

ANTLER RANGE FILING NO. 1

EL PASO COUNTY, COLORADO

CONSTRUCTION DOCUMENTS

STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS:

- 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 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 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 (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/OR 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 PCD. 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 PCD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD 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 DPW AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DPW, 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.

ABBREVIATIONS:

ASCE - AMERICAN SOCIETY OF CIVIL ENGINEERS	MIN - MINIMUM
BLDG - BUILDING	OH - OVERHEAD
BW - BOTTOM OF WALL	PB - PUBLIC
CG - CURB AND GUTTER	PC - POINT OF CURVATURE
CIP - CAST IRON PIPE	PCC - POINT OF COMPOUND CURVATURE
CL - CENTERLINE	PCR - POINT OF CURB RETURN
CMP - CORRUGATED METAL PIPE	PR - PROPOSED
CONC - CONCRETE	PRC - POINT OF REVERSE CURVATURE
DIP - DUCTILE IRON PIPE	PVC - POLYVINYL CHLORIDE PIPE
DS - DOWNSPOUT	PVT - PRIVATE
EL - ELEVATION	PT - POINT OF TANGENCY
ESMT - EASEMENT	P.U.E - PUBLIC UTILITY EASEMENT
EX - EXISTING	P.U.A.E - PUBLIC UTILITY & ACCESS EASEMENT
FES - FLARED END SECTION	P.U.D.E - PUBLIC UTILITY & DRAINAGE EASEMENT
FL - FLOWLINE	P.I.E - PUBLIC IMPROVEMENT EASEMENT
GB - GRADE BREAK	R - RADIUS
HP - HIGH POINT	RIM - RIM ELEVATION
HYD - HYDRANT	STM - STORM
INV - INVERT ELEVATION	TBC - TOP BACK OF CURB
LF - LINEAR FEET	TW - TOP OF WALL
LP - LOW POINT	TYP - TYPICAL
MH - MANHOLE	UD - UNDERDRAIN
	UT - UTILITY
	WTR - WATER
	XPAN - CROSSPAN



VICINITY MAP
SCALE: 1"=1000'

BASIS OF BEARINGS:

THE COURSE ON THE NORTHERLY BOUNDARY LINE OF THE WESTERLY PORTION OF THE TRACT OF LAND DESCRIBED IN WARRANTY DEED RECORDED UNDER RECEPTION NO. 206150812 OF THE RECORDS OF THE EL PASO COUNTY, COLORADO, BEING MONUMENTED AT THE WEST END BY A REBAR AND YELLOW PLASTIC CAP STAMPED "WKC&ASSOCPLS4842" 0.1' BELOW GRADE, ASSUMED TO BEAR S89°44'22"E FEET (DEED BEARING S89°18'55"E) A DISTANCE OF 1,424.82 FEET.

BENCHMARK:

NGS MONUMENT DESIGNATION BLACK - PID KK1644.3-1/2" BRASS DISK IN CONCRETE
NAVD88 ELEV 7317.86

SHEET INDEX

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20	-	CONSTRUCTION DETAILS
20	-	TOTAL SHEETS

CONTACTS:

OWNER/DEVELOPER	ANTLER RANGE LLC PO BOX 38939 COLORADO SPRINGS, CO 80937 ATTN: GRANT LANGDON (602) 957-0966
ENGINEER	ALL TERRAIN ENGINEERING LLC 1004 W VAN BUREN ST COLORADO SPRINGS, CO 80907 ATTN: RYAN BURNS
SURVEYOR	EDWARD JAMES SURVEYING, INC. 926 ELKTON DRIVE COLORADO SPRINGS, CO 80907 (719) 576-1216
EL PASO COUNTY	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS CO 80910
FIRE PROTECTION	FALCON FIRE PROTECTION DISTRICT 7030 OLD MERIDIAN ROAD PEYTON, CO 80831 (719) 495-4050
ELECTRIC	MOUNTAIN VIEW ELECTRIC 11140 E WOODMEN ROAD FALCON, CO 80831
GAS	BLACK HILLS ENERGY 105 S VICTORIA AVENUE PUEBLO, CO 81003

EL PASO COUNTY STATEMENT

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.

FILE IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

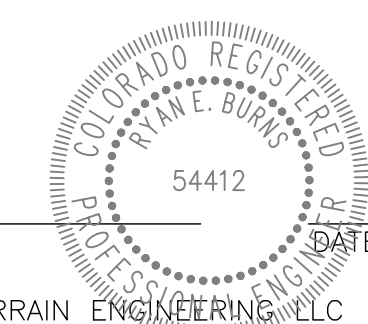
IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THESE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

JOSHUA J. PALMER P.E. _____ DATE _____

COUNTY ENGINEER/ECM ADMINISTRATOR

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT 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 PLAN 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.



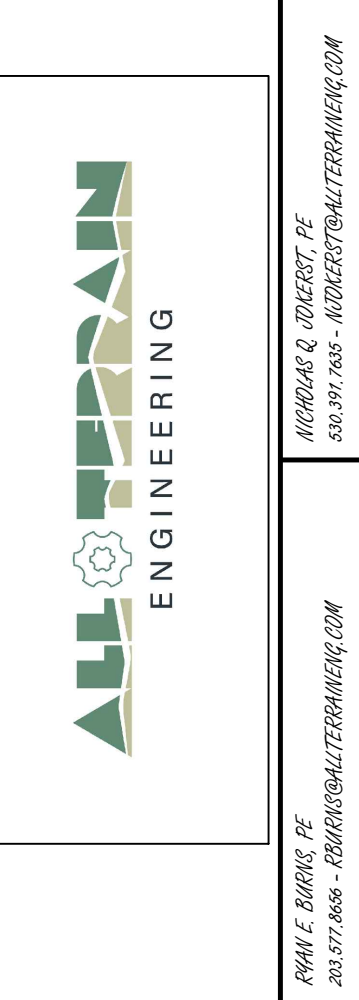
RYAN E. BURNS, P.E.
COLORADO P.E. 54412
FOR AND ON BEHALF OF ALL TERRAIN ENGINEERING LLC

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

NAME _____ DATE _____

ANTLER RANGE LLC
PO BOX 38939
COLORADO SPRINGS, 80937



PREPARED FOR:
ANTLER RANGE LLC
PO BOX 38939
COLORADO SPRINGS, CO 80937
GRANT LANGDON
(602) 957-0966
GL@GLANGDON.COM

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, ALL TERRAIN ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

DATE	DESCRIPTION

ANTLER RANGE FILING NO. 1

COVER SHEET

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026

H-SCALE: 1"=1000'

V-SCALE: NA

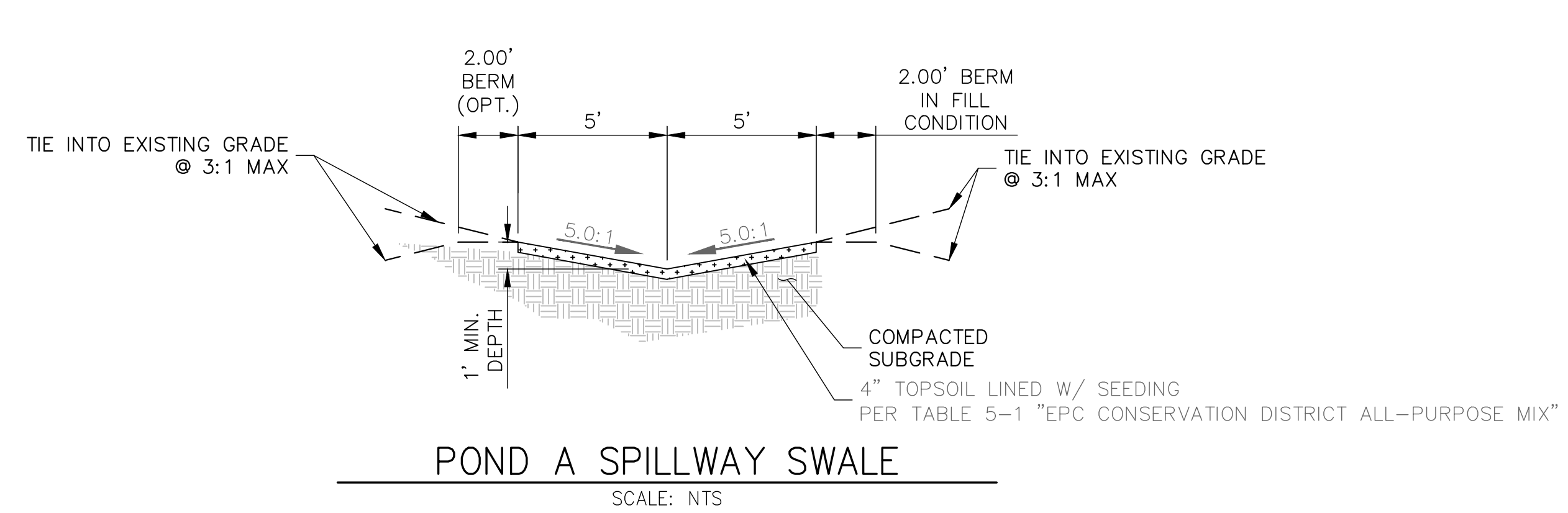
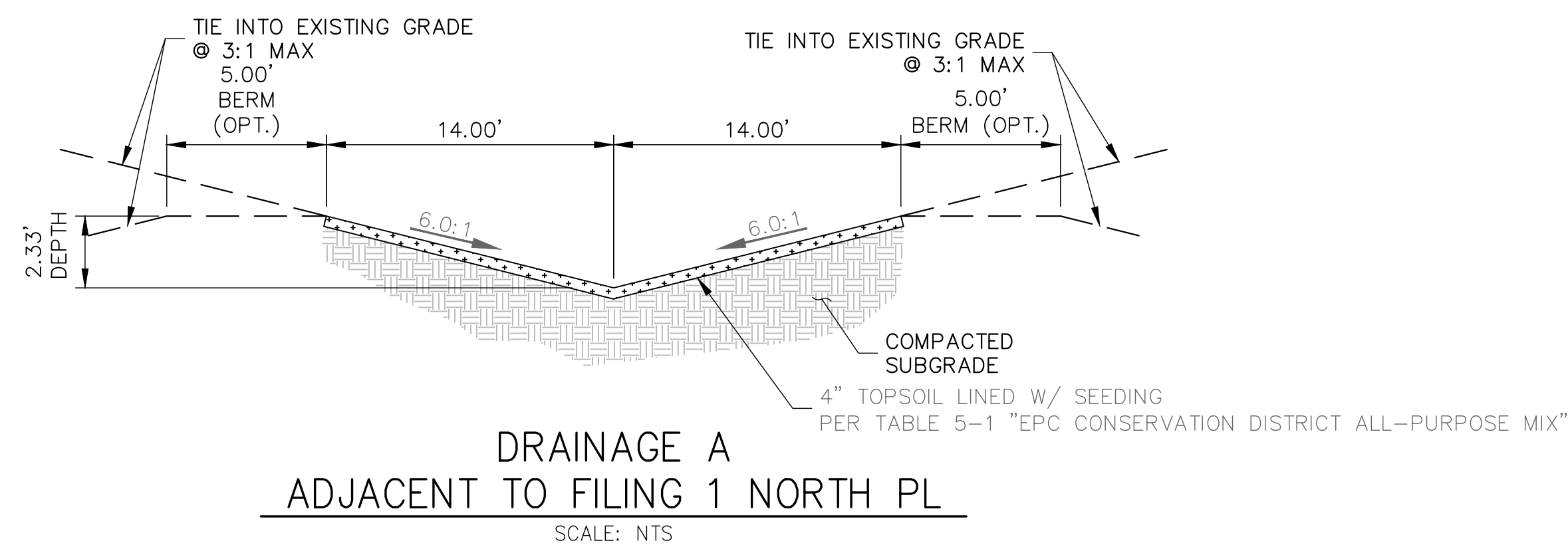
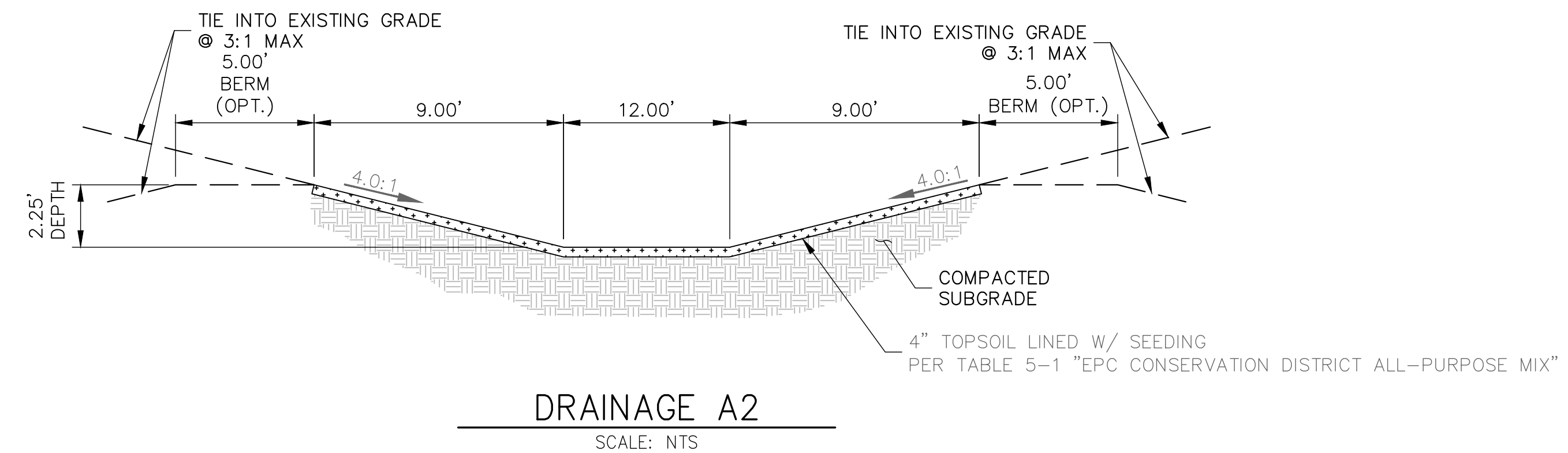
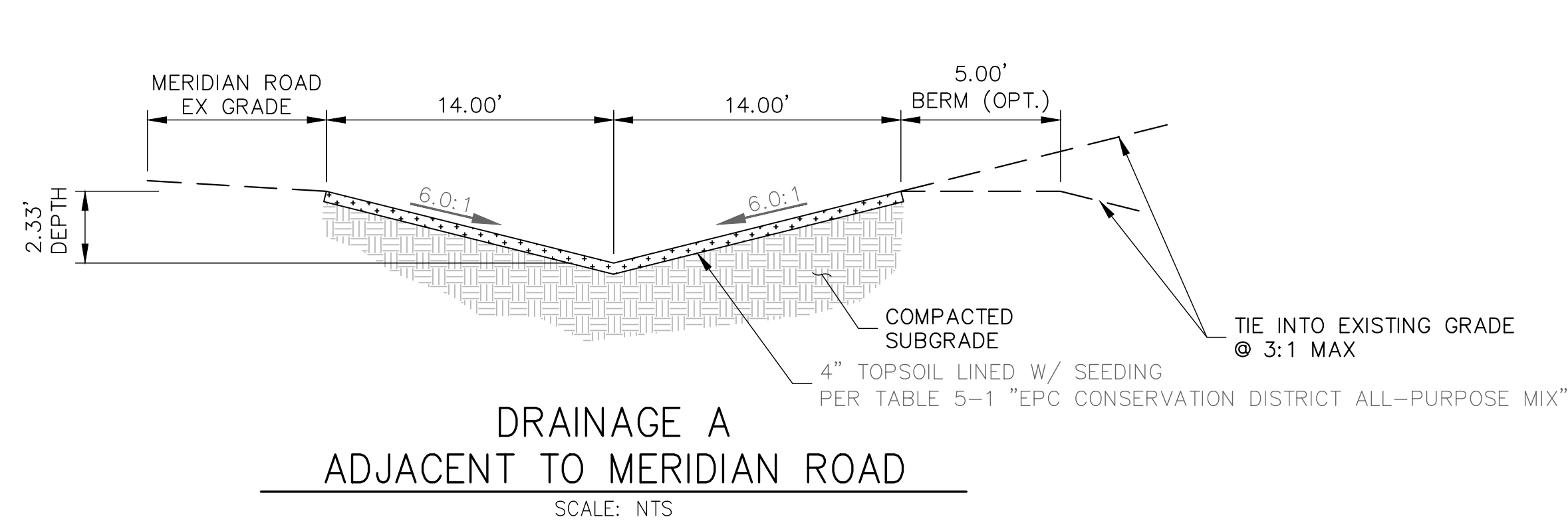
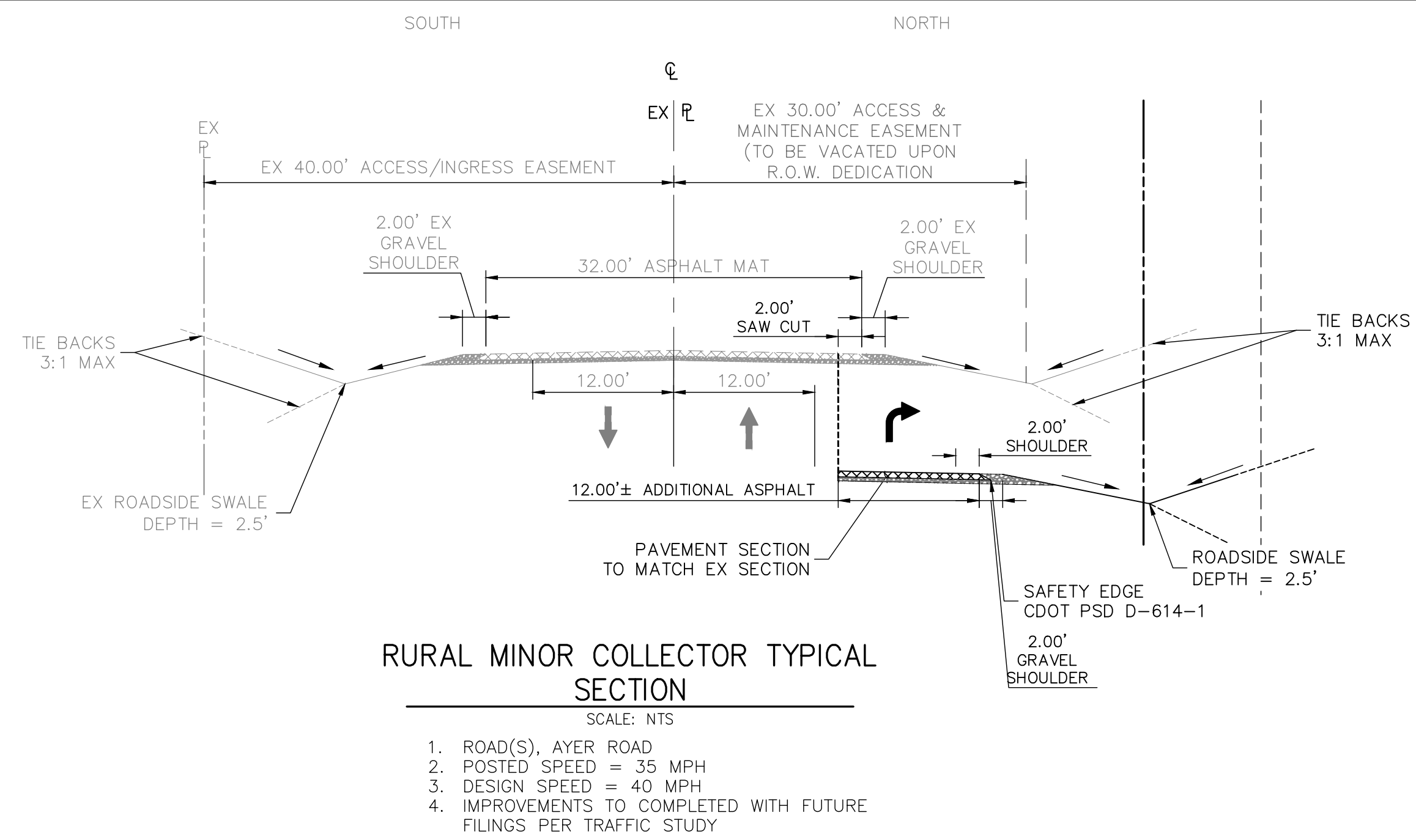
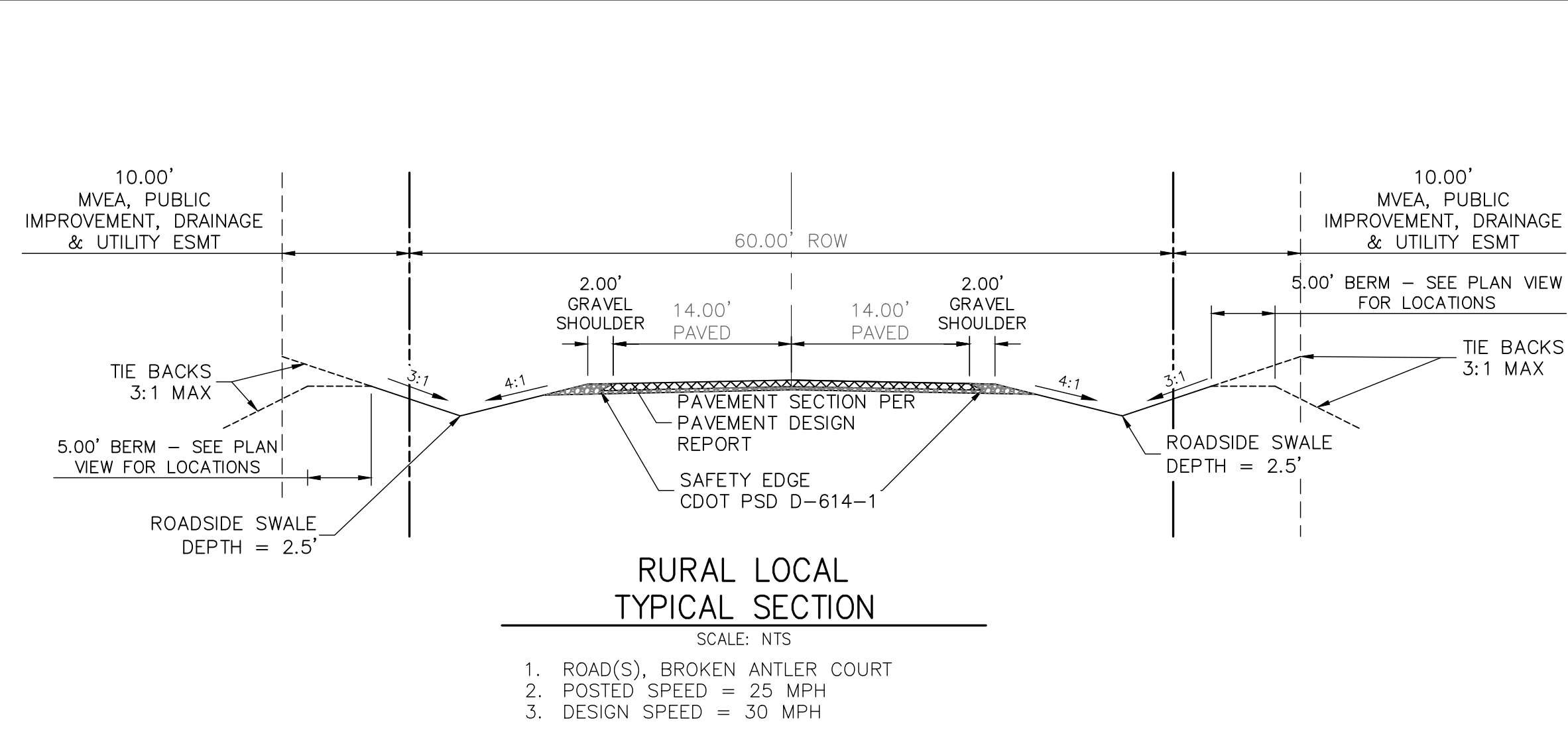
SHEET

1 OF 20



Know what's below.
Call before you dig.

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.



GENERAL CONSTRUCTION NOTES:

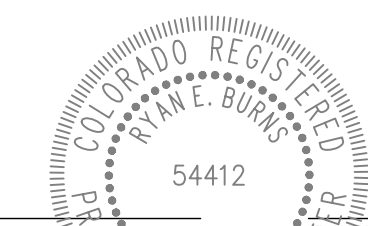
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
- ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
- ALL BACKFILL, SUB-BASE, AND/OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED PER THE SOILS ENGINEER'S RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY PCD.
- ALL STATIONING IS CENTERLINE OF IMPROVEMENTS UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE INDICATED AS TOP BACK OF CURB (TBC), ASPHALT (ASP), OR TOP OF INLET OR BOX (TOB).
- ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO EPC ECM APPENDIX K - 1.2C.
- ALL INTERSECTION ACCESSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" VERTICAL IN THIS AREA.
- ALL CULVERTS AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE), REINFORCED CONCRETE PIPE (RCP). ALL CULVERTS SHALL BE PLACED COMPLETE WITH FLARED END SECTIONS. ADEQUACY OF MATERIAL THICKNESS FOR ANY CSP INSTALLED SHALL BE VERIFIED BY OWNER'S GEOTECHNICAL ENGINEER TO SUPPORT MINIMUM 50 YEAR DESIGN LIFE. CULVERTS MUST CONFORM TO EPC ECM SECTION 3.32 - CULVERTS.
- ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNER'S GEOTECHNICAL ENGINEER. OWNER'S GEOTECHNICAL ENGINEER TO BE ON SITE AT THE TIME OF ROAD CONSTRUCTION TO EVALUATE SOIL CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES ARE NECESSARY TO ASSURE STABILITY OF THE NEW ROADS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY DEVELOPMENT SERVICES ENGINEERING DIVISION PRIOR TO CONSTRUCTION.

SIGNING AND STRIPING NOTES:

- ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 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.
- ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
- 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.
- STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
- ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
- 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"
- ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
- 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 SLIPBASE DESIGN.
- ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
- THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT 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 PLAN 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.



RYAN E. BURNS, P.E.
COLORADO P.E. 54412
FOR AND ON BEHALF OF ALL TERRAIN ENGINEERING, LLC



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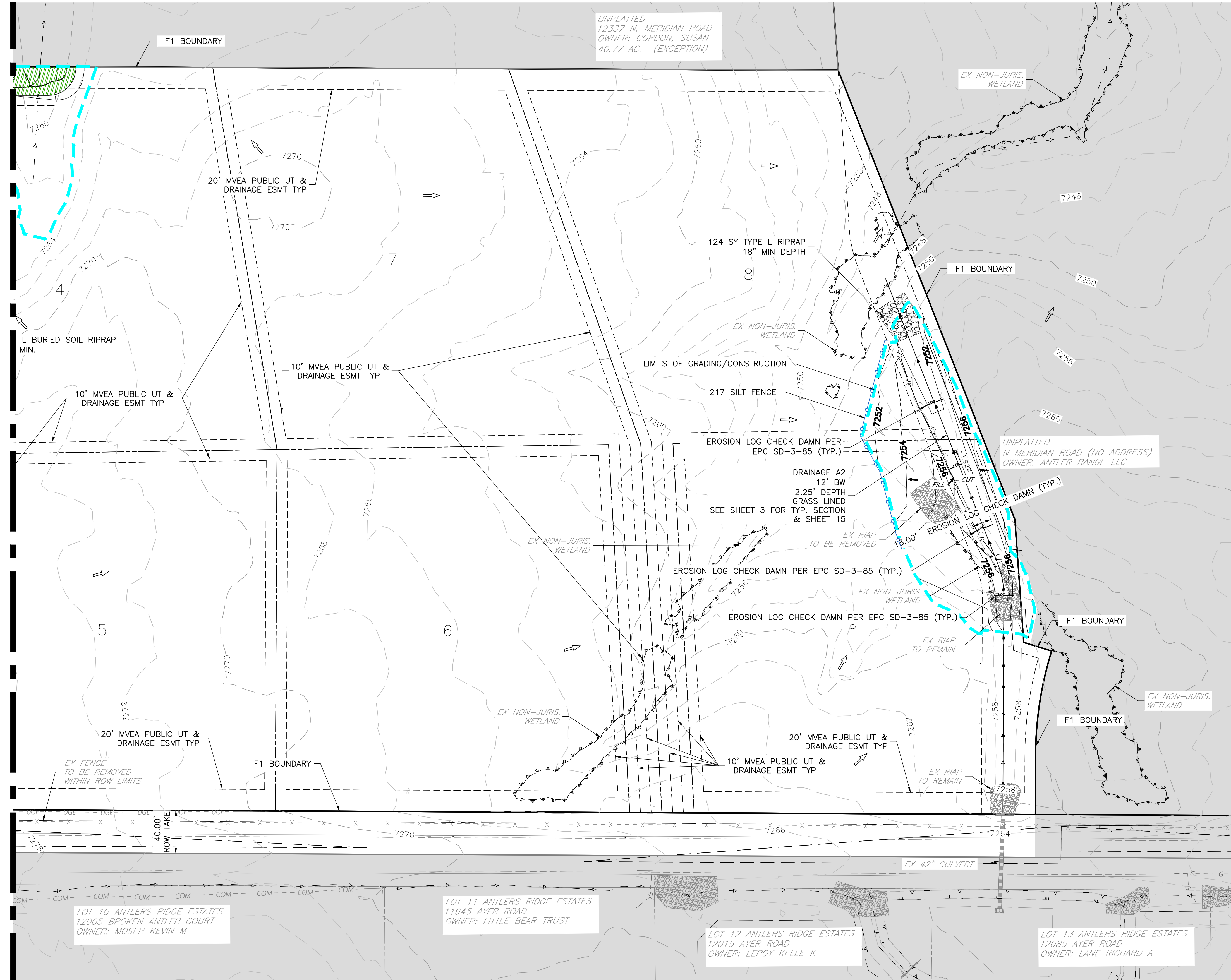
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DRAWINGS ARE APPROVED BY THE
APPROPRIATE REVIEWING
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USE ONLY FOR THE PURPOSES
DESIGNATED BY WRITTEN
AUTHORIZATION.

DATE	REV	DESCRIPTION

ANTLER RANGE FILING NO. 1

TYPICAL SECTIONS

DESIGN: REB
REVIEW: NJQ
DATE: 02/23/2026
H-SCALE: 1" = 50'
V-SCALE: 1" = 5'
SHEET
3 OF 20



GRADING & EROSION CONTROL PLAN NOTES:

1. THE VERTICAL PHASE OF CONSTRUCTION IS NOT INCLUDED IN THESE PLANS. WHEN VERTICAL CONSTRUCTION COMMENCES, BUILDER AND/OR DEVELOPER SHALL SUBMIT BESQCP APPLICATION & AMEND THIS PLAN ACCORDINGLY.
2. THE LIMITS OF DISTURBANCE BOUNDARY REPRESENTS THE FILING 1 LIMITS. IT IS ANTICIPATED THAT ADDITIONAL AREA OUTSIDE THE PROPOSED GRADING LIMITS WILL BE DISTURBED RESULTING FROM TYPICAL CONSTRUCTION ACTIVITIES. HOWEVER, LOTS WILL NOT BE OVERLOT GRADED AT THIS TIME.
3. EXISTING VEGETATION: SITE IS VEGETATED CONSISTENTLY WITH GRASSES & SHRUBBERY. EXTENTS OF VEGETATION NOT SHOWN ON PLAN.

INITIAL PHASE TCM:

- INSTALL VEHICLE TRACKING CONTROL
- ESTABLISH STABILIZED STAGING AREA
- INSTALL PERIMETER CONTROLS I.E. SILT FENCE, CONSTRUCTION FENCING
- INSTALL TEMPORARY SEDIMENT BASIN

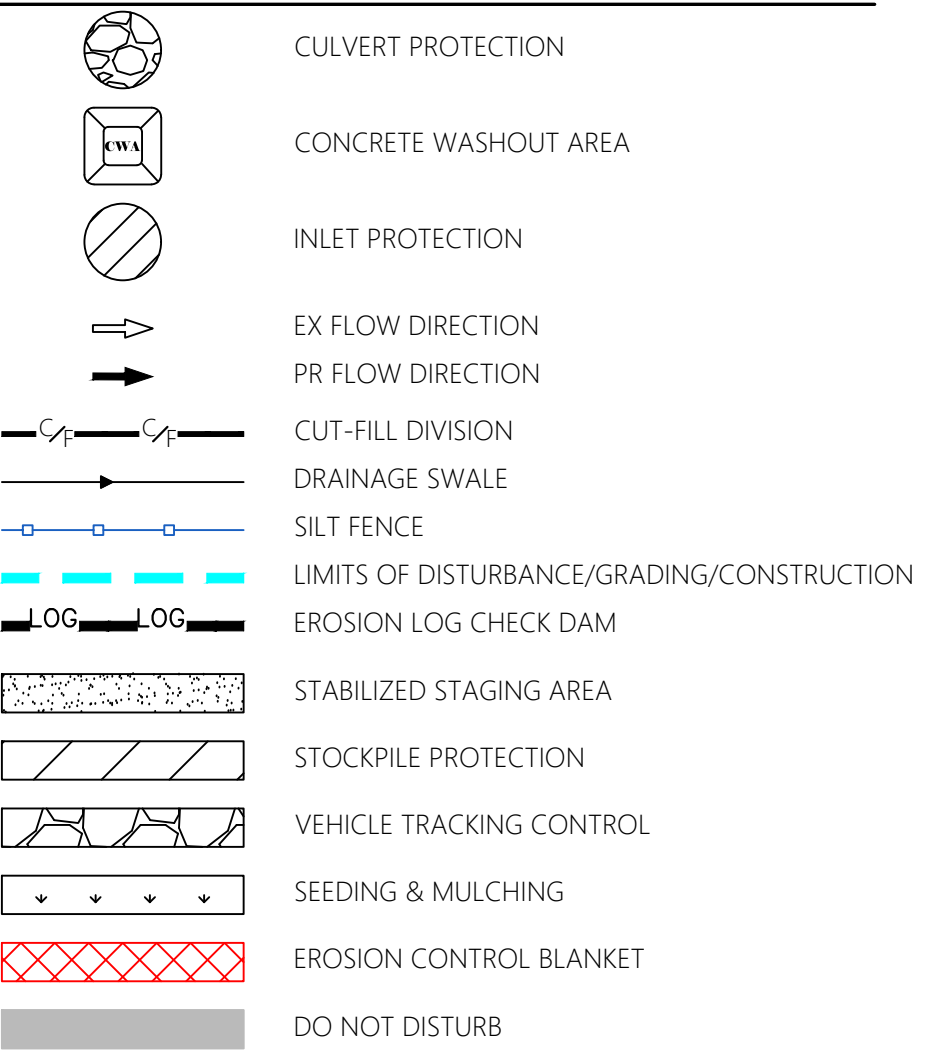
INTERIM PHASE TCM:

- INSTALL EROSION CONTROL BLANKET ON 3:1 SLOPES
- PROVIDE CULVERT & INLET PROTECTION

FINAL PHASE TCM:

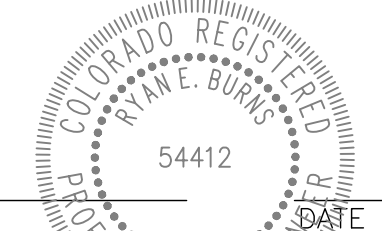
- SEED & MULCH DISTURBED AREAS
- ONCE FINAL STABILIZATION ACHIEVED (70% OF PRE-DISTURBANCE), REMOVE TEMPORARY CONTROL MEASURES
- REMOVE TEMPORARY SEDIMENT BASIN & COMPLETE FULL SPECTRUM WATER QUALITY & DETENTION POND CONSTRUCTION PER POND GRADING PLAN & DETAILS INCLUDED HEREIN.

GEC LEGEND:

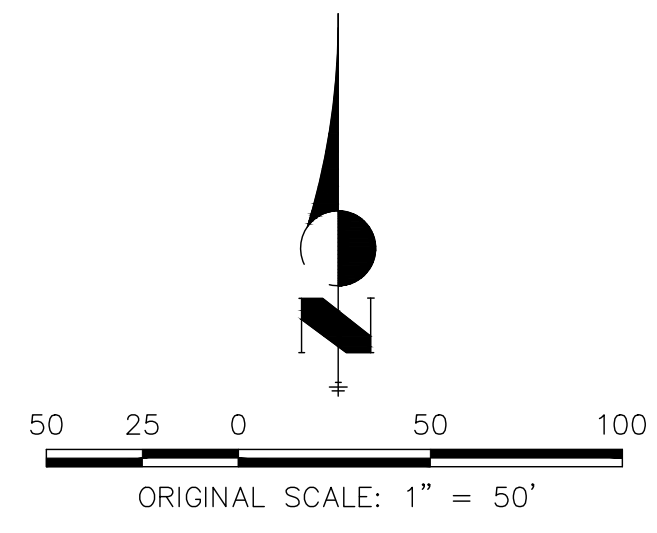


ENGINEER'S STATEMENT

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 COLORADO P.E. 54412
 FOR AND ON BEHALF OF ALL TERRAIN ENGINEERING, LLC



THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.



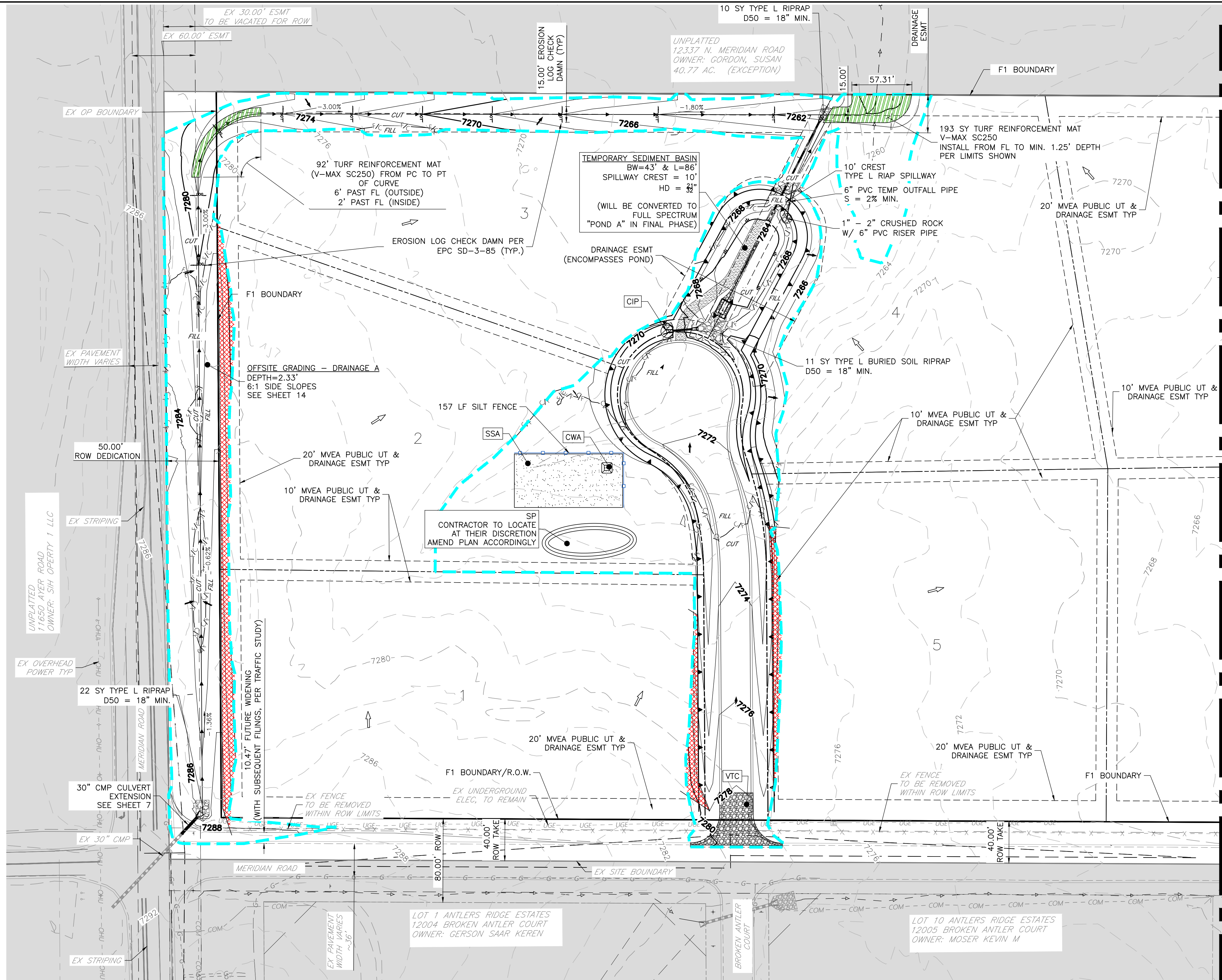
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UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, ALL TERRAIN ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

DATE	DESCRIPTION

ANTLER RANGE FILING NO. 1
 INITIAL-FINAL GEC PLAN

DESIGN: REB
 REVIEW: NOJ
 DATE: 02/23/2026
 H-SCALE: 1" = 50'
 V-SCALE: 1" = 5'
 SHEET
 4 OF 20



GRADING & EROSION CONTROL PLAN NOTES:

1. THE VERTICAL PHASE OF CONSTRUCTION IS NOT INCLUDED IN THESE PLANS. WHEN VERTICAL CONSTRUCTION COMMENCES, BUILDER AND/OR DEVELOPER SHALL SUBMIT BESQCP APPLICATION & AMEND THIS PLAN ACCORDINGLY.
2. THE LIMITS OF DISTURBANCE BOUNDARY REPRESENTS THE FILING 1 LIMITS. IT IS ANTICIPATED THAT ADDITIONAL AREA OUTSIDE THE PROPOSED GRADING LIMITS WILL BE DISTURBED RESULTING FROM TYPICAL CONSTRUCTION ACTIVITIES. HOWEVER, LOTS WILL NOT BE OVERLOT GRADED AT THIS TIME.
3. EXISTING VEGETATION: SITE IS VEGETATED CONSISTENTLY WITH GRASSES & SHRUBBERY. EXTENTS OF VEGETATION NOT SHOWN ON PLAN.

INITIAL PHASE TCM:

- INSTALL VEHICLE TRACKING CONTROL
- ESTABLISH STABILIZED STAGING AREA
- INSTALL PERIMETER CONTROLS I.E. SILT FENCE, CONSTRUCTION FENCING
- INSTALL TEMPORARY SEDIMENT BASIN

INTERIM PHASE TCM:

- INSTALL EROSION CONTROL BLANKET ON 3:1 SLOPES
- PROVIDE CULVERT & INLET PROTECTION

FINAL PHASE TCM:

- SEED & MULCH DISTURBED AREAS
- ONCE FINAL STABILIZATION ACHIEVED (70% OF PRE-DISTURBANCE), REMOVE TEMPORARY CONTROL MEASURES
- REMOVE TEMPORARY SEDIMENT BASIN & COMPLETE FULL SPECTRUM WATER QUALITY & DETENTION POND CONSTRUCTION PER POND GRADING PLAN & DETAILS INCLUDED HEREIN.

GEC LEGEND:

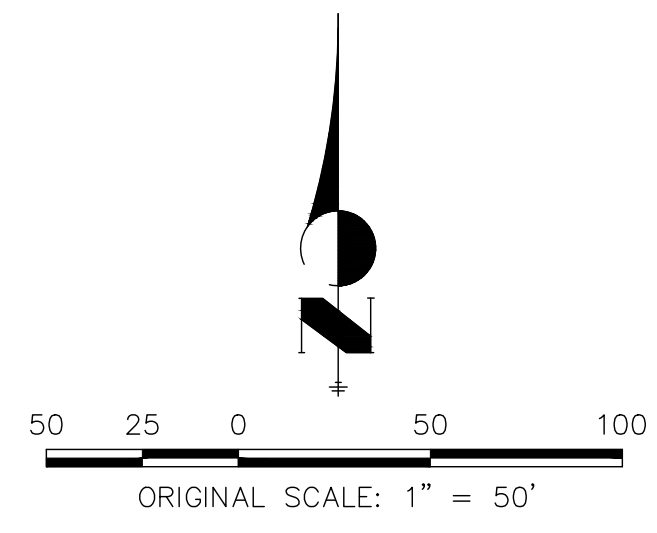
- CULVERT PROTECTION
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- EX FLOW DIRECTION
PR FLOW DIRECTION
- CUT-FILL DIVISION
- DRAINAGE SWALE
- SILT FENCE
- LIMITS OF DISTURBANCE/GRADING/CONSTRUCTION
- EROSION LOG CHECK DAM
- STABILIZED STAGING AREA
- STOCKPILE PROTECTION
- VEHICLE TRACKING CONTROL
- SEEDING & MULCHING
- EROSION CONTROL BLANKET
- DO NOT DISTURB

ENGINEER'S STATEMENT

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NOTES:

1. SEE SHEET 1 FOR ABBREVIATIONS AND GENERAL NOTES.
2. SEE SHEET 2 FOR LINE TYPE LEGEND AND STANDARD GEC NOTES.
3. SEE SHEET 3 FOR TYPICAL SECTIONS OF ROADWAYS AND SWALES.
4. CONTRACTOR TO FAMILIARIZE SELF WITH SITE, PLANS, EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY QUESTIONS, DISCREPANCIES, CONFLICTS, OR REQUIRED CHANGES PRIOR TO COMMENCING CONSTRUCTION.
5. PLEASE NOTE, EXISTING UTILITY LOCATIONS SHOULD BE VERIFIED PRIOR TO CONSTRUCTION AND MAY DIFFER THAN WHAT IS SHOWN IN THESE PLANS.



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PREPARED FOR:
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(602) 957-0966
G@GLANGDON.COM

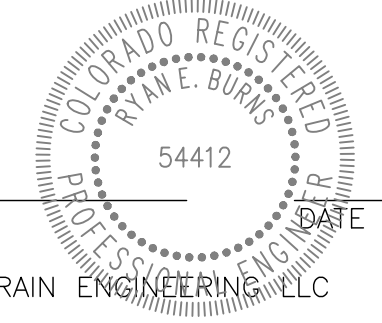
UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, ALL TERRAIN ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

REV	DESCRIPTION	DATE

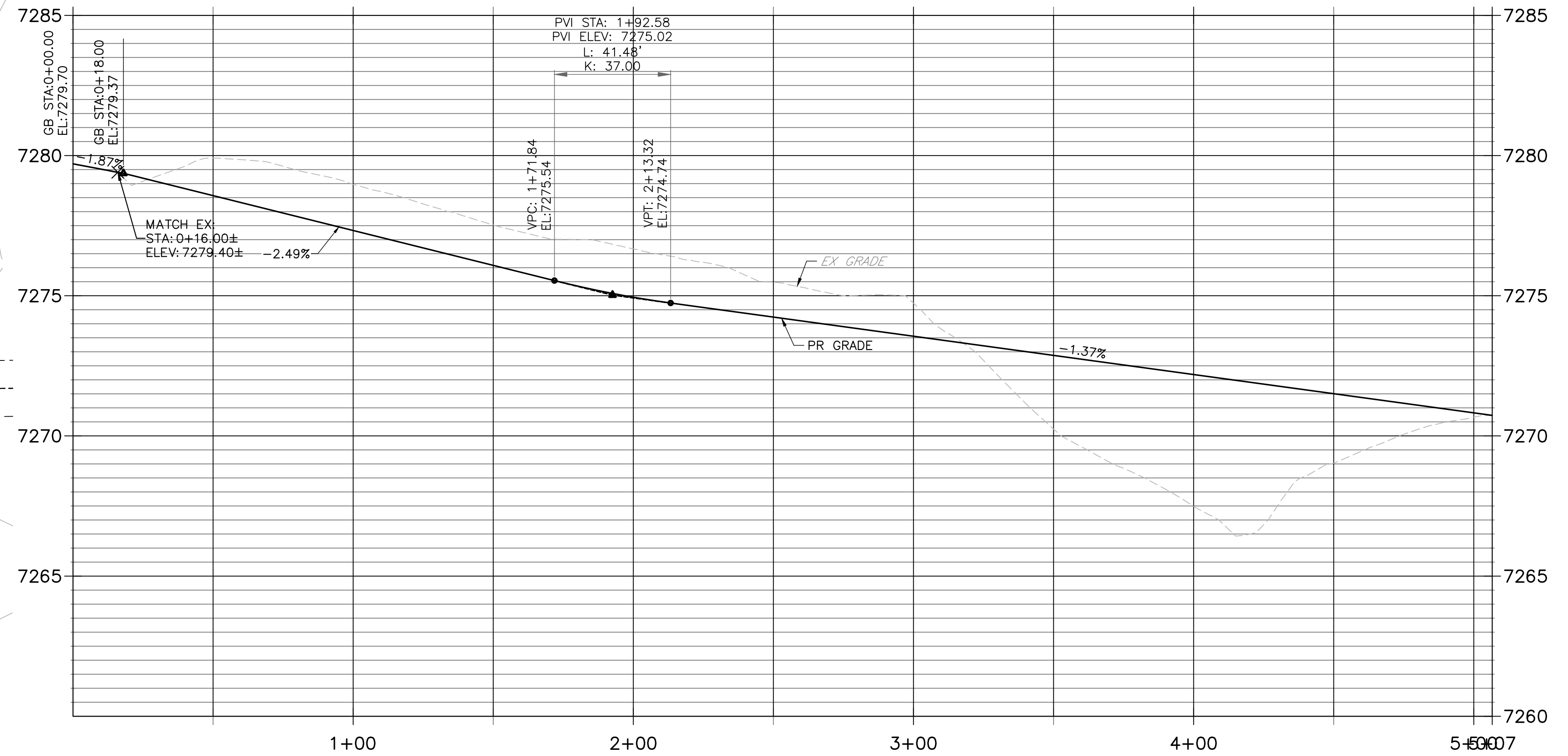
ANTLER RANGE FILING NO. 1
INITIAL-FINAL GEC PLAN

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026
H-SCALE: 1" = 50'
V-SCALE: 1" = 5'
SHEET
5 OF 20

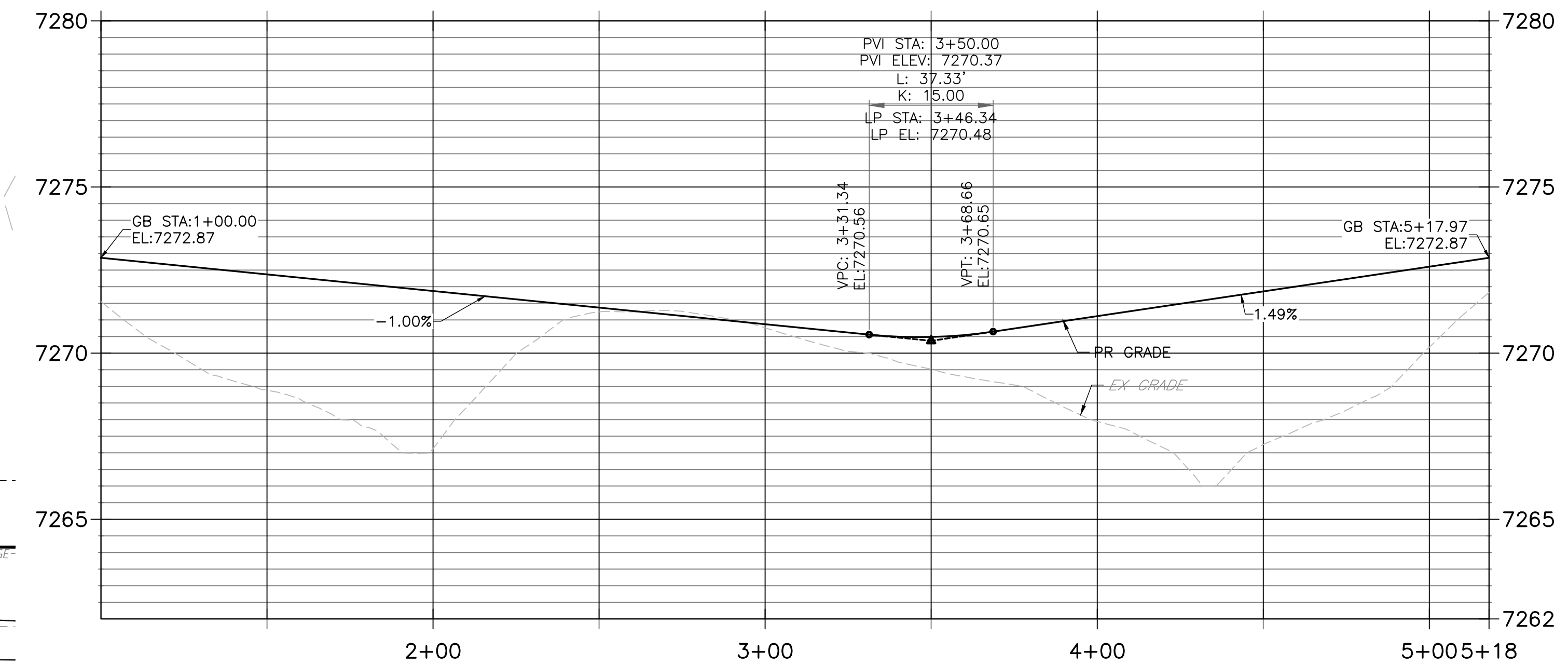
RYAN E. BURNS, P.E.
COLORADO P.E. 54412
FOR AND ON BEHALF OF ALL TERRAIN ENGINEERING, LLC



**ROAD A
STA 0+00.00 TO 5+06.57**

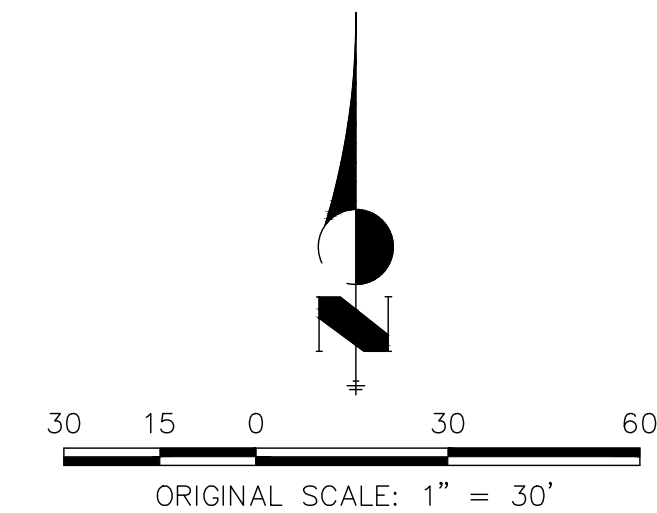


**ROAD A CULDESAC
STA 1+00.00 TO 5+17.97**



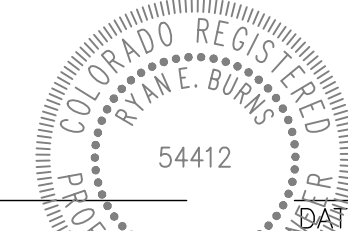
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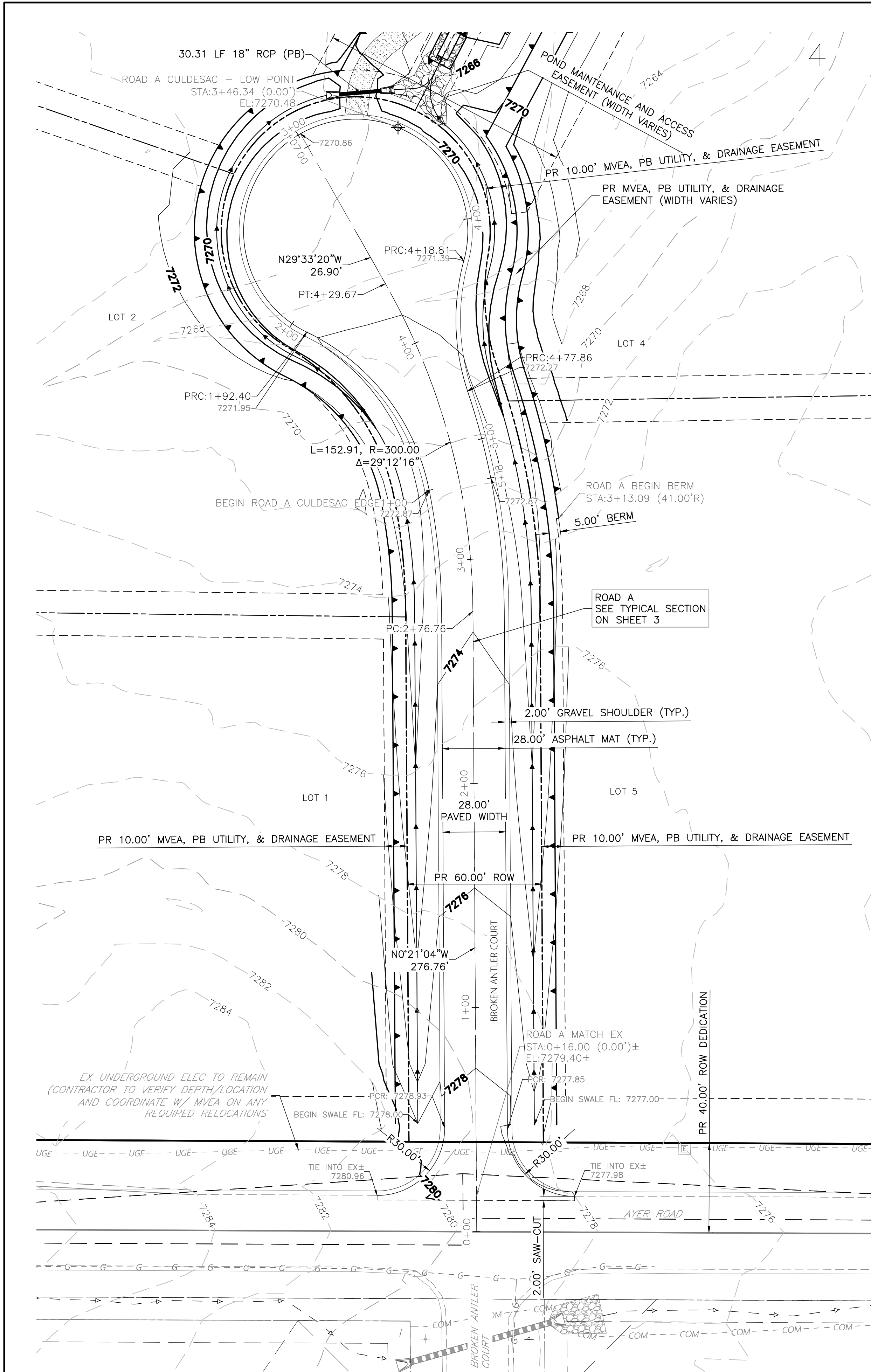


ENGINEER'S STATEMENT

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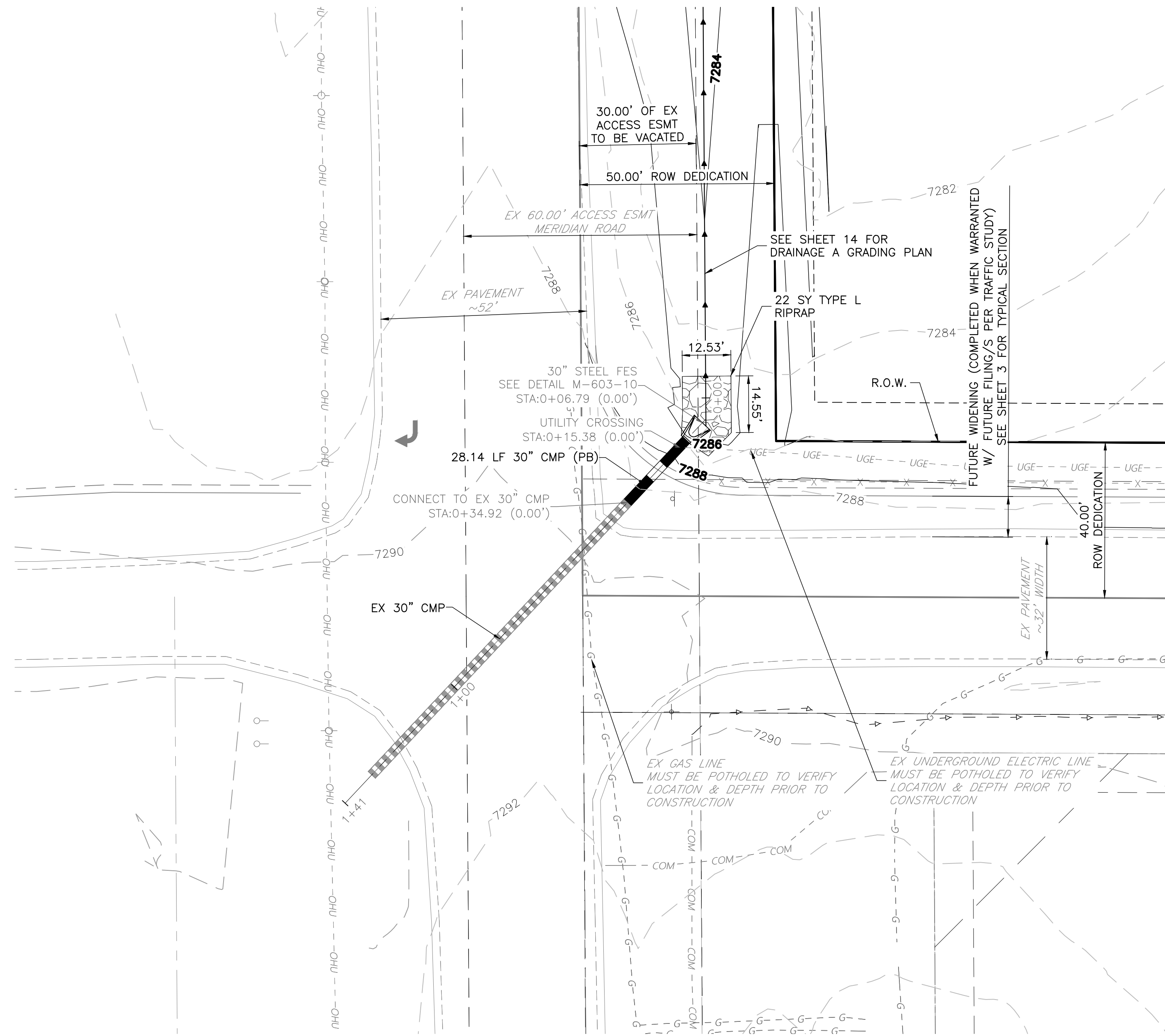
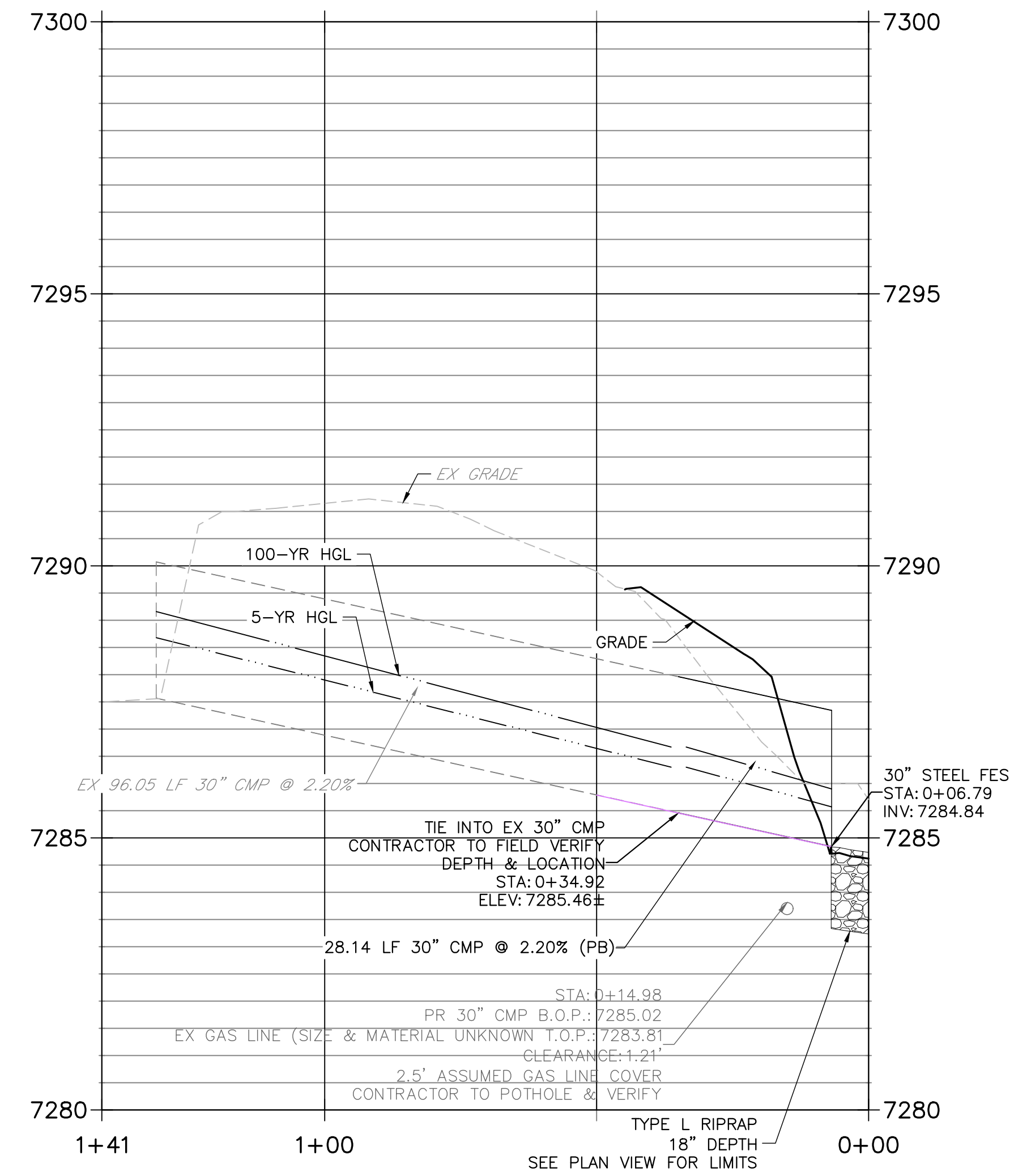
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REV	DESCRIPTION	DATE

ANTLER RANGE FILING NO. 1
ROAD A PLAN & PROFILE

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026
H-SCALE: 1" = 30'
V-SCALE: 1" = 3'
SHEET
6 OF 20

MERIDIAN ROAD CULVERT STA 0+00.00 TO 1+40.98



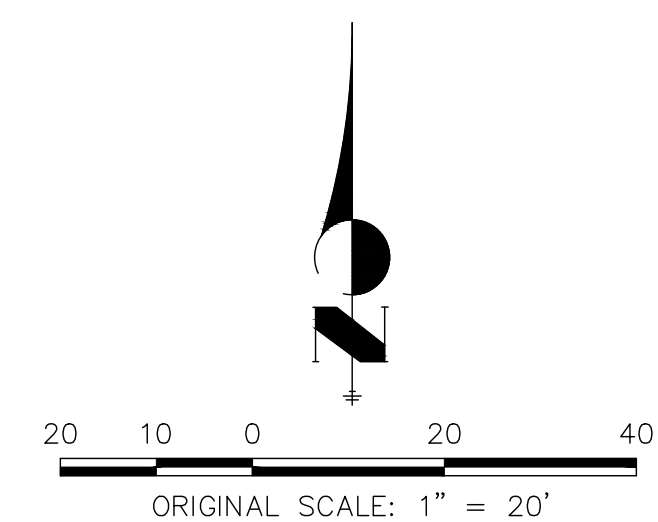
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Call before you dig.

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GL@GLANGDON.COM

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DATE	DESCRIPTION

ANTLER RANGE FILING NO. 1

STORM PLAN & PROFILE

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026

H-SCALE: 1" = 20'
V-SCALE: 1" = 2'

SHEET

7 OF 20

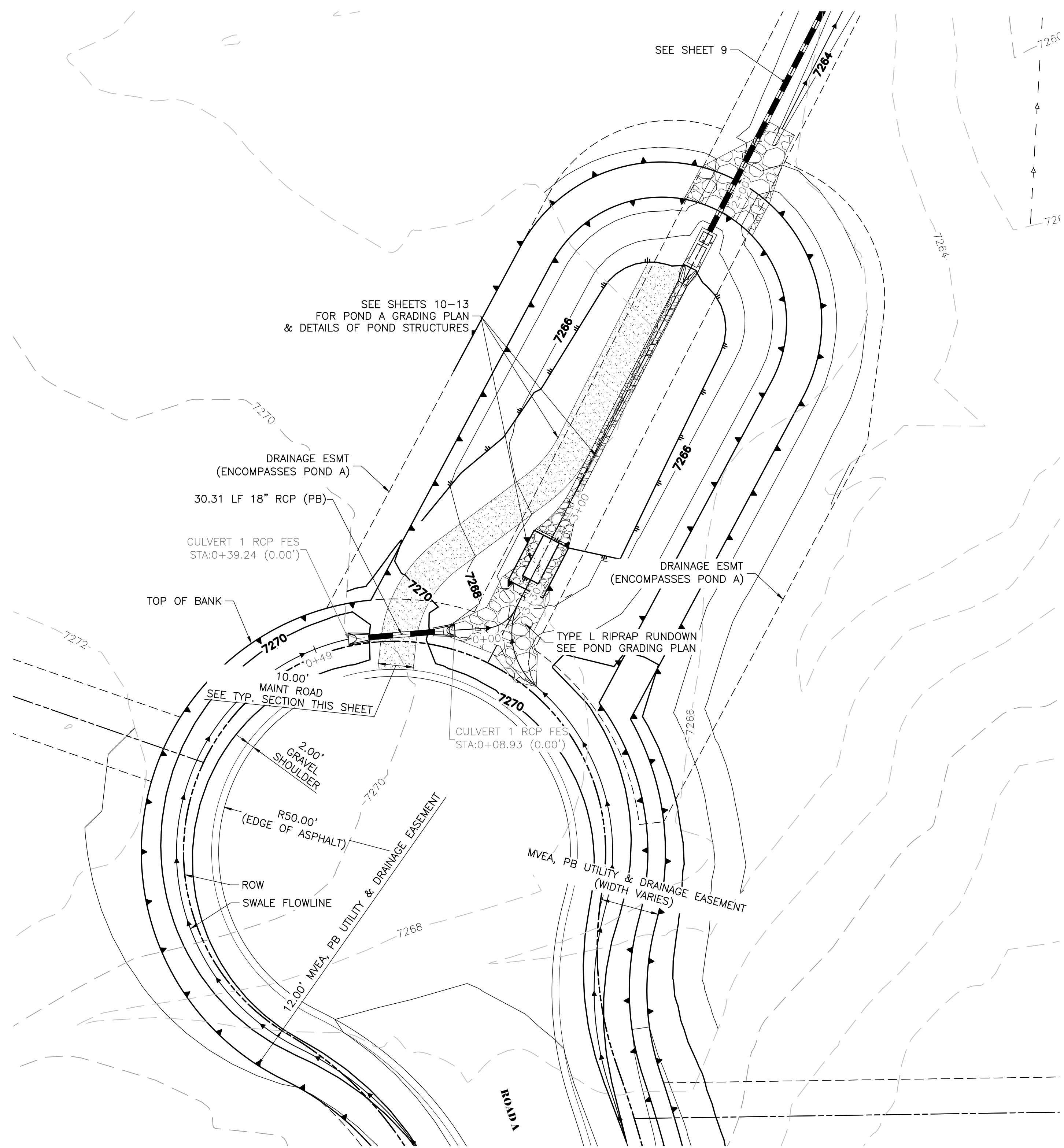
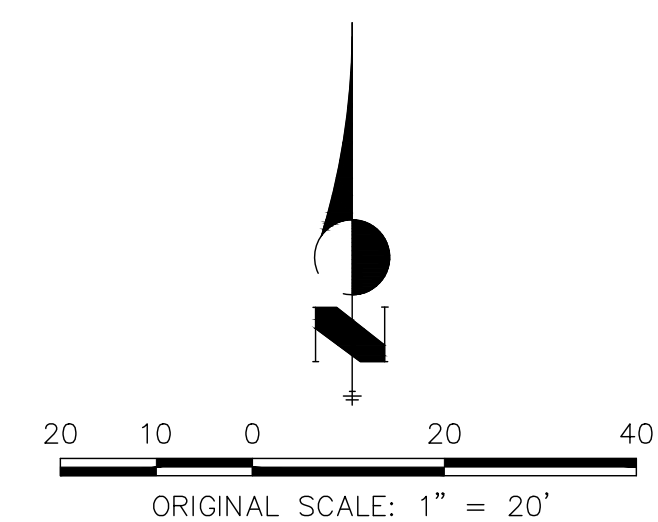


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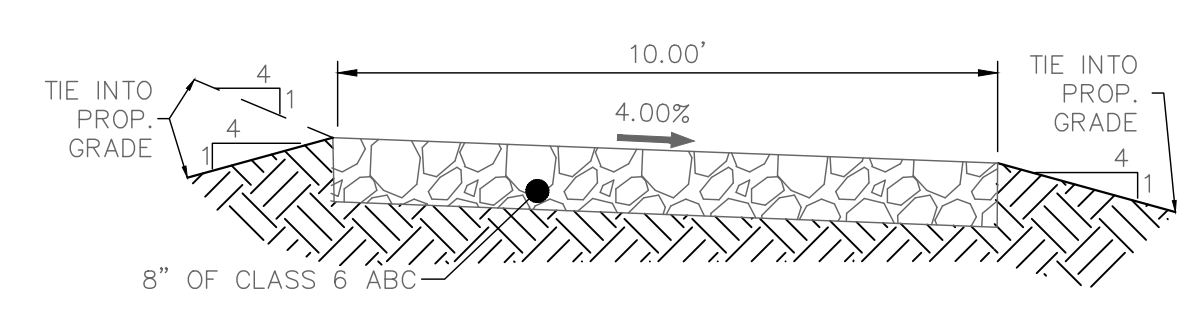
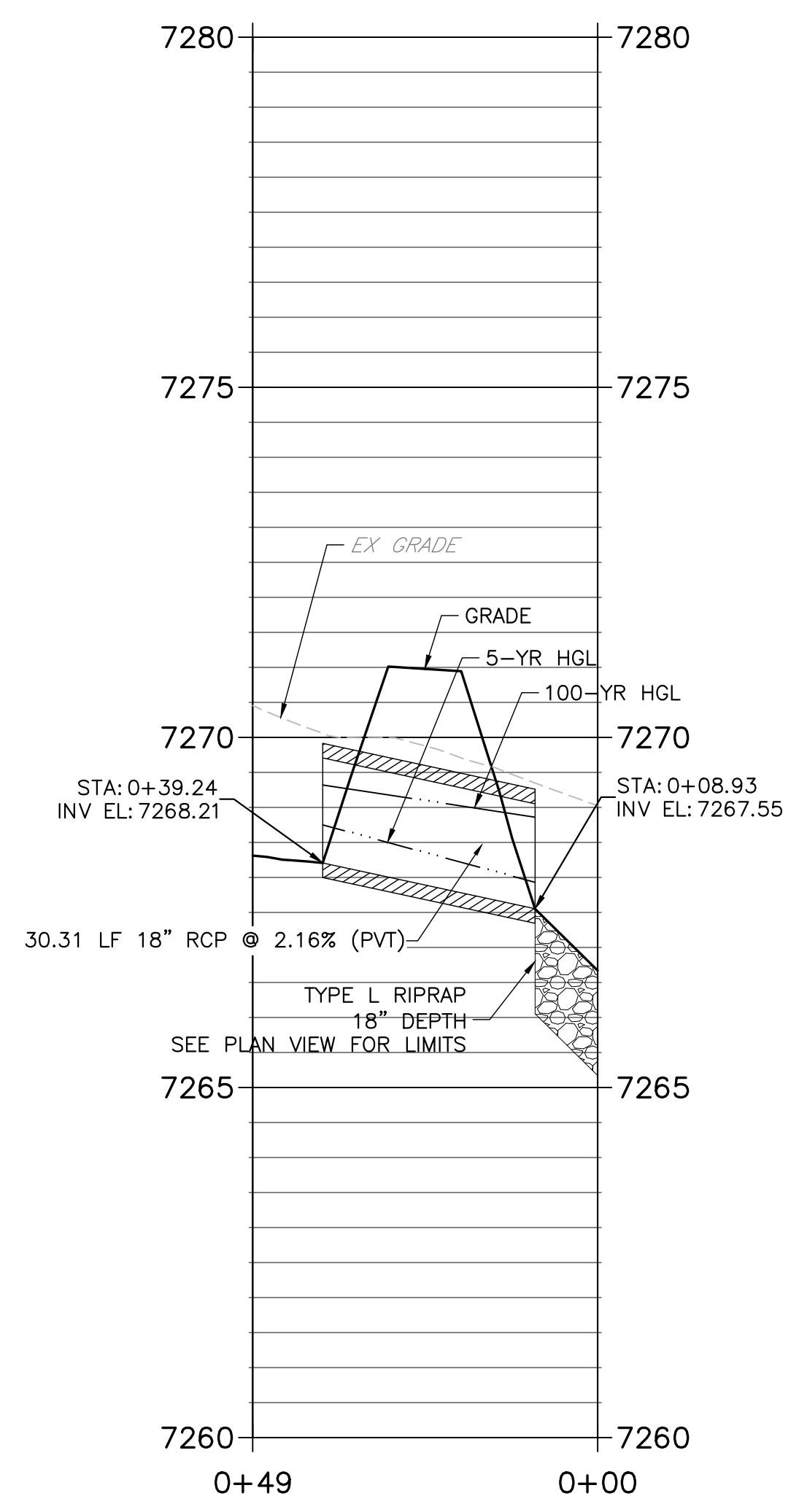
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**CULVERT 1
STA 0+00.00 TO 0+49.24**



**10' GRAVEL MAINTENANCE
ACCESS ROAD TYPICAL SECTION**
N.T.S.



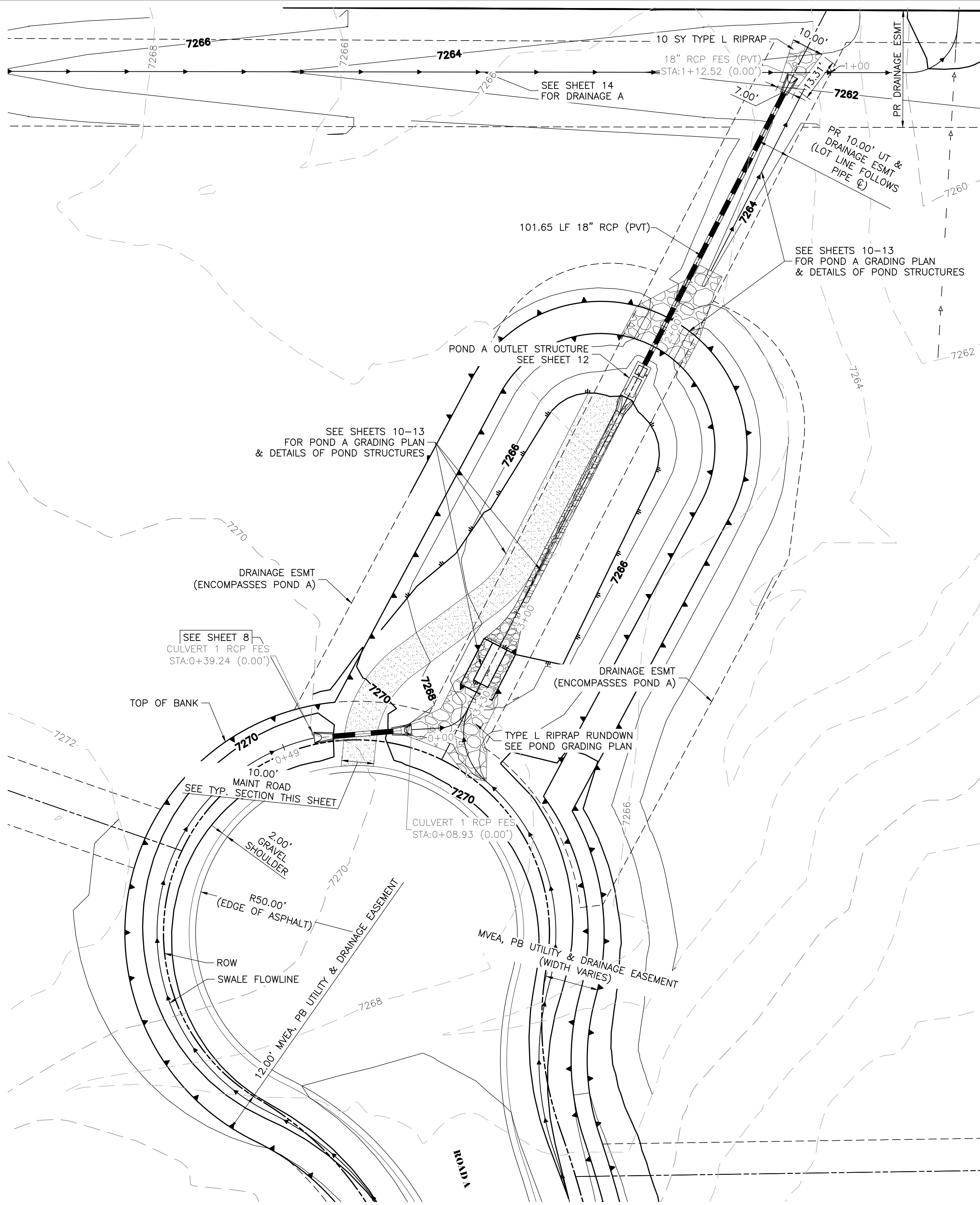
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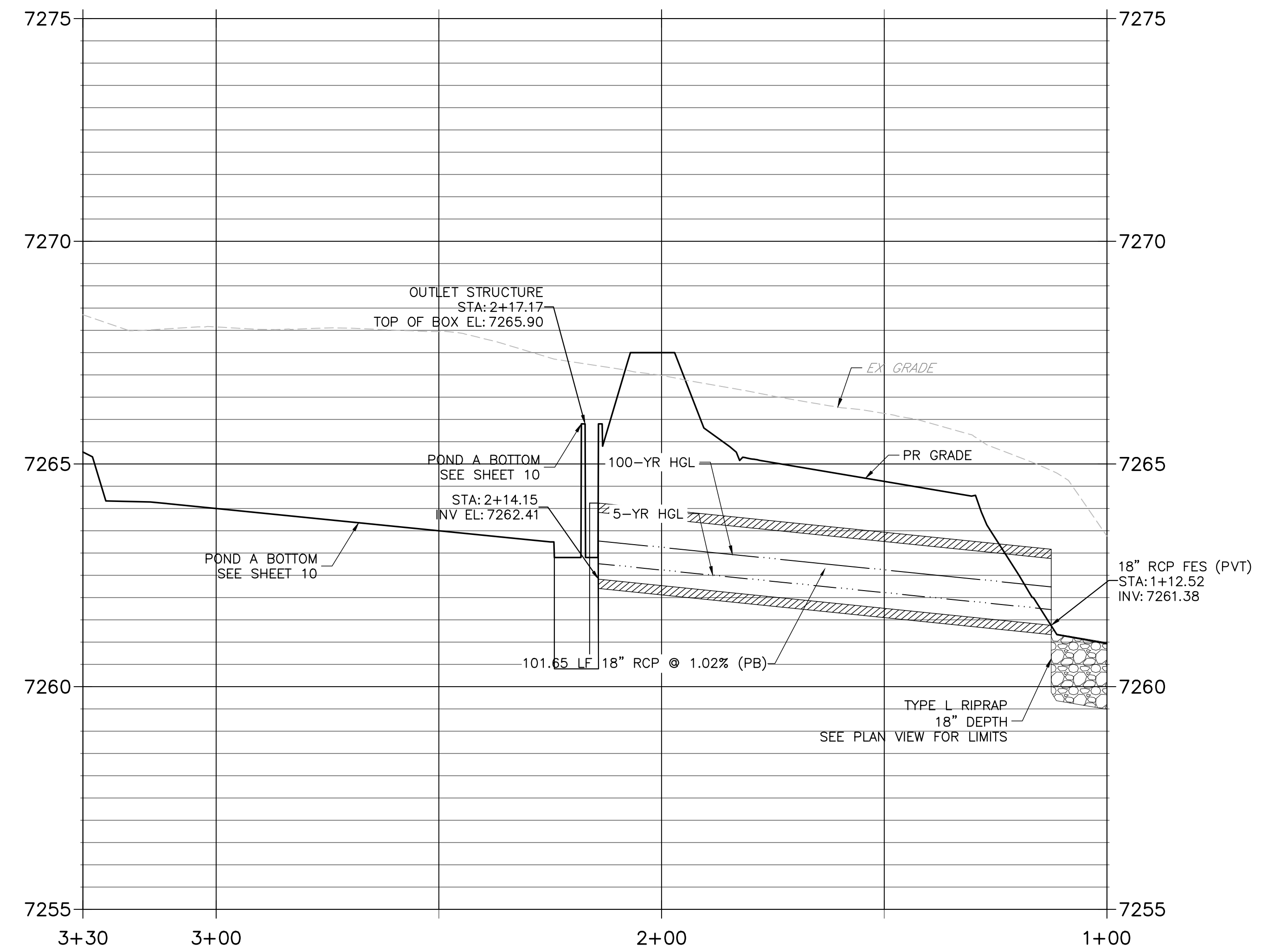
REV	DESCRIPTION	DATE

JOB NO: 24031 LOCATION: EPC
ANTLER RANGE FILING NO. 1
STORM PLAN & PROFILE

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026
H-SCALE: 1" = 20'
V-SCALE: 1" = 2'
SHEET
8 OF 20

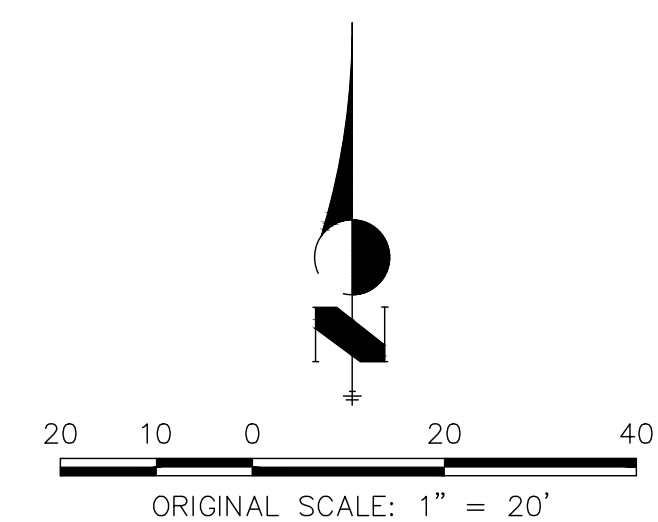


**POND A OUTFALL
STA 1+00.00 TO 3+29.91**



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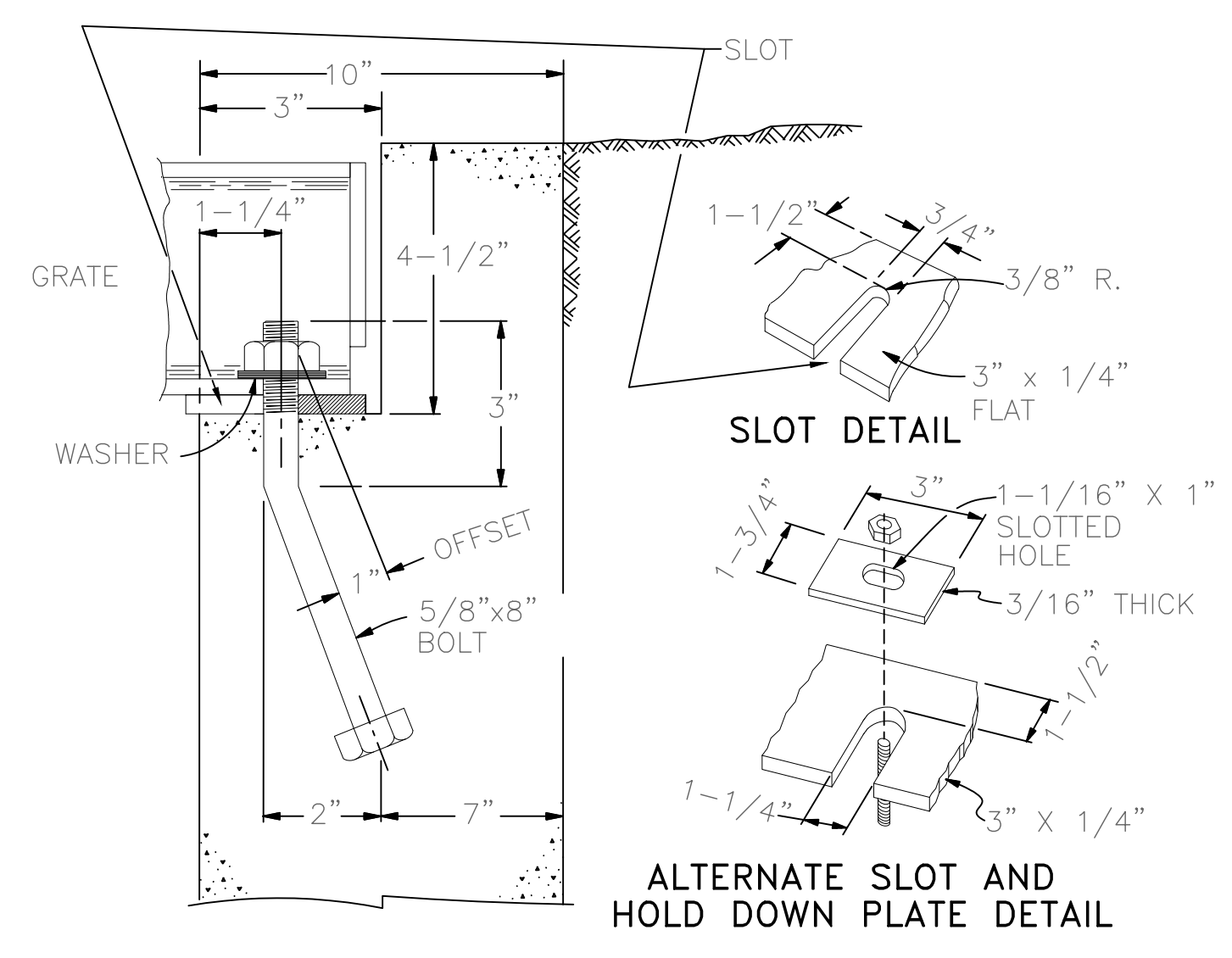
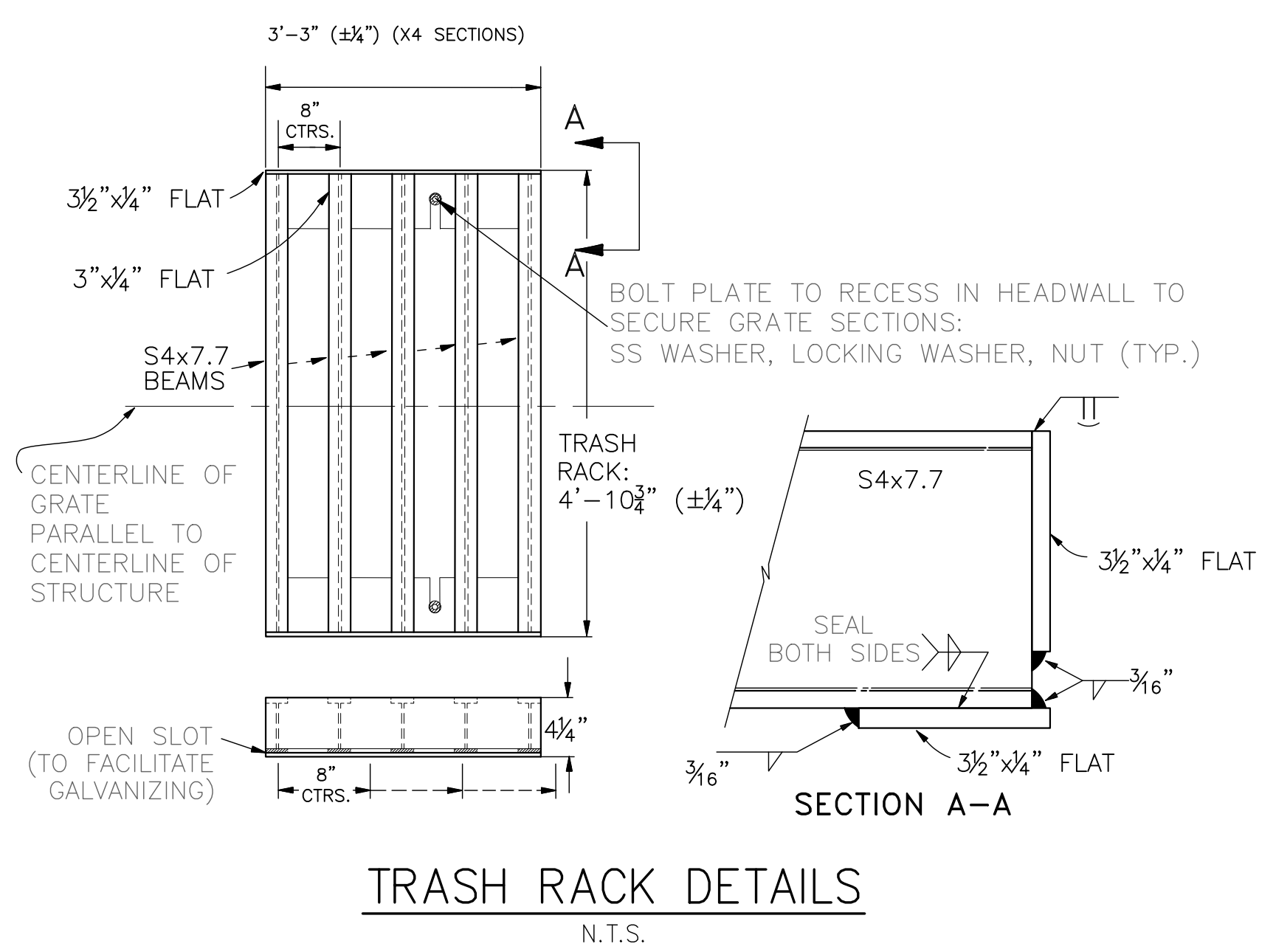
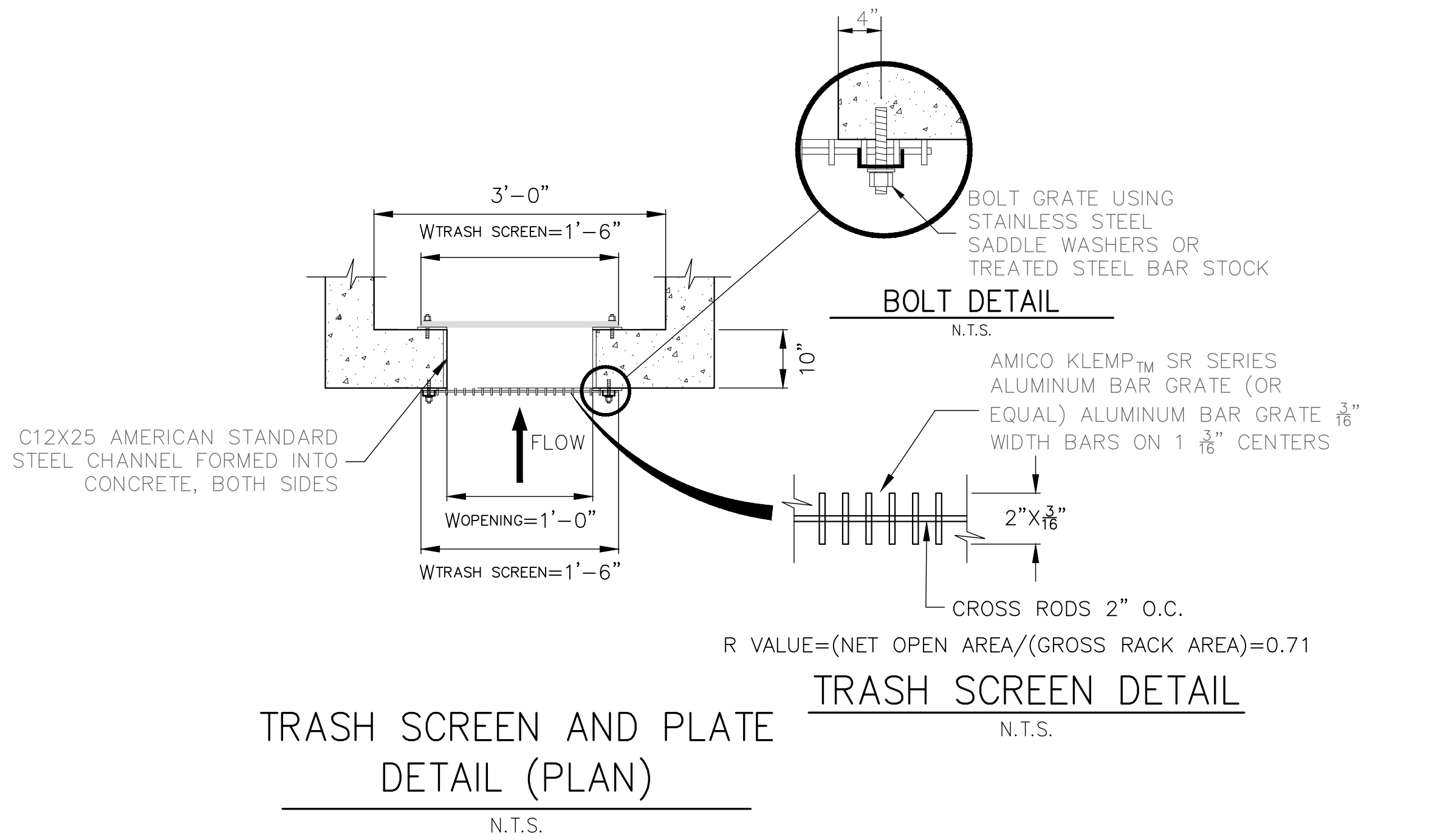
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STORM PLAN & PROFILE

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026
H-SCALE: 1" = 20'
V-SCALE: 1" = 2'
SHEET
9 OF 20



GENERAL STRUCTURE NOTES:

ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY OR COUNTY STANDARD CONSTRUCTION SPECIFICATIONS. EXCEPT AS SHOWN IN THE PLANS, STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH CDOT M-206-1, AND M-206-2 EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OF OTHER.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING AND PROVIDING ALL BRACING AND SHORING AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE EXCAVATION PROCEDURES INCLUDING ANY SHORING REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL METHODS AND MEANS OF CONSTRUCTION AS WELL AS ALL JOB SITE SAFETY & HEALTH PRECAUTIONS.

ALL SOILS WORK INCLUDING (BUT NOT LIMITED TO) PIER DRILLING AND CONSTRUCTION, SOILS EXCAVATION, FILL PLACEMENT, AND STRUCTURE BACKFILL SHALL BE IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT, UNLESS MORE STRINGENT REQUIREMENTS ARE PRINTED ON THE "IRRIGATION NOTES".

BACKFILL SHALL NOT BEGIN UNTIL CONCRETE WALLS REACH COMPRESSION STRENGTH AT LEAST 80 PERCENT OF THE REQUIRED 28 DAY STRENGTH, 0.8fc'.
REINFORCED CONCRETE: CLASS D CONCRETE: fc' = 4,500 psi
REINFORCING STEEL: fy = 60,000 psi
ALL CAST-IN-PLACE CONCRETE SHALL BE CLASS D UNLESS NOTED OTHERWISE.

REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 U.N.O.
REINFORCING BARS TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60.
ALL REINFORCING, EXCEPT PIER REINFORCING, SHALL BE EPOXY COATED AND SHALL CONFORM TO ASTM A775.
ALL REINFORCING SHALL HAVE 2" CONCRETE COVER, U.N.O. ON PLANS, 3" AGAINST GROUND (BOTTOM SLAB)
ALL REINFORCING SHALL BE HOOKED AROUND CORNERS AND LAPPED, SEE DETAILS.
ALL LAP SPICE LOCATIONS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

THE FOLLOWING TABLE GIVES THE MINIMUM CLASS B (STAGGERED) LAP SPICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER, INCREASED BY 40% FOR HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE BELOW (TOP BARS.), AND INCREASED BY 75% IF BOTH CONDITIONS EXIST. THE INCREASES ABOVE FOR #6 THRU #11 BARS MAY BE 25%, 13%, AND 42% RESPECTIVELY.

#4	1'-3"	#5	1'-7"
#6	2'-5"	#7	2'-10"
#8	3'-8"	#9	4'-8"
#10	5'-11"	#11	7'-3"

WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS. THE MINIMUM LAP SPICE SHALL BE AS DESCRIBED ABOVE.

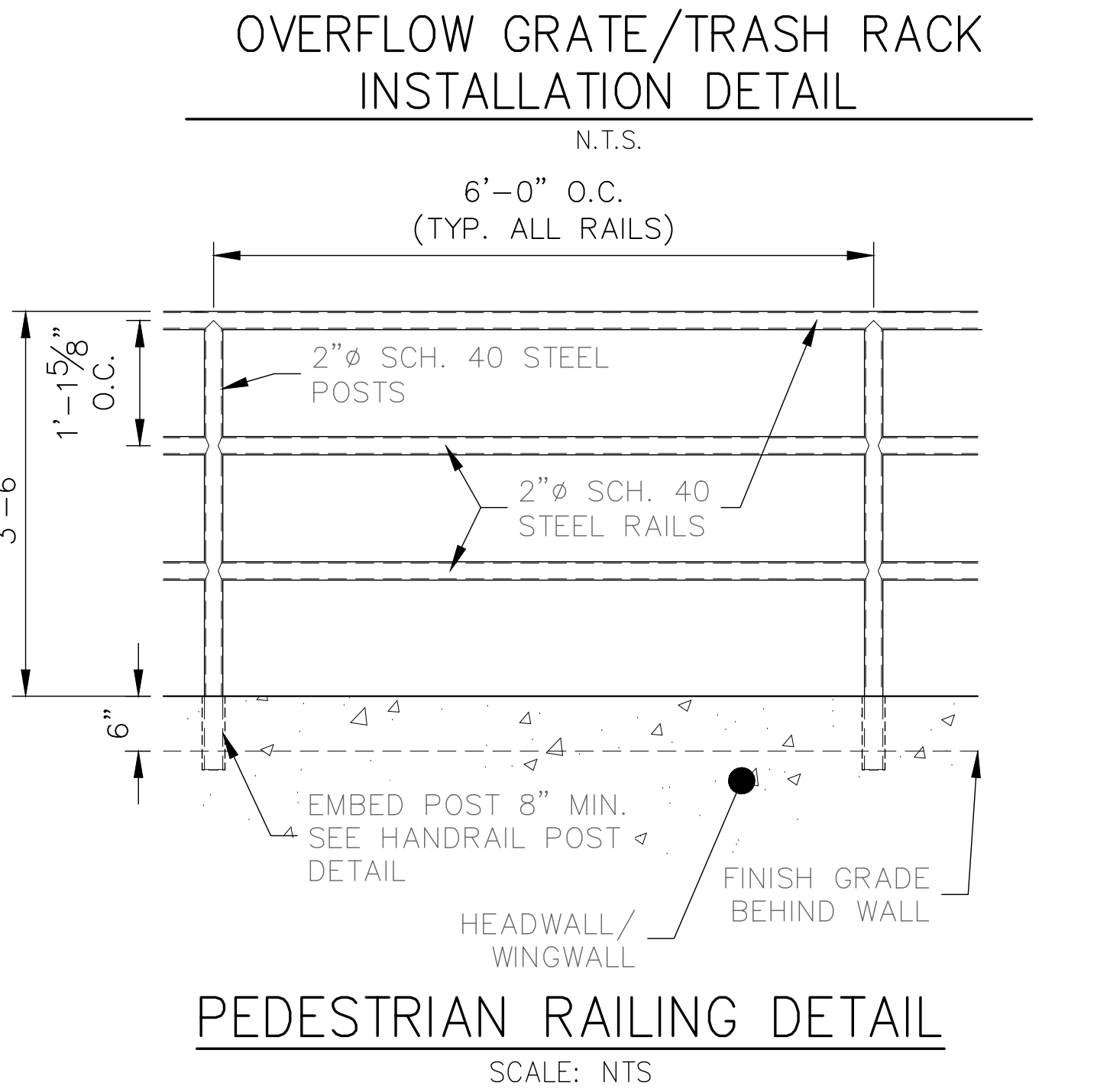
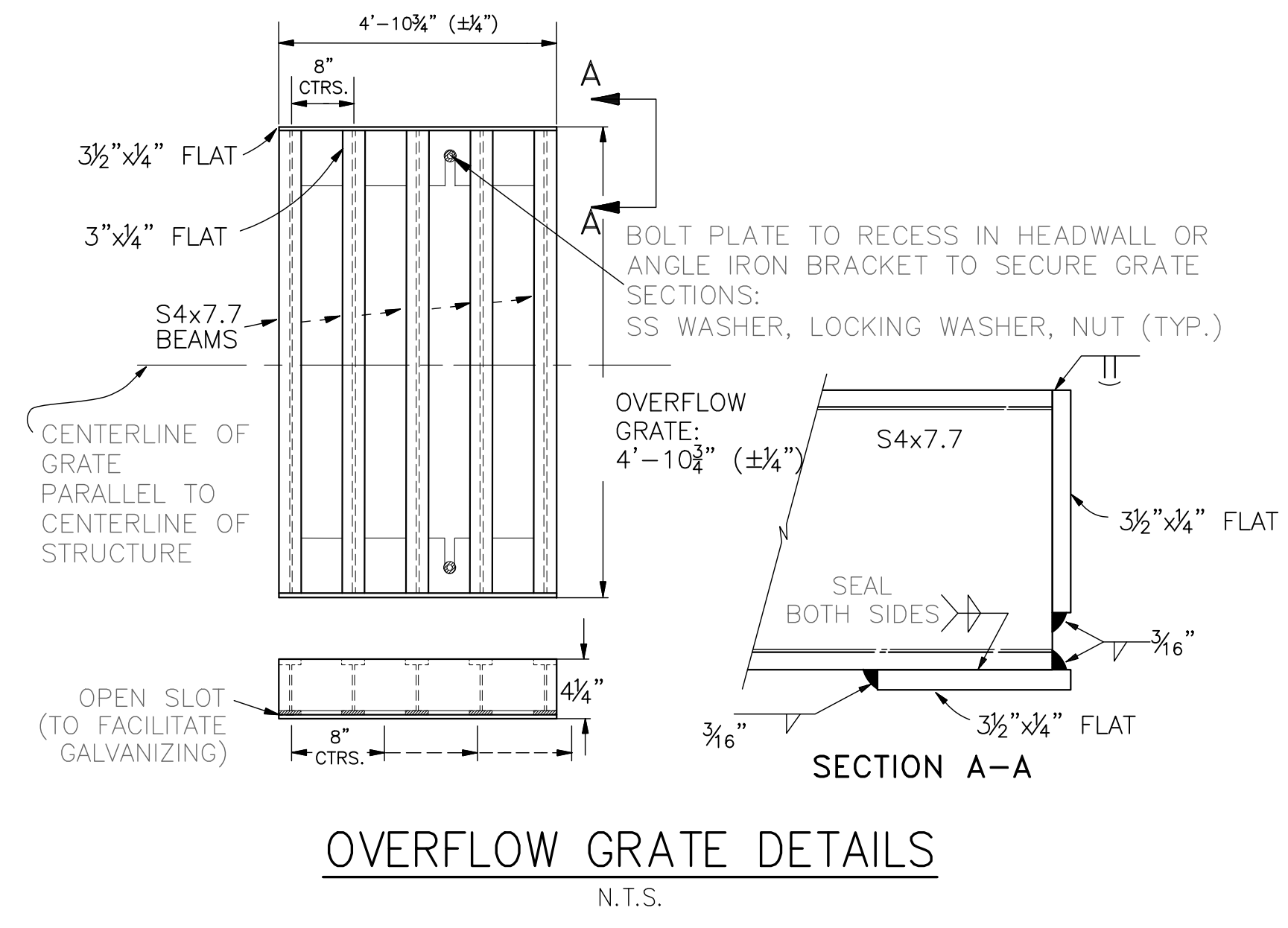
STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

THE CONTRACTOR SHALL SUBMIT REINFORCING STEEL PLACING DRAWINGS (PRIOR TO CONSTRUCTION) TO THE ENGINEER FOR REVIEW FOR CONFORMANCE WITH THE DESIGN DRAWINGS. THE DESIGN DRAWINGS SHALL GOVERN OVER PLACING DRAWINGS IN ALL CASES UNLESS MODIFICATIONS ARE APPROVED IN WRITING BY ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

E.F. = EACH FACE
F.E. = FAR FACE
N.F. = NEAR FACE
I.F. = INSIDE FACE
T.W. = TWO WAY
E.S. = EACH SIDE

O.F. = OUTSIDE FACE
T.&B. = TOP AND BOTTOM
T.F. = TOP FACE
B.F. = BOTTOM FACE
T.F. = TWO FACES
Lp = LAP LENGTH



OUTLET STRUCTURE PLATE, GRATE, AND RAIL NOTES:

ORIFICE PLATE:

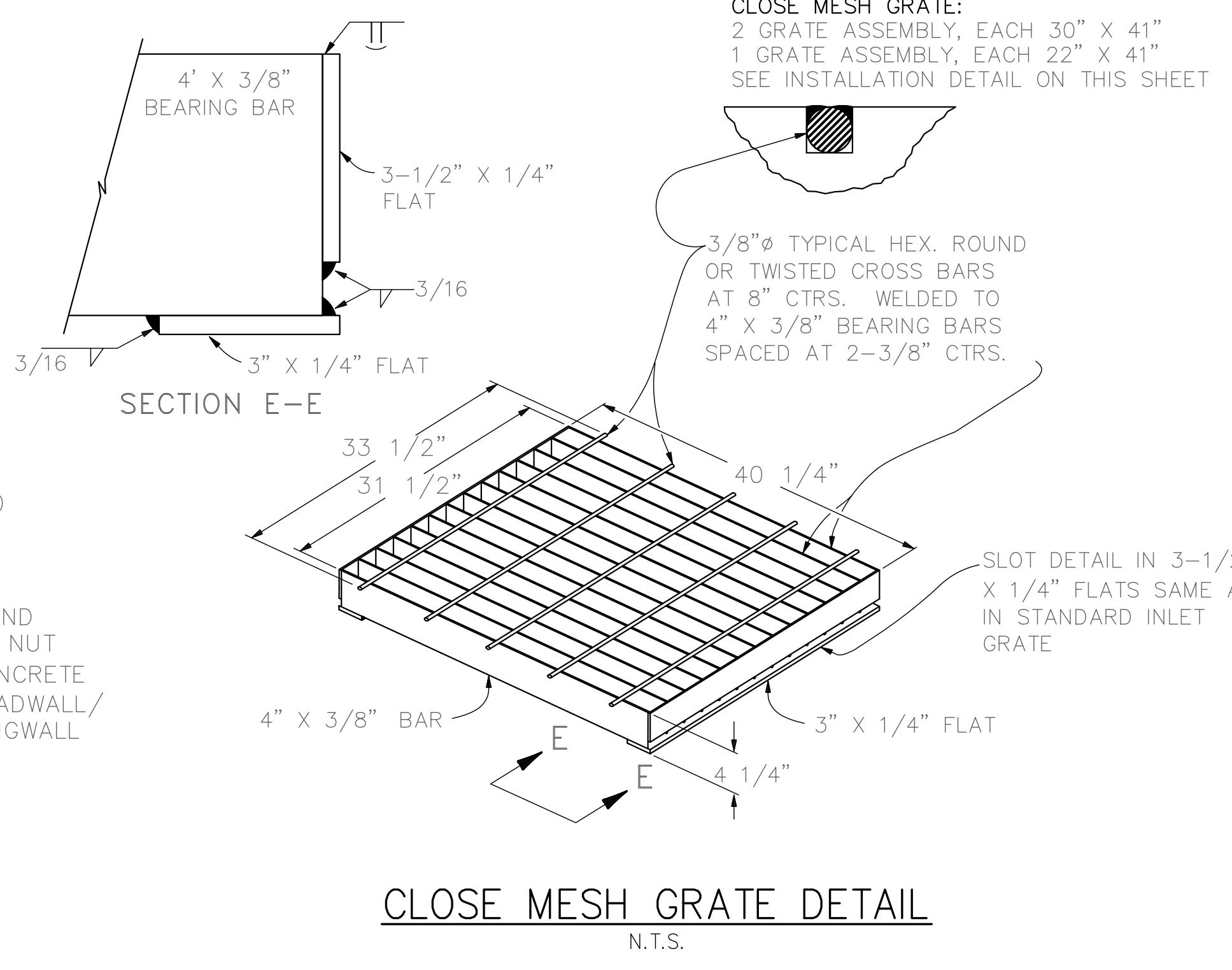
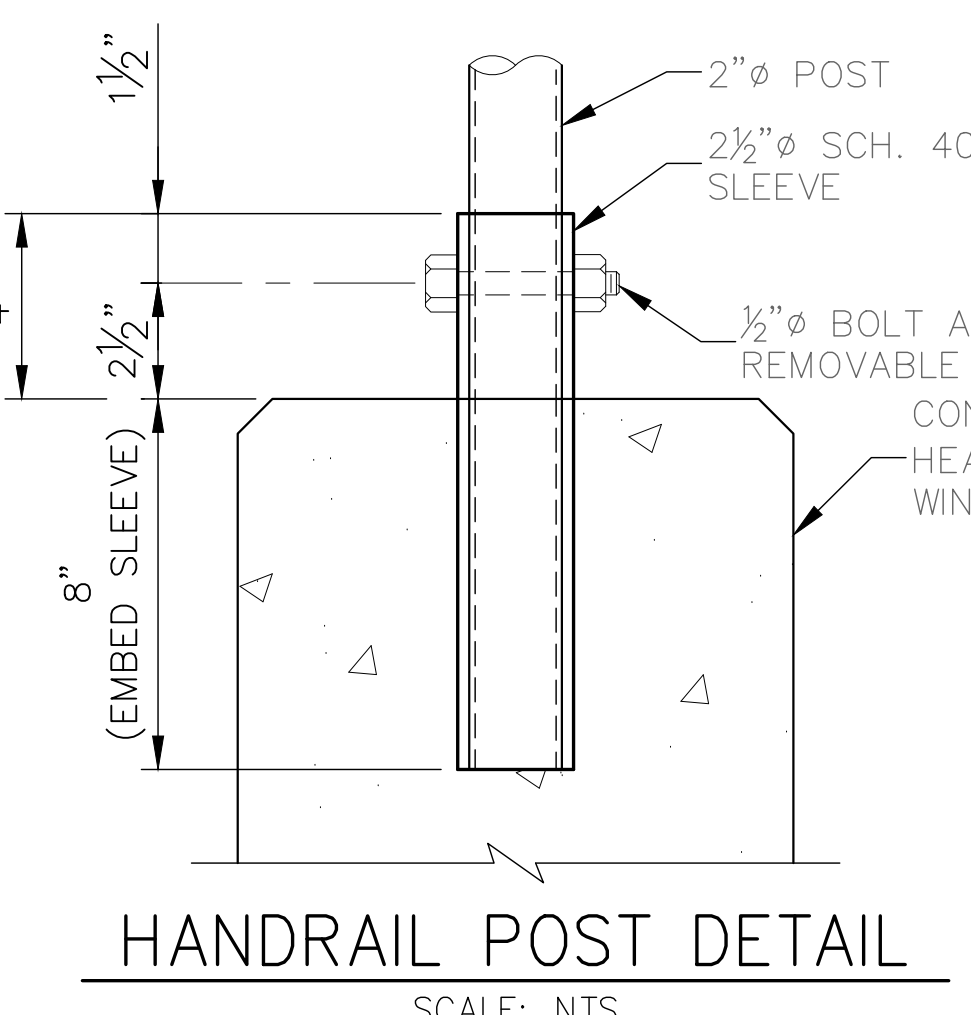
- PROVIDE CONTINUOUS EPDM GASKET 1/4" THICK BETWEEN ORIFICE PLATE AND STRUCTURE.
- THE GASKET SHALL BE MADE OF 1/4-INCH THICK, 60 DUROMETER EPDM RUBBER IN A CONTINUOUS SHEET THE SIZE OF THE ORIFICE PLATE. THE SHEET SHALL BE PLACED BETWEEN THE ORIFICE PLATE AND THE CONCRETE WALL, WITH THE WIDTH OF THE OVERLAP BETWEEN THE PLATE AND THE CONCRETE OPENINGS SHALL BE CUT INTO THE SHEET CORRESPONDING TO THE PLATE BOLT HOLES AND THE CONCRETE WALL OPENING, CUTS MADE EITHER BY THE CONTRACTOR IN THE FIELD OR BY THE MANUFACTURER, OR EQUIVALENT APPROVED BY EPC.
- BOLT PLATE TO CONCRETE 12" MAX. ON CENTER.

TRASH RACKS & GRATES:

- RACKS AND GRATE OPEN AREAS ARE FOR THE SPECIFIED MATERIALS/MANUFACTURERS. ALTERNATIVE MANUFACTURERS AND MATERIALS WITH DIFFERING DIMENSIONS ARE ACCEPTABLE PROVIDED THEY MEET THE GROSS OPEN AREA RATIO (R VALUE) AND ARE CONSIDERED EQUAL BY THE ENGINEER AND EPC. SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PROCUREMENT.
- TRASH RACKS SHALL BE 1 1/2" SCH. 40 STEEL PIPE, GALVANIZED, @ 6" CENTERS. SUPPORT BARS SHALL BE 1/2" x 2" STEEL RECTANGULAR BARS, GALVANIZED, @ 36". ALL TRASH RACKS SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE.
- REMOVABLE TRASH RACK SECTIONS SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE AND PROVIDED WITH HINGED & LOCKABLE OR BOLTABLE ACCESS PANELS AS SHOWN ON THE PLANS.
- STEEL TRASH RACKS SHALL BE HOT DIP GALVANIZED AND MAY BE HOT POWDER COATED AFTER GALVANIZING.
- STRUCTURAL STEEL FOR GRATES, ORIFICE PLATES, AND BARS SHALL BE GALVANIZED AND SHALL BE IN ACCORDANCE WITH CDOT STANDARD SPECIFICATIONS, SUBSECTION 712.06.
- ALL HARDWARE, BOLTS, AND FASTENERS SHALL BE STAINLESS STEEL.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PLATES AND GRATING FOR ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.

HAND RAILS:

- WELD PLATES MAY BE SUBSTITUTED FOR PIPE EMBEDMENT.
- STRUCTURES THAT CREATE A 30" OR GREATER DROP HEIGHT REQUIRE HAND RAILS FOR FALL PROTECTION.
- CONTRACTOR TO ENSURE HANDRAIL DESIGN AND MOUNTING SYSTEM IS COMPATIBLE WITH HW/WW DESIGN AND REINFORCING.
- DESIGN CRITERIA SHALL BE ACCORDANCE W/ AASHTO



ENGINEER'S STATEMENT

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ALL TERRAIN ENGINEERING

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DATE	REV	DESCRIPTION

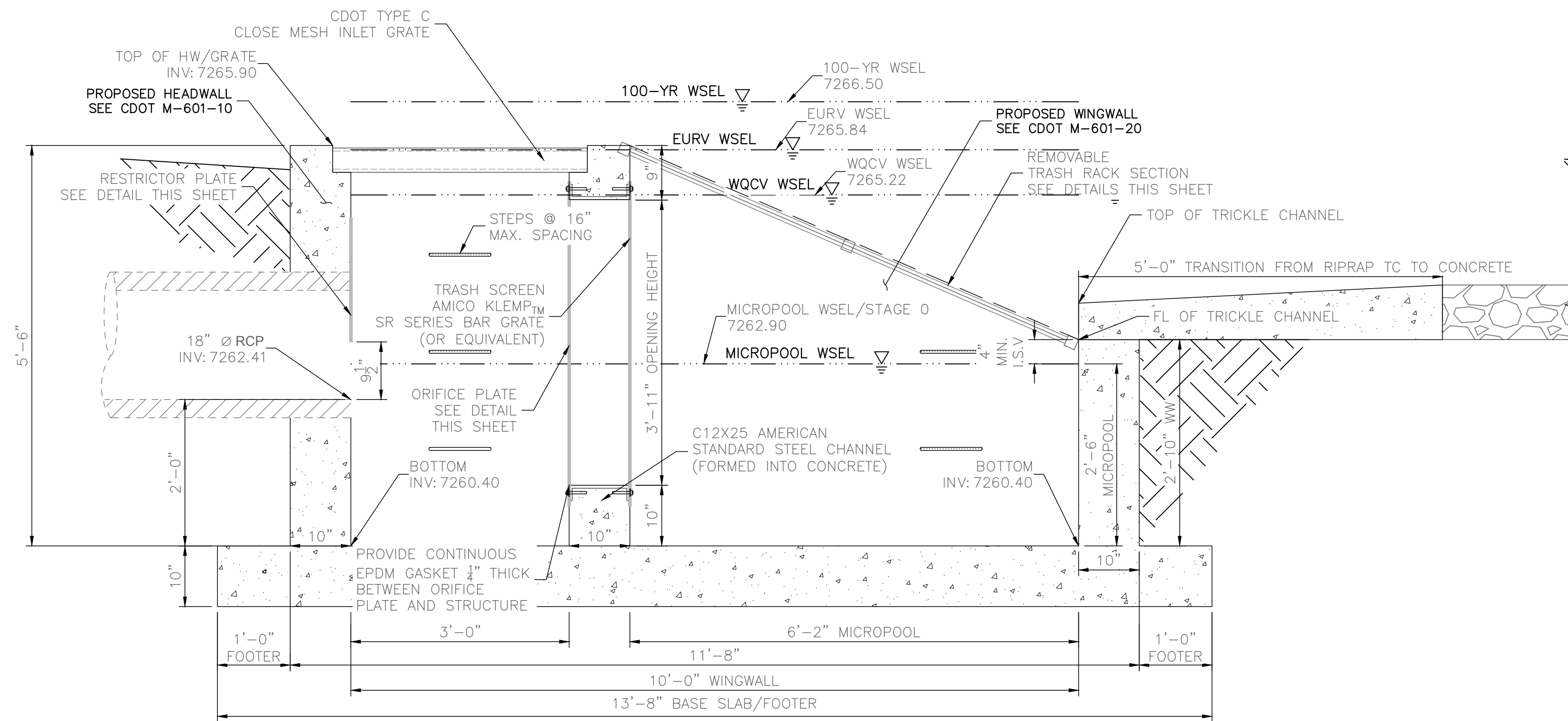
JOB NO: 24031 LOCATION: EPC

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026

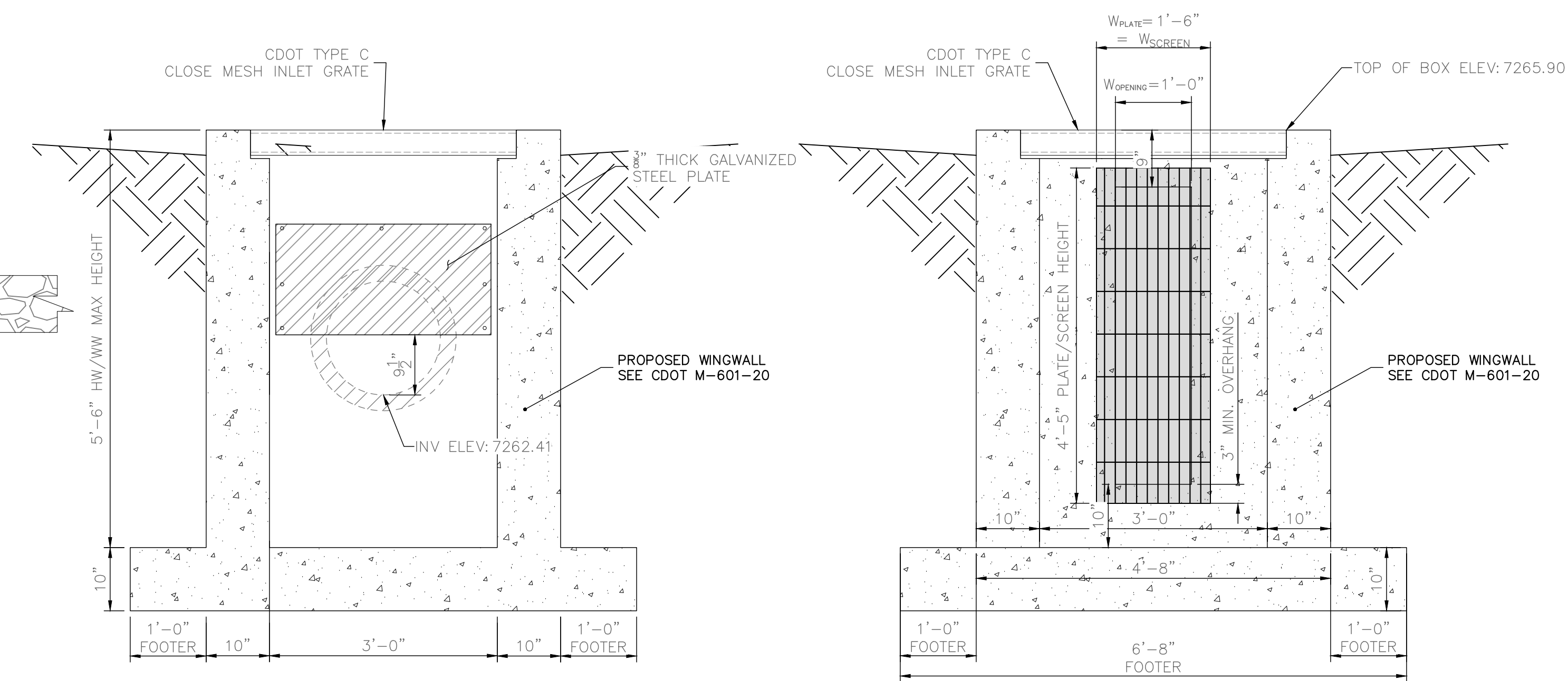
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V-SCALE: NTS

SHEET 12 OF 20

ANTLER RANGE FILING NO. 1
POND A OUTLET STRUCTURE DETAILS

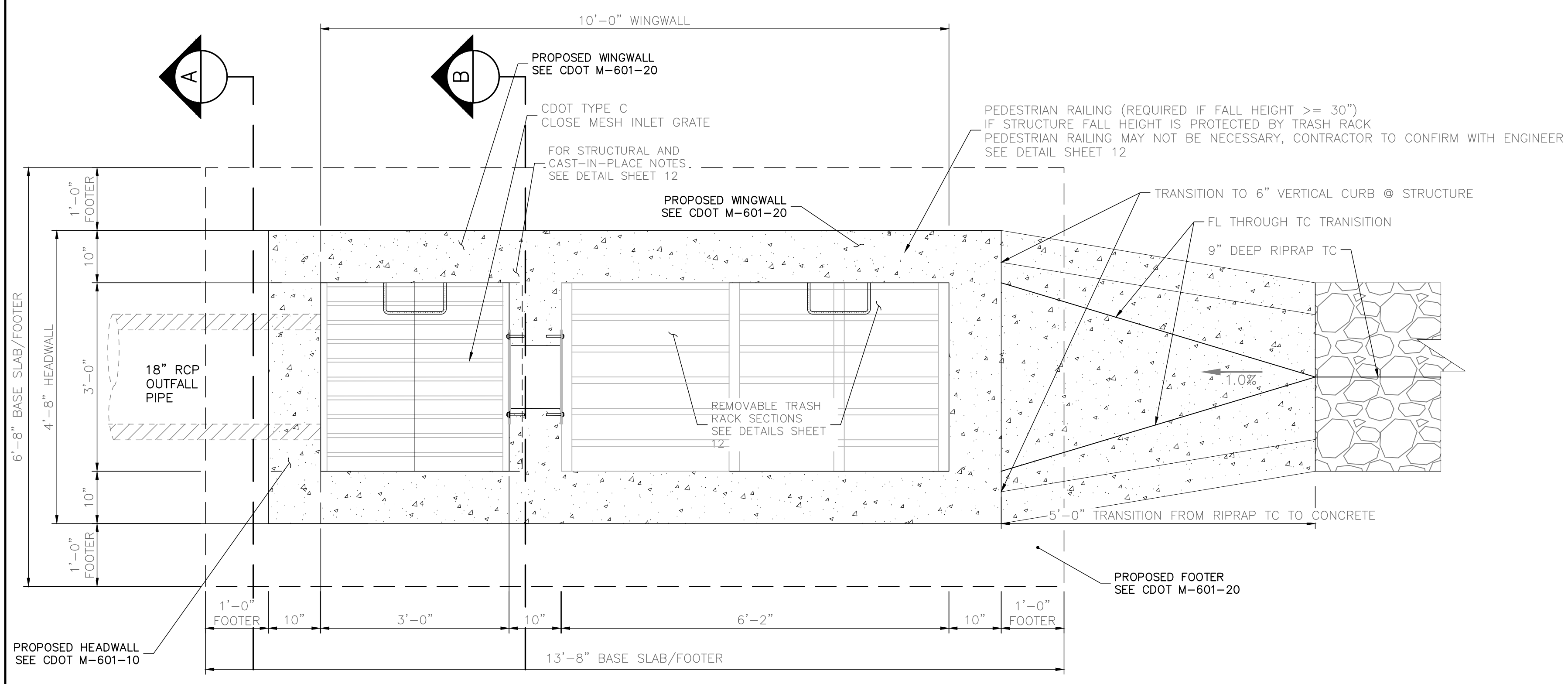


**POND
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SCALE: 3/4"=1"

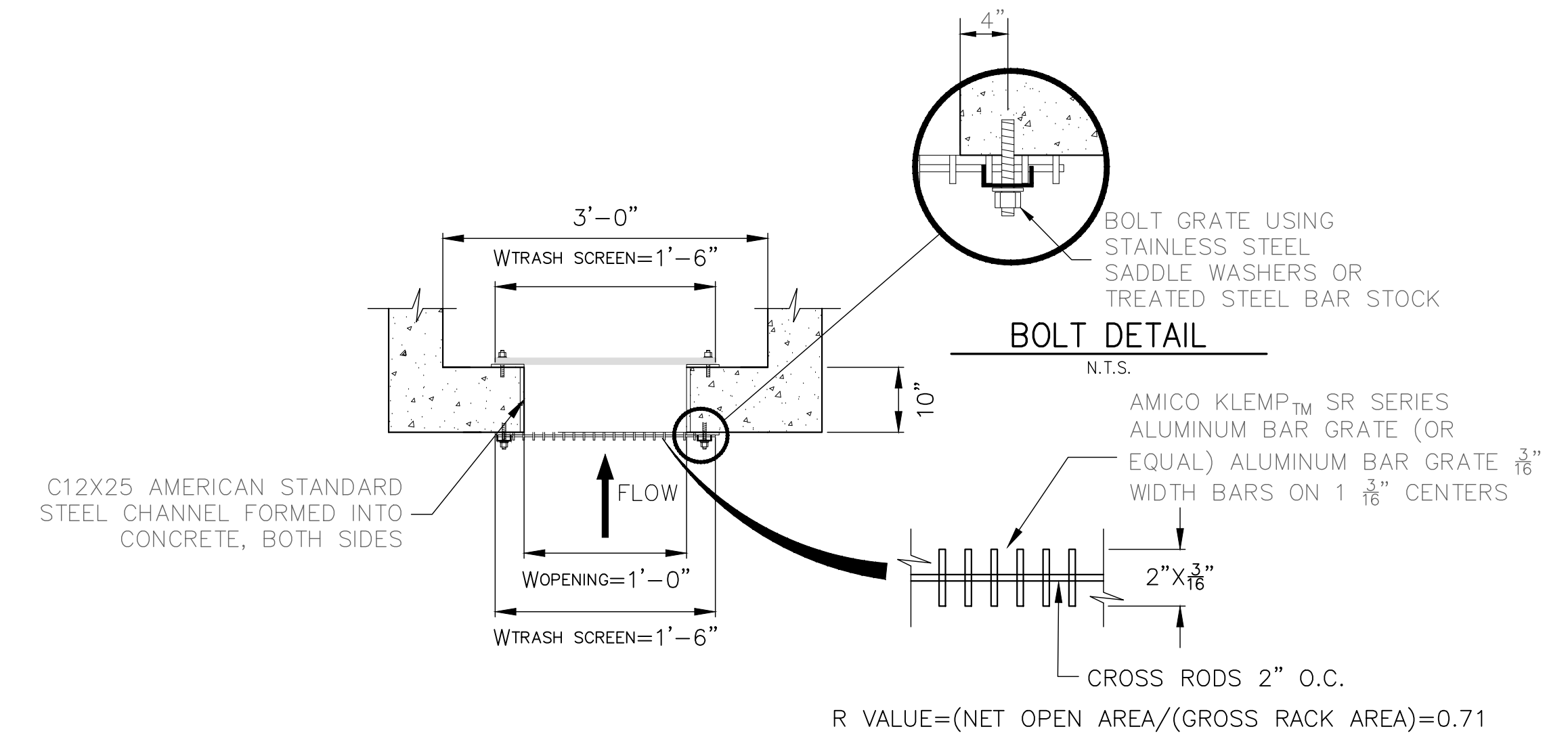


A A-A SECTION
SCALE: 3/4"=1"

B B-B SECTION
SCALE: 3/4"=1"



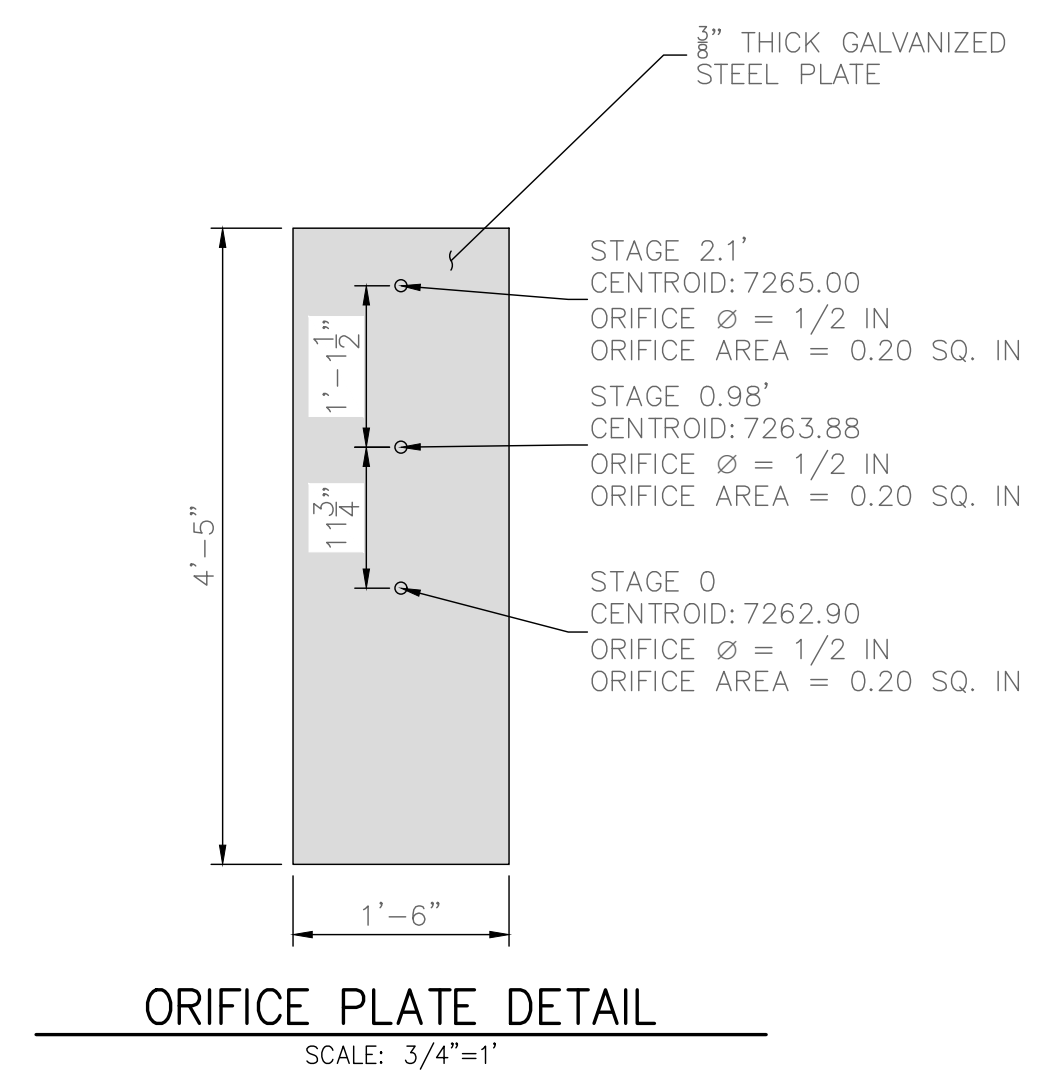
**POND
OUTLET STRUCTURE PLAN**
SCALE: 3/4"=1"



**TRASH SCREEN AND PLATE
DETAIL (PLAN)**
N.T.S.

TRASH SCREEN DETAIL
N.T.S.

- CAST-IN-PLACE STRUCTURAL NOTES:**
1. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS POURED.
 2. ALL CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE APPROVED BY THE ENGINEER.
 3. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
 4. DO NOT BACKFILL UNTIL CONCRETE HAS REACHED DESIGN STRENGTH, F_c.
 5. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
 6. CONTRACTOR SHALL SUBMIT STEEL REINFORCING SHOP DRAWINGS FOR ALL CAST-IN-PLACE STRUCTURES FOR ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION. REINFORCING SHOWN IS FOR INFORMATION ONLY.
 7. HEADWALLS FOR PIPES SHALL BE CONSTRUCTED PER CDOT M-601-10.
 8. WINGWALLS SHALL BE CONSTRUCTED PER CDOT M-601-20.
 9. WINGWALL FOOTINGS AND FLOOR TO BE POURED MONOLITHICALLY.
 10. REINFORCING STEEL SHALL BE GRADE 60 & MIN. SLICE LENGTHS PER CDOT STANDARDS AND APPLICABLE M-STANDARD DRAWINGS FOR HEADWALLS AND WINGWALLS.
 11. SEE GENERAL STRUCTURE NOTES ON SHEET 4.



ORIFICE PLATE DETAIL
SCALE: 3/4"=1"

ENGINEER'S STATEMENT

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DATE	DESCRIPTION

JOB NO: 24031 LOCATION: EPC

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REVIEW: NJQ
DATE: 02/23/2026
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V-SCALE: 3/4" = 1'

ANTLER RANGE FILING NO. 1

POND A OUTLET STRUCTURE DETAILS (CONT.)

SHEET
13 OF 20



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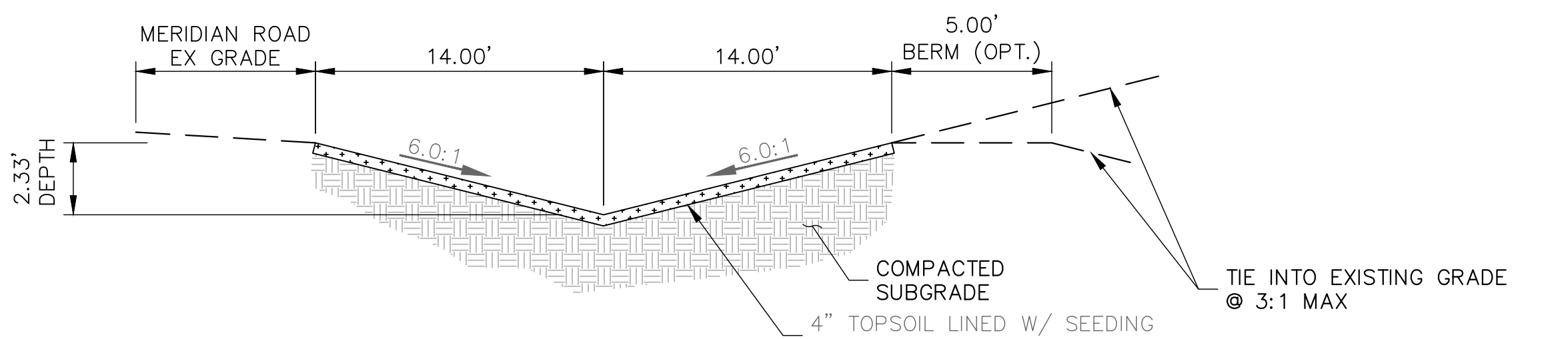
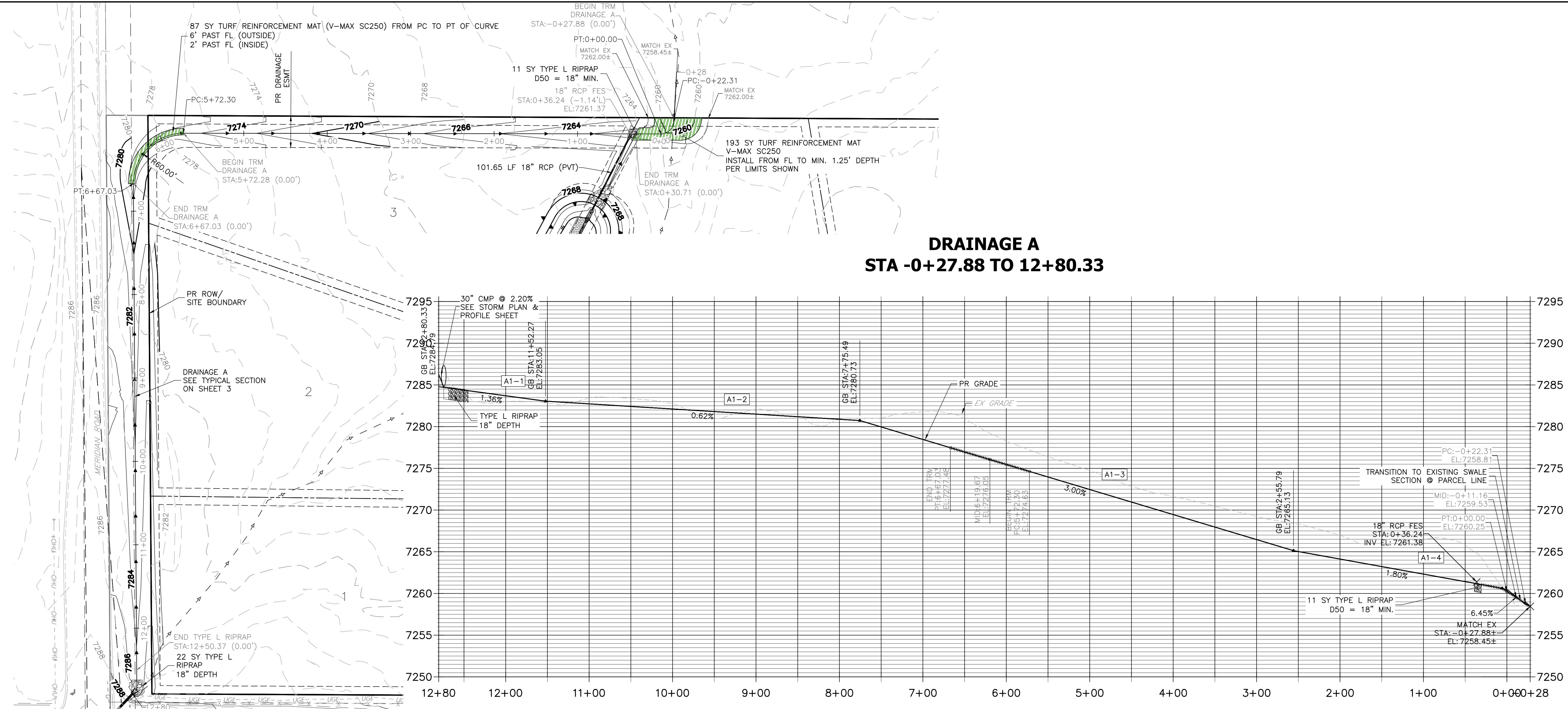
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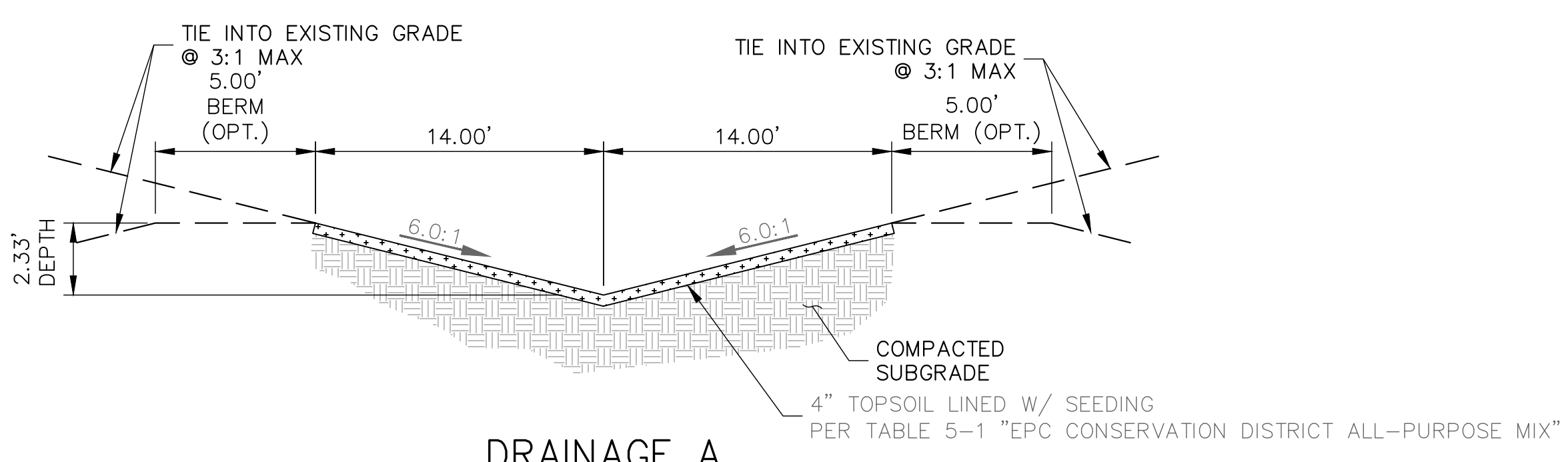
ANTLER RANGE FILING NO. 1
DRAINAGE A PLAN & PROFILE

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026
H-SCALE: 1" = 60'
V-SCALE: 1" = 6'
SHEET
14 OF 20

DRAINAGE A STA -0+27.88 TO 12+80.33

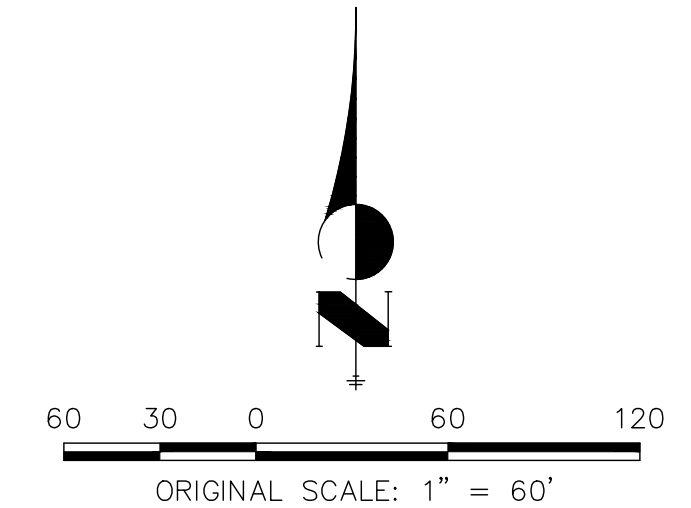


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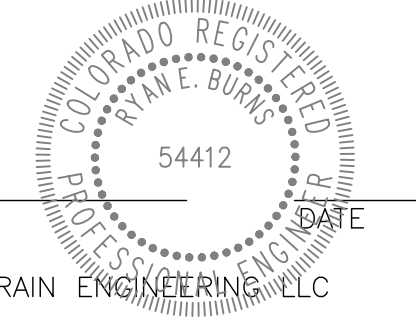
**DRAINAGE A
ADJACENT TO FILING 1 NORTH PL**
SCALE: NTS

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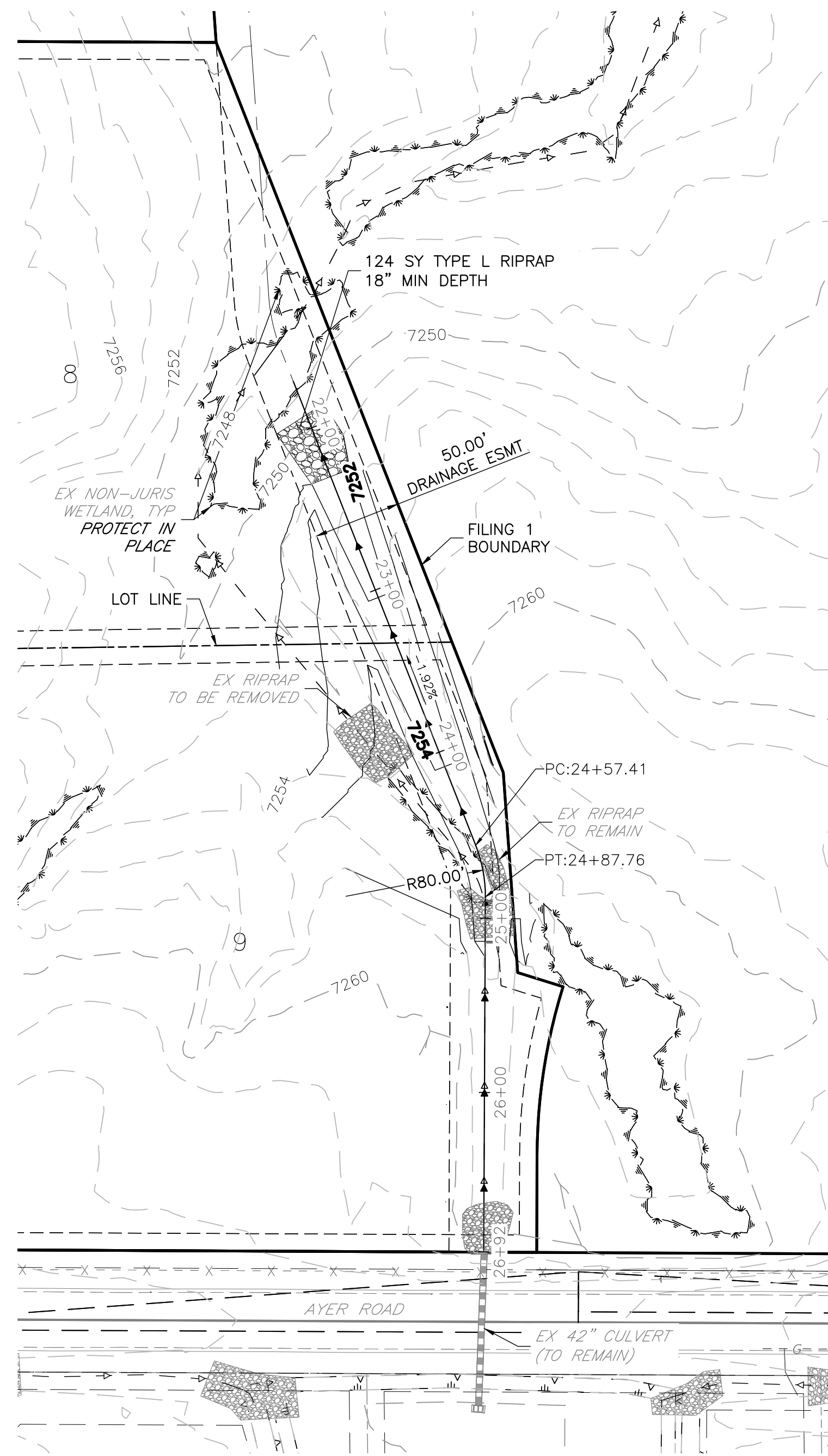


ENGINEER'S STATEMENT

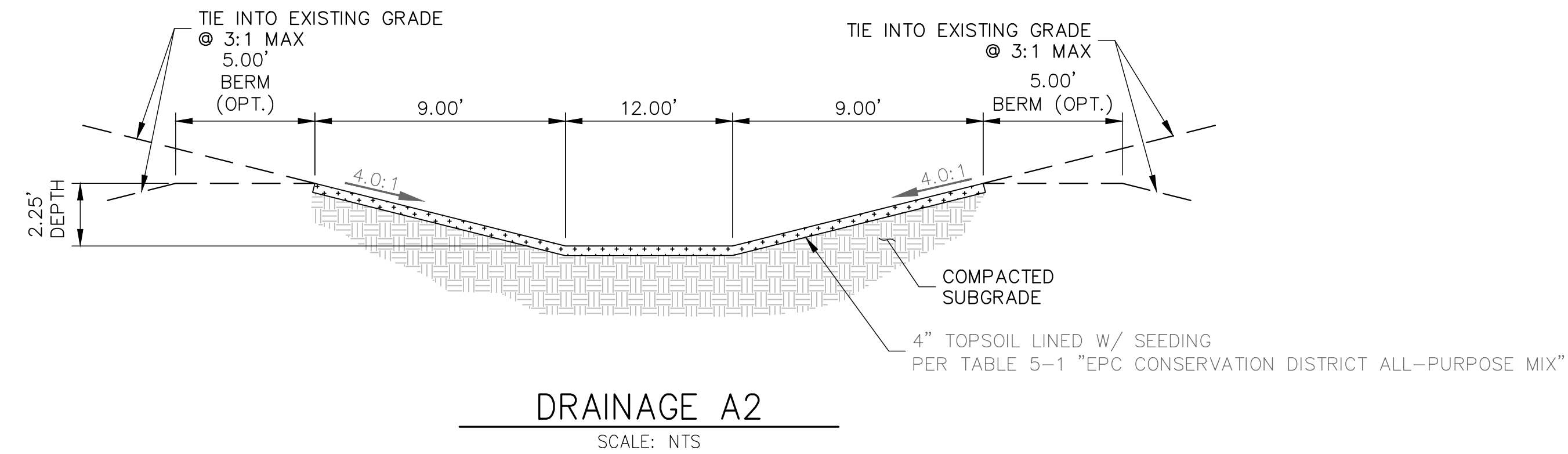
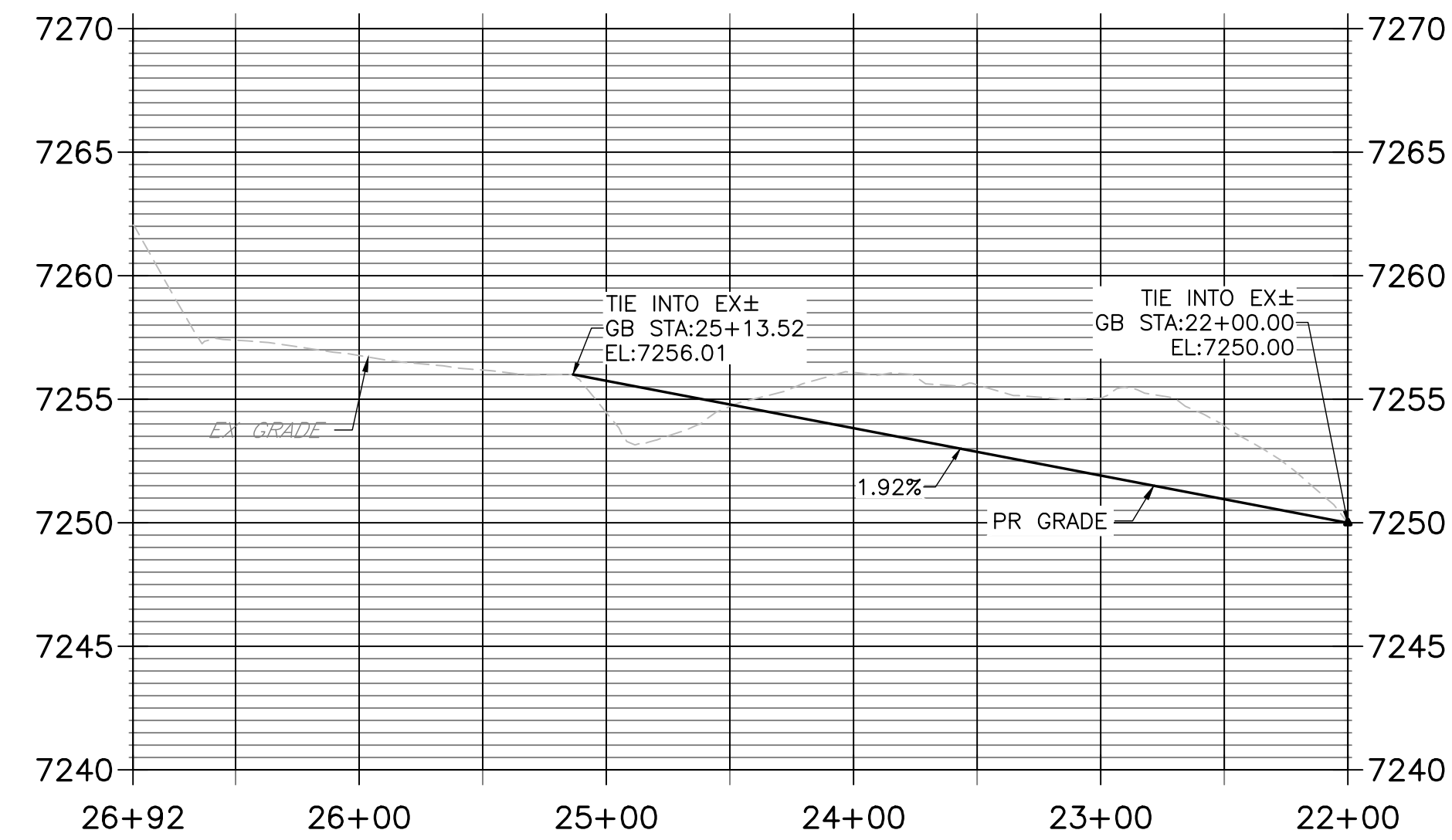
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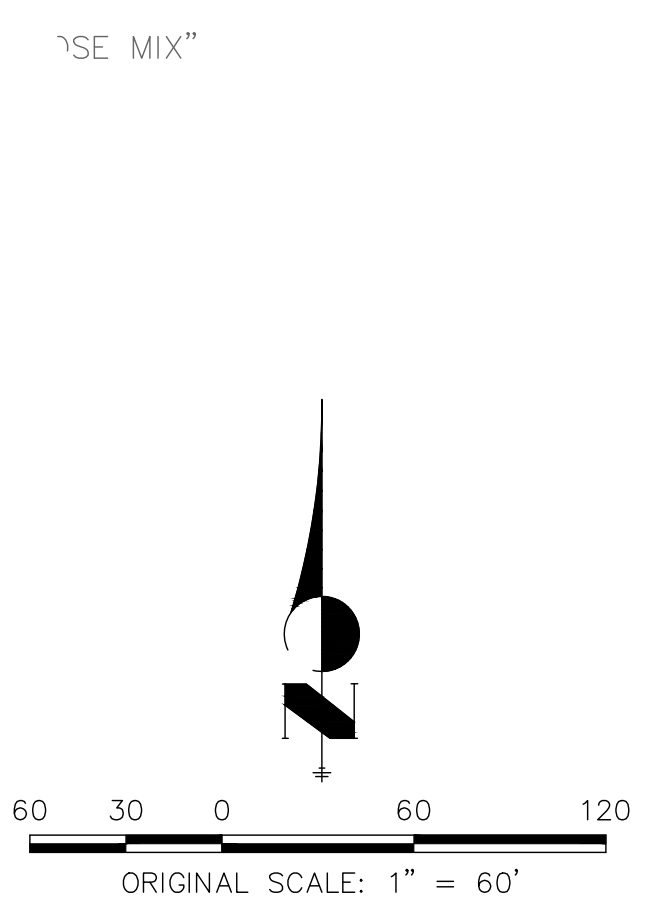


DRAINAGE A-2 STA 22+00.00 TO 26+91.51



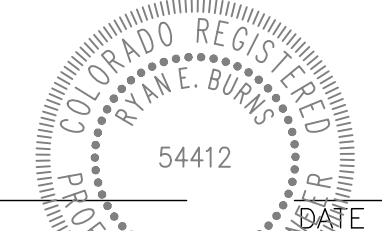
DRAINAGE A2
SCALE: NTS

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DATE	DESCRIPTION

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DRAINAGE A2 PLAN & PROFILE

DESIGN: REB
REVIEW: NOJ
DATE: 02/23/2026
H-SCALE: 1" = 60'
V-SCALE: 1" = 6'
SHEET
15 OF 20



EC-2 Temporary and Permanent Seeding (TS/PS)

soil amendments and rototill them into the soil to a depth of 6 inches or more. Topsoil should be salvaged during grading operations for use and spread on areas to be revegetated later. Topsoil should be viewed as an important resource to be utilized for vegetation establishment, due to its water-holding capacity, structure, texture, organic matter content, biological activity, and nutrient content. The rooting depth of most native grasses in the semi-arid Denver metropolitan area is 6 to 18 inches. At a minimum, the upper 6 inches of topsoil should be stripped, stockpiled, and ultimately respread across areas that will be revegetated.

Where topsoil is not available, subsoils should be amended to provide an appropriate plant-growth medium. Organic matter, such as well digested compost, can be added to improve soil characteristics conducive to plant growth. Other treatments can be used to adjust soil pH conditions when needed. Soil testing, which is typically inexpensive, should be completed to determine and optimize the types and amounts of amendments that are required.

If the disturbed ground surface is compacted, rip or rototill the surface prior to placing topsoil. If adding compost to the existing soil surface, rototilling is necessary. Surface roughening will assist in placement of a stable topsoil layer on steeper slopes, and allow infiltration and root penetration to greater depth.

Prior to seeding, the soil surface should be rough and the seedbed should be firm, but neither too loose nor compacted. The upper layer of soil should be in a condition suitable for seeding at the proper depth and conducive to plant growth. Seed-to-soil contact is the key to good germination.

Seed Mix for Temporary Vegetation

To provide temporary vegetative cover on disturbed areas which will not be paved, built upon, or fully landscaped or worked for an extended period (typically 30 days or more), plant an annual grass appropriate for the time of planting and mulch the planted areas. Annual grasses suitable for the Denver metropolitan area are listed in Table TS/PS-1. These are to be considered only as general recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction.

Seed Mix for Permanent Revegetation

To provide vegetative cover on disturbed areas that have reached final grade, a perennial grass mix should be established. Permanent seeding should be performed promptly (typically within 14 days) after reaching final grade. Each site will have different characteristics and a landscape professional or the local jurisdiction should be contacted to determine the most suitable seed mix for a specific site. In lieu of a specific recommendation, one of the perennial grass mixes appropriate for site conditions and growth season listed in Table TS/PS-2 can be used. The pure live seed (PLS) rates of application recommended in these tables are considered to be absolute minimum rates for seed applied using proper drill-seeding equipment.

If desired for wildlife habitat or landscape diversity, shrubs such as rubber rabbitbrush (*Chrysothamnus nauseosus*), fourwing saltbush (*Atriplex canescens*) and skunkbrush sumac (*Rhus trilobata*) could be added to the upland seedmixes at 0.25, 0.5 and 1 pound PLS/acre, respectively. In riparian zones, planting root stock of such species as American plum (*Prunus americana*), woods rose (*Rosa woodsii*), plains cottonwood (*Populus sargentii*), and willow (*Populus spp.*) may be considered. On non-topsoiled upland sites, a legume such as Ladak alfalfa at 1 pound PLS/acre can be included as a source of nitrogen for perennial grasses.

TS/PS-2 Urban Drainage and Flood Control District June 2012
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Temporary and Permanent Seeding (TS/PS) EC-2

Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. See Table TS/PS-3 for appropriate seeding dates.

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species* (Common name)	Growth Season*	Pounds of Pure Live Seed (PLS)/acre*	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Sudangrass	Warm	5-10	½ - ¾
7. Sorghum	Warm	5-10	½ - ¾
8. Winter wheat	Cool	20-35	1 - 2
9. Winter barley	Cool	20-35	1 - 2
10. Winter rye	Cool	20-35	1 - 2
11. Triticale	Cool	25-40	1 - 2

* Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or moved closer than 8 inches.

Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch.

† See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.

‡ Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

June 2012 Urban Drainage and Flood Control District TS/PS-3
Urban Storm Drainage Criteria Manual Volume 3

EC-2 Temporary and Permanent Seeding (TS/PS)

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses

Common Name	Botanical Name	Growth Season*	Growth Form	Seeds/ Pound	Pounds of PLS/acre
Alkalai Soil Seed Mix					
Alkali sacaton	<i>Sporobolus airoides</i>	Cool	Bunch	1,750,000	0.25
Basin wildrye	<i>Elymus cinereus</i>	Cool	Bunch	165,000	2.5
Sodar streambank wheatgrass	<i>Agropyron riparium 'Sodar'</i>	Cool	Sod	170,000	2.5
Jose tall wheatgrass	<i>Agropyron elongatum 'Jose'</i>	Cool	Bunch	79,000	7.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					17.75
Fertile Loamy Soil Seed Mix					
Ephraim crested wheatgrass	<i>Agropyron cristatum 'Ephraim'</i>	Cool	Sod	175,000	2.0
Dural hard fescue	<i>Festuca ovina 'duruscula'</i>	Cool	Bunch	565,000	1.0
Lincoln smooth brome	<i>Bromus inermis leys 'Lincoln'</i>	Cool	Sod	130,000	3.0
Sodar streambank wheatgrass	<i>Agropyron riparium 'Sodar'</i>	Cool	Sod	170,000	2.5
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	7.0
Total					15.5
High Water Table Soil Seed Mix					
Meadow foxtail	<i>Alopecurus pratensis</i>	Cool	Sod	900,000	0.5
Redtop	<i>Agrostis alba</i>	Warm	Open sod	5,000,000	0.25
Reed canarygrass	<i>Phalaris arundinacea 'Lincoln'</i>	Cool	Sod	68,000	0.5
Lincoln smooth brome	<i>Bromus inermis leys 'Lincoln'</i>	Cool	Sod	130,000	3.0
Pathfinder switchgrass	<i>Panicum virgatum 'Pathfinder'</i>	Warm	Sod	389,000	1.0
Alkar tall wheatgrass	<i>Agropyron elongatum 'Alkar'</i>	Cool	Bunch	79,000	5.5
Total					10.75
Transition Turf Seed Mix*					
Ruebens Canadian bluegrass	<i>Poa compressa 'Ruebens'</i>	Cool	Sod	2,500,000	0.5
Dural hard fescue	<i>Festuca ovina 'duruscula'</i>	Cool	Bunch	565,000	1.0
Citation perennial ryegrass	<i>Lolium perenne 'Citation'</i>	Cool	Sod	247,000	3.0
Lincoln smooth brome	<i>Bromus inermis leys 'Lincoln'</i>	Cool	Sod	130,000	3.0
Total					7.5

TS/PS-4 Urban Drainage and Flood Control District June 2012
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EC-2 Temporary and Permanent Seeding (TS/PS)

Table TS/PS-3. Seeding Dates for Annual and Perennial Grasses

Seeding Dates	Annual Grasses (Numbers in table reference species in Table TS/PS-1)		Perennial Grasses	
	Warm	Cool	Warm	Cool
March 16–April 15			✓	✓
January 1–March 15			✓	✓
March 16–April 30	4	1,2,3	✓	✓
May 1–May 15	4		✓	
May 16–June 30	4,5,6,7			
July 1–July 15	5,6,7			
July 16–August 31				
September 1–September 30		8,9,10,11		
October 1–December 31			✓	✓

Mulch

Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the Mulching BMP Fact Sheet for additional guidance.

Maintenance and Removal

Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may also be necessary.

Protect seeded areas from construction equipment and vehicle access.

TS/PS-6 Urban Drainage and Flood Control District June 2012
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EC-4 Mulching (MU)

- Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may have to be weighted to afford proper soil penetration.

- Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided above).

- On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch.

- Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation should be avoided.

- Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead of mulch. (See the ECM/TRM BMP for more information.)

- Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)

- Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

Maintenance and Removal

After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.

MU-2 Urban Drainage and Flood Control District June 2012
Urban Storm Drainage Criteria Manual Volume 3

Chapter 5 Native Vegetation Requirements and Guidelines

Table 5-1. El Paso County Conservation District All-Purpose Mix for Upland, Transition and Permanent Control Measure Areas

Common Name	Scientific Name	Growth Season / Form	% of Mix	Pounds PLS		
				Irrigated broadcast Irrigated hydroseeded	Non-irrigated broadcast Non-irrigated hydroseeded Irrigated drilled	Non-irrigated drilled
				80 seeds/sq ft	40 seeds/sq ft	20 seeds/sq ft
Bluestem, big	<i>Andropogon gerardii</i>	Warm, sod	20	4.4	2.2	1.1
Grama, blue	<i>Bouteloua gracilis</i>	Warm, bunch	10	0.5	0.25	0.13
Green needlegrass ²	<i>Nassella viridula</i>	Cool, bunch	10	2	1	0.5
Wheatgrass, western ²	<i>Pascopyrum smithii</i>	Cool, sod	20	6.4	3.2	1.6
Grama, sideoats	<i>Bouteloua curtipendula</i>	Warm, bunch/sod	10	2	1	0.5
Switchgrass ²	<i>Panicum virgatum</i>	Warm, bunch/sod	10	0.8	0.4	0.2
Prairie sandreed	<i>Calamovilfa longifolia</i>	Warm, sod	10	1.2	0.6	0.3
Yellow indiangrass ²	<i>Sorghastrum nutans</i>	Warm, sod	10	2	1	0.5
			Seed rate (lbs PLS/acre)	19.3	9.7	4.8

¹For portions of facilities located near or on the bottom or where wet soil conditions occur. Planting of potted nursery stock wetland plants 2-foot on-center is recommended for sites with wetland hydrology.

²Species that will do well in the bottom of pond areas.

City of Colorado Springs Stormwater Enterprise **MUST BE USED IN ALL PCM AREAS** Stormwater Construction Manual December 2020

Temporary and Permanent Seeding (TS/PS) EC-2

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses (cont.)

Common Name	Botanical Name	Growth Season*	Growth Form	Seeds/ Pound	Pounds of PLS/acre
Sandy Soil Seed Mix					
Blue grama	<i>Bouteloua gracilis</i>	Warm	Sod-forming bunchgrass	825,000	0.5
Camper litle bluestem	<i>Schizachyrium scoparium 'Camper'</i>	Warm	Bunch	240,000	1.0
Prairie sandreed	<i>Calamovilfa longifolia</i>	Warm	Open sod	274,000	1.0
Sand dropseed	<i>Sporobolus cryptandrus</i>	Cool	Bunch	5,298,000	0.25
Vaughn sideoats grama	<i>Bouteloua curtipendula 'Vaughn'</i>	Warm	Sod	191,000	2.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					10.25
Heavy Clay, Rocky Foothill Seed Mix					
Ephraim crested wheatgrass ⁴	<i>Agropyron cristatum 'Ephraim'</i>	Cool	Sod	175,000	1.5
Oahe Intermediate wheatgrass	<i>Agropyron intermedium 'Oahe'</i>	Cool	Sod	115,000	5.5
Vaughn sideoats grama ⁴	<i>Bouteloua curtipendula 'Vaughn'</i>	Warm	Sod	191,000	2.0
Lincoln smooth brome	<i>Bromus inermis leys 'Lincoln'</i>	Cool	Sod	130,000	3.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					17.5

¹ All of the above seeding mixes and rates are based on drill seeding followed by crimped straw mulch. These rates should be doubled if seed is broadcast and should be increased by 50 percent if the seeding is done using a Brillion Drill or is applied through hydraulic seeding. Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1. If hydraulic seeding is used, hydraulic mulching should be done as a separate operation.
² See Table TS/PS-3 for seeding dates.
³ If site is to be irrigated, the transition turf seed rates should be doubled.
⁴ Crested wheatgrass should not be used on slopes steeper than 6H to 1V.
⁵ Can substitute 0.5 lbs PLS of blue grama for the 2.0 lbs PLS of Vaughn sideoats grama.

June 2012 Urban Drainage and Flood Control District TS/PS-5
Urban Storm Drainage Criteria Manual Volume 3

MATERIAL PROPERTY DATA SHEET

WESTERN GREEN VMax® SC250™
Permanent • Triple Net • Organic Fiber Matrix • Turf Reinforcement Mat


DESCRIPTION
SC250 Turf Reinforcement Mat (TRM) is composed of 70% straw and 30% coconut fibers mechanically (stitch) bound between a three-dimensional UV stabilized, synthetic net structure. Stitching is secured on two-inch centers using UV stabilized, synthetic thread. SC250 is a permanent, three-dimensional TRM that provides immediate erosion protection and long-term turf reinforcement and is intended for applications requiring erosion protection for greater than thirty-six months.

Each roll of SC250 is made in the USA and manufactured under Western Green's Quality Assurance Program to ensure a continuous distribution of fibers and consistent thickness.

Material Content	Index Property	Test Method	Typical
Matrix: Straw/Coconut	Thickness	ASTM D6525	0.58 in. (15 mm)
Top Net: Mediumweight, UV stable	Mass/Unit Area	ASTM D6566	15.0 oz/sy (500 g/m ²)
Middle Net: Corrugated Ultra-Heavyweight, UV stable	Tensile Strength – MD	ASTM D6818	700 lbs/ft (10.2 kN/m)
Bottom Net: Mediumweight, UV stable	Tensile Strength – TD	ASTM D6818	675 lbs/ft (9.9 kN/m)
Thread: Synthetic, UV Stable	Elongation – MD	ASTM D6818	30%
	Elongation – TD	ASTM D6818	20%
	UV Stability	ASTM D4355	80% @ 1000 hr
	Light Penetration	ASTM D6567	5%
	Biomass Improvement	ASTM D7322	400%
	Specific Gravity	ASTM D792	57.4 lb/ft ³ (932 g/cm ³)
	Porosity	ECTC	N/A

Standard Roll Sizes	Design Parameters
Width: 8 ft (2.4 m), 6.5 ft (2.0 m)	Property: Unvegetated, Vegetated ¹
Length: 90 ft (27.4 m), 55.5 ft (17.0 m)	RUSLE C Factor ² : 0.05, N/A
Weight ± 10%: 70 lb (32.0 kg), 34 lb (15.5 kg)	Slope Maximum Gradient ³ : 0.5H:1V, 0.5H:1V
Area: 80 sy (66.9 m ²), 40 sy (33.4 m ²)	Permissible Shear Stress ² : 3.0 psf (145 Pa), 10.0 psf (480 Pa)
	Permissible Velocity ² : 9.5 fps (2.9 m/s), 15 fps (4.6 m/s)
	$v_{w,100}$ (HEC-15): N/A, 0.67
	Manning's n Roughness (HEC-15): n_{unveg} , n_{veg} , n_{stone}
	0.038, 0.032, 0.027

¹ Unvegetated: The information contained herein may represent product index data, performance ratings, bench scale testing or other material utility qualifications. Such representation may have unique utility and limitations. Every effort has been made to ensure accuracy, however, no warranty is claimed and the liability shall be limited by Western Green or its affiliates regarding the completeness, accuracy or the use of these data for any particular application or installation. While testing methods are provided for reference, values shown may be derived from interpretation or adjustment to be representative of intended use. For further information, please refer to contact Western Green.
² Maximum Gradient is a recommendation for typical installations.
³ Hydraulic methods compliant with ASTM D6659/D6660 but generalized for typical applications.
⁴ Vegetated values dependent on established stand of vegetation.

NORTH AMERICAN GREEN
Rev. 4.2023 Scan for additional and updated product information, or click here. 
Western Green • 4609 E. Boonville-New Harmony Rd. Evansville, IN 47725 • (800) 772-2040 [westergreen.com](http://www.westergreen.com)

ENGINEER'S STATEMENT
STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS PART OF THEIR APPLICATION ON THIS PROJECT
RYAN E. BURNS, P.E.
COLORADO P.E. 54412
FOR AND ON BEHALF OF ALL TERRAIN ENGINEERING, LLC

DESIGN: REB
REVIEW: NJQ
DATE: 02/23/2026
H-SCALE: NA
V-SCALE: NA
SHEET 19 OF 20

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, ALL TERRAIN ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.
JOB NO.: 24031 LOCATION: EPC
DATE: _____
REV. DESCRIPTION: _____
ANTLER RANGE FILING NO. 1
MANNING'S n ROUGHNESS (HEC-15)
GRADING & EROSION CONTROL DETAILS

PREPARED FOR:
ANTLER RANGE LLC
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COLORADO SPRINGS, CO 80937
(602) 957-0966
GI@GLANGDON.COM

ALL TERRAIN ENGINEERING
RYAN E. BURNS, P.E.
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FOR AND ON BEHALF OF ALL TERRAIN ENGINEERING, LLC

