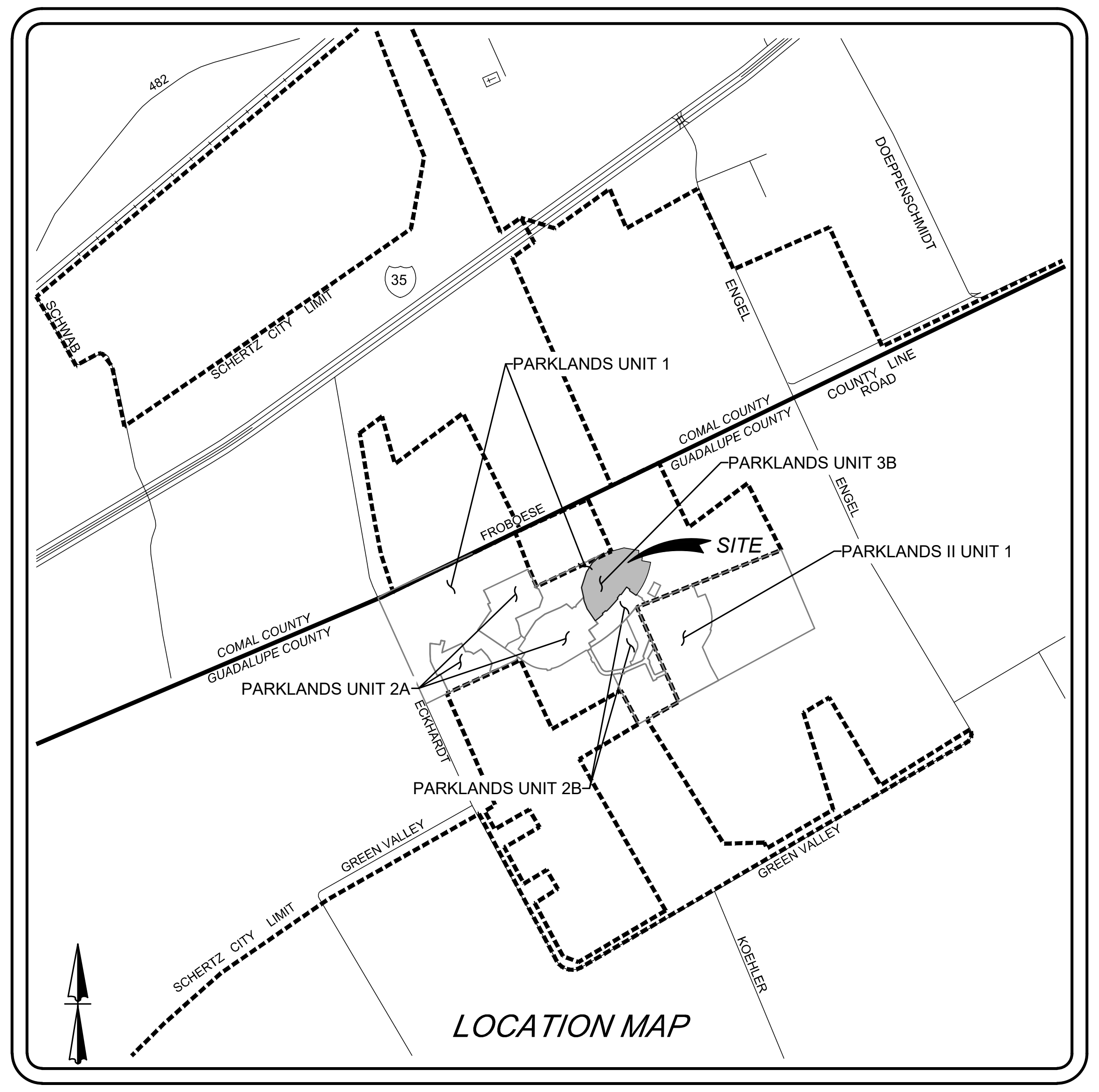
THE PARKLANDS SUBDIVISION - UNIT 3B

SCHERTZ, TEXAS

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



LOCATION MAP
N.T.S.

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OWNER / APPLICANT:
PARKLANDS UNITS 1 & 2, LTD
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SAN ANTONIO, TX 78218
PHONE: 210-828-6131

KFW
ENGINEERS + SURVEYING
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JOB NO. - 171-23-07

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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
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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.

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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
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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.

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TRAFFIC
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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
SCALE: N.T.S.
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SHEET NO.: 6 of 6

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

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

GENERAL NOTES

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN:
CHECKED: NR

SHEET NUMBER:
0.1

Date: Mar 22, 2024, 11:18am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\General Notes\0.1 GENERAL NOTES.dwg

TRENCH EXCAVATION SAFETY PROTECTION

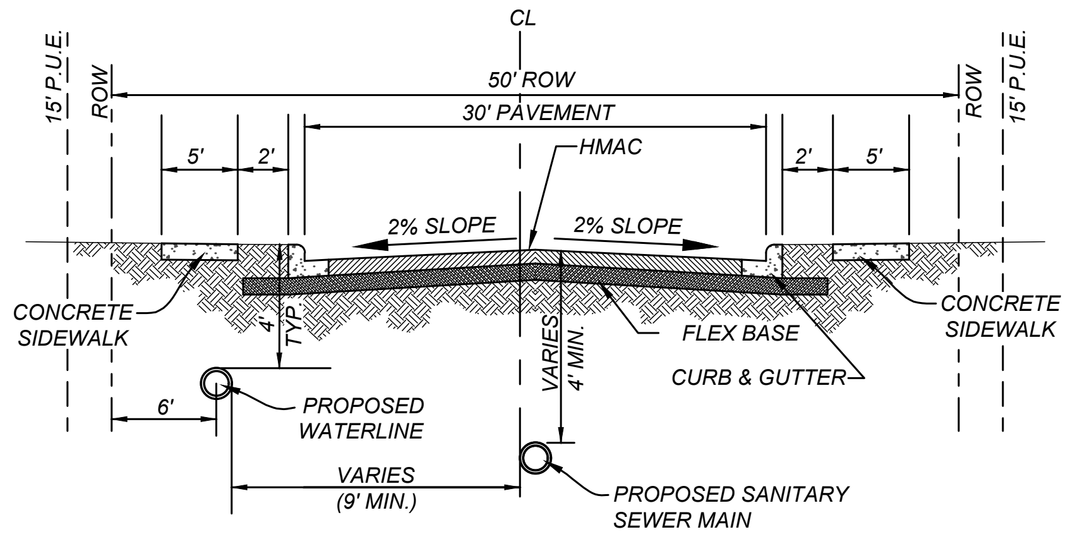
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

CAUTION!!:

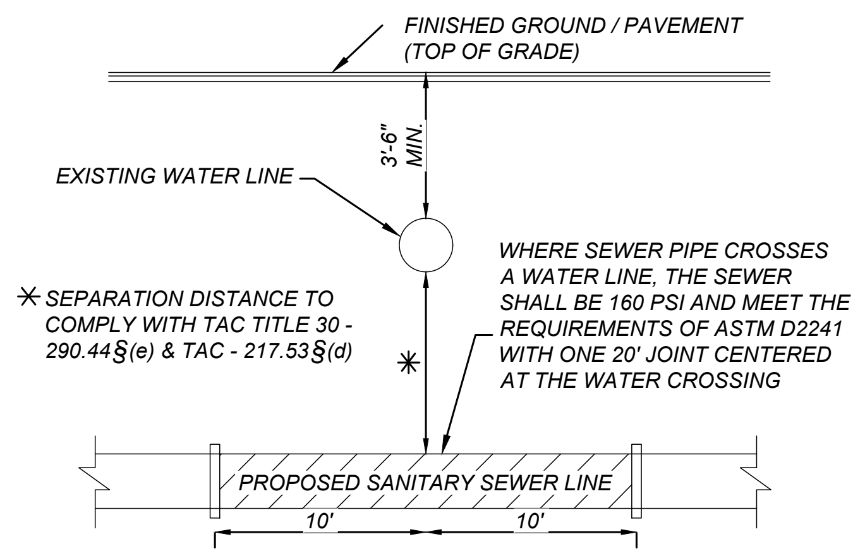
THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT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

* WATER METER NOTE:

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



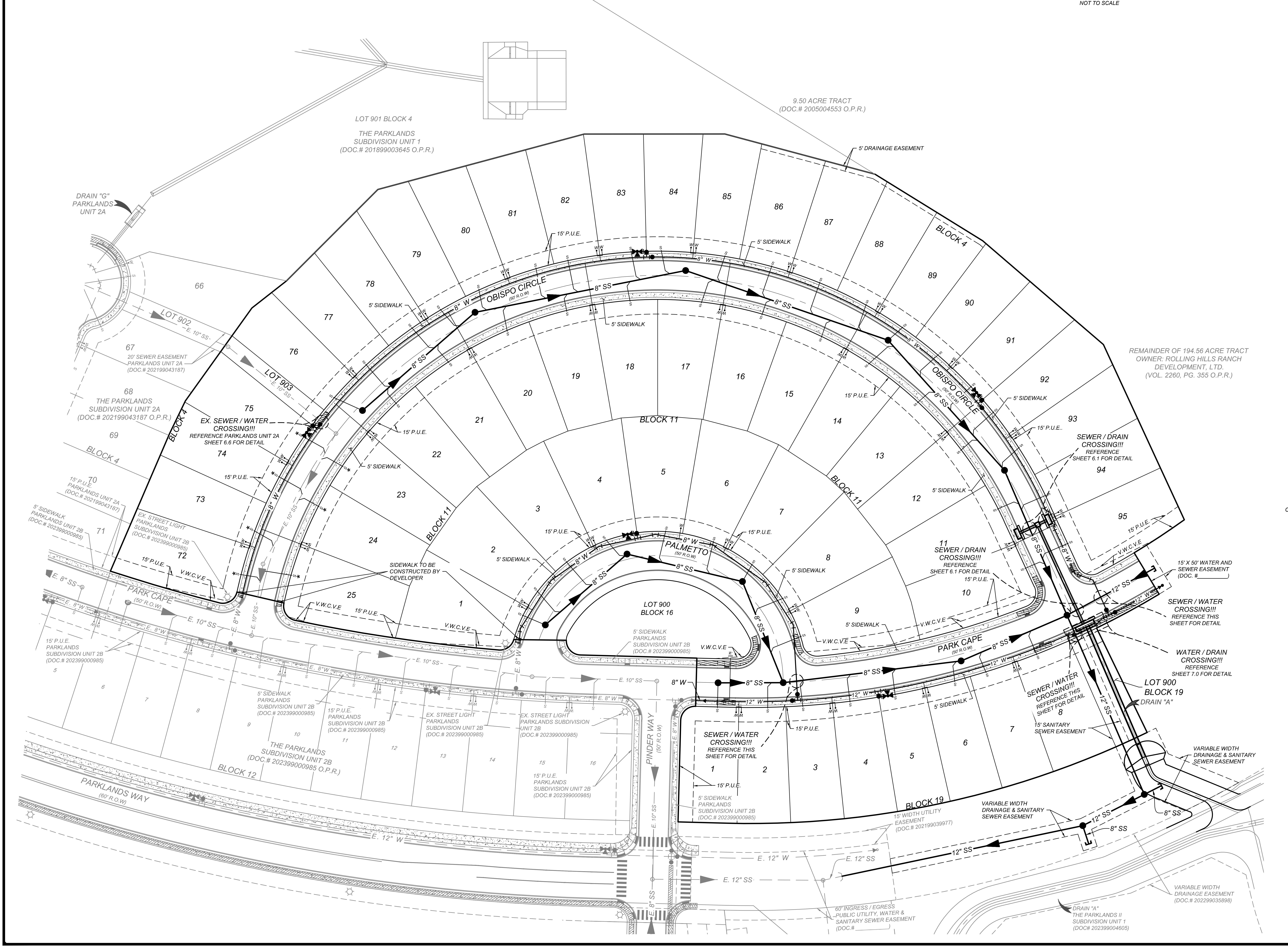
TYPICAL 50' ROW STREET CROSS SECTION - LOCAL ST.
N.T.S.


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
3'-6" MIN.
EXISTING WATER LINE
*
PROPOSED SANITARY SEWER LINE
10'
10'

* SEPARATION DISTANCE TO COMPLY WITH TAC TITLE 30 - 290.44§(e) & TAC - 217.53§(d)

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

TYPICAL SANITARY SEWER / WATER CROSSING DETAIL
NOT TO SCALE


LOT 901 BLOCK 4
THE PARKLANDS SUBDIVISION UNIT 1 (DOC.# 201899003645 O.P.R.)
9.50 ACRE TRACT (DOC.# 2005004553 O.P.R.)
5' DRAINAGE EASEMENT
DRAIN "G" PARKLANDS UNIT 2A
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
BLOCK 4
BLOCK 11
BLOCK 12
BLOCK 19
LOT 900 BLOCK 16
LOT 900 BLOCK 19
LOT 902
LOT 903
OBISPO CIRCLE (50' R.O.W)
PALMETTO (50' R.O.W)
PARK CAPE (50' R.O.W)
PINDER WAY (50' R.O.W)
PARKLANDS WAY (60' R.O.W)
8" W
8" SS
12" W
12" SS
E. 8" W
E. 8" SS
E. 10" SS
E. 12" W
E. 12" SS
15' P.U.E.
5' SIDEWALK
V.W.C.V.E
20' SEWER EASEMENT PARKLANDS UNIT 2A (DOC.# 202199043187)
THE PARKLANDS SUBDIVISION UNIT 2A (DOC.# 202199043187 O.P.R.)
EX. SEWER / WATER CROSSING!!! REFERENCE PARKLANDS UNIT 2A SHEET 6.6 FOR DETAIL
15' P.U.E. PARKLANDS UNIT 2A (DOC.# 202199043187)
5' SIDEWALK PARKLANDS UNIT 2B (DOC.# 202399000985)
EX. STREET LIGHT PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
SIDEWALK TO BE CONSTRUCTED BY DEVELOPER
15' P.U.E. PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
5' SIDEWALK PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
THE PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985 O.P.R.)
SEWER / DRAIN CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
15' X 50' WATER AND SEWER EASEMENT (DOC. #__________)
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
WATER / DRAIN CROSSING!!! REFERENCE SHEET 7.0 FOR DETAIL
DRAIN "A"
15' SANITARY SEWER EASEMENT
VARIABLE WIDTH DRAINAGE & SANITARY SEWER EASEMENT
15' WIDTH UTILITY EASEMENT (DOC.# 202199039977)
60' INGRESS / EGRESS PUBLIC UTILITY, WATER & SANITARY SEWER EASEMENT (DOC.#__________)
VARIABLE WIDTH DRAINAGE EASEMENT (DOC.# 202299035898)
DRAIN "A" THE PARKLANDS II SUBDIVISION UNIT 1 (DOC# 202399004605)
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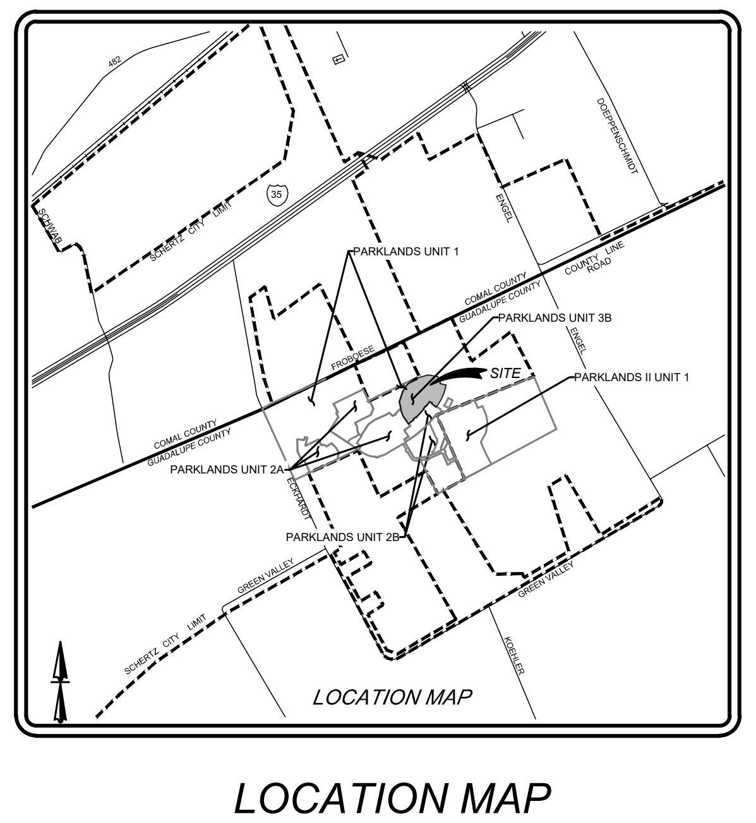
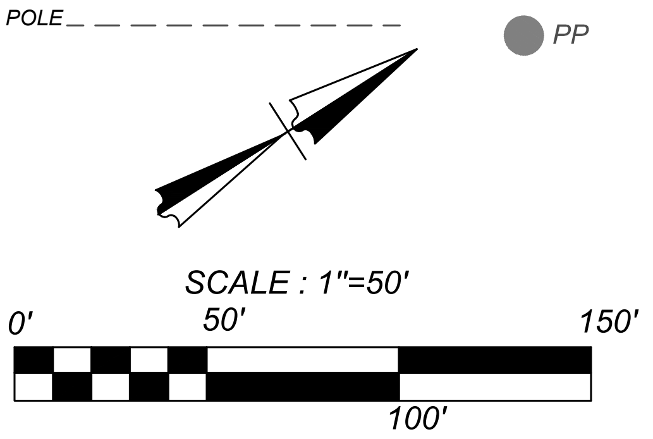
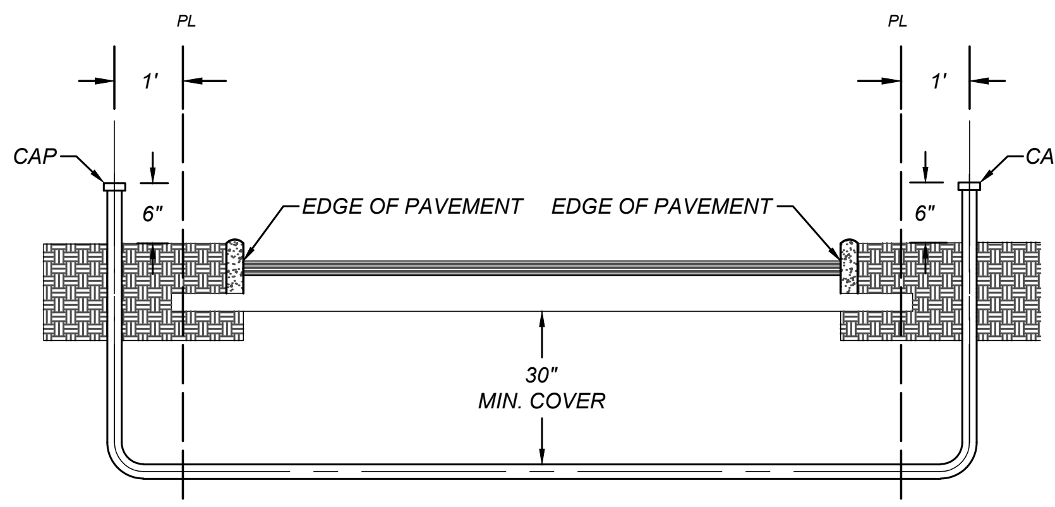


LOCATION MAP
N.T.S.

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	⧓
GAS, ELECTRIC, TELEPHONE, CABLE T.V., EASEMENT	G.E.T.TV. E.
VARIABLE WIDTH CLEAR VISION EASEMENT	V.W.C.V.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 SANITARY SEWER LATERAL (TIE-IN TO EXISTING MAIN)	* 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





PRIVATE CONDUIT DETAIL
NOT TO SCALE

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

NOTE:

- CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH GVEC FACILITY AT ALL STREETS AND DRAIN CROSSINGS CONSTRUCTION SLEEVES MUST ALSO BE LOCATED FOR GVEC CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE FINAL ELECTRIC PROVIDER'S DESIGN AND SPECIFICATION.
- CONTRACTOR TO CONTACT ENGINEER FOR APPROPRIATE NUMBER AND SIZE OF CONDUITS FOR TELECOMMUNICATIONS
- CONTRACTOR TO CONTACT ENGINEER FOR ELECTRICAL PLANS

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

ISSUE DATE

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

OVERALL UTILITY PLAN

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
1.0

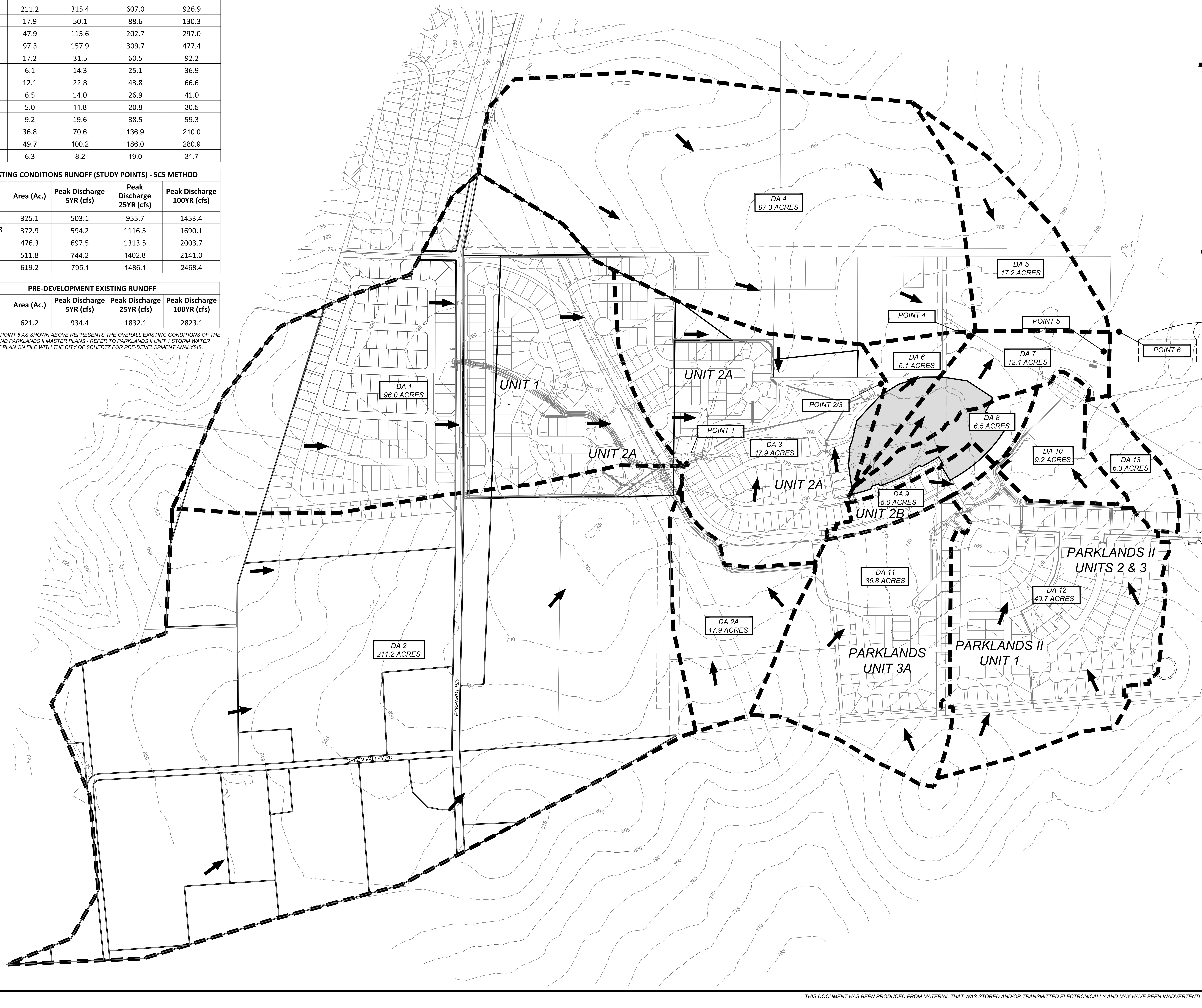
Date: Apr 03, 2024, 10:26am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\UTILITIES\1.0 OVERALL UTILITY PLAN.dwg

EXISTING CONDITIONS RUNOFF (DRAINAGE AREAS) - SCS METHOD				
Name	Area (Ac.)	Peak Discharge 5YR (cfs)	Peak Discharge 25YR (cfs)	Peak Discharge 100YR (cfs)
DA1	96.0	172.8	321.6	485.7
DA2	211.2	315.4	607.0	926.9
DA2A	17.9	50.1	88.6	130.3
DA3	47.9	115.6	202.7	297.0
DA4	97.3	157.9	309.7	477.4
DA5	17.2	31.5	60.5	92.2
DA6	6.1	14.3	25.1	36.9
DA7	12.1	22.8	43.8	66.6
DA8	6.5	14.0	26.9	41.0
DA9	5.0	11.8	20.8	30.5
DA10	9.2	19.6	38.5	59.3
DA11	36.8	70.6	136.9	210.0
DA12	49.7	100.2	186.0	280.9
DA13	6.3	8.2	19.0	31.7

EXISTING CONDITIONS RUNOFF (STUDY POINTS) - SCS METHOD				
Name	Area (Ac.)	Peak Discharge 5YR (cfs)	Peak Discharge 25YR (cfs)	Peak Discharge 100YR (cfs)
POINT 1	325.1	503.1	955.7	1453.4
POINT 2/3	372.9	594.2	1116.5	1690.1
POINT 4	476.3	697.5	1313.5	2003.7
POINT 5	511.8	744.2	1402.8	2141.0
POINT 6	619.2	795.1	1486.1	2468.4

PRE-DEVELOPMENT EXISTING RUNOFF				
Name	Area (Ac.)	Peak Discharge 5YR (cfs)	Peak Discharge 25YR (cfs)	Peak Discharge 100YR (cfs)
POINT 5	621.2	934.4	1832.1	2823.1

NOTE: STUDY POINT 5 AS SHOWN ABOVE REPRESENTS THE OVERALL EXISTING CONDITIONS OF THE PARKLANDS AND PARKLANDS II MASTER PLANS - REFER TO PARKLANDS II UNIT 1 STORM WATER MANAGEMENT PLAN ON FILE WITH THE CITY OF SCHERTZ FOR PRE-DEVELOPMENT ANALYSIS.



POINT 6 = POINT 5
PRE-DEVELOPMENT
EXISTING RUNOFF -
ANALYSIS COMPLETED
WITH PARKLANDS II UNIT 1

LEGEND

DA 4 96.89 ACRES	*WATERSHED IDENTIFIER*
▨	*PROPOSED SITE*
POINT 1	*STUDY POINT*
▬ ▬ ▬ ▬	*DRAINAGE AREA BOUNDARY*
——> - - -> ——	*FLOW PATH*
— — -717- — —	*EXISTING CONTOURS*
➡	*FLOW ARROW*

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

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

EXISTING OVERALL DRAINAGE AREA MAP

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
2.0

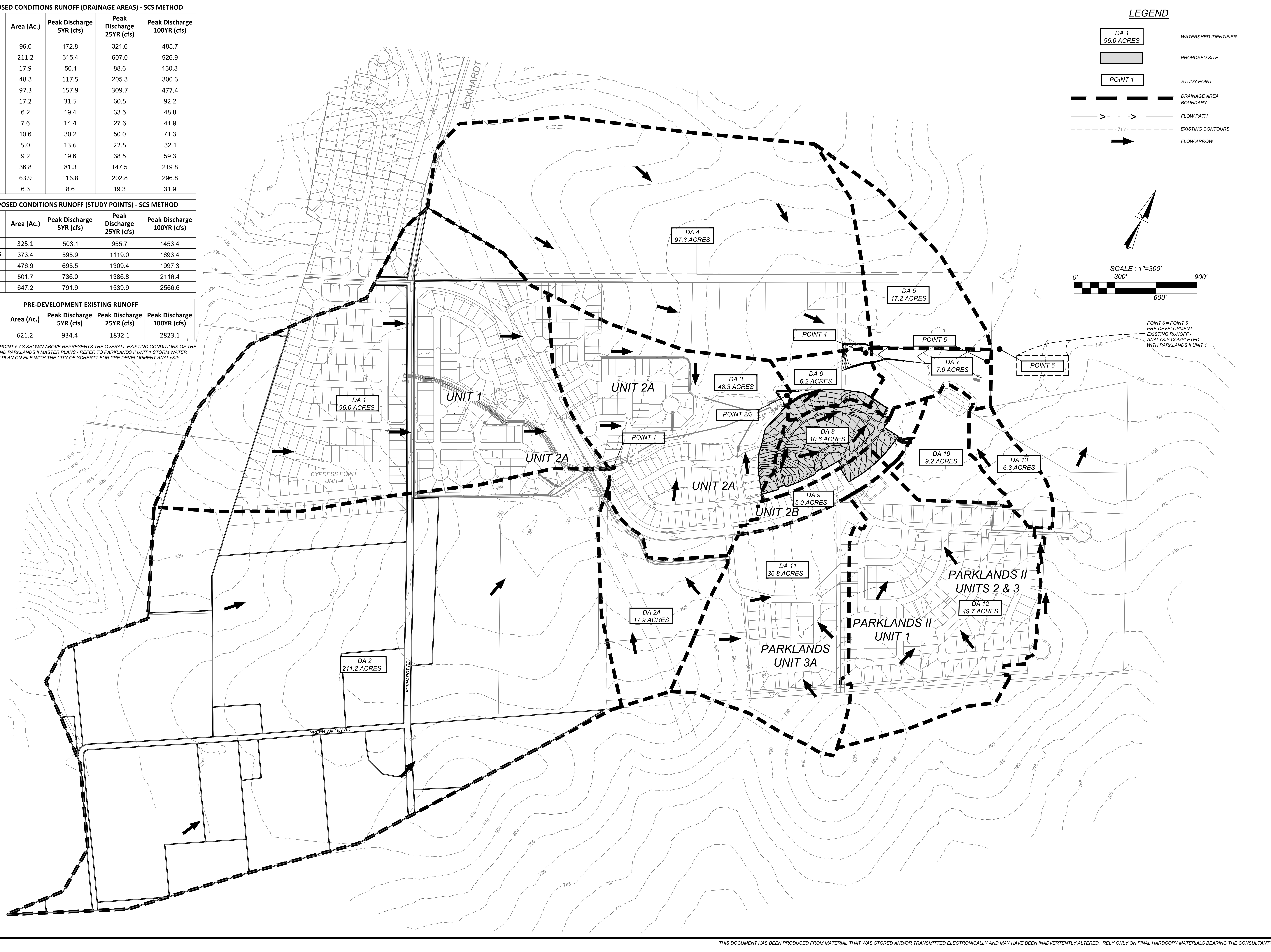
Date: Mar 22, 2024, 11:39am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\Drainage\2.0 EXISTING CONDITIONS OVERALL DRAINAGE PLAN.dwg

PROPOSED CONDITIONS RUNOFF (DRAINAGE AREAS) - SCS METHOD				
Name	**Area (Ac.)**	**Peak Discharge 5YR (cfs)**	**Peak Discharge 25YR (cfs)**	**Peak Discharge 100YR (cfs)**
DA1	96.0	172.8	321.6	485.7
DA2	211.2	315.4	607.0	926.9
DA2A	17.9	50.1	88.6	130.3
DA3	48.3	117.5	205.3	300.3
DA4	97.3	157.9	309.7	477.4
DA5	17.2	31.5	60.5	92.2
DA6	6.2	19.4	33.5	48.8
DA7	7.6	14.4	27.6	41.9
DA8	10.6	30.2	50.0	71.3
DA9	5.0	13.6	22.5	32.1
DA10	9.2	19.6	38.5	59.3
DA11	36.8	81.3	147.5	219.8
DA12	63.9	116.8	202.8	296.8
DA13	6.3	8.6	19.3	31.9

PROPOSED CONDITIONS RUNOFF (STUDY POINTS) - SCS METHOD				
Name	**Area (Ac.)**	**Peak Discharge 5YR (cfs)**	**Peak Discharge 25YR (cfs)**	**Peak Discharge 100YR (cfs)**
POINT 1	325.1	503.1	955.7	1453.4
POINT 2/3	373.4	595.9	1119.0	1693.4
POINT 4	476.9	695.5	1309.4	1997.3
POINT 5	501.7	736.0	1386.8	2116.4
POINT 6	647.2	791.9	1539.9	2566.6

PRE-DEVELOPMENT EXISTING RUNOFF				
Name	**Area (Ac.)**	**Peak Discharge 5YR (cfs)**	**Peak Discharge 25YR (cfs)**	**Peak Discharge 100YR (cfs)**
POINT 5	621.2	934.4	1832.1	2823.1

NOTE: STUDY POINT 5 AS SHOWN ABOVE REPRESENTS THE OVERALL EXISTING CONDITIONS OF THE PARKLANDS AND PARKLANDS II MASTER PLANS - REFER TO PARKLANDS II UNIT 1 STORM WATER MANAGEMENT PLAN ON FILE WITH THE CITY OF SCHERTZ FOR PRE-DEVELOPMENT ANALYSIS.



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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

PROPOSED OVERALL DRAINAGE AREA MAP

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
2.1

Date: Mar 22, 2024, 11:43am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\Drainage\2.1 PROPOSED OVERALL DRAINAGE MAP.dwg

ULTIMATE CONDITIONS RUNOFF (DRAINAGE AREAS) - SCS METHOD				
Name	**Area (Ac.)**	**Peak Discharge 5YR (cfs)**	**Peak Discharge 25YR (cfs)**	**Peak Discharge 100YR (cfs)**
DA1	96.0	220.5	369.2	530.7
DA2	211.2	447.8	735.6	1045.7
DA2A	17.9	55.0	92.9	133.8
DA3	48.3	118.0	205.8	300.8
DA4	97.3	157.9	309.7	477.4
DA5	17.2	37.6	66.5	97.8
DA6	6.2	15.0	26.0	38.0
DA7	5.8	13.9	25.9	37.0
DA8	12.3	35.0	57.8	82.4
DA9	5.0	13.6	22.5	32.1
DA10	29.5	67.1	115.1	167.7
DA11	36.8	82.6	148.8	221.0
DA12	63.9	148.9	255.6	372.3

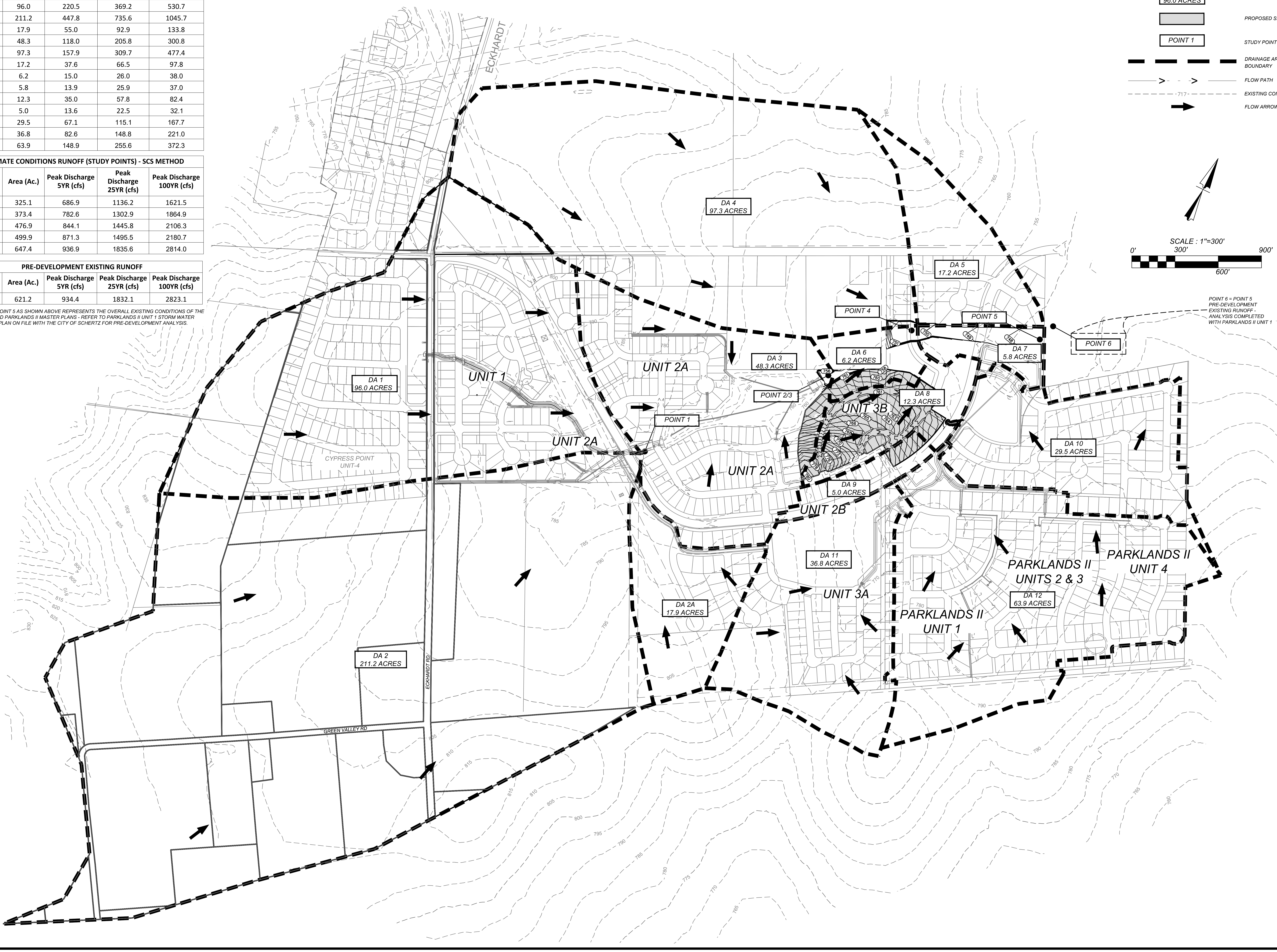
ULTIMATE CONDITIONS RUNOFF (STUDY POINTS) - SCS METHOD				
Name	**Area (Ac.)**	**Peak Discharge 5YR (cfs)**	**Peak Discharge 25YR (cfs)**	**Peak Discharge 100YR (cfs)**
POINT 1	325.1	686.9	1136.2	1621.5
POINT 2/3	373.4	782.6	1302.9	1864.9
POINT 4	476.9	844.1	1445.8	2106.3
POINT 5	499.9	871.3	1495.5	2180.7
POINT 6	647.4	936.9	1835.6	2814.0

PRE-DEVELOPMENT EXISTING RUNOFF				
Name	**Area (Ac.)**	**Peak Discharge 5YR (cfs)**	**Peak Discharge 25YR (cfs)**	**Peak Discharge 100YR (cfs)**
POINT 5	621.2	934.4	1832.1	2823.1

NOTE: STUDY POINT 5 AS SHOWN ABOVE REPRESENTS THE OVERALL EXISTING CONDITIONS OF THE PARKLANDS AND PARKLANDS II MASTER PLANS - REFER TO PARKLANDS II UNIT 1 STORM WATER MANAGEMENT PLAN ON FILE WITH THE CITY OF SCHERTZ FOR PRE-DEVELOPMENT ANALYSIS.

LEGEND

DA 1 96.0 ACRES	WATERSHED IDENTIFIER
▨	PROPOSED SITE
POINT 1	STUDY POINT
▬ ▬ ▬ ▬	DRAINAGE AREA BOUNDARY
——— > - - > ———	FLOW PATH
- - - - 717 - - - -	EXISTING CONTOURS
➡	FLOW ARROW



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TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

REVISIONS

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CONSTRUCTION

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THE PARKLANDS SUBDIVISION - UNIT 3B

SCHERTZ, TX

ULTIMATE OVERALL DRAINAGE AREA MAP

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

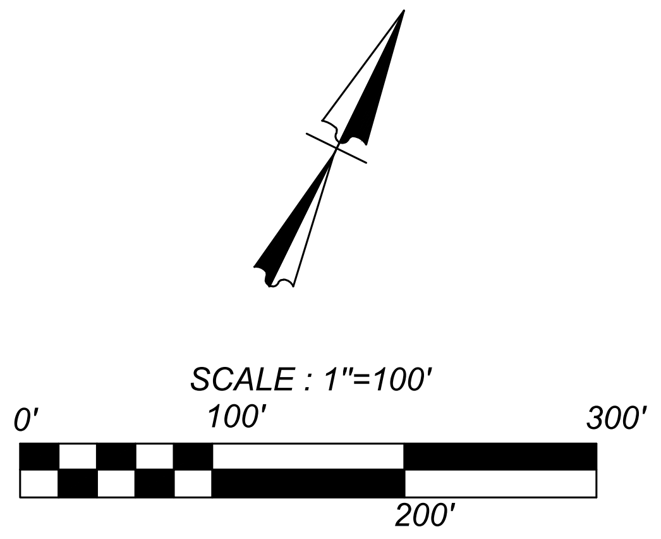
SHEET NUMBER:
2.2

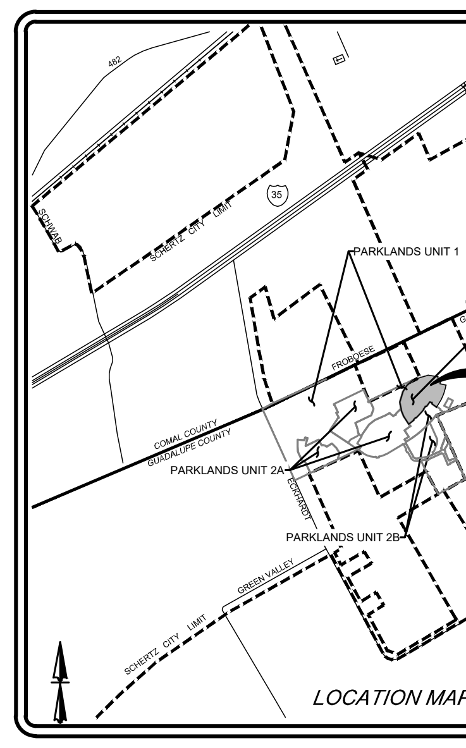
Date: Mar 22, 2024, 11:45am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\Drainage\2.2 ULTIMATE OVERALL DRAINAGE AREA MAP.dwg

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)
	DA-8A	4.32	0.67			17.2	6.9	0.0	24.1	4.22	5.50	6.68	12.21	15.92	19.33
1A	DA-8A CAPTURED	FLOW CAPURED BY ON-GRADE INLETS											8.85	10.30	11.45
1B	DA-8A BYPASS	FLOW THAT BYPASSES ON-GRADE INLET											3.36	5.62	7.88
	DA-8B	3.93	0.67			11.9	9.2	0.0	21.1	4.48	5.77	6.99	11.80	15.19	18.41
2	DA-8B + SP1B	SIMPLY SUMMED											15.16	20.81	26.29
3	DA-8A + DA-8B	8.25	0.67	DA-8A	24.1				24.1	4.22	5.50	6.68	23.33	30.40	36.92

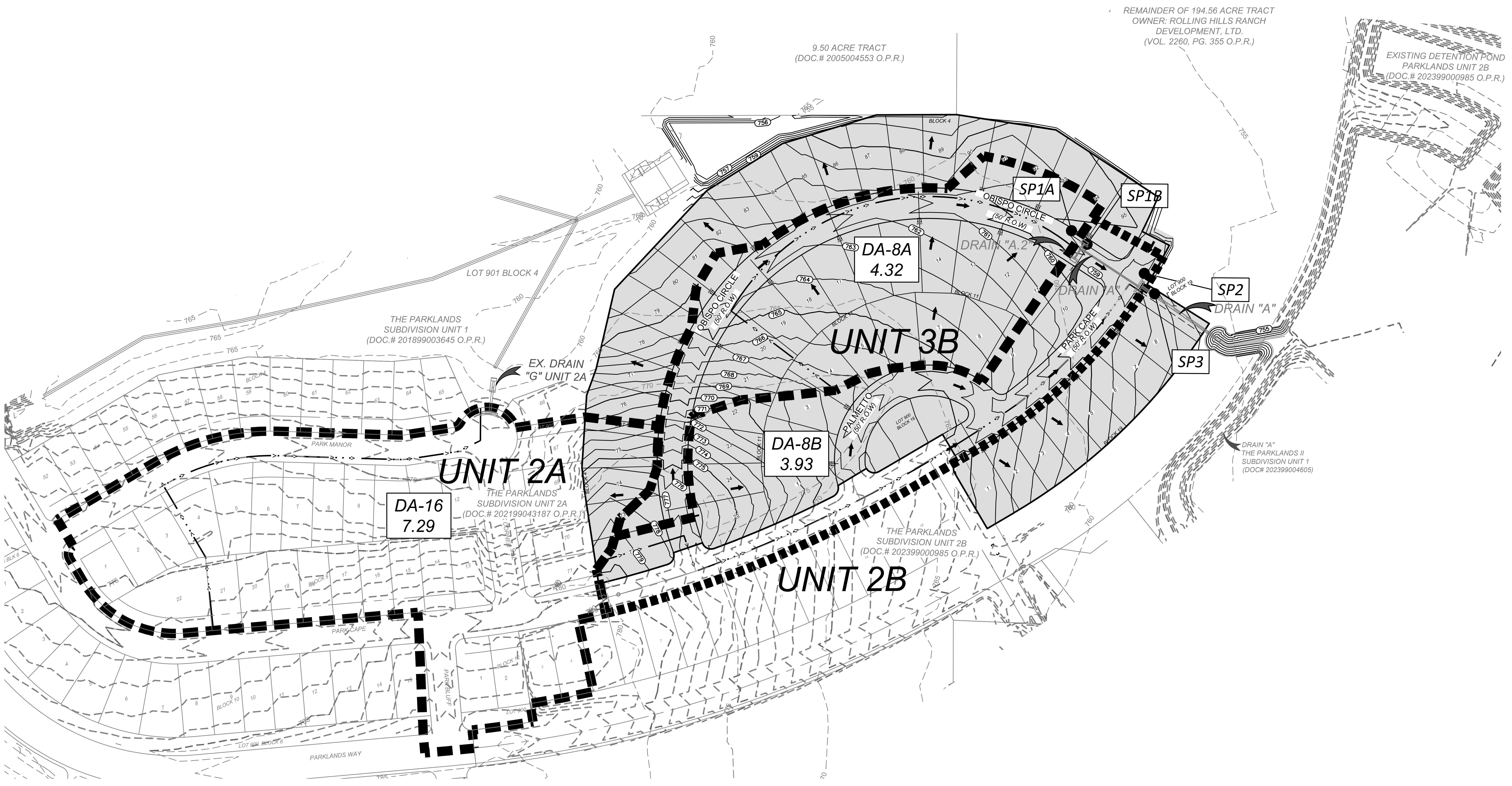
NOTE:

1. *FLOWRATES FROM STUDY POINT 1B WERE SIMPLY ADDED TO DOWNSTREAM STUDY POINT (SP2) AS A CONSERVATIVE APPROACH TO DESIGN.*





LOCATION MAP
N.T.S.


REMAINDER OF 194.56 ACRE TRACT
OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD.
(VOL. 2260, PG. 355 O.P.R.)
9.50 ACRE TRACT
(DOC.# 2005004553 O.P.R.)
EXISTING DETENTION POND
PARKLANDS UNIT 2B
(DOC.# 202399000985 O.P.R.)
SP1A
SP1B
SP2
SP3
OBISPO CIRCLE (50' R.O.W)
PARK CAPE (50' R.O.W)
PALMETTO (50' R.O.W)
DRAIN "A.2"
DRAIN "A"
DA-8A
4.32
DA-8B
3.93
UNIT 3B
UNIT 2A
UNIT 2B
DA-16
7.29
BLOCK 4
BLOCK 11
BLOCK 16
BLOCK 19
LOT 900 BLOCK 16
LOT 900 BLOCK 19
LOT 901 BLOCK 4
EX. DRAIN "G" UNIT 2A
THE PARKLANDS SUBDIVISION UNIT 1
(DOC.# 201899003645 O.P.R.)
THE PARKLANDS SUBDIVISION UNIT 2A
(DOC.# 202199043187 O.P.R.)
THE PARKLANDS SUBDIVISION UNIT 2B
(DOC.# 202399000985 O.P.R.)
DRAIN "A"
THE PARKLANDS II SUBDIVISION UNIT 1
(DOC# 202399004605)
PARK MANOR
PARK CAPE
PARKLANDS WAY
755
760
765
770

LEGEND

DA 1 96.0 ACRES	WATERSHED IDENTIFIER
▨	PROPOSED SITE
POINT 1	STUDY POINT
▬ ▬ ▬	DRAINAGE AREA BOUNDARY
— > - · - > —	FLOW PATH
- - - 717 - - -	EXISTING CONTOURS
- - - 769 - - -	ADJACENT CONTOURS
—— 751 ——	PROPOSED CONTOURS
➡	FLOW ARROW

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

PROPOSED ONSITE DRAINAGE AREA MAP

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
2.3

Date: Mar 22, 2024, 11:47am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\Drainage\PROPOSED ONSITE DRAINAGE AREA MAP.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.

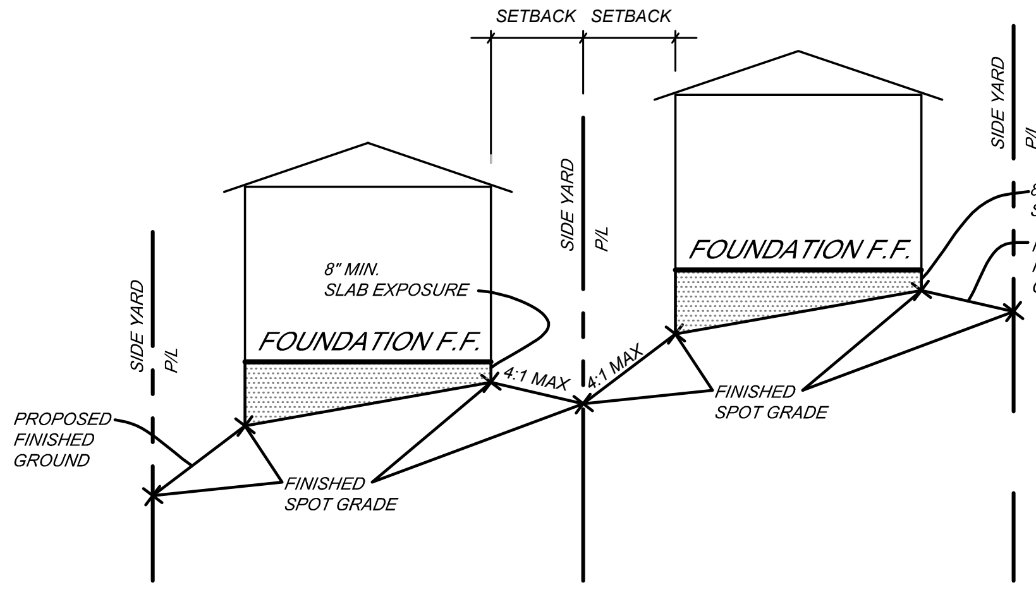
8. GRADING PLAN IS INTENDED FOR USE IN LOT GRADING ONLY. CONTRACTOR SHOULD REFER TO CONSTRUCTION DRAWINGS FOR ALL OTHER GRADES, INCLUDING, BUT NOT LIMITED TO, CHANNELS, ROADS, AND DETENTION PONDS.

9. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE WITHIN ALL SWALES.

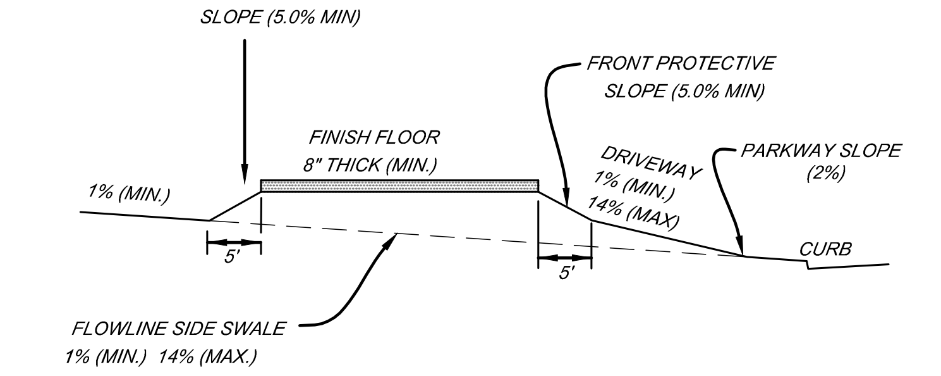
10. ALL LOTS SHALL BE IN GENERAL CONFORMANCE WITH THE INTENDED GRADING PLAN. AS REQUIRED BY THE CITY, ANY LOT NOT IN GENERAL CONFORMANCE WITH THE LOT GRADING TYPES (AS SHOWN) SHALL BE ROUGH GRADED PRIOR TO PRELIMINARY ACCEPTANCE OF PUBLIC INFRASTRUCTURE.

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.

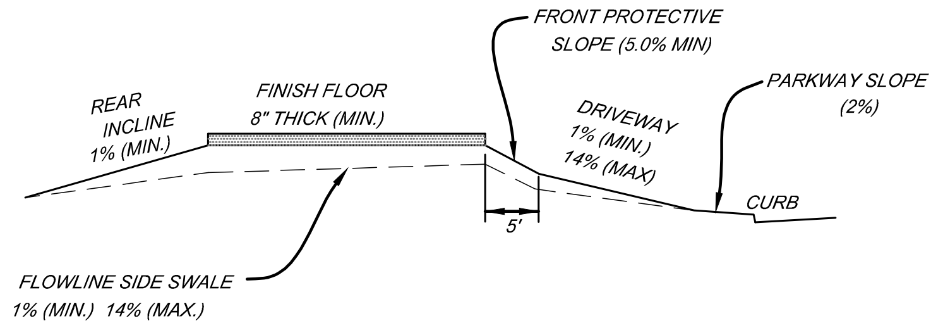
12. ROUGH GRADING, INCLUDING TREE REMOVAL, MUST BE DONE ON ALL LOTS PRIOR TO SUBDIVISION PRELIMINARY ACCEPTANCE.



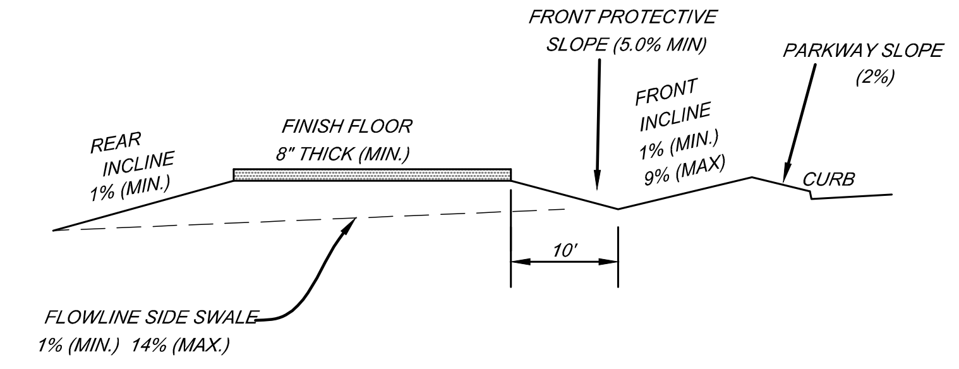
TYPICAL SIDE YARD GRADING
N.T.S.


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

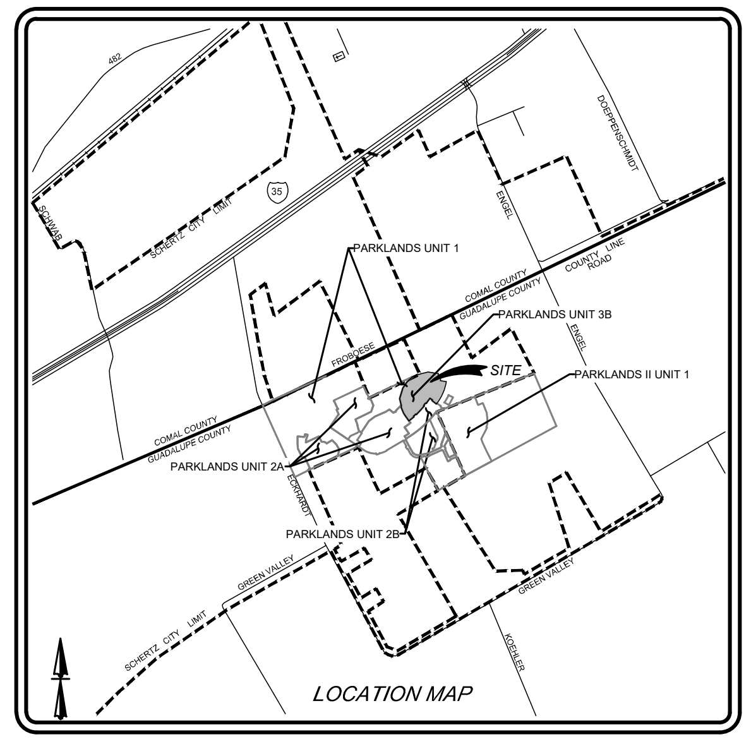
TYPE 'A' LOT GRADING


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

TYPE 'B' LOT GRADING


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

TYPE 'C' LOT GRADING



LOCATION MAP
N.T.S.

LEGEND

EXIST. = EXISTING

V.W.C.V.E. = VARIABLE WIDTH CLEAR VISION EASEMENT

G.E.T.TV.E. = GAS, ELECTRIC, TELEPHONE, CABLE T.V. EASEMENT

⬅ = FLOW ARROW

Ⓐ = LOT GRADE TYPE

▨ = PROPOSED DRIVEWAY LOCATION

× 539.42 = PROPOSED GROUND ELEVATION

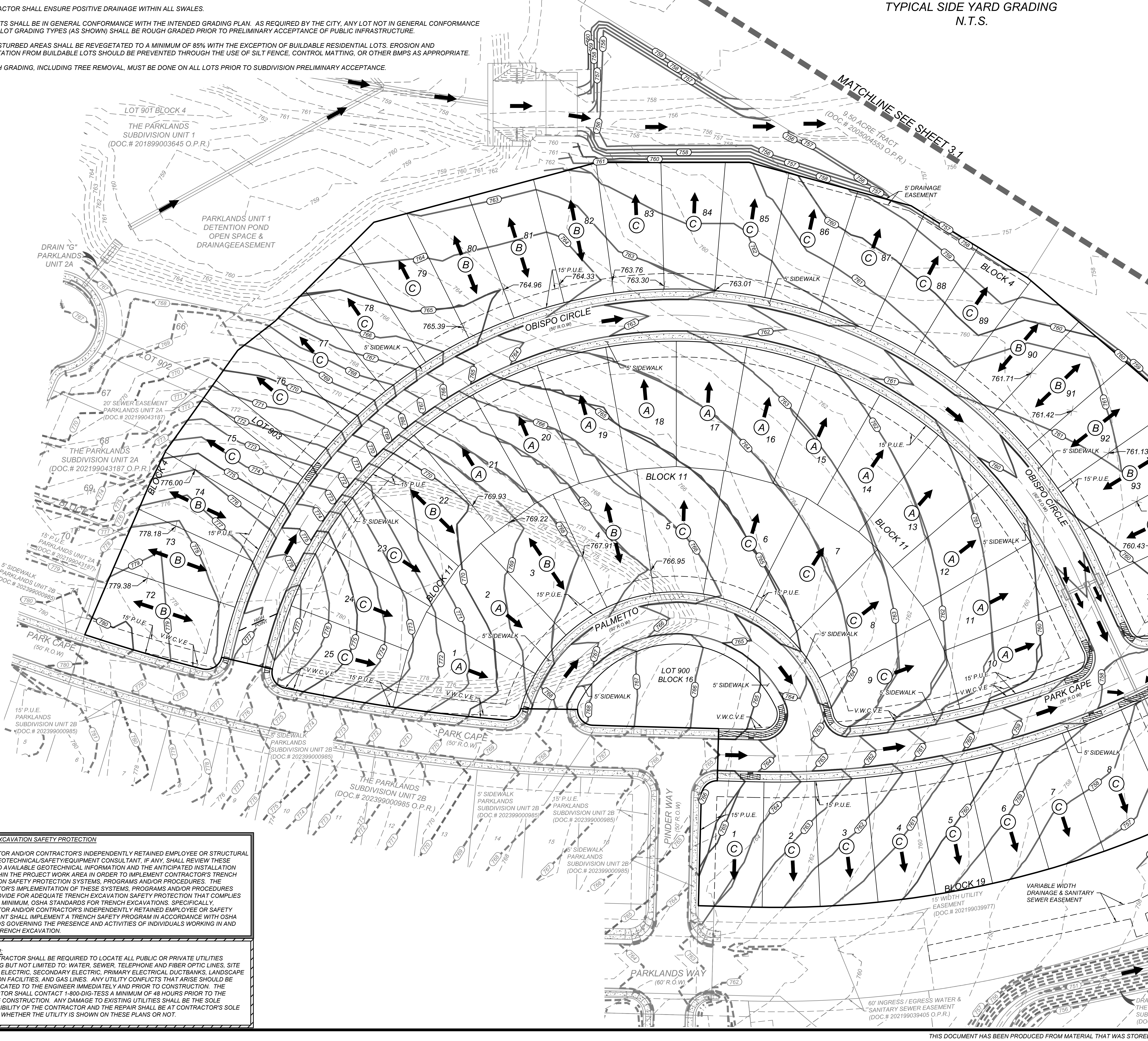
FFE=XXX.XX = MINIMUM FINISHED FLOOR ELEVATION

715 = EXISTING CONTOUR

670 = PROPOSED CONTOUR

543 = ADJACENT UNIT PROPOSED CONTOUR

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


MATCHLINE SEE SHEET 3.1
9.50 ACRE TRACT (DOC.# 20050045?? O.P.R.)
LOT 901 BLOCK 4
THE PARKLANDS SUBDIVISION UNIT 1 (DOC.# 201899003645 O.P.R.)
PARKLANDS UNIT 1 DETENTION POND OPEN SPACE & DRAINAGE EASEMENT
DRAIN "G" PARKLANDS UNIT 2A
LOT 902
LOT 903
20' SEWER EASEMENT PARKLANDS UNIT 2A (DOC.# 202199043187)
THE PARKLANDS SUBDIVISION UNIT 2A (DOC.# 202199043187 O.P.R.)
BLOCK 4
BLOCK 11
BLOCK 16
BLOCK 19
OBISPO CIRCLE (50' R.O.W.)
PALMETTO (50' R.O.W.)
PARK CAPE (50' R.O.W.)
PINDER WAY (50' R.O.W.)
PARKLANDS WAY (60' R.O.W.)
LOT 900 BLOCK 16
LOT 900 BLOCK 19
5' DRAINAGE EASEMENT
15' P.U.E.
5' SIDEWALK
V.W.C.V.E.
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
THE PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985 O.P.R.)
15' SEWER EASEMENT
DRAIN "A"
VARIABLE WIDTH DRAINAGE & SANITARY SEWER EASEMENT
15' WIDTH UTILITY EASEMENT (DOC.# 202199039977)
60' INGRESS / EGRESS WATER & SANITARY SEWER EASEMENT (DOC.# 202199039405 O.P.R.)
DRAIN "A" THE PARKLANDS II SUBDIVISION UNIT 1 (DOC# 202399004605)
764.96
764.33
763.76
763.30
763.01
765.39
761.71
761.42
761.13
760.77
760.43
760.04
757.07
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778.18
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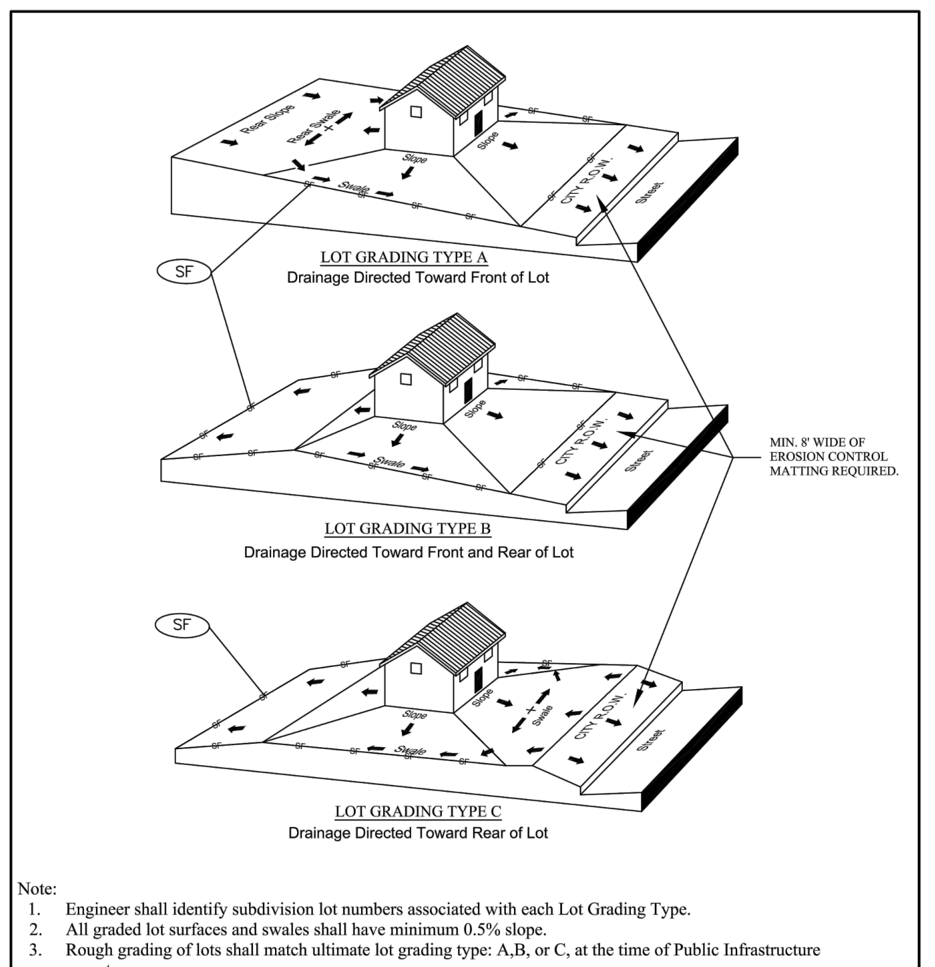
769.93
769.22
767.91
766.95



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
TECHNICAL SPECIFICATION SECTION 01575
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 7/19/19
DSGN. BY: ENG. DRAWN BY: BCP SHEET NO.: 1

TRENCH EXCAVATION SAFETY PROTECTION

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

CAUTION!!:
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Date: Apr 03, 2024, 10:28am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\GRADING\3.0 OVERALL GRADING PLAN.dwg

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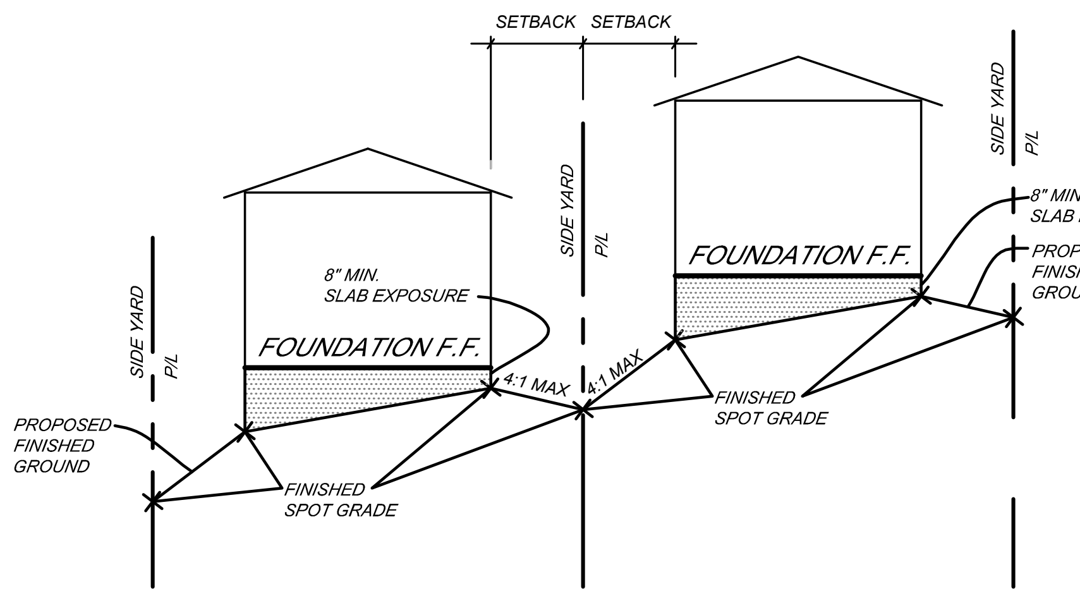
THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

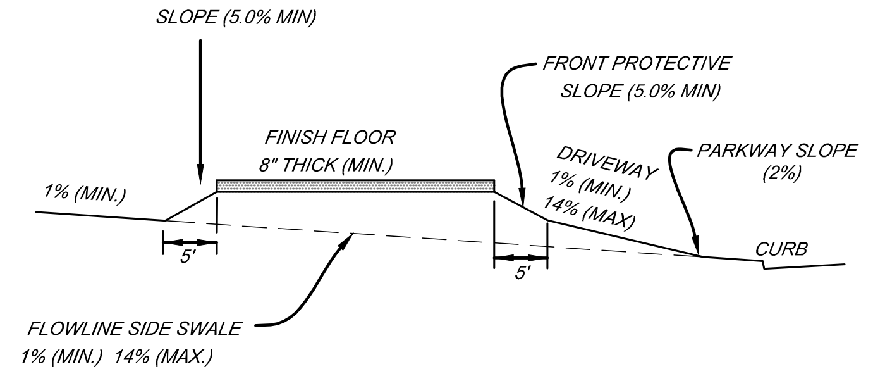
OVERALL GRADING PLAN

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

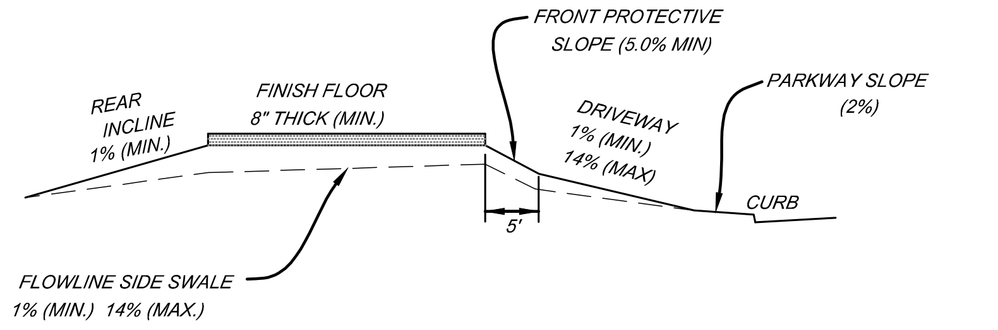
SHEET NUMBER:
3.0



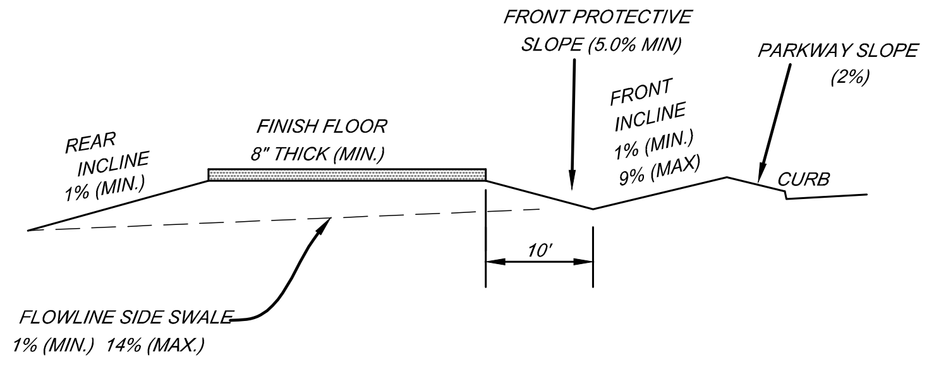
TYPICAL SIDE YARD GRADING
N.T.S.



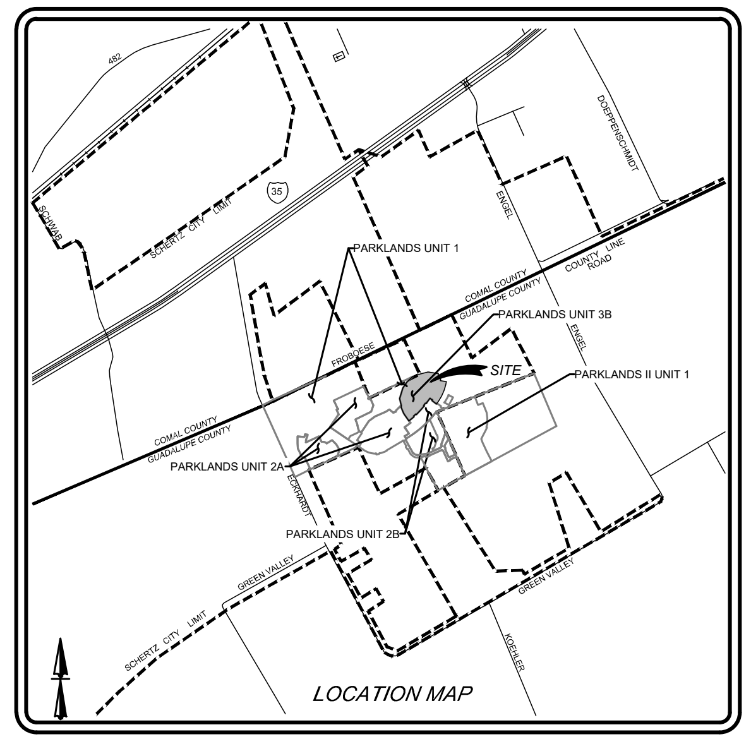
TYPE 'A' LOT GRADING



TYPE 'B' LOT GRADING



TYPE 'C' LOT GRADING



LOCATION MAP
N.T.S.

LEGEND

EXIST. = EXISTING

V.W.C.V.E. = VARIABLE WIDTH CLEAR VISION EASEMENT

G.E.T.TV.E. = GAS, ELECTRIC, TELEPHONE, CABLE T.V. EASEMENT

← = FLOW ARROW

(A) = LOT GRADE TYPE

▨ = PROPOSED DRIVEWAY LOCATION

× 539.42 = PROPOSED GROUND ELEVATION

FFE=XXX.XX = MINIMUM FINISHED FLOOR ELEVATION

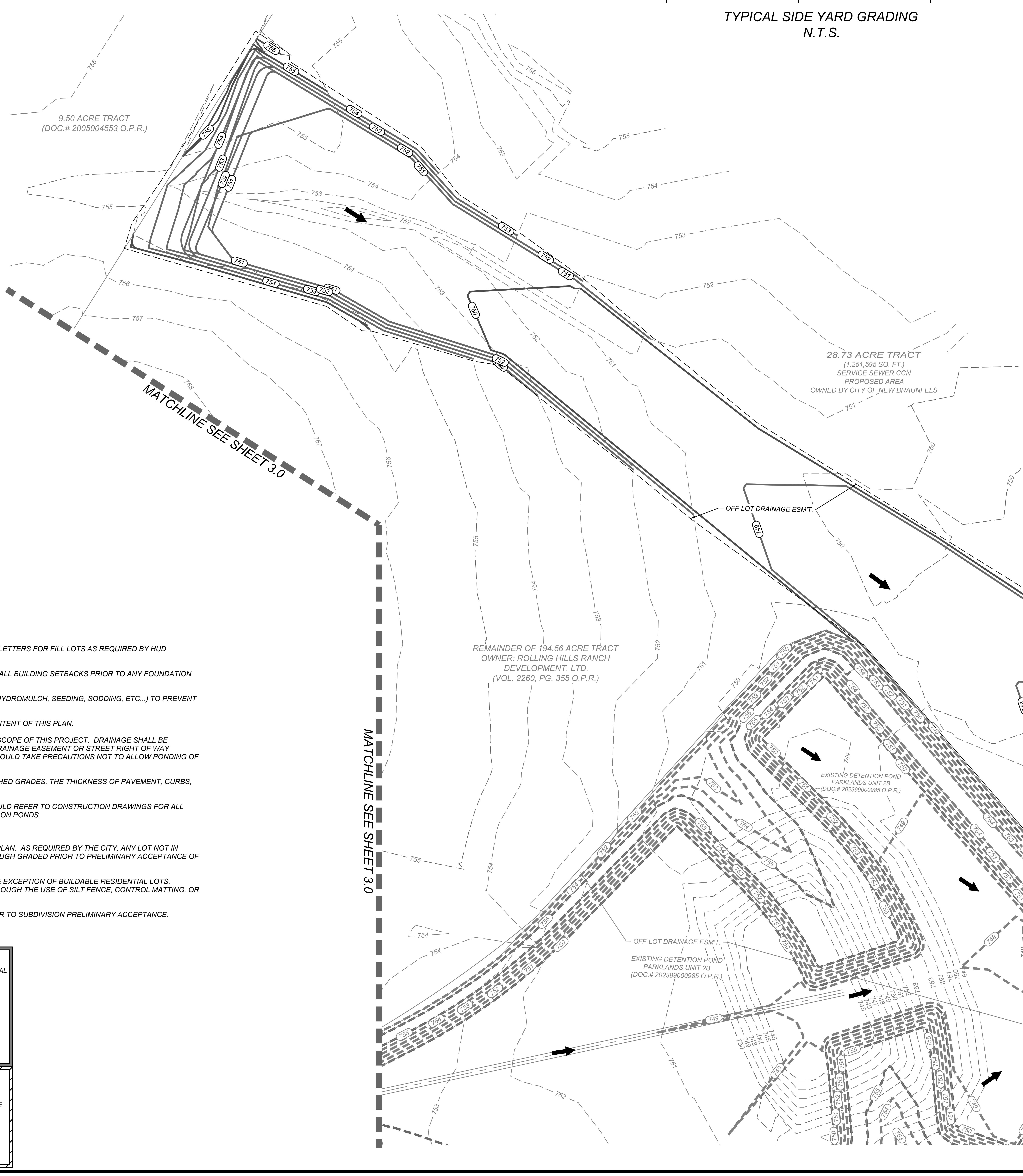
— — 715 — — = EXISTING CONTOUR

—(670)— = PROPOSED CONTOUR

- -(543)- - = ADJACENT UNIT PROPOSED CONTOUR

SCALE : 1"=50'

0' 50' 100' 150'



GENERAL NOTES:

1. ELEVATION SHOWN ON FOUNDATION IS FOR FINISHED FLOOR.

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Date: Mar 22, 2024, 11:35am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\GRADING\3.0 OVERALL GRADING PLAN.dwg

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NOT FOR
CONSTRUCTION

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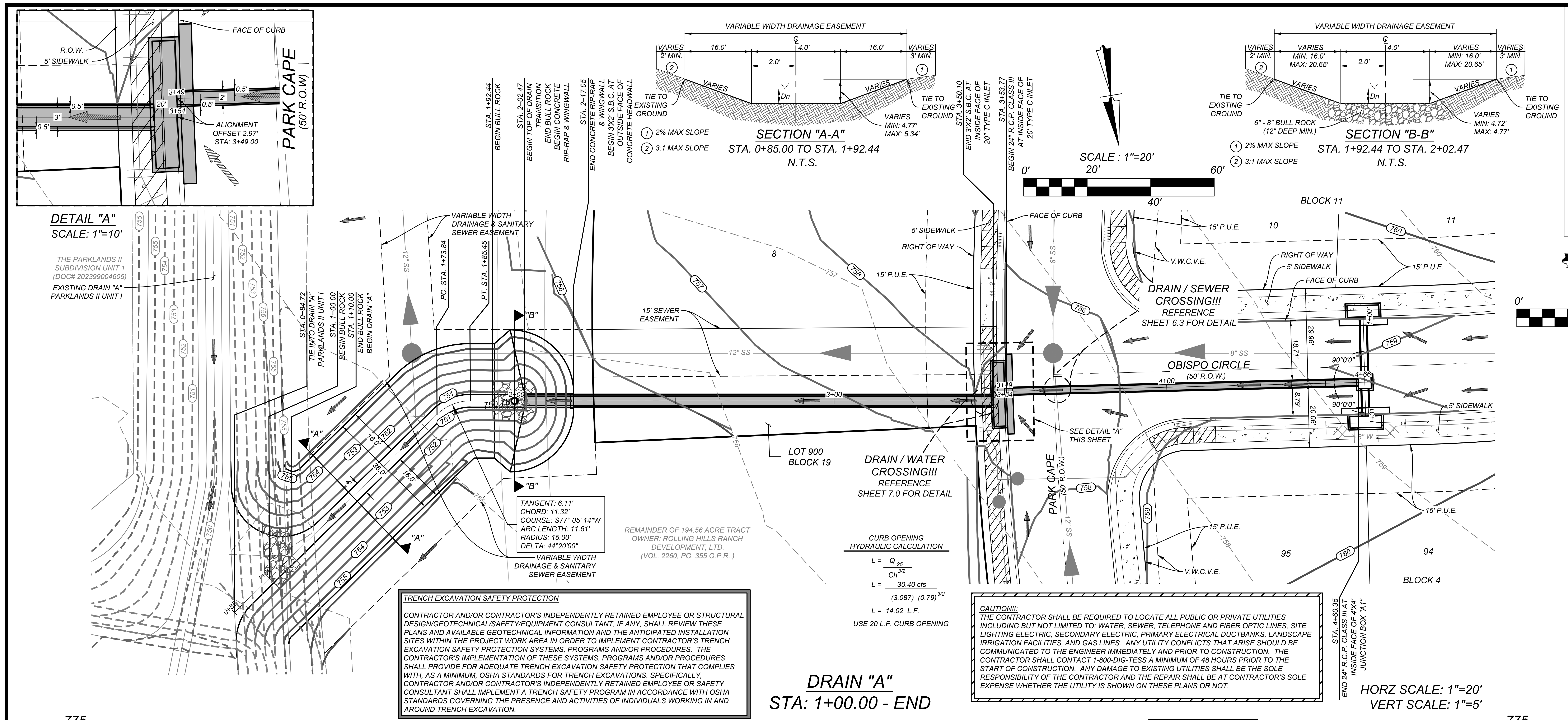
THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX
OVERALL GRADING PLAN

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:


DETAIL "A"
SCALE: 1"=10'
FACE OF CURB
R.O.W.
5' SIDEWALK
PARK CAPE (50' R.O.W)
ALIGNMENT OFFSET 2.97' STA: 3+49.00
VARIABLE WIDTH DRAINAGE EASEMENT
SECTION "A-A"
STA. 0+85.00 TO STA. 1+92.44
N.T.S.
① 2% MAX SLOPE
② 3:1 MAX SLOPE
TIE TO EXISTING GROUND
VARIES MIN: 4.77' MAX: 5.34'
SECTION "B-B"
STA. 1+92.44 TO STA. 2+02.47
N.T.S.
6" - 8" BULL ROCK (12" DEEP MIN.)
VARIES MIN: 4.72' MAX: 4.77'
SCALE : 1"=20'
THE PARKLANDS II SUBDIVISION UNIT 1 (DOC# 202399004605)
EXISTING DRAIN "A" PARKLANDS II UNIT I
VARIABLE WIDTH DRAINAGE & SANITARY SEWER EASEMENT
15' SEWER EASEMENT
DRAIN / SEWER CROSSING!!! REFERENCE SHEET 6.3 FOR DETAIL
DRAIN / WATER CROSSING!!! REFERENCE SHEET 7.0 FOR DETAIL
SEE DETAIL "A" THIS SHEET
LOT 900 BLOCK 19
OBISPO CIRCLE (50' R.O.W.)
PARK CAPE (50' R.O.W)
BLOCK 11
BLOCK 4
V.W.C.V.E.
15' P.U.E.
TANGENT: 6.11'
CHORD: 11.32'
COURSE: S77° 05' 14"W
ARC LENGTH: 11.61'
RADIUS: 15.00'
DELTA: 44°20'00"
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R..)

LEGEND

- FLOW ARROW
- EXISTING CONTOUR
- PROPOSED CONTOUR
- ADJACENT UNIT PROPOSED CONTOUR

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.

CURB OPENING
HYDRAULIC CALCULATION

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

$$L = \frac{30.40\ cfs}{(3.087)\ (0.79)^{3/2}}$$

L = 14.02 L.F.

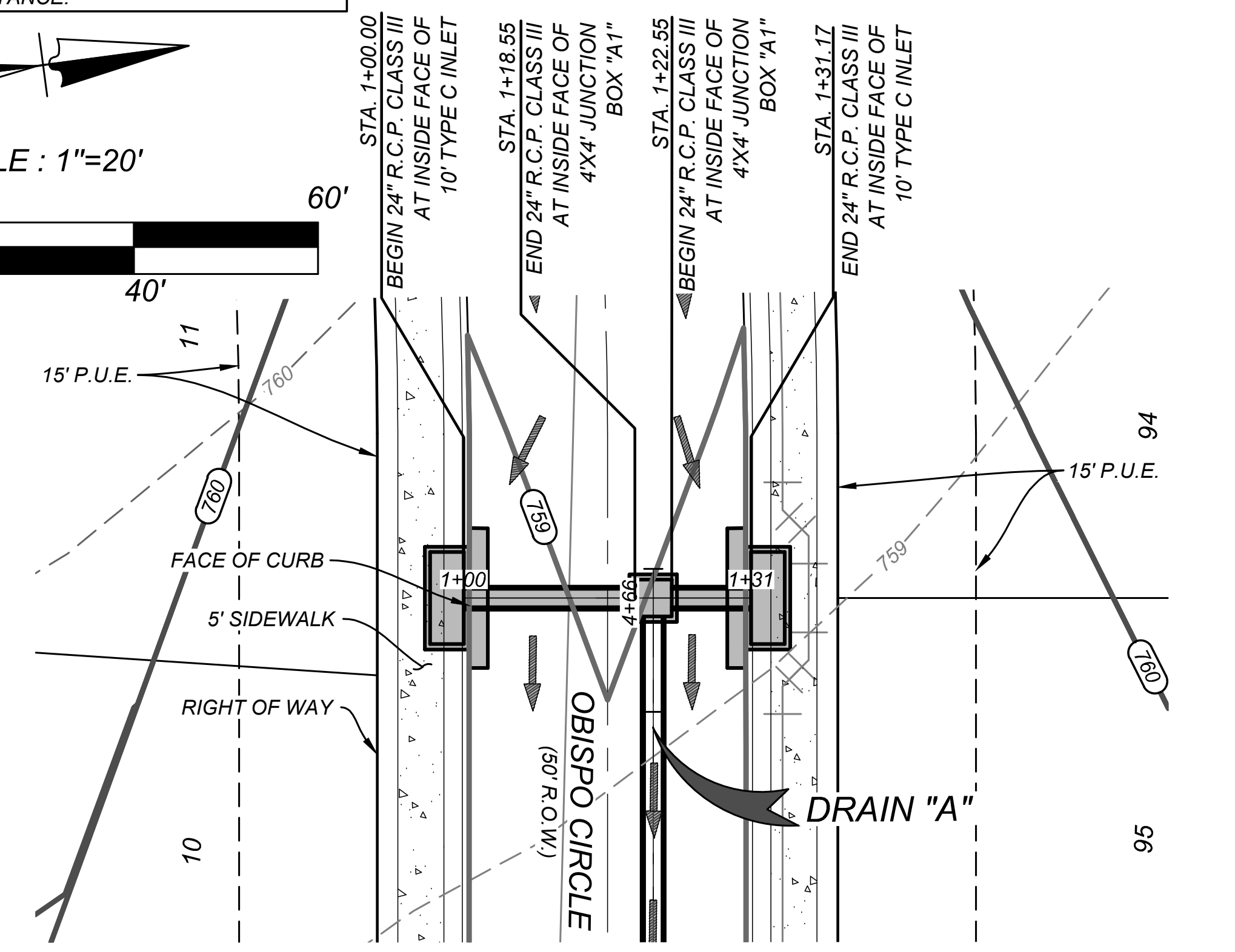
USE 20 L.F. CURB OPENING

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.


SCALE : 1"=20'
STA. 1+00.00 BEGIN 24" R.C.P. CLASS III AT INSIDE FACE OF 10' TYPE C INLET
FACE OF CURB
5' SIDEWALK
RIGHT OF WAY
OBISPO CIRCLE (50' R.O.W.)
DRAIN "A"
15' P.U.E.

10' ON-GRADE CURB OPENING @ 0.75%
HYDRAULIC CALCULATION

USING AUTOCAD HYDRAFLOW

$Q_{(25)}$= 15.92

Y= DEPTH OF FLOW IN GUTTER = 0.508'
A= GUTTER DEPRESSION = 0.202'
L= LENGTH OF CURB OPENING = 10.0'
$Q_{CAPTURED}$ = 10.30 CFS
Q_{BYPASS} = 5.62 CFS

10' ON-GRADE CURB OPENING @ 0.75%
HYDRAULIC CALCULATION

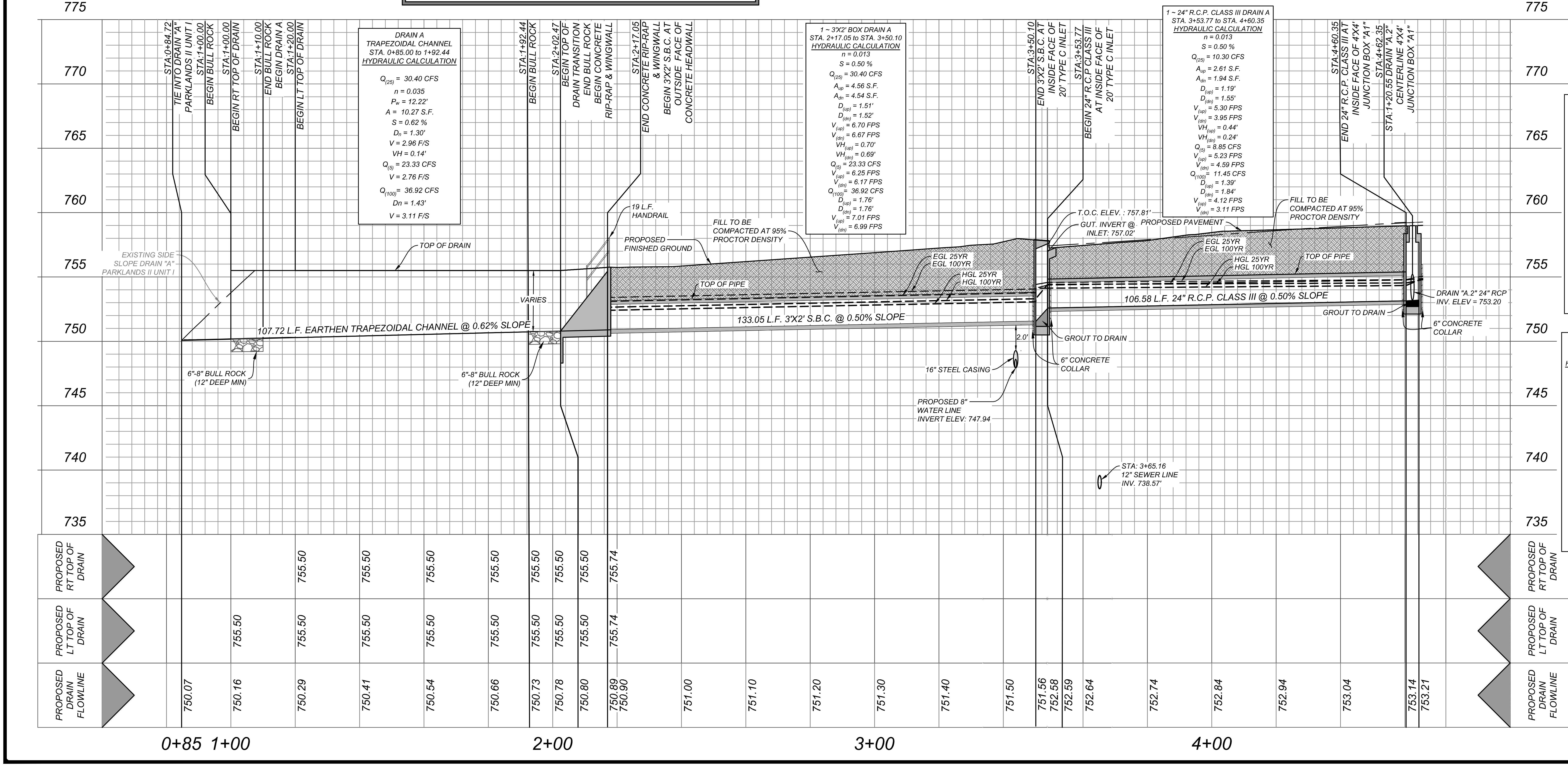
USING AUTOCAD HYDRAFLOW

$Q_{(25)}$= 15.92

Y= DEPTH OF FLOW IN GUTTER = 0.508'
A= GUTTER DEPRESSION = 0.202'
L= LENGTH OF CURB OPENING = 10.0'
$Q_{CAPTURED}$ = 10.30 CFS
Q_{BYPASS} = 5.62 CFS

DRAIN "A"
STA: 1+00.00 - END

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


STA:0+84.72 TIE INTO DRAIN "A" PARKLANDS II UNIT I
STA:1+00.00 BEGIN BULL ROCK
BEGIN RT TOP OF DRAIN
STA:1+10.00 END BULL ROCK
BEGIN DRAIN "A"
STA:1+20.00 BEGIN LT TOP OF DRAIN
STA:1+92.44 BEGIN BULL ROCK
STA:2+02.47 BEGIN TOP OF DRAIN TRANSITION END BULL ROCK BEGIN CONCRETE RIP-RAP & WINGWALL
STA:2+17.05 END CONCRETE RIP-RAP & WINGWALL BEGIN 3'X2' S.B.C. AT OUTSIDE FACE OF CONCRETE HEADWALL
STA:3+50.10 END 3'X2' S.B.C. AT INSIDE FACE OF 20' TYPE C INLET
STA:3+53.77 BEGIN 24" R.C.P CLASS III AT INSIDE FACE OF 20' TYPE C INLET
STA:4+60.35 END 24" R.C.P. CLASS III AT INSIDE FACE OF 4'X4' JUNCTION BOX "A1"
STA:4+62.35 CENTERLINE 4'X4' JUNCTION BOX "A1"
EXISTING SIDE SLOPE DRAIN "A" PARKLANDS II UNIT I
TOP OF DRAIN
107.72 L.F. EARTHEN TRAPEZOIDAL CHANNEL @ 0.62% SLOPE
6"-8" BULL ROCK (12" DEEP MIN)
VARIES
19 L.F. HANDRAIL
PROPOSED FINISHED GROUND
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
TOP OF PIPE
EGL 25YR
EGL 100YR
HGL 25YR
HGL 100YR
133.05 L.F. 3'X2' S.B.C. @ 0.50% SLOPE
16" STEEL CASING
PROPOSED 8" WATER LINE INVERT ELEV: 747.94
T.O.C. ELEV. : 757.81'
GUT. INVERT @ INLET: 757.02'
PROPOSED PAVEMENT
GROUT TO DRAIN
6" CONCRETE COLLAR
106.58 L.F. 24" R.C.P. CLASS III @ 0.50% SLOPE
DRAIN "A.2" 24" RCP INV. ELEV = 753.20
STA: 3+65.16 12" SEWER LINE INV. 738.57'
775 770 765 760 755 750 745 740 735
PROPOSED RT TOP OF DRAIN
PROPOSED LT TOP OF DRAIN
PROPOSED DRAIN FLOWLINE
755.50 755.50 755.50 755.50 755.50 755.50 755.50 755.50 755.74
750.07 750.16 750.29 750.41 750.54 750.66 750.73 750.78 750.80 750.89 750.90 751.00 751.10 751.20 751.30 751.40 751.50 751.56 752.58 752.59 752.64 752.74 752.84 752.94 753.04 753.14 753.21
0+85 1+00 2+00 3+00 4+00

DRAIN A
TRAPEZOIDAL CHANNEL
STA. 0+85.00 to 1+92.44
HYDRAULIC CALCULATION

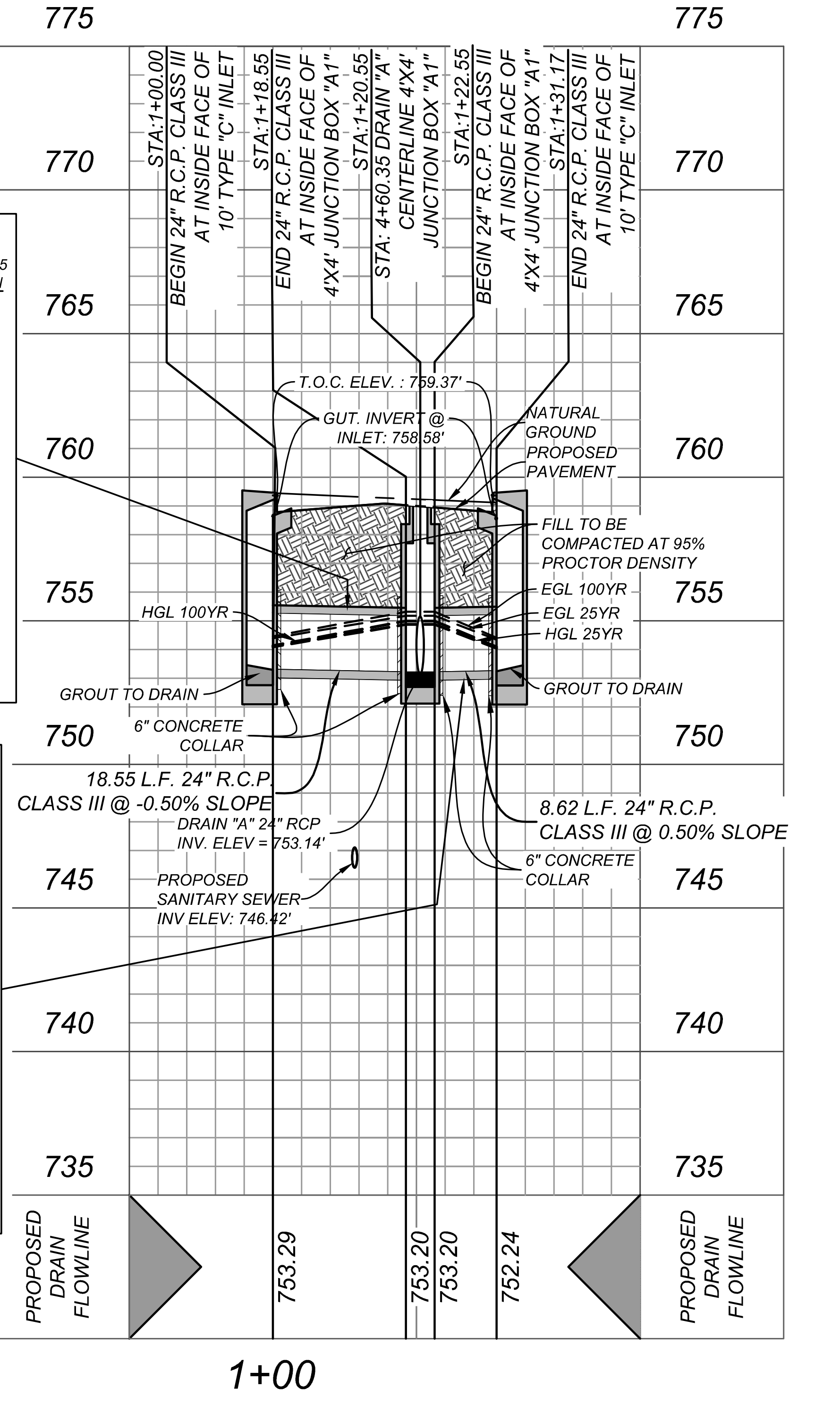
$Q_{(25)}$ = 30.40 CFS
n = 0.035
P_w = 12.22'
A = 10.27 S.F.
S = 0.62 %
D_n = 1.30'
V = 2.96 F/S
VH = 0.14'
$Q_{(5)}$ = 23.33 CFS
V = 2.76 F/S
$Q_{(100)}$= 36.92 CFS
Dn = 1.43'
V = 3.11 F/S

1 ~ 3'X2' BOX DRAIN A
STA. 2+17.05 to STA. 3+50.10
HYDRAULIC CALCULATION
n = 0.013
S = 0.50 %
$Q_{(25)}$ = 30.40 CFS
A_{up} = 4.56 S.F.
A_{dn} = 4.54 S.F.
$D_{(up)}$ = 1.51'
$D_{(dn)}$ = 1.52'
$V_{(up)}$ = 6.70 FPS
$V_{(dn)}$ = 6.67 FPS
$VH_{(up)}$ = 0.70'
$VH_{(dn)}$ = 0.69'
$Q_{(5)}$ = 23.33 CFS
$V_{(up)}$ = 6.25 FPS
$V_{(dn)}$ = 6.17 FPS
$Q_{(100)}$= 36.92 CFS
$D_{(up)}$ = 1.76'
$D_{(dn)}$ = 1.76'
$V_{(up)}$ = 7.01 FPS
$V_{(dn)}$ = 6.99 FPS

1 ~ 24" R.C.P. CLASS III DRAIN A
STA. 3+53.77 to STA. 4+60.35
HYDRAULIC CALCULATION
n = 0.013
S = 0.50 %
$Q_{(25)}$ = 10.30 CFS
A_{up} = 2.61 S.F.
A_{dn} = 1.94 S.F.
$D_{(up)}$ = 1.19'
$D_{(dn)}$ = 1.55'
$V_{(up)}$ = 5.30 FPS
$V_{(dn)}$ = 3.95 FPS
$VH_{(up)}$ = 0.44'
$VH_{(dn)}$ = 0.24'
$Q_{(5)}$ = 8.85 CFS
$V_{(up)}$ = 5.23 FPS
$V_{(dn)}$ = 4.59 FPS
$Q_{(100)}$= 11.45 CFS
$D_{(up)}$ = 1.39'
$D_{(dn)}$ = 1.84'
$V_{(up)}$ = 4.12 FPS
$V_{(dn)}$ = 3.11 FPS

DRAIN "A.2"
STA: 1+00.00 - END

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


STA:1+00.00 BEGIN 24" R.C.P. CLASS III AT INSIDE FACE OF 10' TYPE "C" INLET
STA:1+18.55 END 24" R.C.P. CLASS III AT INSIDE FACE OF 4'X4' JUNCTION BOX "A1"
STA:1+20.55 DRAIN "A" CENTERLINE 4'X4' JUNCTION BOX "A1"
STA:1+22.55 BEGIN 24" R.C.P. CLASS III AT INSIDE FACE OF 4'X4' JUNCTION BOX "A1"
STA:1+31.17 END 24" R.C.P. CLASS III AT INSIDE FACE OF 10' TYPE "C" INLET
T.O.C. ELEV. : 759.37'
GUT. INVERT @ INLET: 758.58'
NATURAL GROUND
PROPOSED PAVEMENT
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
EGL 100YR
EGL 25YR
HGL 25YR
HGL 100YR
GROUT TO DRAIN
6" CONCRETE COLLAR
18.55 L.F. 24" R.C.P CLASS III @ -0.50% SLOPE
DRAIN "A" 24" RCP INV. ELEV = 753.14'
PROPOSED SANITARY SEWER INV ELEV: 746.42'
8.62 L.F. 24" R.C.P. CLASS III @ 0.50% SLOPE
775 770 765 760 755 750 745 740 735
PROPOSED DRAIN FLOWLINE
753.29 753.20 753.20 752.24
1+00

1 ~ 24" R.C.P CLASS III
DRAIN A.2
STA. 1+00.00 to STA. 1+18.55
HYDRAULIC CALCULATION
n = 0.013
S = 0.50 %
$Q_{(25)}$ = 5.15 CFS
A_{up} = 1.17 S.F.
A_{dn} = 1.17 S.F.
$D_{(up)}$ = 0.80'
$D_{(dn)}$ = 1.67'
$V_{(up)}$ = 4.40 FPS
$V_{(dn)}$ = 1.84 FPS
$VH_{(up)}$ = 0.30'
$VH_{(dn)}$ = 0.30'
$Q_{(5)}$ = 4.43 CFS
$V_{(up)}$ = 4.20 FPS
$V_{(dn)}$ = 1.67 FPS
$Q_{(100)}$= 5.73 CFS
$D_{(up)}$ = 0.84'
$D_{(dn)}$ = 1.79'
$V_{(up)}$ = 4.54 FPS
$V_{(dn)}$ = 1.94 FPS

1 ~ 24" R.C.P CLASS III
DRAIN A.2
STA. 1+22.55 to STA. END
HYDRAULIC CALCULATION
n = 0.013
S = 0.50 %
$Q_{(25)}$ = 5.15 CFS
A_{up} = 1.17 S.F.
A_{dn} = 1.17 S.F.
$D_{(up)}$ = 0.80'
$D_{(dn)}$ = 1.67'
$V_{(up)}$ = 4.40 FPS
$V_{(dn)}$ = 1.84 FPS
$VH_{(up)}$ = 0.30'
$VH_{(dn)}$ = 0.30'
$Q_{(5)}$ = 4.43 CFS
$V_{(up)}$ = 4.20 FPS
$V_{(dn)}$ = 1.67 FPS
$Q_{(100)}$= 5.73 CFS
$D_{(up)}$ = 0.84'
$D_{(dn)}$ = 1.79'
$V_{(up)}$ = 4.54FPS
$V_{(dn)}$ = 1.93 FPS

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

BID SET
NOT FOR
CONSTRUCTION

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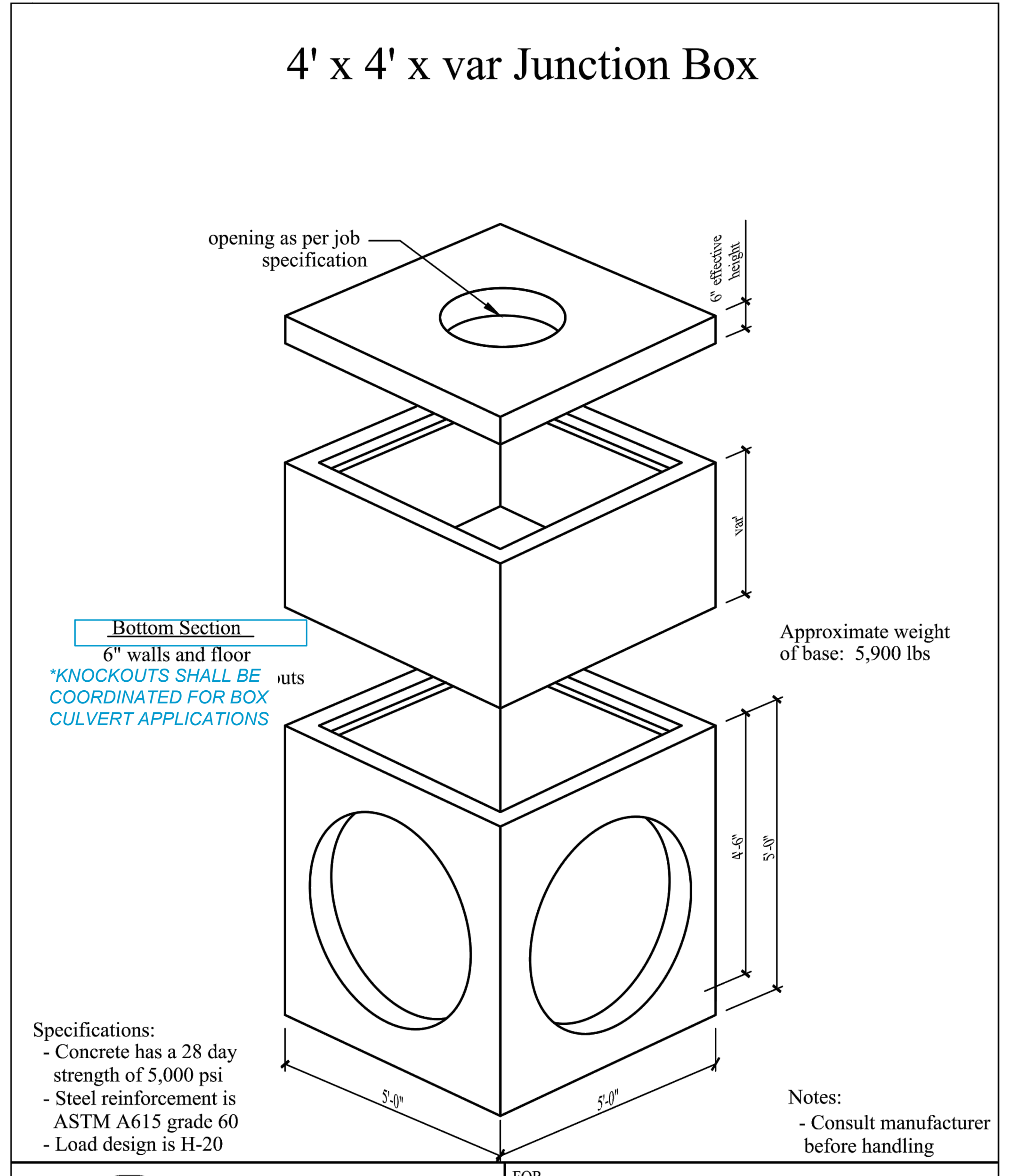
THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX
DRAIN A STA. 1+00.00 - END

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
4.0

Date: Mar 22, 2024, 11:50am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\Drains\DRAIN A.dwg

4' x 4' x var Junction Box

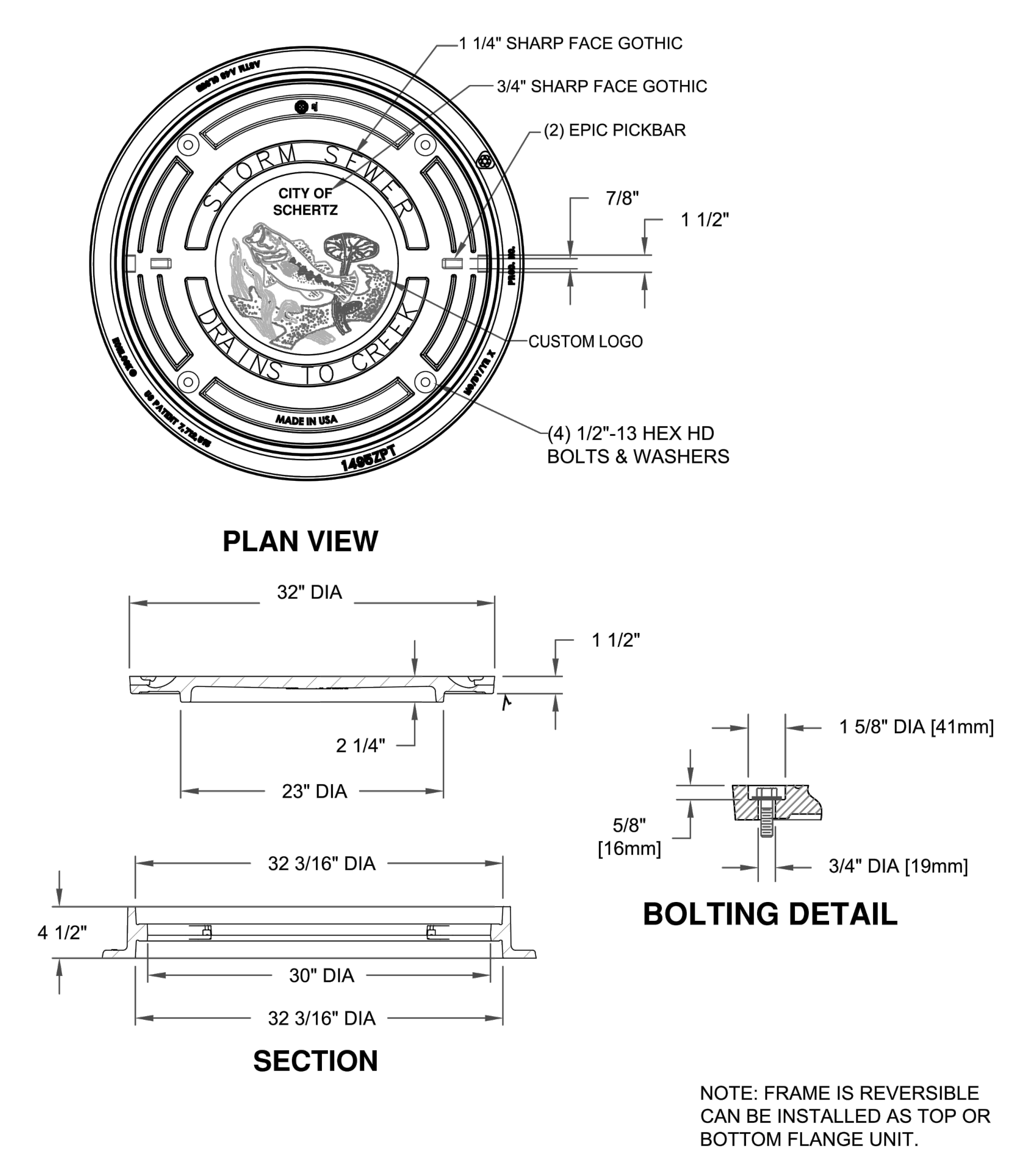

opening as per job specification
6" effective height
Bottom Section
6" walls and floor
*KNOCKOUTS SHALL BE COORDINATED FOR BOX CULVERT APPLICATIONS
Approximate weight of base: 5,900 lbs
4'-6"
5'-0"
5'-0"
5'-0"

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	4' x 4' x var Junction Box
JOB	
DRAWN RW	DATE 12/1/2015
Rev. No.	SHEET 1 OF 1
FILE	catalog/junction boxes/4x4JB



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

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

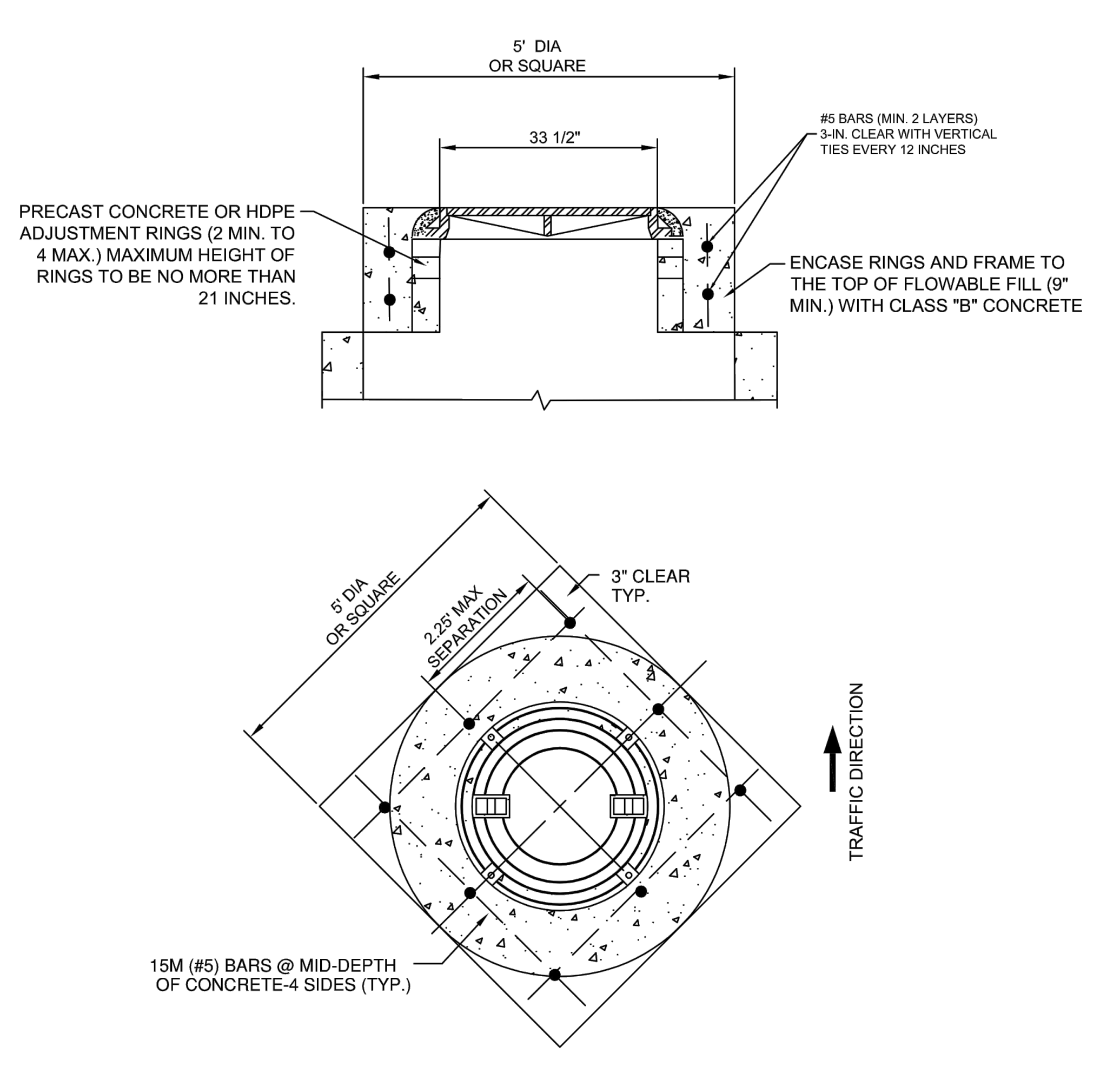
STORM SEWER MANHOLE RING & COVER

TECHNICAL SPECIFICATION SECTION 02084

ENGINEERING AND PUBLIC WORKS

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

L:\Engineer\Standard Details and Technical Specifications\Standard Details\2019\WW\STAND


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
5' DIA OR SQUARE
2.25' MAX SEPARATION
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

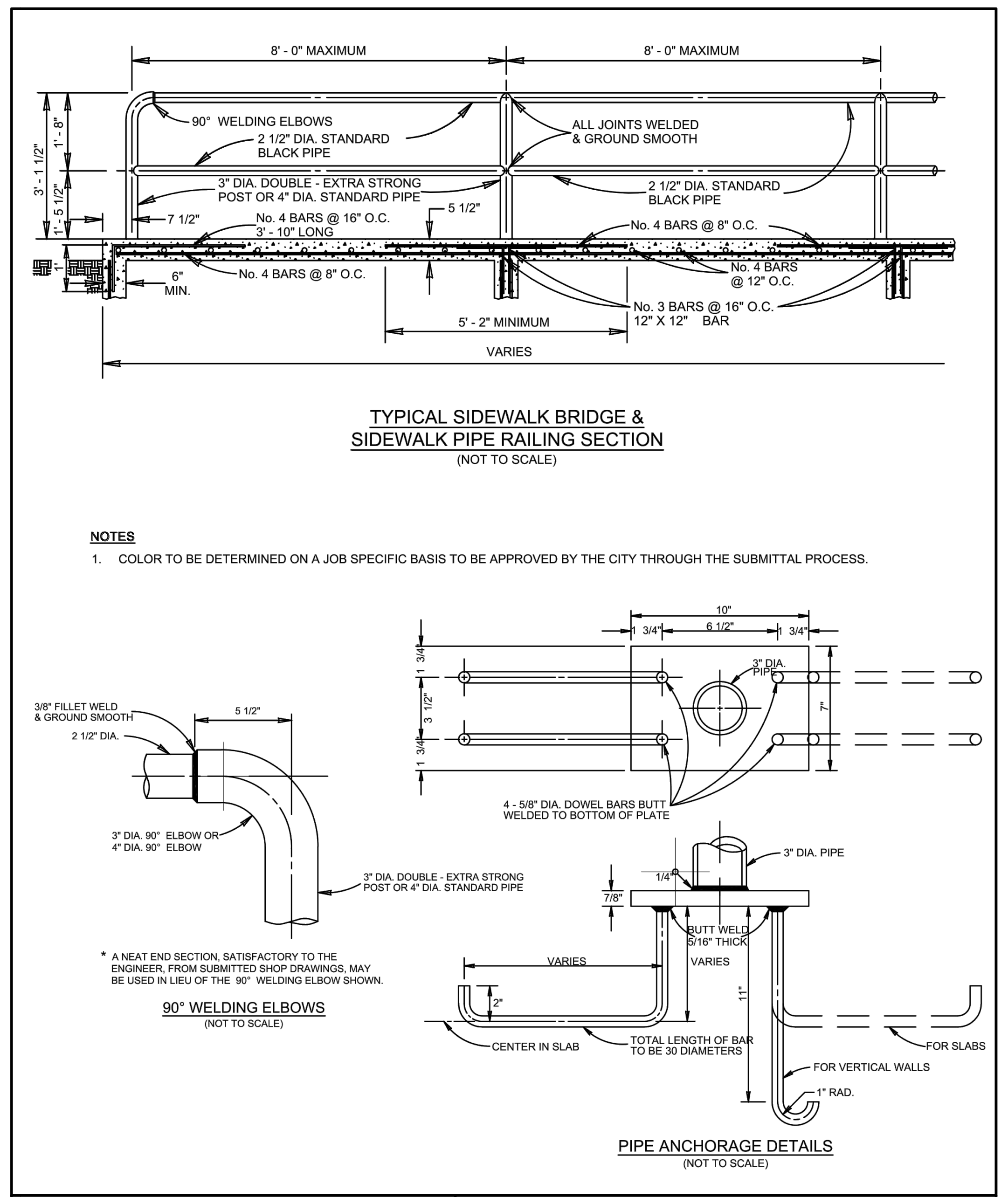
SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

STANDARD DETAIL 02081.2

MANHOLE RING ENCASEMENT
TECHNICAL SPECIFICATION SECTIONS 02081, 02082, & 02083

ENGINEERING AND PUBLIC WORKS

SCALE: N.T.S. DATE: 12/07/2022
DSGN. BY: ENG DRAWN BY: TGW SHEET NO.: 1 of 1


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
7 1/2"
No. 4 BARS @ 16" O.C.
3' - 10" LONG
5 1/2"
No. 4 BARS @ 8" O.C.
No. 4 BARS @ 12" O.C.
6" MIN.
No. 4 BARS @ 8" O.C.
5' - 2" MINIMUM
No. 3 BARS @ 16" O.C. 12" X 12" BAR
VARIES
TYPICAL SIDEWALK BRIDGE & SIDEWALK PIPE RAILING SECTION
(NOT TO SCALE)
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
* 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)
10"
1 3/4"
6 1/2"
1 3/4"
3" DIA. PIPE
7"
3 1/2"
4 - 5/8" DIA. DOWEL BARS BUTT WELDED TO BOTTOM OF PLATE
3" DIA. PIPE
BUTT WELD 5/16" THICK
VARIES
VARIES
CENTER IN SLAB
TOTAL LENGTH OF BAR TO BE 30 DIAMETERS
FOR SLABS
FOR VERTICAL WALLS
1" RAD.
PIPE ANCHORAGE DETAILS
(NOT TO SCALE)

NOTES

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

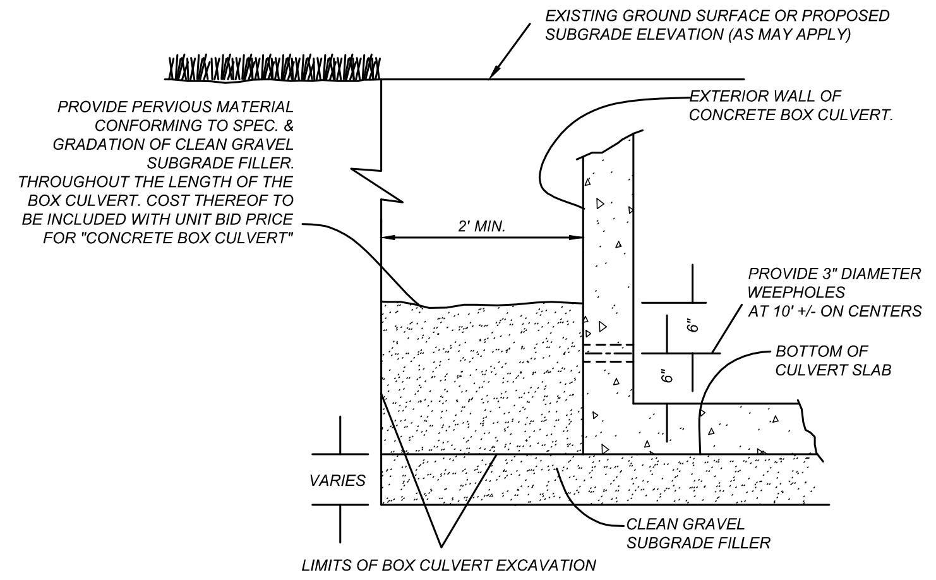
SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

PIPE RAILING

TECHNICAL SPECIFICATION SECTION 03200

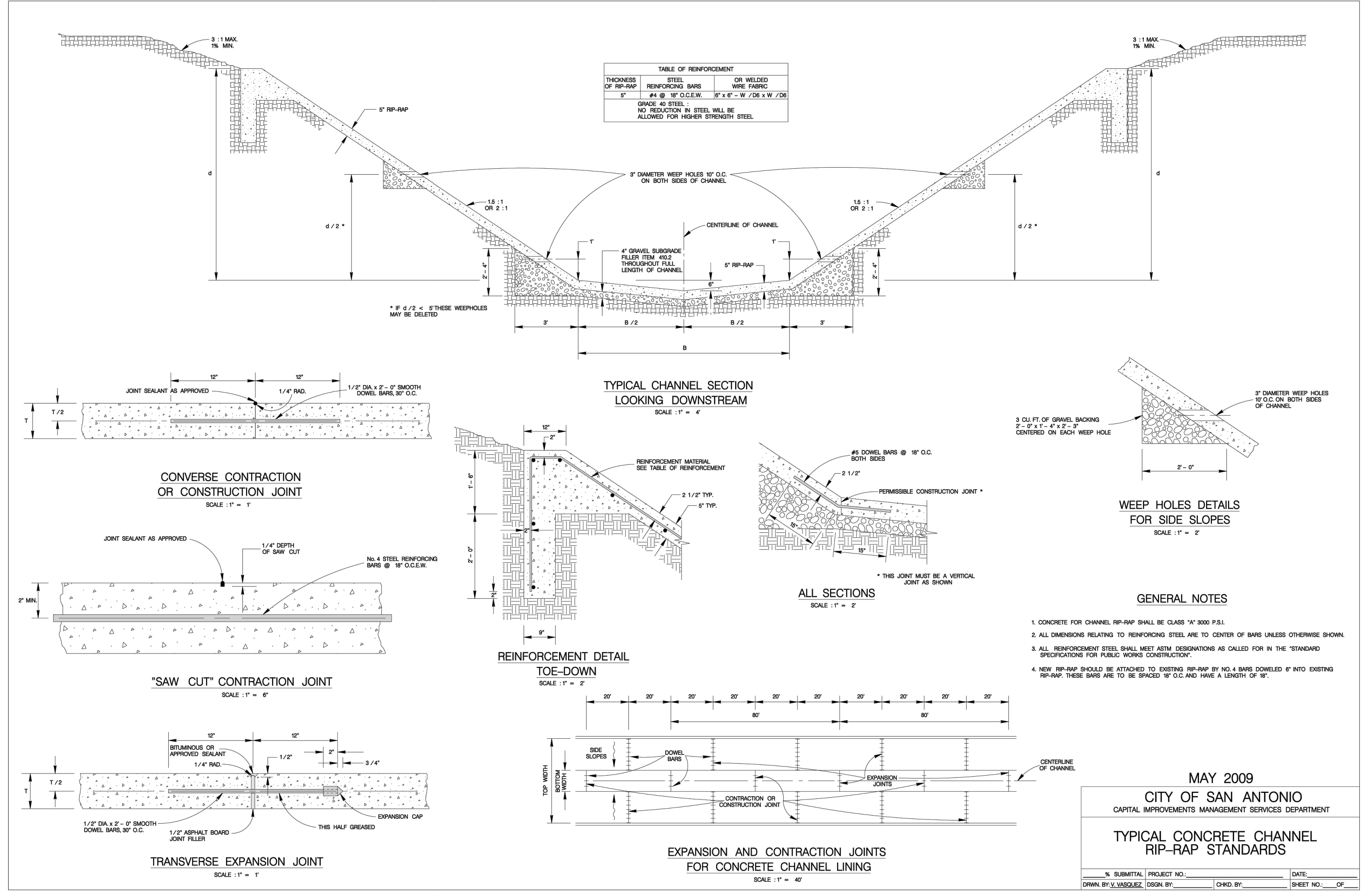
ENGINEERING AND PUBLIC WORKS

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


EXISTING GROUND SURFACE OR PROPOSED SUBGRADE ELEVATION (AS MAY APPLY)
PROVIDE PERVIOUS MATERIAL CONFORMING TO SPEC. & GRADATION OF CLEAN GRAVEL SUBGRADE FILLER. THROUGHOUT THE LENGTH OF THE BOX CULVERT. COST THEREOF TO BE INCLUDED WITH UNIT BID PRICE FOR "CONCRETE BOX CULVERT"
EXTERIOR WALL OF CONCRETE BOX CULVERT.
2' MIN.
PROVIDE 3" DIAMETER WEEPHOLES AT 10' +/- ON CENTERS
6"
6"
BOTTOM OF CULVERT SLAB
VARIES
CLEAN GRAVEL SUBGRADE FILLER
LIMITS OF BOX CULVERT EXCAVATION

BOX CULVERT BACKFILL

N.T.S.


3 : 1 MAX. 1% MIN.
TABLE OF REINFORCEMENT
THICKNESS OF RIP-RAP
STEEL REINFORCING BARS
5"
#4 @ 18" O.C.E.W.
GRADE 40 STEEL
TYPICAL CHANNEL SECTION LOOKING DOWNSTREAM
CONVERSE CONTRACTION OR CONSTRUCTION JOINT
"SAW CUT" CONTRACTION JOINT
TRANSVERSE EXPANSION JOINT
REINFORCEMENT DETAIL TOE-DOWN
ALL SECTIONS
EXPANSION AND CONTRACTION JOINTS FOR CONCRETE CHANNEL LINING
2" MIN.
T
T/2
20'
20'
CENTERLINE OF CHANNEL
2'-0"

WEEP HOLES DETAILS FOR SIDE SLOPES
SCALE : 1" = 2'

GENERAL NOTES

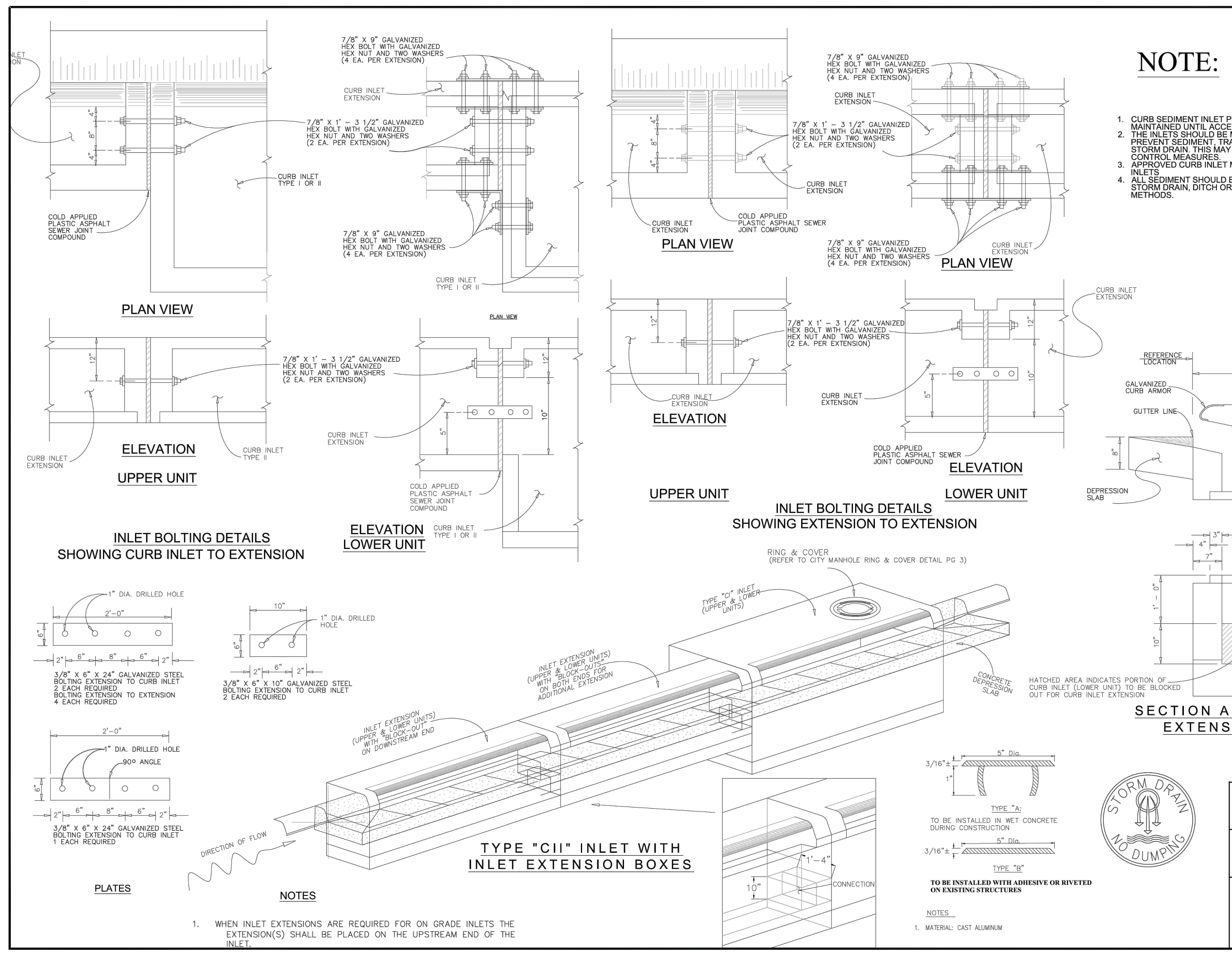
1. CONCRETE FOR CHANNEL RIP-RAP SHALL BE CLASS "A" 3000 P.S.I.
2. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS UNLESS OTHERWISE SHOWN.
3. ALL REINFORCEMENT STEEL SHALL MEET ASTM DESIGNATIONS AS CALLED FOR IN THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
4. NEW RIP-RAP 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____


PLAN VIEW
ELEVATION
UPPER UNIT
INLET BOLTING DETAILS SHOWING CURB INLET TO EXTENSION
ELEVATION LOWER UNIT
PLAN VIEW
ELEVATION
UPPER UNIT
INLET BOLTING DETAILS SHOWING EXTENSION TO EXTENSION
ELEVATION LOWER UNIT
CURB INLET EXTENSION
COLD APPLIED PLASTIC ASPHALT SEWER JOINT COMPOUND
7/8" X 6" GALVANIZED HEX BOLT WITH GALVANIZED HEX NUT AND TWO WASHERS (4 EA. PER EXTENSION)
3/8" X 6" X 24" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 2 EACH REQUIRED BOLTING EXTENSION TO EXTENSION 4 EACH REQUIRED
3/8" X 6" X 10" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 2 EACH REQUIRED
2'-0"
1" DIA. DRILLED HOLE
90° ANGLE
3/8" X 6" X 24" GALVANIZED STEEL BOLTING EXTENSION TO CURB INLET 1 EACH REQUIRED
PLATES
INLET EXTENSION (UPPER & LOWER UNITS) WITH "BLOCK-OUT" ON DOWNSTREAM END
INLET EXTENSION (UPPER & LOWER UNITS) WITH "BLOCK-OUTS" ON BOTH ENDS FOR ADDITIONAL EXTENSION
CONCRETE DEPRESSION SLAB
DIRECTION OF FLOW
TYPE "CII" INLET WITH INLET EXTENSION BOXES
CONNECTION
1'-4"
10"
HATCHED AREA INDICATES PORTION OF CURB INLET (LOWER UNIT) TO BE BLOCKED OUT FOR CURB INLET EXTENSION
SECTION A-A CURB INLET EXTENSION TYPE E
5" Dia.
3/16"±
1"
TYPE "A"
TO BE INSTALLED IN WET CONCRETE DURING CONSTRUCTION
TYPE "B"
TO BE INSTALLED WITH ADHESIVE OR RIVETED ON EXISTING STRUCTURES
STORM DRAIN NO DUMPING

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.

NOTES

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

NOTES

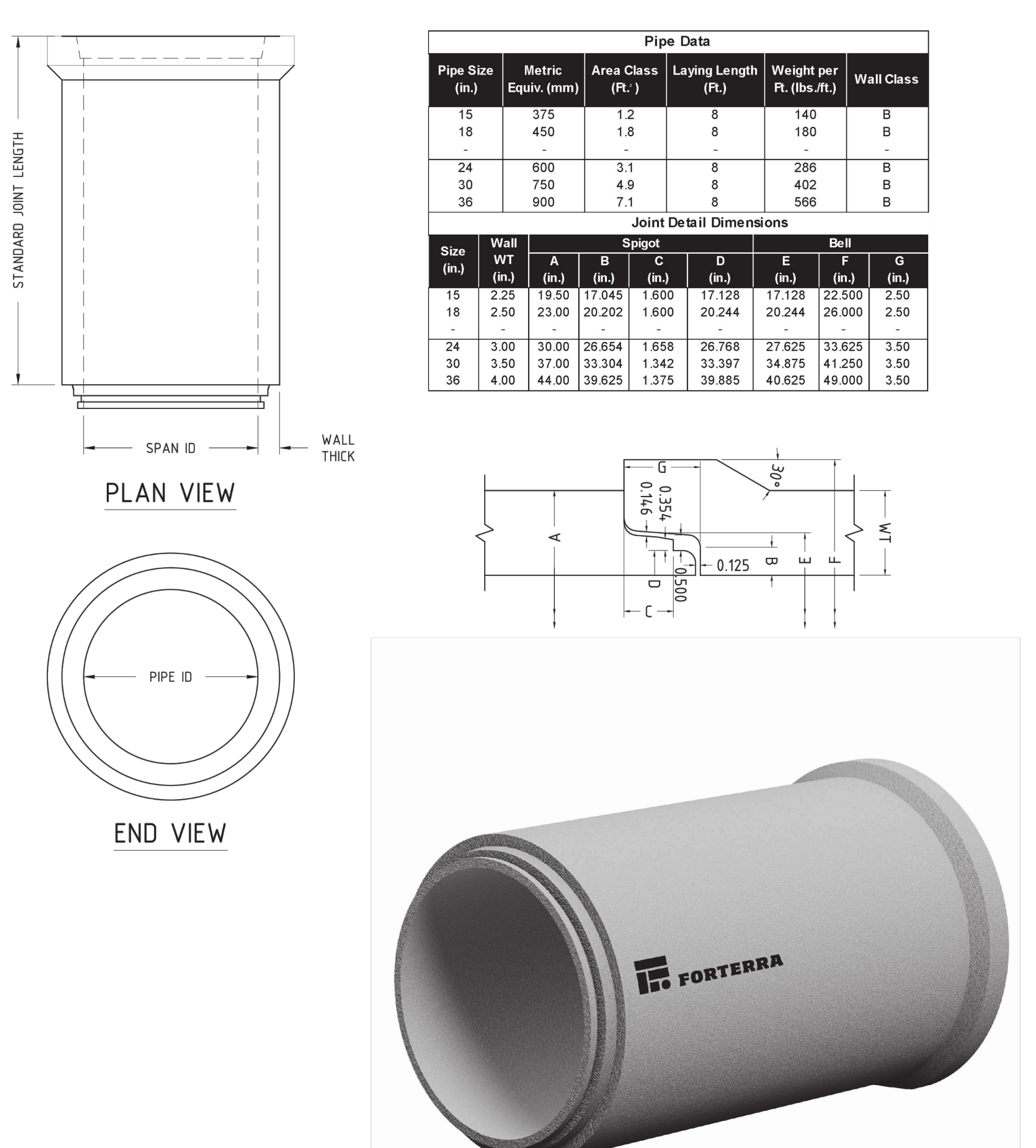
1. MATERIAL: CAST ALUMINUM

16-MAY-2019

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS

DRAINAGE INLET DETAIL
N.T.S.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY



Pipe Data					
Pipe Size (in.)	Metric Equiv. (mm)	Area Class (Ft.²)	Laying Length (Ft.)	Weight per Ft. (lbs./ft.)	Wall Class
15	375	1.2	8	140	B
18	450	1.8	8	180	B
-	-	-	-	-	-
24	600	3.1	8	286	B
30	750	4.9	8	402	B
36	900	7.1	8	566	B

Joint Detail Dimensions

Size (in.)	Wall WT (in.)	Spigot				Bell		
		A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)
15	2.25	19.50	17.045	1.600	17.128	17.128	22.500	2.50
18	2.50	23.00	20.202	1.600	20.244	20.244	26.000	2.50
-	-	-	-	-	-	-	-	-
24	3.00	30.00	26.654	1.658	26.768	27.625	33.625	3.50
30	3.50	37.00	33.304	1.342	33.397	34.875	41.250	3.50
36	4.00	44.00	39.625	1.375	39.885	40.625	49.000	3.50

NOTE:

-JOINT MATERIAL: RUBBER GASKET (ASTM C-443) PREFORMED FLEXIBLE MASTIC (FEDERAL SPEC. SS-S-210A) BITUMINOUS PLASTIC CEMENT
-ALL PIPE MANUFACTURED ACCORDING TO ASTM SPECIFICATION C-76 AND AASHTO M-170

FORTERRA

REGION, STATE		15" - 36" BELL AND SPIGOT ROUND PIPE
C & S MS		
DATE	SECT.PAGE	
2018	12.1.1	

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

BID SET
NOT FOR
CONSTRUCTION
THIS DOCUMENT IS RELEASED BY AUTHORITY OF DENIS A. AVENDANO P.E. #137588 FOR INTERIM REVIEW ONLY AND NOT TO BE USED FOR CONSTRUCTION.

THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

DRAIN DETAILS

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
4.1

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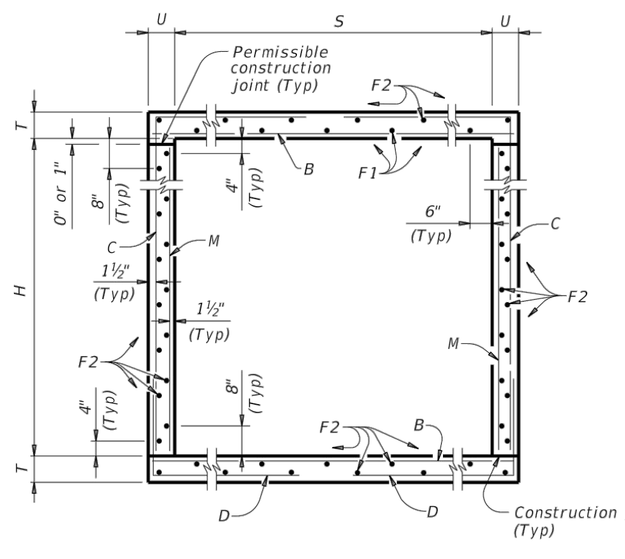
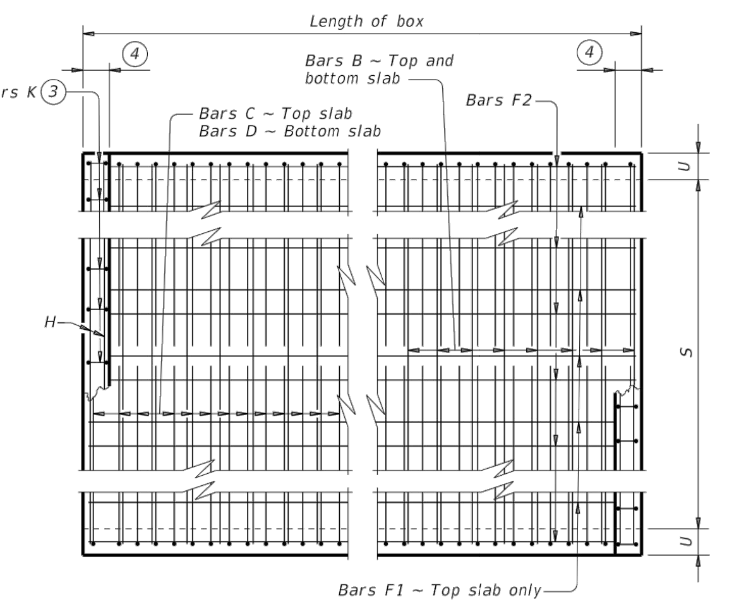
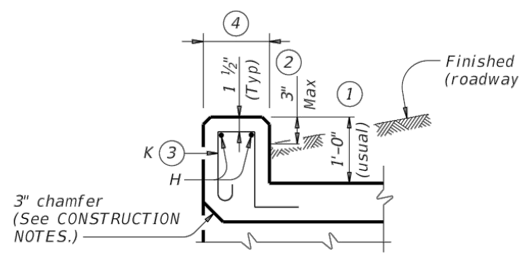


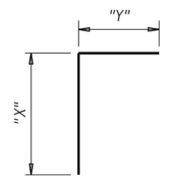
TYPICAL SECTION



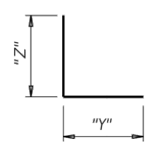
PLAN OF REINF STEEL


Finished grade (roadway slope)
3" chamfer (See CONSTRUCTION NOTES.)
K
H
Max
(Typ)

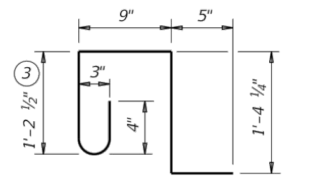
SECTION THRU CURB



BARS C



BARS D



BARS K (#4)
(Spa = 1'-0" Max)
(Length = 4'-2")

① 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

② For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct 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.

③ For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.

④ 1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.

The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR.
Required WWR = (0.44 sq. in. per 0.5 ft.) x (60 ksi / 70 ksi) = 0.755 sq. in. per ft.
If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86" Max spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same minimum lap length required for uncoated #5 bars, as listed under MATERIAL NOTES).

CONSTRUCTION NOTES:

Do not use permanent forms.

Chamfer the bottom edge of the top slab 3" at the entrance.

Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed.

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) for culvert barrel and curb, with the following exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of:
- culverts with overlay,
- culverts with 1-to-2 course surface treatment, or
- culverts with the top slab as the final riding surface.

Provide bar laps, where required, as follows:
- Uncoated or galvanized ~ #4 = 1'-8" Min
- Uncoated or galvanized ~ #5 = 2'-1" Min

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.

See the Single Box Culverts Cast-In-Place Miscellaneous Detail (SCC-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation
Bridge Division Standard

SINGLE BOX CULVERTS
CAST-IN-PLACE
0' TO 30' FILL

SCC-3 & 4

FILE: CD-SCC34-21.dgn	DN: TBE	CK: BMP	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS 04/2021 Updated X values.	DIST	COUNTY		SHEET NO.

DATE:
FILE:

TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

Dimensions					Variable Reinforcing				Estimated Quantities ③ per ft of wing length (2~wings)	
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1		Bars J2			
					Size	Spa	Size	Spa	Reinf Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING
(2~wings)

Bar	Size	No.	Spa
D	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
M	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-6"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:

(All values are in feet.)

Hw = H + T + C - 0.250'
Lw = (Hw - 0.333') (SL)

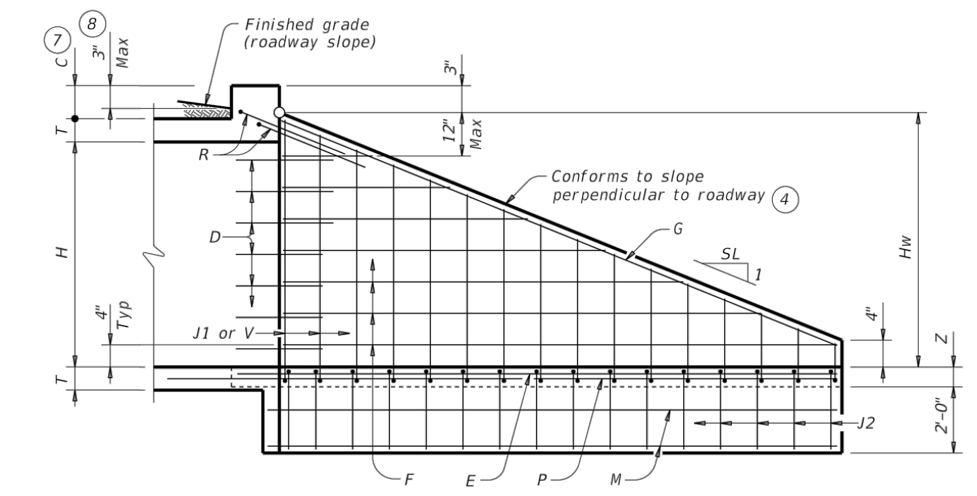
For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)

For precast culverts:
Ltw = (N) (2U + S) + (N - 1) (0.5')

Total Wingwall Area (two wings ~ SF) = (Hw + 0.333') (Lw)

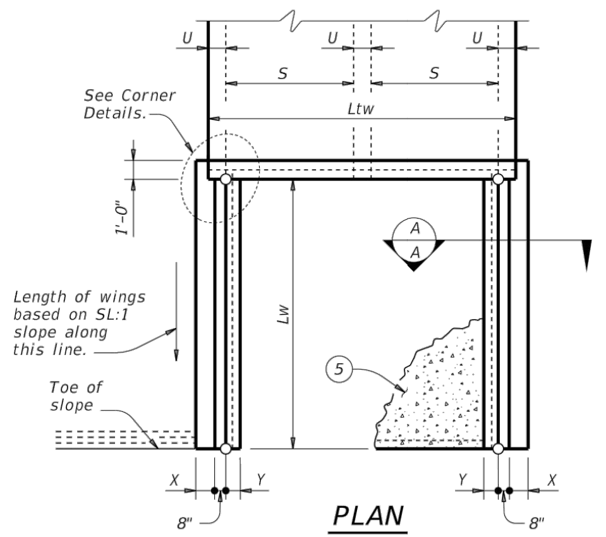
Hw = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

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


⑦
⑧
C
3"
Max
Finished grade (roadway slope)
3"
12" Max
Conforms to slope perpendicular to roadway ④
R
T
H
D
G
SL
1
J1 or V
Hw
Z
J2
F
E
P
H

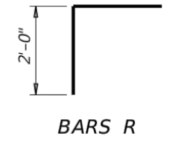
INSIDE ELEVATION

(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)

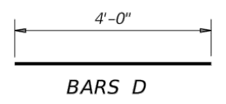


PLAN

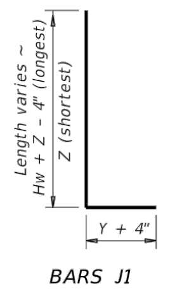
(Showing dimensions.)



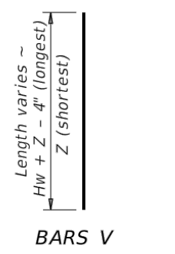
BARS R



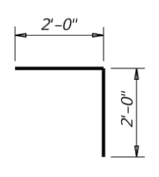
BARS D



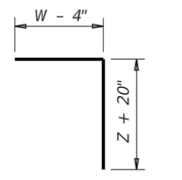
BARS J1



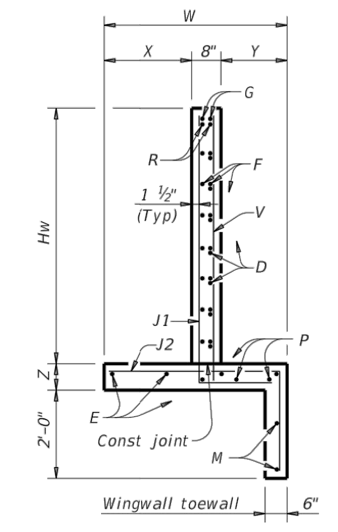
BARS V



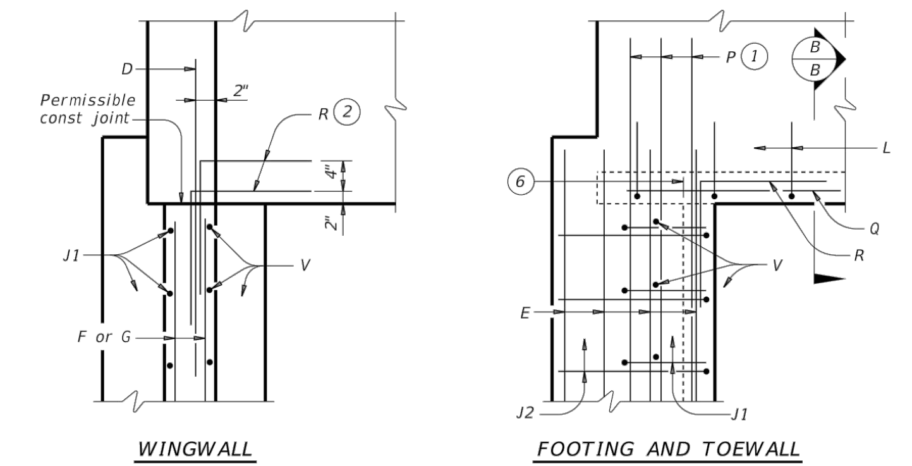
BARS L



BARS J2



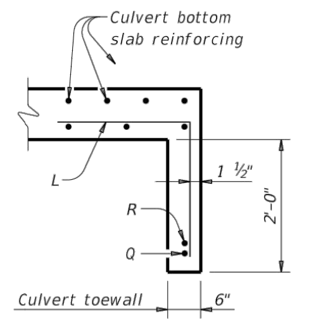
SECTION A-A



WINGWALL

FOOTING AND TOEWALL

CORNER DETAILS



SECTION B-B ⑤

① Extend Bars P 3'-0" minimum into bottom slab of box culvert.

② Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.

③ Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.

④ Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.

⑤ When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap." Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.

⑥ At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.

⑦ 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

⑧ For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct 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.

MATERIAL NOTES:

Provide Class C concrete (f'c=3,600 psi).

Provide Grade 60 reinforcing steel.

Provide galvanized reinforcing steel if required elsewhere in the plans.

In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.

See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.

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

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation
Bridge Division Standard

CONCRETE WINGWALLS
WITH STRAIGHT WINGS FOR
0° SKEW BOX CULVERTS

SW-0

FILE: CD-SW0-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

DATE:
FILE:

BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

SECTION DIMENSIONS				FILL HEIGHT ⑤	Bars B					Bars C						
S	H	T	U		No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	" X "	" Y "
3' - 0"	2' - 0"	8"	7"	30'	108	#5	9"	3' - 11"	441	108	#4	9"	5' - 4"	385	2' - 6"	2' - 10"
3' - 0"	3' - 0"	8"	7"	30'	108	#5	9"	3' - 11"	441	108	#4	9"	6' - 4"	457	3' - 6"	2' - 10"
4' - 0"	2' - 0"	8"	7"	30'	108	#5	9"	4' - 11"	554	162	#4	6"	5' - 8"	613	2' - 6"	3' - 2"
4' - 0"	3' - 0"	8"	7"	30'	108	#5	9"	4' - 11"	554	162	#4	6"	6' - 8"	721	3' - 6"	3' - 2"
4' - 0"	4' - 0"	8"	7"	30'	108	#5	9"	4' - 11"	554	162	#4	6"	7' - 8"	830	4' - 6"	3' - 2"

S	H	Bars D							Bars M ~ #4				Bars F1 ~ #4 at 18" Spa			Bars F2 ~ #4 at 18" Spa			Bars H 4 ~ #4		Bars K	
		No.	Size	Spa	Length	Weight	" Y "	" Z "	No.	Spa	Length	Weight	No.	Length	Wt	No.	Length	Weight	Length	Wt	No.	Wt
3' - 0"	2' - 0"	108	#4	9"	5' - 1"	367	2' - 10"	2' - 3"	108	9"	2' - 0"	144	3	39' - 9"	80	19	39' - 9"	505	3' - 11"	10	10	28
3' - 0"	3' - 0"	108	#4	9"	5' - 1"	367	2' - 10"	2' - 3"	108	9"	3' - 0"	216	3	39' - 9"	80	23	39' - 9"	611	3' - 11"	10	10	28
4' - 0"	2' - 0"	162	#4	6"	5' - 5"	586	3' - 2"	2' - 3"	108	9"	2' - 0"	144	3	39' - 9"	80	21	39' - 9"	558	4' - 11"	13	12	33
4' - 0"	3' - 0"	162	#4	6"	5' - 5"	586	3' - 2"	2' - 3"	108	9"	3' - 0"	216	3	39' - 9"	80	25	39' - 9"	664	4' - 11"	13	12	33
4' - 0"	4' - 0"	162	#4	6"	5' - 5"	586	3' - 2"	2' - 3"	108	9"	4' - 0"	289	3	39' - 9"	80	25	39' - 9"	664	4' - 11"	13	12	33

S	H	QUANTITIES					
		Per Foot of Barrel		Curb		Total	
		Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
3' - 0"	2' - 0"	0.292	48.1	0.3	38	12.0	1,960
3' - 0"	3' - 0"	0.335	54.3	0.3	38	13.7	2,210
4' - 0"	2' - 0"	0.342	63.4	0.4	46	14.1	2,581
4' - 0"	3' - 0"	0.385	70.5	0.4	46	15.8	2,867
4' - 0"	4' - 0"	0.428	75.1	0.4	46	17.5	3,049

⑤ For direct traffic culverts (fill height ≤ 2 ft.), identify the required box size and select the option with the minimum fill height.

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation
Bridge Division Standard

SINGLE BOX CULVERTS
CAST-IN-PLACE
0' TO 30' FILL

SCC-3 & 4

FILE: CD-SCC34-21.dgn	DN: TBE	CK: BMP	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS 04/2021 Updated X values.	DIST	COUNTY		SHEET NO.

DATE:
FILE:

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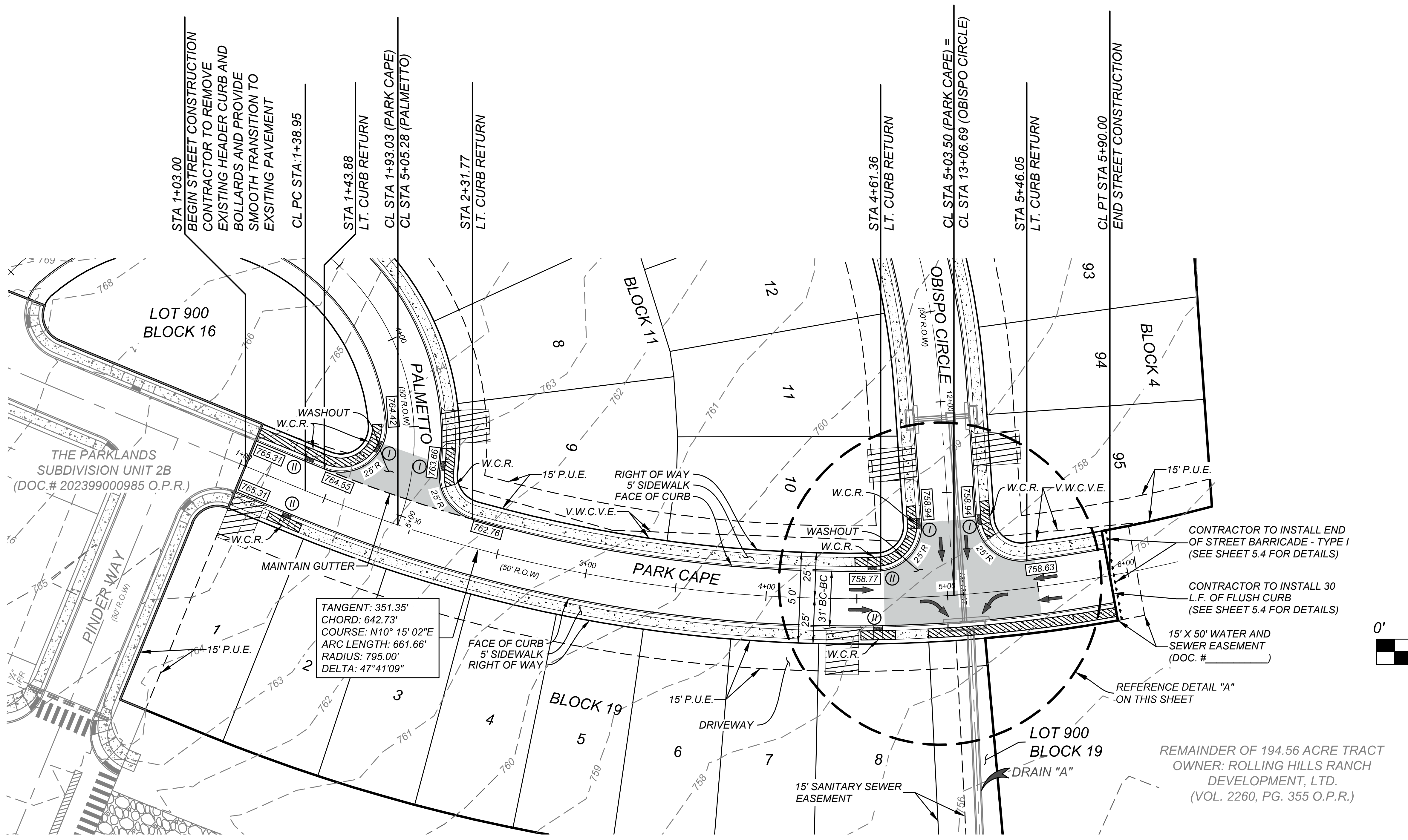
DRAIN DETAILS

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
4.2

Date: Mar 22, 2024, 12:52pm User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\Drains\4.1 DRAIN DETAILS.dwg

POINT #	NORTHERN	EASTING	PAVEMENT ELEV.
1	13782358.57	2225844.40	758.16
2	13782355.82	2225859.15	758.46
3	13782353.07	2225873.89	757.98
4	13782377.81	2225847.74	758.01
5	13782375.42	2225862.55	757.82
6	13782373.04	2225877.36	757.58
7	13782392.36	2225849.94	757.90
8	13782390.25	2225864.79	757.60
9	13782388.15	2225879.65	757.30
10	13782405.37	2225851.67	757.80
11	13782403.52	2225866.56	757.50
12	13782401.67	2225881.44	757.20
13	13782421.57	2225853.51	757.92
14	13782420.03	2225868.44	757.62
15	13782418.49	2225883.36	757.32
16	13782441.11	2225855.28	758.07
17	13782439.95	2225870.24	758.37
18	13782438.78	2225885.19	757.77



TRENCH EXCAVATION SAFETY PROTECTION

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NOTE:

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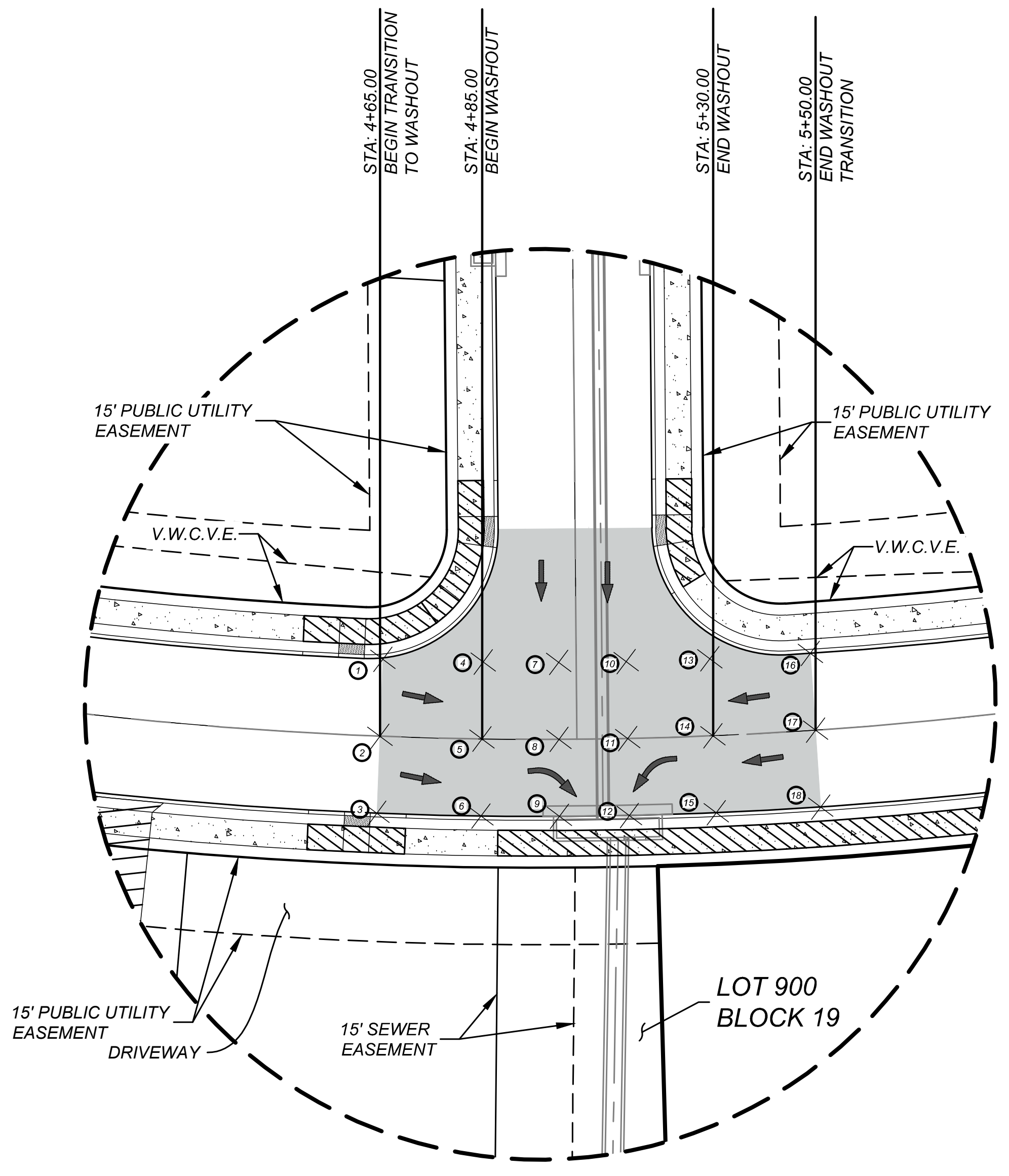
SCALE : 1"=50'
0' 50' 100' 150'

LEGEND

→ = FLOW ARROW
W.C.R. = WHEELCHAIR RAMPS, SEE SHEET 5.5
Ⓘ = WHEELCHAIR RAMP TYPE I SEE SHEET 5.5
Ⓘⓘ = WHEELCHAIR RAMP TYPE II SEE SHEET 5.5
░ = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
732.87 = TOP OF CURB ELEVATIONS
▒ = WASHOUT CROWN
⌖ 688.24 = PROPOSED CONCRETE GUTTER & PAVEMENT ELEVATION WITHIN WASHOUT AREA
▨ = DEVELOPER INSTALLED SIDEWALK



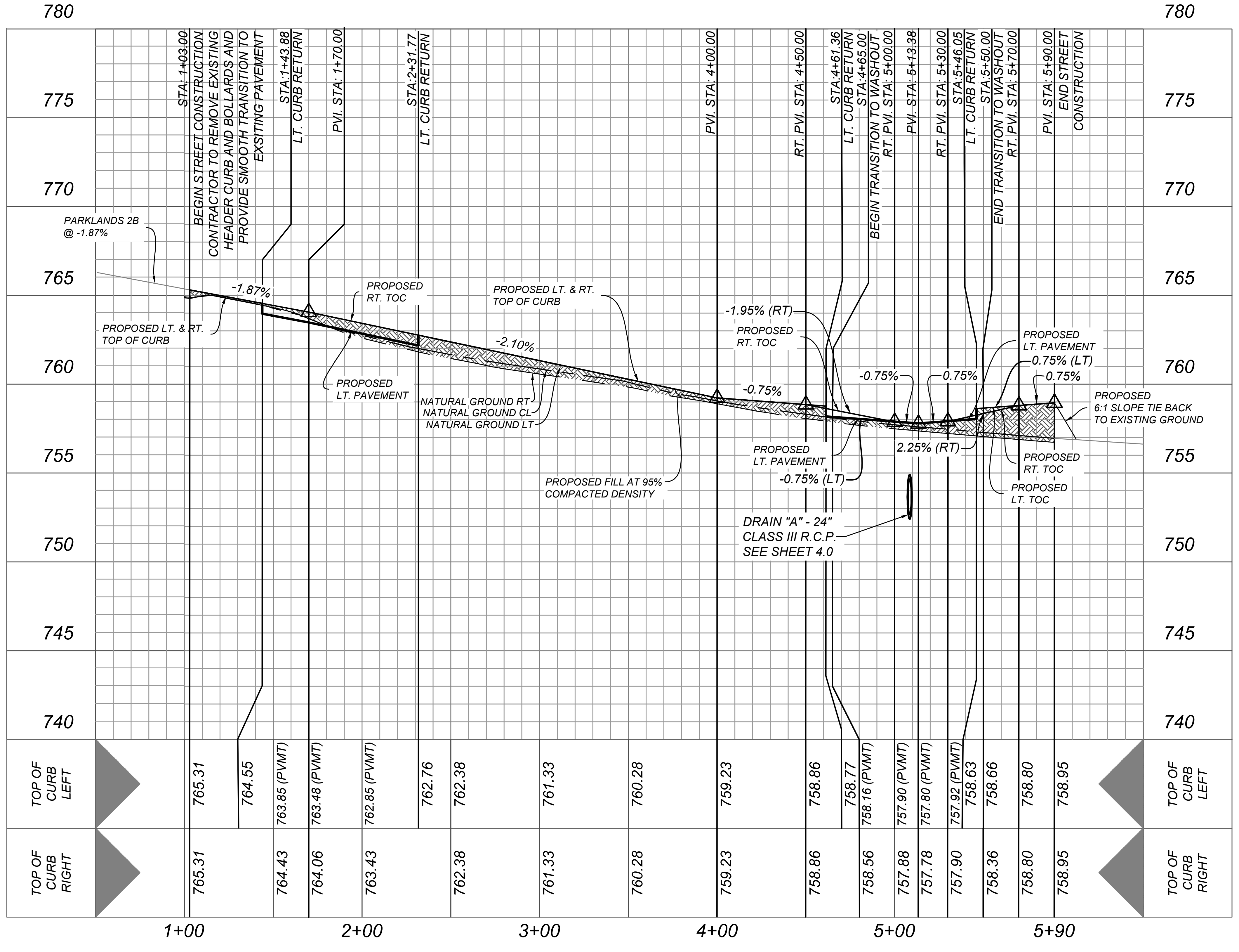
DETAIL "A"
SCALE : 1"=30'

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.

PARK CAPE
STA. 1+00.00 - END

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



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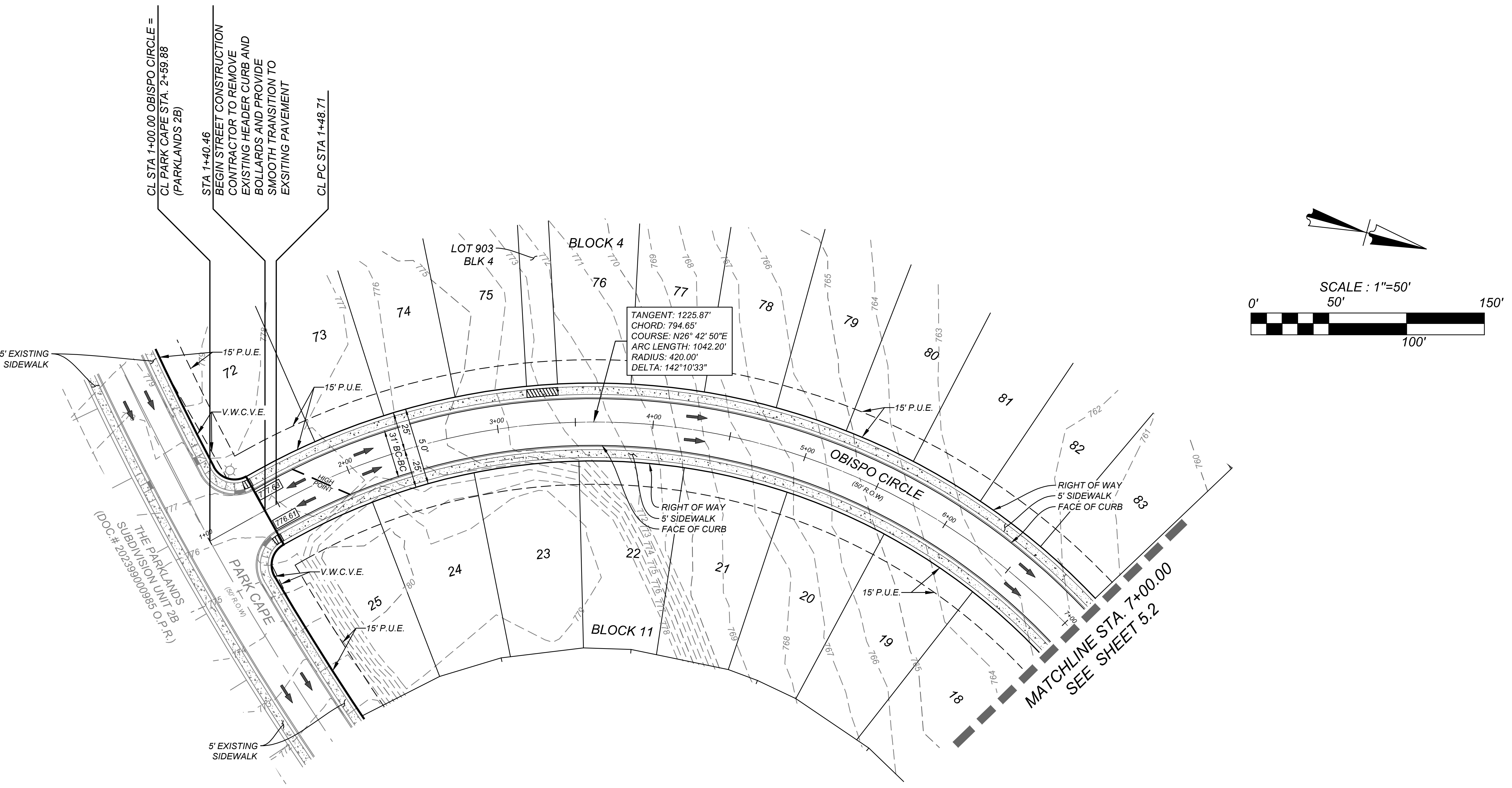
PARK CAPE STA. 1+00.00 - END

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
5.0

Date: Apr 03, 2024, 10:30am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\STREETS\PARK CAPE STA. 1+00.00 – END.dwg



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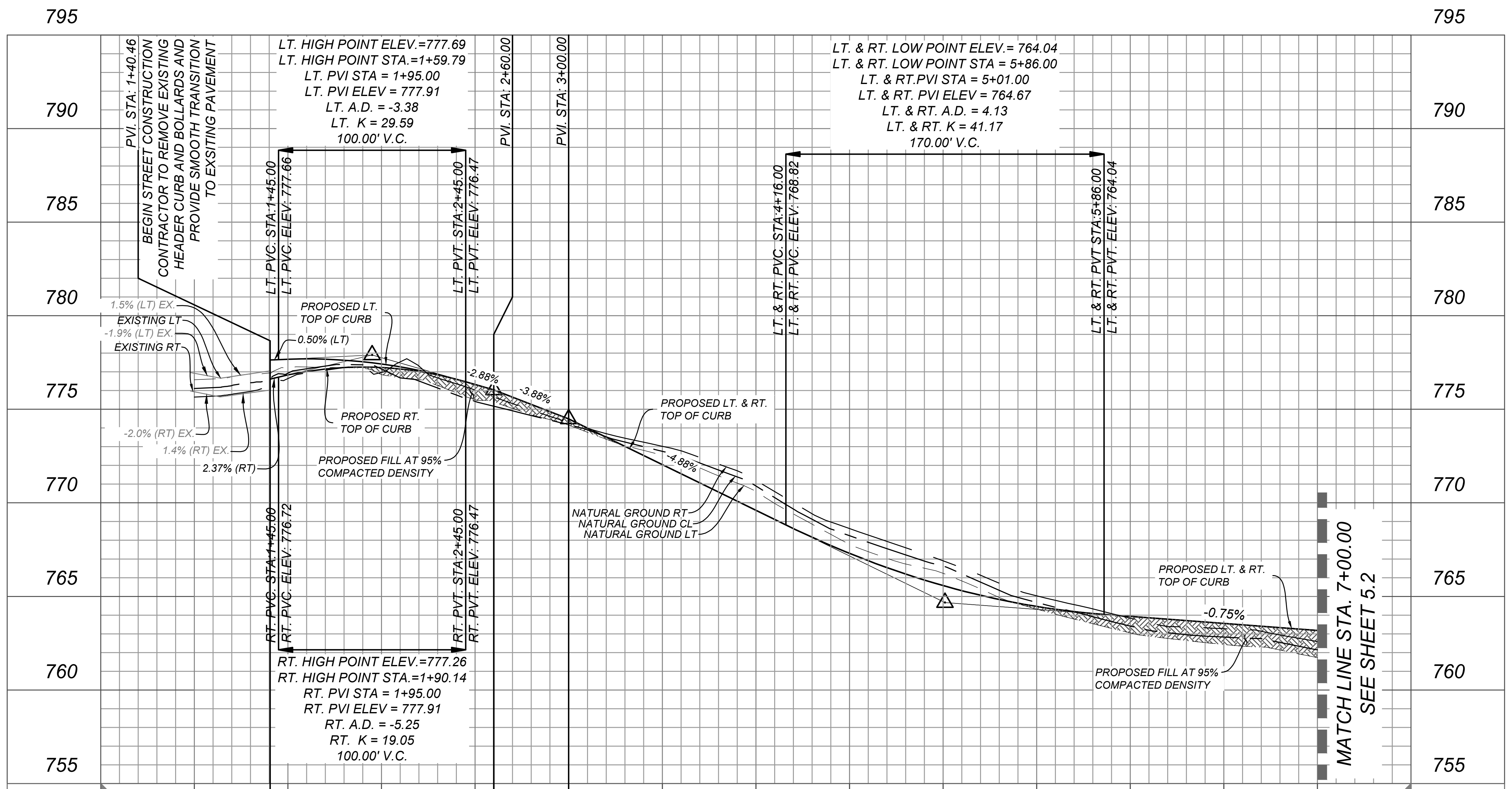
LEGEND

→	=	FLOW ARROW
W.C.R.	=	WHEELCHAIR RAMPS, SEE SHEET 5.5
(I)	=	WHEELCHAIR RAMP TYPE I SEE SHEET 5.5
(II)	=	WHEELCHAIR RAMP TYPE II SEE SHEET 5.5
▭	=	SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
732.87	=	TOP OF CURB ELEVATIONS
▩	=	WASHOUT CROWN
⌖ 688.24	=	PROPOSED CONCRETE GUTTER & PAVEMENT ELEVATION WITHIN WASHOUT AREA
▨	=	DEVELOPER INSTALLED SIDEWALK

OBISPO CIRCLE
STA. 1+00.00 - 7+00.00

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



TOP OF CURB LEFT	777.63	777.68	777.42	776.32	776.03	774.48	772.04	769.60	767.30	765.58	764.46	763.93	763.56	763.18	TOP OF CURB LEFT
TOP OF CURB RIGHT	776.61	776.83	777.23	776.32	776.03	774.48	772.04	769.60	767.30	765.58	764.46	763.93	763.56	763.18	TOP OF CURB RIGHT

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

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OBISPO CIRCLE STA. 1+00.00 - 7+00.00

JOB NO. 171-23-07
DATE: JUNE 2023
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SHEET NUMBER:
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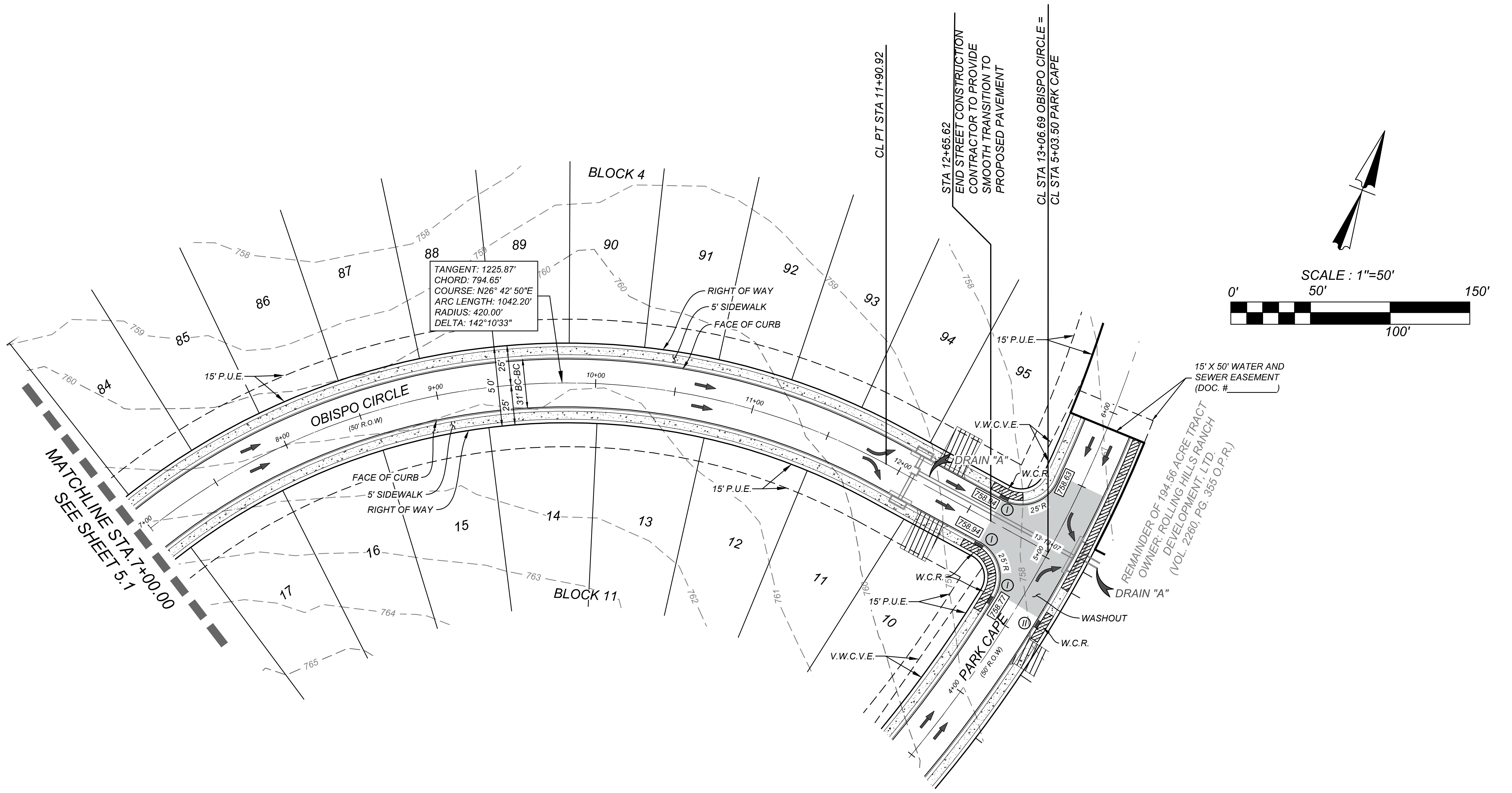

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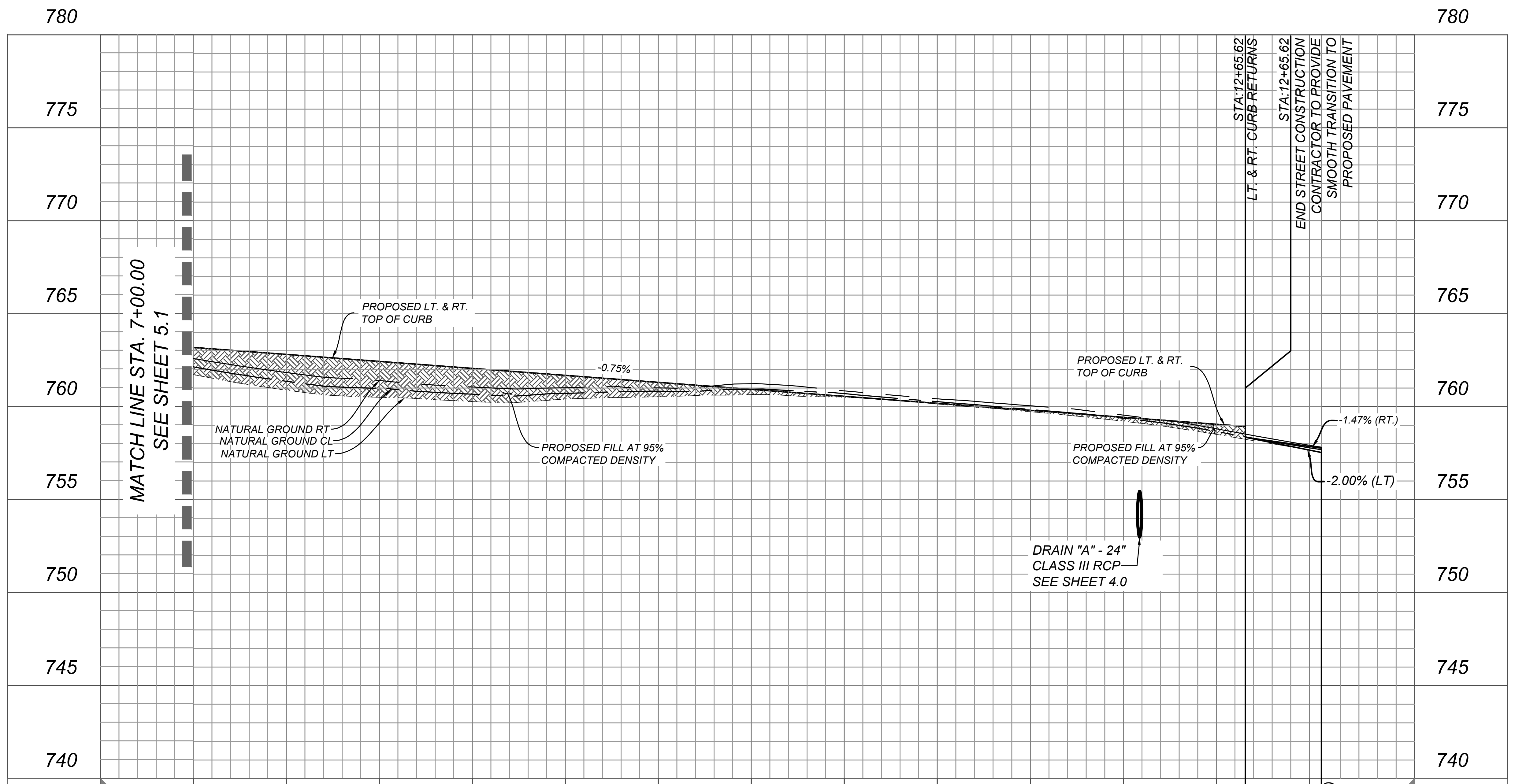
▩ = WASHOUT CROWN
⌖ 688.24 = PROPOSED CONCRETE GUTTER & PAVEMENT ELEVATION WITHIN WASHOUT AREA
▨ = DEVELOPER INSTALLED SIDEWALK

OBISPO CIRCLE
STA. 7+00.00 - END

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



TOP OF CURB LEFT	763.18	762.81	762.43	762.06	761.68	761.31	760.93	760.56	760.18	759.81	759.43	759.06	758.94	757.77 (PVMT)
TOP OF CURB RIGHT	763.18	762.81	762.43	762.06	761.68	761.31	760.93	760.56	760.18	759.81	759.43	759.06	758.94	757.54 (PVMT)
	7+00		8+00		9+00		10+00		11+00		12+00			13+06.69

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OBISPO CIRCLE STA. 7+00.00 - END

JOB NO. 171-23-07
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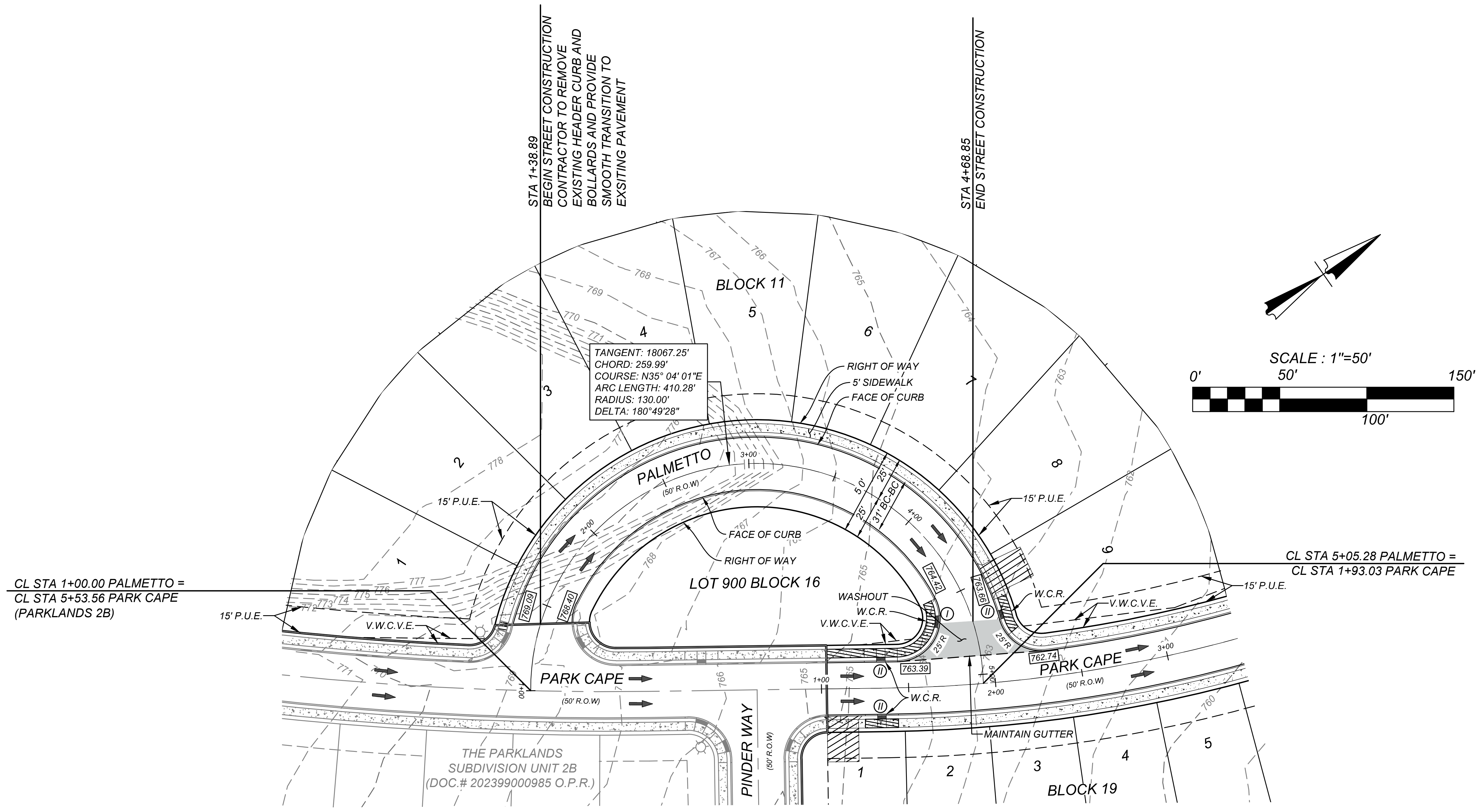
File: U:\Projects\171\23\07\Design\Civil\STREETS\OBISPO CIRCLE STA. 7+00.00 – END.dwg



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PALMETTO
STA. 1+00.00 - END

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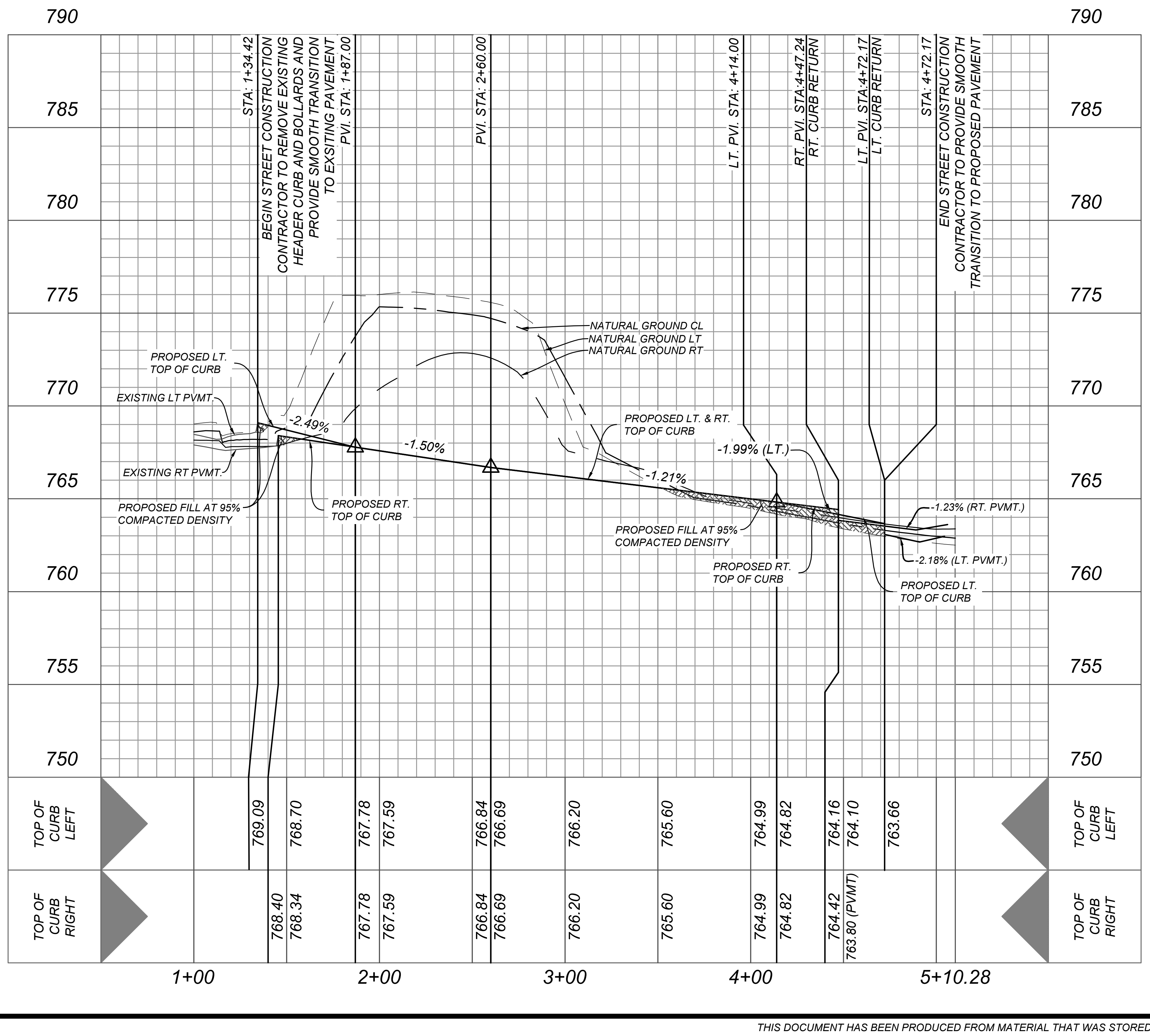

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JOB NO. 171-23-07
DATE: JUNE 2023
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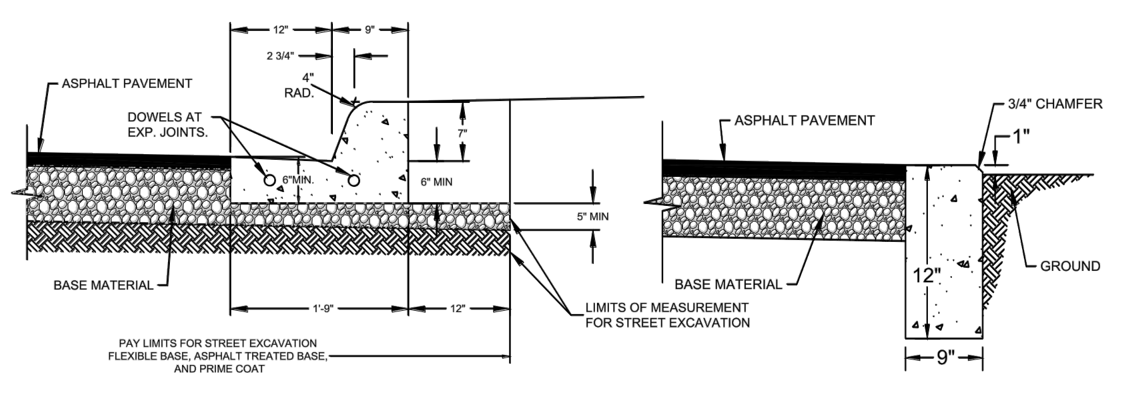
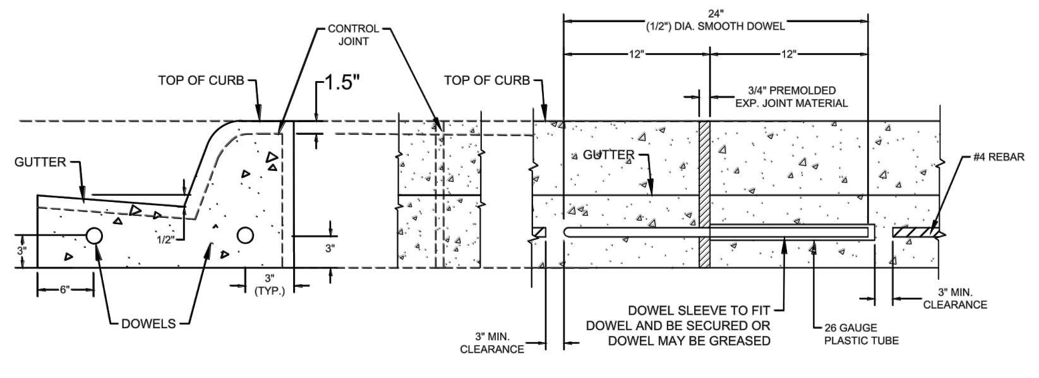
5.3

Date: Apr 03, 2024, 10:32am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\STREETS\PALMETTO STA. 1+00.00 – END.dwg


ASPHALT PAVEMENT
DOWELS AT EXP. JOINTS
BASE MATERIAL
PAY LIMITS FOR STREET EXCAVATION FLEXIBLE BASE, ASPHALT TREATED BASE, AND PRIME COAT
ASPHALT PAVEMENT
3/4" CHAMFER
1"
BASE MATERIAL
LIMITS OF MEASUREMENT FOR STREET EXCAVATION
12"
GROUND
9"

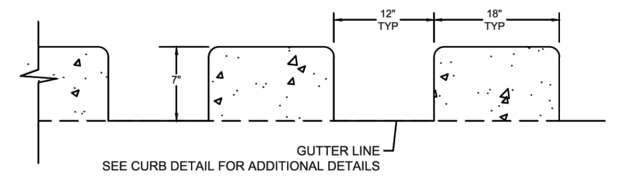
SPILL CURB
(NOT TO SCALE)

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.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

CURB & GUTTER DETAIL
TECHNICAL SPECIFICATION SECTION 02771
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S.
DSGN. BY: ENG.
DRAWN BY: BCP
DATE: 10/23/19
SHEET NO.: 1

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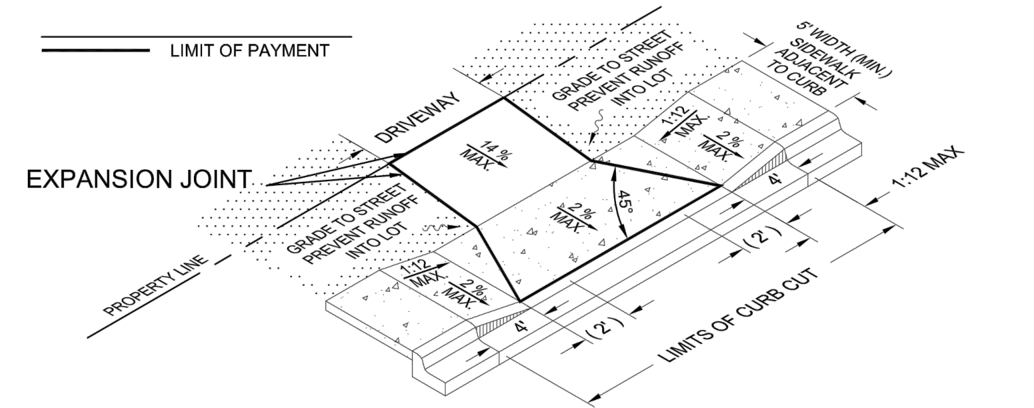
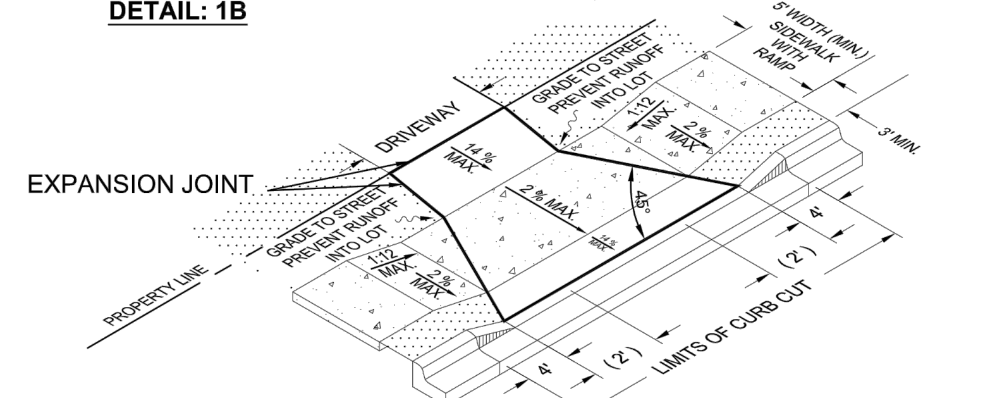
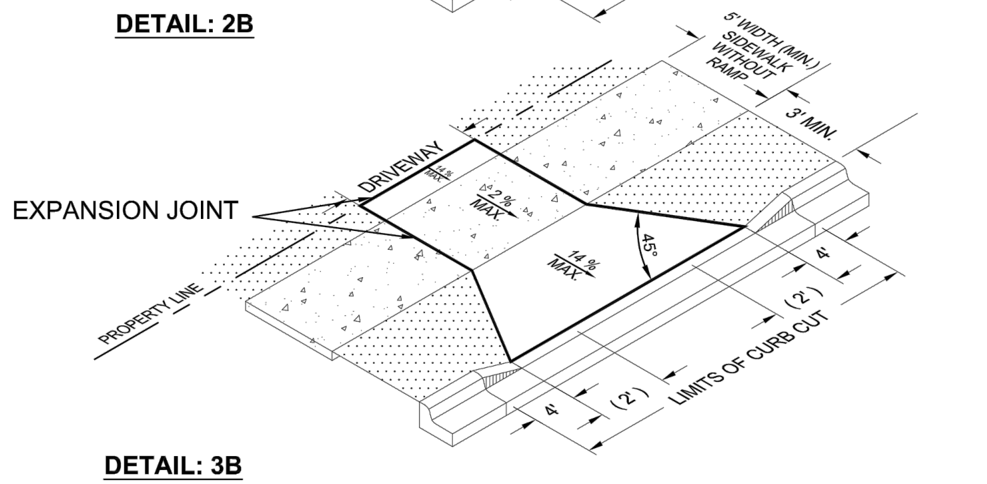


DETAIL: 1B


EXPANSION JOINT
PROPERTY LINE
DRIVEWAY
GRADE TO STREET PREVENT RUNOFF INTO LOT
5' WIDTH (MIN.) SIDEWALK WITH RAMP
3' MIN.
4'
(2')
LIMITS OF CURB CUT

DETAIL: 2B



DETAIL: 3B

SEE STANDARD DETAIL 2754.2 FOR ADDITIONAL INFORMATION

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

STANDARD DETAIL 2754.1
CONCRETE DRIVEWAY ENTRANCE
TECHNICAL SPECIFICATION SECTIONS 02754
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S.
DSGN. BY: ENG
DRAWN BY: JRS
DATE: 12/14/2022
SHEET NO.: 1 of 2

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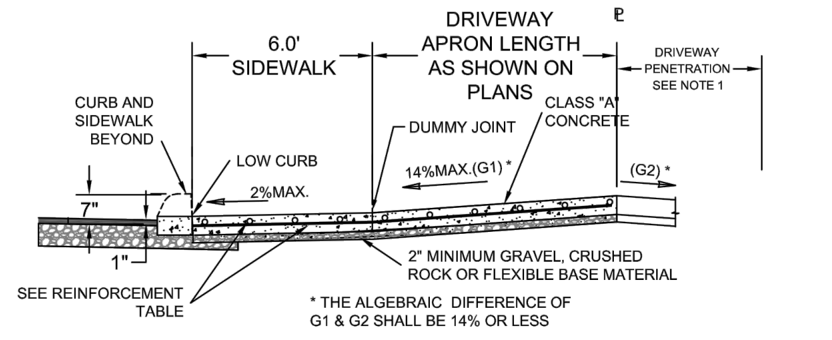
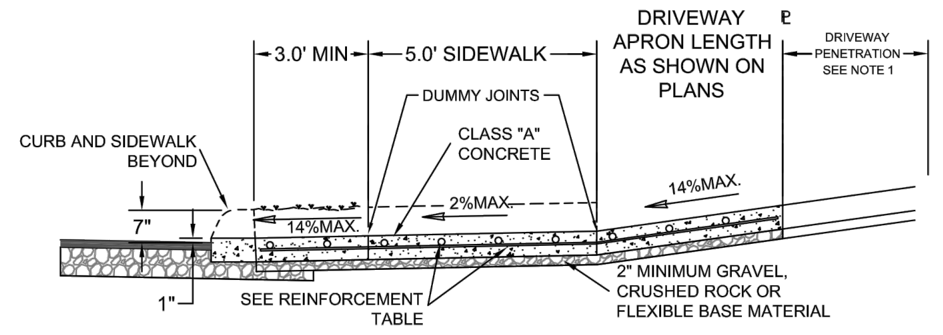

6.0' SIDEWALK
DRIVEWAY APRON LENGTH AS SHOWN ON PLANS
℄
DRIVEWAY PENETRATION SEE NOTE 1
CURB AND SIDEWALK BEYOND
CLASS "A" CONCRETE
DUMMY JOINT
LOW CURB
2%MAX.
14%MAX.(G1)
(G2)
7"
1"
SEE REINFORCEMENT TABLE
2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL
* THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL 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
DUMMY JOINTS
CLASS "A" CONCRETE
CURB AND SIDEWALK BEYOND
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) MIN.	WIDTHS (MEASURED AT PROPERTY LINE) MAX.	MINIMUM CONCRETE THICKNESS	REINFORCEMENT	DRIVEWAY BASE
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

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. CURB SHALL BE TAPERED TO FINISH FLUSH WITH SIDEWALK.
3. 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.
4. THE MINIMUM DRIVEWAY RADII IS 20 FEET FOR RESIDENTIAL DRIVEWAYS AND 30 FEET FOR COMMERCIAL DRIVEWAYS.
5. ALL PAVEMENTS ADJACENT TO DRIVEWAY CONSTRUCTION SHALL BE REPLACED OR RETURNED TO A CONDITION EQUAL TO THAT BEFORE THE WORK BEGAN. ANY DAMAGES INCURRED WILL BE AT THE CONTRACTOR'S EXPENSE.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

STANDARD DETAIL 2754.2
CONCRETE DRIVEWAY ENTRANCE
TECHNICAL SPECIFICATION SECTIONS 02754
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S.
DSGN. BY: ENG
DRAWN BY: JRS
DATE: 12/14/2022
SHEET NO.: 2 of 2

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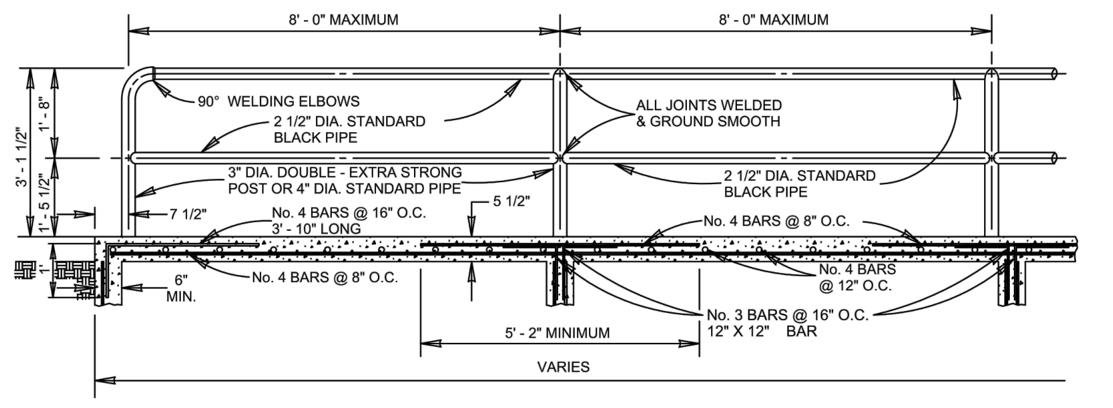
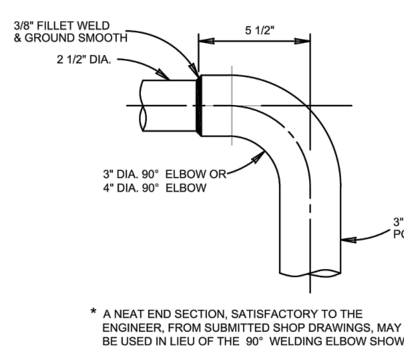

8' - 0" MAXIMUM
8' - 0" MAXIMUM
90° WELDING ELBOWS
2 1/2" DIA. STANDARD BLACK PIPE
ALL JOINTS WELDED & GROUND SMOOTH
3" DIA. DOUBLE - EXTRA STRONG POST OR 4" DIA. STANDARD PIPE
5 1/2"
2 1/2" DIA. STANDARD BLACK PIPE
7 1/2"
No. 4 BARS @ 16" O.C. 3' - 10" LONG
No. 4 BARS @ 8" O.C.
No. 4 BARS @ 8" O.C.
No. 4 BARS @ 12" O.C.
No. 3 BARS @ 16" O.C. 12" X 12" BAR
6" MIN.
5' - 2" MINIMUM
VARIES

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

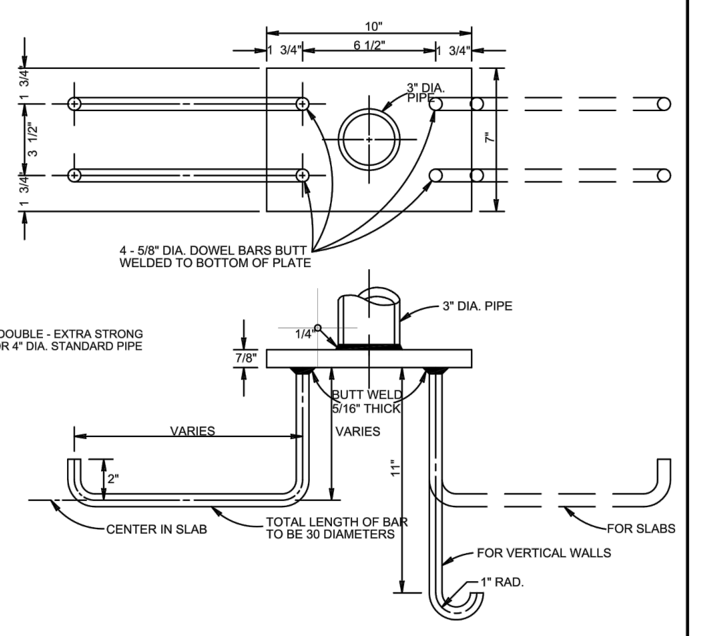
NOTES

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


3/8" FILLET WELD & GROUND SMOOTH
5 1/2"
2 1/2" DIA.
3" DIA. 90° ELBOW OR 4" DIA. 90° ELBOW
3" DIA. DOUBLE - EXTRA STRONG POST OR 4" DIA. STANDARD PIPE

* 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.
DSGN. BY: ENG.
DRAWN BY: BCP
DATE: 7/1/19
SHEET NO.: 1

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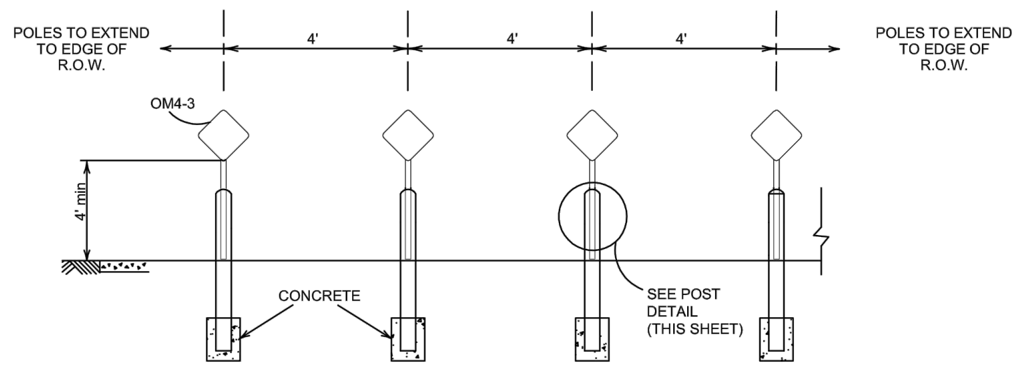
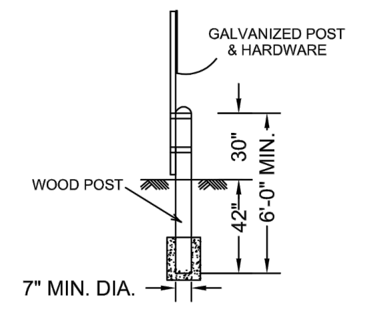

POLES TO EXTEND TO EDGE OF R.O.W.
4'
4'
4'
POLES TO EXTEND TO EDGE OF R.O.W.
OM4-3
CONCRETE
SEE POST DETAIL (THIS SHEET)

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.
DSGN. BY: ENG
DRAWN BY: JRS
DATE: 12/07/2022
SHEET NO.: 1 of 1

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KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

BID SET
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CONSTRUCTION
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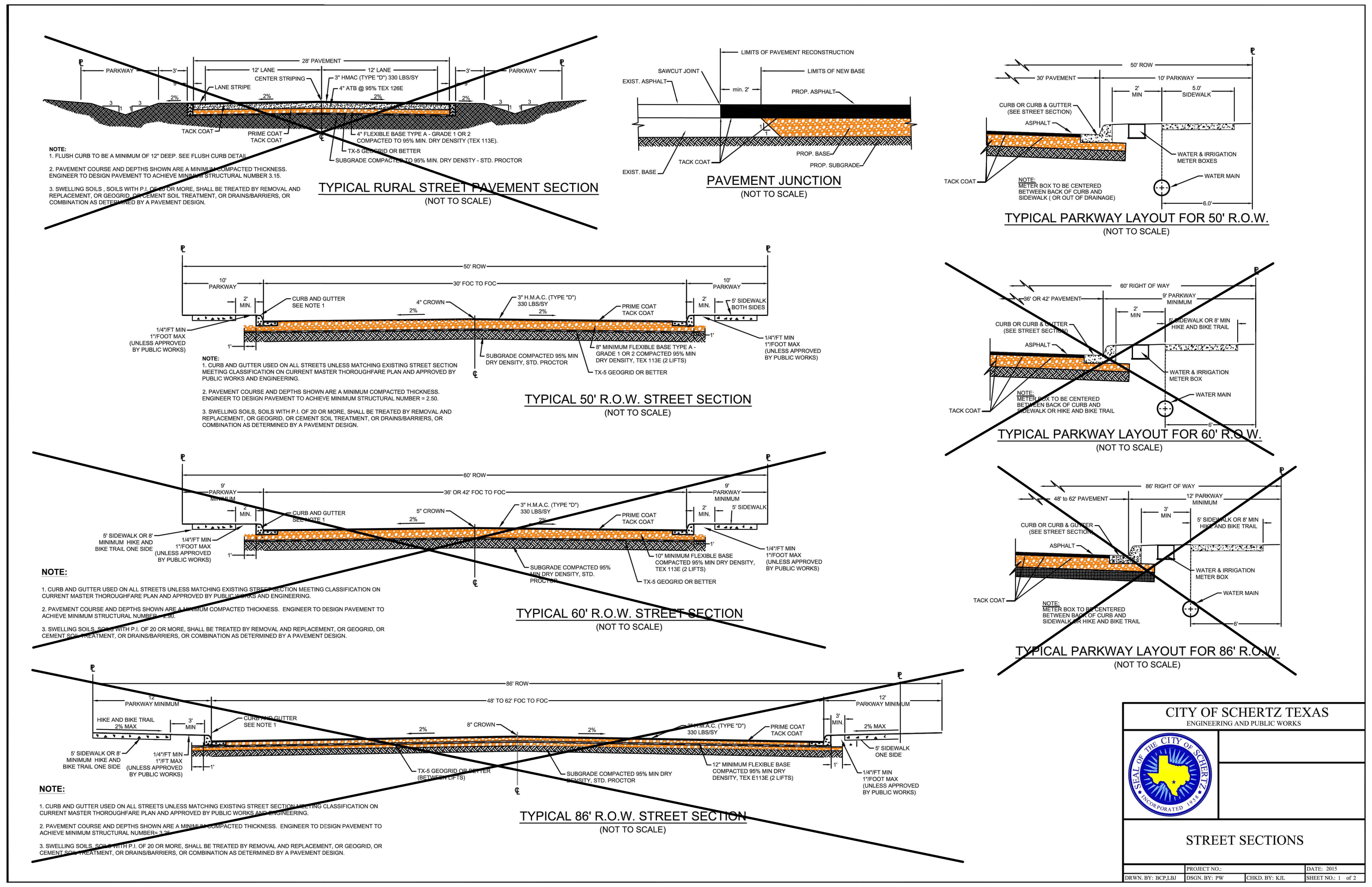
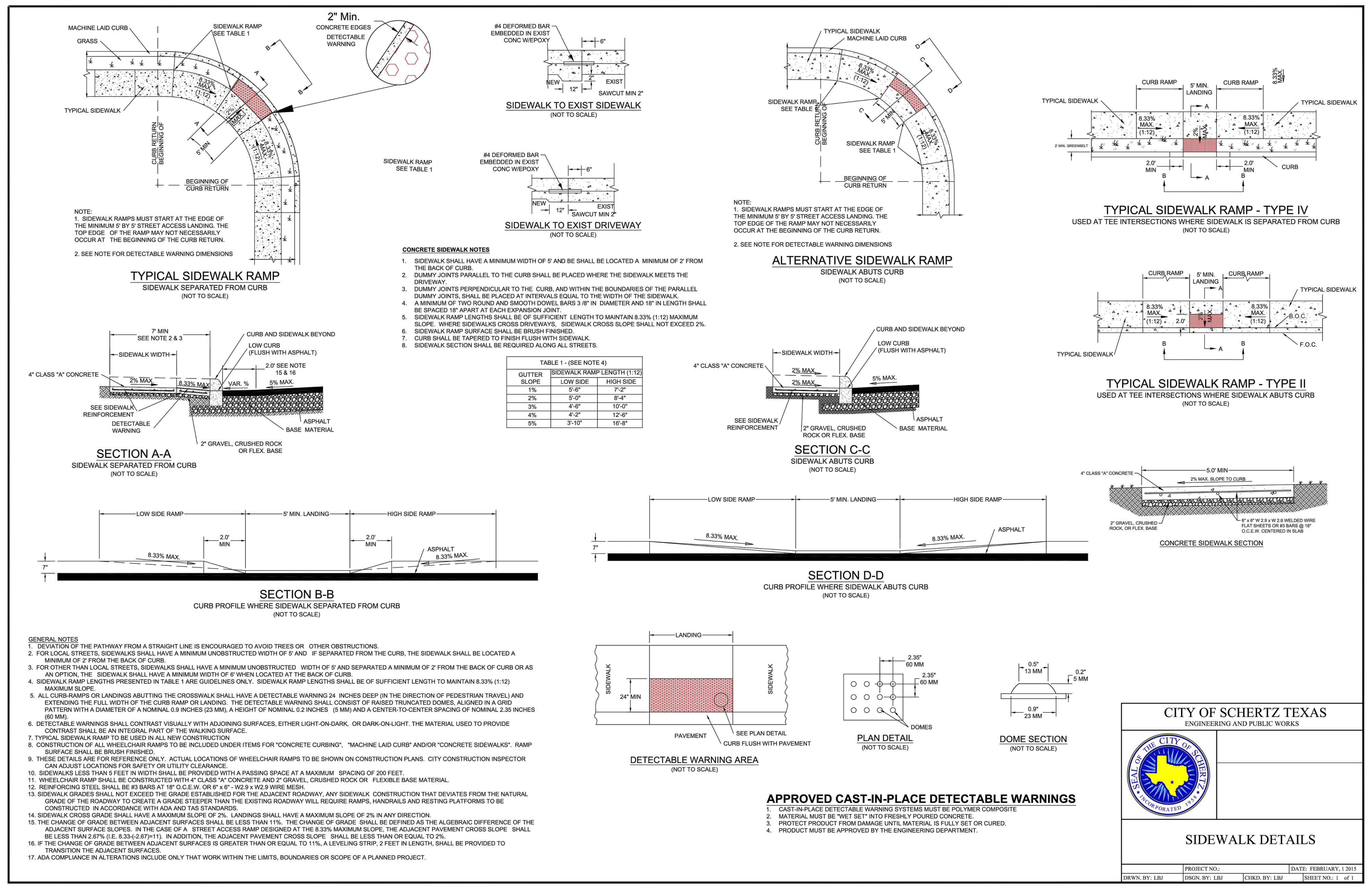
THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

STREET DETAIL SHEET

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN:
CHECKED: NR
SHEET NUMBER:
5.4

Date: Mar 22, 2024, 1:09pm User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\STREETS\STREET DETAIL SHEET.dwg


TYPICAL RURAL STREET PAVEMENT SECTION
(NOT TO SCALE)
NOTE:
1. FLUSH CURB TO BE A MINIMUM OF 12" DEEP. SEE FLUSH CURB DETAIL.
2. PAVEMENT COURSE AND DEPTHS SHOWN ARE A MINIMUM COMPACTED THICKNESS. ENGINEER TO DESIGN PAVEMENT TO ACHIEVE MINIMUM STRUCTURAL NUMBER 3.15.
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.
PARKWAY
28' PAVEMENT
12' LANE
CENTER STRIPING
3" HMAC (TYPE "D") 330 LBS/SY
4" ATB @ 95% TEX 126E
LANE STRIPE
TACK COAT
PRIME COAT
4" FLEXIBLE BASE TYPE A - GRADE 1 OR 2 COMPACTED TO 95% MIN. DRY DENSITY (TEX 113E).
TX-5 GEOGRID OR BETTER
SUBGRADE COMPACTED TO 95% MIN. DRY DENSTY - STD. PROCTOR
PAVEMENT JUNCTION
(NOT TO SCALE)
LIMITS OF PAVEMENT RECONSTRUCTION
SAWCUT JOINT
EXIST. ASPHALT
LIMITS OF NEW BASE
min. 2'
PROP. ASPHALT
TACK COAT
PROP. BASE
PROP. SUBGRADE
EXIST. BASE
TYPICAL PARKWAY LAYOUT FOR 50' R.O.W.
(NOT TO SCALE)
50' ROW
30' PAVEMENT
10' PARKWAY
2' MIN
5.0' SIDEWALK
CURB OR CURB & GUTTER (SEE STREET SECTION)
ASPHALT
WATER & IRRIGATION METER BOXES
WATER MAIN
TACK COAT
NOTE: METER BOX TO BE CENTERED BETWEEN BACK OF CURB AND SIDEWALK (OR OUT OF DRAINAGE)
TYPICAL 50' R.O.W. STREET SECTION
(NOT TO SCALE)
50' ROW
10' PARKWAY
30' FOC TO FOC
CURB AND GUTTER SEE NOTE 1
4" CROWN
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)
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 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

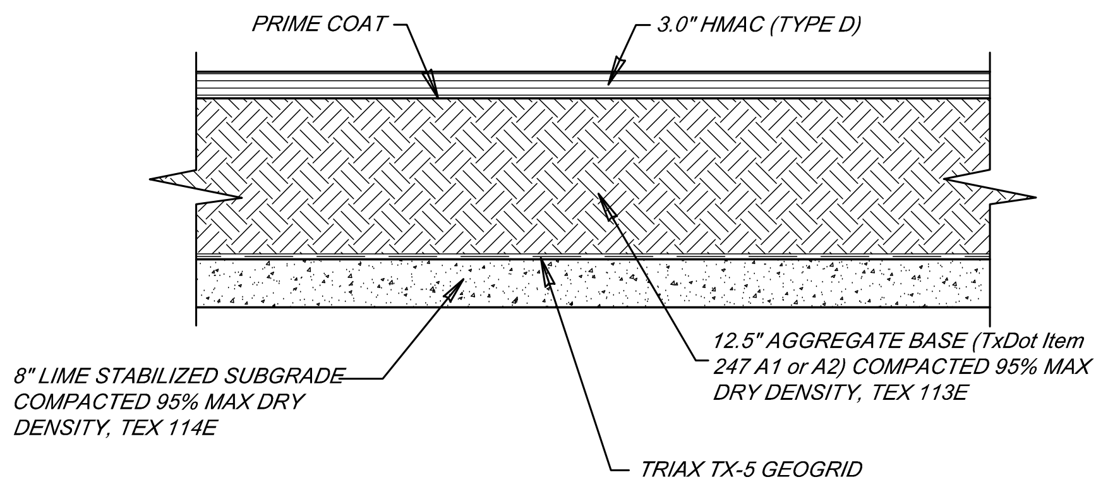

TYPICAL SIDEWALK RAMP
SIDEWALK SEPARATED FROM CURB
(NOT TO SCALE)
SIDEWALK TO EXIST SIDEWALK
SIDEWALK TO EXIST DRIVEWAY
ALTERNATIVE SIDEWALK RAMP
SIDEWALK ABUTS CURB
TYPICAL SIDEWALK RAMP - TYPE IV
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
TYPICAL SIDEWALK RAMP - TYPE II
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
CONCRETE SIDEWALK NOTES
SECTION A-A
SIDEWALK SEPARATED FROM CURB
SECTION C-C
SIDEWALK ABUTS CURB
SECTION B-B
CURB PROFILE WHERE SIDEWALK SEPARATED FROM CURB
SECTION D-D
CURB PROFILE WHERE SIDEWALK ABUTS CURB
CONCRETE SIDEWALK SECTION
GENERAL NOTES
DETECTABLE WARNING AREA
PLAN DETAIL
DOME SECTION
APPROVED CAST-IN-PLACE DETECTABLE WARNINGS
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
SIDEWALK DETAILS

Pavement Section

3.0" HMAC (TYPE "D")
12.5" Aggregate Base (TxDot Item 247 A1 or A2)
TRIAX TX-5 GEOGRID
8" Lime Stabilized Subgrade
Total: 23.5"
Structural No: 3.71
C.B.R = 2.0

NOTES:

1. *PAVEMENT DESIGN THICKNESS BASED ON ON GEOTECHNICAL REPORT BY INTEGRATED TESTING AND ENGINEERING COMPANY OF SAN ANTONIO, L.P. PROJECT NO. S231353 DATED JANUARY 3, 2024.*
2. *CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.*


PRIME COAT
3.0" HMAC (TYPE D)
8" LIME STABILIZED SUBGRADE COMPACTED 95% MAX DRY DENSITY, TEX 114E
12.5" AGGREGATE 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

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

ISSUE DATE

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

STREET DETAIL SHEET

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN:
CHECKED: NR

SHEET NUMBER:

5.5

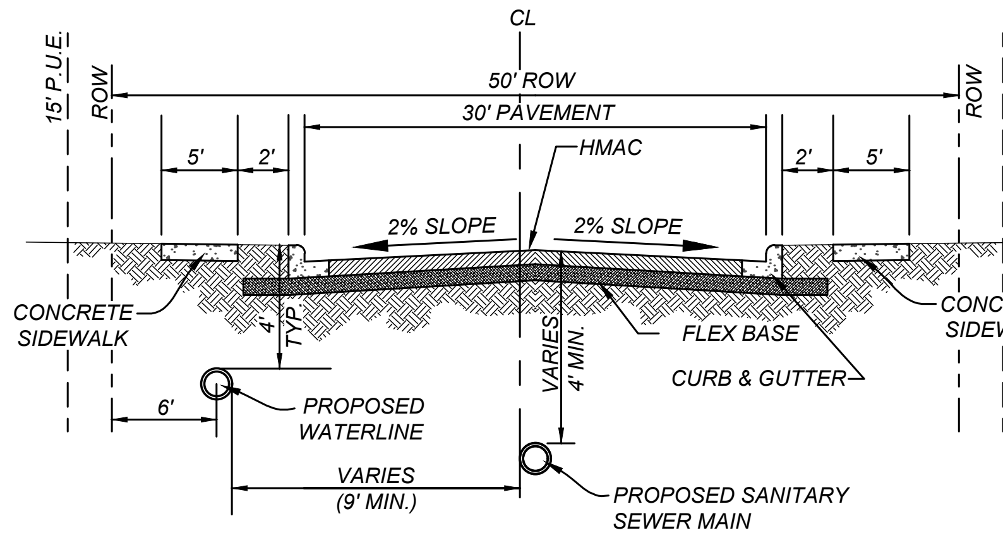
Date: Mar 22, 2024, 1:15pm User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\STREETS\5.5 STREET DETAIL SHEET.dwg

TRENCH EXCAVATION SAFETY PROTECTION

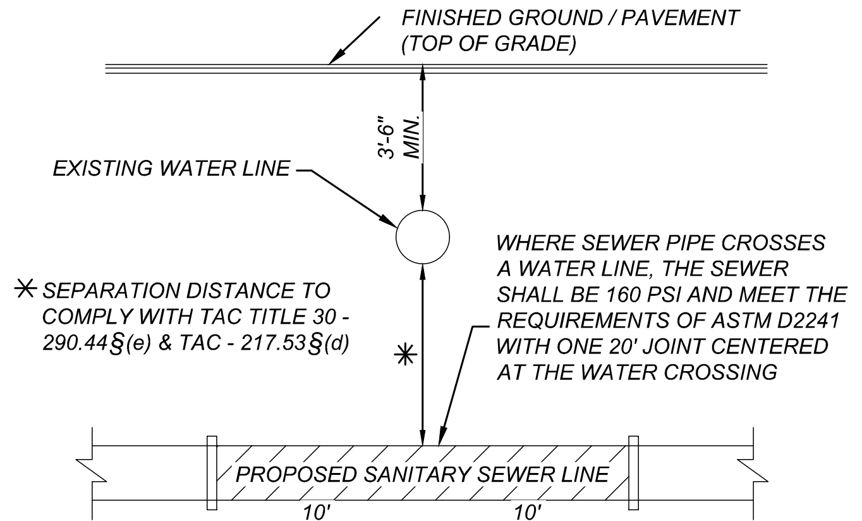
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

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

NOTE:
ALL SIDEWALK RAMPS SHALL INCLUDE ONE SIDEWALK JOINT IN EACH DIRECTION, AND ANY PROPOSED SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH THE STREET CONSTRUCTION.



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


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
EXISTING WATER LINE
3'-6" MIN.
✳ SEPARATION DISTANCE TO COMPLY WITH TAC TITLE 30 - 290.44§(e) & TAC - 217.53§(d)
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'

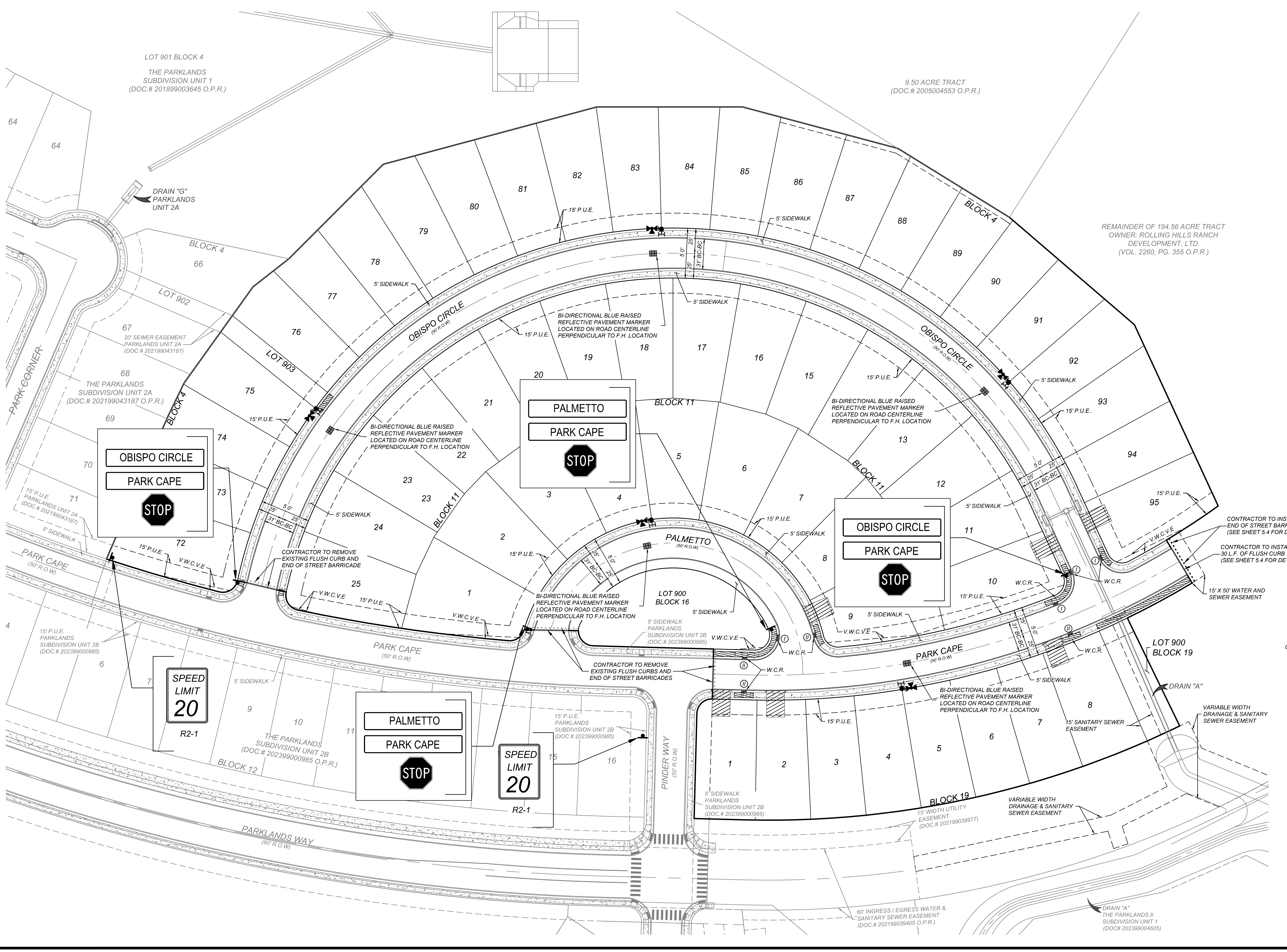
TYPICAL SANITARY SEWER / WATER CROSSING DETAIL
NOT TO SCALE

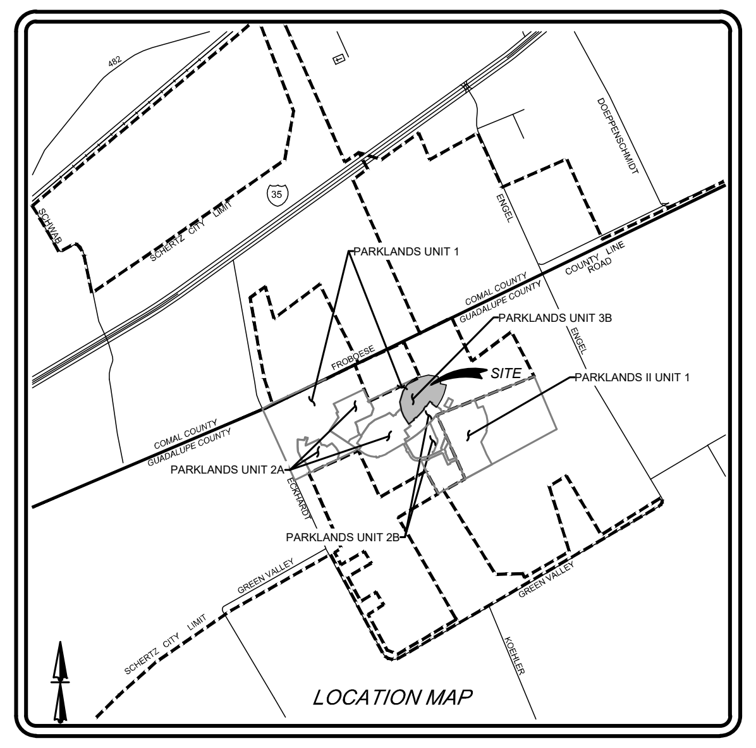
NOTES:
1) ALL SIGNAGE WITHIN SUBDIVISION SHALL COMPLY WITH THE CITY OF SCHERTZ STANDARD SIGN SPECIFICATIONS.

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.

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


LOT 901 BLOCK 4
THE PARKLANDS SUBDIVISION UNIT 1 (DOC.# 201899003645 O.P.R.)
9.50 ACRE TRACT (DOC.# 2005004553 O.P.R.)
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
DRAIN "G" PARKLANDS UNIT 2A
BLOCK 4
LOT 902
LOT 903
20' SEWER EASEMENT PARKLANDS UNIT 2A (DOC.# 202199043187)
THE PARKLANDS SUBDIVISION UNIT 2A (DOC.# 202199043187 O.P.R.)
PARK CORNER
OBISPO CIRCLE (50' R.O.W)
PALMETTO (50' R.O.W)
PARK CAPE (50' R.O.W)
PINDER WAY (50' R.O.W)
PARKLANDS WAY (60' R.O.W)
BLOCK 11
BLOCK 12
BLOCK 19
LOT 900 BLOCK 16
LOT 900 BLOCK 19
15' P.U.E.
5' SIDEWALK
V.W.C.V.E.
W.C.R.
31' BC-BC
BI-DIRECTIONAL BLUE RAISED REFLECTIVE PAVEMENT MARKER LOCATED ON ROAD CENTERLINE PERPENDICULAR TO F.H. LOCATION
CONTRACTOR TO REMOVE EXISTING FLUSH CURB AND END OF STREET BARRICADE
CONTRACTOR TO REMOVE EXISTING FLUSH CURBS AND END OF STREET BARRICADES
CONTRACTOR TO INSTALL END OF STREET BARRICADE - TYPE I (SEE SHEET 5.4 FOR DETAILS)
CONTRACTOR TO INSTALL 30 L.F. OF FLUSH CURB (SEE SHEET 5.4 FOR DETAILS)
15' X 50' WATER AND SEWER EASEMENT
DRAIN "A"
VARIABLE WIDTH DRAINAGE & SANITARY SEWER EASEMENT
15' SANITARY SEWER EASEMENT
15' WIDTH UTILITY EASEMENT (DOC.# 202199039977)
5' SIDEWALK PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
15' P.U.E. PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
THE PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985 O.P.R.)
60' INGRESS / EGRESS WATER & SANITARY SEWER EASEMENT (DOC.# 202199039405 O.P.R.)
DRAIN "A" THE PARKLANDS II SUBDIVISION UNIT 1 (DOC# 202399004605)
OBISPO CIRCLE
PARK CAPE
STOP
PALMETTO
PARK CAPE
STOP
OBISPO CIRCLE
PARK CAPE
STOP
PALMETTO
PARK CAPE
STOP
SPEED LIMIT 20
R2-1
SPEED LIMIT 20
R2-1

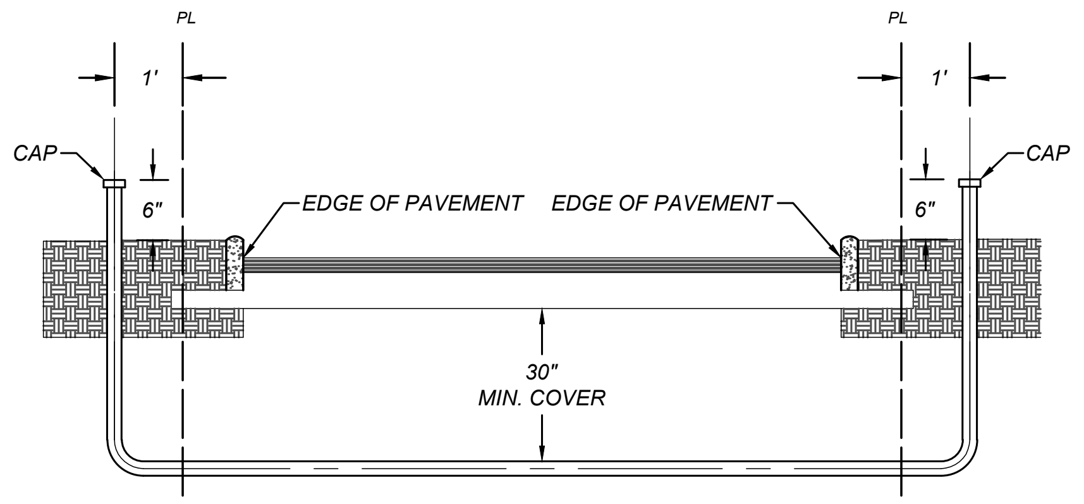


LOCATION MAP
N.T.S.

LEGEND

W.C.R. = WHEELCHAIR RAMPS SEE SHEET 5.6
(I) = WHEELCHAIR RAMP TYPE I SEE SHEET 5.5
(II) = WHEELCHAIR RAMP TYPE II SEE SHEET 5.5
▨ = PLAN TO REFLECT DEVELOPER SIDEWALKS
▭ = SIDEWALK TO BE BUILT AT THE TIME OF HOME CONSTRUCTION
▦ = BLUE RAISED REFLECTIVE PAVEMENT MARKER
✚ = PROPOSED FIRE HYDRANT
▨ = PROPOSED DRIVEWAY LOCATION

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



PRIVATE CONDUIT DETAIL
NOT TO SCALE

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

NOTE:
- CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH GVEC FACILITY AT ALL STREETS AND DRAIN CROSSINGS CONSTRUCTION SLEEVES MUST ALSO BE LOCATED FOR GVEC CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE FINAL ELECTRIC PROVIDER'S DESIGN AND SPECIFICATION.
- 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.

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

TRAFFIC SIGNAGE AND PEDESTRIAN ACCESSIBILITY PLAN

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
5.6

TRENCH EXCAVATION SAFETY PROTECTION

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

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

NOTE:

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 6.5 FOR DETAILS.
5. SEE SHEET 6.0 FOR BENCHMARK INFORMATION.
6. ALL SANITARY SEWER LATERALS SHALL BE INSTALLED AT 2% UNLESS OTHERWISE SPECIFIED.

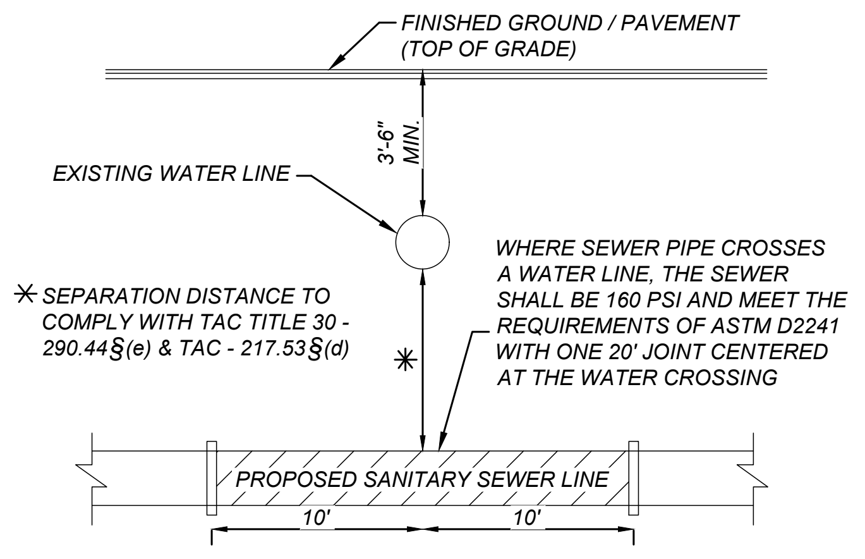
COMPACTION NOTE:

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.

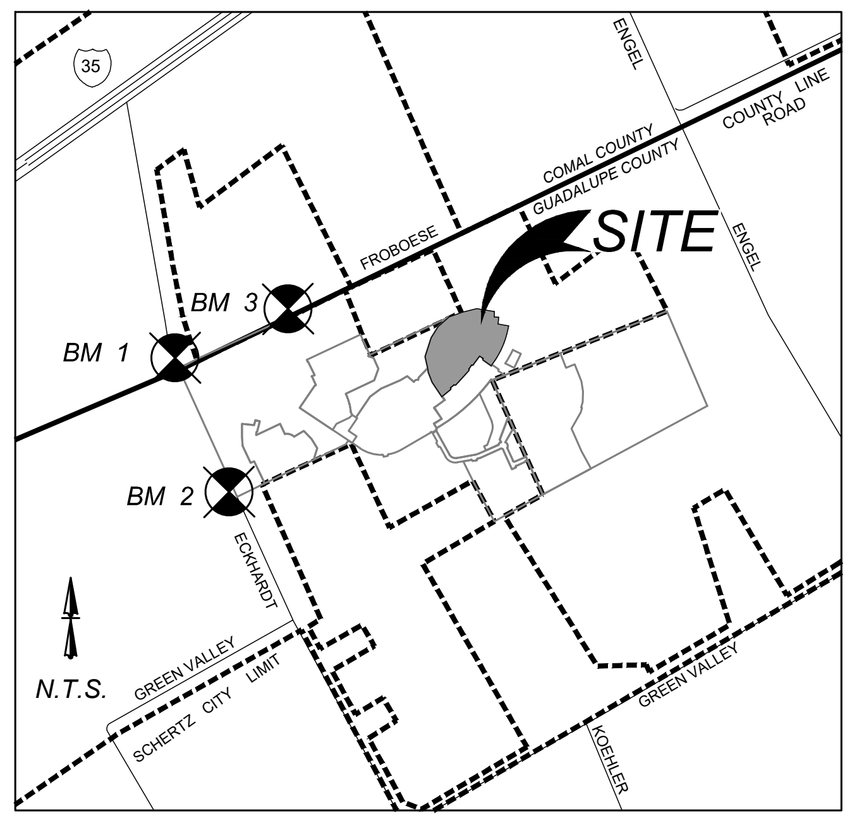
NOTE:

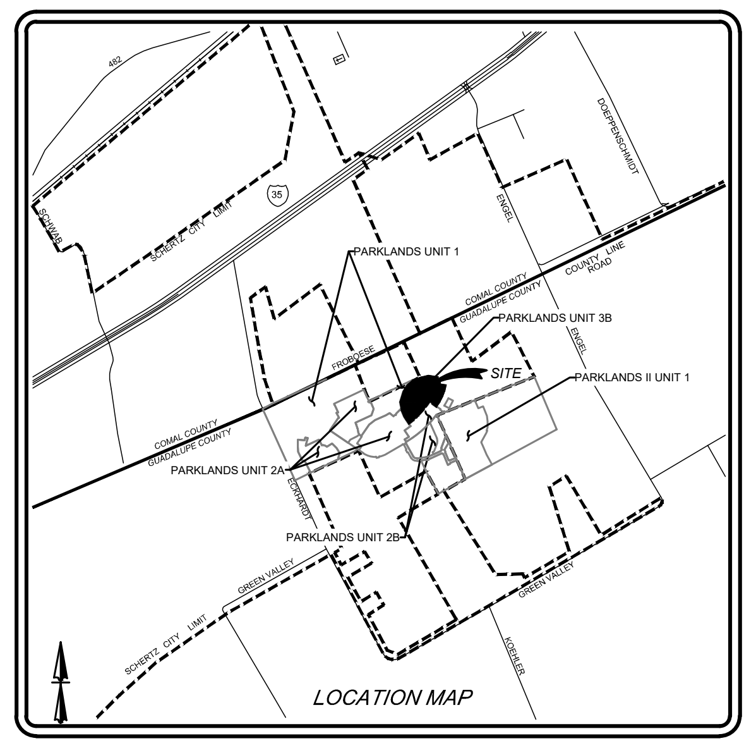
- CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH GVEC FACILITY AT ALL STREETS AND DRAIN CROSSING CONSTRUCTION SLEEVES MUST ALSO BE LOCATED FOR GVEC CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE THIS SHEET FOR CONDUIT CROSSING DETAIL AND SCHEDULE.
- CONTRACTOR TO CONTACT ENGINEER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


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
3'-6" MIN.
EXISTING WATER LINE
✱ SEPARATION DISTANCE TO COMPLY WITH TAC TITLE 30 - 290.44§(e) & TAC - 217.53§(d)
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
NOT TO SCALE



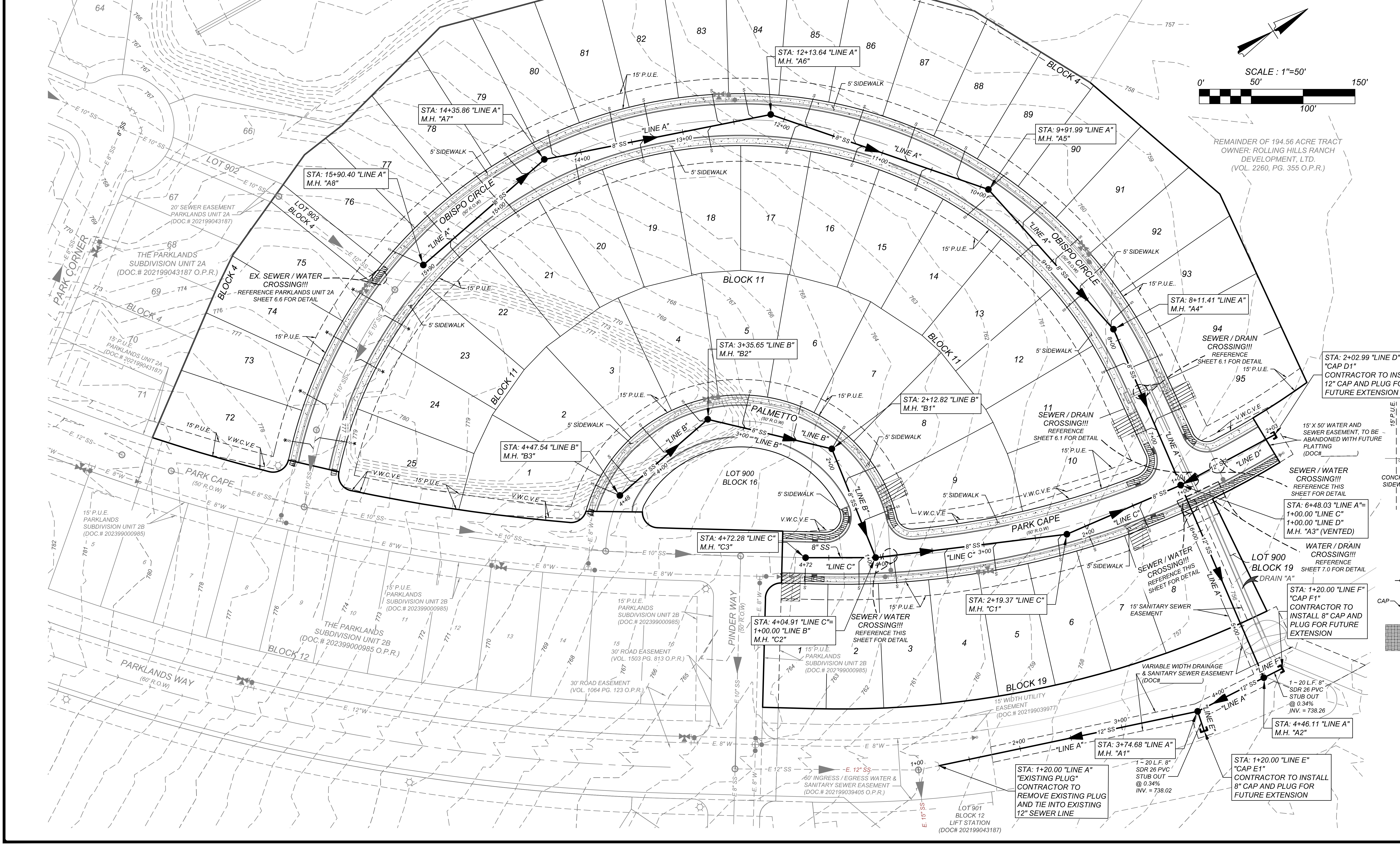


LOCATION MAP
N.T.S.

SITE BENCHMARKS (SURFACE)

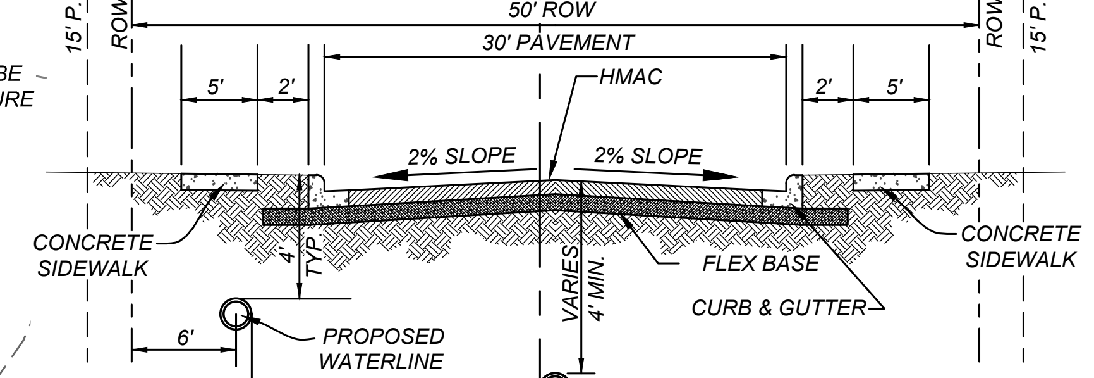
BM #	ELEV.	DESCRIPTION
BM 1	799.66	SET ½" IRON ROD WITH "KFW" CAP N: 13781919.20', E: 2222316.97' (SURFACE)
BM 2	798.92	SET ½" IRON ROD WITH "KFW" CAP N: 13780446.99', E: 2222962.66' (SURFACE)
BM 3	788.86	SET ½" IRON ROD WITH "KFW" CAP N: 13782501.80', E: 13782501.80' (SURFACE)

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

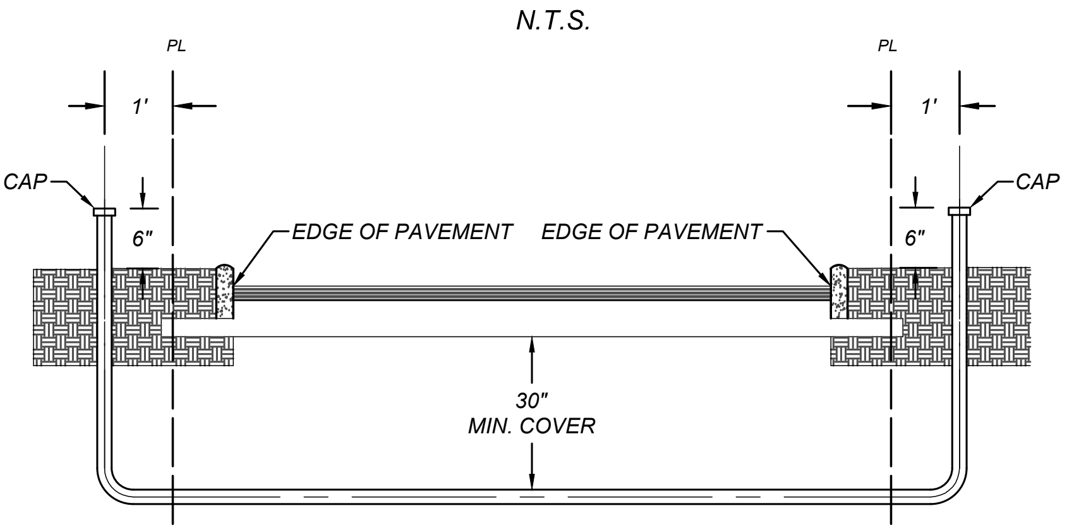

LOT 901 BLOCK 4
THE PARKLANDS SUBDIVISION UNIT 1 (DOC.# 201899003645 O.P.R.)
9.50 ACRE TRACT (DOC.# 2005004553 O.P.R.)
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
THE PARKLANDS SUBDIVISION UNIT 2A (DOC.# 202199043187 O.P.R.)
20' SEWER EASEMENT PARKLANDS UNIT 2A (DOC.# 202199043187)
LOT 902
LOT 903 BLOCK 4
BLOCK 4
BLOCK 11
BLOCK 16
BLOCK 19
BLOCK 12
LOT 900 BLOCK 16
LOT 900 BLOCK 19
LOT 901 BLOCK 12 LIFT STATION (DOC# 202199043187)
OBISPO CIRCLE (50' R.O.W.)
PALMETTO (50' R.O.W)
PARK CAPE (50' R.O.W)
PARKLANDS WAY (60' R.O.W)
PINDER WAY (50' R.O.W)
PARK CORNER
STA: 15+90.40 "LINE A" M.H. "A8"
STA: 14+35.86 "LINE A" M.H. "A7"
STA: 12+13.64 "LINE A" M.H. "A6"
STA: 9+91.99 "LINE A" M.H. "A5"
STA: 8+11.41 "LINE A" M.H. "A4"
STA: 6+48.03 "LINE A"= 1+00.00 "LINE C" 1+00.00 "LINE D" M.H. "A3" (VENTED)
STA: 4+46.11 "LINE A" M.H. "A2"
STA: 3+74.68 "LINE A" M.H. "A1"
STA: 1+20.00 "LINE A" "EXISTING PLUG" CONTRACTOR TO REMOVE EXISTING PLUG AND TIE INTO EXISTING 12" SEWER LINE
STA: 3+35.65 "LINE B" M.H. "B2"
STA: 2+12.82 "LINE B" M.H. "B1"
STA: 4+47.54 "LINE B" M.H. "B3"
STA: 4+72.28 "LINE C" M.H. "C3"
STA: 4+04.91 "LINE C"= 1+00.00 "LINE B" M.H. "C2"
STA: 2+19.37 "LINE C" M.H. "C1"
STA: 2+02.99 "LINE D" "CAP D1" CONTRACTOR TO INSTALL 12" CAP AND PLUG FOR FUTURE EXTENSION
STA: 1+20.00 "LINE F" "CAP F1" CONTRACTOR TO INSTALL 8" CAP AND PLUG FOR FUTURE EXTENSION
STA: 1+20.00 "LINE E" "CAP E1" CONTRACTOR TO INSTALL 8" CAP AND PLUG FOR FUTURE EXTENSION
1 ~ 20 L.F. 8" SDR 26 PVC STUB OUT @ 0.34% INV. = 738.26
1 ~ 20 L.F. 8" SDR 26 PVC STUB OUT @ 0.34% INV. = 738.02
EX. SEWER / WATER CROSSING!!! REFERENCE PARKLANDS UNIT 2A SHEET 6.6 FOR DETAIL
SEWER / DRAIN CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
WATER / DRAIN CROSSING!!! REFERENCE SHEET 7.0 FOR DETAIL
15' X 50' WATER AND SEWER EASEMENT, TO BE ABANDONED WITH FUTURE PLATTING (DOC#________)
15' SANITARY SEWER EASEMENT
VARIABLE WIDTH DRAINAGE & SANITARY SEWER EASEMENT (DOC#________)
15' WIDTH UTILITY EASEMENT (DOC.# 202199039977)
60' INGRESS / EGRESS WATER & SANITARY SEWER EASEMENT (DOC.# 202199039405 O.P.R.)
15' P.U.E. PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
THE PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985 O.P.R.)
30' ROAD EASEMENT (VOL. 1503 PG. 813 O.P.R.)
30' ROAD EASEMENT (VOL. 1064 PG. 123 O.P.R.)
DRAIN "A"
"LINE A"
"LINE B"
"LINE C"
"LINE D"
"LINE E"
"LINE F"
8" SS
12" SS
E. 8" W
E. 10" SS
E. 12" SS
E. 15" SS
15' P.U.E.
5' SIDEWALK
V.W.C.V.E.

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	
GAS, ELECTRIC, TELEPHONE, CABLE T.V., EASEMENT	G.E.T.TV. E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
VARIABLE WIDTH CLEAR VISION EASEMENT	V.W.C.V.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
PROPOSED SANITARY SEWER LATERAL (TIE-IN TO EXISTING MAIN)	✱ S
EXISTING SANITARY SEWER LATERAL	S
EXISTING WATER VALVE	
EXISTING FIRE HYDRANT	
EXISTING WATER MAIN	E. 8" W
EXISTING WATER BLOWOFF	
EXISTING SANITARY SEWER MAIN	E. 10"SS
EXISTING SANITARY SEWER MAIN	E. 12"SS
EXISTING SANITARY SEWER MAIN	E. 15"SS
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	SS
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	● PP



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



PRIVATE CONDUIT DETAIL
NOT TO SCALE

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

NOTE:

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- CONTRACTOR TO CONTACT ENGINEER FOR ELECTRICAL PLANS

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

SANITARY SEWER PLAN

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
6.0

Date: Apr 03, 2024, 10:33am User ID: jferguson
File: J:\Projects\171\23\07\Design\Civil\SEWER\6.0 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:

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 6.5 FOR DETAILS.
5. SEE SHEET 6.0 FOR BENCHMARK INFORMATION.
6. ALL SANITARY SEWER LATERALS SHALL BE INSTALLED AT 2% UNLESS OTHERWISE SPECIFIED.

COMPACTION NOTE:

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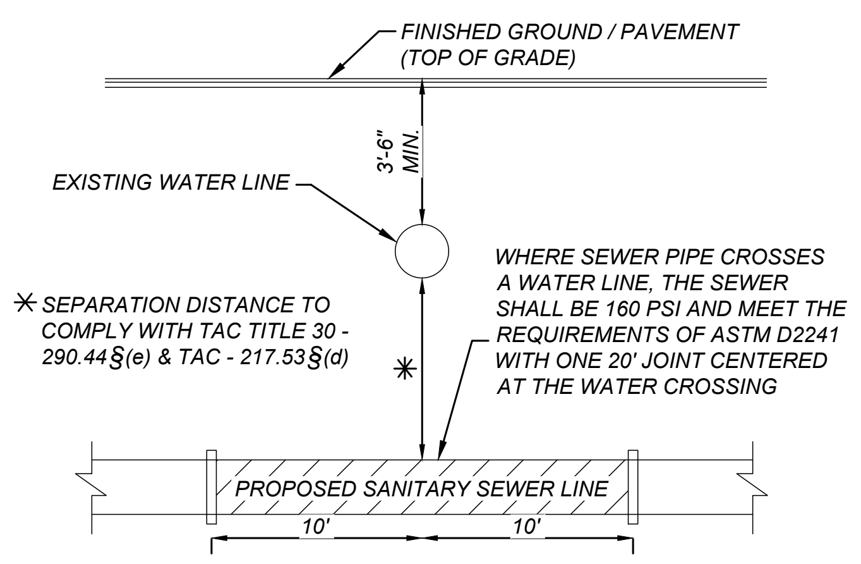
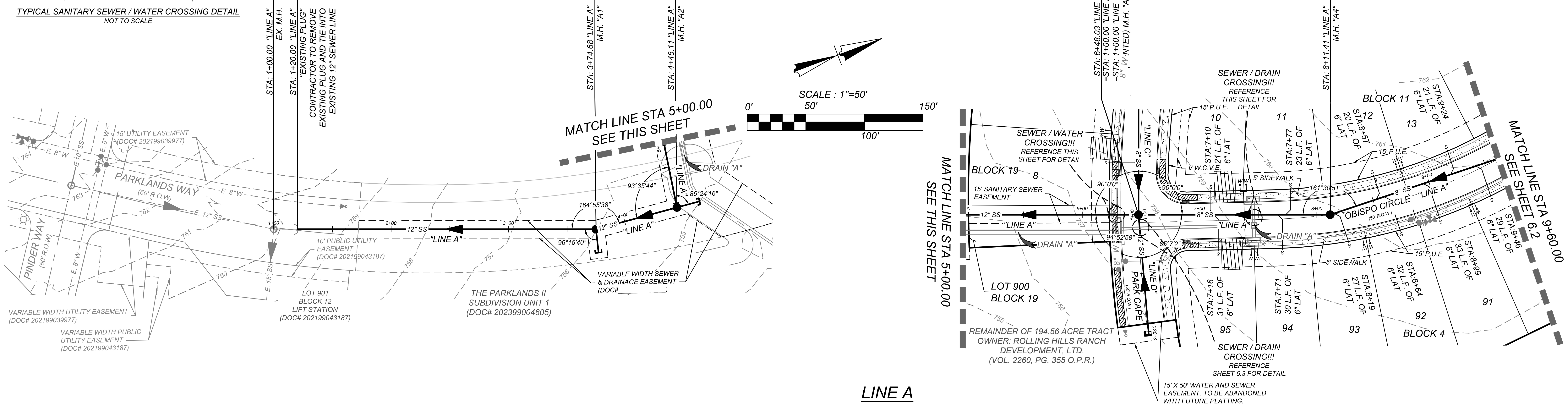
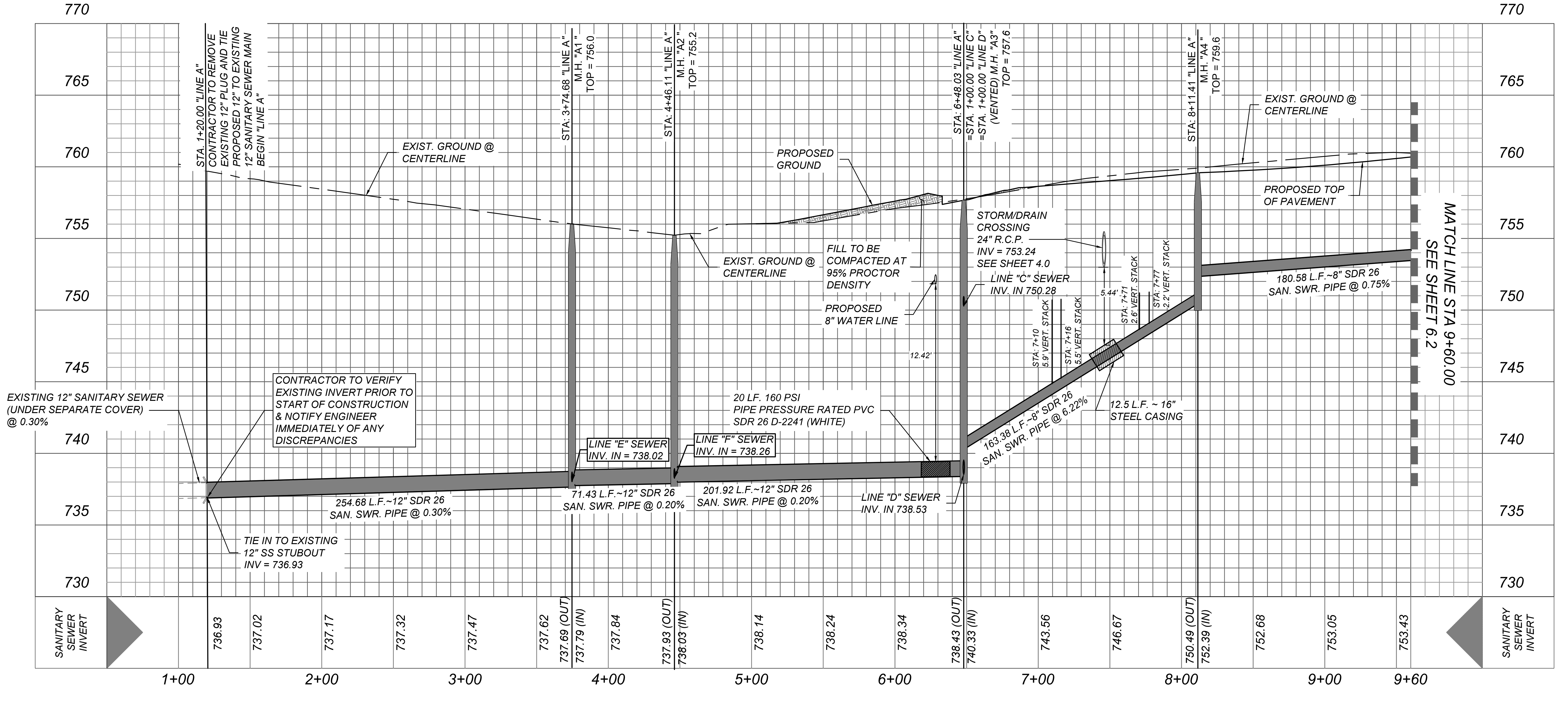
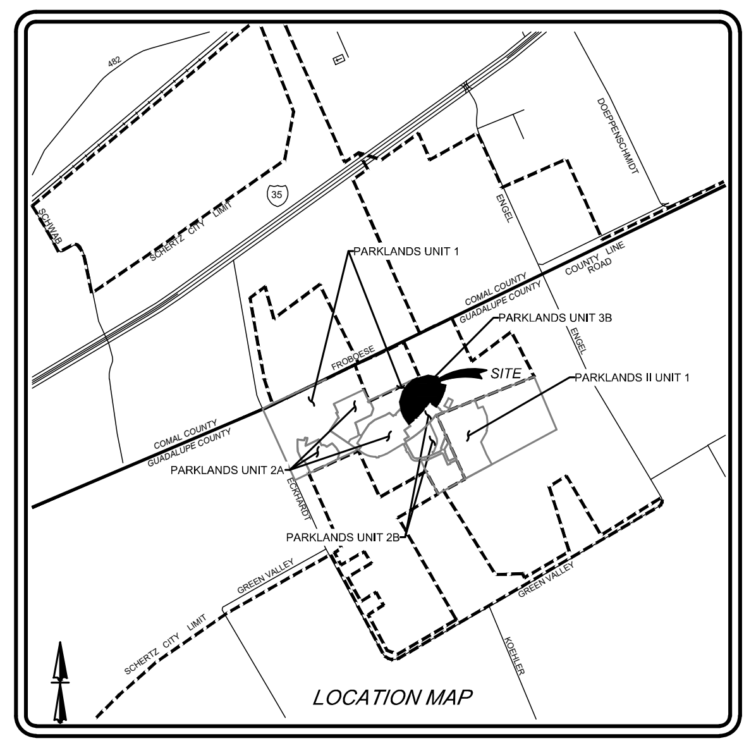

FINISHED GROUND / PAVEMENT (TOP OF GRADE)
3'-6" MIN.
EXISTING WATER LINE
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
* SEPARATION DISTANCE TO COMPLY WITH TAC TITLE 30 - 290.44§(e) & TAC - 217.53§(d)
PROPOSED SANITARY SEWER LINE
10'
10'

TYPICAL SANITARY SEWER / WATER CROSSING DETAIL
NOT TO SCALE


STA: 1+00.00 "LINE A" EX. M.H.
STA: 1+20.00 "LINE A" "EXISTING PLUG" CONTRACTOR TO REMOVE EXISTING PLUG AND TIE INTO EXISTING 12" SEWER LINE
STA: 3+74.68 "LINE A" M.H. "A1"
STA: 4+46.11 "LINE A" M.H. "A2"
MATCH LINE STA 5+00.00 SEE THIS SHEET
SCALE : 1"=50'
0'
50'
100'
150'
15' UTILITY EASEMENT (DOC# 202199039977)
E. 8" W
E. 10" SS
E. 8" W
764
763
762
761
760
759
758
757
756
755
PARKLANDS WAY (60' R.O.W)
E. 12" SS
PINDER WAY (60' R.O.W)
E. 15" SS
1+00
2+00
3+00
4+00
12" SS
"LINE A"
164°55'38"
93°35'44"
86°24'16"
96°15'40"
DRAIN "A"
10' PUBLIC UTILITY EASEMENT (DOC# 202199043187)
LOT 901 BLOCK 12 LIFT STATION (DOC# 202199043187)
THE PARKLANDS II SUBDIVISION UNIT 1 (DOC# 202399004605)
VARIABLE WIDTH SEWER & DRAINAGE EASEMENT (DOC#____________)
VARIABLE WIDTH UTILITY EASEMENT (DOC# 202199039977)
VARIABLE WIDTH PUBLIC UTILITY EASEMENT (DOC# 202199043187)
STA: 6+48.03 "LINE A" =STA: 1+00.00 "LINE D" =STA: 1+00.00 "LINE C" (VENTED) M.H. "A3"
STA: 8+11.41 "LINE A" M.H. "A4"
MATCH LINE STA 5+00.00 SEE THIS SHEET
MATCH LINE STA 9+60.00 SEE SHEET 6.2
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
SEWER / DRAIN CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
SEWER / DRAIN CROSSING!!! REFERENCE SHEET 6.3 FOR DETAIL
BLOCK 19
8
15' SANITARY SEWER EASEMENT
LOT 900 BLOCK 19
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
"LINE C"
8" SS
"LINE D"
12" SS
PARK CAPE (50' R.O.W.)
90°0'0"
94°52'58"
85°7'2"
161°30'51"
15' P.U.E.
V.W.C.V.E.
5' SIDEWALK
6+00
7+00
8+00
9+00
8" SS
"LINE A"
DRAIN "A"
OBISPO CIRCLE (50' R.O.W.)
BLOCK 11
10
11
12
13
BLOCK 4
95
94
93
92
91
STA:7+10 21 L.F. OF 6" LAT
STA:7+77 23 L.F. OF 6" LAT
STA:8+57 20 L.F. OF 6" LAT
STA:9+24 21 L.F. OF 6" LAT
STA:7+16 31 L.F. OF 6" LAT
STA:7+71 30 L.F. OF 6" LAT
STA:8+19 27 L.F. OF 6" LAT
STA:8+64 32 L.F. OF 6" LAT
STA:8+99 33 L.F. OF 6" LAT
STA:9+46 29 L.F. OF 6" LAT
15' X 50' WATER AND SEWER EASEMENT. TO BE ABANDONED WITH FUTURE PLATTING. (DOC#___________)

LINE A
STA. 1+00.00 - STA. 9+60.00


770
765
760
755
750
745
740
735
730
STA. 1+20.00 "LINE A" CONTRACTOR TO REMOVE EXISTING 12" PLUG AND TIE PROPOSED 12" TO EXISTING 12" SANITARY SEWER MAIN BEGIN "LINE A"
STA: 3+74.68 "LINE A" M.H. "A1" TOP = 756.0
STA: 4+46.11 "LINE A" M.H. "A2" TOP = 755.2
STA: 6+48.03 "LINE A" =STA. 1+00.00 "LINE C" =STA. 1+00.00 "LINE D" (VENTED) M.H. "A3" TOP = 757.6
STA: 8+11.41 "LINE A" M.H. "A4" TOP = 759.6
EXIST. GROUND @ CENTERLINE
PROPOSED GROUND
EXIST. GROUND @ CENTERLINE
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
PROPOSED 8" WATER LINE
STORM/DRAIN CROSSING 24" R.C.P. INV = 753.24 SEE SHEET 4.0
LINE "C" SEWER INV. IN 750.28
EXIST. GROUND @ CENTERLINE
PROPOSED TOP OF PAVEMENT
MATCH LINE STA 9+60.00 SEE SHEET 6.2
12.42'
5.44'
STA: 7+10 5.9' VERT. STACK
STA: 7+16 5.5' VERT. STACK
STA: 7+71 2.6' VERT. STACK
STA: 7+77 2.2' VERT. STACK
EXISTING 12" SANITARY SEWER (UNDER SEPARATE COVER) @ 0.30%
CONTRACTOR TO VERIFY EXISTING INVERT PRIOR TO START OF CONSTRUCTION & NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES
LINE "E" SEWER INV. IN = 738.02
LINE "F" SEWER INV. IN = 738.26
20 LF. 160 PSI PIPE PRESSURE RATED PVC SDR 26 D-2241 (WHITE)
254.68 L.F.~12" SDR 26 SAN. SWR. PIPE @ 0.30%
71.43 L.F.~12" SDR 26 SAN. SWR. PIPE @ 0.20%
201.92 L.F.~12" SDR 26 SAN. SWR. PIPE @ 0.20%
LINE "D" SEWER INV. IN 738.53
163.38 L.F.~8" SDR 26 SAN. SWR. PIPE @ 6.22%
12.5 L.F. ~ 16" STEEL CASING
180.58 L.F.~8" SDR 26 SAN. SWR. PIPE @ 0.75%
TIE IN TO EXISTING 12" SS STUBOUT INV = 736.93
SANITARY SEWER INVERT
736.93
737.02
737.17
737.32
737.47
737.62
737.69 (OUT)
737.79 (IN)
737.84
737.93 (OUT)
738.03 (IN)
738.14
738.24
738.34
738.43 (OUT)
740.33 (IN)
743.56
746.67
750.49 (OUT)
752.39 (IN)
752.68
753.05
753.43
SANITARY SEWER INVERT
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
9+60

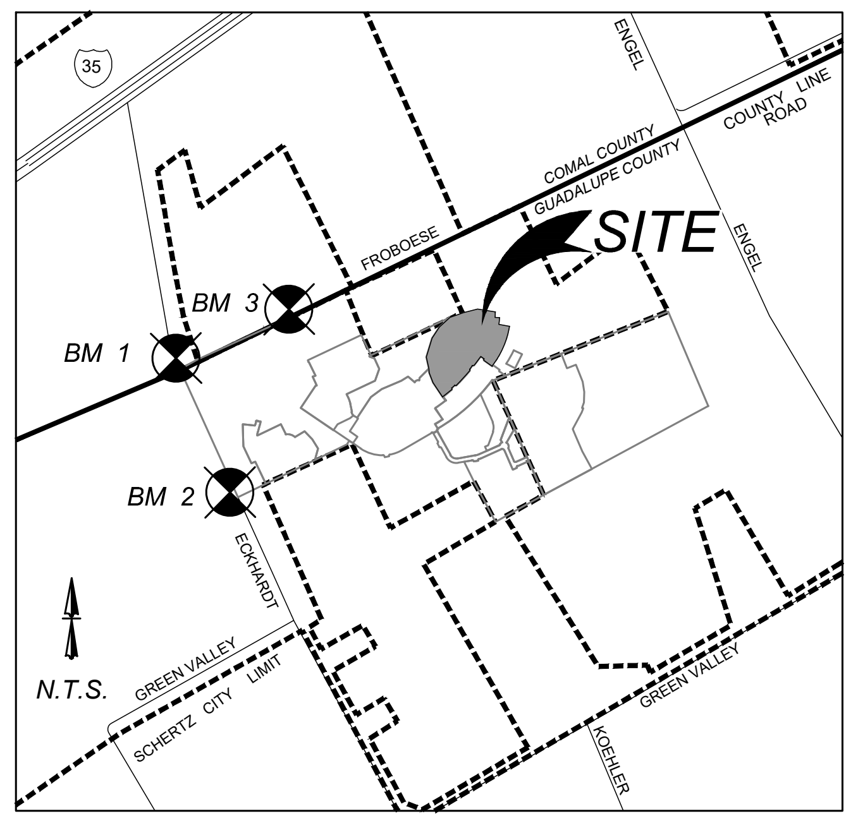


LOCATION MAP
N.T.S.

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

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	⧓
GAS, ELECTRIC, TELEPHONE, CABLE T.V., EASEMENT	G.E.T.TV. E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
VARIABLE WIDTH CLEAR VISION EASEMENT	V.W.C.V.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
PROPOSED SANITARY SEWER LATERAL (TIE-IN TO EXISTING MAIN)	* S
EXISTING SANITARY SEWER LATERAL	S
EXISTING WATER VALVE	⋈
EXISTING FIRE HYDRANT	⋈
EXISTING WATER MAIN	E. 8" W
EXISTING WATER BLOWOFF	▷o
EXISTING SANITARY SEWER MAIN	E. 10"SS
EXISTING SANITARY SEWER MAIN	E. 12"SS
EXISTING SANITARY SEWER MAIN	E. 15"SS
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	SS
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	● PP



SITE BENCHMARKS (SURFACE)

BM #	ELEV.	DESCRIPTION
BM 1	799.66	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13781919.20', E: 2222316.97' (SURFACE)
BM 2	798.92	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13780446.99', E: 2222962.66' (SURFACE)
BM 3	788.86	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13782501.80', E: 13782501.80' (SURFACE)

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

BID SET
NOT FOR
CONSTRUCTION
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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

SEWER LINE A STA. 1+00.00 - STA. 9+60.00

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
6.1

Date: Mar 22, 2024, 1:18pm User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\SEWER\SEWER LINE A STA. 1+00.00 ~ STA. 9+60.00.dwg

CAUTION!!:
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TRENCH EXCAVATION SAFETY PROTECTION

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

NOTE:

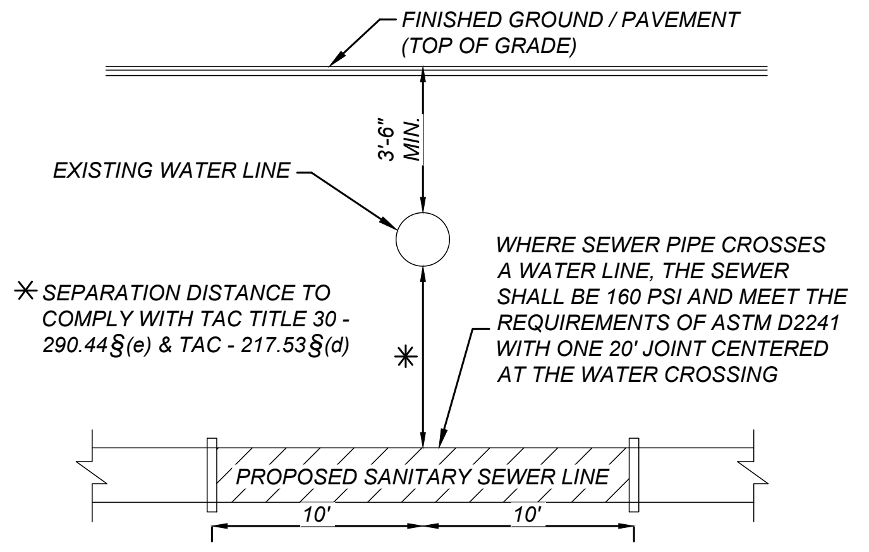
1. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM).
2. PIPE TYPE DESIGNATIONS ARE SDR 26.
3. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / 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 6.5 FOR DETAILS.
5. SEE SHEET 6.0 FOR BENCHMARK INFORMATION.
6. ALL SANITARY SEWER LATERALS SHALL BE INSTALLED AT 2% UNLESS OTHERWISE SPECIFIED.

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.

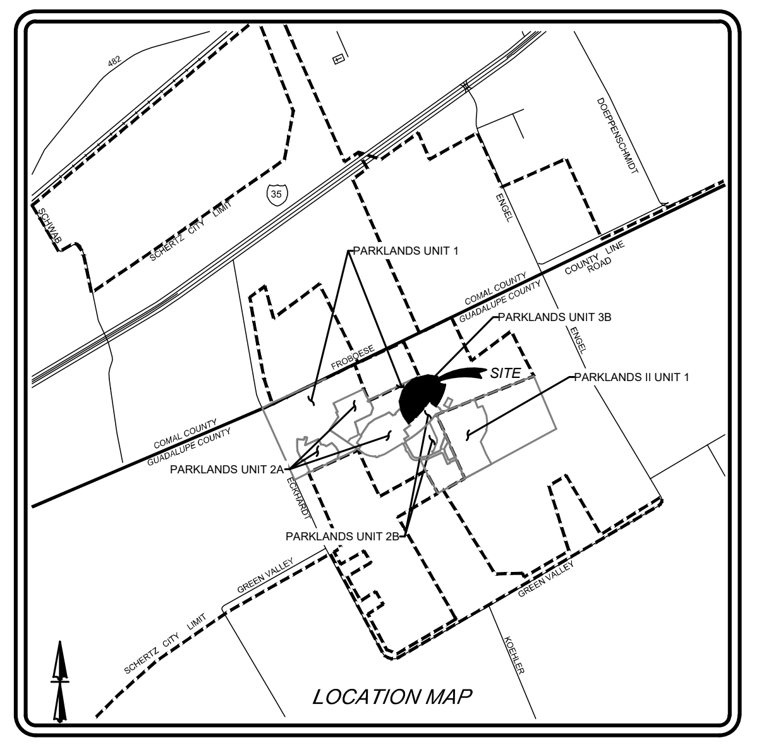
LEGEND

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	
GAS, ELECTRIC, TELEPHONE, CABLE T.V., EASEMENT	G.E.T.TV. E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
VARIABLE WIDTH CLEAR VISION EASEMENT	V.W.C.V.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
PROPOSED SANITARY SEWER LATERAL (TIE-IN TO EXISTING MAIN)	* S
EXISTING SANITARY SEWER LATERAL	S
EXISTING WATER VALVE	
EXISTING FIRE HYDRANT	
EXISTING WATER MAIN	E. 8" W
EXISTING WATER BLOWOFF	
EXISTING SANITARY SEWER MAIN	E. 10"SS
EXISTING SANITARY SEWER MAIN	E. 12"SS
EXISTING SANITARY SEWER MAIN	E. 15"SS
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	SS
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	● PP

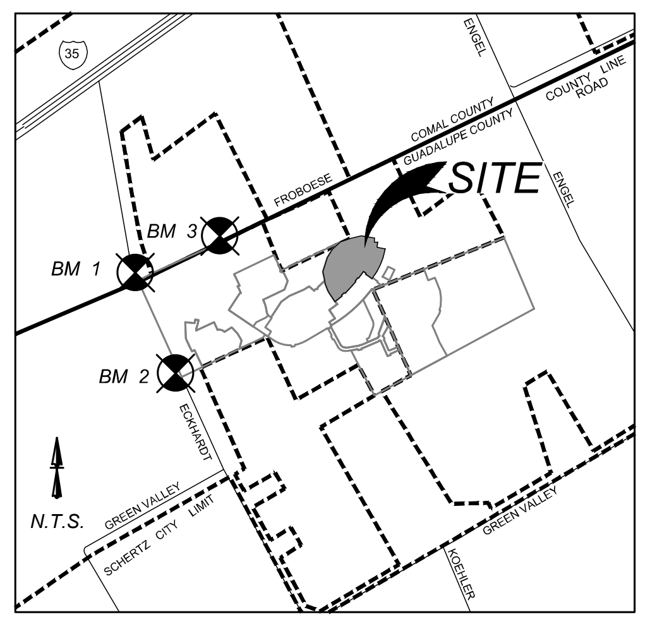


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
3'-6" MIN.
EXISTING WATER LINE
✳ SEPARATION DISTANCE TO COMPLY WITH TAC TITLE 30 - 290.44§(e) & TAC - 217.53§(d)
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10'
10'

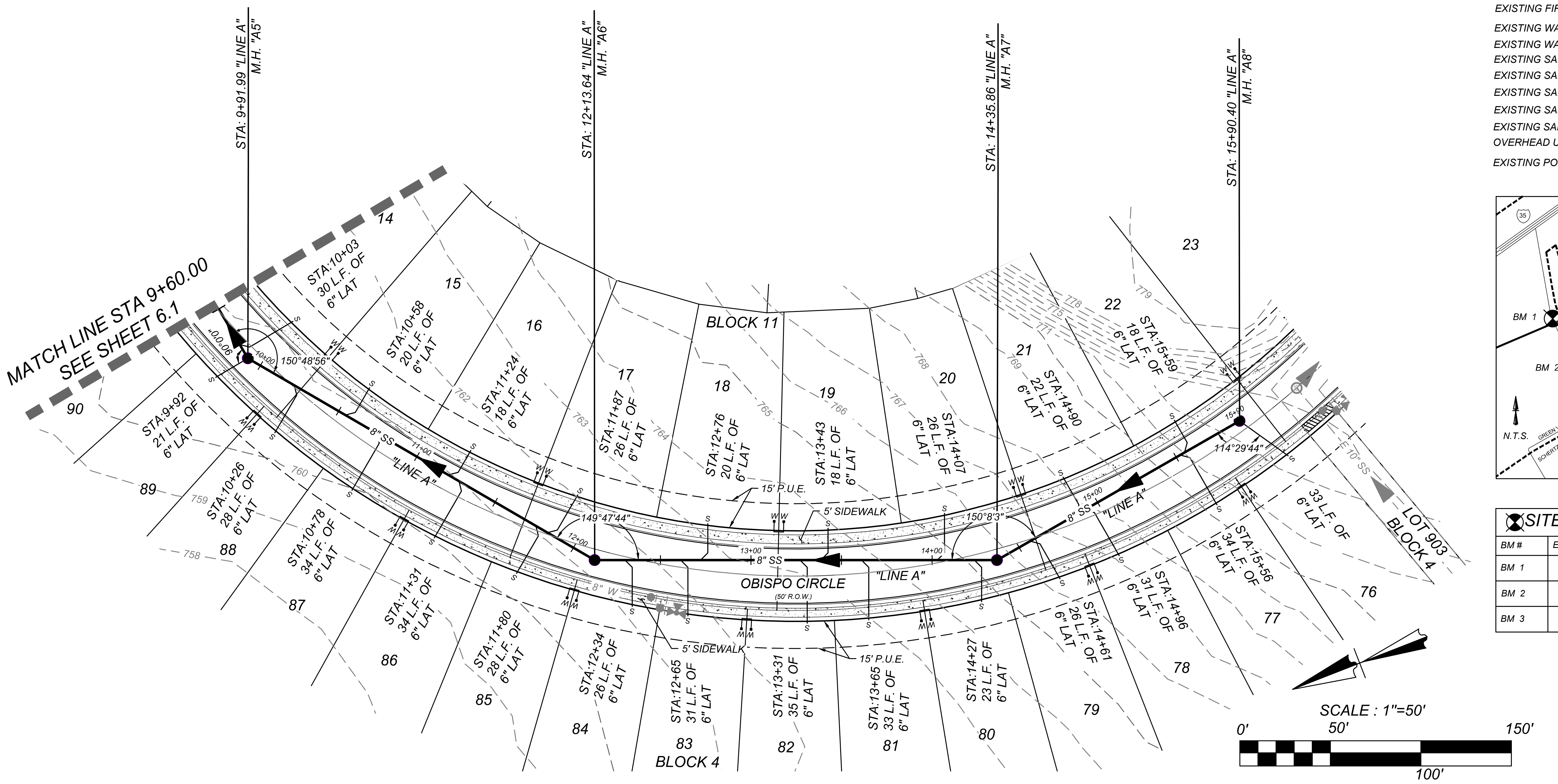
TYPICAL SANITARY SEWER / WATER CROSSING DETAIL
NOT TO SCALE



LOCATION MAP
N.T.S.

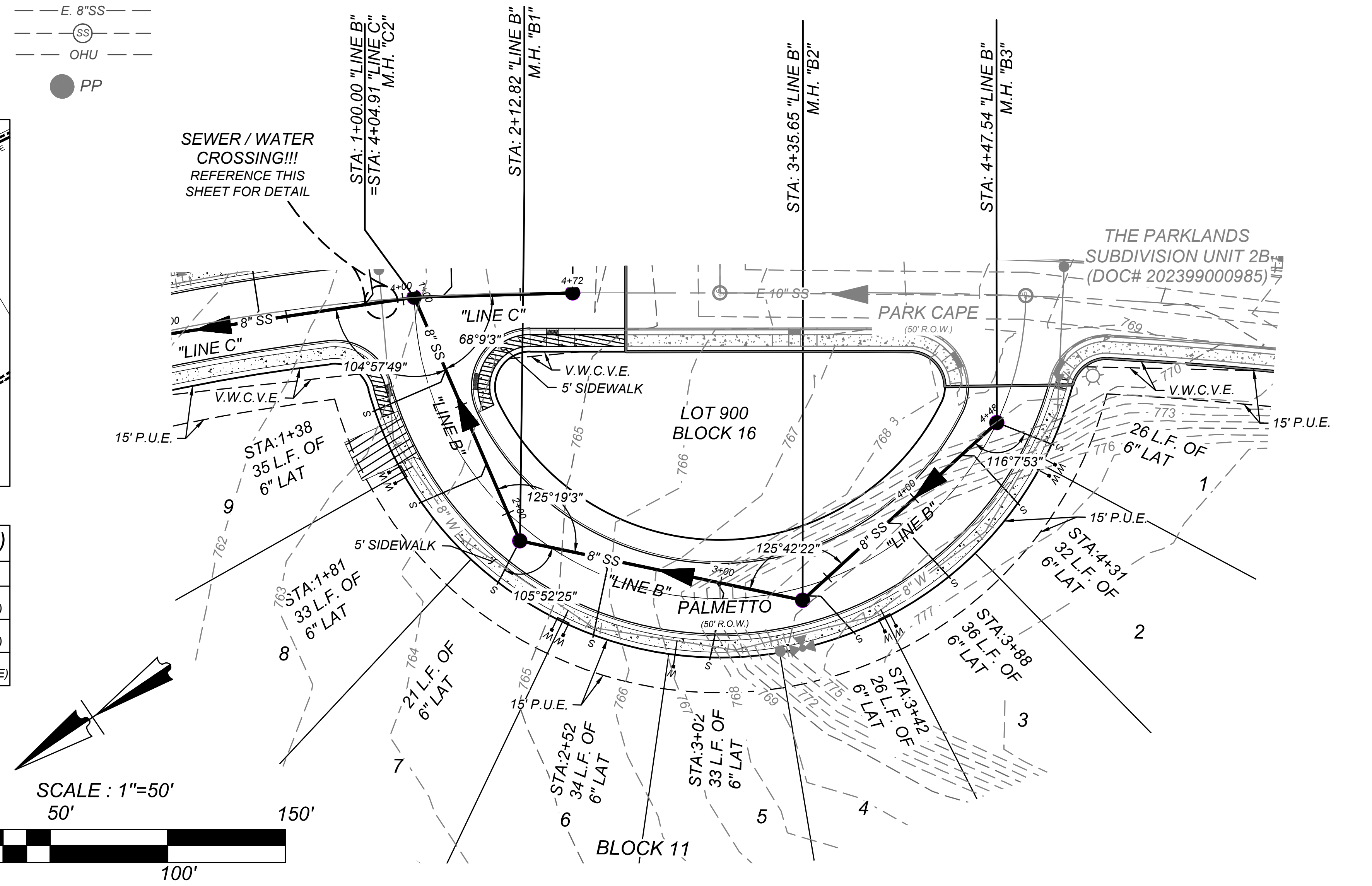


SITE BENCHMARKS (SURFACE)		
BM #	ELEV.	DESCRIPTION
BM 1	799.66	SET ½" IRON ROD WITH "KFW" CAP N: 13781919.20', E: 2222316.97' (SURFACE)
BM 2	798.92	SET ½" IRON ROD WITH "KFW" CAP N: 13780446.99', E: 2222962.66' (SURFACE)
BM 3	788.86	SET ½" IRON ROD WITH "KFW" CAP N: 13782501.80', E: 13782501.80' (SURFACE)



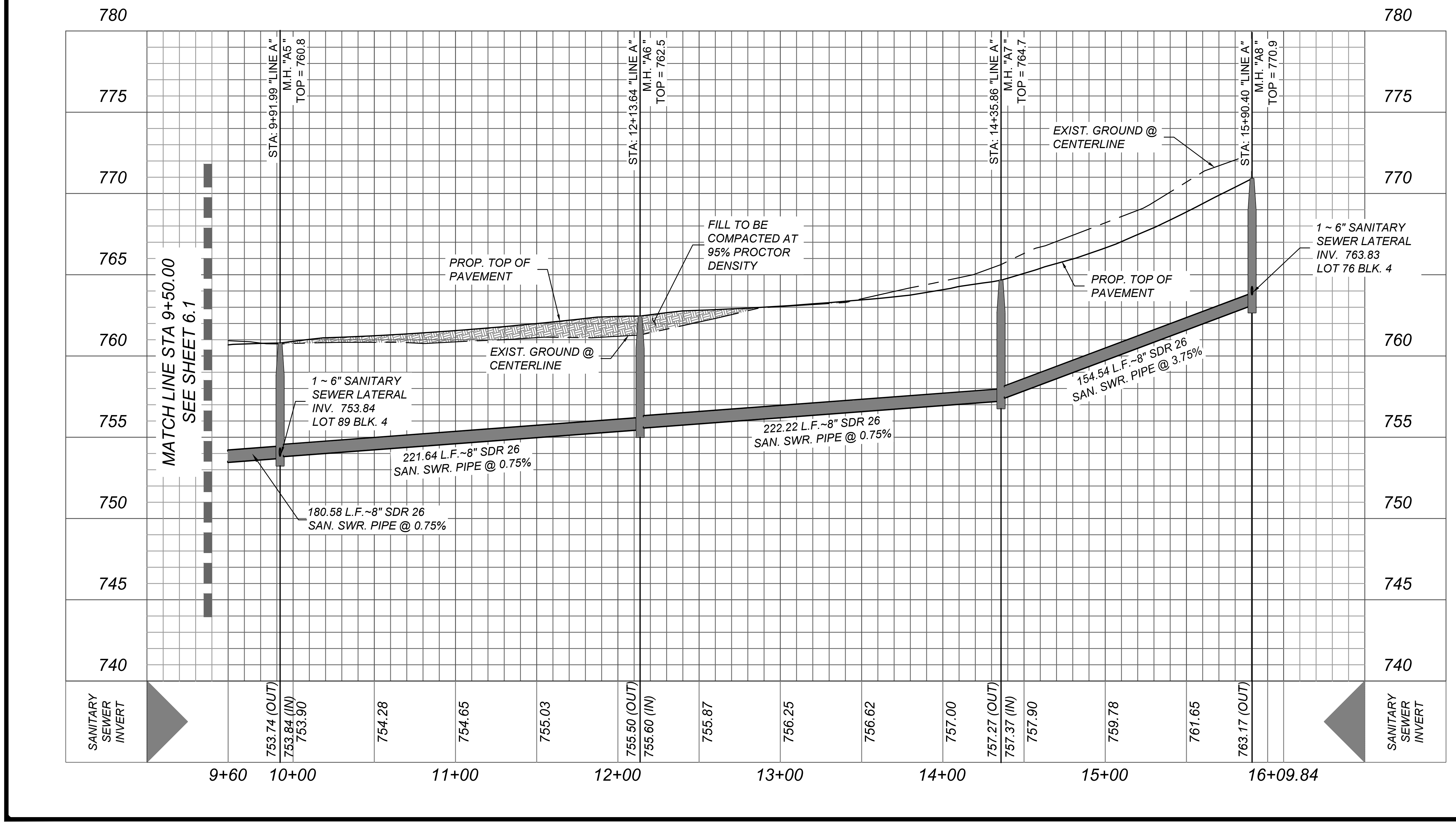
MATCH LINE STA 9+60.00 SEE SHEET 6.1
STA: 9+91.99 "LINE A" M.H. "A5"
STA: 12+13.64 "LINE A" M.H. "A6"
STA: 14+35.86 "LINE A" M.H. "A7"
STA: 15+90.40 "LINE A" M.H. "A8"
"LINE A"
OBISPO CIRCLE
BLOCK 11
BLOCK 4
LOT 903 BLOCK 4
5' SIDEWALK
15' P.U.E.
SCALE : 1"=50'
0'
50'
100'
150'

LINE A
STA. 9+60.00 - END

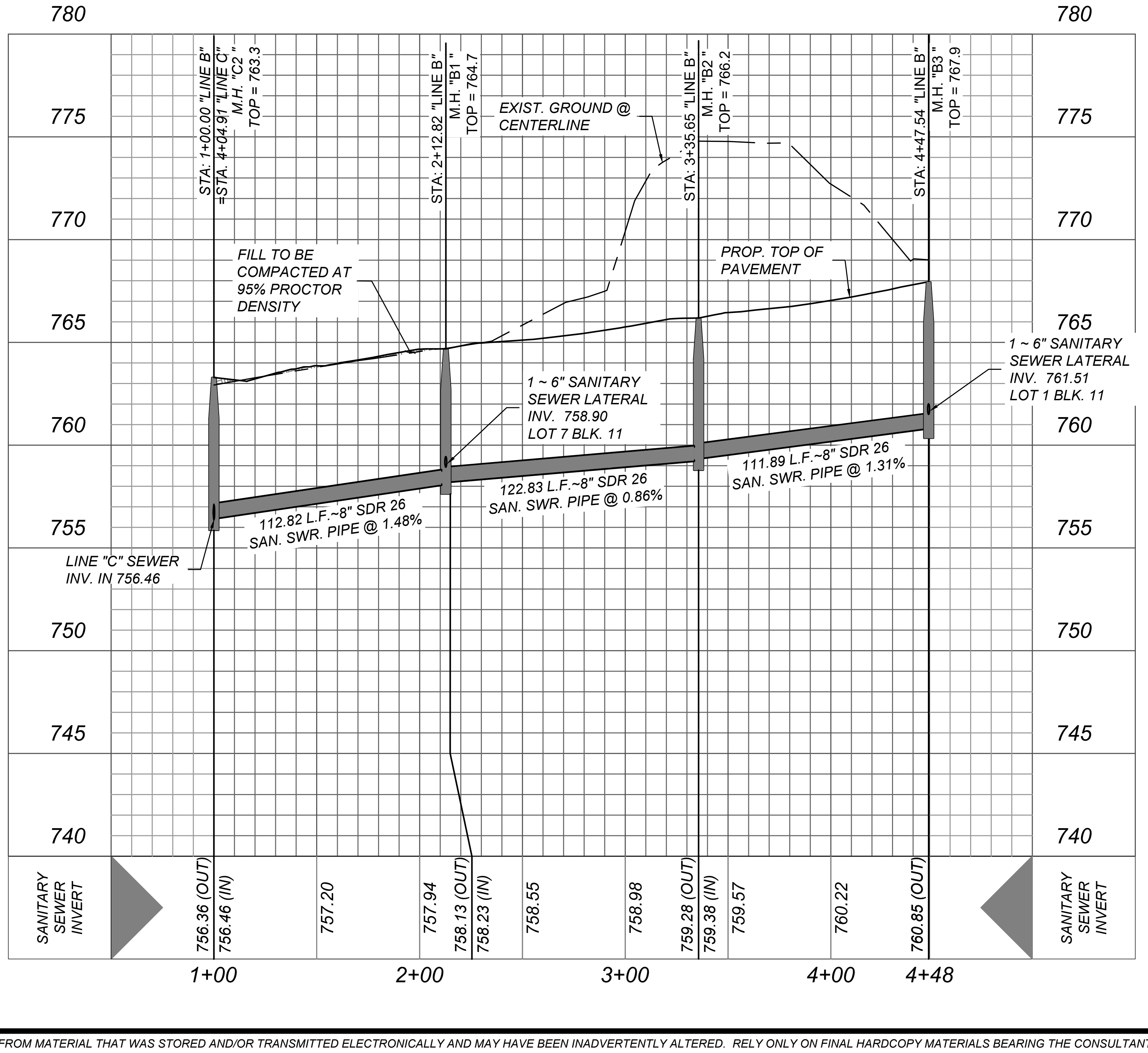


SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
STA: 1+00.00 "LINE B" =STA: 4+04.91 "LINE C" M.H. "C2"
STA: 2+12.82 "LINE B" M.H. "B1"
STA: 3+35.65 "LINE B" M.H. "B2"
STA: 4+47.54 "LINE B" M.H. "B3"
THE PARKLANDS SUBDIVISION UNIT 2B (DOC# 202399000985)
PARK CAPE
PALMETTO
LOT 900 BLOCK 16
BLOCK 11
"LINE C"
"LINE B"
V.W.C.V.E.
5' SIDEWALK
15' P.U.E.
SCALE : 1"=50'
0'
50'
100'
150'

LINE B
STA. 1+00.00 - END



780
775
770
765
760
755
750
745
740
MATCH LINE STA 9+50.00 SEE SHEET 6.1
STA: 9+91.99 "LINE A" M.H. "A5" TOP = 760.8
STA: 12+13.64 "LINE A" M.H. "A6" TOP = 762.5
STA: 14+35.86 "LINE A" M.H. "A7" TOP = 764.7
STA: 15+90.40 "LINE A" M.H. "A8" TOP = 770.9
EXIST. GROUND @ CENTERLINE
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
PROP. TOP OF PAVEMENT
1 ~ 6" SANITARY SEWER LATERAL INV. 763.83 LOT 76 BLK. 4
1 ~ 6" SANITARY SEWER LATERAL INV. 753.84 LOT 89 BLK. 4
221.64 L.F.~8" SDR 26 SAN. SWR. PIPE @ 0.75%
222.22 L.F.~8" SDR 26 SAN. SWR. PIPE @ 0.75%
154.54 L.F.~8" SDR 26 SAN. SWR. PIPE @ 3.75%
180.58 L.F.~8" SDR 26 SAN. SWR. PIPE @ 0.75%
SANITARY SEWER INVERT
753.74 (OUT)
753.84 (IN)
753.90
754.28
754.65
755.03
755.50 (OUT)
755.60 (IN)
755.87
756.25
756.62
757.00
757.27 (OUT)
757.37 (IN)
757.90
759.78
761.65
763.17 (OUT)
9+60
10+00
11+00
12+00
13+00
14+00
15+00
16+09.84



780
775
770
765
760
755
750
745
740
STA: 1+00.00 "LINE B" =STA: 4+04.91 "LINE C" M.H. "C2" TOP = 763.3
STA: 2+12.82 "LINE B" M.H. "B1" TOP = 764.7
STA: 3+35.65 "LINE B" M.H. "B2" TOP = 766.2
STA: 4+47.54 "LINE B" M.H. "B3" TOP = 767.9
EXIST. GROUND @ CENTERLINE
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
PROP. TOP OF PAVEMENT
1 ~ 6" SANITARY SEWER LATERAL INV. 758.90 LOT 7 BLK. 11
1 ~ 6" SANITARY SEWER LATERAL INV. 761.51 LOT 1 BLK. 11
LINE "C" SEWER INV. IN 756.46
112.82 L.F.~8" SDR 26 SAN. SWR. PIPE @ 1.48%
122.83 L.F.~8" SDR 26 SAN. SWR. PIPE @ 0.86%
111.89 L.F.~8" SDR 26 SAN. SWR. PIPE @ 1.31%
SANITARY SEWER INVERT
756.36 (OUT)
756.46 (IN)
757.20
757.94
758.13 (OUT)
758.23 (IN)
758.55
758.98
759.28 (OUT)
759.38 (IN)
759.57
760.22
760.85 (OUT)
1+00
2+00
3+00
4+00
4+48

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

ISSUE DATE

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX
SEWER LINE A STA. 9+60.00 - END & LINE B STA. 1+00.00 - END

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
6.2

Date: Apr 03, 2024, 10:34am User ID: jferguson
File: I:\Projects\171\23\07\Design\Civil\SEWER\SEWER LINE A STA. 9+60.00 - END & LINE B STA. 1+00.00 - END.dwg

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2. PIPE TYPE DESIGNATIONS ARE SDR 26.
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4. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING AND COVER ALL MANHOLES SHALL BE 5' IN DIAMETER. SEE SHEET 6.5 FOR DETAILS.
5. SEE SHEET 6.0 FOR BENCHMARK INFORMATION.
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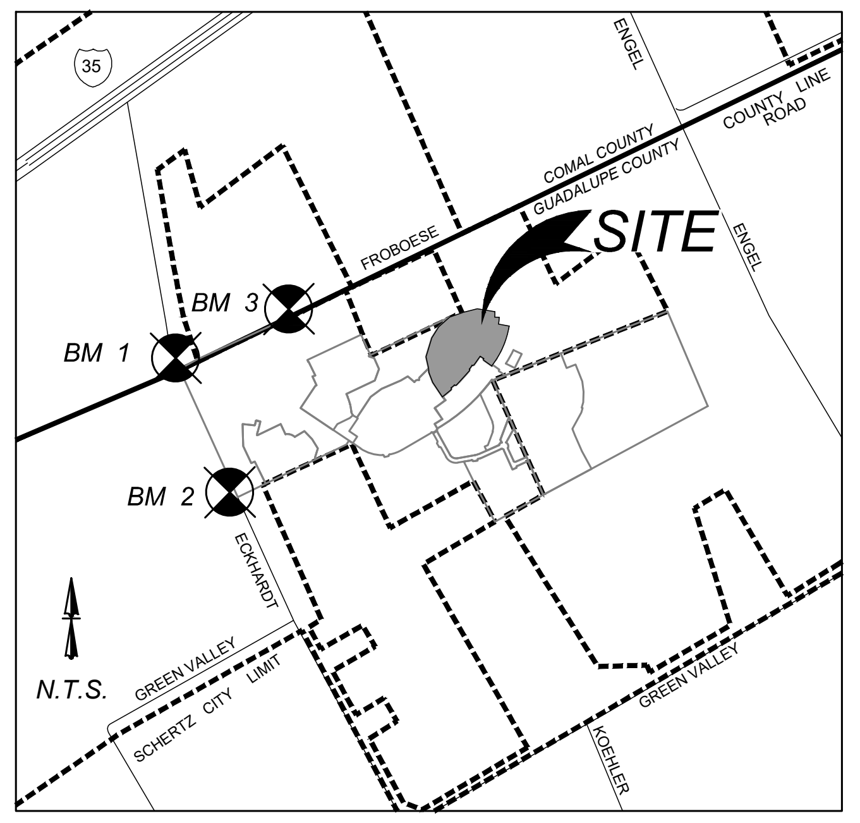

SITE BENCHMARKS (SURFACE)

BM #	ELEV.	DESCRIPTION
BM 1	799.66	SET 1/2" IRON ROD WITH "KFW" CAP N: 13781919.20', E: 2222316.97' (SURFACE)
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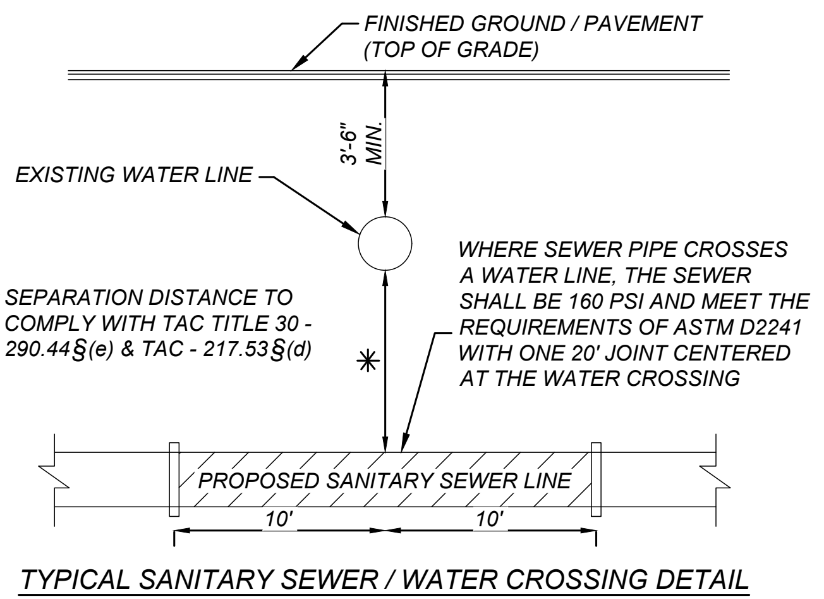
BM 3	788.86	SET 1/2" IRON ROD WITH "KFW" CAP N: 13782501.80', E: 13782501.80' (SURFACE)

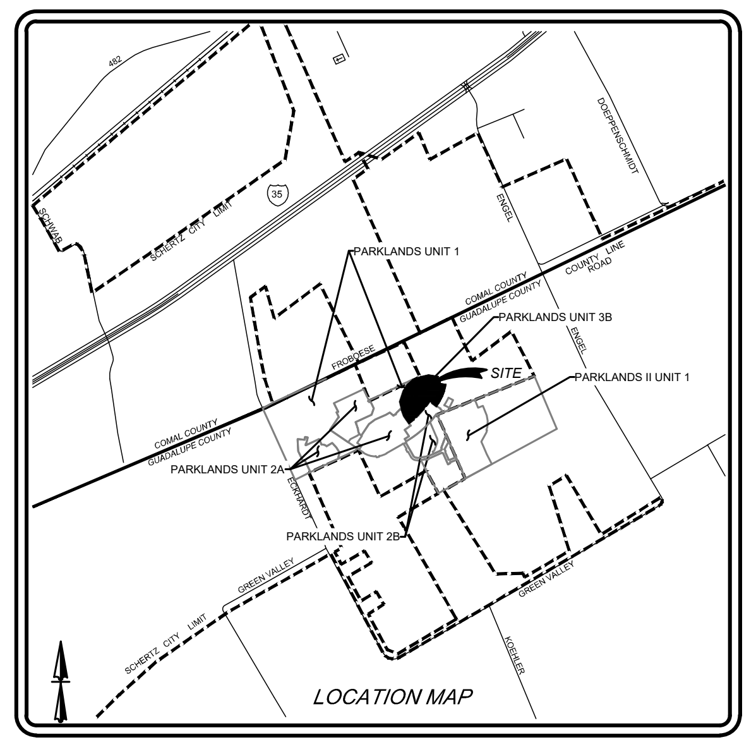
LEGEND

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	⧓
GAS, ELECTRIC, TELEPHONE, CABLE T.V., EASEMENT	G.E.T.TV. E.
VEHICULAR NON-ACCESS EASEMENT	V.N.A.E.
VARIABLE WIDTH CLEAR VISION EASEMENT	V.W.C.V.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
PROPOSED SANITARY SEWER LATERAL (TIE-IN TO EXISTING MAIN)	* S
EXISTING SANITARY SEWER LATERAL	S
EXISTING WATER VALVE	⋈
EXISTING FIRE HYDRANT	⧓
EXISTING WATER MAIN	E. 8" W
EXISTING WATER BLOWOFF	▷○
EXISTING SANITARY SEWER MAIN	E. 10"SS
EXISTING SANITARY SEWER MAIN	E. 12"SS
EXISTING SANITARY SEWER MAIN	E. 15"SS
EXISTING SANITARY SEWER MAIN	E. 8"SS
EXISTING SANITARY SEWER MANHOLE	SS
OVERHEAD UTILITY LINE	OHU
EXISTING POWER POLE	● PP

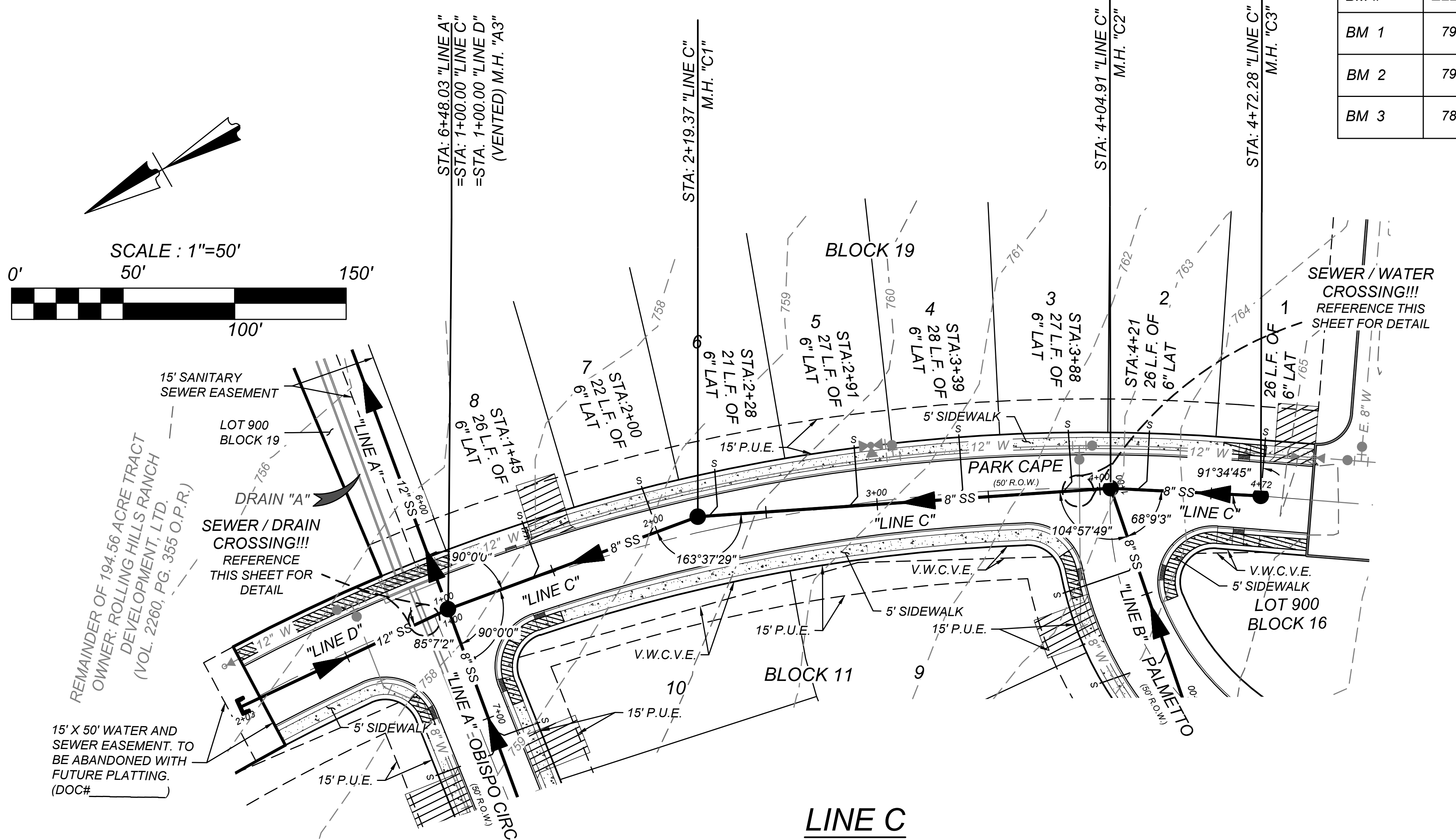


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
3'-6" MIN.
EXISTING WATER LINE
✳ SEPARATION DISTANCE TO COMPLY WITH TAC TITLE 30 - 290.44§(e) & TAC - 217.53§(d)
WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT CENTERED AT THE WATER CROSSING
PROPOSED SANITARY SEWER LINE
10'
10'

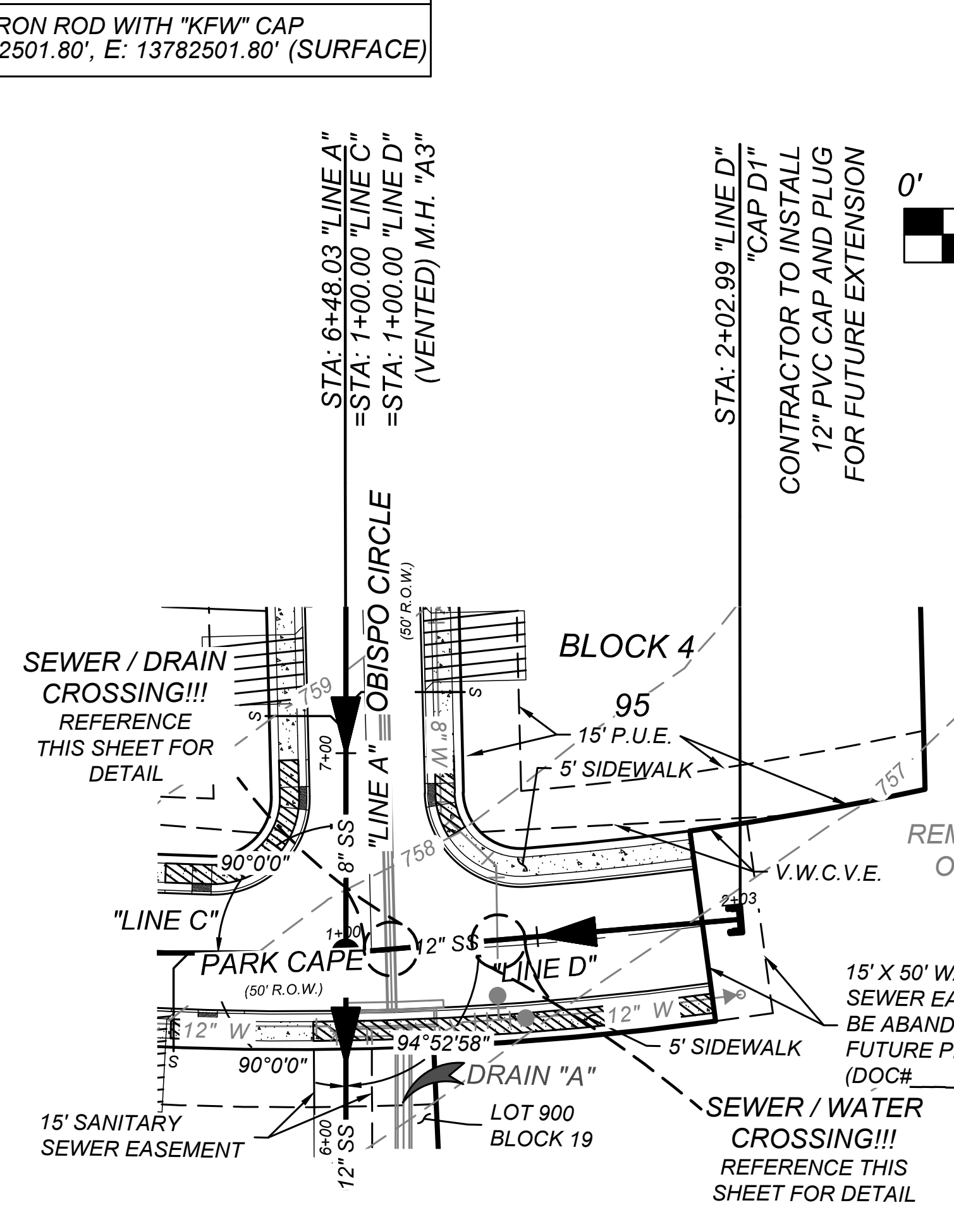
TYPICAL SANITARY SEWER / WATER CROSSING DETAIL
NOT TO SCALE



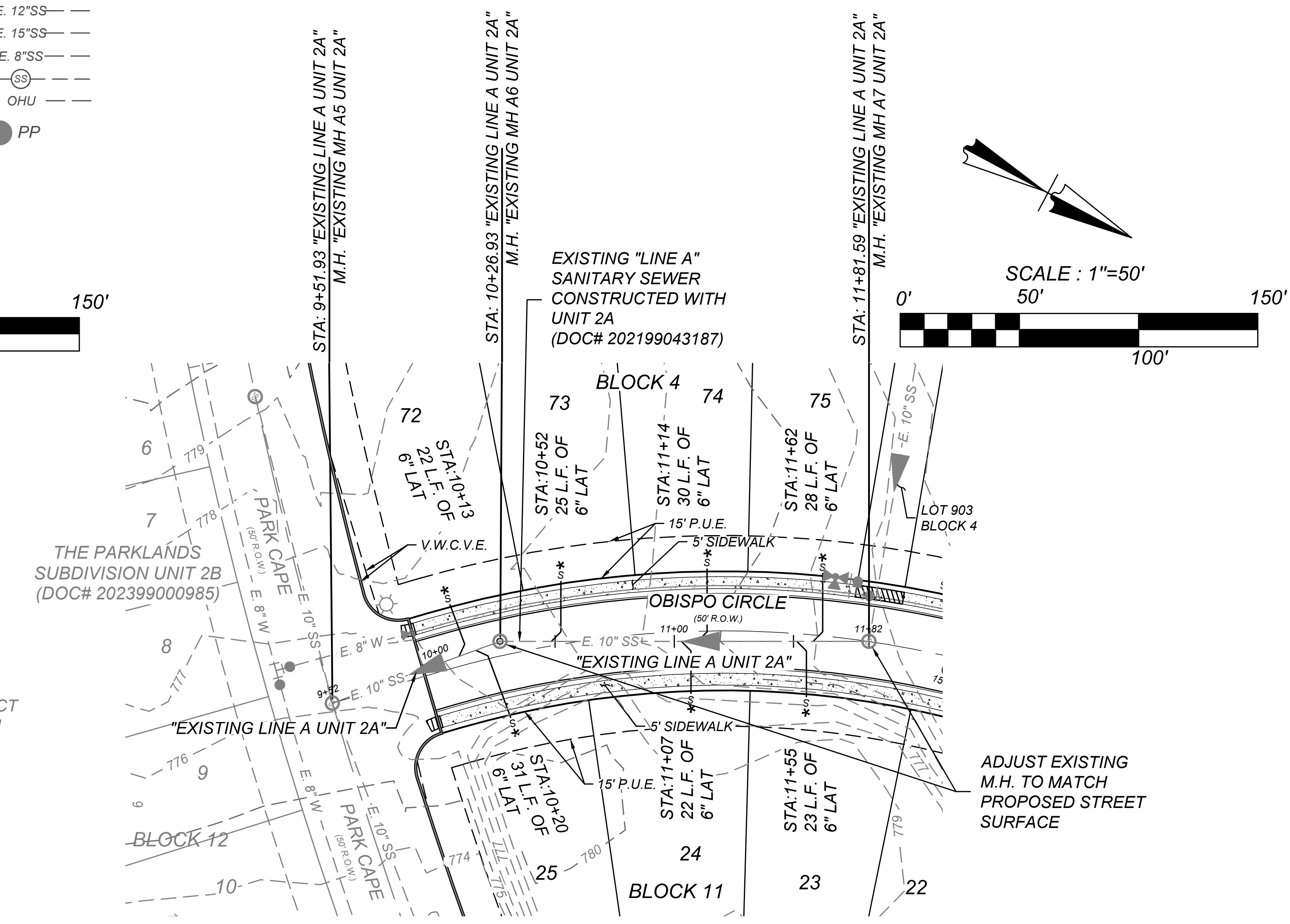
LOCATION MAP
N.T.S.



SCALE : 1"=50'
0'
50'
100'
150'
STA: 6+48.03 "LINE A" =STA: 1+00.00 "LINE C" =STA: 1+00.00 "LINE D" (VENTED) M.H. "A3"
STA: 2+19.37 "LINE C" M.H. "C1"
STA: 4+04.91 "LINE C" M.H. "C2"
STA: 4+72.28 "LINE C" M.H. "C3"
BLOCK 19
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
15' SANITARY SEWER EASEMENT
LOT 900 BLOCK 19
DRAIN "A"
SEWER / DRAIN CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
15' X 50' WATER AND SEWER EASEMENT. TO BE ABANDONED WITH FUTURE PLATTING. (DOC#
STA.1+45 26 L.F. OF 6" LAT
STA.2+00 22 L.F. OF 6" LAT
STA.2+28 21 L.F. OF 6" LAT
STA.2+91 27 L.F. OF 6" LAT
STA.3+39 28 L.F. OF 6" LAT
STA.3+88 27 L.F. OF 6" LAT
STA.4+21 26 L.F. OF 6" LAT
26 L.F. OF 6" LAT
8 7 6 5 4 3 2 1
PARK CAPE (50' R.O.W.)
"LINE C"
"LINE D"
"LINE A"
"LINE B"
PALMETTO
OBISPO CIRCLE
5' SIDEWALK
15' P.U.E.
V.W.C.V.E.
LOT 900 BLOCK 16
BLOCK 11
10
9
163°37'29"
104°57'49"
68°9'3"
91°34'45"
90°0'0"
85°7'2"

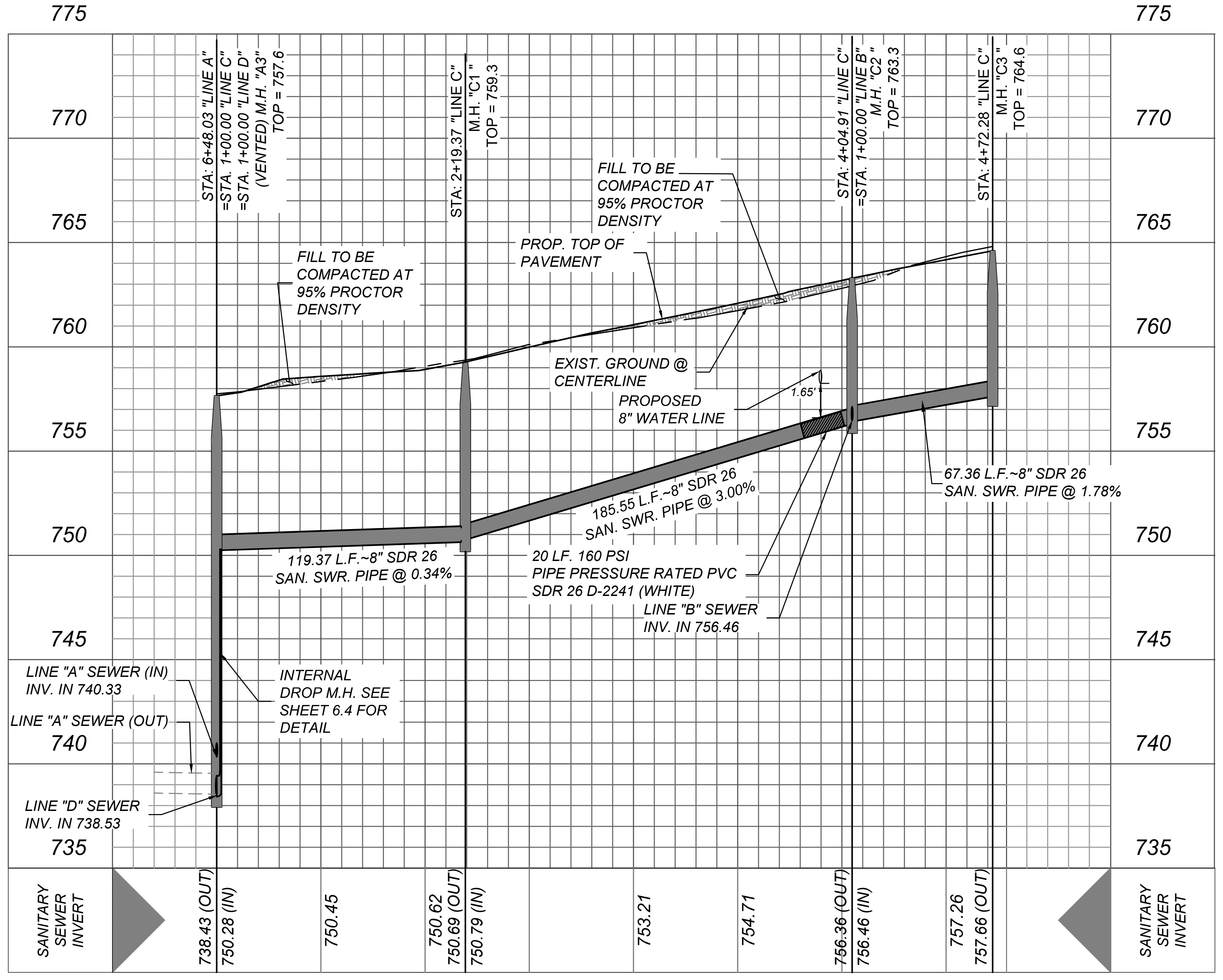


STA: 6+48.03 "LINE A" =STA: 1+00.00 "LINE C" =STA: 1+00.00 "LINE D" (VENTED) M.H. "A3"
STA: 2+02.99 "LINE D" "CAP D1" CONTRACTOR TO INSTALL 12" PVC CAP AND PLUG FOR FUTURE EXTENSION
SCALE : 1"=50'
0'
50'
100'
150'
OBISPO CIRCLE
BLOCK 4
95
15' P.U.E.
5' SIDEWALK
V.W.C.V.E.
SEWER / DRAIN CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
15' X 50' WATER AND SEWER EASEMENT. TO BE ABANDONED WITH FUTURE PLATTING. (DOC#
"LINE C"
"LINE D"
"LINE A"
PARK CAPE (50' R.O.W.)
DRAIN "A"
LOT 900 BLOCK 19
15' SANITARY SEWER EASEMENT
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
94°52'58"
90°0'0"



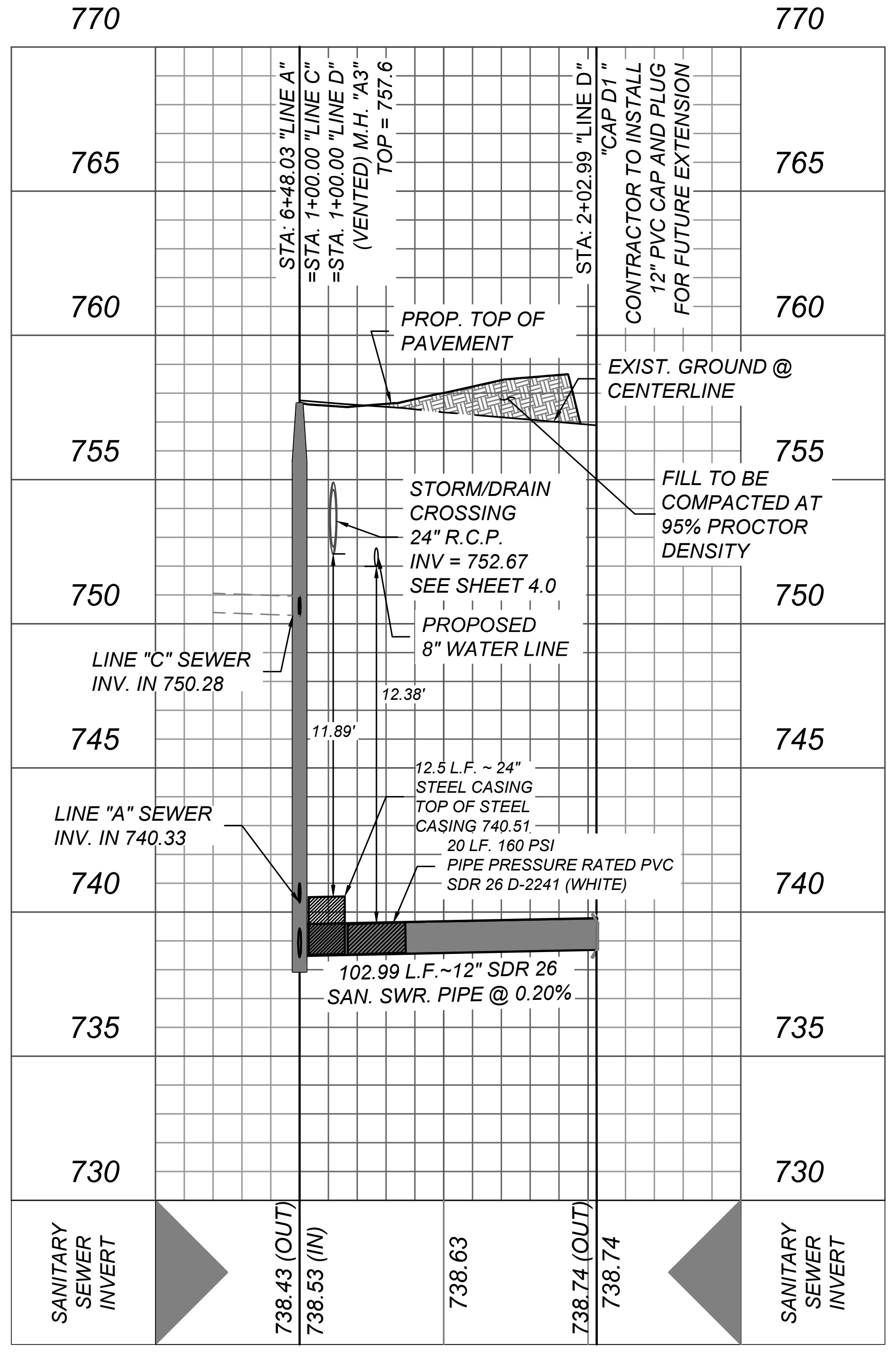
STA: 9+51.93 "EXISTING LINE A UNIT 2A" M.H. "EXISTING MH A5 UNIT 2A"
STA: 10+26.93 "EXISTING LINE A UNIT 2A" M.H. "EXISTING MH A6 UNIT 2A"
STA: 11+81.59 "EXISTING LINE A UNIT 2A" M.H. "EXISTING MH A7 UNIT 2A"
EXISTING "LINE A" SANITARY SEWER CONSTRUCTED WITH UNIT 2A (DOC# 202199043187)
SCALE : 1"=50'
0'
50'
100'
150'
THE PARKLANDS SUBDIVISION UNIT 2B (DOC# 202399000985)
72
73
74
75
BLOCK 4
LOT 903 BLOCK 4
STA.10+13 22 L.F. OF 6" LAT
STA.10+52 25 L.F. OF 6" LAT
STA.11+14 30 L.F. OF 6" LAT
STA.11+62 28 L.F. OF 6" LAT
STA.10+20 31 L.F. OF 6" LAT
STA.11+07 22 L.F. OF 6" LAT
STA.11+55 23 L.F. OF 6" LAT
OBISPO CIRCLE (50' R.O.W.)
"EXISTING LINE A UNIT 2A"
15' P.U.E.
5' SIDEWALK
V.W.C.V.E.
PARK CAPE
BLOCK 12
BLOCK 11
25
24
23
22
ADJUST EXISTING M.H. TO MATCH PROPOSED STREET SURFACE

LINE C
STA. 1+00.00 - END



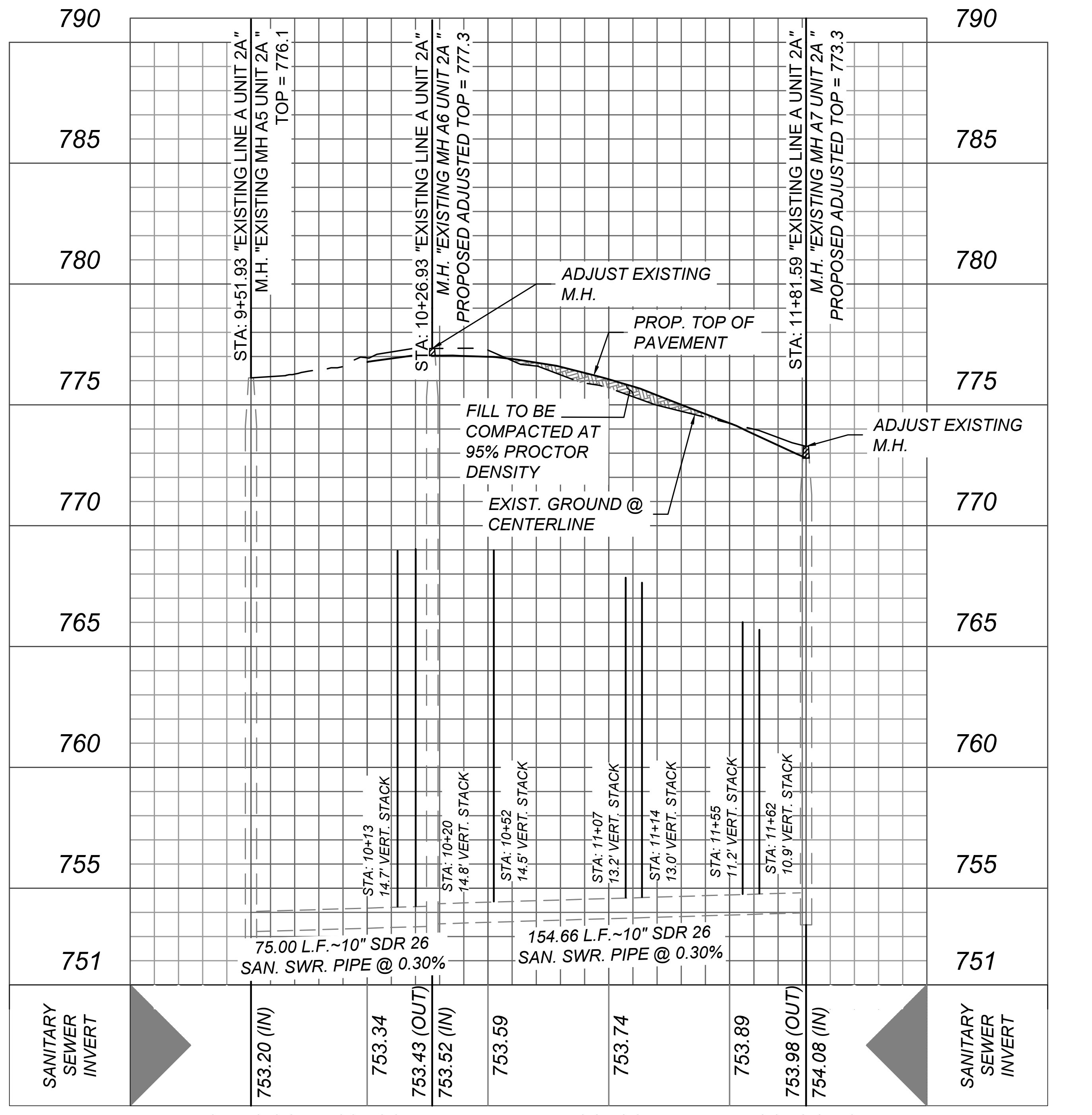
775
770
765
760
755
750
745
740
735
STA: 6+48.03 "LINE A" =STA: 1+00.00 "LINE C" =STA: 1+00.00 "LINE D" (VENTED) M.H. "A3" TOP = 757.6
STA: 2+19.37 "LINE C" M.H. "C1" TOP = 759.3
STA: 4+04.91 "LINE C" =STA: 1+00.00 "LINE B" M.H. "C2" TOP = 763.3
STA: 4+72.28 "LINE C" M.H. "C3" TOP = 764.6
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
PROP. TOP OF PAVEMENT
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
EXIST. GROUND @ CENTERLINE
PROPOSED 8" WATER LINE
1.65'
67.36 L.F.~8" SDR 26 SAN. SWR. PIPE @ 1.78%
185.55 L.F.~8" SDR 26 SAN. SWR. PIPE @ 3.00%
119.37 L.F.~8" SDR 26 SAN. SWR. PIPE @ 0.34%
20 LF. 160 PSI PIPE PRESSURE RATED PVC SDR 26 D-2241 (WHITE)
LINE "B" SEWER INV. IN 756.46
LINE "A" SEWER (IN) INV. IN 740.33
LINE "A" SEWER (OUT)
INTERNAL DROP M.H. SEE SHEET 6.4 FOR DETAIL
LINE "D" SEWER INV. IN 738.53
SANITARY SEWER INVERT
738.43 (OUT)
750.28 (IN)
750.45
750.62 (OUT)
750.69 (OUT)
750.79 (IN)
753.21
754.71
756.36 (OUT)
756.46 (IN)
757.26
757.66 (OUT)
1+00
2+00
3+00
4+00
4+79

LINE D
STA. 1+00.00 - END



770
765
760
755
750
745
740
735
730
STA: 6+48.03 "LINE A" =STA: 1+00.00 "LINE C" =STA: 1+00.00 "LINE D" (VENTED) M.H. "A3" TOP = 757.6
STA: 2+02.99 "LINE D" "CAP D1" CONTRACTOR TO INSTALL 12" PVC CAP AND PLUG FOR FUTURE EXTENSION
PROP. TOP OF PAVEMENT
EXIST. GROUND @ CENTERLINE
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
STORM/DRAIN CROSSING 24" R.C.P. INV = 752.67 SEE SHEET 4.0
PROPOSED 8" WATER LINE
LINE "C" SEWER INV. IN 750.28
11.89'
12.38'
12.5 L.F. ~ 24" STEEL CASING TOP OF STEEL CASING 740.51
20 LF. 160 PSI PIPE PRESSURE RATED PVC SDR 26 D-2241 (WHITE)
LINE "A" SEWER INV. IN 740.33
102.99 L.F.~12" SDR 26 SAN. SWR. PIPE @ 0.20%
SANITARY SEWER INVERT
738.43 (OUT)
738.53 (IN)
738.63
738.74 (OUT)
738.74

EXISTING LINE A UNIT 2A
STA. 9+51.93 - STA. 11+81.59



790
785
780
775
770
765
760
755
751
STA: 9+51.93 "EXISTING LINE A UNIT 2A" M.H. "EXISTING MH A5 UNIT 2A" TOP = 776.1
STA: 10+26.93 "EXISTING LINE A UNIT 2A" M.H. "EXISTING MH A6 UNIT 2A" PROPOSED ADJUSTED TOP = 777.3
STA: 11+81.59 "EXISTING LINE A UNIT 2A" M.H. "EXISTING MH A7 UNIT 2A" PROPOSED ADJUSTED TOP = 773.3
ADJUST EXISTING M.H.
PROP. TOP OF PAVEMENT
FILL TO BE COMPACTED AT 95% PROCTOR DENSITY
EXIST. GROUND @ CENTERLINE
ADJUST EXISTING M.H.
STA. 10+13 14.7' VERT. STACK
STA. 10+20 14.8' VERT. STACK
STA. 10+52 14.5' VERT. STACK
STA. 11+07 13.2' VERT. STACK
STA. 11+14 13.0' VERT. STACK
STA. 11+55 11.2' VERT. STACK
STA. 11+62 10.9' VERT. STACK
75.00 L.F.~10" SDR 26 SAN. SWR. PIPE @ 0.30%
154.66 L.F.~10" SDR 26 SAN. SWR. PIPE @ 0.30%
SANITARY SEWER INVERT
753.20 (IN)
753.34
753.43 (OUT)
753.52 (IN)
753.59
753.74
753.89
753.98 (OUT)
754.08 (IN)
9+51.93
10+00
11+00
11+81.59

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

BID SET
NOT FOR
CONSTRUCTION
THIS DOCUMENT IS RELEASED BY AUTHORITY OF DENIS A. AVENDANO P.E. #137588 FOR INTERIM REVIEW ONLY AND NOT TO BE USED FOR CONSTRUCTION.

THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX
SEWER LINE C&D STA. 1+00 - END & EX LINE A 9+51.93 - 11+81.59

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN:
CHECKED: NR

SHEET NUMBER:
6.3

Date: Mar 22, 2024, 1:21pm User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\SEWER\SEWER LINE C&D STA.1+00 - END & EX LINE A 9+51.93 - 11+81.59.dwg

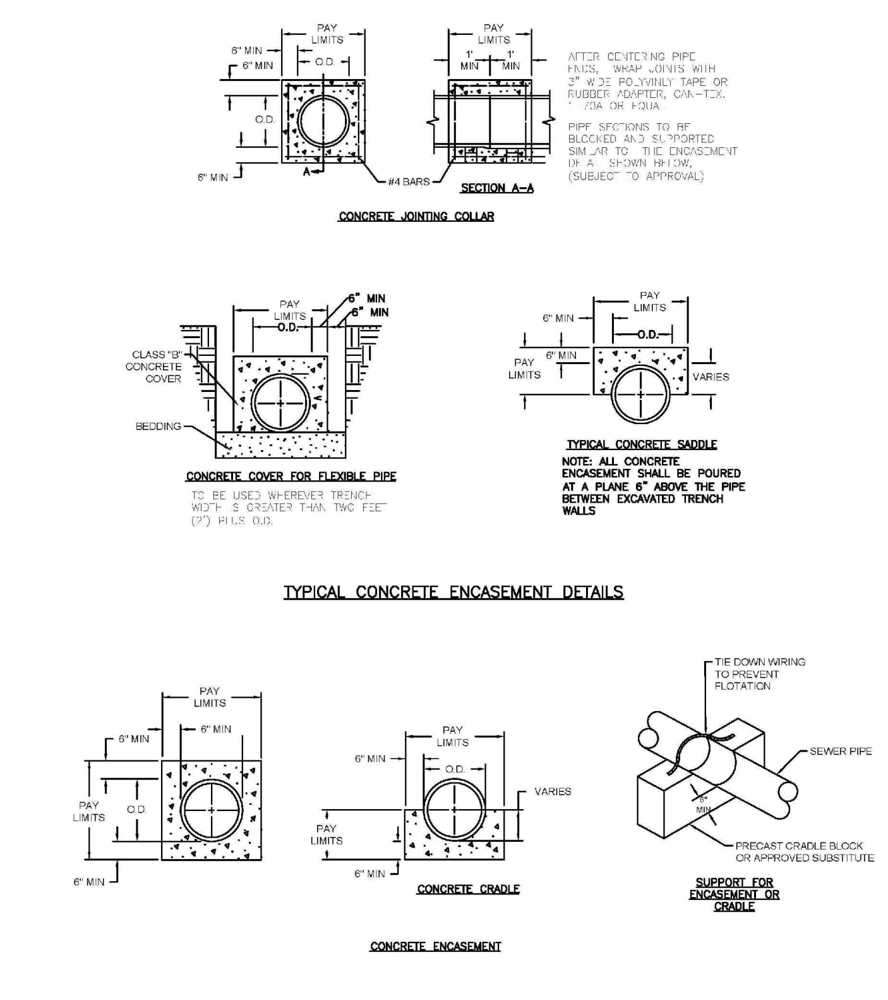
OSHA TRENCH SAFETY

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


SECTION A–A
CONCRETE JOINTING COLLAR
CONCRETE COVER FOR FLEXIBLE PIPE
TYPICAL CONCRETE SADDLE
TYPICAL CONCRETE ENCASEMENT DETAILS
PAY LIMITS
O.D.
6" MIN
VARIES
CONCRETE CRADLE
PRECAST CRADLE BLOCK OR APPROVED SUBSTITUTE
SUPPORT FOR ENCASEMENT OR CRADLE
CONCRETE ENCASEMENT

NOTES:
1) ALL CONCRETE ENCASEMENT SHALL BE POURED AT A PLANE 6" ABOVE THE PIPE BETWEEN EXCAVATED TRENCH WALLS.
2) ALL SEWER MAIN WITH LESS THAN 4' OF COVER TO FINAL GRADE SHALL BE CONCRETE ENCASED.
3) ALL FORCE MAINS SHALL BE PROVIDED WITH THRUST BLOCKS, WHERE CHANGES IN DIRECTION OCCUR, AT TEES, BENDS, CROSSES, CHANGES IN SIZE, STOPS, OR AS DIRECTED BY THE CITY ENGINEER.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
CONCRETE ENCASEMENT
TECHNICAL SPECIFICATION SECTION 02511
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 5/10/19
DSGN. BY: ENG. DRAWN BY: BCP SHEET NO.: 1

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

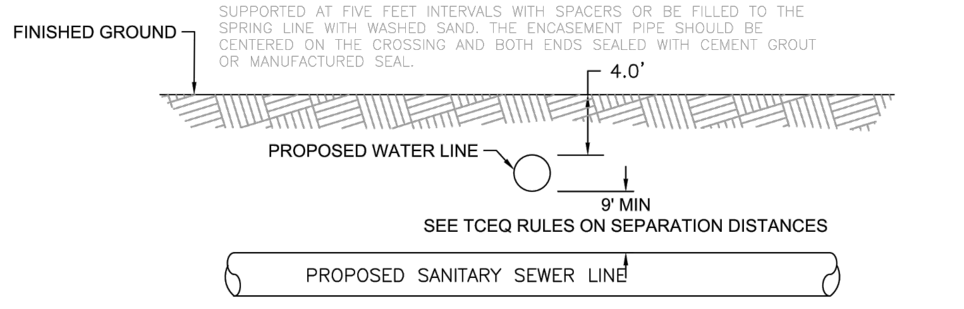
WHEN NEW SANITARY SEWERS ARE INSTALLED, THEY SHALL BE INSTALLED NO CLOSER TO WATERLINES THAN NINE FEET IN ALL DIRECTIONS. SEWERS THAT PARALLEL WATERLINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING GUIDELINES WILL APPLY.

(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.

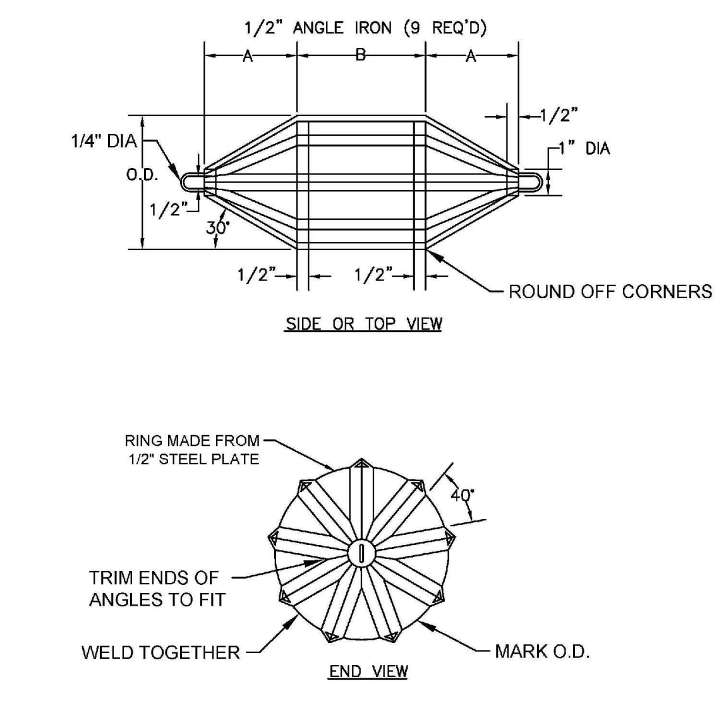

FINISHED GROUND
4.0'
PROPOSED WATER LINE
9' MIN
SEE TCEQ RULES ON SEPARATION DISTANCES
PROPOSED SANITARY SEWER LINE

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
OSHA TRENCH SAFETY
TECHNICAL SPECIFICATION SECTION 02260
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"	—	—

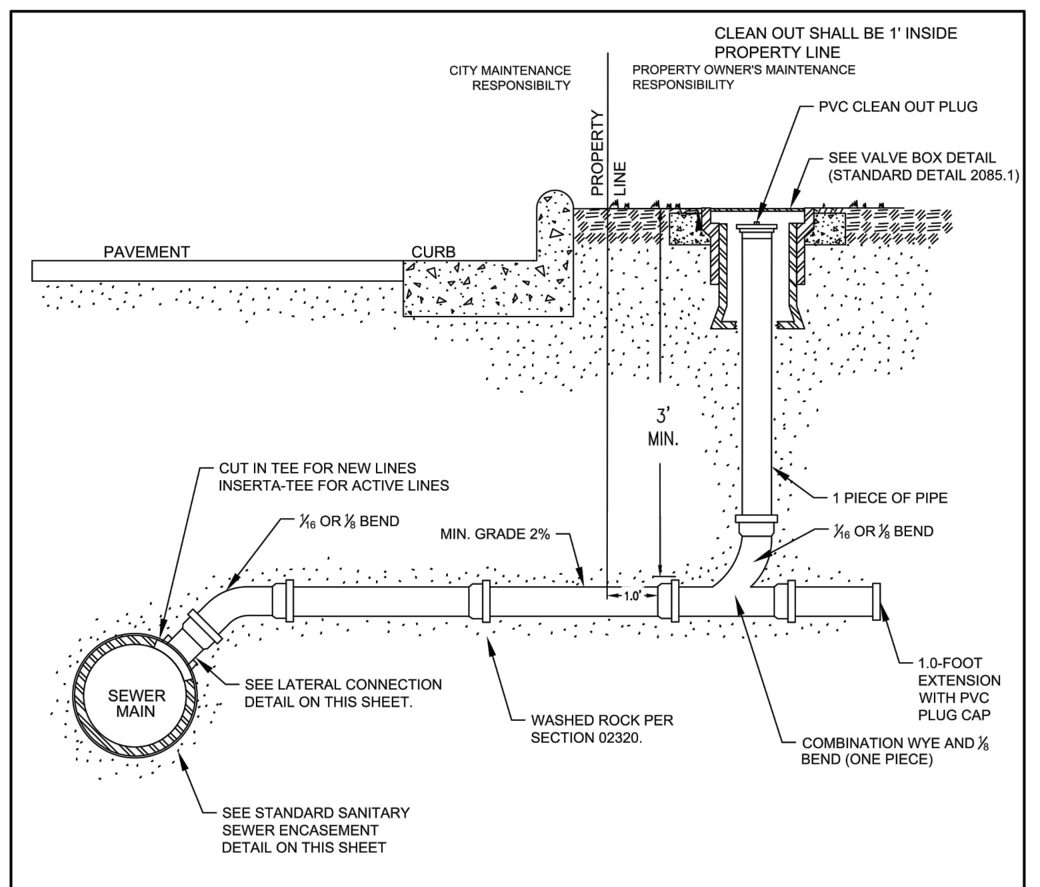
MINIMUM LENGTH
CHART

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.



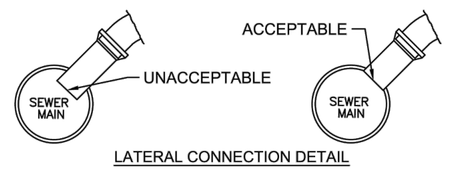
NOTE:
ALL MANDRELS MUST BE APPROVED BY CONSTRUCTION INSPECTIONS AND STAMPED BEFORE USE.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
DEFLECTION TESTING MANDREL
TECHNICAL SPECIFICATION SECTION 02260
ENGINEERING AND PUBLIC WORKS


CLEAN OUT SHALL BE 1' INSIDE PROPERTY LINE
CITY MAINTENANCE RESPONSIBILITY
PROPERTY OWNER'S MAINTENANCE RESPONSIBILITY
PROPERTY LINE
PVC CLEAN OUT PLUG
SEE VALVE BOX DETAIL (STANDARD DETAIL 2085.1)
PAVEMENT
CURB
3' MIN.
CUT IN TEE FOR NEW LINES INSERTA-TEE FOR ACTIVE LINES
1/16 OR 1/8 BEND
MIN. GRADE 2%
1 PIECE OF PIPE
1/16 OR 1/8 BEND
SEWER MAIN
SEE LATERAL CONNECTION DETAIL ON THIS SHEET.
WASHED ROCK PER SECTION 02320.
1.0-FOOT EXTENSION WITH PVC PLUG CAP
COMBINATION WYE AND 1/8 BEND (ONE PIECE)
SEE STANDARD SANITARY SEWER ENCASEMENT DETAIL ON THIS SHEET

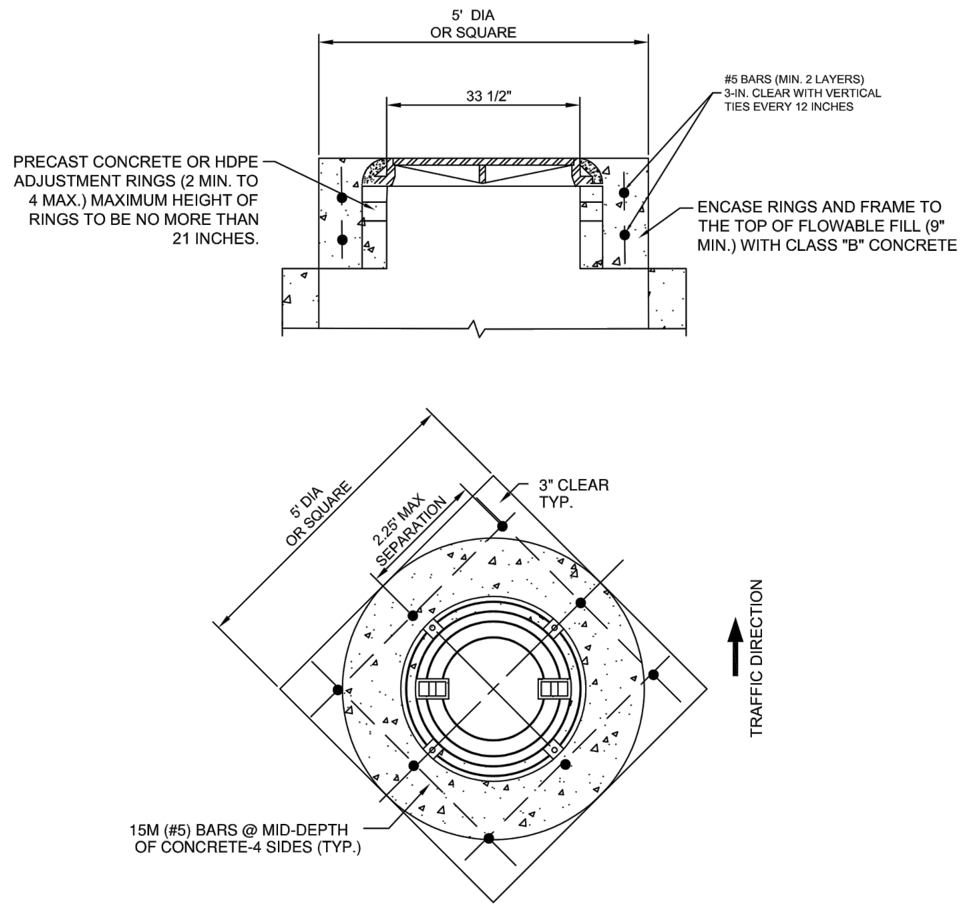
NOTES:

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 ENCAEMENT DETAIL THE FULL LENGTH OF TEH SERVICE DITCH SHALL BE FILLED IN 6-INCH LIFTS USING MECHANICAL COMPACTION EQUIPMENT. PIPE SHALL BE BEDDED IN WASHED ROCK PER SECTION 02320.
2. ALL SEWER MAINS WITH LESS THAN 4' OR COVER TO FINAL GRADE SHALL BE CONCRETE ENCASED.
3. SEWER CLEANOUT MUST BE INSTALLED INSIDE A VALVE BOX WITH COVER LABELED "SEWER."
4. SEWER LATERAL PIPE SHALL BE 6" MINIMUM SDR 26 PVC PIPE.
5. CONCRETE ENCASEMENT TO BE 6" GREATER THAN THE FULL LENGTH OF TEE IN ALL DIRECTIONS AROUND PIPE.



LATERAL CONNECTION DETAIL

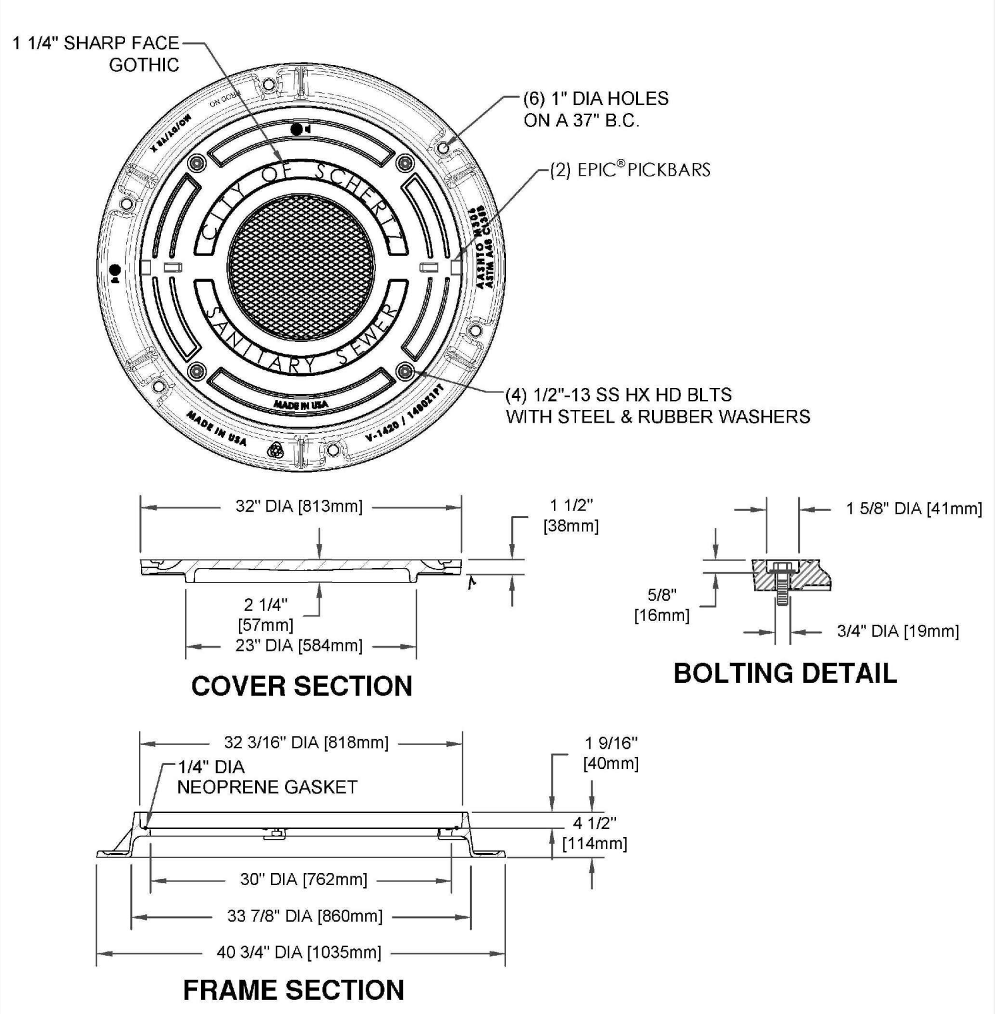
SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
STANDARD DETAIL 2534.1
SANITARY SEWER LATERAL
TECHNICAL SPECIFICATION SECTIONS 02534
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 08/07/2023
DSGN. BY: ENG DRAWN BY: TGW SHEET NO.: 1 of 1


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
5' DIA OR SQUARE
3" CLEAR TYP.
TRAFFIC DIRECTION
15M (#5) BARS @ MID-DEPTH OF CONCRETE-4 SIDES (TYP.)

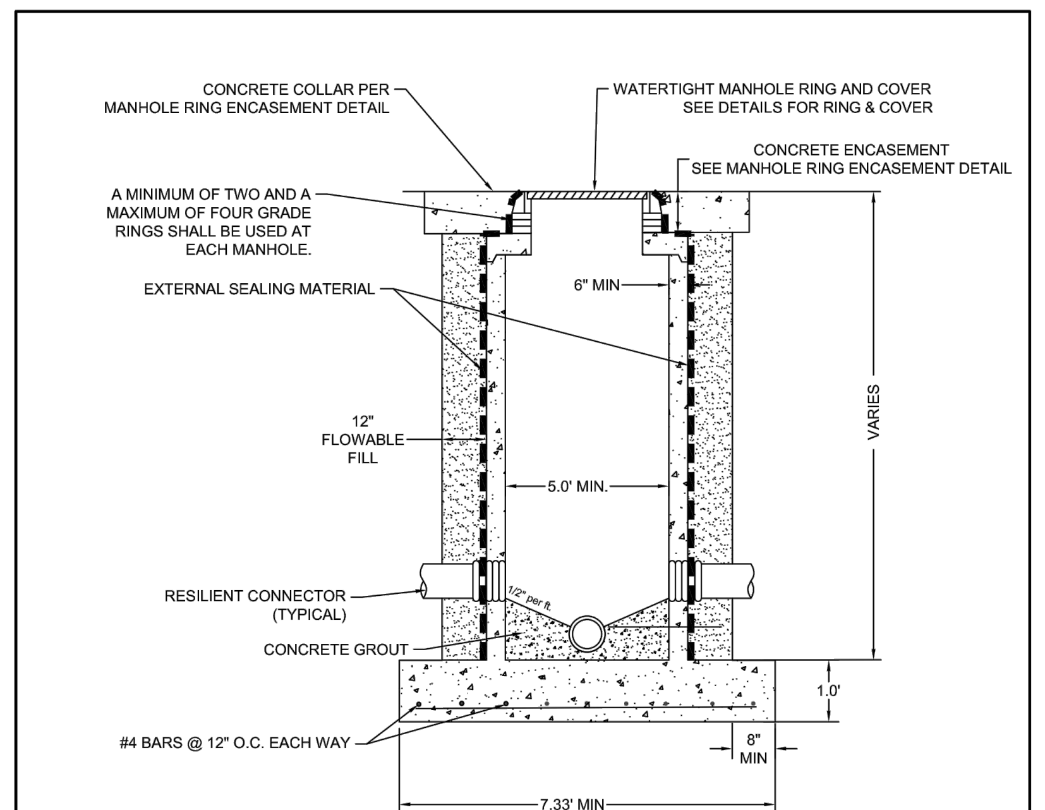
GENERAL NOTES

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

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
STANDARD DETAIL 02081.2
MANHOLE RING ENCASEMENT
TECHNICAL SPECIFICATION SECTIONS 02081, 02082, & 02083
ENGINEERING AND PUBLIC WORKS



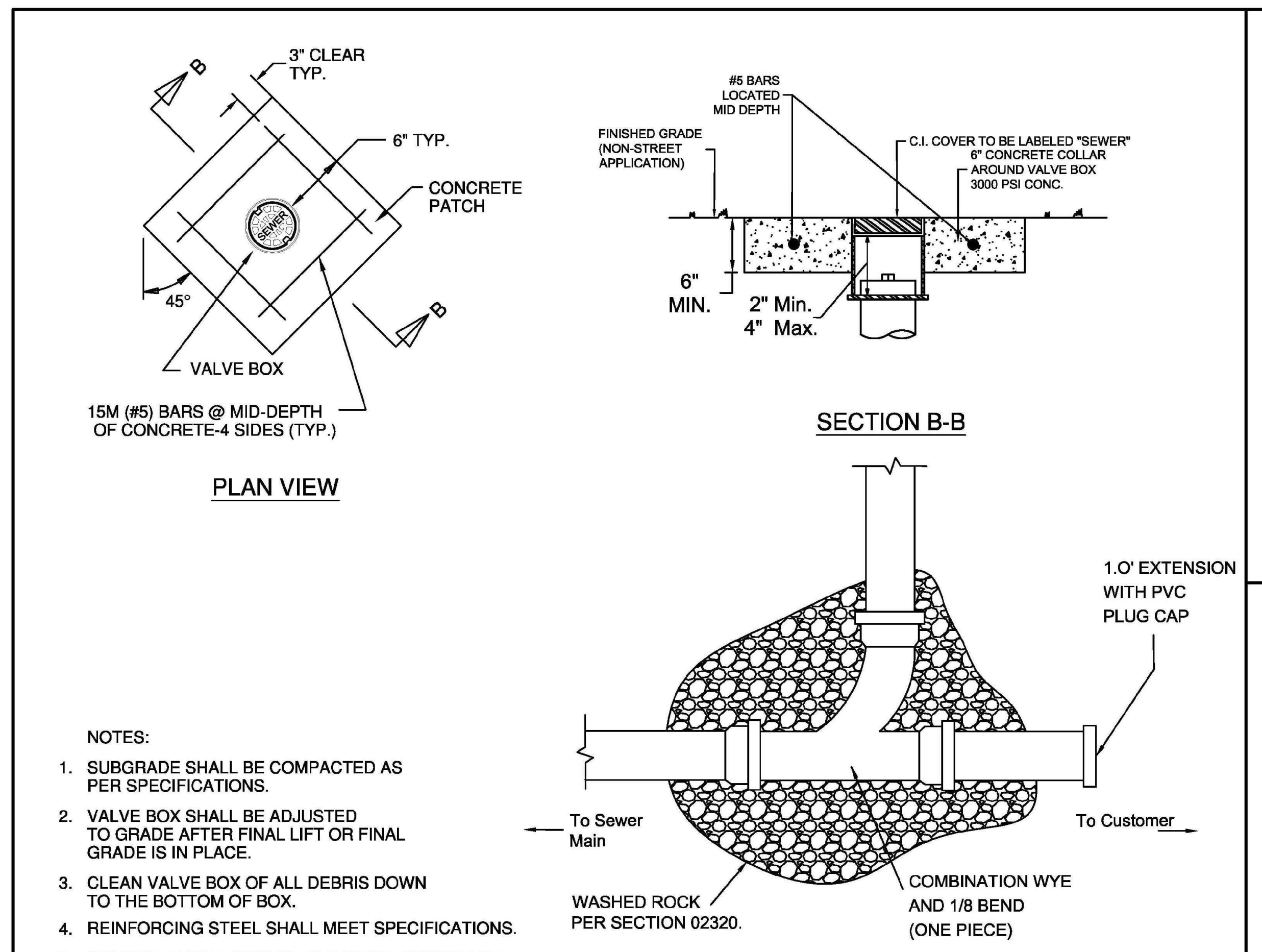
SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
MANHOLE RING & COVER
TECHNICAL SPECIFICATION SECTION 02084
ENGINEERING AND PUBLIC WORKS


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
5.0' MIN.
VARIES
RESILIENT CONNECTOR (TYPICAL)
CONCRETE GROUT
1.0'
#4 BARS @ 12" O.C. EACH WAY
8" MIN
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. .

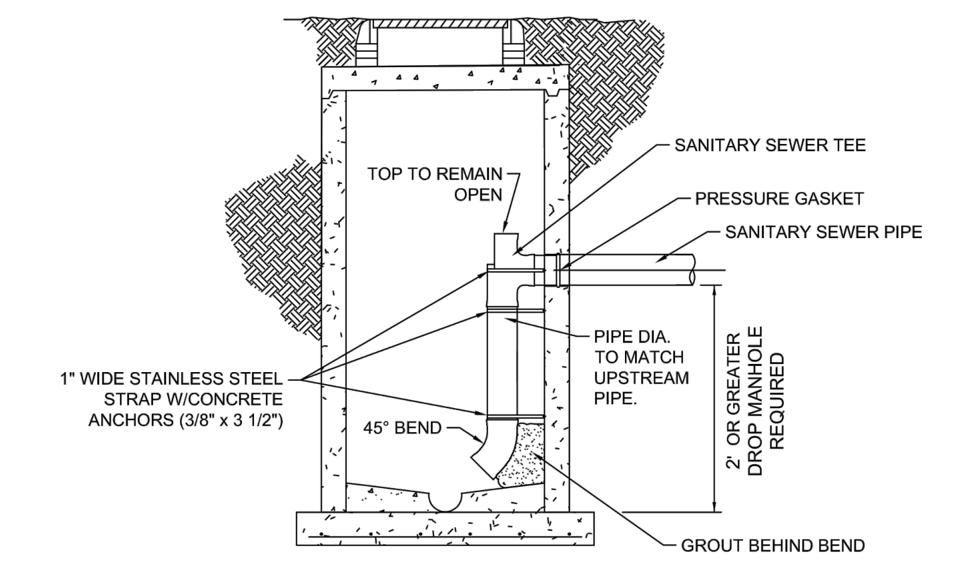
SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
STANDARD DETAIL 02081.1
MANHOLES
TECHNICAL SPECIFICATION SECTIONS 02081, 02082, & 02083
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 12/07/2022
DSGN. BY: ENG DRAWN BY: TGW SHEET NO.: 1 of 1


3" CLEAR TYP.
6" TYP.
CONCRETE PATCH
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.O' 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.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
LATERAL VALVE BOX
TECHNICAL SPECIFICATION SECTION 02534
ENGINEERING AND PUBLIC WORKS

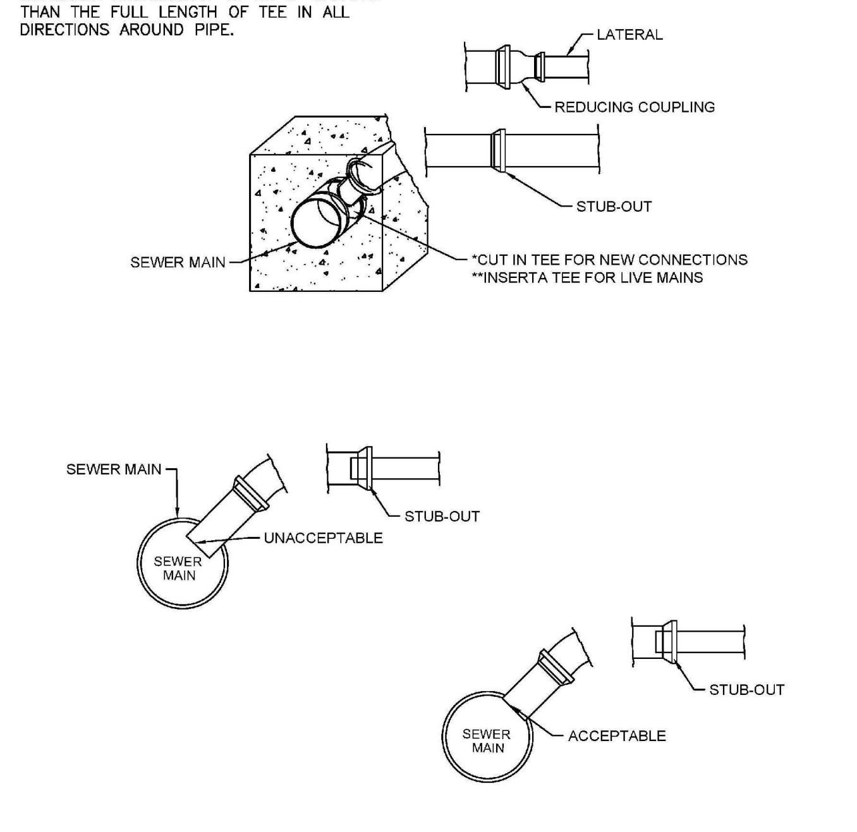

SANITARY SEWER TEE
TOP TO REMAIN OPEN
PRESSURE GASKET
SANITARY SEWER PIPE
1" WIDE STAINLESS STEEL STRAP W/CONCRETE ANCHORS (3/8" x 3 1/2")
PIPE DIA. TO MATCH UPSTREAM PIPE.
45° BEND
2' OR GREATER DROP MANHOLE REQUIRED
GROUT BEHIND BEND

GENERAL NOTES

1. THE CONTRACTOR SHALL REFERENCE MANHOLE STANDARD DETAIL FOR ADDITIONAL REQUIREMENTS.

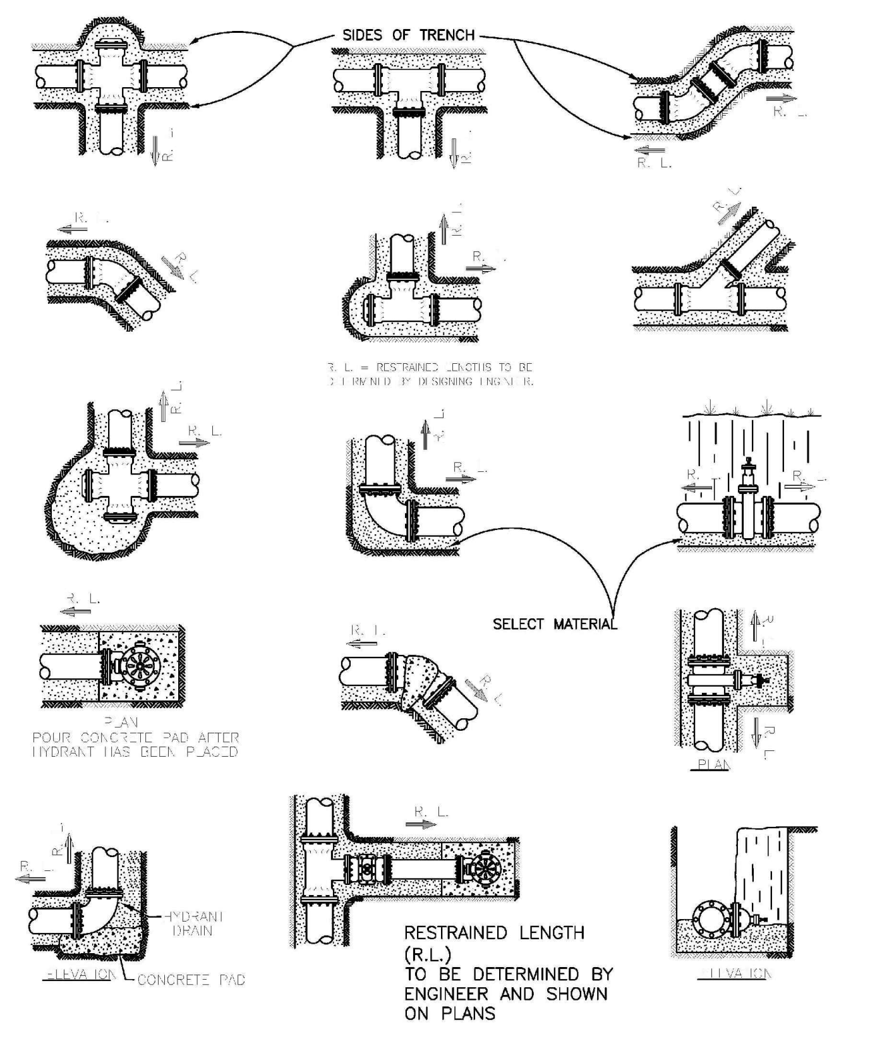
SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
STANDARD DETAIL 02081.3
INTERNAL DROP MANHOLE
TECHNICAL SPECIFICATION SECTIONS 02081, 02082, & 02083
ENGINEERING AND PUBLIC WORKS

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

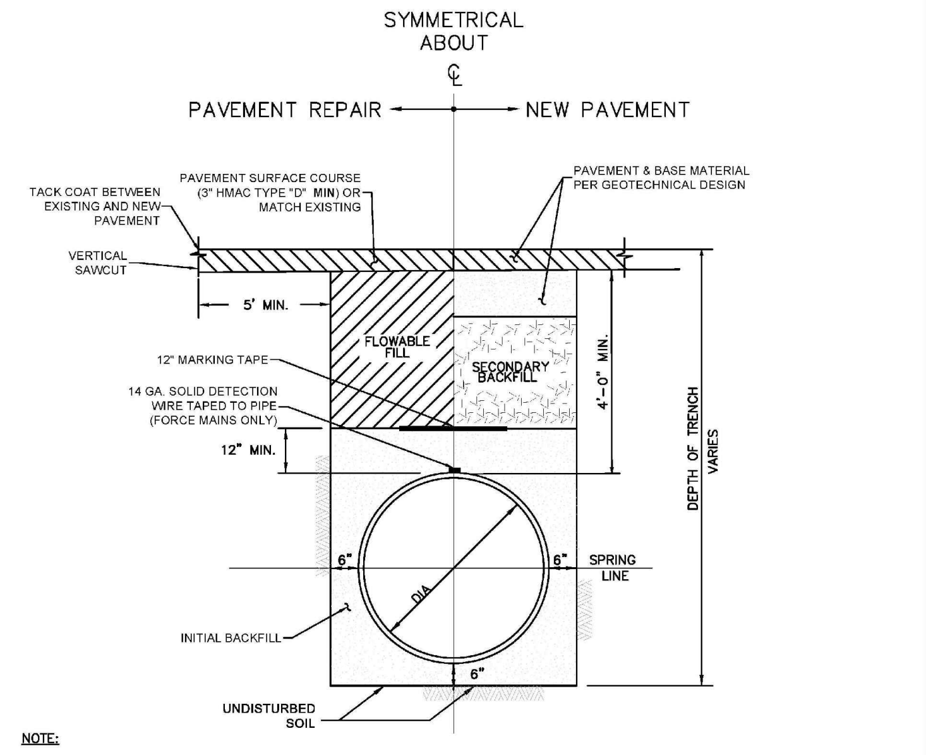


NOTE:
INSERTA TEE SHOULD BE INSTALLED USING PROPER SIZED HOLE SAW TO CORE INTO MAIN.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
LATERAL CONNECTION TO MAIN
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
CONCRETE PAD

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
RESTRAINTS FOR FITTINGS
TECHNICAL SPECIFICATION SECTION 02511
ENGINEERING AND PUBLIC WORKS


SYMMETRICAL ABOUT ℄
PAVEMENT REPAIR
NEW PAVEMENT
PAVEMENT SURFACE COURSE (2" HMAC TYPE "D" MIN) OR MATCH EXISTING
PAVEMENT & BASE MATERIAL PER GEOTECHNICAL DESIGN
TACK COAT BETWEEN EXISTING AND NEW PAVEMENT
VERTICAL SAWCUT
5" MIN.
FLOWABLE FILL
SECONDARY BACKFILL
12" MARKING TAPE
14 GA. SOLID DETECTION WIRE TAPED TO PIPE (FORCE MAINS ONLY)
12" MIN.
4'-0" MIN.
DEPTH OF TRENCH VARIES
6"
6"
SPRING LINE
DIA
INITIAL BACKFILL
6"
UNDISTURBED SOIL

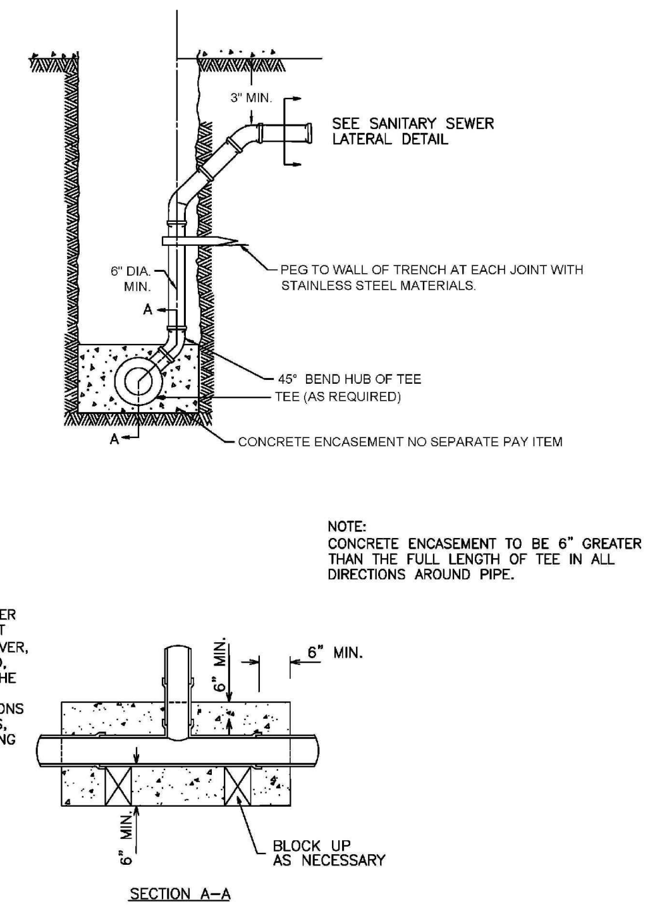
NOTE:

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.
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:
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

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


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

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

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

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
VERTICAL STACK
TECHNICAL SPECIFICATION SECTION 02534
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 5/10/19
DSGN. BY: ENG. DRAWN BY: BCP SHEET NO.: 1

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

BID SET
NOT FOR
CONSTRUCTION
THIS DOCUMENT IS RELEASED BY AUTHORITY OF DENIS A. AVENDANO P.E. #137588 FOR INTERIM REVIEW ONLY AND NOT TO BE USED FOR CONSTRUCTION.

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

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR
SHEET NUMBER:
6.4

Date: Mar 22, 2024, 1:20pm User ID: jferguson
File: J:\Projects\171\23\07\Design\Civil\SEWER\SANITARY SEWER DETAIL SHEET.dwg

TRENCH EXCAVATION SAFETY PROTECTION

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

⊗ 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.

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.

WATER PLAN NOTES:

1. ALL PVC PIPE 4", 8" & 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

* WATER METER NOTE:

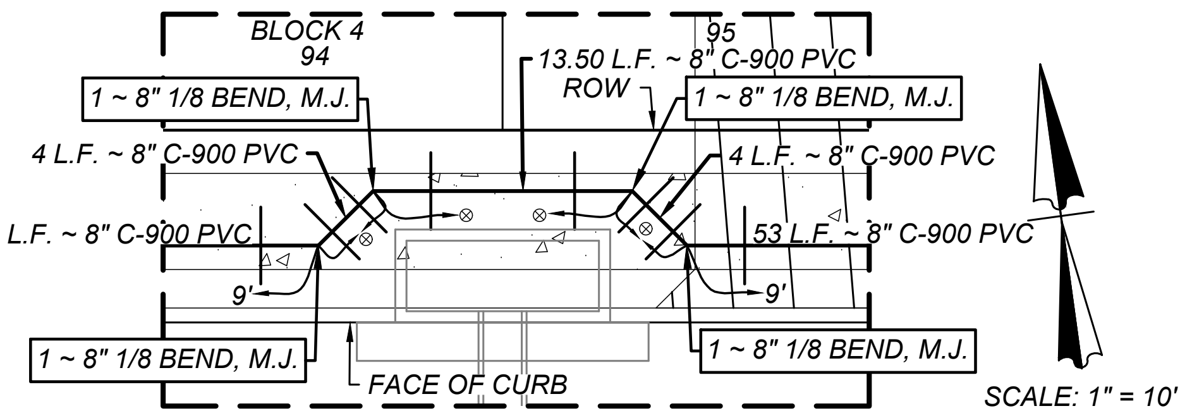
ALL ELECTRIC IMPROVEMENTS INCLUDING STREET LIGHTS MUST BE PLACED A MINIMUM OF 4 FEET FROM THE METER BOX.

OSHA TRENCH SAFETY

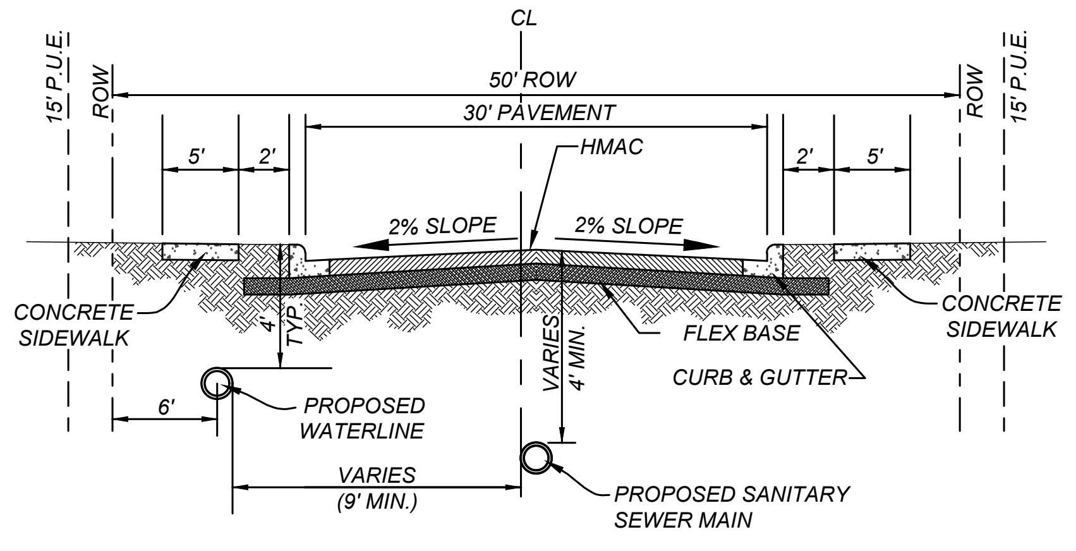
1. TRENCH EXCAVATION SHALL COMPLY WITH MINIMUM STANDARDS AS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, REGULATIONS STANDARDS - 29 CFR - "EXCAVATION" - 1926 SUBPART P.

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.

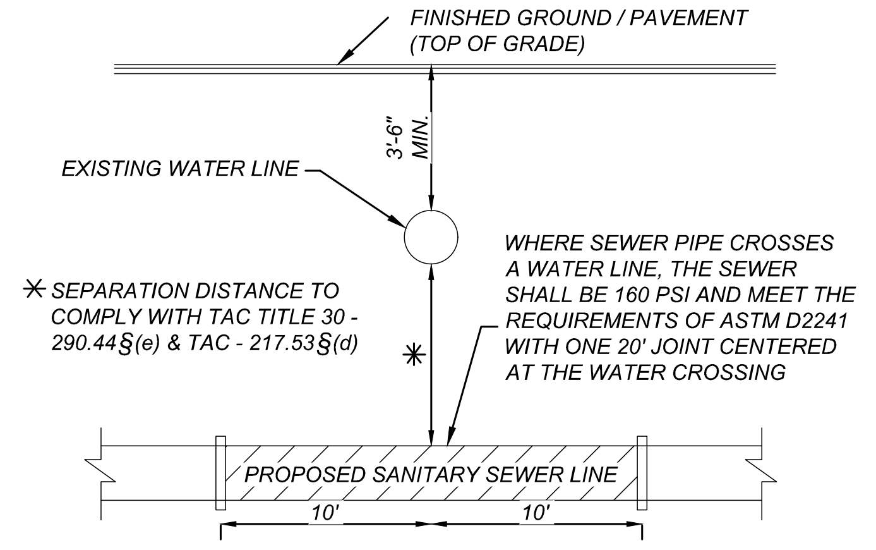
3. CONTINUOUS INSPECTION OF ALL TRENCH EXCAVATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR JOB SUPERINTENDENT. THE CONTRACTOR CONTROLS THE SIZE, WEIGHT, AND SPEED OF OPERATION OF EQUIPMENT AND PIPE INSTALLATION, WHICH DIRECTLY AFFECTS ALL SAFETY MEASURES IN A TRENCH. IF PROBABLE CAUSE OF UNSAFE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



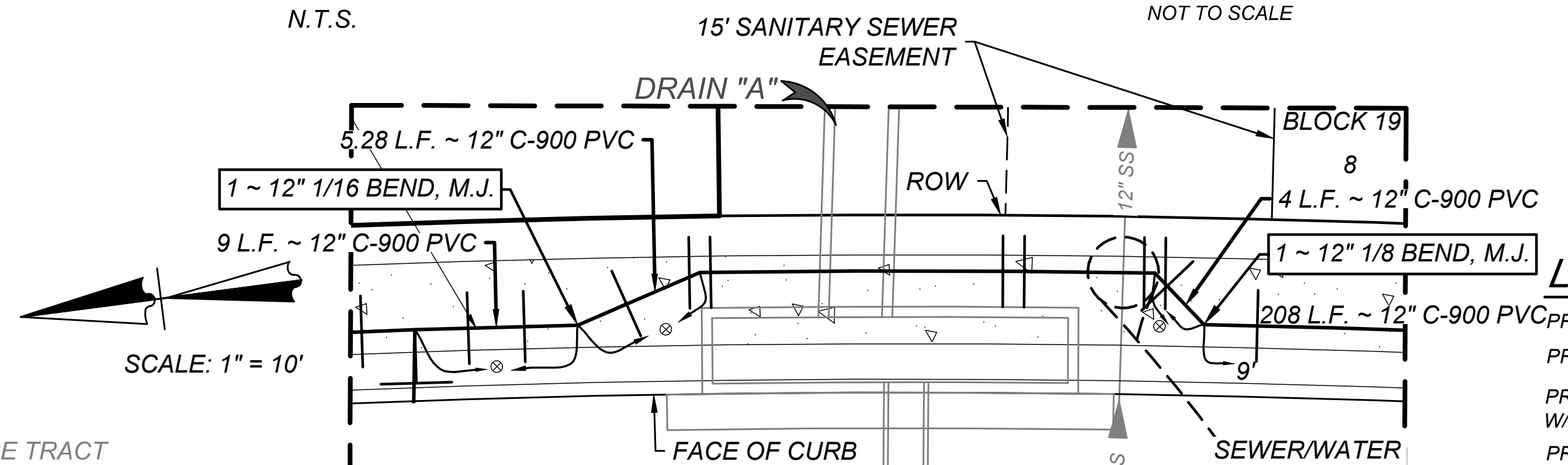
DETAIL "B"
SCALE: 1" = 10'



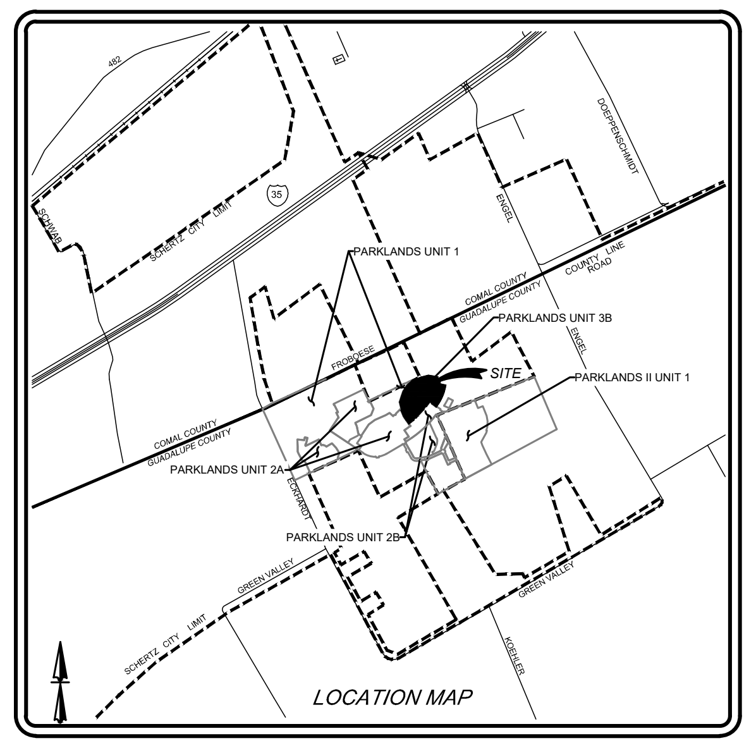
TYPICAL 50' ROW STREET CROSS SECTION - LOCAL ST.
N.T.S.


FINISHED GROUND / PAVEMENT (TOP OF GRADE)
EXISTING WATER LINE
3'-6" MIN.
✻ SEPARATION DISTANCE TO COMPLY WITH TAC TITLE 30 - 290.44§(e) & TAC - 217.53§(d)
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
NOT TO SCALE



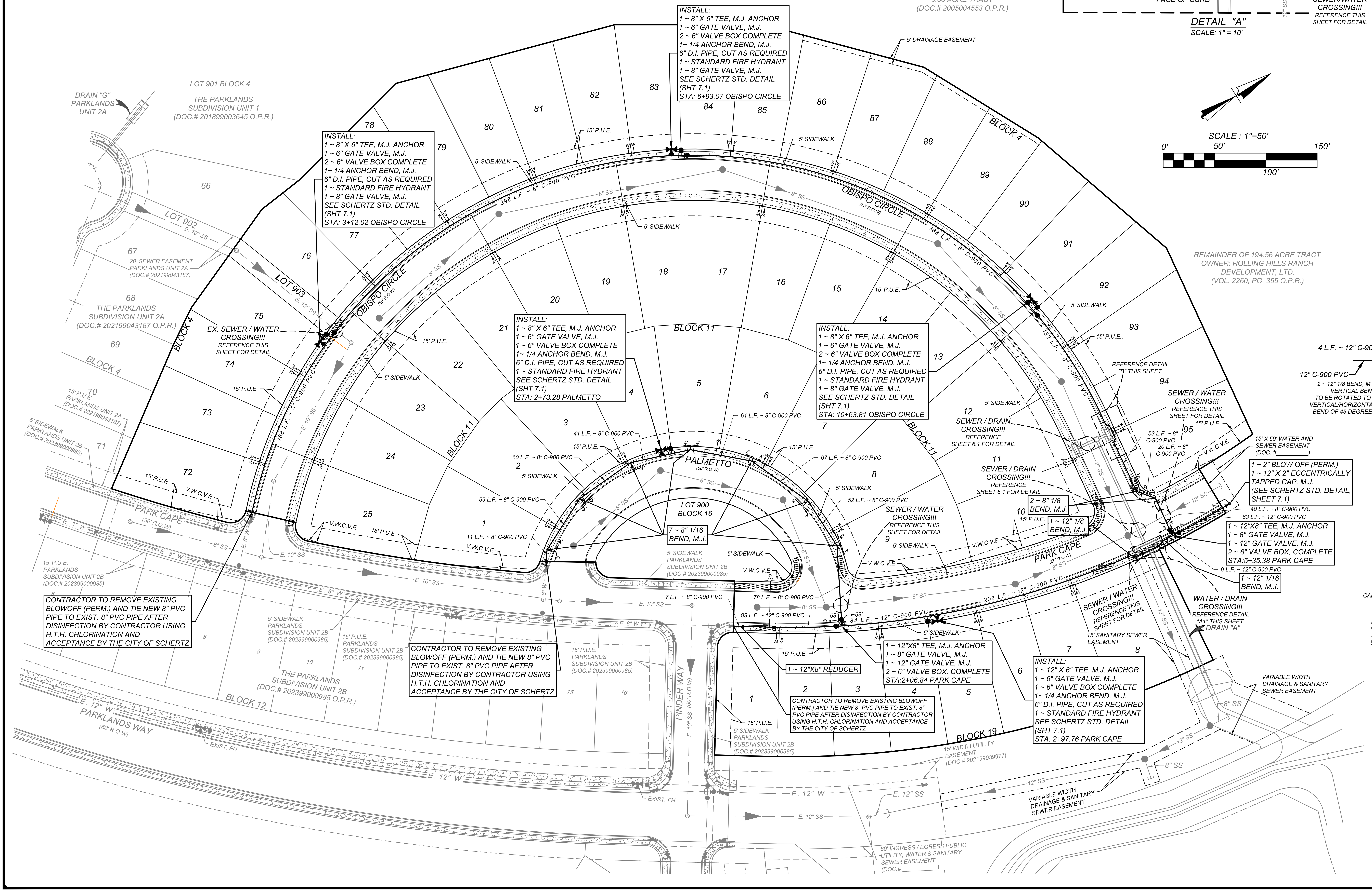
DETAIL "A"
SCALE: 1" = 10'



LOCATION MAP
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	⧓
GAS, ELECTRIC, TELEPHONE, CABLE T.V., EASEMENT	G.E.T.TV. E.
VARIABLE WIDTH CLEAR VISION EASEMENT	V.W.C.V.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 SANITARY SEWER LATERAL (TIE-IN TO EXISTING MAIN)	* 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


SCALE : 1"=50'
0'
50'
100'
150'
LOT 901 BLOCK 4
THE PARKLANDS SUBDIVISION UNIT 1 (DOC.# 201899003645 O.P.R.)
DRAIN "G" PARKLANDS UNIT 2A
66
LOT 902
E. 10" SS
67
20' SEWER EASEMENT PARKLANDS UNIT 2A (DOC.# 202199043187)
68
THE PARKLANDS SUBDIVISION UNIT 2A (DOC.# 202199043187 O.P.R.)
69
BLOCK 4
70
15' P.U.E. PARKLANDS UNIT 2A (DOC.# 202199043187)
5' SIDEWALK PARKLANDS UNIT 2B (DOC.# 202399000985)
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
LOT 903
EX. SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
OBISPO CIRCLE (50' R.O.W)
188 L.F. ~ 8" C-900 PVC
398 L.F. ~ 8" C-900 PVC
388 L.F. ~ 8" C-900 PVC
132 L.F. ~ 8" C-900 PVC
8" SS
15' P.U.E.
5' SIDEWALK
5' DRAINAGE EASEMENT
9.50 ACRE TRACT (DOC.# 2005004553 O.P.R.)
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
BLOCK 4
BLOCK 11
BLOCK 12
BLOCK 16
BLOCK 19
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
REFERENCE DETAIL "B" THIS SHEET
SEWER / WATER CROSSING!!! REFERENCE THIS SHEET FOR DETAIL
12 SEWER / DRAIN CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
11 SEWER / DRAIN CROSSING!!! REFERENCE SHEET 6.1 FOR DETAIL
53 L.F. ~ 8" C-900 PVC
20 L.F. ~ 8" C-900 PVC
15' X 50' WATER AND SEWER EASEMENT (DOC. #________)
V.W.C.V.E
40 L.F. ~ 8" C-900 PVC
63 L.F. ~ 12" C-900 PVC
9 L.F. ~ 12" C-900 PVC
2 ~ 8" 1/8 BEND, M.J.
1 ~ 12" 1/8 BEND, M.J.
1 ~ 12" 1/16 BEND, M.J.
12" SS
PARK CAPE (50' R.O.W)
208 L.F. ~ 12" C-900 PVC
84 L.F. ~ 12" C-900 PVC
99 L.F. ~ 12" C-900 PVC
78 L.F. ~ 8" C-900 PVC
7 L.F. ~ 8" C-900 PVC
58'
WATER / DRAIN CROSSING!!! REFERENCE DETAIL "A1" THIS SHEET
DRAIN "A"
15' SANITARY SEWER EASEMENT
VARIABLE WIDTH DRAINAGE & SANITARY SEWER EASEMENT
15' WIDTH UTILITY EASEMENT (DOC.# 202199039977)
60' INGRESS / EGRESS PUBLIC UTILITY, WATER & SANITARY SEWER EASEMENT (DOC.#
PALMETTO (50' R.O.W)
LOT 900 BLOCK 16
7 ~ 8" 1/16 BEND, M.J.
41 L.F. ~ 8" C-900 PVC
60 L.F. ~ 8" C-900 PVC
59 L.F. ~ 8" C-900 PVC
11 L.F. ~ 8" C-900 PVC
61 L.F. ~ 8" C-900 PVC
67 L.F. ~ 8" C-900 PVC
52 L.F. ~ 8" C-900 PVC
4'
5' SIDEWALK PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
15' P.U.E. PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
1 ~ 12"X8" REDUCER
PINDER WAY (60' R.O.W)
E. 8" W
E. 10" SS
E. 12" W
E. 12" SS
EXIST. FH
THE PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985 O.P.R.)
PARKLANDS WAY (60' R.O.W)

INSTALL:
1 ~ 8" X 6" TEE, M.J. ANCHOR
1 ~ 6" GATE VALVE, M.J.
2 ~ 6" VALVE BOX COMPLETE
1~ 1/4 ANCHOR BEND, M.J.
6" D.I. PIPE, CUT AS REQUIRED
1 ~ STANDARD FIRE HYDRANT
1 ~ 8" GATE VALVE, M.J.
SEE SCHERTZ STD. DETAIL
(SHT 7.1)
STA: 3+12.02 OBISPO CIRCLE

INSTALL:
1 ~ 8" X 6" TEE, M.J. ANCHOR
1 ~ 6" GATE VALVE, M.J.
2 ~ 6" VALVE BOX COMPLETE
1~ 1/4 ANCHOR BEND, M.J.
6" D.I. PIPE, CUT AS REQUIRED
1 ~ STANDARD FIRE HYDRANT
1 ~ 8" GATE VALVE, M.J.
SEE SCHERTZ STD. DETAIL
(SHT 7.1)
STA: 6+93.07 OBISPO CIRCLE

INSTALL:
1 ~ 8" X 6" 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: 2+73.28 PALMETTO

INSTALL:
1 ~ 8" X 6" TEE, M.J. ANCHOR
1 ~ 6" GATE VALVE, M.J.
2 ~ 6" VALVE BOX COMPLETE
1~ 1/4 ANCHOR BEND, M.J.
6" D.I. PIPE, CUT AS REQUIRED
1 ~ STANDARD FIRE HYDRANT
1 ~ 8" GATE VALVE, M.J.
SEE SCHERTZ STD. DETAIL
(SHT 7.1)
STA: 10+63.81 OBISPO CIRCLE

1 ~ 2" BLOW OFF (PERM.)
1 ~ 12" X 2" ECCENTRICALLY TAPPED CAP, M.J.
(SEE SCHERTZ STD. DETAIL, SHEET 7.1)

1 ~ 12"X8" TEE, M.J. ANCHOR
1 ~ 8" GATE VALVE, M.J.
1 ~ 12" GATE VALVE, M.J.
2 ~ 6" VALVE BOX, COMPLETE
STA:5+35.38 PARK CAPE

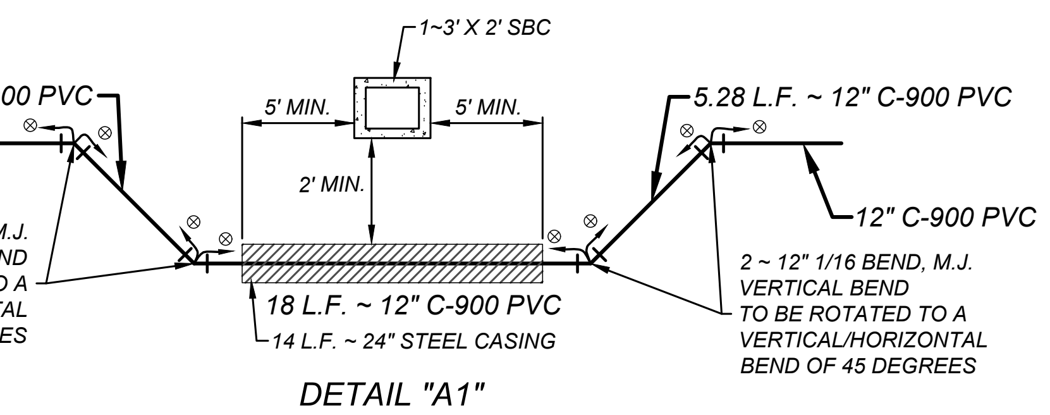
1 ~ 12"X8" TEE, M.J. ANCHOR
1 ~ 8" GATE VALVE, M.J.
1 ~ 12" GATE VALVE, M.J.
2 ~ 6" VALVE BOX, COMPLETE
STA:2+06.84 PARK CAPE

INSTALL:
1 ~ 12" X 6" 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: 2+97.76 PARK CAPE

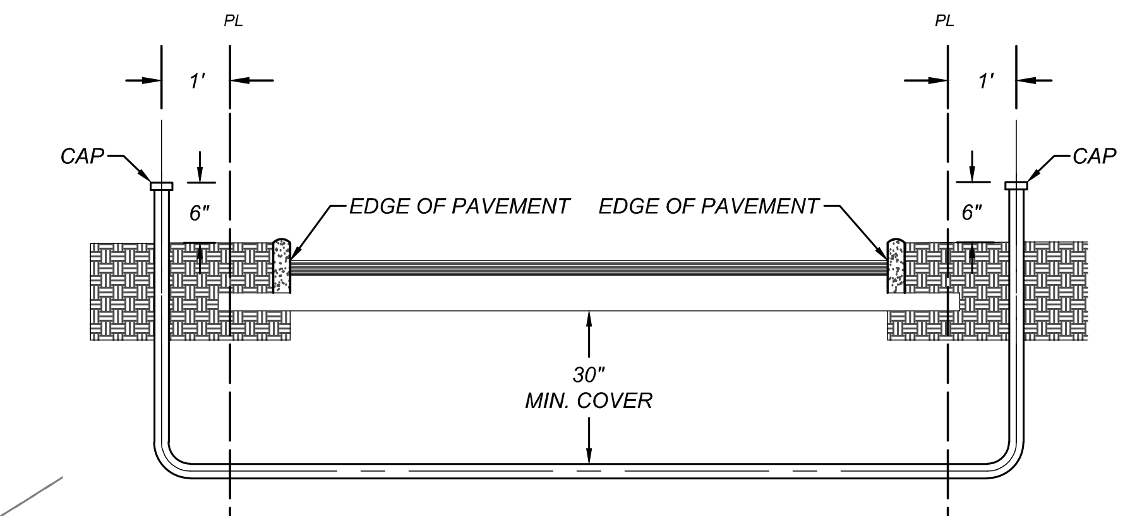
CONTRACTOR TO REMOVE EXISTING BLOWOFF (PERM.) AND TIE NEW 8" PVC PIPE TO EXIST. 8" PVC PIPE AFTER DISINFECTION BY CONTRACTOR USING H.T.H. CHLORINATION AND ACCEPTANCE BY THE CITY OF SCHERTZ

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

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


4 L.F. ~ 12" C-900 PVC
12" C-900 PVC
2 ~ 12" 1/8 BEND, M.J. VERTICAL BEND TO BE ROTATED TO A VERTICAL/HORIZONTAL BEND OF 45 DEGREES
1~3' X 2' SBC
5' MIN.
5' MIN.
2' MIN.
18 L.F. ~ 12" C-900 PVC
14 L.F. ~ 24" STEEL CASING
5.28 L.F. ~ 12" C-900 PVC
12" C-900 PVC
2 ~ 12" 1/16 BEND, M.J. VERTICAL BEND TO BE ROTATED TO A VERTICAL/HORIZONTAL BEND OF 45 DEGREES

DETAIL "A1"
VERTICAL OFFSET



PRIVATE CONDUIT DETAIL
NOT TO SCALE

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

NOTE:

- CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING CONDUIT SLEEVES FOR EACH GVEC FACILITY AT ALL STREETS AND DRAIN CROSSINGS CONSTRUCTION SLEEVES MUST ALSO BE LOCATED FOR GVEC CREWS DURING CONSTRUCTION. (SEPARATE ITEM) SEE FINAL ELECTRIC PROVIDER'S DESIGN AND SPECIFICATION.
- 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.

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

BID SET
NOT FOR
CONSTRUCTION

THIS DOCUMENT IS RELEASED BY AUTHORITY OF DENIS A. AVENDANO P.E. #137588 FOR INTERIM REVIEW ONLY AND NOT TO BE USED FOR CONSTRUCTION.

THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

WATER DISTRIBUTION PLAN

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN:
CHECKED: NR

SHEET NUMBER:
7.0

Date: Apr 03, 2024, 10:36am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\WATER\7.0 WATER DISTRIBUTION 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
N.T.S.
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

L:\Engineer\Standard Details and Technical Specifications\Standard Details\2018\STANDARD WATER DETAILS 02232018.dwg

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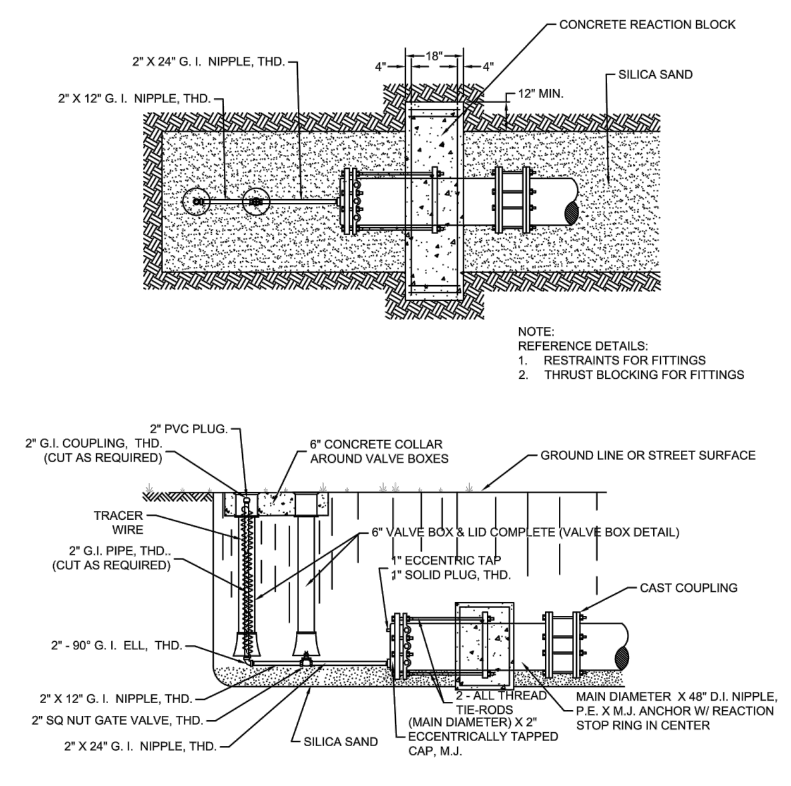
GENERAL WATER NOTES CON'T:

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
N.T.S.
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.: 2 of 2


CONCRETE REACTION BLOCK
SILICA SAND
2" X 24" G. I. NIPPLE, THD.
2" X 12" G. I. NIPPLE, THD.
12" MIN.
NOTE:
REFERENCE DETAILS
1. RESTRAINTS FOR FITTINGS
2. THRUST BLOCKING FOR FITTINGS
2" PVC PLUG
2" G.I. COUPLING, THD (CUT AS REQUIRED)
6" CONCRETE COLLAR AROUND VALVE BOXES
GROUND LINE OR STREET SURFACE
TRACER WIRE
"V" VALVE BOX & LID COMPLETE (VALVE BOX DETAIL)
2" G.I. PIPE, THD. (CUT AS REQUIRED)
2" ECCENTRIC TAP
2" 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

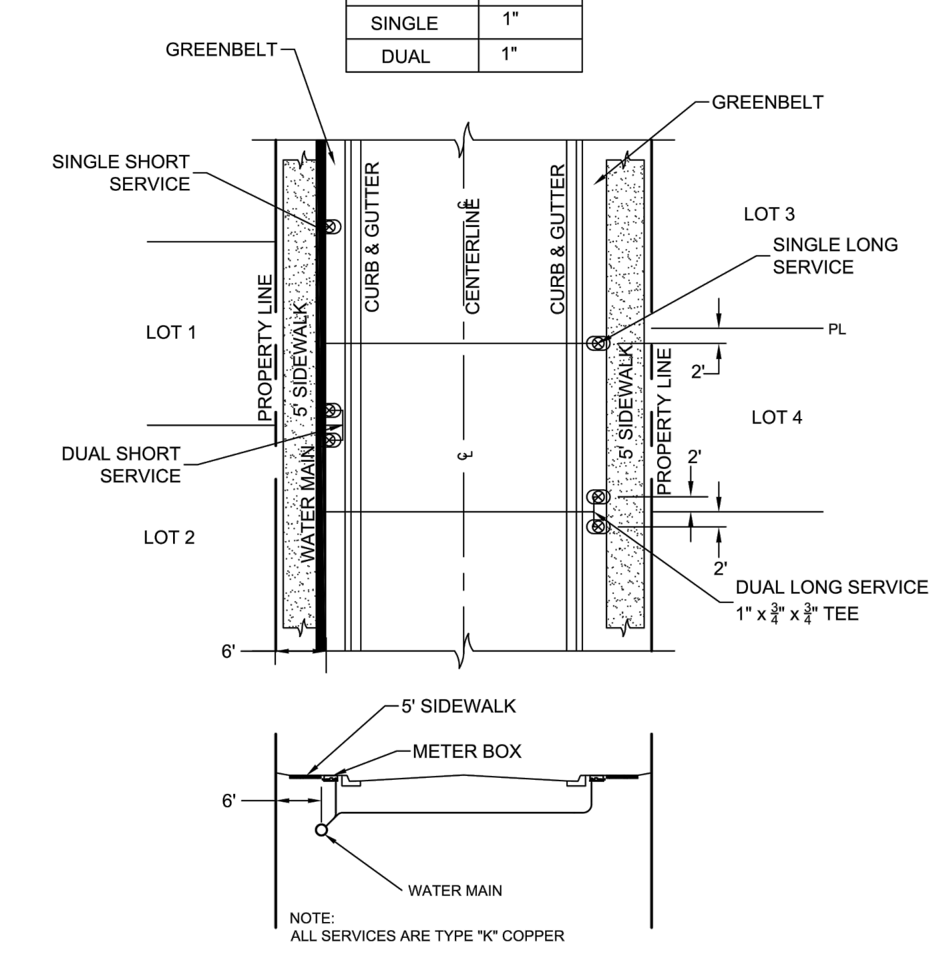
NOTE:

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

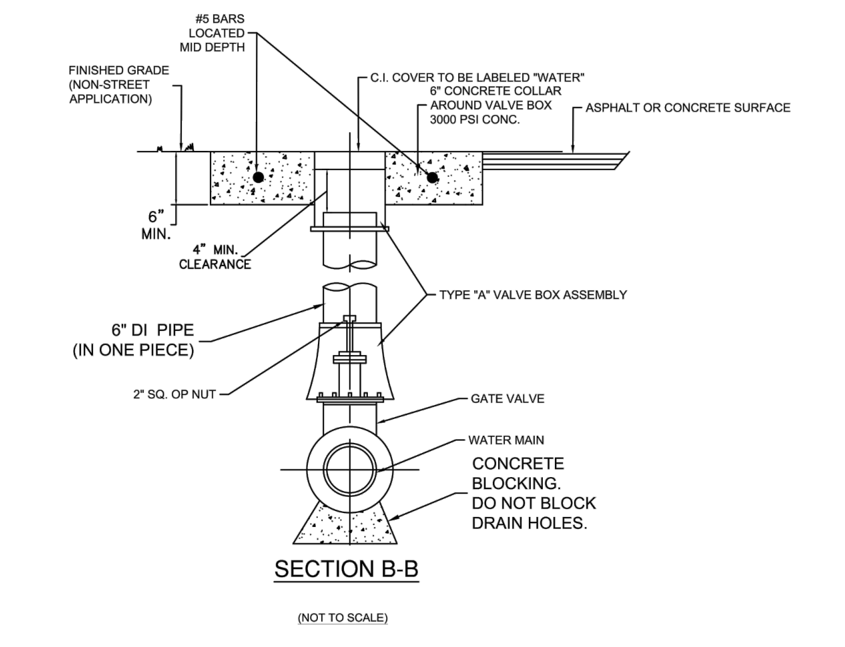
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
N.T.S.
BLOW-OFF ASSEMBLY
PW TECH. SPEC. SECTION 02085
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 1

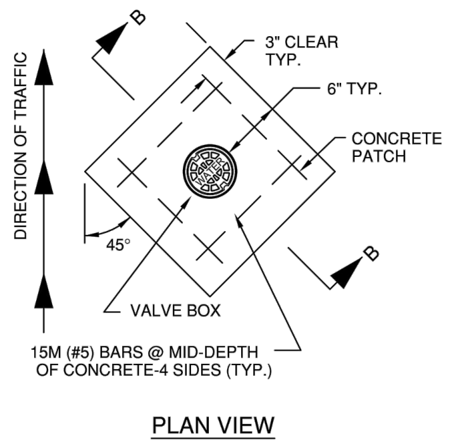
SERVICE	SIZE
SINGLE	1"
DUAL	1"



NOTE:
ALL SERVICES ARE TYPE "K" COPPER

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
N.T.S.
METER BOX LOCATION
PW TECH. SPEC. SECTION 02085


#5 BARS LOCATED MID DEPTH
FINISHED GRADE (NON-STREET APPLICATION)
C.I. COVER TO BE LABELED "WATER"
8" 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

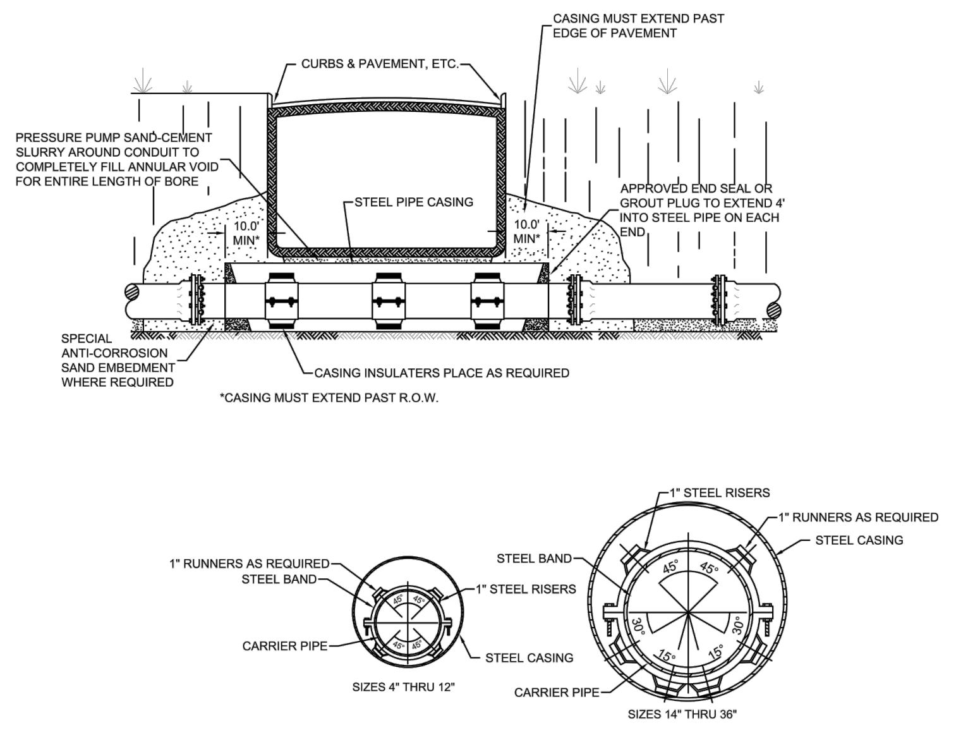
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
N.T.S.
VALVE BOX
PW SPECIFICATION SECTION 02085
SHEETNUMBER | PROJECT NO.: | DATE: 2/26/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: XX

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

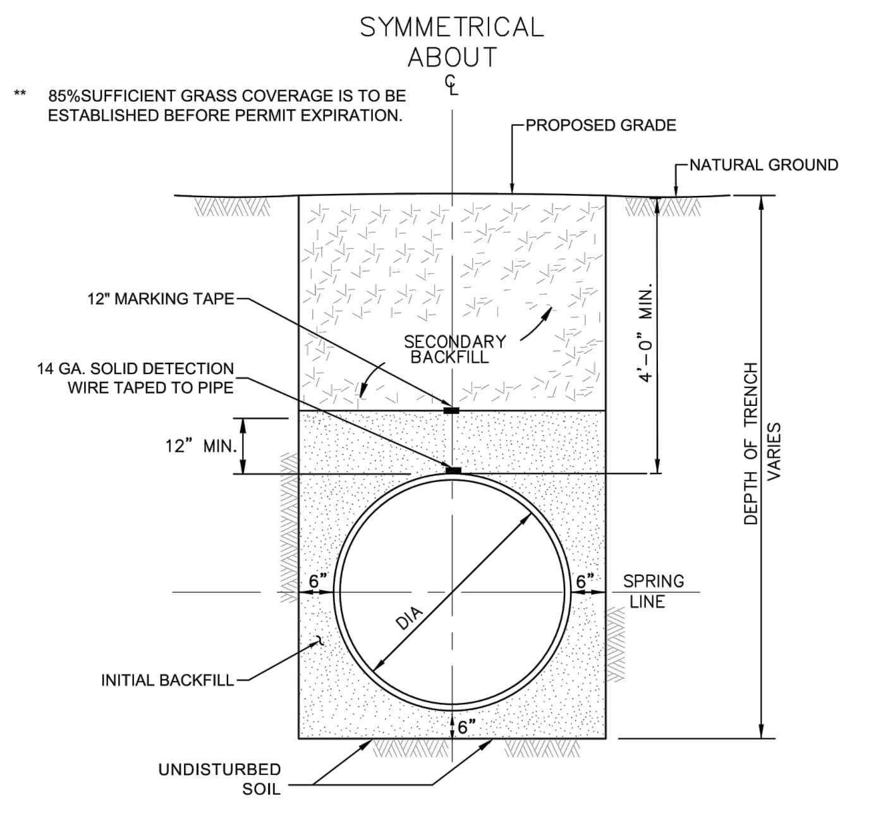
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
N.T.S.
OSHA TRENCH SAFETY NOTES
PW TECH. SPEC. SECTION 02260


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
APPROVED END SEAL OR GROUT PLUG TO EXTEND 4" INTO STEEL PIPE ON EACH END.
10.0' MIN*
10.0' MIN*
SPECIAL ANTI-CORROSION SAND EMBEDMENT WHERE REQUIRED
CASING INSULATORS 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
1" STEEL RISERS
CARRIER PIPE
STEEL CASING
SIZES 4" THRU 12"
STEEL BAND
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

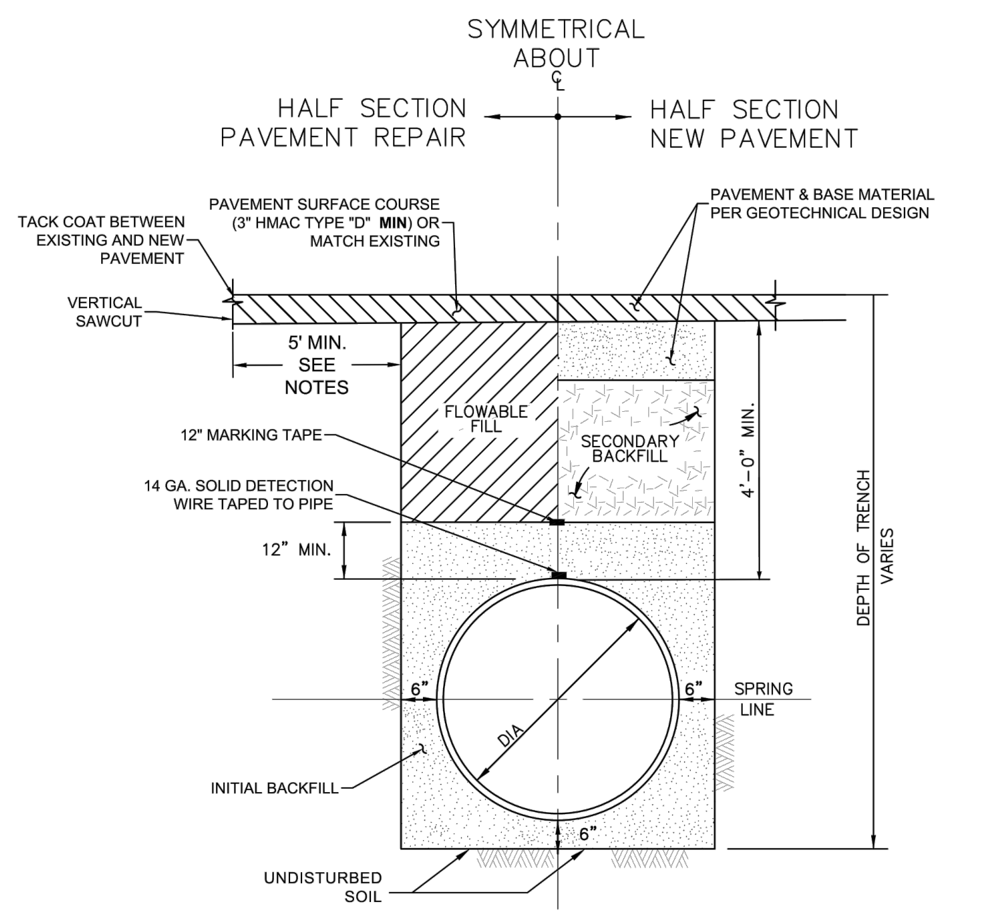
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
N.T.S.
BORE AND CASE
PW SPECIFICATION SECTION 02447



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
N.T.S.
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"
DIA
SPRING LINE
INITIAL BACKFILL
UNDISTURBED SOIL
6"

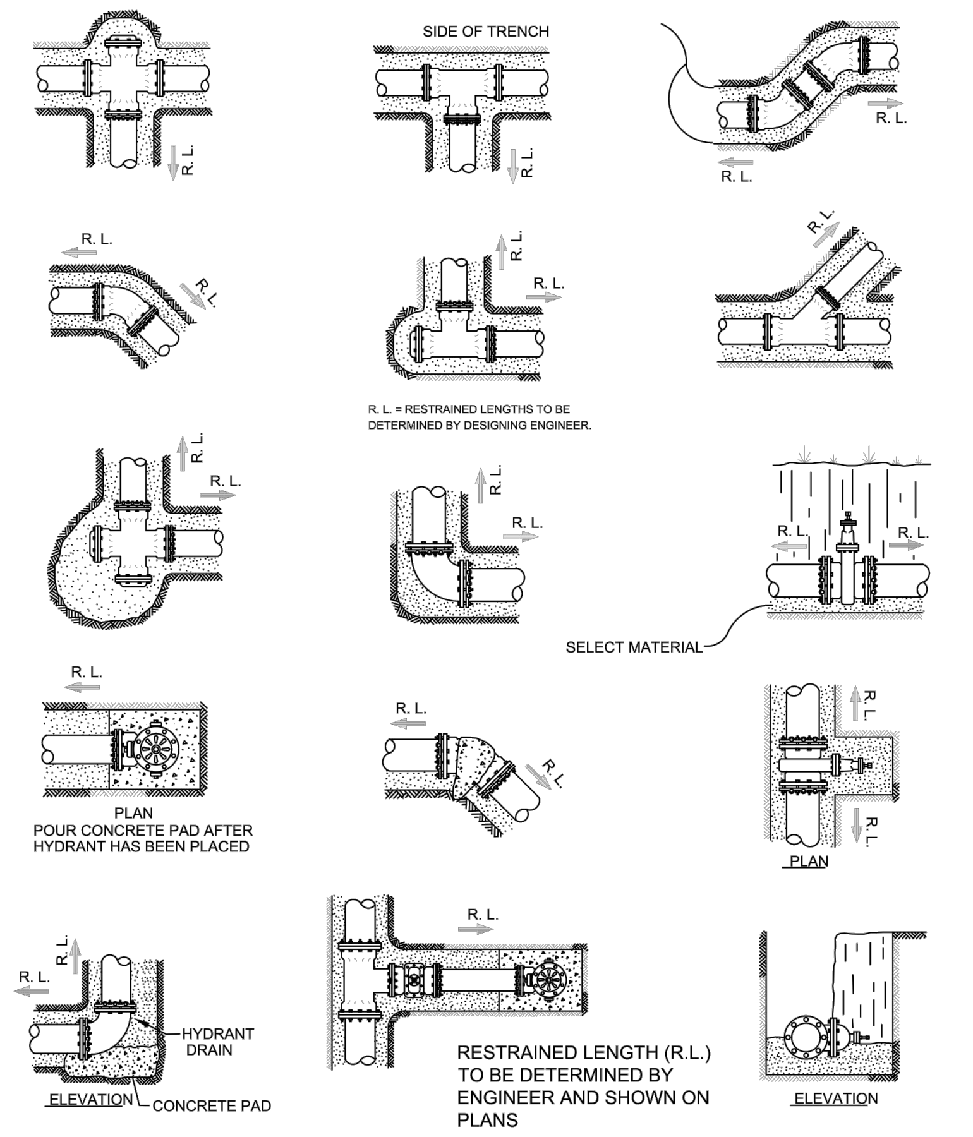
NOTE:

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

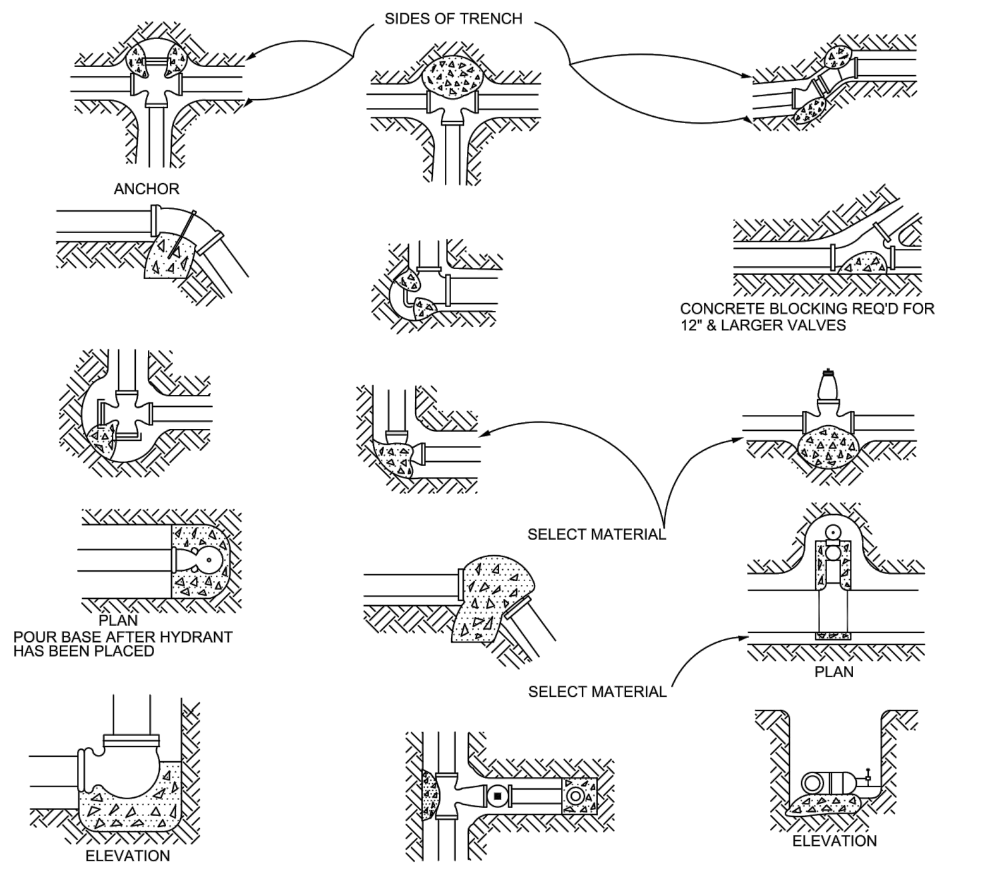
SECONDARY BACKFILL:
NATIVE MATERIAL FROM TRENCH PLACED IN MAXIMUM 8" LOOSE LIFTS, FREE OF DEBRIS AND STONES LARGER THAN 4". COMPACTION TO 95% STD PROCTOR DENSITY (ASTM D 698). PER SPEC 02317

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
N.T.S.
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.
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
RESTRAINED LENGTH (R.L.) TO BE DETERMINED BY ENGINEER AND SHOWN ON PLANS
ELEVATION

RESTRAINTS FOR FITTING
(NOT TO SCALE)

CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
N.T.S.
RESTRAINTS FOR FITTINGS
PW TECH. SPEC. SECTION 02511


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

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

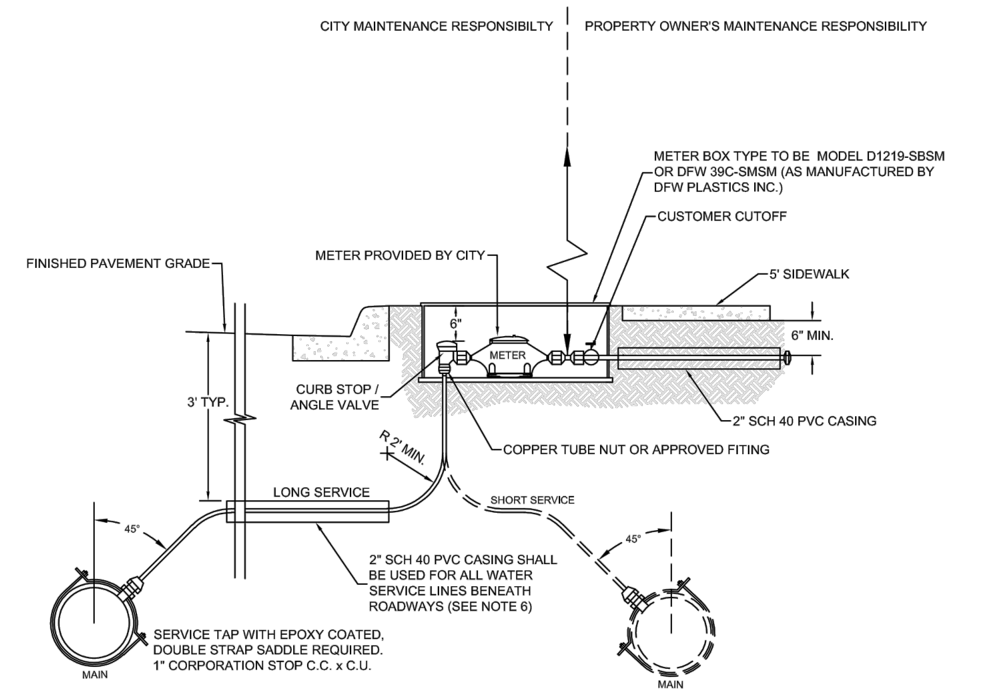
SIZE PIPE	TEES & DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS
6"	2	2	1	1
8"	3	4	2	1
12"	6	9	5	2
16"	11	15	8	4
18"	14	20	10	5

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)

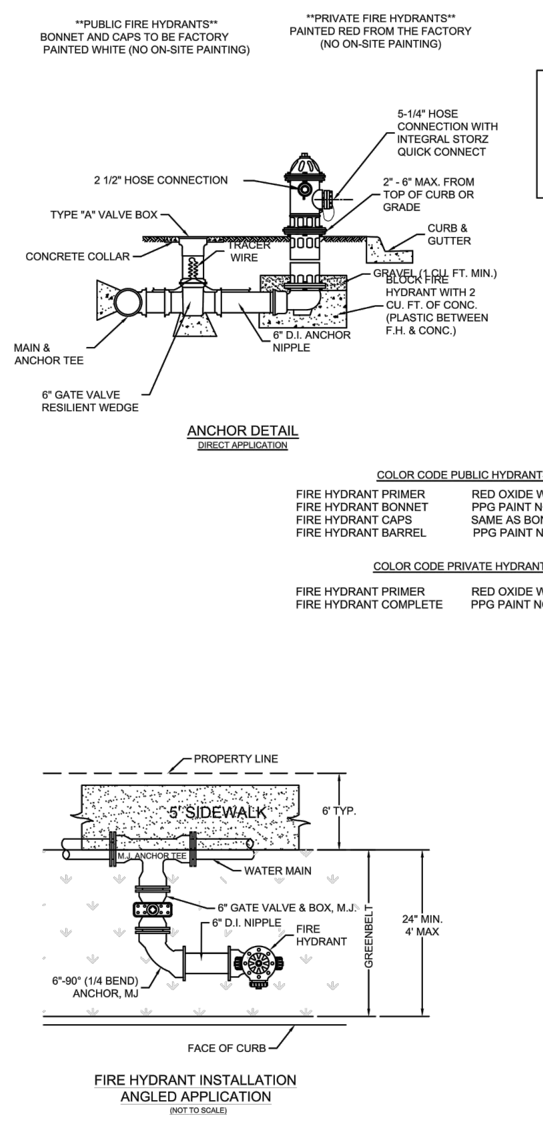
CITY OF SCHERTZ TEXAS
ENGINEERING AND PUBLIC WORKS
STANDARD DETAIL
N.T.S.
THRUST BLOCKING FOR FITTINGS
PW TECH. SPEC. SECTION 02511
SHEETNUMBER | PROJECT NO.: | DATE: 1/18/18
DRWN. BY: BCP | DSGN. BY: BCP | CHKD. BY: KJW | SHEET NO.: 2 of 2

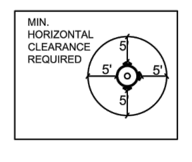

CITY MAINTENANCE RESPONSIBILITY
PROPERTY OWNER'S MAINTENANCE RESPONSIBILITY
METER BOX TYPE TO BE MODEL D1219-SBSM OR DFW SBC-SMSM (AS MANUFACTURED BY DFW PLASTICS INC.)
CUSTOMER CUTOFF
5' SIDEWALK
FINISHED PAVEMENT GRADE
METER PROVIDED BY CITY
6" MIN.
METER
CURB STOP / ANGLE VALVE
3' TYP.
2" SCH 40 PVC CASING
COPPER TUBE NUT OR APPROVED FITTING
LONG SERVICE
SHORT SERVICE
2" SCH 40 PVC CASING SHALL BE USED FOR ALL WATER SERVICE LINES BENEATH ROADWAYS (SEE NOTE 6)
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 OR BLUE HDPE.
4. METER BOXES WILL BE ACCOMPANIED BY AN "X" ETCHED INTO CURB FACE PAINTED BLUE.
5. NO METER BOXES TO BE SET IN DRIVEWAYS. METER BOXES SET IN DRIVEWAYS SHALL BE RELOCATED AT THE CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
6. PVC CASING IS NOT REQUIRED FOR HDPE WATER SERVICE PIPE.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY
STANDARD DETAIL 2512
WATER TAP & SERVICE
TECHNICAL SPECIFICATION SECTIONS 02512
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. | DATE: 12/14/2022


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
TYPE "A" VALVE BOX
2" - 6" MAX. FROM TOP OF CURB OR GRADE
CURB & GUTTER
CONCRETE COLLAR
GRAVEL (1 CU. FT. MIN.)
BLOCK FIRE HYDRANT WITH 2 CU. FT. OF CONC. (PLASTIC BETWEEN F.H. & CONC.)
MAIN & ANCHOR TEE
6" GATE VALVE RESILIENT WEDGE
6" D.I. ANCHOR NIPPLE
ANCHOR DETAIL
PROPERTY LINE
5' SIDEWALK
WATER MAIN
6" GATE VALVE & BOX, M.J.
6" D.I. NIPPLE
FIRE HYDRANT
24" MIN. 4' MAX
6" 90° (1/4 BEND) ANCHOR, MJ
FACE OF CURB
FIRE HYDRANT INSTALLATION ANGLED 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)

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
N.T.S.
FIRE HYDRANT
PW TECH. SPEC. SECTION 02520

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
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

BID SET
NOT FOR
CONSTRUCTION
THIS DOCUMENT IS RELEASED BY AUTHORITY OF DENIS A. AVENDANO P.E. #137588 FOR INTERIM REVIEW ONLY AND NOT TO BE USED FOR CONSTRUCTION.

THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

WATER NOTES AND DETAILS SHEET

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR
SHEET NUMBER:
7.1

Date: Mar 22, 2024, 1:24pm User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\WATER\7.1 WATER NOTES AND DETAILS SHEET.dwg

SW3P MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

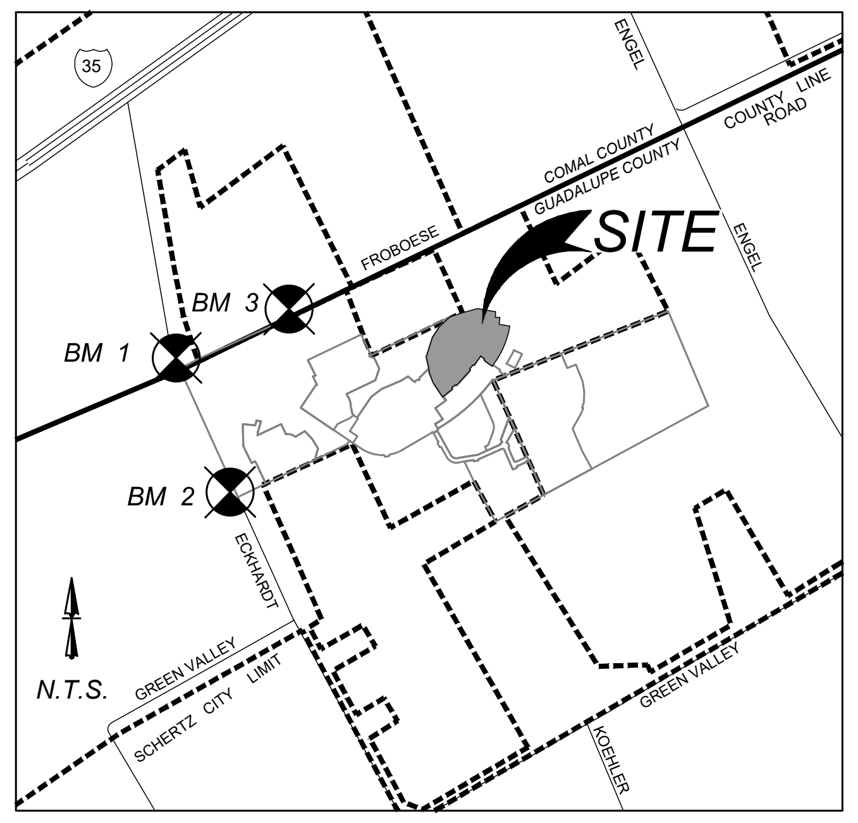
COORDINATION NOTE:

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:

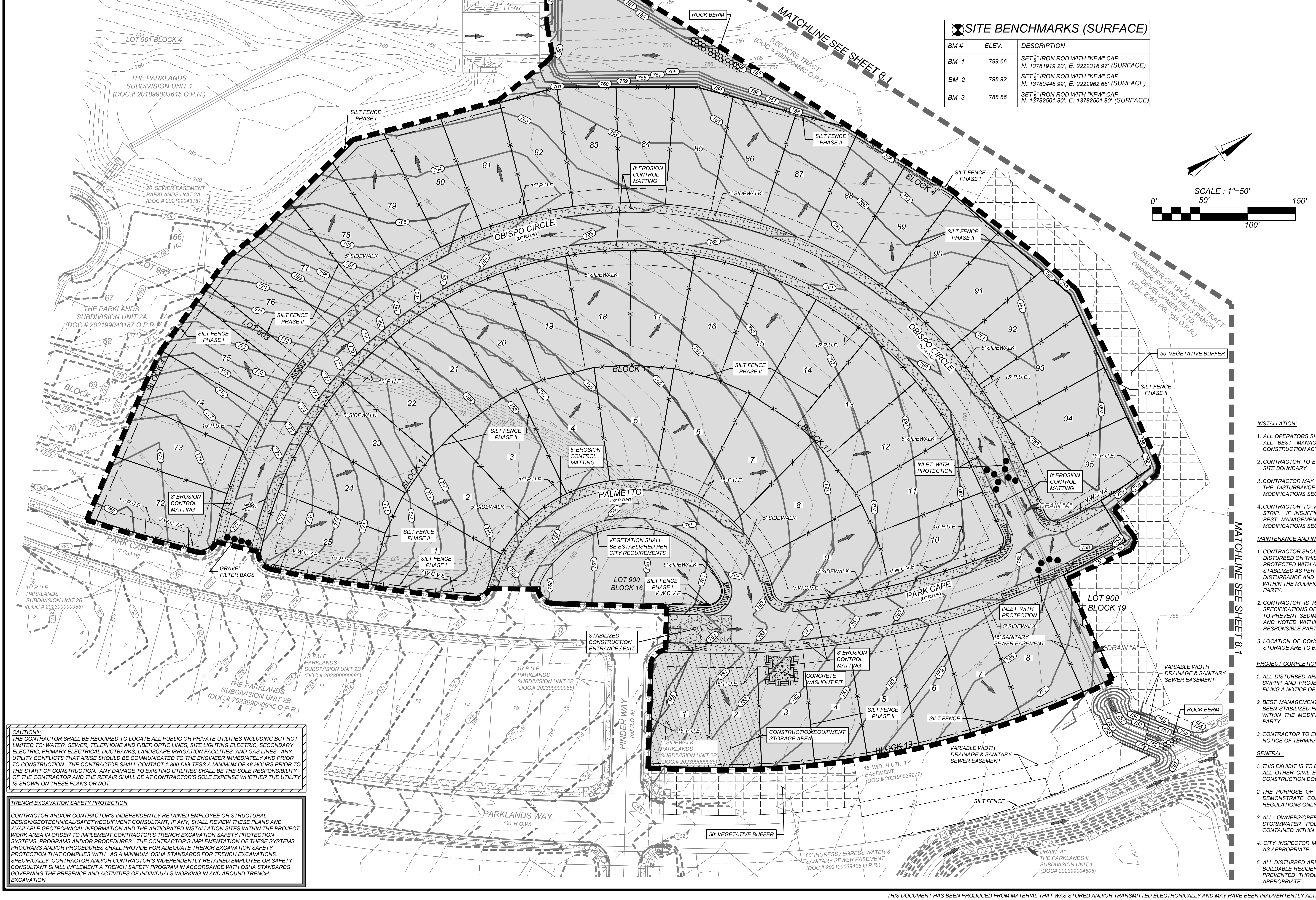
CONSTRUCTION ACTIVITY WILL INCLUDE:

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.

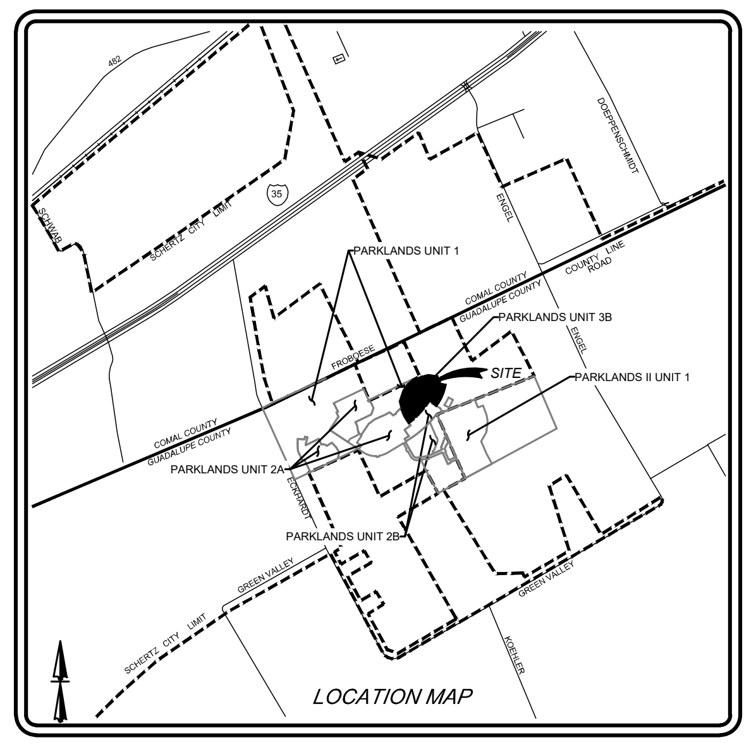


SITE BENCHMARKS (SURFACE)

BM #	ELEV.	DESCRIPTION
BM 1	799.66	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13781919.20', E: 2222316.97' (SURFACE)
BM 2	798.92	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13780446.99', E: 2222962.66' (SURFACE)
BM 3	788.86	SET $\frac{1}{2}$" IRON ROD WITH "KFW" CAP N: 13782501.80', E: 13782501.80' (SURFACE)



SCALE : 1"=50'
0'
50'
100'
150'
MATCHLINE SEE SHEET 8.1
ROCK BERM
9.50 ACRE TRACT (DOC.# 2005045553 O.P.R.)
LOT 901 BLOCK 4
THE PARKLANDS SUBDIVISION UNIT 1 (DOC.# 201899003645 O.P.R.)
20' SEWER EASEMENT PARKLANDS UNIT 2A (DOC.# 202199043187)
THE PARKLANDS SUBDIVISION UNIT 2A (DOC.# 202199043187 O.P.R.)
LOT 902
LOT 903
BLOCK 4
BLOCK 11
BLOCK 16
BLOCK 19
SILT FENCE PHASE I
SILT FENCE PHASE II
SILT FENCE
8' EROSION CONTROL MATTING
OBISPO CIRCLE (50' R.O.W)
PALMETTO (50' R.O.W)
PARK CAPE (50' R.O.W)
PINDER WAY (50' R.O.W)
PARKLANDS WAY (60' R.O.W)
5' SIDEWALK
15' P.U.E.
V.W.C.V.E.
GRAVEL FILTER BAGS
VEGETATION SHALL BE ESTABLISHED PER CITY REQUIREMENTS
LOT 900 BLOCK 16
LOT 900 BLOCK 19
STABILIZED CONSTRUCTION ENTRANCE / EXIT
CONCRETE WASHOUT PIT
CONSTRUCTION EQUIPMENT STORAGE AREA
INLET WITH PROTECTION
DRAIN "A"
15' SANITARY SEWER EASEMENT
VARIABLE WIDTH DRAINAGE & SANITARY SEWER EASEMENT
15' WIDTH UTILITY EASEMENT (DOC.# 202199039977)
60' INGRESS / EGRESS WATER & SANITARY SEWER EASEMENT (DOC.# 202199039405 O.P.R.)
50' VEGETATIVE BUFFER
REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
THE PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985 O.P.R.)
15' P.U.E. PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
5' SIDEWALK PARKLANDS SUBDIVISION UNIT 2B (DOC.# 202399000985)
DRAIN "A" THE PARKLANDS II SUBDIVISION UNIT 1 (DOC.# 202399004605)



LOCATION MAP
N.T.S.

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
▨	VEGETATION SHALL BE ESTABLISHED PER CITY REQUIREMENTS
▨	SIDEWALK DEVELOPER HATCH

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.

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: Apr 03, 2024, 10:15am User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\SW3P\8.0 STORMWATER POLLUTION PREVENTION PLAN.dwg

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

ISSUE DATE

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THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

STORMWATER POLLUTION PREVENTION PLAN

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
8.0

SW3P MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

COORDINATION NOTE:

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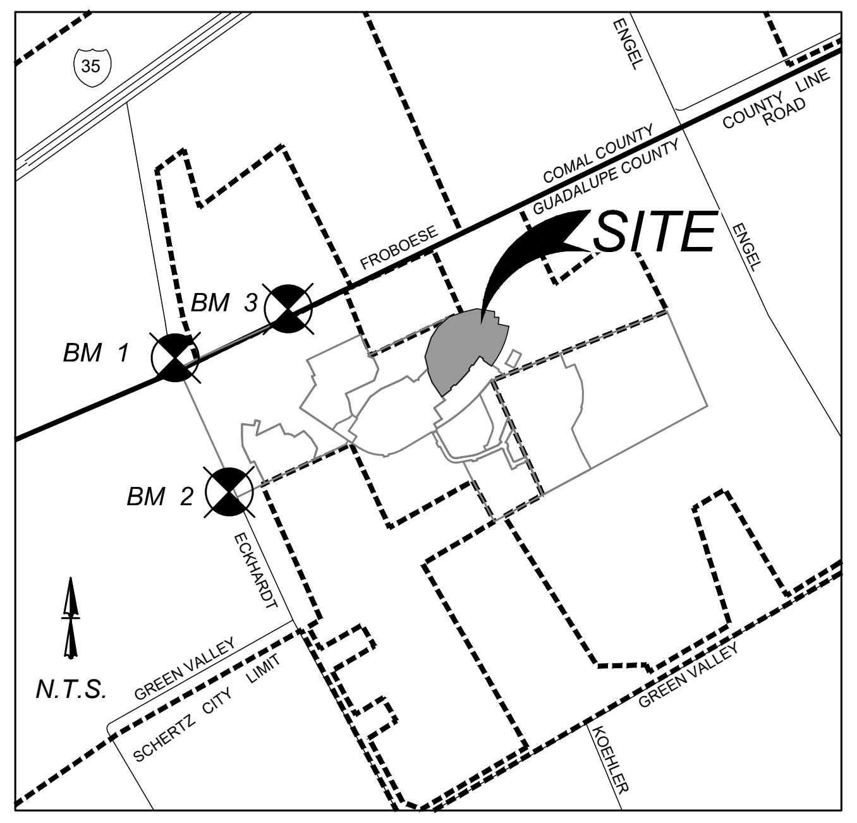

⊗SITE BENCHMARKS (SURFACE)

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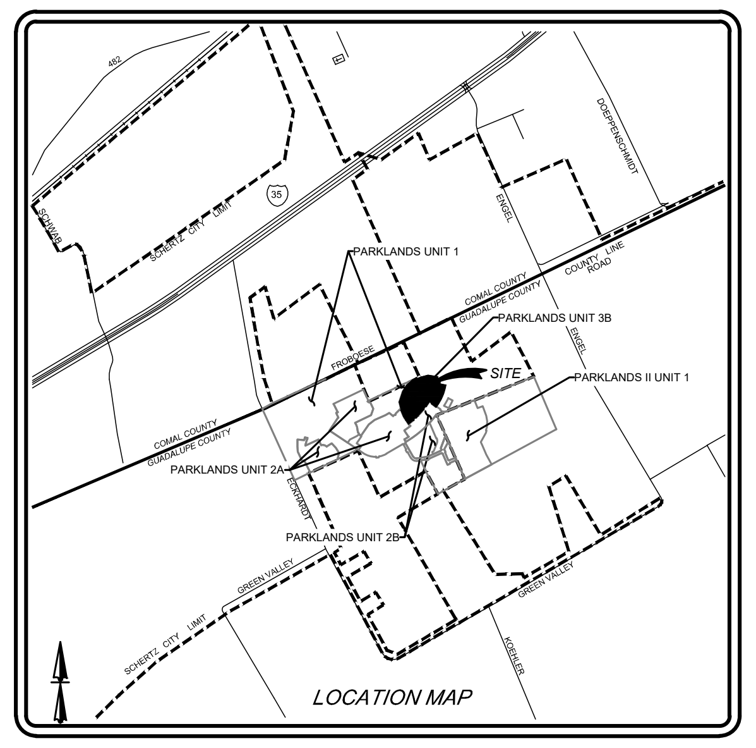
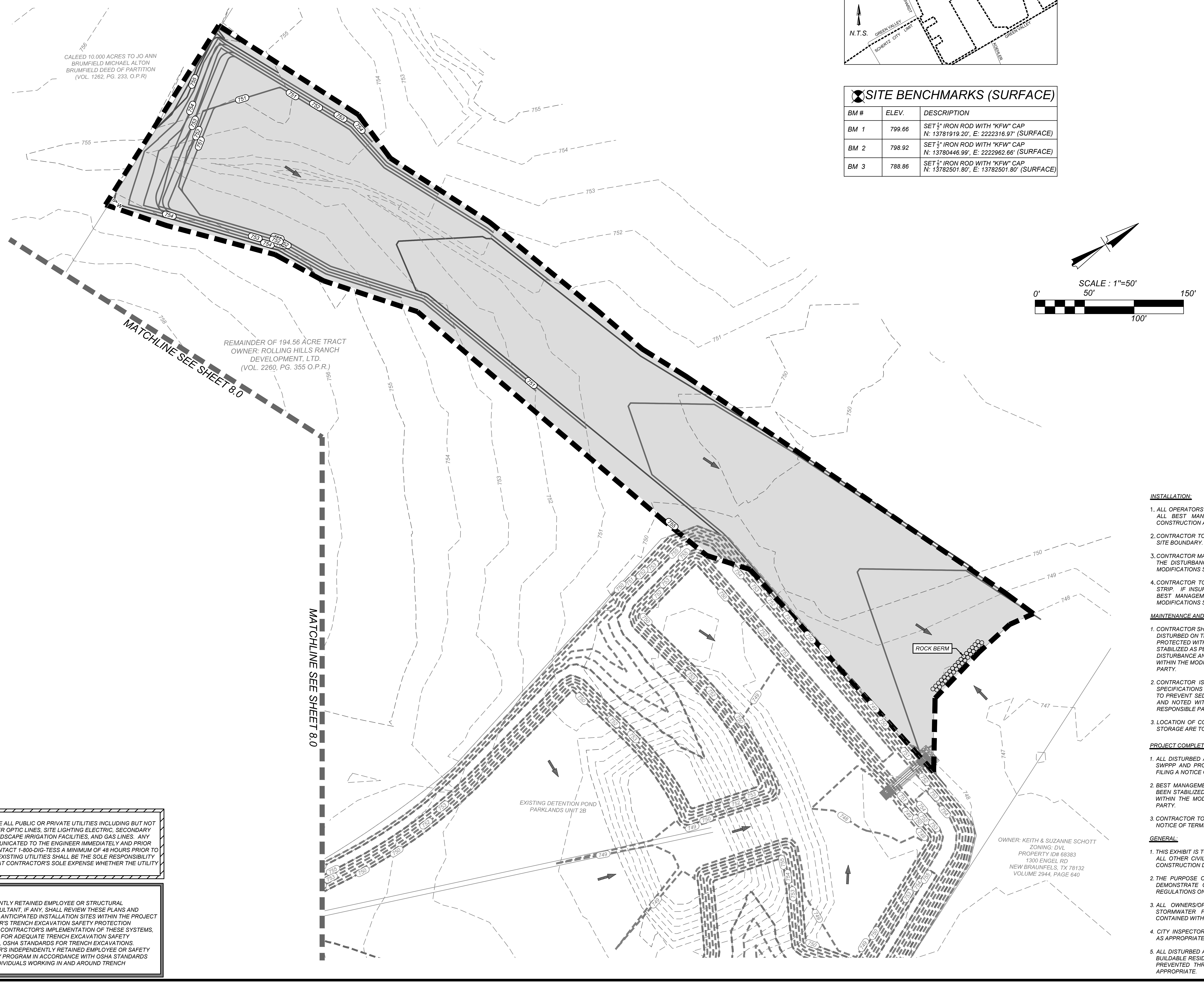


LOCATION MAP
N.T.S.


CALEED 10.000 ACRES TO JO ANN BRUMFIELD MICHAEL ALTON BRUMFIELD DEED OF PARTITION (VOL. 1262, PG. 233, O.P.R)
756
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REMAINDER OF 194.56 ACRE TRACT OWNER: ROLLING HILLS RANCH DEVELOPMENT, LTD. (VOL. 2260, PG. 355 O.P.R.)
MATCHLINE SEE SHEET 8.0
MATCHLINE SEE SHEET 8.0
SCALE : 1"=50'
0'
50'
100'
150'
ROCK BERM
EXISTING DETENTION POND PARKLANDS UNIT 2B
OWNER: KEITH & SUZANNE SCHOTT
ZONING: DVL
PROPERTY ID# 68383
1300 ENGEL RD
NEW BRAUNFELS, TX 78132
VOLUME 2944, PAGE 640

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—x—	SILT FENCE PHASE II
⁂	NATURAL VEGETATIVE BUFFER
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PROJECT COMPLETION:

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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.
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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.

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
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has joined Colliers Engineering & Design
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TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE

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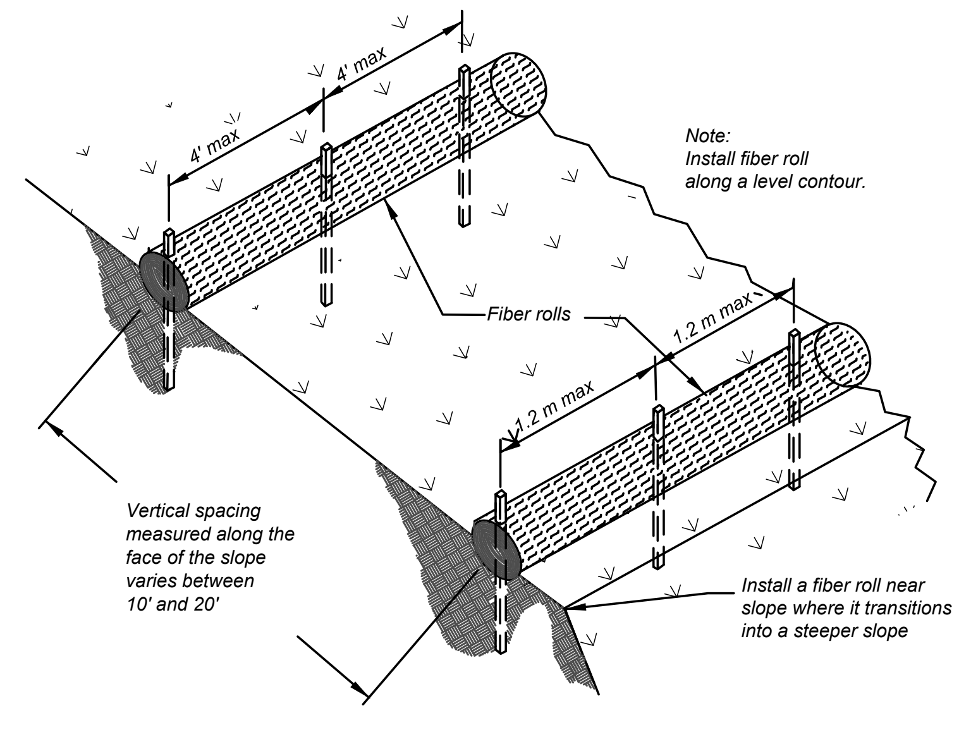
THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX

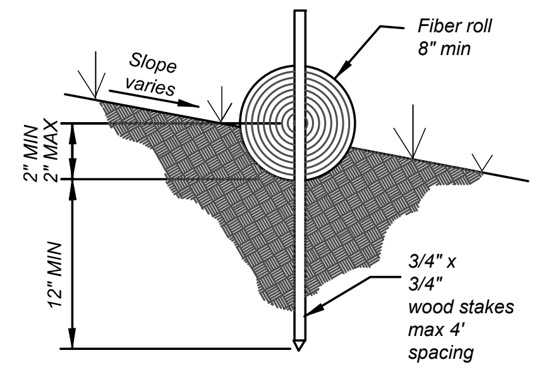
STORMWATER POLLUTION PREVENTION PLAN

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR

SHEET NUMBER:
8.1



TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.

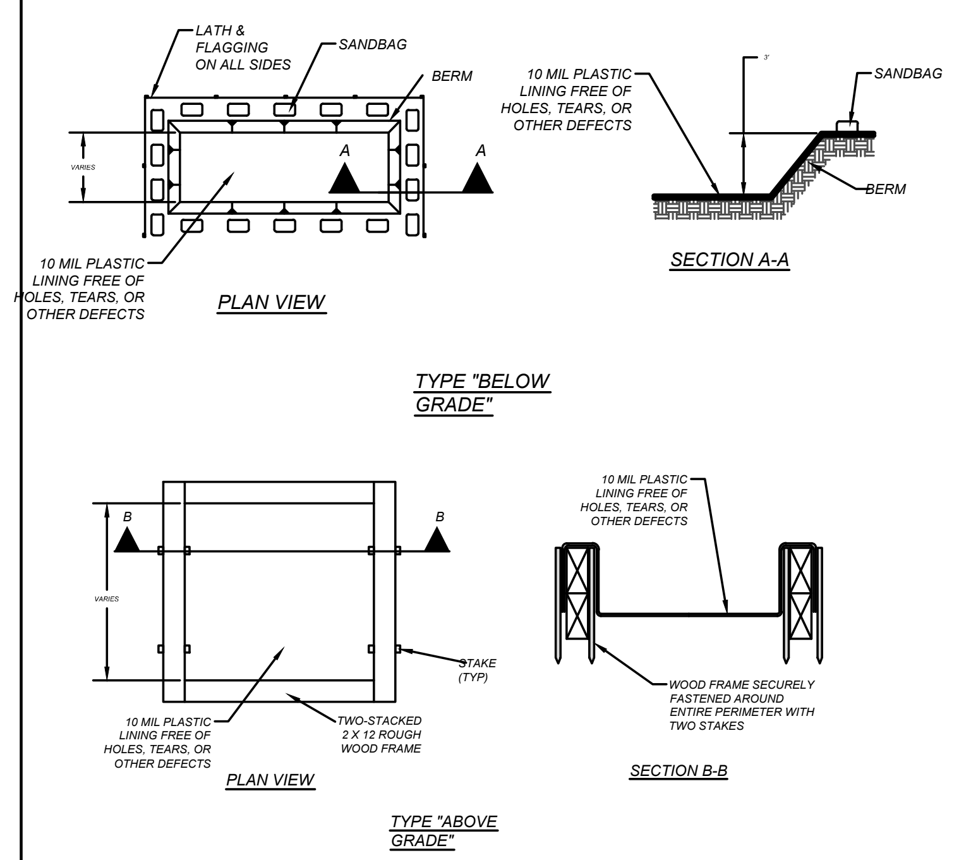
THE MATERIAL, INSTALLATION, INSPECTION, AND MAINTENANCE OF FIBER ROLLS WILL BE PER THE MANUFACTURE'S SPECIFICATIONS AND SHALL ALSO COMPLY WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY CURRENT "TECHNICAL GUIDANCE ON BEST MANAGEMENT PRACTICES" AS NOTED BELOW.

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.

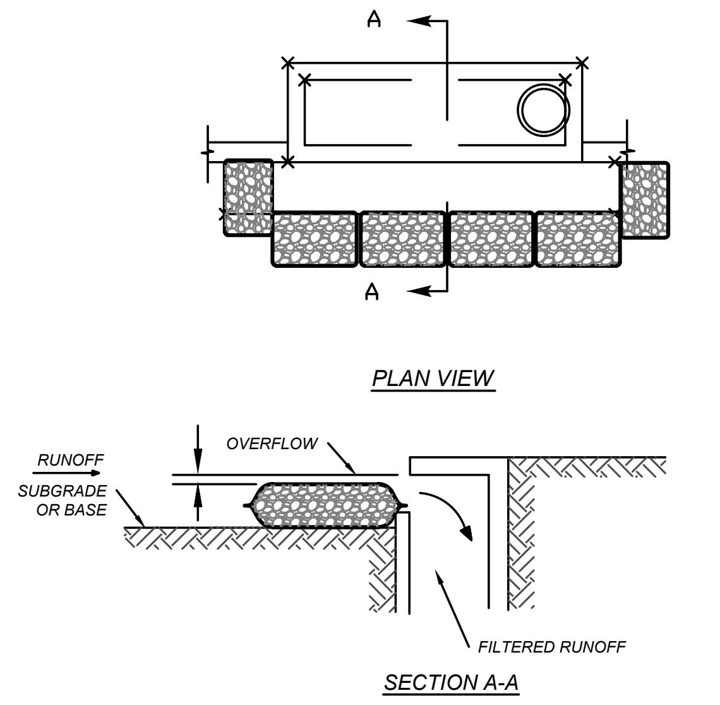
FIBER ROLL



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.

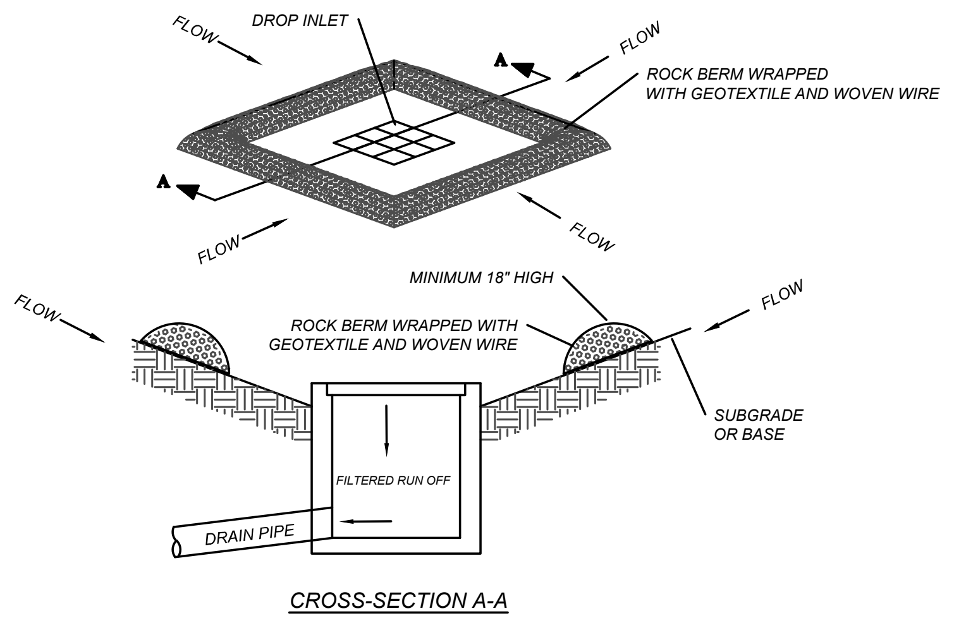
CONCRETE TRUCK WASHOUT PIT



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.

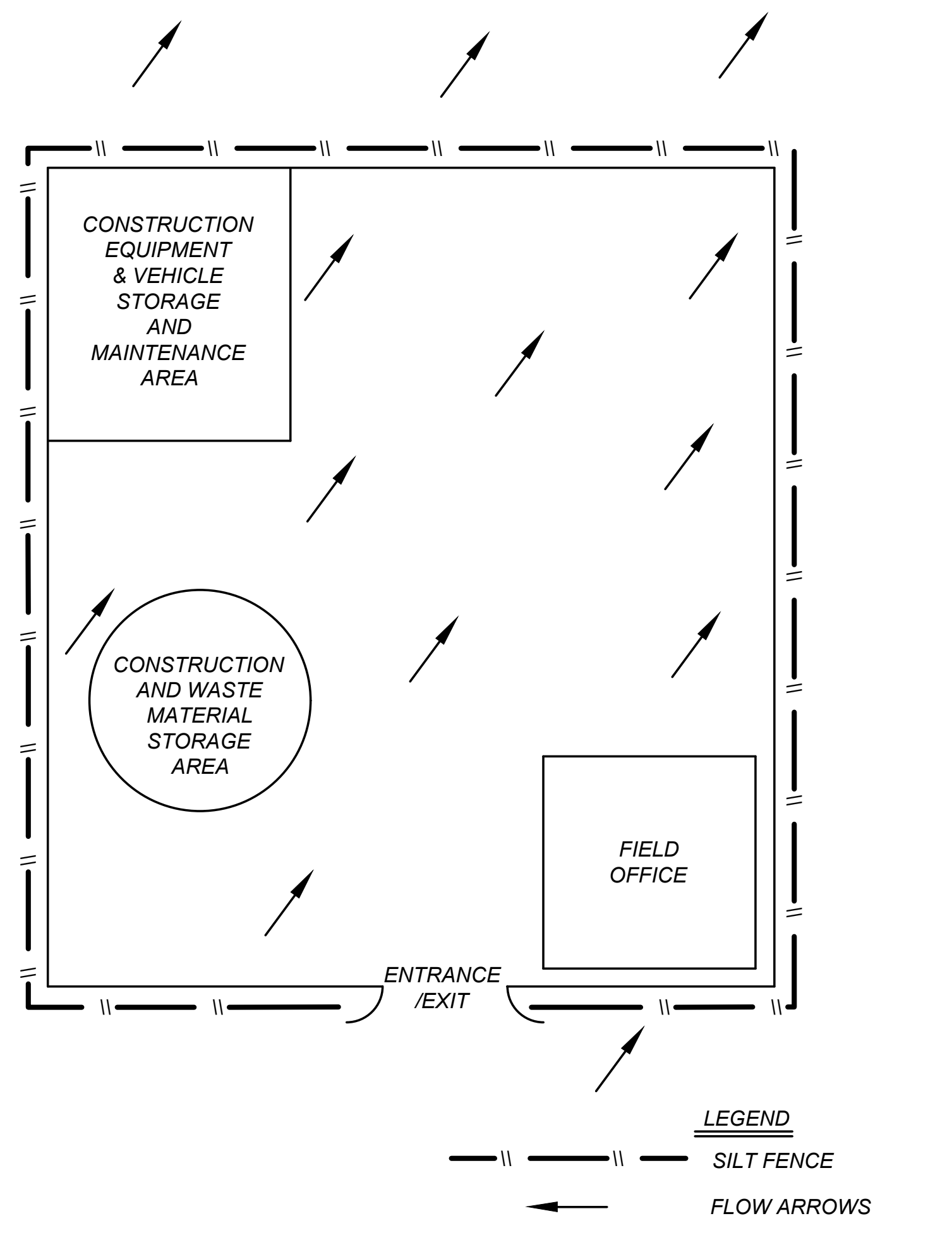
CURB INLET PROTECTION GRAVEL FILTER BAGS



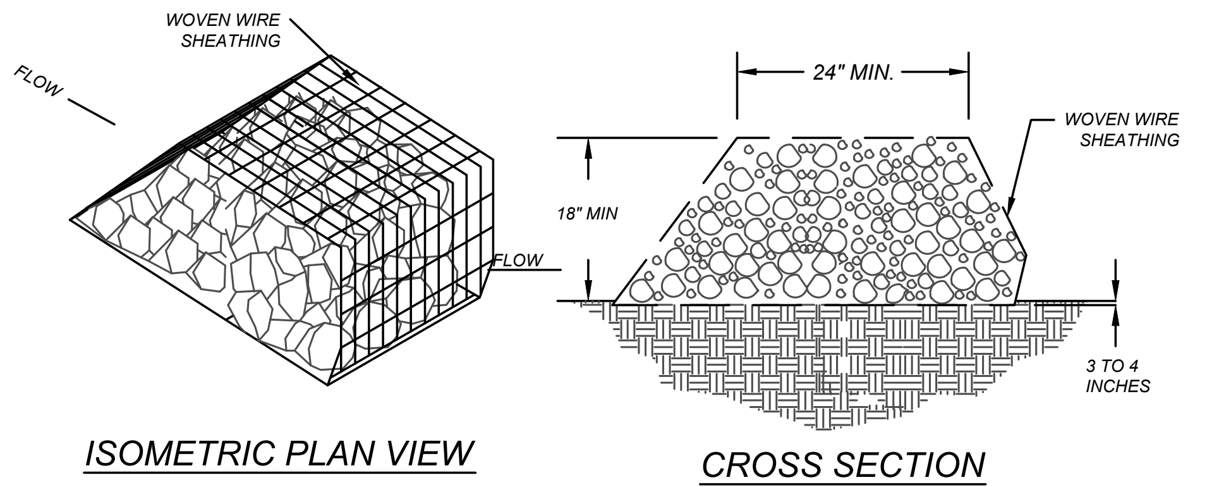
GENERAL NOTES:

- 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

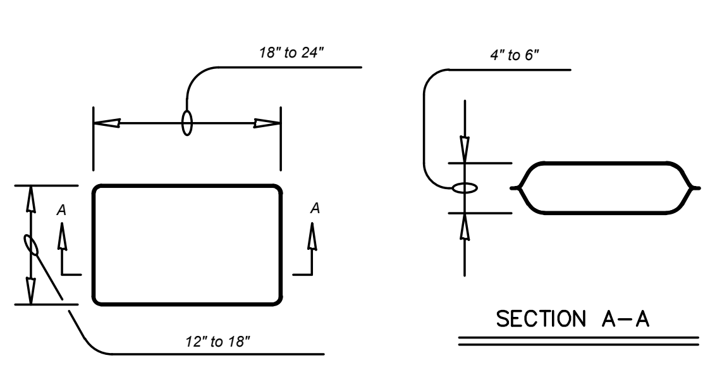


Materials:
(1) The berm structure should be. secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoat rings.
(2) Clean, open graded 3- to 5-inch diameter rock should be used, except in areas where high velocities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

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

Inspection and Maintenance Guidelines:
(1) Inspection should be made weekly 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.

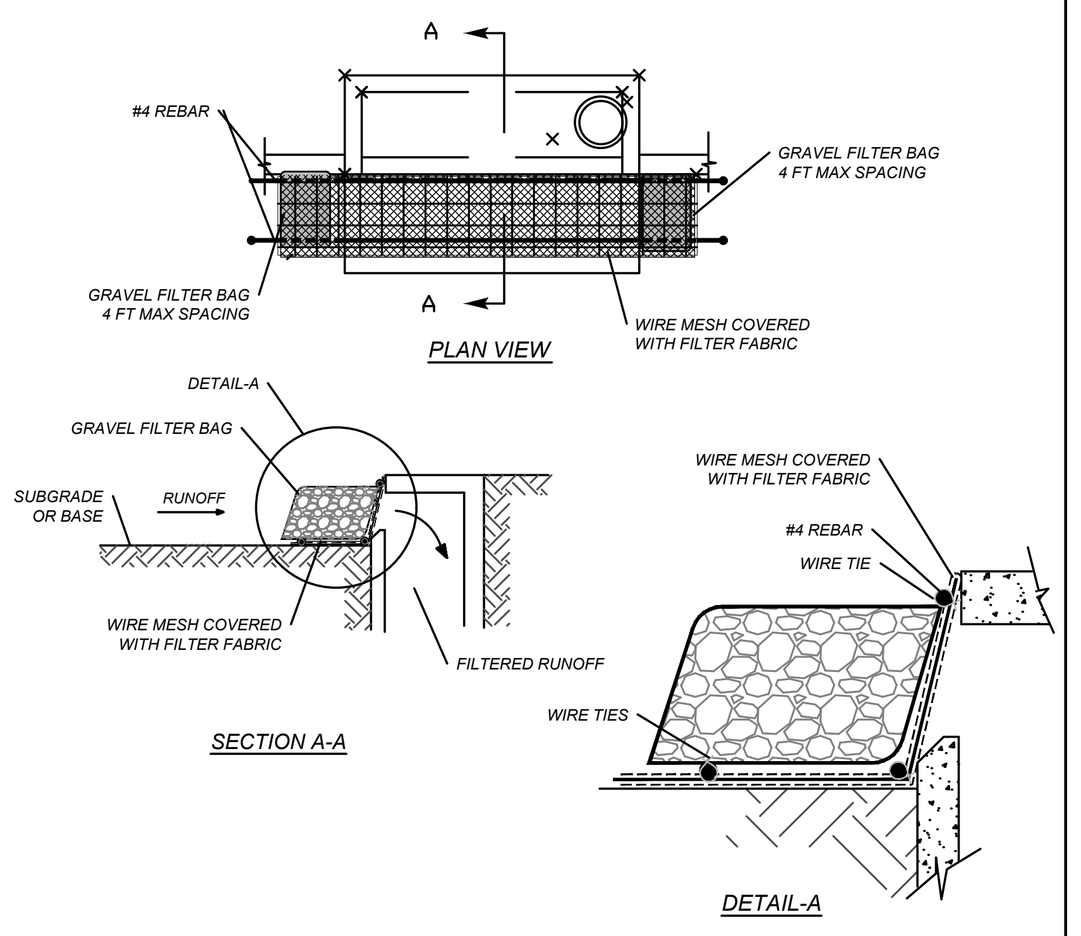
ROCK BERM



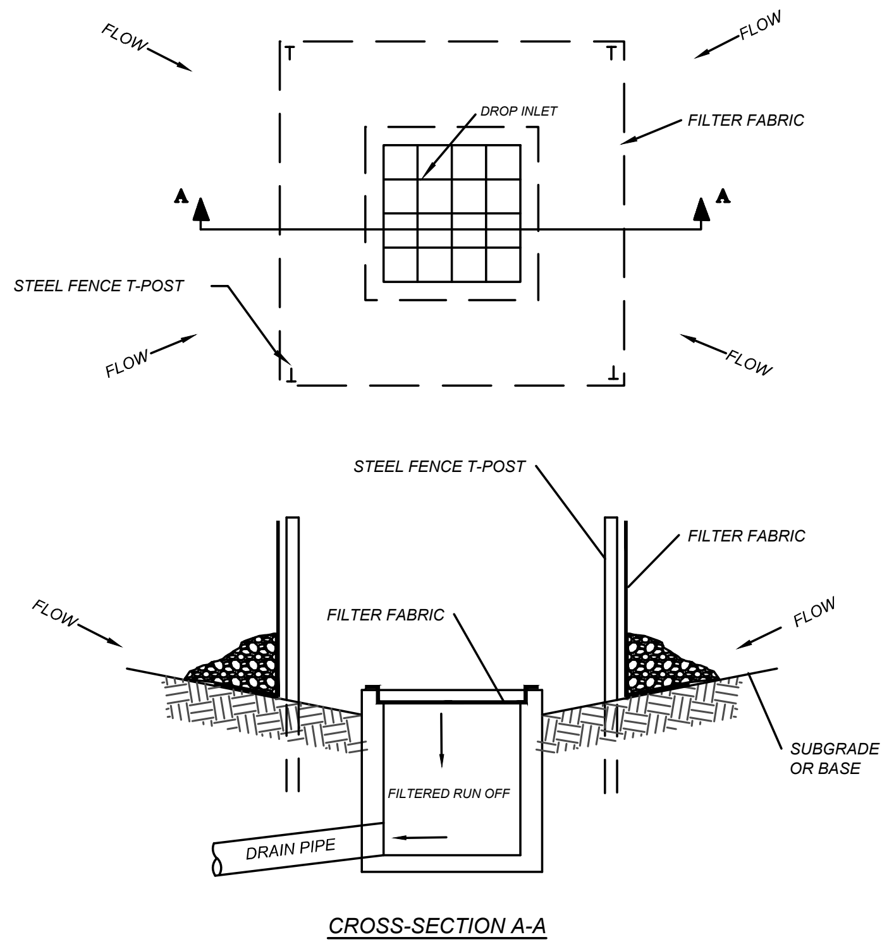
GENERAL NOTES:

- 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



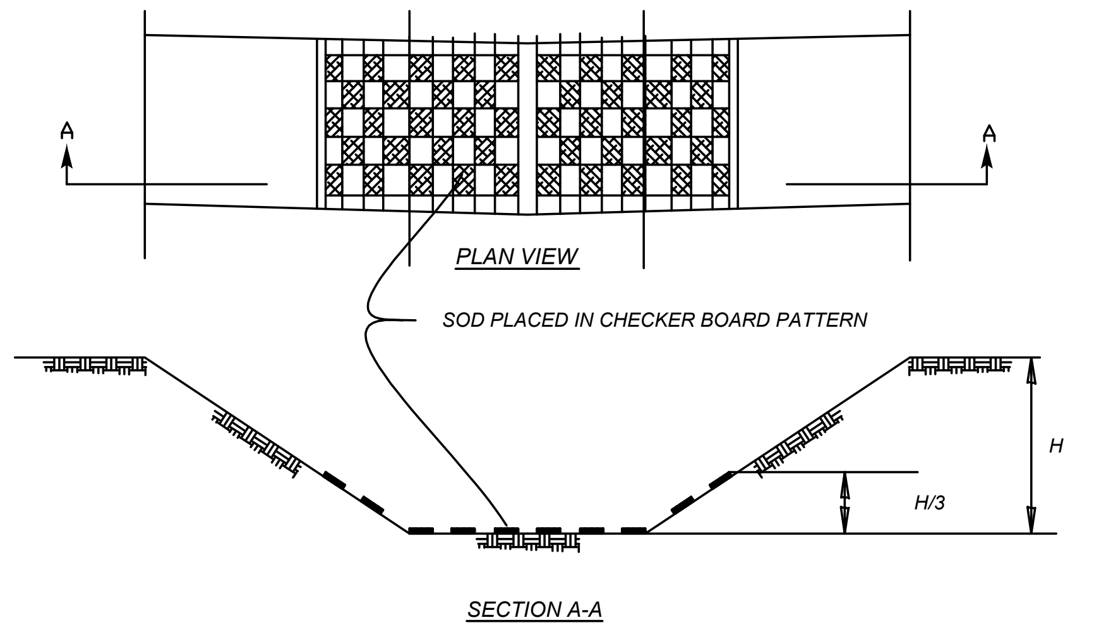
CURB INLET PROTECTION (ALRTERNATE)



GENERAL NOTES:

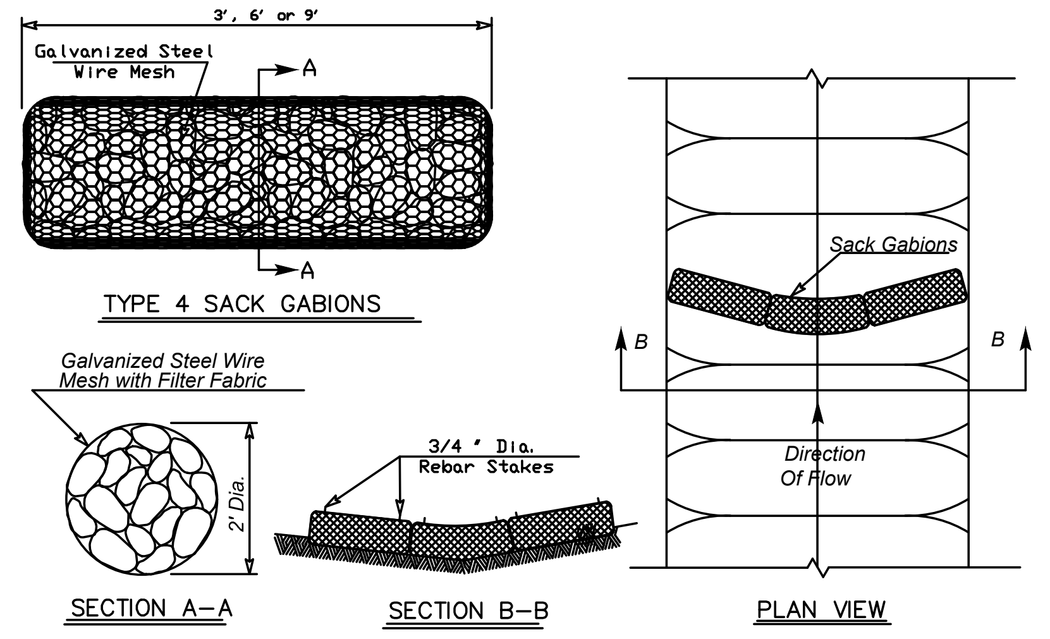
- ALL MATERIALS AND ERECTION PROCEDURES WILL BE THE SAME AS DESCRIBED IN THE STANDARD SILT FENCE REQUIREMENTS.

GRATE INLET PROTECTION (ALRTERNATE)



- 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

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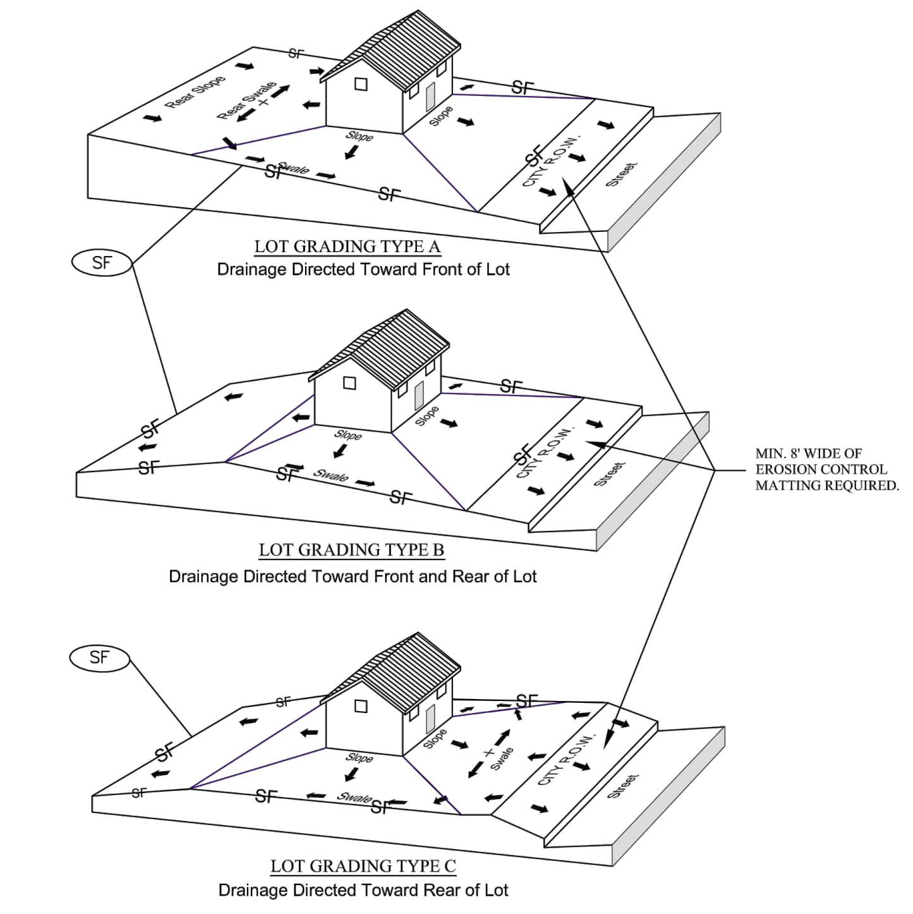
THE PARKLANDS SUBDIVISION - UNIT 3B
SCHERTZ, TX
STORMWATER POLLUTION PREVENTION PLAN TYPICAL DETAILS

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN: CHECKED: NR
SHEET NUMBER:
8.2

Date: Mar 22, 2024, 1:27pm User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\SW3P\8.2 STORMWATER POLLUTION PREVENTION PLAN TYPICAL DETAILS.dwg



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

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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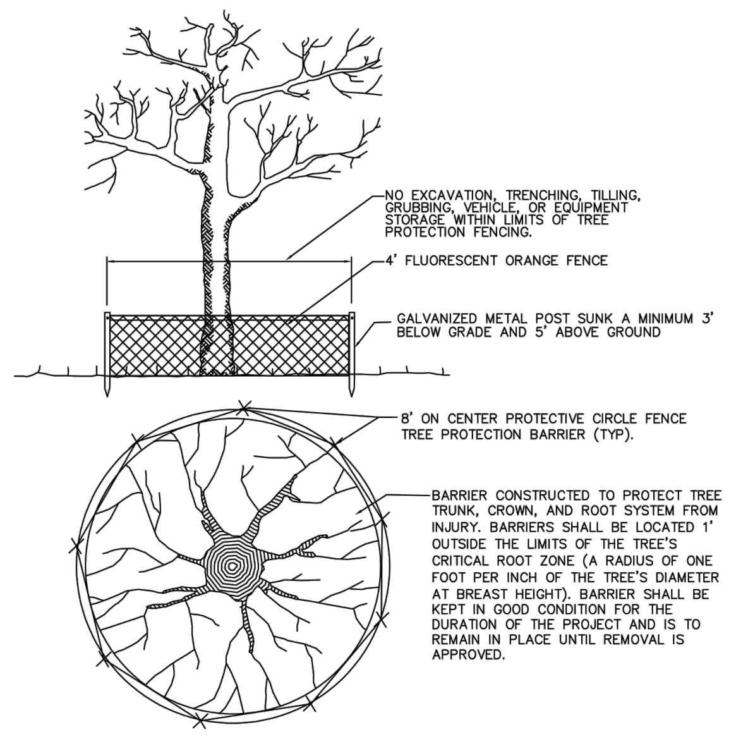
STANDARD DETAIL 01570.1
RESIDENTIAL LOT GRADING
TECHNICAL SPECIFICATION SECTION 01570
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 12/07/2022
DSGN. BY: ENG DRAWN BY: JRS SHEET NO.: 1 of 1


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

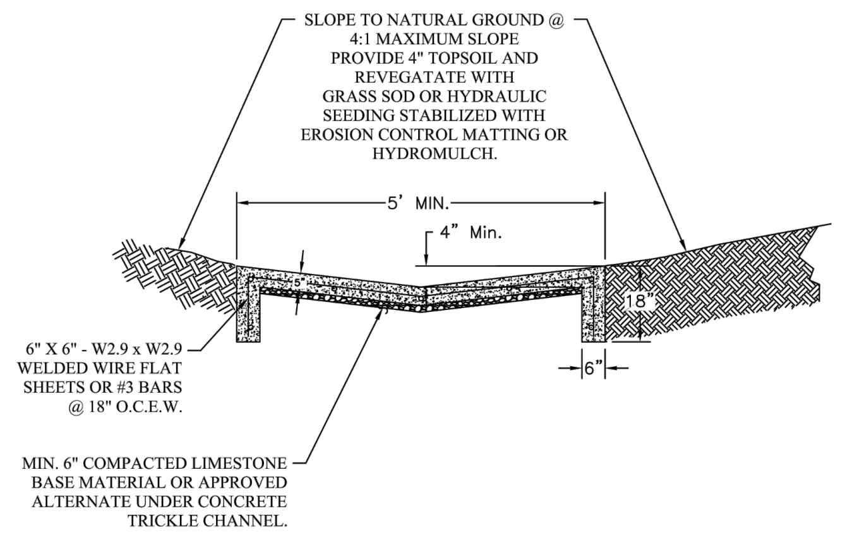
- ESTABLISH FENCE PROTECTION A MINIMUM OF 5' FROM TRUNK
- PROVIDE 4" DEEP WOOD CHIP MULCH OVER CRITICAL ROOT ZONE INSIDE FENCE PROTECTION
- PROVIDE 8" DEEP WOOD CHIP MULCH OVER DRIP LINE OUTSIDE OF FENCE PROTECTION.
- MAKE CLEAN CUTS ON ROOTS EXPOSED BY GRADING AND BACKFILL IMMEDIATELY.
- PROVIDE TEMPORARY 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 2 $\frac{1}{2}$" MINIMUM DIAMETER CONCRETE FILLED STEEL PIPE MOUNTED IN RUBBER AUTOMOBILE TIRES WITH CONCRETE.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

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


SLOPE TO NATURAL GROUND @ 4:1 MAXIMUM SLOPE PROVIDE 4" TOPSOIL AND REVEGATATE WITH GRASS SOD OR HYDRAULIC SEEDING STABILIZED WITH EROSION CONTROL MATTING OR HYDROMULCH.
5' MIN.
4" Min.
5"
18"
6"
6" X 6" - W2.9 x W2.9 WELDED WIRE FLAT SHEETS OR #3 BARS @ 18" O.C.E.W.
MIN. 6" COMPACTED LIMESTONE BASE MATERIAL OR APPROVED ALTERNATE UNDER CONCRETE TRICKLE CHANNEL.

NOTES:

1. ALL GRASS–LINED CHANNELS AND DETENTION BASINS WITH A BOTTOM WIDTH OF EIGHT (8') FEET OR GREATER MUST HAVE A TRICKLE CHANNEL WITH A MINIMUM WIDTH OF 5 FEET.
2. CLASS "A" CONCRETE TO BE USED.
3. JOINTS: (SPEC 02752)
   a. PROVIDE TOOLED OR SAWCUT CONTRACTION JOINTS AT A MAXIMUM OF 20 FEET.
   b. PLACE EXPANSION JOINTS WITH A $\frac{1}{2}$" EXPANSION MATERIAL IN CONCRETE LOW–FLOW AND TRAPEZOIDAL BOTTOM SECTIONS AT 40 FEET MAXIMUM SPACING CONTINUOUSLY THROUGH CHANNEL LINING.
4. CONTRACTOR SHALL BACKFILL ADJACENT TO CONCRETE EDGES TO A MINIMUM OF 90% STANDARD PROCTOR (ASTM D–698) IN 6" LIFTS.

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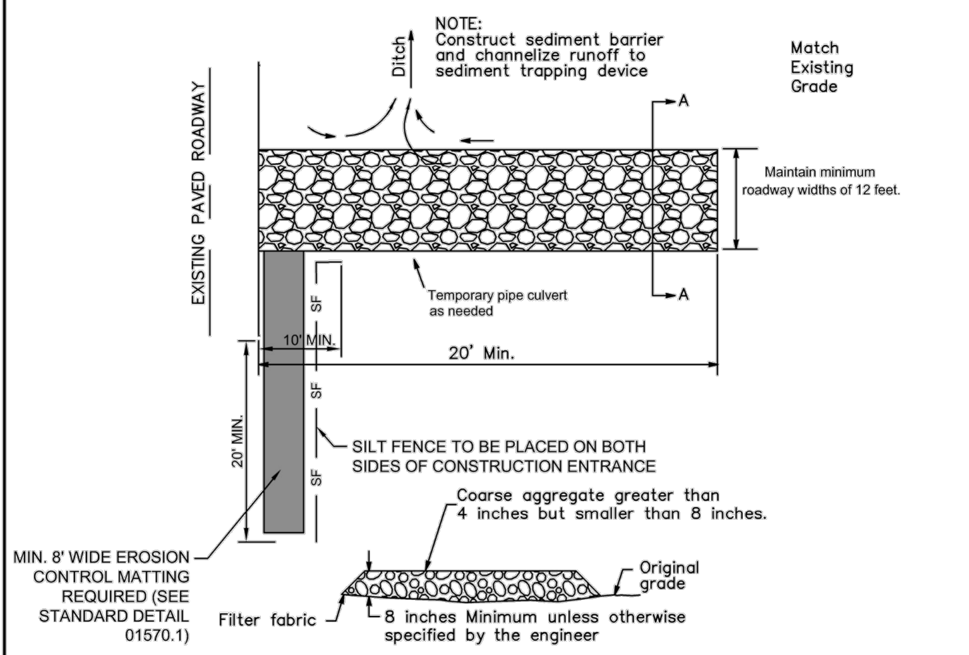
COMMUNITY ★ SERVICE ★ OPPORTUNITY

CONCRETE TRICKLE CHANNEL
TECHNICAL SPECIFICATION SECTION 02751
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 5/15/19
DSGN. BY: ENG. DRAWN BY: BCP SHEET NO.: 1

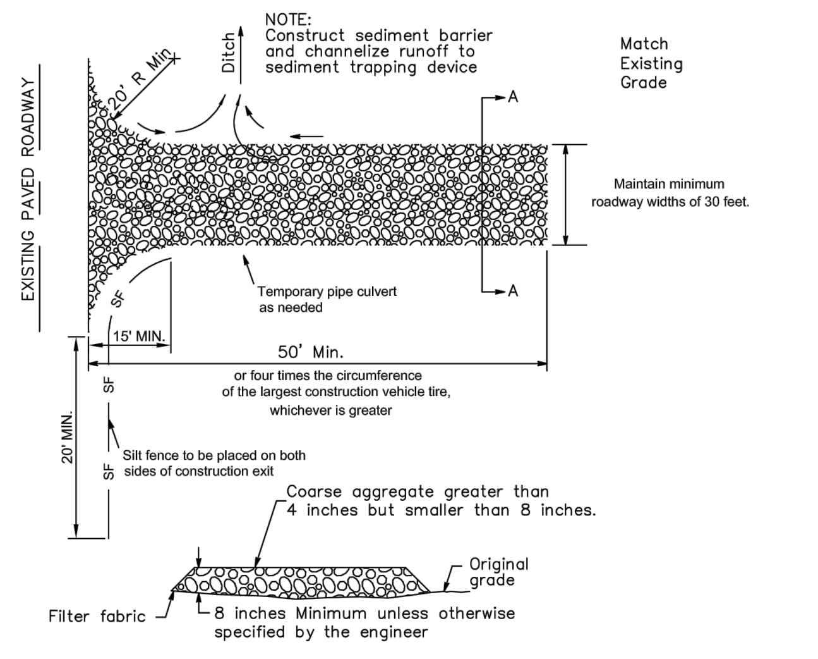

NOTE:
Construct sediment barrier and channelize runoff to sediment trapping device
Ditch
Match Existing Grade
EXISTING PAVED ROADWAY
Maintain minimum roadway widths of 12 feet.
Temporary pipe culvert as needed
20' Min.
10' MIN
20' MIN
SILT FENCE TO BE PLACED ON BOTH SIDES OF CONSTRUCTION ENTRANCE
Coarse aggregate greater than 4 inches but smaller than 8 inches.
MIN. 8' WIDE EROSION CONTROL MATTING REQUIRED (SEE STANDARD DETAIL 01570.1)
Filter fabric
Original grade
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.
8. THE CONTRACTOR SHALL MAINTAIN SILT FENCE AND MATTING PER RESIDENTIAL LOT GRADING PLAN.
9. THE CONTRACTOR SHALL PREVENT WATER PONDING BEHIND EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION AND AFTER REMOVAL.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

STANDARD DETAIL 01575.2
STABILIZED CONSTRUCTION EXIT
ALTERNATIVE FOR 1/2 ACRE OR SMALLER RESIDENTIAL LOTS
TECHNICAL SPECIFICATION SECTION 01575
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 07/02/2021
DSGN. BY: ENG DRAWN BY: JRS SHEET NO.: 1 of 1


NOTE:
Construct sediment barrier and channelize runoff to sediment trapping device
Ditch
Match Existing Grade
EXISTING PAVED ROADWAY
Maintain minimum roadway widths of 30 feet.
Temporary pipe culvert as needed
15' MIN
50' MIN.
or four times the circumference of the largest construction vehicle tire, whichever is greater
20' MIN
Silt fence to be placed on both sides of construction exit
Coarse aggregate greater than 4 inches but smaller than 8 inches.
Filter fabric
Original grade
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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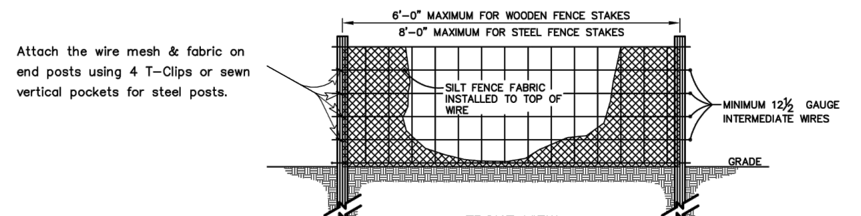
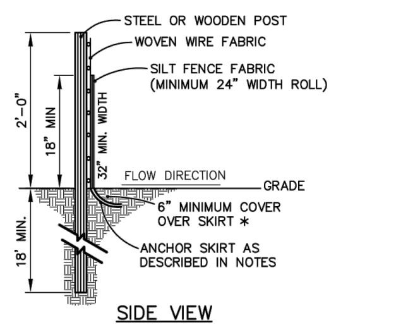
STANDARD DETAIL 01575.1
STABILIZED CONSTRUCTION EXIT
TECHNICAL SPECIFICATION SECTION 01575
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 07/02/2021
DSGN. BY: ENG DRAWN BY: JRS SHEET NO.: 1 of 1


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

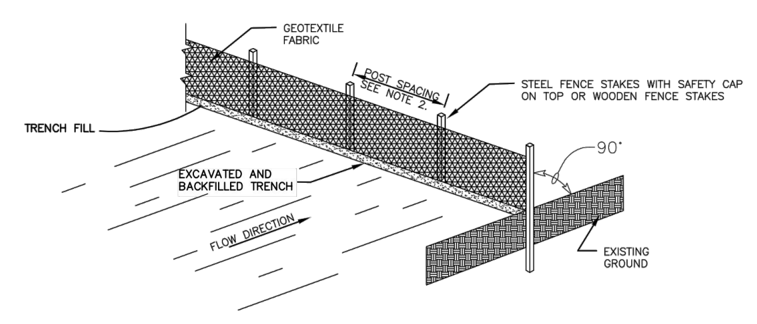
* INSTALL STAKES AT A SLIGHT ANGLE TOWARD SOURCE OF ANTICIPATED RUNOFF.


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 *
ANCHOR SKIRT AS DESCRIBED IN NOTES
18' MIN.

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
FLOW DIRECTION
90°
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. DATE: 07/02/2021
DSGN. BY: ENG DRAWN BY: JRS SHEET NO.: 1 of 1

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.

SCHERTZ
COMMUNITY ★ SERVICE ★ OPPORTUNITY

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

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.

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CLEARING & GRADING
GENERAL NOTES
TECHNICAL SPECIFICATION SECTION 01410
ENGINEERING AND PUBLIC WORKS
SCALE: N.T.S. DATE: 5/15/19
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Date: Mar 22, 2024, 1:27pm User ID: jferguson
File: U:\Projects\171\23\07\Design\Civil\SW3P\8.3 STORMWATER POLLUTION PREVENTION PLAN TYPICAL DETAILS.dwg

KFW
ENGINEERS + SURVEYING
has joined Colliers Engineering & Design
162 W Mill St., New Braunfels, Tx. 78130
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TBPE Firm #: 9513 • TBPLS Firm #: 10122300

ISSUE DATE
REVISIONS

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

JOB NO. 171-23-07
DATE: JUNE 2023
DRAWN:
CHECKED: NR
SHEET NUMBER:
8.3