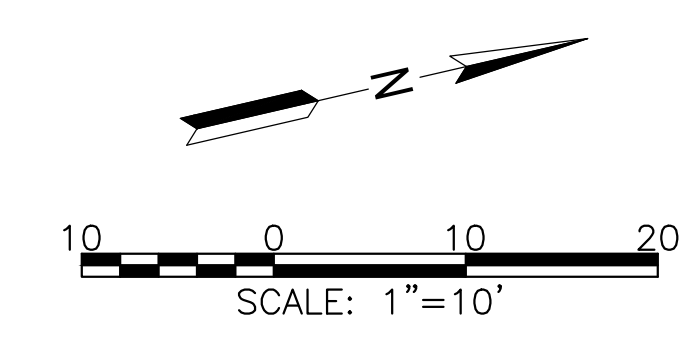


LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED GRAVEL BRIDGE APPROACH & TRAIL (SEE SHEET C-20)
- BORE HOLE LOCATION
- PROPOSED CONCRETE ABUTMENT AND WING WALLS (SEE STRUCTURAL SHEETS)
- EXISTING TREE SEE SHEET C-04 FOR TREE PROTECTION DETAILS
- PROP. STONE PROTECTION RIPRAP (NOTE 2)
- PROPOSED FILL AND EMBANKMENT
- CRITICAL ROOT ZONE AREA (SEE NOTE 3)

NOTES

1. BACKFILL WINGWALLS WITH SELECT FILL. SEE STRUCTURAL GENERAL RETAINING WALL NOTES FOR WINGWALL SUBGRADE AND BACKFILL REQUIREMENTS.
2. SEE SHEET C-19 FOR TYPICAL STONE PROTECTION RIPRAP DETAILS AND REQUIREMENTS. PROP. STONE RIPRAP SHALL EXTEND 15' MIN. EACH SIDE OF ABUTMENTS.
3. MAINTAIN 12" MIN. SEPARATION BETWEEN ALL TREE ROOTS AND PROPOSED RIP RAP. FIELD COORDINATE WITH TPWD INSPECTOR TO FIELD ADJUST RIP RAP AROUND TREE ROOTS.



DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0- FB SUBMITTAL
(02/06/2026)

SHEET TITLE
CIVIL PLAN &
PROFILE -
YEGUA CREEK

SHEET NUMBER

C-14

PATH: P:\133\133-10060-001\4-0-Production-Working\4-1-BIM-CAD\Civil\Sheets\C-XX - CIVIL PLAN & PROFILES.dwg

DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0- FB SUBMITTAL
(02/06/2026)

SHEET TITLE
YEGUA CREEK
BANK
STABILIZATION
PLAN

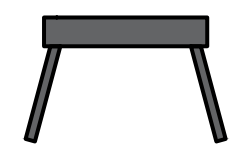

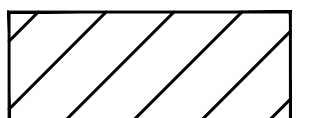
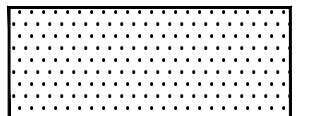
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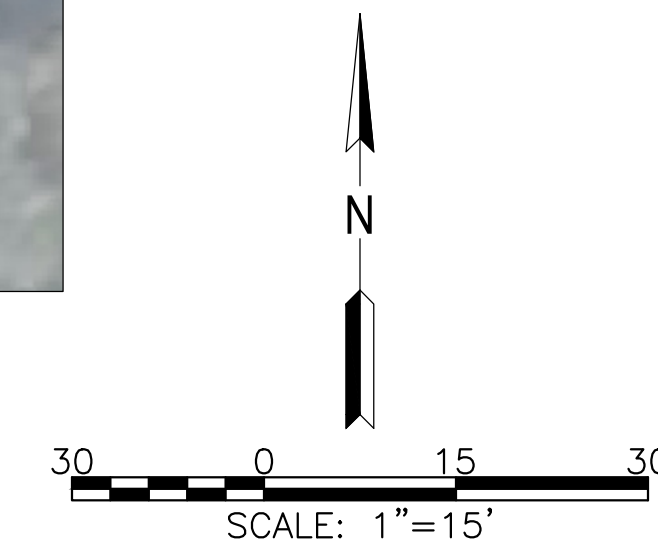
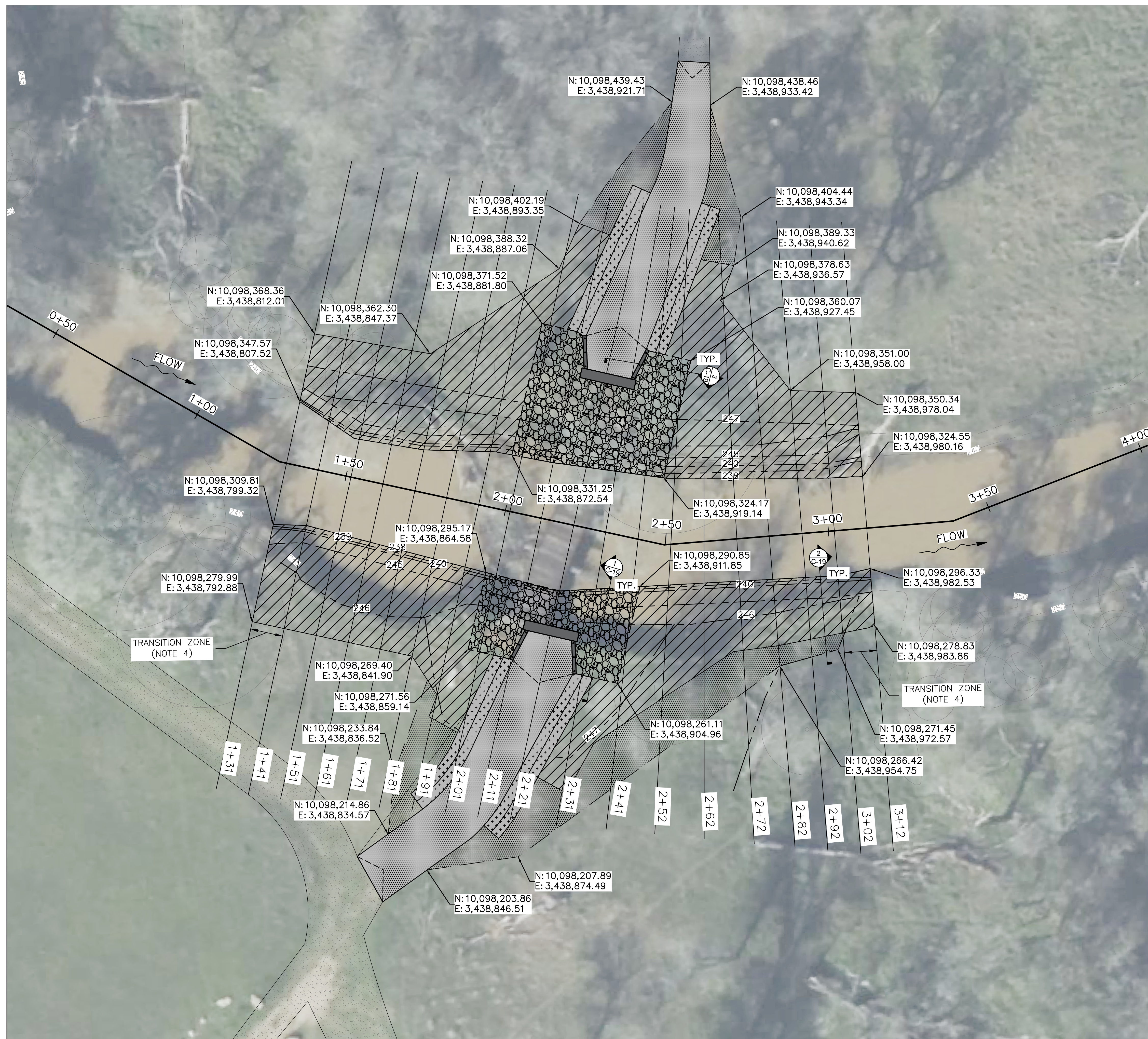
C-15

NOTES

1. PROP. STONE PROTECTION RIPRAP SHALL EXTEND 15' MIN. PAST CONCRETE ABUTMENT. SEE SHEET C-19 FOR TYPICAL DETAILS AND REQUIREMENTS.
2. PROVIDE EROSION TECH ETSC-7030-BN (OR APPROVED EQUAL THAT IS WILDLIFE FRIENDLY) PER TXDOT ITEM 169. EXTEND BLANKET 10' MIN BEYOND THE TOP OF THE BANK. EXTEND THE BLANKET 10' MIN BEYOND ALL SIDES OF PROP. RIPRAP AND 10' MIN BEYOND THE PROPOSED GABION BASKETS. EXTEND BLANKET ALONG THE GABION BASKETS 40' MIN FROM THE EDGE OF THE BRIDGE.
3. EXTEND GEOTEXTILE FABRIC 10' BEYOND THE WING WALLS.
4. TRANSITION ZONE - PROPOSED FILL SHALL TRANSITION TO MATCH EXISTING GRADE.
5. SEE SHEET C-19 FOR CREEK EMBANKMENT FILL DETAILS AND REQUIREMENTS. ALL FILL MATERIAL LOCATED WITHIN THE CRITICAL ROOT ZONE OF TREES SHALL BE TOPSOIL, UNLESS INDICATED OR APPROVED OTHERWISE.

LEGEND

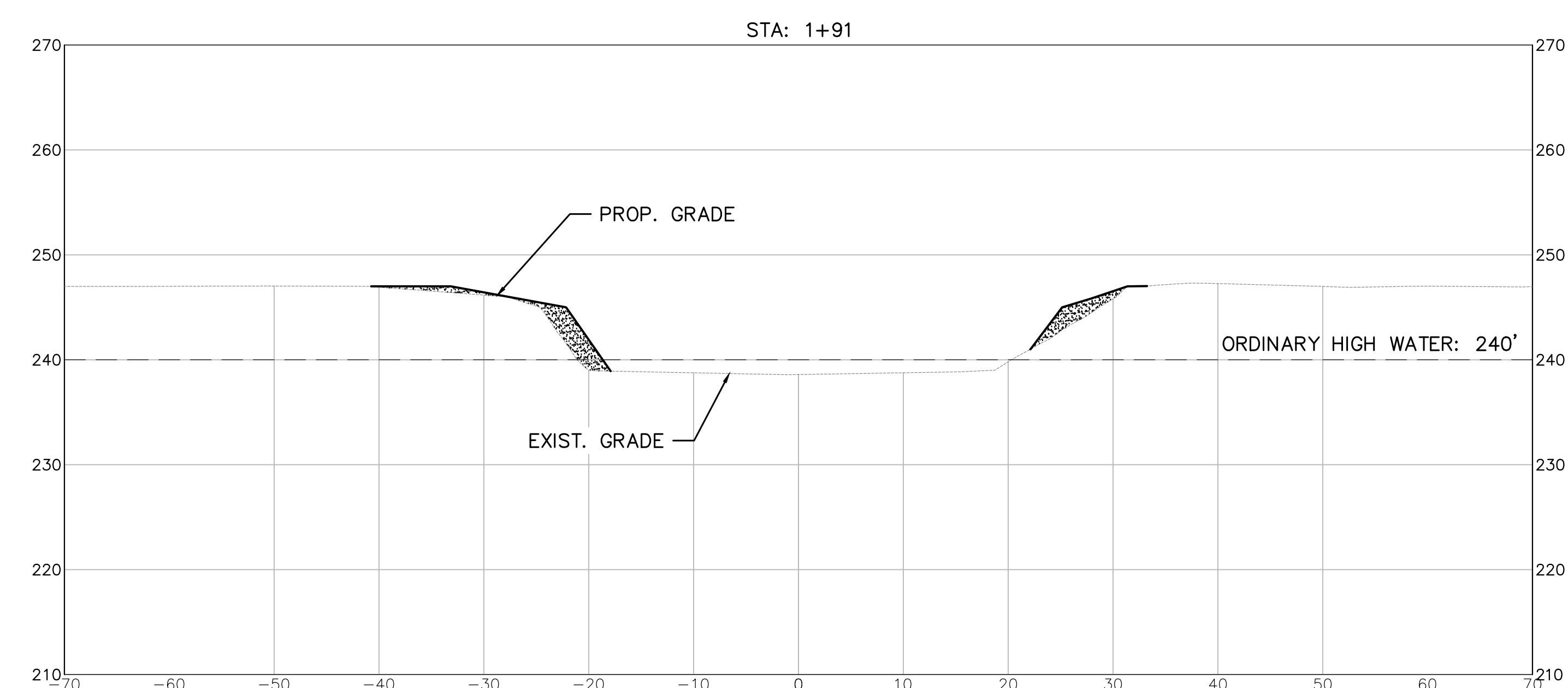
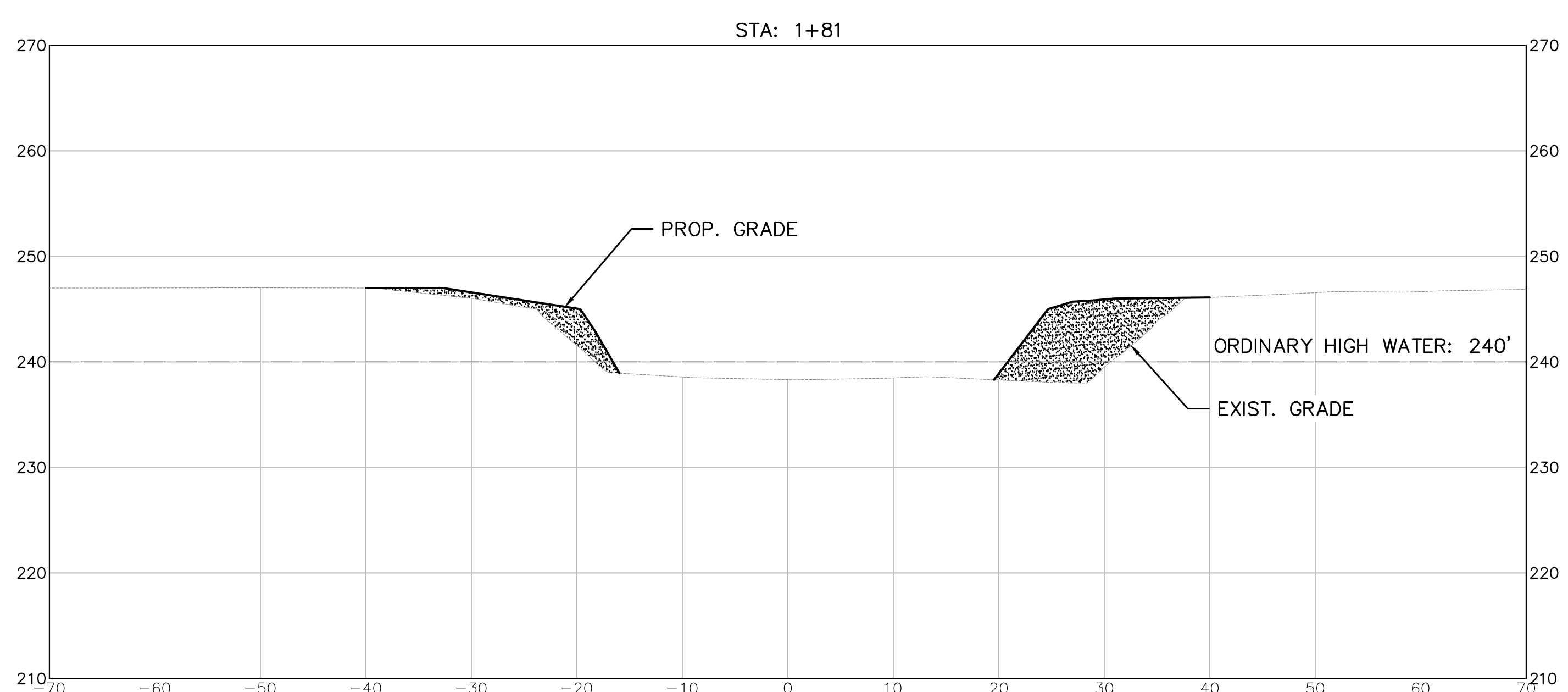
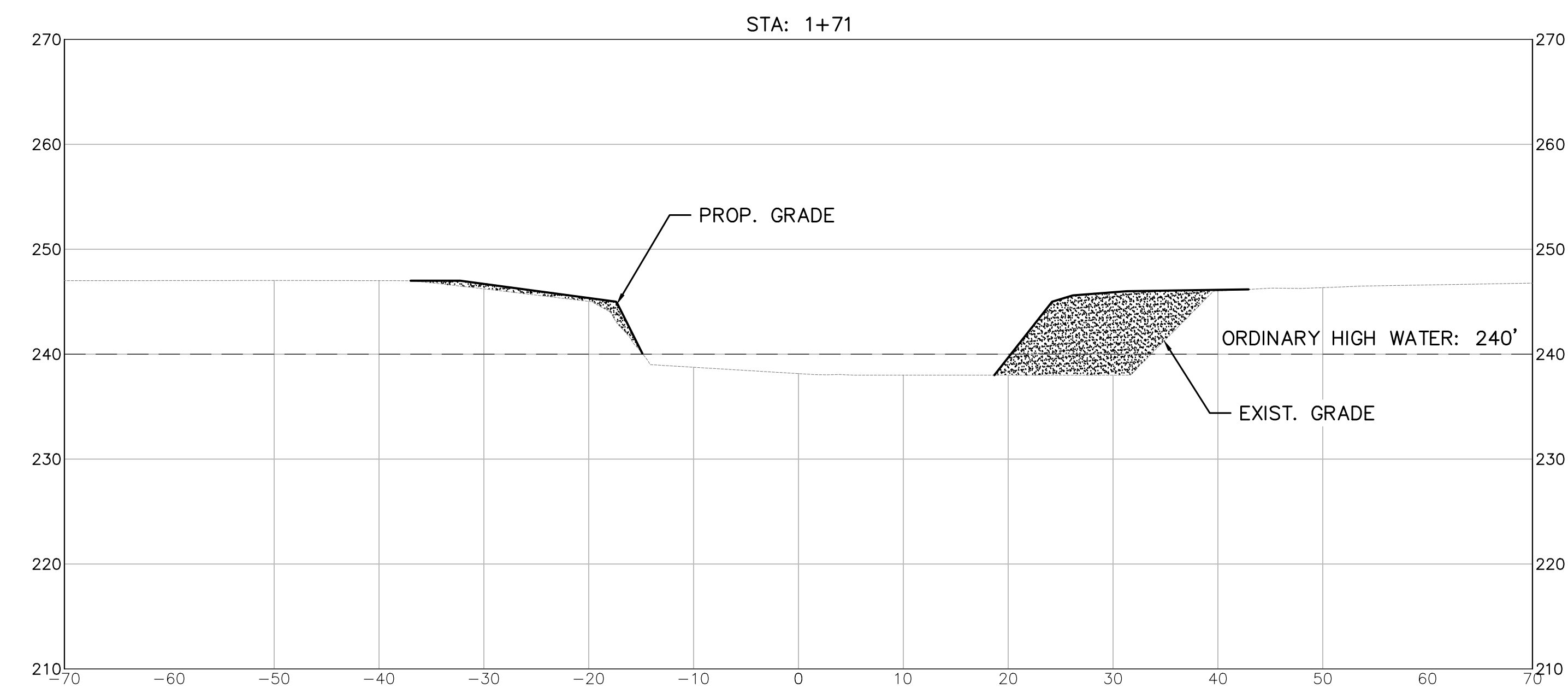
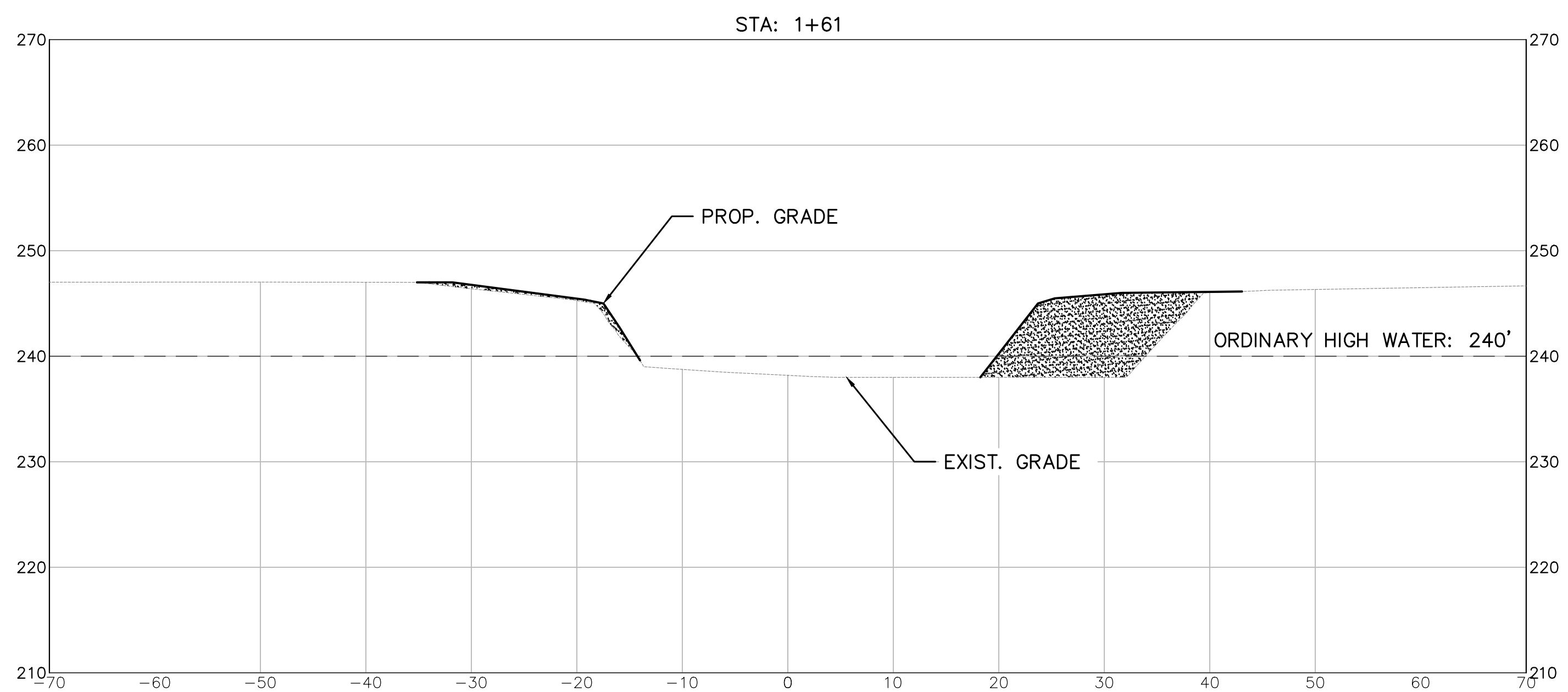
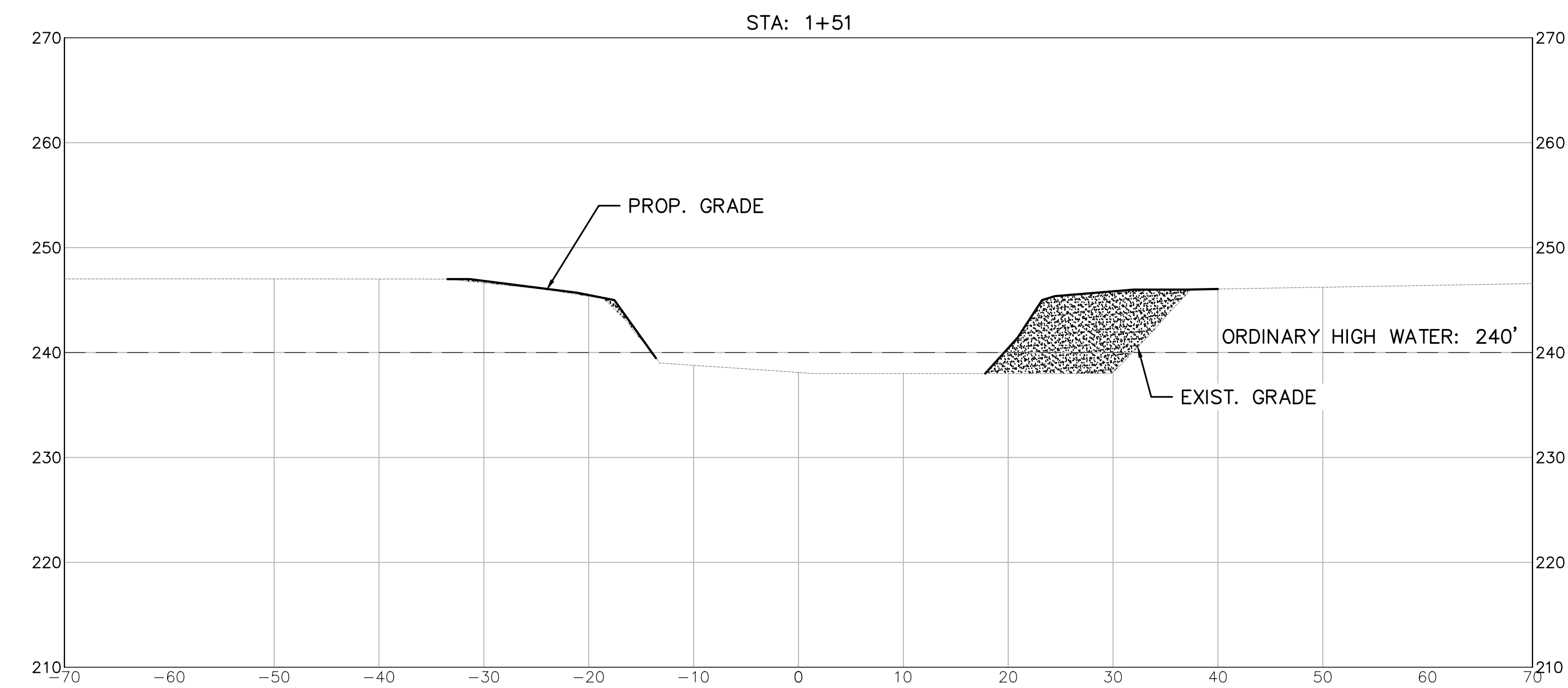
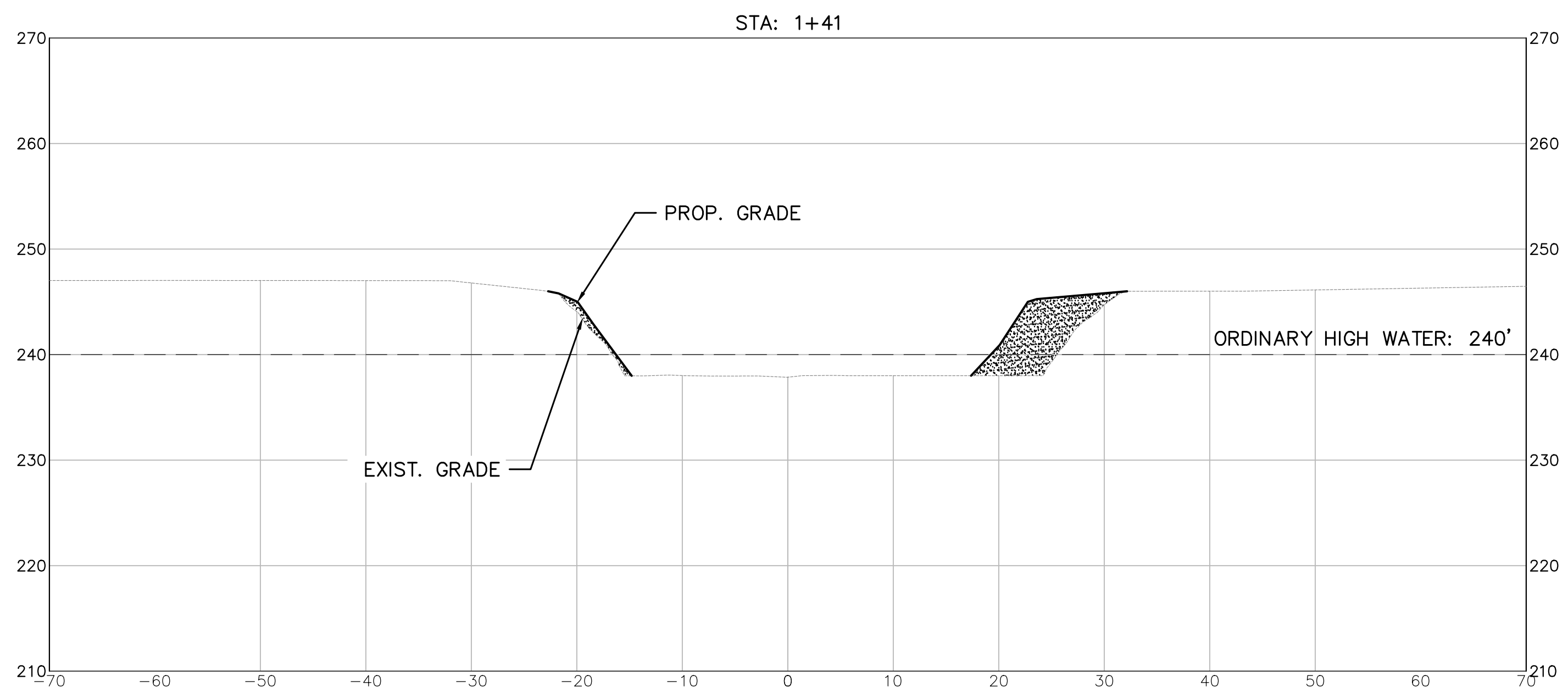
- XXX--- EXISTING CONTOURS
- XXX--- PROPOSED CONTOURS
-  PROPOSED CONCRETE ABUTMENT AND WING WALLS
-  PROP. STONE PROTECTION RIPRAP (TXDOT ITEM 432)
-  PROP. FILL LIMITS WITH SOIL RETENTION BLANKET (NOTE 2 & 5)
-  PROP. FILL LIMITS (NOTE 5)



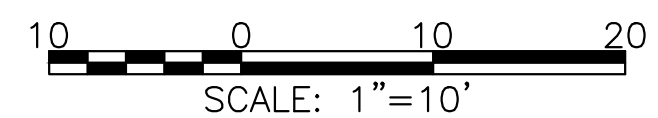
DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0- FB SUBMITTAL
(02/04/2026)

SHEET TITLE
**YEGUA CREEK
CROSS SECTION
SHEET 1 OF 3**

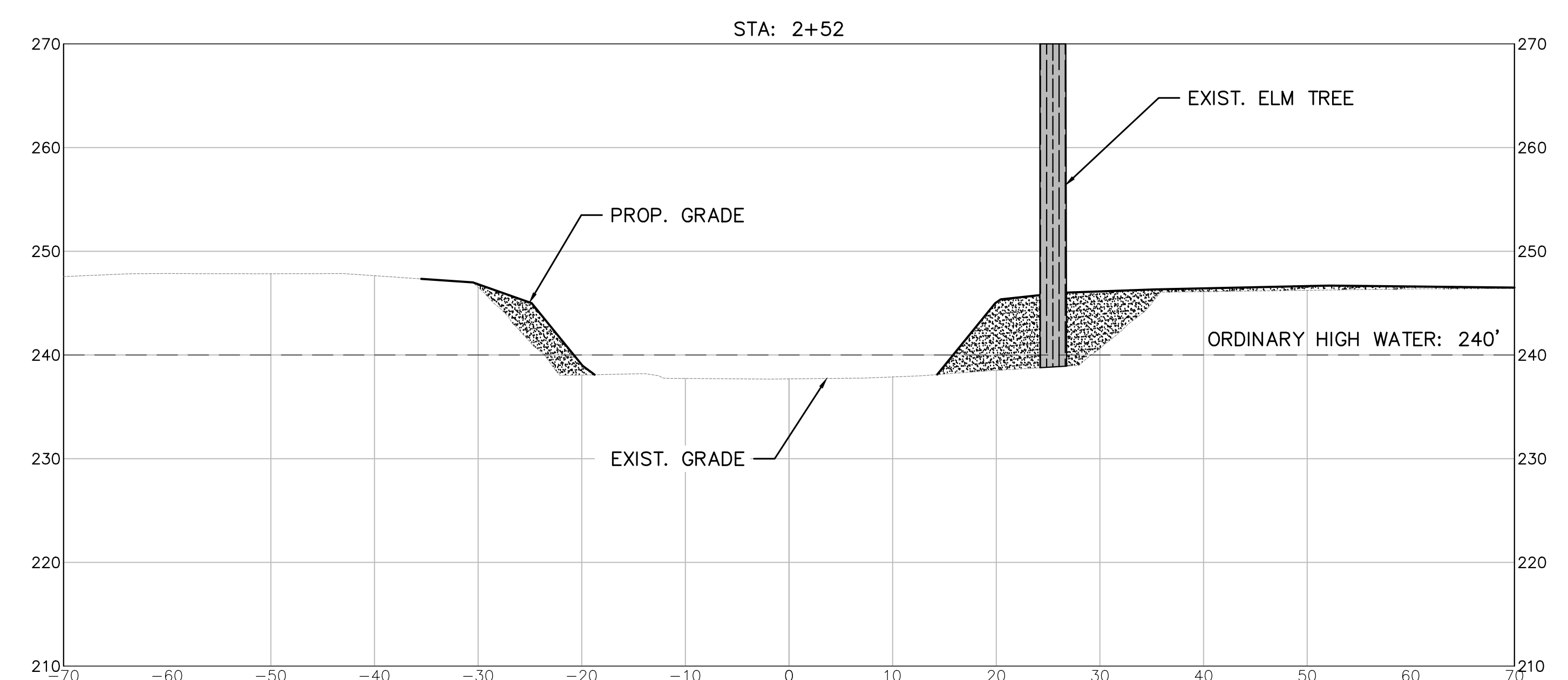
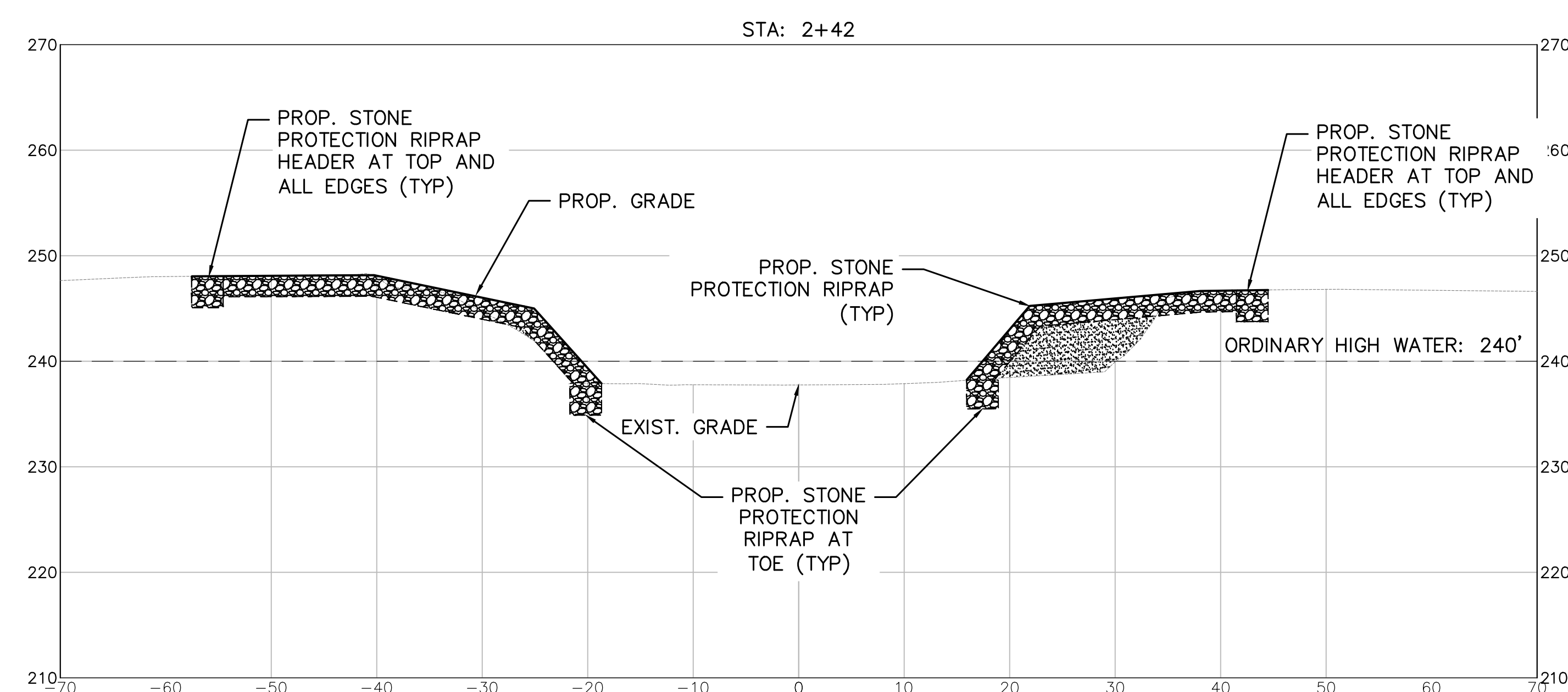
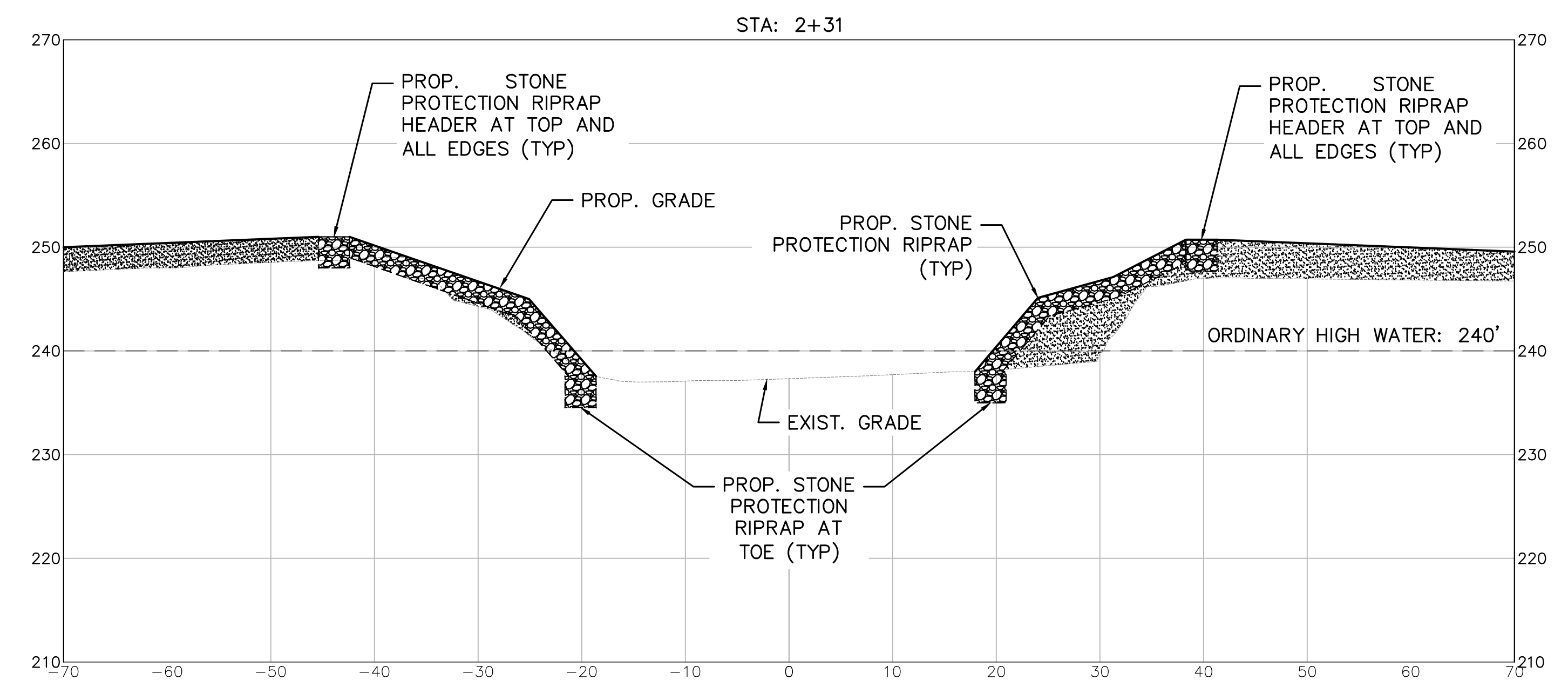
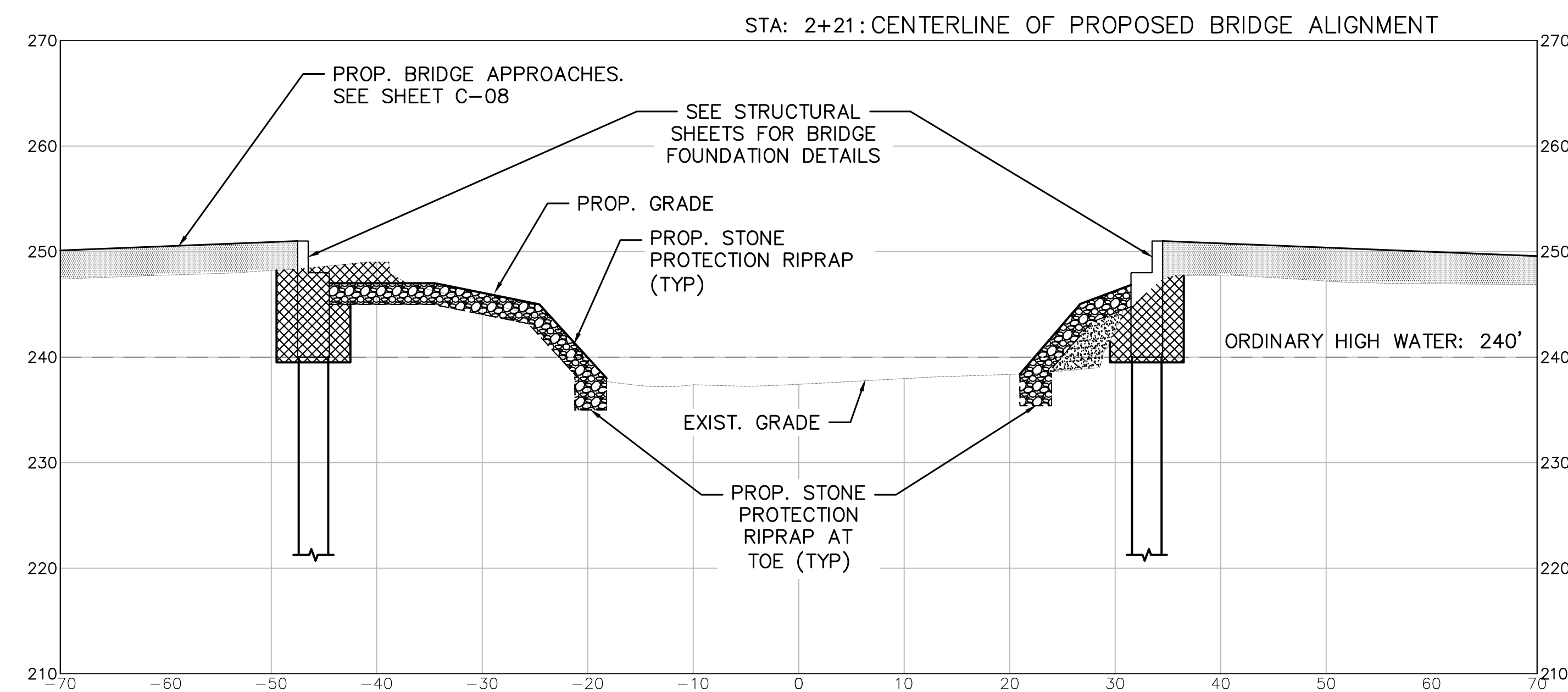
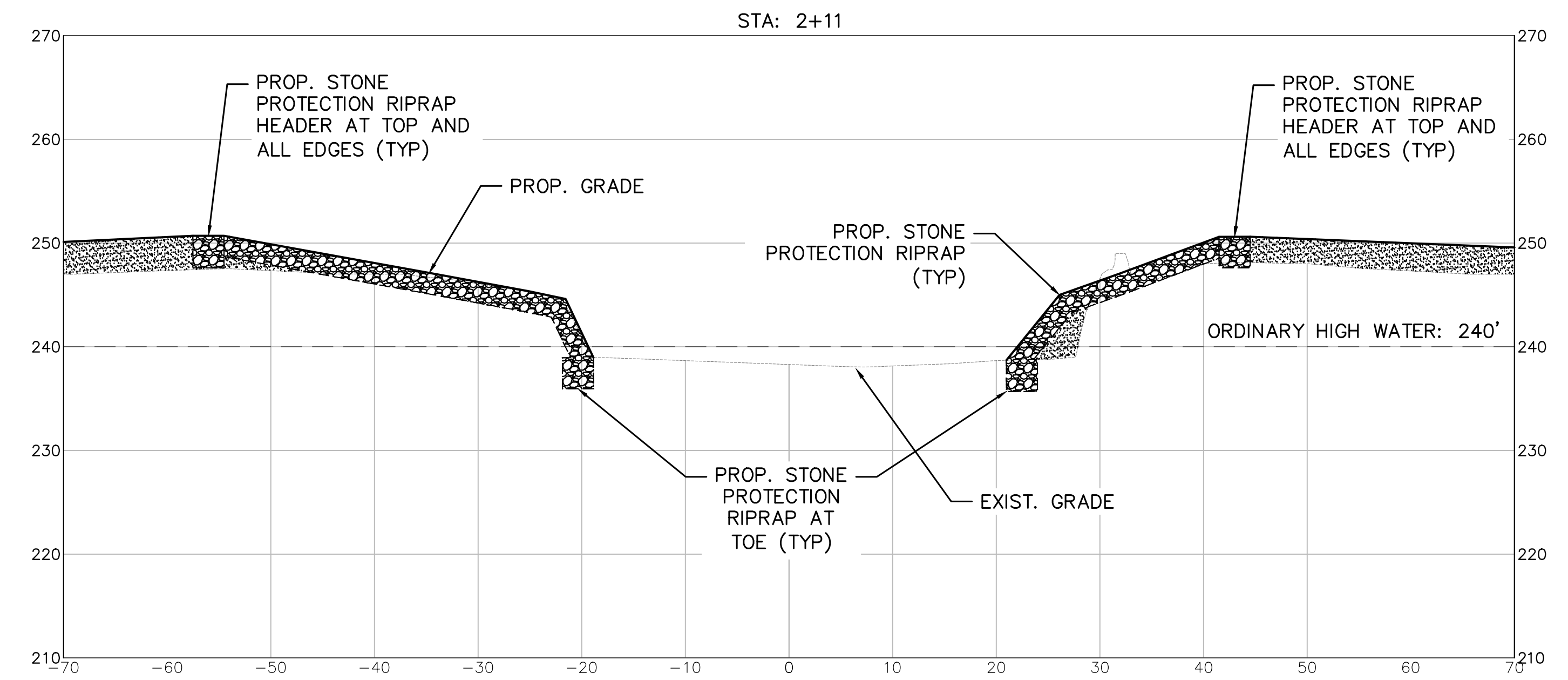
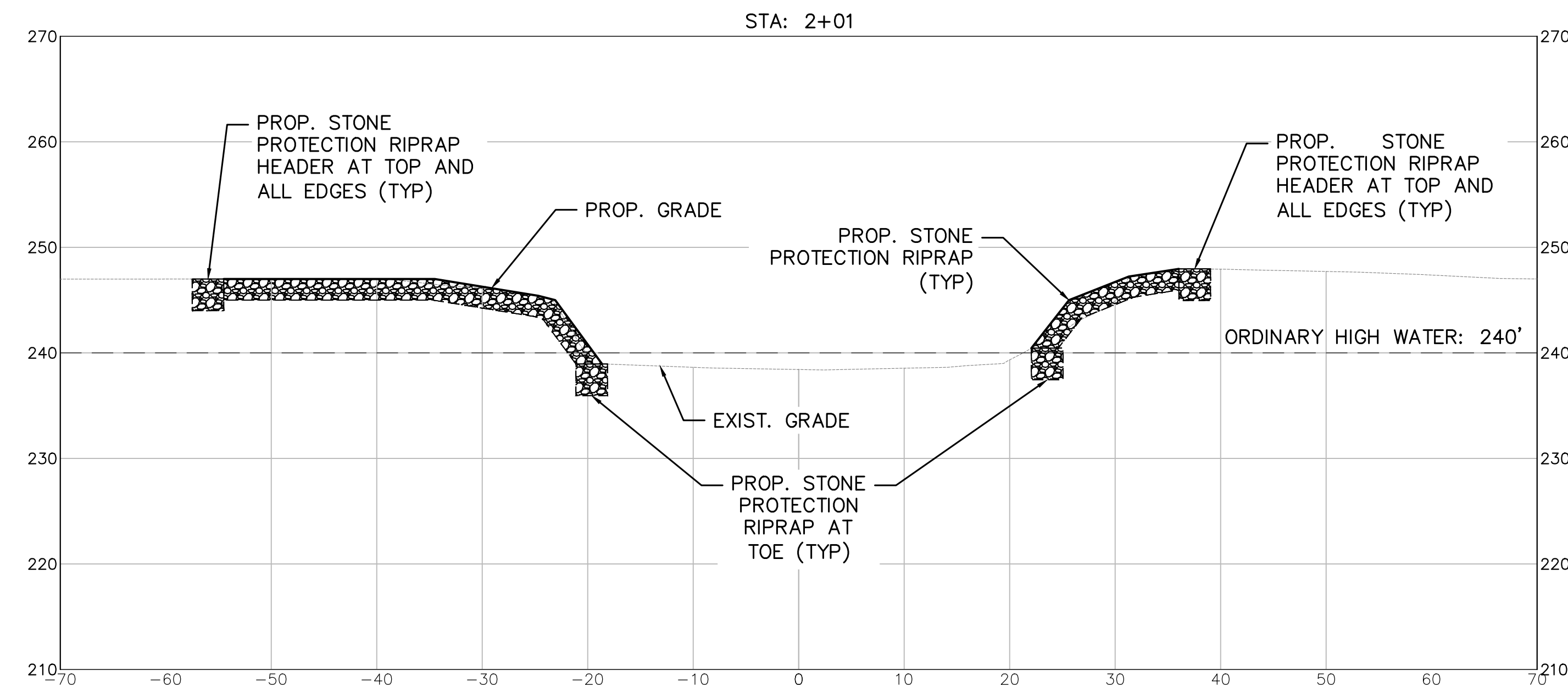
SHEET NUMBER
C-16



LEGEND
 PROPOSED FILL



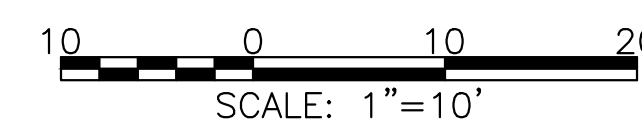
STATE OF TEXAS
 SCOTT M. HARRIS
 99261
 LICENSED PROFESSIONAL ENGINEER
 2/6/26



LEGEND

	PROPOSED FILL (NOTE 1)
	PROP. STONE PROTECTION RIPRAP (NOTE 2)

- NOTE
1. SEE SHEET C-19 FOR TYPICAL CREEK EMBANKMENT RESTORATION AND FILL REQUIREMENTS.
 2. SEE SHEET C-19 FOR TYPICAL STONE PROTECTION RIPRAP DETAILS AND REQUIREMENTS.



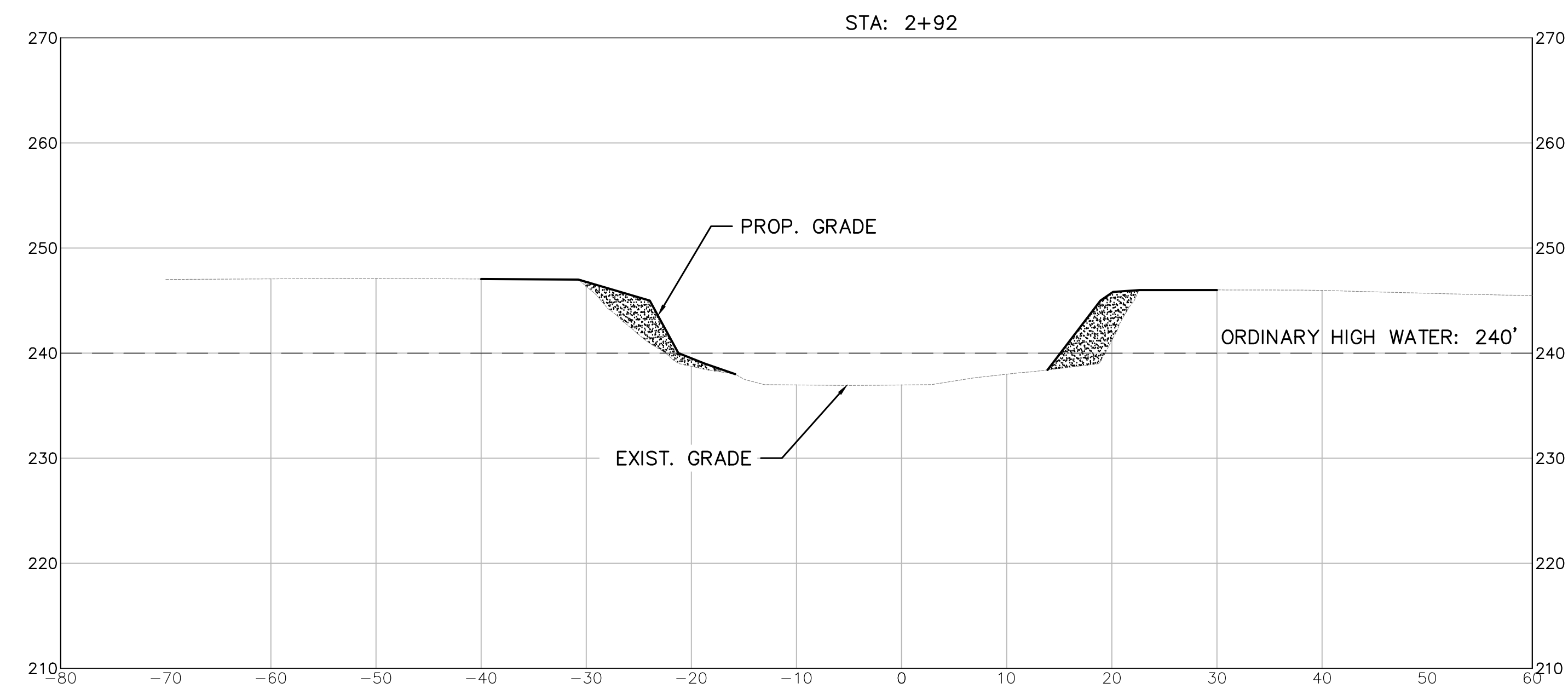
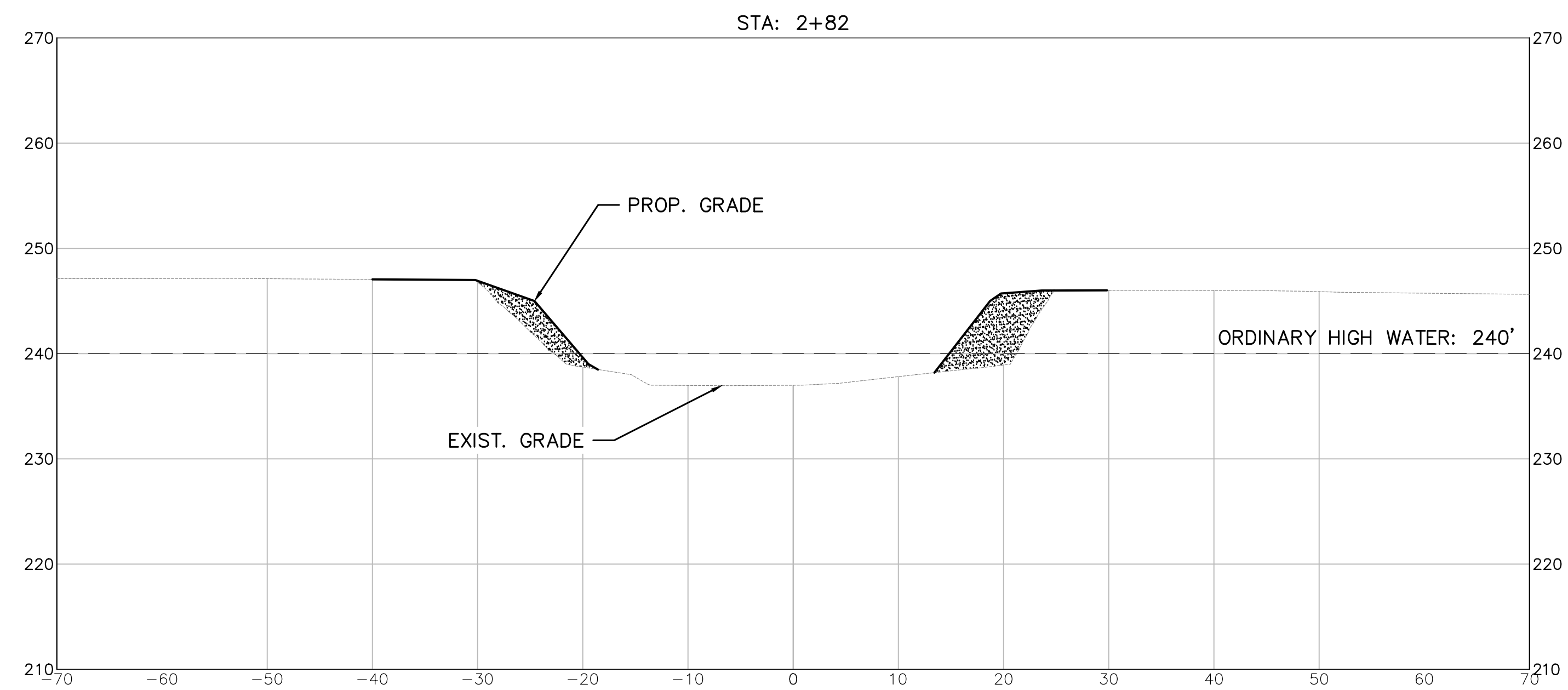
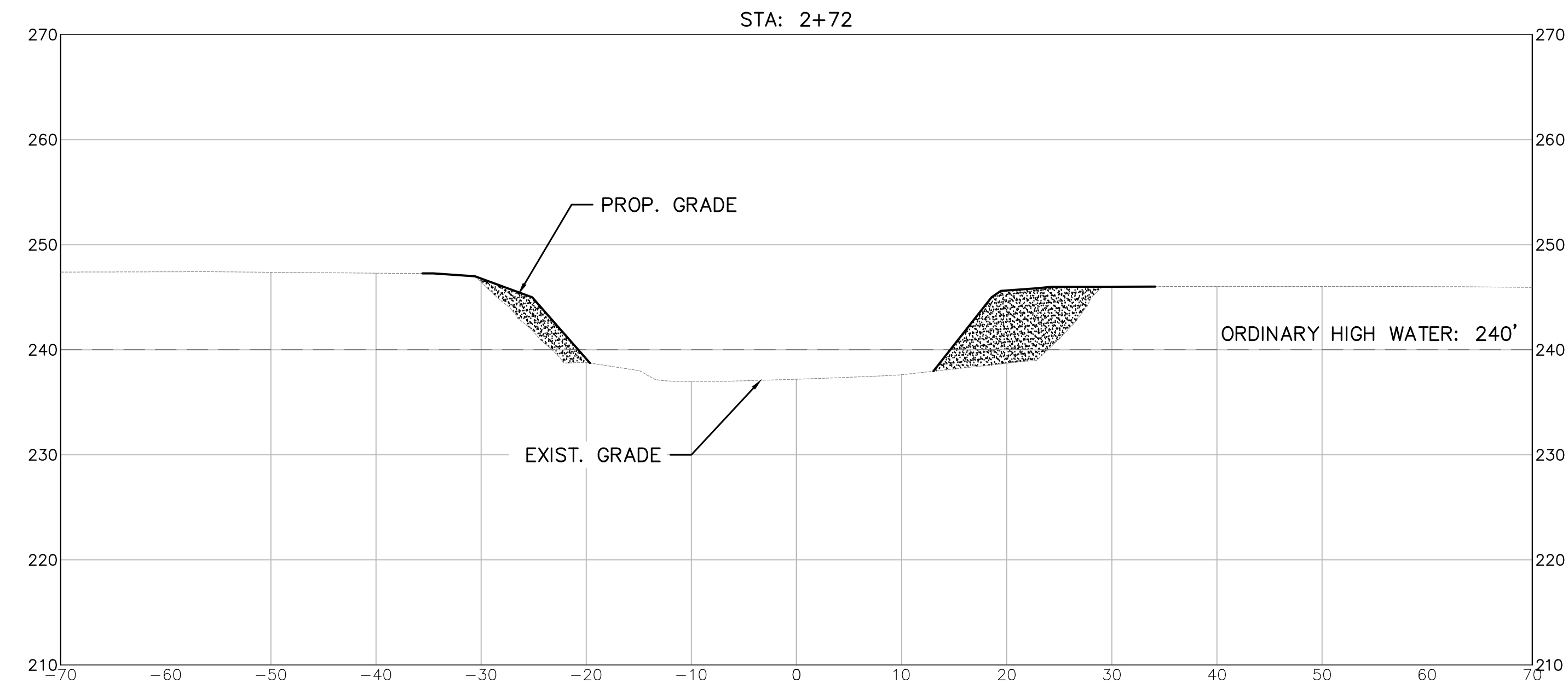
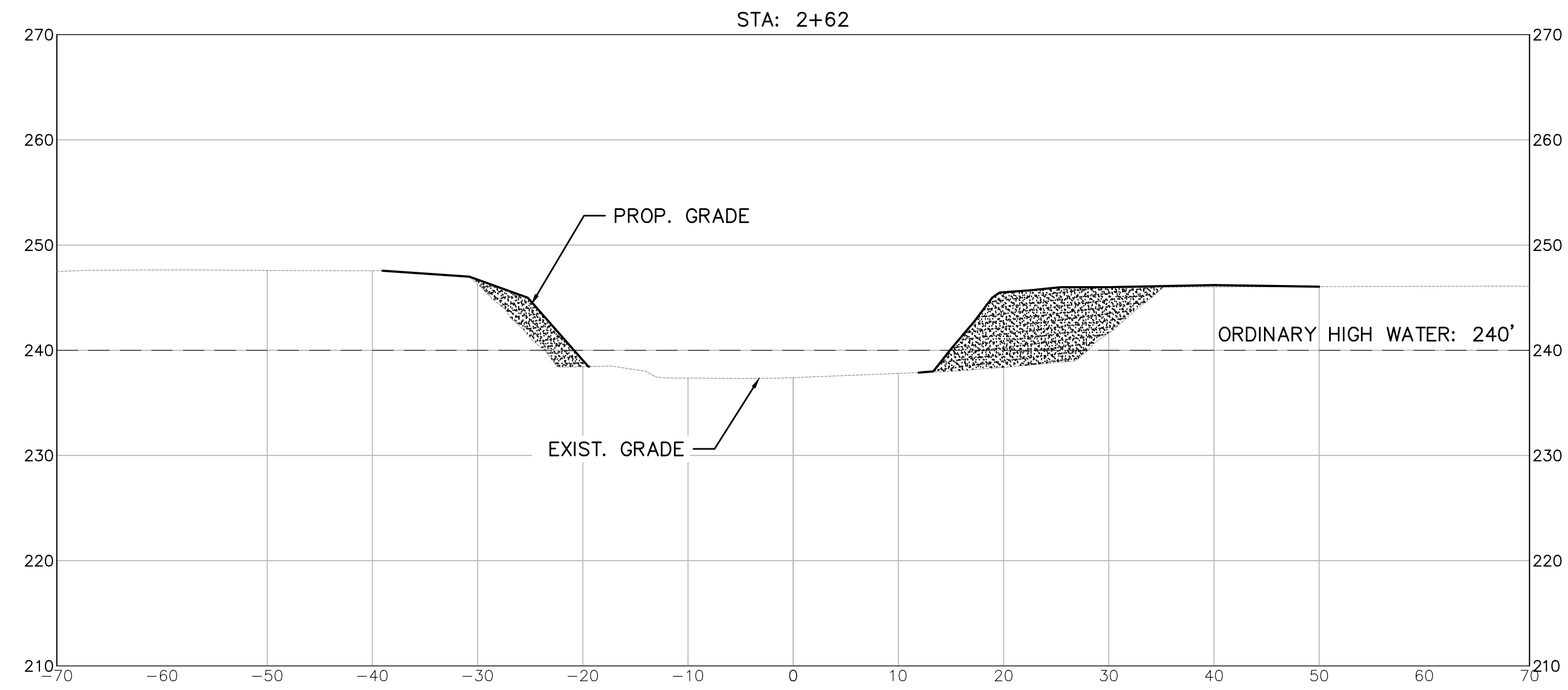
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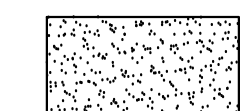
SHEET TITLE
YEGUA CREEK
CROSS SECTION
SHEET 3 OF 3

SHEET NUMBER

C-18



LEGEND



PROPOSED FILL

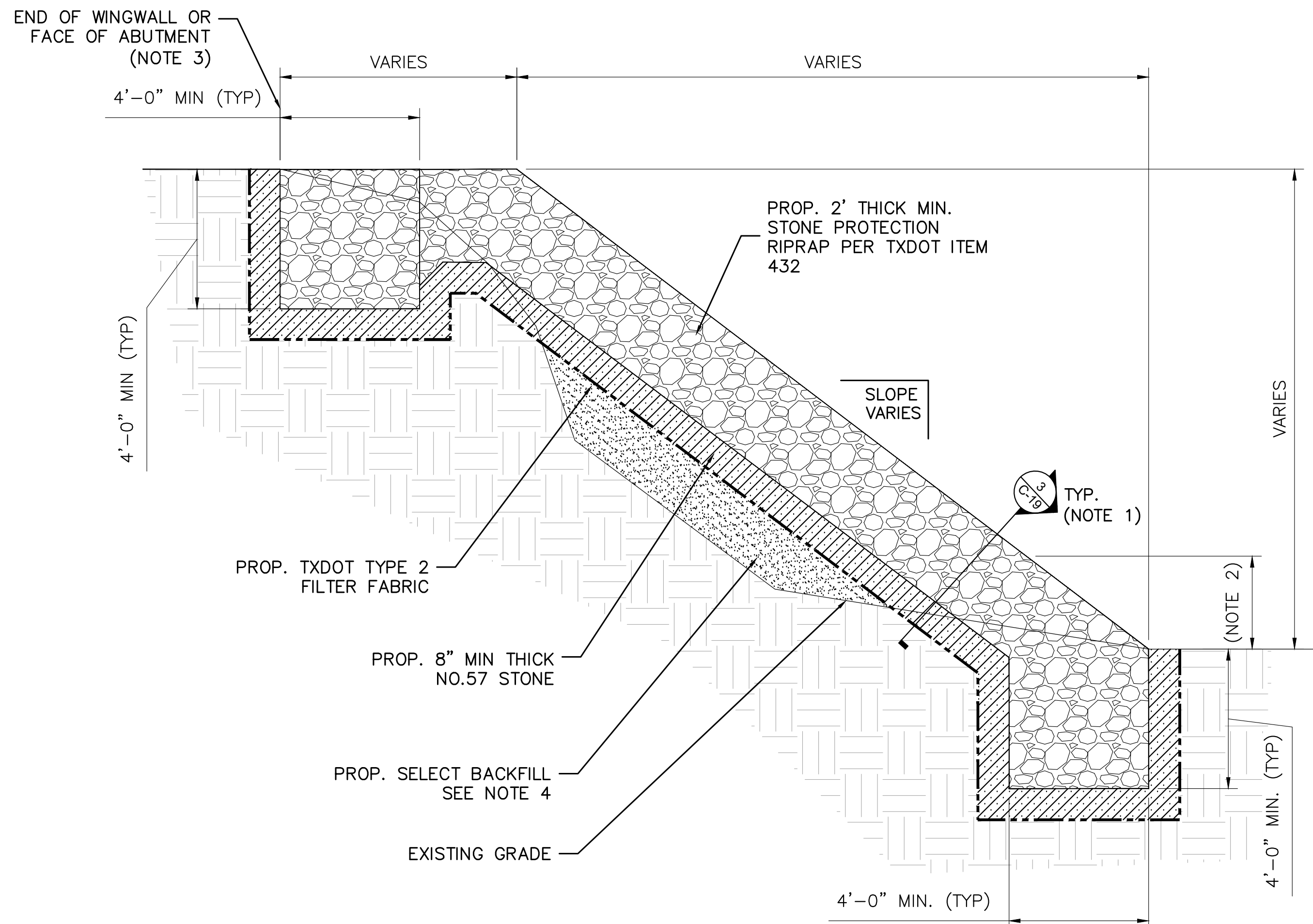


SCALE: 1"=10'

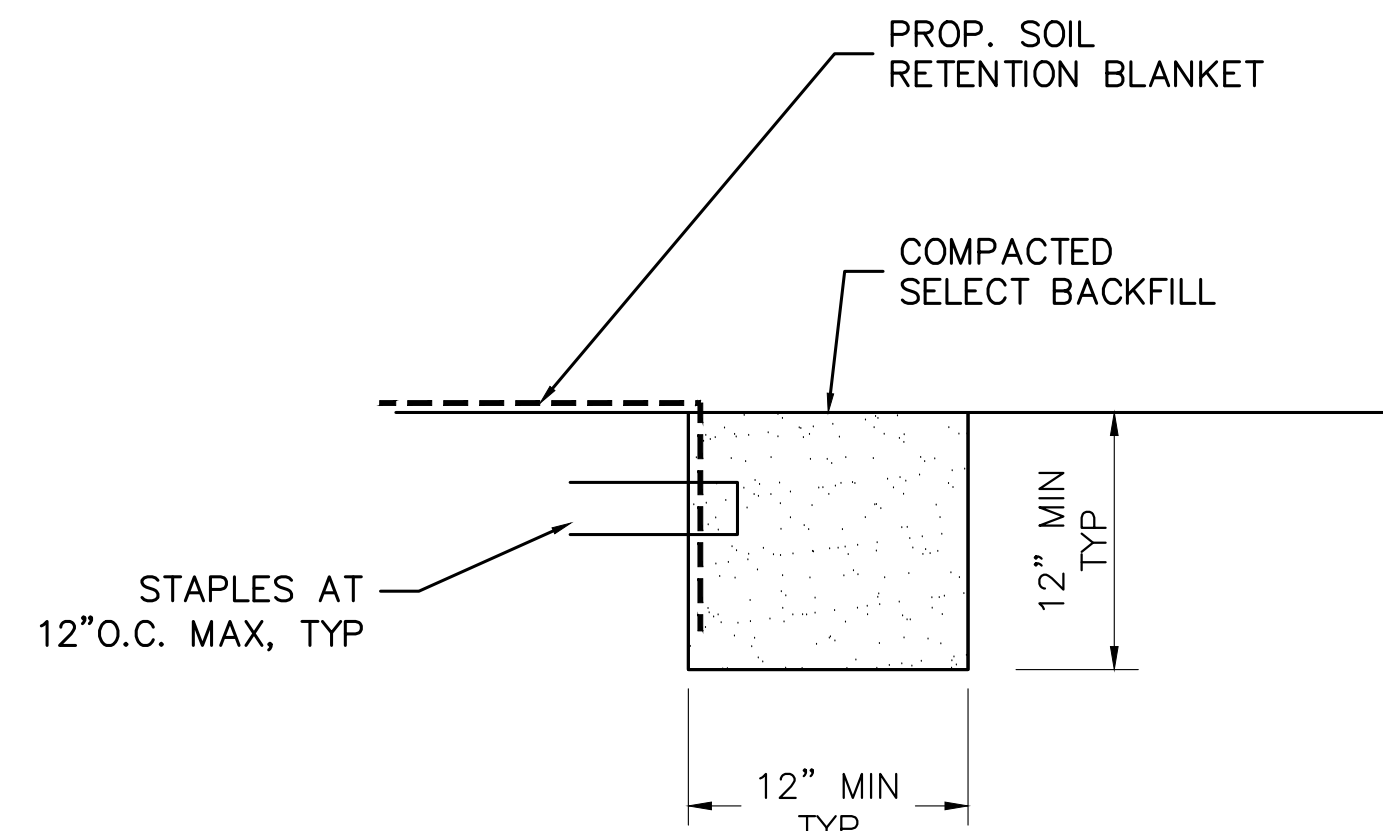
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NOTES

1. PROVIDE STONE PROTECTION RIPRAP PER TXDOT ITEM 432. PROVIDE 2' THICK MIN. RIPRAP EXCEPT AT HEADERS WHICH ARE 4' THICK MIN. X 4' WIDE MIN. PROVIDE HEADERS AROUND ALL EDGES OF THE RIPRAP PERIMETER.
2. CONTRACTOR SHALL ASSUME THE WATER HEIGHT IN THE CREEKS WILL HAVE A TYPICAL WATER HEIGHT OF 2 FOOT.
3. DELETE #57 STONE BETWEEN RIPRAP AND FACE OF ABUTMENTS AND FACE OF WINGWALLS.
4. PROVIDE SELECT BACKFILL FOR EARTHEN EMBANKMENTS PER SECTION 31 21 00 WITH A PI BETWEEN 8 AND 25 AND A LIQUID LIMIT LESS THAN 45. PLACE IN 8" MAX LOOSE LIFTS. COMPACT TO AT LEAST 95% OR MORE OF THE TEX-114E/ASTM D698 MAXIMUM DRY DENSITY AT A MOISTURE CONCENT PER SECTION 3 OF TXDOT ITEM 132. SAMPLES OF THE PROPOSED SELECT BACKFILL MATERIAL SHALL BE PROVIDED TO THE OWNER'S LABORATORY FOR MOISTURE-DENSITY TESTING. THE TESTS WILL PROVIDE THE BASIS FOR EVALUATION OF FILL COMPACTION BY IN-PLACE DENSITY TESTING. CONSTRUCTION PER SECTION 3 (EARTHEN EMBANKMENTS) OF TXDOT ITEM 132.
5. PROVIDE WEBTEC TERRAGUARD 44P (OR APPROVED EQUAL) CLASS 2 TYPE H FLEXIBLE CHANNEL LINER SOIL RETENTION BLANKET PER TXDOT ITEM 169. ANCHOR BLANKET PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE TRENCH ANCHORS AROUND PERIMETER PER DETAIL 4, SHEET C-19.



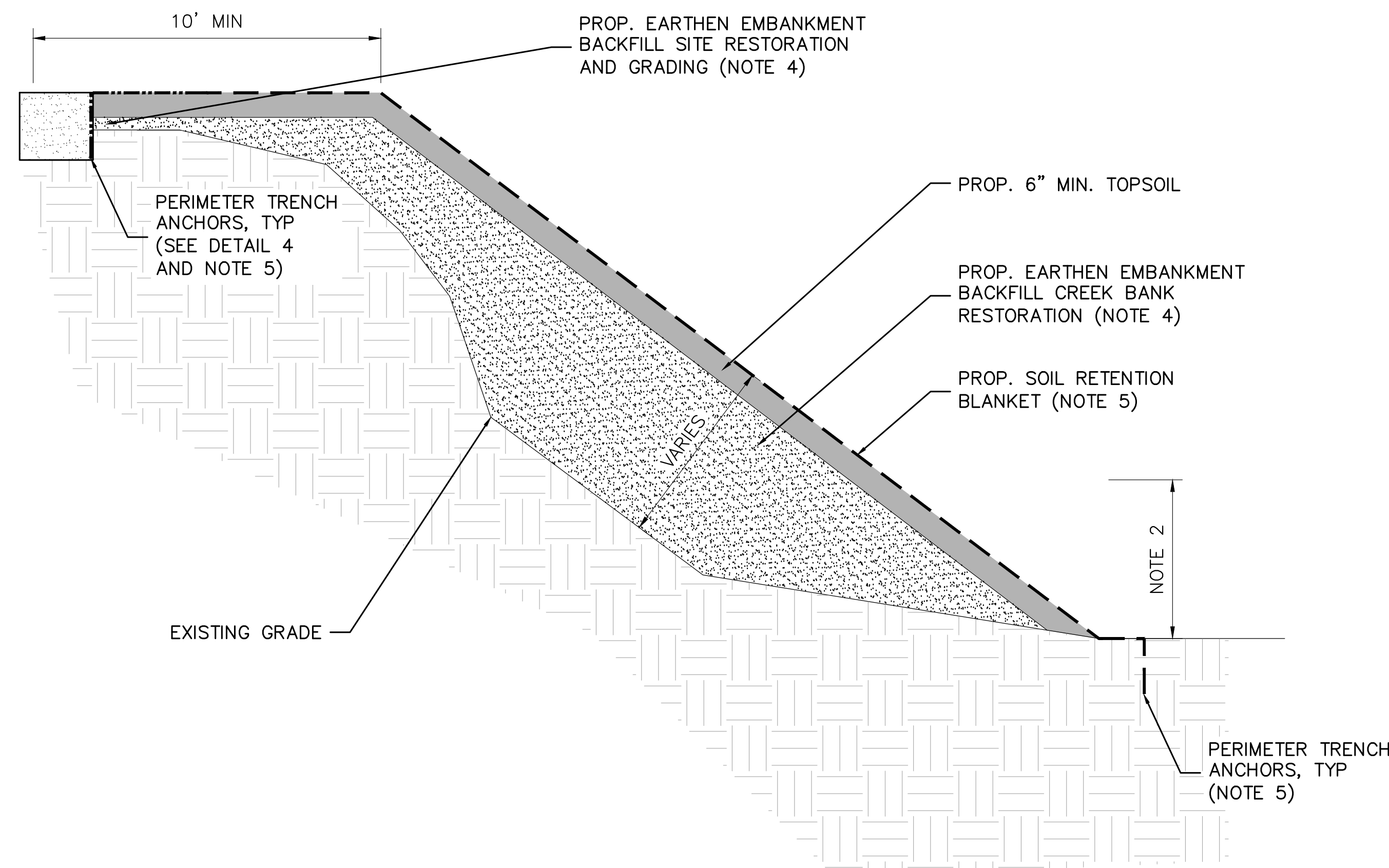
1 TYPICAL SECTION - ROCK RIP RAP BANK STABILIZATION
SCALE: N.T.S



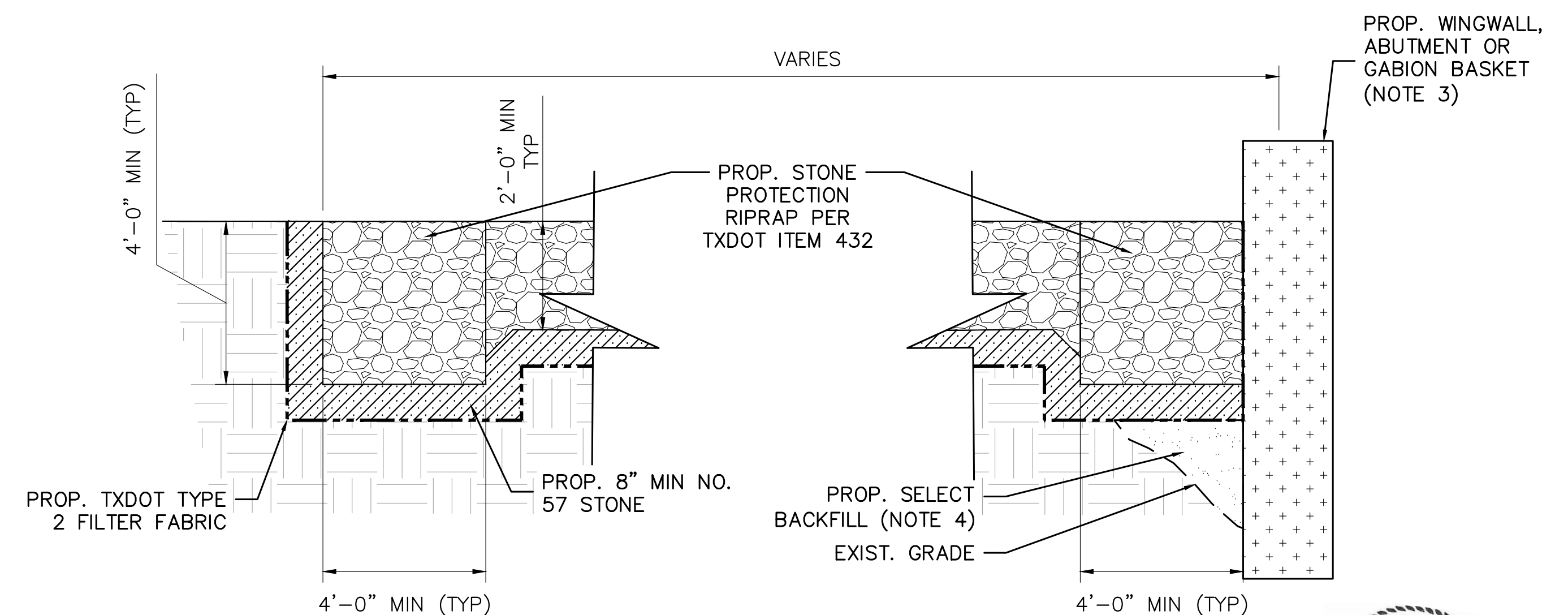
4 SOIL RETENTION BLANKET TRENCH ANCHORS
SCALE: N.T.S

LEGEND

- EXISTING SUBGRADE-COMPACTED
- PROPOSED NO. 57 STONE
- PROPOSED SELECT BACKFILL (NOTE 4)
- PROP. STONE PROTECTION RIP RAP (NOTE 1)
- PROPOSED TOPSOIL PER TXDOT ITEM 160
- PROPOSED TXDOT TYPE 2 FILTER FABRIC
- PROPOSED SOIL RETENTION BLANKET (NOTE 5)



2 TYPICAL SECTION - EMBANKMENT RESTORATION-CREEK BANK AND SITE
SCALE: N.T.S

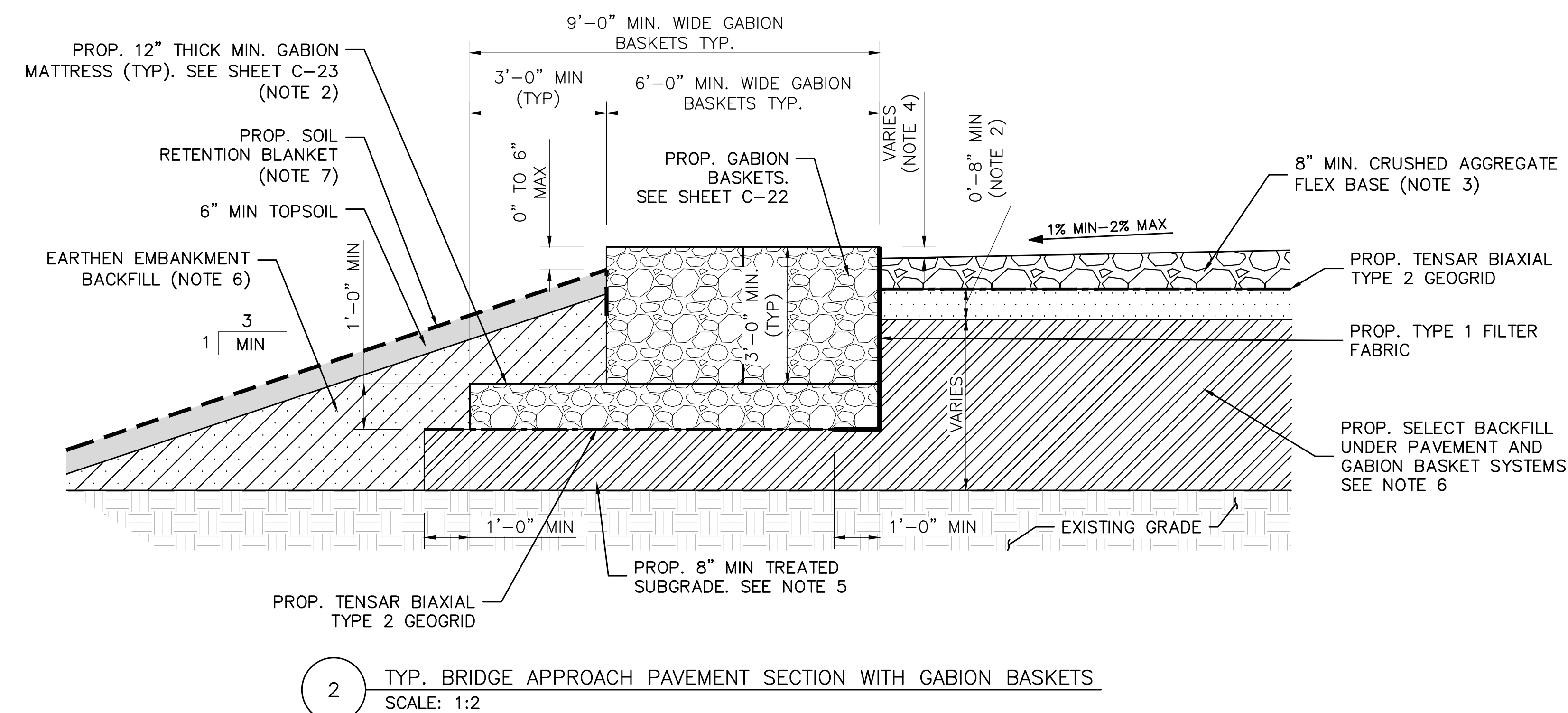
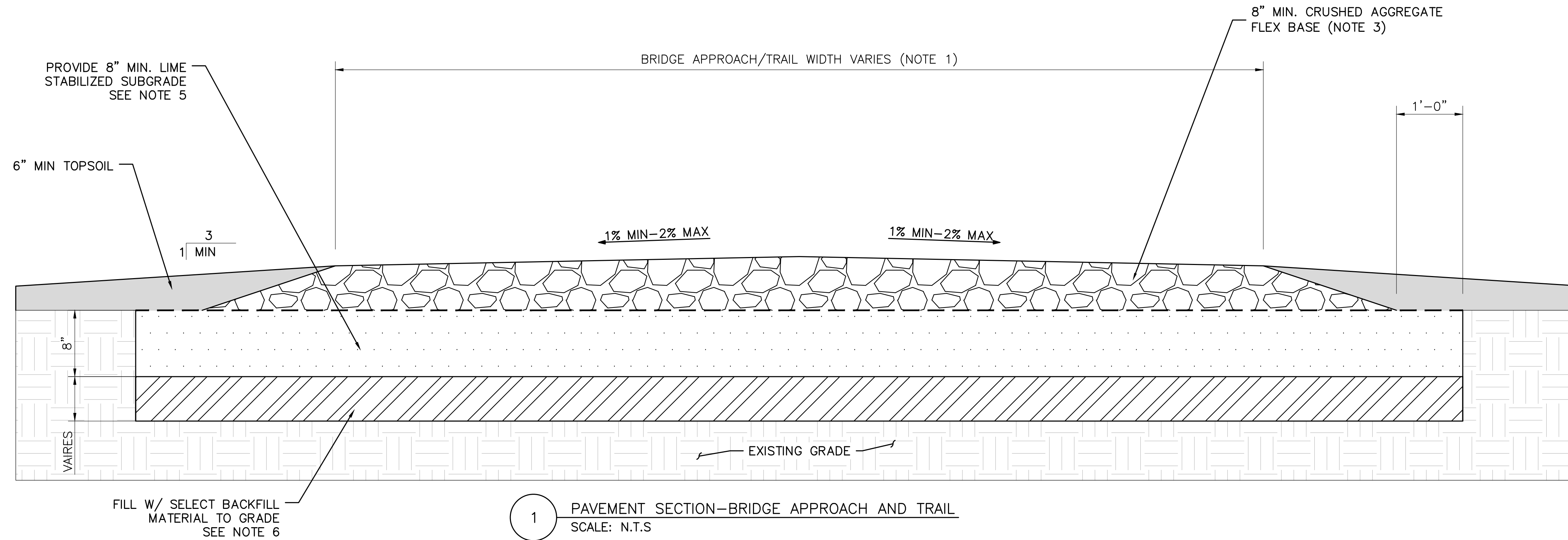


3 TYP. RIPRAP HEADER ALONG ALL EDGES
SCALE: N.T.S



NOTES

1. SLOPE GRAVEL PAVEMENT TO DRAIN WITH 2% MAX CENTER CROWN CROSS SLOPES AND 4% MAX RUNNING SLOPES.
2. PROVIDE 8" MIN. SELECT BACKFILL BACKFILL (ITEM 423) AND 8" MIN. STABILIZED SUBGRADE (ITEM 275) UNDER GABION MATTRESS. EXTEND SELECT BACKFILL AND STABILIZED SUBGRADE 12" MIN. ON ALL SIDES OF MATTRESS.
3. PROVIDE 8" MIN. CRUSHED AGGREGATE FLEXIBLE BASE, TYPE D GRADE 1-2 OR APPROVED EQUIVALENT PER TXDOT ITEM 247.
4. IT IS PREFERRED THAT THE TOP OF GABION BASKETS SHOULD SLOPE TO MATCH THE EDGE OF THE TOP OF PAVEMENT ELEVATIONS. IF GABION BASKETS ARE STEPPED, THEN THE LENGTH OF THE GABION BASKETS SHOULD BE SIZED SO THE DISTANCE BETWEEN THE TOP OF THE GABION BASKETS AND TOP OF THE EDGE OF PAVEMENT SHOULD VARY FROM 0" AT THE UP SLOPE END TO 6" MAX AT THE DOWNSLOPE END OF THE GABION BASKETS.
5. PROVIDE 8" MIN. LIME STABILIZED SUBGRADE PER TXDOT ITEM 260 OR APPROVED EQUAL. COMPACTED TO MINIMUM 95% MAX DRY DENSITY (ASTM D698) WITHIN +/- 2% OF OPTIMUM MOISTURE CONTENT. SEE SECTION 5.2 OF THE GEOTECH REPORT FOR LIME CONTENT REQUIREMENTS FOR SOIL SULFATE MITIGATION. IF SULFATE CONTENT EXCEEDS 7,000 PPM THEN PROVIDE CEMENT TREATED STABILIZED SUBGRADE PER TXDOT ITEM 275. CONTRACTOR NO COST OPTION TO PROVIDE CEMENT TREATED STABILIZED SUBGRADE PER TXDOT ITEM 275 IN LIEU OF LIME TREATED SUBGRADE.
6. PROVIDE SELECT BACKFILL FOR EARTHEN EMBANKMENTS PER SECTION 31 21 00 WITH A PI BETWEEN 8 AND 25 AND A LIQUID LIMIT LESS THAN 45. PLACE IN 8" MAX LOOSE LIFTS. COMPACT TO AT LEAST 95% OR MORE OF THE TEX-114E/ASTM D698 MAXIMUM DRY DENSITY AT A MOISTURE CONCENT PER SECTION 3 OF TXDOT ITEM 132. SAMPLES OF THE PROPOSED SELECT BACKFILL MATERIAL SHAL BE PROVIDED TO THE OWNER'S LABORATORY FOR MOISTURE-DENSITY TESTING. THE TESTS WILL PROVIDE THE BASIS FOR EVALUATION OF FILL COMPACTION BY IN-PLACE DENSITY TESTING. CONSTRUCTION PER SECTION 3 (EARTHEN EMBANKMENTS) OF TXDOT ITEM 132.
7. PROVIDE WEBTEC TERRAGUARD 44P (OR APPROVED EQUAL) CLASS 2 TYPE H FLEXIBLE CHANNEL LINER SOIL RETENTION BLANKET PER TXDOT ITEM 169.



LEGEND

- EXISTING SUBGRADE
- PROPOSED 8" MIN CRUSHED AGGREGATE FLEX BASE (NOTE 3)
- PROPOSED SELECT BACKFILL (NOTE 6)
- PROPOSED 8" MIN TREATED SUBGRADE (NOTE 5)
- PROPOSED TOPSOIL PER TXDOT ITEM 160
- PROPOSED EARTHEN EMBANKMENT
- PROP. TYPE 1 FILTER FABRIC PER TXDOT DMS 6200.



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REVIEWED BY: SMH
REVISION:
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(02/06/2026)

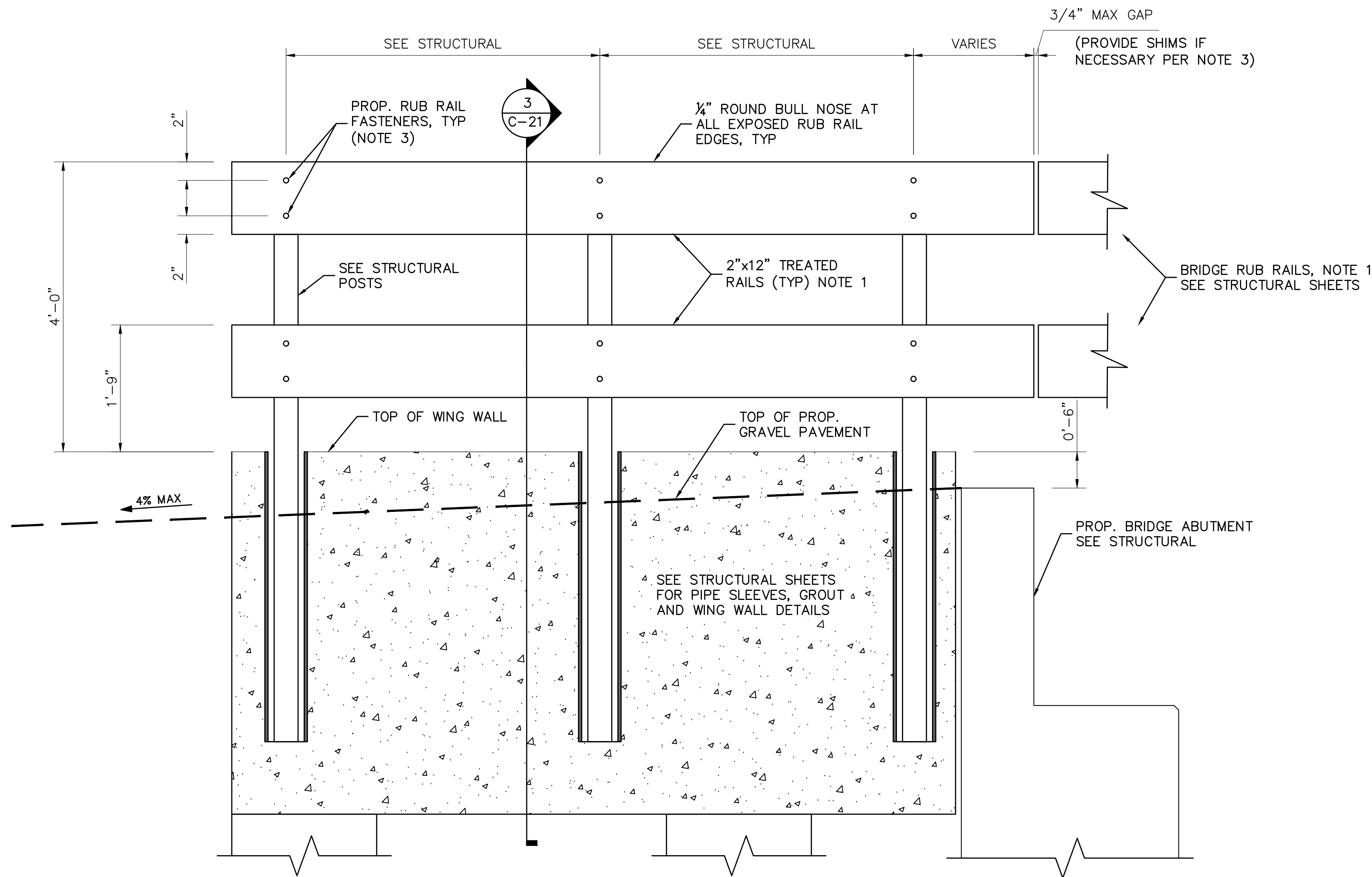
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BRIDGE
APPROACH
DETAILS SHEET
1 OF 2

SHEET NUMBER

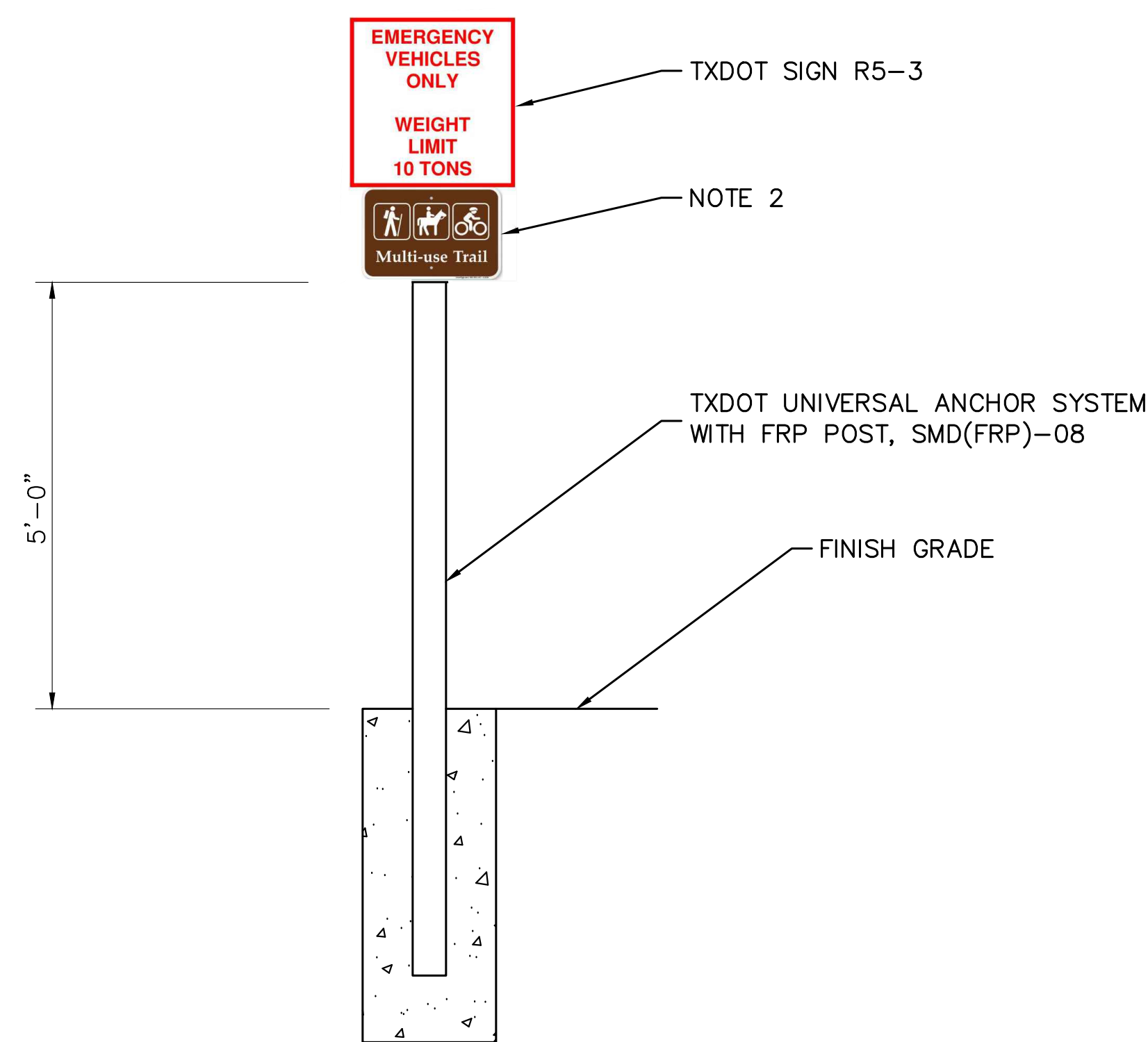
C-20

NOTES

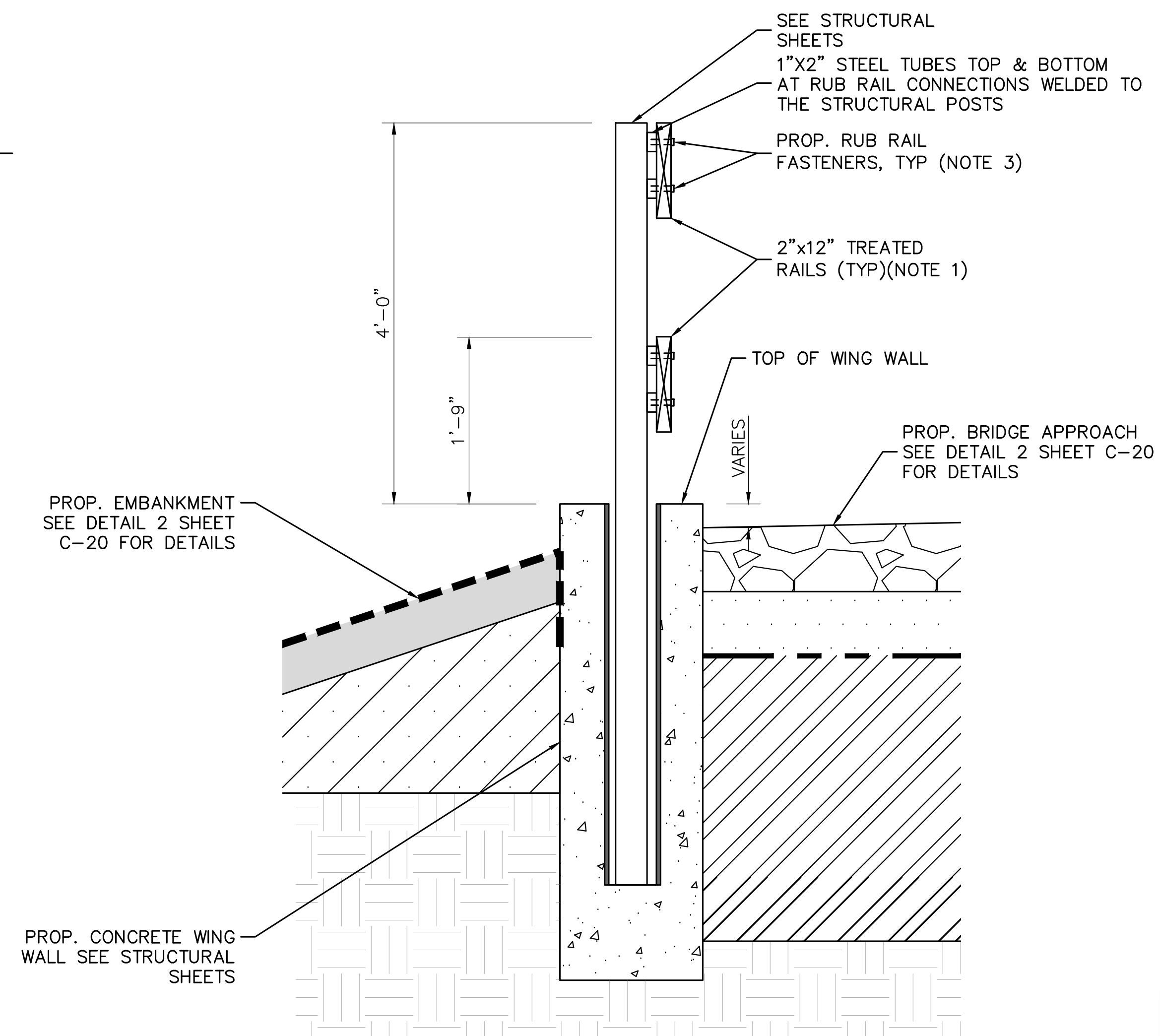
1. PROVIDE PRESSURE TREATED 2'X12" NOMINAL RUB RAILS. PRESSURE TREATED ON WINGWALLS AND BRIDGE SHALL BE STAINED ON ALL EXPOSED SIDES WITH A SEMI-TRANSPARENT OIL-BASED STAIN THAT IS WATER REPELLANT AND MILDEW RESISTANT WITH A UV STABILIZER. PROVIDE STAIN COLOR CHIPS FOR THE TPWD AND ENGINEER TO SELECT COLOR THAT WILL COMPLEMENT THE WEATHERED FINISH OF THE STEEL BRIDGE. PRESSURE TREATED RUB RAILS SHALL BE AIR-DRIED OR KILN-DRIED AFTER TREATMENT PRIOR TO APPLYING STAIN. PRIOR TO APPLYING THE STAIN CLEAN AND PREPARE THE WOOD SURFACE IN ACCORDANCE WITH THE STAIN MANUFACTURE'S RECOMMENDATIONS. APPLY STAIN IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS.
2. PROVIDE 12"X18" 3M DIAMOND GRADE REFLECTIVE ALUMINUM "MULTI-USE TRAIL" SIGN (WITH HIKER, HORSE RIDER AND CYCLIST SYMBOL) WITH 3M SMARTSHIELD POF LAMINATE FOR PROTECTION FROM FADING AND GRAFFITI, MODEL K-0709 BY CAMPGROUND SIGNS (<https://www.campgroundsigns.com/multi-use-trail-campground-sign/sku-k-0709>) OR APPROVED EQUAL.
3. EACH POST AND RUB RAIL CONNECTION SHALL FOLLOW SIMILAR FASTENING METHOD AS THE BRIDGE RUB RAILS. COUNTER SINK FASTENER FLUSH WITH FACE OR RUB RAIL. PROVIDE ASTM F593 TYPE 316 STAINLESS STEEL SHIMS, WASHERS AND/OR OTHER ACCEPTABLE SPACERS IF NECESSARY TO ENSURE THE RUB RAILS ON THE WINGWALLS ALIGN WITH THE RUB RAILS ON THE BRIDGE.



1 BRIDGE APPROACH RUB RAIL-ELEVATION
SCALE: N.T.S



2 BRIDGE APPROACH RUB RAIL-ELEVATION
SCALE: N.T.S



3 BRIDGE APPROACH RUB RAIL SECTION
SCALE: N.T.S

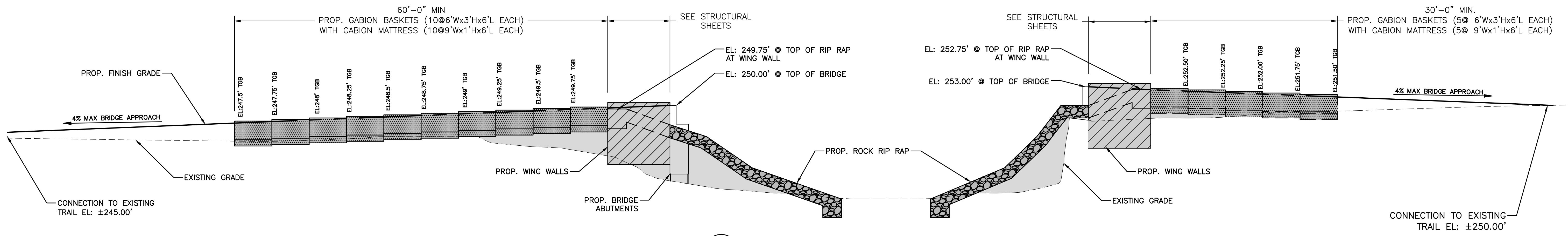


DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0- FB SUBMITTAL
(02/06/2026)

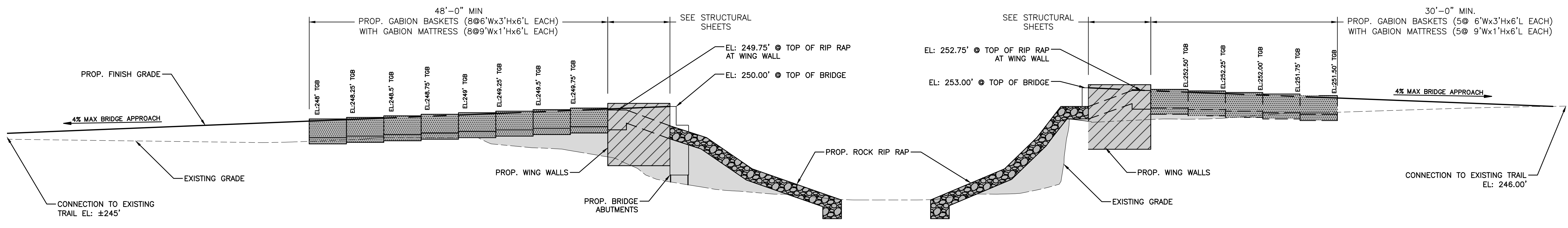
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BRIDGE
APPROACH
GABION WALL
PROFILES

SHEET NUMBER

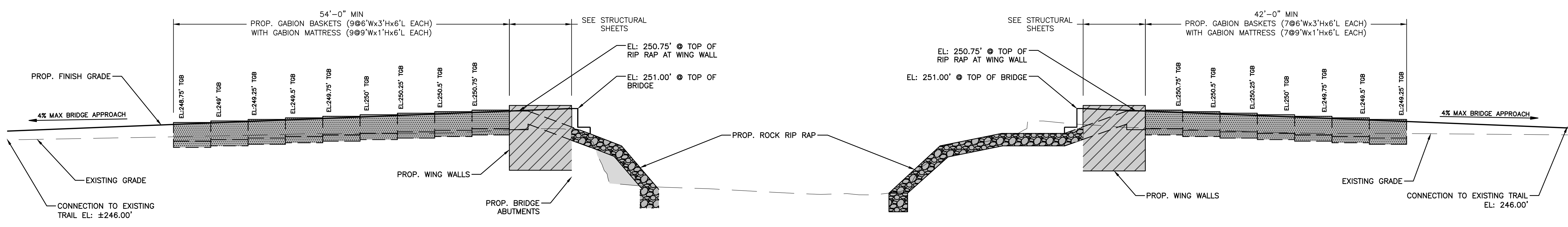
C-22



1 NAIL CREEK-PROP. GABION BASKET PROFILE-NORTH SIDE
SCALE: NTS



2 NAIL CREEK-PROP. GABION BASKET PROFILE-SOUTH SIDE
SCALE: NTS



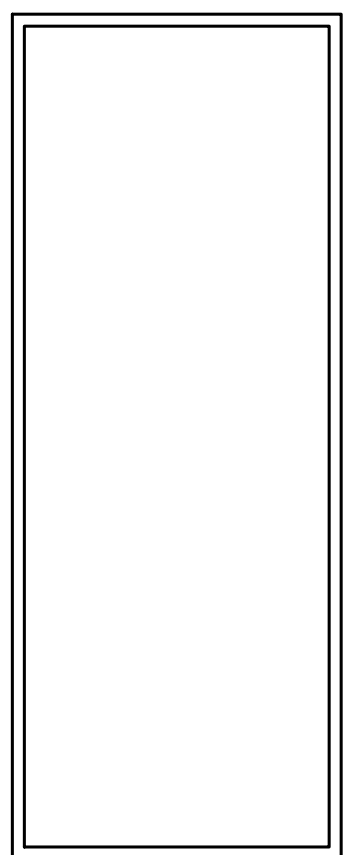
3 YEGUA CREEK-PROP. GABION BASKET PROFILE-NORTH & SOUTH SIDE
SCALE: NTS

NOTE
1. BRIDGE DETAILS NOT SHOWN FOR CLARITY. SEE STRUCTURAL SHEETS FOR BRIDGE DETAILS.
2. TGB: TOP OF GABION BASKET.

LEGEND

- PROPOSED FILL
- PROPOSED GABION BASKETS (SEE SHEET C-23)
- PROPOSED ROCK RIP RAP SEE SITE PLANS AND C-19

PATH: P:\133-10060-001\4-0-Production-Working\4-1-BIM-CAD\Civil\Sheets\C-XX - CIVIL PLAN & PROFILES.dwg



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DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
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(02/06/2026)

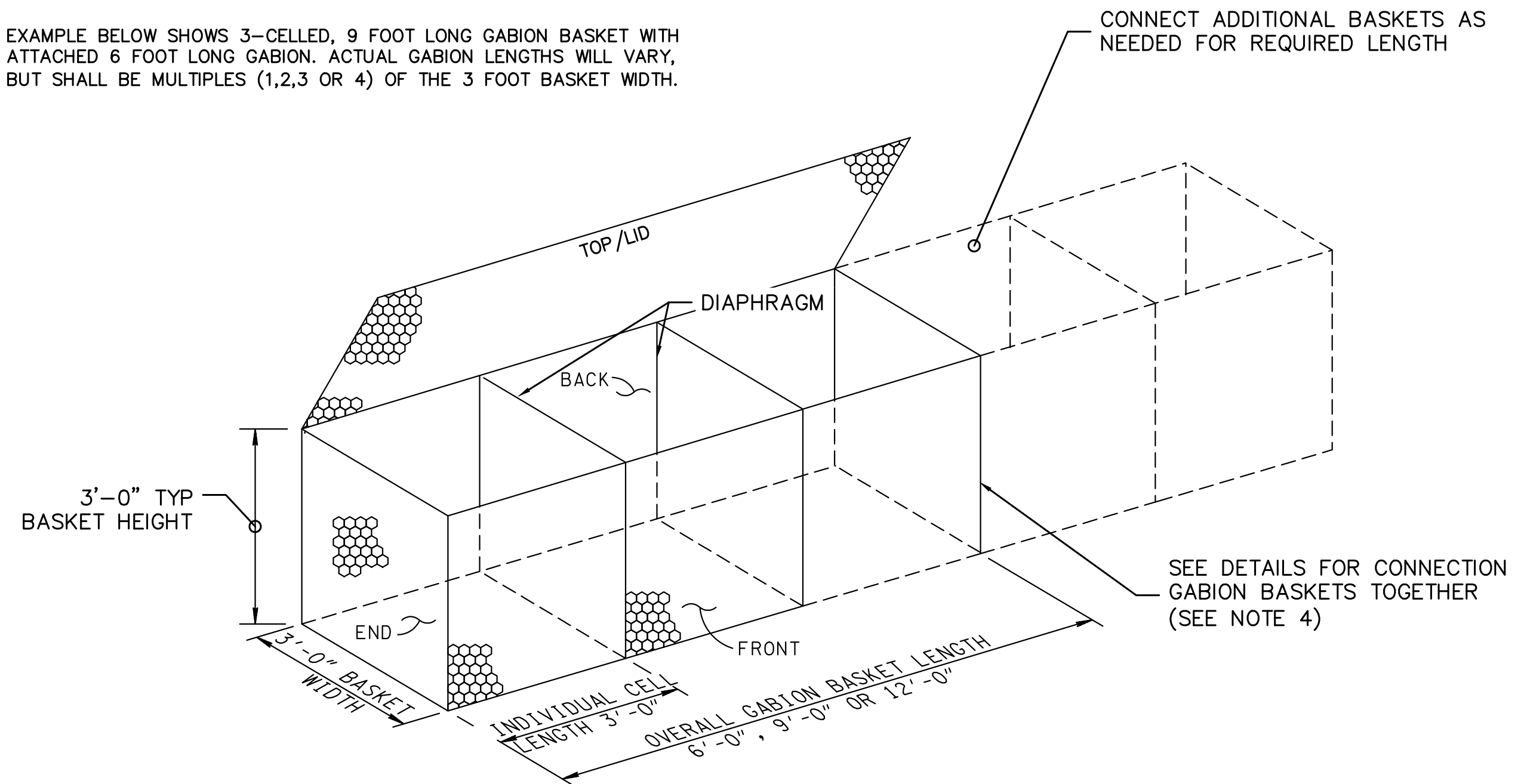
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GABION BASKET
DETAILS

SHEET NUMBER
C-23

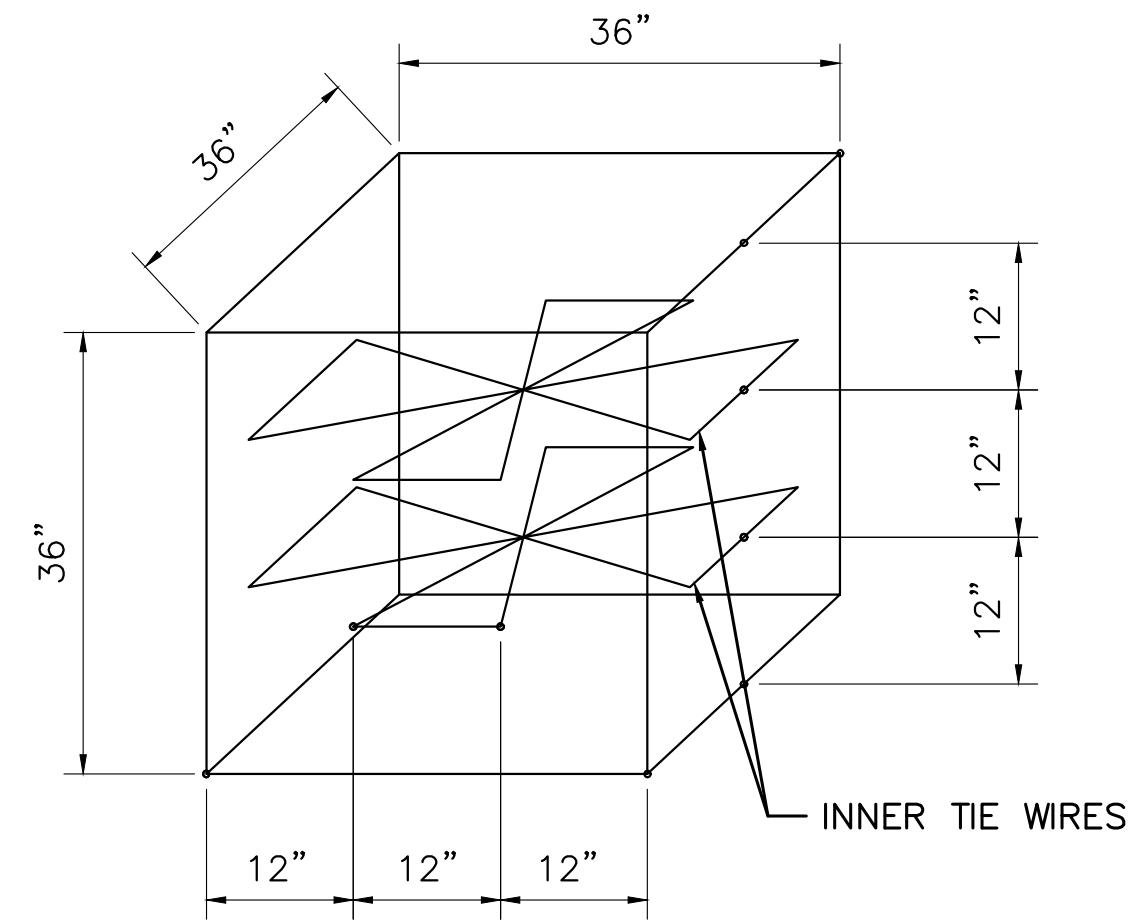
NOTES

1. PROVIDE STYLE 1 TWISTED WIRE GABION BASKETS AND MATTRESSES PER ASTM A975 AND TXDOT ITEM 459.
2. WIRE FOR FABRICATION AND ASSEMBLY SHALL BE HOT-DIPPED GALVANIZED. THE WIRE SHALL HAVE A MINIMUM TENSILE STRENGTH OF 60,000 PSI. GALVANIZED STEEL. WIRE SHALL CONFORM TO ASTM A641, CLASS 3, SOFT TEMPER.
3. TYPE 1, TYPE 2 AND TYPE 3 FASTENERS MUST PROVIDE A MINIMUM STRENGTH OF 1,400 POUNDS PER LINEAR FOOT FOR GABION BASKETS. ALL FASTENERS SHALL BE HOT-DIPPED GALVANIZED.
4. CONNECT ADJACENT BASKETS AND DIAPHRAGMS WITH TYPE 3 LACING FASTENERS AND REINFORCE WITH HOG RINGS AT 5" MAX SPACING. HOG RINGS SHALL BE TYPE 1 OR TYPE 2.
5. PROVIDE INNER TIE WIRES IN ALL BASKET CELLS PER TYPICAL DETAIL.
6. PROVIDE GABION MATTRESSES SIMILAR TO THE TYPICAL GABION BASKET ISOMETRIC DETAIL EXCEPT MATTRESS HEIGHTS SHALL BE 1 FT.
7. SEE DRAWINGS FOR GABION BASKET AND GABION MATTRESS WIDTHS, HEIGHTS AND LENGTHS.
8. PREPARE SUBGRADE, BACKFILL AND GEOGRID FOUNDATION PER TXDOT ITEM 459 AND THE TYPICAL BRIDGE APPROACH PAVEMENT SECTION WITH GABION BASKETS.
9. PROVIDE TYPE 1 FILTER FABRIC AS INDICATED ON THE TYPICAL BRIDGE APPROACH PAVEMENT SECTION WITH GABION BASKETS.
10. ASSEMBLY - ROTATE THE GABION PANELS INTO POSITION AND JOIN THE VERTICAL EDGES WITH FASTENERS FOR GABION ASSEMBLY. WRAP THE LACING WIRE WITH ALTERNATING SINGLE AND DOUBLE HALF-HITCHES AT INTERVALS BETWEEN FOUR (4) TO FIVE (5) INCHES. USE THE SAME FASTENING PROCEDURES TO INSTALL INTERIOR DIAPHRAGMS. INTERIOR DIAPHRAGMS WILL BE REQUIRED WHEN ANY INSIDE DIMENSION OF A GABION BASKET EXCEEDS 3 FEET.
11. PLACEMENT - PLACE THE EMPTY GABIONS ON THE FOUNDATION AND INTERCONNECT THE ADJACENT GABIONS ALONG THE TOP, BOTTOM, AND VERTICAL EDGES USING LACING WIRE. WRAP THE WIRE WITH ALTERNATING SINGLE AND DOUBLE HALF-HITCHES AT INTERVALS BETWEEN FOUR (4) TO SIX (6) INCHES. UNLESS OTHERWISE SPECIFIED, LACING WIRE WILL BE THE ONLY FASTENER ALLOWED FOR INTERCONNECTING WOVEN MESH GABIONS.
12. THE VERTICAL JOINTS BETWEEN GABION BASKET UNITS OF ADJACENT LAYERS OR TIERS OF BASKETS AND MATTRESS, ALONG THE LENGTH OF THE GABION SYSTEM, SHALL BE STAGGERED BY A MINIMUM OF ONE CELL.
13. FILLING OPERATION
 - A. REINFORCEMENT, INTERNAL CONNECTING WIRES SHALL BE PLACED IN EACH UNRESTRAINED GABION CELL 18 INCHES OR GREATER IN HEIGHT, INCLUDING GABION CELLS LEFT TEMPORARILY UNRESTRAINED. TWO INTERNAL CONNECTING WIRES SHALL BE PLACED (TWO ACROSS THE WIDTH AND TWO ACROSS THE LENGTH) CONCURRENTLY WITH ROCK PLACEMENT. THESE REINFORCING WIRES SHALL BE EVENLY SPACED ALONG THE FRONT FACE AND CONNECTING TO THE BACK FACE. ALL CONNECTING WIRES SHALL BE LOOPED AROUND TWO MESH OPENINGS AND EACH WIRE END SHALL BE SECURED BY A MINIMUM OF FIVE 180 DEGREE TWISTS AROUND ITSELF AFTER LOOPING.
 - B. GABIONS SHALL BE CAREFULLY FILLED WITH ROCK, EITHER BY MACHINE OR HAND METHODS, ENSURING ALIGNMENT, AVOIDING BULGES, AND PROVIDING A COMPACT MASS THAT MINIMIZES VOIDS. MACHINE PLACEMENT WILL REQUIRE SUPPLEMENTING WITH HAND WORK TO ENSURE THE DESIRED RESULTS. THE CELLS IN ANY ROW SHALL BE FILLED IN STAGES SO THAT THE DEPTH OF ROCK PLACED IN ANY ONE CELL DOES NOT EXCEED THE DEPTH OF ROCK IN ANY ADJOINING CELL BY MORE THAN 3 INCHES. ALONG THE EXPOSED FACES, THE OUTER LAYER OF STONE SHALL BE CAREFULLY PLACED AND ARRANGED BY HAND TO ENSURE A NEAT, COMPACT PLACEMENT WITH A UNIFORM APPEARANCE.
 - C. THE LAST LAYER OF ROCK SHALL BE UNIFORMLY LEVELED TO THE TOP EDGES OF THE GABIONS. LIDS SHALL BE STRETCHED TIGHT OVER THE ROCK FILLING USING ONLY APPROVED LID CLOSING TOOLS AS NECESSARY. THE USE OF CROWBARS OR OTHER SINGLE POINT LEVERAGE BARS FOR LID CLOSING IS PROHIBITED, AS THEY MAY DAMAGE THE BASKETS. THE LID SHALL BE STRETCHED UNTIL IT MEETS THE PERIMETER EDGES OF THE FRONT AND END PANELS. THE GABION LID SHALL THEN BE SECURED TO THE SIDES, ENDS, AND DIAPHRAGMS WITH OVERLAPPING RING FASTENERS AND LACING WIRE WRAPPED WITH ALTERNATING SINGLE AND DOUBLE HALF-HITCHES IN THE MESH OPENINGS.

EXAMPLE BELOW SHOWS 3-CELLED, 9 FOOT LONG GABION BASKET WITH ATTACHED 6 FOOT LONG GABION. ACTUAL GABION LENGTHS WILL VARY, BUT SHALL BE MULTIPLES (1,2,3 OR 4) OF THE 3 FOOT BASKET WIDTH.

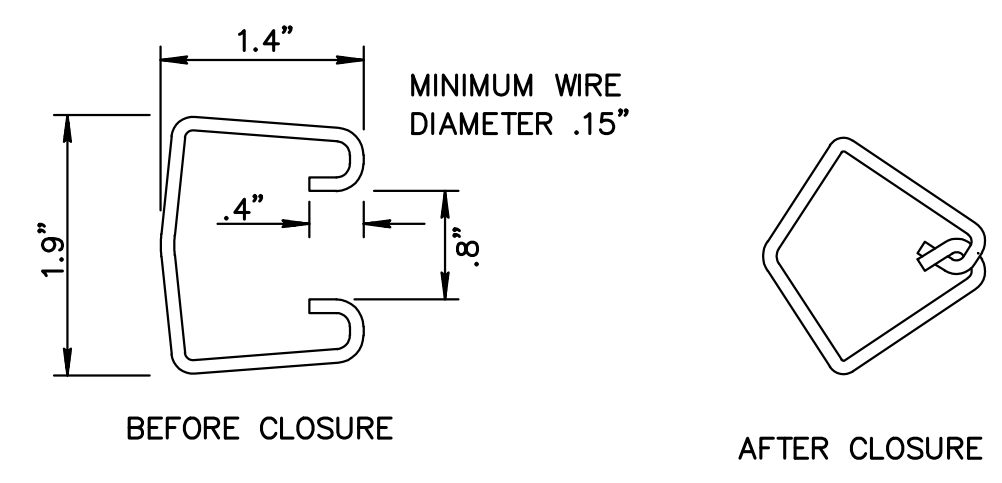


1 ISOMETRIC-TYPICAL GABION BASKETS
SCALE: N.T.S

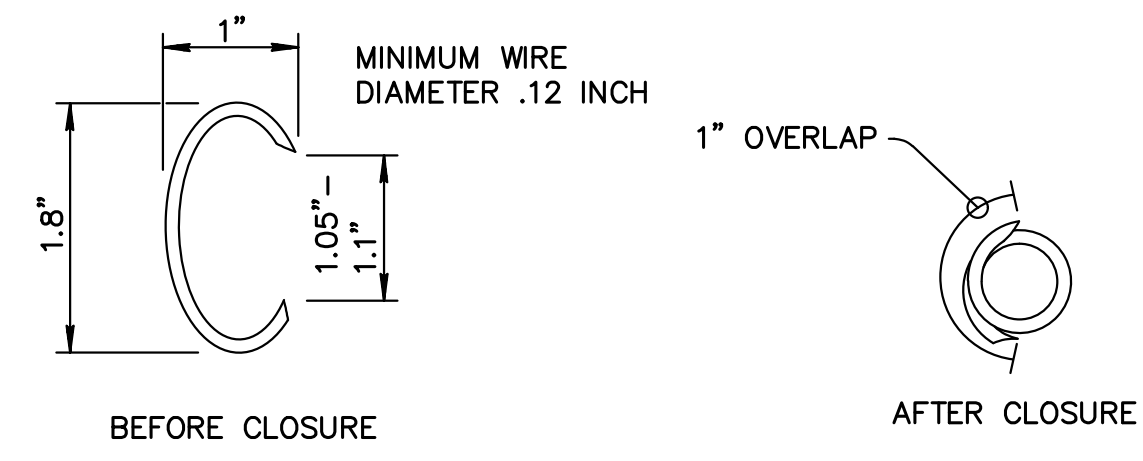


INNER TIE WIRES SHALL BE PLACED HORIZONTALLY IN EACH CELL EVERY 12" OF VERTICAL HEIGHT CONNECTING THE FRONT AND BACK FACES AND ANY UNSUPPORTED FACE LENGTHWISE.

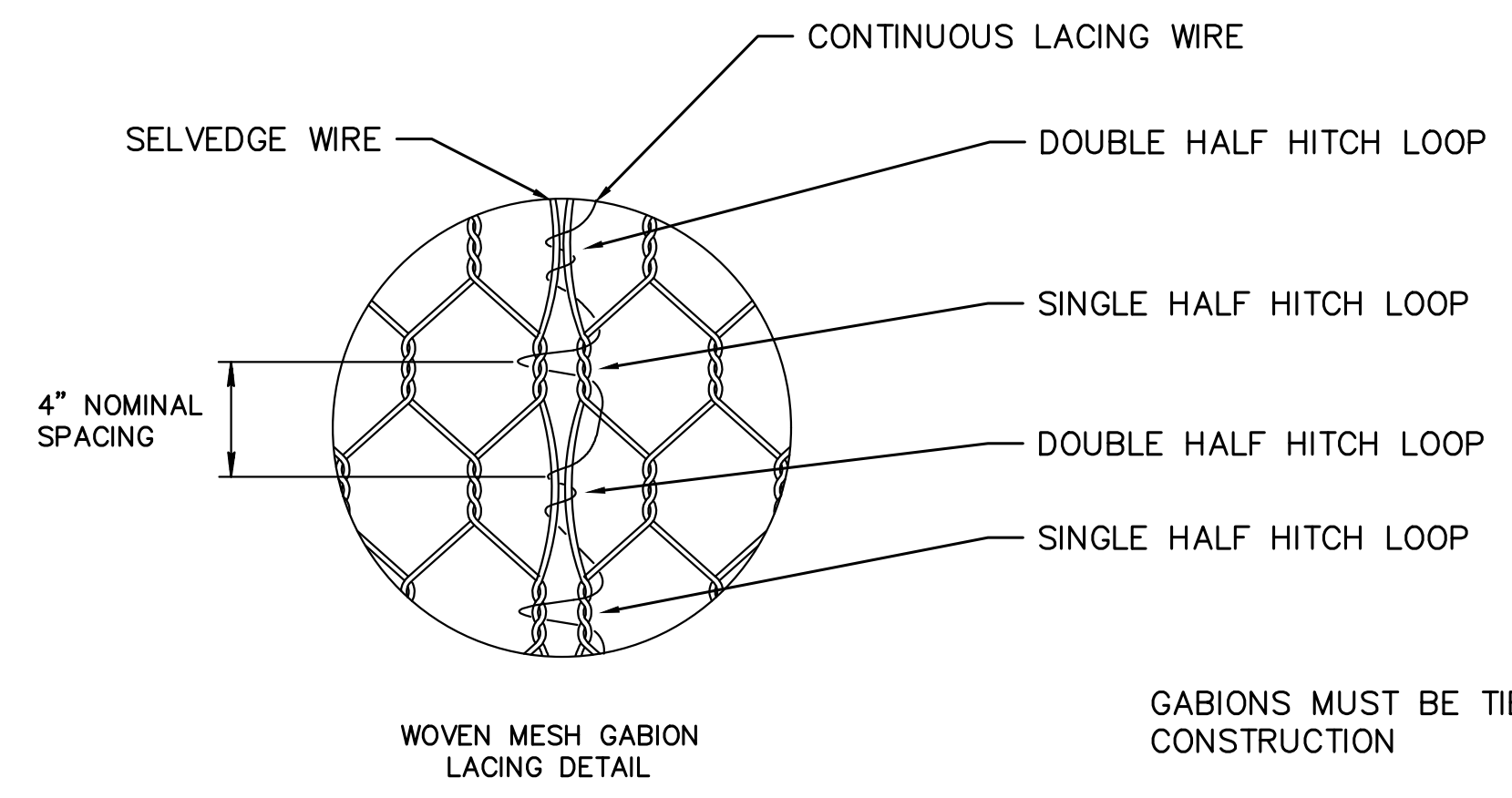
2 GABION TYE WIRE INSTALLATION METHOD
SCALE: N.T.S



A TYPE 1 FASTNER INTERLOCKING WIRE
SCALE: N.T.S



B TYPE 2 FASTENER OVERLAPPING RING
SCALE: N.T.S



C TYPE 3 FASTENER LACING WIRE
SCALE: N.T.S

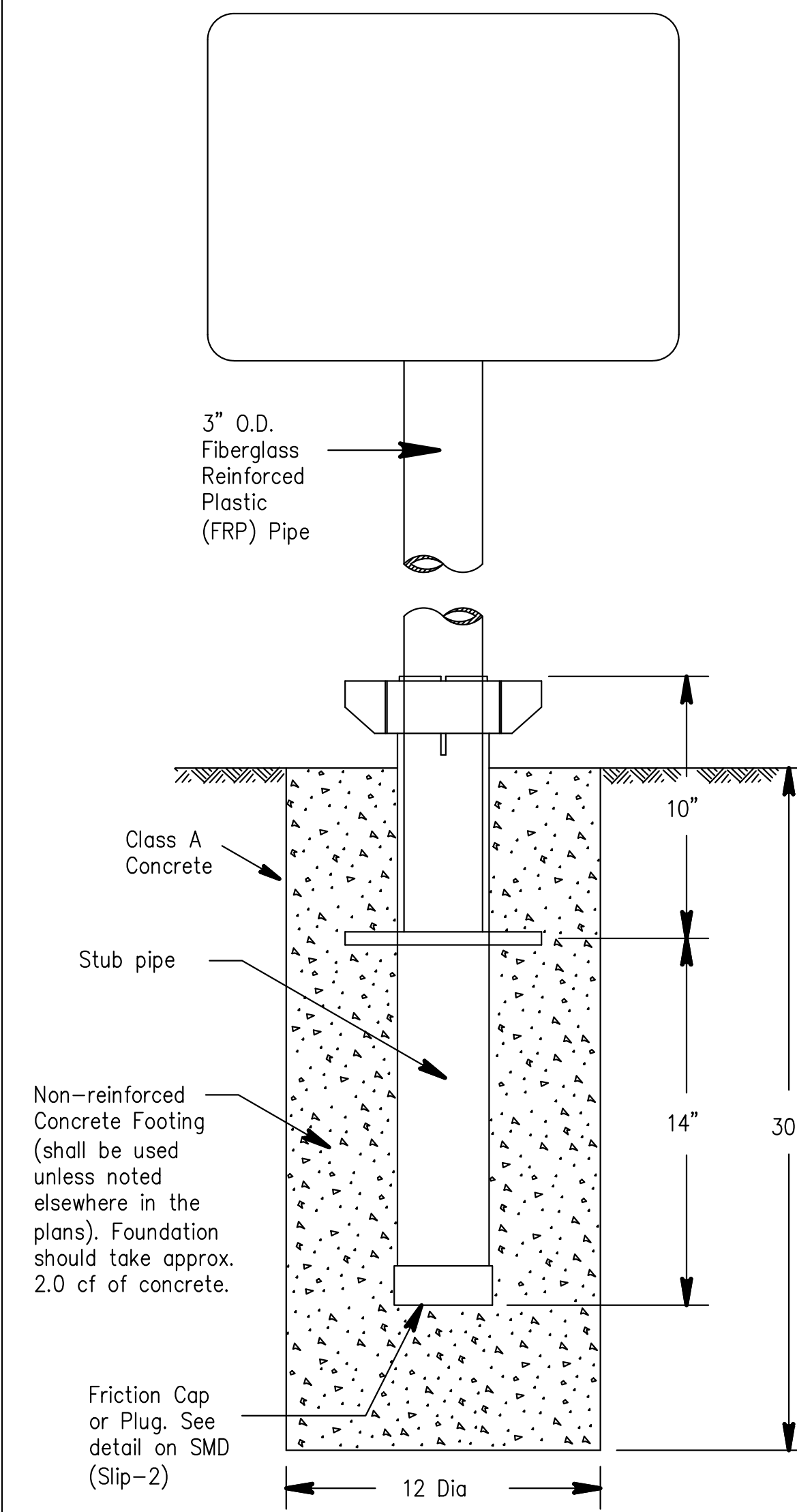
GABIONS MUST BE TIED IN THIS MANNER AT EACH STEP OF CONSTRUCTION

1. INITIAL ASSEMBLY
2. TYING TO ADJACENT GABIONS ALONG ALL CONTACTING EDGES
3. TYING OF LID TO SIDES
4. TYING OF LID TO ALL DIAPHRAGMS
5. RE-TYING OF CUT GABION
6. TYING OF GABION MATTRESS TO THE GABION WALL ALONG ALL CONTACTING EDGES
7. REINFORCE TIE WIRE WITH HOG RINGS

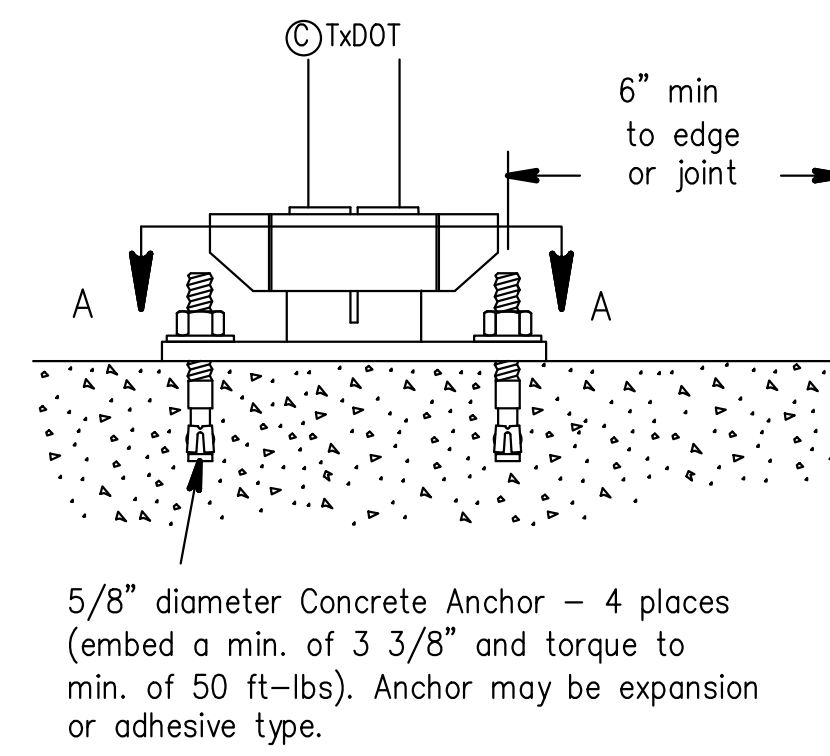
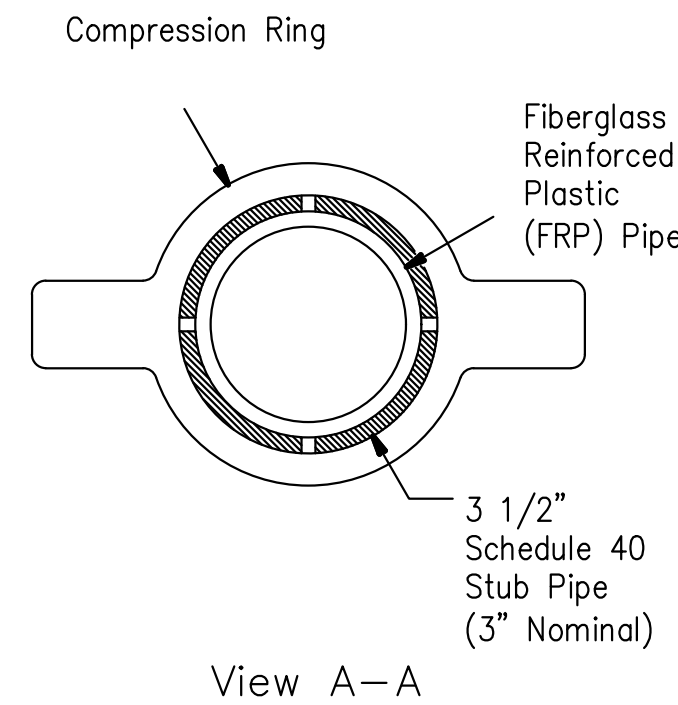
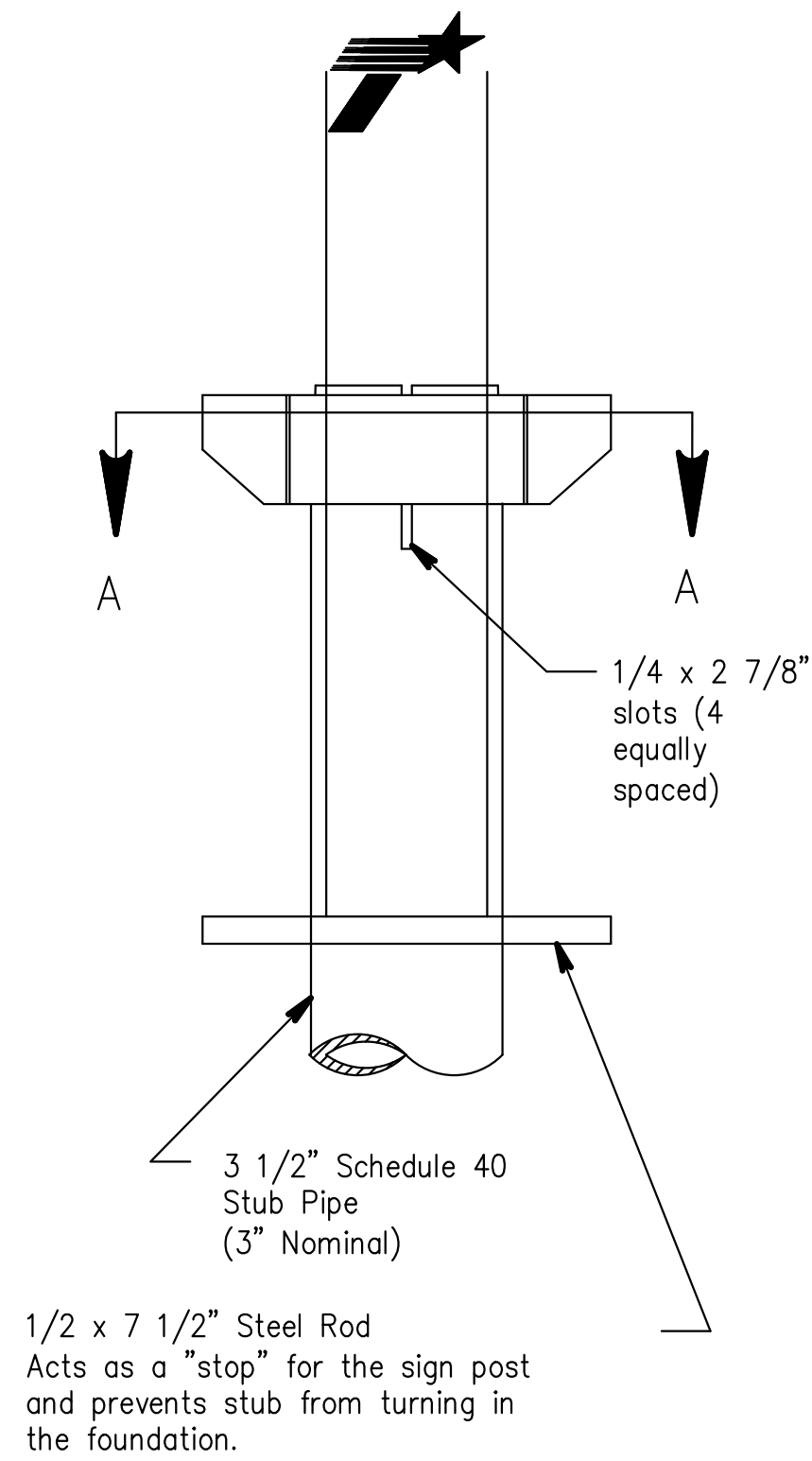
STATE OF TEXAS
SCOTT M. HARRIS
99261
LICENSED PROFESSIONAL ENGINEER
2/6/26

Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post

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

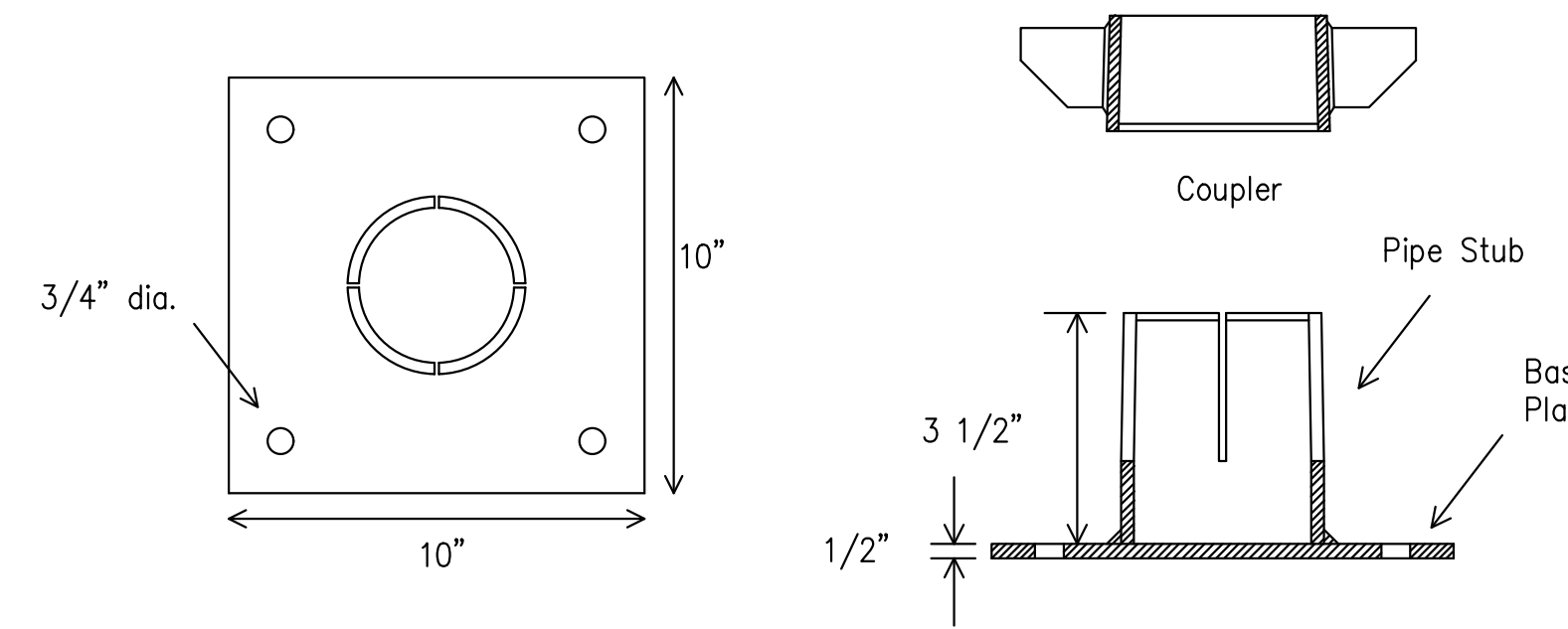


SM RD SGN ASSM TY FRP(X)UA(P)



Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxyes and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

BOLT-DOWN DETAILS



SM RD SGN ASSM TY FRP(X)UB(P)

1. FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign supports.

1. Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or gray color as specified.
2. Thickness of FRP sign support is 0.125" + 0.031", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division. Prequalification procedures are obtained by writing:
Texas Department of Transportation
Traffic Operations Division
125 East 11th Street
Austin, Texas 78701-2483

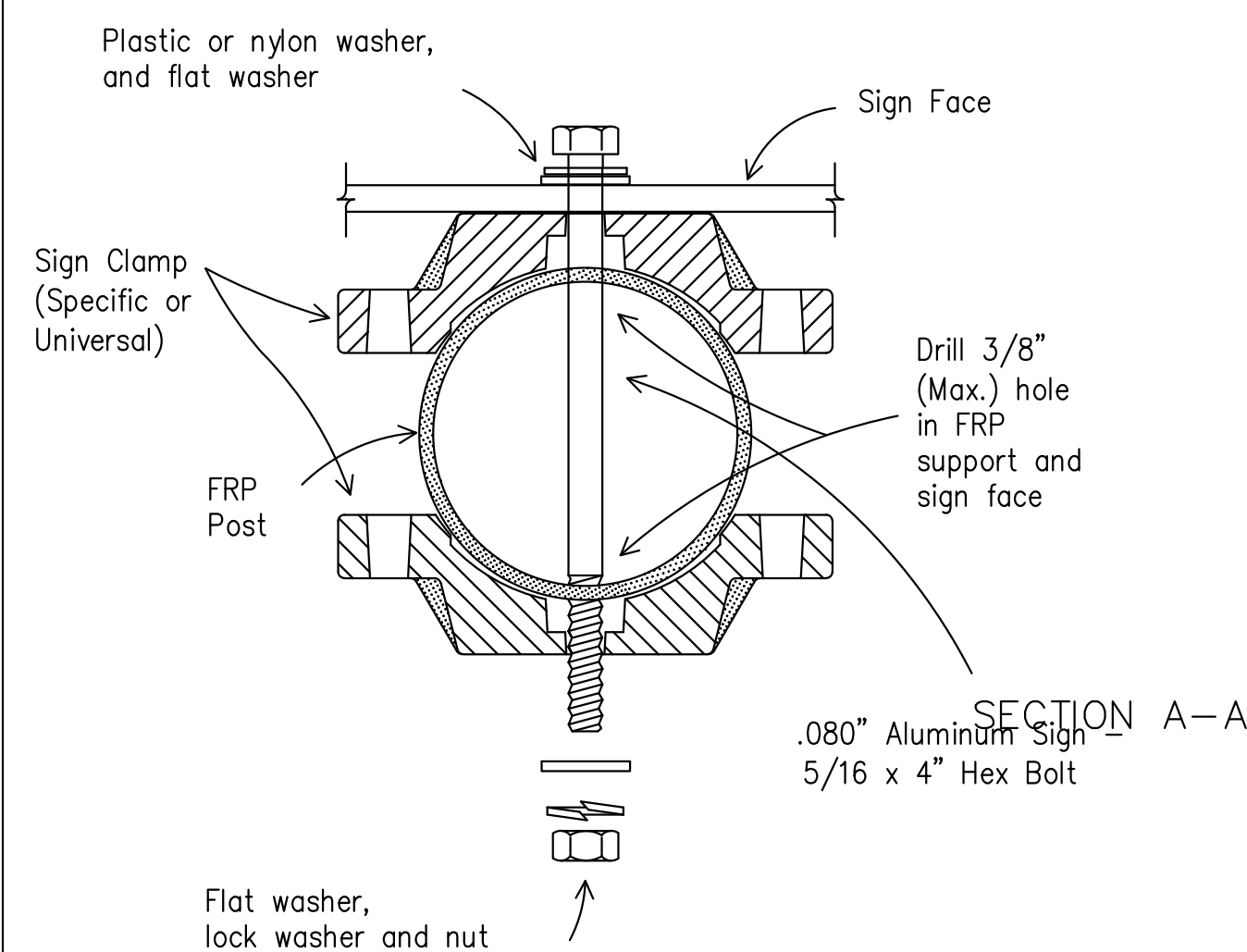
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if required.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set a minimum of 4 days, unless otherwise directed by Engineer. Bottom of base post slots shall be above the concrete footing.
5. Attach sign to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the coupler.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
8. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

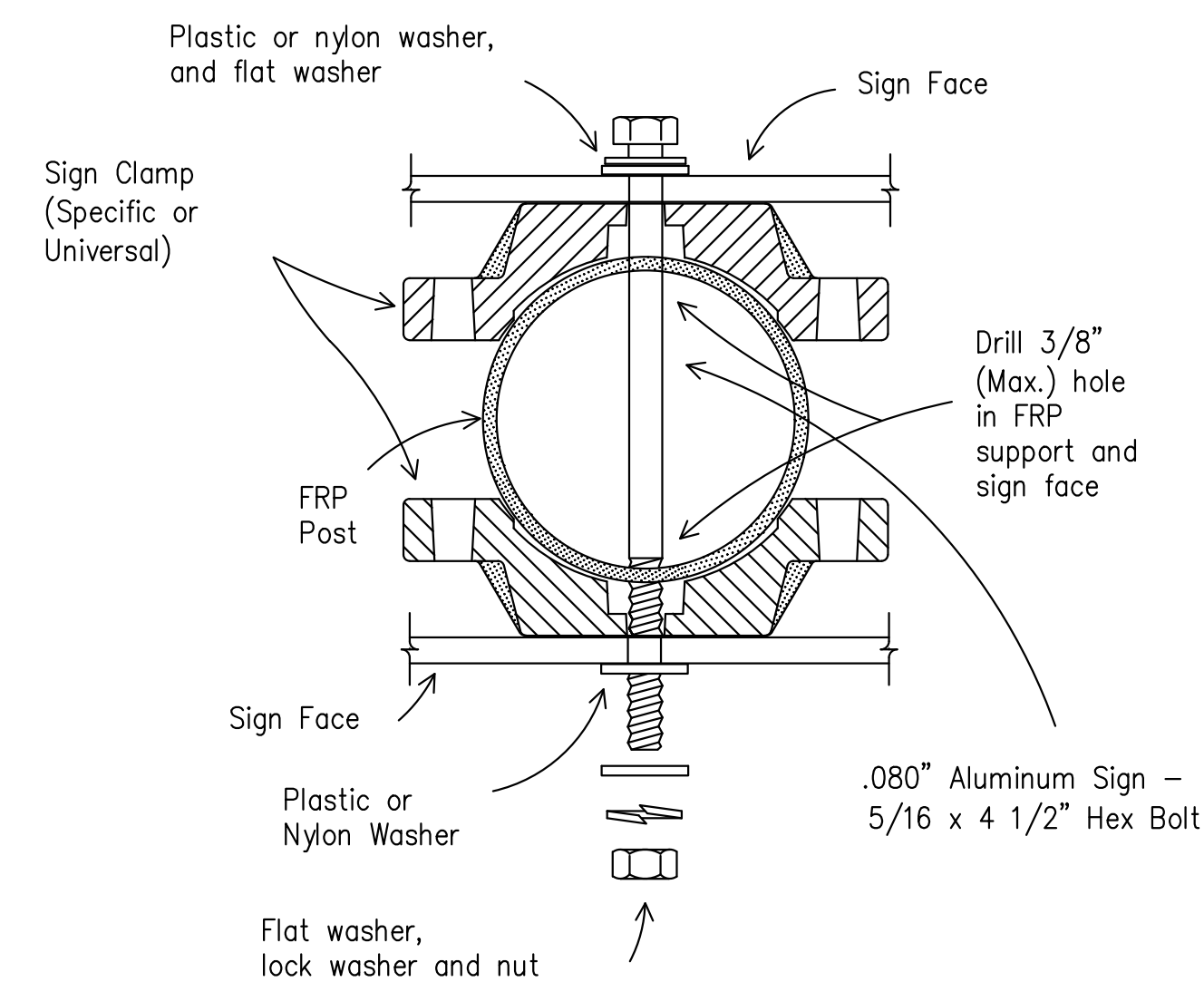
BOLT DOWN SIGN SUPPORT

1. Position base plate with coupler on existing concrete.
2. Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
3. Attach sign to FRP post.
4. Insert bottom of sign post into pipe stub.
5. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
6. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

Typical Sign Mounting Detail for FRP Support with Single Sign



Typical Sign Mounting Detail for FRP Support with Back-to-Back Signs



Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST SMD(FRP)-08

©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08	REVISIONS	CONT	SECT	JOB
26F		DIST	COUNTY	SHEET NO.

LAKE SOMERVILLE TRAILWAY
TRAIL BRIDGE REPLACEMENTS
PROJECT NO. 1211815

DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0- FB SUBMITTAL
(02/06/2009)

SHEET TITLE
TxDOT SIGN
DETAILS

SHEET NUMBER

C-24



NOTE

1. CONTRACTOR SHALL SUBMIT A HAUL OFF/TRUCKING PLAN FOR REVIEW BY THE EOR AND TPWD.
2. SEE APPENDIX D FOR GEOTECHNICAL BORE AT BORROW SITE.
3. WET WEATHER MAY CAUSE THE SITE AND TRAILS TO BE SOFT AND NOT SUITABLE TO DRIVE ON. CONTRACTOR SHALL PROVIDE TIMBER MATS WHERE NEEDED. THIS ALSO INCLUDES CULVERT CROSSING, LOW BERM CROSSING ETC.
4. CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL FROM THE EXCAVATED MATERIAL USED FOR FILL.

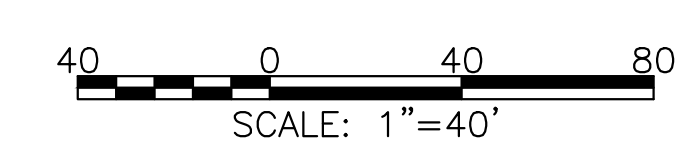
1 CIVIL OVERALL FLOOD MITIGATION SITE PLAN
SCALE: 1" = 40'

LEGEND

	CONSTRUCTION LIMITS
	EXISTING TREES
	EXISTING CHANNEL/POND WATER



2 CIVIL OVERALL FLOOD MITIGATION SITE PLAN
SCALE: 1" = 40'



ASL
2/6/26

**LAKE SOMERVILLE TRAILWAY
TRAIL BRIDGE REPLACEMENTS**
PROJECT NO. 1211815

DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0- FB SUBMITTAL
(02/06/2026)

SHEET TITLE
**BORROW SITE -
EXISTING SITE
PLAN**

SHEET NUMBER

C-25



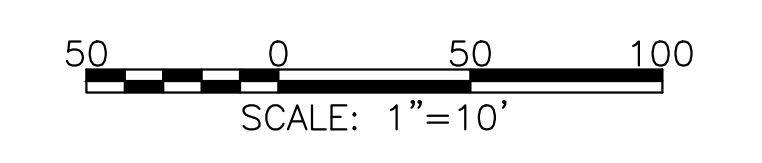
NOTE

1. SEE SHEET C-03 FOR SWPPP DETAILS.
2. CONTRACTOR SHALL INSPECT, MAINTAIN AND REPAIR SWPPP MEASURES ON A DAILY BASIS.
3. CONTRACTOR SHALL MODIFY SWPPP MEASURES AS WORK PROGRESSES AND AS DIRECTED BY THE TPWD.
4. SEE SWPPP GENERAL NOTE 8 ON SHEET C-01

LEGEND

- xx — TEMPORARY SEDIMENT CONTROL FENCE
- [Stippled Box] TEMPORARY STABILIZED CONSTRUCTION ENTRANCE

STATE OF TEXAS
SCOTT M. HARRIS
99261
LICENSED PROFESSIONAL ENGINEER
Signature
2/6/26



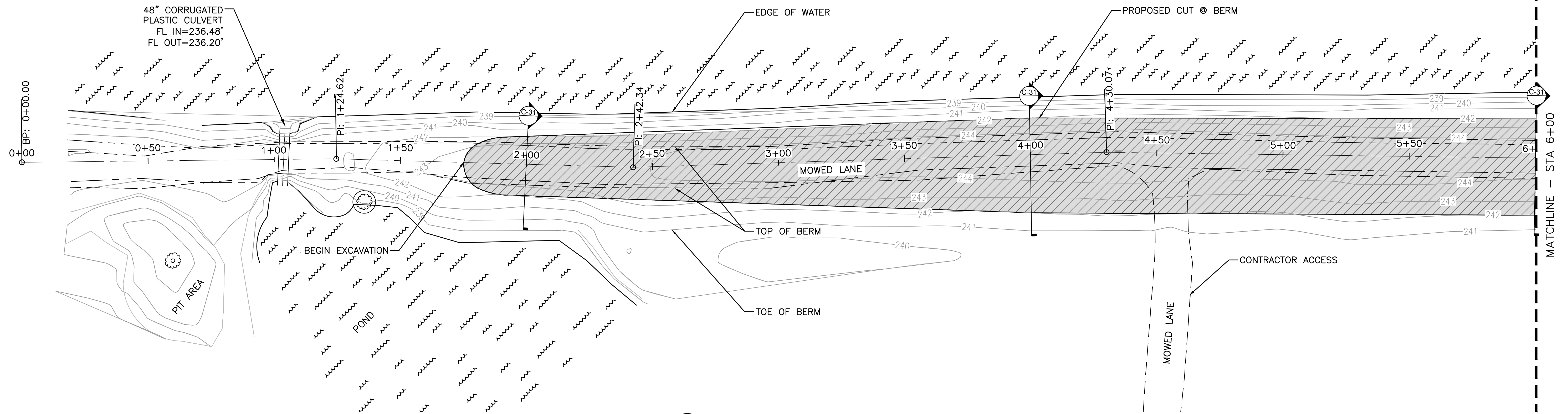
**LAKE SOMERVILLE TRAILWAY
TRAIL BRIDGE REPLACEMENTS**
PROJECT NO. 1211815

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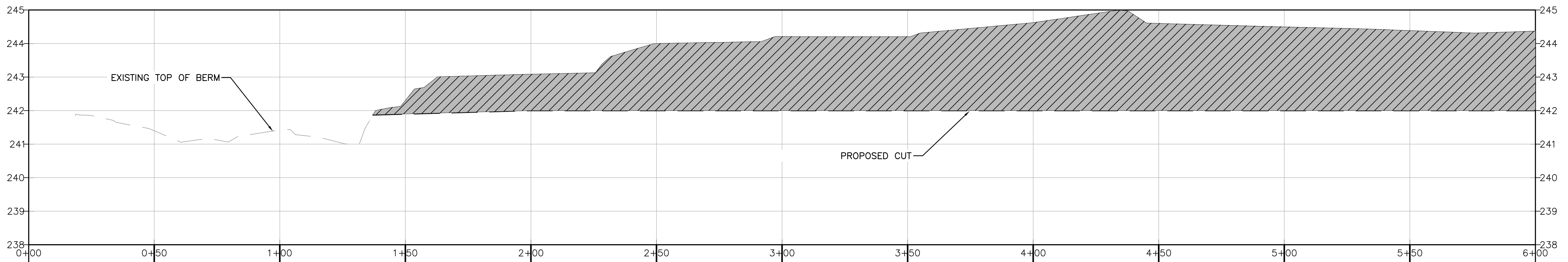
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**BORROW SITE -
SWPPP PLAN**

SHEET NUMBER

C-26



1 CIVIL BERM MITIGATION PLAN
SCALE: 1" = 20'

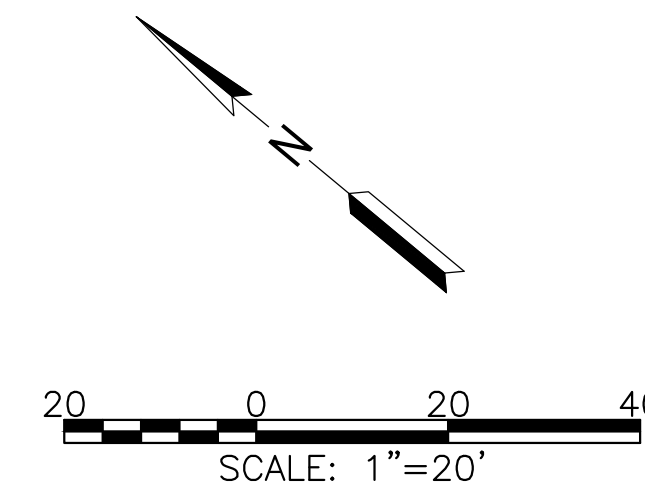


A CIVIL BERM MITIGATION PROFILE
SCALE: 1" = 20'

- LEGEND**
- EXISTING CONTOURS
 - - - VEGETATION LINE
 - - - TOP OF BERM
 - ⊙ TREES
 - ▨ PROPOSED CUT @ BERM (1.25')

NOTES:

1. CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL FROM THE EXCAVATED MATERIAL USED FOR FILL.
2. CONTRACTOR SHALL PERFORM TOPOGRAPHIC SURVEYS AND EARTH WORK VOLUME REPORTS THAT WILL BE USED TO MEASURE THE TOTAL VOLUME REMOVED FROM THE SITE. SURVEYS BY A REGISTERED PROFESSIONAL LAND SURVEYOR (RPLS) REGISTERED IN TEXAS ACCEPTABLE TO THE EOR AND TPWD. SURVEYS AND VOLUME REPORTS SHALL BE PROVIDED TO THE EOR FOR REVIEW.
3. CONTRACTOR SHALL EXCAVATE NO MORE THAN 3,047 CY. CONTRACTOR SHALL NOTIFY EOR AND TPWD IF FURTHER EXCAVATION FOR FILL MATERIALS IS REQUIRED FOR THE PROJECT SITES TO GAIN APPROVAL.



LAKE SOMERVILLE TRAILWAY
TRAIL BRIDGE REPLACEMENTS
PROJECT NO. 1211815

DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0 - FB SUBMITTAL
(02/06/2026)

SHEET TITLE
BORROW SITE -
PROPOSED PLAN
& PROFILE
SHEET 1 OF 4

SHEET NUMBER

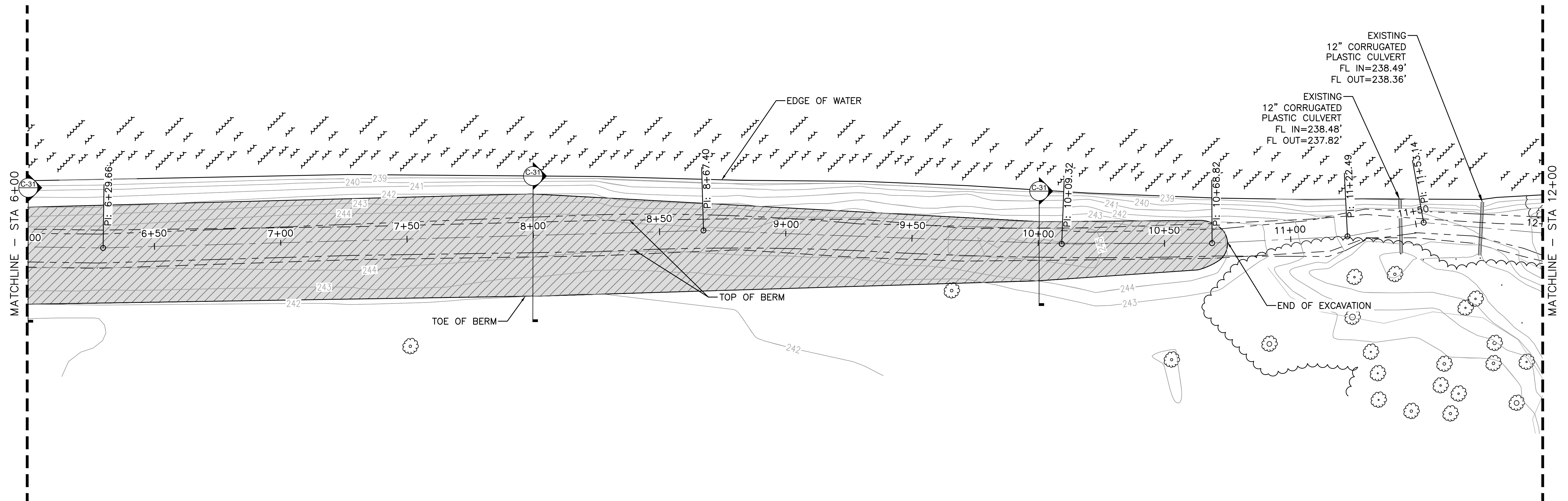
C-27

DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0 - FB SUBMITTAL
(02/06/2026)

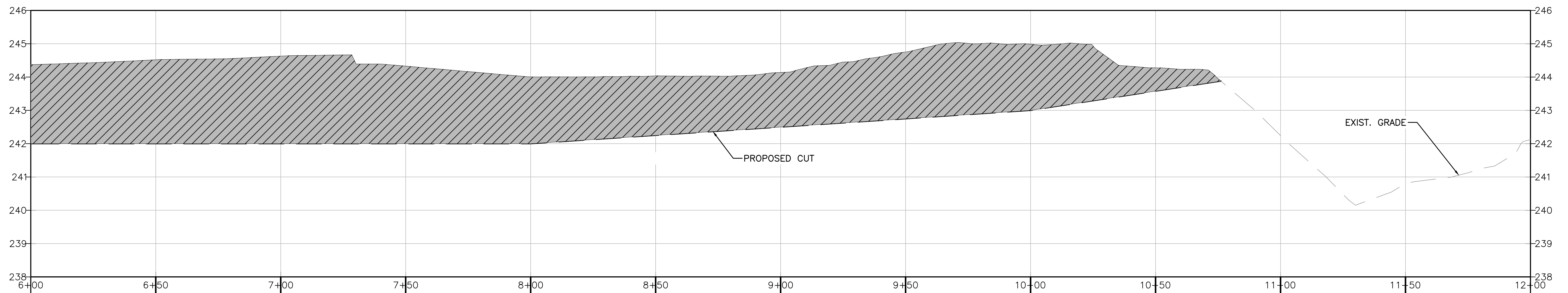
SHEET TITLE
BORROW SITE -
PROPOSED PLAN
& PROFILE
SHEET 2 OF 4

SHEET NUMBER

C-28



1 CIVIL BERM MITIGATION PLAN
SCALE: 1" = 20'

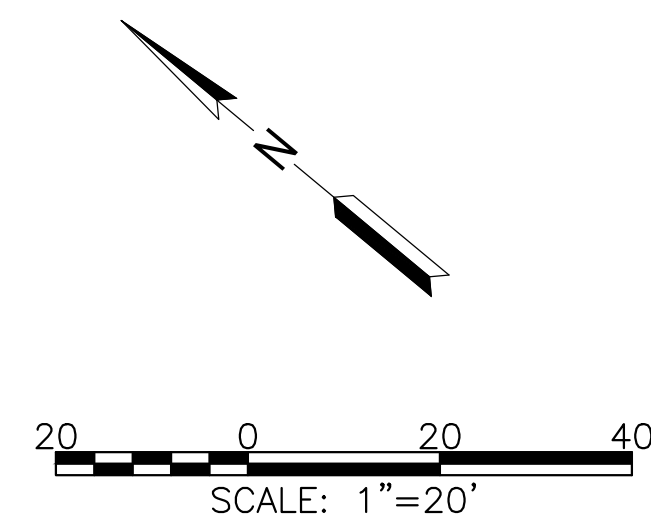


A CIVIL BERM MITIGATION PROFILE
SCALE: 1" = 20'

- LEGEND**
- EXISTING CONTOURS
 - - - - - VEGETATION LINE
 - - - - - TOP OF BERM
 - ⊙ TREES
 - ▨ PROPOSED CUT @ BERM (1.25')

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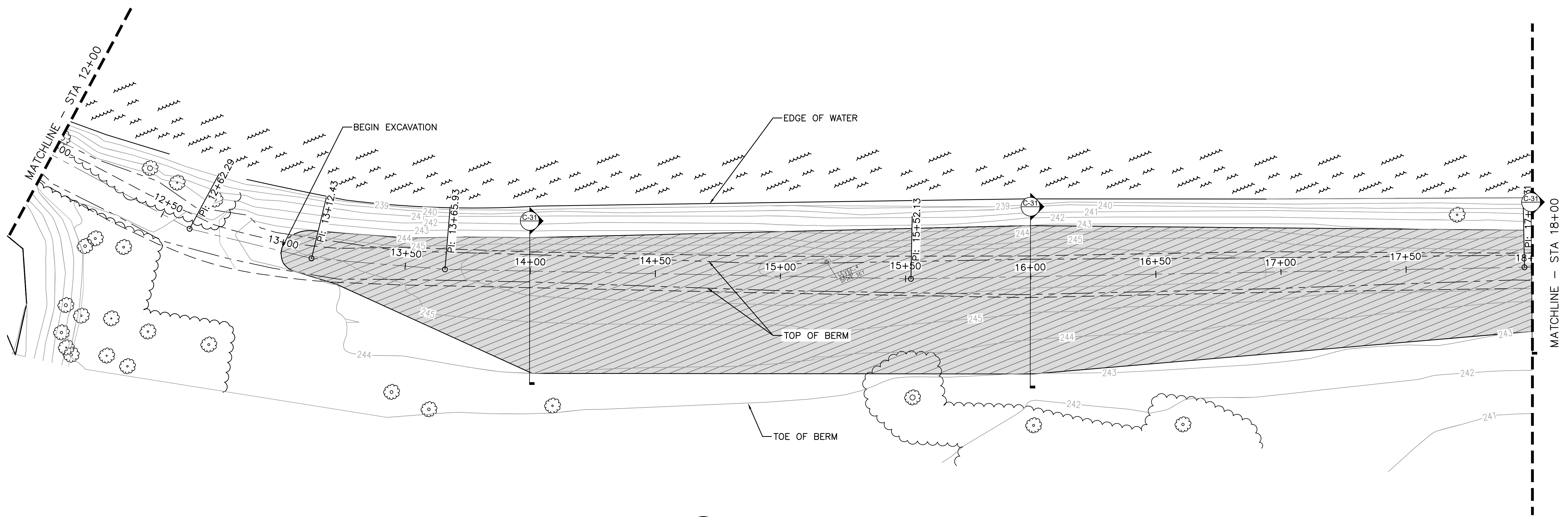


DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0 - FB SUBMITTAL
(02/06/2026)

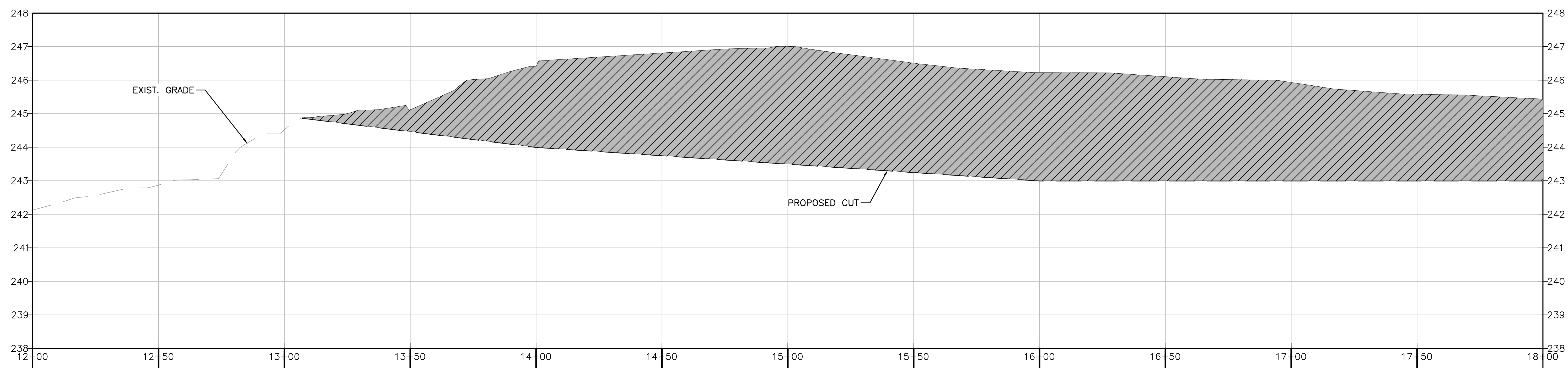
SHEET TITLE
BORROW SITE -
PROPOSED PLAN
& PROFILE
SHEET 3 OF 4

SHEET NUMBER

C-29



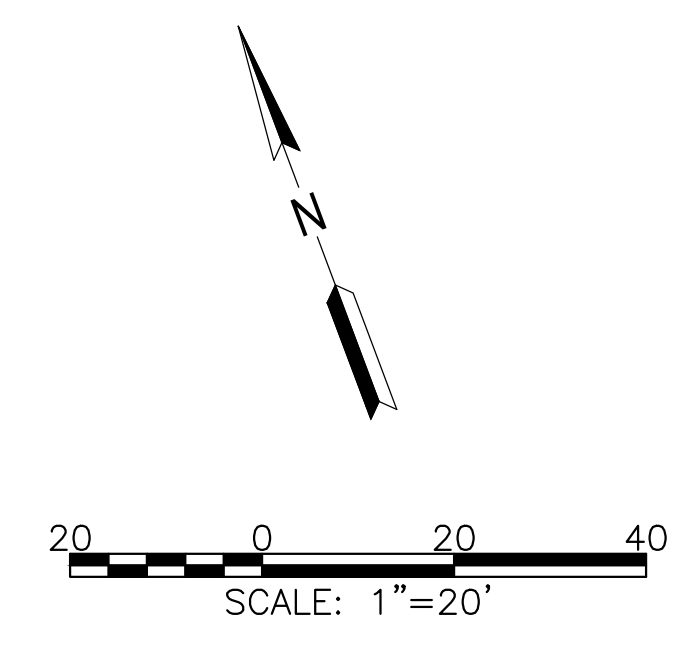
1 CIVIL BERM MITIGATION PLAN
SCALE: 1" = 20'



A CIVIL BERM MITIGATION PROFILE
SCALE: 1" = 20'

- LEGEND**
- EXISTING CONTOURS
 - - - VEGETATION LINE
 - - - TOP OF BERM
 - TREES
 - ▨ PROPOSED CUT @ BERM (1.25')

- NOTES:**
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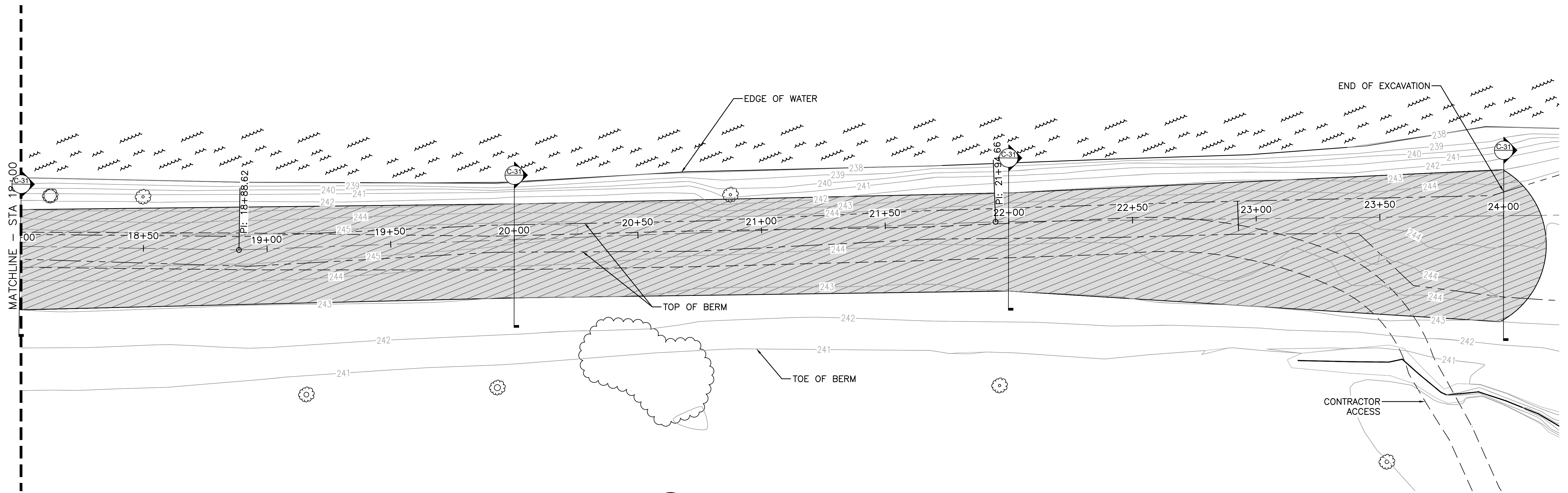
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DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0- FB SUBMITTAL
(02/06/2026)

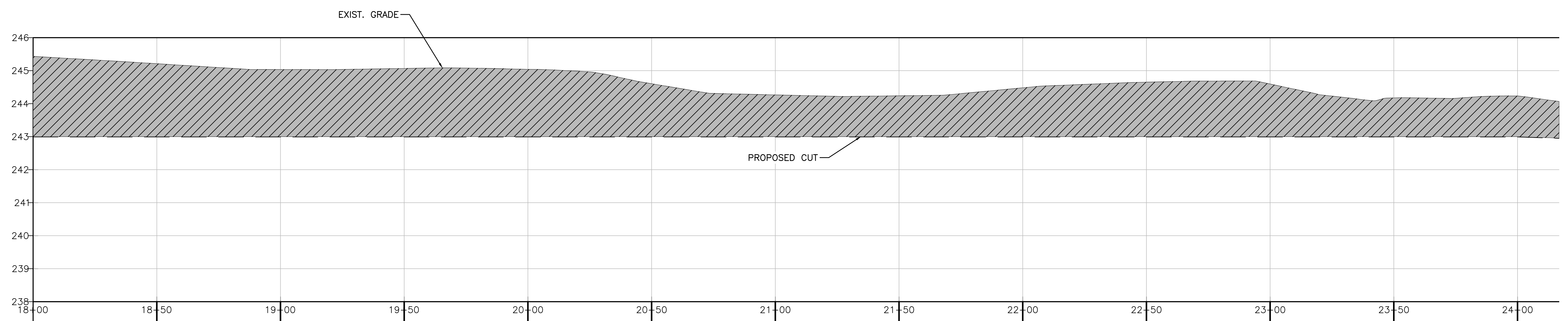
SHEET TITLE
BORROW SITE -
PROPOSED PLAN
& PROFILE
SHEET 4 OF 4

SHEET NUMBER

C-30



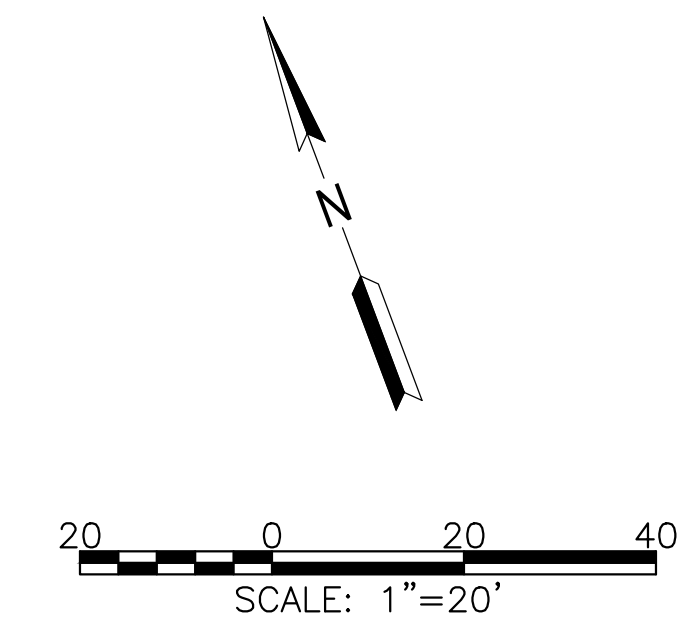
1 CIVIL BERM MITIGATION PLAN
SCALE: 1" = 20'



A CIVIL BERM MITIGATION PROFILE
SCALE: 1" = 20'

- LEGEND**
- EXISTING CONTOURS
 - - - VEGETATION LINE
 - - - TOP OF BERM
 - ⊙ TREES
 - ▨ PROPOSED CUT @ BERM (1.25')

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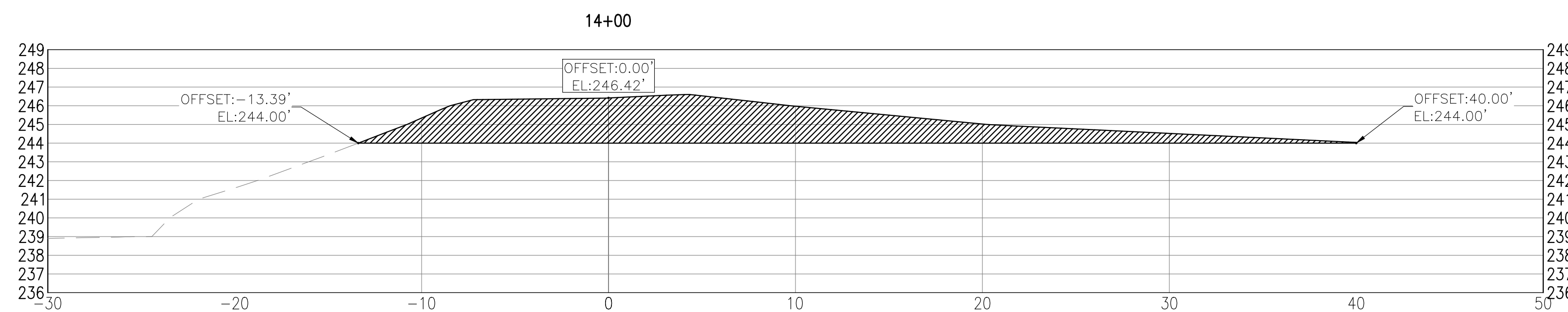
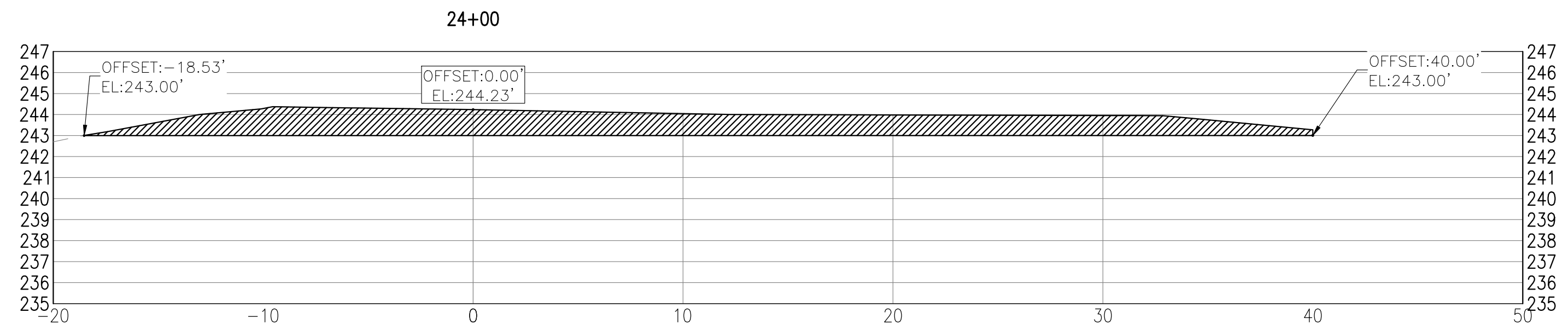
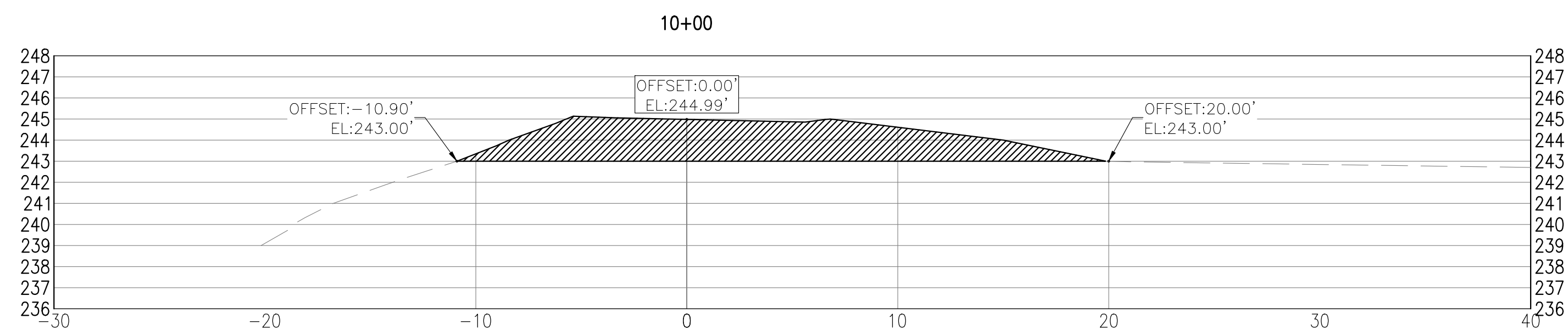
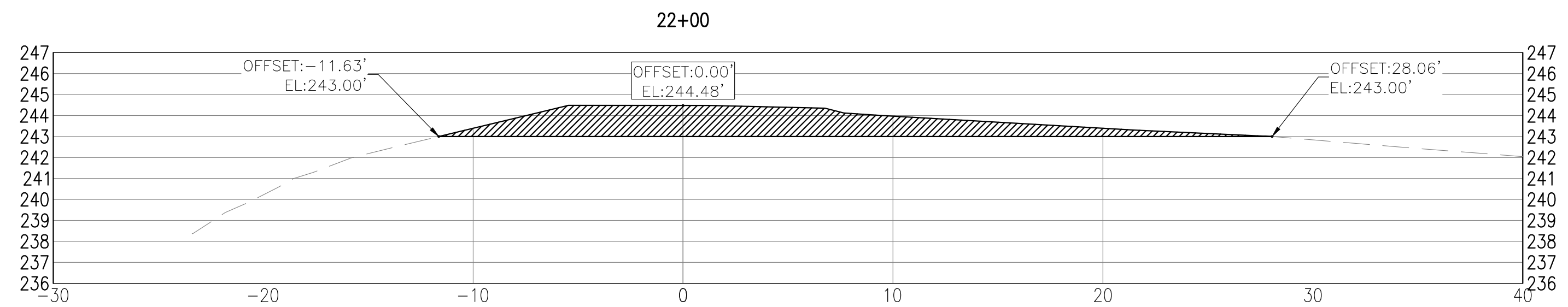
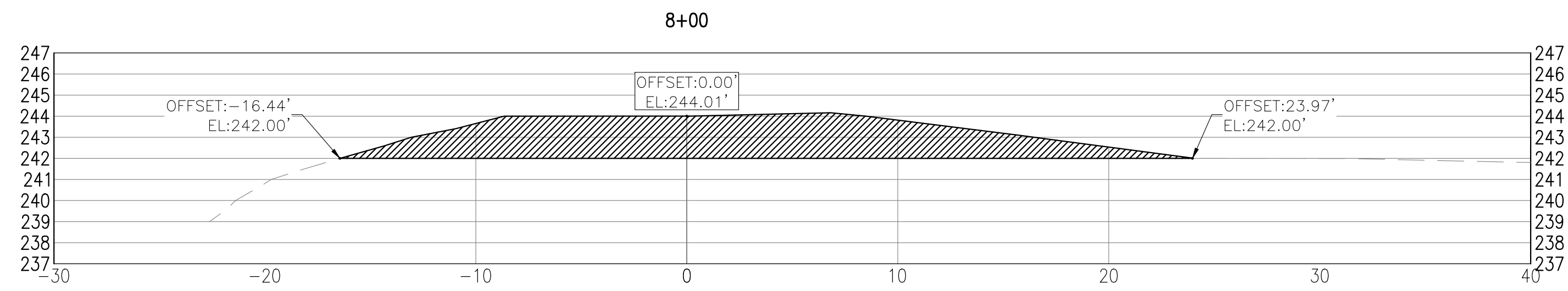
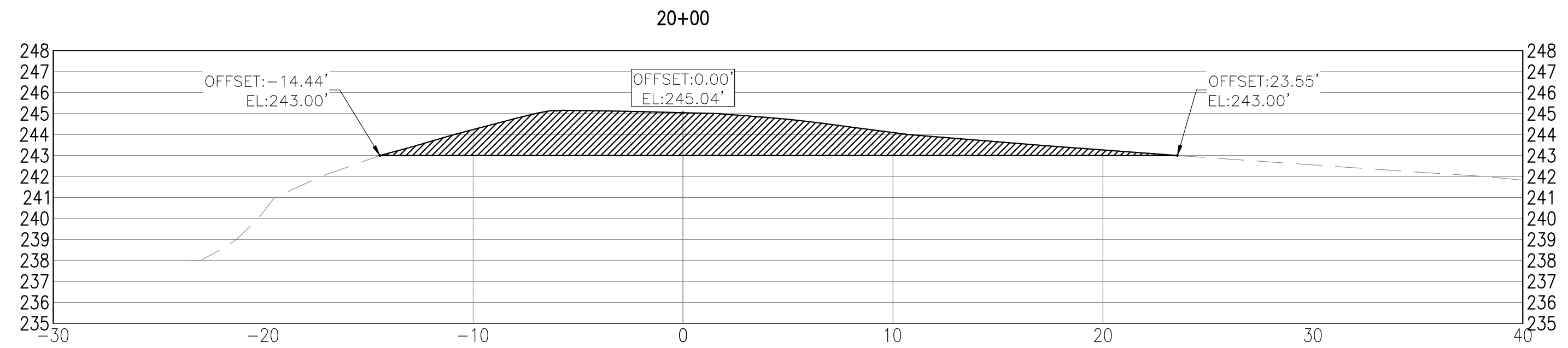
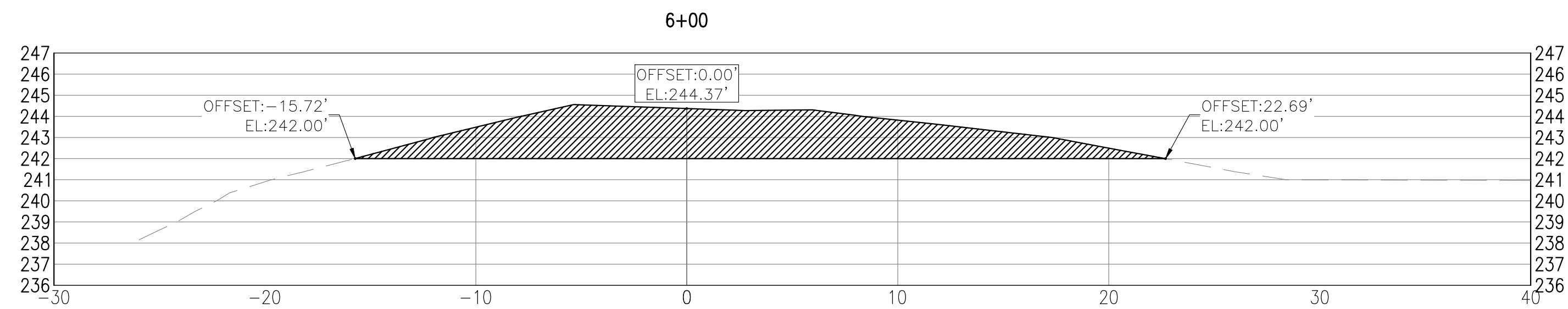
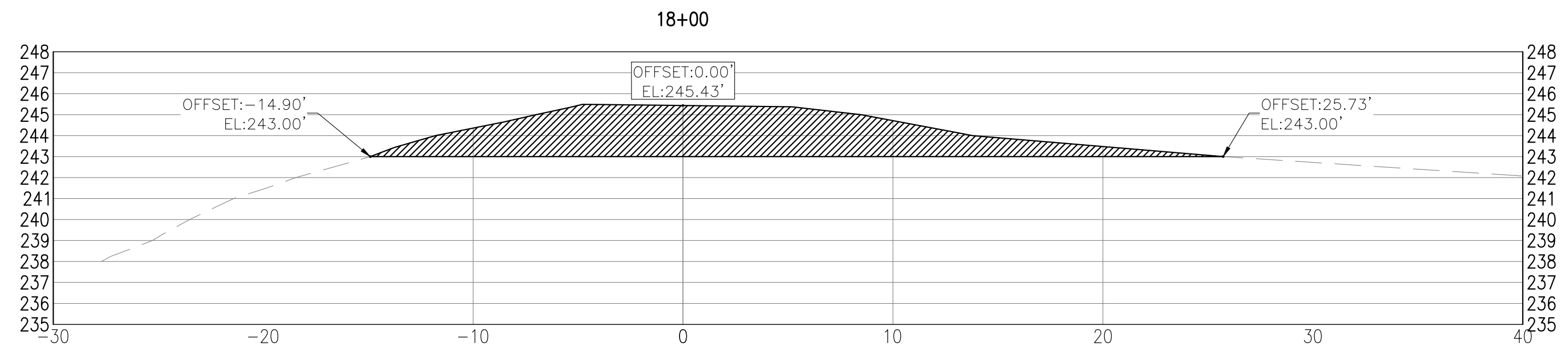
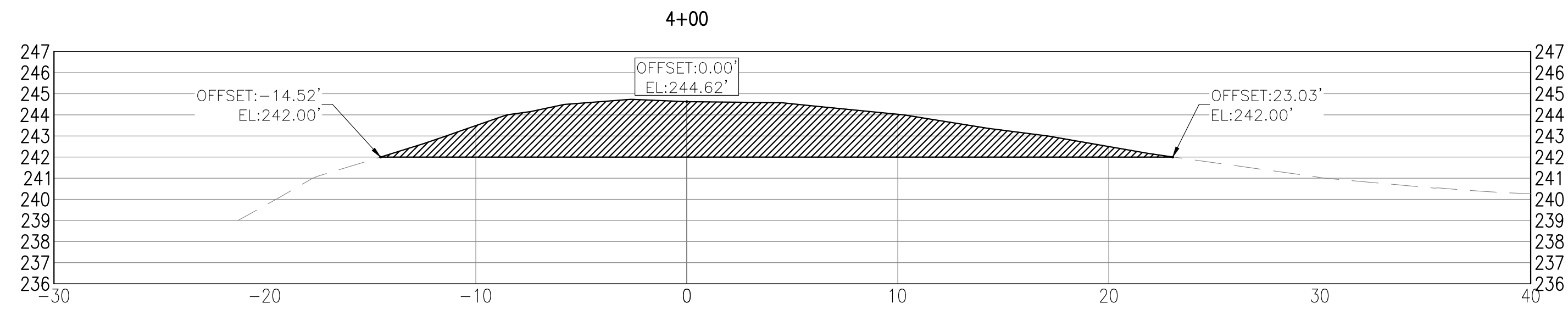
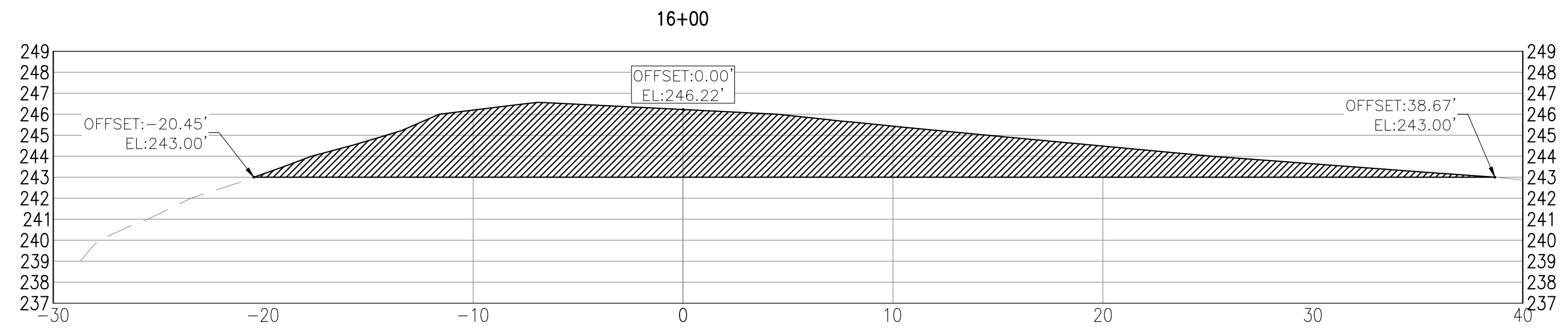
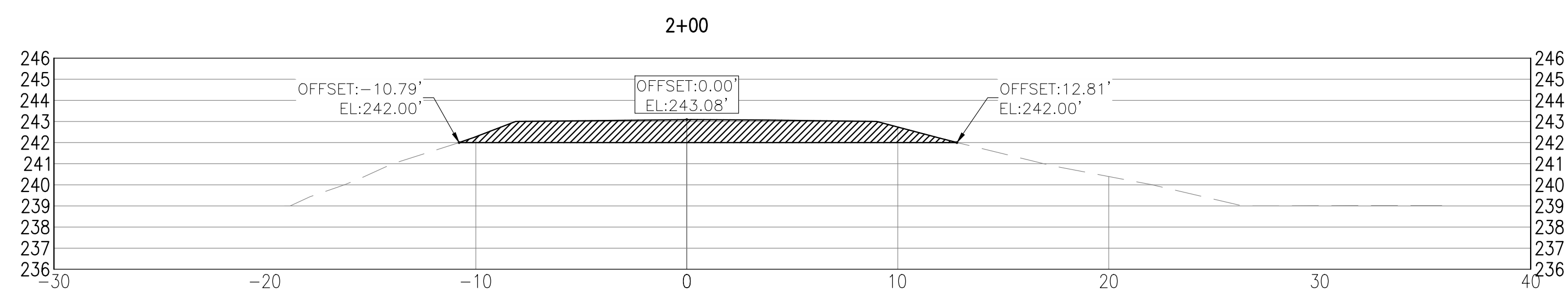
LAKE SOMERVILLE TRAILWAY
TRAIL BRIDGE REPLACEMENTS
PROJECT NO. 1211815

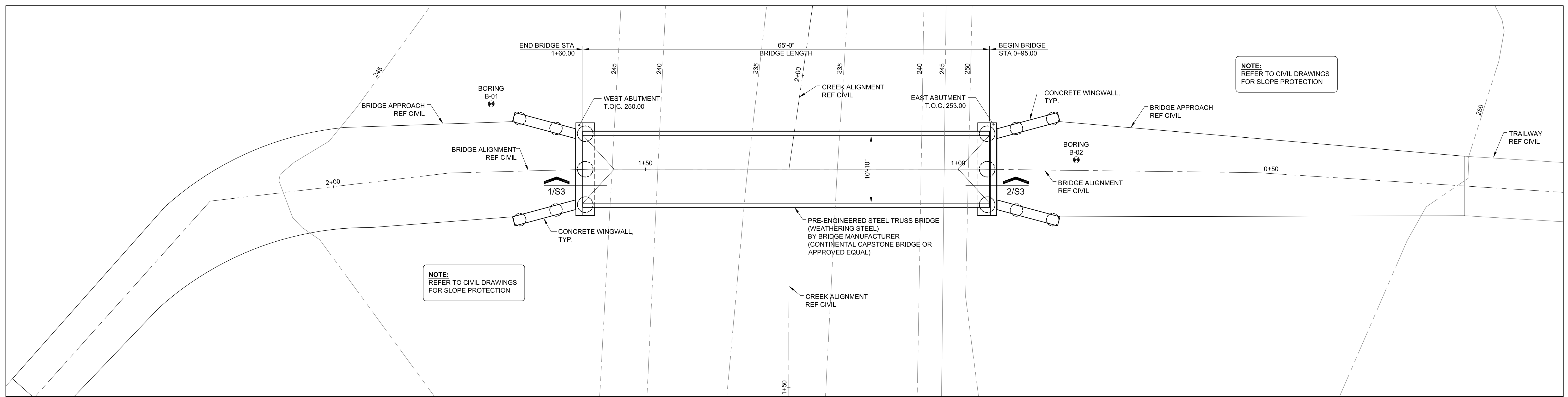
DESIGNED BY: RJR
DRAWN BY: GG
REVIEWED BY: SMH
REVISION:
0- FB SUBMITTAL
(02/06/2026)

SHEET TITLE
BORROW SITE
PROPOSED
CROSS
SECTIONS

SHEET NUMBER

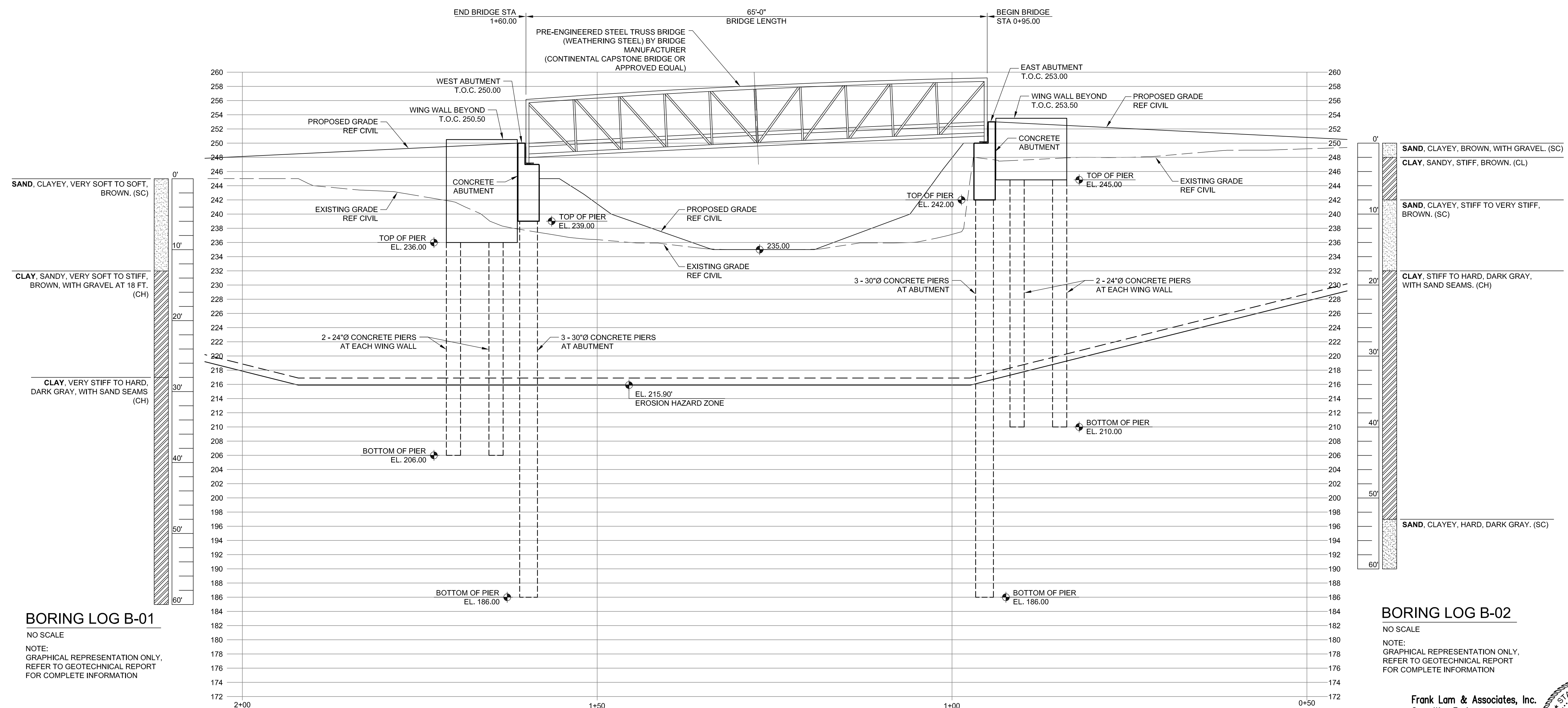
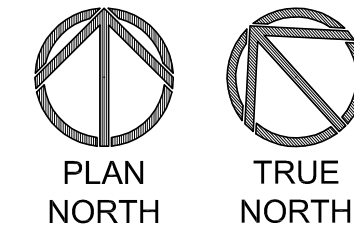
C-31





1 STRUCTURAL BRIDGE PLAN
NAILS CREEK

SCALE: 1/8"=1'-0"



2 STRUCTURAL BRIDGE PROFILE
NAILS CREEK

SCALE: 1/8"=1'-0"

BORING LOG B-01

NO SCALE

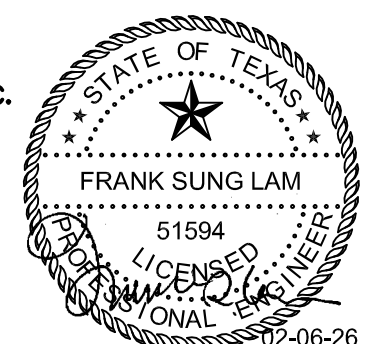
NOTE:
GRAPHICAL REPRESENTATION ONLY.
REFER TO GEOTECHNICAL REPORT
FOR COMPLETE INFORMATION

BORING LOG B-02

NO SCALE

NOTE:
GRAPHICAL REPRESENTATION ONLY.
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Expiration Date 12-31-2026
FLA PROJECT NUMBER: 2305

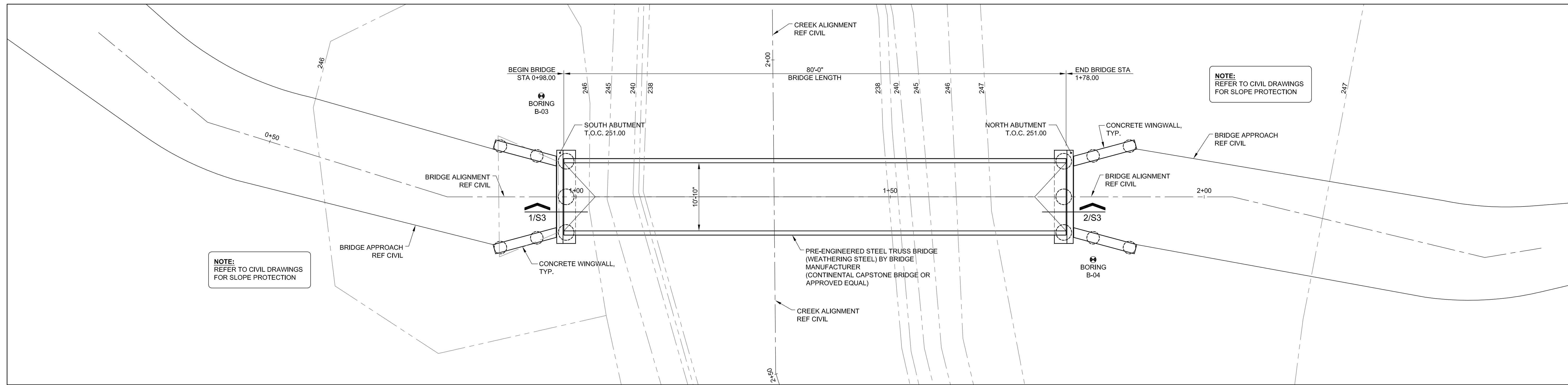


DESIGNED BY: FL
DRAWN BY: BG
REVIEWED BY: FL
REVISION:
0- FB SUBMITTAL
(02/06/26)

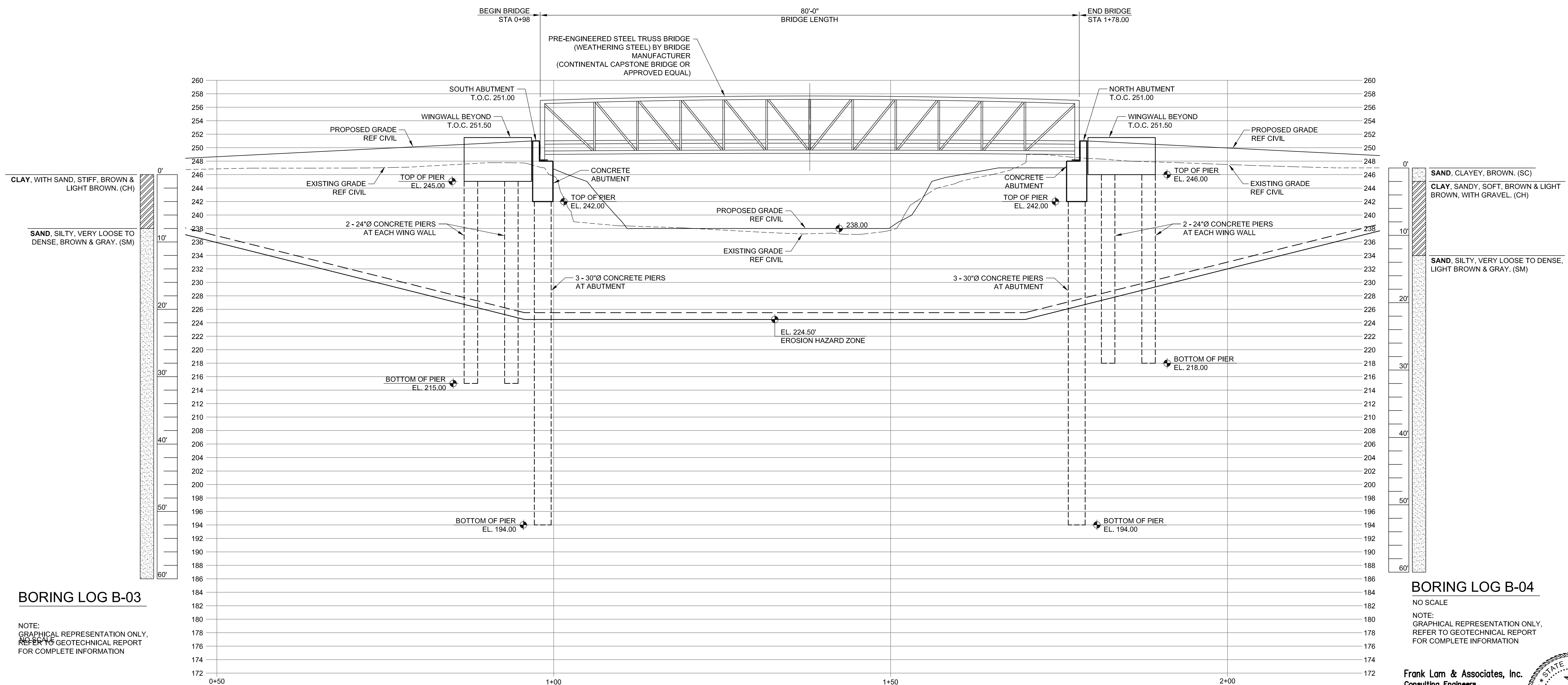
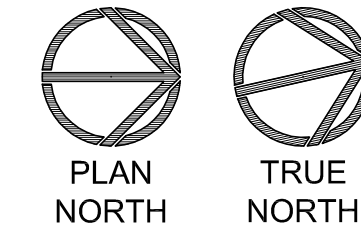
SHEET TITLE
STRUCTURAL
NAILS CREEK
PLAN & PROFILE

SHEET NUMBER

S1



1 STRUCTURAL BRIDGE PLAN
YEGUA CREEK
SCALE: 1/8"=1'-0"



BORING LOG B-03

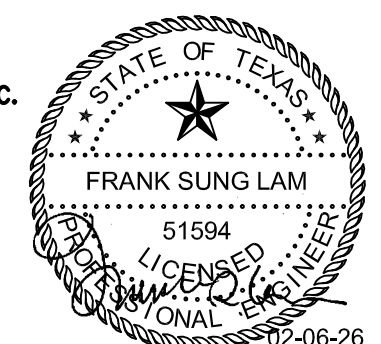
NOTE:
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REFER TO GEOTECHNICAL REPORT
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BORING LOG B-04

NO SCALE
NOTE:
GRAPHICAL REPRESENTATION ONLY.
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FOR COMPLETE INFORMATION

2 STRUCTURAL BRIDGE PROFILE
YEGUA CREEK
SCALE: 1/8"=1'-0"

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LAKE SOMERVILLE TRAILWAY
TRAIL BRIDGE REPLACEMENTS
PROJECT NO. 1211815

DESIGNED BY: FL
DRAWN BY: BG
REVIEWED BY: FL
REVISION:
0- FB SUBMITTAL
(02/06/26)

SHEET TITLE
STRUCTURAL
YEGUA CREEK
PLAN & PROFILE

SHEET NUMBER
S2

GENERAL NOTES FOR BRIDGE STRUCTURE

- GENERAL NOTES FOR BRIDGE STRUCTURE
- A. DESIGN STANDARDS:
1. US FOREST SERVICE EQUESTRIAN DESIGN GUIDEBOOK
 2. TEXAS PARKS & WILDLIFE DEPARTMENT, DESIGN STANDARDS FOR ROADS & PARKING, REV. SEP. 2008
 3. AASHTO, LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, 2ND EDITION, 2015.
 4. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020.
 5. AISC, STEEL CONSTRUCTION MANUAL, 15TH EDITION, 2017.
 6. AMERICAN WELDING SOCIETY (AWS), STRUCTURAL WELDING CODE, D1.5, 2015.
 7. ASCE/SEI 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2010.
- B. THE BRIDGE SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN COMPLIANCE WITH ADA AND TAS REQUIREMENTS.
- C. BRIDGE GEOMETRY AND CHARACTERISTICS:
1. BRIDGE TYPE: PREFABRICATED AND PRE-ENGINEERED STEEL BRIDGE. IT WILL BE A SHARED USE BRIDGE, SHARED BY PEDESTRIAN, EQUESTRIAN, MOUNTAIN BIKE, OCCASIONAL TPWD VEHICLES AND EQUIPMENT, AMBULANCES, AND FIRE TRUCKS. BRIDGE MANUFACTURER WILL BE REQUIRED TO SUBMIT FOR REVIEW AND APPROVAL DETAILED SHOP DRAWINGS AND CALCULATIONS (SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN TEXAS) FOR EACH BRIDGE DESIGNED IN ACCORDANCE WITH THE DESIGN CRITERIA AND LOADING REQUIREMENTS AND THE CONTRACT DOCUMENTS.
 2. BRIDGE STYLE: BASED ON CONTECH CONTINENTAL BRIDGES' CAPSTONE PEDESTRIAN STEEL TRUSS BRIDGES.
 3. BRIDGE DECK:
 - a) SURFACE: CONCRETE WITH ROUGH SURFACE
 - b) SLOPES:
 - i. CROSS SLOPE: 2% MAX FOR DRAINAGE AND ADA/TAS COMPLIANCE.
 - ii. LONGITUDINAL SLOPE: 4.6% MAX FOR EQUESTRIAN TRAFFIC.
 - c) STAINING: CONCRETE DECK WILL BE STAINED TO BE SIMILAR IN COLOR TO THE GRAVEL APPROACHES IN ACCORDANCE WITH US FOREST SERVICE EQUESTRIAN DESIGN GUIDEBOOK.
 4. BRIDGE FINISH: WEATHERED STEEL - THE CORROSION RESISTANT HIGH-STRENGTH LOW-ALLOY STEEL WILL FORM A PROTECTIVE WEATHERING PATINA OVER TIME.
 5. BRIDGE LOAD RATING: AASHTO HS20 TRUCK LOADS. TPWD INDICATED TEN (10) TON MINIMUM TO ACCOMMODATE TPWD MAINTENANCE TRUCKS/EQUIPMENT, AMBULANCES, AND FIRE TRUCKS.
 6. BRIDGE CLEARANCE: BOTTOM BRIDGE CHORD AT OR ABOVE TOP OF CREEK BANK TO MINIMIZE DEBRIS GETTING CAUGHT ON BRIDGE DURING FLOOD EVENTS AND TO ALLOW SAFE PASSAGE OF SMALL WATER CRAFT DURING NORMAL CREEK FLOW. ASSUME 2 FT WATER DEPTH FOR NORMAL CREEK FLOW PER TPWD.
 7. BRIDGE RAILING:
 - a) SAFETY RAIL: 54" MIN. FOR EQUESTRIAN TRAFFIC
 - b) HORIZONTAL RAIL SPACING FOR CHILD SAFETY:
 - i. BOTTOM 27 INCHES: < 6 INCHES
 - ii. ABOVE 27 INCHES: < 8 INCHES
 - c) RUB RAIL: WOODEN SMOOTH AND FLAT RUBBING RAIL TO PREVENT SADDLES, BICYCLE HANDLEBARS, ETC. FROM SNAGGING BRIDGE TRUSSES, POSTS, ETC. STAIN RUB RAIL PER SHEET C-21.
 8. BRIDGE VIBRATION: THE BRIDGE WILL NEED TO BE DESIGNED TO CONTROL VIBRATIONS TO AVOID "SPOOKING" EQUESTRIAN TRAFFIC.

STRUCTURAL NOTES

THESE GENERAL NOTES SHALL APPLY UNLESS OTHERWISE SPECIFICALLY NOTED ON PLANS AND DETAILS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, NEW AND/OR EXISTING, AND SHALL COORDINATE ALL STRUCTURAL PLANS AND DETAILS WITH CIVIL DRAWINGS AND BRIDGE MANUFACTURER SHOP DRAWINGS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. DESIGN, CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE, TXDOT STANDARD DETAILS AND SPECIFICATIONS, AASHTO 'GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES', US FOREST SERVICE EQUESTRIAN DESIGN GUIDEBOOK, TEXAS PARK AND WILDLIFE DEPARTMENT DESIGN STANDARDS FOR ROADS AND PARKING. IN CASE OF DISCREPANCIES AMONG DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

CONTRACTOR SHALL CHECK AND VERIFY ALL SHOP DRAWINGS BEFORE SUBMITTING TO THE CONSULTANTS.

ALL CONSTRUCTABILITY ISSUES AND SITE RESTRICTIONS SHALL BE CAREFULLY EXAMINED BY CONTRACTOR AND RESOLVED PRIOR TO BIDDING.

DESIGN CRITERIA

1. LIVE LOADS:

BRIDGE STRUCTURE	HS 20
VERTICAL SURCHARGE LOAD ON RETAINING WALL	250 PSF
PEDESTRIANS	100 PSF
2. WIND LOAD: 115 MPH BASIC WIND SPEED, EXPOSURE C, IMPORTANCE FACTOR 1.
3. MINIMUM FLOOD VELOCITY 5 FT/SEC
4. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION PREPARED BY: ALHPA TESTING, DATED: AUGUST 24, 2024.

CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE TXDOT STANDARD SPECIFICATIONS.
2. SOIL SULFATES WERE FOUND PER GEOTECHNICAL REPORT - FOLLOW GUIDELINES IN ACI 318-19 FOR SULFATE RESISTANT CONCRETE MIX DESIGN.
3. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED, MUST FOLLOW THE A.C.I. "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE", A.C.I. #315, LATEST EDITION.
4. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS:

ABUTMENTS, PIER CAPS, WALLS,	CLASS S, 4,000 PSI, W/C 0.45
PIERS	CLASS C, 3,600 PSI, W/C 0.45
CONCRETE DECK (CONCRETE OVERLAY) ...	CLASS CO, 4,600 PSI, W/C 0.40
OTHER	1-1/2 IN.
7. AT CORNERS AND "T" INTERSECTIONS OF ALL BEAMS, EXTEND 4 CORNER BARS EQUAL TO THE SCHEDULED STEEL IN THE ADJACENT BEAMS 2'-0" EACH WAY, 2 BARS TOP AND 2 BARS BOTTOM. MAKE ALL HORIZONTAL WALL STEEL CONTINUOUS AROUND CORNERS.
8. ALL ACCESSORIES SHALL BE IN ACCORDANCE WITH THE A.C.I. "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE", A.C.I. #315, LATEST EDITION.
9. BARS SCHEDULED AND DETAILED "CONT" SHALL BE LAPPED 24 BAR DIAMETERS UNLESS OTHERWISE NOTED ACCORDING TO BEAM SCHEDULE AND BAR PLACING DIAGRAM. THE SPLICES SHALL OCCUR AT MIDSPAN FOR TOP BARS AND OVER THE SUPPORTS FOR BOTTOM BARS.
10. SHOP DRAWINGS SHALL BE PREPARED FOR ALL REINFORCING STEEL AND SUBMITTED FOR REVIEW BY ENGINEER. **ENGINEERING DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS.**
11. WELDING OF REINFORCING BARS SHALL NOT BE PERMITTED, UNLESS APPROVED BY ENGINEER.
12. DURING PLACEMENT OF CONCRETE, USE TREMIE OR OTHER MEANS TO LIMIT FREE-FALL OF CONCRETE TO 5'-0".

PIER (DRILLED SHAFT) NOTES

8. PIERS ARE SIZED FOR ALLOWABLE BEARING AND SKIN FRICTION AS PER GEOTECHNICAL REPORT.
9. EACH PIER SHAFT SHALL BE INSPECTED BY QUALIFIED GEOTECHNICAL PERSONNEL TO INSURE PROPER BEARING AND PENETRATION.
10. ALL PIERS SHALL BE CENTERED ON BEAMS UNLESS OTHERWISE SHOWN.
11. DRILL PIERS TO THE EXACT SIZE SHOWN. SHAFTS SHALL BE BORED PLUMB WITH A TOLERANCE OF TWO INCHES. INSTALL OFFSET STAKES ON OPPOSITE SIDES OF THE PIER AND USE TO MAINTAIN THE PIER CENTERS AND TO CHECK THE PIER PLUMBNESS. FOOTING BOTTOMS SHALL BE THOROUGHLY CLEAN AND FREE OF WATER WHEN CONCRETE IS PLACED. IF MACHINE CLEANING IS NOT SATISFACTORY TO ARCHITECT/ENGINEER, HAND CLEANING WILL BE REQUIRED.
12. FOR ESTIMATING PURPOSES, CARRY ALL FOOTINGS TO THE DEPTHS INDICATED ON THE DRAWINGS. WHEN DIRECTED BY THE ARCHITECT/ENGINEER, CARRY FOOTINGS TO GREATER OR LESSER DEPTHS TO PROVIDE SUITABLE BEARING. ADJUSTMENTS WILL BE MADE IN THE CONTRACT PRICE FOR MORE OR LESS DEPTH IN ACCORD WITH THE UNIT PRICES QUOTED IN THE CONTRACTOR'S BID.
13. PROVIDE SUITABLE ACCESS AND LIGHTING FOR INSPECTION OF THE EXCAVATIONS FOR CLEANLINESS AND FOR CORRECTNESS OF DIMENSIONS AND ALIGNMENT.
14. PLACEMENT OF CONCRETE SHALL BE ACCOMPLISHED AS SOON AS POSSIBLE AFTER DRILLING AND INSPECTION. NO PIER EXCAVATION SHALL BE LEFT OPEN OVERNIGHT WITHOUT CONCRETING.
15. TEMPORARY CASINGS MAY BE REQUIRED TO PROTECT WORKMEN HAND-CLEANING THE HOLES OR TO PREVENT CAVING OF THE SOIL AND THE SEEPAGE OF WATER INTO THE DRILLED FOOTINGS. CASINGS SHALL BE METAL OF AMPLE STRENGTH TO WITHSTAND HANDLING STRESSES. CONCRETE AND EARTH PRESSURES AND SHALL BE WATERTIGHT. CONTRACTORS SHALL FURNISH UNIT PRICES FOR CASING OF DIFFERENT SIZE PIER SHAFTS.

FOUNDATION NOTES FOR RETAINING WALLS

1. AFTER EXCAVATING THE EXISTING SOIL TO THE PROPER GRADE, THE EXPOSED SUBGRADE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH TXDOT TEST METHOD TEX-113-E. SOIL MOISTURE SHALL BE WITHIN 3% OF OPTIMUM.
2. IF REQUIRED, BACK FILL AND SELECT FILL UNDER FOUNDATION SHALL BE FLEXIBLE BASE MATERIAL CONFORMING TO ITEM NO. 247, "FLEXIBLE BASE" AS PER TXDOT STANDARD SPECIFICATIONS.
3. BACK FILL AND SELECT FILL SHALL BE COMPACTED IN THE FIELD IN 8" LIFTS TO MINIMUM OF 95 PERCENT OF MAXIMUM DENSITY AS DETERMINED BY TXDOT TEST METHOD TEX-114-E. SOIL MOISTURE SHALL BE WITHIN 3% OF OPTIMUM.

STRUCTURAL STEEL

1. ALL HOT ROLLED STRUCTURAL STEEL W-SHAPES SHALL CONFORM TO ASTM SPECIFICATION A992, GRADE 50.
2. ALL STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM SPECIFICATION A-500, GRADE B.
3. ALL STRUCTURAL STEEL M-SHAPES, S-SHAPES, CHANNELS, ANGLES, PLATES AND BARS SHALL CONFORM TO ASTM SPECIFICATION A36 UNLESS OTHERWISE SHOWN OR NOTED OTHERWISE.
4. ALL ROUND, SQUARE AND RECTANGULAR HOLLOW STRUCTURAL SHAPES (HSS) SHALL CONFORM TO ASTM A500, GRADE B.
5. ALL STRUCTURAL STEEL PIPE SHALL CONFORM TO ASTM SPECIFICATION A53, GRADE B.
6. ALL ANCHOR RODS SHALL CONFORM TO ASTM SPECIFICATION F1554, GRADE 55.
7. ALL STRUCTURAL STEEL SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
8. ALL STRUCTURAL STEEL BOLTS SHALL CONFORM TO ASTM A325, TYPE I, HEAVY HEX UNLESS OTHERWISE SHOWN OR NOTED. FURNISH HEAVY HEX CARBON-STEEL NUTS PER ASTM A563 AND HARDENED CARBON-STEEL WASHERS PER ASTM F436 AT ALL BOLTED CONNECTIONS, INCLUDING ANCHOR RODS.
9. ALL SHOP AND FIELD WELDS SHALL BE MADE BY WELDERS WHO HAVE BEEN QUALIFIED AND CERTIFIED TO MAKE THE REQUIRED WELDS WITHIN THE PREVIOUS SIX MONTHS IN ACCORDANCE WITH THE LATEST AMERICAN WELDING SOCIETY SPECIFICATIONS A.W.S. D1.1. WELD FILLER METAL SHALL BE E70XX ELECTRODES, UNLESS OTHERWISE SPECIFIED. MINIMUM WELD SIZE SHALL BE 1/4 INCH FILLET WELD, UNLESS OTHERWISE NOTED.
10. BRIDGE CALCULATIONS AND SHOP DRAWINGS SHALL BE PREPARED FOR ALL STRUCTURAL STEEL AND SUBMITTED FOR REVIEW BY ENGINEER. CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY PROFESSIONAL ENGINEER LICENSED IN TEXAS. **ENGINEERING DRAWINGS SHALL NOT BE REPRODUCED AND USED AS SHOP DRAWINGS.**
11. BRIDGE STRUCTURE SHALL BE WEATHERING STEEL AS PER MANUFACTURER'S STANDARD.
12. UNLESS NOTED OTHERWISE, ALL CONNECTORS SHALL BE HOT DIPPED GALVANIZED AS PER ASTM A 153. REPAIR ALL DAMAGED GALVANIZING WITH ZINC COMPOUND AS PER ASTM A 780.



LAKE SOMERVILLE TRAILWAY
TRAIL BRIDGE REPLACEMENTS

PROJECT NO. 1211815

DESIGNED BY: FL
DRAWN BY: BG
REVIEWED BY: FL
REVISION:
0- FB SUBMITTAL
(02/06/26)

SHEET TITLE
STRUCTURAL NOTES

SHEET NUMBER
S5

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