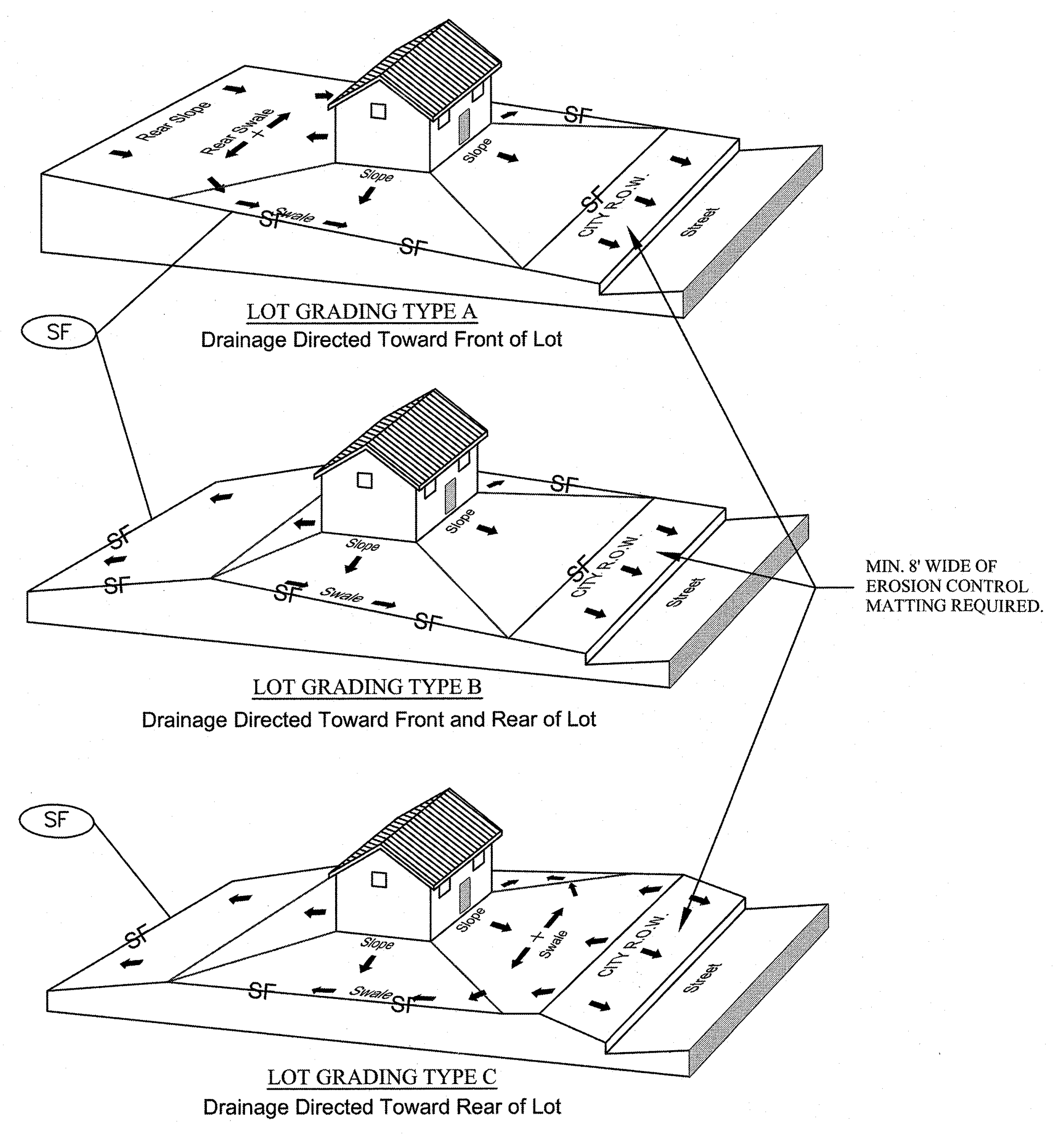
Rear Slope
Rear Swale
Slope
Slope
Swale
SF
CITY R.O.W.
Street
SF
LOT GRADING TYPE A
Drainage Directed Toward Front of Lot
Slope
Swale
LOT GRADING TYPE B
Drainage Directed Toward Front and Rear of Lot
MIN. 8' WIDE OF EROSION CONTROL MATTING REQUIRED.
SF
Slope
Swale
LOT GRADING TYPE C
Drainage Directed Toward Rear of Lot

GENERAL NOTES

1. ENGINEER SHALL IDENTIFY SUBDIVISION LOT NUMBERS ASSOCIATED WITH EACH LOT GRADING TYPE.
2. ALL GRADED LOT SURFACES AND SWALES SHALL HAVE MINIMUM 0.5% SLOPE.
3. ROUGH GRADING OF LOTS SHALL MATCH ULTIMATE LOT GRADING TYPE: A,B, OR C, AT THE TIME OF PUBLIC INFRASTRUCTURE ACCEPTANCE.
4. SWPPP REQUIRED ON ALL LOTS, (EROSION CONTROL, WATTLES, ETC. AS APPROPRIATE).
5. CONSTRUCTION ENTRANCE REQUIRED ON ALL RESIDENTIAL LOTS TO PREVENT SEDIMENT FROM BEING DEPOSITED AFTER EQUIPMENT LEAVES THE SITE. THE CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE LOCATION OF THE PROPOSED PERMANENT DRIVEWAY.

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STANDARD DETAIL 01570.1
RESIDENTIAL LOT GRADING
TECHNICAL SPECIFICATION SECTION 01570
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DSGN. BY: ENG | DRAWN BY: JRS | DATE: 07/02/2021 | SHEET NO.: 1 of 1

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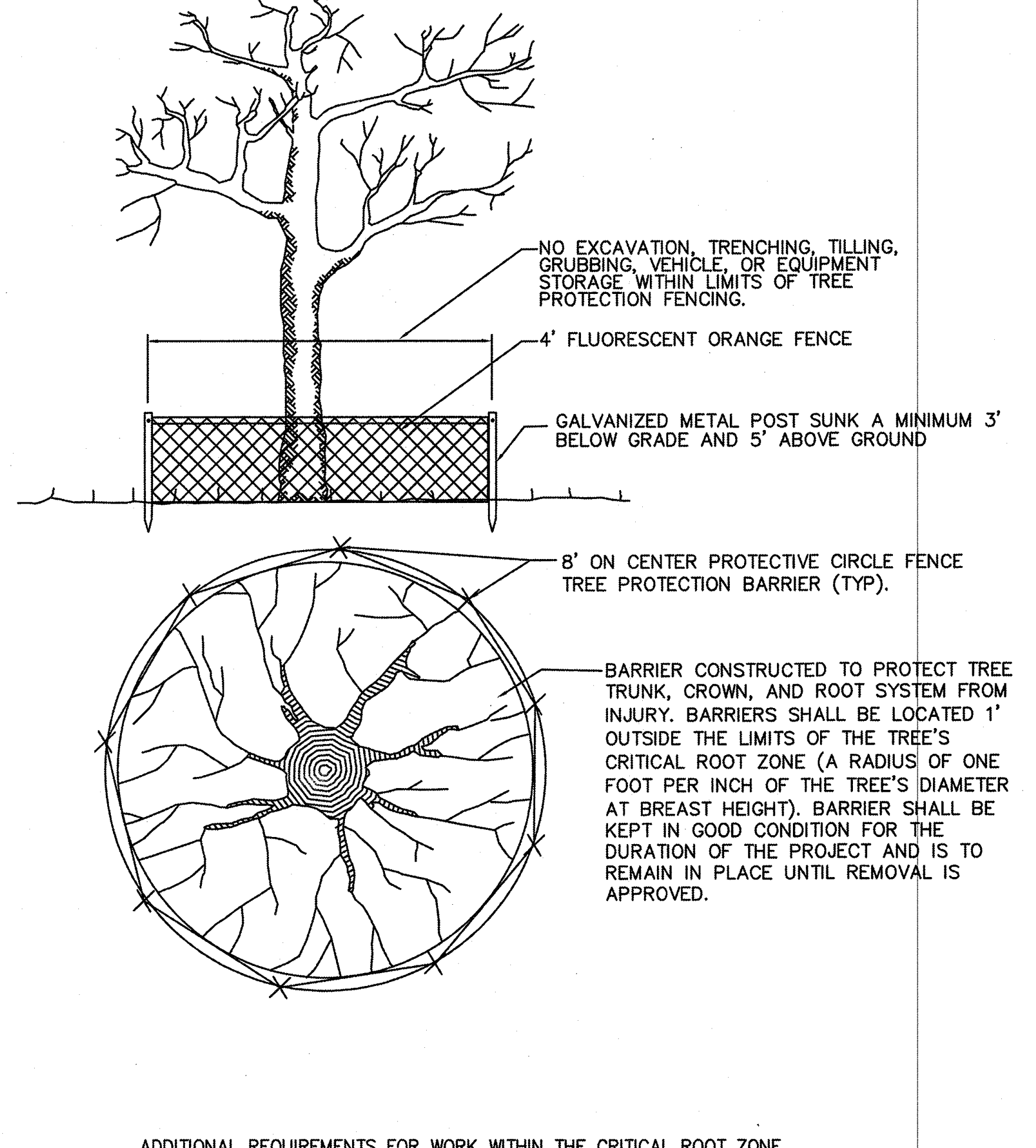
NO EXCAVATION, TRENCHING, TILLING, GRUBBING, VEHICLE, OR EQUIPMENT STORAGE WITHIN LIMITS OF TREE PROTECTION FENCING.
4' FLUORESCENT ORANGE FENCE
GALVANIZED METAL POST SUNK A MINIMUM 3' BELOW GRADE AND 5' ABOVE GROUND
8' ON CENTER PROTECTIVE CIRCLE FENCE TREE PROTECTION BARRIER (TYP).
BARRIER CONSTRUCTED TO PROTECT TREE TRUNK, CROWN, AND ROOT SYSTEM FROM INJURY. BARRIERS SHALL BE LOCATED 1' OUTSIDE THE LIMITS OF THE TREE'S CRITICAL ROOT ZONE (A RADIUS OF ONE FOOT PER INCH OF THE TREE'S DIAMETER AT BREAST HEIGHT). BARRIER SHALL BE KEPT IN GOOD CONDITION FOR THE DURATION OF THE PROJECT AND IS TO REMAIN IN PLACE UNTIL REMOVAL IS APPROVED.

ADDITIONAL REQUIREMENTS FOR WORK WITHIN THE CRITICAL ROOT ZONE
- ESTABLISH FENCE PROTECTION A MINIMUM OF 5' FROM TRUNK
- PROVIDE 4" DEEP WOOD CHIP MULCH OVER CRITICAL ROOT ZONE INSIDE FENCE PROTECTION
- PROVIDE 8" DEEP WOOD CHIP MULCH OVER DRIP LINE OUTSIDE OF FENCE PROTECTION.
- MAKE CLEAN CUTS ON ROOTS EXPOSED BY GRADING AND BACKFILL IMMEDIATELY.
- PROVIDE TEMPORARY IRRIGATION WHERE REQUIRED BY THE CITY

GENERAL NOTES

1. A TREE PRESERVATION/REMOVAL PERMIT APPLICATION MUST BE SUBMITTED AND APPROVED.
2. A LANDSCAPING PLAN SHALL BE SUBMITTED TO THE CITY FOR APPROVAL.
3. PROVIDE TIMBER WRAP PROTECTION FOR TREES WHEN WORK IS REQUIRED WITHIN CONSTRUCTION FENCING. INSTALL VERTICAL 5 TO 6 FOOT LONG 2 BY 4's OR 2 BY 5's, SPACED 3 TO 5 INCHES APART, AROUND CIRCUMFERENCE OF TREE TRUNK.
4. FOR TREES OR SHRUBS IN PAVED AREAS, USE MOVABLE POSTS CONSISTING OF 2½" MINIMUM DIAMETER CONCRETE FILLED STEEL PIPE MOUNTED IN RUBBER AUTOMOBILE TIRES WITH CONCRETE.

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STANDARD DETAIL 01562
TREE AND PLANT PROTECTION
TECHNICAL SPECIFICATION SECTION 01562
ENGINEERING AND PUBLIC WORKS | SCALE: N.T.S. | DSGN. BY: ENG | DRAWN BY: JRS | DATE: 07/06/2021 | SHEET NO.: 1 of 1

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ISSUE DATE
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1/26/22
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Nick Reynolds, P.E.

THE PARKLANDS SUBDIVISION - UNIT 3A
SCHERTZ, TX
STORMWATER POLLUTION PREVENTION PLAN
TYPICAL DETAILS

JOB NO. 171-23-06
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Date: Aug 03, 2021, 2:17pm User ID: acruz
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