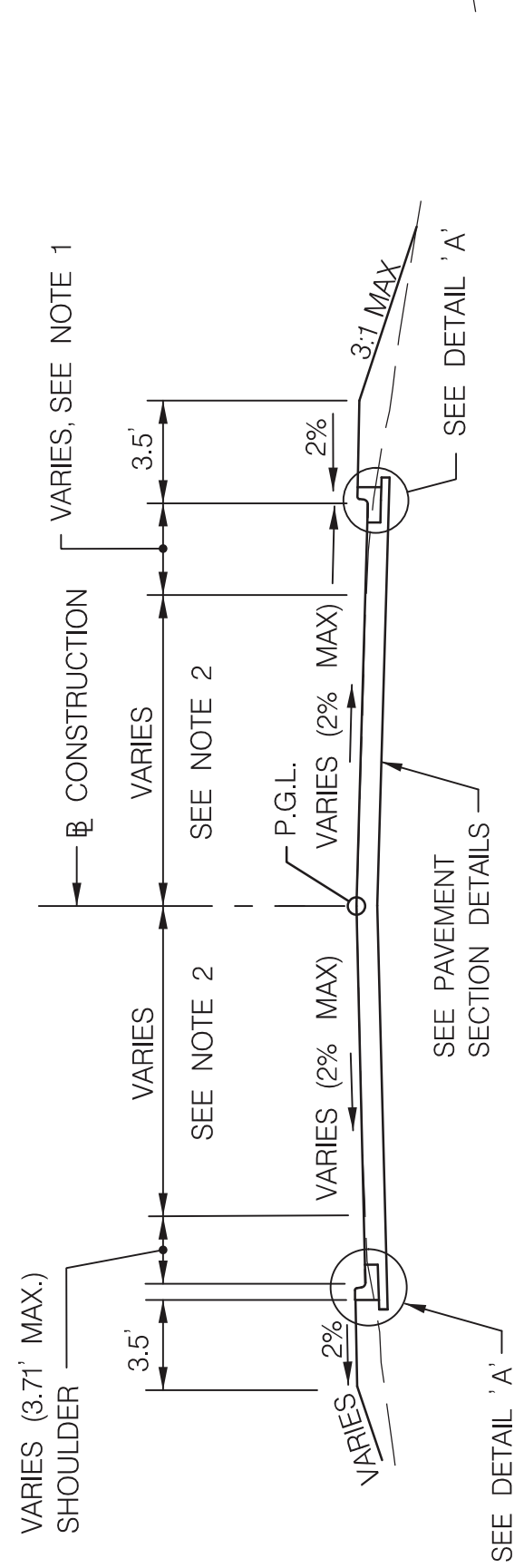
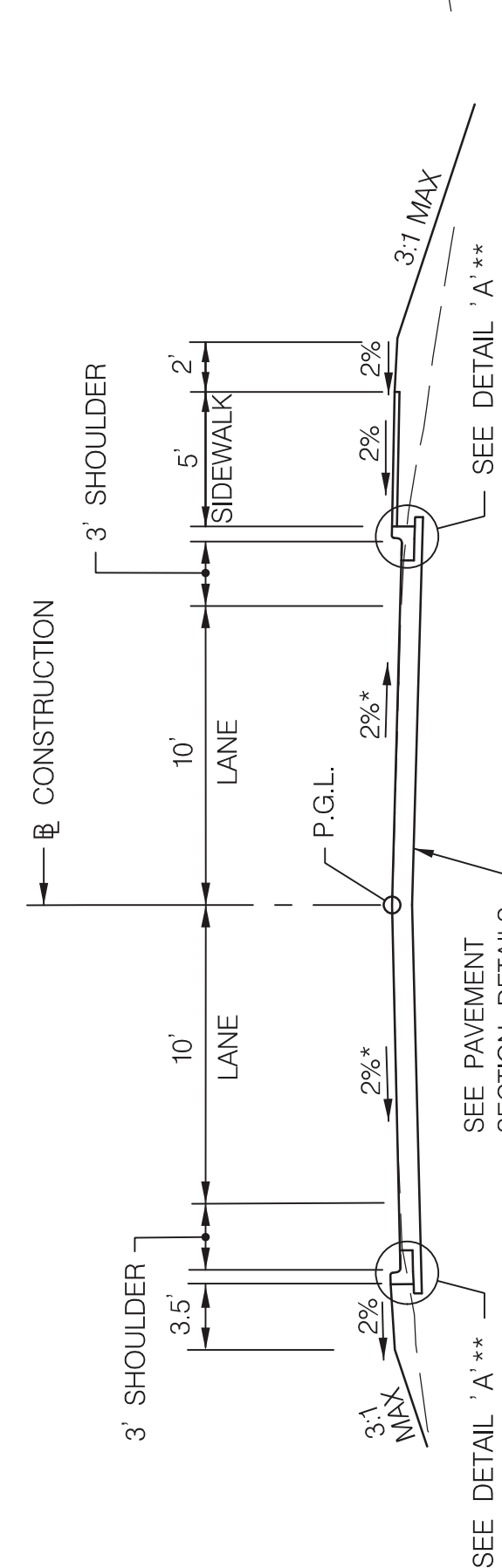


ROADWAY PLAN STA. 101+32 TO 102+00
SCALE 1" = 10'



TYPICAL ROADWAY SECTION
STA. 101+32 TO STA. 101+80.00
NOT TO SCALE

TYPICAL ROADWAY SECTION WITH MEDIAN
STA. 102+64.69 TO STA. 103+05.74
NOT TO SCALE

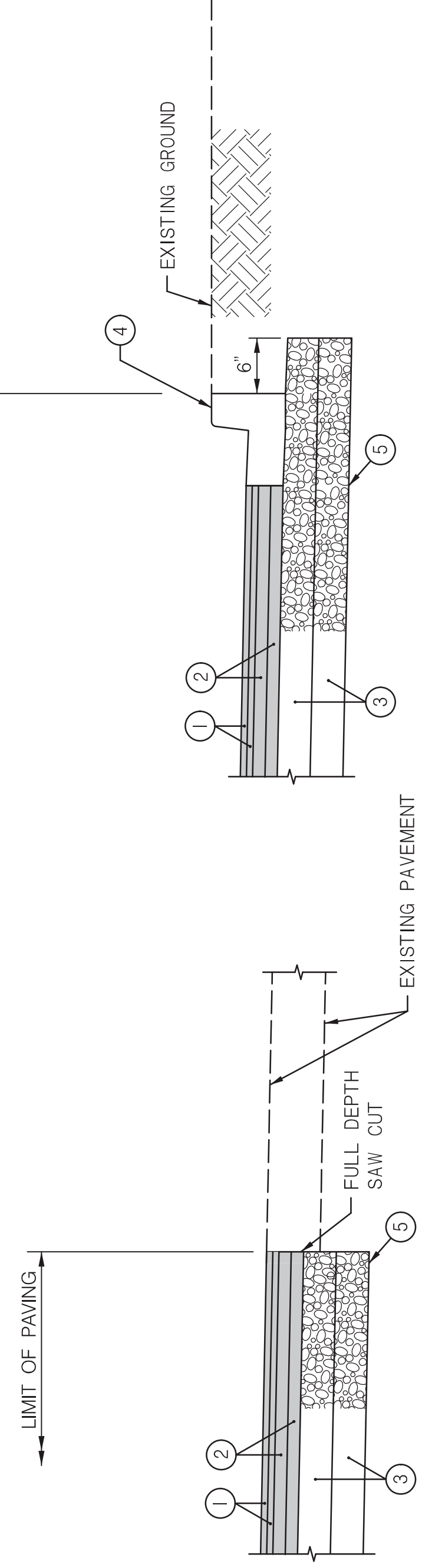


TYPICAL ROADWAY SECTION
STA. 101+80.00 TO STA. 101+96.50 AND
STA. 102+36.50 TO STA. 102+64.69
NOT TO SCALE

TYPICAL ROADWAY SECTION WITH MEDIAN
STA. 103+05.74 TO STA. 103+27.42
NOT TO SCALE

1. TRANSITION UNIFORMLY FROM -2% AT STA. 103+05.74 TO MEET EXISTING SLOPE AT SLIGO CREEK PARKWAY.

* VARY CROSS SLOPE AS REQUIRED TO PROVIDE POSITIVE DRAINAGE TO INLETS I-2 AND I-4.



TIE-IN DETAIL
NOT TO SCALE

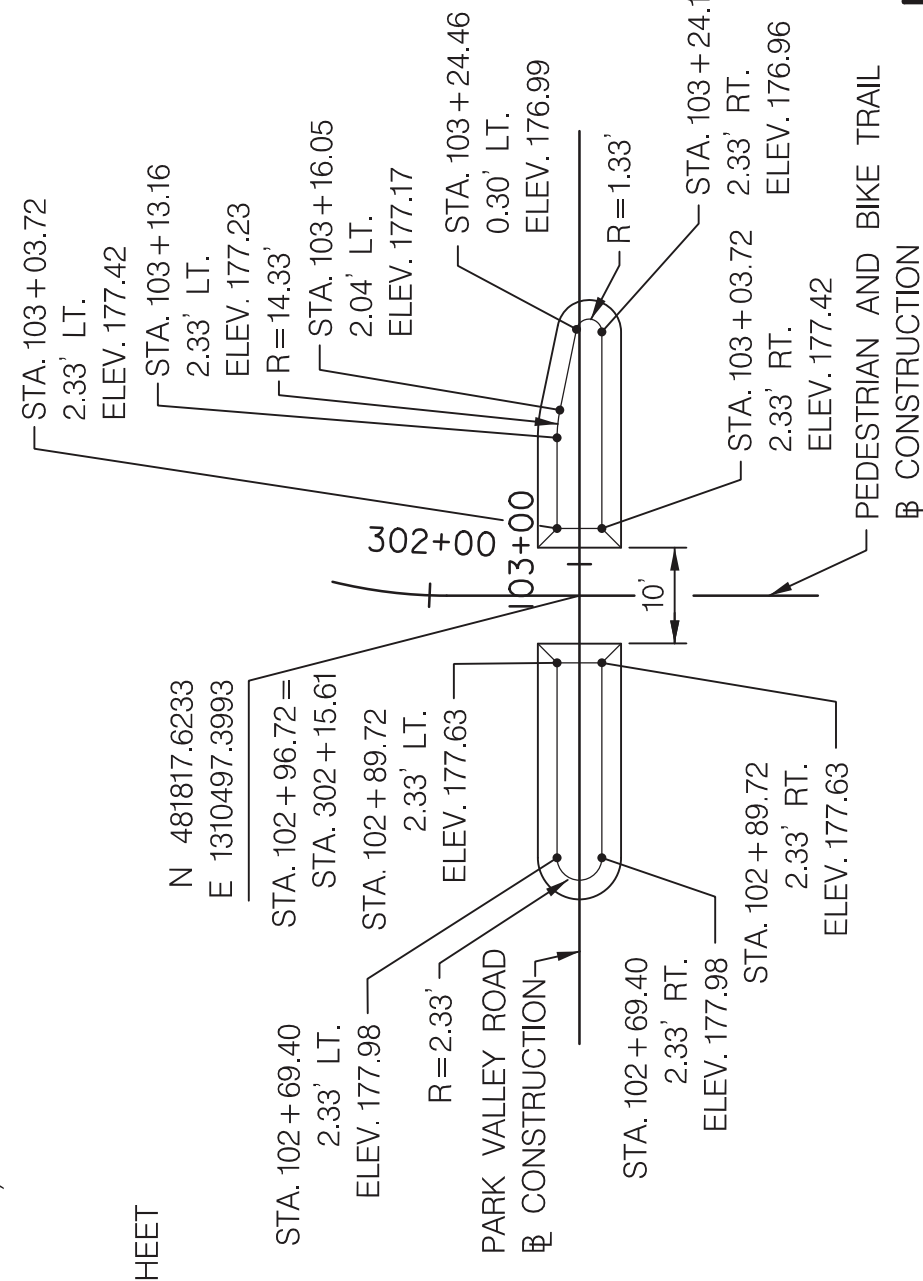
PAVEMENT SECTION DETAILS
NOT TO SCALE

DETAIL 'A'
NOT TO SCALE

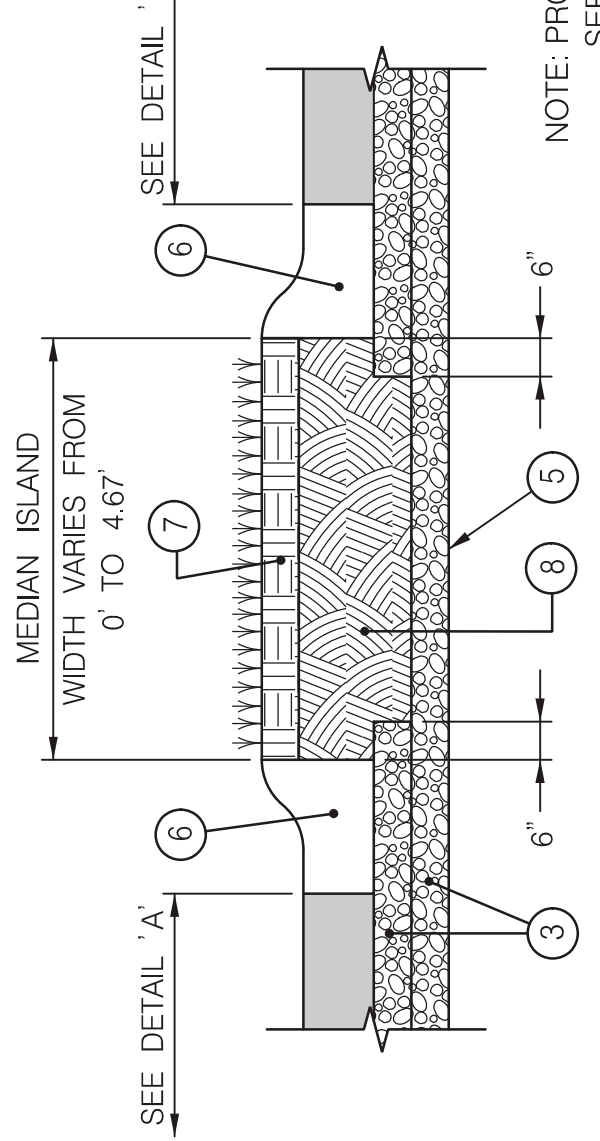
PAVEMENT LEGEND

- 1 1 1/2" SUPERPAVE ASPHALT MIX 12.5MM FOR SURFACE, PG64S-22, LEVEL 2 (TWO - 1 1/2" LAYERS)
- 2 2 1/2" SUPERPAVE ASPHALT MIX 19.0MM FOR BASE, PG64S-22, LEVEL 2 (TWO - 2 1/2" LAYERS)
- 3 4" GRADED AGGREGATE BASE (TWO - 4" LAYERS)
- 4 COMBINATION CURB AND GUTTER, HEIGHT VARIES. SEE DETAILS ON THIS SHEET AND SHEET NO. 3. SEE SHEET NO. 5 FOR LOCATIONS OF CURB HEIGHT TRANSITIONS.
- 5 TOP OF SUBGRADE AND LIMIT OF CLASS EXCAVATION
- 6 MOUNTABLE CURB AND GUTTER, SEE DETAIL THIS SHEET
- 7 4" DEPTH FURNISHED TOPSOIL AND SOD
- 8 12" DEPTH FURNISHED SUBSOIL

TOPSOIL AND PERMANENT VEGETATION NOTES:
1. SLOPES 2:1 AND STEEPER: PLACING FURNISHED TOPSOIL 2 IN. DEPTH, TURFGRASS ESTABLISHMENT AND TYPE A SSM, UNLESS OTHERWISE NOTED.
2. SLOPE 4:1 AND FLATTER THAN 2:1: PLACING FURNISHED TOPSOIL 4 IN. DEPTH, TURFGRASS ESTABLISHMENT, AND TYPE A SSM, UNLESS OTHERWISE NOTED.
3. AREAS FLATTER THAN 4:1: PLACING FURNISHED TOPSOIL 4 IN. DEPTH, TURFGRASS ESTABLISHMENT, UNLESS OTHERWISE NOTED.



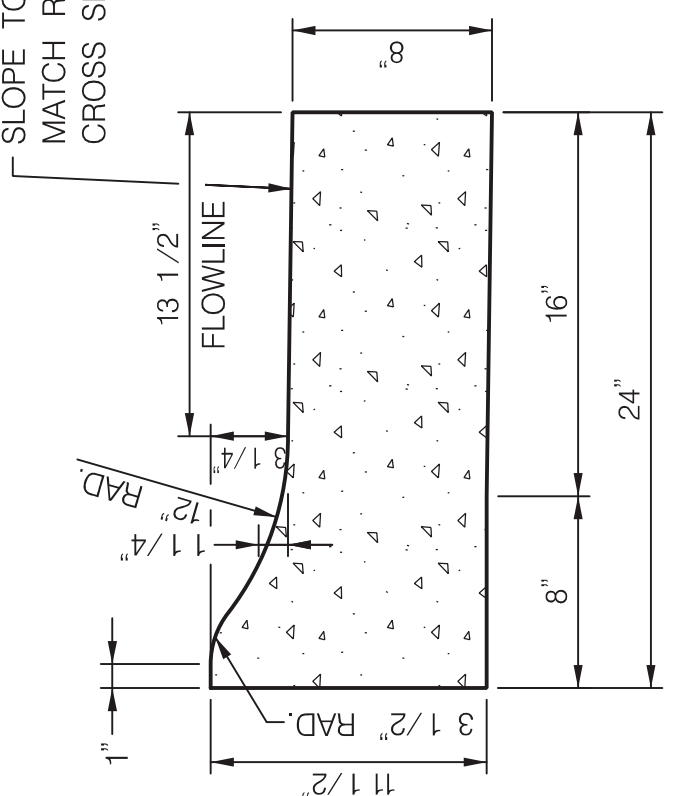
NOTE: STATIONS AND ELEVATIONS ARE TO THE TOP OF MOUNTABLE CURB.
MEDIAN ISLAND PLAN
NOT TO SCALE



MEDIAN ISLAND DETAIL
NOT TO SCALE

COMBINATION CONCRETE CURB AND GUTTER
NOT TO SCALE

NOTE: CONCRETE MIX SHALL BE NO. 3 (3500 PSI).



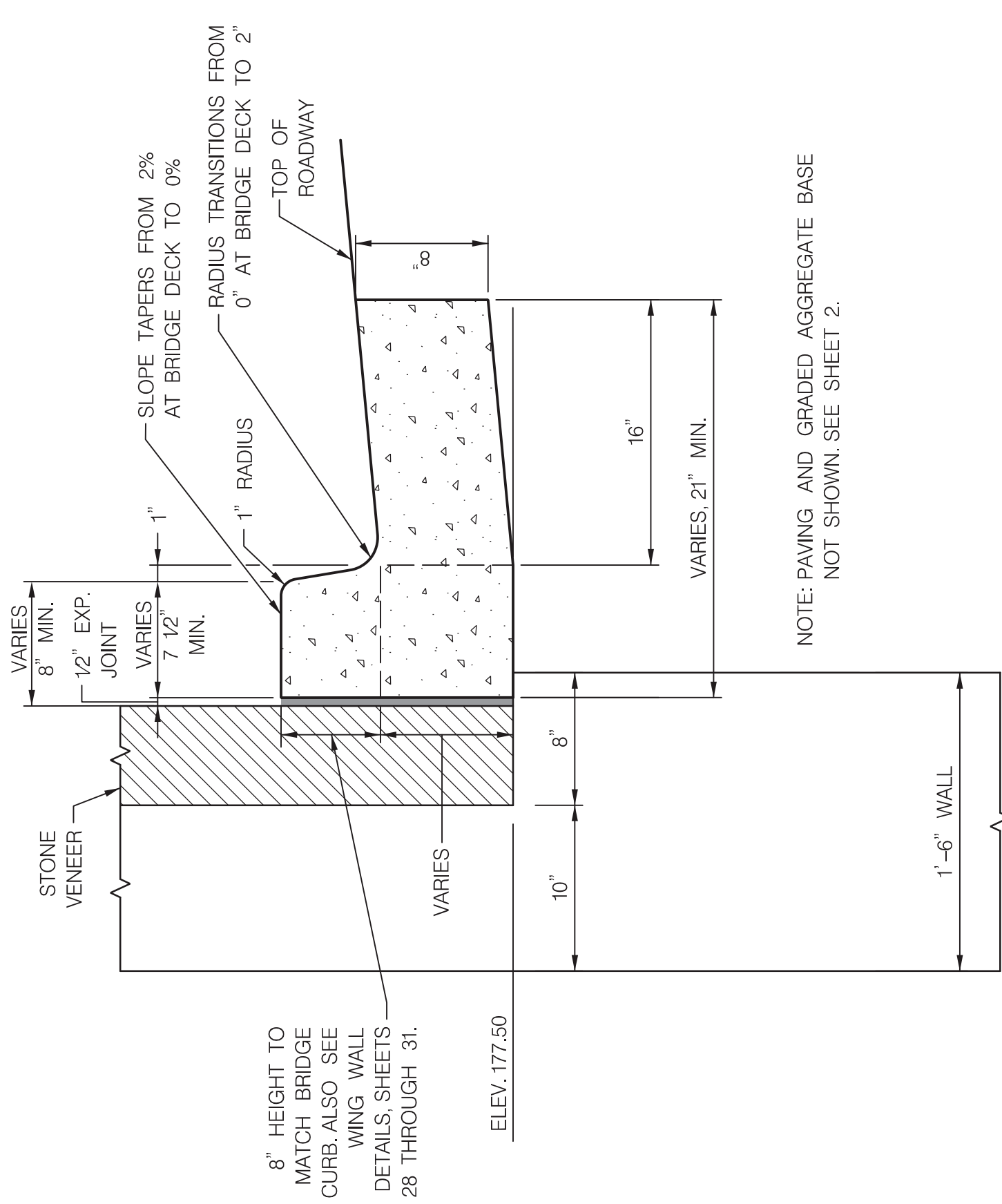
MOUNTABLE CONCRETE CURB AND GUTTER
NOT TO SCALE

<p>OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND</p>		<p>RECOMMENDED FOR APPROVAL <i>David M. Reid</i> Date: 12/14/17 Chief, Design Section</p>		<p>DESIGNED BY: <i>JRW</i> DATE: MAY 2017 CHECKED BY: <i>JRW</i> DATE: MAY 2017</p>	
<p>CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7271</p>		<p>DESIGNED BY: <i>JRW</i> DATE: MAY 2017 CHECKED BY: <i>JRW</i> DATE: MAY 2017</p>		<p>PROJECT NO.: 501523 SHEET 2 OF 62</p>	
<p>DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND</p>		<p>BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK</p>		<p>SCALE: AS SHOWN DATE: MAY 2017</p>	
<p>TYPICAL ROADWAY SECTIONS AND DETAILS</p>		<p>TYPICAL ROADWAY SECTIONS AND DETAILS</p>		<p>TYPICAL ROADWAY SECTIONS AND DETAILS</p>	

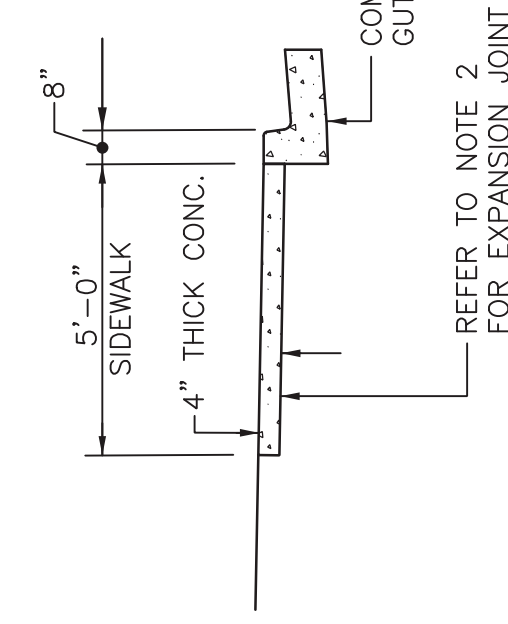
FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

GENERAL NOTES FOR WORK ON M-NCPPC PROPERTY

1. A PRE-CONSTRUCTION MEETING MUST BE HELD PRIOR TO START OF WORK WITH 72-HOURS PRIOR NOTICE. THE M-NCPPC PARK MANAGER, INSPECTOR, AND ARBORIST SHALL BE REPRESENTED AT THE MEETING.
2. M-NCPPC RESERVES THE RIGHT TO ADJUST AND MODIFY THE LIMITS OF DISTURBANCE (L.O.D.) IN THE FIELD TO MINIMIZE IMPACTS OF WORK.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SAFE FACILITY ACCESS THROUGHOUT CONSTRUCTION AND PROVIDE ANY APPROPRIATE DETOURS, TEMPORARY FACILITIES, AND SIGNAGE AS REQUESTED BY THE PARK MANAGER.
4. SITE RESTORATION AND REPAIR/REPLACEMENT OF DAMAGED INFRASTRUCTURE SHALL BE IN ACCORDANCE WITH M-NCPPC DETAILS AND SPECIFICATIONS CONTAINED HEREIN AT THE DIRECTION OF THE M-NCPPC INSPECTOR AT NO COST TO M-NCPPC OR THE COUNTY.
5. TREE PROTECTION FENCING SHOULD BE 14-GAUGE WELDED WIRE TYPE (WITH METAL STAKES AT 10 FEET O.C.) AND MUST BE MAINTAINED THROUGHOUT CONSTRUCTION. TREE SAVE AREA SIGNAGE SHOULD BE POSTED EVERY 30 FEET ALONG FENCING. TREE PROTECTION FENCE SHOULD BE INSTALLED BY THE CONTRACTOR AND INSPECTED BY M-NCPPC ARBORIST PRIOR TO START OF CONSTRUCTION.
6. THE ENTIRE L.O.D. SHALL BE FENCED AS DIRECTED BY THE PARK INSPECTOR. WHERE SILT FENCE, SILT/SILT FENCE, OR TREE PROTECTION FENCE IS NOT REQUIRED, ORANGE BLAZE SAFETY FENCE MAY BE USED.
7. ALL PLANTING SUBSTITUTIONS MUST BE APPROVED BY M-NCPPC HORTICULTURIST. PLANT MATERIALS AND LOCATIONS SHOULD BE INSPECTED BY M-NCPPC HORTICULTURIST PRIOR TO INSTALLATION.
8. PROVIDE 4-FOOT HIGH (1-FOOT MINIMUM DIAMETER) 14-GAUGE WELDED WIRE DEER PROTECTION CAGES WITH MINIMUM OF ONE SUPPORT STAKE FOR ALL REFORESTATION TREES AND SHRUBS TO PREVENT DAMAGE BY DEER. DO NOT USE TUBEX AS A SUBSTITUTE.
9. STAGING AREAS AND ACCESS ROUTES SHALL BE DETERMINED IN FIELD TO MINIMIZE IMPACTS.
10. SPECIAL PROTECTION MEASURES, INCLUDING BUT NOT LIMITED TO 12-INCH THICK MULCH LAYER ACCESS BEDDING, MATTING, TREE PROTECTION FENCING, AND SEDIMENT CONTROLS SHALL BE PROVIDED AS DIRECTED IN FIELD BY M-NCPPC. M-NCPPC RESERVES THE RIGHT TO INSPECT CONDITION OF TREES THROUGHOUT CONSTRUCTION AND MAY REQUIRE REPAIR, REMOVAL, AND/OR REPLACEMENT OF ANY DAMAGED TREES AT NO COST TO M-NCPPC OR THE COUNTY.

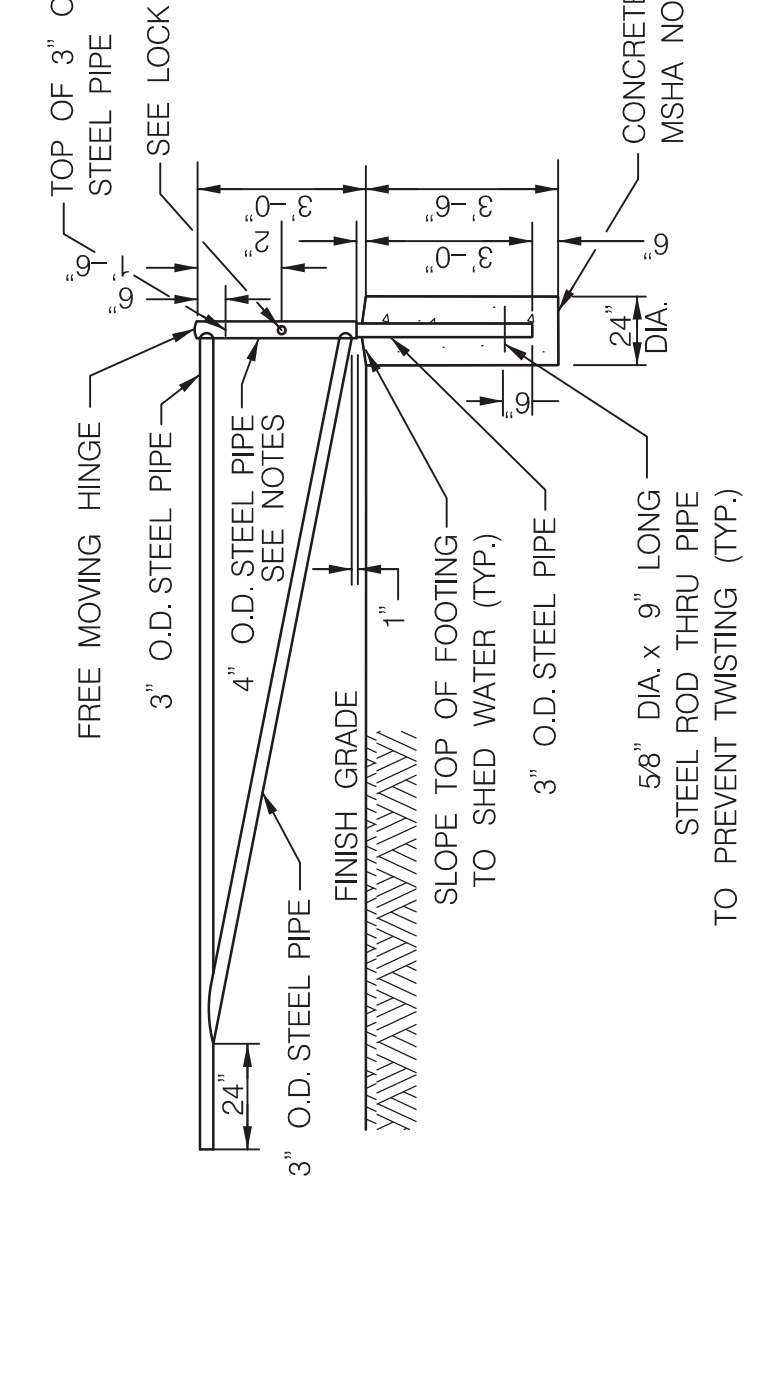
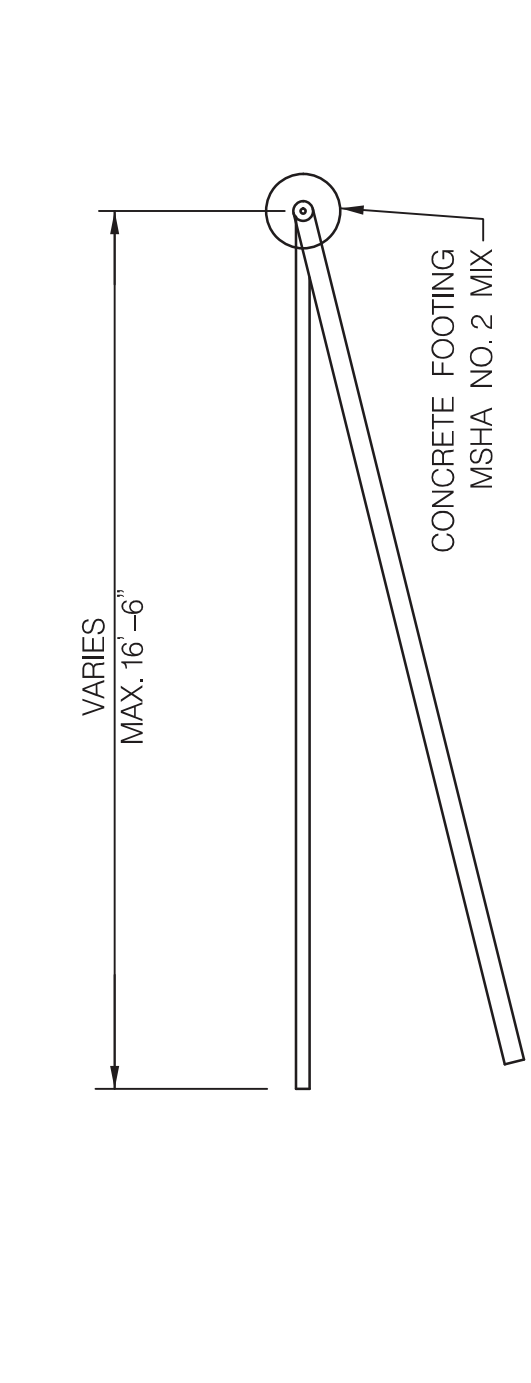
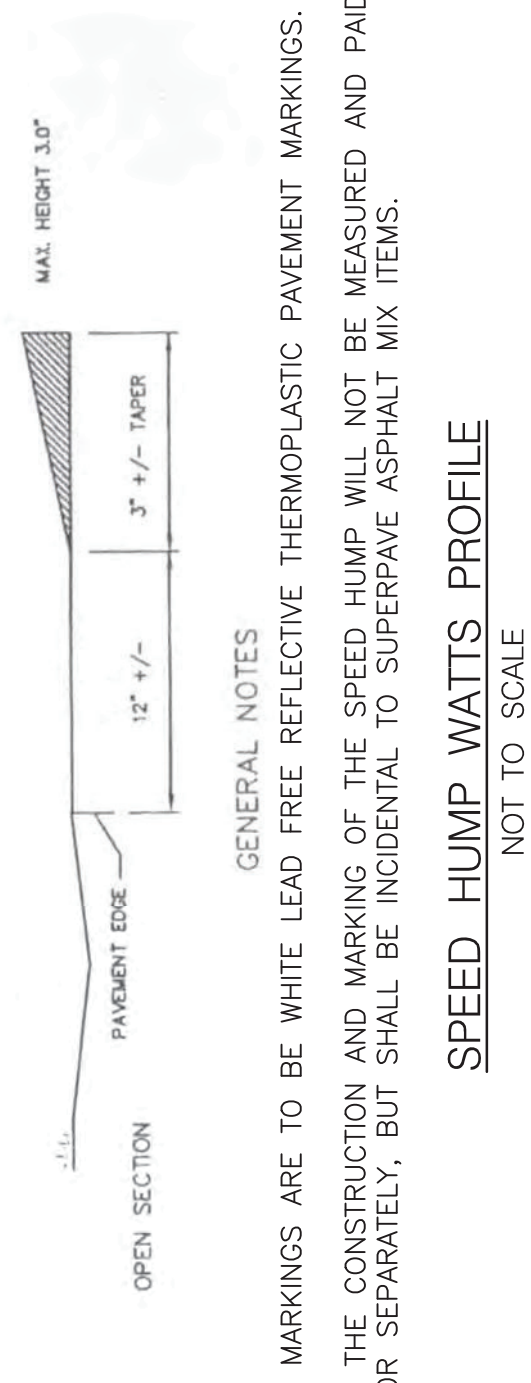
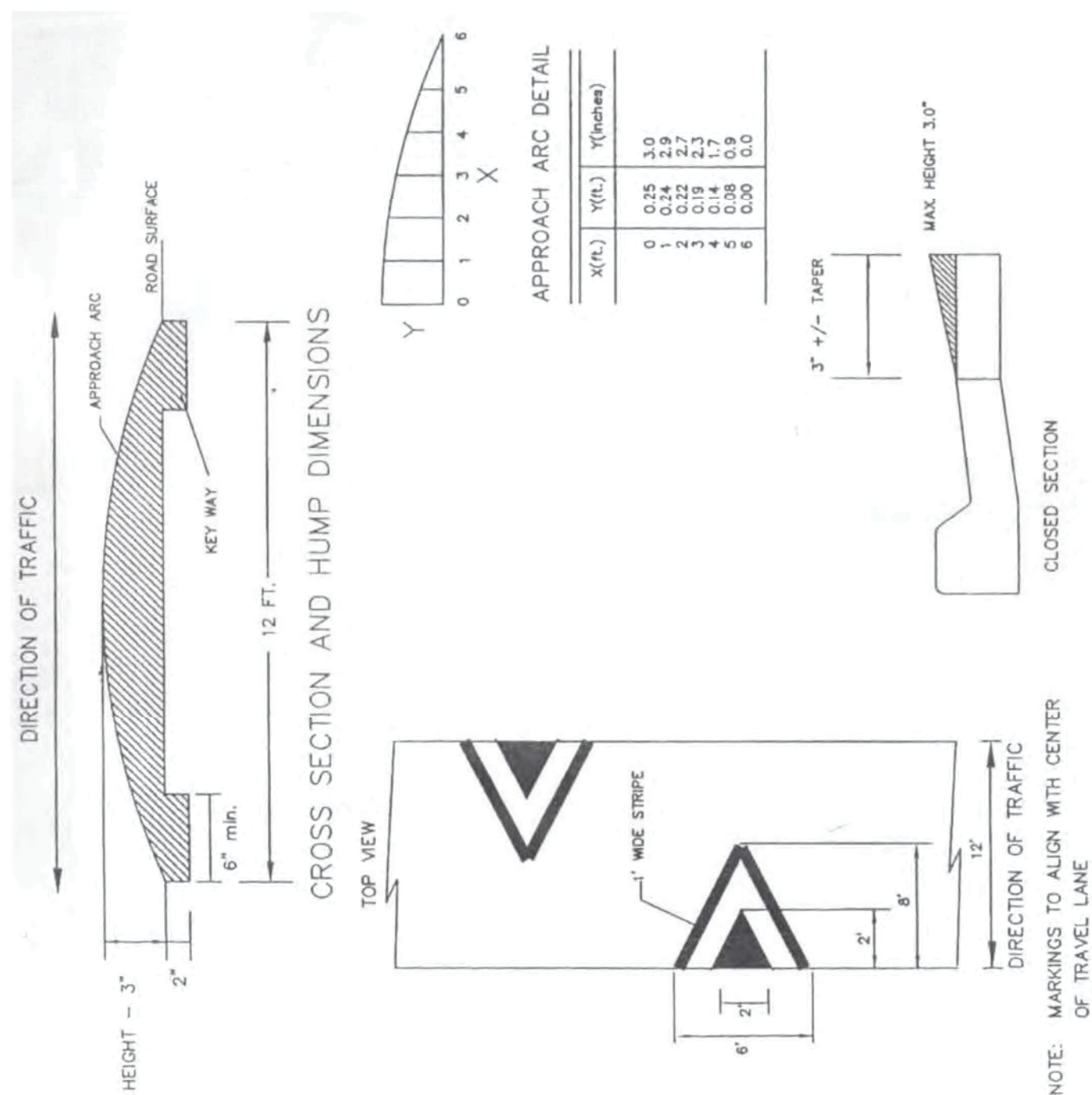


COMBINATION CURB AND GUTTER AT WINGWALLS (AND III)
NOT TO SCALE

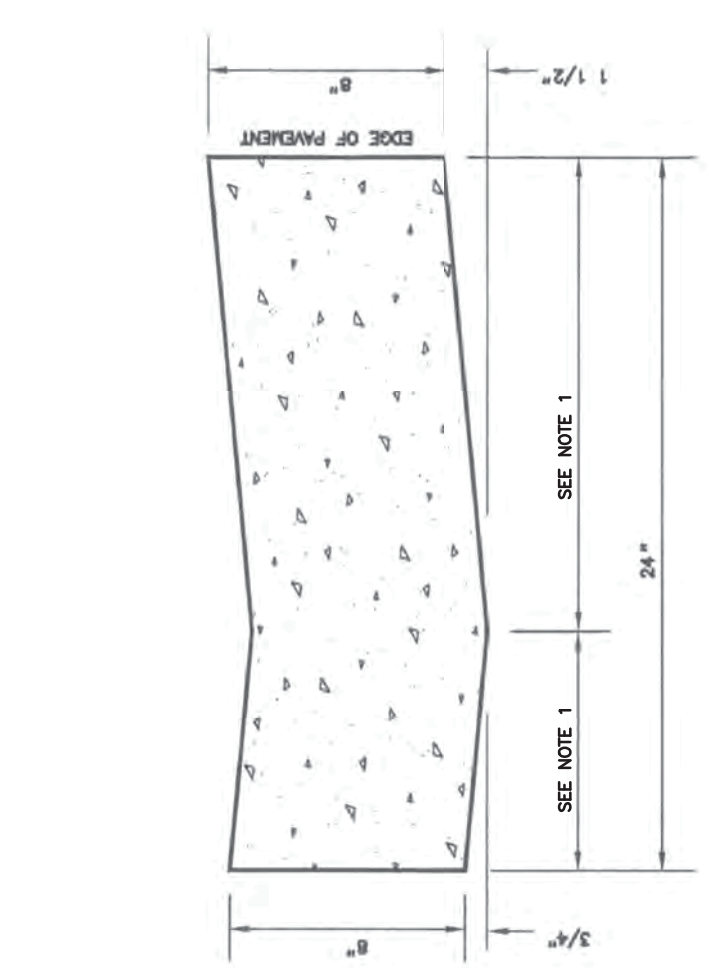


SIDEWALK DETAIL

1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. EXPANSION JOINTS SHALL HAVE A MAXIMUM SPACING OF 100 FEET AND BE LOCATED AT POINTS OF CURVATURE. EXPANSION JOINT MATERIAL SHALL BE 1/2 INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING, TWO-COMPONENT POLYURETHANE OR POLYURETHANE ELASTOMERIC TYPE SEALANT COMPLYING WITH ASTM-C920.
3. SCORE THE CONCRETE TO A DEPTH OF 1/2 THE SLAB THICKNESS TO PROVIDE WEAKENED PLANE TRANSVERSE JOINTS AT 5-0" INTERVALS.

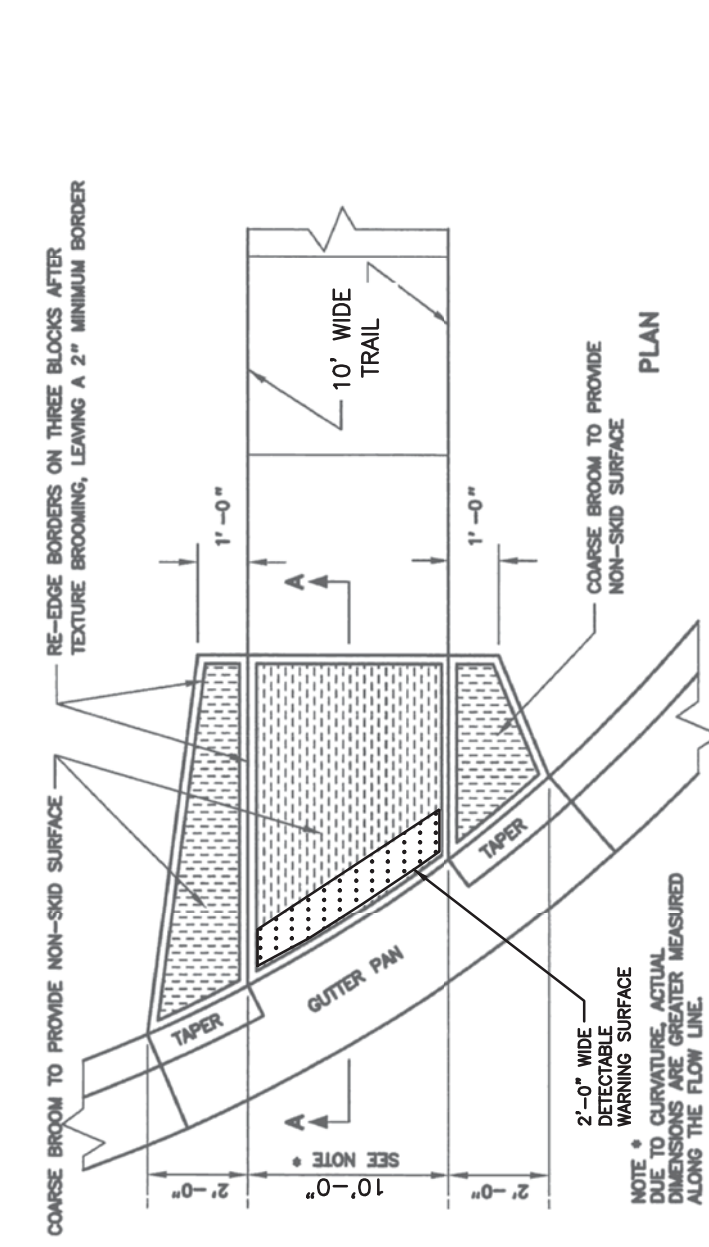
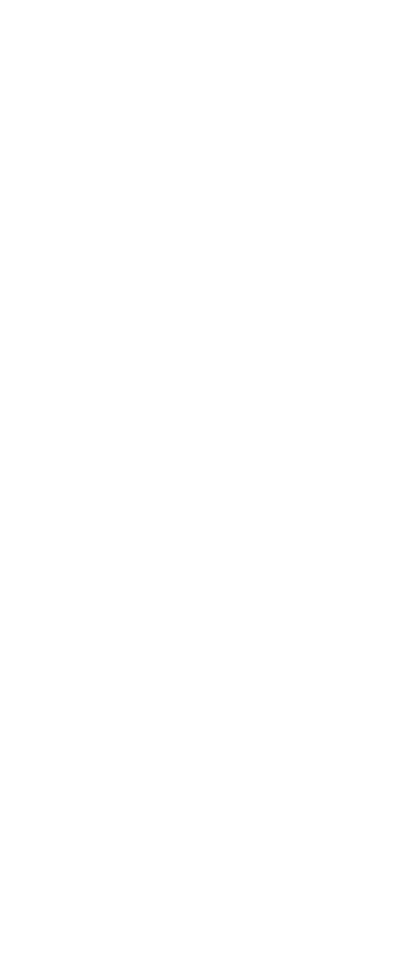


- GATE DETAIL
NOT TO SCALE
1. STEEL POST SHALL BE CAPPED WITH STEEL PLATE WELDED TO PIPE AND TO REFLECT SHAPE OF POST.
 2. ALL WELDS SHALL BE CONTINUOUS AND SHALL BE GROUND DOWN TO BE FREE OF ALL PROTRUSIONS.
 3. FINISH ALL METAL WITH ONE COAT OF PRIMER AND TWO COATS OF INDUSTRIAL GRADE ENAMEL. FINISH PAINT COLOR: GREEN AND YELLOW.
 4. GATE TO SWING AWAY FROM BRIDGE.



- DEPRESSED CURB ENTRANCE
NOT TO SCALE
- GENERAL NOTES
1. THE DISTANCE FROM THE FLOWLINE TO THE FRONT AND BACK EDGE OF CURB SHALL BE ADJUSTED TO MATCH EXISTING CONDITIONS.
 2. THE STANDARD DISTANCE BETWEEN JOINTS SHALL BE TEN FEET (MAXIMUM AND MINIMUM DISTANCES SHALL BE THIRTEEN FEET AND FIVE FEET RESPECTIVELY).
 3. EXPANSION JOINT MATERIAL SHALL BE 1/2 INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING TWO-COMPONENT POLYURETHANE OR POLYURETHANE ELASTOMERIC TYPE SEALANT COMPLYING WITH ASTM-C920.

LOCK BAR DETAIL
NOT TO SCALE



- RESIDENTIAL SIDEWALK RAMP
NOT TO SCALE
- GENERAL NOTES
1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
 2. SIDEWALK RAMP SHOULD BE LOCATED AS INDICATED. HOWEVER, EXISTING SURFACE UTILITIES AND EXISTING OR PROPOSED GUTTERS MAY AFFECT PLACEMENT.
 3. EXPANSION JOINT MATERIAL SHALL BE 1/2 INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING TWO-COMPONENT POLYURETHANE OR POLYURETHANE ELASTOMERIC TYPE SEALANT, COMPLYING WITH ASTM-C920.

M-NCPPC GENERAL NOTES AND ROADWAY DETAILS

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL: *David M. Reid* Chief, Design Section APPROVED: *[Signature]* Chief, Division of Transportation Engineering

DATE: 12/14/17

DATE: 12/14/2017

Checked By: *[Signature]* MMR Drawn By: *[Signature]* JRW

Project No.: 501523 SHEET 3 OF 62

OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND

CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7271

GREENMAN-PEDERSEN, INC. ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS 10877 CULFORD RD., ANNAPOLIS JUNCTION, MD 20710 WASH DC: 410-476-7272 BALT: 410-880-2055 www.gpiinc.com

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION ROAD & BRIDGE DIVISION PROFESSIONAL ENGINEER

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

GUIDELINES FOR CONVERTING PAVED AREAS INTO PERVIOUS GREENSPACE

THESE GUIDELINES PROVIDE TYPICAL PRACTICES FOR THE REMOVAL OF PAVEMENTS AND DECONSOLIDATION OF UNDERLYING SOILS TO PROMOTE VEGETATIVE GROWTH AND INFILTRATION OF STORMWATER. PLEASE NOTE THAT THESE PROCEDURES MAY BE VARIED TO BETTER MATCH PARTICULAR CONDITIONS AT INDIVIDUAL SITES. FOR EXAMPLE, AREAS OF SOIL DECONSOLIDATION MAY BE REDUCED WHERE TREE ROOTS EXTEND UNDER PAVEMENTS IN ORDER TO PREVENT IMPACTING ROOTS. CONVERSELY, THE AREA OF SOIL DECONSOLIDATION MAY BE EXPANDED TO INCLUDE SIGNIFICANTLY COMPACTED SOILS IN AREAS ADJACENT TO PAVEMENT WHERE UNCERTAINTY EXISTS ABOUT HOW TO TREAT A PARTICULAR CONDITION. PLEASE CONSULT WITH AN APPROPRIATE PROFESSIONAL WITH EXPERIENCE IN THIS TYPE OF CONSTRUCTION ACTIVITY.

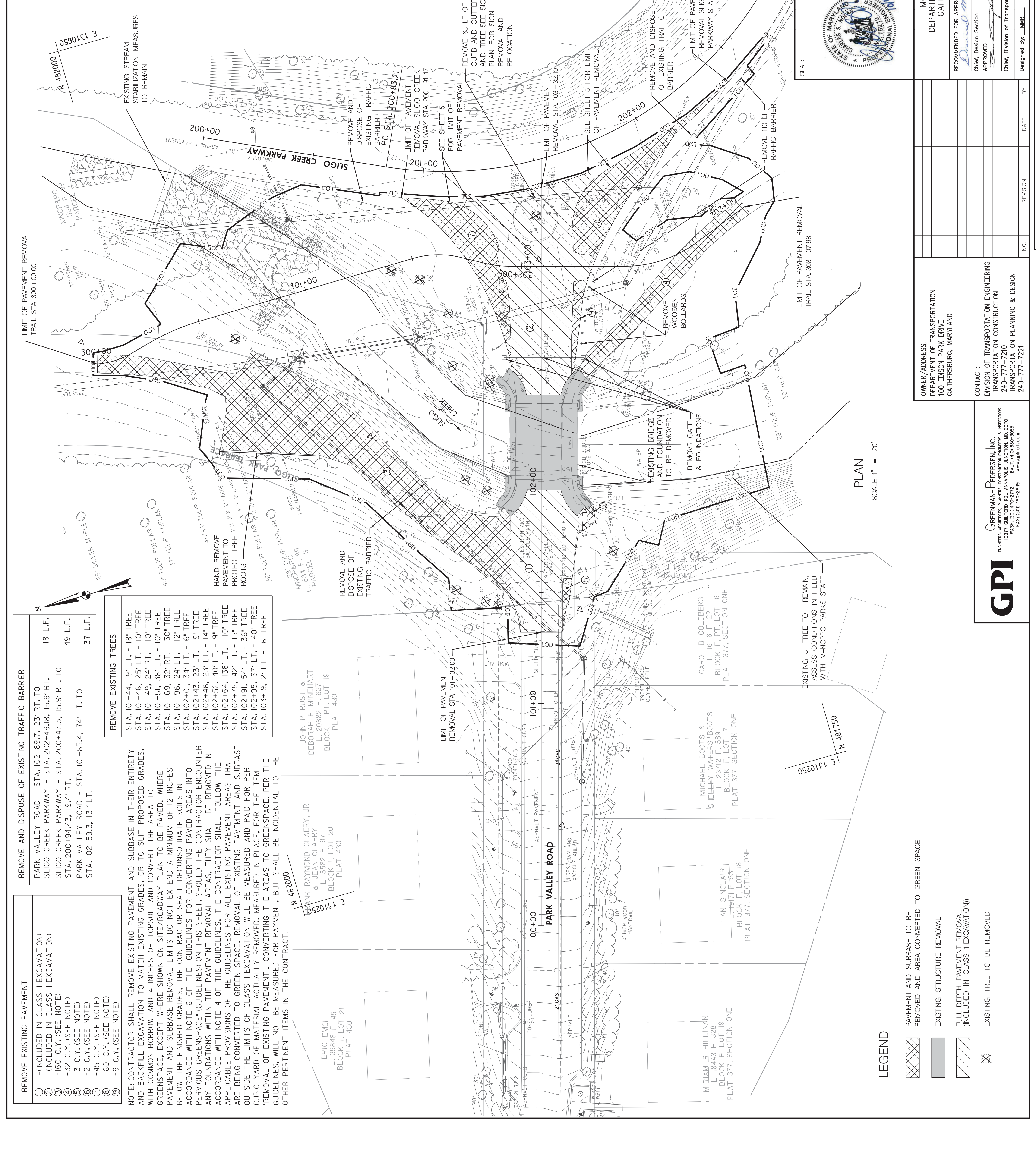
- PRIOR TO STARTING CONSTRUCTION, CONTACT MISS UTILITY TO CLEAR ALL EXISTING UTILITIES WITHIN WORK AREA. PLEASE NOTE THAT A PRIVATE UTILITY LOCATION FIRM MAY BE REQUIRED TO LOCATE PRIVATE UTILITIES NOT MARKED BY MISS UTILITY. COORDINATE ANY UTILITY DISCONNECTIONS AND/OR ABANDONMENTS WITH APPROPRIATE UTILITY COMPANY.
- CONDUCT A PRE-CONSTRUCTION MEETING WITH APPROPRIATE PERSONNEL FROM THE CONTRACTING COMPANY, OWNER, AND ANY AGENCY HAVING JURISDICTION OVER THE PROPOSED CONSTRUCTION ACTIVITIES. THE LIMIT OF DISTURBANCE (LOD) AND ACCESS ROUTES SHOULD BE IDENTIFIED, AND A FINAL SET OF PLANS SHOULD BE AVAILABLE FOR REVIEW AND DISCUSSION. THE LOD SHOULD BE FIELD ADJUSTED TO MINIMIZE IMPACTS TO ADJACENT NATURAL RESOURCES. ALSO SEE SEQUENCE OF CONSTRUCTION, SHEET 18.
- FIELD LOCATE AND INSTALL TREE PROTECTION MEASURES AND PERIMETER SEDIMENT CONTROLS AROUND WORK AREA. SCHEDULE WORK WHEN FAVORABLE WEATHER CONDITIONS ARE FORECASTED OVER ANTICIPATED PERIOD OF CONSTRUCTION. IN THE EVENT THAT POOR WEATHER CONDITIONS DEVELOP OR IF WORK IS SUSPENDED FOR MORE THAN 2-3 DAYS, THE WORK AREA SHALL BE COVERED OR OTHERWISE STABILIZED WITH A TEMPORARY SEED AND STRAW MULCHING.
- REMOVE EXISTING PAVEMENTS (AND SUBBASE, FOUNDATIONS, AND OTHER IMPERVIOUS MATERIALS IN ACCORDANCE WITH PROJECT INTENT AND FIELD DIRECTION BY OWNER'S REPRESENTATIVE AND INSPECTORS. WHERE DEEP FOUNDATIONS OR FOOTINGS EXIST, THEY SHOULD BE REMOVED TO A MINIMUM DEPTH OF 24 INCHES BELOW PROPOSED FINISHED GRADE.
- ROUGH GRADE SITE TO PROPOSED GRADES AND SMOOTH TRANSITIONS INTO ADJACENT GRADES AND FACILITIES TO REMAIN. REMOVE ALL ROCKY MATERIAL (STONES GREATER THAN 2" IN ANY DIRECTION) FROM SOIL WITHIN TOP 12-INCHES OF FINISHED GRADE.
- DECONSOLIDATE SOILS THROUGHOUT AREAS OF FORMER IMPERVIOUSNESS EXTENDING 2-FEET BEYOND PREVIOUS LIMITS WHERE FEASIBLE. USE EQUIPMENT-MOUNTED METAL TINES (OR OTHER APPROVED SOIL RIPPING/FILLING EQUIPMENT) SPACED AT APPROXIMATELY 2 FEET AND EXTENDING A MINIMUM OF 12 INCHES BELOW MOUNTING ELEMENT TO BREAK UP UPPER 12 INCHES OF SOIL LAYER. SOIL SHOULD BE RIPPED WITH A MINIMUM OF THREE PASSES OF EQUIPMENT IN ONE DIRECTION AND THREE ADDITIONAL PASSES IN AN APPROXIMATELY PERPENDICULAR DIRECTION TO ENSURE SOIL IS THOROUGHLY MIXED AND FRIABLE. ADDITIONAL PASSES AND OTHER MEASURES MAY BE REQUIRED IF SOILS FAILS TO BREAK APART. REMOVE ANY LARGE CHUNKS OF SOIL/ROCK THAT CANNOT BE BROKEN DOWN TO PIECES LESS THAN 2 INCHES IN ANY DIRECTION.
- ONCE SOIL IS DECONSOLIDATED AND APPROVED BY MNCPPC PARKS CONSTRUCTION MANAGER, APPLY 2 INCHES OF CERTIFIED COMPOST (I.E. LEAFGRASS, OR EQUAL) ACROSS ENTIRE DISTURBED AREA. MECHANICALLY MIX COMPOST INTO TOP 4 INCHES OF SOIL TO ENSURE THOROUGH DISTRIBUTION OF ORGANIC MATTER. BLADE OFF AND/OR RAKE FINISHED MATERIALS TO REESTABLISH PROPOSED GRADES TAKING PRECAUTIONS NOT TO RECOMPACT SOILS.
- ONCE PLANTING BED IS PREPARED, APPLY APPROVED NATIVE SEED MIX OVER DISTURBED AREA AND INSTALL/TRACK STRAW MULCHING. THOROUGHLY WATER SEEDS TO ESTABLISH GOOD STAND OF VEGETATION. NOTE THAT IF PROJECT AREA IS ON M-NCPPC PROPERTY (OR AREA TO BE DEDICATED TO M-NCPPC), ESTABLISHMENT OF VEGETATION SHALL BE IN ACCORDANCE WITH PLANTING REQUIREMENTS FOR LAND-DISTURBING ACTIVITIES AND RELATED MITIGATION ON M-NCPPC MONTGOMERY COUNTY PARKLAND AND LATEST STANDARDS OF M-NCPPC.
- ONCE VEGETATION IS ESTABLISHED (AND WITH APPROVAL OF INSPECTORS) REMOVE SEDIMENT CONTROLS, TREE PROTECTION FENCING, AND ANY MISCELLANEOUS DEBRIS THROUGHOUT SITE. ALSO, SEE SEQUENCE OF CONSTRUCTION, SHEET 18.
- ADDITIONAL NATIVE PLANTINGS MAY BE INSTALLED AT DIRECTION OF OWNER DEPENDING ON ULTIMATE DESIRED CONDITIONS OF GREENSPACE.

1. REMOVE AND DISPOSE OF EXISTING TRAFFIC BARRIER
 PARK VALLEY ROAD - STA. 102+89.7, 23' RT. TO
 SLOGO CREEK PARKWAY - STA. 202+49.18, 15.9' RT.
 STA. 200+94.43, 19.4' RT.
 PARK VALLEY ROAD - STA. 101+85.4, 7.4' LT. TO
 STA. 102+59.3, 13.1' LT.

REMOVE EXISTING TREES
 STA. 101+44, 19' LT. - 18" TREE
 STA. 101+46, 25' LT. - 10" TREE
 STA. 101+49, 24' RT. - 10" TREE
 STA. 101+51, 38' LT. - 10" TREE
 STA. 101+68, 32' RT. - 30" TREE
 STA. 101+96, 24' LT. - 12" TREE
 STA. 102+01, 34' LT. - 6" TREE
 STA. 102+43, 23' LT. - 9" TREE
 STA. 102+46, 23' LT. - 14" TREE
 STA. 102+52, 40' LT. - 9" TREE
 STA. 102+64, 138' LT. - 10" TREE
 STA. 102+75, 42' LT. - 15" TREE
 STA. 102+91, 54' LT. - 36" TREE
 STA. 102+95, 67' LT. - 40" TREE
 STA. 103+19, 2' LT. - 16" TREE

REMOVE EXISTING PAVEMENT
 ① -INCLUDED IN CLASS 1 EXCAVATION
 ② -INCLUDED IN CLASS 1 EXCAVATION
 ③ -160 C.Y. (SEE NOTE)
 ④ -32 C.Y. (SEE NOTE)
 ⑤ -2 C.Y. (SEE NOTE)
 ⑥ -45 C.Y. (SEE NOTE)
 ⑦ -60 C.Y. (SEE NOTE)
 ⑧ -9 C.Y. (SEE NOTE)

NOTE: CONTRACTOR SHALL REMOVE EXISTING PAVEMENT AND SUBBASE IN THEIR ENTIRETY AND BACKFILL EXCAVATION TO MATCH EXISTING GRADES, OR TO SUIT PROPOSED GRADES, WITH COMMON BORROW AND 4 INCHES OF TOPSOIL AND CONVERT THE AREA TO GREENSPACE, EXCEPT WHERE SHOWN ON SITE/ROADWAY PLAN TO BE PAVED. WHERE PAVEMENT AND SUBBASE REMOVAL LIMITS DO NOT EXTEND A MINIMUM OF 12 INCHES BELOW THE FINISHED GRADES, THE CONTRACTOR SHALL DECONSOLIDATE SOILS IN ACCORDANCE WITH NOTE 6 OF THE 'GUIDELINES FOR CONVERTING PAVED AREAS INTO PERVIOUS GREENSPACE' (GUIDELINES) ON THIS SHEET. SHOULD THE CONTRACTOR ENCOUNTER ANY FOUNDATIONS WITHIN THE PAVEMENT REMOVAL AREAS, THEY SHALL BE REMOVED IN ACCORDANCE WITH NOTE 4 OF THE GUIDELINES. THE CONTRACTOR SHALL FOLLOW THE APPLICABLE PROVISIONS OF THE GUIDELINES FOR ALL EXISTING PAVEMENT AREAS THAT ARE BEING CONVERTED TO GREEN SPACE. REMOVAL OF EXISTING PAVEMENT AND SUBBASE OUTSIDE THE LIMITS OF CLASS 1 EXCAVATION WILL BE MEASURED AND PAID FOR PER CUBIC YARD OF MATERIAL ACTUALLY REMOVED, MEASURED IN PLACE. FOR THE ITEM "REMOVAL OF EXISTING PAVEMENT", CONVERTING THE AREAS TO GREENSPACE, PER THE GUIDELINES, WILL NOT BE MEASURED FOR PAYMENT, BUT SHALL BE INCIDENTAL TO THE OTHER PERTINENT ITEMS IN THE CONTRACT.



LEGEND
 PAVEMENT AND SUBBASE TO BE REMOVED AND AREA CONVERTED TO GREEN SPACE
 EXISTING STRUCTURE REMOVAL
 FULL DEPTH PAVEMENT REMOVAL (INCLUDED IN CLASS 1 EXCAVATION)
 EXISTING TREE TO BE REMOVED

OWNER/ADDRESS
 DEPARTMENT OF TRANSPORTATION
 100 EDISON PARK DRIVE
 GAITHERSBURG, MARYLAND

CONTACT:
 DIVISION OF TRANSPORTATION ENGINEERING
 TRANSPORTATION CONSTRUCTION
 240-777-7210
 TRANSPORTATION PLANNING & DESIGN
 240-777-7221

RECOMMENDED FOR APPROVAL
 Chief, Design Section
 DATE: 12/14/17

DESIGNED BY: MMR
 DRAWN BY: JRW
 CHECKED BY: MZ/CSL
 DATE: 12/14/17

SEAL:
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 MONTGOMERY COUNTY
 DEPARTMENT OF TRANSPORTATION
 GAITHERSBURG, MARYLAND

MONTEGOMERY COUNTY DEPARTMENT OF TRANSPORTATION PERMITTING SERVICES APPROVED FOR:
 Stormwater Management: See 534 #1
 Administrative Requirements: Approved 12-8-16
 Date: 12-8-16
 REVIEWED: 287675
 DATE: 12-8-16
 SEDIMENT CONTROL PERMIT NO. 287675

NOTE: MDCPS APPROVAL DOES NOT NEGATE THE NEED OF A MDCPS ACCESS PERMIT.

THIS APPROVAL IS VALID ONLY FOR THE PROJECT AND SITE SPECIFIC TO THE PERMIT. THE PROJECT HAS NOT STARTED.

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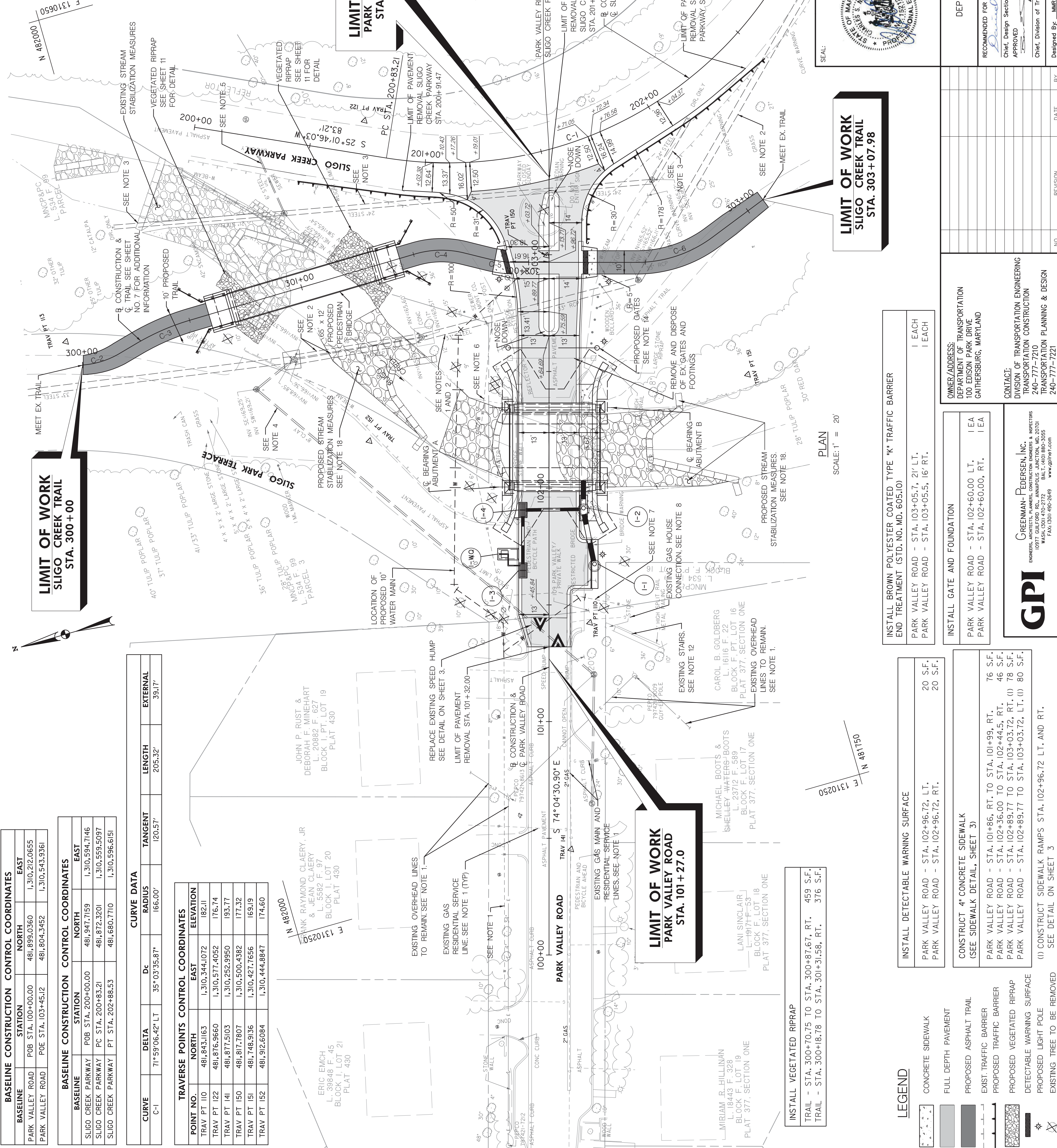
BASELINE CONSTRUCTION CONTROL COORDINATES			
BASELINE	STATION	NORTH	EAST
PARK VALLEY ROAD	POB STA. 100+00.00	481,899.0360	1,310,212.0655
PARK VALLEY ROAD	P.O.E. STA. 103+45.12	481,804.3452	1,310,543.9361

BASELINE CONSTRUCTION CONTROL COORDINATES			
BASELINE	STATION	NORTH	EAST
SLIGO CREEK PARKWAY	POB STA. 200+00.00	481,947.7159	1,310,594.7146
SLIGO CREEK PARKWAY	PC STA. 200+83.21	481,872.3201	1,310,559.5097
SLIGO CREEK PARKWAY	PT STA. 202+88.53	481,680.7710	1,310,596.6151

CURVE DATA				
CURVE	DELTA	RADIUS	TANGENT	EXTERNAL
C-1	71°59'06.42" LT	35°03'35.87"	120.57'	39.17'

TRAVERSE POINTS CONTROL COORDINATES			
POINT NO.	NORTH	EAST	ELEVATION
TRAV PT 110	481,843.1163	1,310,344.1072	182.11
TRAV PT 122	481,876.9660	1,310,577.4052	176.74
TRAV PT 141	481,877.5103	1,310,252.9950	193.77
TRAV PT 150	481,817.7807	1,310,500.4382	177.32
TRAV PT 151	481,748.9136	1,310,427.7656	169.19
TRAV PT 152	481,912.6084	1,310,444.8847	174.60

- NOTES:**
- CONTRACTOR SHALL EXERCISE SPECIAL CARE AND EXTREME CAUTION TO PROTECT AND AVOID DAMAGE TO EXISTING OVERHEAD LINES, GAS MAIN, 33" SANITARY SEWER CROSSING, PARK VALLEY ROAD, AND RESIDENTIAL GAS SERVICE LINES IN CLOSE PROXIMITY TO THE PROJECT LIMIT OF WORK DURING CONSTRUCTION AND OPERATION OF CONSTRUCTION EQUIPMENT. SEE GENERAL NOTES SHEET 1 AND UTILITY STATEMENT IN INVITATION FOR BIDS.
 - EXISTING SANITARY SEWER MANHOLES AND 18", 24", AND 33" LINES TO REMAIN.
 - EXISTING SANITARY SEWER MANHOLES AND 21" AND 24" LINES TO REMAIN.
 - EXISTING 8" SANITARY SEWER TO REMAIN.
 - EXISTING 6" SANITARY SEWER TO REMAIN.
 - EXISTING 10" WATER MAIN TO BE RELOCATED. REFER TO WSSC'S RELOCATION PLANS, SHEETS 58 TO 60.
 - EXISTING WATER HOUSE CONNECTION TO BE RELOCATED. SEE SHEETS 58 THRU 60.
 - EXISTING GAS HOUSE CONNECTION TO REMAIN.
 - SEE DEMOLITION PLAN SHEET FOR REMOVAL NOTES.
 - REMOVE AND REPLACE EXISTING STREAM STABILIZATION AS REQUIRED TO CONSTRUCT PEDESTRIAN BRIDGE ABUTMENTS. REPLACE TO MATCH EXISTING.
 - IF TIEBACKS ARE REQUIRED FOR THE TEMPORARY SUPPORT OF EXCAVATION, CONTRACTOR SHALL TEST PIT THE LOCATION OF THE GAS MAIN AND 33" SANITARY SEWER IN THE WEST AND EAST BRIDGE APPROACHES.
 - CONTRACTOR SHALL PROTECT THE EXISTING STAIRS AT STATION 101+40. RT. ANY DAMAGE TO STAIRS SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
 - FOR LIGHTING PLAN SEE SHEET 56.
 - INSTALL PROPOSED GATES AND FOOTINGS. SEE DETAIL ON SHEET 3. PROVIDE 5' OPENING AT THE CENTERLINE OF ROADWAY FOR PEDESTRIAN ACCESS.
 - FOR ADDITIONAL INFORMATION FOR THE PROPOSED ROADWAY FROM STA. 101+32 TO 102+00, SEE SHEET 2.
 - FOR ADDITIONAL INFORMATION FOR THE PROPOSED MEDIAN ISLAND, SEE SHEET 2.
 - CURB HEIGHT TO TRANSITION FROM 6" AT STA. 101+85.35 LT. TO 8" AT STA. 101+87.35 LT. AND FROM 6" AT STA. 101+55 RT. TO 8" AT STA. 101+57 RT. CURB HEIGHT TO TRANSITION FROM 8" AT STA. 102+44.50 LT. AND RT. TO 6" AT STA. 102+48.50 LT. AND RT. SEE COMBINATION CURB AND GUTTER DETAIL ON SEE SHEET 2.
 - FOR STREAM STABILIZATION PLAN AND DETAILS, SEE SHEET NOS. 12 AND 13.



INSTALL VEGETATED RIPRAP
 TRAIL - STA. 300+70.75 TO STA. 300+87.67, RT. 459 S.F.
 TRAIL - STA. 300+18.78 TO STA. 301+31.58, RT. 376 S.F.

LEGEND	
	CONCRETE SIDEWALK
	FULL DEPTH PAVEMENT
	PROPOSED ASPHALT TRAIL
	EXIST. TRAFFIC BARRIER
	PROPOSED TRAFFIC BARRIER
	PROPOSED VEGETATED RIPRAP
	DETECTABLE WARNING SURFACE
	PROPOSED LIGHT POLE
	EXISTING TREE TO BE REMOVED

INSTALL DETECTABLE WARNING SURFACE	20 S.F.
PARK VALLEY ROAD - STA. 102+96.72, LT.	20 S.F.
PARK VALLEY ROAD - STA. 102+96.72, RT.	20 S.F.

CONSTRUCT 4" CONCRETE SIDEWALK (SEE SIDEWALK DETAIL, SHEET 3)	76 S.F.
PARK VALLEY ROAD - STA. 101+86, RT. TO STA. 101+99, RT.	46 S.F.
PARK VALLEY ROAD - STA. 102+36.00 TO STA. 102+44.5, RT.	46 S.F.
PARK VALLEY ROAD - STA. 102+89.77 TO STA. 103+03.72, RT. (1) 78 S.F.	
PARK VALLEY ROAD - STA. 102+89.77 TO STA. 103+03.72, LT. (1) 80 S.F.	

(1) CONSTRUCT SIDEWALK RAMPS STA. 102+96.72 LT. AND RT. SEE DETAIL ON SHEET 3	
---	--

INSTALL BROWN POLYESTER COATED TYPE "K" TRAFFIC BARRIER
 END TREATMENT (STD. NO. MD. 605.10)
 PARK VALLEY ROAD - STA. 103+05.7, 21' LT.
 PARK VALLEY ROAD - STA. 103+05.5, 16' RT.

OWNER/ADDRESS:
 DEPARTMENT OF TRANSPORTATION
 100 EDISON PARK DRIVE
 GAITHERSBURG, MARYLAND

CONTACT:
 DIVISION OF TRANSPORTATION ENGINEERING
 TRANSPORTATION CONSTRUCTION
 240-777-7210
 TRANSPORTATION PLANNING & DESIGN
 240-777-7221

GPI
 GREENMAN-PEDERSEN, INC.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
 10877 CALVERT RD., ANNAPOLIS JUNCTION, MD. 20710
 WASHINGTON FIELD OFFICE: BALTIMORE, MD. 21208
 TEL: 410-891-8600 FAX: 410-891-8608
 www.gpiinc.com

INSTALL GATE AND FOUNDATION
 PARK VALLEY ROAD - STA. 102+60.00 LT.
 PARK VALLEY ROAD - STA. 102+60.00, RT.



RECOMMENDED FOR APPROVAL
 Chief, Design Section
 APPROVED
 Date: 12/14/17

DEPARTMENT OF TRANSPORTATION
 GAITHERSBURG, MARYLAND

SITE PLAN / ROADWAY PLAN
 BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
 ON PARK VALLEY ROAD OVER SLIGO CREEK
 SCALE: AS SHOWN DATE: MAY 2017
 Project No.: 501523 SHEET 5 OF 62

Montgomery Co. Department of Permitting Services Approved For:

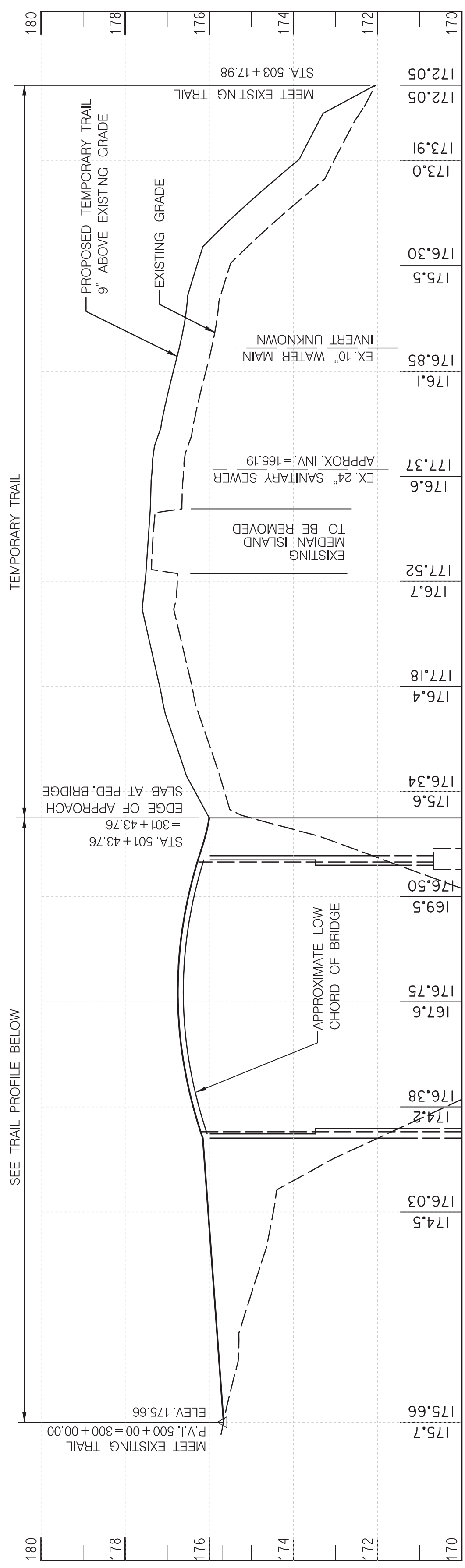
Stormwater Management: See 5-17-1	Administrative Requirements: 12-8-16
Reviewed: [Signature]	Date: 12-8-16
Approved: [Signature]	Date: 12-8-16
Reviewed: [Signature]	Date: 12-8-16
Approved: [Signature]	Date: 12-8-16

SEDIMENT CONTROL PERMIT NO. 287975

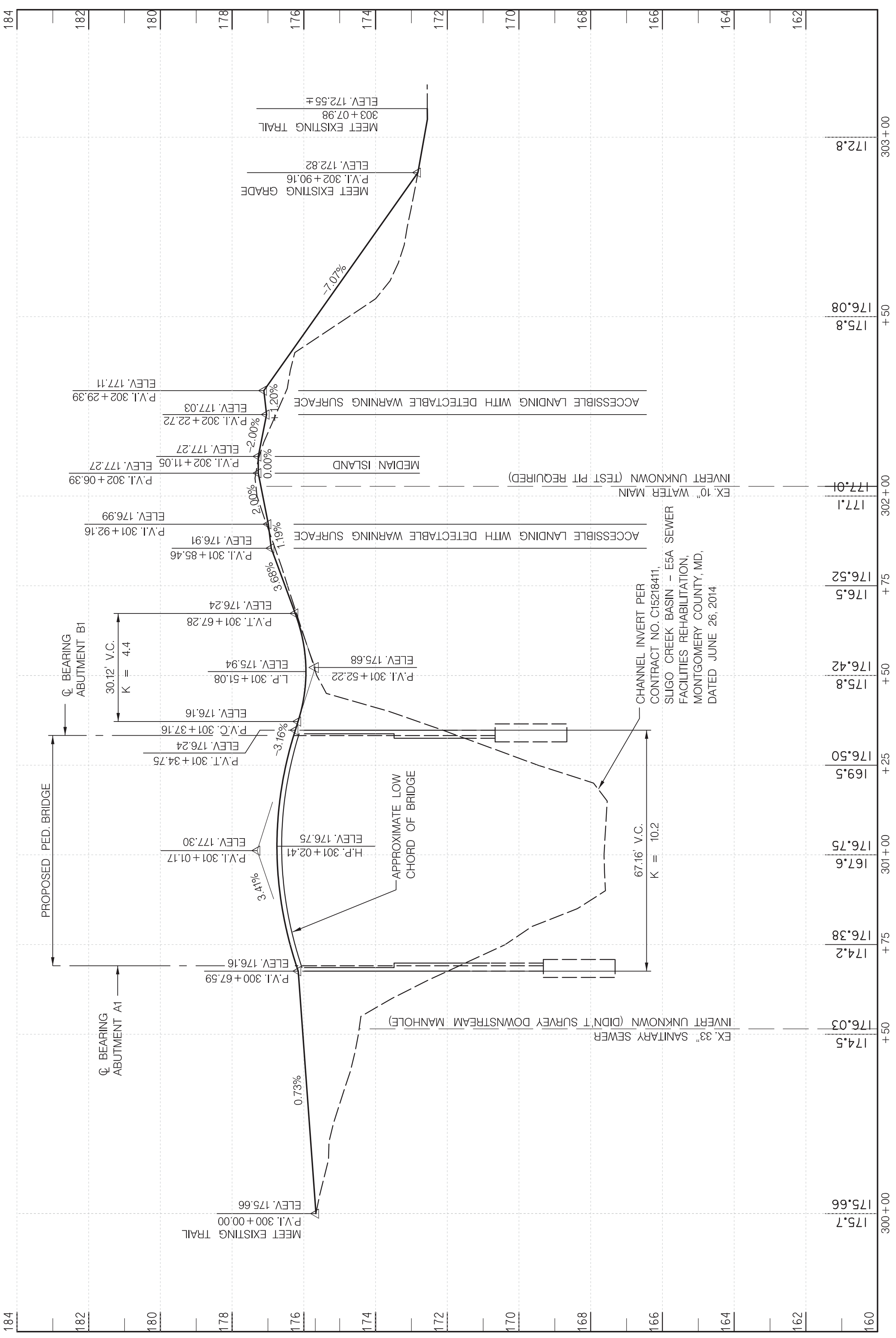
NOTE: MDPS APPROVAL DOES NOT NEGATE THE NEED OF A MDPS ACCESS PERMIT.

MDPS APPROVAL OF THIS PLAN SHALL NOT BE CONSIDERED AS A GUARANTEE OF THE ACCURACY OF THE INFORMATION PROVIDED HEREON. THE PROJECT HAS NOT STARTED.

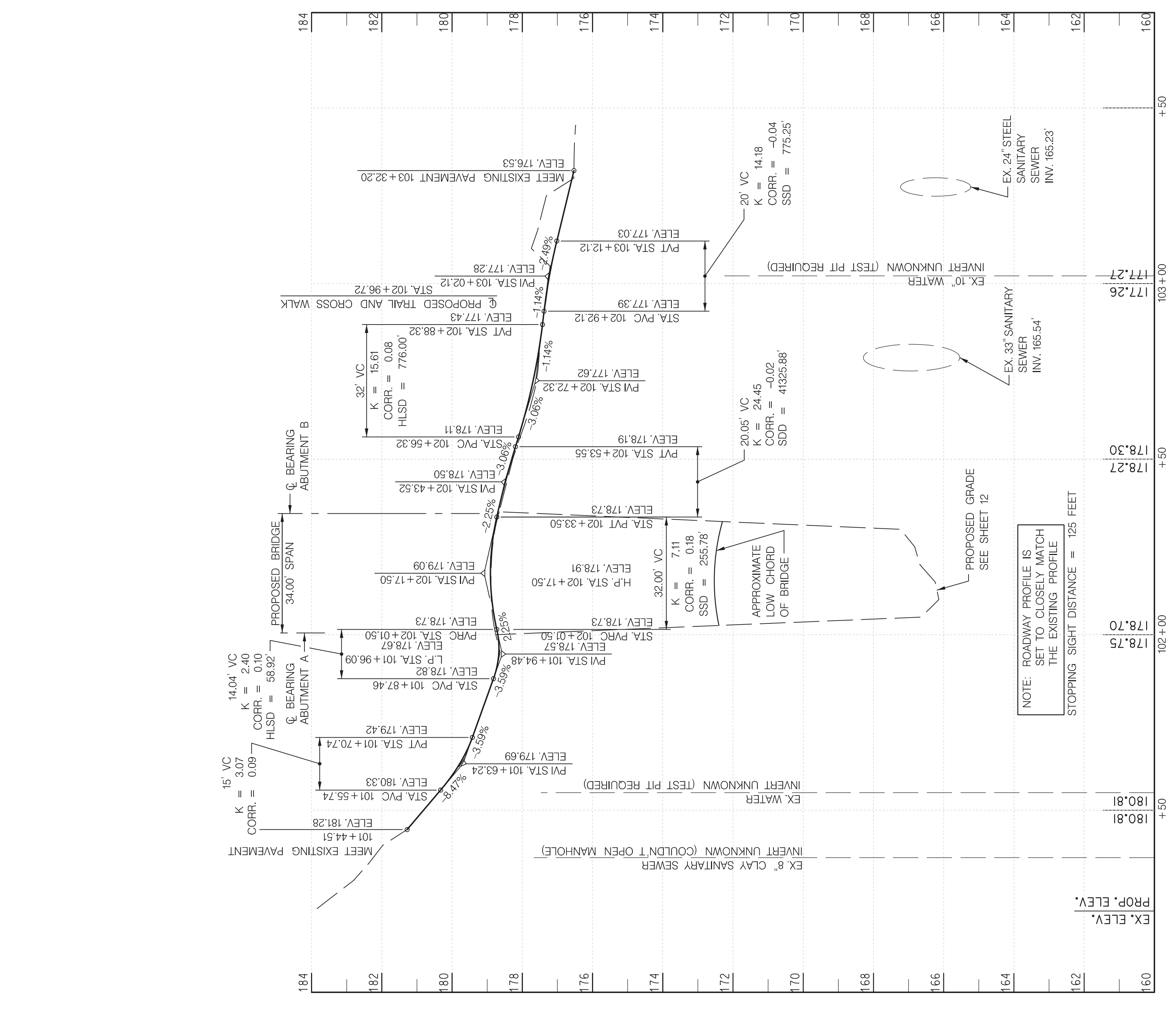
MDPS APPROVAL OF THIS PLAN IS FOR DEMONSTRATED COMPLIANCE WITH MINIMUM ENVIRONMENTAL MITIGATION STANDARDS AND DOES NOT CONSTITUTE AN ENDORSEMENT OF THE PROJECT OR A GUARANTEE OF THE ACCURACY OF THE INFORMATION PROVIDED. THE PROJECT HAS NOT STARTED.



TEMPORARY TRAIL PHASE 2-6 PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



ROADWAY PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



ROADWAY PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

RECOMMENDED FOR APPROVAL
Date: 12/14/17
Chief, Design Section
APPROVED
Date: 12/14/17
Chief, Division of Transportation Engineering

DESIGNED BY: MMR
DRAWN BY: BSB
CHECKED BY: MC/CSL

NO. _____ **REVISION** _____ **DATE** _____ **BY** _____

PROJECT NO.: 501523 **SHEET** 6 **OF** 62

DATE: MAY 2017
SCALE: AS SHOWN

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK

ROADWAY PROFILE, TRAIL PROFILE, & TEMPORARY TRAIL PROFILE

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND



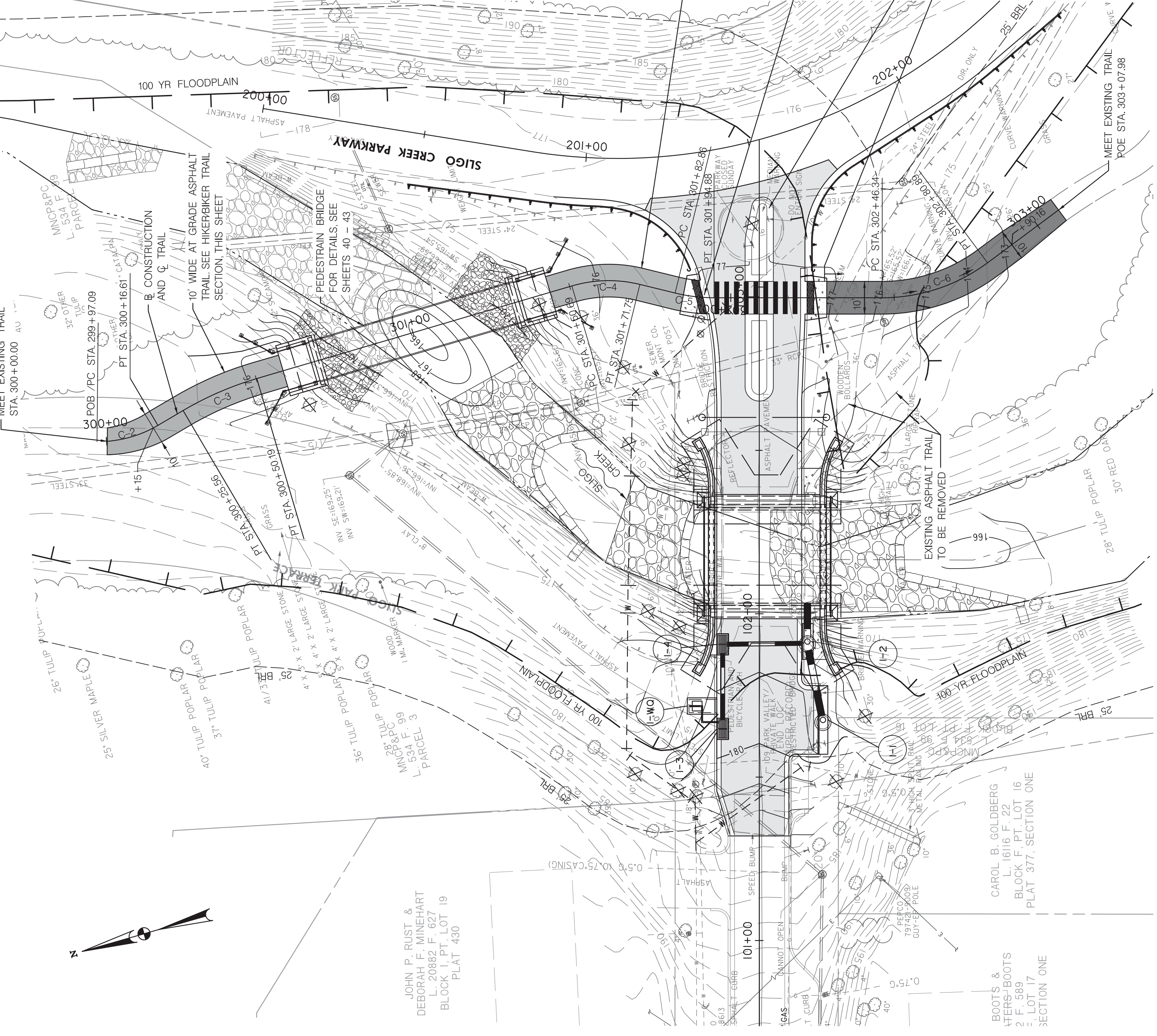
FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

CURVE DATA FOR TRAIL

CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C-2	31°03'43.56" LT	159°09'17.80"	36.00'	10.00'	19.52'	1.36'
C-3	14°06'57.96" RT	57°17'44.81"	100.00'	12.38'	24.64'	0.76'
C-4	30°09'33.15" LT	143°14'22.02"	40.00'	10.78'	21.06'	1.43'
C-5	13°46'21.55" LT	114°35'29.61"	50.00'	6.04'	12.02'	0.36'
C-6	36°39'40.09" LT	106°06'11.86"	54.00'	17.89'	34.55'	2.89'

BASELINE COORDINATES FOR TRAIL

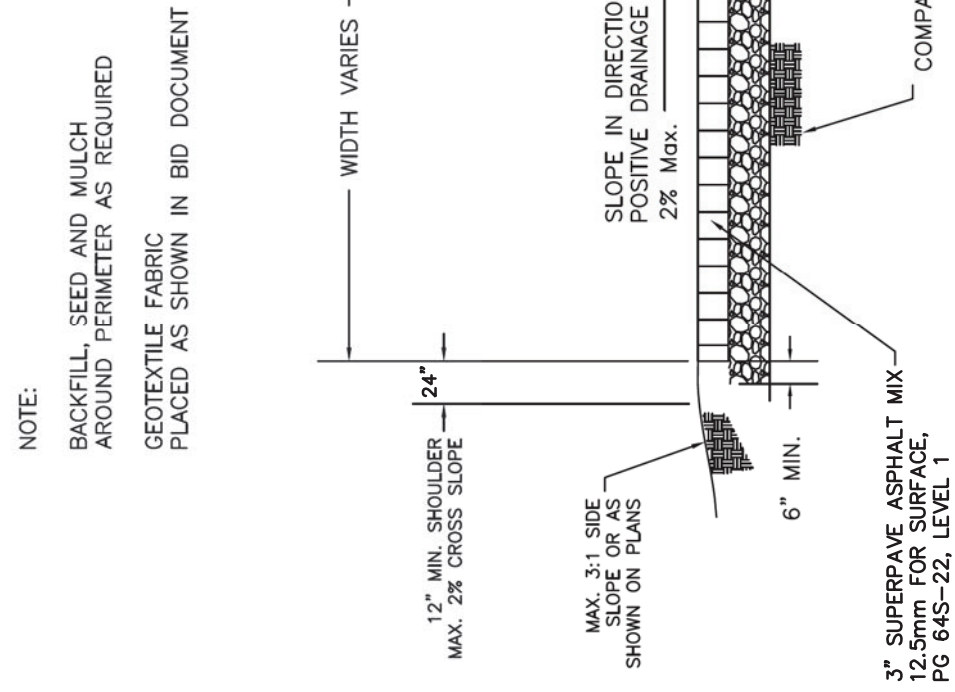
STATION	NORTH	EAST
POB/PC STA. 299+97.09	482,024.5742	1,310,510.6447
PT STA. 300+16.61	482,005.2981	1,310,510.3240
PC STA. 300+25.56	481,996.6316	1,310,512.5779
PT STA. 300+50.19	481,972.2680	1,310,515.7941
PC STA. 301+50.69	481,871.7756	1,310,515.6040
PT STA. 301+71.75	481,851.6364	1,310,511.3515
PC STA. 301+82.86	481,481.9788	1,310,505.8435
PT STA. 301+94.88	481,830.9266	1,310,501.1950
PC STA. 302+46.34	481,781.4411	1,310,487.0756
PT STA. 302+80.89	481,747.5052	1,310,488.5014
POE STA. 303+07.98	481,722.1788	1,310,498.0898



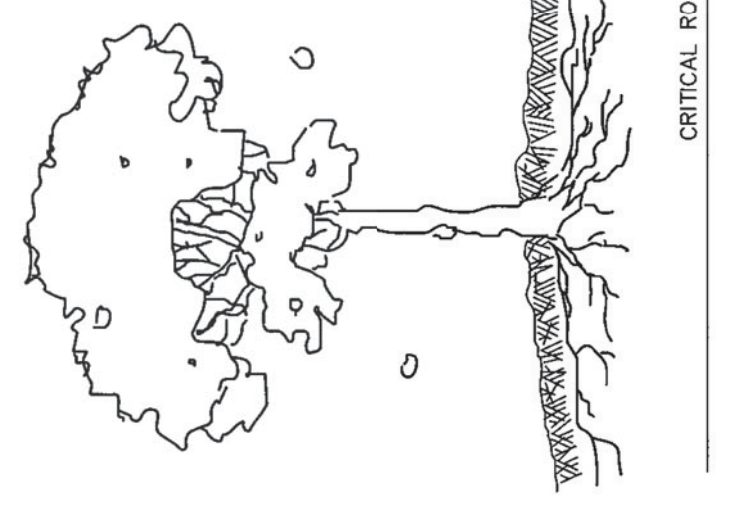
PLAN
SCALE: 1" = 20'

- LEGEND**
- CONCRETE SIDEWALK
 - FULL DEPTH PAVEMENT
 - PROPOSED AT GRADE ASPHALT TRAIL
 - ABOVE GRADE ASPHALT TRAIL
 - EXIST. TRAFFIC BARRIER
 - PROPOSED TRAFFIC BARRIER
 - PROPOSED VEGETATED RIPRAP
 - DETECTABLE WARNING SURFACE
 - EXISTING TREE TO BE REMOVED

NOTE:
FOR TRAIL PROFILE SEE SHEET 6.



HIKER /BIKER TRAIL PAVEMENT SECTION
STA. 300+00 TO STA. 300+58.59
AND STA. 301+43.76 TO STA. 301+85.45
NOT TO SCALE



- NOTES:**
- Strip vegetation and limit bed preparation (2" max. depth) to protect existing roots.
 - During construction near existing trees, exercise extreme care to protect roots. Root protection shall be provided for trees within the critical root zones of the trail construction area and within the critical root zones of the trees.
 - Root protection mat shall be an approved trapezoidal geotext (ASTM D4433) and geogrid shall be Temar Geotextile BX-4100, or approved equal.
 - M-NCPCC Arborist/Inspector must approve Tree Protection Fence field layout.
 - Contractor shall retain an International Society of Arboriculture Certified Arborist to inspect and certify installation of above grade asphalt trail in CUC.
 - Additional information section 721 - Tree preservation, contained therein, for additional information.

ABOVE GRADE ASPHALT TRAIL
STA. 302+29.38 TO STA. 303+07.98
NOT TO SCALE



MONTGOMERY CO. DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:		NOTE: MDCPS APPROVAL DOES NOT NEGATE THE NEED OF A MDCPS ACCESS PERMIT.	
Stormwater Management:	Sediment Control Technical Requirements:	Administrative Requirements:	
Reviewed: <i>S. A. T. #1</i>	Reviewed: <i>David M. Reid</i>	Reviewed: <i>David M. Reid</i>	Reviewed: <i>David M. Reid</i>
Date: 12-8-16	Date: 12-8-16	Date: 12-8-16	Date: 12-8-16
Approved: <i>David M. Reid</i>	Approved: <i>David M. Reid</i>	Approved: <i>David M. Reid</i>	Approved: <i>David M. Reid</i>
Permit No. 287875	Permit No. 287875	Permit No. 287875	Permit No. 287875

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		TRAIL PLAN & DETAILS	
RECOMMENDED FOR APPROVAL	Date: 12/14/17	BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK	
Chief, Design Section	Date: 12/14/17	SCALE: AS SHOWN	DATE: MAY 2017
Chief, Division of Transportation Engineering	Checked By: <i>CP/AMR</i>	Project No.: 501523	SHEET 7 OF 62

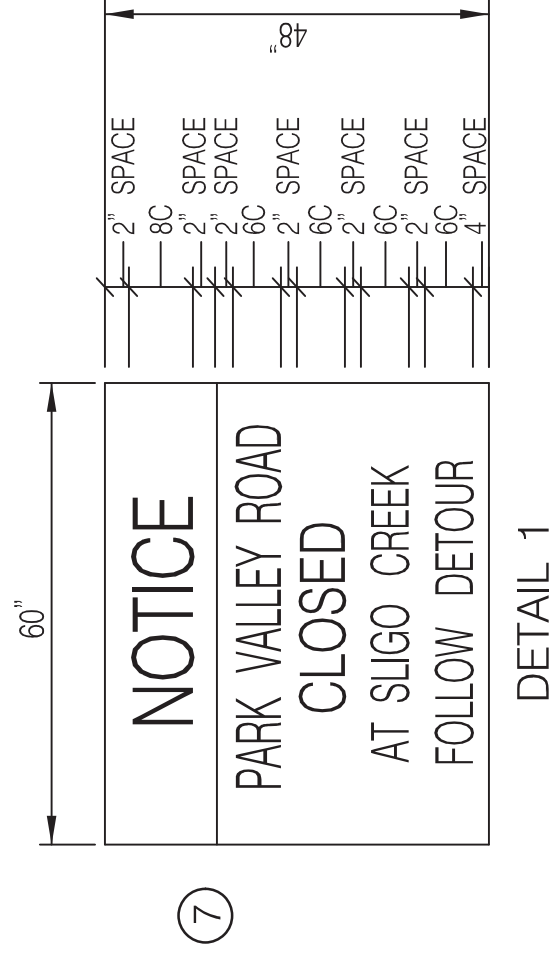
OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221NC



TEMPORARY TRAFFIC CONTROL SIGN TABLE

SYMBOL	M.U.T.C.D. DESIGNATION	MESSAGE	SIZE	QUANTITY	COLOR	
					BACKGROUND	CHARACTERS
1	R11-2	ROAD CLOSED	48" X 30"	2	WHITE	BLACK
2	R4-9	DOWNSTREAM DETOUR	30" X 24"	13	ORANGE	BLACK
3	R4-9R	UPSTREAM DETOUR	30" X 24"	3	ORANGE	BLACK
4	R4-9R (MODIFIED ARROW)	DOWNSTREAM DETOUR	30" X 30"	2	ORANGE	BLACK
5	R4-9L	UPSTREAM DETOUR	30" X 24"	3	ORANGE	BLACK
6	R4-9L (MODIFIED ARROW)	UPSTREAM DETOUR	30" X 30"	2	ORANGE	BLACK
7	R11-2A (MODIFIED) SEE DETAIL THIS SHEET	NOTICE PARK VALLEY ROAD CLOSED AT SLIGO CREEK FOLLOW DETOUR	60" X 48" (SEE DETAIL 1)	5	ORANGE / WHITE	BLACK / BLACK
8	R11-3A	ROAD CLOSED AHEAD	60" X 30"	1	WHITE	BLACK
9	M4-8A(1)	NO DETOUR	24" X 36"	2	ORANGE	BLACK
10	VARIABLE MESSAGE SIGN (VMS)	PARK VALLEY ROAD (SCREEN 1) / TO CLOSE MONTHDAY (SCREEN 2)	VMS	3	VMS	VMS
11	W20-2(1)	DETOUR	48" X 48"	1	ORANGE	BLACK
12	W20-3	ROAD CLOSED	48" X 48"	1	ORANGE	BLACK
13	W20-3	ROAD CLOSED	48" X 48"	1	ORANGE	BLACK

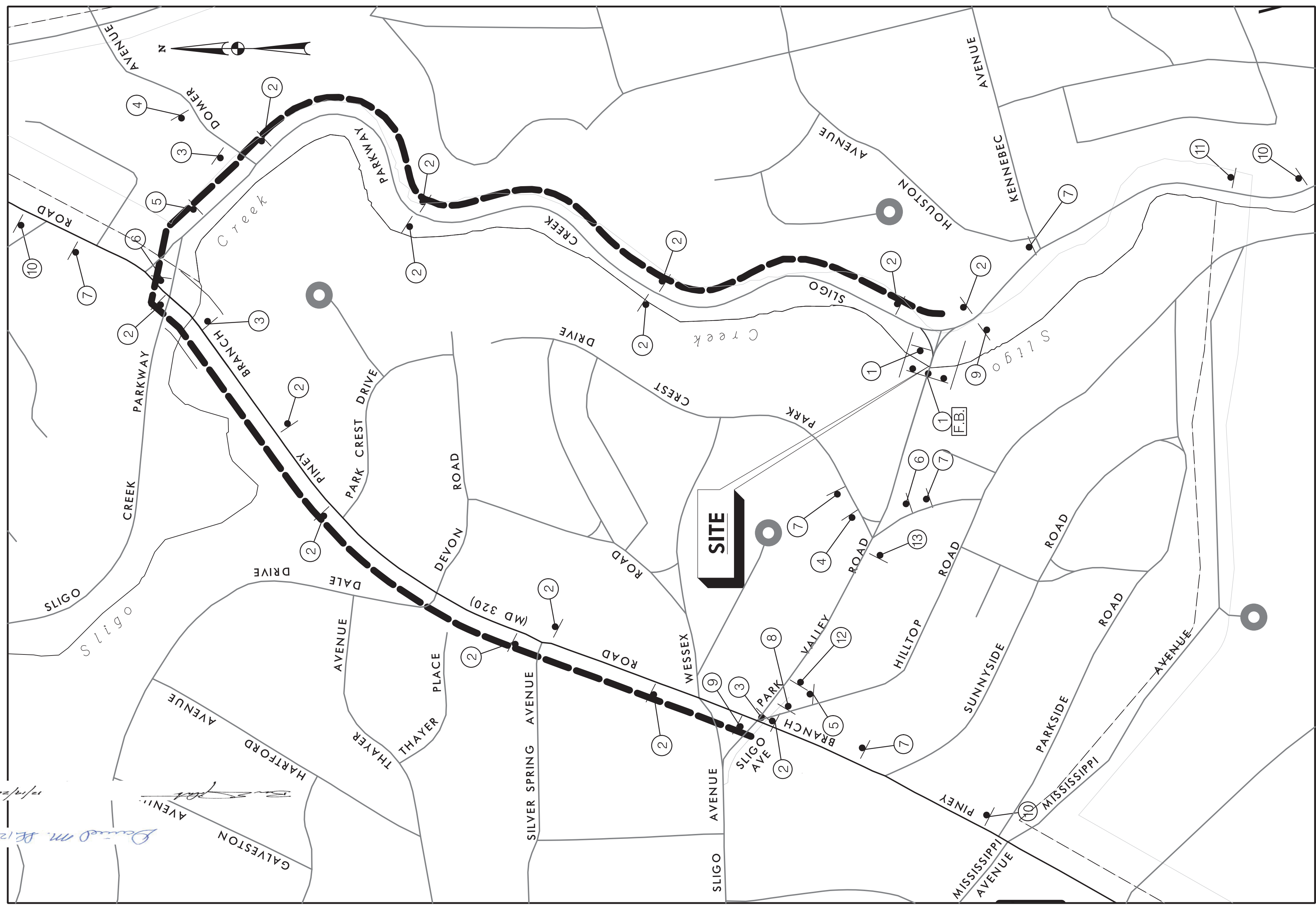


GENERAL NOTES FOR DETOUR AND MAINTENANCE OF TRAFFIC

- ALL MAINTENANCE OF TRAFFIC AND TRAFFIC CONTROL DEVICES SHALL BE IN COMPLIANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE MARYLAND SHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS. NO WORK SHALL BEGIN UNTIL ALL ADVANCE WARNING AND DETOUR SIGNS AND BARRICADES REQUIRED FOR THE PHASE OF WORK ARE IN PLACE AND OPERATIONAL.
- ACCESS SHALL BE MAINTAINED AT ALL TIMES TO ADJACENT ROADWAYS, DRIVEWAYS AND ENTRANCES WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL COORDINATE ACCESS FOR THE WORK AT DRIVEWAYS AND ENTRANCES WITH THE PROPERTY OWNERS AND THE ENGINEER IN ADVANCE TO MINIMIZE INCONVENIENCE TO THE OWNERS.
- THE CONTRACTOR SHALL UTILIZE FLAGGING OPERATIONS AS REQUIRED DURING CONSTRUCTION TO MAINTAIN PEDESTRIAN AND BICYCLE TRAFFIC ALONG THE TRAIL AND TO ENSURE SAFE VEHICULAR TRAFFIC ALONG SLIGO CREEK PARKWAY AND/OR PARK VALLEY ROAD OUTSIDE OF THE CLOSURE AREA AND TO ALLOW CONSTRUCTION VEHICLE ACCESS TO AND FROM THE CONSTRUCTION SITE.
- THE CONTRACTOR SHALL COORDINATE THE ROADWAY DETOUR WITH THE MAINTENANCE OF TRAIL ACCESS PLAN ON SHEET 9.
- ALL DETOUR AND MAINTENANCE OF TRAIL ACCESS SIGN LOCATIONS SHALL BE MARKED IN ADVANCE BY THE CONTRACTOR FOR APPROVAL BY MONTGOMERY COUNTY DOT.
- F.B. = TYPE III BARRICADES. FIXED BARRICADES SHALL BLOCK THE FULL WIDTH OF THE ROADWAY AT CLOSURE POINTS AND SHALL HAVE FLASHING WARNING LIGHTS. THE CONTRACTOR SHALL PROTECT THE WORK AREA AND/OR EXCAVATION(S) AT ALL TIMES.
- VARIABLE MESSAGE SIGNS (#10 SIGNS) ALERTING THE PUBLIC OF THE FUTURE ROAD CLOSURE SHALL BE PLACED A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE ROAD CLOSURE. THE EXACT LOCATIONS AND MESSAGES SHALL BE APPROVED BY MONTGOMERY COUNTY DOT.
- THE CONTRACTOR SHALL ADJUST THE LOCATION OF THE PVMS SIGNS FOR MAXIMUM VISIBILITY, AS APPROVED BY THE ENGINEER. IN ADDITION, WHERE PVMS IMPEDE PEDESTRIAN OR BICYCLE PATHS, INSTALL CHANNELIZING DRUMS OR CONES AROUND THE PVMS TO ENSURE SAFETY.

SEQUENCE OF CLOSURE

- PLACE VARIABLE MESSAGE SIGNS (#10 SIGNS) ALERTING THE PUBLIC OF THE FUTURE CLOSURE OF PARK VALLEY ROAD A MINIMUM FOURTEEN (14) DAYS PRIOR TO THE ROAD CLOSURE.
- PLACE TEMPORARY TRAFFIC CONTROL SIGNS FOR THE PARK VALLEY ROAD DETOUR IN ACCORDANCE WITH THE DETOUR PLAN AND/OR AS DIRECTED BY THE ENGINEER.
- PLACE TYPE III BARRICADES, TEMPORARY CONCRETE BARRIERS, TEMPORARY TYPE "E" BARRIER END TREATMENTS AND TEMPORARY REMOVABLE GATE PER PLAN-PHASE 1 ON SHEET 14, AND CLOSE PARK VALLEY ROAD TO TRAFFIC.
- SLIGO CREEK PARKWAY IS CLOSED ON WEEKENDS AT SPECIFIC TIMES TO THE CONTRACTOR SHALL COORDINATE WITH THE PARK MANAGER PRIOR TO THE PARK VALLEY ROAD CLOSURE TO ENSURE THAT NO VEHICLES ARE TRAPPED ON SLIGO CREEK PARKWAY.
- PROCEED WITH CONSTRUCTION OF ALL PROPOSED WORK.
- AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SIGNS, BARRICADES AND BARRIERS AND OPEN PARK VALLEY ROAD TO TRAFFIC.



DETOUR PLAN
SCALE 1" = 1000'

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section
David M. Arndt
Date: 12/14/17

APPROVED
Chief, Division of Transportation Engineering
[Signature]
Date: 12/14/17

Checked By: JMH
Drawn By: JFW
Project No.: 501523
SHEET 8 OF 62

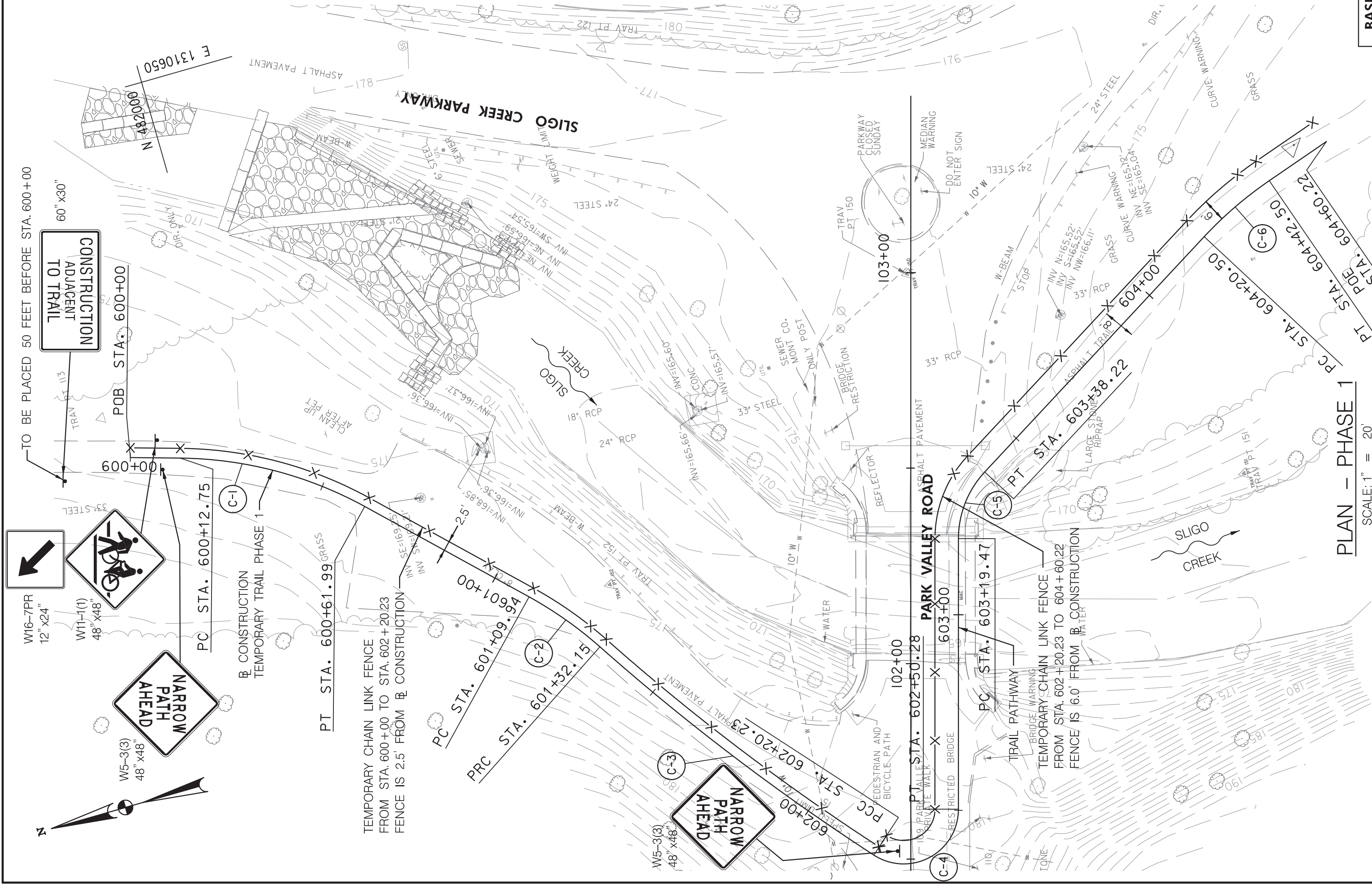
DETOUR PLAN

BRIDGE REPLACEMENT OF
BRIDGE NO. MPK-03 ON
PARK VALLEY ROAD
OVER SLIGO CREEK

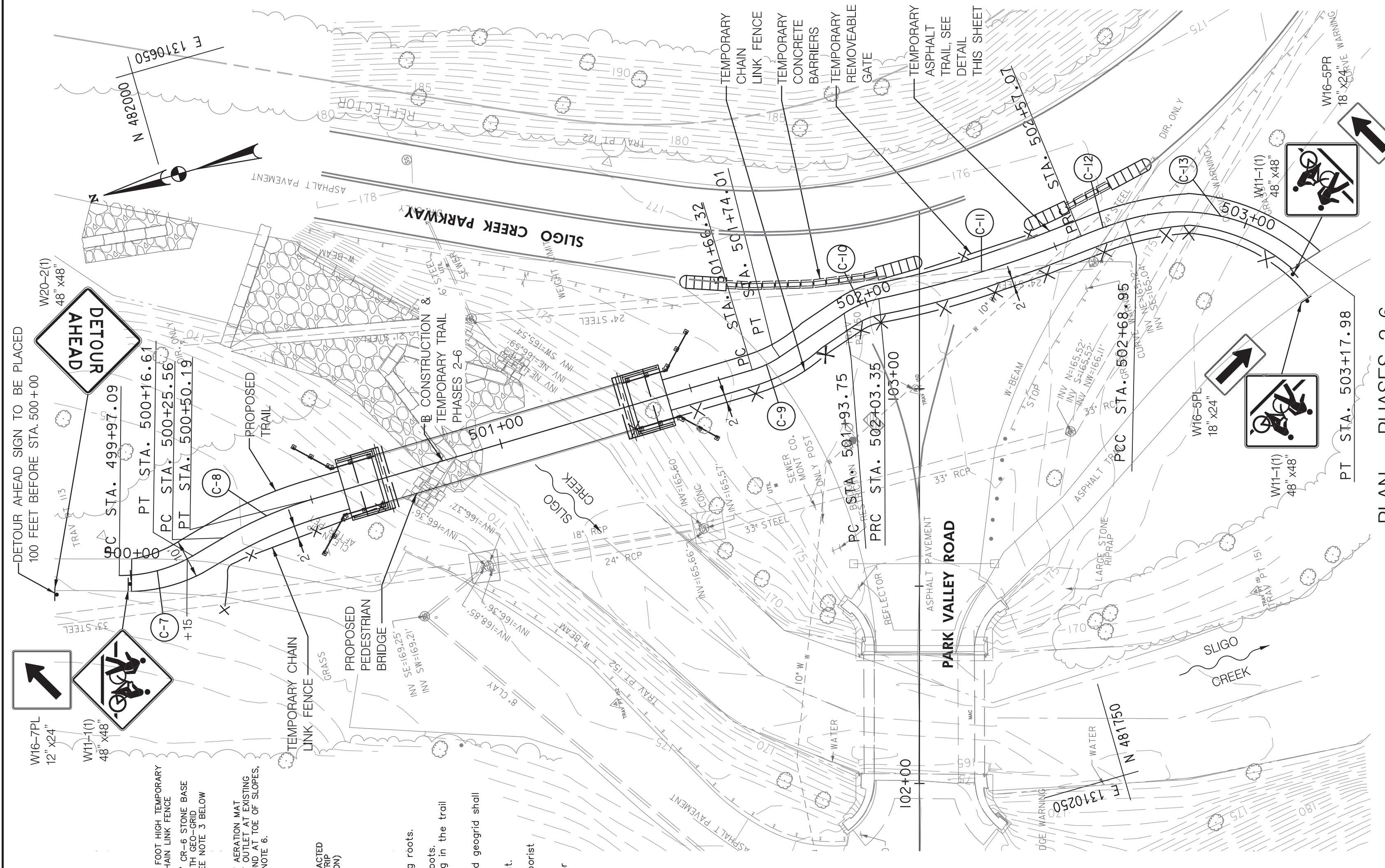
SCALE: AS SHOWN DATE: MAY 2017



MONTGOMERY COUNTY, MARYLAND
Division of Traffic Engineering and Operations
APPROVED
FOR MOT/STP
BY: *[Signature]*
Date: 12/14/17



PLAN - PHASE 1
SCALE: 1" = 20'



PLAN - PHASES 2-6
SCALE: 1" = 20'

SIGN	SIGN DESIGNATION	COLOR/BACKGROUND	SIZE	QUANTITY	POST
	W11-1(1)	BLACK/YELLOW	48" x 48"	4	SQUARE PERFORATED TUBULAR TEEL SIGN POST
	W16-7PL	BLACK/YELLOW	12" x 24"	1	
	W16-7PR	BLACK/YELLOW	12" x 24"	1	
	W16-5PL	BLACK/YELLOW	18" x 24"	1	
	W16-5PR	BLACK/YELLOW	18" x 24"	1	
		BLACK/YELLOW	48" x 48"	1	
		BLACK/YELLOW	48" x 48"	2	
		BLACK/YELLOW	60" x 30"	1	

- NOTES:**
- Strip vegetation and limit bed preparation (2" max. depth) to protect existing roots.
 - During construction near existing trees, exercise care to protect roots. Use only low-impact construction equipment, 6 PSI or less when operating in the trail construction area and within the critical root zones of the trees.
 - Root operation must shall be an approved triplanar geonet (ASTM D4439) and geogrid shall be Tensar Geo-Grid BX-4100, or approved equal.
 - W-NDPPC Arborist/Inspector must approve Tree Protection Fence field layout.
 - Contractor shall retain an International Society of Arboriculture Certified Arborist to inspect and certify installation of above grade asphalt trail in CRZ.
 - Refer to specification section 721 - Tree preservation, contained herein, for additional information.

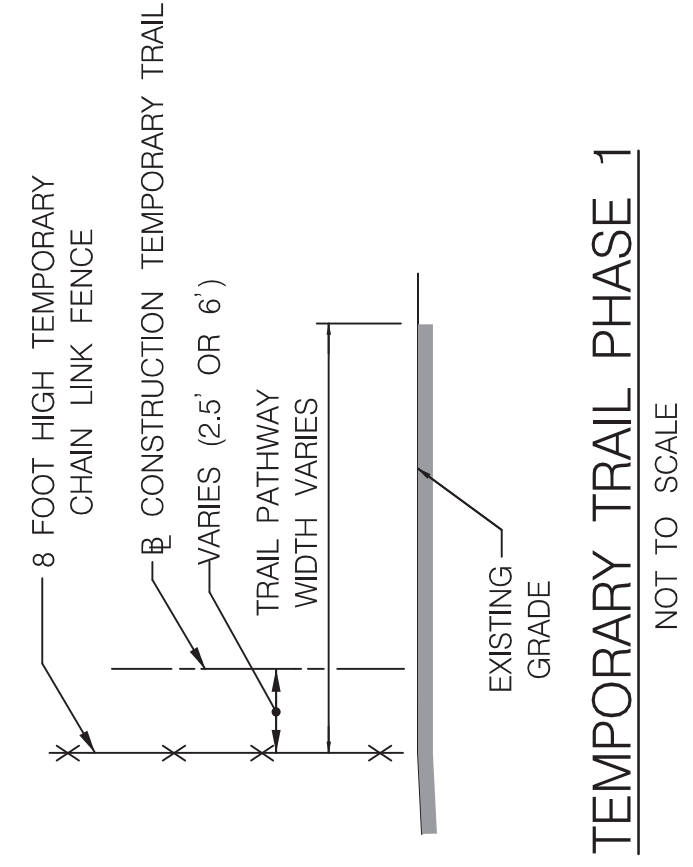
TEMPORARY ASPHALT TRAIL
TEMPORARY TRAIL PHASES 2-6
 STA. 501+43.76 TO STA. 503+17.88
 NOT TO SCALE

CURVE DATA FOR TEMPORARY TRAIL PHASE 1

CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C-1	28°12'44.27" RT	57°17'44.81"	100.00'	25.12'	49.23'	3.10'
C-2	12°43'29.39" RT	57°17'44.81"	100.00'	11.15'	22.20'	0.61'
C-3	8°32'28.44" LT	9°41'51.76"	590.81	44.11'	88.07'	1.64'
C-4	122°59'35.66" LT	409°15'20.04"	14.00'	25.78'	30.05'	15.33'
C-5	42°59'11.51" RT	229°10'59.22"	25.00'	9.84	18.75'	1.86'
C-6	12°36'19.98" RT	57°17'44.81"	100.00'	11.04'	22.00'	0.60

BASELINE CONSTRUCTION CONTROL COORDINATES FOR TEMPORARY TRAIL PHASE 1

STATION	NORTH	EAST
POB STA. 600+00.00	482,021,569.7	1,310,509,755.7
PC STA. 600+12.75	482,009,342.7	1,310,506,128.7
PT STA. 600+61.99	481,967,399.1	1,310,481,295.4
PC STA. 600+09.94	481,933,335.5	1,310,447,546.3
PT STA. 601+32.15	481,919,416.8	1,310,430,298.5
PC STA. 601+32.15	481,919,416.8	1,310,430,298.5
PT STA. 602+20.23	481,866,692.8	1,310,359,850.1
PC STA. 602+50.28	481,842,677.3	1,310,365,208.8
PT STA. 603+19.47	481,823,694.3	1,310,431,740.0
PC STA. 603+38.22	481,812,562.9	1,310,446,289.8
PT STA. 604+20.50	481,742,057.7	1,310,488,773.4
PT STA. 604+42.50	481,722,171.9	1,310,497,978.2
PDE STA. 604+60.22	481,705,363.0	1,310,503,596.8



TEMPORARY TRAIL PHASE 1
NOT TO SCALE

BASELINE CONSTRUCTION CONTROL COORDINATES FOR TEMPORARY TRAIL PHASES 2-6

STATION	NORTH	EAST
POB/PC STA. 499+97.09	482,024,574.2	1,310,510,644.7
PT STA. 500+16.61	482,005,238.1	1,310,510,324.0
PC STA. 500+25.56	481,996,631.6	1,310,512,577.9
PT STA. 500+50.19	481,972,268.0	1,310,515,794.1
PC STA. 501+66.32	481,856,148.4	1,310,516,730.0
PT STA. 501+74.01	481,848,584.0	1,310,517,966.0
PC STA. 501+93.75	481,829,821.0	1,310,524,097.8
PT STA. 502+03.35	481,820,358.1	1,310,525,276.9
PC STA. 502+03.35	481,820,358.1	1,310,525,276.9
PT STA. 502+57.07	481,766,723.2	1,310,526,484.4
PC STA. 502+57.07	481,766,723.2	1,310,526,484.4
PT STA. 502+68.95	481,754,877.4	1,310,527,282.5
PC STA. 502+68.95	481,754,877.4	1,310,527,282.5
PT/POE STA. 503+17.98	481,713,607.8	1,310,505,025.8

CURVE DATA FOR TEMPORARY TRAIL PHASES 2-6

CURVE	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
C-7	31°03'43.56" LT	159°09'17.80"	36.00'	10.00'	19.52'	1.36'
C-8	14°06'57.96" RT	57°17'44.81"	100.00'	12.38'	24.63'	0.76'
C-9	17°38'08.54" LT	229°10'59.22"	25.00'	3.87'	7.69'	0.29'
C-10	21°59'23.15" RT	229°10'59.22"	25.00'	9.59'	9.59'	0.46'
C-11	10°21'50.31" LT	191°17'31.00"	296.99'	26.93'	53.72'	1.21'
C-12	59°14'04.18" RT	44°04'25.24"	130.00'	5.94'	11.87'	0.13
C-13	59°09'01.00" RT	120°37'21.71"	47.50'	26.95'	49.03'	7.11'

- NOTES:**
- SEE SHEET NOS. 14-16 FOR CONSTRUCTION PHASES.
 - CONTRACTOR TO PROVIDE FLAGGERS AS REQUIRED TO MAINTAIN TRAIL ACCESS DURING CONSTRUCTION AND AS REQUIRED TO ALLOW CONSTRUCTION VEHICLES TO ENTER AND LEAVE THE SITE.
 - TEMPORARY ASPHALT TRAIL AND TEMPORARY CHAIN LINK FENCE SHALL REMAIN IN PLACE UNTIL CONSTRUCTION OF THE TRAIL IS COMPLETED. FOLLOW GUIDELINES FOR CONVERTING PAVED AREAS INTO PERVIOUS GREEN SPACE ON SHEET 4 WHEN REMOVING TEMPORARY ASPHALT TRAIL. ALSO SEE GENERAL NOTES ON SHEET 8.

OWNER/ADDRESS:
 DEPARTMENT OF TRANSPORTATION
 100 EDISON PARK DRIVE
 GAITHERSBURG, MARYLAND

CONTACT:
 DIVISION OF TRANSPORTATION ENGINEERING
 TRANSPORTATION CONSTRUCTION
 240-777-7210
 TRANSPORTATION PLANNING & DESIGN
 240-777-7271

RECOMMENDED FOR APPROVAL:
 Chief, Design Section
 Date: 12/14/17

DATE: 12/14/17

DESIGNED BY: CP
DRAWN BY: RW
CHECKED BY: MRR/MC

DEPARTMENT OF TRANSPORTATION
 GAITHERSBURG, MARYLAND

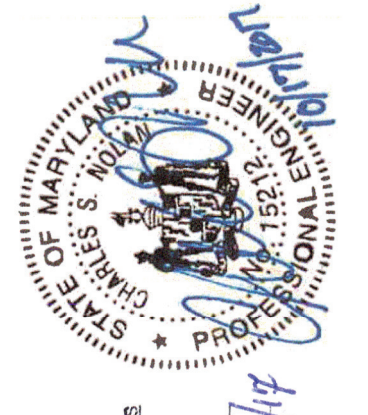
MAINTENANCE OF TRAIL ACCESS PLAN

BRIDGE REPLACEMENT OF PARK VALLEY ROAD OVER SLIGO CREEK

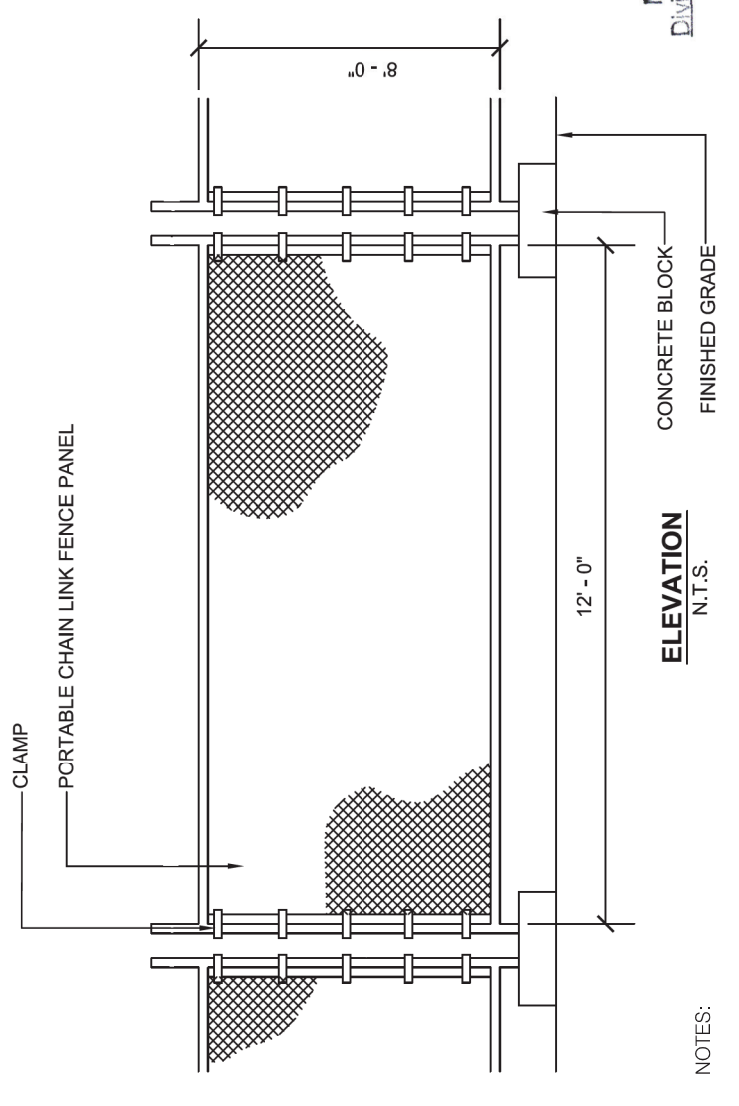
SCALE: AS SHOWN
DATE: MAY 2017

Project No.: 501523
SHEET: 9 OF 62

GPI
 GREENMAN-PEDERSEN, INC.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
 10877 CULFORD RD., ANNAPOLIS, MARYLAND 20710
 WASHINGTON FIELD OFFICE: BALTIMORE, MARYLAND
 TEL: 410.880.8000
 WWW.GPI.COM



FOR MOTION PICTURE
 APPROVED
 E.W. MOTION PICTURE



- NOTES:**
- INSTALL METAL BARS ON THREE SIDES TO ANCHOR THE CONCRETE BLOCK TO THE GROUND SO FENCE CANNOT BE MOVED DURING CONSTRUCTION FROM STA. TO STA.
 - PROVIDE GATES WITH PADLOCKS AS REQUIRED.
- TEMPORARY CHAIN LINK FENCE
NOT TO SCALE

Subarea 4 Non-Rooftop Disconnect 1

General Site Information
 Drainage area = 5,760.3 sf
 Impervious area = 369.4 sf
 I = % Impervious area = 6.41 %
 Rv = 0.05+0.005 (I) = 0.11

Provided P_E

Ratio of disconnection length to contributing length = 1:1
 P_E (treated by disconnection) = 1.0 inch (From Table 5.7, pg. 5.62 of MDE Stormwater Design Manual Chapter 5 2009)

Determine maximum ESDv for area

ESDv_{max} = Maximum volume that can be treated for P= 2.7 inch
 ESDv_{max} = P*RV*A/12 = 139.6 ft³

ESDv Provided

ESDv = P_E Rv/A/12 = 51.7 ft³
 Rv = A*S*RV/12 = 13.4 ft³

Subarea 5 Non-Rooftop Disconnect 2

General Site Information

Drainage area = 331.6 sf
 Impervious area = 236.4 sf
 I = % Impervious area = 71.30 %
 Rv = 0.05+0.009 (I) = 0.69

Provided P_E

Ratio of disconnection length to contributing length = 1:1
 P_E (treated by disconnection) = 1.0 inch (From Table 5.7, pg. 5.62 of MDE Stormwater Design Manual Chapter 5 2009)

Determine maximum ESDv for area

ESDv_{max} = Maximum volume that can be treated for P= 2.7 inch
 ESDv_{max} = P*RV*A/12 = 51.6 ft³

ESDv Provided

ESDv = P_E Rv/A/12 = 19.1 ft³
 Rv = A*S*RV/12 = 5.0 ft³

UNIFIED SIZING CRITERIA FOR PROJECT AREA

REQUIRED P _E	1.00"
REQUIRED ESDv	955.3 CF
REQUIRED Rv	66.9 CF
PROVIDED P _E	0.07"
ESDv PROVIDED	70.8 CG
PROVIDED Rv	18.4 CF

ENVIRONMENTAL SITE DESIGN FACILITY SUMMARY TABLE

DEVICE	DRAINAGE AREA (AC)	IMPERVIOUS AREA (AC)	RV	FACILITY AREA (SF)	AVERAGE DEPTH (FT)	ESDv (CF)	REV (CF)	P _E (IN)
SUBAREA #4 NON-ROOFTOP DISCONNECT 1	0.08	0.009	0.11	-	-	51.7	13.4	1.0
SUBAREA #5 NON-ROOFTOP DISCONNECT 2	0.01	0.005	0.69	-	-	19.1	5.0	1.0
TOTAL		0.014				70.8	18.4	0.07

NOTE: MDEPS APPROVAL DOES NOT NEGATE THE NEED OF A MDEPS ACCESS PERMIT.

SEAL:

MONTEGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management: *5-2-597-#1* Reviewed: 12-8-16 Date: 12-8-16
 Administrative Requirements: *Administrative Requirements* Reviewed: 2/8/15 Date: 2/8/15

SEDIMENT CONTROL PERMIT NO. _____

NOTE: MDEPS APPROVAL DOES NOT NEGATE THE NEED OF A MDEPS ACCESS PERMIT.

MONTEGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:

Stormwater Management: *5-2-597-#1* Reviewed: 12-8-16 Date: 12-8-16
 Administrative Requirements: *Administrative Requirements* Reviewed: 2/8/15 Date: 2/8/15

SEDIMENT CONTROL PERMIT NO. _____

NOTE: MDEPS APPROVAL DOES NOT NEGATE THE NEED OF A MDEPS ACCESS PERMIT.

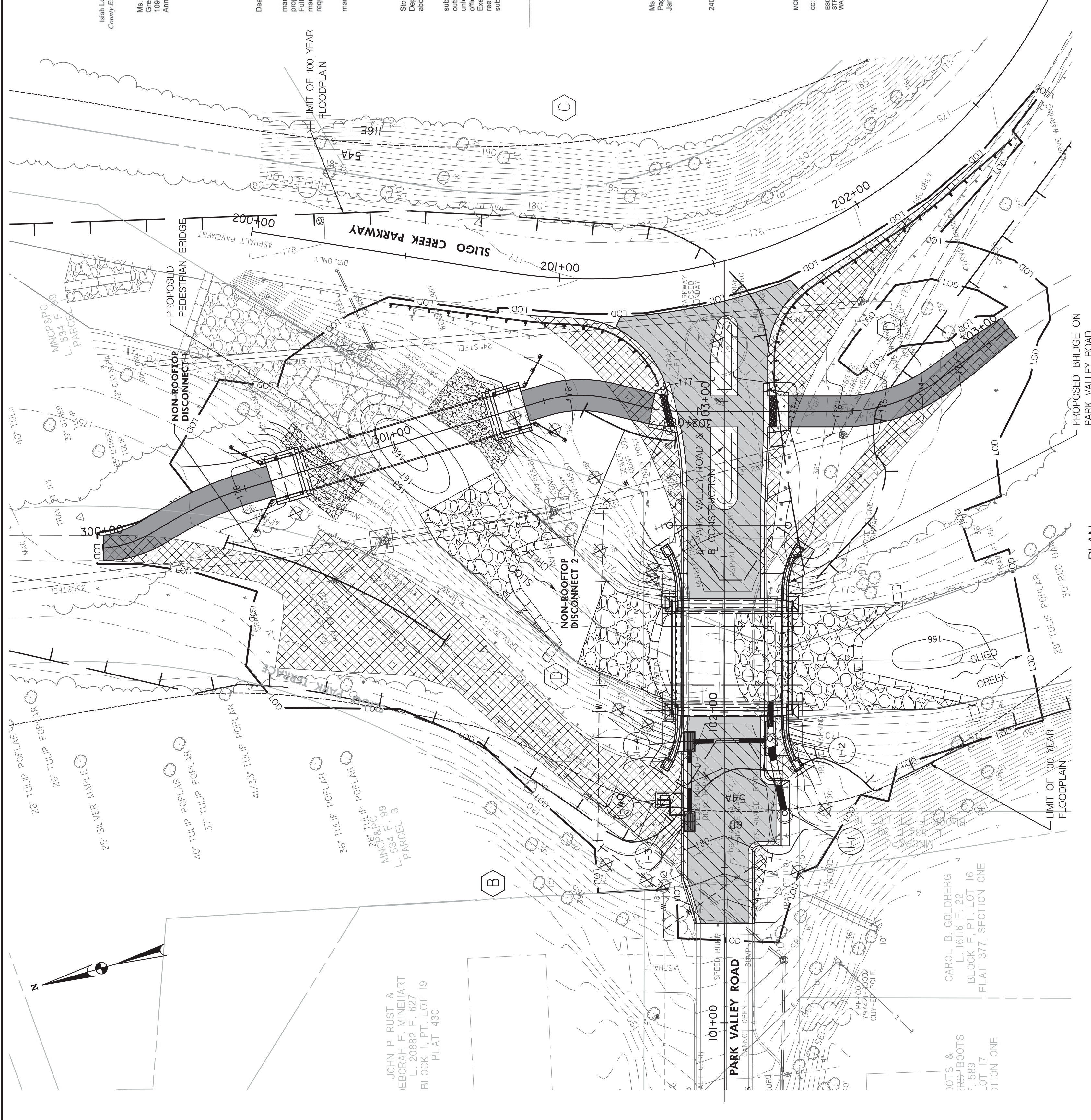
STORMWATER MANAGEMENT AND GRADING PLAN

RECOMMENDED FOR APPROVAL: *Daniel M. Reid* Date: 12/14/17
 Chief, Design Section

APPROVED: *[Signature]* Date: 12/14/2017
 Chief, Division of Transportation Engineering

Designed By: *[Signature]* Drawn By: *[Signature]* Checked By: *[Signature]*

Project No.: 501523 SHEET 10 OF 62



PLAN SCALE: 1" = 20'

NOTE: THE AREAS NOTED AS "NON-ROOFTOP DISCONNECT" ARE LOCATIONS WITHIN THE PROJECT SITE WHERE THE PROPOSED GRADING MEETS CRITERIA TO ALLOW FOR CREDIT OF THIS FORM OF SWM TREATMENT. THESE AREAS ARE TO BE GRADED AND STABILIZED USING TOPSOIL AND TURFGRASS ESTABLISHMENT. THERE IS NO SEPARATE MEASUREMENT OR PAYMENT FOR THESE AREAS AND WORK TO ESTABLISH THESE AREAS WILL BE INCIDENTAL TO THE OTHER PERTINENT ITEMS IN THE CONTRACT.

NON-ROOFTOP DISCONNECT
 "The constructed Non-Rooftop Disconnects meet the conditions specified on the approved plans."
 Owner/Developer Signature _____ Date _____

OWNER/ADDRESS:
 DEPARTMENT OF TRANSPORTATION
 100 EDISON PARK DRIVE
 GAITHERSBURG, MARYLAND

CONTACT:
 DIVISION OF TRANSPORTATION ENGINEERING
 TRANSPORTATION CONSTRUCTION
 240-777-7210
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 240-777-7221

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 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
 10777 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
 WASH DC OFFICE: 4772772 BALTIMORE OFFICE: 880-3055
 FAX: 301-865-6548 www.gpi.com

DEPARTMENT OF PERMITTING SERVICES
 February 19, 2014

Re: Stormwater Management CONCEPT Request
 MPK-03 over Sligo Creek
 Preliminary Plan # 12147
 SM File # 2012-09-94 acres/R-60
 Total Concept Area: 75 acres
 Lots/Block: 14/45
 Watershed: Sligo Creek

Dear Ms. Ryder:
 Based on a review by the Department of Permitting Services Review Staff, the stormwater management concept for the above mentioned site is acceptable. The stormwater management concept proposes to partially meet required stormwater management goals via non rooftop disconnection credits. Full stormwater management cannot be provided for the bridge replacement, therefore a stormwater management quantity waiver is hereby granted for the remainder of the stormwater treatment volume requirement.

The following item will need to be addressed during the detailed sediment control/stormwater management plan stage:
 1. An engineered sediment control plan must be submitted by the applicant.

This list may not be all-inclusive and may change based on available information at the time. Payment of a stormwater management contribution in accordance with Section 2.0 of the Stormwater Management Manual is required for all stormwater management structures approved by the Department of Transportation. If a waiver fee had been required it would have been computed per the above Regulation.

This letter must appear on the sediment control/stormwater management plan at its initial submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way unless specifically approved on the construction permit. The approval process, or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

255 Rockville Pike, 2nd Floor • Rockville, Maryland 20850 • 240-777-6300 • 240-777-6256 TTY: 240-777-6311
 www.montgomerycountymd.gov

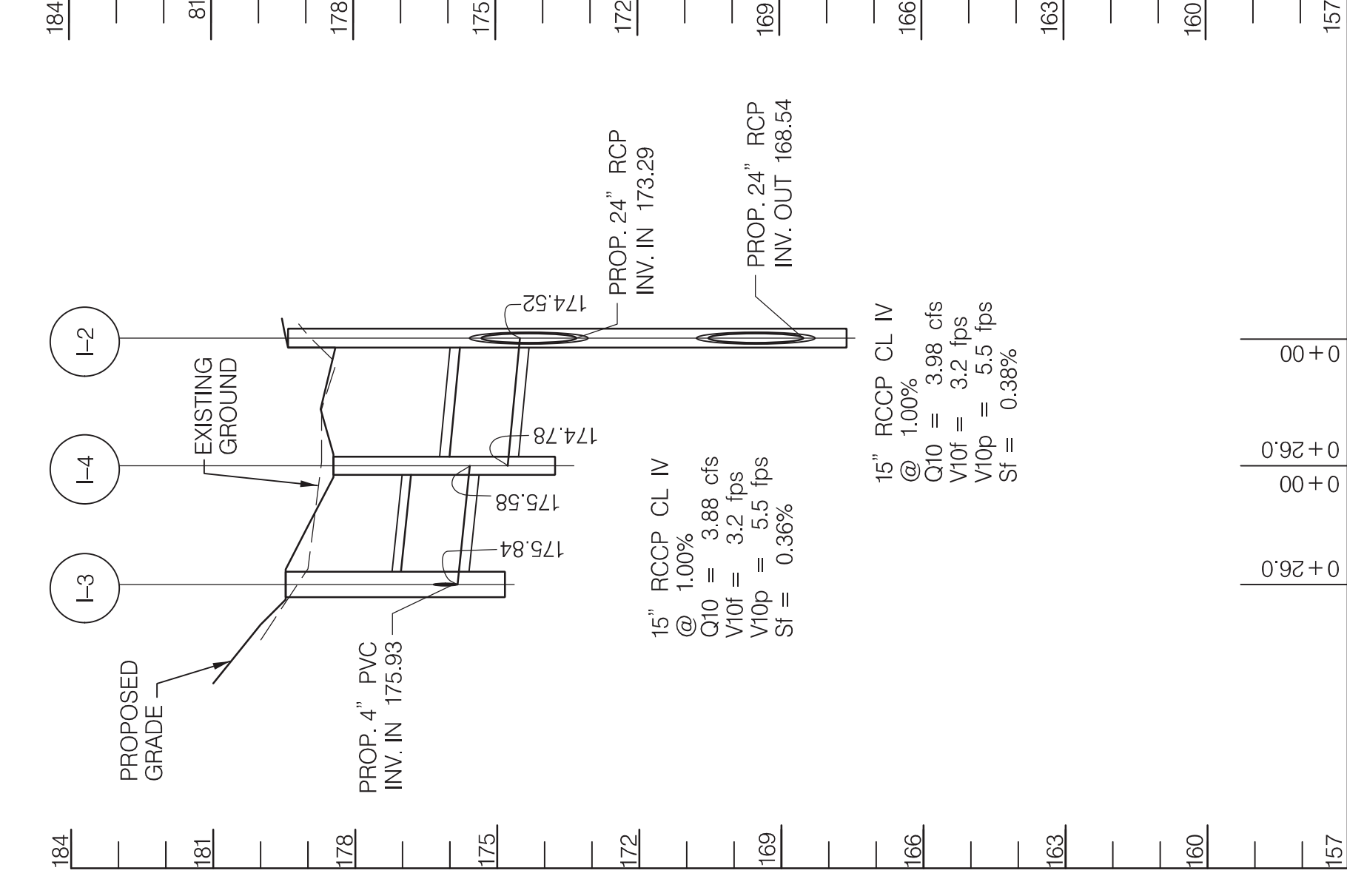
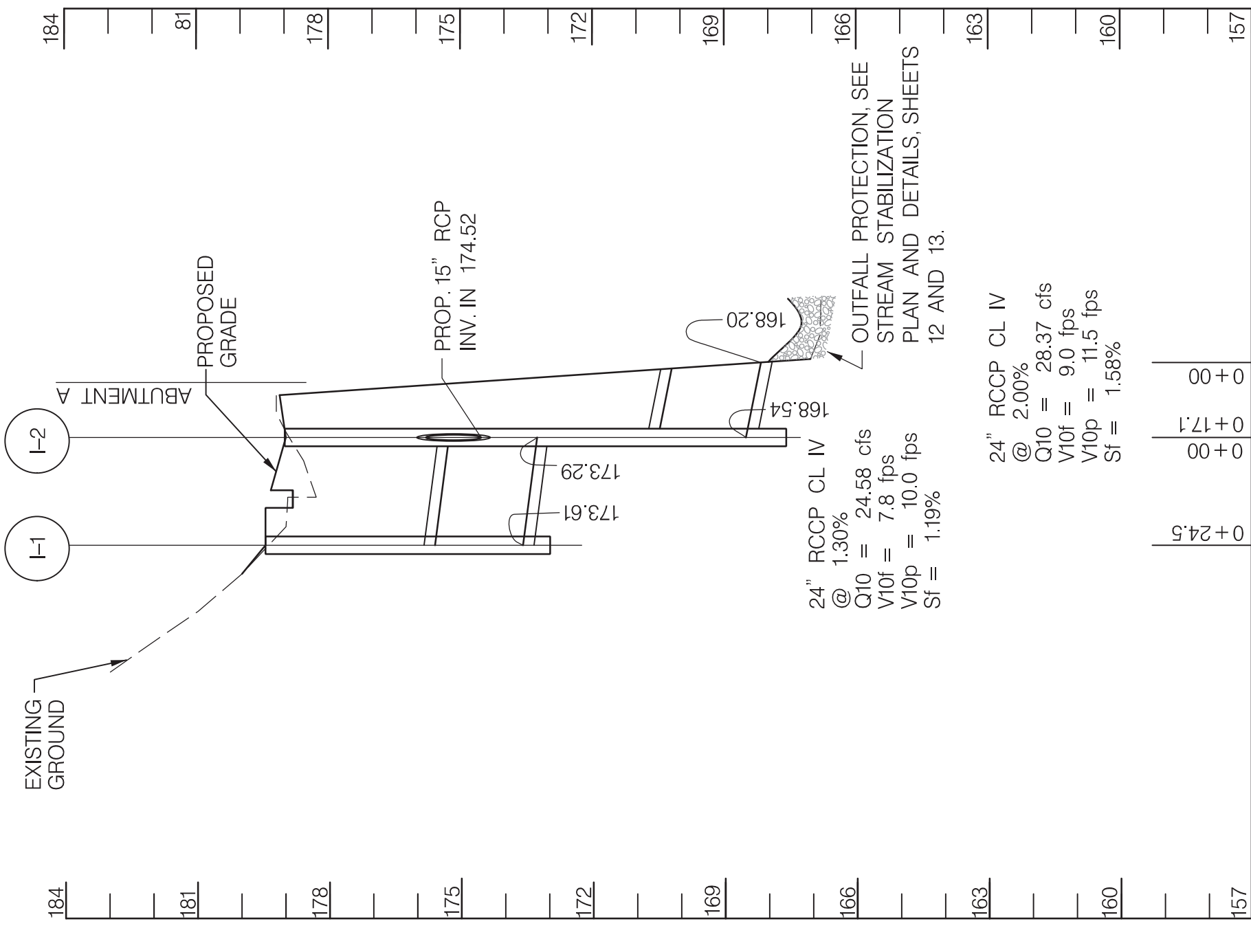
311
 montgomerycountymd.gov/311 240-773-3516 TTY

Ms. Melissa Ryder, P.E.
 Figure 2
 January 19, 2014

If you have any questions regarding these actions, please feel free to contact William Campbell at 240-777-6345.

Sincerely,
 Mark C. Etheridge, Manager
 Water Resources Section
 Division of Land Development Services

MCE me WRC
 CC: SM File # 2012395
 ESD Name: Sligo Creek
 WAVED Acres: 251



Appendix B.4. Construction Specifications for Environmental Site Design Practices

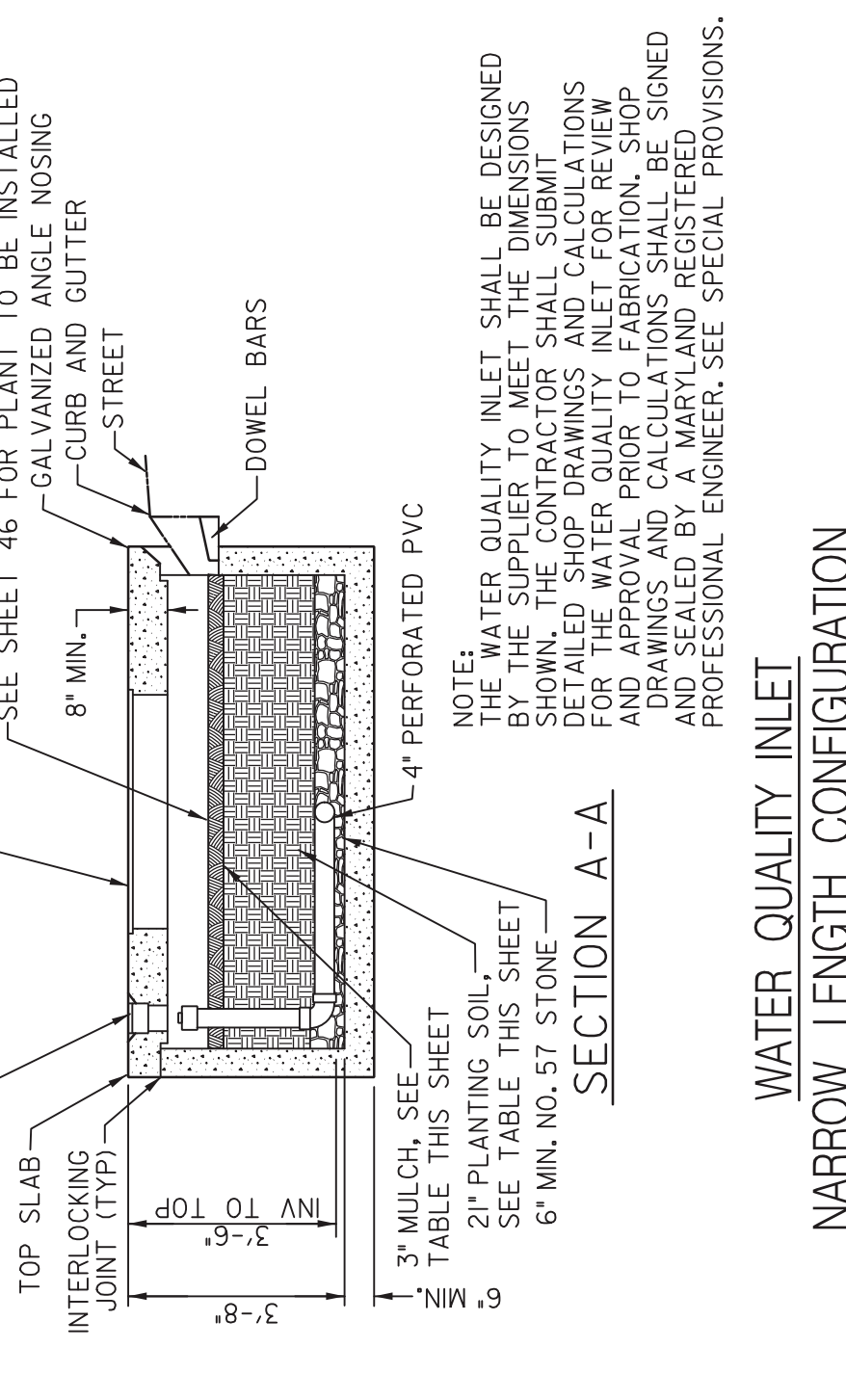
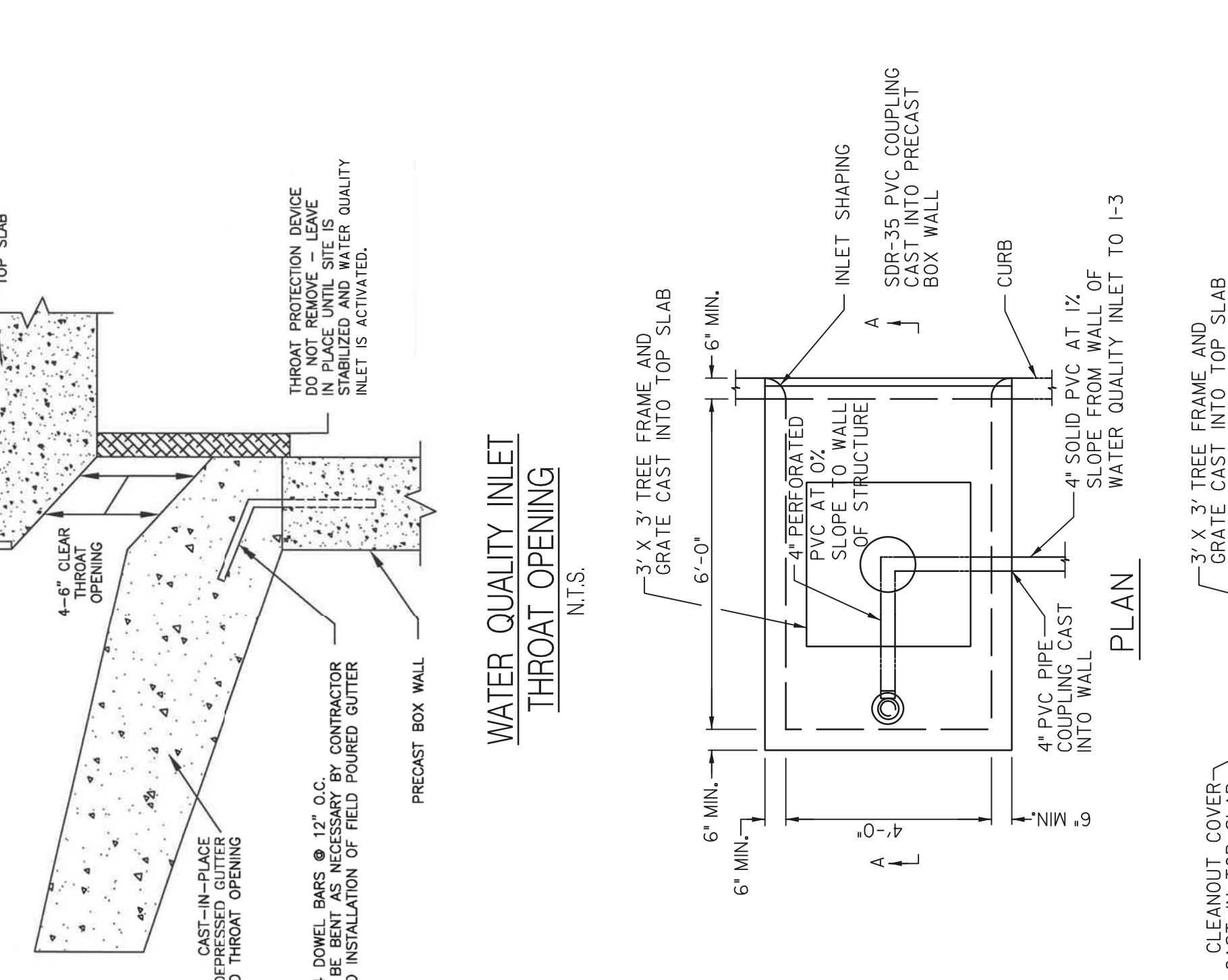
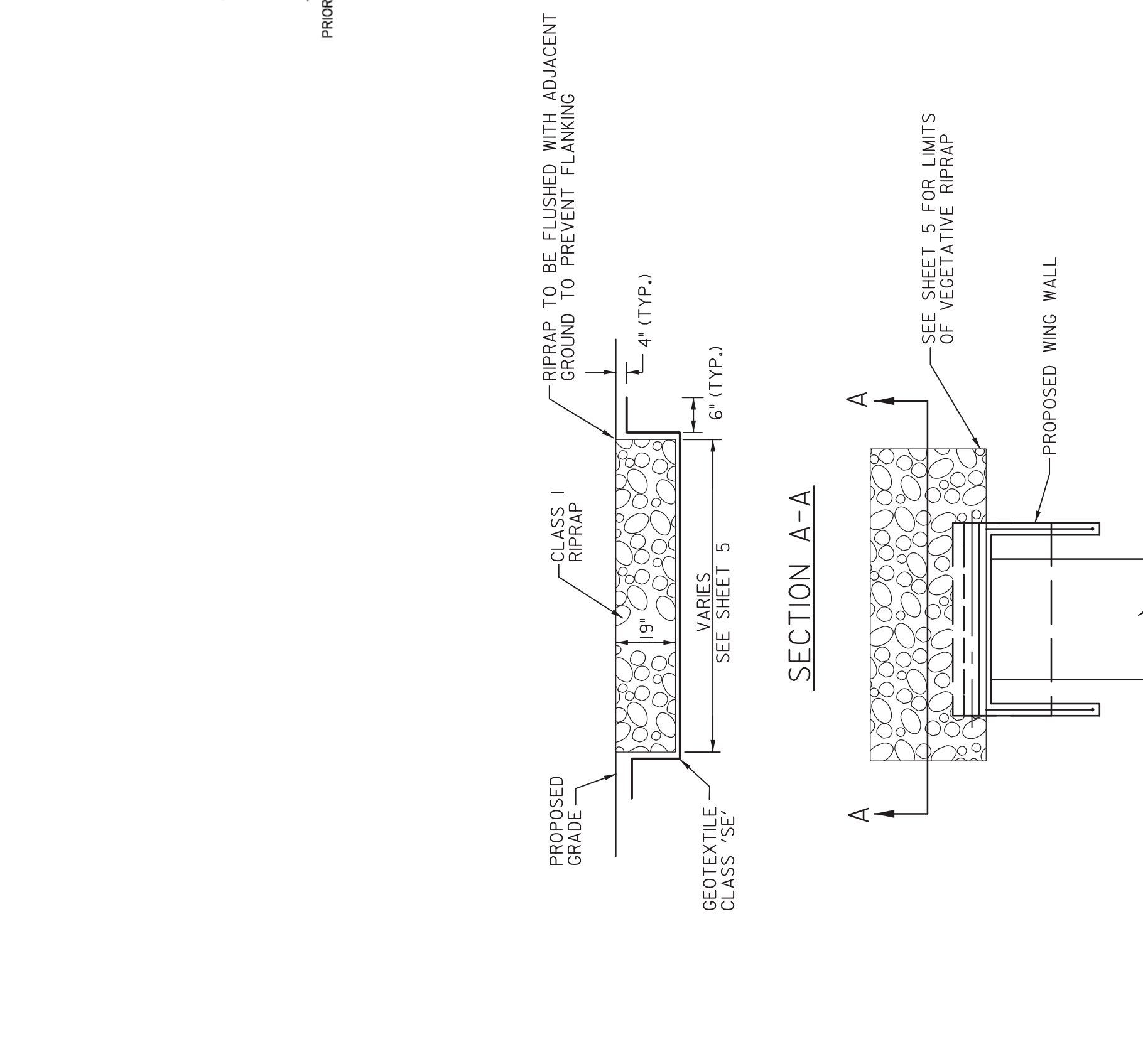
Table B.4.1 Materials Specifications for Micro-Bioretenition, Rain Gardens & Landscape Infiltration-

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil	loamy sand (40Z) coarse sand (22Z) compost (35Z)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 8974)		
Mulch	shredded hardwood pine gravel (ASTM D 448)	NO. 8 OR NO. 9 (1.8" TO 3/8")	aged 6 months; minimum; no pine or wood chips
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	AASHTO M-43	n/b	PE Type 1, nonwoven
Gravel (underdrains and infiltration terms)	AASHTO M-43	NO. 57 OR NO. 6 (3/8" TO 1/2")	
Underdrain piping	F 754, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perft. @ 6" on center; 4 holes per linear foot; pipe, not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/2-inch galvanized hardware cloth.
Poured in place concrete (if required)	MSHA Mix No. 3, f'c = 3500 psi @ 28 days, normal weight air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of precast-in-place concrete required; 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved Stone or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R.8.9, vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.075" to 0.14"	Standard substitutions such as Database and Graystone (AASHTO) #10 are not acceptable. No calcium carbide or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretenition, Rain Gardens & Landscape Infiltration-

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Sand	AASHTO-M-6 or ASTM-C-33	0.075" to 0.14"	Standard substitutions such as Database and Graystone (AASHTO) #10 are not acceptable. No calcium carbide or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.



DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP EL.	DETAIL NO.
I-1	COS 20	STA. 101+67.5, 18' RT.	---	173.61	179.42	MD 374.63
I-2	COS 10	STA. 101+91.5, 13' RT.	173.29	174.52	178.96	MD 374.63, NOTE 1
I-3	TYPE S DOUBLE GRATE	STA. 101+64.76, 13' LT.	175.93	175.84	179.34	MD 374.70, NOTE 2
I-4	TYPE S DOUBLE GRATE	STA. 101+90.5, 13' LT.	175.58	174.78	178.28	MD 374.70, NOTE 1
I-W0	WATER QUALITY INLET	STA. 101+71.75, 13' LT.	---	176.02	179.52	SEE THIS SHEET

NOTES:
1. USE MD 374.70 AND MD 374.63, EXCEPT WIDTH OF CURB VARIES.
2. USE MD 374.70, EXCEPT HEIGHT OF CURB WILL BE 6".
3. DETAILS NOTED MD XXXXX REFER TO DETAILS OF THE MARYLAND STATE HIGHWAY ADMINISTRATION.
4. TOP EL. IS TOP OF SLAB AT FACE OF CURB FOR COS, COG AND W0 INLETS AND TOP OF GRATE AT BOTTOM OF CURB/FLOW LINE FOR OTHERS.
5. STATIONS AND OFFSETS ARE TO CENTER LINE OF INLET AT FACE OF CURB.

DRAINAGE PIPE SCHEDULE

FROM STRUCT.	TO STRUCT.	SIZE (IN.)	TYPE	LENGTH (FT.)
I-1	I-2	24	RCP CL IV	25
I-2	ABUT.	24	RCP CL IV	17
I-3	I-4	15	RCP CL IV	26
I-4	I-2	15	RCP CL IV	26
I-W0	I-3	4	PVC	9

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
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240-777-7210
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GREENMAN-PEDERSEN, INC.
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WASH DC OFFICE: 477272 BALT. OFFICE: 880-3055
FAX: 301-865-5548 www.gpiinc.com

GPI

STORM DRAIN PROFILES, SCHEDULES AND DETAILS

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017

Project No. : 501523 SHEET 11 OF 62

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SHEET 6 OF 16

- THE EXISTING STREAM STABILIZATION MEASURES SHOWN IN THE VICINITY OF THE PROPOSED PEDESTRIAN BRIDGE WERE TAKEN FROM WSSC PLAN ENTITLED "MONTGOMERY COUNTY, MD., DATED JUNE 26, 2014, THE ACTUAL EXISTING STREAM MEASURES MIGHT SLIGHTLY VARY FROM THE PLAN.
- TRANSITION PROPOSED CHANNEL GRADING TO TIE INTO DOWNSTREAM CHANNEL AS DIRECTED IN THE FIELD. BED STABILITY MIX SHALL BE APPLIED TO STABILIZE CHANNEL WHERE TRANSITION OCCURS. FIELD ADJUST POOL DEPTH AND LENGTH AS DIRECTED TO MAXIMIZE IN-STREAM HABITAT.
- FIELD ADJUST LOG GRADING/TREE PROTECTION FENCING IN COORDINATION WITH PARKS TO PROTECT EXISTING 42' SYCAMORE TREE.
- FIELD ADJUST STONE PLACEMENT TO MATCH EXISTING STONE TOE.
- AUGMENT EXISTING RIFLE CONSTRUCTED BY WSSC TO MATCH PROPOSED GRADELINE. BRIDGE IN COORDINATION WITH PARKS.
- FIELD ADJUST RIFLE CREST AND UPSTREAM POOL TO MAXIMIZE CAPACITY THROUGH BRIDGE IN COORDINATION WITH PARKS.
- PROPOSED 10" WATER MAIN SEE SHEETS 58 TO 60 ENSURE 24" MIN. COVER OVER CROWN. STREAM BED AND BANKS TO BE RESTORED PER SHEETS 12 AND 13. WSSC'S DETAIL SCA3.0 NOT TO BE USED ON M-NCPPC PARK LAND.

MIN. P. RUST & MINOR F. 99
 20382 F. 627
 PK (L) PT. LOT 19
 PLAT. 430

PROPOSED J HOOK
 SEE SHEET 11,
 SHEET 13

PROPOSED 10" WATER
 MAIN, SEE NOTE 7,
 SHEET 13

EX-10" WATER MAIN
 TO BE ABANDONED.
 SEE SHEETS 58 TO 60

PROPOSED RIFLE
 SEE SHEET 13,
 SHEET 13

PROPOSED J HOOK
 SEE SHEET 11,
 SHEET 13

PROPOSED 10" WATER
 MAIN, SEE NOTE 7,
 SHEET 13

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 TO BE ABANDONED.
 SEE SHEETS 58 TO 60

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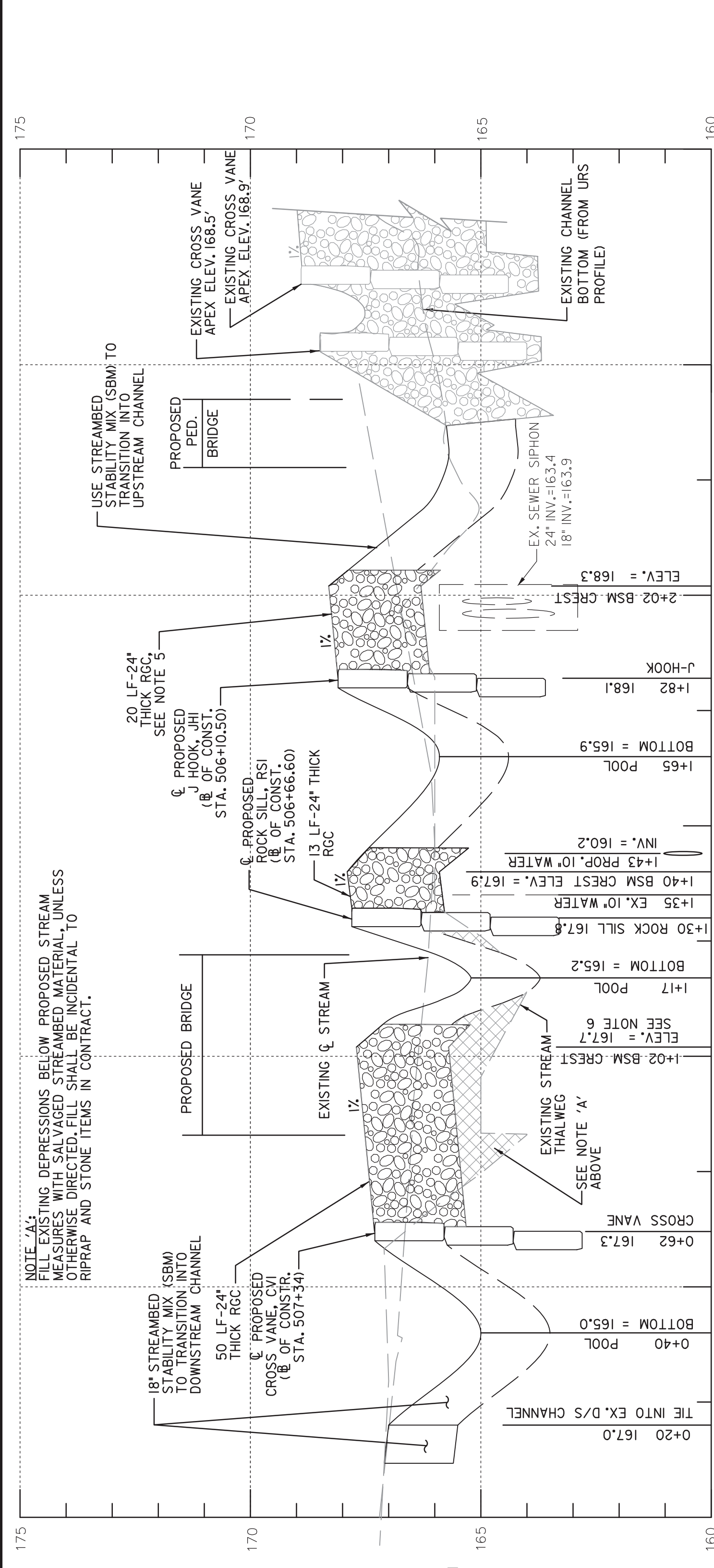
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 TO BE ABANDONED.
 SEE SHEETS 58 TO 60

PROPOSED RIFLE
 SEE SHEET 13,
 SHEET 13

PROPOSED J HOOK
 SEE SHEET 11,
 SHEET 13



PROFILE "A" ALONG CENTERLINE OF STREAM
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'

GENERAL NOTES FOR STREAM RESTORATION WORK ON PARKLAND
 M-NCPPC MONTGOMERY COUNTY PARKS DEVELOPMENT DIVISION

- A PRE-CONSTRUCTION MEETING WITH THE M-NCPPC (PARKS) CONSTRUCTION INSPECTOR, URBAN FORESTER, PARK MANAGER, ENGINEER, AND MCDOT'S STREAM RESTORATION PROFESSIONAL (SRP) SHALL OCCUR TO ENSURE FULL UNDERSTANDING OF THE PROJECT GOALS, DESIGN INTENT, AND FIELD CONDITIONS AT THE TIME OF CONSTRUCTION. (MCDOT IS RESPONSIBLE FOR COORDINATION WITH MDE AND OTHER REGULATORY AGENCIES AS REQUIRED BY PERMITS.) CONTACT JAY CHILDS, PARK CONSTRUCTION MANAGER, AT 301.495.2574 TO SCHEDULE THIS MEETING.
- CONTRACTOR SHALL BE FAMILIAR WITH MDE WATERWAY CONSTRUCTION GUIDELINES AND MDE BEST MANAGEMENT PRACTICES FOR WORKING IN NON-TIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAIN, AND IMPLEMENT THEM THROUGHOUT THE PROJECT, INCLUDING DURING IN-CHANNEL REMEDIATION INSTALLATION AND PUMP-AROUND PRACTICES.
- MCDOT SHALL ENGAGE A SRP (AN INDIVIDUAL FAMILIAR WITH STREAM RESTORATION REVENUE DESIGN AND WATERWAY CONSTRUCTION TECHNIQUES) THAT WILL OVERSEE CONSTRUCTION ACTIVITIES TO ENSURE A STABLE STREAM CONDITION IS ESTABLISHED WITH THE PROTECTION OF NATURAL RESOURCES. MCDOT SHALL EMPLOY SUFFICIENT TIME TO INSPECT THE NEW FLOW PATTERN AND MAKE ADJUSTMENTS AS NECESSARY TO OF STRUCTURES WITH M-NCPPC AS CONSTRUCTION PROGRESSES.
- PARKS, IN COORDINATION WITH THE SRP, MAY ADJUST THE LIMITS OF THE IN-STREAM STRUCTURES, STREAM BANK STABILIZATION, AND GRADING TO MINIMIZE DISTURBANCE TO TREES /TREE ROOTS AND TO ENSURE FUNCTIONALITY OF DESIGN INTENT IS ACHIEVED. IN ADDITION, CARE SHALL BE TAKEN TO PROTECT TREE ROOTS DURING CONSTRUCTION.
- CONTRACTOR SHALL SURVEY AND LOCATE CRITICAL DESIGN POINTS (CENTERLINE STATION, OFFSETS, ELEVATIONS, STRUCTURES, ETC.) ALONG THE STREAM CHANNEL FOR REVEIT PRIOR TO STRUCTURE INSTALLATION. SRP SHALL CONDUCT SURVEY AND LOCATION OF CRITICAL DESIGN POINTS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING STAKEOUT DURING CONSTRUCTION UNTIL FINAL ACCEPTANCE BY M-NCPPC.
- CONSTRUCTION OF IN-STREAM REVENUEMENTS, INCLUDING GRADE CONTROL AND BANK STABILIZATION, SHALL BE INSPECTED AND APPROVED BY SRP AND M-NCPPC.
- ACCESS ROUTES (12' WIDE, TYP.) AND STAGING AREAS SHALL BE IN COORDINATION WITH PARK TO MINIMIZE IMPACTS TO NATURAL RESOURCES. EQUIPMENT SIZE RESTRICTIONS (E.G., <8 PSI LOADED GROUND PRESSURE) MAY BE REQUIRED BY M-NCPPC IN SENSITIVE AREAS.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL TREE PROTECTION MEASURES AND TREE REMOVALS WITH M-NCPPC. THESE MEASURES (WHICH MAY INCLUDE HARDWOOD MATS, TREE PLANKING, ROOT AERATION MATTING, EQUIPMENT RESTRICTIONS, MULCH ROADS, TREE PROTECTION FENCE, ETC.) MUST BE INSTALLED BEFORE EQUIPMENT ACCESS OVER ROOTS.
- COMPLETED STREAMBED PROFILE WILL NOT HAVE DROPS GREATER THAN SIX INCHES IN ANY ONE LOCATION TO ENSURE FISH PASSAGE. AREAS WHERE FINAL GRADE DROPS EXCEEDS SIX INCH CHANGE IN ELEVATION AT ANY ONE LOCATION SHALL BE ADJUSTED TO ALLOW FISH PASSAGE PRIOR TO FINAL ACCEPTANCE BY M-NCPPC.
- VOIDS SHOULD NOT BE LEFT IN ANY COMPLETED IN-STREAM STRUCTURES. STRUCTURES SHOULD BE FILLED IN WITH STONE AND STREAM BED MIX TO FILL VOIDS.
- CONSTRUCTED RIFLES AND OTHER STREAMBED REVENUEMENTS WILL NOT BE ACCEPTED UNTIL SURFACE FLOW IS ESTABLISHED.
- MCDOT IS RESPONSIBLE FOR COMPLETING FISH RESCUES ASSOCIATED WITH ALL PUMP-AROUNDS. FISH RESCUE TEAMS SHOULD CONSIST OF PROPERLY TRAINED PERSONNEL, BASED ON MARYLAND BIOLOGICAL SURVEY (MBSS) STANDARDS. A LIST OF PERSONNEL CERTIFIED IN MBSS PROTOCOLS CAN BE FOUND AT [HTTP://WWW.DNR.MARYLAND.GOV/STREAMS/MBSS/RESQURY.ASP](http://www.dnr.maryland.gov/streams/mbs/rescue.asp). FISH RESCUES REQUIRE NOTICE TO M-NCPPC THREE (3) WORKING DAYS IN ADVANCE.
- COMPLETED STREAMBED PROFILE WILL NOT HAVE DROPS GREATER THAN SIX INCHES IN ANY ONE LOCATION TO ENSURE FISH PASSAGE. AREAS WHERE FINAL GRADE DROPS EXCEEDS SIX INCH CHANGE IN ELEVATION AT ANY ONE LOCATION SHALL BE ADJUSTED TO ALLOW FISH PASSAGE PRIOR TO FINAL ACCEPTANCE BY M-NCPPC.

THE CONTRACTOR SHALL COORDINATE WITH SEDIMENT CONTROL INSPECTOR AND M-NCPPC ON THE USE OF COMPOST SOCKS, TRENCHLESS SILT FENCES AND/OR DAILY STABILIZATION TO AVOID CUTTING THROUGH MATURE TREE ROOT SYSTEMS, WHERE TRENCHING IS REQUIRED. ROOT PRUNE PRIOR TO TRENCH EXCAVATION AT THE DIRECTION OF M-NCPPC.

TREE ROOT SYSTEMS ARE NOT TO BE DISTURBED DURING PLACEMENT OF RIP RAP, VEGETATED ROCK PACKS, AND OTHER SIMILAR STRUCTURES, UNLESS OTHERWISE NOTED ON PLANS OR INSTRUCTED BY M-NCPPC. EXACT EXTENTS OF STONE PLACEMENT SHALL BE DETERMINED IN THE FIELD. WORK SHALL BE COMPLETED IN A MANNER THAT MINIMIZES IMPACTS TO NATURAL RESOURCES, INCLUDING TREES, AQUATIC HABITAT, AND TERRESTRIAL HABITAT.

THE CONTRACTOR IS RESPONSIBLE FOR CONTROL OF WATER THROUGHOUT THE CONSTRUCTION SITE, INCLUDING RUNOFF THROUGH DISTURBED AREAS.

IN-STREAM AREAS WHERE PUMP-AROUND IS REMOVED AT THE END OF THE WORKDAY, MUST BE COMPLETED AND STABILIZED DAILY. DISTURBED AREAS ABOVE THE WATERLINE SHALL RECEIVE SEED/MULCH AT THE END OF EACH WORKDAY. ONCE STREAM FLOW IS RE-ESTABLISHED AT THE END OF THE WORKDAY, THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME TO INSPECT THE NEW FLOW PATTERN AND MAKE ADJUSTMENTS AS NECESSARY TO ENSURE NON-EROSIVE CONDITION BEFORE VACATING THE SITE.

CONTRACTOR IS RESPONSIBLE FOR ENSURING SMOOTH TRANSITIONS AT UPSTREAM AND DOWNSTREAM ENDS OF WORK AREAS AND BETWEEN THE STREAMBED AND ITS BANKS.

THALWEG TO BE INSTALLED PER PLAN AND/OR AS DIRECTED BY THE SRP IN COORDINATION WITH M-NCPPC.

UPON THE COMPLETION OF STONE STRUCTURES (INCLUDING STONE TOE, ROCK PACK, AND RIP RAP, ETC.), COMPOST MIX SHOULD BE INTEGRATED INTO THE UPPER PORTIONS OF THE COMPLETED STRUCTURE (ABOVE THE BASEFLOW WATER SURFACE) TO ENCOURAGE VEGETATION ESTABLISHMENT.

VOIDS SHOULD NOT BE LEFT IN ANY COMPLETED IN-STREAM STRUCTURES. STRUCTURES SHOULD BE FILLED IN WITH STONE AND STREAM BED MIX TO FILL VOIDS.

CONSTRUCTED RIFLES AND OTHER STREAMBED REVENUEMENTS WILL NOT BE ACCEPTED UNTIL SURFACE FLOW IS ESTABLISHED.

MCDOT IS RESPONSIBLE FOR COMPLETING FISH RESCUES ASSOCIATED WITH ALL PUMP-AROUNDS. FISH RESCUE TEAMS SHOULD CONSIST OF PROPERLY TRAINED PERSONNEL, BASED ON MARYLAND BIOLOGICAL SURVEY (MBSS) STANDARDS. A LIST OF PERSONNEL CERTIFIED IN MBSS PROTOCOLS CAN BE FOUND AT [HTTP://WWW.DNR.MARYLAND.GOV/STREAMS/MBSS/RESQURY.ASP](http://www.dnr.maryland.gov/streams/mbs/rescue.asp). FISH RESCUES REQUIRE NOTICE TO M-NCPPC THREE (3) WORKING DAYS IN ADVANCE.

COMPLETED STREAMBED PROFILE WILL NOT HAVE DROPS GREATER THAN SIX INCHES IN ANY ONE LOCATION TO ENSURE FISH PASSAGE. AREAS WHERE FINAL GRADE DROPS EXCEEDS SIX INCH CHANGE IN ELEVATION AT ANY ONE LOCATION SHALL BE ADJUSTED TO ALLOW FISH PASSAGE PRIOR TO FINAL ACCEPTANCE BY M-NCPPC.

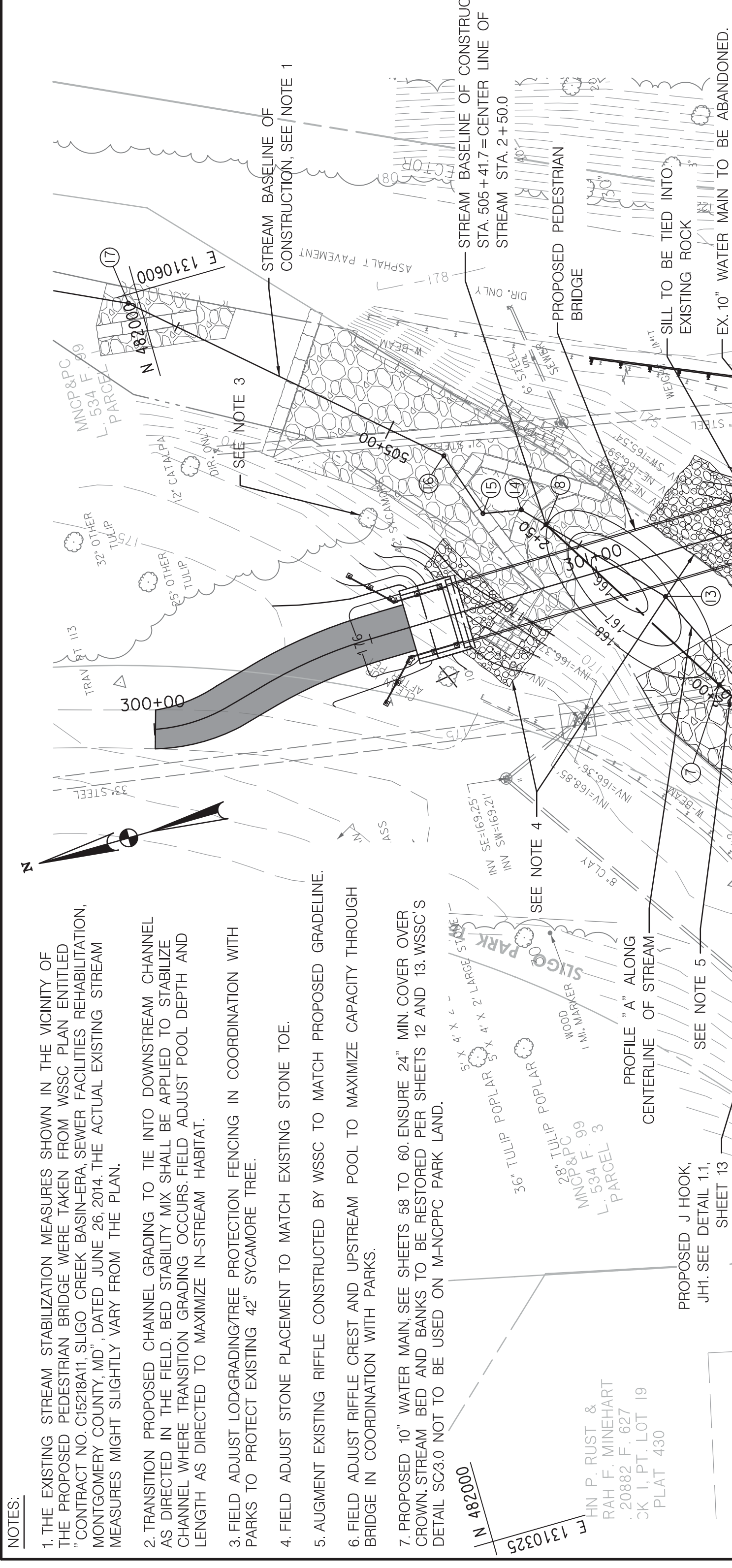
NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.

MONTGOMERY CO. DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:	MONTGOMERY CO. DEPARTMENT OF PERMITTING SERVICES APPROVED FOR:
Stormwater Management Reviewed: <i>[Signature]</i> 12-8-16 Date: 267875 Approved: <i>[Signature]</i> 12-8-16 Date: 267875	Sediment Control Technical Requirements Reviewed: <i>[Signature]</i> 12-8-16 Date: 267875 Approved: <i>[Signature]</i> 12-8-16 Date: 267875
SEDIMENT CONTROL PERMIT NO. _____	
NOTE: MCDPS APPROVAL DOES NOT NEGATE THE NEED OF A MCDPS ACCESS PERMIT.	
WORK SHALL BE COMPLETED BY DATE OF APPROVAL: NO LATER THAN DATE OF APPROVAL: THE PROJECT HAS NOT STARTED.	

OWNER/ADDRESS:
 DEPARTMENT OF TRANSPORTATION
 100 EDISON PARK DRIVE
 GAITHERSBURG, MARYLAND

CONTACT:
 DIVISION OF TRANSPORTATION ENGINEERING
 TRANSPORTATION CONSTRUCTION
 240-777-7210
 TRANSPORTATION PLANNING & DESIGN
 240-777-7221

NO.	REVISION	DATE	BY



STREAM STABILIZATION PLAN
 SCALE: 1" = 20'

NO.	STATION	NORTHING	EASTING
(9)	505+89.32	482,117.66	1,310,653.37
(10)	505+12.73	481,946.94	1,310,548.83
(11)	505+27.48	481,942.32	1,310,534.83
(12)	505+35.62	481,934.31	1,310,533.36
(13)	505+71.26	481,909.99	1,310,507.31
(14)	506+49.10	481,877.05	1,310,436.78
(15)	506+88.85	481,844.51	1,310,413.95
(16)	507+39.62	481,797.13	1,310,395.72
(17)	508+37.00	481,701.16	1,310,412.23

NO.	STATION	NORTHING	EASTING
(1)	0+00.00	481,736.99	1,310,402.97
(2)	0+33.85	481,770.84	1,310,402.34
(3)	0+65.17	481,820.58	1,310,414.95
(4)	1+21.11	481,854.87	1,310,425.75
(5)	1+46.18	481,874.53	1,310,441.30
(6)	1+16.02	481,883.23	1,310,453.33
(7)	2+00.00	481,904.17	1,310,486.20
(8)	2+50.00	481,930.16	1,310,528.91

PROPOSED RIGHT SILL TO BE TIED INTO STREAM BANK BETWEEN EXISTING ROCK OUTCROPS. AVOID EXCAVATION INTO BANK IN ORDER TO PROTECT EXISTING ROOTS OF ADJACENT 40' TREE. EXISTING TREE ROOTS TO BE PROTECTED DURING CONSTRUCTION.

EXISTING 8" TREE TO REMAIN. ASSESS CONDITIONS IN FIELD WITH M-NCPPC PARKS STAFF.

PROPOSED RIFLE SEE SHEET 13, SHEET 13

PROPOSED J HOOK SEE SHEET 11, SHEET 13

PROPOSED 10" WATER MAIN, SEE NOTE 7, SHEET 13

EX-10" WATER MAIN TO BE ABANDONED. SEE SHEETS 58 TO 60

PROPOSED RIFLE SEE SHEET 13, SHEET 13

PROPOSED J HOOK SEE SHEET 11, SHEET 13

PROPOSED 10" WATER MAIN, SEE NOTE 7, SHEET 13

EX-10" WATER MAIN TO BE ABANDONED. SEE SHEETS 58 TO 60

PROPOSED RIFLE SEE SHEET 13, SHEET 13

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EX-10" WATER MAIN TO BE ABANDONED. SEE SHEETS 58 TO 60

PROPOSED RIFLE SEE SHEET 13, SHEET 13

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PROPOSED RIFLE SEE SHEET 13, SHEET 13

PROPOSED J HOOK SEE SHEET 11, SHEET 13

PROPOSED 10" WATER MAIN, SEE NOTE 7, SHEET 13

EX-10" WATER MAIN TO BE ABANDONED. SEE SHEETS 58 TO 60

PROPOSED RIFLE SEE SHEET 13, SHEET 13

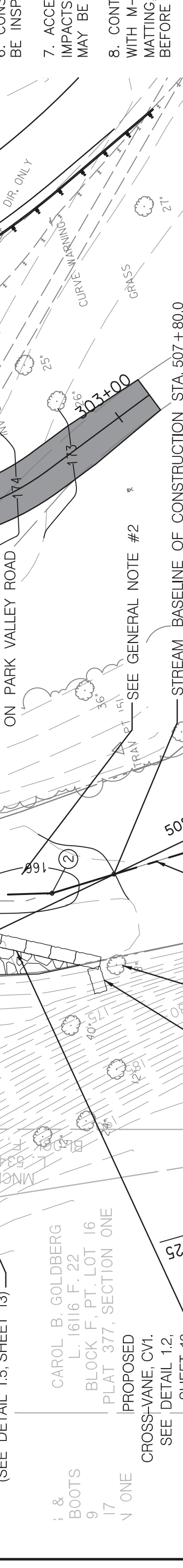
PROPOSED J HOOK SEE SHEET 11, SHEET 13

PROPOSED 10" WATER MAIN, SEE NOTE 7, SHEET 13

EX-10" WATER MAIN TO BE ABANDONED. SEE SHEETS 58 TO 60

PROPOSED RIFLE SEE SHEET 13, SHEET 13

PROPOSED J HOOK SEE SHEET 11, SHEET 13



MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL: *[Signature]* Date: 12/16/17

Chief, Design Section

Approved: *[Signature]* Date: 12-8-16

Chief, Division of Transportation Engineering

DESIGNED BY: JA DRAWN BY: AWV CHECKED BY: DM

NO. _____ REVISION _____ DATE _____ BY _____

INSTALL FILTER BAG - PHASE 3
 PARK VALLEY ROAD - STA. 102+06, 29' RT.
 PARK VALLEY ROAD - STA. 102+30, 33' RT.

INSTALL SUMP PIT - PHASE 3
 PARK VALLEY ROAD - STA. 102+06, 29' RT.
 PARK VALLEY ROAD - STA. 102+30, 33' RT.

INSTALL SAND BAGS - PHASE 3
 PARK VALLEY ROAD - STA. 102+42, 31' LT.
 PARK VALLEY ROAD - STA. 101+93, 40' RT.
 PARK VALLEY ROAD - STA. 102+39, 40' RT.
 PARK VALLEY ROAD - STA. 102+41, 82' RT.

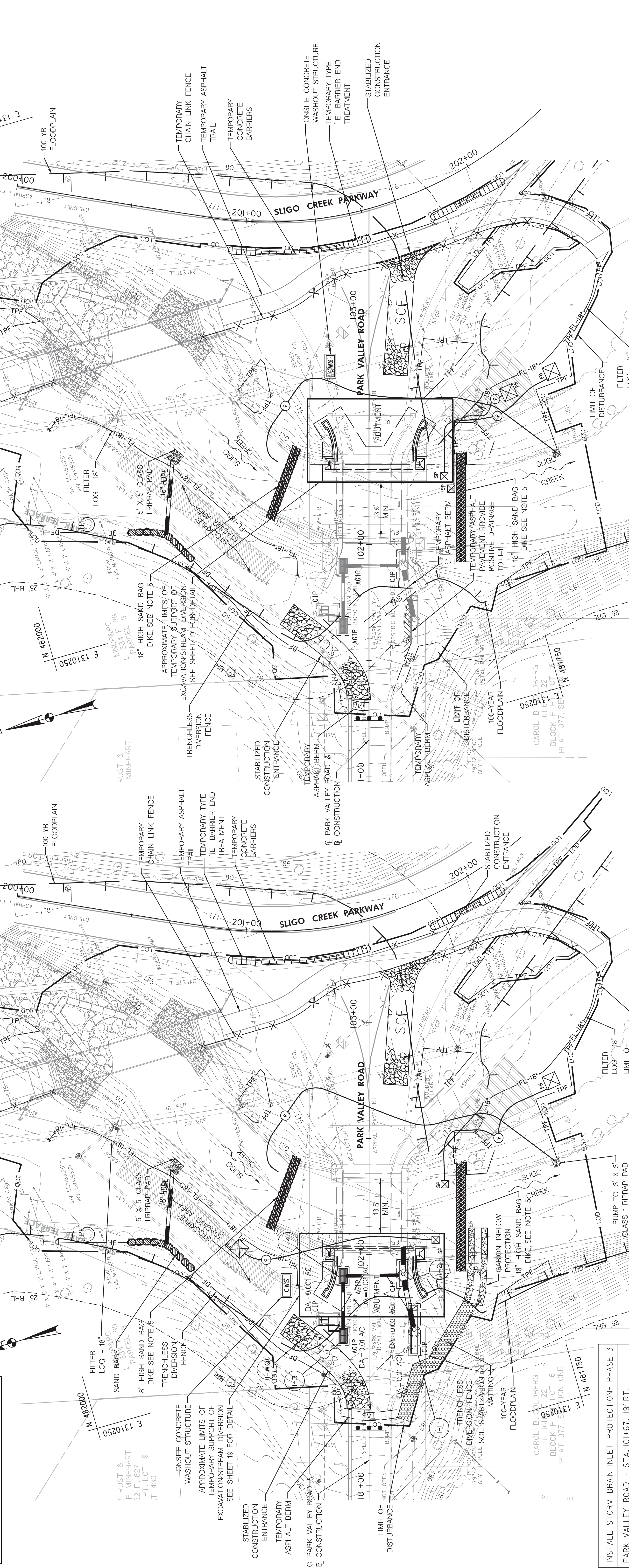
INSTALL CLASS I RIPRAP PAD - PHASE 3 & 4
 PARK VALLEY ROAD - STA. 102+37, 80' RT. TO STA. 102+41, 82' RT.

ONSITE CONCRETE WASHOUT STRUCTURE
 APPROXIMATE LIMITS OF TEMPORARY SUPPORT OF EXCAVATION/STREAM DIVERSION
 SEE SHEET 19 FOR DETAIL

APPROXIMATE LIMITS OF TEMPORARY SUPPORT OF EXCAVATION/STREAM DIVERSION
 SEE SHEET 19 FOR DETAIL

APPROXIMATE LIMITS OF TEMPORARY SUPPORT OF EXCAVATION/STREAM DIVERSION
 SEE SHEET 19 FOR DETAIL

APPROXIMATE LIMITS OF TEMPORARY SUPPORT OF EXCAVATION/STREAM DIVERSION
 SEE SHEET 19 FOR DETAIL



REMOVAL AND RECONSTRUCTION OF ABUTMENT B
 PLAN-PHASE 4
 SCALE: 1" = 20'

INSTALL TEMPORARY ASPHALT PAVEMENT - PHASE 4
 PARK VALLEY ROAD - STA. 102+27, 26' LT. AND 36' RT. TO STA. 102+63, 26' LT. AND 36' RT.

INSTALL TEMPORARY ASPHALT BERM - PHASE 4
 PARK VALLEY ROAD - STA. 101+49, 15' RT. TO STA. 101+77, 18' RT.

INSTALL CONCRETE WASHOUT STRUCTURE - PHASE 4
 PARK VALLEY ROAD - STA. 102+77, 17' LT.

INSTALL FILTER BAG - PHASE 4
 PARK VALLEY ROAD - STA. 102+66, 60' RT.
 PARK VALLEY ROAD - STA. 102+75, 79' RT.

INSTALL SUMP PIT - PHASE 4
 PARK VALLEY ROAD - STA. 102+24, 35' RT.
 PARK VALLEY ROAD - STA. 102+30, 33' RT.

OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION, 100 EDISON PARK DRIVE, GAITHERSBURG, MARYLAND
 CONTACT: DIVISION OF TRANSPORTATION ENGINEERING, TRANSPORTATION CONSTRUCTION, TRANSPORTATION PLANNING & DESIGN, 240-777-7271

GPI
 GREENMAN-PEDERSEN, INC.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
 10877 CULFORD RD., ANNAPOLIS JUNCTION, MD 20710
 TEL: 410-496-7772 FAX: 410-496-7668 www.gpi.com

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

MONTEGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SHEET 10 OF 16

NOTE: MODPS APPROVAL DOES NOT NEGATE THE NEED OF A MODPS ACCESS PERMIT.

Administrative Requirements
 Reviewed: 267875 Date: 12-8-16
 Approved: 267875 Date: 12-8-16

Stormwater Management
 Reviewed: 267285 Date: 12-8-16
 Approved: 267285 Date: 12-8-16

Sediment Control Technical Requirements
 Reviewed: 267875 Date: 12-8-16
 Approved: 267875 Date: 12-8-16

RECOMMENDED FOR APPROVAL
 Chief, Design Section
 Date: 12/14/17

Chief, Division of Transportation Engineering
 Date: 12/14/17

Designed By: JMR
 Checked By: JMR

MONTEGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
 GAITHERSBURG, MARYLAND

EROSION AND SEDIMENT CONTROL PLAN AND CONSTRUCTION PHASES

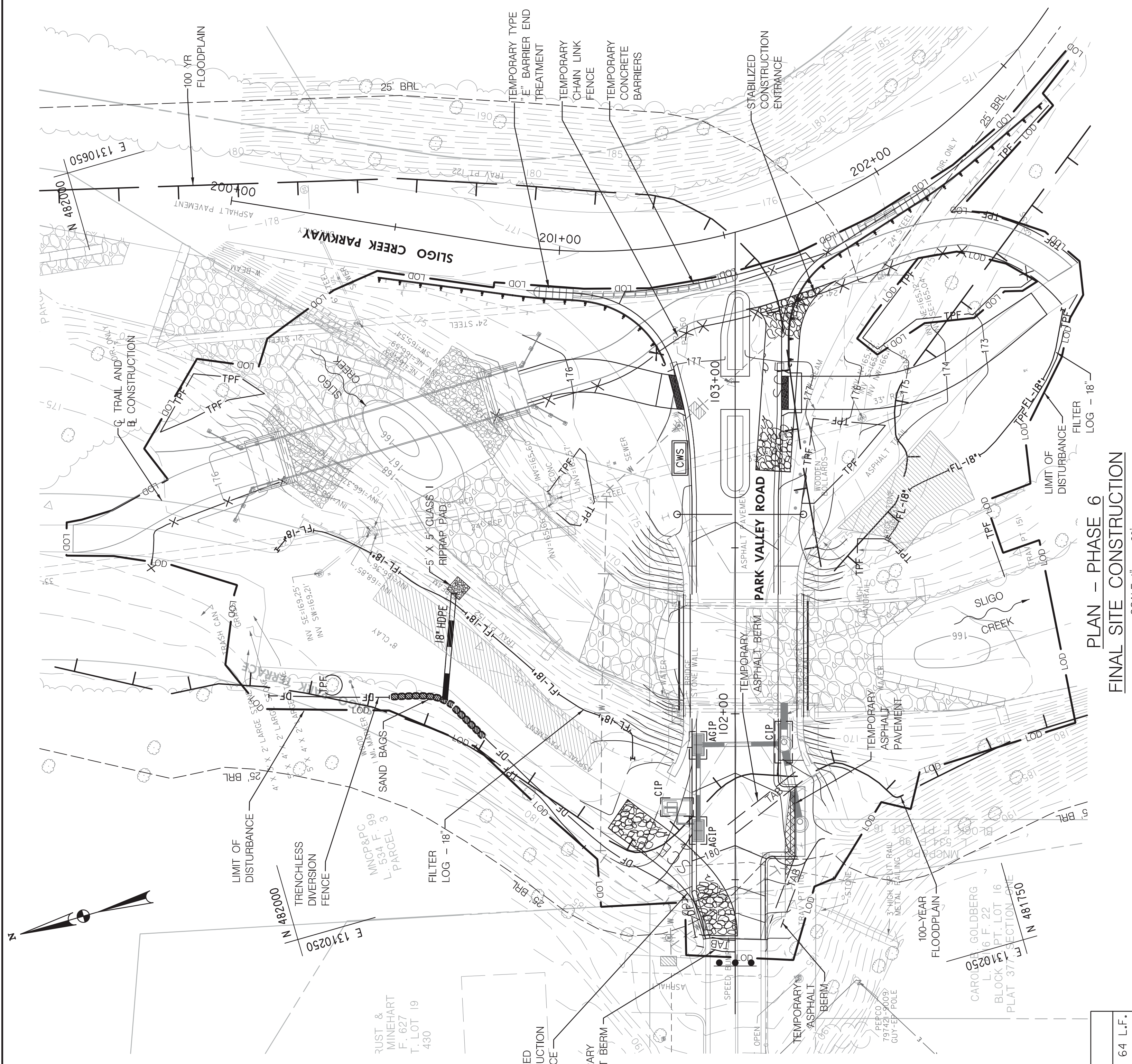
BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
 ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017
 Project No.: 501523 SHEET 15 OF 62

LEGEND

- TEMPORARY CONCRETE BARRIER
- TEMPORARY ASPHALT BERM
- FILTER LOG - 18"
- SUPER SILT FENCE
- EXIST. TRAFFIC BARRIER
- TYPE III BARRICADE
- TEMPORARY TYPE "E" BARRIER END TREATMENT
- RIPPRAP PAD
- STABILIZED CONSTRUCTION ENTRANCE
- ONSITE CONCRETE WASHOUT STRUCTURE
- SAND BAGS
- MULCH MAT
- LIMIT OF DISTURBANCE
- SUMP PIT
- FILTER BAG
- TREE PROTECTION FENCE
- TEMPORARY CHAIN LINK FENCE
- STORM DRAIN INLET PROTECTION
- TRENCHLESS DIVERSION FENCE
- SOIL STABILIZATION MATTING
- GABION INFLOW PROTECTION
- TEMPORARY ASPHALT

NOTES:
 1. SEE SHEET 18 FOR SEQUENCE OF CONSTRUCTION.
 2. SLIGO CREEK IS A USE I STREAM AND IN-STREAM WORK IS PROHIBITED FROM MARCH 1ST THROUGH JUNE 15TH, INCLUSIVE.
 3. BEFORE STORMDRAIN SYSTEM IS OPERATIONAL, SYSTEM IS TO BE BLOCKED OR CLEANED.
 4. REMOVE SOUTHERN PORTION OF TEMPORARY ASPHALT BERM IN PHASE IV AT STA. 101+30.
 5. STREAM FLOW IS TO BE RESTORED AT THE END OF EACH WORK DAY BY REMOVING APPROXIMATELY 13 LF OF SAND BAGS AT THE STREAM'S LOW POINT FROM BOTH SAND BAG DIKES. IF RAINFALL GREATER THAN 3.2 INCHES IN 24-HOUR PERIOD IS PREDICTED, SAND BAG DIKES ARE TO BE REMOVED IN THEIR ENTIRETY PRIOR TO THE STORM. ANY AREAS DISTURBED WITHIN THE STREAM SHALL BE STABILIZED AT THE END OF EACH DAY PRIOR TO RESTORING STREAM FLOW.



PLAN - PHASE 5
WATER MAIN INSTALLATION AND IN-STREAM WORK

SCALE: 1" = 20'

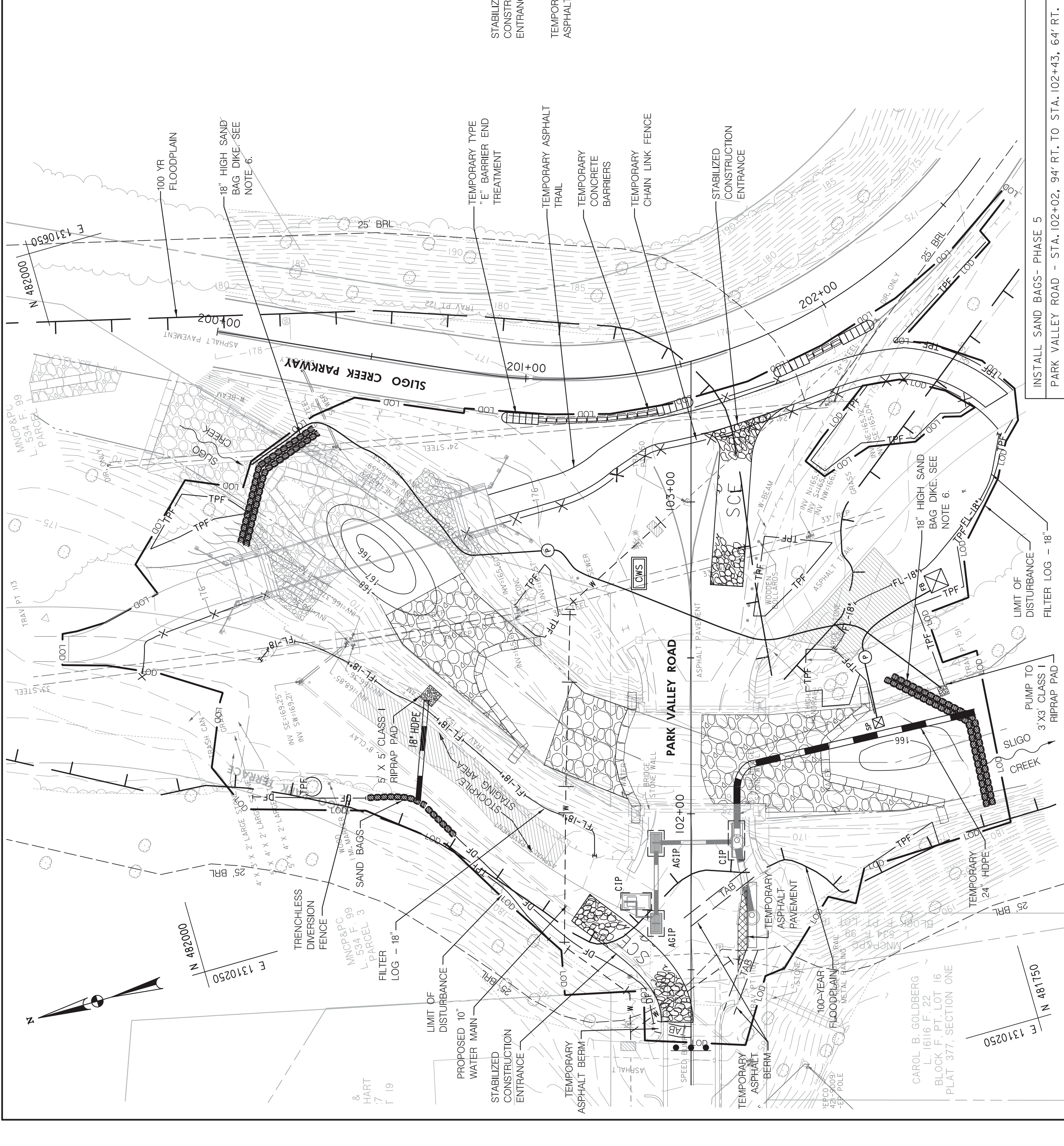
LEGEND

	TEMPORARY CONCRETE BARRIER
	TEMPORARY ASPHALT BERM
	FL-18" SUPER SILT FENCE
	EXIST. TRAFFIC BARRIER
	TYPE III BARRICADE
	TEMPORARY TYPE "E" BARRIER END TREATMENT
	RIPRAP PAD
	STABILIZED CONSTRUCTION ENTRANCE
	ONSITE CONCRETE WASHOUT STRUCTURE
	TEMPORARY ASPHALT
	SAND BAGS
	MULCH MAT
	LIMIT OF DISTURBANCE
	TRENCHLESS DIVERSION FENCE
	SUMP PIT
	FILTER BAG
	TREE PROTECTION FENCE
	TEMPORARY CHAIN LINK FENCE
	STORM DRAIN INLET PROTECTION

NOTES:

- SEE SHEET 18 FOR SEQUENCE OF CONSTRUCTION.
- SLIGO CREEK IS A USE I STREAM AND IN-STREAM WORK IS PROHIBITED FROM MARCH 1ST THROUGH JUNE 15TH, INCLUSIVE.
- CONTRACTOR TO USE ANY AREA WITHIN THE LOD FOR STAGING THAT CONTAINS EXISTING PAVEMENT.
- CONTRACTOR TO USE MULCH MAT DETAIL FOR CONSTRUCTION ACCESS OF PEDESTRIAN BRIDGE ABUTMENTS.
- SEE SHEETS 12 AND 13 FOR STREAM WORK.
- STREAM FLOW IS TO BE RESTORED AT THE END OF EACH WORK DAY BY REMOVING APPROXIMATELY 13 LF OF SAND BAGS AT THE STREAM'S LOW POINT FROM BOTH SAND BAG DIKES. IF RAINFALL GREATER THAN 3.2 INCHES IN 24-HOUR PERIOD IS PREDICTED, SAND BAG DIKES ARE TO BE REMOVED IN THEIR ENTIRETY PRIOR TO THE STORM. ANY AREAS DISTURBED WITHIN THE STREAM SHALL BE STABILIZED AT THE END OF EACH DAY PRIOR TO RESTORING STREAM FLOW.

- INSTALL SAND BAGS - PHASE 5
PARK VALLEY ROAD - STA. 102+02, 94' RT. TO STA. 102+43, 64' RT. 64 LF.
PARK VALLEY ROAD - STA. 102+86, 142 LT. TO STA. 103+24, 121' LT. 46 LF.
- INSTALL FILTER BAG - PHASE 5
PARK VALLEY ROAD - STA. 102+37, 80' RT. TO STA. 102+41, 82' RT. 1 SY
- INSTALL TEMPORARY 24" HDPE - PHASE 5
PARK VALLEY ROAD - STA. 102+03, 15' RT. TO STA. 102+33, 91' RT. 88 LF
- INSTALL SUMP PIT - PHASE 5
PARK VALLEY ROAD - STA. 102+99, 60' RT.



PLAN - PHASE 6
FINAL SITE CONSTRUCTION

SCALE: 1" = 20'

SEAL:

Stormwater Management <i>See 531#1</i>	Administrative Requirements <i>See 531#1</i>
Reviewed: <i>12-8-16</i>	Reviewed: <i>12-8-16</i>
Date: <i>12-8-16</i>	Date: <i>12-8-16</i>
Approved: <i>12-8-16</i>	Approved: <i>12-8-16</i>
Date: <i>12-8-16</i>	Date: <i>12-8-16</i>

NOTE: MDDPS APPROVAL DOES NOT NEGATE THE NEED OF A MDDPS ACCESS PERMIT.

NOTE: APPROVAL OF THIS PLAN BY THE MDDPS DOES NOT CONSTITUTE AN ENDORSEMENT OF THE PROJECT HAS NOT STARTED.

DPS approval of a sediment control/stormwater management plan is for demonstrated compliance with minimum environmental runoff treatment standards and does not constitute an endorsement of any product or manufacturer. It is the contractor's responsibility to ensure that the approved plan is followed as intended.

MONTEGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
David M. Reed
Chief, Design Section

DATE: *12/14/17*

DESIGNED BY: *MMR* Drawn By: *MMR* Checked By: *MSZ/CEN*

DATE: *12/14/17*

DATE: MAY 2017

SCALE: AS SHOWN

Project No. : 501523 SHEET 16 OF 62

STANDARD EROSION AND SEDIMENT CONTROL NOTES

JUNE 2013

- 1. The permittee shall notify the Department of Permitting Services (DPS) forty-eight (48) hours before commencing any land disturbing activity and, unless waived by the Department, shall be required to hold a pre-construction meeting with the Department, permittees, their engineer and an authorized representative of the Department.
- 2. The permittee must obtain inspection and approval by DPS at the following points:
 - A. At the required pre-construction meeting.
 - B. Following installation of sediment control measures and prior to any other land disturbing activity.
 - C. During the installation of a sediment basin or stormwater management structure at the required inspection points. (See Inspection Checklist on plan.) Notification prior to commencing construction is mandatory.
 - D. Prior to removal or modification of any sediment control structures.
 - E. Prior to final acceptance.
- 3. The permittee shall construct all erosion and sediment control measures per the approved permit and construction drawings. Sediment basins, traps, and ditches shall ensure that all runoff from disturbed areas is directed to the sediment control devices, and shall not remove any erosion or sediment control measure without prior permission from the Department.
- 4. The permittee shall protect all points of construction ingress and egress from sediment deposition on public thoroughfares and shall be required to immediately remove any sediment deposited on public thoroughfares as follows:
 - a. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization measures must be completed within:
 - A. Three (3) calendar days at the surface of all perimeter ditches, swales, vertical ditches, perimeter slopes and all slopes steeper than 3:1 horizontal to 1 vertical.
 - B. Seven calendar days as to all other disturbed or graded areas on the project site not under active grading.
 - b. All areas disturbed outside of the perimeter sediment control system must be minimized and stabilized immediately. Maintenance control system must be necessary to ensure continued stabilization.
 - 5. The permittee shall notify the Department of Permitting Services (DPS) 48 hours before commencing any land disturbing activity and, unless waived by the Department, shall be required to hold a pre-construction meeting with the Department, permittees, their engineer and an authorized representative of the Department.
 - 6. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization measures must be completed within:
 - A. Three (3) calendar days at the surface of all perimeter ditches, swales, vertical ditches, perimeter slopes and all slopes steeper than 3:1 horizontal to 1 vertical.
 - B. Seven calendar days as to all other disturbed or graded areas on the project site not under active grading.
 - 7. The permittee shall notify the Department of Permitting Services (DPS) 48 hours before commencing any land disturbing activity and, unless waived by the Department, shall be required to hold a pre-construction meeting with the Department, permittees, their engineer and an authorized representative of the Department.
 - 8. The permittee shall protect all points of construction ingress and egress from sediment deposition on public thoroughfares and shall be required to immediately remove any sediment deposited on public thoroughfares as follows:
 - a. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization measures must be completed within:
 - A. Three (3) calendar days at the surface of all perimeter ditches, swales, vertical ditches, perimeter slopes and all slopes steeper than 3:1 horizontal to 1 vertical.
 - B. Seven calendar days as to all other disturbed or graded areas on the project site not under active grading.
 - b. All areas disturbed outside of the perimeter sediment control system must be minimized and stabilized immediately. Maintenance control system must be necessary to ensure continued stabilization.
 - 9. The site permit, work, materials, approved SC/SM plans, and test reports shall be available at the site for inspection by duly authorized officials of Montgomery County.
 - 10. Surface drainage flows over unstabilized cut and fill slopes shall be controlled by installing mechanical devices to lower the water down slope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time the dikes shall be removed. Mechanical devices must be provided at points of concentrated flow where erosion is likely to occur.
 - 11. Permitted swales or other points of concentrated water flow shall be stabilized within 3 calendar days of establishment with sod or seed with an approved erosion control matting or by other approved stabilization measures.
 - 12. Sediment control devices shall be removed, with permission of the Department, within thirty (30) calendar days following establishment of permanent stabilization. The permittee shall provide adequate storage for management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.
 - 13. No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in low maintenance areas or on residential lots. A slope gradient of up to 1:1 will be permitted in non-maintenance areas provided that those low-maintenance areas are clearly marked and that the permittee shall provide a permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization, unless the permittee shall install a silt/soakback at the bottom of each downslope unless the downslope is connected by a drain line to an acceptable outlet.
 - 14. For finished grading, the permittee shall provide adequate storage for sediment control devices to prevent water from standing on the surface of lawns more than twenty-four (24) hours after the end of a rainfall, except in designated drainage courses and swale flow areas, which may drain as long as forty-eight (48) hours after the end of a rainfall.
 - 15. Sediment traps or basins are not permitted within 20 feet of a building, driveway, sidewalk, or other structure. No building may be constructed within 20 feet of a sediment trap or basin.
 - 16. All ditches in stormwater areas shall have asphalt berms installed at the time of base paving establishment.
 - 17. The sediment control inspector has the option of requiring additional sediment control measures, as deemed necessary.
 - 18. All trap elevations are relative to the outlet elevation, which must be on an existing undisturbed ground.
 - 19. Vegetative stabilization shall be performed in accordance with the Standards and Specifications for Soil Erosion and Sediment Control.
 - 20. Sediment traps/basins shall be cleaned out and restored to the original dimensions when sediment has accumulated to the point of pre-hat or when required by the sediment control inspector.
 - 21. Sediment traps/basins shall be cleaned out and restored to the original dimensions when sediment has accumulated to the point of pre-hat or when required by the sediment control inspector.
 - 22. Sediment removed from traps/basins shall be placed and stabilized in approved areas, but not within a floodplain.
 - 23. All sediment basins and traps must be surrounded with a welded wire safety fence that is at least 4 feet high. The fence shall have a minimum of four (4) feet in height, with a minimum of 14 gauge wire. Safety fence must be maintained in good condition at all times.
 - 24. No excavation in the areas of existing utilities is permitted unless their location has been determined. Call Miss Utility at 1-800-257-7177, 48 hours prior to the start of work.
 - 25. Off-site spill or borrow areas must have prior approval by DPS.
 - 26. Sediment trap/basin dewatering for cleanup or repair may only be done with the DPS inspection permission. The Inspector must approve the dewatering method for each application. The following methods may be considered:
 - A. Pump discharge may be directed to another on-site sediment trap or basin, provided it is of sufficient volume and the pump intake is floated to prevent agitation or suction of deposited sediments.
 - B. The pump intake may utilize a Removable Pumping Station and must discharge into an undisturbed area through a non-erosive structure.

B.4-3. STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND AMENDMENTS CONT.

- 3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - b. The soil material is so shallow that the rooting zone is not sufficiently deep to support vegetation.
 - c. The original soil to be vegetated contains material toxic to plant growth.
 - d. The soil is so acidic that treatment with limestone is not feasible.
 - e. Areas where slopes steeper than 2:1 require special consideration and design.
- 4. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - i. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by the appropriate approval authority.
 - ii. Topsoil must contain a minimum of 10 percent organic matter.
 - iii. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison Ivy, thistle, or others as specified.
 - iv. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison Ivy, thistle, or others as specified.
 - v. Topsoil must be approved by the appropriate approval authority.
- 5. Topsoil Application
 - a. Erosion and sediment control practices must be maintained when applying topsoil.
 - b. Uniformly distribute topsoil in 0.5 to 1.0 inch layers and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed without the need for additional soil preparation and tilling. The maximum depth of topsoil application shall not exceed 8 inches. Other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or a condition which may otherwise be detrimental to proper grading and seedbed preparation.
 - d. Soil Amendments Fertilizer and Lime Specifications)
 - i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed soils. Lime and fertilizer tests shall be conducted by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - ii. Fertilizers must be uniform in composition, free flowing, and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall be applied to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - iii. Lime materials must be ground limestone (hydrated or burnt lime) and shall be applied in such a manner that it will provide a minimum of 16 percent total oxides (calcium oxide plus magnesium oxide), but will pass through a #20 mesh sieve.
 - iv. Lime and fertilizer are to be evenly distributed and incorporated into the subsoil.
 - v. Lime and fertilizer are to be evenly distributed and incorporated into the subsoil.
- 6. Application
 - a. Apply much to all seeded areas immediately after seeding.
 - b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Straw mulch shall be applied in such a manner that it will anchor the soil surface so that the application rate to 2.5 tons per acre.
 - c. Wood cellulose fiber used as mulch must be applied at a net weight of 1000 pounds per acre. Mix the wood cellulose fiber with straw mulch. The wood cellulose fiber must contain a minimum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - 3. Anchoring
 - a. Perform mulch anchoring immediately following application of mulch. A minimum tests by the Department of Permitting Services (DPS) shall be conducted to determine if water erosion areas, depending upon the size of the area and erosion hazard.
 - b. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface to a minimum of 2 inches. This practice is most effective on loamy soils. It is limited to 1000 square feet per application. This practice should follow the contour.
 - ii. Wood cellulose fiber may be used for anchoring straw mulch. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber with water at 100 gallons of water.
 - iii. Synthetic binders such as Acrylic DLR (Agra-Tack, DCA-70, Terraset, Terra Tex II, Terra Tack, AR or other approved equal) may be used. Follow application rates as specified by the manufacturer. Synthetic binders should be applied in such a manner that they will be heavier at the edges where wind catches much. Synthetic binders shall be applied in such a manner that they will be heavier at the edges where wind catches much. Synthetic binders shall be applied in such a manner that they will be heavier at the edges where wind catches much.
 - iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3500 feet long.

B.4-4. STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING CONT.

- 1. Cultivating seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering seedbed must be firm after planting.
- ii. Apply seed in two directions, perpendicular to each other.
- iii. Apply fertilizer and lime to the seedbed.
- iv. Hydrate seed uniformly with hydro-seeder (slurry includes seed and fertilizer).
- 1. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P205, 200 pounds per acre; K2O, 200 pounds per acre.
- ii. Lime use only ground agricultural limestone up to 3 tons per acre.
- iii. Do not use burnt or hydrated lime when hydro-seeding.
- iv. When hydro-seeding do not incorporate seed into the soil.
- B. Mulching
 - i. Mulch Materials (in order of preference)
 - a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not contain any plant parts which may be detrimental to proper grading and seedbed preparation.
 - b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - ii. WCFM is to be dust free or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a continuous mat that will anchor the seed and fertilizer. The mulch material must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison Ivy, thistle, or others as specified.
 - iv. The growth of the grass seedlings.
 - v. WCFM must conform to the following physical requirements:
 - a. Concentration of 16 percent maximum and water holding capacity content of 16 percent minimum.
 - b. Application
 - i. Apply much to all seeded areas immediately after seeding.
 - ii. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Straw mulch shall be applied in such a manner that it will anchor the soil surface so that the application rate to 2.5 tons per acre.
 - iii. Wood cellulose fiber used as mulch must be applied at a net weight of 1000 pounds per acre. Mix the wood cellulose fiber with straw mulch. The wood cellulose fiber must contain a minimum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - 3. Anchoring
 - a. Perform mulch anchoring immediately following application of mulch. A minimum tests by the Department of Permitting Services (DPS) shall be conducted to determine if water erosion areas, depending upon the size of the area and erosion hazard.
 - b. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface to a minimum of 2 inches. This practice is most effective on loamy soils. It is limited to 1000 square feet per application. This practice should follow the contour.
 - ii. Wood cellulose fiber may be used for anchoring straw mulch. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber with water at 100 gallons of water.
 - iii. Synthetic binders such as Acrylic DLR (Agra-Tack, DCA-70, Terraset, Terra Tex II, Terra Tack, AR or other approved equal) may be used. Follow application rates as specified by the manufacturer. Synthetic binders should be applied in such a manner that they will be heavier at the edges where wind catches much. Synthetic binders shall be applied in such a manner that they will be heavier at the edges where wind catches much.
 - iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3500 feet long.

B.4-5. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-6. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-7. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-8. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-9. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-10. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-11. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-12. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-13. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - c. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance. Kentucky Bluegrass is the best genotype of turfgrass. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rates: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - d. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive maintenance. Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Bluegrass Seeding Rate 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

B.4-14. STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

- 1. Purpose: To stabilize disturbed soils with permanent vegetation.
- 2. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.
- 3. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.
- 4. Criteria:
 - A. Seed Mixtures
 - i. General Use
 - a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in the Plant Hardiness Zone.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or other sites having disturbed areas over 5 acres, use and show the rates recommended by the USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - d. For areas receiving the maintenance, apply rates from fertilizer (46-0-0), 3.5 pounds per 1000 square feet (use in excess of 1000 square feet) in addition to the soil amendments shown in the Permanent Seeding Summary.
 - ii. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks/playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mix

GENERAL NOTES

- SH4 SPECIFICATIONS DATED JULY, 2008
- REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2012 AND ALL INTERIMS.
- CONCRETE: LOAD AND RESISTANCE FACTOR DESIGN METHOD THE DESIGN COMPRESSIVE STRENGTH SHALL BE:
 - f_c = 3000 PSI FOR ELEMENTS USING MIX NO. 3 CONCRETE AND
 - f_c = 4000 PSI FOR ELEMENTS USING MIX NO. 6 CONCRETE
- PRESTRESSED CONCRETE DESIGN: LOAD AND RESISTANCE FACTOR DESIGN METHOD. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE f_c = 7000 PSI. THE MINIMUM COMPRESSIVE STRENGTH AT TRANSFER OF PRESTRESS SHALL BE f_{ci} = 5950 PSI. REINFORCING STEEL DESIGN: f_y = 60,000 PSI.

LOADING:
CONCRETE:

EXCEPT WHERE NOTED OTHERWISE ALL CONCRETE FOR PARAPETS AT ABUTMENT WING WALLS AND FOR ENTIRE SUPERSTRUCTURE SHALL BE MIX NO. 6 (4500 PSI). ALL OTHER STRUCTURE CONCRETE EXCEPT PRESTRESSED SLABS AND OVERLAY SHALL BE MIX NO. 3 (3500 PSI).

ALL CONCRETE FOR PRESTRESSED CONCRETE SLABS SHALL BE SELF CONSOLIDATING CONCRETE WITH A 28 DAY COMPRESSIVE STRENGTH OF f_c = 8,000 PSI.

ALL CONCRETE FOR SUPERSTRUCTURE OVERLAY SHALL BE MIX NO. 8 CONCRETE (4000 PSI).

REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ONLY GRADE 60 CAN BE USED ON THIS PROJECT.

ALL SPLICES NOT SHOWN SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED. WITH THE EXCEPTION OF BARS AT THE BOTTOM AND SIDES OF ALL FOOTINGS WHICH SHALL HAVE 3" MINIMUM COVER.

MINIMUM COVER FOR ANY BAR IN PRESTRESSED CONCRETE SLABS SHALL BE 3" UNLESS OTHERWISE NOTED.

FOR TIES AND STIRRUPS: STANDARD ACI BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL ACI BENDING TOLERANCES.

ALL REINFORCING STEEL IN ENTIRE SUPERSTRUCTURE INCLUDING OVERLAY, CURB, SIDEWALK, CURB AND GUTTER, PARAPETS, ARCH BEAMS, END DIAPHRAGMS AT ENDS OF SLAB, ALL NON-PRESTENSIONING STEEL IN PRESTRESSED CONCRETE SLAB BEAMS, PARAPET PORTION OF WING WALLS, AND WING WALL BALUSTRADES, TOP PORTION OF ABUTMENT BALUSTRADES, BRACKETS FOR BALUSTRADE STONE CAPS, ABUTMENT (ROADWAY) BRIDGE BEAM SEAT AREAS AND ARCH BEAM SEAT AREAS, SHALL BE EPOXY COATED.

STRUCTURAL STEEL SHALL CONFORM TO A-709, GRADE 50. GALVANIZED ACCORDING TO A-515.

PRETENSIONING STEEL SHALL CONSIST OF 1/2" DIAMETER 7-WIRE BRIGHT LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF M. 203 GRADE 270. EACH 1/2" STRAND SHALL BE PRETENSIONED TO 31,000 LB. (0.75 f_{pu}). HAVE AN ULTIMATE STRENGTH OF 41,300 LB./sq. IN AND A YIELD STRENGTH OF 37,200 LB. (0.90 f_{py}).

ALL DIMENSIONS AFFECTED BY THE GEOMETRICS AND/OR LOCATION OF THE EXISTING STRUCTURE(S) SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR BEFORE ANY CONSTRUCTION IS DONE AND BEFORE ANY MATERIAL IS ORDERED OR FABRICATED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE DRAWINGS WITH ALL FIELD DIMENSIONS REQUIRED TO CHECK DETAIL DRAWINGS. THE CONTRACTOR SHALL MARK SHOWN WITH DIMENSIONS AND STATIONS DO NOT INDICATE ANY DEGREE OF PRECISION THESE MARKS (+) INDICATE EXISTING DIMENSIONS AND STATIONS THAT MAY VARY AND DO REQUIRE FIELD VERIFICATION BY THE CONTRACTOR.

EXISTING STRUCTURE(S) SHOWN IN LONG DASHED LINES AND SHADING. EXISTING STRUCTURE(S) SHALL BE REMOVED IN ITS ENTIRETY.

THERE ARE RESTRICTIONS ON PLACING EQUIPMENT ON STRUCTURE AND STORING MATERIALS ON OR AGAINST STRUCTURE ELEMENTS. THE LIMITATIONS BASICALLY RELATE TO LOADS THAT ARE BEYOND MARYLAND'S LEGAL VEHICLE AND/OR POSTED LOAD LIMITS (WHERE APPLICABLE) AND MATERIALS STOCKPILED ON OR AGAINST STRUCTURE OR STRUCTURE ELEMENTS FOR DETAILS OF SUCH RESTRICTIONS SEE SECTION TO 6.14 TITLED "RESTRICTIONS FOR PLACING AND USING EQUIPMENT ON STRUCTURE OR STORING MATERIALS ON OR AGAINST STRUCTURES" IN THE CONTRACT DOCUMENTS. IN ORDER TO COMPLY WITH THIS ARTICLE, THE CONTRACTOR SHALL READ THIS SECTION PRIOR TO COMMENCING ANY WORK ON STRUCTURE IN THIS CONTRACT.

SPECIFICATIONS:

REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ONLY GRADE 60 CAN BE USED ON THIS PROJECT.

LOADING:
CONCRETE:

EXCEPT WHERE NOTED OTHERWISE ALL CONCRETE FOR PARAPETS AT ABUTMENT WING WALLS AND FOR ENTIRE SUPERSTRUCTURE SHALL BE MIX NO. 6 (4500 PSI). ALL OTHER STRUCTURE CONCRETE EXCEPT PRESTRESSED SLABS AND OVERLAY SHALL BE MIX NO. 3 (3500 PSI).

REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ONLY GRADE 60 CAN BE USED ON THIS PROJECT.

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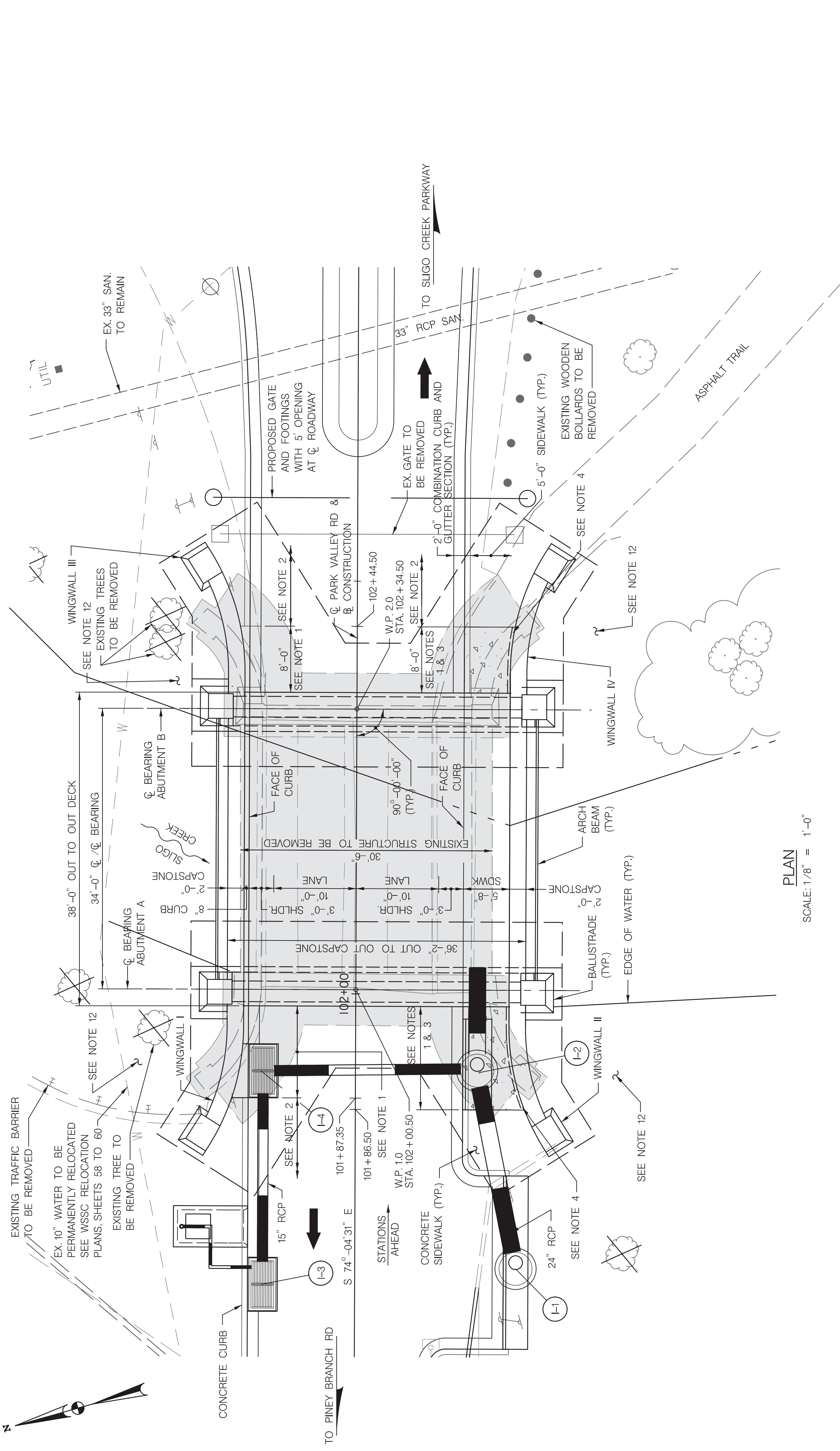
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PRETENSIONING STEEL SHALL CONSIST OF 1/2" DIAMETER 7-WIRE BRIGHT LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF M. 203 GRADE 270. EACH 1/2" STRAND SHALL BE PRETENSIONED TO 31,000 LB. (0.75 f_{pu}). HAVE AN ULTIMATE STRENGTH OF 41,300 LB./sq. IN AND A YIELD STRENGTH OF 37,200 LB. (0.90 f_{py}).

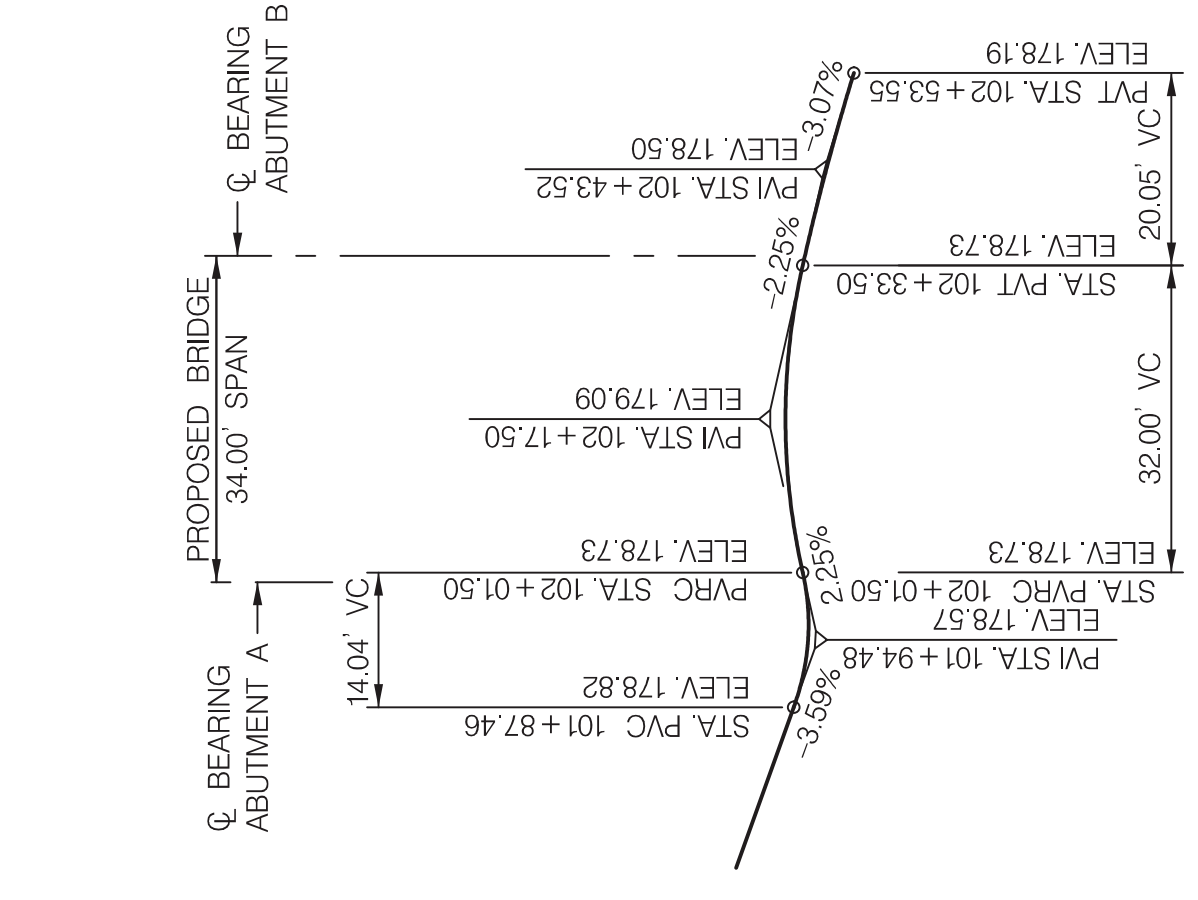
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EXISTING STRUCTURE(S) SHOWN IN LONG DASHED LINES AND SHADING. EXISTING STRUCTURE(S) SHALL BE REMOVED IN ITS ENTIRETY.

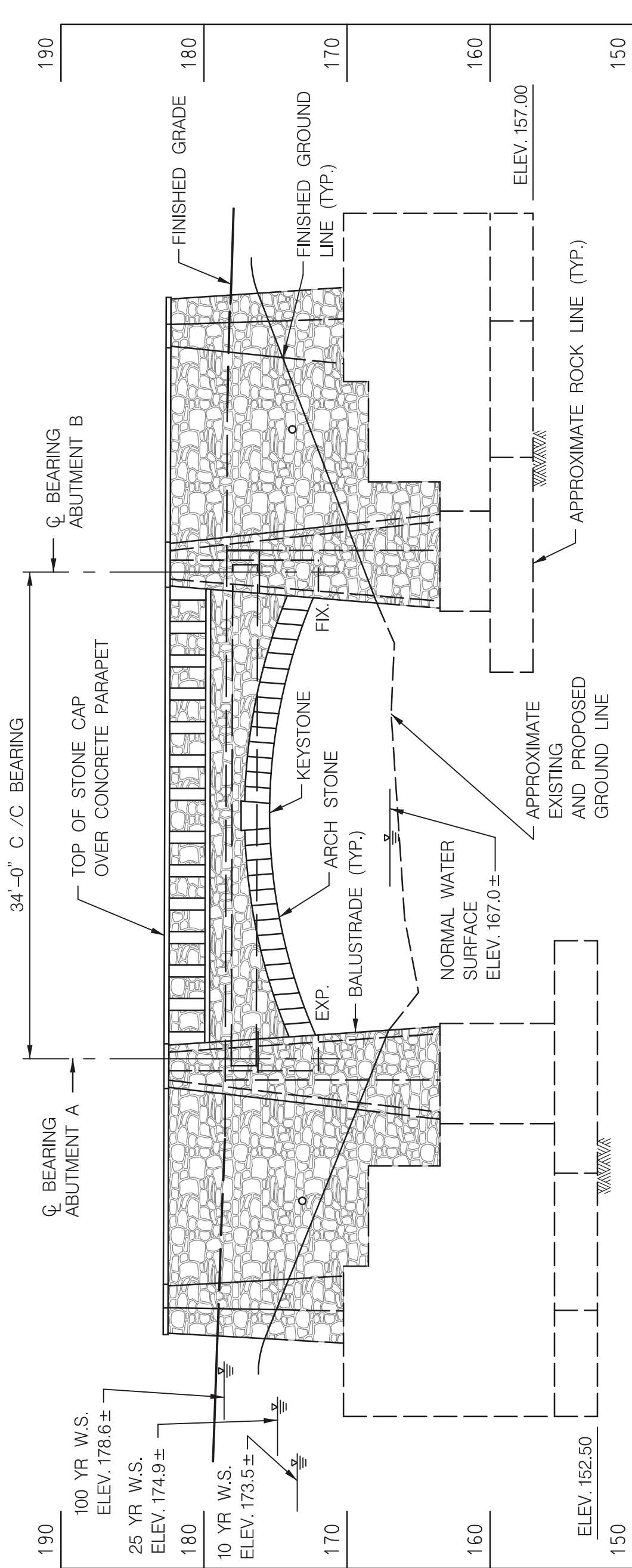
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PLAN
SCALE: 1/8" = 1'-0"



BRIDGE PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



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

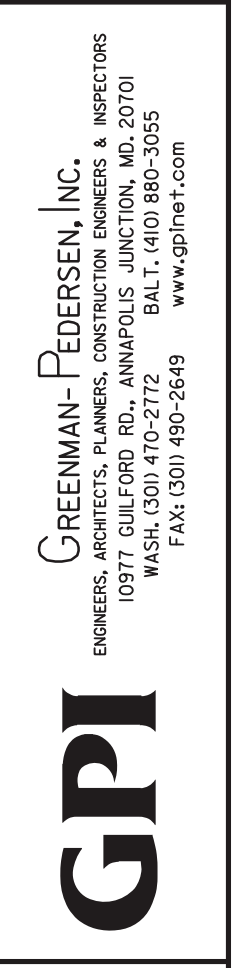
- NOTES:**
- COMBINATION CURB AND GUTTER SECTION. SEE DETAIL SHEET NO. 3. POUR AROUND PROPOSED INLETS I-2 & I-4 AND PLACE 1/2" EXPANSION JOINTS.
 - COMBINATION CURB AND GUTTER SECTION. SEE DETAIL SHEET NO. 2. TRANSITION CURB HEIGHT FROM 8" TO 6" AND TRANSITION SIDEWALK SLOPE FROM 1.5% TO 2% IN 4 FEET.
 - FOR SIDEWALK DETAILS AT WING WALLS SEE WING WALL DETAILS SHEET NO. 31. POUR AROUND PROPOSED INLET AND PLACE A 1/2" EXPANSION JOINT. SIDEWALK WIDTH WILL VARY AND SIDEWALK WILL BE SUPPORTED ON CONCRETE WALL LEDGE, MAINTAIN 1.5% SIDEWALK SLOPE TO MATCH SIDEWALK ON BRIDGE.
 - FOR SUPERSTRUCTURE DETAILS. SEE SHEETS NO. 24 - 31.
 - FOR ROADWAY PROFILE. SEE SHEET NO. 32 - 39.
 - FOR ARCHITECTURAL DETAILS. SEE SHEETS NO. 44 AND 45.
 - THE LOCATION OF EXISTING AND PROPOSED UTILITIES SHOWN ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS.
 - FOR DETAILS OF APPROACH ROADWAYS. SEE SHEET NO. 5.
 - FOR DISPOSITION OF EXISTING SIGNS. SEE SHEET NO. 21.
 - FOR DRAINAGE & STORMWATER MANAGEMENT DETAILS. SEE SHEETS NO. 10 AND 11.
 - EXISTING RIPRAP AT STREAM BANKS SHALL BE REMOVED AS NEEDED AND REPLACED AFTER CONSTRUCTION.
 - STREAM STABILIZATION MEASURES NOT SHOWN. SEE SHEETS NOS. 12 AND 13 FOR DETAILS.

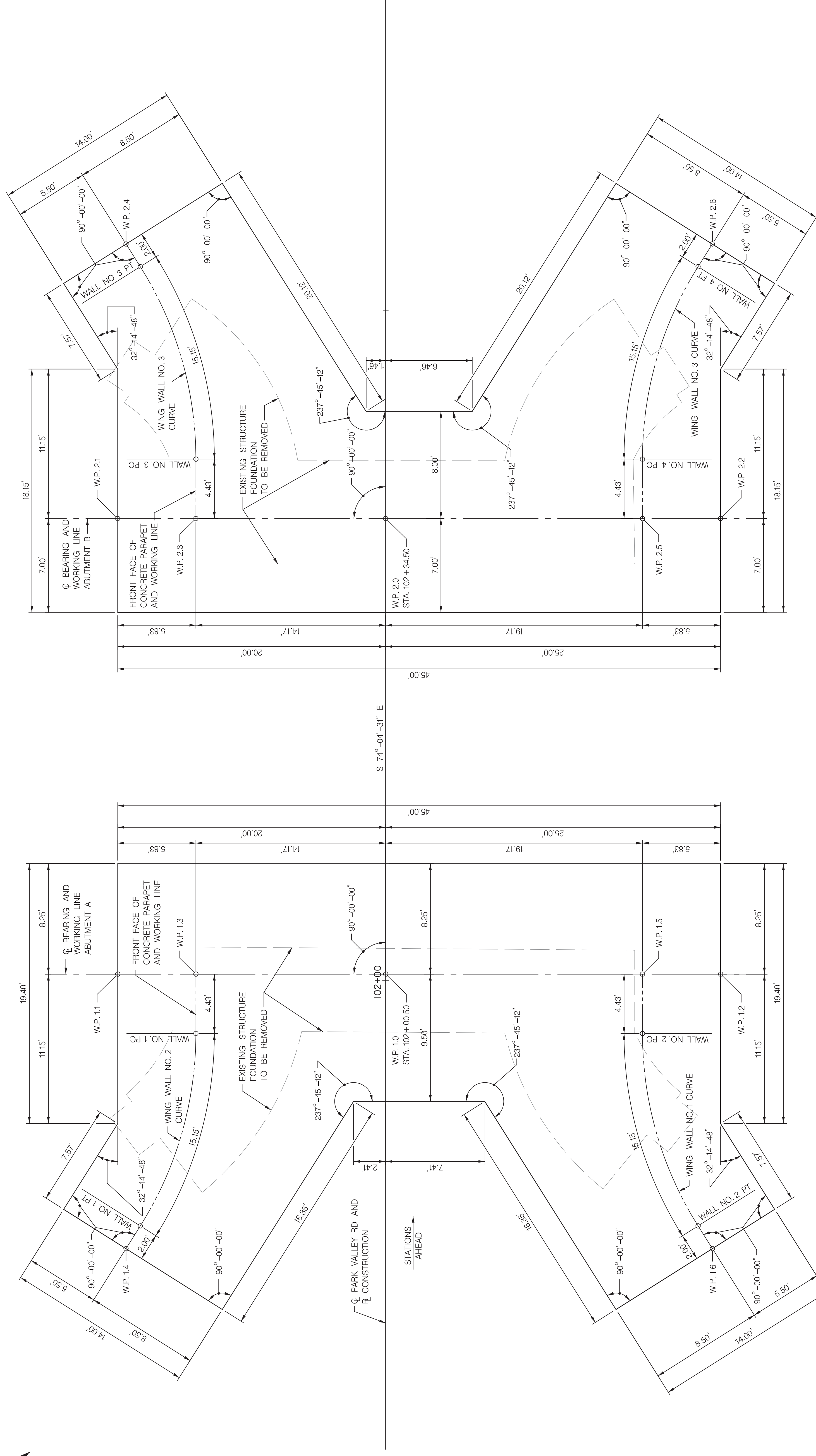
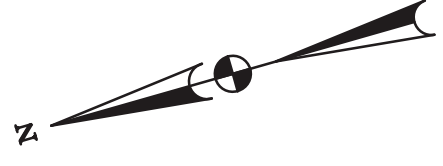
GENERAL PLAN AND ELEVATION	
MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND	DATE: 12/14/17
RECOMMENDED FOR APPROVAL Chief, Design Section <i>David M. Reid</i>	DATE: 12/14/2017
Chief, Division of Transportation Engineering	DATE: MAY 2017
Designed By: <u> </u> Drawn By: <u> </u> Checked By: <u> </u>	Project No.: 501523 SHEET 22 OF 62

NO.	REVISION	DATE	BY

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7271

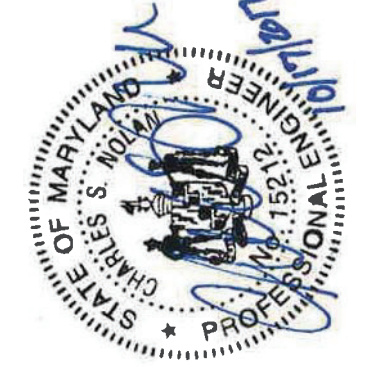




GEOMETRIC AND FOOTING LAYOUT
SCALE: 1/4" = 1'-0"

WORKING POINT COORDINATES		
POINT	NORTHING	EASTING
W.P. 1.0	481.844.0235	1,310.404.8723
W.P. 1.1	481.863.2560	1,310.410.3598
W.P. 1.2	481.819.9829	1,310.398.0129
W.P. 1.3	481.857.6455	1,310.408.7593
W.P. 1.4	481.868.2845	1,310.390.4916
W.P. 1.5	481.825.5924	1,310.399.6135
W.P. 1.6	481.826.1933	1,310.378.4821
W.P. 2.0	481.834.6948	1,310.437.5675
W.P. 2.1	481.853.9272	1,310.435.0550
W.P. 2.3	481.848.3177	1,310.441.4545
W.P. 2.4	481.847.7158	1,310.462.5848
W.P. 2.5	481.816.2637	1,310.432.3086
W.P. 2.6	481.805.6237	1,310.450.5742

CURVE DATA FOR WORKING LINES		
WING WALL	STATION & OFFSET	RADIUS (FT.)
I	PC NO. 1 - STA. 101+96.07, 14.17' LT.	26.92'
I	PT NO. 1 - STA. 101+81.71, 18.32' LT.	26.92'
II	PC NO. 2 - STA. 101+96.07, 19.17' RT.	26.92'
II	PT NO. 2 - STA. 101+81.71, 23.32' RT.	26.92'
III	PC NO. 3 - STA. 102+53.29, 14.17' LT.	26.92'
III	PT NO. 3 - STA. 102+53.29, 18.32' LT.	26.92'
IV	PC NO. 4 - STA. 102+53.29, 23.32' RT.	26.92'
IV	PT NO. 4 - STA. 102+53.29, 23.32' RT.	26.92'



GPI
GREENMAN-PEDERSEN, INC.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
10877 CULFORD RD., ANNAPOLIS JUNCTION, MD. 20710
WASHDCO 474772 BALTO 680-3055
FAX 410-695-5248 www.gpiinc.com

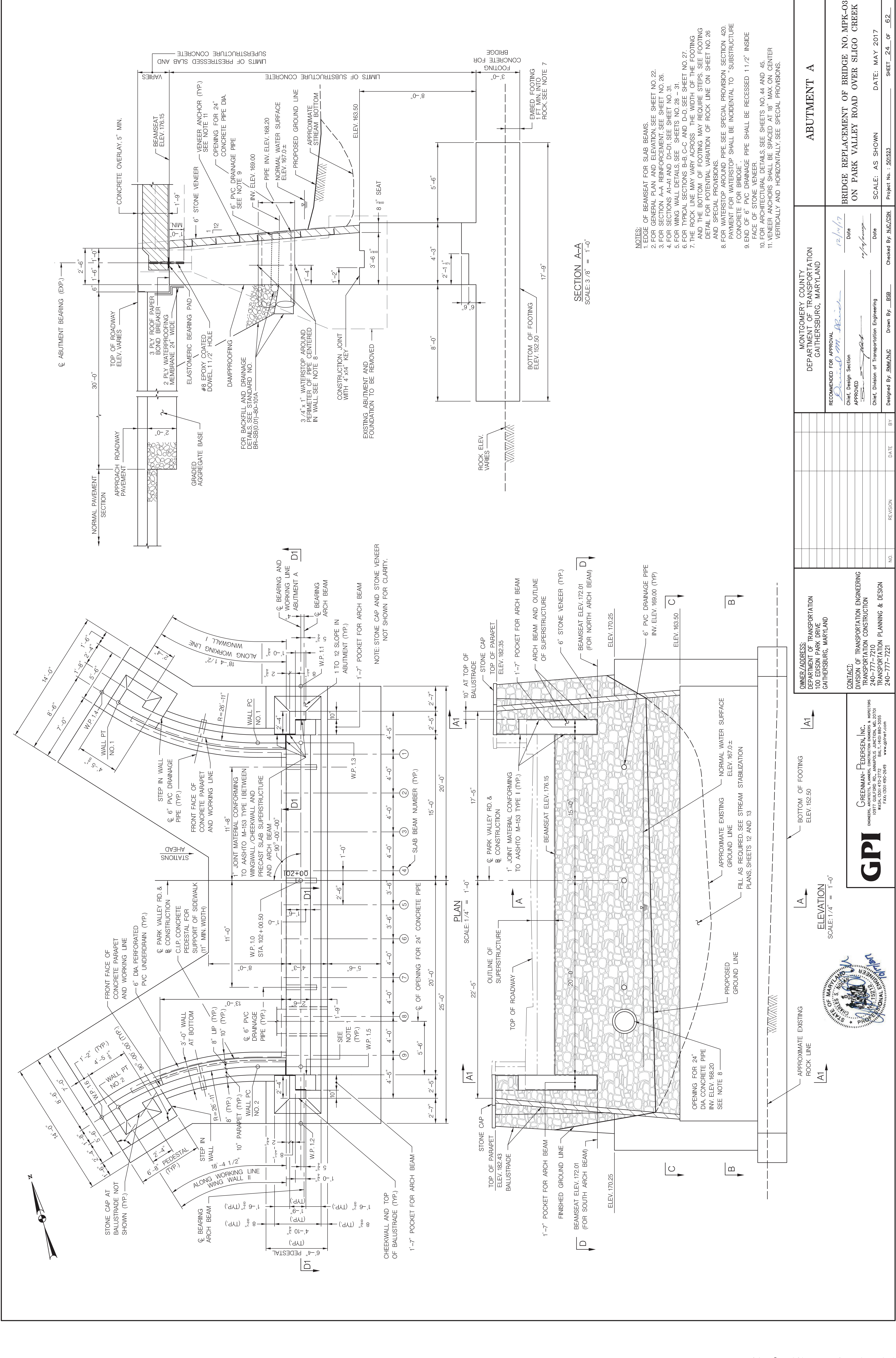
OWNER/ADDRESS:
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

RECOMMENDED FOR APPROVAL
Date: 12/14/17
Chief, Design Section
APPROVED: *David M. Reid*

Checked By: *BSB*
Drawn By: *BSB*
DATE: _____
REVISION: _____
BY: _____

GEOMETRIC AND FOOTING LAYOUT
BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK
SCALE: AS SHOWN DATE: MAY 2017
Project No. : 501523 SHEET 23 OF 62



- NOTES:**
1. EDGE OF BEAMSEAT FOR SLAB BEAMS.
 2. FOR GENERAL PLAN AND ELEVATION, SEE SHEET NO. 22.
 3. FOR SECTION A-A REINFORCEMENT, SEE SHEET NO. 26.
 4. FOR SECTIONS A1-A1 AND D1-D1, SEE SHEET NO. 31.
 5. FOR WING WALL DETAILS, SEE SHEETS NO. 28 - 31.
 6. FOR TYPICAL SECTIONS B-B, C-C AND D-D, SEE SHEET NO. 27.
 7. THE ROCK LINE MAY VARY ACROSS THE WIDTH OF THE FOOTING AND THE BOTTOM OF FOOTING MAY REQUIRE STEPS. SEE FOOTING DETAIL FOR POTENTIAL VARIATION OF ROCK LINE ON SHEET NO. 26 AND SPECIAL PROVISIONS.
 8. FOR WATERSTOP AROUND PIPE SEE SPECIAL PROVISION SECTION 420. PAYMENT FOR WATERSTOP SHALL BE INCIDENTAL TO "SUBSTRUCTURE CONCRETE FOR BRIDGE".
 9. END OF 6" PVC DRAINAGE PIPE SHALL BE RECESSED 1 1/2" INSIDE FACE OF STONE VENEER.
 10. FOR ARCHITECTURAL DETAILS, SEE SHEETS NO. 44 AND 45.
 11. VENEER ANCHORS SHALL BE SPACED AT 18" MAX. ON CENTER VERTICALLY AND HORIZONTALLY. SEE SPECIAL PROVISIONS.

SECTION A-A
SCALE: 3/8" = 1'-0"

ABUTMENT A	
MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND	RECOMMENDED FOR APPROVAL <i>David M. Reid</i> Chief, Design Section APPROVED
DATE: 12/14/17	DATE: 12/14/17
Checked By: NJC/ZSN	Checked By: BSB
Project No. : 501523	SHEET 24 OF 62

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

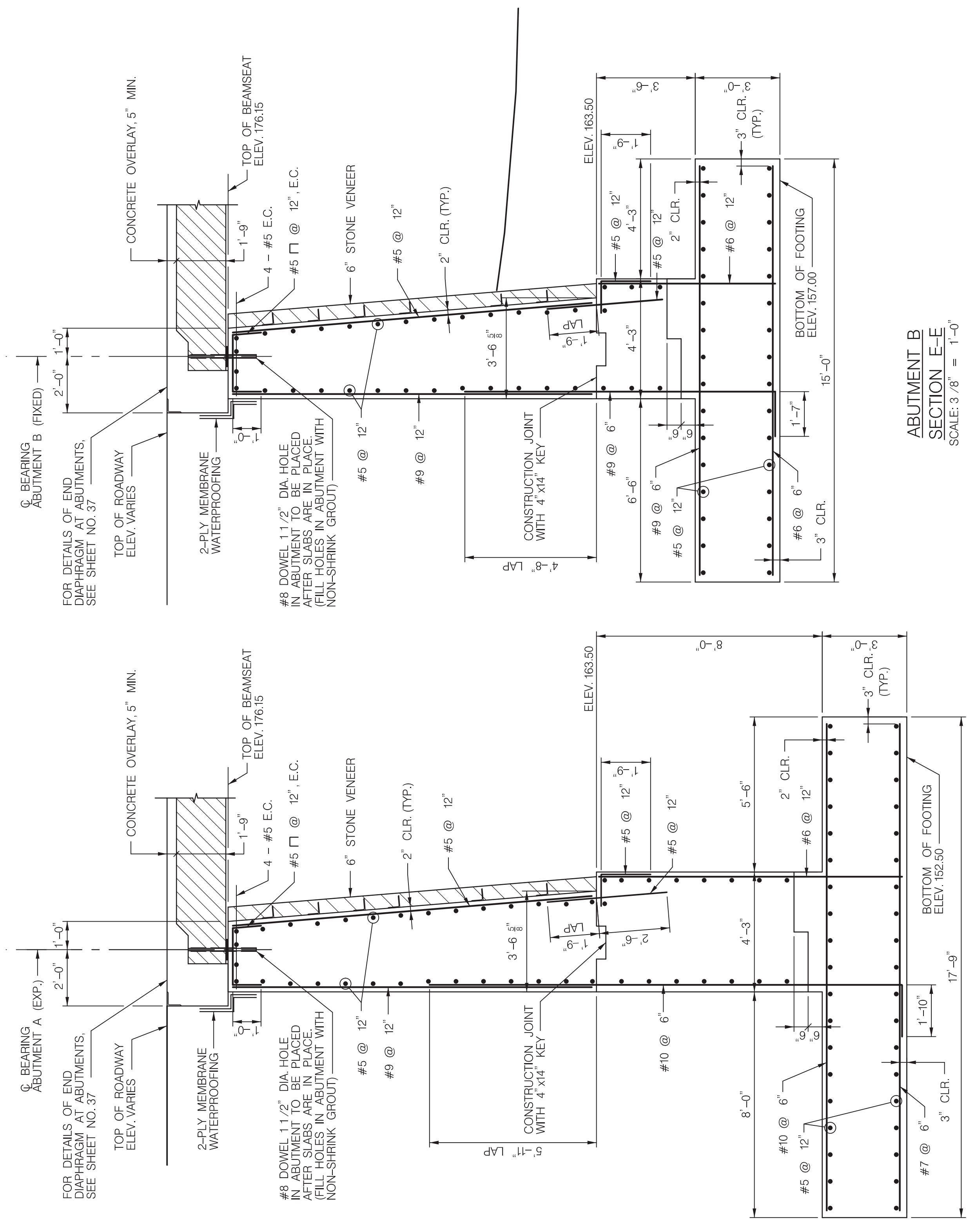
CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
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WASH DC OFFICE: 1527 WOODMONT AVE., BALTIMORE, MD 21208
TEL: 410-890-5055
www.gpiinc.com

ELEVATION
SCALE: 1/4" = 1'-0"

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

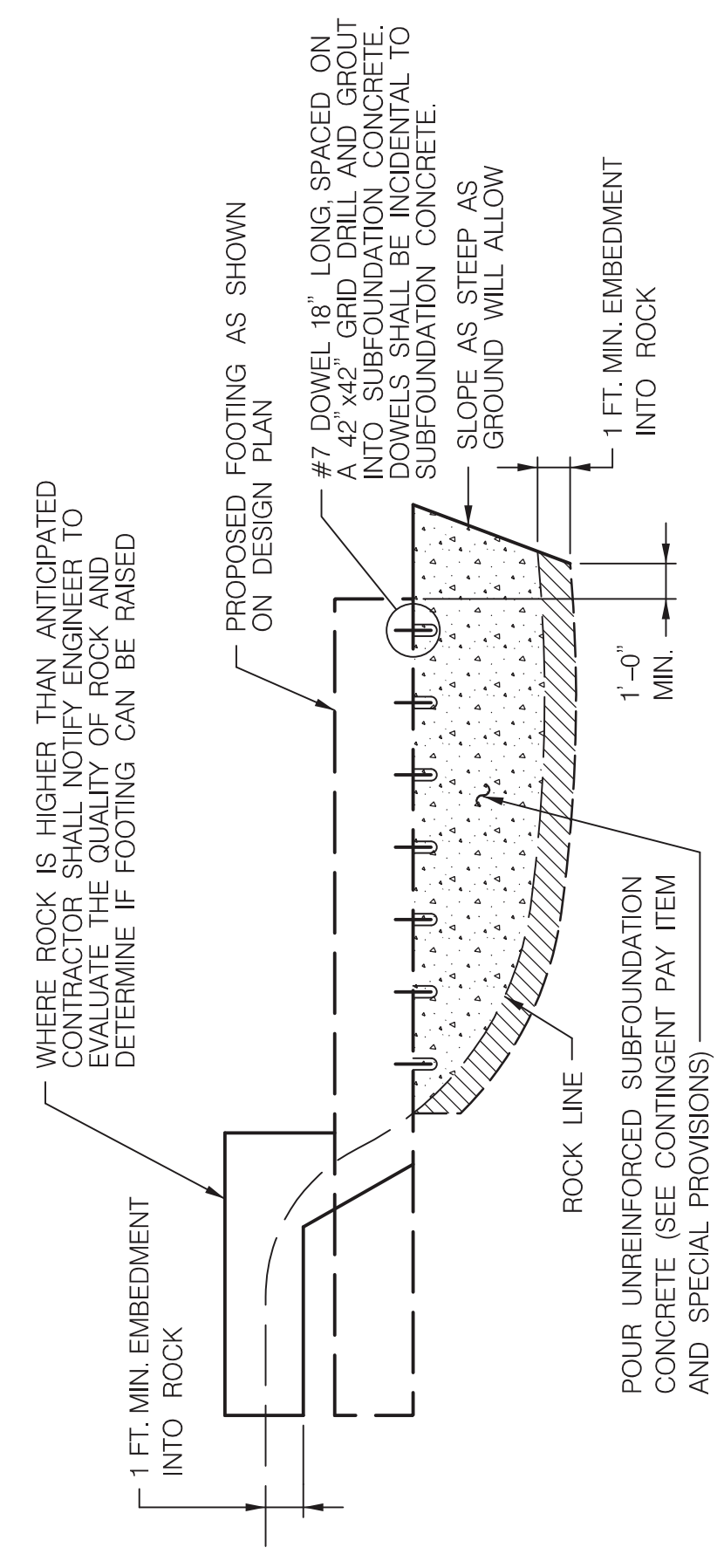




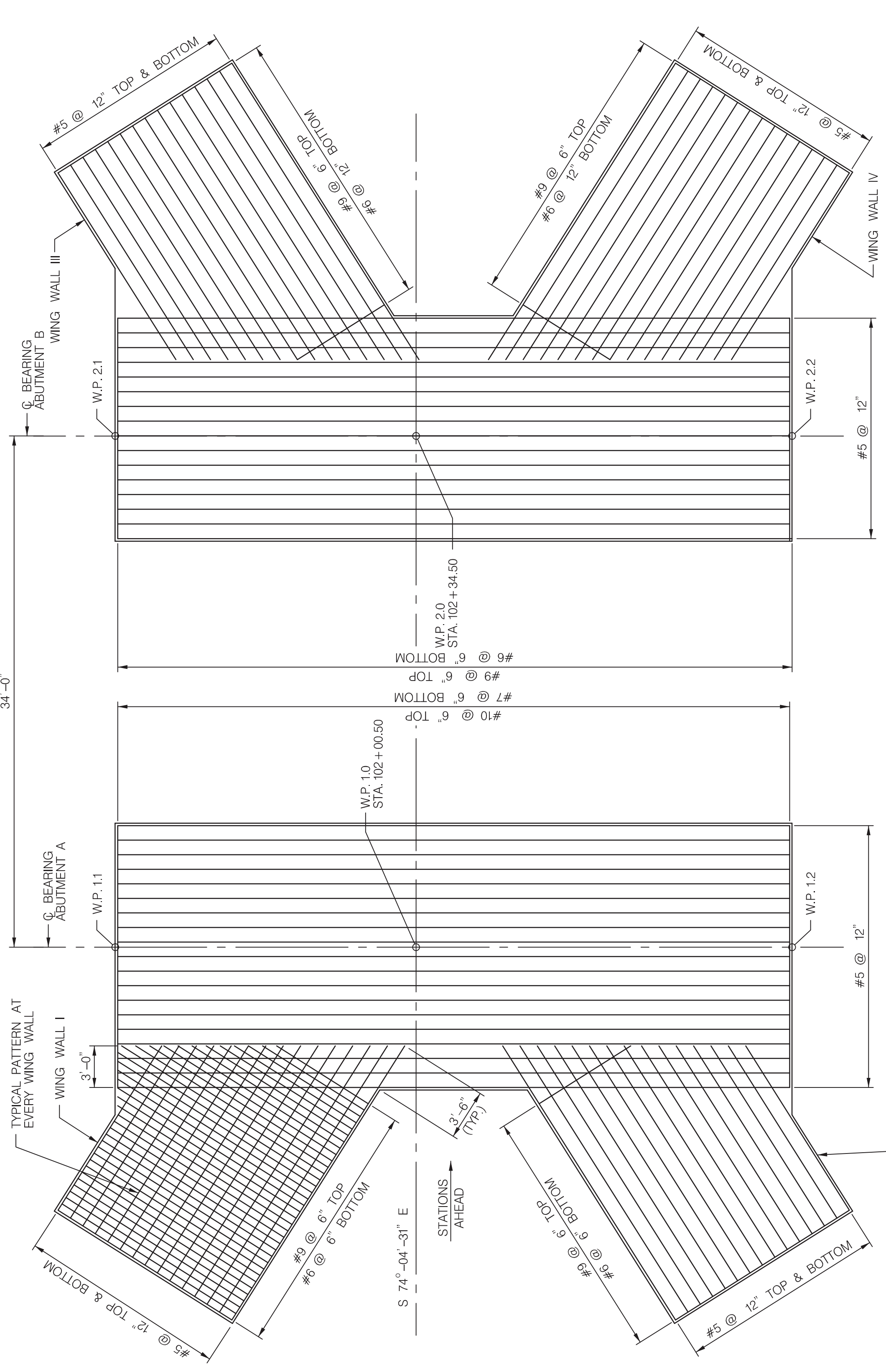
ABUTMENT B
SECTION E-E
SCALE: 3/8" = 1'-0"

ABUTMENT A
SECTION A-A
SCALE: 3/8" = 1'-0"

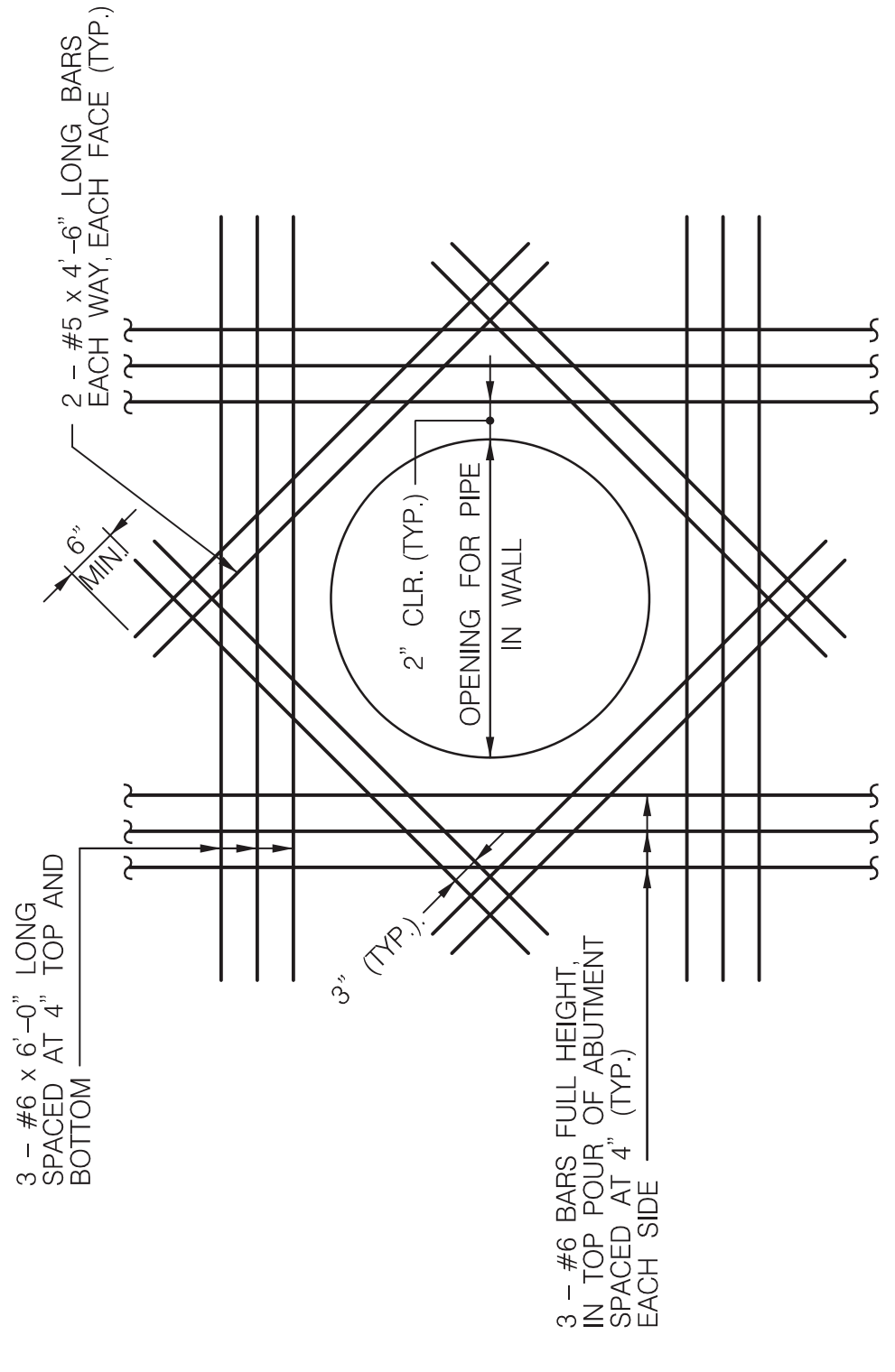
LEGEND:
E.C. - EPOXY COATED



FOOTING DETAIL FOR POTENTIAL VARIATION OF ROCK LINE
NOT TO SCALE



TYPICAL FOOTING REINFORCEMENT LAYOUT
SCALE: 3/16" = 1'-0"



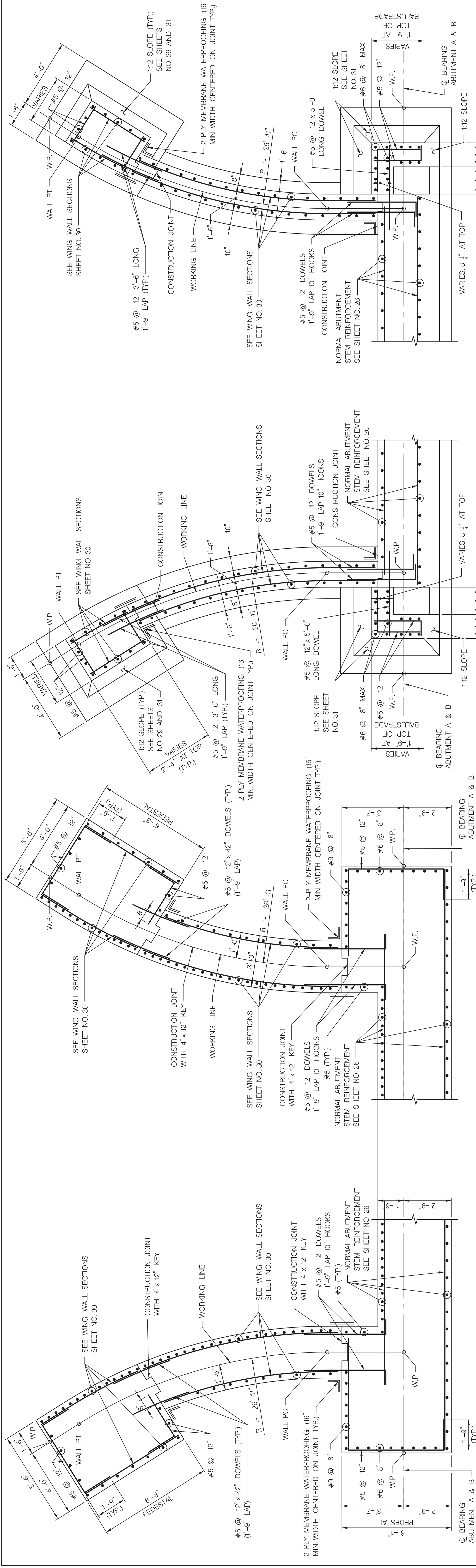
ADDITIONAL REINFORCEMENT AT OPENING FOR 24" PIPE
ABUTMENT A
NOT TO SCALE

- NOTES:
1. FOR GENERAL PLAN AND ELEVATION SEE SHEET NO. 22.
 2. FOR ABUTMENTS A AND B PLANS AND ELEVATIONS, SEE SHEETS NO. 24 AND 25.
 3. FOR WING WALL DETAILS SEE SHEETS NO. 29-31.
 4. FOR SUPERSTRUCTURE DETAILS SEE SHEETS NO. 37 AND 38.
 5. FOR LOCATIONS OF ABUTMENT SECTION CUTS, SEE SHEETS NO. 24 AND 25.

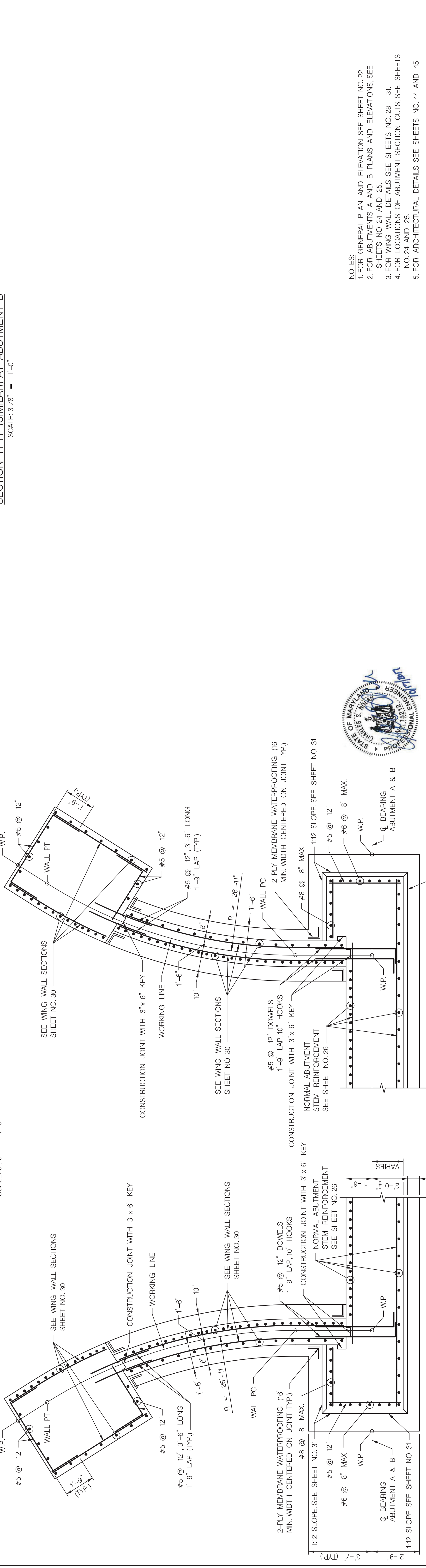
OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND		CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7271	
MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		RECOMMENDED FOR APPROVAL <i>David M. Reid</i> Chief, Design Section 12/14/17 Date	
ABUTMENT A AND B REINFORCEMENT		Checked By: <i>NJC/CSN</i> Date	
BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK		Scale: AS SHOWN DATE: MAY 2017	
Project No.: 501523		SHEET 26 OF 62	



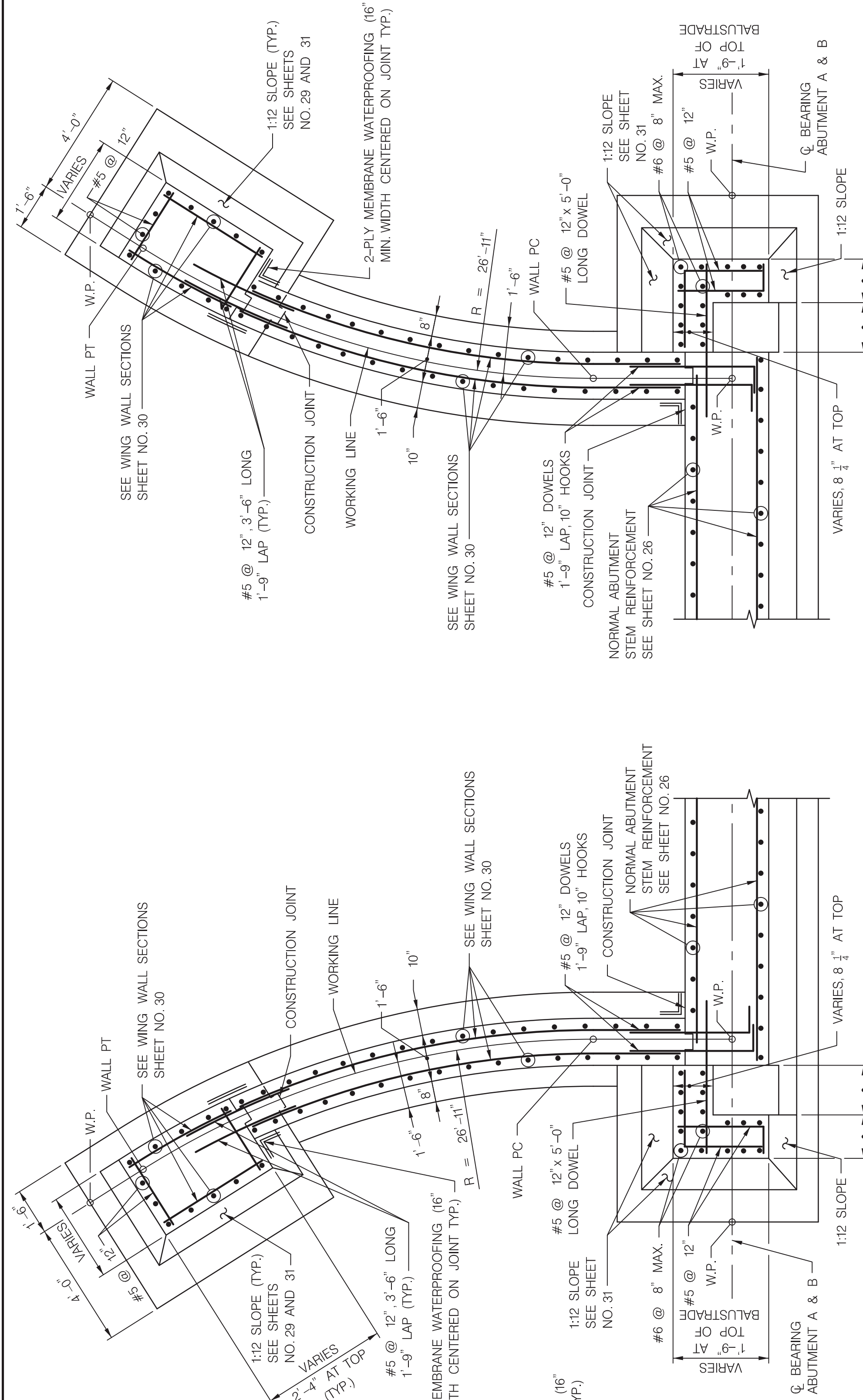
FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



SECTION B-B (SHOWN) AT ABUTMENT A
SECTION F-F (SIMILAR) AT ABUTMENT B
SCALE: 3/8" = 1'-0"



SECTION C-C (SHOWN) AT ABUTMENT A
SECTION G-G (SIMILAR) AT ABUTMENT B
SCALE: 3/8" = 1'-0"



SECTION D-D (SHOWN) AT ABUTMENT A
SECTION H-H (SIMILAR) AT ABUTMENT B
SCALE: 3/8" = 1'-0"

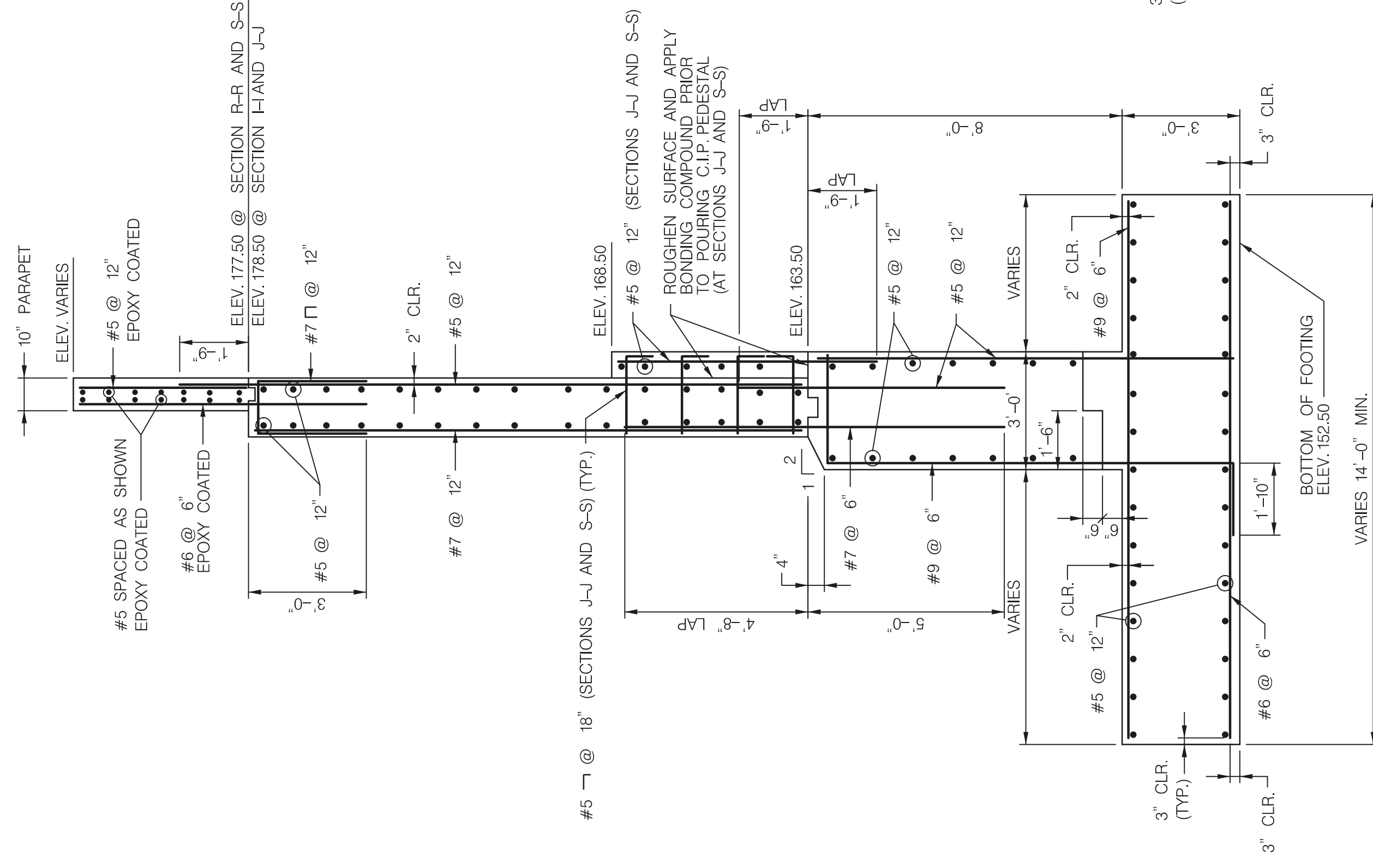


- NOTES:
1. FOR GENERAL PLAN AND ELEVATION, SEE SHEET NO. 22.
 2. FOR ABUTMENTS A AND B PLANS AND ELEVATIONS, SEE SHEETS NO. 24 AND 25.
 3. FOR WING WALL DETAILS, SEE SHEETS NO. 28 - 31.
 4. FOR LOCATIONS OF ABUTMENT SECTION CUTS, SEE SHEETS NO. 24 AND 25.
 5. FOR ARCHITECTURAL DETAILS, SEE SHEETS NO. 44 AND 45.

<p>OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND</p>		<p>MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND</p>		<p>ABUTMENT DETAILS 1</p>	
<p>CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7221</p>		<p>RECOMMENDED FOR APPROVAL <i>Daniel M. Reid</i> Chief, Design Section APPROVED</p>		<p>BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK</p>	
NO.	REVISION	DATE	BY	Checked By: <i>NJC/CSN</i>	Project No.: 501523
				Drawn By: <i>BBS</i>	SHEET 27 OF 62

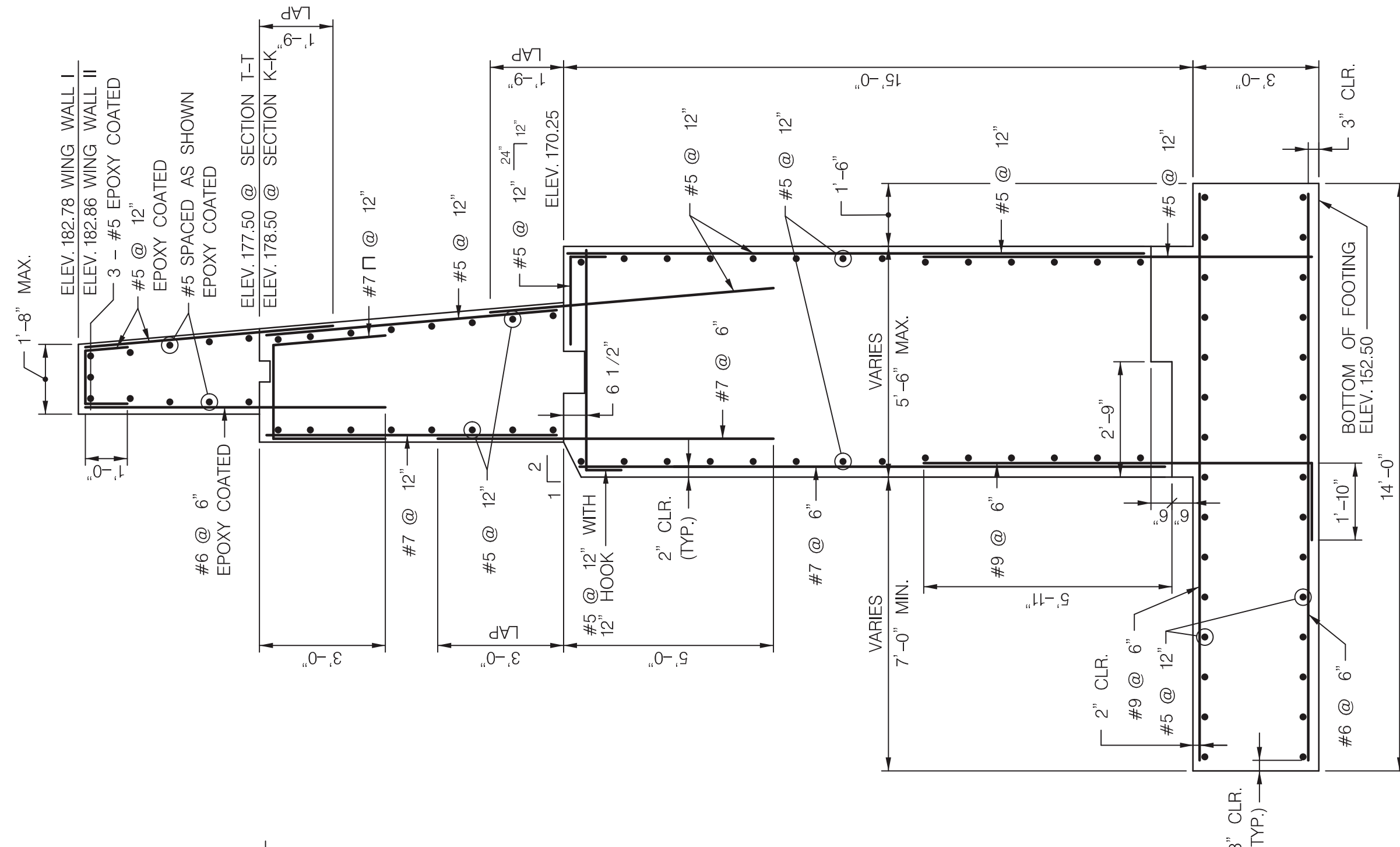


FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



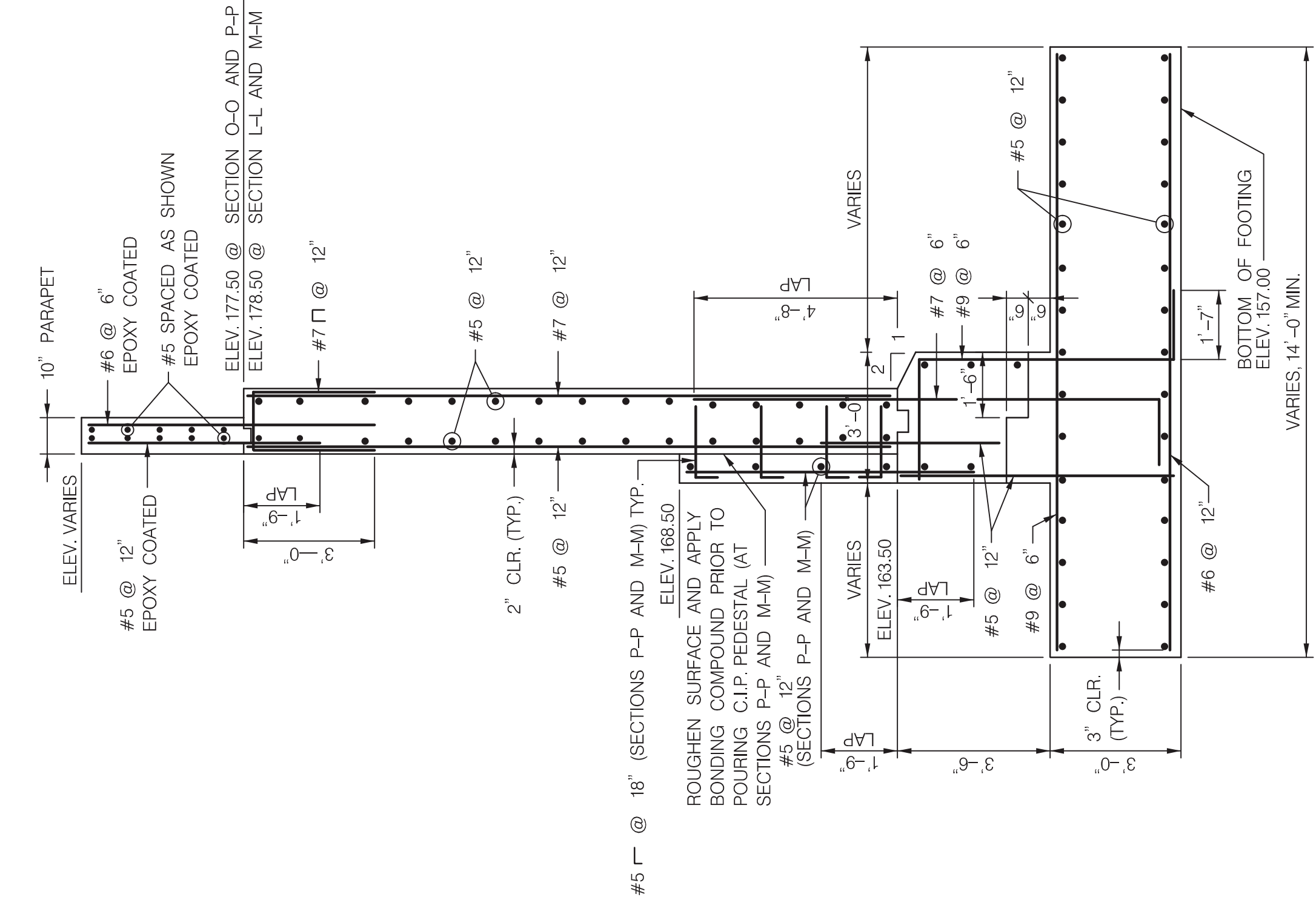
SECTIONS R-R (SHOWN) AND S-S (SIMILAR) AT WING WALL I
SECTIONS I-I (SHOWN) AND J-J (SIMILAR) AT WING WALL II

SCALE: 3/8" = 1'-0"



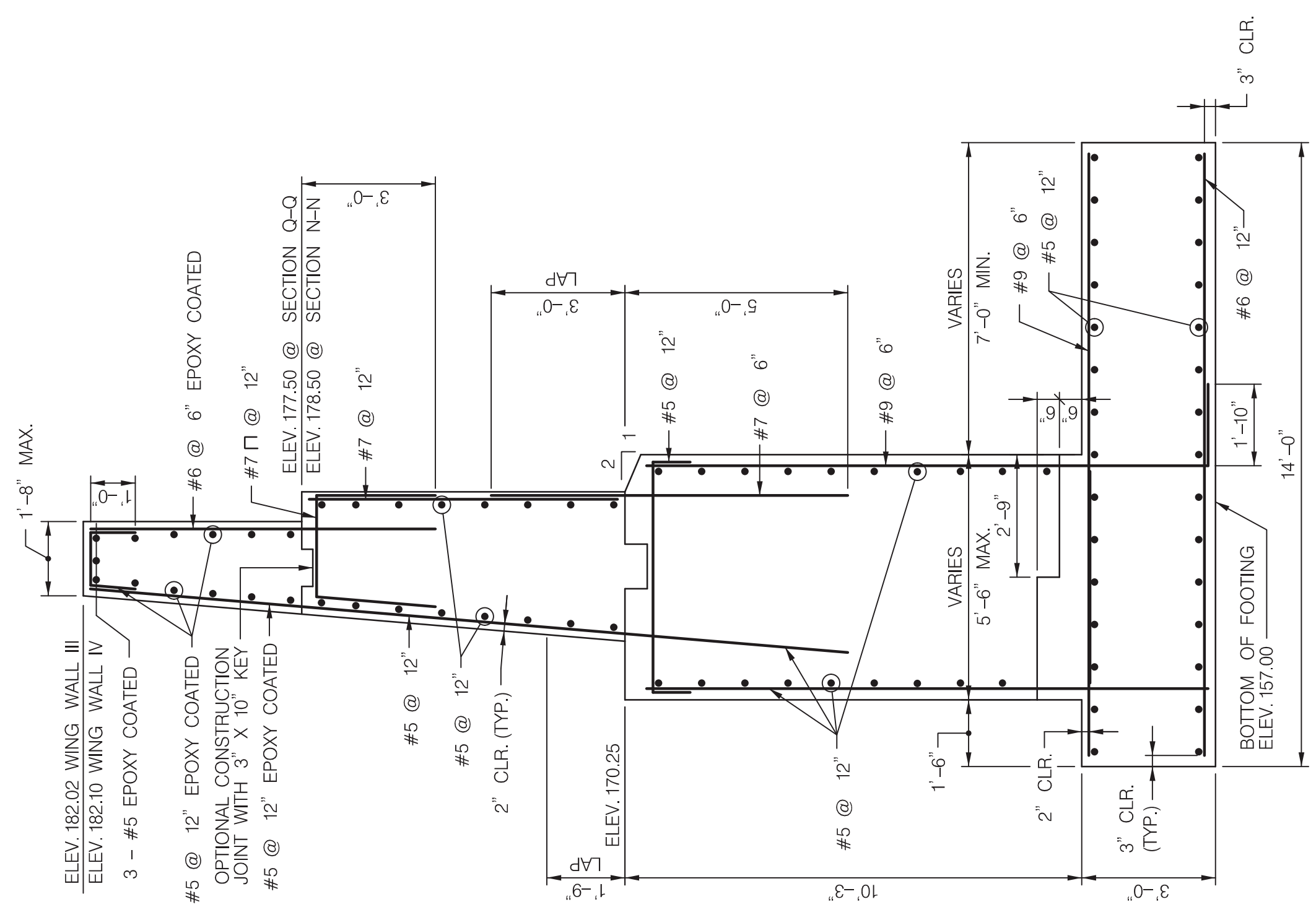
SECTION T-T AT WING WALL I
SECTION K-K AT WING WALL II

SCALE: 3/8" = 1'-0"



SECTIONS O-O (SHOWN) AND P-P (SIMILAR) AT WING WALL III
SECTIONS L-L (SHOWN) AND M-M (SIMILAR) AT WING WALL IV

SCALE: 3/8" = 1'-0"



SECTION Q-Q AT WING WALL III
SECTION N-N AT WING WALL IV

SCALE: 3/8" = 1'-0"

- NOTES:
1. FOR GENERAL PLAN AND ELEVATION, SEE SHEET NO. 22.
 2. FOR ABUTMENTS A AND B PLANS AND ELEVATIONS, SEE SHEETS NO. 24 AND 25.
 3. FOR ABUTMENTS A AND B REINFORCEMENT AND DETAILS, SEE SHEETS NO. 26 AND 27.
 4. FOR ADDITIONAL WING WALL DETAILS, SEE SHEETS NO. 27-31.
 5. FOR LOCATIONS OF WING WALL SECTION CUTS, SEE SHEET NO. 28.
 6. ALL ROUGHENED SURFACES SHALL BE ROUGHENED TO A FULL 1/4" AMPLITUDE.

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
David M. Reid
Chief, Design Section

APPROVED
[Signature]
Chief, Division of Transportation Engineering

Checked By: *[Signature]* BSB
Drawn By: *[Signature]*

Date: 12/14/17
Date: 12/14/17

WING WALL DETAILS 3

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017

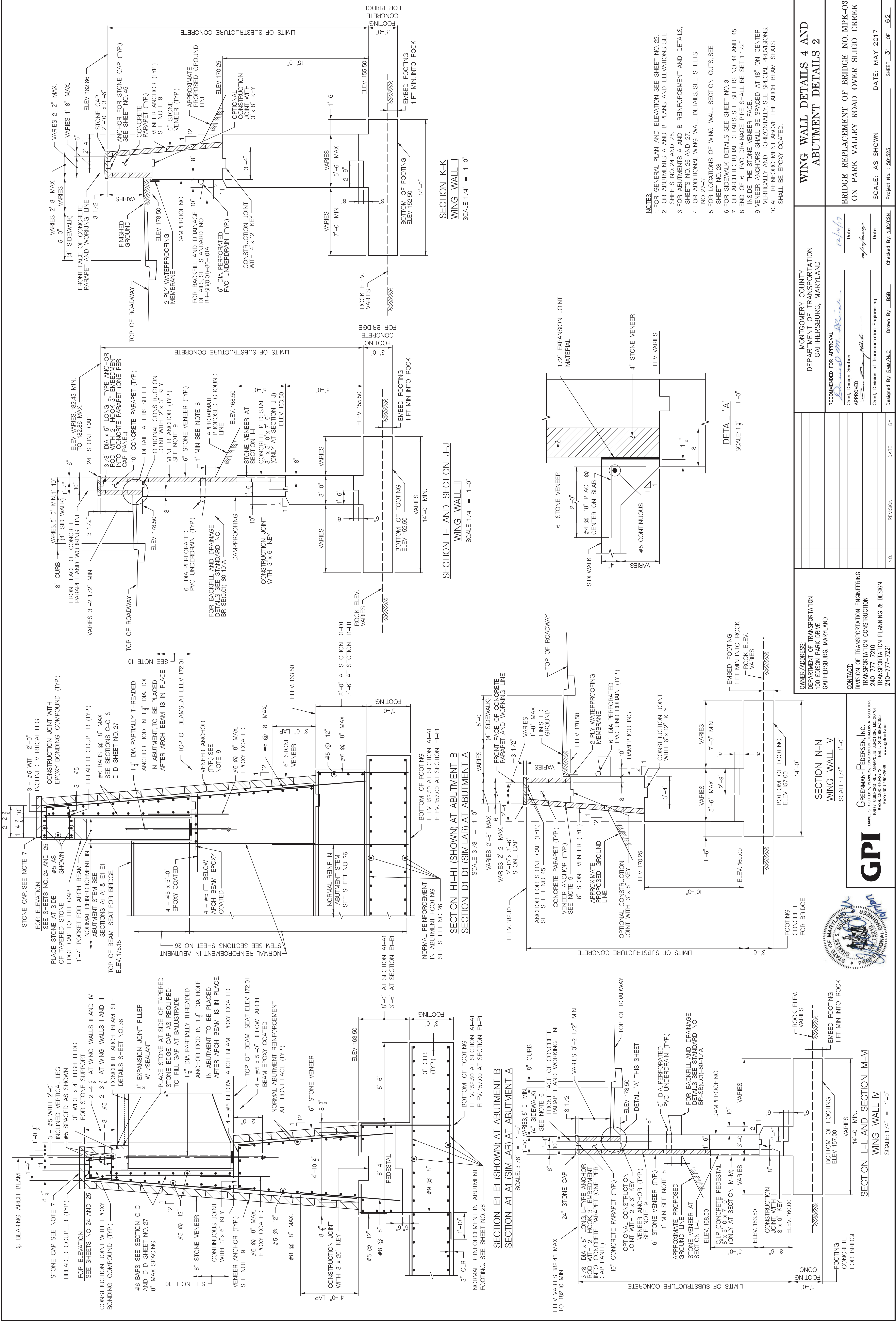
Project No.: 501523 SHEET 30 OF 62



GPI

GREENMAN-PEDERSEN, INC.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
10777 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
WASH DC OFFICE: 410-277-7772 BALTIMORE OFFICE: 410-880-3055
FAX: 410-880-2548 www.gpiinc.com

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



- NOTES:
- FOR GENERAL PLAN AND ELEVATION, SEE SHEET NO. 22.
 - FOR ABUTMENTS A AND B PLANS AND ELEVATIONS, SEE SHEETS NO. 24 AND 25.
 - FOR ABUTMENTS A AND B REINFORCEMENT AND DETAILS, SEE SHEETS NO. 26 AND 27.
 - FOR ADDITIONAL WING WALL DETAILS, SEE SHEETS NO. 27-31.
 - FOR LOCATIONS OF WING WALL SECTION CUTS, SEE SHEET NO. 28.
 - FOR SIDEWALK DETAILS, SEE SHEET NO. 3.
 - FOR ARCHITECTURAL DETAILS, SEE SHEETS NO. 44 AND 45.
 - END OF 6" PVC DRAINAGE PIPE SHALL BE SET 1 1/2" INSIDE THE STONE VENEER FACE.
 - VENEER ANCHORS SHALL BE SPACED AT 18" ON CENTER VERTICALLY AND HORIZONTALLY. SEE SPECIAL PROVISIONS.
 - ALL REINFORCEMENT ABOVE THE ARCH BEAM SEATS SHALL BE EPOXY COATED.

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		DATE: 12/14/17	Checked By: NMC/CSL
RECOMMENDED FOR APPROVAL	Chief, Design Section	DATE: 12/14/17	Checked By: BSB
APPROVED	Chief, Division of Transportation Engineering	DATE: 12/14/17	Drawn By: BSB
NO.	REVISION	DATE	BY

WING WALL DETAILS 4 AND ABUTMENT DETAILS 2

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7271

**SECTION N-N
WING WALL IV**
SCALE: 1/4" = 1'-0"

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7271

**SECTION L-L AND SECTION M-M
WING WALL IV**
SCALE: 1/4" = 1'-0"

**SECTION E1-E1 (SHOWN) AT ABUTMENT B
SECTION A1-A1 (SIMILAR) AT ABUTMENT A**
SCALE: 3/8" = 1'-0"

**SECTION H1-H1 (SHOWN) AT ABUTMENT B
SECTION DI-D1 (SIMILAR) AT ABUTMENT A**
SCALE: 3/8" = 1'-0"

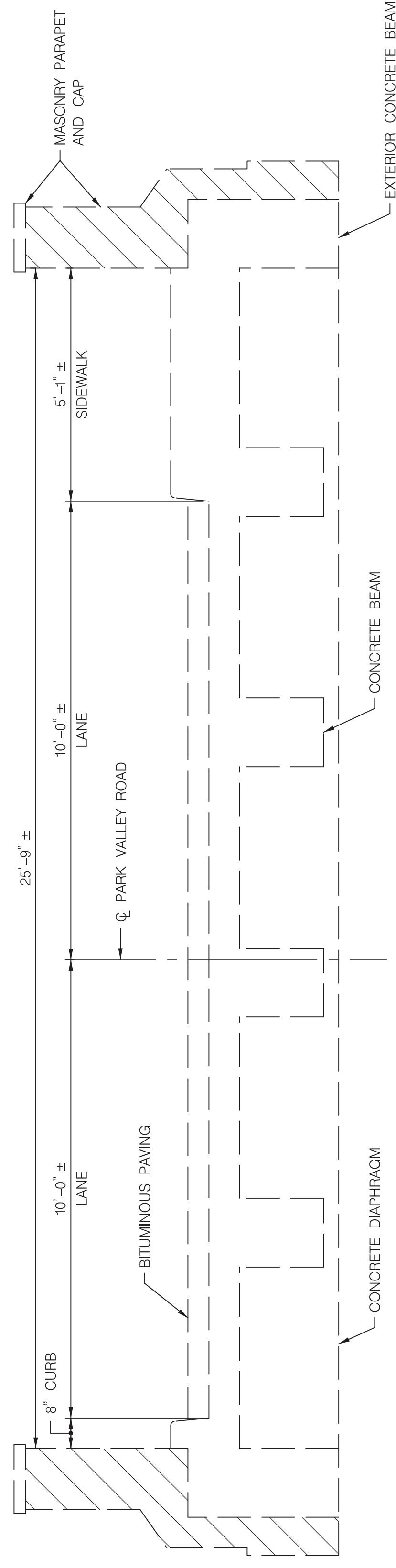
**SECTION I-I AND SECTION J-J
WING WALL II**
SCALE: 1/4" = 1'-0"

**SECTION K-K
WING WALL II**
SCALE: 1/4" = 1'-0"

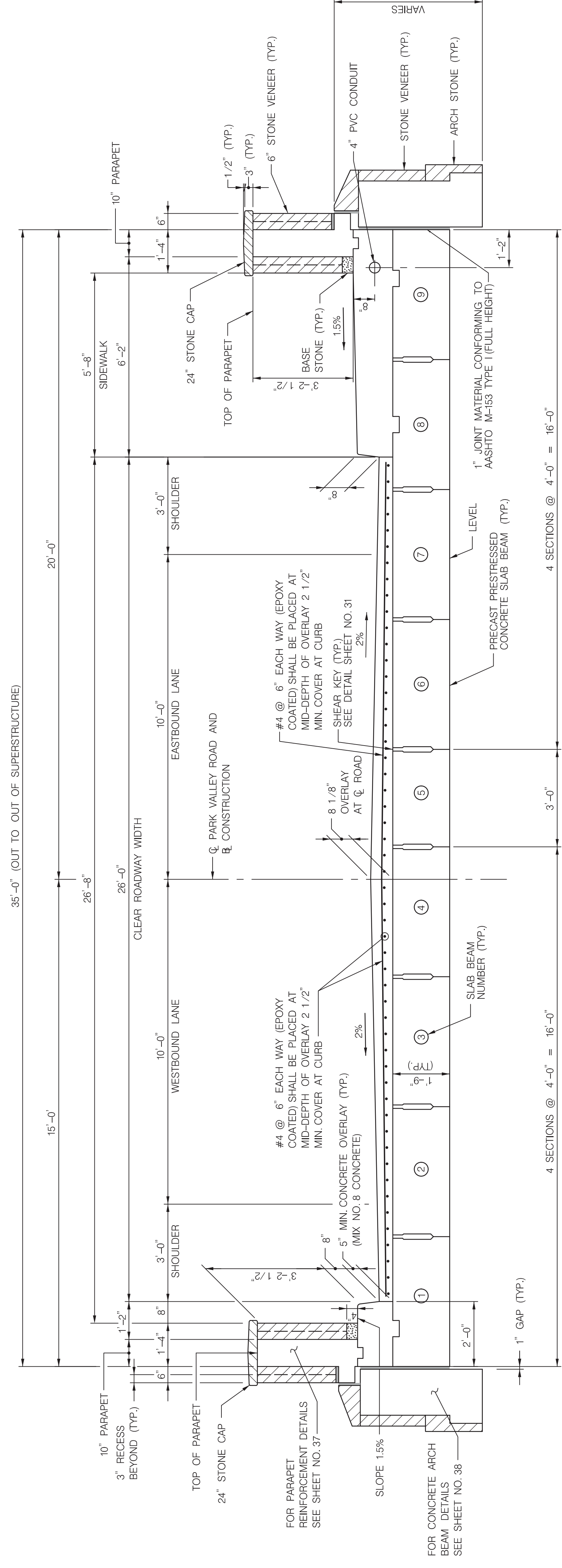
DETAIL 'A'
SCALE: 1 1/2" = 1'-0"



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FAX: 410-890-9048 www.gpi.com



EXISTING TYPICAL SECTION
(LOOKING EAST)
SCALE: 1/2" = 1'-0"



PROPOSED TYPICAL SECTION
SCALE: 1/2" = 1'-0"

- NOTES:
1. FOR GENERAL PLAN AND ELEVATION, SEE SHEET NO. 22.
 2. FOR ABUTMENTS REINFORCEMENT AND DETAILS, SEE SHEET NOS. 24 TO 27.
 3. FOR SLAB LAYOUT AND DETAIL, SEE SHEET NO. 33.
 4. FOR SLAB BEAM AND SUPERSTRUCTURE DETAILS, SEE SHEETS NO. 34 - 38.
 5. ALL EPOXY COATED REINFORCING STEEL IN THE CONCRETE OVERLAY, CURB, END DIAPHRAGMS AND NON-PRESTRESSING STEEL IN SLAB BEAMS SHALL BE INCIDENTAL TO THE SUPERSTRUCTURE CONCRETE FOR BRIDGE ITEM.
 6. THE THICKNESS OF DECK OVERLAY WILL VARY DUE TO THE ROADWAY VERTICAL CURVATURE AND ACTUAL CAMBER.
 7. FOR ARCHITECTURAL DETAILS, SEE SHEET NOS. 44 AND 45.
 8. FOR CONCRETE ARCH BEAM DETAILS, SEE SHEET NO. 38.
 9. FOR FINISHED ROADWAY ELEVATIONS AND CONCRETE OVERLAY SEQUENCE OF OPERATIONS, SEE SHEET NO. 39.
 10. THE OVERLAY SHALL BE PLACED IN ONE CONTINUOUS POUR.

MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		TYPICAL SECTIONS	
RECOMMENDED FOR APPROVAL <i>David M. Reid</i> Chief, Design Section APPROVED	Date 12/14/17	BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK	
DESIGNED BY <i>[Signature]</i> Chief, Division of Transportation Engineering	Date 12/14/17	SCALE: AS SHOWN	DATE: MAY 2017
DRAWN BY ...MAM	CHECKED BY ...NJC	Project No. : 501523	SHEET 32 OF 62

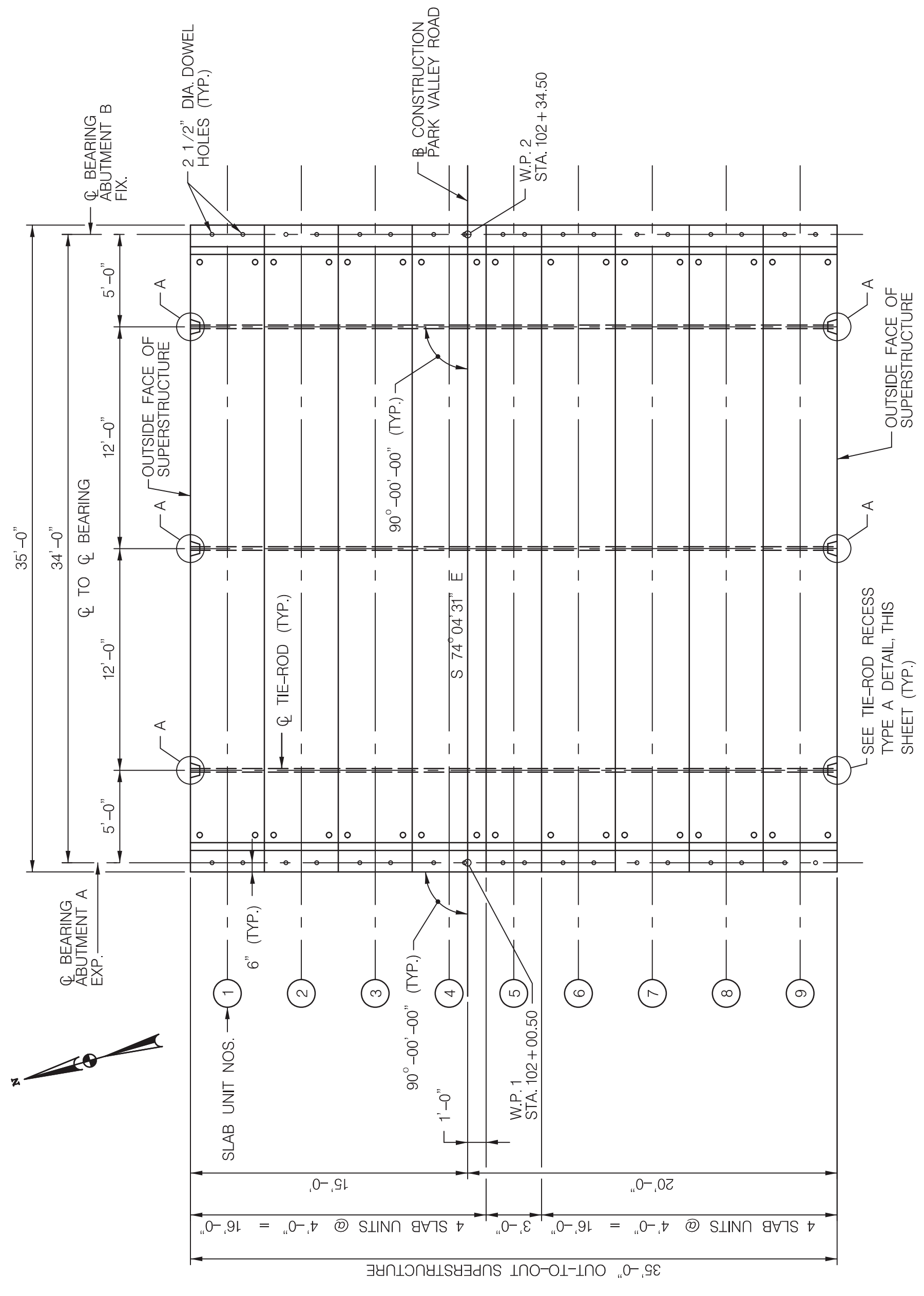
OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
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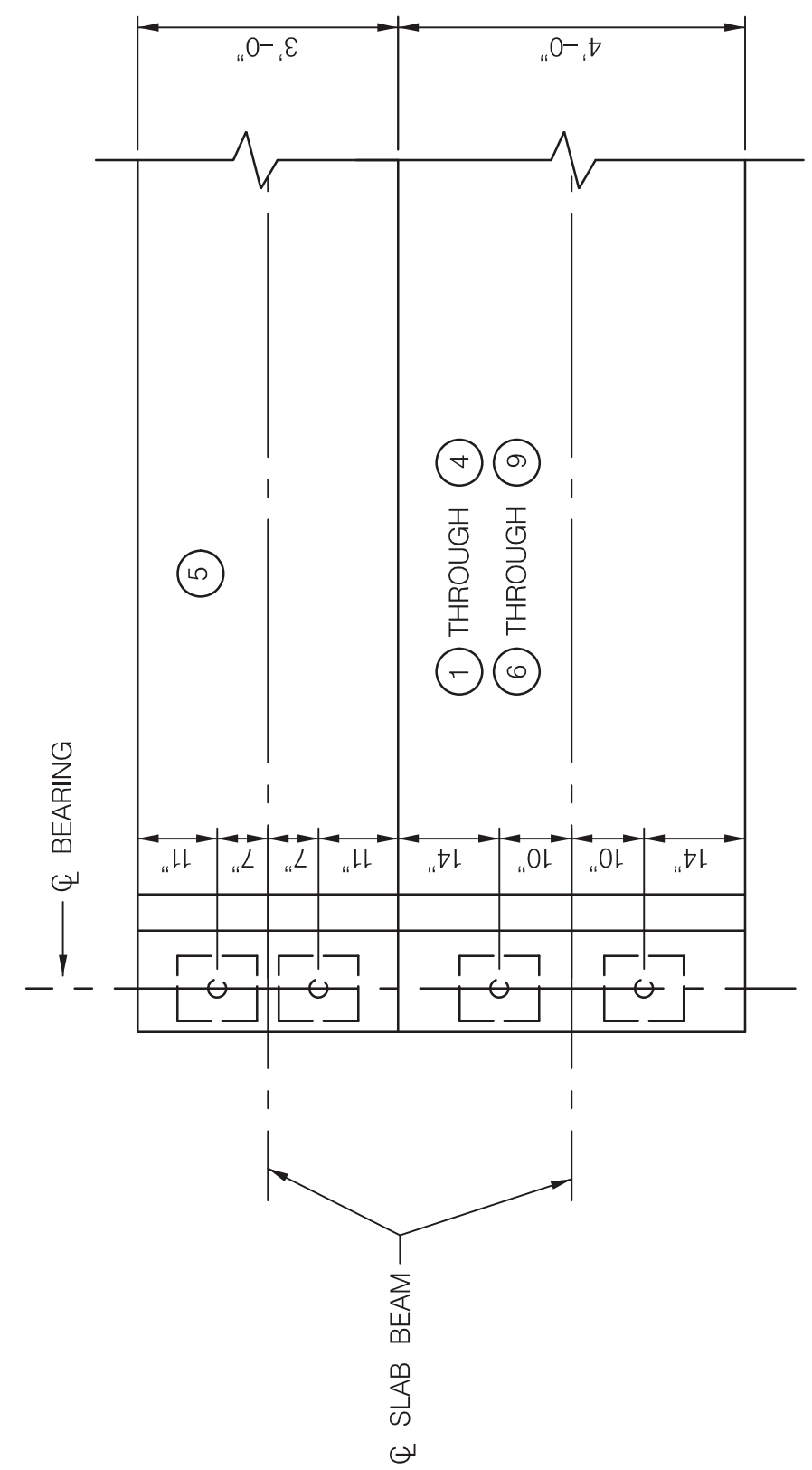
GPI
GREENMAN-PEDERSEN, INC.
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10877 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
WASHDCO: 474-7172 BALTO: 680-880-5055
FAX: 680-880-5048 www.gpiinc.com



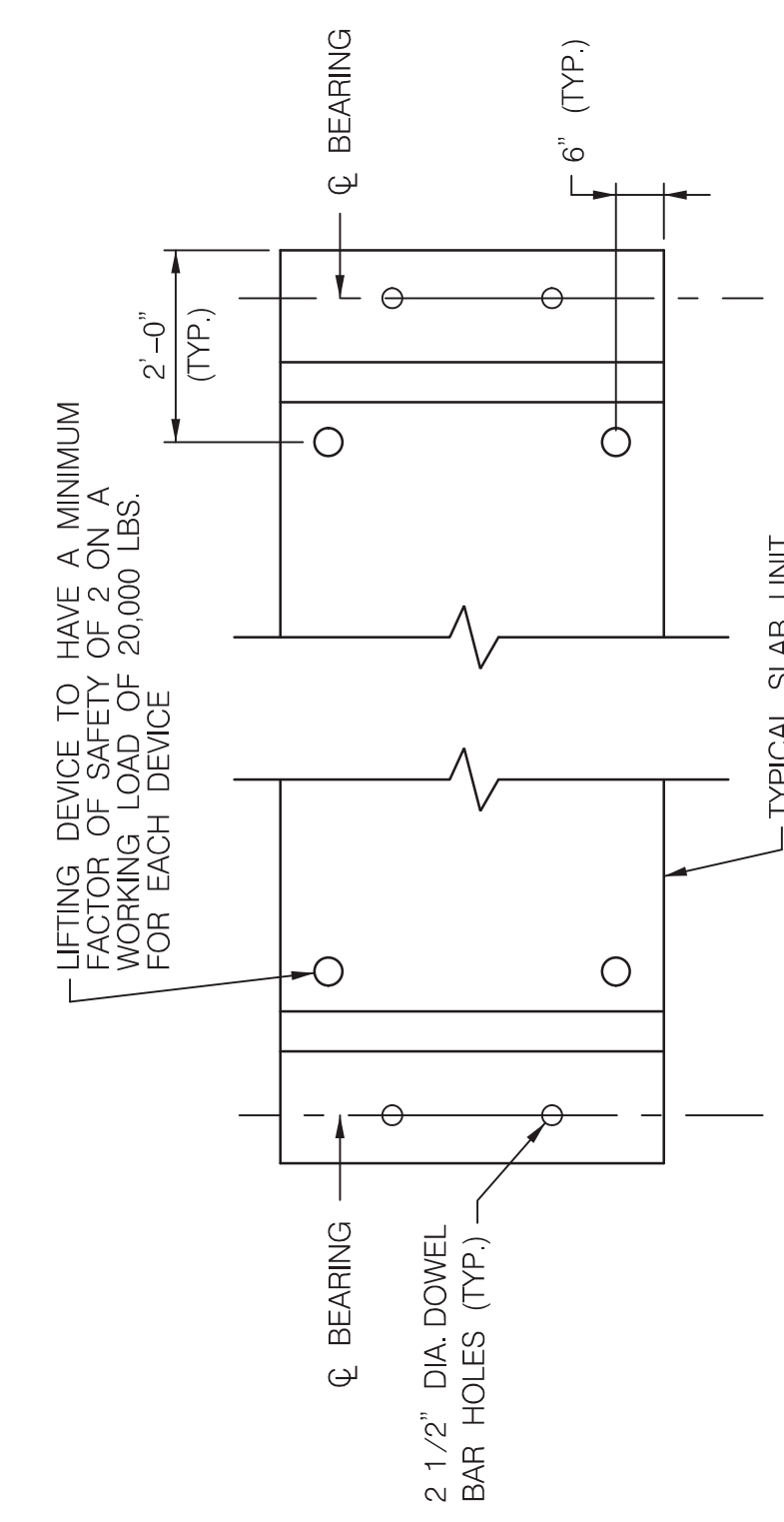
FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



SLAB LAYOUT
SCALE: 3/16" = 1'-0"



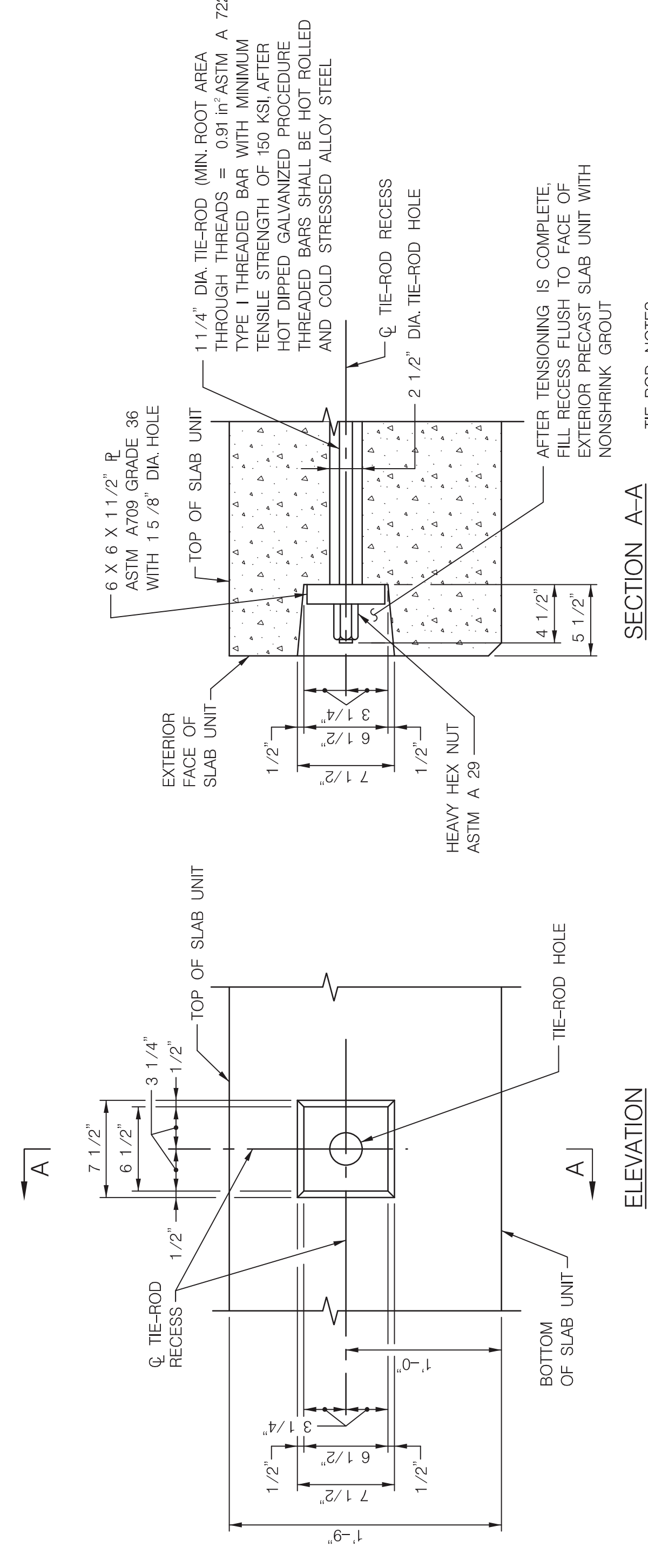
BEARING PAD LAYOUT
SCALE: 1/2" = 1'-0"



LIFTING DEVICES LOCATION - PLAN VIEW
SCALE: 1/2" = 1'-0"

SLAB PANEL ERECTION - SEQUENCE OF OPERATION

- THE CONTRACTOR SHALL FOLLOW THE FOLLOWING SEQUENCE OF OPERATIONS AND SECTION 440.03.20 FOR THE ERECTION OF SLAB PANEL UNITS.
1. IMMEDIATELY PRIOR TO ERECTING SLAB PANELS, CLEAN THE ABRASIVE BLASTED SHEAR KEY SURFACES WITH COMPRESSED AIR, STIFF BRISTLE FIBER BRUSHES, OR VACUUMING.
 2. PULL THE SLAB PANELS TOGETHER AND FIELD TIGHTEN IN THE TRANSVERSE DIRECTION USING TIE-RODS TO THE INITIAL TENSIONING FORCE AS SPECIFIED IN THE CONTRACT PLANS.
 3. ISOLATE LATERAL TIE-ROD NEAR MID-SPAN FIRST AND THEN PROGRESS TOWARDS THE END OF THE BEAM.
 4. ISOLATE LATERAL TIE-RODS FROM SHEAR KEY GROUT BY INSTALLING EXPANDABLE SPRAY FOAM SEALANT AT ALL TIE-ROD LOCATIONS, FOLLOWING THE MANUFACTURER'S GUIDELINES AND AS DETAILED IN THE CONTRACT PLANS.
 5. SEAL THE JOINT BELOW THE SHEAR KEY USING APPROVED METHOD.
 6. ONCE THE EXPANDABLE SPRAY FOAM SEALANT HAS MET THE MANUFACTURER'S CURING REQUIREMENTS, PROCEDURES FOR PLACEMENT OF THE SHEAR KEY GROUT MAY BEGIN.
 7. CLEAN THE SHEAR KEY SURFACE WITH COMPRESSED AIR AND KEEP IT MOIST UNTIL THE GROUT IS PLACED.
 8. GROUT THE SHEAR KEYS BY OVERFILLING THE JOINTS. DRIVE THE GROUT OR COMPACTLY TAMP IT INTO KEYSWAYS. DO NOT VIBRATE. AFTER 30 MINUTES, STRIKE OFF THE EXCESS GROUT FLUSH WITH THE TOP OF THE PANELS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS FOR GROUTING IN COLD OR HOT WEATHER.
 9. START CURING OF THE SHEAR KEY GROUT IMMEDIATELY AFTER THE GROUT HAS BEEN FINISHED BUT DO NOT LEAVE ANY PORTION OF THE GROUT UNCOVERED FOR MORE THAN 45 MINUTES AFTER PLACEMENT.
 10. KEEP THE SURFACE WET EVEN IN AREAS WHERE THERE IS NO READY WATER SUPPLY.
 11. CURE THE SHEAR KEY GROUT FOR THREE (3) DAYS WITH BURLAP OR COTTON MATS AS SPECIFIED IN 420.03.09(B) OR (D), RESPECTIVELY.
 12. TENSION LATERAL TIE-RODS TO FINAL TENSIONING FORCE AS SPECIFIED IN THE CONTRACT PLANS FOLLOWING PROCEDURE DETAILED ABOVE.

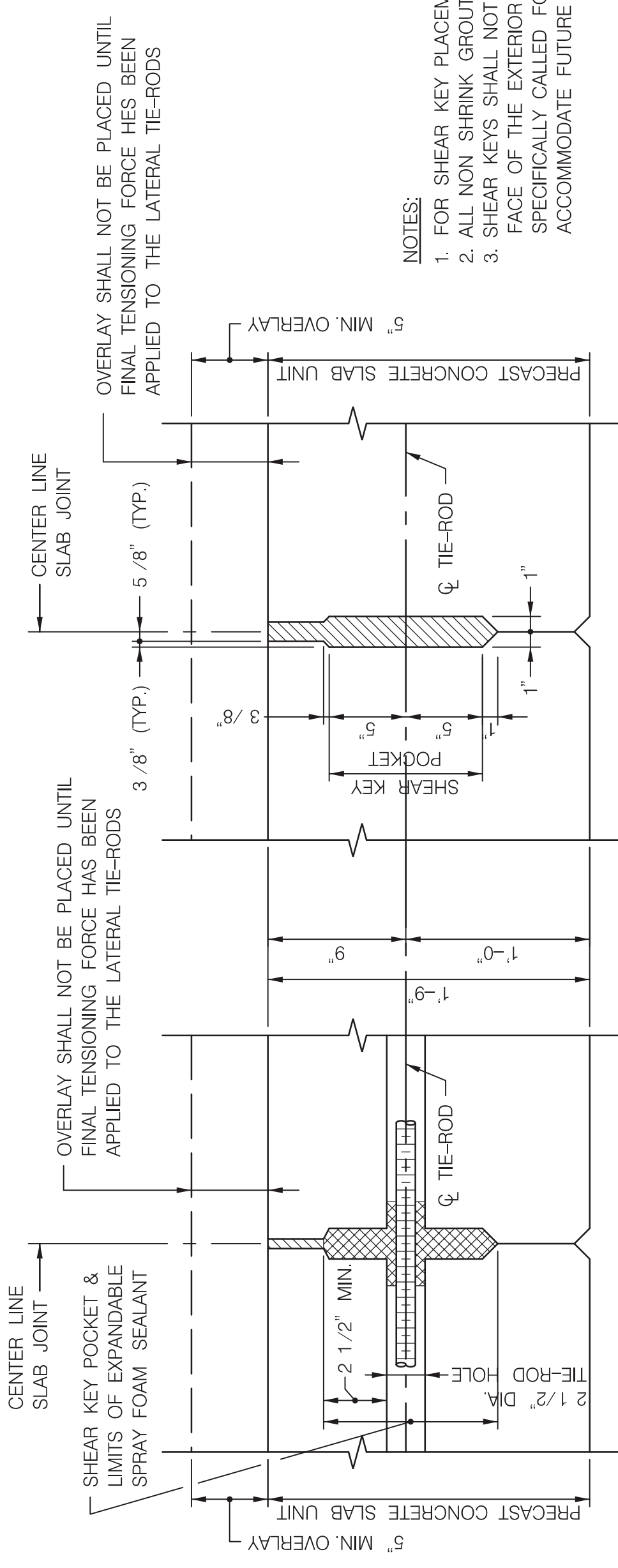


SECTION A-A

TIE-ROD RECESS DETAILS - TYPE A
SCALE: 1 1/2" = 1'-0"

TIE-ROD NOTES:

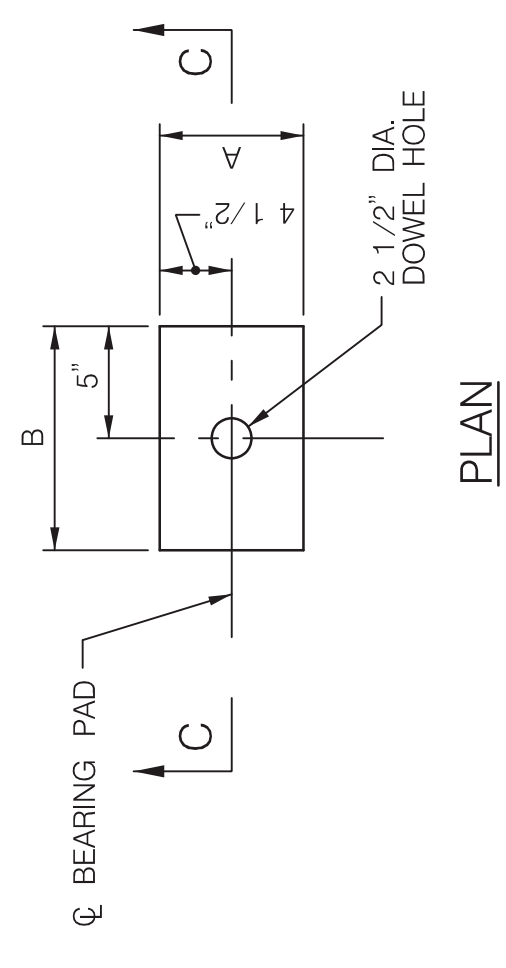
1. FOR TIE-ROD TENSIONING PROCEDURES SEE SLAB PANEL ERECTION NOTES, THIS SHEET AND SECTION 440.03.20.
2. ALL NUTS, PLATES AND TIE RODS TO BE HOT DIPPED GALVANIZED.
3. NONSHRINK GROUT SHALL CONFORM TO 902.11(C).
4. HEAVY HEX NUT SHALL BE SUPPLIED BY TIE ROD MANUFACTURER AND DEVELOP FULL TENSILE STRENGTH OF THE TIE ROD. INITIAL TENSION FORCE = 20 KIPS. FINAL TENSION FORCE = 120 KIPS.



SHEAR KEY BETWEEN TIE-RODS

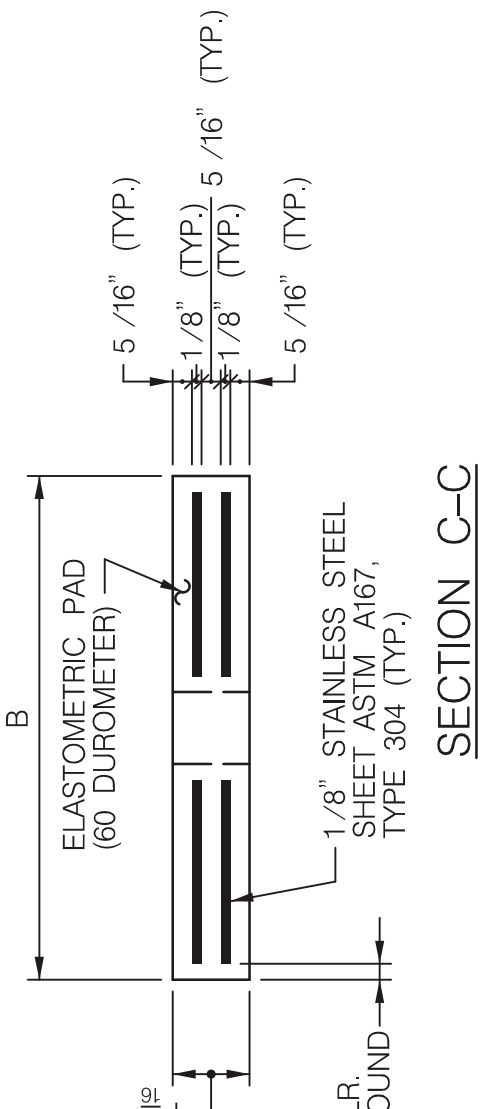
SHEAR KEY AT TIE-RODS

SHEAR KEY DETAILS
SCALE: 1 1/2" = 1'-0"



PLAN

ELASTOMETRIC BEARING PAD
NOT TO SCALE



SECTION C-C



NOTES:

1. FOR SHEAR KEY PLACEMENT PROCEDURES, SEE 440.03.20.
2. ALL NON SHRINK GROUT SHALL CONFORM TO 902.11(C).
3. SHEAR KEYS SHALL NOT BE PLACED ON THE EXPOSED FACE OF THE EXTERIOR SLAB UNITS UNLESS WHERE SPECIFICALLY CALLED FOR ON THE PLANS TO ACCOMMODATE FUTURE WIDENINGS.

BEARING PAD TABLE	
DIMENSIONS	A B
SLAB BEAMS	8" 10"
ARCH BEAMS	10" 12"

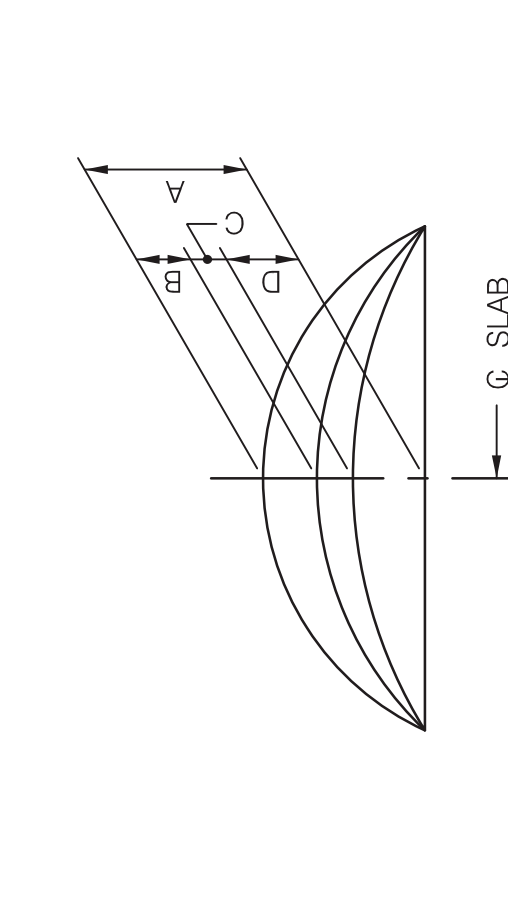
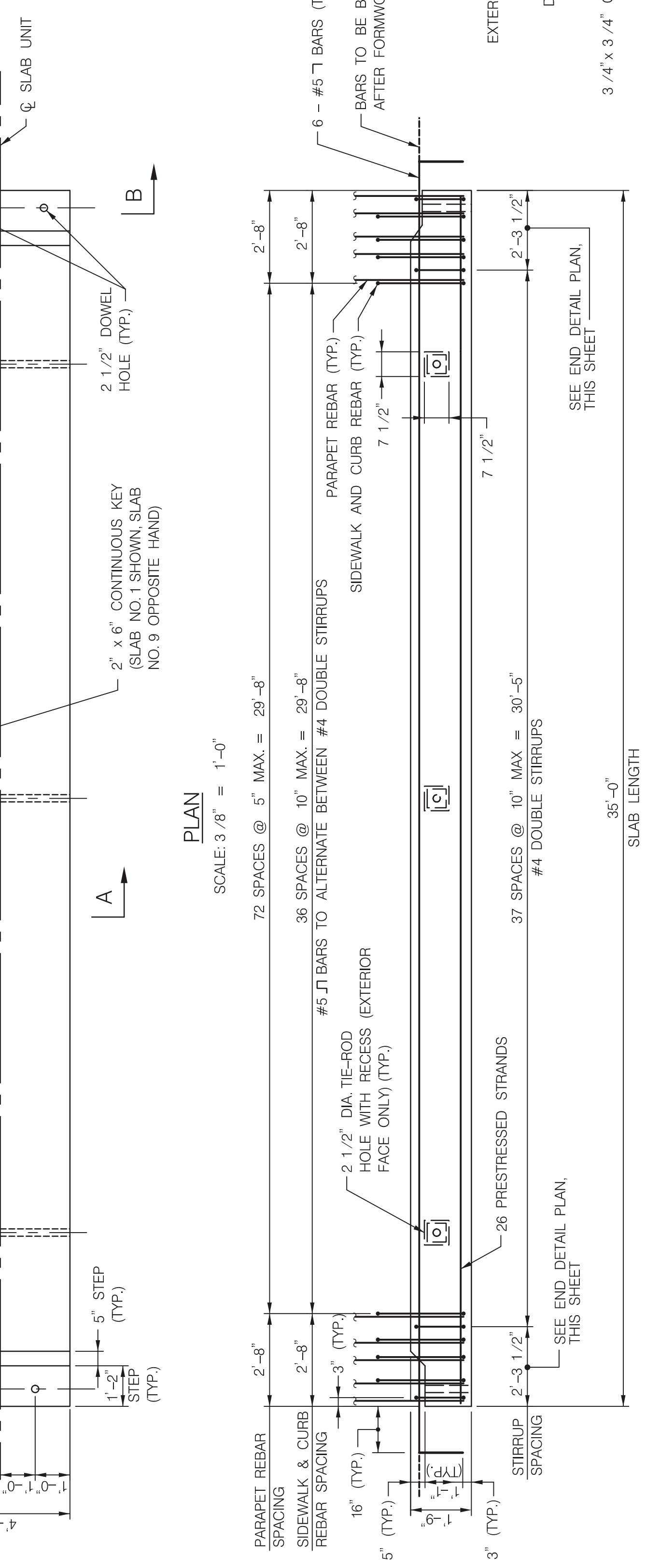
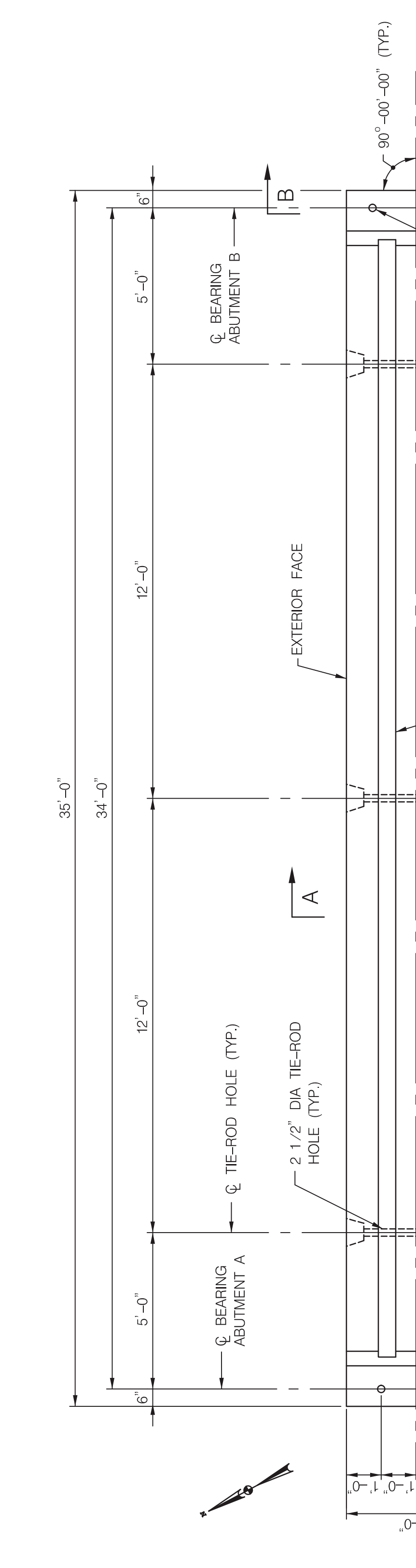
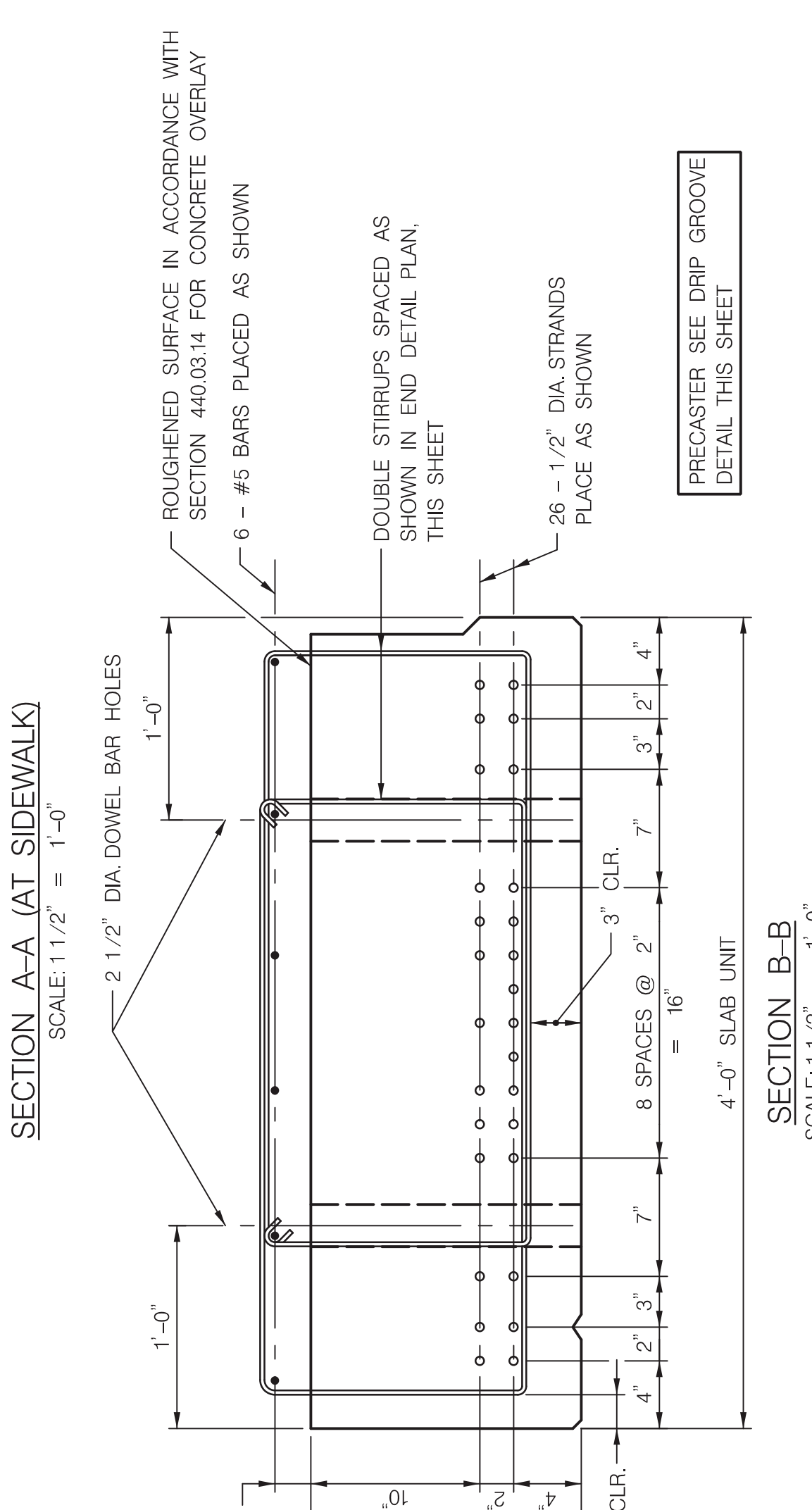
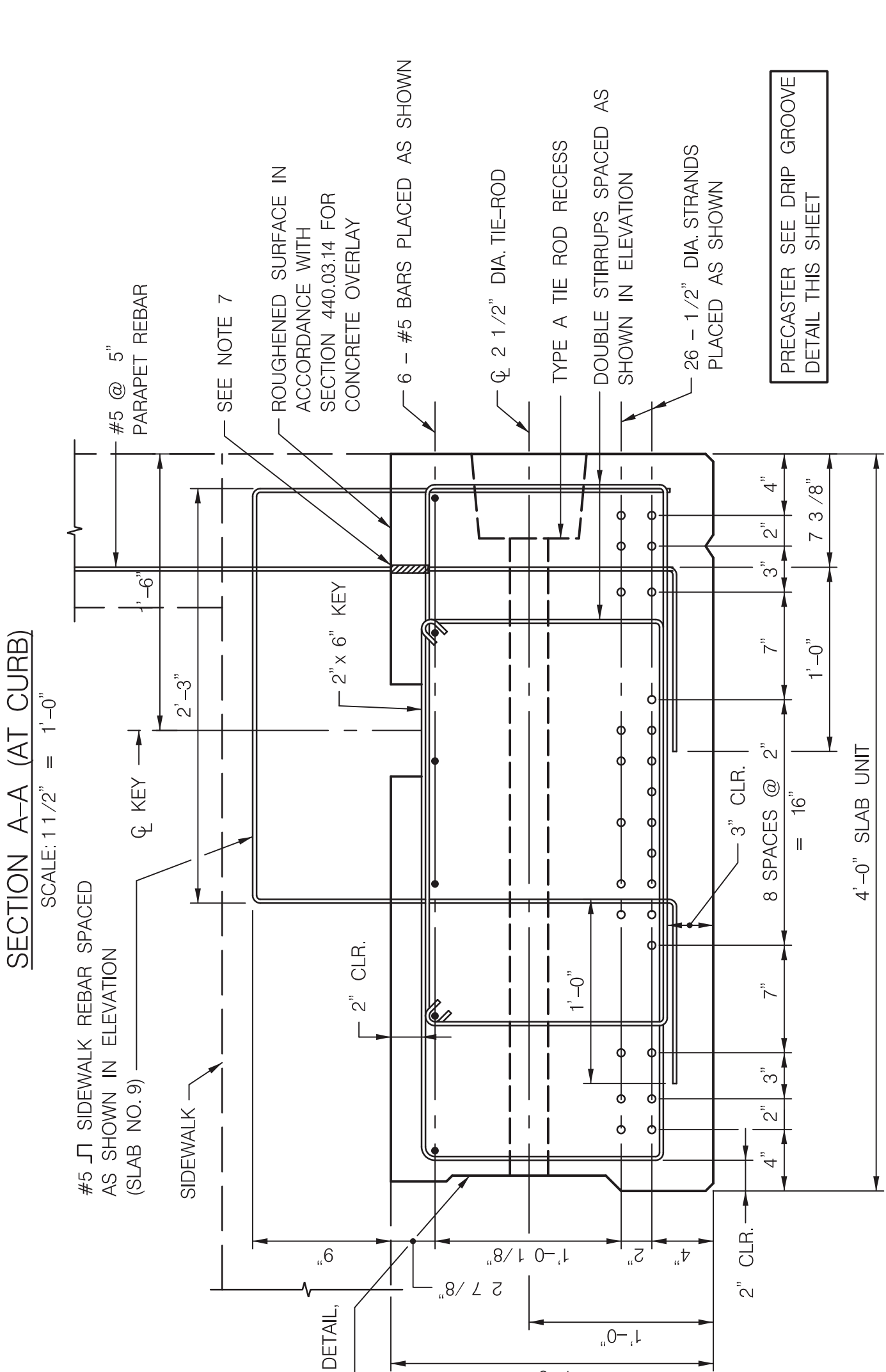
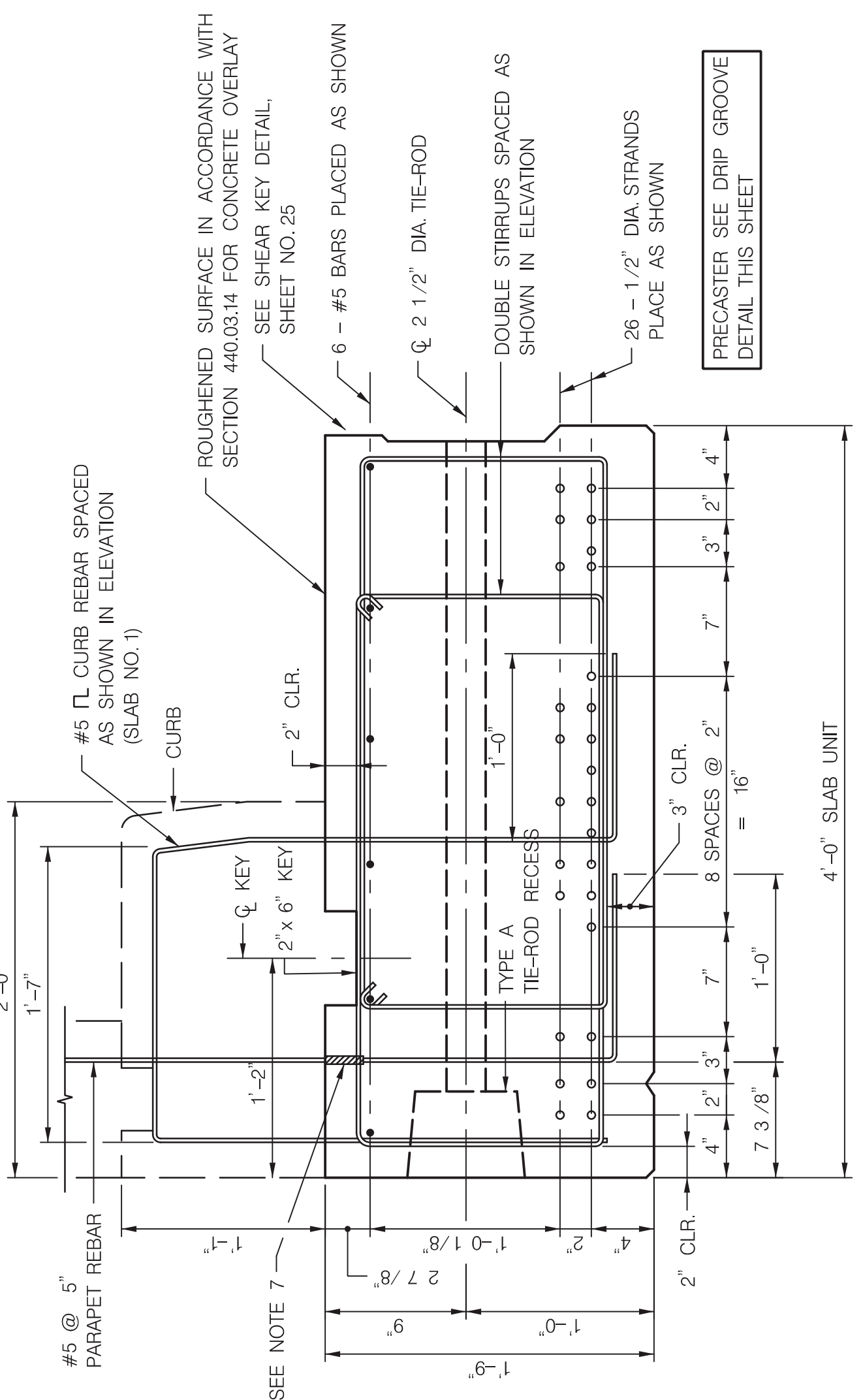
<p>OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND</p>	<p>CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7271</p>	<p>MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND</p>	<p>RECOMMENDED FOR APPROVAL <i>David M. Reid</i> Chief, Design Section APPROVED <i>[Signature]</i> Chief, Division of Transportation Engineering</p>	<p>DATE: 12/14/17</p>	<p>DATE: MAY 2017</p>	<p>SHEET 33 OF 62</p>



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WASH DC OFFICE: 476-7772 BALTIMORE OFFICE: 880-3055
FAX: 301-865-5648 www.gpiinc.com

SLAB BEAM NOTES:

- EXTREME CARE SHOULD BE USED IN LOCATING TIE ROD HOLES DURING CASTING OPERATION. CONTRACTOR SHALL ASSEMBLE THE SLAB UNITS FOR ENTIRE BRIDGE WIDTH AT THE CASTING PLANT TO ENSURE THAT THERE IS NO MISALIGNMENT PRIOR TO SHIPPING SLAB UNITS TO THE SITE. ANY MISALIGNMENT OF THE HOLES WILL BE CAUSE FOR REJECTION OF THE SLAB UNITS. DRILLING OR CORING OF THE SLABS TO CREATE NEW OR MODIFIED CAST HOLES IS PROHIBITED. IN THE CASTING BED SHALL BE DETERMINED AND DEPICTED IN THE SHOP DRAWINGS TO COMPENSATE FOR GRADE SHORTENING DUE TO THE PRESTRESS EFFECT.
- THE CONTRACTOR SHALL SHOW THE TYPE AND THE LOCATION OF THE LIFTING INSERTS. THE CONTRACTOR SHALL ENSURE THE LIFTING DEVICES HAVE THE SAFE WORKING CAPACITY TO LIFT THE SLAB PANELS INTO POSITION DURING ERECTION WITHOUT OVERSTRESSING THE PANELS.
- THE CONTRACTOR WILL BE ALLOWED TO PLACE EQUIPMENT ON THE SLAB UNIT PRIOR TO PLACING THE CONCRETE OVERLAY PROVIDED THAT ALL SLAB UNITS ARE IN PLACE, THE TIE RODS TENSIONED TO THE FINAL TENSIONING FORCE AND THE SHEAR KEY GROUT HAS MET THE CURING REQUIREMENTS.



CAMBER NOTES:

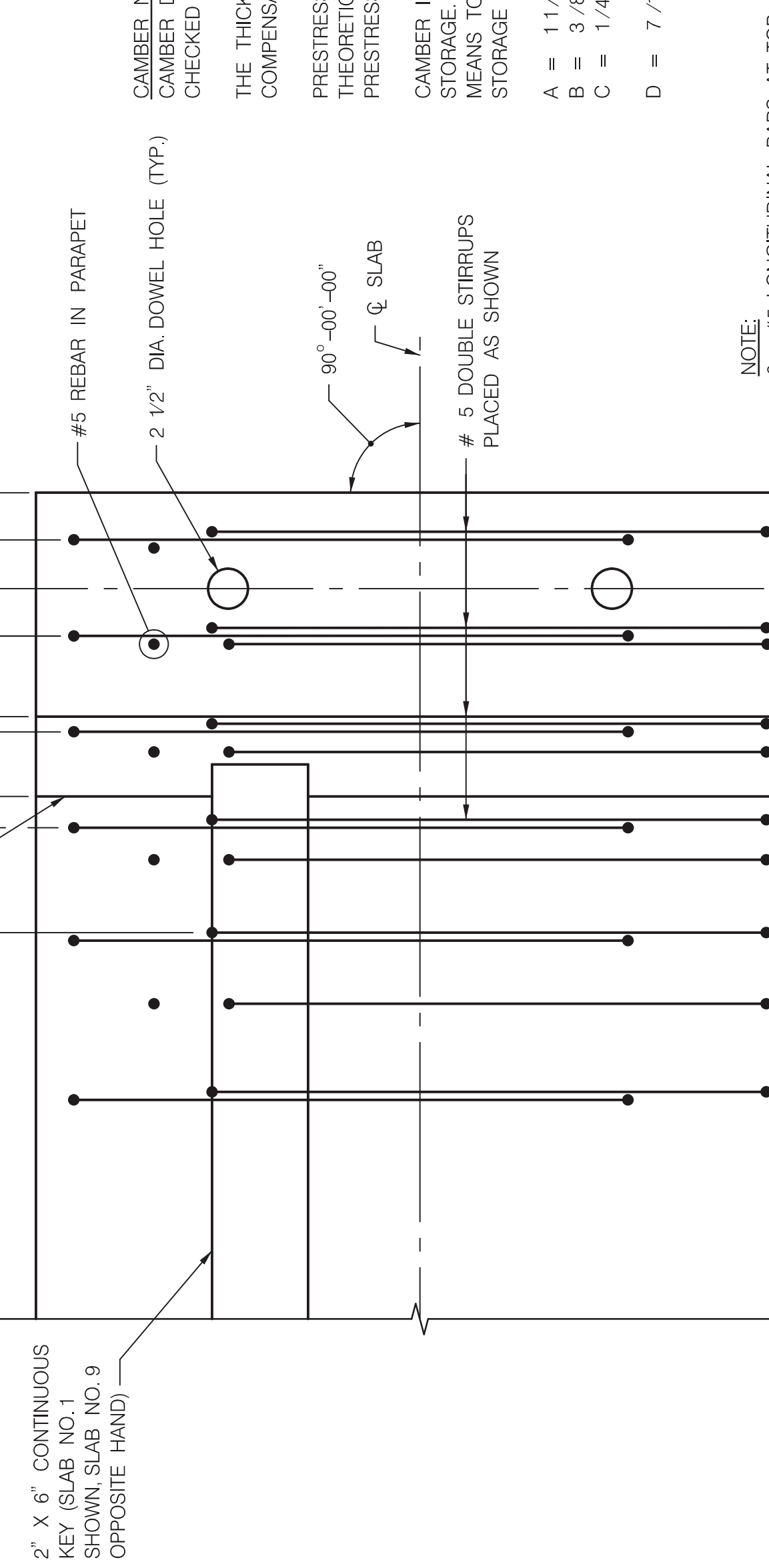
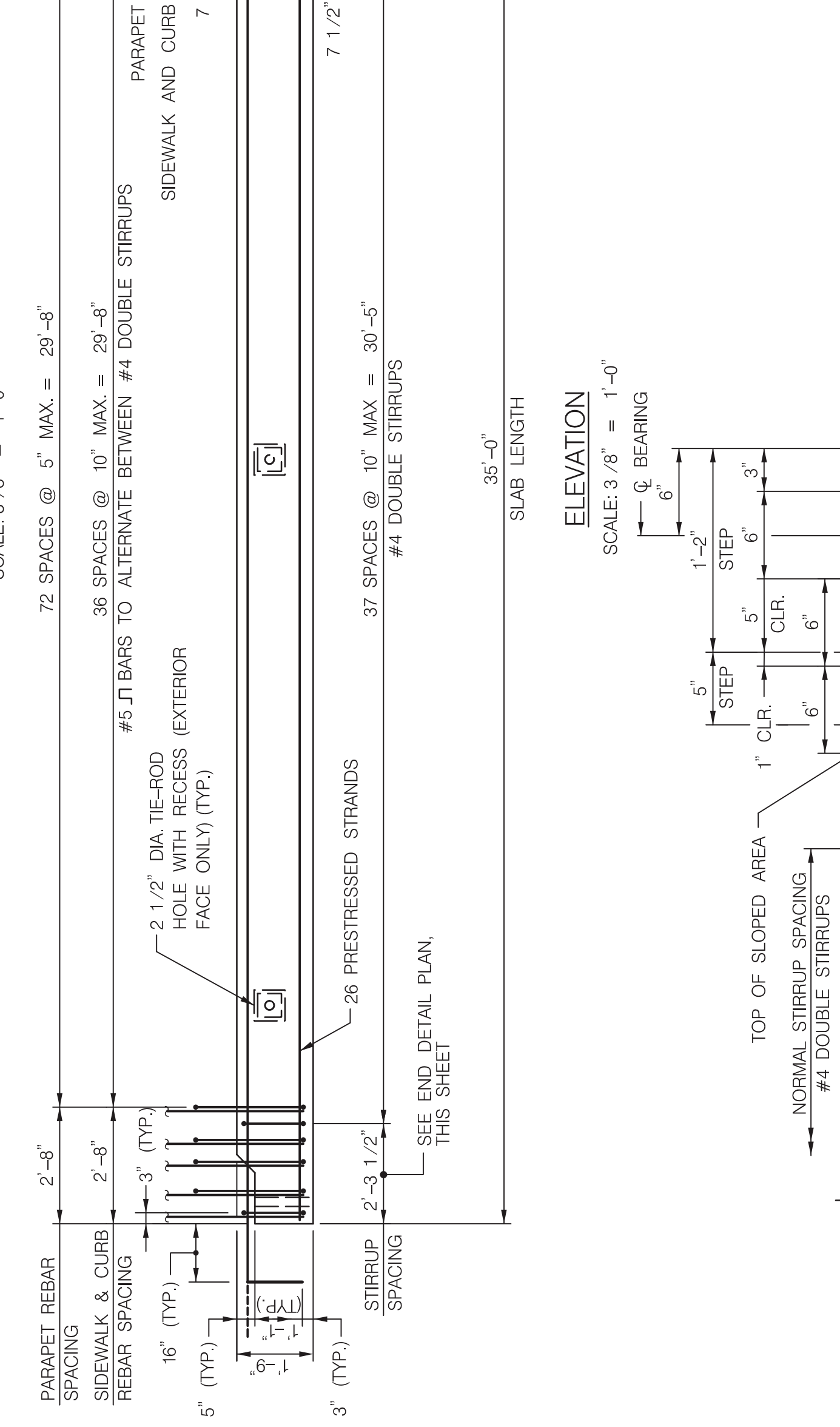
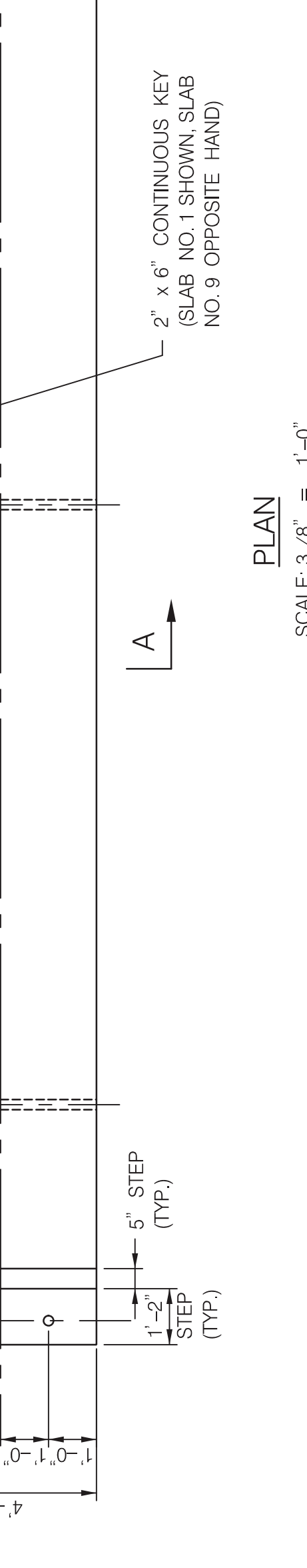
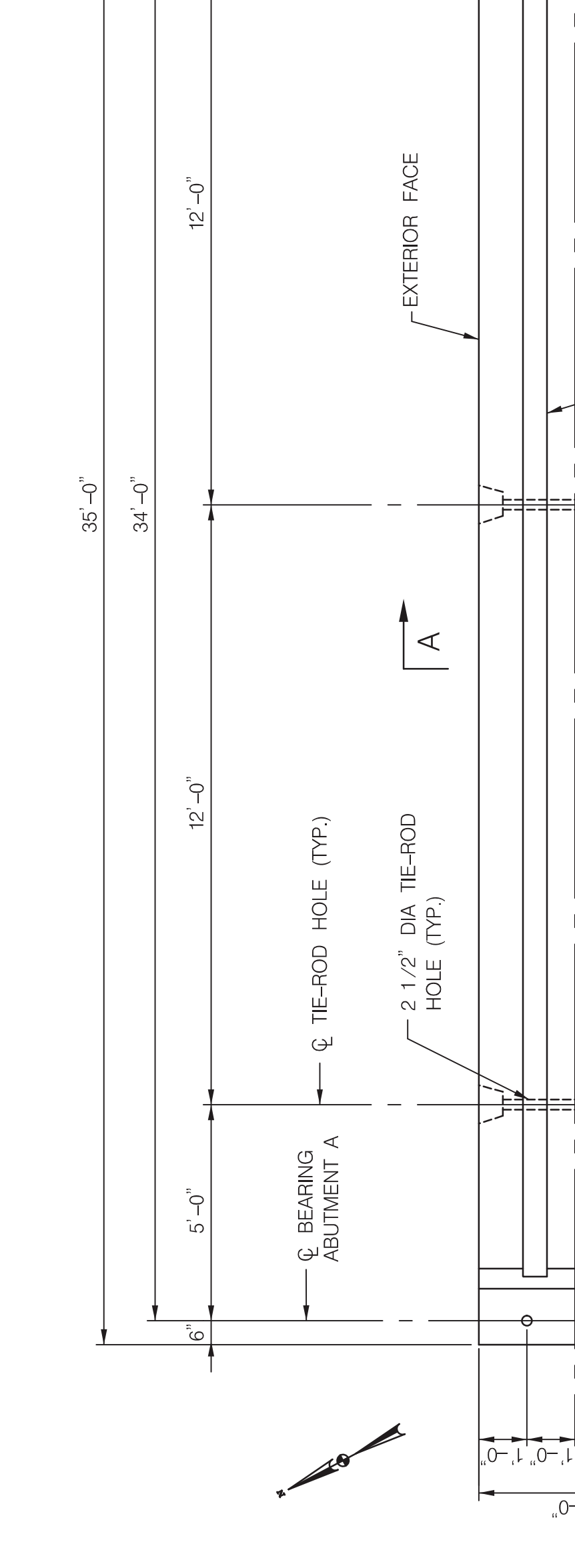
CAMBER DUE TO PRESTRESS PLUS SLAB DEAD LOAD TO BE CHECKED IN THE FIELD.

THE THICKNESS OF THE CONCRETE OVERLAY SHALL BE VARIED TO COMPENSATE FOR ANY INACCURACIES IN THE CAMBER OF SLABS.

PRESTRESS CAMBER AND DEAD LOAD DEFLECTION DATA SHOWN IS THEORETICAL AND MAY VARY WITH CONCRETE STRENGTH, VARIABLE PRESTRESSING CONDITIONS AND PRESTRESS LOSSES.

CAMBER IN SLABS WILL INCREASE DUE TO CONCRETE CREEP DURING STORAGE. PRECAUTIONS SHALL BE TAKEN BY LOADING OR OTHER MEANS TO PREVENT ADDITIONAL CAMBER FROM DEVELOPING DURING STORAGE OF PRESTRESSED SLABS.

A = 11/16" (ESTIMATED CAMBER DUE TO PRESTRESS)
 B = 3/8" (DEFLECTION DUE TO DEAD LOAD OF PRESTRESSED SLABS)
 C = 1/4" (DEFLECTION DUE TO DEAD LOAD OF CAST-IN-PLACE CONCRETE OVERLAY, CURBS AND RAILINGS)
 D = 7/16" (NET FINAL CAMBER)



SLAB BEAM NOTES:

- EXTREME CARE SHOULD BE USED IN LOCATING TIE ROD HOLES DURING CASTING OPERATION. CONTRACTOR SHALL ASSEMBLE THE SLAB UNITS FOR ENTIRE BRIDGE WIDTH AT THE CASTING PLANT TO ENSURE THAT THERE IS NO MISALIGNMENT PRIOR TO SHIPPING SLAB UNITS TO THE SITE. ANY MISALIGNMENT OF THE HOLES WILL BE CAUSE FOR REJECTION OF THE SLAB UNITS. DRILLING OR CORING OF THE SLABS TO CREATE NEW OR MODIFIED CAST HOLES IS PROHIBITED. IN THE CASTING BED SHALL BE DETERMINED AND DEPICTED IN THE SHOP DRAWINGS TO COMPENSATE FOR GRADE SHORTENING DUE TO THE PRESTRESS EFFECT.
- THE CONTRACTOR SHALL SHOW THE TYPE AND THE LOCATION OF THE LIFTING INSERTS. THE CONTRACTOR SHALL ENSURE THE LIFTING DEVICES HAVE THE SAFE WORKING CAPACITY TO LIFT THE SLAB PANELS INTO POSITION DURING ERECTION WITHOUT OVERSTRESSING THE PANELS.
- THE CONTRACTOR WILL BE ALLOWED TO PLACE EQUIPMENT ON THE SLAB UNIT PRIOR TO PLACING THE CONCRETE OVERLAY PROVIDED THAT ALL SLAB UNITS ARE IN PLACE, THE TIE RODS TENSIONED TO THE FINAL TENSIONING FORCE AND THE SHEAR KEY GROUT HAS MET THE CURING REQUIREMENTS.



<p>OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND</p>		<p>RECOMMENDED FOR APPROVAL <i>David M. Reid</i> Chief, Design Section APPROVED</p>		<p>DATE: 12/14/17</p>	
<p>CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7221</p>		<p>DESIGNED BY: MAM DRAWN BY: BSB CHECKED BY: NMC</p>		<p>DATE: MAY 2017</p>	
<p>PROJECT NO.: 501523</p>		<p>SHEET 34 OF 62</p>		<p>BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK</p>	

NO.	REVISION	DATE	BY

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

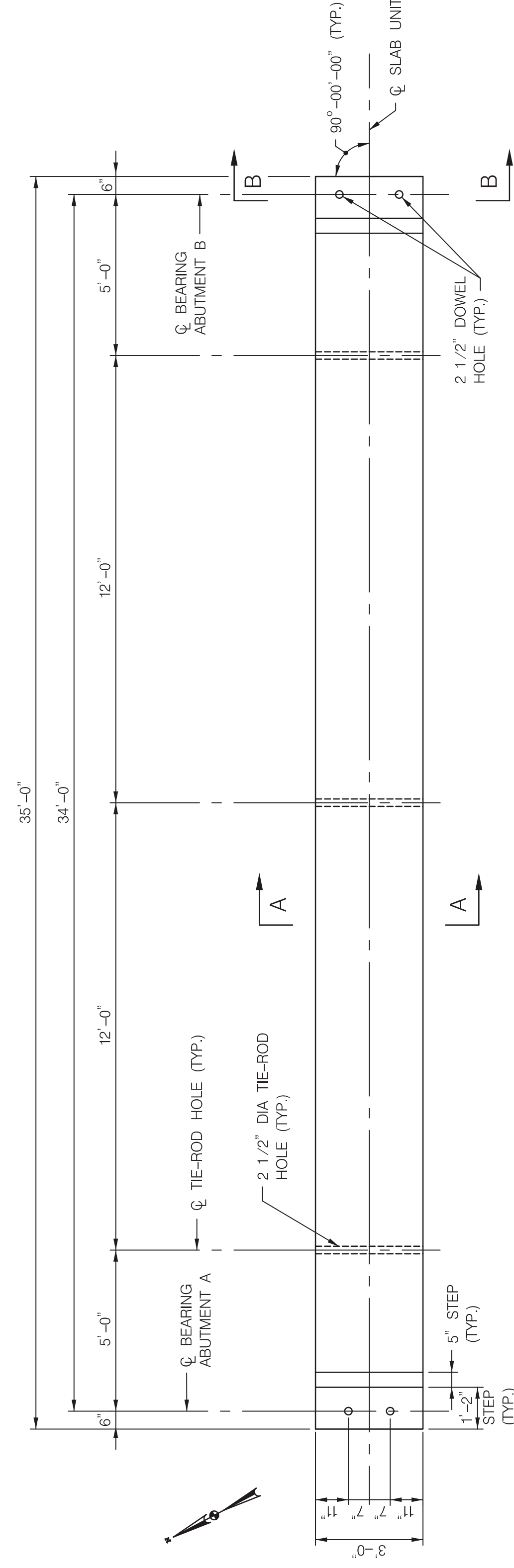
GREENMAN-PEDERSEN, INC.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
 10877 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
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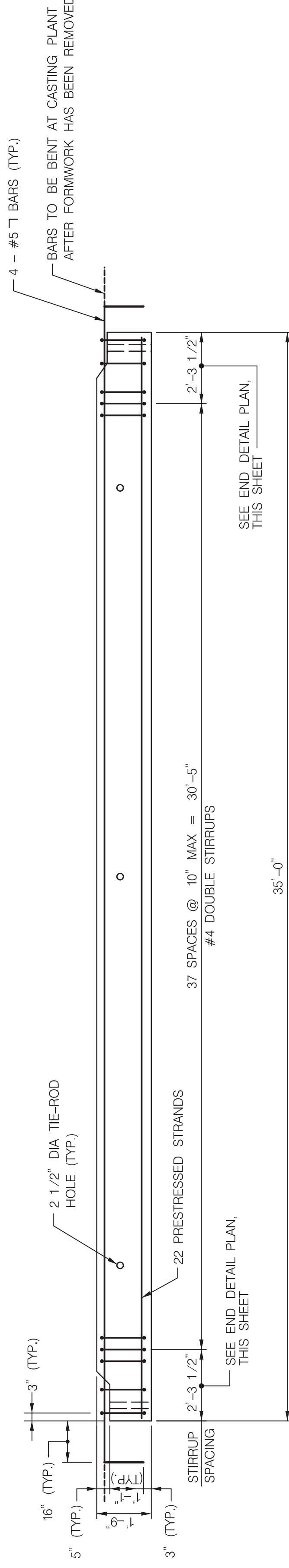
EXTERIOR SLAB DETAILS

END DETAIL PLAN
 SCALE: 1/2" = 1'-0"

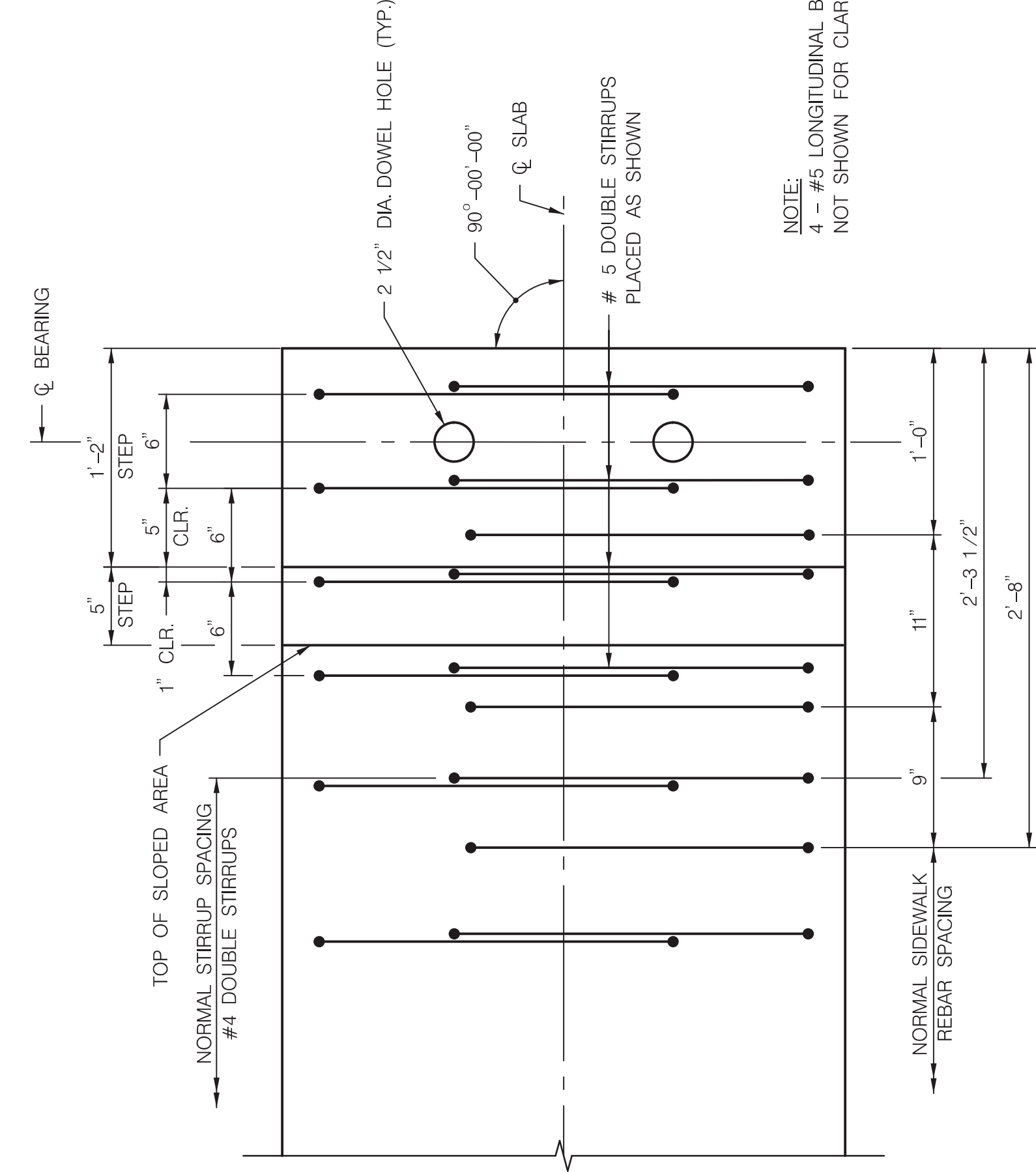
- SLAB BEAM NOTES:**
- EXTREME CARE SHOULD BE USED IN LOCATING THE ROD HOLES DURING CASTING OPERATION. CONTRACTOR SHALL ASSEMBLE THE SLAB UNITS FOR ENTIRE BRIDGE WIDTH AT THE CASTING PLANT TO ENSURE THAT THERE IS NO MISALIGNMENT PRIOR TO SHIPPING SLAB UNITS TO THE SITE. ANY MISALIGNMENT OF THE HOLES WILL BE CAUSE FOR REJECTION OF THE SLAB UNITS. DRILLING OR CORING OF THE SLABS TO CREATE NEW OR MODIFIED CAST HOLES IS PROHIBITED.
 - SLAB UNIT LENGTHS IN THE SHOP DRAWINGS TO COMPENSATE FOR AND DEPTICED IN THE SHOP DRAWINGS TO COMPENSATE FOR GRADE SHORTENING DUE TO THE PRESTRESS EFFECT.
 - THE CONTRACTOR SHALL SHOW THE TYPE AND THE LOCATION OF THE LIFTING INSERTS. THE CONTRACTOR SHALL ENSURE THE LIFTING DEVICES HAVE THE SAFE WORKING CAPACITY TO LIFT THE SLAB PANELS INTO POSITION DURING ERECTION WITHOUT OVERSTRESSING THE PANELS.
 - THE CONTRACTOR WILL BE ALLOWED TO PLACE EQUIPMENT ON THE SLAB UNIT PRIOR TO PLACING THE CONCRETE OVERLAY PROVIDED THAT ALL SLAB UNITS ARE IN PLACE, THE TIE RODS TENSIONED TO THE FINAL TENSIONING FORCE AND THE SHEAR KEY GROUT HAS MET THE CURING REQUIREMENTS.



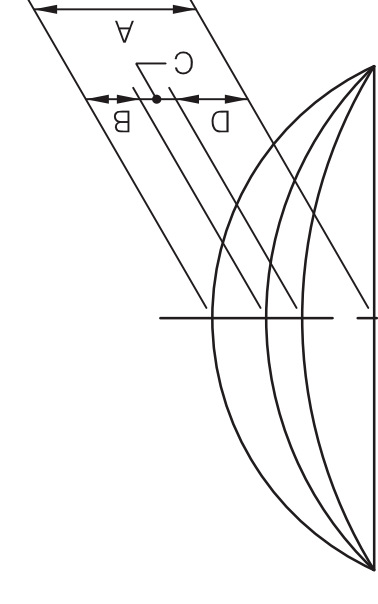
PLAN
SCALE: 3/8" = 1'-0"



ELEVATION
SCALE: 3/8" = 1'-0"



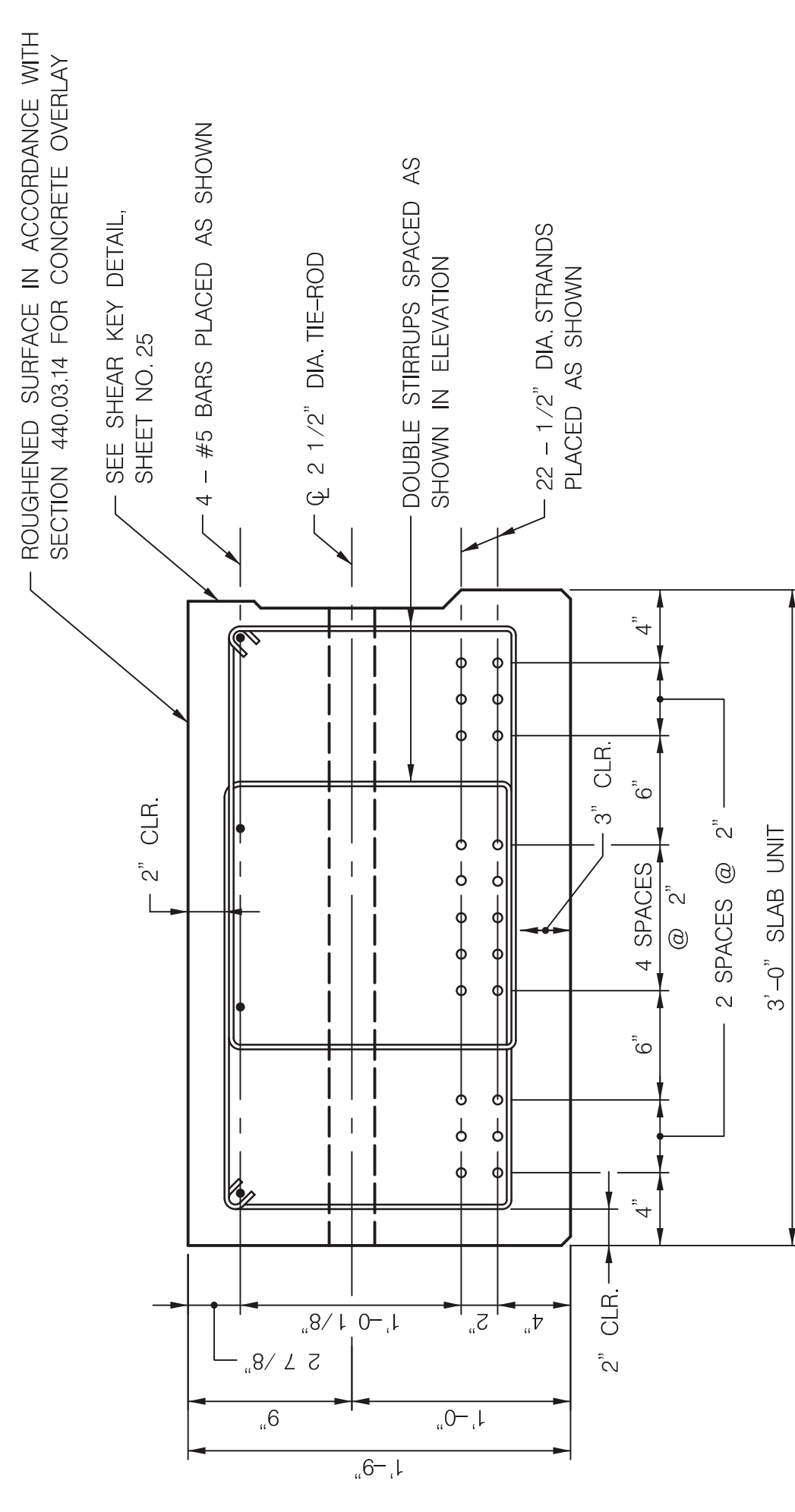
END DETAIL PLAN
SCALE: 11/2" = 1'-0"



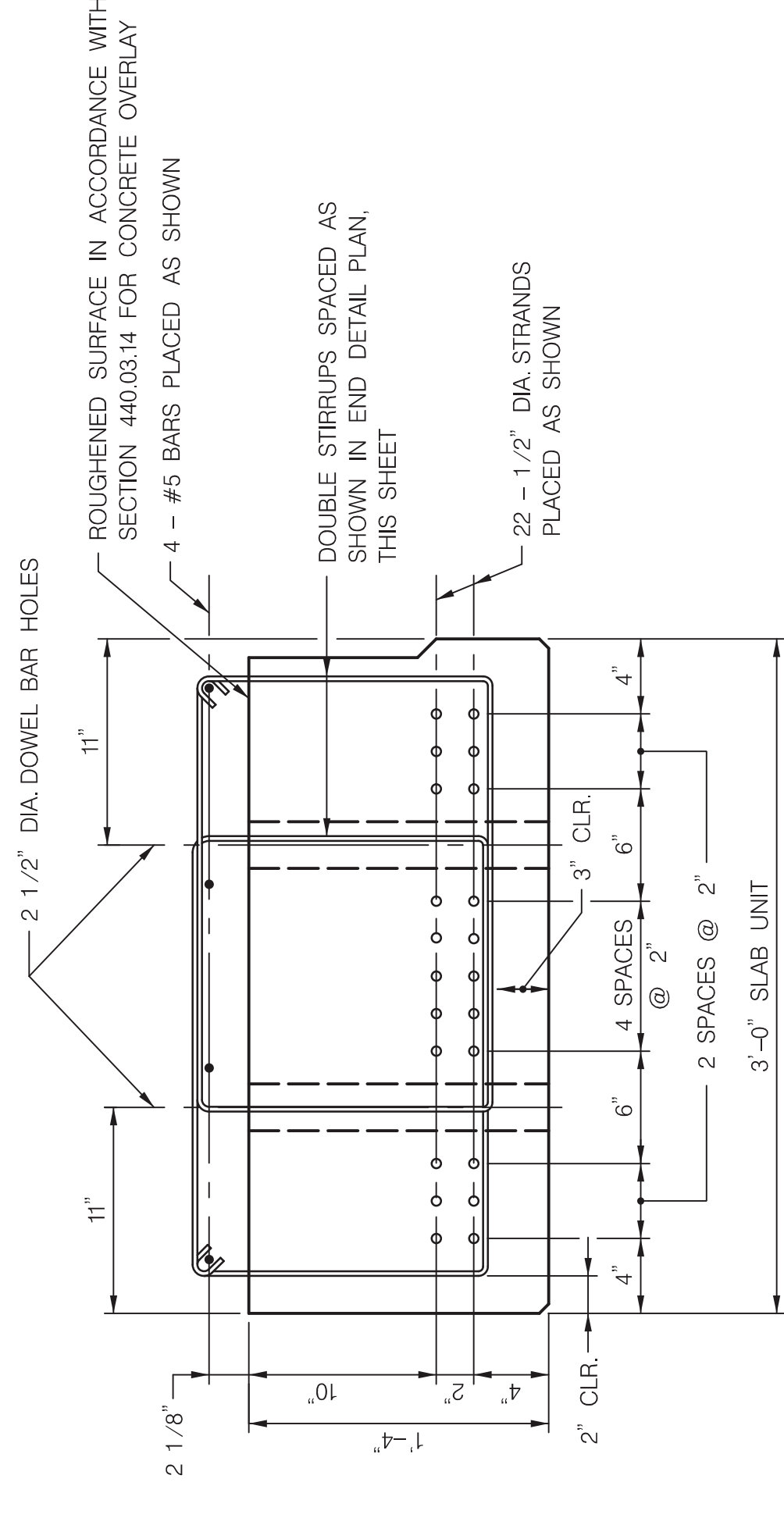
CAMBER DIAGRAM
NOT TO SCALE

- CAMBER NOTES:**
- CAMBER DUE TO PRESTRESS PLUS SLAB DEAD LOAD TO BE CHECKED IN THE FIELD.
 - THE THICKNESS OF THE CONCRETE OVERLAY SHALL BE VARIED TO COMPENSATE FOR ANY INACCURACIES IN THE CAMBER OF SLABS.
 - PRESTRESS CAMBER AND DEAD LOAD DEFLECTION DATA SHOWN IS THEORETICAL AND MAY VARY WITH CONCRETE STRENGTH, VARIABLE PRESTRESSING CONDITIONS AND PRESTRESS LOSSES.
 - CAMBER IN SLABS WILL INCREASE DUE TO CONCRETE CREEP DURING STORAGE. PRECAUTIONS SHALL BE TAKEN BY LOADING OR OTHER MEANS TO PREVENT ADDITIONAL CAMBER FROM DEVELOPING DURING STORAGE OF PRESTRESSED SLABS.
 - A = 1 1/8" (ESTIMATED CAMBER DUE TO PRESTRESS)
 - B = 3/8" (DEFLECTION DUE TO DEAD LOAD OF PRESTRESSED SLABS)
 - C = 1/16" (DEFLECTION DUE TO DEAD LOAD OF CAST-IN-PLACE CONCRETE OVERLAY CURBS AND RAILINGS)
 - D = 11/16" (NET FINAL CAMBER)

- NOTE:**
- 4 - #5 LONGITUDINAL BARS AT TOP, NOT SHOWN FOR CLARITY.



SECTION A-A
SCALE: 11/2" = 1'-0"



SECTION B-B
SCALE: 11/2" = 1'-0"

- NOTES:**
- FOR SLAB LAYOUT AND DETAILS, SEE SHEET NO. 33.
 - FOR TYPICAL SECTION, SEE SHEET NO. 32.
 - FOR TIE-ROD RECESS DETAILS, SEE SHEET NO. 33.
 - FOR SIDEWALK REINFORCING, SEE SHEET NO. 37.
 - ALL NON-PRESTRESSED REINFORCING SHALL BE EPOXY COATED.
 - EXTREME CARE SHALL BE USED WHEN PLACING AND TYING THE SIDEWALK AND CURB REBAR, AND ANCHOR BOLT ASSEMBLY TO PROVIDE FOR THE REQUIRED CLEARANCES. ANY MISPLACED REBAR, DOWEL BAR HOLES, TIE-ROD HOLES OR ANCHOR BOLTS WILL BE CAUSE FOR REJECTION OF THE PRECAST SLAB UNIT.

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7271



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ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
10877 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
WASH DC: 410-476-7772 BALT.: 410-890-3055
FAX: 301-895-2648 www.gpiinc.com

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

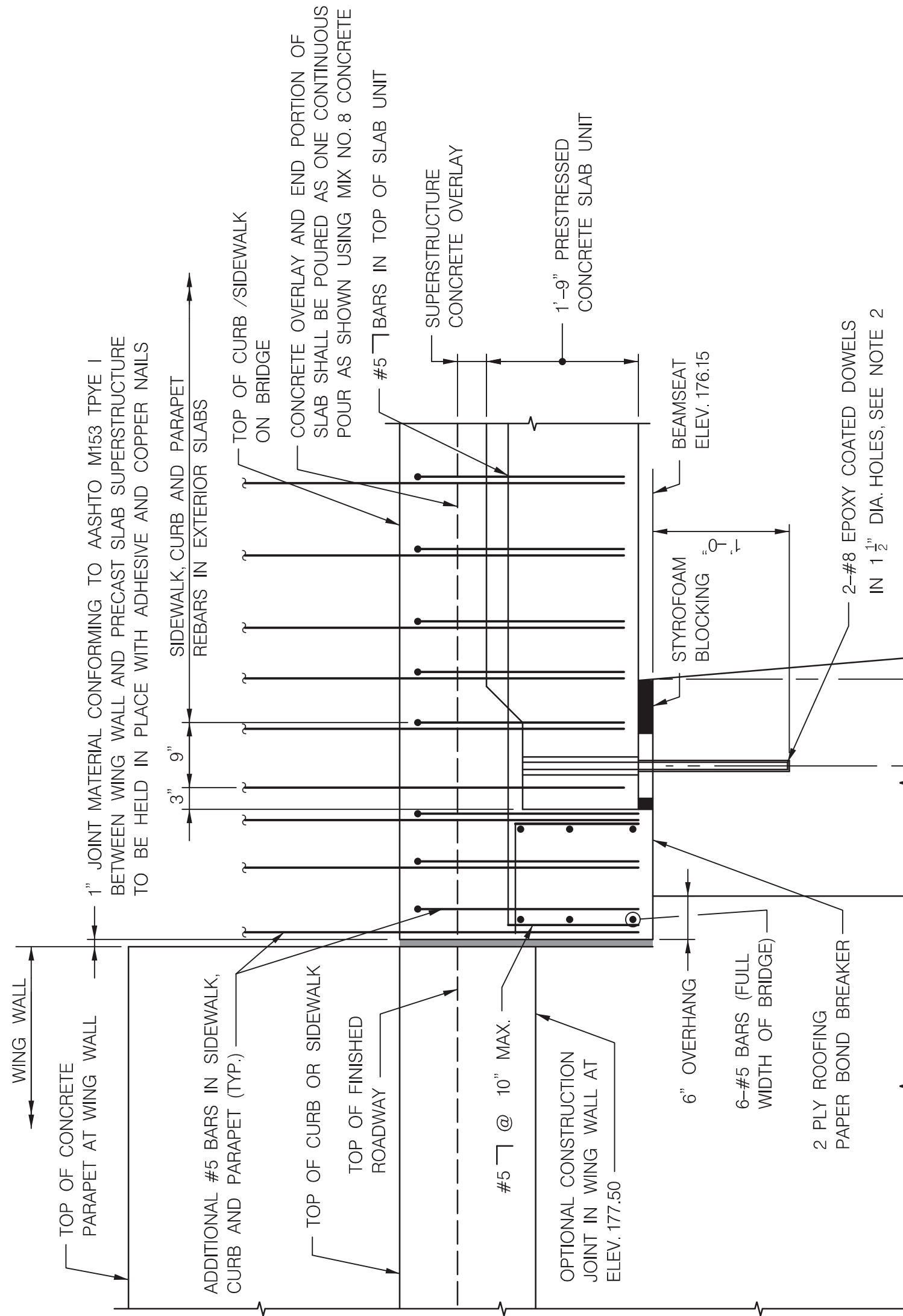
RECOMMENDED FOR APPROVAL
David M. Reid
Chief, Design Section
APPROVED
[Signature]
Chief, Division of Transportation Engineering

INTERIOR SLAB DETAILS 2

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

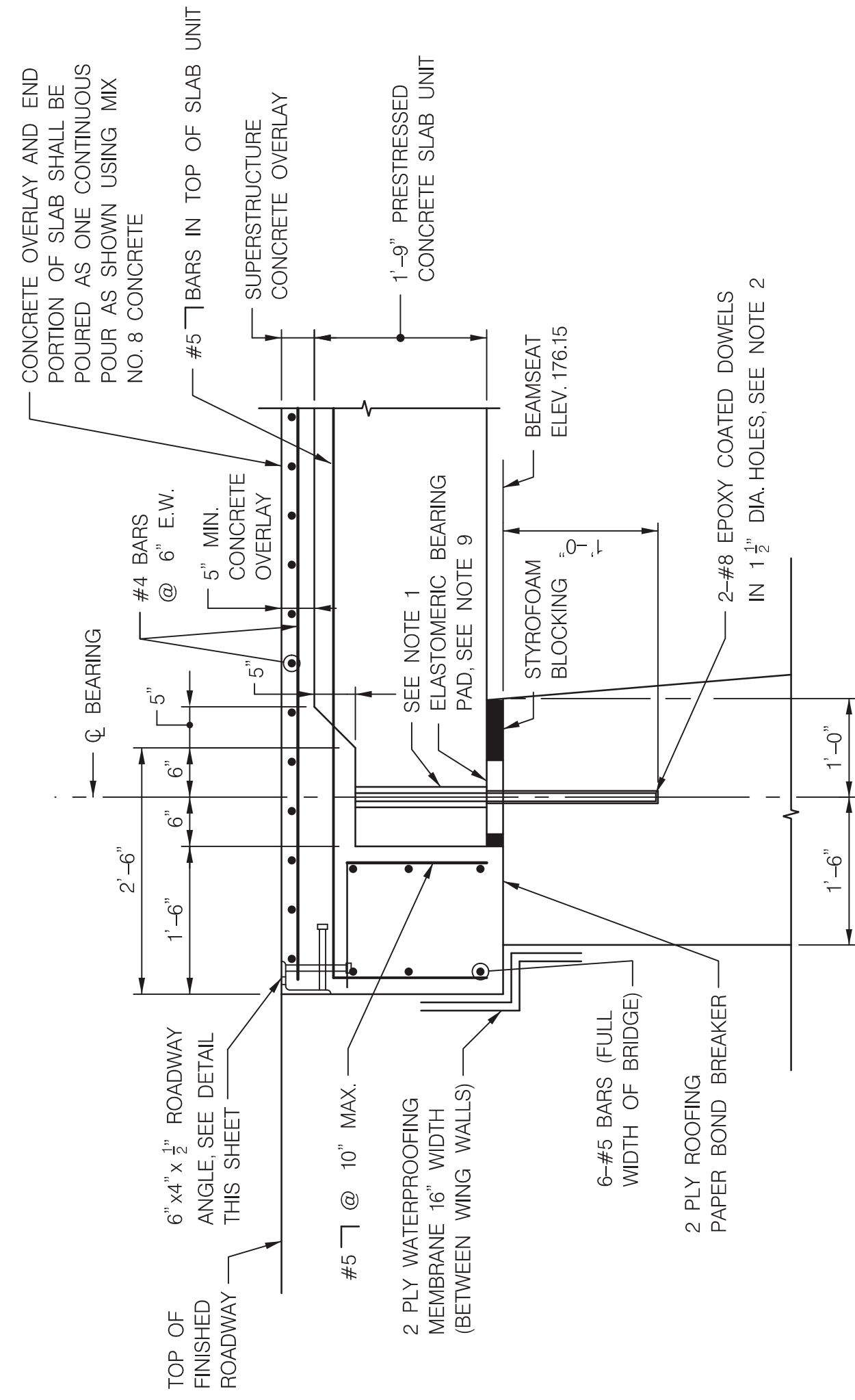
SCALE: AS SHOWN DATE: MAY 2017
Project No.: 501523 SHEET 36 OF 62

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



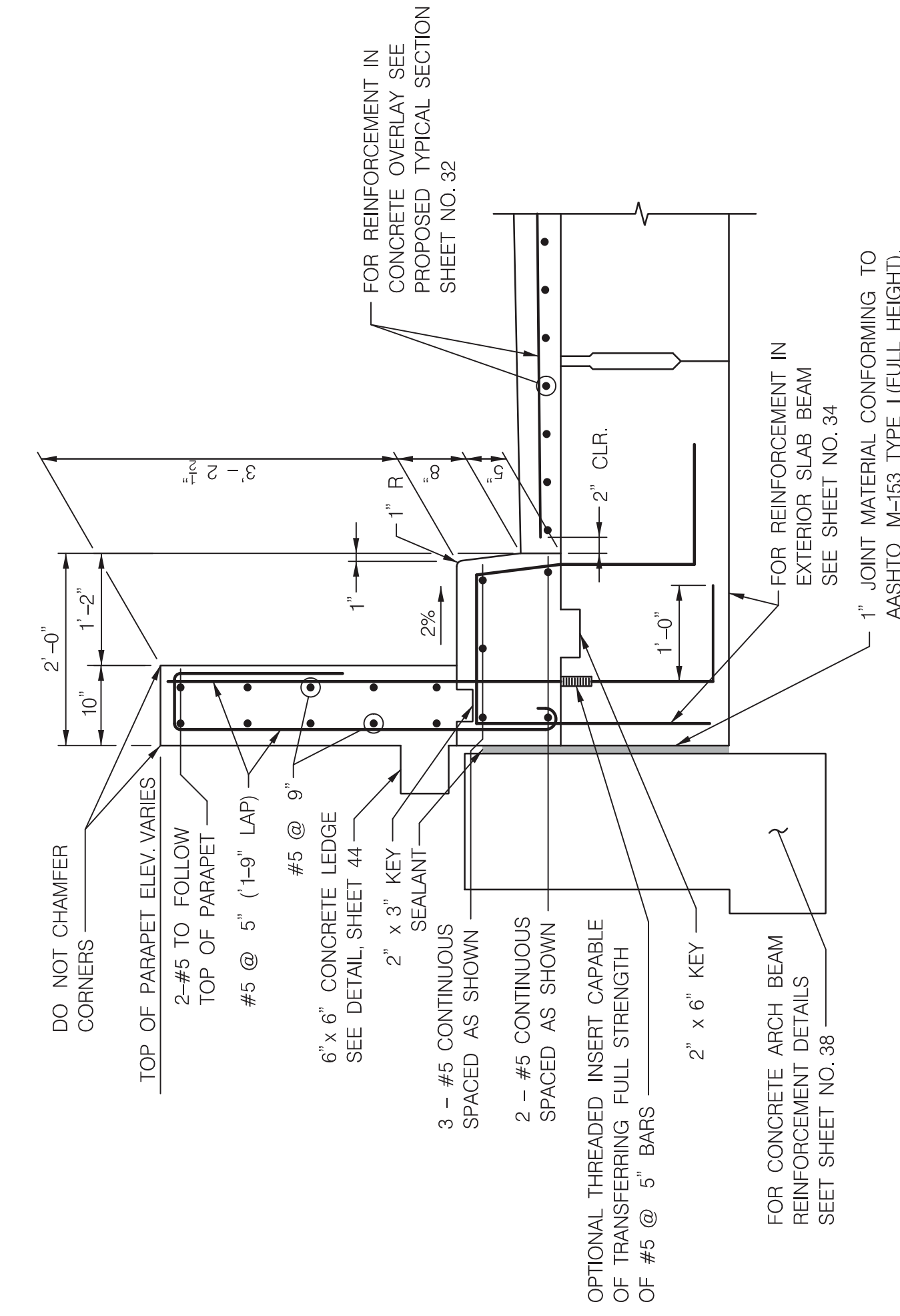
END DIAPHRAGM AT ABUTMENTS
(BETWEEN CURB LINES)

SCALE: 3/4" = 1'-0"



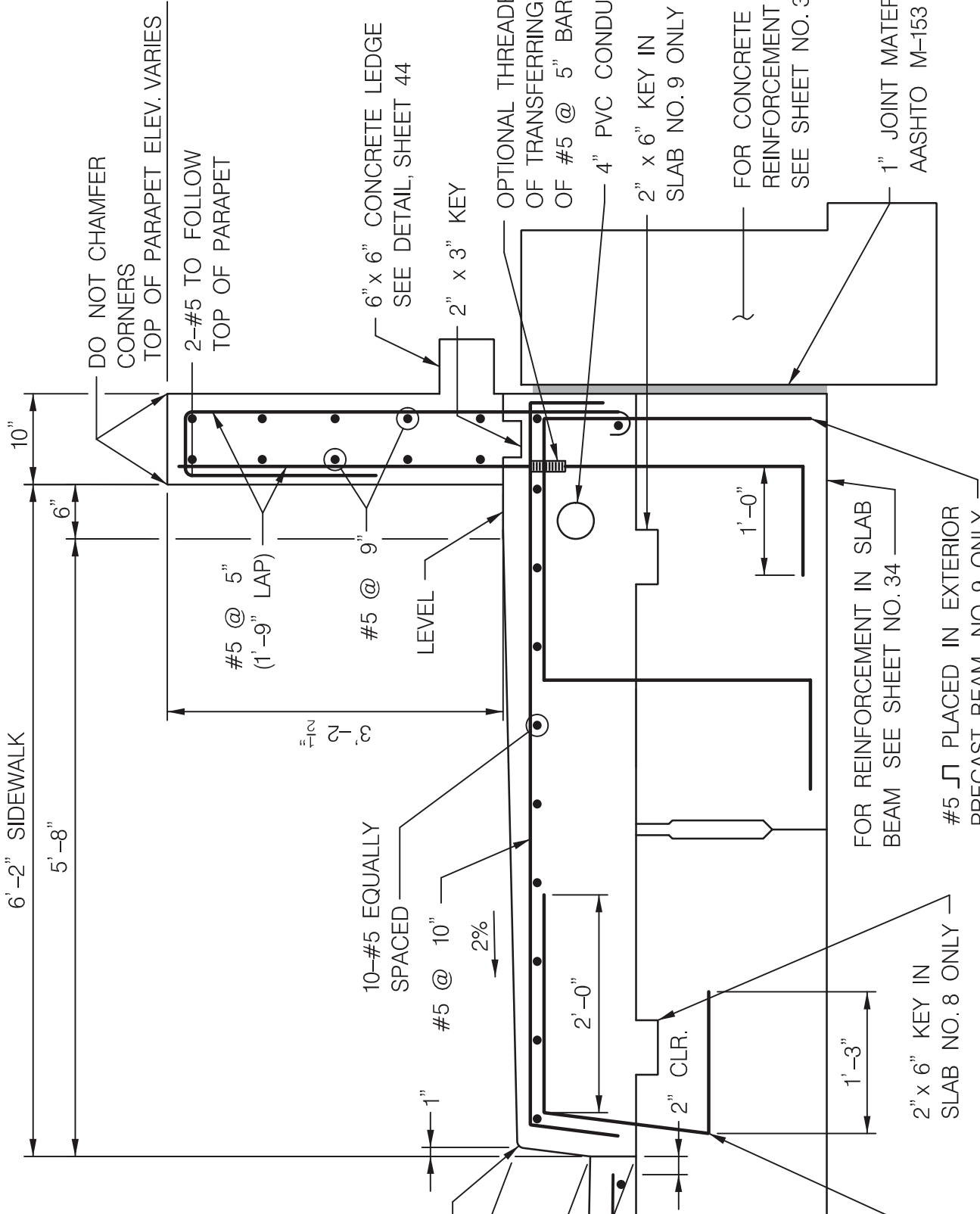
END DIAPHRAGM AT ABUTMENTS
(AT SIDEWALK, CURB AND PARAPET)

SCALE: 3/4" = 1'-0"



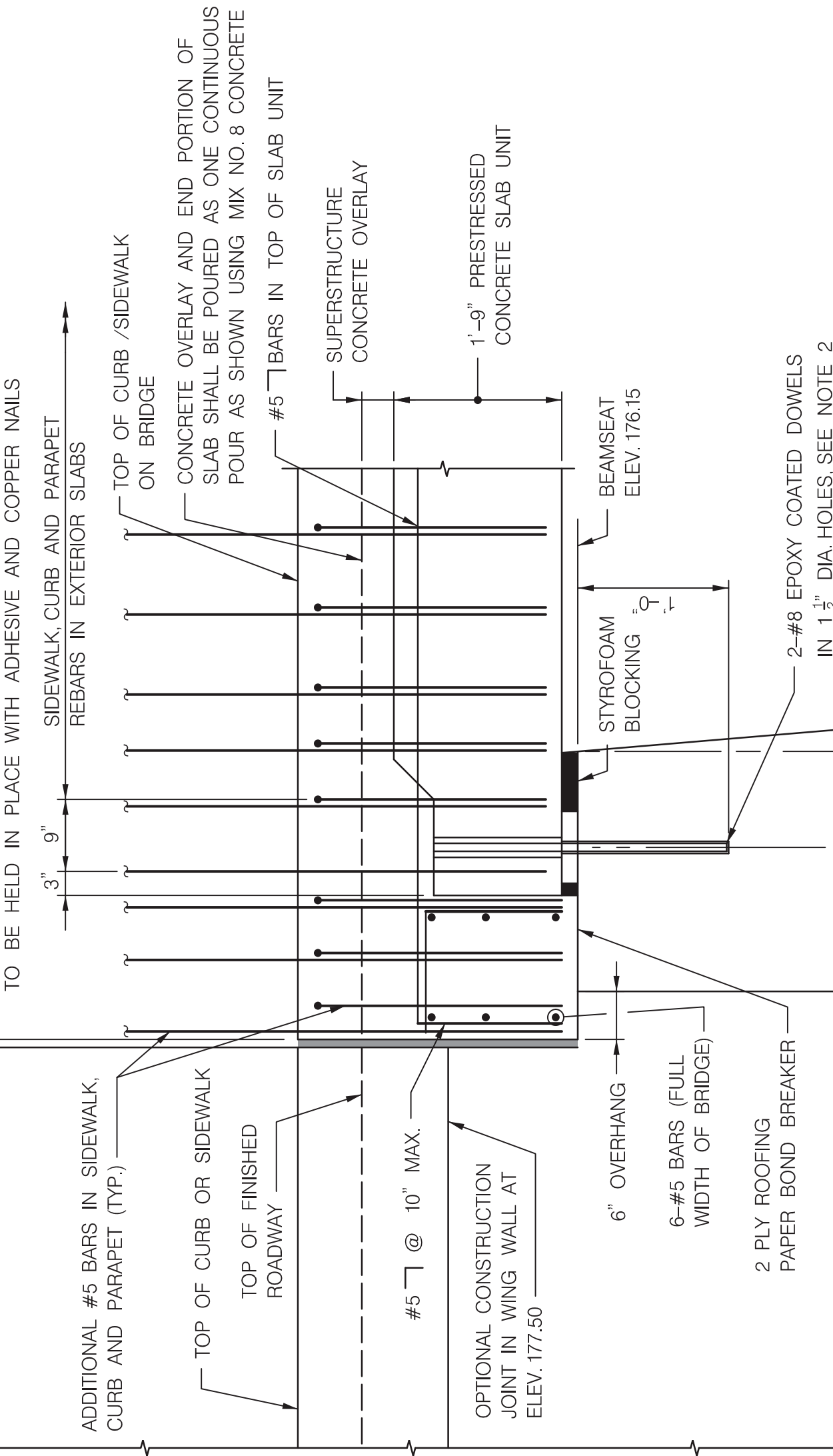
PARAPET AND CURB REINFORCEMENT DETAIL

SCALE: 3/4" = 1'-0"



PARAPET AND SIDEWALK REINFORCEMENT DETAIL

SCALE: 3/4" = 1'-0"



ROADWAY ANGLE DETAIL

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

NOTES:

- ROADWAY ANGLE ASSEMBLAGE SHALL BE GALVANIZED AFTER FABRICATION.
- ROADWAY ANGLE SHALL SPAN BETWEEN GUTTER LINES

STUDS
3/4" DIA. x 8' LONG @ 1'-0" CC
3/4" DIA. x 8' LONG @ 1'-0" CC
STAGGERED

15/16" DIA. VENT HOLE @ 1'-0" C.C. (AS CLOSE TO VERTICAL LEG AS POSSIBLE) THE CONTRACTOR AND ENGINEER SHALL VERIFY DURING OVERLAY AND END DIAPHRAGM PLACEMENT THAT ALL VENT HOLES ARE FILLED WITH CONCRETE THAT HAS BEEN FORCED FROM UNDER THE ANGLES

- NOTES:
- THE 2 1/2" DIA. DOWEL HOLES IN EACH SLAB UNIT SHALL BE FILLED WITH AN ELASTOMERIC OR RUBBERIZED JOINT MATERIAL AT ABUTMENT A (EXP.) AT ABUTMENT B (FIXED) THE DOWEL HOLE SHALL BE FILLED WITH NON-SHRINK GROUT CONFORMING TO SECTION 902.11(C) OF THE STANDARD SPECIFICATIONS.
 - THE #8 DOWEL BARS SHALL BE DRILLED AND GROUTED IN PLACE IN 1 1/2" DIA. HOLE USING NON-SHRINK GROUT AFTER TIE-RODS ARE TENSIONED. (TYPICAL 2 PER EACH UNIT)
 - MX NO. 8 CONCRETE SHALL BE USED FOR DECK OVERLAY AND CONCRETE END DIAPHRAGM.
 - CONCRETE END DIAPHRAGMS SHALL BE CAST MONOLITHICALLY WITH CONCRETE OVERLAY.
 - ALL REINFORCING STEEL IN SUPERSTRUCTURE SHALL BE INCIDENTAL TO THE "SUPERSTRUCTURE CONCRETE FOR BRIDGE" ITEM.
 - ALL NON-PRESTRESSED REINFORCEMENT ON THIS SHEET SHALL BE EPOXY COATED.
 - THE COST OF THE ROADWAY ANGLES SHALL BE INCIDENTAL TO THE "SUPERSTRUCTURE CONCRETE FOR BRIDGE" ITEM.
 - FOR EXTERIOR AND INTERIOR SLAB DETAILS, SEE SHEET NOS. 34, 35 AND 36.
 - FOR ELASTOMERIC BEARING PAD DETAIL, SEE SHEET NO. 33. ALL ELASTOMERIC BEARING PADS SHALL BE PLACED WITH AN EPOXY ADHESIVE IN ACCORDANCE WITH SECTION 432.03.04.
 - FOR TYPICAL SECTION, SEE SHEET NO. 32.



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FAX: 410-880-5248 www.gpiinc.com

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
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MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

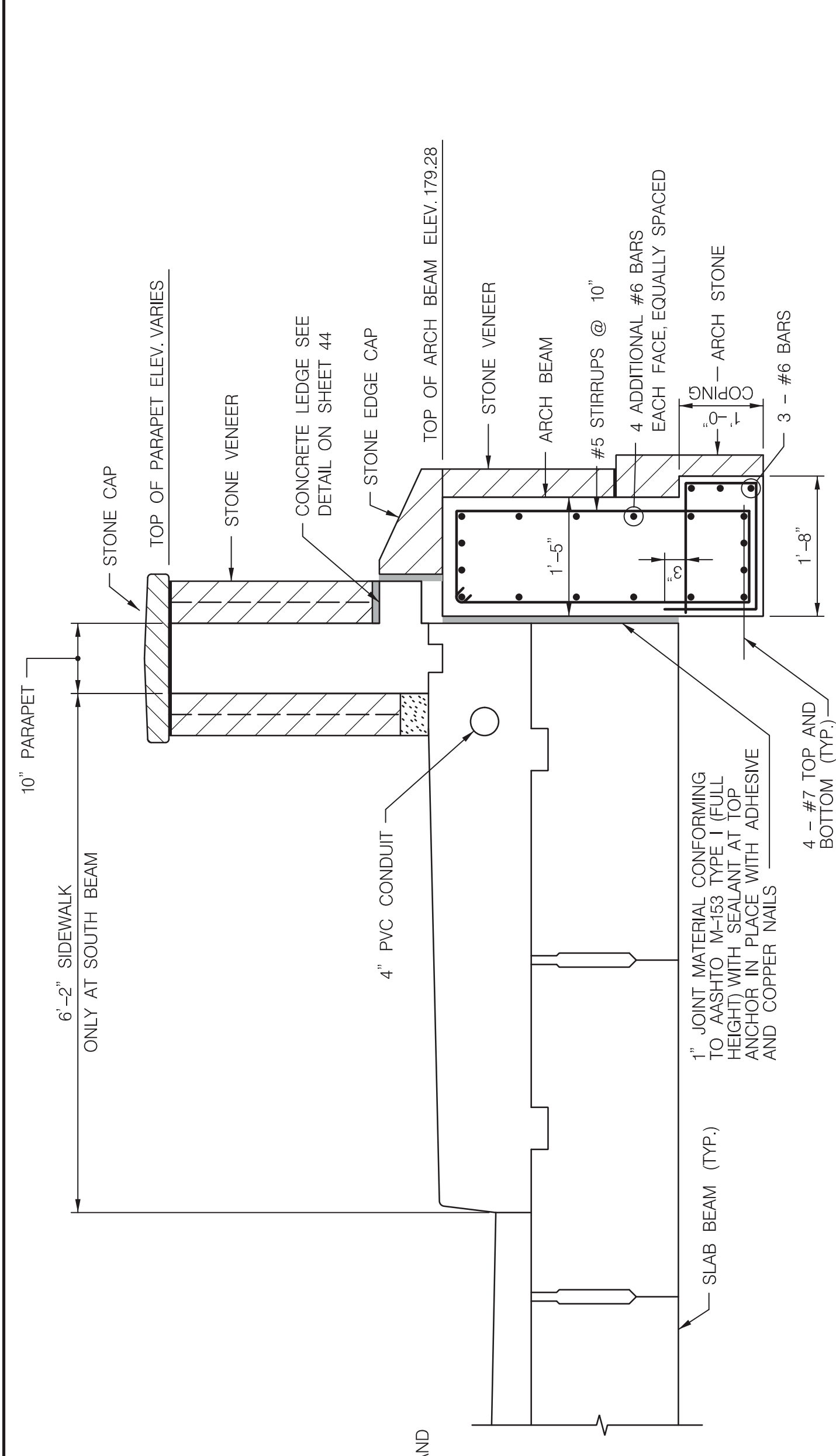
RECOMMENDED FOR APPROVAL
Date: 12/14/17
Chief, Design Section
Date: 12/14/2017
Chief, Division of Transportation Engineering

Designed By: MAM/NJC
Drawn By: BSB
Checked By: NJC/ZSN

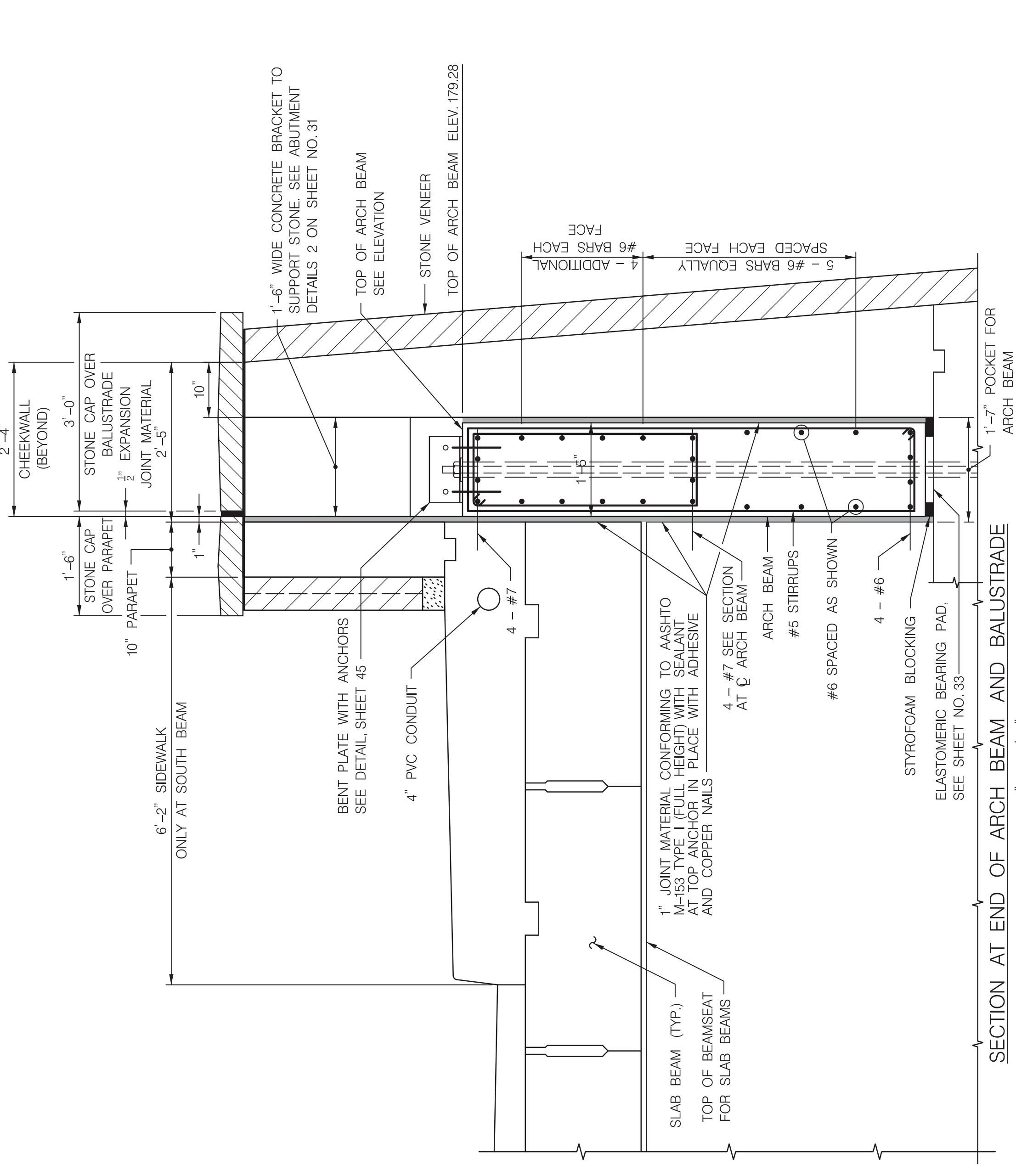
SUPERSTRUCTURE DETAILS 1

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

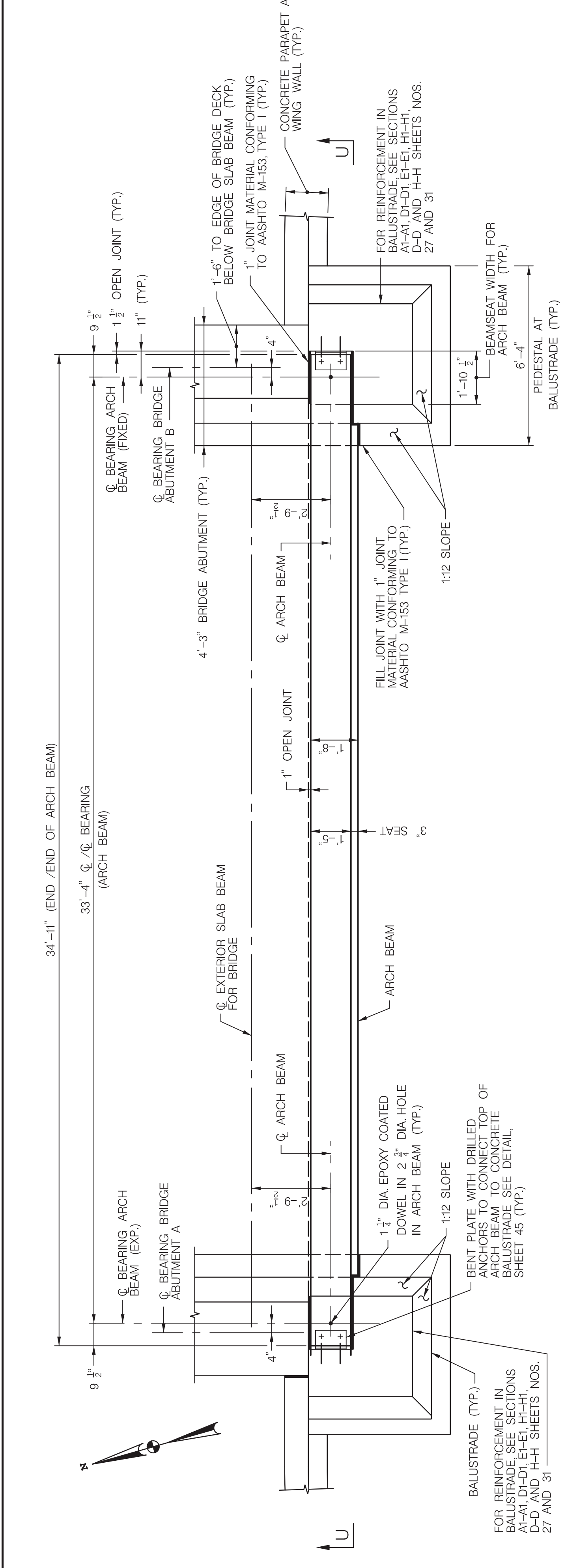
SCALE: AS SHOWN DATE: MAY 2017
Project No.: 501523 SHEET 37 OF 62



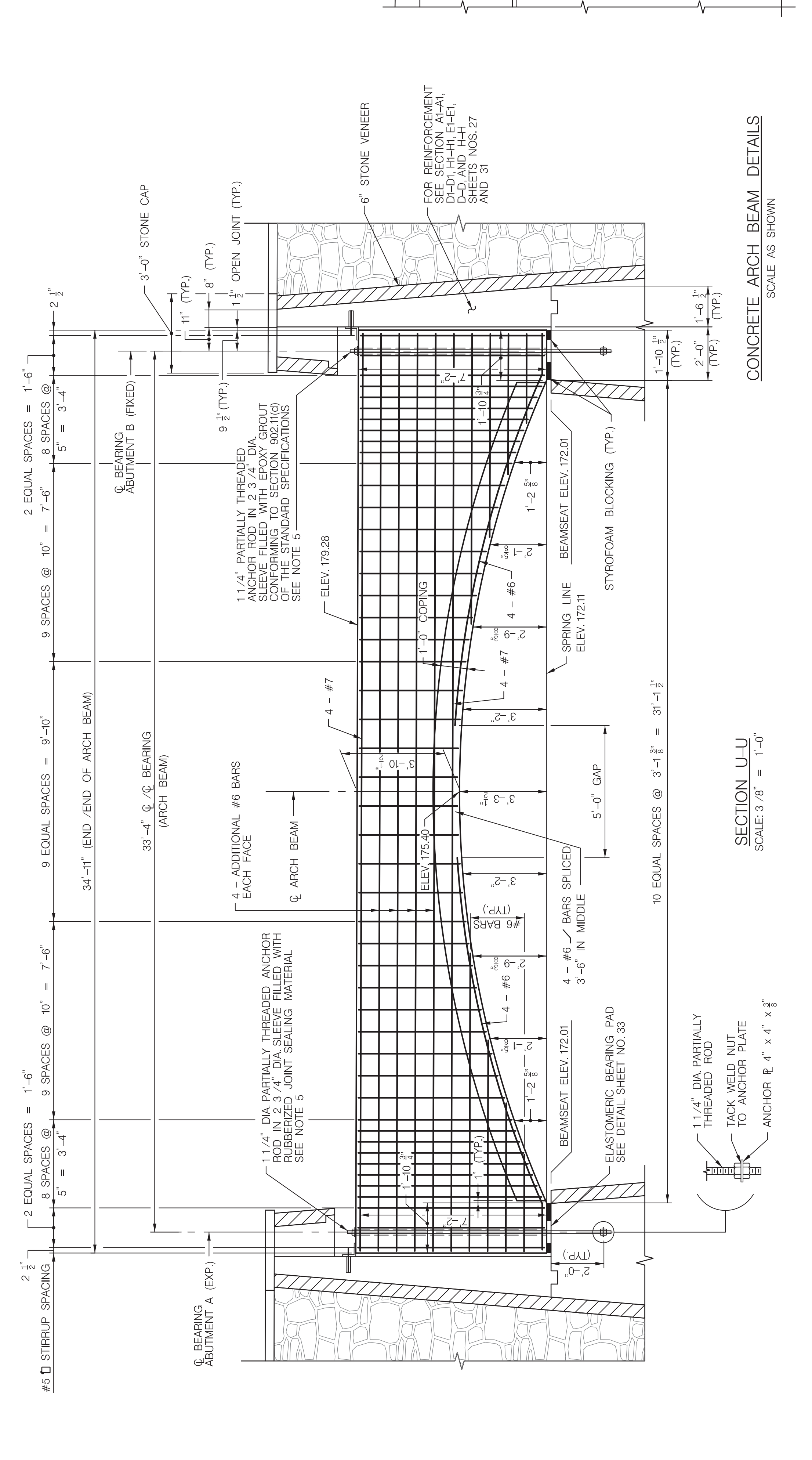
SECTION AT END OF ARCH BEAM AND BALUSTRADE
SCALE: 3/4" = 1'-0"



SECTION AT ARCH BEAM
SCALE: 3/4" = 1'-0"



PLAN AT ARCH BEAM
SCALE: 3/8" = 1'-0"



CONCRETE ARCH BEAM DETAILS
SCALE AS SHOWN

SECTION U-U
SCALE: 3/8" = 1'-0"

- NOTES:
1. ALL REINFORCEMENT IN ARCH BEAM SHALL BE EPOXY COATED.
 2. FOR EXTERIOR AND INTERIOR SLAB DETAILS SEE SHEET NOS. 33 TO 36.
 3. FOR TYPICAL SECTION SEE SHEET NO. 32.
 4. FOR ARCHITECTURAL DETAILS, SEE SHEET NO. 44 AND 45.
 5. ADEQUATELY SECURE ANCHOR ROD TO FORMWORK OR BY OTHER APPROVED MEANS, PRIOR TO POURING BEAMSEAT CONCRETE.

OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND		CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7271	
RECOMMENDED FOR APPROVAL Chief, Design Section <i>David M. Reid</i> APPROVED		DATE 12/14/17	
DESIGNED BY: MAM/NAC Drawn By: <i>MAM</i>		CHECKED BY: NAC/CSNL Checked By: <i>NAC</i>	
DATE		DATE	
REVISION		DATE	
BY		DATE	

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

SUPERSTRUCTURE DETAILS 2

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017

Project No. : 501523 SHEET 38 OF 62



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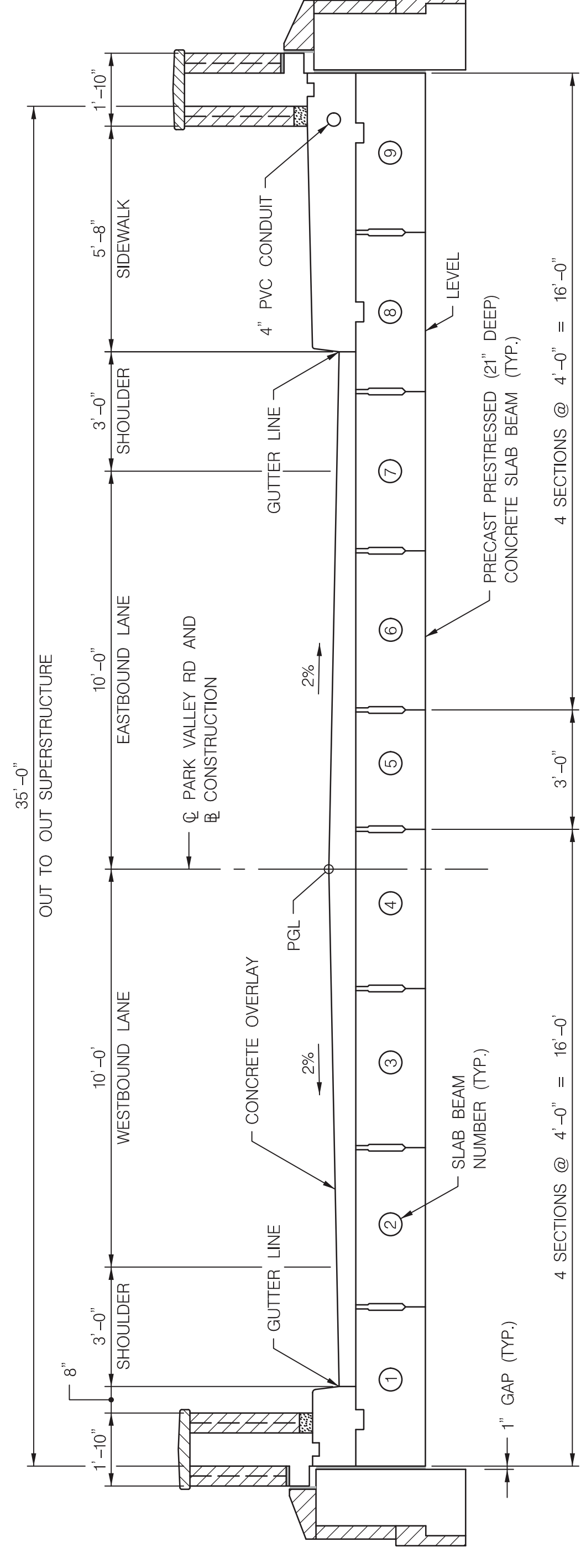
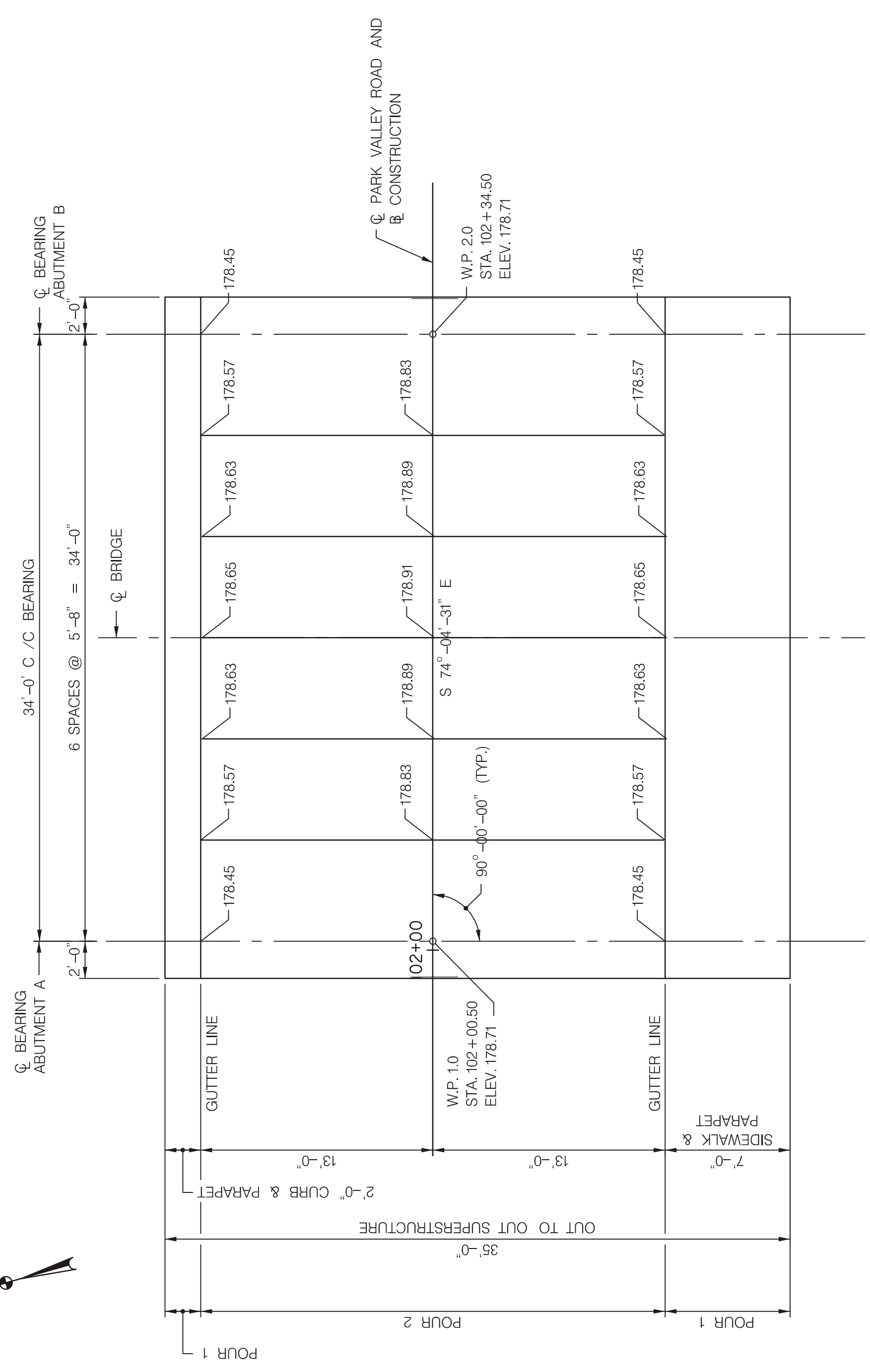
GREENMAN-PEDERSEN, INC.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
10877 CALLEFORD RD., ANNAPOLIS JUNCTION, MD 20710
WASH DC: 410-476-7772 BALT: 410-890-3055
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CONCRETE OVERLAY SEQUENCE OF OPERATIONS
 IN PREPARATION FOR THE PLACEMENT OF THE MIX NO. 8 CONCRETE OVERLAY OVER
 THE PRECAST CONCRETE SLAB UNITS, THE CONTRACTOR SHALL FOLLOW THE FOLLOWING
 SEQUENCE OF OPERATIONS:

1. CONCRETE CURBS AND PARAPETS MAY BE PLACED ONCE THE LATERAL TIE RODS
 HAVE BEEN TENSIONED TO THE FINAL TENSIONING FORCE AND THE SHEAR KEY
 GROUT HAS MET THE CURING REQUIREMENTS.
2. PLACEMENT OF THE OVERLAY MAY OCCUR ONCE PARAPETS, SIDEWALK AND CURB
 HAVE MET THE CURING REQUIREMENTS.
3. THE OVERLAY REINFORCING MAT MAY BE ASSEMBLED ON OR OFF THE STRUCTURE.
 HOWEVER, THE MATS MUST BE ASSEMBLED IN UNITS THAT CAN BE LIFTED ON AND
 OFF THE STRUCTURE PRIOR TO PLACING OVERLAY REINFORCING UNITS SHALL BE
 ASSEMBLED WITH PROPER BAR LAP LENGTHS TO TIE REINFORCING UNITS TOGETHER.
 TEMPORARY SUPPORTS ATTACHED TO THE MATS, SUCH AS DIAGONAL REBARS OR
 SIMILAR SUPPORT STEEL SUCH AS STEEL ANGLES, MAY BE REQUIRED TO PREVENT
 RACKING OF THE MAT DURING LIFTING OPERATIONS. NO WELDING WILL BE ALLOWED.
4. TO LOCATE THE REINFORCING MAT IN THE CENTER OF THE DECK OVERLAY THE
 CONTRACTOR SHALL PLACE AND TIE THE SUPPORT CHAIRS TO THE UNDERSIDE OF
 THE REINFORCING MAT.
5. THE FINISHING SCREED SHALL BE SET-UP AND A DRY RUN OF THE FINISHING
 OPERATION MADE TO VERIFY THAT THE REINFORCING IS PROPERLY LOCATED AND
 THE FINISHED DECK ELEVATIONS SHOWN ON THE PLANS CAN BE ACHIEVED.
6. THE REINFORCING MAT, INCLUDING CHAIRS, SHALL BE LIFTED OFF OF THE BRIDGE
 JUST PRIOR TO THE PLACEMENT OF THE OVERLAY TO PERMIT THE ENTIRE DECK
 TO BE CLEANED IN ACCORDANCE WITH SECTION 440.03.22.
7. PRIOR TO BEGINNING THE PLACEMENT OF THE OVERLAY, THE CONTRACTOR SHALL
 FLOAT THE CEMENT SLURRY ACROSS THE BRIDGE DECK AS DESCRIBED IN THE
 SPECIFICATIONS AND WORK IT INTO THE TOP OF THE SLAB UNITS.
8. KEEPING THE SLURRY MOIST WITH A MISTING OPERATION, THE REINFORCING MAT
 SHALL BE PLACED BACK ON TOP OF THE PRECAST SLAB UNITS, SEGMENTS TIED
 TOGETHER AND RESTING ON CHAIRS AND THE PLACEMENT OF THE MIX NO. 8
 CONCRETE OVERLAY SHALL COMMENCE IMMEDIATELY. IT IS IMPERATIVE THAT THE
 OVERLAY SHALL BE PLACED WHILE THE SLURRY IS IN A NON-SET CONDITION.

NOTES:
 1. FINISHED ROADWAY ELEVATIONS ARE TOP OF CONCRETE OVERLAY.
 2. FOR VERTICAL ROADWAY PROFILE, SEE SHEET NO. 6.
 3. FOR SLAB BEAM CAMBER AND DEFLECTION DATA, SEE SHEETS
 NO. 33, 34 AND 35.

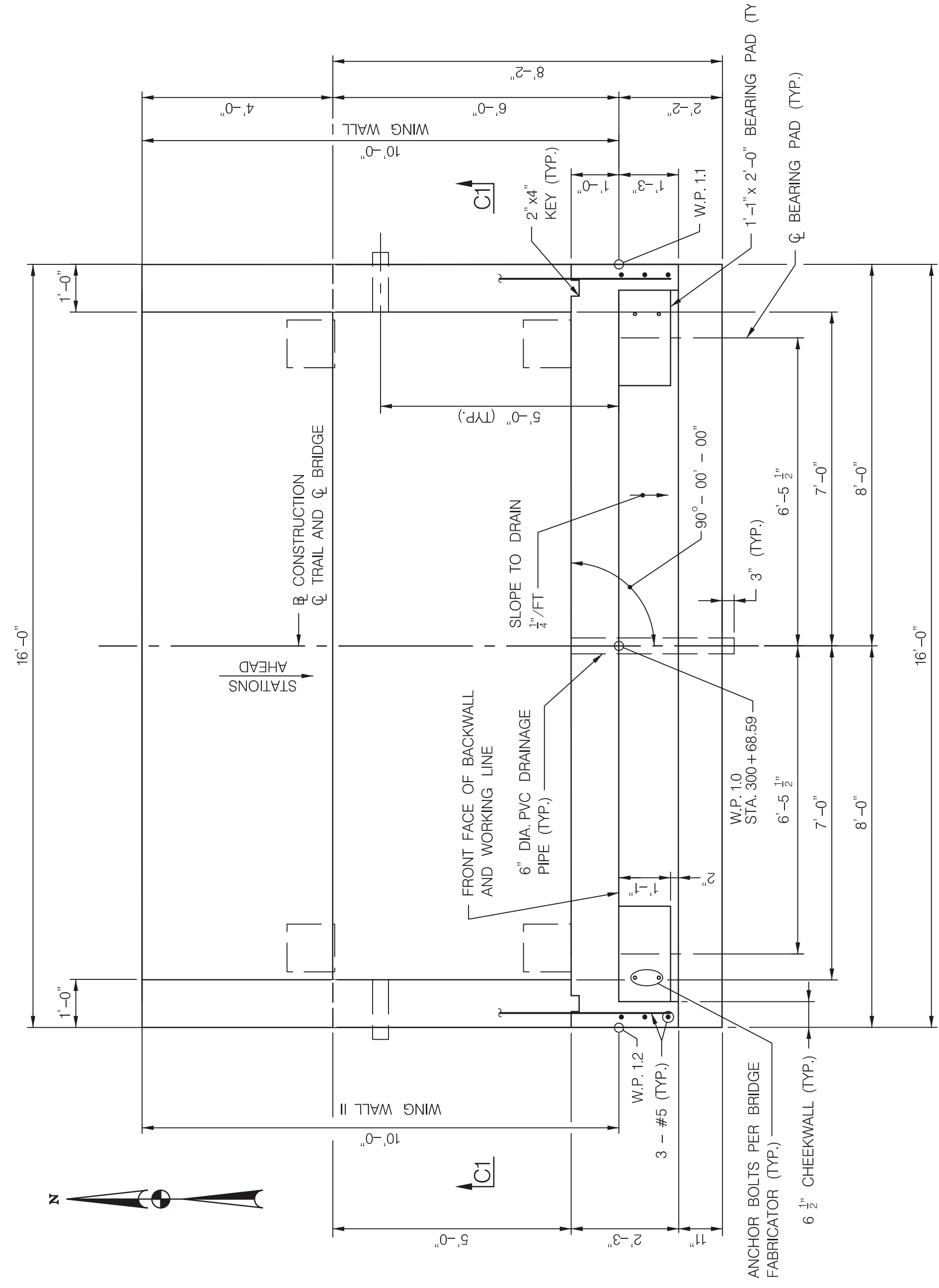
MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		RECOMMENDED FOR APPROVAL <i>David M. Reich</i> Chief, Design Section APPROVED Date: 12/14/17	Checked By: NJC/CSN
OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND		CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7221	Project No.: 501523
FINISHED ROADWAY ELEVATIONS		BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK	DATE: MAY 2017
SCALE: AS SHOWN		DATE: MAY 2017	SHEET 39 OF 62



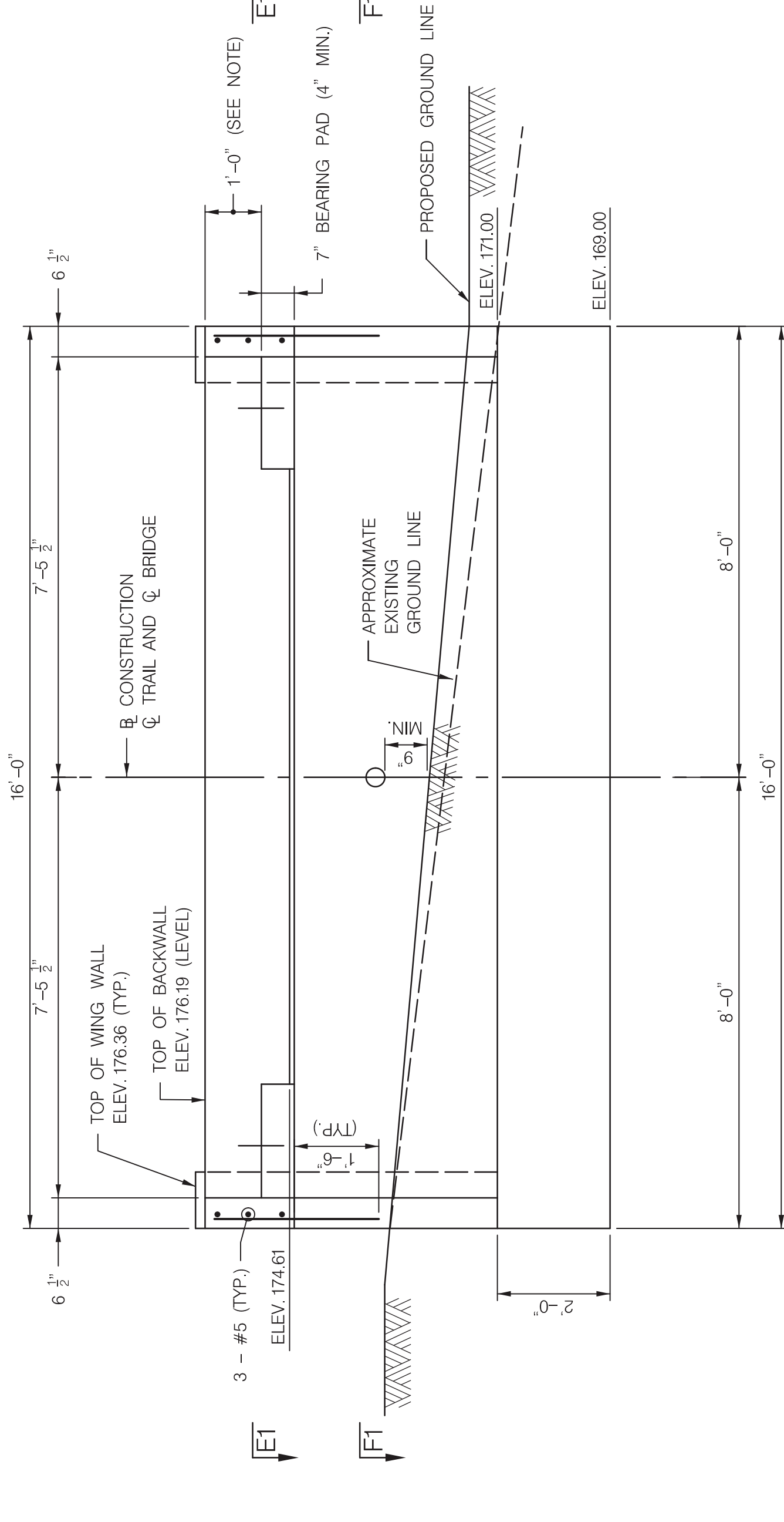
FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



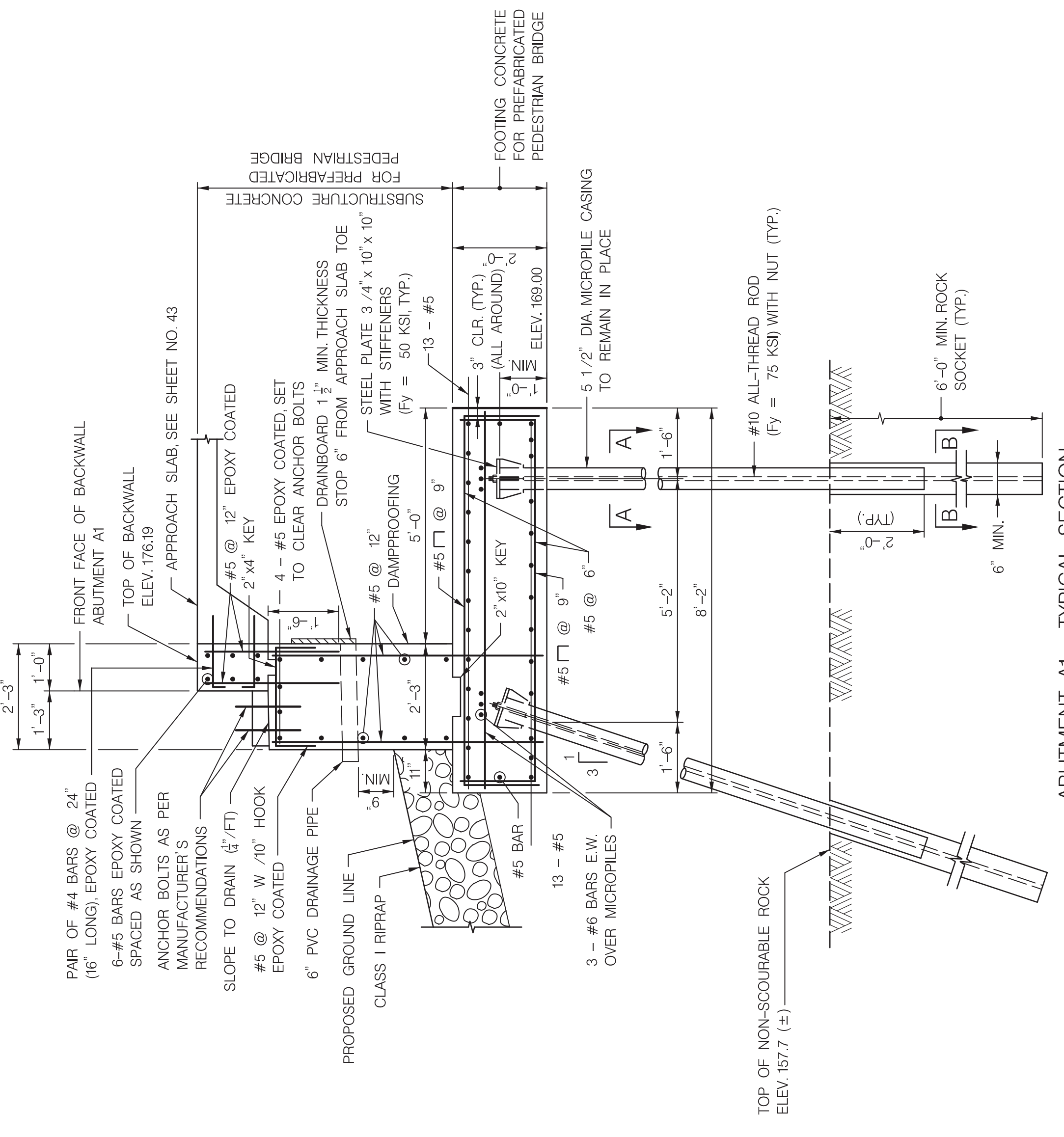
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 GREENMAN-PEDERSEN, INC.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
 10877 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
 WASHINGTON FIELD OFFICE: BALTIMORE, MD 21208
 TEL: 410-291-8600 FAX: 410-291-8608 www.gpiinc.com



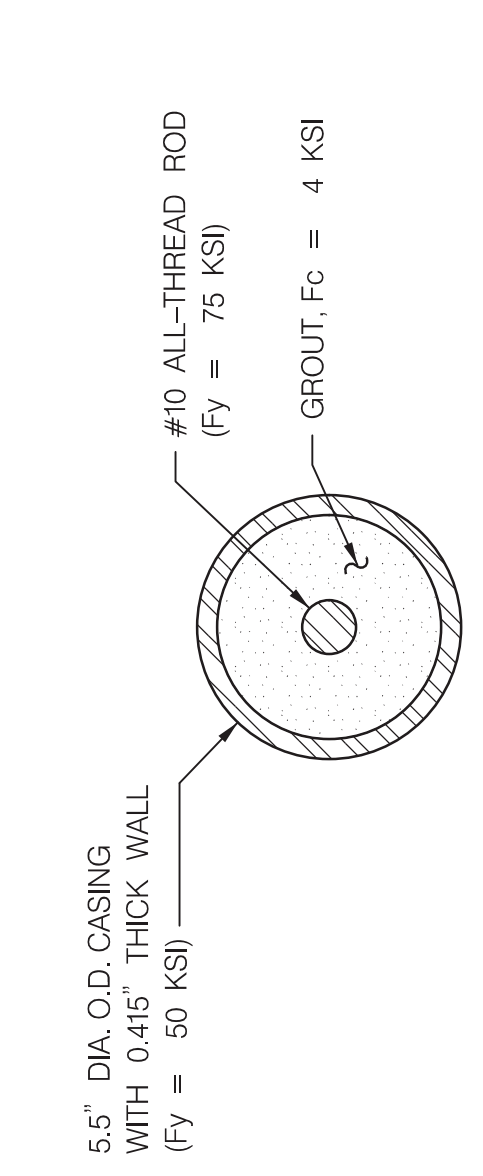
PLAN
SCALE: 1/2" = 1' - 0"



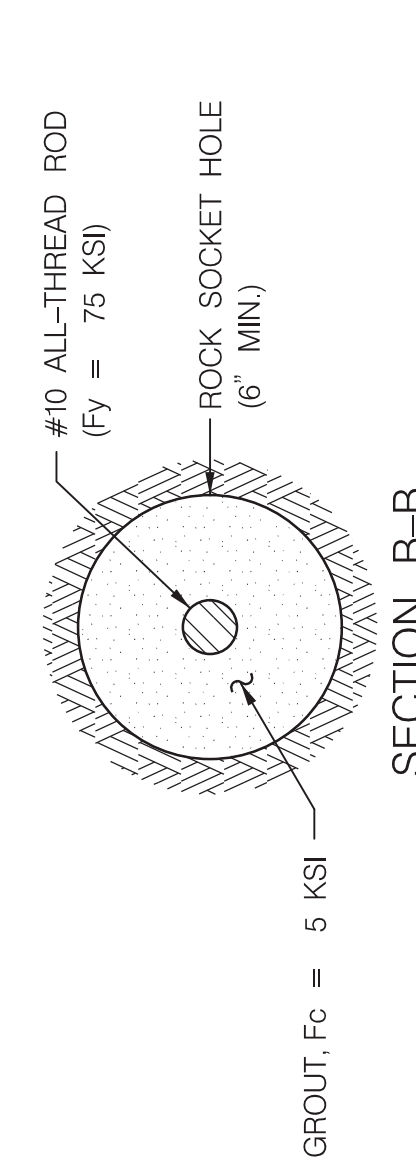
ELEVATION
SCALE: 1/2" = 1' - 0"



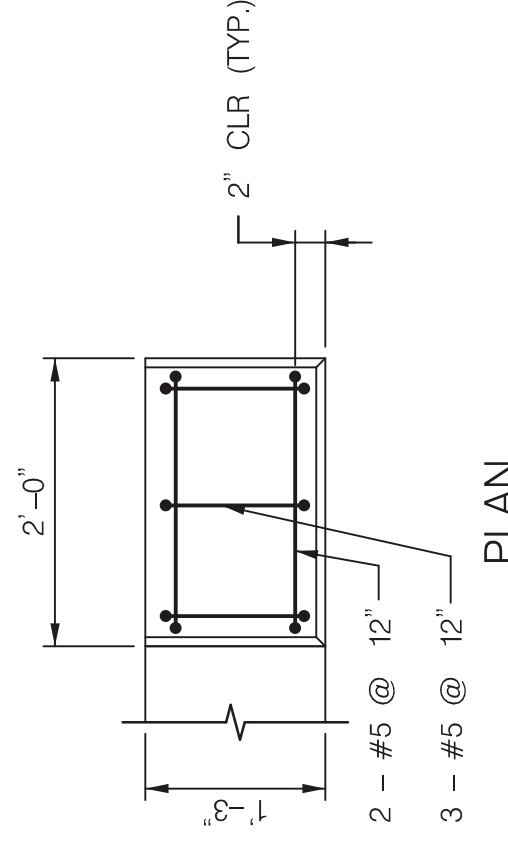
ABUTMENT A1 - TYPICAL SECTION
SCALE: 1/2" = 1' - 0"



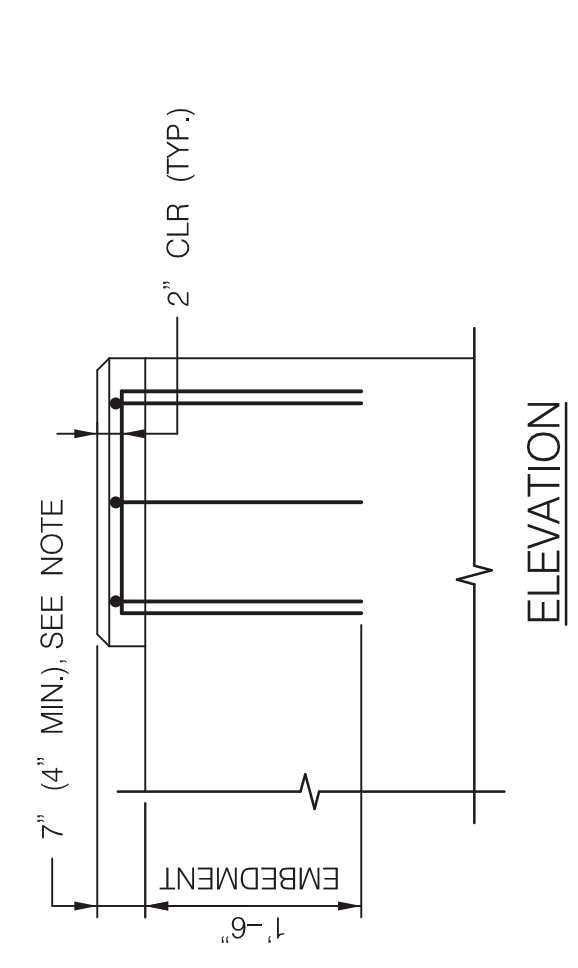
SECTION A-A
SCALE: 3" = 1' - 0"



SECTION B-B
SCALE: 3" = 1' - 0"



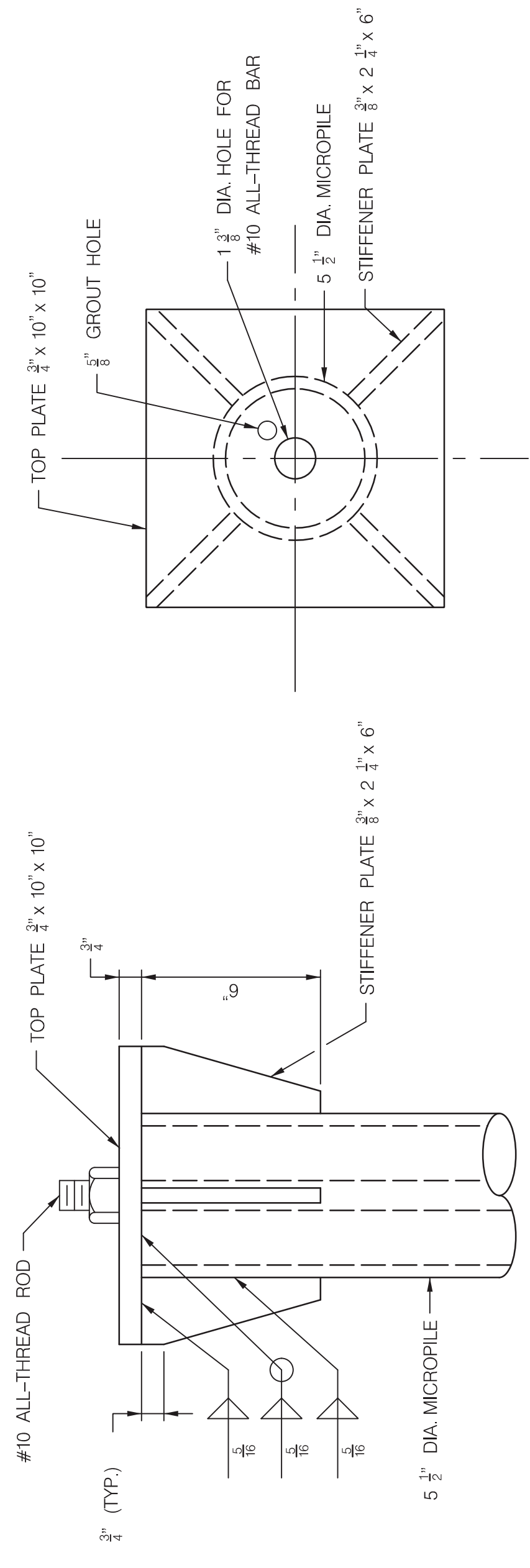
PLAN
SCALE: 3" = 1' - 0"



ELEVATION
SCALE: 3" = 1' - 0"

BEARING PAD DETAIL
NOT TO SCALE

NOTE: ADJUST BEARING PAD REINFORCEMENT TO ALLOW PLACEMENT OF ANCHOR BOLTS AS SPECIFIED BY TRUSS MANUFACTURER.



PILE TOP PLATE DETAILS
SCALE: 3" = 1' - 0"

NOTE:
PLANS ARE DETAILED TO ACCOMMODATE A. PREMANUFACTURED TRUSS DEPTH OF 12" BELOW TOP OF DECK. CONTRACTOR TO ADJUST BEARING PAD HEIGHT BASED ON ACTUAL STRUCTURE DEPTH SUBMITTED FOR REVIEW BY ENGINEER.

NOTES:
1. FOR SECTIONS C-C1, E1-E1 AND F1-F1, SEE SHEET NO. 43.
2. FOR WING WALL ELEVATIONS, SEE SHEET NO. 43.
3. FOR APPROACH SLAB DETAILS, SEE SHEET NO. 43.

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

RECOMMENDED FOR APPROVAL
Date: 12/14/17
Chief, Design Section
Approved: [Signature]
Chief, Division of Transportation Engineering
Date: 12/14/17
Checked By: [Signature]
Designed By: [Signature]
Drawn By: [Signature]

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

PEDESTRIAN BRIDGE DETAILS 2
ABUTMENT A1

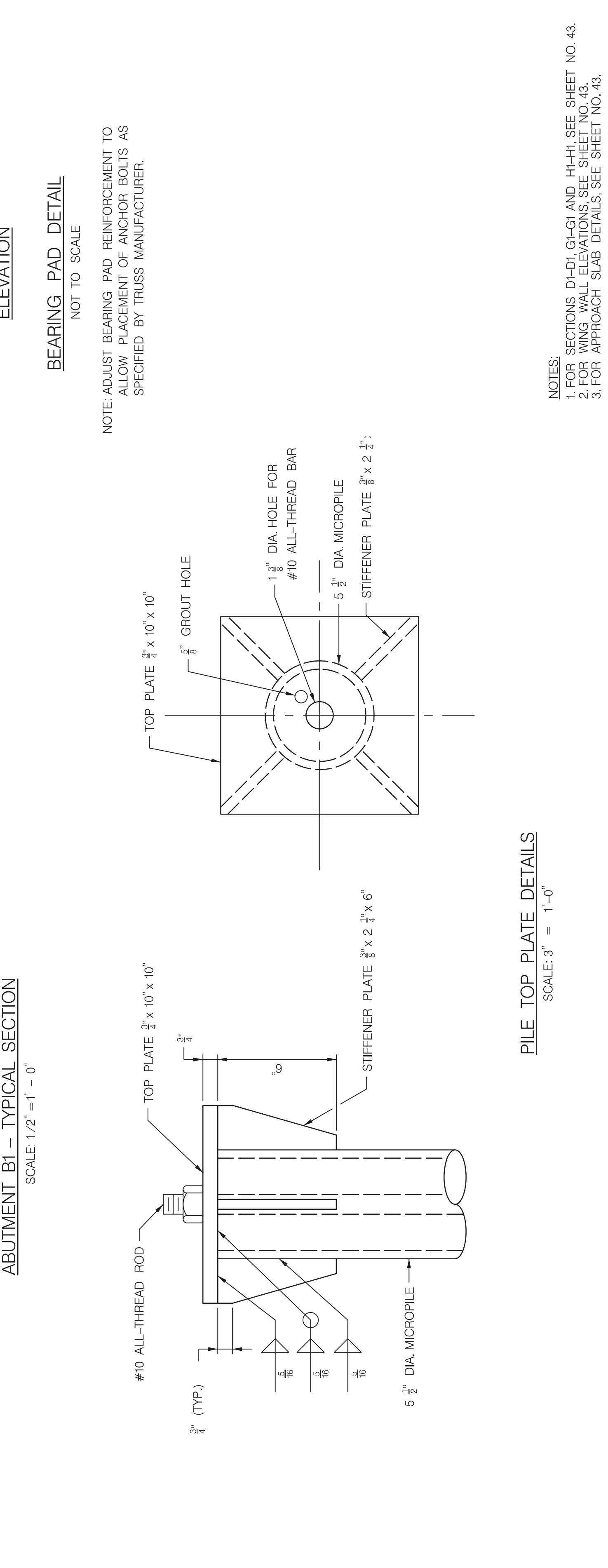
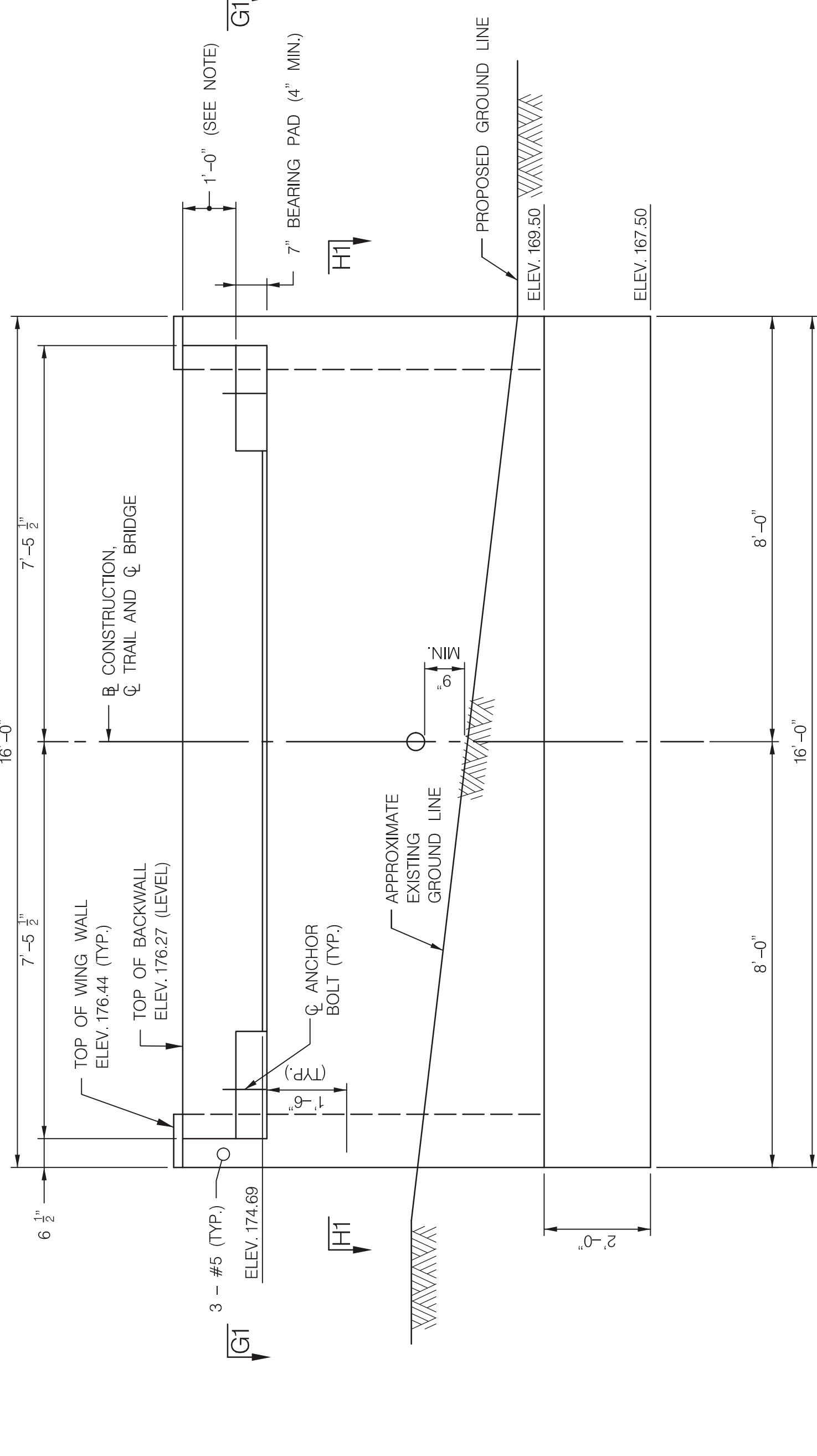
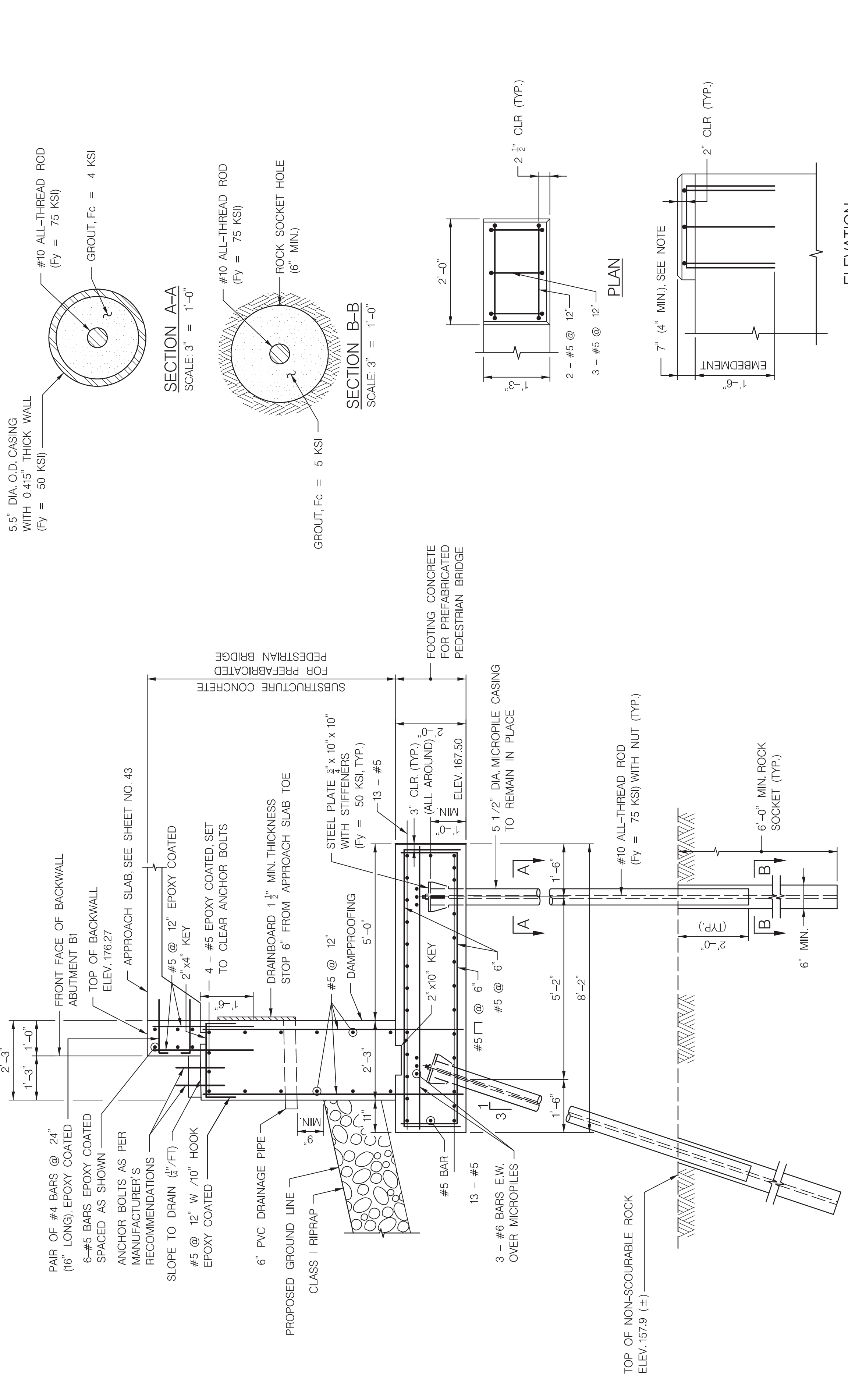
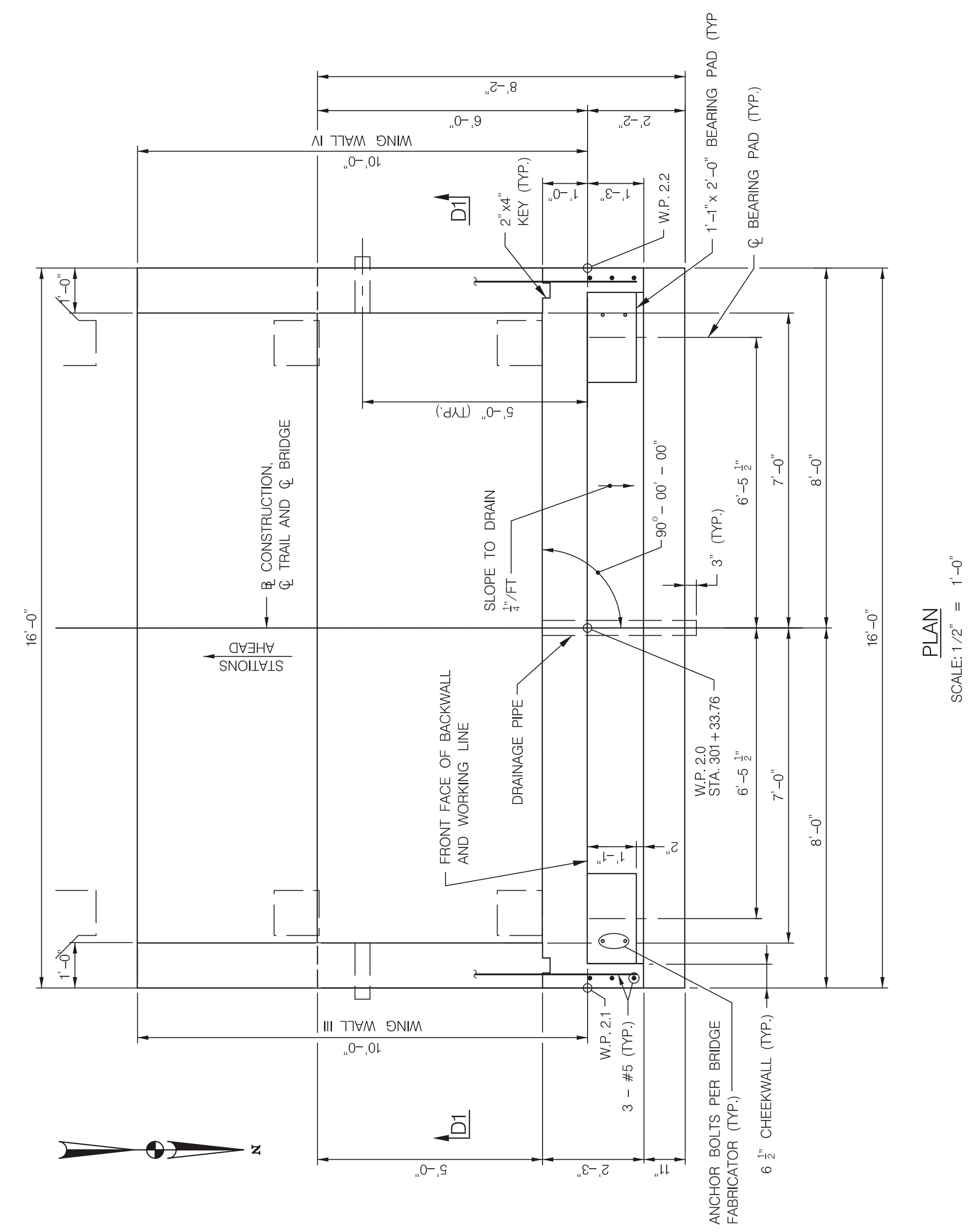
BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017
Project No.: 501523 SHEET 41 OF 62



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WASH. DC OFFICE: 476-7772 BALTIMORE OFFICE: 880-3055
FAX: 301-865-5848 www.gpiinc.com

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



NOTE:
 1. PLANS ARE DETAILED TO ACCOMMODATE A PREMANUFACTURED TRUSS DEPTH OF 12' BELOW TOP OF DECK. CONTRACTOR TO ADJUST BEARING PAD HEIGHT BASED ON ACTUAL STRUCTURE DEPTH SUBMITTED FOR REVIEW BY ENGINEER.

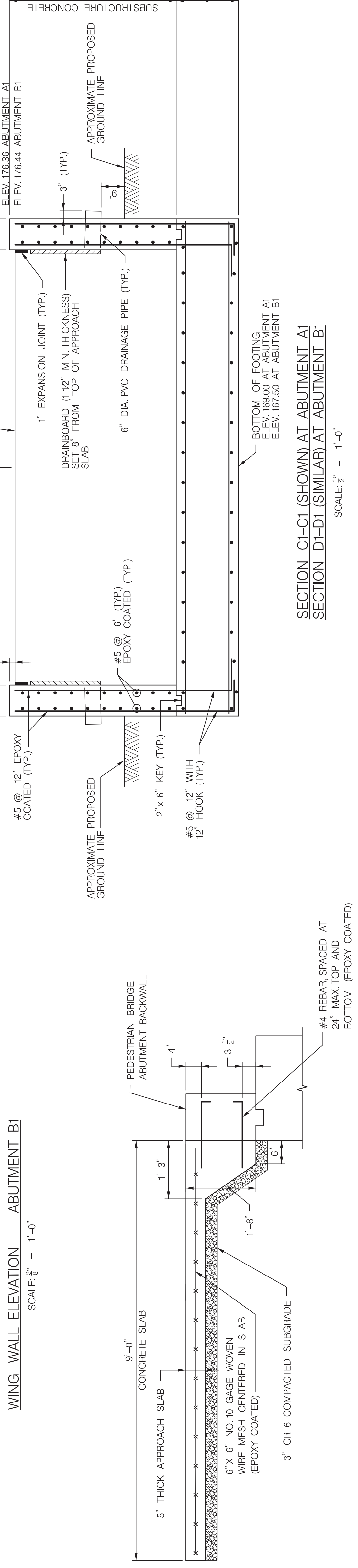
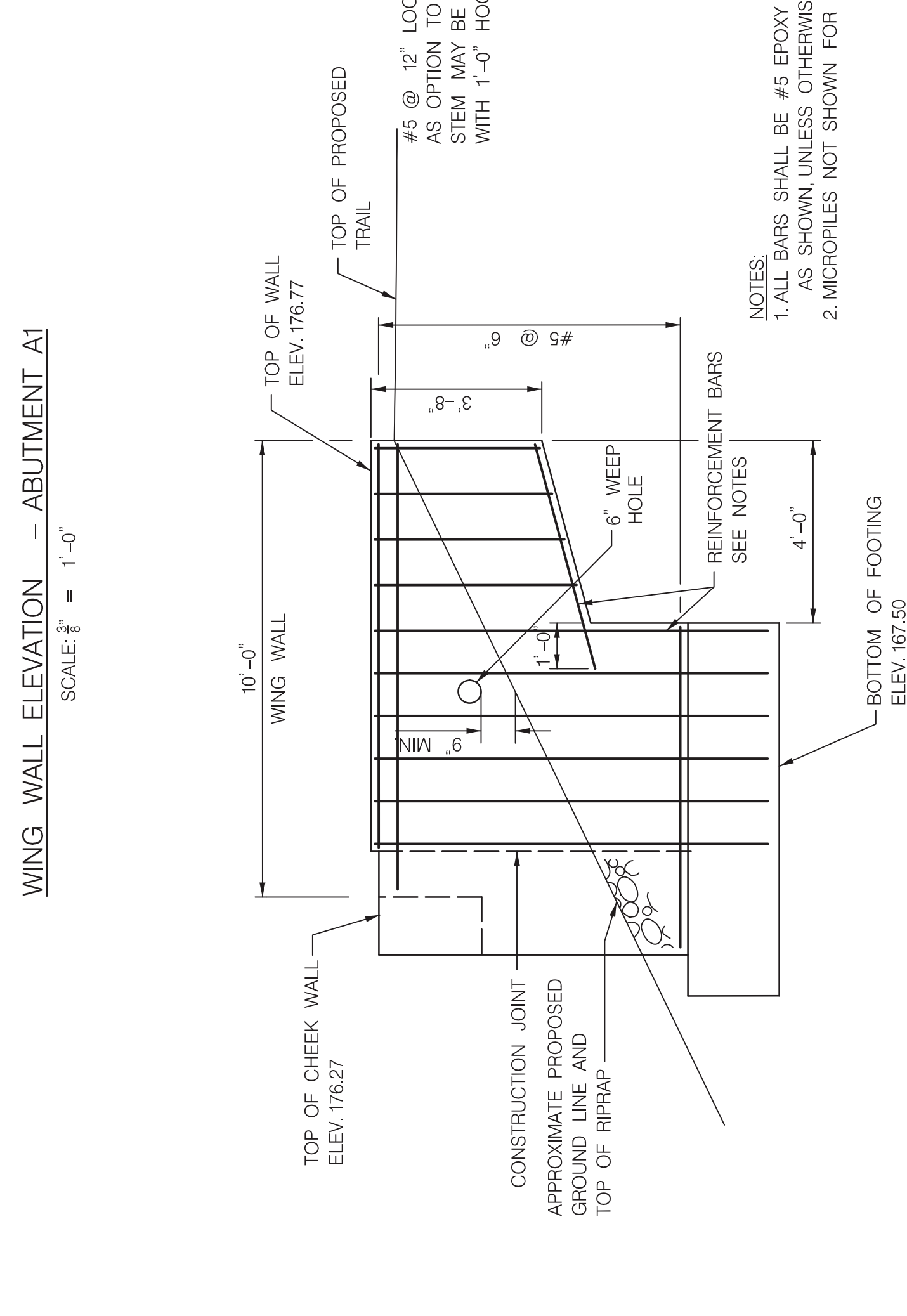
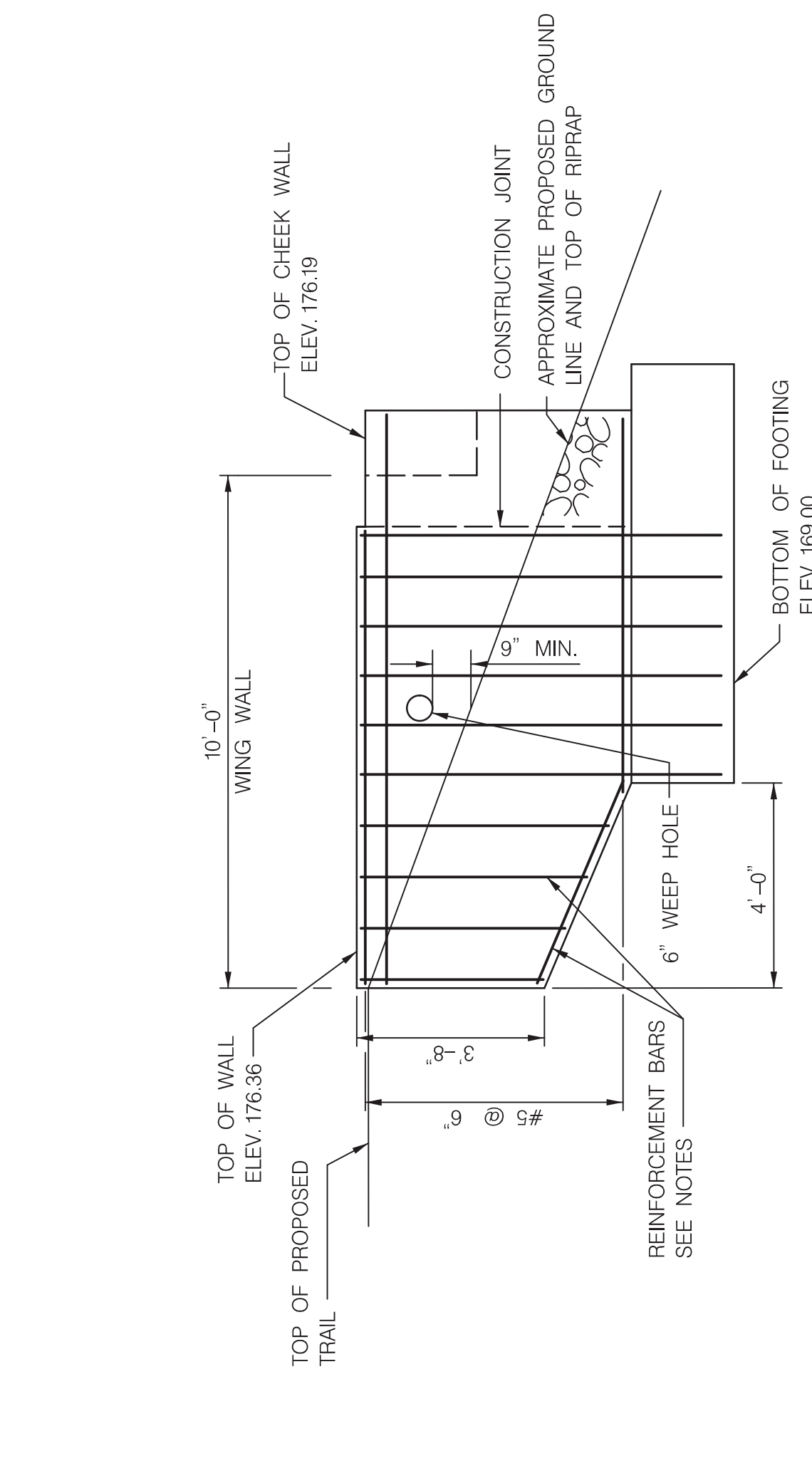
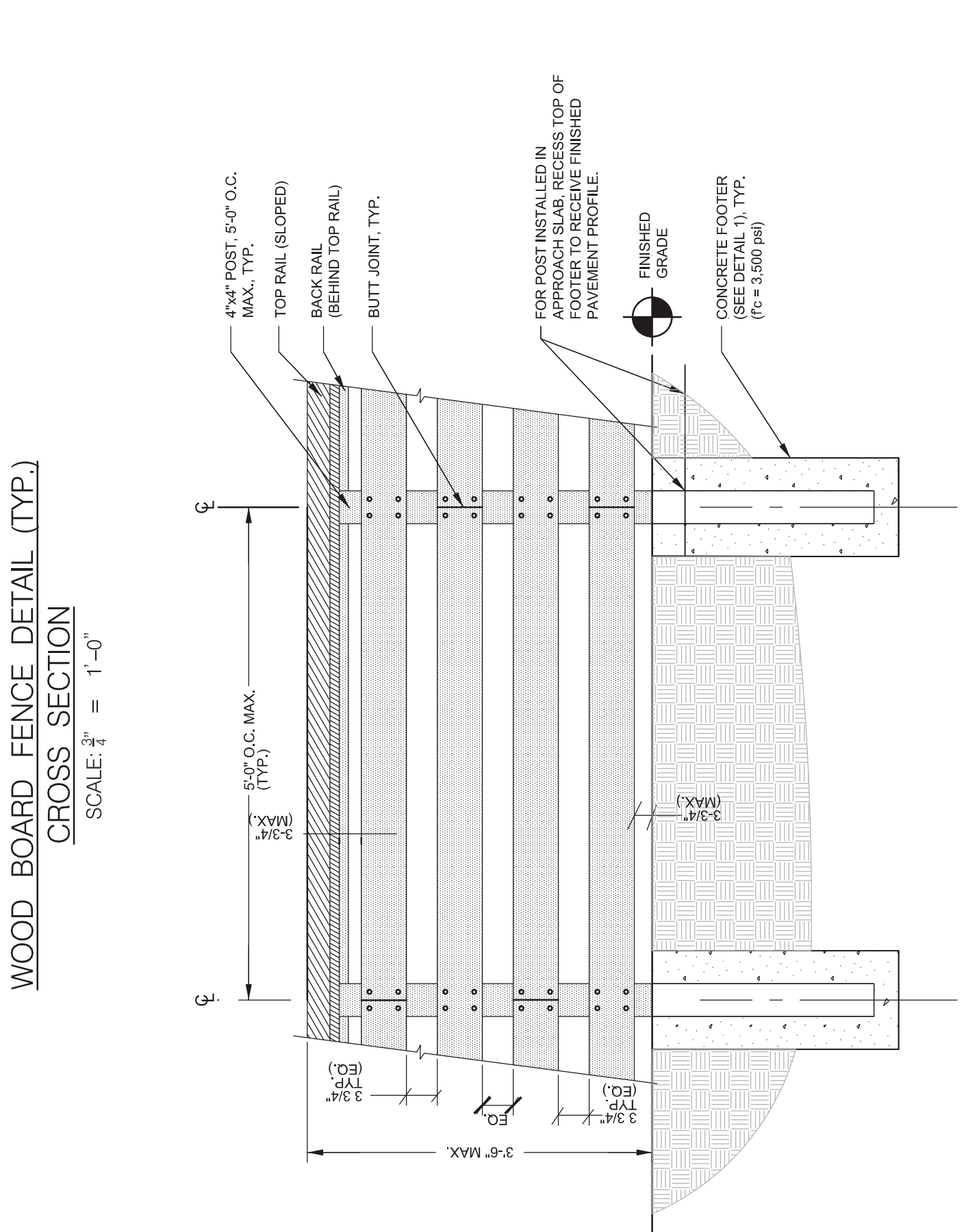
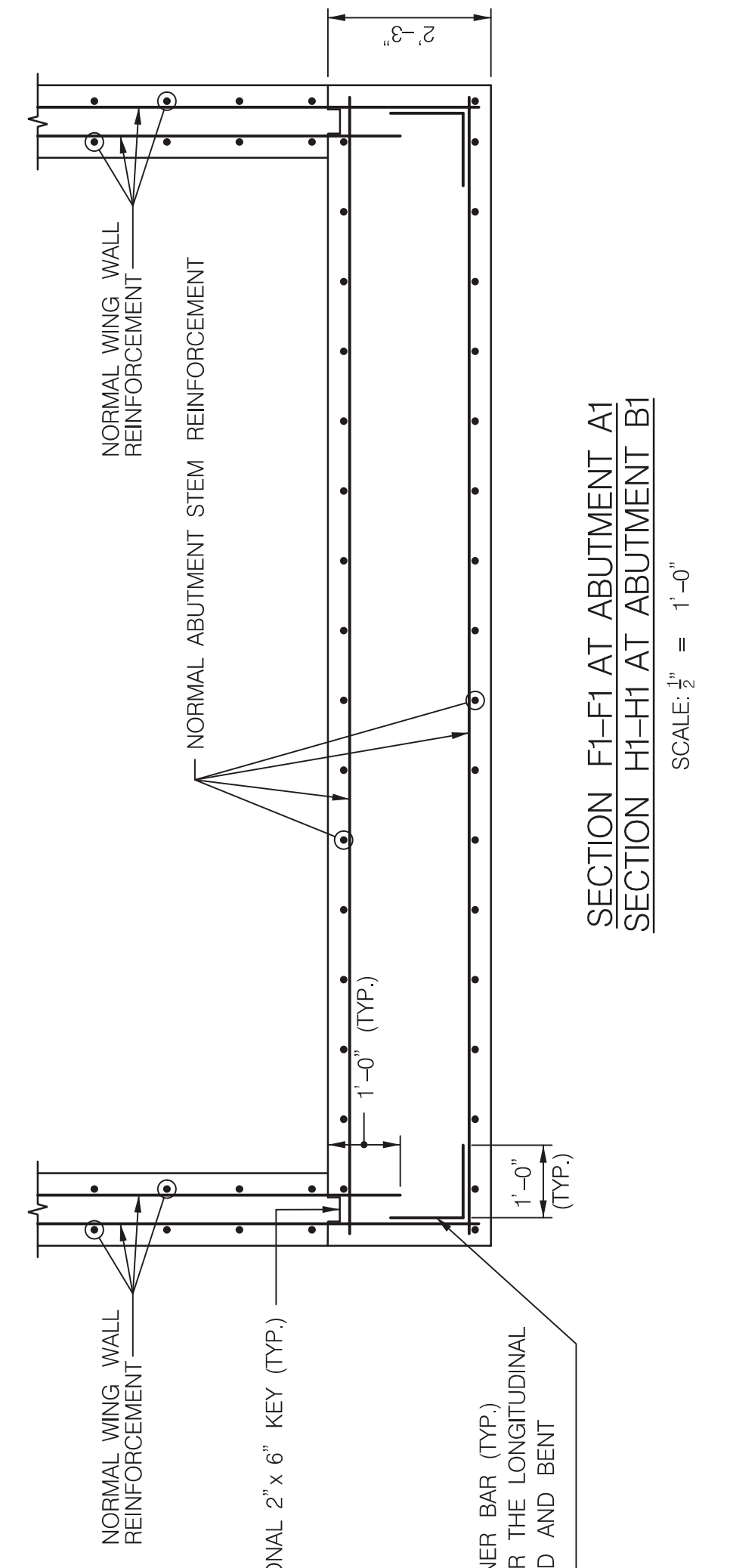
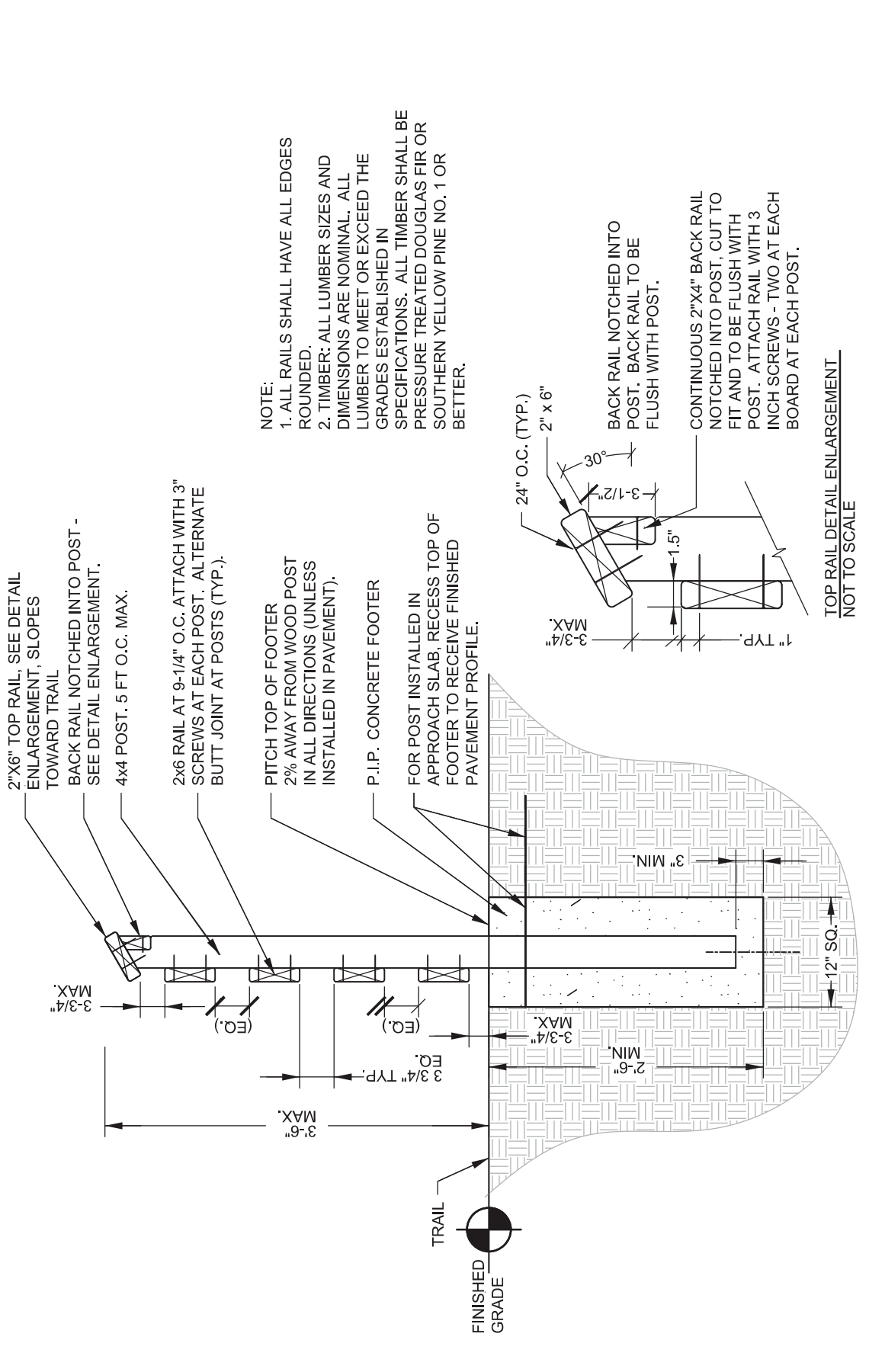
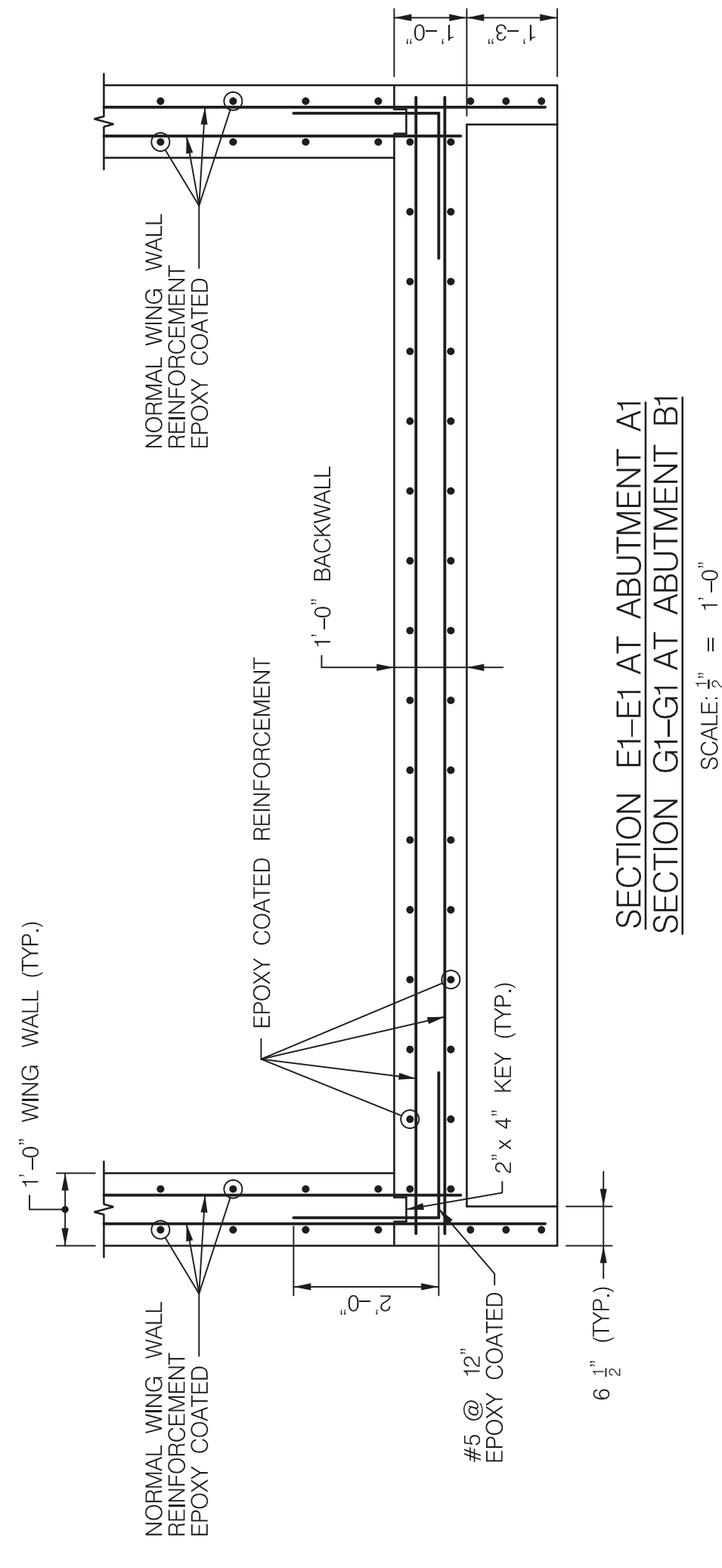
NOTES:
 1. FOR SECTIONS D-I, G-I AND H-I, SEE SHEET NO. 43.
 2. FOR WING WALL ELEVATIONS, SEE SHEET NO. 43.
 3. FOR APPROACH SLAB DETAILS, SEE SHEET NO. 43.

OWNER/ADDRESS: DEPARTMENT OF TRANSPORTATION 100 EDISON PARK DRIVE GAITHERSBURG, MARYLAND		MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		PEDESTRIAN BRIDGE DETAILS 3 ABUTMENT B1	
CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7221		RECOMMENDED FOR APPROVAL Chief, Design Section <i>David M. Reid</i> Date: 12/14/17		BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SLIGO CREEK SCALE: AS SHOWN DATE: MAY 2017 Project No.: 501523 SHEET 42 OF 62	
NO.	REVISION	DATE	BY	DESIGNED BY	CHECKED BY
				HJ/ALC	MJC/CSN



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OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
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CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

RECOMMENDED FOR APPROVAL
Chief, Design Section
David M. Reid
Date: 12/14/17

DESIGNED BY: *David M. Reid*
DATE: 12/14/17

CHECKED BY: *[Signature]*
DATE: 12/14/17

DESIGNED BY: *[Signature]*
DATE: 12/14/17

NO. _____ REVISION _____ DATE _____ BY _____

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

PEDESTRIAN BRIDGE DETAILS 4

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017

Project No. : 501523 SHEET 43 OF 62

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



NOTES:
1. FOR ABUTMENTS A1 AND B1 PLANS AND ELEVATIONS, SEE SHEETS NO. 41 AND 42.
2. FOR LOCATIONS OF ABUTMENT SECTION CUTS, SEE SHEET NO. 41 AND 42.

TOP RAIL DETAIL ENLARGEMENT
NOT TO SCALE

FOR POST INSTALLED IN APPROACH SLAB, RECESS TOP OF PAVEMENT PROFILE

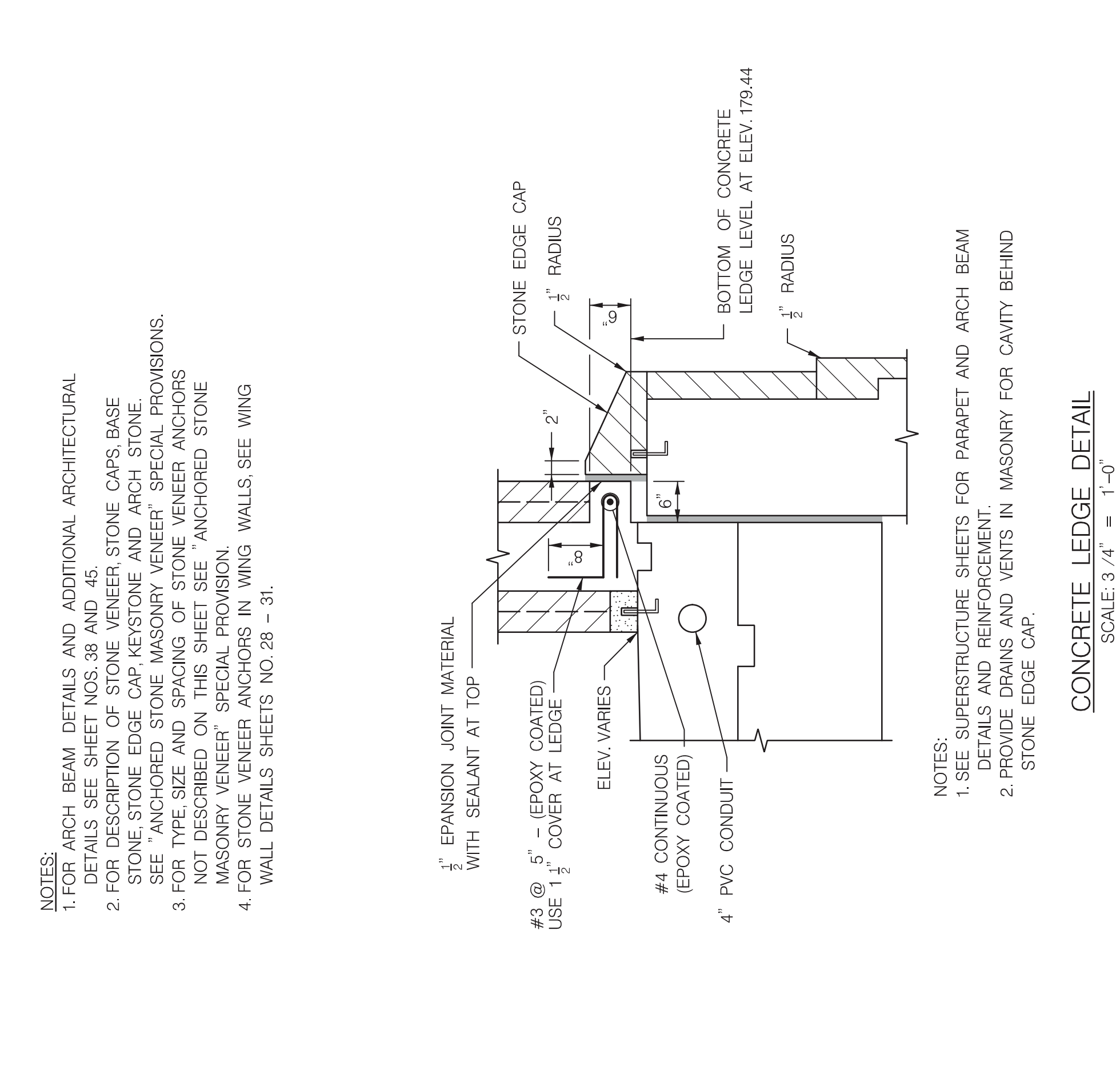
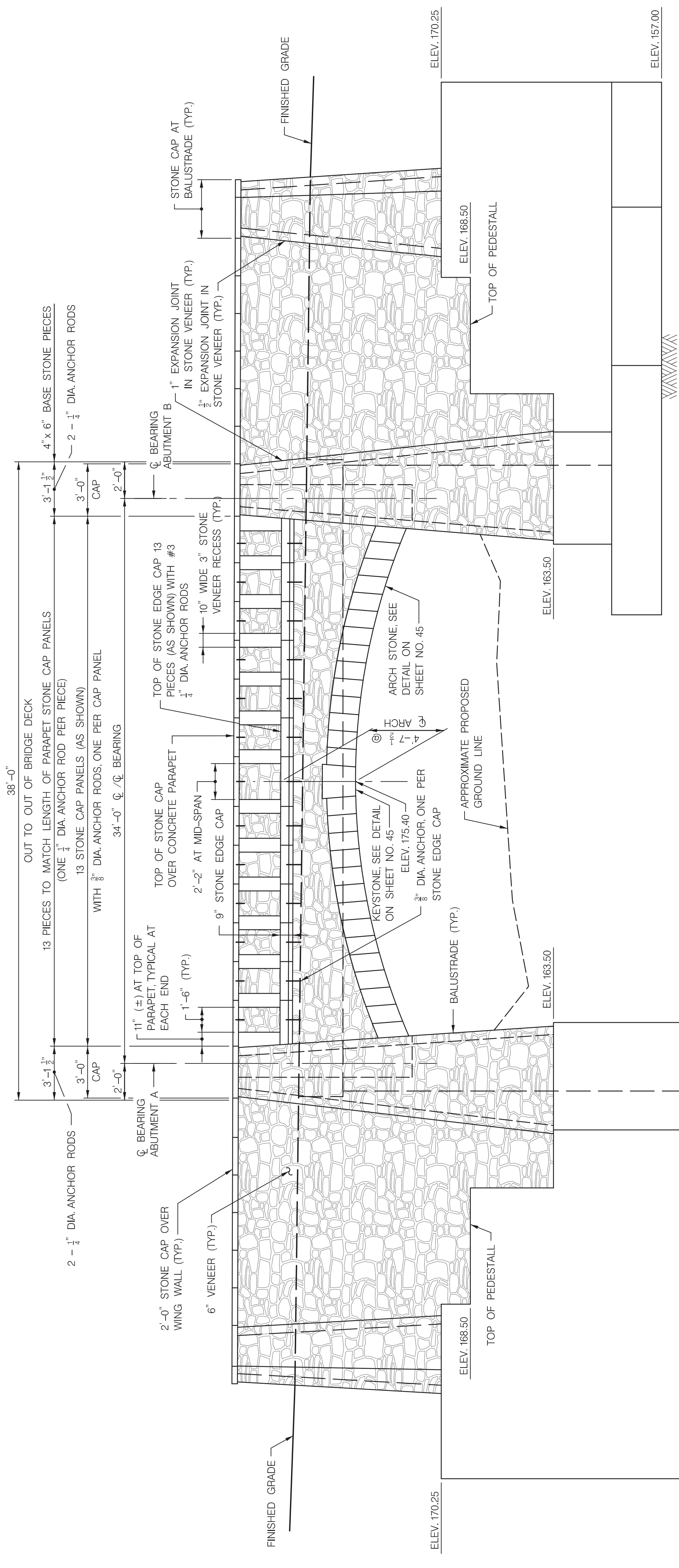
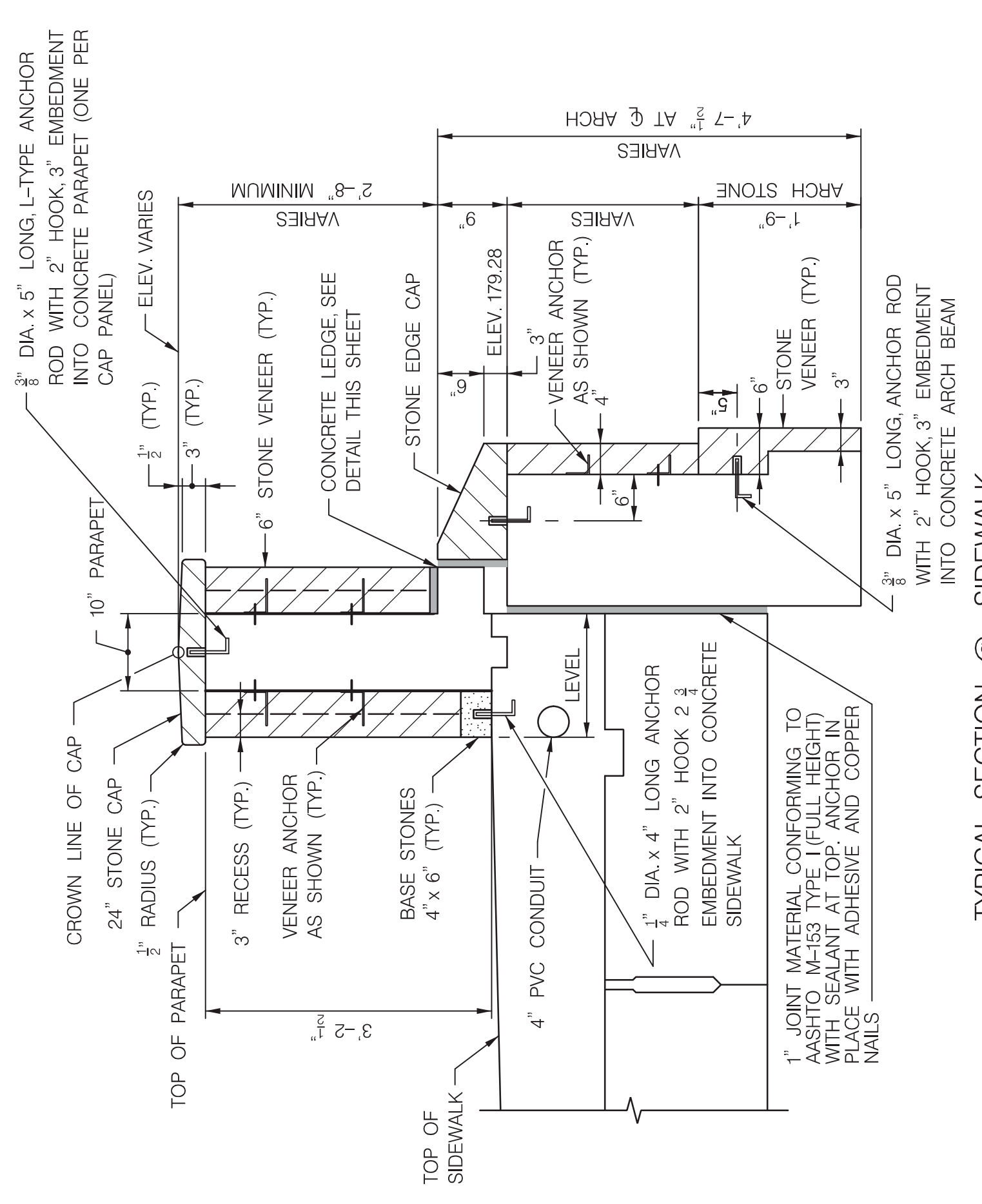
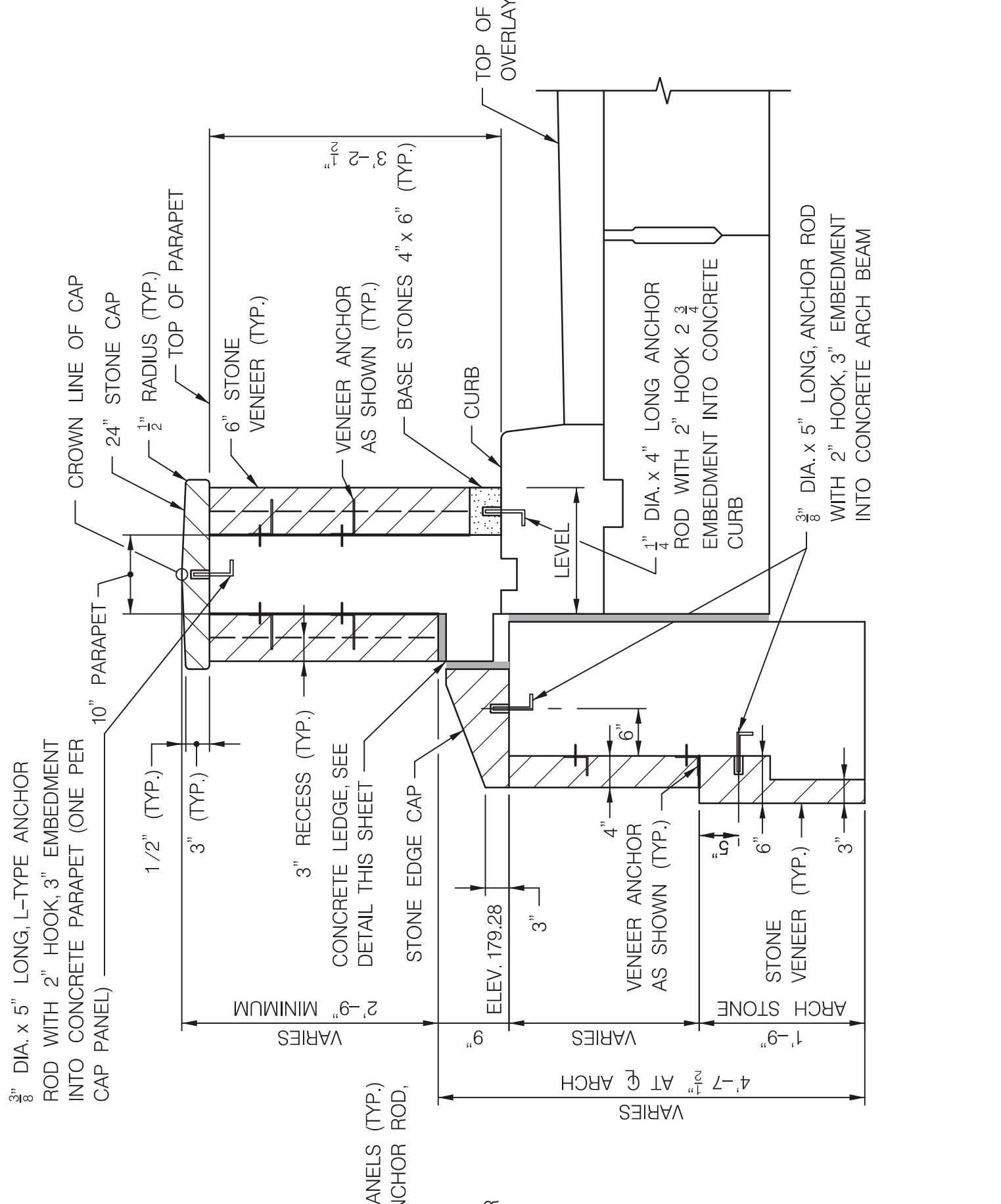
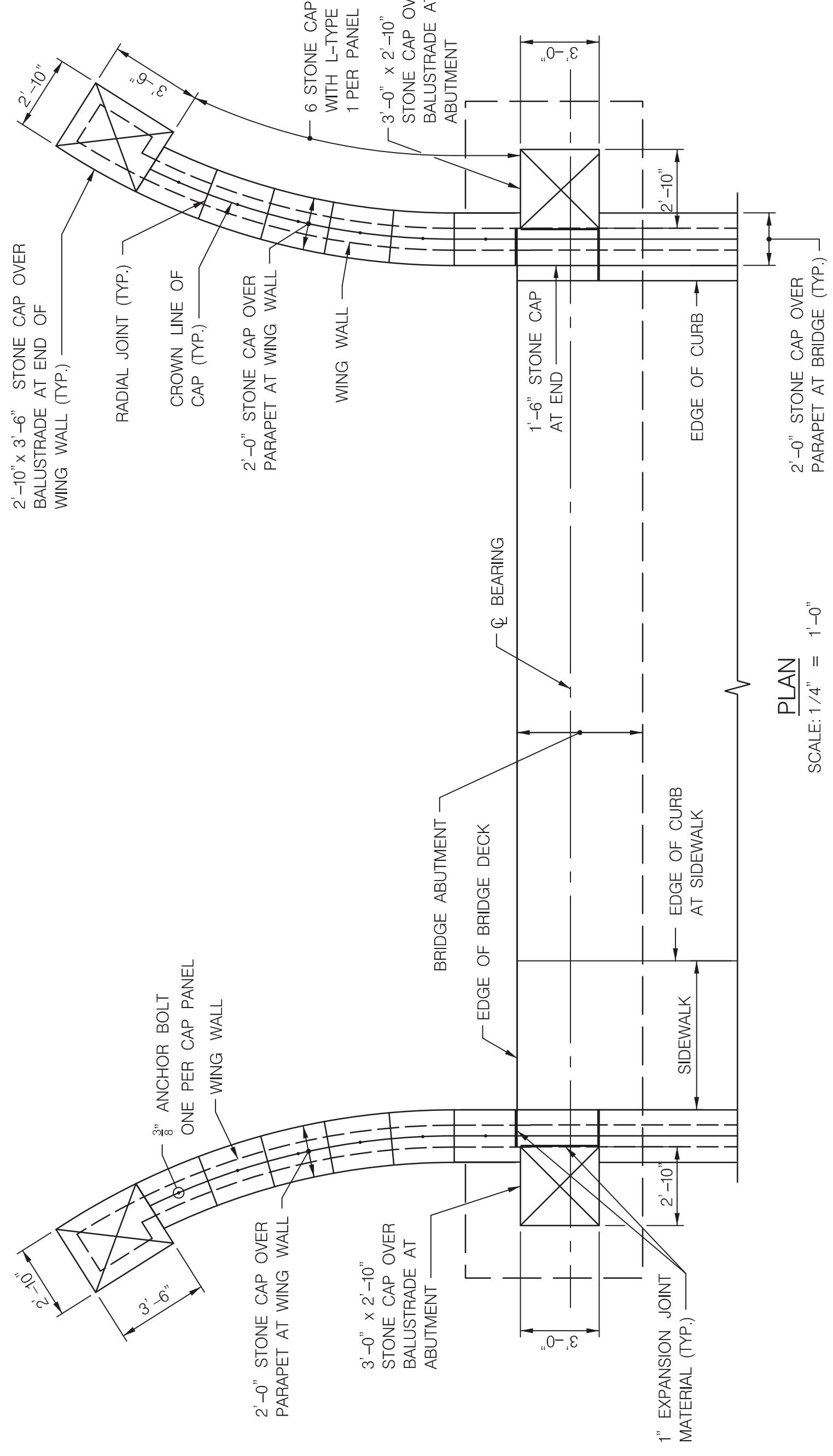
CONCRETE FOOTER (SEE DETAIL 1), TYP. (FC = 3,500 PSI)

FINISHED GRADE

APPROXIMATE PROPOSED GROUND LINE

FOR PREFABRICATED SUBSTRUCTURE CONCRETE

FOOTING CONCRETE FOR REBAR/CORROSION PEDESTRIAN BRIDGE



- NOTES:**
- FOR ARCH BEAM DETAILS AND ADDITIONAL ARCHITECTURAL DETAILS SEE SHEET NOS. 38 AND 45.
 - FOR DESCRIPTION OF STONE VENEER, STONE CAPS, BASE STONE, STONE EDGE CAP, KEYSTONE AND ARCH STONE SEE "ANCHORED STONE MASONRY VENEER" SPECIAL PROVISIONS.
 - FOR TYPE, SIZE AND SPACING OF STONE VENEER ANCHORS NOT DESCRIBED ON THIS SHEET SEE "ANCHORED STONE MASONRY VENEER" SPECIAL PROVISIONS.
 - FOR STONE VENEER ANCHORS IN WING WALLS, SEE WING WALL DETAILS SHEETS NO. 28 - 31.

ARCHITECTURAL DETAILS 1

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
David M. Reid
Chief, Design Section
APPROVED

12/14/17 Date

12/14/2017 Date

Chief, Division of Transportation Engineering

Designed By: *NJC* Drawn By: *BBS* Checked By: *CSN*

Project No. : 501523 SHEET 44 OF 62

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

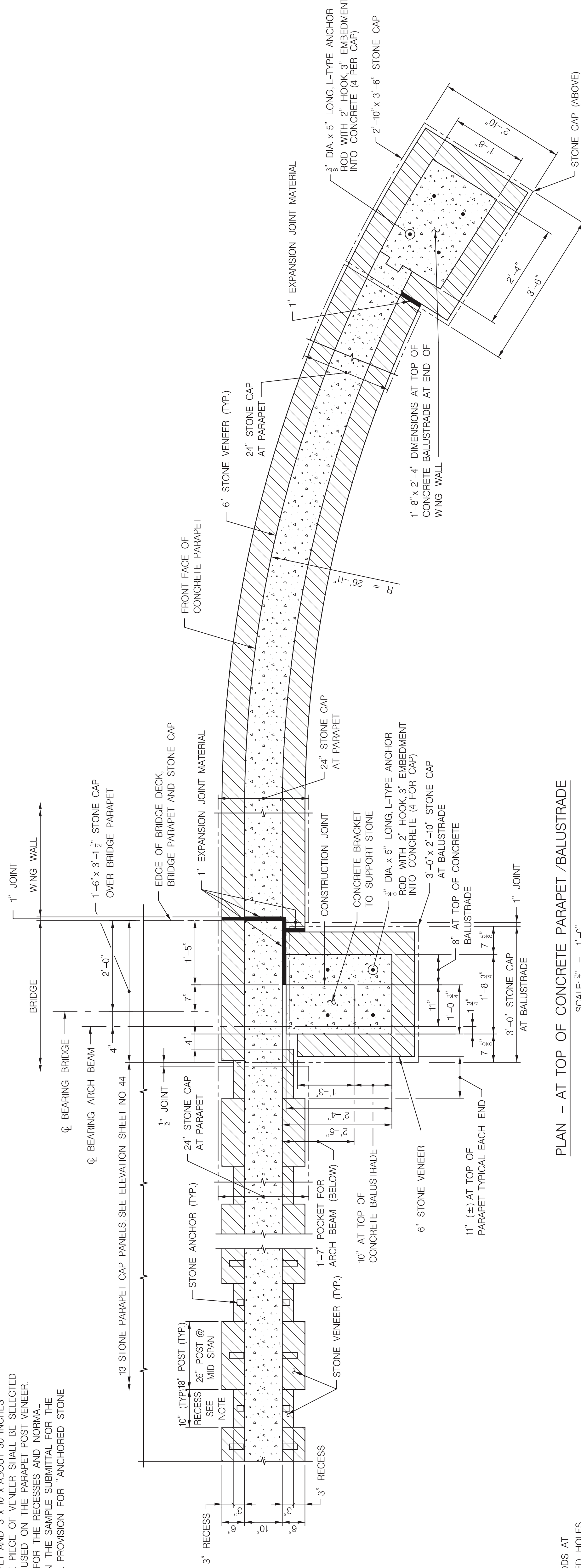
OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

GPI
GREENMAN-PEDERSEN, INC.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
10177 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
WASH. DC: 474-7772 BALT.: 610-890-5055
FAX: 610-890-5048 www.gpiinc.com

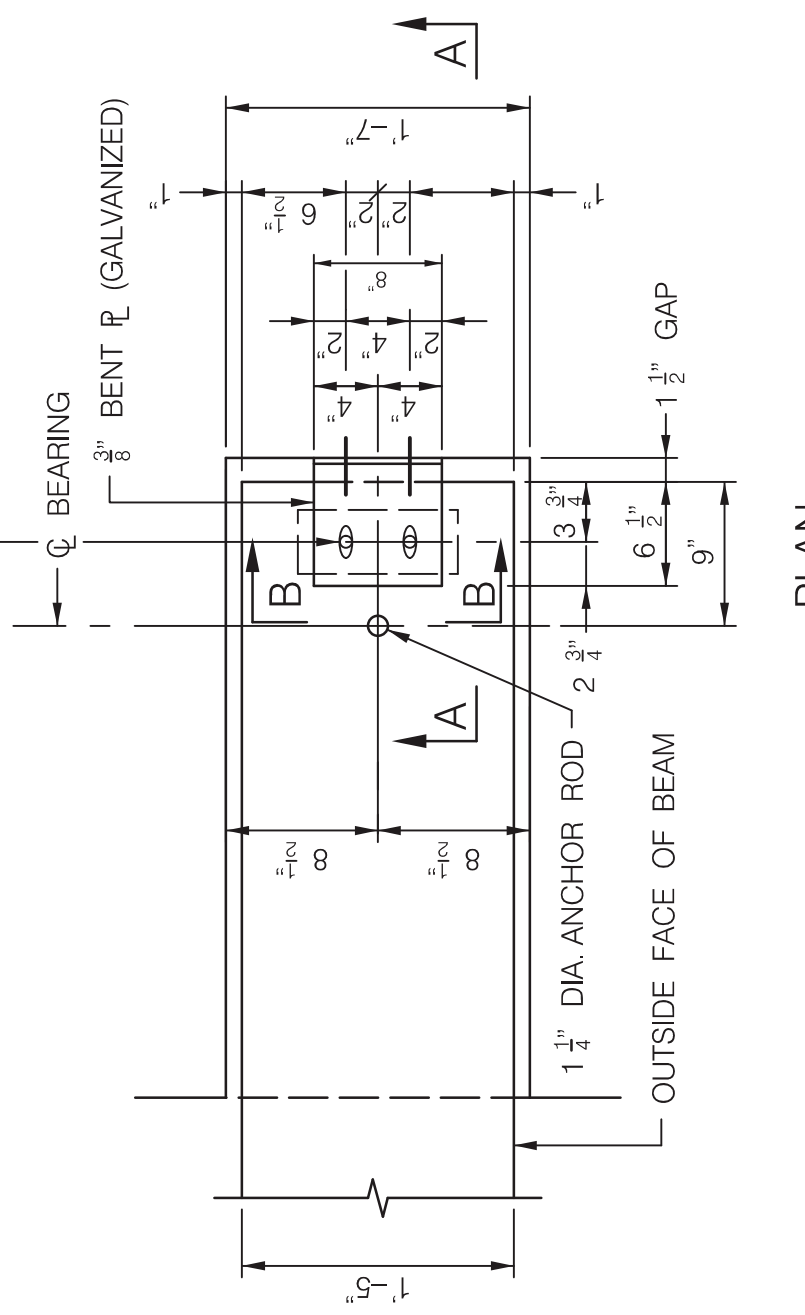
STATE OF MARYLAND
PROFESSIONAL ENGINEER
M. J. GREENMAN, No. 15213

NOTE FOR STONE VENEER RECESS AND POST ON THE PARAPETS FOR THE 3' x 10' STONE RECESSES A SINGLE PIECE OF STONE SHALL BE CUT TO FIT THE VERTICAL DIMENSIONS OF THE PARAPET EACH STONE PIECE SHALL BE 3" x 10" x APPROXIMATELY 34 INCHES HIGH ON THE ROADWAY FACE OF THE PARAPET AND 3" x 10" x ABOUT 30 INCHES HIGH ON THE REAR FACE OF THE PARAPET THE SINGLE PIECE OF VENEER SHALL BE SELECTED AS A LIGHTER COLOR THAN THE REST OF THE VENEER USED ON THE PARAPET POST VENEER SAMPLES OF THE COMBINATION OF SINGLE-CUT PIECES FOR THE RECESSES AND NORMAL BOND /PATTERN FOR THE POSTS SHALL BE INCLUDED IN THE SAMPLE SUBMITTAL FOR THE STONE VENEER AND IN A TYPICAL MOCKUP PER SPECIAL PROVISION FOR "ANCHORED STONE MASONRY VENEER" FOR APPROVAL BY M-NCPPC.



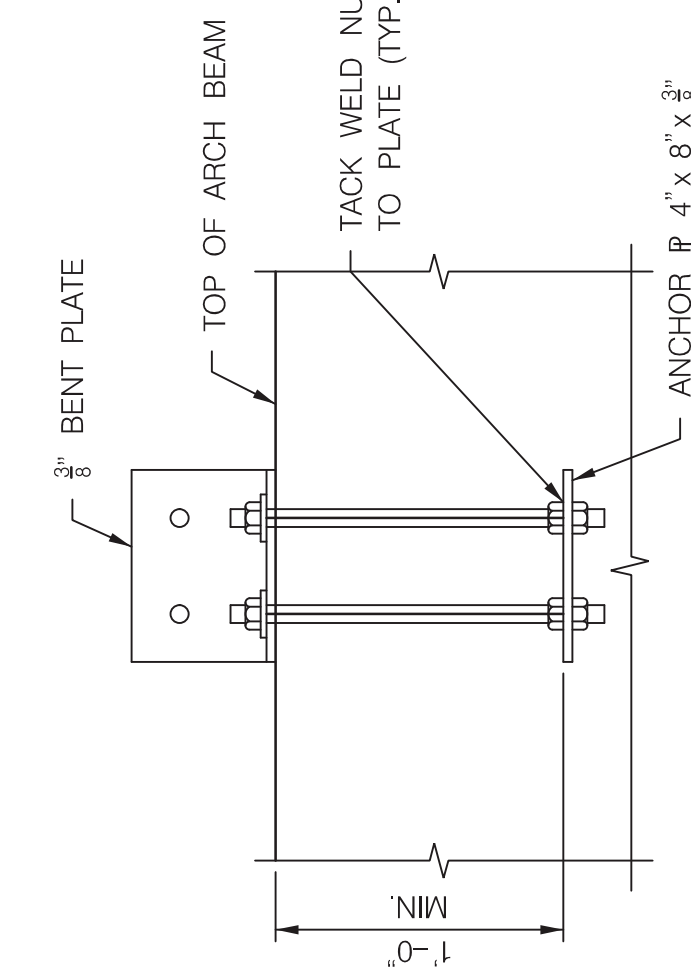
PLAN - AT TOP OF CONCRETE PARAPET /BALUSTRADE
SCALE: 3/8" = 1'-0"

3/8" DIA HOLES FOR 3/8" DIA ANCHORS RODS AT ABUTMENT B (FIXED) AND 3/8" x 2" SLOTTED HOLES AT ABUTMENT A (EXPANSION)

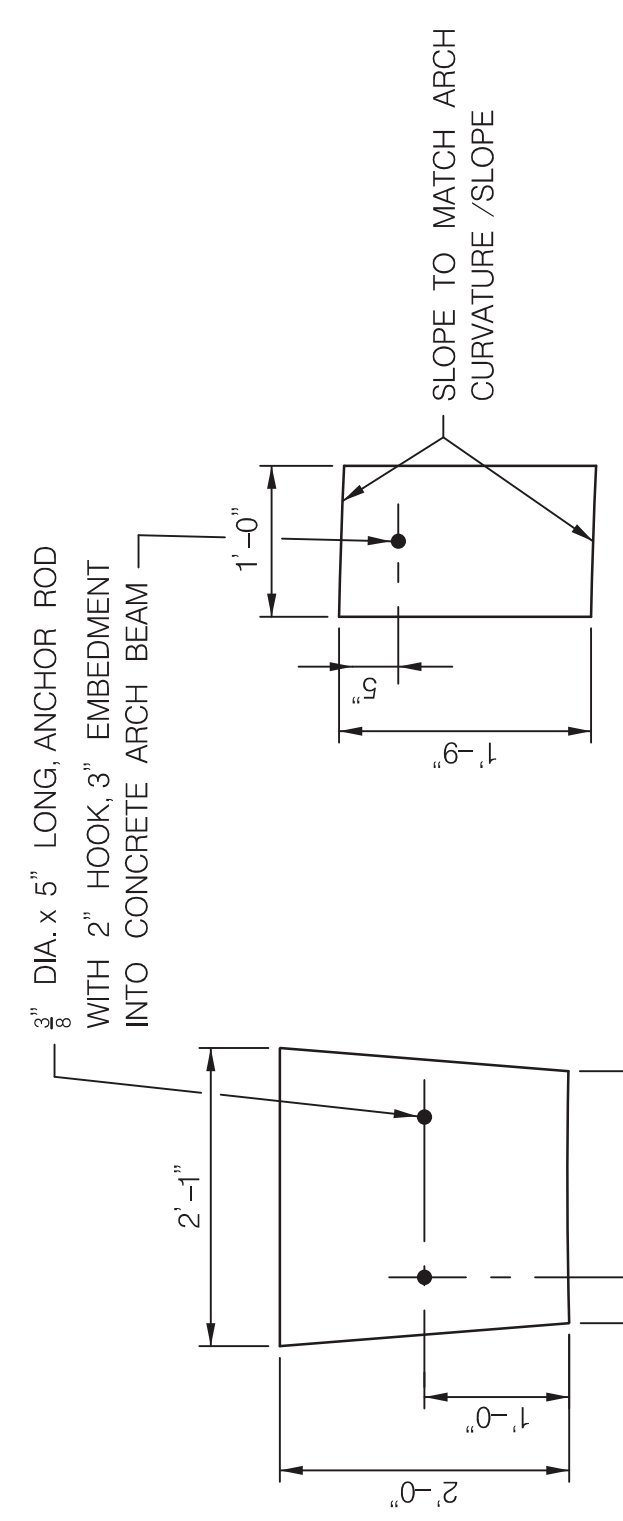


SECTION A-A
SCALE: 1/2" = 1'-0"

DRILL HOLES FOR 3/8" DIA FULL THREADED RODS AND SET IN PLACE WITH ADHESIVE ANCHORAGE SYSTEM, 5" EMBEDMENT.
MINIMUM FACTORED TENSION CAPACITY = $\phi T_n = 15$ KIPS
MINIMUM SHEAR CAPACITY = $\phi V_n = 32$ KIPS
BASED ON ACI 318-11, APPENDIX D



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



ARCH STONE DETAIL
NOT TO SCALE



KEYSTONE DETAIL
NOT TO SCALE



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10877 GULFORD RD., ANNAPOLIS JUNCTION, MD 20710
WASH DC: 410-477-7772 BALT: 410-890-3055
FAX: 301-865-2648 www.gpiinc.com

TOP PLATE DETAIL FOR ARCH BEAM
SCALE: 1/2" = 1'-0"

ARCHITECTURAL DETAILS 2 AND SUPERSTRUCTURE DETAILS 3

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section
APPROVED
Date: 12/14/17
Checked By: CSN
Date: 12/14/2017
Chief, Division of Transportation Engineering
Designed By: NUC
Drawn By: BSB
Checked By: CSN

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7271

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK
SCALE: AS SHOWN DATE: MAY 2017
Project No. : 501523 SHEET 45 OF 62

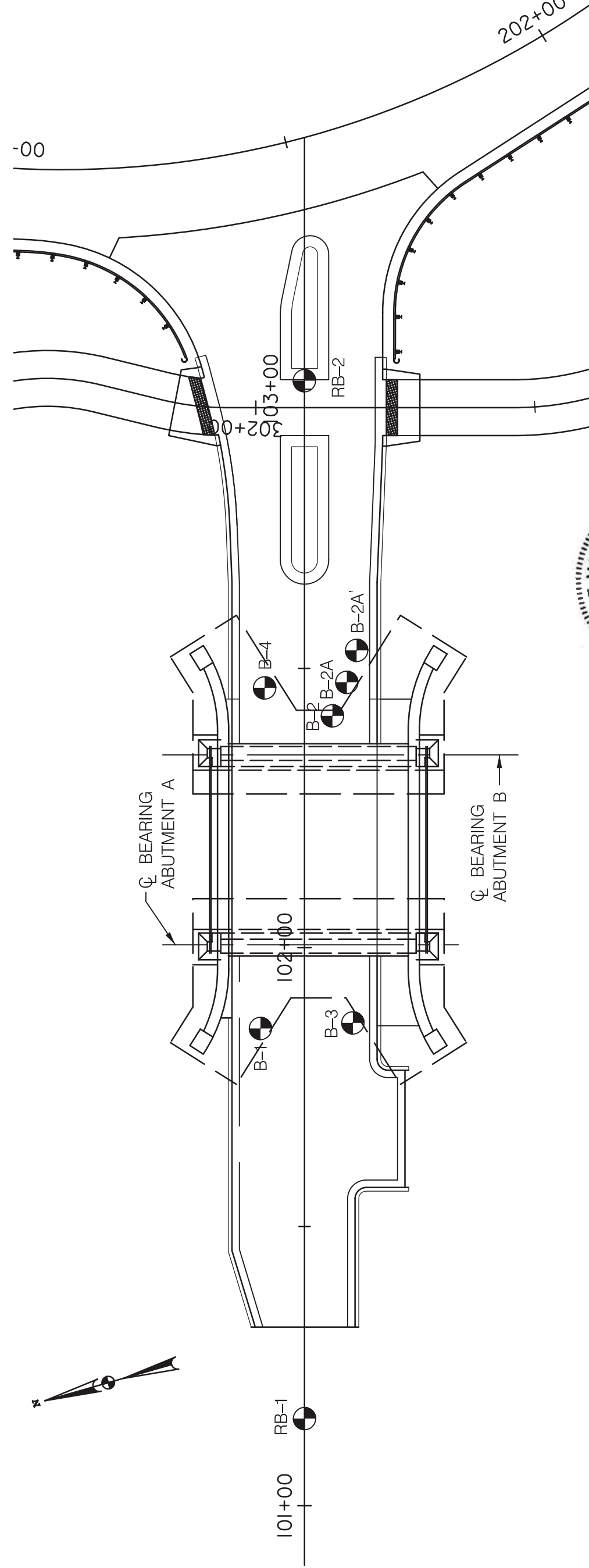
E2CR, Inc.										BORING LOG									
PROJECT					PROJECT NO.					BORING NO.					BORING LOG				
Replacement of Park Valley Road Bridge No. MPK-03 over Sligo Creek					1250K/04					B-1					B-1				
Montgomery County, MD					COMPLETED					HOLE SIZE					GROUND ELEVATION				
8/9/12					AT 24 HRS					178.8					178.8				
17'					AT END DRILL					CAVED DEPTH					14.1'				
140 lbs					HEIGHT OF FALL					DEPTH OF BORING					34.8				
25'					LOGGED BY:					PAGE NO.					1 OF 1				
DEPTH		STRATA ELEV./DEPTH		DESCRIPTION		SAMPLE NO.		SAMPLE LENGTH		N/A/T/L/R		SAMPLE TYPE AND DIAMETER		RECOVERY		REMARKS			
0	178.8	177.6		Pavement	S-1	18"	6-6-7	DS	14"								5' Asphalt Gravel and Stone (possible GAB)		
5	173.3			Tan, greenish brown, gray, moist, silty fine sand, trace to some gravel and mica (SM) (FILL)	S-2	18"	3-2-3	DS	12"										
10	166.8			Olive green, brown, moist to wet, silty fine sand, little gravel (SM) (FILL)	S-3	18"	2-2-2	DS	12"								Sample wet at 9.8'		
15	160.8			Tan, orange brown, moist, micaceous, silty fine sand, trace to some rock fragments (Decomposed Rock)	S-4	18"	2-1-2	DS	9"										
20	153.8			Gray, brown, tan, medium hard, moderately weathered, moderately fractured to sound, GNEISS	S-5	18"	2-1-2	DS	6"								Auger refusal at 25 feet. Spoon refusal at 25.1 feet.		
25	144.0			Bottom of boring at 34.8 feet	S-6	18"	18-36-53	DS	18"										
					S-7	3"	507"	DS	3"								BOTTOM OF FOOTING ELEV. 152.50		
					S-8	1"	507"	DS	1"										
					RUN-1	18"	RQD = 56%	RC	14"										
					RUN-2	60"	RQD = 55%	RC	58"										
					RUN-3	40"	RQD = 88%	RC	39"										

E2CR, Inc.										BORING LOG									
PROJECT					PROJECT NO.					BORING NO.					BORING LOG				
Replacement of Park Valley Road Bridge No. MPK-03 over Sligo Creek					1250K/04					B-3					B-3				
Montgomery County, MD					COMPLETED					HOLE SIZE					GROUND ELEVATION				
8/13/12					AT 24 HRS					178.8					178.8				
12.5'					AT END DRILL					CAVED DEPTH					18.7'				
140 lbs					HEIGHT OF FALL					DEPTH OF BORING					24.5				
24.5'					LOGGED BY:					PAGE NO.					1 OF 1				
DEPTH		STRATA ELEV./DEPTH		DESCRIPTION		SAMPLE NO.		SAMPLE LENGTH		N/A/T/L/R		SAMPLE TYPE AND DIAMETER		RECOVERY		REMARKS			
0	178.5	177.7		Pavement	S-1	18"	7-6-5	DS	15"								5' Asphalt 6" Gravel Base		
5	172.8			Orange, tan, brown, moist, silty SAND, little mica, trace gravel (SM) (FILL)	S-2	18"	2-2-1	DS	14"										
10	170.8			Tan, brown, moist, silty lean CLAY, trace mica and gravel (CL)	S-3	18"	1-1-1	DS	11"										
15	169.2			Gray, moist, clayey SILT, some Sand (ML) (FILL)	S-4	18"	1-1-1	DS	17"										
20	165.8			Tan, orange brown, olive green, silty fine sand, trace mica and gravel (SM)	S-5	18"	7-7-6	DS	0"										
25	161.3			Gray, tan, brown, moist, micaceous, silty fine sand, trace to some Rock fragments (Decomposed Rock)	S-6	24"	3-4-12-13	DS	14"										
				Bottom of boring at 24.5 feet.	S-7	24"	7-21-37-37	DS											
					S-8	1"	507"	DS	1"										
					S-9	0"	500"	DS	0"										

DATUM ELEV. 140.00

BORING LOGS
SCALE: 1" = 5'

DATUM ELEV. 140.00



BORING LOCATION PLAN
SCALE: 1" = 20'

OWNER/ADDRESS:
MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

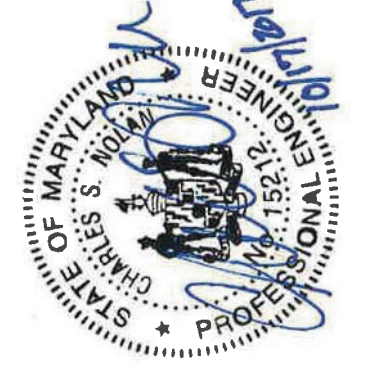
CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7271

RECOMMENDED FOR APPROVAL
Chief, Design Section
David M. Reid
Date: 12/14/17

APPROVED
Chief, Division of Transportation Engineering
[Signature]
Date: 12/14/2017

Designed By: NJC Drawn By: BSB Checked By: CSN

Project No.: 501523 SHEET 47 OF 62



FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

PROJECT		BORING NO.		PROJECT NO.		BORING LOG	
Replacement of Park Valley Road Bridge No. MPK-03 over Sligo Creek		B-2		12508-04		B-2A'	
SITE		HOLE SIZE		COMPLETED		GROUND ELEVATION	
Montgomery County, MD		AT 24 HRS		5/22/12		178.2	
COORDINATES		AT END DRILL		5/22/12		CAVED DEPTH	
D. Gough		D. Gough		10'		DEPTH OF BORING	
TYPE OF DRILL RIG & METHOD		LOGGED BY:		140 lbs		PAGE NO. 12	
CME 550 ATV / HSA		E. Ever		30 In.		OF	
M. Patel		M. Patel		19.6		1	
DEPTH	STRATA DEPTH	DESCRIPTION	SAMPLE NO.	SAMPLE LENGTH	N.V.A.L.E. ROD (%)	SAMPLE TYPE AND DIAMETER	REMARKS
0	178.2	Pavement	S-1	18"	6-5-5	DS	4" Asphalt
5	172.7	Orange, brown, gray, moist, silty clay with some Rock fragments, trace Clay (SM) (FILL)	S-2	18"	5-4-5	DS	10" Gravel and Sand
10	166.2	Gray, orange brown, moist, micaceous, Silty f-c SAND, trace Rock fragments (SM) (FILL)	S-3	18"	2-2-2	DS	
15		Gray, brown, moist to wet, micaceous, Clayey fine to medium SAND, some Gravel (SO) (FILL)	S-4	9"	2-502"	DS	
20		Terminated boring at 12 feet due to augers kicking to the side and causing the hole to be crooked.					
25							BOTTOM OF FOOTING. ELEV. 157.00
30							
35							

PROJECT		BORING NO.		PROJECT NO.		BORING LOG	
Replacement of Park Valley Road Bridge No. MPK-03 over Sligo Creek		B-2A		12508-04		B-2A'	
SITE		HOLE SIZE		COMPLETED		GROUND ELEVATION	
Montgomery County, MD		AT 24 HRS		5/22/12		178.2	
COORDINATES		AT END DRILL		5/22/12		CAVED DEPTH	
D. Gough		D. Gough		10'		DEPTH OF BORING	
TYPE OF DRILL RIG & METHOD		LOGGED BY:		140 lbs		PAGE NO. 19.6	
CME 550 ATV / HSA		E. Ever		30 In.		OF	
M. Patel		M. Patel		19.6		1	
DEPTH	STRATA DEPTH	DESCRIPTION	SAMPLE NO.	SAMPLE LENGTH	N.V.A.L.E. ROD (%)	SAMPLE TYPE AND DIAMETER	REMARKS
0	178.2	Blank auger to 13.5 feet	S-1	18"	3-6-6	DS	12"
5							
10	166.2	Gray, purple, wet, micaceous, Silty SAND, little Silty (Decomposed Rock) (SM)	S-2	2"	502"	DS	2"
15	161.2	Gray, wet, ROCK fragments and SAND, little Silty (Decomposed Rock) (GM-SM)	S-3	1"	501"	DS	0"
20	158.6	Terminated boring at 19.6 feet					
25							BOTTOM OF FOOTING. ELEV. 157.00
30							
35							

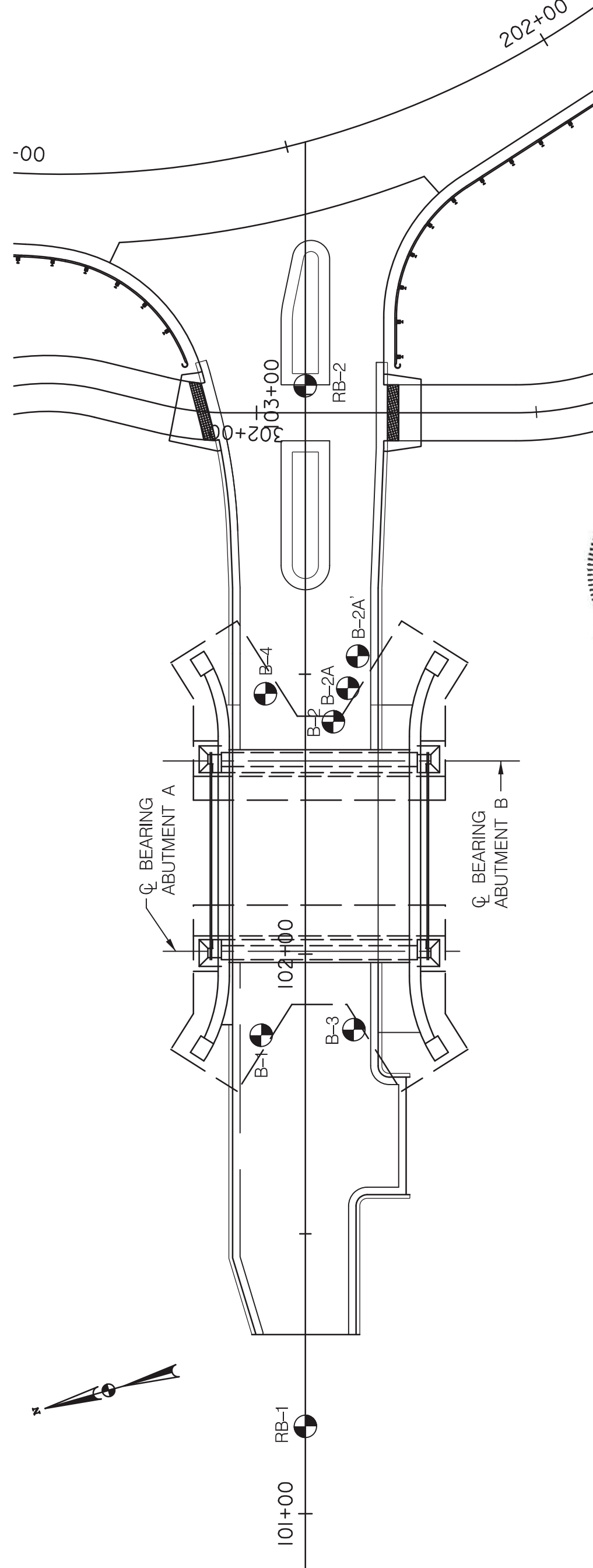
PROJECT		BORING NO.		PROJECT NO.		BORING LOG	
Replacement of Park Valley Road Bridge No. MPK-03 over Sligo Creek		B-2A'		12508-04		B-2A'	
SITE		HOLE SIZE		COMPLETED		GROUND ELEVATION	
Montgomery County, MD		AT 24 HRS		8/8/12		178.2	
COORDINATES		AT END DRILL		8/8/12		CAVED DEPTH	
D. Gough		D. Gough		10.7'		DEPTH OF BORING	
TYPE OF DRILL RIG & METHOD		LOGGED BY:		140 lbs		PAGE NO. 32	
CME 550 ATV / HSA		M. Patel		30 In.		OF	
M. Patel		M. Patel		19.5'		1	
DEPTH	STRATA DEPTH	DESCRIPTION	SAMPLE NO.	SAMPLE LENGTH	N.V.A.L.E. ROD (%)	SAMPLE TYPE AND DIAMETER	REMARKS
0	178.2	Blank augered to auger refusal at 19.5 feet					
5							
10							
15							
20	158.7	Gray, hard, slightly weathered to fresh, widely fractured, massive, GNEISS	RUN-1	30"	ROD = 80%	RC	27"
25			RUN-2	80"	ROD = 80%	RC	50"
30	146.2	Bottom of boring at 32 feet	RUN-3	60"	ROD = 72%	RC	50"
35							Note: Rock sample lost 23.8' to 24.4'

PROJECT		BORING NO.		PROJECT NO.		BORING LOG	
Replacement of Park Valley Road Bridge No. MPK-03 over Sligo Creek		B-4		12508-04		B-4	
SITE		HOLE SIZE		COMPLETED		GROUND ELEVATION	
Montgomery County, MD		AT 24 HRS		8/13/12		178.2	
COORDINATES		AT END DRILL		8/13/12		CAVED DEPTH	
D. Gough		D. Gough		10.3'		DEPTH OF BORING	
TYPE OF DRILL RIG & METHOD		LOGGED BY:		140 lbs		PAGE NO. 19.5	
CME 550 ATV / HSA		M. Patel		30 In.		OF	
M. Patel		M. Patel		19.8'		1	
DEPTH	STRATA DEPTH	DESCRIPTION	SAMPLE NO.	SAMPLE LENGTH	N.V.A.L.E. ROD (%)	SAMPLE TYPE AND DIAMETER	REMARKS
0	178.2	Pavement	S-1	18"	12-10-7	DS	12"
5	177.3	Dark brown, tan, brown, moist, Silty f-c SAND, some Mica, trace Gravel (SM) (FILL)	S-2	18"	7-4-4	DS	2"
10	168.7	Gray, wet, Silty f-c SAND, trace Mica (SM) (Possible FILL)	S-3	18"	3-2-2	DS	14"
15			S-4	18"	3-2-1	DS	12"
20	160.2	Gray, tan, brown, moist, Silty f-c SAND, trace to some Rock fragments, trace Mica (Decomposed Rock) (SM)	S-5	18"	4-2-3	DS	4"
25			S-6	3"	503"	DS	2"
30	158.4	Auger refusal at 19.7'	S-7	1"	501"	DS	1"
35		Bottom of boring at 19.8 feet					Spoon refusal at 19.8 feet

DATUM ELEV. 140.00

BORING LOGS
SCALE: 1" = 5'

DATUM ELEV. 140.00



BORING LOCATION PLAN
SCALE: 1" = 20'

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7271

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

BORINGS AND DRIVE TESTS 2

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017
Project No. : 501523 SHEET 48 OF 62



GPI
GREENMAN-PEDERSEN, INC.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
10877 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
WASH. CO. #462722 BALT. #610 880-3055
FAX: 301-865-5248 www.gpiinc.com

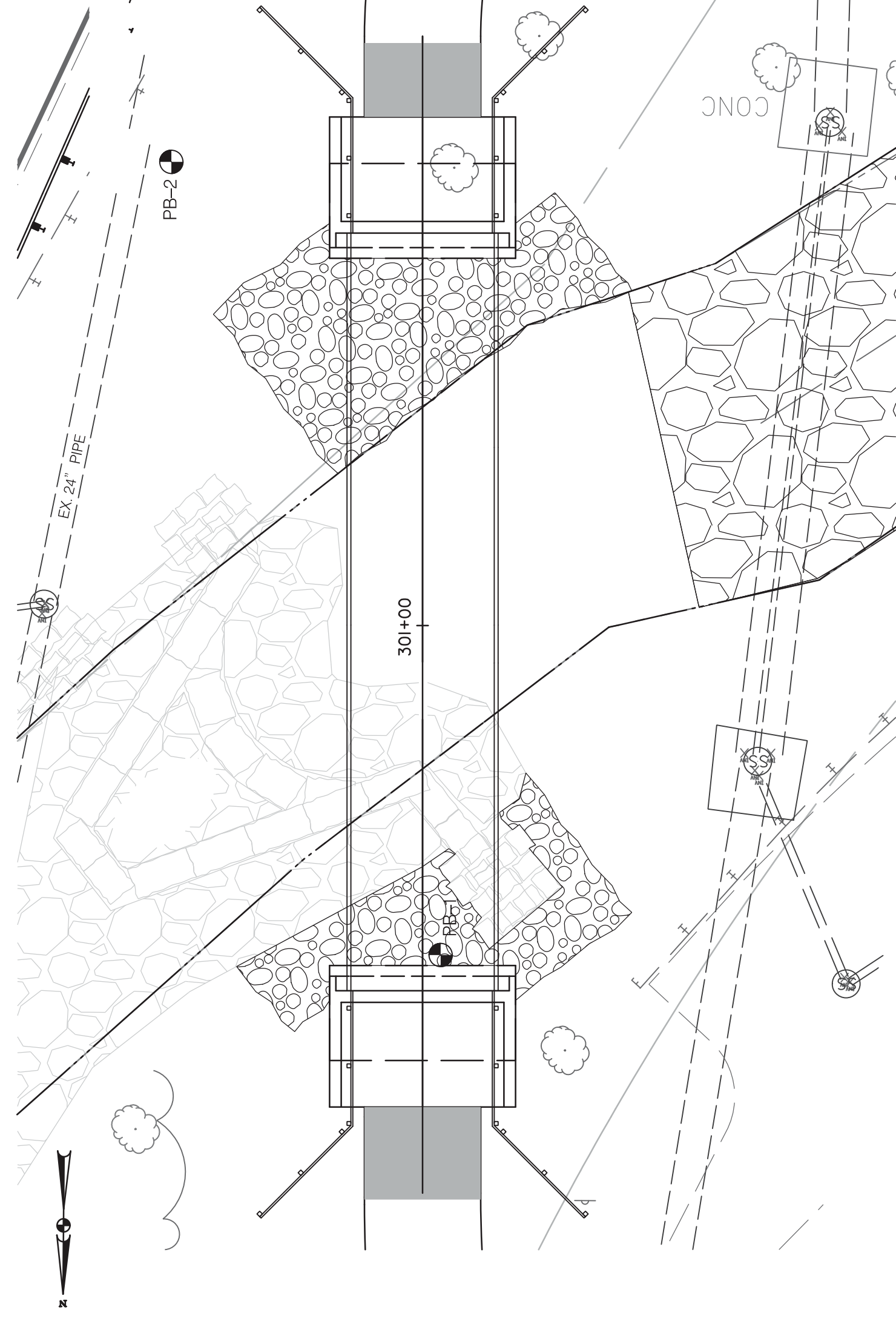
FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

E2CR, Inc.										BORING LOG									
PROJECT: Pedestrian Bridge NE of Park Valley Road Bridge No. MPK-03 over Sligo Creek										PROJECT NO: PB-1									
SITE: 12700/2013										GROUND ELEVATION: 171.4									
COORDINATES: Montgomery County, MD										CAVED DEPTH: 7.1'									
DRILLER: Rick K.										DEPTH OF BORING: 20'									
TYPE OF DRILLING & METHOD: CME: S50 ATV / HSA										PAGE NO: 20									
CMF: S50 ATV / HSA										OF: 1									
STRATA		DEPTH		DESCRIPTION		SAMPLE DATA		REMARKS		STRATA		DEPTH		DESCRIPTION		SAMPLE DATA		REMARKS	
0	171.4	170.4	1'	Topsoil	S-1	18"	WOH/12'-1	DS	4"	170.4	169.4	1'	Light brown, moist, loose Silty SAND with Gravel (SM)	S-1	18"	WOH/12'-1	DS	4"	Location of boring hole offset 15ft NE of original location due to the presence of utility line.
5	165.4	165.4	6'	Brown, gray, very moist, Silty SAND with Rock fragments, trace Mica (Residual) (SM)	S-2	18"	1-2-7	DS	12"	165.4	164.4	1'		S-2	18"	1-2-7	DS	12"	Note: Elevation of location 1ft higher than original.
10	157.7	157.7	7'	Gray, brown, medium hard to hard, slightly weathered to fresh, medium to massive, GNEISS.	S-3	18"	13-15-16	DS	12"	157.7	156.7	1'		S-3	18"	13-15-16	DS	12"	
15	151.4	151.4	6'	Bottom of boring at 20.0 feet.	S-4	24"	7-13-17-25	DS	3"	151.4	150.4	1'		S-4	24"	7-13-17-25	DS	3"	
20	147.6	147.6	4'		S-5	24"	50/3"	DS	3"	147.6	146.6	1'		S-5	24"	50/3"	DS	3"	Auger refusal @ 138"
25			5'		RUN#1	16"	15"	RC	12"					RUN#1	16"	15"	RC	12"	RUN#1 (138"-15") REC=75%
30			5'		RUN#2	60"	60"	RC	60"					RUN#2	60"	60"	RC	60"	RUN#2 (15'-20") REC=100%
35			5'																

BOT. OF ABUT. A
FIG. ELEV. 169.00

DATUM ELEV. 132.00

BORING LOGS
SCALE: 1" = 5'



BORING LOCATION PLAN
SCALE: 1" = 10'

E2CR, Inc.										BORING LOG									
PROJECT: Pedestrian Bridge NE of Park Valley Road Bridge No. MPK-03 over Sligo Creek										PROJECT NO: PB-2									
SITE: 12700/2013										GROUND ELEVATION: 175.6									
COORDINATES: Montgomery County, MD										CAVED DEPTH: 7.1'									
DRILLER: Rick K.										DEPTH OF BORING: 28'									
TYPE OF DRILLING & METHOD: CME: S50 ATV / HSA										PAGE NO: 28									
CMF: S50 ATV / HSA										OF: 1									
STRATA		DEPTH		DESCRIPTION		SAMPLE DATA		REMARKS		STRATA		DEPTH		DESCRIPTION		SAMPLE DATA		REMARKS	
0	175.6	174.6	1'	Topsoil	S-1	24"	1-1-2-3	DS	15"	175.6	174.6	1'	Brown, orange, moist, Silty SAND with Rock fragments (SM)	S-1	24"	1-1-2-3	DS	15"	Location of boring hole offset 15ft NE of original location due to the presence of utility line.
5	169.6	169.6	4'	Brown, tan, gray, very moist, Silty SAND with Rock fragments (Residual) (SM)	S-2	24"	3-1-1-2	DS	15"	169.6	168.6	1'		S-2	24"	3-1-1-2	DS	15"	Note: Elevation of location 1ft higher than original.
10	167.5	167.5	2'	Bottom of boring at 28.0 feet.	S-3	24"	2-2-2-1	DS	6"	167.5	166.5	1'		S-3	24"	2-2-2-1	DS	6"	
15	157.9	157.9	10'		S-4	24"	WOH-4-1-11	DS	6"	157.9	156.9	1'		S-4	24"	WOH-4-1-11	DS	6"	Auger refusal @ 178"
20			5'		RUN#1	64"	13-15-12-50/6"	RC	49.5'					RUN#1	64"	13-15-12-50/6"	RC	49.5'	RUN#1 (178"-23") REC=77%
25			5'		RUN#2	60"	60"	RC	60"					RUN#2	60"	60"	RC	60"	RUN#2 (23'-28") REC=100%
30			5'																
35			5'																

BOT. OF ABUT. B
FIG. ELEV. 167.50

DATUM ELEV. 132.00

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
Chief, Design Section
David M. Reid
Date: 12/14/17

DATE: MAY 2017
SCALE: AS SHOWN
Project No.: 501523

BORINGS AND DRIVE TESTS 4

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

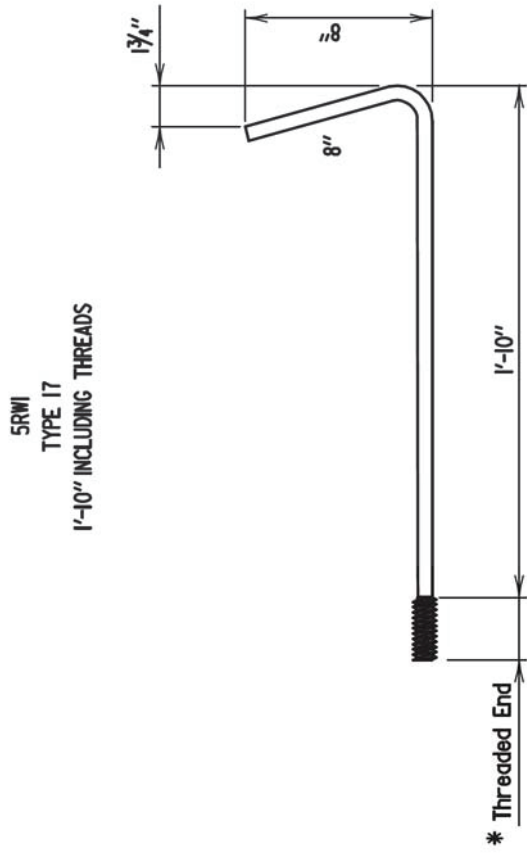
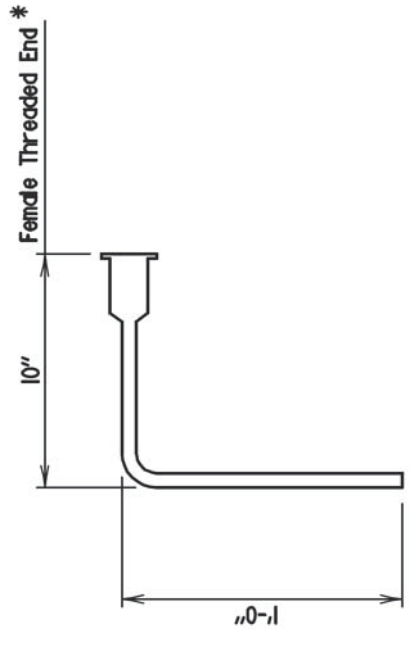
DESIGNED BY: JNC
DRAWN BY: JNC
CHECKED BY: JNC

NO. _____ REVISON _____ DATE _____ BY _____



GPI
GREENMAN-PELDERSEN, INC.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
10877 GULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
WASH DC OFFICE: 410-292-7772 BALTIMORE OFFICE: 410-880-3055
FAX: 410-880-2648 www.gpiinc.com

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



SMW
TYPE II
1-10" INCLUDING THREADS

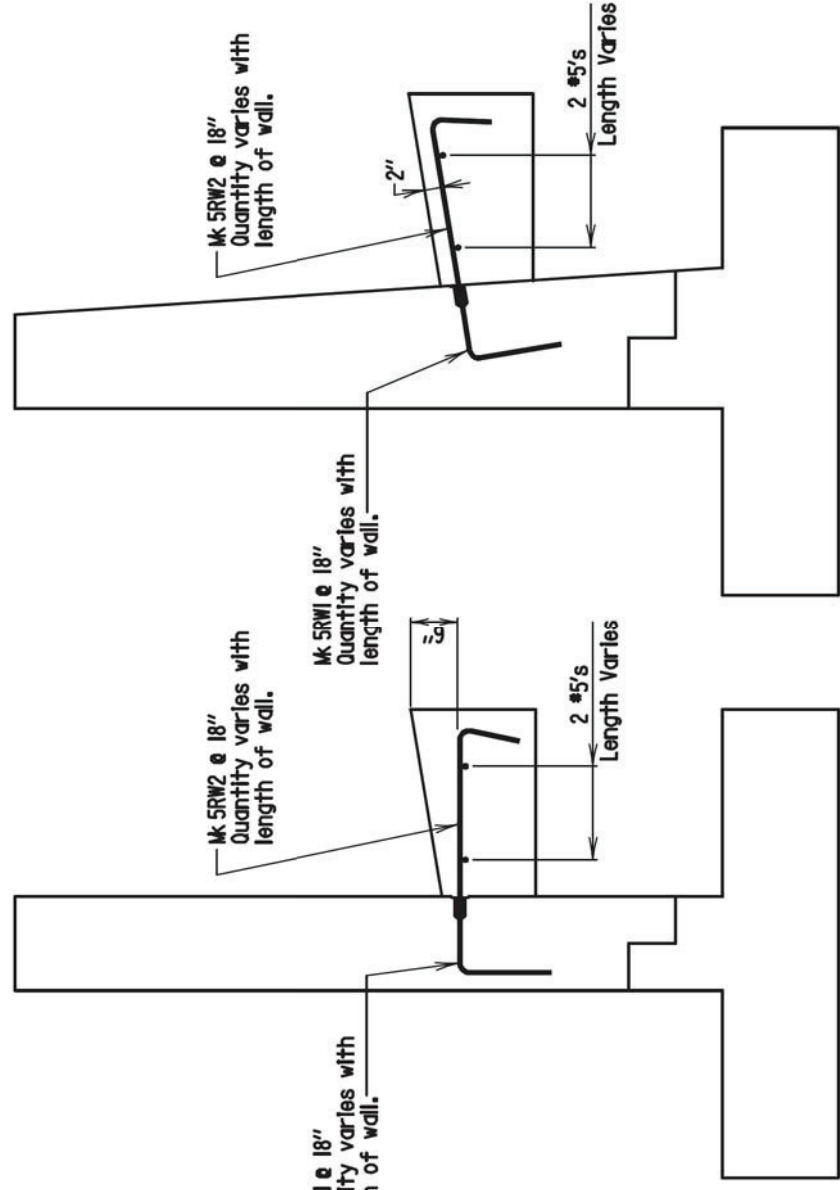
SMW
TYPE II
2-6" PLUS THREADS

* Root diameter of threaded end must be the nominal diameter of rebar. If necessary, the next larger size bar shall be used to verify this requirement of no extra charge to SJK.

OTHER RELATED STANDARDS
BR-380.00-80-101

APPROVAL	DATE	REVISION
DESIGNED	12-14-08	1
CHECKED	12-14-08	1
DATE	12-14-08	1

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
DATE: 3/17/09
REINFORCING BAR STANDARD
DRIVING PILE CAP
THREADED REBAR DOWEL COUPLER
STANDARD NO. REBAR-B02.21-92-285
SHEET 1 OF 1



PLUMB
Scale 1/2" = 1'-0"

BATTERED
Scale 1/2" = 1'-0"

OTHER RELATED STANDARDS
BR-380.00-80-101

APPROVAL	DATE	REVISION
DESIGNED	12-14-08	1
CHECKED	12-14-08	1
DATE	12-14-08	1

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
DATE: 3/17/09
REINFORCING BAR STANDARD
DRIVING PILE CAP
THREADED REBAR DOWEL COUPLER
STANDARD NO. REBAR-PL4.00-92-285
SHEET 1 OF 1

BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	2'-11"	2'-4"	1'-8"
#5	3'-7"	2'-7"	2'-4"
#6	4'-7"	3'-3"	2'-8"
#7	6'-3"	3'-7"	3'-4"
#8	8'-2"	4'-3"	4'-8"
#9	10'-4"	Does Exist	5'-11"
#10	13'-2"	Does Exist	7'-6"
#11	16'-4"	Does Exist	9'-3"

* LOCATION CATEGORY

- A - Bars in horizontal layers in top of pour with 12" or more of concrete
- B - All bars not in Category A spaced less than 6" apart.
- C - All bars not in Category A spaced 6" or more apart.

Note:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. The bar lap is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate Reinforcing Steel Design, $f_c = 4000$ psi.

CASE NO.2 - For bars coated with epoxy not in Case No.1.

APPROVAL	DATE	REVISION
DESIGNED	12-14-08	1
CHECKED	12-14-08	1
DATE	12-14-08	1

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
DATE: 3/17/09
REINFORCING BAR STANDARD
DRIVING PILE CAP
THREADED REBAR DOWEL COUPLER
STANDARD NO. REBAR-BL-101
SHEET 1 OF 1

OLD NO. MG.07-81-127(L)

BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	2'-5"	1'-9"	1'-5"
#5	3'-0"	2'-2"	1'-9"
#6	3'-7"	2'-7"	2'-1"
#7	4'-6"	3'-3"	2'-1"
#8	5'-4"	4'-3"	3'-5"
#9	7'-6"	5'-4"	4'-3"
#10	9'-6"	6'-3"	5'-5"
#11	11'-8"	8'-4"	6'-8"

* LOCATION CATEGORY

- A - Bars in horizontal layers in top of pour with 12" or more of concrete
- B - All bars not in Category A spaced less than 6" apart.
- C - All bars not in Category A spaced 6" or more apart.

Note:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. The bar lap is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate Reinforcing Steel Design, $f_c = 4000$ psi.

CASE NO.1 - For bars coated with epoxy with cover less than 3 times the bar diameter.

APPROVAL	DATE	REVISION
DESIGNED	12-14-08	1
CHECKED	12-14-08	1
DATE	12-14-08	1

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
DATE: 3/17/09
REINFORCING BAR STANDARD
DRIVING PILE CAP
THREADED REBAR DOWEL COUPLER
STANDARD NO. REBAR-BL-103
SHEET 1 OF 1

OLD NO. MG.051-80-122(L)

BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	2'-5"	1'-9"	1'-5"
#5	3'-0"	2'-2"	1'-9"
#6	3'-10"	2'-9"	2'-2"
#7	5'-2"	3'-9"	3'-0"
#8	6'-10"	4'-11"	3'-11"
#9	8'-8"	6'-2"	4'-11"
#10	10'-11"	7'-10"	6'-3"
#11	13'-5"	9'-1"	7'-8"

* LOCATION CATEGORY

- A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.
- B - All bars not in Category A spaced less than 6" apart.
- C - All bars not in Category A spaced 6" or more apart.

Note:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate Reinforcing Steel Design, $f_c = 4000$ psi.

CASE NO.1 - For bars coated with epoxy with cover less than 3 times the bar diameter.

APPROVAL	DATE	REVISION
DESIGNED	12-14-08	1
CHECKED	12-14-08	1
DATE	12-14-08	1

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
DATE: 3/17/09
REINFORCING BAR STANDARD
DRIVING PILE CAP
THREADED REBAR DOWEL COUPLER
STANDARD NO. REBAR-BL-101
SHEET 1 OF 1

OLD NO. MG.07-81-127(L)

BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	2'-11"	2'-4"	1'-8"
#5	3'-7"	2'-7"	2'-4"
#6	4'-7"	3'-3"	2'-8"
#7	6'-3"	3'-7"	3'-4"
#8	8'-2"	4'-3"	4'-8"
#9	10'-4"	Does Exist	5'-11"
#10	13'-2"	Does Exist	7'-6"
#11	16'-4"	Does Exist	9'-3"

* LOCATION CATEGORY

- A - Bars in horizontal layers in top of pour with 12" or more of concrete
- B - All bars not in Category A spaced less than 6" apart.
- C - All bars not in Category A spaced 6" or more apart.

Note:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. The bar lap is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate Reinforcing Steel Design, $f_c = 4000$ psi.

CASE NO.2 - For bars coated with epoxy not in Case No.1.

APPROVAL	DATE	REVISION
DESIGNED	12-14-08	1
CHECKED	12-14-08	1
DATE	12-14-08	1

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
DATE: 3/17/09
REINFORCING BAR STANDARD
DRIVING PILE CAP
THREADED REBAR DOWEL COUPLER
STANDARD NO. REBAR-BL-103
SHEET 1 OF 1

OLD NO. MG.051-80-122(L)

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7271

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
David M. Reid
Chief, Design Section
Date: 12/14/08

APPROVED
[Signature]
Chief, Division of Transportation Engineering
Date: 12/14/08

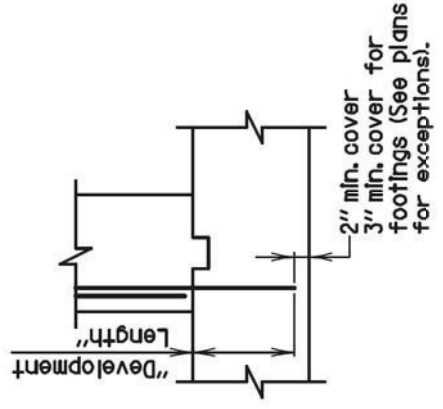
Checked By: _____
Drawn By: _____
DATE: _____
NO. _____
REVISION _____
BY _____
DATE: _____

DETAILS 2

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SILIGO CREEK

SCALE: AS SHOWN
DATE: MAY 2017
Project No.: 501523
SHEET 52 OF 62





STANDARD STRAIGHT BAR

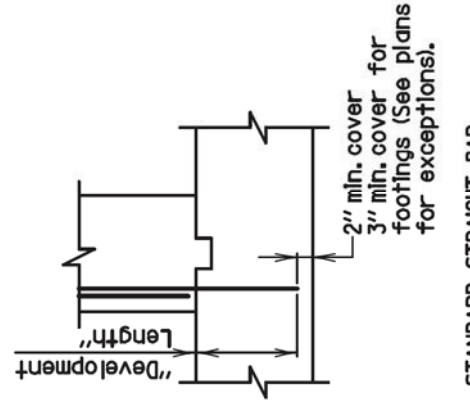
BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	1'-3"	1'-3"	1'-0"
#5	1'-6"	1'-6"	1'-3"
#6	2'-0"	1'-6"	1'-4"
#7	3'-0"	2'-0"	1'-9"
#8	4'-0"	2'-4"	2'-4"
#9	5'-1"	3'-3"	3'-8"
#10	6'-5"	4'-7"	3'-8"
#11	7'-11"	5'-3"	4'-7"

- LOCATION CATEGORY:
 - A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc.
 - B - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc. A spaced less than 6" apart.
 - C - All bars not in Category A spaced 6" or more apart.

- Notes:
- When development length is not specified on the Plans, the above dimensions shall be used.
 - In lightweight concrete, apply when bar is in lightweight concrete or any other strength of concrete.
 - These development lengths only apply where the Steel Design, $f_y = 60$ ksi and Concrete Design, $f_c = 3000$ psi.
 - If depth of member does not allow for development lengths in Categories A, B, and C, then hook shall be added to all bars not conforming to Categories D, E, and F per STD. NO. REBAR-DL-101.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN NON-EPOXY COATED REINFORCING		STANDARD NO. REBAR-DL-101		SHEET 1 OF 3	
DATE	DATE	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE	DATE

OLD NO. MGL(16)-90-214(L)



STANDARD STRAIGHT BAR

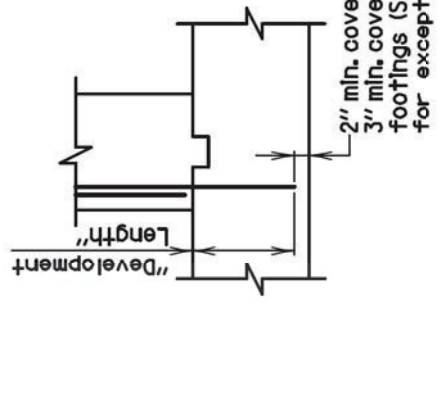
BAR SIZE	LOCATION CATEGORY			3 Times Bar Diameter	6 Times Bar Diameter	c/c Spacing
	A	B	C			
#4	1'-3"	1'-3"	1'-0"	1/4"	3/4"	3/4"
#5	1'-6"	1'-6"	1'-3"	1/4"	3/4"	3/4"
#6	2'-0"	1'-6"	1'-4"	1/4"	3/4"	3/4"
#7	3'-0"	2'-0"	1'-9"	1/4"	3/4"	3/4"
#8	4'-0"	2'-4"	2'-4"	1/4"	3/4"	3/4"
#9	5'-1"	3'-3"	3'-8"	1/4"	3/4"	3/4"
#10	6'-5"	4'-7"	3'-8"	1/4"	3/4"	3/4"
#11	8'-4"	5'-11"	4'-7"	1/4"	3/4"	3/4"

- LOCATION CATEGORY:
 - A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc.
 - B - All bars not in Category A spaced less than 6" apart.
 - C - All bars not in Category A spaced 6" or more apart.

- Notes:
- When development length is not specified on the Plans, the above dimensions shall be used.
 - In lightweight concrete, apply when bar is in lightweight concrete or any other strength of concrete.
 - These development lengths only apply where the Steel Design, $f_y = 60$ ksi and Concrete Design, $f_c = 3000$ psi.
 - If depth of member does not allow for development lengths in Categories A, B, and C, then hook shall be added to all bars not conforming to Categories D, E, and F per STD. NO. REBAR-DL-101.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN NON-EPOXY COATED REINFORCING		STANDARD NO. REBAR-DL-101		SHEET 2 OF 3	
DATE	DATE	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE	DATE

OLD NO. MGL(16)-90-216(L)



STANDARD STRAIGHT BAR

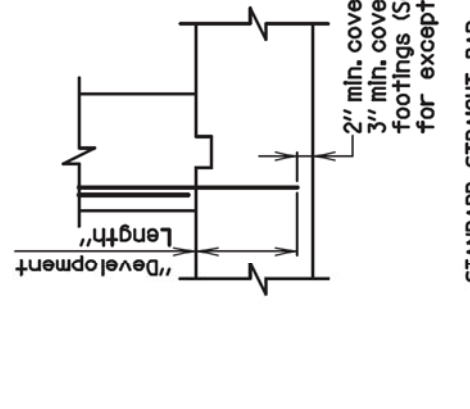
BAR SIZE	LOCATION CATEGORY			3 Times Bar Diameter	6 Times Bar Diameter	c/c Spacing
	A	B	C			
#4	1'-3"	1'-3"	1'-0"	1/4"	3/4"	3/4"
#5	1'-6"	1'-6"	1'-3"	1/4"	3/4"	3/4"
#6	2'-0"	1'-6"	1'-4"	1/4"	3/4"	3/4"
#7	3'-0"	2'-0"	1'-9"	1/4"	3/4"	3/4"
#8	4'-0"	2'-4"	2'-4"	1/4"	3/4"	3/4"
#9	5'-1"	3'-3"	3'-8"	1/4"	3/4"	3/4"
#10	6'-5"	4'-7"	3'-8"	1/4"	3/4"	3/4"
#11	8'-4"	5'-11"	4'-7"	1/4"	3/4"	3/4"

- LOCATION CATEGORY:
 - A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc.
 - B - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc. A spaced less than 6" apart.
 - C - All bars not in Category A spaced 6" or more apart.

- Notes:
- When development length is not specified on the Plans, the above dimensions shall be used.
 - In lightweight concrete, apply when bar is in lightweight concrete or any other strength of concrete.
 - These development lengths do not apply when bar is in lightweight concrete. The General Notes indicate Reinforcing Steel Design, $f_y = 60$ ksi, and Steel Concrete Design, $f_c = 3000$ psi.
 - If depth of member does not allow for development lengths in Categories A, B, and C, then hook shall be added to all bars not conforming to Categories D, E, and F per STD. NO. REBAR-DL-101.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN NON-EPOXY COATED REINFORCING		STANDARD NO. REBAR-DL-101		SHEET 2 OF 3	
DATE	DATE	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE	DATE

OLD NO. MGL(16)-90-214(L)



STANDARD STRAIGHT BAR

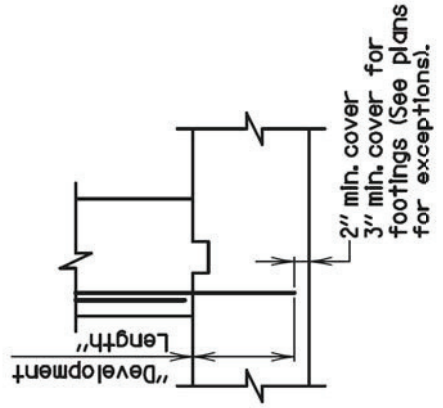
BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	1'-3"	1'-3"	1'-0"
#5	1'-6"	1'-6"	1'-3"
#6	2'-0"	1'-6"	1'-4"
#7	3'-0"	2'-0"	1'-9"
#8	4'-0"	2'-4"	2'-4"
#9	5'-1"	3'-3"	3'-8"
#10	6'-5"	4'-7"	3'-8"
#11	8'-4"	5'-11"	4'-7"

- LOCATION CATEGORY:
 - A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc.
 - B - All bars not in Category A spaced less than 6" apart.
 - C - All bars not in Category A spaced 6" or more apart.

- Notes:
- When development length is not specified on the Plans, the above dimensions shall be used.
 - In lightweight concrete, apply when bar is in lightweight concrete or any other strength of concrete.
 - These development lengths only apply where the Steel Design, $f_y = 60$ ksi and Concrete Design, $f_c = 3000$ psi.
 - If depth of member does not allow for development lengths in Categories A, B, and C, then hook shall be added to all bars not conforming to Categories D, E, and F per STD. NO. REBAR-DL-101.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN NON-EPOXY COATED REINFORCING		STANDARD NO. REBAR-DL-101		SHEET 3 OF 3	
DATE	DATE	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE	DATE

OLD NO. MGL(16)-90-216(L)



STANDARD STRAIGHT BAR

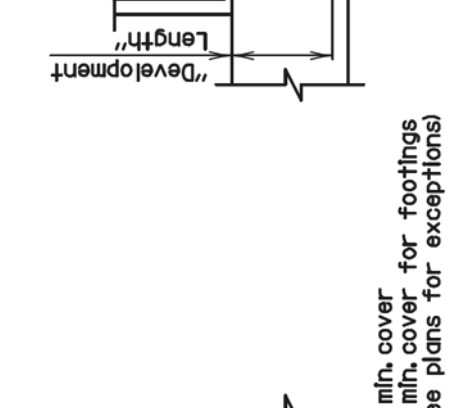
BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	1'-3"	1'-3"	1'-0"
#5	1'-6"	1'-6"	1'-3"
#6	2'-0"	1'-6"	1'-4"
#7	3'-0"	2'-0"	1'-9"
#8	4'-0"	2'-4"	2'-4"
#9	5'-1"	3'-3"	3'-8"
#10	6'-5"	4'-7"	3'-8"
#11	8'-4"	5'-11"	4'-7"

- LOCATION CATEGORY:
 - A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc.
 - B - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc. A spaced less than 6" apart.
 - C - All bars not in Category A spaced 6" or more apart.

- Notes:
- When development length is not specified on the Plans, the above dimensions shall be used.
 - In lightweight concrete, apply when bar is in lightweight concrete or any other strength of concrete.
 - These development lengths do not apply when bar is in lightweight concrete. The General Notes indicate Reinforcing Steel Design, $f_y = 60$ ksi, and Steel Concrete Design, $f_c = 3000$ psi.
 - If depth of member does not allow for development lengths in Categories A, B, and C, then hook shall be added to all bars not conforming to Categories D, E, and F per STD. NO. REBAR-DL-101.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN NON-EPOXY COATED REINFORCING		STANDARD NO. REBAR-DL-101		SHEET 3 OF 3	
DATE	DATE	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE	DATE

OLD NO. MGL(16)-90-214(L)



STANDARD STRAIGHT BAR

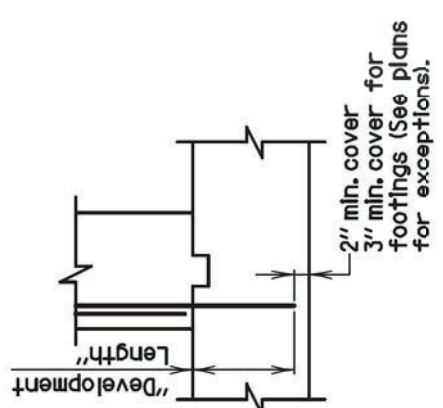
BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	1'-3"	1'-3"	1'-0"
#5	1'-6"	1'-6"	1'-3"
#6	2'-0"	1'-6"	1'-4"
#7	3'-0"	2'-0"	1'-9"
#8	4'-0"	2'-4"	2'-4"
#9	5'-1"	3'-3"	3'-8"
#10	6'-5"	4'-7"	3'-8"
#11	8'-4"	5'-11"	4'-7"

- LOCATION CATEGORY:
 - A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc.
 - B - All bars not in Category A spaced less than 6" apart.
 - C - All bars not in Category A spaced 6" or more apart.

- Notes:
- When development length is not specified on the Plans, the above dimensions shall be used.
 - In lightweight concrete, apply when bar is in lightweight concrete or any other strength of concrete.
 - These development lengths only apply where the Steel Design, $f_y = 60$ ksi, and Concrete Design, $f_c = 3000$ psi.
 - If depth of member does not allow for development lengths in Categories A, B, and C, then hook shall be added to all bars not conforming to Categories D, E, and F per STD. NO. REBAR-DL-101.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN NON-EPOXY COATED REINFORCING		STANDARD NO. REBAR-DL-101		SHEET 1 OF 1	
DATE	DATE	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE	DATE

OLD NO. MGL(16)-90-216(L)



STANDARD STRAIGHT BAR

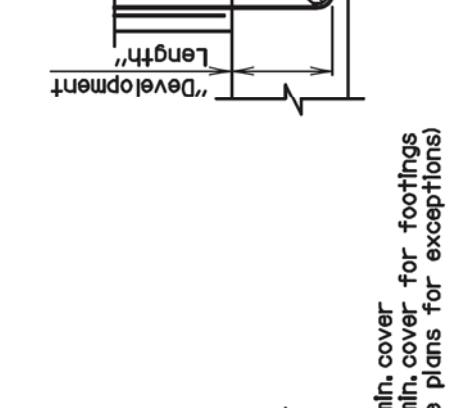
BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	1'-3"	1'-3"	1'-0"
#5	1'-6"	1'-6"	1'-3"
#6	2'-0"	1'-6"	1'-4"
#7	3'-0"	2'-0"	1'-9"
#8	4'-0"	2'-4"	2'-4"
#9	5'-1"	3'-3"	3'-8"
#10	6'-5"	4'-7"	3'-8"
#11	8'-10"	4'-11"	3'-11"

- LOCATION CATEGORY:
 - A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc.
 - B - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc. A spaced less than 6" apart.
 - C - All bars not in Category A spaced 6" or more apart.

- Notes:
- When development length is not specified on the Plans, the above dimensions shall be used.
 - In lightweight concrete, apply when bar is in lightweight concrete or any other strength of concrete.
 - These development lengths only apply where the Steel Design, $f_y = 60$ ksi and Concrete Design, $f_c = 4000$ psi.
 - If depth of member does not allow for development lengths in Categories A, B, and C, then hook shall be added to all bars not conforming to Categories D, E, and F per STD. NO. REBAR-DL-103.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN NON-EPOXY COATED REINFORCING		STANDARD NO. REBAR-DL-103		SHEET 1 OF 3	
DATE	DATE	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE	DATE

OLD NO. MGL(16)-90-216(L)



STANDARD STRAIGHT BAR

BAR SIZE	LOCATION CATEGORY		
	A	B	C
#4	1'-3"	1'-3"	1'-0"
#5	1'-6"	1'-6"	1'-3"
#6	2'-0"	1'-6"	1'-4"
#7	3'-0"	2'-0"	1'-9"
#8	4'-0"	2'-4"	2'-4"
#9	5'-1"	3'-3"	3'-8"
#10	6'-5"	4'-7"	3'-8"
#11	8'-10"	4'-11"	3'-11"

- LOCATION CATEGORY:
 - A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as its footings, pier caps, etc.
 - B - All bars not in Category A spaced less than 6" apart.
 - C - All bars not in Category A spaced 6" or more apart.

- Notes:
- When development length is not specified on the Plans, the above dimensions shall be used.
 - In lightweight concrete, apply when bar is in lightweight concrete or any other strength of concrete.
 - These development lengths only apply where the Steel Design, $f_y = 60$ ksi, and Concrete Design, $f_c = 4000$ psi.
 - If depth of member does not allow for development lengths in Categories A, B, and C, then hook shall be added to all bars not conforming to Categories D, E, and F per STD. NO. REBAR-DL-103.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN NON-EPOXY COATED REINFORCING		STANDARD NO. REBAR-DL-103		SHEET 1 OF 1	
DATE	DATE	DESIGNER	DATE	DATE	DATE	DATE	DATE	DATE	DATE

OLD NO. MGL(16)-90-216(L)

DETAILS 3

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
David M. Reid
Chief, Design Section

DATE: 12/14/17

DATE: 12/14/2017

Checked By: _____
Designed By: _____
Drawn By: _____
REVISION NO. DATE BY

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SILIGO CREEK

SCALE: AS SHOWN DATE: MAY 2017

Project No. : 501923 SHEET 53 OF 62

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

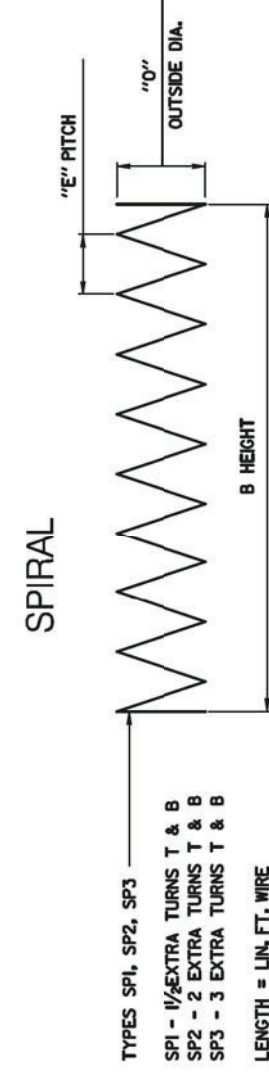


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GREENMAN-PEERSEN, INC.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
1077 GULFORD RD., ANNAPOLIS JUNCTION, MD. 20710
WASH. DC. 4761772 BALT. 410 880-3055
FAX: 410 880-6248 www.gpiinc.com

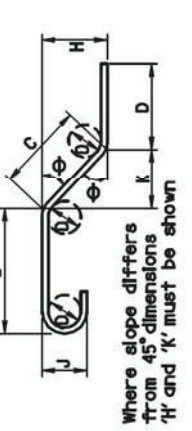
TYPICAL BAR BENDS

DETAILS AND NOTES



TYPES SPA, SP3, SP4
 SPA - MAXIMUM TURNS 1 & 2
 SP3 - 3 EXTRA TURNS 1 & 2
 SP4 - 4 EXTRA TURNS 1 & 2
 LENGTH = UN. FT. INCH

Unless otherwise noted diameter D is the same for all bends and hooks on a bar.



Where slope differs from 45° dimensions shall be shown.

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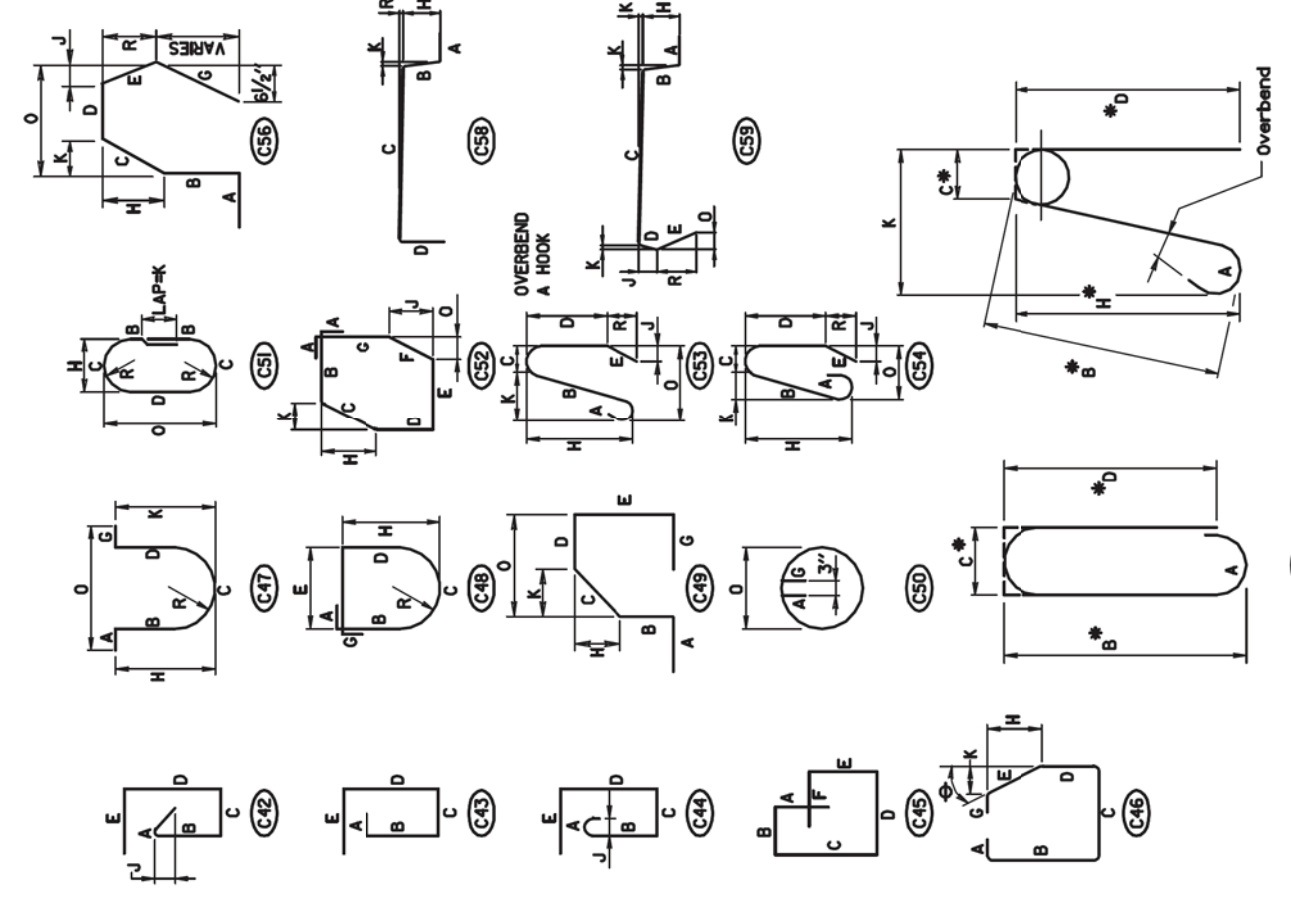
Dimensions shall be shown.

NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 THIS AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO NOTCH (1/4" MAX) (1" MAX) AND (-1/4" MIN) (1" MIN) TOLERANCES.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES DATE: 2/10/14	SHEET 1 OF 3
DESIGN	BAR BEND TYPES GENERAL NOTES	
DATE	STANDARD NO. REBAR-BB-101	OLD NO. REBAR-BB-101-94-256

SHA TYPICAL BAR BENDS

TIES AND STIRRUPS

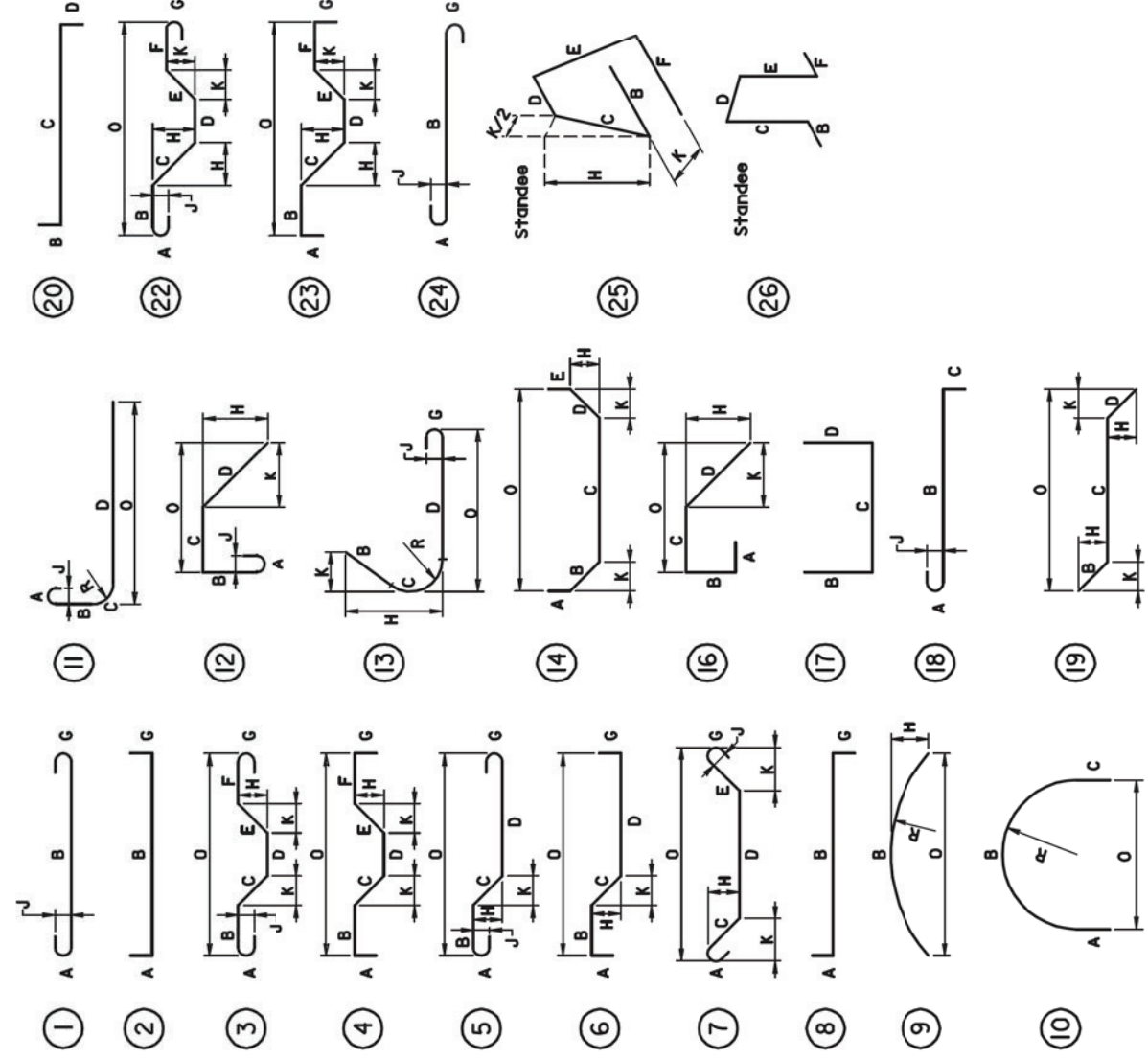


NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 THIS AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO NOTCH (1/4" MAX) (1" MAX) AND (-1/4" MIN) (1" MIN) TOLERANCES.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES DATE: 2/10/14	SHEET 1 OF 3
DESIGN	BAR BEND TYPES SHA - TIES AND STIRRUPS	
DATE	STANDARD NO. REBAR-BB-101	OLD NO. REBAR-BB-101-94-256

ACI TYPICAL BAR BENDS

STANDARD PIN BENDING

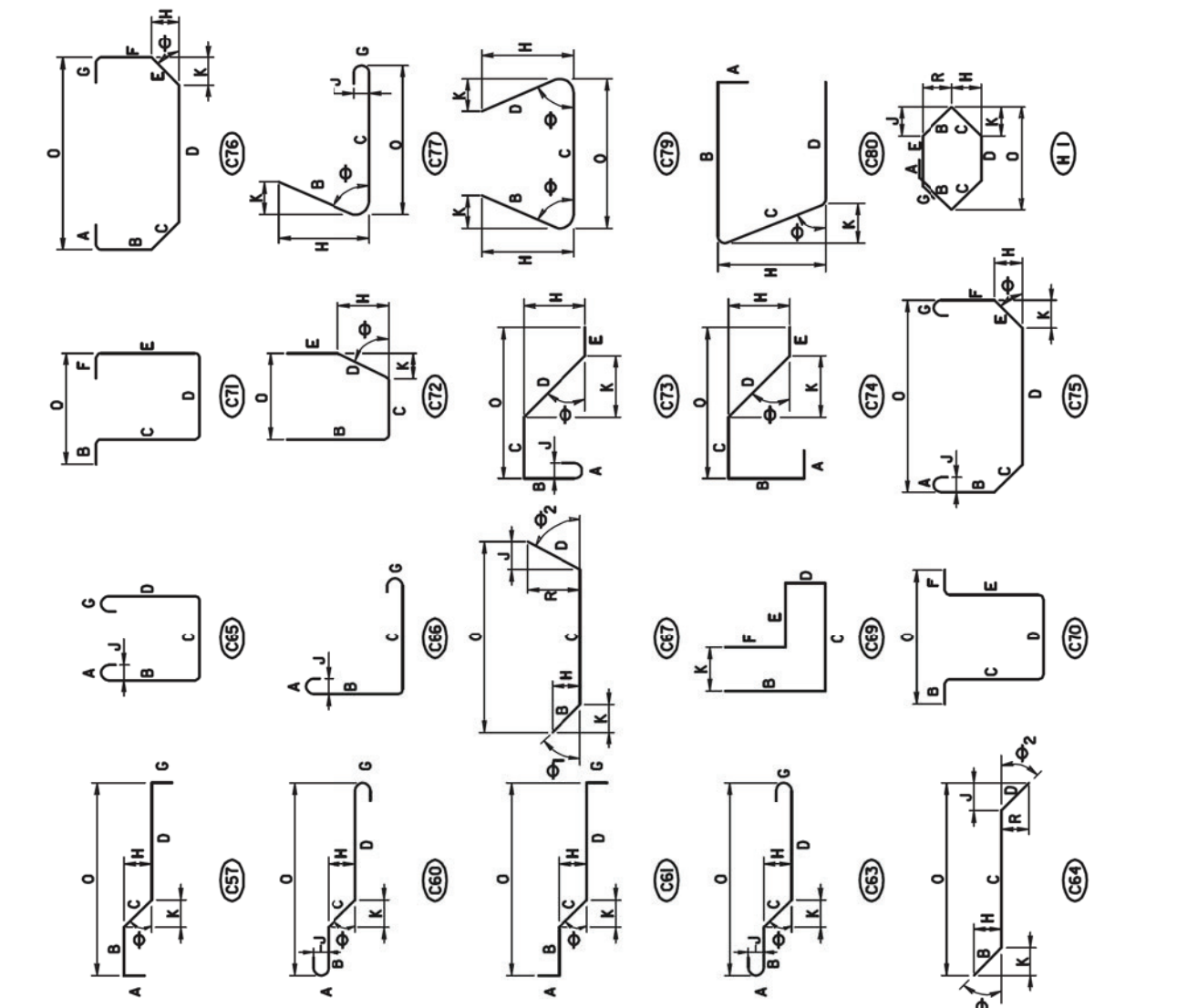


NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 THIS AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO NOTCH (1/4" MAX) (1" MAX) AND (-1/4" MIN) (1" MIN) TOLERANCES.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES DATE: 2/10/14	SHEET 2 OF 3
DESIGN	BAR BEND TYPES ACI - STANDARD PIN BENDING	
DATE	STANDARD NO. REBAR-BB-101	OLD NO. REBAR-BB-101-94-256

SHA TYPICAL BAR BENDS

STANDARD PIN BENDING

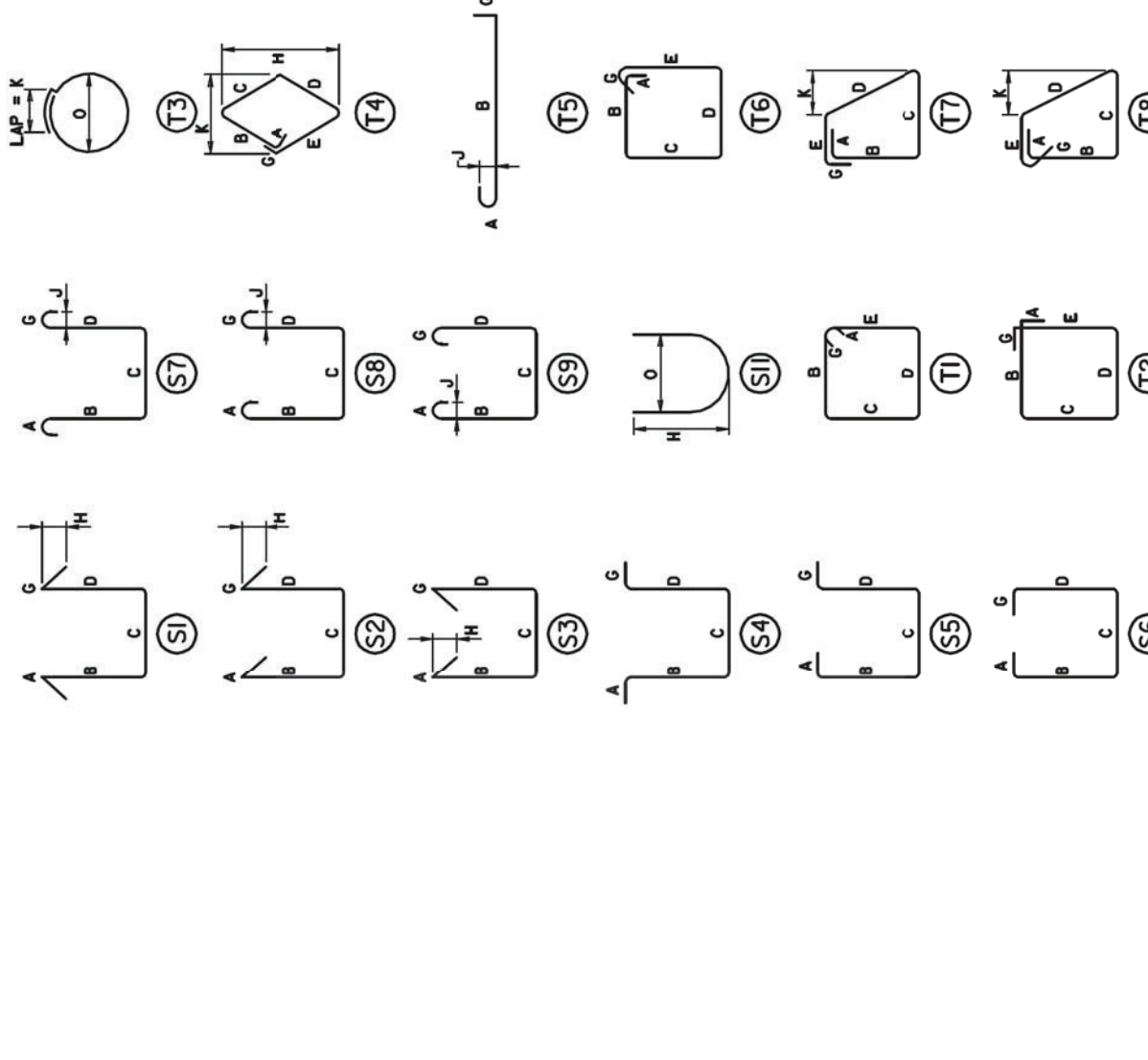


NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 THIS AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO NOTCH (1/4" MAX) (1" MAX) AND (-1/4" MIN) (1" MIN) TOLERANCES.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES DATE: 2/10/14	SHEET 2 OF 3
DESIGN	BAR BEND TYPES SHA - STANDARD PIN BENDING	
DATE	STANDARD NO. REBAR-BB-101	OLD NO. REBAR-BB-101-94-256

ACI TYPICAL BAR BENDS

TIES AND STIRRUPS

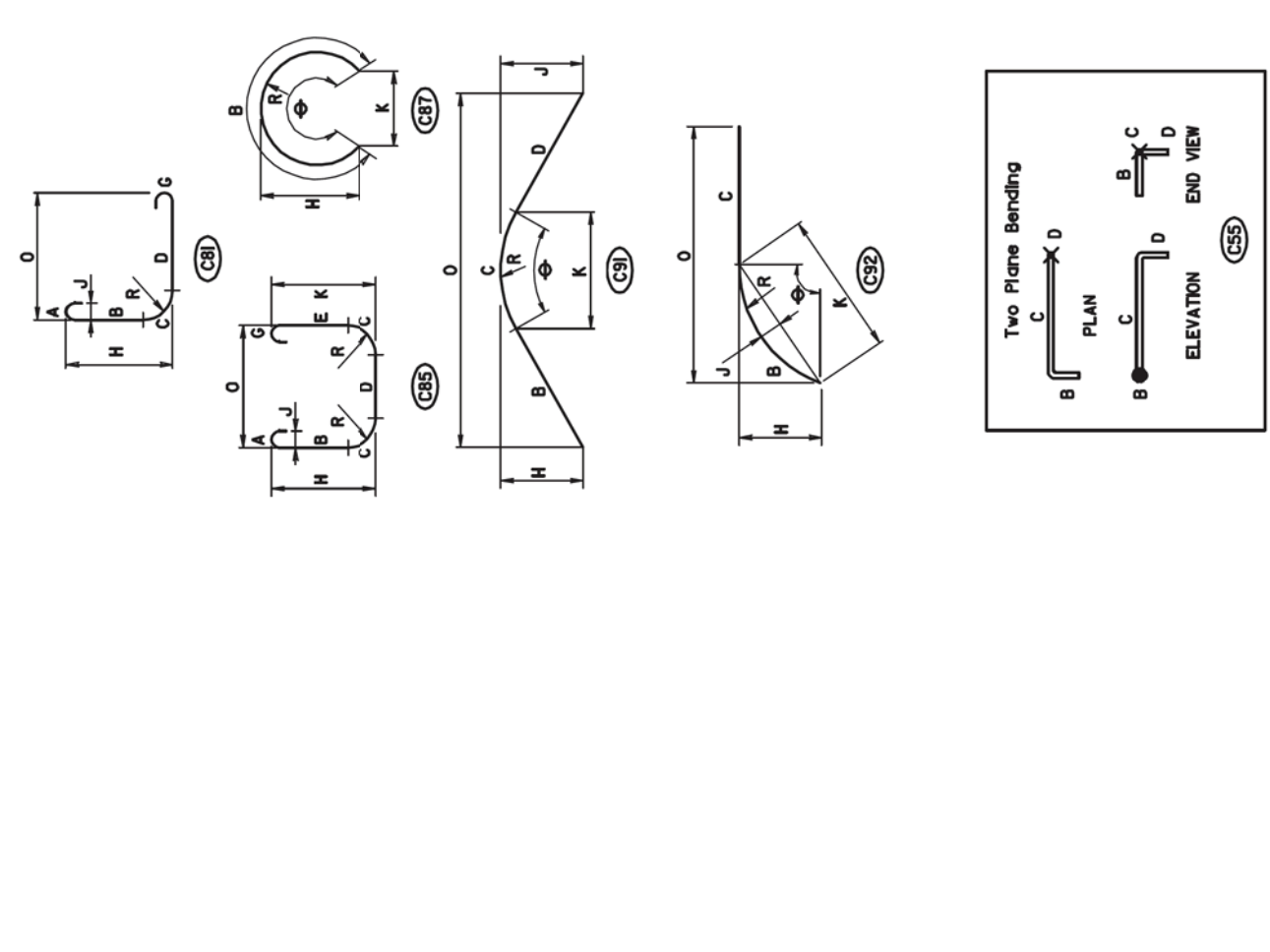


NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 THIS AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO NOTCH (1/4" MAX) (1" MAX) AND (-1/4" MIN) (1" MIN) TOLERANCES.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES DATE: 2/10/14	SHEET 1 OF 3
DESIGN	BAR BEND TYPES ACI - TIES A	
DATE	STANDARD NO. REBAR-BB-101	OLD NO. REBAR-BB-101-94-256

SHA TYPICAL BAR BENDS

RADIUS BENDING

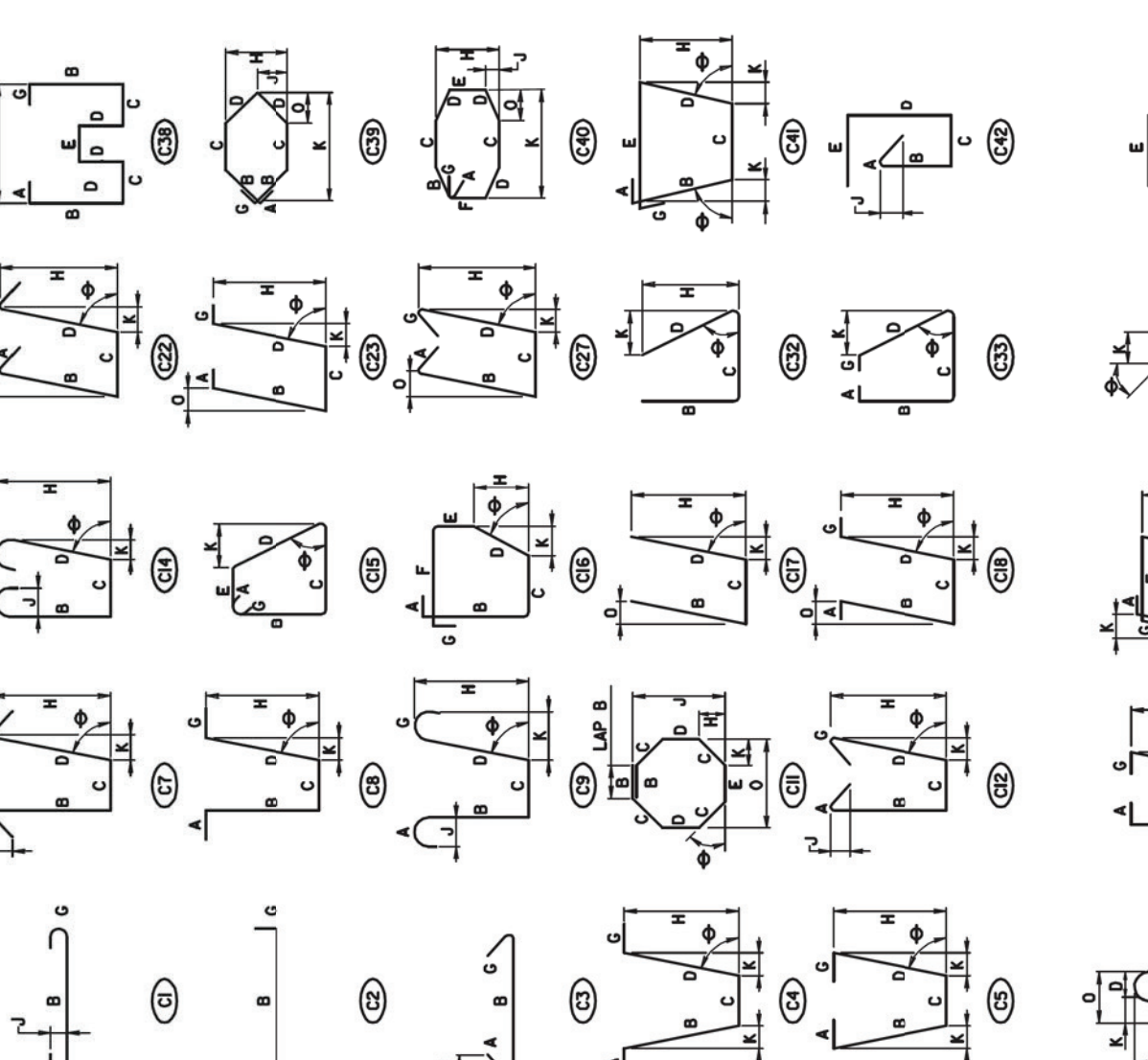


NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 THIS AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO NOTCH (1/4" MAX) (1" MAX) AND (-1/4" MIN) (1" MIN) TOLERANCES.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES DATE: 2/10/14	SHEET 1 OF 3
DESIGN	BAR BEND TYPES SHA - RADIUS BENDING	
DATE	STANDARD NO. REBAR-BB-101	OLD NO. REBAR-BB-101-94-256

SHA TYPICAL BAR BENDS

TIES AND STIRRUPS

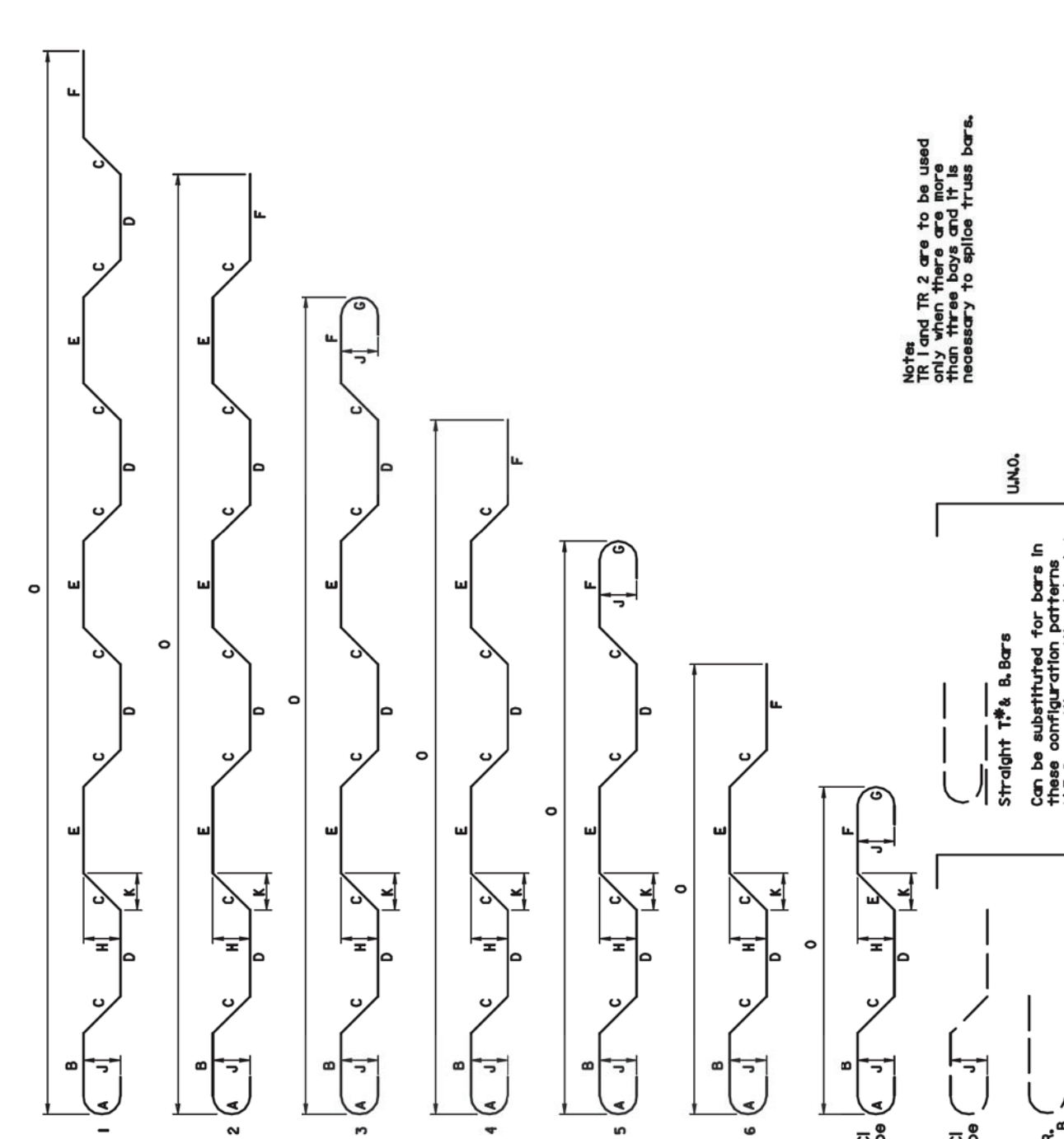


NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 THIS AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO NOTCH (1/4" MAX) (1" MAX) AND (-1/4" MIN) (1" MIN) TOLERANCES.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES DATE: 2/10/14	SHEET 4 OF 5
DESIGN	BAR BEND TYPES SHA - TIES AND STIRRUPS	
DATE	STANDARD NO. REBAR-BB-101	OLD NO. REBAR-BB-101-94-256

SHA TYPICAL BAR BENDS

TRUSS BAR CONFIGURATIONS



NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 THIS AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO NOTCH (1/4" MAX) (1" MAX) AND (-1/4" MIN) (1" MIN) TOLERANCES.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES DATE: 2/10/14	SHEET 3 OF 5
DESIGN	BAR BEND TYPES TRUSS BAR CONFIGURATIONS	
DATE	STANDARD NO. REBAR-BB-101	OLD NO. REBAR-BB-101-94-256

OWNER/ADDRESS: MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION GAITHERSBURG, MARYLAND		CONTACT: DIVISION OF TRANSPORTATION ENGINEERING TRANSPORTATION CONSTRUCTION 240-777-7210 TRANSPORTATION PLANNING & DESIGN 240-777-7221	
RECOMMENDED FOR APPROVAL <i>David M. Reid</i> Chief, Design Section		DATE: 12/1/17	
DATE: 12/1/17		DATE: 12/1/17	
DESIGNED BY: _____		CHECKED BY: _____	
PROJECT NO.: 501523		SHEET 54 OF 62	
BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03 ON PARK VALLEY ROAD OVER SILIGO CREEK			
SCALE: AS SHOWN DATE: MAY 2017			

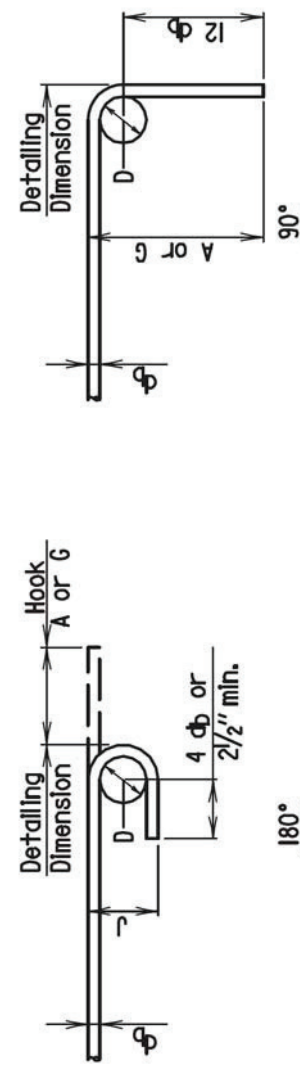


GPI
 GREENMAN-PEERSEN, INC.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
 10777 CULFORD RD., ANNAPOLIS JUNCTION, MD 20710
 WASHINGTON FIELD OFFICE: BALTIMORE, MD 21208
 TEL: 410-291-7777 FAX: 410-291-7778 www.gpiinc.com

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

HOOKS
TABLE I
REFERENCES

- ACI Types I thru 26
- Standard Pin Bending
- Standard Bending



BAR SIZE	180 - deg hook		90 - deg hook	
	A or C	D	A or C	D
#3	3	3	3	3
#4	4	4	4	4
#5	5	5	5	5
#6	6	6	6	6
#7	7	7	7	7
#8	8	8	8	8
#9	9	9	9	9
#10	10	10	10	10
#11	11	11	11	11
#12	12	12	12	12
#14	14	14	14	14
#16	16	16	16	16

APPROVAL: [Signature] DATE: 6/27/08
 STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

REINFORCING STEEL HOOK TABLES AND DIAGRAMS

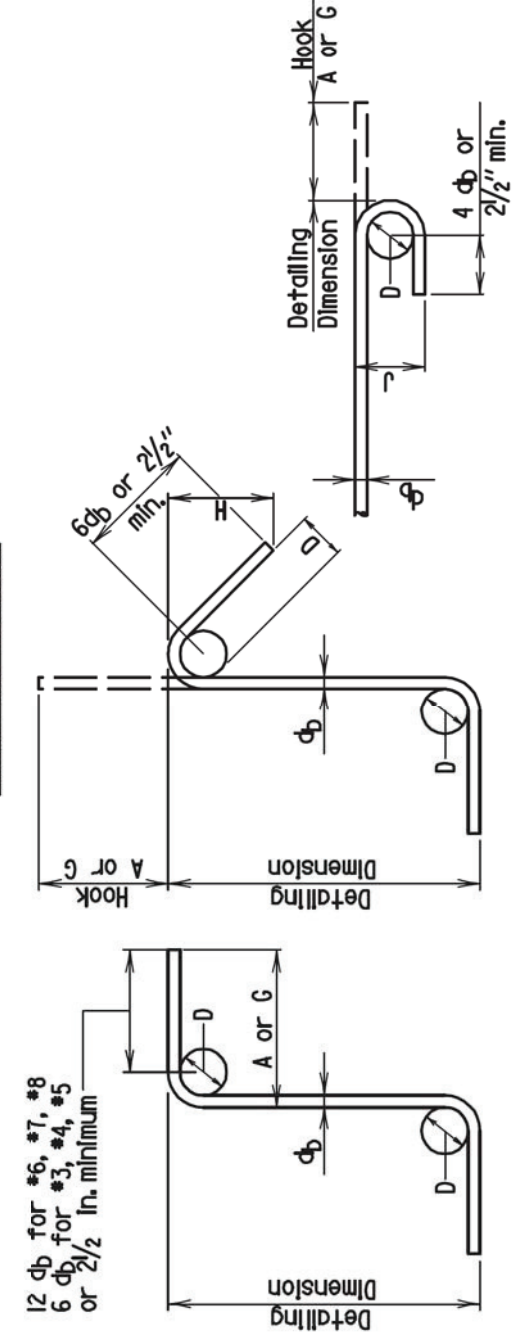
STANDARD NO. REBAR-BB-102
 SHEET 1 OF 2

OLD NO. REBAR-BB05-97-320

HOOKS
TABLE II
REFERENCES

- ACI Types S1 thru S11
- ACI Types T1 thru T8
- SMA Ties and Stirrups

(Notes Tie and stirrup types supplied in sizes #3-#8)
STIRRUP AND TIE HOOKS



BAR SIZE	90 - deg hook		135 - deg hook		180 - deg hook	
	A or C	D	A or C	D	A or C	D
#3	3	3	3	3	3	3
#4	4	4	4	4	4	4
#5	5	5	5	5	5	5
#6	6	6	6	6	6	6
#7	7	7	7	7	7	7
#8	8	8	8	8	8	8

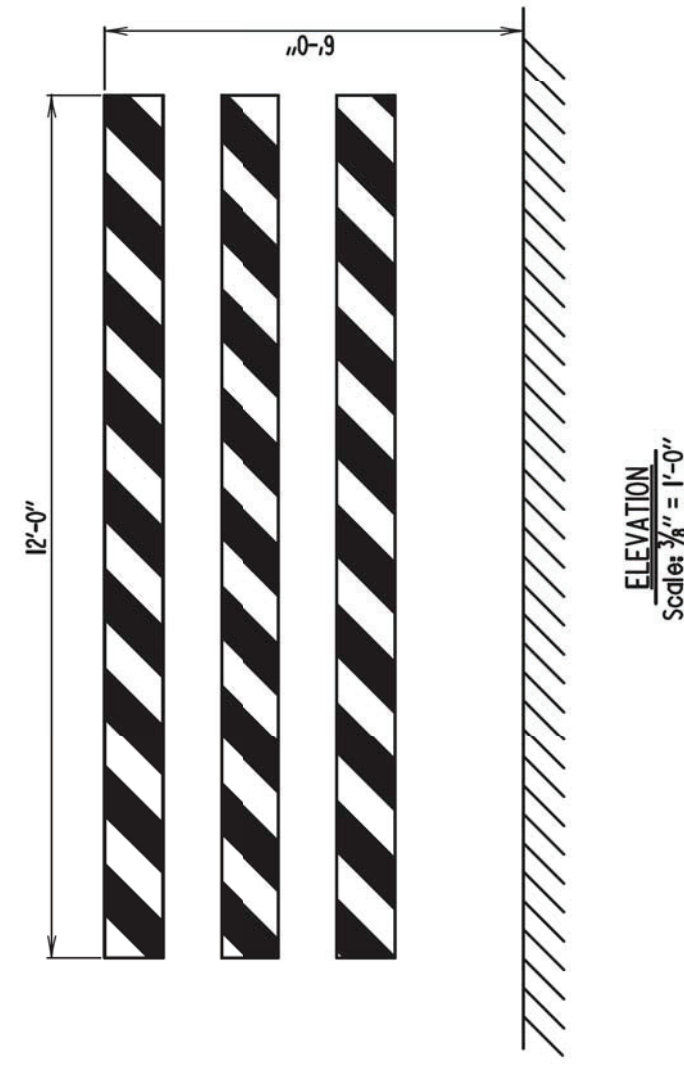
BAR SIZE	180 - deg hook		135 - deg hook		90 - deg hook	
	A or C	D	A or C	D	A or C	D
#3	3	3	3	3	3	3
#4	4	4	4	4	4	4
#5	5	5	5	5	5	5
#6	6	6	6	6	6	6
#7	7	7	7	7	7	7
#8	8	8	8	8	8	8

APPROVAL: [Signature] DATE: 6/27/08
 STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

REINFORCING STEEL HOOK TABLES AND DIAGRAMS

STANDARD NO. REBAR-BB-102
 SHEET 2 OF 2

OLD NO. REBAR-BB05-97-320



Notes:

- Type III Barricades shall conform to NCHRP Report 350 and the MUTCD except that all barricades to close structures shall be 12 ft. long by 6 ft. high.
- Striping shall be reflectorized diamonds orange and white colors. Right (R) Barricade show (U) barricade shall have stripes sloping in opposite direction. If barricades are to be used close road, striping shall be reflectorized diamonds white and red colors.
- Barricade shall be lighted if required by location.
- Type III Barricades shall be selected from the Progressed List published by the Office of Materials and Technology. Procedures for adding products to the prequalified list may be obtained from the Office of Materials and Technology.
- If sloping is attached to the movable barricade, the signs shall be placed so that no more than 1/2 of the reflective surface of the barricade shall be covered.

APPROVAL: [Signature] DATE: 6/27/08
 STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

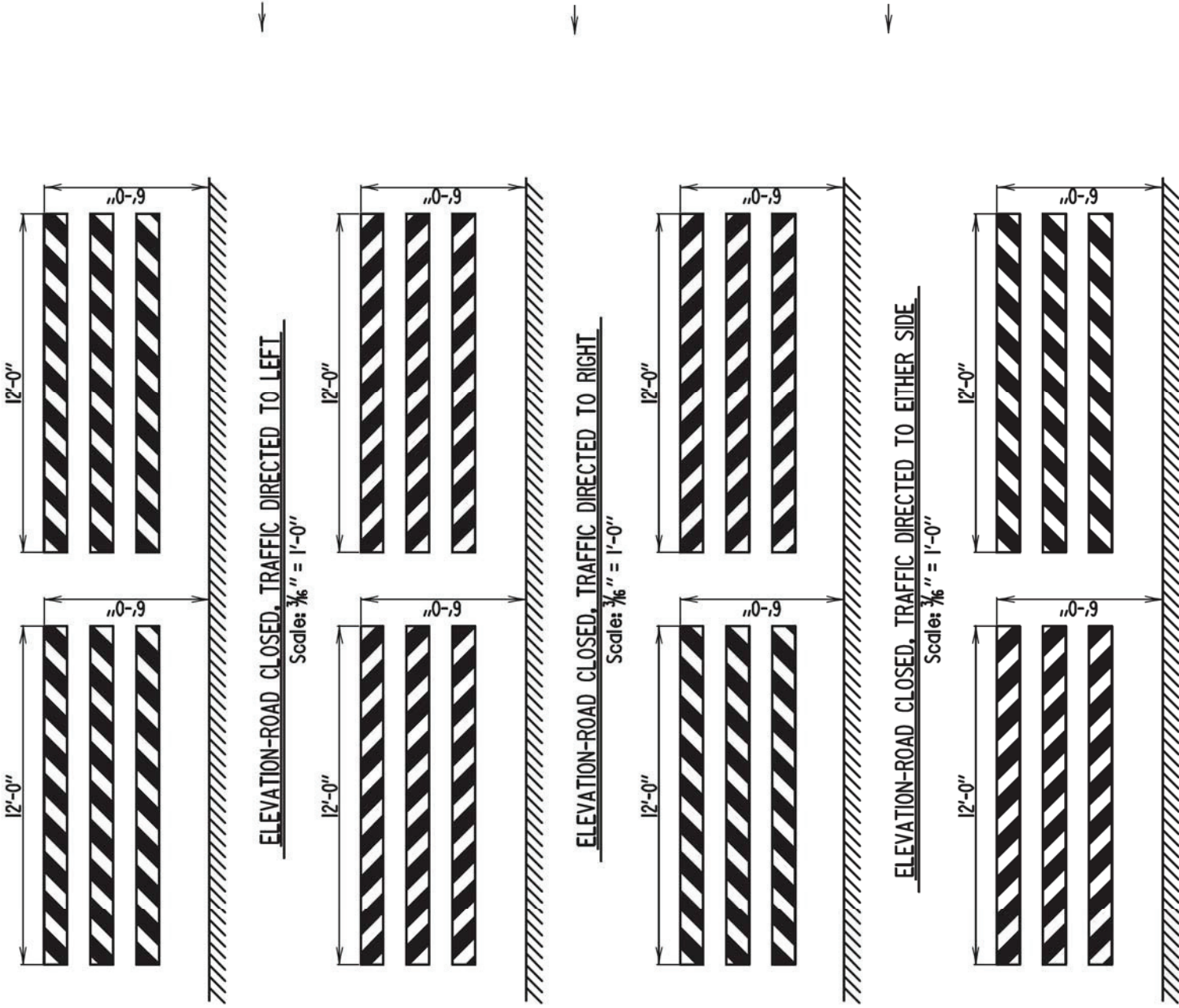
TEMPORARY MOVABLE BARRICADE

STANDARD NO. M5.08-79-82
 SHEET 1 OF 2

APPROVAL: [Signature] DATE: 6/27/08
 STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF STRUCTURES

TEMPORARY MOVABLE BARRICADE

STANDARD NO. M5.08-79-82
 SHEET 2 OF 2



OWNER/ADDRESS:
 DEPARTMENT OF TRANSPORTATION
 100 EDISON PARK DRIVE
 GAITHERSBURG, MARYLAND

CONTACT:
 DIVISION OF TRANSPORTATION ENGINEERING
 TRANSPORTATION CONSTRUCTION
 240-777-7210
 TRANSPORTATION PLANNING & DESIGN
 240-777-7271

MONTGOMERY COUNTY
 DEPARTMENT OF TRANSPORTATION
 GAITHERSBURG, MARYLAND

RECOMMENDED FOR APPROVAL
 Chief, Design Section
 APPROVED: [Signature]
 Chief, Division of Transportation Engineering

Date: 12/14/17
 Date: 12/14/2017

Drawn By: [Signature]
 Checked By: [Signature]

DETAILS 5

BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
 ON PARK VALLEY ROAD OVER SLIGO CREEK

SCALE: AS SHOWN
 DATE: MAY 2017
 Project No. : 501523
 SHEET 55 OF 62

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET



GPI
 GREENMAN-PEDERSEN, INC.
 ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
 1077 CULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
 WASH DC OFFICE: 410-477-7772 BALTIMORE OFFICE: 410-880-3055
 FAX: 410-880-3048 www.gpiinc.com

NOTES:
STREETLIGHT CONDUIT INSTALLATION CHECKLIST

- 1) DUAL FOUR INCH (4") SCHEDULE 40, PVC CONDUIT SHALL BE INSTALLED BY THE CONTRACTOR CONNECTING EACH SPLICE BOX IN A CONTINUOUS RUN.
- 2) TWO INCH (2") SCHEDULE 40, PVC CONDUIT SHALL BE INSTALLED BY THE CONTRACTOR CONNECTING THE SPLICEBOX TO THE STREETLIGHT FOOTING.
- 3) CONTRACTOR TO PROVIDE AND INSTALL PHOTO CELLS FOR EACH STREETLIGHT LUMINAIRE.
- 4) STREETLIGHT AND POST ERRECTED BY THE CONTRACTOR ARE TO BE WIRED WITH #10 AWG (MIN) COPPER WITH A THREE FOOT MINIMUM LOOP OF SLACK IN THE SPLICE BOX FOR ATTACHMENT BY PEPCO.
- 5) STREETLIGHT POSTS ARE TO HAVE A GROUNDING LUG ATTACHED TO THE BASE OF THE POST WITH A MINIMUM OF THREE FOOT LOOP OF SLACK IN THE SPLICEBOX OF A #6 AWG BARE COPPER WIRE ATTACHED.
- 6) ALL SWEEPBENDS TO BE A MINIMUM OF 24 INCHES RADIUS.
- 7) 1/4" NYLON PULL-LINE IS TO BE INSTALLED IN EACH CONDUIT DUCT.
- 8) CONTRACTOR TO INSTALL MARKING TAPE ONE FOOT (1') ABOVE EACH CONDUIT RUN.
- 9) NO MORE THAN 270 DEGREES OF BENDS IN A CONDUIT RUN.
- 10) CONDUIT IS TO HAVE THREE (3) FEET (MINIMUM) OF COVER OVER IT.
- 11) INSTALLATION OF ALL UNDERGROUND LIGHTING FACILITIES ARE ALSO SUBJECT TO PEPCO INSPECTION AND WRITTEN APPROVAL BEFORE CONSTRUCTION. FAILURE TO OBTAIN SUCH INSPECTION WILL RESULT IN THE UNCOVERING OF FACILITIES AT THE CONTRACTOR'S EXPENSE. CALL 301-670-8808 OR 301-670-8828 7:00 TO 9:00 AM OR 3:00 TO 4:00 PM TWO WORKING DAYS IN ADVANCE TO ARRANGE INSPECTION.
- 12) ALL STREETLIGHT EQUIPMENT AND MATERIALS SHALL BE SUBMITTED TO MCDPWT FOR APPROVAL PRIOR TO BEING INSTALLED ON THE PROJECT. SEE SPECIAL PROVISIONS FOR STREETLIGHT SPECIFICATION.
- 13) ALL STREETLIGHTS SHALL BE INSTALLED 2'-6" BEHIND THE FACE OF CURB (EXCEPT AS NOTED ON PLANS).

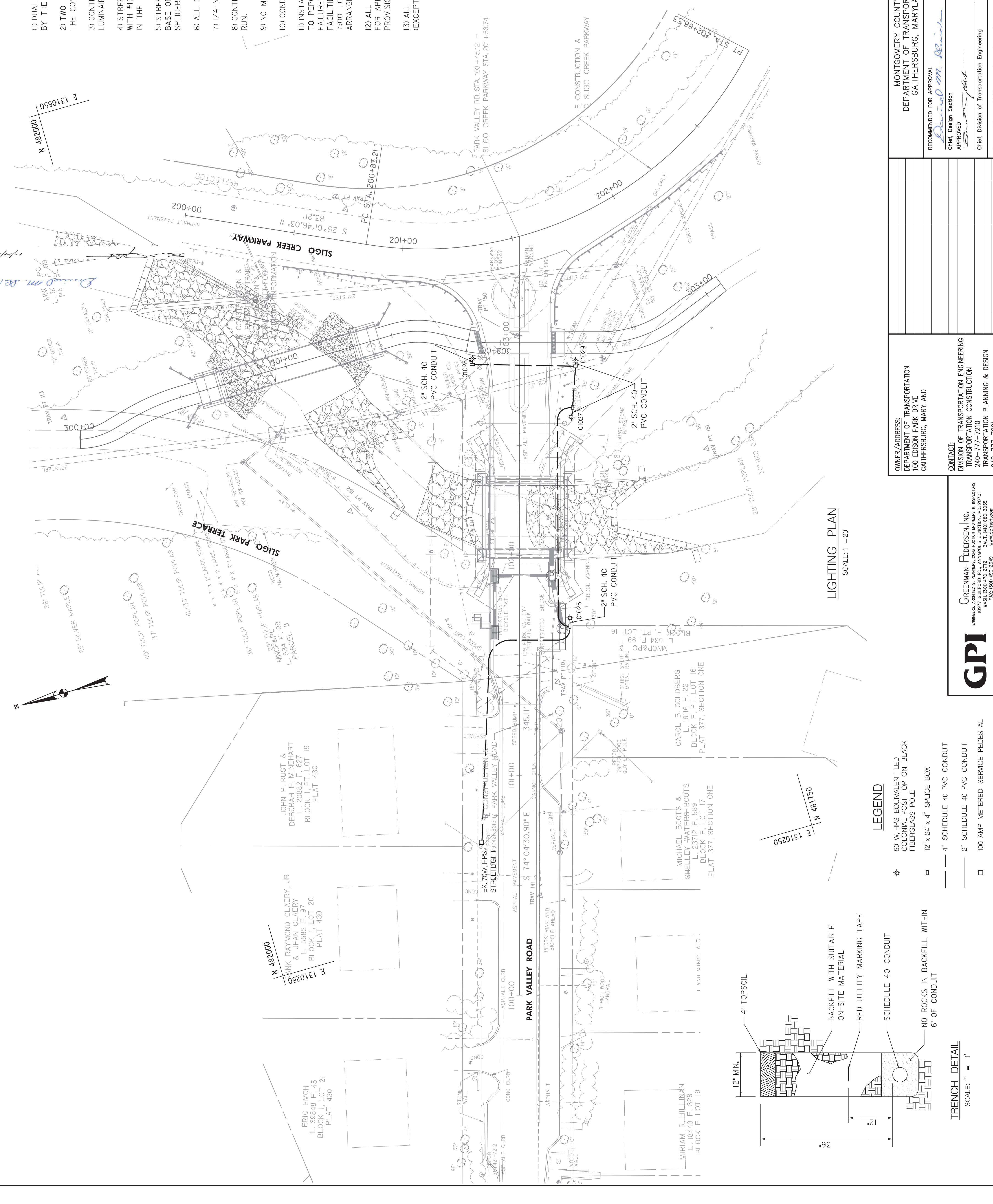
CONTRACTOR FURNISHED EQUIPMENT NOTES:

- 1) PEPCO TO PROVIDE ENERGY AND CABLING.
- 2) CONTRACTOR SHALL PROVIDE LUMINAIRES, POLES, PHOTOCELLS, FOOTINGS AND CONDUIT.
- 3) CONTRACTOR TO PROVIDE CONDUIT AS REQUESTED BY PEPCO.
- 4) REFER TO CONDUIT CHECKLIST FOR ADDITIONAL INFORMATION.

GENERAL NOTES:

- A. STREET LIGHT TO BE LOCATED 5' MINIMUM FROM EDGE OF ABUTMENT FOOTING.
- B. COORDINATE LOCATION OF STREET LIGHTS TO AVOID CONFLICTS WITH PROPOSED SIGNING.

Montgomery County Division of Traffic and Parking Services Street Lighting	Quantity	4
1 - Pedestrian	Quantity	4
1 - Total	Quantity	4
Checked By: <i>[Signature]</i>	Date:	12/15/17
Approved By: <i>[Signature]</i>	Date:	12/15/17

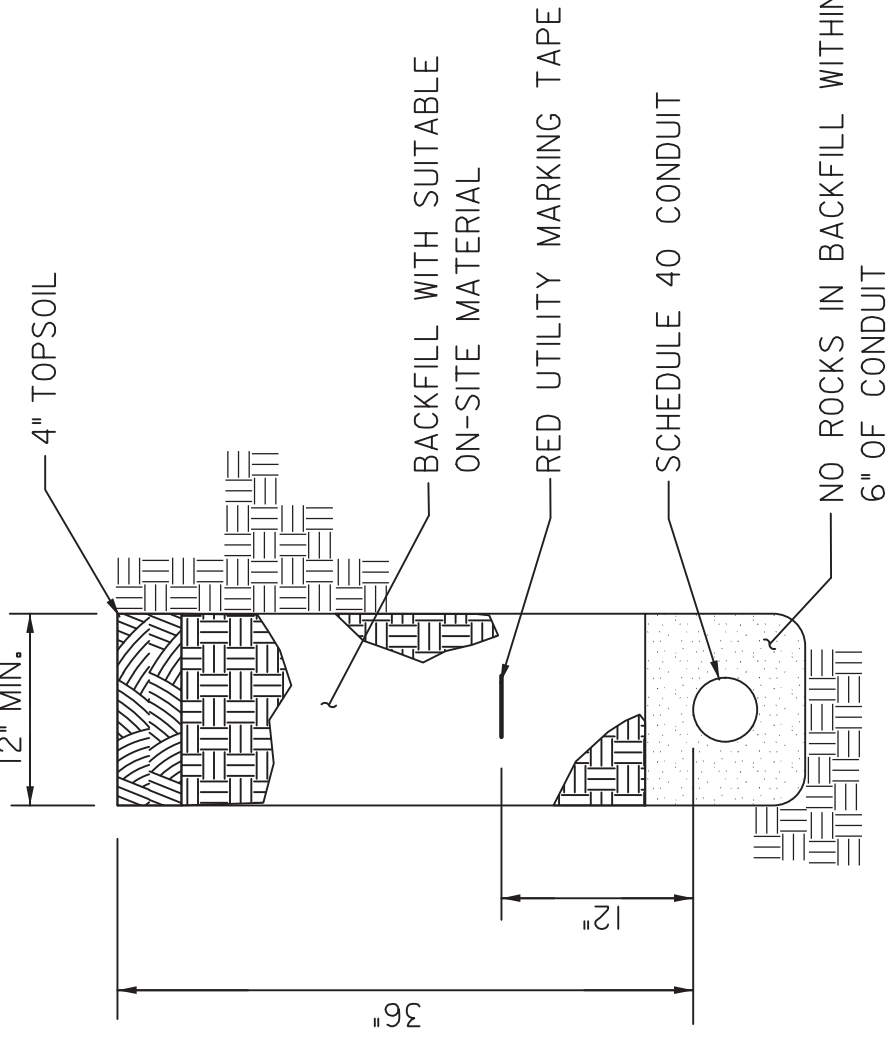


LIGHTING PLAN
SCALE: 1" = 20'

LEGEND

- ★ 50 W. HPS EQUIVALENT LED COLONIAL POST TOP ON BLACK FIBERGLASS POLE
- 12" x 24" x 4" SPLICE BOX
- 4" SCHEDULE 40 PVC CONDUIT
- 2" SCHEDULE 40 PVC CONDUIT
- 100 AMP METERED SERVICE PEDESTAL

TRENCH DETAIL
SCALE: 1" = 1'



OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

RECOMMENDED FOR APPROVAL
Date: 12/14/17
Chief, Design Section: *[Signature]*
Date: 12/14/17
Chief, Division of Transportation Engineering: *[Signature]*
Date: 12/14/17

DESIGNED BY: MCDOT
DRAWN BY: JRW
CHECKED BY: MCDOT

NO. _____ **REVISION** _____ **DATE** _____ **BY** _____

LIGHTING PLAN

MONTGOMERY COUNTY
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

**BRIDGE REPLACEMENT OF BRIDGE NO. MPK-03
ON PARK VALLEY ROAD OVER SLIGO CREEK**

SCALE: AS SHOWN DATE: MAY 2017
Project No. : 501523 SHEET 56 OF 62

GPI
GREENMAN-PEDERSEN, INC.
ENGINEERS, ARCHITECTS, PLANNERS, CONSTRUCTION MANAGERS & INSPECTORS
10877 CALLEFORD RD., ANNAPOLIS JUNCTION, MD, 20710
WASHDCO 4762722 BALTO 610 890-5055
FAX 410 891-6548 www.gpiinc.com

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

RESIDENTIAL, COLONIAL, POST-TOP,
LED OPTICS, TYPE III DISTRIBUTION, STYLE LUMINAIRE

1) PURPOSE

The purpose of these specifications is to prescribe the minimum requirements for the design, manufacture, fabrication, finishing and delivery of colonial, post-top, LED optics, type III distribution, style luminaire. This luminaire is intended for use on or with the black fiberglass pole. These colonial post-tops, LED optics, type III distribution, style luminaires are intended for use along residential roadways, walkways, and tunnels throughout Montgomery County. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and attached drawings.

2) DESCRIPTION

The residential, colonial post-top, LED optics, type III distribution, style luminaire is made of a cast aluminum alloy housing.
Each streetlight luminaire shall include the following:
a) Cast aluminum housing and hinged top canopy;
b) 120 volt LED Driver;
c) 10KV Surge Suppression Device built in;
d) NEMA standard photoelectric control receptacle and NEMA multi-volt standard photocell;
e) Acrylic or Polycarbonate resin refractor side panels (lens);
f) All necessary hardware required for mounting on fiberglass poles, as specified.

3) DESIGN CRITERIA

3.1) AASHTO Standards
The luminaire shall meet the requirements of American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.
3.2) Shape and Minimum Size
The luminaire shall be of a trapezoidal shape. The minimum size for the luminaire shall 40.0 inches (sum of the length plus height), when viewed from the side.
3.3) Effective Projected Area (EPA)
The luminaire shall have a maximum estimated allowable EPA for the luminaire of 0.7 square feet.

3.4) Finish

The luminaire shall have a black polyester powder coat finish. During the finishing process, all critical openings shall be plugged to prevent contamination of the threads or reduction of other critical openings.

4) MATERIALS

4.1) Housing
The luminaire shall consist of a water tight housing fabricated from die-cast aluminum with a gasketed die-cast aluminum canopy. The canopy shall be hinged on one side and secured on the opposite side with a captive stainless steel screw. All castings used to fabricate the luminaire housing shall be clean and smooth with detail defined and true to form. The housing shall be suitable to accommodate 120 volt LED Driver, 10KV Surge Suppression Device and NEMA standard photoelectric control receptacle and NEMA multi-volt standard photocell.

4.2) Driver & Surge Protection
The driver shall be mounted to facilitate easy removal for maintenance operations. The driver shall be equipped with a 10KV Surge Protection and suppression system. All electrical connections shall be polarized and of plug-in design. The driver shall be wired to receive 120 volt AC current. The driver shall reliably start and operate the lamp in ambient temperatures down to minus 30 degrees. The terminal block shall be capable of accepting up to a #6 AWG wire.

4.3) LED Color Temperature (CCT) and Rendering Index (CRI)
The Correlated Color Temperature (CCT) shall be a nominal Kelvin Temperature of 3500K ± 500K with a minimum Color Rendering Index (CRI) of 70.
4.4) Photoelectric Cell
The photocell receptacle shall be mounted for easy access and maintenance. The photocell shall be of the NEMA twist-lock type.

4.5) Side refractor panels
The luminaire shall be equipped with acrylic or polycarbonate resin refractor panels, with spring loaded retainer clips to hold refractor panels.

4.6) Slip Fitter
The slip fitter shall have a nominal inside diameter of 3.375 inches ± 0.025 and shall be secured to the lamp post tenon with three or four evenly spaced set screws. The slip fitter shall accommodate a tenon 3.0 inches long.

7.2) Length
The residential, round, tapered, direct burial fiberglass pole shall have a minimum pole diameter of 2.5 inches (± 0.1 inches), and a top pole diameter of 2.9 inches (± 0.1 inches)

The residential, round, tapered, direct burial fiberglass pole shall have a nominal minimum luminaire mounting height of 12 feet and a maximum of 14 feet above the surrounding ground. The shaft shall be embedded a minimum of 3 feet in the ground.

OWNER/ADDRESS:
DEPARTMENT OF TRANSPORTATION
100 EDISON PARK DRIVE
GAITHERSBURG, MARYLAND

CONTACT:
DIVISION OF TRANSPORTATION ENGINEERING
TRANSPORTATION CONSTRUCTION
240-777-7210
TRANSPORTATION PLANNING & DESIGN
240-777-7221

GREENMAN-PEERSEN, INC.
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10877 GULFORD RD., ANNAPOLIS JUNCTION, MD, 20710
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REVISIONS
NO. REVISION DATE BY

RECOMMENDED FOR APPROVAL
DEPARTMENT OF TRANSPORTATION
GAITHERSBURG, MARYLAND

DATE: MAY 2017
SCALE: AS SHOWN
Project No.: 501923

SHEET 57 OF 62

FOR THE STATE AND FEDERAL AID CONTRACT NUMBERS SEE TITLE SHEET

RESIDENTIAL, DIRECT BURIAL, FIBERGLASS POLE
ROUND, TAPERED, POST-TOP
GRAY OK BLACK

1) DESCRIPTION

The residential, round, tapered, direct burial fiberglass pole shall be made of a fiberglass reinforced composite (fiberglass filament and color pigmented resin), with a polyurethane and UV inhibitor coating, with a natural finish. This fiberglass pole is intended for use on residential roadways, walkways, and tunnels throughout Montgomery County. Any manufacturer, distributor or vendor who submits a bid shall agree to comply with these specifications and the attached drawings.

2) DESIGN CRITERIA

2.1) AASHTO Standards
The residential, round, tapered, direct burial fiberglass pole shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Standard, "Specification for Structural supports for Highway Signs, Luminaires and Traffic Signals," latest edition.
2.2) Wind Load
The residential, round, tapered, direct burial fiberglass pole shall be designed to resist (at yield strength of the material without permanent deflection or destruction) test loads equivalent to the calculated wind loads developed by the velocity pressures of an 80 MPH wind with a 30% gust factor. A minimum safety factor of 1.82 on the yield strength shall be maintained.

2.3) Effective Projected Area (EPA)

The residential, round, tapered, direct burial fiberglass pole shall be designed using the following assumptions:
a) The streetlight luminaire shall be mounted at a height of 12 feet above the level of the surrounding ground (EPA of 3 Sq. Ft. ±).
b) One (24" x 36") traffic sign may be mounted with the sign's bottom edge 7 feet above the ground. (EPA of 6 Sq. Ft. ±).

3) MATERIALS

a) The residential, round, tapered, direct burial fiberglass pole shall be constructed by a winding filament process with color pigmented polyester resin impregnated into the filaments. The filament winding shall be continuously applied with uniform tension.
b) The resin used will be color pigmented and shall be ultraviolet resistant. A highly weather resistant pigmented polyurethane coating shall be applied to the pole at a minimum thickness of 1.5 mils.

4) FINISH

The residential, round, tapered, direct burial fiberglass pole shall be of a natural finish for the entire length of the pole.

5) TENONS

The residential, round, tapered, direct burial fiberglass pole shall have a permanently bonded, hot-dipped galvanized steel or aluminum, 3 inch tenon.

6) HAND-HOLES

The residential, round, tapered, direct burial fiberglass pole shall have one 2 1/2 inch x 5 inch hand-hole, with a non-metallic cover secured with a vandal-resistant, stainless steel screws.

7) POLE

7.1) Shaft
The residential, round, tapered, direct burial fiberglass pole shall have a bottom pole diameter of 2.5 inches (± 0.1 inches), and a top pole diameter of 2.9 inches (± 0.1 inches)

The residential, round, tapered, direct burial fiberglass pole shall have a nominal minimum luminaire mounting height of 12 feet and a maximum of 14 feet above the surrounding ground. The shaft shall be embedded a minimum of 3 feet in the ground.

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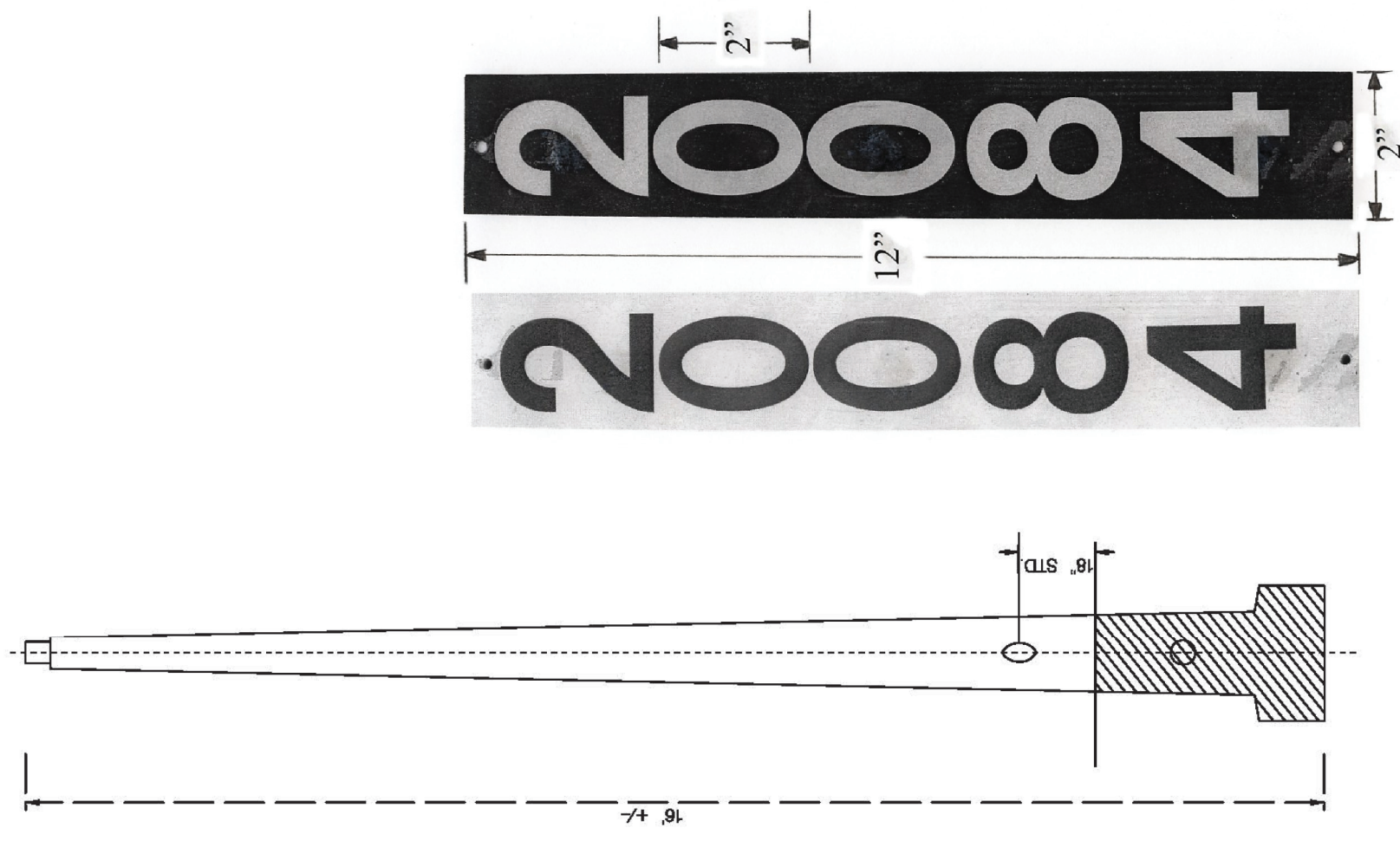
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WAITAGE LAMP TYPE LUM STYLE POLE STYLE ARM FEED TYPE ADDRESS

40 LED	Colonial Post-top	16" Black Fiberglass	0 M	EB Park Valley Road, 1st light east of 109 Park Valley Road
40 LED	Colonial Post-top	16" Black Fiberglass	0 M	EB Park Valley Road, 2nd light east of 109 Park Valley Road
40 LED	Colonial Post-top	16" Black Fiberglass	0 M	SB Sligo Creek Parkway path, 1st light north of Park Valley Road
40 LED	Colonial Post-top	16" Black Fiberglass	0 M	SB Sligo Creek Parkway path, 1st light south of Park Valley Road

INSTALLATION OF SECONDARY SPLICE BOX AND DIMENSION

