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NOTE: ACCORDING TO DOCUMENTS OBTAINED FROM FEMA, THIS PROJECT IS A RESTORATION OF PRE-DISASTER CONDITIONS. NO UPGRADES ARE INCLUDED IN THE SITE DESIGN.

Pittsylvania County Ringgold Rail Trail Pedestrian Bridge

Pittsylvania County, Virginia

February 11, 2022
Revised October 19, 2022



Vicinity Map

SCALE: N.T.S.

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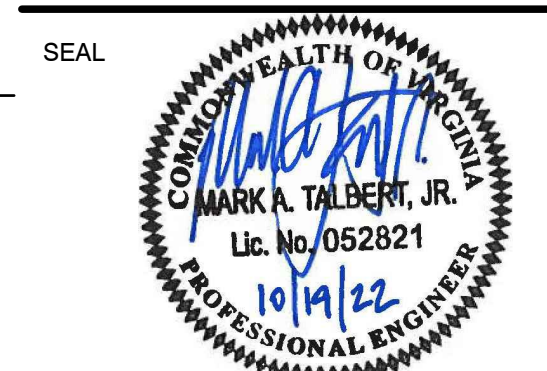
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SET NUMBER

RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE
SUPERSTRUCTURE REPLACEMENT
AND SUBSTRUCTURE MODIFICATION
PITTSYLVANIA COUNTY
RINGGOLD, VIRGINIA 24586



KEY PLAN

SCALE

No.	DATE	BY	Description
4	10/19/2022	JSS	DEQ Comments
3	5/26/2022	JSS	DEQ Comments
2	5/11/2022	JSS	DEQ Comments
1	4/11/2022	JSS	County Comments

REVISIONS

DRAWN BY: JSS
APPROVED BY: MAT
CHECKED BY:
DATE: 02/11/2021

TITLE

COVER SHEET

PROJECT NO. 50106038

T100

SHEET NO.

General Notes

1. FIELD VERIFY VERTICAL AND HORIZONTAL LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. NOTIFY THE UTILITY COMPANIES 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY. CONTACT MISS UTILITY (811) 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.
2. NOTIFY THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO ANY CONSTRUCTION ON STREET RIGHT-OF-WAYS (PHONE NO. 434-432-7219).
3. WHEN WORKING ADJACENT TO EXISTING STRUCTURES, POLES, ETC., CONTRACTOR SHALL USE WHATEVER METHODS THAT ARE NECESSARY TO PROTECT STRUCTURES FROM DAMAGE. REPLACEMENT OF DAMAGED STRUCTURES SHALL BE AT THE CONTRACTOR'S EXPENSE.
4. EROSION AND SEDIMENT CONTROL NOTES:
 - A. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL CONFORM TO THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE VDOT ROAD AND BRIDGE STANDARDS MANUAL.
 - B. CONTRACTOR SHALL INSTALL SILT BARRIERS, INLET PROTECTION, CONSTRUCTION ENTRANCES AT POINTS OF INGRESS AND EGRESS TO PUBLIC RIGHT-OF-WAY, STABILIZE DISTURBED AREAS, AND PROVIDE OTHER MEASURES REQUIRED AS SHOWN ON THE DRAWINGS AND SPECIFIED.
 - C. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT TRACKING ON EXISTING PAVEMENTS.
 - D. CONTRACTOR SHALL INSTALL GRAVEL CONSTRUCTION ROAD STABILIZATION OF ADEQUATE AREA TO ACCOMMODATE CONSTRUCTION VEHICLE PARKING, MATERIAL STORAGE, ETC. AT A LOCATION CONVENIENT TO THE INDIVIDUAL CONSTRUCTION AREAS AND CONSISTENT WITH THE CONSTRUCTION SEQUENCES.
 - E. THE LOCATIONS OF SEDIMENT AND EROSION CONTROL MEASURES SHOWN ON PLANS ARE APPROXIMATE. THE EXACT LOCATION MUST BE DETERMINED IN THE FIELD.
 - F. A ROCK CHECK DAM SHALL BE INSTALLED BELOW THE DISTURBED AREA WITHIN DITCH LINES AND/OR WHERE DITCH LINES OUTLET TO UNDISTURBED AREAS.
 - G. SILT FENCE SHALL BE PROVIDED BELOW DISTURBED AREAS FOR ALL LOCATIONS WHERE DISTURBED AREA DRAINS TOWARD PROPERTY OWNER BY OTHERS AND/OR TOWARD STREAMS.
5. ALL DISTURBED AREAS ARE TO BE MULCHED AND SEEDED PER THE SPECIFICATIONS WITHIN 7 DAYS OF ACHIEVING FINAL GRADES.
6. IF CONSTRUCTION SCHEDULE DOES NOT ALLOW PERMANENT SEEDING IN THE DATES SHOWN IN THE SPECIFICATIONS OR IF CONSTRUCTION IS TEMPORARILY HALTED FOR A PERIOD OF 14 DAYS OR LONGER DUE TO WEATHER, WINTER SHUT DOWN, ETC., CONTRACTOR SHALL INSTALL TEMPORARY SEEDING WITHIN 7 DAYS. WHEN PERMANENT SEEDING DATES CAN BE ACCOMMODATED, THE CONTRACTOR SHALL RESEED WITH PERMANENT SEEDING MIXTURES. ALL SEEDED AREAS, WHICH DO NOT PRODUCE A THICK, HEALTHY, DESIRABLE VEGETATIVE COVER, ARE TO BE RESEDED AND MULCHED AS NECESSARY UNTIL ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. PRIOR TO RESEEDING WITH PERMANENT VEGETATION, ALL ESTABLISHED TEMPORARY VEGETATION IS TO BE REMOVED.
7. ANY CONSTRUCTION WITHIN THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S RIGHTS-OF-WAY ARE TO BE IN ACCORDANCE WITH THE STATE'S STANDARDS AND SPECIFICATIONS REGARDING MATERIALS, INSTALLATION, AND TESTING, UNLESS NOTED OTHERWISE IN THE CONTRACT DRAWINGS AND TECHNICAL SPECIFICATIONS, EXCEPT THE METHOD OF PAYMENT WHICH WILL BE AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS AND CONTRACT DOCUMENTS. ANY CONSTRUCTION WITHIN THE VDOT RIGHTS-OF-WAYS AND AT ENTRANCE TO VDOT RIGHT-OF-WAYS ARE TO BE SIGNED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL STANDARDS AND GUIDELINE.
8. TOPSOIL IS TO BE STOCKPILED AND RE-SPREAD OVER DISTURBED AREAS TO BE SEEDED PER THE TECHNICAL SPECIFICATIONS. STOCKPILES SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AND SEDIMENT AND EROSION CONTROLS DEVICES/MEASURES SHALL BE INSTALLED AS NECESSARY. THESE STOCKPILES ARE TO BE LOCATED IN AREAS THAT MINIMIZE DISTURBANCE TO CONSTRUCTION OPERATIONS. ANY OFF-SITE LAND DISTURBING ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST HAVE AN APPROVED EROSION AND SEDIMENT CONTROL PLAN. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING DOCUMENTATION OF THE APPROVED EROSION SEDIMENT CONTROL PLAN FOR EACH OF THESE SITES.
9. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR.
10. ALL DISTURBED PAVEMENT AND GRAVEL DRIVES ARE TO BE RESTORED TO ORIGINAL CONDITION OR BETTER.
11. WHEN CONSTRUCTION DISTURBS EXISTING DITCH LINES, THE RESTORED DITCH LINES SHALL BE STABILIZED WITH EXCELSIOR MAT OR SOD FOR EROSION CONTROL.
12. DRIVEWAYS, FENCES, MAILBOXES, ROAD SIGNS, STEPS, SIDEWALKS, ETC., THAT INTERFERE WITH CONSTRUCTION ARE TO BE RESTORED TO ORIGINAL CONDITION.
13. PAVED DRIVEWAYS, PARKING LOTS, AND PRIVATE ROADS SHALL BE OPEN-CUT UNLESS SHOWN OTHERWISE.
14. CONTRACTOR SHALL NOT DISTURB ANY TREES, SHRUBS, OR LANDSCAPING OUTSIDE THE CONSTRUCTION LIMITS. CONTRACTOR SHALL USE EXTREME CAUTION TO PREVENT DISTURBANCE TO THE TREES, SHRUBS, ETC., WHICH ARE IN THE CONSTRUCTION LIMITS AND NOTED TO REMAIN.
15. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO VERIFY LOCATION OF AND PREVENT DISTURBANCE OF ANY EXISTING UTILITIES IN WORK AREA, AND PROVIDE IMMEDIATE TEMPORARY SERVICE TO ANY DAMAGED UTILITIES AT THE EXPENSE OF THE CONTRACTOR. ANY EXISTING UTILITIES NOT LOCATED PRIOR TO BEGINNING CONSTRUCTION THAT ARE DAMAGED DURING CONSTRUCTION OR WHICH CONFLICT WITH PROPOSED CONSTRUCTION SHALL BE REPAIRED OR RELOCATED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
16. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN, POSTAL & VEHICULAR ACCESS TO & FROM ALL DWELLINGS & BUSINESSES DURING CONSTRUCTION.
17. TOPOGRAPHIC SURVEY FOR THIS PROJECT IS BASED ON A CURRENT FIELD SURVEY DATED DECEMBER 2020.
18. HORIZONTAL CONTROL: VIRGINIA STATE PLANE (SOUTH ZONE) (NAD83, NSRS 2011, US FT). HORIZONTAL CONTROL ESTABLISHED BY GPS OBSERVATIONS AND COMPUTED USING THE KEYNETGPS VIRTUAL REFERENCE STATION NETWORK(VRS).

VA E&S Minimum Standards

1. **SOIL STABILIZATION:** PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
2. **SOIL STOCKPILE STABILIZATION:** DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
3. **PERMANENT STABILIZATION:** A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
4. **SEDIMENT BASINS AND TRAPS:** SEDIMENT BASINS, SEDIMENT TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
5. **STABILIZATION OF EARTHEN STRUCTURES:** STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
6. **SEDIMENT TRAPS AND SEDIMENT BASINS:** SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
 - a. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.
 - b. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WITHIN THE SEDIMENT BASIN IS UTILIZED.
7. **CUT AND FILL SLOPES DESIGN & CONSTRUCTION:** CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.
8. **CONCENTRATED RUNOFF DOWN SLOPES:** CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
9. **SLOPE MAINTENANCE:** WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
10. **STORM SEWER INLET PROTECTION:** ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
11. **STORMWATER CONVEYANCE PROTECTION:** BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
12. **WORK IN LIVE WATERCOURSE:** WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
13. **CROSSING LIVE WATERCOURSE:** WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
14. **REGULATION OF WATERCOURSE CROSSING:** ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
15. **STABILIZATION OF WATERCOURSE:** THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
16. **UNDERGROUND UTILITY LINE INSTALLATION:** UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
 - a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
 - b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
 - c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
 - d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
 - e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
 - f. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.
17. **VEHICULAR SEDIMENT TRACKING:** WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
18. **REMOVAL OF TEMPORARY MEASURES:** ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

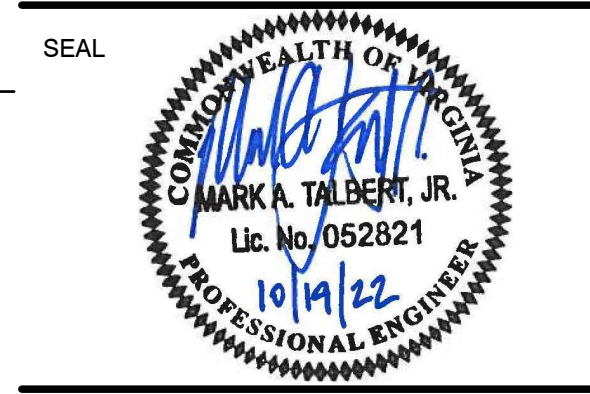
19. **STORMWATER MANAGEMENT:** PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS:
 - a. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.
 - b. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
 - i. THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
 - ii. (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
 - (B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
 - (C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.
 - c. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
 - i. IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; OR
 - ii. IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;
 - iii. DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR
 - iv. PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.
 - d. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.
 - e. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.
 - f. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.
 - g. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.
 - h. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.
 - i. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.
 - j. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.
 - k. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.
 - l. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO
 - i. DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS;
 - ii. DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND
 - iii. REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15.54 OR 62.1-44.15.65 OF THE ACT.
 - m. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15.62 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15.24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS.
 - n. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.

NOTE: ACCORDING TO DOCUMENTS OBTAINED FROM FEMA, THIS PROJECT IS A RESTORATION OF PRE-DISASTER CONDITIONS. NO UPGRADES ARE INCLUDED IN THE SITE DESIGN.



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**RINGGOLD RAIL TRAIL
 PEDESTRIAN BRIDGE
 SUPERSTRUCTURE REPLACEMENT
 AND SUBSTRUCTURE MODIFICATION**
 PITTSYLVANIA COUNTY
 RINGGOLD, VIRGINIA 24586



KEY PLAN

SCALE

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REVISIONS

DRAWN BY: JSS
 APPROVED BY: MAT
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GENERAL NOTES

PROJECT NO. 50106038

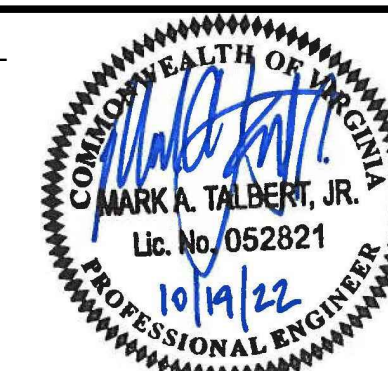
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SHEET NO.

**RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE
SUPERSTRUCTURE REPLACEMENT
AND SUBSTRUCTURE MODIFICATION**

PITTSYLVANIA COUNTY
RINGGOLD, VIRGINIA 24586

SEAL



KEY PLAN

SCALE



No.	DATE	BY	Description
4	10/19/2022	JSS	DEQ Comments
3	5/26/2022	JSS	DEQ Comments
2	5/11/2022	JSS	DEQ Comments
1	4/11/2022	JSS	County Comments

REVISIONS

DRAWN BY: JSS

APPROVED BY: MAT

CHECKED BY:

DATE: 02/11/2021

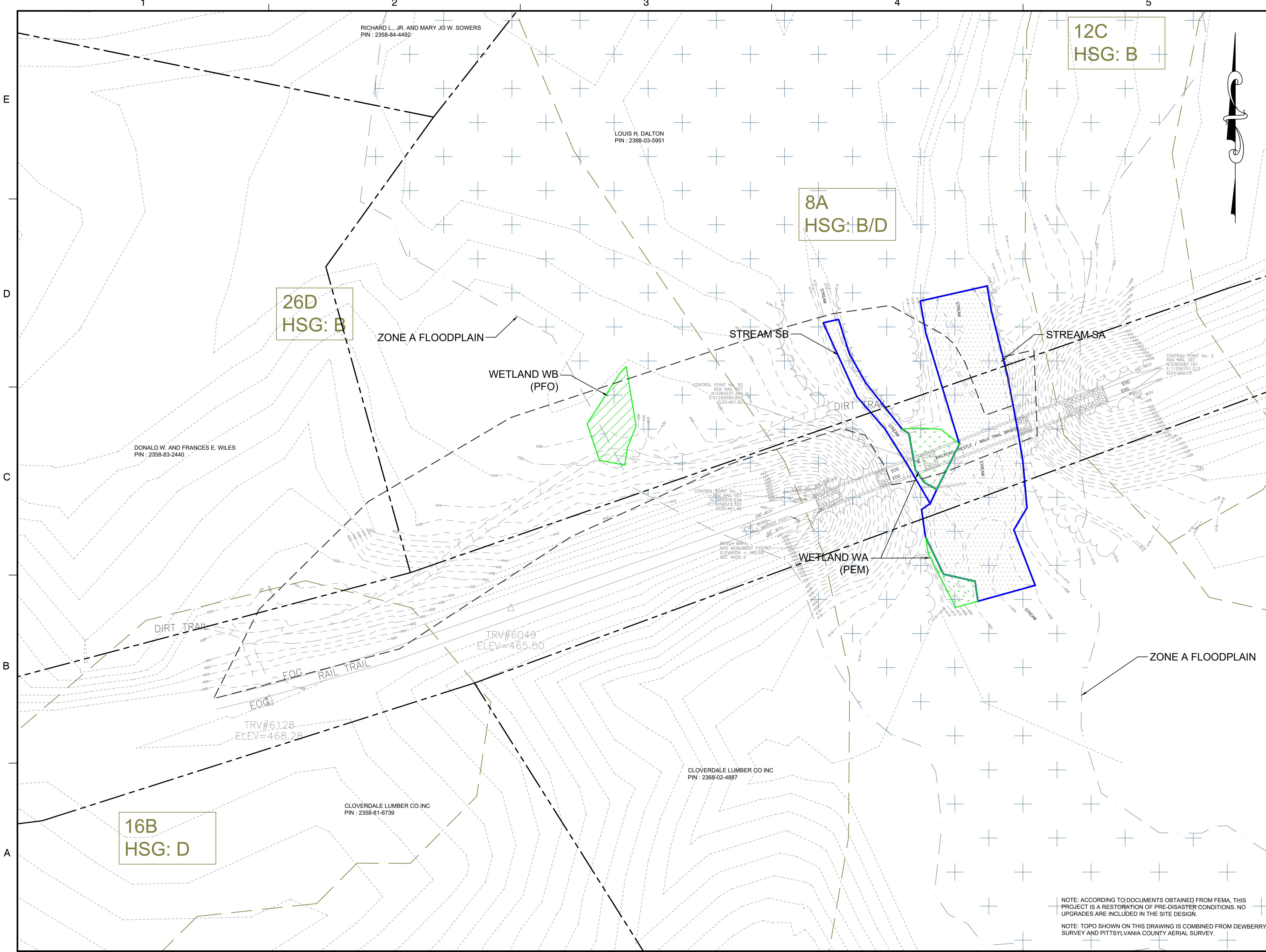
TITLE

**EXISTING
CONDITIONS**

PROJECT NO. 50106038

C100

SHEET NO.



12C
HSG: B

8A
HSG: B/D

26D
HSG: B

16B
HSG: D

RICHARD L. JR. AND MARY JO W. SOWERS
PIN : 2358-84-4492

LOUIS H. DALTON
PIN : 2368-03-5951

DONALD W. AND FRANCES E. WILES
PIN : 2358-83-2440

CLOVERDALE LUMBER CO. INC
PIN : 2358-81-6739

CLOVERDALE LUMBER CO INC
PIN : 2368-02-4887

TRV#6049
ELEV=465.50

TRV#6128
ELEV=468.28

NOTE: ACCORDING TO DOCUMENTS OBTAINED FROM FEMA, THIS PROJECT IS A RESTORATION OF PRE-DISASTER CONDITIONS. NO UPGRADES ARE INCLUDED IN THE SITE DESIGN.
NOTE: TOPO SHOWN ON THIS DRAWING IS COMBINED FROM DEWBERRY SURVEY AND PITTSYLVANIA COUNTY AERIAL SURVEY.

EROSION & SEDIMENT CONTROL NOTES:

THE FOLLOWING SEQUENCE OF CONSTRUCTION SHALL BE ADHERED TO BY THE CONTRACTOR AT ALL TIMES:

1. OBTAIN ALL PERMITS AND POST ALL REQUIRED BONDS.
2. CONTRACTOR SHALL KEEP & MAINTAIN A COPY OF THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK, LATEST EDITION ON-SITE AT ALL TIMES.
3. INSTALL PERIMETER SILT FENCE AND TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT. TEMPORARY EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO ALL LAND DISTURBING ACTIVITIES.
4. ALL SPECIFIC LOCATIONS FOR SILT FENCE OR STONE CHECK DAMS ARE NOT SHOWN ON THE APPROVED PLANS. THE NEED FOR ADDITIONAL E&S CONTROL MEASURES IS TO BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER AND THE EROSION CONTROL DIRECTOR.
5. INSTALL BLANKET MATTING AND RIP-RAP IN DITCHES AND ON STEEP SLOPES PER DETAILS.
6. TEMPORARY SEEDING SHALL OCCUR AS CONSTRUCTION PROGRESSES. NO SECTION OF DISTURBANCE LONGER THAN 1000' SHALL BE LEFT UNSEEDED. TEMPORARY SEEDING SHALL COMPLY W/ DEQ.
7. REMOVE EROSION AND SEDIMENT CONTROL MEASURES UPON SITE STABILIZATION.
8. CONTRACTOR IS RESPONSIBLE FOR ALL MAINTENANCE MEASURES UNTIL THE SITE IS STABILIZED.
9. ALL DENUDED AREAS SHALL BE SHAPED TO PROMOTE POSITIVE DRAINAGE.

GRADING NOTES:

1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER CONTRACTOR(S) ON-SITE.
2. ALL SPOT ELEVATIONS REFLECT FINISHED ELEVATIONS. SUBGRADE ELEVATIONS SHALL BE DETERMINED FROM INDIVIDUAL SECTION DETAILS.
3. CONTRACTOR SHALL PROTECT THE PUBLIC AT ALL COST FROM CONSTRUCTION ACTIVITIES WITH FENCES, BARRICADES, ENCLOSURES, AND OTHER BEST MANAGEMENT PRACTICES.
4. CONTRACTOR TO VERIFY LOCATION OF ALL UNDERGROUND UTILITIES BEFORE SITE WORK MAY BEGIN. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED UTILITIES.
5. CONTRACTOR SHALL FIELD VERIFY ELEVATIONS AND TIE OUT AT 2.5:1 SLOPE EXCEPT AT TEMPORARY CONSTRUCTION PAD IN THE STREAM.
6. CONTRACTOR SHALL REPAIR ANY AND ALL AREAS DAMAGED BY SITE WORK AND TRANSPORTATION.
7. ALL TEMPORARY CONSTRUCTION AREAS SHALL BE RESTORED TO PRE-DEVELOPMENT CONDITION UPON COMPLETION OF CONSTRUCTION.

NOTE: "CRANE/CONSTRUCTION PAD SHOWN FOR ILLUSTRATION AND PERMITTING PURPOSES ONLY. THIS PAD IS CONSIDERED A DESIGN-BUILD ITEM AND THE CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF CONSTRUCTION WITHIN THE PERMITTED AREA SHOWN ON THE DRAWINGS. CONTRACTOR SHALL REMOVE AFTER CONSTRUCTION AND RESTORE AREA TO ORIGINAL CONDITIONS. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE NOTED."

NOTE: ACCORDING TO DOCUMENTS OBTAINED FROM FEMA, THIS PROJECT IS A RESTORATION OF PRE-DISASTER CONDITIONS. NO UPGRADES ARE INCLUDED IN THE SITE DESIGN.

DONALD W. AND FRANCES E. WILES
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CLOVERDALE LUMBER CO INC
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CLOVERDALE LUMBER CO INC
PIN : 2368-02-4887

12C
HSG: B

8A
HSG: B/D

26D
HSG: B

16B
HSG: D

WETLAND WB
(TO BE PLANTED WITH WOODY
VEGETATION, SEE
PLANTING DETAIL ON SHEET C201)

LIMITS OF
CONSTRUCTION

CONTRACTOR SHALL INSTALL BANK
STABILIZATION MEASURES AS
NEEDED IN THIS LOCATION.

CONSTRUCTION PAD TO BE REMOVED
AND RESTORED TO EXISTING
CONDITIONS AFTER CONSTRUCTION

WETLAND WA
(TO BE PLANTED WITH
HERBACEOUS WETLAND
SEED MIX)

ACCESS ROAD TO BE REMOVED AND
RESTORED TO EXISTING
CONDITIONS
AFTER CONSTRUCTION

E&S LEGEND

- (CE) CONSTRUCTION ENTRANCE, VA. E&S STD. 3.02
 - (SF) SILT FENCE, VA. E&S STD. 3.05
 - (RR) RIPRAP, VA. E&S STD. 3.19
 - (SSS) STRUCTURAL STREAMBANK STABILIZATION, VA. E&S STD. 3.23
 - (SC) TEMPORARY BRIDGE CROSSING, VA. E&S STD. 3.24
 - (TS) TEMPORARY SEEDING, VA. E&S STD. 3.31
 - (PS) PERMANENT SEEDING, VA. E&S STD. 3.32
 - (BM) SOIL STABILIZATION BLANKETS AND MATTING, VA. E&S STD. 3.36
- LIMITS OF DISTURBANCE

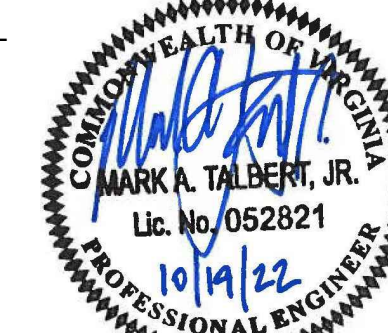
TOTAL LAND DISTURBANCE = 1.27 ACRES



Dewberry Engineers Inc.
551 Piney Forest Road
Danville, VA 24540
Phone: 434.797.4497
Fax: 434.797.4341

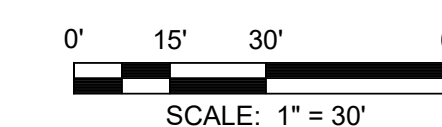
RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE
SUPERSTRUCTURE REPLACEMENT
AND SUBSTRUCTURE MODIFICATION
PITTSYLVANIA COUNTY
RINGGOLD, VIRGINIA 24586

SEAL



KEY PLAN

SCALE



No.	DATE	BY	Description
4	10/19/2022	JSS	DEQ Comments
3	5/26/2022	JSS	DEQ Comments
2	5/11/2022	JSS	DEQ Comments
1	4/11/2022	JSS	County Comments

REVISIONS

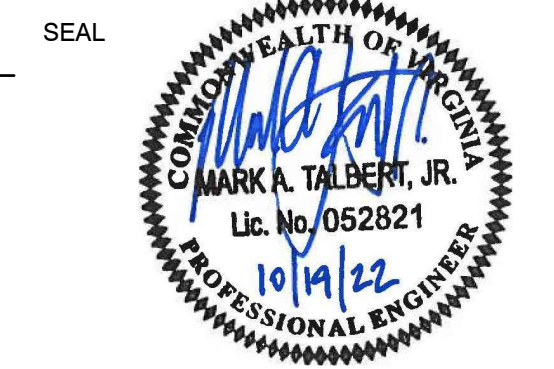
DRAWN BY: JSS
APPROVED BY: MAT
CHECKED BY:
DATE: 02/11/2021

TITLE
BRIDGE ACCESS ROAD

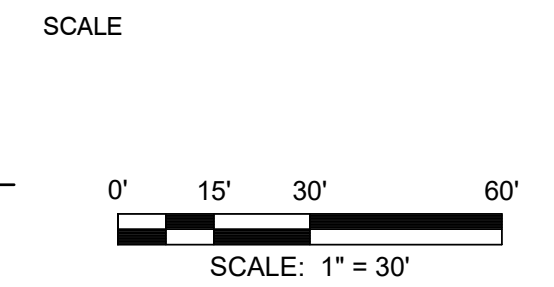
PROJECT NO. 50106038

C110

SHEET NO.



KEY PLAN



No.	DATE	BY	Description
4	10/19/2022	JSS	DEQ Comments
3	5/26/2022	JSS	DEQ Comments
2	5/11/2022	JSS	DEQ Comments
1	4/11/2022	JSS	County Comments

REVISIONS

DRAWN BY: JSS
APPROVED BY: MAT
CHECKED BY:
DATE: 02/11/2021

TITLE

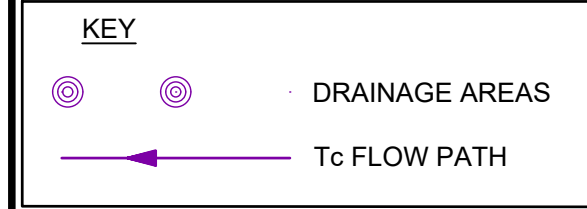
**RESTORATION
PLAN**

PROJECT NO. 50106038

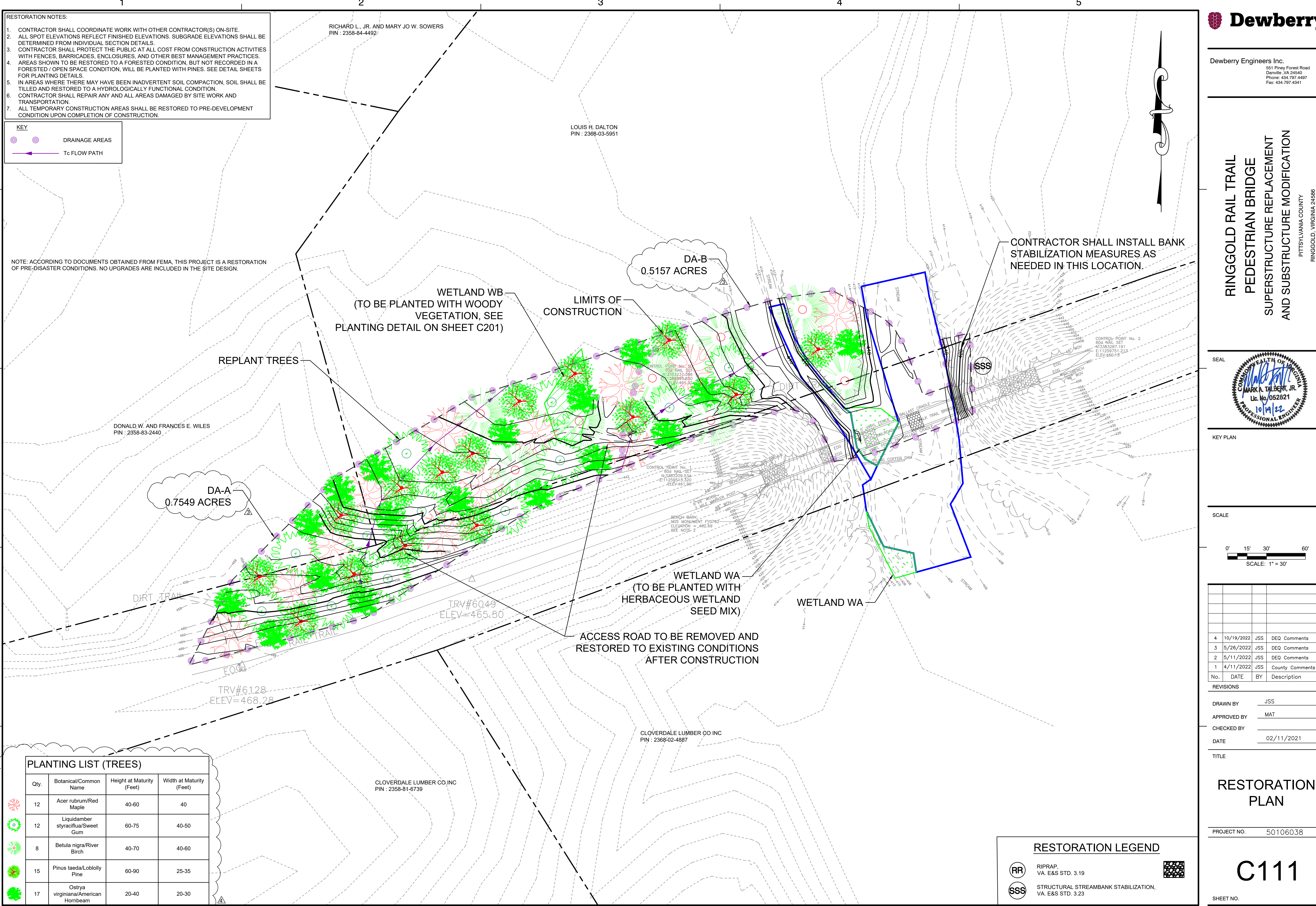
C111

SHEET NO.

- RESTORATION NOTES:**
1. CONTRACTOR SHALL COORDINATE WORK WITH OTHER CONTRACTOR(S) ON-SITE.
 2. ALL SPOT ELEVATIONS REFLECT FINISHED ELEVATIONS. SUBGRADE ELEVATIONS SHALL BE DETERMINED FROM INDIVIDUAL SECTION DETAILS.
 3. CONTRACTOR SHALL PROTECT THE PUBLIC AT ALL COST FROM CONSTRUCTION ACTIVITIES WITH FENCES, BARRICADES, ENCLOSURES, AND OTHER BEST MANAGEMENT PRACTICES.
 4. AREAS SHOWN TO BE RESTORED TO A FORESTED CONDITION, BUT NOT RECORDED IN A FORESTED / OPEN SPACE CONDITION, WILL BE PLANTED WITH PINES. SEE DETAIL SHEETS FOR PLANTING DETAILS.
 5. IN AREAS WHERE THERE MAY HAVE BEEN INADVERTENT SOIL COMPACTION, SOIL SHALL BE TILLED AND RESTORED TO A HYDROLOGICALLY FUNCTIONAL CONDITION.
 6. CONTRACTOR SHALL REPAIR ANY AND ALL AREAS DAMAGED BY SITE WORK AND TRANSPORTATION.
 7. ALL TEMPORARY CONSTRUCTION AREAS SHALL BE RESTORED TO PRE-DEVELOPMENT CONDITION UPON COMPLETION OF CONSTRUCTION.



NOTE: ACCORDING TO DOCUMENTS OBTAINED FROM FEMA, THIS PROJECT IS A RESTORATION OF PRE-DISASTER CONDITIONS. NO UPGRADES ARE INCLUDED IN THE SITE DESIGN.



PLANTING LIST (TREES)

Qty.	Botanical/Common Name	Height at Maturity (Feet)	Width at Maturity (Feet)
12	Acer rubrum/Red Maple	40-60	40
12	Liquidambar styraciflua/Sweet Gum	60-75	40-50
8	Betula nigra/River Birch	40-70	40-60
15	Pinus taeda/Loblolly Pine	60-90	25-35
17	Ostrya virginiana/American Hornbeam	20-40	20-30

RESTORATION LEGEND

RR RIPRAP, VA. E&S STD. 3.19

SSS STRUCTURAL STREAMBANK STABILIZATION, VA. E&S STD. 3.23

A

E

D

C

B

A

DONALD W. AND FRANCES E. WILES
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CLOVERDALE LUMBER CO. INC
PIN : 2358-81-6739

CLOVERDALE LUMBER CO INC
PIN : 2368-02-4887

DA-A
0.7549 ACRES

DA-B
0.5157 ACRES

WETLAND WB
(TO BE PLANTED WITH WOODY
VEGETATION, SEE
PLANTING DETAIL ON SHEET C201)

LIMITS OF
CONSTRUCTION

REPLANT TREES

WETLAND WA
(TO BE PLANTED WITH
HERBACEOUS WETLAND
SEED MIX)

ACCESS ROAD TO BE REMOVED AND
RESTORED TO EXISTING CONDITIONS
AFTER CONSTRUCTION

CONTRACTOR SHALL INSTALL BANK
STABILIZATION MEASURES AS
NEEDED IN THIS LOCATION.

TRV#6128
ELEV=468.28

TRV#6049
ELEV=465.80

CONTROL POINT No. 2
806 RAIL SET
NCS33287.191
E-11259751.213
ELEV=460+15

CONTROL POINT No. 1
806 RAIL SET
N3383209.534
E-11259815.320
ELEV=461.98

BEYOND MARK
NGS MONUMENT FY0762
ELEVATION = 462.69
SEE NOTE-2

SSS

DIRT TRAIL

FOG

TRAIL TRAIL

TRV#6049
ELEV=465.80

WETLAND WA
(TO BE PLANTED WITH
HERBACEOUS WETLAND
SEED MIX)

ACCESS ROAD TO BE REMOVED AND
RESTORED TO EXISTING CONDITIONS
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CONTRACTOR SHALL INSTALL BANK
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TRV#6128
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CONTROL POINT No. 2
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(TO BE PLANTED WITH
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SEED MIX)

ACCESS ROAD TO BE REMOVED AND
RESTORED TO EXISTING CONDITIONS
AFTER CONSTRUCTION

CONTRACTOR SHALL INSTALL BANK
STABILIZATION MEASURES AS
NEEDED IN THIS LOCATION.

DEFINITION
THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS BY PLANTING SEED.

- PURPOSES**
1. TO REDUCE EROSION AND DECREASE SEDIMENT YIELD FROM DISTURBED AREAS.
 2. TO PERMANENTLY STABILIZE DISTURBED AREAS IN A MANNER THAT IS ECONOMICAL, ADAPTABLE TO SITE CONDITIONS, AND ALLOWS SELECTION OF THE MOST APPROPRIATE PLANT MATERIALS.
 3. TO IMPROVE WILDLIFE HABITAT.
 4. TO ENHANCE NATURAL BEAUTY.

- CONDITIONS WHERE PRACTICE APPLIES**
1. DISTURBED AREAS WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL.
 2. ROUGH-GRADED AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE.

LAND USE: A PRIME CONSIDERATION IN SELECTING WHICH PLANTS TO ESTABLISH IS THE INTENDED USE OF THE LAND. ALL OF THESE USES RESIDENTIAL, INDUSTRIAL, COMMERCIAL, RECREATIONAL - CAN BE SEPARATED INTO TWO MAJOR CATEGORIES: HIGH-MAINTENANCE AND LOW-MAINTENANCE.

HIGH-MAINTENANCE AREAS WILL BE MOWED FREQUENTLY, LIMED AND FERTILIZED REGULARLY, AND WILL EITHER RECEIVE INTENSE USE (E.G., ATHLETICS) OR REQUIRE MAINTENANCE TO AN AESTHETIC STANDARD (HOME LAWNS). GRASSES USED FOR THESE SITUATIONS MUST BE FINE-LEAVED AND ATTRACTIVE IN APPEARANCE, ABLE TO FORM TIGHT SOIL, AND BE LONG-LIVED PERENNIALS. THEY MUST BE WELL-ADAPTED TO THE GEOGRAPHIC AREA WHERE THEY ARE PLANTED, BECAUSE CONSTANT MOWING PUTS TURF UNDER GREAT STRESS. SITES WHERE HIGH-MAINTENANCE VEGETATIVE COVER IS DESIRABLE INCLUDE HOMES, INDUSTRIAL PARKS, SCHOOLS, CHURCHES, ATHLETIC PLAYING SURFACES AS WELL AS SOME RECREATIONAL AREAS.

LOW-MAINTENANCE AREAS WILL BE MOWED INFREQUENTLY OR NOT AT ALL; AND FERTILIZER MAY NOT BE APPLIED ON A REGULAR BASIS; THE AREAS WILL NOT BE SUBJECTED TO INTENSE USE, NOR REQUIRED TO HAVE A UNIFORM APPEARANCE. THESE PLANTS MUST BE ABLE TO PERSIST WITH LITTLE MAINTENANCE OVER LONG PERIODS OF TIME. GRASS AND LEGUME MIXTURES ARE FAVORED FOR THESE SITES BECAUSE LEGUMES ARE CAPABLE OF FIXING NITROGEN FROM THE AIR FOR THEIR OWN USE, AND THE USE OF THE PLANTS AROUND THEM SUCH MIXED STANDS ARE BETTER ABLE TO WITHSTAND ADVERSE CONDITIONS. SITES WHICH WOULD BE SUITABLE FOR LOW-MAINTENANCE VEGETATION INCLUDE STEEP SLOPES, STREAM OR CHANNEL BANKS, SOME COMMERCIAL PROPERTIES, AND "UTILITY TURF" AREAS SUCH AS ROADBANKS.

TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

MIXTURE	SEEDING RATE (LBS./AC.)
MINIMUM CARE LAWN	
- COMMERCIAL OR RESIDENTIAL	175-200 LBS./AC.
- KENTUCKY 31 OR TURF-TYPE TALL FESCUE	95-100%
- IMPROVED PERENNIAL RYEGRASS	0-5%
- KENTUCKY BLUEGRASS	0-5%
HIGH-MAINTENANCE LAWN	200-250 LBS./AC.
- KENTUCKY 31 OR TURF-TYPE FESCUE	100%
GENERAL SLOPE (3:1 OR LESS)	
- KENTUCKY 31 FESCUE	128 LBS.
- RED TOP GRASS	2 LBS.
- SEASONAL NURSE CROP *	20 LBS.
- CROWN VETCH **	150 LBS./AC.
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	
- KENTUCKY 31 FESCUE	108 LBS.
- RED TOP GRASS	2 LBS.
- SEASONAL NURSE CROP *	20 LBS.
- CROWN VETCH **	150 LBS./AC.

* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

FEBRUARY 16TH THROUGH APRIL _____	ANNUAL RYE
MAY 1ST THROUGH AUGUST 15TH _____	FOXTAIL MILLET
AUGUST 16TH THROUGH OCTOBER _____	ANNUAL RYE
NOVEMBER THROUGH FEBRUARY 15TH _____	WINTER RYE

** SUBSTITUTE SERICEA LESPEDEZA FOR CROWN VETCH EAST OF FARMVILLE, VA. (MAY THROUGH SEPTEMBER USE HULLED SERICEA. ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED IN LIEU OF CROWN VETCH, INCREASE RATE TO 30 LBS./ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEDING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

1992
STD & SPEC 3.24
TEMPORARY VEHICULAR STREAM CROSSINGS

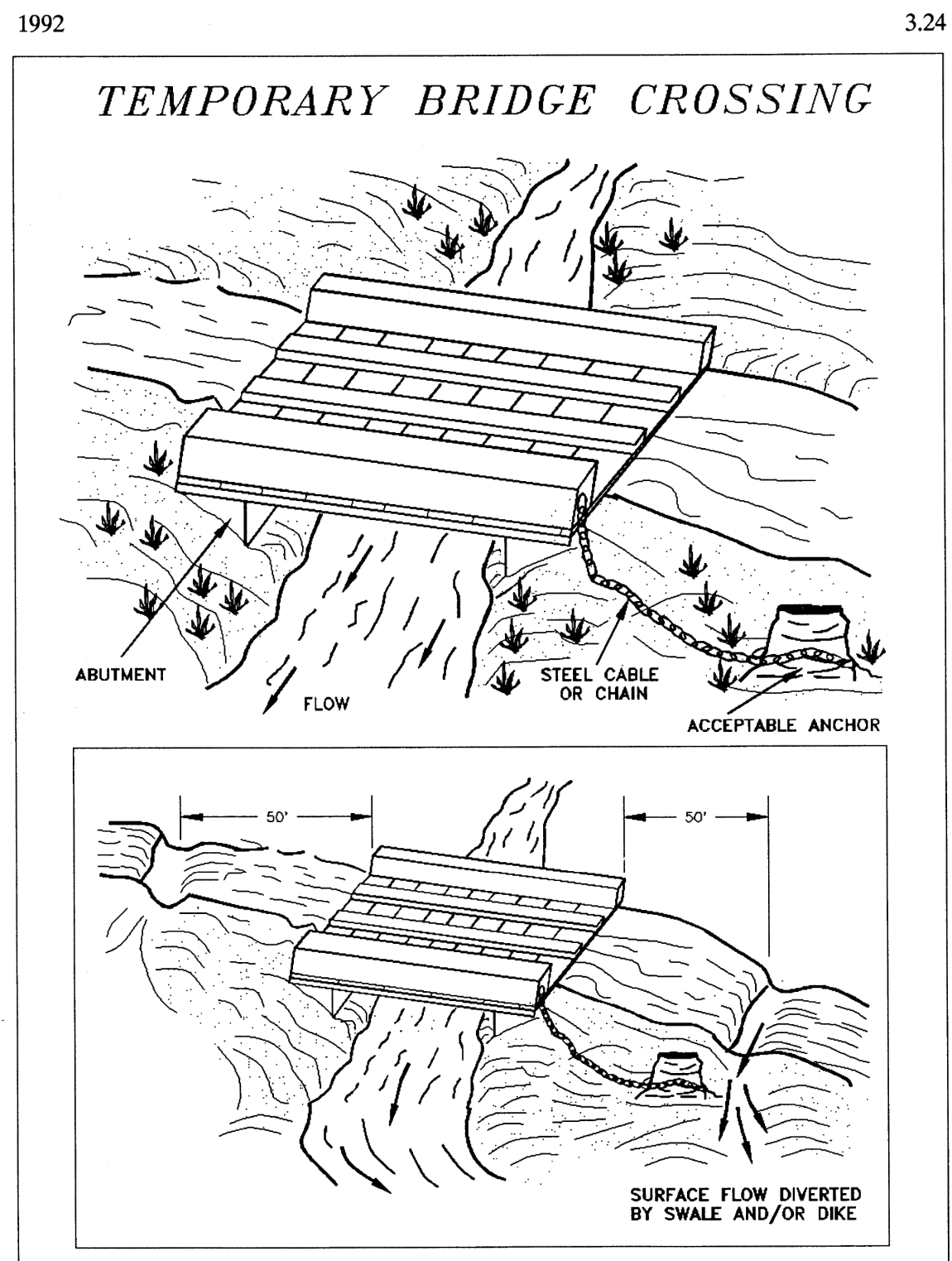
PURPOSES

1. TO PROVIDE A MEANS FOR CONSTRUCTION TRAFFIC TO CROSS FLOWING STREAMS WITHOUT DAMAGING THE CHANNEL OR BANKS.
2. TO KEEP SEDIMENT GENERATED BY CONSTRUCTION TRAFFIC OUT OF THE STREAM.

SPECIFICATIONS

1. CLEARING AND EXCAVATION OF THE STREAM BED AND BANKS SHALL BE KEPT TO A MINIMUM.
2. THE INVERT ELEVATION OF THE CULVERT SHALL BE INSTALLED ON THE NATURAL STREAMBED GRADE TO MINIMIZE INTERFERENCE WITH FISH MIGRATION.
3. FILTER CLOTH SHALL BE PLACED ON THE STREAMBED AND STREAMBANKS PRIOR TO PLACEMENT OF THE PIPE CULVERT(S) AND AGGREGATE. THE FILTER CLOTH SHALL COVER THE STREAMBED AND EXTEND A MINIMUM OF SIX INCHES AND A MAXIMUM OF ONE FOOT BEYOND THE END OF THE CULVERT AND BEDDING MATERIAL. FILTER CLOTH REDUCES SETTLEMENT AND IMPROVES CROSSING STABILITY. SEE STD. & SPEC. 3.19, RIPRAP, FOR REQUIRED PHYSICAL QUALITIES OF THE FILTER CLOTH.
4. THE CULVERT(S) SHALL EXTEND A MINIMUM OF ONE FOOT BEYOND THE UPSTREAM AND DOWNSTREAM TOE OF THE AGGREGATE PLACED AROUND THE CULVERT. IN NO CASE SHALL THE CULVERT EXCEED 40 FEET IN LENGTH.
5. THE CULVERT(S) SHALL BE COVERED WITH A MINIMUM OF ONE FOOT OF AGGREGATE. IF MULTIPLE CULVERTS ARE USED, THEY SHALL BE SEPARATED BY AT LEAST 12 INCHES OF COMPACTED AGGREGATE FILL. AT A MINIMUM, THE BEDDING AND FILL MATERIAL USED IN THE CONSTRUCTION OF THE TEMPORARY ACCESS CULVERT CROSSINGS SHALL CONFORM WITH THE AGGREGATE REQUIREMENTS CITED IN PART '1' UNDER 'TEMPORARY CULVERT CROSSING.'
6. WHEN THE CROSSING HAS SERVED ITS PURPOSE, ALL STRUCTURES INCLUDING CULVERTS, BEDDING AND FILTER CLOTH MATERIALS SHALL BE REMOVED. REMOVAL OF THE STRUCTURE AND CLEAN-UP OF THE AREA SHALL BE ACCOMPLISHED WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL.
7. UPON REMOVAL OF THE STRUCTURE, THE STREAM SHALL IMMEDIATELY BE SHAPED TO ITS ORIGINAL CROSS-SECTION AND PROPERLY STABILIZED.

MAINTENANCE
BOTH STRUCTURES SHALL BE INSPECTED AFTER EVERY RAINFALL AND AT LEAST ONCE A WEEK, WHETHER IT HAS RAINED OR NOT, AND ALL DAMAGES REPAIRED IMMEDIATELY.



Source: 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control Plate 3.24-1

LIME AND FERTILIZER
LIME AND FERTILIZER NEEDS SHOULD BE DETERMINED BY SOIL TESTS. SOIL TESTS MAY BE PERFORMED BY THE COOPERATIVE EXTENSION SERVICE SOIL TESTING LABORATORY AT VPI & SU, OR BY A REPUTABLE COMMERCIAL LABORATORY. INFORMATION CONCERNING THE STATE SOIL TESTING LABORATORY IS AVAILABLE FROM COUNTY EXTENSION AGENTS.

UNUSUAL CONDITIONS WHERE IT IS NOT POSSIBLE TO OBTAIN A SOIL TEST, THE FOLLOWING SOIL AMENDMENTS WILL BE APPLIED.

LIME
PIEDMONT AND APPALACHIAN REGION: 2 TONS/ACRE PULVERIZED AGRICULTURAL GRADE LIMESTONE (90 LBS./1000 FT.)
NOTE: AN AGRICULTURAL GRADE OF LIMESTONE SHOULD ALWAYS BE USED.

FERTILIZER
MIXED GRASSES & LEGUMES: 100 LBS./ACRE 10-20-10 OR EQUIVALENT NUTRIENTS (23 LBS./1000 FT.)
LEGUME STANDS ONLY: 1000 LBS./ACRE 5-20-10 (23 LBS./1000 FT.) IS PREFERRED; HOWEVER, 1000 LBS./ACRE OF 10-20-10 OR EQUIVALENT MAY BE USED.
GRASS STANDS ONLY: 1000 LBS./ACRE 10-20-10 OR EQUIVALENTS, (23 LBS./1000 FT.).

OTHER FERTILIZER FORMULATIONS, INCLUDING SLOW-RELEASE SOURCES OF NITROGEN (PREFERRED FROM A WATER QUALITY STANDPOINT), MAY BE USED PROVIDED THEY CAN SUPPLY THE SAME AMOUNTS AND PROPORTIONS OF PLANT NUTRIENTS.

MAINTENANCE OF NEW SEEDING
IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE FULL YEAR AFTER PLANTING.

IRRIGATION: NEW SEEDINGS SHOULD BE SUPPLIED WITH ADEQUATE MOISTURE. SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ABNORMALLY HOT OR DRY WEATHER, OR ON ADVERSE SITES. WATER APPLICATION RATES SHOULD BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF. INADEQUATE AMOUNTS OF WATER MAY BE MORE HARMFUL THAN NO WATER.

RE-SEEDING: INSPECT SEEDING AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RE-SEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE.

a. IF VEGETATIVE COVER IS INADEQUATE TO PREVENT RILL EROSION, OVER-SEED AND FERTILIZE IN ACCORDANCE WITH SOIL TEST RESULTS.

b. IF A STAND HAS LESS THAN 40% COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER. THE SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCES ARE RESPONSIBLE. RE-ESTABLISH THE STAND FOLLOWING SEEDING PREPARATION AND SEEDING RECOMMENDATIONS.

FERTILIZATION: COOL SEASON GRASSES SHOULD BEGIN TO BE FERTILIZED 90 DAYS AFTER PLANTING TO ENSURE PROPER STAND AND DENSITY. WARM SEASON FERTILIZATION SHOULD BEGIN AT 30 DAYS AFTER PLANTING.

APPLY MAINTENANCE LEVELS OF FERTILIZER AS DETERMINED BY SOIL TEST. IN THE ABSENCE OF A SOIL TEST, FERTILIZATION SHOULD BE AS FOLLOWS:

COOL SEASON GRASSES
4 LBS. NITROGEN (N)
1 LB. PHOSPHORUS (P) } PER 1000 FT² PER YEAR
2 LBS. POTASH (K)

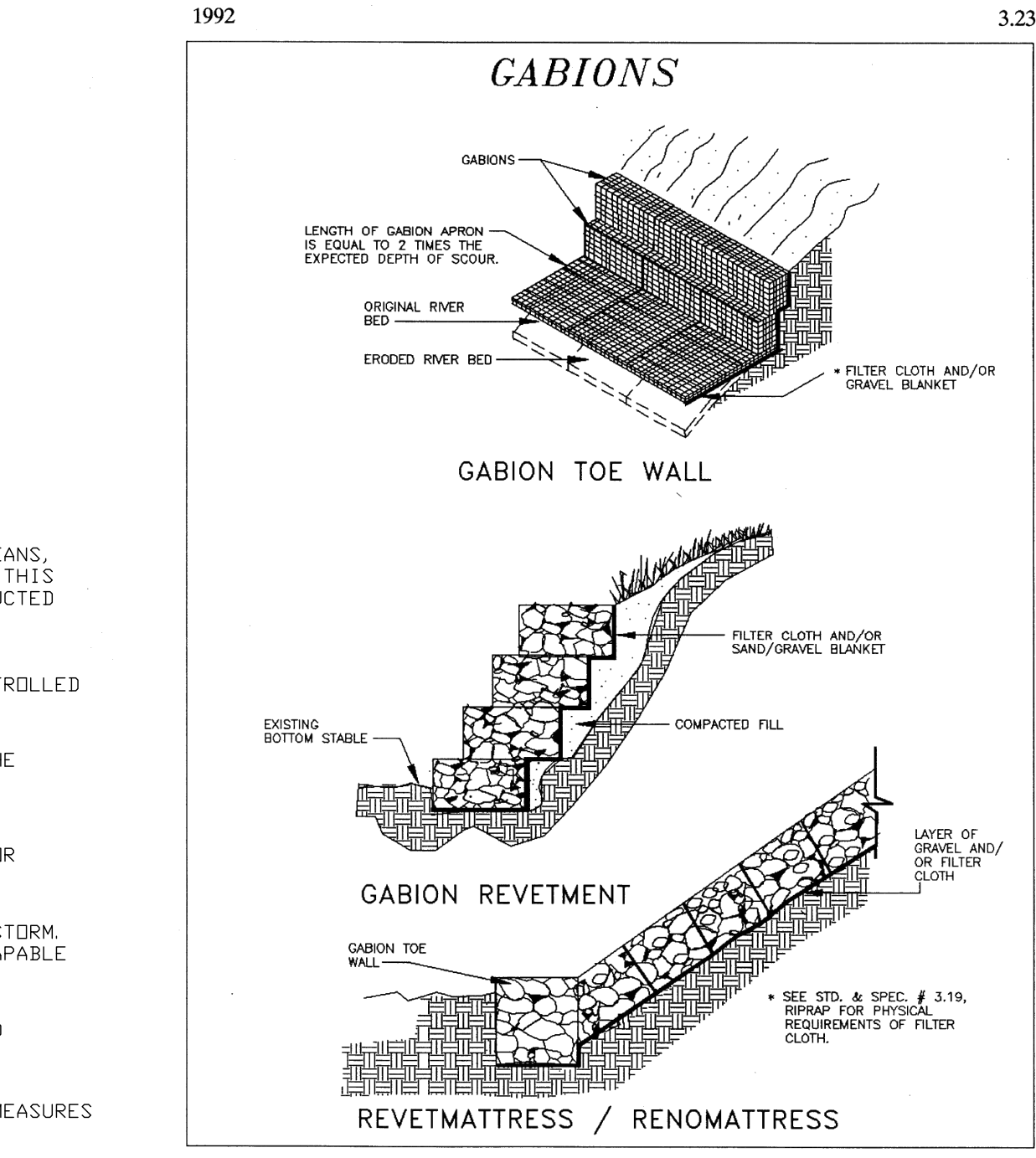
SEVENTY-FIVE PERCENT OF THE TOTAL REQUIREMENTS SHOULD BE APPLIED BETWEEN SEPTEMBER 1 AND DECEMBER 31st. THE BALANCE SHOULD BE APPLIED DURING THE REMAINDER OF THE YEAR. MORE THAN 1 LB. OF SOLUBLE NITROGEN PER 1000 FT. SHOULD NOT BE APPLIED AT ANY ONE TIME.

WARM SEASON GRASSES
APPLY 4-5 LBS. NITROGEN (N) BETWEEN MAY 1 AND AUGUST 15th PER 1000 FT² PER YEAR.
PHOSPHORUS (P) AND POTASH (K) SHOULD ONLY BE APPLIED ACCORDING TO SOIL TEST.

NOTE: THE USE OF SLOW-RELEASE FERTILIZER FORMULATIONS FOR MAINTENANCE OF TURF IS ENCOURAGED TO REDUCE THE NUMBER OF APPLICATIONS AND THE IMPACT ON GROUNDWATER.

SEED QUALITY CRITERIA
WHERE CERTIFIED SEED IS NOT AVAILABLE, THE MINIMUM REQUIREMENTS FOR GRASS AND LEGUME SEED USED IN VEGETATIVE ESTABLISHMENT ARE AS FOLLOWS:

- a. ALL TAGS ON CONTAINERS OF SEED SHALL BE LABELED TO MEET THE REQUIREMENTS OF THE STATE SEED LAW.
- b. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY THAT EMPLOYS A REGISTERED SEED TECHNOLOGIST OR BY A STATE SEED LAB.
- c. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN TWELVE (12) MONTHS.
- d. INOCULANT - THE INOCULANT ADDED TO LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. TWICE THE SUPPLIER'S RECOMMENDED RATE OF INOCULANT WILL BE USED ON DRY SEEDINGS; FIVE TIMES THE RECOMMENDED RATE IF HYDROSEEDED.
- e. THE QUALITY OF THE SEED USED SHALL BE SHOWN ON THE BAG TAGS TO CONFORM TO THE GUIDELINES IN TABLE 3.32-E (VA EROSION AND SEDIMENT CONTROL HANDBOOK)



Source: Adapted from product literature of Bekaert Gabions Plate 3.23-1

1992
STD & SPEC 3.32
PERMANENT SEEDING

DEFINITION
THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS BY PLANTING SEED.

PURPOSES

1. TO REDUCE EROSION AND DECREASE SEDIMENT YIELD FROM DISTURBED AREAS.
2. TO PERMANENTLY STABILIZE DISTURBED AREAS IN A MANNER THAT IS ECONOMICAL, ADAPTABLE TO SITE CONDITIONS, AND ALLOWS SELECTION OF THE MOST APPROPRIATE PLANT MATERIALS.
3. TO IMPROVE WILDLIFE HABITAT.
4. TO ENHANCE NATURAL BEAUTY.

CONDITIONS WHERE PRACTICE APPLIES

1. DISTURBED AREAS WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL.
2. ROUGH-GRADED AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE.

LAND USE: A PRIME CONSIDERATION IN SELECTING WHICH PLANTS TO ESTABLISH IS THE INTENDED USE OF THE LAND. ALL OF THESE USES RESIDENTIAL, INDUSTRIAL, COMMERCIAL, RECREATIONAL - CAN BE SEPARATED INTO TWO MAJOR CATEGORIES: HIGH-MAINTENANCE AND LOW-MAINTENANCE.

HIGH-MAINTENANCE AREAS WILL BE MOWED FREQUENTLY, LIMED AND FERTILIZED REGULARLY, AND WILL EITHER RECEIVE INTENSE USE (E.G., ATHLETICS) OR REQUIRE MAINTENANCE TO AN AESTHETIC STANDARD (HOME LAWNS). GRASSES USED FOR THESE SITUATIONS MUST BE FINE-LEAVED AND ATTRACTIVE IN APPEARANCE, ABLE TO FORM TIGHT SOIL, AND BE LONG-LIVED PERENNIALS. THEY MUST BE WELL-ADAPTED TO THE GEOGRAPHIC AREA WHERE THEY ARE PLANTED, BECAUSE CONSTANT MOWING PUTS TURF UNDER GREAT STRESS. SITES WHERE HIGH-MAINTENANCE VEGETATIVE COVER IS DESIRABLE INCLUDE HOMES, INDUSTRIAL PARKS, SCHOOLS, CHURCHES, ATHLETIC PLAYING SURFACES AS WELL AS SOME RECREATIONAL AREAS.

LOW-MAINTENANCE AREAS WILL BE MOWED INFREQUENTLY OR NOT AT ALL; AND FERTILIZER MAY NOT BE APPLIED ON A REGULAR BASIS; THE AREAS WILL NOT BE SUBJECTED TO INTENSE USE, NOR REQUIRED TO HAVE A UNIFORM APPEARANCE. THESE PLANTS MUST BE ABLE TO PERSIST WITH LITTLE MAINTENANCE OVER LONG PERIODS OF TIME. GRASS AND LEGUME MIXTURES ARE FAVORED FOR THESE SITES BECAUSE LEGUMES ARE CAPABLE OF FIXING NITROGEN FROM THE AIR FOR THEIR OWN USE, AND THE USE OF THE PLANTS AROUND THEM SUCH MIXED STANDS ARE BETTER ABLE TO WITHSTAND ADVERSE CONDITIONS. SITES WHICH WOULD BE SUITABLE FOR LOW-MAINTENANCE VEGETATION INCLUDE STEEP SLOPES, STREAM OR CHANNEL BANKS, SOME COMMERCIAL PROPERTIES, AND "UTILITY TURF" AREAS SUCH AS ROADBANKS.

MAINTENANCE
ALL STRUCTURES SHOULD BE MAINTAINED IN AN "AS BUILT" CONDITION. STRUCTURAL DAMAGE CAUSED BY STORM EVENTS SHOULD BE REPAIRED AS SOON AS POSSIBLE TO PREVENT FURTHER DAMAGE TO THE STRUCTURE OR EROSION OF THE STREAMBANK.

PURPOSES

1. TO REDUCE EROSION AND SEDIMENTATION BY STABILIZING DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS.
2. TO REDUCE DAMAGE FROM SEDIMENT AND RUNOFF TO DOWNSTREAM OR OFF-SITE AREAS; AND TO PROVIDE PROTECTION TO BARE SOILS EXPOSED DURING CONSTRUCTION UNTIL PERMANENT VEGETATION OR OTHER EROSION CONTROL MEASURES CAN BE ESTABLISHED.

SPECIFICATIONS
PRIOR TO SEEDING, INSTALL NECESSARY EROSION CONTROL PRACTICES SUCH AS DIKES, WATERWAYS, AND BASINS.

PLANT SELECTION
SELECT PLANTS APPROPRIATE TO THE SEASON AND SITE CONDITIONS FROM TABLE 3.31-B AND 3.31-C. NOTE THAT TABLE 3.31-B PRESENTS PLANTS WHICH CAN BE USED WITHOUT EXTENSIVE EVALUATION OF SITE CONDITIONS; TABLE 3.31-C PRESENTS MORE IN-DEPTH INFORMATION ON THE PLANT MATERIALS.

SEEDBED PREPARATION
TO CONTROL EROSION ON BARE SOIL SURFACES, PLANTS MUST BE ABLE TO GERMINATE AND GROW. SEEDBED PREPARATION IS ESSENTIAL.

1. **LIMING:** AN EVALUATION SHOULD BE CONDUCTED TO DETERMINE IF LIME IS NECESSARY FOR TEMPORARY SEEDING. IN MOST SOILS, IT TAKES UP TO 6 MONTHS FOR pH ADJUSTMENTS TO OCCUR FOLLOWING THE APPLICATION OF LIME. THEREFORE, IT MAY BE DIFFICULT TO JUSTIFY THE COST OF LIMING A TEMPORARY SITE, ESPECIALLY WHEN THE SOIL WILL LATER BE MOVED AND REGRADED. THE FOLLOWING TABLE MAY BE USED TO DETERMINE THE ACTUAL NEED ALONG WITH SUGGESTED APPLICATION RATES.
2. **FERTILIZER:** SHALL BE APPLIED AS 600 LBS./ACRE OF 10-20-10 (14 LBS./71,000 SQ. FT.) OR EQUIVALENT NUTRIENTS. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2 TO 4 INCHES OF THE SOIL IF POSSIBLE.
3. **SURFACE ROUGHENING:** IF THE AREA HAS BEEN RECENTLY LOOSENED OR DISTURBED, NO FURTHER ROUGHENING IS REQUIRED. WHEN THE AREA IS COMPACTED, CRUSTED, OR HARDENED, THE SOIL SURFACE SHALL BE LOOSENED BY DISCING, RAKING, HARROWING, OR OTHER ACCEPTABLE MEANS (SEE SURFACE ROUGHENING, STD. & SPEC. 3.29).
4. **TRACKING:** TRACKING WITH BULLDOZER CLEATS IS MOST EFFECTIVE ON SANDY SOILS. THIS PRACTICE OFTEN CAUSES UNDESIRED COMPACTION OF THE SOIL SURFACE, ESPECIALLY IN CLAYEY SOILS. TRACKING DOES NOT AID PLANT GROWTH AS EFFECTIVELY AS OTHER METHODS OF SURFACE ROUGHENING.

SEEDING
SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN ONE INCH DEEP. GRASSES AND LEGUMES SHALL BE PLANTED WITH NO LESS THAN 1/4" SOIL COVER.

MULCHING
1. SEEDINGS MADE IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS SHALL BE MULCHED ACCORDING TO MULCHING, STD. & SPEC. 3.35. EXCEPT THAT HYDROMULCHES (FIBER MULCH) WILL NOT BE CONSIDERED ADEQUATE. STRAW MULCH SHOULD BE USED DURING THESE PERIODS.

2. TEMPORARY SEEDINGS MADE UNDER FAVORABLE SOIL AND SITE CONDITIONS DURING OPTIMUM SPRING AND FALL SEEDING DATES MAY NOT REQUIRE MULCH.

RE-SEEDING
AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RESEED AS SOON AS SUCH AREAS ARE IDENTIFIED.

TABLE 3.31-B
ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS
"QUICK REFERENCE FOR ALL REGIONS"

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT. 1-FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LILIUM MULTI-FLORUM) CEREAL (WINTER) RYE (SECALE CEREALE)	50 - 100
FEB. 16-APR. 30	ANNUAL RYEGRASS (LILIUM MULTI-FLORUM)	60 - 100
MAY 1-AUG. 31	GERMAN MILLET (SETARIA ITALICA)	50

TABLE 3.31-C
TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

SPECIES	SEEDING RATE	NORTH ^a				SOUTH ^b			PLANT CHARACTERISTICS
		ACRE	1000 Ft ²	3/1 to 4/30	5/1 to 8/15	9/15 to 11/1	2/15 to 4/30	5/1 to 9/1	
OATS (AVENA SATIVA)	3 bu (up to 100 lbs., not less than 50 lbs.)	2 lbs	X	-	-	X	-	-	Use spring varieties (e.g., Noble)
RYE ^d (SECALE CEREALE)	2 bu (up to 110 lbs., not less than 50 lbs.)	2.5 lbs	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
GERMAN MILLET (SETARIA ITALICA)	50 lbs	approx. 1 lb.	-	X	-	-	X	-	Warm-season annual. Dies at first frost. May be added to summer mixes.
ANNUAL RYEGRASS ^c (LILIUM MULTI-FLORUM)	60 lbs	1.5 lbs	X	-	X	X	-	X	May be added in mixes. Will now out of most stands.
WEeping LOVEGRASS (ERAGROSTIS CURVULA)	15 lbs	5.5 ozs.	-	X	-	-	X	-	Warm-season perennial. May bunch. Tolerates hot, dry slopes and acids, infertile soils. May be added to mixes.
KOREAN LESPEDEZA ^c (LESPEDEZA STIPULACEA)	25 lbs	approx. 1.5 lbs.	X	X	-	X	X	-	Warm season annual legume. Tolerates acid soils. May be added to mixes.

a NORTHERN PIEDMONT AND MOUNTAIN REGION. SEE PLATES 3.22-1 AND 3.22-2.
b SOUTHERN PIEDMONT AND COASTAL PLAIN.
c MAY BE USED AS A COVER CROP WITH SPRING SEEDING.
d MAY BE USED AS A COVER CROP FOR FALL SEEDING.
X MAY BE PLANTED BETWEEN THESE DATES.
- MAY NOT BE PLANTED BETWEEN THESE DATES.

Dewberry
Dewberry Engineers Inc.
551 Piney Forest Road
Danville, VA 24540
Phone: 434.797.4467
Fax: 434.797.4341

RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE
SUPERSTRUCTURE REPLACEMENT
AND SUBSTRUCTURE MODIFICATION
PITTSYLVANIA COUNTY
RINGGOLD, VIRGINIA 24488

SEAL
COMMONWEALTH OF VIRGINIA
MARK A. TALBERT, JR.
Lic. No. 052821
10/19/22
PROFESSIONAL ENGINEER

KEY PLAN
SCALE

No.	DATE	BY	Description
4	10/19/2022	JSS	DEQ Comments
3	5/26/2022	JSS	DEQ Comments
2	5/11/2022	JSS	DEQ Comments
1	4/11/2022	JSS	County Comments

REVISIONS
DRAWN BY: JSS
APPROVED BY: MAT
CHECKED BY:
DATE: 02/11/2021
TITLE:

EROSION AND SEDIMENT CONTROL DETAILS
PROJECT NO. 50106038

C200
SHEET NO.

PLANT MATERIAL DETAIL

THE GOAL FOR THIS PLANTING SCHEME IS TO ESTABLISH ADEQUATE VEGETATIVE COVER TO JURISDICTIONAL DISTURBED AREAS. THE PLANT MATERIAL DETAIL AND PLANTING SPECIFICATIONS ARE PRESENTED FOR ONE PLANTING ZONED, INDICATED ON THE PLAN SHEETS AS A DISTURBANCE WITHIN A JURISDICTIONAL AREA. THESE DETAILS AND SPECIFICATIONS SHALL GOVERN THE PLANT MATERIALS AND SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

- WOODY PLANT (TREES AND SHRUBS) SPECIES FROM THE PLANTING LIST PRESENTED ON THIS SHEET SHOULD BE SELECTED TO PROVIDE A VARIETY OF SPECIES WITHIN THE PROJECT AREA.
- SELECTED PLANTS SHALL BE FIRST CLASS REPRESENTATIVES OF THEIR SPECIES, NURSERY GROWN ACCORDING TO GOOD HORTICULTURE PRACTICES AND GROWN IN A CLIMATE SIMILAR TO THE PROJECT AREA TO BE PLANTED. PLANTS SHALL BE HEALTHY AND FREE FROM PLANT DISEASES, INSECT PEST EGGS, DECAY, INJURIES AND ALL FORMS OF OBJECTIONAL DISFIGUREMENTS. PLANTS SHALL CONFORM TO ALL ASPECTS OF THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1). EACH PLANT SPECIES SHALL BE TAGGED WITH LABELS IDENTIFYING THE BOTANICAL NAME.
- IT IS ACCEPTABLE TO USE BARE ROOT, UNROOTED CUTTING, BALLED & BURLAPPED, CONTAINER, AND PLUG SEEDLINGS THROUGHOUT THE PROJECT AREA AS REQUIRED.
- THE SELECTED PLANTING MATERIAL MAY NOT BE SUBSTITUTED UNLESS WRITTEN APPROVAL FROM THE PROJECT ENGINEER HAS BEEN PROVIDED.
- UNLESS OTHERWISE SPECIFIED, VEGETATION SHALL BE PLANTED DURING THE DORMANT SEASON OR THE EARLY GROWING SEASON, WHICH IS GENERALLY DEFINED AS NOVEMBER 15 TO APRIL 15.
- A WETLAND VARIETY SEED SHALL BE CHOSEN AND CONSIST OF PURE, LIVE, CERTIFIED GRASS SEED MIXTURE, OF THE LATEST CROP, AND CONTAINING WEED LESS THAN 0.5 PERCENT BY WEIGHT OF THE TOTAL MIXTURE.
- THE SELECTED WETLAND SEED MIX WILL BE SURFACE SOWN AT THE RATE OF 150 LBS/ACRE TO ALL DISTURBED AREAS ACCOUNTING FOR SUN/SHADE TOLERANCE.
- SHRUBS MUST BE PLANTED IN GROUPS ACCORDING TO THEIR HYDROLOGIC CONDITIONS AND GENERALLY SHOULD BE CONCENTRATED IN AREAS CLOSELY SUITED TO THEIR WETLAND INDICATOR STATUS.
- ALL PLANTINGS DIMENSIONS ARE MAXIMUMS, PLANTINGS SHALL BE RANDOM.
- SHADE TOLERANT SPECIES SHOULD BE SELECTED FOR THOSE AREAS LOCATED UNDER EXISTING FORESTED CANOPY.
- NON BIODEGRADABLE MATERIAL SURROUNDING THE EARTHEN BALL SHALL BE REMOVED PRIOR TO THE BACKFILLING.
- PLANTS WILL NOT BE HANDLED BY THE STEMS DURING TRANSPORT TO PLANTING SITE OR DURING PLANTING.
- ALL PLANTED AND SEEDING VEGETATION WILL RECEIVE A MULCH OF LOOSE STRAW APPLIED UNIFORMLY AT THE RATE OF TWO (2) TONS PER ACRE WITHIN 48 HOURS OF SOWING SEED.
- ALL PLANTED AND SEEDING VEGETATION WILL BE WATERED WITHIN 24 HOURS OF MULCHING.
- ALL PLANTED AND SEEDING VEGETATION SHALL BE FERTILIZED WITH A 10-10-10 ANALYSIS (PERCENTAGES BY WEIGHT OF NITROGEN, PHOSPHOROUS AND POTASSIUM, RESPECTIVELY) INORGANIC FERTILIZER WITH A RELEASE OF 8 TO 9 MONTHS.
- FERTILIZER SHALL BE APPLIED AT A RATE OF 150 POUNDS PER ACRE.
- REMOVE ALL EXOTIC AND NATIVE INVASIVE PLANT SPECIES TO ENSURE THE SUCCESS OF THE NEWLY PLANTED MATERIAL.

PLANTING SPECIFICATIONS

A MINIMUM OF THREE OVERSTORY AND TWO SUBCANOPY TREE SPECIES SHOULD BE SELECTED FROM THE PLANTING LIST PRESENTED ON THIS SHEET. THE SPECIES COMPOSITION SHOULD BE SELECTED TO SUPPORT A VIABLE PLANT SYSTEM THAT PROVIDES STABILIZATION AND STRUCTURAL DIVERSITY WITHIN THE EXISTING PLANT COMMUNITY.

- ALL BARE AREAS ISHALL BE SEEDDED WITH THE SAME SEED MIXTURE.
- ALL TREES AND SHRUBS SHALL BE PLANTED IN SUCH A MANNER AS TO ENSURE THEIR SURVIVAL. THIS SHALL INCLUDE THE PLANTING OF INTACT BALLS, PLANTING AT PROPER DEPTH, PROPER BACKFILLING AND WATERING.
- IN GENERAL, AN EQUAL DISTRIBUTION OF TREE TYPES SHALL BE PLANTED AT AN INTERVAL OF 20- FEET ON CENTER EXCEPT WHERE OTHERWISE NOTED. IF SHRUBS ARE UTILIZED, THEN THEY SHALL BE PLANTED AT 10- FEET ON CENTER.
- SELECTED TREE SPECIES SHOULD BE PLANTED ON MORE THAN 70 PERCENT OF EACH OF THE DESIGNATED PROJECT DESIGN AREAS AT A DENSITY OF 20 FEET ON CENTER EXCEPT AS NOTED. AT POINTS WITHIN AN IRREGULAR BOUNDARY, SUPPLEMENTAL TREE PLANTINGS ALONG THE EDGE OF THE RESTORED AREA ARE TO BE PLANTED AT INTERVALS OF 10 FEET ON CENTER. NO TREE SHALL BE PLANTED WITHIN 15 FEET OF ZONE 1.
- TREES / SHRUBS DIMENSIONS ARE MAXIMUMS, PLANTINGS SHALL BE RANDOM.
- USING THE LIST OF SUGGESTED TREE / SHRUB SPECIES PROVIDED IN THE PLANTING LIST ON THIS SHEET, PLANT AT LEAST 10 PERCENT, BUT NO MORE THAN 25 PERCENT, OF ANY ONE SPECIES OF THE TOTAL SPECIES MIX SELECTED.
- TO SET THE PLANTS, PREPARE ALIGNMENT OF INDIVIDUAL TREE SAPLINGS PLUMB AND STRAIGHT AND PROVIDE ALLOWANCE FOR SETTLEMENT.
- DEPTH OF THE HOLE FOR CONTAINERIZED PLANTS SHALL BE AT LEAST 2.5 TIMES THE DIAMETER OF THE ROOT SPAN.
- ON SLOPES CONTAINING EXISTING VEGETATION THAT ARE STEEPER THAN 2:1, HAND DIGGING IS THE PREFERRED METHOD OF PLANT INSTALLATION TO MINIMIZE DISTURBANCE OF THE EXISTING ENVIRONMENT. AN AUGER CAN BE USED TO CREATE THE PLANTING HOLE IN AREAS WHERE SLOPES ARE SHALLOWER THAN 2:1.
- IF A STABILIZATION MAT IS PRESENT, A CIRCULAR OPENING SHALL BE CUT IN THE MAT FOR PLANTING OF TREES. ONCE THE OPENING IS CUT, THE AUGER CAN BE USED TO CREATE THE HOLE.
- ALL CONTAINERIZED TREES GREATER THAN 3- FEET IN HEIGHT SHALL BE PROPERLY GUYED OR STAKED TO KEEP THEM IN A VERTICAL POSITION.
- LIVE STAKE PLANTING IS TO OCCUR BETWEEN THE MONTHS OF NOVEMBER AND APRIL, DURING DORMANCY. THESE LIVE STAKES SHALL HAVE A MINIMUM DIAMETER OF 3/5 INCH AND A LENGTH OF 20 TO 24 INCHES. THE LIVE STAKE IS TO HAVE A WELL-DEVELOPED ROOT SYSTEM OVER 5 TO 8 INCHES OF ITS LENGTH. THE LIVE STAKE IS TO BE PLANTED TO A DEPTH OF 4 TO 6 INCHES OF ITS LENGTH.
- GUYING AND STAKING SHALL BE REMOVED FROM THE PLANTING ONE YEAR AFTER INSTALLATION.
- AFTER PLANTING, THE SOIL SHOULD BE FIRMED TO ELIMINATE AIR POCKETS SURROUNDING THE ROOTS.

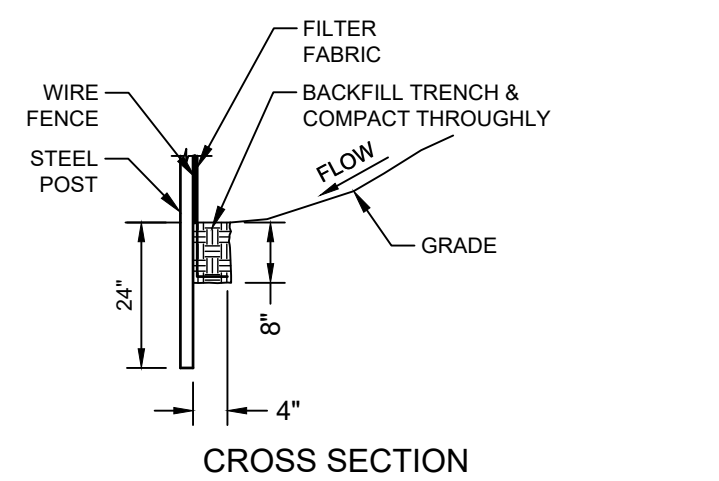
INSPECTION

- PITTSYLVANIA COUNTY WILL MONITOR THE RESTORATION EFFORTS OF THE PROJECT SITE THEMSELVES OR CHOOSE A REPRESENTATIVE TO CONDUCT THE MONITORING.
- PITTSYLVANIA COUNTY OR A REPRESENTATIVE WILL INSPECT AND VERIFY THE DISTRIBUTION AND PLANTING TO ENSURE PLANTS ARE OF ACCEPTABLE QUALITY AND THAT THE PLANTING SPECIFICATIONS HAVE BEEN MET TO THE FULLEST EXTENT POSSIBLE.
- PITTSYLVANIA COUNTY OR A REPRESENTATIVE WILL CONDUCT A SITE INSPECTION TO EVALUATE ESTABLISHMENT AND SURVIVAL RATES OF PLANTED MATERIAL AT THE LATTER PART OF THE GROWING SEASON (AUGUST TO SEPTEMBER) TO DOCUMENT REPLACEMENT NEEDS FOR INDIVIDUAL SPECIES.

MANAGEMENT & MONITORING

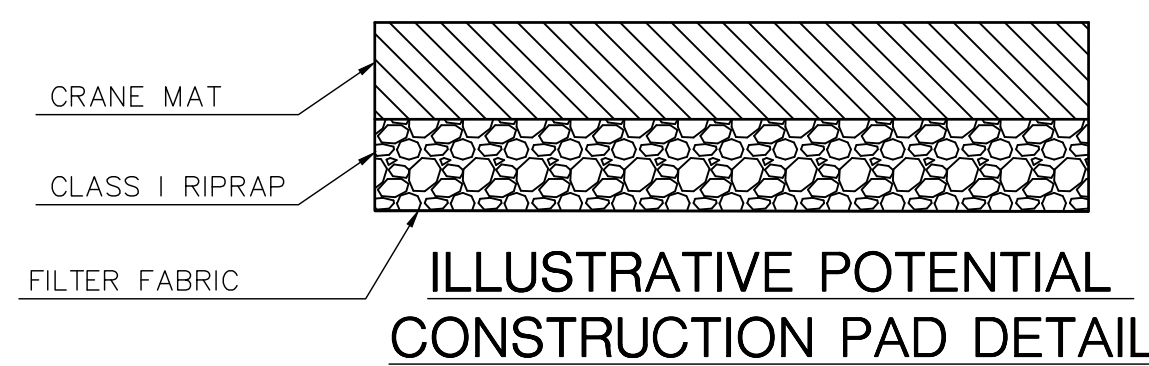
TECHNIQUES FOR MANAGING VEGETATION OF THE RESTORED STREAM BANKS MAY INCLUDE ONE OR MORE OF THE FOLLOWING:

- SPECIES COMPETITION WILL AFFECT THE DISTRIBUTION OF VARIOUS FORESTED UPLAND/WETLAND SPECIES AND GROWTH PATTERNS WILL VARY ACCORDING TO THE PHYSICAL SETTING OF THE STREAM RESTORATION AREA. MANAGEMENT OF PLANT COMMUNITY SUCCESSION SHOULD BE BASED ON THE DESIGN DETAIL.
- SHOULD WILDLIFE NUISANCES RESULT IN PLANT DAMAGE, VEGETATION REPLACEMENT SHOULD BE UTILIZED IF THE WILDLIFE DAMAGE IS DEEMED EXCESSIVE.
- UNDESIRABLE AND INVASIVE SPECIES FOR THIS SITE INCLUDE: ALLIARIA PETIOLATA (GARLIC MUSTARD), BIDENS POLYLEPIS (LONG-BRACTED BEGGAR TICKS), CIRSIUM ARVENSE (CANADIAN THISTLE), CIRSIUM VULGARE (BULL THISTLE), FESTUCA ELATIOR (TALL FESCUE), GLECOMA HEDERACEA (GROUND IVY), LIGUSTRUM SP. (PRIVET), LONICERA JAPONICA (JAPANESE HONEYSUCKLE), LONICERA SP. (BUSH HONEYSUCKLE), LYTHRUM SALICARIA (PURPLE LOOSESTRIFE), MORUS ALBA (WHITE MULBERRY), POLYGONUM PERFORLATUM (MILE-A-MINUTE), ROSA MULTIFLORA (MULTIFLORA ROSE).
- MONITORING OF THE PROJECT SITE WILL BE CONDUCTED FOR THREE (3) YEARS.
- THE PROJECT SITE WILL BE MONITORED ON A MONTHLY BASIS DURING THE LATTER PART OF THE GROWING SEASON (AUGUST TO SEPTEMBER) FOR THE FIRST YEAR AFTER PLANTING IS COMPLETE.
- PROGRESS REPORTS WILL BE GENERATED DETAILING THE DENSITY COUNTS OF EACH PLANT SPECIES ALONG WITH PHOTOGRAPHS OF THE RESTORED AREAS.
- THE FOLLOWING FOUR (4) ITEMS WILL BE MONITORED AT THE WETLAND AND STREAM RESTORATION AREAS.
 - * STABILITIES OF THE SUBSTRATES AND PHYSICAL STRUCTURES
 - * STABILITIES OF THE VEGETATION COMMUNITIES
 - * WETLAND HYDROLOGY
 - * INVASION OF UNDESIRABLE BIOTA
- GROWTH AND DISTRIBUTION OF DESIRABLE VOLUNTEER PLANT SPECIES SHOULD BE MONITORED. THE DISTRIBUTION OF THE DESIRABLE TREE SPECIES MAY BE ENHANCED BY THINNING OUT COMPETITOR SPECIES.
- SURVIVABILITY OF THE PLANTING WILL BE INCREASED IF EACH INDIVIDUAL PLANTING IS IRRIGATED DURING THE ENTIRE FIRST GROWING SEASON.



- POST: METAL - 5' LONG, TRIANGLE STEP 1.33 LB./LINEAR FEET
- WIRE: 1/4 GAUGE MIN. MAX MESH SPACING OF 6"
- FABRIC: PROPEX (BY AMOCO) OR EQUAL
- SPACING: 8' MAX. STANDARD STRENGTH FABRIC WITH WIRE FENCE 6' MAX. EXTRA STRENGTH FABRIC WITHOUT WIRE FENCE

SILT FENCE DETAIL
NOT TO SCALE



NOTE: "CRANE/CONSTRUCTION PAD SHOWN FOR ILLUSTRATION AND PERMITTING PURPOSES ONLY. THIS PAD IS CONSIDERED A DESIGN-BUILD ITEM AND THE CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF CONSTRUCTION WITHIN THE PERMITTED AREA SHOWN ON THE DRAWINGS. CONTRACTOR SHALL REMOVE AFTER CONSTRUCTION AND RESTORE AREA TO ORIGINAL CONDITIONS. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE NOTED."

PLANTING SPECIES LIST

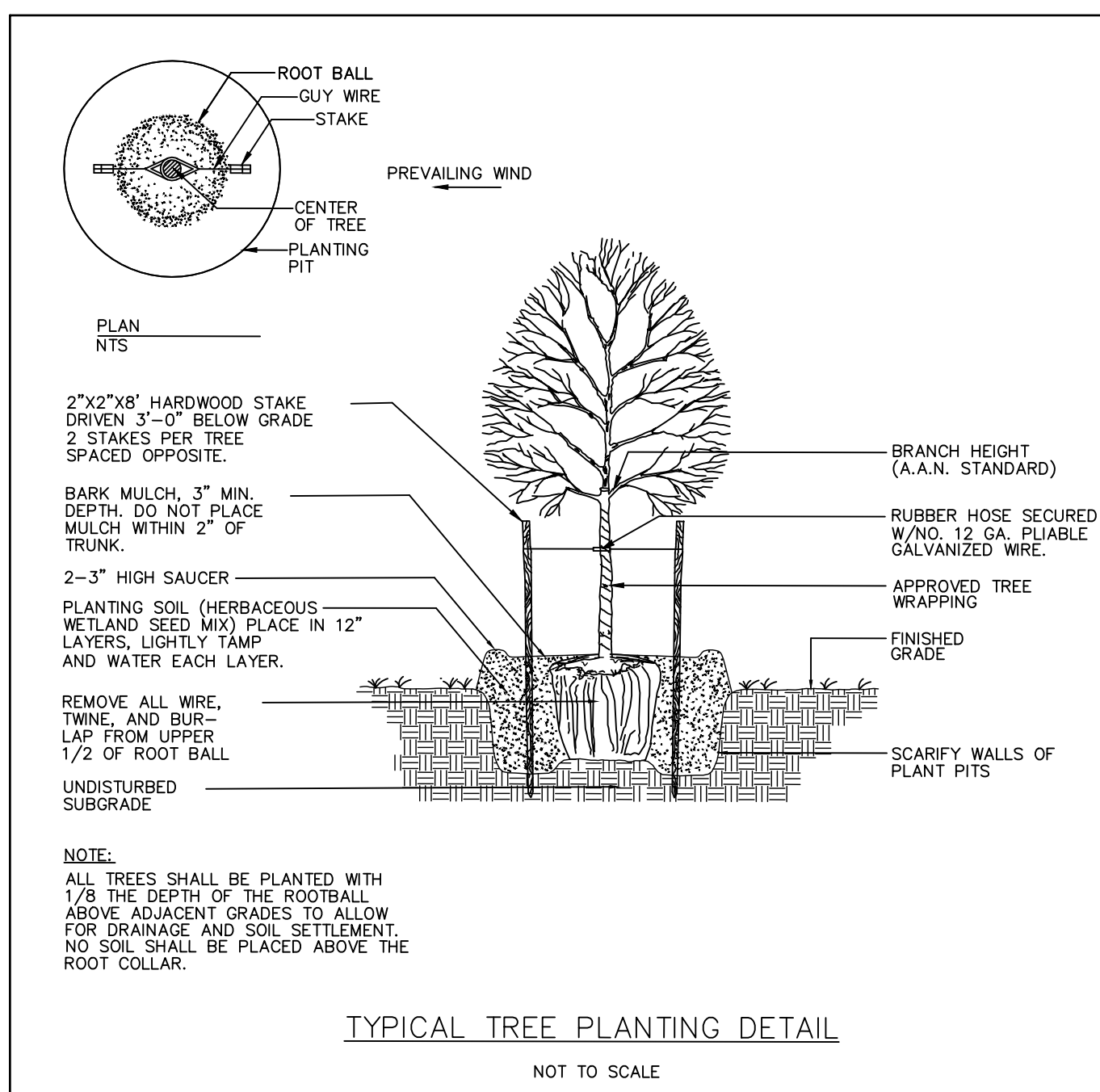
Plants for this list have been selected based on tolerance to deposition, flooding, drought and salt; having a high habitat value; native; local; endemic; indigenous; and having a fibrous and networking root pattern. Selection of species for planting configuration must take into account wetland indicator status.

WOODY PLANTINGS

SCIENTIFIC NAME	COMMON NAME	SHADE/SUN PREFERENCE	WETLAND INDICATOR STATUS
<i>Cornus amomum</i>	Silky dogwood	■	FACW
<i>Salix nigra</i>	Black willow	○, ■	FACW+
<i>Alnus serrulata</i>	Smooth alder	■	OBL
<i>Ilex verticillata</i>	Winterberry	■	FACW+
<i>Sambucus canadensis</i>	Elderberry	○, ■, ●	FACW-
** <i>Viburnum dentatum</i>	Arrowwood	■, ●	FAC
* <i>Acer rubrum</i>	Red maple	■	FAC
<i>Fraxinus americana</i>	Green ash	■	FACW
* <i>Platanus occidentalis</i>	Sycamore	■	FACW-
** <i>Cornus stolonifera</i>	Red-osier dogwood	■	FACW+
<i>Lindera benzoin</i>	Spicebush	○, ■, ●	FACW-
<i>Amelanchier canadensis</i>	Serviceberry	○, ■, ●	FAC
<i>Quercus falcata</i>	Southern red oak	○	FACU-
<i>Liriodendron tulipifera</i>	Tulip tree	○, ■	FACU
* <i>Quercus phellos</i>	Willow Oak	○	FAC +
<i>Quercus bicolor</i>	Swamp White Oak	○, ■, ●	FACW
* <i>Betula nigra</i>	River Birch	○, ■	FACW
<i>Nyssa sylvatica</i>	Blackgum	○	FAC
<i>Acer negundo</i>	Box Elder	○, ■	FACW
<i>Carya glabra</i>	Pignut Hickory	○, ■, ●	FACU
<i>Prunus serotina</i>	Black Cherry	○, ■	FACU
* <i>Ulmus rubra</i>	Slippery Elm	○	FAC
** <i>Ostrya virginiana</i>	American Hornbeam	○, ■, ●	FAC
<i>Cornus florida</i>	Flowering Dogwood	○, ■, ●	FACU
<i>Carya cordifolia</i>	Bitternut Hickory	■, ●	FACU
<i>Quercus alba</i>	White Oak	○, ■, ●	FACU
<i>Quercus velutina</i>	Black Oak	○, ■, ●	FACU
* <i>Liquidambar styraciflua</i>	Sweet Gum	■	FAC

SHRUBS

SCIENTIFIC NAME	COMMON NAME	SHADE/SUN PREFERENCE	WETLAND INDICATOR STATUS
<i>Amelanchier canadensis</i>	Serviceberry	○, ■, ●	FAC+
<i>Vaccinium corymbosum</i>	High Bush Blueberry	■	FACW
<i>Lindera benzoin</i>	Spicebush	■	FACW
<i>Alnus serrulata</i>	Speckled Alder	■	FACW-
<i>Cercis canadensis</i>	Eastern Redbud	■, ●	FACU-
<i>Cornus florida</i>	Flowering Dogwood	○, ■, ●	FACU
<i>Viburnum lentago</i>	Nannyberry	■, ●	FAC
<i>Aronia melanocarpa</i>	Black Chokeberry	■	FAC



WETLAND SEED MIXTURE

SCIENTIFIC NAME	COMMON NAME	SHADE/SUN PREFERENCE	WETLAND INDICATOR STATUS	MIX PERCENT
<i>Dichanthelium clandestinum</i>	Deertongue2	■	FAC+	10
<i>Agrostis gigantea</i>	Red top	■	FACW	55
<i>Trifolium incarnatum</i>	Crimson clover1,2	■	NI	7.5
<i>Elymus virginicus</i>	Virginia wild rye	■	FACW-	10
<i>Cinna arundinaceae</i>	Wood-reed2	■	FACW	7.5
<i>Polygonum pensylvanicum</i>	Pink Smartweed2	■	FACW	10

- Non-persistent, non-native nurse crop used as a temporary erosion control cover.
- Can be planted a bare root seeding or as plugs.

Legend

○ - Full Sunlight ■ - Partial Shade ● - Full Shade

"+" Indicates a greater frequency of occurrence

"-" Indicates a lesser frequency of occurrence.

* Recommended over story species

** Recommended sub-canopy species

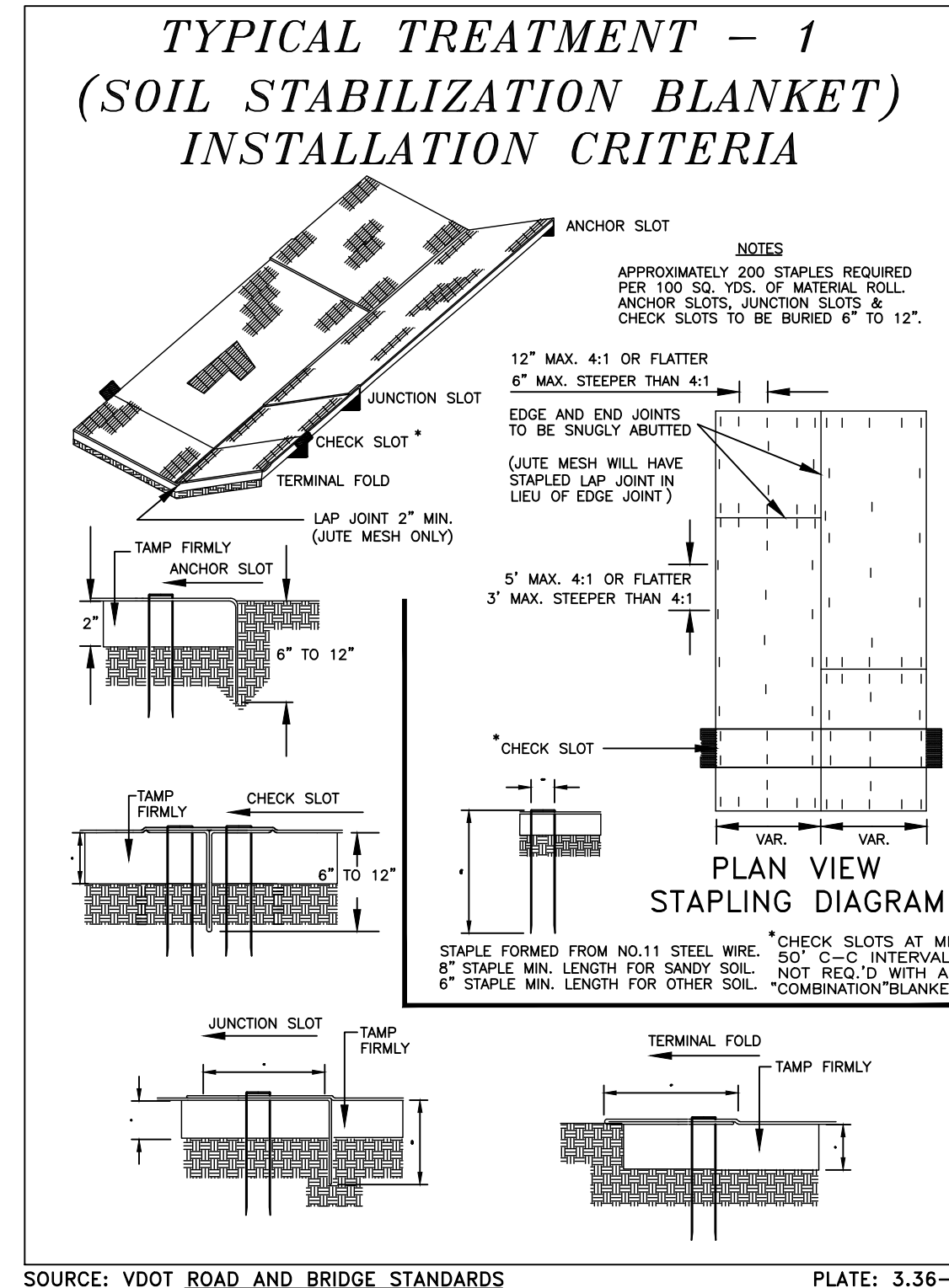
FAC Facultative

FACU Facultative Upland

FACW Facultative Wetland

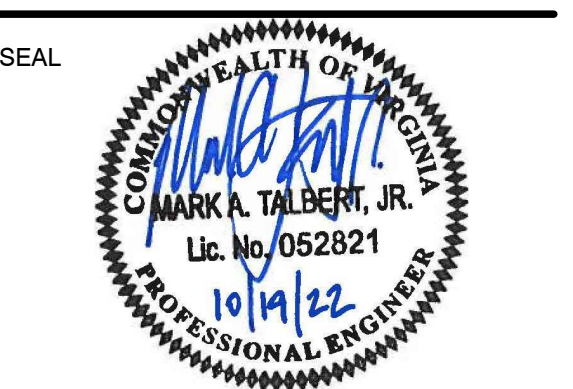
PLANTS AVAILABLE AS BARE ROOTS AND PLUGS

SCIENTIFIC NAME	COMMON NAME	SHADE/SUN PREFERENCE	WETLAND INDICATOR STATUS
<i>Onoclea sensibilis</i>	Sensitive Fern	■, ●	FACW
<i>Osmunda cinnamomea</i>	Christmas Fern	○, ■, ●	FACW
<i>Glechoma hederacea</i>	Gill-over-the-ground	○, ■, ●	FACU
<i>Smilacina racemosa</i>	False Solomons Seal	■	FACU-
<i>Maianthemum canadense</i>	Canadian Mayflower	○, ■, ●	FAC-
<i>Mikania scandens</i>	Climbing Bon Set	■	FACW
<i>Amphicarpa bracteata</i>	Hog Peanut	■	FAC
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	○, ■, ●	FACU
<i>Vitis labrusca</i>	Fox Grape	■, ●	FACU
<i>Thalictrum dioicum</i>	Early Meadow Rue	■, ●	FAC



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RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE
SUPERSTRUCTURE REPLACEMENT
AND SUBSTRUCTURE MODIFICATION
PITTSYLVANIA COUNTY
RINGGOLD, VIRGINIA 24586



KEY PLAN

SCALE

No.	DATE	BY	Description
4	10/19/2022	JSS	DEQ Comments
3	5/26/2022	JSS	DEQ Comments
2	5/11/2022	JSS	DEQ Comments
1	4/11/2022	JSS	County Comments

DRAWN BY: JSS

APPROVED BY: MAT

CHECKED BY:

DATE: 02/11/2021

TITLE

EROSION AND SEDIMENT CONTROL DETAILS

PROJECT NO. 50106038

C201

SHEET NO.

1
2
3
4
5

STD & SPEC 3.02
TEMPORARY STONE

CONSTRUCTION ENTRANCE

CONSTRUCTION SPECIFICATIONS

THE AREA OF THE ENTRANCE MUST BE EXCAVATED A MINIMUM OF 3 INCHES AND MUST BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. THE FILTER FABRIC UNDERLINER WILL THEN BE PLACED THE FULL WIDTH AND LENGTH OF THE ENTRANCE.

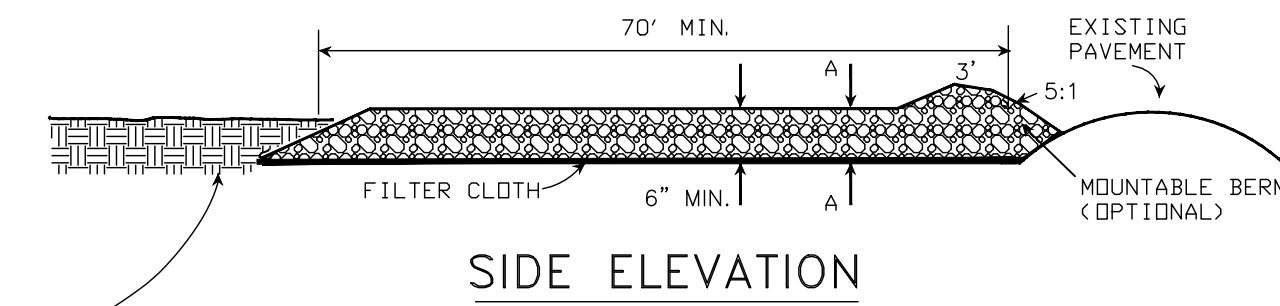
FOLLOWING THE INSTALLATION OF THE FILTER CLOTH, THE STONE SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. IF WASH RACKS ARE USED, THEY SHOULD BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. CONVEYANCE OF SURFACE WATER UNDER ENTRANCE, THROUGH CULVERTS, SHALL BE PROVIDED AS REQUIRED. IF SUCH CONVEYANCE IS IMPOSSIBLE, THE CONSTRUCTION OF A "MOUNTABLE" BERM WITH 5:1 SLOPES WILL BE PERMITTED.

THE FILTER CLOTH UTILIZED SHALL BE A WOVEN OR NONWOVEN FABRIC CONSISTING ONLY OF CONTINUOUS CHAIN POLYMERIC FILAMENTS OR YARNS OF POLYESTER. THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS, BE MILDEW AND ROT RESISTANT, AND CONFORM TO THE PHYSICAL PROPERTIES NOTED IN TABLE 3.02-A.

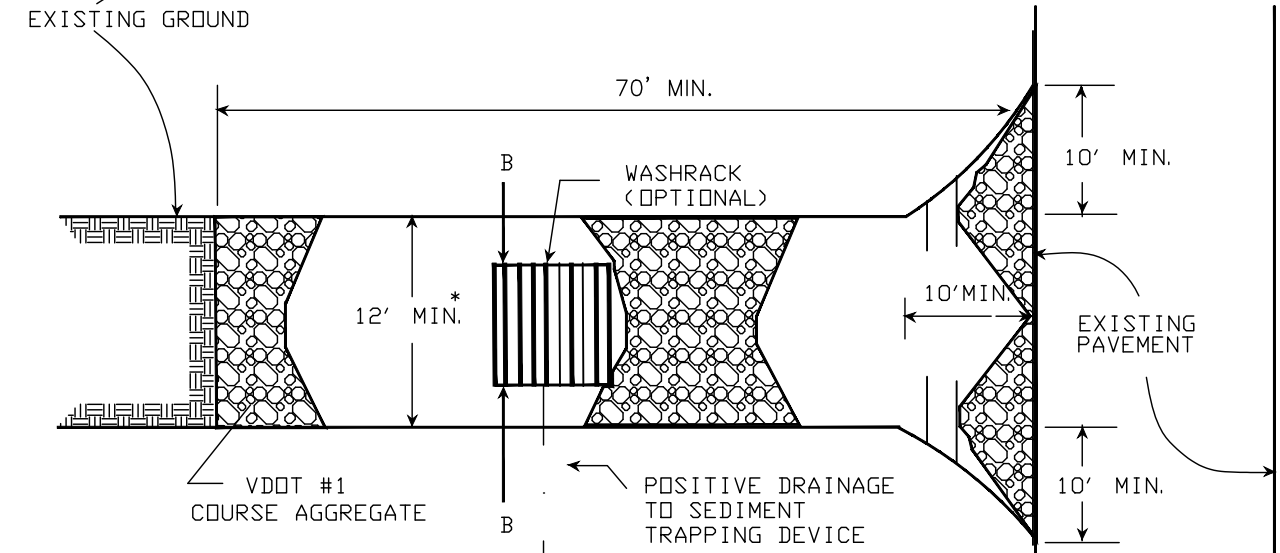
MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

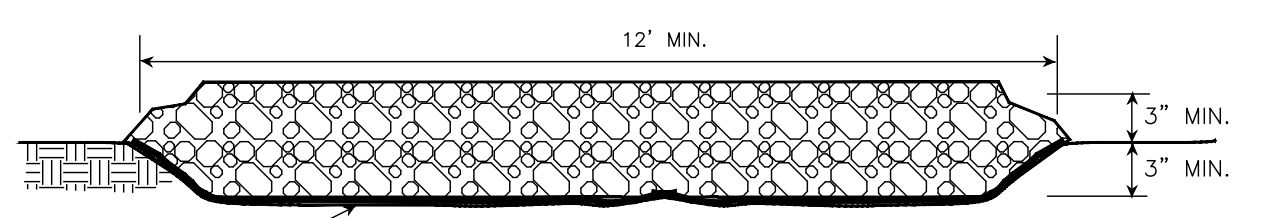
STONE CONSTRUCTION ENTRANCE



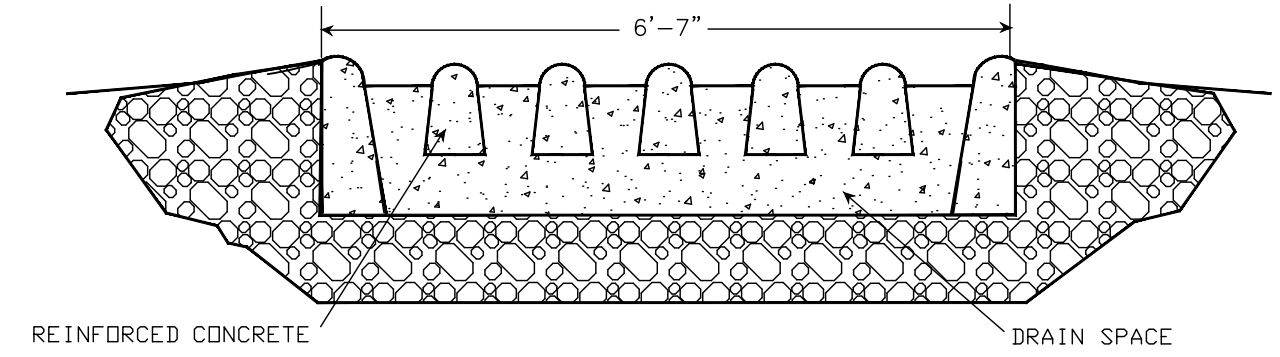
SIDE ELEVATION



PLAN VIEW



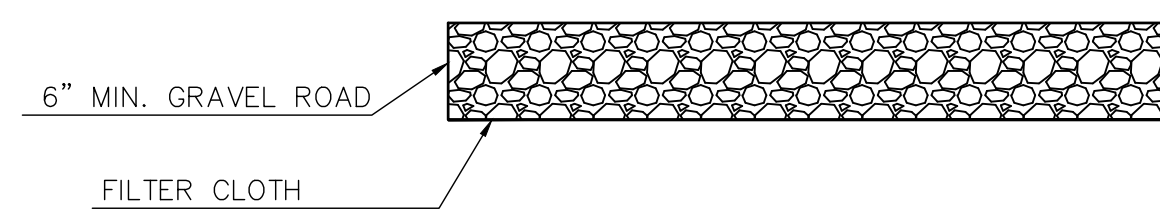
SECTION A-A



SECTION B-B

SOURCE: MARYLAND WATER RESOURCES ADMINISTRATION
VA. DSWC

PLATE. 3.2-1



GRAVEL ACCESS ROAD DETAIL

N.T.S.

STD & SPEC 3.19

RIPRAP

PURPOSES

1. TO PROTECT THE SOIL FROM THE ERODIVE FORCES OF CONCENTRATED RUNOFF.
2. TO SLOW THE VELOCITY OF CONCENTRATED RUNOFF WHILE ENHANCING THE POTENTIAL FOR INFILTRATION.
3. TO STABILIZE SLOPES WITH SEEPAGE PROBLEMS AND/OR NON-COHESIVE SOILS.

SPECIFICATIONS

SUBGRADE PREPARATION

THE SUBGRADE FOR THE RIPRAP OR FILTER SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL. BRUSH, TREES, STUMPS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED.

FILTER FABRIC OR GRANULAR FILTER

PLACEMENT OF THE FILTER FABRIC SHOULD BE DONE IMMEDIATELY AFTER SLOPE PREPARATION. FOR GRANULAR FILTERS, THE STONE SHOULD BE SPREAD IN A UNIFORM LAYER TO THE SPECIFIED DEPTH (NORMALLY 6 INCHES). WHERE MORE THAN ONE LAYER OF FILTER MATERIAL IS USED, THE LAYER SHOULD BE SPREAD SO THAT THERE IS MINIMAL MIXING OF THE LAYERS.

WHEN INSTALLING GEOTEXTILE FILTER CLOTHS, THE CLOTH SHOULD BE PLACED DIRECTLY ON THE PREPARED SLOPE. THE EDGES OF THE SHEETS SHOULD OVERLAP BY AT LEAST 12 INCHES. ANCHOR PINS, 15 INCHES LONG, SHOULD BE SPACED EVERY 3 FEET ALONG THE OVERLAP. THE UPPER AND LOWER ENDS OF THE CLOTH SHOULD BE BURIED AT LEAST 12 INCHES. CARE SHOULD BE TAKEN NOT TO DAMAGE THE CLOTH WHEN PLACING THE RIPRAP. IF DAMAGE OCCURS, THAT SHEET SHOULD BE REMOVED AND REPLACED. FOR LARGE STONE (CLASS II OR GREATER), A 6-INCH LAYER OF GRANULAR FILTER WILL BE NECESSARY TO PREVENT DAMAGE TO THE CLOTH.

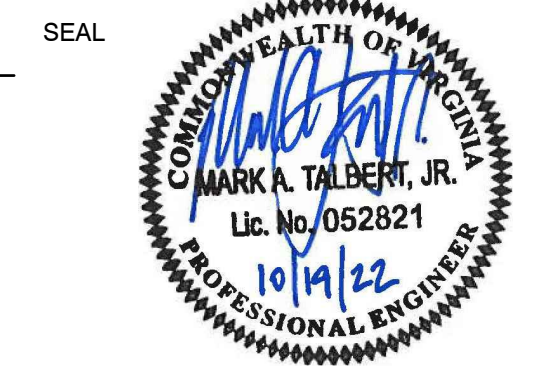
STONE PLACEMENT

PLACEMENT OF RIPRAP SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER. THE RIPRAP SHOULD BE PLACED SO THAT IT PRODUCES A DENSE WELL-GRADED MASS OF STONE WITH A MINIMUM OF VOIDS. THE DESIRED DISTRIBUTION OF STONES THROUGHOUT THE MASS MAY BE OBTAINED BY SELECTIVE LOADING AT THE QUARRY, CONTROLLED DUMPING OF SUCCESSIVE LOADS DURING FINAL PLACING, OR BY A COMBINATION OF THESE METHODS. THE RIPRAP SHOULD BE PLACED TO ITS FULL THICKNESS IN ONE OPERATION. THE RIPRAP SHOULD NOT BE PLACED BY DUMPING INTO CHUTES OR SIMILAR METHODS WHICH ARE LIKELY TO CAUSE SEGREGATION OF THE VARIOUS STONE SIZES. CARE SHOULD BE TAKEN NOT TO DISLodge THE UNDERLYING MATERIAL WHEN PLACING THE STONES.

THE FINISHED SLOPE SHOULD BE FREE OF POCKETS OF SMALL STONE OR CLUSTERS OF LARGE STONES. HAND PLACING MAY BE NECESSARY TO ACHIEVE THE REQUIRED GRADES AND A GOOD DISTRIBUTION OF STONE SIZES. FINAL THICKNESS OF THE RIPRAP BLANKET SHOULD BE WITHIN PLUS OR MINUS 1/4 OF THE SPECIFIED THICKNESS.

MAINTENANCE

ONCE A RIPRAP INSTALLATION HAS BEEN COMPLETED, IT SHOULD REQUIRE VERY LITTLE MAINTENANCE. IT SHOULD, HOWEVER, BE INSPECTED PERIODICALLY TO DETERMINE IF HIGH FLOWS HAVE CAUSED SCOUR BENEATH THE RIPRAP OR FILTER FABRIC OR DISLODGED ANY OF THE STONE. CARE MUST BE TAKEN TO PROPERLY CONTROL SEDIMENT-LADEN CONSTRUCTION RUNOFF WHICH MAY DRAIN TO THE POINT OF THE NEW INSTALLATION. IF REPAIRS ARE NEEDED, THEY SHOULD BE ACCOMPLISHED IMMEDIATELY.



KEY PLAN

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REVISIONS

DRAWN BY: JSS
APPROVED BY: MAT
CHECKED BY:
DATE: 02/11/2021
TITLE:

EROSION AND
SEDIMENT
CONTROL DETAILS

PROJECT NO. 50106038

C202

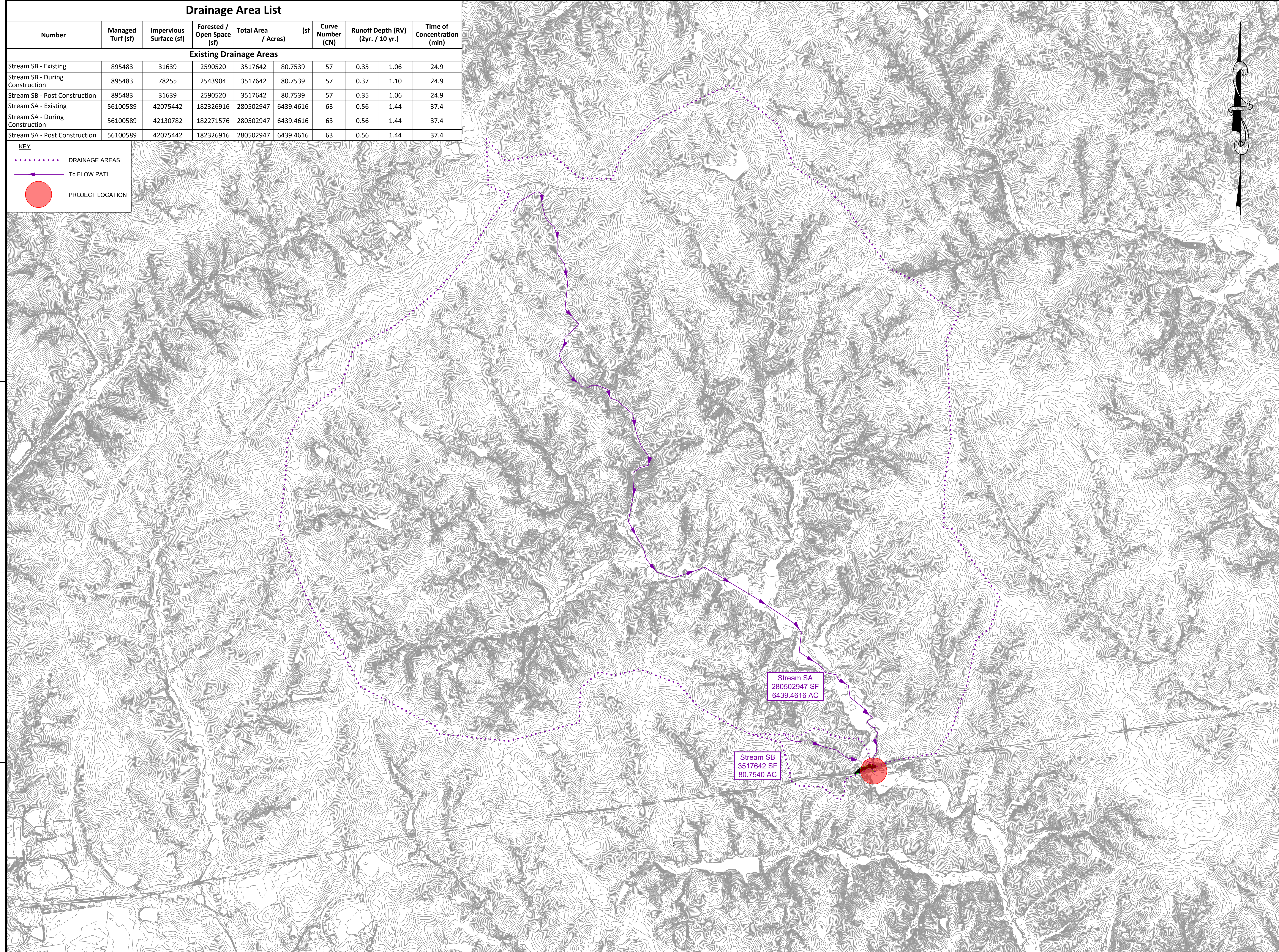
SHEET NO.

Drainage Area List

Number	Managed Turf (sf)	Impervious Surface (sf)	Forested / Open Space (sf)	Total Area / Acres	(sf)	Curve Number (CN)	Runoff Depth (RV) (2yr. / 10 yr.)	Time of Concentration (min)
Existing Drainage Areas								
Stream SB - Existing	895483	31639	2590520	3517642	80.7539	57	0.35 1.06	24.9
Stream SB - During Construction	895483	78255	2543904	3517642	80.7539	57	0.37 1.10	24.9
Stream SB - Post Construction	895483	31639	2590520	3517642	80.7539	57	0.35 1.06	24.9
Stream SA - Existing	56100589	42075442	182326916	280502947	6439.4616	63	0.56 1.44	37.4
Stream SA - During Construction	56100589	42130782	182271576	280502947	6439.4616	63	0.56 1.44	37.4
Stream SA - Post Construction	56100589	42075442	182326916	280502947	6439.4616	63	0.56 1.44	37.4

KEY

- DRAINAGE AREAS
- Tc FLOW PATH
- PROJECT LOCATION



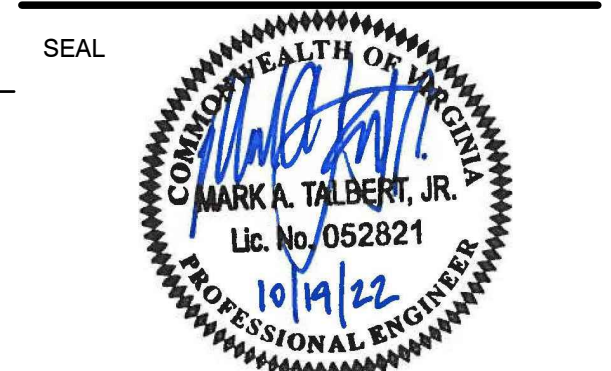
Stream SA
280502947 SF
6439.4616 AC

Stream SB
3517642 SF
80.7540 AC

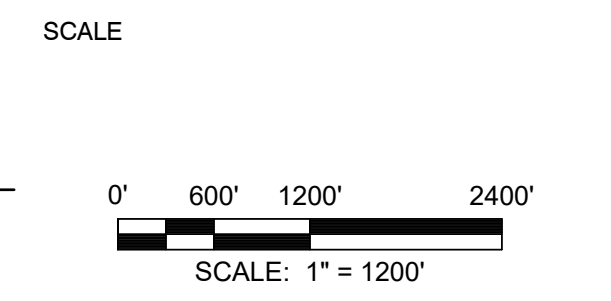


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**RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE
SUPERSTRUCTURE REPLACEMENT
AND SUBSTRUCTURE MODIFICATION**
PITTSYLVANIA COUNTY
RINGGOLD, VIRGINIA 24586



KEY PLAN



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REVISIONS

DRAWN BY: JSS
APPROVED BY: MAT
CHECKED BY:
DATE: 02/11/2021
TITLE:

DRAINAGE PLAN

PROJECT NO. 50106038

C300

SHEET NO.

PROJECT CRITERIA

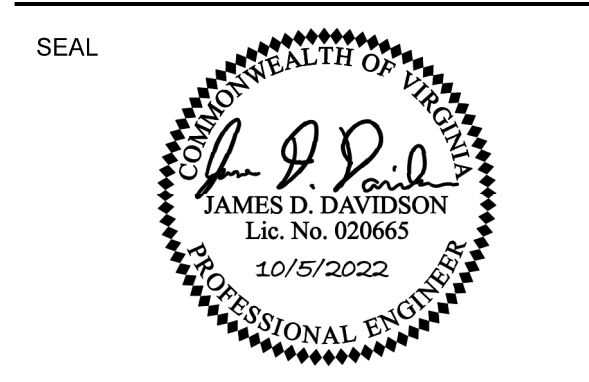
DESIGN STANDARDS:
-AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
-AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES

METHODS AND MATERIALS:
-PER VIRGINIA DEPARTMENT OF TRANSPORTATION'S "ROAD AND BRIDGE SPECIFICATIONS (2020)."
-ALL REGULAR STEEL REINFORCEMENT SHALL BE GRADE 60
-ALL PRESTRESSING STEEL SHALL BE GRADE 270 LOW-RELAXATION STRANDS
-ALL CAST-IN-PLACE CONCRETE EXCEPT THE CURB/FASCIA SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI MIN. CURB/FASCIA SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI MIN.
-AN ARCHITECTURAL SURFACE TREATMENT SHALL BE APPLIED TO INDICATED EXPOSED CONCRETE SURFACES AND SELECTED TO MATCH THE EXISTING STRUCTURE. SUBMIT PATTERN FOR ACCEPTANCE BY THE ENGINEER.

DESIGN LOADING:
-90 PSF PEDESTRIAN LIVE LOAD
-H10 DESIGN VEHICLE
-42 PSF STREAM LOAD W/ 100 YR. FLOOD
-STREAM VELOCITY = 5.48 FT/SEC.
-DEAD LOADS AND WIND LOADS PER AASHTO

FOR MORE INFORMATION, SEE NOTES ON SHEETS S-5 AND S-17.

RINGGOLD RAIL TRAIL PEDESTRIAN BRIDGE
SUPERSTRUCTURE REPLACEMENT AND SUBSTRUCTURE MODIFICATION
RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA. 24586



KEY PLAN

REVISIONS

No.	DATE	BY	DESCRIPTION

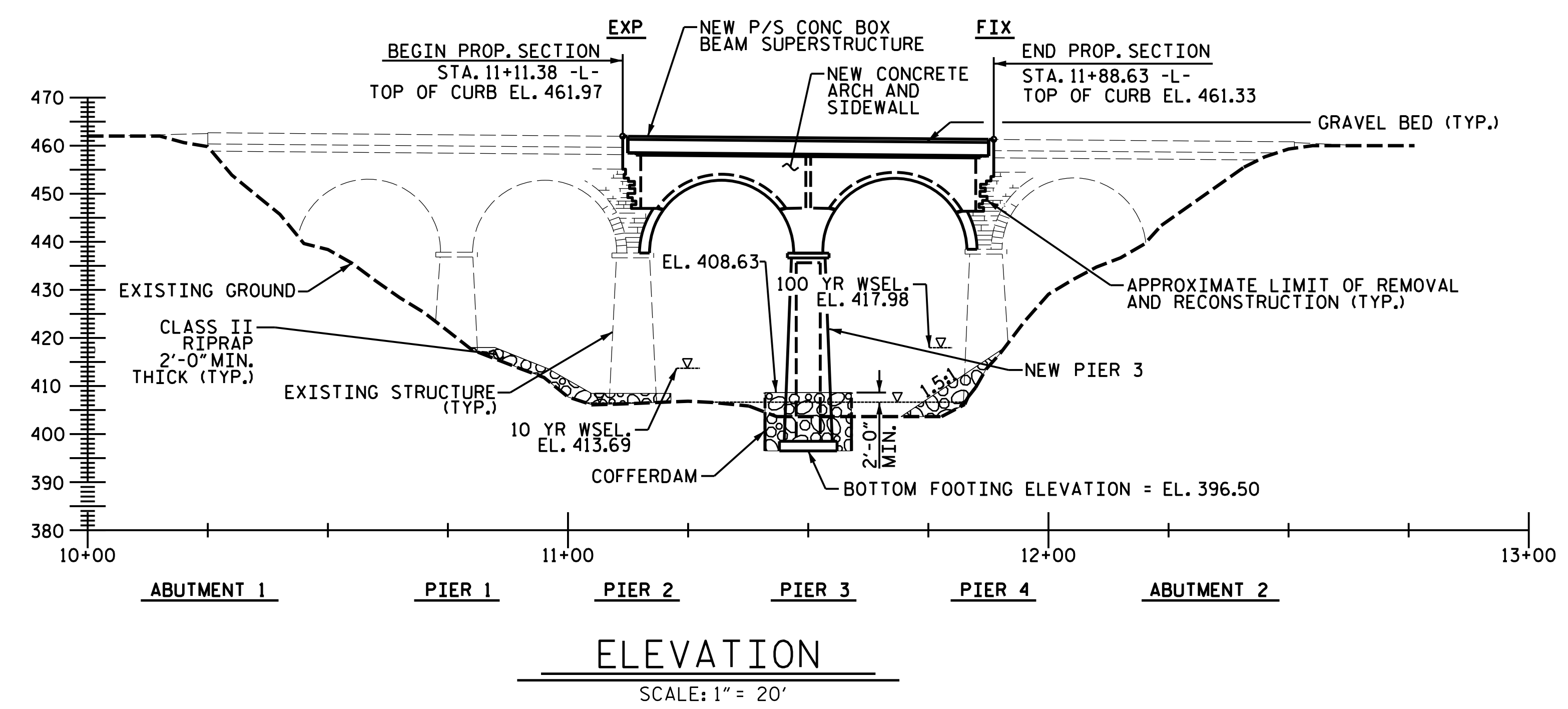
DRAWN BY: SKC/KLT
APPROVED BY: MTP
CHECKED BY: CBC/JMS
DATE: 02/2022

TITLE

GENERAL PLAN & ELEVATION

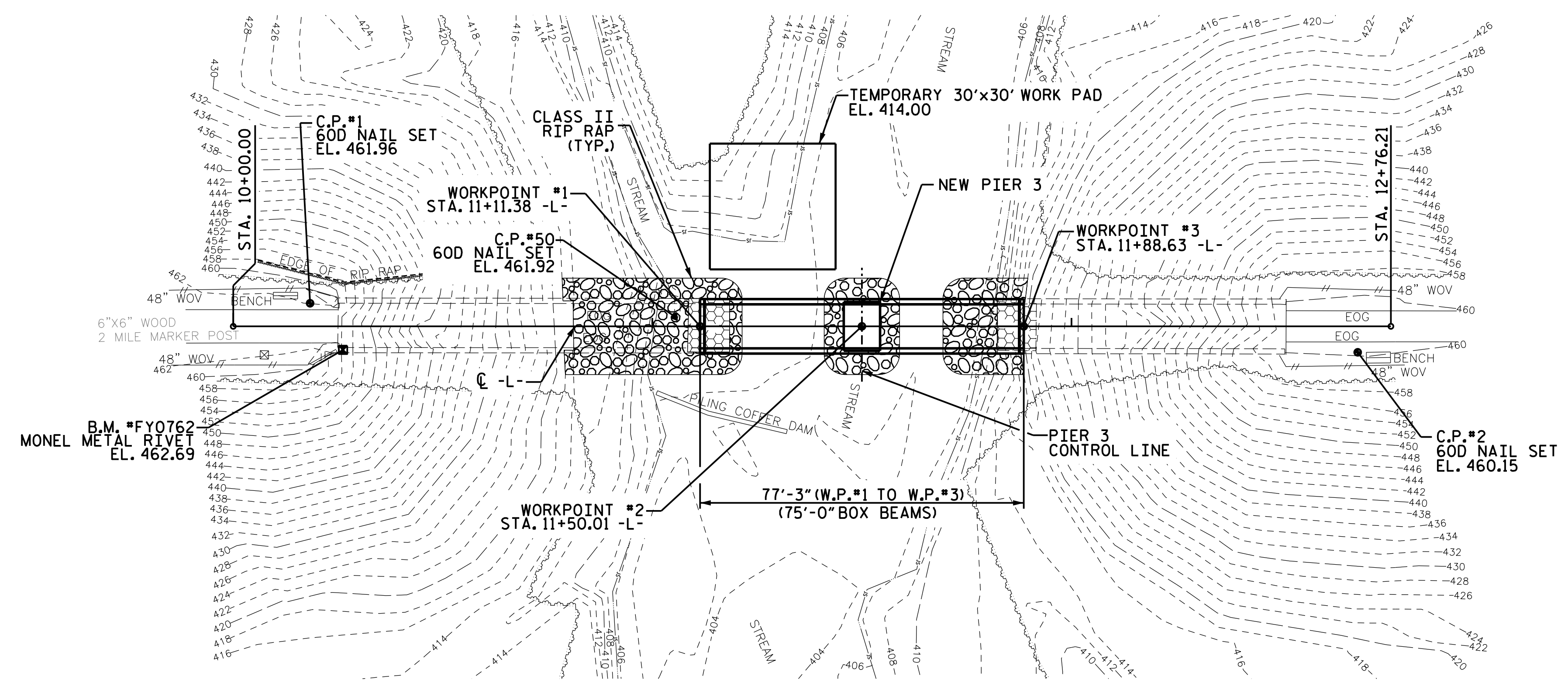
PROJECT NO. 50106038

S-1

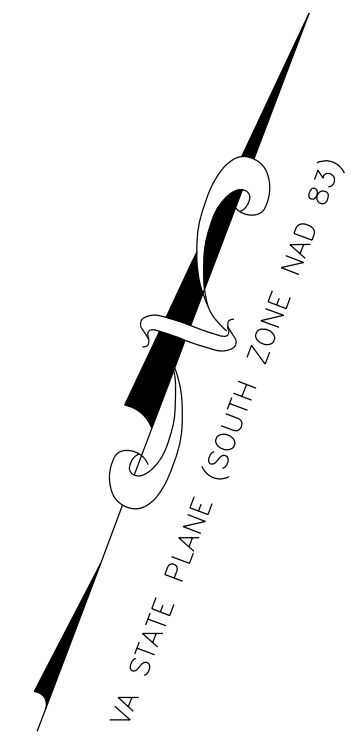


ELEVATION
SCALE: 1" = 20'

COORDINATE TABLE			
LOCATION	-L- STA.	NORTHING	EASTING
BEG. ALIGNMENT	10+00.00	3,383,197.88	11,259,498.13
END ALIGNMENT	12+76.21	3,383,295.78	11,259,756.41
B.M. #FY0762	10+26.20	3,383,201.93	11,259,524.61
C.P. #1	10+18.33	3,383,209.53	11,259,513.32
C.P. #2	12+68.30	3,383,287.19	11,259,751.21
C.P. #50	11+05.37	3,383,237.39	11,259,595.85



PLAN
SCALE: 1" = 20'



**RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE**
SUPERSTRUCTURE
REPLACEMENT
AND SUBSTRUCTURE
MODIFICATION
RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA 24586



KEY PLAN

REVISIONS

No.	DATE	BY	DESCRIPTION

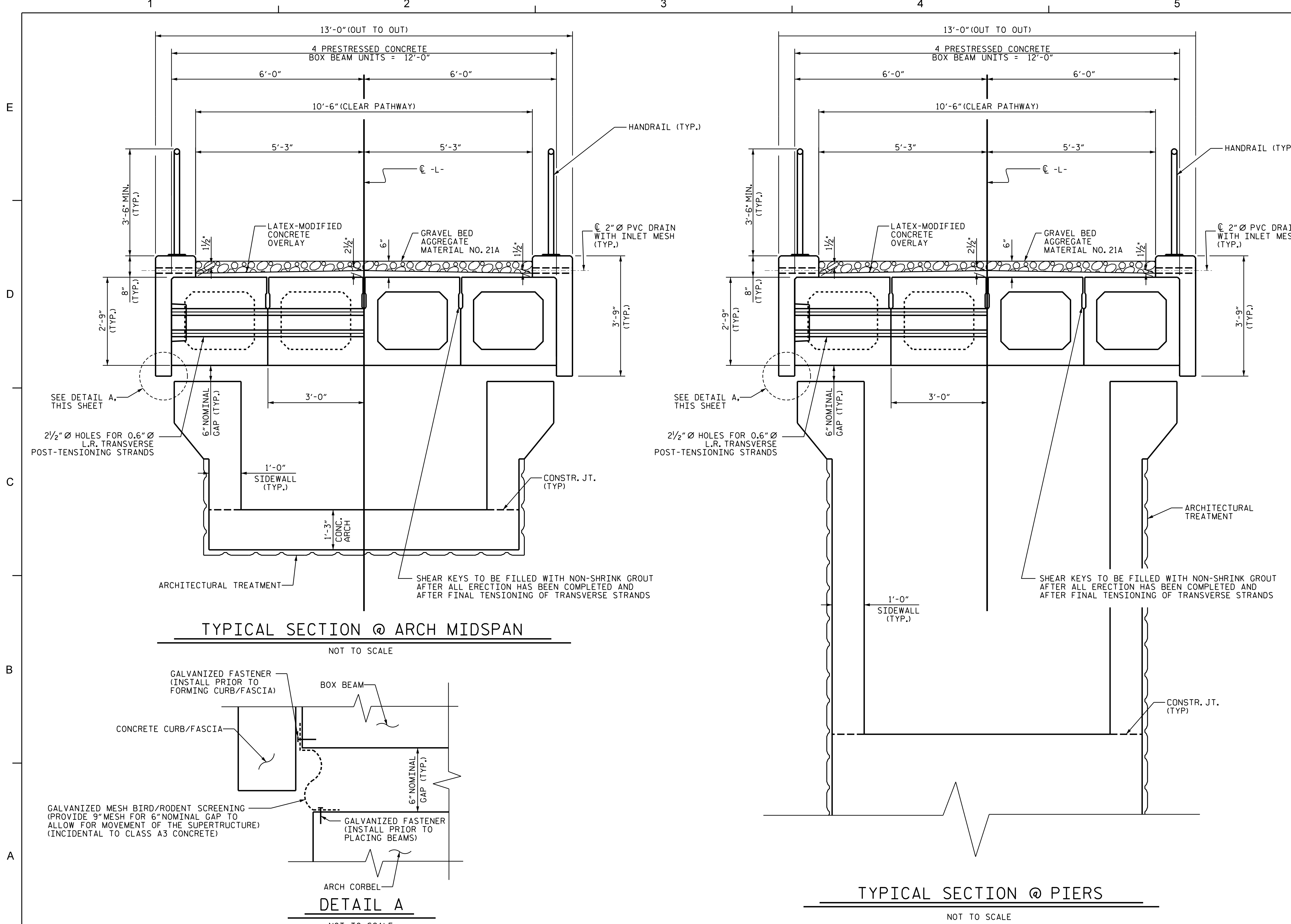
DRAWN BY SKC/KLT
APPROVED BY MTP
CHECKED BY CBC/JMS
DATE 02/2022

TITLE

TYPICAL SECTION

PROJECT NO. 50106038

S-2



TYPICAL SECTION @ ARCH MIDSPAN

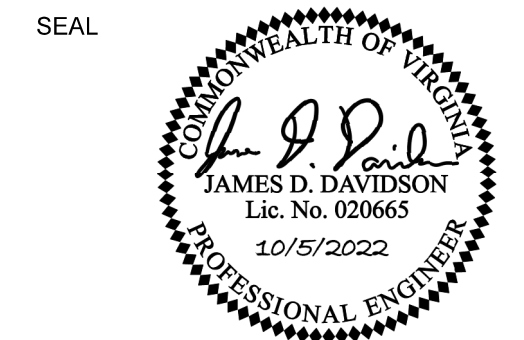
NOT TO SCALE

TYPICAL SECTION @ PIERS

NOT TO SCALE

DETAIL A

NOT TO SCALE



KEY PLAN

REVISIONS

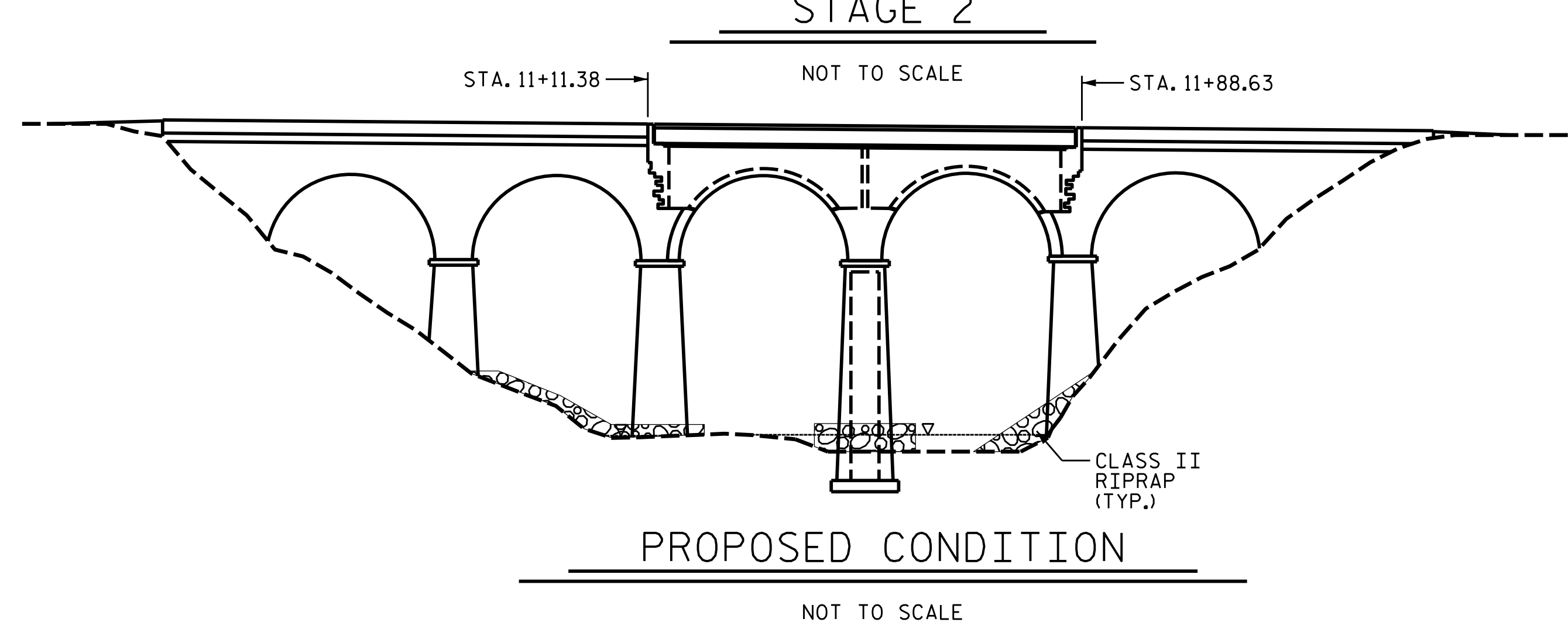
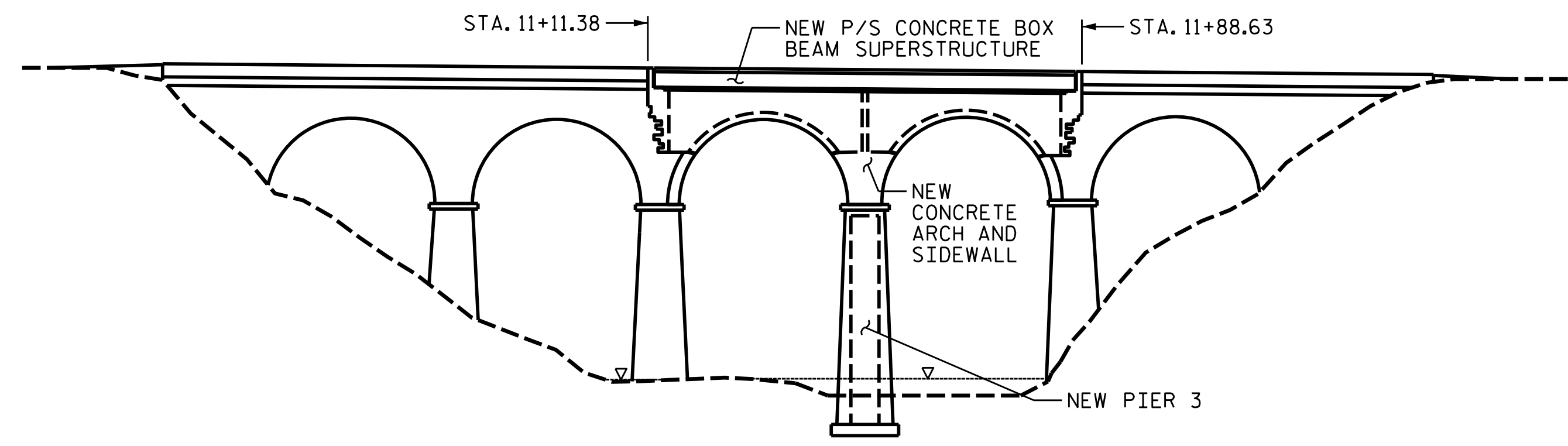
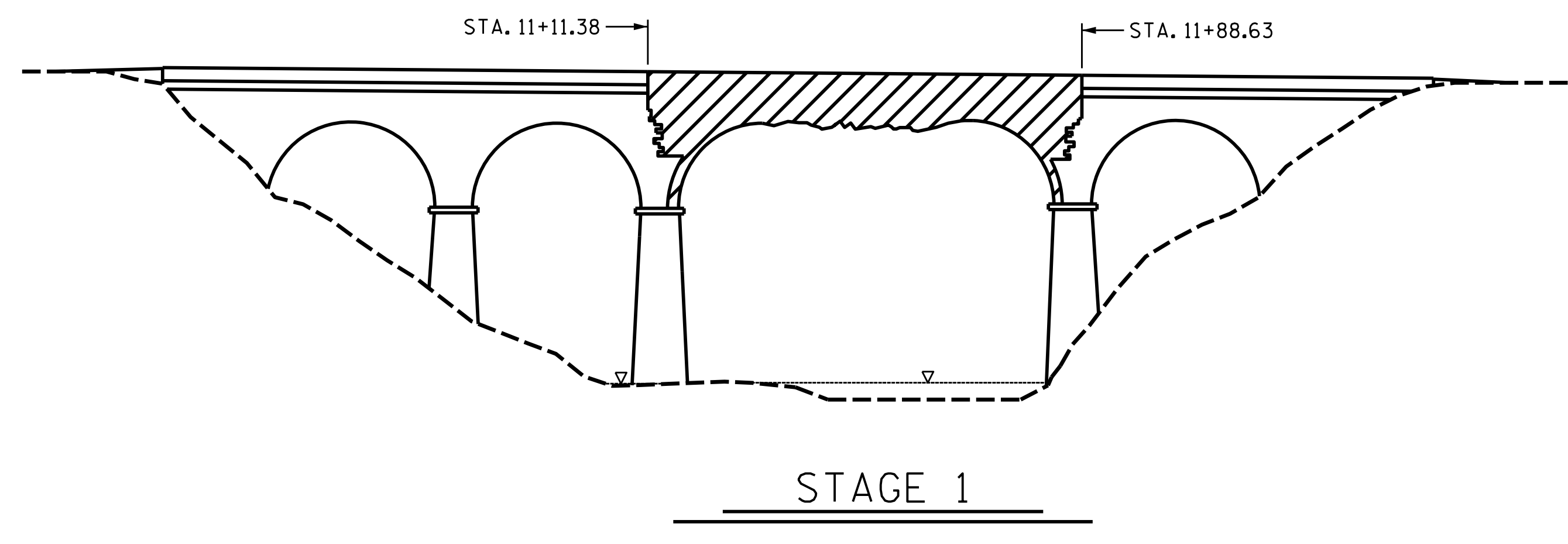
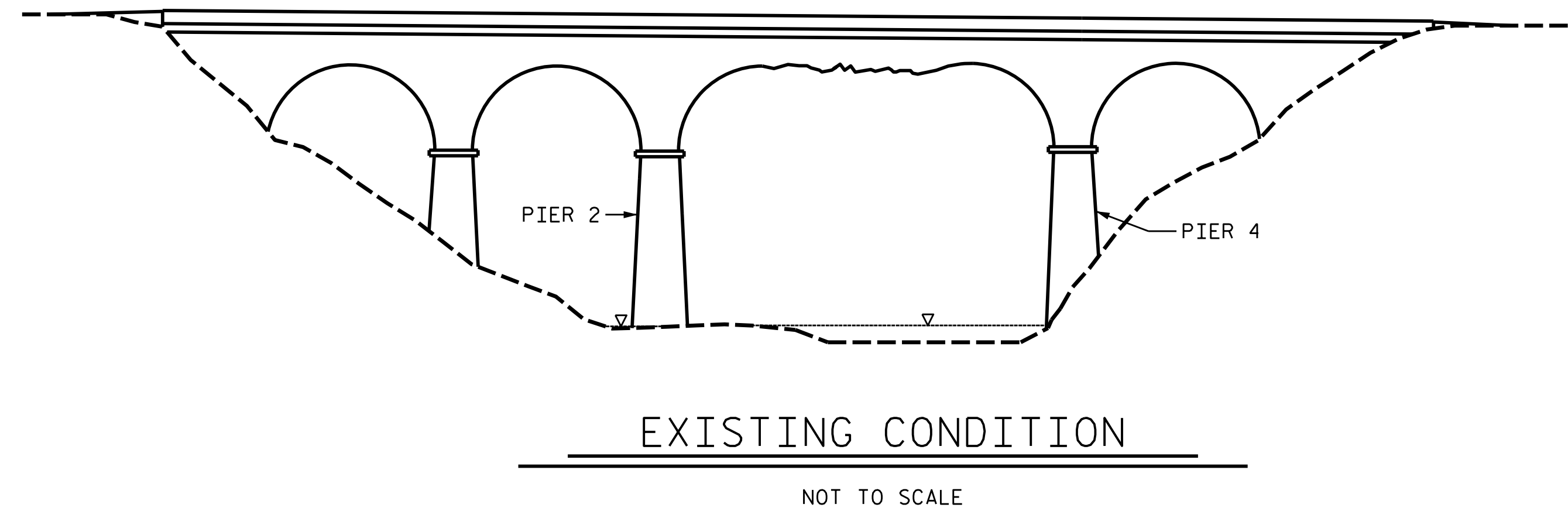
No.	DATE	BY	DESCRIPTION

DRAWN BY SKC/KLT
 APPROVED BY MTP
 CHECKED BY CBC/JMS
 DATE 02/2022

TITLE
**DEMOLITION
 & CONSTRUCTION
 SEQUENCE**

PROJECT NO. 50106038

S-3



STAGE 1 - DEMOLITION AND REMOVAL OF PORTIONS OF THE EXISTING STRUCTURE

1. REMOVE AND RETAIN EXISTING HANDRAIL TO BE RESET FOLLOWING NEW CONSTRUCTION. REMOVE HANDRAIL IN A MANNER THAT WILL ALLOW REATTACHMENT TO THE NEW CONCRETE CURB.
2. REMOVE EXISTING CONCRETE TO SAWCUT LINES AND REMOVE STONES ALONG MORTAR LINES.
3. PROVIDE TEMPORARY FALSEWORK AND SUPPORT OF THE EXISTING STRUCTURE DURING DEMOLITION AND REMOVAL OPERATIONS AS REQUIRED TO AVOID DAMAGE TO EXISTING PORTIONS TO REMAIN. REPAIR ANY DAMAGE CAUSED BY DEMOLITION AND REMOVAL OPERATIONS TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST.

LEGEND

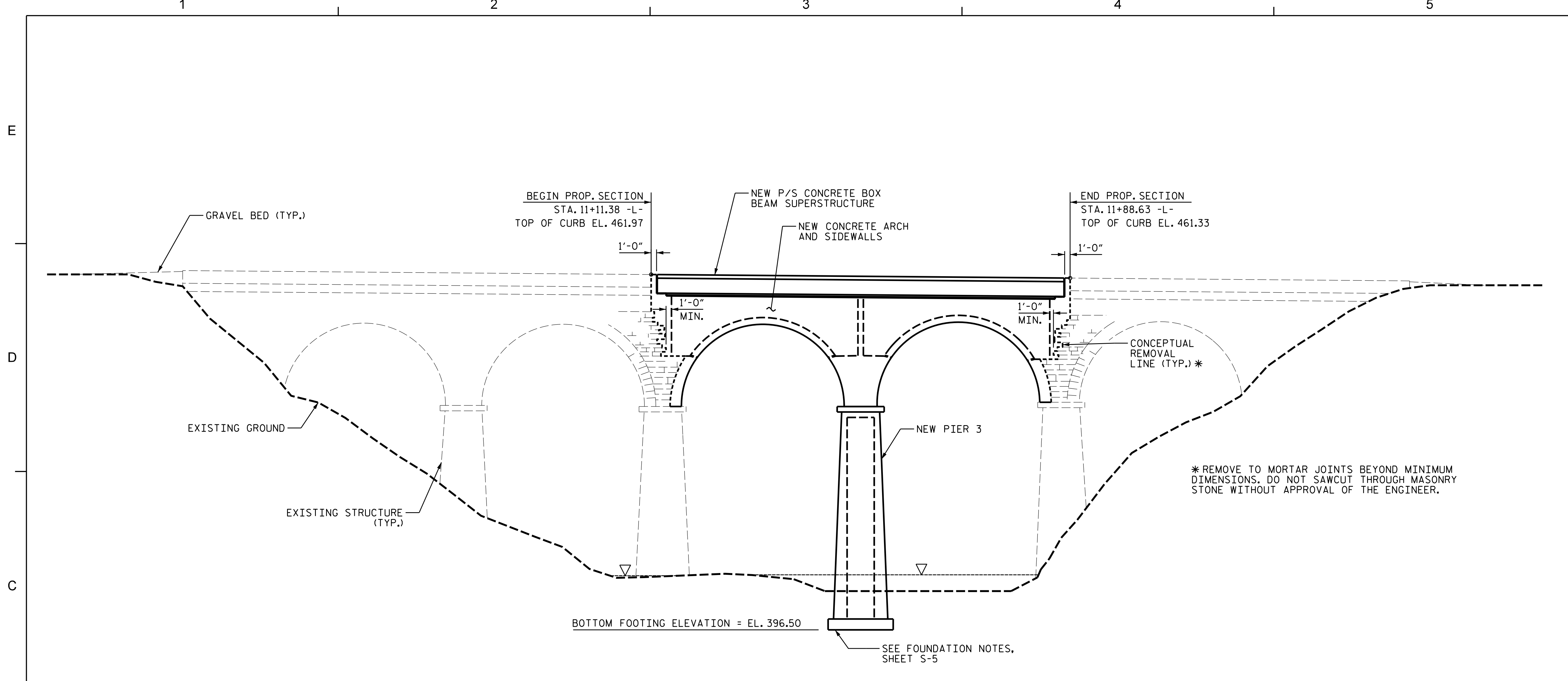
PORTION OF EXISTING STRUCTURE TO BE REMOVED.

STAGE 2 - NEW CONSTRUCTION

1. CONSTRUCT NEW PIER 3.
2. CONSTRUCT NEW CONCRETE ARCH AND SIDEWALLS.
3. ERECT NEW SUPERSTRUCTURE.
4. COVER NEW SUPERSTRUCTURE WITH LATEX-MODIFIED CONCRETE OVERLAY & GRAVEL BED. REINSTALL EXISTING HANDRAIL.
5. PLACE CLASS II RIP RAP.

E
D
C
B
A

1 2 3 4 5

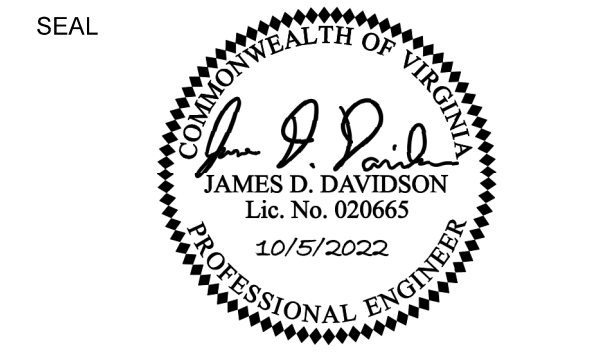


ELEVATION
 SCALE: 1" = 10'

NOTES:
 NO CONSTRUCTION EQUIPMENT OR LOADS OTHER THAN WHAT IS DIRECTLY REQUIRED TO COMPLETE THE BEAM ERECTION, CURB POURING AND OTHER APPURTENANCE ATTACHMENT SHALL BE ALLOWED ON THE BRIDGE.
 ALL DIMENSIONS MEASURED CENTER TO CENTER.
 CONTRACTOR SHALL PROVIDE DEMOLITION PLAN AND FALSEWORK/FORMWORK PLAN FOR APPROVAL BY THE ENGINEER. PROVIDE TEMPORARY SUPPORT OF THE EXISTING STRUCTURE THROUGH ALL STAGES OF DEMOLITION AND CONSTRUCTION AS REQUIRED TO MAINTAIN STRUCTURAL INTEGRITY AND STABILITY OF THE REMAINING STRUCTURE. FALSEWORK AND FORMWORK SUBMITTALS SHALL INCLUDE DESIGN CALCULATIONS AND PLANS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF VIRGINIA.

* REMOVE TO MORTAR JOINTS BEYOND MINIMUM DIMENSIONS. DO NOT SAWCUT THROUGH MASONRY STONE WITHOUT APPROVAL OF THE ENGINEER.

**RINGGOLD RAIL TRAIL
 PEDESTRIAN BRIDGE**
 SUPERSTRUCTURE
 REPLACEMENT
 AND SUBSTRUCTURE
 MODIFICATION
 RINGGOLD RAIL TRAIL BRIDGE
 DAN RIVER, VA. 24586



KEY PLAN

REVISIONS

No.	DATE	BY	DESCRIPTION

DRAWN BY: SKC/KLT
 APPROVED BY: MTP
 CHECKED BY: CBC/JMS
 DATE: 02/2022

TITLE
**REMOVAL AND
 RECONSTRUCTION
 LIMITS &
 DETAILS**

PROJECT NO. 50106038

S-4

GENERAL NOTES:

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

ALL METHODS AND MATERIALS SHALL CONFORM TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S "ROAD AND BRIDGE SPECIFICATIONS (2020)." IN THE EVENT OF A CONFLICT BETWEEN THE VDOT STANDARD SPECIFICATIONS AND PLANS, THE CONTRACTOR MAY SUBMIT A REQUEST FOR INFORMATION TO THE ENGINEER.

DESIGN PEDESTRIAN LIVE LOAD = 90 PSF.
DESIGN LIVE LOAD = H10 MAINTENANCE VEHICLE.

THE DATA SHOWN FOR THE EXISTING STRUCTURE ON THE PLANS IS BASED ON THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING CONSTRUCTION, VERIFY THE ELEVATIONS ON THE TOP OF EXISTING CONCRETE CURB AND THE ADEQUACY OF THE EXISTING PIER WIDTHS TO ACCOMMODATE THE PROPOSED STRUCTURE AS DETAILED. REPORT ANY VARIATIONS TO THE ENGINEER BEFORE CONTINUING CONSTRUCTION. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE OWNER FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PARTIAL REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL FOLLOW THE DEMOLITION SEQUENCE PROVIDED IN THIS PLAN SET AND PERFORM WORK IN ACCORDANCE WITH SECTION 413 OF THE VDOT STANDARD SPECIFICATIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SECTION 105 OF THE VDOT STANDARD SPECIFICATIONS.

FOR FALSEWORK AND FORMWORK, SEE SECTION 404 OF THE VDOT STANDARD SPECIFICATIONS.

FOR GROUT, SEE SECTION 218 OF THE VDOT STANDARD SPECIFICATIONS.

FOR ARCHITECTURAL TREATMENT, SEE SPECIAL PROVISIONS. FORM LINERS SHALL BE USED ON INDICATED SURFACES TO VISUALLY MATCH THE EXISTING BRIDGE.

PROVIDE 2" CONCRETE COVER UNLESS OTHERWISE NOTED.

USE CLASS A3 CONCRETE (3,000 PSI) IN THE FOOTING, PIER, ARCH, END POURS, AND BEAM SEATS/BACKWALLS.

USE CLASS A4 CONCRETE (4,000 PSI) IN THE CURB/FASCIA AND BEAM NOTCH BLOCKOUT.

FOUNDATION NOTES:

THE DESIGN FOUNDATION RESISTANCE OF THE PIER 3 SPREAD FOOTING IS 7.1 KSF AT THE SERVICE LIMIT STATE AND 9.9 KSF AT THE STRENGTH LIMIT STATE.

SEE SHEETS S-6 AND S-7 FOR BORING LOGS AND LOCATIONS.

CONTRACT ITEM "EXPLORATORY GEOTECHNICAL ACTIVITIES" PROVIDES FOR SUPPLEMENTAL BORINGS TO BE DRILLED FOR CONFIRMATION OF THE AS-DESIGNED FOUNDATION PARAMETERS PRIOR TO CONSTRUCTION OF PIER 3. THE ENGINEER WILL CONFIRM THE ADEQUACY OF THE AS-DESIGNED FOUNDATION BASED ON REVIEW OF THE INFORMATION FROM "EXPLORATORY GEOTECHNICAL ACTIVITIES", OR MAY REVISE THE SPREAD FOOTING DESIGN FOR AN ELEVATION UP TO 10.0 FEET LOWER THAN THE AS-DESIGNED SPREAD FOOTING. PAYMENT FOR CONSTRUCTION OF A REVISED SPREAD FOOTING WILL BE AT THE CONTRACT BID UNIT PRICES FOR THE AS-DESIGNED STRUCTURE, INCLUDING PIER 3 COLUMN AND FOUNDATION ITEMS, COFFERDAM AND ALL TEMPORARY WORKS ASSOCIATED WITH THE PROJECT. IN LIEU OF CONSTRUCTING A REVISED SPREAD FOOTING LOWER THAN THE AS-DESIGNED ELEVATION, THE CONTRACTOR MAY DESIGN AN ALTERNATE DEEP FOUNDATION AT A TOTAL COST, INCLUDING DESIGN AND ALL REMAINING CONTRACT ITEMS, EQUAL TO OR LOWER THAN THE TOTAL COST OF THE REVISED SPREAD FOOTING DESIGN.



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RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE
SUPERSTRUCTURE
REPLACEMENT
AND SUBSTRUCTURE
MODIFICATION
RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA 24586



KEY PLAN

REVISIONS

No.	DATE	BY	DESCRIPTION

DRAWN BY: SKC/KLT
APPROVED BY: MTP
CHECKED BY: CBC/JMS
DATE: 02/2022

TITLE

GENERAL NOTES & QUANTITIES

PROJECT NO. 50106038

S-5

TOTAL BILL OF MATERIAL

ITEM DESCRIPTION	NOTE	UNIT	SUPERSTRUCTURE	ARCH	PIER 2 (END POUR 1)	PIER 3	PIER 4 (END POUR 2)	TOTAL
REMOVING PORTION OF EXISTING STRUCTURES		LUMP SUM	---	---	---	---	---	LUMP SUM
TEMPORARY WORK PAD	(SP)	LUMP SUM	---	---	---	---	---	LUMP SUM
EXPLORATORY GEOTECHNICAL ACTIVITIES	(SP)	LUMP SUM	---	---	---	---	---	LUMP SUM
COFFERDAM	(1)	EACH	---	---	---	1	---	1
STRUCTURE EXCAVATION		CU. YARDS	---	---	---	110	---	110
DRY CLASS II RIPRAP	(2)	TONS	---	---	124	221	80	425
CLASS A3 CONCRETE (3,000 PSI)	(3)	CU. YARDS	---	156 (8)	---	112	---	268
CLASS A4 CONCRETE (4,000 PSI)	(4)	CU. YARDS	14	---	---	---	---	14
REINFORCING STEEL		LBS.	2,088	25,013 (8)	---	21,834	---	48,935
REINFORCING STEEL DOWELS	(5)	LBS.	---	285 (8)	---	388	---	673
2"Ø PVC VOID DRAIN	(SP)	EACH	22	12	---	---	---	34
ARCHITECTURAL TREATMENT	(SP)	SQ. YARDS	---	234 (8)	---	160	---	394
EXPANDED POLYSTYRENE GEOFOAM	(SP)	CU. YARDS	---	---	---	28	---	28
3'-0" x 2'-9" PRESTRESSED CONCRETE BOX BEAMS	(6)	NO. / LIN. FT.	4 / 300	---	---	---	---	4 / 300
ELASTOMERIC BEARINGS		NO. / LBS.	16 / 143	---	---	---	---	16 / 143
FURNISH LATEX-MODIFIED CONCRETE		CU. YARDS	5	---	---	---	---	5
PLACE LATEX-MODIFIED CONCRETE OVERLAY		SQ. YARDS	87	---	---	---	---	87
AGGREGATE MATERIAL NO. 21A		TONS	23	---	---	---	---	23
REMOVE AND RESET EXISTING HANDRAIL	(SP)	LIN. FT.	150	---	---	---	---	150
GALVANIZED FABRICATED STRUCTURAL STEEL	(7)	LBS.	436	---	---	---	---	436
ADHESIVE BASED JOINT SEALER (CLASS III) (2" WIDTH)		LIN. FT.	26	---	---	---	---	26

QUANTITY NOTES

- (SP) REFER TO CONTRACT SPECIAL PROVISIONS.
- BID PRICE FOR COFFERDAM SHALL INCLUDE COST OF CONSTRUCTING THE FOOTING AT A DEPTH UP TO 10.0 FEET BELOW THE AS-DESIGNED ELEVATION.
 - EXCAVATION REQUIRED FOR PLACEMENT OF RIPRAP LINING IS INCIDENTAL TO THIS ITEM. GEOTEXTILE IS INCIDENTAL TO THIS ITEM.
 - INCLUDES ADDITIONAL CONCRETE REQUIRED FOR ARCHITECTURAL TREATMENT FORM LINERS, FURNISHING AND INSTALLING THE GALVANIZED BIRD/RODENT MESH SCREENING IS INCIDENTAL TO THIS ITEM.
 - EXPANSION JOINT MATERIAL AND OTHER RELATED COMPONENTS ARE INCIDENTAL TO THIS ITEM.
 - DRILLED HOLES, ELASTOMERIC SPONGE, NON-SHRINK GROUT, EXPANSION JOINT MATERIAL, AND OTHER RELATED COMPONENTS ARE INCIDENTAL TO THIS ITEM.
 - INCLUDES FURNISHING AND INSTALLATION OF SHEAR KEY NON-SHRINK GROUT AND OTHER RELATED WATERPROOFING COMPONENTS. INCLUDES DESIGN, FURNISHING, AND INSTALLATION OF TRANSVERSE POST-TENSIONING TENDONS, SPLICES, CHUCKS, AND OTHER RELATED COMPONENTS. INCLUDES FURNISHING AND INSTALLATION OF EPOXY PROTECTIVE COATING. INCLUDES FURNISHING AND INSTALLATION OF PRECAST BEAM THREADED INSERTS.
 - GALVANIZED SLIDING STEEL PLATE, FASTENERS, INSERTS, AND OTHER RELATED COMPONENTS ARE INCIDENTAL TO THIS ITEM.
 - INCLUDES QUANTITY FOR END POURS 1 AND 2 AT PIERS 2 AND 4, RESPECTIVELY.



BORING LOG
Boring: B-3 (1 of 1)

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks	
			2-1-1	0.0			
418.3	2.0	ALLUVIUM: Very loose, brown and gray, moist, fine to medium, CLAYEY SAND (SC) with mica		1.5	2.0	No subsurface water was encountered immediately upon completion of drilling.	
416.8	3.5	Soft, gray, red-brown, and orange-brown, moist, micaceous, fine to medium, sandy, ELASTIC SILT (MH) with gravel	2-1-2		3.5		
		Soft, brown, orange-brown, and red-brown, moist, fine to coarse, sandy, ELASTIC SILT (MH) with mica	2-1-2		5.0		
414.3	6.0	Loose, gray and brown, moist/wet, fine to coarse, SILTY SAND (SM) with mica, trace clay	2-4-4		6.5		
412.3	8.0	POSSIBLE ALLUVIUM: Soft, blue-gray and brown, moist/wet, fine, sandy, LEAN CLAY (CL) with mica	2-2-2	8.0	8.5		
					10.0		
408.3	12.0	Very loose, gray and tan, wet, fine to coarse, SILTY SAND (SM) with pockets of fat clay and mica	1-1-1	13.5			
					15.0		
403.3	17.0	PARTIALLY WEATHERED ROCK: Sampled as very dense, brown and tan, moist/wet, fine to medium, SILTY SAND (SM) with mica	16-34	18.5			
			50/6	20.0	100+		
398.3	22.0	RESIDUUM: Very hard, brown and red-brown, moist, fine to medium, sandy, SILT (ML) with mica	12-22-34	23.5			
				25.0	56		
393.3	27.0	PARTIALLY WEATHERED ROCK: Sampled as very dense, gray and brown, wet, fine to coarse, CLAYEY SAND (SC) with mica, trace silt	22-50/2	28.5		Cave in at 27.5'	
				29.2	100+		
388.3	32.0	Boring Terminated at 32'					

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.



BORING LOG
Boring: B-4 (1 of 2)

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks	
		Auger Probe to 48.5'					
		No subsurface water was encountered immediately upon completion of drilling.					

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.



BORING LOG
Boring: B-4 (2 of 2)

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks	
412.0	48.5	POSSIBLE ALLUVIUM: Medium dense, white and red-brown, fine to medium, CLAYEY SAND (SC)	8-8-16	48.5			
				50.0	24		
408.5	52.0	PARTIALLY WEATHERED ROCK: Sampled as very dense, gray and pink, moist, fine to medium, POORLY-GRADED SAND (SP) with silt and mica	30-47	53.5			
			50/5	54.9	100+		
403.5	57.0	Sampled as very dense, tan and brown, moist, fine to coarse, POORLY-GRADED SAND (SP), trace silt	12-29	58.5			
			50/3	59.8	100+		
398.5	62.0	Sampled as very dense, gray, wet, fine to coarse, POORLY-GRADED SAND (SP) with clay	50/3	63.5			
				65.0	100+		
393.5	67.0	Auger Refusal at 67' Begin Coring at 67'	REC=85% RQD=48%	67.0			
388.5	72.0	ROCK: Light to dark-gray, moderately to highly weathered, close to very close joints/fractures, moderate angle, medium to fine grained, extremely hard, poor, SCHIST	REC=100% RQD=68%	72.0		Cave in at 72'	
		Dark-gray, moderately to highly weathered, close to very close joints/fractures, moderate angle, medium to fine grained, very hard, fair, SCHIST		77.0			
383.5	77.0	Coring Terminated at 77'					

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

RINGGOLD RAIL TRAIL PEDESTRIAN BRIDGE
SUPERSTRUCTURE REPLACEMENT AND SUBSTRUCTURE MODIFICATION
 RINGGOLD RAIL TRAIL BRIDGE
 DAN RIVER, VA 24566



KEY PLAN

REVISIONS

No.	DATE	BY	DESCRIPTION

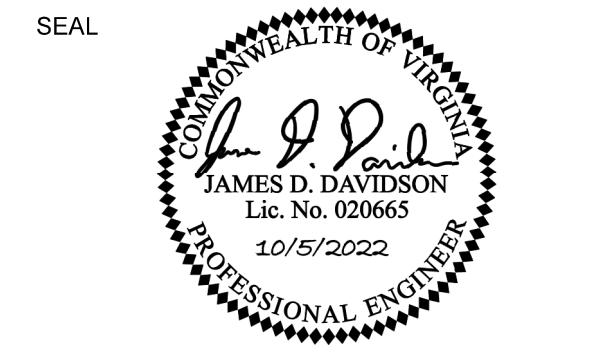
DRAWN BY: SKC
 APPROVED BY: MTP
 CHECKED BY: CBC
 DATE: 02/2022

TITLE
BORE DATA

PROJECT NO. 50106038

S-7

**RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE**
SUPERSTRUCTURE
REPLACEMENT
AND SUBSTRUCTURE
MODIFICATION
RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA 24586



KEY PLAN

REVISIONS

No.	DATE	BY	DESCRIPTION

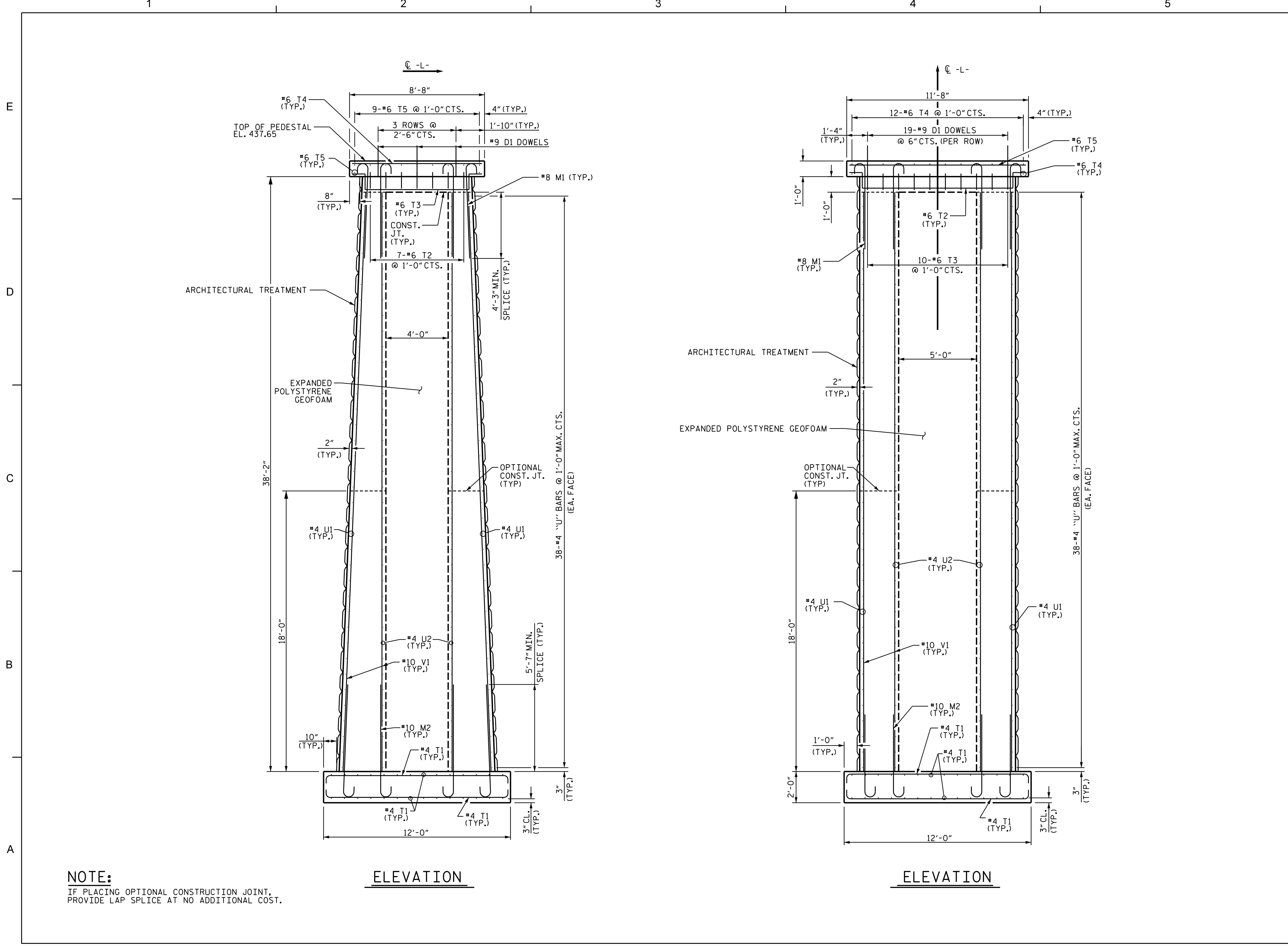
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APPROVED BY MTP
CHECKED BY CBC/JMS
DATE 02/2022

TITLE

PIER 3 ELEVATION

PROJECT NO. 50106038

S-8



NOTE:
IF PLACING OPTIONAL CONSTRUCTION JOINT,
PROVIDE LAP SPLICE AT NO ADDITIONAL COST.

ELEVATION

ELEVATION

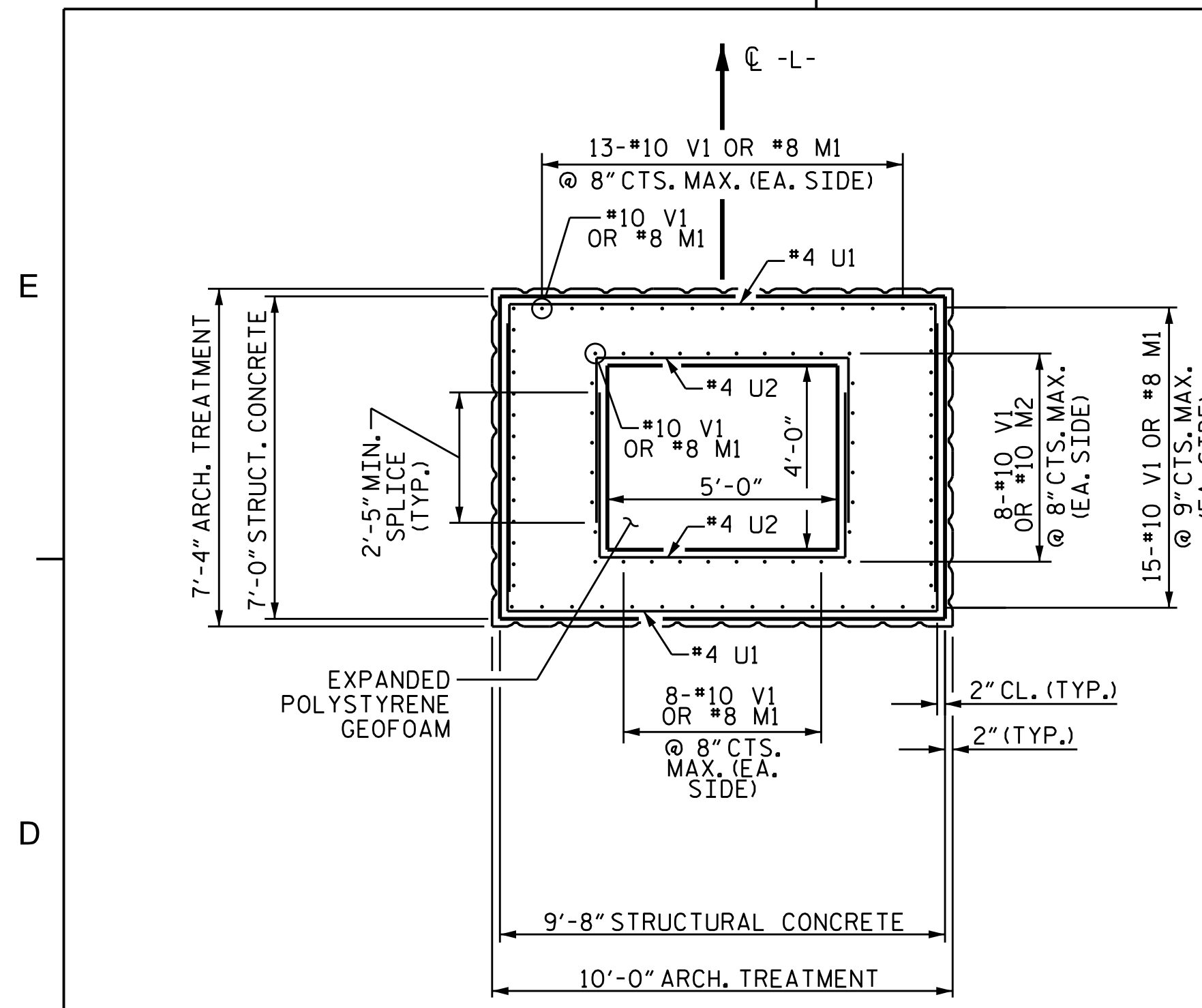
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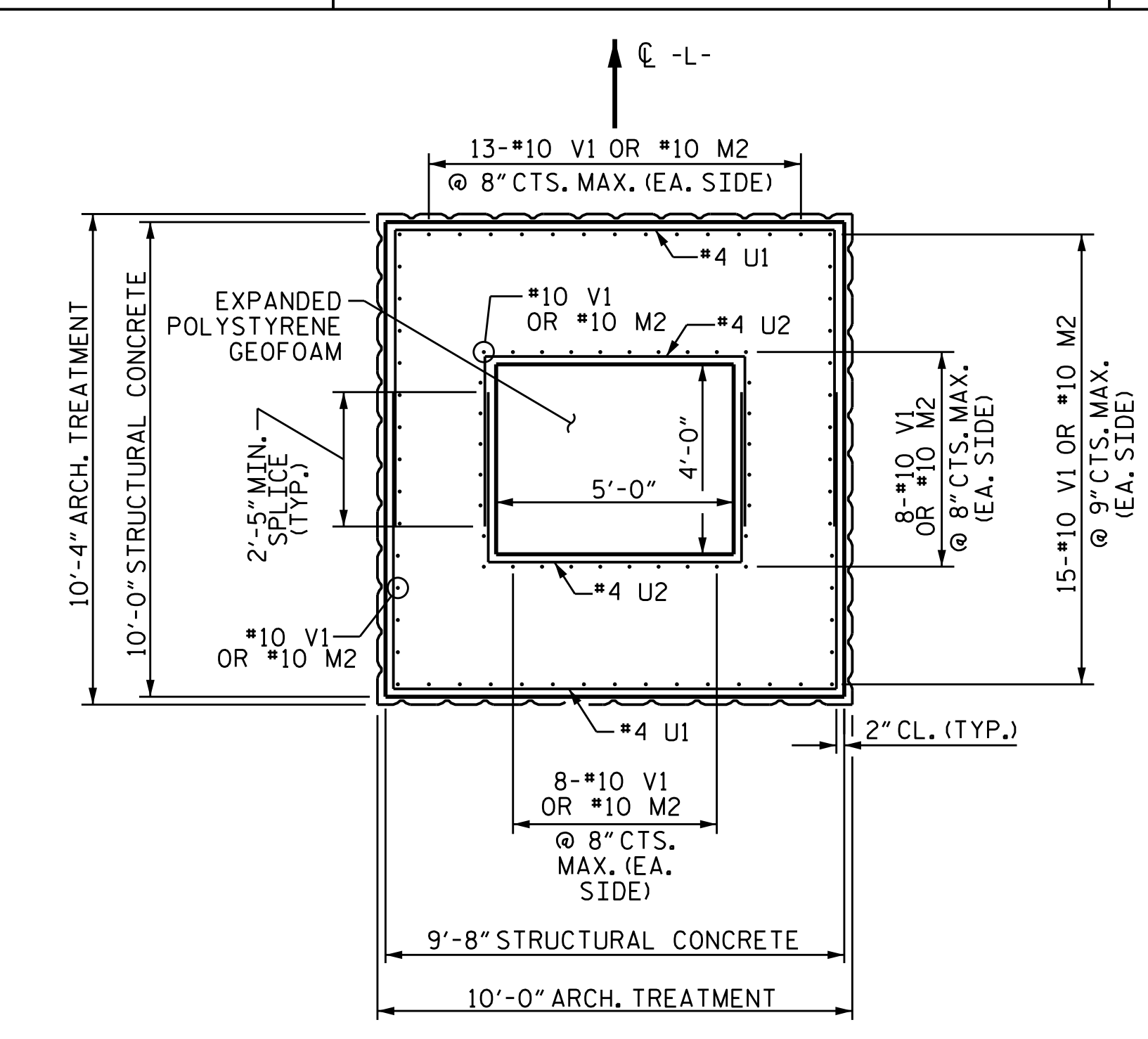
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4

5

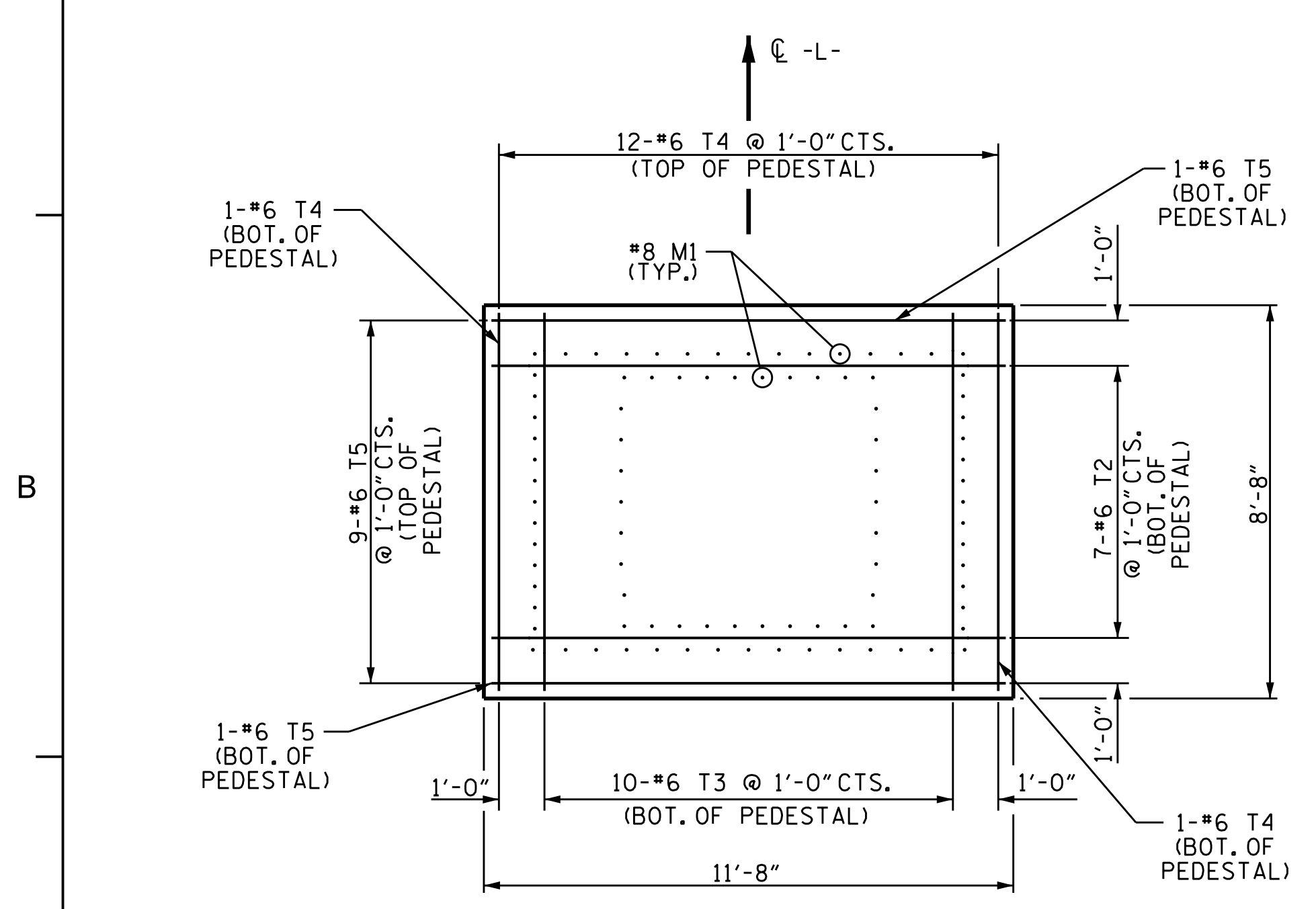


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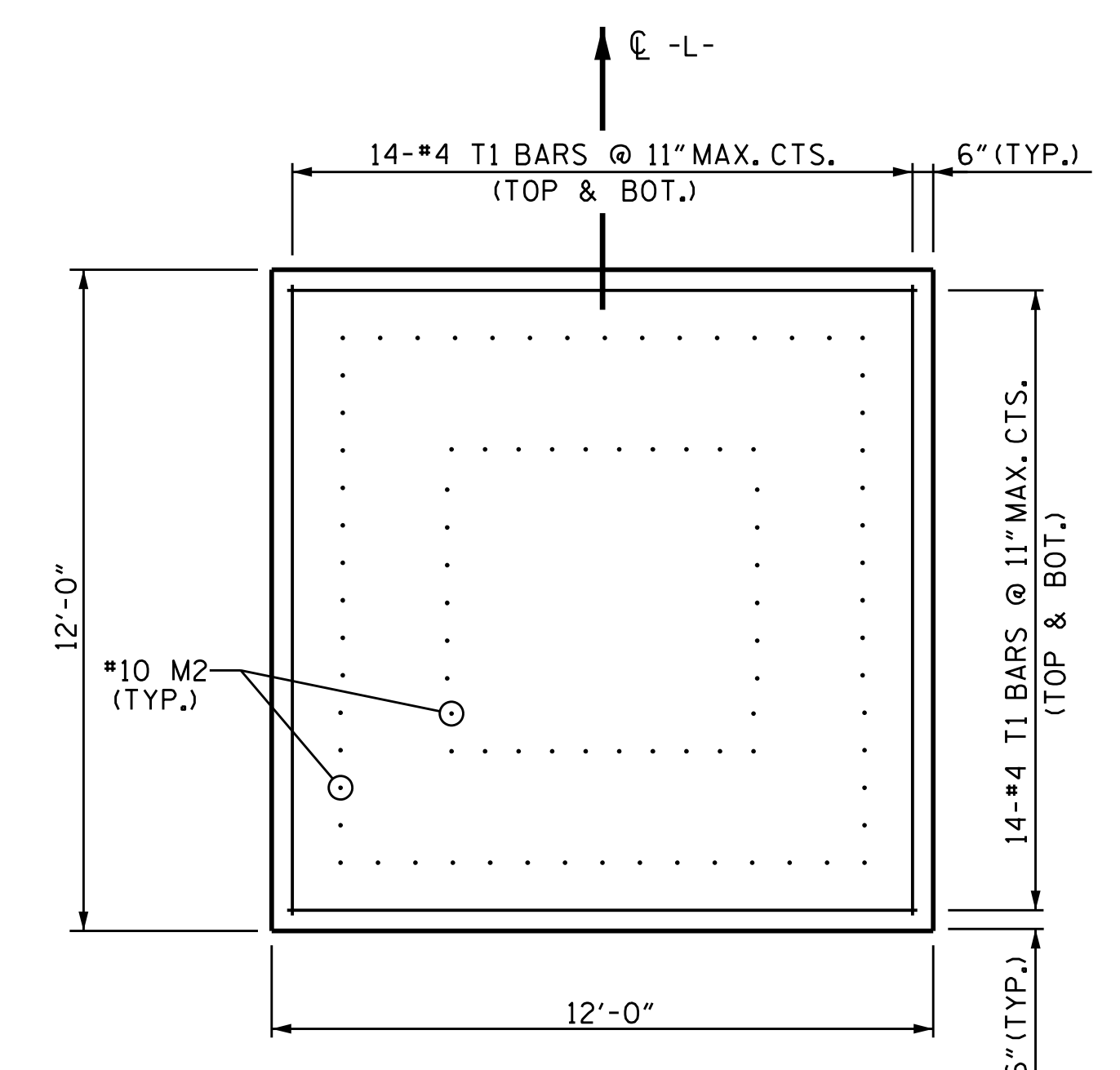


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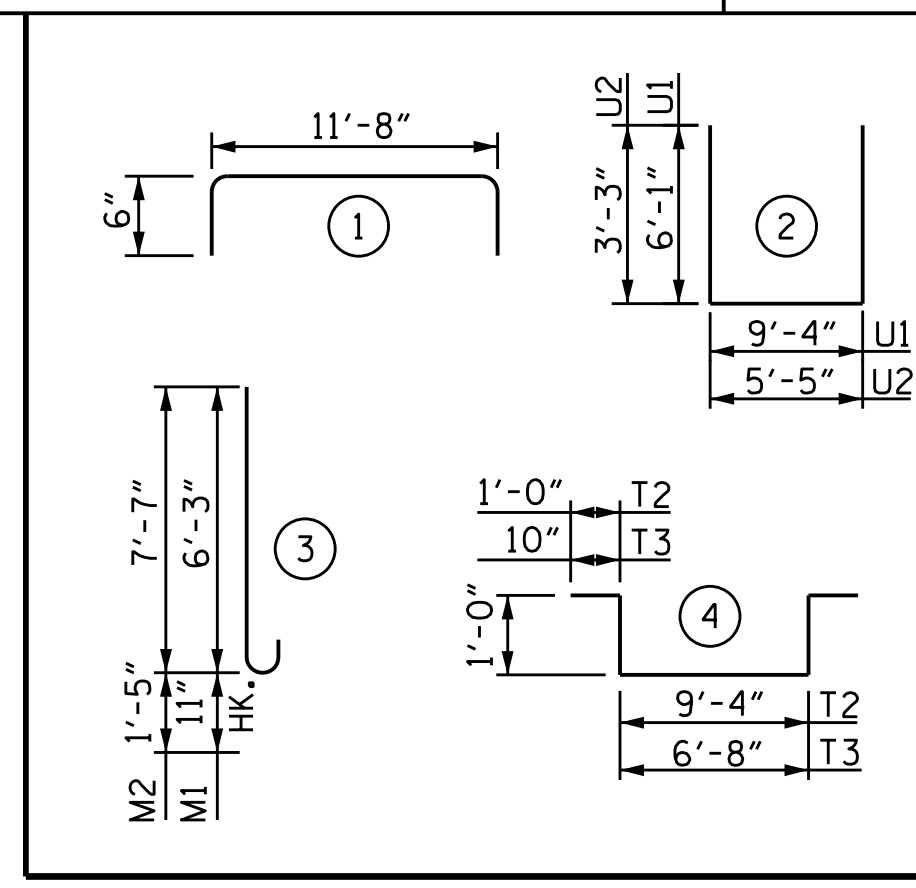
COLUMN REINFORCEMENT PLAN



PEDESTAL REINFORCEMENT PLAN



FOOTING REINFORCEMENT PLAN

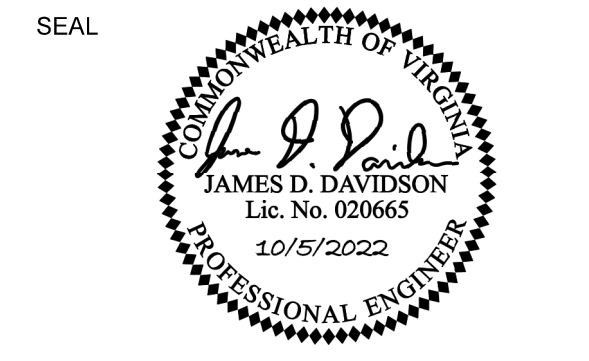


BILL OF MATERIAL					
PIER 3					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
U1	76	#4	2	21'-6"	1092
U2	76	#4	2	11'-11"	605
M1	88	#8	3	7'-2"	1684
M2	88	#10	3	9'-0"	3408
T1	56	#4	1	11'-8"	436
T2	7	#6	4	13'-4"	140
T3	10	#6	4	10'-4"	155
T4	12	#6	STR	8'-4"	150
T5	9	#6	STR	11'-4"	153
V1	88	#10	STR	37'-0"	14,011
REINFORCING STEEL					21,834 LBS
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
D1	57	#9	STR	2'-0"	388
REINFORCING STEEL DOWELS					388 LBS
POUR #1	FOOTING				11 C.Y.
POUR #2	COLUMN				97 C.Y.
POUR #3	PEDESTAL				4 C.Y.
TOTAL CLASS A3 CONCRETE					112 C.Y.



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RINGGOLD RAIL TRAIL
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RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA, 24566



KEY PLAN

REVISIONS			
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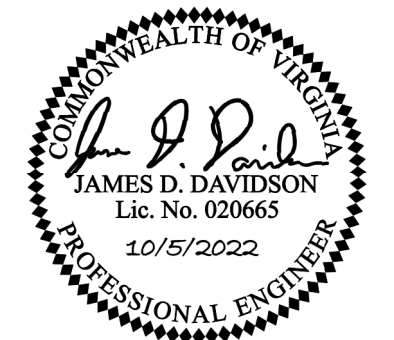
PIER 3 DETAILS

PROJECT NO. 50106038

S-9

**RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE**
SUPERSTRUCTURE
REPLACEMENT
AND SUBSTRUCTURE
MODIFICATION
RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA 24586

SEAL



KEY PLAN

REVISIONS

No.	DATE	BY	DESCRIPTION

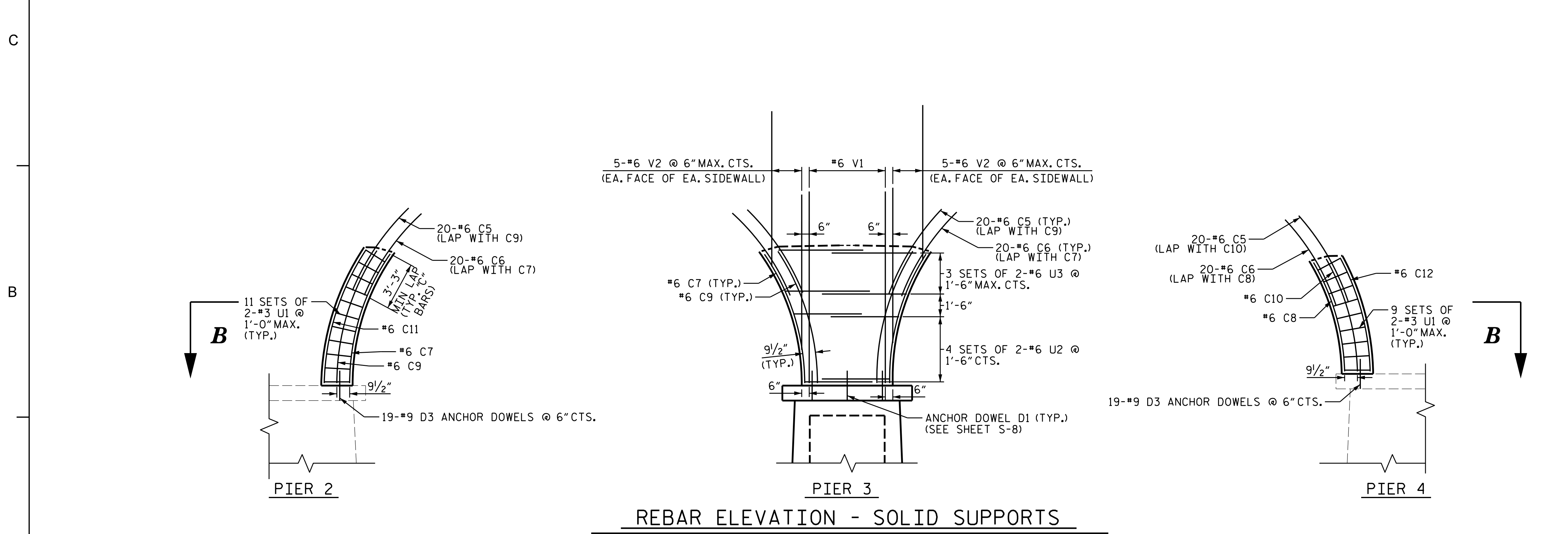
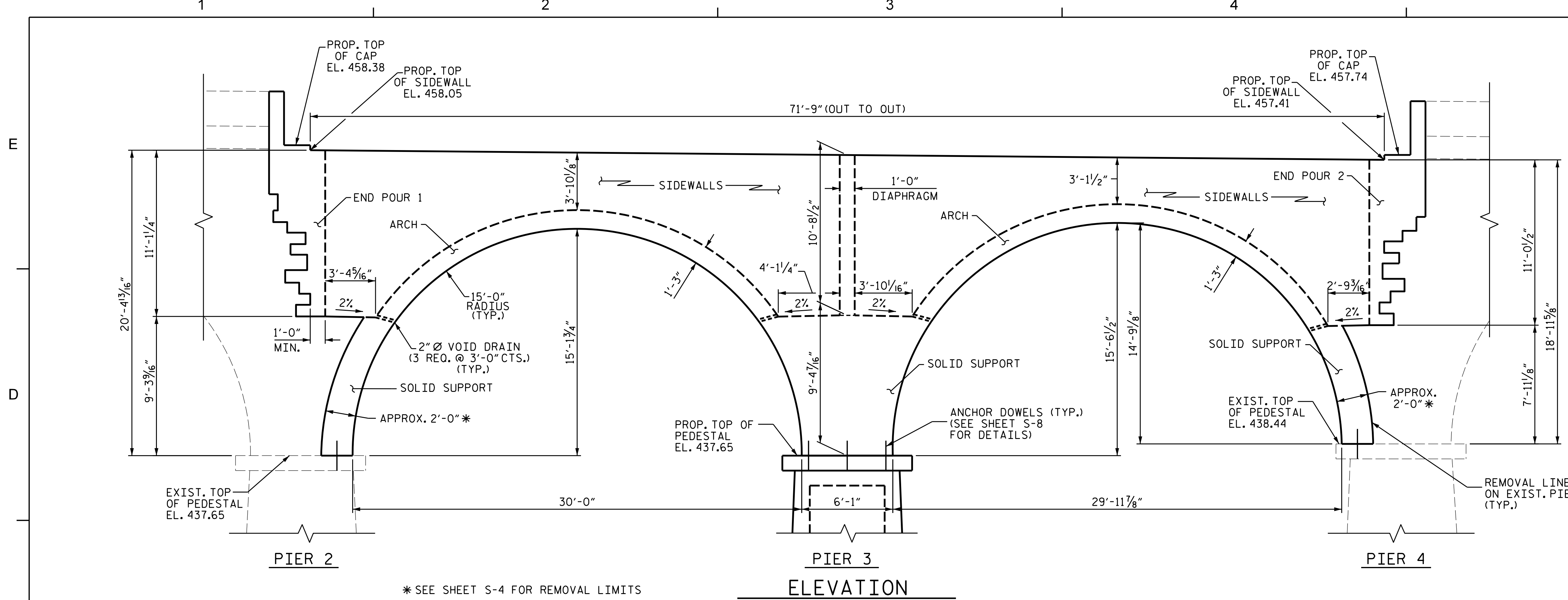
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DATE 02/2022

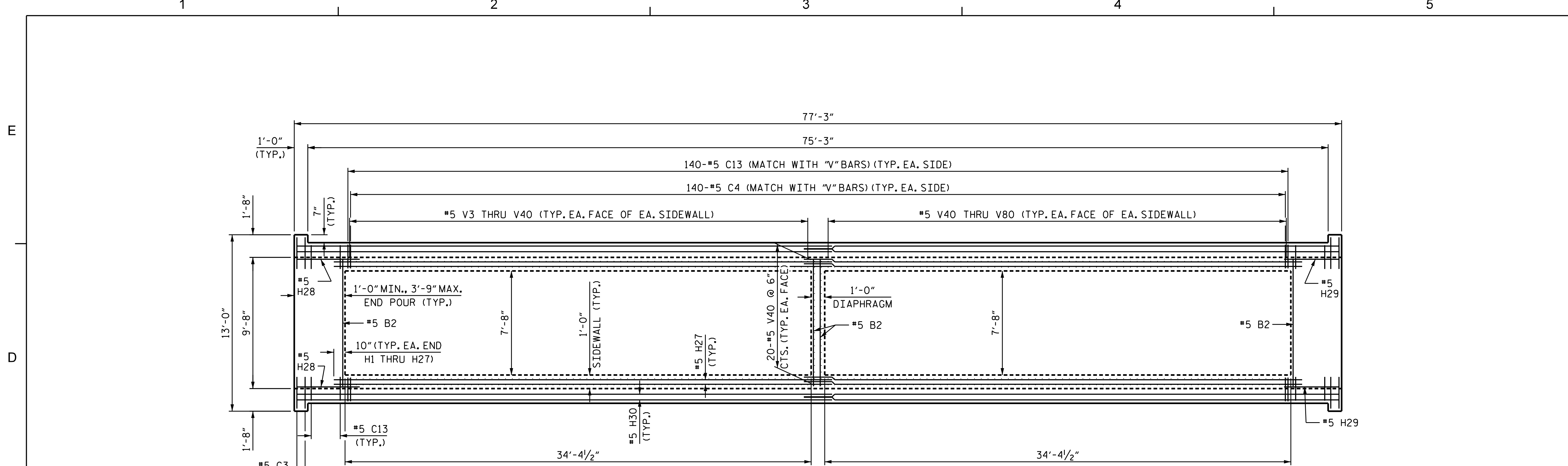
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ARCH ELEVATION - 1

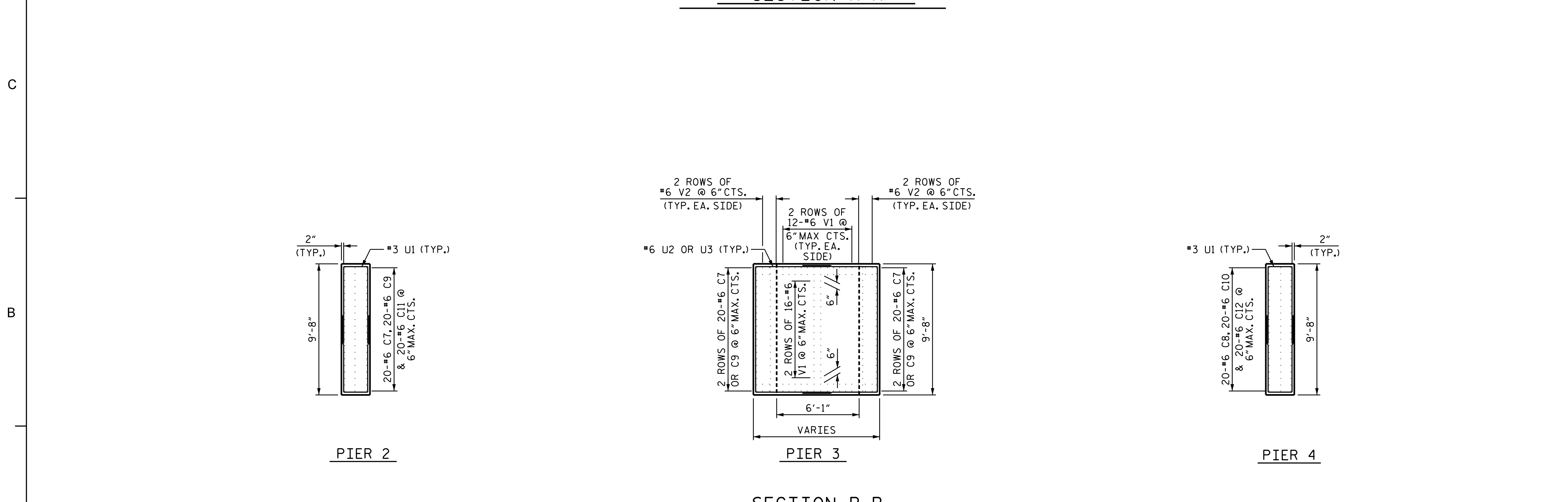
PROJECT NO. 50106038

S-10



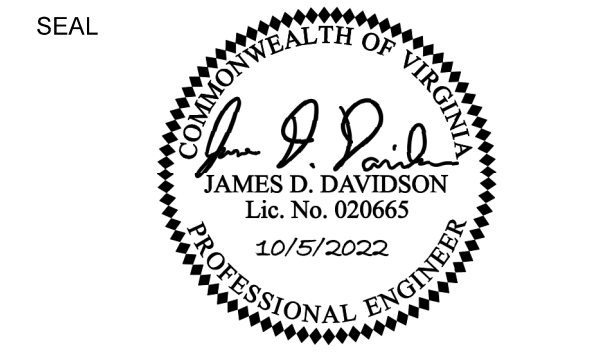


SECTION A-A



SECTION B-B

**RINGGOLD RAIL TRAIL
 PEDESTRIAN BRIDGE**
 SUPERSTRUCTURE
 REPLACEMENT
 AND SUBSTRUCTURE
 MODIFICATION
 RINGGOLD RAIL TRAIL BRIDGE
 DAN RIVER, VA 24586



KEY PLAN

REVISIONS

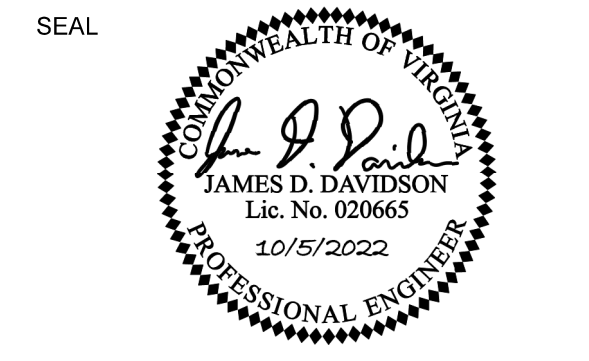
No.	DATE	BY	DESCRIPTION

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**ARCH SECTIONS
 & DETAILS - 1**

PROJECT NO. 50106038

**RINGGOLD RAIL TRAIL
 PEDESTRIAN BRIDGE**
 SUPERSTRUCTURE
 REPLACEMENT
 AND SUBSTRUCTURE
 MODIFICATION
 RINGGOLD RAIL TRAIL BRIDGE
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KEY PLAN

REVISIONS

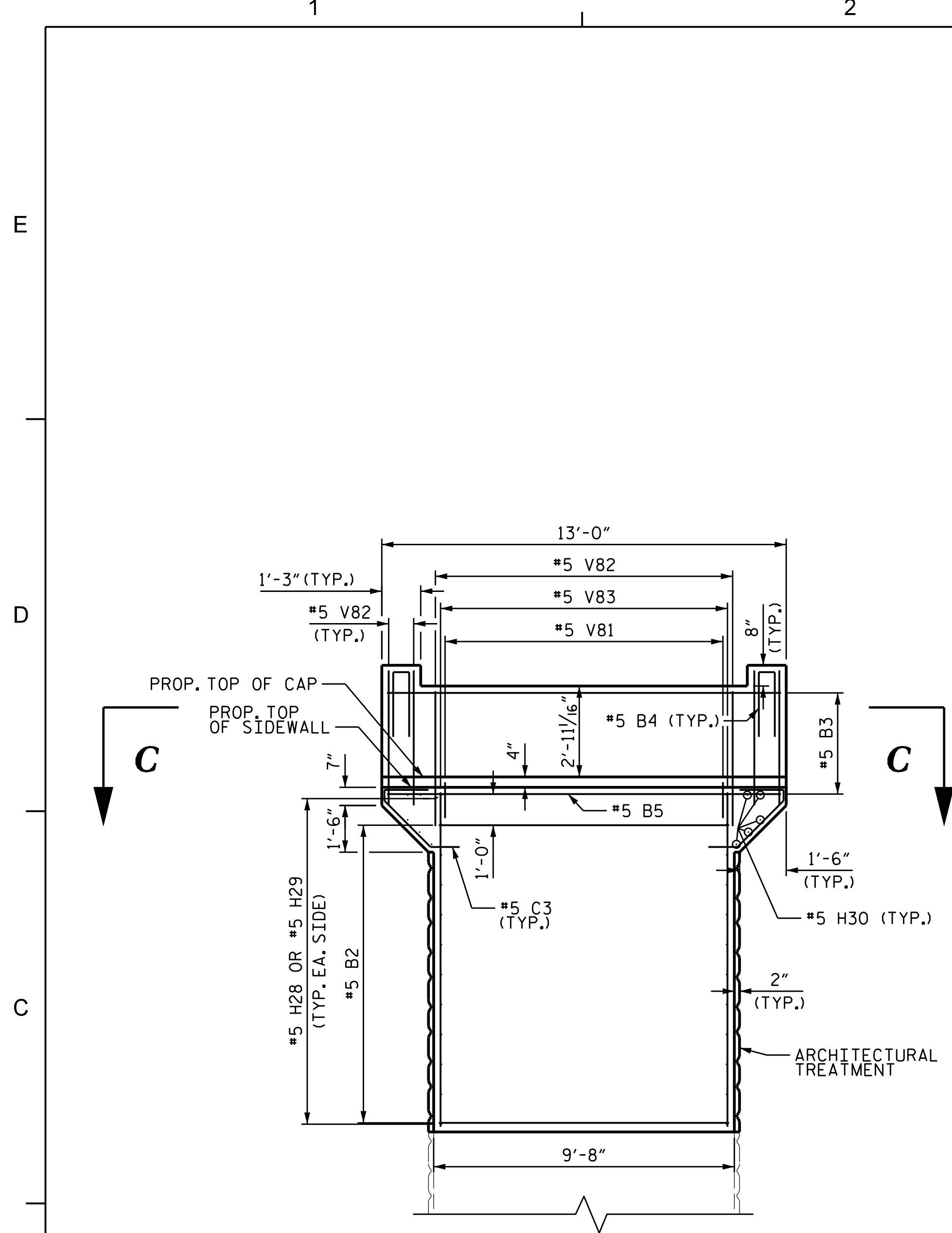
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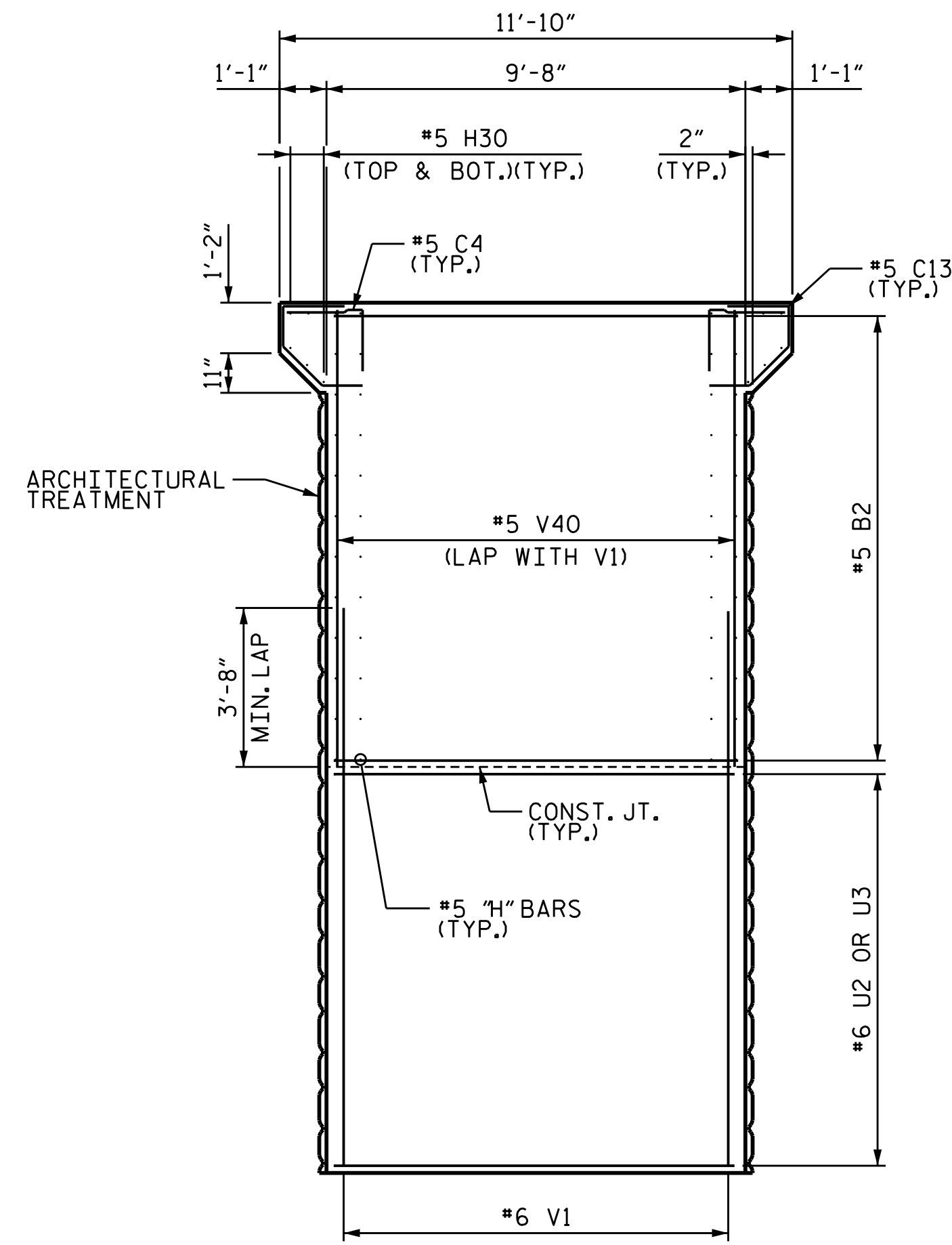
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**ARCH SECTIONS
 & DETAILS - 2**

PROJECT NO. 50106038

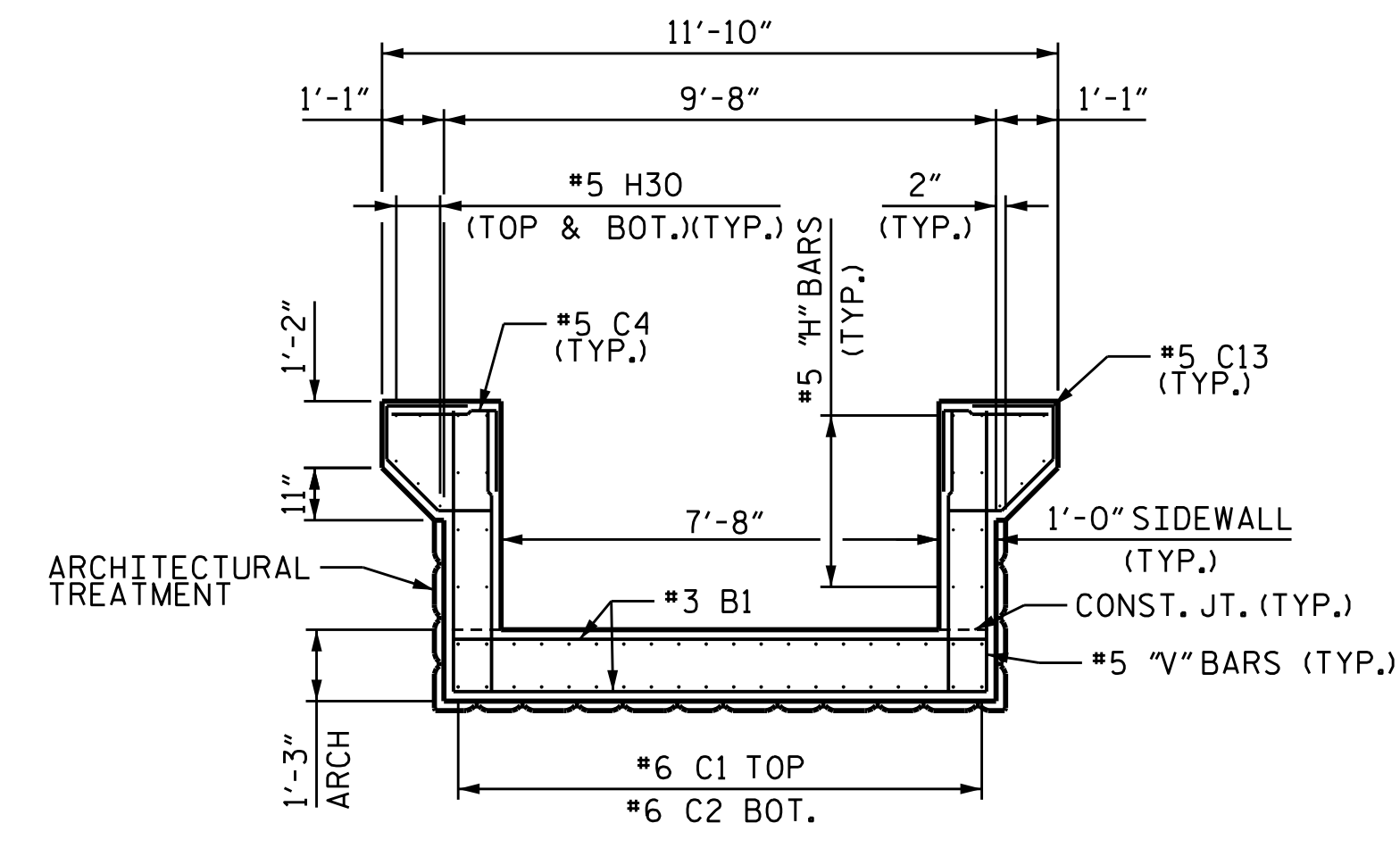
S-13



SECTION @ END POUR



SECTION @ DIAPHRAGM



SECTION NEAR MIDSPAN

**RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE**
**SUPERSTRUCTURE
REPLACEMENT
AND SUBSTRUCTURE
MODIFICATION**
RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA, 24586



KEY PLAN

REVISIONS

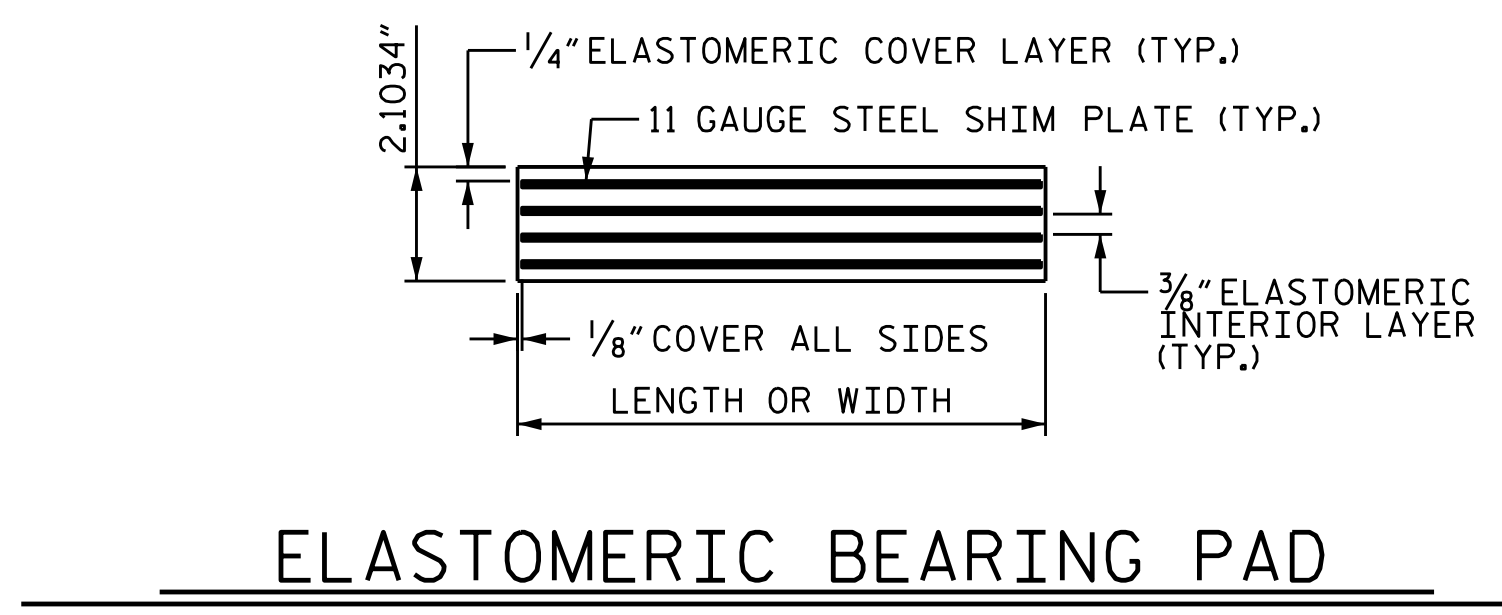
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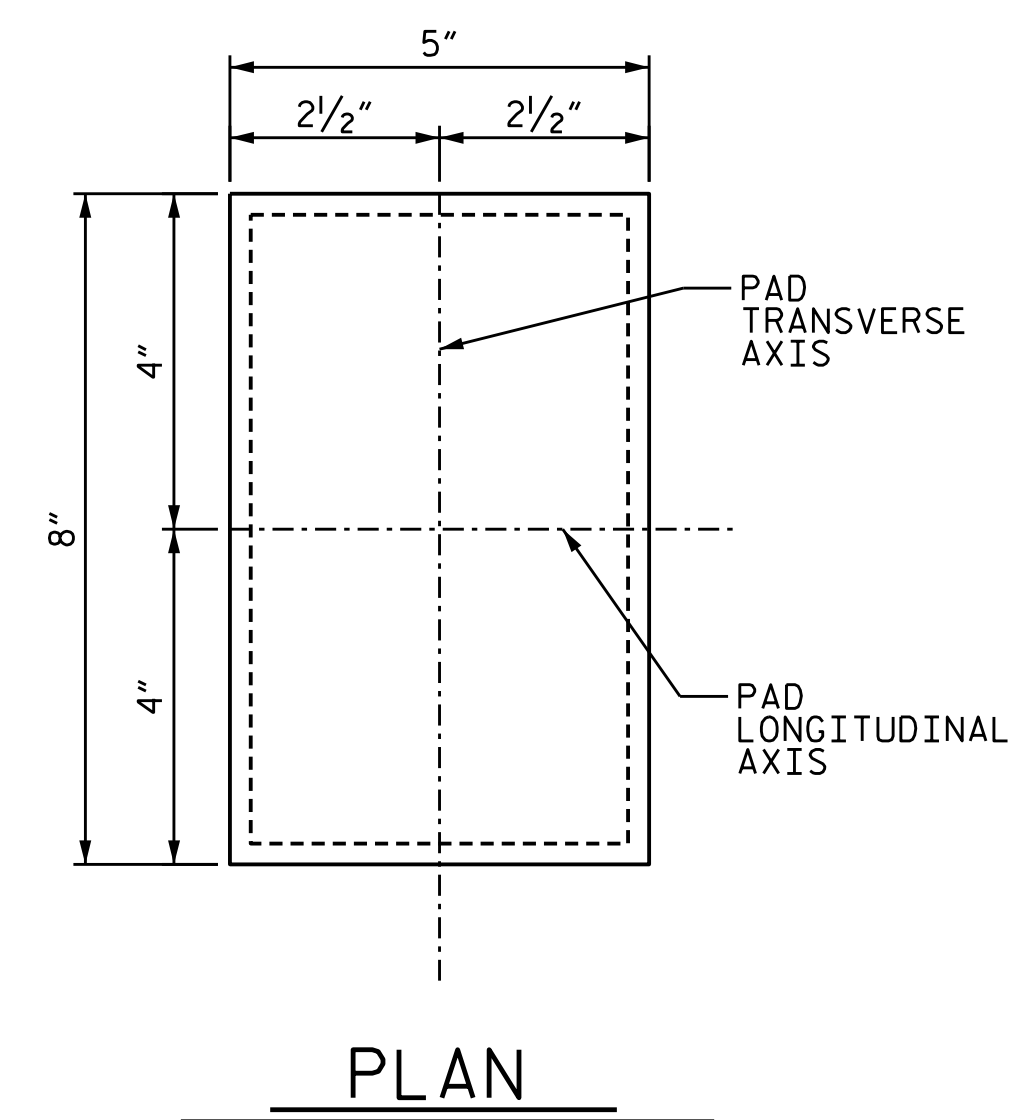
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**BEARING SEAT
DETAILS - 1**

PROJECT NO. 50106038

S-14

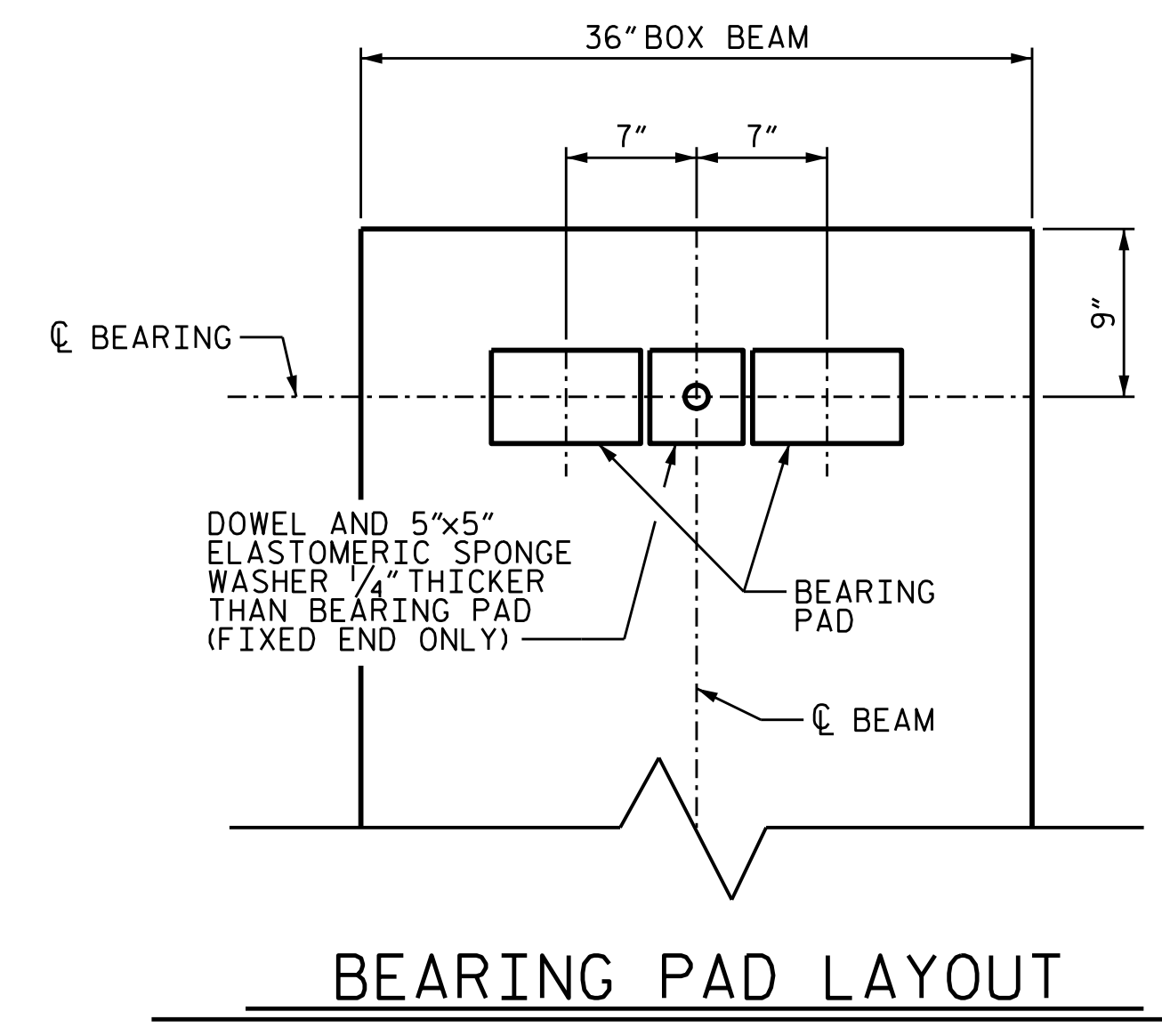


ELASTOMERIC BEARING PAD

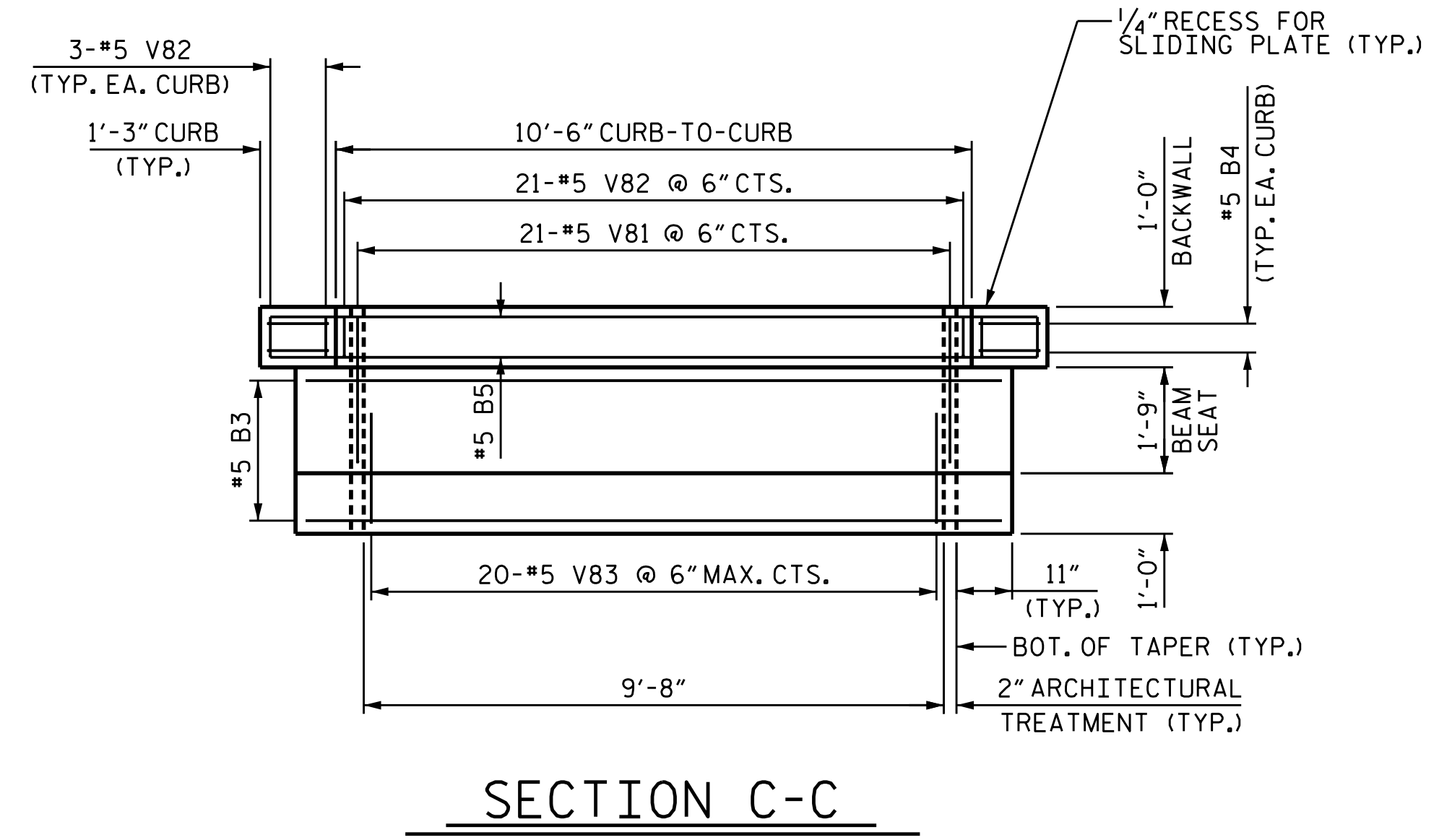


PLAN

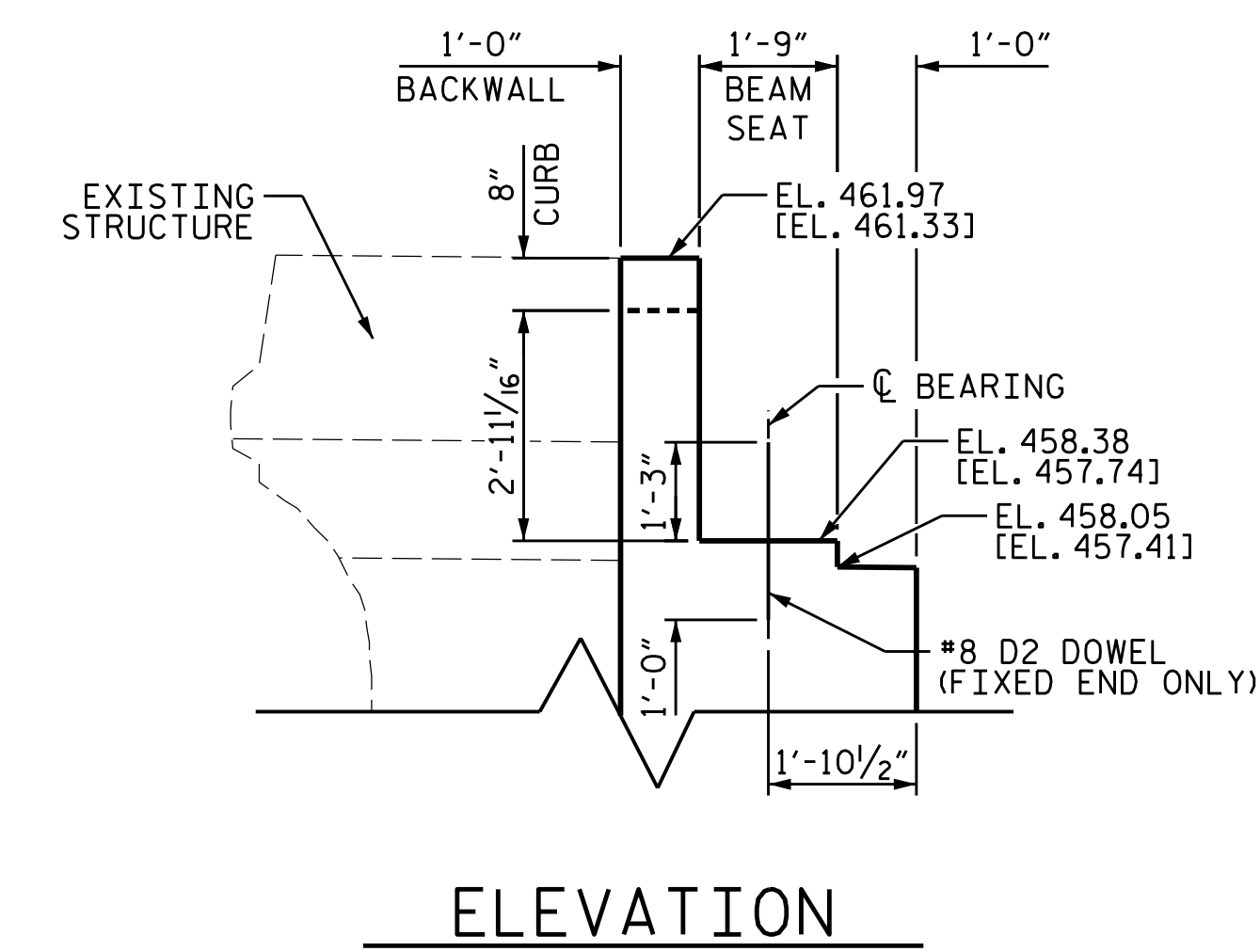
(16 REQ'D)
ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS



BEARING PAD LAYOUT



SECTION C-C



ELEVATION

END POUR 1 SHOWN, END POUR 2 SIMILAR EXCEPT AS NOTED IN []

**RINGGOLD RAIL TRAIL
 PEDESTRIAN BRIDGE**
 SUPERSTRUCTURE
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 AND SUBSTRUCTURE
 MODIFICATION
 RINGGOLD RAIL TRAIL BRIDGE
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KEY PLAN

REVISIONS

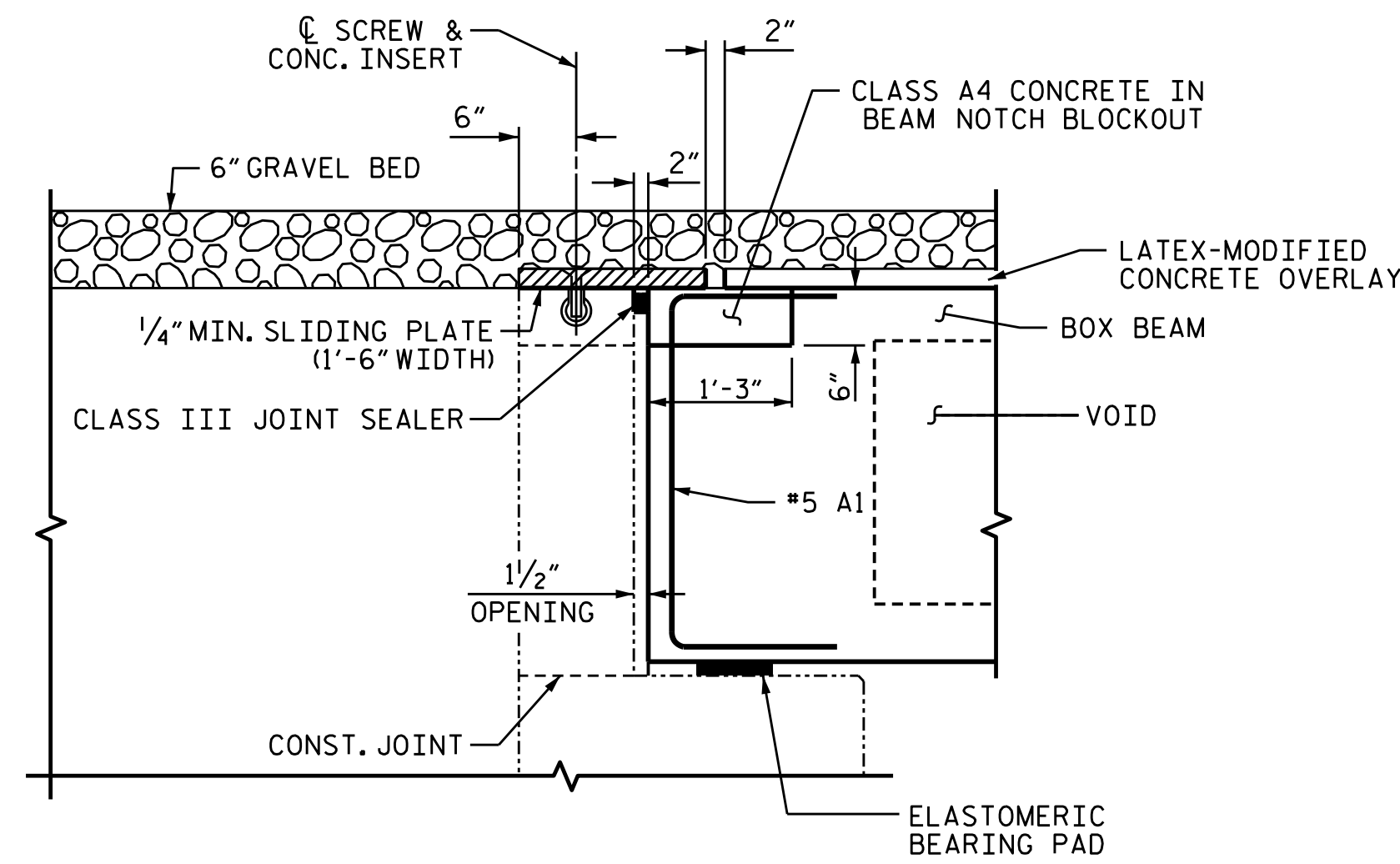
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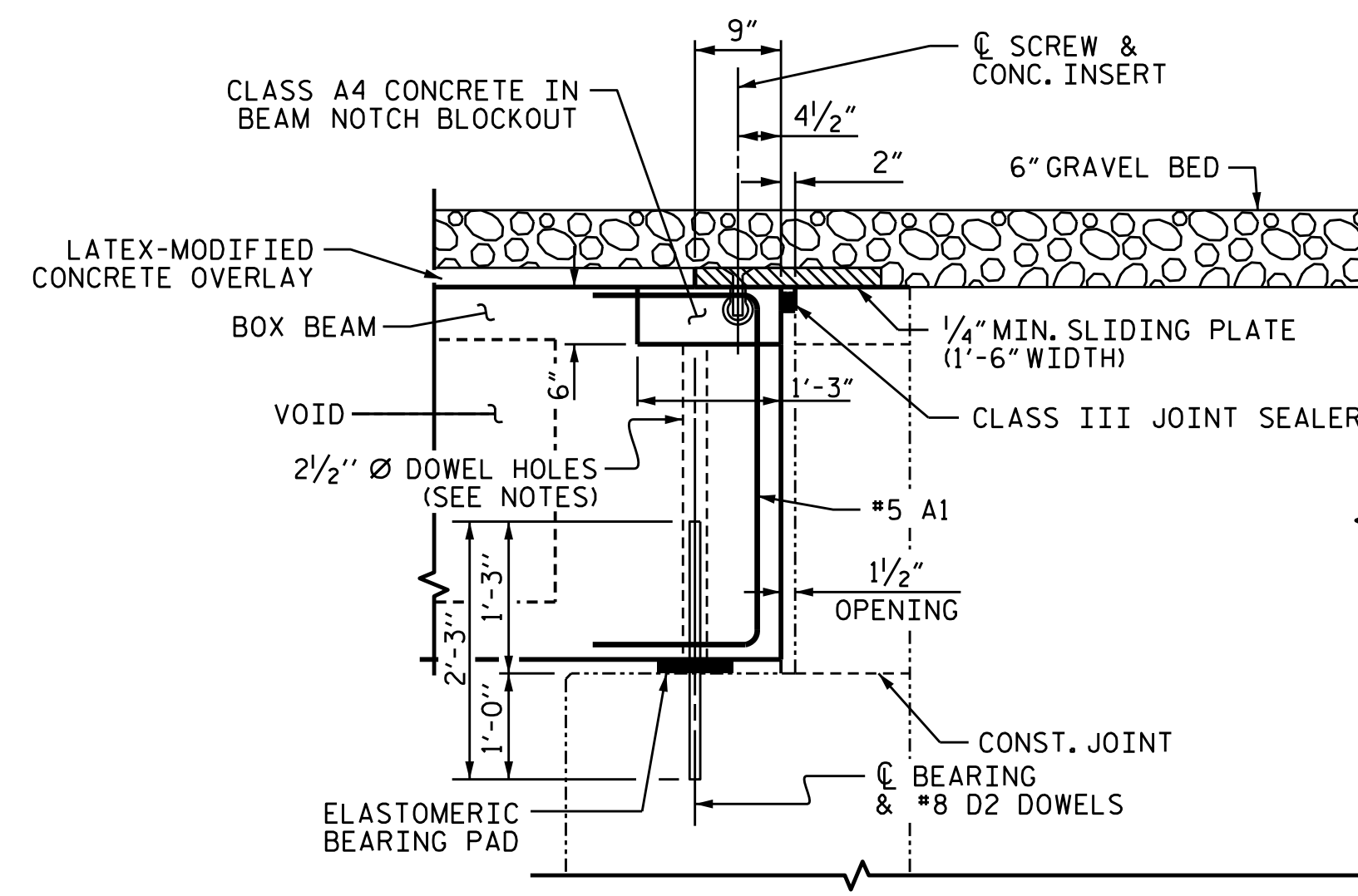
TITLE
**BEARING SEAT
 DETAILS - 2**

PROJECT NO. 50106038

S-15



SECTION AT END POUR 1



SECTION AT END POUR 2



KEY PLAN

REVISIONS

No.	DATE	BY	DESCRIPTION

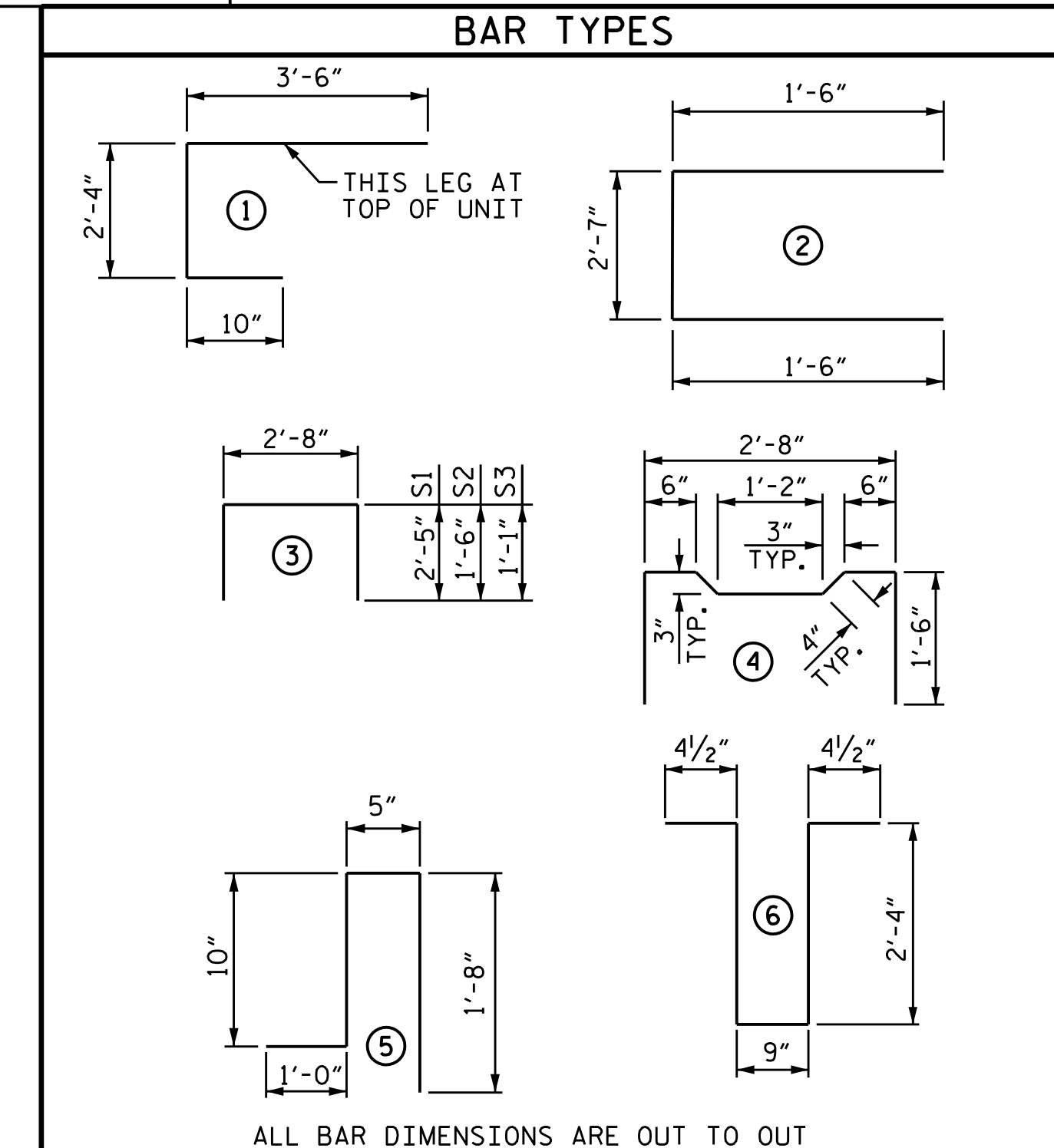
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TITLE

BEAM DETAILS

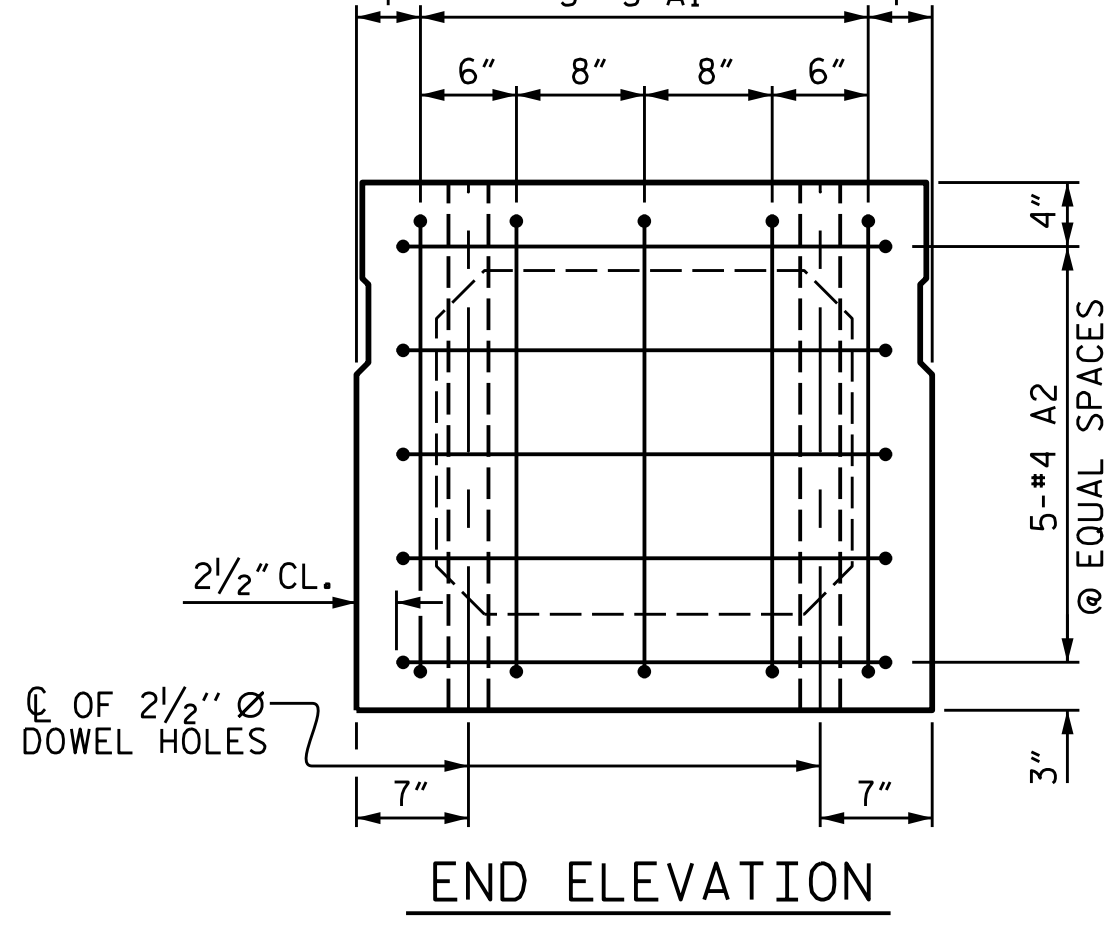
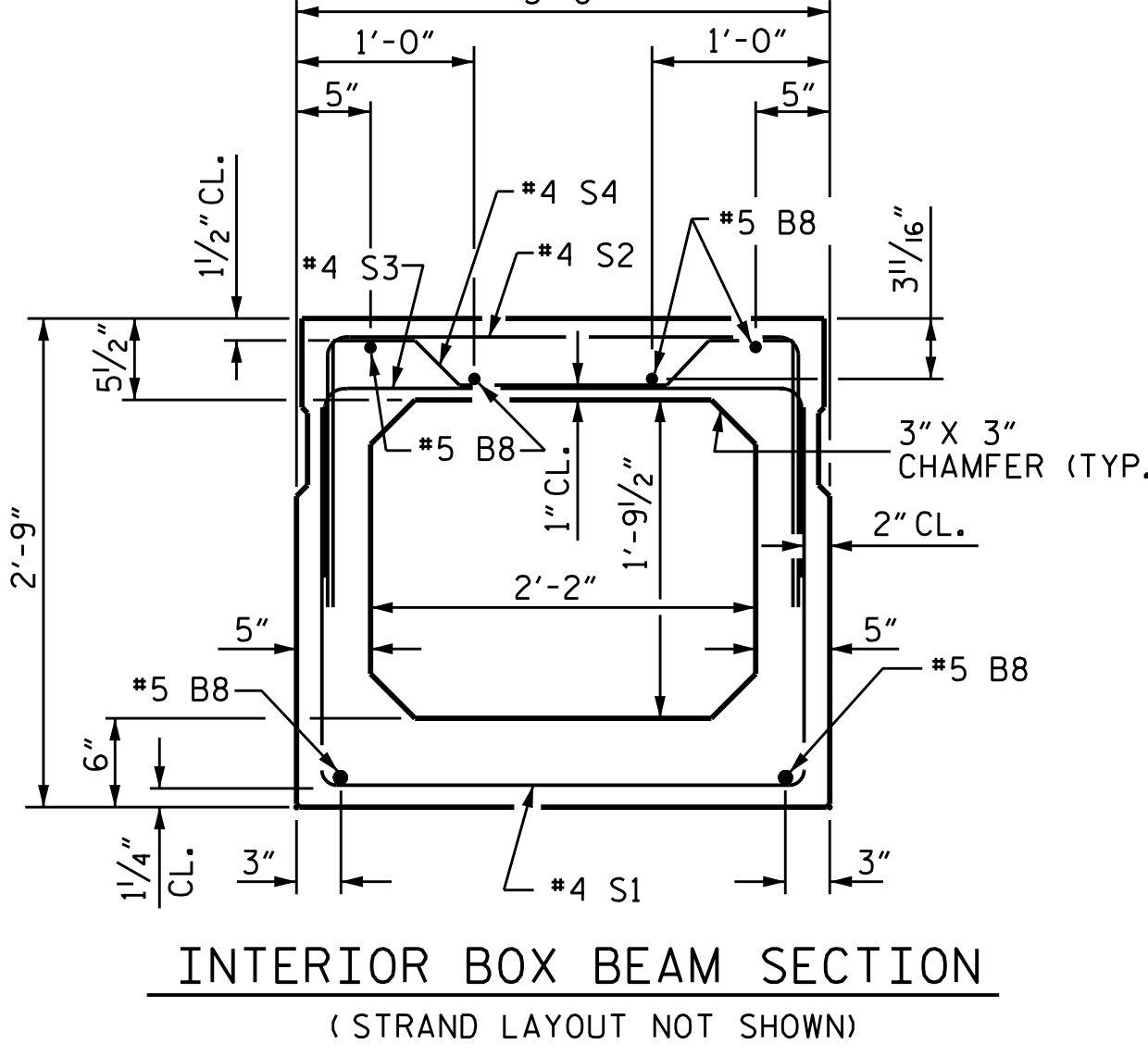
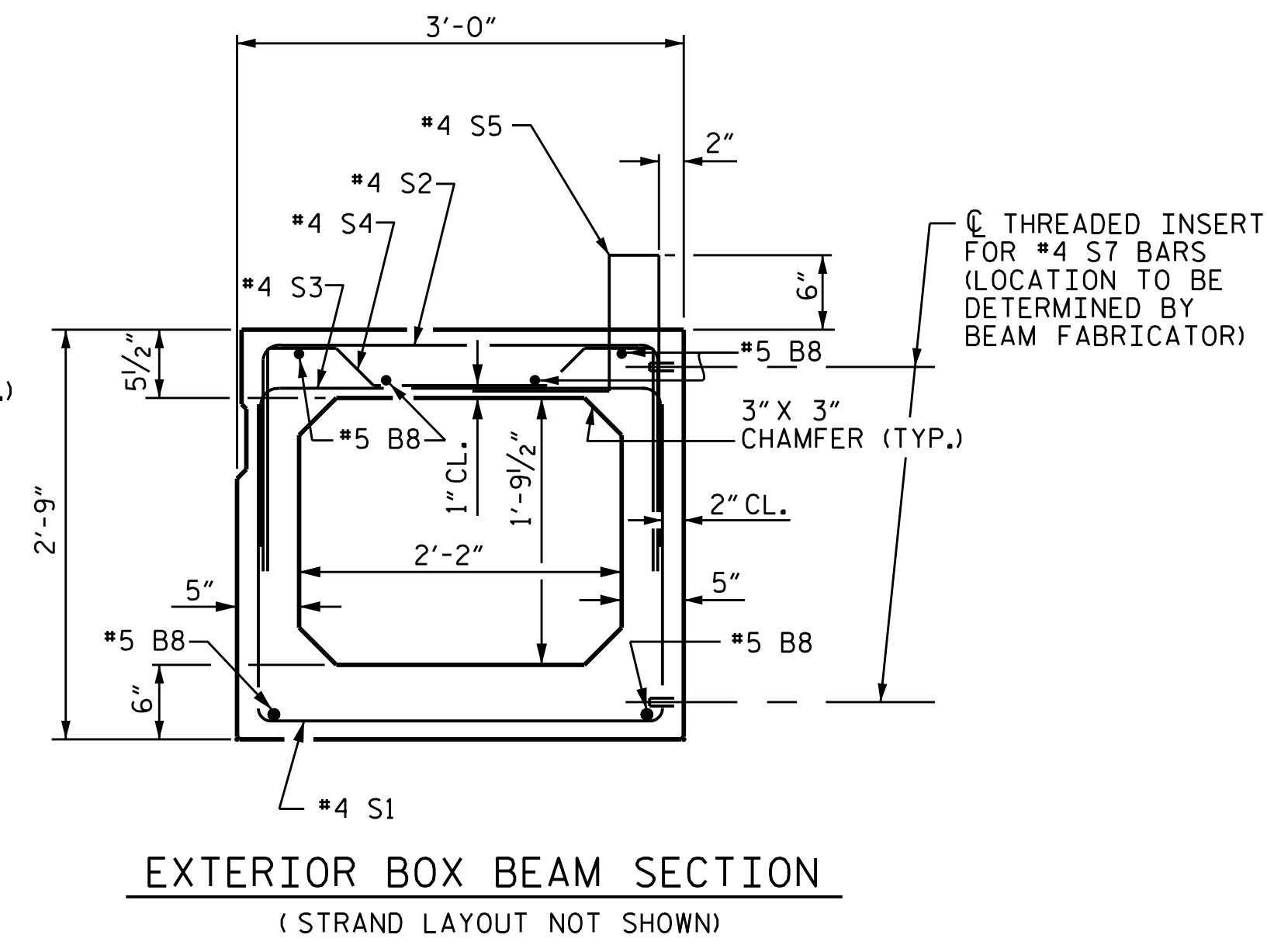
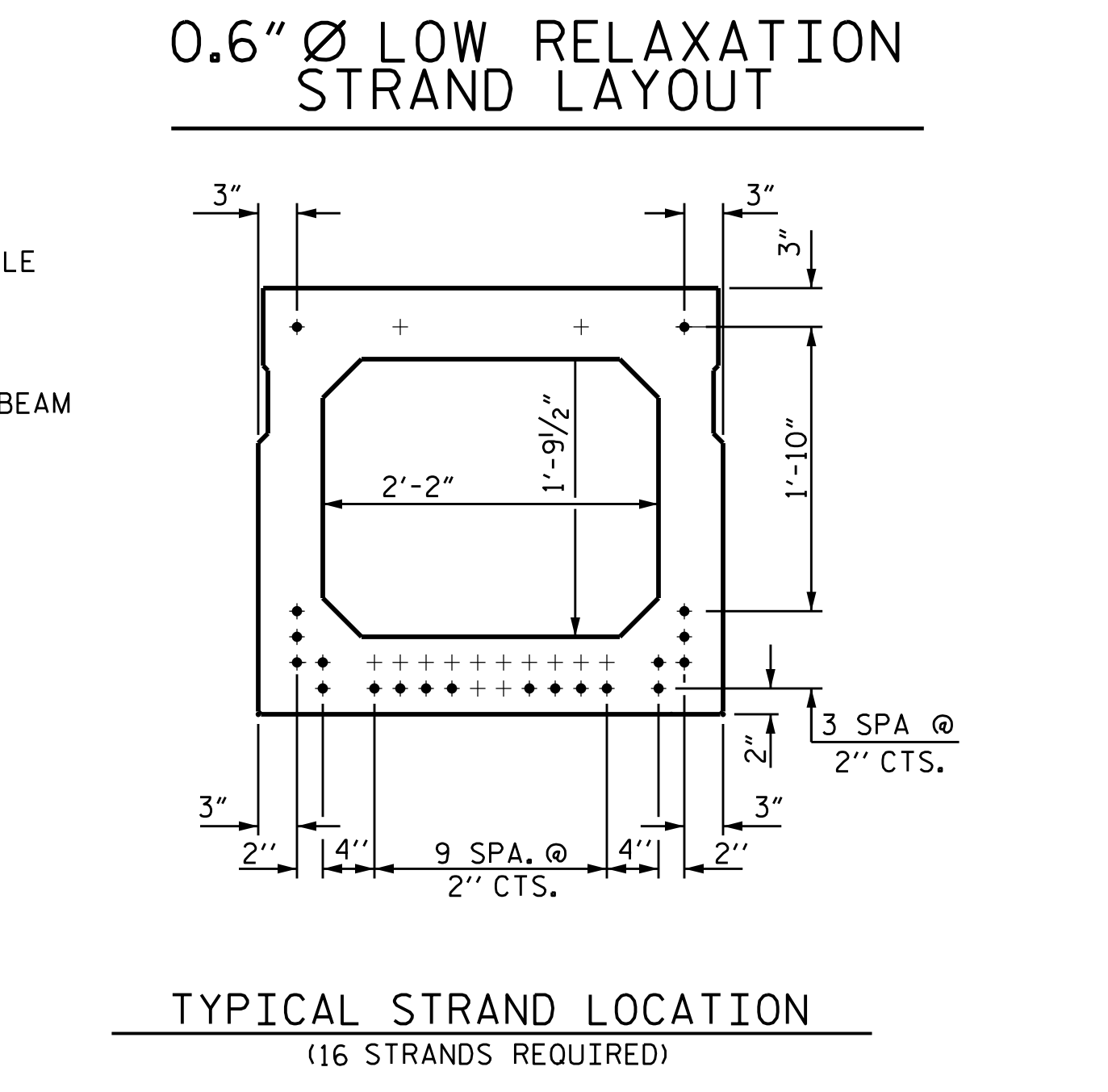
PROJECT NO. 50106038

SHEET NO. 17 OF 20

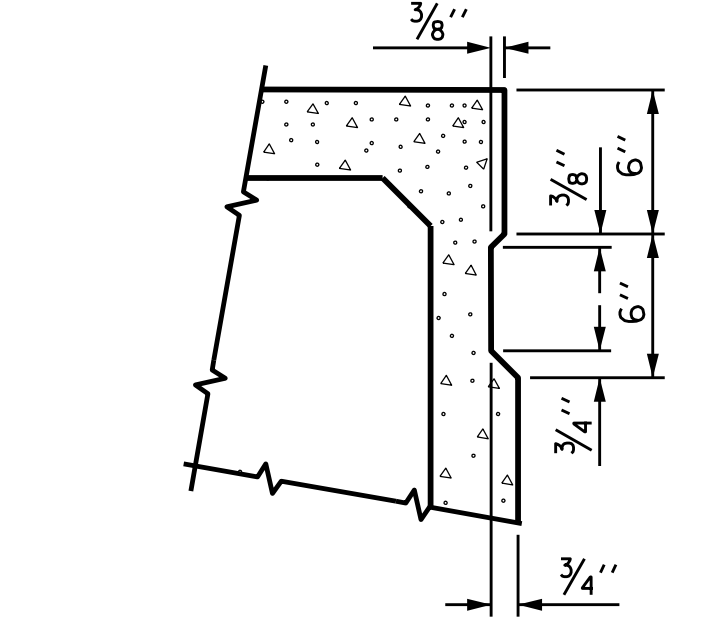


ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE BOX BEAM SECTION							
BAR NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT		
			LENGTH	WEIGHT	LENGTH	WEIGHT	
A1	10	#5	6'-8"	70	6'-8"	70	
A2	34	#4	5'-7"	127	5'-7"	127	
B8	12	#5	STR	38'-5"	481	38'-5"	481
K1	12	#4	6	6'-2"	49	6'-2"	49
K2	8	#4	STR	2'-7"	14	2'-7"	14
S1	63	#4	3	7'-6"	316	7'-6"	316
S2	63	#4	3	5'-8"	238	5'-8"	238
S3	107	#4	3	4'-10"	345	4'-10"	345
S4	44	#4	4	5'-10"	171	5'-10"	171
S5	105	#4	5	3'-11"	275	--	--
REINFORCING STEEL			2086	LBS.	1811	LBS.	
8000 P.S.I. CONCRETE			13.4	CU. YDS.	13.3	CU. YDS.	
0.6" Ø L.R. STRANDS			No. 20		No. 20		



SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF DOWEL HOLES. (INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.

GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203.

ALL REINFORCING STEEL CAST WITH THE BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT THE FIXED END OF BOX BEAM SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE 2 1/2" Ø DOWEL HOLES AT THE EXPANSION END OF BOX BEAM SECTIONS SHALL BE FILLED WITH EXPANSION JOINT MATERIAL.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

FOR GROUT, SEE SECTION 218 OF THE VDOT STANDARD SPECIFICATIONS.

THE THREADED INSERTS ARE DETAILED FOR USE WITH #4 S7 CONCRETE CURB REINFORCEMENT.

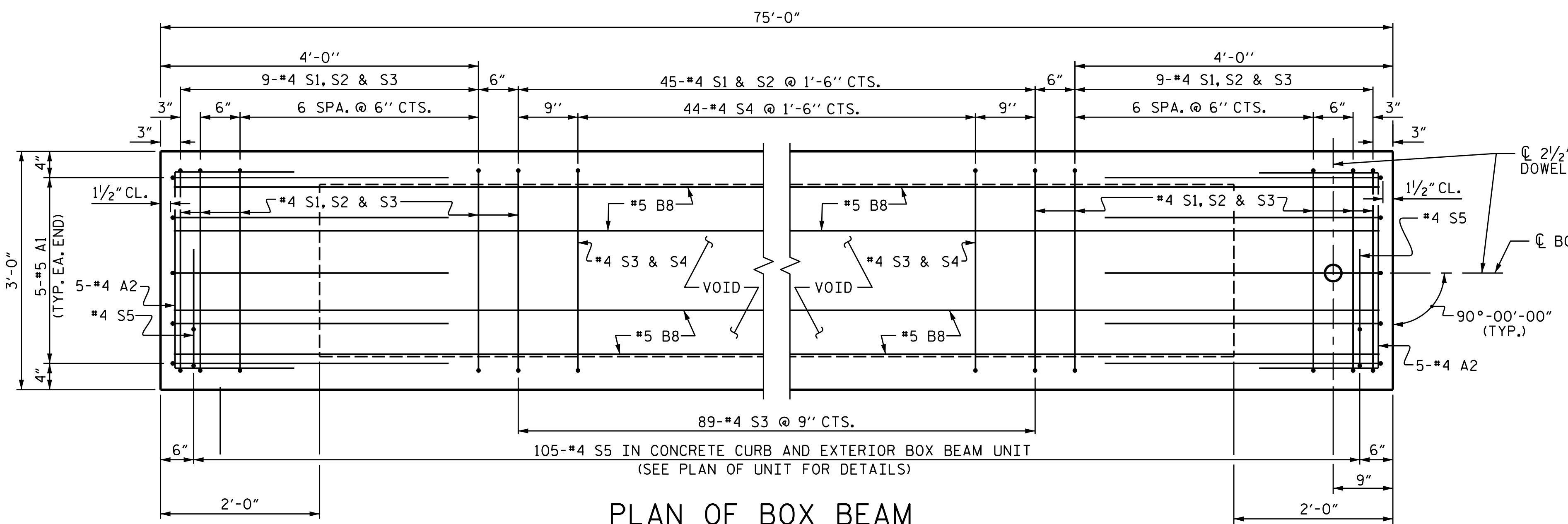
THE THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AS NOTED ON THE PLAN OF UNIT, AND GALVANIZED IN ACCORDANCE WITH SECTION 233 OF THE VDOT STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE COST OF THE THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

BEAMS SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 8,000 PSI MIN.

NOTES

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR B.B.	2	75'-0"	150'-0"
INTERIOR B.B.	2	75'-0"	150'-0"
TOTAL	4		300'-0"



EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #4 S5 BARS. FOR LOCATION OF DIAPHRAGMS, SEE "PLAN OF UNIT". FOR LOCATION OF THREADED INSERTS, SEE "PLAN OF UNIT". FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS".

No.	DATE	BY	DESCRIPTION

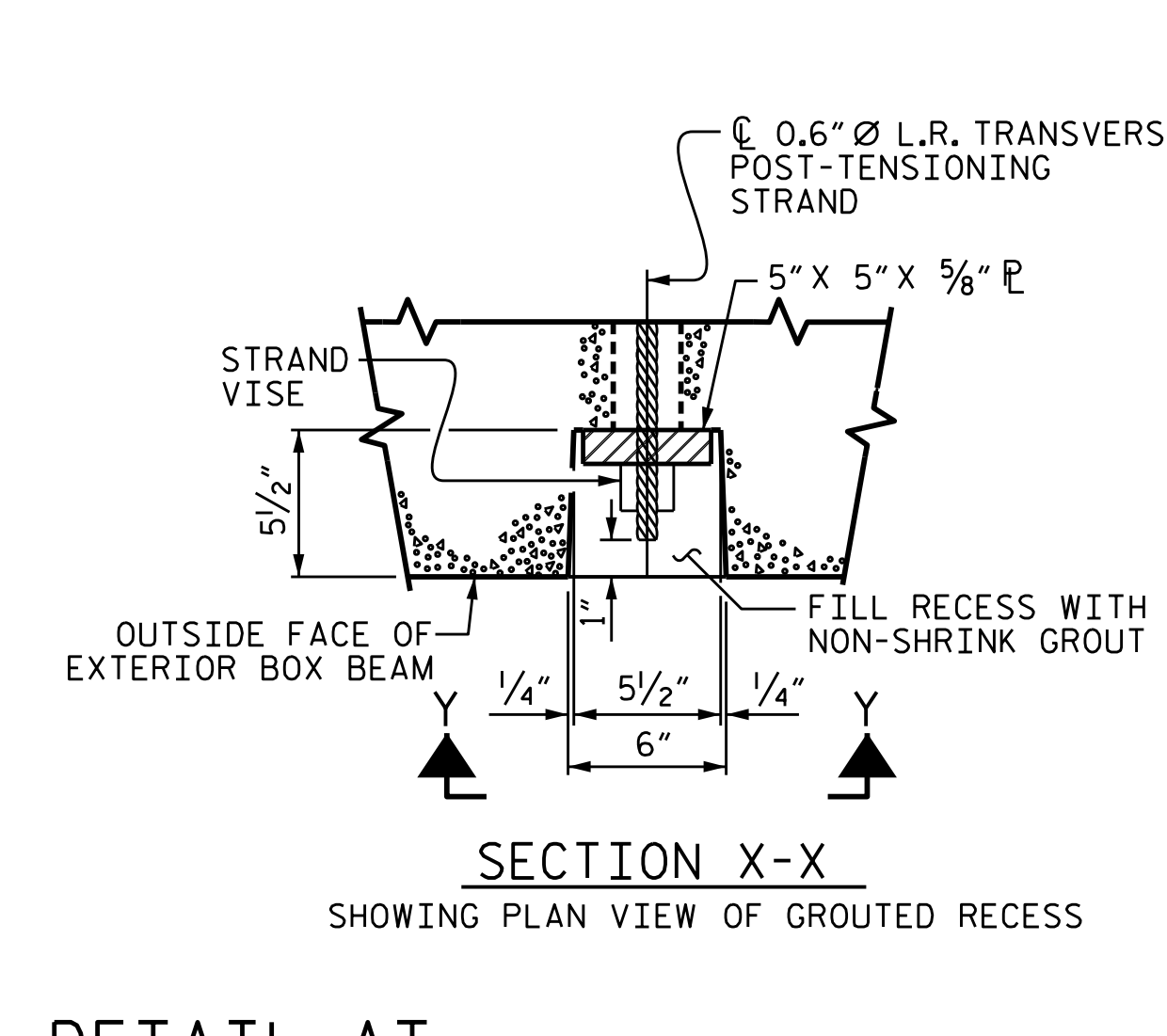
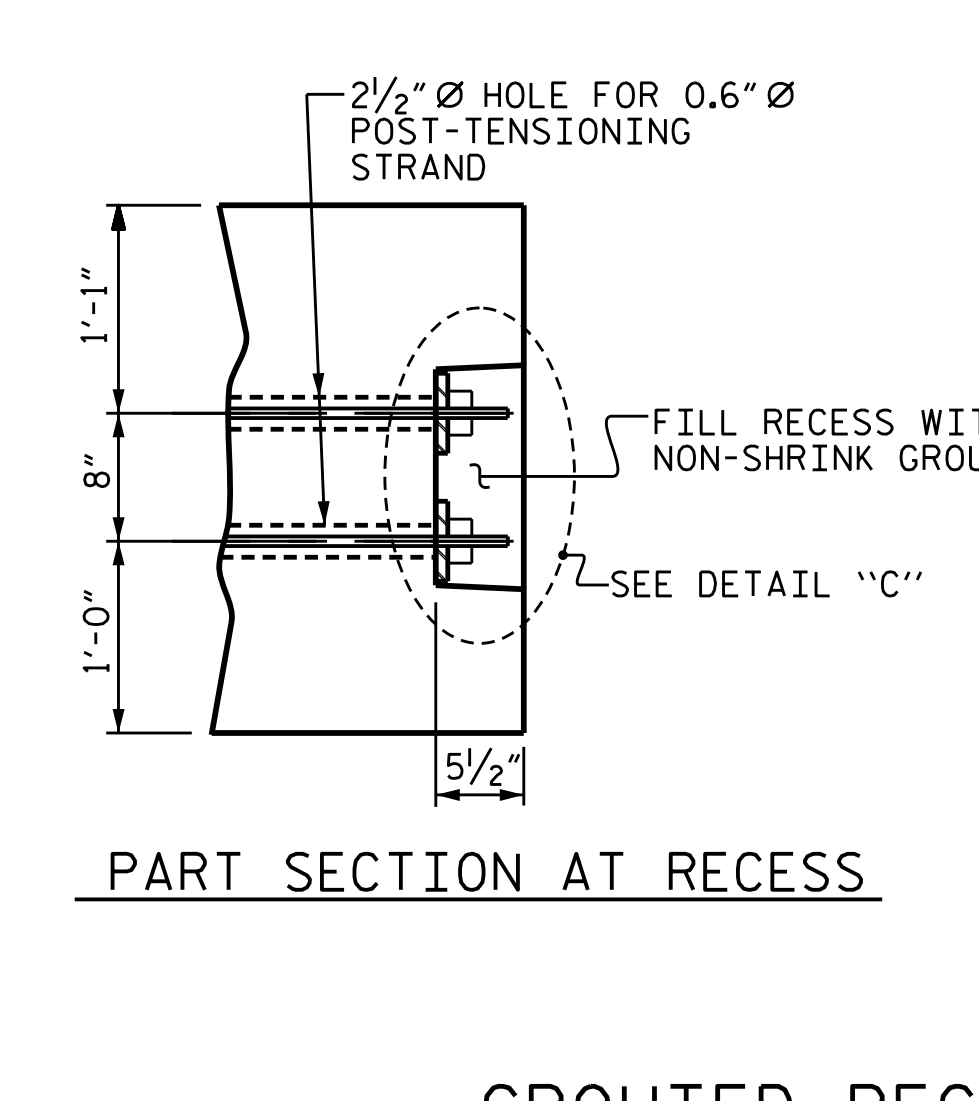
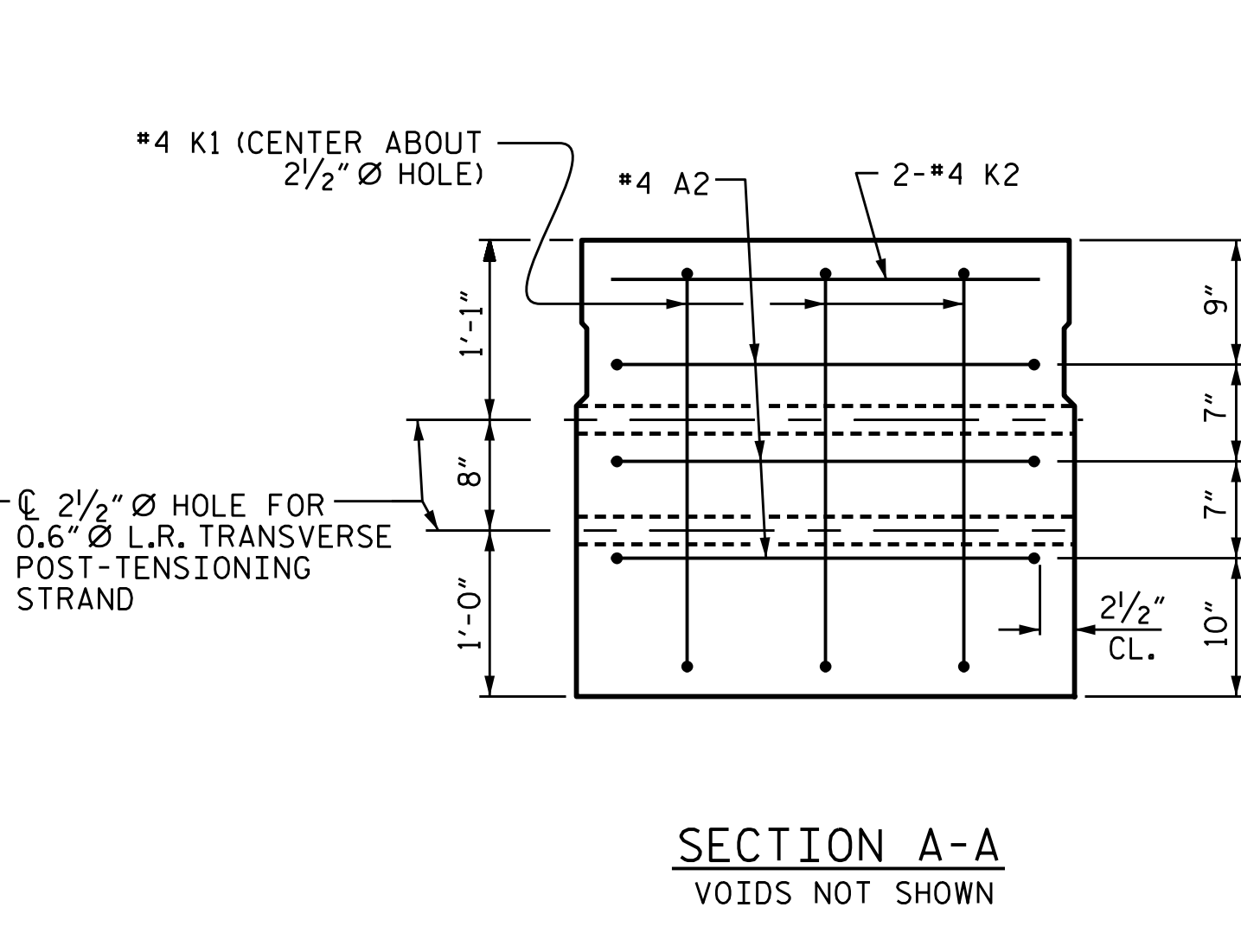
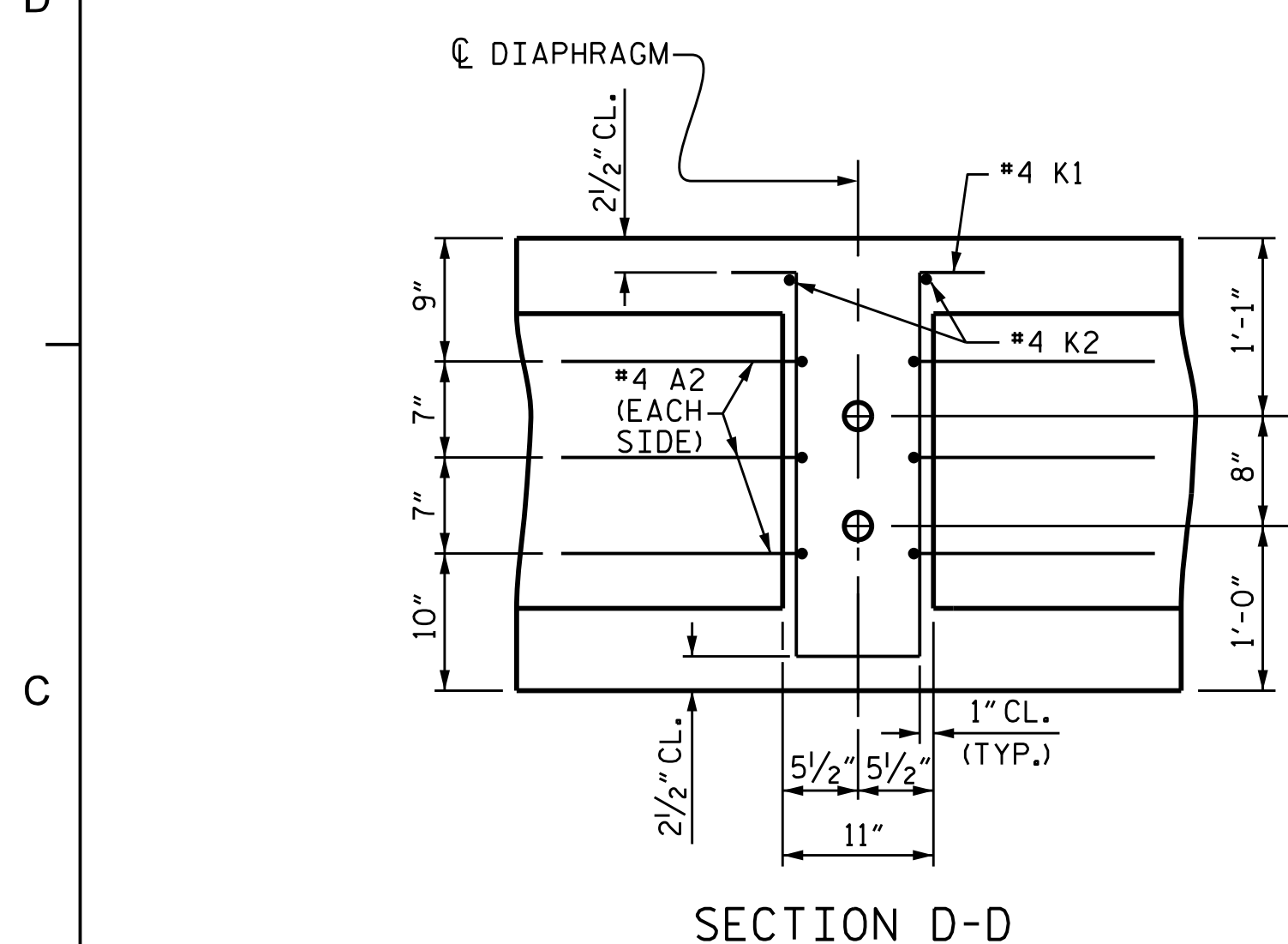
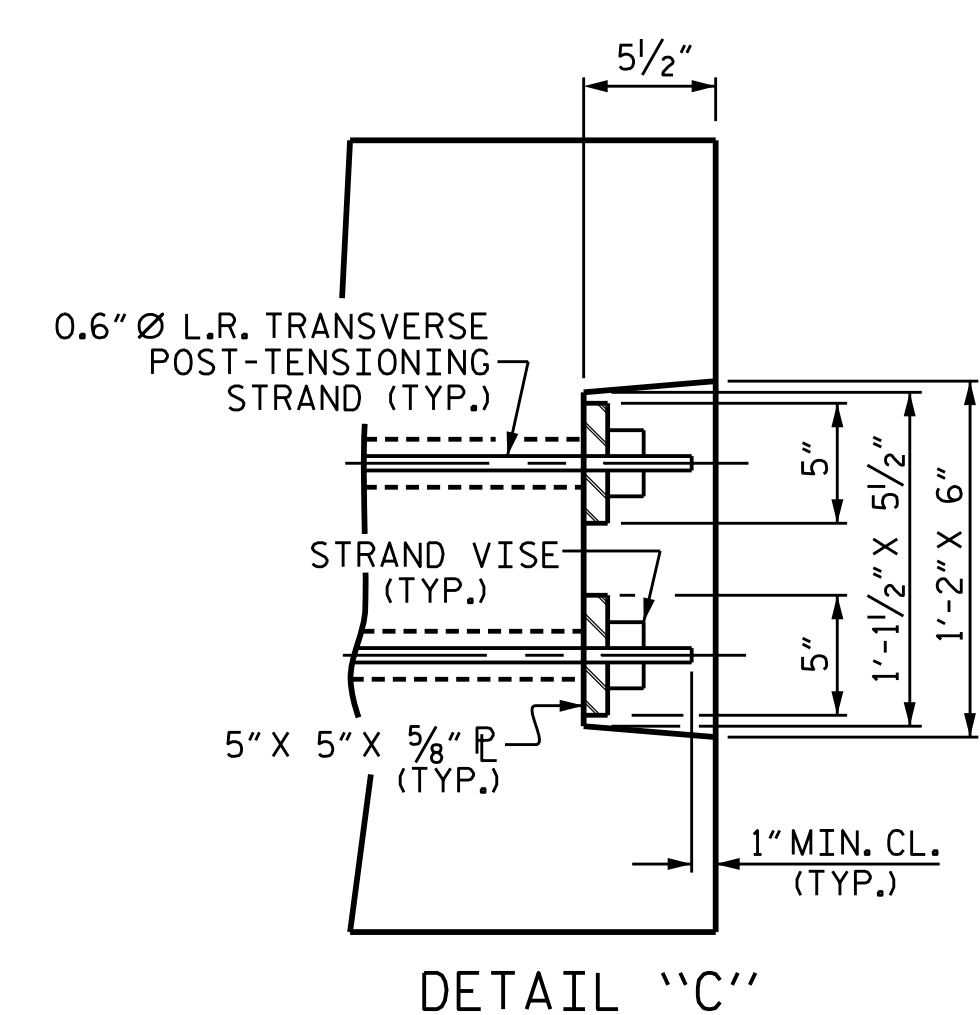
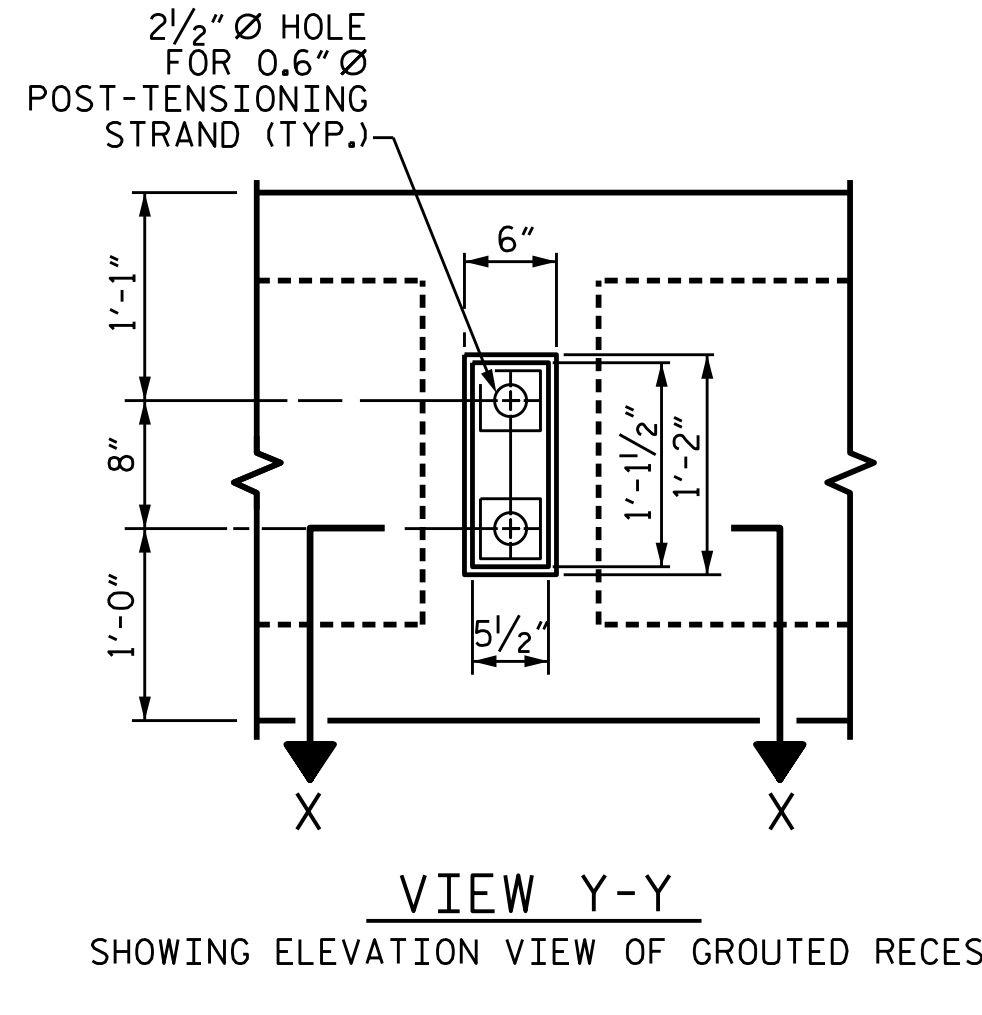
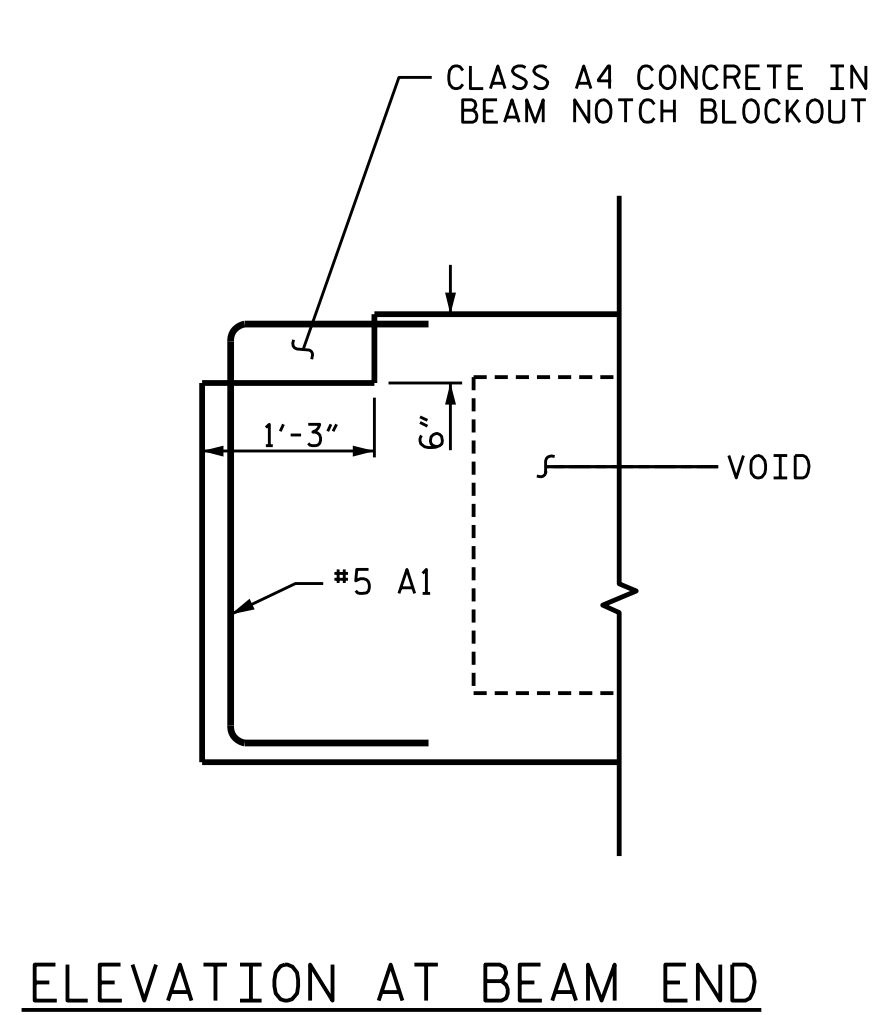
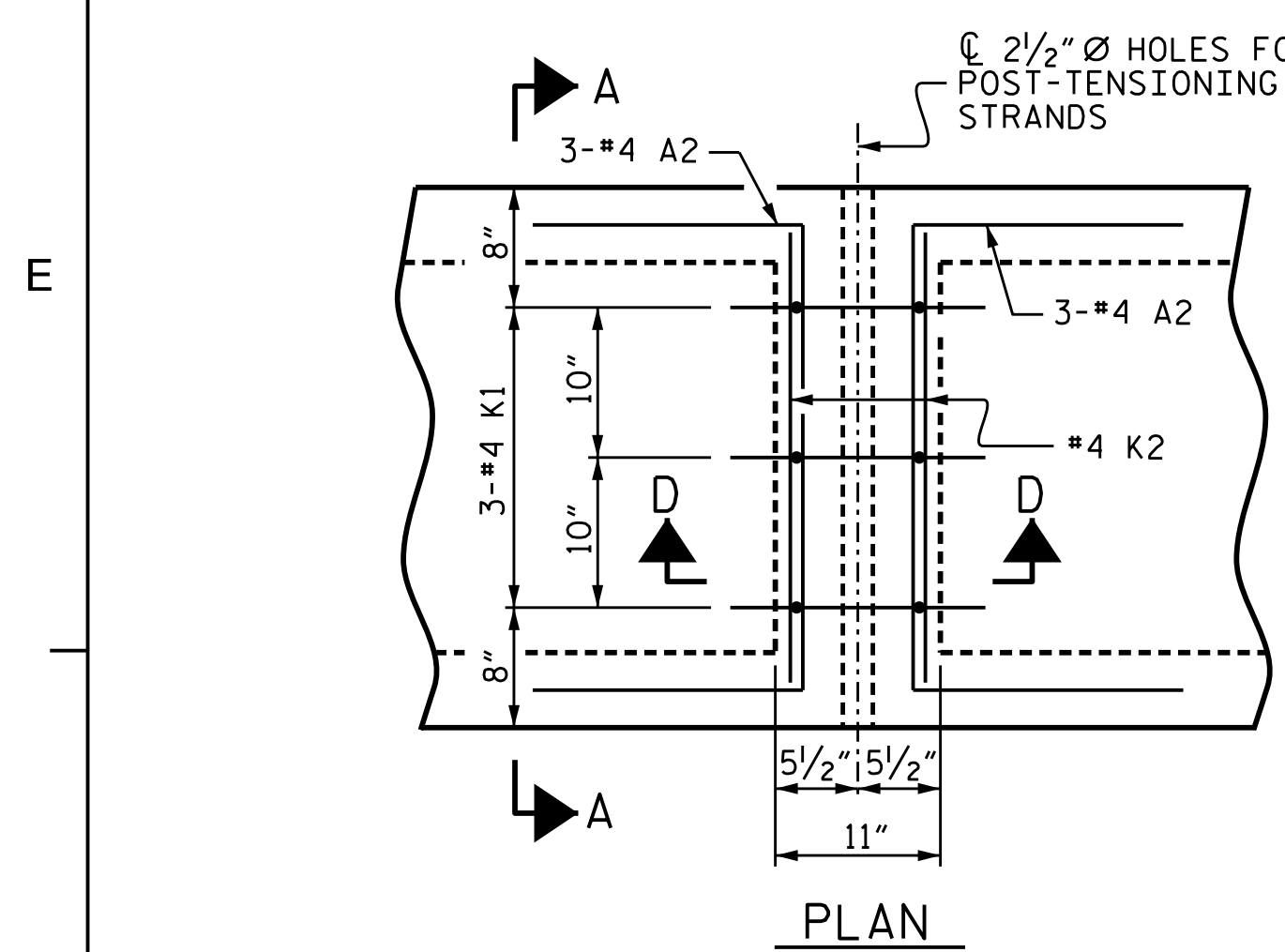
DRAWN BY SKC/KLT
APPROVED BY MTP
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TITLE

BEAM DETAILS

PROJECT NO. 50106038

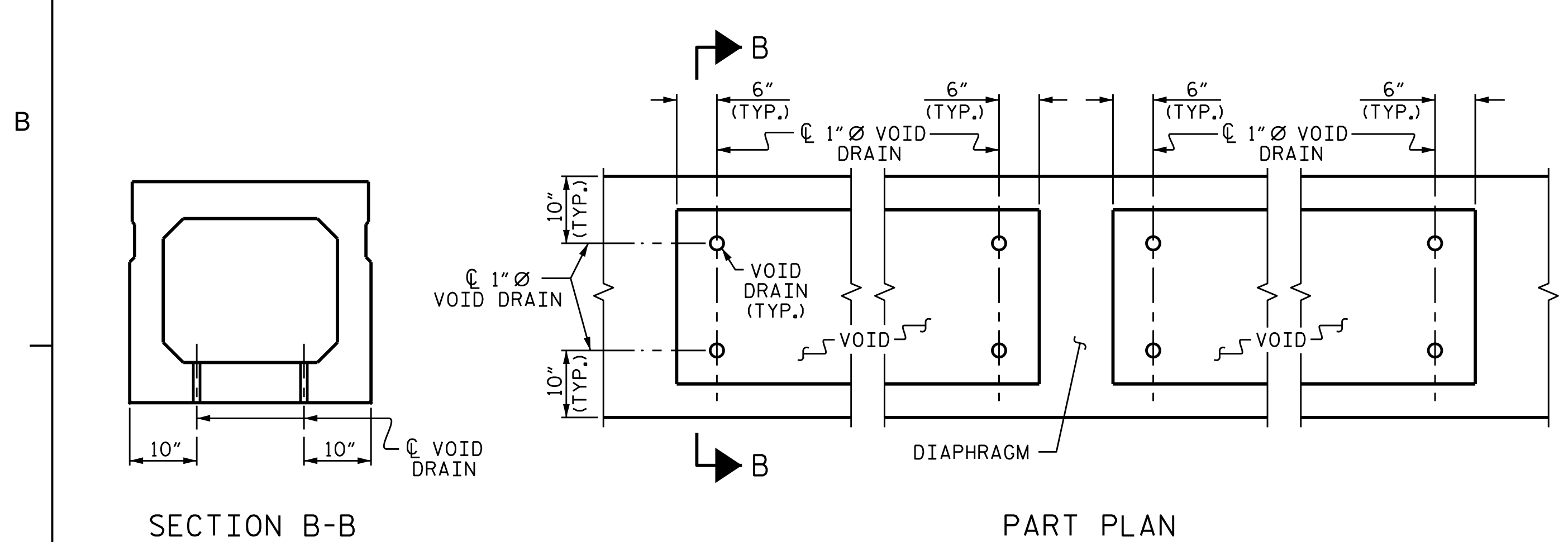
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DOUBLE DIAPHRAGM DETAILS

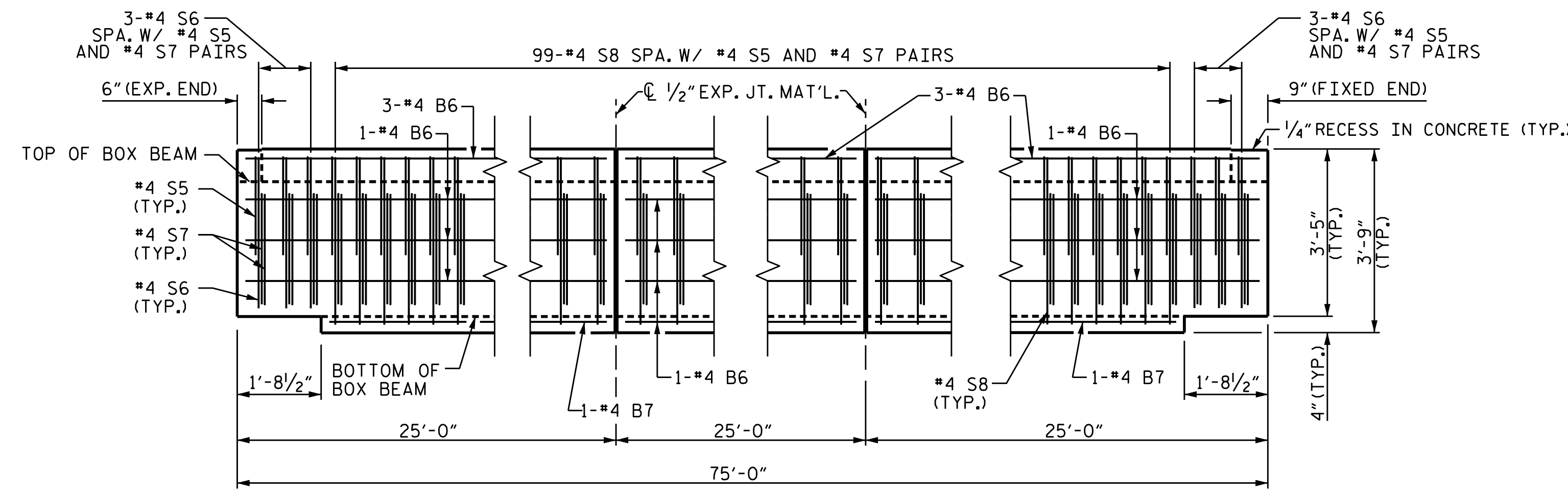
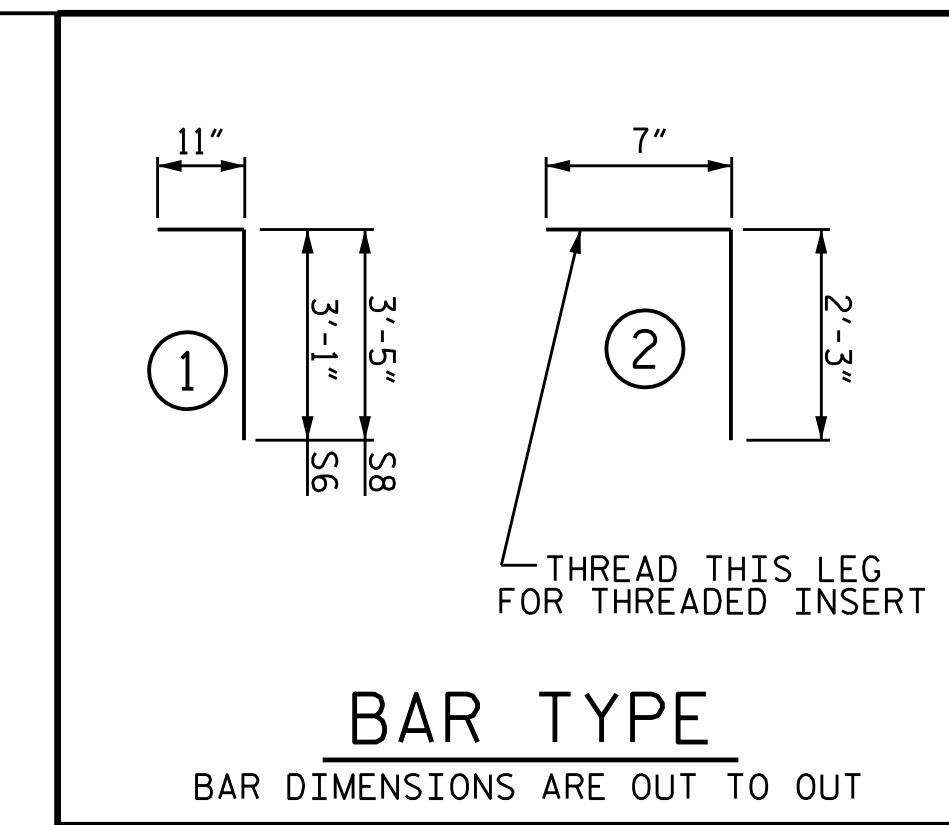
#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2 1/2" Ø HOLE.

**GROUTED RECESS DETAIL AT
END OF POST-TENSIONED STRANDS
OF EXTERIOR BOX BEAM**



DEAD LOAD DEFLECTION AND CAMBER	
75' BOX BEAM UNIT	3'-0" x 2'-9"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND 3 9/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD	2 5/8" ↓
FINAL CAMBER	1 5/16" ↑

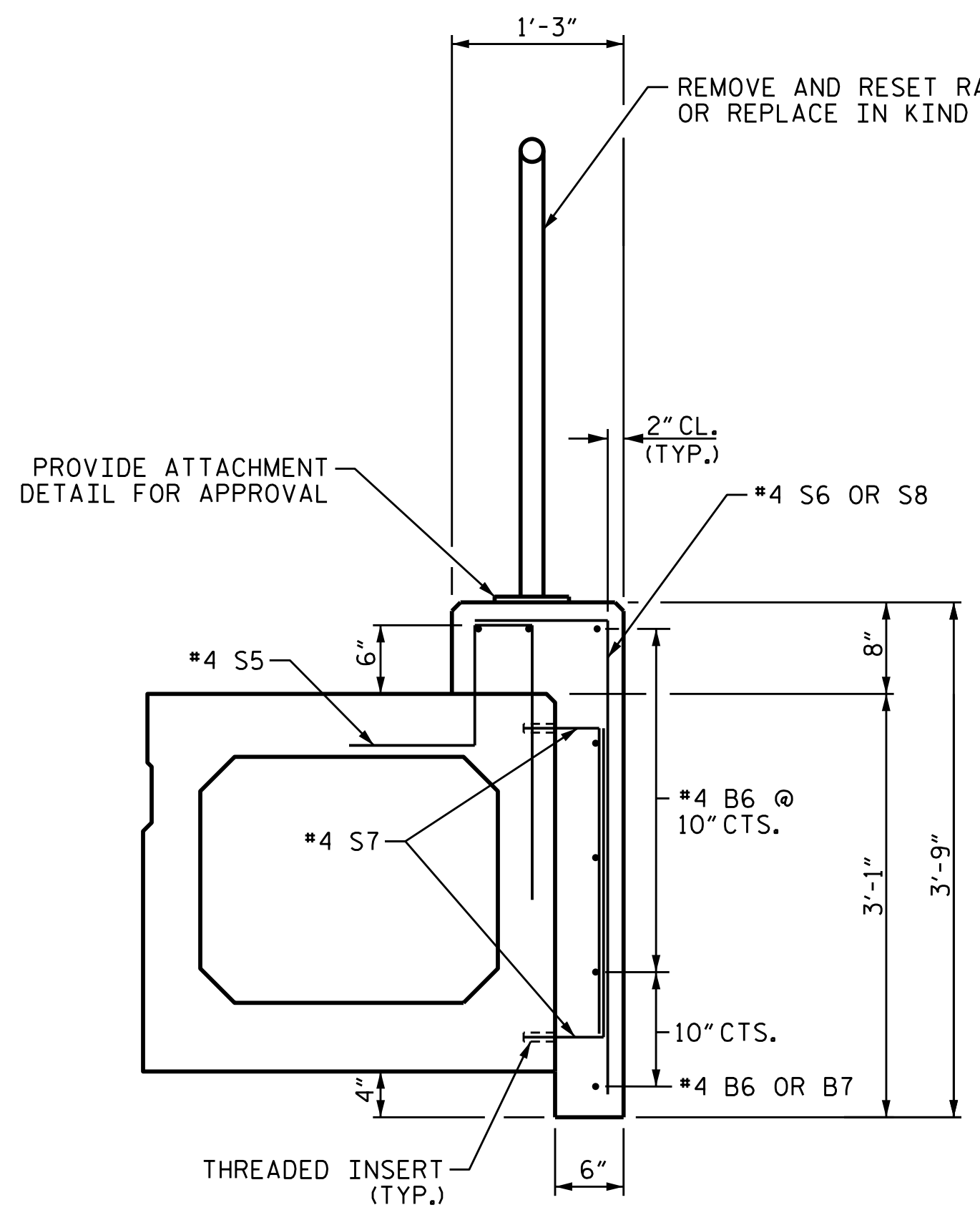
VOID DRAIN DETAILS
(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)



CONCRETE CURB ELEVATION

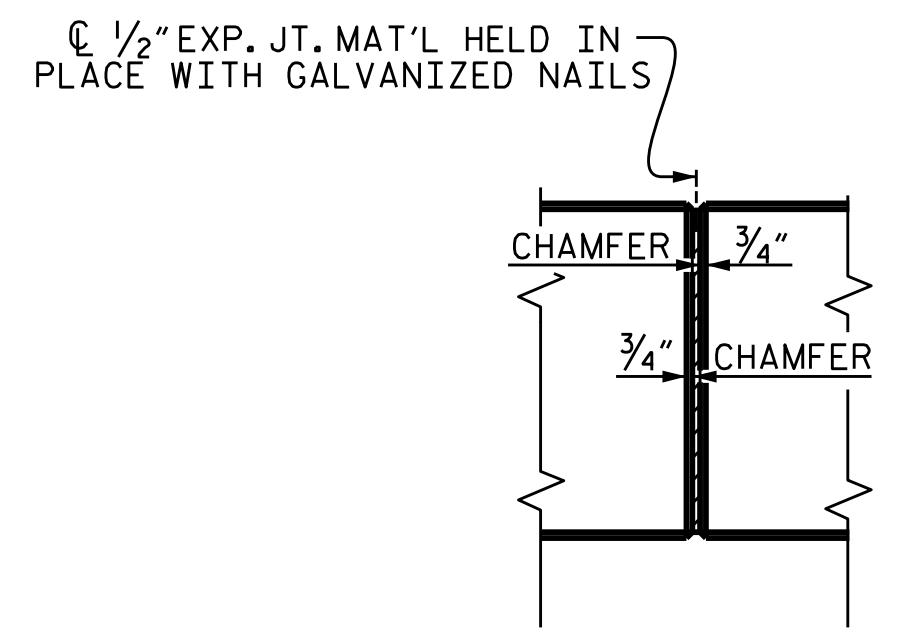
B7, B8, S6, & S8 BARS MAYBE SHIFTED AS NECESSARY FOR TYING.
SEE SHEET S-16 FOR "S" BAR SPACINGS.

BILL OF MATERIAL FOR CONCRETE CURB					
BAR	75' UNIT	SIZE	TYPE	LENGTH	WEIGHT
B6	19	#4	STR	24'-8"	313
B7	2	#4	STR	22'-11"	31
S6	6	#4	1	4'-0"	16
S7	210	#4	2	2'-10"	397
S8	99	#4	1	4'-4"	287
REINFORCING STEEL PER CURB (75' UNIT)				LBS.	1044
CLASS A4 CONCRETE PER CURB (75' UNIT)				CU.YDS.	7
TOTAL PROJECT CLASS A4 CONCRETE				CU.YDS.	14

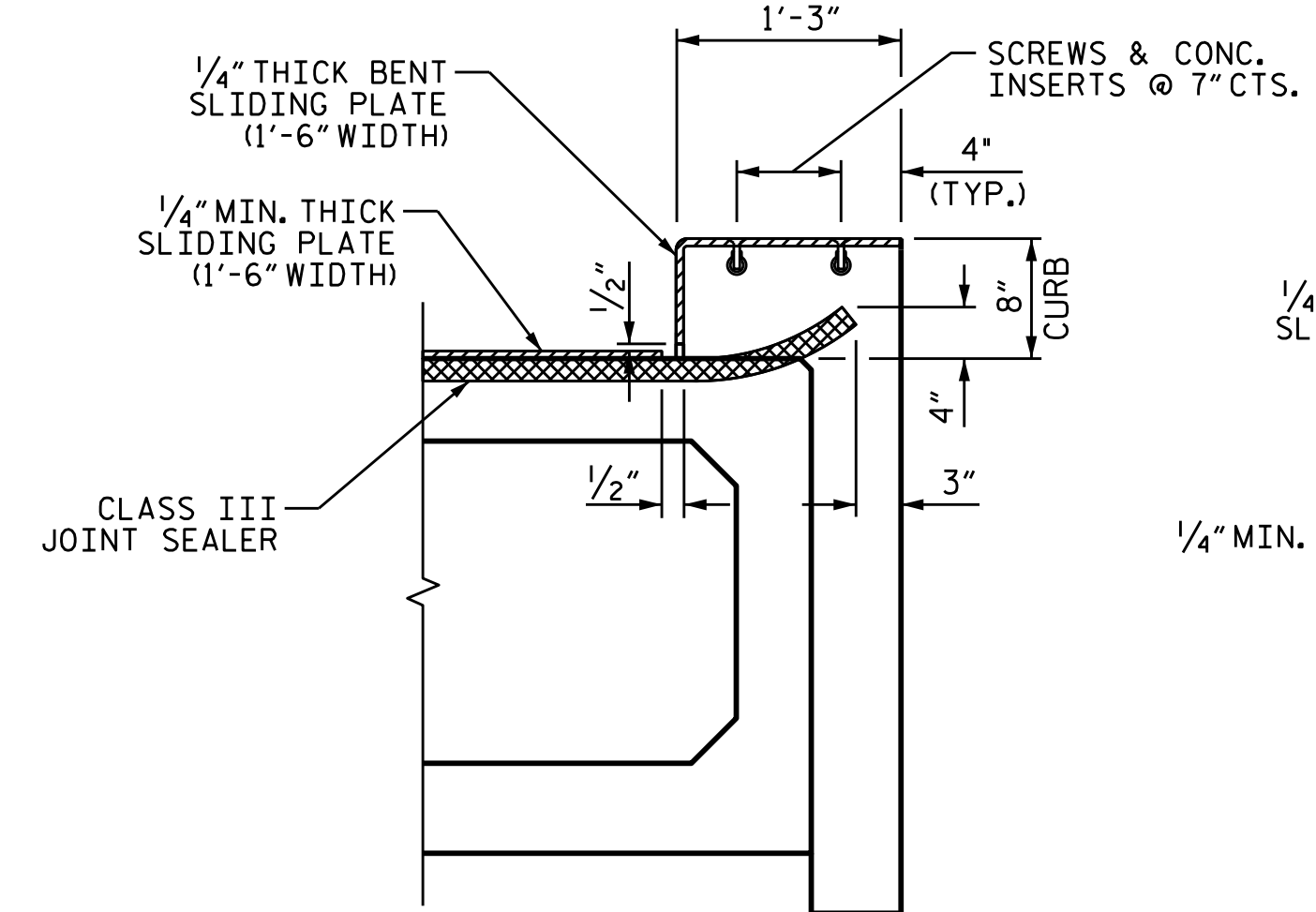


CURB SECTION

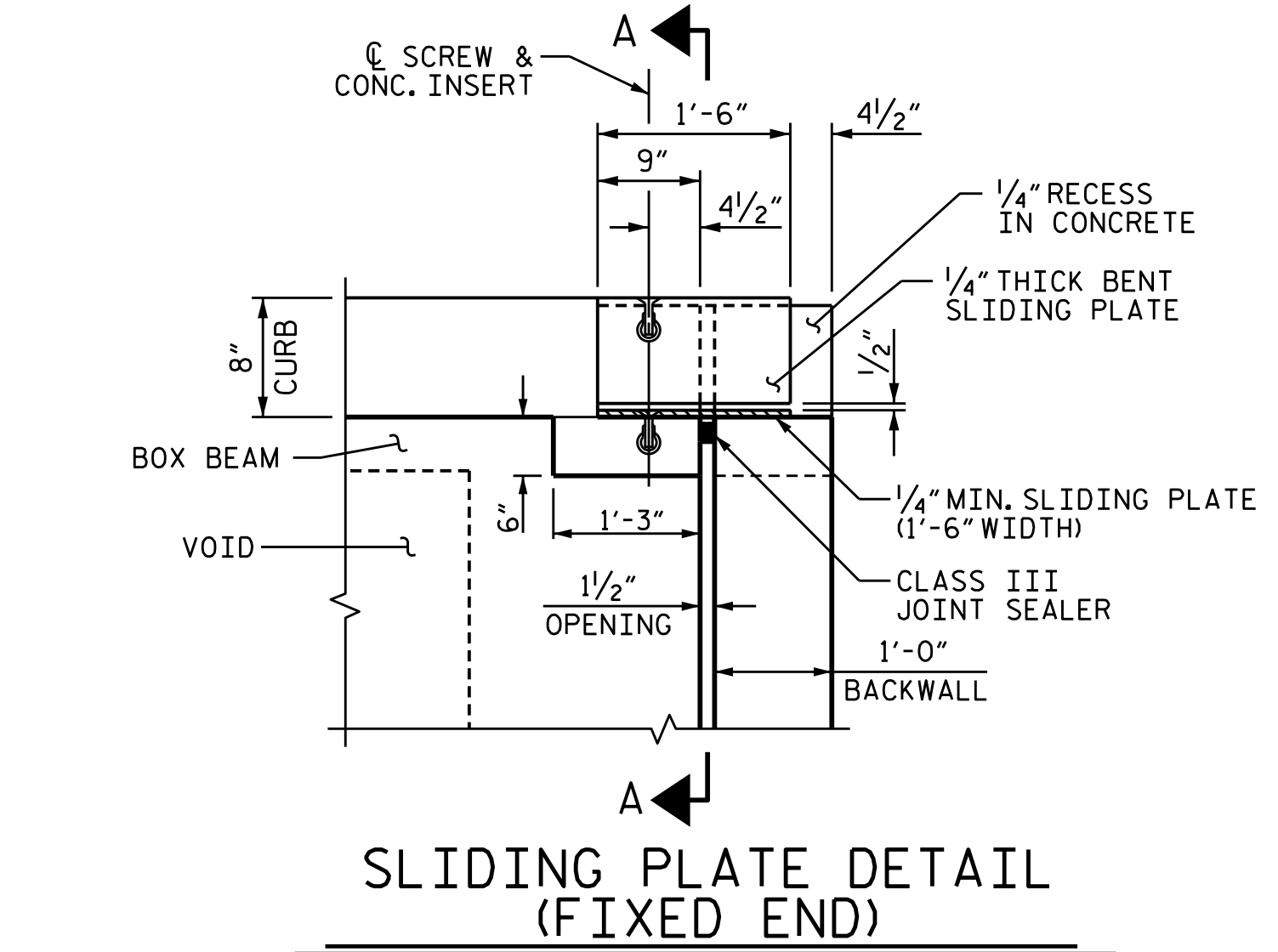
PVC DRAINS W/ INLET MESH NOT SHOWN FOR CLARITY.



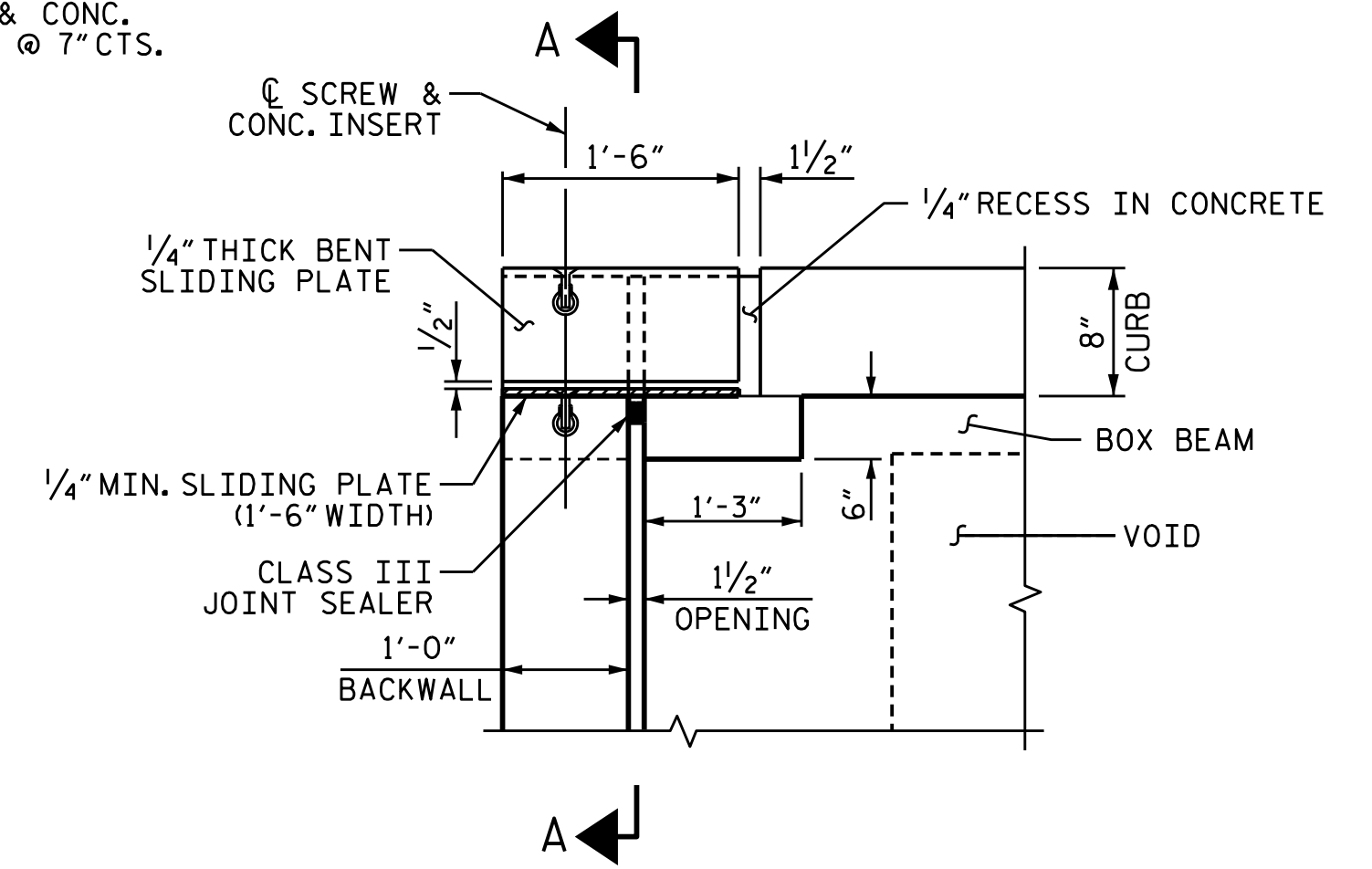
ELEVATION AT EXPANSION JOINTS



SECTION A-A



SLIDING PLATE DETAIL (FIXED END)

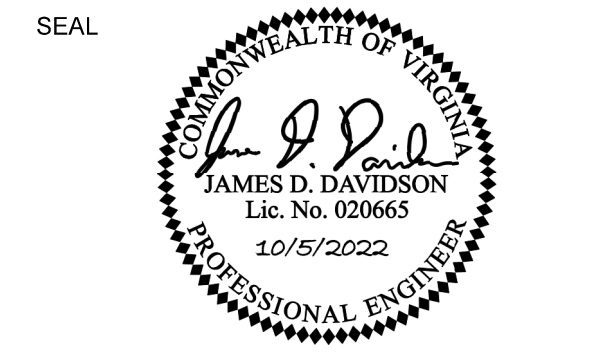


SLIDING PLATE DETAIL (EXPANSION END)

**RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE**

SUPERSTRUCTURE
REPLACEMENT
AND SUBSTRUCTURE
MODIFICATION

RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA. 24586



KEY PLAN

REVISIONS

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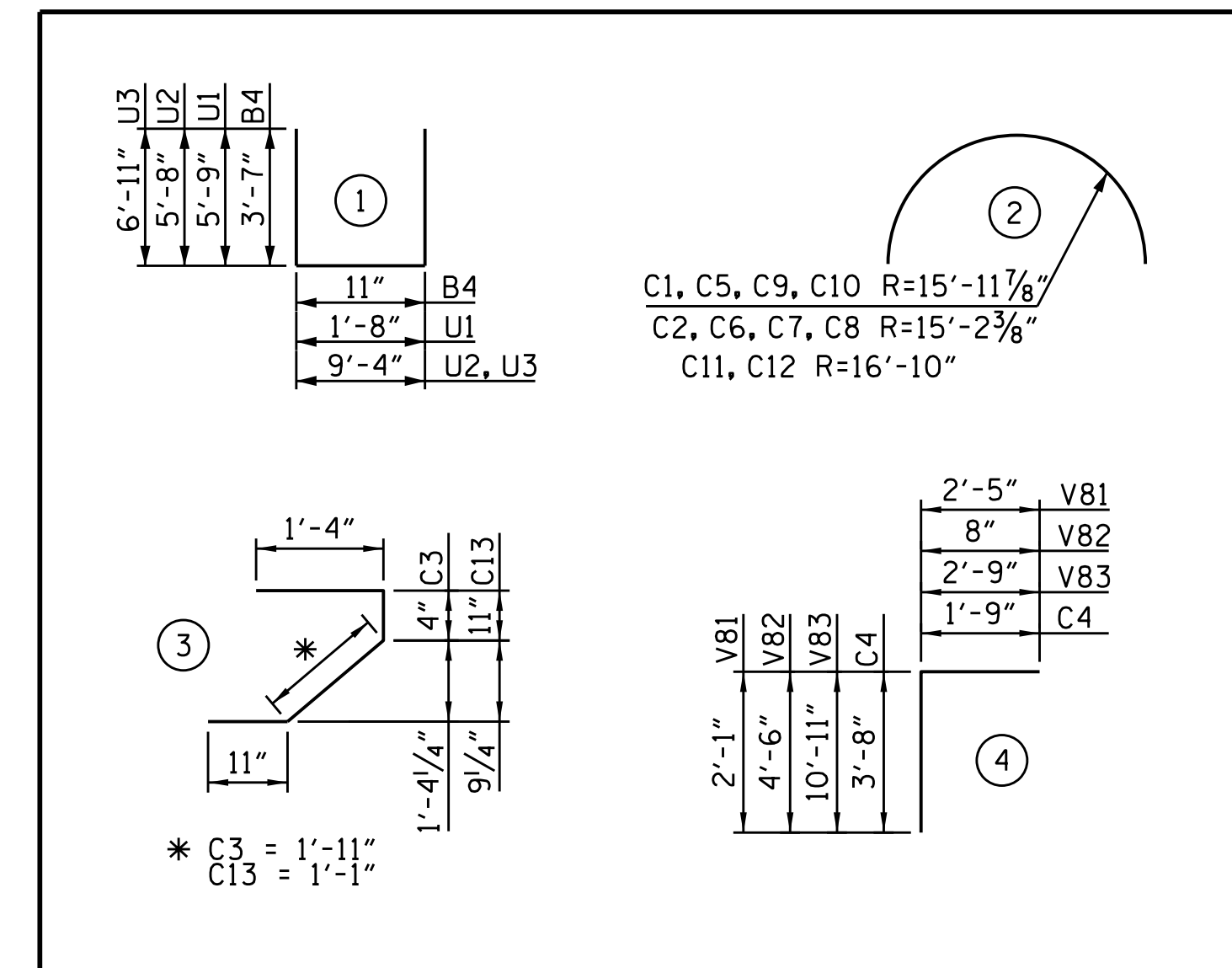
**CURB & FASCIA
PANELS**

PROJECT NO. 50106038

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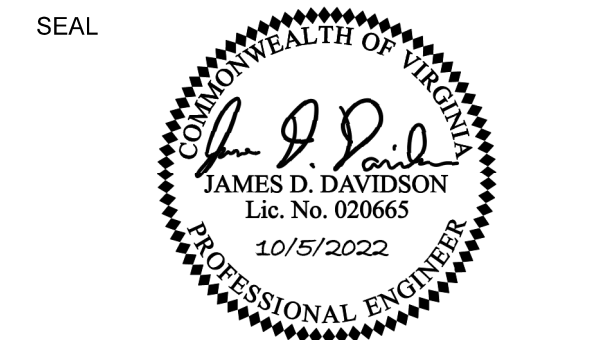
**BILL OF MATERIAL
CONCRETE ARCH, SIDEWALLS & END POURS**

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	236	#3	STR	9'-4"	828	V1	80	#6	STR	12'-11"	1552	V56	4	#5	STR	4'-8"	19
B2	46	#5	STR	9'-4"	448	V2	40	#6	STR	10'-9"	646	V57	4	#5	STR	4'-6"	19
B3	8	#5	STR	11'-6"	96	V3	40	#5	STR	10'-11"	455	V58	4	#5	STR	4'-5"	18
B4	8	#5	1	8'-1"	67	V4	4	#5	STR	10'-3"	43	V59	4	#5	STR	4'-4"	18
B5	10	#5	STR	12'-8"	132	V5	4	#5	STR	9'-8"	40	V60	48	#5	STR	4'-0"	200
						V6	4	#5	STR	9'-2"	38	V61	4	#5	STR	4'-5"	18
C1	80	#6	2	18'-1"	2173	V7	4	#5	STR	8'-8"	36	V62	4	#5	STR	4'-7"	19
C2	80	#6	2	17'-0"	2043	V8	4	#5	STR	8'-3"	34	V63	4	#5	STR	4'-8"	19
C3	8	#5	3	4'-6"	38	V9	4	#5	STR	7'-10"	33	V64	4	#5	STR	4'-10"	20
C4	280	#5	4	5'-5"	1582	V10	4	#5	STR	7'-6"	31	V65	4	#5	STR	5'-0"	21
C5	80	#6	2	6'-9"	811	V11	4	#5	STR	7'-2"	30	V66	4	#5	STR	5'-3"	22
C6	80	#6	2	6'-9"	811	V12	4	#5	STR	6'-10"	29	V67	4	#5	STR	5'-6"	23
C7	60	#6	2	9'-3"	834	V13	4	#5	STR	6'-7"	27	V68	4	#5	STR	5'-9"	24
C8	20	#6	2	7'-8"	230	V14	4	#5	STR	6'-4"	26	V69	4	#5	STR	6'-0"	25
C9	60	#6	2	9'-5"	849	V15	4	#5	STR	6'-1"	25	V70	4	#5	STR	6'-4"	26
C10	20	#6	2	7'-10"	235	V16	4	#5	STR	5'-10"	24	V71	4	#5	STR	6'-8"	28
C11	20	#6	2	9'-6"	285	V17	4	#5	STR	5'-8"	24	V72	4	#5	STR	7'-0"	29
C12	20	#6	2	7'-11"	238	V18	4	#5	STR	5'-6"	23	V73	4	#5	STR	7'-5"	31
C13	296	#5	3	4'-3"	1312	V19	4	#5	STR	5'-4"	22	V74	4	#5	STR	7'-10"	33
						V20	4	#5	STR	5'-2"	22	V75	4	#5	STR	8'-3"	34
H1	4	#5	STR	4'-4"	18	V21	52	#5	STR	4'-9"	258	V76	4	#5	STR	8'-9"	37
H2	4	#5	STR	5'-1"	21	V22	4	#5	STR	5'-1"	21	V77	4	#5	STR	9'-4"	39
H3	4	#5	STR	5'-11"	25	V23	4	#5	STR	5'-2"	22	V78	4	#5	STR	10'-0"	42
H4	4	#5	STR	6'-11"	29	V24	4	#5	STR	5'-4"	22	V79	4	#5	STR	10'-8"	45
H5	4	#5	STR	8'-1"	34	V25	4	#5	STR	5'-6"	23	V80	32	#5	STR	10'-10"	362
H6	4	#5	STR	9'-7"	40	V26	4	#5	STR	5'-8"	24	V81	42	#5	4	4'-6"	197
H7	4	#5	STR	11'-5"	48	V27	4	#5	STR	5'-10"	24	V82	54	#5	4	5'-2"	291
H8	4	#5	STR	14'-6"	60	V28	4	#5	STR	6'-1"	25	V83	40	#5	4	13'-8"	570
H9	4	#5	STR	9'-3"	39	V29	4	#5	STR	6'-4"	26	REINFORCING STEEL 25,013 LBS					
H10	4	#5	STR	10'-7"	44	V30	4	#5	STR	6'-7"	27						
H11	4	#5	STR	12'-2"	51	V31	4	#5	STR	6'-10"	29	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H12	4	#5	STR	14'-0"	58	V32	4	#5	STR	7'-2"	30	D2	4	#8	STR	2'-3"	25
H13	4	#5	STR	16'-2"	67	V33	4	#5	STR	7'-6"	31	D3	38	#9	STR	2'-0"	260
H14	4	#5	STR	18'-9"	78	V34	4	#5	STR	7'-10"	33	REINFORCING STEEL DOWELS 285 LBS					
H15	4	#5	STR	22'-0"	92	V35	4	#5	STR	8'-3"	34						
H16	4	#5	STR	26'-11"	112	V36	4	#5	STR	8'-9"	37	CLASS A3 CONCRETE BREAKDOWN					
H17	4	#5	STR	3'-10"	16	V37	4	#5	STR	9'-2"	38						
H18	4	#5	STR	4'-5"	18	V38	4	#5	STR	9'-9"	41	TOTAL CLASS A3 CONCRETE 156.0 C.Y.					
H19	4	#5	STR	5'-2"	22	V39	4	#5	STR	10'-4"	43						
H20	4	#5	STR	6'-0"	25	V40	128	#5	STR	10'-6"	1402						
H21	4	#5	STR	7'-1"	30	V41	4	#5	STR	9'-10"	41						
H22	4	#5	STR	8'-3"	34	V42	4	#5	STR	9'-2"	38						
H23	4	#5	STR	9'-10"	41	V43	4	#5	STR	8'-8"	36						
H24	4	#5	STR	11'-11"	50	V44	4	#5	STR	8'-2"	34						
H25	4	#5	STR	16'-1"	67	V45	4	#5	STR	7'-9"	32						
H26	4	#5	STR	52'-5"	219	V46	4	#5	STR	7'-4"	31						
H27	24	#5	STR	37'-7"	941	V47	4	#5	STR	6'-11"	29						
H28	24	#5	STR	4'-8"	117	V48	4	#5	STR	6'-7"	27						
H29	24	#5	STR	4'-1"	102	V49	4	#5	STR	6'-3"	26						
H30	20	#5	STR	40'-3"	840	V50	4	#5	STR	6'-0"	25						
						V51	4	#5	STR	5'-8"	24						
U1	40	#3	1	13'-2"	198	V52	4	#5	STR	5'-5"	23						
U2	8	#6	1	20'-8"	248	V53	4	#5	STR	5'-3"	22						
U3	6	#6	1	23'-2"	209	V54	4	#5	STR	5'-0"	21						
						V55	4	#5	STR	4'-10"	20						



**RINGGOLD RAIL TRAIL
PEDESTRIAN BRIDGE
SUPERSTRUCTURE
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AND SUBSTRUCTURE
MODIFICATION**

RINGGOLD RAIL TRAIL BRIDGE
DAN RIVER, VA. 24566



KEY PLAN

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**REINFORCEMENT
BAR SCHEDULE**

PROJECT NO. 50106038

S-20