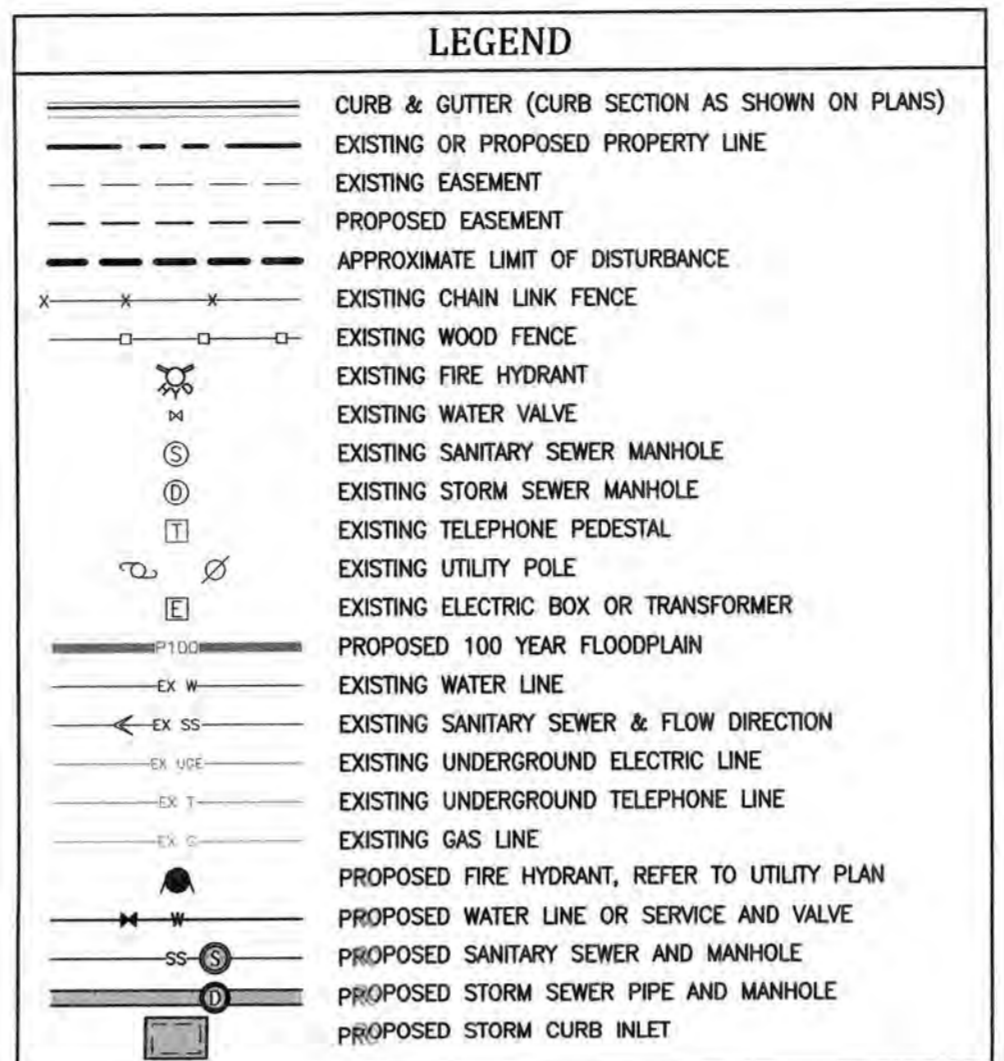
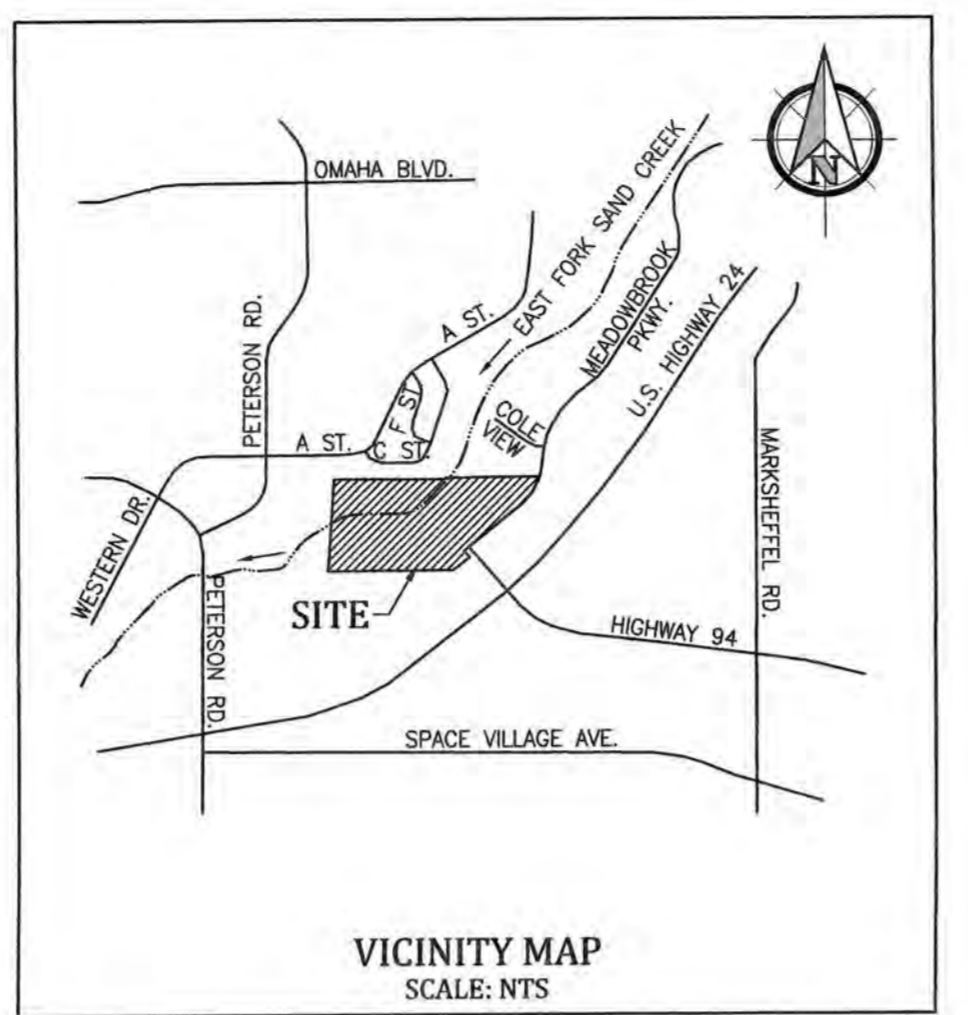


MEADOWBROOK CROSSING FILING NO. 1

CIVIL CONSTRUCTION DRAWINGS

EL PASO COUNTY, COLORADO

- GENERAL NOTES:**
- ALL NEW CONSTRUCTION TO CONFORM TO THE SPECIFICATIONS OF EL PASO COUNTY DEVELOPMENT SERVICES DEPT AND CHEROKEE METROPOLITAN DISTRICT.
 - ALL UTILITY CONSTRUCTION TO BE CONDUCTED IN CONFORMANCE WITH THE CURRENT CHEROKEE METROPOLITAN DISTRICT SPECIFICATIONS AND/OR EL PASO COUNTY SPECIFICATIONS, WHICHEVER IS GREATER.
 - FOR UTILITY NOTES, SEE UTILITY PLAN AND/OR SERVICE PLAN.
 - PROFILE DESIGN LINES ARE BASED ON CENTERLINE, AS SHOWN, UNLESS OTHERWISE NOTED.
 1. ALL HORIZONTAL STATIONING IS BASED ON THE "BACK OF CURB", UNLESS OTHERWISE SHOWN.
 2. ALL VERTICAL STATIONING AND TOP OF CURB ARE BASED ON THE DESIGN POINT SHOWN IN THE TYPICAL CROSS SECTION.
 - ANY ASPHALT REMOVED IS TO BE REPLACED TO MEET THE SPECIFICATIONS OF THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT.
 - FOR PAVEMENT DESIGN, CURB AND GUTTER, AND SIDEWALKS SEE INDIVIDUAL PLAN AND PROFILE SHEETS. PAVEMENT DESIGN TO BE BASED ON RESISTANCE VALUE "R" DERIVED FROM HVEEM TESTS AND ARE TO BE APPROVED BY THE ENGINEERING DIVISION OF THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT PRIOR TO WORK ABOVE SUBGRADE.
 - AT INTERSECTIONS, RISE CURB RETURNS WILL HAVE 20'-FOOT RADIUS UNLESS OTHERWISE NOTED.
 - EXISTING UTILITIES: THE LOCATIONS OF EXISTING UTILITIES ARE BASED UPON THE BEST AVAILABLE INFORMATION, ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATION AND VERIFICATION OF THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK. IF IT APPEARS THERE COULD BE A CONFLICT WITH ANY UTILITIES, WHETHER INDICATED ON THE PLANS OR NOT, THE CONTRACTOR IS TO NOTIFY THE ENGINEER AND OWNER IMMEDIATELY. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES WITHIN THE CONSTRUCTION AREA AND SITE. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE THE EXISTING UTILITIES.
 - WITH NOTIFICATION OF THE RESPECTIVE OWNER, ADJUST RIMS OF ALL CLEANOUTS, MANHOLES AND VALVE COVERS WITHIN PAVEMENT TO 1/4 TO 1/2 INCH BELOW THE FINISHED GRADE AND CROSS SLOPE PRIOR TO FINAL LIFT PAVING AND ADJUST TO MATCH FINISH GRADE IN UNPAVED AREAS.
 - A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT AND CHEROKEE METROPOLITAN DISTRICT PRIOR TO ANY CONSTRUCTION.
 - APPROVED PLANS, ENGINEERING CRITERIA MANUAL, ETC. IS REQUIRED TO BE ON-SITE AT ALL TIMES DURING CONSTRUCTION.
 - ALL NECESSARY PERMITS, SUCH AS SWMP, ESQCP, FUGITIVE DUST, ACCESS, C.O.E. 404, ETC. SHALL BE OBTAINED PRIOR TO CONSTRUCTION.
 - ALL HANDICAP RAMPS TO BE PER EL PASO COUNTY STANDARD SD-2-40.
 - 12.1. THE CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND LAYOUT WITH THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT ON THE PLACEMENT OF ANY PEDESTRIAN RAMP PRIOR TO CONSTRUCTION OF THE CURB. PEDESTRIAN RAMP LOCATIONS ARE AS SHOWN ON THE PLANS.
 - WHERE APPROPRIATE, NEATLY SAW CUT ALL EXISTING CONCRETE AND ASPHALT. REPAIR/REPLACE ALL DISTURBED EXISTING ITEMS WITH LIKE MATERIALS AND THICKNESSES.
 - ALL DISTURBED AREAS SHALL BE REVEGETATED WITH NATIVE GRASSES WITHIN 21 DAYS OF EXCAVATION PER EROSION CONTROL PLAN.
 - THE PREPARED EROSION/SEDIMENT CONTROL PLAN IS TO BE CONSIDERED A PART OF THESE PLANS AND ITS REQUIREMENTS ADHERED TO DURING THE CONSTRUCTION OF THIS PROJECT.
 - ALL STORM SEWER PIPE LENGTHS AND SLOPES ARE FIGURED FROM CENTER OF MANHOLE, BEND OR WYE AND INSIDE FACE OF INLET. PIPE LENGTHS ARE GIVEN AS A HORIZONTAL LENGTH AND ARE APPROXIMATE.
 - 16.1. PIPE LENGTHS INCLUDE THE FLARED END SECTION.
 - ALL STORM SEWER PIPE BEDDING TO BE CLASS B BEDDING, UNLESS OTHERWISE NOTED.
 - ALL STORM SEWER PIPE SHALL BE CLASS III, WALL B UNLESS OTHERWISE NOTED.
 - ALL WYES AND BENDS IN CONSTRUCTION OF STORM SEWER FACILITIES SHALL BE FACTORY FABRICATED, UNLESS APPROVED BY THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT.
 - ALL RCP SECTIONS SHALL BE JOINED IN SUCH A MANNER THAT THE ENDS ARE FULLY ENTERED AND THE INNER SURFACES ARE REASONABLY FLUSH. RUBBER GASKETS SHALL BE USED ON ALL PIPE JOINTS CONFORMING TO ASTM C-443. AVERAGE JOINT GAP THAT EXCEEDS 1/2 INCH SHALL BE FILLED WITH NON-SHRINK GROUT.
 - MANHOLE RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. RING AND COVER TO BE SET IN CENTERED CONCRETE RINGS WITH RAM-NECK FOR ADJUSTMENT TO MATCH FINAL PAVEMENT ELEV.
 - CONSTRUCTION AND MATERIALS USED IN ALL STORM AND SANITARY SEWER MANHOLES SHALL BE PER SPECIFICATIONS. STORM SEWER RADIAL DEFLECTIONS TO BE GROUTED OR INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
 - STORM SEWER MANHOLES SIZES AS FOLLOWS UNLESS OTHERWISE SHOWN:
 - 18" THRU 36" USE 48" I.D. MANHOLE
 - 42" THRU 48" USE 60" I.D. MANHOLE
 - 54" THRU 60" USE 72" I.D. MANHOLE
 NOTE: MANHOLE SIZES TABULATED HERE SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE INCOMING LATERALS.
 - VERTICAL CURB TO BE USED BETWEEN CURB RETURNS (CR) AND AT CURB INLETS. TRANSITIONS FROM RAMP TO VERTICAL CURB SHALL BE 10'-FEET UNLESS OTHERWISE APPROVED BY THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT. ALL OTHER CURB & GUTTER TO BE RAMP CURB & GUTTER, UNLESS OTHERWISE SHOWN ON THE PLAN.
 - CROSS PANS TO BE PER EL PASO COUNTY STANDARD DETAIL SD-2-26.
 - CURB RETURNS SHALL BE STRAIGHT GRADED FROM CR TO CR UNLESS OTHERWISE NOTED.
 - INLETS ARE TYPE "R" INLETS (CDOT STD M-604-12) UNLESS OTHERWISE NOTED.
 - USPS OBU MAILBOXES ARE TO BE DETERMINED BY USPS.
 - ALL SANITARY SEWER PIPE BEDDING TO BE CLASS B BEDDING, UNLESS OTHERWISE NOTED. REFER TO CHEROKEE METROPOLITAN DISTRICT STANDARDS FOR BEDDING MATERIAL REQUIREMENTS.
- BENCHMARK:** FIMS MONUMENT NUMBER 81, A BERTENSEN TOP SECURITY ROD WITH A 3.25-INCH DIAMETER ALUMINUM FIMS CAP (NORTH SIDE OF U.S. HWY 24 EAST OF VALLEY STREET) ELEV. = 6272.26 (NVD 1929).
BASIS OF BEARINGS: NORTH LINE OF THE SOUTH HALF OF SEC. 8, T14S, R65W OF THE 6TH P.M., MONUMENTED AT BOTH ENDS BY A 3/4" BRASS CAP IN RANGE BOX AND ASSUMED TO BEAR N89°43'13"E.



INDEX OF SHEETS

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3	PLAN AND PROFILE - PREBLE AND BOREAL DRIVE
4	PLAN AND PROFILE - BOREAL DRIVE
5	PLAN AND PROFILE - NEWT DRIVE
6-7	PLAN AND PROFILE - MEADOWBROOK PKWY CONCEPTUAL
8	OVERALL SIGNAGE & STRIPING PLAN
9-10	STORM SEWER PLAN AND PROFILE
11-12	OVERALL GRADING AND EROSION CONTROL PLAN
13-14	EROSION CONTROL DETAILS
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34	DT5
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- EL PASO COUNTY STANDARD NOTES:**
- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
 - CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
 - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
 - CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
 - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
 - CDOT M & S STANDARDS
 - NOTWITHSTANDING ANYTHING DEPICTED IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
 - IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
 - CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT (PCD) - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS - ISSUED 401 AND 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
 - CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND DSD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
 - ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY DSD.
 - CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD DEPARTMENT PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
 - ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
 - SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
 - SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
 - CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
 - THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

CONTACTS

SERVICE	ENTITY	POINT OF CONTACT
DEVELOPER	MEADOWBROOK DEVELOPMENT LLC 90 SOUTH CASCADE AVENUE, SUITE 1500 COLORADO SPRINGS, CO 80903	
CIVIL ENGINEER	KIOWA ENGINEERING CORPORATION 1604 SOUTH 21ST STREET COLORADO SPRINGS, CO 80904	(719) 630-7342
JURISDICTION:	EL PASO COUNTY PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT 2880 INTERNATIONAL CIRCLE, SUITE 110	(719) 520-6300
WASTEWATER & WATER:	CHEROKEE METROPOLITAN DISTRICT 6250 PALMER PARK BLVD	(719) 597-5080
FIRE:	CIMARRON HILLS FIRE DEPT 1835 TUSKEGEE PLACE	(719) 591-1960
GAS/ELEC:	SPRINGS UTILITIES 7710 DURANT DRIVE	ROBERT ESTES (719) 668-5904
PHONE:	CENTURY LINK 7925 INDUSTRY ROAD #112	PATTI MOORE (719) 278-4681
CABLE:	COMCAST 213 NORTH UNION BLVD	DALE STEWART (719) 442-4733

Design Engineer's Statement:
 These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications.

Signature: *Matthew W. Briesen* Date: 8/2/17
 Matthew W. Briesen, P.E. #36713
 For and on behalf of Kiowa Engineering Corp.

Owner/Developer's Statement:
 I, the owner/developer, have read and will comply with all of the requirements specified in these detailed plans and specifications.

Signature: *Danny Mientka* Date: 9/5/17
 Danny Mientka
 Meadowbrook Development LLC
 90 South Cascade Ave, Suite 1500
 Colorado Springs, Colorado 80903

El Paso County:
 County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/or accuracy of this document.

Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual, and Engineering Criteria Manual as amended.

In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Directors discretion.

Signature: *Jennifer Irvine* Date: _____
 Jennifer Irvine, P.E.
 County Engineer / ECM Administrator

OWNER/DEVELOPER PLAN APPROVAL
 The undersigned owner/developer agrees that they shall, at their expense, be solely responsible for 1) the installation of the proposed utility infrastructure in accordance with these plans, and 2) all damages and defects arising from, or related to, the installation, maintenance or operation of the public utility infrastructure from the date of preliminary acceptance until final acceptance.

Signature: *Danny Mientka* Date: 9/5/17
 Owner/Developer

Signature: *Danny Mientka* Date: 9/5/17
 Owner/Developer (Print Name)

DBA: Meadowbrook Development LLC
 Address: 90 South Cascade Ave, Suite 1500
 Colorado Springs, CO 80903
 Phone: _____

FIRE DISTRICT APPROVAL
 The number of hydrants and hydrant locations as shown on this water plan are correct and adequate to satisfy the fire protection requirements as specified by the City of Colorado Springs Fire Department.

Signature: _____ Date: 9/30/17

PRE-EXCAVATION CHECKLIST

- GAS AND OTHER UTILITY LINES OF RECORD SHOWN ON PLANS.
- UTILITIES CENTRAL LOCATING CALLED AT LEAST 2 BUSINESS DAYS AHEAD.
- UTILITIES LOCATED AND MARKED.
- EMPLOYEES BRIEFED ON MARKING AND COLOR CODES.*
- EMPLOYEES TRAINED ON EXCAVATION AND SAFETY PROCEDURES FOR NATURAL GAS LINES.
- WHEN EXCAVATION APPROACHES GAS LINES, EMPLOYEES EXPOSE LINES BY CAREFUL PROBING AND HAND DIGGING.

*A.G.A./A.P.W.A. STANDARD UTILITY MARKING COLOR CODE
 NATURAL GAS YELLOW WATER BLUE
 ELECTRIC RED WASTEWATER GREEN

811
 Know what's below.
 Call before you dig.

ABBREVIATIONS

ASSY = ASSEMBLY	MIN = MINIMUM	NTS = NOT TO SCALE
BNDY = BOUNDARY	OD = OUTSIDE DIAMETER	
BOP = BOTTOM OF PIPE	PC = POINT OF HORIZONTAL CURVATURE	
C&G = CURB & GUTTER	POCC = POINT OF CONNECTION	
CL = CENTERLINE	PP = PROPOSED	
CO = CLEAN OUT	PRC = POINT OF REVERSE CURVE	
CRA = CONCRETE REVERSE ANCHOR	PROP = PROPERTY	
CR = POINT OF CURB RETURN	PT = POINT OF HORIZONTAL TANGENCY	
CS = CROSS SLOPE	PVC = POLY VINYL CHLORIDE PIPE	
CTB = CONCRETE THRUST BLOCK	PVC = POINT OF VERTICAL CURVATURE	
DIP = DUCTILE IRON PIPE	PVI = POINT OF VERTICAL INTERSECTION	
DET = DETAIL	PVT = POINT OF VERTICAL TANGENCY	
E = ELEVATION	R = RADIUS	
EOA = EDGE OF ASPHALT	RT = RIGHT	
ESMT = EASEMENT	RCR = REINFORCED CONCRETE PIPE	
EX = EXISTING	RD = ROOF DRAIN (STORM LINE)	
FC = FACE OF CURB	ROW = RIGHT OF WAY	
FES = FLARED END SECTION	SHT = SHEET	
FLG = FLANGE	SS = SANITARY SEWER	
FL = FLOWLINE	STA = STATION	
GB = GRADE BREAK	STD = STANDARD	
HP = HIGH POINT	TA = TOP OF ASPHALT	
HORIZ = HORIZONTAL	TBC = TOP BACK OF CURB	
HYD = HYDRANT	TC = TOP OF CURB	
ID = INSIDE DIAMETER	TOA = TOP OF ASPHALT	
L = LEFT	TOT = TOP OF CONCRETE	
LF = LINEAR FEET	TOP = TOP OF PIPE	
LP = LOW POINT	TYP = TYPICAL	
MAX = MAXIMUM	VC = VERTICAL CURVE	
MH = MANHOLE		

NOTES:
 1. FILING 2 HAS NOT BEEN PLATTED AT THE TIME THIS PLAN WAS PREPARED. THE FILING 2 LOT NUMBERS ARE SUBJECT TO CHANGE DEPENDING ON THE FINAL PLAT NUMBERING.

CHEROKEE METROPOLITAN DISTRICT WATER PLAN DESIGN APPROVAL

APPROVED BY: *Janette Smith* DATE: 9/15/17

Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

CHEROKEE METROPOLITAN DISTRICT WASTEWATER PLAN DESIGN APPROVAL

APPROVED BY: *Janette Smith* DATE: 9/15/17

Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

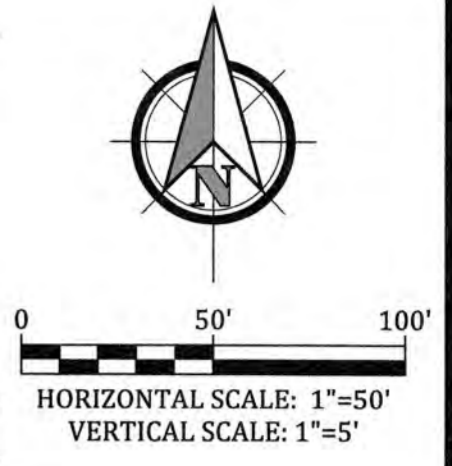
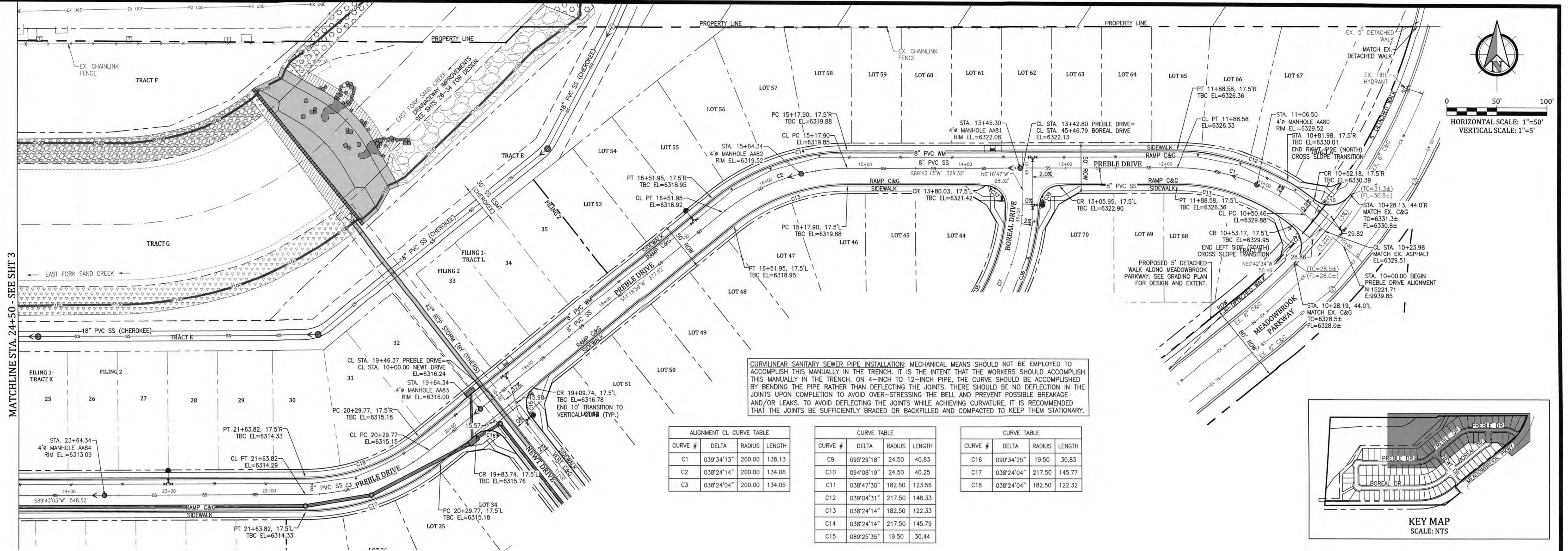
MEADOWBROOK CROSSING FILING NO. 1

COVER SHEET

EL PASO COUNTY, COLORADO

Kiowa Engineering Corporation
 Celebrating 30 years
 1604 South 21st Street
 Colorado Springs, Colorado 80904
 (719) 630-7342

Project No.: 16039
 Date: August 22, 2017
 Design: ELS
 Drawn: ELS
 Check: MWE
 Revisions:
 SHEET
 1
 OF 35 SHEETS



MATCHLINE STA. 24+50 - SEE SHT 3

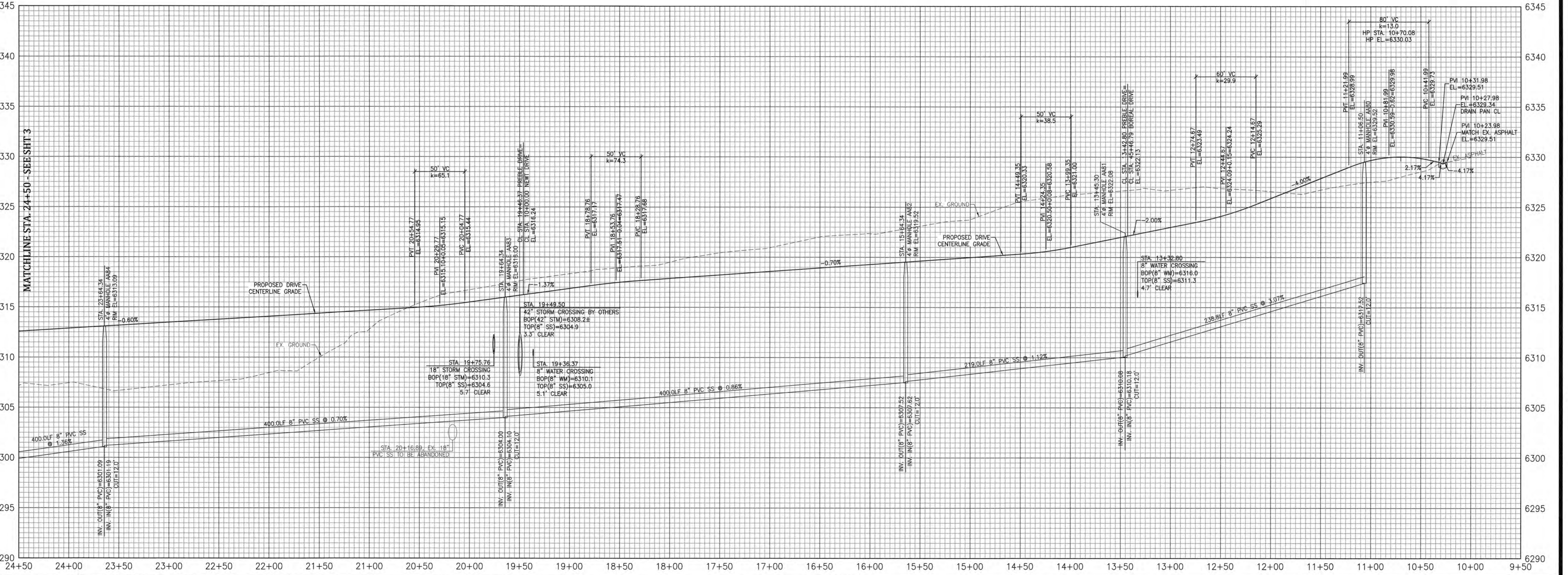
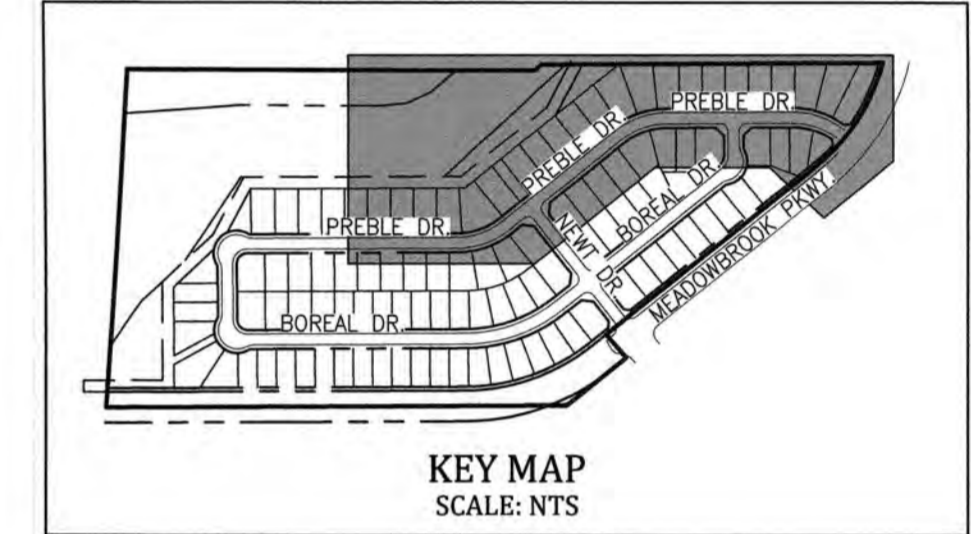
MATCHLINE STA. 24+50 - SEE SHT 3

ALIGNMENT CL CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C1	039°34'13"	200.00	138.13
C2	038°24'14"	200.00	134.06
C3	038°24'04"	200.00	134.05

CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C9	095°29'18"	24.50	40.83
C10	094°08'19"	24.50	40.25
C11	038°47'30"	182.50	123.56
C12	039°04'31"	217.50	148.33
C13	038°24'14"	182.50	122.33
C14	038°24'14"	217.50	145.79
C15	089°25'35"	19.50	30.44

CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C16	090°34'25"	19.50	30.83
C17	038°24'04"	217.50	145.77
C18	038°24'04"	182.50	122.32

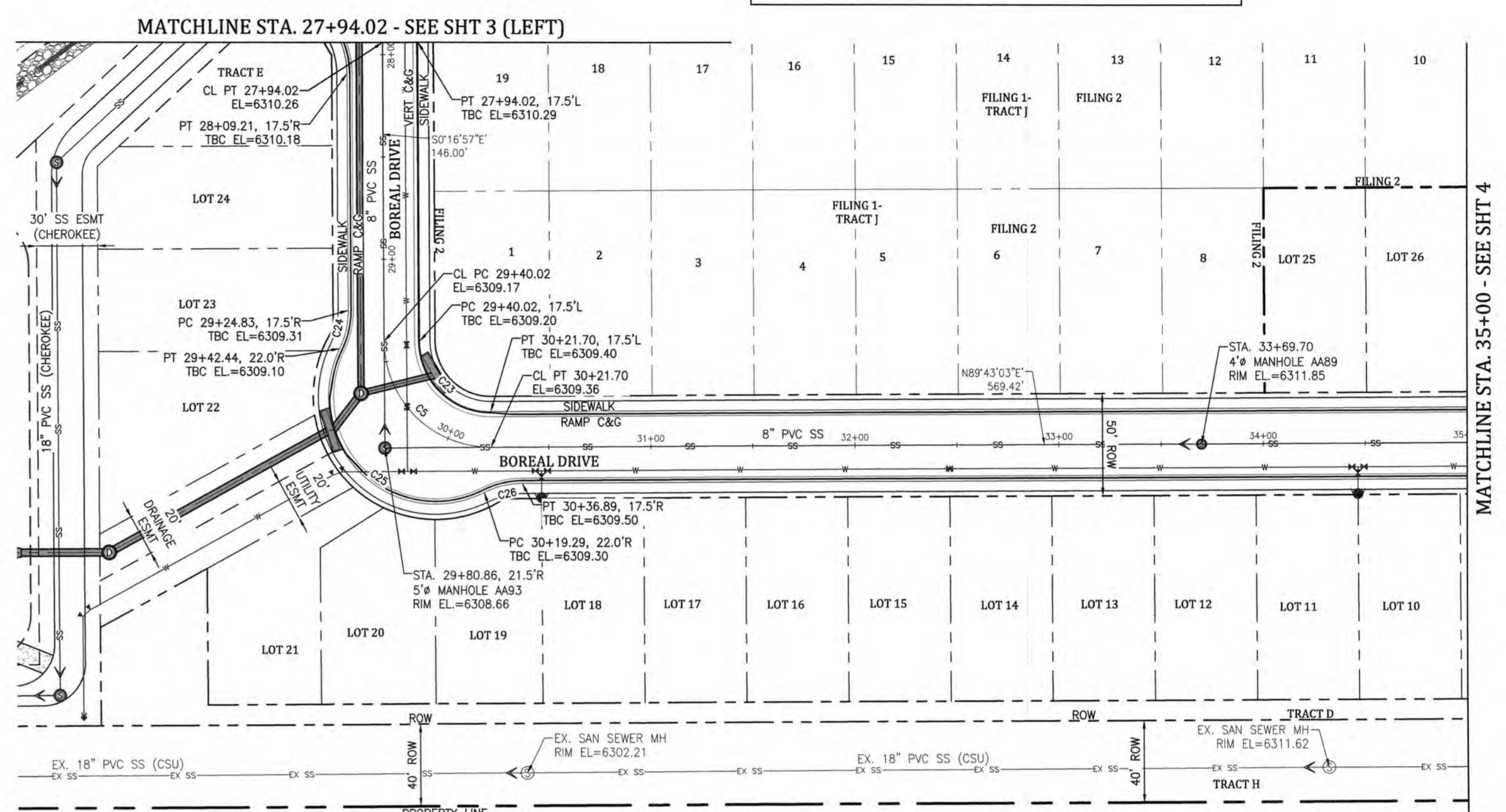
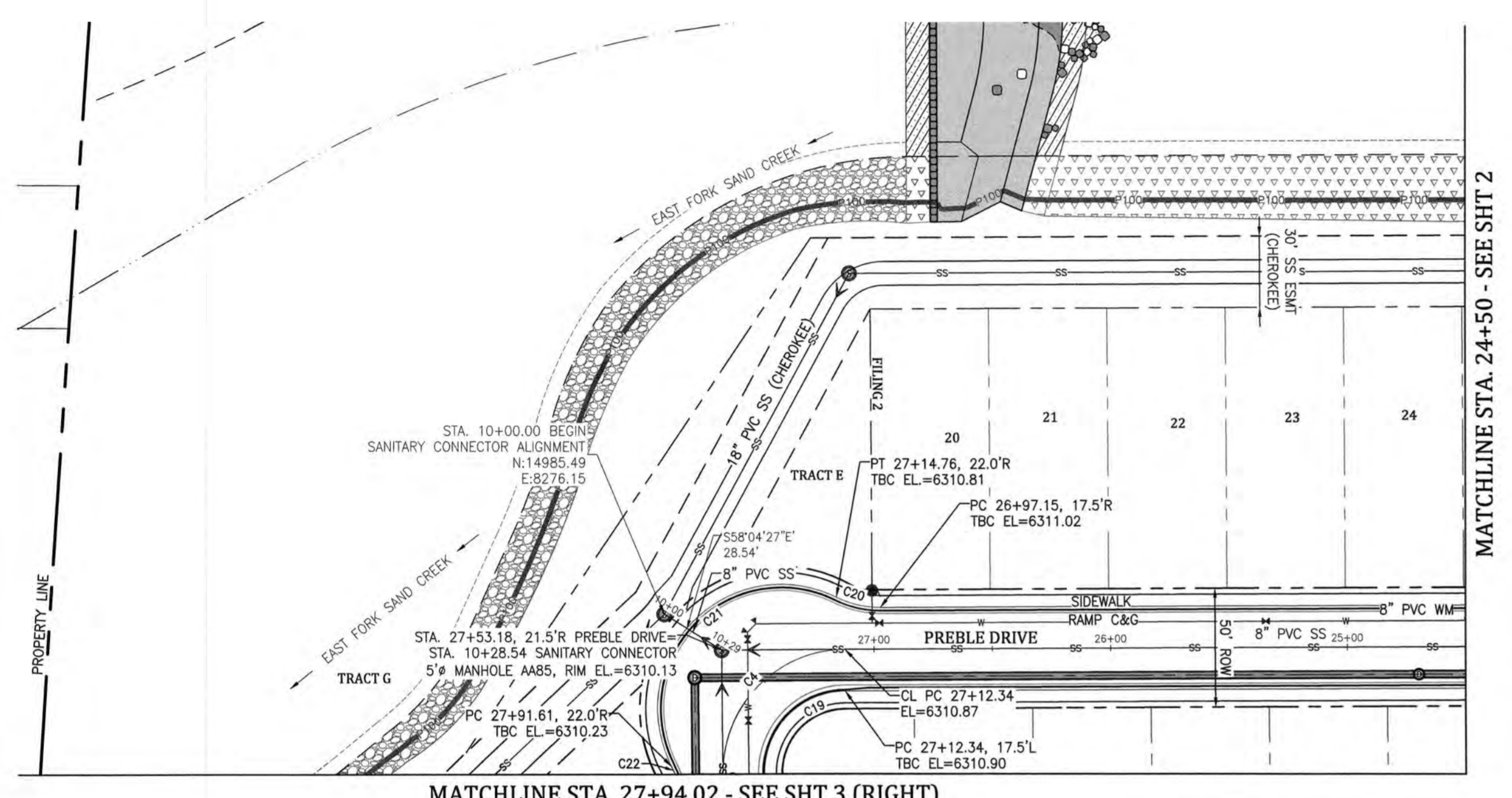
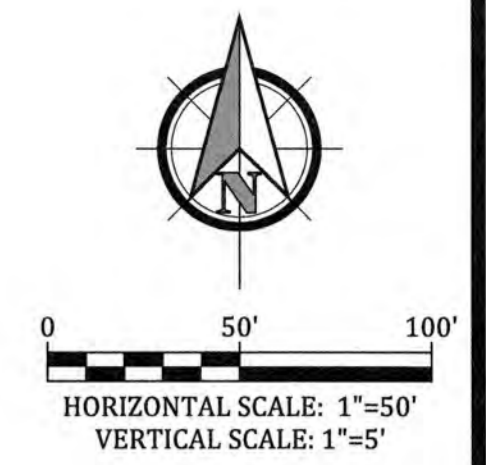
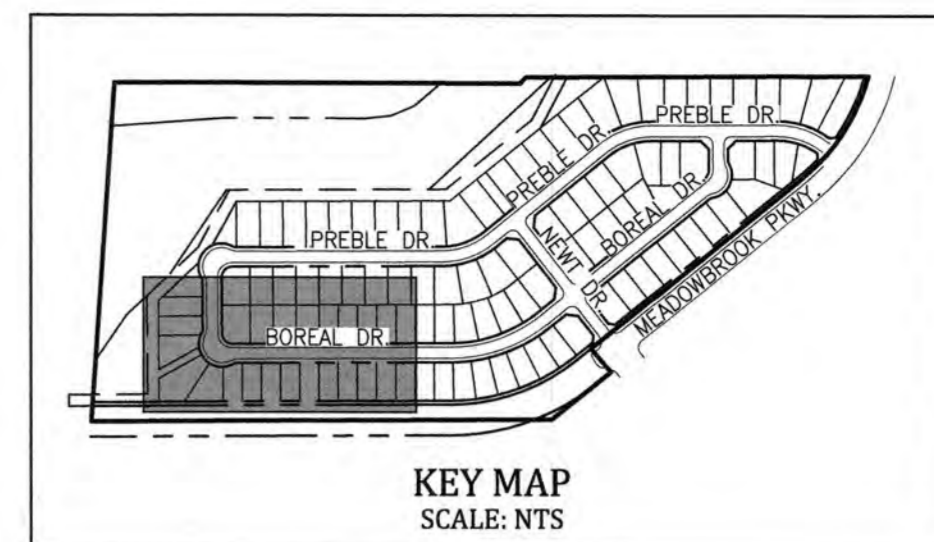
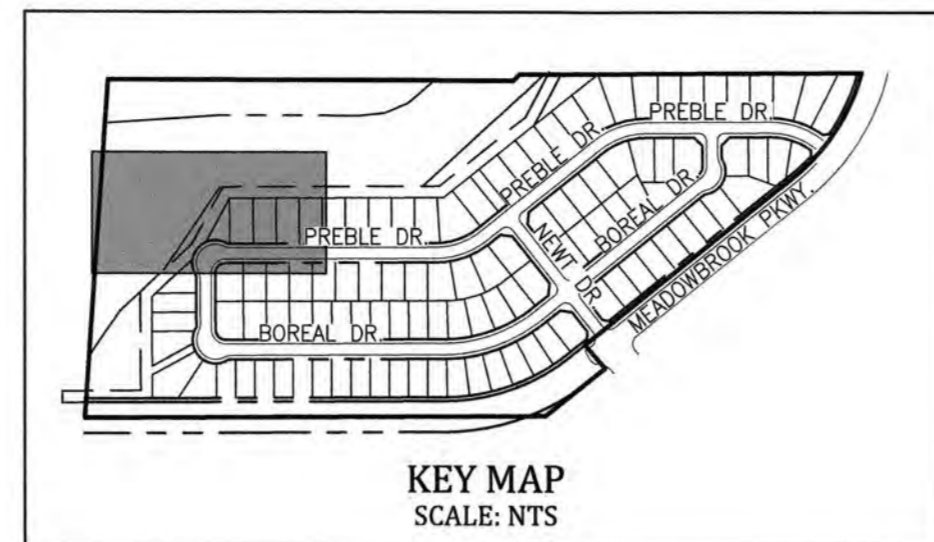
CURVILINEAR SANITARY SEWER PIPE INSTALLATION: MECHANICAL MEANS SHOULD NOT BE EMPLOYED TO ACCOMPLISH THIS MANUALLY IN THE TRENCH. IT IS THE INTENT THAT THE WORKERS SHOULD ACCOMPLISH THIS MANUALLY IN THE TRENCH ON 4-INCH TO 12-INCH PIPE. THE CURVE SHOULD BE ACCOMPLISHED BY BENDING THE PIPE RATHER THAN DEFLECTING THE JOINTS. THERE SHOULD BE NO DEFLECTION IN THE JOINTS UPON COMPLETION TO AVOID OVER-STRESSING THE BELL AND PREVENT POSSIBLE BREAKAGE AND/OR LEAKS. TO AVOID DEFLECTING THE JOINTS WHILE ACHIEVING CURVATURE, IT IS RECOMMENDED THAT THE JOINTS BE SUFFICIENTLY BRACED OR BACKFILLED AND COMPACTED TO KEEP THEM STATIONARY.



MEADOWBROOK CROSSING FILING NO. 1
PREBLE DRIVE PLAN AND PROFILE
STA. 10+00 TO STA. 24+50
 EL PASO COUNTY, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	



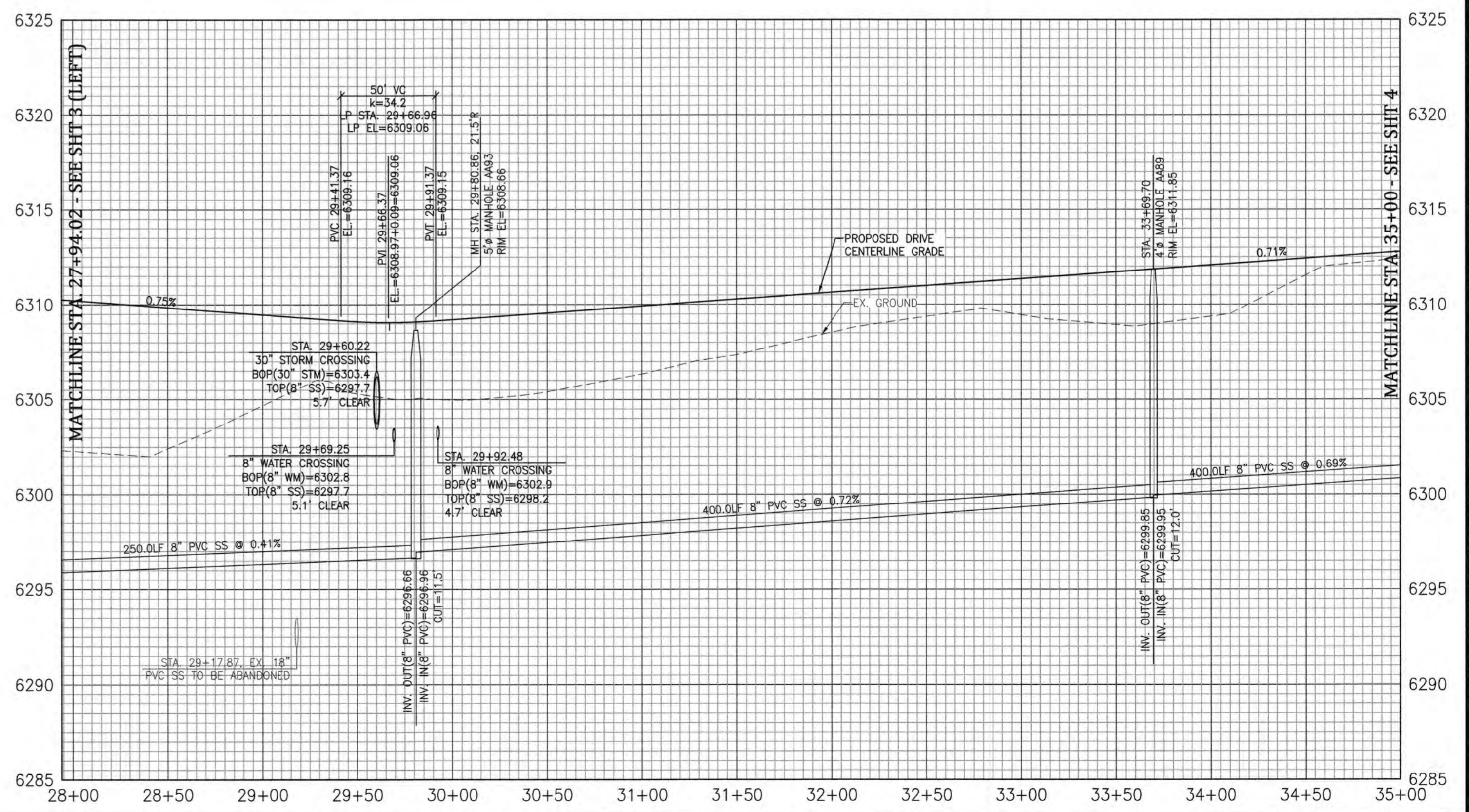
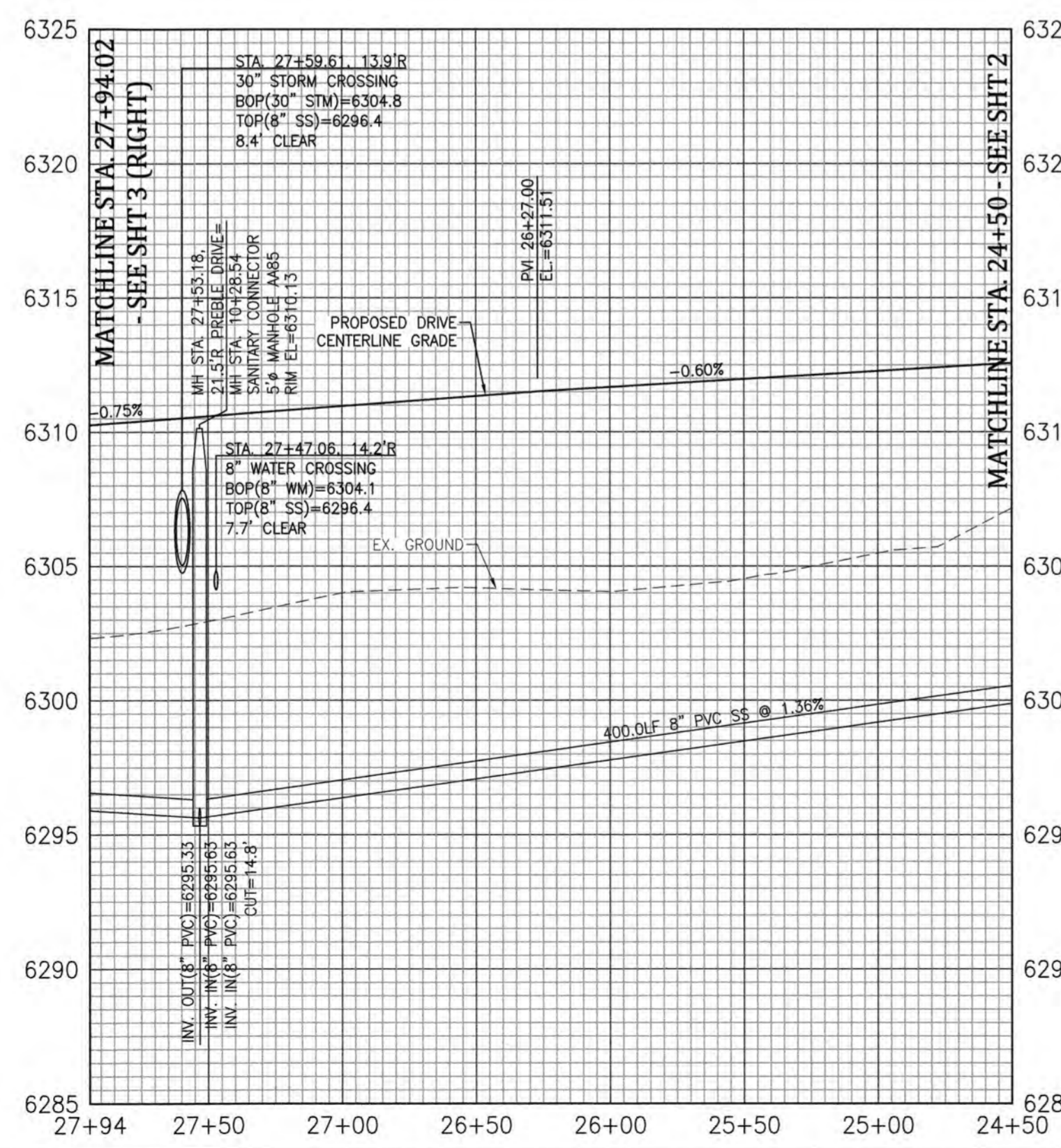
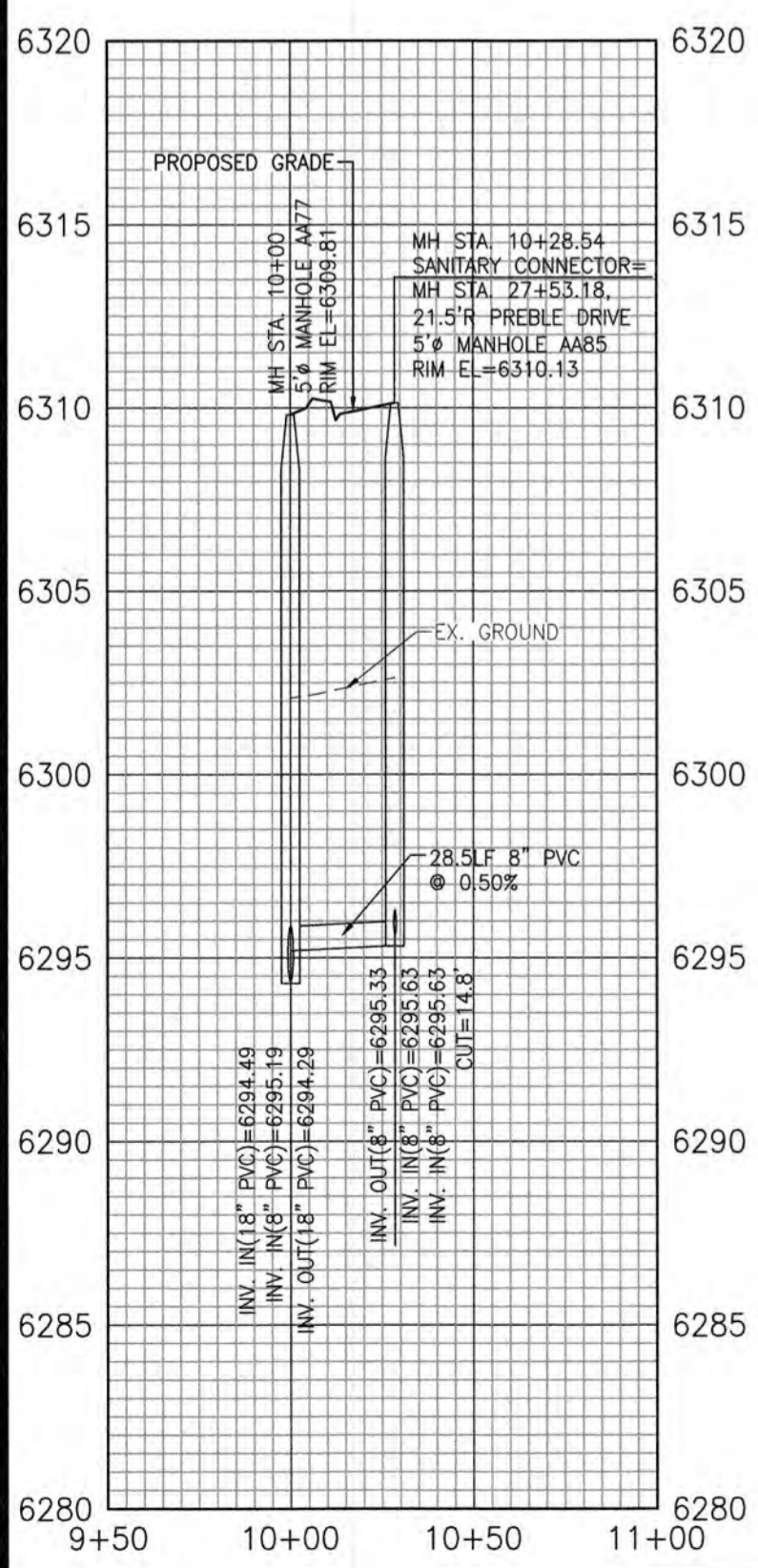


ALIGNMENT CL CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C4	090°00'00"	52.00	81.68

CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C19	090°00'00"	34.50	54.19
C20	026°40'07"	41.50	19.32
C21	143°20'14"	52.50	131.34
C22	026°40'07"	41.50	19.32

ALIGNMENT CL CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C5	090°00'00"	52.00	81.68

CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C23	090°00'00"	34.50	54.19
C24	026°40'07"	41.50	19.32
C25	143°20'14"	52.50	131.34
C26	026°40'07"	41.50	19.32

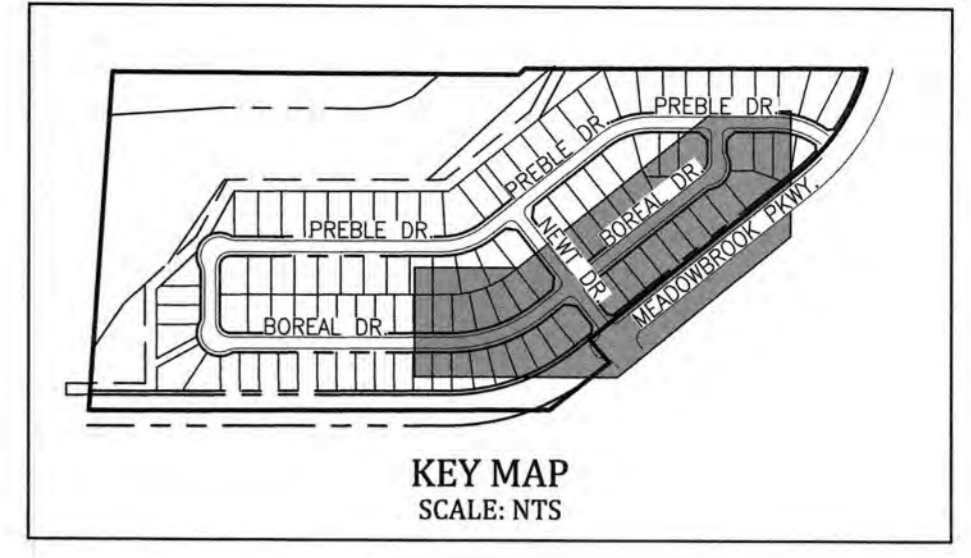
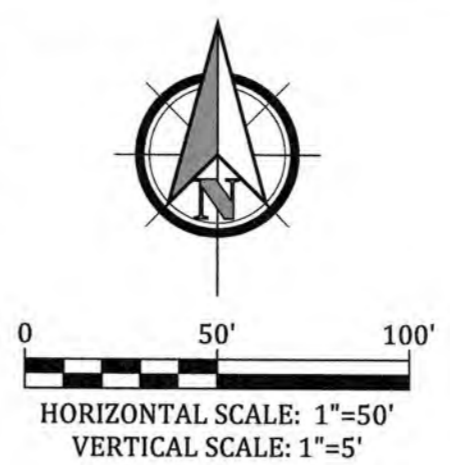
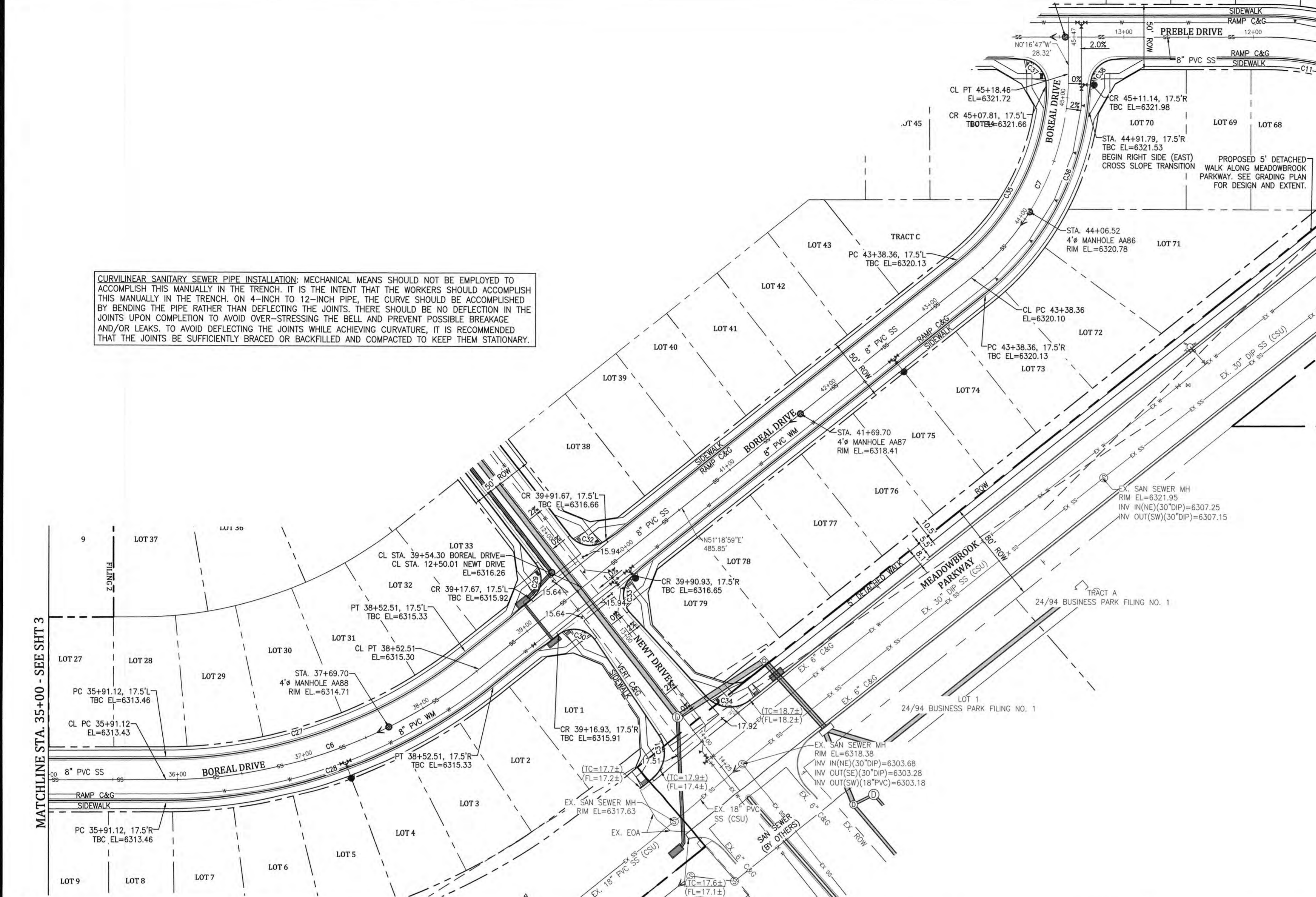


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MEADOWBROOK CROSSING FILING NO. 1
PREBLE DRIVE AND BOREAL DRIVE PLAN AND PROFILE
STA. 24+50 TO STA. 35+00
 EL PASO COUNTY, COLORADO

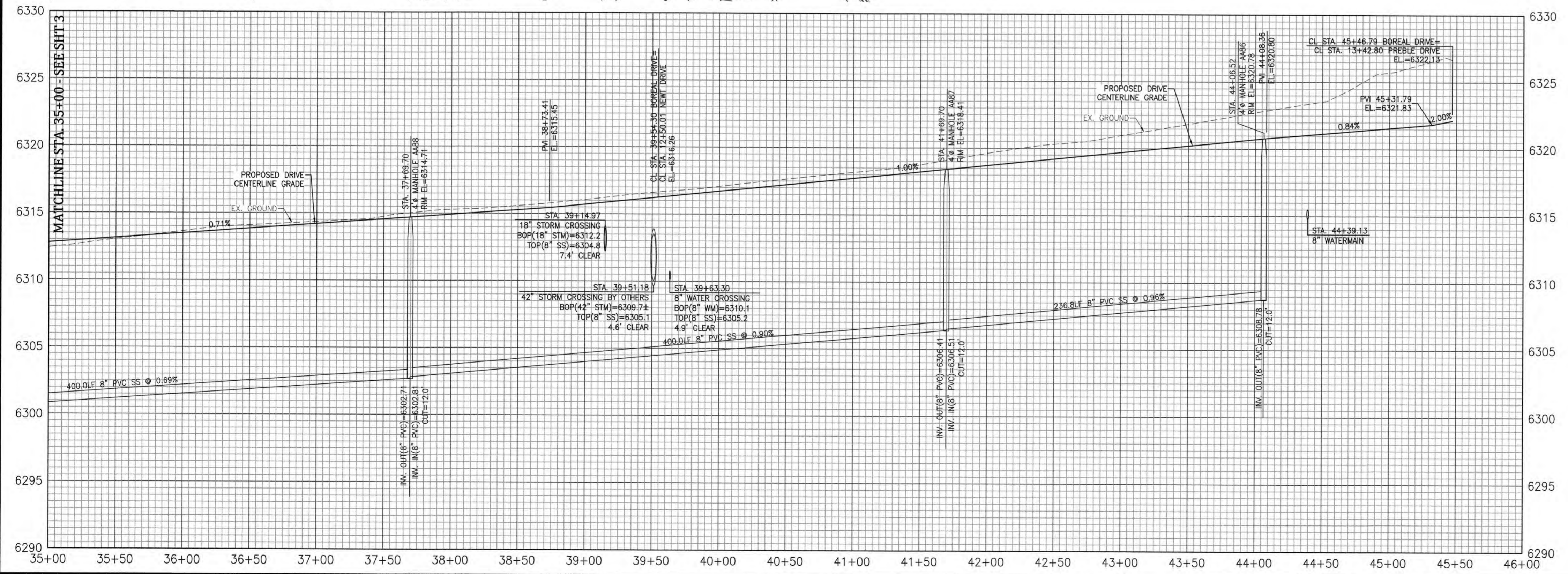
Project No.: 16039
 Date: August 22, 2017
 Design: ELS
 Drawn: ELS
 Check: MWE
 Revisions:

CURVILINEAR SANITARY SEWER PIPE INSTALLATION: MECHANICAL MEANS SHOULD NOT BE EMPLOYED TO ACCOMPLISH THIS MANUALLY IN THE TRENCH. IT IS THE INTENT THAT THE WORKERS SHOULD ACCOMPLISH THIS MANUALLY IN THE TRENCH. ON 4-INCH TO 12-INCH PIPE, THE CURVE SHOULD BE ACCOMPLISHED BY BENDING THE PIPE RATHER THAN DEFLECTING THE JOINTS. THERE SHOULD BE NO DEFLECTION IN THE JOINTS UPON COMPLETION TO AVOID OVER-STRESSING THE BELL AND PREVENT POSSIBLE BREAKAGE AND/OR LEAKS. TO AVOID DEFLECTING THE JOINTS WHILE ACHIEVING CURVATURE, IT IS RECOMMENDED THAT THE JOINTS BE SUFFICIENTLY BRACED OR BACKFILLED AND COMPACTED TO KEEP THEM STATIONARY.



ALIGNMENT CL CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C6	038°24'04"	390.00	261.39
C7	051°35'46"	200.00	180.10

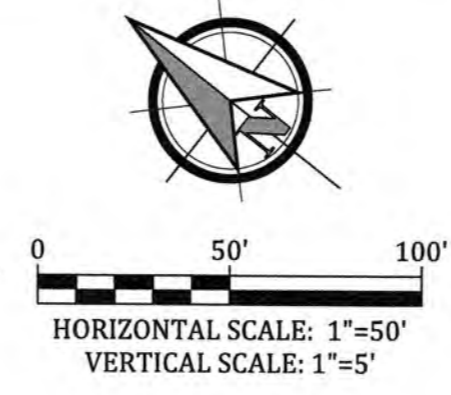
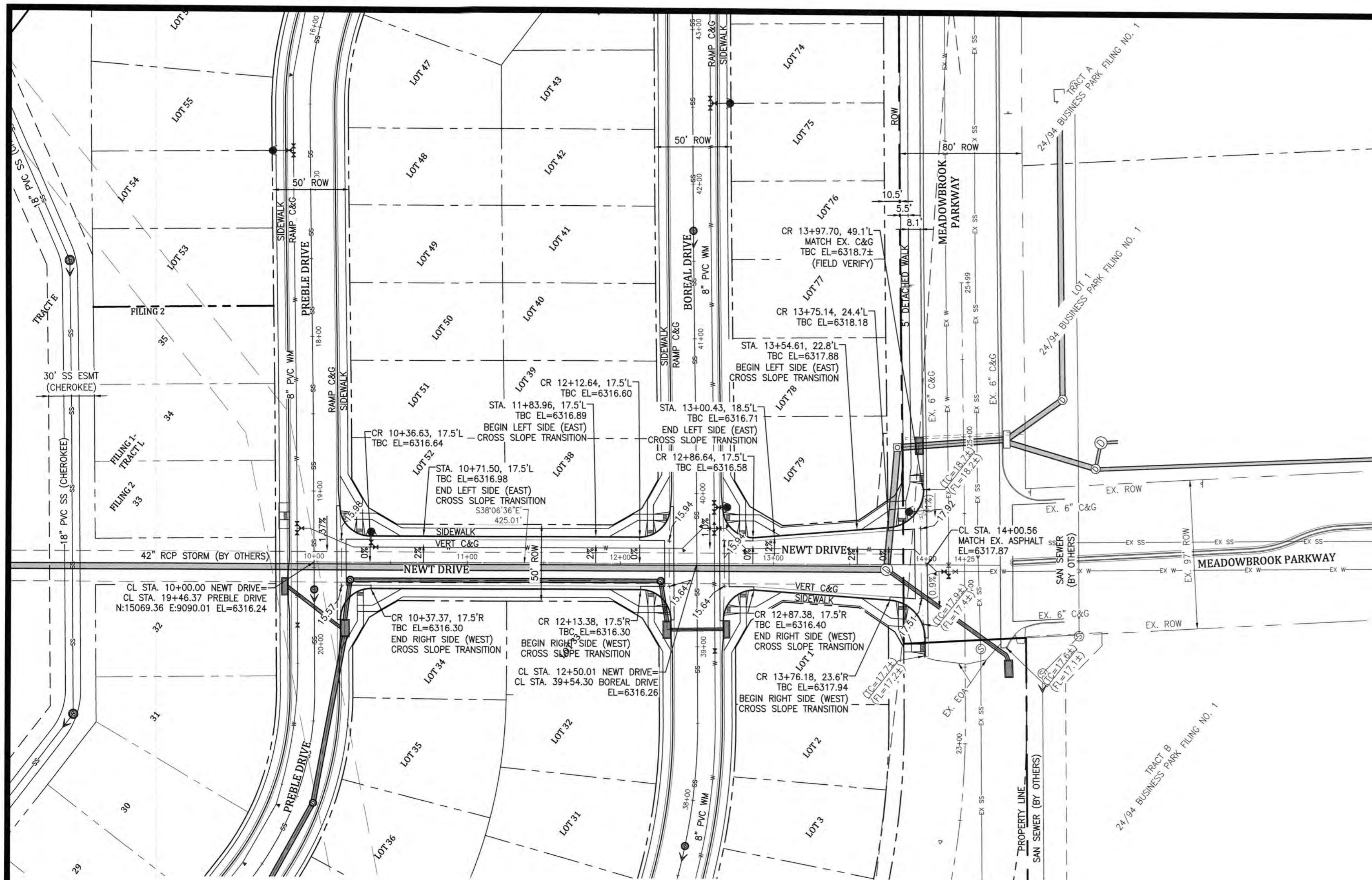
CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C27	038°24'04"	372.50	249.66
C28	038°24'04"	407.50	273.12
C29	089°25'35"	19.50	30.44
C30	090°34'25"	19.50	30.83
C31	085°28'12"	24.50	36.55
C32	090°34'25"	19.50	30.83
C33	089°25'35"	19.50	30.44
C34	085°57'56"	24.50	36.76
C35	048°32'43"	182.50	154.63
C36	049°29'54"	217.50	187.90
C37	093°03'03"	19.50	31.67
C38	087°54'08"	19.50	29.92



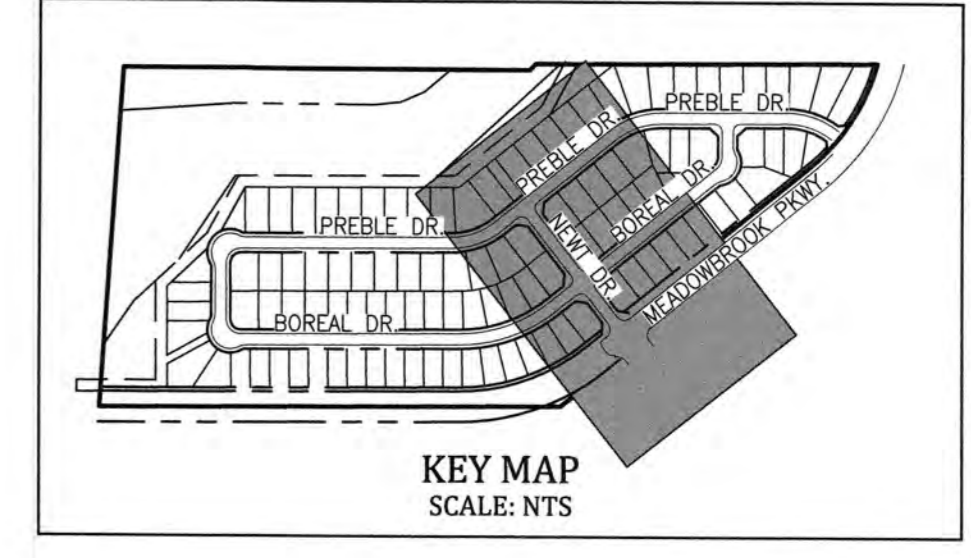
MEADOWBROOK CROSSING FILING NO. 1
BOREAL DRIVE PLAN AND PROFILE
STA. 35+00 TO STA. 45+56.59
EL PASO COUNTY, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
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Revisions:	

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NOTE:
1. THE 42" RCP (BY OTHERS) MUST BE IN PLACE PRIOR TO ASPHALT INSTALLATION.

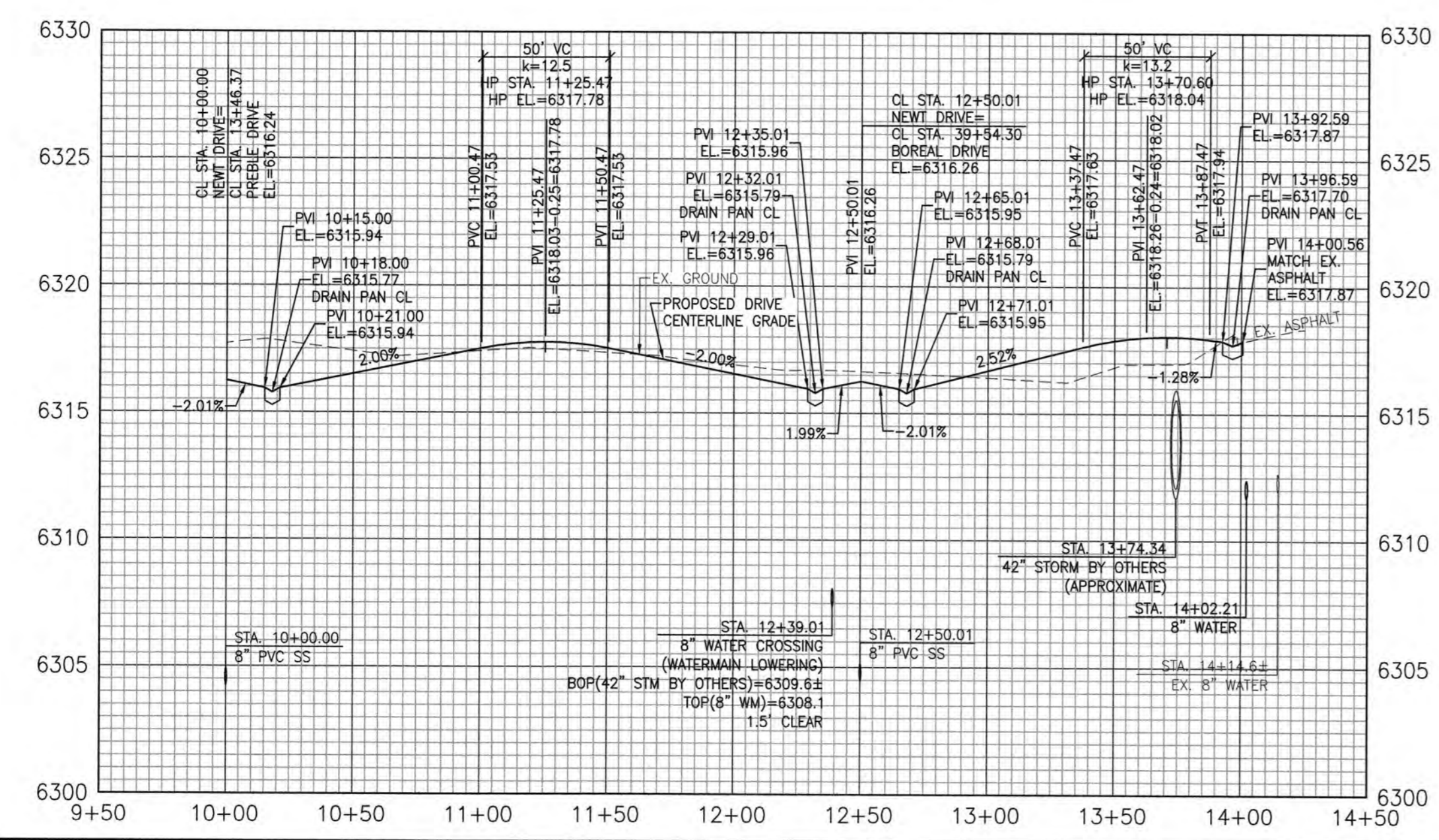


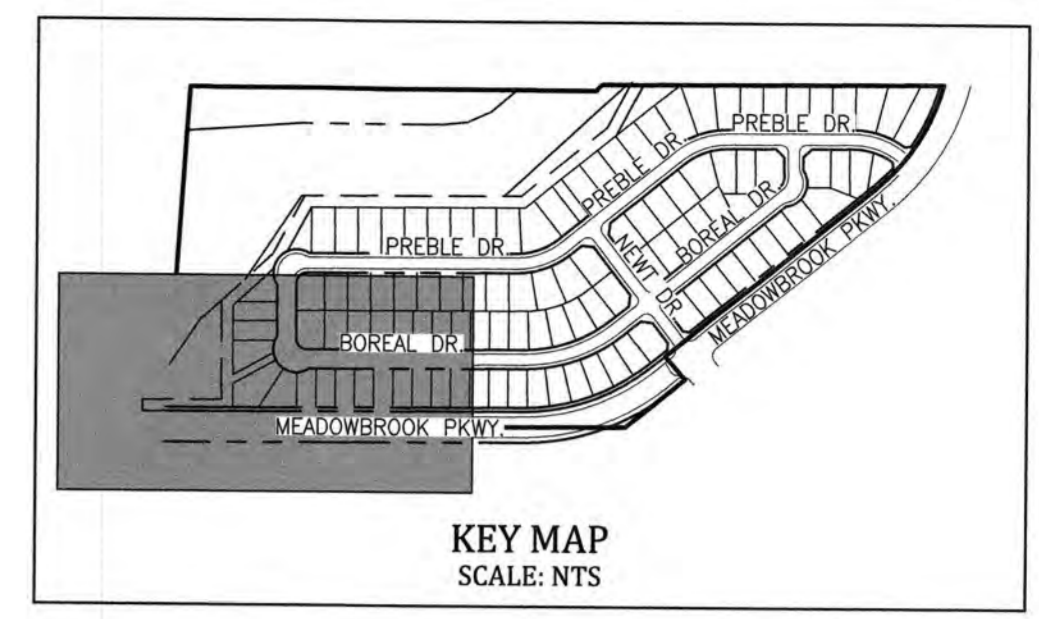
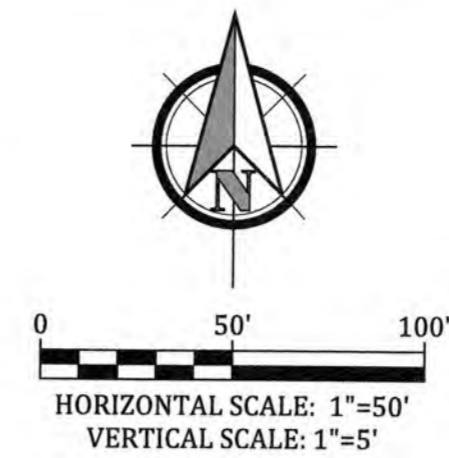
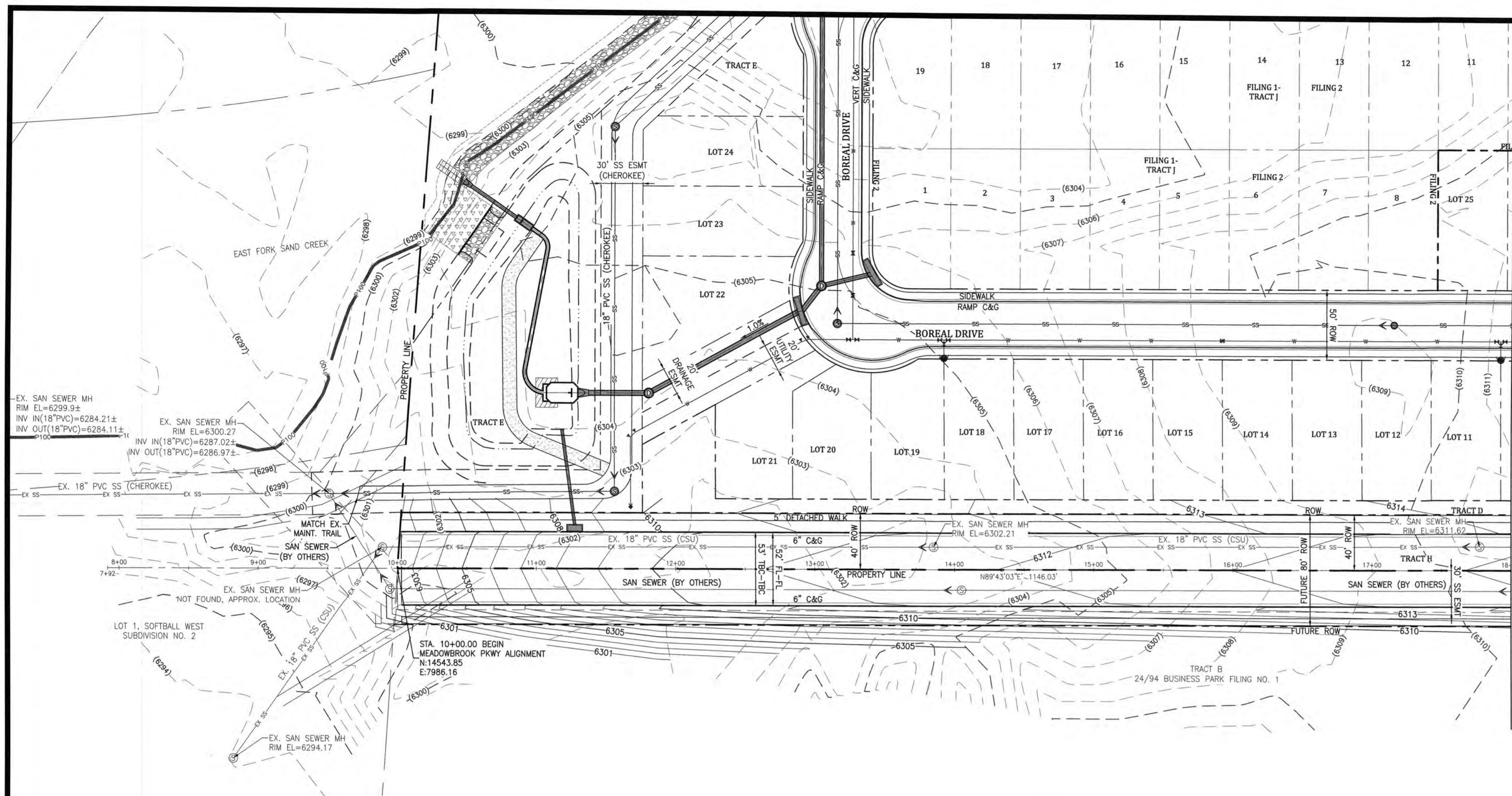
MEADOWBROOK CROSSING FILING NO. 1
NEWT DRIVE PLAN AND PROFILE
STA. 10+00 TO STA. 14+00.47
 EL PASO COUNTY, COLORADO

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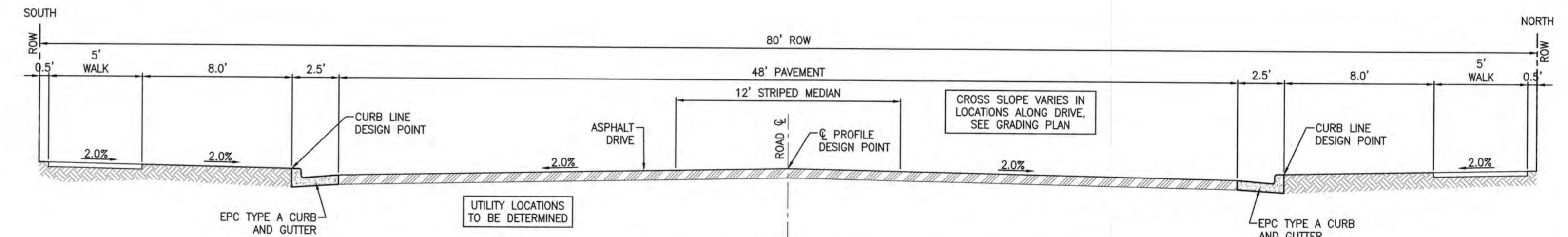
Project No.:	16039
Date:	August 22, 2017
Design:	ELS
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SHEET
5
 OF 35 SHEETS

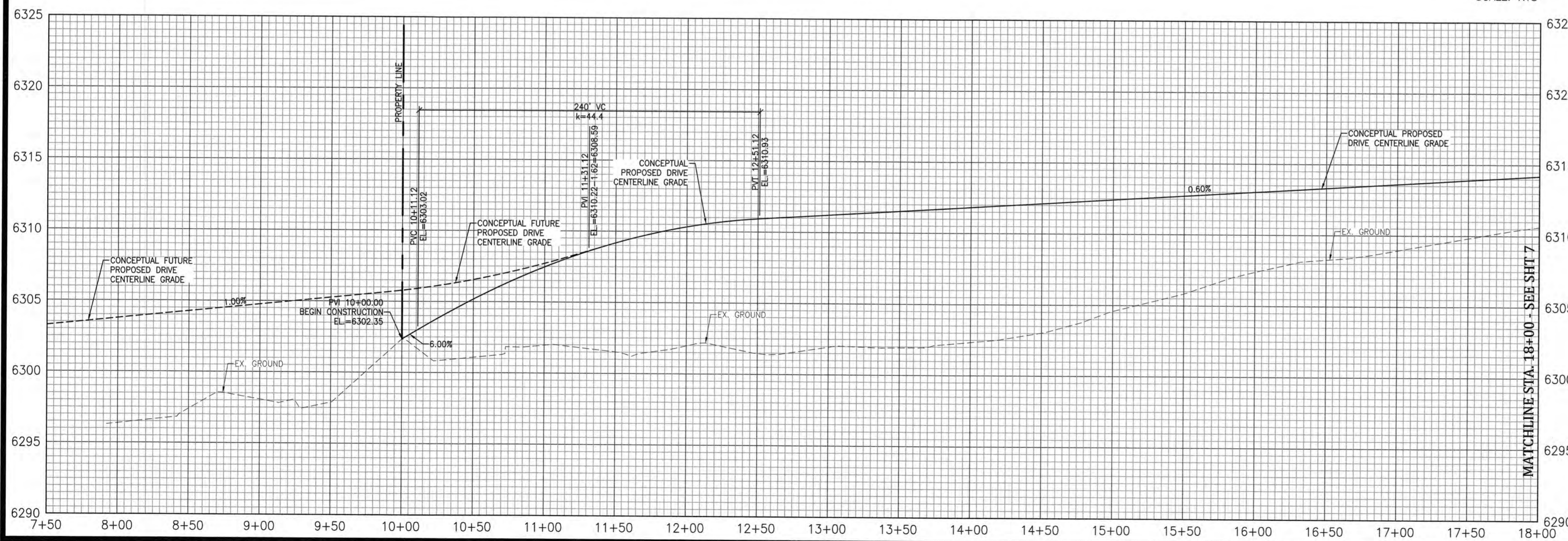




**CONCEPTUAL MEADOWBROOK PARKWAY DESIGN ONLY
NOT FOR CONSTRUCTION**



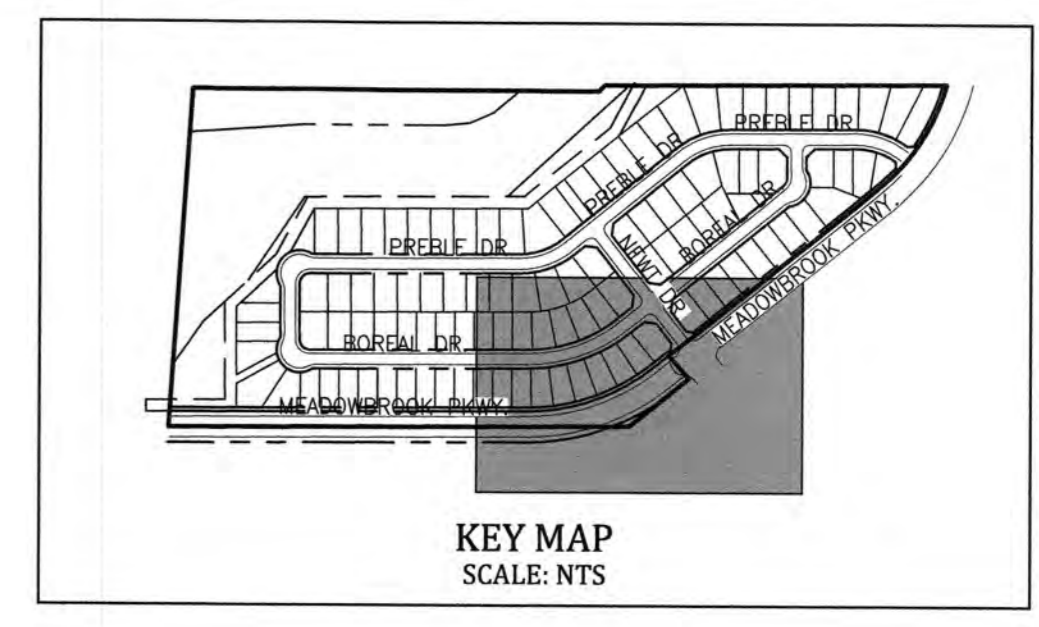
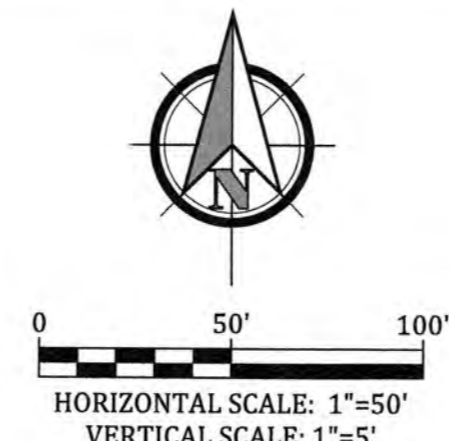
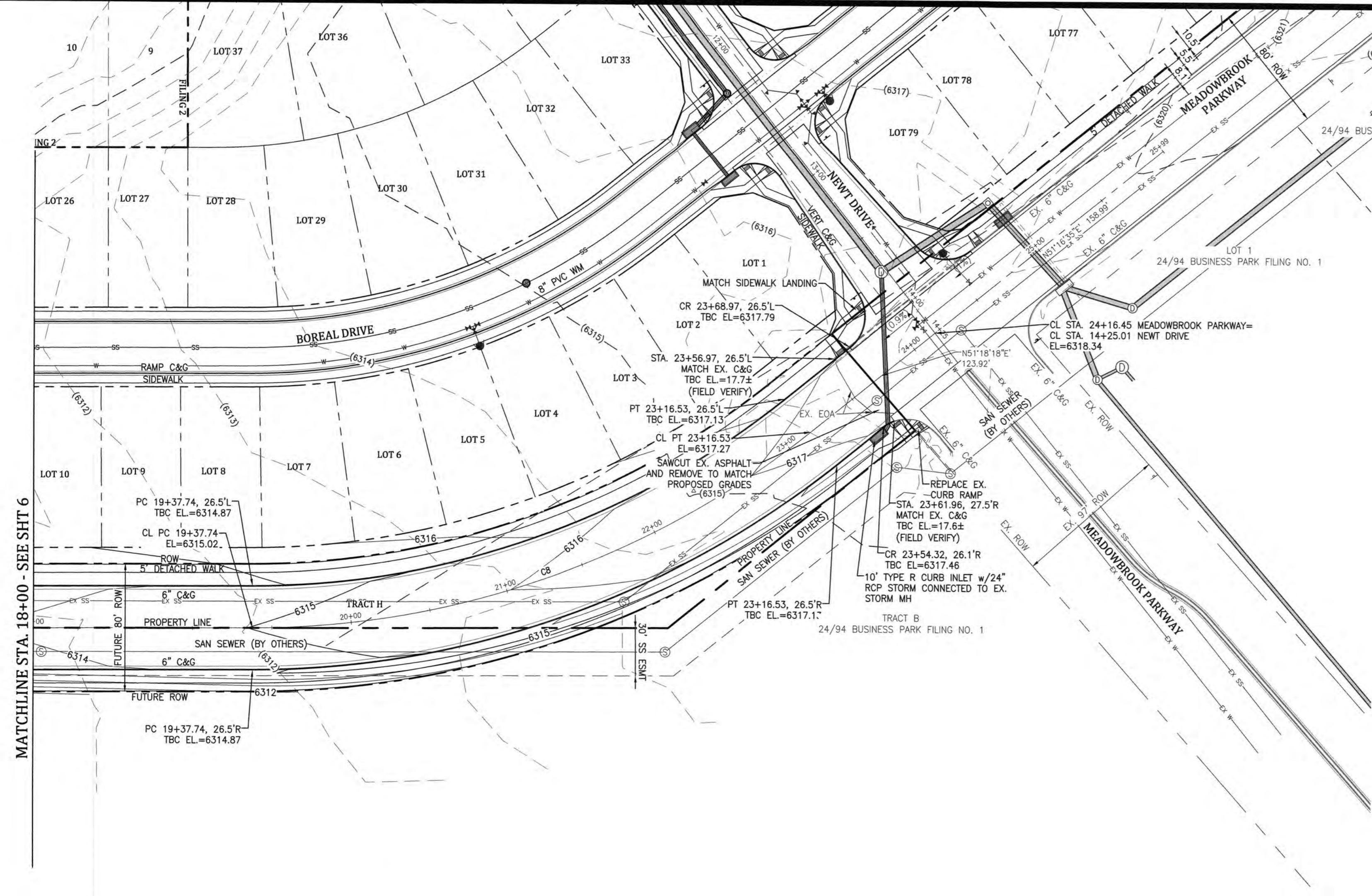
C TYPICAL MEADOWBROOK PARKWAY SECTION (CONCEPTUAL)
DT1 TYPICAL URBAN NON-RESIDENTIAL COLLECTOR ROADWAY
EPC SD.2-3
SCALE: NTS



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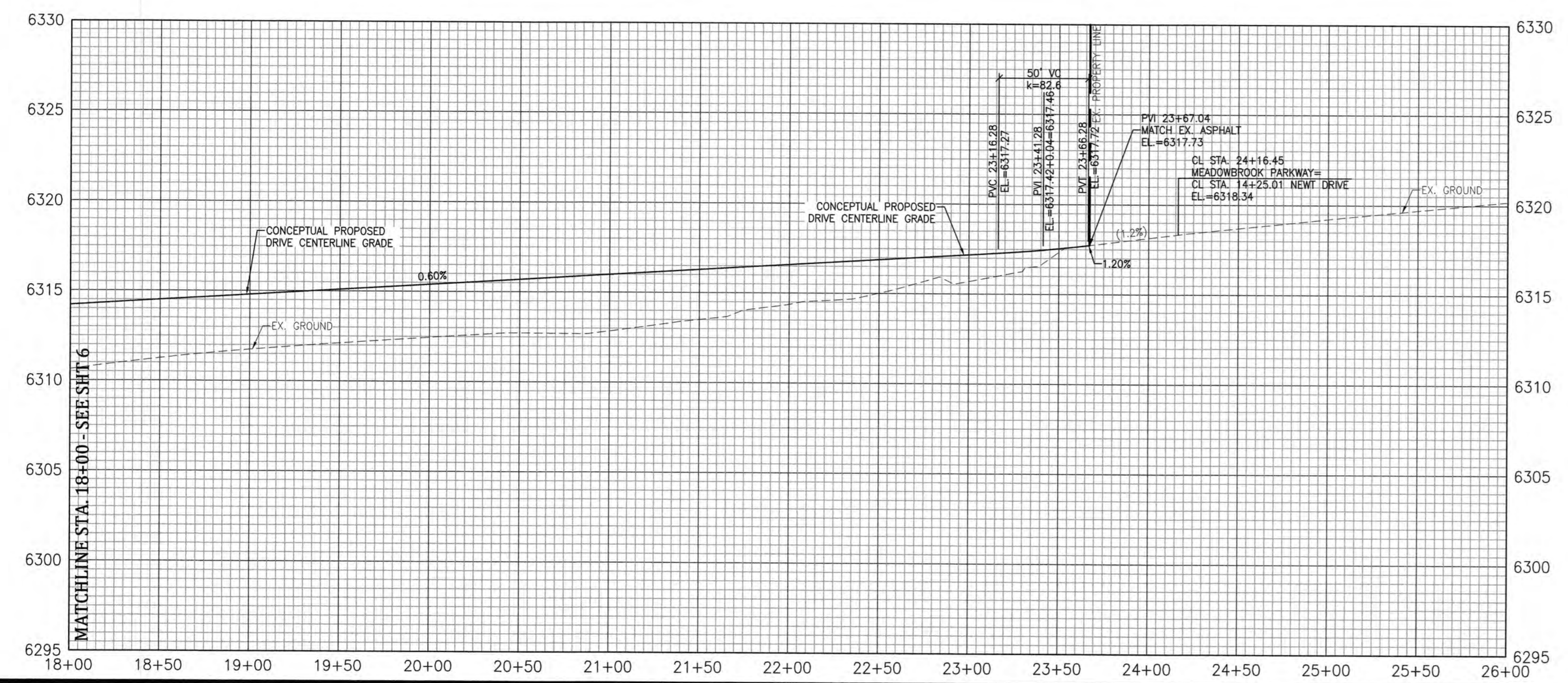
**MEADOWBROOK CROSSING FILING NO. 1
MEADOWBROOK PKWY PLAN AND PROFILE- CONCEPTUAL DESIGN
STA. 10+00 TO STA. 18+00
EL PASO COUNTY, COLORADO**

Project No.:	16039
Date:	August 22, 2017
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CONCEPTUAL MEADOWBROOK PARKWAY DESIGN ONLY
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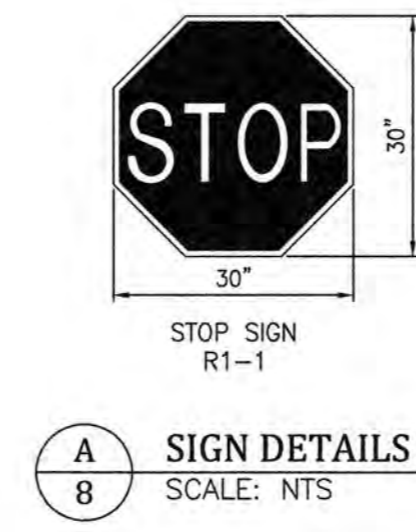
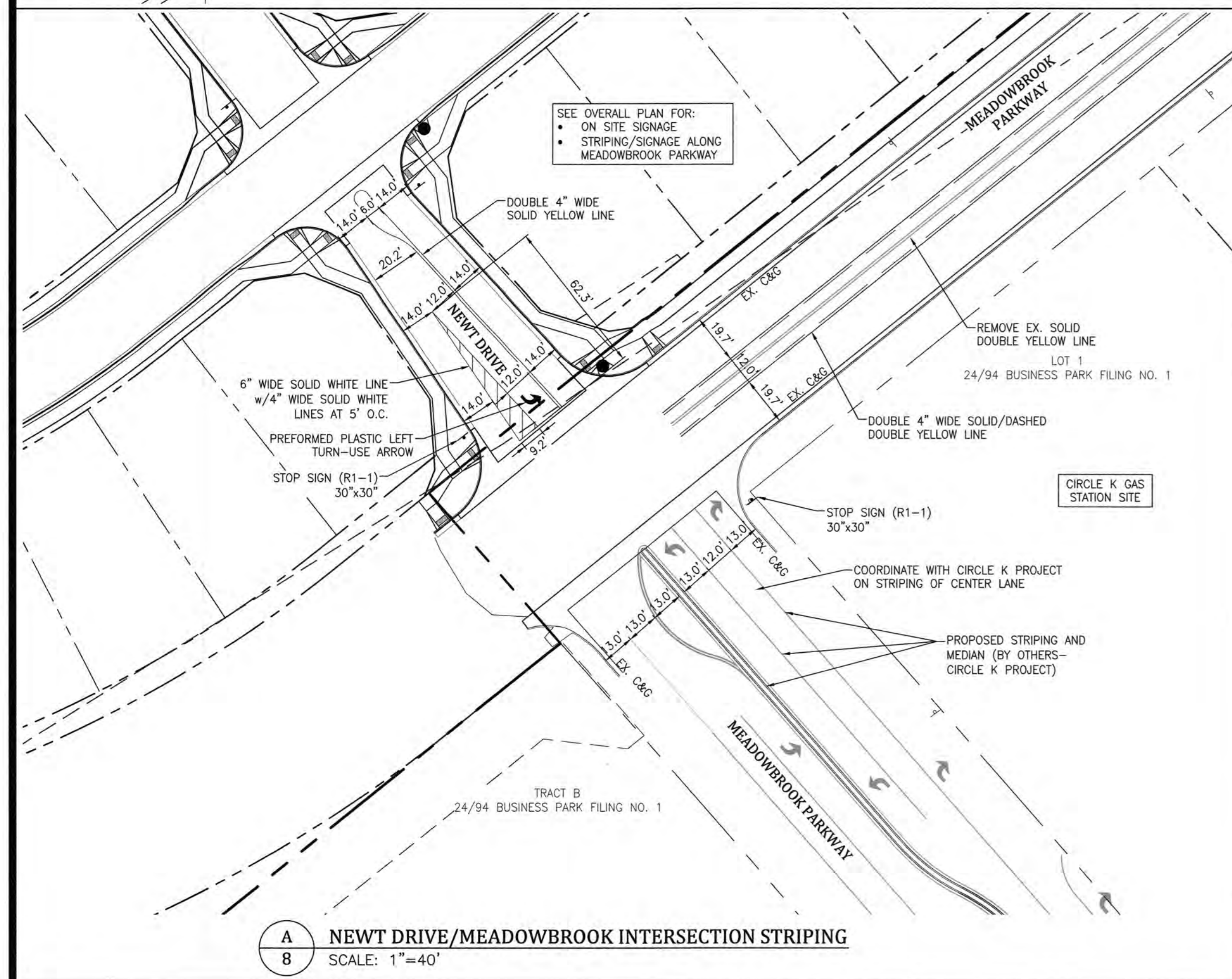
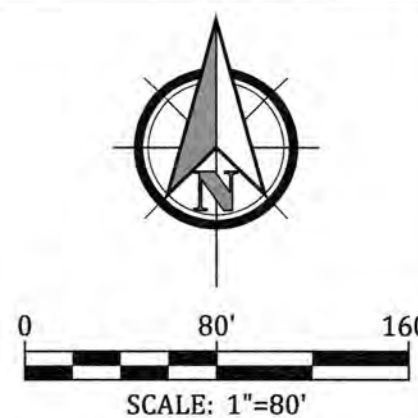
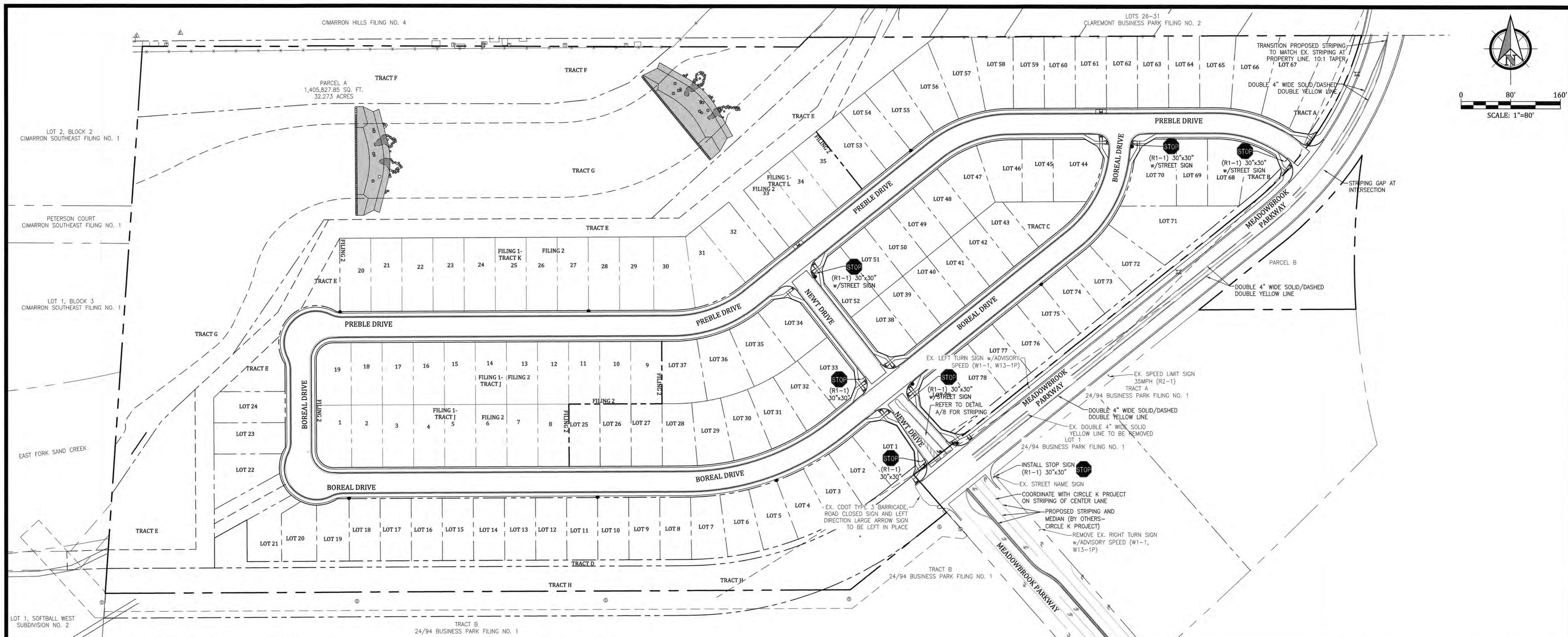
ALIGNMENT CL CURVE TABLE			
CURVE #	DELTA	RADIUS	LENGTH
C8	038°24'45"	565.00	378.79



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MEADOWBROOK CROSSING FILING NO. 1
MEADOWBROOK PKWY PLAN AND PROFILE- CONCEPTUAL DESIGN
 STA. 18+00 TO STA. 23+67.04
 EL PASO COUNTY, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	

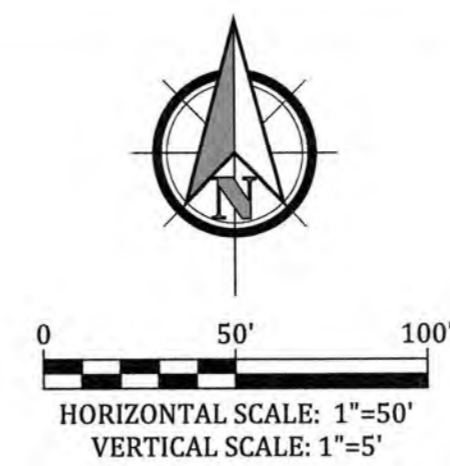
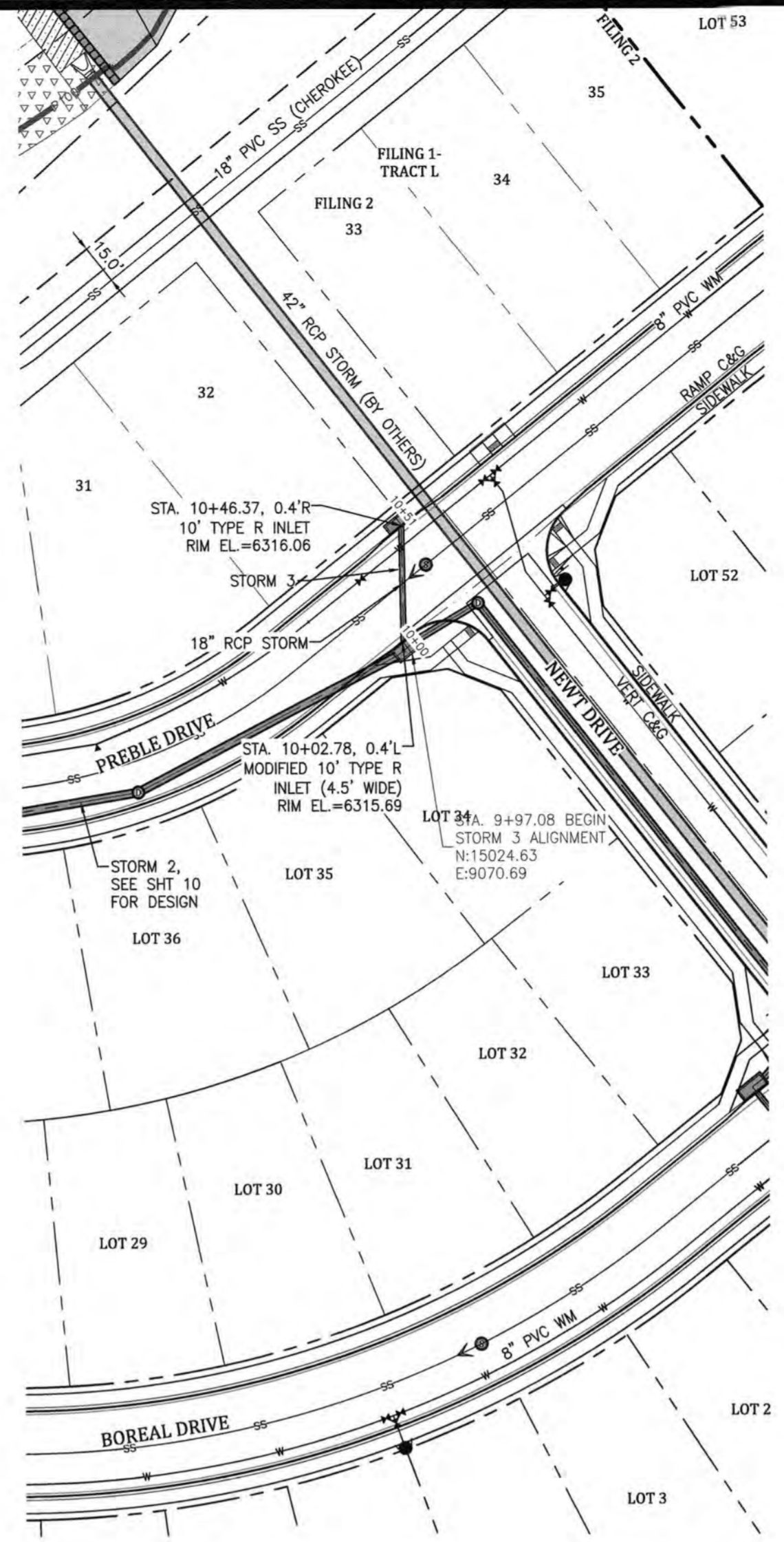
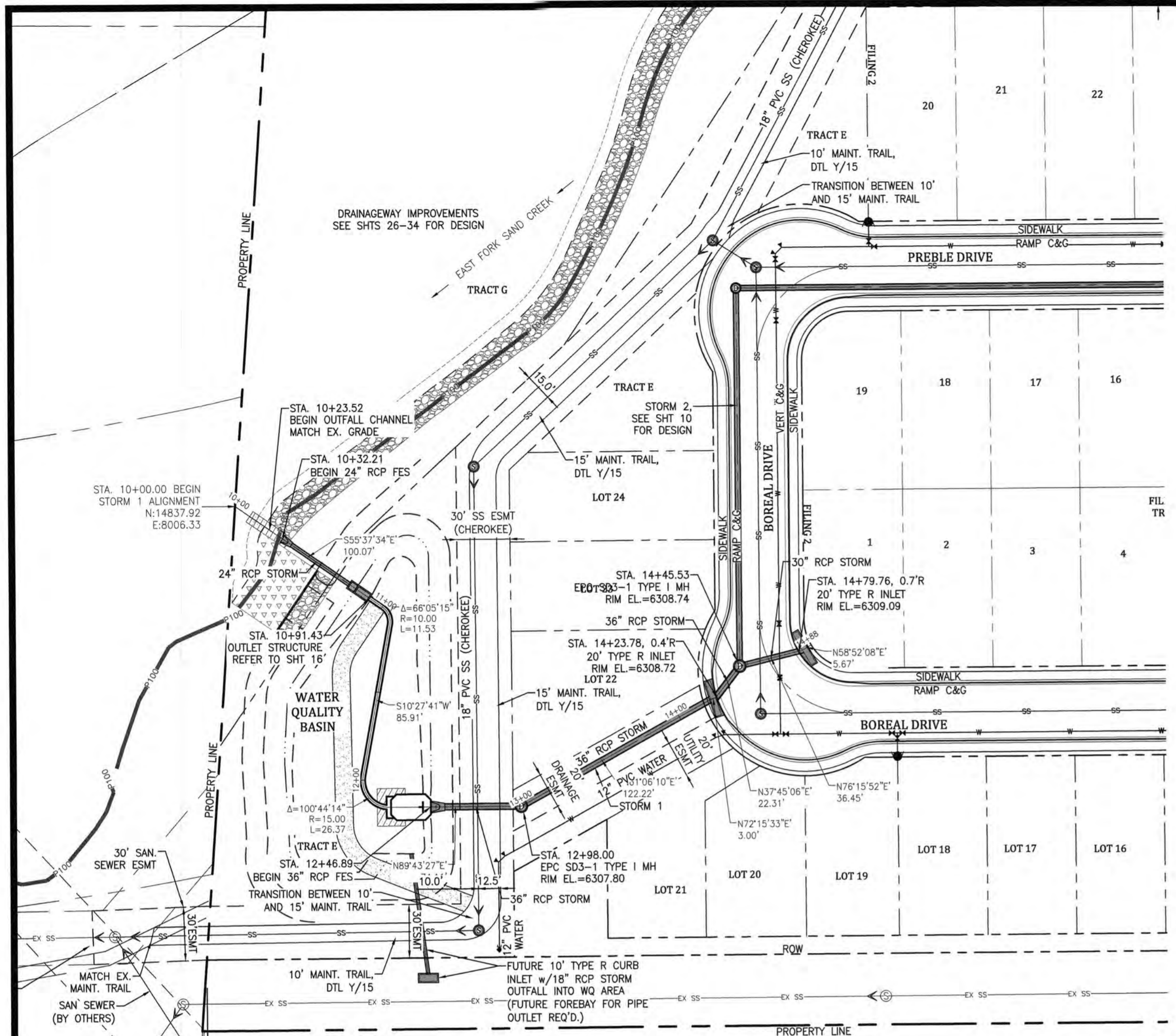


- SIGNING AND STRIPING NOTES:**
1. ALL TRAFFIC CONTROL, TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE CURRENT COLORADO SUPPLEMENT AND THE APPROVED PLANS.
 2. STOP SIGN PLACEMENT LOCATIONS SHALL BE PER SECTION 2B-9 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION AND CDOT S-614-1.
 3. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
 4. ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES.
 5. ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
 6. STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
 7. ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
 8. ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS".
 9. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
 10. ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SUBBASE DESIGN.
 11. ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
 12. ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALKS LINES SHALL BE 12" WIDE AND 8" LONG PER CDOT S-627-1.
 13. ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
 14. THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY DEVELOPMENT SERVICES (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
 15. THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY PUBLIC SERVICE DEPARTMENT (PSD) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.
- GENERAL NOTES:**
1. BEFORE EXCAVATING, CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITIES.
 2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A REGISTERED PROFESSIONAL AUTHORIZED TO PRACTICE LAND SURVEYING.
 3. APPROVAL OF THESE PLANS BY THE COUNTY DOES NOT AUTHORIZE ANY WORK TO BE PERFORMED UNTIL A PERMIT HAS BEEN ISSUED.
 4. THE APPROVAL OF THESE PLANS OR ISSUANCE OF A PERMIT BY EL PASO COUNTY DOES NOT AUTHORIZE THE CONTRACTOR, SUBDIVIDER, OR OWNER TO VIOLATE ANY FEDERAL, STATE, OR CITY LAWS, ORDINANCES, REGULATIONS, OR POLICIES.
 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NEW, TEMPORARY AND EXISTING TRAFFIC SIGNS FROM THE START OF THE CONSTRUCTION PROJECT UNTIL ACCEPTANCE BY EL PASO COUNTY.
 6. ALL TRAFFIC SIGNS, PAVEMENT, AND TRAFFIC SIGNALS SHALL MEET OR EXCEED M.U.T.C.D. STANDARDS.
 7. THE CONTRACTOR SHALL NOT REMOVE ANY EXISTING SIGNS, PAVEMENT MARKINGS OR TRAFFIC SIGNALS DURING THE PROJECT WITHOUT AUTHORIZATION OF THE ENGINEERING INSPECTOR ASSIGNED TO THE PROJECT.
 8. THE CONTRACTOR SHALL PREPARE A DETAILED TRAFFIC CONTROL PLAN, SUBMIT TO EL PASO COUNTY FOR APPROVAL, AND OBTAIN APPROPRIATE PERMITS.
 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ZONE TRAFFIC CONTROL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND MAINTAINING THE TEMPORARY TRAFFIC CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.

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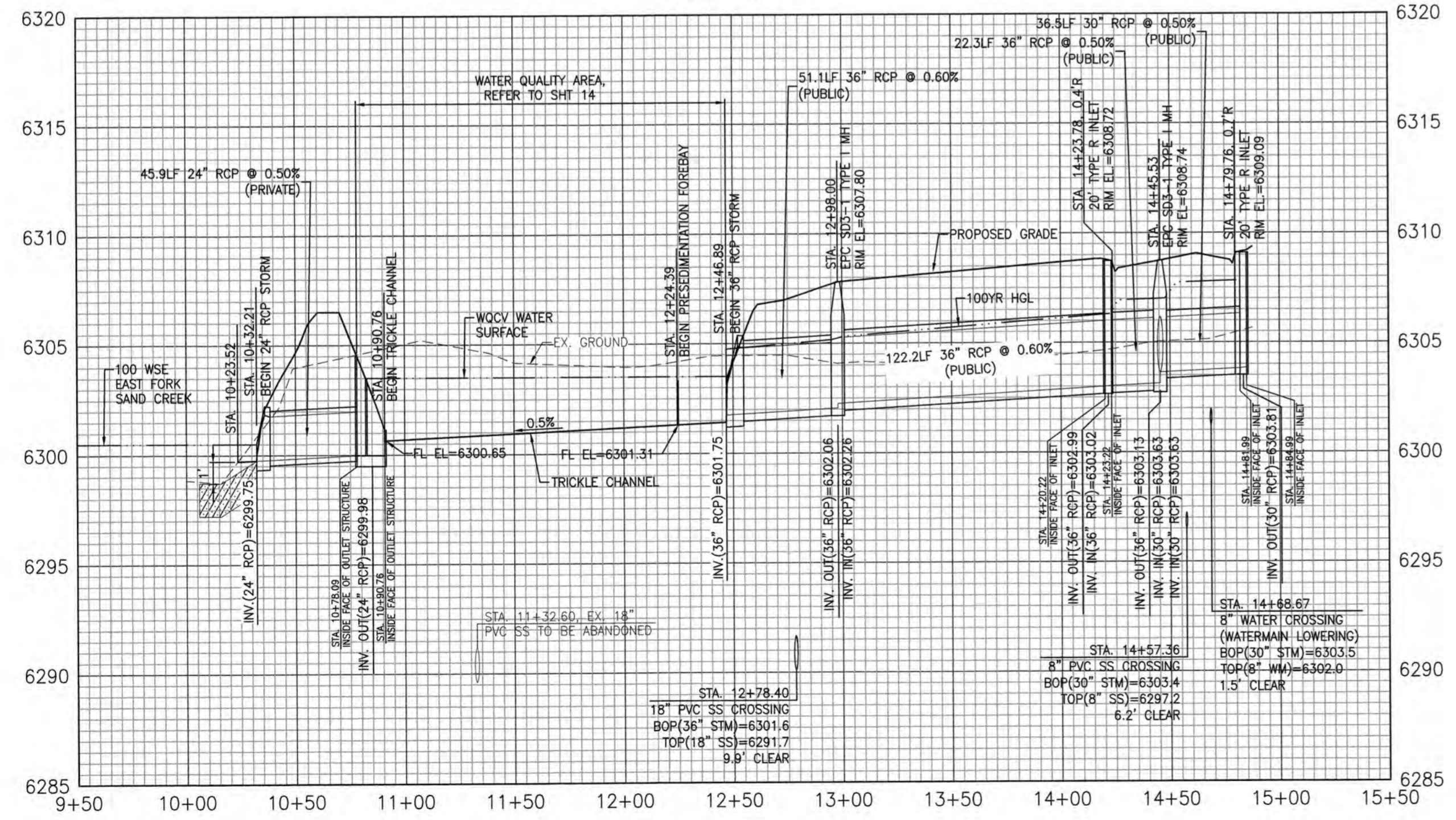
MEADOWBROOK CROSSING FILING NO. 1
OVERALL SIGNAGE AND STRIPING PLAN
 EL PASO COUNTY, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	

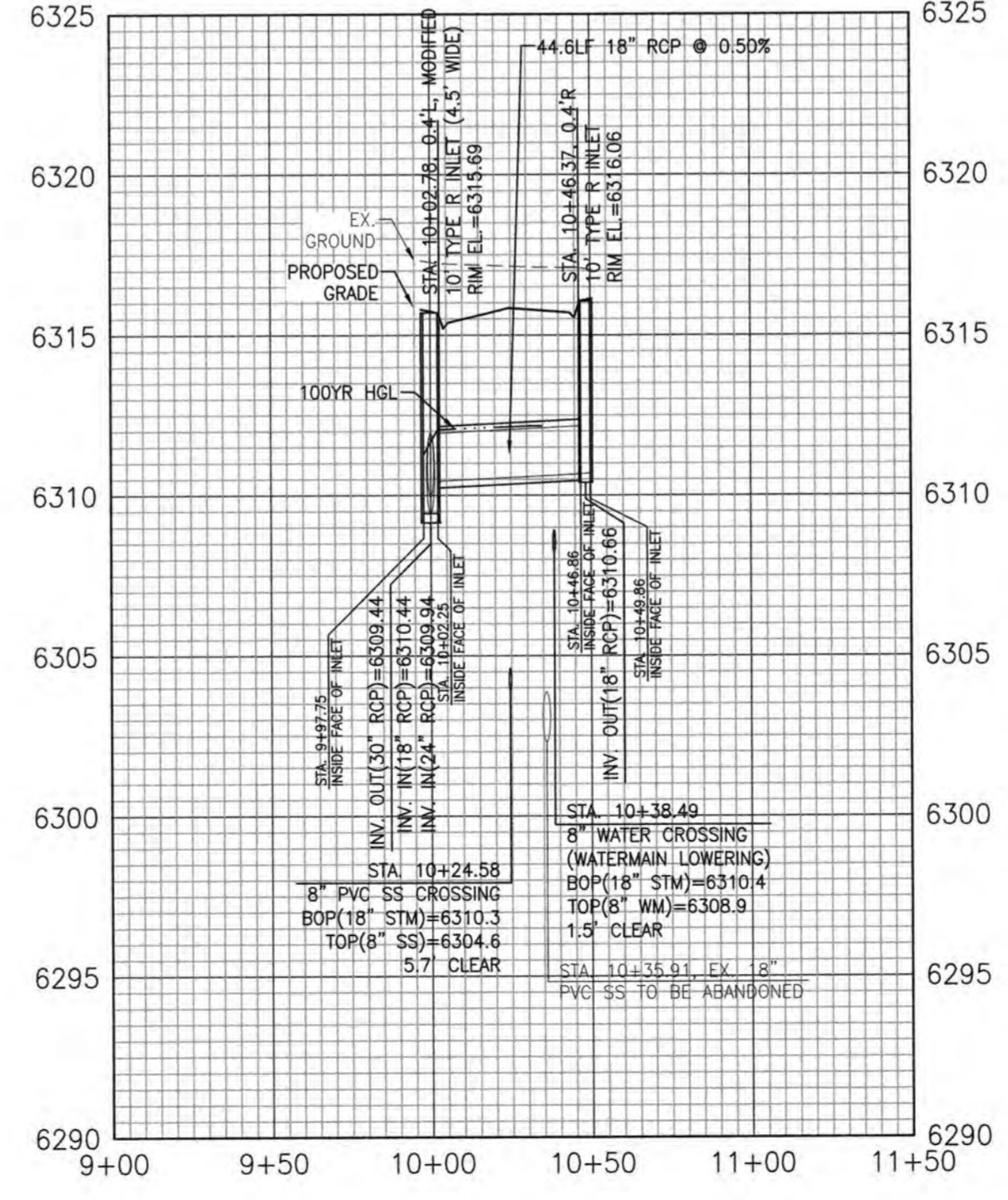


NOTES:
 1. ALL STORM SEWER FACILITIES ARE PUBLIC UNLESS OTHERWISE NOTED. REFER TO STORM SEWER PROFILES FOR INDICATION OF PRIVATE OR PUBLIC.
 2. WATER QUALITY BASIN FACILITY IS PRIVATE INCLUDING FOREBAY, LOW FLOW CHANNEL, OUTLET STRUCTURE, OUTLET PIPE AND SPILLWAY.

STORM 1 PROFILE

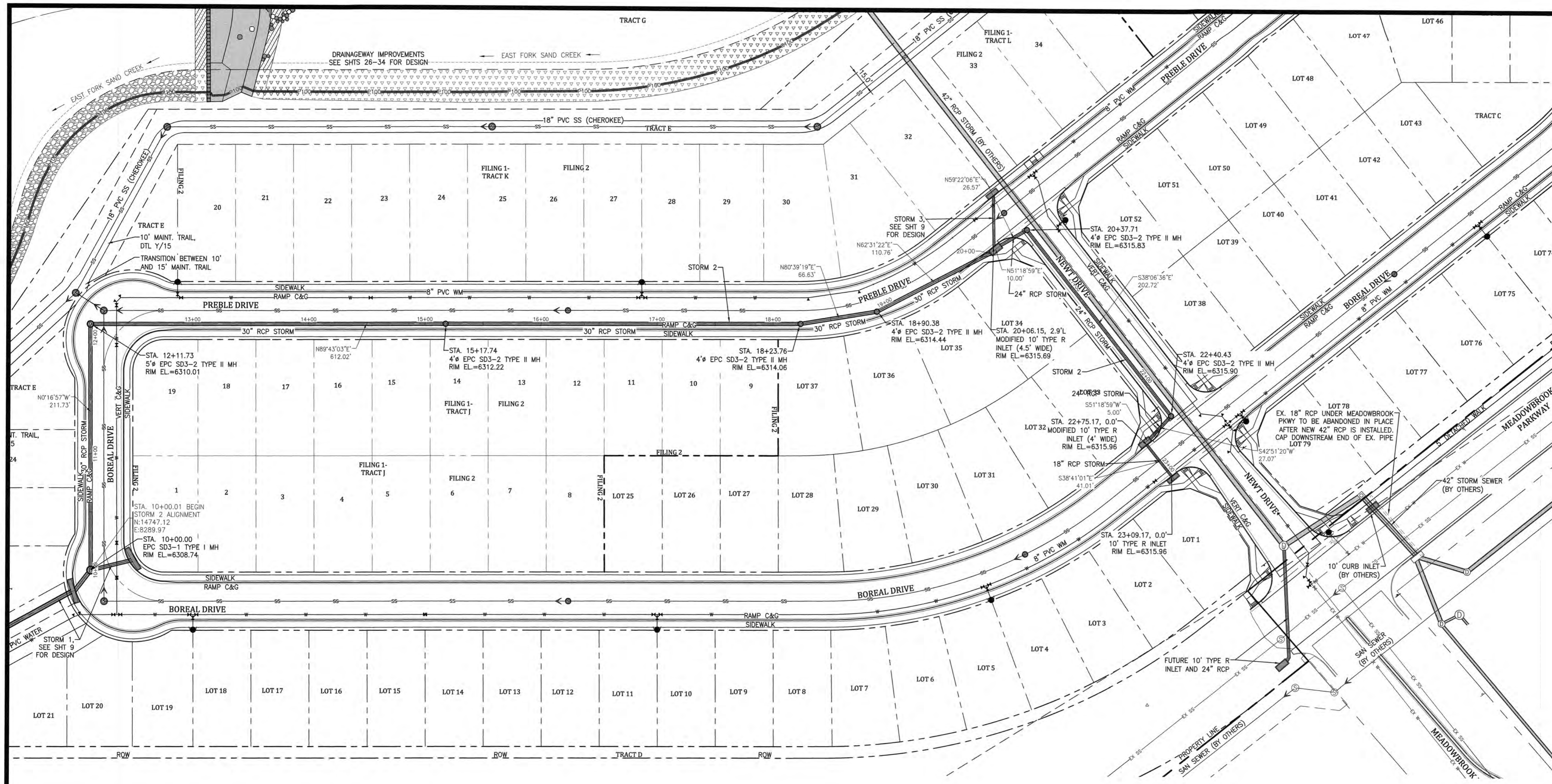


STORM 3 PROFILE



MEADOWBROOK CROSSING FILING NO. 1
STORM SEWER PLAN AND PROFILE
 EL PASO COUNTY, COLORADO

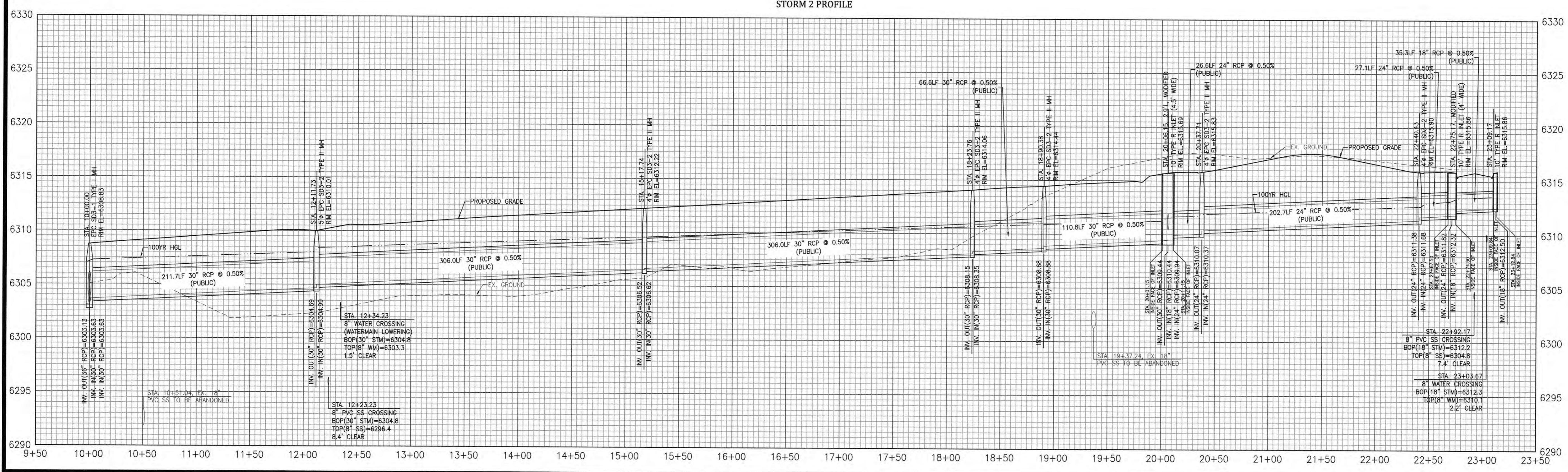
Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	



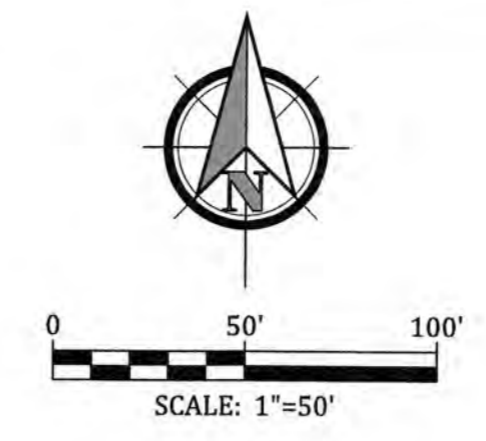
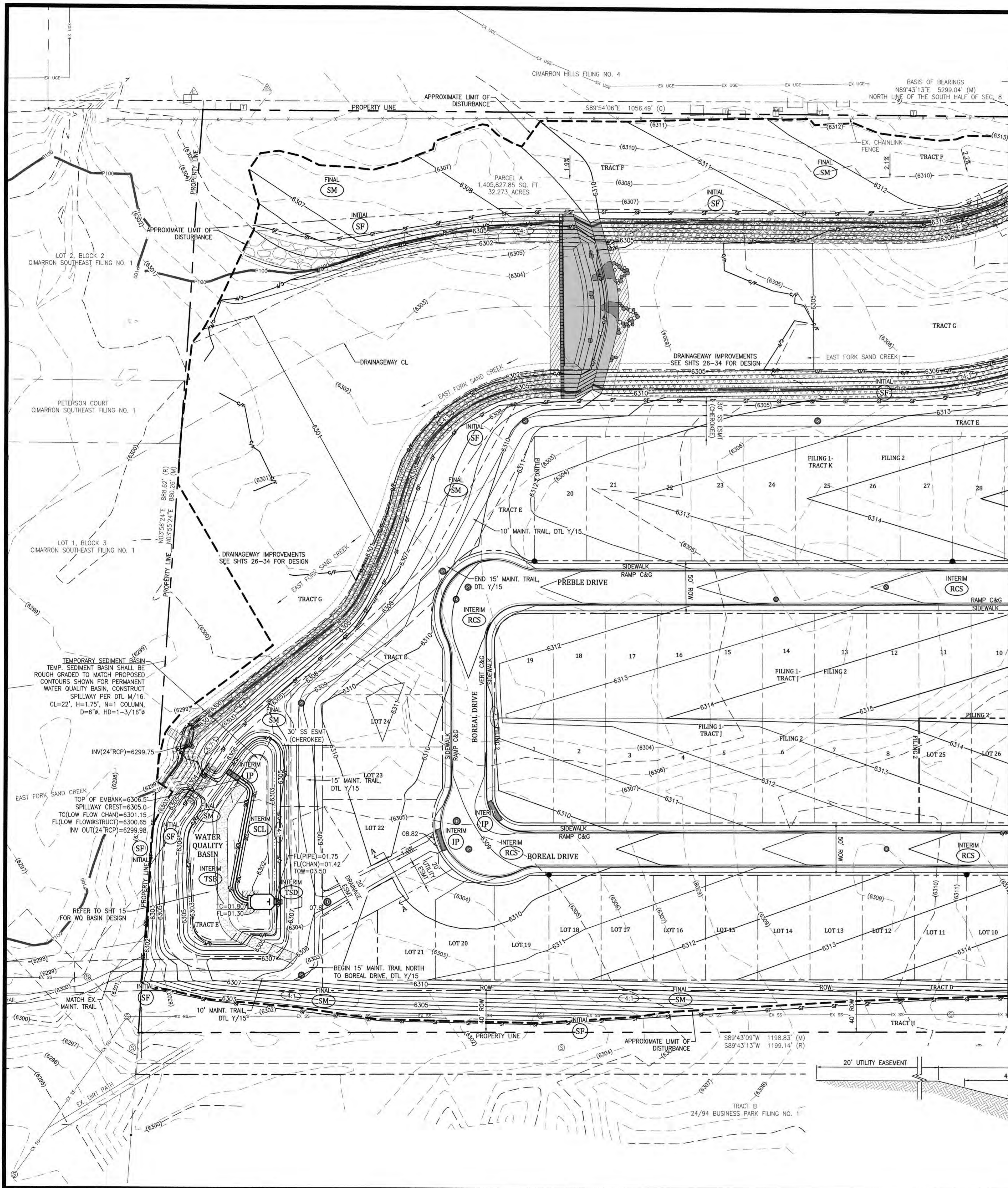
- NOTES:
1. ALL STORM SEWER FACILITIES ARE PUBLIC UNLESS OTHERWISE NOTED. REFER TO STORM SEWER PROFILES FOR INDICATION OF PRIVATE OR PUBLIC.
 2. WATER QUALITY BASIN FACILITY IS PRIVATE INCLUDING FOREBAY, LOW FLOW CHANNEL, OUTLET STRUCTURE, OUTLET PIPE AND SPILLWAY.

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MEADOWBROOK CROSSING FILING NO. 1
 STORM SEWER PLAN AND PROFILE
 EL PASO COUNTY, COLORADO



Project No.:	16039
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Revisions:	



SEED MIX

SEED MIX: AREAS DISTURBED BY THE EARTHWORK AND NOT RECEIVING PAVEMENT OR OTHER TREATMENT SHALL BE PERMANENTLY REVEGETATED WITH THE FOLLOWING SEED MIX. SEED OF GRASS SPECIES AS LISTED BELOW WITH NOT LESS THAN 85% GERMINATION, NOT LESS THAN 95% PURE SEED AND NOT MORE THAN 0.5% WEED SEED:

SPECIES	Percent of Mix
CREeping OREGON GRAPE	15%
SOAPWEEED	15%
SIDE OATS GRASS	25%
DOTTED GAYFEATHER	20%
BUFFALOGRASS	25%
<i>Muhlenbergia repens</i>	
<i>Yucca glauca</i>	
<i>Bouteloua curtipendula</i>	
<i>Liatris punctata</i>	
<i>Buchloe dactyloides</i>	

SEED AT NOT LESS THAN 30 PLS/ACRE
SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL IN AREAS INACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL. MULCHING APPLICATION: 1-1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRIMPED INTO THE TOPSOIL.

LEGEND

---	PROPERTY OR ROW LINE
- - - -	EXISTING EASEMENT
EX #	EXISTING WATER LINE
EX SS	EXISTING SANITARY SEWER
EX STW	EXISTING STORM SEWER
EX UG	EXISTING UNDERGROUND ELECTRIC LINE
EX T	EXISTING UNDERGROUND TELEPHONE LINE
EX G	EXISTING GAS LINE
100	PROPOSED 100 YEAR FLOODPLAIN
X	EXISTING FENCE
- - - -	EXISTING CONTOURS
- - - -	PROPOSED CONTOURS
- - - -	CUT/FILL DEMARCATION LINE
14.79	EXISTING SPOT ELEVATION
15.41	PROPOSED SPOT ELEVATION
(2.3%)	EXISTING FLOW DIRECTION AND SLOPE
2.3%	PROPOSED FLOW DIRECTION AND SLOPE
4:1	PROPOSED SLOPE
- - - -	APPROXIMATE LIMIT OF DISTURBANCE
RS	ROCK SOCK
CWA	CONCRETE WASHOUT AREA
IP	INLET PROTECTION
MSA	MATERIALS STORAGE AREA
TSD	TEMPORARY SLOPE DRAIN
TSB	TEMPORARY SEDIMENT BASIN
RCS	ROUGH-CUT STREET CONTROL
SCL	SEDIMENT CONTROL LOG
SF	SILT FENCE EROSION BARRIER
SM	SEEDING AND MULCHING
SP	STOCKPILE AREA
SSA	STABILIZED STAGING AREA
VTC	VEHICLE TRACKING CONTROL

- GRADING NOTES:**
- ALL EARTHWORK AND EROSION CONTROL REQUIRED OF THIS CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS AND THE COUNTY STANDARDS.
 - A GEOTECHNICAL ENGINEERING REPORT WAS PREPARED FOR THE SUBJECT SITE. THE RECOMMENDATIONS INCLUDED IN THE REPORT SHOULD BE FOLLOWED DURING CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO THE REPORT FOR SOIL BORING LOGS.
 - FILL SHOULD BE PLACED AND COMPACTED IN THIN HORIZONTAL LIFTS, USING EQUIPMENT AND PROCEDURES THAT WILL PRODUCE RECOMMENDED MOISTURE CONTENTS AND DENSITIES THROUGHOUT THE LIFT. THE PLACEMENT AND COMPACTING OF FILL AND BACKFILL SHOULD BE OBSERVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER.
 - FILL MATERIAL SHOULD BE PLACED IN MAXIMUM 8-INCH LOOSE LIFTS, UNLESS OTHERWISE NOTED.
 - FILL SHOULD BE COMPACTED TO 95% OF THE MATERIALS STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698) AND TO 0 TO +2% OF THE OPTIMUM MOISTURE CONTENT FOR CLAY SOILS AND -2 TO +2% OF THE OPTIMUM MOISTURE CONTENT FOR SANDY SOILS, UNLESS OTHERWISE NOTED.
 - ON-SITE SOILS SHOULD BE SCARIFIED TO A DEPTH OF NO LESS THAN 12 INCHES BELOW PLANNED GRADE, MOISTURE CONDITIONED AND RE-COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REQUIREMENTS.
 - ALL SOILS USED FOR FILL AND BACKFILL MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION. THE GEOTECHNICAL ENGINEER SHALL OBSERVE AND TEST THE FILL COMPACTION, APPROVE THE FILL MATERIALS AND COMMENT, AS NEEDED, ON THE METHOD OF PLACING AND COMPACTING, IN WRITING, TO THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE GEOTECHNICAL ENGINEER WHEN TESTS ARE TO BE MADE.
 - RUBBISH AND DEBRIS INCLUDING TIMBER, CONCRETE RUBBLE, TREES, BRUSH, AND ASPHALT SHALL NOT BE BACKFILLED ADJACENT TO ANY OF THE STRUCTURES OR BE IN THE PLACEMENT OF ANY UNCLASSIFIED FILL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND HAULING OF SUCH MATERIALS TO A SUITABLE SPOIL AREA.
 - GRADING CONTOURS SHOWN ON THIS PLAN ARE TO FINAL GRADE.
 - ALL VERTICAL SPOT ELEVATIONS SHOWN ON THE GRADING PLAN ARE FLOWLINE OF CURB (FL) OR FINISH GROUND (FG), UNLESS OTHERWISE NOTED.
 - GRADING ABBREVIATIONS: FL=FLOWLINE, TC=TOP OF CURB, TOC=TOP OF CONCRETE, TOA=TOP OF ASPHALT, EOC=EDGE OF CONCRETE, EOA=EDGE OF ASPHALT, HP=HIGH POINT, LP=LOW POINT, FF=FINISH FLOOR ELEVATION.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION OF ADEQUATE SHORING AND/OR BRACING NECESSARY TO FACILITATE THE EXCAVATION ASSOCIATED WITH THE CONSTRUCTION OF THE WALLS, PIPELINES AND FOUNDATIONS. THE BRACING AND/OR SHORING OF EXCAVATED WALLS OR TRENCHES SHALL BE IN COMPLIANCE WITH OSHA REGULATIONS AND SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER.
 - IMMEDIATELY PUMP OR BAIL OUT WATER FOUND IN EXCAVATIONS, WHETHER RAIN OR SEEPAGE. EXCAVATIONS MUST BE KEPT FREE FROM WATER AT ALL TIMES. TAKE ALL MEASURES AND FURNISH ALL EQUIPMENT AND LABOR NECESSARY TO CONTROL THE FLOW, DRAINAGE AND ACCUMULATION OF WATER AS REQUIRED TO PERMIT COMPLETION OF THE WORK AND TO AVOID DAMAGE TO THE WORK.
 - WHEN FREEZING TEMPERATURES MAY BE EXPECTED, DO NOT EXCAVATE TO THE FULL DEPTH INDICATED UNLESS THE FOOTING OR SLABS ARE TO BE POURED IMMEDIATELY AFTER THE EXCAVATION HAS BEEN COMPLETED. IF PLACING OF CONCRETE IS DELAYED, PROTECT THE BOTTOMS OF EXCAVATIONS FROM FROST UNTIL CONCRETE IS PLACED.
 - NO FILL MATERIAL SHALL BE PLACED, SPREAD OR ROLLED WHILE IT IS FROZEN OR THAWING OR DURING UNFAVORABLE WEATHER CONDITIONS. WHEN THE WORK IN PROGRESS IS INTERRUPTED BY HEAVY RAIN, FILL OPERATIONS SHALL NOT BE RESUMED UNTIL THE GEOTECHNICAL ENGINEER INDICATES THAT THE MOISTURE CONTENT AND DENSITY OF THE PREVIOUSLY PLACED FILL ARE AS SPECIFIED.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND HAULING OF UNSUITABLE FILL MATERIALS TO A SUITABLE SPOIL AREA. EXCESS EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE. THE COST OF HAULAGE AND SPOILING OF EXCESS EXCAVATED MATERIALS SHALL BE PAID FOR AS DOCUMENTED IN THE PROJECT SPECIFICATIONS.
 - AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE ACRE OR MORE, THE OWNER OR OPERATOR OF THE CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORM WATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY CONTROL DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORM WATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT: COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY CONTROL DIVISION-PERMITS.
 - ALL EROSION CONTROL WILL BE DONE IN CONFORMANCE WITH THE COUNTY STANDARDS. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY COUNTY OR ENGINEER.
 - ALL SLOPES GREATER THAN 4:1 REQUIRE EROSION CONTROL BLANKET, NORTH AMERICAN GREEN SC150BN DOUBLE NETTED OR EQUAL AS A TEMP STABILIZATION MEASURE.
 - WATER SHALL BE USED AS A DUST PALLIATIVE AS REQUIRED AND SHALL BE INCLUDED IN THE COST FOR EARTHWORK ITEM(S).
 - STORMWATER QUALITY VOLUME CERTIFICATION: THE CONTRACTOR SHALL PROVIDE A VOLUME CERTIFICATION FOR THE STORMWATER QUALITY AREA, SIGNED AND SEALED BY A LICENSED PROFESSIONAL LAND SURVEYOR.
 - WATER QUALITY BASIN: AT A MINIMUM, THE SURVEY SHALL INCLUDE THE OUTLET STRUCTURE FLOWLINE IN AND OUT, ORIFICE PLATE ELEVATIONS, TOP OF OUTLET STRUCTURE/GRATE ELEVATIONS AT FRONT, MIDDLE AND BACK; SPILLWAY ELEVATION AND WIDTH, TOP OF EMBANKMENT ELEVATION AROUND WATER QUALITY BASIN; FOREBAY FLOWLINE AND TOP OF WALLS; LOW FLOW CHANNEL ELEVATIONS AND A SUFFICIENT AMOUNT OF GROUND ELEVATIONS WITHIN THE WATER QUALITY AREA TO DETERMINE THE AS-BUILT VOLUME.
 - BENCHMARK: FIMS MONUMENT NUMBER 81, A BERTSEN'S TOP SECURITY ROD WITH A 3.25-INCH DIAMETER ALUMINUM FIMS CAP (NORTH SIDE OF U.S. HWY 24 EAST OF VALLEY STREET) ELEV.=6272.26 (NGVD 1929).

APPROXIMATE EARTHWORK QUANTITIES

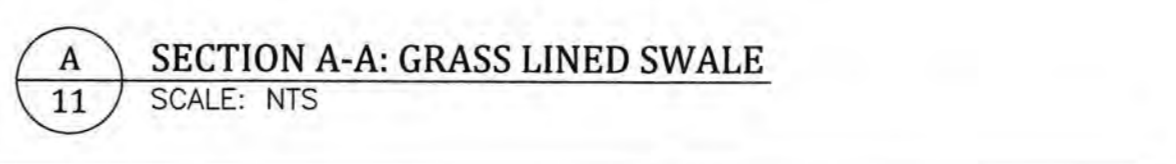
CUT (EXCESS) =	21,500 CY
FILL =	116,200 CY
SHRINKAGE (10% OF FILL) =	11,600 CY
NET FILL (w/SHRINKAGE) =	106,300 CY

NOTES:

- EARTHWORK QUANTITIES SHOWN ABOVE ARE APPROXIMATE.
- SHRINKAGE FACTOR IS ASSUMED, CONSULT GEOTECHNICAL ENGINEER FOR SHRINKAGE FACTOR.

OPINION OF COST FOR EROSION CONTROL REQUIREMENTS

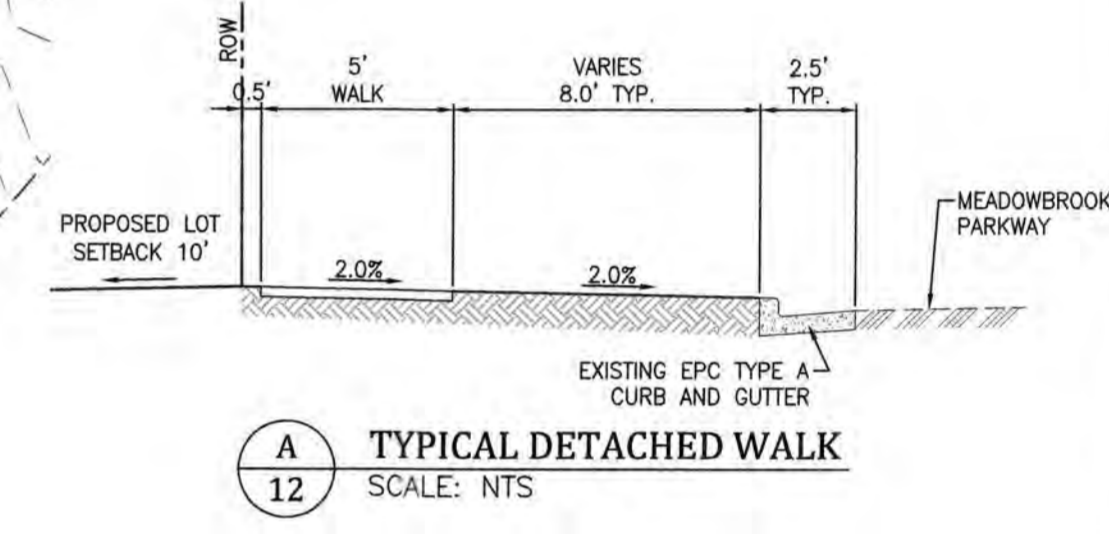
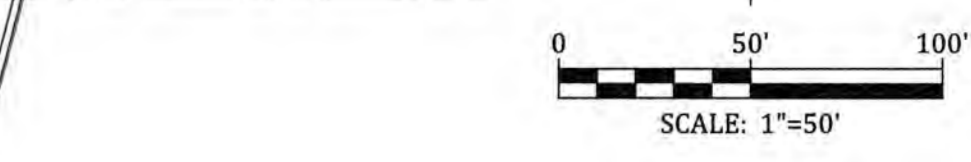
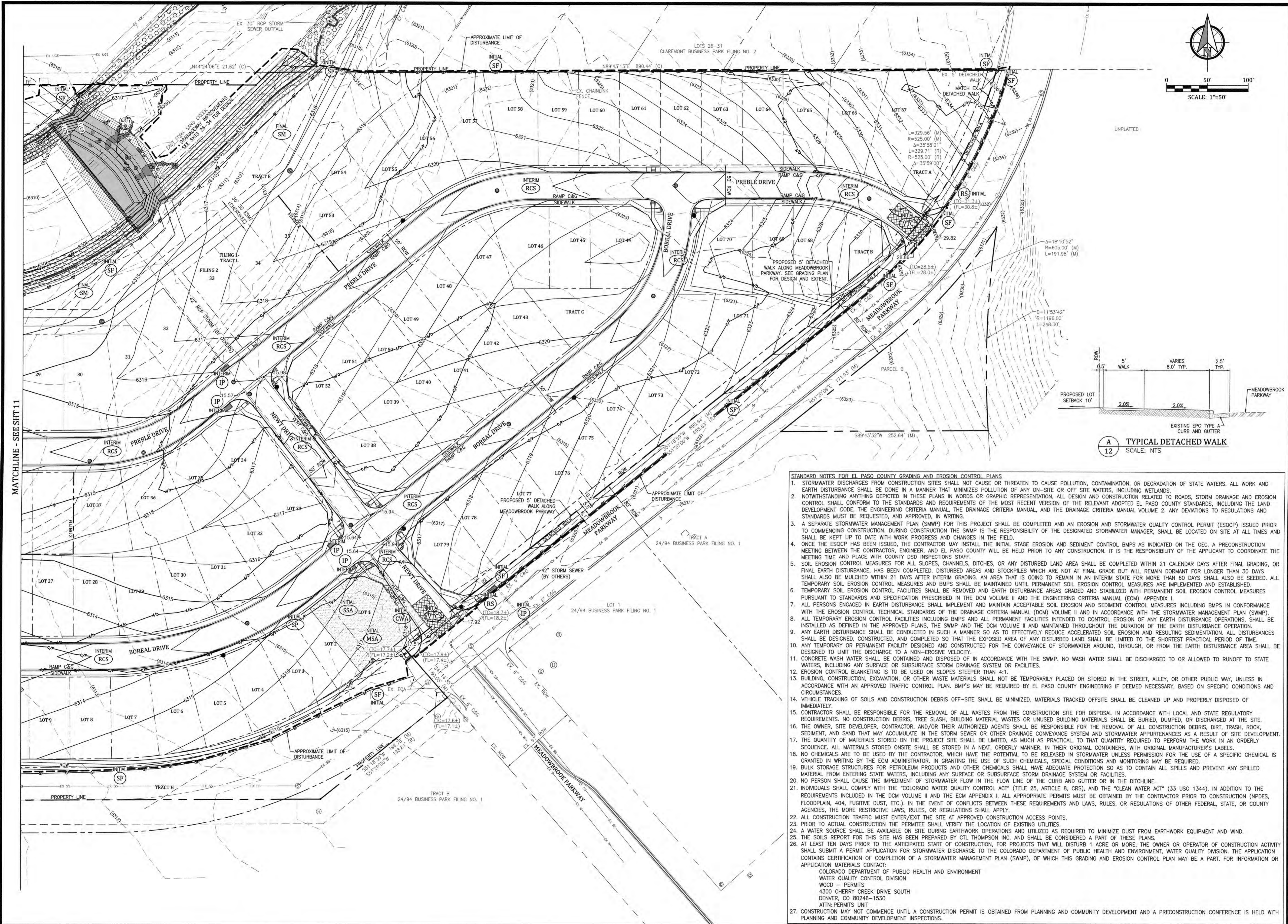
ITEM	QUANTITY	UNITS	PRICE	AMOUNT
PERMANENT SEEDING	6.50	AC	\$582	\$3,783.00
MULCHING	6.50	AC	\$507	\$3,295.50
VEHICLE TRACKING CONTROL	2	EA	\$1,625	\$3,250.00
INLET PROTECTION	7	EA	\$153	\$1,071.00
CONCRETE WASHOUT BASIN	1	EA	\$776	\$776.00
ROUGH CUT STREET CONTROL	3,930	LF	\$2	\$7,860.00
SILT FENCE	5,586	LF	\$4	\$22,344.00
TEMPORARY SEDIMENT BASIN	1	EA	\$1,625	\$1,625.00
ROCK SOCK	2	EA	\$110	\$220.00
SEDIMENT CONTROL LOGS	260	LF	\$3	\$715.00
TEMPORARY SLOPE DRAIN	1	EA	\$750	\$750.00
STABILIZED STAGING AREA	1,110	SY	\$2	\$2,220.00
TOTAL				\$47,909.50



Celebrating 30 years
Kiowa
 Engineering Corporation
 1604 South 21st Street
 Colorado Springs, Colorado 80904
 (719) 630-7342

MEADOWBROOK CROSSING FILING NO. 1
OVERALL GRADING AND EROSION CONTROL PLAN
 EL PASO COUNTY, COLORADO

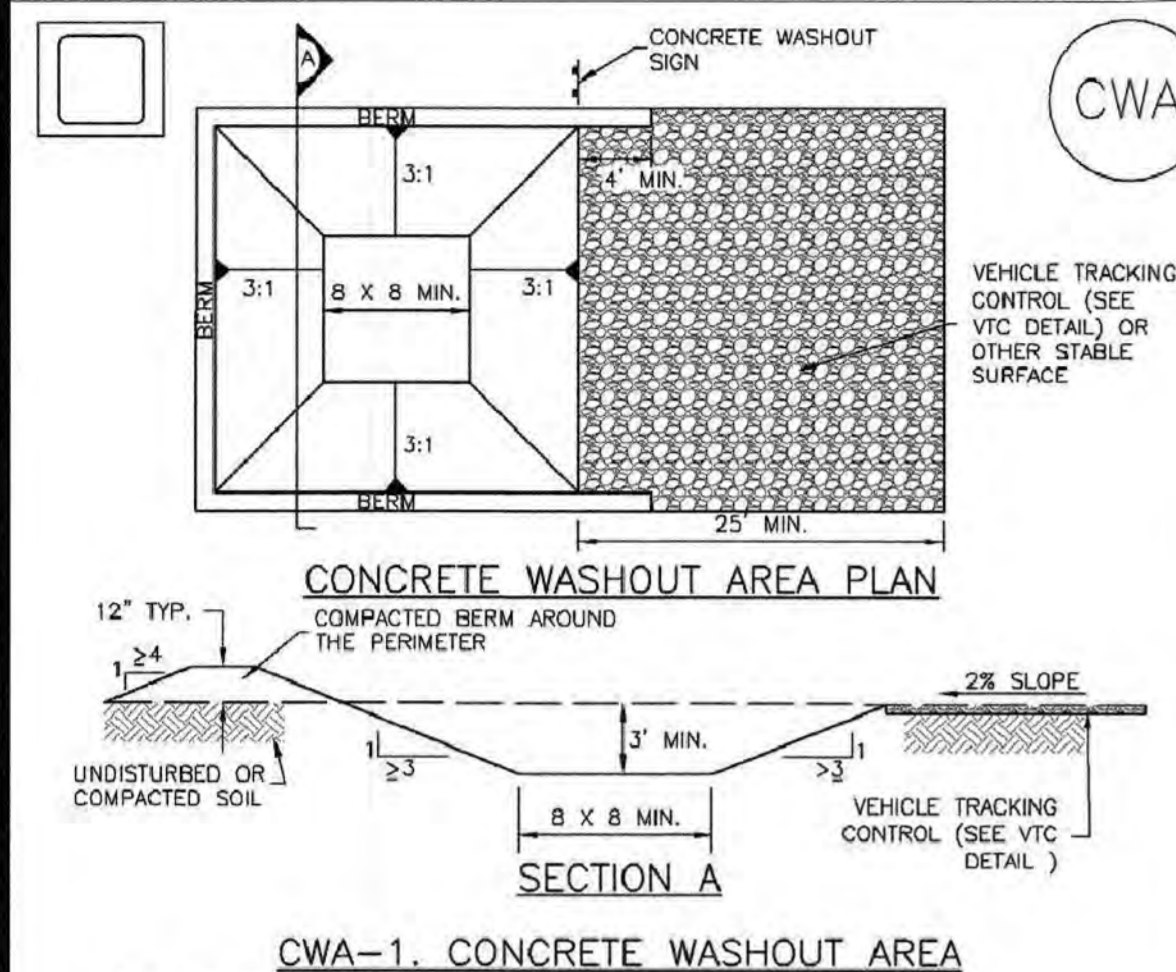
Project No.: 16039
 Date: August 22, 2017
 Design: ELS
 Drawn: ELS
 Check: MWE
 Revisions:



- STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS**
1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
 2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
 3. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, SHALL BE LOCATED ON SITE AT ALL TIMES AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
 4. ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPs AS INDICATED ON THE GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY OSD INSPECTIONS STAFF.
 5. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE, HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPs SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.
 6. TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO STANDARDS AND SPECIFICATION PRESCRIBED IN THE DCM VOLUME II AND THE ENGINEERING CRITERIA MANUAL (ECM) APPENDIX I.
 7. ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING BMPs IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME II AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PLAN (SWMP).
 8. ALL TEMPORARY EROSION CONTROL FACILITIES INCLUDING BMPs AND ALL PERMANENT FACILITIES INTENDED TO CONTROL EROSION OF ANY EARTH DISTURBANCE OPERATIONS, SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS, THE SWMP AND THE DCM VOLUME II AND MAINTAINED THROUGHOUT THE DURATION OF THE EARTH DISTURBANCE OPERATION.
 9. ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME.
 10. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON-EROSIVE VELOCITY.
 11. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
 12. EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 4:1.
 13. BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. BMPs MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
 14. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
 15. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
 16. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
 17. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ONSITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
 18. NO CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
 19. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
 20. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.
 21. INDIVIDUALS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
 22. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
 23. PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
 24. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
 25. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY CIL THOMPSON INC. AND SHALL BE CONSIDERED A PART OF THESE PLANS.
 26. AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:
 COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
 WATER QUALITY CONTROL DIVISION
 WQCD - PERMITS
 4300 CHERRY CREEK DRIVE SOUTH
 DENVER, CO 80246-1530
 ATTN: PERMITS UNIT
 27. CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PLANNING AND COMMUNITY DEVELOPMENT AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PLANNING AND COMMUNITY DEVELOPMENT INSPECTIONS.

MEADOWBROOK CROSSING FILING NO. 1
OVERALL GRADING AND EROSION CONTROL PLAN
 EL PASO COUNTY, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	



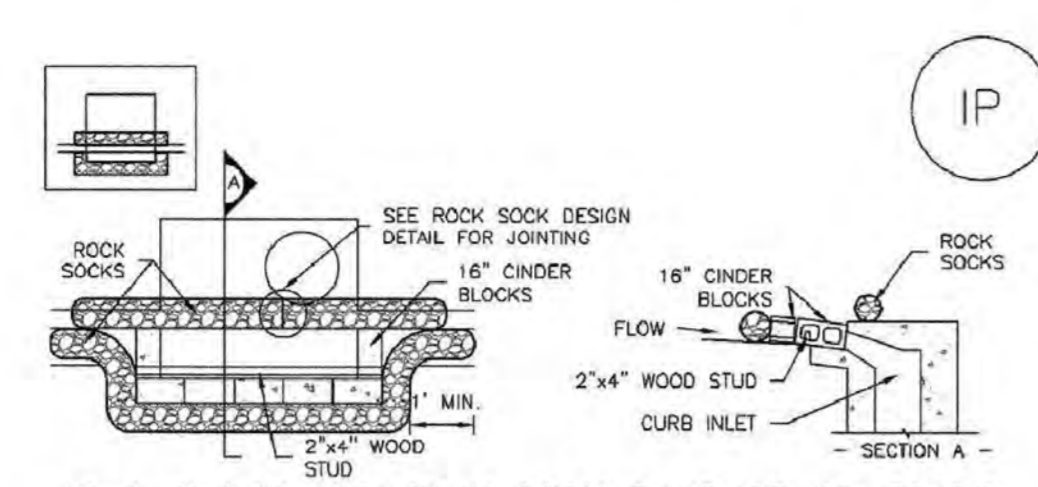
CWA-1. CONCRETE WASHOUT AREA

- CWA INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - CWA INSTALLATION LOCATION.
 - DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL. MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
 - THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
 - CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
 - BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
 - VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
 - SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
 - USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

CWA MAINTENANCE NOTES

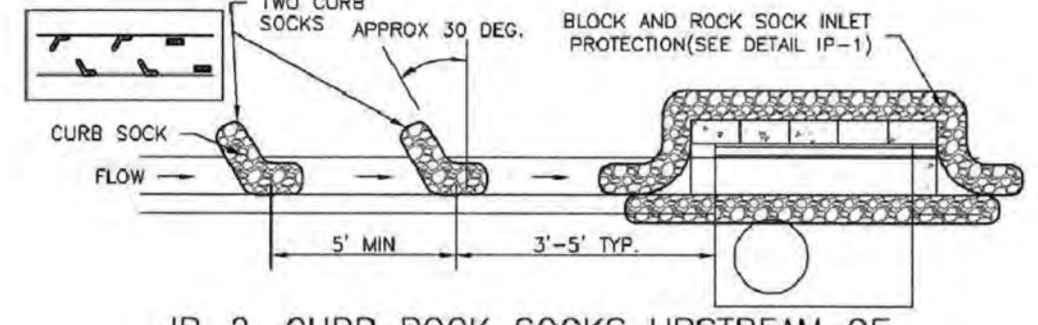
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
- CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
- THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
- WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

SC-6 Inlet Protection (IP)



IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

- BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES**
- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
 - CONCRETE "CINDER" BLOCKS SHALL BE LAD ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ADJUTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
 - GRVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ADJUTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

- CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES**
- SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
 - PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
 - SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
 - AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

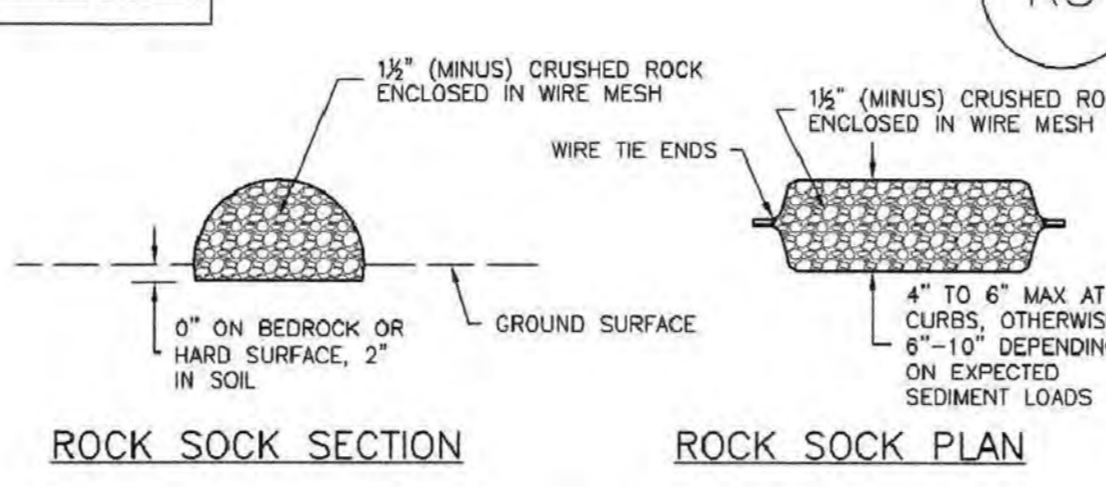
GENERAL INLET PROTECTION INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF INLET PROTECTION.
 - TYPE OF INLET PROTECTION (IP,1, IP,2, IP,3, IP,4, IP,5, IP,6)
- INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
- MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

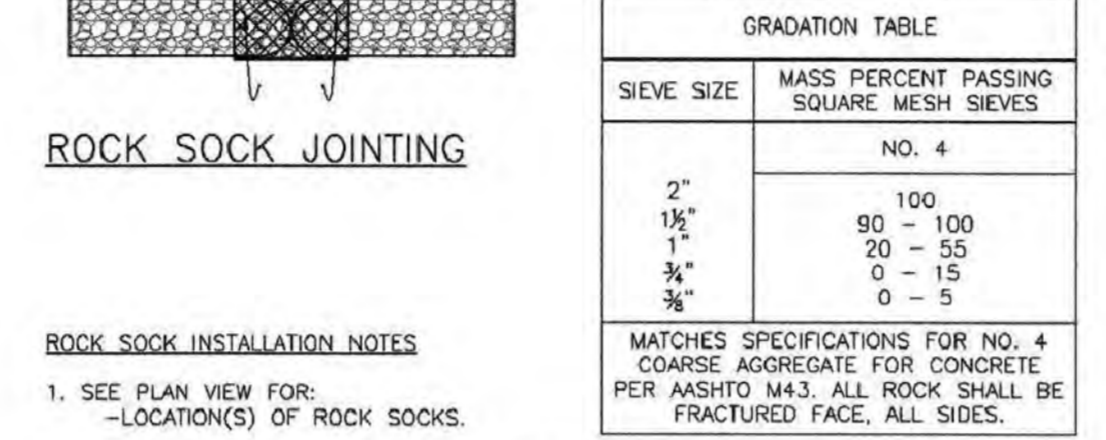
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR STRAW BALES.
- INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
- WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

RS Rock Sock Perimeter Control



RS-1. ROCK SOCK PERIMETER CONTROL

- ROCK SOCK MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 - FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
 - SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK.
 - ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 - WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.



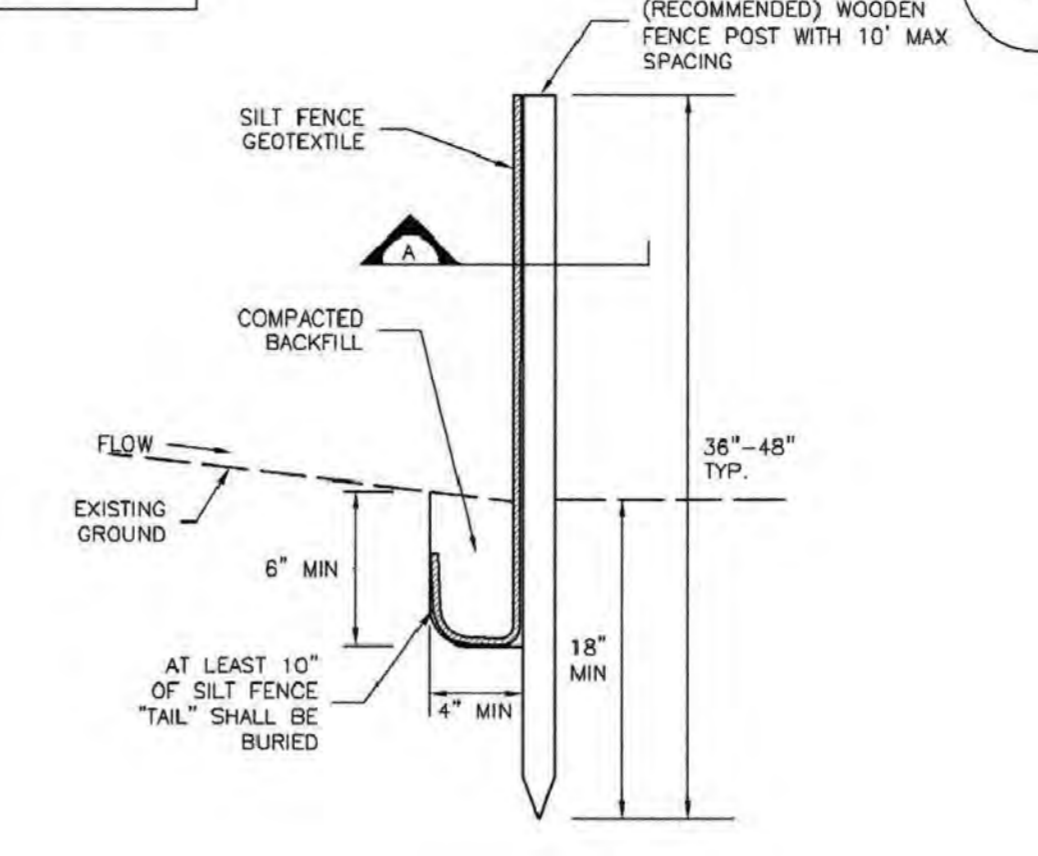
RS-1. ROCK SOCK PERIMETER CONTROL

- ROCK SOCK INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION(S) OF ROCK SOCKS.
 - CRUSHED ROCK SHALL BE 1 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1/2" MINUS).
 - WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 1/2", RECOMMENDED MINIMUM ROLL WIDTH OF 48"
 - WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
 - SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
NO. 4	
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5

MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M4.3. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.

SF Silt Fence



SF-1. SILT FENCE



SF-1. SILT FENCE

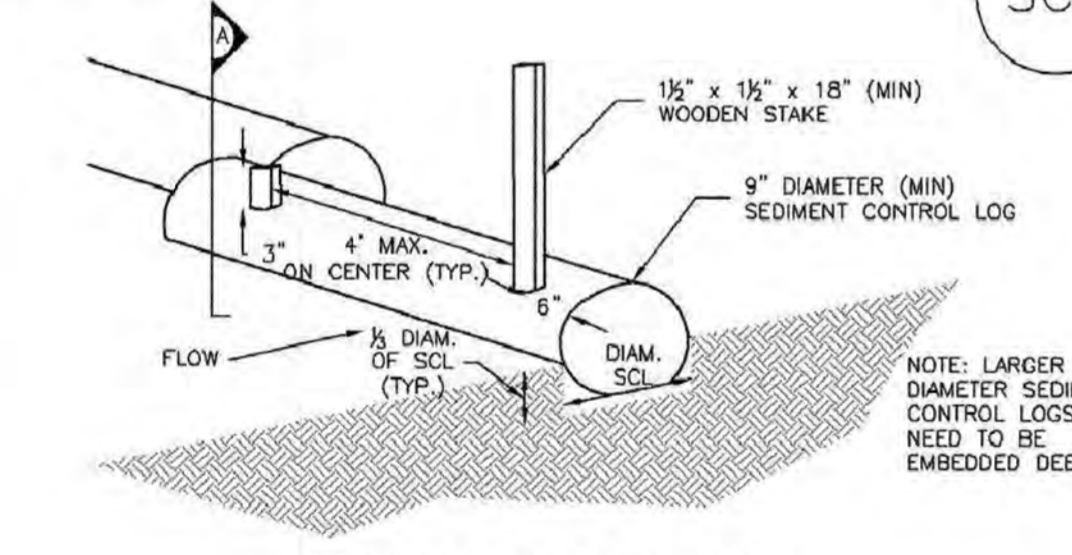
SILT FENCE INSTALLATION NOTES

- SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
- A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
- COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
- SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
- SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
- AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
- SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

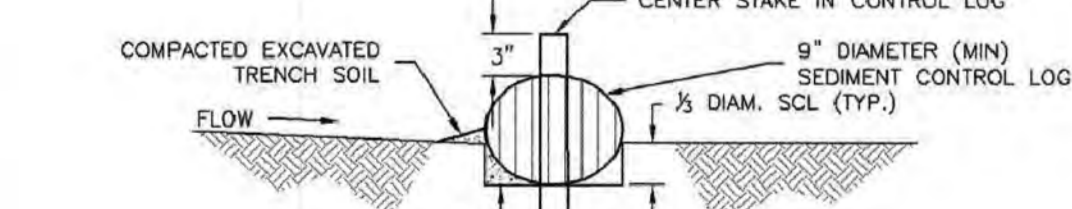
SILT FENCE MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2".
- REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
- SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
- WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

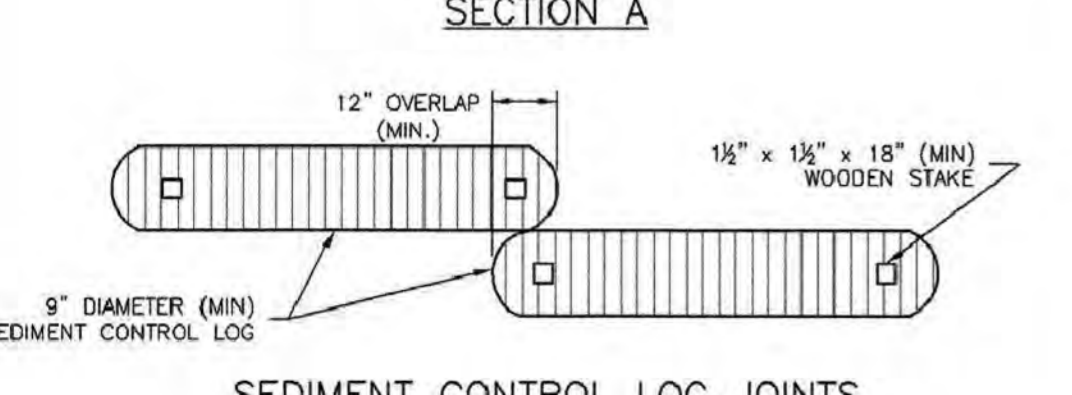
SCL Sediment Control Log



SCL-1. SEDIMENT CONTROL LOG



SCL-1. SEDIMENT CONTROL LOG



SCL-1. SEDIMENT CONTROL LOG

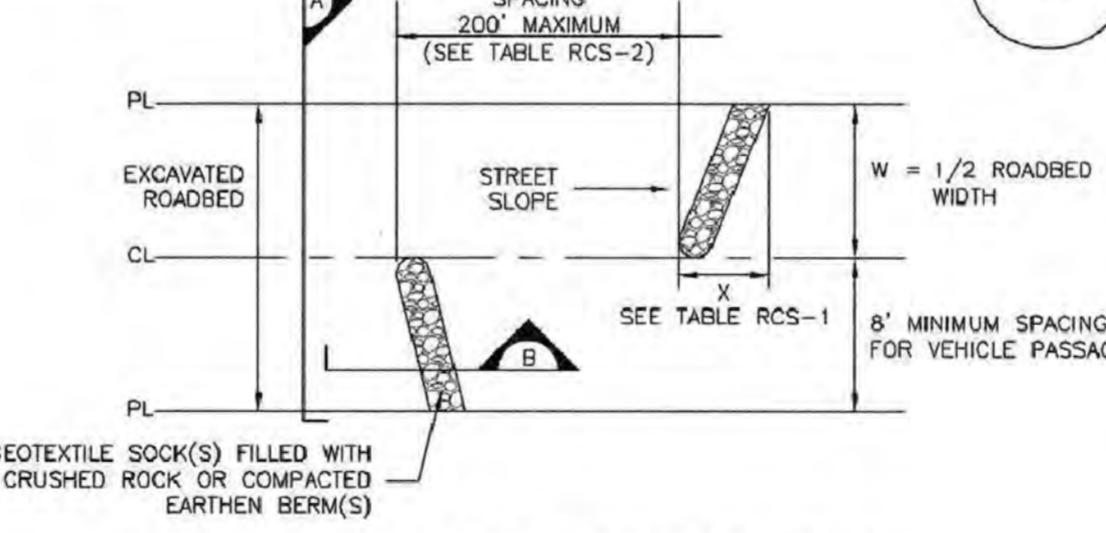
SEDIMENT CONTROL LOG INSTALLATION NOTES

- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
- SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADE/LAND-DISTURBING ACTIVITIES.
- SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELISOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
- SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS.
- IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/2 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING.
- THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.
- FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

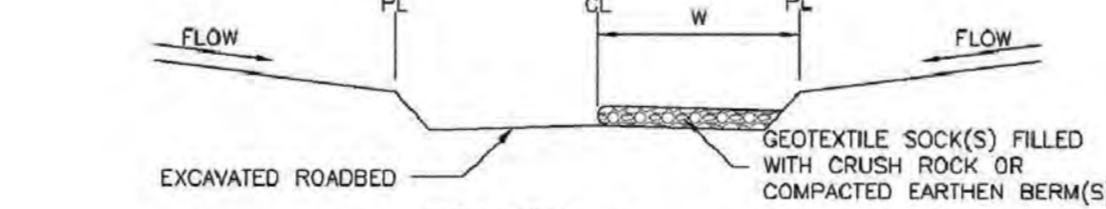
SEDIMENT CONTROL LOG MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
- SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

RCS Rough Cut Street Control



RCS-1. ROUGH CUT STREET CONTROL



RCS-1. ROUGH CUT STREET CONTROL

TABLE RCS-1		TABLE RCS-2	
W (FT)	X (FT)	LONGITUDINAL STREET SLOPE (%)	SPACING (FT)
20-30	5	<2	200
31-40	7	3	200
41-50	9	4	150
51-60	10.5	5	100
61-70	12	6	50
		7	25
		8	25

NOT TYPICALLY NEEDED

ROUGH CUT STREET CONTROL INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF ROUGH CUT STREET CONTROL MEASURES.
- ROUGH CUT STREET CONTROL SHALL BE INSTALLED AFTER A ROAD HAS BEEN CUT IN, AND WILL NOT BE PAVED FOR MORE THAN 14 DAYS OR FOR TEMPORARY CONSTRUCTION ROADS THAT HAVE NOT RECEIVED ROAD BASE.

ROUGH CUT STREET CONTROL INSPECTION AND MAINTENANCE NOTES

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

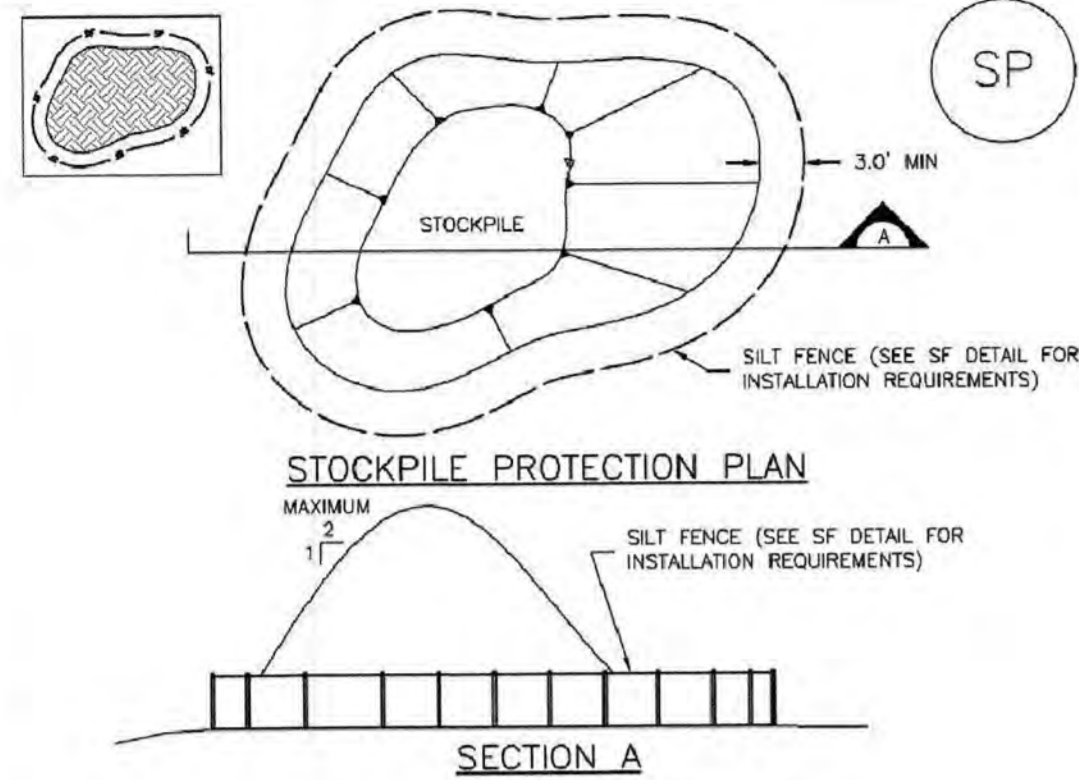
Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	

Stockpile Management (SP)

MM-2

Sediment Basin (SB)

SC-7



SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: -LOCATION OF STOCKPILES. -TYPE OF STOCKPILE PROTECTION. 2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS...

STOCKPILE PROTECTION MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE...

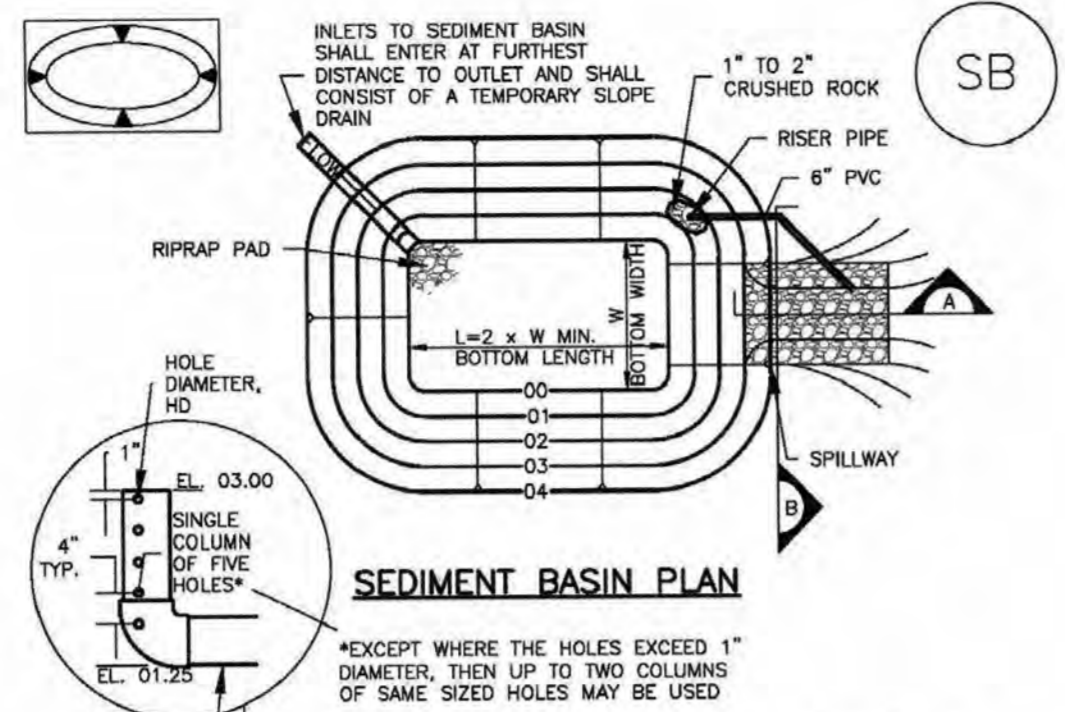
- 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION...

- 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

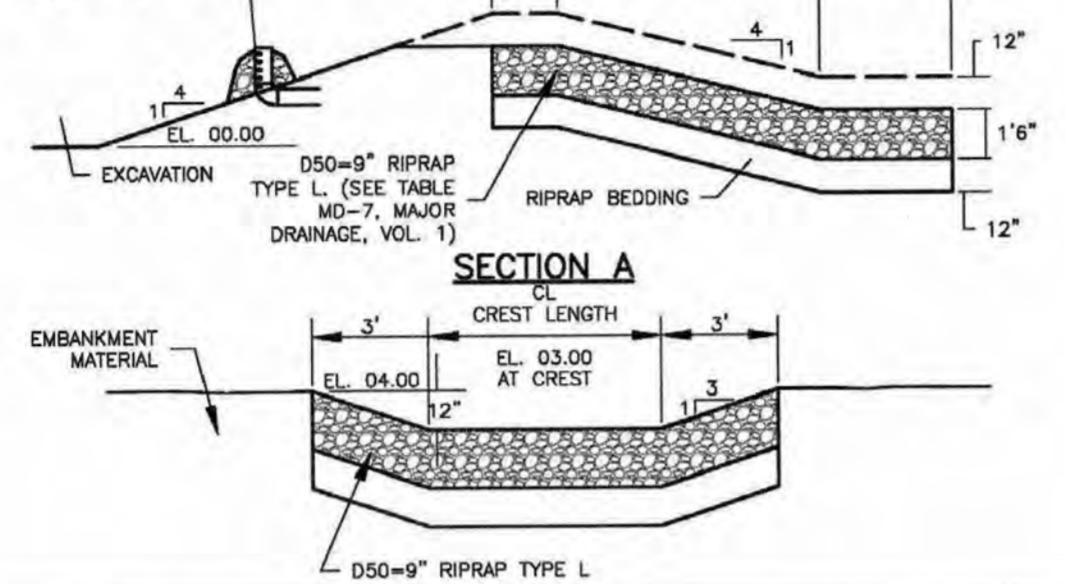
STOCKPILE PROTECTION MAINTENANCE NOTES

- 4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.

- 5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.



SECTION A



NOTE: SEE SHEET 11 FOR TEMPORARY SEDIMENT BASIN SIZING REQUIREMENTS

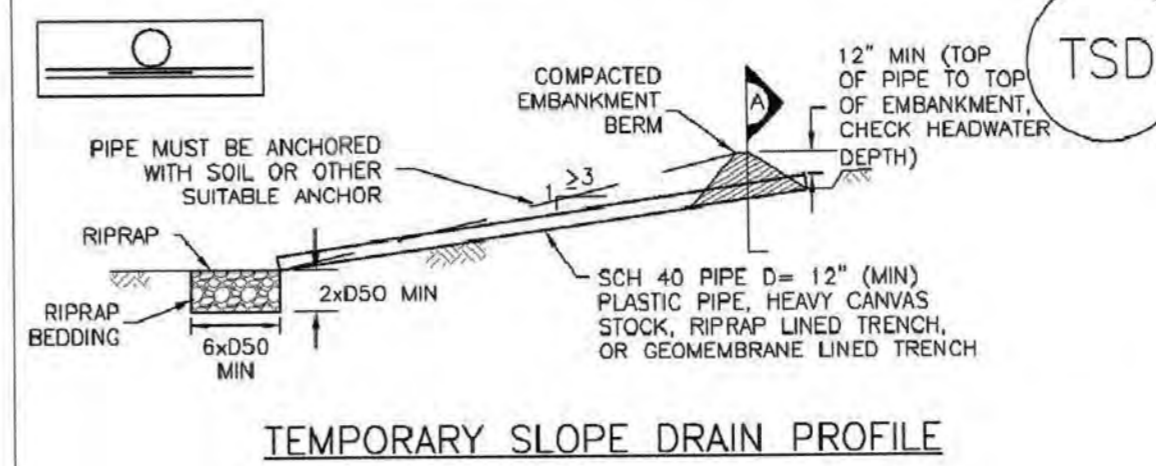
TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN. Columns: Upstream Drainage Area, Basin Bottom Width, Spillway Crest Length, Hole Diameter.

SEDIMENT BASIN INSTALLATION NOTES

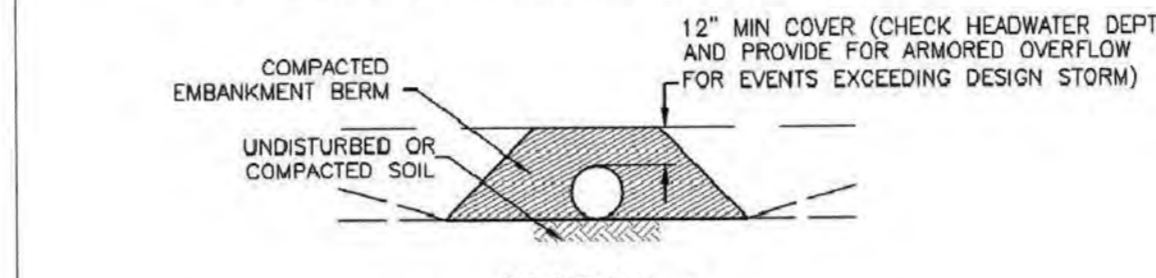
- 1. SEE PLAN VIEW FOR: -LOCATION OF SEDIMENT BASIN. -TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN). 2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED...

SEDIMENT BASIN MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE...



TEMPORARY SLOPE DRAIN PROFILE



SECTION A

TERMINATION OF RIPRAP LINED SLOPE DRAIN

GEOMEMBRANE LINED SLOPE DRAIN

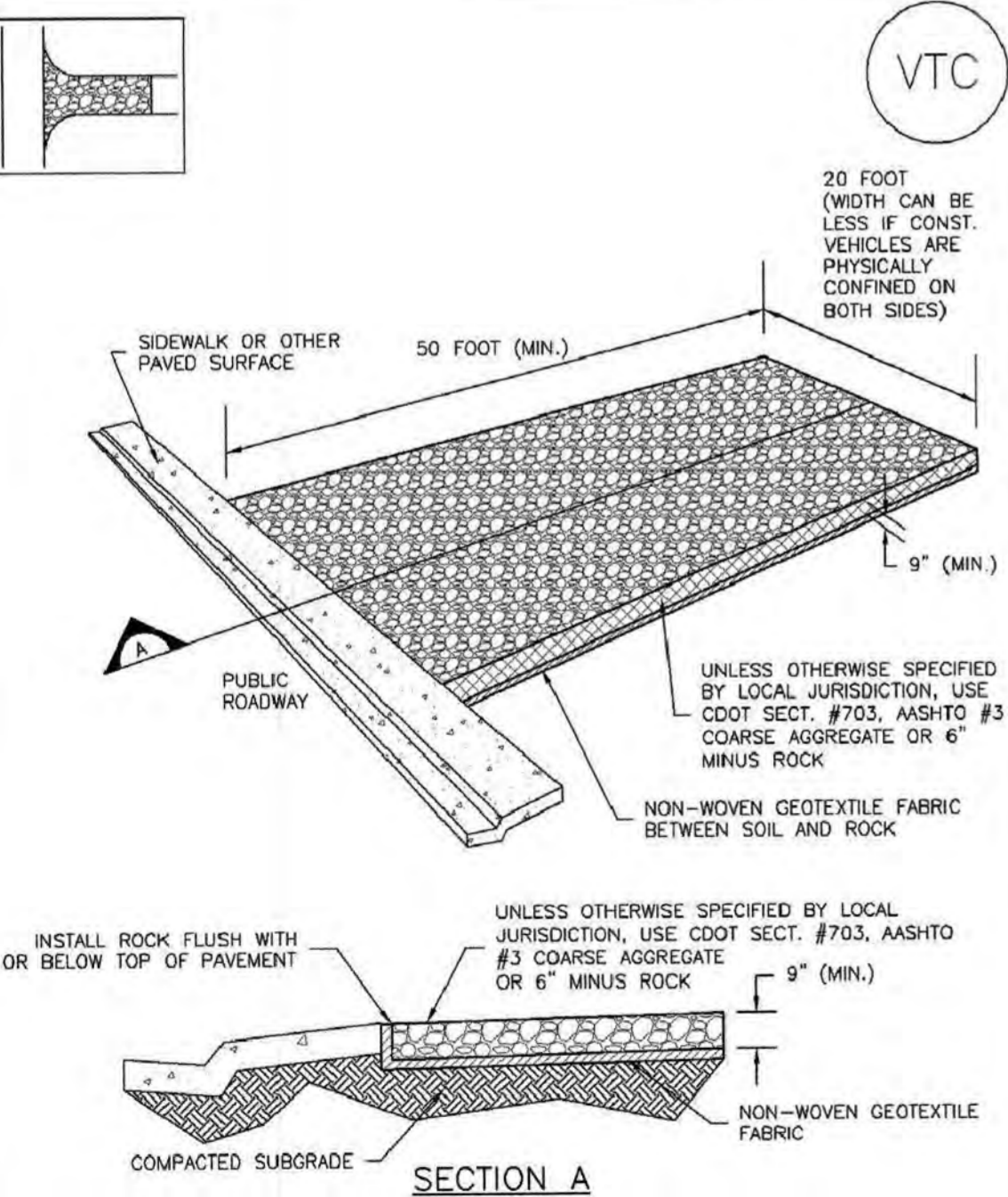
TERMINATION OF GEOMEMBRANE LINED SLOPE DRAIN

SLOPE DRAIN INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: -LOCATION AND LENGTH OF SLOPE DRAIN. -PIPE DIAMETER, D, AND RIPRAP SIZE, D50. 2. SLOPE DRAIN SHALL BE DESIGNED TO CONVEY PEAK RUNOFF FOR 2-YEAR 24-HOUR STORM AT A MINIMUM...

SLOPE DRAIN MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE...



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: -LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S). -TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM). 2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS...

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE...

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

- 1. SEE PLAN VIEW FOR: -LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S). -TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM). 2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS...

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

- 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE...

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

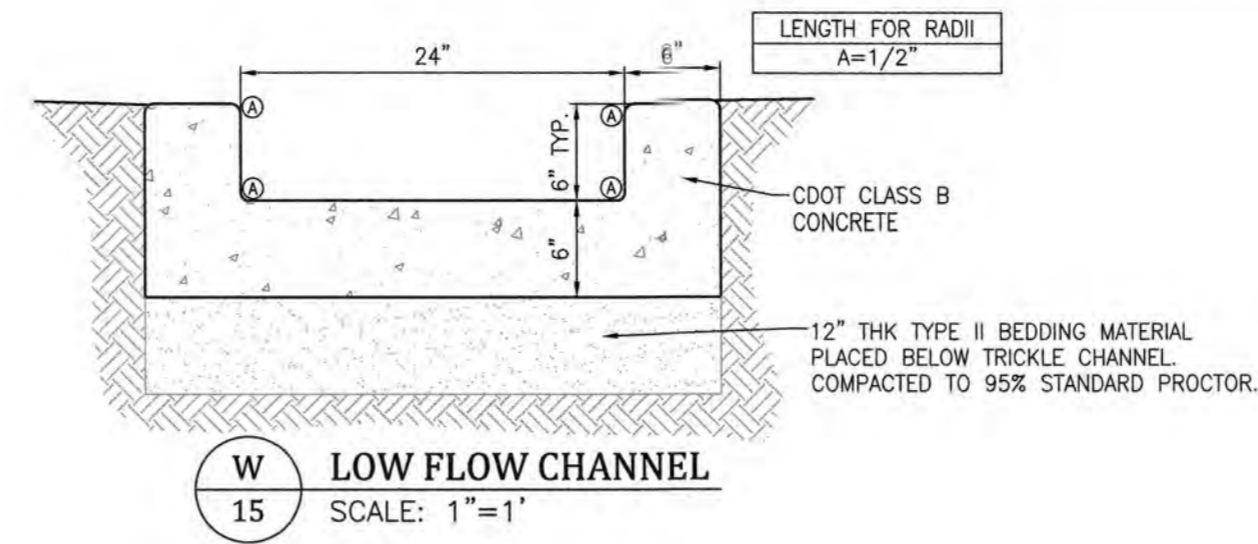
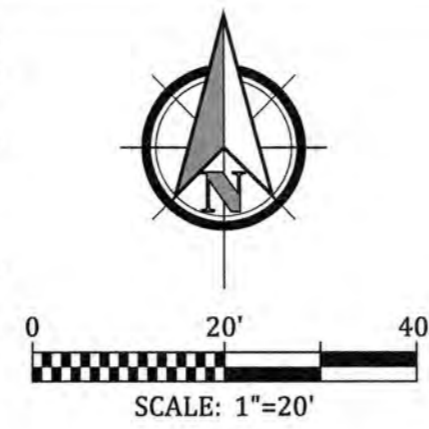
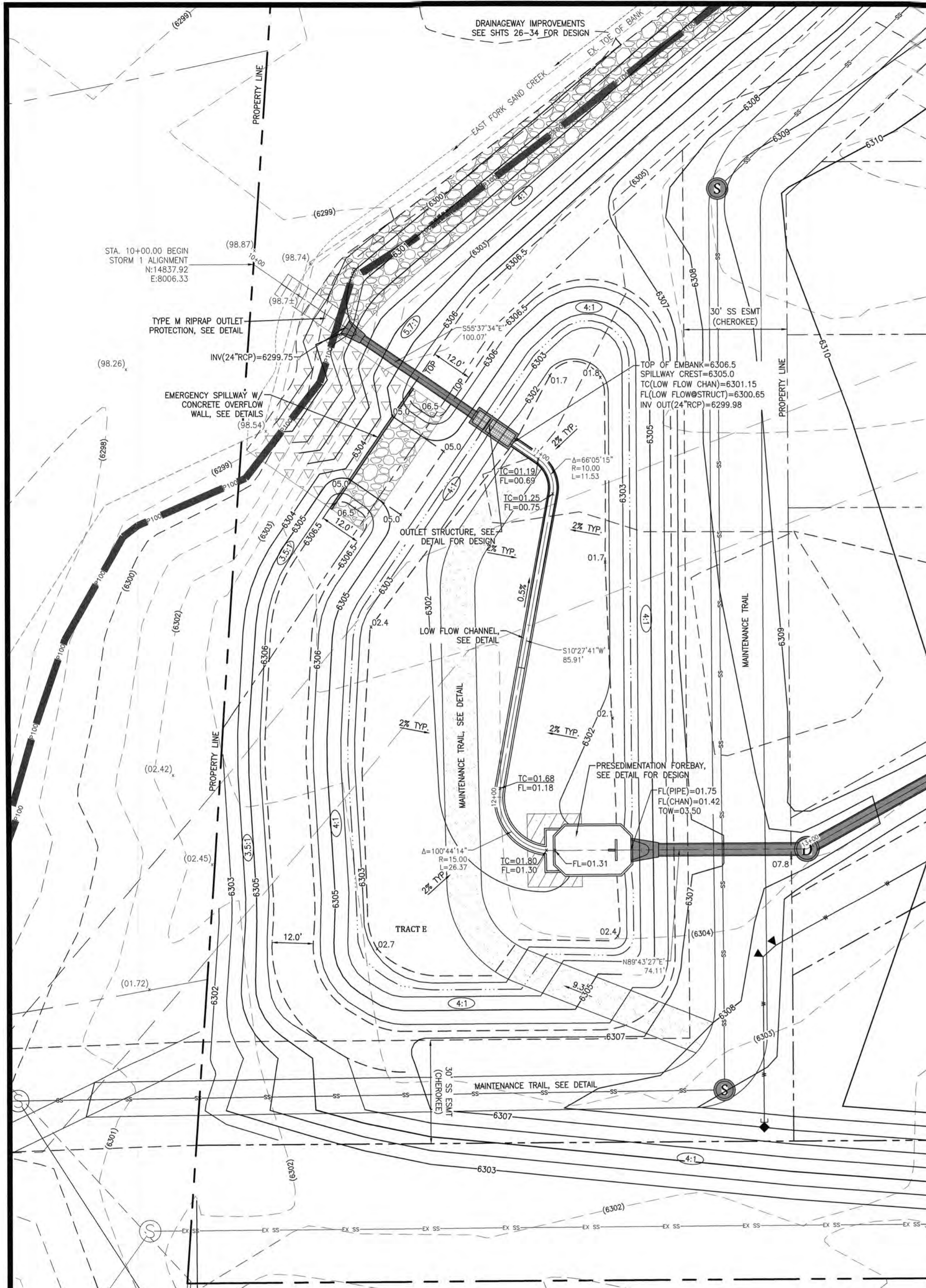
MEADOWBROOK CROSSING FILING NO. 1

EROSION CONTROL DETAILS EL PASO COUNTY, COLORADO

Kiowa Engineering Corporation 1604 South 21st Street, Colorado Springs, Colorado 80904 (719) 630-7342

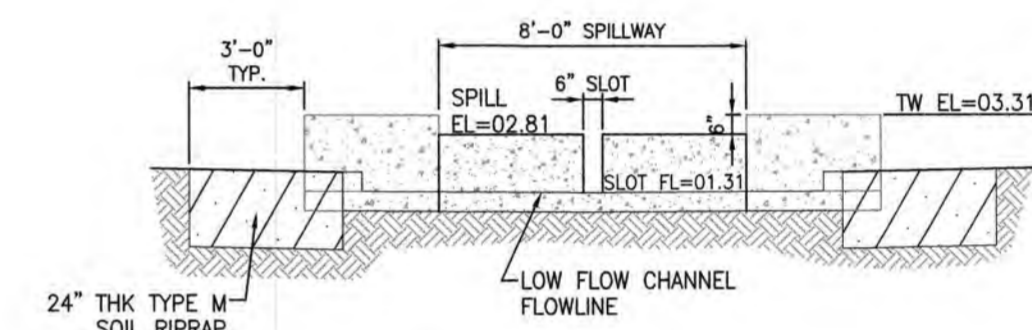
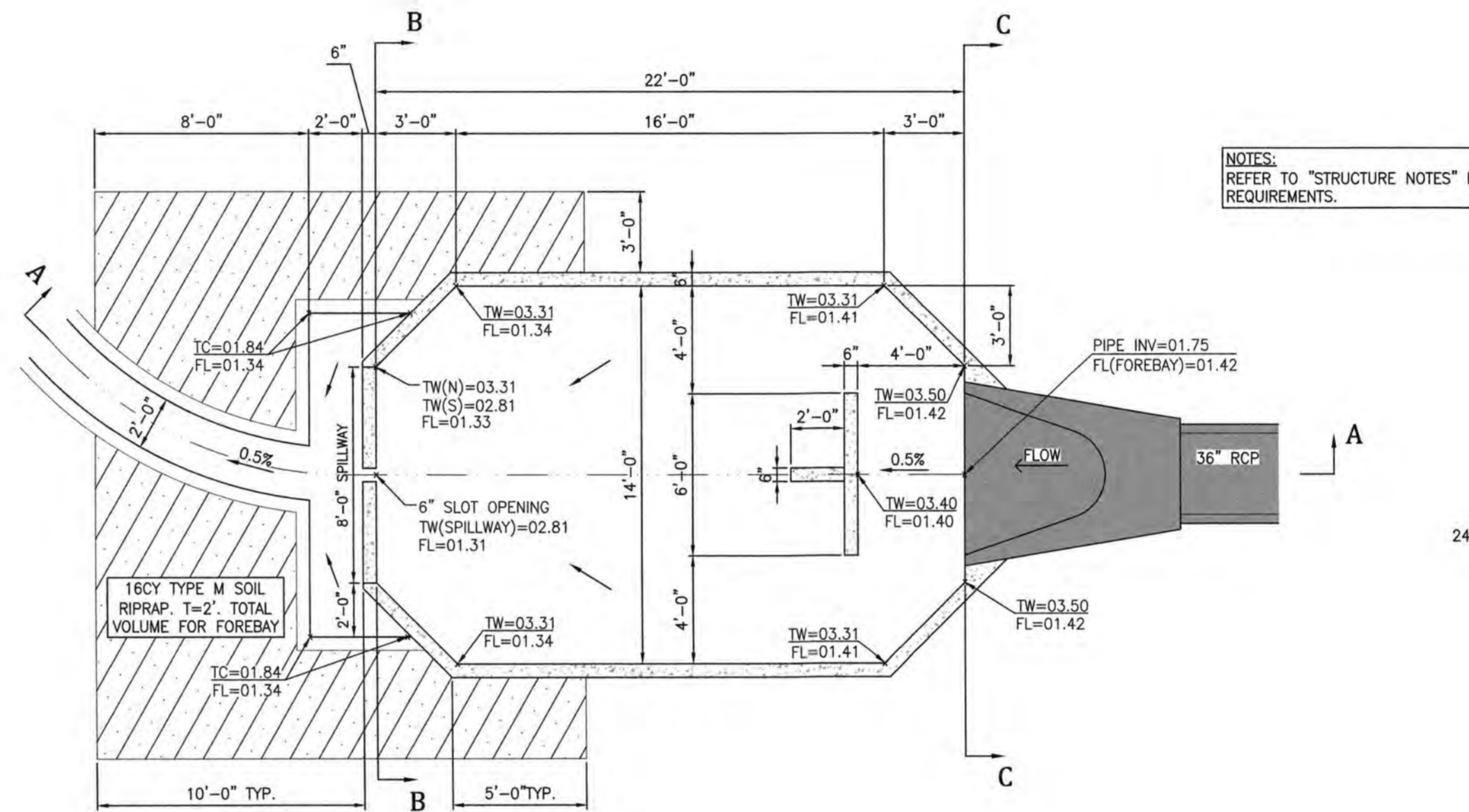
Project No.: 16039 Date: August 22, 2017 Design: ELS Drawn: ELS Check: MWE Revisions:

SHEET

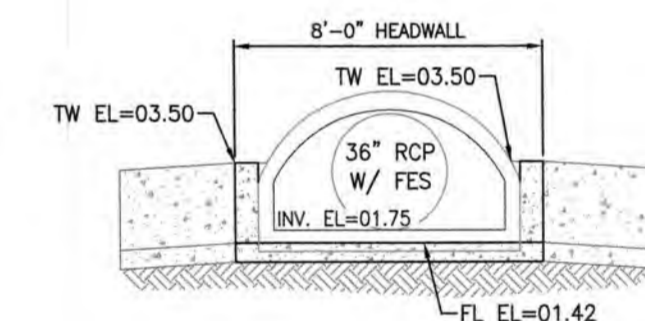


CLASSIFICATION AND GRADATION OF RIPRAP			
RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	d50* (INCHES)
TYPE VL	70-100	12	
	50-70	9	
	35-50	6	6**
TYPE L	70-100	15	
	50-70	12	
	35-50	9	9**
TYPE M	70-100	21	
	50-70	18	
	35-50	12	12**

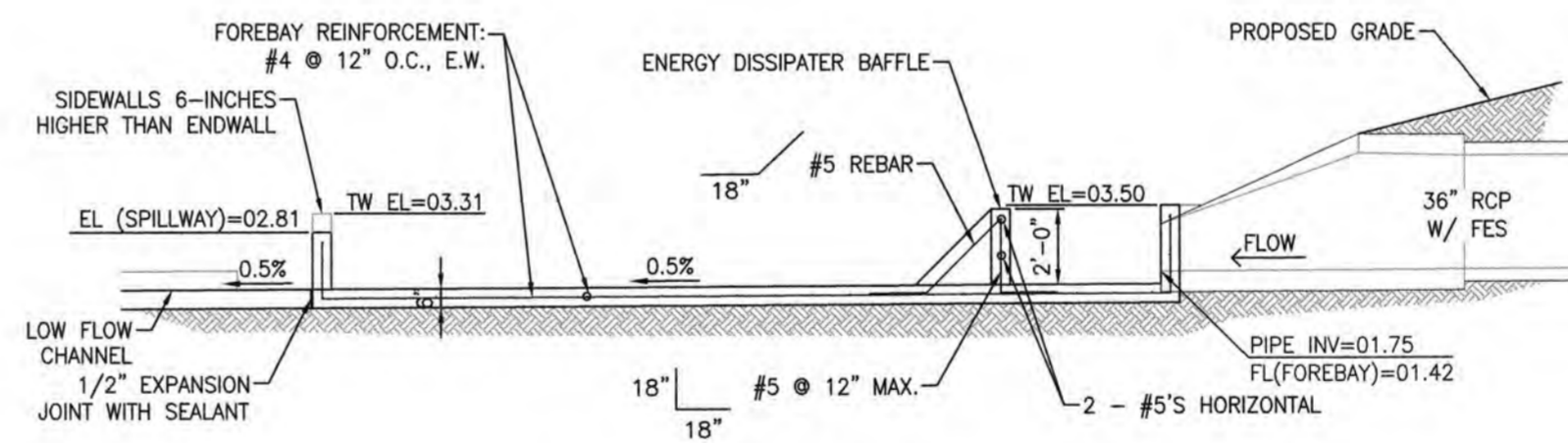
* d50=MEAN PARTICLE SIZE (INTERMEDIATE DIMENSION) BY WEIGHT.
 ** MIX VL, L AND M RIPRAP WITH 35% TOPSOIL (BY VOLUME) AND BURY WITH 4-6 INCHES OF TOPSOIL, ALL VIBRATION COMPACTED & REVEGETATE. (TABLE MD-7: CLASSIFICATION AND GRADATION OF ORDINARY RIPRAP. UDFCD, DRAINAGE CRITERIA MANUAL, VOL. 1)



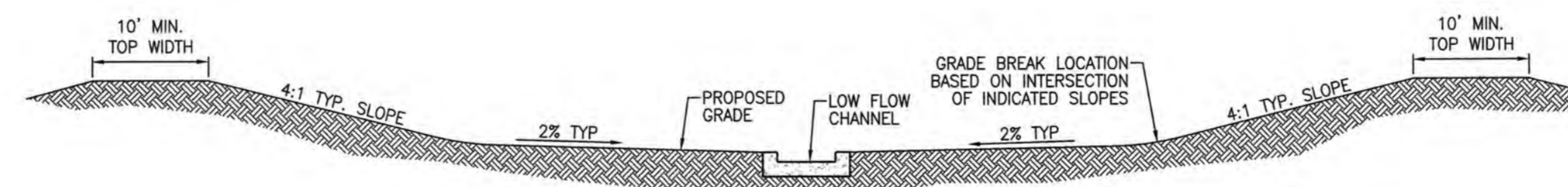
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15 SECTION B-B
SCALE: NTS



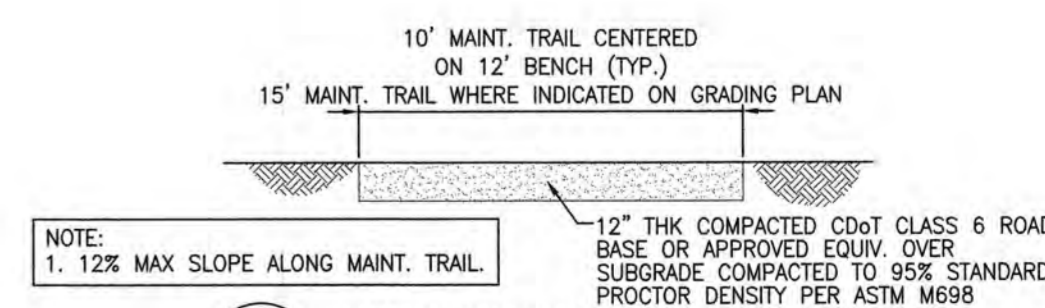
C
15 SECTION C-C
SCALE: NTS



A
15 SECTION A-A
SCALE: NTS



X
15 WATER QUALITY BASIN TYPICAL CROSS SECTION
SCALE: NTS



Y
15 MAINTENANCE TRAIL SECTION
SCALE: NTS

WATER QUALITY BASIN				
	WATER SURFACE ELEV. (FT)	REQUIRED STORAGE VOLUME	RELEASE RATE	PROVIDED STORAGE VOLUME
WQCV	6303.62	0.36 AC-FT		
SPILLWAY CREST ELEVATION: 6305.00				
TOP OF EMBANKMENT MINIMUM ELEVATION: 6306.50				
NOTES:				
1. AS-BUILT SURVEY AND VOLUME CERTIFICATION REQUIRED BY A LICENSED PROFESSIONAL LAND SURVEYOR, SEE GRADING NOTES.				

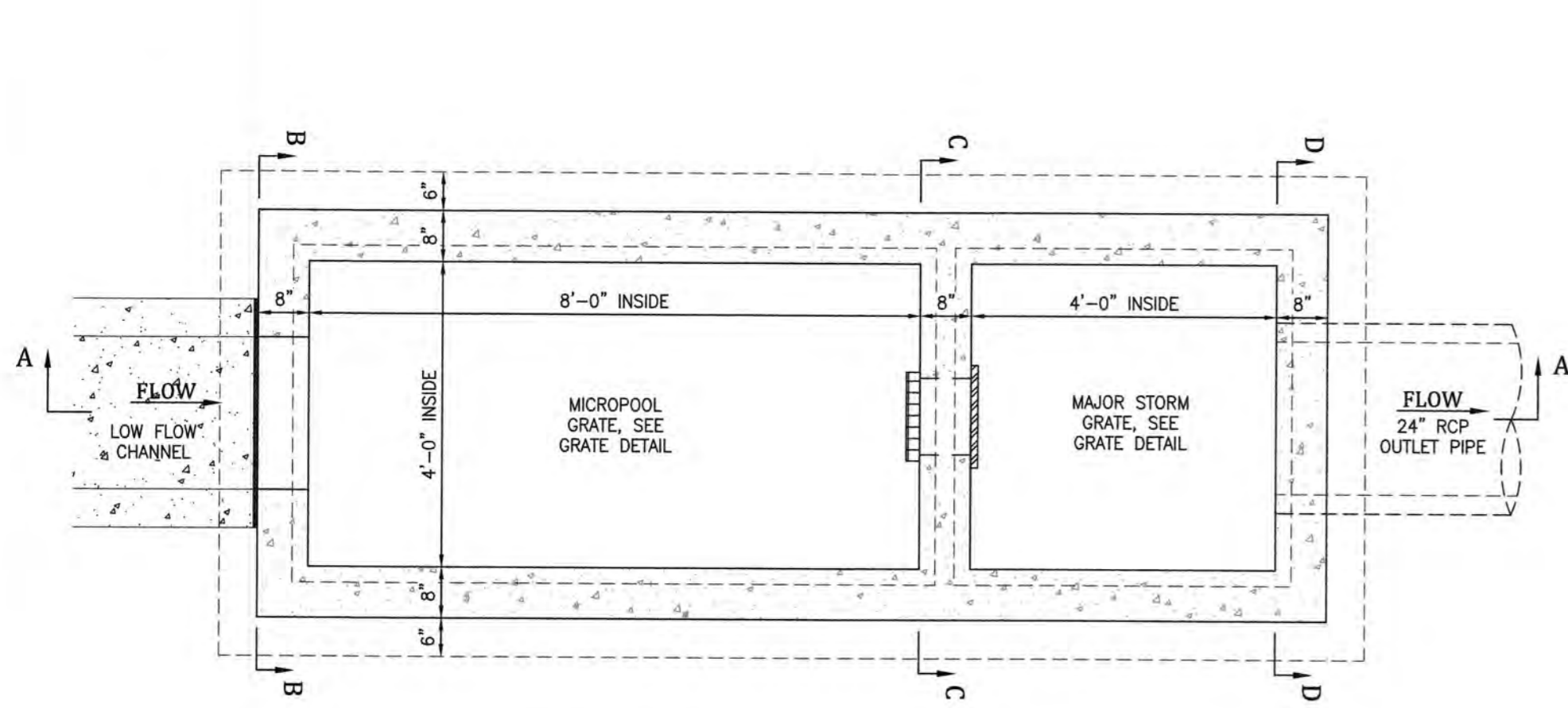
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WATER QUALITY AREA PLAN
EL PASO COUNTY, COLORADO

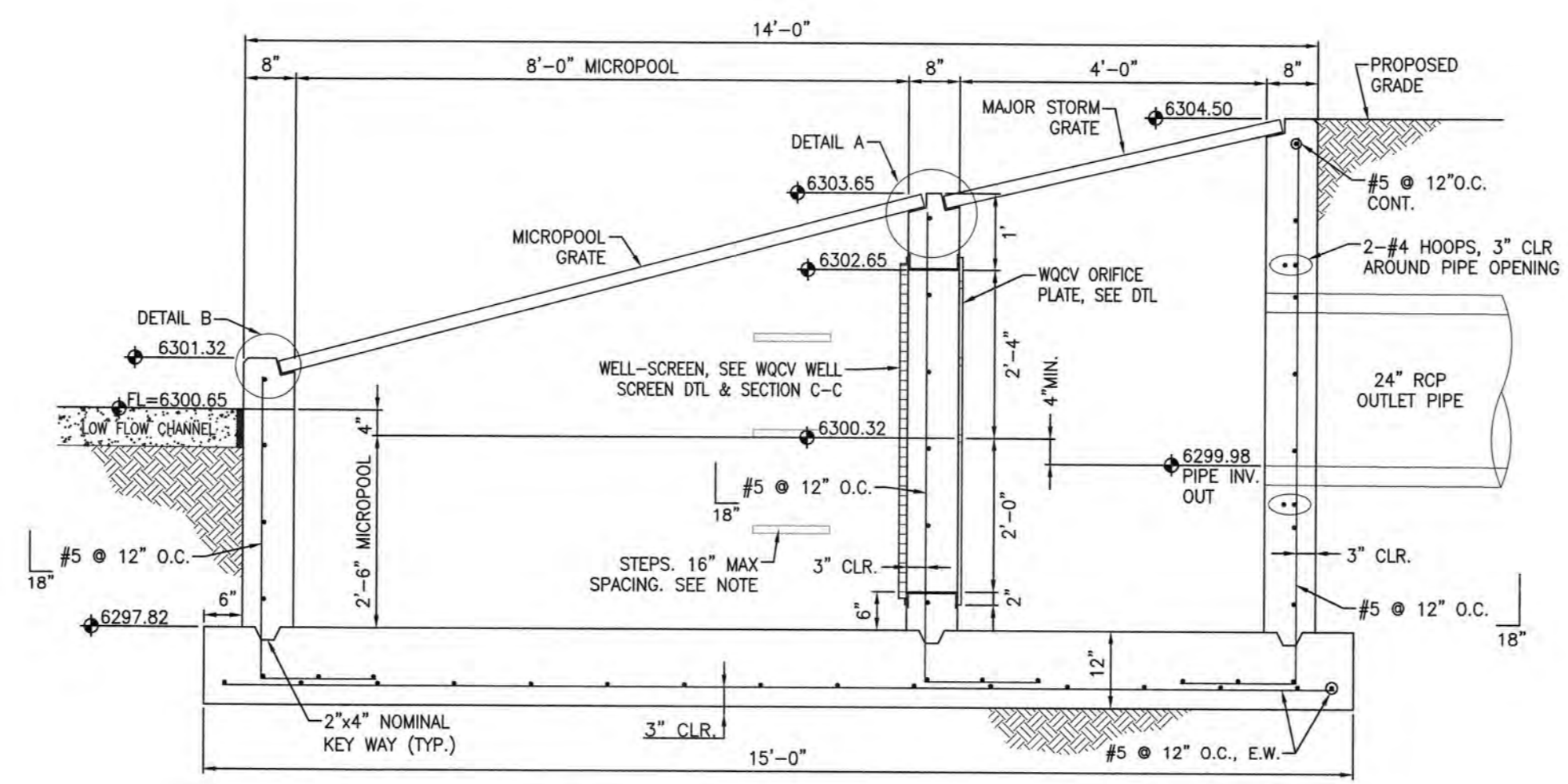
Kiewit
Celebrating 30 years
Engineering Corporation
1604 South 27th Street
Colorado Springs, Colorado 80904
(719) 630-7342

Project No.: 16039
Date: August 22, 2017
Design: ELS
Drawn: ELS
Check: MWE
Revisions:

SHEET



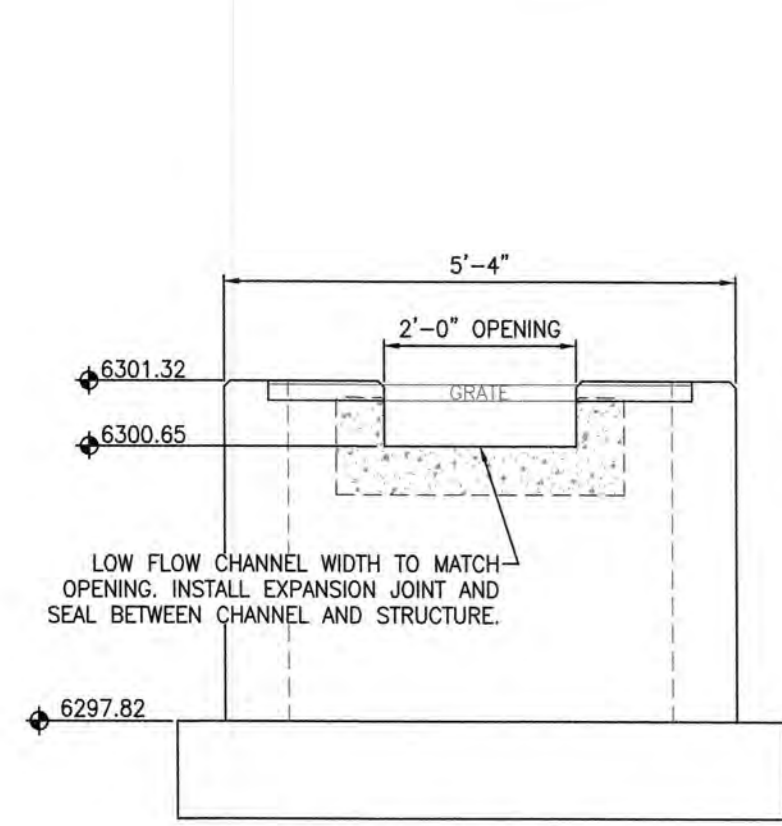
Z
16 OUTLET STRUCTURE DETAIL
PLAN VIEW
SCALE: NTS



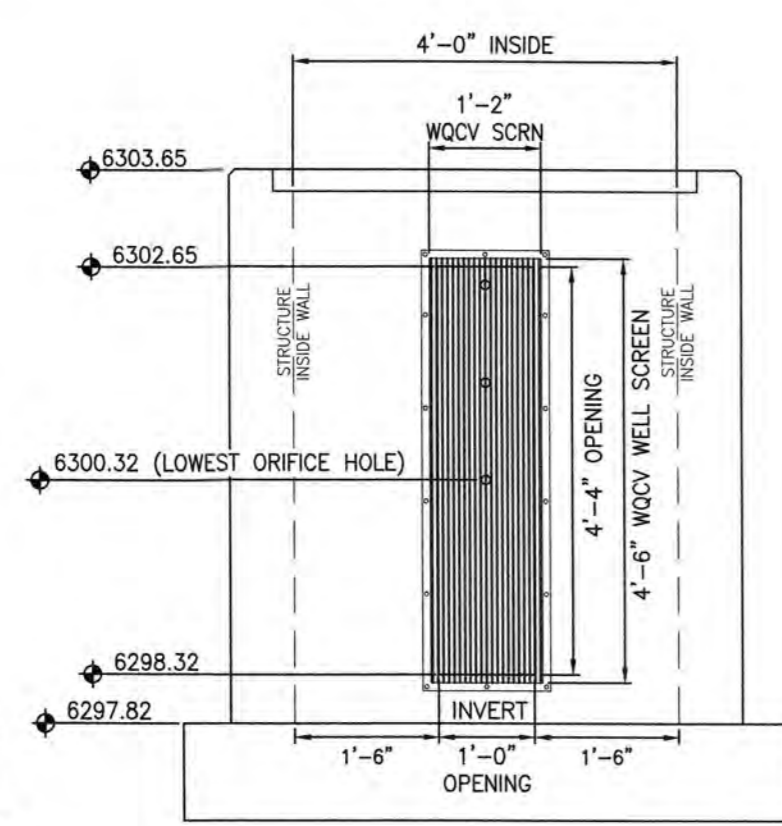
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16 SECTION A-A
SCALE: NTS

OUTLET STRUCTURE, FOREBAY, DRAIN CHANNEL AND WALL NOTES:

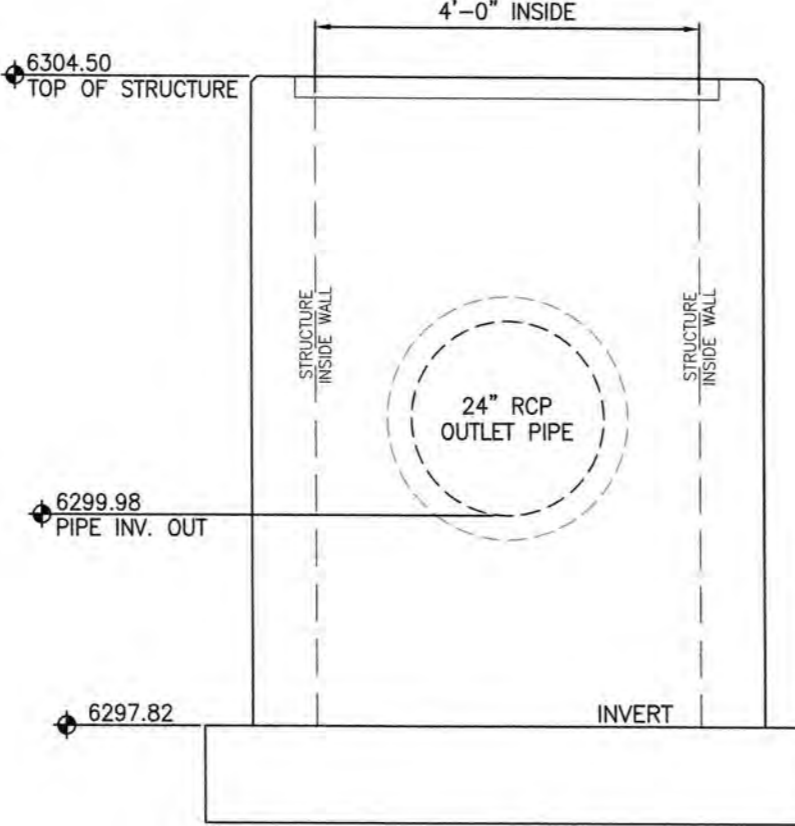
1. PRIOR TO CONSTRUCTION, CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL COMPONENTS OF THE OUTLET STRUCTURE.
2. GRADE 60 REINFORCING STEEL REQUIRED. SEE TABLE FOR THE MINIMUM LAP SPlice LENGTH FOR REINFORCING BARS. ALL REINFORCING STEEL SHALL HAVE 2-INCH MINIMUM CLEARANCE FROM EDGE OF CONCRETE AND 3-INCH MIN CLEARANCE TO EDGE OF CONCRETE PLACED AGAINST SOIL, UNLESS OTHERWISE NOTED.
3. MIN. SPlice LENGTH: #4: 1'-3", #5: 1'-7", #6: 2'-0"
4. CONCRETE FOR THE OUTLET STRUCTURE, FOREBAY AND SPILLWAY WALL SHALL BE CDOT CLASS D CONCRETE.
5. CONCRETE FOR DRAIN CHANNELS SHALL BE CDOT CLASS B CONCRETE (CLASS D CONCRETE IS ALSO ACCEPTABLE).
6. EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213. EXPANSION JOINT MATERIAL SHALL BE 1/2" THICK, SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE AND THE JOINT SHALL BE SEALED. REFER TO DETAILS.
7. ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/4-INCH CHAMFER, UNLESS OTHERWISE NOTED.
8. BACKFILLING AGAINST WALLS SHALL NOT COMMENCE UNTIL CONCRETE HAS OBTAINED ITS FULL SEVEN DAY STRENGTH.
9. SUBGRADE TO BE 12" THK CLEAN FILL COMPACTED TO 95% STANDARD PROCTOR DENSITY PER ASTM M698 UNDER STRUCTURES.
10. OUTLET STRUCTURES STEPS SHALL CONFORM TO AASHTO M199.
11. FOREBAY: CONTROL JOINTS SHALL BE INSTALLED AT 10' O.C. MAXIMUM. THE JOINTS SHALL BE SEALED WITH A JOINT SEALANT.



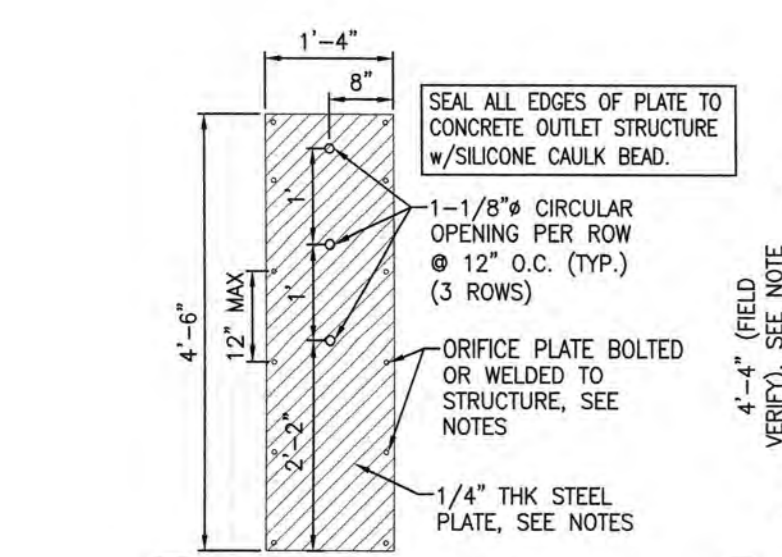
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16 SECTION B-B
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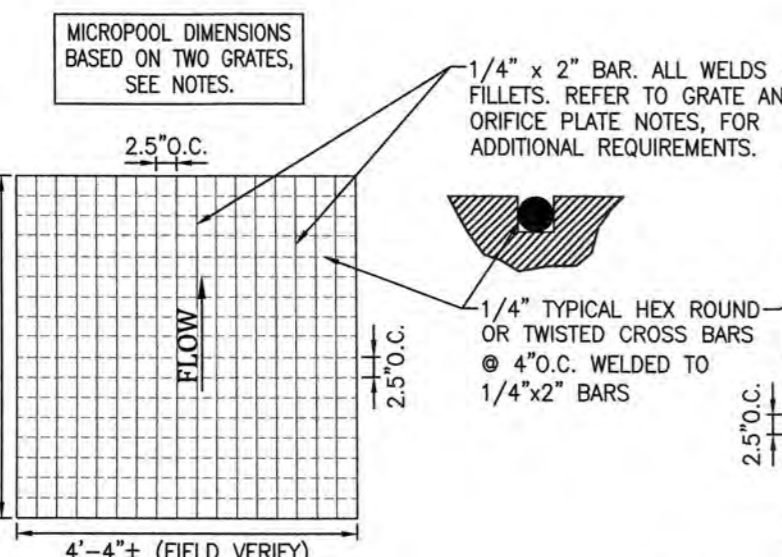
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16 SECTION C-C
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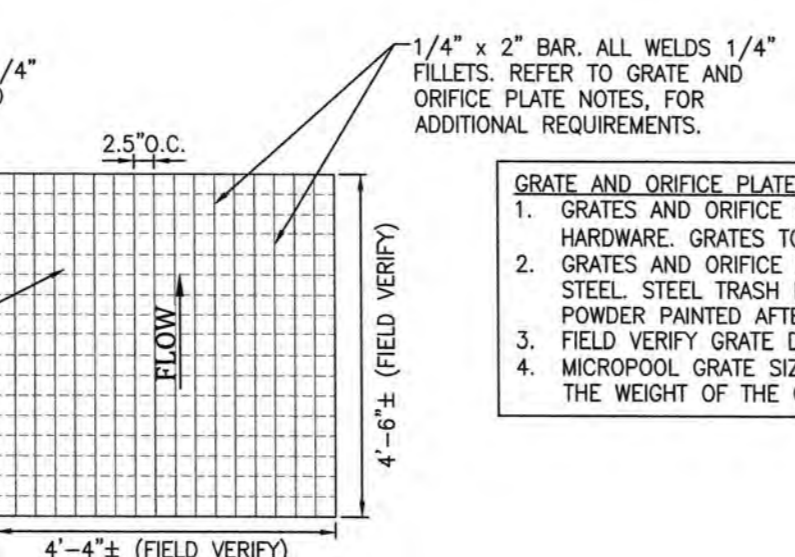
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16 SECTION D-D
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F
16 WQCV ORIFICE PLATE
SCALE: NTS



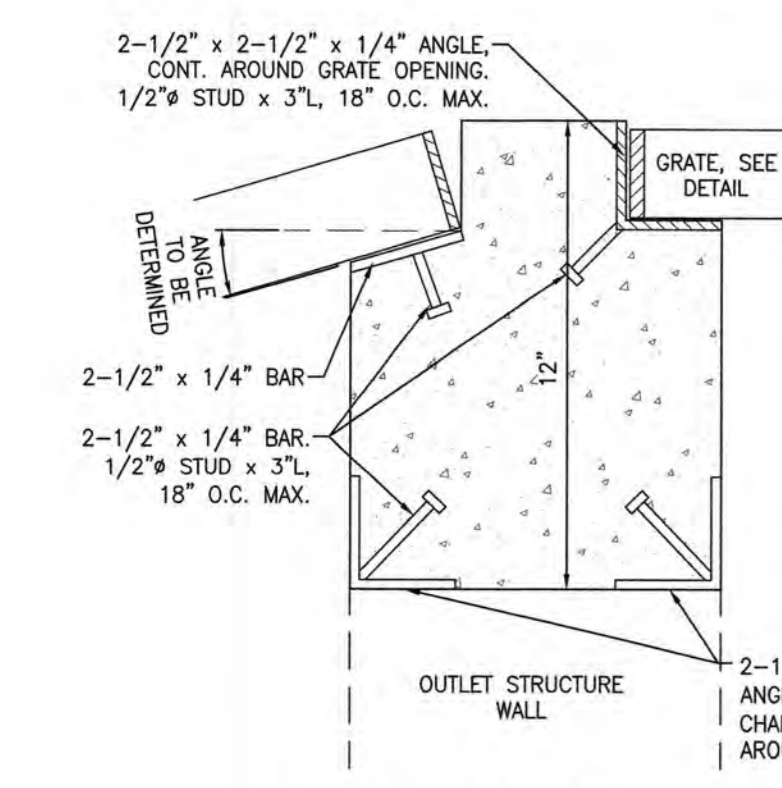
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16 MICROPOOL GRATE DETAIL
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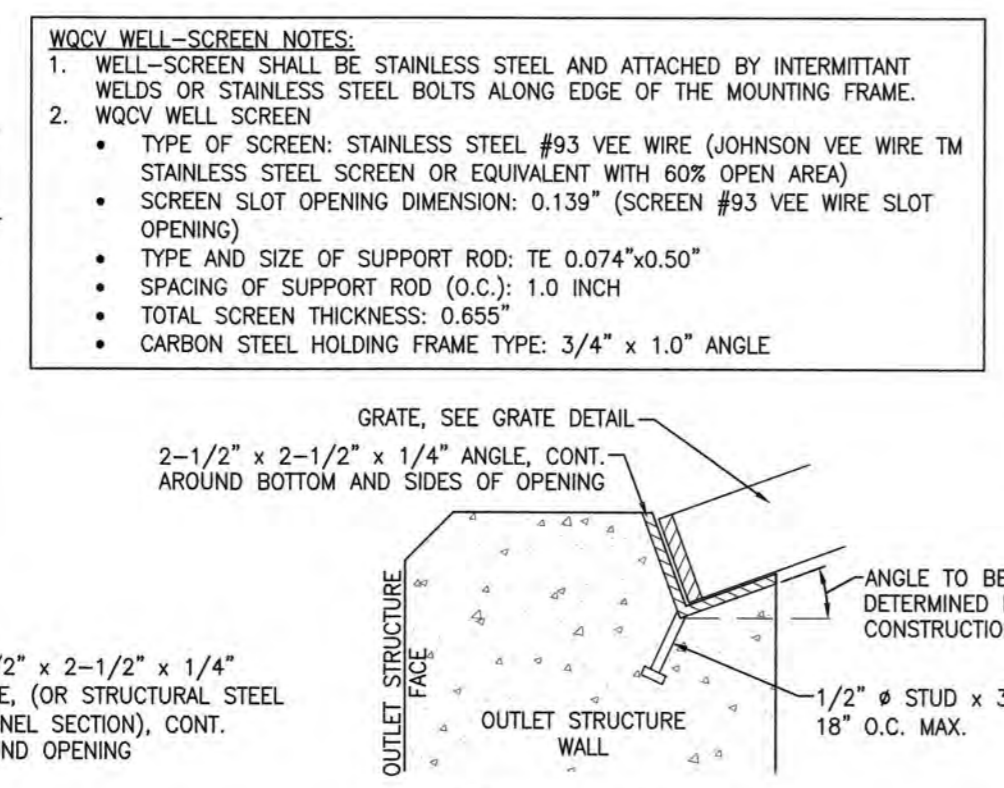
H
16 MAJOR STORM GRATE DETAIL
SCALE: NTS

GRATE AND ORIFICE PLATE NOTES:

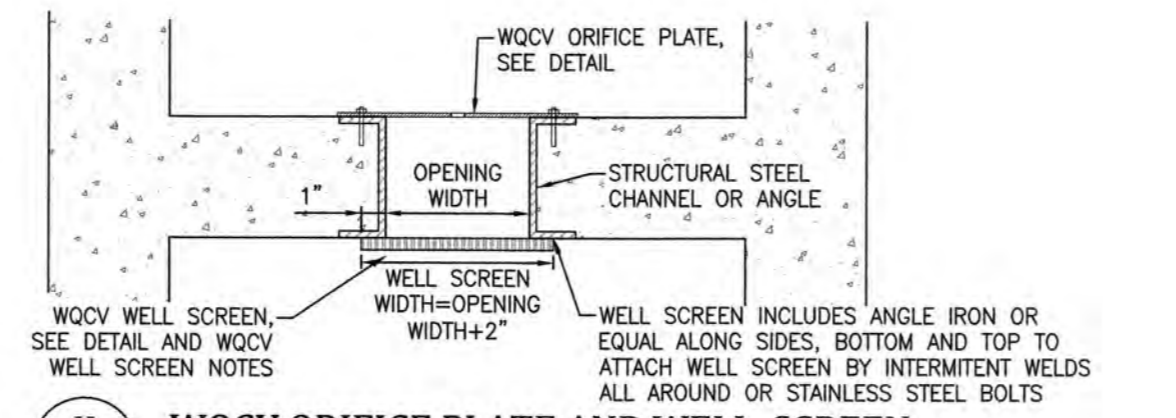
1. GRATES AND ORIFICE PLATES SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE. GRATES TO BE BOLTED DOWN TO OUTLET STRUCTURE 18" O.C.
2. GRATES AND ORIFICE PLATES SHALL BE STAINLESS STEEL, ALUMINUM OR STEEL. STEEL TRASH RACKS SHALL BE HOT DIP GALVANIZED AND HOT POWDER PAINTED AFTER GALVANIZED.
3. FIELD VERIFY GRATE DIMENSION PRIOR TO FABRICATION.
4. MICROPOOL GRATE SIZE IS SHOWN FOR MULTIPLE SECTIONS TO MINIMIZE THE WEIGHT OF THE GRATE. THE SIZE CAN VARY FROM WHAT IS SHOWN.



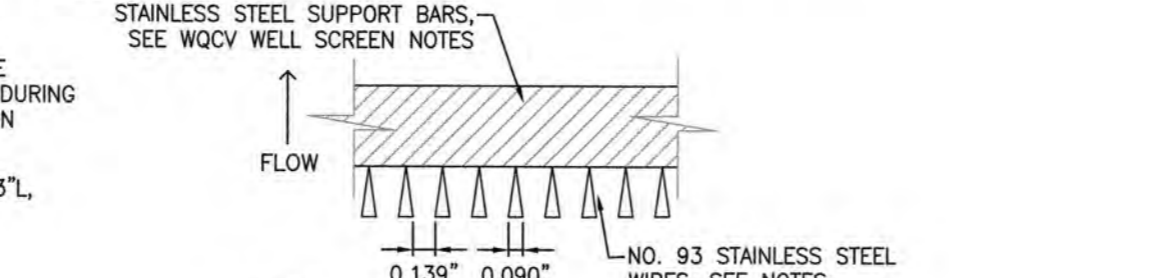
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16 DETAIL A
SCALE: NTS



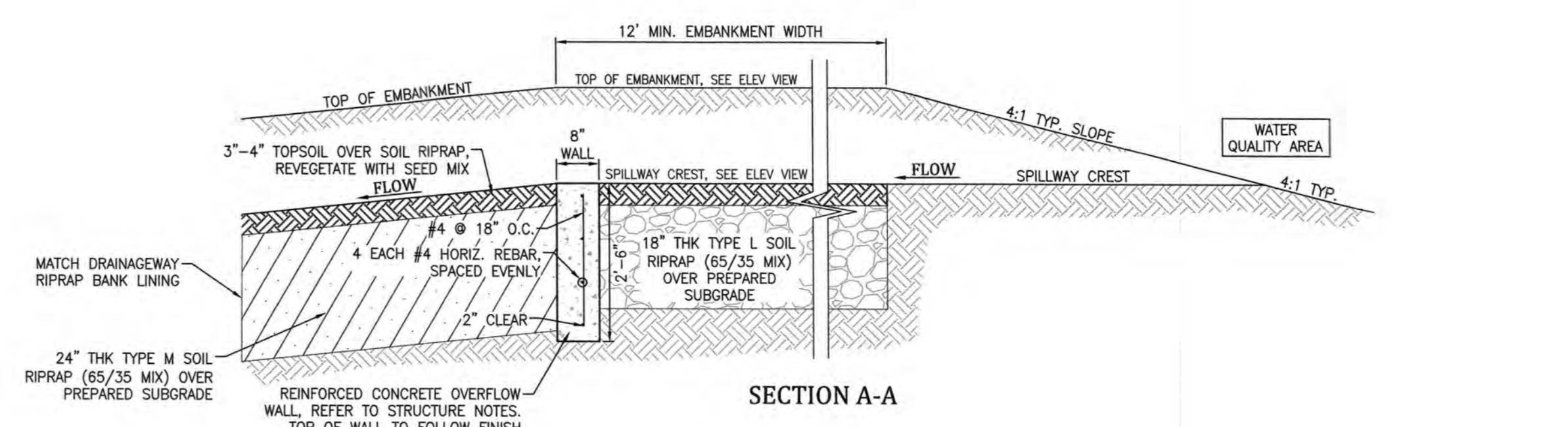
J
16 DETAIL B
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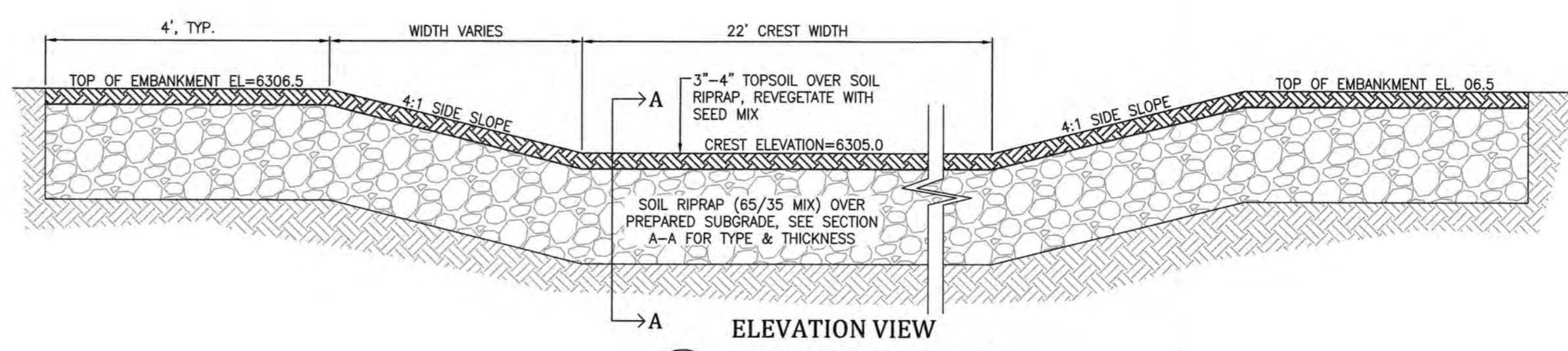
K
16 WQCV ORIFICE PLATE AND WELL SCREEN
SCALE: NTS



L
16 WQCV WELL SCREEN
SCALE: NTS



SECTION A-A



ELEVATION VIEW

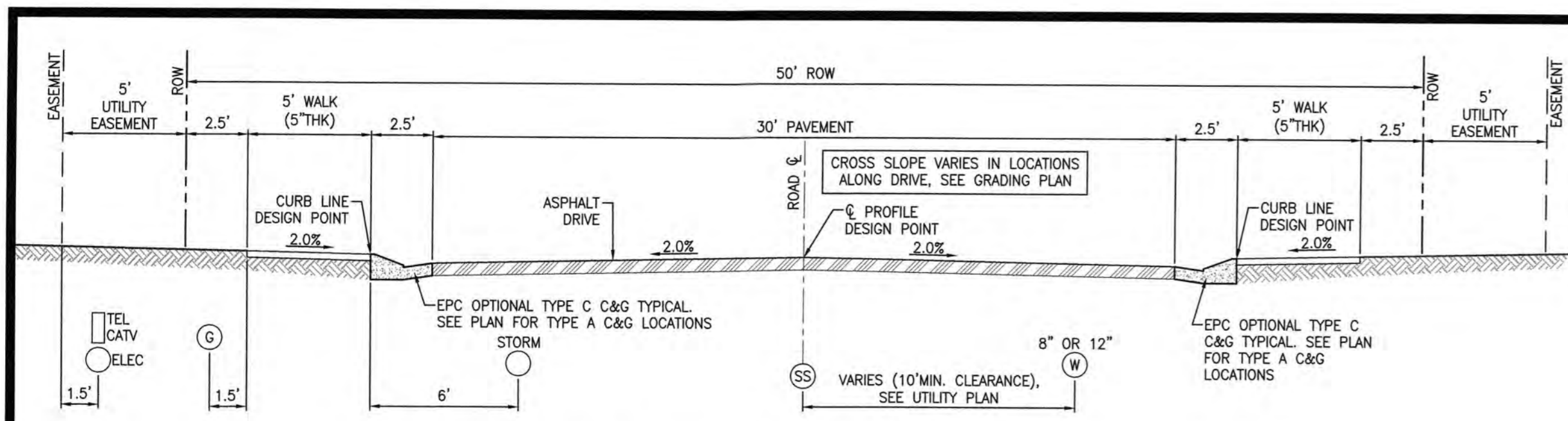
M
16 EMERGENCY SPILLWAY
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MEADOWBROOK CROSSING FILING NO. 1

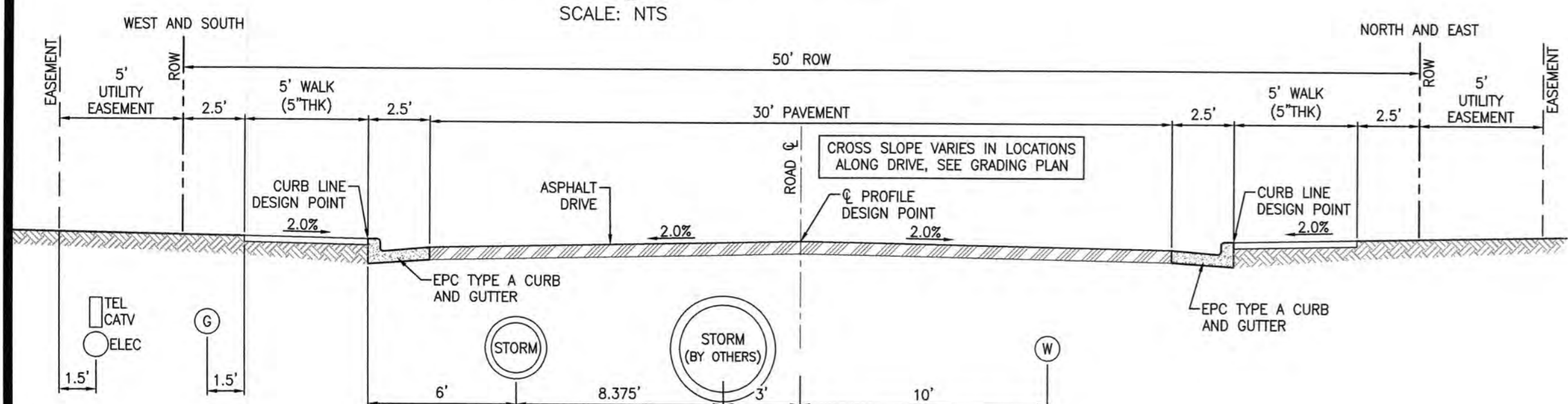
WATER QUALITY AREA DETAILS
EL PASO COUNTY, COLORADO

Kiewit
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

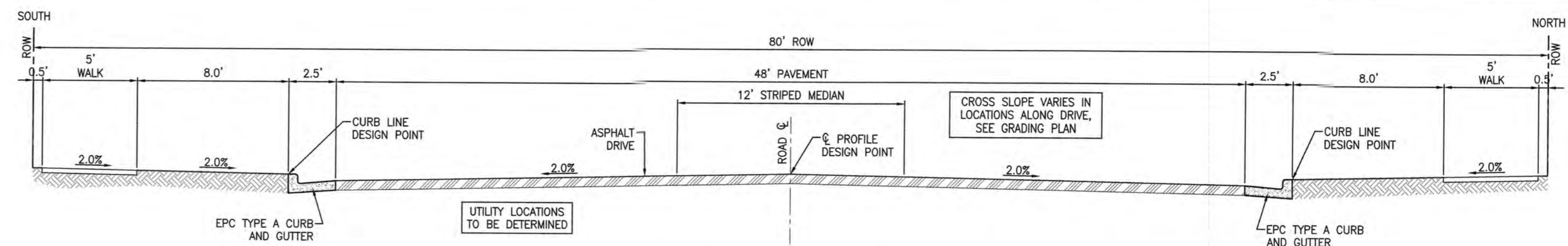
Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	



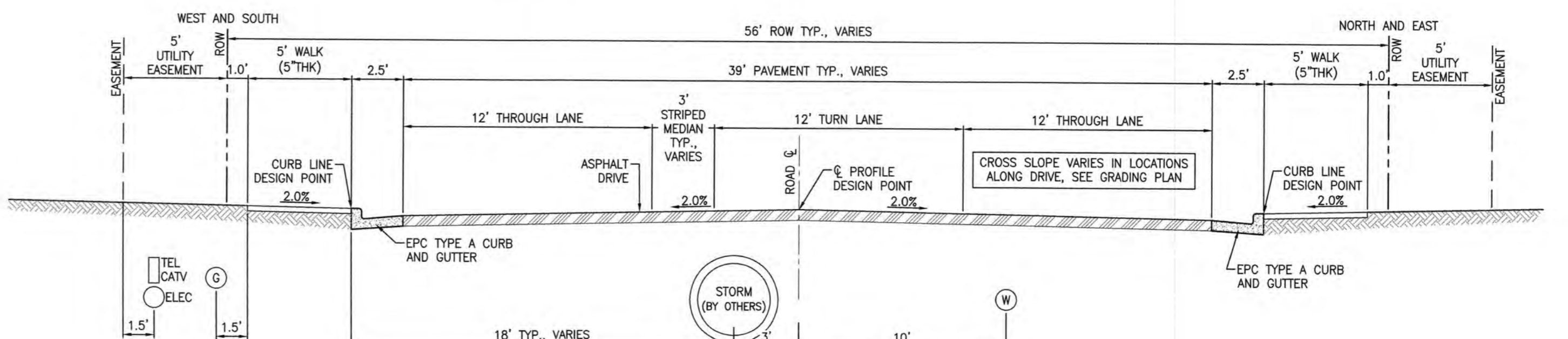
A TYPICAL PREBLE AND BOREAL DRIVE SECTIONS
 DT1 TYPICAL URBAN LOCAL ROADWAY
 EPC SD_2-2
 SCALE: NTS



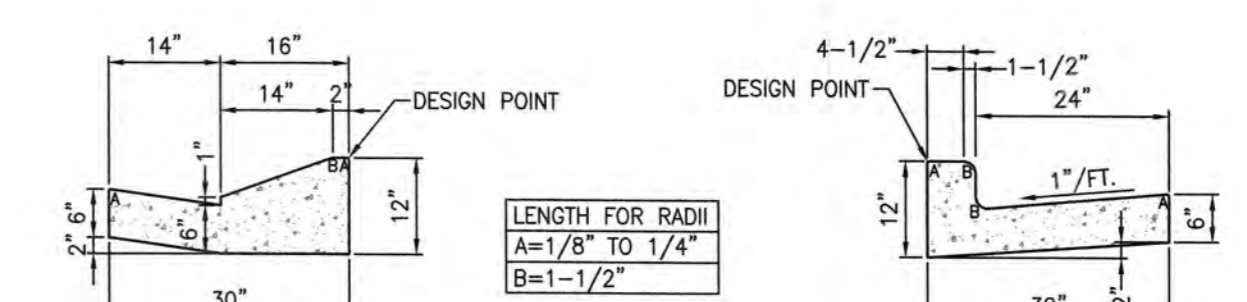
B TYPICAL NEWT DRIVE SECTION
 DT1 TYPICAL URBAN LOCAL ROADWAY
 EPC SD_2-2
 SCALE: NTS



C TYPICAL MEADOWBROOK PARKWAY SECTION (CONCEPTUAL)
 DT1 TYPICAL URBAN NON-RESIDENTIAL COLLECTOR ROADWAY
 EPC SD_2-3
 SCALE: NTS

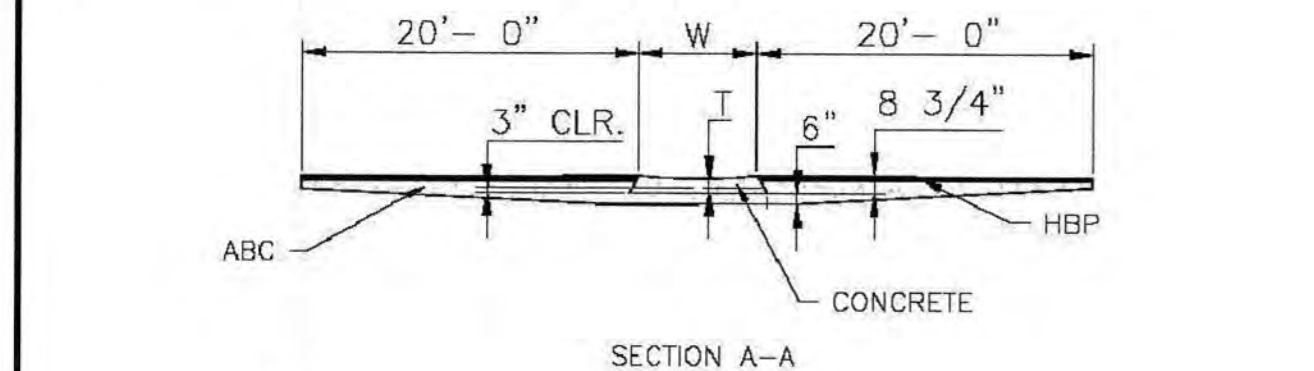
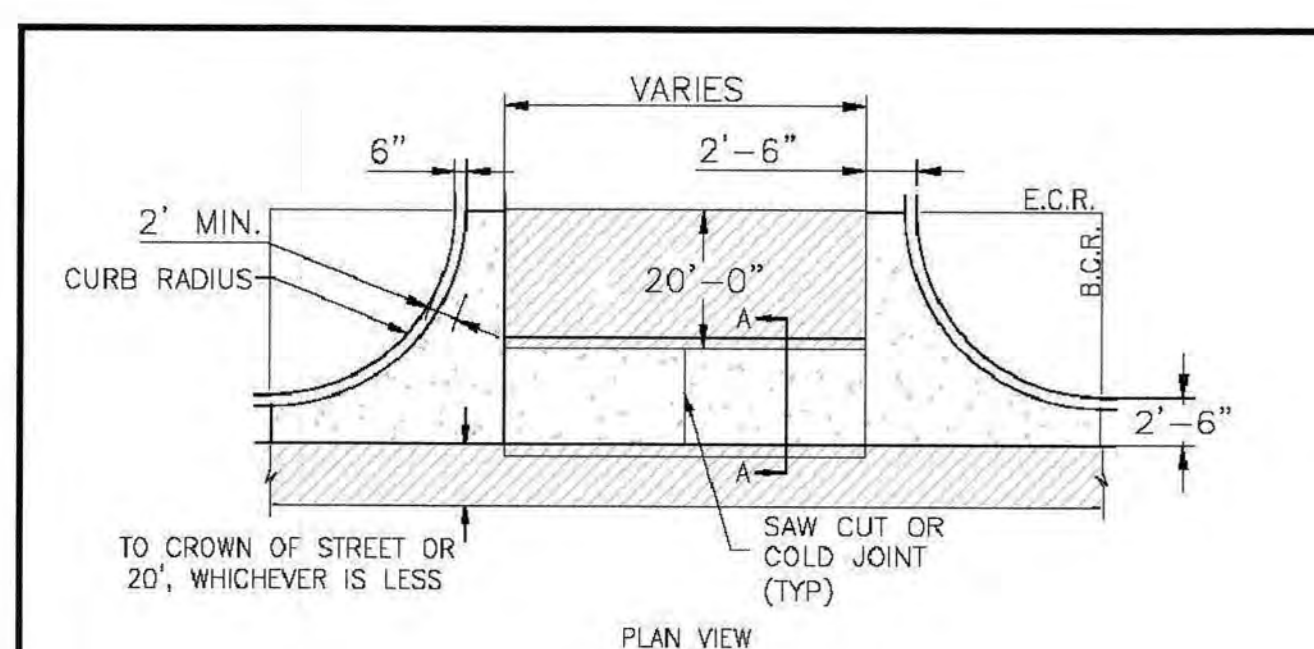


D TYPICAL WIDENED ENTRACNE NEWT DRIVE SECTION
 DT1 TYPICAL URBAN LOCAL ROADWAY
 EPC SD_2-2
 SCALE: NTS



D RAMP CURB AND GUTTER
 DT1 EPC SD_2-20, EPC OPTIONAL TYPE C
 SCALE: NTS

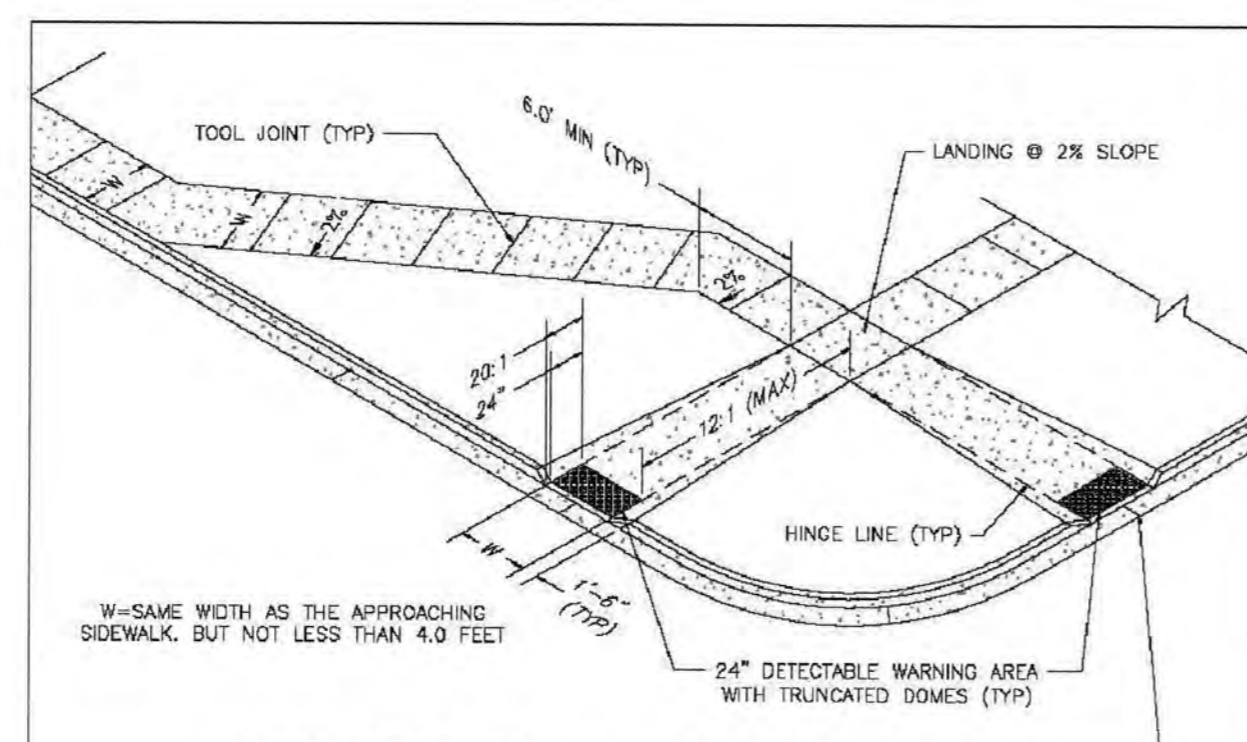
E VERTICAL CURB AND GUTTER
 DT1 EPC SD_2-20, EPC TYPE A
 SCALE: NTS



- NOTES
- W - WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL ROADS.
 - T - SQUARED-OFF RETURN TO BE POURED MONOLITHIC 8" PCC OR 9" FOR COLLECTORS MINIMUM WITH 6x6 - 4.4 W.W.F. OR #4 @ 18 E.W.
 - 3" MINIMUM ASPHALT DEPTH (2 LIFTS).
 - DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR

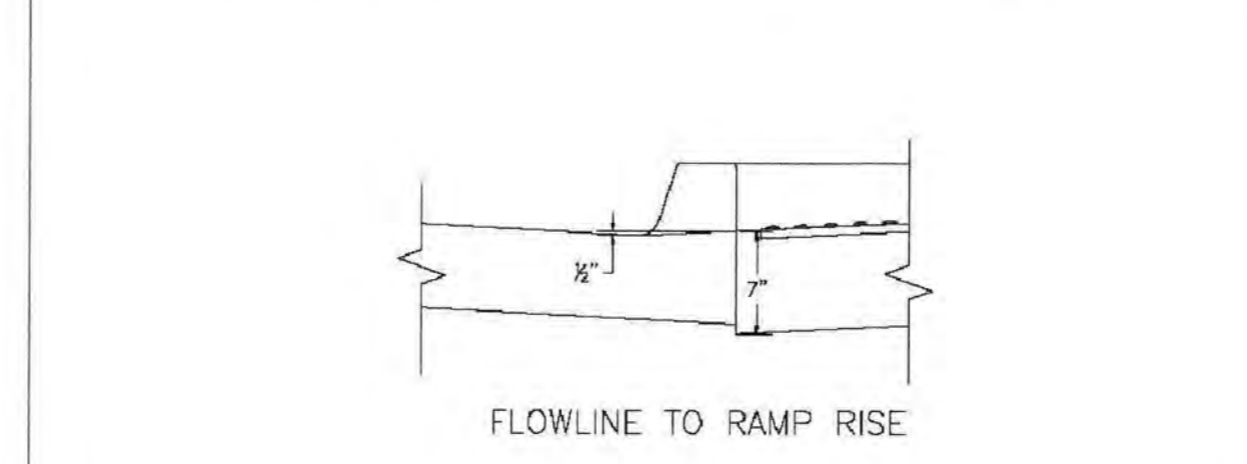
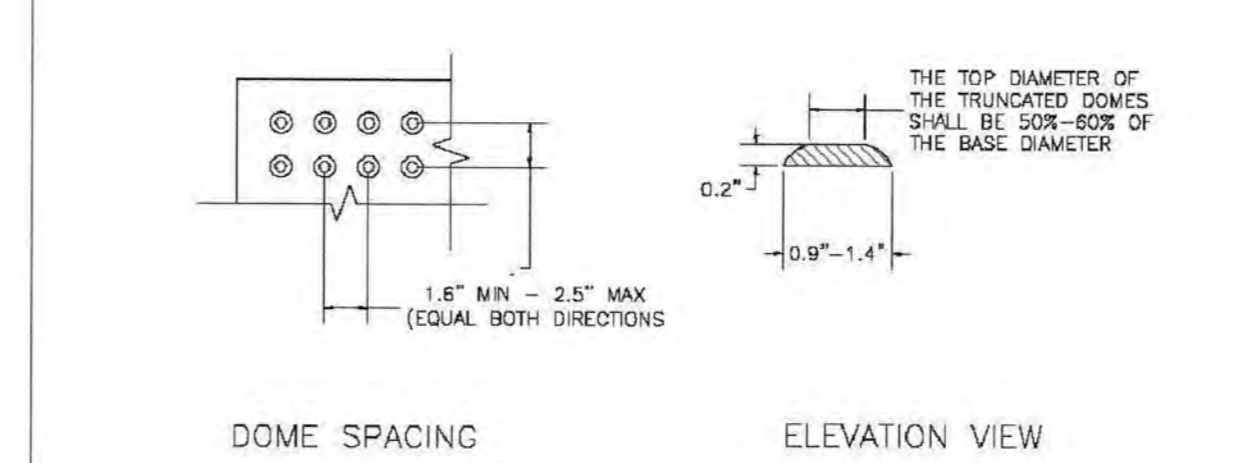
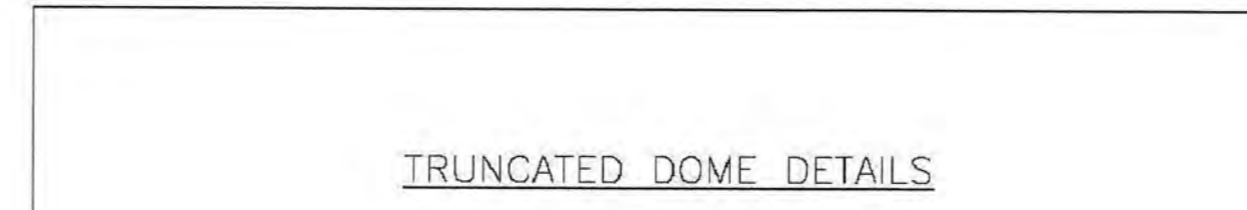
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DATE APPROVED: 8/11/11	APPROVED: André P. Brackin	DEPARTMENT OF TRANSPORTATION
FILE NAME: SD_2-26	REVISION DATE: 11/10/04	FILE NAME: SD_2-26

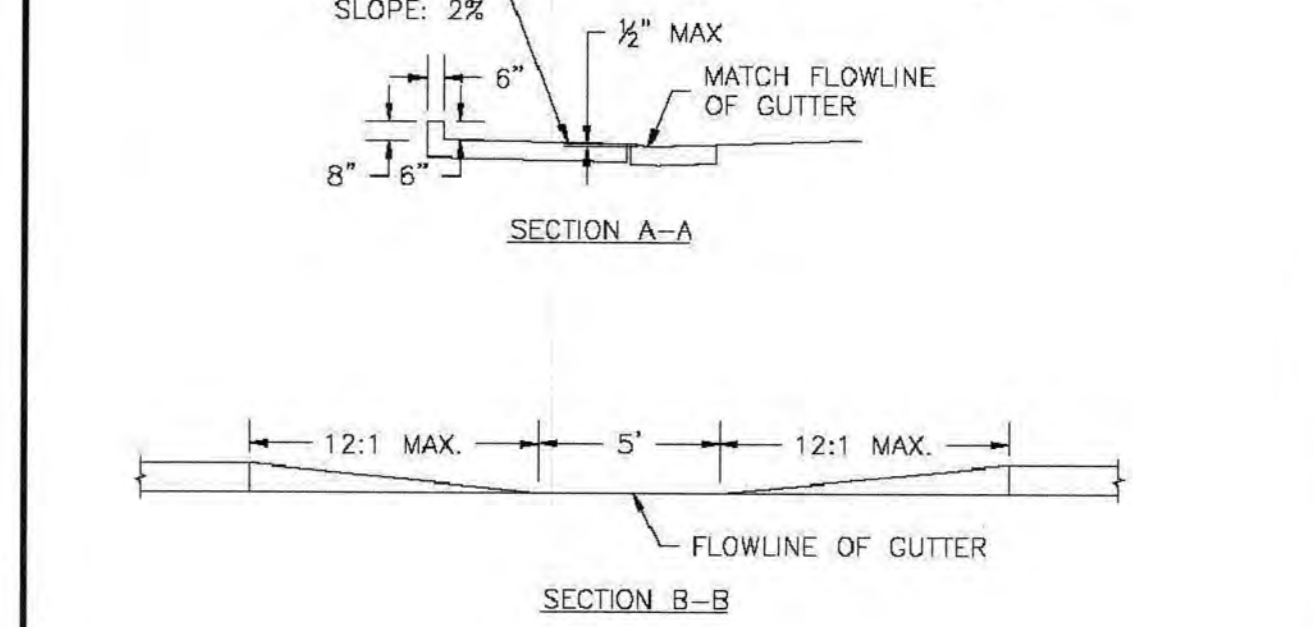
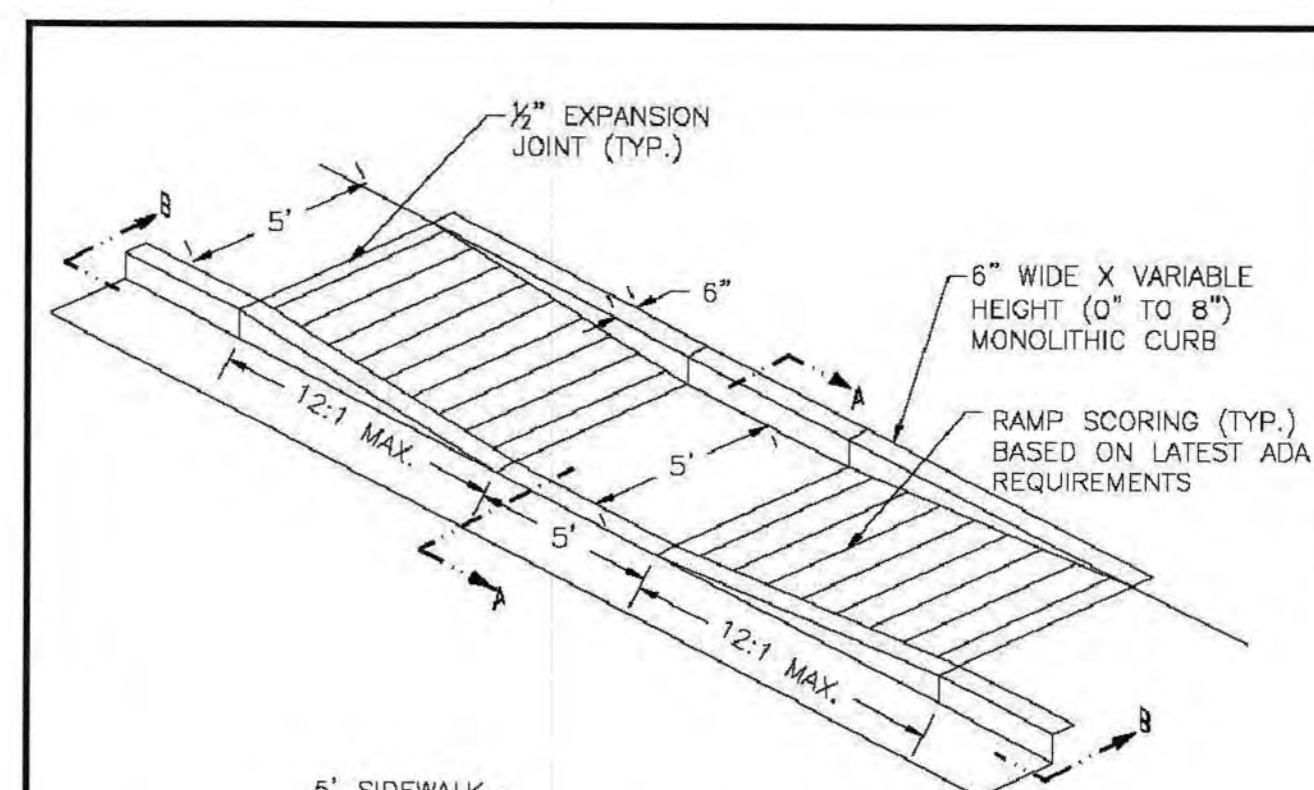


- PEDESTRIAN RAMP NOTES
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ENGINEERING CRITERIA MANUAL AND ADA REQUIREMENTS.
 - CONTRACTOR TO NOTIFY ENGINEERING DIVISION INSPECTION STAFF 48 HOURS PRIOR TO CONCRETE PLACEMENT.
 - PEDESTRIAN RAMP CONSTRUCTION SHALL BE A MINIMUM 4000 PSI CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SKIDDED, COARSE BROOM FINISH.
 - RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 12:1 MAXIMUM RAMP SLOPE AND 20:1 DETECTABLE WARNING AREA DUE TO STREET INTERSECTION SPACES AND/OR ADJUSTMENTS.
 - DETECTABLE WARNING AREA SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB AT ANY POINT.
 - THE DETECTABLE WARNING AREA SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
 - RAMP WIDTH REQUIRED IS SAME AS APPROACHING SIDEWALK, 4' MINIMUM.
 - ALL RAMP SHALL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MED-BLOCK OR TERMINAL RAMP WHICH MAY BE PARALLEL, SUBJECT TO APPROVAL.
 - AVOID PLACING DRAINAGE STRUCTURES, TRAFFIC SIGNAL/BOXES, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED RAMP AREAS.
- GENERAL NOTES
- WHERE THE 1"-8" FLARED SIDING OF A PERPENDICULAR CURB RAMP IS FOUND CONTIGUOUS WITH A PEDESTRIAN OR HAND SURFACE AREA, THE MAXIMUM FLARE SLOPE SHALL NOT EXCEED 10:1.
 - PEDESTRIAN WALKWAY AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMP OR CROSSING CORNERS SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMP.
 - AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMP'S, EXCLUSIVE OF THE FLARE SIDING, SHALL BE TOTALLY CONTAINED WITHIN THE MARKINGS.

DATE APPROVED: 7/9/09	APPROVED: André P. Brackin	DEPARTMENT OF TRANSPORTATION
FILE NAME: SD_2-41	REVISION DATE: 1/18/11	FILE NAME: SD_2-41



DATE APPROVED: 1/1/08	APPROVED: John A. McCarty	DEPARTMENT OF TRANSPORTATION
FILE NAME: SD_2-42	REVISION DATE: 7/09/07	FILE NAME: SD_2-42



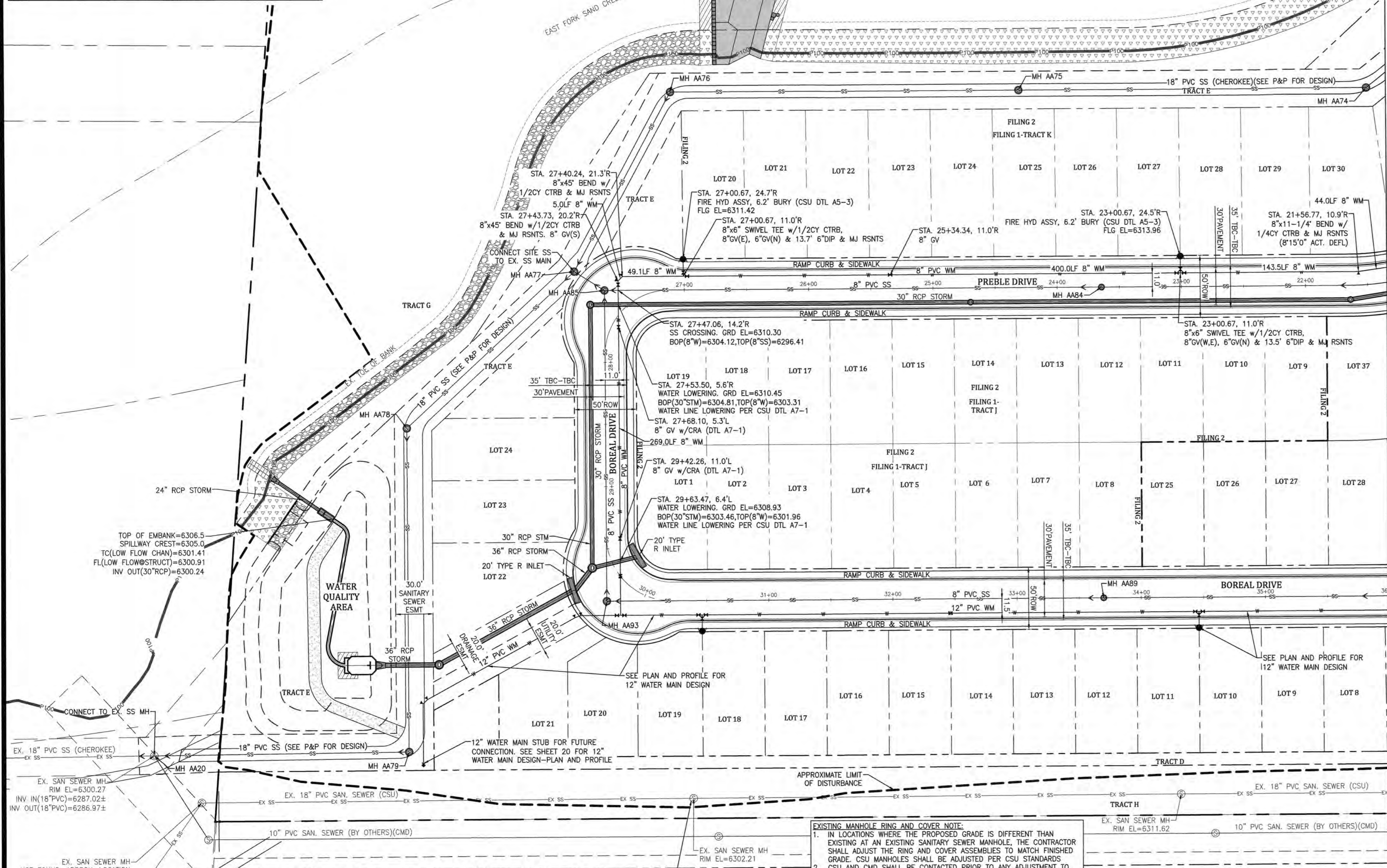
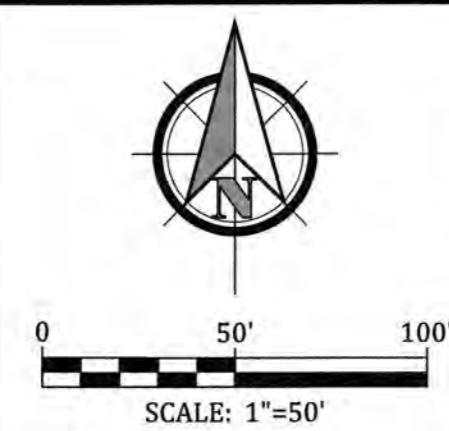
DATE APPROVED: 8/11/11	APPROVED: André P. Brackin	DEPARTMENT OF TRANSPORTATION
FILE NAME: SD_2-50	REVISION DATE: 11/10/04	FILE NAME: SD_2-50

MEADOWBROOK CROSSING FILING NO. 1

DETAIL SHEET
 EL PASO COUNTY, COLORADO

Project No.: 16039
Date: August 22, 2017
Design: ELS
Drawn: ELS
Check: MWE
Revisions:

- LEGEND**
- CURB & GUTTER (CURB SECTION AS SHOWN ON PLANS)
 - - - - - EXISTING OR PROPOSED PROPERTY LINE
 - - - - - EXISTING EASEMENT
 - PROPOSED EASEMENT
 - ⊕ EXISTING FIRE HYDRANT
 - ⊕ EXISTING WATER VALVE
 - ⊕ EXISTING SANITARY SEWER MANHOLE
 - ⊕ EXISTING STORM SEWER MANHOLE
 - ⊕ EXISTING WATER MANHOLE
 - ⊕ EXISTING UTILITY POLE
 - ⊕ EXISTING ELECTRIC BOX OR TRANSFORMER
 - PROPOSED 100 YEAR FLOODPLAIN
 - EXISTING WATER LINE
 - EXISTING SANITARY SEWER & FLOW DIRECTION
 - EXISTING UNDERGROUND ELECTRIC LINE
 - EXISTING UNDERGROUND TELEPHONE LINE
 - EXISTING GAS LINE
 - ⊕ PROPOSED FIRE HYDRANT, PER CSU STANDARDS
 - ⊕ PROPOSED WATER LINE AND VALVE
 - PROPOSED WATER LINE, THRUST BLOCK & MJ RESTRAINTS
 - ⊕ PROPOSED SANITARY SEWER AND MANHOLE
 - ⊕ PROPOSED STORM SEWER PIPE AND MANHOLE
 - ⊕ PROPOSED STORM CURB INLET



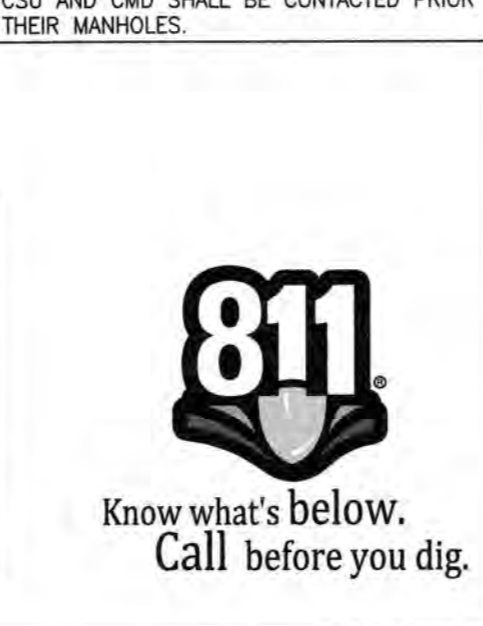
FIRE FLOW INFORMATION

IFC APPENDIX III B
 BLDG CONSTRUCTION TYPE: V-B
 NFPA FIRE SPRINKLER SYSTEM TYPE: N
 BUILDING FIRE AREA: 3,000 sq ft
 FIRE FLOW REQUIRED: 1,500 gpm

IFC APPENDIX III C
 MIN # OF HYDRANTS: 1
 AVE HYDRANT SPACING: 500 FT
 MAXIMUM HOSE LAY DISTANCE: 250 FT

NOTES:

- ALL WATER AND SANITARY SEWER WORK SHALL COMPLY WITH THE CHEROKEE METRO DISTRICT REQUIREMENTS ALONG WITH COLORADO SPRINGS UTILITIES WATER LINE EXTENSION & SERVICE STANDARDS (CURRENT EDITION) AND COLORADO SPRINGS UTILITIES WASTEWATER LINE EXTENSION & SERVICE STANDARDS (CURRENT EDITION).
- PROPOSED SITE WATER MAIN TO BE 8-INCH AWWA C900 DR-14 PVC PIPE IN ACCORDANCE WITH CHEROKEE METROPOLITAN DISTRICT STANDARDS UNLESS OTHERWISE NOTED.
- MINIMUM WATER MAIN RADIUS SHALL BE 286'-FT.
- MINIMUM COVER OVER WATER MAIN & SERVICES AND SANITARY SEWER MAIN & SERVICES IS 5.0'-FEET.
- FILING 2 HAS NOT BEEN PLATTED AT THE TIME THIS PLAN WAS PREPARED. THE FILING 2 LOT NUMBERS ARE SUBJECT TO CHANGE DEPENDING ON THE FINAL PLAT NUMBERING.



CHEROKEE METROPOLITAN DISTRICT WATER PLAN DESIGN APPROVAL

APPROVED BY: *[Signature]* DATE: 09/05/17

Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

CHEROKEE METROPOLITAN DISTRICT WASTEWATER PLAN DESIGN APPROVAL

APPROVED BY: *[Signature]* DATE: 09/05/17

Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

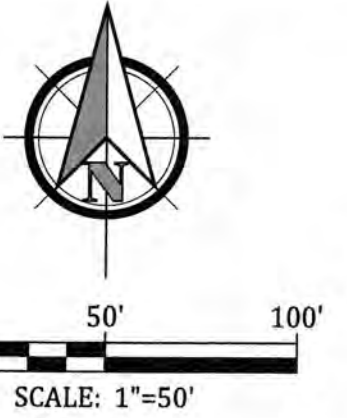
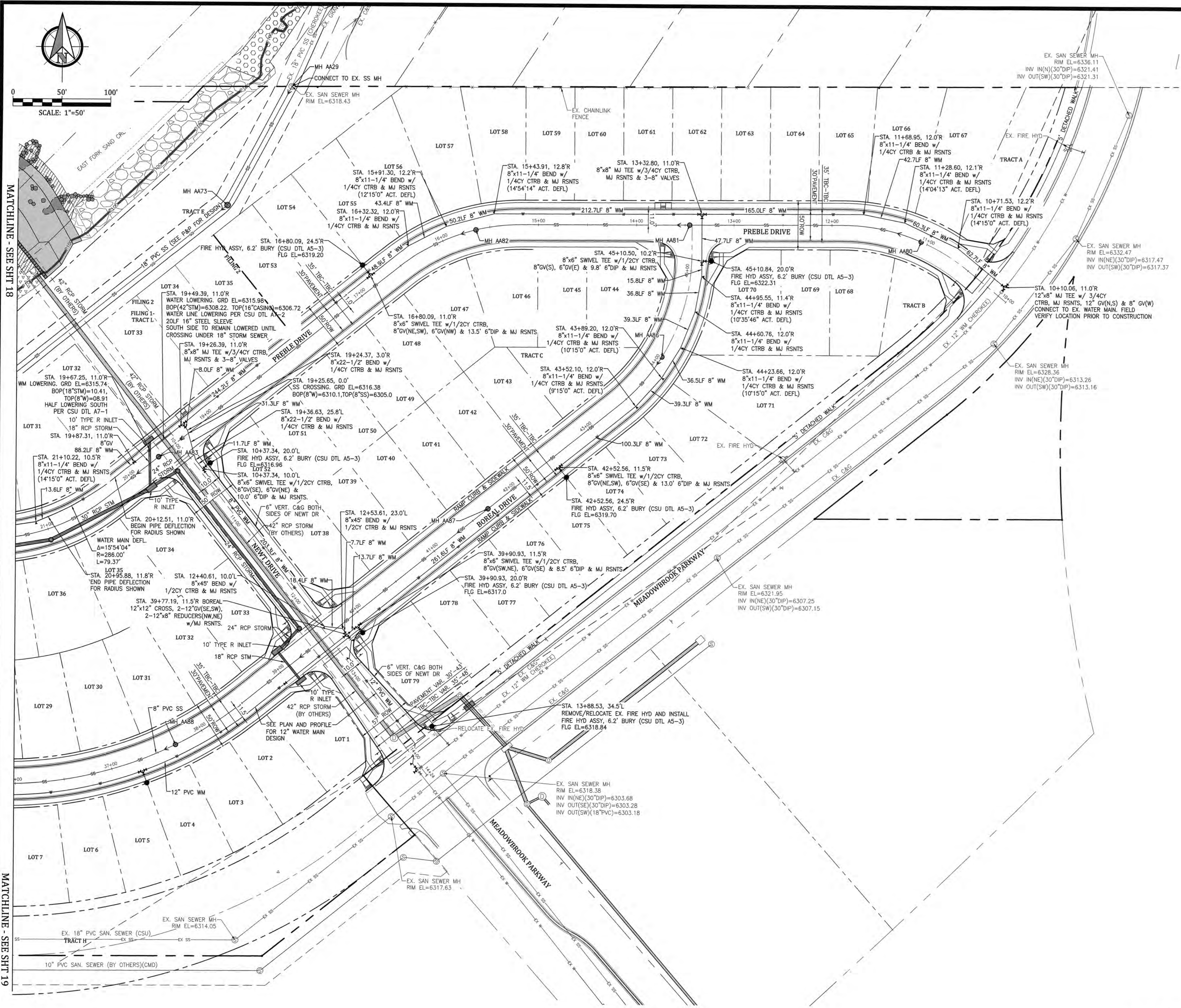
- GENERAL NOTES - CHEROKEE METROPOLITAN DISTRICT:**
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH CHEROKEE METROPOLITAN DISTRICT STANDARDS AND SPECIFICATIONS AND THE CITY OF COLORADO SPRINGS CONSTRUCTION STANDARDS UNLESS NOTED OTHERWISE. IN THE EVENT OF CONFLICTING STANDARDS CHEROKEE METROPOLITAN DISTRICT STANDARDS SHALL GOVERN.
 - THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE STANDARDS AND REGULATIONS AS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
 - THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE PROVISIONS OF THE APPLICABLE AGENCY HAVING JURISDICTION OVER THE ROADWAY WHICH MAY INCLUDE, BUT IS NOT LIMITED TO, THE EL PASO COUNTY PUBLIC SERVICES DIVISION, CITY OF COLORADO SPRINGS, AND/OR THE COLORADO DEPARTMENT OF TRANSPORTATION.
 - ALL STREET SURFACE RESTORATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE AGENCY HAVING JURISDICTION OVER THE ROADWAY.
 - SHOP DRAWING SUBMITTALS SHALL BE MADE FOR ALL MATERIALS TO BE INCORPORATED INTO THIS PROJECT.
 - THE CONTRACTOR IS TO UNDERTAKE HIS WORK IN ACCORDANCE WITH OSHA'S CONFINED SPACE ENTRY REQUIREMENTS.
 - THE SUBGRADE UNDERNEATH ALL STRUCTURES SHALL BE ADEQUATELY STABILIZED.
 - POSITIVE DRAINAGE SHALL BE PROVIDED AWAY FROM ALL STRUCTURES. FINAL GRADING IS SUBJECT TO REVIEW AND APPROVAL.
 - THE CONTRACTOR'S WARRANTY SHALL EXTEND FOR A TWO-YEAR PERIOD FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.
- WATER SYSTEM CONSTRUCTION NOTES - CHEROKEE METROPOLITAN DISTRICT:**
- ALL WATER SYSTEM MAINS PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) CLASS 305 (DR-14) PER AWWA C-900 AND ASTM D2241 SPECIFICATIONS, EXCEPT WHERE NOTED. SPECIFICALLY, SECTIONS OF WATER PIPE THAT CROSS UNDER MAJOR DRAINAGE WAYS (SAND CREEK) OR MAJOR THROUGHFARES SHALL BE DUCTILE IRON PIPE.
 - ALL FITTINGS SHALL BE CONSTRUCTED OF GRAY-IRON MATERIAL AND FURNISHED WITH MECHANICAL JOINT ENDS. ALL FITTINGS SHALL HAVE A MINIMUM PRESSURE RATING OF 250 PSI AND SHALL BE WRAPPED WITH A 8-MIL THICKNESS POLYETHYLENE MATERIAL PER AWWA STANDARD C105.
 - ALL WATER PIPES SHALL BE INSTALLED AT A MINIMUM DEPTH OF FIVE (5) FEET BELOW FINISHED GRADE.
 - ALL BENDS, TEE, FIRE HYDRANTS, BLOW-OFFS, AND PLUGS AT DEAD END MAINS SHALL BE INSTALLED WITH CONCRETE THRUST BLOCKS.
 - FIRE HYDRANT ASSEMBLIES SHALL INCLUDE ALL PIPES, FITTINGS, VALVES, APPURTENANCES, MATERIALS AND LABOR THAT ARE NECESSARY TO INSTALL A COMPLETE AND USEABLE FIRE HYDRANT. FIRE HYDRANT ASSEMBLIES TO CONFORM TO THE OPEN RIGHT CONVENTION. FIRE HYDRANT ASSEMBLIES SHALL BE ONE OF THE FOLLOWING TYPES:
 - MUELLER CENTURION, MODEL A-473
 - KENNEDY VALVE
 - AMERICAN AKK
 - OR ENGINEER/DISTRICT APPROVED EQUAL.
 - VALVE BOXES SHALL BE TYLER SLIP; TYPE "C" CAST IRON VALVE BOX ASSEMBLY SERIES 6860 WITH NO. 160 OVAL BASE OR APPROVED EQUAL.
 - CONTRACTOR SHALL PRESSURE TEST AND DISINFECT THE SYSTEM PRIOR TO CONNECTING TO EXISTING MAINS.
 - ALL WATER SYSTEM COMPONENTS SHALL BE FLUSHED AND CHLORINATED PER AWWA C-601, "DISINFECTING WATER MAINS" PRIOR TO ACCEPTANCE. THE CONTRACTOR SHALL PRODUCE A 25 MG/L SOLUTION BY ADHERING CHLORINE TABLETS TO THE PIPE SECTION WITH PERMATEX CLEAR TRV INSIDE THE SYSTEM. CHLORINATION SHALL OCCUR PRIOR TO HYDROSTATIC TESTING. THE CONTRACTOR SHALL OBTAIN A BACTERIOLOGICAL SAMPLE AFTER THE SYSTEM HAS BEEN FLUSHED. A CLEAN BACTERIOLOGICAL SAMPLE MUST BE OBTAINED PRIOR TO THE SYSTEM BEING PLACED INTO SERVICE.
 - HYDROSTATIC TESTING: ALL WATER SYSTEM MAINS SHALL BE FIELD PRESSURE TESTED TO A MINIMUM OF 150 PSI OR 1 1/2 TIMES THE STATIC OPERATING PRESSURE, WHICH EVER IS GREATER. MAXIMUM ALLOWABLE LEAKAGE FOR EACH SECTION OF PIPE BETWEEN LINE VALVES SHALL NOT EXCEED THE FOLLOWING: *10 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY.
 - ALL VALVES SHALL CONFORM TO OPEN LEFT CONVENTION PER CHEROKEE METROPOLITAN DISTRICT STANDARDS. SERVICE LINE STOP VALVES/BOXES SHALL BE LOCATED A MINIMUM OF 7 FEET BEYOND THE PROPERTY LINE OR PER THE SERVICE DETAIL ON THE UTILITY SERVICE PLAN. ALL OTHER VALVES SHALL BE LOCATED PER THESE PLANS.
 - WHEN IT IS NECESSARY TO RAISE OR LOWER WATER MAINS AT OTHER UTILITY CROSSINGS THE CONTRACTOR SHALL INSURE A MINIMUM CLEARANCE OF 18" WHERE POSSIBLE BETWEEN THE OUTSIDE DIAMETER OF PIPES.
 - WHILE CONSTRUCTING THE WATER SYSTEM THE CONTRACTOR SHALL HAVE HIS POSSESSION AT LEAST ONE "APPROVED FOR CONSTRUCTION" SET OF UPDATED PLANS AT ALL TIMES. APPROVED FIELD MODIFICATIONS TO PLAN SETS SHALL BE CLEARLY IDENTIFIED IN RED INK ON THE PLANS BY THE CONTRACTOR PER FIELD CONSTRUCTION. THESE AS-BUILT CHANGES SHALL BE DATED AND SUBMITTED TO THE ENGINEER OF RECORD. THE ENGINEER OF RECORD SHALL PREPARE A COMPLETE SET OF "AS CONSTRUCTED" DRAWINGS AND DELIVER THE SETS TO THE CHEROKEE METROPOLITAN DISTRICT PRIOR TO FINAL ACCEPTANCE OF THE WATER SYSTEM.
 - COMPACTION TESTING RESULTS OF ALL TRENCHES AND BEDDING MATERIAL SHALL BE SUBMITTED TO THE ENGINEER OF RECORD PRIOR TO ACCEPTANCE OF THE WATER SYSTEM.
 - PRIOR TO TAPPING AN EXISTING WATER MAIN THE CONTRACTOR SHALL SUBMIT AND RECEIVE APPROVAL FOR SAID TAP IN ACCORDANCE WITH THE CHEROKEE METROPOLITAN DISTRICT STANDARDS.
 - PVC PIPE MUST BE PRESSURIZED PRIOR TO TAPPING.
 - THE WATER SYSTEM CONTRACTOR SHALL INSTALL ALL IRRIGATION TAPS AND METERS PER THESE PLANS.
 - FIRE FLOW DEMAND IS 1500 GPM FOR A 3 HOUR DURATION AT A 20-PSI MINIMUM RESIDUAL MAIN LINE PRESSURE.
 - ALL NONMETALLIC PIPES SHALL HAVE A TRACER WIRE ATTACHED TO ITS TOP DURING CONSTRUCTION. THE TRACER WIRE SHALL BE #12 AWG INSULATED COPPER WIRE WITH NO. 12 TYPE COPPER CONNECTORS AND SHALL BE PERMANENTLY AFFIXED TO THE TOP OF THE PIPE USING TAPE AT 4' INTERVALS. THE TRACER WIRE SHALL ALSO BE PERMANENTLY CONNECTED TO ALL FIRE HYDRANT TEE, METALLIC PIPE BENDS, MAIN VALVE AND OTHER METALLIC FITTINGS AND APPURTENANCES. ALL POINTS OF CONNECTION SHALL BE PROTECTED FROM CORROSION BY AN EPOXY OR SILICON COATING. GROUND TRACER WIRES TO SURFACE AT ALL VALVE BOXES.
 - THE CONTRACTOR ASSUMES RESPONSIBILITY FOR THE PROTECTION OF ALL UTILITIES DURING THE WORK. PRIOR TO ANY EXCAVATION, CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT (800) 922-1987 AT LEAST TWO WORKING DAYS PRIOR TO DIGGING.
 - ALL VALVES SHALL BE INSTALLED IN ACCORDANCE WITH COLORADO SPRINGS STANDARDS EXCEPT FOR NOTE 10 ABOVE. SPACING SHALL BE EQUIDISTANT FROM TEES, ELBOWS, BENDS AND OTHER APPURTENANCES AT 3 FOOT WHERE POSSIBLE.
 - ALL REFLECTION COUPLES ARE NOT TO BE USED.
 - TAPS WILL NOT BE RELEASE UNTIL THE FOLLOWING CONDITIONS ARE MET:
 - PAINT AND SEWER LINES ARE INSTALLED AND PRESSURE TESTED TO THE DISTRICT STANDARDS. ALL 24X MARKERS ARE INTACT AND MAINTAINED FOR SERVICES.
 - AS CONSTRUCTED DRAWINGS HAVE BEEN SUBMITTED TO THE DISTRICT. DRAWINGS TO INCLUDE ANY CHANGES FROM CONSTRUCTION DRAWINGS. THE LENGTH, DEPTH, GRADE AND LOCATION OF ALL SEWER SERVICES. THE LENGTH DEPTH AND LOCATION OF WATER SERVICES.
 - ALL ELECTRIC AND GAS UTILITIES ARE INSTALLED.
 - THE FIRST LIFT OF HOT MIX ASPHALT BE INSTALLED.
 - CONTRACTOR IS TO NOTIFY CHEROKEE METROPOLITAN DISTRICTS' INSPECTOR 24 HOURS PRIOR TO ALL STORM SEWER CRITICAL CROSSING OVER WATER AND SEWER LINES, TO VERIFY CLEARANCE.
 - FIRE HYDRANTS MUST BE PAINTED, BLUE CAPS AND BONNETS; WHITE BARREL SECTIONS. COLOR CODES ARE AS FOLLOWS: CHEROKEE BLUE, PRODUCT NUMBER 58155; CHEROKEE WHITE, PRODUCT NUMBER 58154. WHITE BARREL NECESSARY-BAROX CAN BE PURCHASED AT THE PAINT SHOP 5849 PALMER PARK BLVD COLORADO SPRINGS, CO 80915, OR EQUAL BRAND.
 - CURVILINEAR PIPELINE ALIGNMENTS IN PVC MATERIAL PIPELINES REQUIRE BENDING OF THE PIPE UTILIZING NECESSARY BRACING & BACKFILLING IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. THERE SHALL BE NO DEFLECTION AT THE JOINTS OF PVC PIPELINES.
- SANITARY SEWER CONSTRUCTION NOTES - CHEROKEE METROPOLITAN DISTRICT:**
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH CHEROKEE METROPOLITAN DISTRICT STANDARD AND THE CITY OF COLORADO SPRINGS CONSTRUCTION STANDARDS UNLESS NOTED OTHERWISE. IN THE EVENT OF CONFLICTING STANDARDS CHEROKEE METROPOLITAN DISTRICT STANDARDS SHALL GOVERN.
 - SANITARY SEWER PIPE SHALL CONFORM TO ASTM D3034 SDR35 PVC.
 - CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF EXISTING INVERTS PRIOR TO INSTALLATION OF NEW SANITARY SEWER SYSTEM.
 - THE PIPELINE INSTALLATION SHALL GENERALLY BE UNDERTAKEN FROM THE DOWNHILL PORTION OF THE PROJECT PROCEEDING UPHILL.
 - THE CONTRACTOR ASSUMES RESPONSIBILITY FOR THE PROTECTION OF ALL UTILITIES DURING THE WORK. PRIOR TO ANY EXCAVATION, CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 811 OR (800) 922-1987 AT LEAST TWO WORKING DAYS PRIOR TO DIGGING.
 - EXFILTRATION AND EXFILTRATION TESTS CONDUCTED BY AND AT THE EXPENSE OF THE CONTRACTOR SHALL BE PERFORMED ON A REPRESENTATIVE PORTION OF THE PROJECT IN ACCORDANCE WITH SECTION 7.04 OF THE CITY OF COLORADO SPRINGS CONSTRUCTION STANDARDS.
 - ALL SANITARY SEWER MANHOLES, LIDS, BASES AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH (AWW) COLORADO SPRINGS DETAILS STANDARD MANHOLE DETAIL 1. EXCEPT AS NOTED-POLES WHERE REQUIRED ON THESE PLANS, WATER TIGHT MANHOLES, LIDS AND CONNECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH COLORADO SPRINGS STANDARDS.
 - THE SANITARY SEWER PIPELINE SHALL BE INSTALLED IN STRAIGHT ALIGNMENTS BETWEEN MANHOLES UNLESS OTHERWISE APPROVED BY THE CHEROKEE METROPOLITAN DISTRICT.
 - WHERE NECESSARY, THE CONTRACTOR SHALL PROVIDE 3 DEGREE BENDS ON ALL CURVILINEAR SANITARY SEWER PIPE.
 - SANITARY SEWER SERVICE LINES SHALL BE LOCATED PER THE DETAIL ON THE UTILITY SERVICE PLAN, OR AT THE DIRECTION OF THE CONSTRUCTION MANAGER.
 - OVERLOT GRADING AND STREET SUBGRADE MUST BE WITHIN ± ONE (1) FOOT PRIOR TO ANY UTILITY INSTALLATION.
 - WHILE CONSTRUCTING THE SANITARY SEWER SYSTEM THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT LEAST ONE "APPROVED FOR CONSTRUCTION" SET OF UPDATED PLANS AT ALL TIMES. APPROVED FIELD MODIFICATIONS TO PLAN SETS SHALL BE CLEARLY IDENTIFIED IN RED INK ON THE PLANS BY THE CONTRACTOR PER FIELD CONSTRUCTION. THESE AS-BUILT CHANGES SHALL BE DATED AND SUBMITTED TO THE ENGINEER OF RECORD. THE ENGINEER OF RECORD SHALL PREPARE A COMPLETE SET OF "AS CONSTRUCTED" DRAWINGS AND DELIVER THE SETS TO THE CHEROKEE METROPOLITAN DISTRICT PRIOR TO FINAL ACCEPTANCE OF THE SANITARY SEWER SYSTEM.
 - CONTRACTOR TO CONSTRUCT ALL MANHOLES AND STRUCTURES TO FINISHED GRADE.
 - FLAT TOP LIDS ON PRECAST CONCRETE MANHOLES ARE REQUIRED FOR ALL MANHOLES 5.0 FEET AND LESS IN DEPTH. ECCENTRIC CONES ARE TO BE INSTALLED ON ALL MANHOLES WITH DEPTHS GREATER THAN 5.0 FEET.
 - THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING WASTEWATER PIPELINES OR MANHOLES AS A RESULT OF THEIR CONSTRUCTION ACTIVITY.
 - ALL PIPELINES SHALL BE "AS BUILT" SURVEYED AND "AS BUILT" DRAWINGS SUBMITTED TO THE CHEROKEE METROPOLITAN DISTRICT FOR REVIEW AND ACCEPTANCE.
 - MANHOLE ENTRY PERMITS: THE CHEROKEE METROPOLITAN DISTRICT WILL AUTHORIZE THE CONTRACTOR TO ENTER DISTRICT-OWNED MANHOLES. HOWEVER, THE DISTRICT WILL NOT ISSUE AN "ENTRY PERMIT" TO THE CONTRACTOR FOR ANY CONFINED SPACE. PRIOR TO ANY ENTRY, THE CONTRACTOR SHALL PROVIDE HIS OWN PERSONNEL CAPABLE AND QUALIFIED TO ISSUE AN ENTRY PERMIT AND SHALL BE EQUIPPED FOR ENTRY INTO CONFINED SPACES. THE CHEROKEE METROPOLITAN DISTRICT WILL ASSUME NO RESPONSIBILITY FOR THE CONTRACTOR'S ENTRY INTO DISTRICT-OWNED MANHOLES.
 - UPON COMPLETION OF CONSTRUCTION AND PRIOR TO ACCEPTANCE BY THE DISTRICT, TWO (2) COPIES OF "AS-CONSTRUCTED" PLANS AND TWO (2) SETS OF ELECTRONIC DATA FILES OF THE PLANS SHALL BE SUBMITTED TO THE DISTRICT FOR RECORD.
 - THE TWO (2) COPIES SHALL BE COMPLETE WITH ALL "AS-CONSTRUCTED" INFORMATION TOGETHER WITH A CERTIFICATION BY THE PARTY RESPONSIBLE FOR CONSTRUCTION THAT ALL DATA THEREON IS ACCURATE AND REPRESENTS ACTUAL CONSTRUCTION CONDITIONS.
 - THE TWO PLAN SETS SHALL BE SUBMITTED ON SHEETS THAT ARE 24" X 36" IN SIZE.
 - THE PLAN SET SHALL BE ON A DURABLE MEDIA THAT CAN BE RUN THROUGH A PHOTOCOPIING EQUIPMENT.
 - THE TWO ELECTRONIC DATA FORMATS SHALL BE SUBMITTED. THE FIRST ELECTRONIC DATA FILE SET SHALL BE IN AUTOCAD 2006 OR NEWER FORMAT WITH NO EXTERNAL REFERENCE DRAWINGS. ALL EXTERNAL REFERENCES MUST BE BOUND INTO THE DRAWING SET. THE SECOND SET OF ELECTRONIC DATA FILES SHALL BE IN ADOBE ACROBAT .PDF FORMAT.
 - "AS-CONSTRUCTED" PLANS SHALL BE SUBMITTED WITHIN TWO WEEKS OF COMPLETION OF THE WATER AND/OR SANITARY SEWER UTILITIES.
 - AUTHORIZATION TO CONNECT TO THE SYSTEM OR DISCHARGE TO THE SYSTEM WILL BE ALLOWED UNTIL THE "AS-CONSTRUCTED" DOCUMENTS HAVE BEEN RECEIVED AND ACCEPTED BY THE DISTRICT.
 - ALL PLANS, SPECIFICATIONS AND SUPPORTING DOCUMENTS SHALL BE PREPARED BY OR UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF COLORADO. ALL PLANS AND SPECIFICATIONS SHALL BEAR THE SEAL AND SIGNATURE OF SAID LICENSED PROFESSIONAL ENGINEER.
 - TRACER WIRE IS TO BE INSTALLED WITH ALL SANITARY SEWER MAIN LINES AND SERVICES (FROM MAIN LINE TO THE BUILDING STRUCTURE). ALL NONMETALLIC PIPES SHALL HAVE A TRACER WIRE ATTACHED TO ITS TOP DURING CONSTRUCTION. THE TRACER WIRE SHALL BE #12 AWG INSULATED COPPER WIRE WITH NO. 12 TYPE COPPER CONNECTORS AND SHALL BE PERMANENTLY AFFIXED TO THE TOP OF THE PIPE USING TAPE AT 4' INTERVALS. ALL POINTS OF CONNECTION SHALL BE PROTECTED FROM CORROSION BY AN EPOXY OR SILICON COATING AND SURFACE AT ALL MANHOLES AND CLEANOUT LOCATIONS.
 - NEW SERVICE LINE TAPS ON NEW MAINS SHALL BE MADE WITH AN IN-LINE WYE FITTING INSTALLED ON THE MAIN POSITIONING THE SERVICE LINE BRANCH IN THE UPPER QUADRANT OF THE PIPE.

Calculating 30 years
Kiowa
 Engineering Corporation
 1604 South 21st Street
 Colorado Springs, Colorado 80904
 (719) 630-7342

MEADOWBROOK CROSSING FILING NO. 1
 UTILITY PLAN
 EL PASO COUNTY, COLORADO

Project No.: 16039
 Date: August 22, 2017
 Design: ELS
 Drawn: ELS
 Check: MWE
 Revisions:

SHEET 18 OF 35 SHEETS



NOTES:
 1. FILING 2 HAS NOT BEEN PLATTED AT THE TIME THIS PLAN WAS PREPARED. THE FILING 2 LOT NUMBERS ARE SUBJECT TO CHANGE DEPENDING ON THE FINAL PLAT NUMBERING.

MEADOWBROOK CROSSING FILING NO. 1

UTILITY PLAN

EL PASO COUNTY, COLORADO

Kiowa
 Celebrating 30 years
 Engineering Corporation
 1604 South 21st Street
 Colorado Springs, Colorado 80904
 (719) 630-7342



**CHEROKEE METROPOLITAN DISTRICT
 WATER PLAN DESIGN APPROVAL**

APPROVED BY: *Jonathan Smith* DATE: 09/05/17

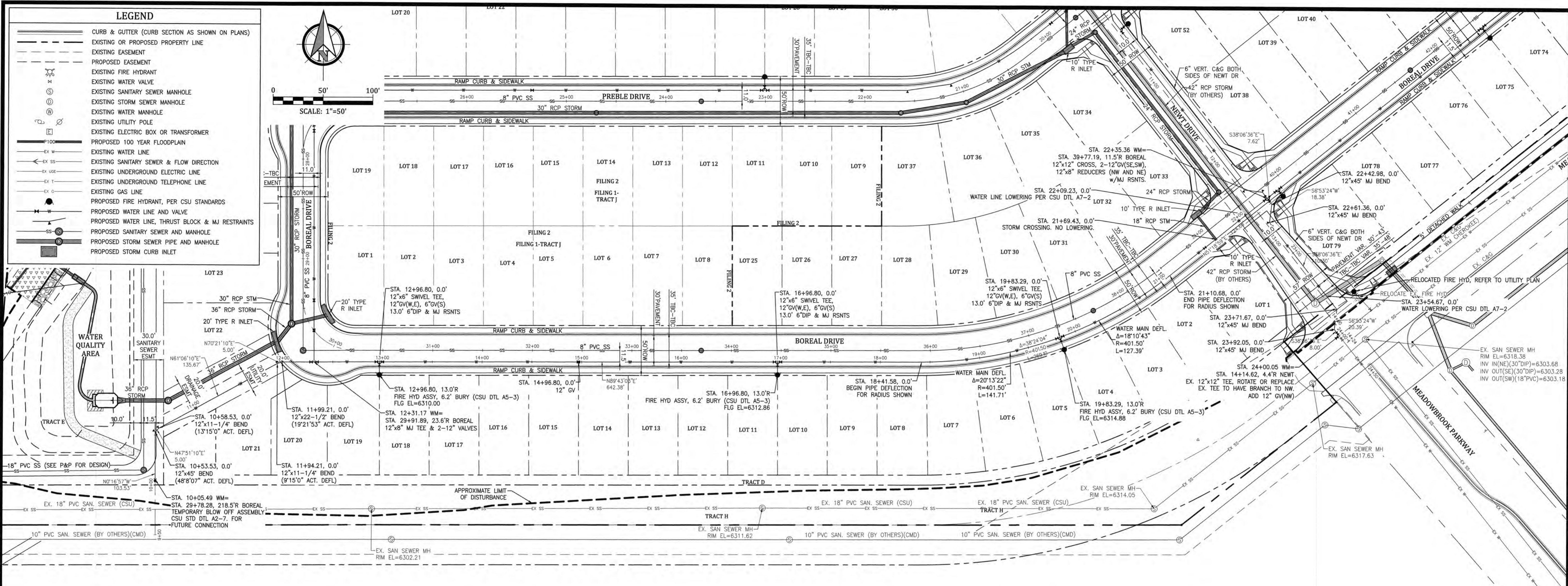
Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

**CHEROKEE METROPOLITAN DISTRICT
 WASTEWATER PLAN DESIGN APPROVAL**

APPROVED BY: *Jonathan Smith* DATE: 09/05/17

Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

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Date:	August 22, 2017
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Revisions:	
SHEET	19
	OF 35 SHEETS



CURVILINEAR WATER PIPE INSTALLATION: MECHANICAL MEANS SHOULD NOT BE EMPLOYED TO ACCOMPLISH THIS MANUALLY IN THE TRENCH. IT IS THE INTENT THAT THE WORKERS SHOULD ACCOMPLISH THIS MANUALLY IN THE TRENCH. ON 4-INCH TO 12-INCH PIPE, THE CURVE SHOULD BE ACCOMPLISHED BY BENDING THE PIPE RATHER THAN DEFLECTING THE JOINTS. THERE SHOULD BE NO DEFLECTION IN THE JOINTS UPON COMPLETION TO AVOID OVER-STRESSING THE BELL AND PREVENT POSSIBLE BREAKAGE AND/OR LEAKS. TO AVOID DEFLECTING THE JOINTS WHILE ACHIEVING CURVATURE, IT IS RECOMMENDED THAT THE JOINTS BE SUFFICIENTLY BRACED OR BACKFILLED AND COMPACTED TO KEEP THEM STATIONARY.

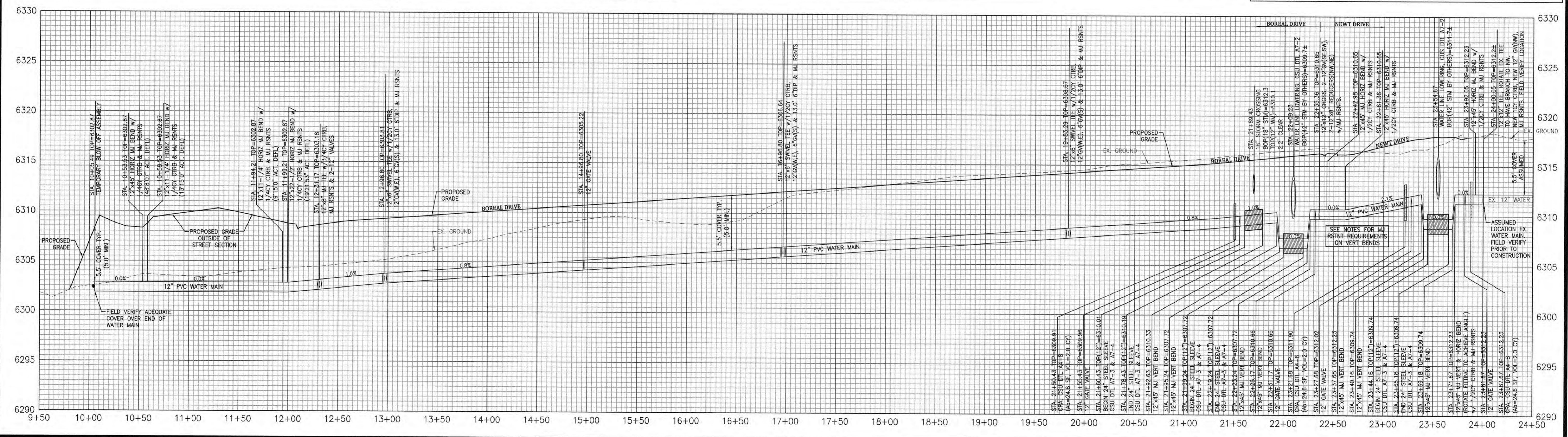
- NOTES:**
- CONTRACTOR TO FIELD VERIFY ELEVATIONS AT TIE IN LOCATIONS PRIOR TO CONSTRUCTION.
 - WATER LINE LOWERINGS TO BE PER CSU STD DTL A7-2. RESTRAINED JOINTS WITHIN LOWERING.
 - THREE (3) 12" MJ RESTRAINTS ON EACH VERTICAL BEND (CSU DTL A4-6 & A4-4). ALL ELEVATIONS ARE TO TOP OF PIPE, UNLESS OTHERWISE NOTED.
 - FILING 2 HAS NOT BEEN PLATTED AT THE TIME THIS PLAN WAS PREPARED. THE FILING 2 LOT NUMBERS ARE SUBJECT TO CHANGE DEPENDING ON THE FINAL PLAT NUMBERING.



**CHEROKEE METROPOLITAN DISTRICT
WATER PLAN DESIGN APPROVAL**

APPROVED BY: *[Signature]* DATE: 8/16/17

Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.



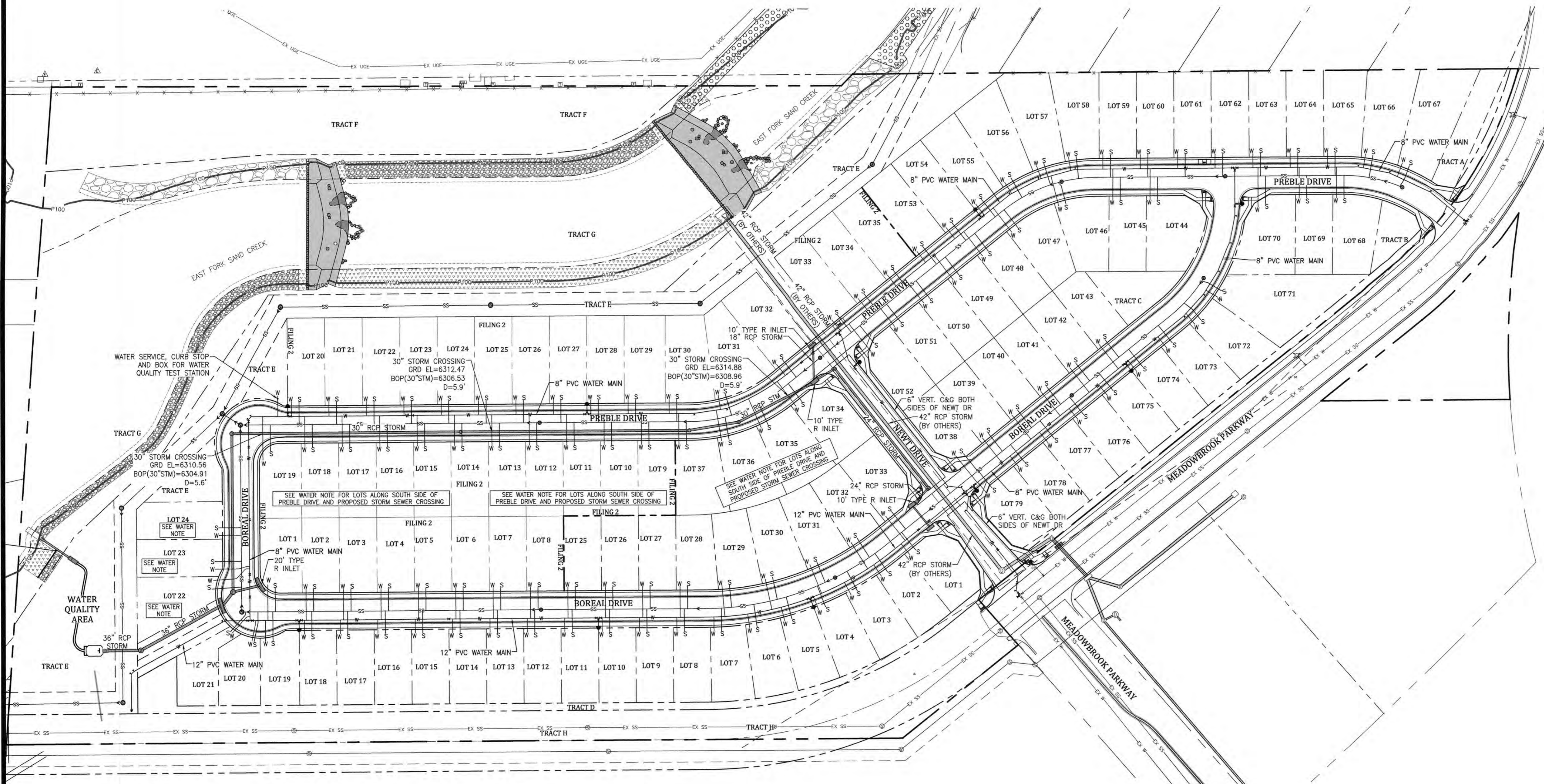
Kiewit
Engineering Corporation
1604 South 27th Street
Colorado Springs, Colorado 80904
(719) 630-7342

MEADOWBROOK CROSSING FILING NO. 1
WATER MAIN PLAN AND PROFILE
EL PASO COUNTY, COLORADO

Project No.: 16039
Date: August 22, 2017
Design: ELS
Drawn: ELS
Check: MWE
Revisions:
SHEET
20
OF 35 SHEETS



0 80' 160'
SCALE: 1"=80'



LEGEND	
	CURB & GUTTER (CURB SECTION AS SHOWN ON PLANS)
	EXISTING OR PROPOSED PROPERTY LINE
	EXISTING EASEMENT
	PROPOSED EASEMENT
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING SANITARY SEWER MANHOLE
	EXISTING STORM SEWER MANHOLE
	EXISTING WATER MANHOLE
	EXISTING UTILITY POLE
	EXISTING ELECTRIC BOX OR TRANSFORMER
	PROPOSED 100 YEAR FLOODPLAIN
	EXISTING WATER LINE
	EXISTING SANITARY SEWER & FLOW DIRECTION
	EXISTING UNDERGROUND ELECTRIC LINE
	EXISTING UNDERGROUND TELEPHONE LINE
	EXISTING GAS LINE
	PROPOSED FIRE HYDRANT, PER CSU STANDARDS
	PROPOSED WATER LINE AND VALVE
	PROPOSED WATER LINE, THRUST BLOCK & MJ RESTRAINTS
	PROPOSED SANITARY SEWER AND MANHOLE
	PROPOSED STORM SEWER PIPE AND MANHOLE
	PROPOSED STORM CURB INLET
	PROPOSED WATER AND SANITARY SERVICE

MEADOWBROOK CROSSING FILING NO. 1

UTILITY SERVICE PLAN
EL PASO COUNTY, COLORADO

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

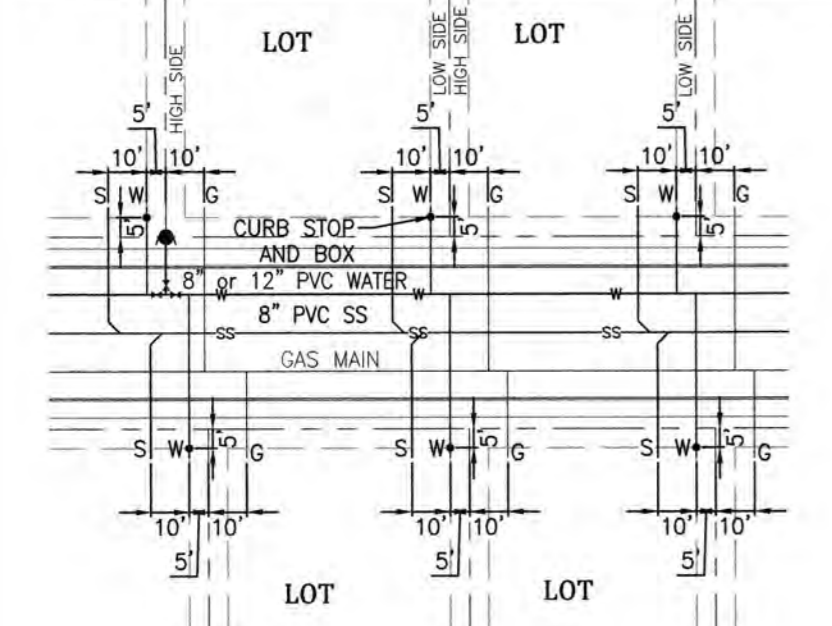
Project No.: 16039
Date: August 22, 2017
Design: ELS
Drawn: ELS
Check: MWE
Revisions:

SHEET
21
OF 35 SHEETS

NOTES:
1. WASTEWATER AND WATER SERVICE CONSTRUCTION TO BE PER CSU STDS.
2. CONTRACTOR TO USE CAUTION WHEN CROSSING OTHER UTILITIES AND MAINTAIN 18" MIN. SEPARATION TO SERVICES.
3. WASTEWATER SERVICES: 4" PVC @ 2.08% MIN. SLOPE
4. WATER SERVICES: 1" HOPE DR9 PIPE IN IRON PIPE SIZE (IPS)
5. WATER SERVICES: INSIDE WATER METER PER CSU DETAIL B1-7.
6. FRONT AND SIDE LOT EASEMENT = 5'

NOTES:
1. ALL WATER AND SANITARY SEWER WORK SHALL COMPLY WITH THE CHEROKEE METRO DISTRICT REQUIREMENTS ALONG WITH COLORADO SPRINGS UTILITIES WATER LINE EXTENSION & SERVICE STANDARDS (CURRENT EDITION) AND COLORADO SPRINGS UTILITIES WASTEWATER LINE EXTENSION & SERVICE STANDARDS (CURRENT EDITION).
2. MINIMUM COVER OVER WATER MAIN & SERVICES AND SANITARY SEWER MAIN & SERVICES IS 5.0- FEET.
3. SANITARY SERVICE CONNECTIONS TO MAIN SHALL BE 5-FT MINIMUM FROM OUTSIDE EDGE OF MANHOLE AND 2-FT MINIMUM BETWEEN CONNECTIONS.
4. WATER SERVICE TAPS SHALL BE 36-INCHES FROM ANOTHER WATER TAP ON THE SAME SIDE OF THE PIPE OR 18 INCHES ON OPPOSITE SIDES OF THE PIPE.
5. FILING 2 HAS NOT BEEN PLATTED AT THE TIME THIS PLAN WAS PREPARED. THE FILING 2 LOT NUMBERS ARE SUBJECT TO CHANGE DEPENDING ON THE FINAL PLAT NUMBERING.

WATER NOTE - WATER SERVICE CROSSING STORM SEWER NOTE:
1. WATER SERVICES FOR FILING 1-LOTS 34-37 AND 22-24; AND FILING 2-LOTS 9-19 CROSS THE PROPOSED STORM SEWER. THE WATER SERVICES SHALL BE INSTALLED UNDER THE STORM DRAIN PIPE. IN THESE CASES, A 4" STEEL OR DUCTILE IRON SLEEVE SHALL BE INSTALLED TO ACCOMMODATE THE WATER SERVICE. THE SLEEVE SHALL BE INSTALLED WITH A MINIMUM CLEAR SEPARATION OF 18" BETWEEN THE SLEEVE AND THE STORM SEWER PIPE, EXTENDED A MINIMUM OF 9' TO EACH SIDE OF THE STORM SEWER PIPE AND INCLUDE END SEALS IN ACCORDANCE WITH CDPHE REQUIREMENTS.



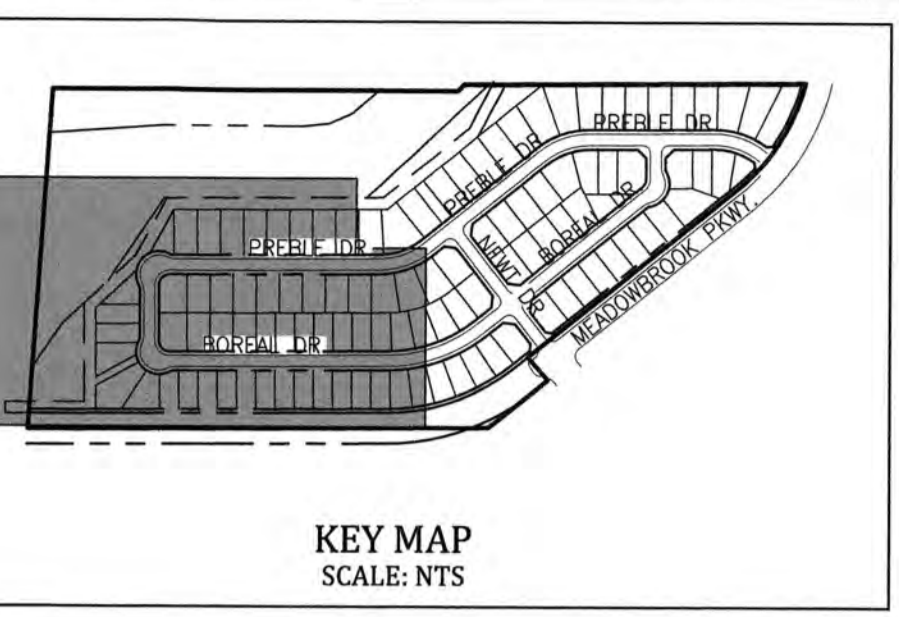
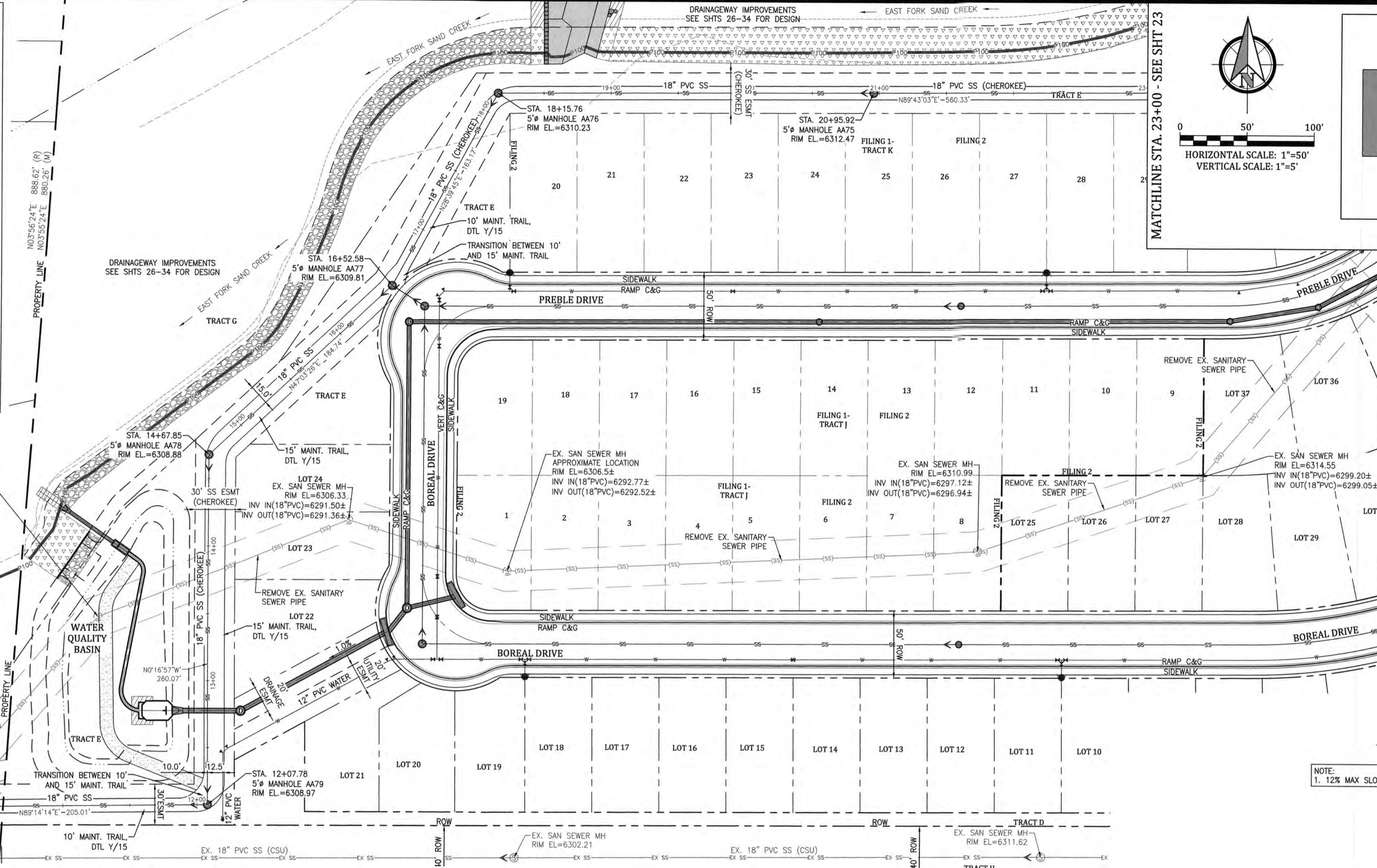
A UTILITY SERVICE TYPICAL DETAIL
SCALE: NTS



**CHEROKEE METROPOLITAN DISTRICT
WATER PLAN DESIGN APPROVAL**
APPROVED BY: *[Signature]* DATE: 08/05/17
Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

**CHEROKEE METROPOLITAN DISTRICT
WASTEWATER PLAN DESIGN APPROVAL**
APPROVED BY: *[Signature]* DATE: 08/05/17
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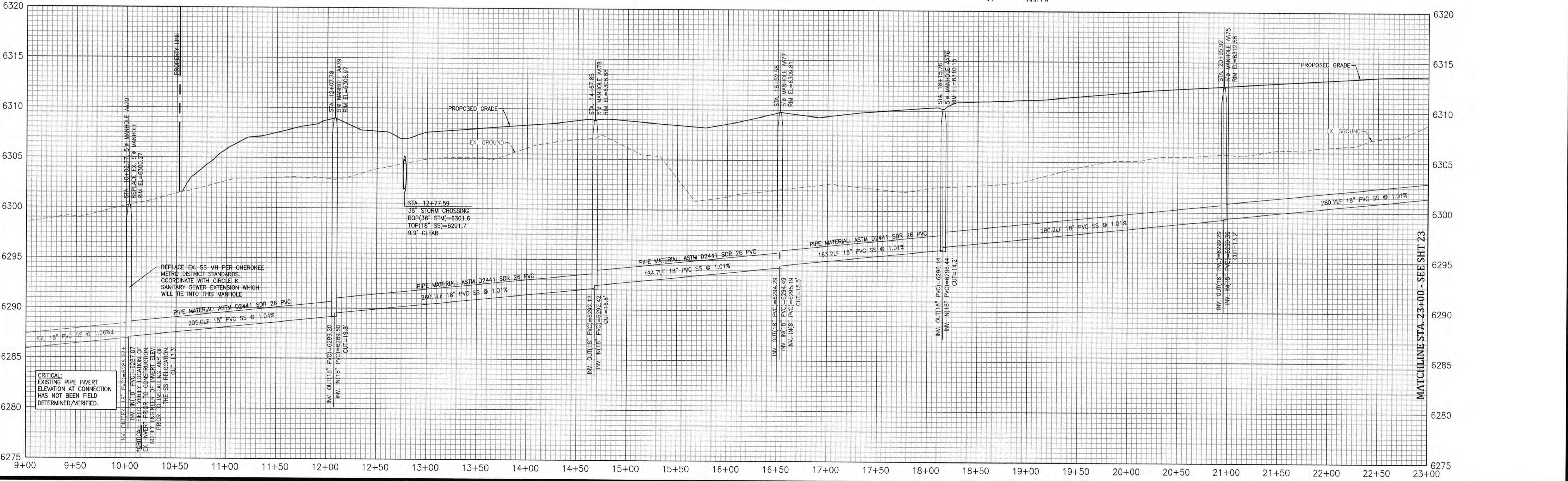
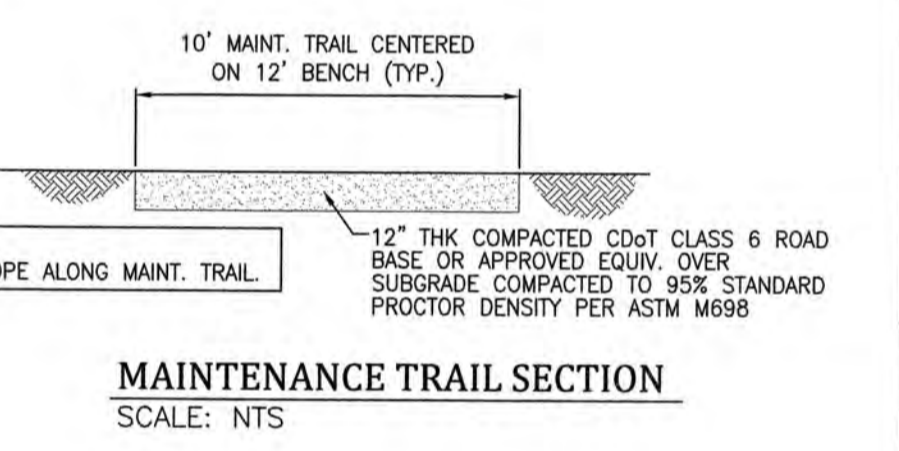
- NOTES:**
- AS PART OF THE SANITARY SEWER INTERCEPTOR RELOCATION, THE EXISTING SANITARY SEWER INTERCEPTOR PIPE AND MANHOLES SHALL BE REMOVED BETWEEN STATION 10+00 AND 28+07.04.
 - ALL EXISTING SANITARY SEWER SYSTEM COMPONENTS BEING REPLACED/RELOCATED SHALL BECOME THE PROPERTY OF THE OWNER AND/OR DEVELOPER. THE OWNER AND/OR DEVELOPER SHALL ASSUME FULL OWNERSHIP AND RESPONSIBILITY OF THOSE SANITARY SEWER SYSTEM COMPONENTS UPON THEIR REMOVAL FROM SERVICE.
 - THE FOLLOWING MINIMUM WORK REQUIREMENTS SHALL APPLY TO THE MANHOLES OF THE EXISTING SANITARY SEWER SYSTEM COMPONENTS BEING REPLACED/RELOCATED. COMPLETELY REMOVE THE MANHOLE IF IT IS EXPOSED DURING THE CONSTRUCTION PROCESS OR IF THE MANHOLE IS LOCATED WITHIN A PROPOSED RIGHT OF WAY. IF A MANHOLE IS NOT COMPLETELY REMOVED BY THE REQUIREMENTS GIVEN ABOVE, THE RING AND COVER, CONE SECTION AND ALL BARREL SECTIONS DOWN TO THE BASE SECTION OF THE MANHOLE SHALL BE REMOVED. THE BASE SECTION SHALL REMAIN IN PLACE AND BE FILLED WITH CONCRETE, ENSURING A MINIMUM 2" THICK CONCRETE PLUG IS PLACED INSIDE EACH PIPE PENETRATION OF THE MANHOLE BASE.
 - THE FOLLOWING MINIMUM WORK REQUIREMENTS SHALL APPLY TO THE PIPELINE SEGMENTS OF THE EXISTING SANITARY SEWER SYSTEM BEING REPLACED/RELOCATED. COMPLETELY REMOVE ALL PIPELINE MATERIALS IF EXPOSED OR DISTURBED DURING CONSTRUCTION OR IF THE PIPELINE MATERIAL IS LOCATED WITHIN A PROPOSED RIGHT OF WAY. THE ENDS OF PIPE MATERIAL TO BE ABANDONED IN PLACE SHALL BE NEATLY CUT BACK TO UNDMAGED AND SOUND MATERIAL AND FILLED WITH A MINIMUM 2" THICK CONCRETE PLUG.
 - IN THE EVENT ANY EXISTING SANITARY SEWER SYSTEM COMPONENTS BEING REPLACED/RELOCATED ARE DISTURBED DURING THE EXCAVATION OR CONSTRUCTION OF BASEMENTS, STRUCTURES, UTILITIES OR OTHER APPURTENANCES WITHIN INDIVIDUAL LOTS, THE DISTURBED MATERIAL SHALL BE COMPLETELY REMOVED IN ACCORDANCE WITH THE REQUIREMENTS STATED ABOVE. ALL PIPES ABANDONED IN PLACE SHALL BE NEATLY CUT BACK TO UNDMAGED AND SOUND MATERIAL AND FILLED WITH A MINIMUM 2" THICK CONCRETE PLUG.
 - FINAL TREATMENT OF ALL EXISTING SANITARY SEWER SYSTEM COMPONENTS BEING REPLACED/RELOCATED SHALL BE THE RESPONSIBILITY OF THE OWNER AND/OR DEVELOPER AS THE OWNER OF THOSE SYSTEM COMPONENTS.
- NOTES:**
- ALL SANITARY SEWER PIPE BEDDING TO BE CLASS B BEDDING, UNLESS OTHERWISE NOTED. REFER TO CHEROKEE METROPOLITAN DISTRICT STANDARDS FOR BEDDING MATERIAL REQUIREMENTS.



CHEROKEE METROPOLITAN DISTRICT
WASTEWATER RAW DESIGN APPROVAL

APPROVED BY: *[Signature]* DATE: *[Date]*

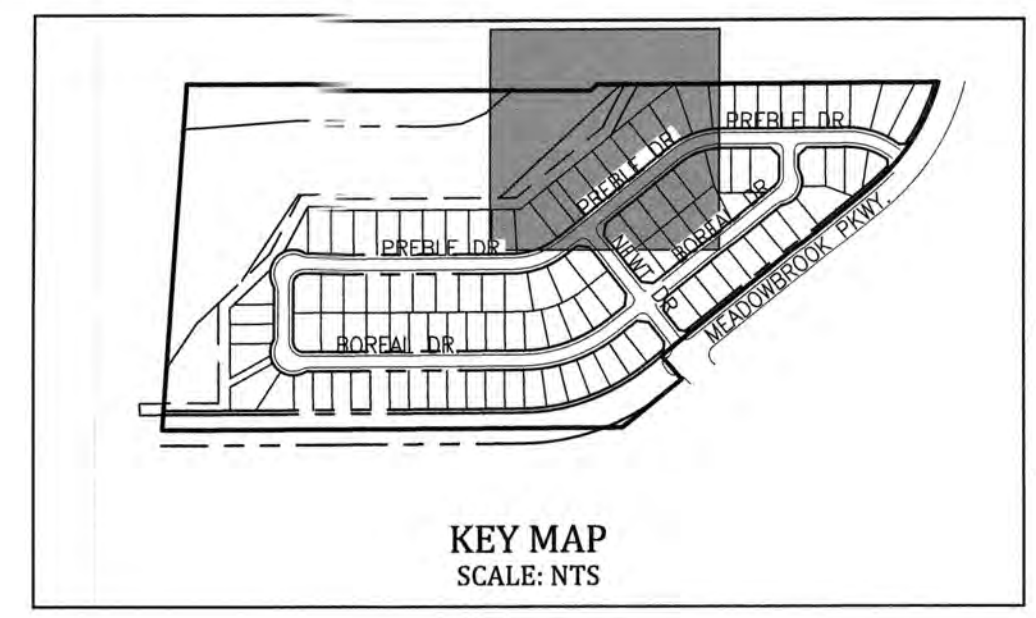
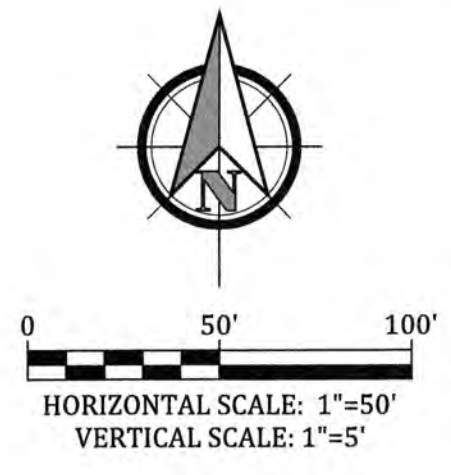
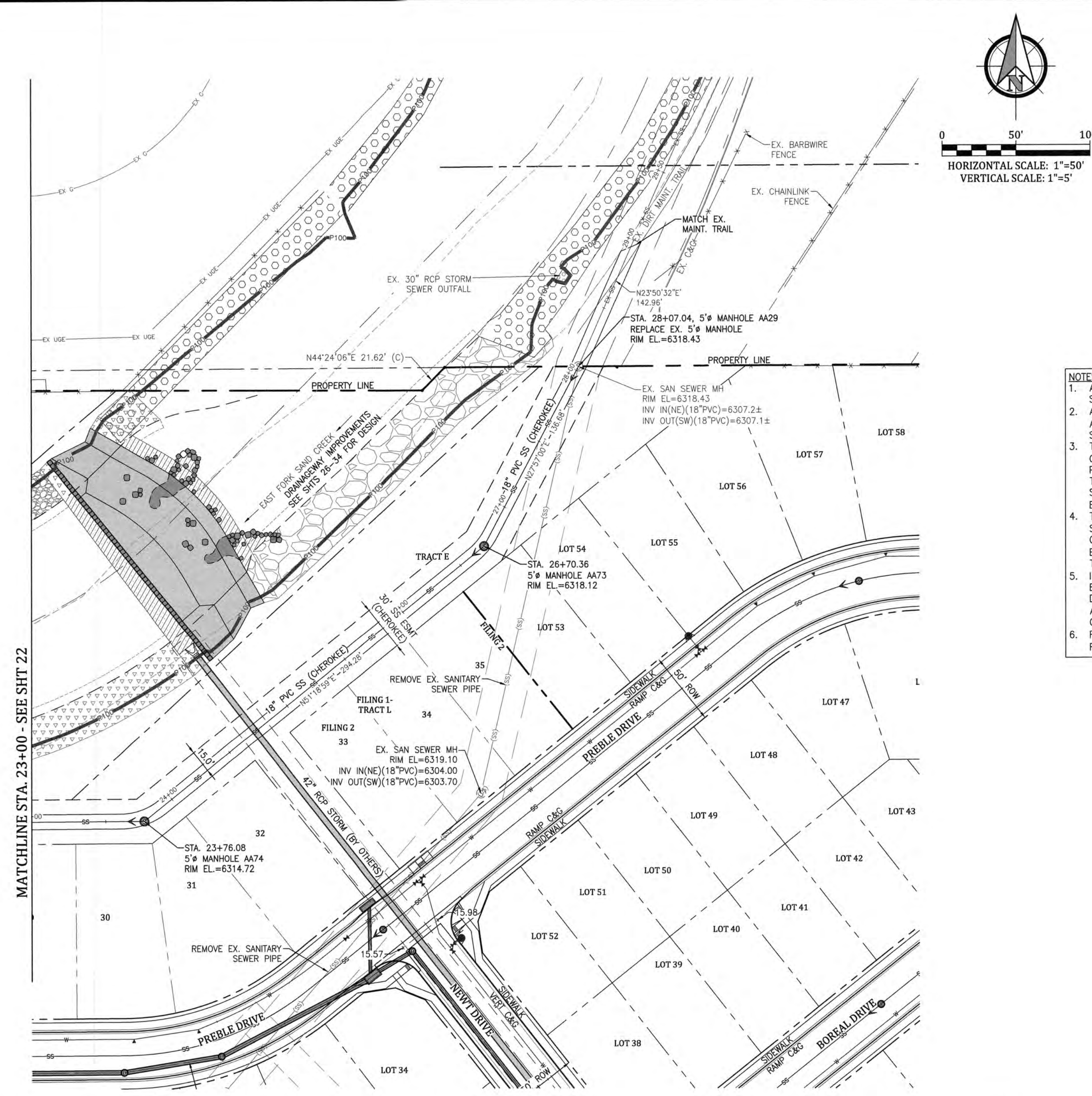
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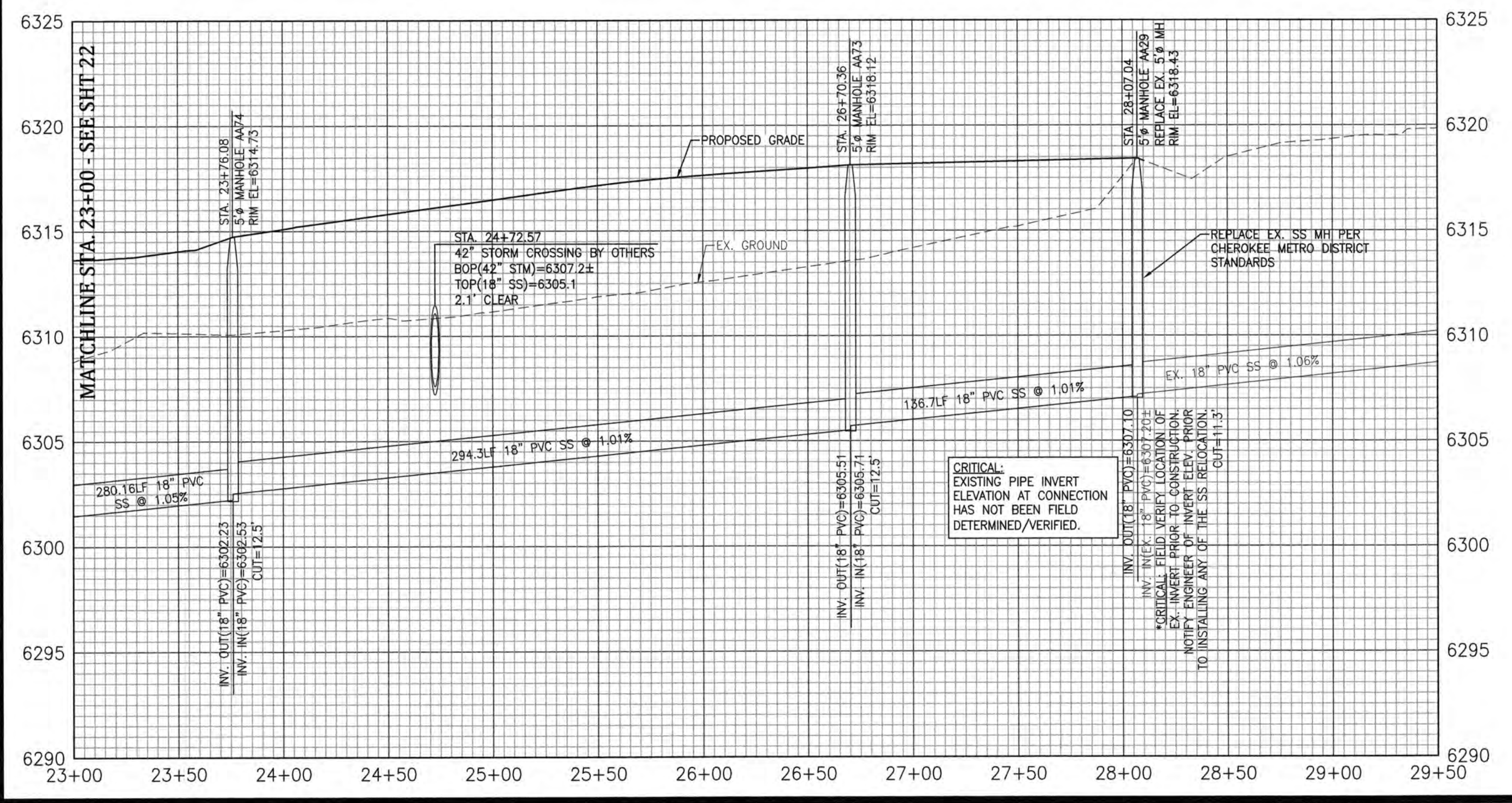
Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

**MEADOWBROOK CROSSING FILING NO. 1
SANITARY SEWER MAIN RELOCATION PLAN AND PROFILE
STA. 10+02.77 TO STA. 23+00
EL PASO COUNTY, COLORADO**

Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	
SHEET	22
	OF 35 SHEETS



- NOTES:**
- AS PART OF THE SANITARY SEWER INTERCEPTOR RELOCATION, THE EXISTING SANITARY SEWER INTERCEPTOR PIPE AND MANHOLES SHALL BE REMOVED BETWEEN STATION 10+00 AND 28+07.04.
 - ALL EXISTING SANITARY SEWER SYSTEM COMPONENTS BEING REPLACED/RELOCATED SHALL BECOME THE PROPERTY OF THE OWNER AND/OR DEVELOPER. THE OWNER AND/OR DEVELOPER SHALL ASSUME FULL OWNERSHIP AND RESPONSIBILITY OF THOSE SANITARY SEWER SYSTEM COMPONENTS UPON THEIR REMOVAL FROM SERVICE.
 - THE FOLLOWING MINIMUM WORK REQUIREMENTS SHALL APPLY TO THE MANHOLES OF THE EXISTING SANITARY SEWER SYSTEM COMPONENTS BEING REPLACED/RELOCATED. COMPLETELY REMOVE THE MANHOLE IF IT IS EXPOSED DURING THE CONSTRUCTION PROCESS OR IF THE MANHOLE IS LOCATED WITHIN A PROPOSED RIGHT OF WAY. IF A MANHOLE IS NOT COMPLETELY REMOVED BY THE REQUIREMENTS GIVEN ABOVE, THE RING AND COVER, CONE SECTION AND ALL BARREL SECTIONS DOWN TO THE BASE SECTION OF THE MANHOLE SHALL BE REMOVED. THE BASE SECTION SHALL REMAIN IN PLACE AND BE FILLED WITH CONCRETE, ENSURING A MINIMUM 2\"/>



MEADOWBROOK CROSSING FILING NO. 1
SANITARY SEWER MAIN RELOCATION PLAN AND PROFILE
STA. 23+00 TO STA. 28+07.04
EL PASO COUNTY, COLORADO

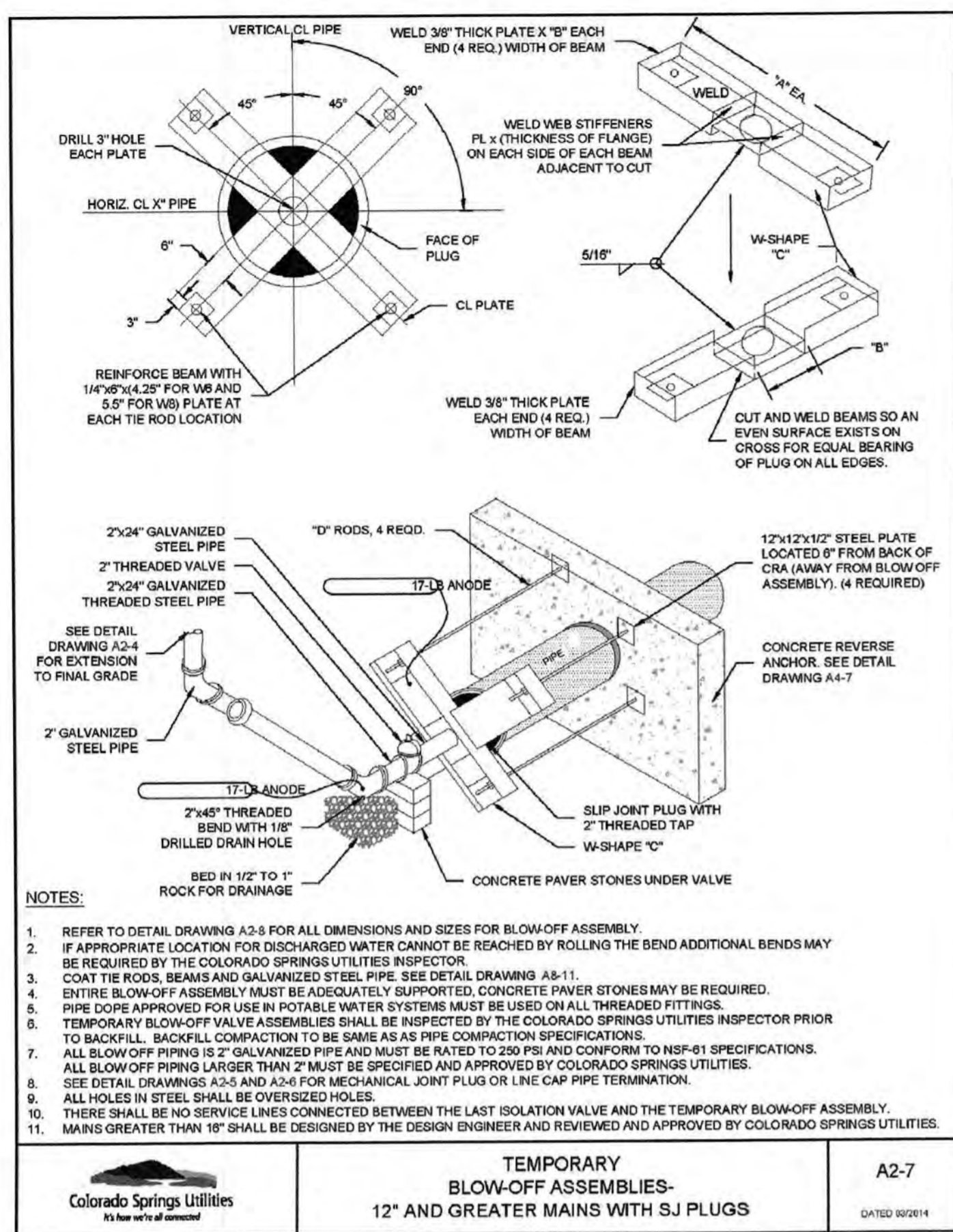
CHEROKEE METROPOLITAN DISTRICT
WASTEWATER PLAN DESIGN APPROVAL

APPROVED BY: *Jonathan Smith* DATE: 08/05/17

Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

Project No.:	16039
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Celebrating 30 years
Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 530-7342



TEMPORARY BLOW-OFF ASSEMBLY SIZING FOR 12" AND GREATER PIPE

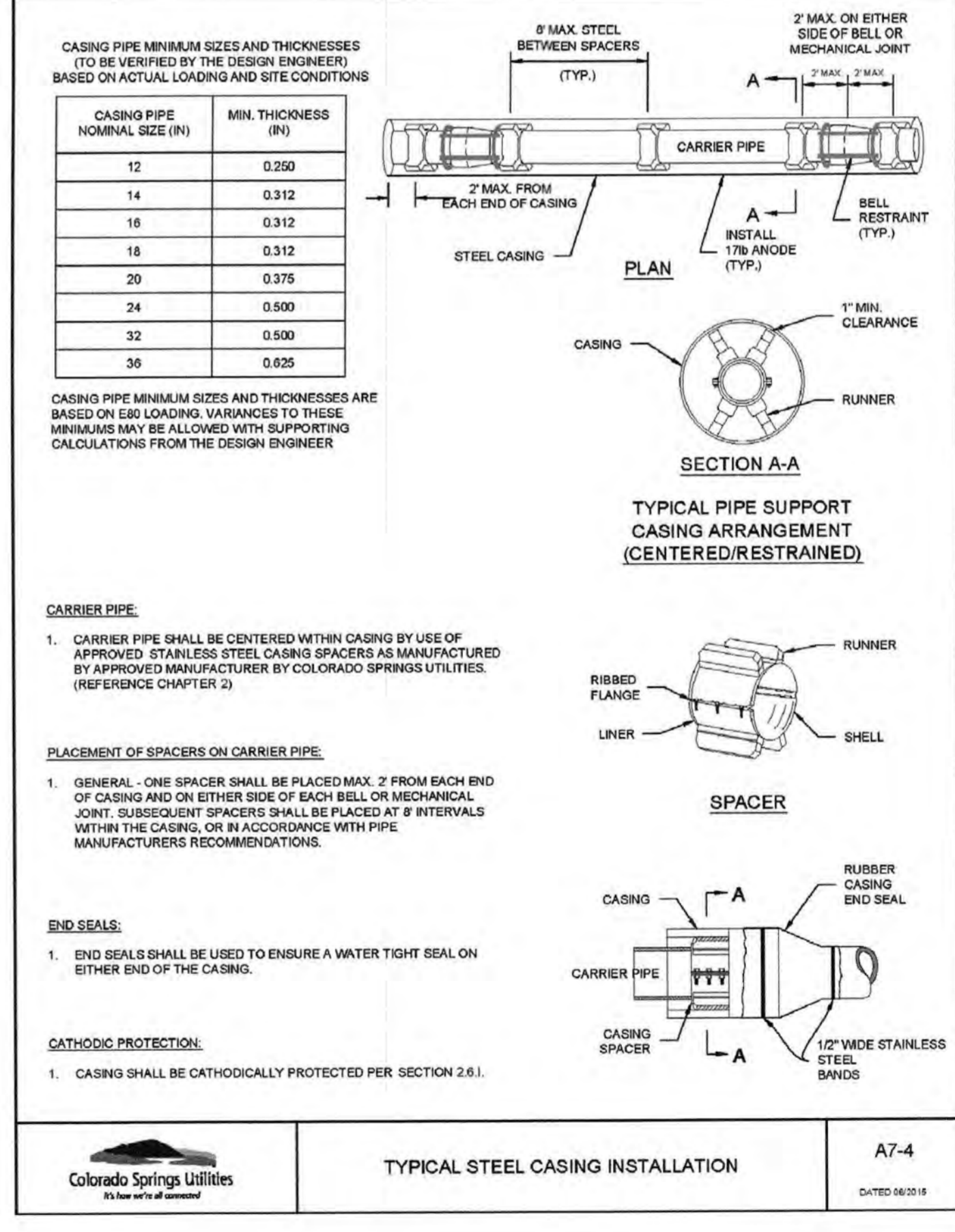
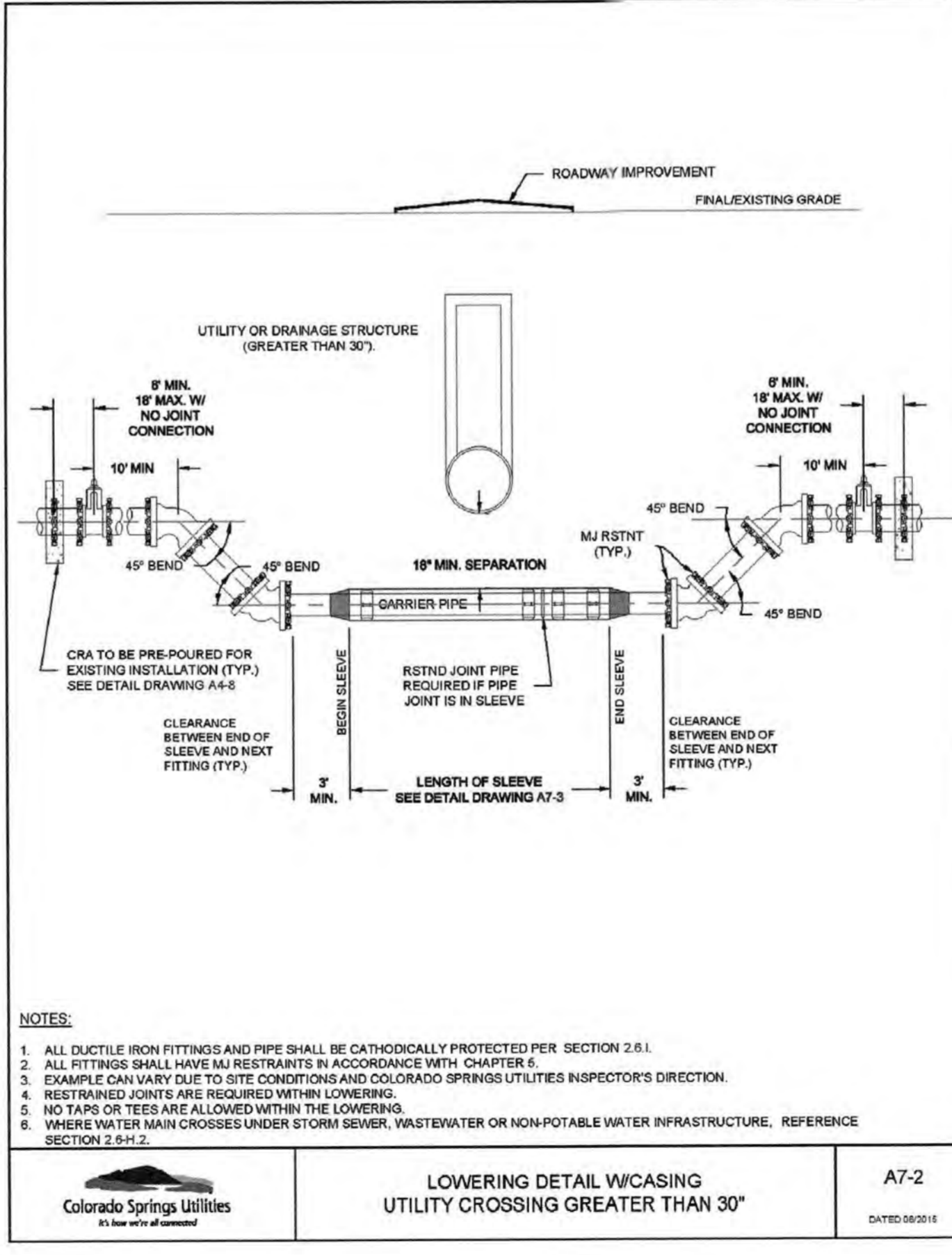
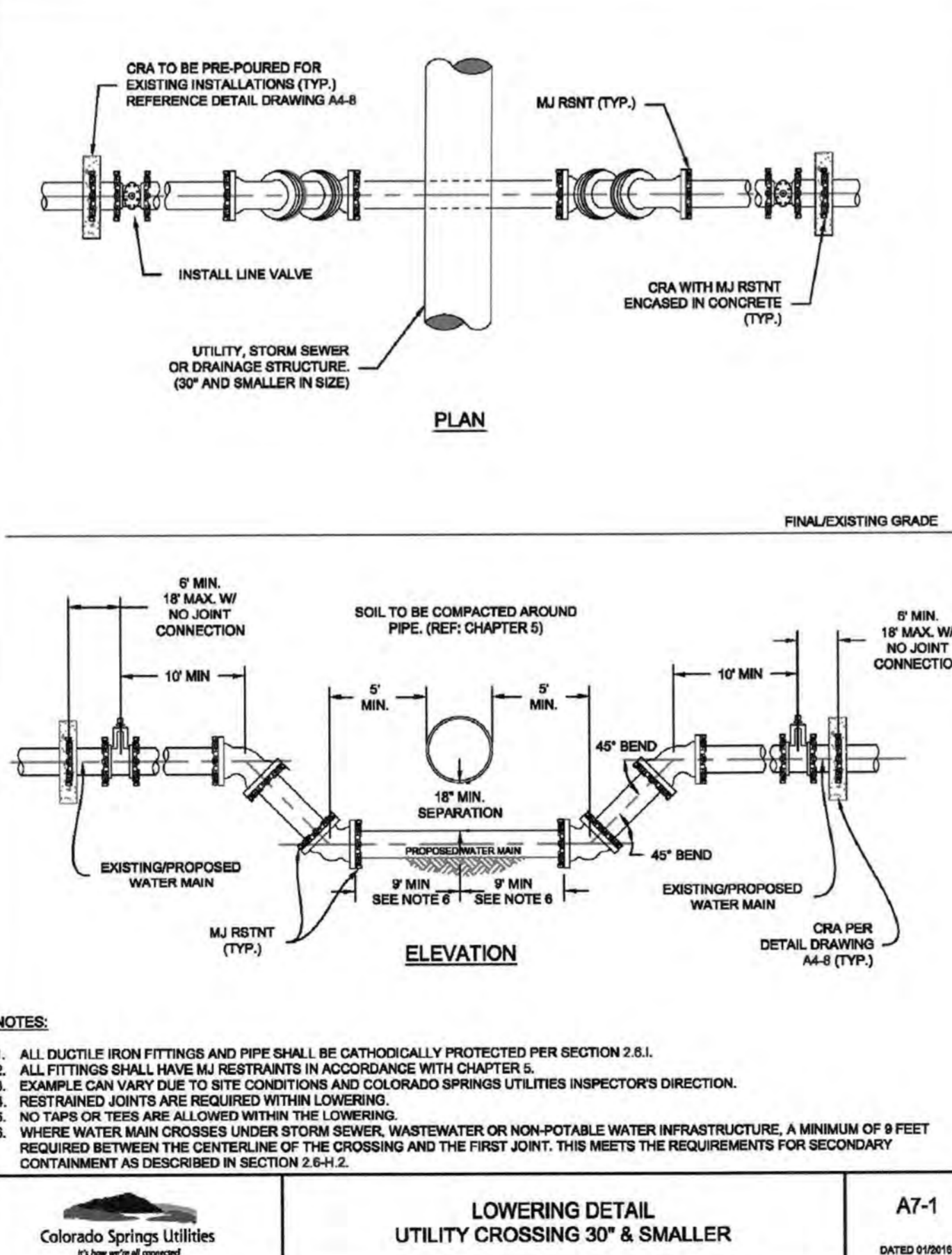
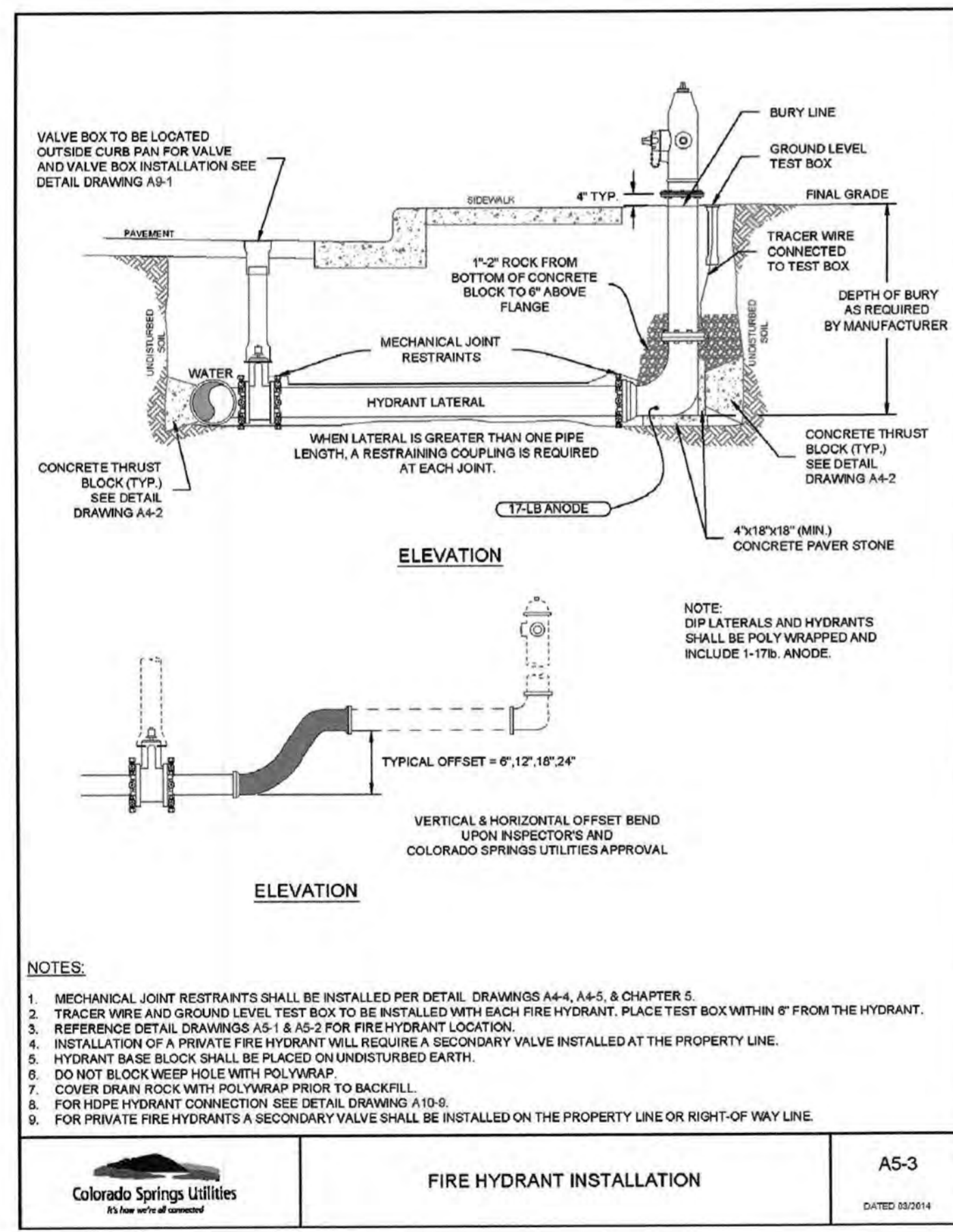
DIMENSIONS FROM DETAIL DRAWING A2-7							
MAIN PIPE DIA. (IN.)	STATIC PRESSURE RANGE (P.S.I.)	"A" (IN.)	"B" (IN.)	"C" (W-SHAPE)	"D" ROD SIZE (IN.)	BLOW-OFF PIPE SIZE (IN.)	NUMBER OF RODS REQUIRED
12	100	36	6"	WB x 16	5/8	2	4
	101-150	36	6-1/4"	WB x 20	3/4	2	
	151-200	36	6-1/4"	WB x 20	7/8	2	
16	100	40	6"	WB x 20	7/8	2	4
	101-150	40	6"	WB x 20	1	2	
	151-200	40	8-1/8"	WB x 35	1-1/8	2	
20	100	40	6"	WB x 20	7/8	2	4
	101-150	40	6"	WB x 20	1	2	
	151-200	40	8-1/8"	WB x 35	1-1/8	2	

THRUST BLOCK DIMENSIONS AND VOLUMES - PVC & DIP 250 psi

MAIN SIZE (IN.)	TYPE OF FITTING	MINIMUM BEARING SURFACE AREA (SQ. FT.)	MINIMUM A (IN.)	MINIMUM B (IN.)	MINIMUM C (IN.)	MINIMUM D (IN.)	MINIMUM E (IN.)	APPROXIMATE VOLUME (CU YD)
4	11.25 BEND	1.00	1.00	0.26	0.33	2.00	0.25	
4	22.5 BEND	2.00	1.41	1.41	0.21	0.30	0.25	
4	45 BEND	3.00	1.81	1.81	0.42	0.30	0.25	
4	TEE & DEAD END	4.75	2.18	2.18	0.87	0.30	0.25	
6	11.25 BEND	2.00	1.41	1.41	0.26	0.30	0.25	
6	22.5 BEND	3.75	1.94	1.94	0.36	0.40	0.25	
6	45 BEND	5.25	2.59	2.59	0.58	0.40	0.25	
6	TEE & DEAD END	7.75	2.99	2.99	1.00	0.40	0.25	
8	11.25 BEND	3.25	1.90	1.90	0.34	0.40	0.25	
8	22.5 BEND	5.50	2.59	2.59	0.58	0.40	0.25	
8	45 BEND	7.75	3.37	3.37	0.87	0.40	0.25	
8	TEE & DEAD END	10.25	3.94	3.94	1.26	0.40	0.25	

RESTRAINED PIPE LENGTH (FEET) W/MECHANICAL JOINT RESTRAINTS

PIPE DIAMETER	45° BEND			22-1/2° BEND			11-1/4° BEND			DEAD END VALUE OR PLUS TO INCLUDE IN LINE VALUES (SEE NOTES)		
	MAX. STATIC PRESSURE (PSI)	100	150	100	150	100	150	100	150			
6 INCH	DUCTILE IRON AND PVC	6	9	12	3	5	6	2	3	40	73	97
8 INCH	DUCTILE IRON AND PVC	8	12	16	4	6	8	2	3	4	83	125
12 INCH	DUCTILE IRON AND PVC	12	17	23	6	8	11	3	4	6	89	133
16 INCH	DUCTILE IRON AND PVC	15	22	29	7	11	14	4	5	7		
20 INCH	DUCTILE IRON AND PVC	18	28	35	9	13	17	4	6	8		
24 INCH	DUCTILE IRON AND PVC	20	30	40	10	15	20	5	7	10		
30 INCH	DUCTILE IRON AND PVC	24	35	48	12	18	24	6	9	12		
36 INCH	DUCTILE IRON AND PVC	28	42	56	14	20	27	7	10	14		



FIRE HYDRANT INSTALLATION
A5-3
DATED 02/01/14

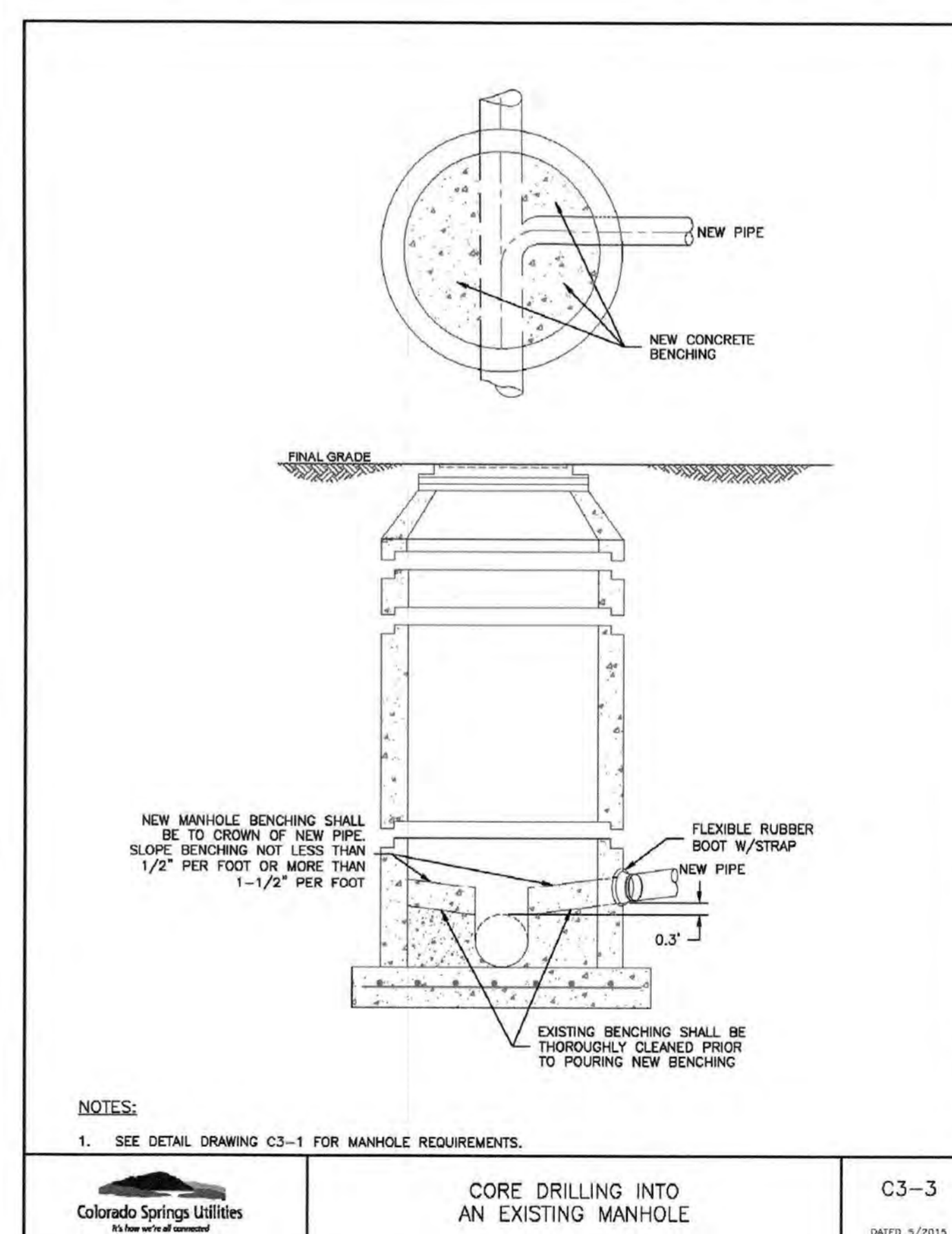
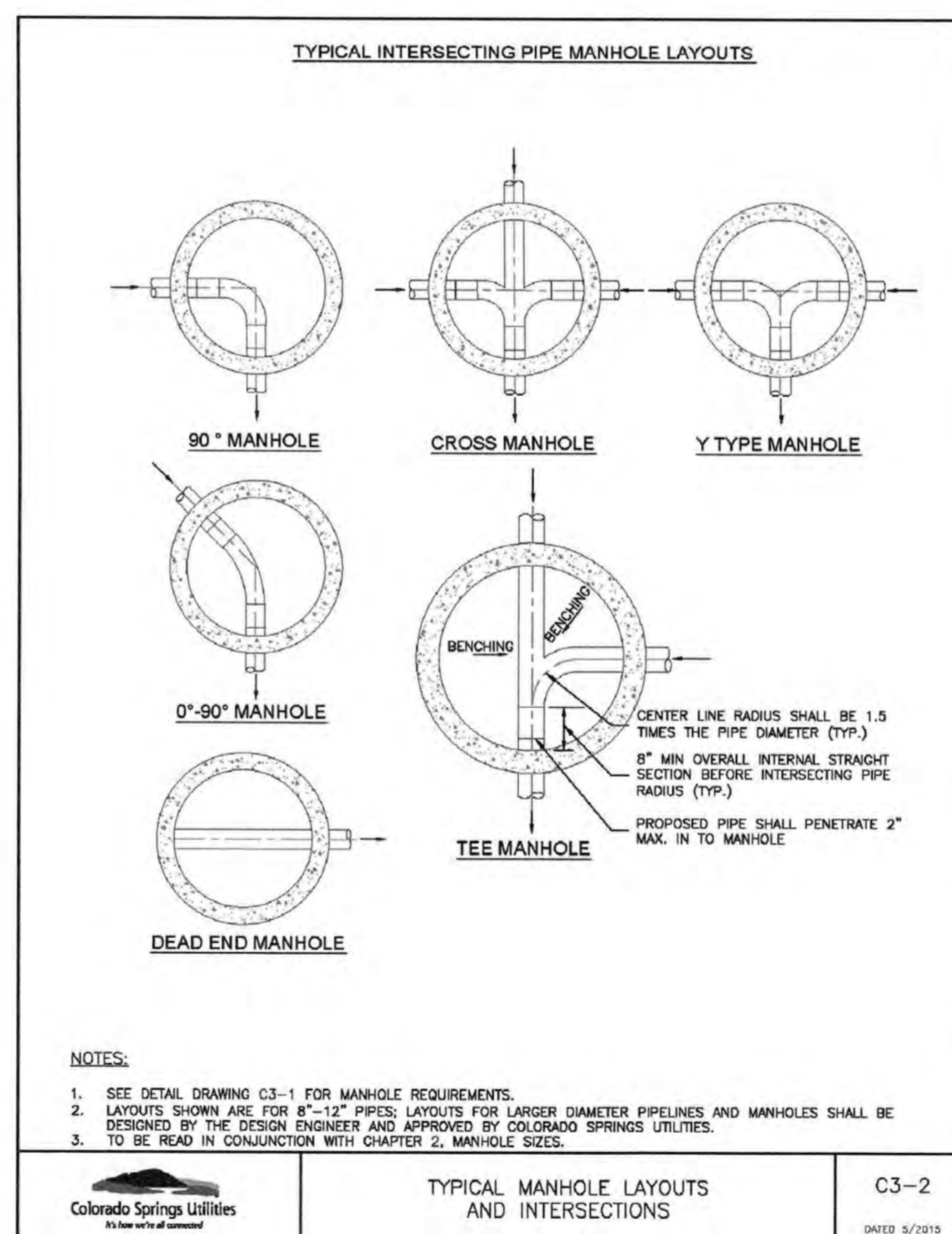
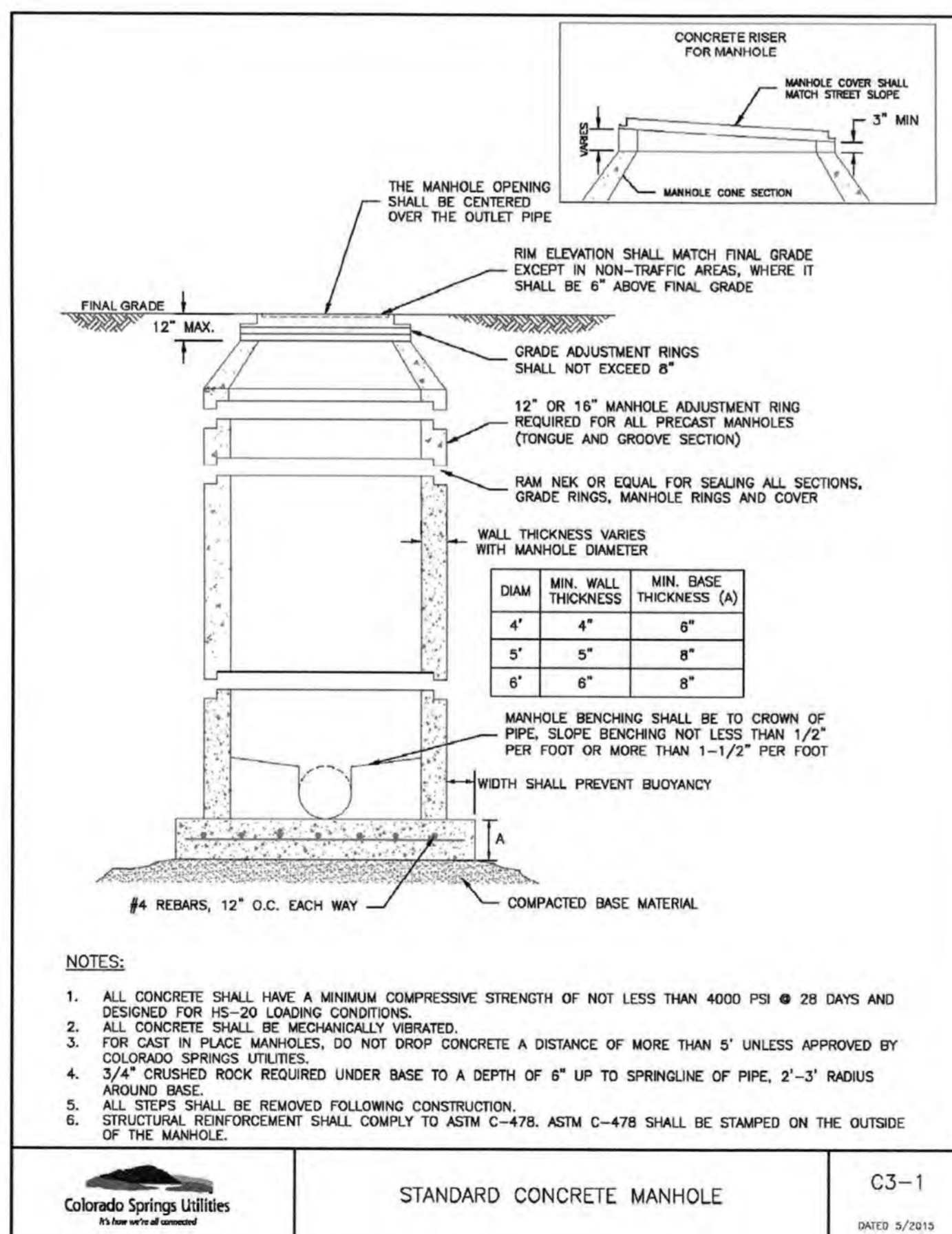
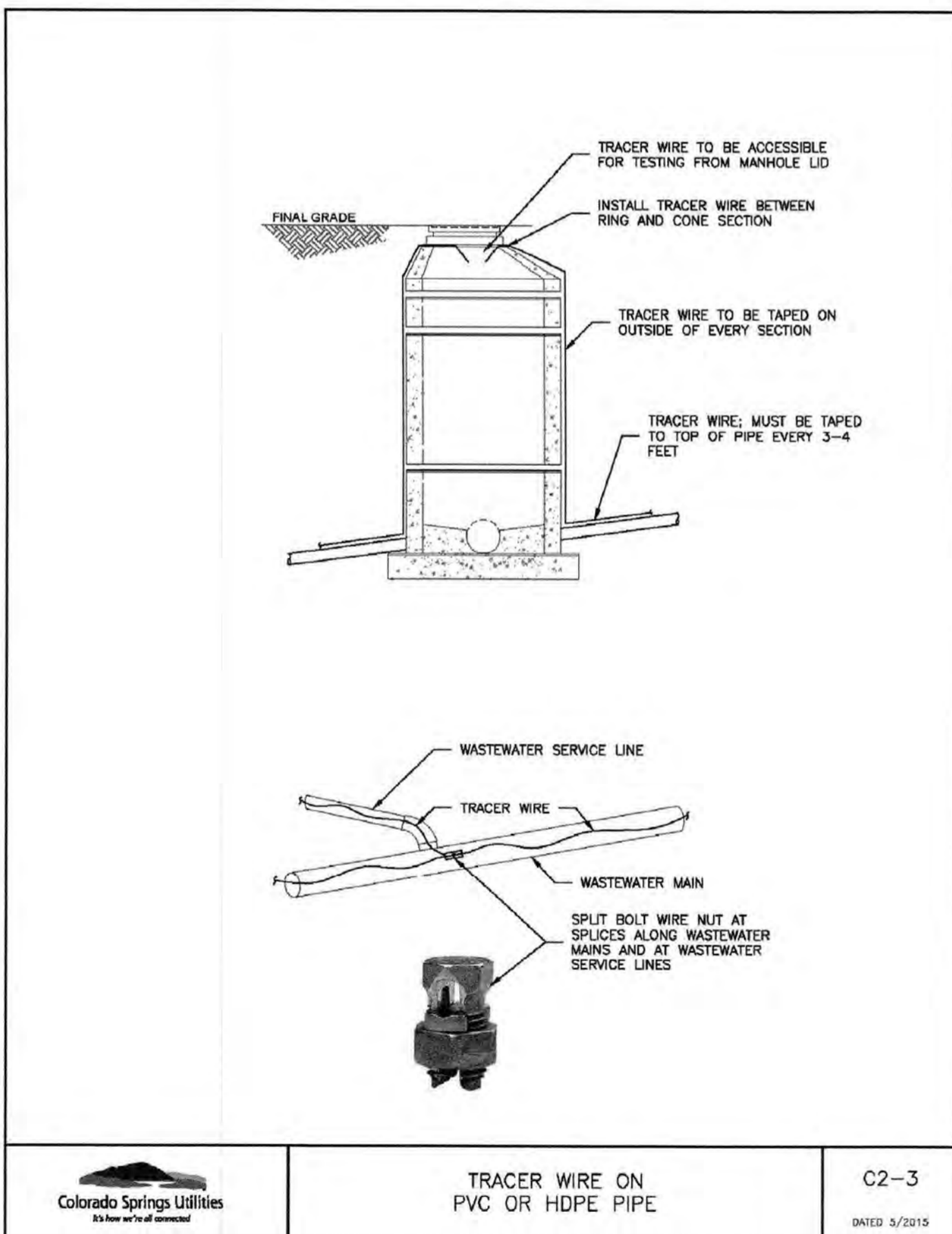
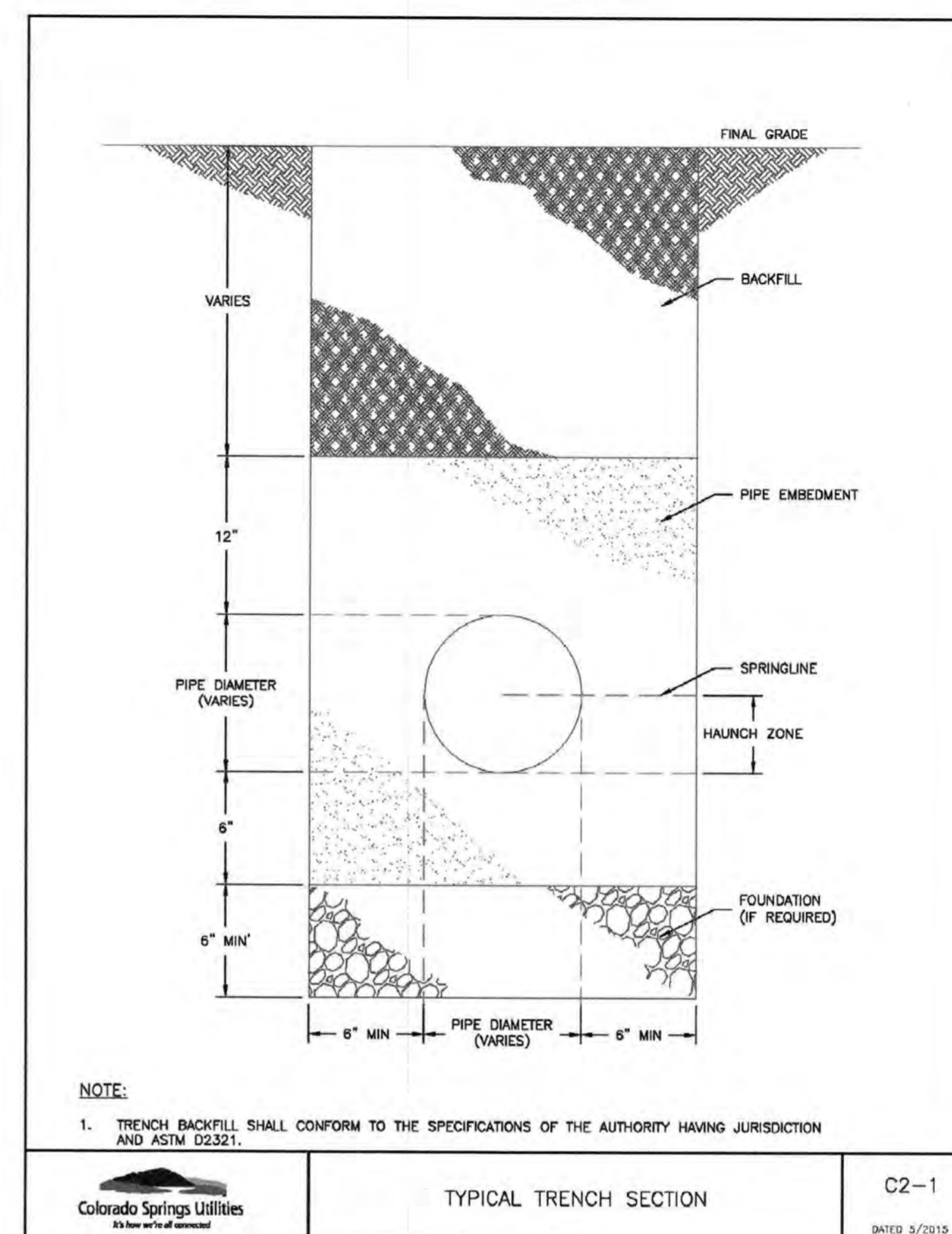
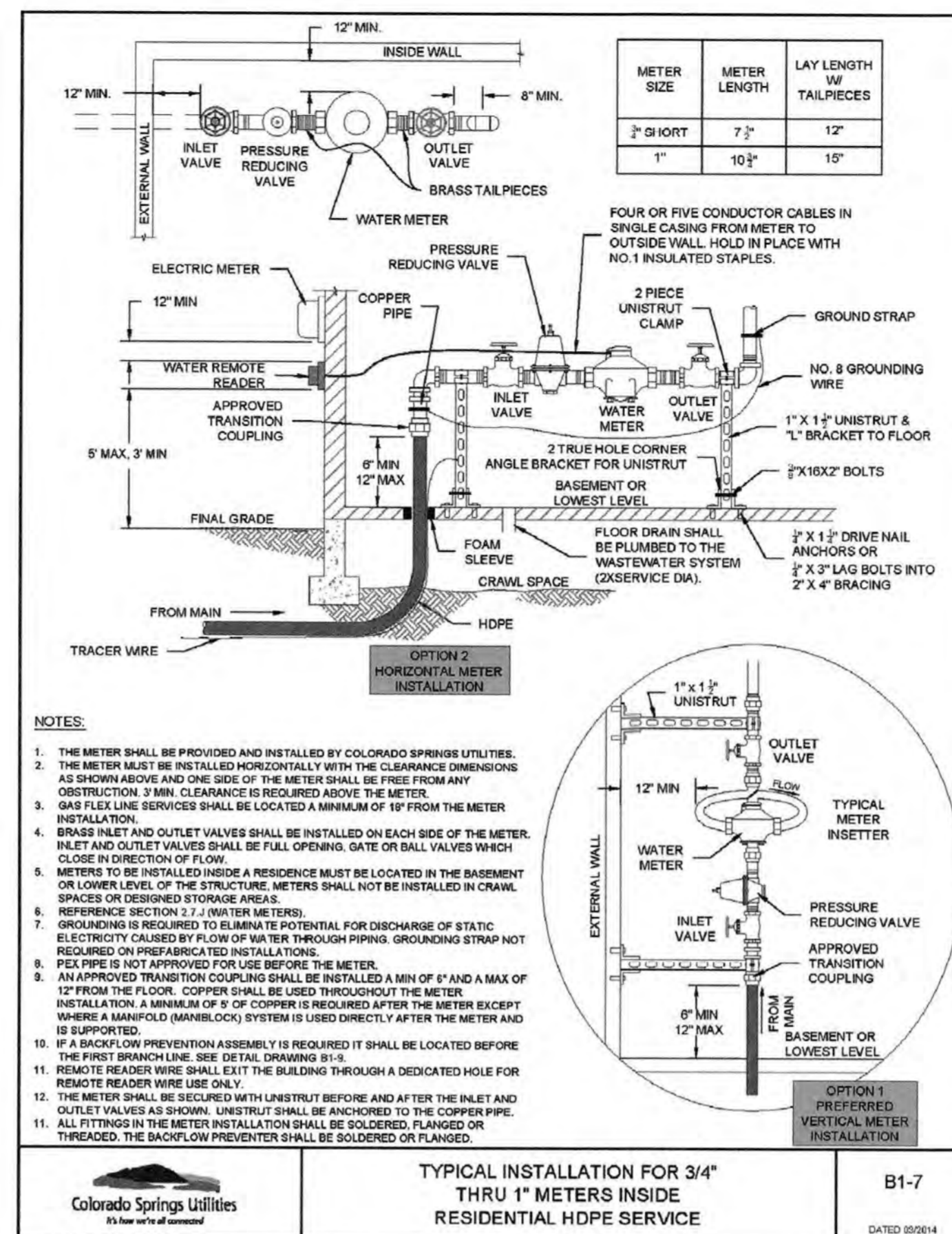
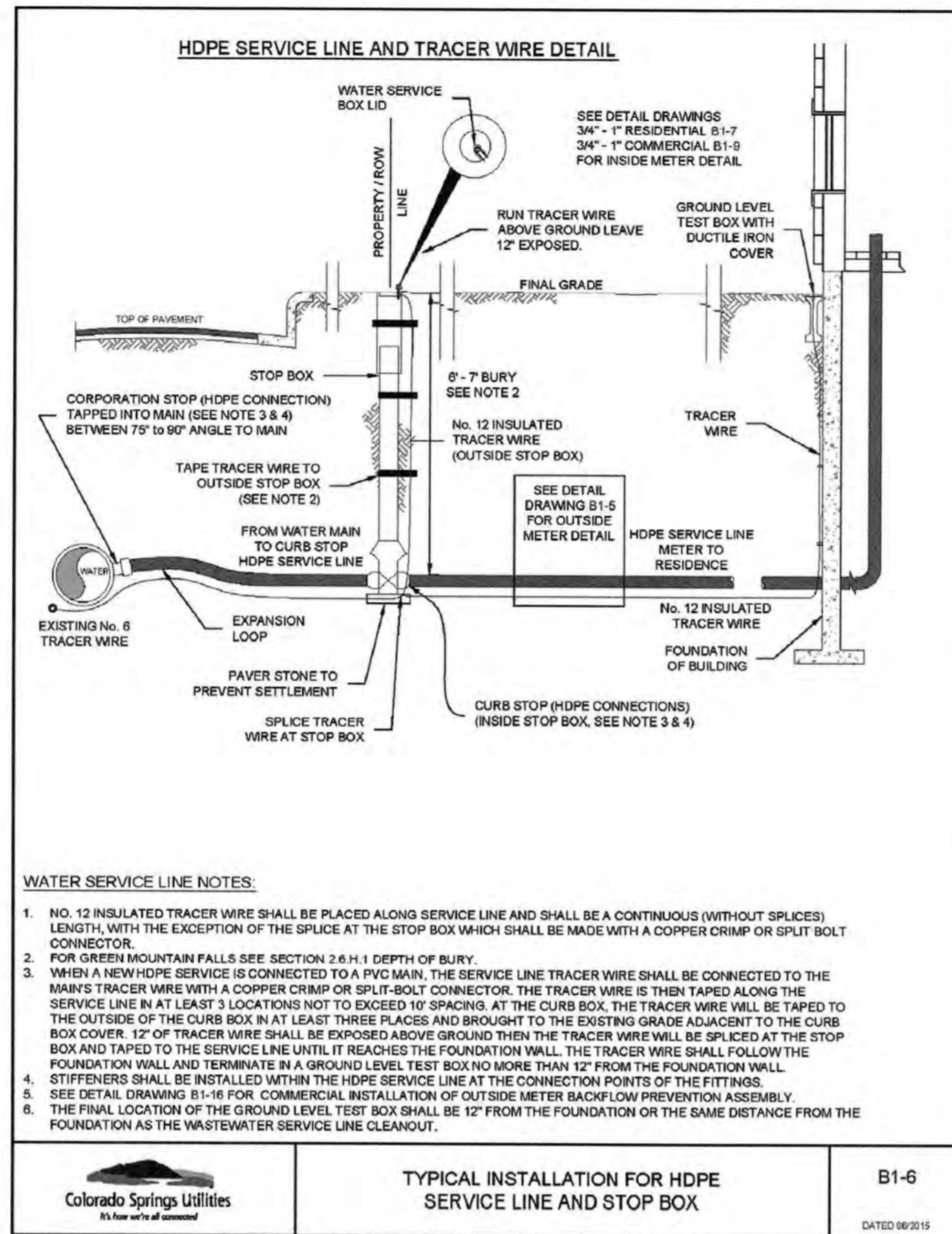
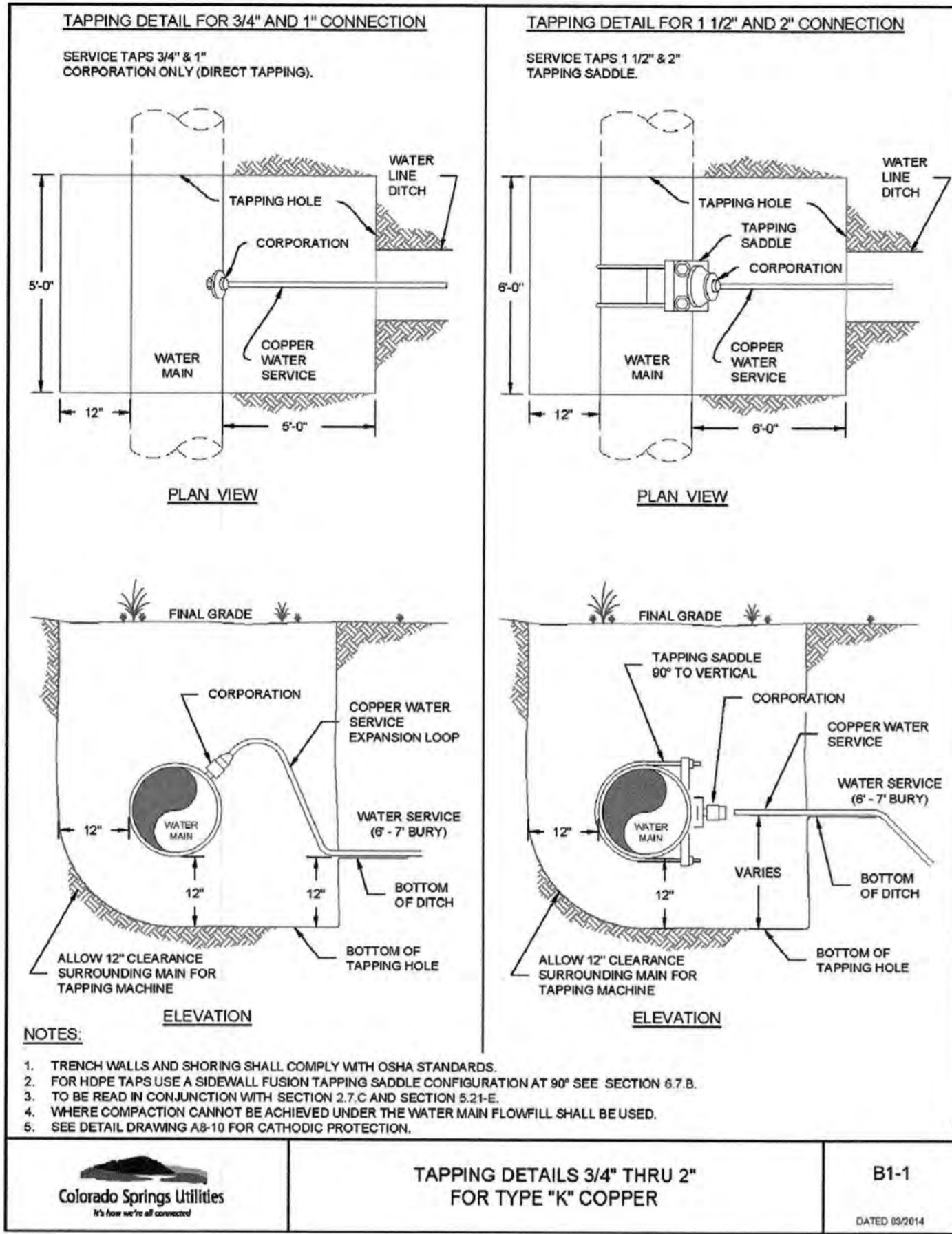
LOWERING DETAIL UTILITY CROSSING 30" & SMALLER
A7-1
DATED 01/02/15

LOWERING DETAIL WCASING UTILITY CROSSING GREATER THAN 30"
A7-2
DATED 02/01/14

TYPICAL STEEL CASING INSTALLATION
A7-4
DATED 08/20/13

CHEROKEE METROPOLITAN DISTRICT WATER PLAN DESIGN APPROVAL
APPROVED BY: *[Signature]* DATE: 09/05/17
Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

CHEROKEE METROPOLITAN DISTRICT WASTEWATER PLAN DESIGN APPROVAL
APPROVED BY: *[Signature]* DATE: 09/05/17
Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.



CHEROKEE METROPOLITAN DISTRICT WATER PLAN DESIGN APPROVAL

APPROVED BY: *[Signature]* DATE: 09/05/17

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CHEROKEE METROPOLITAN DISTRICT WASTEWATER PLAN DESIGN APPROVAL

APPROVED BY: *[Signature]* DATE: 09/05/17

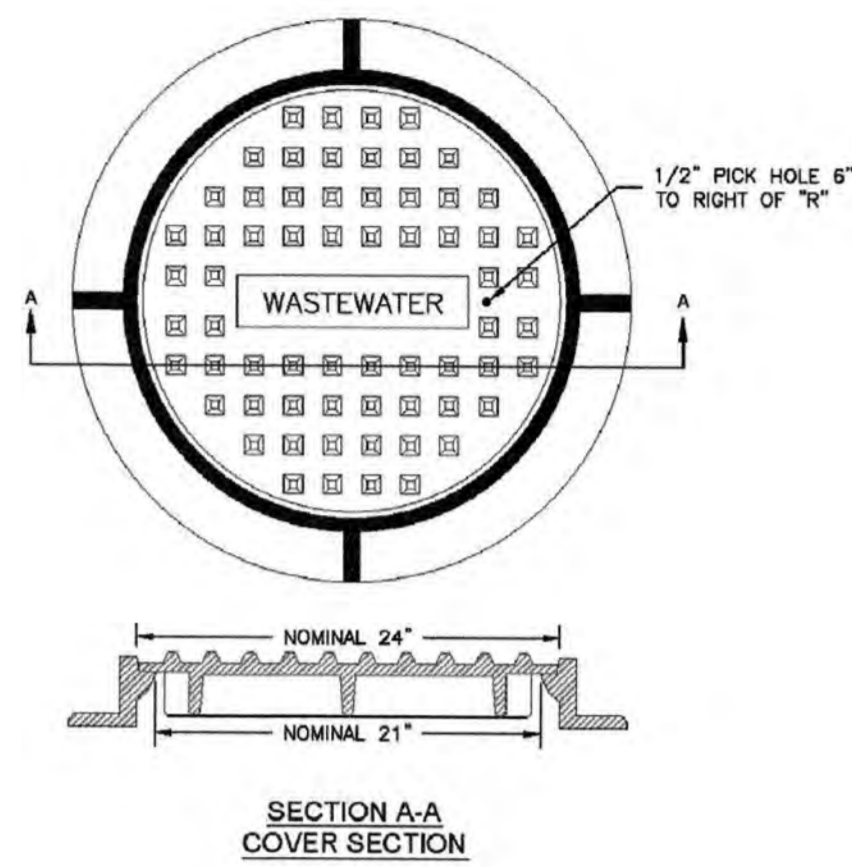
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Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

MEADOWBROOK CROSSING FILING NO. 1
UTILITY DETAILS
EL PASO COUNTY, COLORADO

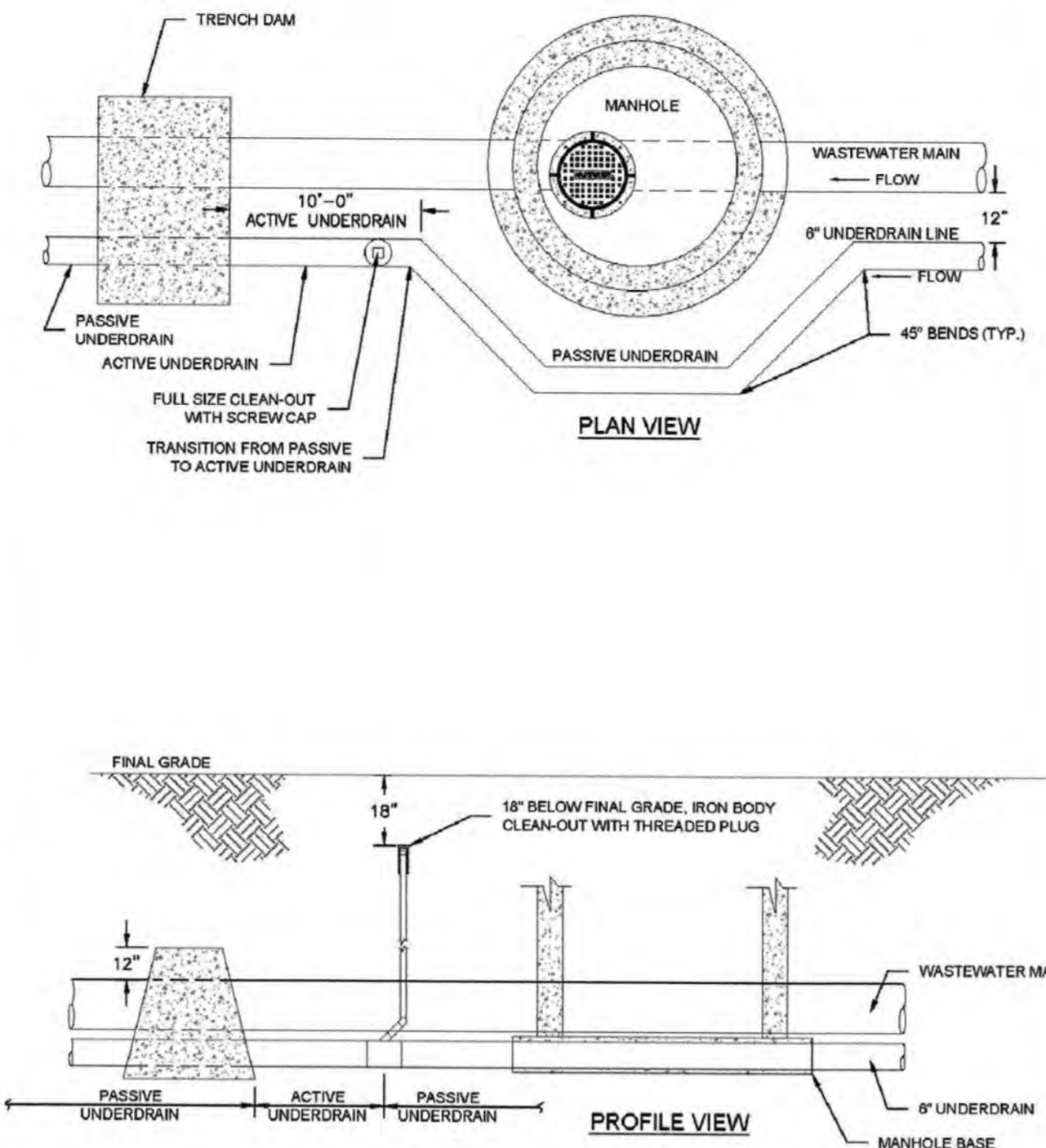
Project No.: 16039
Date: August 22, 2017
Design: ELS
Drawn: ELS
Check: MWE
Revisions:

SHEET
DT3
25
OF 35 SHEETS

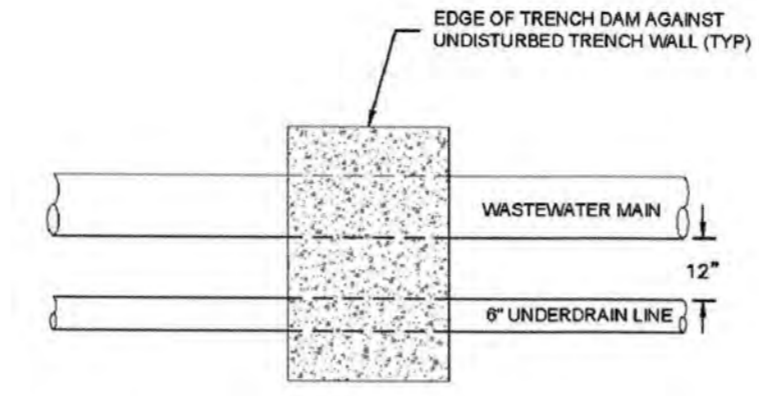


NOTES:
1. SEE CHAPTER 4 FOR ADDITIONAL INFORMATION AND SPECIFIC DIMENSIONS.

Colorado Springs Utilities
STANDARD MANHOLE RING AND COVER IN TRAFFIC AREAS
C3-9
DATED 5/2015

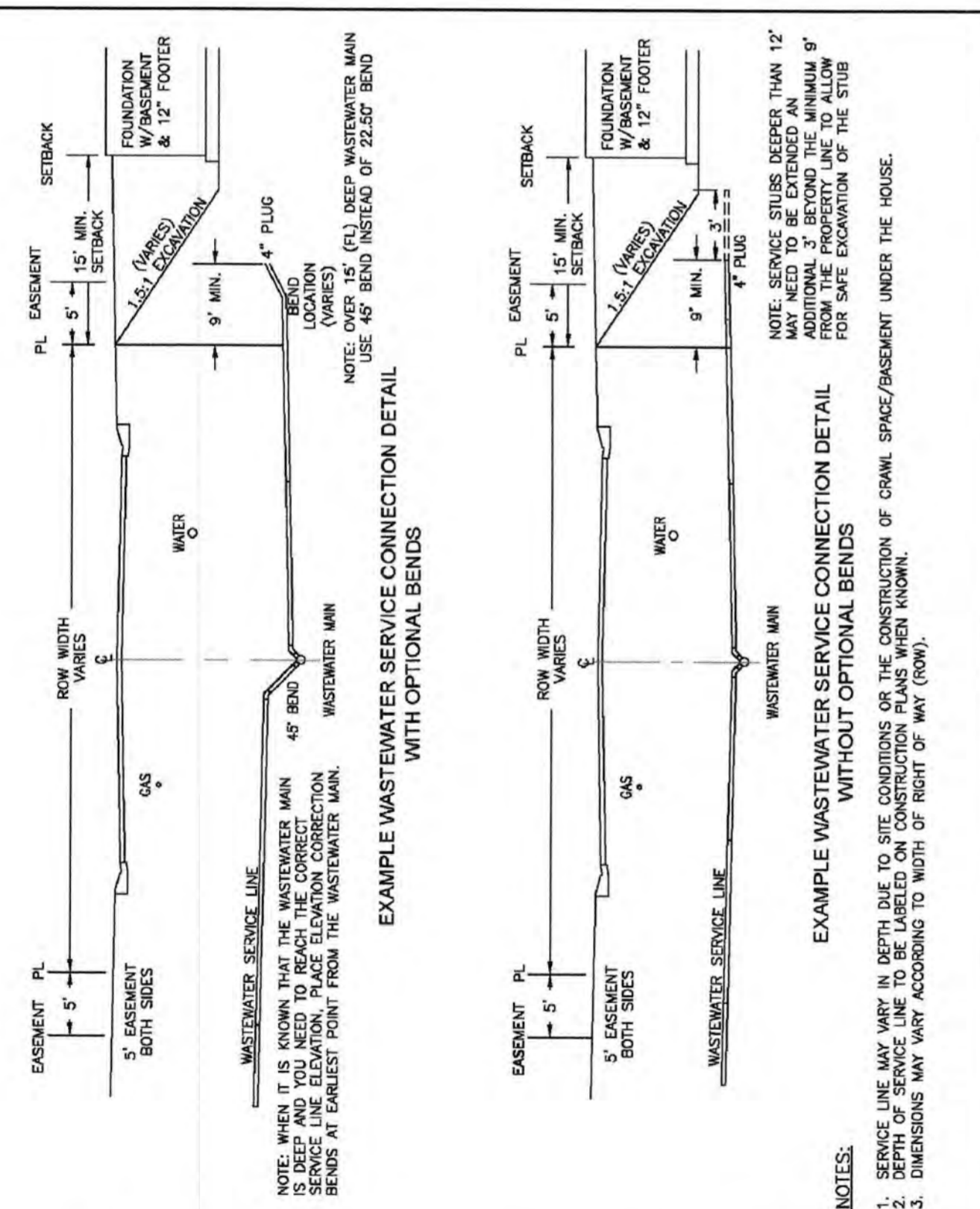


Colorado Springs Utilities
PASSIVE GROUNDWATER UNDERDRAIN SCHEMATIC
C6-1
DATED 5/2015

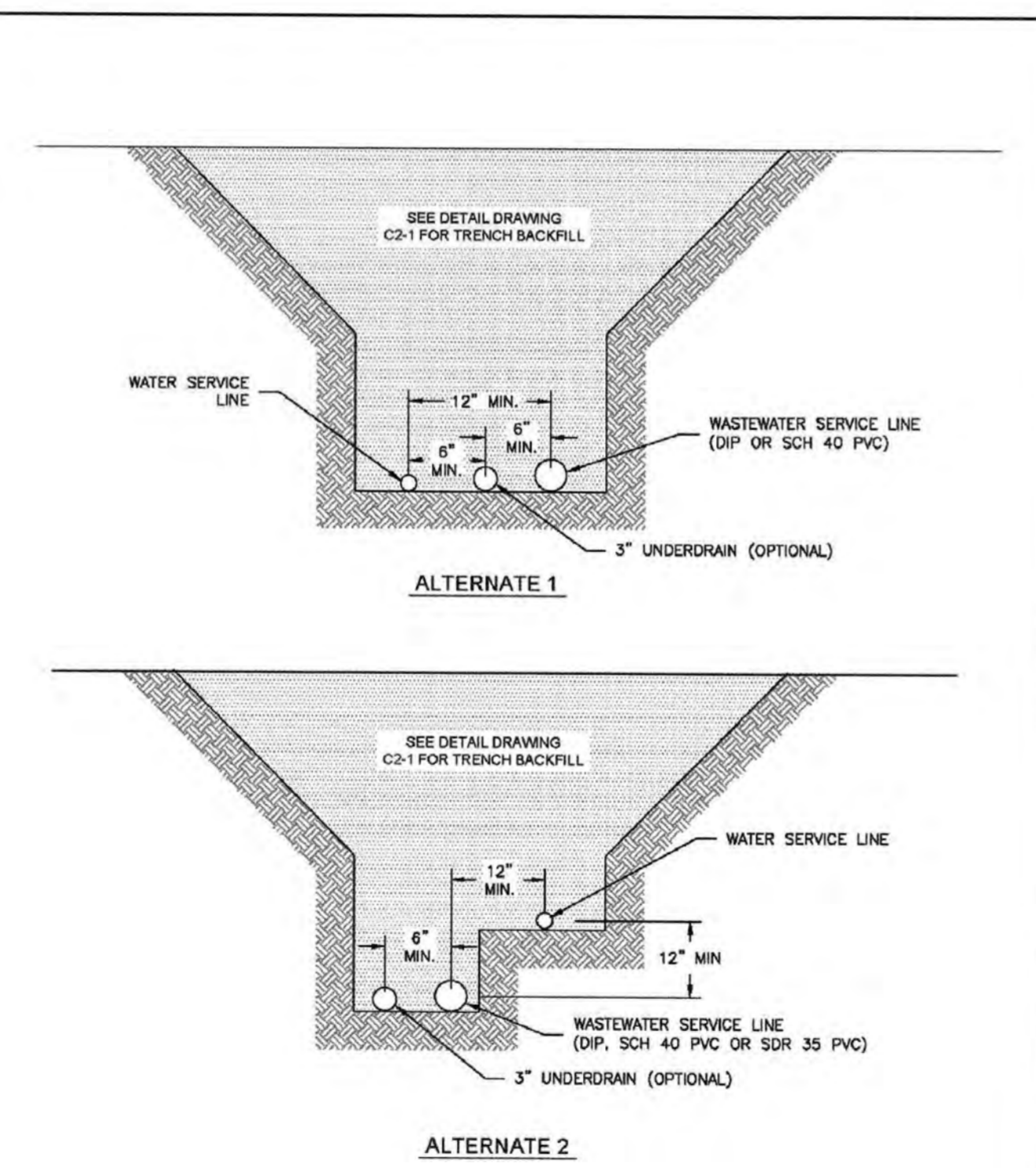


NOTES:
1. TRENCH DAMS ARE REQUIRED AT THE TRANSITION FROM ACTIVE UNDERDRAINS TO PASSIVE UNDERDRAINS.

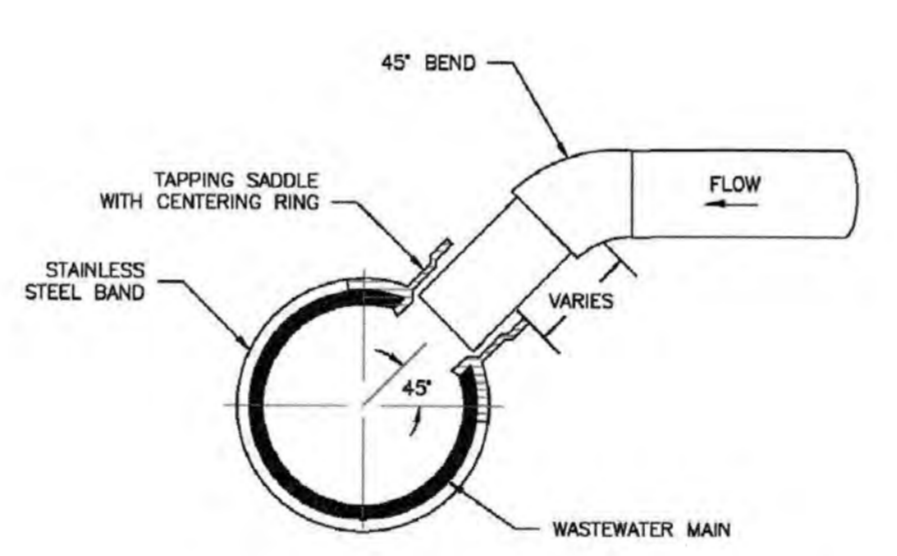
Colorado Springs Utilities
UNDERDRAIN TRENCH DAM
C6-2
DATED 5/2015



Colorado Springs Utilities
EXAMPLE OF A SERVICE WITH A BASEMENT
D1-2
DATED 5/2015



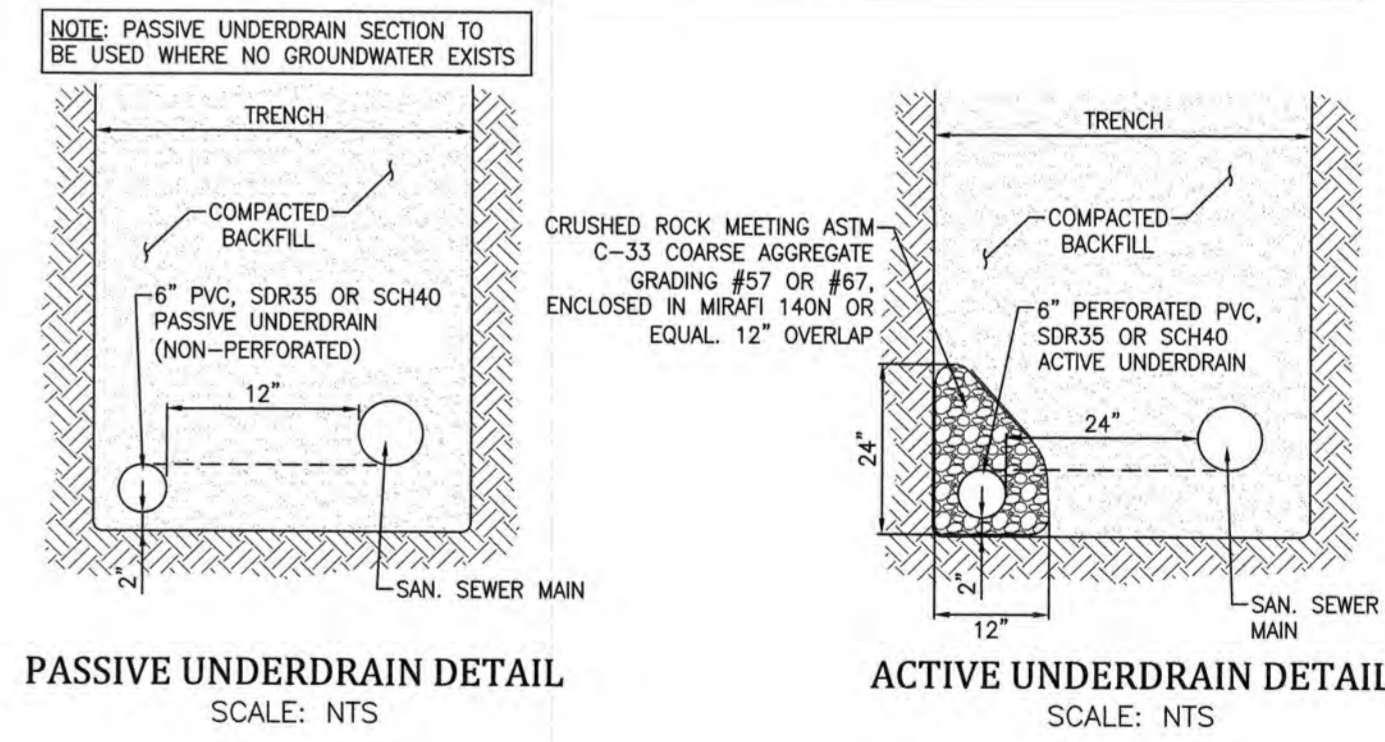
Colorado Springs Utilities
TYPICAL COMMON SERVICE TRENCH SECTION
D1-5
DATED 5/2015



NOTES:
1. WHEN THE WASTEWATER MAIN IS VCP, USE THE SDR 35 PVC SADDLE WITH A LARGER SKIRT. SADDLE SHALL BE ONE NOMINAL SIZE LARGER THAN THE WASTEWATER MAIN.
2. PIPE WILL BE CUT WITH AN O.D. HOLE SAW OR TAPPING MACHINE. A 4-1/2" O.D. HOLE SAW SHALL BE USED FOR 4" TAPS AND A 6-1/2" O.D. HOLE SAW SHALL BE USED FOR 6" TAPS.
3. ONLY 4" AND 6" TAP SIZES ARE ALLOWED.
4. WASTEWATER TAPPING SADDLES SHALL HAVE A CENTERING RING.
5. A GASKET SHALL BE USED TO ENSURE AN AIRTIGHT SEAL BETWEEN THE SADDLE AND THE PIPE.

Colorado Springs Utilities
TYPICAL WASTEWATER SERVICE LINE TAPPING METHOD
D1-6
DATED 5/2015

UNDERDRAIN NOTES:
1. THE NEED FOR AN UNDERDRAIN WILL BE BASED ON FIELD CONDITIONS AND DETERMINATION OF THE GEOTECHNICAL ENGINEER.
2. GEOTECHNICAL ENGINEER TO DETERMINE EXTENT OF ACTIVE/PASSIVE UNDERDRAIN DEPENDING UPON CONDITIONS ENCOUNTERED DURING CONSTRUCTION.
2.1. SOLID DRAIN PIPE WILL BE USED IN AREAS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
3. ENGINEERING FABRIC (MIRAFI 140N) TO HAVE A MINIMUM 12-INCH OVERLAP ABOVE UNDERDRAIN GRANULAR FILL. ENCOUNTERED DURING CONSTRUCTION.
4. UNDERDRAIN PIPE TO BE CONSTRUCTED WITH THE TOP OF PIPE EQUAL TO OR BELOW THE BOTTOM OF THE SANITARY SEWER PIPE.
5. THE CONNECTION BETWEEN THE ACTIVE AND PASSIVE PORTIONS OF THE UNDERDRAIN SYSTEM IS TO BE CONSTRUCTED WITH A NON-PERMEABLE BARRIER SO THAT ALL COLLECTED GROUNDWATER IS DIRECTED INTO THE PASSIVE PIPE SECTION.
6. ACTIVE UNDERDRAIN PIPE REQUIRED FOR 10-FT DOWNSTREAM OF EACH MANHOLE WHERE UNDERDRAINS ARE INSTALLED.
7. OUTFALL FOR UNDERDRAIN PIPE SHALL DRAIN INTO A STORM SEWER OR DRAINAGEWAY. IF THE PIPE DRAINS TO THE DRAINAGEWAY OR SURFACE, CONCRETE SHALL BE PLACED AROUND THE OUTLET TO MINIMIZE THE CHANCE OF THE PIPE OUTLET BEING BURIED.

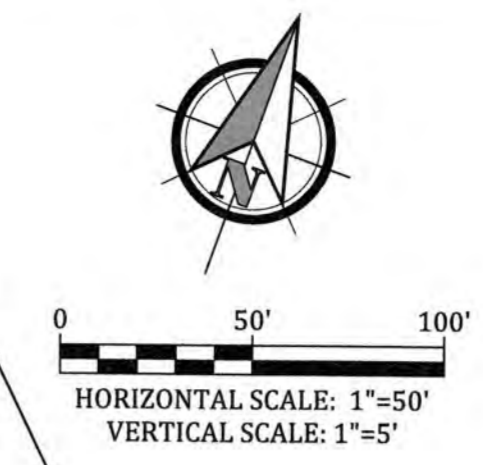
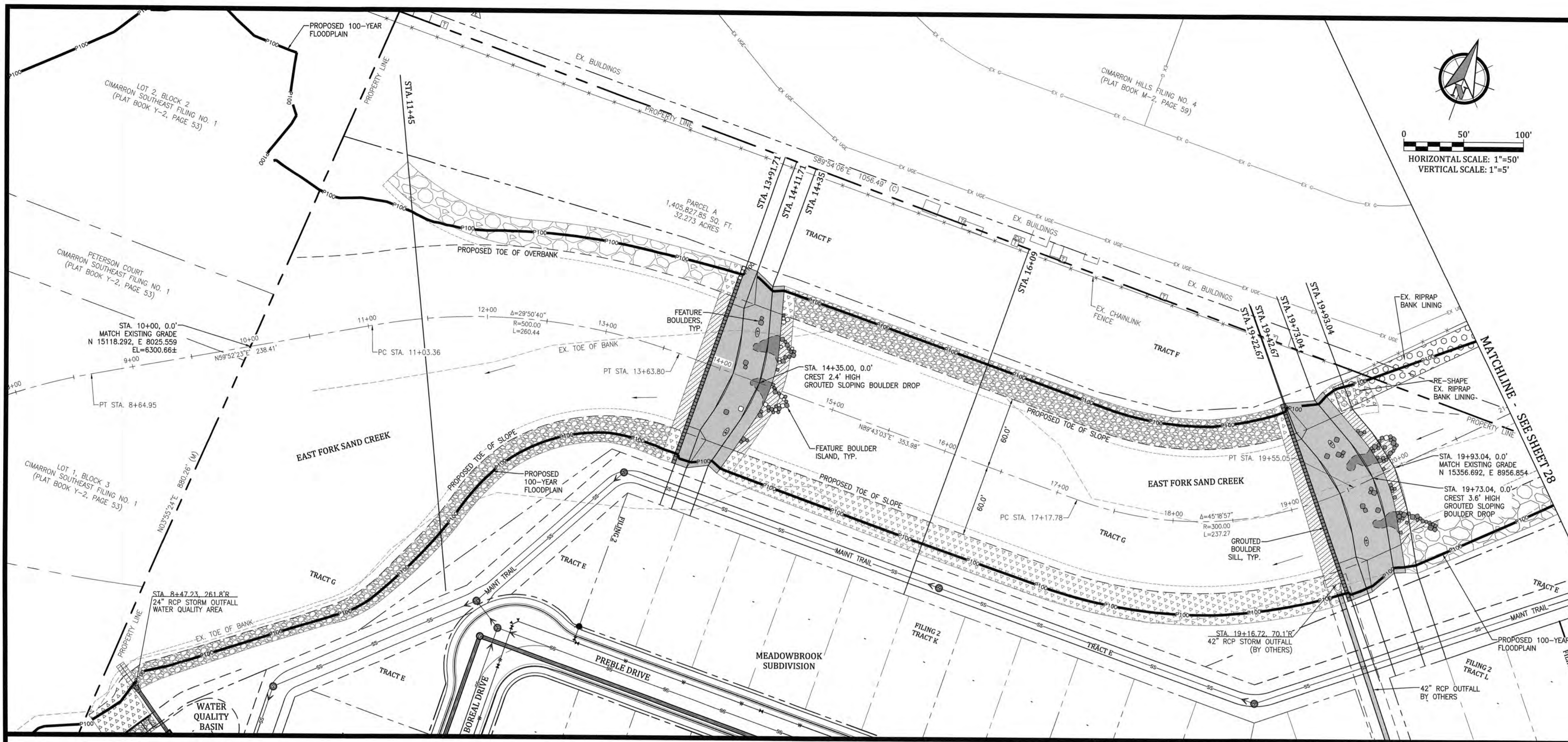


SCALE: NTS
SCALE: NTS

**CHEROKEE METROPOLITAN DISTRICT
WATER PLAN DESIGN APPROVAL**
APPROVED BY: *Scott Smith* DATE: 01/05/17
Approval expires one (1) year from the date above and resubmittal of these plans for review and approval is required if construction does not begin during this period.

**CHEROKEE METROPOLITAN DISTRICT
WASTEWATER PLAN DESIGN APPROVAL**
APPROVED BY: *Scott Smith* DATE: 01/05/17
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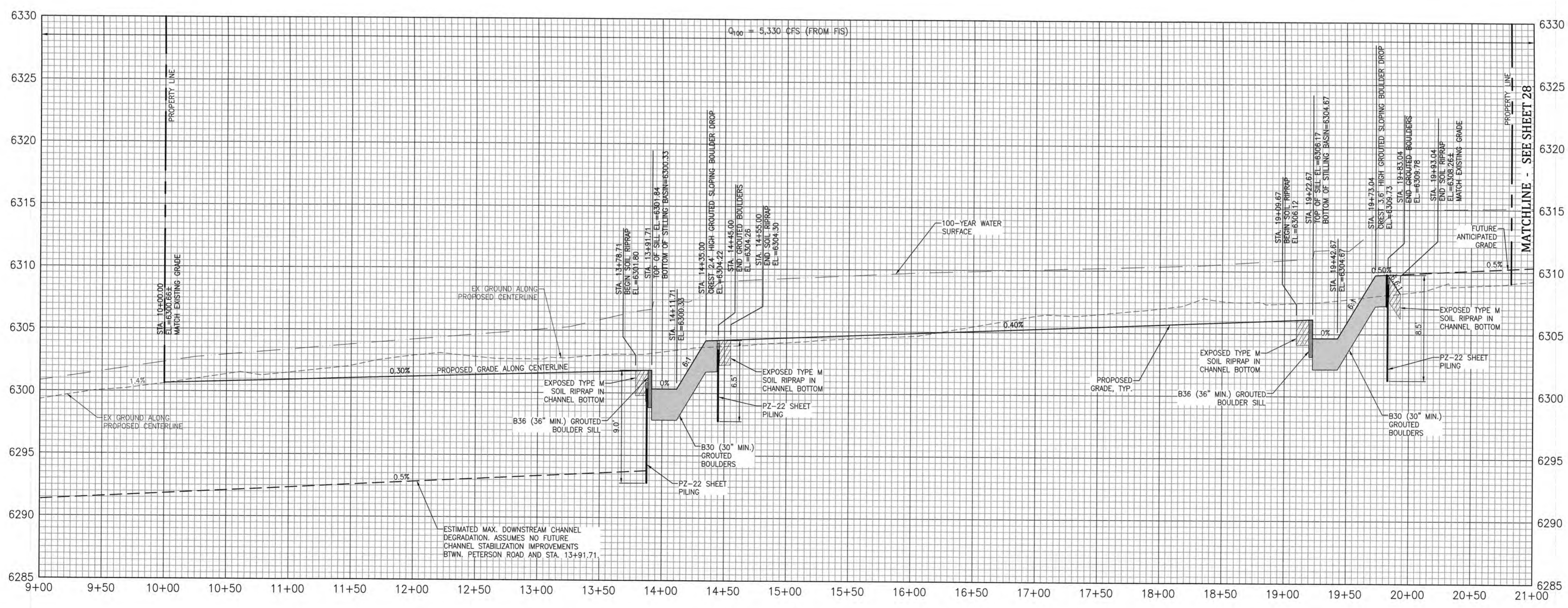
Project No.:	16039
Date:	August 22, 2017
Design:	ELS
Drawn:	ELS
Check:	MWE
Revisions:	



LEGEND

- EXISTING PROPERTY LINE
- SECTION LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- PROPOSED TRACT BOUNDARY
- PROPOSED EASEMENT
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED 100-YEAR FLOODPLAIN
- EXISTING FENCE
- EXISTING BUILDING TO REMAIN
- EXISTING WATER LINE
- EXISTING SANITARY SEWER
- EX. SANITARY SEWER TO BE REMOVED OR RELOCATED
- EXISTING STORM SEWER
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING ELECTRIC VAULT OR TRANSFORMER
- EXISTING ELECTRIC METER
- PROPOSED SANITARY SEWER AND MANHOLE
- PROPOSED WATER LINE OR SERVICE AND VALVE
- PROPOSED WATER LINE AND THRUST BLOCK
- PROPOSED STORM SEWER PIPE AND MANHOLE
- PROPOSED STORM CURB INLET
- EXISTING RIPRAP
- EXPOSED TYPE M SOIL RIPRAP
- BURIED TYPE L SOIL RIPRAP
- BURIED TYPE M SOIL RIPRAP
- BURIED TYPE H SOIL RIPRAP
- GROUDED BOULDERS
- FEATURE BOULDERS

KEY MAP
SCALE: NTS



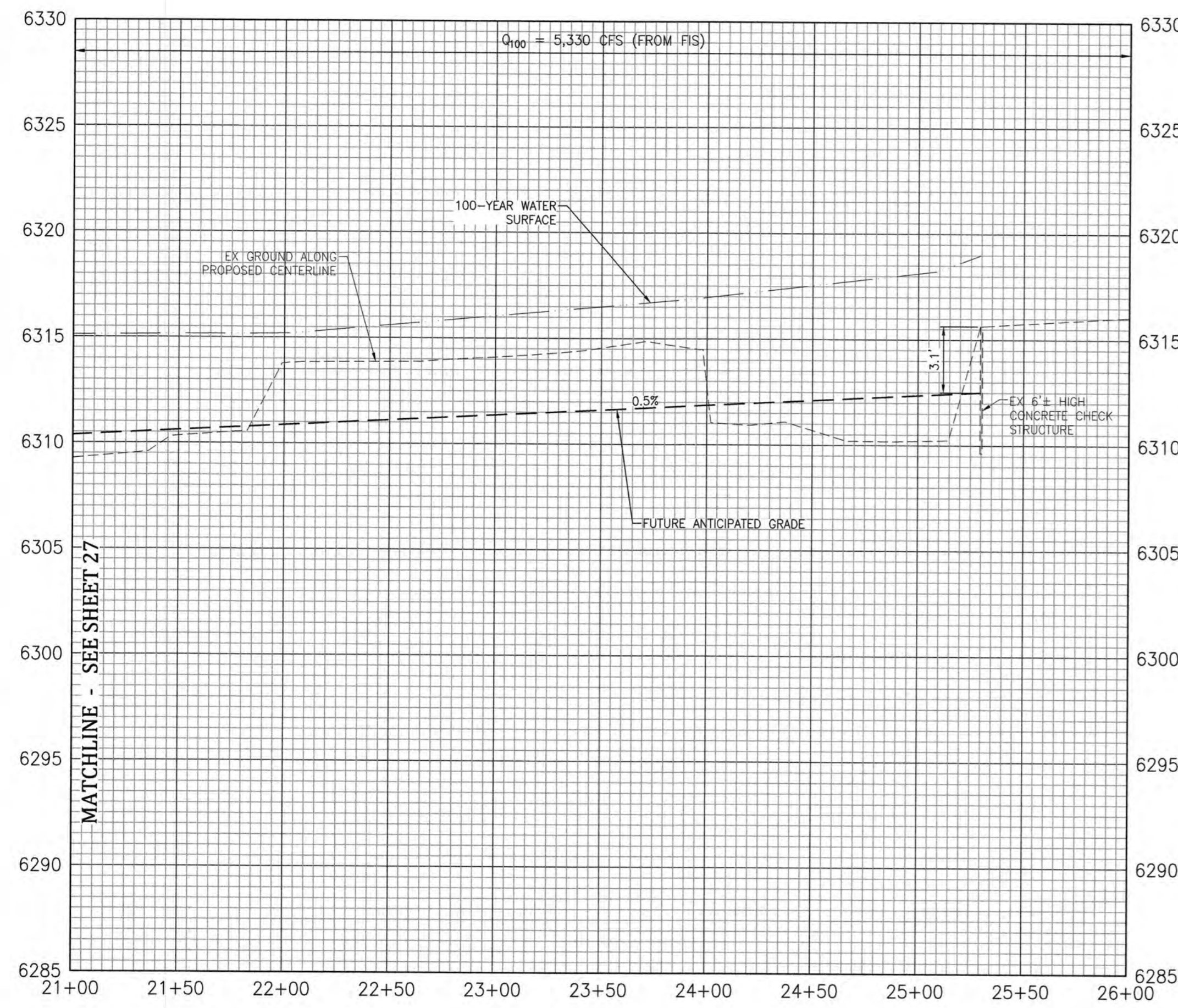
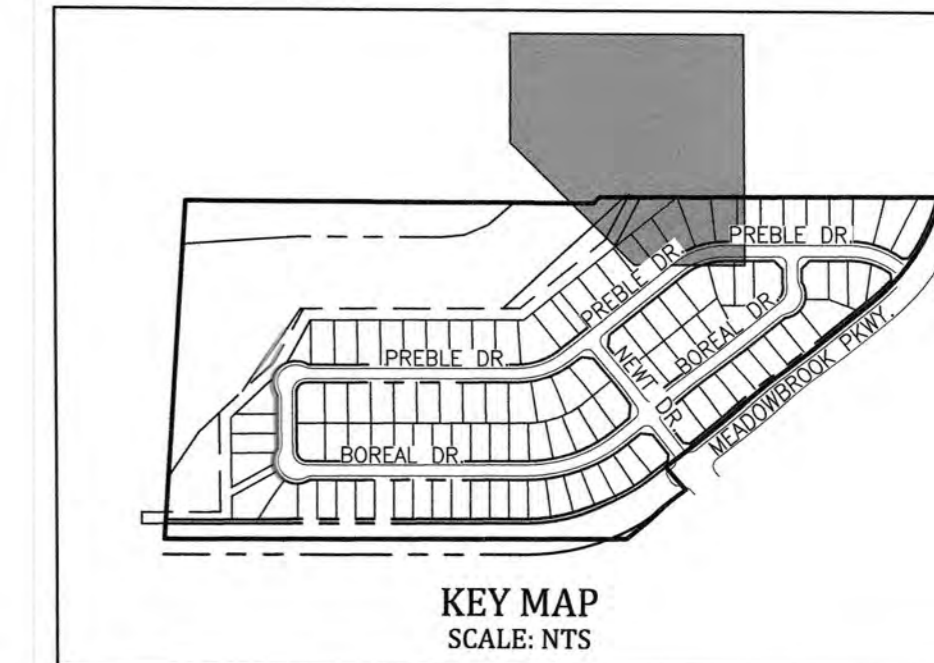
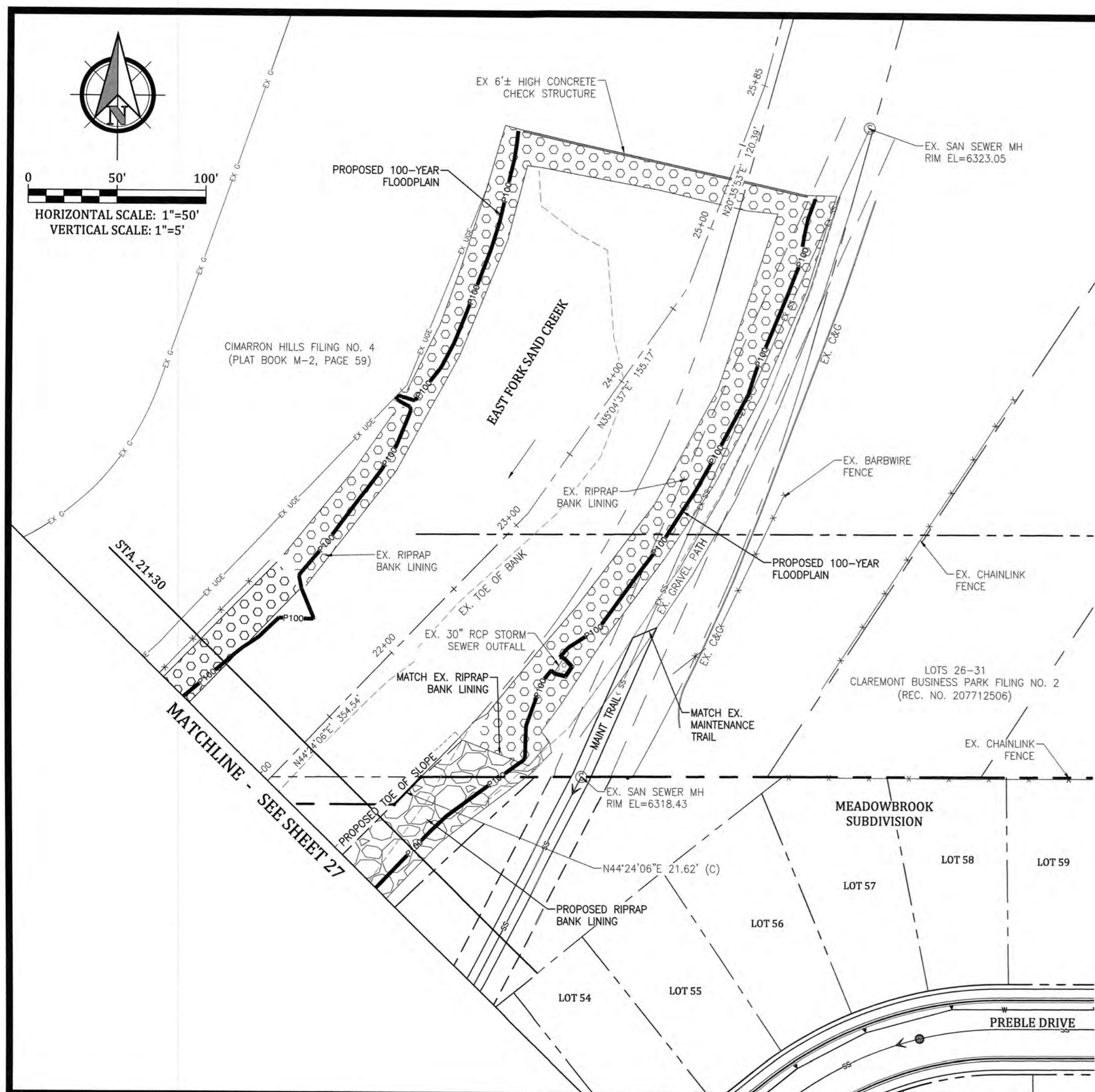
Celebrating 30 years
Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

MEADOWBROOK CROSSING FILING NO. 1

LOWER EAST FORK SAND CREEK PLAN AND PROFILE

STA. 9+00 TO STA. 21+00
EL PASO COUNTY, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	CJC
Drawn:	CJC
Check:	MWB
Revisions:	



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Kiowa
 Engineering Corporation
 1604 South 21st Street
 Colorado Springs, Colorado 80904
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MEADOWBROOK CROSSING FILING NO. 1
LOWER EAST FORK SAND CREEK PLAN AND PROFILE
 STA. 21+00 TO STA. 26+00
 EL PASO COUNTY, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	CJC
Drawn:	CJC
Check:	MWE
Revisions:	

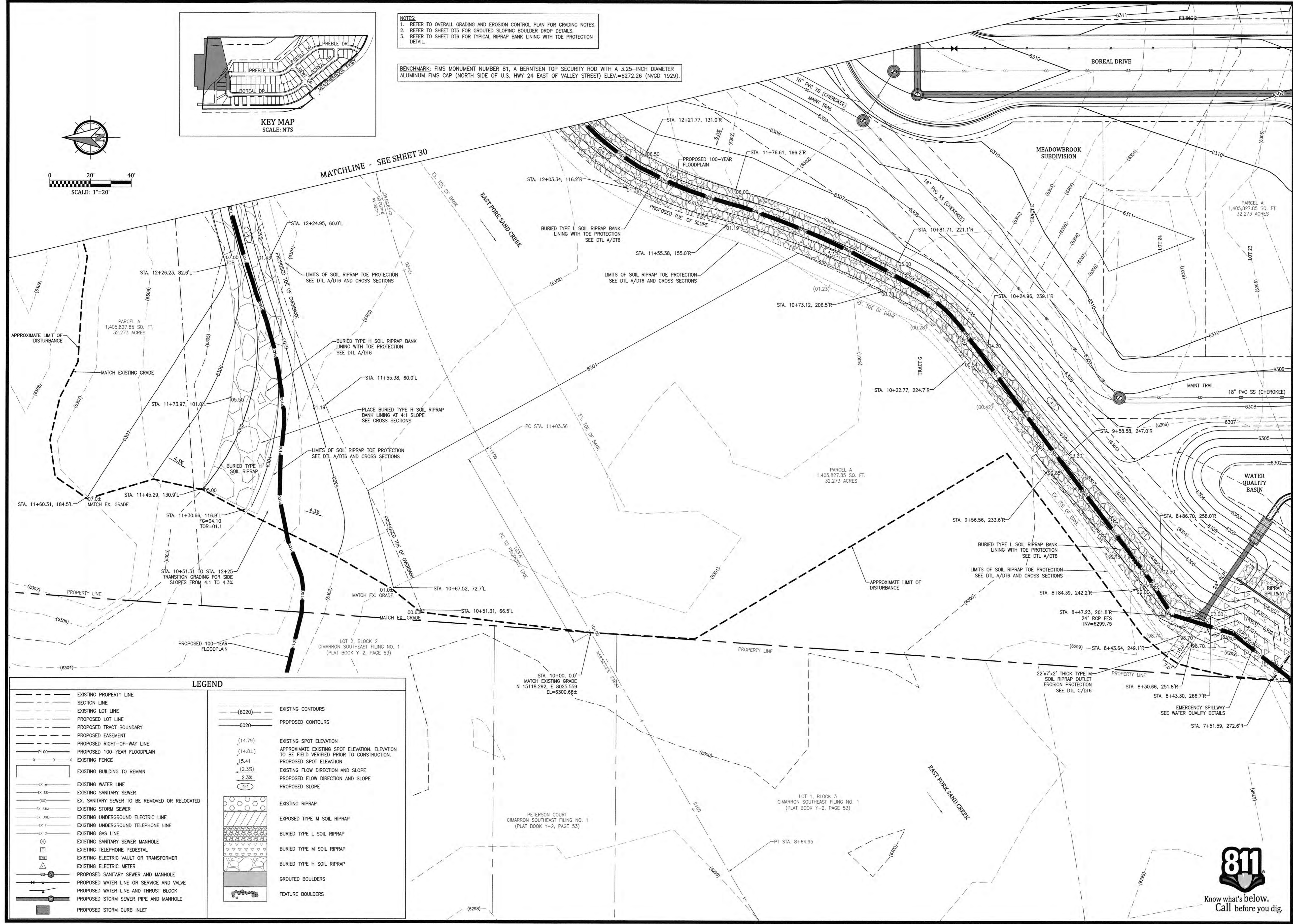
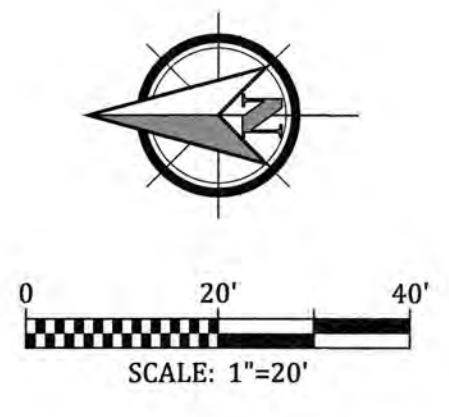
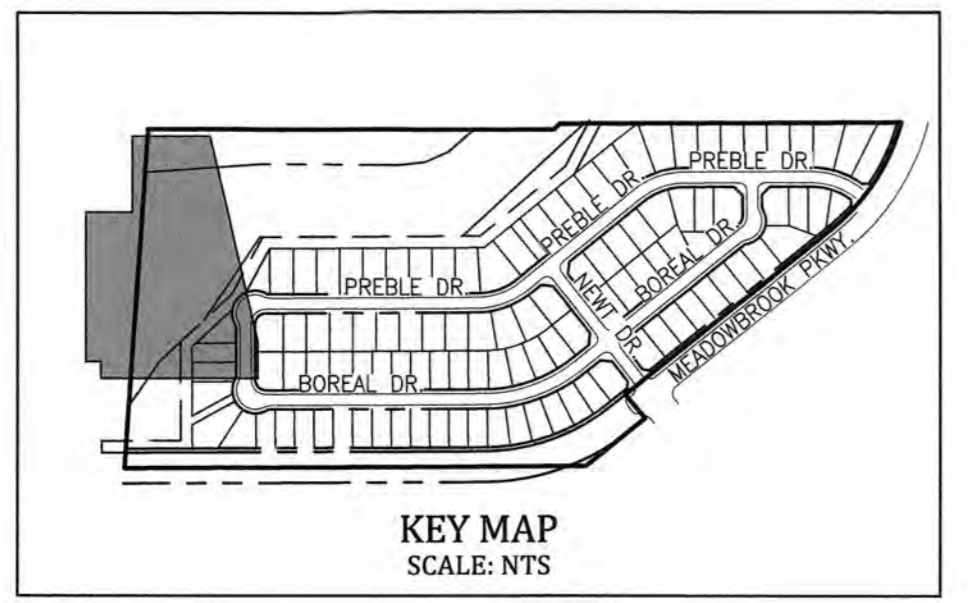
SHEET
28
 OF 35 SHEETS

MEADOWBROOK CROSSING FILING NO. 1
LOWER EAST FORK SAND CREEK GRADING PLAN
 STA. 9+00 TO STA. 12+50
 CITY OF COLORADO SPRINGS, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	CJC
Drawn:	CJC
Check:	MWE
Revisions:	

NOTES:
 1. REFER TO OVERALL GRADING AND EROSION CONTROL PLAN FOR GRADING NOTES.
 2. REFER TO SHEET DT5 FOR GROUTED SLOPING BOULDER DROP DETAILS.
 3. REFER TO SHEET DT6 FOR TYPICAL RIPRAP BANK LINING WITH TOE PROTECTION DETAIL.

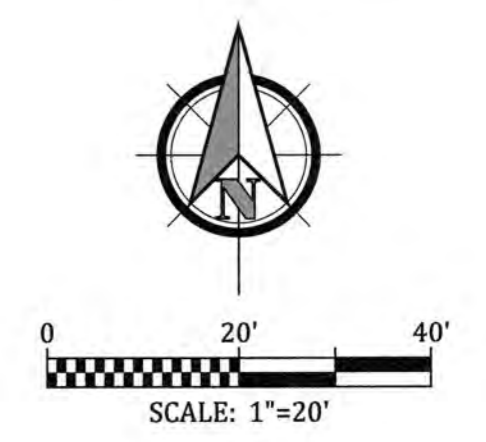
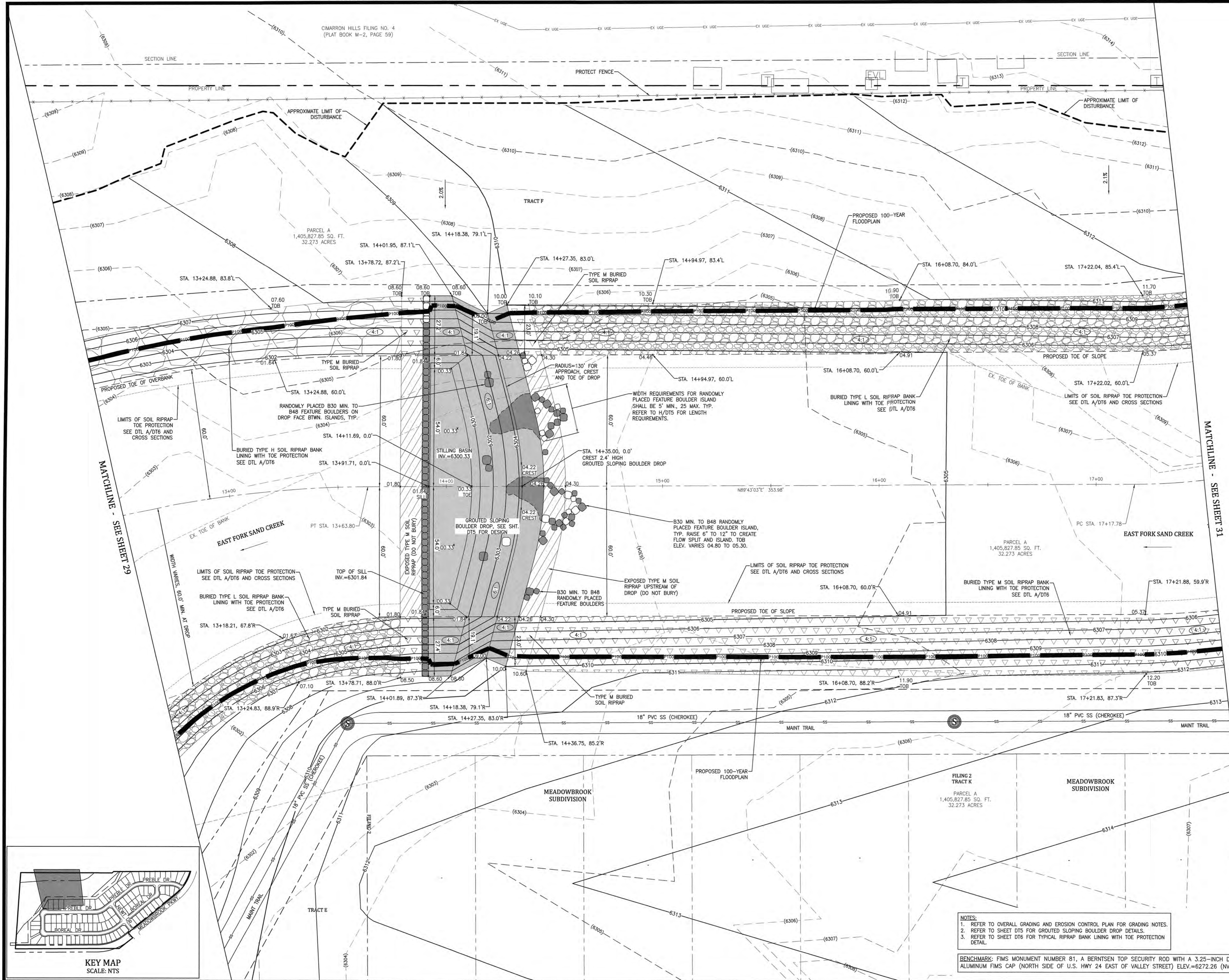
BENCHMARK: FIMS MONUMENT NUMBER 81, A BERNTSEN TOP SECURITY ROD WITH A 3.25-INCH DIAMETER ALUMINUM FIMS CAP (NORTH SIDE OF U.S. HWY 24 EAST OF VALLEY STREET) ELEV.=6272.26 (NVGD 1929).



LEGEND

	EXISTING PROPERTY LINE		EXISTING CONTOURS
	SECTION LINE		PROPOSED CONTOURS
	EXISTING LOT LINE		EXISTING SPOT ELEVATION
	PROPOSED LOT LINE		APPROXIMATE EXISTING SPOT ELEVATION, ELEVATION TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
	PROPOSED TRACT BOUNDARY		PROPOSED SPOT ELEVATION
	PROPOSED EASEMENT		EXISTING FLOW DIRECTION AND SLOPE
	PROPOSED RIGHT-OF-WAY LINE		PROPOSED FLOW DIRECTION AND SLOPE
	PROPOSED 100-YEAR FLOODPLAIN		PROPOSED SLOPE
	EXISTING FENCE		EXISTING RIPRAP
	EXISTING BUILDING TO REMAIN		EXPOSED TYPE M SOIL RIPRAP
	EXISTING WATER LINE		BURIED TYPE L SOIL RIPRAP
	EXISTING SANITARY SEWER		BURIED TYPE M SOIL RIPRAP
	EX. SANITARY SEWER TO BE REMOVED OR RELOCATED		BURIED TYPE H SOIL RIPRAP
	EXISTING STORM SEWER		GROUTED BOULDERS
	EX. STORM SEWER		FEATURE BOULDERS
	EXISTING UNDERGROUND ELECTRIC LINE		
	EXISTING UNDERGROUND TELEPHONE LINE		
	EXISTING GAS LINE		
	EXISTING SANITARY SEWER MANHOLE		
	EXISTING TELEPHONE PEDESTAL		
	EXISTING ELECTRIC VAULT OR TRANSFORMER		
	EXISTING ELECTRIC METER		
	PROPOSED SANITARY SEWER AND MANHOLE		
	PROPOSED WATER LINE OR SERVICE AND VALVE		
	PROPOSED WATER LINE AND THRUST BLOCK		
	PROPOSED STORM SEWER PIPE AND MANHOLE		
	PROPOSED STORM CURB INLET		





Celebrating 30 years

Kiewit

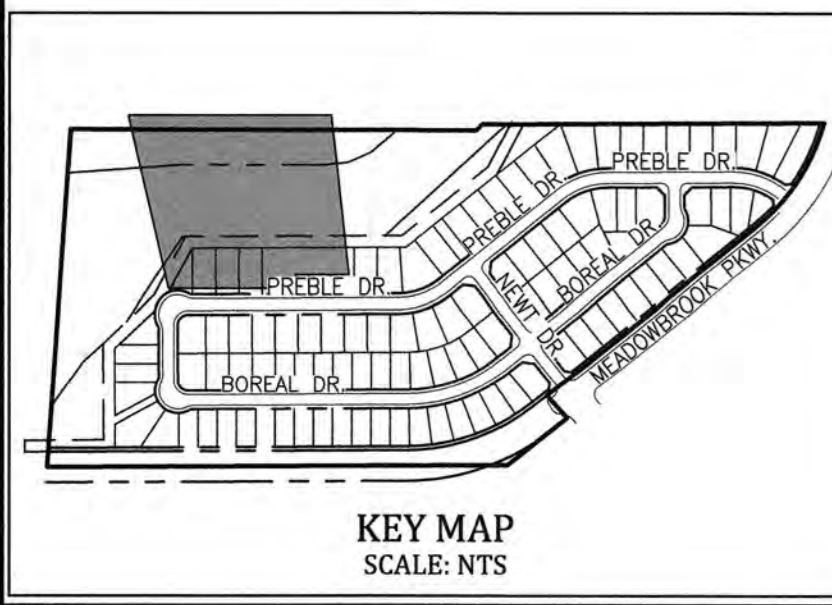
Engineering Corporation

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Colorado Springs, Colorado 80904
(719) 630-7342

MEADOWBROOK CROSSING FILING NO. 1

LOWER EAST FORK SAND CREEK GRADING PLAN

STA. 12+50 TO STA. 17+50
CITY OF COLORADO SPRINGS, COLORADO



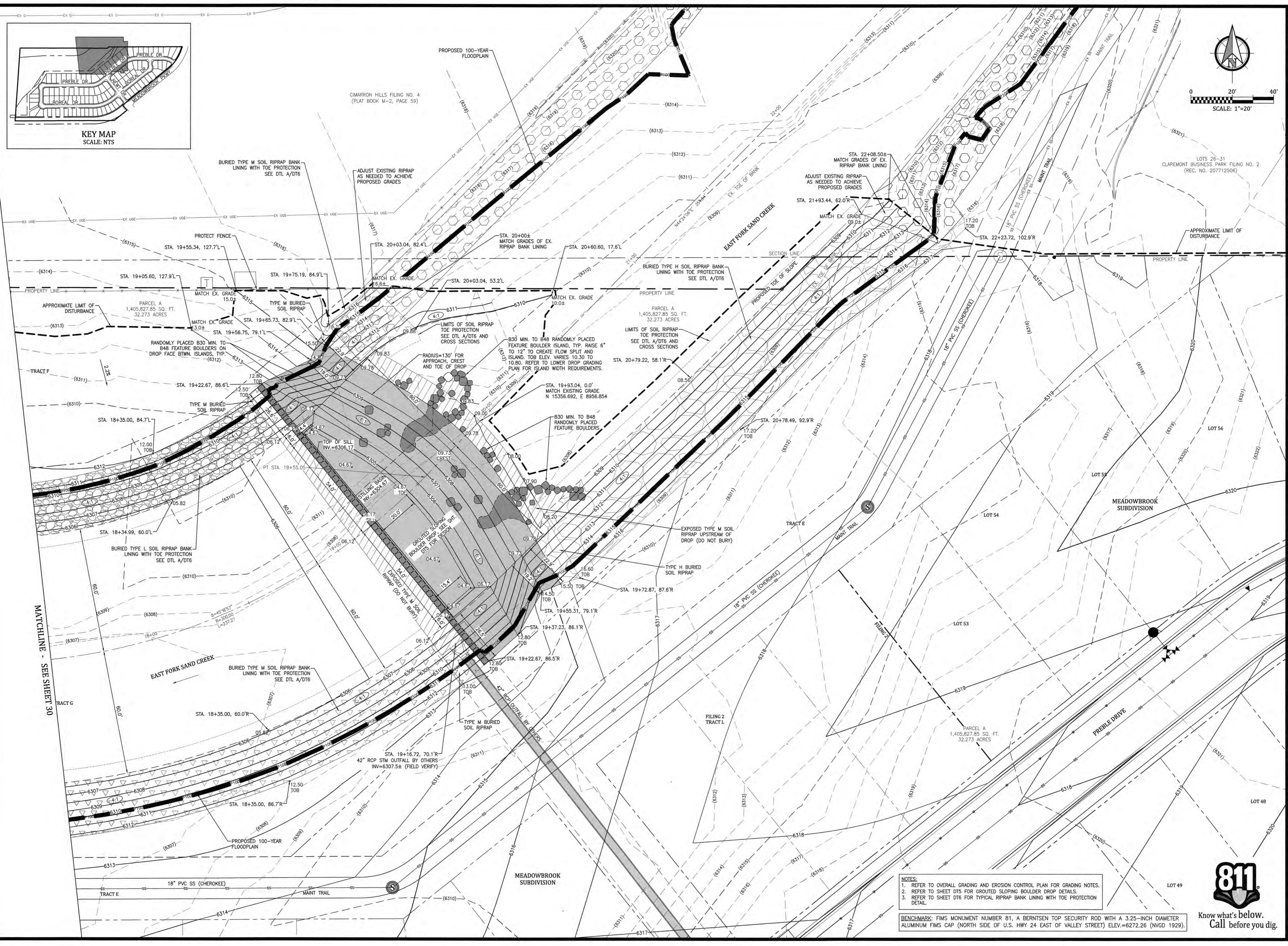
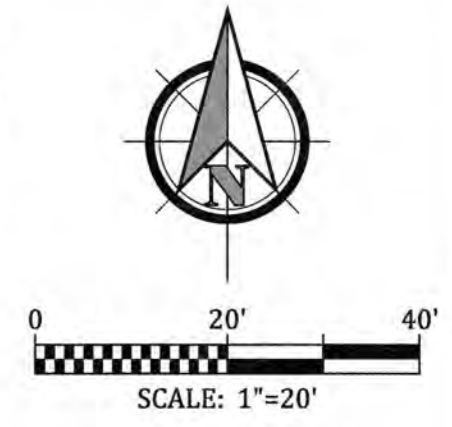
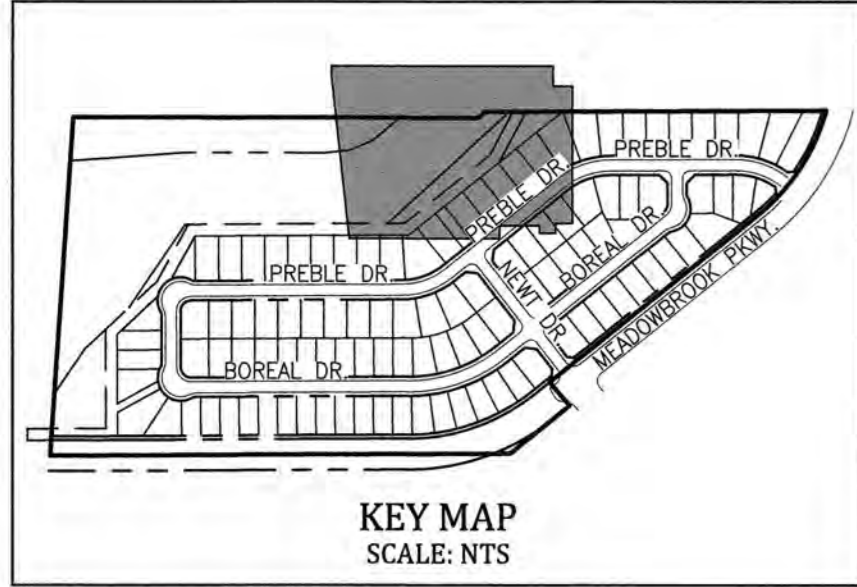
- NOTES:**
1. REFER TO OVERALL GRADING AND EROSION CONTROL PLAN FOR GRADING NOTES.
 2. REFER TO SHEET DT5 FOR GROUDED SLOPING BOULDER DROP DETAILS.
 3. REFER TO SHEET DT6 FOR TYPICAL RIPRAP BANK LINING WITH TOE PROTECTION DETAIL.

BENCHMARK: FIMS MONUMENT NUMBER 81, A BERNTSEN TOP SECURITY ROD WITH A 3.25-INCH DIAMETER ALUMINUM FIMS CAP (NORTH SIDE OF U.S. HWY 24 EAST OF VALLEY STREET) ELEV.=6272.26 (NGVD 1929).



Know what's below.
Call before you dig.

Project No.:	16039
Date:	August 22, 2017
Design:	CJC
Drawn:	CJC
Check:	MWE
Revisions:	



Celebrating 30 years
Kiowa
 Engineering Corporation
 1604 South 21st Street
 Colorado Springs, Colorado 80904
 (719) 630-7342

MEADOWBROOK CROSSING FILING NO. 1
LOWER EAST FORK SAND CREEK GRADING PLAN
 STA. 17+50 TO STA. 22+50
 CITY OF COLORADO SPRINGS, COLORADO

- NOTES:
 1. REFER TO OVERALL GRADING AND EROSION CONTROL PLAN FOR GRADING NOTES.
 2. REFER TO SHEET D15 FOR GROUTED SLOPING BOULDER DROP DETAILS.
 3. REFER TO SHEET D16 FOR TYPICAL RIPRAP BANK LINING WITH TOE PROTECTION DETAIL.

BENCHMARK: FIMS MONUMENT NUMBER 81, A BERNTSEN TOP SECURITY ROD WITH A 3.25-INCH DIAMETER ALUMINUM FIMS CAP (NORTH SIDE OF U.S. HWY 24 EAST OF VALLEY STREET) ELEV.=6272.26 (NVD 1929).



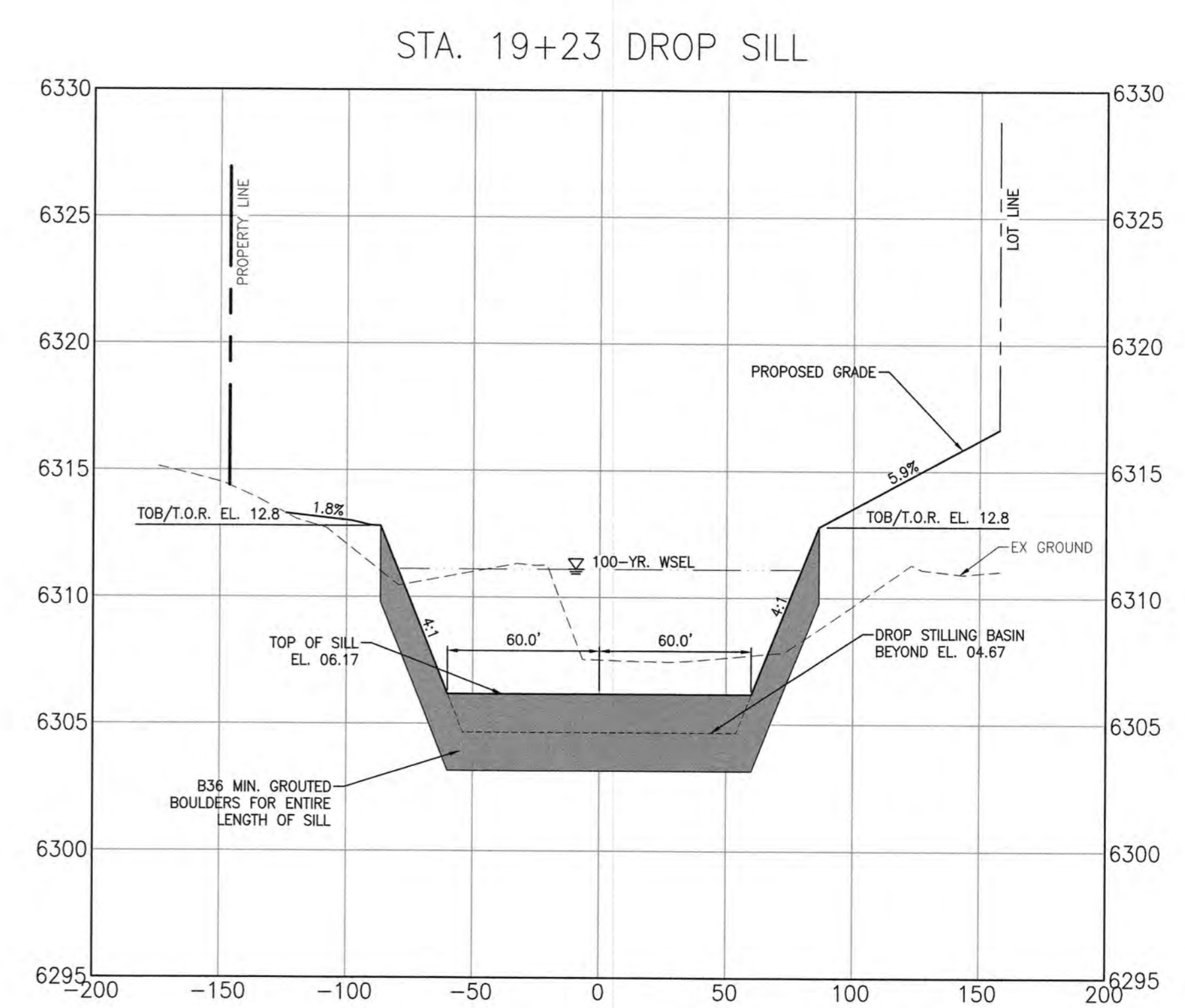
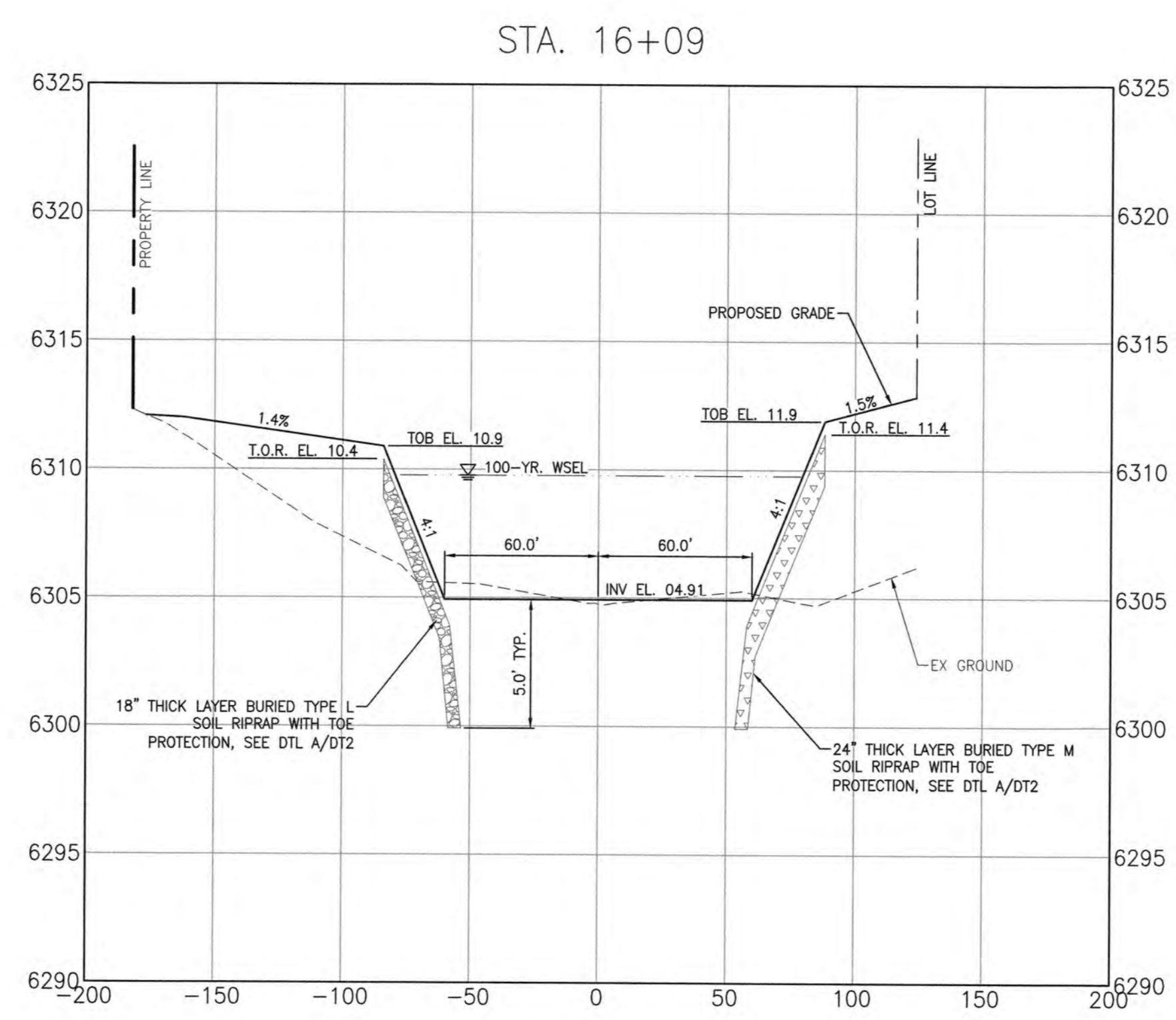
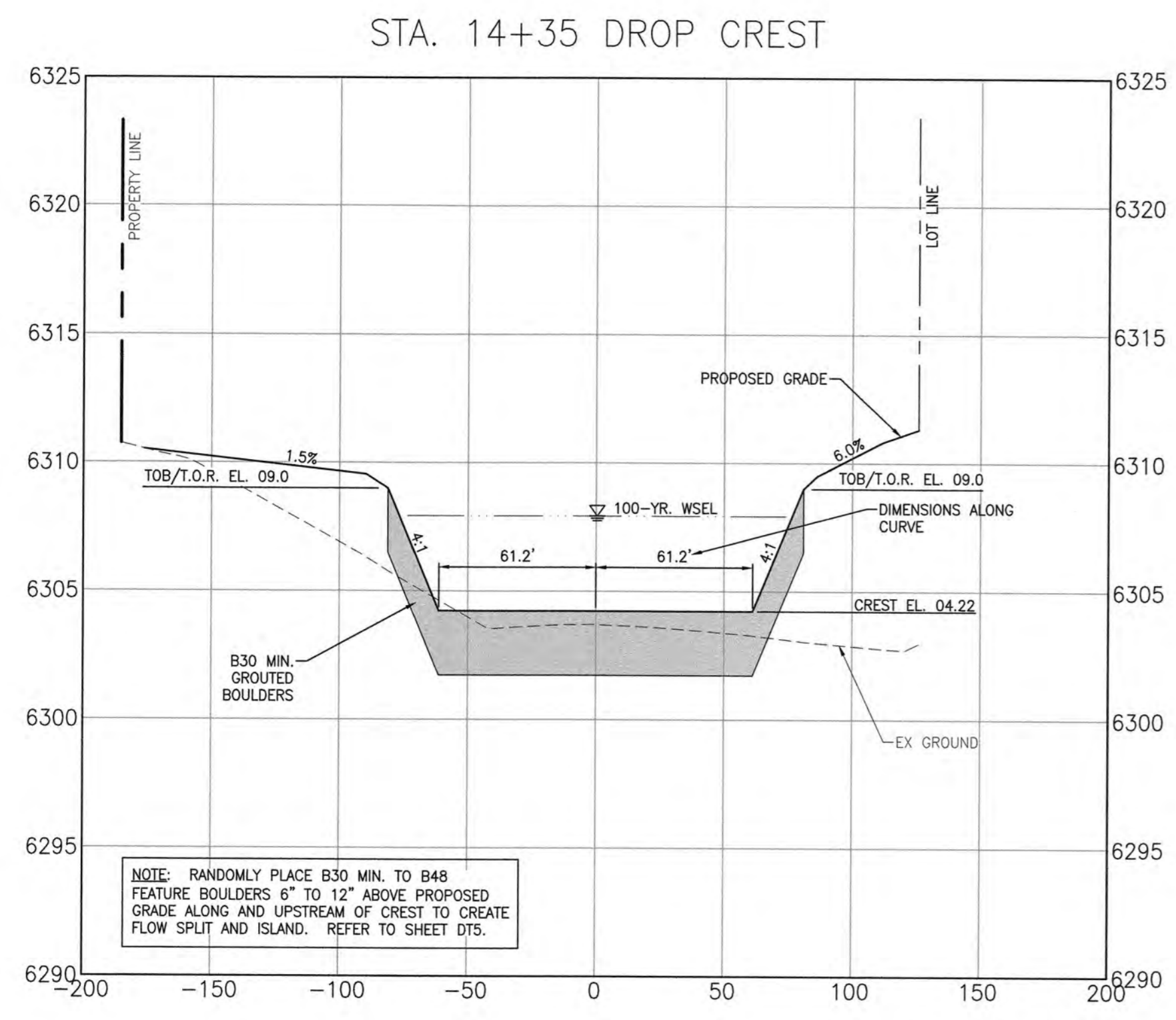
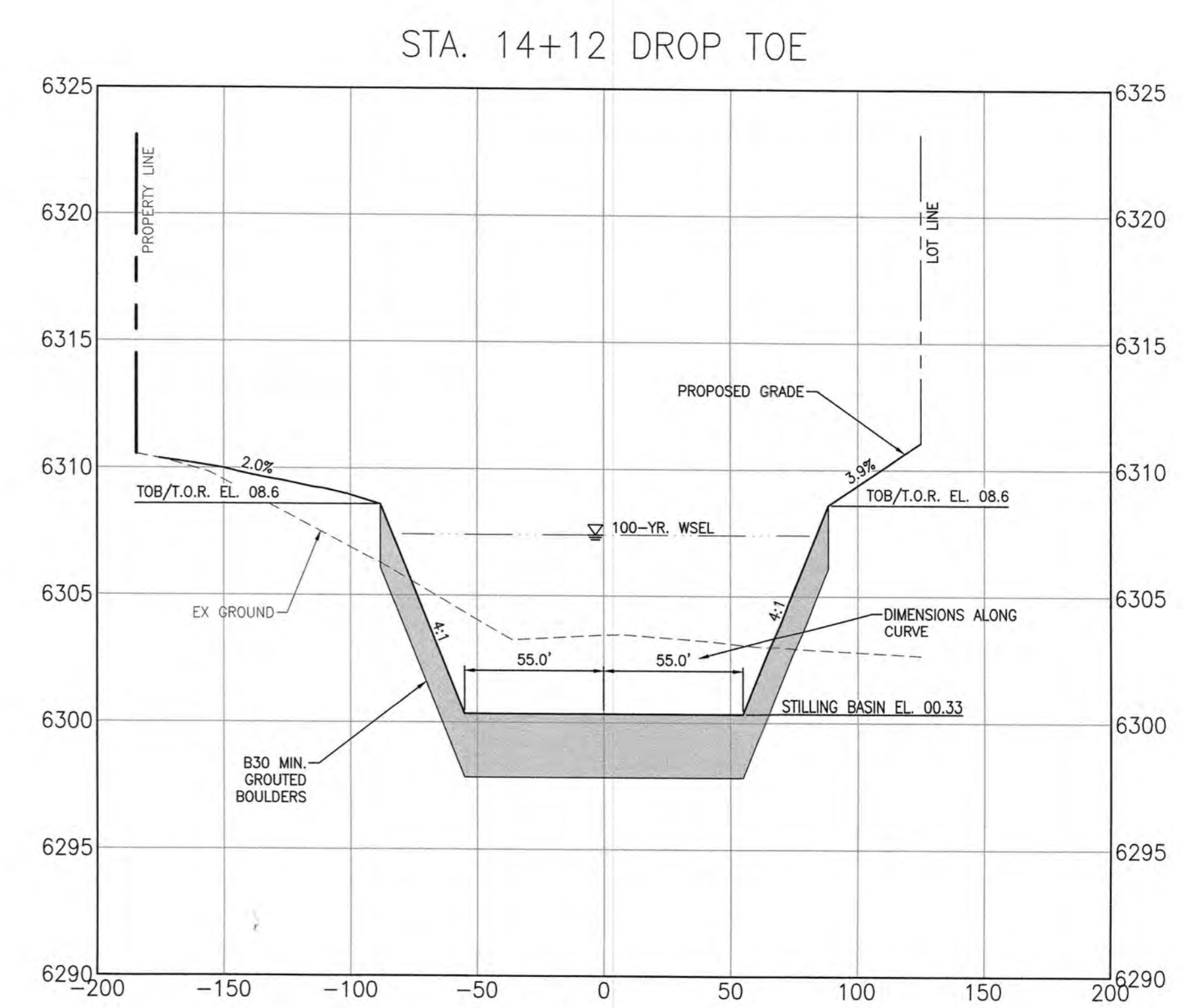
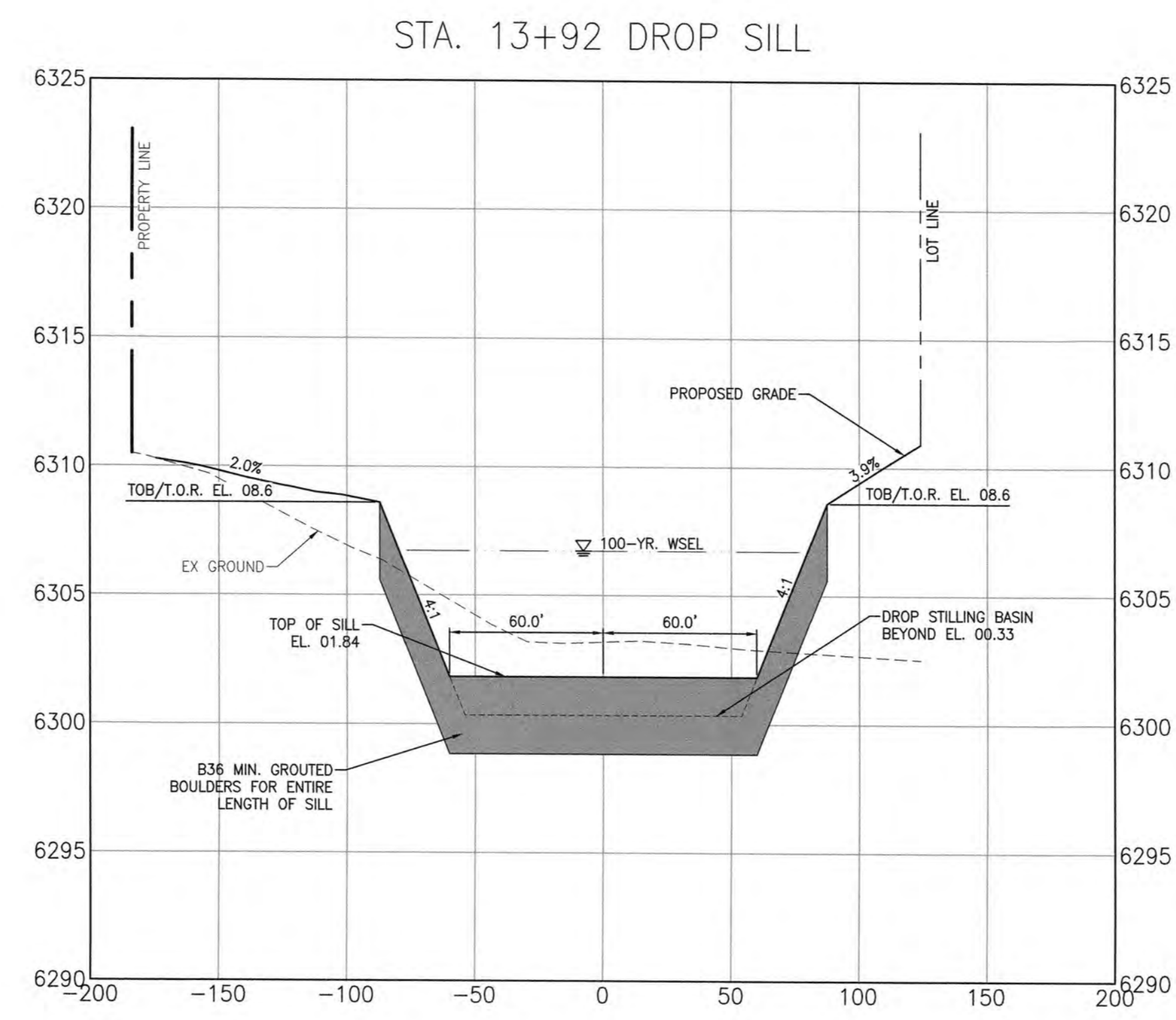
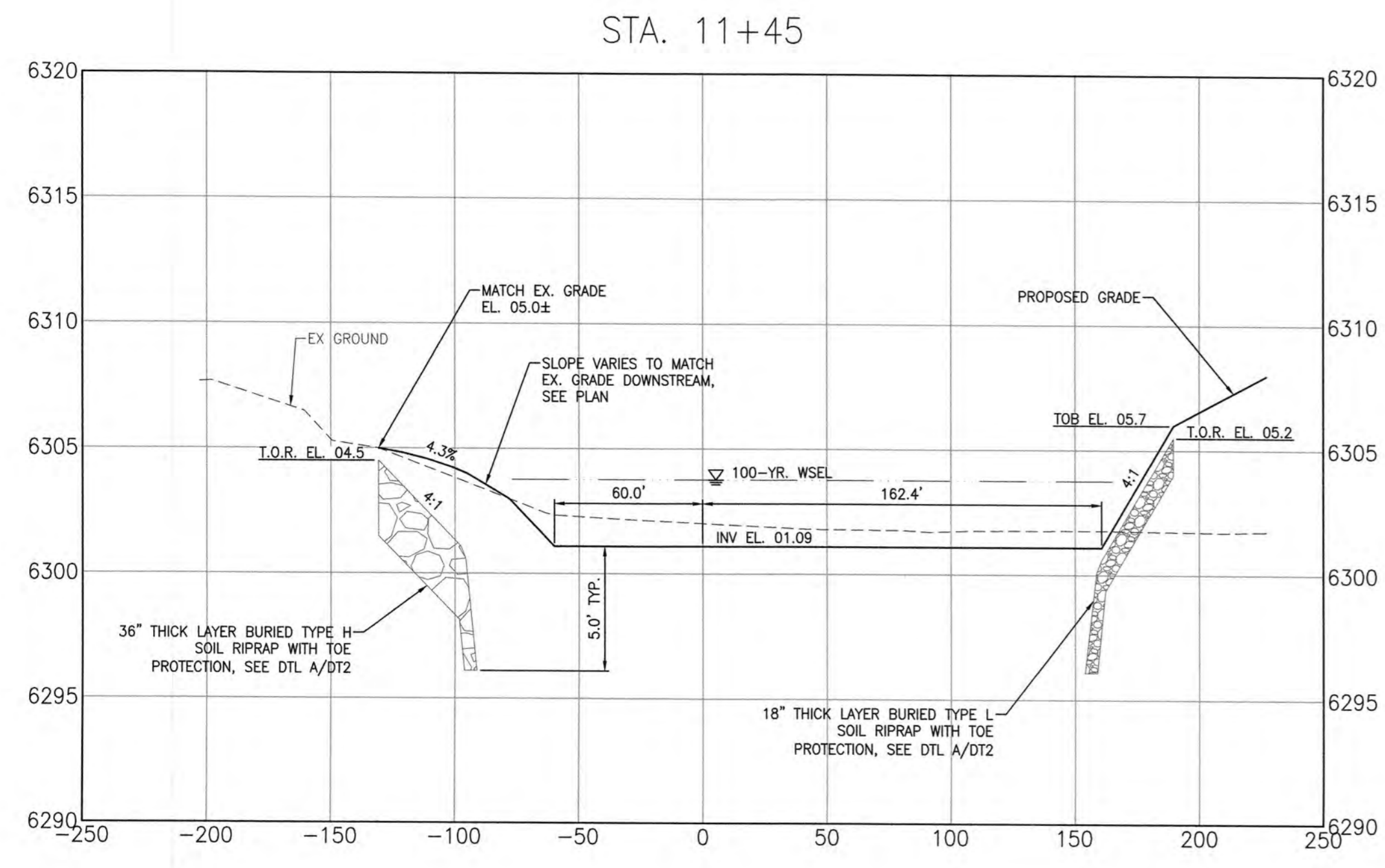
Project No.:	16039
Date:	August 22, 2017
Design:	CJC
Drawn:	CJC
Check:	MWE
Revisions:	
SHEET	31
	OF 35 SHEETS

MEADOWBROOK CROSSING FILING NO. 1
 CHANNEL CROSS SECTIONS
 CITY OF COLORADO SPRINGS, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	CJC
Drawn:	CJC
Check:	MWE
Revisions:	

SCALE:
 HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'

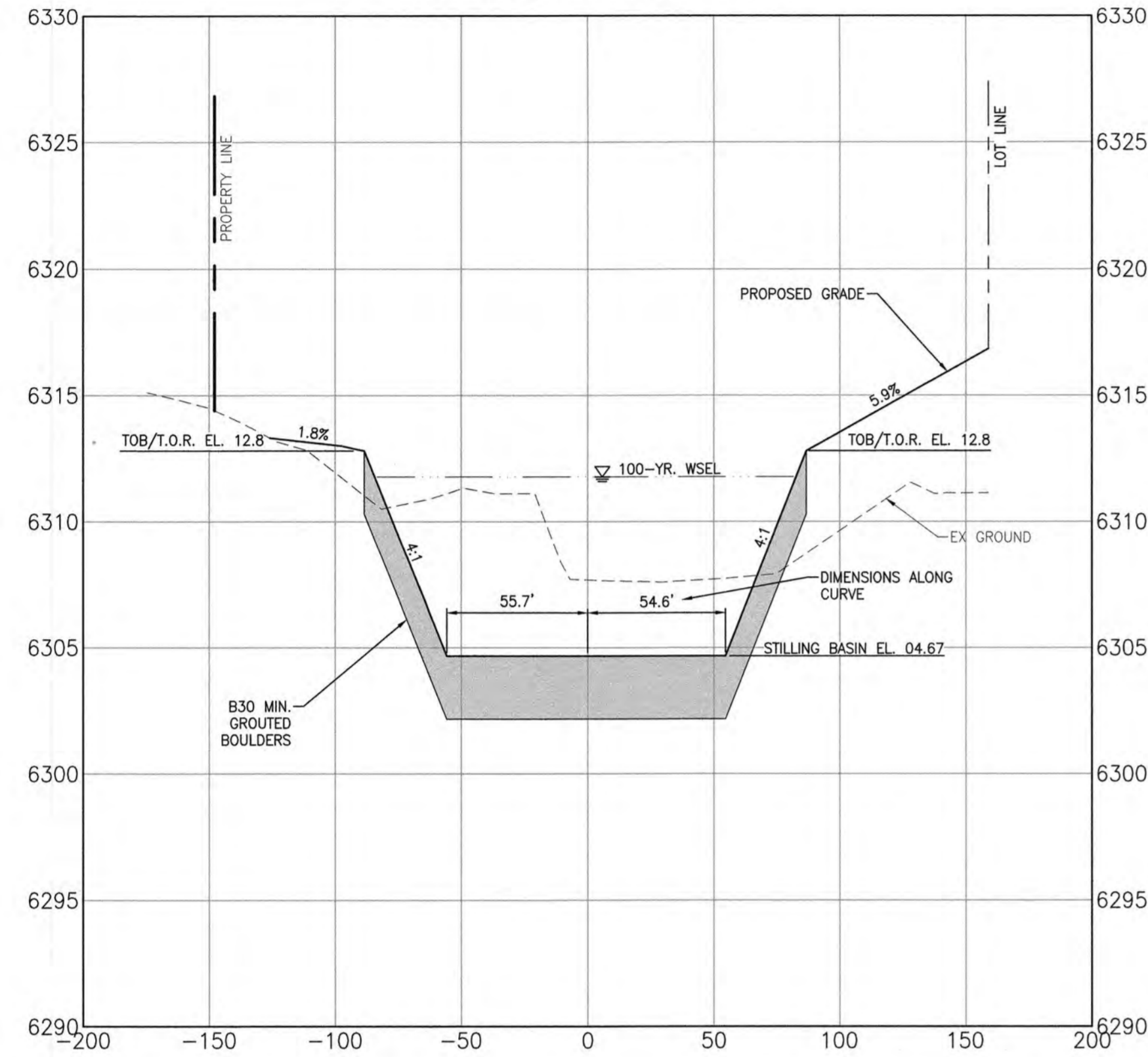
NOTES:
 1. ALL CROSS SECTIONS FACING UPSTREAM.
 2. REFER TO CHANNEL PLAN AND PROFILES FOR CROSS SECTION LOCATIONS.



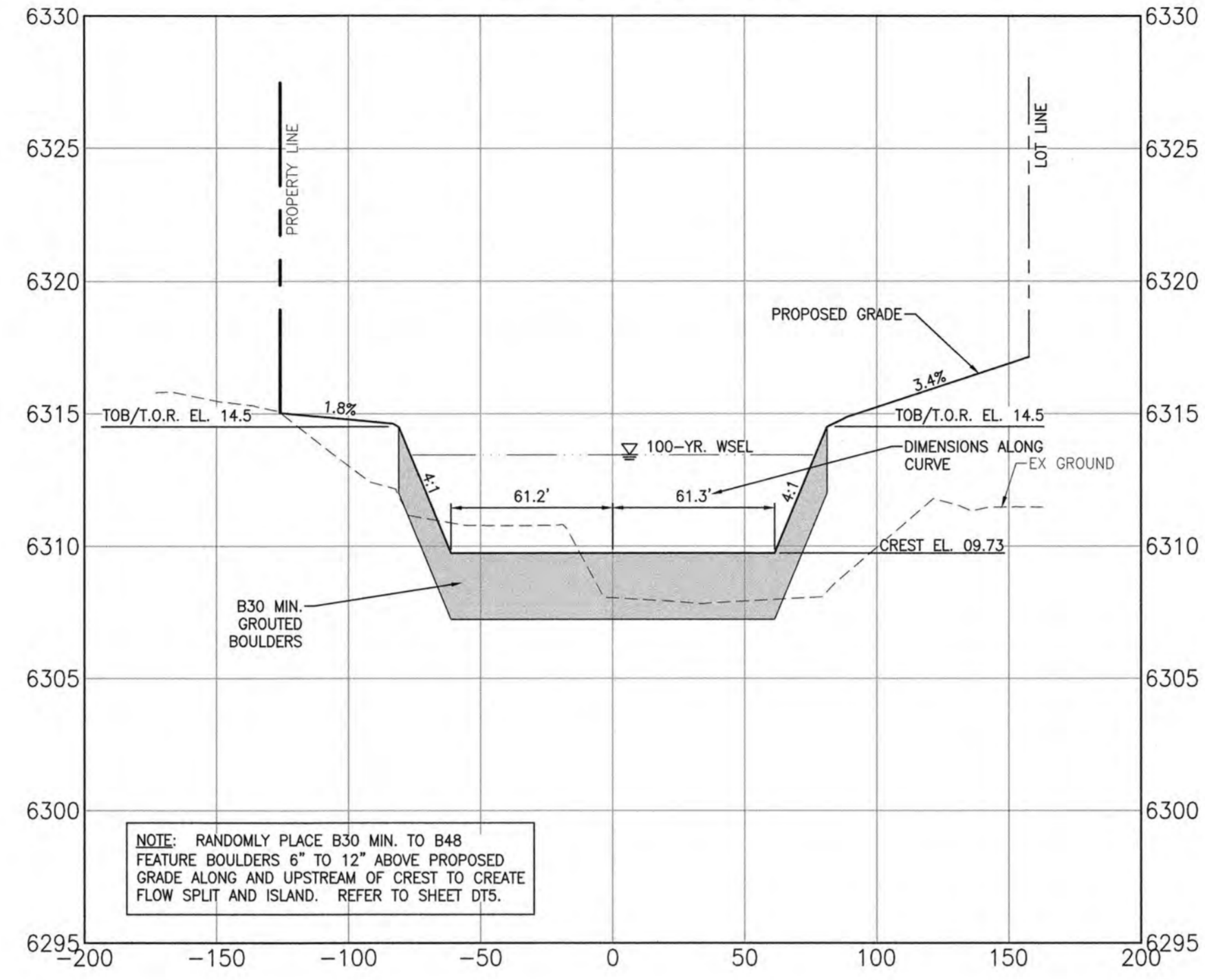
SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

NOTES:
1. ALL CROSS SECTIONS FACING UPSTREAM.
2. REFER TO CHANNEL PLAN AND PROFILES FOR CROSS SECTION LOCATIONS.

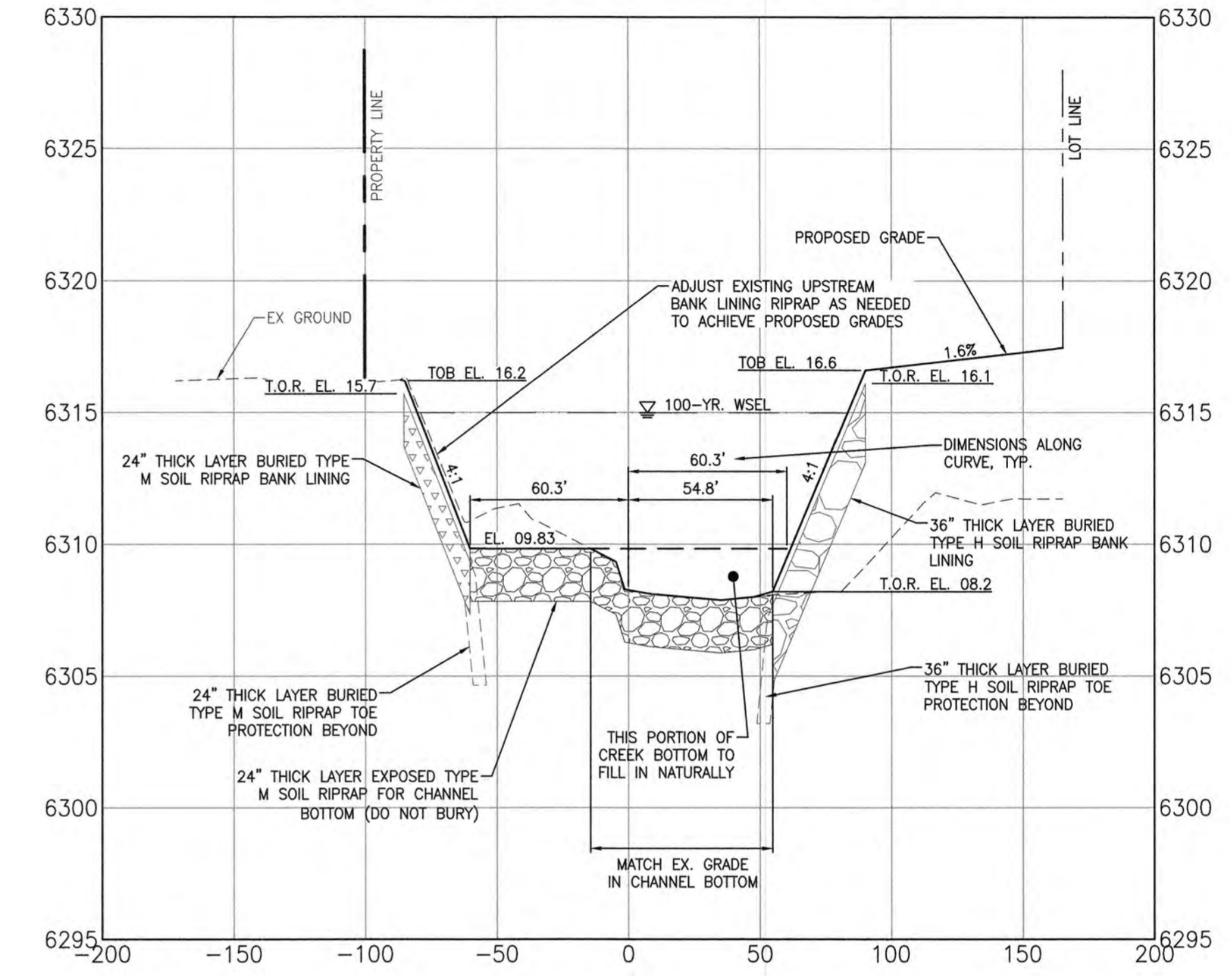
STA. 19+43 DROP TOE



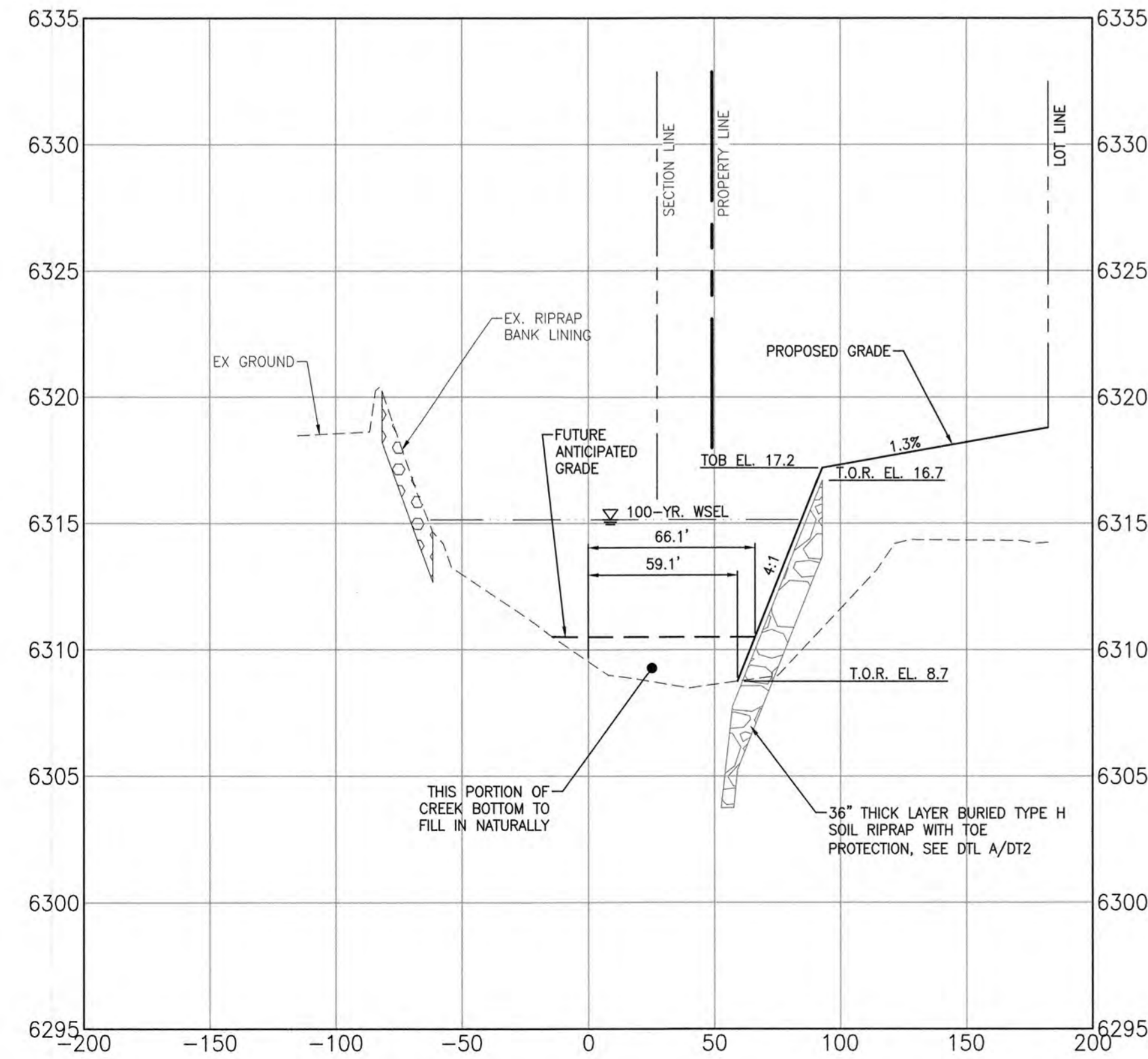
STA. 19+73 DROP CREST



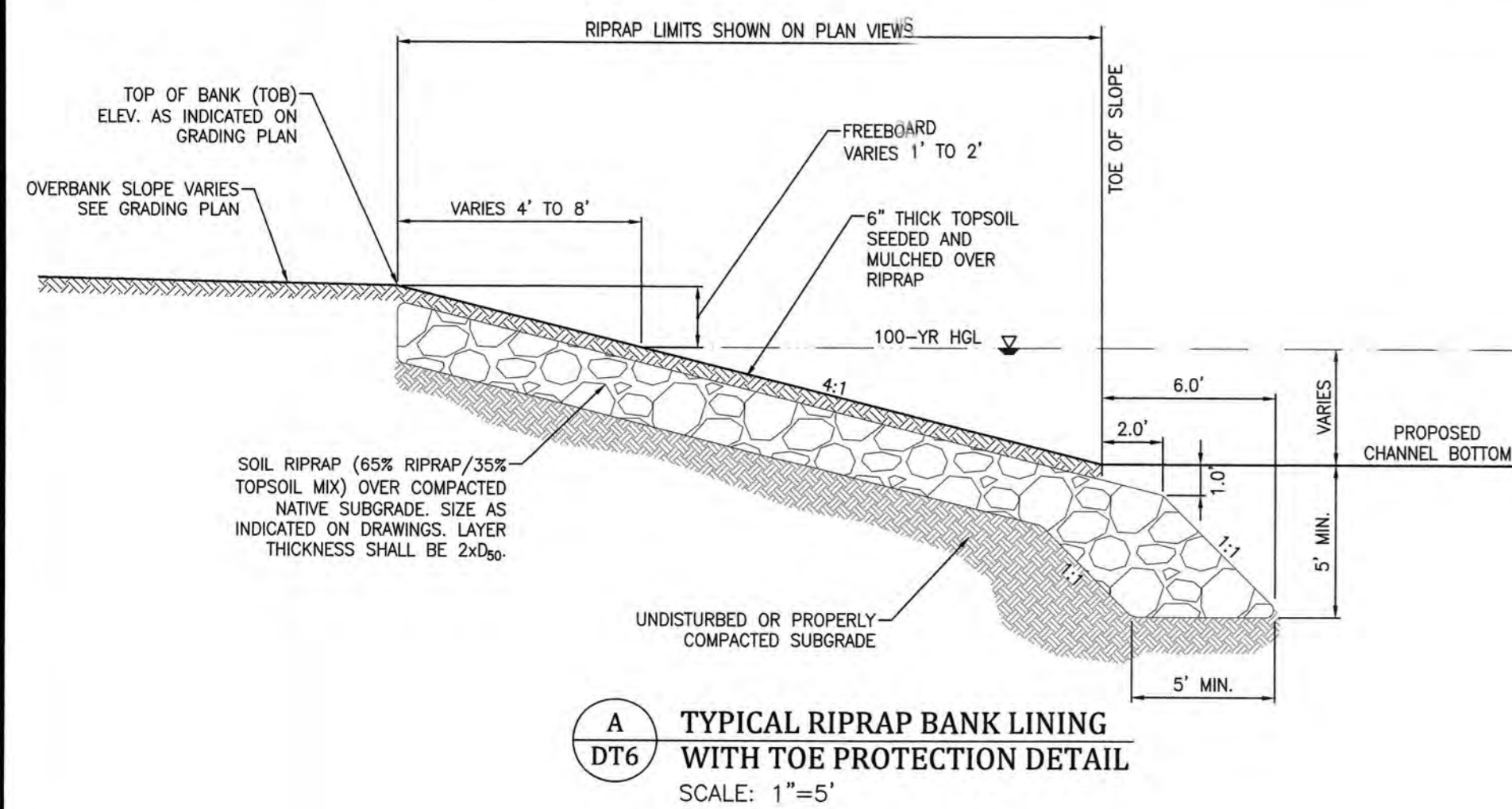
STA. 19+93 MATCH EXISTING GRADE



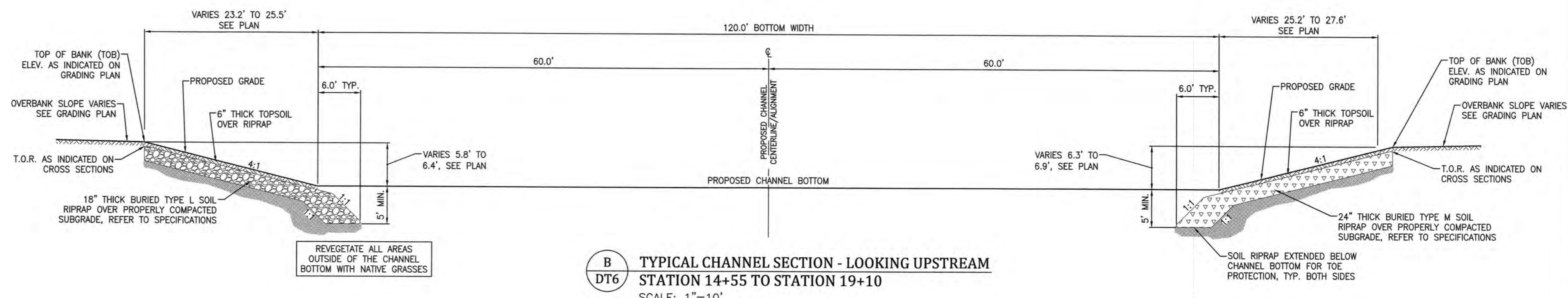
STA. 21+30



Project No.:	16039
Date:	August 22, 2017
Design:	CJC
Drawn:	CJC
Check:	MWE
Revisions:	



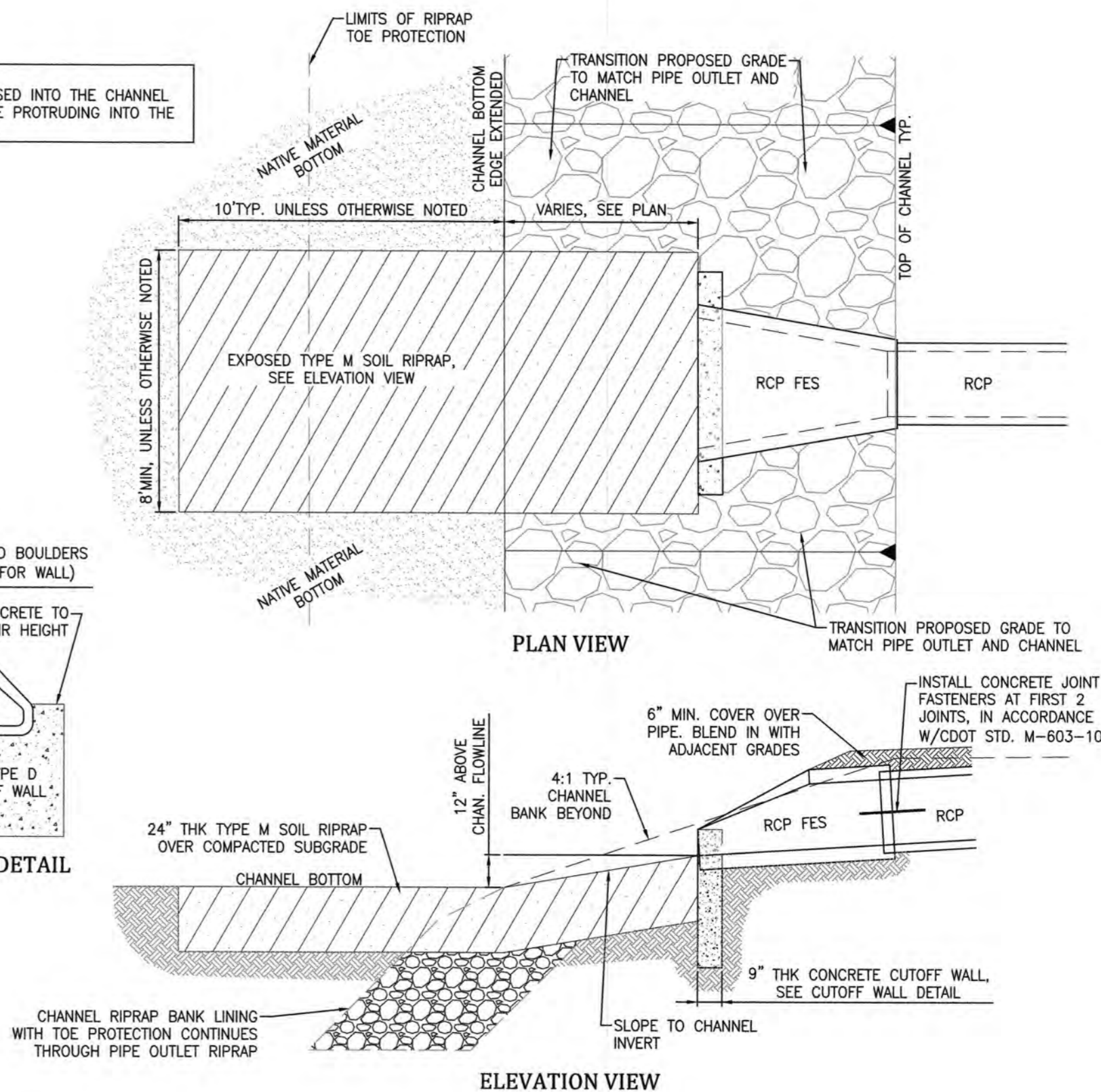
A TYPICAL RIPRAP BANK LINING WITH TOE PROTECTION DETAIL
DT6
SCALE: 1"=5'



B TYPICAL CHANNEL SECTION - LOOKING UPSTREAM
DT6
STATION 14+55 TO STATION 19+10
SCALE: 1"=10'

- SOIL RIPRAP**
1. THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH SIXTY FIVE PERCENT (65%) RIPRAP AND THIRTY FIVE PERCENT (35%) SOIL BY VOLUME. SOIL RIPRAP SHALL CONSIST OF A UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS.
 2. CONTRACTOR SHALL COOPERATE WITH ENGINEER IN OBTAINING AND PROVIDING SAMPLES OF ALL SPECIFIED MATERIALS.
 3. CONTRACTOR SHALL SUBMIT CERTIFIED LABORATORY TEST CERTIFICATES FOR ALL ITEMS REQUIRED FOR SOIL RIPRAP.
 4. RIPRAP USED SHALL BE THE TYPE DESIGNATED ON THE DRAWINGS AND SHALL CONFORM TO TABLE SHOWN.
 5. THE RIPRAP DESIGNATION AND TOTAL THICKNESS OF RIPRAP SHALL BE AS SHOWN ON THE DRAWINGS. THE MAXIMUM STONE SIZE SHALL NOT BE LARGER THAN THE THICKNESS OF THE RIPRAP.
 6. NEITHER WIDTH NOR THICKNESS OF A SINGLE STONE OF RIPRAP SHALL BE LESS THAN ONE-THIRD (1/3) OF ITS LENGTH.
 7. THE SPECIFIC GRAVITY OF THE RIPRAP SHALL BE TWO AND ONE-HALF (2.5) OR GREATER.
 8. MINIMUM DENSITY FOR ACCEPTABLE RIPRAP SHALL BE ONE HUNDRED AND SIXTY FIVE (165) POUNDS PER CUBIC FOOT.
 9. RIPRAP SPECIFIC GRAVITY SHALL BE ACCORDING TO THE BULK-SATURATED, SURFACE-DRY BASIS, IN ACCORDANCE WITH AASHTO T85.
 10. THE RIPRAP SHALL HAVE A PERCENTAGE LOSS OF NOT MORE THAN FORTY PERCENT (40%) AFTER FIVE HUNDRED (500) REVOLUTIONS WHEN TESTED IN ACCORDANCE WITH AASHTO T96.
 11. THE RIPRAP SHALL HAVE A PERCENTAGE LOSS OF NOT MORE THAN TEN PERCENT (10%) AFTER FIVE (5) CYCLES WHEN TESTED IN ACCORDANCE WITH AASHTO T104 FOR LEDGE ROCK USING SODIUM SULFATE.
 12. THE RIPRAP SHALL HAVE A PERCENTAGE LOSS OF NOT MORE THAN TEN PERCENT (10%) AFTER TWELVE (12) CYCLES OF FREEZING AND THAWING WHEN TESTED IN ACCORDANCE WITH AASHTO T103 FOR LEDGE ROCK, PROCEDURE A. ROCK SHALL BE FREE FROM CALCITE INTRUSIONS.
 13. RUBBLE FOR USE AS SOIL/RIPRAP SHALL BE GRADED TO MEET THE EQUIVALENT ROCK RIPRAP GRADATION. RUBBLE PROPOSED FOR USE IN PLACE OF ROCK RIPRAP SHALL BE STOCKPILED FOR OBSERVATION BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF THE WORK. ROUNDED RIPRAP (RIVER ROCK) IS NOT ACCEPTABLE, UNLESS SPECIFICALLY DESIGNATED ON THE DRAWINGS.
 14. GRADATION: EACH LOAD OF RIPRAP SHALL BE REASONABLY WELL GRADED FROM THE SMALLEST TO THE LARGEST SIZE SPECIFIED.
 - 14.1. STONES SMALLER THAN THE TWO TO TEN PERCENT (2%-10%) SIZE WILL NOT BE PERMITTED IN AN AMOUNT EXCEEDING TEN PERCENT (10%) BY WEIGHT OF EACH LOAD.
 - 14.2. CONTROL OF GRADATION SHALL BE BY VISUAL INSPECTION. HOWEVER IN THE EVENT THE ENGINEER DETERMINES THE RIPRAP TO BE UNACCEPTABLE, THE ENGINEER SHALL PICK TWO (2) RANDOM TRUCKLOADS TO BE DUMPED AND CHECKED FOR GRADATION. MECHANICAL EQUIPMENT AND LABOR NEEDED TO ASSIST IN CHECKING GRADATION SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.

NOTE:
1. PIPE OUTLET TO BE RECESSED INTO THE CHANNEL BANK TO MINIMIZE THE PIPE PROTRUDING INTO THE TYPICAL CHANNEL SECTION.



C FES PIPE OUTLET w/CONCRETE CUTOFF WALL AND JOINT RESTRAINTS
DT6
SCALE: NTS

MEADOWBROOK CROSSING FILING NO. 1

CHANNEL DETAILS
EL PASO COUNTY, COLORADO

Project No.:	16039
Date:	August 22, 2017
Design:	CJC
Drawn:	CJC
Check:	MWE
Revisions:	