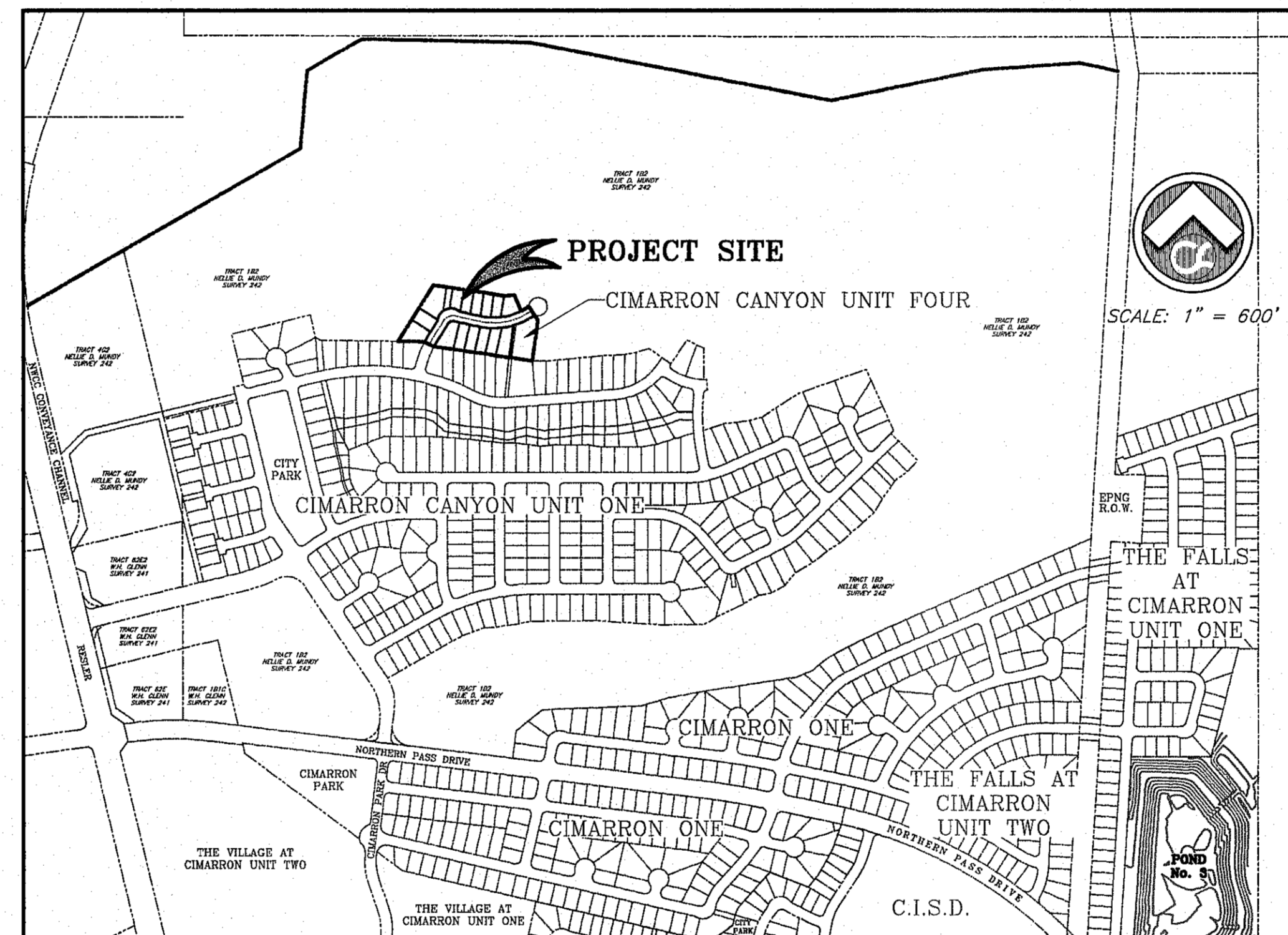
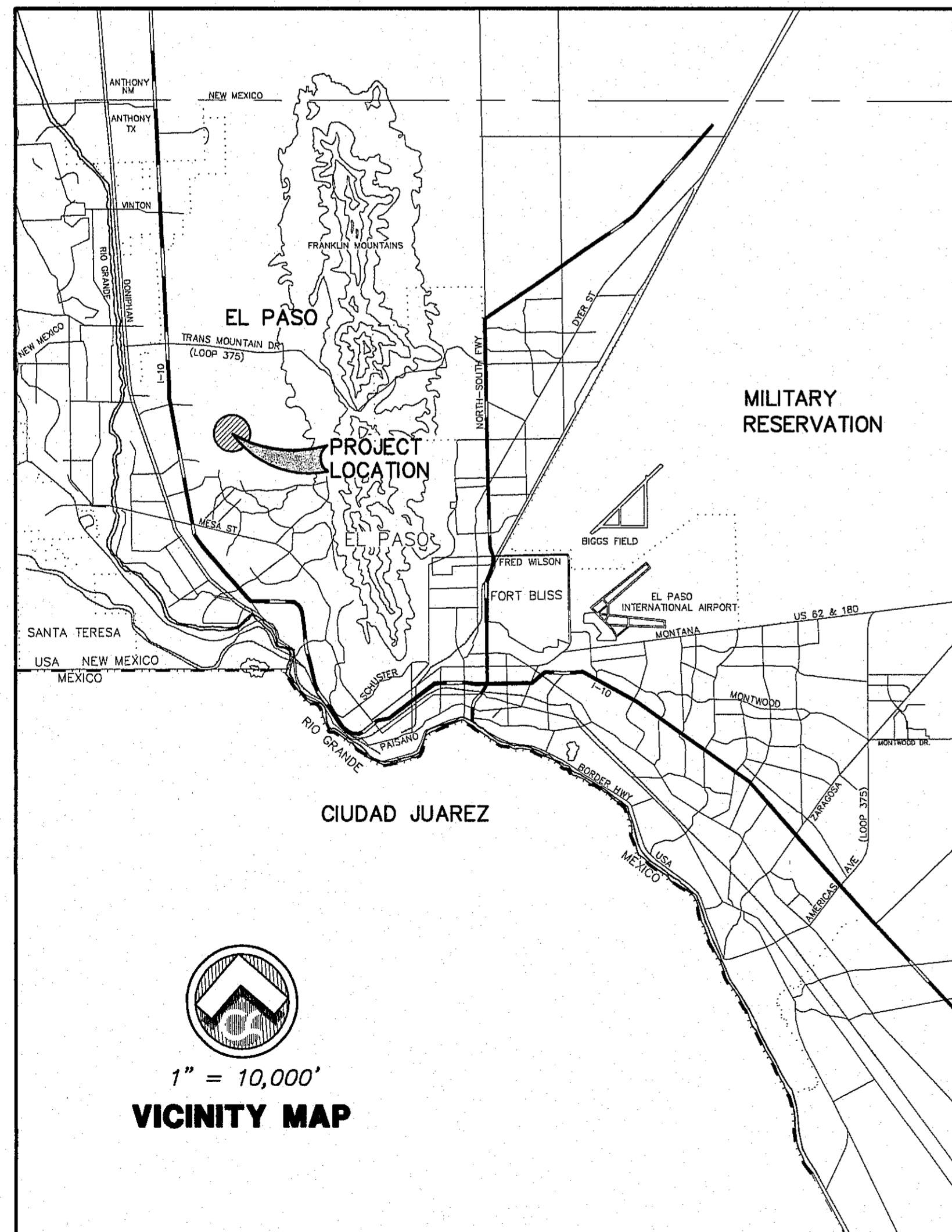


PLANS FOR CONSTRUCTION OF CIMARRON CANYON UNIT FOUR SUBDIVISION CITY OF EL PASO, TEXAS



LOCATION MAP



1" = 10,000'
VICINITY MAP



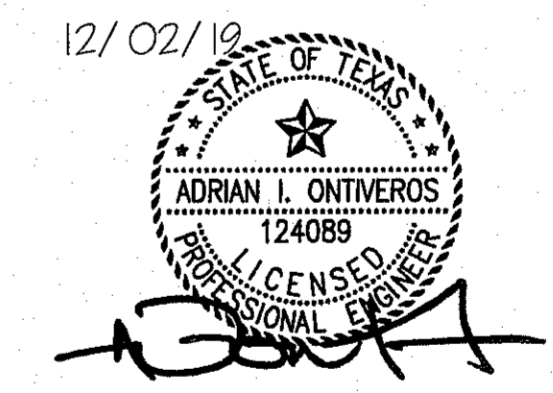
CITY DEVELOPMENT DEPARTMENT

Reviewed For Conformance For Condition Related To:

- Wetlands
- Grading or Retention
- Wetland Buffer
- On the Filing Paper
- Easements
- Resolving Road Width
- On the Filing of Storm Water

Contractor Must Call 911 Prior To Construction for Inspection

[Signature] 12/4/2019



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FILE No. 1723

12/02/19 Final City Submittal

1723 CIMARRON CANYON UNIT FOUR

Dec 02, 2019 - 8:16am s:\Data\1723 Cimarron Canyon Unit Four City Submittal\1723_Sht 1 (Cover).dwg

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GENERAL NOTES: WATER AND SANITARY SEWER CONSTRUCTION

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE TO THE MOST STRINGENT OF THE REQUIREMENTS OF THE CITY OF EL PASO, EL PASO WATER (EPWater), THE TCEQ OR THE PROJECT SPECIFICATIONS. AT A MINIMUM, THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D.
2. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AND EPWater RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR HIS/HER AUTHORIZED REPRESENTATIVE SHALL CONVEY A PRECONSTRUCTION CONFERENCE BETWEEN THE CONSULTING ENGINEERS REPRESENTATIVE, CONTRACTOR(S), EPWater, TCEQ, THE CITY OF EL PASO AND ANY OTHER AFFECTED PARTIES. NOTICE ALL SUCH PARTIES AT LEAST 48 HOURS PRIOR TO THE TIME OF THE CONFERENCE AND 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
3. THE CONTRACTOR SHALL GIVE THE ENGINEER, CITY OF EL PASO ENGINEERING DIVISION, A MINIMUM OF 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.
4. ANY EXISTING PAVEMENT, CURBS AND/OR SIDEWALKS DAMAGED OR REMOVED DURING CONSTRUCTION WILL BE REPAIRED BY THE CONTRACTOR AT THEIR OWN EXPENSE BEFORE ACCEPTANCE OF THE WORK.
5. THE LOCATION AND DEPTHS OF ANY EXISTING WATER AND/OR WASTEWATER LINES TO BE GROSSED OR CONNECTED TO SHALL BE VERIFIED BY THE CONTRACTOR AT THE TIME OF COMMENCEMENT OF CONSTRUCTION.
6. CONTRACTORS SHALL VERIFY EXACT DEPTH AND LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, DRIVEWAYS, PAVEMENT, CURB AND GUTTER, SIDEWALKS, ETC., SHALL BE REPAIRED BY THE CONTRACTOR, OR THE UTILITY, AT UTILITIES OPTION, AND SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
7. EL PASO WATER (EPWater), THE DESIGN ENGINEER AND ANY OTHER CONCERNED PARTIES SHALL BE CONTACTED A MINIMUM OF 48 HOURS PRIOR TO CONNECTING TO EXISTING WATER AND/OR WASTEWATER LINES.
8. ALL FILL AREAS OVER ALL UTILITIES, SHALL BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY IN ACCORDANCE WITH ASTM D-1557.
9. WATER AND WASTEWATER ALIGNMENTS SHOWN ON THE PLANS SHOULD BE ACHIEVED BY FLEXURE WITHIN THE MANUFACTURER'S SPECIFICATIONS, EXCEPT WHERE SPECIFIC FITTINGS ARE CALLED FOR THE PLANS.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING UTILITIES SUCH AS GAS LINES, ELECTRIC LINES, WATER LINES, VALVE BOXES, FIRE HYDRANTS, STRUCTURES, AND ANY OTHER APPURTENANCES THAT LIE WITHIN THE RIGHT-OF-WAY OR EASEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR ALL UTILITIES, DRIVEWAYS, PAVEMENT, CURBS, GUTTER, SIDEWALKS, FENCES, OR OTHER ITEMS DAMAGED DURING CONSTRUCTION, REGARDLESS OF WHETHER ALL ITEMS ARE SHOWN ON THE PLANS, AT HIS SOLE EXPENSE. IN ADDITION TO NORMAL PRECAUTIONS WHEN EXCAVATING, TAKE EXTRA CAUTION WHEN EXCAVATING WITHIN 25 FT. OF ANY UTILITIES SHOWN ON THE PLANS.
11. ALL CONSTRUCTION ACTIVITIES, INCLUDING ACCESS, EGRESS, TRAVEL, STOCKPILING, ETC., ARE TO BE CONFINED TO AREAS IDENTIFIED BY THE ENGINEER.
12. DISPOSAL OF ALL SPOIL OFFSITE WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
13. PIPE FITTINGS AND JOINTS: WATER-PVC DR 18, C-900, CL-235 WITH BOLTLESS GASKETED JOINTS AND M.J. OR FLANGED FITTINGS UNLESS OTHERWISE SHOWN ON THE PLANS; FLUSHING VALVE / FIRE HYDRANTS LEAD - DUCTILE IRON, CLASS 350, MECHANICAL JOINTS AND G.I. (D.I. ENDS) FITTINGS, UNLESS OTHERWISE SHOWN ON THE PLANS; GRAVITY SEWER - PVC SDR 35 AND SDR 26 UNLESS OTHERWISE NOTED, IN PROJECT SPECIFICATIONS OR ON THE DRAWINGS.
14. AT ALL LOCATIONS WHERE A WATERLINE GROSSES A WASTEWATER LINE, THE CONSTRUCTION SHALL STRICTLY COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS OF THE TCEQ AND EPWater.
15. THE CONTRACTOR SHALL FURNISH THE ENGINEER ONE SET OF AS-BUILT PLANS REFLECTING ALL CHANGES MADE IN THE FIELD, AND TWO MEASUREMENTS TO ALL VALVES AND MANHOLES INSTALLED FROM PERMANENT OBJECTS.
16. THE EPWater AND THE ENGINEER SHALL BE GIVEN 48 HOURS NOTICE PRIOR TO ANY TESTING PHASE. (DENSITY, PRESSURE, LEAKAGE, ETC.)
17. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE / NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 81 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI.
18. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 235 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS.
19. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY.
20. WATER TRANSMISSION AND DISTRIBUTION LINES MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS HOWEVER; THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE.
21. THE HYDROSTATIC LEAKAGE RATE FOR PVC PIPE, DUCTILE IRON PIPE, AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARD C605 AND STANDARD C600, AS REQUIRED IN 30 TAC §290.44(a)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND IN USE;

$$Q = \frac{LD\sqrt{P}}{148,000}$$
 WHERE:
 Q=THE QUANTITY OF MAKEUP WATER, IN GALLONS PER HOUR;
 L=THE LENGTH OF PIPE BEING TESTED, IN FEET;
 D=THE NOMINAL DIAMETER OF THE PIPE, IN INCHES; AND
 P=THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST, IN PSI.
22. PROJECTS CONSTRUCTED ON OR AFTER JANUARY 4, 2014 MUST COMPLY WITH CHANGES TO THE SAFE DRINKING WATER ACT THAT REDUCE THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES TO 0.25 PERCENT.
23. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES IN THE DISTRIBUTION SYSTEM AT ALL POINTS WHERE TOPOGRAPHY OR OTHER FACTORS MAY CREATE AIR LOCKS IN THE LINES. ALL VENT OPENINGS TO THE ATMOSPHERE SHALL BE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT.
24. THE SYSTEM SHALL BE DESIGNED TO AFFORD EFFECTIVE CIRCULATION OF WATER WITH A MINIMUM OF DEAD ENDS. ALL DEAD END MAINS SHALL BE PROVIDED WITH ACCEPTABLE FLUSH VALVES AND DISCHARGE PIPING. ALL DEAD END LINES LESS THAN TWO INCHES IN DIAMETER WILL NOT REQUIRE FLUSH VALVES IF THEY END AT A CUSTOMER SERVICE. WHERE DEAD ENDS ARE NECESSARY AS A STAGE IN THE GROWTH OF THE SYSTEM, THEY SHALL BE LOCATED AND ARRANGED TO ULTIMATELY CONNECT THE ENDS TO PROVIDE CIRCULATION.
25. THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION.
26. THE CONTRACTOR SHALL DISINFECT THE NEW WATER MAINS IN ACCORDANCE WITH AWWA STANDARD C651 AND THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATER LINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER.
27. WATER LINE / NEW SEWER LINE SEPARATION: WHEN NEW SANITARY SEWERS ARE INSTALLED, THEY SHALL BE INSTALLED NO CLOSER TO WATER LINES THAN NINE (9) FEET IN ALL DIRECTIONS. SEWERS THAT PARALLEL WATER LINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE (9) FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING GUIDELINES APPLY:
 - A. WHERE A SANITARY SEWER PARALLELS A WATERLINE, THE SEWER SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING ASTM SPECIFICATION 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 (4) FEET BETWEEN OUTSIDE DIAMETERS. THE SEWER SHALL BE LOCATED BELOW THE WATER LINE.
 - B. 30 TAC §290.44(a)(4)(b)(v) REQUIRES THAT WHERE A NEW POTABLE WATERLINE GROSSES A NEW, PRESSURE RATED WASTEWATER LINE, ALL OF THE FOLLOWING CONDITIONS MUST BE MET:
 - ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WATERLINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER LINE;
 - THE POTABLE WATERLINE SHALL BE AT LEAST 6 INCHES ABOVE THE WASTEWATER LINE;
 - WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER LINE;
 - THE WASTEWATER LINE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI; AND
 - THE WASTEWATER LINE SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (CONTAINING AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
 - C. WHERE A SANITARY SEWER GROSSES UNDER A WATER LINE 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 BAGS OF CEMENT PER CUBIC YARD OF SAND) FOR ALL SECTIONS OF SEWER WITHIN NINE (9) FEET OF THE WATER LINE. THIS INITIAL BACKFILL SHALL BE FROM ONE QUARTER DIAMETER BELOW THE CENTERLINE OF THE PIPE TO ONE PIPE DIAMETER (BUT NOT LESS THAN TWELVE (12) INCHES) ABOVE THE TOP OF THE PIPE.
 - D. 30 TAC §290.44(a)(4)(b)(vi) REQUIRES THAT WHEN A NEW WATERLINE GROSSES UNDER A WASTEWATER LINE, AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATERLINE AND WASTEWATER LINE MUST PASS A PRESSURE AND LEAKAGE TEST AS SPECIFIED IN AWWA C600 STANDARDS AND ONE OF THE FOLLOWING CONDITIONS MUST BE MET:
 - a. THE WATERLINE SHALL BE ENCASED IN AN 18-FOOT (OR LONGER) SECTION OF PIPE. THE ENCASEING PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0X DEFLECTION (E.G., SDR-26 PVC), AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE WATERLINE PIPE. THE SPACE AROUND THE CARRIER SHALL BE SUPPORTED AT FIVE FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. EACH END OF THE CASING SHALL BE SEALED WITH WATERTIGHT NON-SHRINK CEMENT GROUT OR A MANUFACTURED WATERTIGHT SEAL; OR
 - b. THE WATERLINE SHALL BE CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE.
 - E. WATER LINE / MANHOLE SEPARATION, UNLESS MANHOLES CAN BE MADE WATER TIGHT AND TESTED FOR NO LEAKAGE THEY MUST BE INSTALLED SO AS TO PROVIDE A MINIMUM OF NINE (9) FEET OF HORIZONTAL CLEARANCE FROM AN EXISTING OR PROPOSED WATER LINE. IF THE NINE (9) FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE WATERLINE MUST BE ENCASED IN JOINT OF 150 PSI PRESSURE CLASS PIPE AT LEAST EIGHTEEN (18) FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE WATERLINE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE (5) FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ABOVE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEAL.

28. MANHOLE CONSTRUCTION AND REHABILITATION: ALL MANHOLES SHALL BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. IF MANHOLES ARE WITHIN THE 100-YEAR FLOODPLAIN THE MANHOLE COVERS SHALL HAVE GASKETS AND BE BOLTED. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE, ALTERNATE MEANS OF VENTING SHALL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE PER 30 TAC 217.55 (F). ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE FOLLOWING REQUIREMENTS: MANHOLES AND WET WELLS MUST BE TESTED SEPARATELY AND INDEPENDENTLY OF THE COLLECTION LINES. ALL MANHOLES MUST BE HYDROSTATICALLY TESTED WITH A MAXIMUM-LOSS ALLOWANCE OF 0.025 GALLON PER FOOT DIAMETER PER FOOT OF HEAD PER HOUR. OTHER TESTING METHODS, SUCH AS VACUUM TESTING, MAY BE APPROVED ON A CASE-BY-CASE BASIS BY THE EXECUTIVE DIRECTOR OF THE TCEQ.
29. ALL SEWER LINES SHALL BE TESTED USING THE FOLLOWING METHOD:
 - A. ALL LOW PRESSURE AIR TESTS SHALL CONFORM TO THE PROCEDURES DESCRIBED IN ASTM C-828, ASTM C-924, OR OTHER APPROPRIATE PROCEDURES. THE TIME FOR THE PRESSURE TO DROP SHALL BE AT LEAST AS STRINGENT AS THE REQUIREMENTS OF TCEQ RULES SECTION 217.57 (A)(1)(B) DESCRIBED BELOW:
 - FOR SECTIONS OF PIPE UP TO 36 INCHES AVERAGE INSIDE DIAMETER, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 POUNDS PER SQUARE INCH GAUGE TO 2.5 POUNDS PER SQUARE INCH GAUGE SHALL BE COMPUTED FROM THE FOLLOWING EQUATION:

$$T = 0.0850(V)(K)(Q)$$
 WHERE:
 T=TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS.
 K=0.00049(D)(L), BUT NOT LESS THAN 1.0
 D=AVERAGE INSIDE DIAMETER IN INCHES
 L=LENGTH OF LINE IN FEET OF SAME SIZE BEING TESTED
 Q=RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOR INTERNAL SURFACE SHALL BE USED

$$SINCE A K VALUE OF LESS THAN 1.0 SHALL NOT BE USED, THERE ARE MINIMUM TIMES FOR EACH PIPE DIAMETER AS OUT LINED BELOW:$$

PIPE DIA. (IN)	MIN. TIME (SEC)	LEN. FOR MIN. (FT)	TIME FOR LONGER LENGTH (SEC)
6	340	398	0.855 (L)
8	454	298	1.520 (L)
10	567	239	2.374 (L)
12	680	199	3.419 (L)
15	850	159	5.342 (L)
18	1020	133	7.693 (L)
21	1190	114	10.471 (L)
24	1360	100	13.676 (L)
27	1530	88	17.309 (L)
30	1700	80	21.369 (L)
33	1870	72	25.856 (L)

 LINES WITH A 36 INCH AVERAGE INSIDE DIAMETER AND LARGER MAY BE TESTED AT EACH JOINT. THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSIG TO 2.5 PSIG DURING A JOINT TEST, REGARDLESS OF PIPE SIZE, SHALL BE 20 SECONDS.
 - B. ALL INFILTRATION / EXFILTRATION TESTS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS. THE TOTAL INFILTRATION OR EXFILTRATION, AS DETERMINED BY WATER TEST, MUST BE AT A RATE NOT GREATER THAN 50 GALLONS PER INCH OF PIPE DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET. IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, REMEDIAL ACTION MUST BE UNDERTAKEN IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED IN 30 TAC SEC 217.57(A) (2).
 - C. DEFLECTION TEST SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID PIPES. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF FIVE (5) PERCENT. IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID BALL OR MANDREL, SUCH TEST DEVICES SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TESTS SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES. THE DESIGN ENGINEER SHOULD RECOGNIZE THAT THIS IS A MAXIMUM DEFLECTION CRITERION FOR ALL PIPES. A REDUCED PERCENT DEFLECTION MAY BE MORE APPROPRIATE FOR SPECIFIC TYPES AND SIZES OF PIPE. REFERENCE 30 TAC SEC 217.57 (B).
 30. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE SHALL COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES 1 OR II. FOR RIGID PIPE THE BEDDING SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C-12 CLASSES A OR B. REFERENCE 30 TAC SECTION 217.54(A).
 31. SEWER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE OR WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEANOUT, IT SHALL BE TESTED FROM AN EXISTING MANHOLE TO A NEW MANHOLE.
 32. ALL FORCE AND GRAVITY SANITARY SEWER LINES SHALL HAVE A MINIMUM 48 INCHES OF COVER FROM FINISHED GRADE OR 36 INCHES BELOW ACTUAL SUBGRADE UNLESS OTHERWISE DENOTED ON PLANS.
 33. INCLUDE ADDITIONAL FLUSHING VALVES, GATE VALVES AND TEST CONNECTIONS NECESSARY TO PERFORM TEST AND STERILIZATION OPERATION.
 34. ALL GATE VALVES SHALL HAVE RESILIENT VALVE SEATS.
 35. ALL MANHOLES AND WET WELLS MUST BE TESTED SEPARATELY AND INDEPENDENTLY OF THE COLLECTION LINES.
 36. AFTER A FORCE MAIN HAS BEEN INSTALLED AND BACKFILLED AND ALL OTHER APPURTENANCES INSTALLED AND CONNECTED, A PRESSURE TEST, FOLLOWED BY A LEAKAGE TEST, WILL BE CONDUCTED BY THE CONTRACTOR UNDER THE OBSERVATION BY THE DISTRICT. THE CONTRACTOR SHALL BE PRESENT AND SHALL FURNISH ALL NECESSARY LABOR AND EQUIPMENT FOR CONDUCTING THE TESTS. THE SPECIFIED TEST PRESSURES WILL BE BASED ON THE ELEVATION OF THE LOWEST POINT OF THE LINE OR SECTION UNDER TEST. BEFORE APPLYING THE SPECIFIED TEST PRESSURE, ALL AIR SHALL BE EXPELLED FROM THE PIPE. IF PERMANENT AIR VENTS ARE NOT LOCATED AT ALL HIGH POINTS, THE CONTRACTOR SHALL INSTALL CORPORATION COCKS AT SUCH POINTS.
 - A. **PRESSURE TEST:** THE ENTIRE PROJECT OR EACH VALVED SECTION SHALL BE TESTED, AT A PRESSURE OF 200 PSI FOR A SUFFICIENT PERIOD (APPROXIMATELY 10 MINUTES) TO DISCOVER ALL LEAKING OR DEFECTIVE MATERIALS. REPAIRS SHALL BE MADE BY THE CONTRACTOR TO CORRECT ANY LEAKING OR DEFECTIVE MATERIALS.
 - B. **PRESSURE PIPE LEAKAGE TEST:** A LEAKAGE TEST WILL FOLLOW THE PRESSURE TEST AND BE CONDUCTED ON THE ENTIRE PROJECT OR EACH VALVED SECTION. THE LEAKAGE TEST SHALL BE AT 150 PSI FOR AT LEAST ONE HOUR.
 - **ALLOWABLE LEAKAGE:** LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO ANY TEST SECTION OF PIPE TO MAINTAIN THE SPECIFIED LEAKAGE TEST PRESSURE AFTER THE AIR IN THE PIPELINE HAS BEEN EXPELLED AND THE PIPE HAS BEEN FILLED WITH WATER. NO PIPE INSTALLATION WILL BE ACCEPTED IF THE LEAKAGE EXCEEDS 25 GALLONS/24 HOURS/MILE OF PIPE/ INCH NOMINAL PIPE DIAMETER. (25 GDP)/(IN.-MI.)
 - **LOCATION AND CORRECTION OF LEAKAGE:** IN SUCH TESTING DISCLOSES LEAKAGE IN EXCESS OF THIS SPECIFIED ALLOWABLE, THE CONTRACTOR, AT THEIR EXPENSE, SHALL LOCATE AND CORRECT ALL DEFECTS IN THE PIPE LINE UNTIL THE LEAKAGE IS WITHIN THE INDICATED ALLOWANCE. ALL VISIBLE LEAKAGE IN PIPE SHALL ALSO BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
 37. SEWERS SHALL BE LAID IN STRAIGHT ALIGNMENT WITH UNIFORM GRADE BETWEEN MANHOLES. DEVIATION FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE SHALL BE APPROVED ONLY ON A CASE BY CASE BASIS BY THE TCEQ. IF APPROVAL IS GIVEN FOR DEVIATION FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE, CURRENT COMMISSION POLICY REGARDING HORIZONTAL CURVATURE SHALL BE COMPLIED WITH FULLY. GENERAL NOTES FOR CURVED SEWER LINES:
 - A. ALL CURVATURE OF SEWER PIPE WILL BE ACHIEVED BY PIPE FLEXURE PER RECOMMENDED PROCEDURE.
 - IN-PLACE DEFLECTION TESTS (MANDREL TEST) MUST BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID PIPE IN ACCORDANCE WITH 30 TAC SECTION 217.57(B) (I).
 - B. INFILTRATION TEST SHALL BE CONDUCTED IN ACCORDANCE WITH 30 TAC SECTION 217.57(A) (2) (C) - 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE.
 - SPECIFIC CARE SHALL BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC SECTION 217.54 (A).
 38. THE ASTM, ANSI OR AWWA SPECIFICATION NUMBERS FOR THE PIPE AND JOINTS ARE ASTM D-3034 AND ASTM 2241. THE PIPE MATERIAL, THE PRESSURE CLASSES AND THE SDR AND/OR DR DESIGNATIONS ARE SDR 35 AND SDR 26.
 39. THE DIAMETER OF THE MANHOLES SHALL BE A MINIMUM OF FOUR (4) FEET AND THE MANHOLE OPENING SHALL HAVE A MINIMUM NOMINAL DIAMETER OF THIRTY (30) INCHES. THESE DIMENSIONS ARE LABELED ON THE MANHOLE DRAWING ON THE DETAIL SHEET. THE MANHOLE DETAILS SHALL INSURE THAT THE TCEQ RULES CONCERNING SEWER INVERTS HAVE BEEN COMPLIED WITH AS DESCRIBED IN SECTION 217.55(L) (2).
 40. A CROSS SECTION OF THE TRENCH DETAILS IS INCLUDED IN THE PLANS WHICH SHOW THE DIMENSIONS OF THE TRENCH AND PIPE AND THE CLASS OF BEDDING MATERIAL REQUIRED.

GENERAL NOTES: SITE COORDINATION, SCHEDULING, AND ACCESS

1. THE CONTRACTOR SHALL VISIT AND FAMILIARIZE THEMSELVES WITH THE PROJECT SITE PRIOR TO SUBMITTING BIDS.
2. CONTRACTOR SHALL MAINTAIN VEHICLE AND PEDESTRIAN ACCESS ALONG PERIMETER OF PROJECT SITE ADJACENT TO PUBLIC RIGHT OF WAY AT ALL TIMES.
3. CONTRACTOR SHALL WATER CONSTRUCTION AREA A MINIMUM OF TWICE A DAY TO KEEP DUST TO A MINIMUM. ONCE IN THE MORNING AND ONCE BEFORE QUITTING TIME. THIS SHALL ALSO BE DONE DURING WEEKENDS AND HOLIDAYS.
4. CONTRACTOR IS RESPONSIBLE TO LOCATE, PROTECT AND PLACE ALL UNDERGROUND UTILITY LINES AT NO EXTRA COST TO THE OWNER WHEN LINES ARE DISTURBED AS A RESULT OF THE WORK. SERVICE SHALL BE PROVIDED TO USER AT ALL TIMES.
5. CONTRACTOR IS RESPONSIBLE TO SCHEDULE AND PERFORM THEIR WORK SO AS TO ASSURE PROPER PASSAGE OF STORM RUNOFF DURING THE COURSE OF THE OPERATIONS. ALL LABOR, TOOLS, EQUIPMENT AND SUPERVISION REQUIRED TO ASSURE SUCH PROPER PASSAGE OF RUNOFF WATER AND ANY REMOVAL OR HANDLING OF WATER IN ORDER TO MAINTAIN DRY CONDITIONS SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
6. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH THE USER. ALL UTILITIES AND ALL OTHER AGENCIES WITH JURISDICTION OVER THE PROJECT.
7. ALL EXISTING PAVEMENT, ADJACENT UTILITIES, STRUCTURES, ETC., DISTURBED AS A RESULT OF THE NEW CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
8. THE OWNER WILL FURNISH HORIZONTAL AND VERTICAL CONTROL REFERENCE POINTS ONLY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES BEFORE PROCEEDING THE WORK. ANY DISCREPANCIES FOUND SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER. OTHERWISE THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THEIR CORRECTNESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF HORIZONTAL AND VERTICAL CONTROL REFERENCE POINTS THE OWNER MAY HAVE PROVIDED ON-SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPLACE ESTABLISHED CONTROL POINTS CORRECTLY THAT ARE DAMAGED OR REMOVED AND AT NO ADDITIONAL EXPENSE TO THE OWNER.
9. VIBRATORY ROLLERS WILL NOT BE PERMITTED ON ANY PHASE OF THE PROJECT, UNLESS APPROVED IN WRITING BY THE ENGINEER.
10. ALL WORK REQUIRED BY THESE PLANS SHALL BE CONDUCTED IN CONFORMANCE WITH CURRENT SAFETY CODES AND STANDARDS WITH JURISDICTION OVER THE PROJECT.
11. THE LOCATION OF THE FLUMES AND INLETS SHALL BE AT THE FIELD LOW POINT AND APPROVED BY THE ENGINEER.

TRENCH SAFETY NOTES:

1. IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ALL TRENCHES, OVER FIVE (5) FEET IN DEPTH IN EITHER HARD AND COMPACT OR SOFT AND UNSTABLE SOIL, SHALL BE SLOPED, SHORED, SHIELED, BRACED OR OTHERWISE SUPPORTED. FURTHERMORE, ALL TRENCHES LESS THAN FIVE (5) FEET IN DEPTH SHALL ALSO BE EFFECTIVELY PROTECTED WHERE HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED.
2. IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, WHEN EMPLOYEES ARE REQUIRED TO BE IN TRENCHES FOUR (4) FEET IN DEPTH OR GREATER, ADEQUATE MEAN EXIT, SUCH AS A LADDER OR STEPS, MUST BE PROVIDED AND LOCATED SO AS TO REQUIRE NO MORE THAN TWENTY-FIVE (25) FEET OF LATERAL TRAVEL.
3. A TRENCH SAFETY SYSTEM MUST BE UTILIZED FOR TRENCHES FIVE (5) FEET OR MORE IN DEPTH OR FOR TRENCHES LESS THAN FIVE (5) FEET IN DEPTH IN AN AREA WHERE HAZARDOUS GROUND MOVEMENT IS EXPECTED. IF A TRENCH SAFETY SYSTEM IS NOT IN PLACE AS REQUIRED, OR IS DEEMED TO BE UNSAFE, ALL CONSTRUCTION SHALL CEASE, THE TRENCHED AREA SHALL BE BARRICADED AND THE ENGINEER NOTIFIED IMMEDIATELY. CONSTRUCTION SHALL NOT RESUME UNTIL APPROPRIATE TRENCH SYSTEMS ARE IMPLEMENTED.
4. STACKING OF TRENCH BOXES SHALL NOT BE PERMITTED IN SOILS WITH PLASTICITY INDICES LESS THAN 25. CONTRACTOR SHALL MAINTAIN A BENCH 24" IN WIDTH MINIMUM, 18" BELOW THE RIM OF ALL TRENCH BOXES WHERE CUT SLOPES INTERSECT THE BOX. SLOPES SHALL BE 1.5 TO 1.5 FEET AT THE STEEPEST POINT, OR SHALL BE STEPPED WITH CUT BENCHES 3'X3' MINIMUM.
5. OPEN TRENCHES MUST BE PROTECTED TO WITHSTAND A 10-YEAR STORM EVENT MINIMUM. WORK IN TRENCHES IS PROHIBITED DURING A RAINFALL EVENT EXCEPT THAT WORK MAY PROCEED IN LIGHT TO MODERATE EVENTS IF TRENCH BOXES ARE IN USE, AND ONLY WITHIN THE CONFINES OF THE TRENCH BOXES.
6. CONTRACTOR SHALL PROVIDE TO THE BUILDING OFFICIAL OF THE CITY OF EL PASO, A TRENCH SAFETY PLAN FOR ALL WORK FIVE (5) FEET IN DEPTH OR GREATER, IN ACCORDANCE WITH THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, A TRENCH SAFETY PLAN MUST BE SEALED BY A REGISTERED ENGINEER FOR ALL WORK TWENTY (20) FEET IN DEPTH OR GREATER, OR FOR ALL WORK AT ANY DEPTH WHERE HAZARDOUS GROUND MOVEMENT IS EXPECTED.

TEN COMMANDMENTS OF TRENCHING

1. A COMPETENT PERSON MUST INSPECT THE TRENCH PRIOR TO THE START OF WORK AND PRIOR TO EMPLOYEE ENTRANCE.
2. PROPER SLOPING OR TRENCH PROTECTION MUST EXIST AT 5 FEET OR DEEPER.
3. SPOILS MUST BE AT LEAST 2 FEET FROM EDGE OF TRENCH.
4. LADDERS OR RAMPS ARE REQUIRED WHEN TRENCHES ARE 4 FEET OR MORE IN DEPTH.
5. 25 FEET IS THE MAXIMUM DISTANCE A PERSON CAN BE FROM A LADDER OR RAMP.
6. LADDERS MUST BE TIED OFF.
7. TRENCH BOXES MUST EXTEND TO THE TOP OF THE EXCAVATION.
8. A TRENCH SHIELD MUST BE WITHIN 2 FEET OF BOTTOM OF THE TRENCH.
9. CLASS B SOILS MUST BE SLOPED 1 : 1.
10. CLASS C SOILS MUST BE SLOPED 1.50 : 1.

BENCHMARK CITY MONUMENT AT THE CENTERLINE INTERSECTION OF THE CENTERLINE OF THE MAIN BRAYS LANDING DRIVE ELEVATION = 3976.63 (EL PASO CITY DATUM)

NO.	DATE	DESCRIPTION	BY
1	09/23/19	Final City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
3	12/02/19	Final City Submittal	AHO

WARNING! BEFORE YOU DIG CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

BEFORE YOU DIG - CALL
 EL PASO ELECTRIC COMPANY 543-5720
 AT&T 1-800-DIG-1ESS
 AL&L GAS SERVICE 544-6300
 T&T EMERGENCY HOTLINE 562-8411/562-2003
 PUBLIC SERVICE BOARD (WATER & SEWER) 1-800-DIG-1ESS
 ELECTRIC WORKERS EMERGENCY (EWH) 775-7414
 TEXAS EXCAVATION SAFETY SYSTEM 1-800-344-8377
 KINDER-MORGAN EPNG PIPELINES 1-800-238-3764
 EL PASO WATER MAINS AND MAINTENANCE 1RESPONSE@ELPASO.EDU

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 El Paso, Texas 79912
 Tel: (915) 877-4155
 Fax: (915) 877-4534
 www.csaengineering.com

WARNING! BEFORE YOU DIG

COORDINATION WITH UTILITIES

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

EL PASO ELECTRIC CO.	543-5720
AT&T	1-800-DIG-1ESS
TEXAS GAS SERVICE	544-6300
EMERGENCY HOTLINE	562-8411/562-2003
PUBLIC SERVICE BOARD (WATER & SEWER)	1-800-DIG-1ESS
TEXAS EXCAVATION SAFETY SYSTEM	1-800-344-8377
TIME WARNER COMMUNICATION	775-7414
KINDER-MORGAN EPNG PIPELINES	1-800-238-3764
EL PASO STREETS AND MAINTENANCE	212-0151



CIMARRON CANYON UNIT FOUR SUBDIVISION

SHEET TITLE

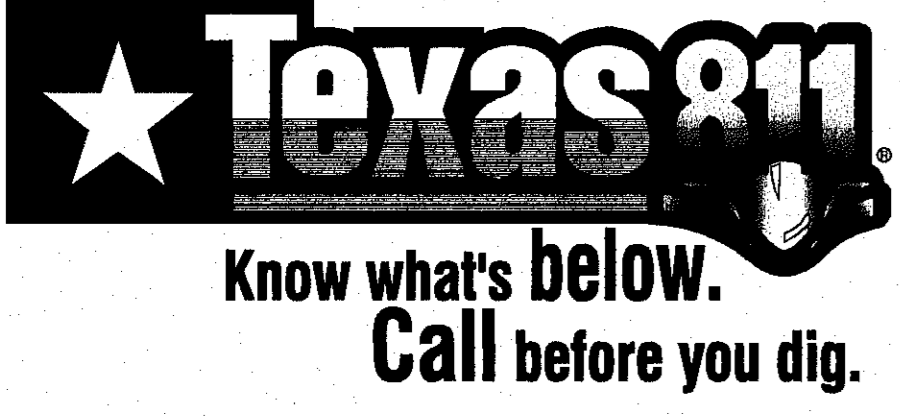
GENERAL NOTES

NOTE:

CALLOUTS SUCH AS 'REFER TO SHEET...
 'REFER TO DETAIL ON SHEET...
 'SEE SHEET...
 'SEE DETAIL ON SHEET...
 NOTES AND MATCHLINES CONTAINED IN THIS PLAN SET REFER TO THE SHEET NUMBER, NOT THE SHEET SEQUENCE.

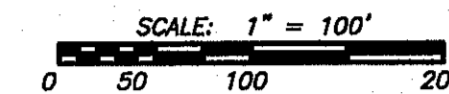
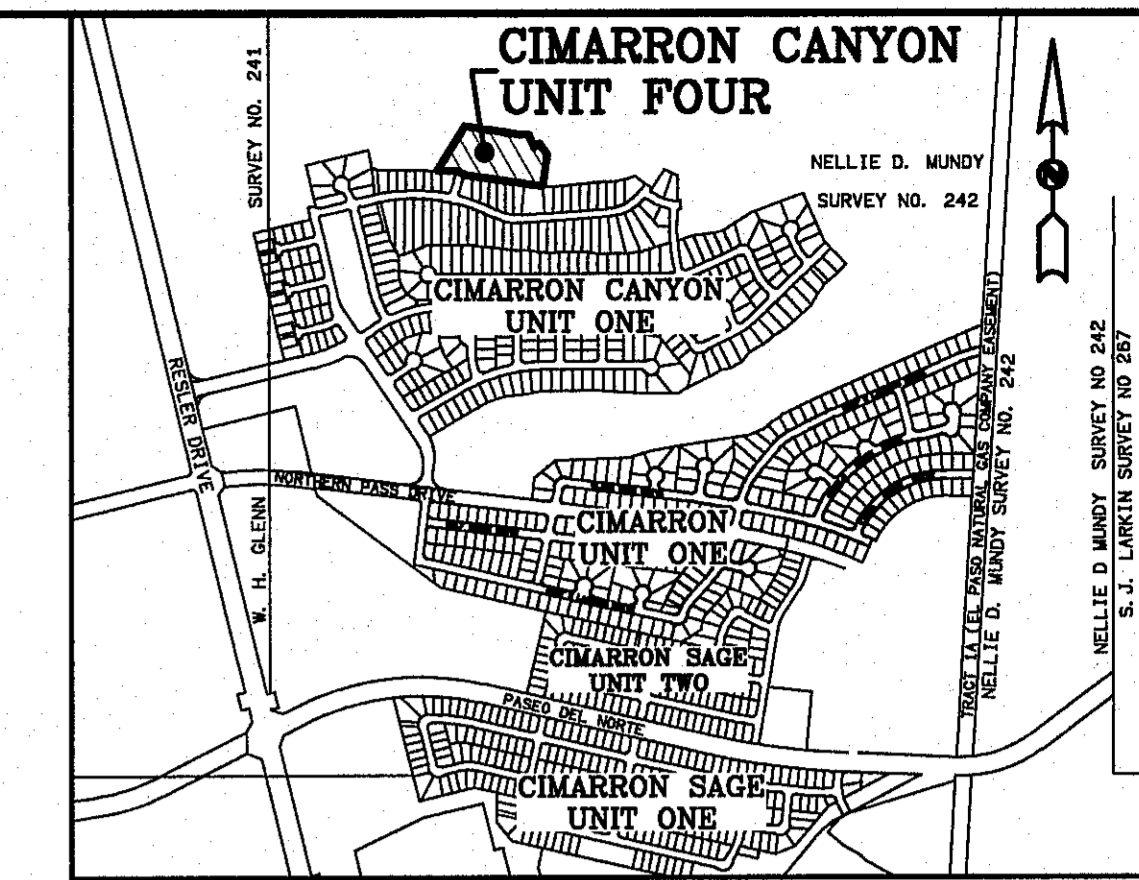
JOB NO.	1723
DATE	08/08/18
SCALE	AS NOTED
SHEET NO.	31

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CIMARRON CANYON UNIT FOUR

BEING A PORTION OF TRACT 1B2, NELLIE D. MUNDY SURVEY 242, CITY OF EL PASO, EL PASO COUNTY, TEXAS.
CONTAINING 3.922 ± ACRES (170,860 SQ. FT.)



PRELIMINARY

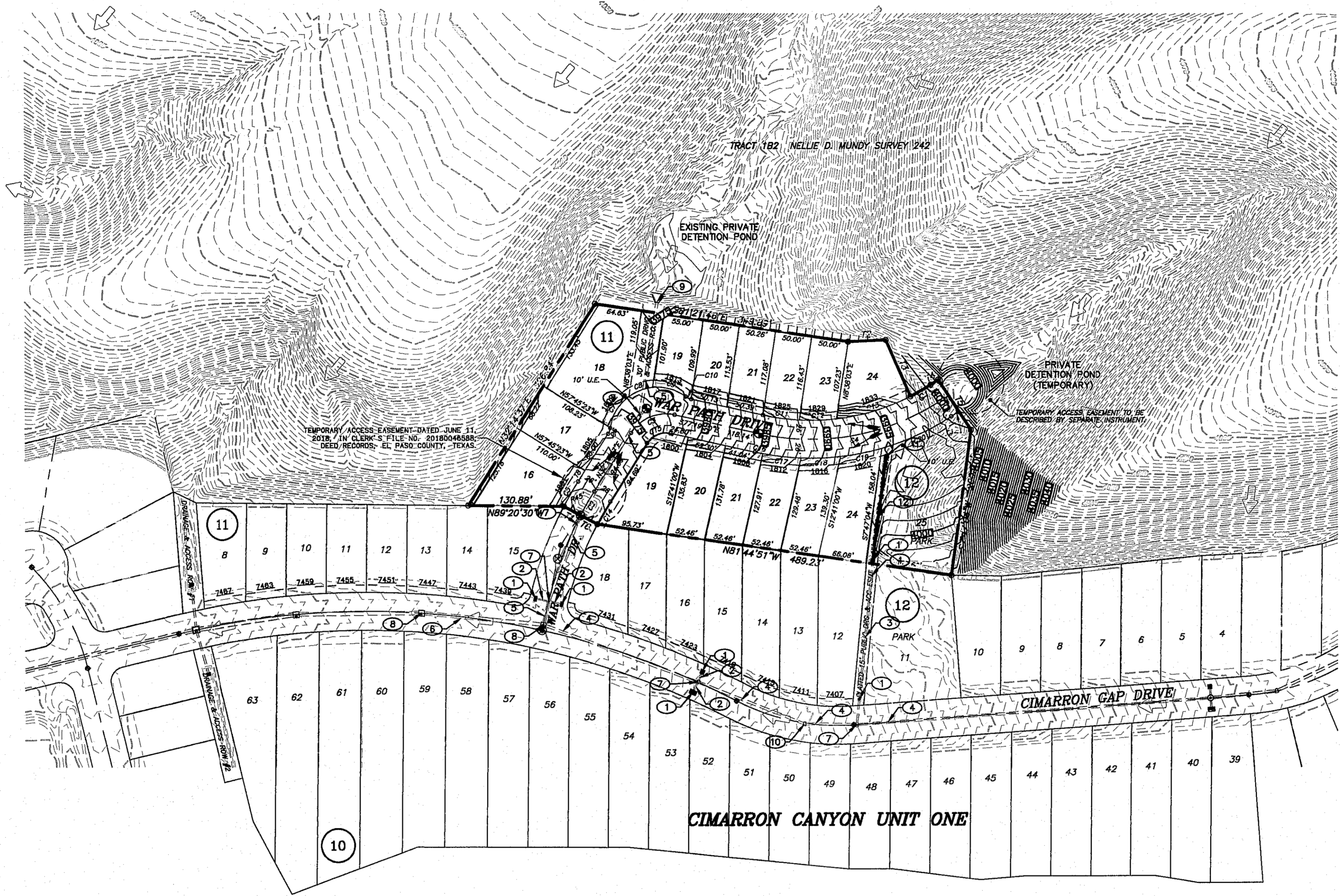
- NOTE:**
- SET 5/8" REBAR WITH CAP MARKED "RPLS 4178" AT ALL EXTERIOR BOUNDARY CORNERS UNLESS OTHERWISE INDICATED.
 - CIMARRON CANYON UNIT ONE IS RECORDED IN COUNTY CLERK'S FILE NO. 20180052184, EL PASO COUNTY, TEXAS.
 - BASIS OF BEARINGS IS THE MONUMENTED CENTERLINE OF NORTHWESTERN DRIVE FROM THE PLAT OF EL PASO WEST UNIT ONE IN BOOK 37, PAGE 5, PLAT RECORDS, EL PASO COUNTY, TEXAS.
 - WATER AND SEWER SERVICES WILL BE PROVIDED TO CIMARRON CANYON UNIT FOUR FROM EXISTING FACILITIES ON NORTHERN PASS DRIVE BY THE EL PASO WATER UTILITIES/PUBLIC SERVICE BOARD IN ACCORDANCE WITH THEIR RULES AND REGULATIONS AND WITH SECTION 16.343 OF THE TEXAS WATER CODE.
 - U.S. POSTAL SERVICE DELIVERY WILL BE PROVIDED THROUGH NEIGHBORHOOD DELIVERY AND COLLECTION BOX UNITS.
 - THE SUBJECT PROPERTY LIES WITHIN THE CANUTILLO INDEPENDENT SCHOOL DISTRICT.
 - 5/8" REBAR WITH CAP MARKED "RPLS 4178" OR SIMILAR WILL BE SET AT ALL LOT CORNERS UPON COMPLETION OF CONSTRUCTION.

NOTE: ALL FRONT LOT UTILITY EASEMENTS ARE 10 FEET WIDE UNLESS OTHERWISE INDICATED.

CHAPTER 395 OF THE TEXAS LOCAL GOVERNMENT CODE AUTHORIZES THE CITY OF EL PASO TO ADOPT AND IMPOSE WATER AND WASTEWATER IMPACT FEES. THIS PLAT NOTE FULFILLS AN OBLIGATION MANDATED BY CHAPTER 395 AND SETS THE ASSESSMENT OF THE IMPACT FEES IN ACCORDANCE WITH THE IMPACT FEE SCHEDULE ADOPTED BY CITY COUNCIL AS SET FORTH BELOW. THE COLLECTION OF THE IMPACT FEE FOR THIS SUBDIVISION SHALL BE PRIOR TO THE TIME A BUILDING PERMIT IS ISSUED IF DEVELOPMENT IS WITHIN THE CITY LIMITS OR AT THE TIME OF THE METER CONNECTION IF DEVELOPMENT IS OUTSIDE THE CITY LIMITS.

WESTSIDE SERVICE AREA			
METER SIZE	METER CAPACITY RATIO	METER WATER*	WASTEWATER
LESS THAN 1 INCH	1.00	\$659.00	\$927.00
1 INCH	1.67	\$1,101.00	\$1,548.00
1 1/2 INCH	3.33	\$2,195.00	\$3,087.00
2 INCH	5.33	\$3,514.00	\$4,941.00
3 INCH	10.00	\$6,593.00	\$9,270.00
4 INCH	16.67	\$10,990.00	\$15,453.00
6 INCH	33.33	\$21,973.00	\$30,897.00
8 INCH	53.33	\$35,158.00	\$49,437.00
10 INCH	76.67	\$50,545.00	\$71,073.00
12 INCH	143.33	\$94,490.00	\$132,867.00

*FEES DO NOT APPLY TO WATER METER OR CONNECTIONS MADE FOR STANDBY FIRE PROTECTION SERVICE.



LOT NUMBER	SQ FT	ACRES
Lot 18 Block 11	10070	0.231
Lot 17 Block 11	7499	0.172
Lot 18 Block 11	13529	0.311
Lot 19 Block 11	5857	0.130
Lot 20 Block 11	5588	0.128
Lot 21 Block 11	5796	0.133
Lot 22 Block 11	5873	0.135
Lot 23 Block 11	5828	0.129
Lot 24 Block 11	7488	0.172

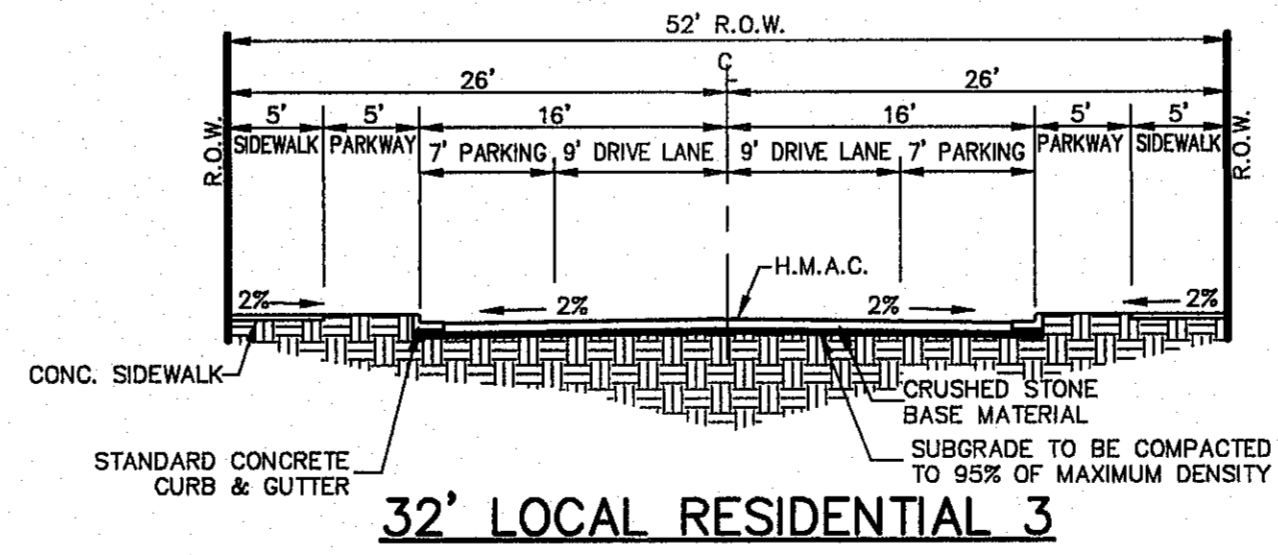
LOT NUMBER	SQ FT	ACRES
Lot 19 Block 12	9779	0.224
Lot 20 Block 12	8999	0.191
Lot 21 Block 12	6787	0.156
Lot 22 Block 12	8687	0.194
Lot 23 Block 12	8991	0.191
Lot 24 Block 12	8822	0.203
Lot 25 Block 12	22452	0.515

LOT NUMBER	SQ FT	ACRES
30' PUBLIC DRNO & ACC ROW Block 11	3280	0.075

CURVE #	DELTA	RADIUS	ARC	CHORD BEARING	CHORD
C1	6°08'17"	299.00'	32.12'	N59°54'27"E	32.10'
C2	4°18'49"	500.00'	37.64'	N30°05'13"E	37.64'
C3	7°02'22"	56.00'	68.85'	N67°27'49"E	64.59'
C4	45°51'11"	325.00'	260.09'	N79°45'24"E	253.21'
C5	4°18'49"	526.00'	39.60'	N30°05'13"E	39.59'
C6	24°15'48"	20.00'	8.47'	N20°06'43"E	8.41'
C7	45°29'00"	65.00'	51.60'	N30°43'19"E	50.28'
C8	30°49'51"	65.00'	34.98'	N68°52'45"E	34.86'
C9	42°39'07"	65.00'	48.39'	S74°22'46"E	47.28'
C10	24°15'48"	20.00'	8.47'	S65°11'06"E	8.41'
C11	9°35'35"	299.00'	50.06'	S82°06'49"E	50.00'
C12	9°45'13"	299.00'	50.90'	N88°12'47"E	50.84'
C13	20°21'05"	299.00'	106.21'	N73°09'38"E	105.65'
C14	4°18'49"	474.00'	35.69'	N30°05'13"E	35.68'
C15	7°02'22"	30.00'	36.88'	N67°27'49"E	34.60'
C16	1°50'22"	351.00'	11.27'	S78°14'12"E	11.27'
C17	8°35'42"	351.00'	52.65'	S83°27'15"E	52.60'
C18	8°50'30"	351.00'	54.17'	N87°49'39"E	54.11'
C19	9°21'50"	351.00'	57.36'	N78°43'29"E	57.30'
C20	17°12'45"	351.00'	105.45'	N65°26'11"E	105.05'

LINE #	BEARING	DISTANCE
T1	N62°04'12"W	26.00'
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T3	S23°19'17"E	84.64'
T4	N56°49'49"E	12.17'
T5	S33°10'11"E	82.00'
T6	N62°04'12"W	26.00'
T7	N56°49'49"E	12.17'
T8	N32°14'37"E	17.07'
T9	N56°49'49"E	12.17'

NOTE: DIRECT VEHICULAR ACCESS TO LOT 19, BLOCK 12, SHALL NOT BE PERMITTED DRIVEWAY ACCESS FROM THE EASTERLY RIGHT-OF-WAY OF WAR PATH DRIVE.



PROPERTY OWNERS:
CIMARRON HUNT COMMUNITIES, LLC
4401 N. MESA STREET
EL PASO TX 79902
915-877-4155

PLAT PREPARED BY: MARK U. BALANSAY
TEXAS RPLS #6489

BENCHMARK:
CITY MONUMENT AT THE CENTERLINE INTERSECTION OF NORTHERN PASS DRIVE AND CIMARRON PARK DRIVE.
ELEVATION = 3976.53 (CITY OF EL PASO DATUM)

- DRAINAGE KEY NOTES**
- EXISTING DRAINAGE INLET
 - EXISTING 18" STORM SEWER
 - EXISTING 24" STORM SEWER
 - EXISTING 36" STORM SEWER
 - EXISTING 42" STORM SEWER
 - EXISTING 54" STORM SEWER
 - EXISTING MANHOLE
 - EXISTING JUNCTION BOX
 - EXISTING OUTFALL STRUCTURE
 - EXISTING PIPE COLLAR
 - PROPOSED BEDDING MANHOLE DRAINAGE INLET
 - PROPOSED 18" STORM SEWER



- REVISED: SEPTEMBER 6, 2019
- REVISED: SEPTEMBER 3, 2019
- REVISED: AUGUST 5, 2019
- REVISED: JULY 2, 2019
- REVISED: JUNE 19, 2019
- REVISED: MAY 29, 2019
- REVISED: MARCH 26, 2019
- REVISED: AUGUST 7, 2018
- REVISED: JULY 23, 2018
- DATE OF PREPARATION: JULY 19, 2018

⊙ EXISTING CITY MONUMENT
⊙ PROPOSED CITY MONUMENT

ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP PANELS AND 480214-17C, DATED FEBRUARY 5, 1986, THIS PROPERTY LIES IN FLOOD HAZARD ZONE "C".

ROBERT SEIPEL ASSOCIATES, INC. PROFESSIONAL LAND SURVEYORS
1845 NORTHWESTERN DRIVE EL PASO TX 79912 PHONE (915) 877-1928 FAX (915) 877-2095

CIMARRON CANYON UNIT FOUR

BEING A PORTION OF TRACT 1B2, NELLIE D. MUNDY SURVEY 242, CITY OF EL PASO, EL PASO COUNTY, TEXAS. CONTAINING 3.922 ± ACRES (170,860 SQ. FT.)

- NOTE:
- SET 5/8" REBAR WITH CAP MARKED "RPLS 4178" AT ALL EXTERIOR BOUNDARY CORNERS UNLESS OTHERWISE INDICATED.
 - CIMARRON CANYON UNIT ONE IS RECORDED IN COUNTY CLERK'S FILE NO. 20180052184, EL PASO COUNTY, TEXAS.
 - BASIS OF BEARINGS IS THE MONUMENTED CENTERLINE OF NORTHWESTERN DRIVE FROM THE PLAT OF EL PASO WEST UNIT ONE IN BOOK 57, PAGE 5, PLAT RECORDS, EL PASO COUNTY, TEXAS.
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Lot 24 Block 12	8822	0.203
Lot 25 Block 12	22452	0.515

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NOTE: DIRECT VEHICULAR ACCESS TO LOT 19, BLOCK 12, SHALL NOT BE PERMITTED DRIVEWAY ACCESS FROM THE EASTERLY RIGHT-OF-WAY OF WAR PATH DRIVE.

DECLARATION OF USE RESTRICTIONS AND DEVELOPMENT CONDITIONS FOR THIS SUBDIVISION ARE RECORDED IN THE OFFICE OF THE CLERK OF EL PASO COUNTY, TEXAS, DEED AND RECORDS SECTION.

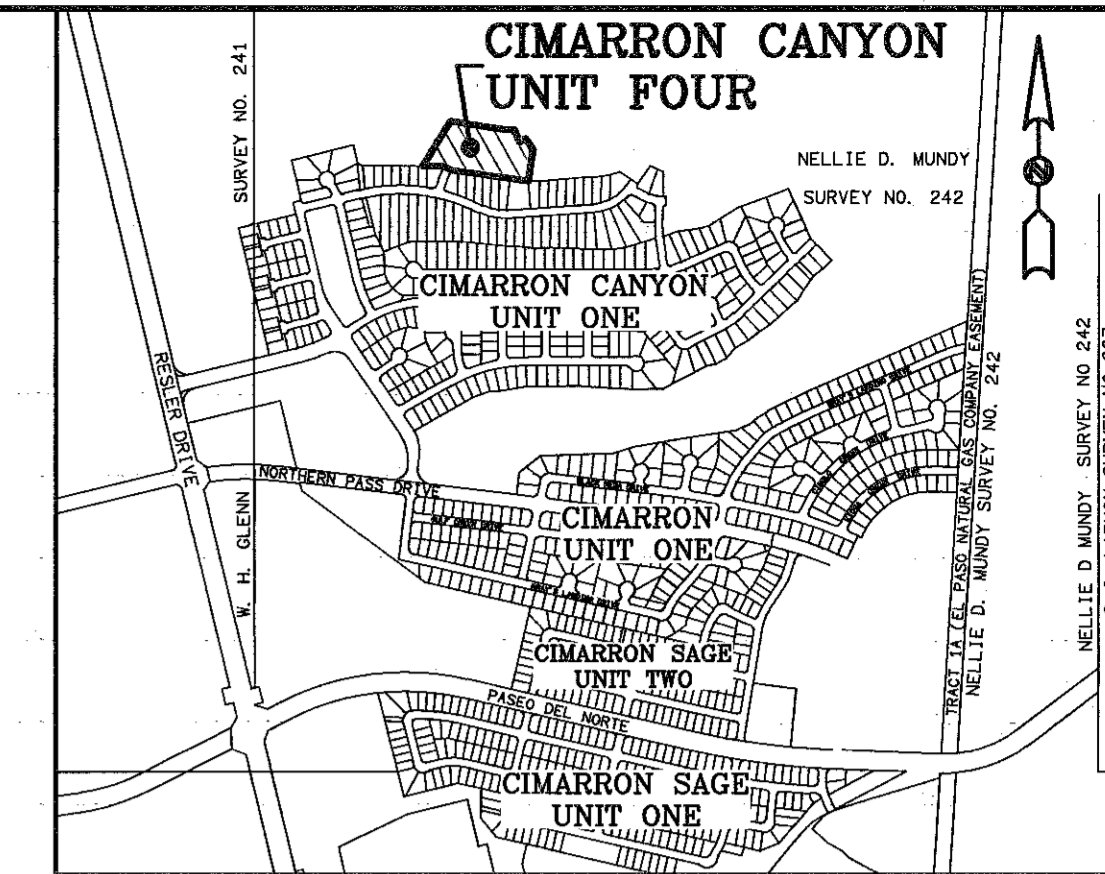
INSTRUMENT NO. _____, DATED _____

TAX CERTIFICATES FOR THIS SUBDIVISION ARE RECORDED IN THE OFFICE OF THE CLERK OF EL PASO COUNTY, TEXAS, DEED AND RECORDS SECTION.

INSTRUMENT NO. _____, DATED _____

THE DOCUMENT ASSURING RELEASE OF ACCESS FOR THIS SUBDIVISION IS RECORDED IN THE OFFICE OF THE CLERK OF EL PASO COUNTY, TEXAS, DEED AND RECORDS SECTION.

INSTRUMENT NO. _____, DATED _____



SCALE: 1" = 100'
0 50 100 200

LOCATION MAP
SCALE: 1" = 1200' ±

DEDICATION

We, Cimarron Hunt Communities, LLC, owners of this land, do hereby present this plat and dedicate to the use of the public the drive, drainage and access rights-of-way, park, public drainage and access easement and utility easements as hereon laid down and designated, including easements for overhang of service wires, conduits and pipes for underground utilities, the right to ingress and egress for service and construction, and the right to trim interfering trees and shrubs.

CIMARRON HUNT COMMUNITIES, LLC.
By: Hunt Communities Development Co., LLC.,
Sole Member.

By: *Justin Chapman*
Justin Chapman, President

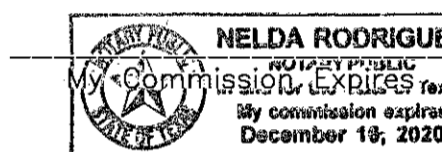
ACKNOWLEDGMENT

STATE OF TEXAS
COUNTY OF EL PASO

This instrument was acknowledged before me on March 5th 2020 by Justin Chapman, President of Cimarron Hunt Communities, LLC.

Given under my hand and seal of office this 5th day of March, 2020.

Nelda Rodriguez
Notary Public, State of Texas



CITY PLAN COMMISSION

This subdivision is hereby approved as to the platting and as to the conditions of the dedication in accordance with Chapter 212 of the Local Government Code of Texas this 12th day of September, 2020.

Maureen Houston
Chairperson

75-20-12
Executive Secretary

Approved for filing this 19th day of March, 2020.

Philip Steve
Planning & Inspections Director

FILING

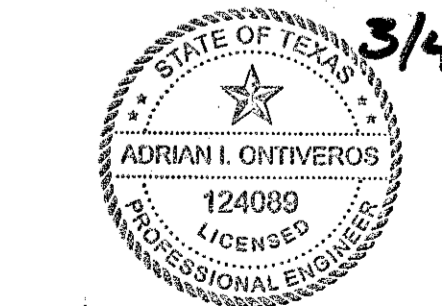
Filed and recorded in the office of the County Clerk of El Paso County, Texas, this 15th day of June, 2020, in File No. 2020015025 Plat

Records.
Robin Bines
County Clerk

Usabel Chang
By Deputy

Subdivision improvement plans prepared by and under the supervision of CSA Design Group, Inc.

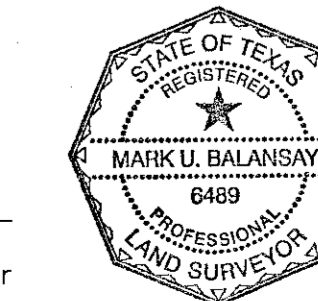
Adrian L. Holguin-Ontiveros
Adrian L. Holguin-Ontiveros, P.E.
Registered Professional Engineer
Texas License No. 124089
Texas Registered Engineering Firm F-9997



I hereby certify that this plat represents an on-the-ground survey made under my supervision in compliance with current Texas Board of Professional Land Surveying Professional and Technical Standards.

Robert Seipel Associates, Inc.
Professional Land Surveyors

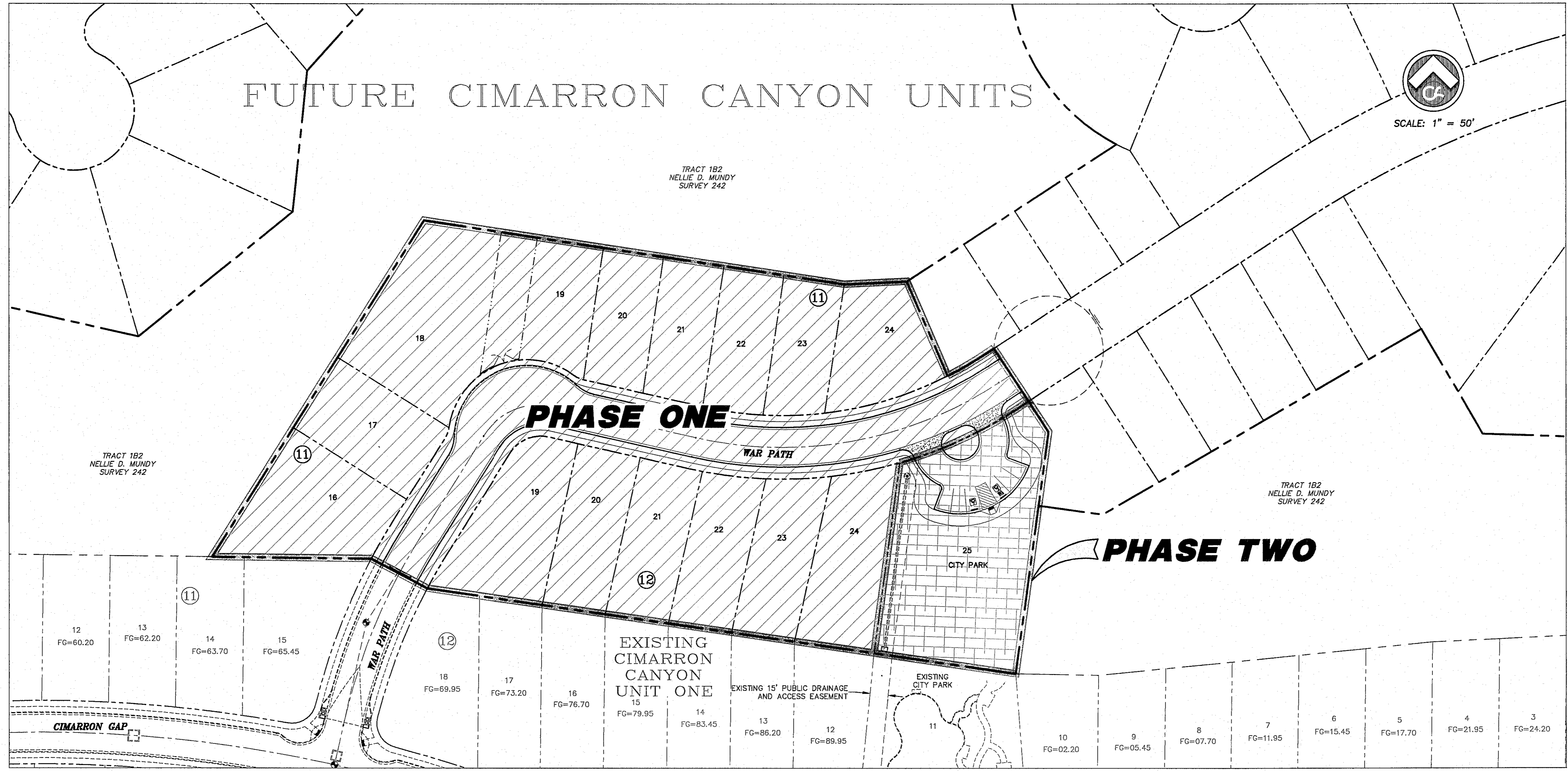
Mark U. Balansay
Mark U. Balansay
Registered Professional Land Surveyor
Texas License No. 6469
Texas Registered Surveying Firm 10060500



- REVISED: MARCH 4, 2020
- REVISED: FEBRUARY 12, 2020
- REVISED: SEPTEMBER 26, 2019
- REVISED: SEPTEMBER 6, 2019
- REVISED: SEPTEMBER 3, 2019
- REVISED: AUGUST 5, 2019
- REVISED: JULY 2, 2019
- REVISED: JUNE 19, 2019
- REVISED: MAY 29, 2019
- REVISED: MARCH 26, 2019
- REVISED: AUGUST 7, 2018
- REVISED: JULY 23, 2018
- DATE OF PREPARATION: JULY 19, 2018

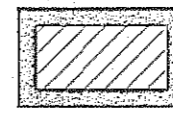
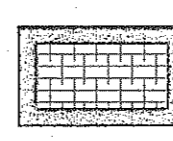
- ☉ EXISTING CITY MONUMENT
- ⦿ PROPOSED CITY MONUMENT

ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP PANELS AND 480214-17C, DATED FEBRUARY 5, 1986, THIS PROPERTY LIES IN FLOOD HAZARD ZONE "C".



PHASE ONE INCLUDES GRADING OF BLOCK 11, LOTS 16-24 AND THE DRAINAGE EASEMENT, AND BLOCK 12, LOTS 19-24 TO INCLUDE INSTALLATION OF ALL ROCK RETAINING WALLS AS NOTED IN THE PLANS, FOR A TOTAL OF 15 RESIDENTIAL LOTS. IT SHALL ALSO INCLUDE THE GRADING AND PAVING OF ALL PUBLIC ROADWAYS FRONTING THE LOTS, ALL UTILITY INFRASTRUCTURE (BOTH ABOVE AND BELOW GROUND) FOR THE SUBDIVISION ROADWAYS AS NOTED ABOVE, AS WELL AS ANY OTHER PUBLIC IMPROVEMENTS SUCH AS SIGNAGE AND STRIPING AND STREET LIGHTING, AS DETAILED IN THE SUBDIVISION IMPROVEMENT PLANS FOR THOSE STREETS.

PHASE TWO SHALL INCLUDE THE DETAILED GRADING OF THE POCKET PARK, LOT 12 BLOCK 25, AS WELL AS THE INSTALLATION OF ALL LANDSCAPE AND IRRIGATION FOR THE PARK, AND ALL PARK AMENITIES AS DETAILED IN THE PLANS. THE PARK IS CURRENTLY IN DESIGN AND PLANS WILL BE SUBMITTED TO THE PARKS DEPARTMENT UNDER SEPARATE COVER FOR REVIEW AND APPROVAL.

 **PHASE ONE**
 **PHASE TWO**

CONSTRUCTION PHASING PLAN



BENCHMARK: CITY MONUMENT AT THE CENTERLINE INTERSECTION OF NORTHERN PASS DRIVE AND MIDWAY DRIVE, EL PASO, TEXAS. ELEVATION = 3955.5 (EL. PASO CITY DATUM)

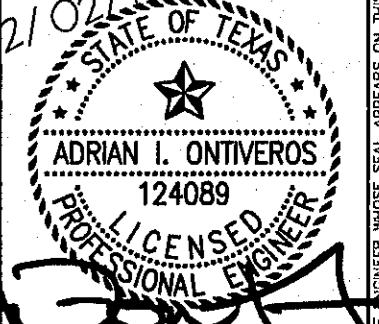
NO.	DATE	DESCRIPTION	BY
3	12/02/19	Final City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
1	09/23/19	First City Submittal	AHO

WARNING!
BEFORE YOU DIG
CONTRACTOR SHALL
FIELD LOCATE ALL
EXISTING UNDERGROUND
IMPROVEMENTS IN
PROJECT AREA

BEFORE YOU DIG - CALL

EL PASO ELECTRIC COMPANY
 1-800-306-6343
 AT&T TEXAS GAS SERVICE
 1-800-306-6343
 PUBLIC SERVICE BOARD (WATER & SEWER)
 569-8411 / 1-800-306-6343
 AFTER HOURS EMERGENCY (EPW)
 569-8411 / 1-800-306-6343
 SPECTRUM
 1-800-775-7374
 KANDER-MORGAN EPWG PIPELINES
 1-800-238-5764
 EL PASO STREETS AND MAINTENANCE
 1-800-212-0151
 EL PASO UTILITY BOND, STREETS AND MAINTENANCE
 569-8411 / 1-800-306-6343

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 Texas Registered Engineering Firm F-9997
 1845 Northwestern Dr. Ste C
 El Paso, Texas 79912
 tel [915] 877.4155
 fax [915] 877.4334
 www.csaengineering.com



CIMARRON CANYON
 UNIT FOUR
 SUBDIVISION

SHEET TITLE
CONSTRUCTION PHASING PLAN

DOB	1723
DESIGN BY	JOB NO.
CSA-SM	08/08/18
DATE	
AHO	AS NOTED
SCALE	

SHEET NO.
5A
 SHEET TOTAL
 6 OF 31

THE USE OF C=0.69 IS BASED ON SOIL CONDITIONS, VEGETATIVE LAND COVER, AND SLOPE OF THE TERRAIN (< 10%). THE SOIL IS IN THE CLASS D HYDROLOGIC SOIL CLASSIFICATION THAT EXHIBITS A LOWER PERMEABILITY AND THEREFORE A HIGH RUNOFF RESPONSE CONSISTENT WITH "PASSIVE OPEN SPACE" - SEE TABLE 4-5 OF THE JUNE 2008 DRAINAGE DESIGN MANUAL.

* THE USE OF C=0.95 IS BASED ON SOIL CONDITIONS, VEGETATIVE LAND COVER, AND SLOPE OF THE TERRAIN (> 10%). THE SOIL IS IN THE CLASS D HYDROLOGIC SOIL CLASSIFICATION THAT EXHIBITS A LOWER PERMEABILITY AND THEREFORE A HIGH RUNOFF RESPONSE CONSISTENT WITH "MOUNTAIN TERRAIN" - SEE TABLE 4-5 OF THE JUNE 2008 DRAINAGE DESIGN MANUAL.

COMPUTATIONS BASED ON RATIONAL FORMULA Q=CIA
100 YEAR STORM FREQUENCY CALCULATIONS

DRAINAGE AREA NO.	AREA (ACRES)	TIME OF CONCENTRATION (MINUTES)	RUNOFF COEFFICIENT C	INTENSITY (I)	DISCHARGE (Q) CFS
DA#1	3.703	10	0.60	5.31	11.57
DA#2	0.349	10	0.60	5.21	1.07
WS#1	33.182	10	0.69	5.21	119.28
WS#2	7.411	10	0.69	5.21	26.64
WS#3	2.468	10	0.95	5.21	12.21

EXISTING DETENTION POND #G CAPACITY BY ELEVATION

Basin Elevation	Area (Acres)	Cumml. Avg Volume (AcFt)	Cumml. Conic Volume (AcFt)	Description
3974.00	0.3016	0.9293	0.9293	POND RIM
3973.00	0.2389	0.4591	0.4591	
3972.00	0.1805	0.3494	0.3447	
3971.00	0.1234	0.1974	0.1936	
3970.00	0.0725	0.0925	0.0925	
3969.00	0.0369	0.0448	0.0431	HEADWALL #2
3968.00	0.0199	0.0184	0.0151	
3967.00	0.0062	0.0020	0.0020	
3966.00	0.0024	0.0020	0.0020	POND BOTTOM

PRIVATE DETENTION POND A (TEMPORARY) CAPACITY BY ELEVATION

Basin Elevation	Area (Acres)	Cumml. Avg Volume (AcFt)	Cumml. Conic Volume (AcFt)	Description
4001.00	0.0894	0.2735	0.2713	POND RIM
4000.00	0.0765	0.1555	0.1536	
3999.00	0.0511	0.0717	0.0702	
3998.00	0.0277	0.0323	0.0314	
3997.00	0.0116	0.0127	0.0124	
3996.00	0.0058	0.0040	0.0038	
3995.00	0.0021	0.0020	0.0020	POND BOTTOM

DROP INLET DATA

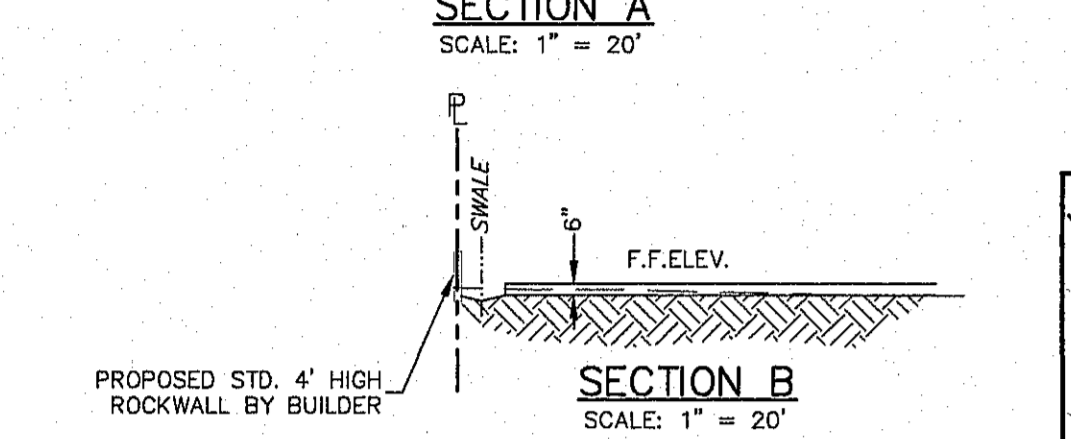
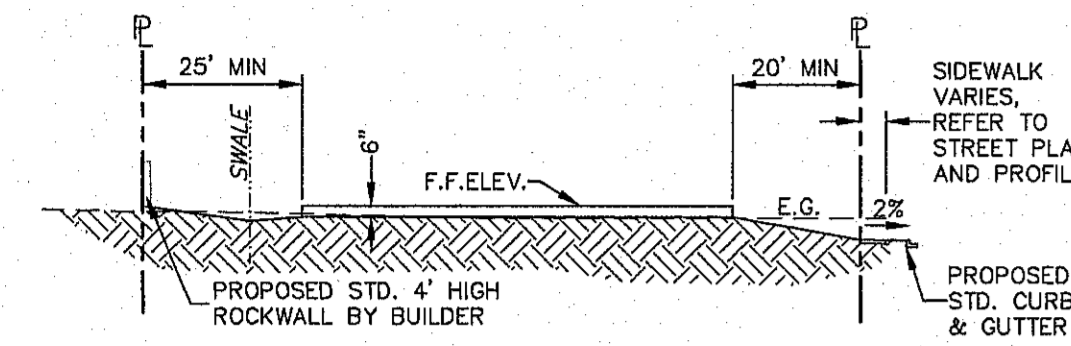
Drop Inlet #	Type	No. of Grates	Pavement Design	Required Flow Capacity Q of Watershed (CFS)	Inlet Bypass Flow From	Required Flow Capacity Q Total W/Bypass (CFS)	Inlet Flow Capture (CFS)	Flow Bypass (CFS)	Inlet Bypass Flow To	Depth of Flow at Inlet (In.)	Approach Velocity (FPS)	Flow Spread at Inlet (FT)	Roadway Width at Inlet (FT)
EX-DI#23	OFFSTREET	2	ON GRADE	6.55	POND A	18.22	12.49	5.73	EX-DI#15	8.69	6.33	17.00	16.00
EX-DI#24	OFFSTREET	2	ON GRADE	5.02	POND A	16.68	11.59	5.09	EX-DI#15	8.41	6.13	16.00	16.00
EX-DI#3	N/A	1	SAG	12.21	NONE	NONE	NONE	NONE	NONE	N/A	N/A	N/A	N/A
MH#1	BEEHIVE	1	SAG	1.07	NONE	NONE	NONE	NONE	NONE	N/A	N/A	N/A	N/A

STREET CARRYING CAPACITY COMPUTATIONS
(FOR FULLY DEVELOPED CONDITIONS AND INCLUDING THE FUTURE SUBDIVISION UNITS)

Spot	Street Name	Station	Design Area (A _d)	Roughness "c"	Average Land Use "L"	Velocity (fps)	L (ft)	TC (min)	I (100) (in/hr)	Q (100) (CFS)	Additional Flow (CFS)	Q (Total) (CFS)	Slope (ft/ft)	Q Cap (CFS)	Depth (in)	Moment M (ft-ft)
1	WAR PATH	0+83.21	2.097	0.016	0.60	5.69	675.14	10.0	5.21	6.55	1/2 OF BYPASS FROM POND A	18.22	0.0350	45.18	0.36	0.171
2	WAR PATH	0+83.21	1.606	0.016	0.60	5.49	675.14	10.0	5.21	5.02	1/2 OF BYPASS FROM POND A	16.68	0.0350	45.18	0.35	0.160

FOR INFORMATION REGARDING SOILS REFER TO THE PRELIMINARY SOILS EVALUATION REPORT FOR CIMARRON CANYON UNIT ONE SUBDIVISION (PROJECT NO. SP01172 DATED OCT 3, 2011; AND THE STREET PAVEMENT DESIGN (PROJECT NO. SP01043 DATED APR 4, 2011) PREPARED BY SPEESOLL, INC.

NOTE: THIS AREA LIES WITHIN FLOOD HAZARD ZONE C, AS DESIGNATED BY THE FLOOD INSURANCE RATE MAP (F.I.R.M.), CITY OF EL PASO PANEL NUMBER 480214 0016 C DATED FEBRUARY 05, 1986, AND AMENDED PER A LETTER OF MAP REVISION, EFFECTIVE DATE AUGUST 04, 2011; AND LIES WITHIN FLOOD HAZARD ZONE C AS DESIGNATED BY THE F.I.R.M. CITY OF EL PASO PANEL NUMBER 480214 0017 C DATED FEBRUARY 05, 1986.



ALL PONDS AND BASINS ARE PRIVATELY MAINTAINED BY HUNT COMMUNITIES

INLET CALCULATIONS
MH #1 (BEEHIVE MANHOLE COVER)
FLOW THROUGH ORIFICE FORMULA
Q = CA√2gh
Q = 7(2.0)√2(32.2)(0.50)
Q = 7.94 cfs + 1/2 = 5.30 cfs

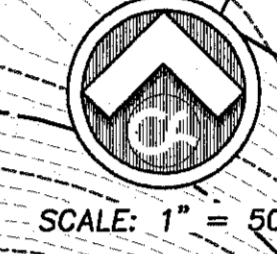
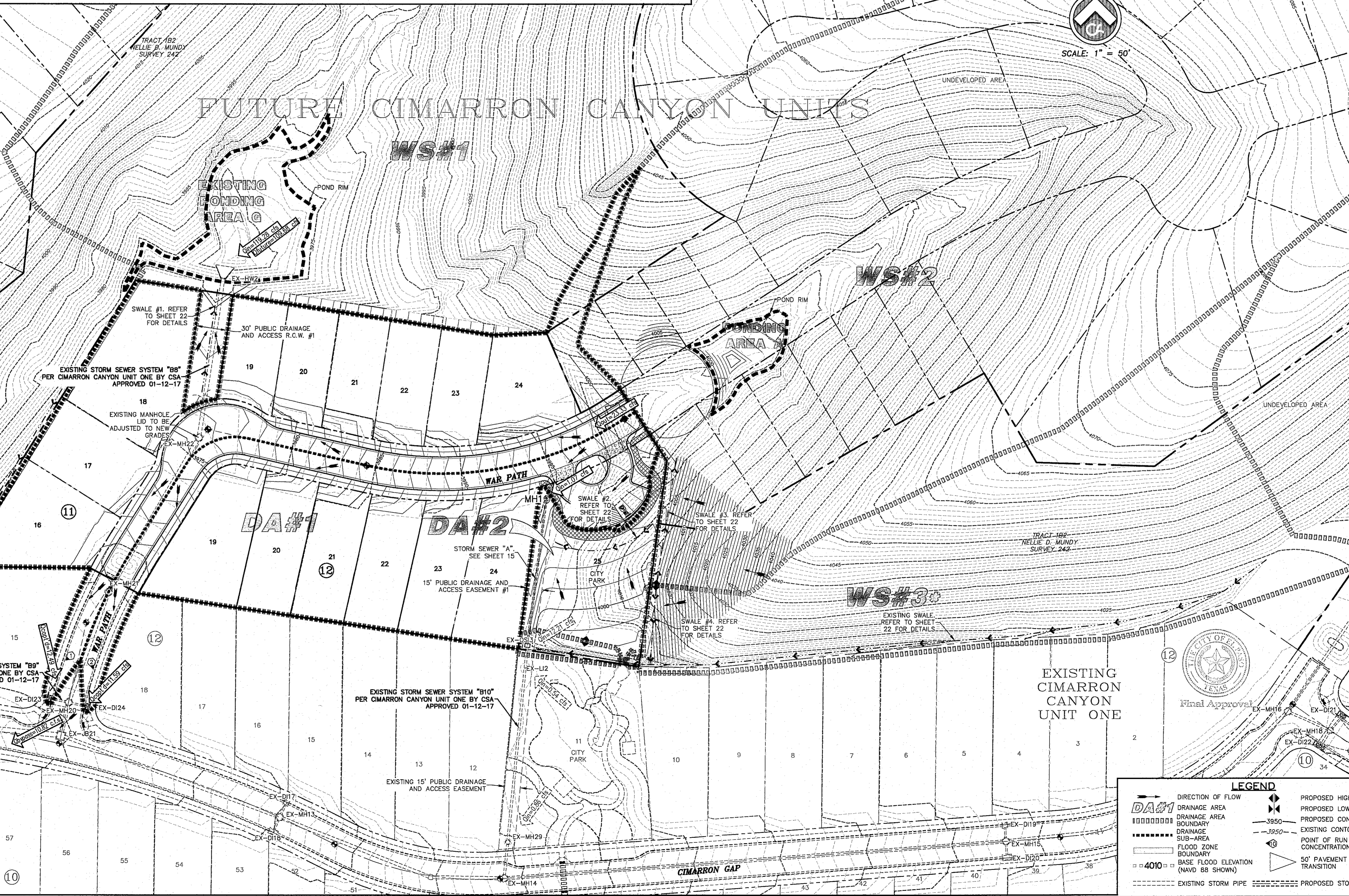
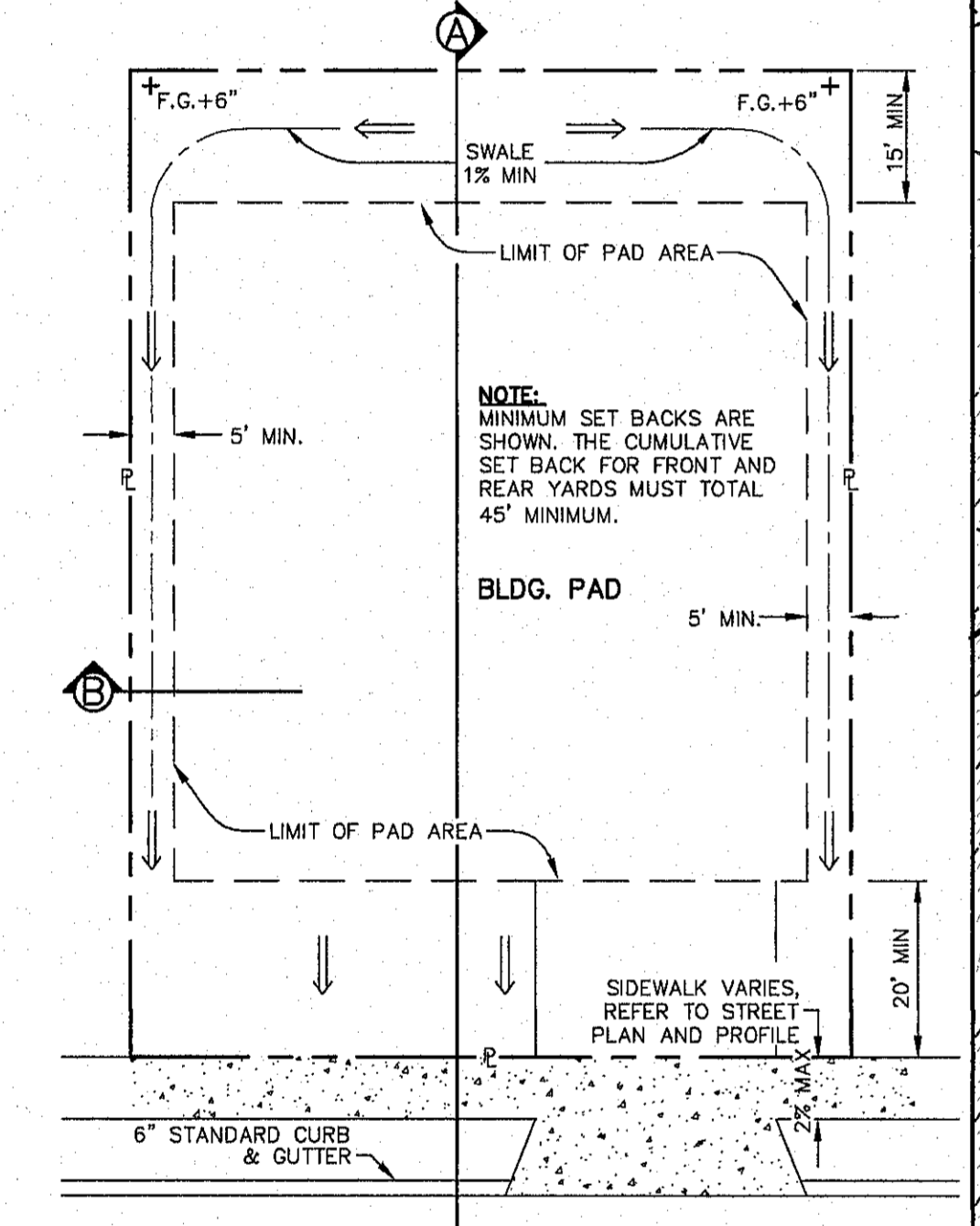
EXISTING PERMANENT POND G (FUTURE)
ARC = AREA * RATE * COEFFICIENT
WS#1 = 31.661 * 4.04 * 0.69
ARC = 88.258
12 = Q_{cap} / 12 = 7.355 AcFt

AcFt INTO HW#2
Q_{required} = Q_{design} - Q_{existing}
7.355 - 0.043 = 7.312 AcFt
AcFt TO CFS INTO HW#2
AREA = AcFt * 12 / RATE / COEFFICIENT
AREA = 7.312 * 12 / 4.04 / 0.69
AREA = 31.476 Ac
CFS = AREA * RATE * COEFFICIENT
CFS = 31.476 * 5.05 * 0.69
CFS = 109.68

PRIVATE DETENTION POND A (TEMPORARY)
ARC = AREA * RATE * COEFFICIENT
WS#2 = 7.411 * 4.18 * 0.69
ARC = 21.375
12 = Q_{cap} / 12 = 1.781 AcFt

AcFt BYPASS
Q_{required} = Q_{design} - Q_{existing}
1.781 - 0.2213 = 1.5597 AcFt
AcFt TO CFS BYPASS
AREA = AcFt * 12 / RATE / COEFFICIENT
AREA = 1.5597 * 12 / 4.18 / 0.68
AREA = 6.4892 Ac
CFS = AREA * RATE * COEFFICIENT
CFS = 6.4892 * 5.21 * 0.68
CFS = 23.33

ALL FINISHED GRADING OF LOTS SHALL BE PERFORMED BY BUILDER. ANY ADDITIONAL REGRADING OF LOTS SHALL BE BY SEPARATE PERMIT



LEGEND

- DIRECTION OF FLOW
- DA#1 DRAINAGE AREA
- BOUNDARY
- DRAINAGE SUB-AREA
- FLOOD ZONE BOUNDARY
- BASE FLOOD ELEVATION (NAVD 88 SHOWN)
- EXISTING STORM PIPE
- PROPOSED HIGH POINT
- PROPOSED LOW POINT
- PROPOSED CONTOUR
- EXISTING CONTOUR
- POINT OF RUN OFF CONCENTRATION
- 50' PAVEMENT TRANSITION
- PROPOSED STORM PIPE

BEFORE YOU DIG - CALL
EL PASO ELECTRIC COMPANY
EL PASO GAS SERVICE
UTCS EMERGENCY HOTLINE
PUBLIC SERVICE BOARD (WATER & SEWER)
CITY OF EL PASO EMERGENCY (EPW)
TEXAS EXCAVATION SAFETY SYSTEM
KINDER-MORGAN EPWC PIPELINES
EL PASO METRIC SIGNS, STREETS AND MAINTENANCE
EMERGENCY@ELPASO.ORG

WARNING! BEFORE YOU DIG CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

STATE OF TEXAS
ADRIAN L. ONTIVEROS
124089
PROFESSIONAL ENGINEER

csa design group, inc.
www.csaengineers.com
1845 Northwestern Dr. Ste C
El Paso, Texas 79912
tel [915] 877.4155
fax [915] 877.4334

CIMARRON CANYON UNIT FOUR SUBDIVISION
SHEET TITLE
DRAINAGE PLAN

COB	1723
DESIGN BY	JOB NO.
COB-SM	08/08/18
DRAWN BY	DATE
AHO	AS NOTED
CHECKED BY	SCALE
SHEET NO. 6	
7 OF 31	

18.44.220 -- PERMIT CLOSEOUT PROCEDURE

AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT, THE PERMIT SHALL BE CLOSED. AS A PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:

- A STATEMENT FROM THE ENGINEER OF RECORD STATING THAT STATES, "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS." THE PERMITTEE SHALL CALL THE PERMIT OFFICIAL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
- A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.

18.44.090 -- WARRANTY

ANY PERSON ISSUED A PERMIT SHALL AGREE TO WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABILIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.

18.44.200 -- ENGINEERING CONTROLS FOR GRADING

- NO ON-SITE PROCESSING OF MATERIAL FOR COMMERCIAL OR RETAIL SALES SHALL BE ALLOWED. ON-SITE PROCESSING OF MATERIALS TO BE USED FOR PREPARATION OR CONSTRUCTION OF IMPROVEMENTS WITHIN THE SITE COVERED BY THE GRADING PERMIT SHALL BE ALLOWED.
- WORK SHALL BE CONDUCTED IN A MANNER THAT PRESERVES AND DOES NOT OBSTRUCT, IMPEDE OR INTERFERE WITH THE FLOW OF STORMWATER IN NATURAL DRAINAGE WAYS, UNIMPROVED CHANNELS OR WATERCOURSES, OR IMPROVED DITCHES, CHANNELS OR CANALS IN SUCH A MANNER AS TO CAUSE FLOODING WHERE IT WOULD NOT OTHERWISE OCCUR.
- CONSTRUCTION EQUIPMENT AND FENCING SHALL BE KEPT OUT OF WATERCOURSES EXCEPT WHEN NECESSARY TO PERFORM WORK ON THE APPROVED PLANS. ADEQUATE BY-PASS MEASURES SHALL BE INSTALLED WHERE TEMPORARY DRAINAGE BLOCKAGES WILL OCCUR. WORK WITHIN A CHANNEL IS DESIGNATED ON APPROVED PLANS. PRECAUTIONS SHALL BE TAKEN TO STABILIZE THE WORK AREA DURING CONSTRUCTION TO MINIMIZE EROSION AS SHOWN ON THE PLANS. THE CHANNEL, INCLUDING BED AND BANKS, SHALL ALWAYS BE RESTORED/RE-STABILIZED IMMEDIATELY AFTER WORK IN THE CHANNEL IS COMPLETED.
- WHERE A DRAINAGE WAY WILL NOT BE CROSSED BY CONSTRUCTION VEHICLES REGULARLY DURING CONSTRUCTION, A TEMPORARY CROSSING SHALL BE CONSTRUCTED AS REQUIRED IN THE APPROVED GRADING PLANS.
- MATERIAL STOCKPILING SHALL NOT BE ALLOWED WHEN GRADING OPERATIONS ARE IDLE FOR MORE THAN SEVEN CONSECUTIVE CALENDAR DAYS. STOCKPILING SHALL BE LIMITED TO TEN FEET HIGH WHEN GRADING OPERATIONS ARE BEING CONDUCTED.
- A TRAFFIC CONTROL PERMIT SHALL BE REQUIRED IF THE GRADING OPERATION WILL IMPACT TRAFFIC.
- ANY USE OF VIBRATORY EQUIPMENT SHALL NOT BE ALLOWED, UNLESS APPROVED IN WRITING BY THE PERMIT OFFICIAL IN ADVANCE OF SUCH USE.
- THE PERMIT OFFICIAL MUST BE NOTIFIED NO LATER THAN 4:00PM THE DAY IN ADVANCE OF ANY GRADING WORK. ADDITIONAL ACTIVITY REQUIREMENTS/RESTRICTIONS MAY BE SPECIFIED BY THE DESIGN ENGINEER OF RECORD.

PENALTY -- SEVERABILITY

ANY PERSON VIOLATING CHAPTER 18 (GRADING ORDINANCE) SHALL BE DEEMED GUILTY OF A MISDEMEANOR AND SHALL BE PUNISHED BY A FINE NOT TO EXCEED TWO THOUSAND DOLLARS. IN THE CASE OF A CONTINUING VIOLATION, EACH DAY'S VIOLATION SHALL BE DEEMED A SEPARATE OFFENSE (PER SECTION 18.44.210) THE SEVERABILITY PROVISIONS OF SECTION 1.04.060 APPLY.

REFER TO SHEET 8 FOR CROSS SECTION KEY
REFER TO GRADING STABILIZATION PLAN FOR RIP-RAP AND OTHER EROSION CONTROL DETAILS

FOR INFORMATION REGARDING SOILS, REFER TO THE PRELIMINARY SOILS EVALUATION REPORT FOR CIMARRON CANYON UNIT ONE SUBDIVISION (PROJECT No. SPG11178 DATED OCT 10, 2011; AND THE STREET PAVEMENT DESIGN (PROJECT No. SPG11043 DATED APR 4, 2011) PREPARED BY SPEESOIL, INC.

- OVERSPILL ON NATURAL SLOPES CAUSED BY GRADING OPERATIONS SHALL NOT BE ALLOWED.
- DEVELOPER SHALL STABILIZE SLOPES, IF DISTURBED, TO MINIMIZE EROSION.
- ALL SLOPES SHALL BE 3' HORIZONTAL TO 1' VERTICAL MAXIMUM UNLESS NOTED OTHERWISE.
- NO CONCENTRATED RUNOFF OVER UNPROTECTED SLOPES SHALL BE ALLOWED.
- REFER TO DRAINAGE PLAN, SHEET 6 FOR LOT DESIGN
- DEVELOPER SHALL COMPLY WITH SECTION 13.08.170 OF THE SUBDIVISION ORDINANCE; "EXCESSIVE CUTS ON STREETS MAY RESULT IN REPAVING THE ENTIRE STREET."
- ALL ACCESSIBLE RAMPS WITHIN THE CITY RIGHT-OF-WAY SHALL BE INSTALLED BY THE DEVELOPER. SIDEWALKS SHALL BE INSTALLED BY BUILDER UNLESS NOTED OTHERWISE.
- 6" ROCK WALLS, RETAINING AS REQUIRED, SHALL BE INSTALLED ABUTTING ALL DRAINAGE RIGHTS-OF-WAY BY DEVELOPER.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL OFF SITE IMPROVEMENTS.

ALL GRADED SLOPES GREATER THAN 3:1 (THREE FEET HORIZONTALLY TO 1 FOOT VERTICALLY) MUST BE STABILIZED PER ORDINANCE. REFER TO GRADING STABILIZATION PLAN, SHEETS 18-20 FOR DETAILS.

THE PARKS DEPARTMENT REQUIRES AN OVER EXCAVATION OF 12" AND IMPORT OF APPROVED TOP SOIL COMPACTED TO A DENSITY OF 95% PER ASTM D-1557 FOR ALL PLANTING BEDS AND SODDED AREAS.

THE PARKS DEPARTMENT HAS SPECIAL REQUIREMENTS FOR ROCK WALLS FOR LOTS ABUTTING THE PARK. REFER TO PARK CIVIL SHEETS FOR DETAILS.

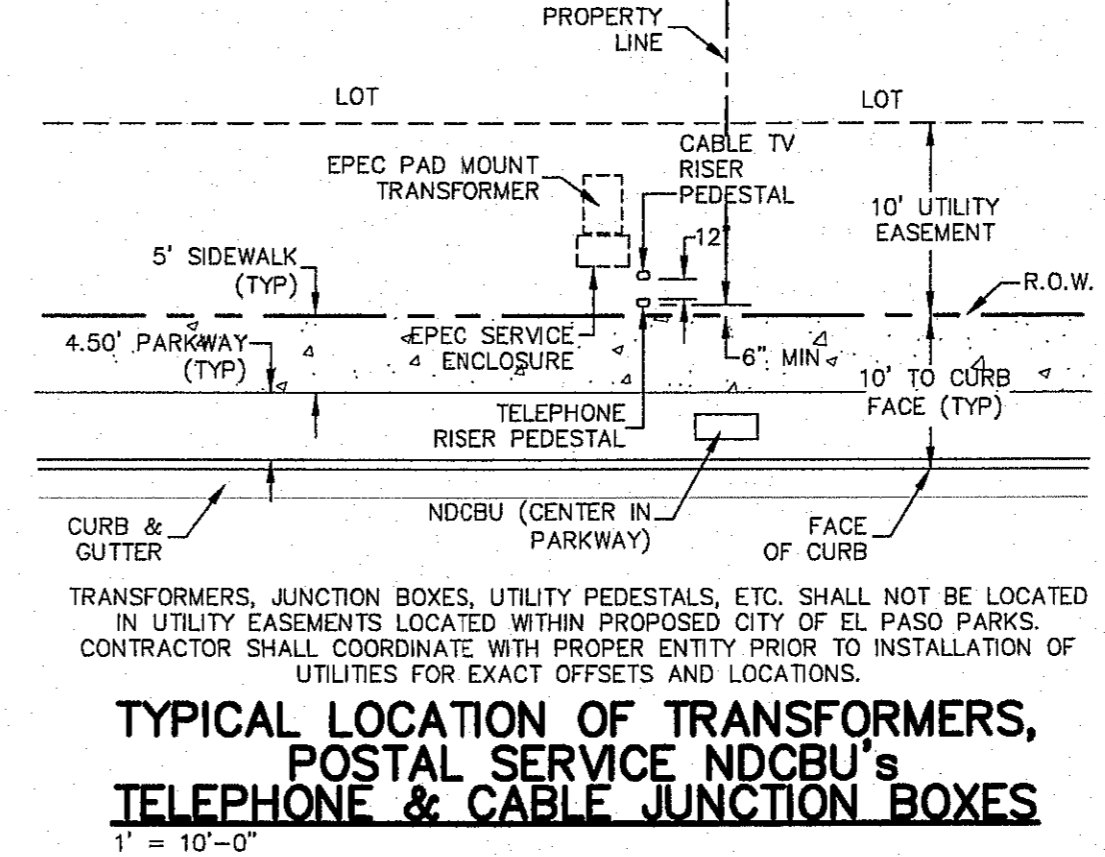
SIDEWALK BY DEVELOPER

ADDITIONAL GRADING OF LOTS BY BUILDER SHALL BE BY SEPARATE PERMIT.

ALL BOUNDARY PERMETER WALLS AND RETAINING WALLS GREATER THAN 4' SHALL BE INSTALLED BY THE DEVELOPER.

LEGEND

- 99.35 3999.35
- 00.35 4000.35
- 09.35 4009.35
- 10.35 4010.35
- 66 PROPOSED BUILDING PAD W/ FINISHED GRADE AND FINISHED FLOOR ELEVATION
- 75.72 PROPOSED TOP OF CURB
- 76.22 PROPOSED HIGH POINT
- 75.72TC PROPOSED LOW POINT
- 3955 PROPOSED CONTOUR
- 3950 EXISTING CONTOUR
- ROCK RETAINING WALL WITH GARDEN WALL EXTENSION BY DEVELOPER, HEIGHTS AS NOTED
- ROCK RETAINING WALL WITH 4" GARDEN WALL EXTENSION BY BUILDER
- ROCK RETAINING WALL WITH 4" GARDEN WALL EXTENSION BY BUILDER
- ROCK WALL WITH VIEW FENCE, RETAINING AS REQUIRED, BY DEVELOPER, HEIGHTS AS NOTED
- EXISTING ROCK WALL RETAINING AS REQUIRED, PER CIMARRON CANYON UNIT ONE
- ALL OTHER ROCK WALLS BY BUILDER UNLESS NOTED OTHERWISE

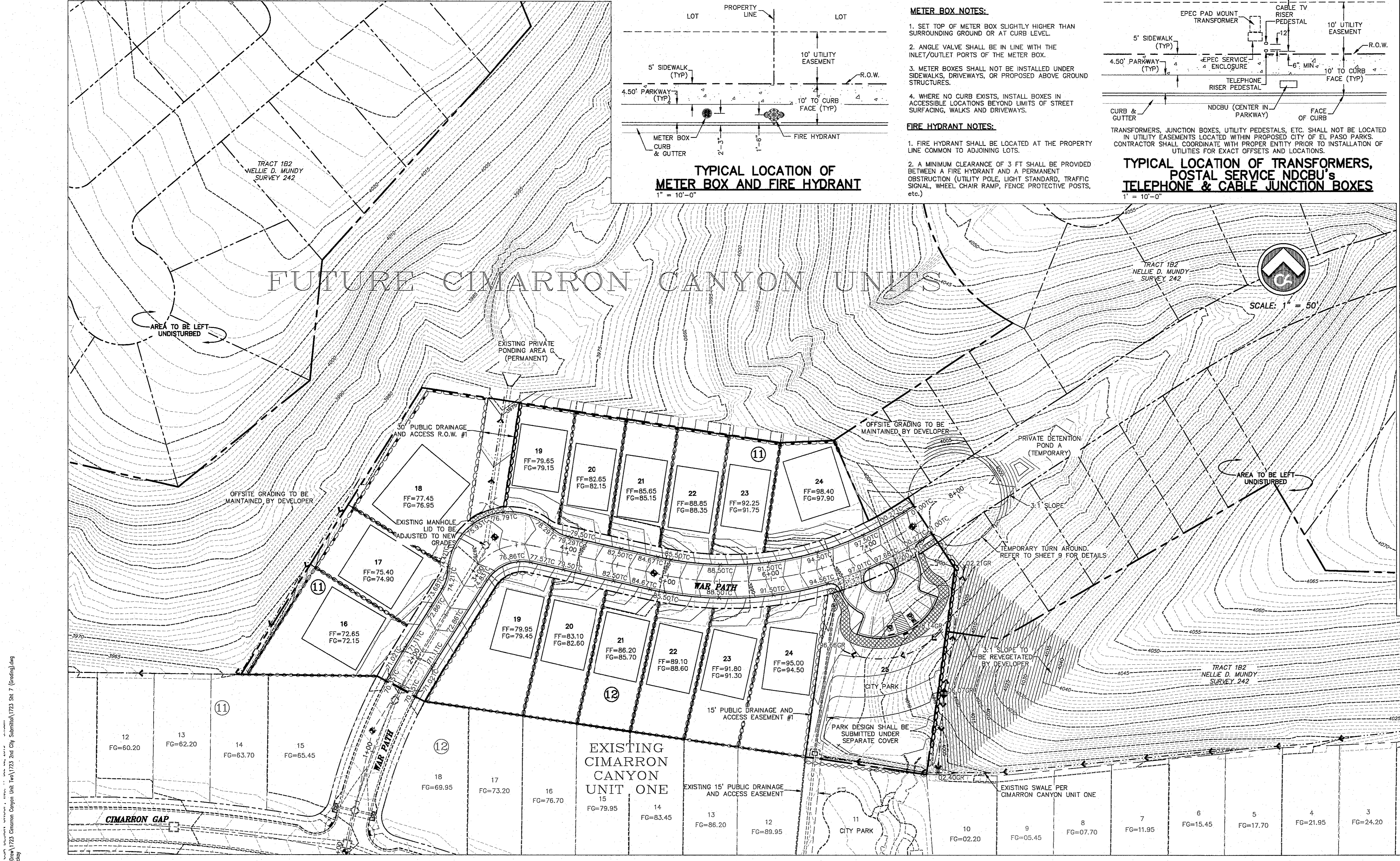
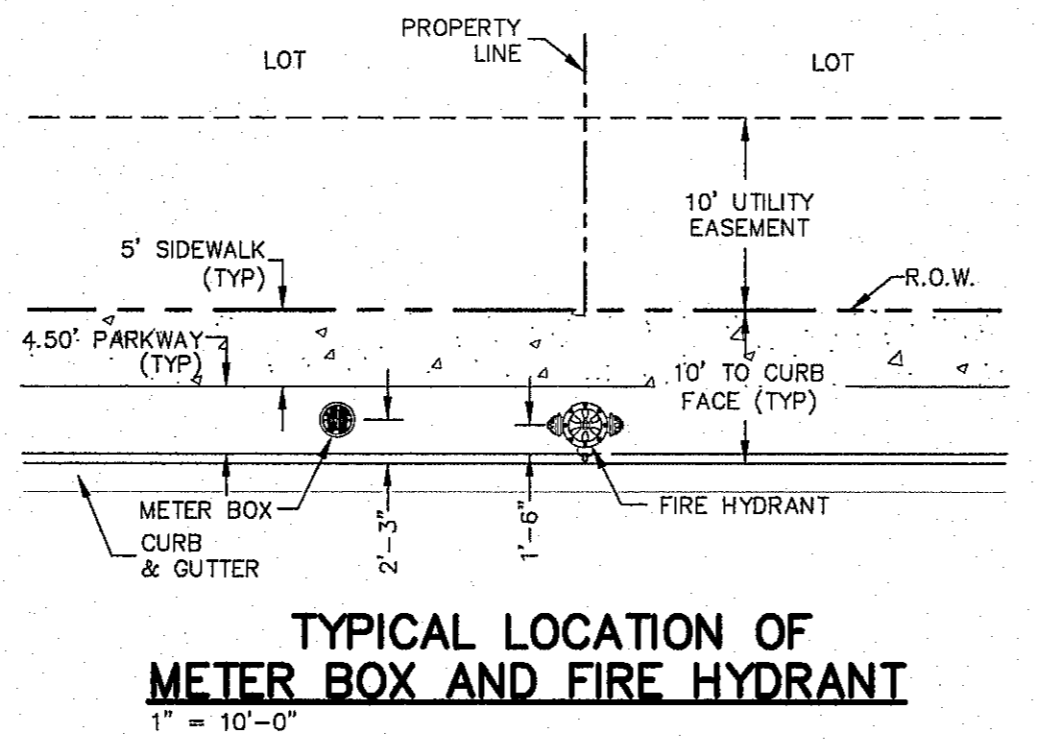


METER BOX NOTES:

- SET TOP OF METER BOX SLIGHTLY HIGHER THAN SURROUNDING GROUND OR AT CURB LEVEL.
- ANGLE VALVE SHALL BE IN LINE WITH THE INLET/OUTLET PORTS OF THE METER BOX.
- METER BOXES SHALL NOT BE INSTALLED UNDER SIDEWALKS, DRIVEWAYS, OR PROPOSED ABOVE GROUND STRUCTURES.
- WHERE NO CURB EXISTS, INSTALL BOXES IN ACCESSIBLE LOCATIONS BEYOND LIMITS OF STREET SURFACING, WALKS AND DRIVEWAYS.

FIRE HYDRANT NOTES:

- FIRE HYDRANT SHALL BE LOCATED AT THE PROPERTY LINE COMMON TO ADJOINING LOTS.
- A MINIMUM CLEARANCE OF 3 FT SHALL BE PROVIDED BETWEEN A FIRE HYDRANT AND A PERMANENT OBSTRUCTION (UTILITY POLE, LIGHT STANDARD, TRAFFIC SIGNAL, WHEEL CHAIR RAMP, FENCE PROTECTIVE POSTS, etc.)

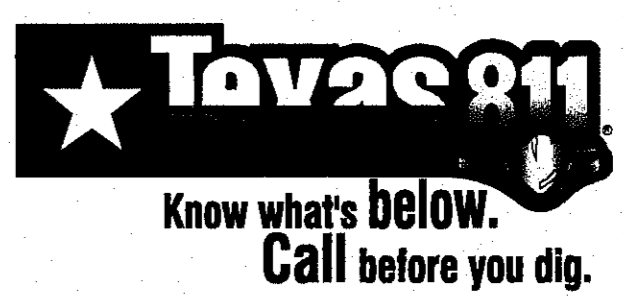


GENERAL NOTES:

- LOCATIONS OF ALL UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES FOR THE EXACT LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES INCLUDING UTILITIES NOT SHOWN ON PLANS. THE CONTRACTOR SHALL PROTECT ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES AND ANY UTILITIES NOT SHOWN ON THIS PLAN DURING CONSTRUCTION. THE CONTRACTOR WILL PERFORM ALL UTILITY INSTALLATION, REMOVAL AND RELOCATION AS PER LOCAL UTILITY CONSTRUCTION SPECIFICATIONS. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ELEVATIONS ON SITE AND SHALL CONTACT THE DESIGN ENGINEER AND REPORT ANY DISCREPANCIES, OMISSIONS AND/OR ERRORS ON PLANS PRIOR TO COMMENCING WORK.
- ALL CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH THE CITY OF EL PASO STANDARD SPECIFICATIONS AND DETAILS.
- CONTRACTOR SHALL PERFORM ALL EARTHWORK REQUIREMENTS AS PER GEOTECHNICAL STUDY REPORT.
- GRADING SHALL BE PERFORMED WITHOUT MAJOR ALTERATION OF WATERSHEDS AND DRAINAGE PATTERNS UNLESS APPROPRIATE AND ADEQUATE MEANS OF WATER RETAINAGE OR CONTROL ARE UTILIZED AND SHOWN OF THE GRADING PLAN.
- NO ON-SITE PROCESSING OF MATERIAL FOR COMMERCIAL OR RETAIL SALES SHALL BE ALLOWED. ON-SITE PROCESSING OF MATERIALS TO BE USED FOR PREPARATION OR CONSTRUCTION IMPROVEMENTS WITHIN THE SITE COVERED BY THE GRADING PERMIT SHALL BE ALLOWED.
- WORK SHALL BE CONDUCTED IN A MANNER THAT PRESERVES AND DOES NOT OBSTRUCT, IMPEDE, OR INTERFERE WITH THE FLOW OF STORM WATER IN NATURAL DRAINAGE WAYS, UNIMPROVED CHANNELS OR WATERCOURSES, OR IMPROVED DITCHES, CHANNELS, OR CANALS IN SUCH A MANNER AS TO CAUSE FLOODING WHERE IT WOULD NOT OTHERWISE OCCUR.
- CONSTRUCTION EQUIPMENT SHALL BE KEPT OUT OF WATERCOURSES EXCEPT WHEN NECESSARY TO PERFORM WORK ON THE APPROVED PLANS. WHERE IN-CHANNEL WORK IS DESIGNATED ON THE APPROVED PLANS, PRECAUTIONS SHALL BE TAKEN TO STABILIZE THE WORK AREA DURING CONSTRUCTION TO MINIMIZE EROSION AS SHOWN ON THE PLANS. THE CHANNEL, INCLUDING THE BED AND THE BANKS, SHALL ALWAYS BE RE-STABILIZED IMMEDIATELY AFTER THE IN-CHANNEL WORK IS COMPLETED.
- WHERE A DRAINAGE WAY WILL BE CROSSED BY CONSTRUCTION VEHICLES REGULARLY DURING CONSTRUCTION, A TEMPORARY CROSSING SHALL BE CONSTRUCTED AS REQUIRED IN THE APPROVED GRADING PLANS.
- MATERIAL STOCKPILING SHALL BE LIMITED TO FOUR (4) FEET HIGH WHEN GRADING OPERATIONS ARE IDLE FOR MORE THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS. STOCKPILING SHALL BE LIMITED TO TEN (10) FEET HIGH WHEN GRADING OPERATIONS ARE BEING CONDUCTED.
- A TRAFFIC CONTROL PERMIT SHALL BE REQUIRED IF GRADING OPERATIONS WILL IMPACT TRAFFIC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACQUIRE SAID PERMIT IF NOT SUPPLIED BY THE DEVELOPER OR HIS DESIGNER.
- ANY USE OF VIBRATORY EQUIPMENT SHALL BE APPROVED IN WRITING BY THE CITY ENGINEER IN ADVANCE OF SUCH USE.
- THE CITY ENGINEER MUST BE NOTIFIED NO LATER THAN 4:00 PM ONE DAY PRIOR TO ANY GRADING WORK, BACKFILL DENSITIES, INSPECTIONS AND/OR CONSTRUCTION OPERATIONS SUCH AS PLACEMENT OF CURB AND GUTTER, PAVEMENT, AND STORM SEWER STRUCTURES. ADDITIONAL ACTIVITY REQUIREMENTS/RESTRICTIONS MAY BE SPECIFIED BY THE DESIGN ENGINEER OF RECORD.
- A BORROW OR WASTE PERMIT SHALL BE REQUIRED FOR ANY SITE THAT HAS AN UNBALANCED EARTHWORK OF GREATER THAN TEN PERCENT (10%) AN APPROVED HAUL ROUTE SHALL BE REQUIRED FOR MATERIALS ENTERING OR LEAVING THE SITE UTILIZING CITY RIGHTS-OF-WAY FOR TRANSPORT. A WASTE/BORROW PERMIT SHALL NOT BE REQUIRED FOR TRANSPORT OF MATERIALS TO AN ADJACENT SITE OWNED OR UNDER DEVELOPMENT BY THE SAME PROPERTY OWNER.
- A COPY OF ALL CURRENT PERMITS REQUIRED FOR CONSTRUCTION SHALL BE MAINTAINED ON-SITE. THESE PERMITS MUST BE DISPLAYED IN A COMMON AND INCONSPICUOUS LOCATION ON-SITE.
- NO GRADING OF ANY KIND WILL BE CONDUCTED ON LEGAL HOLIDAYS OR WEEKENDS (7:00 PM FRIDAY THROUGH 7:00 AM ON THE FOLLOWING MONDAY) UNLESS THE DEVELOPER OR HIS AUTHORIZED AGENT HAS NOTIFIED THE CITY'S ENGINEERING DEPARTMENT BY NOON THE DAY BEFORE THE HOLIDAY, OR BY NOON ON FRIDAY. GRADING SHALL NOT BE PERMITTED WITHIN THREE HUNDRED (300) FEET OF A RESIDENTIALLY ZONED AREA BEFORE 7:00 AM OR AFTER 7:00 PM ON WEEKENDS OR HOLIDAYS.
- INSTALLATION OF A TRENCH SAFETY SYSTEM IS REQUIRED FOR ALL TRENCHES EXCEEDING A DEPTH OF FIVE FEET (5') AND MUST CONFORM TO THE CITY OF EL PASO DESIGN STANDARDS AS WELL AS OSHA REQUIREMENTS.
- ALL ORGANIC MATERIAL SHALL BE CLEARED AND GRUBBED TO A DEPTH OF A MINIMUM OF SIX (6) INCHES AND RESERVED PER GRADING PLANS. REFER TO SHEETS 18-20 FOR DETAILS.
- SLOPES WHICH ARE TO RECEIVE FILL MUST BE CLEARED OF ALL VEGETATION. OVERSPILL ON NATURAL SLOPES CAUSED BY GRADING OPERATIONS SHALL NOT BE ALLOWED.
- POSITIVE DRAINAGE SHALL BE PROVIDED BY CONTRACTOR DURING ALL PHASES OF CONSTRUCTION AND GRADING. ALL LOTS SHOULD DRAIN TOWARD STREET UNLESS OTHERWISE INDICATED ON THE GRADING PLAN.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR THE PREPARATION AND SUBMITTAL OF ALL PERMITTING NECESSARY FOR EARTHWORK OPERATIONS AND STORM WATER POLLUTION CONTROL.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL BOUNDARY PERMETER WALLS AS WELL AS ROCK WALLS RETAINING FOUR (4) FEET OR MORE. ALL OTHER WALLS SHALL BE INSTALLED BY THE BUILDER. NOTE TO BUILDERS: RETAINING WALLS MUST BE PROVIDED WHENEVER THE GRADE DIFFERENTIAL BETWEEN LOT GRADES IS GREATER THAN TWO (2) FEET. WALLS MUST BE DESIGNED AND CERTIFIED BY A CIVIL ENGINEER (FOR APPROVAL) WHEN APPLYING FOR A BUILDING PERMIT.

DATUM REFERENCE

THE CITY MONUMENT AT THE CORNER OF NORTHERN PASS AND BRAYS LANDING (NOW KNOWN AS CIMARRON PARK DRIVE) WITH A CITY DATUM ELEVATION OF 3976.53 REQUIRES AN ELEVATION ADJUSTMENT TO 3987.81 FOR NAVD 83 (STATE PLANE) BASED ON NGS MONUMENT DESIGNATION "CHINO", PID C0444, USGS QUAD CANUTILLO.



WARNING!
BEFORE YOU DIG
 CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

BENCHMARK: CITY MONUMENT AT THE CORNER OF NORTHERN PASS AND BRAYS LANDING (NOW KNOWN AS CIMARRON PARK DRIVE) WITH A CITY DATUM ELEVATION OF 3976.53 (EL PASO CITY DATUM)

NO.	DATE	DESCRIPTION	BY
1	02/02/19	Final City Submitted	AHO
2	11/07/19	Second City Submitted	AHO
3	09/23/19	Final City Submitted	AHO

WARNING!
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 CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

BEFORE YOU DIG - CALL

543-5720
 1-800-000-TESS
 AT&T
 1-800-000-TESS
 1-800-000-TESS
 562-8411/562-2000
 PUBLIC SERVICE BOARD (WATER & SEWER)
 AFTER HOURS EMERGENCY (EPW)
 594-5775
 1-800-544-8377
 1-800-544-8377
 1-800-338-3764
 EL PASO WATER, SEWER AND MAINTENANCE
 1-800-544-8377

EL PASO ELECTRIC COMPANY
 543-5720
 AT&T
 1-800-000-TESS
 1-800-000-TESS
 562-8411/562-2000
 PUBLIC SERVICE BOARD (WATER & SEWER)
 AFTER HOURS EMERGENCY (EPW)
 594-5775
 1-800-544-8377
 1-800-544-8377
 1-800-338-3764
 EL PASO WATER, SEWER AND MAINTENANCE
 1-800-544-8377

STATE OF TEXAS
 ADRIAN I. ONTIVEROS
 124089
 PROFESSIONAL ENGINEER
 CIVIL

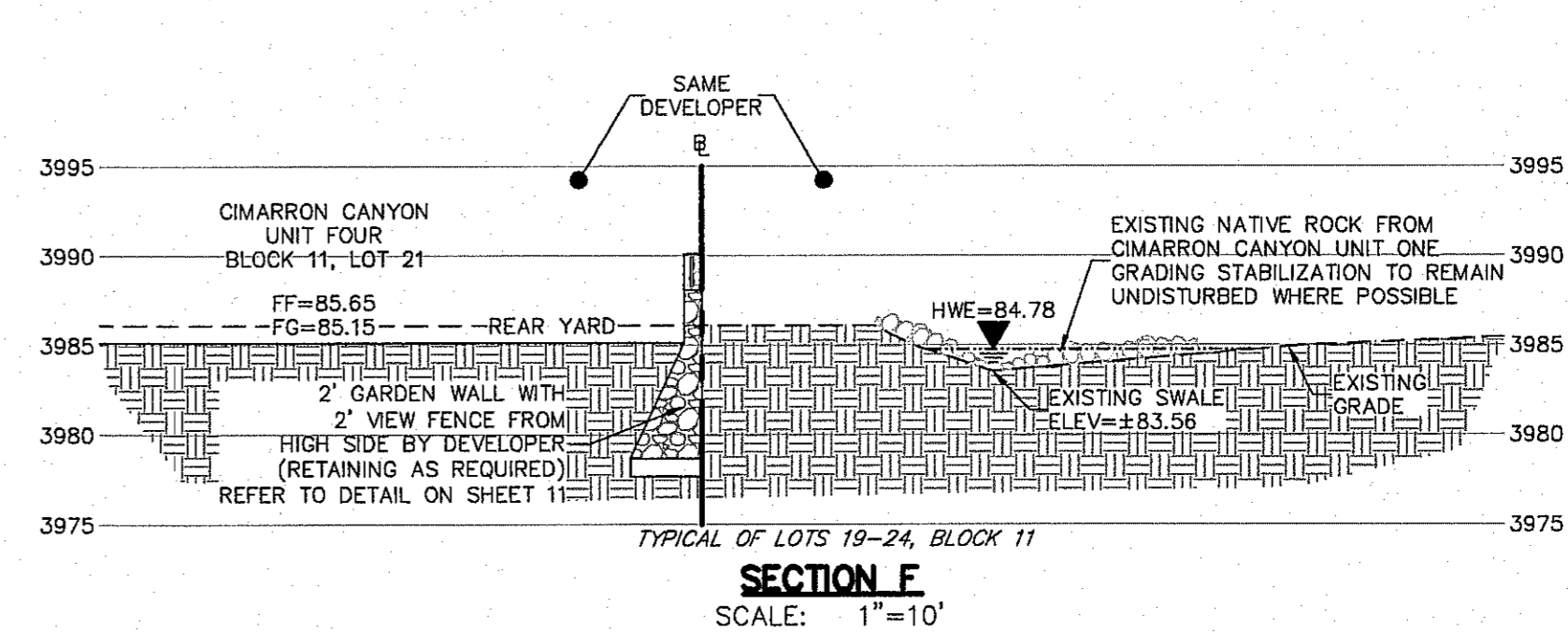
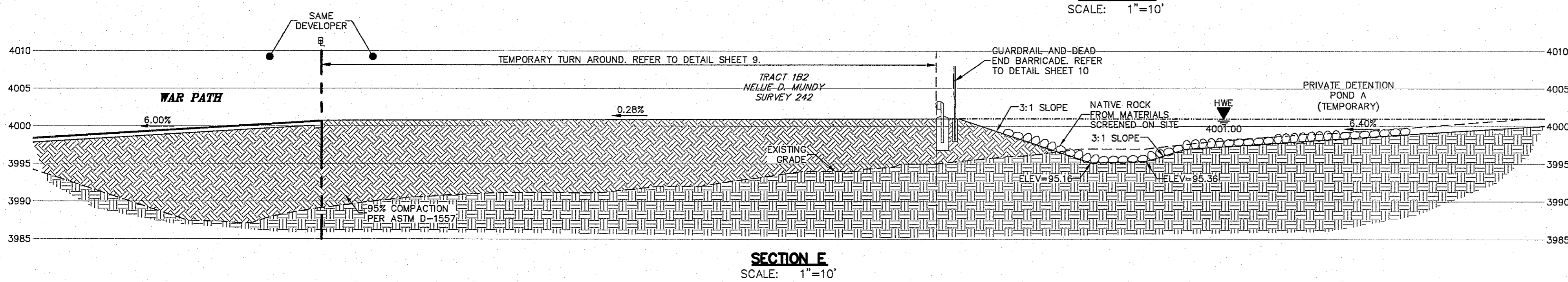
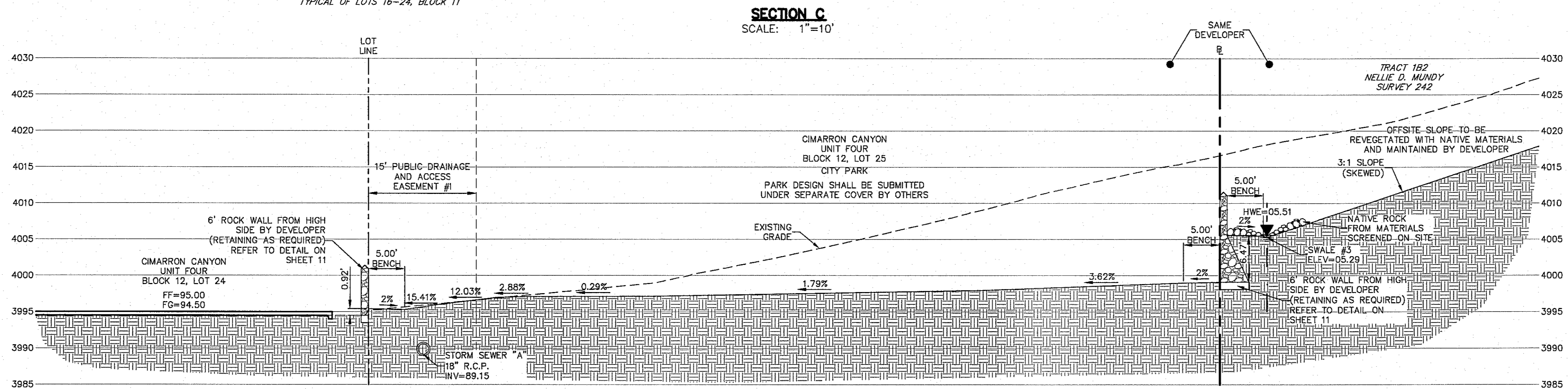
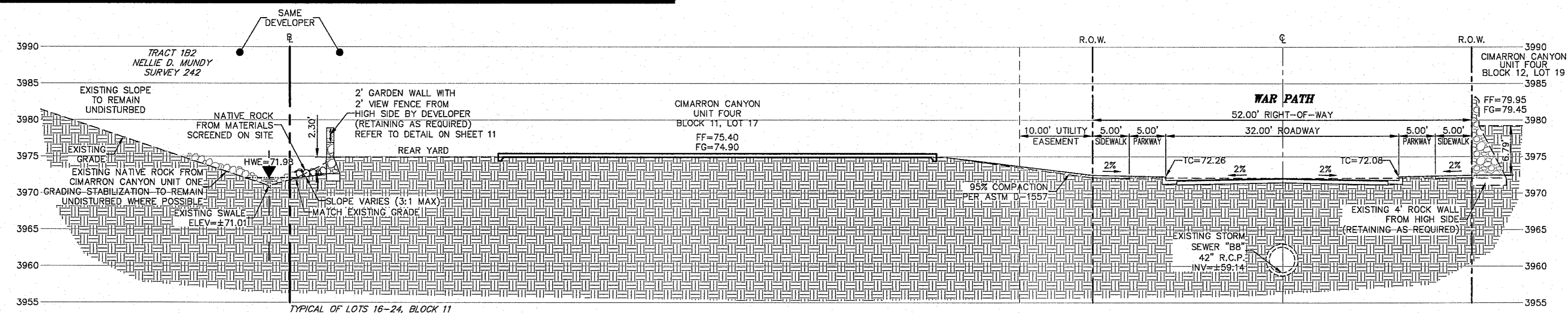
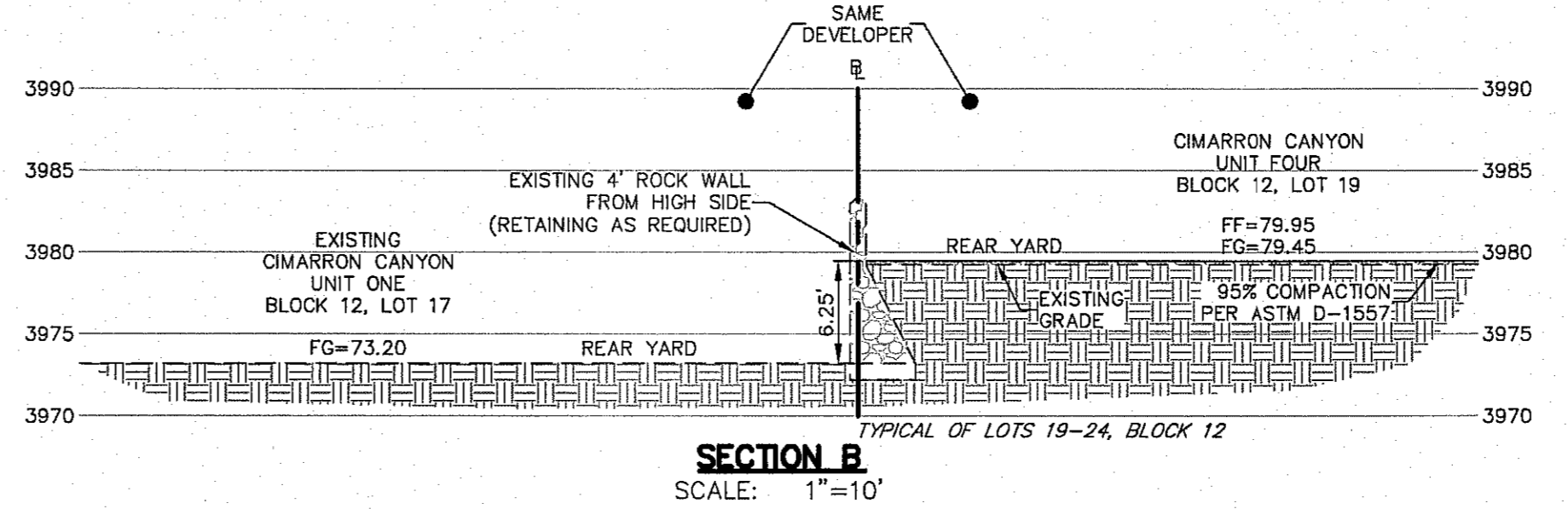
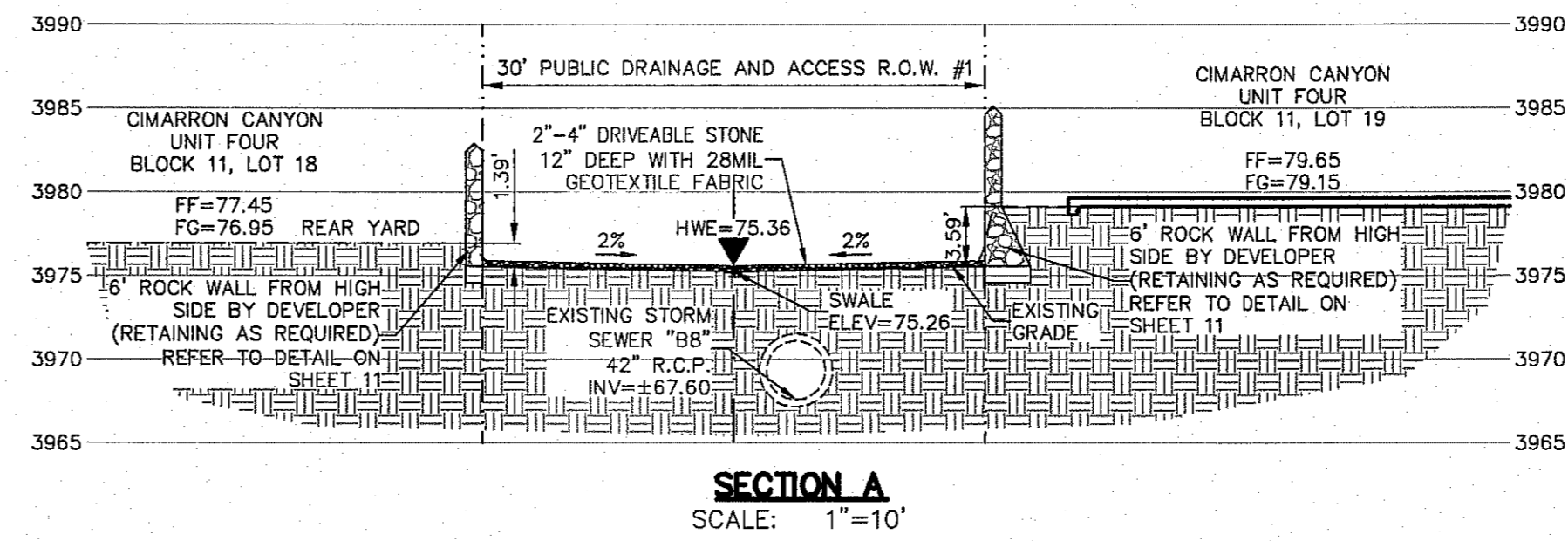
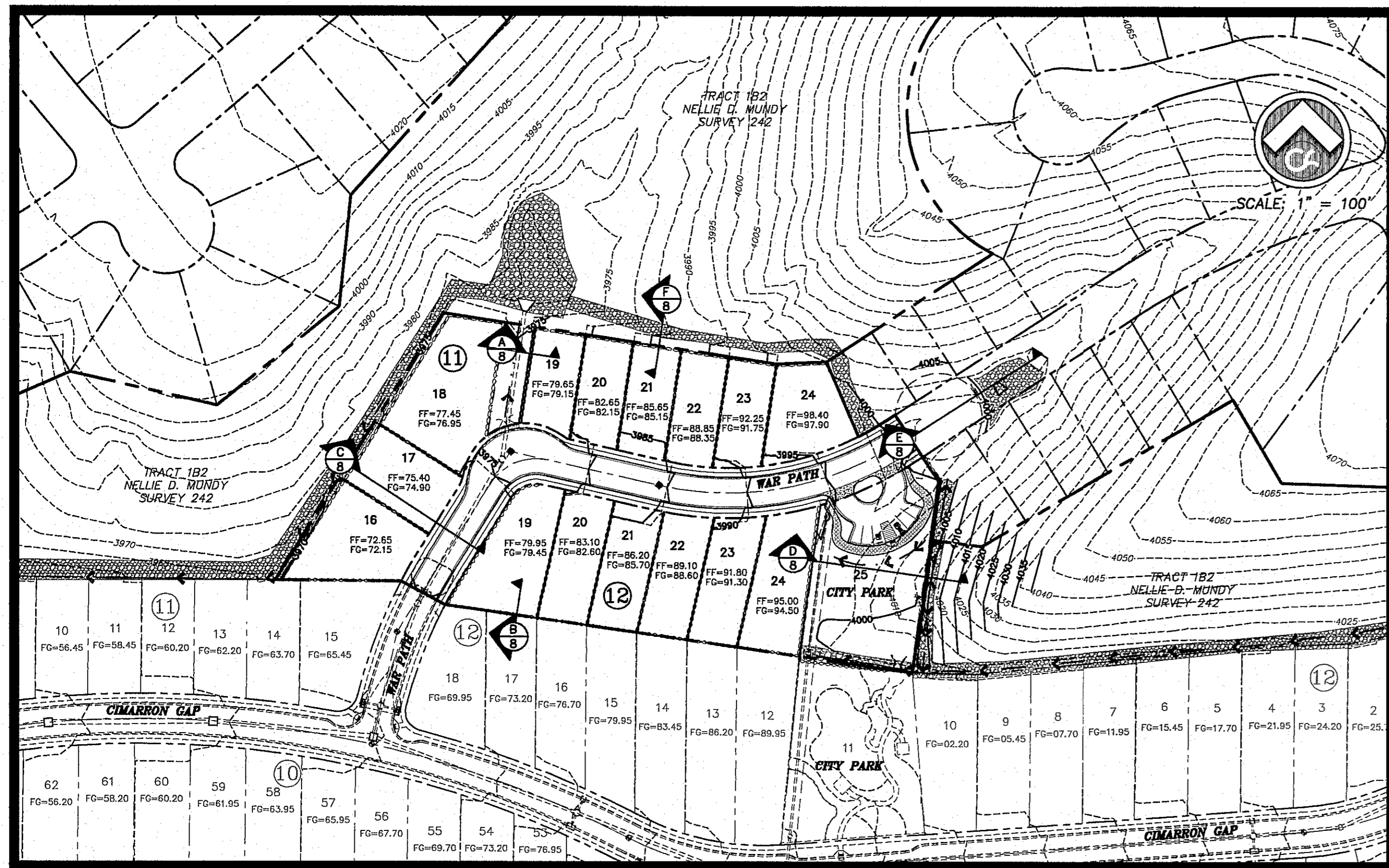
CSA design group, inc.
 Texas Registered Engineering Firm - F-687
 1845 Northwestern Dr., Ste C
 El Paso, Texas 79912
 Tel: (915) 877-4155
 Fax: (915) 877-4334
 www.csaengineers.com

CIMARRON CANYON UNIT FOUR SUBDIVISION

SHEET TITLE

GRADING PLAN

COB	1723
COB-SM	08/08/18
DRAWN BY	AS NOTED
AHO	SCALE
DESIGNED BY	7
SHEET SEQUENCE	8 of 31



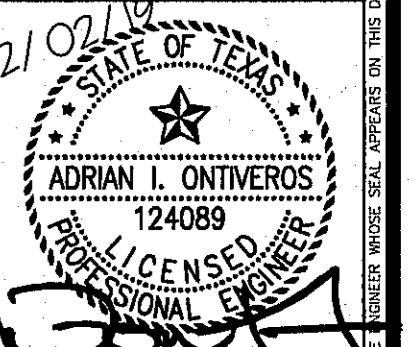
ALL BOUNDARY PERIMETER WALLS AND RETAINING WALLS GREATER THAN 4' SHALL BE INSTALLED BY THE DEVELOPER.
 ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS. EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET CURRENT CITY OF EL PASO STANDARDS.
 ALL ACCESSIBLE RAMPS INSTALLED BY DEVELOPER.
 ALL SIDEWALKS WITHIN CITY RIGHT-OF-WAY ARE TO BE INSTALLED BY BUILDER UNLESS SPECIFIED OTHERWISE.
 ALL CURB AS SHOWN IS 6" STANDARD CURB AND GUTTER UNLESS NOTED OTHERWISE.
 ALL OFFSITE GRADED SLOPES SHALL BE MAINTAINED BY THE DEVELOPER. ALL SLOPES WITHIN THE LOTS SHALL BE MAINTAINED BY THE HOME OWNER. ALL SLOPES LEFT NATURAL ARE 3:1 MAXIMUM. SLOPES GREATER THAN 3:1 REQUIRE SLOPE STABILIZATION AS NOTED.
 ANY RE-GRADING OF LOTS BY BUILDER SHALL BE BY SEPARATE PERMIT.

NO.	DATE	DESCRIPTION	BY
1	09/23/19	First City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
3	12/02/19	Final City Submittal	AHO

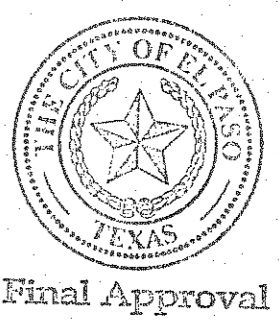
WARNING!
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 PROJECT AREA

BEFORE YOU DIG - CALL
 EL PASO ELECTRIC COMPANY 843-5720
 AT&T 1-800-300-4575
 TEXAS GAS SERVICE 644-6300
 PUBLIC SERVICE COMPANY 644-6300
 PUBLIC SERVICE COMPANY (WATER & SEWER) 644-6300
 PUBLIC SERVICE COMPANY (EPA) 644-6300
 TEXAS EXCAVATION SAFETY SYSTEM 994-5775
 TEXAS EXCAVATION SAFETY SYSTEM 994-5775
 KINDER-MORGAN EPAG PIPELINES 1-800-244-6374
 EL PASO STATE STREETS AND MAINTENANCE 1-800-238-3764
 EL PASO STATE STREETS AND MAINTENANCE 1-800-238-3764

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Final Approval

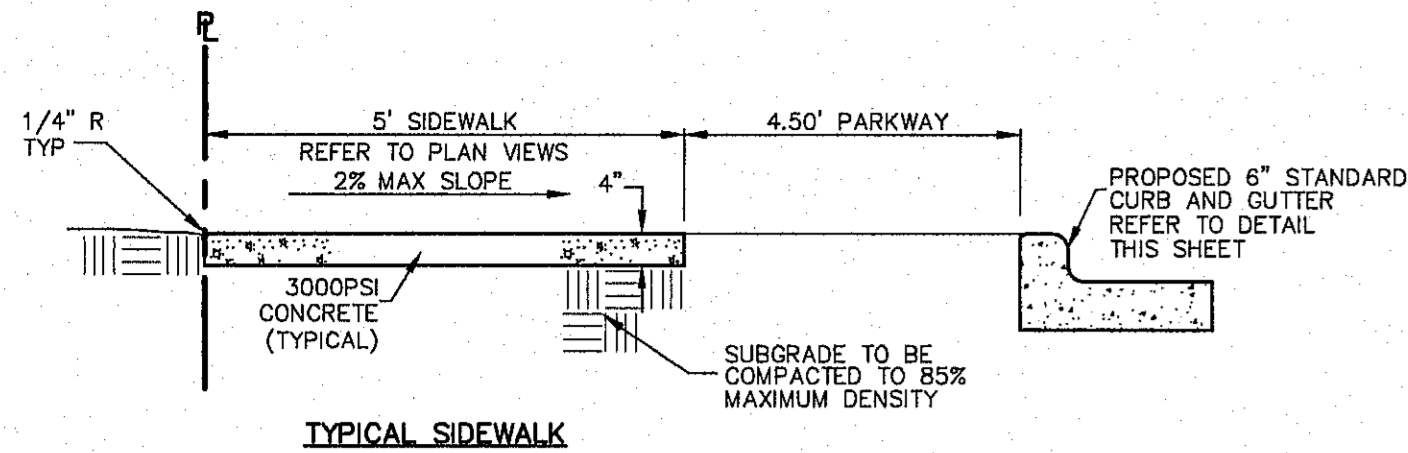
CIMARRON CANYON
 UNIT FOUR
 SUBMISSION

SHEET TITLE
CROSS SECTIONS A-F

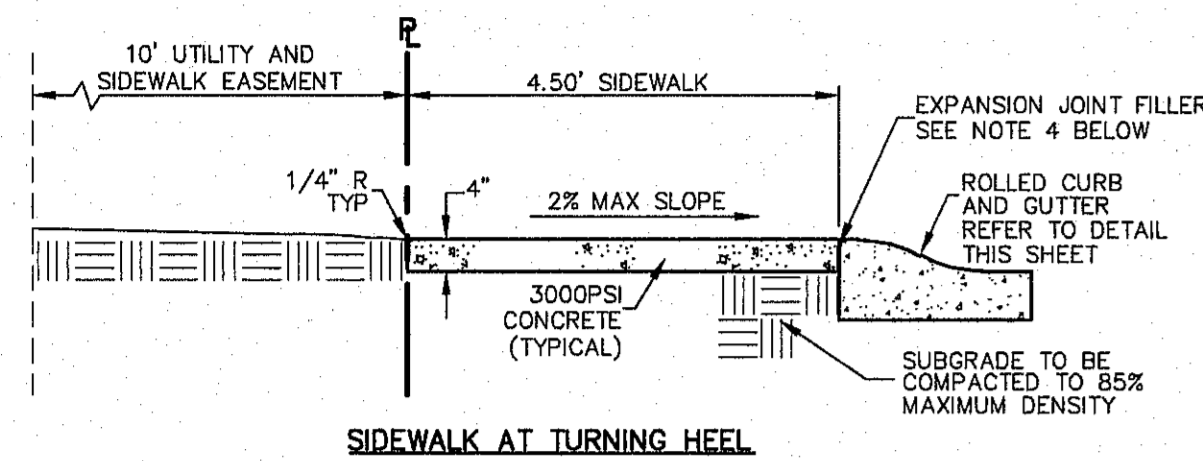
COB	1723
DESIGN BY	JOB NO.
COB-SM	08/08/18
DRAWN BY	DATE
AHO	AS NOTED
CHECKED BY	SCALE

SHEET NO.
8
 OF
31

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 V:\1722 Cimarron Canyon Unit Four\1722 and City Submittal\1722_Sht 8 (CrossSections).dwg



TYPICAL SIDEWALK



SIDEWALK AT TURNING HEEL

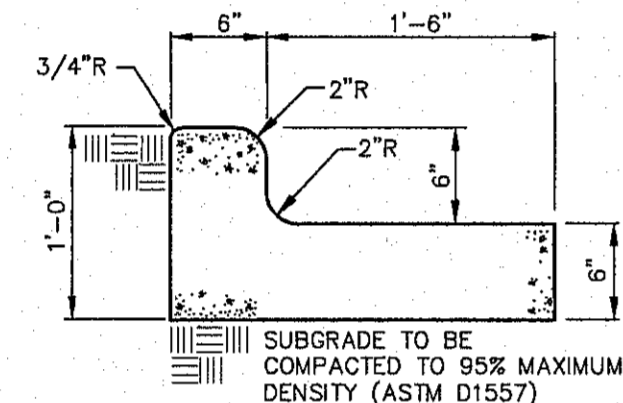
- NOTES:**
- PROVIDE TRANSVERSE CONTRACTION JOINTS AT INTERVALS NOT EXCEEDING 5'-0" O.C.
 - PROVIDE EXPANSION JOINTS AT INTERVALS NOT EXCEEDING 20'-0" O.C. AND ALONG FEATURES THAT PROJECT THROUGH OR ADJACENT TO SIDEWALK
 - CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS
 - EXPANSION JOINT FILLER SHALL BE 1/2" BITUMINOUS TYPE PREFORMED JOINT FILLER, AASHTO M-33.
 - WHEREVER SIDEWALK ABUTS ROCK OR MASONRY STRUCTURES SUCH AS CURBS OR BUILDINGS, EXPANSION JOINT FILLER SHALL BE PLACED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
 - ALL SIDEWALKS FRONTING LOTS, AND ALL SIDEWALKS ADJACENT TO THE SIDES OF LOTS SHALL BE INSTALLED BY THE BUILDER OF THAT LOT UNLESS SPECIFIED OTHERWISE IN THE PLANS.

SIDEWALK DETAILS

SCALE: 1"=2'

NOTES:

- CONCRETE FOR CURBS, GUTTERS, & RETURNS SHALL BE 3000 P.S.I. MINIMUM.
- DUMMY JOINT REQUIRED AT 10' O.C.
- EXPANSION JOINTS REQUIRED AT CURB RETURNS. JOINTS TO BE PACKED WITH 1/2" PRE-MOLDED ASPHALT IMPREGNATED EXPANSION MATERIAL OR EQUAL.

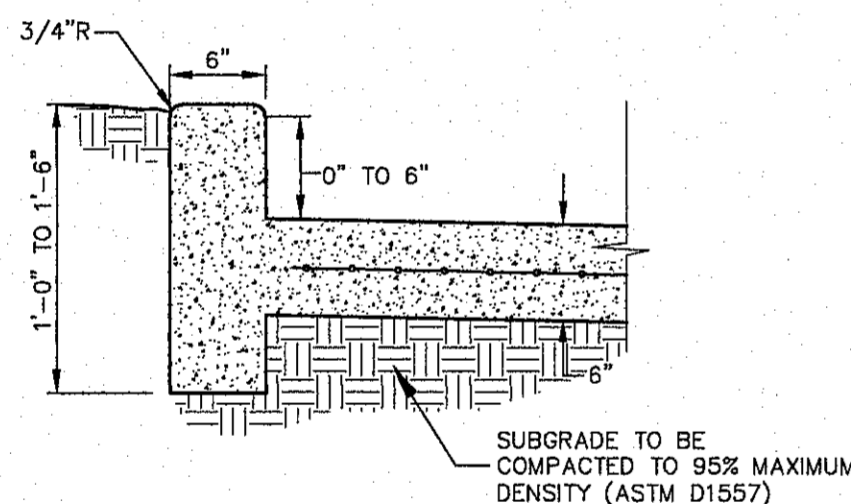


STANDARD 6" CURB & GUTTER DETAIL

SCALE: 1" = 1'-0"

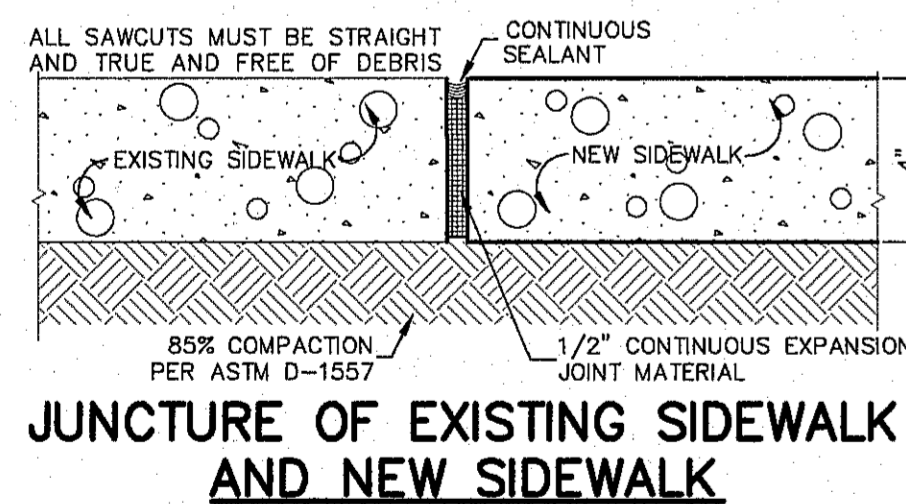
NOTES:

- CONCRETE FOR CURBS, GUTTERS, & RETURNS SHALL BE 3000 P.S.I. MINIMUM.
- DUMMY JOINT REQUIRED AT 10' O.C.
- EXPANSION JOINTS REQUIRED AT CURB RETURNS. JOINTS TO BE PACKED WITH 1/2" PRE-MOLDED ASPHALT IMPREGNATED EXPANSION MATERIAL OR EQUAL.



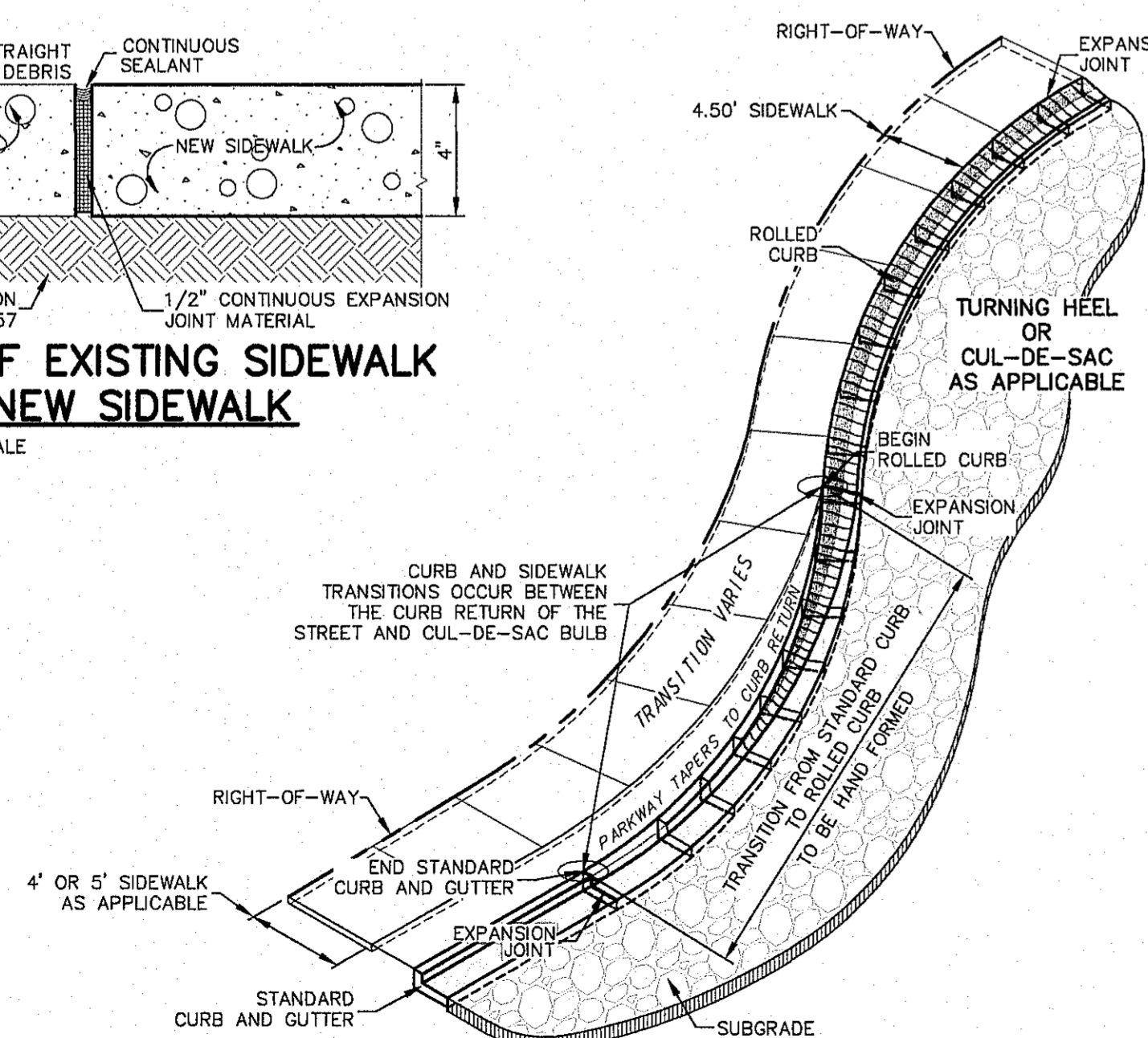
STANDARD CURB @ DRIVEWAY DETAIL

SCALE: 1" = 1'-0"



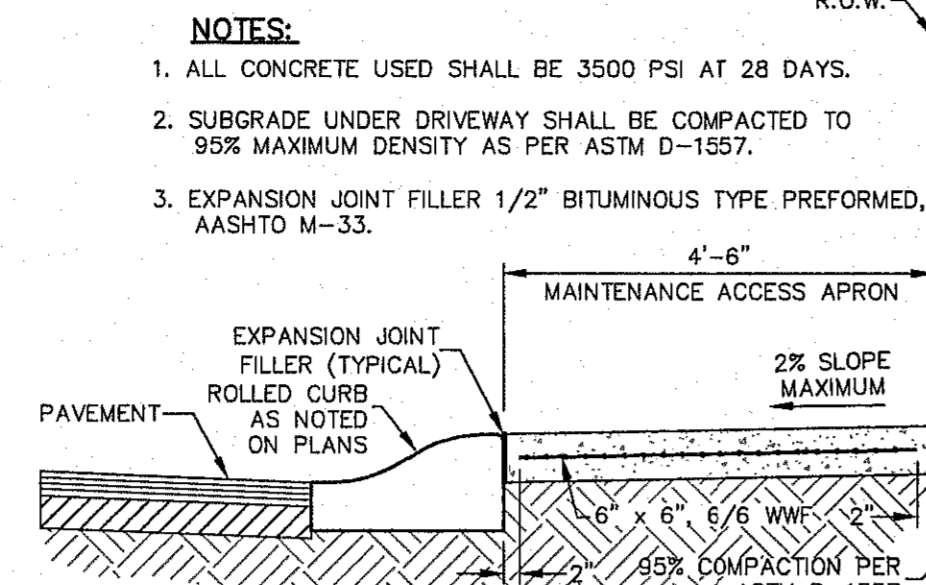
JUNCTURE OF EXISTING SIDEWALK AND NEW SIDEWALK

NOT TO SCALE



TRANSITION FROM STANDARD CURB & GUTTER TO ROLLED CURB

NOTES



MAINTENANCE ACCESS APRON AT TURNING HEEL

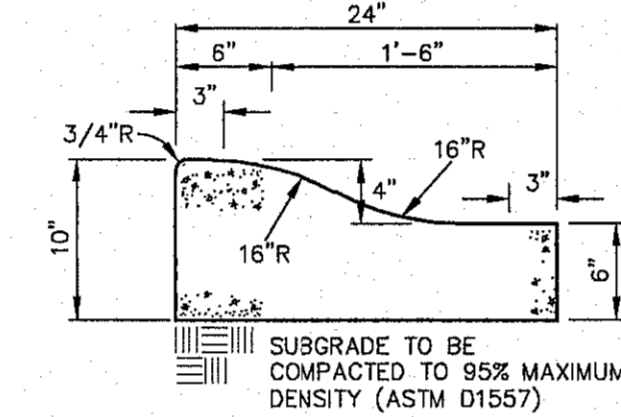
SCALE: 1" = 2'-0"

NOTES:

- CONCRETE FOR CURBS, GUTTERS, & RETURNS SHALL BE 3000 P.S.I. MINIMUM.
- DUMMY JOINT REQUIRED AT 10' O.C.
- EXPANSION JOINTS REQUIRED AT CURB RETURNS. JOINTS TO BE PACKED WITH 1/2" PRE-MOLDED ASPHALT IMPREGNATED EXPANSION MATERIAL OR EQUAL.

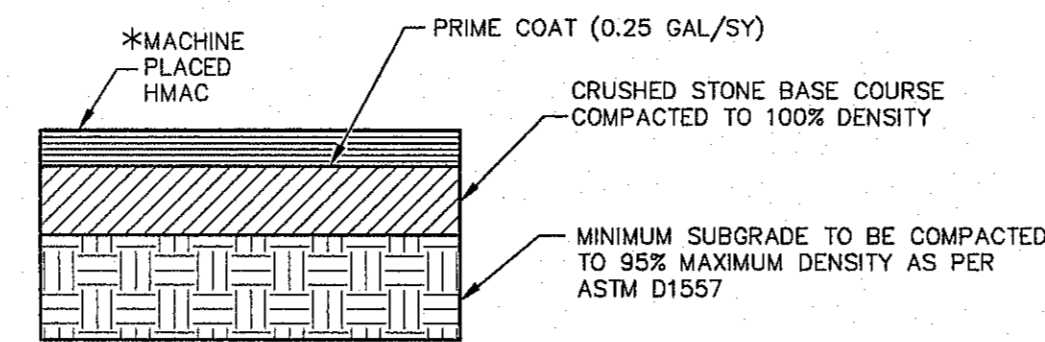
4" ROLLED CURB @ TURNING HEEL

SCALE: 1" = 1'-0"



4" ROLLED CURB @ TURNING HEEL

SCALE: 1" = 1'-0"

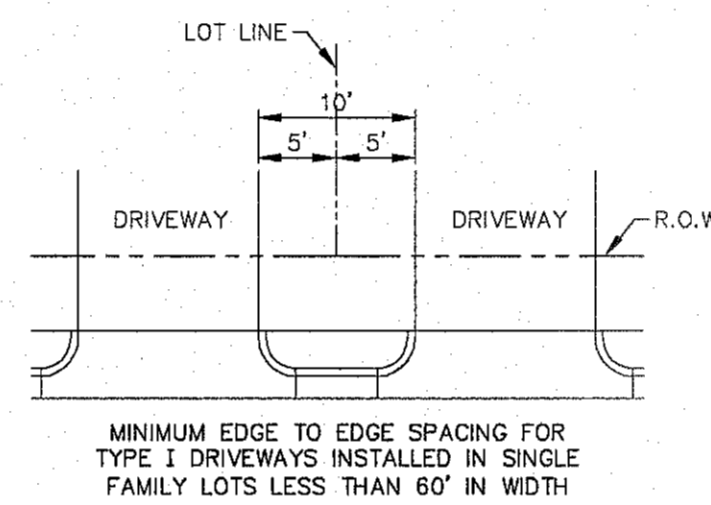


GENERAL H.M.A.C. PAVING NOTES:

- FOR RECOMMENDATIONS REFER TO THE STANDARD PAVEMENT DESIGN BY SPEESOL INC. PROJECT NO. SPG11043, DATED 04 APRIL 2011
- BASE COURSE SHALL MEET THE REQUIREMENTS FOR TYPE "A", GRADE 1 OR 2 MATERIAL ACCORDING TO ITEM 247, FLEXIBLE BASE, AS DESCRIBED IN THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES. ALL THE REQUIREMENTS OF THIS DOCUMENT SHALL BE MET, EXCEPT WHERE DENSITY IS SPECIFIED. THE DENSITY SHALL BE NOT LESS THAN 100% OF ASTM D1557.
- THE SURFACE COURSE SHALL MEET THE REQUIREMENTS FOR (HMAC), TYPOT TYPE "B" AS SPECIFIED IN ITEM 340 H.M.A.C. (HOT MIX ASPHALTIC CONCRETE PAVEMENT), AS DESCRIBED IN THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES. STABILITY SHALL BE NOT LESS THAN 1500 POUNDS, WHEN COMPACTED AT 75 BLOWS. FURTHERMORE, THE MIX SHALL HAVE A FLOW BETWEEN 0.05" AND 0.15", ACCORDING TO THE MARSHALL STABILITY ANALYSIS.
- SUBGRADE TO BE COMPACTED IN 8" LIFTS TO 95% MAXIMUM DENSITY AS PER ASTM D1557.
- FINAL PAVEMENT DESIGN TO BE DETERMINED BASED UPON FINAL CBR TEST RESULTS (REFER TO APPLICABLE SUBDIVISION ORDINANCE-PAVEMENT THICKNESS DESIGN PROCEDURE).
- *IF THE THICKNESS FOR "CBR" VALUES ARE HIGHER THAN MINIMUM PAVEMENT THICKNESS SPECIFIED PER ORDINANCE, THE HIGHER VALUE SHALL BE USED.

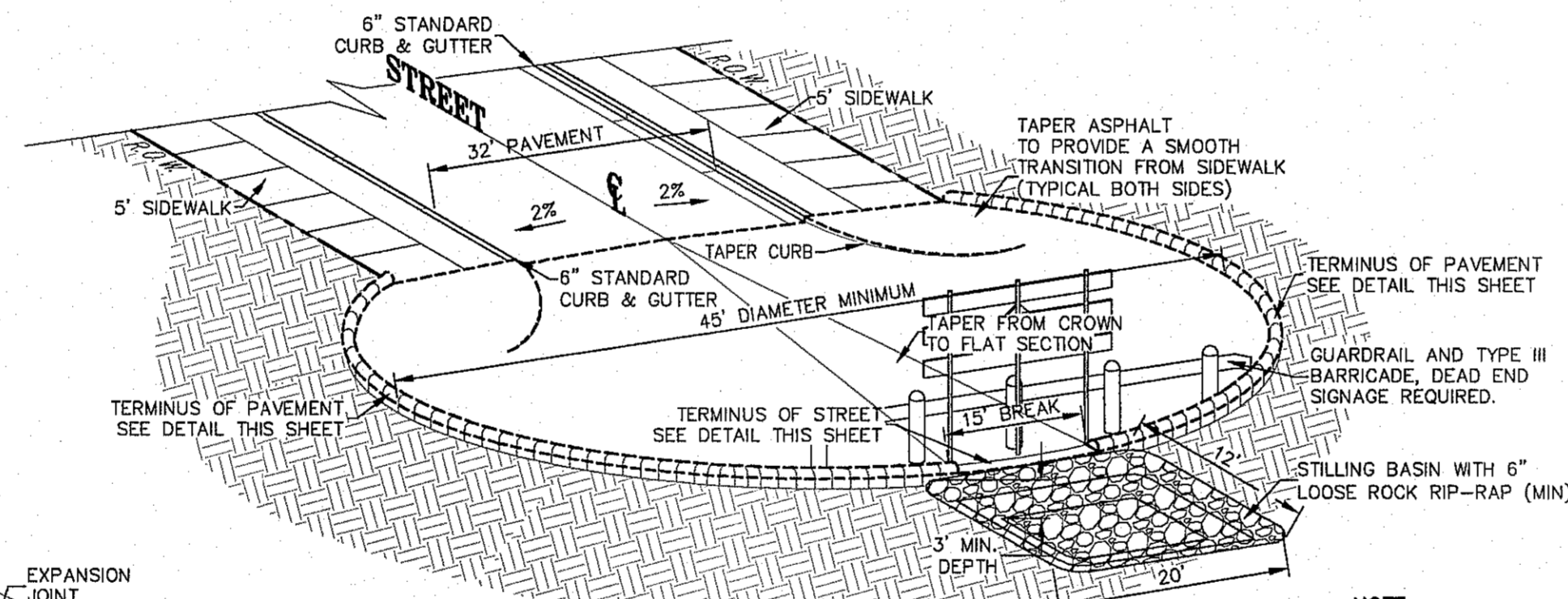
TYPICAL H.M.A.C. PAVEMENT SECTION

N.T.S.



4" ROLLED CURB @ TURNING HEEL

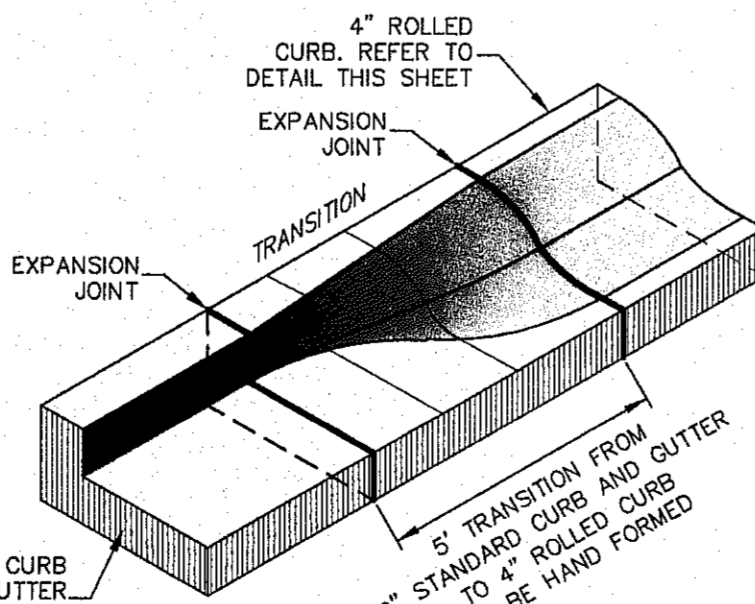
SCALE: 1" = 1'-0"



TEMPORARY TURN AROUND

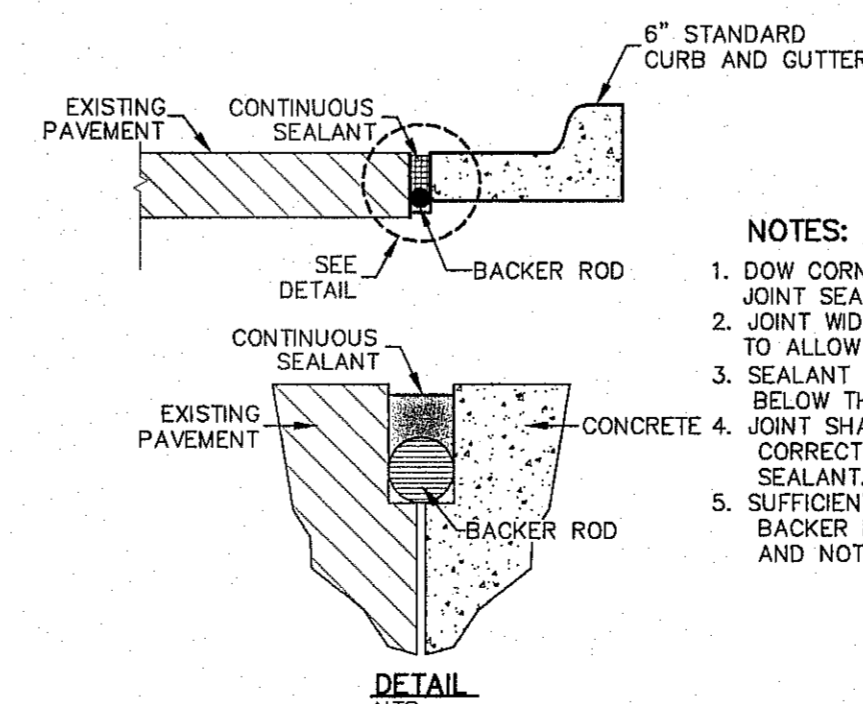
SCALE 1"=12'-0"

NOTE:
TEMPORARY TURN AROUND SHALL BE MAINTAINED BY DEVELOPER UNTIL SUCH TIME THAT PATH IS EXTENDED AS A THROUGH STREET.



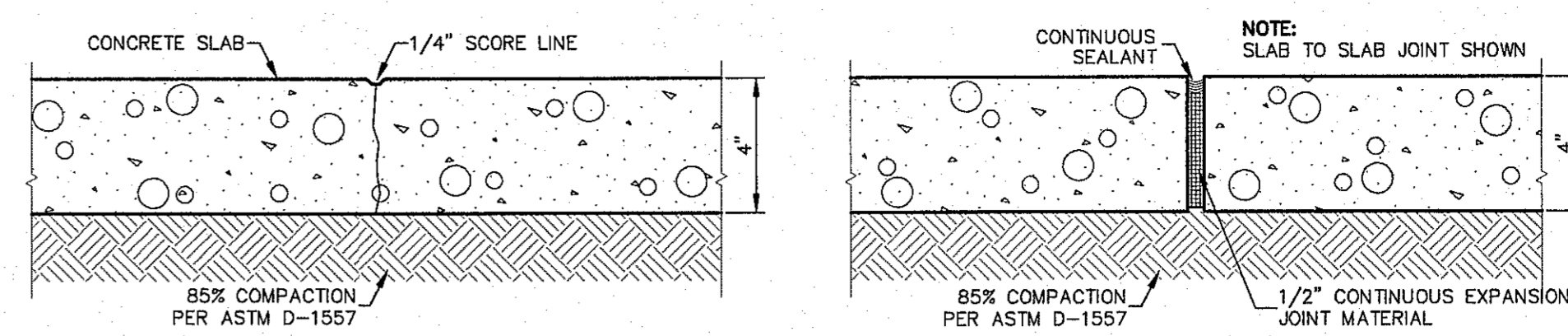
TRANSITION FROM 6" STANDARD CURB & GUTTER TO 4" ROLLED CURB

SCALE: 1/2" = 1'-0"



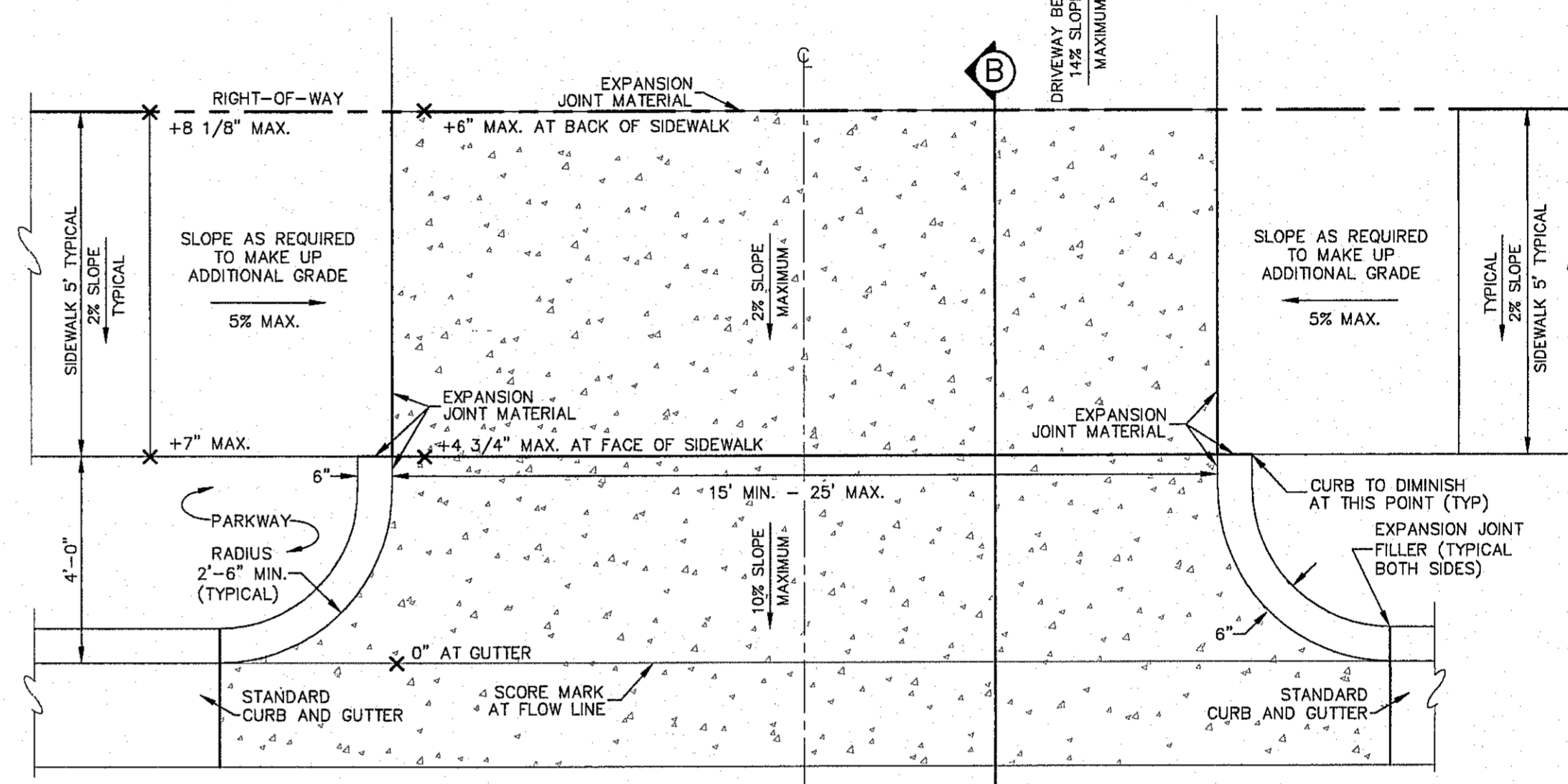
JUNCTURE OF EXISTING PAVEMENT AND NEW CURB & GUTTER

SCALE: 1"=2'



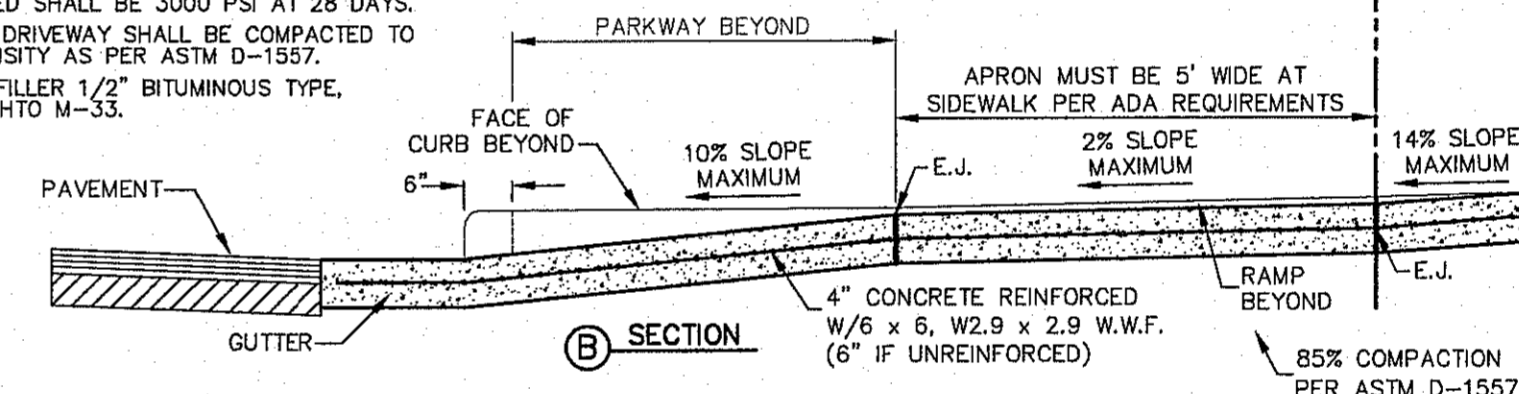
TYPICAL SIDEWALK JOINTS

NOT TO SCALE



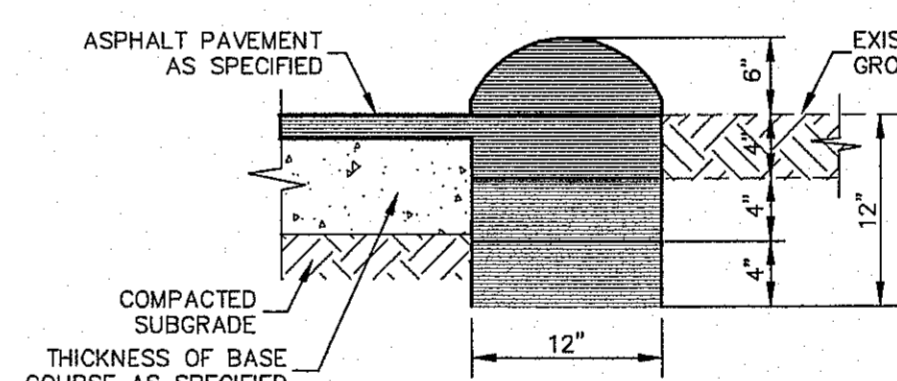
NOTES:

- ALL CONCRETE USED SHALL BE 3000 PSI AT 28 DAYS.
- SUBGRADE UNDER DRIVEWAY SHALL BE COMPACTED TO 95% MAXIMUM DENSITY AS PER ASTM D-1557.
- EXPANSION JOINT FILLER 1/2" BITUMINOUS TYPE, PRE-FORMED, AASHTO M-33.



TYPICAL RESIDENTIAL DRIVEWAY BY BUILDER

SCALE: 1"=2'-0"

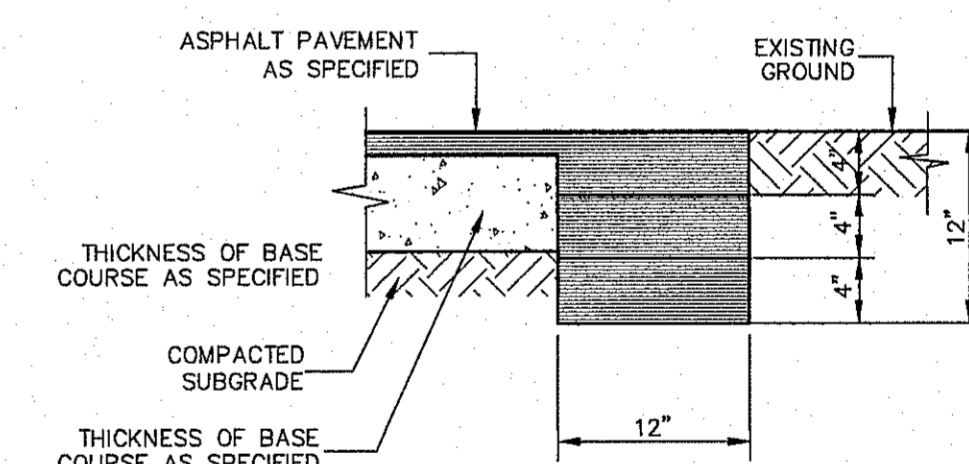


NOTE:

- TERMINUS MUST BE CONSTRUCTED IN 4" LIFTS. FINAL LIFT MUST BE PLACED WITH FINAL PAVEMENT COURSE.

TERMINUS OF PAVEMENT

SCALE 1"=1'-0"

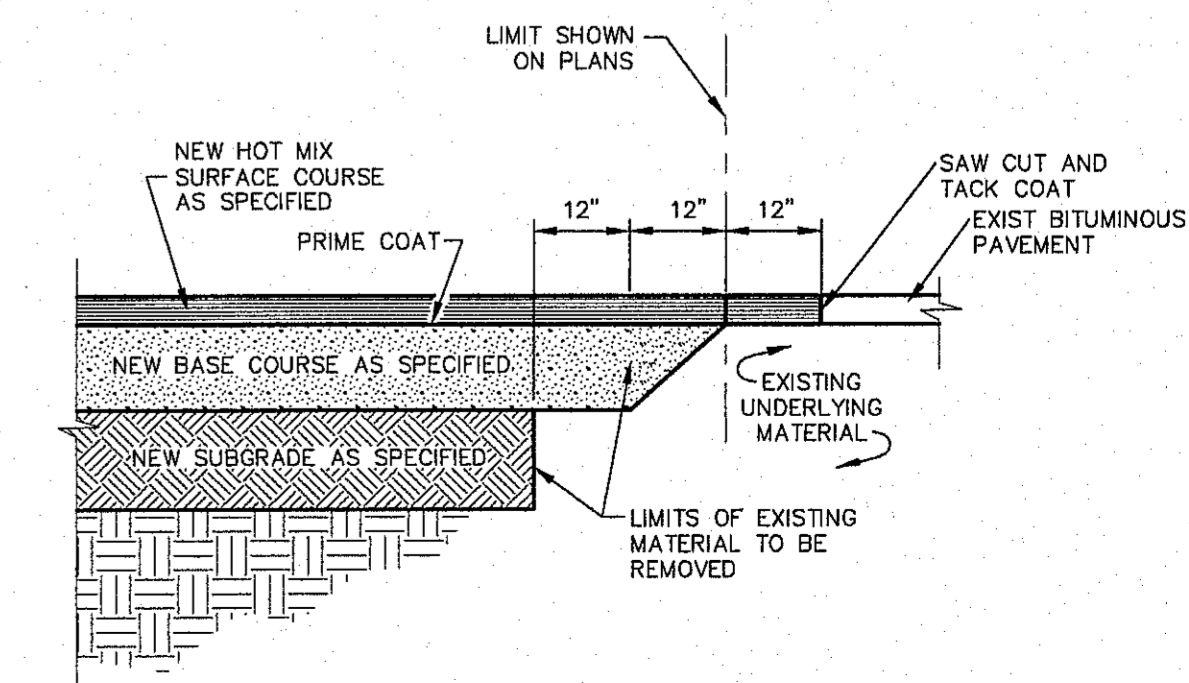


NOTE:

- TERMINUS MUST BE CONSTRUCTED IN 4" LIFTS. FINAL LIFT MUST BE PLACED WITH FINAL PAVEMENT COURSE.

TERMINUS OF STREET

SCALE 1"=1'-0"



JUNCTURE OF NEW FLEXIBLE AND EXISTING FLEXIBLE PAVEMENT

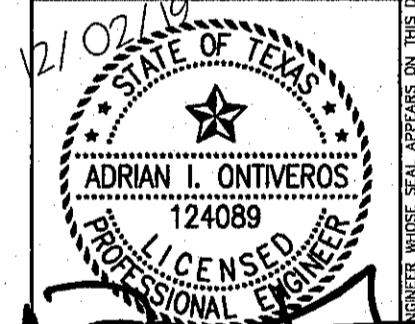
SCALE: 1"=2'-0"

NO.	DATE	DESCRIPTION	BY
1	09/23/19	First City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
3	12/02/19	Final City Submittal	AHO

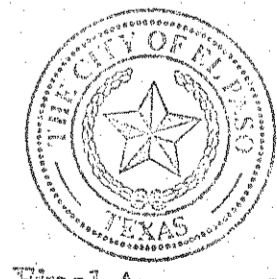
WARNING!
BEFORE YOU DIG
CONTRACTOR SHALL
FIELD LOCATE ALL
EXISTING UNDERGROUND
IMPROVEMENTS IN
PROJECT AREA

BEFORE YOU DIG - CALL
EL PASO ELECTRIC COMPANY 843-5720
AT&T 1-800-343-1234
TEXAS GAS SERVICE 1-800-343-1234
TEXAS GAS SERVICE 544-3300
PUBLIC SERVICE COMPANY 544-3300
AFTER HOURS EMERGENCY (EPW) 562-8411
TEXAS EXCAVATION SAFETY SYSTEM 594-3775
KINDER-MORGAN EPAC PIPELINES 1-800-244-3374
EL PASO COUNTY WATER AND WASTEWATER 1-800-238-3764
EL PASO COUNTY WATER AND WASTEWATER 1-800-238-3764
EL PASO COUNTY WATER AND WASTEWATER 1-800-238-3764

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El Paso, Texas 79912
Tel: (915) 877-4155
Fax: (915) 877-4334
www.csaengineers.com

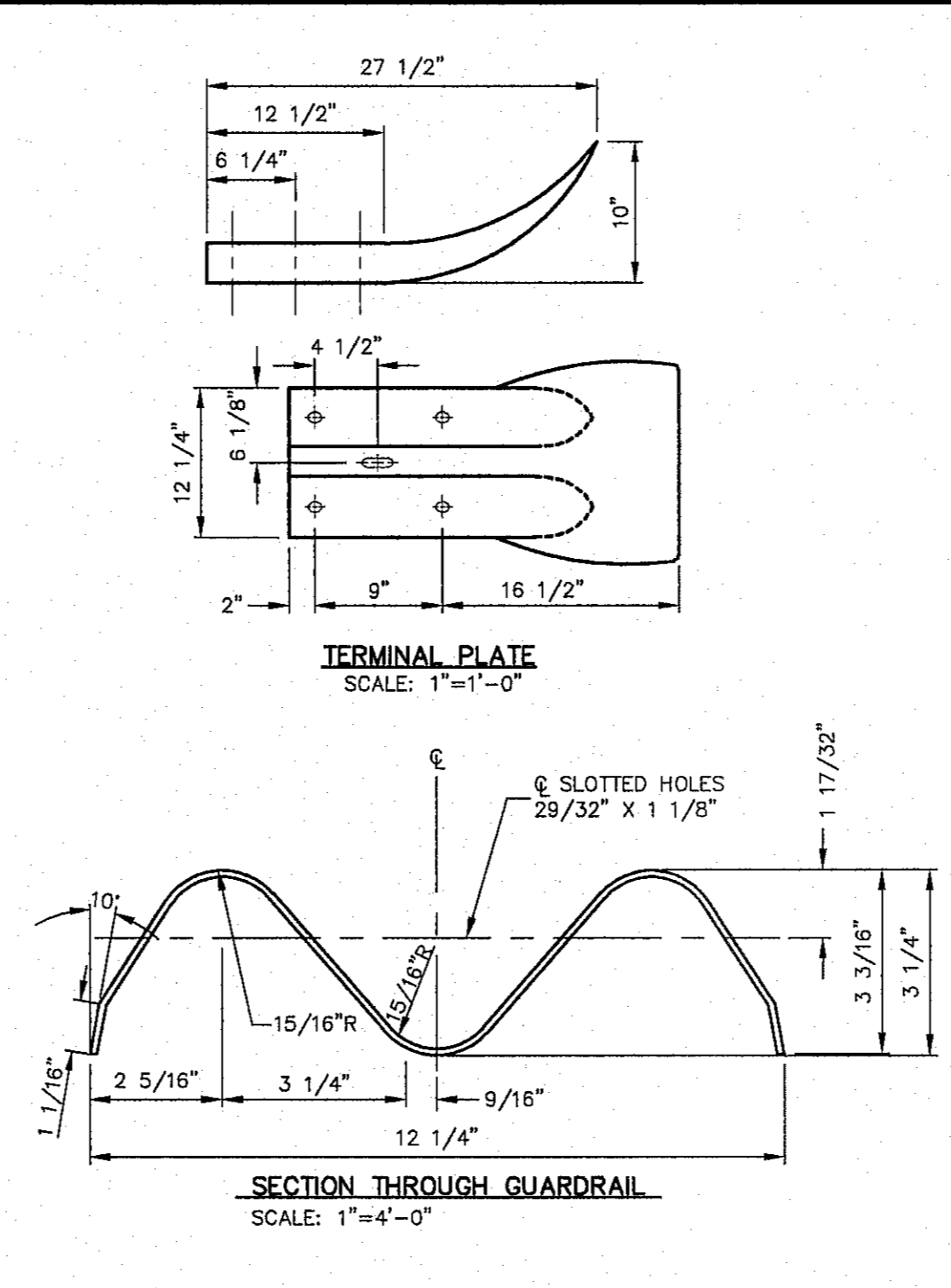
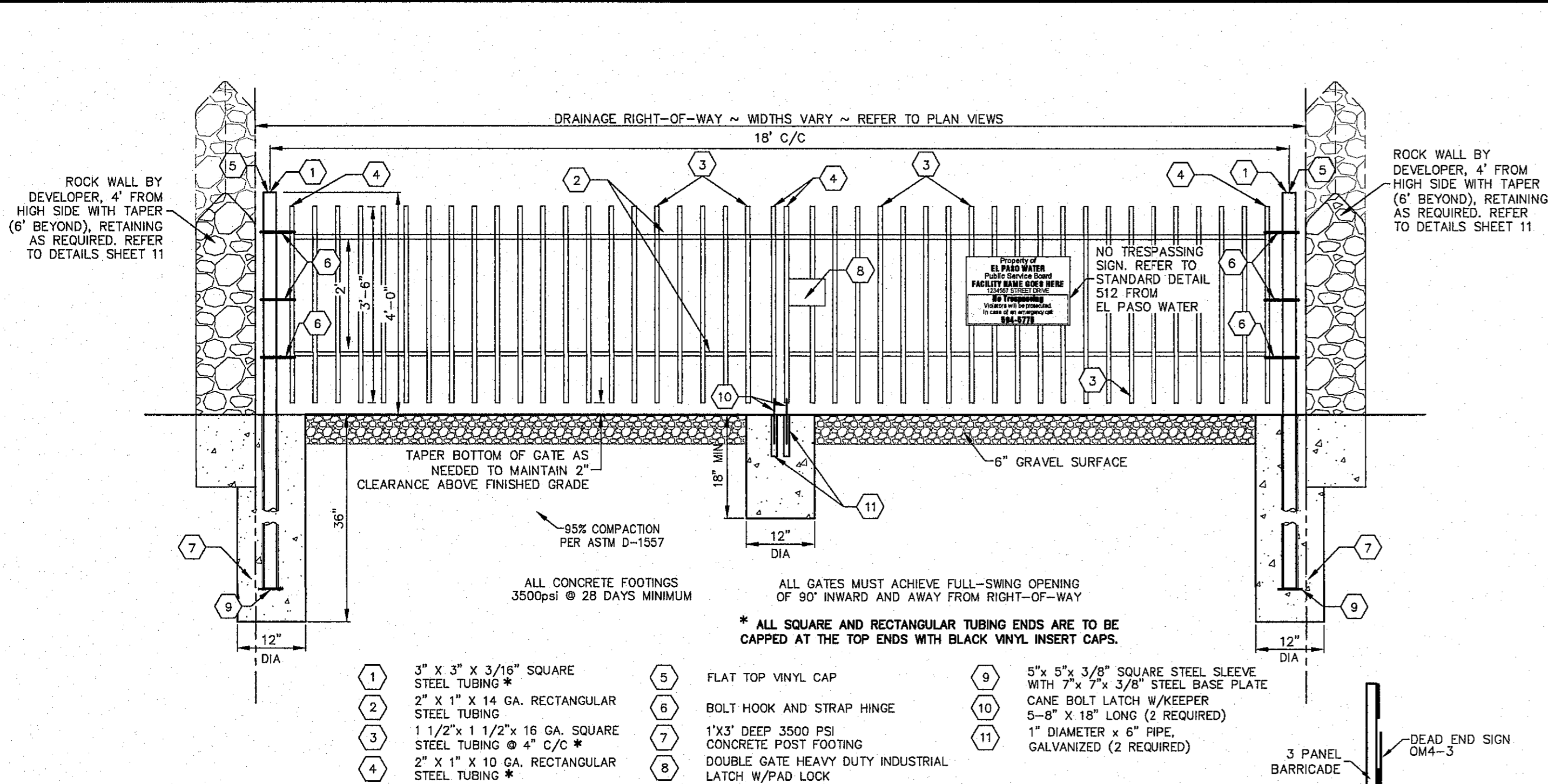


CIMARRON CANYON UNIT FOUR SUBMISSION

SHEET TITLE

STANDARD DETAILS

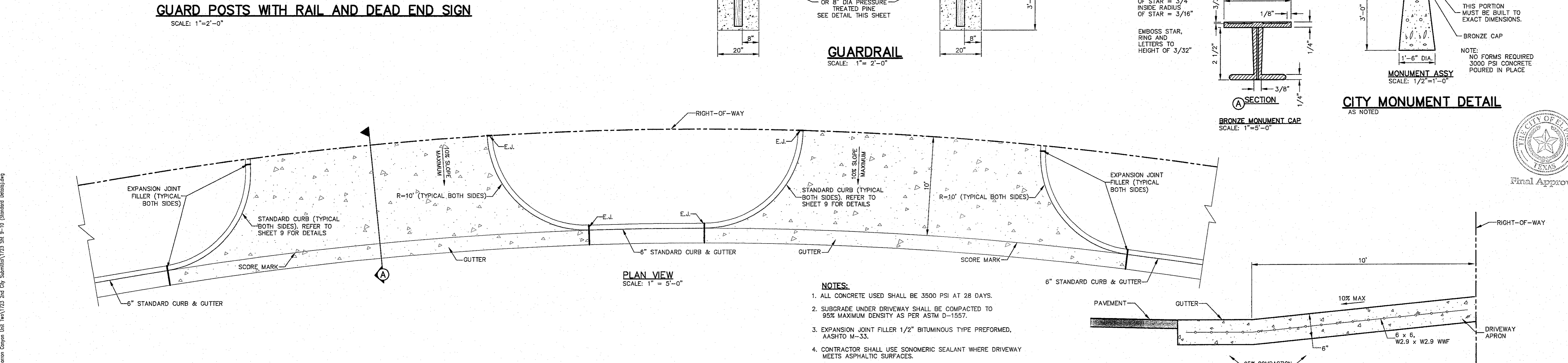
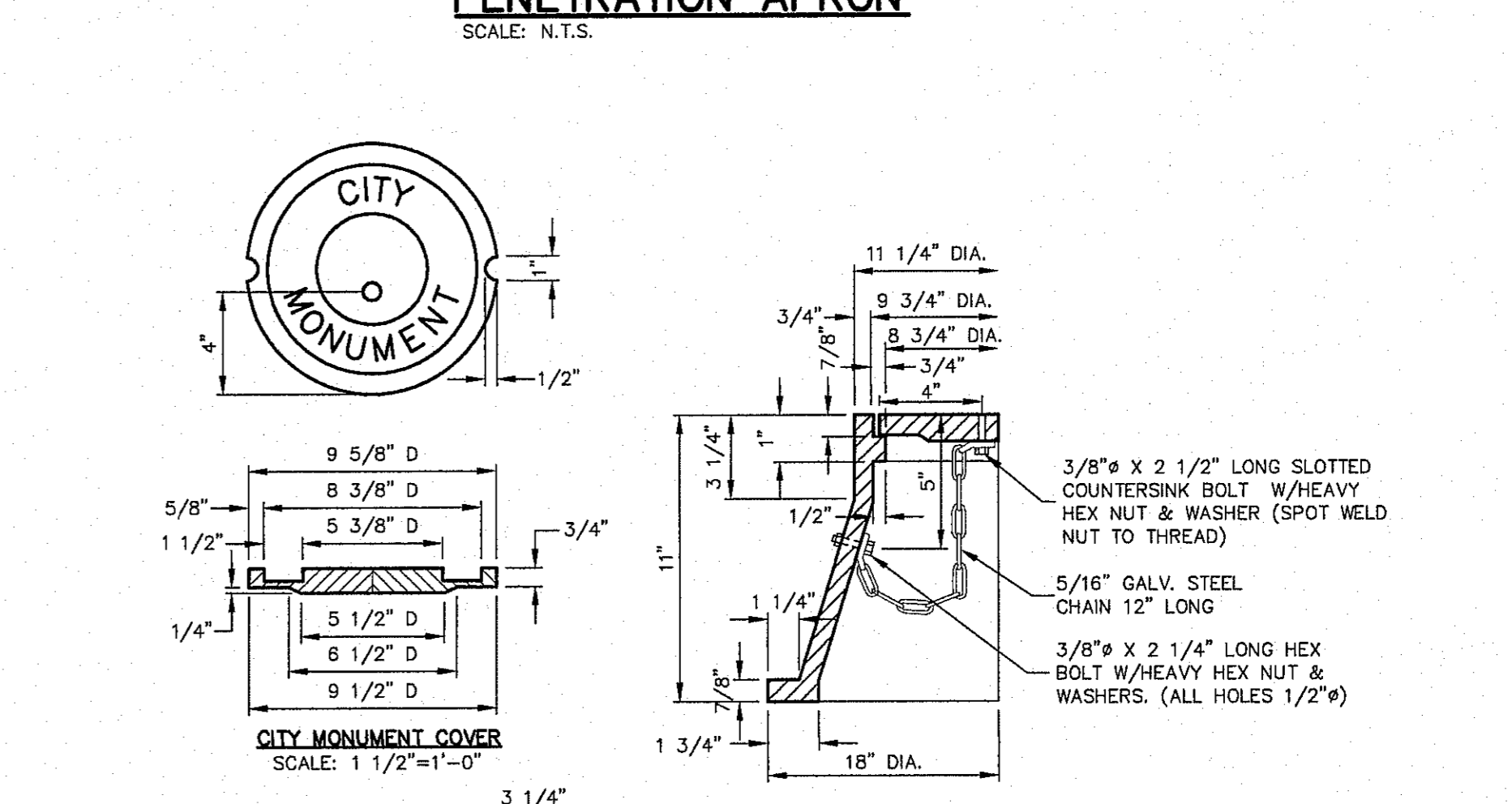
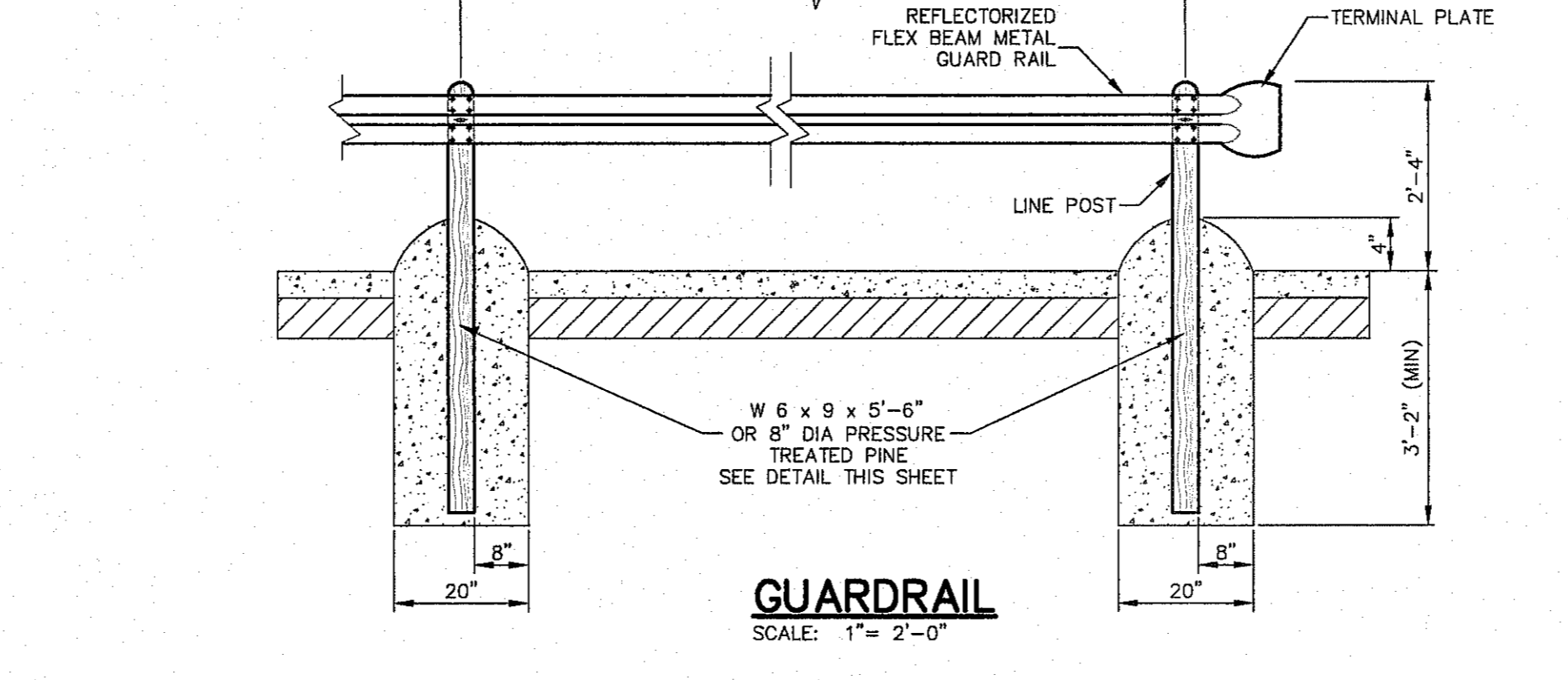
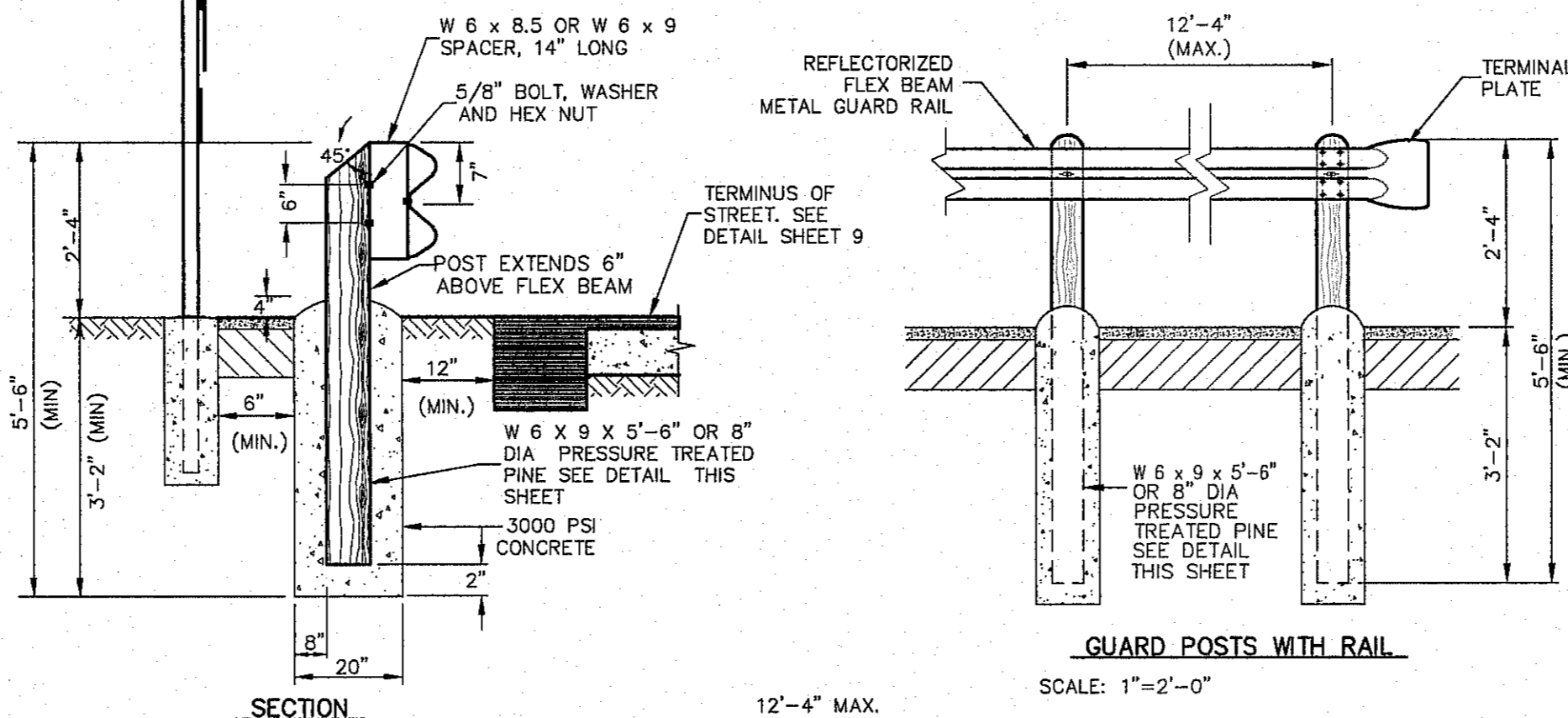
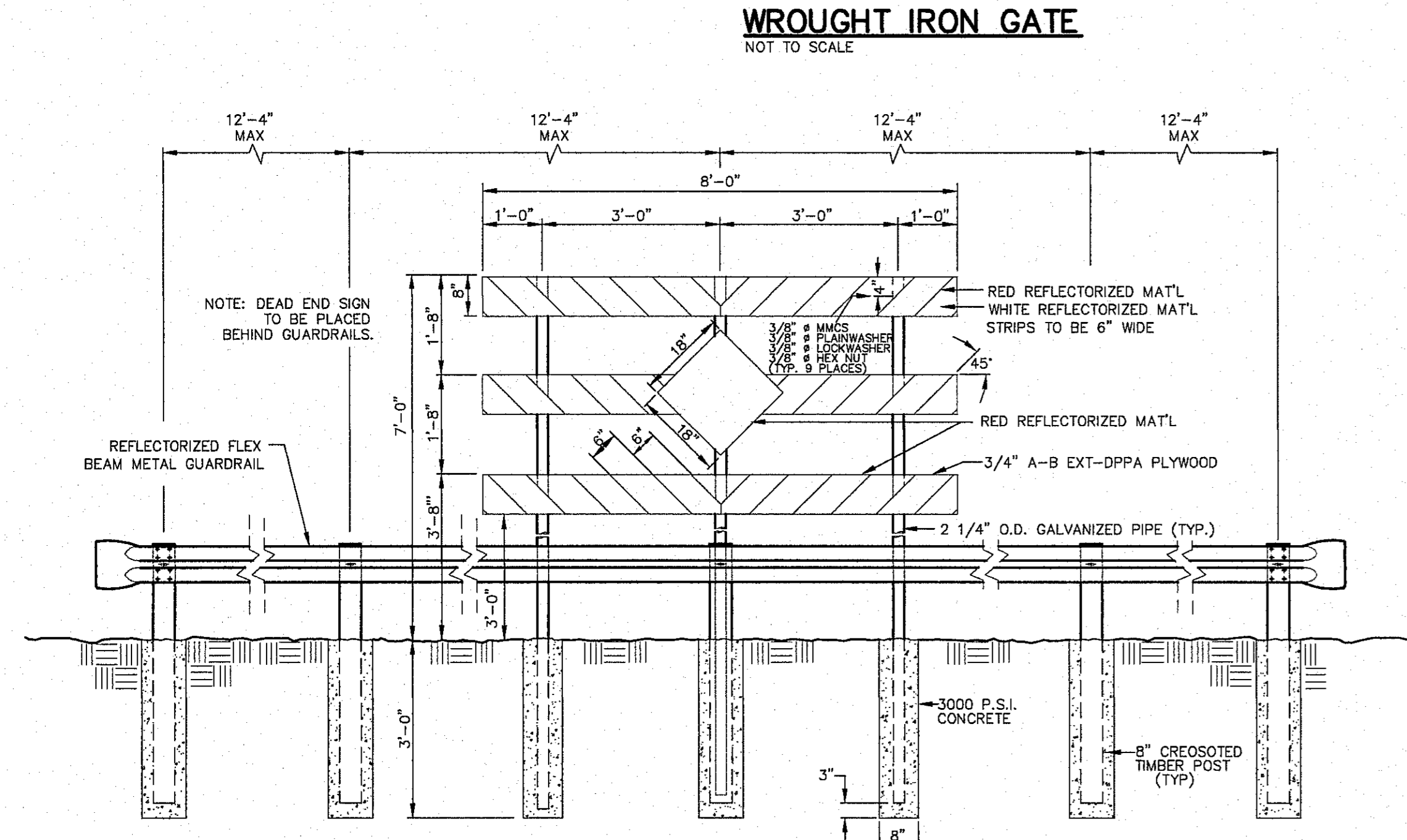
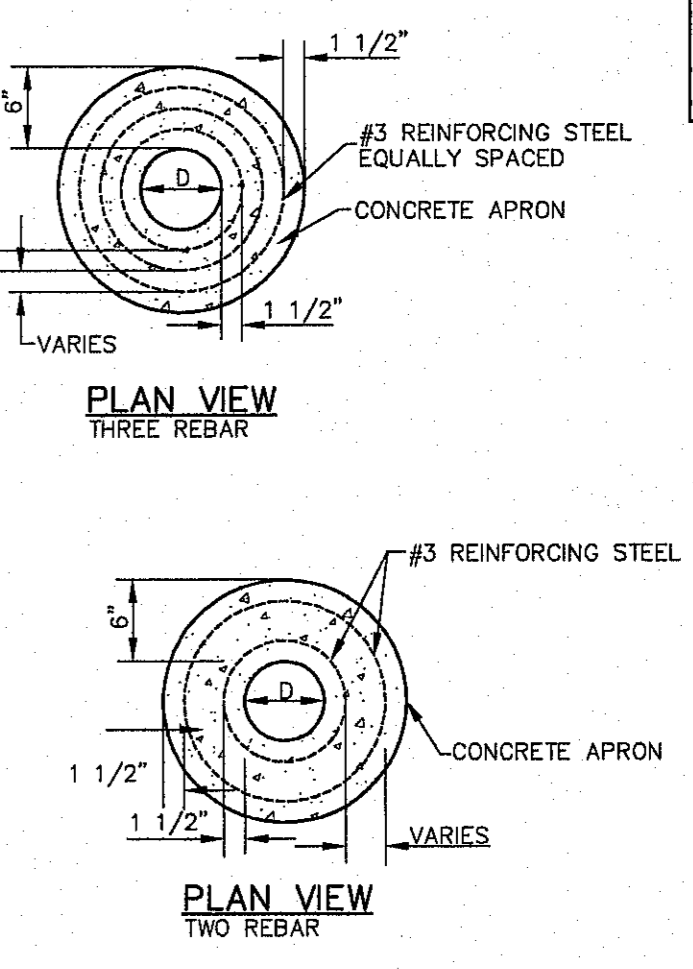
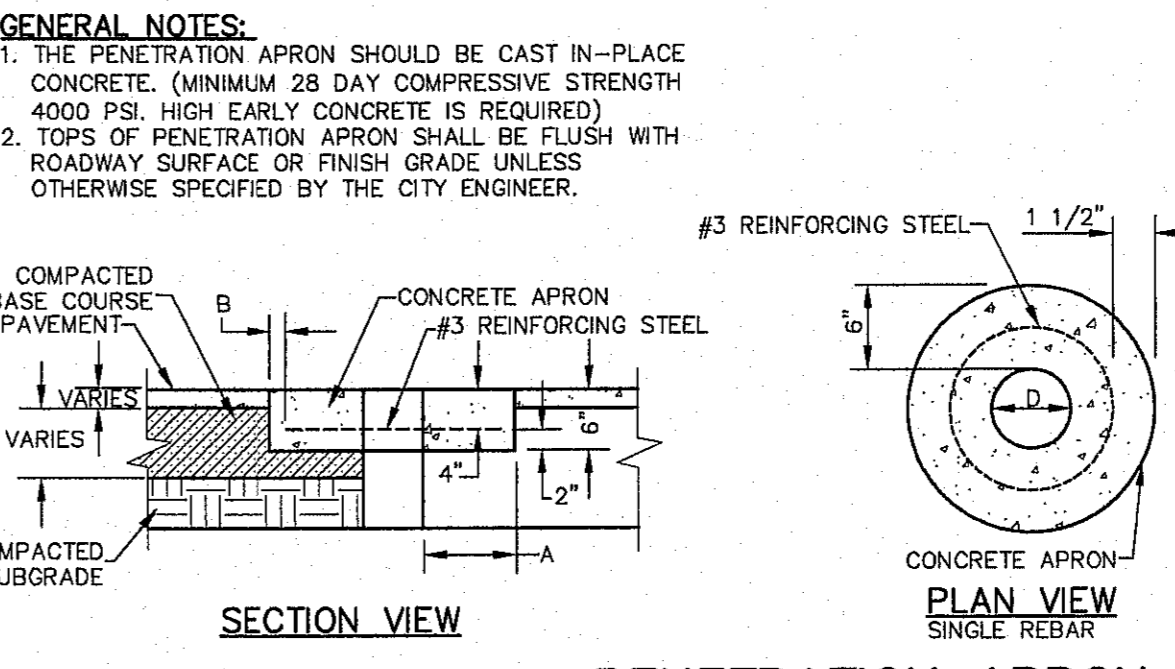
DOB	1723
DESIGN BY	JUN 10
COB-SM	08/08/18
DRAWN BY	SCALE
AHO	AS NOTED
CHECKED BY	SCALE
SHEET NO.	9
TOTAL SHEETS	10 OF 31



CONCRETE APRON FOR CIRCULAR PENETRATIONS IN ASPHALT PAVEMENT				
"D" DIAMETER OF PENETRATION (INCHES)	"A" CONCRETE HORIZONTAL DIMENSION FROM PENETRATION (INCHES)	NUMBER OF NO. 3 REINFORCING STEEL BARS (INCHES)	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE APRON TO CENTER OF NEAREST REBAR (INCHES)	"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR (INCHES)
0 TO 6.00	8	1	1 1/2	1 1/2
6.01 TO 18.00	8	2	1 1/2	1 1/2
18.01 AND OVER	12	3	1 1/2	1 1/2

CONSTRUCTION NOTES:

- ANY DISTURBED SUBGRADE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 95% DENSITY ± 3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
- ANY DISTURBED COARSE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 100% DENSITY ± 2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
- PROVIDE A MINIMUM OF 1 1/2" OF CONCRETE COVER FOR ALL REINFORCEMENT STEEL.
- REINFORCING SHALL MEET ASTM C-478 AND TRAFFIC LOADING (HS-20).
- NO. 3 REINFORCING STEEL HOOPS SHALL BE SPACED EQUALLY.



NOTES:

- ALL CONCRETE USED SHALL BE 3500 PSI AT 28 DAYS.
- SUBGRADE UNDER DRIVEWAY SHALL BE COMPACTED TO 95% MAXIMUM DENSITY AS PER ASTM D-1557.
- EXPANSION JOINT FILLER 1/2" BITUMINOUS TYPE PREFORMED, AASHTO M-33.
- CONTRACTOR SHALL USE SONOMERIC SEALANT WHERE DRIVEWAY MEETS ASPHALTIC SURFACES.

NO.	DESCRIPTION	DATE	BY
1	Final City Submitter	12/02/19	AHO
2	Second City Submitter	11/07/19	AHO
3	Final City Submitter	09/23/19	AHO

WARNING! BEFORE YOU DIG CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

BEFORE YOU DIG - CALL

EL PASO ELECTRIC COMPANY 443-3720

AT&T C&S SERVICE 1-800-DIG-LESS

UTS EMERGENCY HOTLINE 562-8411/562-2003

PUBLIC SERVICE BOARD (WATER & SEWER) 1-800-DIG-LESS

TEXAS EMERGENCY (EPW) 978-7410

TEXAS EXCAVATION SAFETY SYSTEM 1-800-344-4377

KINDER-MORGAN EPIC PIPELINES 1-800-238-4333

EL PASO NATURAL GAS 1-800-344-4377

EL PASO WATER MAINS & MAINTENANCE 1-800-344-4377

STATE OF TEXAS

ADRIAN I. ONTIVEROS

124089

PROFESSIONAL ENGINEER

CSA design group, inc.

1845 Northwest Dr. Ste C
El Paso, Texas 79912
tel [915] 877.4155
fax [915] 877.4334
www.csadesigngroup.com

CIMARRON CANYON UNIT FOUR SUBDIVISION

SHEET TITLE

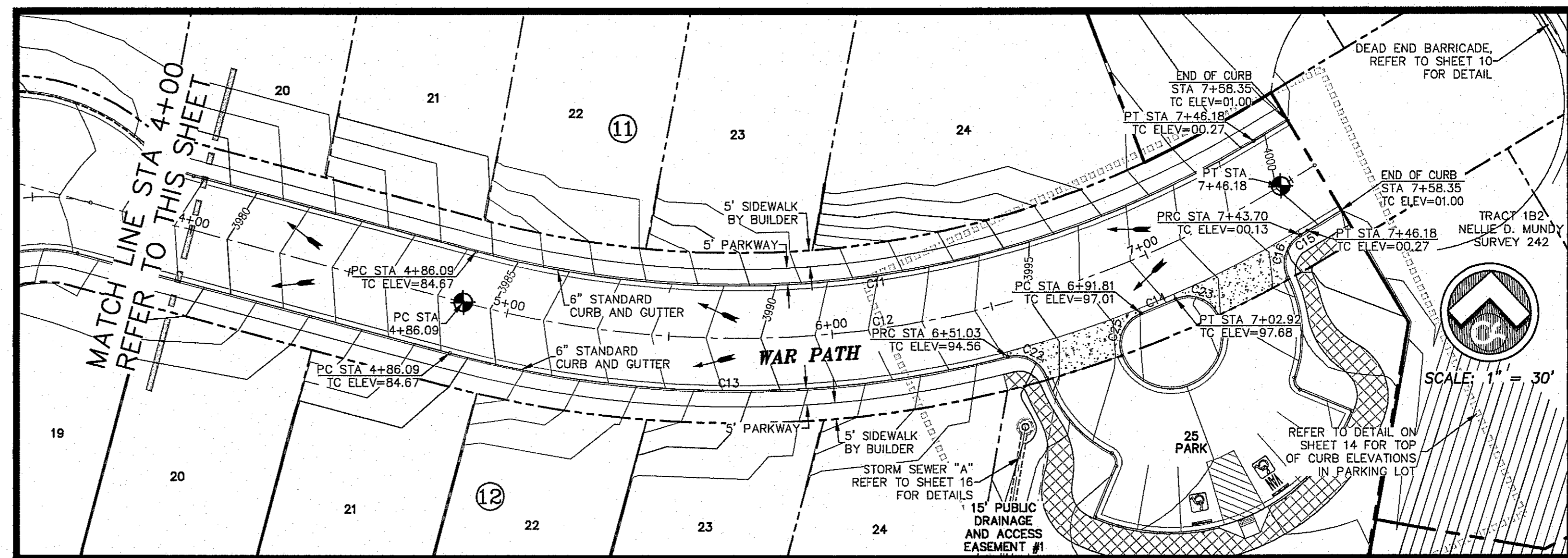
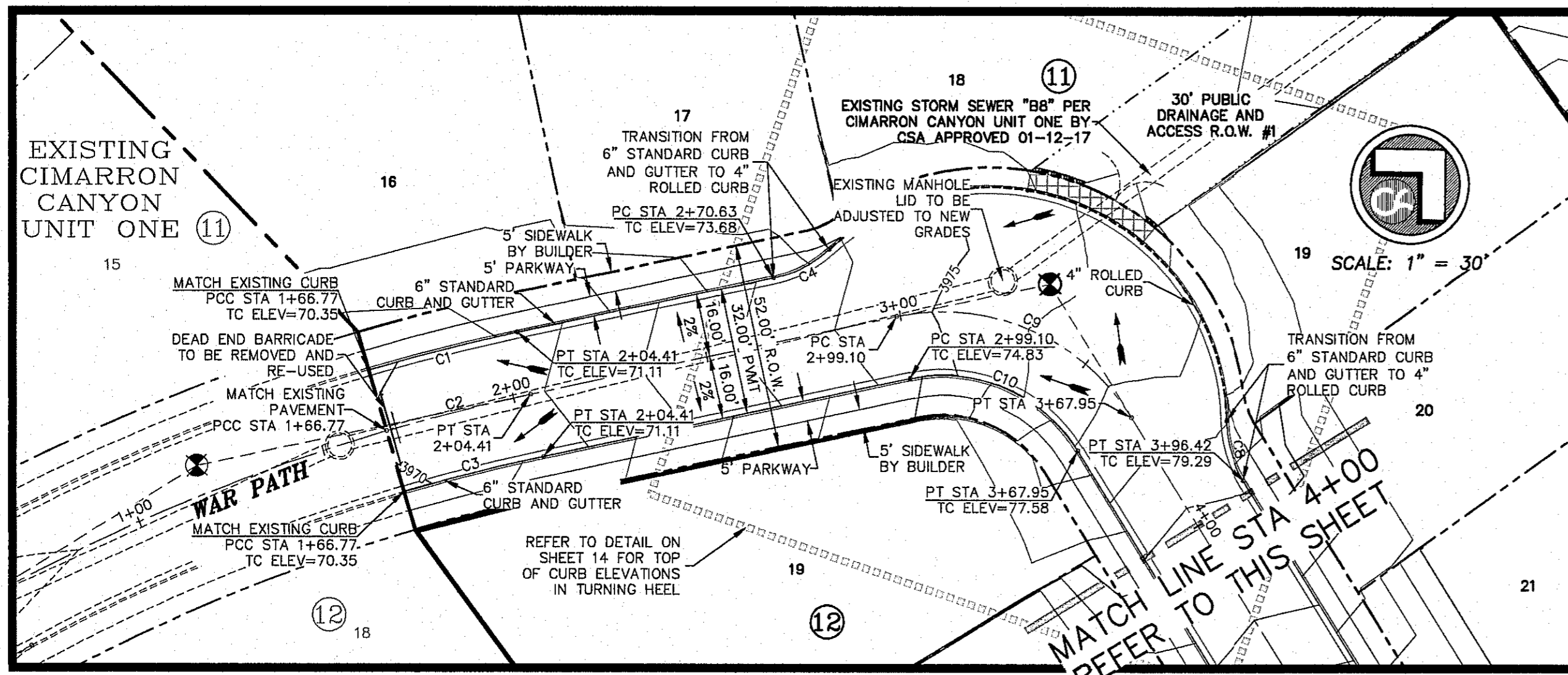
STANDARD DETAILS

JOB NO.	1723
DATE	08/08/18
SCALE	AS NOTED

SHEET NO. **10**

11 of 31

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 1723 Cimarron Canyon Unit Four Submitter 1/19 2nd City Submitter 1/19 3rd City Submitter 1/19 4th City Submitter 1/19



ALL EXISTING AND PROPOSED SIDEWALKS, BARRIER FREE RAMPS, HANDICAP PARKING, DRIVEWAY CROSSWALKS, DRIVEWAYS AND ACCESSIBLE ROUTES SHALL COMPLY WITH A.D.A., T.A.S. AND CITY OF EL PASO REQUIREMENTS. EXISTING INFRASTRUCTURE NOT COMPLYING SHALL BE REMOVED AND REPLACED TO MEET STANDARDS.

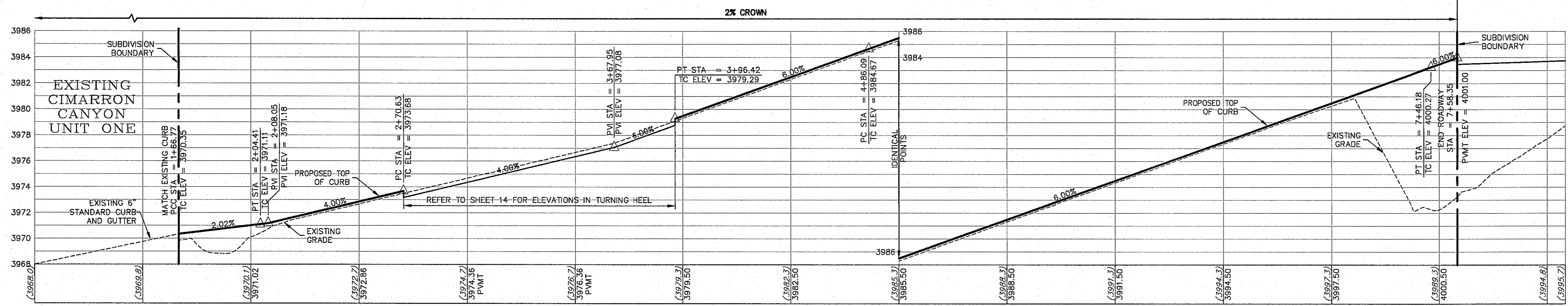
ALL SIDEWALKS TO BE INSTALLED BY BUILDER UNLESS NOTED OTHERWISE

ALL ACCESSIBLE RAMPS WITHIN THE RIGHT-OF-WAY TO BE INSTALLED BY THE DEVELOPER

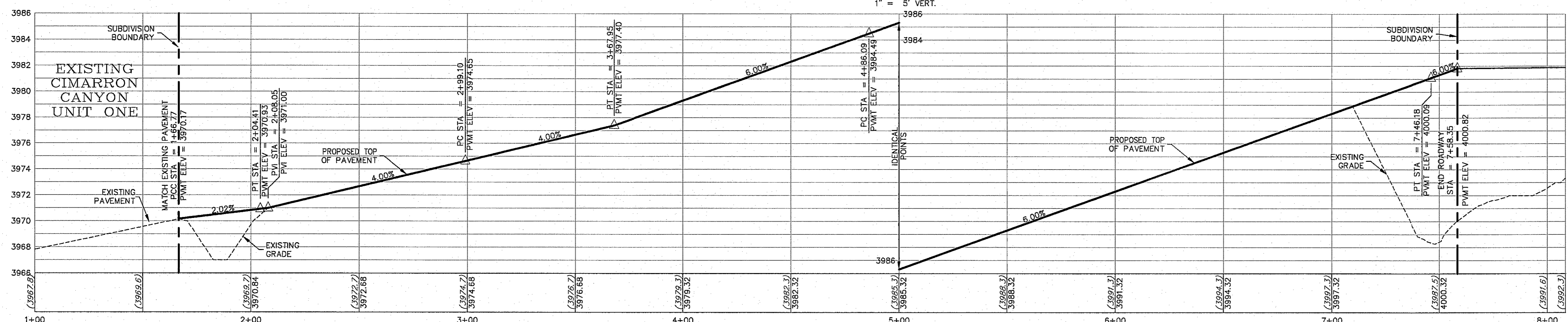
REFER TO SHEET 12 FOR ACCESSIBLE RAMP DETAILS

SIDEWALK BY DEVELOPER

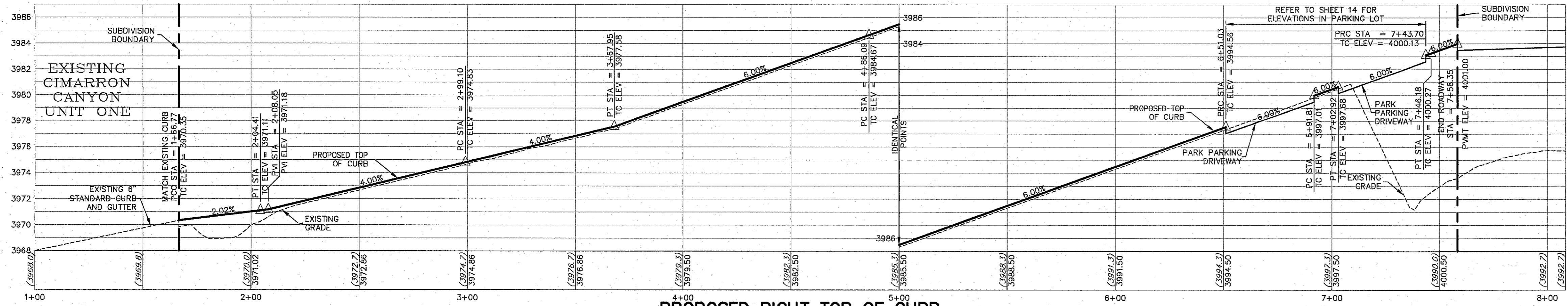
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	516.00	39.85	19.43	38.84	S30°05'13"W	41°18'49"
C2	500.00	37.64	18.83	37.64	S30°05'13"W	41°18'49"
C3	484.00	36.44	18.23	36.43	S30°05'13"W	41°18'49"
C4	30.00	16.01	8.20	15.82	N16°57'33"E	30°34'08"
C8	30.00	16.01	8.20	15.82	S62°01'56"E	30°34'08"
C9	56.00	68.85	39.53	64.59	S67°27'49"W	70°26'22"
C10	40.00	49.18	28.24	46.14	S67°27'49"W	70°26'22"
C11	309.00	247.29	130.70	240.74	N79°45'24"E	45°51'11"
C12	325.00	260.08	137.46	253.21	N79°45'24"E	45°51'11"
C13	341.00	173.06	88.44	171.21	N88°08'39"E	29°04'40"
C14	341.00	11.66	5.83	11.66	N65°26'11"E	1°57'32"
C15	341.00	2.60	1.30	2.60	N57°02'56"E	0°28'15"
C16	10.00	15.00	9.31	13.63	S141°18'36"W	85°54'56"
C22	10.00	15.00	9.31	13.63	N63°26'13"W	85°54'56"
C23	10.00	15.79	10.09	14.20	N701°7'33"W	90°29'23"
C25	10.00	15.79	10.09	14.20	S211°01'15"W	90°29'23"



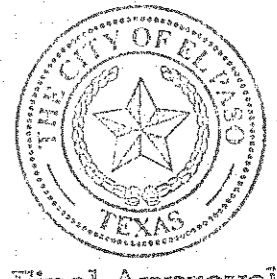
PROPOSED LEFT TOP OF CURB



PROPOSED CENTERLINE TOP OF PAVEMENT



PROPOSED RIGHT TOP OF CURB



LEGEND

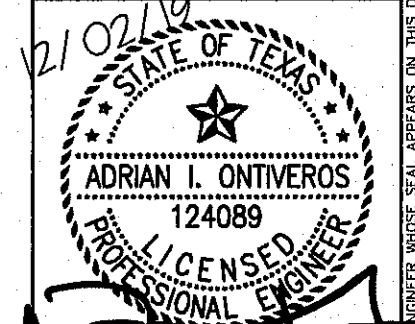
- LOT LINE
- UTILITY & SIDEWALK EASEMENT
- CENTER LINE OF STREET
- STREET R.O.W.
- DRAINAGE & UTILITY R.O.W.
- 4" ROLLED CURB & GUTTER
- SUBDIVISION BOUNDARY LINE
- PROPOSED TOP OF CURB FINISHED GRADES
- (3729.2) EXISTING GRADE
- PROPOSED TOP OF CURB ELEVATION
- PWMT=08.65 PROPOSED PAVEMENT ELEVATION
- DIRECTION OF RUNOFF FLOW
- HIGH POINT
- LOW POINT
- POINT OF INTERSECTION
- 50' TRANSITION AT INTERSECTION
- PROPOSED CITY MONUMENT

NO.	DATE	DESCRIPTION	BY
1	09/23/19	First City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
3	12/02/19	Final City Submittal	AHO

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EL PASO GAS SERVICE 1-800-DIG-TESS
AT&T 1-800-DIG-TESS
TEXAS GAS SERVICE 644-6300
UTILITY SERVICE 644-6300
PUBLIC SERVICE BOARD (WATER & SEWER) 562-8417
AFTER HOURS EMERGENCY (EPW) 594-5775
TEXAS EXCAVATION SAFETY SYSTEM 1-800-244-6377
KINDER-MORGAN EPWC PIPELINES 1-800-238-3764
EL PASO STREETS AND MAINTENANCE 1-800-212-0151
EL PASO STREETS, SIGNALS, STREET LIGHTS AND TRAFFIC SIGNALS 1-800-212-0151

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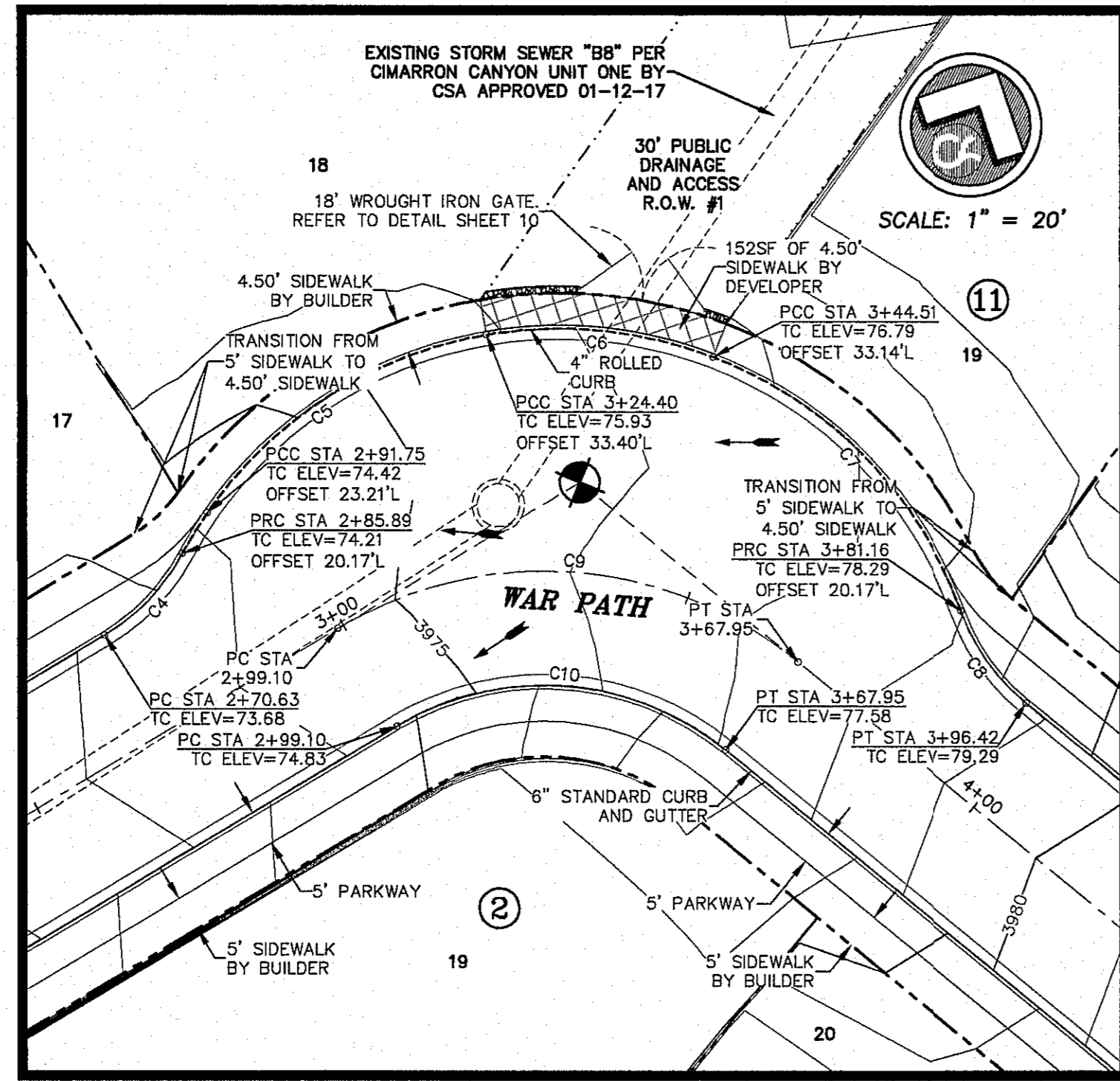
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Texas Registered Engineering Firm F-997
1845 Northwestern Dr. Ste C
El Paso, Texas 79912
Tel (915) 877.4155
Fax (915) 877.4334
www.csaengineers.com

CIMARRON CANYON
UNIT FOUR
SUBDIVISION

SHEET TITLE
**WAR PATH
PLAN AND
PROFILE**

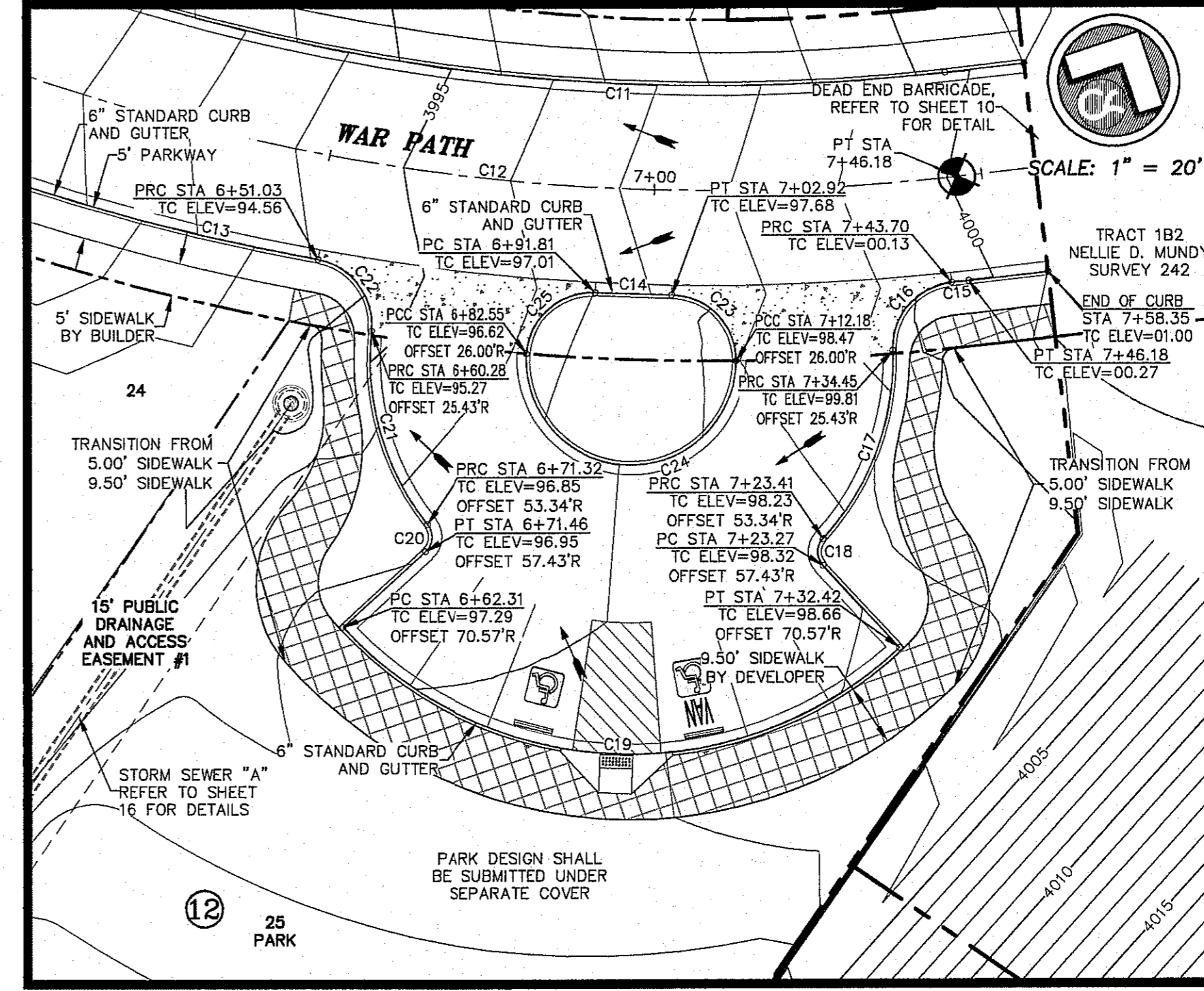
COB	1723
DESIGN BY	JOB #
COB-SM	08/08/18
DATE	
AHO	AS NOTED
CHECKED BY	DATE

13
SHEET NO.
14 OF 31



DETAIL
SCALE: 1" = 20'

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C4	30.00	16.01	8.20	15.82	N16°57'33"E	30°34'08"
C5	60.00	54.23	29.13	52.41	S27°34'09"W	51°47'19"
C6	60.00	32.29	16.54	31.90	S68°52'44"W	30°49'51"
C7	60.00	51.27	27.32	49.72	N71°13'36"W	48°57'29"
C8	30.00	16.01	8.20	15.82	S62°01'56"E	30°34'08"
C9	55.00	68.85	39.53	64.59	S87°27'48"W	70°28'22"
C10	40.00	49.18	28.24	45.14	S87°27'49"W	70°28'22"
C11	309.00	247.29	130.70	240.74	N79°45'24"E	45°51'11"
C12	325.00	260.09	137.46	253.21	N79°45'24"E	45°51'11"
C13	341.00	173.06	88.44	171.21	N88°08'39"E	29°04'40"
C14	341.00	11.66	5.83	11.66	N65°26'11"E	1°57'32"
C15	341.00	2.60	1.30	2.60	N57°02'56"E	0°26'19"
C16	10.00	15.00	9.31	13.63	S141°18'36"W	85°54'56"
C17	40.00	31.32	16.51	30.53	N06°12'51"W	44°52'03"
C18	3.00	4.50	2.80	4.09	S26°46'48"E	85°59'58"
C19	60.00	94.70	60.45	85.17	N65°26'11"E	90°25'58"
C20	3.00	4.50	2.80	4.09	N22°20'49"W	85°59'58"
C21	40.00	31.32	16.51	30.53	S42°54'46"E	44°52'03"
C22	10.00	15.00	9.31	13.63	N63°26'13"W	85°54'56"
C23	10.00	15.79	10.09	14.20	N70°17'53"W	90°23'23"
C24	16.00	50.54	1871.93	32.00	N65°26'11"E	180°58'46"
C25	10.00	15.79	10.09	14.20	S21°10'16"W	90°23'23"



DETAIL
SCALE: 1" = 20'

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ALL ACCESSIBLE RAMPS WITHIN THE RIGHT-OF-WAY TO BE INSTALLED BY THE DEVELOPER.

REFER TO SHEET 12 FOR ACCESSIBLE RAMP DETAILS.

SIDEWALK BY DEVELOPER

Final Approval

- LEGEND**
- LOT LINE
 - UTILITY & SIDEWALK EASEMENT
 - CENTER LINE OF STREET
 - STREET R.O.W.
 - DRAINAGE & UTILITY R.O.W.
 - 4" ROLLED CURB & GUTTER
 - SUBDIVISION BOUNDARY LINE
 - 3728.85 PROPOSED TOP OF CURB FINISHED GRADES
 - (3729.2) EXISTING GRADE
 - TC=08.09 PROPOSED TOP OF CURB ELEVATION
 - PWMT=08.65 PROPOSED PAVEMENT ELEVATION
 - DIRECTION OF RUNOFF FLOW
 - ▲ HIGH POINT
 - ▼ LOW POINT
 - ▲ POINT OF VERTICAL INTERSECTION
 - ▲ 50' TRANSITION AT INTERSECTION
 - PROPOSED CITY MONUMENT

NO.	DATE	DESCRIPTION	BY
1	09/23/19	First City Submittal	AHO
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1-800-368-5720
1-800-368-5720

AT&T GAS SERVICE
1-800-368-5720
1-800-368-5720

TEXAS GAS SERVICE
1-800-368-5720
1-800-368-5720

PUBLIC SERVICE BOARD (WATER & SEWER)
562-8411
1-800-368-5720

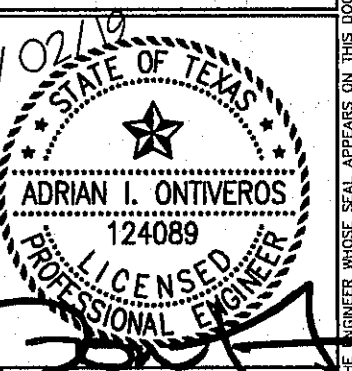
AFTER HOURS EMERGENCY (EPW)
562-8411
1-800-368-5720

TEXAS EXCAVATION SAFETY SYSTEM
954-344-3377
1-800-344-3377

TEXAS-KORAN ENGINEERING
1-800-368-5720
1-800-368-5720

EL PASO COUNTY PUBLIC WORKS
1-800-368-5720
1-800-368-5720

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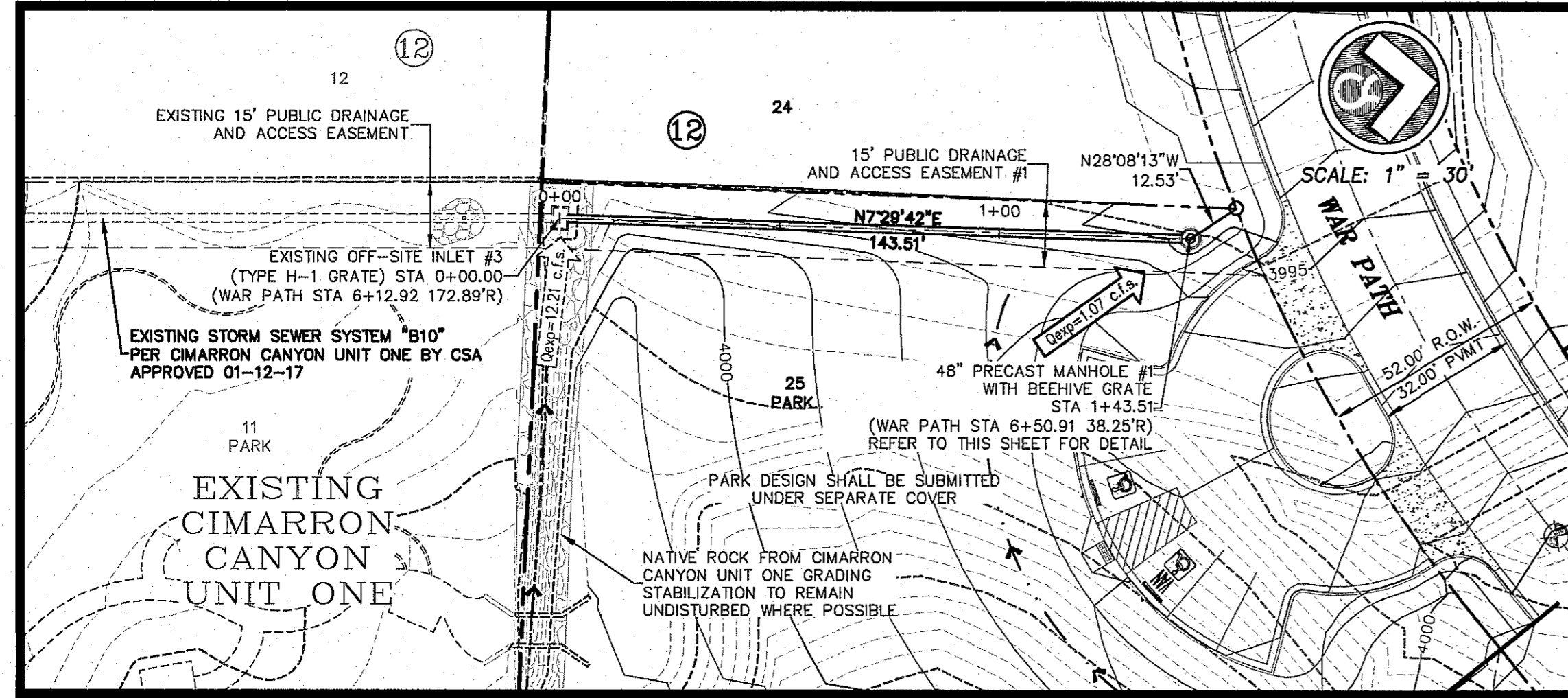
**CIMARRON CANYON
UNIT FOUR
SUBDIVISION**

SHEET TITLE

**WAR PATH
TURNING HEEL
AND PARK
PARKING LOT**

JOB NO.	1723
DATE	08/08/18
AS NOTED	

SHEET NO.
14
SHEET SEQUENCE
15 OF **31**



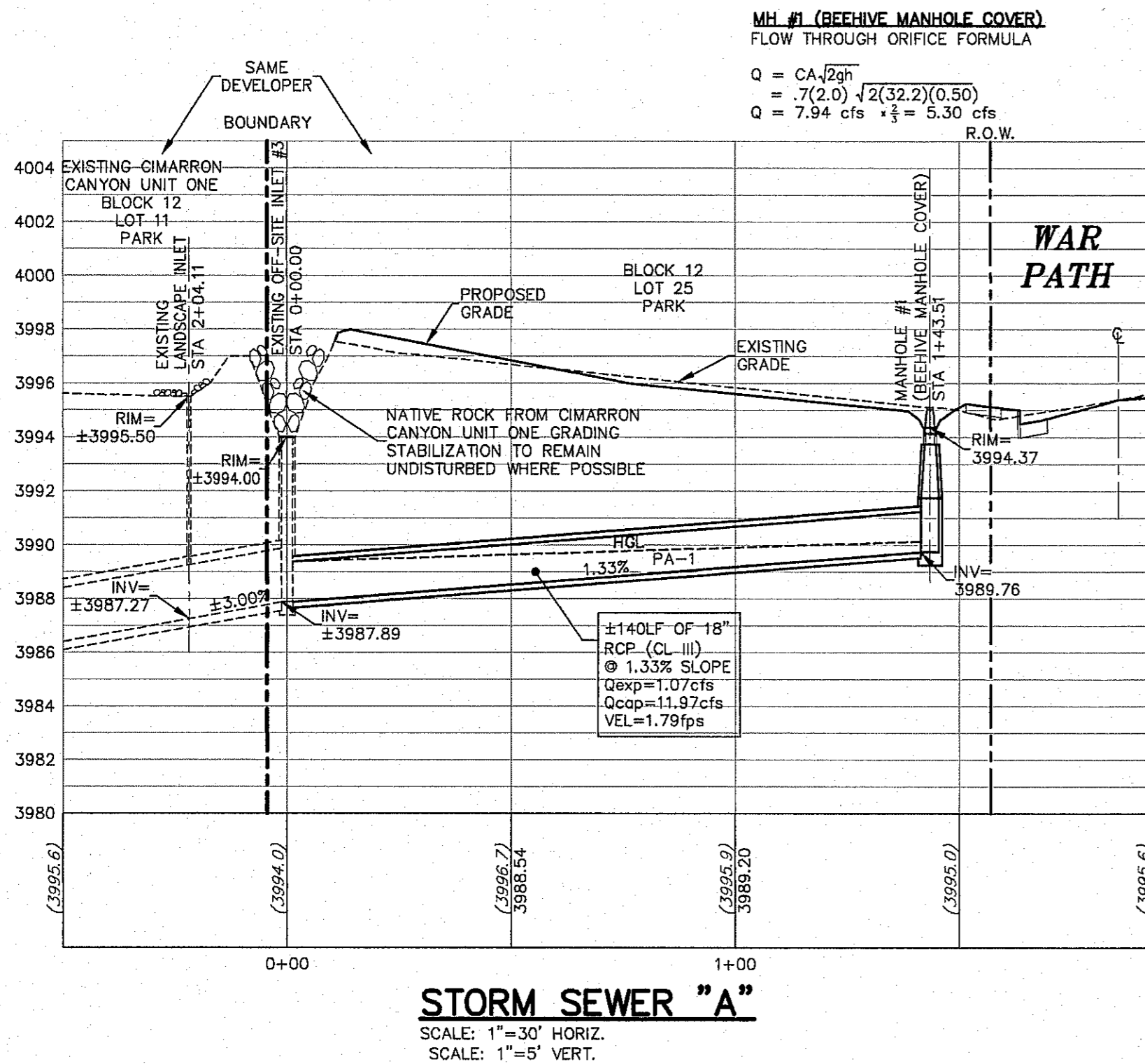
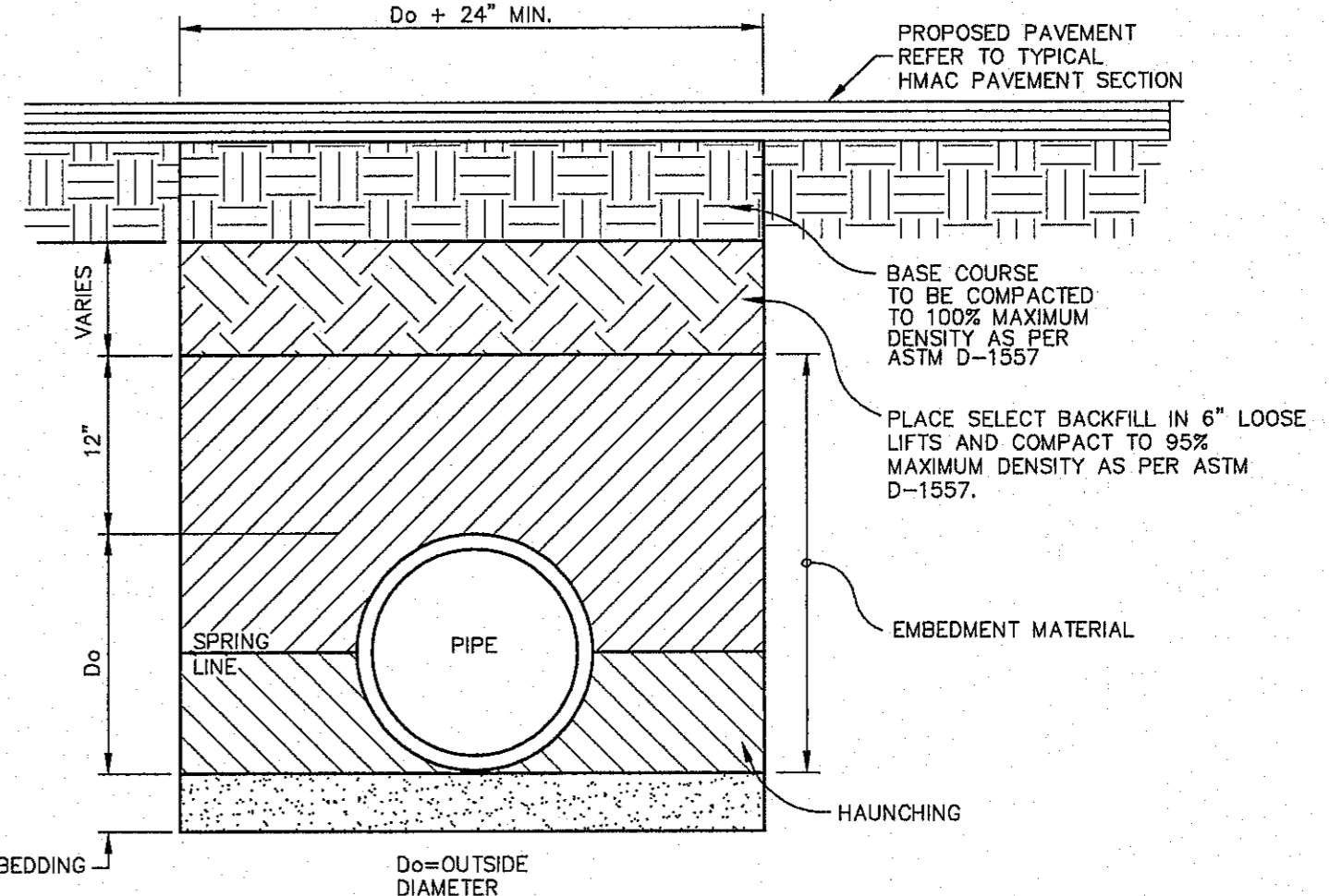
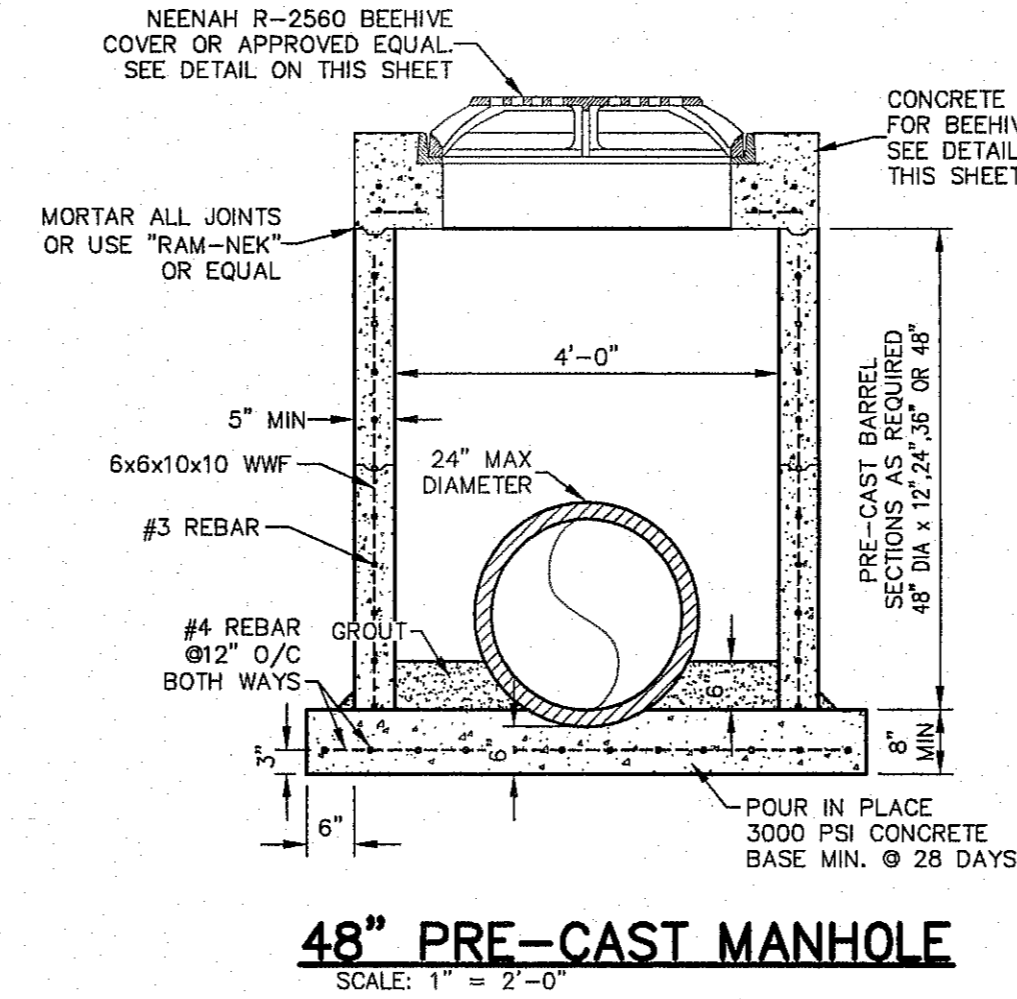
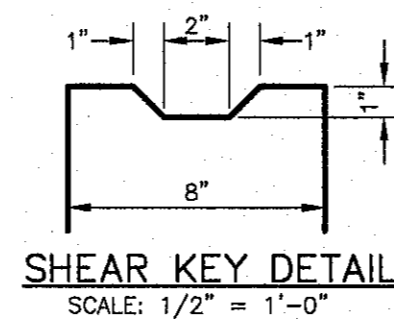
INLETS ARE STATIONED TO THE CENTER OF THE STRUCTURE AT THE CURB LINE UNLESS NOTED OTHERWISE. ALL OTHER STATIONING IS TO THE CENTER OF THE STRUCTURE. BEARINGS AND DISTANCES ARE FOR FIELD LOCATION OF STRUCTURES ONLY. REFER TO PROFILE FOR ACTUAL PIPE LENGTHS.

HYDRAULIC GRADE LINE (HGL) REPRESENTED ON THIS SHEET IS 100-YEAR EVENT

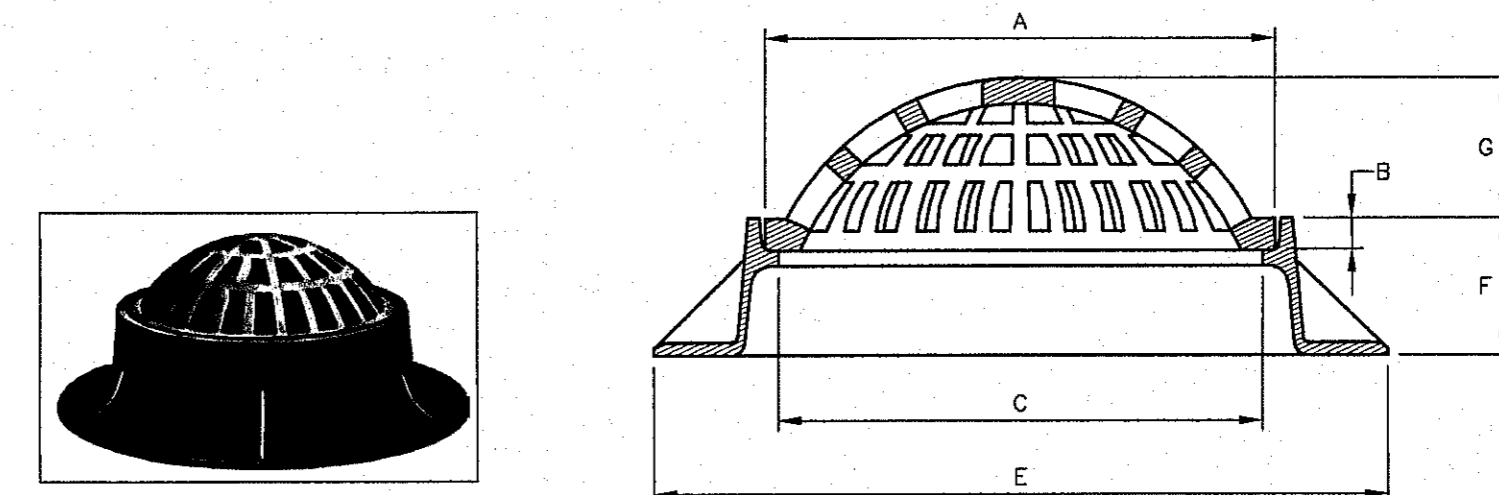
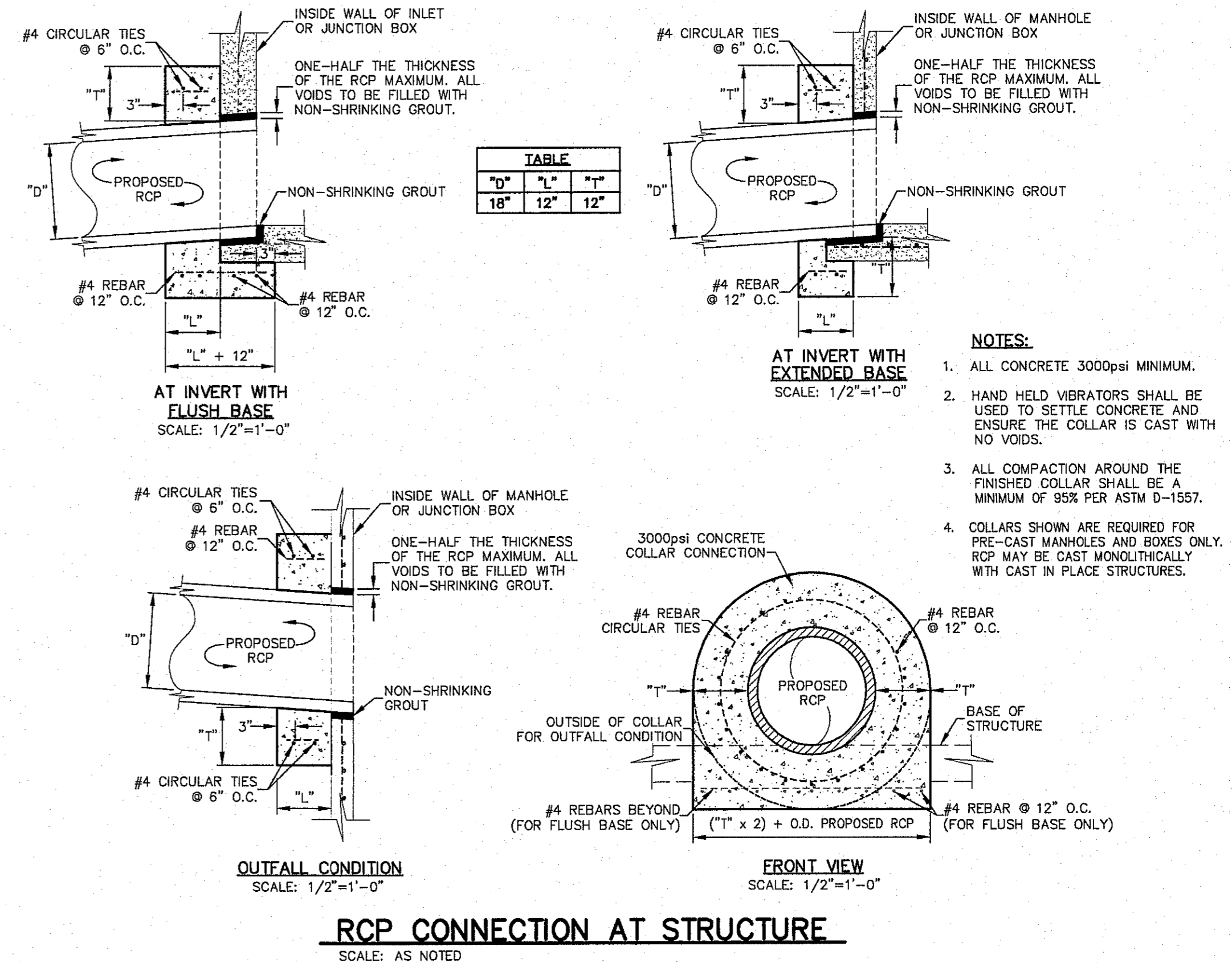
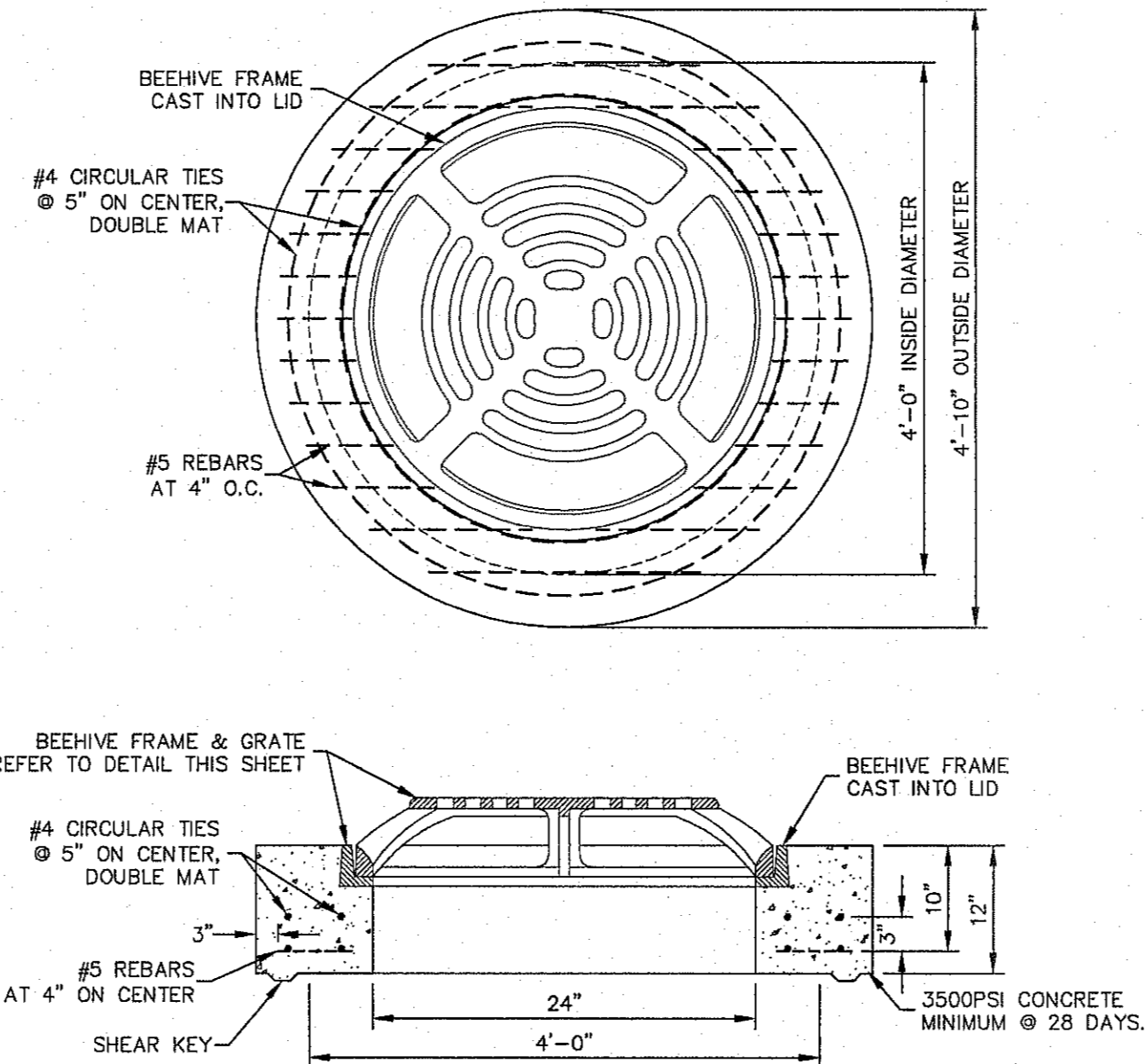
ALL RUN OFF CALCULATIONS ARE BASED ON THE 100-YEAR STORM FREQUENCY.

SANITITE HP (PLASTIC PIPE) MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS (ADS) HAS BEEN APPROVED BY EPMU STORMWATER MANAGEMENT AS AN 'APPROVED EQUAL' TO REINFORCED CONCRETE PIPE (RCP). SANITITE HP IS AVAILABLE IN DIAMETERS UP TO 60 INCHES.

SEE SHEET 6 FOR HYDRAULIC DATA AND CALCULATIONS RELATIVE TO CAPACITY, BYPASS AND CLOGGING FOR INLETS.



Pipe	Section Size	Length (ft)	Constructed Slope (ft/ft)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Inlet C Coefficient	Inlet CA (squares)	Total CA (squares)	System Flow Time (min)	Discharge (cfs)	Capacity (cfs)	Average Velocity (ft/s)	Downstream Node	Downstream Rim Elevation (ft)	Downstream HGL (ft)	Upstream Node	Upstream Rim Elevation (ft)	Upstream HGL (ft)
PA-1	18 Inch	140	0.0133	3,987.76	3,987.89	0.60	0.343	0.34	10.00	11.97	11.97	1.79	EX-OSI-3	3,994.00	3,989.39	MIH-1	3,994.37	3,990.15



CATALOG NUMBER	GRATE TYPE	MANHOLE #	DIMENSIONS IN INCHES							FRAME/LID NUMBER	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
A	B	C	E	F	G	H	I					
R-2560-E2	BEEHIVE	1	25 3/4	7/8	24	35 7/16	7	9	R-1733	2.0	6.7	

NEENAH R-2560 SERIES BEEHIVE COVER

N.T.S.

BENCHMARK CITY MONUMENT AT THE CENTERLINE INTERSECTION OF NORTHERN PASE DRIVE ELEVATION = 3978.53 (EL PASO CITY DATUM)

NO.	DATE	DESCRIPTION	BY
1	09/23/19	First City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
3	12/02/19	Final City Submittal	AHO

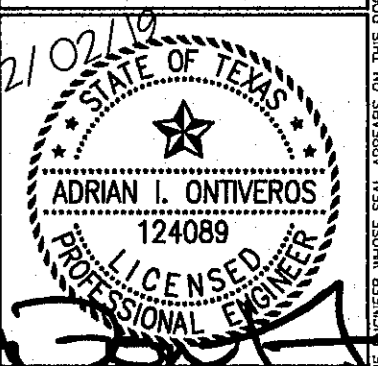
WARNING! BEFORE YOU DIG CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUNDS IN PROJECT AREA

BEFORE YOU DIG - CALL

843-5170
1-800-DIG-LESS
544-5300
544-5300
562-8411
594-5775
594-5775
1-800-344-5377
1-800-238-3764
1-800-238-3764

EL PASO ELECTRIC COMPANY
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CAL SERVICE CENTER
PUBLIC SERVICE BOARD (WATER & SEWER)
AFTER HOURS EMERGENCY (EPW)
TEXAS EXCAVATION SAFETY SYSTEM
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EL PASO POLICE DEPARTMENT
EL PASO COUNTY SHERIFFS OFFICE

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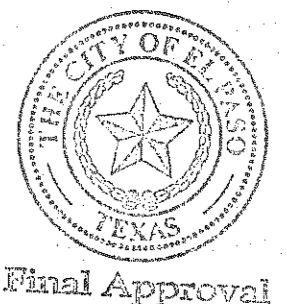


CIMARRON CANYON UNIT FOUR SUBDIVISION

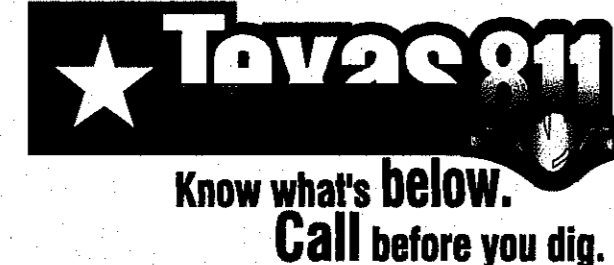
SHEET TITLE

STORM SEWER 'A' PLAN AND PROFILE AND DETAILS

COB	1723
COB-SM	08/08/18
DATE	
AHO	AS NOTED
SCALE	
SHEET NUMBER	15
OF	31



Final Approval



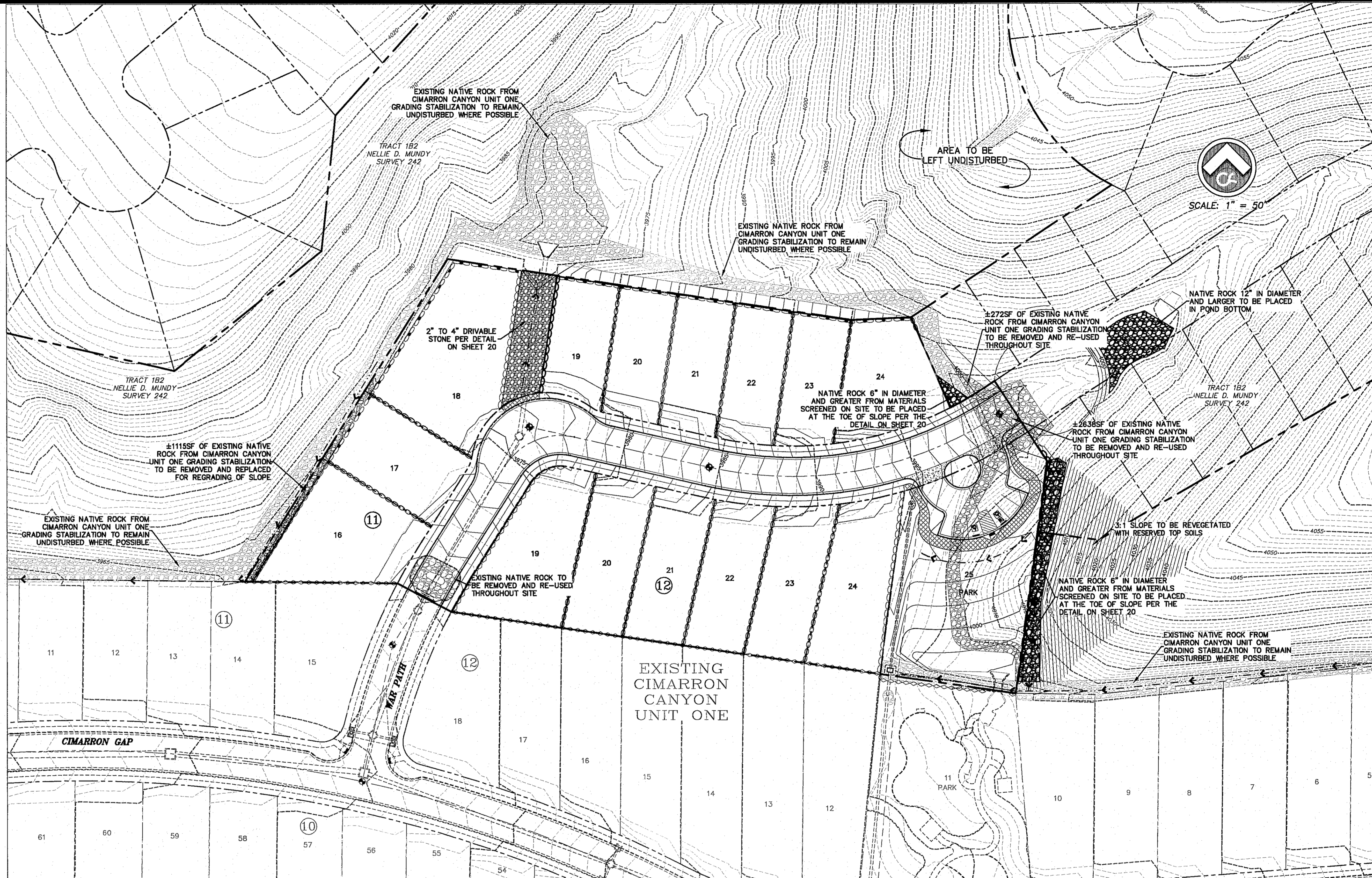
WARNING! BEFORE YOU DIG CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL EROSION CONSERVATION AND SILTATION ORDINANCES.
2. ALL EROSION CONTROL DEVICES (WITH THE EXCEPTION OF TEMPORARY BERMS AND SWALES) SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE AND SHALL REMAIN IN PLACE UNTIL FINAL GRADING AND THE INSTALLATION OF PROPOSED STORM SEWERS ARE COMPLETE AND A STAND OF NATURAL VEGETATION WITH 70% COVERAGE IS ACHIEVED. TOP SOIL SHOULD BE RESERVED AND STOCKPILED DURING CLEARING AND GRUBBING OPERATIONS. THE RESERVED TOP SOIL SHOULD BE SPREAD EVENLY UPON THE FINISHED SURFACE ONCE GRADING OPERATIONS ARE COMPLETE IN ORDER TO PROMOTE A NATURAL VEGETATION OF THE DISTURBED AREA.
3. PLACE INLET PROTECTION AROUND ALL PROPOSED DRAINAGE INLETS DURING CONSTRUCTION.
4. THE CONTRACTOR MUST USE SEDIMENT FILTERS OR OTHER MEASURES APPROVED BY THE ENGINEER TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM CLOGGING STORM SEWER LINES AND EXISTING AND/OR PROPOSED DRAINAGE INLETS. LIKEWISE, THE CONTRACTOR MUST USE SEDIMENT FILTERS OR OTHER MEASURES TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM BEING TRANSPORTED TO ADJACENT PROPERTIES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING ANY EROSION CONTROL DEVICE WHICH THEY DISTURB. THE CONTRACTOR SHALL CONTACT THE OWNER/DEVELOPER OR THEIR REPRESENTATIVE REGARDING ANY DEFICIENCIES IN THE ESTABLISHED EROSION CONTROL MEASURES WHICH MAY LEAD TO THE UNAUTHORIZED DISCHARGE OF STORM WATER, SEDIMENTATION, OR OTHER POLLUTANTS. THESE INCLUDE, BUT ARE NOT LIMITED TO, EXCESS CONCRETE DUMPING OR CONCRETE RESIDUE, ASPHALT REMAINS, PAINTS, SOLVENTS, GREASES, FUEL AND LUBRICATION OILS, PESTICIDES, AND SOLID WASTE MATERIALS.
6. MAINTENANCE OF THE EROSION CONTROL DEVICES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR DURING CONSTRUCTION. REGULAR INSPECTION OF THE EROSION CONTROL DEVICES SHOULD BE MADE BY THE CONTRACTOR AND ACCUMULATED SILT IN DEVICES SHOULD BE REMOVED IN A TIMELY FASHION AND SHALL BE DISTRIBUTED ON SITE IN A MANNER THAT SHALL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY SILT OR CONSTRUCTION DEBRIS FROM OFF-SITE PROPERTIES AND ROADWAYS THAT IS THE RESULT OF THE PROPOSED CONSTRUCTION.
8. THE CONTRACTOR SHALL CONSTRUCT A STABILIZED CONSTRUCTION ENTRANCE AT ALL PRIMARY POINTS OF ACCESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE STABILIZED CONSTRUCTION ENTRANCE AND FOR INSURING THAT ALL CONSTRUCTION TRAFFIC UTILIZES THE STABILIZED ENTRANCE AT ALL TIMES FOR INGRESS/EGRESS TO THE SITE.
9. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. THE CONTRACTOR MAY WATER DOWN THE SITE ON A REGULAR BASIS, OR UTILIZE OTHER MEANS AS APPROVED BY THE CITY ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
10. CONTRACTOR STAGING AREA TO BE AGREED UPON BY THE OWNER PRIOR TO CONSTRUCTION.
11. BEFORE ANY EARTHWORK COMMENCES, THE CONTRACTOR SHALL STAKE OUT THE LIMITS OF CONSTRUCTION AND ANY OTHER ITEMS ESTABLISHED IN THESE PLANS. THE CONTRACTOR SHALL PROTECT AND PRESERVE THE CONTROL POINTS AT ALL TIMES DURING THE COURSE OF THE PROJECT. THE GRADING CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORKS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CLEAN WORK SITE TO INCLUDE ALL EROSION CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE AND THE OWNER/DEVELOPER HAS ACCEPTED THE SITE.
13. THE CITY ENGINEER, OR HIS REPRESENTATIVE, MAY MAKE REGULAR INSPECTIONS OF THE SITE AND RESERVES THE RIGHT TO REQUEST ADDITIONAL MEASURES.
14. IN ADDITION TO THE NOTES ABOVE, THE CONTRACTOR SHALL OBSERVE AND ADHERE TO ALL NOTES FOUND ON THE GRADING AND DRAINAGE PLAN, THE STORM WATER POLLUTION PREVENTION PLAN, OR ELSEWHERE IN THIS PLAN SET, AS WELL AS CHAPTER 15 OF THE ORDINANCE.

OWNER/DEVELOPER RESPONSIBILITY:

1. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER TO INSURE THAT THE CONTRACTOR ADHERES TO THE NOTES SET FORTH IN THIS PLAN SET. IN THE EVENT THAT A CONTRACTOR DEFAULTS ON THE PROJECT, THE OWNER/DEVELOPER SHALL ASSUME THE RESPONSIBILITIES OF THE CONTRACTOR FOR THE MAINTENANCE OF THE SITE.
2. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER TO NOTIFY THE CITY IN WRITING WHEN A SITE IS OR WILL BECOME IDLE FOR MORE THAN 180 CONSECUTIVE DAYS. DURING THIS TIME, THE PERMITTEE RESPONSIBILITY FOR THE GRADING STABILIZATION PLAN SHALL MAKE REGULAR INSPECTIONS OF THE PROJECT AREA TO INSURE THE SITE IS PROPERLY MAINTAINED AND ADEQUATELY PROTECTED.
3. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER TO ASSUME THE MAINTENANCE OF THE SITE ONCE THE PROJECT IS CLOSED AND HAS BEEN ACCEPTED AS COMPLETE. THE OWNER/DEVELOPER SHALL ADHERE TO THE NOTES SET FORTH IN THIS PLAN SET AND MAINTAIN THE SITE AT THEIR EXPENSE DURING THE WARRANTY PERIOD.
4. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER TO WATER THE SITE UNTIL THE ESTABLISHMENT OF VEGETATION AS OUTLINED IN THE EROSION CONTROL NOTES HAS BEEN ACHIEVED. LIKEWISE, THE OWNER/DEVELOPER SHALL WATER AS NECESSARY TO PREVENT WIND EROSION OF THE SITE. THE OWNER/DEVELOPER MAY UTILIZE OTHER MEANS TO CONTROL WIND EROSION AS APPROVED BY THE CITY ENGINEER.
5. THE OWNER/DEVELOPER SHOULD MAKE REGULAR VISITS TO THE SITE (AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS) TO INSPECT THE EROSION CONTROL DEVICES DURING THE WARRANTY PERIOD. ADDITIONALLY, SITE VISITS SHOULD BE MADE WITHIN 24 HOURS PRIOR TO AN ANTICIPATED STORM EVENT AND IMMEDIATELY FOLLOWING A RAINFALL EVENT OF ONE-HALF INCH OR MORE, AND LIKEWISE, FOLLOWING A SIGNIFICANT WIND EVENT TO INSPECT THE EROSION CONTROL DEVICES. ANY DEVICES REQUIRING REPAIR OR REPLACEMENT SHOULD BE ADDRESSED WITHIN 24 HOURS FOLLOWING THE VISUAL INSPECTION.
6. THE OWNER/DEVELOPER SHALL MAINTAIN A CLEAN SITE BY REMOVING AND PROPERLY DISPOSING OF ANY TRASH, SOLID WASTE, OR OTHER DEBRIS THAT MAY ACCUMULATE ON THE PROPERTY.
7. THE OWNER/DEVELOPER MUST ADHERE TO TITLE 9 (HEALTH AND SAFETY), CHAPTER 9.04 (SOLID WASTE MANAGEMENT), ARTICLE XVII WEEDS AND VEGETATION, SECTION 9.04.860 (WEEDS AND VEGETATION PROHIBITED) AND MAINTAIN A SITE THAT IS FREE OF WEEDS AND VEGETATION OTHER THAN THOSE DEEMED AS "ACCEPTABLE" PER SECTION 9.04.870 (EXCEPTIONS).
8. THE CITY ENGINEER OR HIS REPRESENTATIVE, AS WELL AS REPRESENTATIVES OF THE SOLID WASTE MANAGEMENT DEPARTMENT MAY MAKE PERIODIC VISITS TO THE SITE DURING THE WARRANTY PERIOD AND RESERVES THE RIGHT TO REQUEST ADDITIONAL MEASURES PER TITLE 9 (HEALTH AND SAFETY) ARTICLE XVII - WEEDS AND VEGETATION, SECTION 9.04.860 (CITY ABATEMENT).



LEGEND

- ◆ PROPOSED HIGH POINT
- ◀ PROPOSED LOW POINT
- 3955 — PROPOSED CONTOUR
- 3950 — EXISTING CONTOUR
- ROCK RETAINING WALL WITH GARDEN WALL EXTENSION BY DEVELOPER, HEIGHTS AS NOTED
- GARDEN OR STEM WALL BY DEVELOPER, HEIGHTS AS NOTED
- ROCK RETAINING WALL, BATTER ONLY, BY DEVELOPER, GARDEN WALL EXTENSION BY BUILDER
- ROCK RETAINING WALL WITH 4' GARDEN WALL EXTENSION BY BUILDER
- EXISTING ROCK WALL, RETAINING AS REQUIRED, PER CIMARRON CANYON UNIT ONE
- ALL OTHER ROCK WALLS BY BUILDER UNLESS NOTED OTHERWISE
- SWALE

ALL GRADED SLOPES GREATER THAN 3:1 (THREE FEET HORIZONTALLY TO 1 FOOT VERTICALLY) MUST BE STABILIZED PER ORDINANCE. REFER TO NOTES AND DETAILS ON SHEETS 19 AND 20.

18.44.220 — PERMIT CLOSEOUT PROCEDURE

- AFTER THE PERMITTEE COMPLETES THE GRADING UNDER THE PERMIT, THE PERMIT SHALL BE CLOSED. AS A PART OF THE CLOSEOUT PROCEDURE, THE APPLICANT MUST SUBMIT THE FOLLOWING TO THE CITY:
- A STATEMENT FROM THE ENGINEER OF RECORD STATING THAT STATES, "THE GRADING OPERATION HAS BEEN SUBSTANTIALLY COMPLETED AND GENERALLY CONFORMS TO THE APPROVED SET OF PLANS." THE PERMITTEE SHALL CALL THE PERMIT OFFICIAL TO ESTABLISH THE BEGINNING OF THE WARRANTY PERIOD AND TO NOTIFY THE PERMIT OFFICIAL THAT THE GSP HAS BEEN IMPLEMENTED.
 - A COPY OF THE NOTICE OF TERMINATION FILED WITH THE STATE OR DATED CONSTRUCTION SITE NOTICE, IF APPLICABLE, IN ACCORDANCE WITH CHAPTER 15.

18.44.090 — WARRANTY

ANY PERSON ISSUED A PERMIT SHALL AGREE WARRANT AND MAINTAIN THE AREA DESCRIBED IN THE PERMIT FOR A PERIOD OF TWO YEARS AFTER THE PERMIT IS CLOSED BY THE CITY PURSUANT TO SECTION 18.44.220, OR UNTIL A BUILDING PERMIT IS ISSUED FOR THE PURPOSE OF MAINTAINING A STABILIZED SITE IN ACCORDANCE WITH THE APPROVED GSP, WHICHEVER FIRST OCCURS (THE "WARRANTY" OR "WARRANTY PERIOD"). THE CITY MAY CONDUCT INSPECTIONS OF THE PERMITTED AREA THROUGHOUT THE WARRANTY PERIOD AND REQUIRE MAINTENANCE AND CORRECTION OF THE WORK BY THE PERMIT HOLDER. FAILURE OF THE PERMIT HOLDER TO CORRECT THE WORK SHALL CONSTITUTE A FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CHAPTER.

18.44.200 — ENGINEERING CONTROLS FOR GRADING

1. NO ON-SITE PROCESSING OF MATERIAL FOR COMMERCIAL OR RETAIL SALES SHALL BE ALLOWED. ON-SITE PROCESSING OF MATERIALS TO BE USED FOR PREPARATION OR CONSTRUCTION OF IMPROVEMENTS WITHIN THE SITE COVERED BY THE GRADING PERMIT SHALL BE ALLOWED.
2. WORK SHALL BE CONDUCTED IN A MANNER THAT PRESERVES AND DOES NOT OBSTRUCT, IMPEDS OR INTERFERE WITH THE FLOW OF STORMWATER IN NATURAL DRAINAGE WAYS, UNIMPROVED CHANNELS OR WATERCOURSES, OR IMPROVED DITCHES, CHANNELS OR CANALS IN SUCH A MANNER AS TO CAUSE FLOODING WHERE IT WOULD NOT OTHERWISE OCCUR.
3. CONSTRUCTION EQUIPMENT AND FENCING SHALL BE KEPT OUT OF WATERCOURSES EXCEPT WHEN NECESSARY TO PERFORM WORK ON THE APPROVED PLANS. ADEQUATE BY-PASS MEASURES SHALL BE INSTALLED WHERE TEMPORARY DRAINAGE BLOCKAGES WILL OCCUR. WHERE WORK WITHIN A CHANNEL IS DESIGNATED ON APPROVED PLANS, PRECAUTIONS SHALL BE TAKEN TO STABILIZE THE WORK AREA DURING CONSTRUCTION TO MINIMIZE EROSION AS SHOWN ON THE PLANS. THE CHANNEL, INCLUDING BED AND BANKS, SHALL ALWAYS BE RESTORED/RE-STABILIZED IMMEDIATELY AFTER WORK IN THE CHANNEL IS COMPLETED.
4. WHERE A DRAINAGE WAY WILL BE CROSSED BY CONSTRUCTION VEHICLES REGULARLY DURING CONSTRUCTION, A TEMPORARY CROSSING SHALL BE CONSTRUCTED AS REQUIRED IN THE APPROVED GRADING PLANS.
5. MATERIAL STOCKPIILING SHALL NOT BE ALLOWED WHEN GRADING OPERATIONS ARE IDLE FOR MORE THAN SEVEN CONSECUTIVE CALENDAR DAYS. STOCKPIILING SHALL BE LIMITED TO TEN FEET HIGH WHEN GRADING OPERATIONS ARE BEING CONDUCTED.
6. A TRAFFIC CONTROL PERMIT SHALL BE REQUIRED IF THE GRADING OPERATION WILL IMPACT TRAFFIC.
7. ANY USE OF VIBRATORY EQUIPMENT SHALL NOT BE ALLOWED, UNLESS APPROVED IN WRITING BY THE PERMIT OFFICIAL IN ADVANCE OF SUCH USE.
8. THE PERMIT OFFICIAL MUST BE NOTIFIED NO LATER THAN 4:00PM THE DAY IN ADVANCE OF ANY GRADING WORK. ADDITIONAL ACTIVITY REQUIREMENTS/RESTRICTIONS MAY BE SPECIFIED BY THE DESIGN ENGINEER OF RECORD.

PENALTY -- SEVERABILITY

ANY PERSON VIOLATING CHAPTER 18 (GRADING ORDINANCE) SHALL BE DEEMED GUILTY OF A MISDEMEANOR AND SHALL BE PUNISHED BY A FINE NOT TO EXCEED TWO THOUSAND DOLLARS. IN THE CASE OF A CONTINUING VIOLATION, EACH DAY'S VIOLATION SHALL BE DEEMED A SEPARATE OFFENSE (PER SECTION 18.44.210) THE SEVERABILITY PROVISIONS OF SECTION 1.04.060 APPLY.

FOR INFORMATION REGARDING SOILS, REFER TO THE PRELIMINARY SOILS EVALUATION REPORT FOR CIMARRON CANYON UNIT ONE SUBDIVISION (PROJECT No. SPO1178 DATED OCT 3, 2011) AND THE STREET PAVEMENT DESIGN (PROJECT No. SPO11043 DATED APR 4, 2011) PREPARED BY SPEESCO, INC.



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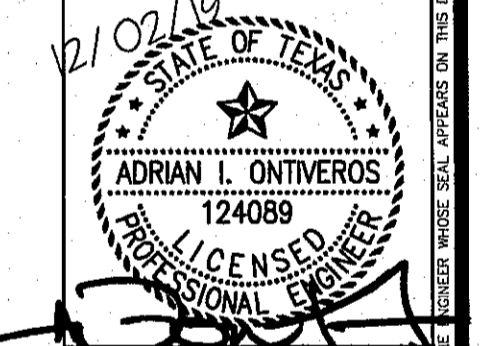
NO.	DATE	DESCRIPTION	BY
3	12/02/19	Final City Submitted	AHO
2	11/07/19	Second City Submitted	AHO
1	09/23/19	First City Submitted	AHO

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BEFORE YOU DIG - CALL

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 AT&T 1-800-DIG-TESS
 TEXAS GAS SERVICE 1-800-454-3000
 TEXAS WATER 1-800-542-7776
 PUBLIC SERVICE BOARD (WATER & SEWER) 562-8411
 AFTER HOURS EMERGENCY (EPW) 1-800-016-TESS
 954-3776
 1-800-344-4377
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 EL PASO WATER 1-800-454-3000
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CIMARRON CANYON UNIT FOUR SUBDIVISION

SHEET TITLE

GRADING STABILIZATION PLAN

COB	1723
DESIGN BY	
COB-SM	08/08/18
DRAWN BY	CAI
AND	AS NOTED
CHECKED BY	
SHEET NO.	18
SHEET SEQUENCE	19 of 31

Final Approval

SITE PREPARATION:

- 1. PRIOR TO GRADING OF THE SITE, NATIVE PLANTS THAT ARE OF A DESIRABLE SPECIES AND THAT ARE OF SUFFICIENT MATURITY WILL BE TAGGED FOR EASE OF IDENTIFICATION. THESE PLANTS WILL BE HARVESTED, REMOVED FROM THE SITE, AND RESERVED FOR THE PURPOSES OF REVEGETATING GRADED SLOPES AND OTHER AREAS THAT ARE IDENTIFIED ON THE PLAN, OR OTHER AREAS THAT MAY HAVE BEEN DISTURBED BY GRADING OPERATIONS AND NOT IDENTIFIED ON THE PLAN.
- 2. THE SITE SHOULD BE CLEARED OF ALL TRASH, RUBBISH, AND DEBRIS THAT IS NOT OF NATURAL ORIGIN. THIS SHOULD INCLUDE BUT IS NOT LIMITED TO PLASTICS, PAPER, CARDBOARD, CANS AND OTHER METAL CONTAINERS, PACKING MATERIALS, PALLETS, LUMBER AND OTHER CONSTRUCTION DEBRIS, TIRES, DISCARDED FURNISHINGS, APPLIANCES, ETC., AND CONCRETE OR ASPHALT RUBBLE. ALL SHOULD BE PLACED IN APPROPRIATE TRANSPORT CONTAINERS AND REMOVED TO A DISPOSAL SITE AUTHORIZED TO ACCEPT THE REFUSE.
- 3. ONCE CLEARED OF UNDESIRABLE MATERIALS, TOPSOILS WITHIN THE LIMITS OF DISTURBANCE IS TO BE REMOVED TO A DEPTH OF 6" TO 12" AND RESERVED IN STOCKPILES AT AREAS WITHIN THE SITE AS IDENTIFIED IN THE PLAN VIEWS. THE TOPSOILS ARE NOT TO BE SCREENED AND ANY ORGANIC MATERIALS SCRUBBED IN THE GRADING OPERATIONS ARE TO BE LEFT INTERMINGLED WITHIN THE RESERVED MATERIALS. THE MATERIALS THAT ARE RESERVED WILL SERVE AS THE SEED BANK AND WILL BE THE BASE FOR OPERATIONS THAT WILL BE PERFORMED FOLLOWING THE GRADING OF AREAS NOTED FOR REVEGETATION ON THE PLANS.
- 4. ANY NATIVE ROCK THAT MAY BE GATHERED WITH THE TOPSOILS ARE TO BE LEFT WITH THE MATERIALS RESERVED. THIS NATIVE ROCK IS A CRUCIAL MEMBER OF THE SOILS MAKE UP WILL AND HELP TO INTERLOCK THE SOIL MATERIALS WHEN TRANSFERRED AND PLACED ON NEWLY GRADED AREAS. ONLY LARGER DIAMETER STONES THAT ARE ENCOUNTERED (12" DIAMETER AND LARGER) SHALL BE REMOVED FROM THE MATERIALS THAT ARE TO BE STOCKPILED. THESE LARGER STONES SHOULD BE SET ASIDE AND RESERVED FOR USE ELSEWHERE ON SITE AS SHOWN IN THE DETAILS ON THESE SHEETS.
- 5. AREAS IDENTIFIED AS STOCKPILES FOR THE SEED BANK ON THE PLANS SHALL BE THOROUGHLY WETTED PRIOR TO PLACING THE TOPSOILS IN RESERVE. MATERIALS SHALL BE SPREAD LOOSELY AND LEFT UNCOMPACTED IN LAYERS NOT GREATER THAN 4" TO 6" IN DEPTH. RESERVED MATERIALS SHALL BE RETWETTED PRIOR TO PLACING ADDITIONAL MATERIALS ONTO THE STOCKPILE. MATERIALS STOCKPILED SHALL NOT EXCEED FOUR (4) FEET IN OVERALL HEIGHT. ONCE MATERIALS HAVE BEEN STOCKPILED, THE SEED BANK SHALL BE WATERED ON A FAIRLY REGULAR BASIS, NOT LESS THAN ONCE PER WEEK, UNTIL SUCH TIME THE MATERIALS ARE REMOVED FOR PLACEMENT WITHIN THE GRADED AREAS NOTED ON THE PLANS. FREQUENCY OF WATERING AND WATER VOLUMES SHALL BE AS DIRECTED BY THE BOTANIST.
- 6. DURING THE PERIOD THAT THE SEED BANK IS IN RESERVE, ONLY UNDESIRABLE GROWTH THAT MAY OCCUR SHALL BE REMOVED. PLANTS SUCH AS TUMBLEWEEDS AND OTHER SPECIES AS IDENTIFIED IN THE CITY CODE AS UNDESIRABLE SHALL BE REMOVED. (REF: TITLE 9 (HEALTH AND SAFETY), CHAPTER 9.0 (SOLID WASTE MANAGEMENT), SECTION 9.04.860 (WEEDS AND VEGETATION PROHIBITED) AND MAINTAIN A SITE THAT IS FREE OF WEEDS AND VEGETATION OTHER THAN THOSE DEEMED AS "ACCEPTABLE" PER SECTION 9.04.870 (EXCEPTIONS).)
- 7. PLANT HARVESTING, PRESERVATION AND PRESERVATION OF THE SEED BANK, AND THE REVEGETATION OF THE AREAS NOTED IN THE PLAN SHALL BE PERFORMED UNDER THE SUPERVISION OF MICHAEL GAGLIO, BOTANIST AND MANAGING MEMBER OF HIGH DESERT NATIVE PLANTS AND MAY BE CONTACTED VIA EMAIL AT mike@hd-env.com.

GENERAL GRADING NOTES:

- 1. AREAS NOTED ON THE PLANS AS 'TO BE LEFT UNDISTURBED' SHOULD BE CORDONED OFF USING ORANGE CONSTRUCTION FENCING AND ALL MECHANIZED EQUIPMENT SHOULD BE RESTRICTED FROM OPERATIONS WITHIN THESE AREAS.
- 2. ON HIGHER GROUND, GRADING OPERATIONS SHOULD BE CATEGORIZED AS 'HILL TOPPING' AND THE LIMITS OF GRADING SHOULD NOT EXTEND BEYOND WHAT IS SHOWN ON THE PLANS, ESPECIALLY THE GRADING SHOWN WITHIN BLOCKS 2, 3 AND 10. INITIAL GRADING CAN BE PERFORMED UTILIZING SCRAPERS, BUT AS THE FINISHED GRADE IS APPROACHED, GRADING AT THE EDGE OF THE LOTS SHOULD BE "RAKED" IN TOWARD THE LOT. RAKED MATERIALS PULLED IN FROM THE EDGE OF SLOPE CAN BE REMOVED UTILIZING SCRAPERS. LEAVING A CLEAN CUT TO NATURAL GRADE IN THE NOTED AREAS IS CRUCIAL TO THE LOOK DESIRED AS A PART OF THE GRADING DESIGN.
- 3. WHILE NOT EXPECTED, IT IS POSSIBLE THAT CLAYS OR OTHER SOILS WITH HIGHER PLASTICITY CAN BE ENCOUNTERED, ESPECIALLY WHEN GRADING OPERATIONS ARE PERFORMED WITHIN LOWER AREAS NEAR RESLER DRIVE AND WITHIN WATER COURSES AND WASHES. REMOVAL AND REPLACEMENT OF THESE SOILS WILL ONLY BE NECESSARY WHERE PAVEMENT IS PROPOSED, OR WHERE IT WILL IMPOSE ISSUES UPON THE PLACEMENT OF FOUNDATIONS BY THE BUILDERS. IT WILL NOT BE NECESSARY TO MITIGATE THESE SOILS WHERE FILL IS PROPOSED AND ENCAPSULATION OF THE UNDESIRABLE SOILS WILL OCCUR.

SCREENING OPERATIONS:

- 1. DURING SCREENING OPERATIONS PERFORMED THROUGHOUT THE DURATION OF CONSTRUCTION, NATIVE ROCK OF ALL SIZES SHALL BE RESERVED AND STOCKPILED FOR FUTURE PLACEMENT ON SITE AS SHOWN ON THE PLAN AND PER THE DETAILS SHOWN ON THESE SHEETS.
- 2. NATIVE ROCK SHOULD BE SORTED BY SIZE AND KEPT SEPARATED DURING THE PERIOD THE MATERIAL IS STOCKPILED. A SIGNIFICANT AMOUNT OF NATIVE ROCK PLACEMENT IS SPECIFIED AS A PART OF THE STABILIZATION PLAN AND ALL EFFORTS SHOULD BE MADE BY THE CONTRACTOR TO SORT AND RESERVE ALL NATIVE ROCK AS IS PERMITTED BY TIME AND BUDGETARY CONSTRAINTS.
- 3. IN THE EVENT THAT SIGNIFICANTLY SIZED SANDSTONE CAPS ARE ENCOUNTERED DURING GRADING OPERATIONS, EFFORTS SHOULD BE MADE TO RESERVE SLABS OF THE SANDSTONE INTACT. LARGE SLABS MAY BE INCORPORATED INTO THE PARKS AS PART OF THE NATIVE DESIGN SCHEMES BEING PROPOSED.

GRADED SLOPES:

- 1. ALL GRADED SLOPES GREATER THAN 3:1 (THREE FEET HORIZONTALLY TO 1 FOOT VERTICALLY) MUST BE STABILIZED PER ORDINANCE. OTHER GRADED SLOPES THAT ARE 3:1 OR LESS SHALL BE STABILIZED PER THE RECOMMENDATIONS OF THE SLOPE STABILITY REPORT PERFORMED BY THE GEOTECHNICAL ENGINEER.
- 2. AS A STANDARD, THE CONTRACTOR SHOULD MAINTAIN REGULAR CONTACT WITH THE GEOTECHNICAL ENGINEER AND REQUEST TESTING OF SOILS TO BE USED IN THE CONSTRUCTION OF FILL SOILS, WHENEVER POSSIBLE, IT IS DESIRABLE TO PLACE SOILS WITH HIGHER PLASTICITY LEVELS AT THE LOWER LEVELS OF FILL AND RESERVE THE LESSER COHESIVE SOILS FOR PLACEMENT NEARER THE TOPS OF THE CONSTRUCTED SLOPES, ESPECIALLY WHERE THOSE SOILS WILL BE CONTAINED WITHIN RETAINING WALLS.
- 3. CONSTRUCTED SLOPES (FILL) SHOULD INCORPORATE A SOILS STITCHING METHODOLOGY WHEN PLACING LIFTS. IN ADDITION TO THE TESTING OF SOILS, FILL SLOPES SHOULD BE INSPECTED ON A REGULAR BASIS BY THE GEOTECHNICAL ENGINEER DURING THE GRADING OPERATIONS. AT A MINIMUM FILL SLOPES SHOULD BE EVALUATED FOR SLOPE STABILITY BY THE ENGINEER UPON COMPLETION OF EVERY FIVE (5) FEET OF VERTICAL FILL.
- 4. SIGNIFICANT CUT SLOPES ARE PROPOSED AS A PART OF THE GRADING OPERATIONS FOR THIS SUBDIVISION. GRADING CONTRACTOR SHALL PAY VERY CLOSE ATTENTION TO THE MATERIALS THAT ARE ENCOUNTERED WHEN CUTTING SLOPES. WHILE MATERIALS WITH HIGH COHESIVE VALUES ARE DESIRED, IN THE EVENT THAT FLOWABLE MATERIALS SUCH AS DUNE, BLOW, OR SUGAR SANDS ARE DISCOVERED DURING CONSTRUCTION, THE GRADING CONTRACTOR SHALL IMMEDIATELY CONTACT THE GEOTECHNICAL ENGINEER TO INSPECT THE SITE CONDITIONS AND RECOMMEND OPTIONS TO COMPLETE THE SLOPE AS DESIGNED. ALL GRADING OF THE CUT SLOPE SHALL CEASE UNTIL OPTIONS CAN BE OFFERED AND A PLAN IS IMPLEMENTED TO MITIGATE THE POOR SOIL CONDITION.
- 5. ALL SLOPES WITHIN THESE PLANS SHALL BE RE-INSPECTED BY THE GEOTECHNICAL ENGINEER AND THE DESIGN ENGINEER UPON COMPLETION. AT THAT TIME, FURTHER RECOMMENDATIONS MAY BE MADE TO ENSURE THE FUTURE STABILITY OF THE COMPLETED SLOPES. THESE RECOMMENDATIONS MAY INCLUDE BUT ARE NOT LIMITED TO THE INCORPORATION OF SOIL RETENTION BLANKETS SUCH AS PYRAMAT OR OTHER GEOTEXTILE GRID MATERIALS, APPLICATION OF HAY OR OTHER ORGANIC MULCHES, SPRAY MULCH APPLICATIONS, OR SOILS BLENDING TO ENCAPSULATE AND PRESERVE THE FINISHED GRADE OF THE SLOPES.
- 6. MOST SLOPES WITHIN THE DISTURBED LIMITS ARE TO BE REVEGETATED BY THE DEVELOPER UNLESS NOTED OTHERWISE IN THE PLANS. THE FIRST STEP IN THE REVEGETATION PROCESS IS THE APPLICATION OF TOPSOILS THAT HAVE BEEN RESERVED HELD IN STOCKPILE. APPLICATION OF THE TOPSOIL CAN BE PERFORMED AS THE SLOPES ARE DEVELOPED BUT ONLY AFTER INSPECTION OF THE PORTION OF THE SLOPE TO RECEIVE THE TOPSOIL HAS BEEN INSPECTED BY THE GEOTECHNICAL ENGINEER AND PASSED FOR STABILITY OF THE SLOPE SPECIFIED. APPLICATION OF THE TOPSOIL SHALL BE PERFORMED PER THE 'REVEGETATION OF SLOPES' NOTES IN THESE PLANS.
- 7. SLOPES THAT ARE NOT NOTED FOR REVEGETATION IN THESE PLANS ARE TEMPORARY IN NATURE AND WILL BE FURTHER AMENDED BY FUTURE DEVELOPMENT OF THIS AREA. ALTHOUGH TEMPORARY, THESE SLOPES ARE TO BE EVALUATED BY THE GEOTECHNICAL ENGINEER UPON COMPLETION AS NOTED ABOVE, AND IF DEEMED NECESSARY, ADDITIONAL SLOPE STABILITY MEASURES WILL BE IMPLEMENTED PER THE ENGINEER'S RECOMMENDATIONS.
- 8. ALL SLOPES, WHETHER CONSTRUCTED BY FILL, OR CREATED BY CUT, AND THAT ARE TO BE REVEGETATED OR LEFT NATURAL, SHALL BE REINFORCED AND PROTECTED BY PLACING NATIVE ROCK SCREENED FROM MATERIALS ON SITE AT THE TOE OF ALL SLOPES PER THE DETAILS IN THIS PLAN UNLESS NOTED OTHERWISE.

- 9. ALL SLOPES THAT ARE NOTED TO BE STABILIZED BY BUILDER SHALL BE COMPLETED AND SHOULD BE CONSIDERED AS A PARAMETER TO BE COMPLETED PRIOR TO RECEIVING A CERTIFICATE OF OCCUPANCY. ALL WORK IS TO BE PERFORMED OR SUBCONTRACTED BY THE INDIVIDUAL BUILDER OF THE LOT IN WHICH A SLOPE IS INDICATED AND SHALL CONFORM TO THE INSTRUCTIONS CONTAINED IN THE 'SLOPE STABILIZATION FOR BUILDERS' NOTE.

REVEGETATION OF SLOPES AND OTHER SCARRED AREAS:

- 1. WHILE THE EROSION OF LAND IS INEVITABLE AND CAN ONLY BE MITIGATED BUT NEVER ERADICATED, IN THAT RESPECT THE REVEGETATION OF SLOPES AND OTHER AREAS LEFT SCARRED BY GRADING OPERATIONS IS A CRUCIAL PORTION OF THE GRADING STABILIZATION PROCESS AS DETAILED IN THIS PLAN. AS NOTED, THE REVEGETATION PROCESS IS TO BE PERFORMED BY THE DEVELOPER AS A FINAL STEP IN ABATING THE FUTURE EROSION OF SCARRED AREAS, ESPECIALLY GRADED SLOPES.
- 2. ONCE GRADED SLOPES ARE COMPLETED, AND HAVE BEEN INSPECTED BY THE GEOTECHNICAL ENGINEER PER THE OTHER NOTES AND DETAILS IN THIS PLAN, TO INCLUDE THE APPLICATION OF ANY ADDITIONAL RECOMMENDATIONS REQUIRED BY THE SLOPE STABILITY ANALYSIS PERFORMED BY THE ENGINEER, THE REVEGETATION PROCESS CAN BEGIN.
- 3. THE FIRST STEP IN THE REVEGETATION PROCESS IS THE PLACEMENT OF RESERVED TOPSOILS STOCKPILED AS THE SEED BANK UPON SCARRED AREAS LEFT UNPROTECTED TO THE ELEMENTS. IN PREPARATION FOR THIS STEP, THE SCARRED AREA SHOULD BE 'TRACK WALKED' TO PROVIDE A FOOT HOLD FOR THE SOILS TO BE APPLIED. WHERE TRACK WALKING MAY NOT BE POSSIBLE, THE USE OF A SHEEPSFOOT ROLLER DRUM ATTACHED TO AN EXCAVATOR CAN BE AN EFFECTIVE ALTERNATIVE. AT THIS TIME, ANY ADDITIONAL APPLICATION OF MULCHES SUCH AS HAY BEDDING SHALL BE PLACED AND THE SCARRED AREA SHALL BE WETTED THOROUGHLY BEFORE APPLYING THE RESERVED TOPSOILS. HYDROSEEDING SHOULD ONLY BE CONSIDERED IF A NATIVE SEED BLEND CAN BE OBTAINED.
- 4. PRIOR TO REMOVING TOPSOILS FROM THE SEED BANK, THE STOCKPILE SHALL ALSO BE THOROUGHLY WETTED. IN THE EVENT THAT THE RESERVED MATERIAL HAS SETTLED TO A POINT WHERE IT HAS BECOME HARDPAN, THE MATERIAL SHALL BE SCARIFIED PRIOR TO WETTING. AT THIS TIME, ANY SOIL AMENDMENTS THAT MAY HAVE BEEN RECOMMENDED SHALL BE INCORPORATED INTO THE MATERIAL. THE RESERVED MATERIALS ARE TO BE REMOVED FROM THE SEED BANK IN LIFTS RELATIVE TO THE DEPTH IN WHICH THEY WERE PLACED. THIS SHOULD ENSURE A DEPTH OF SEEDING RELATIVE TO THAT WHICH WAS NATURAL WHEN THE MATERIALS WERE HARVESTED.
- 5. ONCE THE MATERIALS ARE TRANSPORTED TO THE SITE THAT IS TO BE REVEGETATED, THE MATERIAL SHALL BE PLACED UPON THE EXPOSED SOILS AT A DEPTH OF NOT MORE THAN SIX TO EIGHT INCHES. THE APPLIED MATERIAL SHOULD BE TRACK WALKED BUT SHOULD ONLY BE COMPACTED TO A POINT AT WHICH A FIRM ADHESION TO THE SCARRED AREA IS ACHIEVED. THE TOPSOIL SHALL BE RETWETTED AS NECESSARY TO ADDITIONALLY ENSURE A FIRM ADHESION. THE USE OF SPRAY MULCH TACKIFIERS, OR AN UNDERLAYMENT OF JUTE, BURLAP, OR OTHER NATURAL DIAPHANOUS BIODEGRADABLE MATERIAL, OR SYNTHETIC POLYGRIDS, PRIOR TO THE PLACEMENT OF MATERIALS MAY ALSO BE CONSIDERED TO ENSURE ADHESION OF THE TOPSOIL TO THE GRADED SLOPES. THE REVEGETATED AREA SHALL BE RETWETTED ONE FINAL TIME ONCE THE APPLICATION OF THE TOPSOIL IS COMPLETE. WATERING SHOULD BE PERFORMED FROM THE TOE OF SLOPE AND UPWARD TO PREVENT POSSIBLE SLIDING OF WETTER SOILS TOWARDS THE TOP OF SLOPE.
- 6. AREAS THAT HAVE RECEIVED TOPSOILS FROM THE SEED BANK SHALL BE WATERED BY THE DEVELOPER ON A REGULAR BASIS TO PROMOTE NEW GROWTH WITHIN THE APPLIED SOILS. ADDITIONAL SOIL AMENDMENTS MAY BE RECOMMENDED AND APPLIED DURING THIS PROCESS. WHILE IRRIGATION OF THE AREAS SLATED FOR REVEGETATION ARE NOT A PART OF THIS PLAN, A LOW WATERING IRRIGATION SYSTEM MAY BE INSTALLED AS A PERMANENT IN-GROUND APPLICATION, OR INSTALLED AS AN ABOVE-GROUND TEMPORARY MEASURE. IT IS HIGHLY RECOMMENDED THAT A PERMANENT DRIP IRRIGATION SYSTEM BE INSTALLED WITHIN THE COMMON OPEN SPACE AREAS, LOT 31, BLOCK 4 AND LOT 75 BLOCK 10 SINCE THEY WILL BE MAINTAINED BY THE HOME OWNERS ASSOCIATION FOR THE SUBDIVISION. THE USE OF PUMICE WICKS, POLYMER PRODUCTS, OR DIATOMACEOUS EARTH CAN BE CONSIDERED FOR USE TO ENHANCE THE WATER RETENTION OF THE TOPSOILS.
- 7. ONCE THE APPLIED TOPSOILS HAVE BECOME WELL ESTABLISHED, NATIVE PLANTS THAT WERE HARVESTED FROM THE SITE PRIOR TO THE COMMENCEMENT GRADING OPERATIONS WILL BE RETURNED FOR REPLANTING. THE PLANTING OF THE VEGETATION SHOULD BE SUCH THAT IT APPEARS RANDOM. ANY SOIL AMENDMENTS THAT MAY BE REQUIRED OR THAT HAS BEEN RECOMMENDED WILL BE APPLIED AT THE TIME REPLANTING OCCURS. EXCAVATED PLANTING PITS WILL BE THOROUGHLY WETTED PRIOR TO PLACEMENT OF PLANTS AND WILL BE WETTED AGAIN ONCE COVERED. DEVELOPER WILL KEEP NEWLY REPLANTED VEGETATION WATERED UNTIL THE ROOT SYSTEM HAS BECOME WELL REESTABLISHED. THIS PERIOD MAY VARY AS COULD THE AMOUNT AND FREQUENCY OF WATERING AND SHALL BE PERFORMED PER THE RECOMMENDATIONS OF THE SUPERVISING BOTANIST.
- 8. ON GRADED SLOPES, PLANTING BENCHES MAY BE INCORPORATED AS AN ADDED ENHANCEMENT. IF USED, THESE AMENITIES SHOULD BE INSTALLED IN A RANDOM PATTERN AND SHALL BE CONSTRUCTED PER THE DETAILS FOUND IN THIS PLAN.
- 9. AT THE SAME TIME OF THE REPLANTING OF THE HARVESTED PLANTS, SMALLER DIAMETER NATIVE ROCK RETAINED FROM MATERIALS SCREENED ON SITE SHALL BE PLACED RANDOMLY IN REVEGETATED AREAS. ON SLOPE, NATIVE ROCK OF NOT GREATER THAN EIGHT (8) INCHES IN DIAMETER MAY BE PLACED BY SIMPLY TAMPING THE STONE INTO THE SURFACE. LARGER STONE CAN BE INCORPORATED, BUT SHALL BE EMBEDDED PER THE BOULDER EMBEDMENT DETAIL ON THIS PLAN.
- 10. IN THE EVENT A SOIL RETENTION BLANKET HAS BEEN INSTALLED AS A SLOPE STABILITY MEASURE PER THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER, THE BLANKET SHALL BE CUT AND REPINNED PER THE MANUFACTURER'S DETAILS AND SPECIFICATIONS IN AREAS WHERE PLANTING PITS OR BOULDER EMBEDMENTS ARE REQUIRED.

NATIVE ROCK, BOULDERS, AND RIP-RAP NOTES:

- 1. WHERE INDICATED IN THE PLAN VIEW, NATIVE ROCK OBTAINED FROM MATERIALS SCREENED ON SITE SHALL BE PLACED PER THE DETAILS CONTAINED IN THIS PLAN. NATIVE ROCK OF SIMILAR AVERAGE DIAMETER SHALL BE USED AS SPECIFIED, AND SMALLER NATIVE ROCK OF NOT LESS THAN ONE HALF THE DIAMETER OF THE COBBLE SPECIFIED CAN BE USED AS INFILL. INFILL NATIVE ROCK SHALL NOT EXCEED THIRTY (30) PERCENT OF THE OVERALL VOLUME OF THE INDICATED COBBLE FIELD. NATIVE ROCK SHALL BE PLACED TO A DEPTH OF AT LEAST ONE AND A HALF TIMES THE SIZE OF THE COBBLE DIAMETER SPECIFIED UNLESS NOTED OTHERWISE.
- 2. WHERE A MIXTURE OF SIZES IS NOTED, THE MIX SHALL CONSIST OF SIXTY (60) PERCENT OF THE LARGER DIAMETER AND FORTY (40) PERCENT OF THE SMALLER DIAMETER. INFILL NATIVE ROCK USED SHALL NOT BE OF A LESSER DIAMETER OF THE LARGER COBBLE SPECIFIED AND SHALL NOT BE CONSIDERED IN THE CALCULATIONS FOR THE DIAMETER MIXTURE.
- 3. MOST OF THE LOOSE COBBLE SPECIFIED IS TO BE PLACED ON FINISHED GRADE. THE EXCEPTION TO THIS RULE IS WHERE NATIVE ROCK ARE USED IN SWALES. THE AREAS INDICATED TO FUNCTION AS SWALES SHALL BE OVER EXCAVATED ONE HALF THE DIAMETER OF THE COBBLE SPECIFIED, ONE HALF THE DIAMETER OF THE LARGEST DIAMETER SPECIFIED IF A MIX IS NOTED, AND THE COBBLE IS TO BE PLACED EMBEDDED.
- 4. THE USE OF SALVAGED COBBLE IS AN EXTENSIVE PART OF THIS PLAN. IN THE EVENT THAT COBBLE RESERVES ARE DEPLETED, ATTEMPTS SHOULD BE MADE BY THE CONTRACTOR TO RECEIVE SCREENED MATERIALS FROM OTHER JOB SITES THAT MIGHT OTHERWISE BE DISCARDED BY ANOTHER DEVELOPER. IN THE EVENT THAT STONE MUST BE PURCHASED FROM A SUPPLIER TO SUPPLEMENT NEEDED COBBLE, THE STONE PURCHASED SHOULD NOT BE A QUARRIED ROCK IF AT ALL POSSIBLE. HOWEVER, WHAT IS GENERALLY MARKETED AS 'RIVER ROCK' BY SUPPLIERS SHOULD BE AVOIDED. AS A NATURAL LOOK TO THE LAND IS THE DESIRED RESULT, PURCHASED ROCK SHOULD BE OF THE SAME APPEARANCE AS THE NATIVE ROCK SCREENED FROM THE SITE. STONE SPOILS THAT A SUPPLIER MAY HAVE SLATED FOR THE ROCK CRUSHER IS LIKELY AN ACCEPTABLE ALTERNATIVE. PURCHASED ROCK SHOULD BE AS INEXPENSIVE AS IS POSSIBLE.
- 5. GEOTEXTILE FABRIC UNDERLAYMENT IS NOT REQUIRED FOR THE PLACEMENT OF NATIVE ROCK. PLANT GROWTH IS DESIRED WITHIN THE LOOSE COBBLE FIELDS SPECIFIED. RANDOM PLANT GROWTH SHOULD BE ANTICIPATED AND WILL ADD TO THE NATURAL LOOK OF THE COMPLETED INSTALLATIONS.
- 6. STONE 30" IN DIAMETER AND GREATER SHALL BE CLASSIFIED AS BOULDERS. IN FLAT AREAS, THESE SHALL BE EMBEDDED PER THE DETAIL IN THIS PLAN. ON SLOPES 4:1 (ONE FOOT VERTICALLY TO FOUR FEET HORIZONTALLY) AND GREATER, ALL STONE 12" IN DIAMETER AND GREATER SHALL BE EMBEDDED.
- 7. WHERE BOULDER WASHES ARE INDICATED ON THIS PLAN, NATIVE ROCK OF THE SPECIFIED DIAMETER SHALL BE USED AND EMBEDDED PER THE DETAIL IN THIS PLAN. NATIVE ROCK NOT LESS THAN TWELVE (12) INCHES IN DIAMETER MAY BE USED AS INFILL IN BOULDER WASHES. AS SPECIFIED ABOVE, THE INFILL SHALL NOT ACCOUNT FOR MORE THAN THIRTY (30) PERCENT OF THE BOULDER FIELD INDICATED.
- 8. RIP-RAP, AND ROCK NOTED TO BE DRIVABLE STONE SHALL BE CLASSIFIED AS PURCHASED ROCK AND MAY BE QUARRIED STONE. THIS ROCK SHOULD BE GRAY, BROWN, OR OTHER NEUTRAL COLOR UNLESS IT IS SPECIFIED OTHERWISE IN THE PLANS. IF DEPTHS OF PLACEMENT ARE NOT INDICATED, THE DEPTH SHALL BE A MINIMUM OF ONE AND ONE HALF THE DIAMETER OF THE STONE SPECIFIED. AS WITH THE NATIVE ROCK, WHERE A RANGE OF SIZES IS INDICATED, THE MIX SHALL CONSIST OF SIXTY (60) PERCENT OF THE LARGER DIAMETER AND FORTY (40) PERCENT OF THE SMALLER DIAMETER SPECIFIED.
- 9. GEOTEXTILE UNDERLAYMENT SHALL BE REQUIRED BENEATH ALL RIP-RAP OR DRIVABLE STONE. ONLY PERMEABLE FABRICS SUCH AS WOVEN OR NEEDLE PUNCHED MATERIALS SHALL BE USED. NON PERVIOUS PLASTICS OR OTHER MATERIALS SHALL NOT BE ACCEPTED.

- 10. SCREENING MAY BE RECOMMENDED BY THE GEOTECHNICAL ENGINEER FOR PLACEMENT ON TRAILS, OR ON BENCHES AS AN ADDITIONAL ANTI-EROSIVE MEASURE. SCREENINGS PLACED ON WALKABLE SURFACES SUCH AS TRAILS SHOULD BE GREATER THAN ONE INCH IN DIAMETER AND PLACED IN A MINIMUM LIFT OF TWO (2) INCHES. NO. 57 STONE SHALL BE CONSIDERED AS AN ACCEPTABLE ALTERNATIVE SHOULD ROCK BE PURCHASED FOR PLACEMENT ON WALKABLE SURFACES.

SLOPE STABILIZATION FOR BUILDERS:

GRADED SLOPES AS SHOWN ON THE GRADING PLAN HAVE BEEN ENGINEERED, BASED ON A GEOTECHNICAL SOILS INVESTIGATION REPORT, TO STAND AT THE SLOPE INDICATED. HOWEVER, EROSION IS INEVITABLE ON ANY SLOPE, EVEN IN HIGHLY COHESIVE SOILS. PROPERTY OWNERS ARE RESPONSIBLE FOR THE MAINTENANCE OF SLOPES WITHIN THEIR LOTS. IF NO MEASURES HAVE BEEN TAKEN PRIOR TO PURCHASE, IT IS HIGHLY RECOMMENDED THAT THE PROPERTY OWNER PROVIDE ANTI-EROSION CONTROLS ON GRADED SLOPES WITHIN THE BOUNDS OF THEIR LOT. THESE MAY INCLUDE BUT ARE NOT LIMITED TO CONCRETE RIP-RAP, MORTARED ROCK RIP-RAP (REQUIRED ON SLOPES 1:1 OR GREATER), LOOSE ROCK RIP-RAP OF A SPECIFIED DIAMETER, SOIL RETENTION BLANKETS, PLANTINGS OF NATIVE SPECIES. (SOD AND OTHER GRASSES ARE NOT RECOMMENDED ON SLOPES GREATER THAN 4:1). BEFORE PERFORMING ANY WORK, PROPERTY OWNERS SHOULD CONSULT A LICENSED, PROFESSIONAL CIVIL ENGINEER. ADDITIONALLY, IT IS THE RESPONSIBILITY OF THE PROPERTY OWNER TO CLEAN AND MAINTAIN ANY WEEP HOLES THAT HAVE BEEN INSTALLED IN WALLS OR RIP-RAP. WEEP HOLES ARE AN INTEGRAL COMPONENT OF DRAINAGE SO AS TO PREVENT GROUND SATURATION BEHIND WALLS AND RIP-RAP THAT COULD CAUSE STRUCTURAL FAILURES. PROPERTY OWNERS SHOULD PERFORM REGULAR INSPECTIONS, ESPECIALLY AFTER HEAVY RAINS, AND CLEAR WEEP HOLES OF ANY SILT AND DEBRIS. PROPERLY INSTALLED WEEP HOLES SHOULD ALLOW THE PASSAGE OF ANY STORM WATER RUN OFF THAT MAY ACCUMULATE BEHIND WALLS OR BENEATH RIP-RAP AS A RESULT OF INFILTRATION. WIRE ENCASED GRAVEL FILTERS WRAPPED IN A GEOTEXTILE FABRIC SHOULD PREVENT LARGE DEBRIS FROM BLOCKING THE WEEP HOLE. HOWEVER, THE PASSAGE OF SILT, SAND, AND OTHER FINE PARTICULATE MATERIAL UP TO ONE-QUARTER INCH IN DIAMETER SHOULD BE CONSIDERED NORMAL. UNDER NO CIRCUMSTANCES SHOULD THE WEEP HOLES BE INTENTIONALLY BLOCKED TO PREVENT PASSAGE OF STORM WATER.

REFERENCE:

DRYLAND SEEDING IS A COMMON TECHNIQUE USED IN ATTEMPTS TO RESTORE VEGETATION ON DISTURBED SITES IN ARID REGIONS. COX AND OTHERS (1982) STUDIED DRYLAND SEEDING ATTEMPTS ON MULTIPLE SITES IN THE CHIHUAHUA DESERT AND CONCLUDED THAT SIGNIFICANT PLANT ESTABLISHMENT COULD BE EXPECTED ONLY ONCE OUT OF EVERY TEN ATTEMPTS. GRANTZ AND OTHERS (1998) INVESTIGATED THE EFFECTIVENESS OF UTILIZING THE SEED BANK METHOD TO MITIGATE DUST ON RETIRED CROPLAND IN THE MOJAVE DESERT OF CALIFORNIA. THEY CONCLUDED THAT THIS METHOD CAN LEAD TO PLANT ESTABLISHMENT IN YEARS WITH ABOVE AVERAGE RAINFALL BUT IS LIKELY TO YIELD MINIMAL RESULTS IN MOST YEARS. BAINBRIDGE AND OTHERS (1995) STATE THAT REVEGETATION OF LAND WITHOUT SUPPLEMENTAL IRRIGATION CAN BE A COST EFFECTIVE RESTORATION STRATEGY, ALTHOUGH PERFORMED WITH LIMITED RESULTS WHEN ATTEMPTED IN ARID LANDS BECAUSE OF UNPREDICTABLE AND INFREQUENT OCCURRENCE OF CONDITIONS FAVORABLE FOR SEED GERMINATION AND SEEDLING ESTABLISHMENT. TESTING PROVED THAT THE INSTALLATION OF MINIMALIST IRRIGATION SYSTEMS IN AREAS WHERE SEED BANK APPLICATIONS ARE UTILIZED VASTLY IMPROVED THE LIKELIHOOD OF SUCCESS FOR A REESTABLISHMENT OF NATIVE GROWTH IN SCARRED AREAS. WHERE SLOPES WERE THE RESTORATION OF VEGETATION WAS PROPOSED, BAINBRIDGE FOUND THAT A SINGLE DRIP IRRIGATION LINE PLACED IN AN 'ESS' PATTERN AND SPACED ONE PER EVERY TEN FEET OF VERTICAL RISE WAS EFFICIENT ENOUGH TO PROMOTE AN ESTIMATED 50% INCREASE IN THE EXPECTED GROWTH.

SALVAGE EXISTING NATIVE PLANT MATERIAL PRIOR TO CONSTRUCTION. THE SPECIES TO BE SALVAGED DEPENDS ON LOCATION, SOILS AND ANALYSIS OF PLANT VALUE INCLUDING THE POTENTIAL SURVIVAL RATE. SALVAGED PLANTS CAN READILY IMPROVE THE AESTHETICS OF A SITE BY PROVIDING MATURE PLANTS THAT WOULD NORMALLY TAKE MANY YEARS TO ESTABLISH. IN ADDITION, ENSURE NATIVE TOPSOIL IS COLLECTED AND STORED FOR REUSE. NATIVE TOPSOIL PROVIDES A SEED SOURCE AND IMPORTANT BACTERIA FOR SALVAGED PLANT ESTABLISHMENT AND GROWTH. CAREFULLY REMOVE, STOCKPILE, AND STORE THE NATIVE TOP SOIL OF NEW CONSTRUCTION PROJECTS TO BE USED AS FINAL BEDDING MATERIAL. ENSURE NATIVE SOIL STOCKPILES ARE PROTECTED FROM THE WIND TO AVOID EROSION AND THE CREATION OF A DUST HAZARD.

EVERY REVEGETATION PROJECT REQUIRES A PRESCRIBED SOIL TREATMENT. SOIL TREATMENTS INCLUDE PLOWING, DISKING, HARROWING, FURROWING, HYDROSEEDING, APPLYING MULCHES (SUCH AS STRAW), AND USING TACKIFIERS (SUCH AS JUTE OR DARK COLORED NETTING) TO FIRMLY ANCHOR THE MULCHES TO THE SITE. SOILS SHOULD BE ROUGHENED BEFORE AND AFTER PLANTING TO CREATE FAVORABLE SEED SITES, PARTICULARLY FOR GRASS AND FORD SEEDS. IN SILTY CONDITIONS, A SOIL STABILIZER, SUCH AS A HYDROMULCH OR A MATTING MATERIAL, SHOULD BE APPLIED TO REDUCE POTENTIAL DUST PROBLEMS. SOME SITES REQUIRE DEEP RIPPING IN ORDER TO LOOSEN HARDPAN AND IMPROVE SEEDING SUCCESS. IN CONDITIONS OF STEEP CUT AND SLOPES GREATER THAN 40 PERCENT, SLOPE DISKING IS REQUIRED TO CREATE SEED POCKETS.

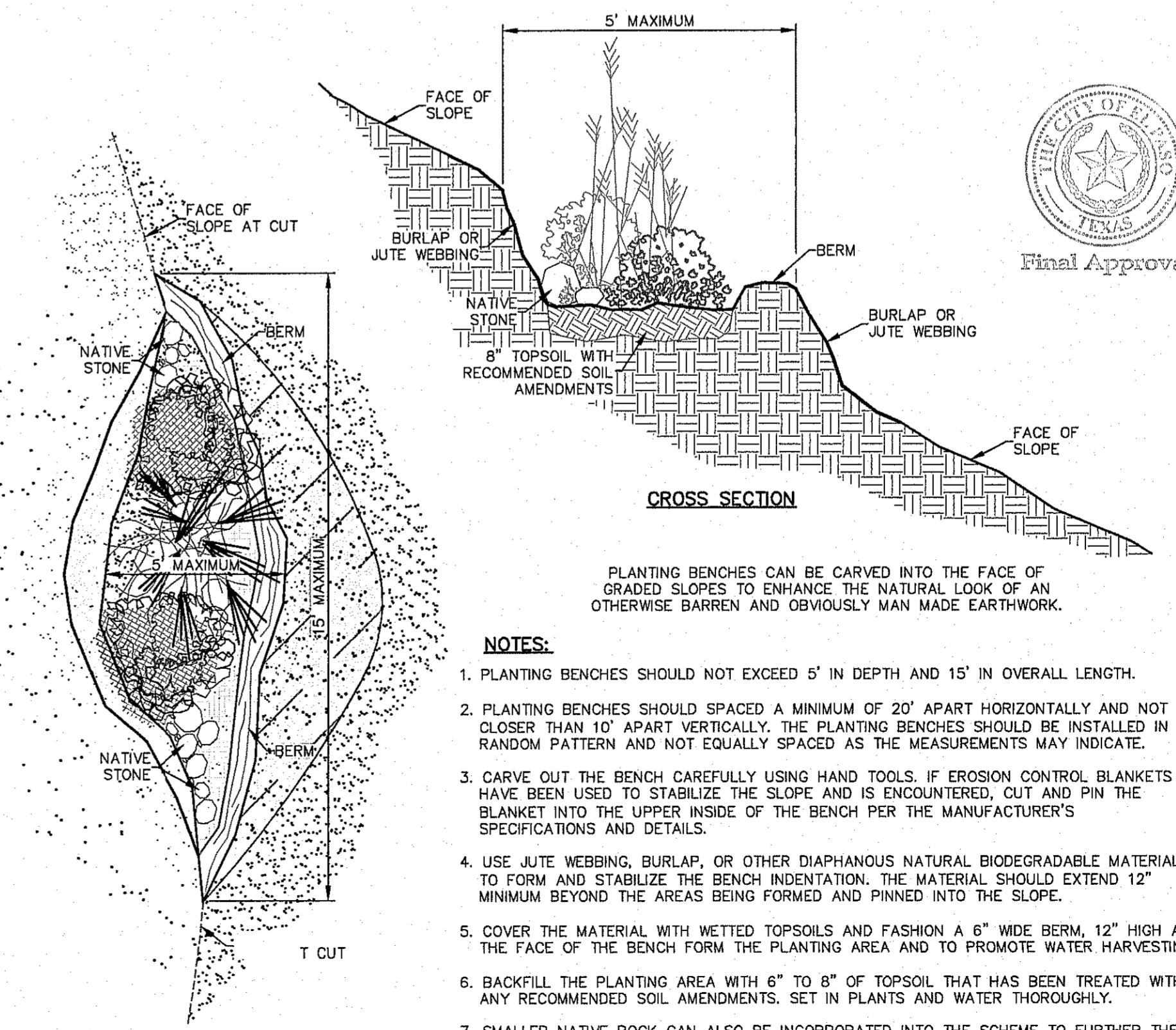
IN MOST CASES, ORGANIC MATERIAL WILL NEED TO BE ADDED TO THE SITE TO IMPROVE SOIL QUALITY. EACH SITE SHOULD BE CAREFULLY ANALYZED TO DETERMINE THE TYPE OF FERTILIZER APPLICATION. ON SITES WITH HARDPAN AND SALTS NEAR THE SURFACE, AN AMENDMENT TO CONTROL OR AMELIORATE pH SHOULD BE APPLIED. SCATTERED ROCK MULCH IS TO BE USED WITH THIS SOFTSCAPE TYPE AS GROUND COVER. IT WILL PROVIDE SEED POCKETS AND PROTECTION THAT WILL ASSIST IN THE ESTABLISHMENT OF SEED.

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PLANTING BENCHES CAN BE CARVED INTO THE FACE OF GRADED SLOPES TO ENHANCE THE NATURAL LOOK OF AN OTHERWISE BARREN AND OBVIOUSLY MAN MADE EARTHWORK.

- NOTES:**
- 1. PLANTING BENCHES SHOULD NOT EXCEED 5' IN DEPTH AND 15' IN OVERALL LENGTH.
 - 2. PLANTING BENCHES SHOULD SPACED A MINIMUM OF 20' APART HORIZONTALLY AND NOT CLOSER THAN 10' APART VERTICALLY. THE PLANTING BENCHES SHOULD BE INSTALLED IN A RANDOM PATTERN AND NOT EQUALLY SPACED AS THE MEASUREMENTS MAY INDICATE.
 - 3. CARVE OUT THE BENCH CAREFULLY USING HAND TOOLS. IF EROSION CONTROL BLANKETS HAVE BEEN USED TO STABILIZE THE SLOPE AND IS ENCOUNTERED, CUT AND PIN THE BLANKET INTO THE UPPER INSIDE OF THE BENCH PER THE MANUFACTURER'S SPECIFICATIONS AND DETAILS.
 - 4. USE JUTE WEBBING, BURAP, OR OTHER DIAPHANOUS NATURAL BIODEGRADABLE MATERIAL TO FORM AND STABILIZE THE BENCH INDENTATION. THE MATERIAL SHOULD EXTEND 12" MINIMUM BEYOND THE AREAS BEING FORMED AND PINNED INTO THE SLOPE.
 - 5. COVER THE MATERIAL WITH WETTED TOPSOILS AND FASHION A 6" WIDE BERM, 12" HIGH AT THE FACE OF THE BENCH FORM THE PLANTING AREA AND TO PROMOTE WATER HARVESTING.
 - 6. BACKFILL THE PLANTING AREA WITH 6" TO 8" OF TOPSOIL THAT HAS BEEN TREATED WITH ANY RECOMMENDED SOIL AMENDMENTS. SET IN PLANTS AND WATER THOROUGHLY.
 - 7. SMALLER NATIVE ROCK CAN ALSO BE INCORPORATED INTO THE SCHEME TO FURTHER THE NATURAL LOOK OF THE SLOPES THAT IS DESIRED.

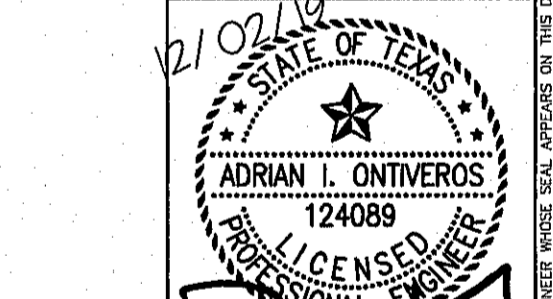
PLANTING BENCHES
N.T.S

NO.	DATE	DESCRIPTION	BY
1	09/23/19	First City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
3	12/02/19	Final City Submittal	AHO

NO.	DATE	DESCRIPTION	BY
1	09/23/19	First City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
3	12/02/19	Final City Submittal	AHO

WARNING!
BEFORE YOU DIG CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

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EL PASO GAS SERVICE 843-5720
TEXAS UTILITY 843-5720
PUBLIC SERVICE BOARD (WATER & SEWER) 843-5720
CITY OF EL PASO 843-5720
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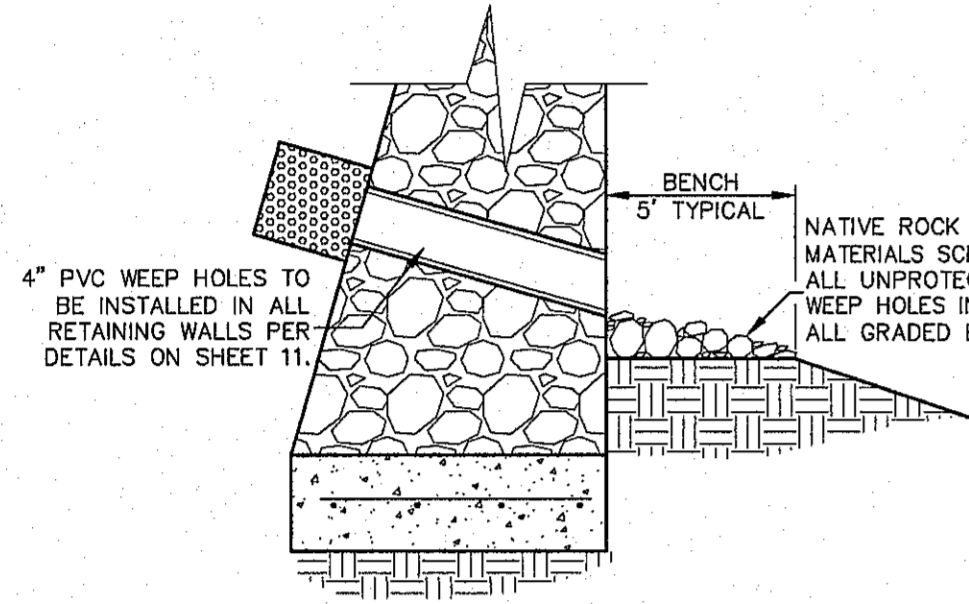
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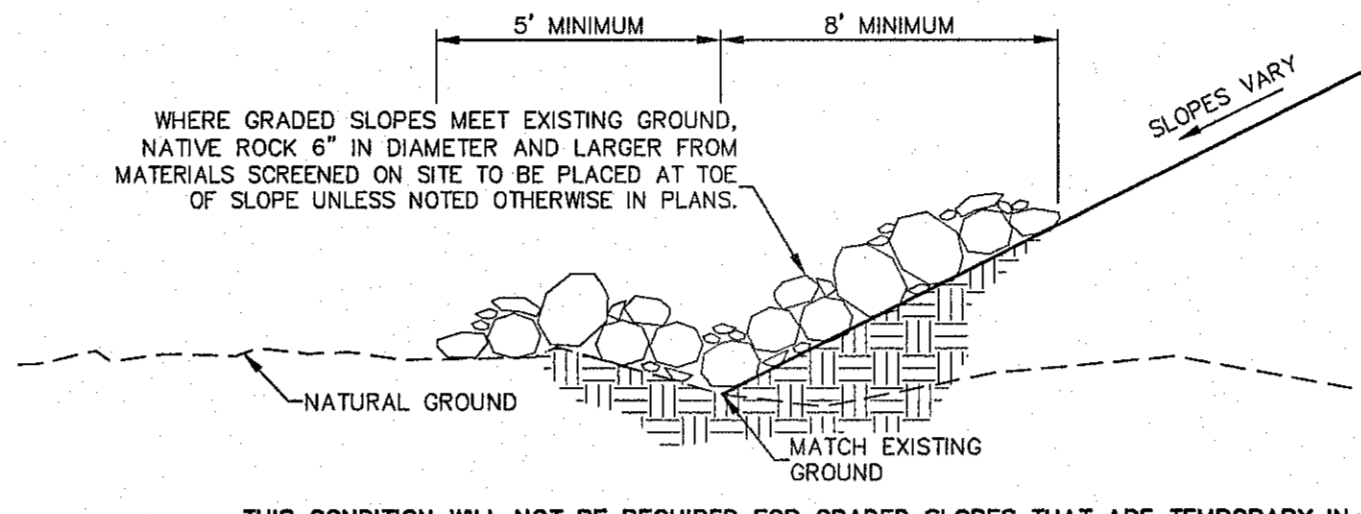
CIMARRON CANYON UNIT FOUR SUBDIVISION

GRADING STABILIZATION NOTES AND DETAILS

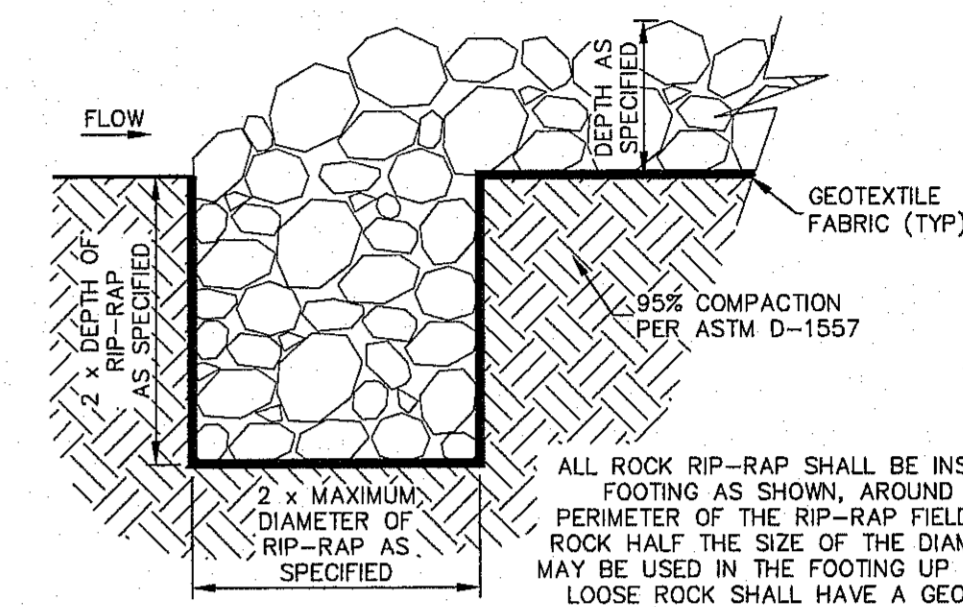
19
SHEET OF 20
DATE: 08/08/18
AS NOTED
SCALE:
DATE: 08/08/18
SCALE:
DATE: 08/08/18
SCALE:



ALL GRADED SLOPES GREATER THAN 3:1 (THREE FEET HORIZONTALLY TO 1 FOOT VERTICALLY) MUST BE STABILIZED PER ORDINANCE.

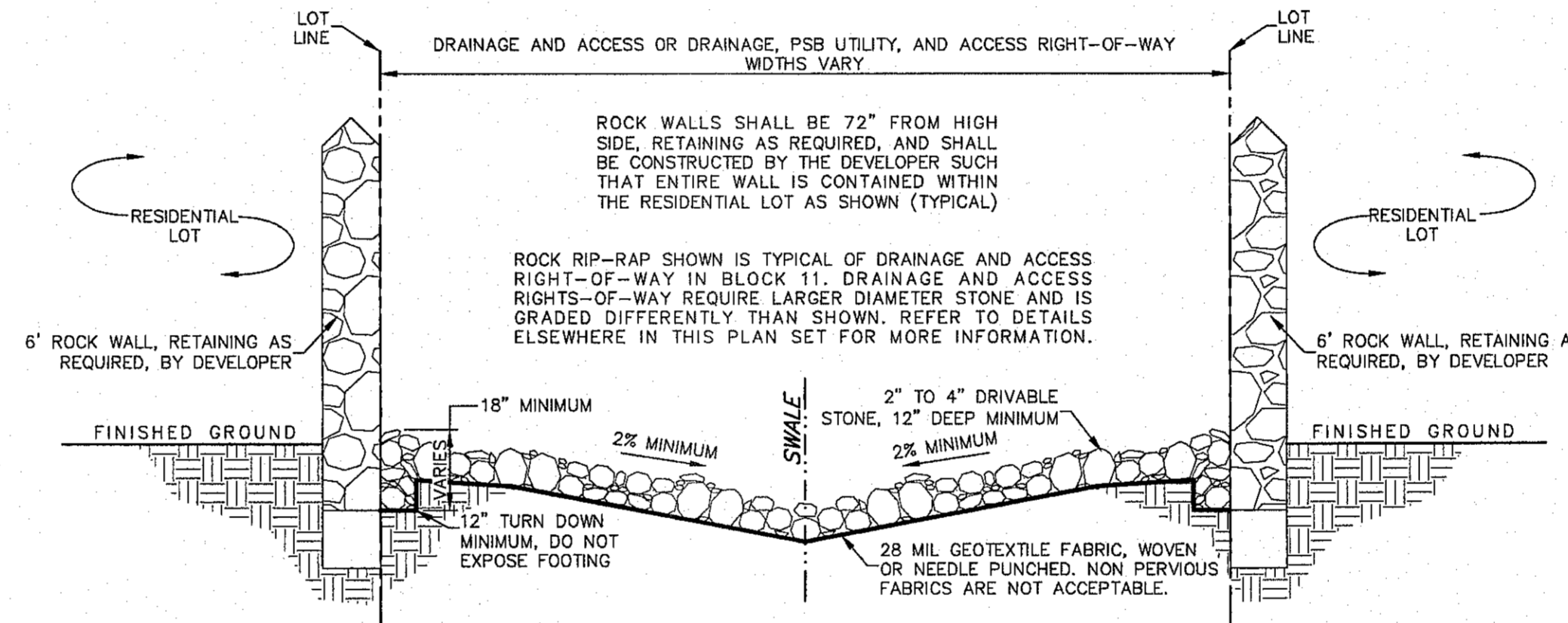


THIS CONDITION WILL NOT BE REQUIRED FOR GRADED SLOPES THAT ARE TEMPORARY IN NATURE UNLESS NOTED OTHERWISE IN THE PLAN VIEWS. ADDITIONALLY, NATIVE ROCK ARE NOT REQUIRED WITHIN LOTS. EROSION CONTROL MEASURES ON GRADED SLOPES WITHIN THE LOTS SHALL BE THE RESPONSIBILITY OF THE BUILDER AND FUTURE HOME OWNER.



LOOSE ROCK RIP-RAP
N.T.S.

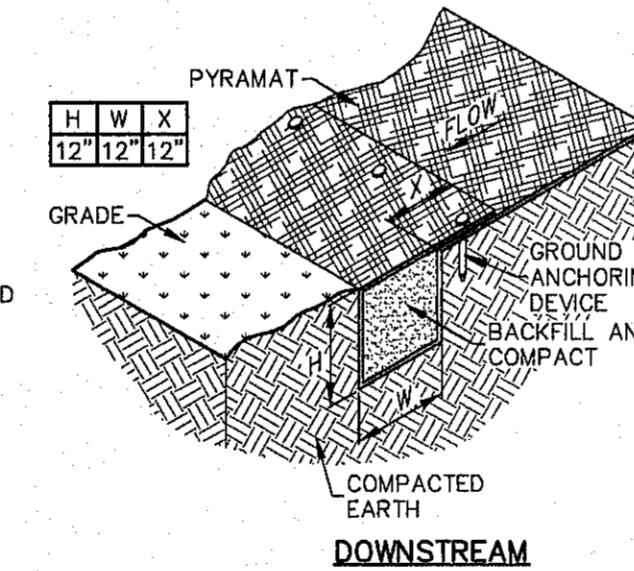
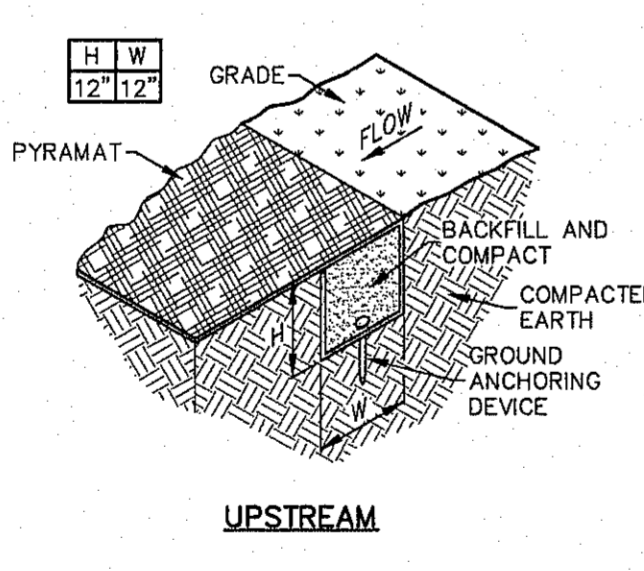
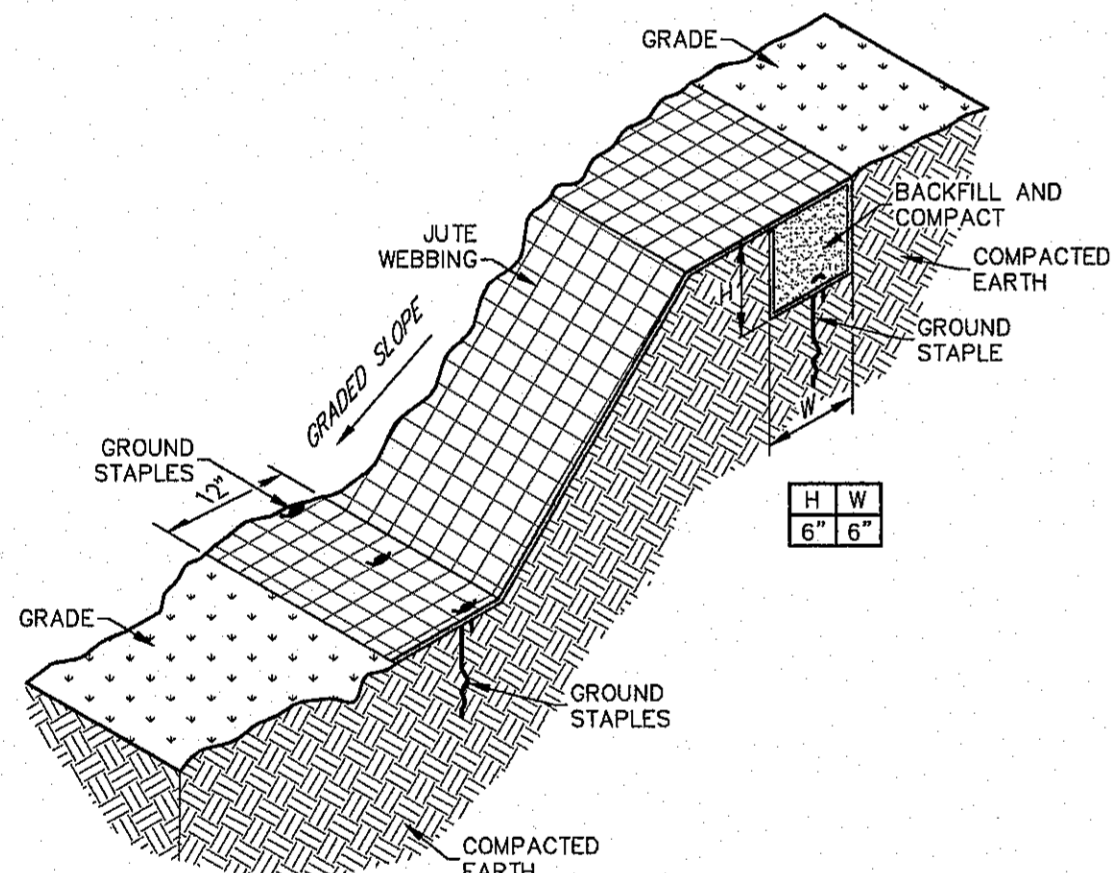
NOTE: WHERE PARK BOUNDARIES ADJUT RESIDENTIAL LOTS, THE ROCK WALLS SHALL BE CONSTRUCTED BY DEVELOPER AS SHOWN, ENTIRETY OF THE ROCK WALL SHALL BE INSTALLED ON THE RESIDENTIAL LOT.



LOOSE COBBLE AND RIP-RAP APPLICATIONS
NOT TO SCALE

TACKIFIERS, HYDROMULCHES, AND NETTING

SPRAY APPLIED TACKIFIERS AND HYDROMULCHES SUCH AS "EARTHBOUND" PRODUCTS MANUFACTURED BY LSC ENVIRONMENTAL PRODUCTS, LLC / TERRA NOVO OR "GUARDIAN" AND "SUPER TACK" BY RANTEC CAN BE CONSIDERED. RANTEC ALSO CARRIES A FULL LINE OF BOTH SYNTHETIC AND NATURAL SOIL WEBBINGS AND OTHER PRODUCTS THAT ARE EXCELLENT FOR SOIL STABILIZATION. GROW ORGANIC CARRIES JUTE WEBBING BY THE ROLL THAT IS QUITE INEXPENSIVE AND VERY EFFECTIVE FOR USE IN SOIL STABILIZATION. ENVIROSCAPE ECM, LTD. CARRIES A FULL LINE OF NATURAL EROSION CONTROL BLANKETS THAT INCLUDE AGRICULTURAL STRAW, ASPEN SHAVINGS, AND COCONUT FIBERS. ALL ARE ENCASED IN PHOTO OR BIODEGRADABLE NETTINGS, AND PROVIDE PROTECTION FROM 12 TO 36 MONTHS. THEIR COIR SERIES BLANKETS ARE SPECIFICALLY ENGINEERED FOR SLOPES OF 1:1 OR GREATER AND FOR USE AS LININGS FOR CHANNELS WITH HIGH RATES OF FLOW.



- PREPARE THE SURFACE TO BE PROTECTED BY THE JUTE WEBBING EROSION CONTROL BLANKET. REMOVE LARGE STONES AND SLOPE THE GROUND TO THE DESIRED GRADE YOU WANT WHEN FINISHED. YOU CAN USE HAND TOOLS FOR A SMALL JOB OR MAY NEED TO USE A TRACTOR OR BOBCAT FOR A LARGE JOB.
- ADD ANY SOIL AMENDMENTS BEFORE YOU INSTALL THE JUTE WEBBING EROSION CONTROL BLANKET. FOR EXAMPLE, YOU MAY NEED TO AMEND THE SOIL WITH LIME OR ADD FERTILIZER.
- PLACE RESERVED TOPSOILS ON GROUND PER SPECIFICATIONS AND DETAILS.
- DIG A SMALL TRENCH ACROSS THE TOP OF THE SLOPE WHERE YOU WILL INSTALL THE ROLLS OF JUTE EROSION CONTROL BLANKET. THE TRENCH ACTS AS AN ANCHOR FOR THE BLANKET. DIG THE TRENCH APPROXIMATELY 6 INCHES WIDE BY 6 INCHES DEEP THE FULL WIDTH OF THE SLOPE.
- INSTALL THE JUTE ROLL OF EROSION CONTROL BLANKET IN THE TRENCH YOU'VE JUST DUG. PLACE AT LEAST 12 INCHES OF THE BLANKET ABOVE THE TRENCH, EXTENDING UP THE HILL. INSTALL ANCHORING STAPLES THROUGH THE BLANKET AND INTO THE BOTTOM OF THE TRENCH. THE STAPLES SHOULD BE PLACED NO MORE THAN A FOOT APART IN THE TRENCH. THE ANCHORS OR STAPLES ARE USUALLY SOLD WITH THE EROSION CONTROL BLANKET IF THE SOIL IS LOOSE OR SANDY, MAKE SURE THE ANCHORS ARE LONG ENOUGH TO INSTALL DEEPER IN THE TRENCH.
- BACKFILL THE TRENCH WITH DIRT AND MAKE SURE IT'S COMPACTED TO HELP HOLD THE JUTE EROSION CONTROL BLANKET IN PLACE. AFTER THE SOIL IN THE TRENCH HAS BEEN COMPACTED, SEED THE DIRT COVERING THE TRENCH, BRING THE 12 INCHES OF BLANKET DOWN OVER THE SEEDED TRENCH AND INSTALL MORE STAPLES OR STAPLES, A FOOT APART, ACROSS THE LENGTH OF THE BLANKET.
- UNROLL THE REMAINING JUTE EROSION CONTROL BLANKET OVER THE SLOPE YOU'VE SEEDDED. IF YOU NEED MORE THAN ONE ROLL OF BLANKET, INSTALL IT AS YOU WOULD ROOF SHINGLES, WITH AN OVERLAP OF AT LEAST 3 INCHES.
- OVERLAP BY AT LEAST 3 INCHES WHEREVER THE JUTE EROSION CONTROL BLANKET ENDS AND ANOTHER BEGINS, WHETHER HORIZONTALLY OR VERTICALLY. OVERLAP ALL SEAMS AS WELL.
- INSTALL STAPLES OR STAPLES AT EVERY SEAM. STAPLES THAT ARE PLACED ACCORDING TO DIRECTIONS HELP DECREASE THE WEIGHT AND PULL ON THE JUTE WEBBING EROSION CONTROL BLANKET.

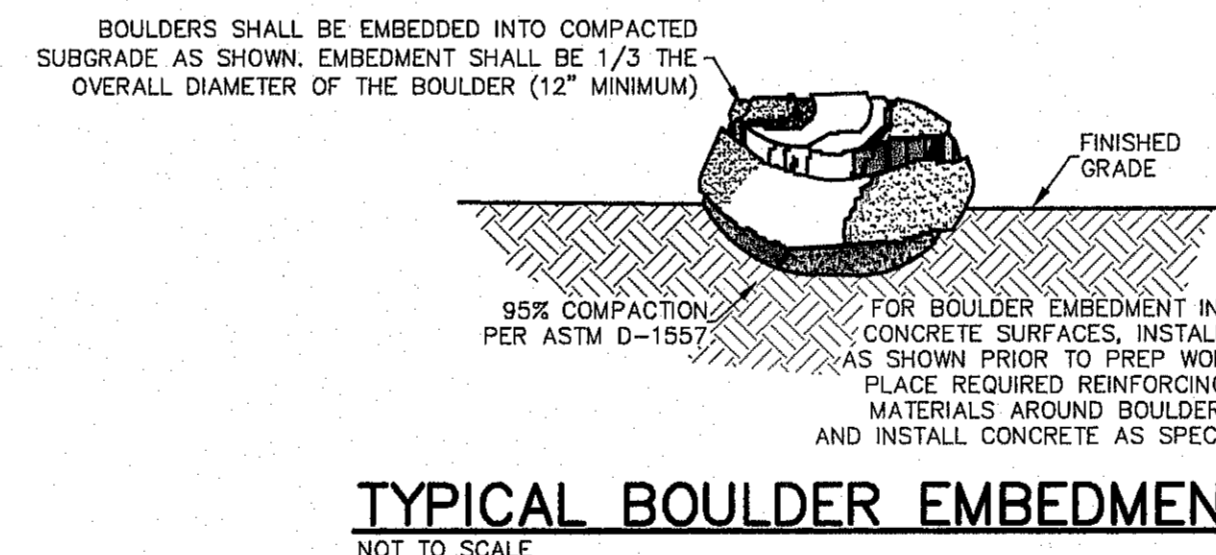
JUTE WEBBING
N.T.S.

PYRAMAT EROSION CONTROL MATTING
N.T.S.

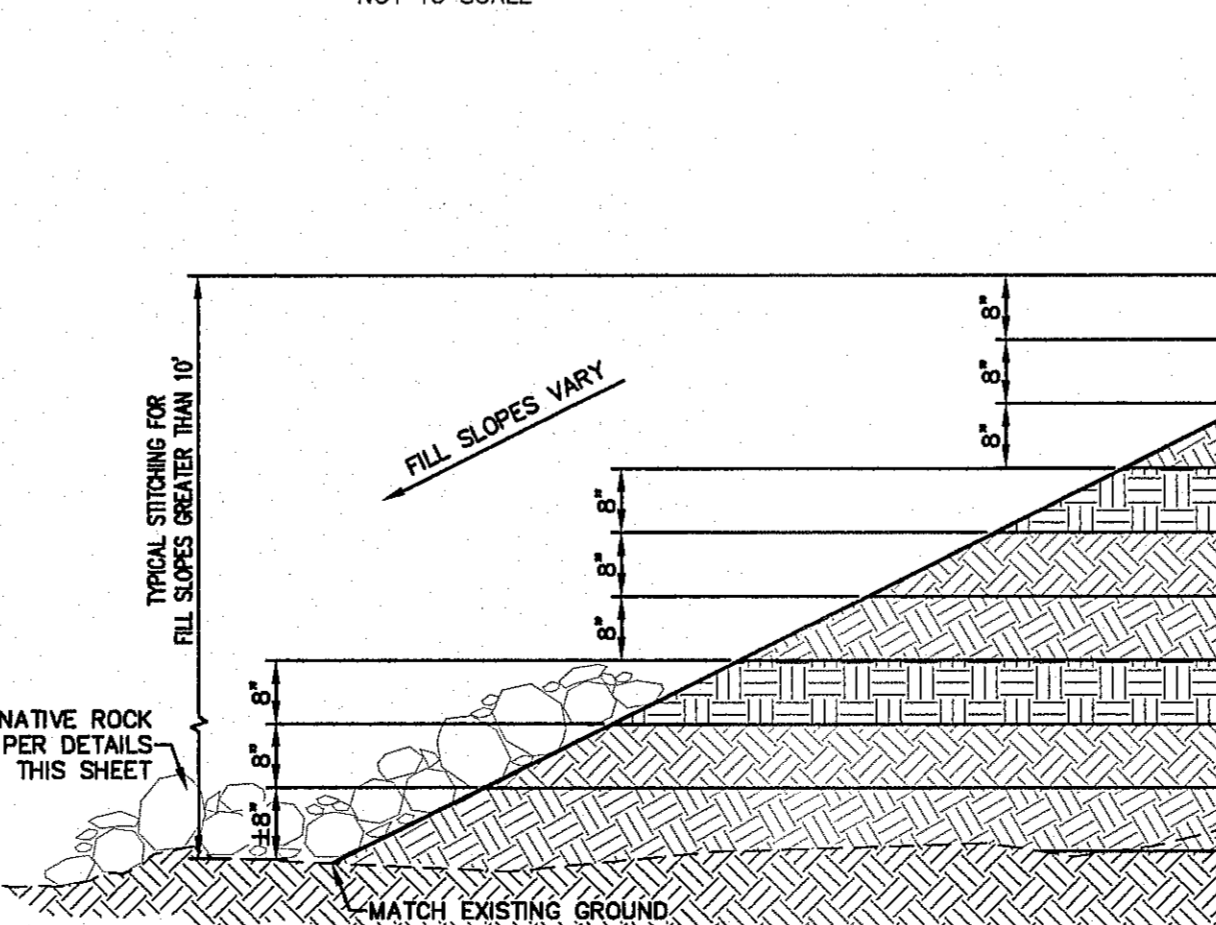
DETAILS SHOWN ARE ACCEPTABLE EXAMPLES OF SLOPE STABILIZATION AND WILL ONLY BE INSTALLED AT THE DIRECTION OF AND PER THE METHOD(S) PRESCRIBED BY THE GEOTECHNICAL AND DESIGN ENGINEERS.

SLOPE STABILIZATION METHODS

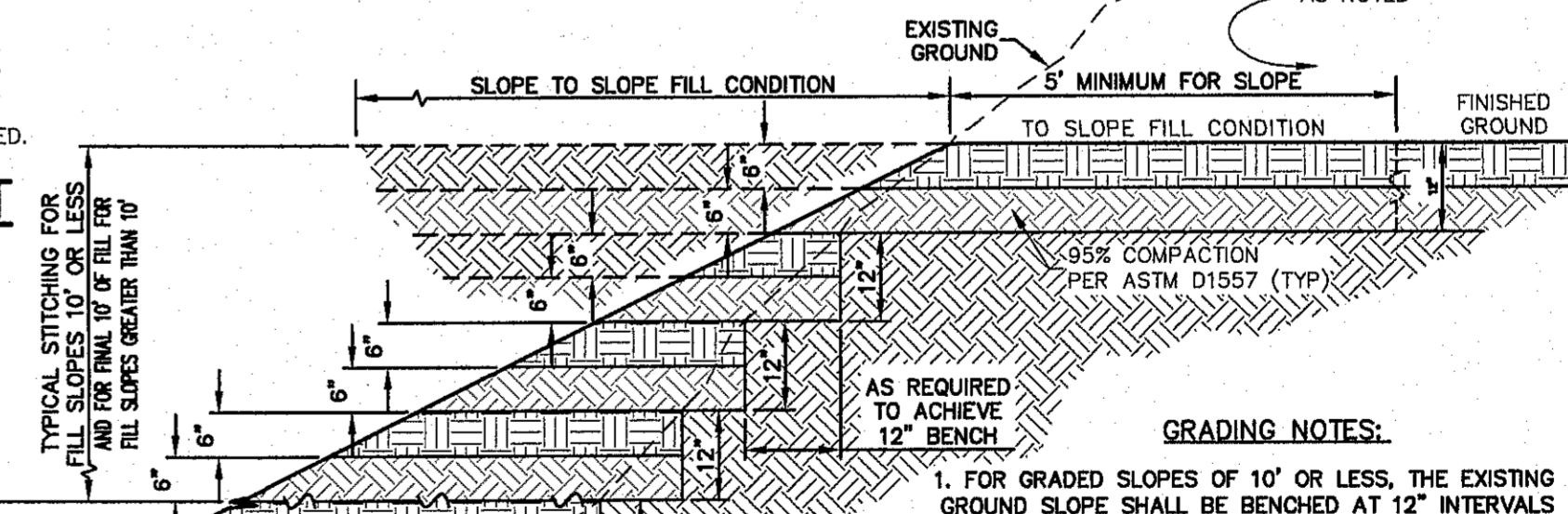
N.T.S.



TYPICAL BOULDER EMBEDMENT
NOT TO SCALE



GROUND STITCHING
SCALE: 1" = 2'-0"



- FOR GRADED SLOPES OF 10° OR LESS, THE EXISTING GROUND SLOPE SHALL BE BENCHED AT 12" INTERVALS AS SHOWN.
- FILL MATERIAL IS TO BE PLACED IN LIFTS OF NOT GREATER THAN 6" AND COMPACTED TO A MINIMUM DENSITY OF 95% OF THE MODIFIED PROCTOR PER ASTM D-1557, WITH A MOISTURE CONTENT OF NOT LESS THAN 3%. A MINIMUM OF TWO LIFTS AND NOT MORE THAN THREE LIFTS PER BENCH SHALL BE REQUIRED.
- FOR GRADED SLOPES GREATER THAN 10°, THE EXISTING GROUND SLOPE SHALL BE BENCHED AT 24" INTERVALS AS OUTLINED ABOVE.
- FILL MATERIAL IS TO BE PLACED ON THE 24" BENCHES IN LIFTS OF NO GREATER THAN 6" AND COMPACTED TO A MINIMUM DENSITY OF 95% OF THE MODIFIED PROCTOR PER ASTM D-1557, WITH A MOISTURE CONTENT OF NOT LESS THAN 3%. A MINIMUM OF THREE LIFTS AND NOT MORE THAN FOUR LIFTS PER BENCH SHALL BE REQUIRED.
- WHEN BACKFILLING SLOPE TO SLOPE, THE FINAL TWO 12" LIFTS ARE TO BE BENCHED INTO THE EXISTING GROUND SLOPES A MINIMUM OF 5" ON EACH SIDE AS SHOWN ABOVE.
- ALL BENCHES CUT INTO THE EXISTING GROUND SLOPES SHALL BE SCARIFIED TO A DEPTH OF 6" MINIMUM AND SHALL BE WETTED PRIOR TO PLACING AND COMPACTING FILL MATERIALS.



Final Approval

NO.	DATE	DESCRIPTION	BY
1	09/23/19	First City Submitted	AHO
2	11/07/19	Second City Submitted	AHO
3	12/02/19	Final City Submitted	AHO

WARNING!
BEFORE YOU DIG - CALL BEFORE YOU DIG - CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

BEFORE YOU DIG - CALL
EL PASO ELECTRIC COMPANY 843-5170
AT&T 1-800-DIG-LESS
TEXAS GAS SERVICE 1-800-368-5000
TEXAS GAS SERVICE 562-8411
PUBLIC SERVICE BOARD (WATER & SEWER) 1-800-DIG-LESS
AFTER HOUR EMERGENCY (EPW) 994-5775
TEXAS EXCAVATION SAFETY SYSTEM 1-800-344-4371
KINDER-MORGAN EPW PIPELINES 1-800-238-3764
EL PASO UTILITY SERVICES 1-800-238-3764
EL PASO UTILITY SERVICES AND MAINTENANCE 1-800-238-3764

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CSA design group, inc.
Texas Registered Engineering Firm #4987
1845 Northwestern Dr., Ste C
El Paso, Texas 79912
Tel: (915) 877.4156
Fax: (915) 877.4334
www.csadesign.com



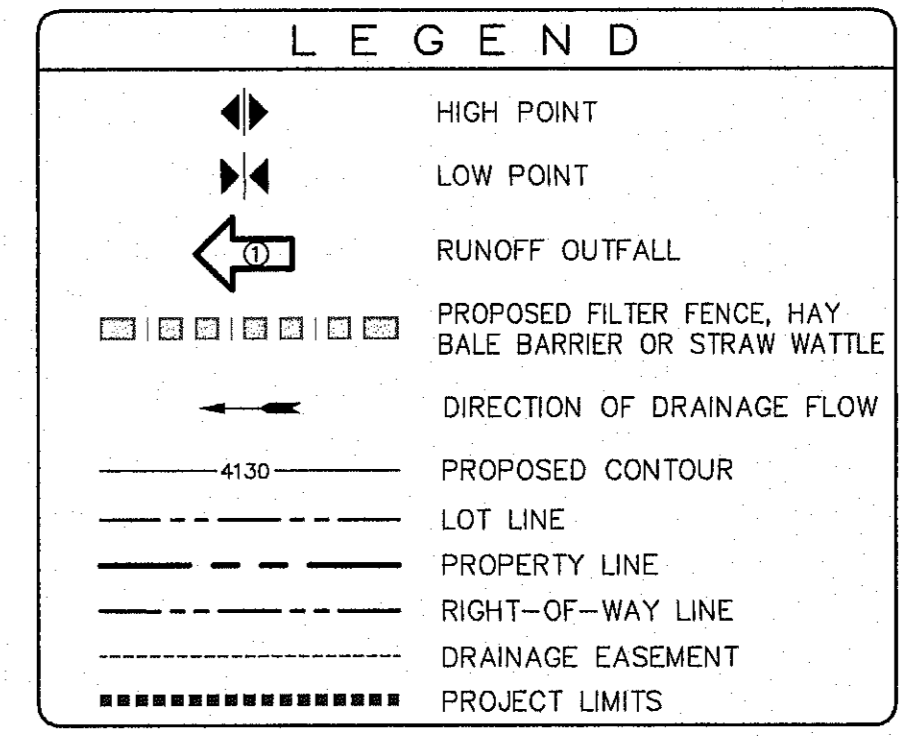
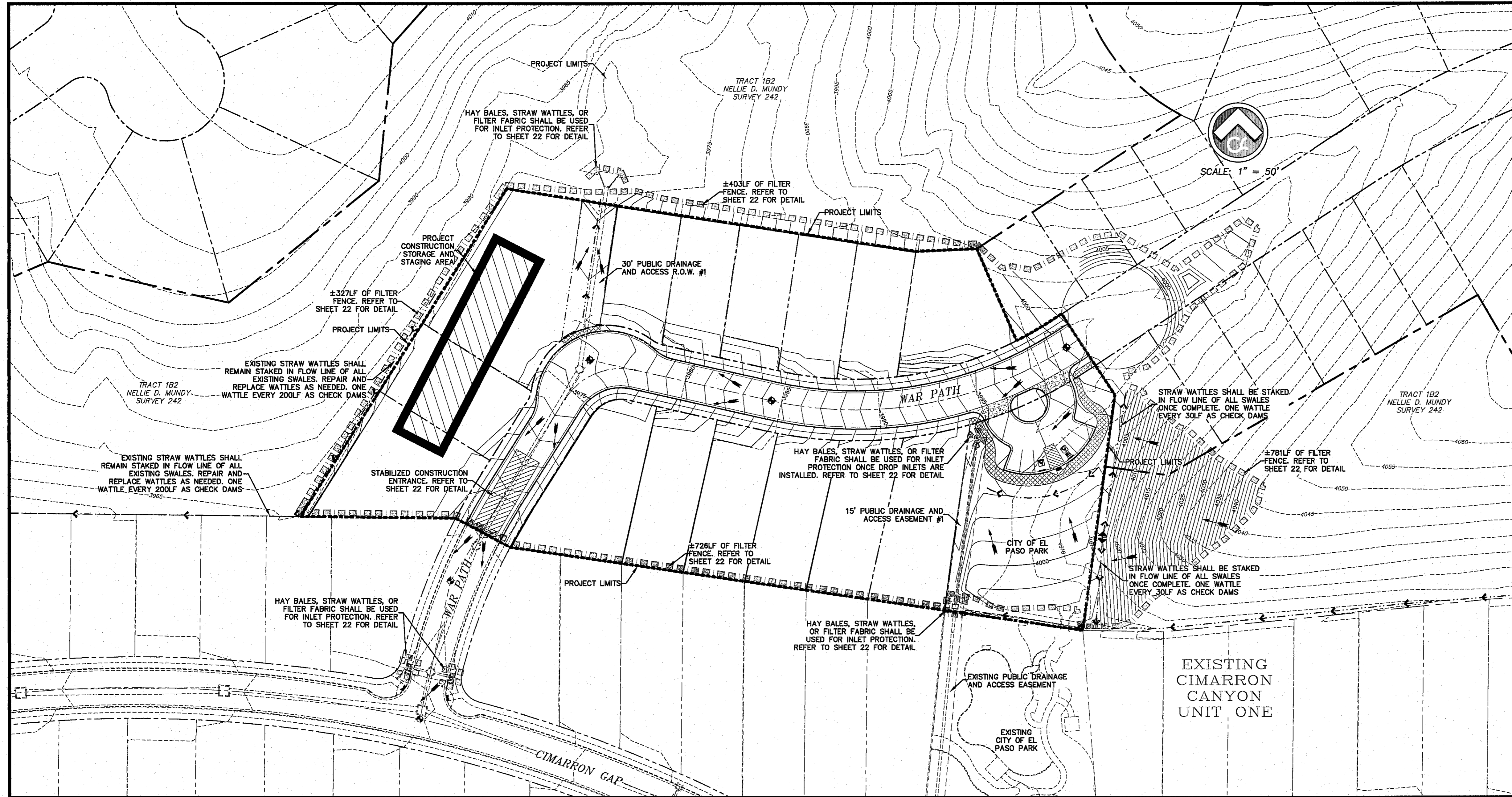
CIMARRON CANYON
UNIT FOUR
SUBDIVISION

SHEET TITLE
GRADING
STABILIZATION
NOTES AND
DETAILS

JOB NO.	1723
DATE	08/08/18
DATE	06/20
DATE	AS NOTED

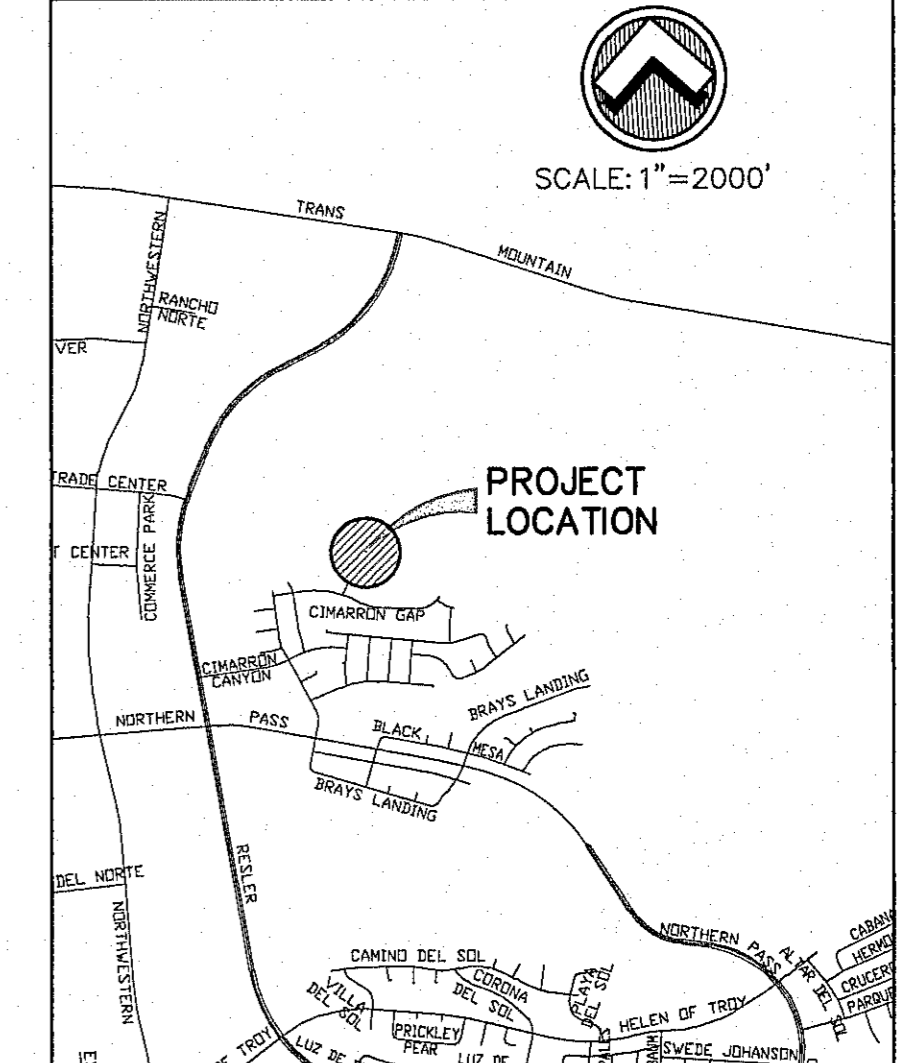
SHEET NO.
20
SHEET SEQUENCE
21 OF 31

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11/11/20 11:20:00 AM
11/11/20 2:00:00 PM
11/11/20 2:00:00 PM
11/11/20 2:00:00 PM



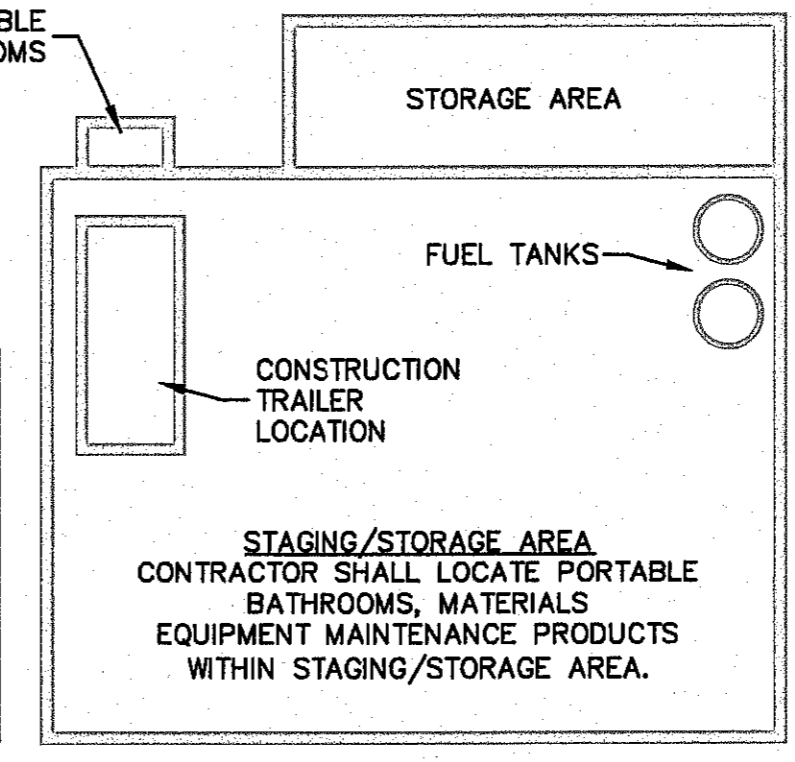
DRAINAGE NOTE:
REFER TO CIVIL DRAINAGE PLAN FOR DRAINAGE AREAS AND DISCHARGE COMPUTATIONS.

DUST AND EROSION CONTROL NOTE:
CONTRACTOR SHALL MAKE PROVISIONS FOR TEMPORARY DUST AND EROSION CONTROL WHERE EXTENSIVE DIRT OR DUST OPERATIONS ARE PERFORMED. USE WATER SPRINKLING AND OTHER METHODS TO LIMIT DUST AND DIRT MIGRATION IN COMPLIANCE WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.



VICINITY MAP
Approx. Latitude = 31°53'45"N
Approx. Longitude = 106°34'03"W

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND SUBMITTAL OF ALL STORM WATER POLLUTION CONTROL PERMITS. THE CONTRACTOR SHALL SUBMIT A NOI AND SDOCP APPLICATION FORM PRIOR TO CONSTRUCTION. AFTER COMPLETION OF PROJECT, CONTRACTOR SHALL SUBMIT A NOTICE OF TERMINATION FORM TO COMPLETE NPDES REQUIREMENTS.
STAGING AREA SHALL PROVIDE ADEQUATE SPACE FOR TRAILER STORAGE, FUEL/LUBRICANT STORAGE, PORTABLE RESTROOMS, EQUIPMENT STORAGE AND MAINTENANCE, ETC.

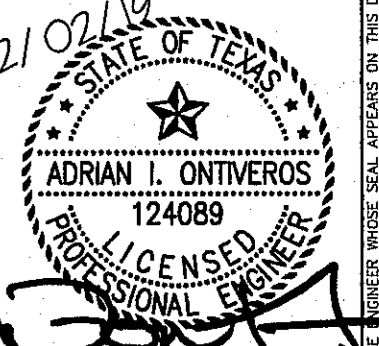


NO.	DATE	DESCRIPTION	BY
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3	12/02/19	Final City Submittal	AHO

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PUBLIC SERVICE BOARD (WATER & SEWER) 562-8411
PUBLIC SERVICE EMERGENCY (EPW) 594-5775
TEXAS EXCAVATION SAFETY SYSTEM 1-800-244-5777
KINDER-MORGAN EPNG PIPELINES 1-800-238-3764
EL PASO POLICE 595-3051
EL PASO FIRE DEPARTMENT 595-3051

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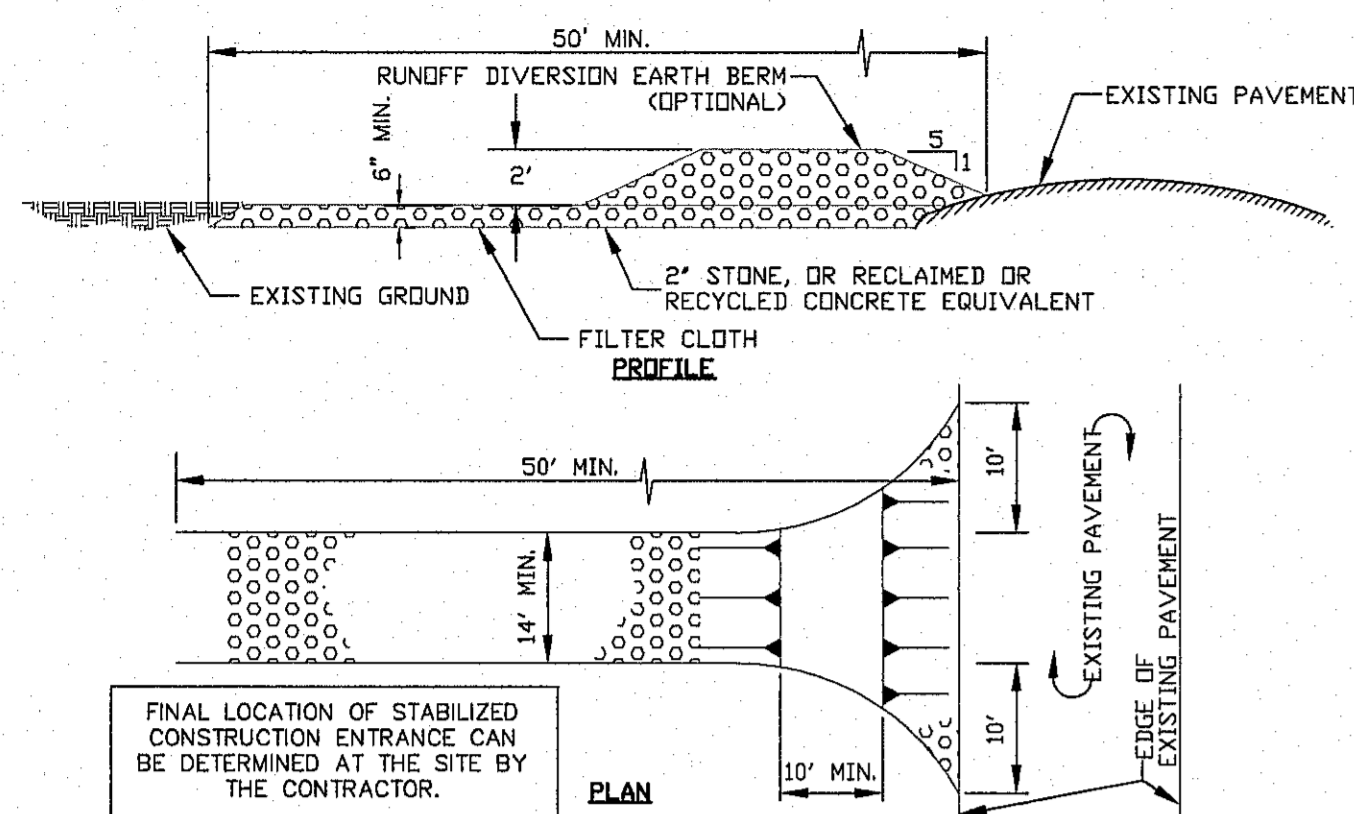


CIMARRON CANYON UNIT FOUR SUBDIVISION

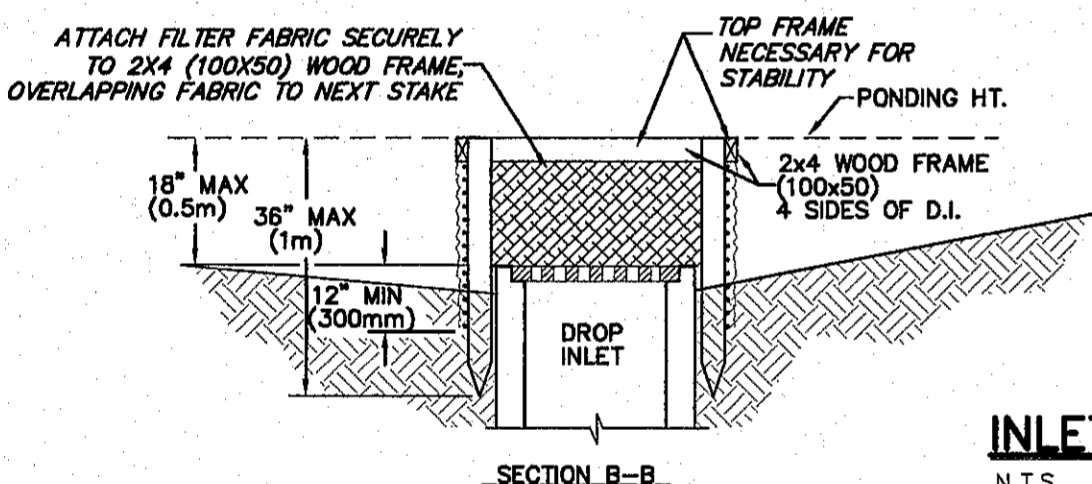
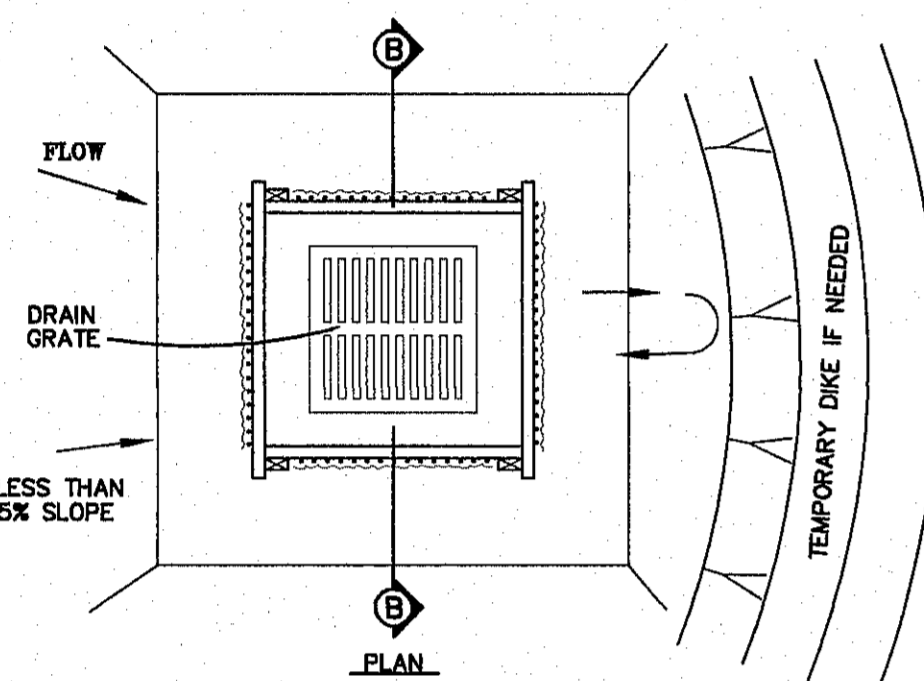
STORM WATER POLLUTION PREVENTION PLAN

COB	1723
DESIGN BY	JOB NO.
COB-SM	08/08/18
DRAWN BY	
AHO	AS NOTED
CHECKED BY	

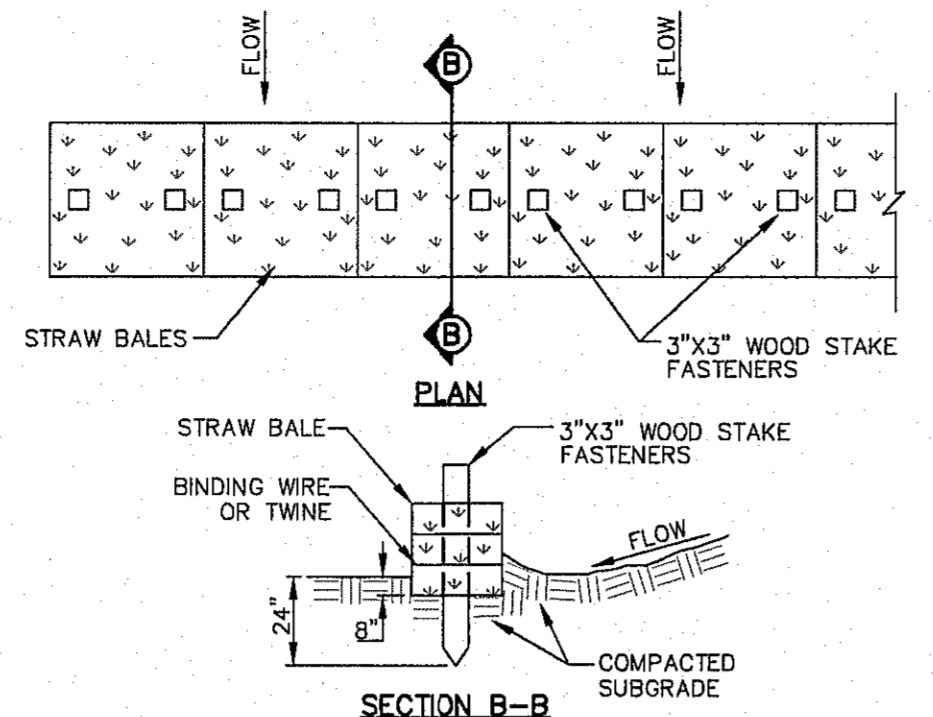
SHEET NO. **21**
SHEET SEQUENCE **22** OF **31**



STABILIZED CONSTRUCTION ENTRANCE
SCALE: 1" = 2'-0"



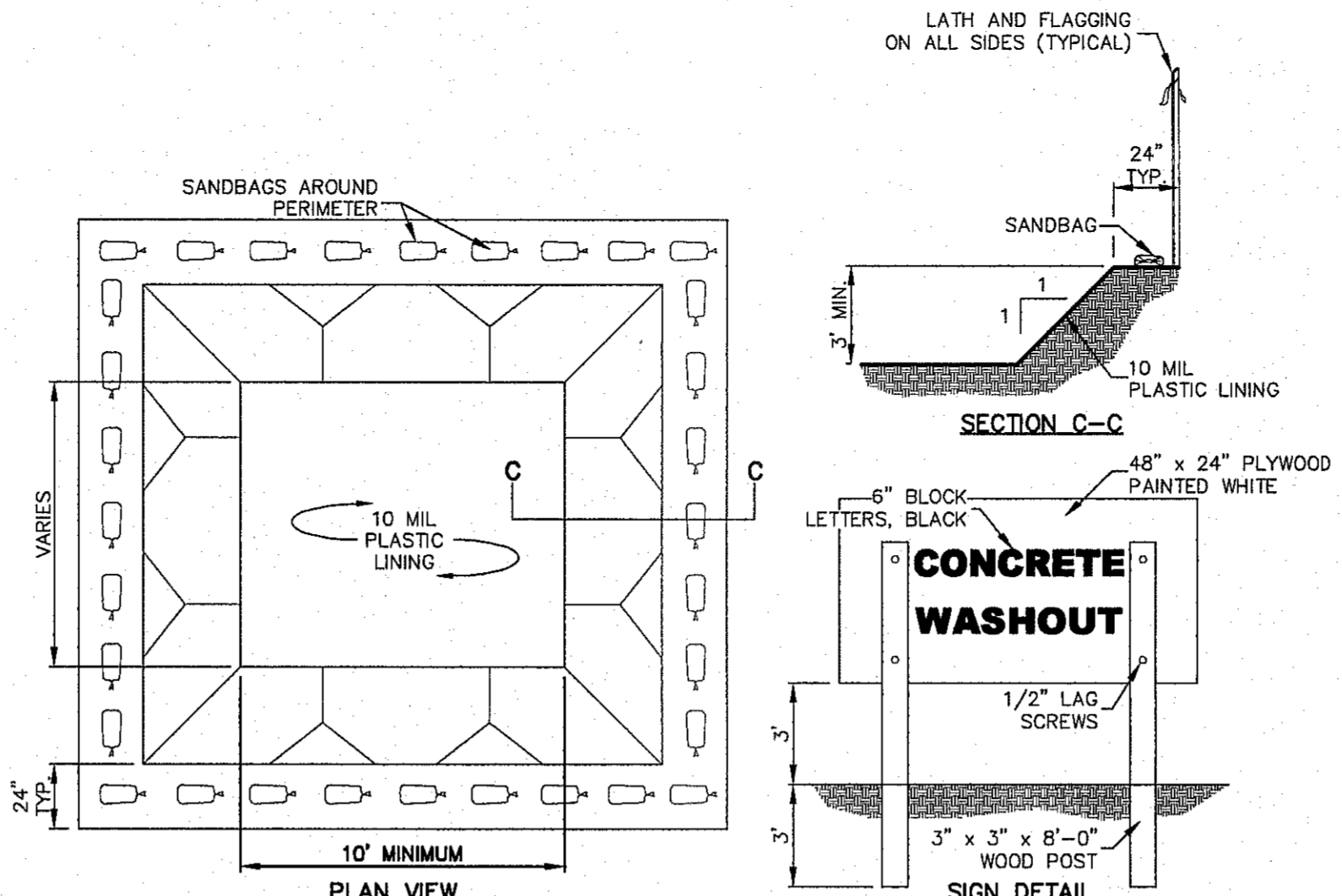
INLET PROTECTION
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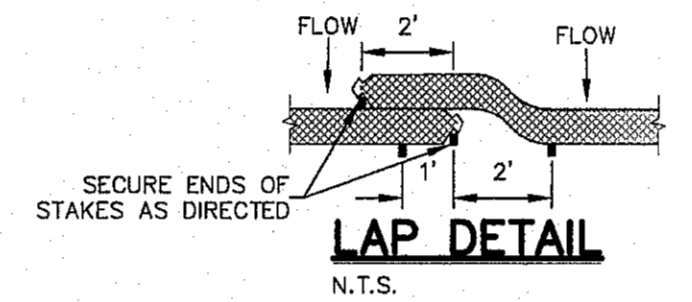
- NOTES (BALE BARRIER):**
- BALES TO BE PLACED PERPENDICULAR TO FLOW. BALE BARRIERS PLACED IN "V" DITCH MUST BE STAGGERED.
 - BALES MUST BE FIRMLY STAKED INTO THE ENTRENCHMENT AND THE ENTRENCHMENT BE PROPERLY BACKFILLED.
 - BALES MUST BE PLACED END TO END AND THERE CAN BE NO GAPS BETWEEN THE BALES.
 - BARRIERS MUST BE INSPECTED AND REPAIRED IMMEDIATELY AFTER EACH RAINFALL OR DAILY IF THERE IS PROLONGED RAINFALL.
 - DAMAGED STRAW BALES REQUIRE IMMEDIATE REPLACEMENT.
 - TRAPPED SEDIMENTS MUST BE REMOVED AND DISPOSED OF PROPERLY.

STRAW BALE BARRIER
SCALE: 1" = 5'-0"

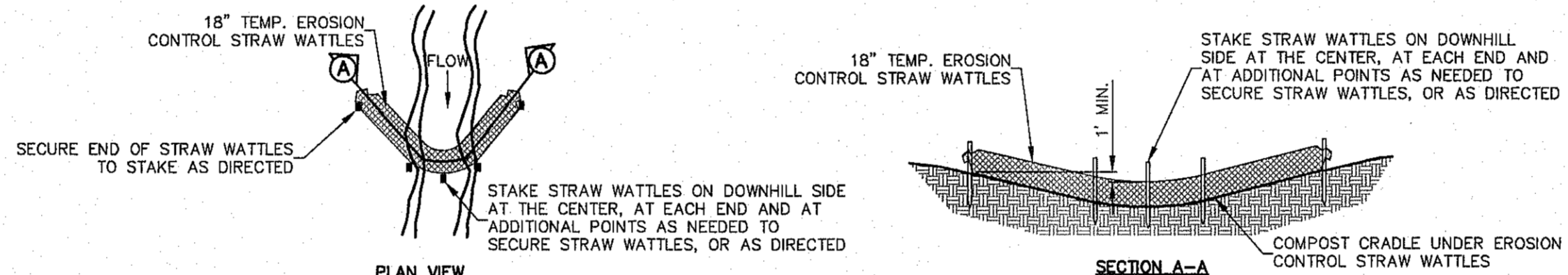
- NOTES:**
- THE FENCE REQUIRES FREQUENT INSPECTION AND PROMPT MAINTENANCE TO MAINTAIN ITS EFFECTIVENESS.
 - INSPECT THE FENCE AFTER EACH RAINFALL.
 - CHECK FOR AREAS WHERE RUN-OFF HAS ERODED A CHANNEL BENEATH THE FENCE, OR WHERE THE FENCE WAS CAUSED TO SAG OR COLLAPSE.
 - ALL NEEDED REPAIRS SHALL BE PERFORMED IMMEDIATELY.
 - REMOVE AND PROPERLY DISPOSE OF SEDIMENT WHEN IT IS ONE-THIRD TO ONE-HALF THE HEIGHT OF THE FENCE OR AFTER EACH STORM.
 - 4" MIN. STEEL OR WOOD POSTS SPACED AT 6' O.C. SOFTWOOD POSTS SHALL HAVE A 3" MIN. DIAMETER OR NOMINAL 2"x4". HARDWOOD POSTS SHALL HAVE A MINIMUM CROSS SECTION OF 1.5"x1.5"



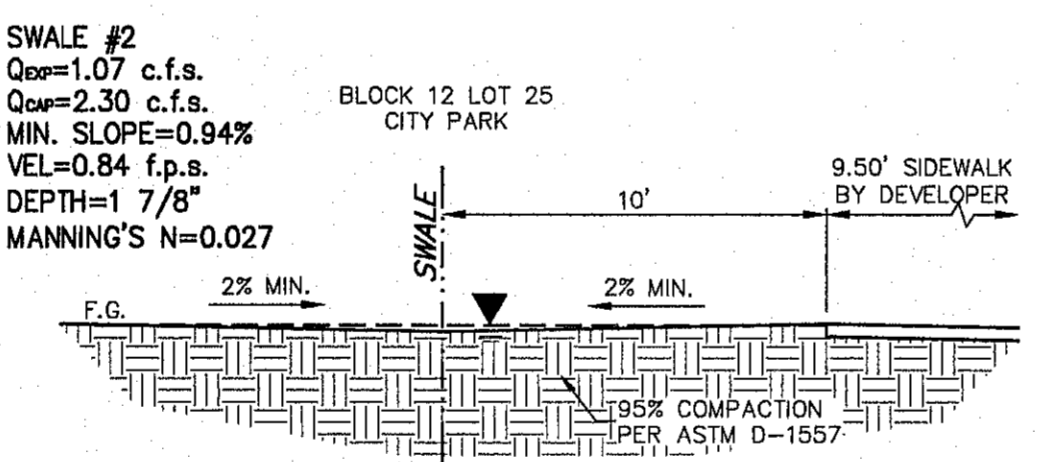
CONCRETE WASHOUT
N.T.S.



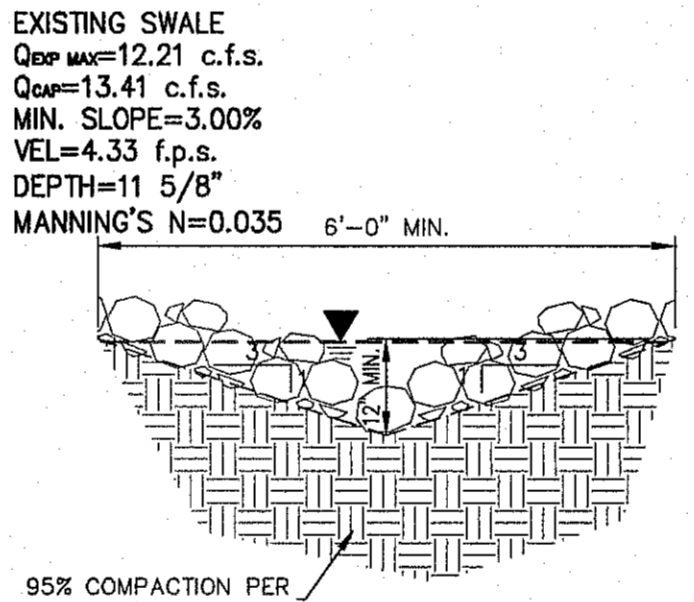
LAP DETAIL
N.T.S.



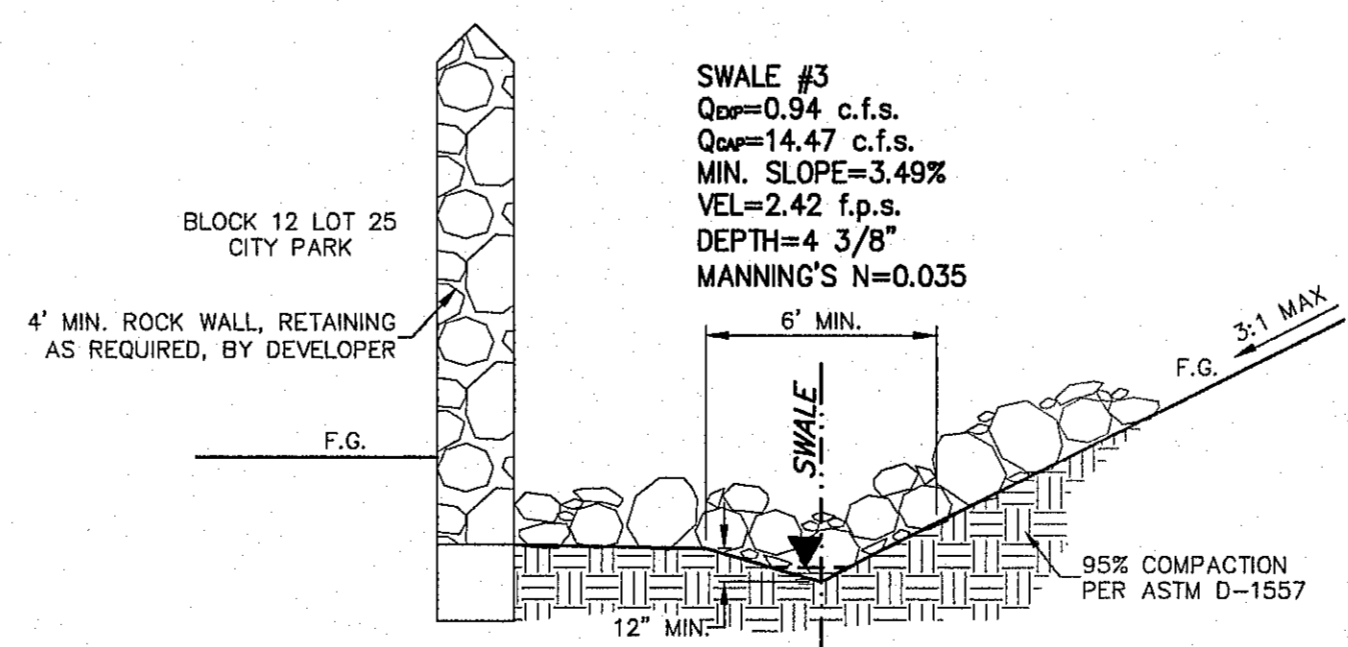
EROSION CONTROL STRAW WATTLE CHECK DAM
N.T.S.



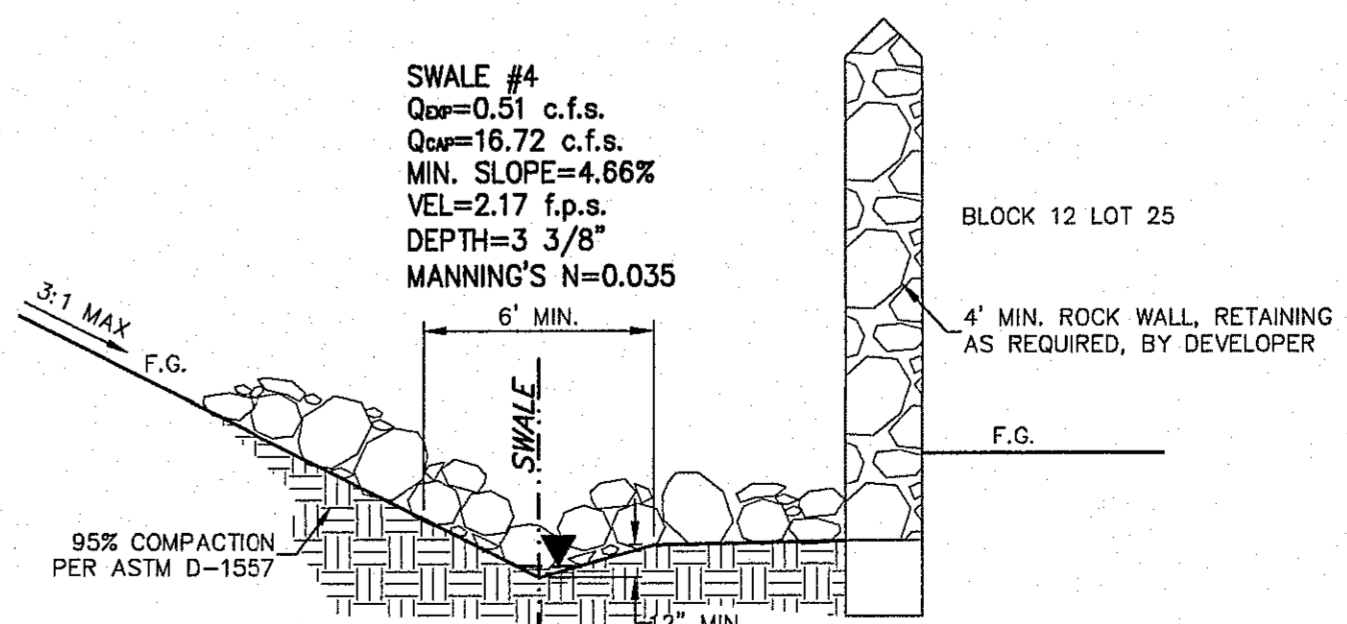
SWALE #2
SCALE: 1" = 5'



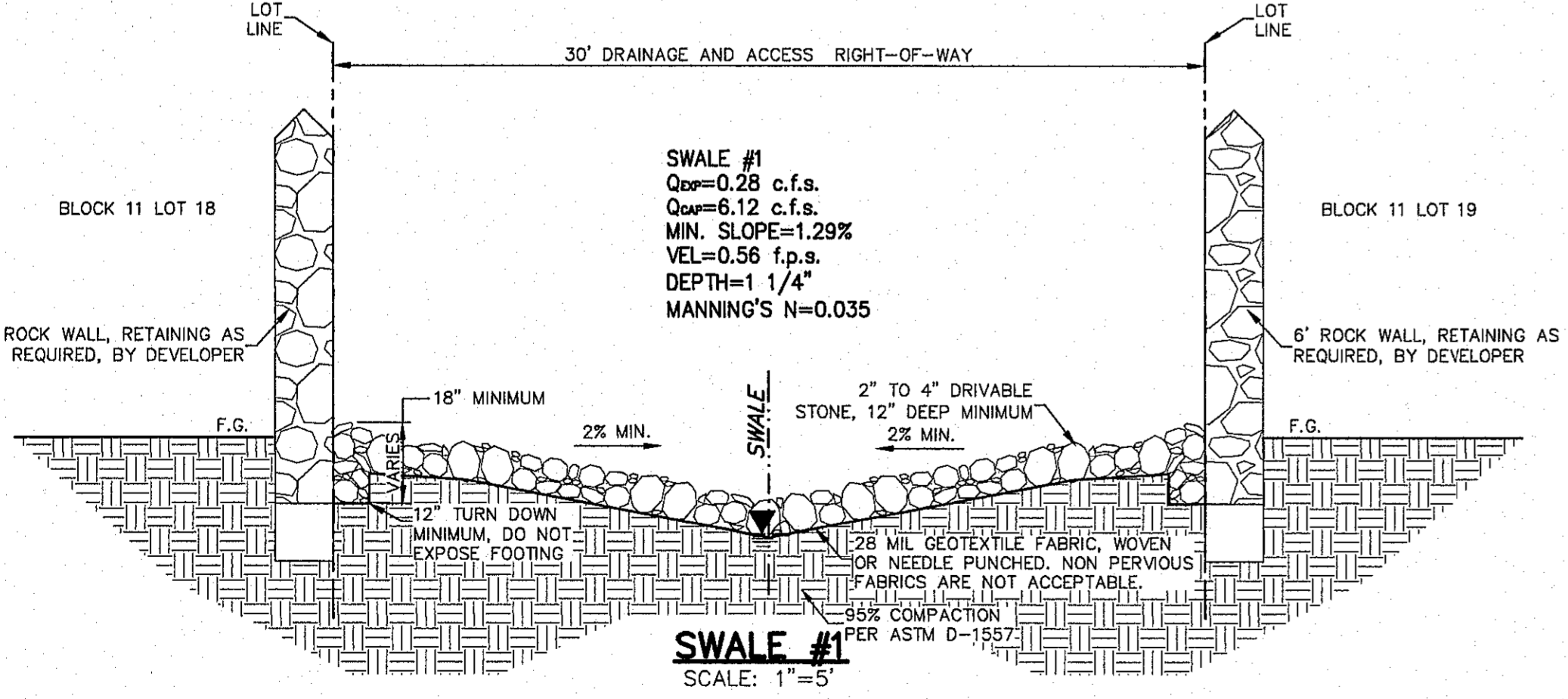
EXISTING SWALE
SCALE: 1" = 2'-0"



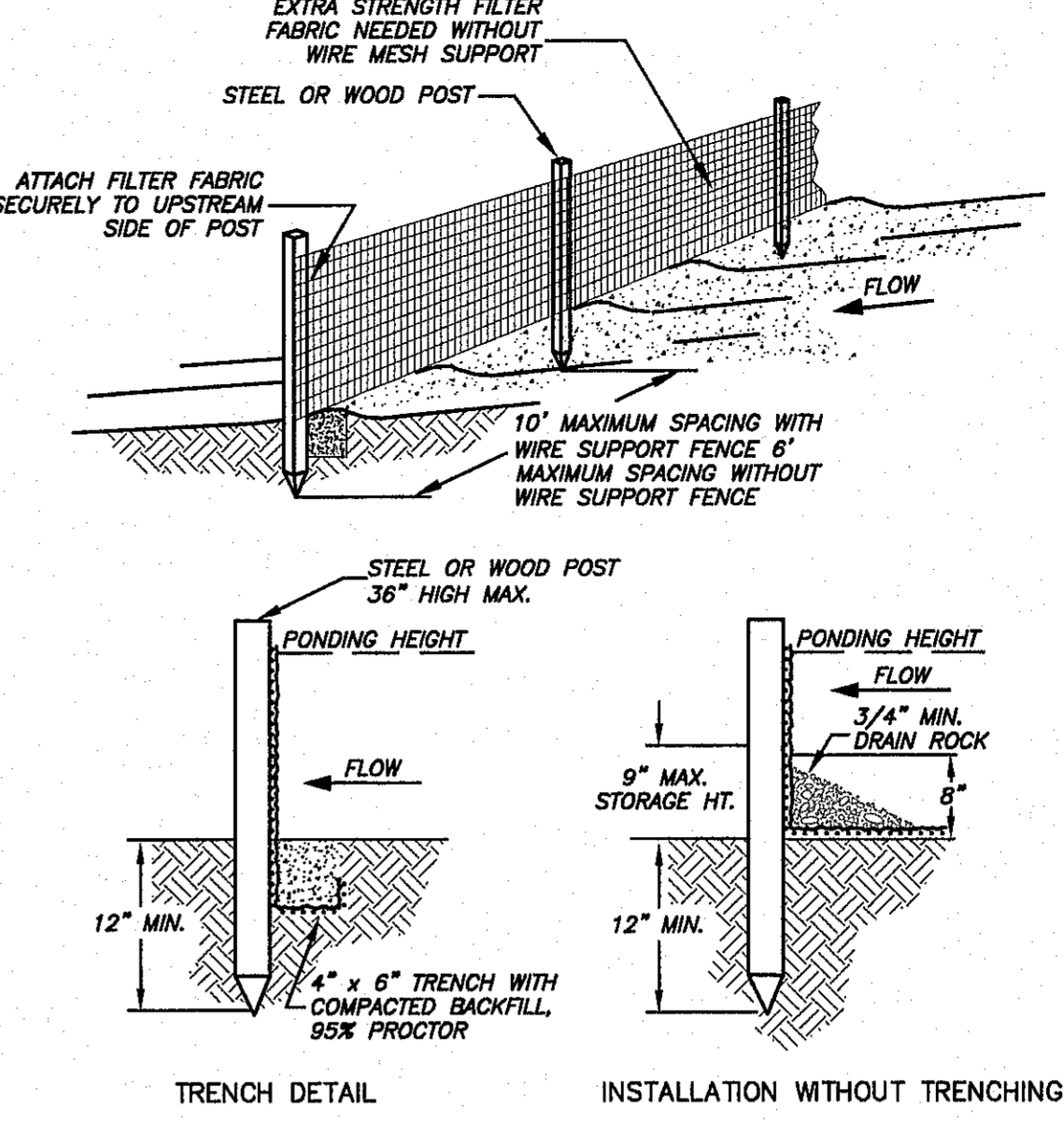
SWALE #3
SCALE: 1" = 5'



SWALE #4
SCALE: 1" = 5'

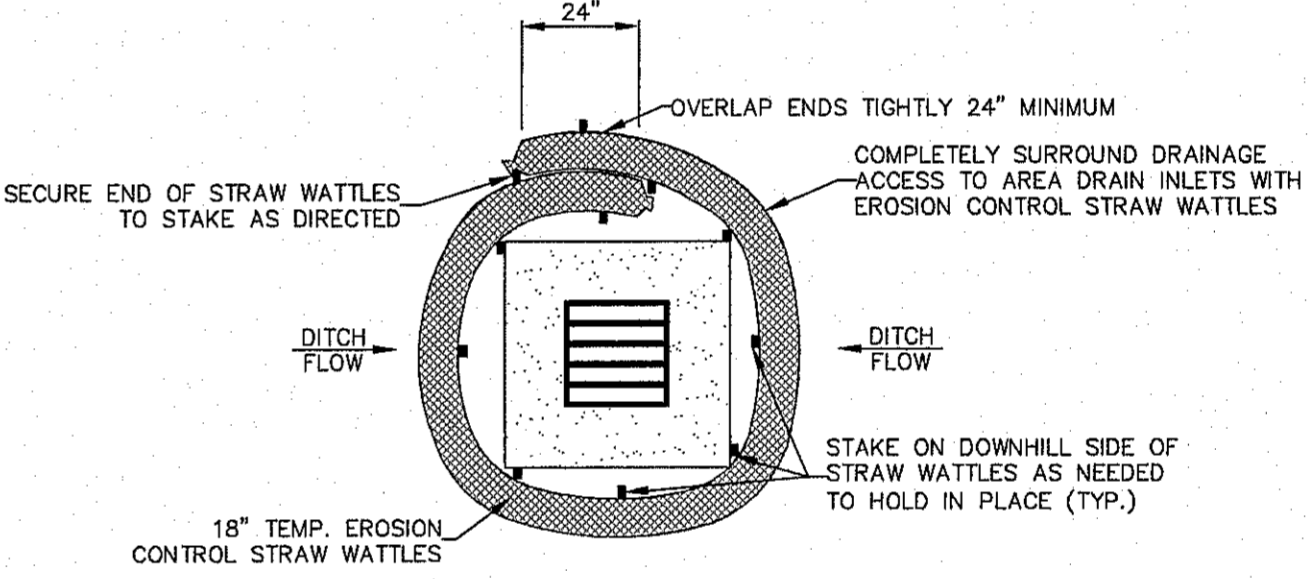


SWALE #1
SCALE: 1" = 5'



FILTER FENCE
SCALE: 1" = 5'-0"

- NOTES:**
- THE FENCE REQUIRES FREQUENT INSPECTION AND PROMPT MAINTENANCE TO MAINTAIN ITS EFFECTIVENESS.
 - INSPECT THE FENCE AFTER EACH RAINFALL.
 - CHECK FOR AREAS WHERE RUN-OFF HAS ERODED A CHANNEL BENEATH THE FENCE, OR WHERE THE FENCE WAS CAUSED TO SAG OR COLLAPSE.
 - ALL NEEDED REPAIRS SHALL BE PERFORMED IMMEDIATELY.
 - REMOVE AND PROPERLY DISPOSE OF SEDIMENT WHEN IT IS ONE-THIRD TO ONE-HALF THE HEIGHT OF THE FENCE OR AFTER EACH STORM.
 - 4" MIN. STEEL OR WOOD POSTS SPACED AT 6' O.C. SOFTWOOD POSTS SHALL HAVE A 3" MIN. DIAMETER OR NOMINAL 2"x4". HARDWOOD POSTS SHALL HAVE A MINIMUM CROSS SECTION OF 1.5"x1.5"



STRAW WATTLE PLACED AT AREA DRAIN INLETS
N.T.S.

- NOTES:**
- LENGTHS OF EROSION CONTROL STRAW WATTLES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED. MAXIMUM LENGTH OF STRAW WATTLES SHALL BE 60' FOR 18" DIAMETER OR 30' FOR 12" DIAMETER STRAW WATTLES.
 - UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE STRAW WATTLES WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
 - STUFF STRAW WATTLES WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION.
 - STAKES SHALL BE 2" x 2" WOOD OR #3 REBAR, 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE STRAW WATTLES, OR AS DIRECTED.
 - DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.

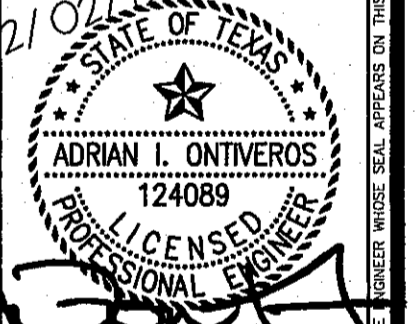
NO.	DATE	DESCRIPTION	BY
1	09/23/19	Final City Submittal	AHO
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EXISTING UNDERGROUND
IMPROVEMENTS IN
PROJECT AREA

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EL PASO ELECTRIC COMPANY
1-800-306-5270
EL PASO GAS SERVICE, INC.
1-800-306-5270
TELEPHONE SERVICE CENTER
1-800-306-5270
PUBLIC SERVICE ROAD (WATER & SEWER)
689-8811
AFTER HOURS EMERGENCY (EPW)
1-800-306-5270
FLOOD CONTROL SAFETY SYSTEM
1-800-306-5270
KINDER-MORGAN EPMS MAINTENANCE
1-800-212-0151
EL PASO STREETS, SIGNS, STREETS AND MAINTENANCE
1-800-306-5270
EL PASO STREETS, SIGNS, STREETS AND MAINTENANCE
1-800-306-5270

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fax (915) 877.4334
www.csaengineers.com

**CIMARRON CANYON
UNIT FOUR
SUBDIVISION**

**STORM WATER
POLLUTION
PREVENTION
PLAN DETAILS**

DOB	1723
ISSUED BY	JWB
CCB-SM	08/08/18
DATE	
AHO	AS NOTED
SCALE	
SHEET NO.	22
TOTAL SHEETS	23 OF 31



FUTURE CIMARRON CANYON UNITS

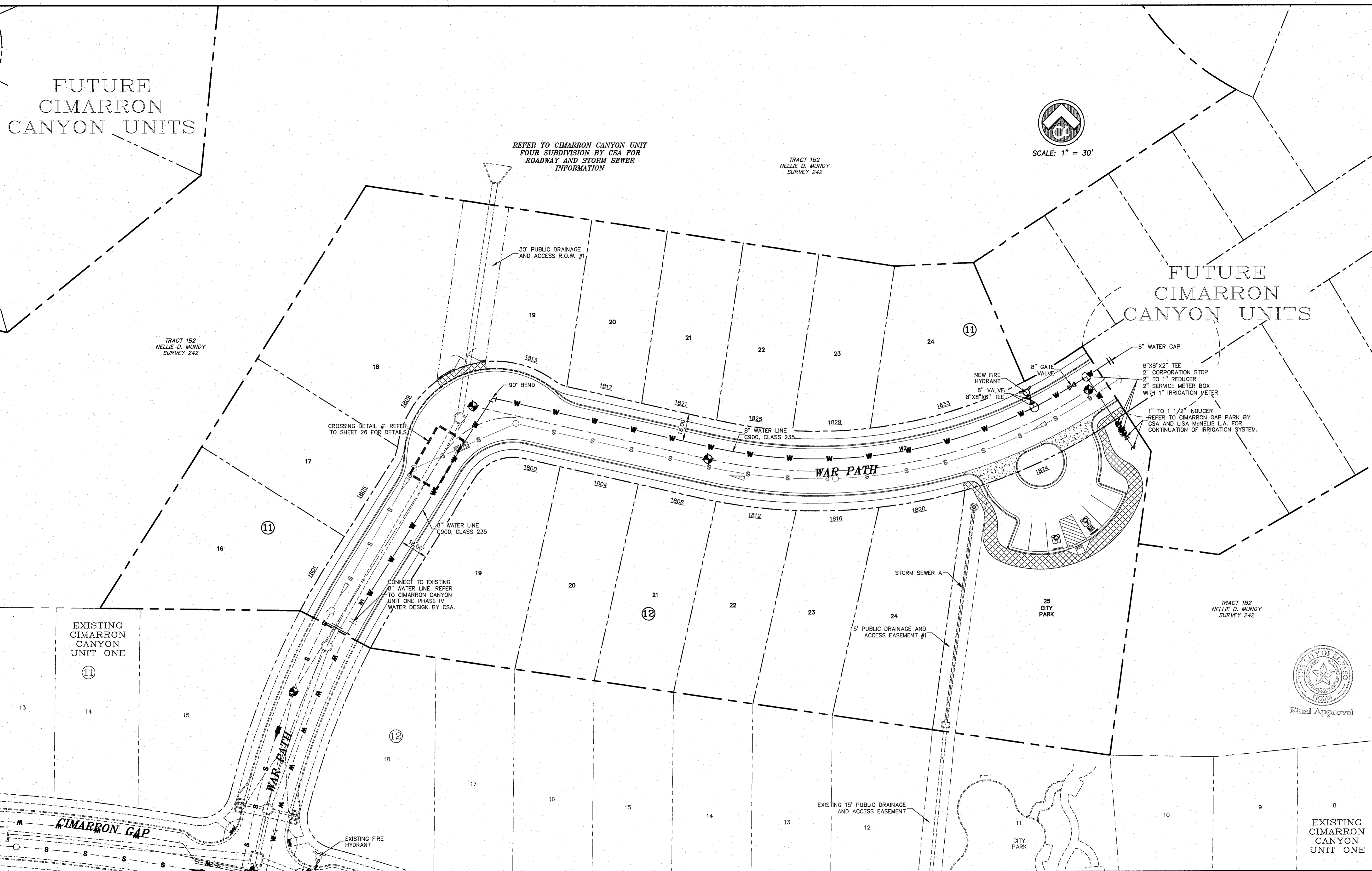
REFER TO CIMARRON CANYON UNIT FOUR SUBDIVISION BY CSA FOR ROADWAY AND STORM SEWER INFORMATION

TRACT 182 NELLIE D. MUNDY SURVEY 242



SCALE: 1" = 30'

FUTURE CIMARRON CANYON UNITS



BENCHMARK CITY MONUMENT AT THE CENTRELINE INTERSECTION OF NORTHERN PASS DRIVE ELEVATION = 3976.53 (EL. PASO CITY DATUM)

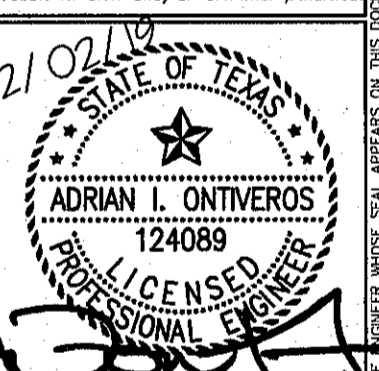
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BEFORE ELECTRIC COMPANY
 843-5370
 1-800-305-1300
 AT&T
 843-5370
 TEXAS GAS SERVICE
 843-5370
 PUBLIC SERVICE BOARD (WATER & SEWER)
 552-8411
 AFTER HOURS EMERGENCY (EPW)
 594-5775
 594-5775
 TEXAS EXCAVATION SAFETY SYSTEM
 1-800-244-6377
 TEXAS EXCAVATION SAFETY SYSTEM
 1-800-238-3764
 EL PASO STREETS AND MAINTENANCE
 1-800-305-1300
 EL PASO STREETS AND MAINTENANCE
 1-800-305-1300

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 El Paso, Texas 79912
 tel [915] 877.4155
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CIMARRON CANYON UNIT FOUR SUBDIVISION

SHEET TITLE
POTABLE WATER DISTRIBUTION PLAN

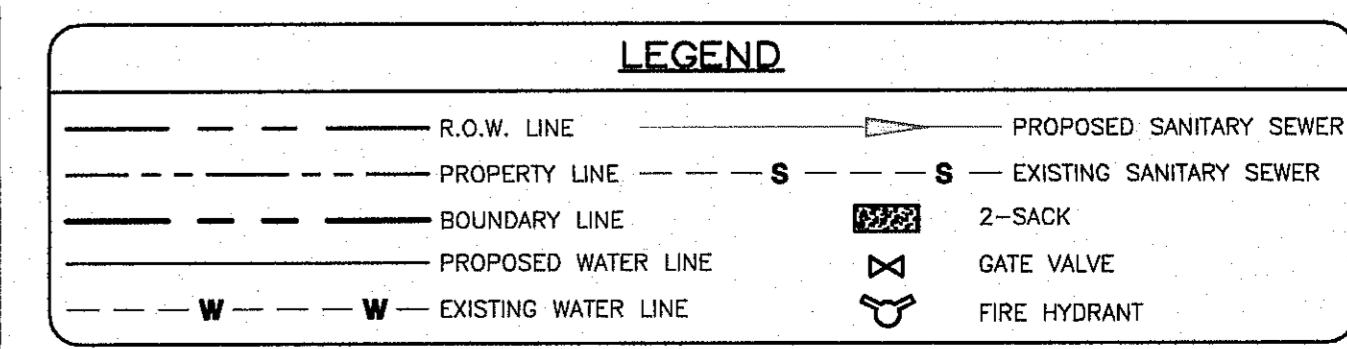
DOB	1273
REVISED BY	JOB NO.
DOB-SM	08/08/18
DATE	DATE
AS NOTED	SCALE
SHEET NO.	
24	
SHEET TOTAL	
25	31

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
W1	492.00	27.04	13.52	27.04	S30°40'09"W	3°08'57"
W2	317.00	253.69	134.08	246.97	N79°45'24"E	45°51'11"

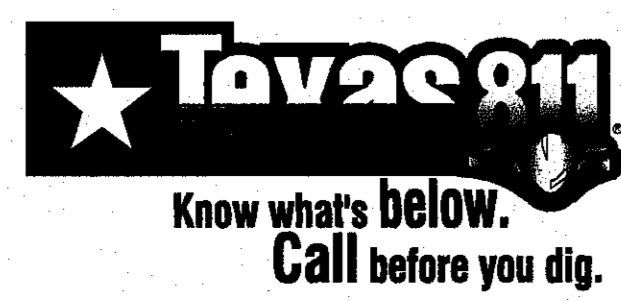
STREET NAME	NUMBER OF FIRE HYDRANTS
WAR PATH	1

STREET NAME	LENGTH, SIZE, & TYPE OF PIPE
WAR PATH	588 FT. OF 8" C900 PVC (CL235)

- WATER NOTES:**
- CONTACT UTILITY COMPANIES FOR EXACT LOCATION OF UNDERGROUND UTILITIES IN THIS AREA BEFORE EXCAVATION.
 - INSTALL A TRENCH SAFETY SYSTEM TO PROVIDE FOR THE SAFE EXCAVATION OF ALL TRENCHES EXCEEDING A DEPTH OF (5') FEET AS PER O.S.H.A. STANDARDS.
 - PROVIDE ADEQUATE CONCRETE THRUST BLOCKING AT THE FOLLOWING TAPPING SLEEVES, TEES, BENDS, PLUGS AND ALL FITTINGS.
 - ALL VALVES ON P.V.C. WATER MAINS SHALL BE ANCHORED IN CONCRETE.
 - P.V.C. PIPES SHALL BE PLACED WITH SELECT BEDDING MATERIAL ALL AROUND.



WARNING! BEFORE YOU DIG
 CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

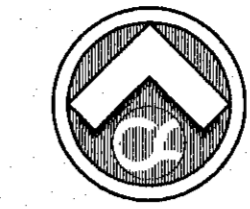


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 17123 Cimarron Canyon Unit Four Submittal (17123) SH 24 (Water Distribution) (dwg)

FUTURE
CIMARRON
CANYON UNITS

REFER TO CIMARRON CANYON UNIT
FOUR SUBDIVISION BY CSA FOR
ROADWAY AND STORM SEWER
INFORMATION

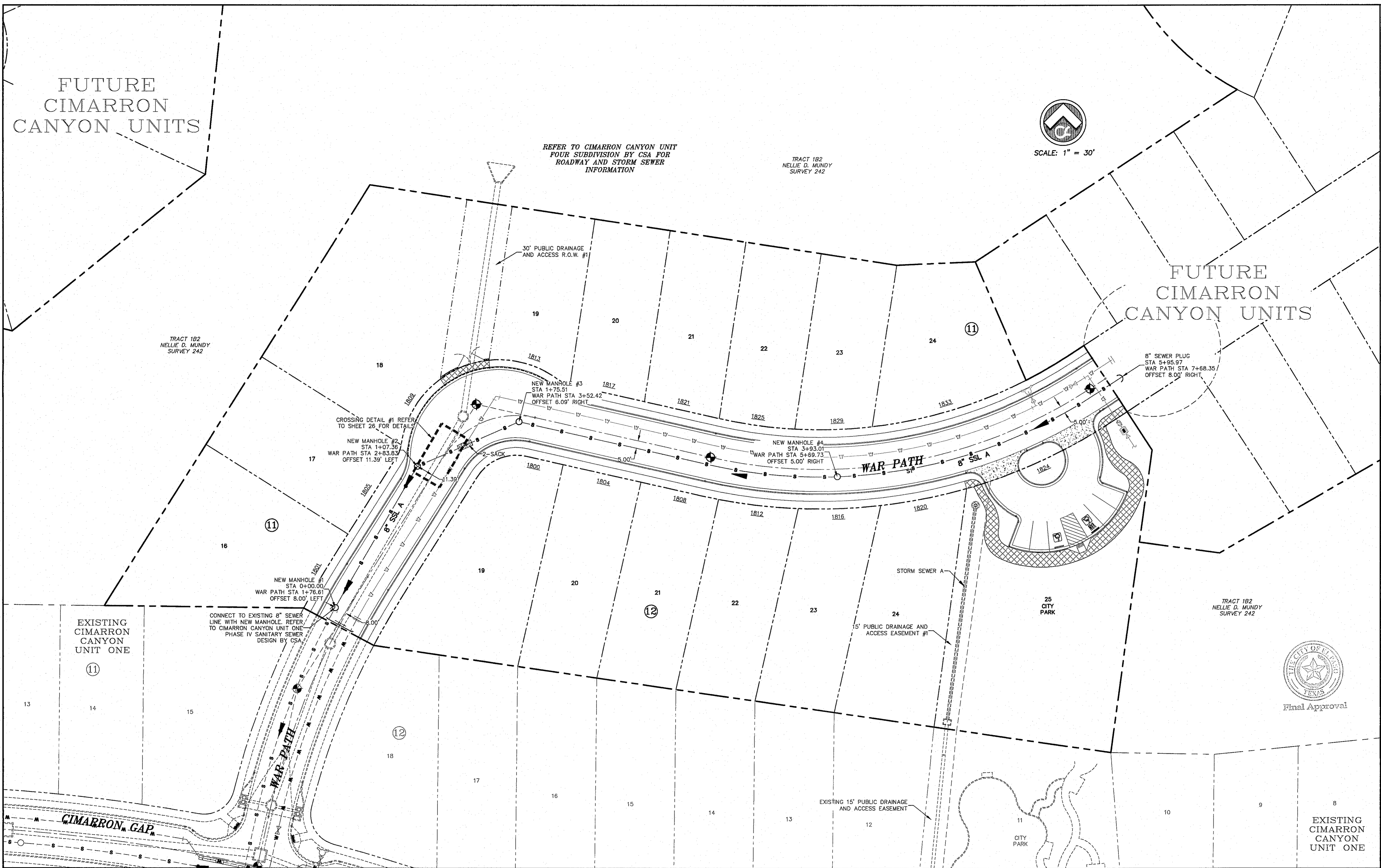
TRACT 1B2
NELLIE D. MUNDY
SURVEY 242



SCALE: 1" = 30'

FUTURE
CIMARRON
CANYON UNITS

TRACT 1B2
NELLIE D. MUNDY
SURVEY 242



EXISTING
CIMARRON
CANYON
UNIT ONE

CONNECT TO EXISTING 8" SEWER
LINE WITH NEW MANHOLE. REFER
TO CIMARRON CANYON UNIT ONE
PHASE IV SANITARY SEWER
DESIGN BY CSA

STORM SEWER A

EXISTING 15' PUBLIC DRAINAGE
AND ACCESS EASEMENT #1



Final Approval

EXISTING
CIMARRON
CANYON
UNIT ONE

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
S1	333.00	286.50	140.85	259.44	N79°45'24"E	45°51'11"

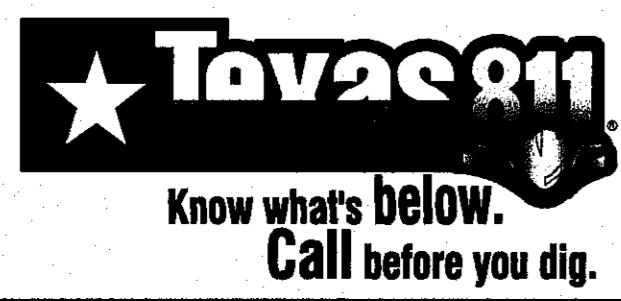
STREET NAME	NUMBER OF MANHOLES
WAR PATH	2

STREET NAME	LENGTH, SIZE, & TYPE OF PIPE
WAR PATH	603 FT. OF 8" (SDR35)

- SANITARY SEWER NOTES:**
- CONTACT UTILITY COMPANIES FOR EXACT LOCATION OF UNDERGROUND UTILITIES IN THIS AREA BEFORE EXCAVATION.
 - INSTALL A TRENCH SAFETY SYSTEM TO PROVIDE FOR THE SAFE EXCAVATION OF ALL TRENCHES EXCEEDING A DEPTH OF (5') FEET AS PER O.S.H.A. STANDARDS.
 - PROVIDE MANHOLE ADAPTER WHERE P.V.C. PIPE CONNECTS TO MANHOLE
 - P.V.C. PIPES SHALL BE PLACED WITH SELECT BEDDING MATERIAL ALL AROUND.

LEGEND	
--- R.O.W. LINE	--- PROPOSED SANITARY SEWER
--- PROPERTY LINE	--- EXISTING SANITARY SEWER
--- BOUNDARY LINE	--- 2-SACK
--- PROPOSED WATER LINE	--- GATE VALVE
--- EXISTING WATER LINE	--- FIRE HYDRANT

WARNING!
BEFORE YOU DIG
CONTRACTOR SHALL
FIELD LOCATE ALL EXISTING
UNDERGROUND IMPROVEMENTS
IN PROJECT AREA



NO.	DATE	DESCRIPTION	BY
3	12/02/19	Final City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
1	09/23/19	First City Submittal	AHO

WARNING!
BEFORE YOU DIG
CONTRACTOR SHALL
FIELD LOCATE ALL
EXISTING UNDERGROUND
IMPROVEMENTS IN
PROJECT AREA

BEFORE YOU DIG - CALL

EL PASO ELECTRIC COMPANY
EL PASO GAS SERVICE LINE
TEXAS GAS SERVICE LINE
PUBLIC SERVICE ROAD (WATER & SEWER)
AFTER HOURS EMERGENCY (EPIW)
TEXAS EXCAVATION SAFETY SYSTEM
KINDER-MORGAN EPNG PIPELINES
EL PASO UTILITY SERVICES AND MAINTENANCE

843-5720
1-800-DIG-TESS
444-5000
444-5000
562-841
594-5775
594-5775
1-800-244-8377
1-800-244-3764
1-800-238-2705

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El Paso, Texas 79912
Tel: (915) 877-4155
Fax: (915) 877-4334
www.csaengineers.com



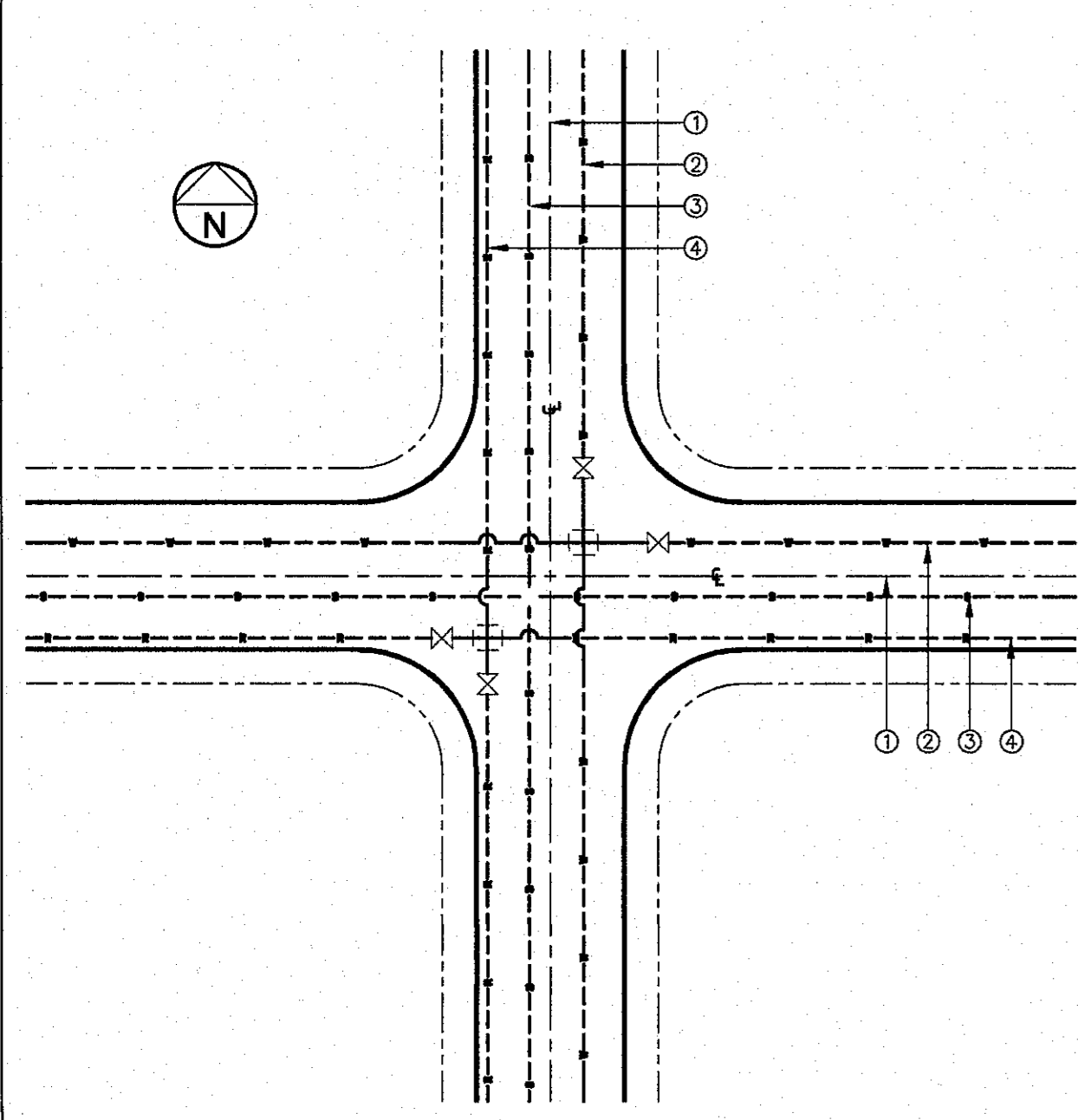
CIMARRON CANYON
UNIT FOUR
SUBDIVISION

SHEET TITLE

**SANITARY
SEWER
COLLECTION
PLAN**

DESIGN BY	1723
DESIGN DATE	08/08/18
DRAWN BY	AS NOTED
CHECKED BY	SCALE
SHEET NO. 25	
OF 31	

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C:\Users\adontiveros\OneDrive\Documents\1723_S1_25 (Sewer Collection).dwg



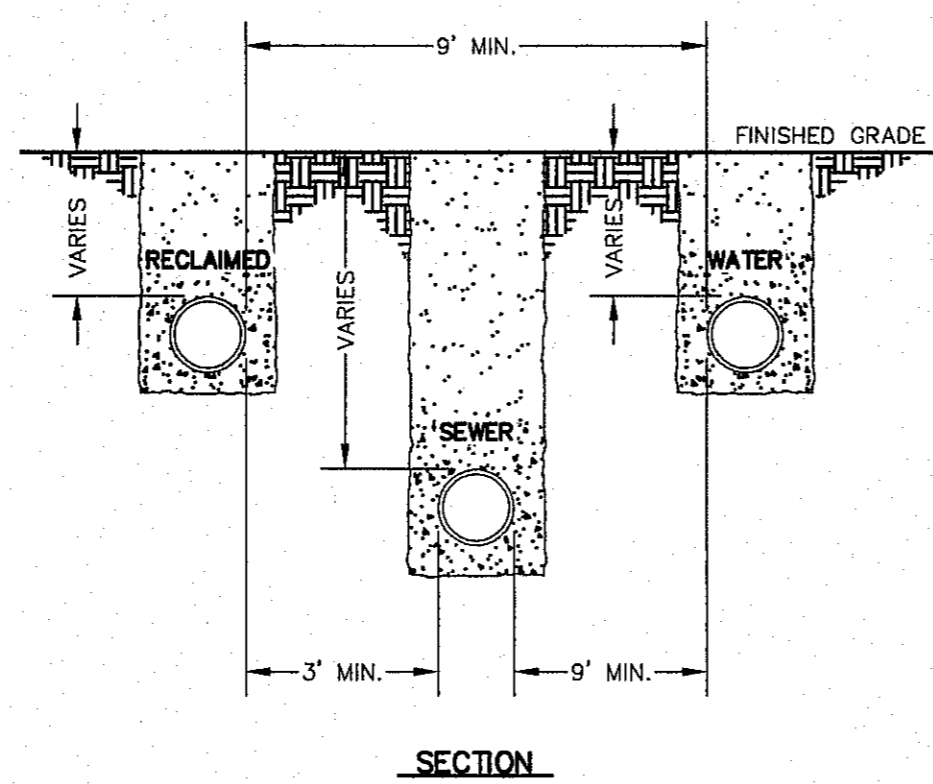
- GENERAL NOTES:**
- REFERENCE CENTERLINE SHALL BE CENTERLINE OF RIGHT OF WAY.
 - WATER LINES SHALL BE LOCATED ON NORTH OR EAST SIDES OF DEDICATED STREETS OR ALLEYS.
 - SEWER LINES SHALL BE LOCATED ON SOUTH OR WEST SIDES OF DEDICATED STREETS OR ALLEYS.
 - RECLAIMED LINES SHALL BE LOCATED ON SOUTH OR WEST SIDES OF DEDICATED STREETS OR ALLEYS.

- CONSTRUCTION KEY NOTES:**
- A. DISTANCES FROM CENTERLINE VARY AND SHALL BE ACCORDING TO THE FOLLOWING:

RIGHT-OF-WAY WIDTH*	OFFSET FROM CENTERLINE**		
	WATER	SEWER	RECLAIMED
36 FT.	9 FT.	1 FT.	6 FT.
44 FT.	8 FT.	3 FT.	8 FT.
52 FT.	8 FT.	5 FT.	10 FT.
64 FT.	10 FT.	5 FT.	10 FT.
72 FT.	10 FT.	5 FT.	10 FT.
76 FT.	10 FT.	5 FT.	10 FT.
84 FT.	20 FT.	5 FT.	10 FT.
110 FT.	25 FT.	15 FT.	20 FT.

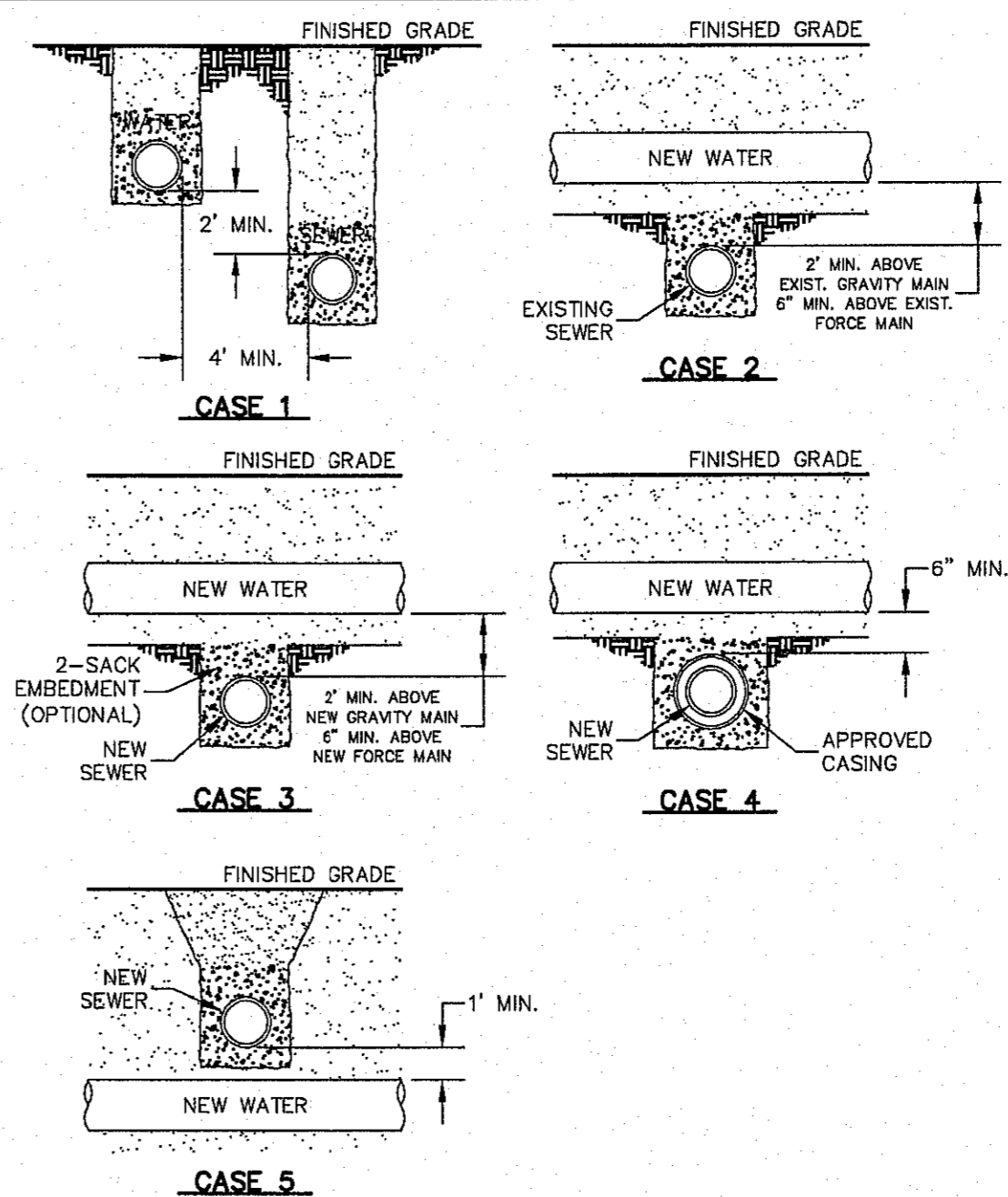
*RIGHT OF WAY WIDTH SUBJECT TO CHANGE. VERIFY WITH CITY SUBDIVISION ORDINANCE.
 **DISTANCES MAY BE MODIFIED AS NEEDED TO MEET TCEQ SEPARATION REQUIREMENTS. REFER TO DETAILS 160 THRU 163 FOR ADDITIONAL INFORMATION.

STANDARD DETAIL DATE: 03/1994 REV: 3/28/2007 LOCATION FOR UTILITY LINES N.T.S. el PASO WATER DETAIL No. 140



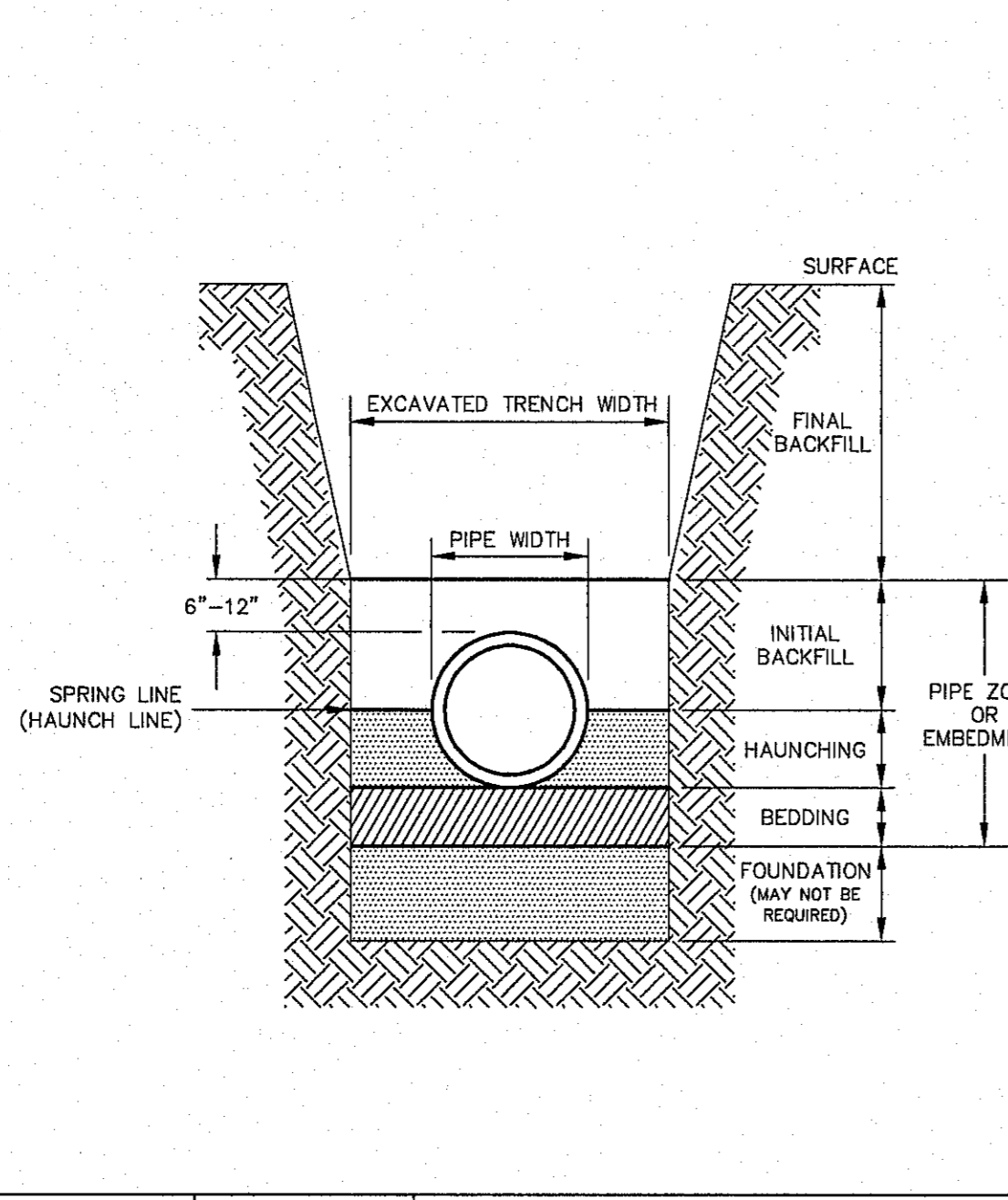
- GENERAL NOTES:**
- SEPARATION DISTANCES SHALL FOLLOW TEXAS COMMISSION ON ENVIRONMENTAL QUALITY STANDARD REQUIREMENTS.
 - MINIMUM SEPARATION DISTANCES SHOWN, IF CONDITIONS DO NOT ALLOW FOR INDICATED DISTANCES REFER TO DETAILS 161, 162 & 163.
 - RECLAIMED WATER LINE AT OR ABOVE SEWER LINE.

STANDARD DETAIL DATE: 8/3/2006 REV: 3/28/2007 SEPARATION DISTANCE POTABLE WATER, SANITARY SEWER AND RECLAIMED WATER N.T.S. el PASO WATER DETAIL No. 160



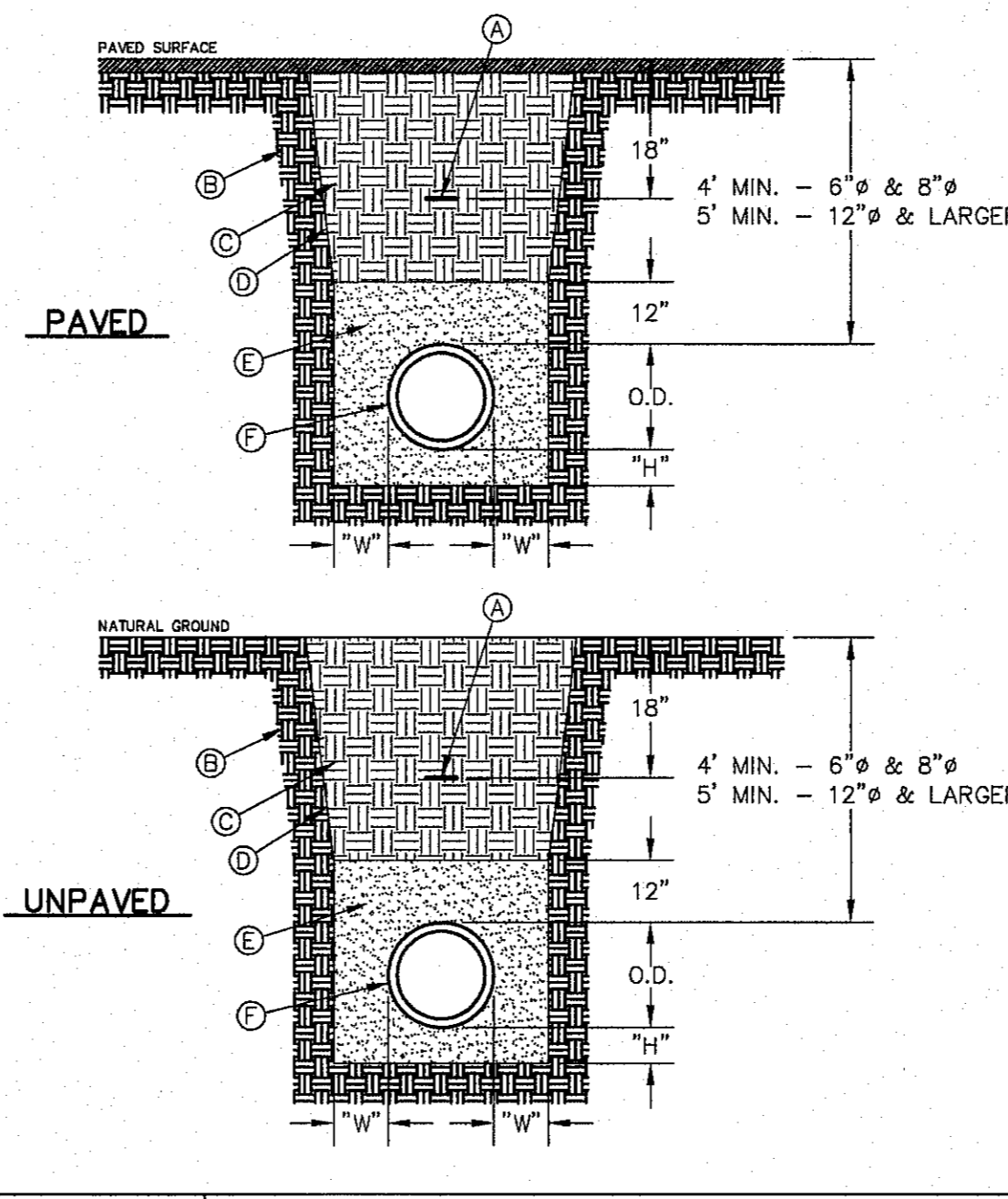
- GENERAL NOTES:**
- NEW OR EXISTING POTABLE WATER AND SANITARY SEWER MAINS SHALL FOLLOW LOW TEXAS COMMISSION ON ENVIRONMENTAL QUALITY STANDARD REQUIREMENTS.
- CONSTRUCTION KEY NOTES:**
- SEPARATION DISTANCES SHALL BE DETERMINED ACCORDING TO THE FOLLOWING CONDITIONS:
- CASE 1: GRAVITY SANITARY SEWER MAIN OR FORCE MAIN PARALLEL TO POTABLE WATER MAIN (PER TCEQ §200.44(a)(4)(B) AND §200.44(a)(4)(C)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
 - SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC 80R305 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING-IF LEAKING, REPLACE ONE PIPE SEGMENT PER CASE 3 REQUIREMENTS.
 - CENTER ONE SEGMENT OF WATER PIPE OVER SEWER MAIN OR FORCE MAIN.
 - MINIMUM PIPE SEGMENT LENGTH FOR WATER PIPE SHALL BE 18 FEET LONG.
- CASE 2: NEW POTABLE WATER MAIN CROSSING EXISTING GRAVITY SANITARY SEWER MAIN OR EXISTING FORCE MAIN (PER TCEQ §200.44(a)(4)(B) AND §200.44(a)(4)(C)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
 - SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC 80R305 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING-IF LEAKING, REPLACE ONE PIPE SEGMENT PER CASE 3 REQUIREMENTS.
 - CENTER ONE SEGMENT OF WATER PIPE OVER SEWER MAIN OR FORCE MAIN.
 - MINIMUM PIPE SEGMENT LENGTH FOR WATER PIPE SHALL BE 18 FEET LONG.
- CASE 3: NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §200.44(a)(4)(B) AND §200.44(a)(4)(C)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
 - SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) OR DI REQUIRED. CENTER UNDER WATER MAIN. NEW FORCE MAIN - PVC (150 PSI) OR DI REQUIRED. CENTER ONE SEGMENT OF WATER PIPE OVER SEWER PIPE OR FORCE MAIN.
 - MINIMUM PIPE SEGMENT LENGTH FOR WATER PIPE SHALL BE 18 FEET LONG.
 - FOR NEW GRAVITY SEWER ONLY, IN LIEU OF PVC (150 PSI) OR DI, INSTALL ONE PIPE SEGMENT OF SPOSS SEWER MAIN MUST BE EMBEDDED IN CEMENT STABILIZED BACKFILL THE TOTAL LENGTH OF ONE PIPE PLUS 12" BEYOND THE JOINT AT EACH END.
- CASE 4: NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §200.44(a)(4)(B) AND §200.44(a)(4)(C)).
- LOCATION: WATER ABOVE SEWER OR FORCE MAIN.
 - SEWER MATERIALS: NEW GRAVITY MAIN - SPOSS ACCEPTABLE. NEW FORCE MAIN - PVC (150 PSI) OR DI REQUIRED. IN ADDITION, SEWER MAIN OR FORCE MAIN MUST BE ENCASED IN DI OR STEEL, TWO NOMINAL SIZES LARGER THAN MAIN AND AT LEAST 18 FEET LONG.
 - CENTER CASING PIPE ON WATER MAIN.
- CASE 5: NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN CROSSING NEW POTABLE WATER MAIN (PER TCEQ §200.44(a)(4)(B) AND §200.44(a)(4)(C)).
- LOCATION: SEWER OR FORCE MAIN ABOVE WATER.
 - NEW GRAVITY MAIN OR FORCE MAIN REQUIRES ONE PIPE SEGMENT OF PVC (150 PSI) OR DI. BLACKSTONE WATER MUST BE DI OR STEEL OR ENCASED IN DI OR STEEL, TWO NOMINAL SIZES LARGER THAN MAIN AND AT LEAST 18 FEET LONG.
 - CENTER ONE SEGMENT OF SEWER PIPE ON WATER MAIN.

STANDARD DETAIL DATE: 8/3/2006 REV: 8/21/2007 SEPARATION DISTANCE SANITARY SEWER AND POTABLE WATER (SPECIAL CONDITIONS) N.T.S. el PASO WATER DETAIL No. 161



- GENERAL NOTES:**
- DETAIL DRAWING TERMINOLOGY IS IN ACCORDANCE WITH ASTM D-2321.
 - UNLESS OTHERWISE PERMITTED BY THE ENGINEER, ALL MATERIAL IN THE EMBEDMENT ZONE SHALL BE HOMOGENEOUS.

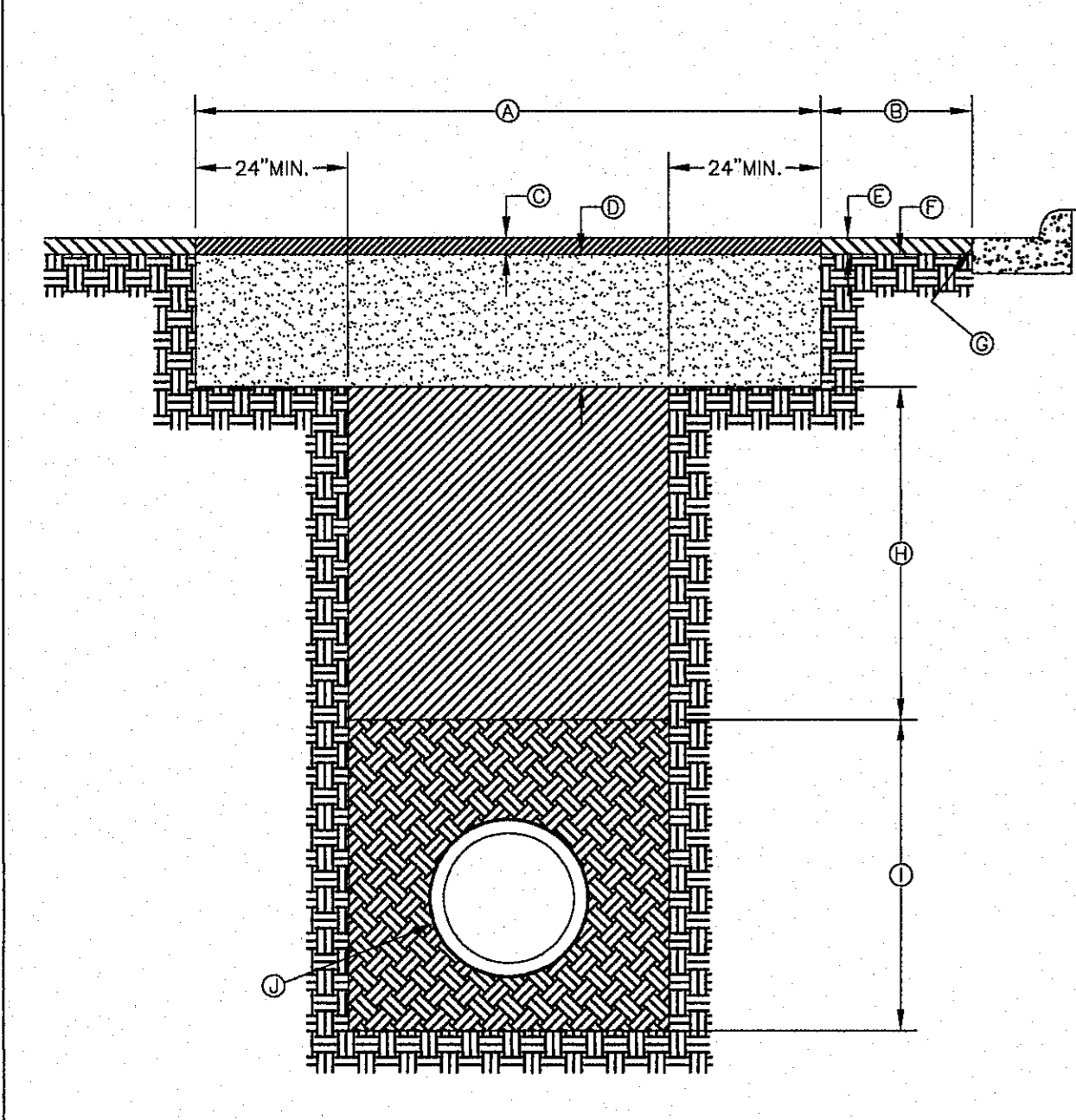
STANDARD DETAIL DATE: 11/1992 REV: 3/28/2007 TRENCH CROSS SECTION TERMINOLOGY N.T.S. el PASO WATER DETAIL No. 170



- GENERAL NOTES:**
- BEDDING FOR PRESSURE AND GRAVITY PIPE IN DRY CONDITIONS.
 - PROVIDE TRENCH SAFETY SYSTEM FOR TRENCH DEPTHS GREATER THAN 5 FEET.
 - IF THE NATIVE MATERIAL EXCAVATED FROM THE TRENCH IS UNSUITABLE AS BACKFILL MATERIAL, OR THE REQUIRED COMPACTION IS UNATTAINABLE, THE CONTRACTOR SHALL, AT HIS EXPENSE, IMPORT SELECT MATERIAL TO BE MIXED WITH OR USED IN PLACE OF THE NATIVE MATERIAL. SELECT MATERIAL MUST BE APPROVED BY EPWU. SUBSTITUTE SOIL CEMENT SLURRY (1-SACK) IF REQUIRED IN SPECS.

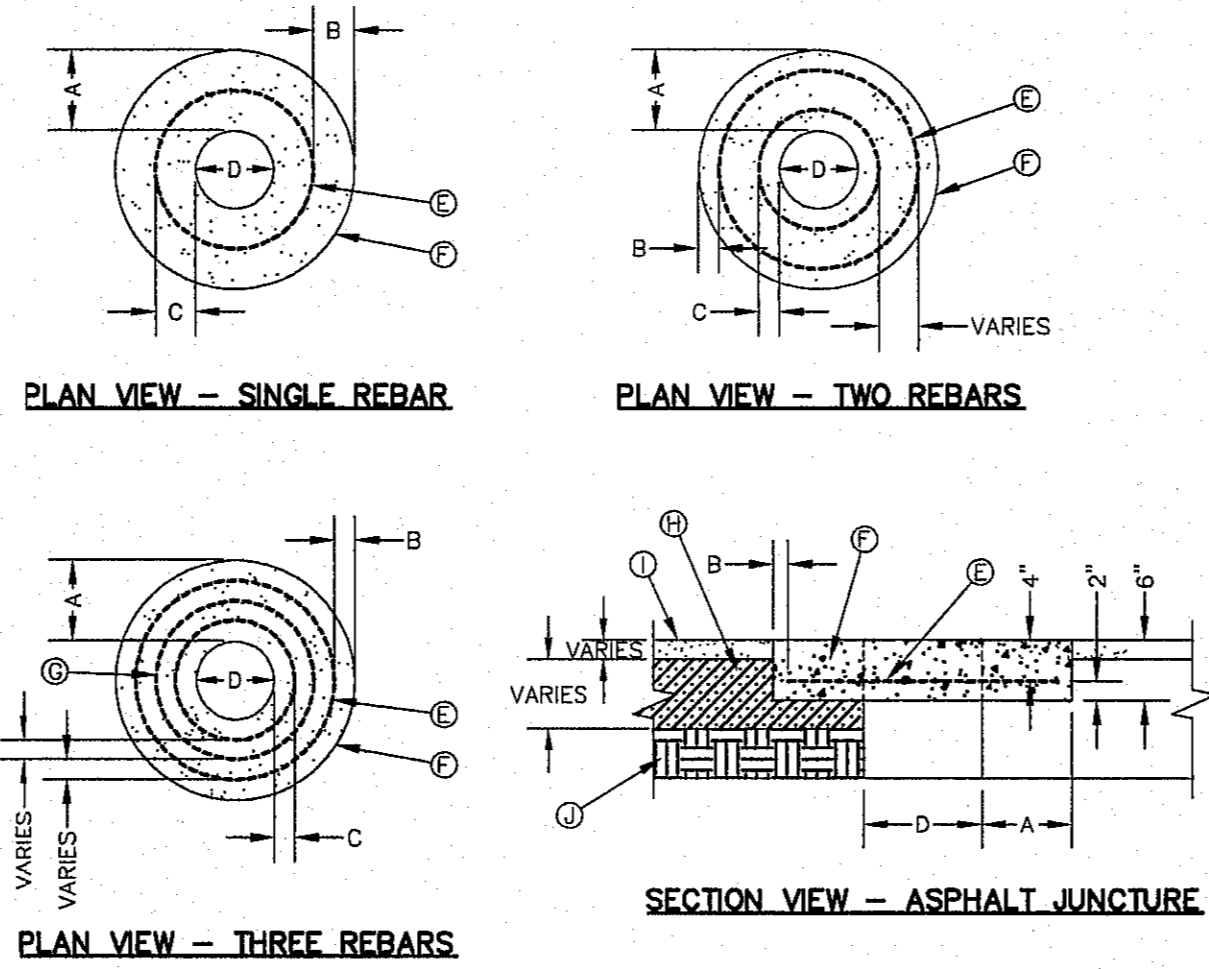
- CONSTRUCTION KEY NOTES:**
- A. APPROVED MARKING TAPE.
 B. UNDISTURBED STABLE MATERIAL.
 C. NATIVE MATERIAL BACKFILL.
 PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
 UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.
 (*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS CANNOT BE MET.)
 D. SLOPE TRENCH IN SANDY SOIL CONDITIONS.
 E. USE CLASS II OR CLASS II SAND PER ASTM D-2487. NATIVE MATERIAL OR IMPORTED SELECT MATERIAL MEETING OR EXCEEDING THIS REQUIREMENT MAY BE USED. COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR (OR 90% D-698 STANDARD PROCTOR).
 F. APPROVED PIPE.
 G. TRENCH DIMENSIONS AS FOLLOWS:
- | | |
|------------------|-----|
| PIPE DIAMETER | 4" |
| GREATER THAN 30" | 6" |
| PIPE DIAMETER | 6" |
| GREATER THAN 30" | 12" |

STANDARD DETAIL DATE: 4/24/2007 REV: 2/21/2011 EMBEDMENT CLASS "A" FOR PRESSURE PIPE AND GRAVITY PIPE DRY CONDITIONS N.T.S. el PASO WATER DETAIL No. 171



- GENERAL NOTES:**
- ALL ASPHALT CUTS MUST BE SAW CUT.
 - SOIL CEMENT SLURRY SHALL BE ALLOWED TO CURE BEFORE PAVING OR OPENING TO ALL TRAFFIC.
- CONSTRUCTION KEY NOTES:**
- A. REFER TO SPECS FOR LIMIT OF FINING WIDTH.
 B. DIMENSION VARIES WHERE GUTTER FACE, ETC. IS WITHIN 3' OF SAW CUT EDGE, CONTRACTOR SHALL REMOVE & REPLACE EXISTING HMA/C IN THIS AREA.
 C. 2" ASPHALT MIN.
 D. 12" THICK SOIL CEMENT BACKFILL (2 SACK PER C.Y. OF SOIL).
 E. EXISTING HMA/C - THICKNESS MAY VARY.
 F. EXISTING BASE COURSE - THICKNESS MAY VARY.
 G. EXISTING GUTTER FACE, EDGE OF PAVEMENT OR BEGINNING OF SHOULDER.
 H. BACKFILL DEPTH VARIES, REFER TO REQUIREMENTS LISTED IN EMBEDMENT DETAILS (DETAIL 171 THRU DETAIL 173).
 I. PIPE BEDDING AS SPECIFIED, REFER TO APPROPRIATE EMBEDMENT DETAIL (DETAIL 171 THRU DETAIL 173).
 J. APPROVED PIPE.

STANDARD DETAIL DATE: 10/1992 REV: 5/9/2011 PAVEMENT REPLACEMENT N.T.S. el PASO WATER DETAIL No. 179

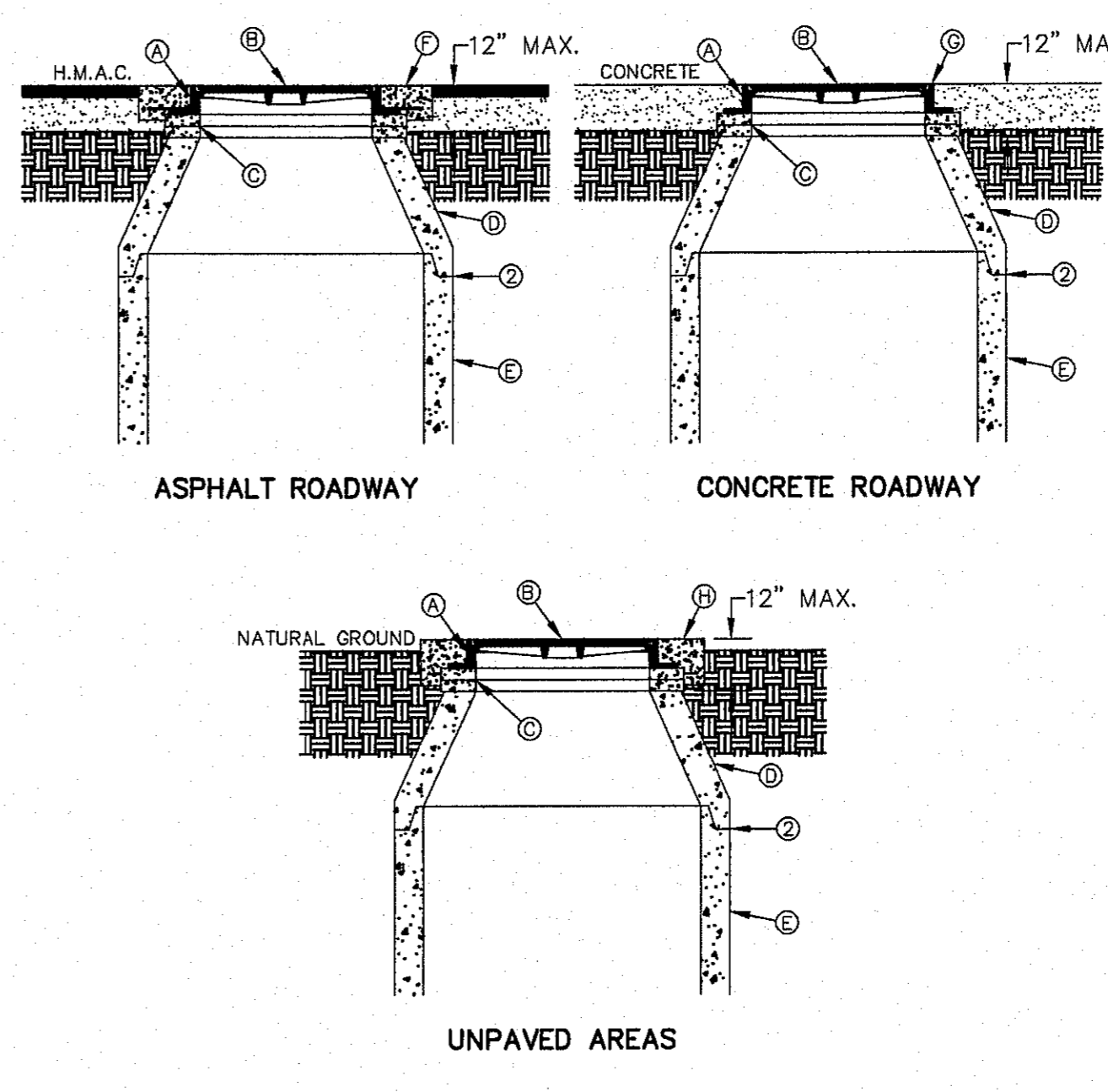


- GENERAL NOTES:**
- THE CONCRETE COLLAR SHOULD BE CAST IN-PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED).
 - TOPS OF CONCRETE COLLAR SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
 - ANY DISTURBED SUBGRADE UNDER THE CONCRETE COLLAR SHALL BE COMPACTED TO 95% DENSITY ± 3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
 - ANY DISTURBED BASE COARSE UNDER THE CONCRETE COLLAR SHALL BE COMPACTED TO 100% DENSITY ± 2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
 - PROVIDE A MINIMUM OF 1 1/2" OF CONCRETE COVER FOR ALL REINFORCEMENT STEEL.
 - REINFORCING SHALL MEET ASTM C-478 AND TRAFFIC LOADING (HS-20).
 - NO. 3 REINFORCING STEEL HOOPS SHALL BE SPACED EQUALLY.

- CONSTRUCTION KEY NOTES:**
- E. #3 REINFORCING STEEL TYP.
 F. CONCRETE COLLAR.
 G. #3 REINFORCING STEEL EQUALLY SPACED.
 H. COMPACTED BASE COARSE.
 I. PAVEMENT.
 J. COMPACTED SUBGRADE.

"D" DIAMETER OF PENETRATION	NUMBER OF #3 REINFORCING STEEL BARS	"A" MINIMUM CONCRETE HORIZONTAL DIMENSION FROM PENETRATION	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE COLLAR TO CENTER OF NEAREST REBAR	"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR
0" TO 6"	1	6"	1 1/2"	4 1/2"
6.1" TO 18"	2	6"	1 1/2"	1 1/2"
18.1" AND OVER	3	9"	1 1/2"	1 1/2"

STANDARD DETAIL DATE: 8/9/2006 REV: 11/6/2008 CONCRETE COLLAR INSTALLATION IN PAVED AREAS N.T.S. el PASO WATER DETAIL No. 184-1



- GENERAL NOTES:**
- MANHOLE TYPE SHALL BE AS SHOWN ON THE PLANS.
 - SEAL JOINTS PER SPECIFICATIONS.
- CONSTRUCTION KEY NOTES:**
- A. MANHOLE RING (SEE DETAIL 377).
 B. MANHOLE COVER (SEE DETAIL 377).
 C. CONCRETE ADJUSTMENT RINGS AS REQUIRED.
 D. MANHOLE CONE SECTION.
 E. MANHOLE BARREL SECTION.
 F. CONCRETE COLLAR (SEE DETAIL 184-1) FLUSH WITH TOP OF H.M.A.C.
 G. MANHOLE RING FLUSH WITH TOP OF CONCRETE. CONCRETE COLLAR NOT NEEDED.
 H. CONCRETE APRON (SEE DETAIL 184-2) FLUSH WITH MANHOLE RING AND 2" ABOVE NATURAL GROUND.

STANDARD DETAIL DATE: 6/22/2009 REV: MANHOLE RING AND COVER INSTALLATION N.T.S. el PASO WATER DETAIL No. 185

WARNING! BEFORE YOU DIG CALL BEFORE YOU DIG CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

NO.	DATE	DESCRIPTION	BY
3	12/02/19	Final City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
1	09/23/19	First City Submittal	AHO

BEFORE YOU DIG - CALL

EL PASO ELECTRIC COMPANY
 1-800-303-5578
 1-800-303-5579
 1-800-303-5580
 1-800-303-5581
 1-800-303-5582
 1-800-303-5583
 1-800-303-5584
 1-800-303-5585
 1-800-303-5586
 1-800-303-5587
 1-800-303-5588
 1-800-303-5589
 1-800-303-5590

EL PASO GAS SERVICE, INC.
 1-800-303-5591
 1-800-303-5592
 1-800-303-5593
 1-800-303-5594
 1-800-303-5595
 1-800-303-5596
 1-800-303-5597
 1-800-303-5598
 1-800-303-5599
 1-800-303-5600

EL PASO WATER
 1-800-303-5601
 1-800-303-5602
 1-800-303-5603
 1-800-303-5604
 1-800-303-5605
 1-800-303-5606
 1-800-303-5607
 1-800-303-5608
 1-800-303-5609
 1-800-303-5610

EL PASO TELEPHONE SERVICE
 1-800-303-5611
 1-800-303-5612
 1-800-303-5613
 1-800-303-5614
 1-800-303-5615
 1-800-303-5616
 1-800-303-5617
 1-800-303-5618
 1-800-303-5619
 1-800-303-5620

EL PASO FIRE DEPARTMENT
 1-800-303-5621
 1-800-303-5622
 1-800-303-5623
 1-800-303-5624
 1-800-303-5625
 1-800-303-5626
 1-800-303-5627
 1-800-303-5628
 1-800-303-5629
 1-800-303-5630

EL PASO POLICE DEPARTMENT
 1-800-303-5631
 1-800-303-5632
 1-800-303-5633
 1-800-303-5634
 1-800-303-5635
 1-800-303-5636
 1-800-303-5637
 1-800-303-5638
 1-800-303-5639
 1-800-303-5640

EL PASO COUNTY CLERK
 1-800-303-5641
 1-800-303-5642
 1-800-303-5643
 1-800-303-5644
 1-800-303-5645
 1-800-303-5646
 1-800-303-5647
 1-800-303-5648
 1-800-303-5649
 1-800-303-5650

EL PASO COUNTY JUDGE
 1-800-303-5651
 1-800-303-5652
 1-800-303-5653
 1-800-303-5654
 1-800-303-5655
 1-800-303-5656
 1-800-303-5657
 1-800-303-5658
 1-800-303-5659
 1-800-303-5660

EL PASO COUNTY SHERIFF
 1-800-303-5661
 1-800-303-5662
 1-800-303-5663
 1-800-303-5664
 1-800-303-5665
 1-800-303-5666
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EL PASO COUNTY ATTORNEY
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EL PASO COUNTY COMMISSIONER
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EL PASO COUNTY DISTRICT CLERK
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EL PASO COUNTY DISTRICT ATTORNEY
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EL PASO COUNTY DISTRICT ATTORNEY
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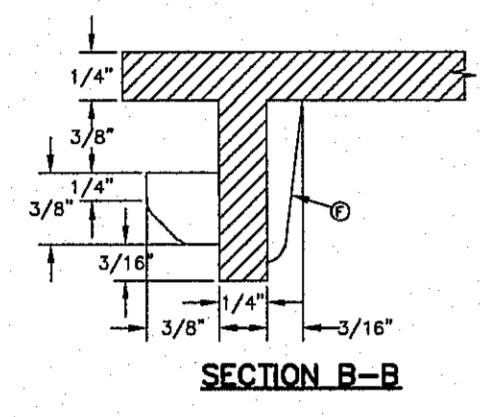
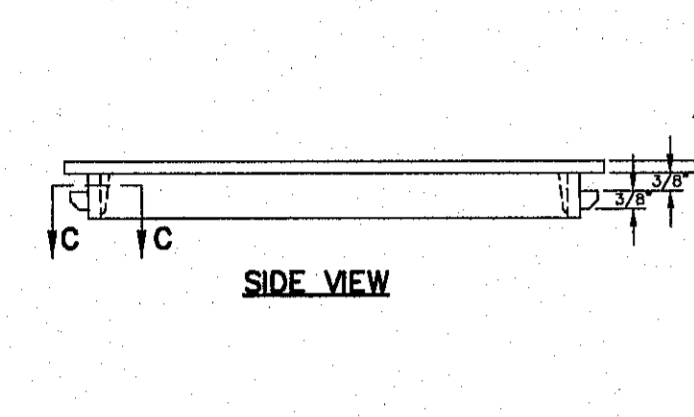
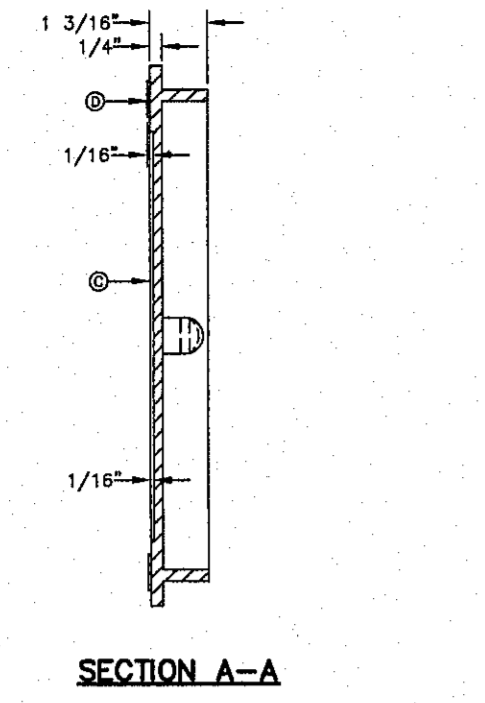
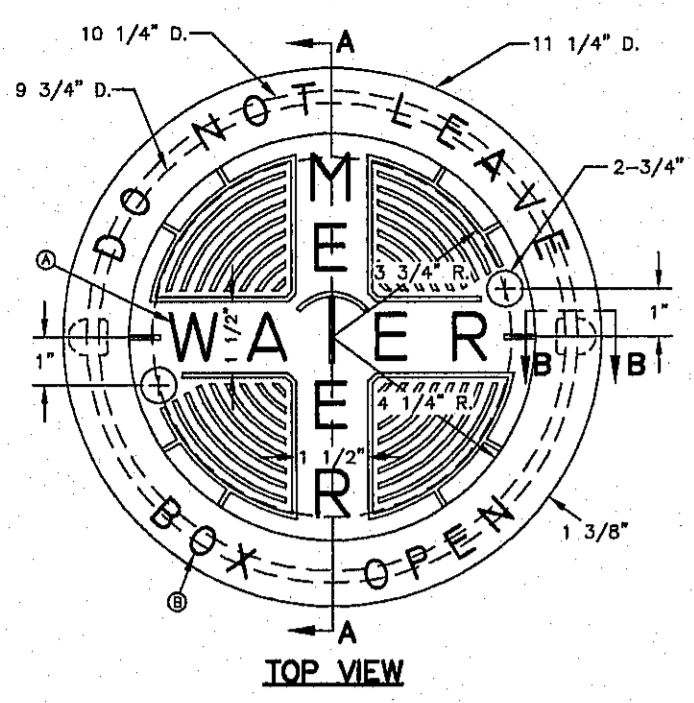
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EL PASO COUNTY DISTRICT CLERK
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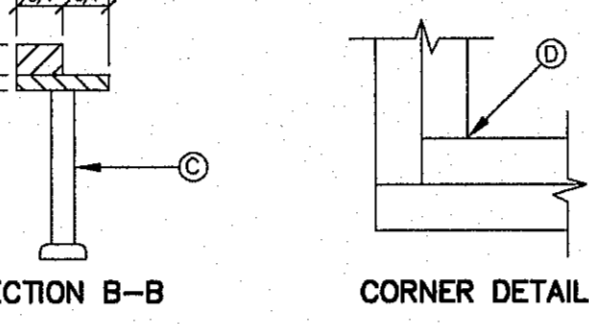
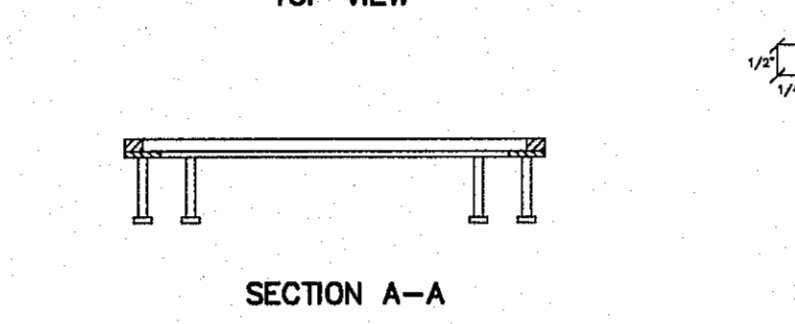
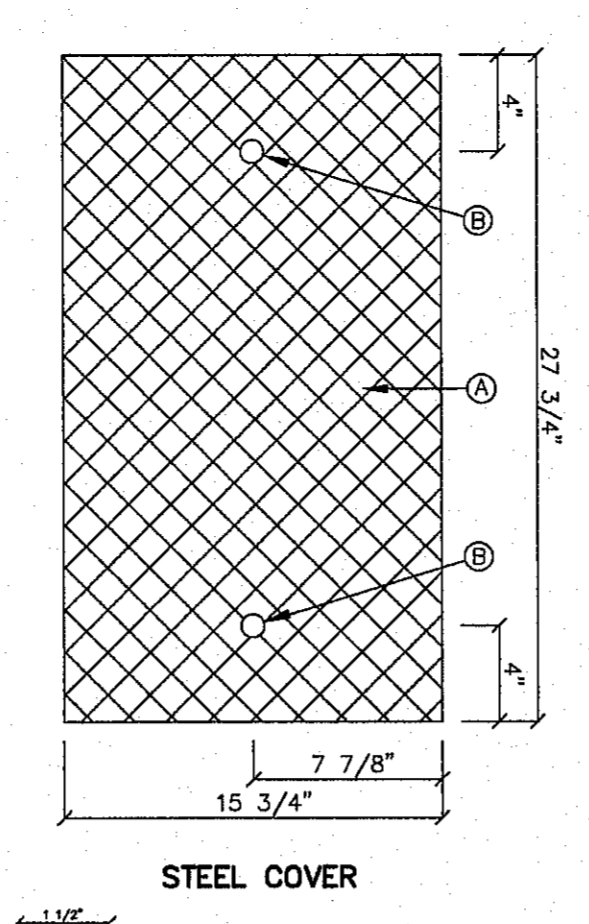
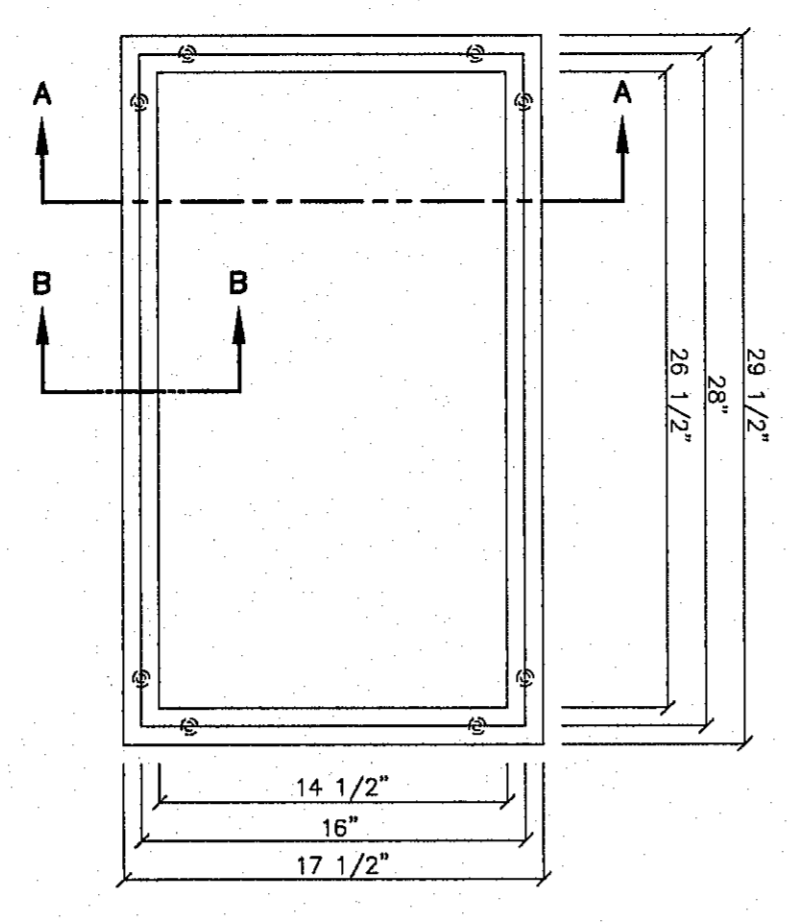
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EL PASO COUNTY DISTRICT CLERK
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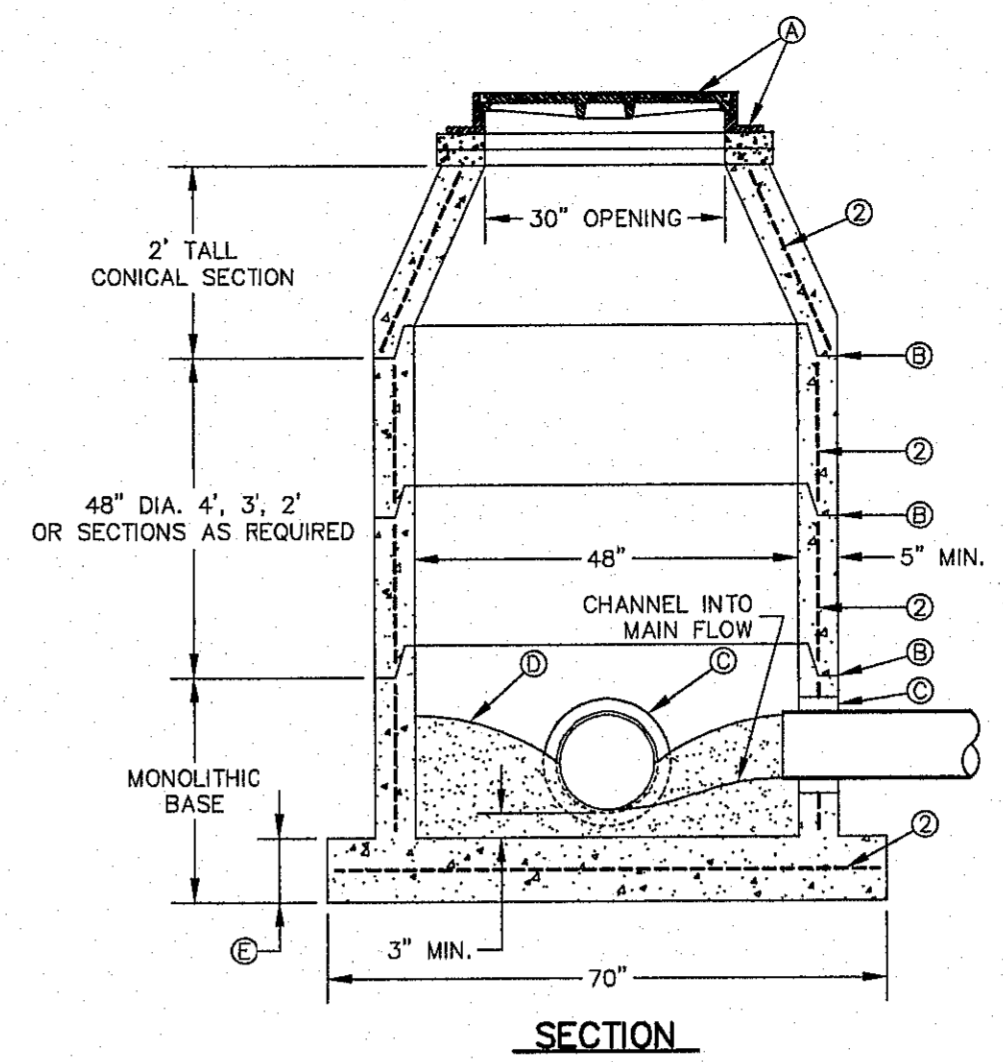


GENERAL NOTES:
 1. MATCHING SURFACES TO BE ROUGH GROUND OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
 2. CASTING TO BE SMOOTH AND VOID OF AIR.
 3. METER BOX COVER WEIGHT= 1 1/4 lbs.

CONSTRUCTION KEY NOTES:
 A. LETTERS TO BE 1\"/>



CONSTRUCTION KEY NOTES:
 A. MATERIAL 3/8\"/>



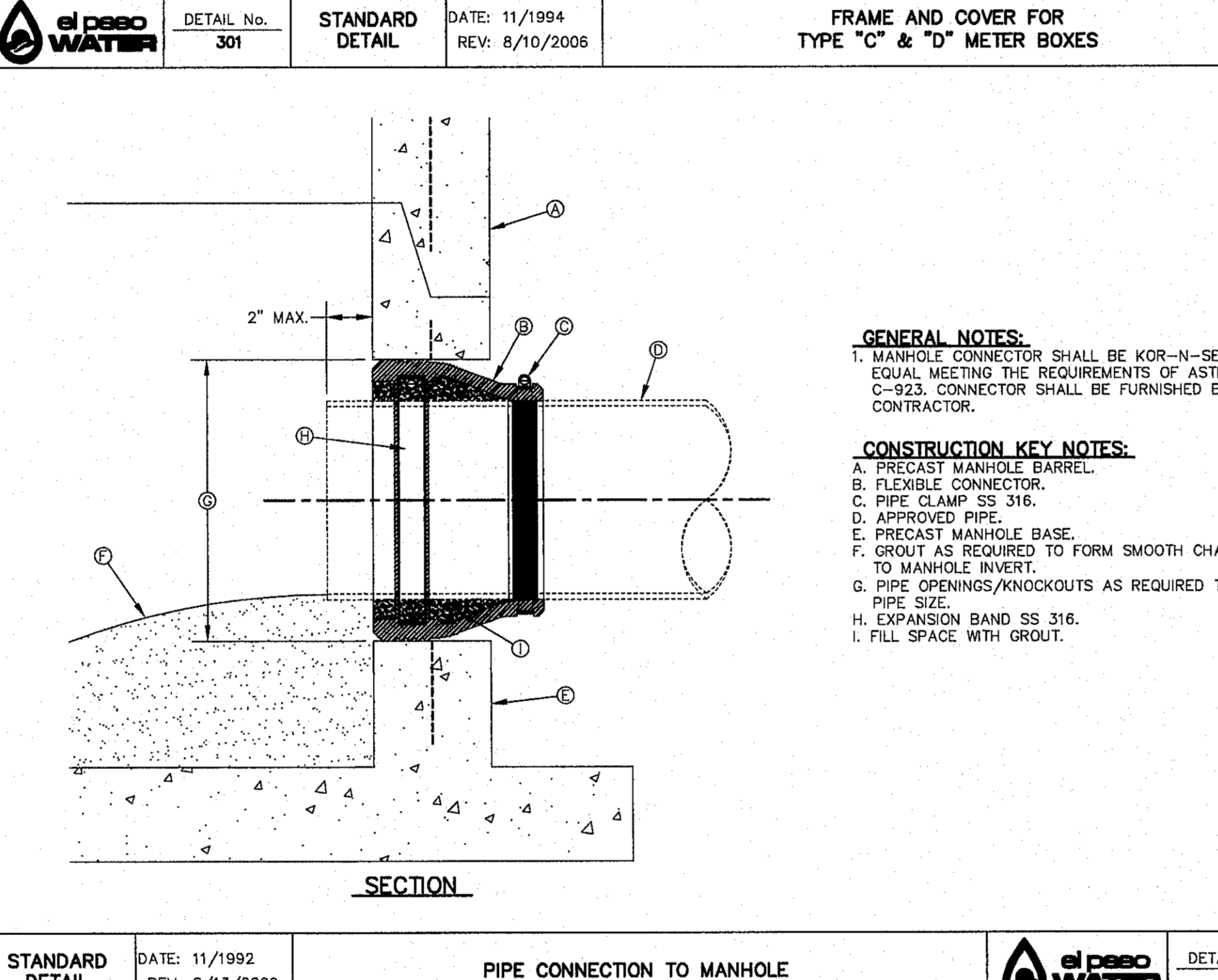
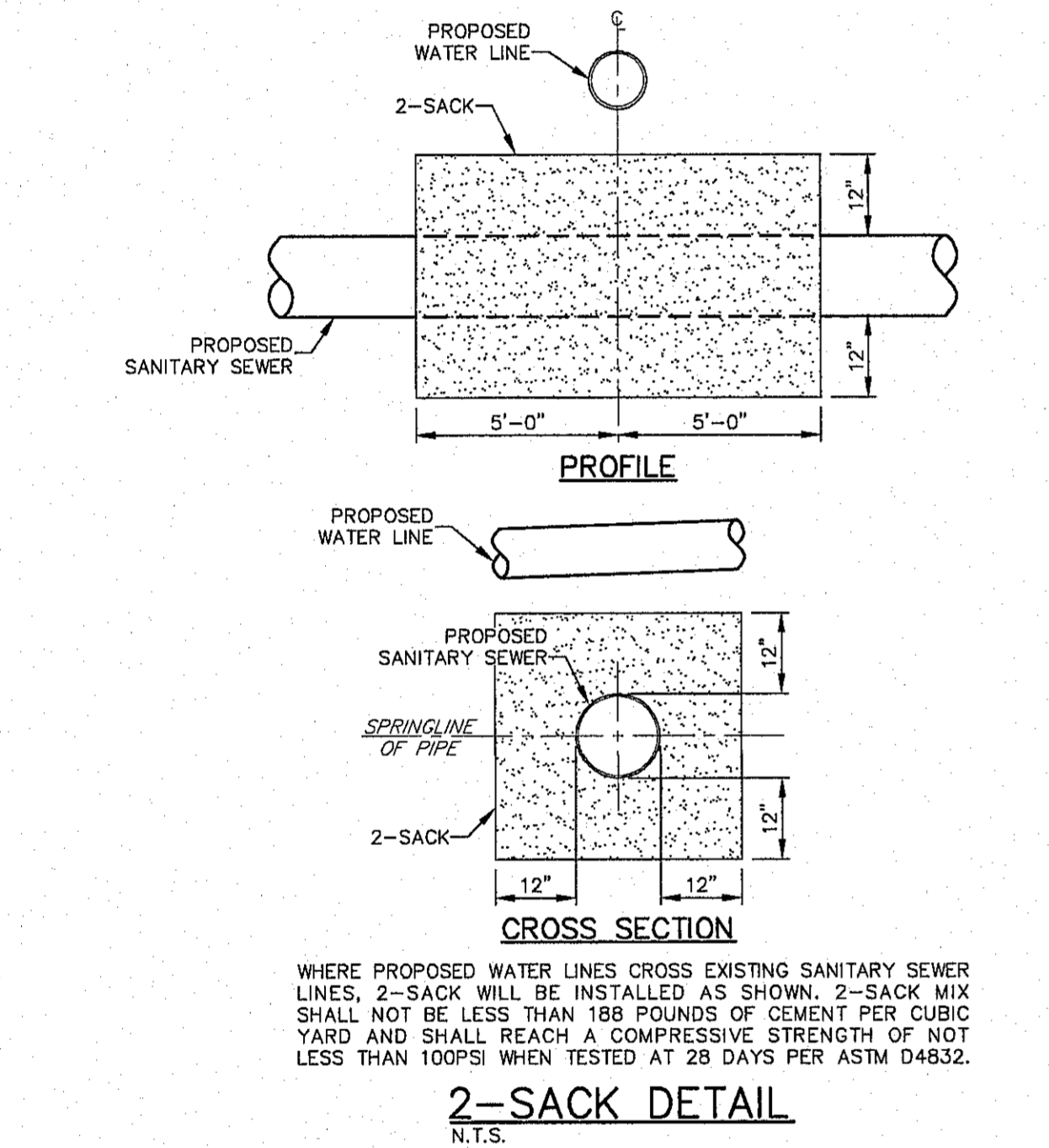
GENERAL NOTES:
 1. MANHOLE TYPE \"A\" SHALL BE USED FOR LINES 21\"/>

CONSTRUCTION KEY NOTES:
 A. MANHOLE RING AND COVER (SEE DETAILS 377 & 378). SET FRAME AND COVER FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE (SEE DETAIL 185).
 B. ALL JOINTS TO BE TONGUE, GROOVE AND SEALED WITH RAM-NEK OR APPROVED EQUAL.
 C. PIPE OPENINGS/KNOCKOUTS AS REQUIRED TO FIT PIPE SIZE AND SHALL HAVE FLEXIBLE PIPE TO MANHOLE CONNECTORS (COMPRESSION TYPE ASTM-923), \"KOR-N-SEAL\" OR APPROVED EQUAL. GROUT AS REQUIRED.
 D. GROUT AS REQUIRED.
 E. CONCRETE BASE SHALL BE 8\"/>

STANDARD DETAIL DATE: 4/1994 REV: 8/10/2006
 METER BOX COVER FOR TYPE \"A\" & \"B\" METER BOXES
 N.T.S. el paso WATER DETAIL No. 301

STANDARD DETAIL DATE: 11/1994 REV: 8/10/2006
 FRAME AND COVER FOR TYPE \"C\" & \"D\" METER BOXES
 N.T.S. el paso WATER DETAIL No. 302

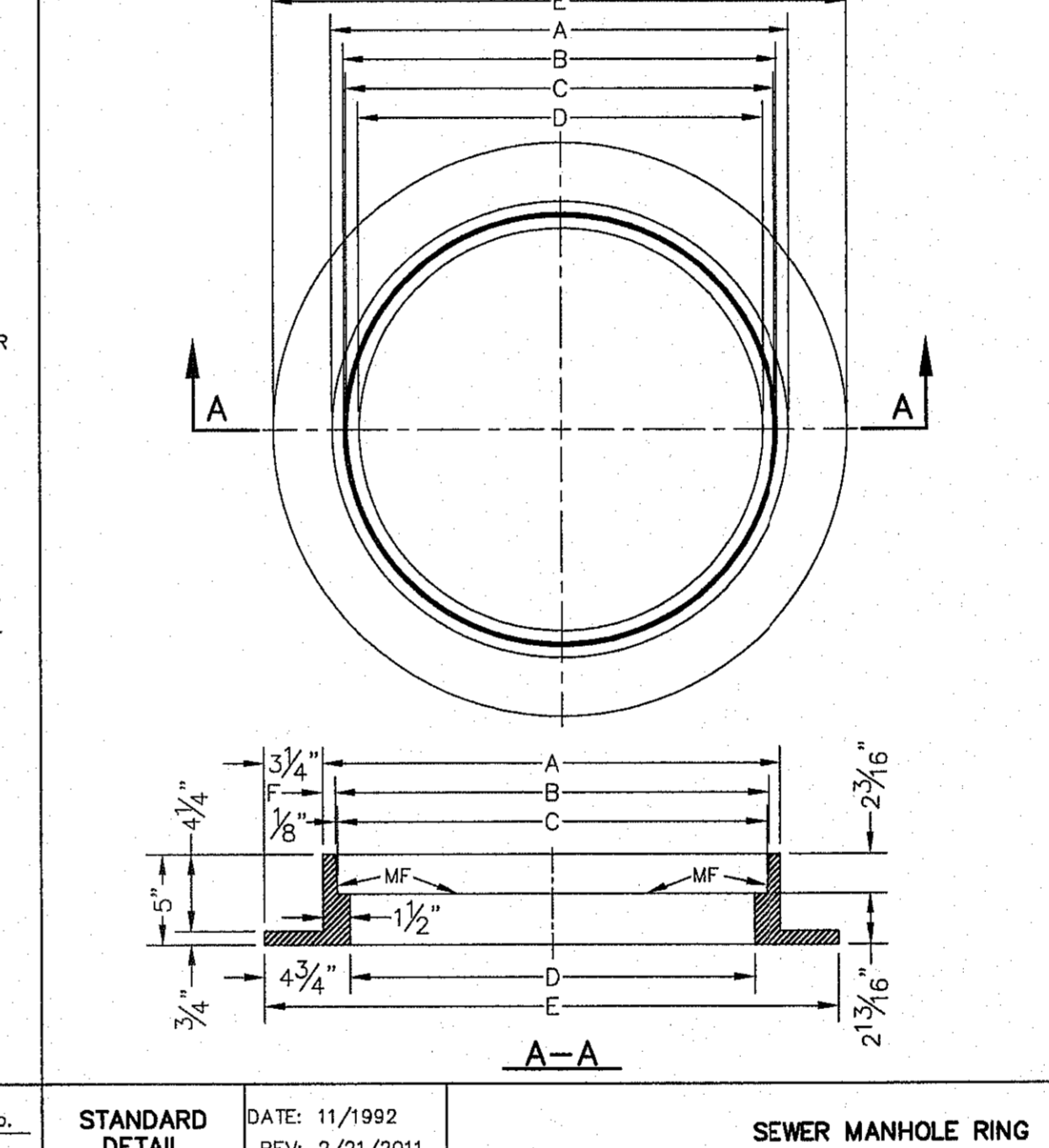
STANDARD DETAIL DATE: 11/1992 REV: 2/8/2013
 MANHOLE TYPE \"A\"
 N.T.S. el paso WATER DETAIL No. 370-1



GENERAL NOTES:
 1. MANHOLE CONNECTOR SHALL BE KOR-N-SEAL OR EQUAL MEETING THE REQUIREMENTS OF ASTM C-923. CONNECTOR SHALL BE FURNISHED BY CONTRACTOR.

CONSTRUCTION KEY NOTES:
 A. PRECAST MANHOLE BARREL.
 B. FLEXIBLE CONNECTOR.
 C. PIPE CLAMP SS 316.
 D. APPROVED PIPE.
 E. PRECAST MANHOLE BASE.
 F. GROUT AS REQUIRED TO FORM SMOOTH CHANNEL TO MANHOLE INVERT.
 G. PIPE OPENINGS/KNOCKOUTS AS REQUIRED TO FIT PIPE SIZE.
 H. EXPANSION BAND SS 316.
 I. FILL SPACE WITH GROUT.

STANDARD DETAIL DATE: 11/1992 REV: 8/13/2009
 PIPE CONNECTION TO MANHOLE
 N.T.S. el paso WATER DETAIL No. 376

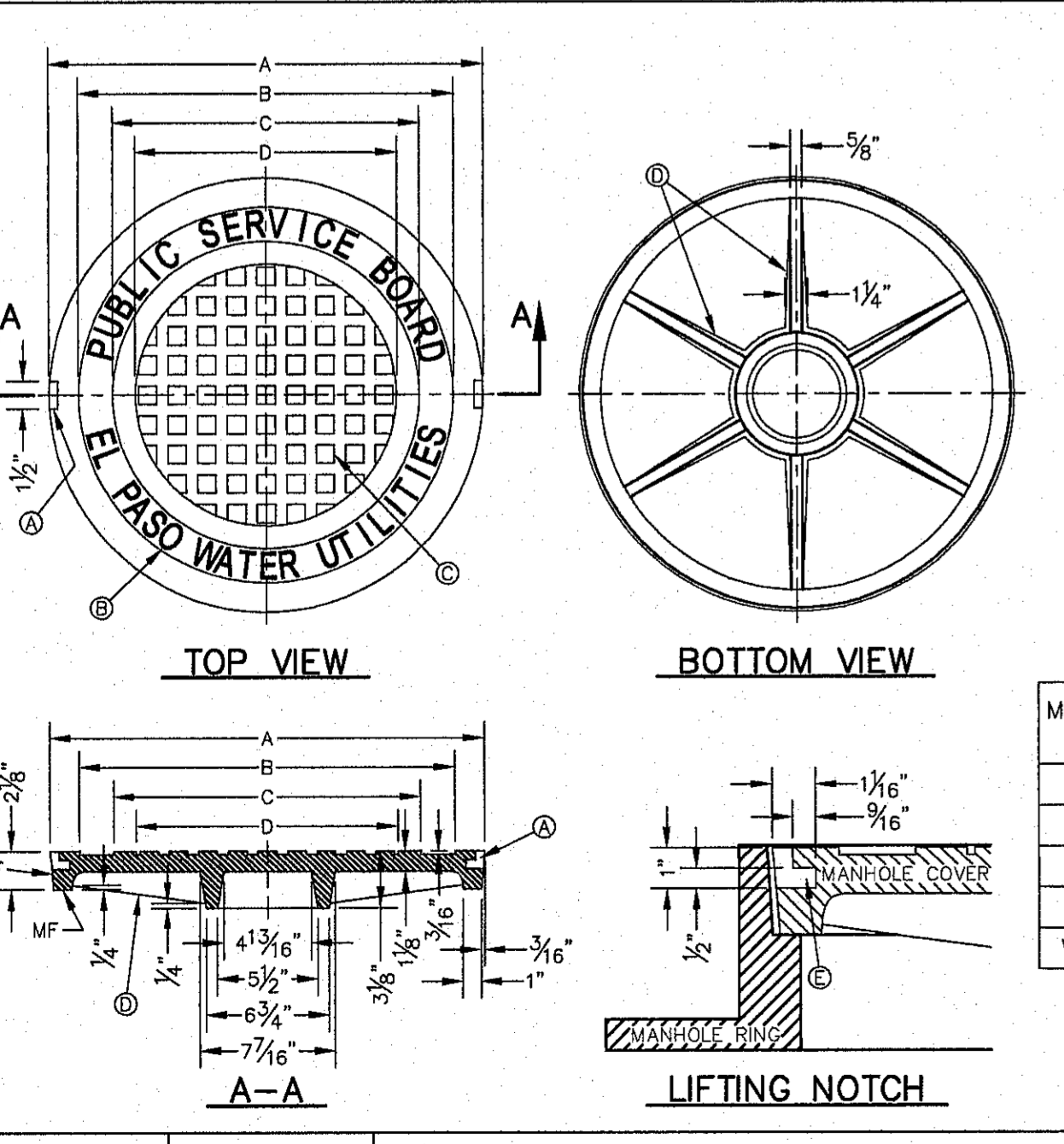


GENERAL NOTES:
 1. MATCHING SURFACES MARKED \"MF\" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
 2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
 3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
 4. AS-CAST DIMENSIONS MAY VARY 1/8\"/>

MANHOLE RING	MANHOLE - ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	33"	25 1/2"
B	31 1/2"	24 1/8"
C	31 1/2"	23 3/8"
D	30"	22 1/2"
E	30 1/2"	32"
F	9 1/2"	1 1/8"
WEIGHT	205 lbs.	170 lbs.

*OBSOLETE - DO NOT USE (FOR REFERENCE ONLY)

STANDARD DETAIL DATE: 11/1992 REV: 2/21/2011
 SEWER MANHOLE RING
 N.T.S. el paso WATER DETAIL No. 377



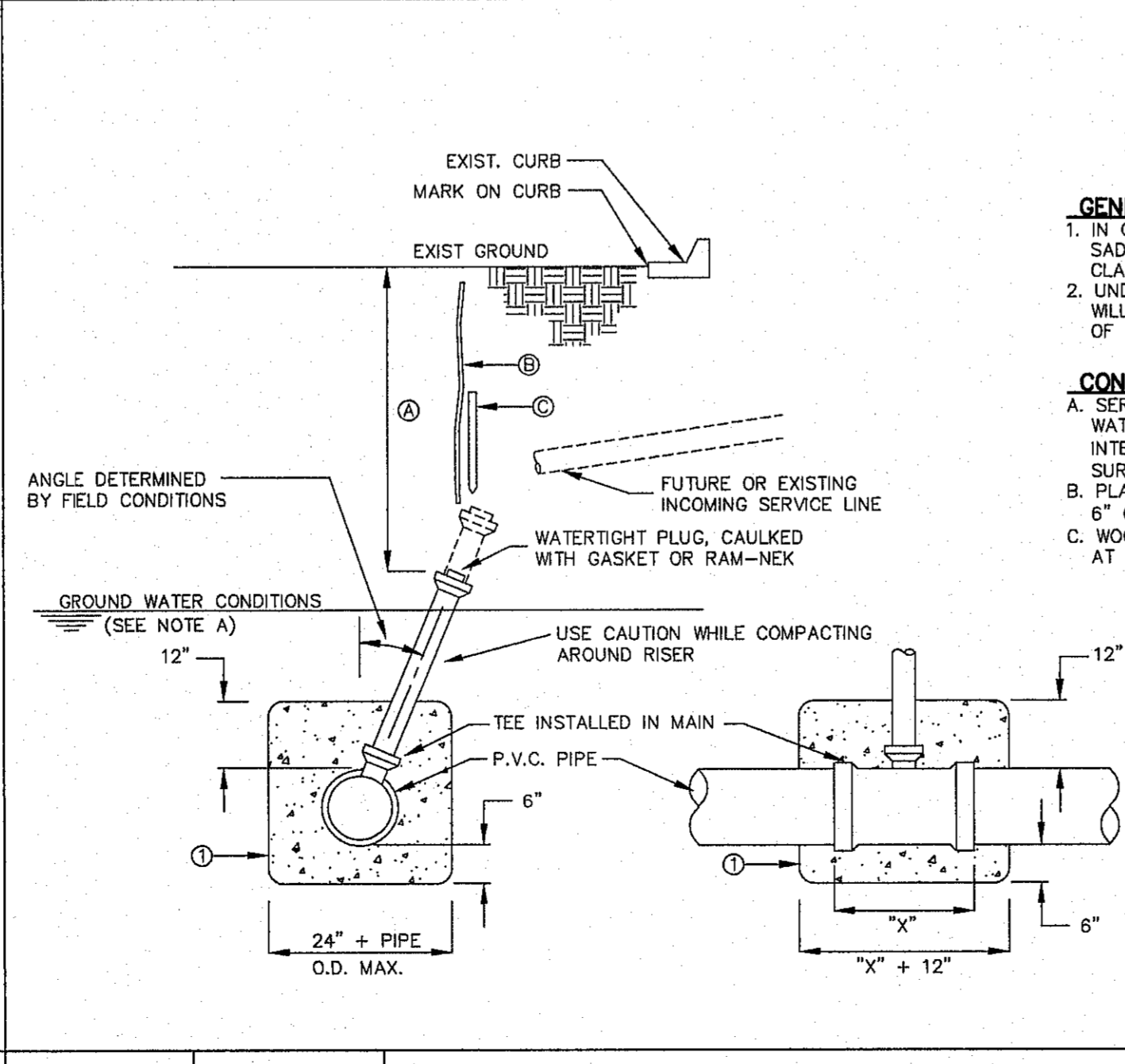
GENERAL NOTES:
 1. MATCHING SURFACES MARKED \"MF\" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
 2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
 3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
 4. AS-CAST DIMENSIONS MAY VARY 1/8\"/>

CONSTRUCTION KEY NOTES:
 A. LIFTING NOTCH.
 B. 3/8\"/>

MANHOLE COVER	MANHOLE - ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	31 3/8"	23 3/8"
B	28 1/2"	20 5/8"
C	24 3/8"	16 3/8"
D	21 3/8"	14 3/8"
WEIGHT	200 lbs.	165 lbs.

*OBSOLETE - DO NOT USE (FOR REFERENCE ONLY)

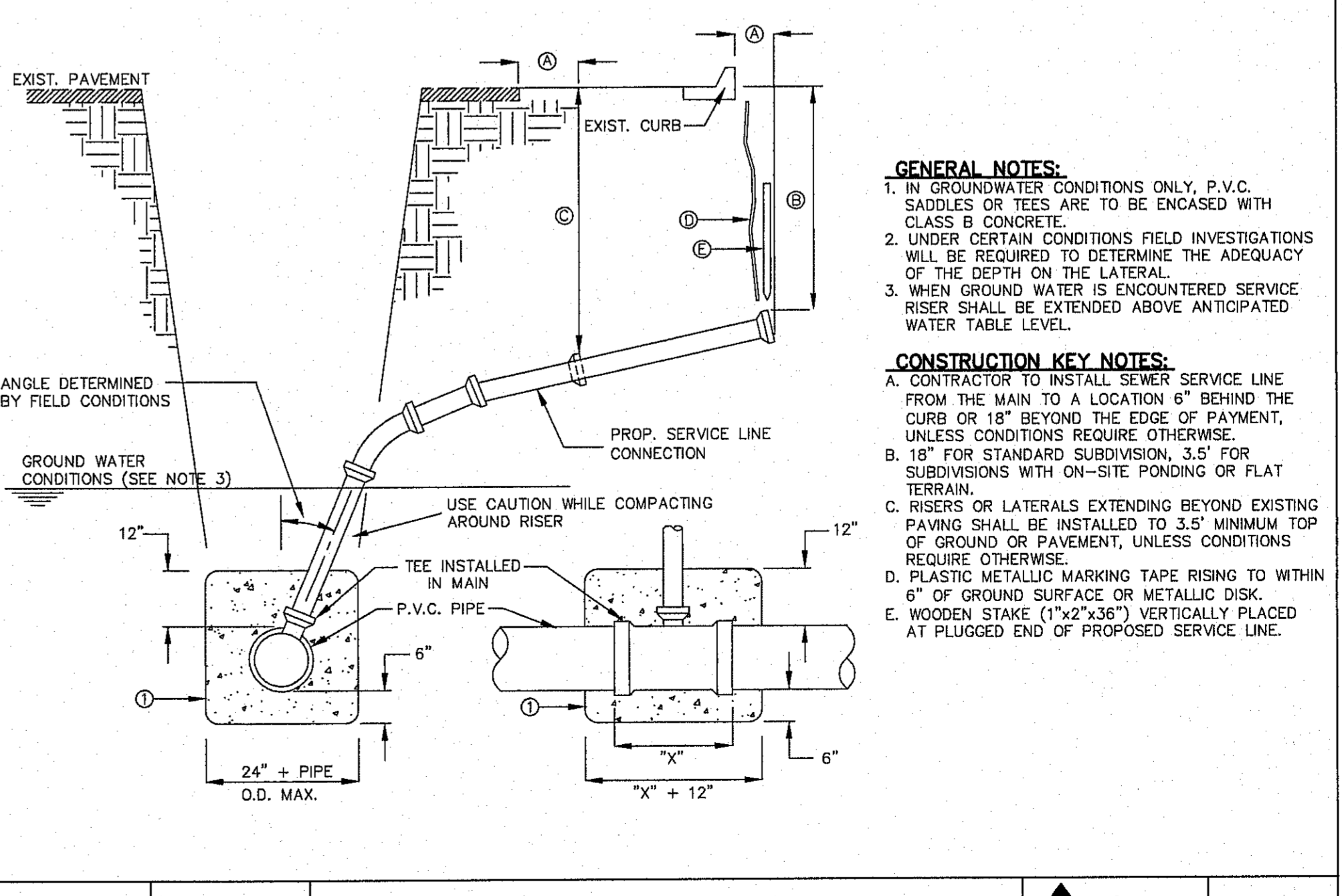
STANDARD DETAIL DATE: 11/1992 REV: 2/21/2011
 SEWER MANHOLE COVER
 N.T.S. el paso WATER DETAIL No. 378



GENERAL NOTES:
 1. IN GROUNDWATER CONDITIONS ONLY, P.V.C. SADDLES OR TEES ARE TO BE ENCASED WITH CLASS B CONCRETE.
 2. UNDER CERTAIN CONDITIONS FIELD INVESTIGATIONS WILL BE REQUIRED TO DETERMINE THE ADEQUACY OF THE DEPTH ON THE LATERAL.

CONSTRUCTION KEY NOTES:
 A. SERVICE LINE TO BE EXTENDED ABOVE GROUND WATER LEVEL OR TO A DEPTH OF THE INTERSECTING SERVICE LINE, OR TO WITHIN 6\"/>

STANDARD DETAIL DATE: 11/1992 REV: 1/23/2009
 SEWER SERVICE RISER CONNECTION
 N.T.S. el paso WATER DETAIL No. 390



GENERAL NOTES:
 1. IN GROUNDWATER CONDITIONS ONLY, P.V.C. SADDLES OR TEES ARE TO BE ENCASED WITH CLASS B CONCRETE.
 2. UNDER CERTAIN CONDITIONS FIELD INVESTIGATIONS WILL BE REQUIRED TO DETERMINE THE ADEQUACY OF THE DEPTH ON THE LATERAL.
 3. WHEN GROUND WATER IS ENCOUNTERED SERVICE RISER SHALL BE EXTENDED ABOVE ANTICIPATED WATER TABLE LEVEL.

CONSTRUCTION KEY NOTES:
 A. CONTRACTOR TO INSTALL SEWER SERVICE LINE FROM THE MAIN TO A LOCATION 6\"/>

STANDARD DETAIL DATE: 11/1992 REV: 1/23/2009
 SEWER SERVICE RISER AND SERVICE LINE CONNECTION
 N.T.S. el paso WATER DETAIL No. 391

WARNING! BEFORE YOU DIG CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UNDERGROUND IMPROVEMENTS IN PROJECT AREA

NO.	DATE	DESCRIPTION	BY
3	12/02/19	Final City Submittal	AHO
2	11/07/19	Second City Submittal	AHO
1	09/23/19	First City Submittal	AHO

BEFORE YOU DIG - CALL

EL PASO ELECTRIC COMPANY
 543-3720
 1-800-546-1350

EL PASO GAS SERVICE
 562-8411/562-2003

EL PASO PUBLIC SERVICE BOARD (WATER & SEWER)
 1-800-DIG-TESS
 774-7414

EL PASO SPECTRUM
 1-800-344-8377

EL PASO EXCAVATION SAFETY SYSTEM
 1-800-212-0151

EL PASO TRAFFIC SIGNALS AND MAINTENANCE
 1-800-212-0151

EL PASO TRAFFIC SIGNALS AND MAINTENANCE
 1-800-212-0151

ADRIAN I. ONTIVEROS
 124089
 LICENSED PROFESSIONAL ENGINEER

csa design group, inc.
 Texas Registered Engineering Firm # 2897
 1845 Northwestern Dr. Ste C
 El Paso, Texas 79912
 Tel: (915) 877-4155
 Fax: (915) 877-4334
 www.csaengineers.com

CIMARRON CANYON UNIT FOUR SUBDIVISION

SHEET TITLE

UTILITY DETAILS

COB	1723
DESIGN BY	JOB NO.
COB-SM	08/08/18
DESIGN BY	DATE
AHO	AS NOTED
CHECKED BY	SCALE

SHEET NO. 30
 31 OF 31