

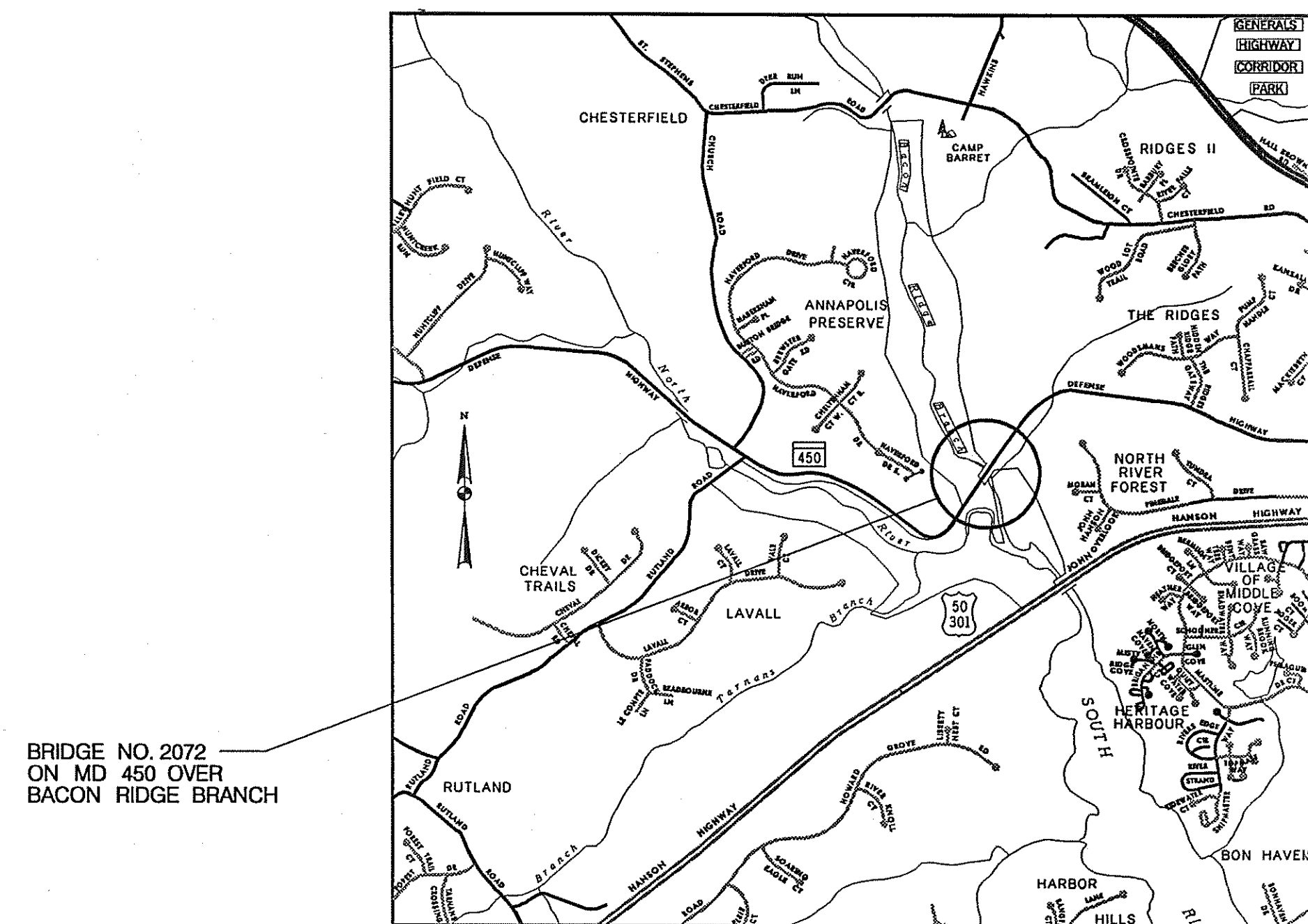
**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION**

**PLANS FOR REPLACEMENT OF TWO BRIDGES
BRIDGE NO. 10016 ON MARYLAND ROUTE 28
OVER WASHINGTON RUN
AND
BRIDGE NO. 02072 ON MARYLAND ROUTE 450
OVER BACON RIDGE BRANCH**

S.H.A. CONTRACT NO. AX4695180
F.A.P. CONTRACT NO. AC-BR-HFL-000A(273)E

ADDENDUMS AND RED LINE REVISIONS

- 1 RED LINE NO. 1 4/9/08
BRIDGE NO. 10016: SHEET NOS. 12 TO 15, 53A.
BRIDGE NO. 02072: SHEET NOS. 4, 7, 8, 14, 16, 17, 18, 19,
20, 21, 22, 42, AND 63.
- 2 RED LINE NO. 2
SHEETS NO. 1, 4, 4.01, 6, 15 - 17, 19, 20 6/26/08

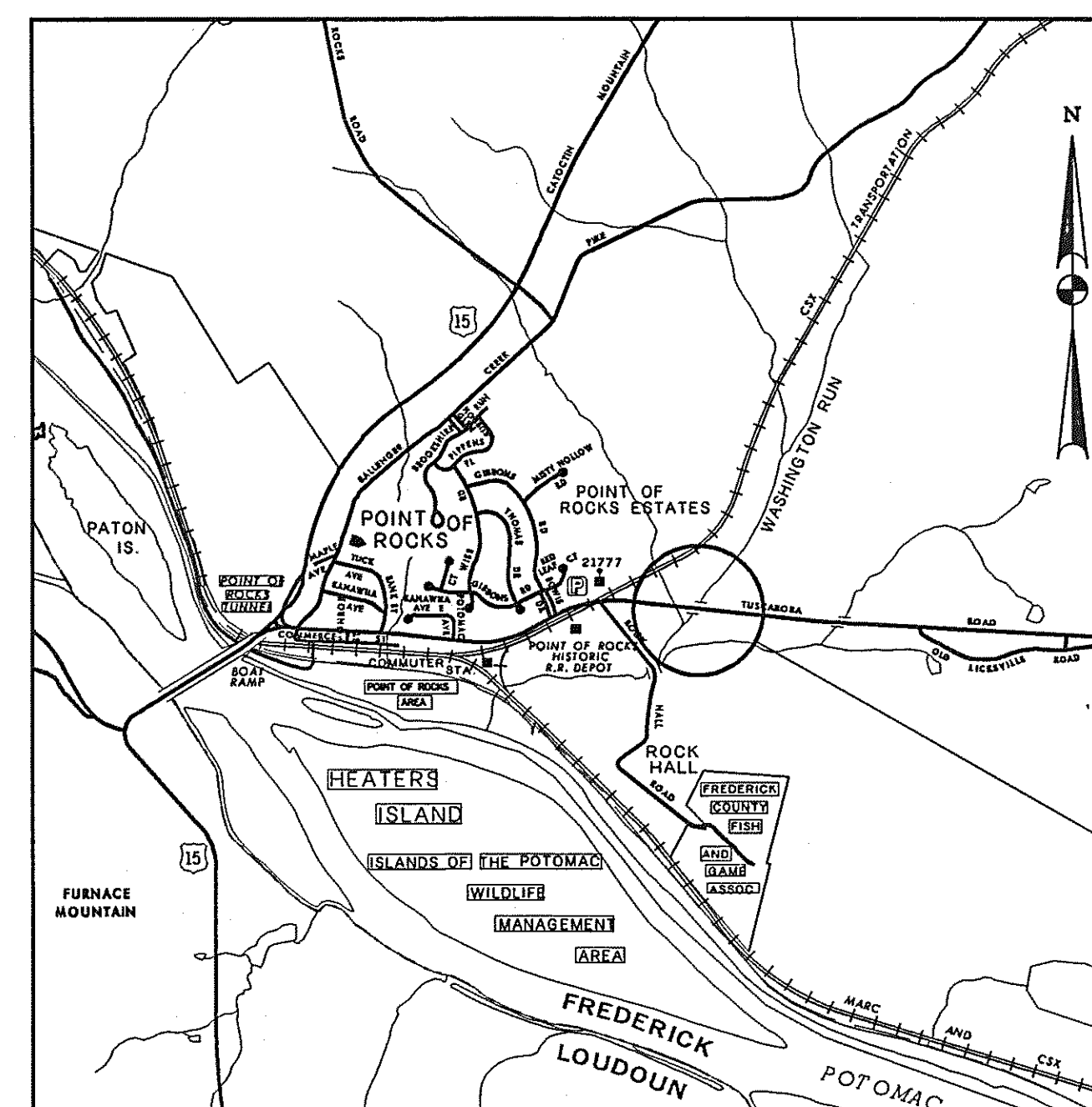


BRIDGE NO. 2072
ON MD 450 OVER
BACON RIDGE BRANCH

ANNE ARUNDEL COUNTY
LOCATION MAP
SCALE: 1" = 2000'
PROJECT LENGTH = 0.280 MILES

MD 450
DESIGN TRAFFIC DATA

	2006	2026(EST.)
A.D.T.	8,000	9,900
D.H.V.	11 %	11 %
DIRECTIONAL DISTRIBUTION	56 %	56 %
PERCENT TRUCKS-A.D.T.	5 %	5 %
PERCENT TRUCKS-D.H.V.	4 %	4 %
DESIGN SPEED	50 M.P.H.	50 M.P.H.



BRIDGE NO. 10016 ON
MARYLAND ROUTE 28
OVER WASHINGTON RUN

FREDERICK COUNTY
LOCATION MAP
SCALE: 1" = 2000'
PROJECT LENGTH = 0.067 MILES

MD 28
DESIGN TRAFFIC DATA

	2005	2025(EST.)
A.D.T.	3,250	6,300
D.H.V.	11 %	11 %
DIRECTIONAL DISTRIBUTION	74 %	74 %
PERCENT TRUCKS-A.D.T.	7 %	7 %
PERCENT TRUCKS-D.H.V.	4 %	4 %
DESIGN SPEED	50 M.P.H.	50 M.P.H.

REVIEWED AND APPROVAL RECOMMENDED

Tom Doughton 11/20/07
CHIEF BRIDGE DESIGN DIVISION

APPROVAL RECOMMENDED

E. S. Freedman 11/20/07
DIRECTOR, OFFICE OF BRIDGE DEVELOPMENT

APPROVED

[Signature] 11/20/07
DEPUTY ADMINISTRATOR FOR PLANNING AND ENGINEERING

INDEX OF SHEETS

1.		TITLE SHEET
2.	GN-1	GENERAL NOTES, ABBREVIATIONS & LEGEND
3.	TOP-1	DETOUR PLAN
4.	TS-1	TYPICAL SECTIONS - STA. 300+25.35 TO STA. 310+50
5.	TS-2	TYPICAL SECTIONS - STA. 310+50 TO STA. 314+00
6.	PS-1	ROADWAY PLAN - STA. 300+25.35 TO STA. 305+50
7.	PS-2	ROADWAY PLAN - STA. 305+50 TO STA. 311+00
8.	PS-3	ROADWAY PLAN - STA. 311+00 TO STA. 314+00
9.	SB-1	ROADWAY SOIL BORINGS
10.	SB-2	ROADWAY SOIL BORINGS
11.	PR-1	ROADWAY PROFILE - STA. 300+25.35 TO STA. 306+00
12.	PR-2	ROADWAY PROFILE - STA. 306+00 TO STA. 312+00
13.	PR-3	ROADWAY PROFILE - STA. 0+00 TO STA. 200+50 AND STA. 312+00 TO STA. 314+00
14.	ED-1	EROSION AND SEDIMENT CONTROL GENERAL NOTES
15.	ED-2	EROSION AND SEDIMENT CONTROL DETAILS
16.	ES-1	EROSION AND SEDIMENT CONTROL PLAN - PHASE I
17.	ES-2	EROSION AND SEDIMENT CONTROL PLAN - PHASE I
18.	ES-3	EROSION AND SEDIMENT CONTROL PLAN - PHASE I
19.	ES-4	EROSION AND SEDIMENT CONTROL PLAN - PHASE II
20.	ES-5	EROSION AND SEDIMENT CONTROL PLAN - PHASE II
21.	ES-6	EROSION AND SEDIMENT CONTROL PLAN - PHASE II
22.	SD-1	STORM DRAIN PIPE PROFILES & STRUCTURE SCHEDULE
23.	SD-2	DRAINAGE DETAILS
24.	SI-1	GENERAL PLAN AND ELEVATION
25.	SI-2	HYDROLOGIC AND HYDRAULIC DATA
26.	SI-3	GEOMETRIC LAYOUT
27.	SI-4	ABUTMENT PILE PLAN
28.	SI-5	ABUTMENT A
29.	SI-6	ABUTMENT B
30.	SI-7	ABUTMENT DETAILS
31.	SI-8	WING WALL ELEVATIONS
32.	SI-9	WING WALL ELEVATIONS
33.	SI-10	WING WALL DETAILS
34.	SI-11	TYPICAL SECTION AND SUPERSTRUCTURE DETAILS
35.	SI-12	SLAB LAYOUT
36.	SI-13	4'-0" INTERIOR SLAB DETAILS
37.	SI-14	3'-0" INTERIOR SLAB DETAILS
38.	SI-15	4'-0" EXTERIOR SLAB DETAILS
39.	SI-16	SUPERSTRUCTURE DETAILS
40.	SI-17	SUPERSTRUCTURE DETAILS
41.	SI-18	FINISHED GRADE ELEVATIONS
42.	SI-19	RAILING DETAILS
43.	SI-20	STANDARD DETAILS
44.	SI-21	STANDARD DETAILS
45.	SI-22	STANDARD DETAILS
46.	SI-23	STANDARD DETAILS
47.	SI-24	STANDARD DETAILS
48.	SI-25	BORINGS AND DRIVE TESTS
49.	SN-2.1	SIGNING AND PAVEMENT MARKINGS PLAN
50.	SN-2.2	SIGNING AND PAVEMENT MARKINGS PLAN
51.	SN-2.3	SIGNING AND PAVEMENT MARKINGS PLAN
52.	CS-1	ROADWAY CROSS SECTIONS - FROM STA. 300+00 TO STA. 300+50
53.	CS-2	ROADWAY CROSS SECTIONS - FROM STA. 301+00 TO STA. 301+50
54.	CS-3	ROADWAY CROSS SECTIONS - FROM STA. 302+00 TO STA. 302+50
55.	CS-4	ROADWAY CROSS SECTIONS - FROM STA. 303+00 TO STA. 303+50
56.	CS-5	ROADWAY CROSS SECTIONS - FROM STA. 304+00 TO STA. 304+50
57.	CS-6	ROADWAY CROSS SECTIONS - FROM STA. 305+00 TO STA. 305+50
58.	CS-7	ROADWAY CROSS SECTIONS - FROM STA. 306+00 TO STA. 306+50
59.	CS-8	ROADWAY CROSS SECTIONS - FROM STA. 307+00 TO STA. 307+50
60.	CS-9	ROADWAY CROSS SECTIONS - FROM STA. 308+00 TO STA. 308+50
61.	CS-10	ROADWAY CROSS SECTIONS - FROM STA. 309+00 TO STA. 309+50
62.	CS-11	ROADWAY CROSS SECTIONS - FROM STA. 310+00 TO STA. 310+50
63.	CS-12	ROADWAY CROSS SECTIONS - FROM STA. 311+00 TO STA. 311+50
64.	CS-13	ROADWAY CROSS SECTIONS - FROM STA. 312+00 TO STA. 312+50
65.	CS-14	ROADWAY CROSS SECTIONS - FROM STA. 313+00 TO STA. 313+50
66.	CS-15	ROADWAY CROSS SECTIONS - FROM STA. 314+00 TO STA. 314+50

STATE HIGHWAY ADMINISTRATION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH

**S.H.A. CONTRACT NO. AX4695180
F.A.P. NO. AC-BR-HFL-000A(273)E**

SURVEY BOOK NOS.
MD 450 - 20925, 20649, 25189, 18727
HORIZONTAL DATUM: NAD 83 / 91
VERTICAL DATUM: NAVD 88

RIGHT-OF-WAY PLAT NOS.
MD 450 - 57573, 57574

UTILITIES
THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS.

ENVIRONMENTAL INFORMATION:
MARYLAND DEPARTMENT OF THE ENVIRONMENT NO. 08-SF-0023 FOR BRIDGE NO. 02072

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR CONTRACT NO. AX4695180 SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION'S BEST MANAGEMENT PRACTICES (BMP) INSPECTION AND REMEDIATION PROGRAM.

SEDIMENT AND EROSION CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION.

OWNERS / DEVELOPERS CERTIFICATION :
I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

STANDARD STABILIZATION NOTE:
FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN (14) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

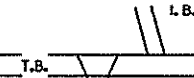
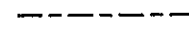
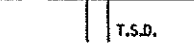

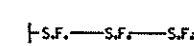

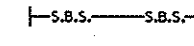
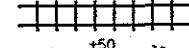

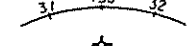
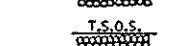


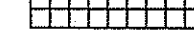
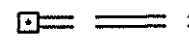
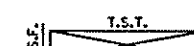
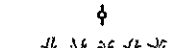
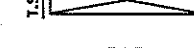
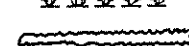
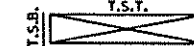




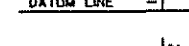
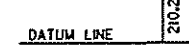

COMPLETENESS OF DOCUMENTS:
THE STATE HIGHWAY ADMINISTRATION SHALL ONLY BE RESPONSIBLE FOR THE COMPLETENESS OF DOCUMENTS OBTAINED DIRECTLY FROM THE STATE HIGHWAY ADMINISTRATION CASHIER'S OFFICE. FAILURE TO ATTACH ADDENDA MAY CAUSE THE BID TO BE IRREGULAR.

ADA COMPLIANCE:
THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES FOR THE ELDERLY AND HANDICAPPED IN COMPLIANCE WITH THE STATE AND FEDERAL LEGISLATION.

RIGHT OF WAY:
RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THESE LINES DO NOT REPRESENT THE OFFICIAL PROPERTY ACQUISITION LINES. FOR OFFICAL FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF WAY PLAT.

FOR THE CONVENIENCE AND INFORMATION OF BIDDERS PRINTS OF PLANS OF EXISTING PERTINENT STRUCTURE(S) ARE INCLUDED WITH THIS CONTRACT. NO RESPONSIBILITY FOR THEIR ACCURACY OR COMPLETENESS IS ASSUMED BY THE STATE HIGHWAY ADMINISTRATION. DIMENSIONS, DETAILS, ETC., AS SHOWN THEREON MAY NOT BE AS BUILT. INCLUDED IS: SHEET 1 OF CONTRACT NO. A-A
SHEET 1 & 2 OF CONTRACT NO. AT226A61

CONVENTIONAL SIGNS

STATE, COUNTY OR CITY LINES	-----	INTERCEPTOR BERM	
PROPOSED TRAFFIC BARRIER		TEMPORARY BERM	
EXISTING TRAFFIC BARRIER		TEMPORARY SLOPE DRAIN	
FENCE LINE	-----	SILT FENCE	
RIGHT OF WAY LINE	-----	STRAW BALE STRUCTURE	
EXISTING ROADWAY		PLACED RIPRAP DITCH	
RAILROAD		TEMPORARY STONE OUTLET STRUCTURE	
BASE OR SURVEY LINE	-----	GABIONS	
FIRE HYDRANT		TEMPORARY SEDIMENT TRAP WITH SILT FENCE	
PROPOSED CULVERT		TEMPORARY SEDIMENT TRAP WITH STRAW BALES	
EXISTING CULVERT		TEMPORARY SEDIMENT TRAP WITH STONE OUTLET STRUCTURE	
EXISTING DROP INLET		TEMPORARY SEDIMENT TRAP WITH RIPRAP OUTLET STRUCTURE	
UTILITY POLE		SOIL BORING	
MARSH			
HEDGE			
INLET PROTECTION			
GROUND ELEVATION			
GRADE ELEVATION			

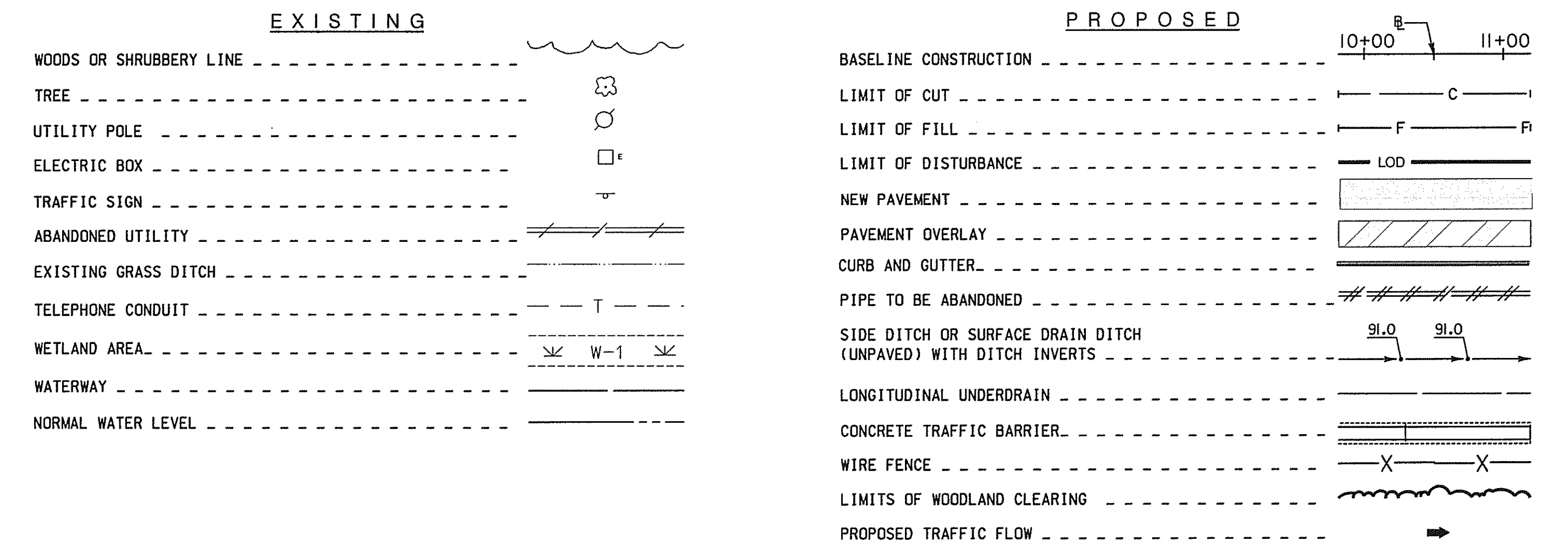
ABBREVIATIONS

- A.D.T - AVERAGE DAILY TRAFFIC
- AHD - AHEAD
- BIT. - BITUMINOUS
- BK. - BACK
- B.M. - BENCH MARK
- Ⓢ - BASELINE OF CONSTRUCTION
- C - RATE OF TRANSITION
- CAP - CORRUGATED ALUMINUM PIPE
- CC - CENTER POINT OF CURVE
- C&G - CURB AND GUTTER
- C.I.P. - CAST IN PLACE (OR CURB INLET PROTECTION)
- C.M.P. - CORRUGATED METAL PIPE
- C.O. - CLEAN OUT
- COMB. - COMBINATION
- CONSTR. - CONSTRUCTION
- CORR. - CORRECTION
- DWG. - DRAWING
- D_c - DEGREE OF CURVE
- Δ - DELTA (CENTRAL ANGLE), DEGREES
- D.H.V. - DESIGN HOUR VOLUME
- D.I. - DROP INLET
- DIA. - DIAMETER
- D.S. - DESIGN SPEED
- E - ELECTRIC, EXTERNAL DISTANCE
- EB - EASTBOUND
- EOI - END OF INFORMATION
- EOR - EDGE OF ROADWAY
- EOS - EDGE OF SHOULDER
- ERCCP - ELLIPTICAL REINFORCED CEMENT CONCRETE PIPE
- ES - END STRUCTURE
- EW - ENDWALL
- F.O. - FIBER OPTIC
- F.S. - FULL SUPERELEVATION
- GA. - GAUGE OR GAGE
- G.H.C. - GAS HOUSE CONNECTION
- G.V. - GAS VALVE
- HDWL. - HEADWALL
- HERCCP - HORIZONTAL ELLIPTICAL REINFORCED CEMENT CONCRETE PIPE
- H.H. - HANDHOLE
- H.S.D. - HEADLIGHT SIGHT DISTANCE
- H.P. - HIGH POINT
- I - INLET
- INV. - INVERT
- L - LENGTH
- LOD - LIMIT OF DISTURBANCE
- L.P. - LOW POINT (OR LIGHT POLE)
- L.S. - LEVEL SECTION
- LT. - LEFT
- MAX. - MAXIMUM
- M.B. - MAIL BOX
- MD - MARYLAND
- MDE - MARYLAND DEPARTMENT OF THE ENVIRONMENT
- MANH. - MANHOLE
- MIN. - MINIMUM
- M.P.H. - MILES PER HOUR
- M.W. - MONITORING WELL
- N/A - NOT APPLICABLE
- NIC - NOT IN CONTRACT
- NO. - NUMBER
- N.S. - NORMAL SECTION
- O.C. - ON CENTER
- P.C. - POINT OF CURVE
- P/C - POINT OF CROWN
- P.C.C. - POINT OF COMPOUND CURVE
- PCCP - PORTLAND CEMENT CONCRETE PAVEMENT
- P.G.E. - PROFILE GRADE ELEVATION
- P.G.L. - PROFILE GRADE LINE
- P/GL - PROFILE GROUND LINE
- P.H. - PUNCH HOLE
- P.I. - POINT OF INTERSECTION
- P.O.C. - POINT ON CURVE
- P.O.T. - POINT ON TANGENT
- P/R - POINT OF ROTATION
- P.R.C. - POINT OF REVERSE CURVATURE
- P.T. - POINT OF TANGENT
- P.V.C. - POINT OF VERTICAL CURVE (OR POLYVINYL CHLORIDE)
- P.V.I. - POINT OF VERTICAL INTERSECTION
- P.V.M.T. - PAVEMENT
- P.V.R.C. - POINT OF VERTICAL REVERSE CURVE
- P.V.T. - POINT OF VERTICAL TANGENCY
- R - RADIUS
- R.C.C.P. - REINFORCED CEMENT CONCRETE PIPE
- RD. - ROAD
- RDG. - ROUNDING
- REF. - REFERENCE
- RT. - RIGHT
- RTE. - ROUTE
- R/W - RIGHT OF WAY, RETAINING WALL
- SAN. - SANITARY
- S.D. - STORM DRAIN
- S/E - SUPERELEVATION
- S.H.A. - STATE HIGHWAY ADMINISTRATION
- S.S.D. - STOPPING SIGHT DISTANCE
- STA. - STATION
- STD. - STANDARD
- STRUCT. - STRUCTURE
- SW - SIDEWALK
- T - TELEPHONE
- T.C.E. - TEMPORARY CONSTRUCTION EASEMENT
- T.C.P. - TRAFFIC CONTROL PLANS
- T.H. - TEST HOLE
- TYP. - TYPICAL
- U.D. - UNDERDRAIN PIPE
- V.C. - LENGTH OF VERTICAL CURVE
- WB - WESTBOUND
- W.M. - WATER METER
- W.S. - WRAPPED STEEL
- W.V. - WATER VALVE

GENERAL NOTES

1. SPECIFICATIONS FOR THIS CONTRACT WILL BE THOSE OF THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JAN. 2001, AND REVISIONS THEREOF OR ADDITIONS THERETO, INCLUDED IN THE INVITATION FOR BIDS AND SPECIAL PROVISIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE IN HIS POSSESSION THE LATEST OF THESE PLANS AND UP-TO-DATE STANDARD PLATES AS OF THE DATE OF ADVERTISEMENT
3. HORIZONTAL CONTROL: THIS PROJECT IS ORIENTED TO CONFORM TO THE MARYLAND GRID SYSTEM, NAD 83/91
4. VERTICAL CONTROL: THE LOCATION AND ELEVATION OF BENCH MARKS ARE SHOWN ON THE PLANS. ALL ELEVATIONS ARE IN FEET AND ARE BASED ON THE NAVD 88.
5. TYPE WIDTH AND INVERT OF DITCHES ARE NOTED ON THE PLANS. DITCHES WILL BE IN CONFORMANCE WITH THE DETAILS SHOWN ON THE PLANS AND/OR STANDARD PLATES.
6. THE CONTRACTOR SHALL GRADE FOR POSITIVE DRAINAGE AT ALL IN CONFORMANCE WITH THE PROPOSED DRAINAGE PATTERNS AS SHOWN ON THE PLANS AND THOSE EXISTING WHERE APPLICABLE.
7. ALL EXISTING STORM DRAIN STRUCTURES, SEWER MANHOLES, INLETS, VALVE BOXES, VAULTS ETC. SHALL BE ADJUSTED BY THE CONTRACTOR TO MEET THE FINISHED GRADE ELEVATION, UNLESS THESE APPURTENANCES ARE ABANDONED UNDER THIS CONTRACT.
8. THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ON THESE PLANS ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS CONCERNED PRIOR TO GRADING OPERATIONS.
9. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF CONTRACTORS NEGLIGENCE OR METHOD OF OPERATION SHALL BE MADE AT NO ADDITIONAL COST TO THE ADMINISTRATION OR THE OWNER.
10. THE CONTRACTOR SHALL PROTECT AND NOT INTERRUPT EXISTING WATER AND SEWER SERVICES DURING CONSTRUCTION, UNLESS AUTHORIZED BY THE ENGINEER.
11. THE CONTRACTOR SHALL SUPPORT EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION. THIS WORK SHALL BE INCIDENTAL TO THE COST OF OTHER PERTINENT PAY ITEMS.
12. ANY DISTURBED AREAS 3:1 OR FLATTER AND NOT PAVED SHALL RECEIVE 2" TOPSOIL SEEDING AND MULCHING UNLESS OTHERWISE NOTED. DISTURBED AREAS STEEPER THAN 3:1 SHALL RECEIVE SEEDING AND MULCHING.
13. MATERIAL REMOVED DURING CONSTRUCTION SHALL BECOME THE CONTRACTOR'S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS.
14. ALL EXCAVATED ROADWAY MATERIALS, INCLUDING EXISTING PAVEMENT, SIDEWALKS OR COMBINATION CURB AND GUTTER, DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR USE IN EMBANKMENTS SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN AN APPROVED LOCATION.
15. THE CONTRACTOR SHALL RESET ANY SIGN POSTS OR MAIL BOXES TO FACILITATE THE WORK, EXCEPT WHERE SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
16. FINAL DETERMINATION AS TO THE LOCATION OF TEMPORARY SLOPE DRAINS, TEMPORARY BERMS AT THE TOP OF FILL SLOPES, TEMPORARY INTERCEPTOR BERMS, SEDIMENT TRAPS, STRAW BALE BERMS, SILT FENCES AND TEMPORARY STONE OUTLET STRUCTURES WILL BE AT THE DIRECTION OF THE ENGINEER.
17. THE WIDTH OF FEE SIMPLE RIGHT OF WAY IS VARIABLE WITH EASEMENTS FOR DRAINAGE AND CONTINGENCIES.
18. PROVISION IS MADE FOR PERFORATED CIRCULAR UNDERDRAIN AND CIRCULAR PIPE OUTLETS TO DISPOSE OF SPRINGS AND UNDERGROUND WATER WHICH MAY BE ENCOUNTERED DURING EXCAVATION OR PLACING EMBANKMENT. EXTENT OF THE UNDERDRAIN FIELD WILL BE DIRECTED BY THE ENGINEER.
19. INTERIM EROSION AND SEDIMENT CONTROL MEASURES WILL BE REQUIRED. THE CONTRACTOR IS SPECIFICALLY RESPONSIBLE FOR THIS ITEM. THE COST OF INTERIM EROSION AND SEDIMENT CONTROL MEASURES WILL NOT BE MEASURED BUT THE COST WILL BE INCIDENTAL TO THE EROSION AND SEDIMENT CONTROL ITEMS SPECIFIED IN THE CONTRACT DOCUMENTS.
20. EXISTING PAVEMENT LOCATED BENEATH FILL SECTIONS SHALL BE SCARIFIED BEFORE ANY EMBANKMENT IS PLACED. SEE SECTION 206.03.01 OF THE SPECIFICATIONS.
21. TRAFFIC BARRIER SHALL BE "TRAFFIC BARRIER W BEAM" (12 GAUGE) USING APPROPRIATE APPURTENANCES. THE CONTRACTOR SHALL VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND STORM DRAINS BEFORE INSTALLING POSTS AND ADJUST THE POST SPACING AS NEEDED TO AVOID UNDERGROUND UTILITIES AND STORM DRAINS. THE EXACT LOCATION AND QUANTITY SHALL BE CHECKED BY THE CONTRACTOR BEFORE ORDERING. SEE STANDARDS NOS. MD-660.01 THROUGH MD-660.61.

THIS CONTRACT



SOILS LEGEND

- A-3 SAND
 - A-2 SAND & FINES
 - A-2-4 SILTY SAND
 - A-4-2 SANDY SILT
 - A-2-7 CLAYEY SAND
 - A-7-2 SANDY CLAY
 - A-4 SILT
 - A-4-7 CLAYEY SILT
 - A-7-4 SILTY CLAY
 - A-7 CLAY
 - A-6 COLLOIDAL CLAY
 - A-5 MICA, DIATOMS
- PLAN LOCATION OF SOIL BORINGS
- BORING TARGETS AND PROFILES SCALE:
HORIZONTAL - NONE
VERTICAL - SEE PROFILE SHEETS
- AO-ABOVE OPTIMUM SAT-SATURATED LIQ-LIQUEFIED
TS-TOPSOIL
RM-ROOT MAT
BC-BITUMINOUS CONCRETE
SB-STONE BASE
SC-SOIL CEMENT
PCC-PORTLAND CEMENT CONCRETE
RPPSA - ROCK PENETRATED BY POWER SOIL AUGER
- LL-LIQUID LIMIT (%)
PI-PLASTICITY INDEX (%)
NP-NON-PLASTIC
MDD-MAXIMUM DRY DENSITY (pcf)
OMC-OPTIMUM MOISTURE CONTENT (%)
USC-UNIFIED SOIL CLASSIFICATION
USDA-UNITED STATES DEPARTMENT OF AGRICULTURE CLASSIFICATION
- w/GR-WITH GRAVEL
w/RF-WITH ROCK FRAGMENTS
- NOTES: SOIL SYMBOLS DENOTE MSMT CLASSIFICATIONS

ALL DIMENSIONS, DEPTHS AND ELEVATIONS ARE NOTED IN FEET
AN ASTERISK AT THE TOP DEPTH OF STRATA INDICATES THAT STRATA WAS VISUALLY CLASSIFIED BY DRILLER
MDD & OMC PER A.A.S.H.T.O. DESIGNATION T-180
N PER A.A.S.H.T.O. DESIGNATION T-206
UNLESS OTHERWISE NOTED ON PLANS, ALL SOIL SURVEY BORINGS FOR ROADWAY CONSTRUCTION WERE LEFT OPEN FOR 24 HOURS WITH NO EXCESS MOISTURE OR FREE WATER ENCOUNTERED DURING TIME OF SOIL SURVEY (06/2007 and 07/2007)

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

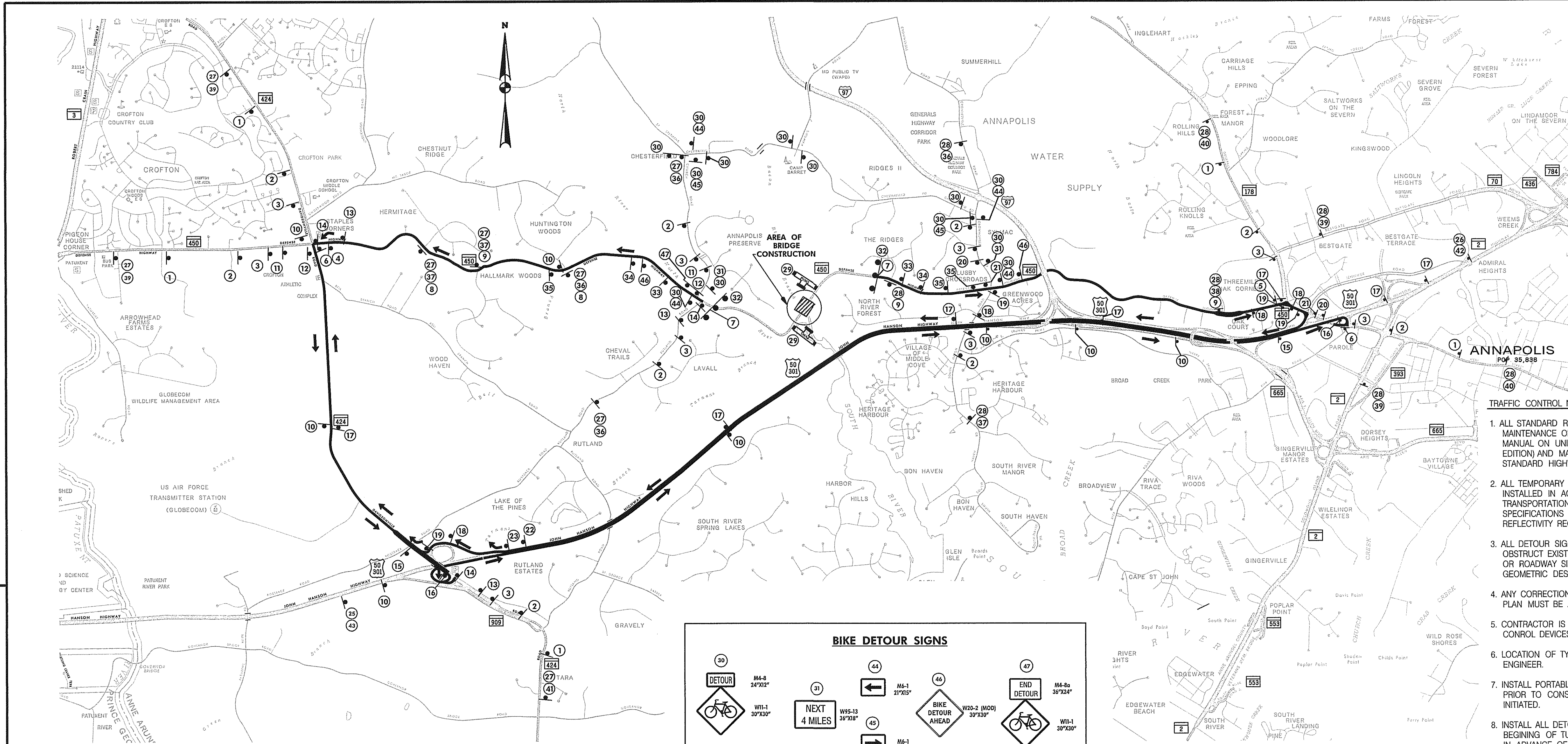
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

APPROVALS	REVISIONS	GENERAL NOTES, ABBREVIATIONS & LEGEND
TEAM LEADER		SCALE As Shown DATE Dec. 2007 CONTRACT NO. AX4695180
ASST. DIV. CHIEF		DESIGNED BY M.A. COUNTY ANNE ARUNDEL
DIVISION CHIEF		DRAWN BY P.S.C. LOGMILE
OFFICE DIRECTOR		CHECKED BY V.V.S. HORIZONTAL SCALE
		F.A.P. NO. VERTICAL SCALE
		DRAWING NO. GN-1 OF 1 SHEET NO. 2 OF 66

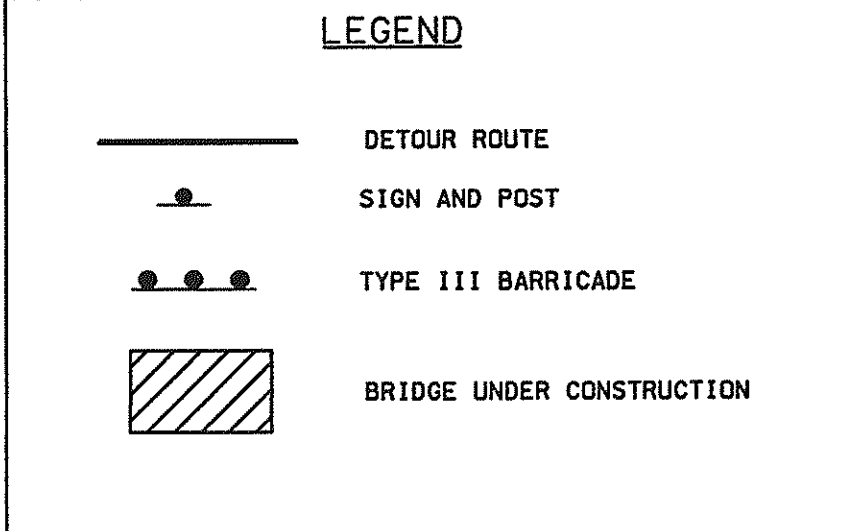
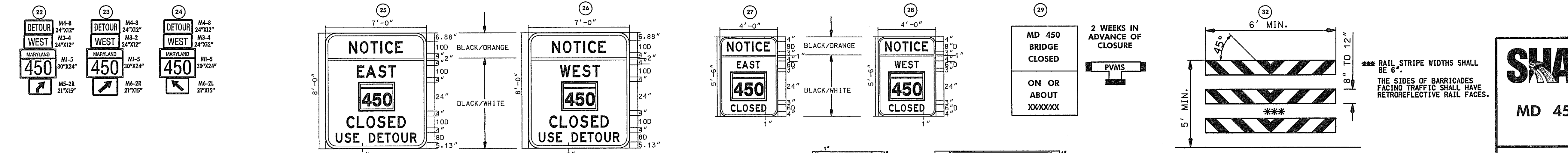
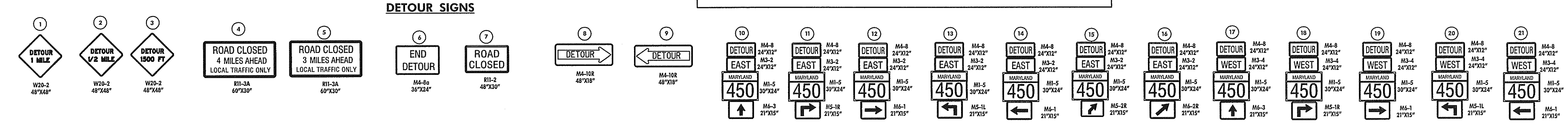
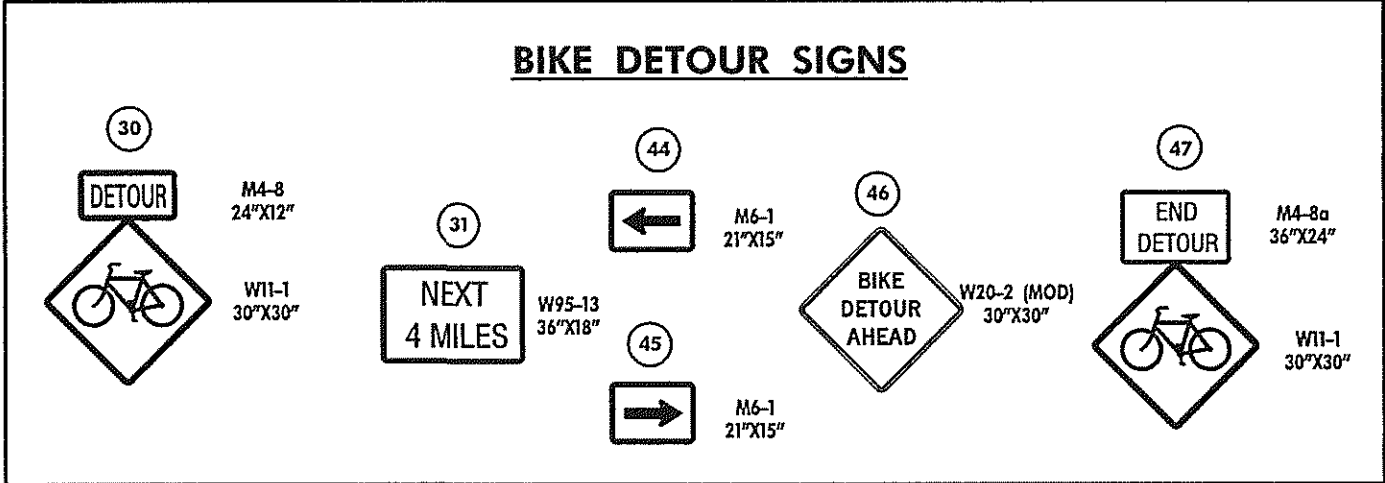
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BY: \$USER\$





- TRAFFIC CONTROL NOTES:**
1. ALL STANDARD REGULATORY AND WARNING SIGNS USED FOR MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD LATEST EDITION) AND MARYLAND STANDARD HIGHWAY SIGNS.
 2. ALL TEMPORARY TRAFFIC SIGNS SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, INCLUDING REFLECTIVITY REQUIREMENTS, SECTION 104.8 AND NCHRP 350.
 3. ALL DETOUR SIGNS SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES, INTERSECTIONS OR ROADWAY SIGHT DISTANCE AS PER AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" LATEST EDITION.
 4. ANY CORRECTIONS, MODIFICATIONS, OR ADDITIONS TO THIS PLAN MUST BE APPROVED BY THE ENGINEER.
 5. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES.
 6. LOCATION OF TYPE III BARRICADES SHALL BE APPROVED BY THE ENGINEER.
 7. INSTALL PORTABLE VARIABLE MESSAGE SIGN (PVMS) TWO WEEKS PRIOR TO CONSTRUCTION AND REMOVE ONCE CONSTRUCTION IS INITIATED.
 8. INSTALL ALL DETOUR SIGNS WITH 90-DEGREE ARROWS AT THE BEGINNING OF TURN BAY OR IF NO TURN BAY, PLACE 300'-500' IN ADVANCE OF TURN.



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MD 450 OVER BACON RIDGE BRANCH

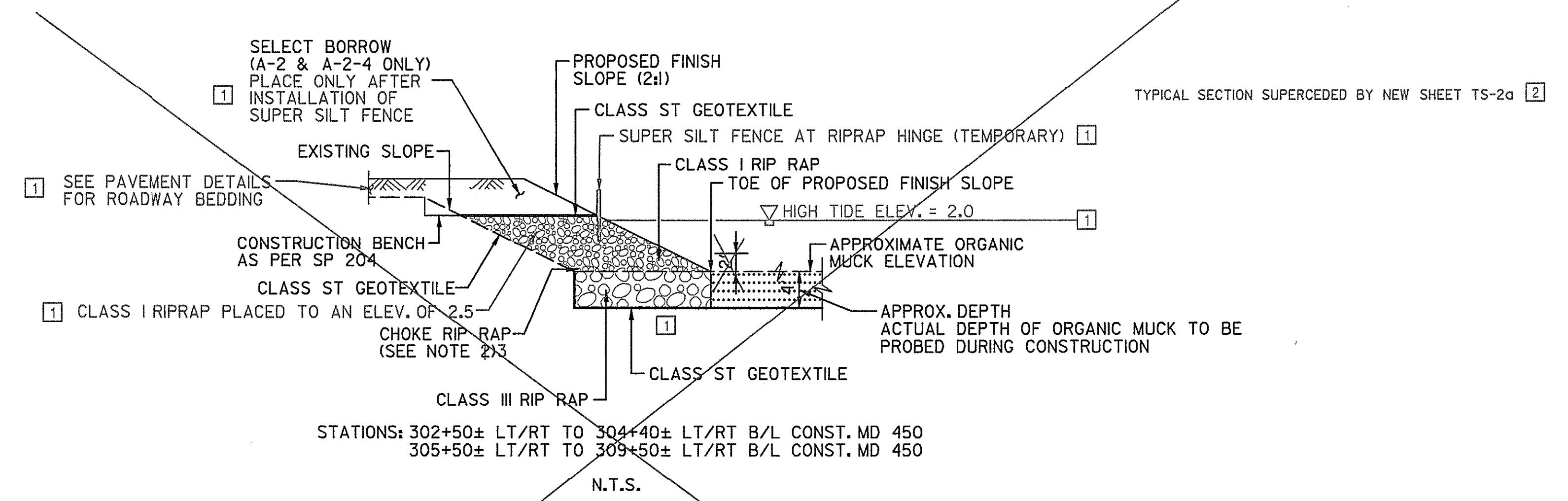
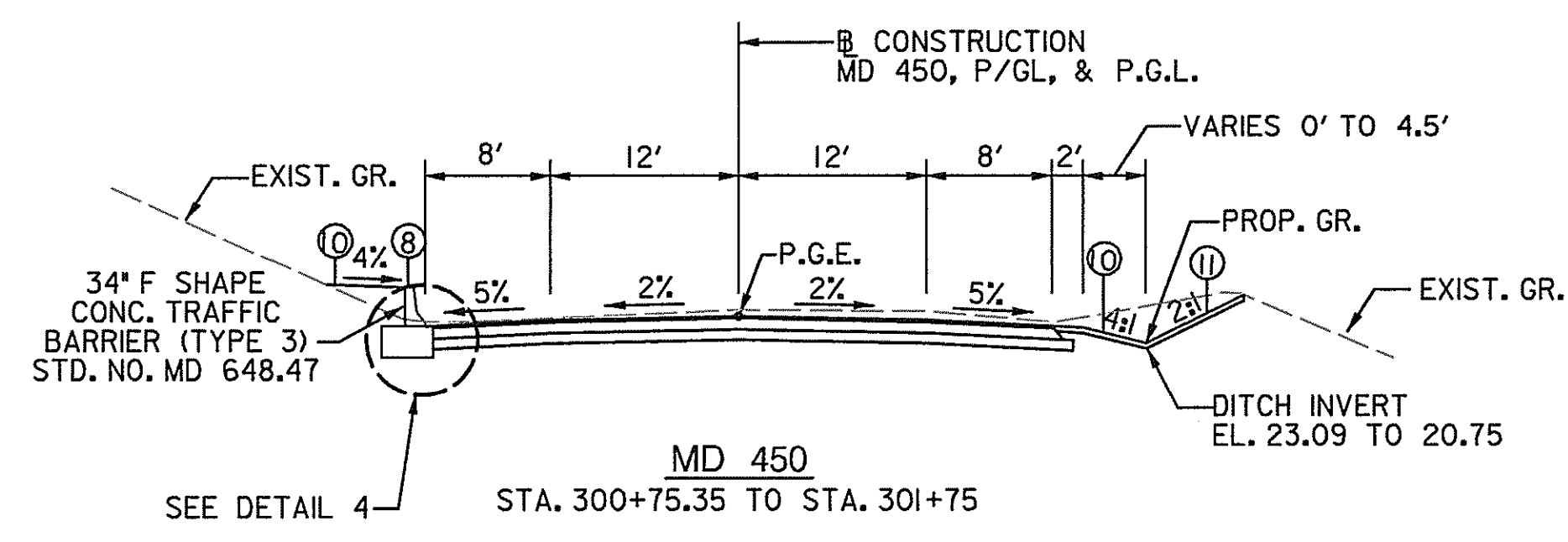
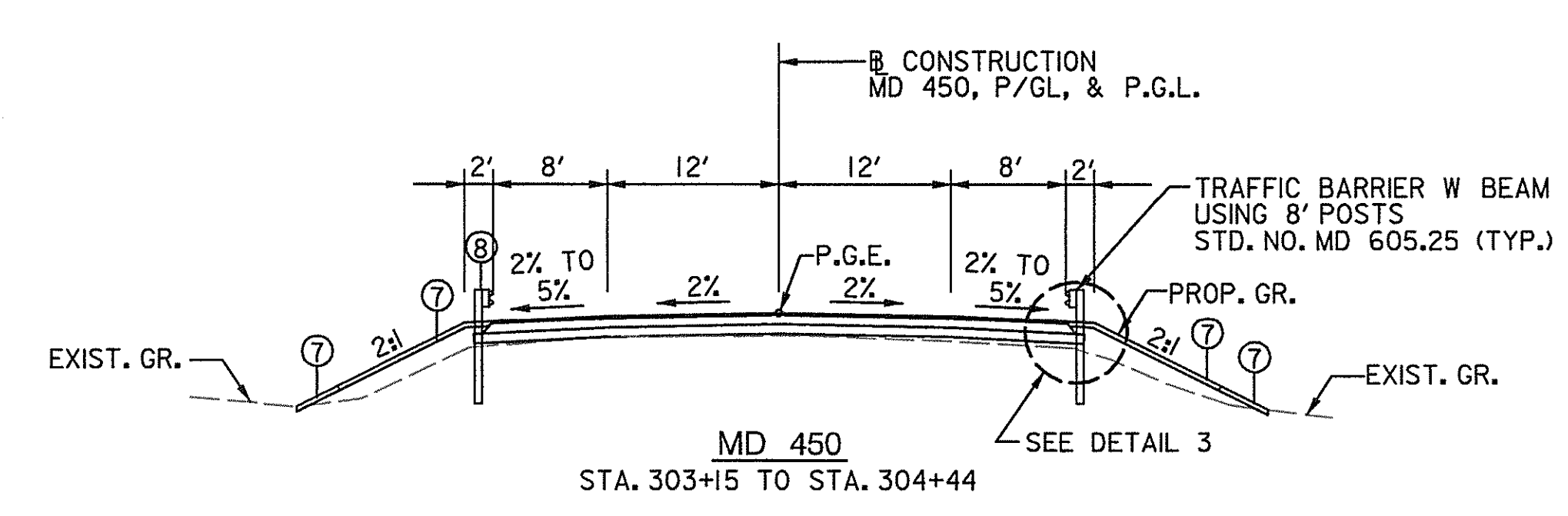
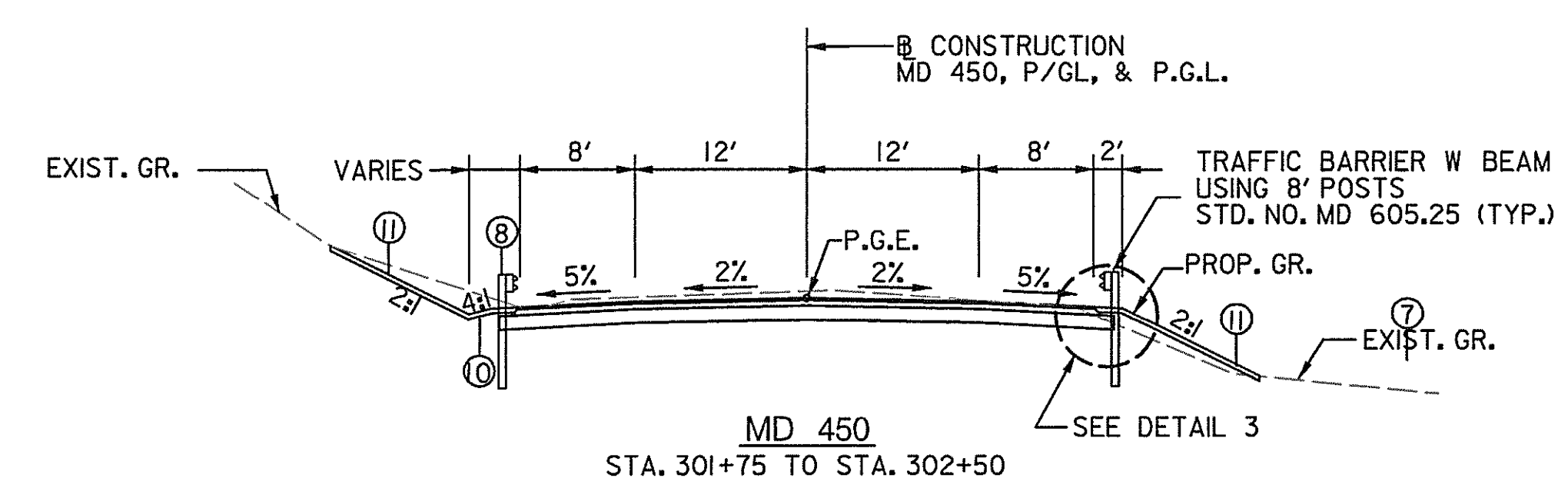
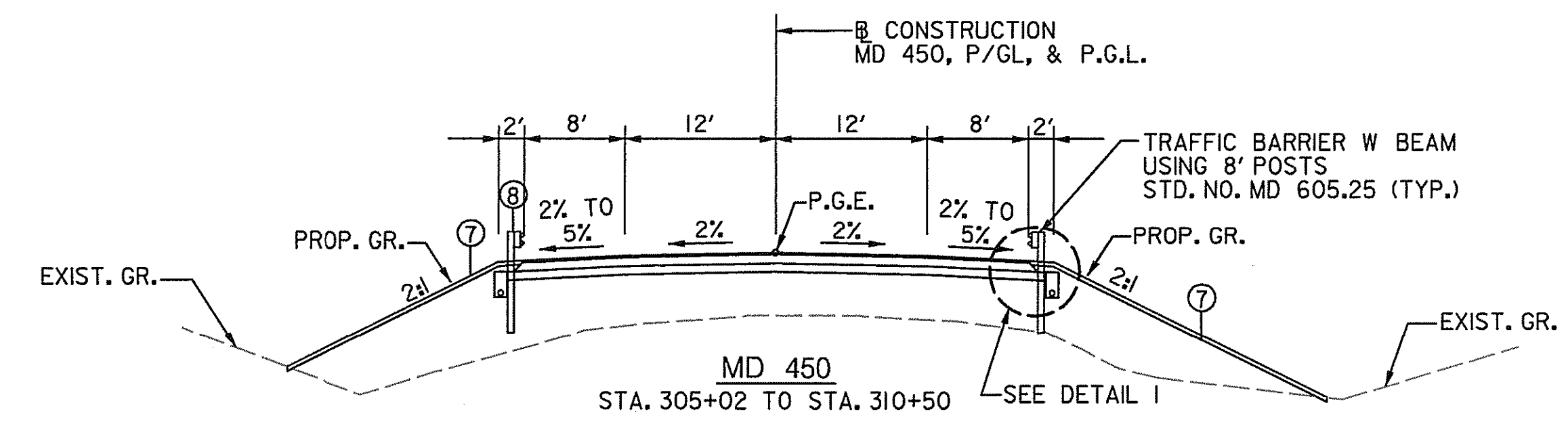
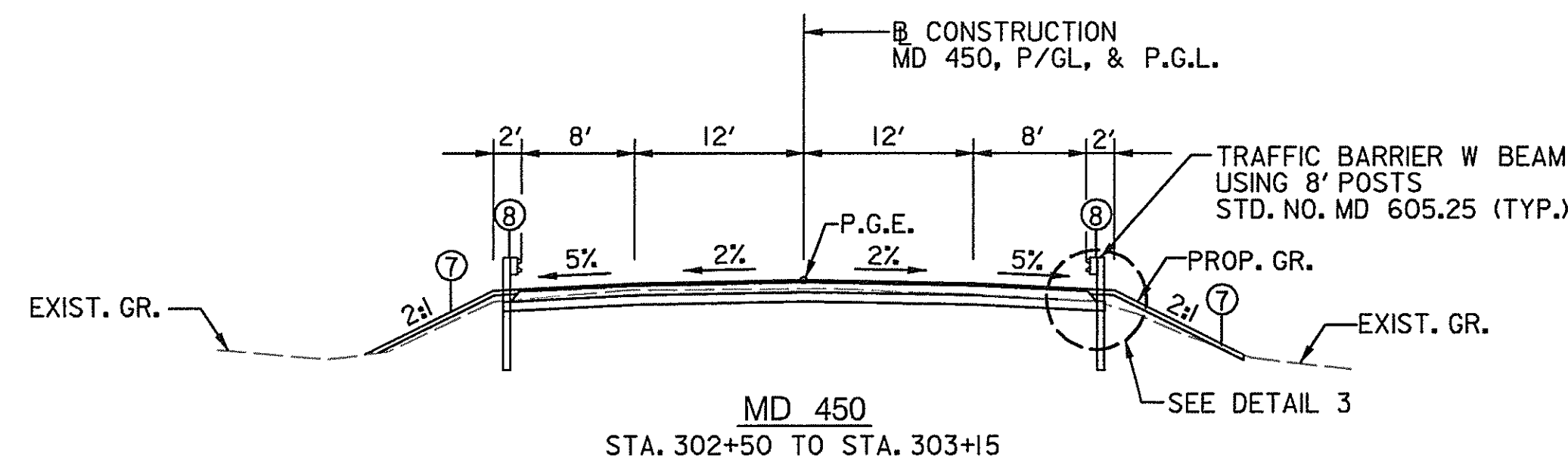
DETOUR PLAN

SCALE 1" = 2000' DATE APRIL 2007 CONTRACT NO. AX4895180

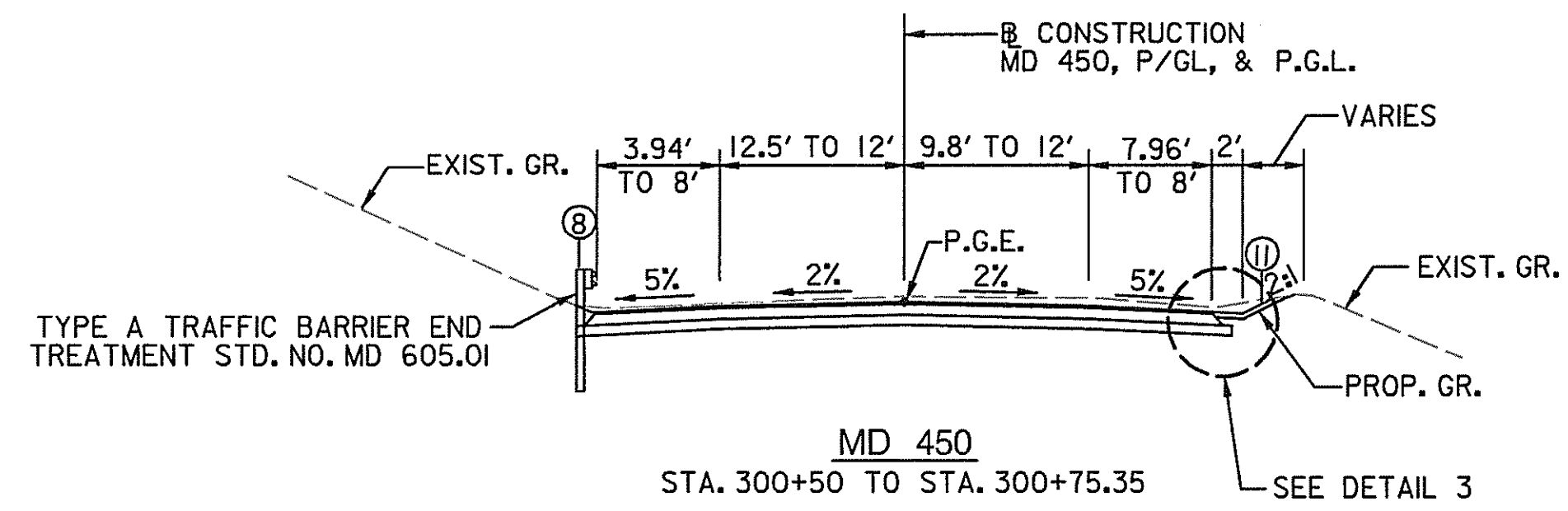
DESIGNED BY FAE COUNTY ANNE ARUNDEL
DRAWN BY FAE LOGMILE
CHECKED BY MJA T.I.M.S. NO.
F.A.P. NO. SEE TITLE SHEET TOD NO.

DRAWING NO. **TCP - 01 OF 01** SHEET NO. 3 OF 66

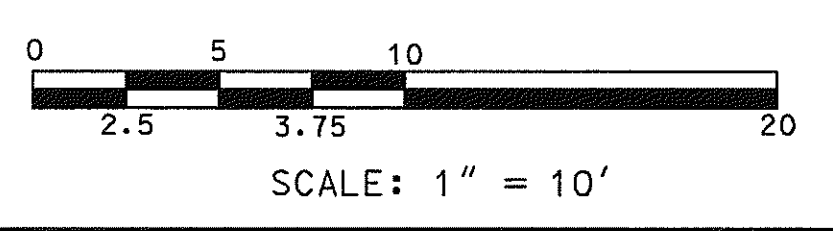
WALLACE, MONTGOMERY & ASSOCIATES, LLP
CIVIL AND STRUCTURAL ENGINEERS
110 West Road
Suite 300
Towson, Maryland 21284



- TYPICAL SLOPE CONSTRUCTION OF EMBANKMENT IN WETLANDS**
1. NO EXCAVATION MAY BE PERFORMED BELOW ELEVATION 2.5.
 2. AT EMBANKMENT FOUNDATION LEVEL, PLACE CLASS ST GEOTEXTILE AND CAREFULLY DUMP CLASS III RIP RAP TO AN ELEVATION OF ORGANIC MUCK (STABLE CONSTRUCTION PLATFORM IS ESTABLISHED). PUT CLASS I RIP RAP TO APPROXIMATELY 2 FEET 6 INCHES ABOVE HIGH TIDE (ELEVATION 2.5) ABOVE CLASS III RIP RAP WITH CLASS ST GEOTEXTILE ON TOP OF IT. SELECT BORROW SHALL BE PLACED ON TOP OF CLASS ST GEOTEXTILE AS PER SP 204 ONLY AFTER INSTALLATION OF THE SUPER SILT FENCE.
 3. #57 STONE SHALL BE USED FOR CHOKING OR AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CLASS III RIP RAP WITHIN LOD LIMITS DURING CONSTRUCTION.
 5. TYPE B SOIL STABILIZATION MATTING SHALL BE PLACED ON THE SELECT BORROW FILL SLOPE AND SHALL BE ANCHORED AT LEAST 3' INTO THE EMBANKMENT BETWEEN THE RIPRAP AND FILL.



NOTE: FOR PAVEMENT DETAILS SEE SHEET TS-2.



APPROVALS	REVISIONS
TEAM LEADER _____	1 REDLINE NO. 1 4/9/08
ASST. DIV. CHIEF _____	2 REDLINE NO. 2 6/26/08
DIVISION CHIEF _____	
OFFICE DIRECTOR _____	

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

TYPICAL SECTIONS

SCALE As Shown DATE Dec. 2007 CONTRACT NO. AX4695180

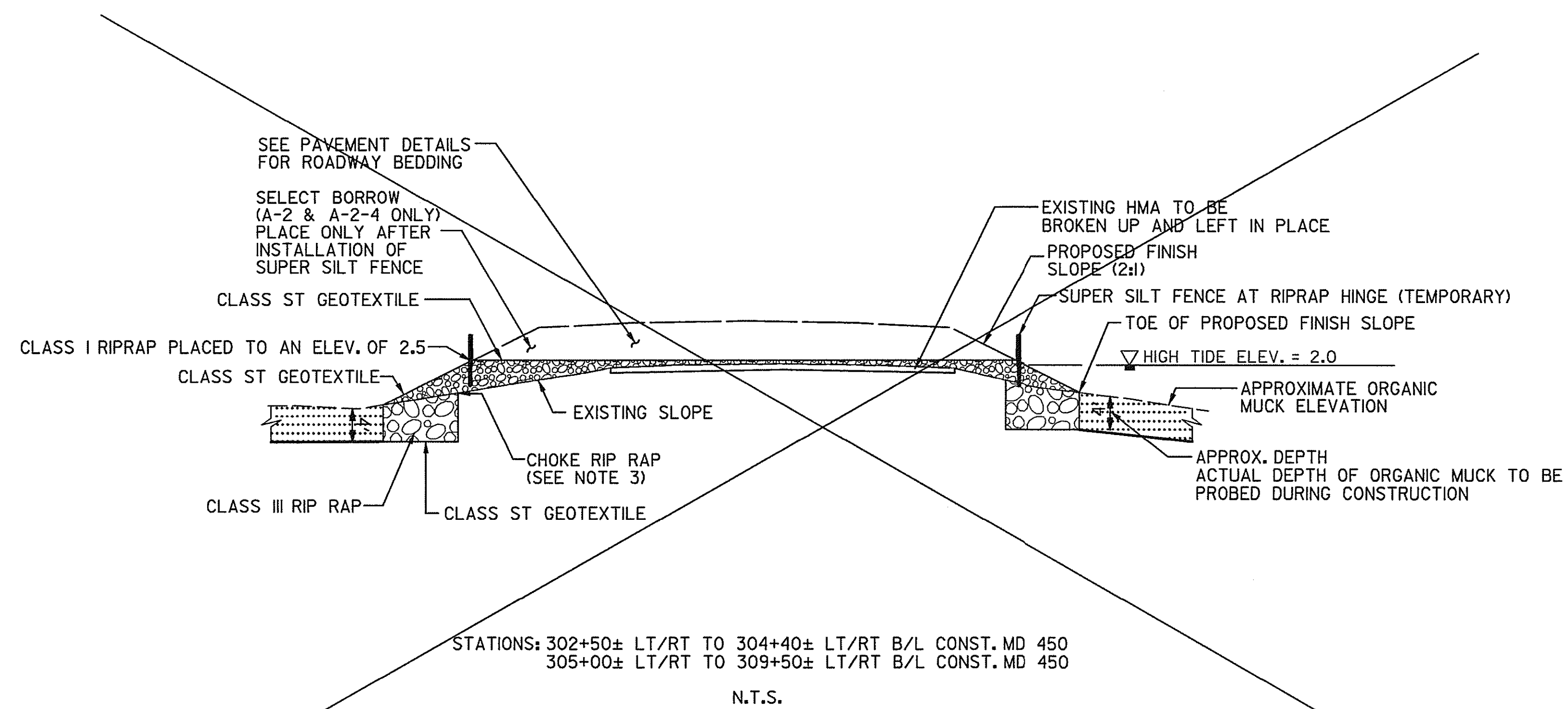
DESIGNED BY M.A. COUNTY ANNE ARUNDEL
DRAWN BY P.S.C. LOGMILE _____
CHECKED BY V.V.S. HORIZONTAL SCALE 1"=10'
F.A.P. NO. VERTICAL SCALE 1"=10'

DRAWING NO. TS-1 OF 2 SHEET NO. 4 OF 66

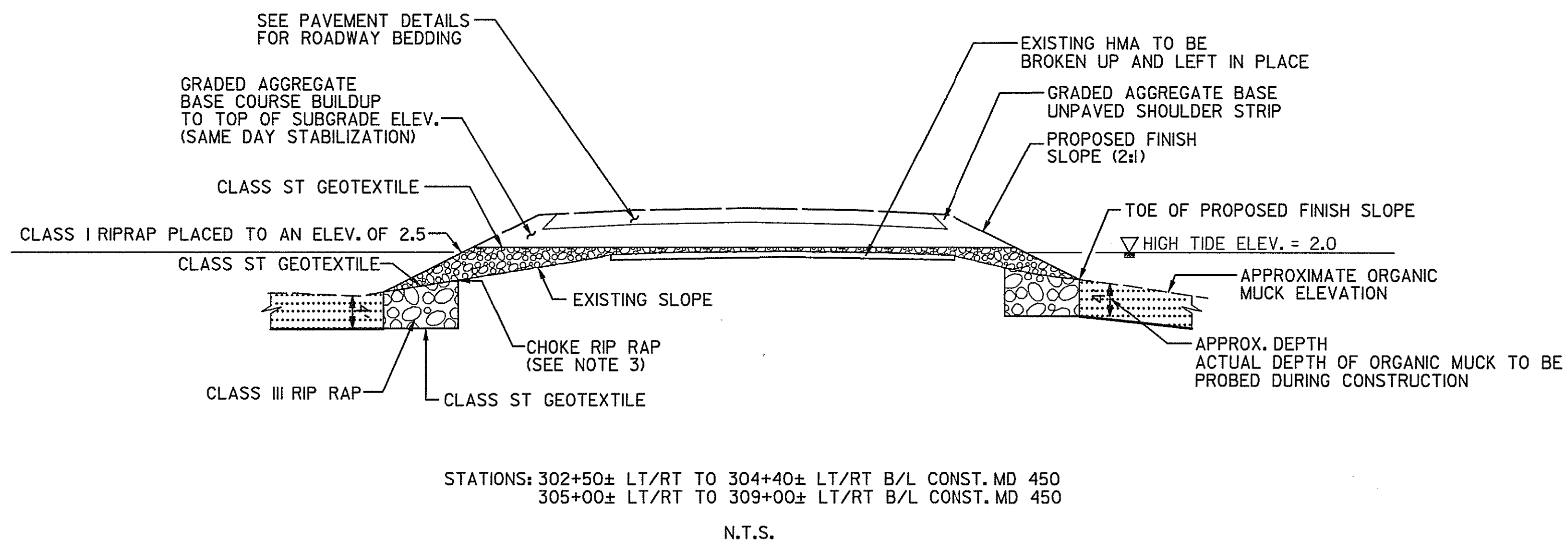
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TYPICAL SLOPE CONSTRUCTION OF EMBANKMENT IN WETLANDS



TYPICAL SLOPE CONSTRUCTION OF EMBANKMENT IN WETLANDS

1. NO EXCAVATION MAY BE PERFORMED BELOW ELEVATION 2.5.
2. AT EMBANKMENT FOUNDATION LEVEL, PLACE CLASS ST GEOTEXTILE AND CAREFULLY DUMP CLASS III RIP RAP TO AN ELEVATION OF ORGANIC MUCK (STABLE CONSTRUCTION PLATFORM IS ESTABLISHED).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CLASS III RIP RAP WITHIN LOD LIMITS DURING CONSTRUCTION.
4. #57 STONE SHALL BE USED FOR CHOKING OR AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION AT TOP OF CLASS III RIP RAP.
5. BREAK UP EXISTING PAVEMENT AND LEAVE IN PLACE.
6. PLACE CLASS ST GEOTEXTILE ON CHOKING STONE AND BROKEN UP PAVEMENT THEN PLACE CLASS I RIP RAP TO APPROXIMATELY 6 INCHES ABOVE HIGH TIDE (ELEVATION 2.5)
7. REMAINING EMBANKMENT UP TO SUBGRADE ELEVATIONS AND UNPAVED SHOULDER STRIP SHALL BE PLACED GRADED AGGREGATE BASE COURSE.
8. EROSION CONTROL IS MAINTAINED THROUGH SAME DAY STABILIZATION OF RIP RAP AND AGGREGATE BASE.

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

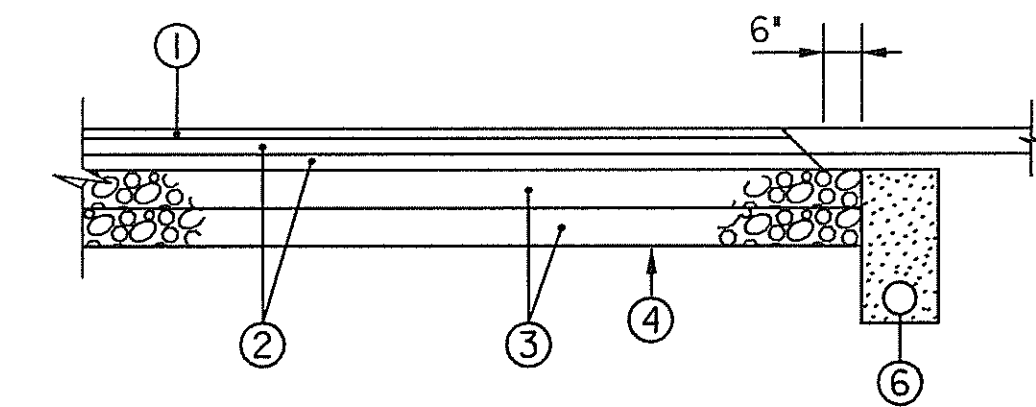
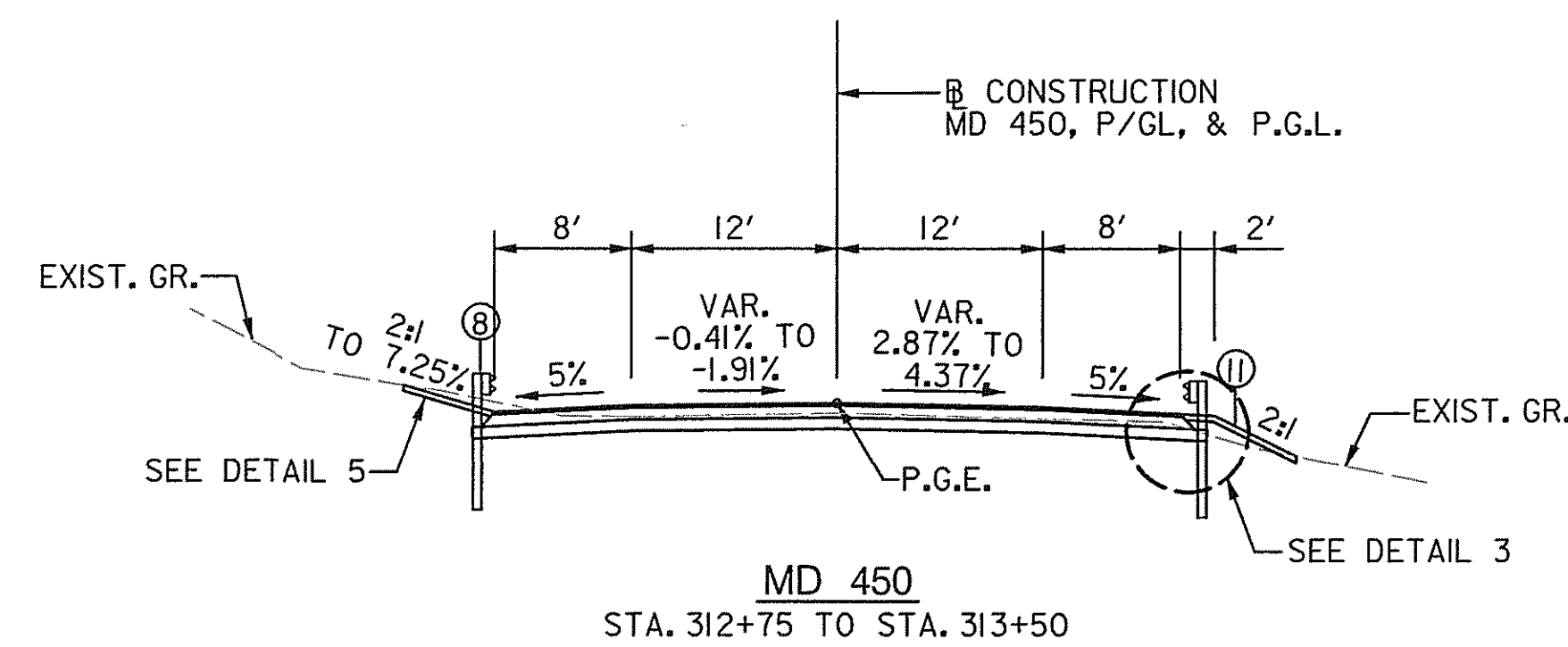
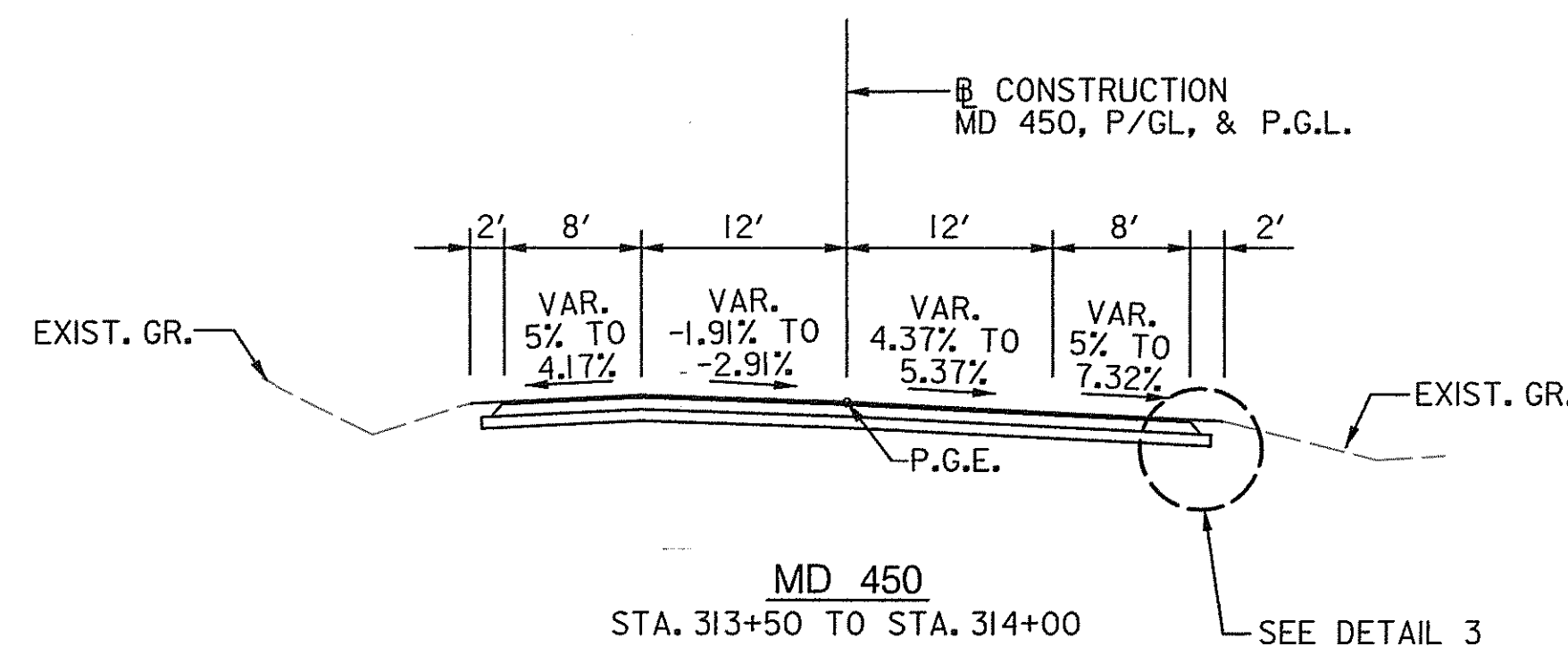
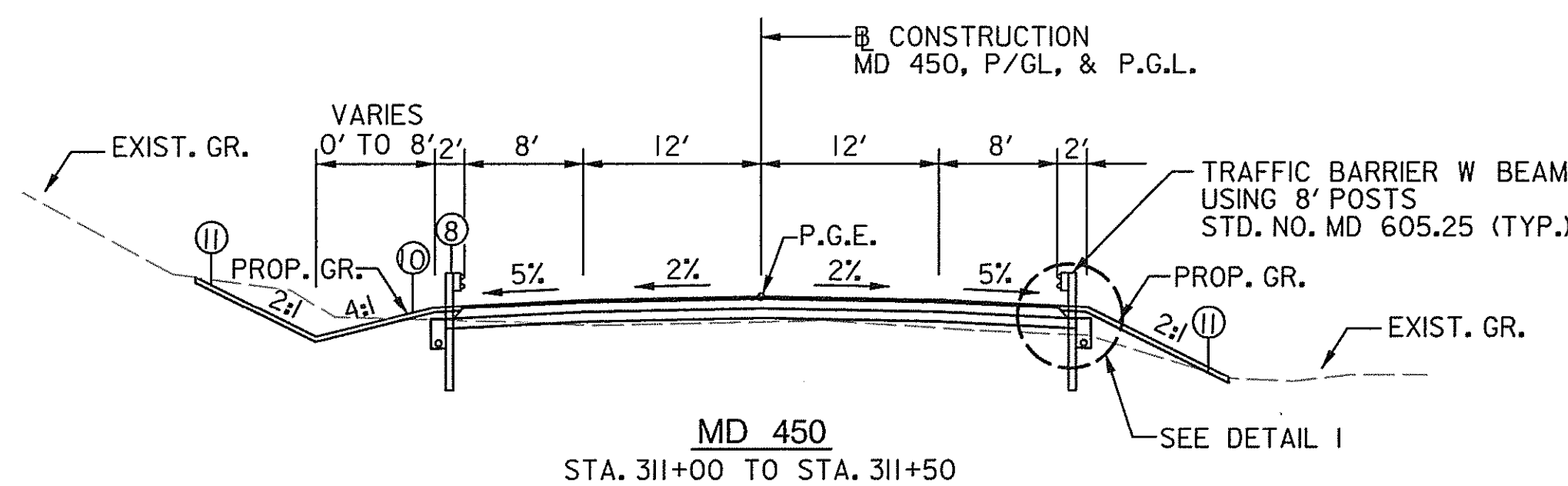
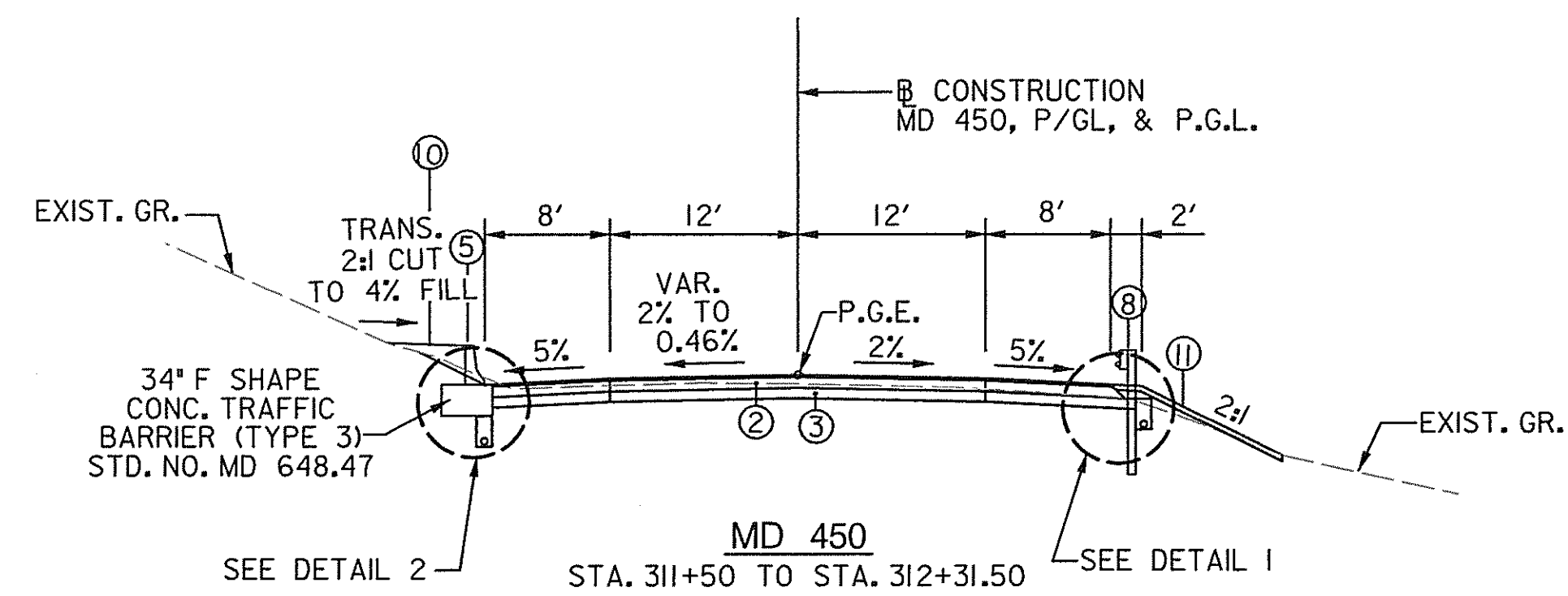
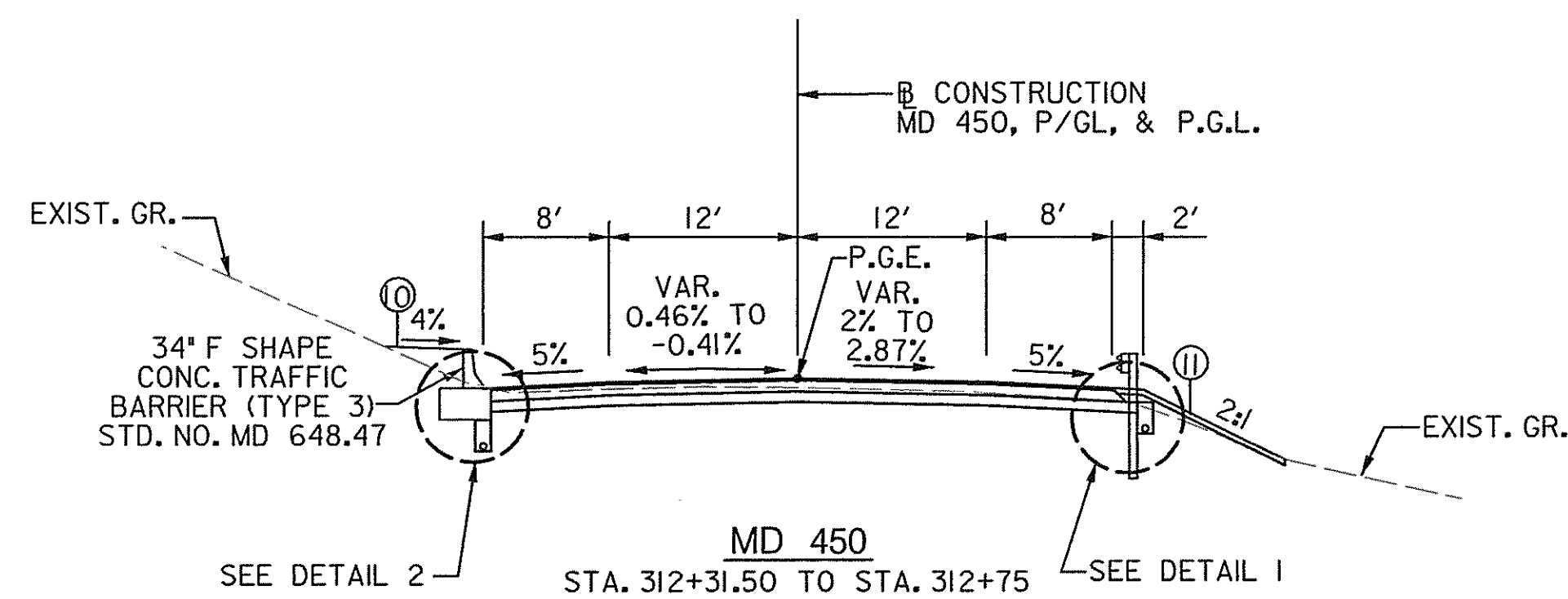
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

APPROVALS	REVISIONS	TYPICAL SECTIONS	
TEAM LEADER _____	2 REDLINE NO. 2 6/26/08 SHEET ADDED	SCALE As Shown	DATE Jun. 2008 CONTRACT NO. AX4695180
ASST. DIV. CHIEF _____		DESIGNED BY M.A.	COUNTY ANNE ARUNDEL
DIVISION CHIEF _____		DRAWN BY P.S.C.	LOGMILE _____
OFFICE DIRECTOR _____		CHECKED BY V.V.S.	HORIZONTAL SCALE _____
		F.A.P. NO. _____	VERTICAL SCALE _____
		DRAWING NO. TS-20	OF 2 SHEET NO. 4.01 OF 66

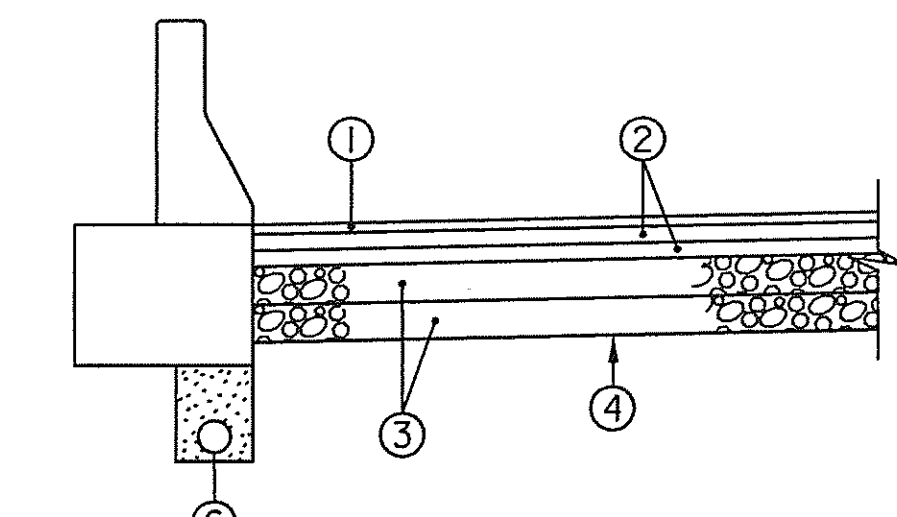
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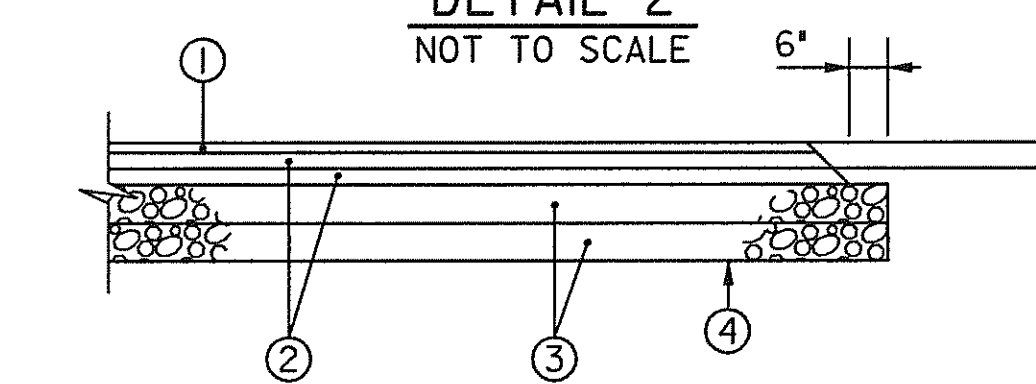




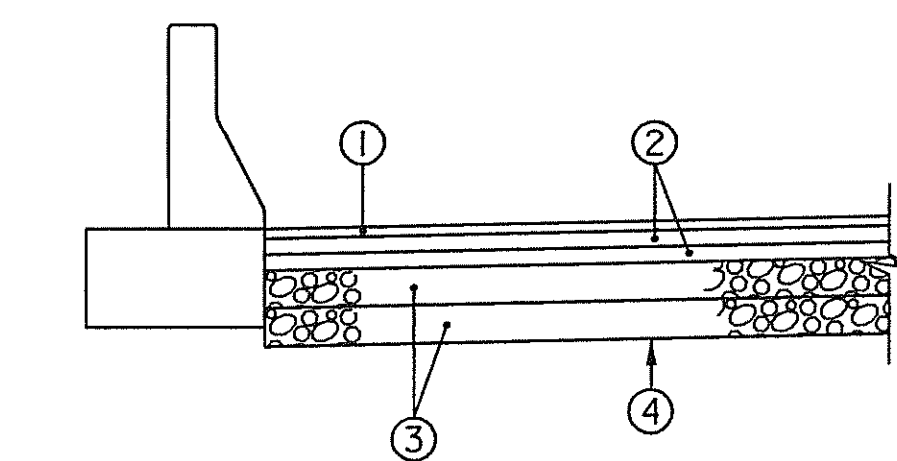
DETAIL 1
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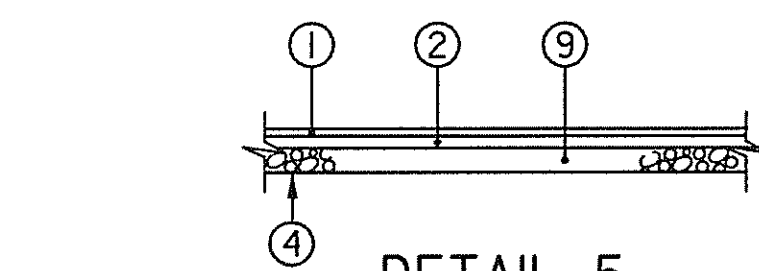
DETAIL 2
NOT TO SCALE



DETAIL 3
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DETAIL 4
NOT TO SCALE



DETAIL 5
NOT TO SCALE

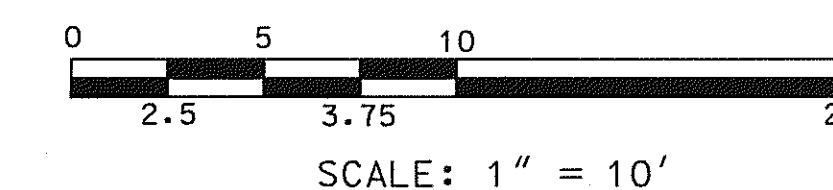
NOTE: PAVEMENT DETAIL 5 APPLIES TO DRIVEWAYS 1, 2, AND 3.

NOTES:

- BASED ON INFORMATION FROM CORING OPERATION AND CONSTRUCTION HISTORY RECORDS: THE PAVEMENT FROM MP: 6.4 TO MP 6.6 CONSISTS OF APPROXIMATELY 5.5' OF HMA OVER 12' OF TYPE II GRAVEL OVER 12' OF SOIL AGGREGATE MIX.
- USE THE FOLLOWING ITEM FOR WEDGE/LEVEL, AS DIRECTED BY THE ENGINEER: VARIABLE DEPTH HOT MIX ASPHALT SUPERPAVE 9.5mm FOR WEDGE/LEVEL-PG 64-22, LEVEL-2 (1" MINIMUM, 2" MAXIMUM LIFT THICKNESS).
- IN AREAS WHERE EXISTING PAVEMENT IS BEING REMOVED, THE LIMIT OF CLASS I EXCAVATION SHALL BE AT THE BOTTOM OF THE BOUND MATERIALS IN THE EXISTING PAVEMENT OR AT THE TOP OF SUBGRADE WHICHEVER IS LOWER.
- SEE PLANS SHEETS FOR LOCATION. UNDERDRAIN TRENCH SHALL BE WRAPPED IN CLASS SD TYPE II GEOTEXTILE.
- IN AREAS WHERE PAVEMENT WILL BE LEFT IN PLACE (FROM STA. 305+50 +/- LT/RT TO STA. 311+00 +/- LT/RT), THE PAVEMENT LAYERS SHALL BE BROKEN UP, AND EMBANKMENT FILL SHALL BE PLACED ON TOP OF IT IN CONFORMANCE WITH SECTION 204.03.02(c) OF '2001 SPECIFICATION FOR CONSTRUCTION AND MATERIALS'.

LEGEND

- 1.5" HOT MIX ASPHALT SUPERPAVE 9.5mm FOR SURFACE, PG 64-22, LEVEL 2
- 2.5" HOT MIX ASPHALT SUPERPAVE 19.0mm FOR BASE, PG 64-22, LEVEL 2
- 6" BASE COURSE USING GRADED AGGREGATE
- TOP OF SUBGRADE AND LIMIT OF EXCAVATION (SEE NOTE 3)
- 34" F SHAPE CONCRETE TRAFFIC BARRIER (STD. NO. MD 648.47)
- UNDERDRAIN PER STANDARD NO. 387.11 (SEE NOTE 4)
- 2" TOP SOIL, TYPE B STABILIZATION MATTING, SEED, AND MULCH
- TRAFFIC BARRIER STD. MD 605.25
- 4" BASE COURSE USING GRADED AGGREGATE
- 4" TOPSOIL, SEED, AND MULCH
- 2" TOP SOIL, TYPE A STABILIZATION MATTING, SEED, AND MULCH.



STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

APPROVALS	REVISIONS
TEAM LEADER _____	
ASST. DIV. CHIEF _____	
DIVISION CHIEF _____	
OFFICE DIRECTOR _____	

TYPICAL SECTIONS		
SCALE As Shown	DATE Dec. 2007	CONTRACT NO. AX4695180
DESIGNED BY M.A.	COUNTY ANNE ARUNDEL	
DRAWN BY P.S.C.	LOGMILE	
CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=10'	
F.A.P. NO.	VERTICAL SCALE 1"=10'	
DRAWING NO. TS-2	OF 2	SHEET NO. 5 OF 66

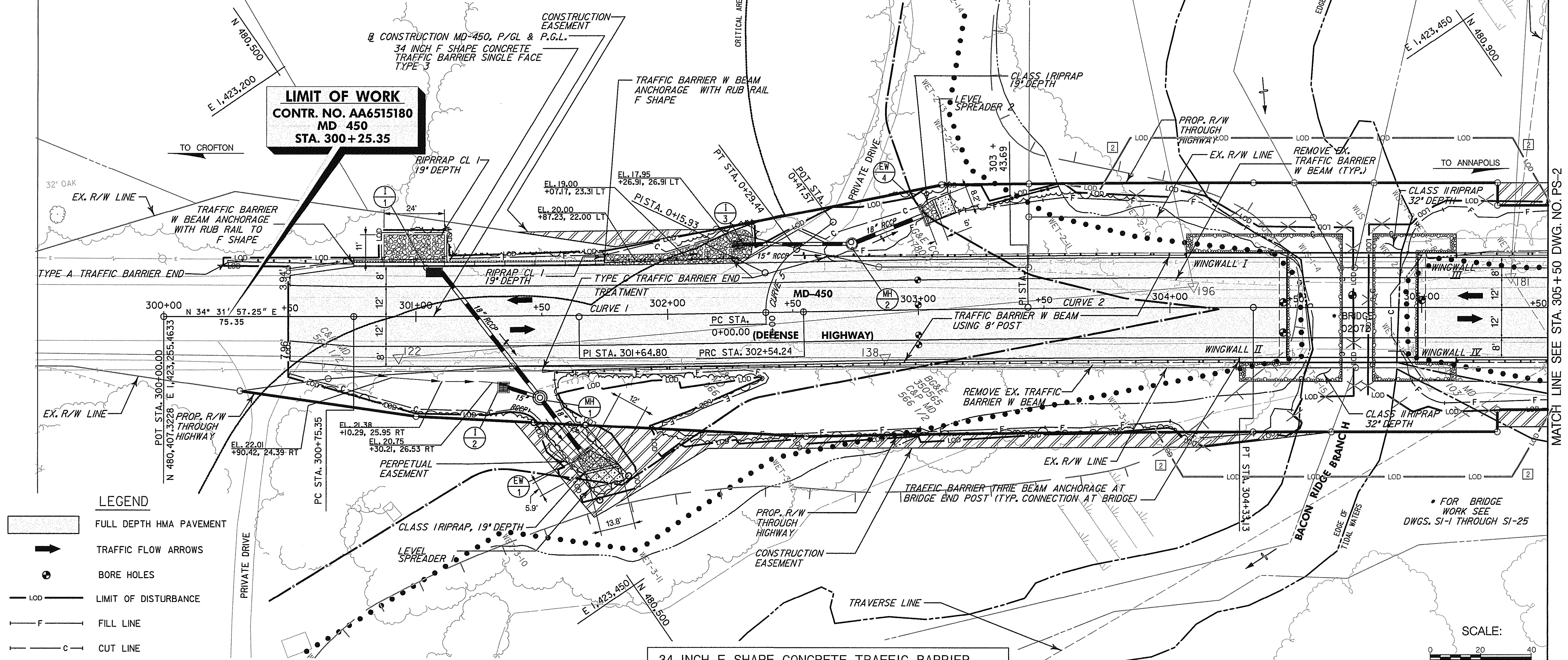
BY: \$USERNAME\$



TRAVERSE POINT COORDINATES				
POINT	STATION	OFFSET	N	E
122	300+93.06	16.48' R	480,474.6930	1,423,321.8060
138	302+86.58	18.92' R	480,634.4514	1,423,431.4809
181	305+35.28	12.24' L	480,857.4690	1,423,545.5090
196	304+09.43	8.51' L	480,751.6290	1,423,477.2450

NOTES: 1. UTILITIES WILL BE RELOCATED BY THE PERTINENT UTILITY COMPANIES BEFORE CONSTRUCTION BEGINS. UTILITIES WILL BE LOCATED UNDERGROUND.
 2. CONTRACTOR TO MAINTAIN ACCESS TO DRIVEWAYS ENTRANCES AT ALL TIMES.

LIMIT OF WORK
 CONTR. NO. AA6515180
 MD 450
 STA. 300+25.35



- LEGEND**
- FULL DEPTH HMA PAVEMENT
 - TRAFFIC FLOW ARROWS
 - BORE HOLES
 - LIMIT OF DISTURBANCE
 - FILL LINE
 - CUT LINE
 - CONCRETE TRAFFIC BARRIER
 - TRAFFIC BARRIER W BEAM
 - LIMIT OF UNPAVED SHOULDER
 - DITCH
 - STONE RIP RAP
 - WETLAND BOUNDARY
 - WETLAND BUFFER (25')

TYPE C TRAFFIC BARRIER END TREATMENT
 (STD. NO. MD 605.03)

STA. 301+50.00 TO STA. 302+00.00 RT	1 EA
STA. 301+95.11 TO STA. 302+28.38 LT	1 EA
STA. 302+63.84 TO STA. 303+13.84 LT	1 EA

END ANCHORAGE TERMINAL FOR TYPE A END TREATMENT
 (STD. NO. MD 605.01)

STA. 300+25.35 TO 300+75.35 LT	1 EA
--------------------------------	------

TRAFFIC BARRIER W BEAM ANCHORAGE WITH RUB RAIL TO F SHAPE
 (STD. NO. MD 605.43)

STA. 300+75.35 LT	1 EA
STA. 301+75.11 LT	1 EA

34 INCH F SHAPE CONCRETE TRAFFIC BARRIER SINGLE FACE TYPE 3
 (STD. NO. MD 648.47)

STA. 300+75.35 TO STA. 301+75.11 LT	100 LF
-------------------------------------	--------

TRAFFIC BARRIER W BEAM USING 8 FOOT POST
 (STD. NO. MD 605.25)

STA. 302+00.00 TO STA. 303+98.56 RT	144 LF
STA. 303+12.52 TO STA. 303+77.70 LT	65 LF
STA. 305+42.70 TO STA. 305+50.00 LT	7 LF
STA. 305+42.70 TO STA. 305+50.00 RT	7 LF

REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM

STA. 301+47.77 TO STA. 304+52.18 RT	306 LF
STA. 302+69.24 TO STA. 304+52.58 LT	184 LF
STA. 304+94.80 TO STA. 305+50.00 LT	56 LF
STA. 304+94.88 TO STA. 305+50.00 RT	55 LF

TRAFFIC BARRIER THREE BEAM ANCHORAGE AT BRIDGE END POSTS
 (STD. NO. MD 605.51)

STA. 304+06.57 LT	1 EA
STA. 304+27.57 RT	1 EA
STA. 305+13.75 LT	1 EA
STA. 305+13.75 RT	1 EA

APPROVALS	REVISIONS
TEAM LEADER	2 REDLINE NO. 2 6/26/08
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

ROADWAY PLAN		
SCALE As Shown	DATE Dec. 2007	CONTRACT NO. AX4695180
DESIGNED BY M.A.	COUNTY ANNE ARUNDEL	
DRAWN BY P.S.C.	LOGMILE	
CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=20'	
F.A.P. NO.	VERTICAL SCALE	
DRAWING NO. PS-1	OF 3	SHEET NO. 6 OF 66

BY: \$USERNAME\$

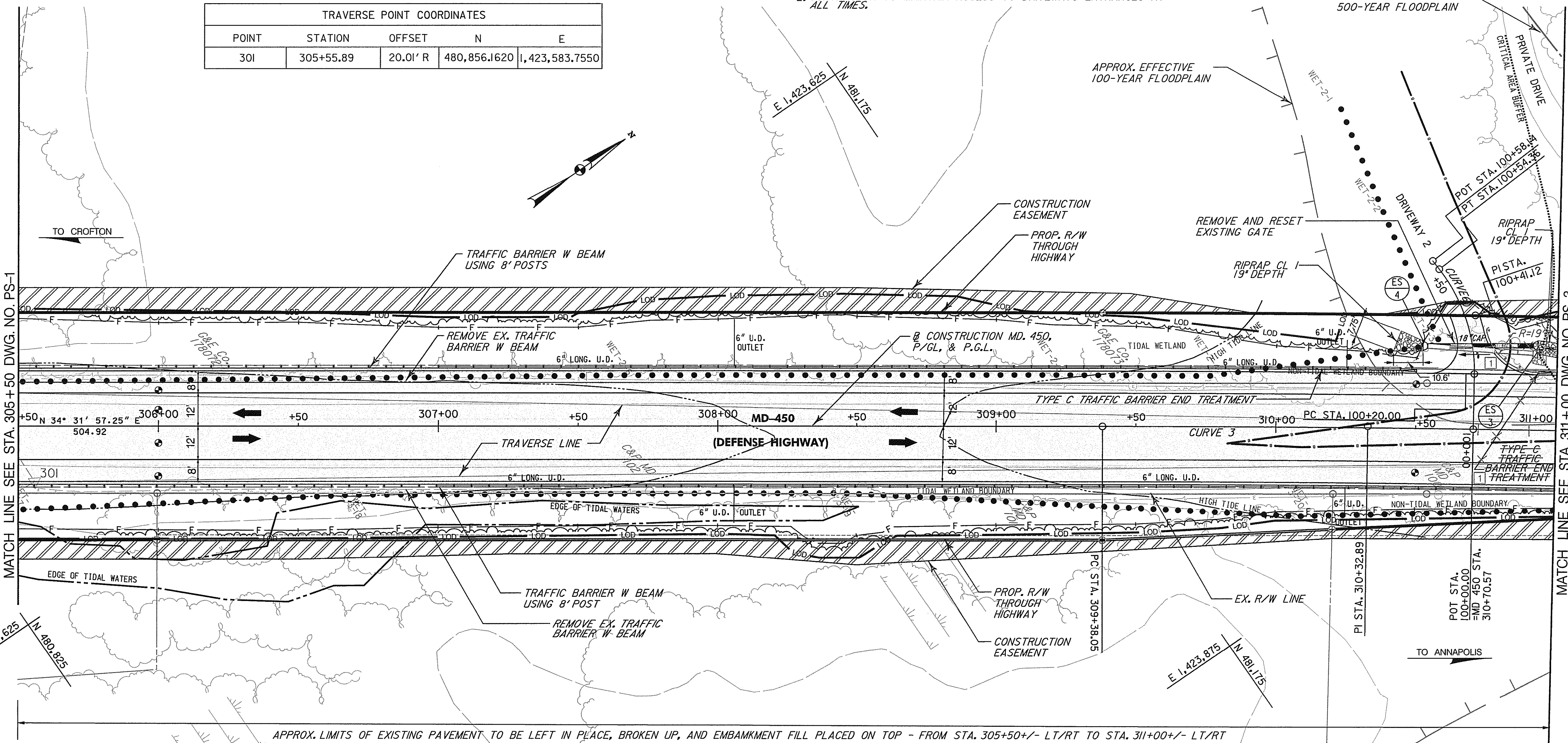


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MATCH LINE SEE STA. 305+50 DWG. NO. PS-2

NOTE: 1. UTILITIES WILL BE RELOCATED BY THE PERTINENT UTILITY COMPANIES BEFORE CONSTRUCTION BEGINS. UTILITIES WILL BE LOCATED UNDERGROUND.
 2. CONTRACTOR TO MAINTAIN ACCESS TO DRIVEWAYS ENTRANCES AT ALL TIMES.

TRAVERSE POINT COORDINATES				
POINT	STATION	OFFSET	N	E
301	305+55.89	20.01' R	480,856.1620	1,423,583.7550



MATCH LINE SEE STA. 305+50 DWG. NO. PS-1

MATCH LINE SEE STA. 311+00 DWG. NO. PS-3

APPROX. LIMITS OF EXISTING PAVEMENT TO BE LEFT IN PLACE, BROKEN UP, AND EMBANKMENT FILL PLACED ON TOP - FROM STA. 305+50+/- LT/RT TO STA. 311+00+/- LT/RT

LEGEND

- PROPOSED FULL DEPTH HMA PAVEMENT
- TRAFFIC BARRIER W BEAM
- TRAFFIC FLOW ARROWS
- LIMIT OF UNPAVED SHOULDER
- FILL LINE
- DITCH
- CUT LINE
- STONE RIP RAP
- WETLAND BUFFER (25')
- WETLAND BOUNDARY
- CONCRETE TRAFFIC BARRIER
- LIMIT OF DISTURBANCE

SCALE: SCALE IN FEET

1	TYPE K TRAFFIC BARRIER END TREATMENT OPTION 2 ANCHORAGE (STD. NO. MD 605.10)	STA. 310+74.71, 35.51' LT	1 EA
	UNDERDRAIN OUTLETS (STD. NO. MD 387.01)	STA. 308+05.86 LT STA. 308+05.86 RT STA. 310+25.00 LT STA. 310+25.00 RT	17 LF 13 LF 10 LF 10 LF
	TRAFFIC BARRIER W BEAM USING 8 FOOT POST (STD. NO. MD 605.25)	STA. 305+50.00 TO STA. 311+00.00 RT STA. 305+50.00 TO STA. 310+00.00 LT STA. 310+74.82 TO STA. 311+00.00 LT	550 LF 450 LF 34 LF
1	TYPE C TRAFFIC BARRIER END TREATMENT (STD. NO. MD 605.03)	STA. 310+00.00 TO STA. 310+50.00 LT STA. 310+93.56 TO STA. 311+43.56 LT	1 EA 1 EA

REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	
STA. 305+50.00 TO STA. 307+53.33 RT	204LF
STA. 305+50.00 TO STA. 307+29.62 LT	180 LF

LONGITUDINAL UNDERDRAIN (STD. NO. MD 387.11)	
STA. 307+00.00 TO STA. 311+00.00 LT	400 LF
STA. 307+00.00 TO STA. 311+00.00 RT	400 LF

APPROVALS	REVISIONS
TEAM LEADER	1 REDLINE NO. 1 4/9/08
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

ROADWAY PLAN		
SCALE As Shown	DATE Dec. 2007	CONTRACT NO. AX4695180
DESIGNED BY M.A.	COUNTY ANNE ARUNDEL	
DRAWN BY P.S.C.	LOGMILE	
CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=20'	
F.A.P. NO.	VERTICAL SCALE	
DRAWING NO. PS-2	OF 3	SHEET NO. 7 OF 66

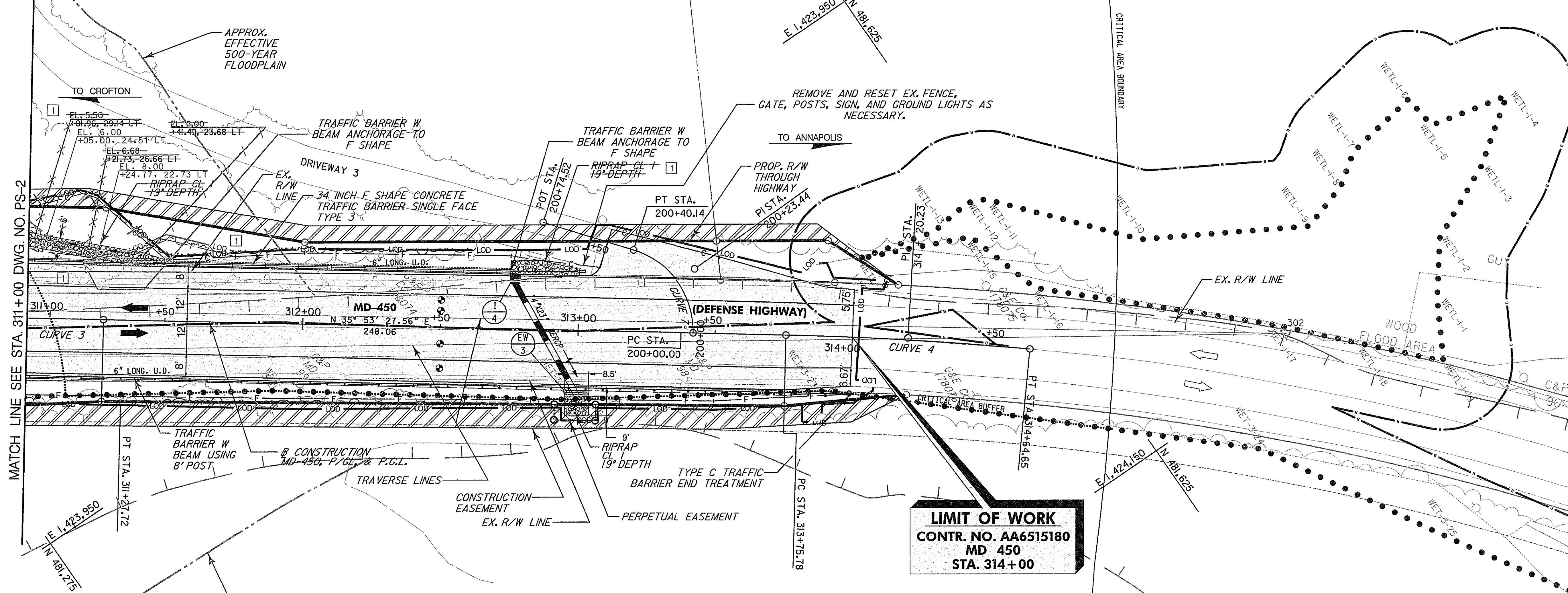
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BY: \$USER\$



BASELINE CURVE DATA

ID	CURVE NO.	DELTA	R	T	L	TANGENT BEARING		BEGIN CURVE STATION	COORDINATE		PI STATION	COORDINATE		END CURVE STATION	COORDINATE	
						BACK	FORWARD		NORTH	EAST		NORTH	EAST		NORTH	EAST
MD 450	1	1° 16' 52.32" LT	8,000.00'	89.45'	178.89'	N 34° 31' 57.25" E	N 33° 15' 04.94" E	300+75.35	480,469.3986	1,423,298.1788	301+64.80	480,543.0865	1,423,348.8847	302+54.24	480,617.8897	1,423,397.9304
	2	1° 16' 52.32" RT	8,000.00'	89.45'	178.89'	N 33° 15' 04.94" E	N 34° 31' 57.25" E	302+54.24	480,617.8897	1,423,397.9305	303+43.69	480,692.6929	1,423,446.9761	304+33.13	480,766.3808	1,423,497.6821
	3	1° 21' 30.30" RT	8,000.00'	94.84'	189.67'	N 34° 31' 57.25" E	N 35° 53' 27.56" E	309+38.05	481,182.3359	1,423,783.9084	310+32.89	481,260.4654	1,423,837.6708	311+27.72	481,337.2984	1,423,893.2702
	4	3° 53' 00.01" RT	1,311.13'	44.45'	88.86'	N 35° 53' 27.56" E	N 39° 46' 27.57" E	313+75.78	481,538.2623	1,424,038.6956	314+20.23	481,574.2723	1,424,064.7538	314+64.65	481,608.4347	1,424,093.1910
DRIVEWAY 1	5	54° 24' 14.29" RT	31.00'	15.93'	29.44'	N 56° 38' 23.07" E	N 2° 14' 08.78" W	0+00.00	480,605.1874	1,423,389.5847	0+15.93	480,613.9491	1,423,376.2769	0+29.44	480,631.0795	1,423,375.6553
DRIVEWAY 2	6	38° 47' 28.69" LT	60.00'	21.12	34.36	N 54° 31' 05.96" E	S 86° 41' 25.35" W	100+20.00	481,302.4886	1,423,843.6457	100+41.12	481,314.7500	1,423,826.4442	100+54.36	481,313.5304	1,423,805.3553
DRIVEWAY 3	7	74° 11' 31.31" LT	31.00'	23.44'	40.14'	N 54° 06' 32.44" E	S 51° 41' 56.25" W	200+00.00	481,510.8599	1,424,018.8662	200+23.44	481,524.6025	1,424,999.8752	200+40.14	481,510.0735	1,424,981.4790



LEGEND

- TRAFFIC FLOW ARROWS
- FULL DEPTH HMA PAVEMENT
- LIMIT OF DISTURBANCE
- FILL LINE
- CUT LINE
- WETLAND BUFFER (25')
- CONCRETE TRAFFIC BARRIER
- TRAFFIC BARRIER W BEAM
- LIMIT OF UNPAVED SHOULDER
- DITCH
- STONE RIP RAP
- WETLAND BOUNDARY

34 INCH F SHAPE CONCRETE TRAFFIC BARRIER SINGLE FACE TYPE 3 (STD. NO. MD 648.47)	STA. 311+50.00 TO STA. 312+75.00 LT	125 LF
TRAFFIC BARRIER W BEAM USING 8 FOOT POST (STD. NO. MD 605.25)	STA. 311+00.00 TO STA. 313+50.00 RT	250 LF
LONGITUDINAL UNDERDRAIN (STD. NO. MD 387.11)	STA. 311+00.00 TO STA. 312+75.00 LT STA. 311+00.00 TO STA. 312+50.00 RT	175 LF 150 LF

TRAVERSE POINT COORDINATES				
POINT	STATION	OFFSET	N	E
302	N/A	N/A	481,688.1940	1,424,141.4270

TYPE C TRAFFIC BARRIER END TREATMENT (STD. NO. MD 605.03)	STA. 312+75.00 TO STA. 313+02.15 LT STA. 313+50.00 TO 314+00.00 RT	1 EA 1 EA
TRAFFIC BARRIER W BEAM ANCHORAGE WITH RUB RAIL TO F SHAPE (STD. NO. MD 605.43)	STA. 311+50.00 LT 20.00 STA. 312+75.00 LT	1 EA 1 EA

SCALE: 0 20 40
SCALE IN FEET

NOTE: 1. UTILITIES WILL BE RELOCATED BY THE PERTINENT UTILITY COMPANIES BEFORE CONSTRUCTION BEGINS. UTILITIES WILL BE LOCATED UNDERGROUND.
2. CONTRACTOR TO MAINTAIN ACCESS TO DRIVEWAYS ENTRANCES AT ALL TIMES.

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

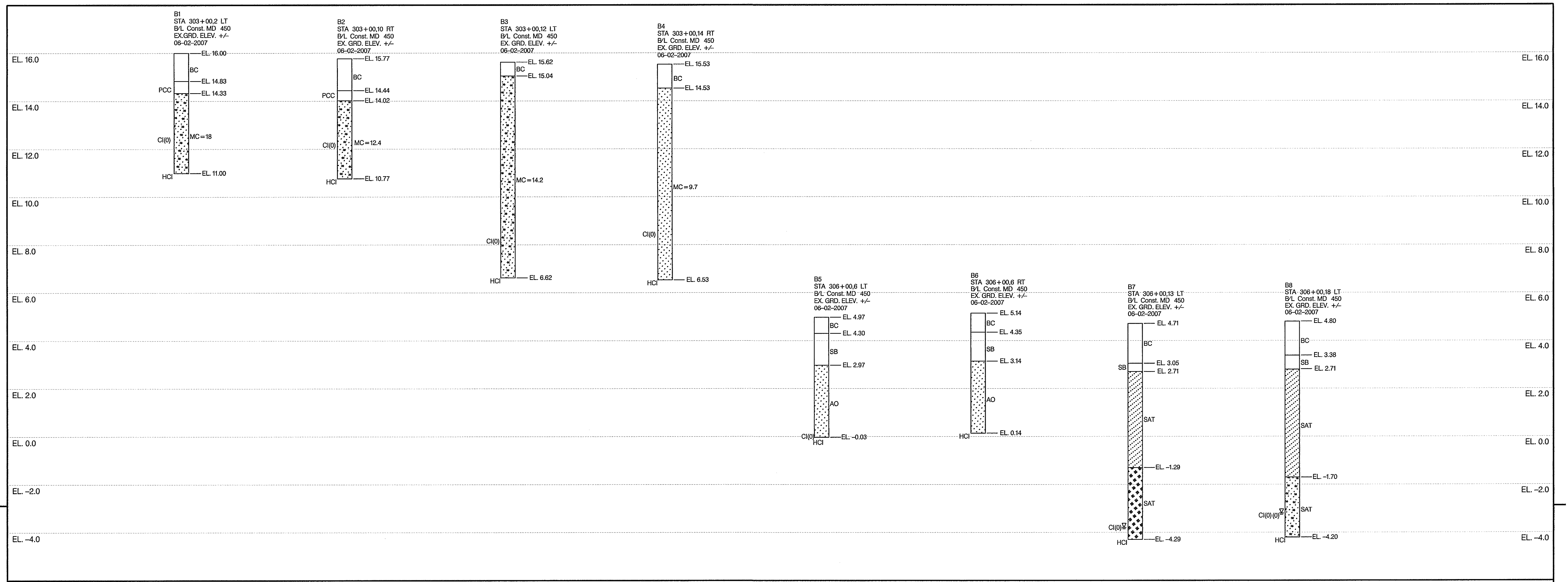
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

APPROVALS	REVISIONS	ROADWAY PLAN
TEAM LEADER	1 REDLINE NO. 1 4/9/08	SCALE As Shown DATE Dec. 2007 CONTRACT NO. AX4695180
ASST. DIV. CHIEF		DESIGNED BY M.A. COUNTY ANNE ARUNDEL
DIVISION CHIEF		DRAWN BY P.S.C. LOGMILE
OFFICE DIRECTOR		CHECKED BY V.V.S. HORIZONTAL SCALE 1"=20'
		F.A.P. NO. VERTICAL SCALE
		DRAWING NO. PS-3 OF 3 SHEET NO. 8 OF 66

PLOTTED: \$DATE\$
FILE: \$FILE\$

BY: \$USERNAME\$

ALA
ATHAVALE, LYSTAD & ASSOCIATES INC.
Consulting Engineers
Rockville, Maryland



DATUM EL. -6.0 DATUM EL. 0.0

SOILS TEST DATA								
BORING NUMBER	SAMPLE DEPTH	LL	PI	USDA	USC	MDD	OMC	REMARKS
B8	2.0 - 6.5	NP	NP	Loamy Sand	**			w/Gravel
B8	6.5 - 9.0	30	13	Sandy Loam	**			w/Gravel
B7	2.0 - 6.0	NP	NP	Loamy Sand	**			w/Gravel
B7	6.0 - 9.0	33	15	Sandy Loam	**			**
B6	2.0 - 5.0			**	**			w/Gravel
B5	2.0 - 5.0			**	**			w/Gravel
B4	1.0 - 9.0	29	6	Sandy Loam	**	130	8.1	w/Gravel
B3	0.58 - 9.0	34	13	Sandy Loam	**	125.4	10.1	w/Gravel
B2	1.75 - 5.0	29	9	Sandy Loam	**			w/Gravel
B1	1.67 - 5.0	32	10	Sandy Loam	**	126	10	**

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 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

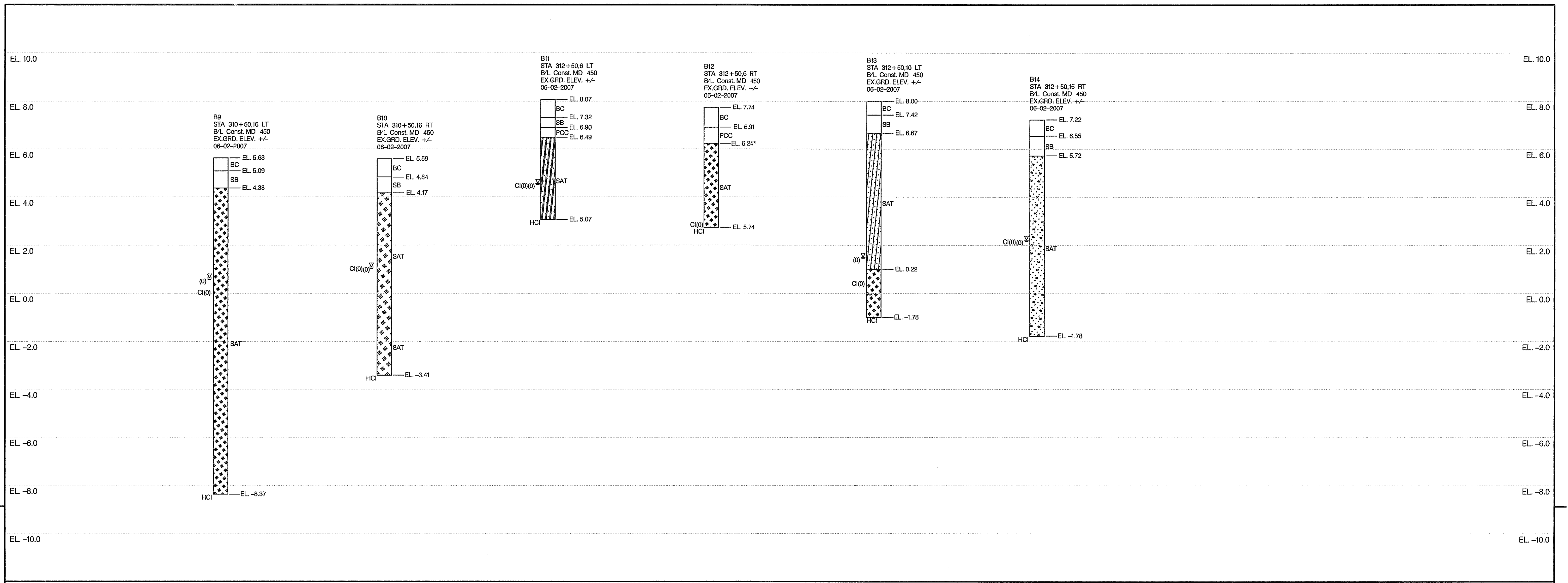
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

APPROVALS	REVISIONS	ROADWAY SOIL BORINGS	
TEAM LEADER _____		SCALE As Shown	DATE Dec. 2007
ASST. DIV. CHIEF _____		CONTRACT NO.	AX4695180
DIVISION CHIEF _____		DESIGNED BY M.A.	COUNTY ANNE ARUNDEL
OFFICE DIRECTOR _____		DRAWN BY P.S.C.	LOGMILE _____
		CHECKED BY V.V.S.	HORIZONTAL SCALE _____
		F.A.P. NO. _____	VERTICAL SCALE _____
		DRAWING NO. SB-1	OF 2 SHEET NO. 9 OF 66

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BY: \$USERNAME\$

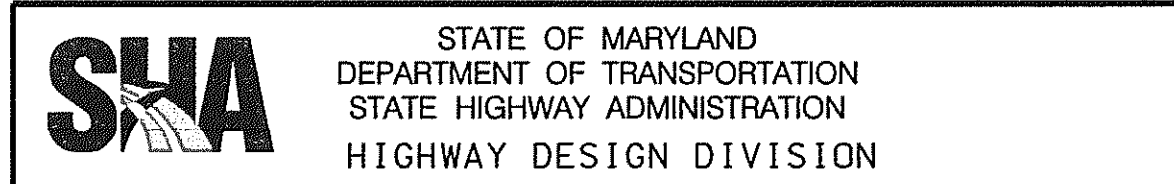




DATUM EL. -12.0

SOILS TEST DATA

BORING NUMBER	SAMPLE DEPTH	LL	PI	USDA	USC	MDD	OMC	REMARKS
B-14	1.5 - 9.0	33	12	Sandy Clay Loam	**			**
B-13	1.33 - 7.0	23	5	Sandy Loam	**	131	7.6	w/Gravel
B-13	7.0 - 9.0	36	17	Sandy Clay Loam	**	121.5	11.5	**
B-12	1.5 - 5.0			**	**			w/Gravel
B-11	1.58 - 5.0	24	6	Sandy Loam	**			**
B10	1.42 - 6.5	33	16	Sandy Clay Loam	**			**
B10	6.5 - 9.0	48	26	Clay Loam	**			**
B9	1.25 - 14.0	36	16	Sandy Loam	**			**



PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

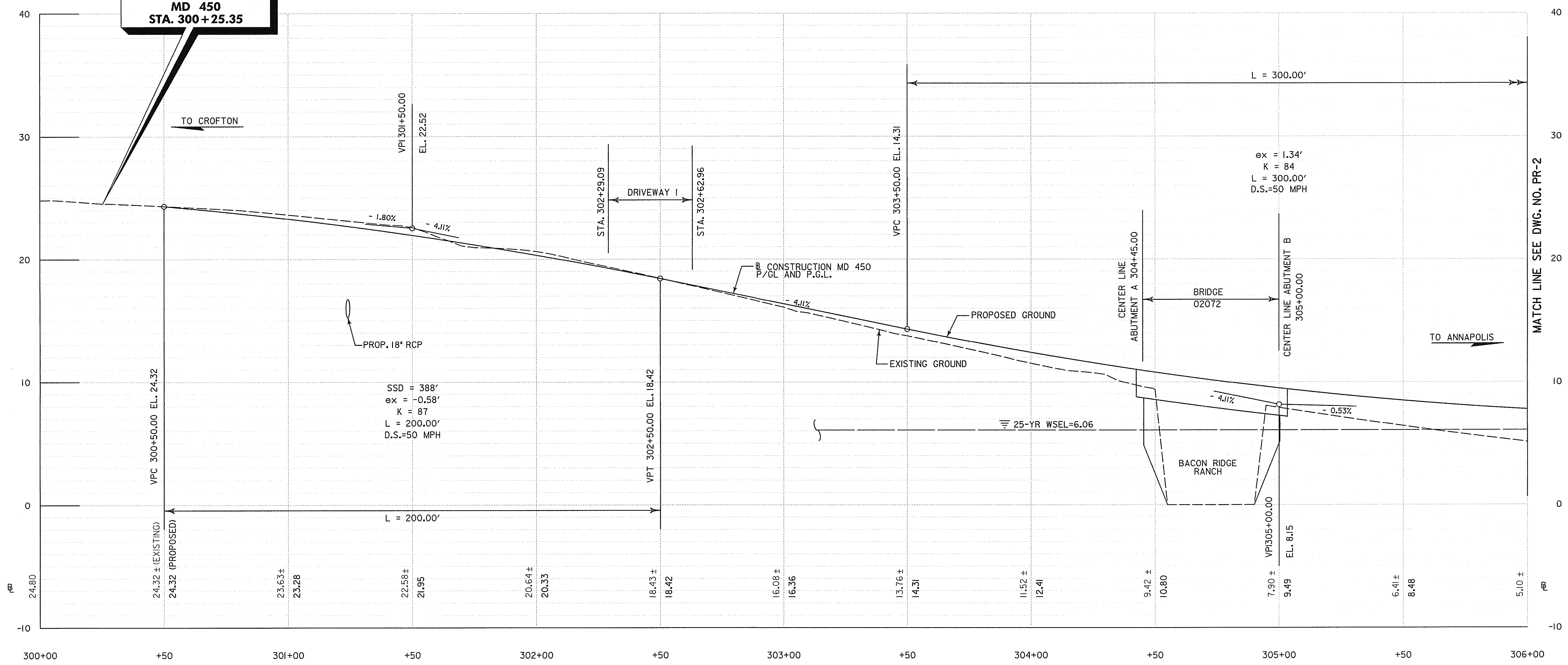
APPROVALS	REVISIONS	ROADWAY SOIL BORINGS	
TEAM LEADER _____		SCALE As Shown	DATE Dec. 2007
ASST. DIV. CHIEF _____		DESIGNED BY M.A.	COUNTY ANNE ARUNDEL
DIVISION CHIEF _____		DRAWN BY P.S.C.	LOGMILE _____
OFFICE DIRECTOR _____		CHECKED BY V.V.S.	HORIZONTAL SCALE _____
		F.A.P. NO. _____	VERTICAL SCALE _____
		DRAWING NO. SB-2	OF 2 SHEET NO. 10 OF 66

PLOTTED: #DATE#
FILE: #FILE#

BY: \$USERNAME\$



LIMIT OF WORK
CONTR. NO. AA6515180
MD 450
STA. 300+25.35

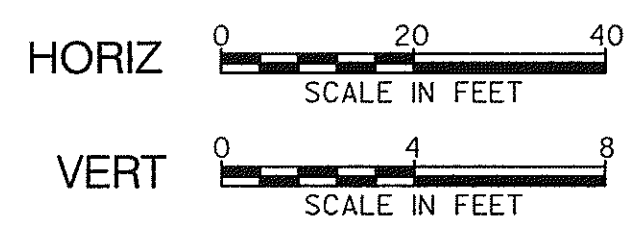


ROADWAY PROFILE FROM STA. 300+00 TO STA. 306+00

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 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

APPROVALS	REVISIONS	ROADWAY PROFILES	
TEAM LEADER _____		SCALE As Shown	DATE Dec. 2007 CONTRACT NO. AX4695180
ASST. DIV. CHIEF _____		DESIGNED BY M.A.	COUNTY ANNE ARUNDEL
DIVISION CHIEF _____		DRAWN BY P.S.C.	LOGMILE _____
OFFICE DIRECTOR _____		CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=20'
		F.A.P. NO. _____	VERTICAL SCALE 1"=4'
		DRAWING NO. PR-1	OF 3 SHEET NO. 11 OF 66

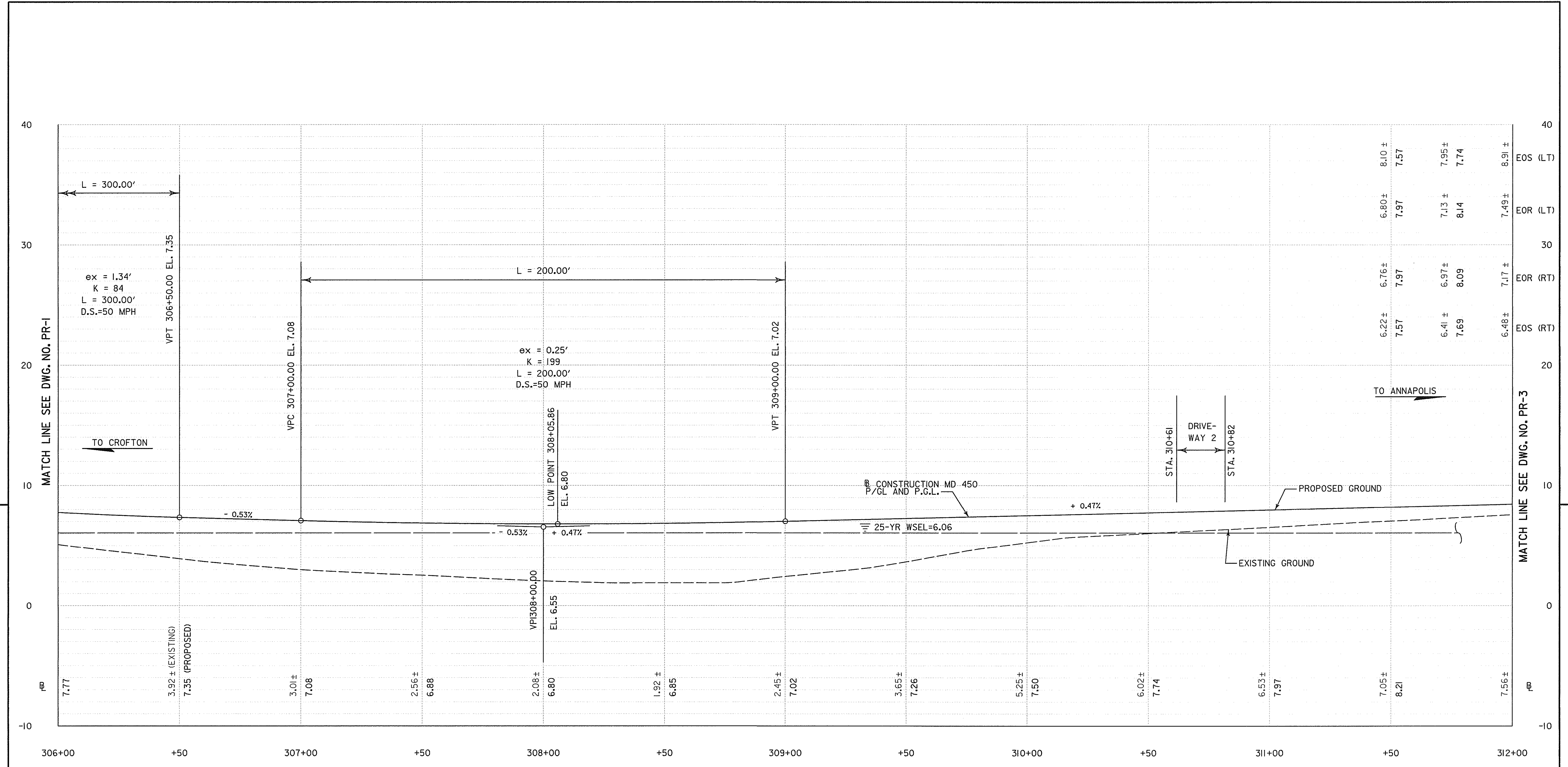


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BY: \$USERNAME\$



MATCH LINE SEE DWG. NO. PR-2

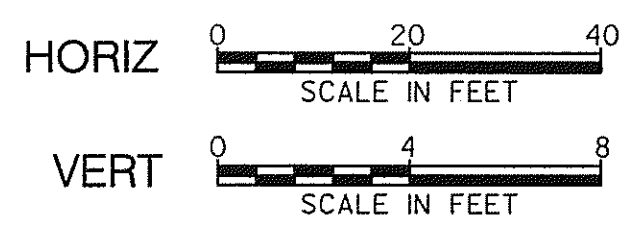


ROADWAY PROFILE FROM STA. 306+00 TO STA. 312+00

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 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

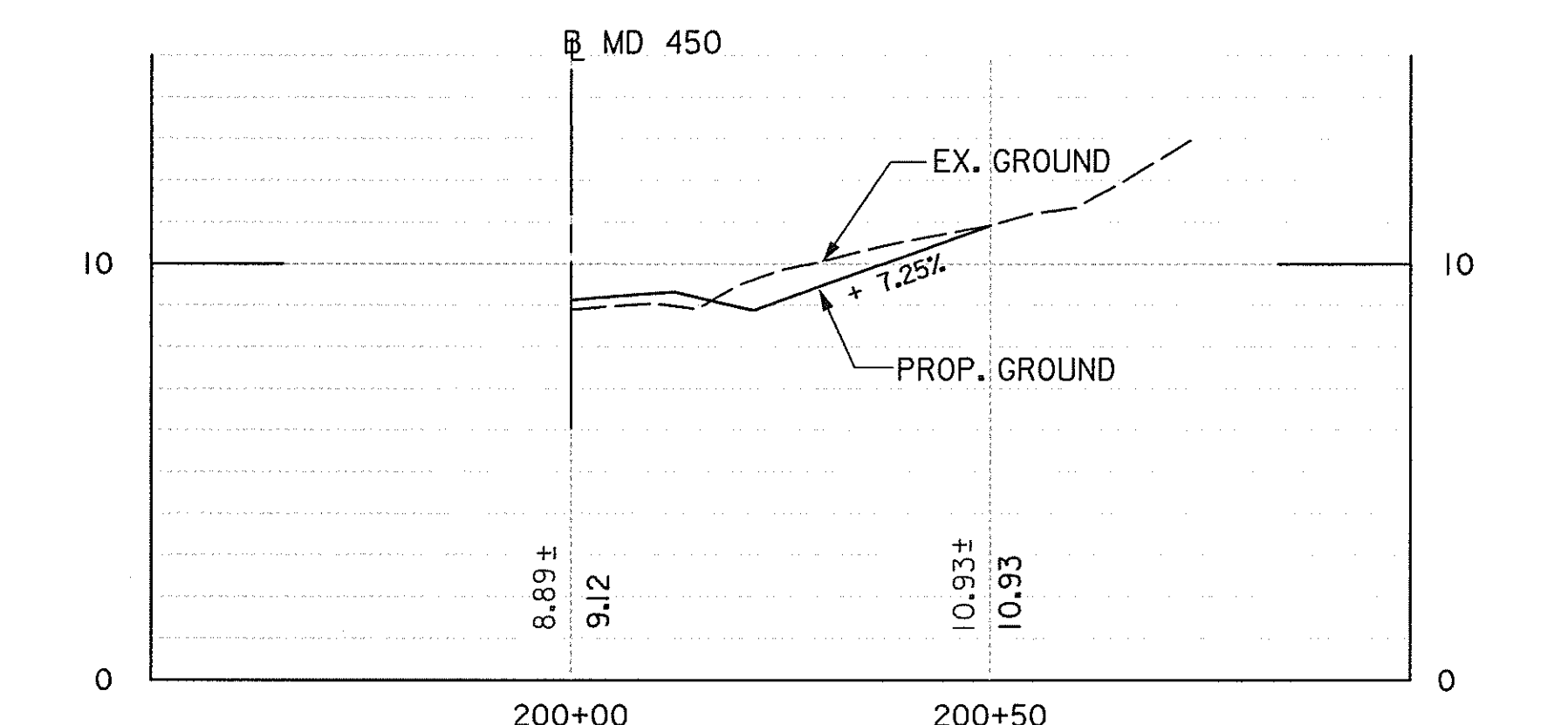
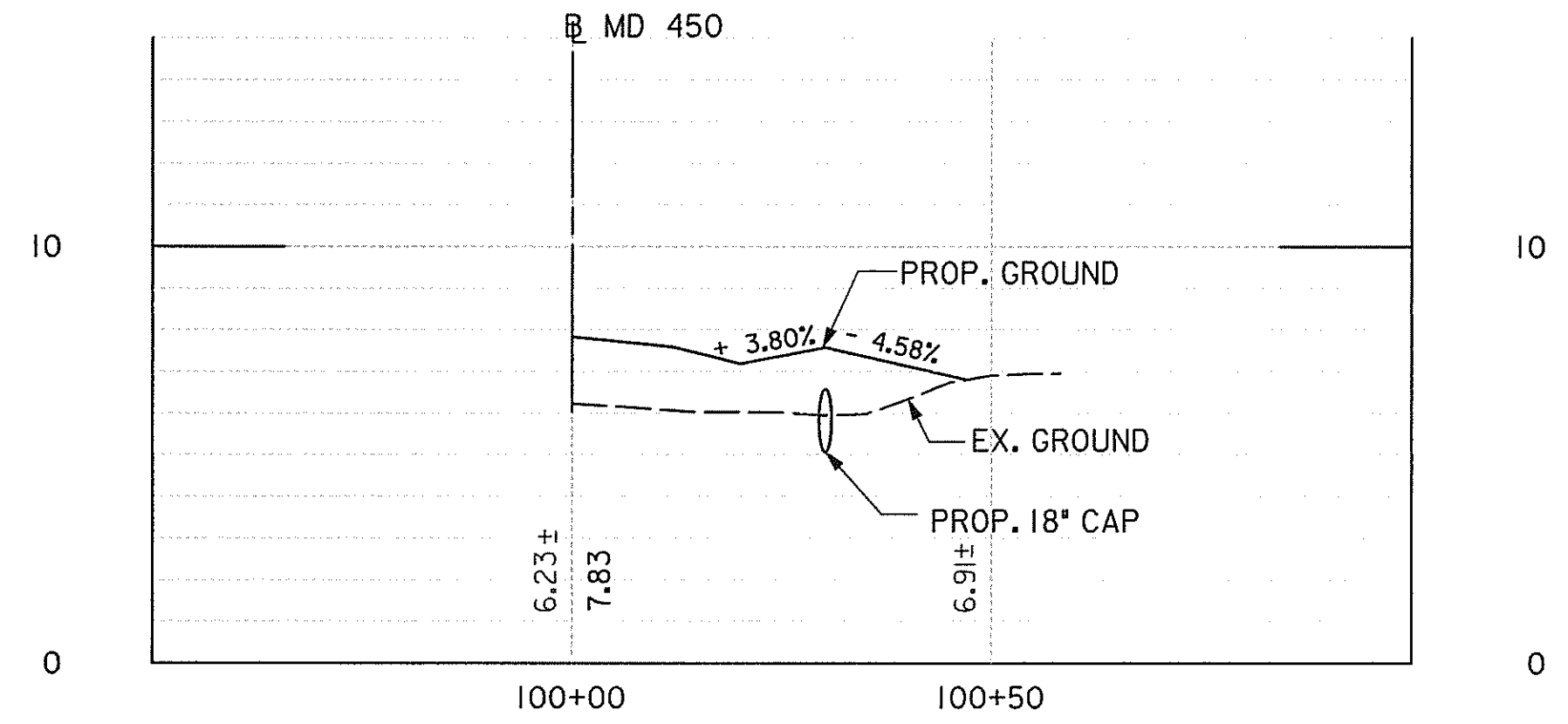
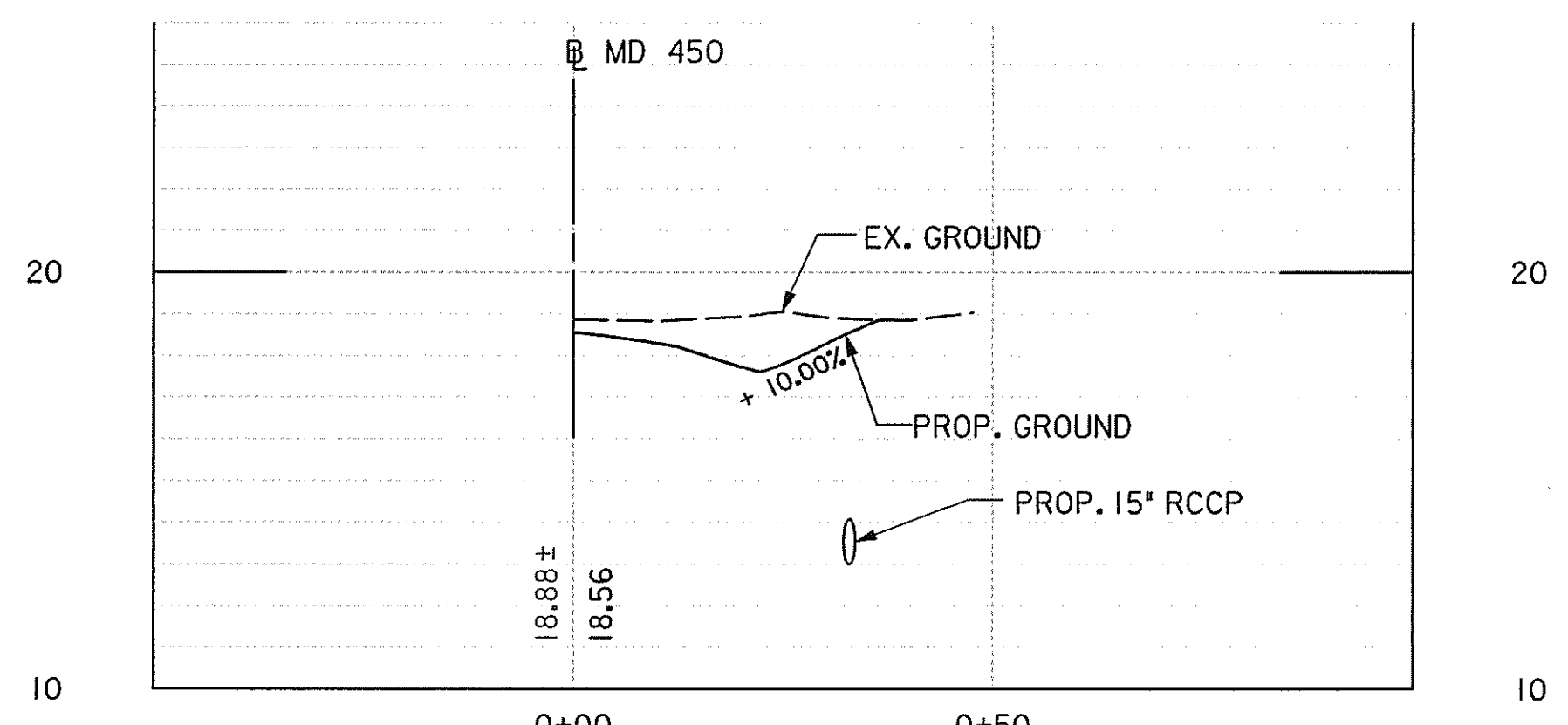
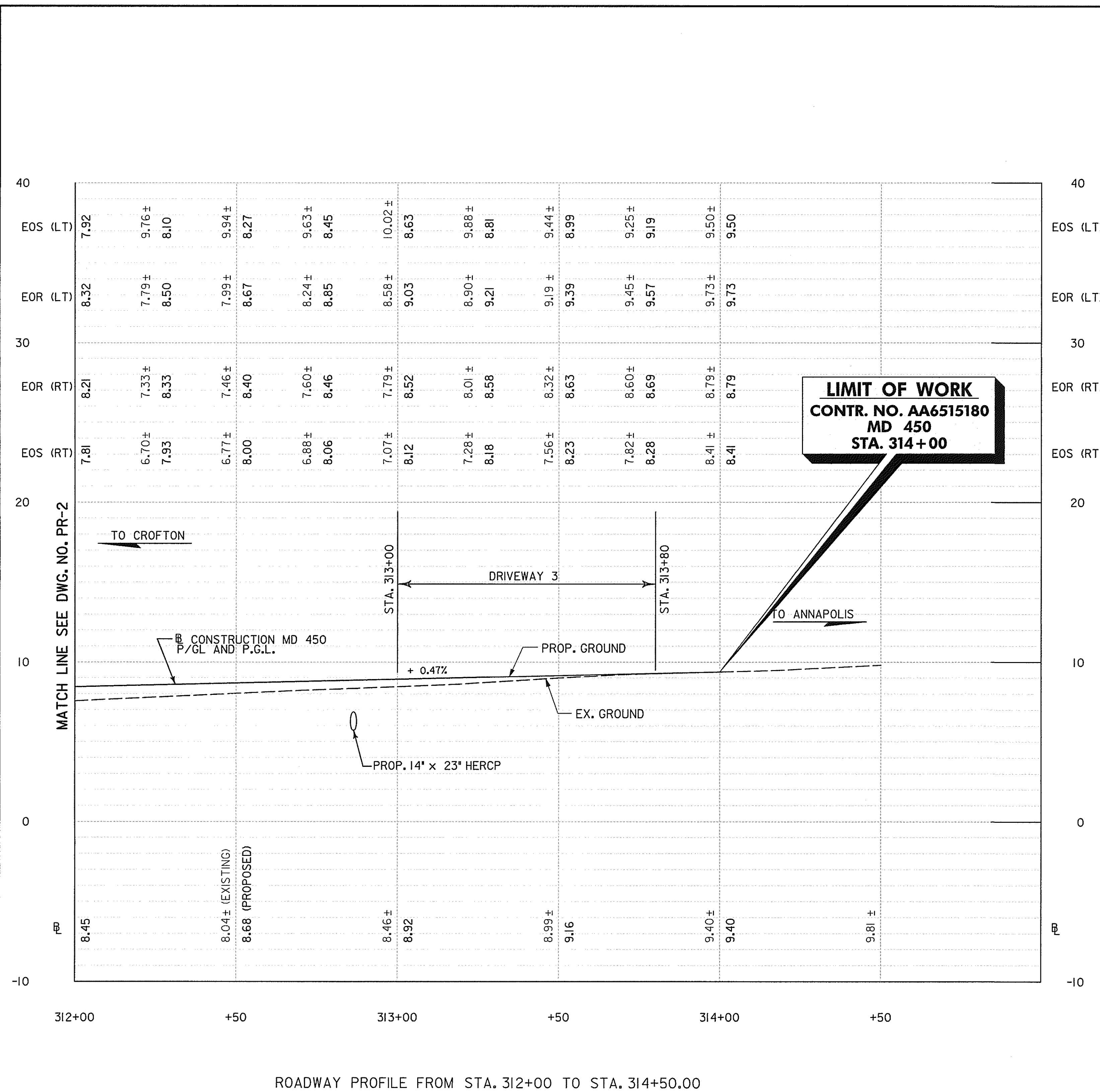
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

APPROVALS	REVISIONS	ROADWAY PROFILES	
TEAM LEADER		SCALE As Shown	DATE Dec. 2007
ASST. DIV. CHIEF		CONTRACT NO.	AX4695180
DIVISION CHIEF		DESIGNED BY	M.A. COUNTY ANNE ARUNDEL
OFFICE DIRECTOR		DRAWN BY	P.S.C. LOGMILE
		CHECKED BY	V.V.S. HORIZONTAL SCALE 1"=20'
		F.A.P. NO.	VERTICAL SCALE 1"=4'
		DRAWING NO.	PR-2 OF 3 SHEET NO. 12 OF 66



BY: \$USERNAME\$

PLOTTED: \$DATETIME\$
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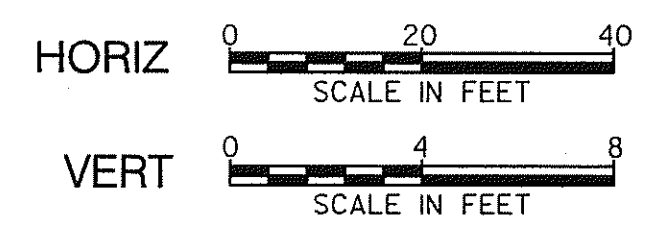
LIMIT OF WORK
CONTR. NO. AA6515180
MD 450
STA. 314+00

NOTE: CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS IN PERSON AT LEAST 48 HOURS IN ADVANCE OF DOING WORK AT THEIR DRIVEWAYS.

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

APPROVALS		REVISIONS		ROADWAY PROFILES	
TEAM LEADER				SCALE As Shown	DATE Dec. 2007
ASST. DIV. CHIEF				CONTRACT NO.	AX4695180
DIVISION CHIEF				DESIGNED BY	M.A. COUNTY ANNE ARUNDEL
OFFICE DIRECTOR				DRAWN BY	P.S.C. LOGMILE
				CHECKED BY	V.V.S. HORIZONTAL SCALE 1"=20'
				F.A.P. NO.	VERTICAL SCALE 1"=4'
DRAWING NO. PR-3		OF 3		SHEET NO. 13 OF 66	



BY: \$USERNAME\$

PLOTTED: \$DATETIME\$ FILE: \$FILE\$

EROSION AND SEDIMENT CONTROL - GENERAL NOTES

1. MDE NOTIFICATION

IF AN EROSION AND SEDIMENT CONTROL PERMIT IS ISSUED FOR THIS PROJECT, THE CONTRACTOR, UPON APPROVAL FROM, SHA MUST NOTIFY MDE IN WRITING AND/OR BY TELEPHONE AT (410) 537-3510 AT THE FOLLOWING POINTS:

- PRE-CONSTRUCTION MEETING
- EROSION AND SEDIMENT CONTROL MEETING (MINIMUM 7 WORKING DAYS PRIOR TO COMMENCING EARTH DISTURBING ACTIVITIES)
- FOLLOWING INSTALLATION OF INITIAL SEDIMENT CONTROL MEASURES
- DURING INSTALLATION OF MAJOR SEDIMENT CONTROL BASINS/TRAPS
- PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S)
- PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES
- PRIOR TO FINAL ACCEPTANCE BY SHA

2. STANDARDS AND SPECIFICATIONS

THIS PLAN IS DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AND THE MARYLAND DEPARTMENT OF ENVIRONMENT EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT REGULATIONS, AND ALL REVISIONS THERE OF, AND AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL KEEP A COPY OF THE 1994 "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" ON THE SITE AT ALL TIMES.

3. INGRESS / EGRESS CONTROLS

THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ON PUBLIC ROADS. ALL MATERIALS DEPOSITED ON PUBLIC ROADS SHALL BE MECHANICALLY REMOVED IMMEDIATELY. THE FLUSHING OF ROAD SURFACES IS PROHIBITED.

TYPICALLY, ALL INGRESS AND EGRESS POINTS SHALL BE CONTROLLED THROUGH THE USE OF A "STABILIZED CONSTRUCTION ENTRANCE."

4. INSPECTION

THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES.

5. SHUTDOWNS AND OR PENALTIES

TOTAL COMPLIANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS EXPECTED AT ALL TIMES. IN CASES WHERE THE CONTRACTOR IS FOUND TO BE IN NON-COMPLIANCE SHA MAY TAKE STEPS TO IMPOSE SELECTED OR TOTAL SHUTDOWNS AND IMPOSE PER DAY PENALTIES FOR NON-COMPLIANCE.

THE DISTRICT ENGINEER CAN IMPOSE A TOTAL OR PARTIAL SHUTDOWN IF THE PROJECT MAY ADVERSELY IMPACT THE WATERS OF THE STATE.

6. RECORD KEEPING

THE PROJECTS' APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, APPROVED CHANGE REQUESTS, DAILY LOG BOOKS AND TEST REPORTS WILL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MDE.

7. EROSION AND SEDIMENT CONTROL EXCAVATION

SILT REMOVED FROM CONTROL DEVICES SHALL BE PLACED IN AN APPROVED WASTE SITE EITHER ON OR OFF THE PROJECT. MATERIAL STORED ON SITE MAY BE REUSED ONCE IT IS DRIED AND IF IT MEETS SHA REQUIREMENTS FOR EMBANKMENT OR ANY UNSPECIFIED NEED.

8. OFF-SITE UTILITY WORK

SEDIMENT CONTROL FOR UTILITY CONSTRUCTION IN AREAS OUTSIDE OF DESIGNED CONTROLS SHALL FOLLOW THESE ADDITIONAL BEST MANAGEMENT PRACTICES:

- (a) CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK
- (b) EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
- (c) TRENCHES FOR UTILITY INSTALLATIONS SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. WHEN THIS IS NOT POSSIBLE, THE AREA SHALL CONFORM TO (d).
- (d) TEMPORARY SILT FENCES SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

9. SENSITIVE AREAS

NO CONSTRUCTION ACTIVITIES SHALL BE UNDERTAKEN WITHIN SPECIFIED SENSITIVE AREAS OF THE PROJECT WITHOUT PRIOR NOTIFICATION OF THE ENGINEER. ALL WORK IN THESE AREAS SHALL BE MONITORED BY A RESPONSIBLE PARTY DESIGNATED BY THE CONTRACTOR TO ASSURE THAT REASONABLE CARE IS TAKEN IN OR ADJACENT TO THESE AREAS. AREAS CONSIDERED SENSITIVE ARE DEFINED AS: FLOODPLAINS, WETLANDS (TIDAL, NONTIDAL AND ASSOCIATED BUFFERS) CRITICAL AREAS, FORESTED AREAS, ARCHEOLOGICAL SITES, HISTORIC SITES, PARKLAND AND OPEN WATER.

10. STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND FOURTEEN (14) DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

11. SITE INFORMATION (NOT FOR BIDDING PURPOSES)

TOTAL AREA OF SITE 2.77 ACRES
 AREA DISTURBED 2.36 ACRES
 AREA TO BE ROOFED _____
 OR PAVED 0.18 ACRES
 TOTAL CUT 3292 CU. YDS.
 TOTAL FILL 5708 CU. YDS.
 OFFSITE WASTE/BORROW _____
 AREA LOCATION (IF KNOWN) N/A ACRES

12. INCREMENTAL STABILIZATION

REFER TO THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR THE INCREMENTAL STABILIZATION OF CUT AND FILLS.

13. DEWATERING PRACTICES

THE CONTRACTOR IS ALERTED THAT MDE CONSIDERS DEWATERING PRACTICES TO BE ELECTIVE IN NATURE. DEWATERING PRACTICES ARE TO BE LOCATED AND OPERATED IN A MANNER THAT DOES NOT DISCHARGE SEDIMENT INTO ANY WATERWAY. NO VISIBLE CHANGES TO STREAM CLARITY ARE PERMITTED.

14. MODIFICATIONS

THE CONTRACTOR SHALL SUBMIT MODIFICATIONS TO THE EROSION AND SEDIMENT CONTROLS TO SHA FOR APPROVAL PRIOR TO SUBMISSION TO MDE. NO MODIFICATIONS SHALL BE IMPLEMENTED UNTIL ALL APPROVALS ARE OBTAINED.

STANDARD SYMBOLS

EARTH DIKE	
TEMPORARY SWALE	
PERIMETER DIKE/SWALE	
STONE CHECK DAM	
STONE OUTLET STRUCTURE	
SILT FENCE	
SUPER SILT FENCE	
STRAW BALES	
STANDARD INLET PROTECTION	
AT GRADE INLET PROTECTION	
CURB INLET PROTECTION	
MEDIAN INLET PROTECTION	
GABION INFLOW PROTECTION	
RIPRAP INFLOW PROTECTION	
SUMP PIT	<input checked="" type="checkbox"/> SP
REMOVABLE PUMPING STATION	<input checked="" type="checkbox"/> RPS
PORTABLE SEDIMENT TANK	<input checked="" type="checkbox"/> PST
INTERCEPTOR BERM	
TEMPORARY BERM	
PIPE SLOPE DRAIN	
STABILIZED CONSTRUCTION ENTRANCE	
SOIL STABILIZATION MATTING	
PLACED RIPRAP DITCH	
GABIONS	
CONCRETE GUTTER	
STONE OUTLET SEDIMENT TRAP	
RIPRAP OUTLET SEDIMENT TRAP	
STONE/RIPRAP OUTLET SEDIMENT TRAP	
PIPE OUTLET SEDIMENT TRAP	
LIMIT OF DISTURBANCE	LOD
EXISTING CONTOURS	100
PROPOSED CONTOURS	100

Professional Certification, hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 17156, Expiration Date February 8, 2008.



DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT REGULATIONS.

MUKHTAR AHMAD
 NAME SIGNATURE
 17156 JANUARY 4, 2007
 MARYLAND REGISTRATION NO. DATE
 P.E., R.L.S. OR R.L.A. (CIRCLE)

STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

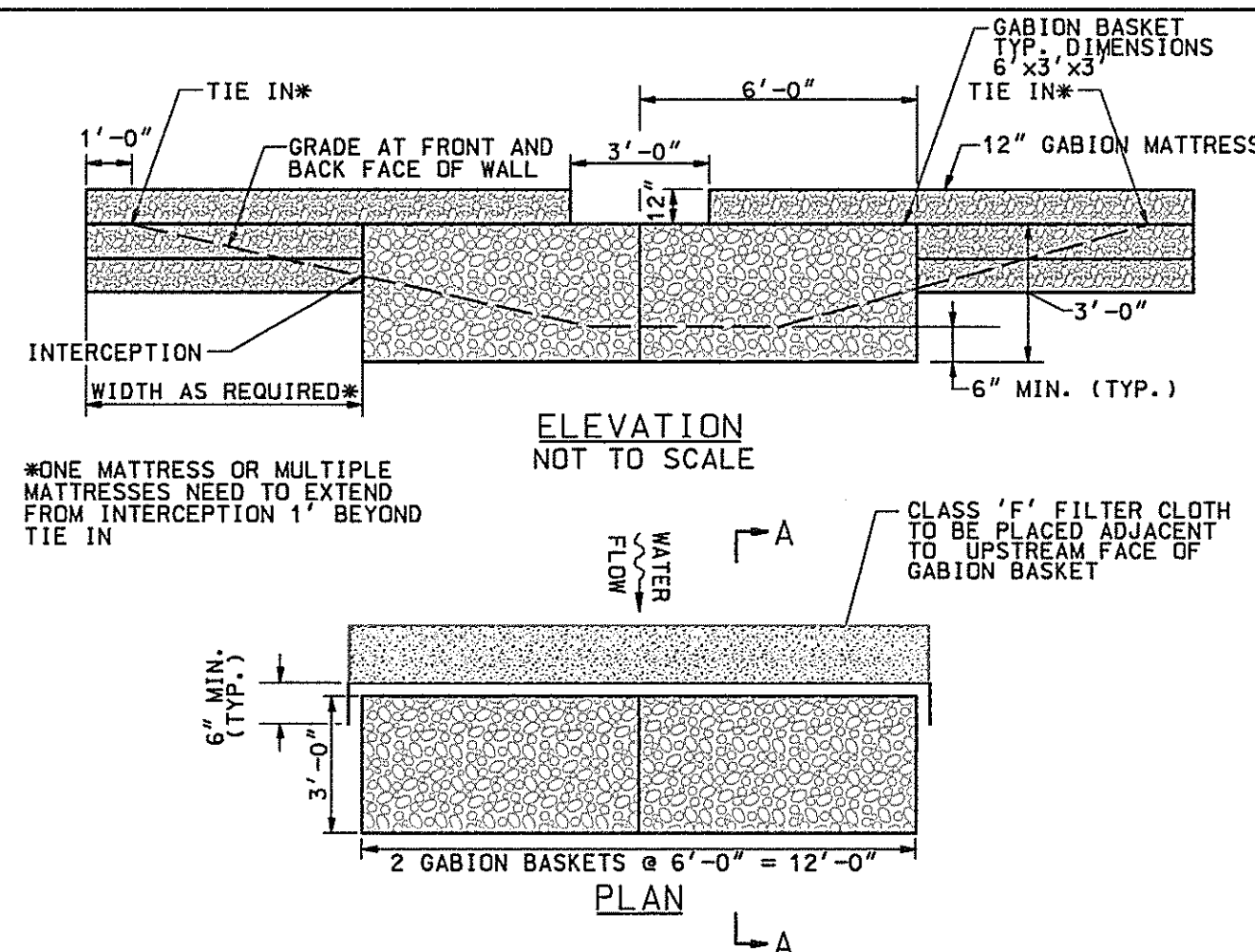
CROSS REFERENCE	APPROVALS	REVISIONS	EROSION AND SEDIMENT CONTROL GENERAL NOTES
ITEM SHEET NOS.	TEAM LEADER	1 REDLINE NO.1 4/9/08	SCALE As Shown DATE Dec. 2007 CONTRACT NO. AX4695180
TYPICAL SHEETS	ASST. DIV. CHIEF		DESIGNED BY M.A. COUNTY ANNE ARUNDEL
SUPERELEVATION SHEETS	DIVISION CHIEF		DRAWN BY P.S.C. LOGMILE
PIPE & DRAINAGE SCHEDULE	OFFICE DIRECTOR		CHECKED BY V.V.S. HORIZONTAL SCALE
GEOMETRIC LAYOUT SHEETS			F.A.P. NO. VERTICAL SCALE
ROADWAY PLAN SHEETS			DRAWING NO. ED-1 OF 2 SHEET NO. 14 OF 66
ROADWAY PROFILE SHEETS			
TRAFFIC CONTROL SHEETS			
EROSION & SEDIMENT CONTROL			
SIGNING & MARKING PLANS			
LANDSCAPE PLAN SHEETS			
UTILITIES			

PLOTTED: \$DATE\$
 FILE: \$FILE\$

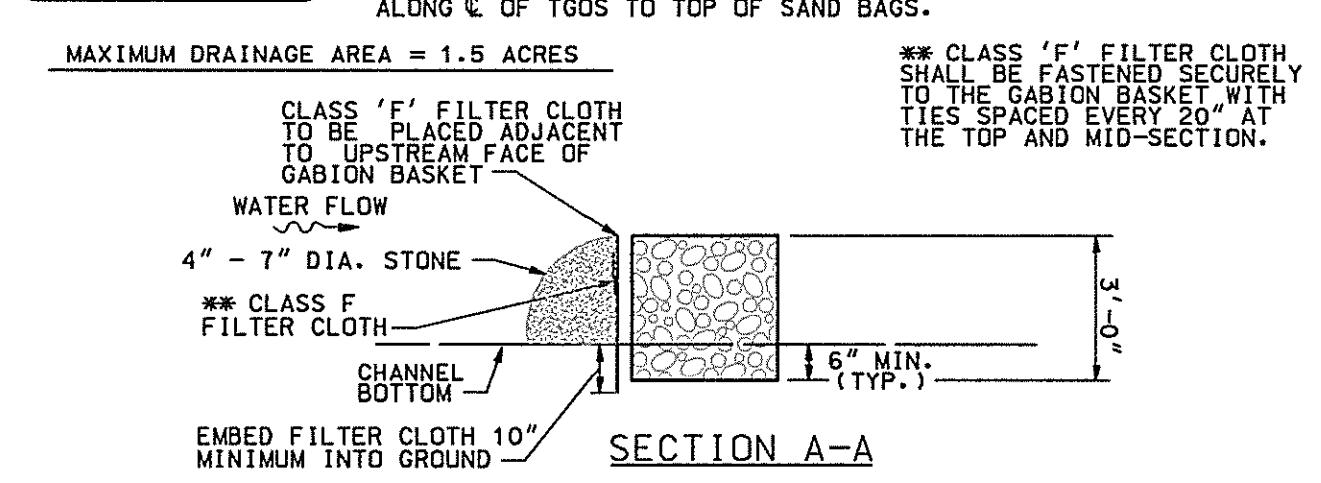
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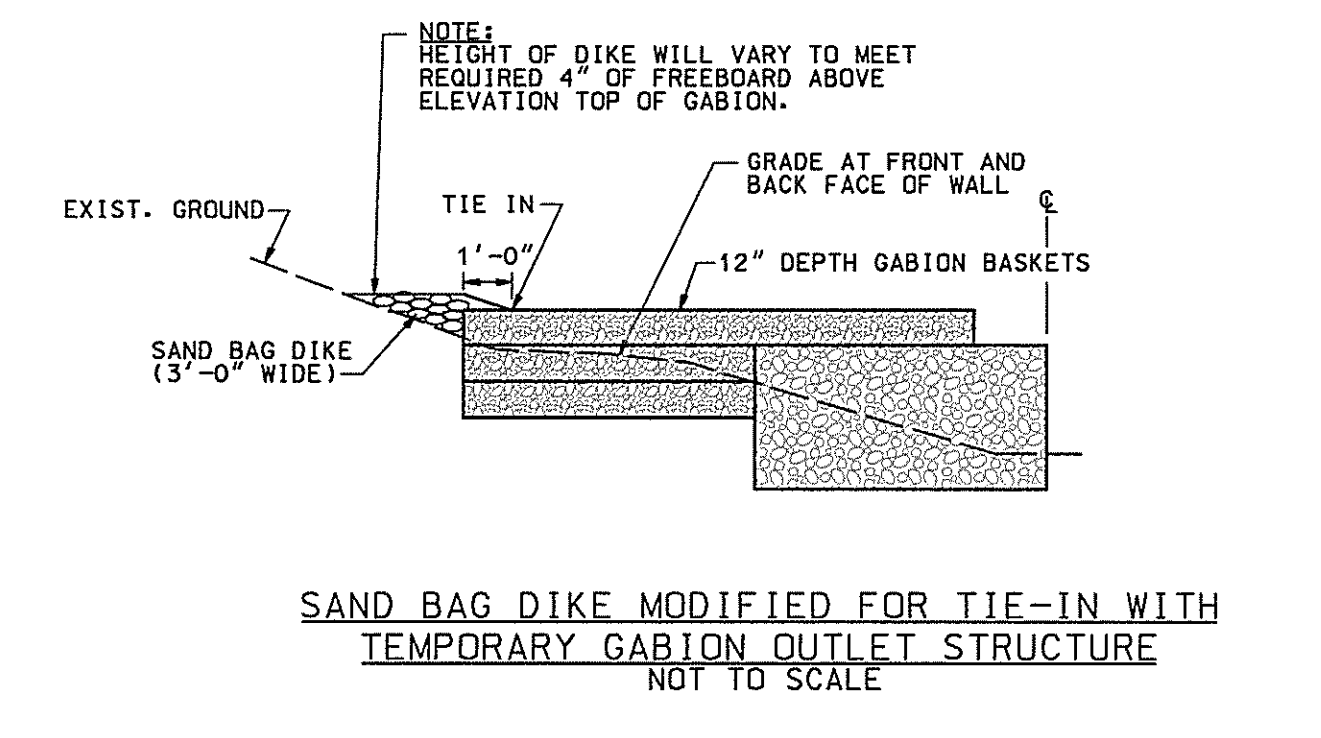
TEMPORARY GABION OUTLET STRUCTURE DETAIL



NOTES:
 1. GABIONS TO BE CONSTRUCTED UNDER SECTION 313 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS" MD SHA JANUARY, 2001.
 2. A MINIMUM HEIGHT OF 46" SHALL BE PROVIDED FOR CONNECTING SAND BAG DIKES AS MEASURED FROM EX. CHANNEL BOTTOM ALONG & OF TGDs TO TOP OF SAND BAGS.

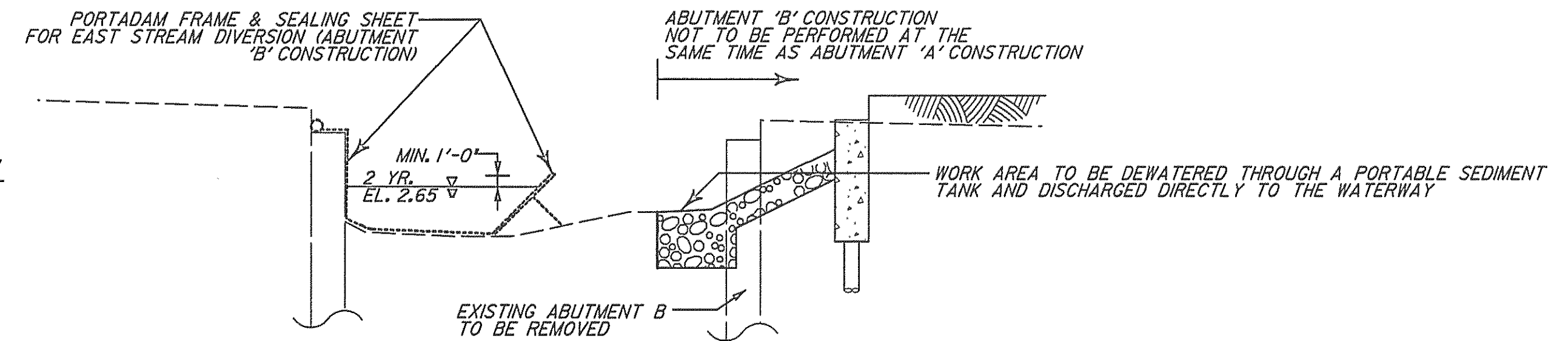


TEMPORARY GABION OUTLET STRUCTURE
NOT TO SCALE

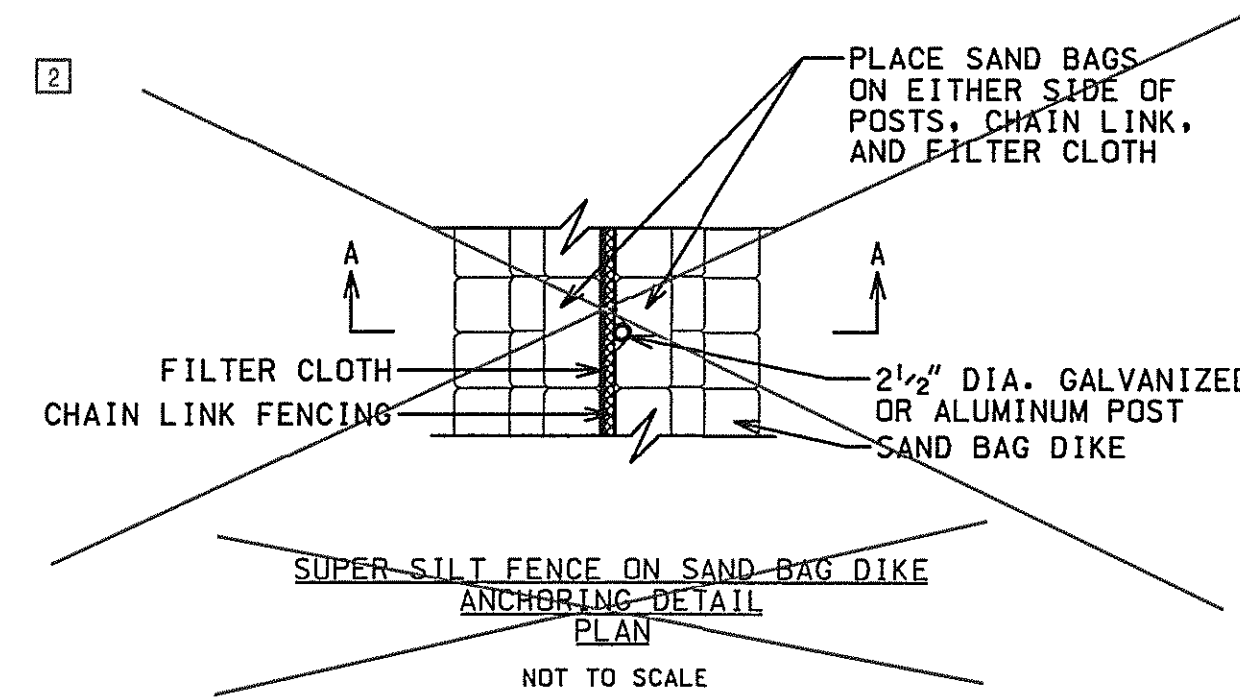
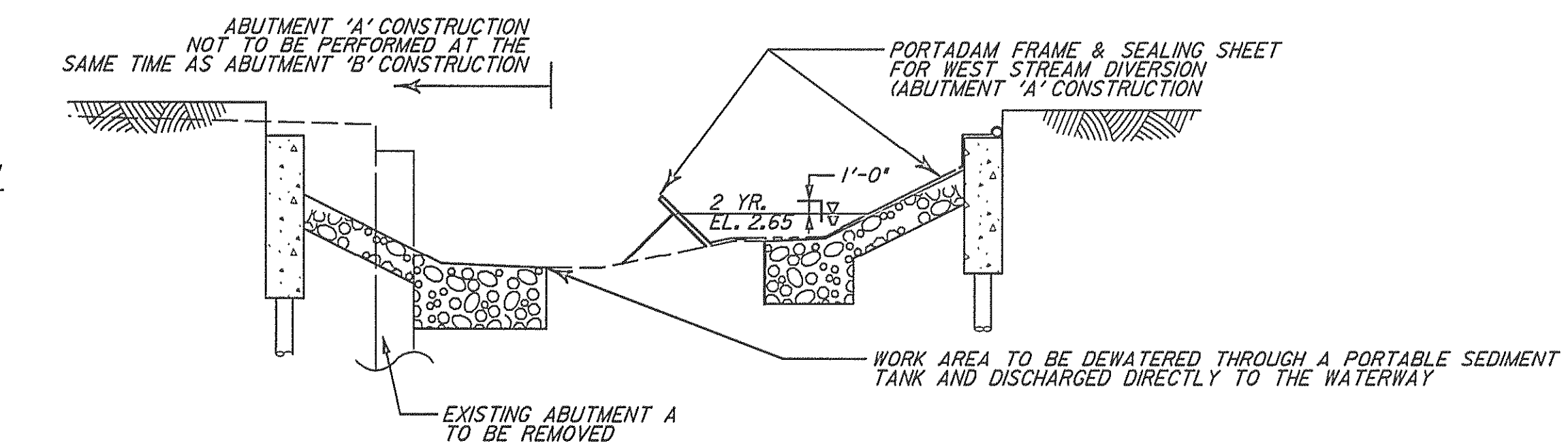


SAND BAG DIKE MODIFIED FOR TIE-IN WITH TEMPORARY GABION OUTLET STRUCTURE
NOT TO SCALE

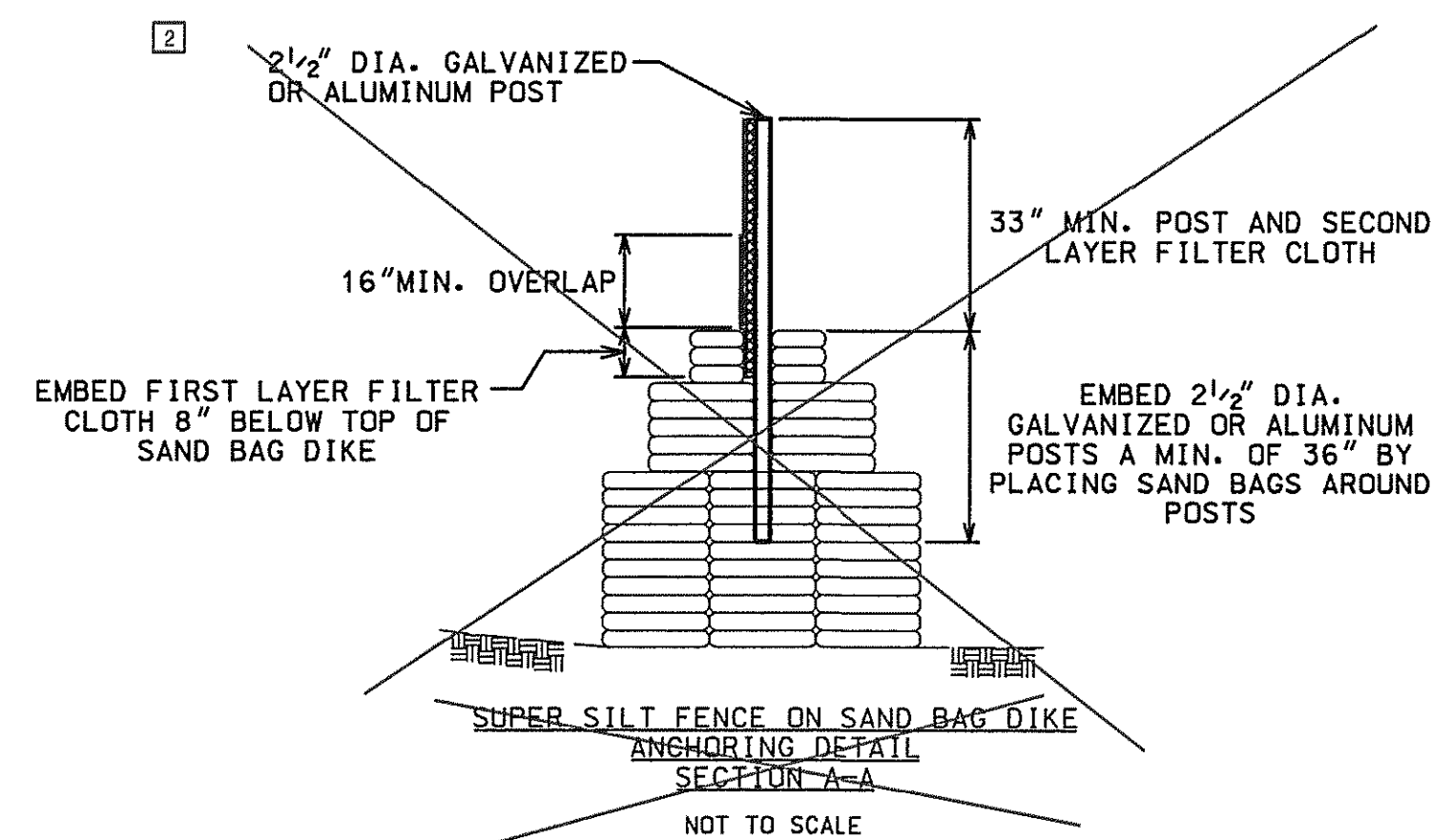
EAST STREAM DIVERSION SECTION A-A
SCALE: 1" = 10'



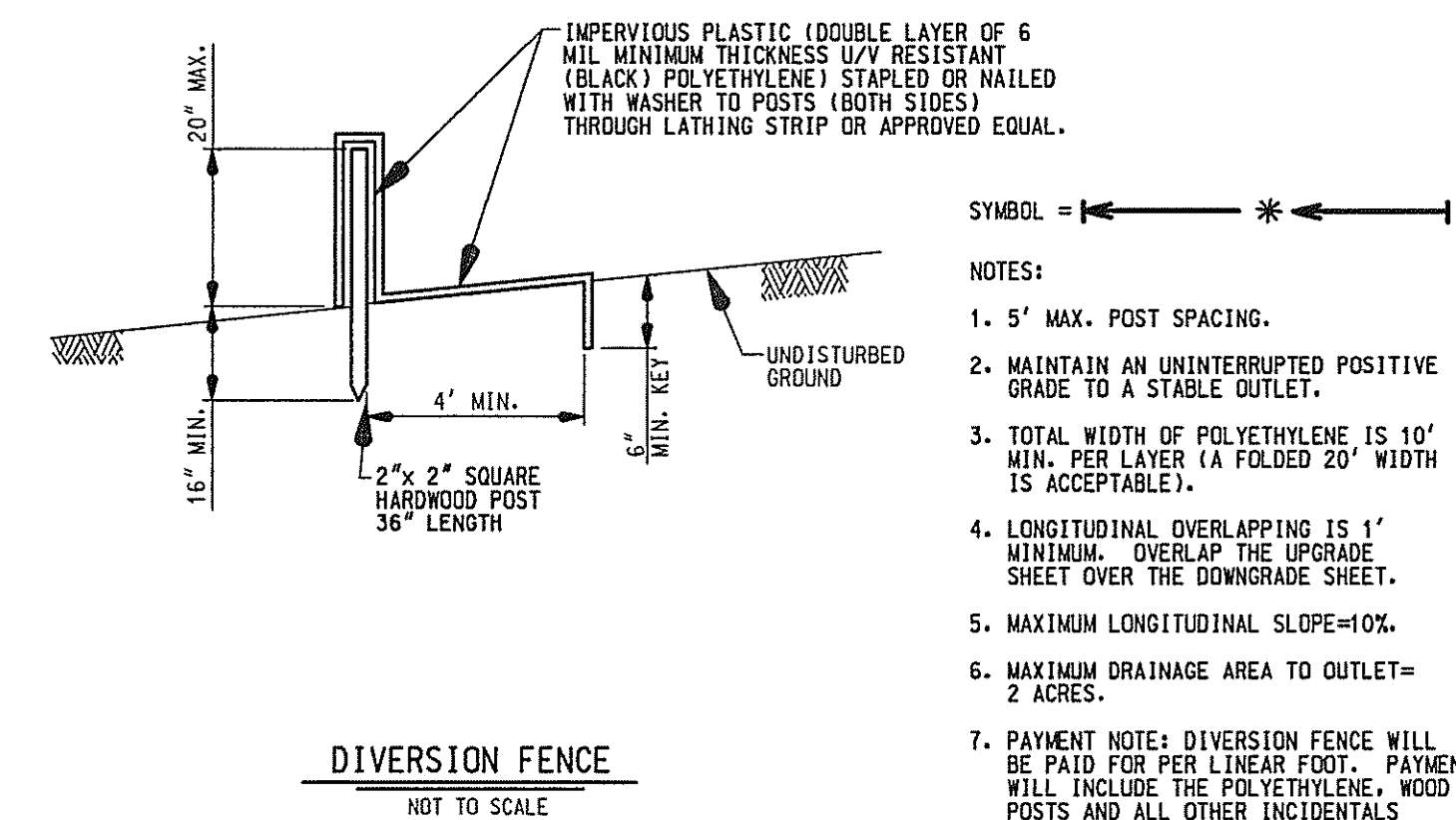
WEST STREAM DIVERSION SECTION A-A
SCALE: 1" = 10'



SUPER SILT FENCE ON SAND BAG DIKE ANCHORING DETAIL
NOT TO SCALE



SUPER SILT FENCE ON SAND BAG DIKE ANCHORING DETAIL SECTION A-A
NOT TO SCALE



DIVERSION FENCE
NOT TO SCALE

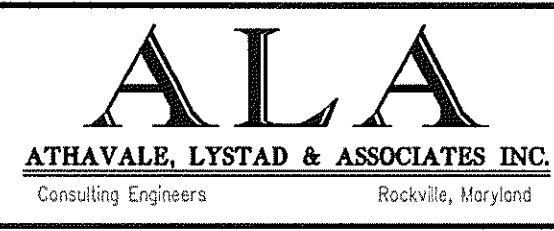
- SYMBOL = *
 NOTES:
 1. 5' MAX. POST SPACING.
 2. MAINTAIN AN UNINTERRUPTED POSITIVE GRADE TO A STABLE OUTLET.
 3. TOTAL WIDTH OF POLYETHYLENE IS 10' MIN. PER LAYER (A FOLDED 20' WIDTH IS ACCEPTABLE).
 4. LONGITUDINAL OVERLAPPING IS 1' MINIMUM. OVERLAP THE UPGRADE SHEET OVER THE DOWNGRADE SHEET.
 5. MAXIMUM LONGITUDINAL SLOPE=10%.
 6. MAXIMUM DRAINAGE AREA TO OUTLET= 2 ACRES.
 7. PAYMENT NOTE: DIVERSION FENCE WILL BE PAID FOR PER LINEAR FOOT. PAYMENT WILL INCLUDE THE POLYETHYLENE, WOOD POSTS AND ALL OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK.

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION
 PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

EROSION AND SEDIMENT CONTROL GENERAL DETAILS		
SCALE	As Shown	DATE Dec. 2007 CONTRACT NO. AX4695180
DESIGNED BY	M.A.	COUNTY ANNE ARUNDEL
DRAWN BY	P.S.C.	LOGMILE
CHECKED BY	V.V.S.	HORIZONTAL SCALE
F.A.P. NO.		VERTICAL SCALE
DRAWING NO.	ED-2 OF 2	SHEET NO. 15 OF 66

CROSS REFERENCE	APPROVALS	REVISIONS
ITEM SHEET NOS.	TEAM LEADER	[2] REDLINE NO. 2 6/26/08
TYPICAL SHEETS	ASST. DIV. CHIEF	
SUPERELEVATION SHEETS	DIVISION CHIEF	
PIPE & DRAINAGE SCHEDULE	OFFICE DIRECTOR	
GEOMETRIC LAYOUT SHEETS		
ROADWAY PLAN SHEETS		
ROADWAY PROFILE SHEETS		
TRAFFIC CONTROL SHEETS		
EROSION & SEDIMENT CONTROL		
SIGNING & MARKING PLANS		
LANDSCAPE PLAN SHEETS		
UTILITIES		

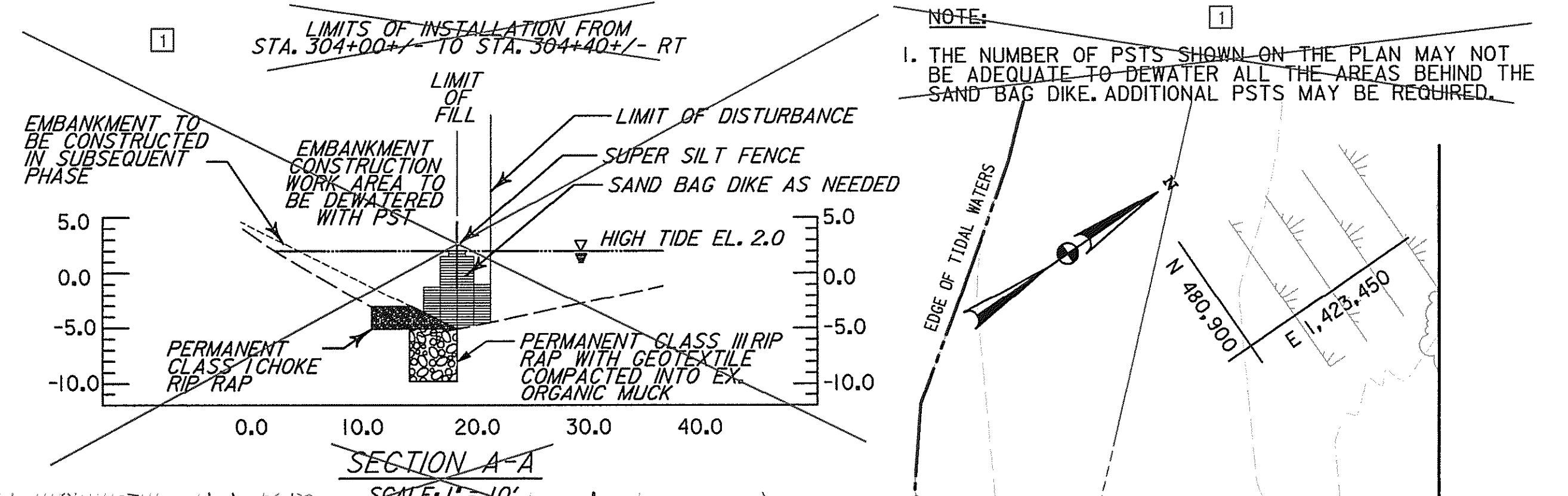
BY: \$USERNAME\$



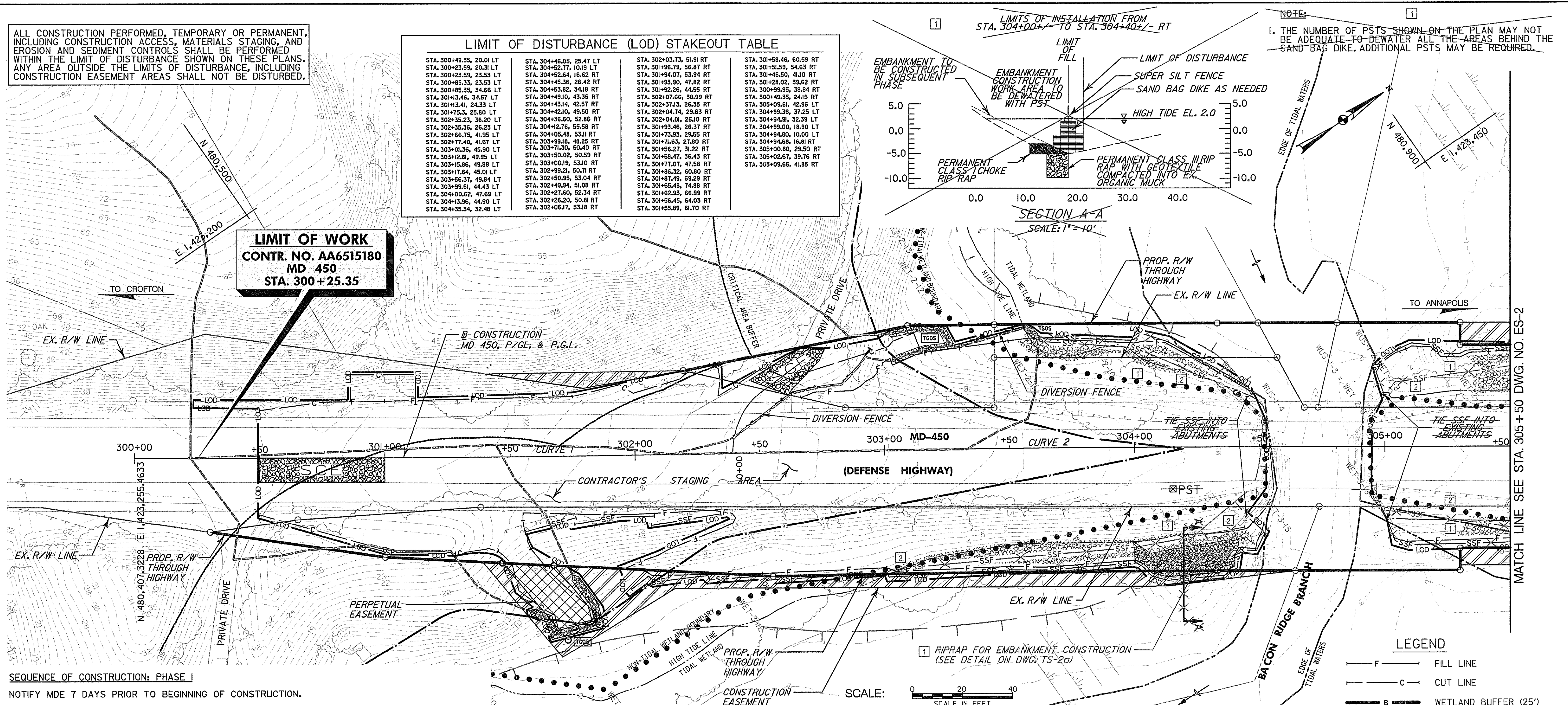
ALL CONSTRUCTION PERFORMED, TEMPORARY OR PERMANENT, INCLUDING CONSTRUCTION ACCESS, MATERIALS STAGING, AND EROSION AND SEDIMENT CONTROLS SHALL BE PERFORMED WITHIN THE LIMIT OF DISTURBANCE SHOWN ON THESE PLANS. ANY AREA OUTSIDE THE LIMITS OF DISTURBANCE, INCLUDING CONSTRUCTION EASEMENT AREAS SHALL NOT BE DISTURBED.

LIMIT OF DISTURBANCE (LOD) STAKEOUT TABLE			
STA. 300+48.35, 20.01 LT	STA. 304+46.05, 25.47 LT	STA. 302+03.73, 51.91 RT	STA. 301+58.46, 60.59 RT
STA. 300+23.59, 20.31 LT	STA. 304+52.77, 10.19 LT	STA. 301+96.79, 56.87 RT	STA. 301+51.59, 54.63 RT
STA. 300+23.59, 23.53 LT	STA. 304+52.64, 16.62 RT	STA. 301+94.07, 53.94 RT	STA. 301+46.50, 41.0 RT
STA. 300+85.33, 23.53 LT	STA. 304+45.56, 25.42 RT	STA. 301+93.50, 47.62 RT	STA. 301+28.02, 39.62 RT
STA. 300+85.35, 34.65 LT	STA. 304+53.60, 34.18 RT	STA. 301+92.26, 44.55 RT	STA. 300+99.85, 39.84 RT
STA. 301+13.41, 34.57 LT	STA. 304+49.10, 43.35 RT	STA. 302+07.66, 38.99 RT	STA. 300+49.35, 24.15 RT
STA. 301+13.41, 24.33 LT	STA. 304+43.14, 42.57 RT	STA. 302+37.13, 26.35 RT	STA. 305+09.61, 42.96 LT
STA. 301+75.3, 25.80 LT	STA. 304+42.10, 49.50 RT	STA. 302+04.74, 29.63 RT	STA. 304+99.36, 37.25 LT
STA. 302+35.23, 36.20 LT	STA. 304+36.60, 52.86 RT	STA. 302+04.01, 26.10 RT	STA. 304+94.91, 32.39 LT
STA. 302+35.36, 26.23 LT	STA. 304+12.76, 55.58 RT	STA. 301+93.46, 26.37 RT	STA. 304+99.00, 18.90 LT
STA. 302+66.75, 41.55 LT	STA. 304+05.48, 53.11 RT	STA. 301+73.93, 29.55 RT	STA. 304+94.80, 10.00 LT
STA. 302+77.40, 41.67 LT	STA. 303+99.18, 48.25 RT	STA. 301+71.63, 27.80 RT	STA. 304+94.68, 16.81 RT
STA. 303+01.35, 45.90 LT	STA. 303+71.30, 50.40 RT	STA. 301+56.27, 31.22 RT	STA. 305+00.80, 29.50 RT
STA. 303+12.81, 49.95 LT	STA. 303+50.02, 50.59 RT	STA. 301+58.47, 35.43 RT	STA. 305+02.67, 39.76 RT
STA. 303+15.86, 49.88 LT	STA. 303+00.19, 53.10 RT	STA. 301+77.07, 47.56 RT	STA. 305+09.66, 41.85 RT
STA. 303+17.64, 45.01 LT	STA. 302+99.21, 50.71 RT	STA. 301+86.32, 60.80 RT	
STA. 303+56.37, 49.84 LT	STA. 302+50.95, 53.04 RT	STA. 301+87.49, 69.29 RT	
STA. 303+99.61, 44.43 LT	STA. 302+49.94, 51.08 RT	STA. 301+85.46, 74.68 RT	
STA. 304+00.62, 47.69 LT	STA. 302+27.60, 52.34 RT	STA. 301+62.93, 66.99 RT	
STA. 304+13.96, 44.90 LT	STA. 302+26.20, 50.81 RT	STA. 301+56.45, 64.03 RT	
STA. 304+35.34, 32.48 LT	STA. 302+06.17, 53.18 RT	STA. 301+55.89, 61.70 RT	

LIMIT OF WORK
CONTR. NO. AA6515180
MD 450
STA. 300+25.35



NOTE:
1. THE NUMBER OF PSTS SHOWN ON THE PLAN MAY NOT BE ADEQUATE TO DEWATER ALL THE AREAS BEHIND THE SAND BAG DIKE. ADDITIONAL PSTS MAY BE REQUIRED.



SEQUENCE OF CONSTRUCTION: PHASE I

- NOTIFY MDE 7 DAYS PRIOR TO BEGINNING OF CONSTRUCTION.
- INSTALL TRAFFIC CONTROL DEVICES AS PER THE DETOUR PLAN AND CLOSE THE ROAD. KEEP ALL ENTRANCES OPEN TO LOCAL TRAFFIC.
- INSTALL ALL PERIMETER EROSION AND SEDIMENT CONTROL DEVICES; DEVICES INCLUDE STABILIZED CONSTRUCTION ENTRANCES (SCES); TEMPORARY 15' RCCP FOR CLEARWATER DIVERSION WITH STABILIZED RIPRAP OUTFALL; TEMPORARY GABION OUTLET STRUCTURES (TGOS) WITH TIE-IN SAND BAG DIKES (WHERE INDICATED ON THE PLAN); SILT FENCE (SF); SUPER SILT FENCE (SSF) WITH SAND BAG DIKE BASE AS NEEDED TO PROVIDE A MINIMUM 6" OF FREEBOARD ABOVE HIGH TIDE WATERS AT ELEV. 2.0 (SEE SECTIONS A-A AND B-B ON DWG. NO. ES-2); PERMANENT CLASS III RIPRAP, GEOTEXTILE, AND CLASS I CHOKE RIP RAP (SEE DWG. NO. TS-1 FOR TYPICAL SLOPE CONSTRUCTION OF EMBANKMENT IN WETLANDS) AS SHOWN IN SECTION A-A ON THIS SHEET; PORTABLE SEDIMENT TANKS (PST); DIVERSION FENCE; AND TEMPORARY STONE OUTLET STRUCTURE (TSOS). REMOVAL OF PAVEMENT IS REQUIRED FOR THE INSTALLATION OF SCES AND DIVERSION FENCE. REMOVAL OF PAVEMENT FOR THESE ITEMS SHALL BE LIMITED ONLY TO THE AREAS NECESSARY FOR INSTALLATION OF THESE ITEMS. CONTRACTOR TO UTILIZE A 3 DAY DRY WEATHER FORECAST PRIOR TO INSTALLING THE TEMPORARY 15' RCCP CLEARWATER DIVERSION.
- INSTALL STORM DRAIN SYSTEM I-4 TO EW-3 AND INSTALL STANDARD INLET PROTECTION AROUND I-4.
- CONTRACTOR TO UTILIZE EXISTING APPROACH ROADWAYS AND CLEARINGS FOR EQUIPMENT AND MATERIAL STAGING AND STORAGE.
- ALL WORK NECESSARY IN THE INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE AS SHOWN ON THE PLANS.
- DISTURBED AREAS RESULTING FROM THE REMOVAL OF ROADWAY PAVEMENT MATERIALS FROM STA. 304+00 TO 304+50 IN SUBSEQUENT PHASE SHALL BE STABILIZED SAME DAY.

DIVERSION FENCE	
STA. 302+39.74, 6.72' LT TO STA. 302+94.98, 41.12' LT	68 LF
STA. 303+28.59, 41.99' LT TO STA. 303+56.11, 48.99' LT	29 LF

STABILIZED CONSTRUCTION ENTRANCE (SCE)	
STA. 300+75.00 RT	20.67 TONS
STA. 302+63 LT	20.67 TONS

CLASS I RIPRAP (FOR EMBANKMENT)	
STA. 304+00 TO STA. 304+41 RT	36 TONS

SUPER SILT FENCE (SSF)	
STA. 301+55.91 TO STA. 302+33.71 RT	81 LF
STA. 301+97.67 TO STA. 304+44.74 RT	284 LF
STA. 303+56.59 TO STA. 304+45.07 LT	103 LF
STA. 305+00.80 TO STA. 305+50.00 RT	55 LF
STA. 304+99.84 TO STA. 305+50.00 LT	71 LF

CLASS III RIPRAP (TO DISPLACE ORGANIC MUCK)	
STA. 304+00 TO STA. 304+41 RT	85 TONS

PORTABLE SEDIMENT TANK (PST)	
STA. 304+15 RT	1 EA

TEMPORARY GABION OUTLET STRUCTURE (TGOS)	
STA. 301+74.06, 64.97' RT	1 EA (MAX DRAINAGE AREA = 1.15 ac)
STA. 303+16.00, 43.82' RT	1 EA (MAX DRAINAGE AREA = 1.37 ac)

TEMPORARY STONE OUTLET STRUCTURE (TSOS)	
STA. 303+59.05, 46.97' LT	10.0 TONS (MAX. DRAINAGE AREA = 0.05 ac)

SILT FENCE (SF)	
STA. 300+89.91, 35.79' RT TO STA. 301+27.88, 38.65' RT	39 LF

LEGEND

- F FILL LINE
- C CUT LINE
- B WETLAND BUFFER (25')
- DRAINAGE AREA BOUNDARY
- WET-3-2 WETLAND BOUNDARY
- - - DITCH
- STONE RIP RAP

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

EROSION AND SEDIMENT CONTROL PLAN - PHASE I

SCALE As Shown	DATE Dec. 2007	CONTRACT NO. Ax4695180
DESIGNED BY M.A.	COUNTY ANNE ARUNDEL	
DRAWN BY P.S.C.	LOGMILE	
CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=20'	
F.A.P. NO.	VERTICAL SCALE	
DRAWING NO. ES-1	OF 6	SHEET NO. 16 OF 66

APPROVALS	REVISIONS
TEAM LEADER	1 REDLINE NO. 1 4/9/08
ASST. DIV. CHIEF	2 REDLINE NO. 2 6/26/08
DIVISION CHIEF	
OFFICE DIRECTOR	

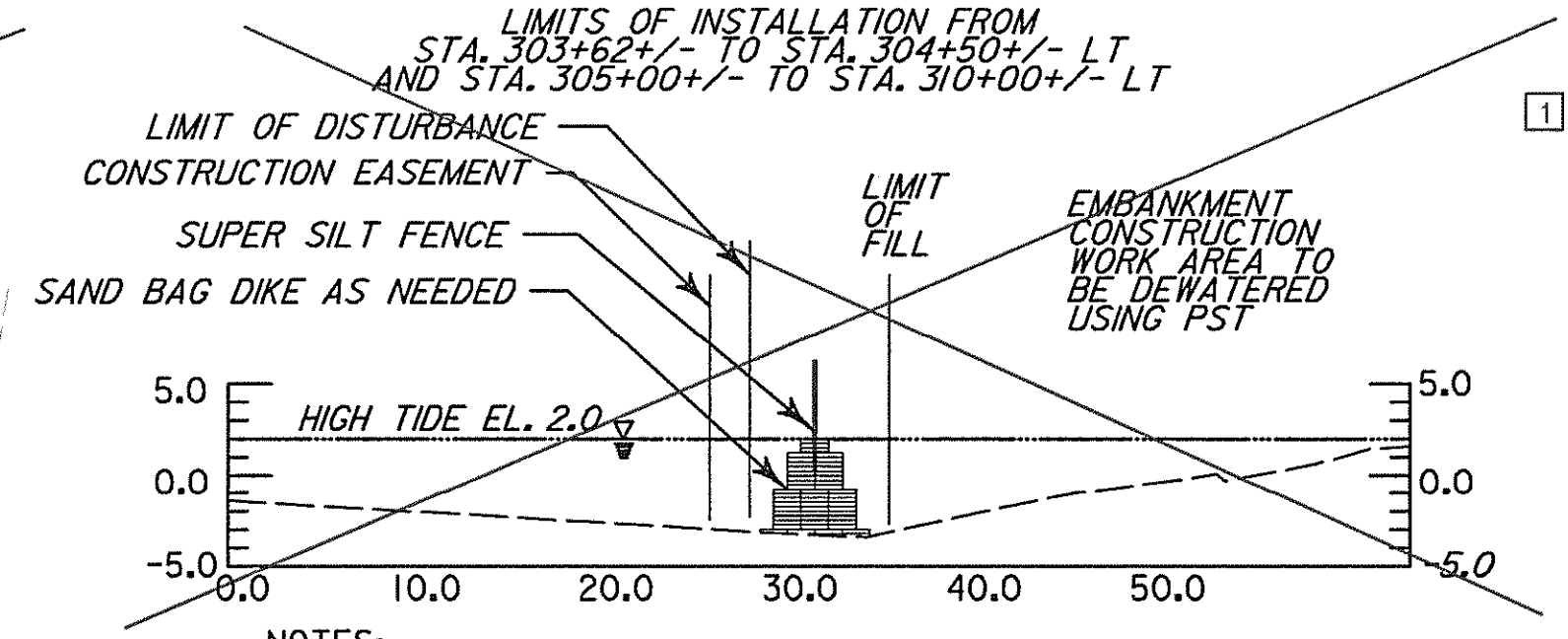
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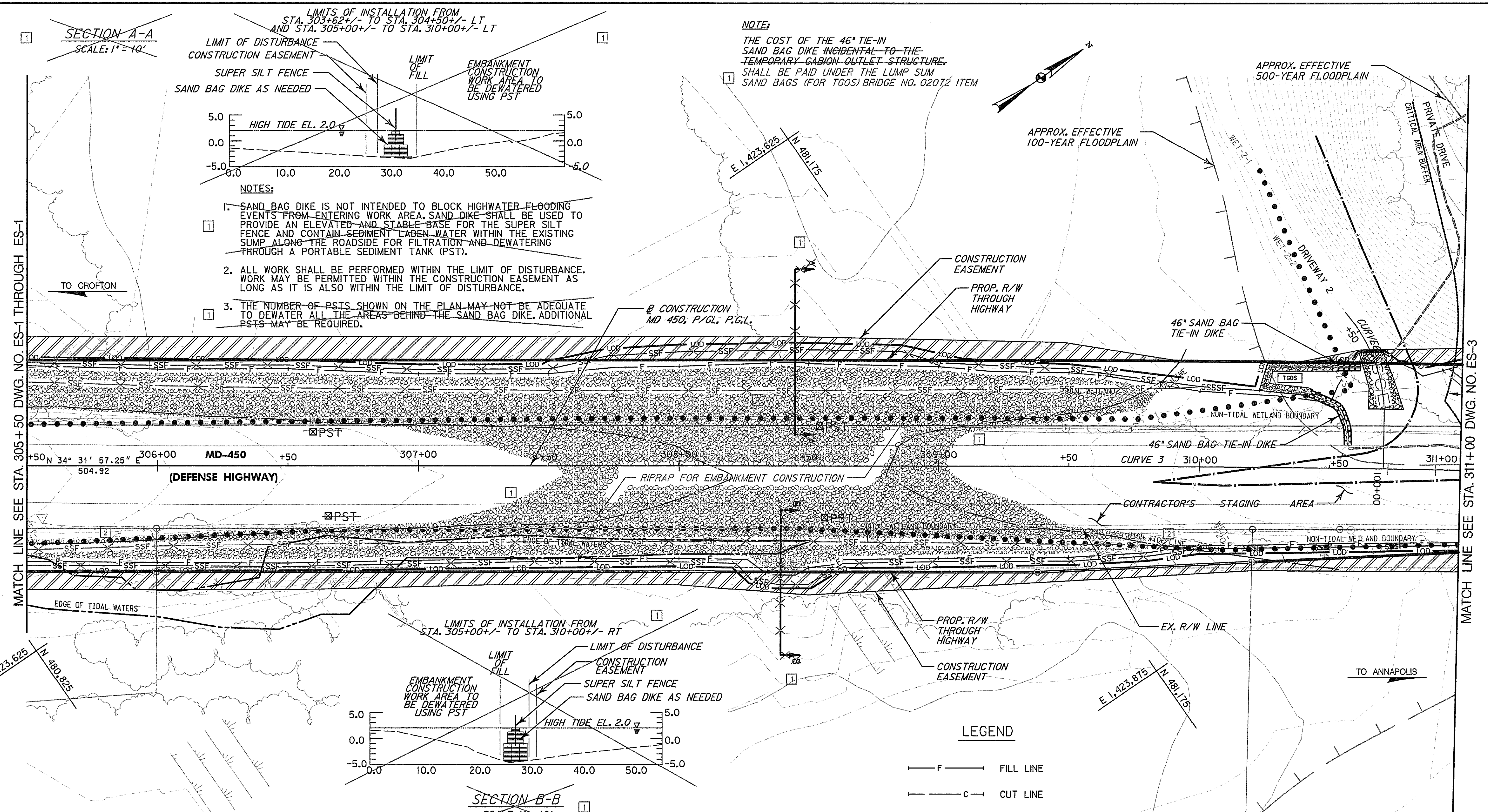
THERE SHALL BE NO IN-STREAM CONSTRUCTION PERMITTED DURING THE PERIOD OF MARCH 1 TO JUNE 15 INCLUSIVE.

SECTION A-A
SCALE: 1"=10'



- NOTES:**
- SAND BAG DIKE IS NOT INTENDED TO BLOCK HIGHWATER FLOODING EVENTS FROM ENTERING WORK AREA. SAND DIKE SHALL BE USED TO PROVIDE AN ELEVATED AND STABLE BASE FOR THE SUPER SILT FENCE AND CONTAIN SEDIMENT LADEN WATER WITHIN THE EXISTING SUMP ALONG THE ROADSIDE FOR FILTRATION AND DEWATERING THROUGH A PORTABLE SEDIMENT TANK (PST).
 - ALL WORK SHALL BE PERFORMED WITHIN THE LIMIT OF DISTURBANCE. WORK MAY BE PERMITTED WITHIN THE CONSTRUCTION EASEMENT AS LONG AS IT IS ALSO WITHIN THE LIMIT OF DISTURBANCE.
 - THE NUMBER OF PSTS SHOWN ON THE PLAN MAY NOT BE ADEQUATE TO DEWATER ALL THE AREAS BEHIND THE SAND BAG DIKE. ADDITIONAL PSTS MAY BE REQUIRED.

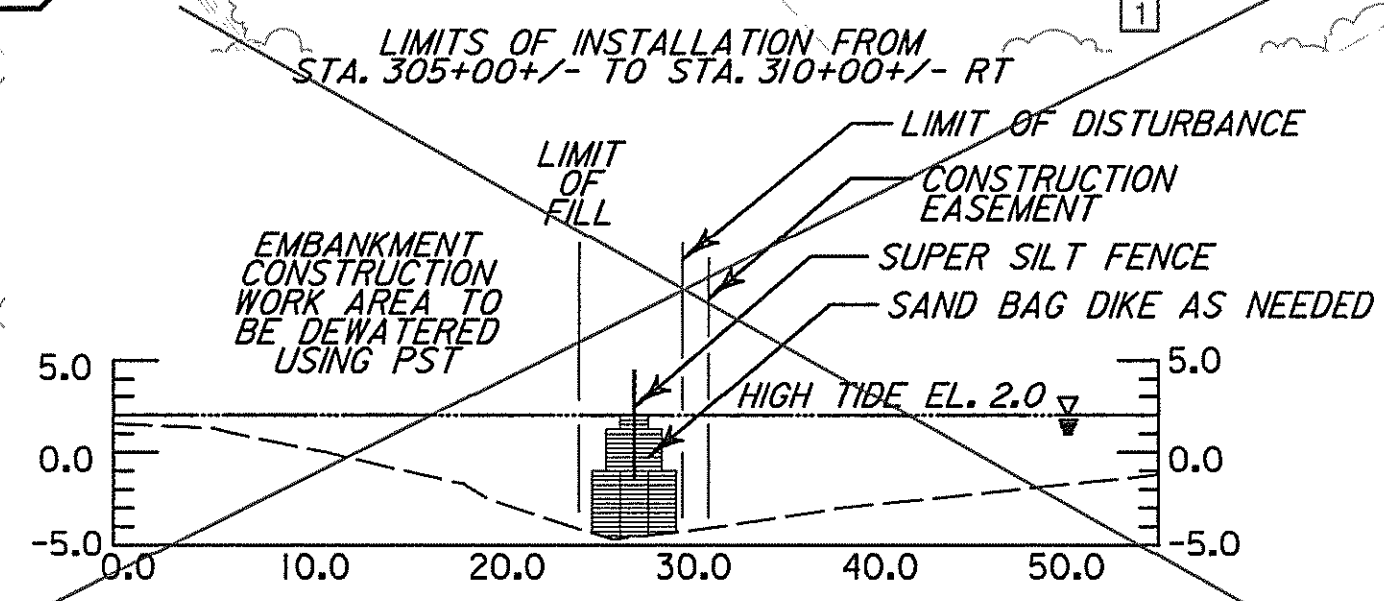
NOTE:
THE COST OF THE 46" TIE-IN SAND BAG DIKE INCIDENTAL TO THE TEMPORARY GABION OUTLET STRUCTURE SHALL BE PAID UNDER THE LUMP SUM SAND BAGS (FOR TGS) BRIDGE NO. 02072 ITEM



MATCH LINE SEE STA. 305+50 DWG. NO. ES-1

MATCH LINE SEE STA. 311+00 DWG. NO. ES-3

SECTION B-B
SCALE: 1"=10'



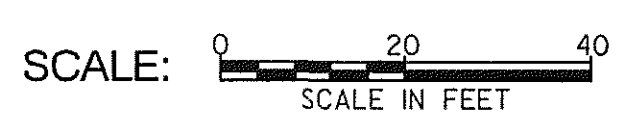
2	STA. 310+07.82	STA. 305+50.00 TO STA. 311+00.00 RT	92 -555 LF
	STA. 309+85.00	STA. 305+50.00 TO STA. 310+23.00 LT	36 -475 LF

TEMPORARY GABION OUTLET STRUCTURE (TGS)	
STA. 310+26 LT	1 EA (MAX. DRAINAGE AREA = 1.51 ac)

STABILIZED CONSTRUCTION ENTRANCE (SCE)	
STA. 310+68.82 LT	20.67 TONS

PORTABLE SEDIMENT TANK (PST)	
STA. 306+61 LT	1 EA
STA. 306+67 RT	1 EA
STA. 308+56 LT	1 EA
STA. 308+57 RT	1 EA

LIMIT OF DISTURBANCE (LOD) STAKEOUT TABLE		
STA. 305+50.00, 42.46 LT	STA. 310+23.84, 40.47 LT	STA. 309+01.44, 39.10 RT
STA. 306+50.55, 41.21 LT	STA. 310+41.55, 41.26 LT	STA. 308+64.58, 39.48 RT
STA. 307+02.21, 39.31 LT	STA. 310+58.24, 42.42 LT	STA. 308+50.84, 47.37 RT
STA. 307+47.30, 39.40 LT	STA. 310+60.09, 45.41 LT	STA. 308+36.65, 47.39 RT
STA. 307+49.49, 40.66 LT	STA. 310+70.43, 45.80 LT	STA. 308+27.13, 45.37 RT
STA. 307+72.27, 45.41 LT	STA. 310+75.80, 42.01 LT	STA. 308+20.87, 39.37 RT
STA. 307+96.89, 46.80 LT	STA. 310+82.13, 41.73 LT	STA. 308+00.83, 38.86 RT
STA. 308+44.85, 47.60 LT	STA. 310+88.27, 42.68 LT	STA. 306+49.97, 40.53 RT
STA. 308+85.77, 46.95 LT	STA. 311+00.00, 35.56 LT	STA. 306+38.85, 40.54 RT
STA. 309+09.81, 41.60 LT	STA. 310+92.14, 41.14 LT	STA. 305+50.48, 40.60 RT
STA. 309+51.95, 39.56 LT	STA. 311+00.00, 31.12 RT	
STA. 310+21.12, 31.31 LT	STA. 309+99.97, 33.79 RT	
	STA. 309+80.71, 36.55 RT	
	STA. 309+53.18, 38.16 RT	



- LEGEND**
- F FILL LINE
 - C CUT LINE
 - B WETLAND BUFFER (25')
 - DITCH
 - STONE RIP RAP
 - WET-3-2 WETLAND BOUNDARY
 - DRAINAGE AREA BOUNDARY

APPROVALS	REVISIONS
TEAM LEADER	1 REDLINE NO. 1 4/9/08
ASST. DIV. CHIEF	2 REDLINE NO. 2 6/26/08
DIVISION CHIEF	
OFFICE DIRECTOR	

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

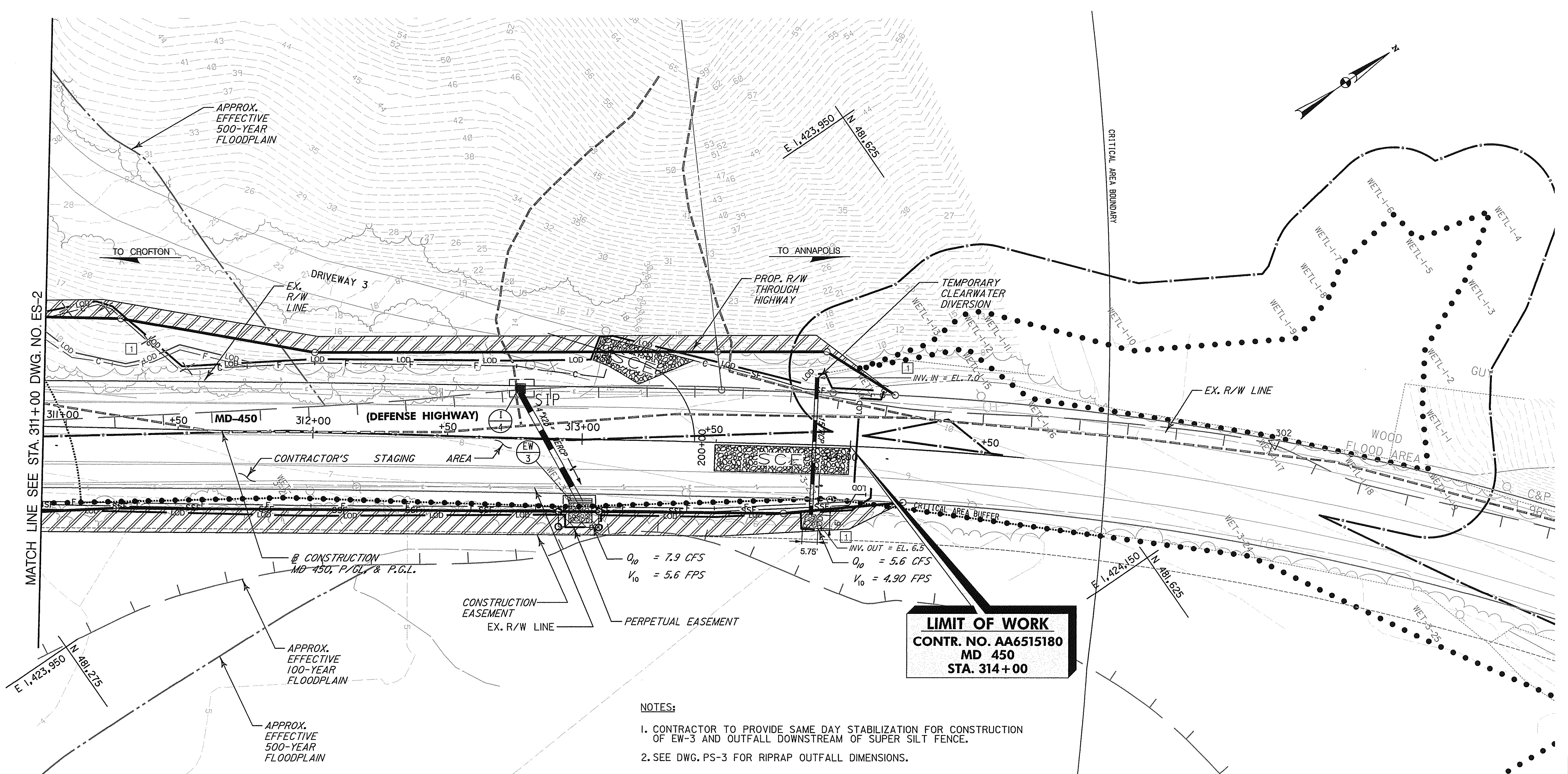
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

EROSION AND SEDIMENT CONTROL PLAN - PHASE I		
SCALE As Shown	DATE Dec. 2007	CONTRACT NO. AX4695180
DESIGNED BY M.A.	COUNTY ANNE ARUNDEL	
DRAWN BY P.S.C.	LOGMILE	
CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=20'	
F.A.P. NO.	VERTICAL SCALE	
DRAWING NO. ES-2	OF 6	SHEET NO. 17 OF 66

BY: \$USERNAME\$



PLOTTED: 8/24/10 10:06 AM
FILE: 02072



LEGEND

- F FILL LINE
- C CUT LINE
- B WETLAND BUFFER (25')
- DITCH
- STONE RIP RAP
- WET-3-2 WETLAND BOUNDARY

SILT FENCE (SF) STA. 313+52.22 TO 314+06.82 LT	56 LF
SUPER SILT FENCE (SSF) STA. 311+00 TO STA. 314+06.63 RT	314 LF
RIPRAP CLASS 1 - 19" DEPTH STA. 313+86.14, 28.82' RT STA. 313+00, 26.76' RT	2.64 SY 6.93 SY
TEMPORARY 15" RCCP (FOR CLEARWATER DIVERSION) STA. 313+86.50 LT TO RT	51.3 LF

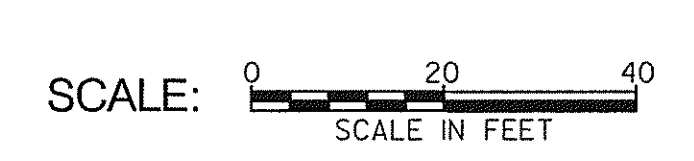
STANDARD INLET PROTECTION (SIP) STA. 312+76.70, 18.35 LT	1 EA (MAX. DRAINAGE AREA = 0.20 ac)
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STABILIZED CONSTRUCTION ENTRANCE (SCE) STA. 313+20.00 RT STA. 313+74.60 RT	20.67 TONS 20.67 TONS
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LIMIT OF DISTURBANCE (LOD) STAKEOUT TABLE		
1 STA. 311+00.00, 35.56 LT STA. 311+03.33, 28.01 LT STA. 311+29.91, 24.23 LT STA. 311+38.21, 26.22 LT STA. 311+49.83, 31.73 LT STA. 311+00.00, 43.07 LT STA. 311+18.32, 47.25 LT STA. 311+24.49, 45.53 LT STA. 311+50.84, 23.78 LT STA. 311+99.85, 27.56 LT STA. 312+74.66, 28.77 LT STA. 313+02.45, 29.79 LT STA. 313+05.57, 38.49 LT STA. 313+10.43, 38.83 LT STA. 313+49.72, 30.10 LT STA. 313+81.01, 23.00 LT	STA. 313+83.53, 26.24 LT STA. 313+89.76, 26.79 LT STA. 313+92.36, 21.51 LT STA. 314+03.77, 21.40 LT STA. 314+11.44, 21.20 LT STA. 314+10.48, 17.98 LT STA. 314+02.71, 18.11 LT STA. 314+02.04, 15.47 RT STA. 314+08.55, 15.58 RT STA. 314+08.50, 19.06 RT STA. 314+01.64, 23.93 RT	STA. 313+89.99, 24.96 RT STA. 313+89.07, 31.65 RT STA. 313+82.68, 31.57 RT STA. 313+82.34, 25.58 RT STA. 313+50.82, 27.94 RT STA. 313+07.73, 28.36 RT STA. 313+07.33, 32.74 RT STA. 312+94.55, 33.18 RT STA. 312+94.44, 28.45 RT STA. 312+00.21, 31.15 RT STA. 311+00.00, 31.12 RT

- NOTES:**
- CONTRACTOR TO PROVIDE SAME DAY STABILIZATION FOR CONSTRUCTION OF EW-3 AND OUTFALL DOWNSTREAM OF SUPER SILT FENCE.
 - SEE DWG. PS-3 FOR RIPRAP OUTFALL DIMENSIONS.

LIMIT OF WORK
CONTR. NO. AA6515180
MD 450
STA. 314+00



BY: \$USERNAME\$

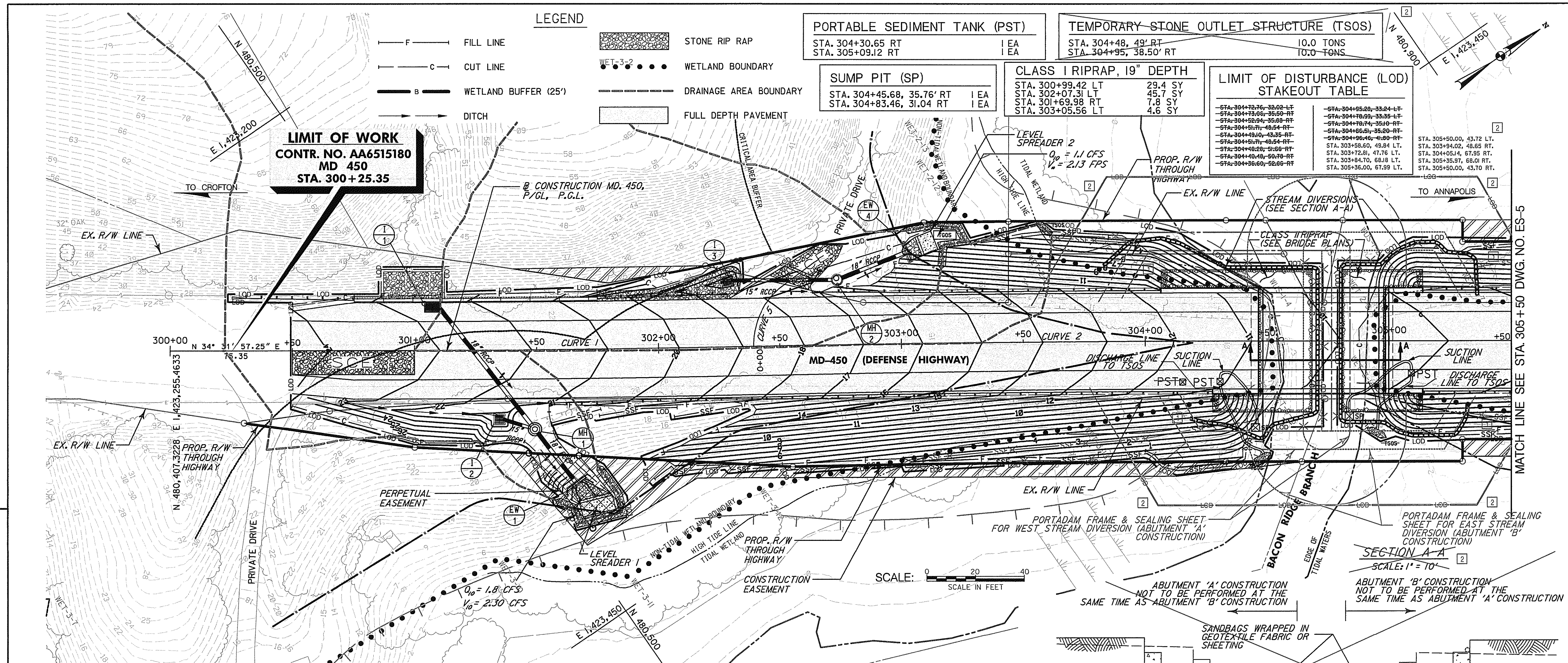


SUA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

APPROVALS		REVISIONS		EROSION AND SEDIMENT CONTROL PLAN - PHASE I	
TEAM LEADER		1 REDLINE NO.1	4/9/08	SCALE As Shown	DATE Dec. 2007
ASST. DIV. CHIEF				CONTRACT NO.	AX4695180
DIVISION CHIEF				DESIGNED BY	M.A. COUNTY ANNE ARUNDEL
OFFICE DIRECTOR				DRAWN BY	P.S.C. LOGMILE
				CHECKED BY	V.V.S. HORIZONTAL SCALE 1"=20'
				F.A.P. NO.	VERTICAL SCALE
				DRAWING NO.	ES-3 OF 6 SHEET NO. 18 OF 66

PLOTTED: \$DATETIME\$
FILE: \$FILE\$



LEGEND

- F — FILL LINE
- C — CUT LINE
- B — WETLAND BUFFER (25')
- DITCH
- STONE RIP RAP
- WET-3-2 WETLAND BOUNDARY
- DRAINAGE AREA BOUNDARY
- FULL DEPTH PAVEMENT

PORTABLE SEDIMENT TANK (PST)
 STA. 304+30.65 RT | EA
 STA. 305+09.12 RT | EA

SUMP PIT (SP)
 STA. 304+45.68, 35.76' RT | EA
 STA. 304+83.46, 31.04 RT | EA

TEMPORARY STONE OUTLET STRUCTURE (TSOS)
 STA. 304+48, 49' RT | EA
 STA. 304+95, 38.50' RT | EA
 10.0 TONS
 10.0 TONS

CLASS I RIPRAP, 19" DEPTH
 STA. 300+99.42 LT 29.4 SY
 STA. 302+07.31 LT 45.7 SY
 STA. 301+69.98 RT 7.8 SY
 STA. 303+05.56 LT 4.6 SY

LIMIT OF DISTURBANCE (LOD) STAKEOUT TABLE

STA. 304+12.76, 33.02' LT	STA. 304+95.20, 33.24' LT	STA. 305+50.00, 43.72' LT
STA. 304+73.06, 35.50' RT	STA. 304+76.99, 35.25' LT	STA. 303+54.02, 48.85' RT
STA. 304+52.04, 35.88' RT	STA. 304+76.74, 35.10' RT	STA. 304+52.14, 47.55' RT
STA. 304+51.71, 46.54' RT	STA. 304+86.51, 35.20' RT	STA. 304+96.46, 41.80' RT
STA. 304+42.10, 43.35' RT	STA. 304+96.46, 41.80' RT	STA. 303+56.50, 49.84' LT
STA. 304+51.71, 46.54' RT	STA. 304+96.46, 41.80' RT	STA. 303+72.81, 47.76' LT
STA. 304+46.28, 51.68' RT	STA. 304+96.46, 41.80' RT	STA. 303+84.70, 68.18' LT
STA. 304+46.48, 50.70' RT	STA. 304+96.46, 41.80' RT	STA. 303+35.57, 68.01' RT
STA. 304+56.60, 52.66' RT	STA. 304+96.46, 41.80' RT	STA. 305+50.00, 43.70' RT

LIMIT OF WORK
 CONTR. NO. AA6515180
 MD 450
 STA. 300+25.35

SEQUENCE OF CONSTRUCTION - PHASE II

1. CONTRACTOR MUST OBTAIN APPROVAL FROM MDE INSPECTOR PRIOR TO PROCEEDING TO PHASE II. ALL EROSION AND SEDIMENT CONTROL DEVICES INSTALLED IN PHASE I SHALL BE MAINTAINED.
2. CONSTRUCT EMBANKMENT WITHIN THE WETLAND (STA. 302+50+/- LT/RT TO STA. 304+40+/- LT/RT AND STA. 305+50+/- LT/RT TO STA. 309+50+/- LT/RT) TO FINISHED GRADE ELEVATION. STABILIZE SLOPES IMMEDIATELY WITH TYPE B SOIL STABILIZATION MATTING (SEE TS-1 FOR TYPICAL SLOPE CONSTRUCTION OF EMBANKMENT IN WETLAND) AND AREAS WITHIN PAVEMENT WITH GRADED AGGREGATE BASE. ALLOW A 7 DAY SETTLEMENT WAITING PERIOD AFTER FILL PLACEMENT (SEE SPECIAL PROVISION 204.03.10), STEPS 5, THROUGH 14, BELOW CONSISTING OF BRIDGE DEMO AND CONSTRUCTION MAY START AND BE PERFORMED AT THE SAME TIME AS THIS STEP.
3. REMOVE THE DIVERSION FENCE BETWEEN STA. 302+39.74, 6.72' LT TO STA. 302+94.98, 41.2' LT AND ADJUST THE TEMPORARY GABION OUTLET STRUCTURE (TGOS) TO ALLOW CONSTRUCTION OF LEVEL SPREADER 2.
4. CONSTRUCT STORM DRAIN SYSTEMS I-1 AND I-2 TO LEVEL SPREADER 1, I-3 TO LEVEL SPREADER 2, AND ES-3 TO ES-4 AND STABILIZED RIP RAP OUTFALLS.
5. REMOVE EXISTING BRIDGE SUPERSTRUCTURE. THE CONTRACTOR SHALL USE CAUTION TO MINIMIZE IMPACTS TO THE STREAM. NO DEBRIS SHALL BE ALLOWED TO ENTER STREAM.
6. INSTALL EAST STREAM DIVERSION FROM UPSTREAM TO DOWNSTREAM AS SHOWN USING PORTADAM SHEET PILING AND/OR SAND BAGS AND A PORTABLE SEDIMENT TANK (PST) FOR DEWATERING (SEE THIS SHEET FOR DETAILS) OR ANY METHOD APPROVED BY THE MDE INSPECTOR THAT WILL ALLOW CONSTRUCTION IN THE DRY AND WITHIN THE LIMIT OF DISTURBANCE.
7. REMOVE EXISTING ABUTMENT B IN ITS ENTIRETY.
8. EXCAVATE AND CONSTRUCT PROPOSED ABUTMENT B, WINGWALLS III AND IV. CONSTRUCT BRIDGE ABUTMENT AND WINGWALL EMBANKMENTS. PLACE CLASS II RIPRAP (SEE BRIDGE PLANS).
9. REMOVE STREAM DIVERSION FROM DOWNSTREAM TO UPSTREAM. STREAM DIVERSION SHALL BE IN PLACE FOR THE SHORTEST TIME POSSIBLE.
10. INSTALL WEST STREAM DIVERSION FROM UPSTREAM TO DOWNSTREAM AS SHOWN USING SHEET PILING AND/OR SAND BAGS AND A PORTABLE SEDIMENT TANK FOR DEWATERING (SEE DETAIL THIS SHEET OR ANY METHOD APPROVED BY THE MDE INSPECTOR THAT WILL ALLOW CONSTRUCTION IN THE DRY AND WITHIN THE LIMIT OF DISTURBANCE).
11. REMOVE EXISTING ABUTMENT A IN ITS ENTIRETY.
12. EXCAVATE AND CONSTRUCT PROPOSED ABUTMENT A AND WINGWALLS I AND II. CONSTRUCT BRIDGE ABUTMENT AND WINGWALL EMBANKMENTS. PLACE CLASS II RIPRAP (SEE BRIDGE PLANS).
13. REMOVE STREAM DIVERSION FROM DOWNSTREAM TO UPSTREAM. STREAM DIVERSION SHALL BE IN PLACE FOR THE SHORTEST TIME POSSIBLE.
14. CONSTRUCT BRIDGE SUPERSTRUCTURE.
15. COMPLETE REMAINING ROADWAY WORK AND GRADING. REMOVE TEMPORARY 15" RCCP CLEARWATER DIVERSION PIPE AT STA. 313+86.50. STABILIZE AREAS WITHIN PAVEMENT WITH GRADED AGGREGATE BASE COURSE, AND AREAS TO BE GRASSED WITH TOPSOIL, SEED, AND MULCH.
16. PAVE ROADWAY.
17. INSTALL ALL REMAINING ROADWAY APPURTENANCES.
18. STORM DRAINS THAT CONVEYED SEDIMENT LADEN RUNOFF SHALL BE CLEANED PRIOR TO REMOVAL OF EROSION AND SEDIMENT CONTROL DEVICES. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES WITH THE APPROVAL OF THE EROSION CONTROL INSPECTOR AFTER GRASSED AREAS HAVE STABILIZED. ALL AREAS DISTURBED BY DEVICE REMOVAL SHALL BE STABILIZED.
19. REMOVE ALL TRAFFIC CONTROL DEVICES AND REOPEN ROADWAY TO TRAFFIC.

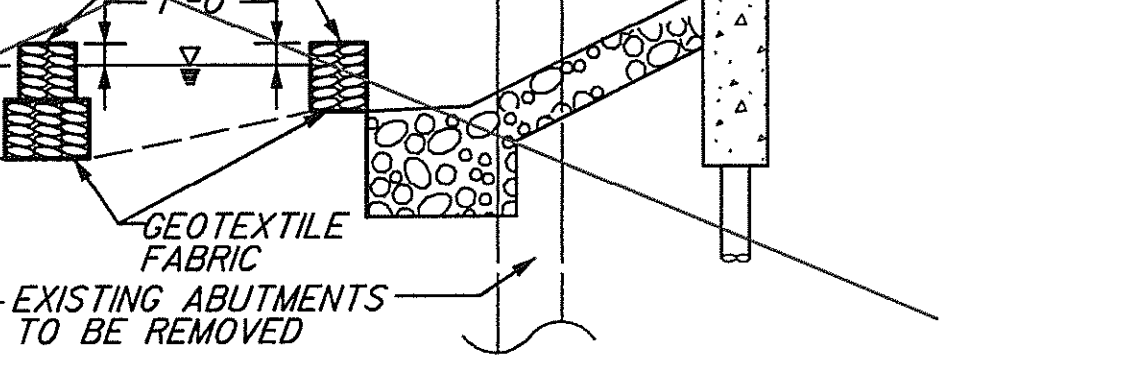
NOTES:

THE COST FOR STREAM DIVERSION SHEET PILING AND/OR SAND BAGS, DEWATERING DEVICES, AND APPURTENANCES SHALL BE INCIDENTAL TO THE MAINTENANCE OF STREAM FLOW.

THE STREAM DIVERSION DETAILS ARE SUGGESTED METHODS OF CONSTRUCTION ONLY. THE CONTRACTOR HAS THE OPTION OF SUBMITTING A WRITTEN PLAN OF HIS OWN DESIGN TO THE ENGINEER FOR APPROVAL BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) AND THE STATE HIGHWAY ADMINISTRATION (SHA), WHICH MAY BE USED IF APPROVED. IF CONTRACTOR USES AN ALTERNATIVE DESIGN NO ADDITIONAL TIME WILL BE GRANTED DUE TO DELAYS CAUSED BY REVIEW AND/OR ACCEPTANCE BY MDE.

DIVERSIONS SHOWN ON THE PLAN ARE FOR SCHEMATIC PURPOSES ONLY. ACTUAL DIVERSION LENGTHS MAY BE ADJUSTED AS LONG AS ALL CONSTRUCTION IS DONE IN THE DRY AND WITHIN THE LOD SHOWN ON THE PLAN.

APPROVALS	REVISIONS
TEAM LEADER	1 REDLINE NO. 1 4/9/08
ASST. DIV. CHIEF	2 REDLINE NO. 2 6/26/08
DIVISION CHIEF	
OFFICE DIRECTOR	



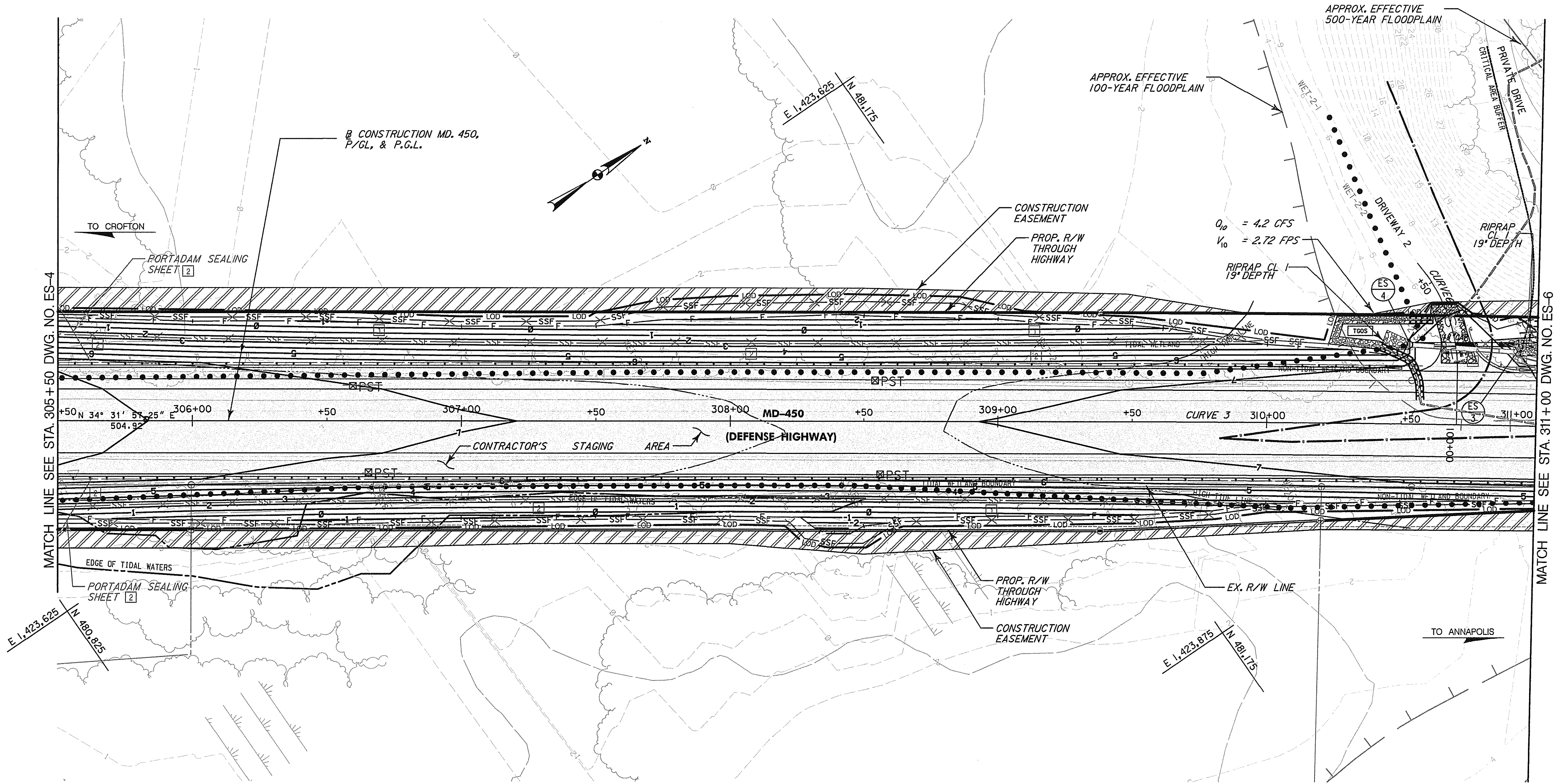
SECTION A-A SUPERCEDED BY SECTIONS ON SHT. ED-2

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION		
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH		
EROSION AND SEDIMENT CONTROL PLAN - PHASE II		
SCALE As Shown	DATE Dec. 2007	CONTRACT NO. AX4695180
DESIGNED BY M.A.	COUNTY ANNE ARUNDEL	
DRAWN BY P.S.C.	LOGMILE	
CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=20'	
F.A.P. NO.	VERTICAL SCALE	
DRAWING NO. ES-4	OF 6	SHEET NO. 19 OF 66

BY: \$USERNAME\$



THERE SHALL BE NO IN-STREAM CONSTRUCTION PERMITTED DURING THE PERIOD OF MARCH 1 TO JUNE 15 INCLUSIVE.



MATCH LINE SEE STA. 305+50 DWG. NO. ES-4

MATCH LINE SEE STA. 311+00 DWG. NO. ES-6

LEGEND

- F FILL LINE
- C CUT LINE
- B WETLAND BUFFER (25')
- DITCH
- STONE RIP RAP
- WET-3-2 WETLAND BOUNDARY
- FULL DEPTH PAVEMENT

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

EROSION AND SEDIMENT CONTROL PLAN - PHASE II

SCALE As Shown DATE Dec. 2007 CONTRACT NO. AX4695180

DESIGNED BY M.A. COUNTY ANNE ARUNDEL
DRAWN BY P.S.C. LOGMILE
CHECKED BY V.V.S. HORIZONTAL SCALE 1"=20'
F.A.P. NO. VERTICAL SCALE

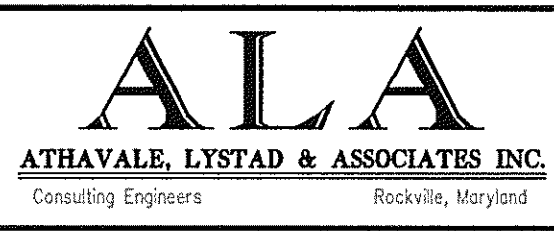
DRAWING NO. ES-5 OF 6 SHEET NO. 20 OF 66

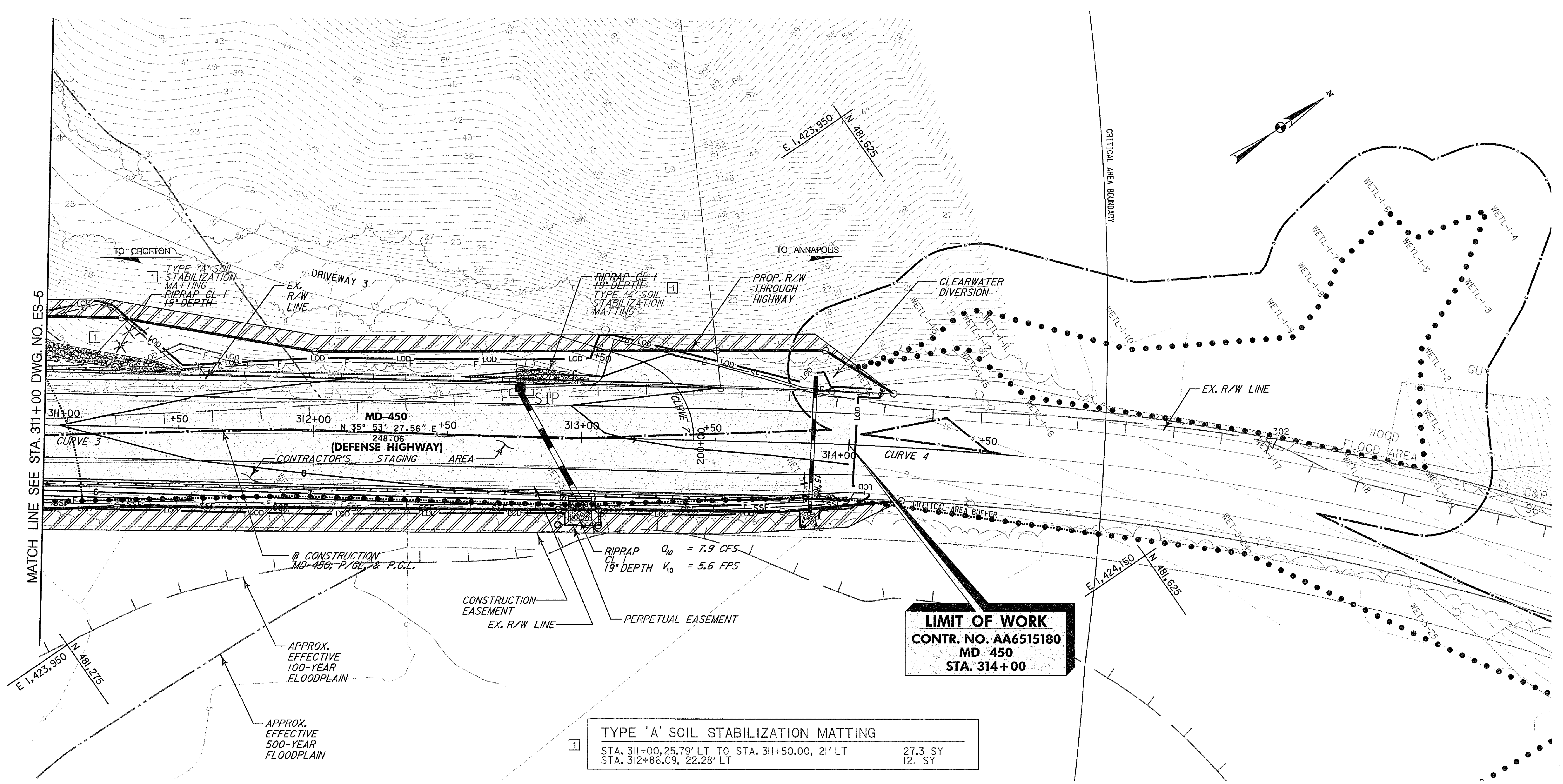
APPROVALS	REVISIONS
TEAM LEADER _____	1 REDLINE NO. 1 4/9/08
ASST. DIV. CHIEF _____	2 REDLINE NO. 2 6/26/08
DIVISION CHIEF _____	
OFFICE DIRECTOR _____	



PLOTTED: #DATE# TIME#
FILE: #FILE#

BY: \$USERNAME\$





MATCH LINE SEE STA. 311+00 DWG. NO. ES-5

LIMIT OF WORK
 CONTR. NO. AA6515180
 MD 450
 STA. 314+00

1 TYPE 'A' SOIL STABILIZATION MATTING
 STA. 311+00, 25.79' LT TO STA. 311+50.00, 21' LT 27.3 SY
 STA. 312+86.09, 22.28' LT 12.1 SY

1 RIPRAP CLASS I - 19" DEPTH
 STA. 311+00, 30' LT TO STA. 311+50, 21' LT 27.3 SY
 STA. 312+86.09, 22.28' LT 12.1 SY

LEGEND

- F — FILL LINE
- C — CUT LINE
- B — WETLAND BUFFER (25')
- FULL DEPTH PAVEMENT
- DITCH
- STONE RIP RAP
- WET-3-2 ● WETLAND BOUNDARY

SCALE: 0 20 40
 SCALE IN FEET

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

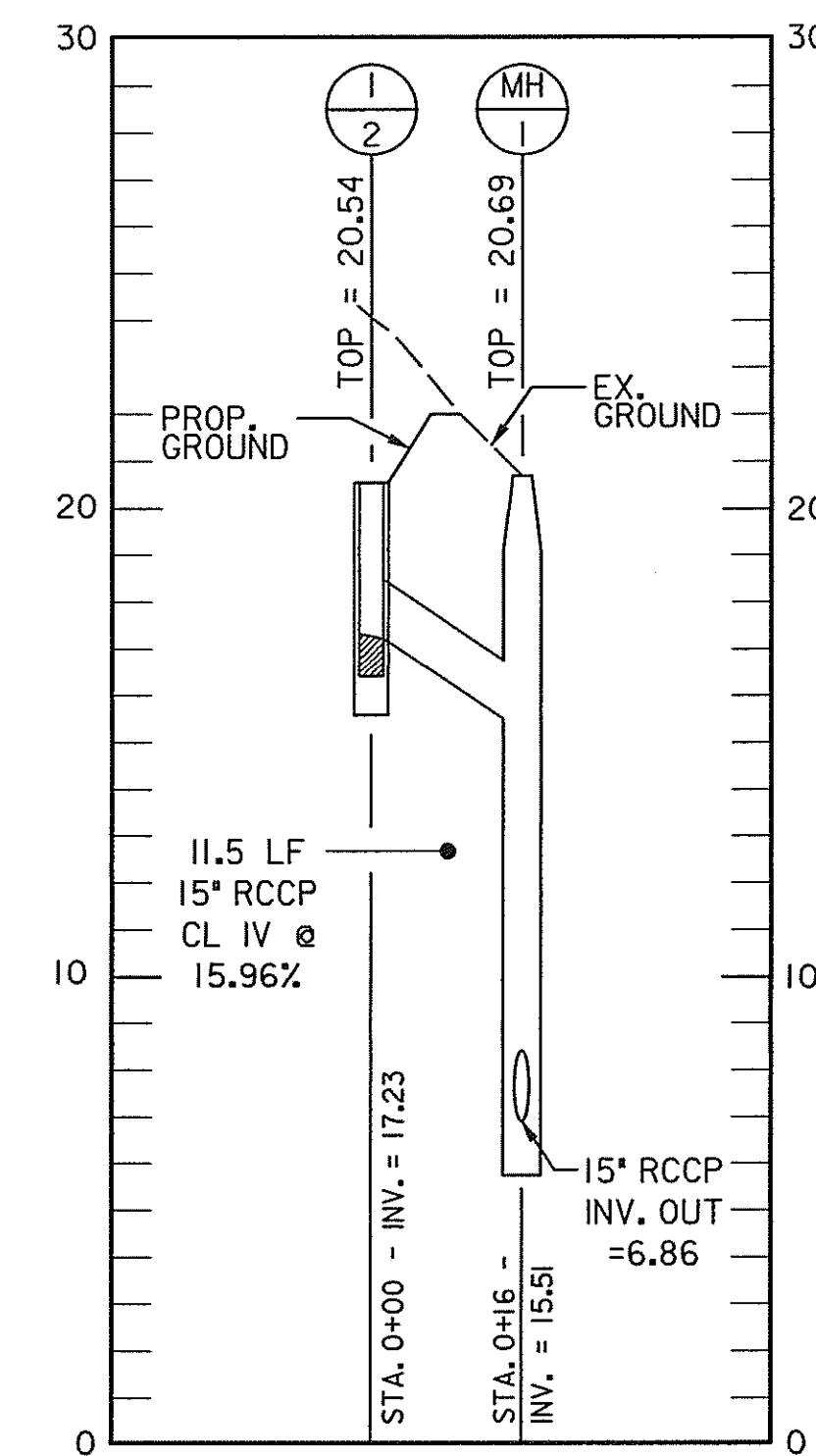
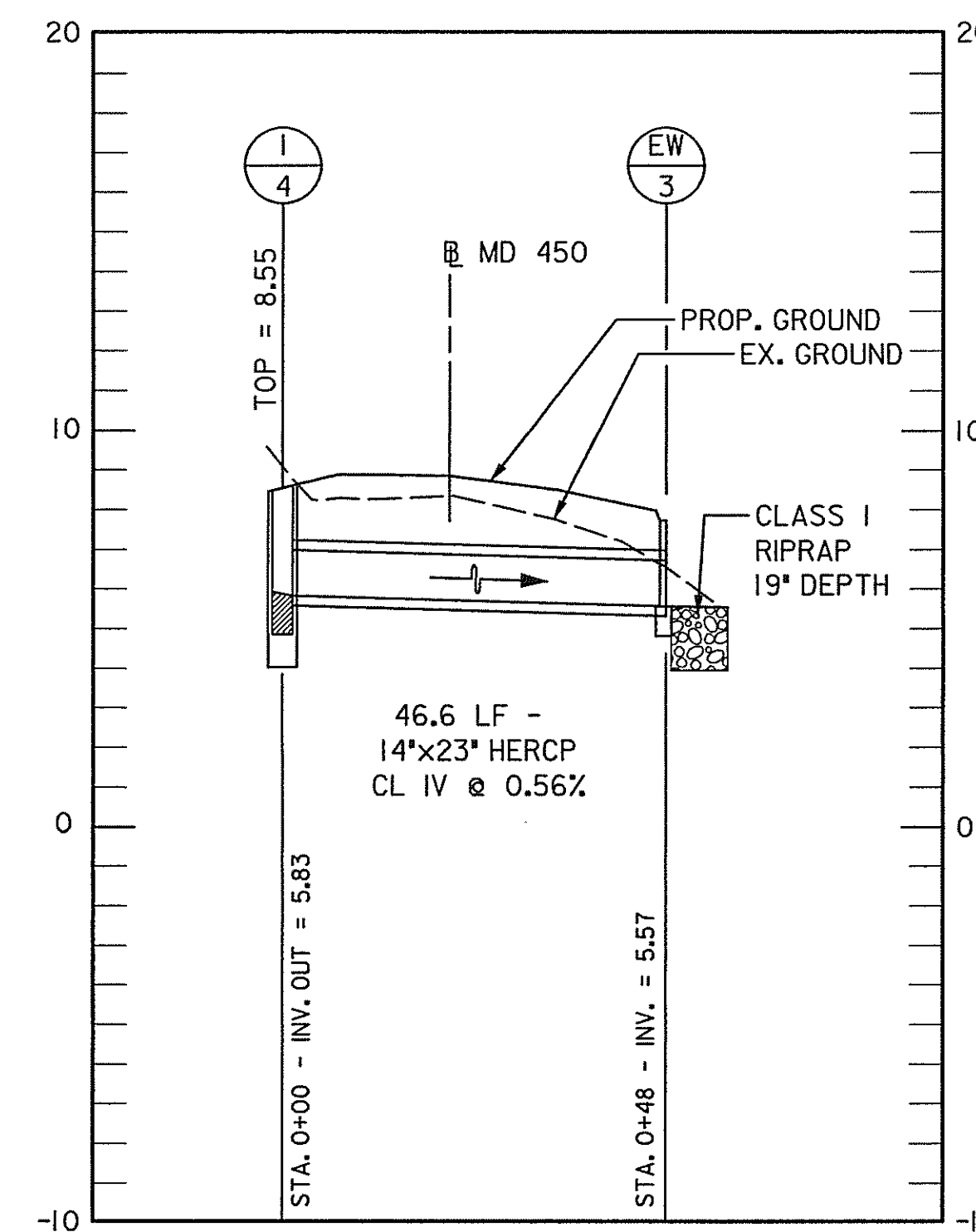
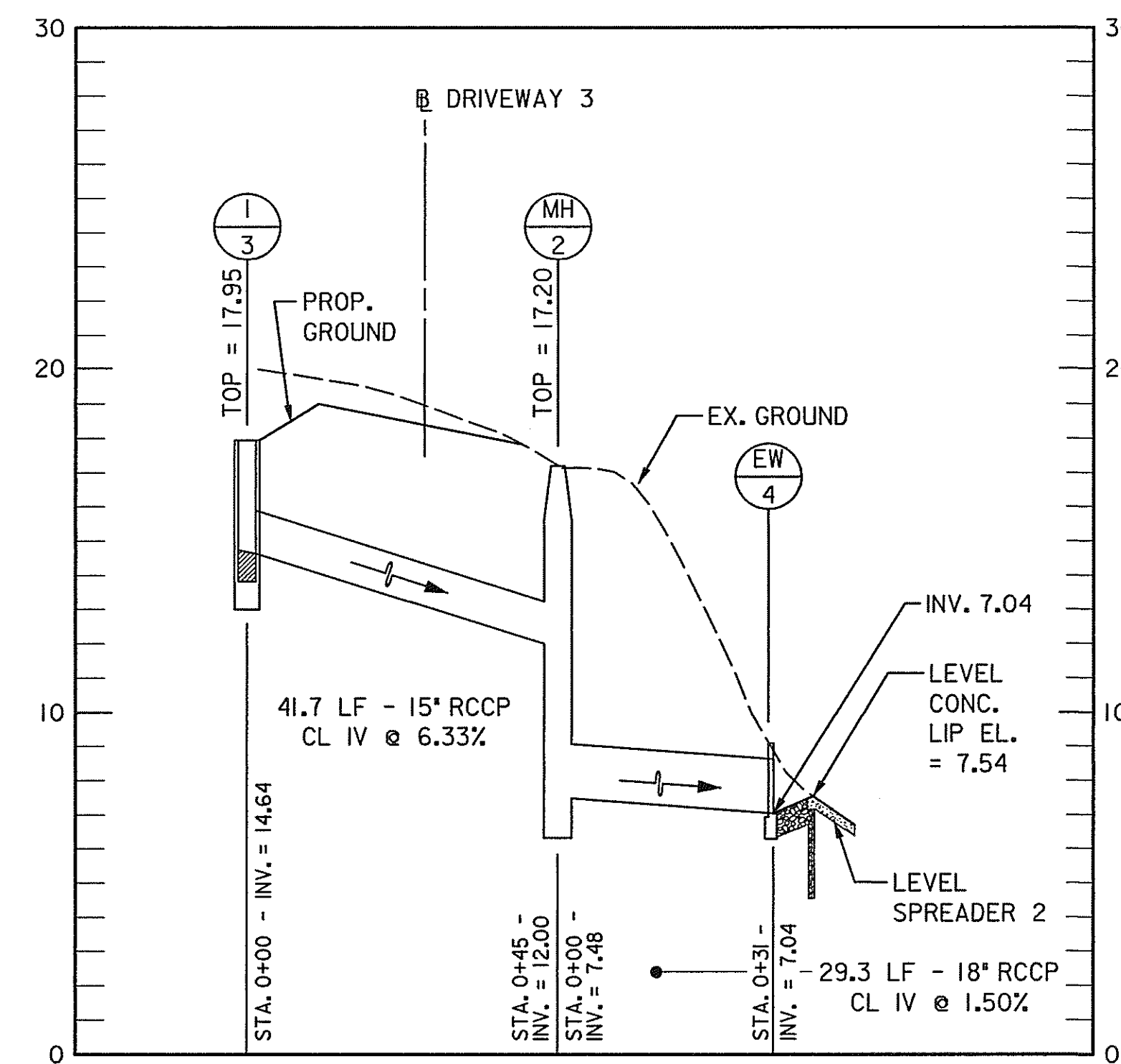
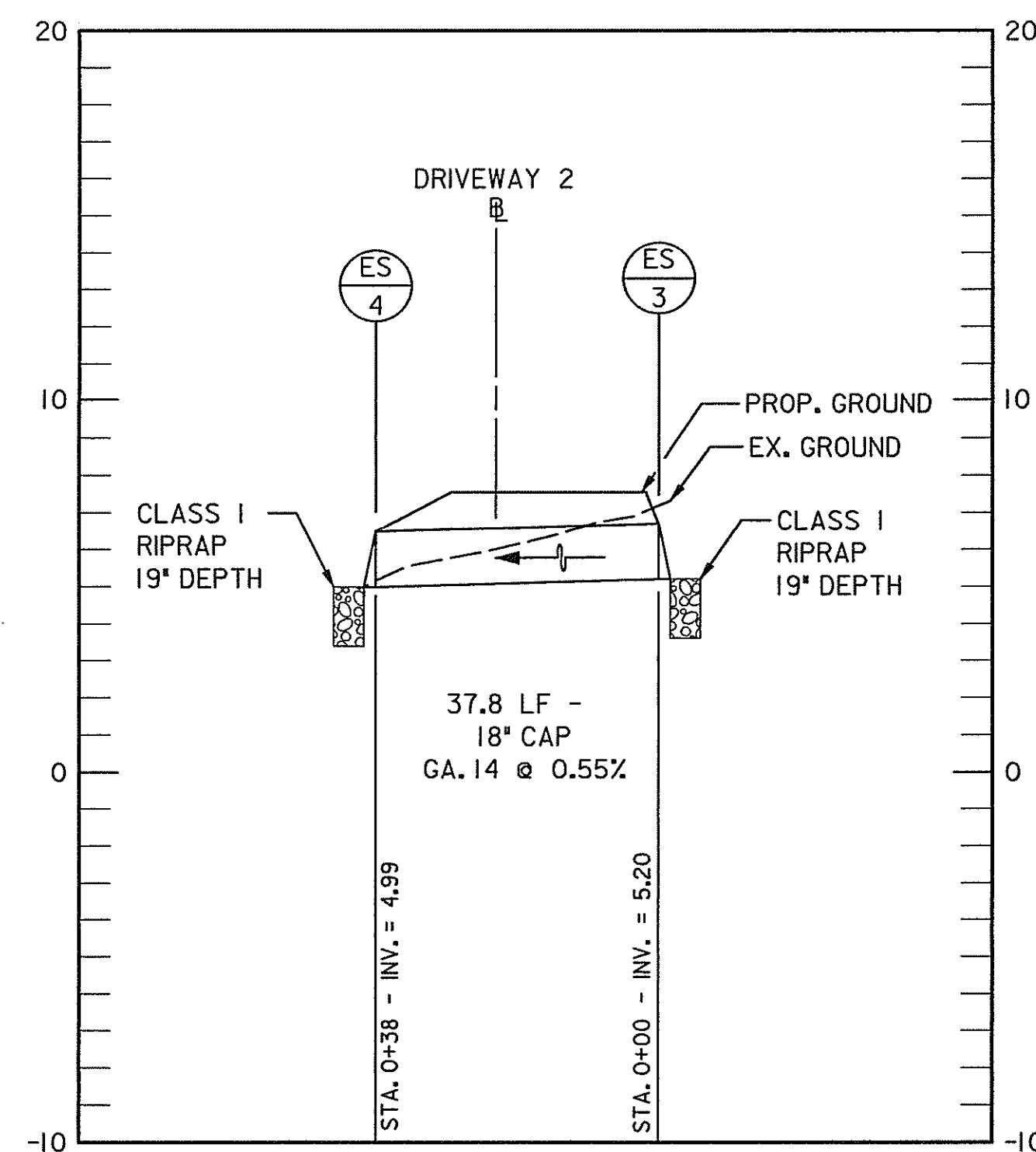
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

APPROVALS		REVISIONS		EROSION AND SEDIMENT CONTROL PLAN - PHASE II	
TEAM LEADER		1	REDLINE NO. 1 4/9/08	SCALE As Shown	DATE Dec. 2007
ASST. DIV. CHIEF				CONTRACT NO.	AX4695180
DIVISION CHIEF				DESIGNED BY	M.A. COUNTY ANNE ARUNDEL
OFFICE DIRECTOR				DRAWN BY	P.S.C. LOGMILE
				CHECKED BY	V.V.S. HORIZONTAL SCALE 1"=20'
				F.A.P. NO.	VERTICAL SCALE
				DRAWING NO.	ES-6 OF 6 SHEET NO. 21 OF 66

PLOTTED: #DATETIME#
 FILE: #FILE#

BY: \$USERNAME\$





PROFILE FROM ES-3 TO ES-4

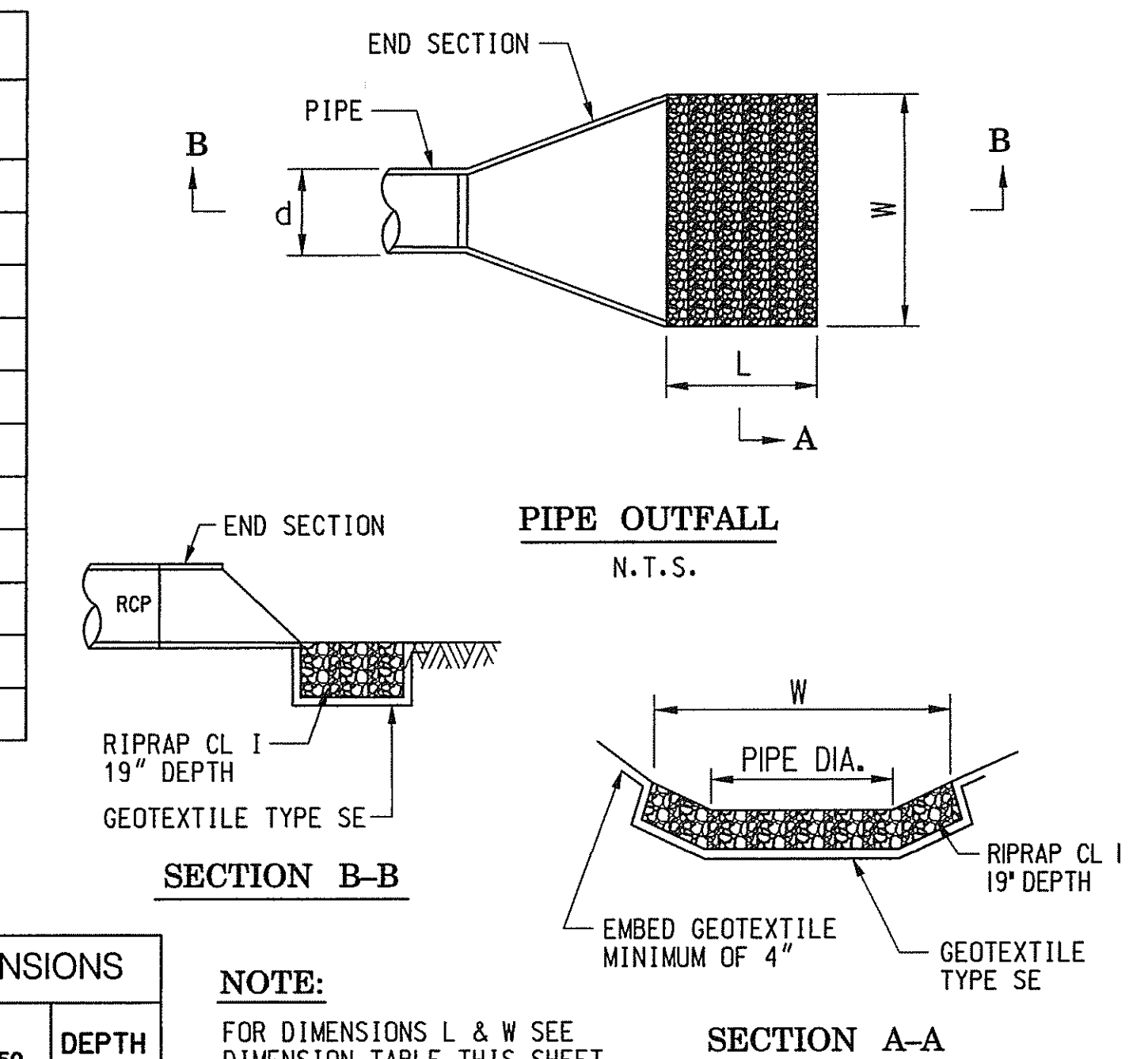
PROFILE FROM I-31 TO LEVEL SPREADER 2

PROFILE FROM I-4 TO EW-3

PROFILE FROM I-2 TO MH-1

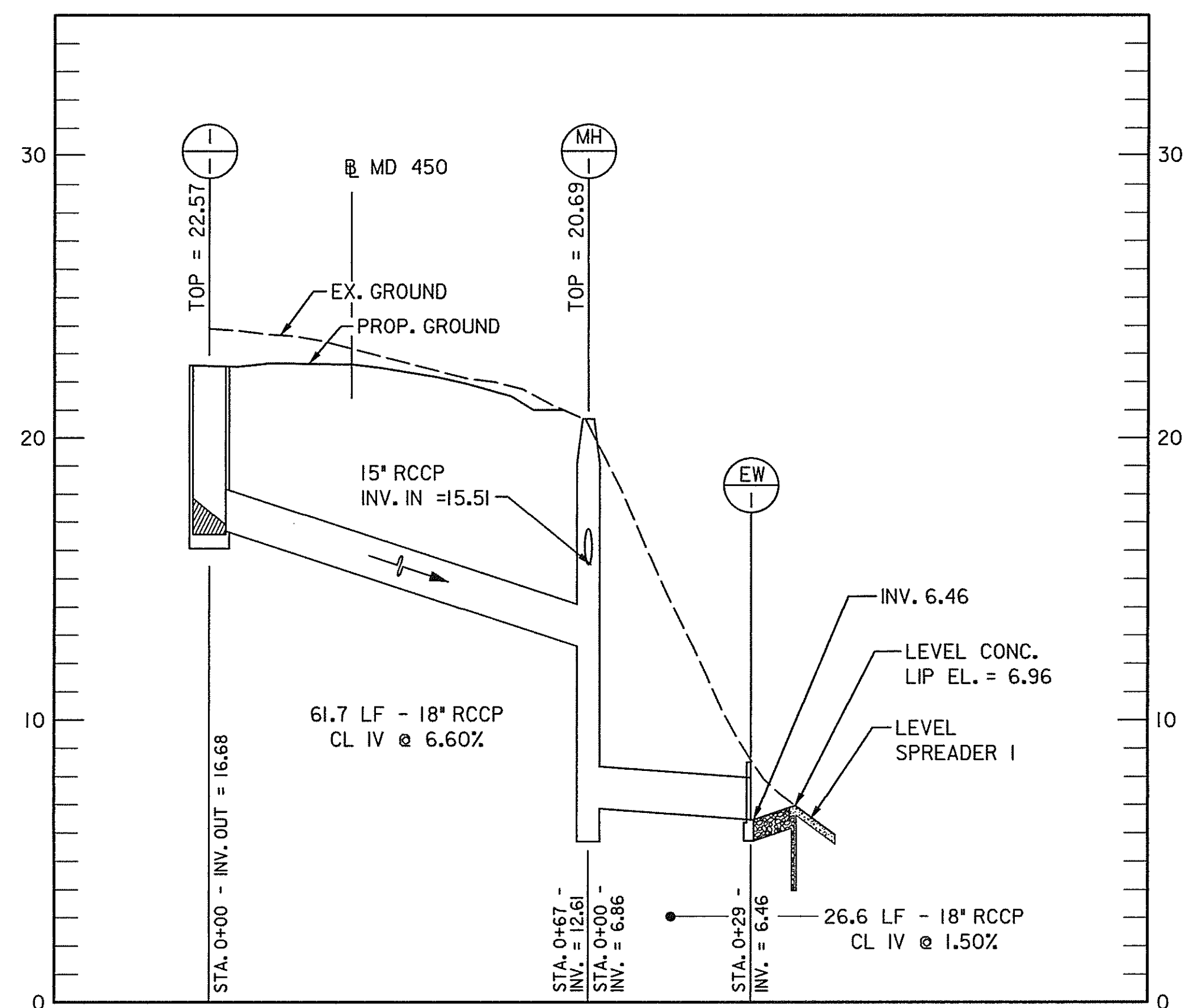
STRUCTURE SCHEDULE - PROPOSED							
STRUCTURE DESIGNATION	REFERENCE STATION	OFFSET (FT.)	TYPE	TOP ELEVATION	DEPTH OVER MIN. (FT.)	MDSHA STANDARD	REMARKS
I-1	301+07.43	17.69 LT	PRECAST STD. TYPE S INLET DOUBLE GRATE TANDEM	22.57	3.00	STD. MD 374.70	
I-4	312+76.70	18.35 LT	PRECAST STD. TYPE S INLET SINGLE GRATE	8.55	0.00	STD. MD 374.73	
EW-1	301+66.02	55.74 RT	STD. TYPE C ENDWALL HORIZONTAL ROUND CONCRETE PIPE	6.46	N/A	STD. MD 354.01	
EW-3	313+00.00	23.65 RT	STD. TYPE C ENDWALL HORIZONTAL ELLIPTICAL CONCRETE PIPE	5.57	N/A	STD. MD 358.04	
ES-3	310+91.21	30.52 LT	STD. METAL END SECTION ROUND METAL PIPE	5.20	N/A	STD. MD 370.01	
ES-4	310+53.92	29.89 LT	STD. METAL END SECTION ROUND METAL PIPE	4.99	N/A	STD. MD 370.01	
MH-2	302+74.06	26.93 LT	48" DIA. PRECAST MANHOLE	17.20	0.00	STD. MD 384.01	
I-3	302+28.61	27.22 LT	PRECAST STD. SINGLE OPENING TYPE K INLET OPEN-END GRATE	17.95	0.00	STD. MD 378.11	
MH-1	301+49.08	32.81 RT	STD. DROP MANHOLE	20.69	2.83	STD. MD 383.11	
I-2	301+34.56	28.58 RT	PRECAST STD. SINGLE OPENING TYPE K INLET OPEN-END GRATE	20.54	0.00	STD. MD 378.11	
EW-4	303+03.19	38.14 LT	STD. TYPE C ENDWALL HORIZONTAL ROUND CONCRETE PIPE	7.04	N/A	STD. MD 354.01	

PIPE SCHEDULE - PROPOSED							
FROM	TO	SIZE	TYPE	CLASS/GAUGE	LENGTH (FT.)	INV. FROM	INV. TO
I-1	MH-1	18"	RCCP	IV	61.7	16.68	12.61
I-4	EW-3	14"x23"	HERCP	IV	46.6	5.83	5.57
ES-3	ES-4	18"	CAP	14	37.8	5.20	4.99
MH-1	EW-1	18"	RCCP	IV	26.6	6.86	6.46
I-2	MH-1	15"	RCCP	IV	11.5	17.23	15.51
I-3	MH-2	15"	RCCP	IV	41.7	14.64	12.00
MH-2	EW-4	18"	RCCP	IV	29.3	7.48	7.04



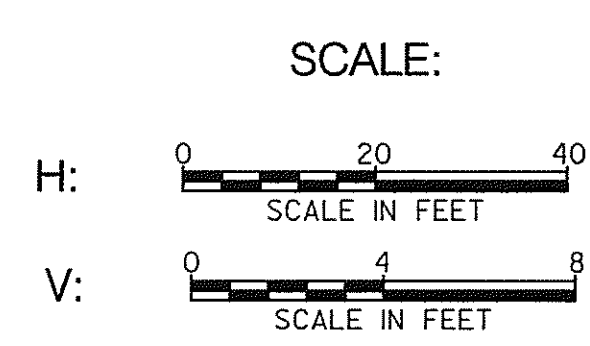
OUTFALL RIPRAP DIMENSIONS					
OUTFALL	d	L	W	d ₅₀	DEPTH
EW-1	18"	5.9' TO 12'	6' TO 13.8'	9.5'	19"
EW-3	23"	9'	8.5'	9.5'	19"
EW-4	15"	5'	8.2'	9.5'	19"
ES-4	18"	10.6'	7.75'	9.5'	19"

NOTE:
FOR DIMENSIONS L & W SEE DIMENSION TABLE THIS SHEET.



PROFILE FROM I-1 TO LEVEL SPREADER 1

NOTE:
REFERENCE STATIONING AND TOP ELEVATIONS OF END SECTIONS AND ENDWALLS MEASURED AT CONNECTING PIPE INVERT LOCATION AND GRADE. INLETS ARE MEASURED AT CENTER OF GRATE.



APPROVALS	REVISIONS
TEAM LEADER _____	1 REDLINE NO. 1 4/9/08
ASST. DIV. CHIEF _____	
DIVISION CHIEF _____	
OFFICE DIRECTOR _____	

SH&A STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

STORM DRAIN PIPE PROFILES & STRUCTURE SCHEDULE

SCALE: As Shown DATE: Dec. 2007 CONTRACT NO.: AX4695180

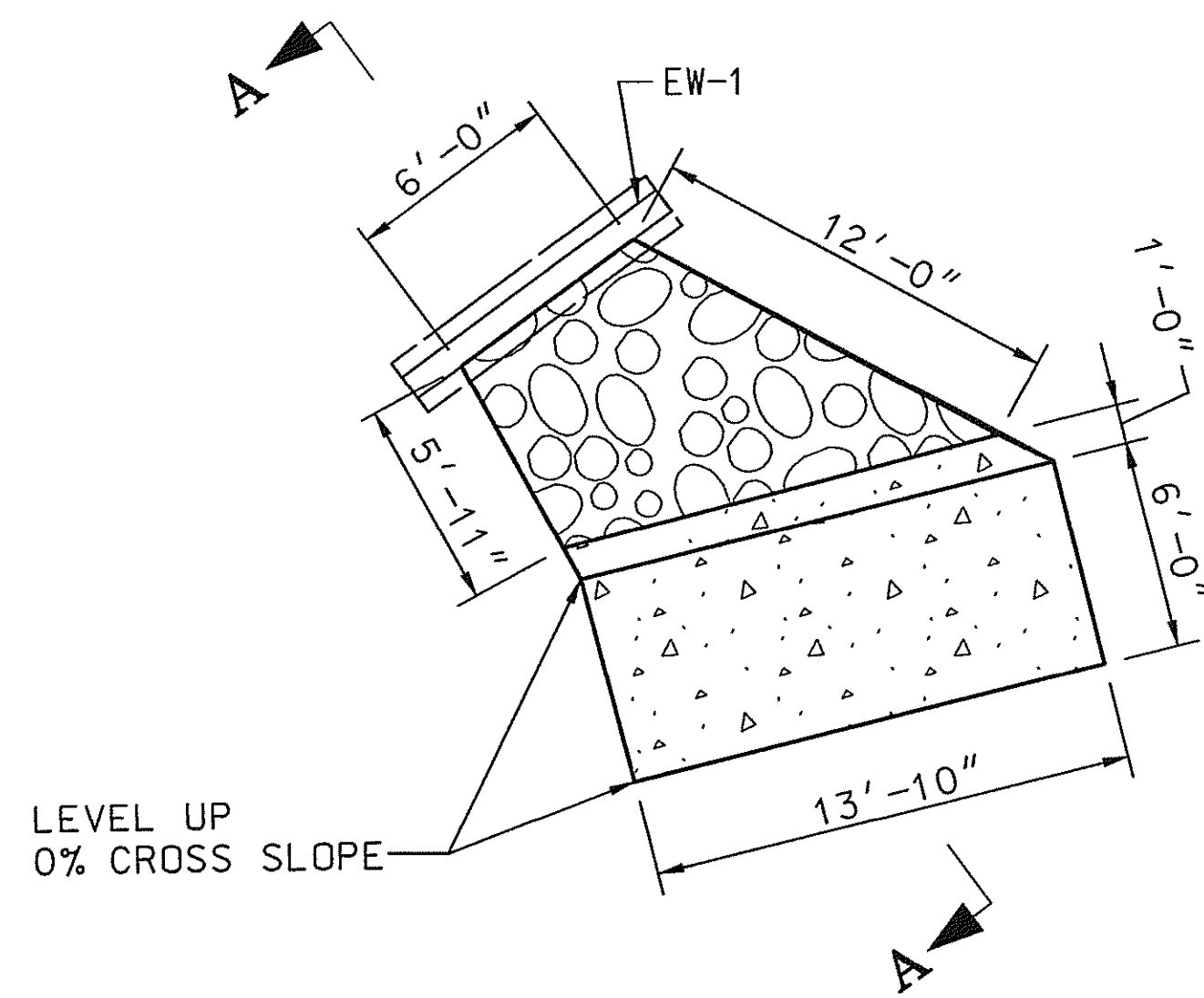
DESIGNED BY: M.A. COUNTY: ANNE ARUNDEL
DRAWN BY: P.S.C. LOGMILE: _____
CHECKED BY: V.V.S. HORIZONTAL SCALE: 1"=20'
F.A.P. NO. VERTICAL SCALE: 1"=4'

DRAWING NO. SD-I OF 2 SHEET NO. 22 OF 66

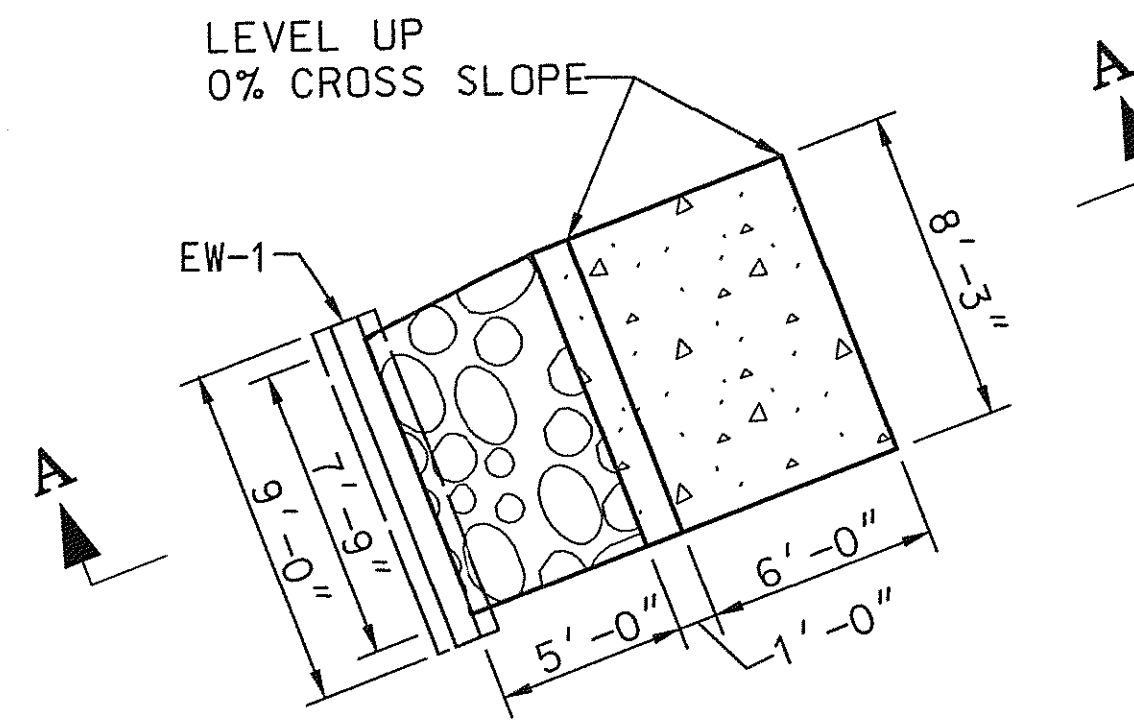


BY: \$USERNAME\$

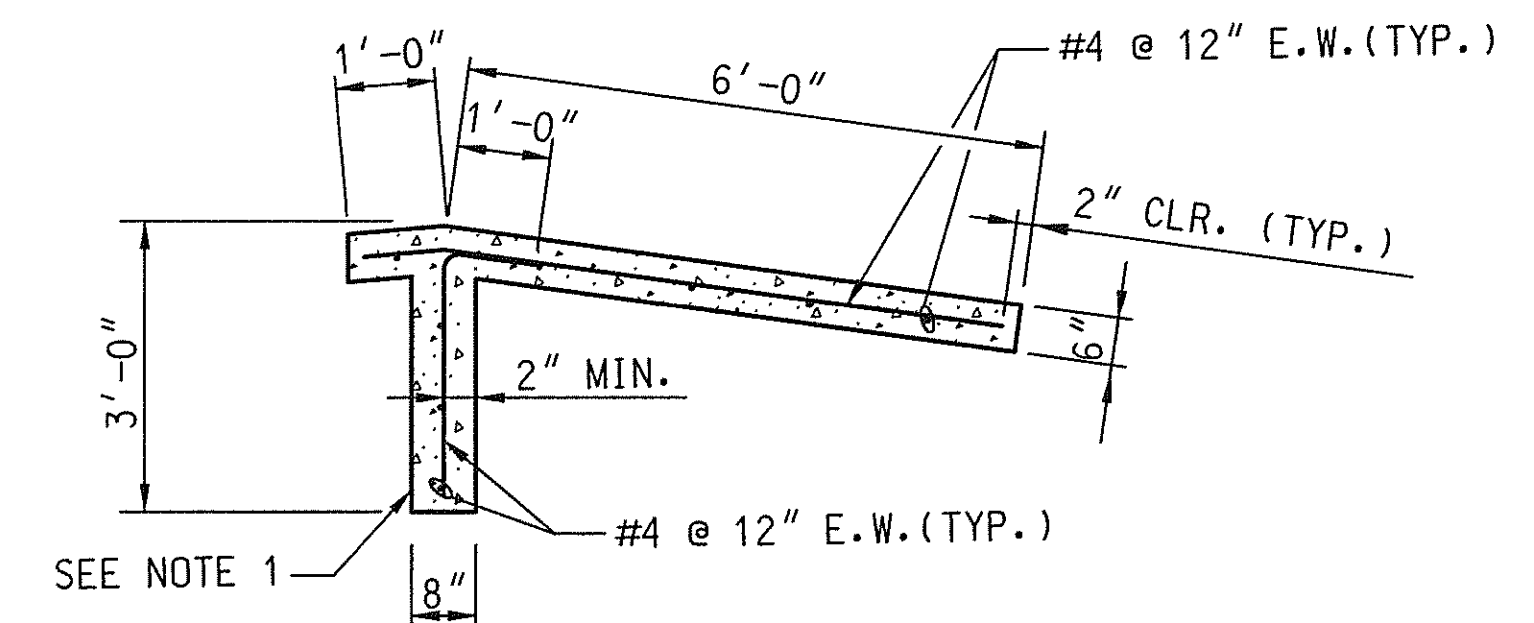
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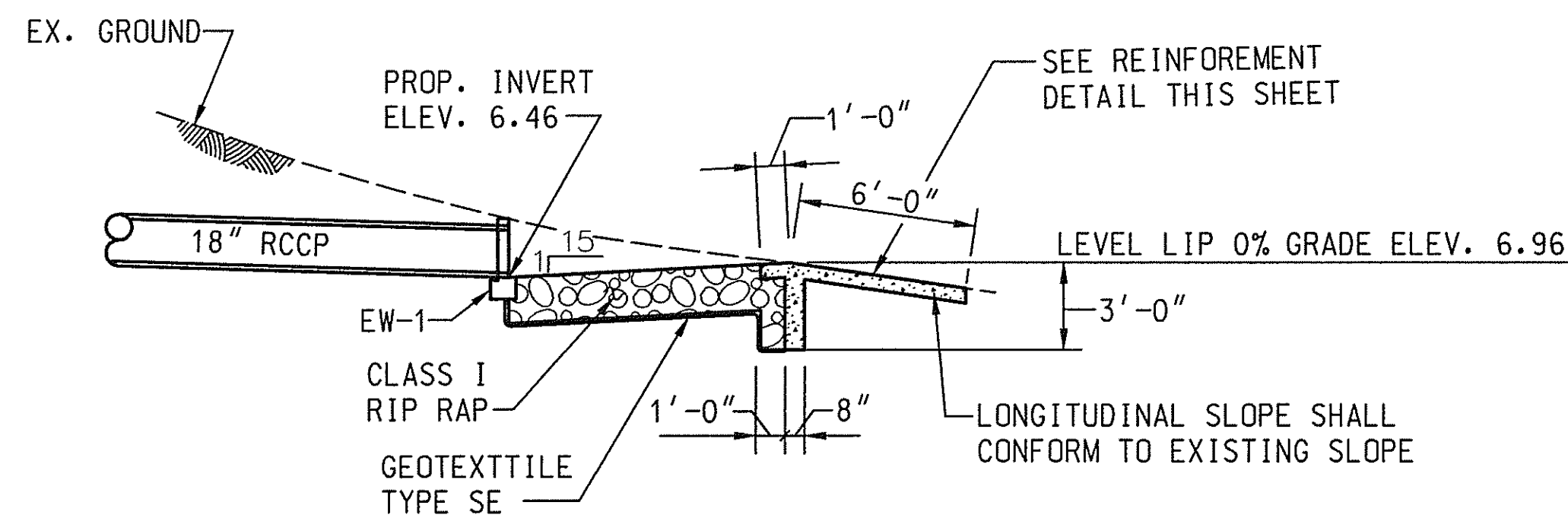
LEVEL SPREADER 1
PLAN VIEW
SCALE: 1" = 5'-0"



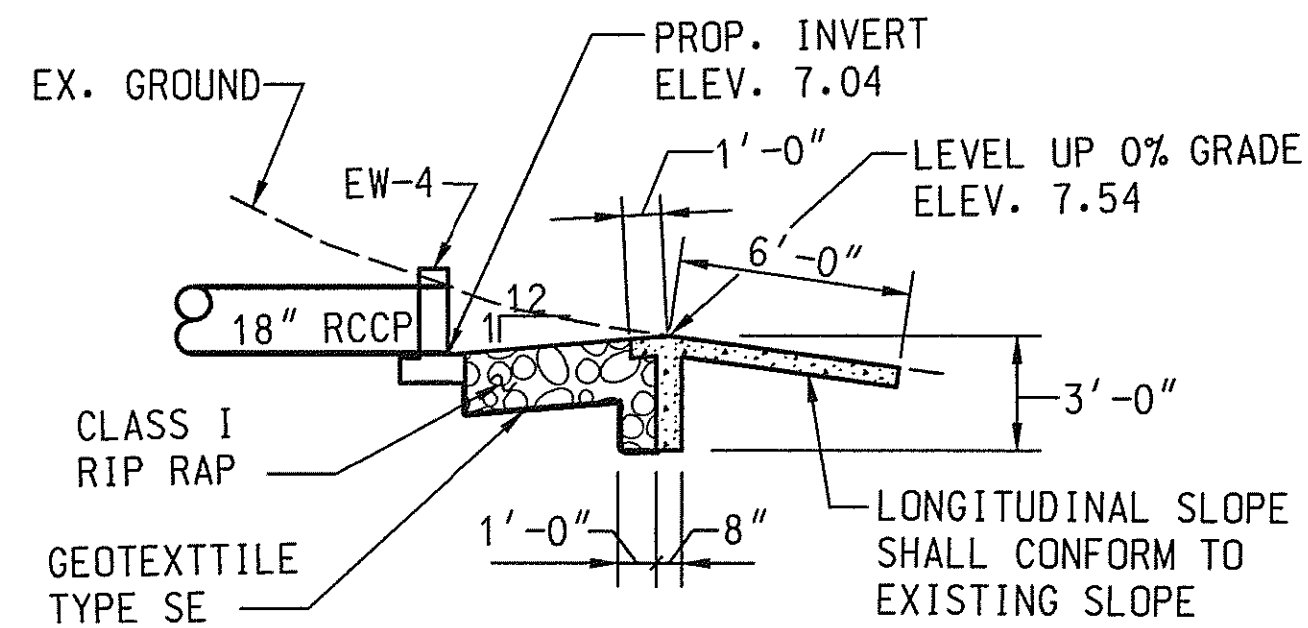
LEVEL SPREADER 2
PLAN VIEW
SCALE: 1" = 5'-0"



LEVEL SPREADER
REINFORCEMENT DETAIL
SCALE: 1/2" = 1'-0"



LEVEL SPREADER 1
SECTION A-A
SCALE: 1" = 5'-0"



LEVEL SPREADER 2
SECTION A-A
SCALE: 1" = 5'-0"

NOTE:
1. CONCRETE TO BE MIX NO. 3

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

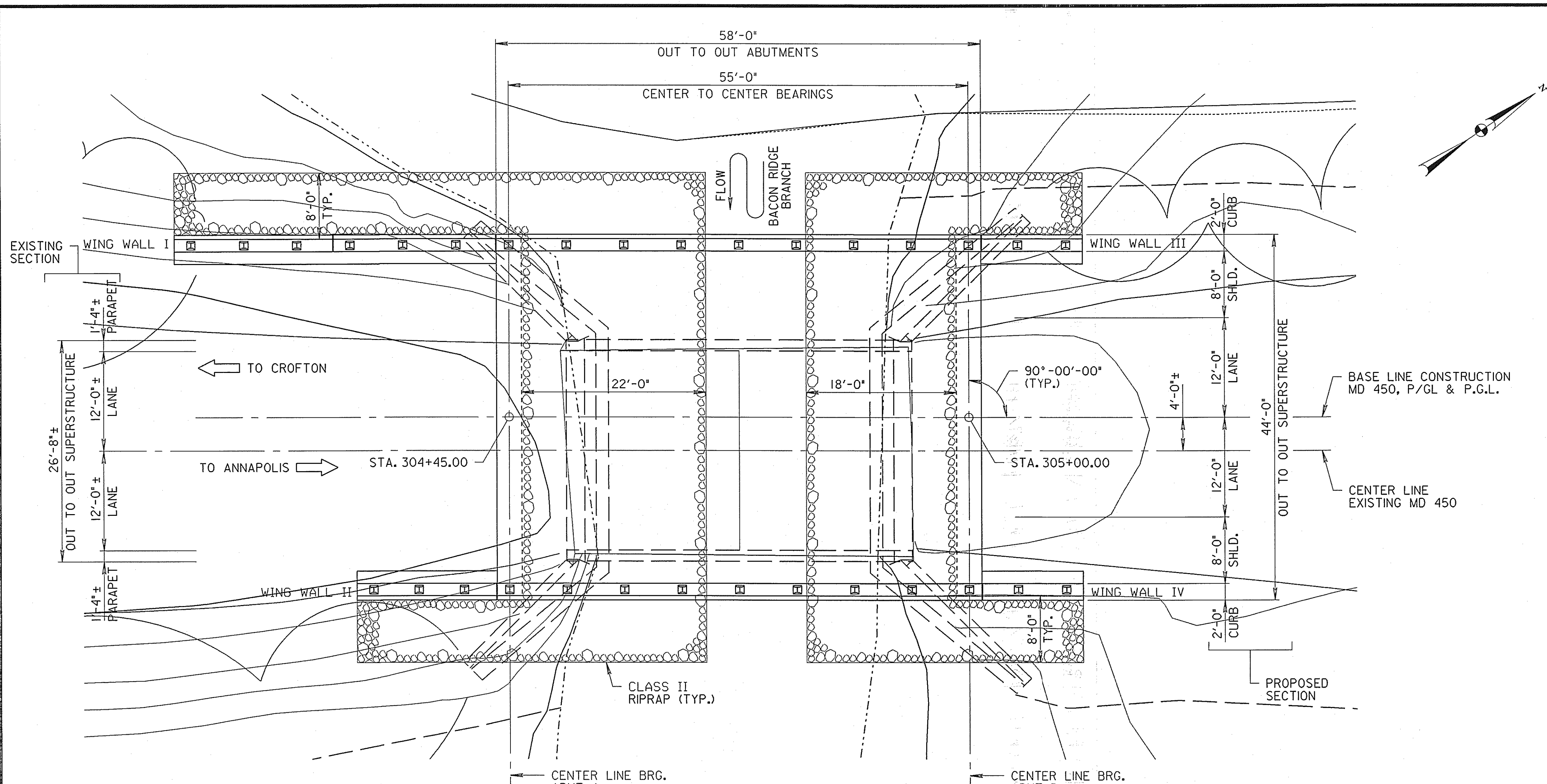
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

APPROVALS	REVISIONS	DRAINAGE STRUCTURE DETAILS	
TEAM LEADER _____		SCALE As Shown	DATE Dec. 2007
ASST. DIV. CHIEF _____		CONTRACT NO. AX4695180	
DIVISION CHIEF _____		DESIGNED BY M.A.	COUNTY ANNE ARUNDEL
OFFICE DIRECTOR _____		DRAWN BY P.S.C.	LOGMILE _____
		CHECKED BY V.V.S.	HORIZONTAL SCALE _____
		F.A.P. NO. _____	VERTICAL SCALE _____
		DRAWING NO. SD - 2 OF 2	SHEET NO. 23 OF 66

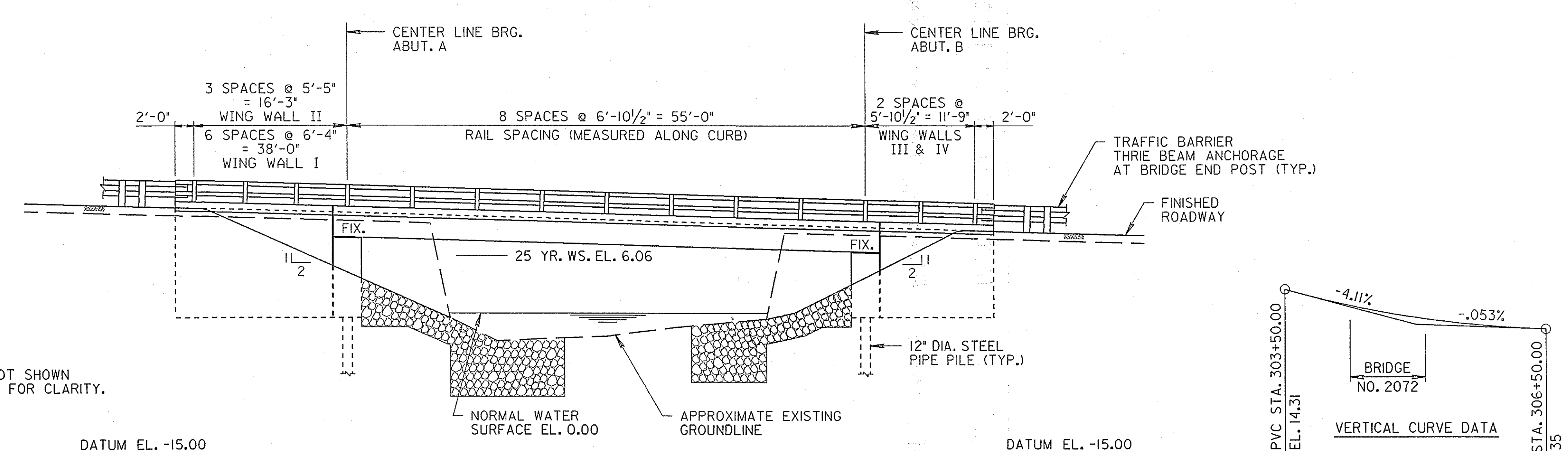
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BY: \$USERNAME\$





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



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

GENERAL NOTES

SPECIFICATIONS: SHA SPECIFICATIONS DATED JANUARY, 2001 AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2007.

CONCRETE DESIGN: LOAD AND RESISTANCE FACTOR DESIGN METHOD $f'_c = 3500$ PSI FOR CONCRETE OTHER THAN PRESTRESSED 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 $f'_{ci} = 5800$ PSI.

REINFORCING STEEL DESIGN: $f_y = 60,000$ PSI

LOADING: HL-93 (HS-20 TRUCK COMBINED WITH A DISTINCT LANE LOADING)

RATINGS: RATINGS ARE BASED ON LOAD AND RESISTANCE FACTOR RATING METHOD UTILIZING LOADINGS NOTED ABOVE.

LRFR INVENTORY	LRFR OPERATING
I.16	I.99

CAST-IN-PLACE CONCRETE: -CAST-IN-PLACE CURBS ON SUPERSTRUCTURE AND WING WALLS SHALL BE MIX NO. 6 (4500 PSI)
-SUPERSTRUCTURE OVERLAY SHALL BE MIX NO. 8 CONCRETE (4000 PSI)
-ALL OTHER CAST-IN-PLACE STRUCTURE CONCRETE SHALL BE MIX NO. 3 (3500 PSI)

PRESTRESSED STEEL: PRETENSIONING STEEL SHALL CONSIST OF 1/2" DIAMETER 7-WIRE LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF M 203 GRADE 270.

PRETENSIONING: EACH 1/2" STRAND SHALL BE PRETENSIONED TO 31,000 LB. (0.75 f's), HAVE AN ULTIMATE STRENGTH OF 41,300 LB. AND A YIELD STRENGTH OF 37,200 LB.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A 615 OR A 706, GRADE 60. 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 ABUTMENTS AND WING WALLS WHICH SHALL HAVE 3" MINIMUM COVER.

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

ONLY GRADE 60 CAN BE USED ON THIS PROJECT.

REINFORCING STEEL IN THE FOLLOWING AREAS SHALL BE EPOXY COATED:

- ENTIRE SUPERSTRUCTURE OVERLAY
- TRAFFIC BARRIER ON SUPERSTRUCTURE
- ENTIRE PRECAST SLAB EXCEPT PRESTRESSING STEEL
- TRAFFIC BARRIER PORTION OF WING WALLS

KEYS: ALL KEYS ARE NOMINAL SIZE.

EXISTING STRUCTURE: EXISTING STRUCTURE SHOWN IN LONG DASHED LINES. ENTIRE EXISTING STRUCTURE SHALL BE REMOVED.

HYDROLOGICAL & HYDRAULIC DATA: FOR HYDROLOGIC AND HYDRAULIC DATA, SEE SHEET TITLED "HYDROLOGIC AND HYDRAULIC DATA"

NOTE:
EXISTING BRIDGE NOT SHOWN
IN ELEVATION VIEW FOR CLARITY.

S1 - 1

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH GENERAL PLAN AND ELEVATION
DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
E.S.F. JAN. 8, 2008	SHEET NO. 24 OF 66

HYDROLOGIC DATA

I. SOURCE: MD 450 OVER BACON RIDGE BRANCH - HYDROLOGIC ANALYSIS
PREPARED BY: [] SHA [X] CONSULTANT: DEWBERRY DATE: SEPT 2002
FILE LOCATION: C:\ALUNA\MD 450

II. DRAINAGE AREA: ACRES 5645 SQUARE MILES 8.82

III. METHOD(S) OF ANALYSIS:

USGS GAGE DATA ANALYSIS
GAGING STATION NO.
LOCATION
DRAINAGE AREA
YEARS OF CONTINUOUS RECORD
USGS REGRESSION EQUATIONS
REFERENCE: FIXED REGION REGRESSION EQUATIONS - APPLICATION OF HYDROLOGY METHODS IN MD
SCS TR - 20 METHOD - VERSION USED (DATE)
RCN (EXISTING-HOMOGENEOUS WATERSHED) 66.9
RCN (ULTIMATE HOMOGENEOUS WATERSHED) 68.2
Tc (HOMOGENEOUS WATERSHED) 6.33 HR
FEMA BASE FLOOD (100-YEAR) DISCHARGE (CFS) METHOD USED BY FEMA
OTHER (DESCRIBE)

HAS FLOOD ROUTING BEEN USED IN DETERMINING FLOOD DISCHARGES? YES [] NO [X]
METHOD SELECTED

IV. COMPUTED FLOOD DISCHARGES

Table with columns: RETURN PERIOD (YEARS), FLOOD DISCHARGE (CFS) - BASED ON EXISTING WATERSHED DEVELOPMENT, FLOOD DISCHARGE (CFS) - BASED ON ULTIMATE WATERSHED DEVELOPMENT.

V. HISTORIC FLOODS NA

Table with columns: YEAR, MAGNITUDE (CFS), HIGH WATER ELEVATION, WHERE MEASURED, SOURCE OF DATA.

VI. STREAM MORPHOLOGY

STREAM TYPE: NA VALLEY TYPE:
STREAM BED MATERIAL:
DESCRIPTION: D16 D50 D84
BANK FULL CHARACTERISTICS:
SLOPE: MANNINGS 'n' VALUE: SINUOSITY:

VII. TIDAL FLOWS

100-YEAR STORM TIDE ELEVATION (FT) 8.1 MAXIMUM DISCHARGE (CFS) 450
500-YEAR STORM TIDE ELEVATION (FT) N/A MAXIMUM DISCHARGE (CFS) N/A
SOURCE OF INFORMATION: TIDAL PRISM CALCULATIONS
DESIGN DISCHARGE 1960 (CFS) RETURN PERIOD 25 YEARS TIDAL PERIOD (HRS) 24
HOW DETERMINED? (EXPLAIN): TIDAL AND RIVERINE DISCHARGE
WATER SURFACE-ELEVATION FOR DESIGN CONDITION (FT)
(IF TIDAL FLOW GOVERNS HYDRAULIC DESIGN)

VII. COMMENTS: * THE DESIGN DISCHARGE IS THE SUM OF THE 25-YEAR RIVERINE PEAK FLOW (Q-25 ULT. = 1090 CFS) AND THE 25-YEAR TIDAL PEAK FLOW OF 270 CFS.

HYDRAULIC DATA

I. SOURCE: MD 450 OVER BACON RIDGE BRANCH - HYDRAULIC ANALYSIS
PREPARED BY: [] SHA [X] CONSULTANT: SAAD CONSULTANTS DATE: DEC. 2007
FILE LOCATION: C:\ALUNA\MD 450 ITEM 71 RATING 2
METHOD(S) OF ANALYSIS: HEC-RAS ANALYSIS

II. HYDRAULIC DATA

Table with columns: FLOW CONDITIONS, CHANNEL CROSS-SECTION, STRUCTURE WATERWAY AREA, ENERGY SLOPE, WATER SURFACE ELEVATION, CHANNEL (Q, W, V, D), LEFT OVERBANK, RIGHT OVERBANK, DISCHARGE OVER ROAD.

III. BRIDGE SCOUR DATA MD 450 OVER BACON RIDGE BRANCH - SCOUR ANALYSIS

A. SCOUR EVALUATION STUDY TITLE:
PREPARED BY: [] SHA [X] CONSULTANT: SAAD CONSULTANTS DATE: DEC. 2007
FILE LOCATION: C:\ALUNA\MD 450 ITEM 113 RATING 2 8L

B. SCOUR ESTIMATES:

Table with columns: DESIGN CONDITIONS, FLOOD DISCHARGE, LONG TERM DEGRADATION / AGGRADATION, CONTRACTION SCOUR DEPTH, CHANNEL BED LOAD, TYPE OF SCOUR.

NOTES:

- BLANK SPACES INDICATE THAT DATA IS NOT AVAILABLE OR IS NOT APPLICABLE
1. PARAMETERS COMPUTED ASSUMING THE WATERSHED IS HOMOGENEOUS WITHOUT SUBDIVISIONS
2. ITEM 71 RATING AND ITEM 113 RATING REFER TO THE OBD GUIDE FOR COMPLETING THE S18A INPUT FORMS.
3. RECORD FLOW CONDITIONS USED IN ANALYSIS: DISCHARGE (Q), TAILWATER CONDITION AND HOW SELECTED, ETC. (FOR DEPRESSED CULVERTS, INDICATE UNDER COMMENTS THE ASSUMPTIONS MADE AS TO WHETHER SEDIMENT WILL REMAIN DURING FLOODS)
4. FOR CULVERTS, USE THESE THREE COLUMNS TO RECORD:
o DEPTH OF FLOW AT CULVERT INLET AND OUTLET
o WATER-SURFACE ELEVATION AT CULVERT INLET AND OUTLET
o ENERGY SLOPE FOR CULVERT BARREL
5. SYMBOLS USED:
Q = FLOW OR DISCHARGE (CFS)
W = CHANNEL WIDTH OR FLOODPLAIN WIDTH (FT)
V = FLOW VELOCITY (FPS)
D = DEPTH OF FLOW (FT)
6. FOR CULVERTS, RECORD OUTLET VELOCITY HERE
7. FOR CULVERTS, RECORD TAILWATER DEPTH HERE
8. APPROACH SECTION SHOULD BE SELECTED AS PER GUIDANCE IN ABS-COUR USERS MANUAL
9. ENTER CONTRACTION SCOUR DEPTHS ONLY (APPROXIMATE LINE 121 IN ABS-COUR OUTPUT) - NOT ABUTMENT SCOUR
10. IF SCOUR RESISTENT BEDROCK CONTROLS SCOUR, ENTER BEDROCK ELEVATION AND NOTE THIS CONDITION UNDER COMMENTS
11. RECORD INCIPENT OVERTOPPING DISCHARGE (Q) AND RECURRENCE INTERVAL
12. RECORD CLEARANCE BETWEEN WATER SURFACE ELEVATION AND LOW CHORD FOR DESIGN DISCHARGE
13. RECORD TOTAL FLOW AREA UNDER STRUCTURE (DOWNSTREAM END) FOR 100 & 500 YEAR FLOODS
14. FOR BRIDGES: ENTER TYPE, SPAN LENGTH AND MAXIMUM VERTICAL CLEARANCE FOR CULVERTS: ENTER SIZE, NUMBER OF CELLS, AND LENGTH; DESCRIBE ANY SPECIAL FEATURES UNDER COMMENTS
15. FOR CULVERTS, DESCRIBE TYPE OF INLET/OUTLET AND EROSION PROTECTION
16. COMPOSITE 'N' VALUE OF STRUCTURE

IV. ROADWAY AND STRUCTURE DATA

Table with columns: ITEM, EXISTING STRUCTURE, PROPOSED STRUCTURE. Rows include: NAME OF WATERWAY, DATE BUILT, OVERTOPPING ELEVATION, OVERTOPPING LOCATION, INCIPENT OVERTOPPING FLOW CONDITION, FREEBOARD, TOTAL STRUCTURE WATERWAY AREA, STRUCTURE DESCRIPTION, INLET TREATMENT, OUTLET TREATMENT, MANNINGS 'N' VALUE.

V. SURVEY BOOK NUMBERS:
REFERENCE DATUM FOR ELEVATIONS: NAVD 88

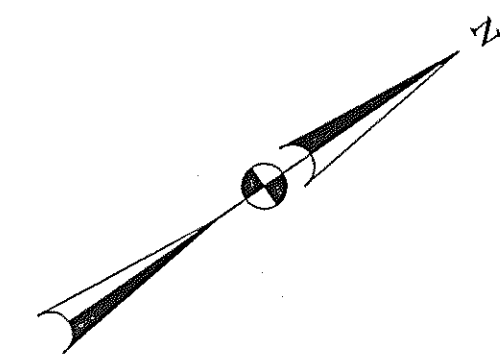
VI. FLOOD PLAIN MANAGEMENT DATA

DATE OF FLOOD INSURANCE STUDY: SEPT 1985 COMMUNITY PANEL NO. 240008 0037 C
PROJECT LOCATION (CHECK BELOW):
BEYOND FEMA PROGRAM LIMITS (NOT IN 'A' HAZARD ZONE)
FEMA HAZARD ZONE 'A'; NO BASE FLOOD ELEVATIONS ESTABLISHED
FEMA HAZARD ZONE 'A'; BASE FLOOD ELEVATIONS ESTABLISHED
REGULATORY FLOODWAY: YES [] NO [X]
MAXIMUM CHANGE IN WATER SURFACE ELEVATION UPSTREAM OF BRIDGE DUE TO HIGHWAY PROJECT (MAX. BACKWATER) FT.
LOCATION OF MAX. BACKWATER FROM UPSTREAM FACE OF BRIDGE FT.

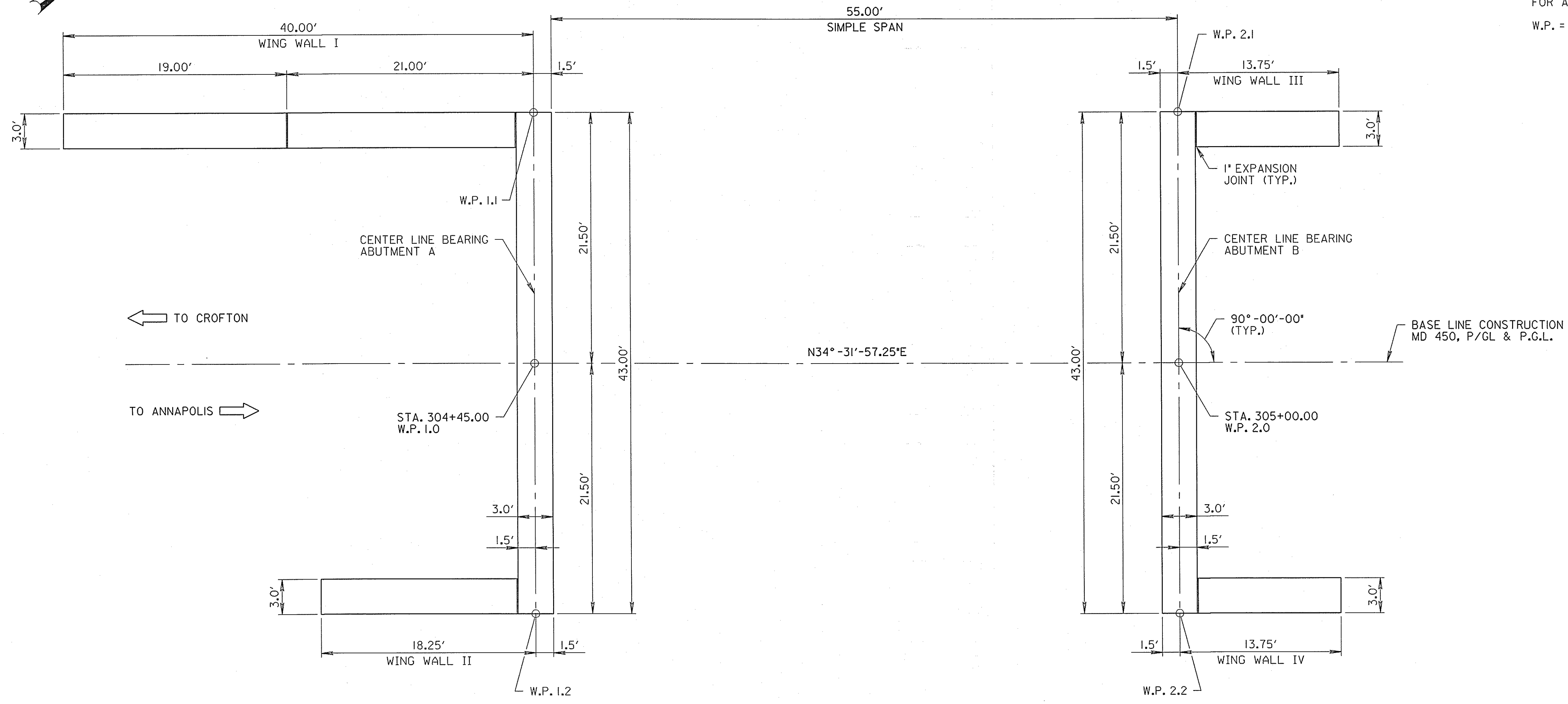
DESCRIBE TYPE OF STUDY DONE TO DETERMINE CONSISTENCY WITH NFIP STANDARDS
DATE COMMUNITY ACKNOWLEDGEMENT FORM ISSUED:
IS THE PROJECT CONSISTENT WITH THE CODE OF FEDERAL REGULATIONS, PART 650 A, LOCATION AND HYDRAULIC DESIGN OF ENCROACHMENTS ON FLOOD PLAINS (23 CFR 650 A). Y/N
IS THE PROJECT CONSISTENT WITH THE ANNOTATED CODE OF MARYLAND (COMAR 08.05.031)? Y/N

VII. COMMENTS: DESIGN DISCHARGES ARE A COMBINATION OF RIVERINE AND TIDAL FLOWS. FINAL DISCHARGES ARE:
2-YR = 240 CFF
10-YR = 715 CFS
25-YR = 1360 CFS
50-YR = 1695 CFS
100-YR = 2130 CFS

Revisions table and project title block: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT. PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH HYDROLOGIC AND HYDRAULIC DATA. SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180. DESIGNED BY S.H.A., DRAWN BY S.H.A., CHECKED BY S.H.A., E.S.F., JAN. 8, 2008. SHEET NO. 25 OF 66. INDEXED



NOTES:
 FOR GENERAL PLAN AND ELEVATION, SEE SHEET NO. SI-1
 FOR ABUTMENT A PLAN AND ELEVATION, SEE SHEET NO. SI-5
 FOR ABUTMENT B PLAN AND ELEVATION, SEE SHEET NO. SI-6
 W.P. = WORKING POINT



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

S1 - 3

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH GEOMETRIC LAYOUT
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 8, 2008
	SHEET NO. 26 OF 66

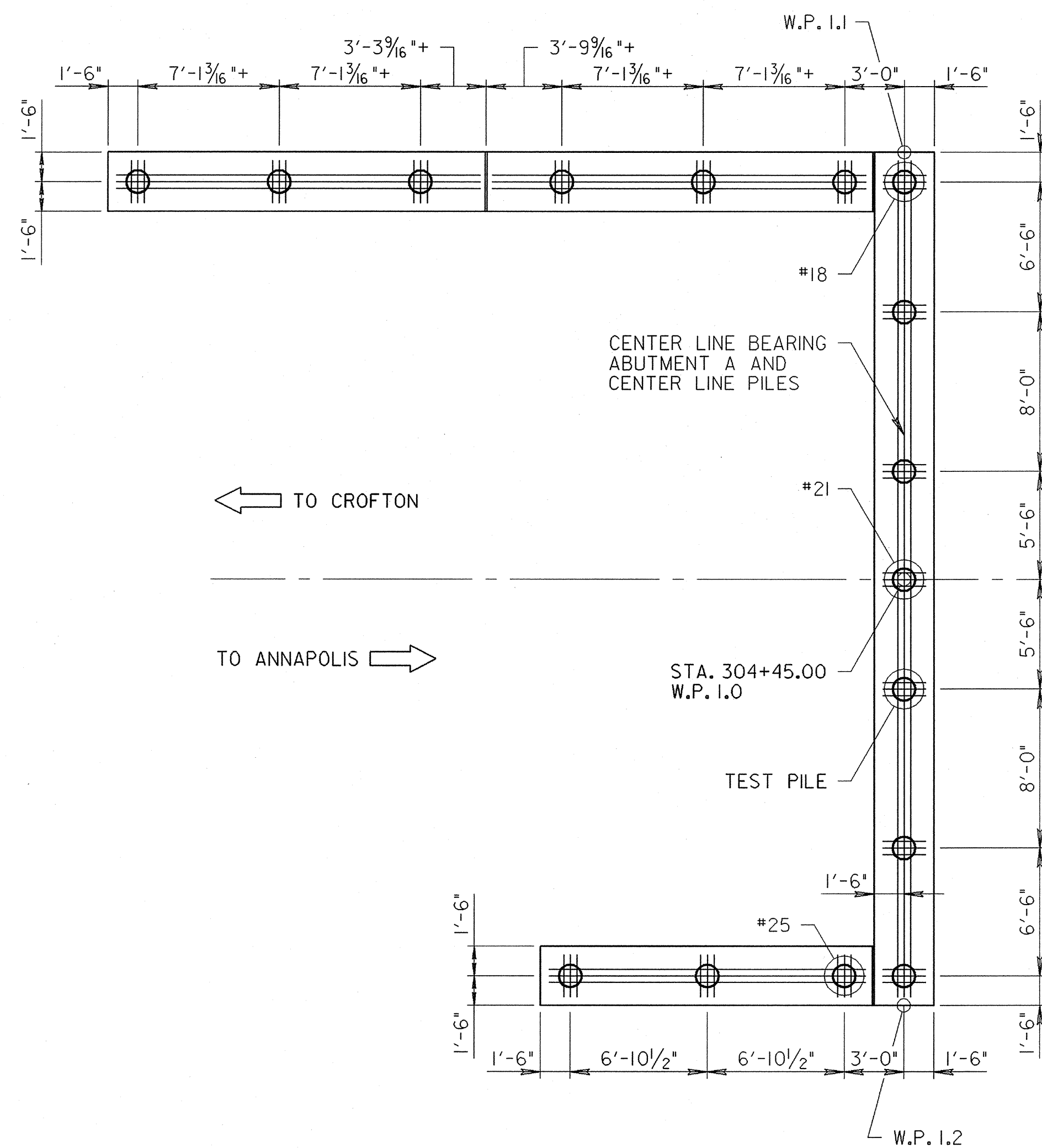
OTHER CONTRACTS FOR THIS STRUCTURE _____

STRUCTURE INVENTORY NO. 0207200

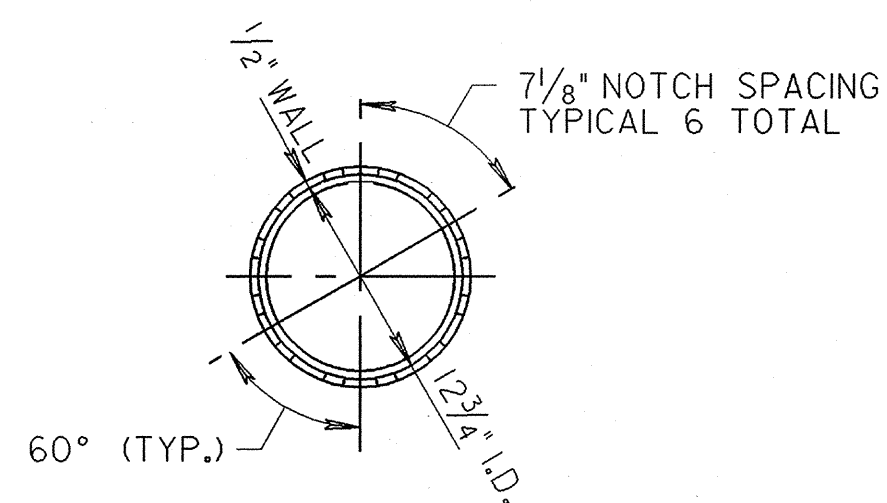
SURVEY BOOK NO.

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 PRINT DATE: Friday, December 07, 2007 at 10:59:30 AM

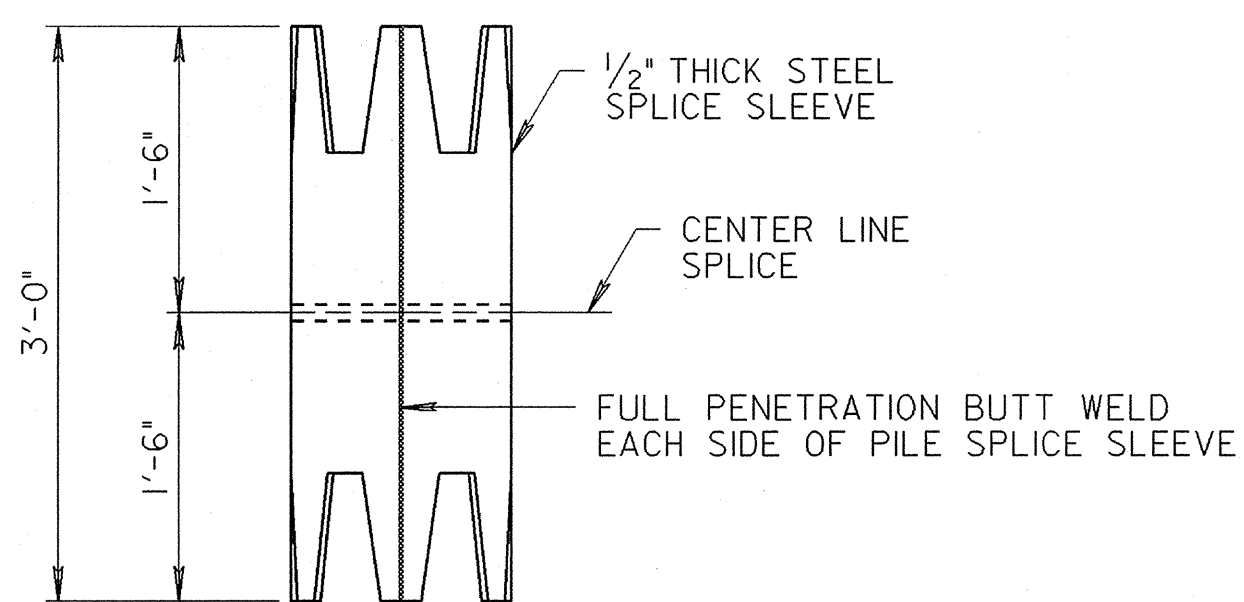
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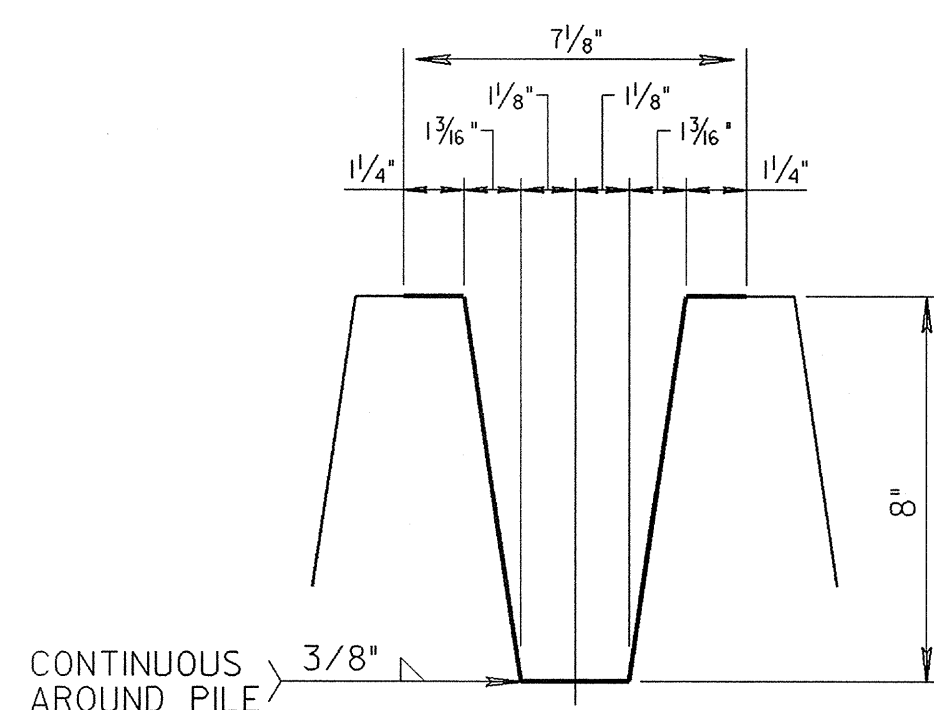
ABUTMENT PILE PLAN
SCALE: 3/16" = 1'-0"



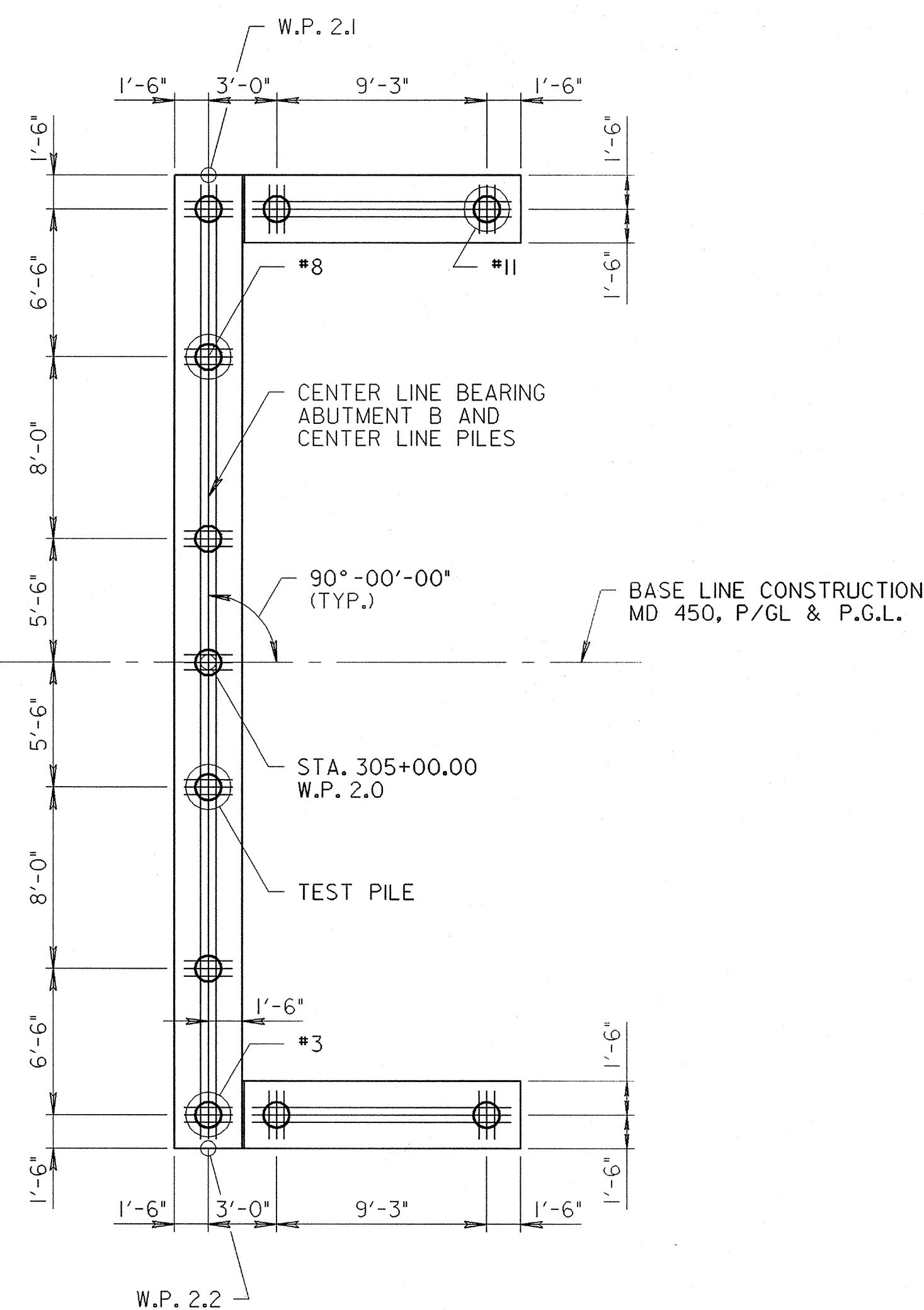
PILE SPLICE PLAN
SCALE: 1" = 1'-0"



PILE SPLICE ELEVATION
SCALE: 1" = 1'-0"



TYPICAL NOTCH SECTION DETAIL
SCALE: 3" = 1'-0"



NOTE:
ONLY PILE REINFORCING
SHOWN FOR CLARITY.

NOTES:
FOR ADDITIONAL ABUTMENT DETAILS, SEE SHEET NO. SI-5 TO SI-10

ALL PILES TO BE PLUMB PILES DENOTED THUS: ○
TEST PILES DENOTED THUS: ⊙

ALL PILES TO BE 12 3/4" DIA. STEEL PIPE PILES WITH 1/2" MINIMUM WALL THICKNESS CONFORMING TO ASTM A 252, GRADE 3. ALL PILES SHALL BE DRIVEN CLOSED ENDED.

ALL PILES SHALL BE DRIVEN TO A MINIMUM SAFE BEARING VALUE OF 120 TONS (DESIGN LOAD 100 TONS).

ALL PILES MUST BE DRIVEN TO ACHIEVE MINIMUM PENETRATION INTO ORIGINAL GROUND TO ELEVATION -65.00. THE ESTIMATED TIP ELEVATION FOR ABUTMENT A IS -70.00 AND ABUTMENT B IS -70.00.

THE MINIMUM SAFE BEARING VALUE AND MINIMUM PENETRATION SHOWN ON THESE PLANS MUST BE ACHIEVED FOR EACH PILE. IF THE ESTIMATED TIP ELEVATION IS NOT REACHED OR IS EXCEEDED WHILE ACHIEVING THE MINIMUM SAFE BEARING VALUE AND THE MINIMUM PENETRATION, THE PILE WILL BE CONSIDERED SATISFACTORY.

ANY VOIDS WITHIN THE PILES SHALL BE FILLED WITH SAND.

ALL SAND WITHIN THE PILES WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCIDENTAL TO THE PERTINENT PILE ITEM.

SHOP PLANS SHALL SHOW HOW REBARS ARE TO BE TIED, AS WELL AS HOW THEY WILL BE HELD IN PLACE ABOVE THE PILING WHILE THE FOOTING POUR IS BEING MADE.

PILE DRIVING INFORMATION

PILE SIZE AND TYPE:	12 3/4" DIA. PIPE PILE
ACTUAL BEARING OBTAINED:	184 TONS
HAMMER TYPE:	MODEL ICE 60S
AVERAGE ACTUAL BLOWS/FT.:	80 (ABUT. A), 115 (ABUT. B)
REQUIRED HAMMER ENERGY:	32,500 - 37,375 FT.-LB.

PILE TIP DATA

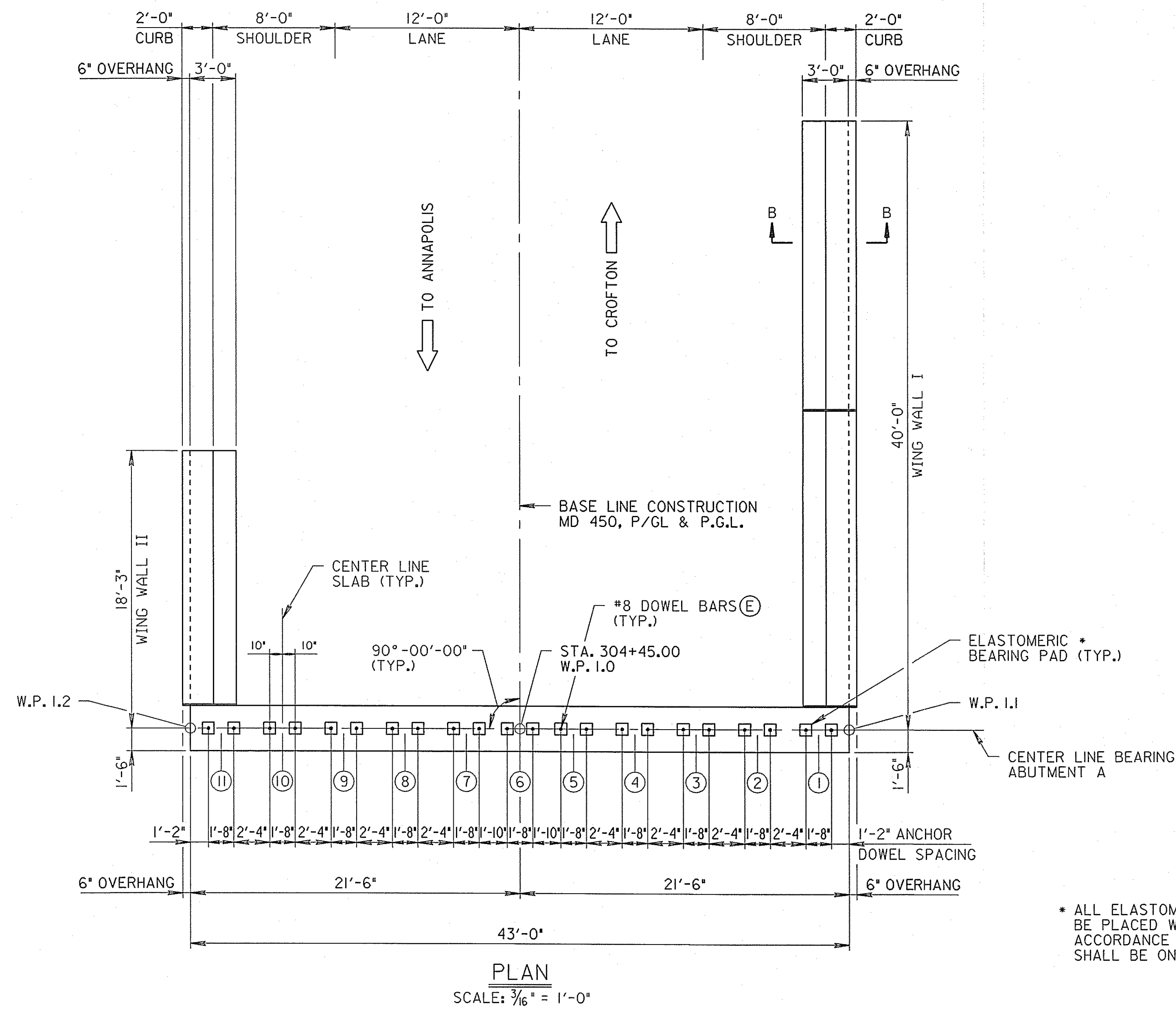
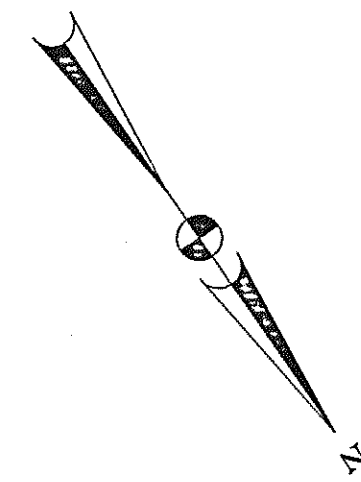
SUBSTRUCTURE UNIT	DESIGN DATA		ACTUAL FIELD DATA	
	MINIMUM PENETRATION ELEVATION	ESTIMATED PENETRATION ELEVATION	AVERAGE ACTUAL MINIMUM PENETRATION ELEVATION	AVERAGE ACTUAL MAXIMUM PENETRATION ELEVATION
ABUTMENT A	-65.00	-70.00	-65.75	-66.25
ABUTMENT B	-65.00	-70.00	-65.25	-65.75

NOTES:
ALL SPLICE MATERIAL TO BE A 709, GRADE 50
SPLICE SLEEVES SHALL BE SHOP FABRICATED.
THIS SPLICE SHALL BE USED FOR ALL SPLICES.
COST OF PILE SPLICES SHALL BE INCIDENTAL TO THE PERTINENT PILE ITEMS.

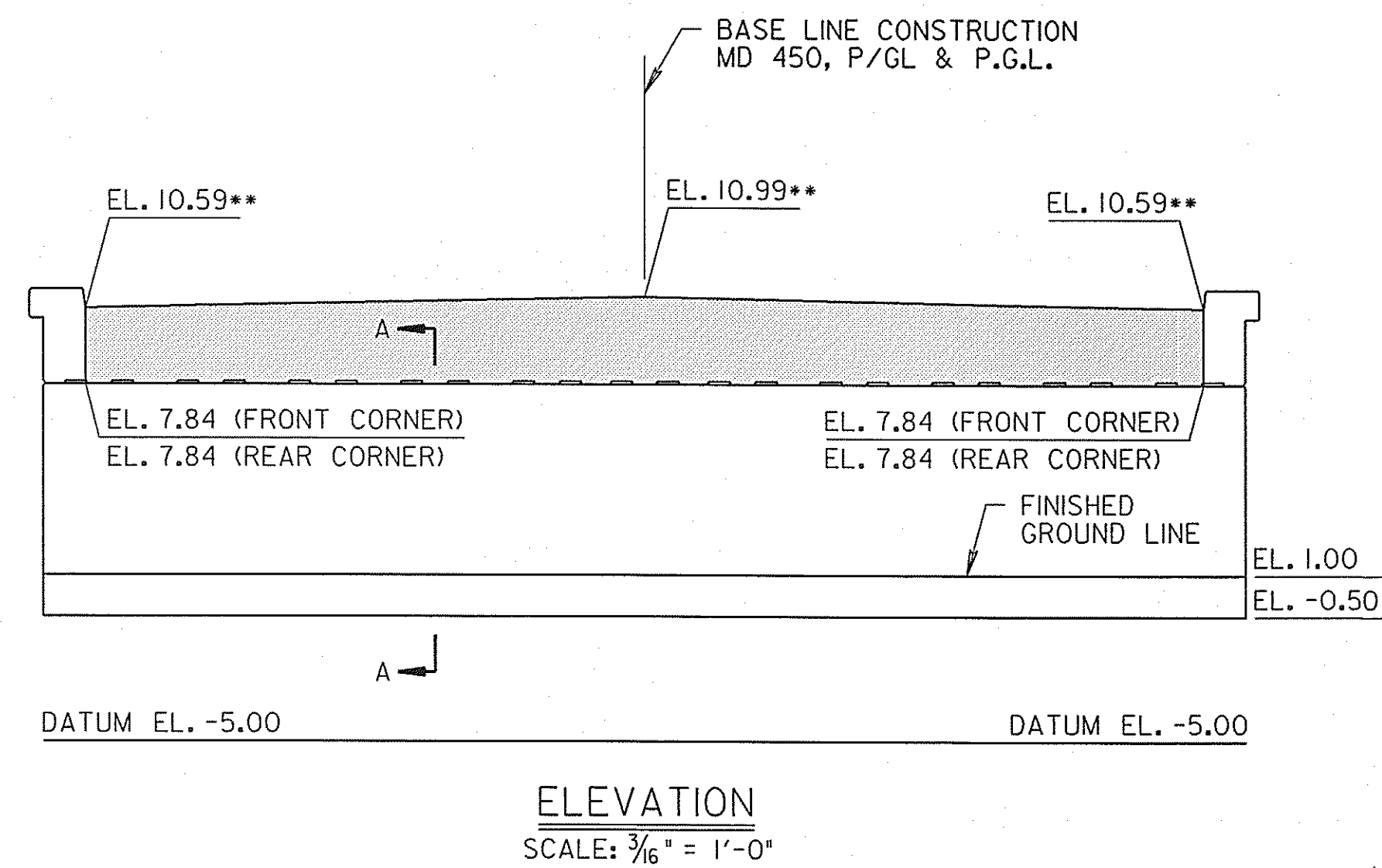
REVISIONS PILE DRIVING & PILE TIP DATA ADDED 9/23/08 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH ABUTMENT PILE PLAN
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180 DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R. E.S.F. JAN. 8, 2008

S1 - 4

SHEET NO. 27 OF 66



* ALL ELASTOMERIC BEARING PADS SHALL BE PLACED WITH AN EPOXY ADHESIVE IN ACCORDANCE WITH 432.03.04. ADHESIVE SHALL BE ON BOTTOM AND TOP OF PAD

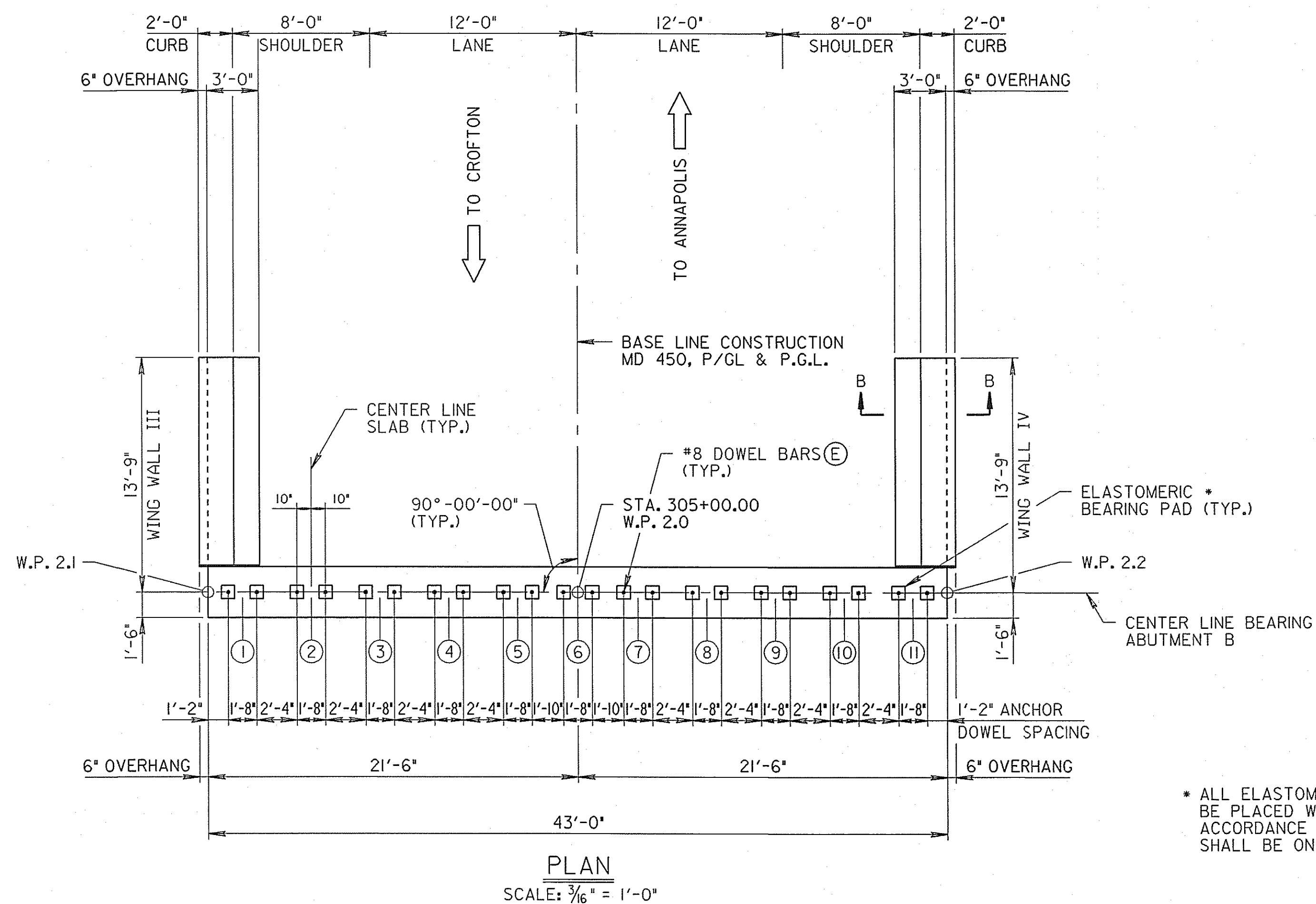
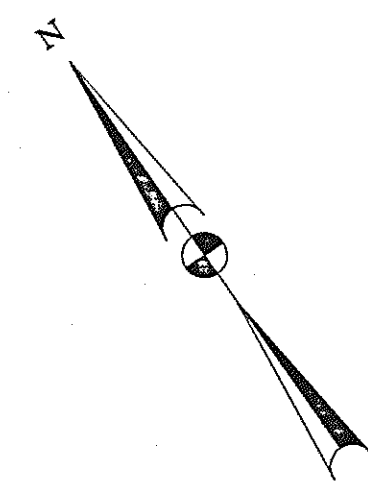


NOTE:
FOOTING PILES NOT SHOWN.
** ELEVATIONS TAKEN ON REAR FACE OF ROADWAY ANGLE AT END OF BRIDGE
SHADED PORTION OF ABUTMENT TO BE PLACED WITH CONCRETE OVERLAY. NOT SHOWN IN PLAN VIEW.

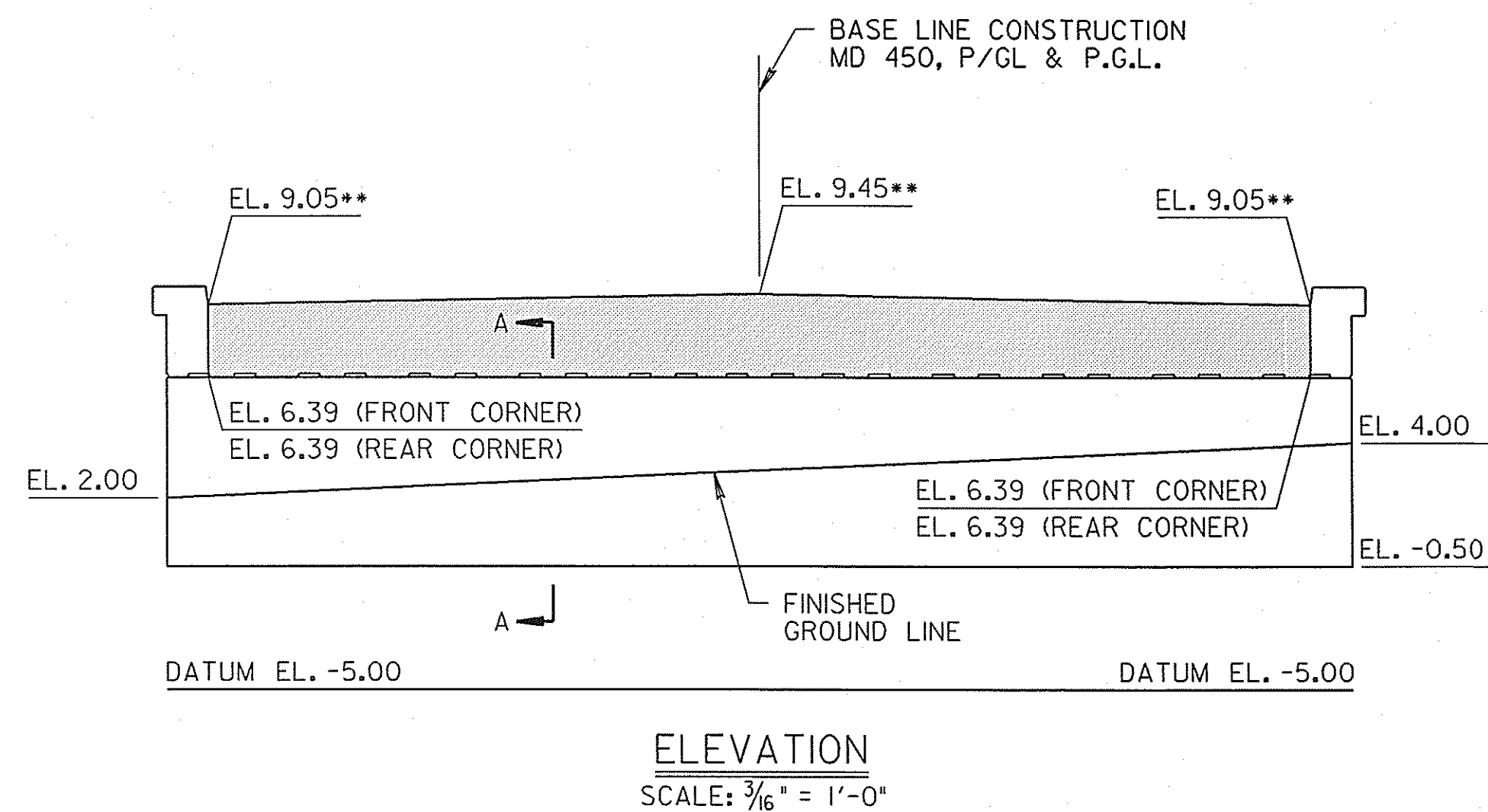
NOTES:
FOR ADDITIONAL ABUTMENT DETAILS, SEE SHEET NO. SI-7
FOR PILE LAYOUT PLAN, SEE SHEET NO. SI-4
FOR WINGWALL DETAILS, SEE SHEET NO. SI-8 TO SI-10
FOR SUPERSTRUCTURE SLAB DETAILS, SEE SHEET NO. SI-13 TO SI-17
FOR SECTION A-A, SEE SHEET NO. SI-7
FOR SECTION B-B, SEE SHEET NO. SI-10
ⓔ INDICATES REINFORCING STEEL TO BE EPOXY COATED.

S1 - 5

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH ABUTMENT A
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 8, 2008
	SHEET NO. 28 OF 66



• ALL ELASTOMERIC BEARING PADS SHALL BE PLACED WITH AN EPOXY ADHESIVE IN ACCORDANCE WITH 432.03.04. ADHESIVE SHALL BE ON BOTTOM AND TOP OF PAD



NOTE:
FOOTING PILES NOT SHOWN.

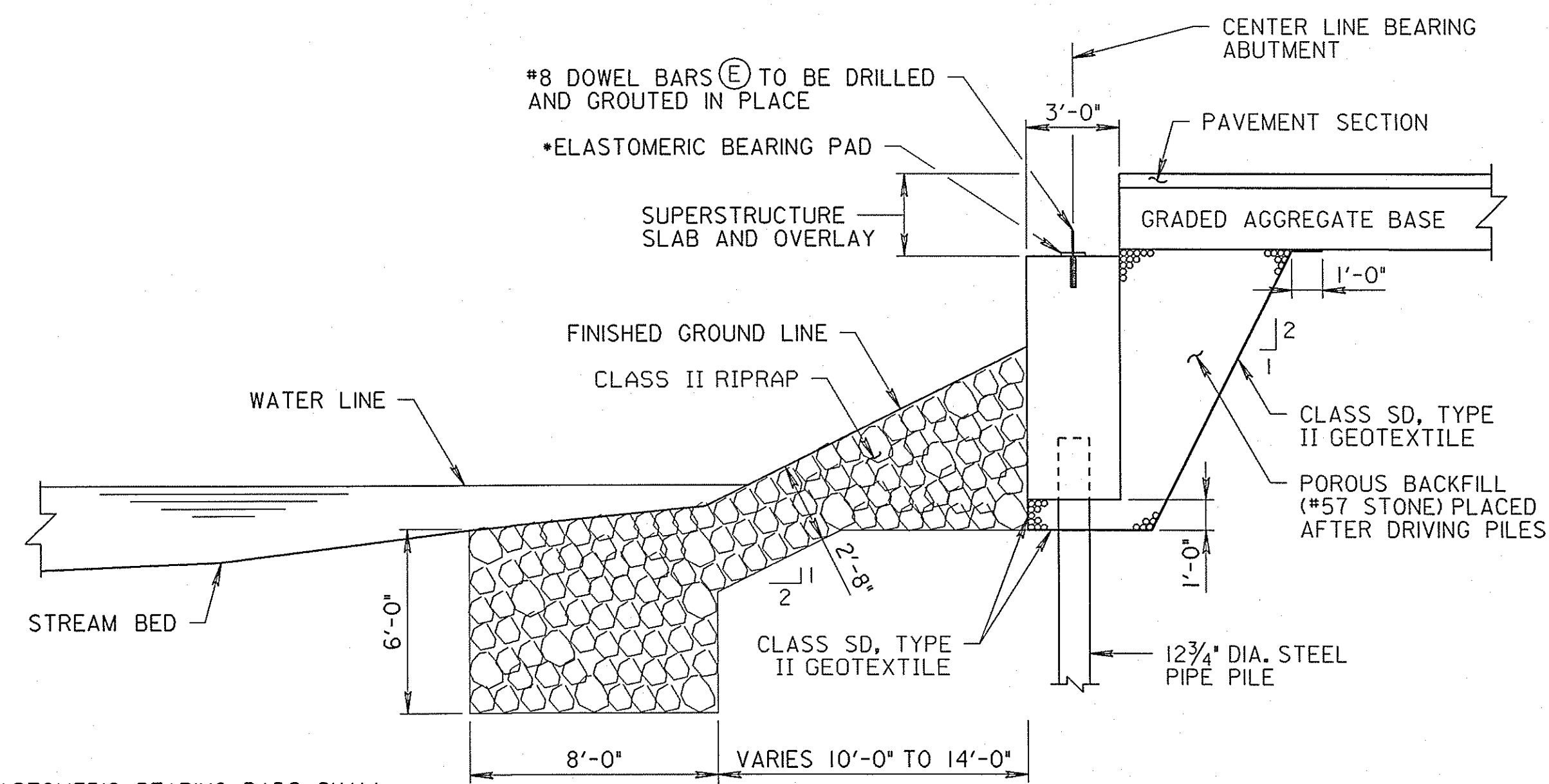
** ELEVATIONS TAKEN ON REAR FACE OF ROADWAY ANGLE AT END OF BRIDGE

SHADED PORTION OF ABUTMENT TO BE PLACED WITH CONCRETE OVERLAY. NOT SHOWN IN PLAN VIEW.

NOTES:
FOR ADDITIONAL ABUTMENT DETAILS, SEE SHEET NO. SI-7
FOR PILE LAYOUT PLAN, SEE SHEET NO. SI-4
FOR WINGWALL DETAILS, SEE SHEET NO. SI-8 TO SI-10
FOR SUPERSTRUCTURE SLAB DETAILS, SEE SHEET NO. SI-13 TO SI-17
FOR SECTION A-A, SEE SHEET NO. SI-7
FOR SECTION B-B, SEE SHEET NO. SI-10
ⓔ INDICATES REINFORCING STEEL TO BE EPOXY COATED.

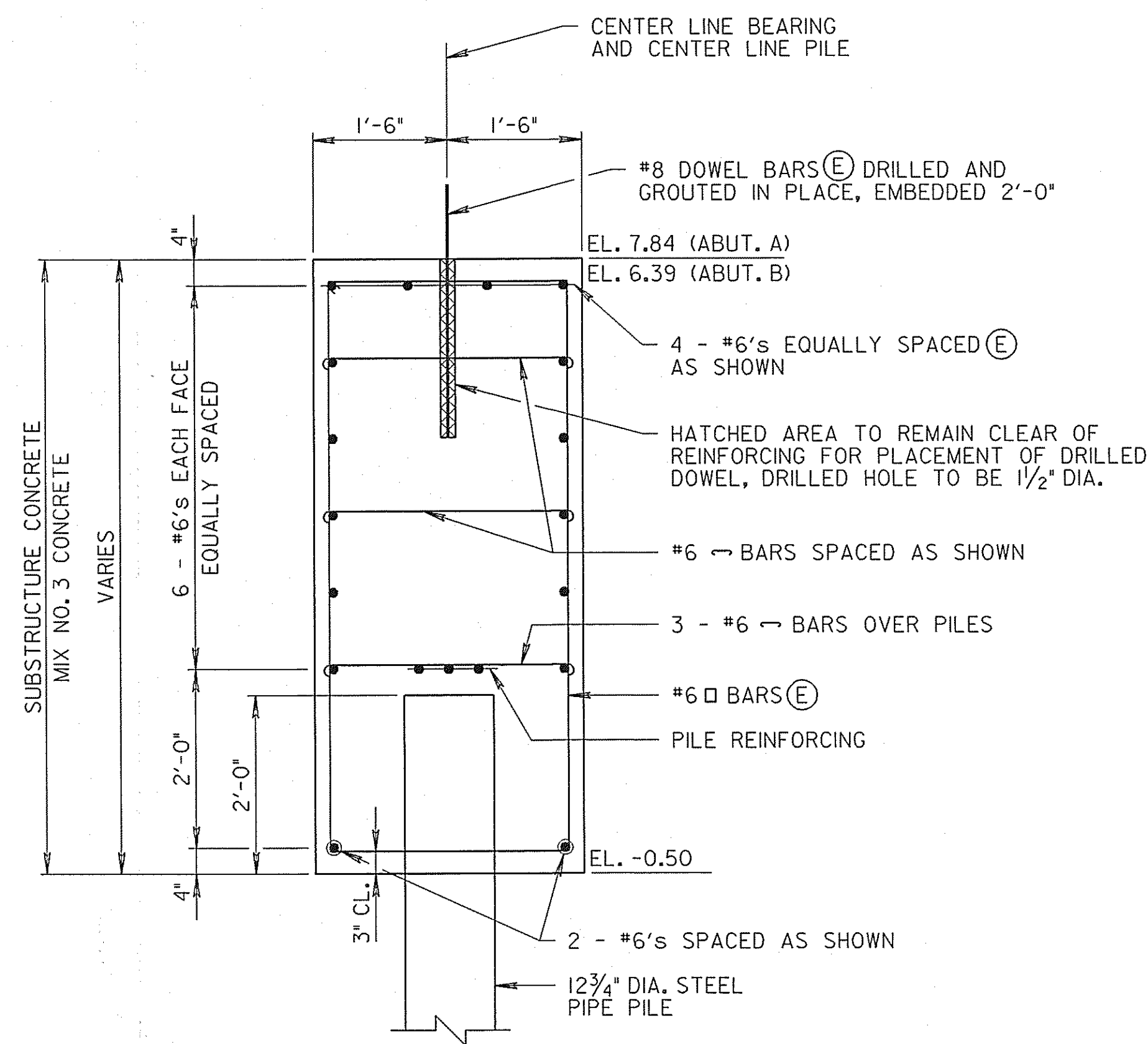
S1 - 6

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH ABUTMENT B	
	SCALE AS SHOWN	DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S.	DRAWN BY D.A.C.
	CHECKED BY J.L.R.	
	E.S.F. JAN. 8, 2008	SHEET NO. 29 OF 66
	OTHER CONTRACTS FOR THIS STRUCTURE	STRUCTURE INVENTORY NO. 0207200
		SURVEY BOOK NO.
		C:\bridge\bdd\2072abb.dgn PRINT DATE: Friday, December 07, 2007 at 10:55:47 AM
		INDEXED



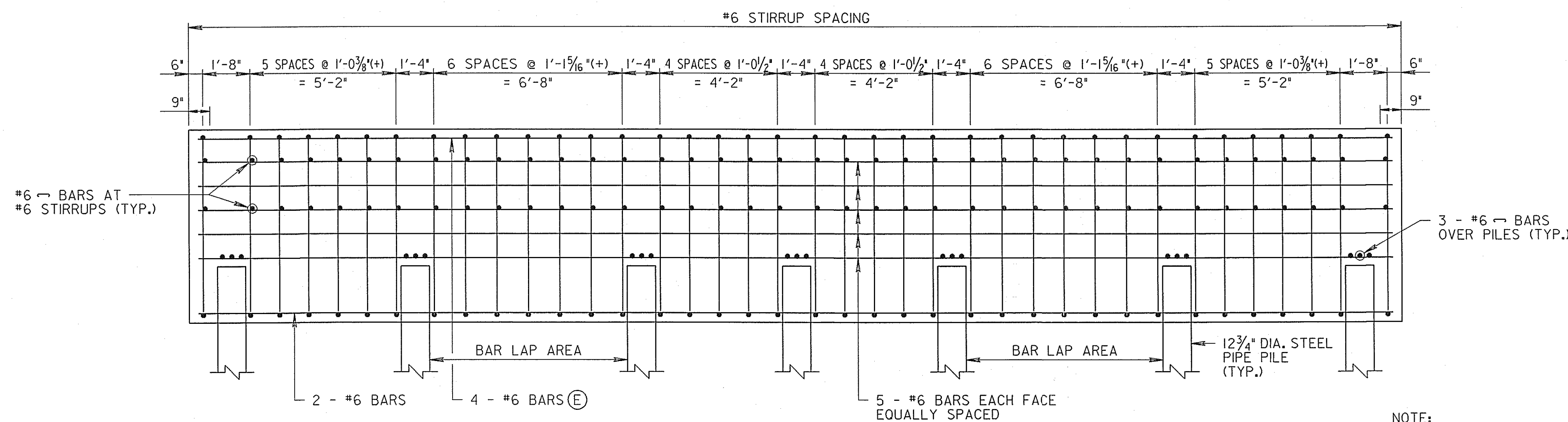
NOTE:
 • ALL ELASTOMERIC BEARING PADS SHALL BE PLACED WITH AN EPOXY ADHESIVE IN ACCORDANCE WITH 432.03.04. ADHESIVE SHALL BE ON BOTTOM AND TOP OF PAD.

SECTION A-A
 SCALE: 1/4" = 1'-0"



REINFORCING DETAIL SECTION A-A
 SCALE: 3/4" = 1'-0"

NOTES:
 FOR PILE LAYOUT PLAN, SEE SHEET NO. SI-4
 FOR WINGWALL DETAILS, SEE SHEET NO. SI-8 TO SI-10
 FOR SUPERSTRUCTURE SLAB DETAILS, SEE SHEET NO. SI-13 TO SI-17
 (E) INDICATES REINFORCING STEEL TO BE EPOXY COATED.

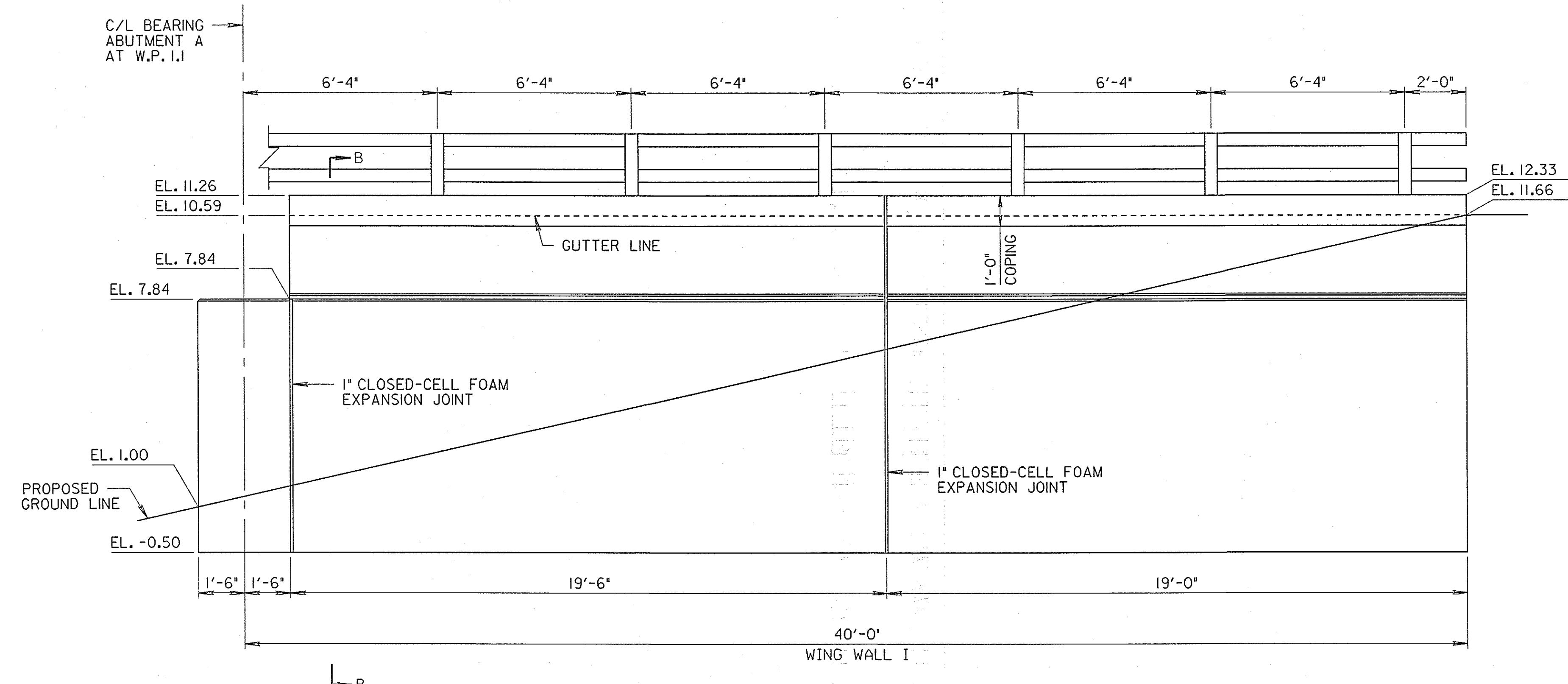


ABUTMENT REINFORCING DETAIL
 SCALE: 3/8" = 1'-0"

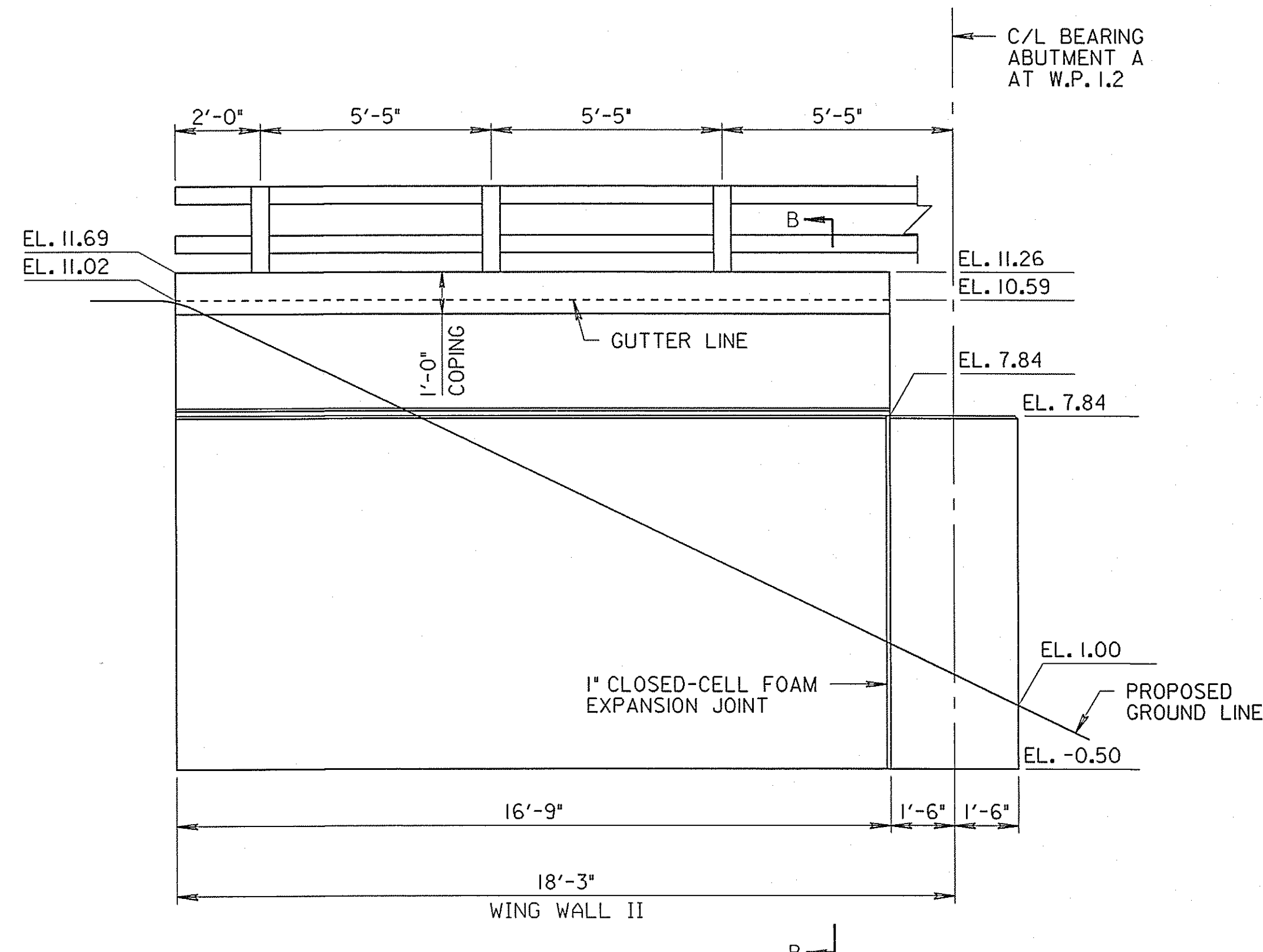
NOTE:
 ALL BAR LAPPING, IF REQUIRED, SHALL BE DONE IN DESIGNATED AREA.

SI - 7

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH ABUTMENT DETAILS
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 8, 2008
	SHEET NO. 30 OF 66



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



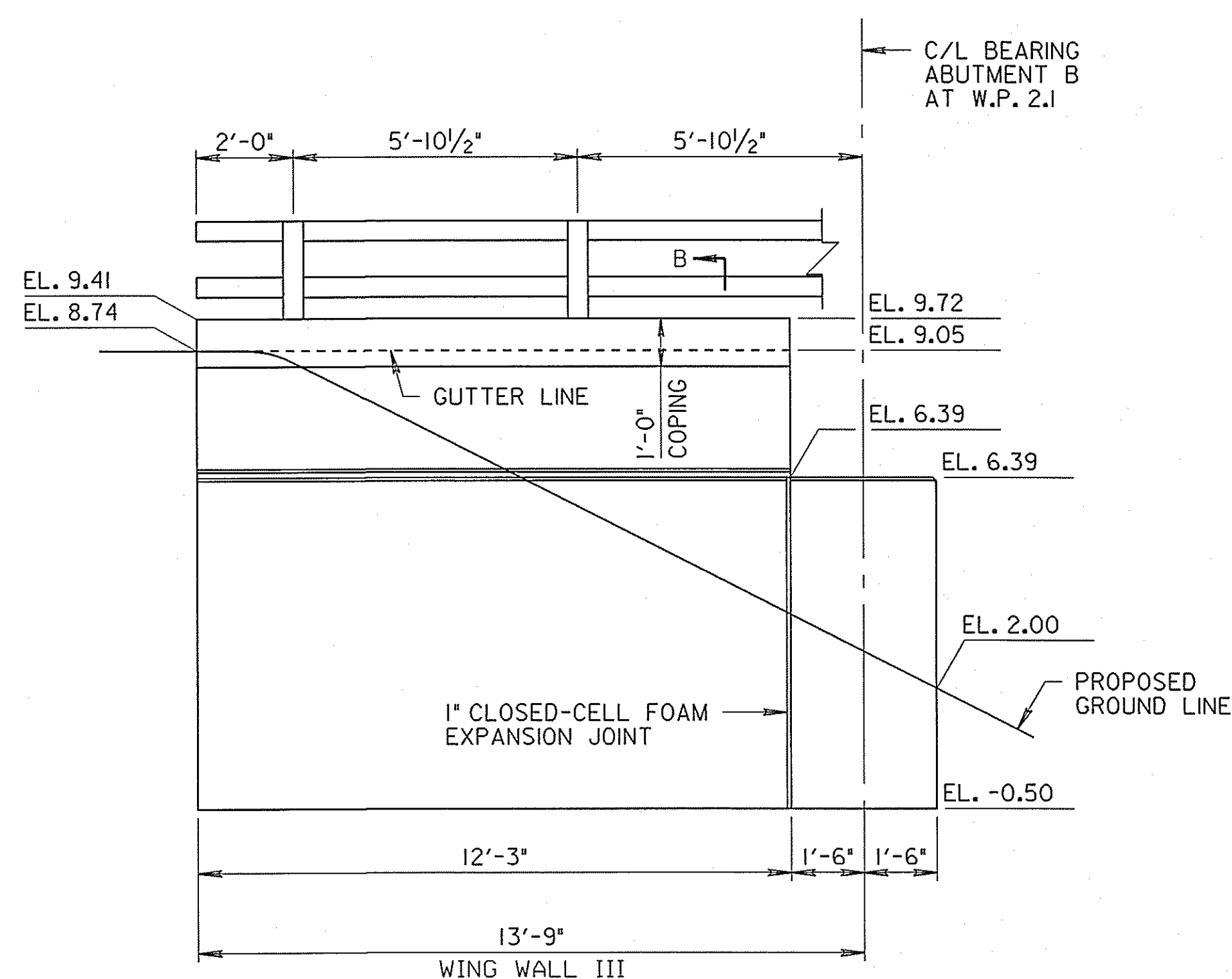
WING WALL II ELEVATION
 SCALE: 3/8" = 1'-0"

NOTES:
 FOR ADDITIONAL WING WALL DETAILS, SEE SHEET NO. SI-10
 FOR SECTION B-B, SEE SHEET NO. SI-10
 FOR RAILING DETAILS, SEE SHEET NO. SI-19
 RIPRAP AND FOOTING PILES NOT SHOWN.

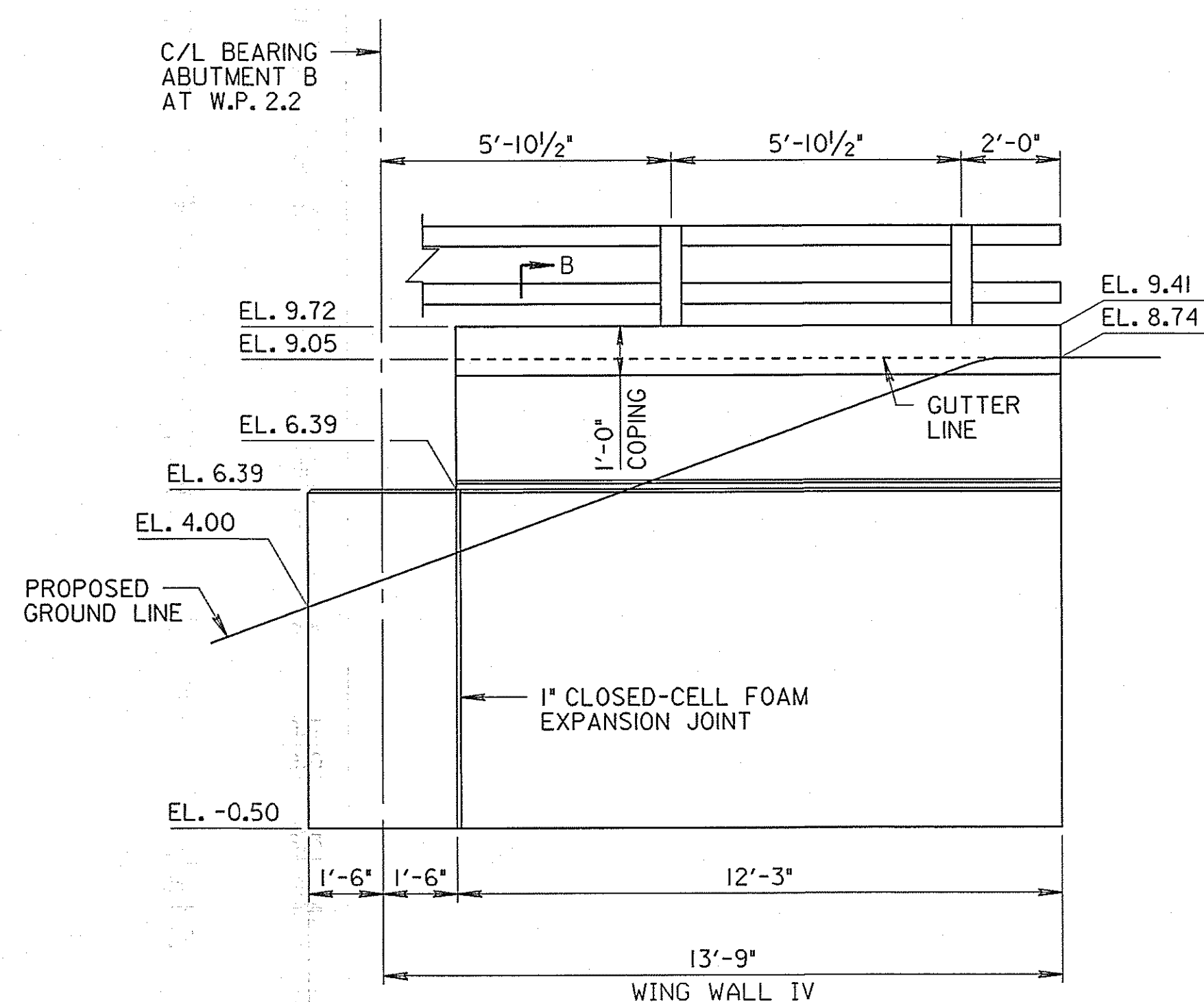
S1 - 8

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH WING WALL ELEVATIONS
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R. E.S.F. JAN. 8, 2008
SHEET NO. 31 OF 66	

NOTES:
 FOR ADDITIONAL WING WALL DETAILS, SEE SHEET NO. SI-10
 FOR SECTION B-B, SEE SHEET NO. SI-10
 FOR RAILING DETAILS, SEE SHEET NO. SI-19
 RIPRAP AND FOOTING PILES NOT SHOWN.



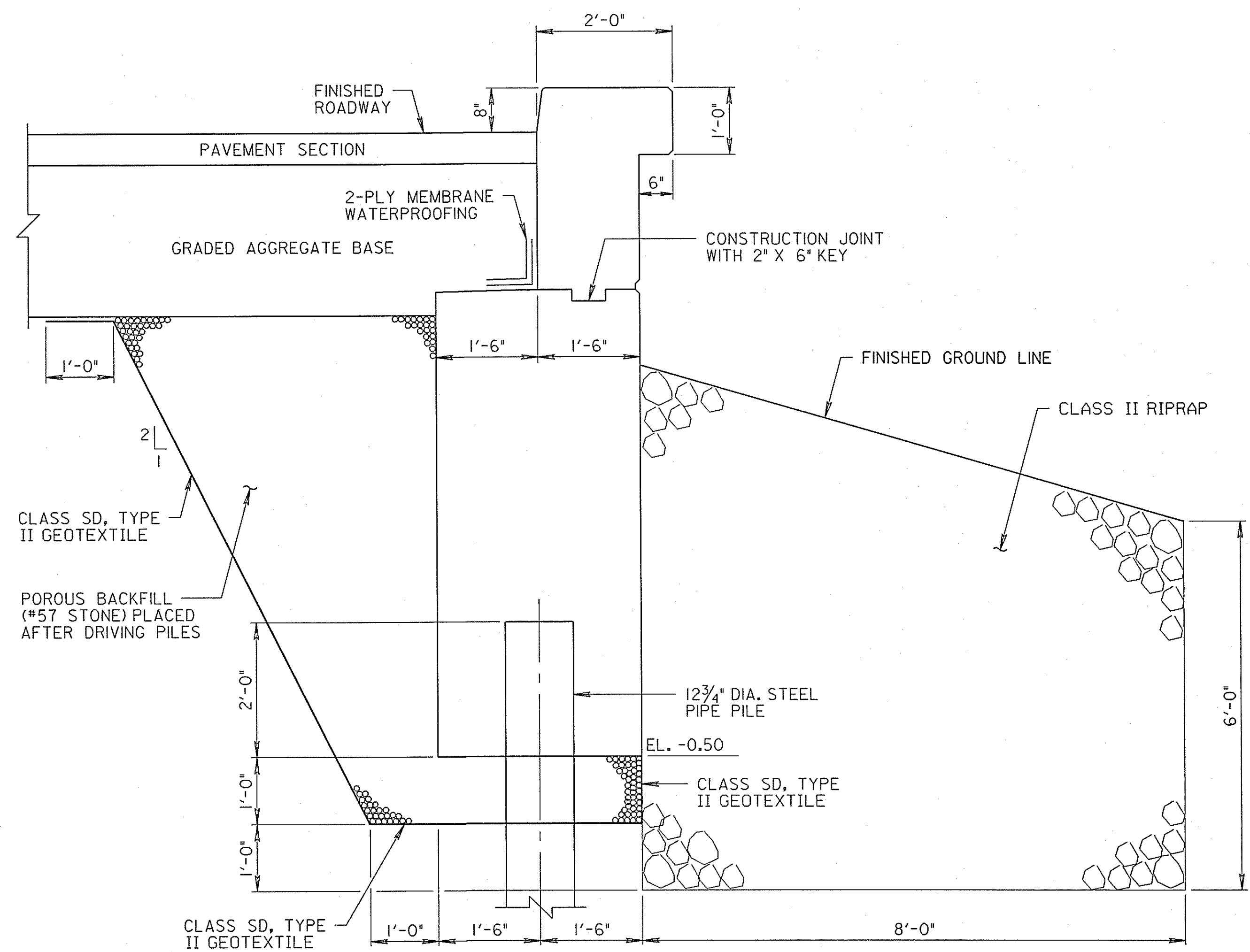
WING WALL III ELEVATION
 SCALE: 3/8" = 1'-0"



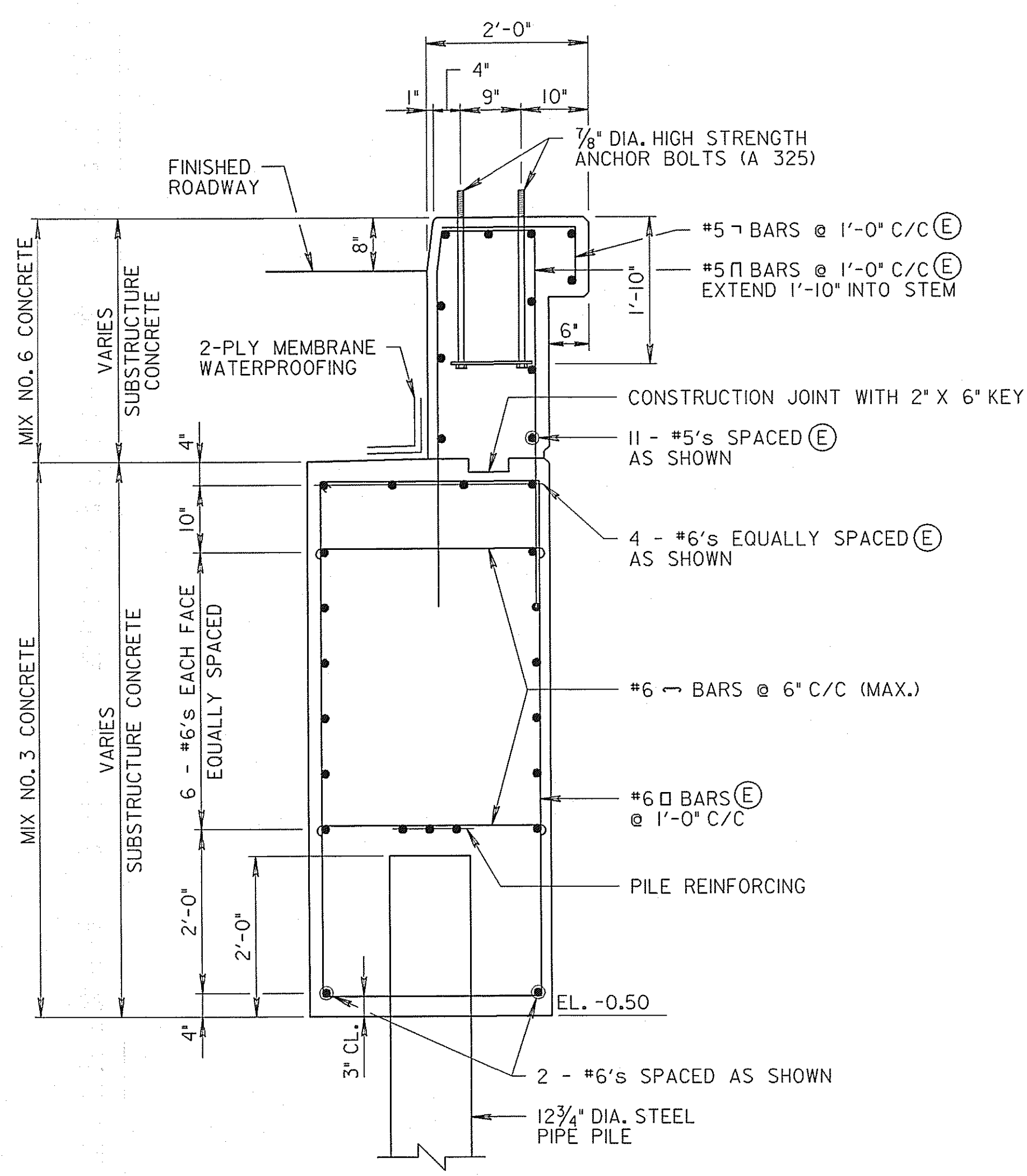
WING WALL IV ELEVATION
 SCALE: 3/8" = 1'-0"

S1 - 9

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH WING WALL ELEVATIONS
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 8, 2008
	SHEET NO. 32 OF 66

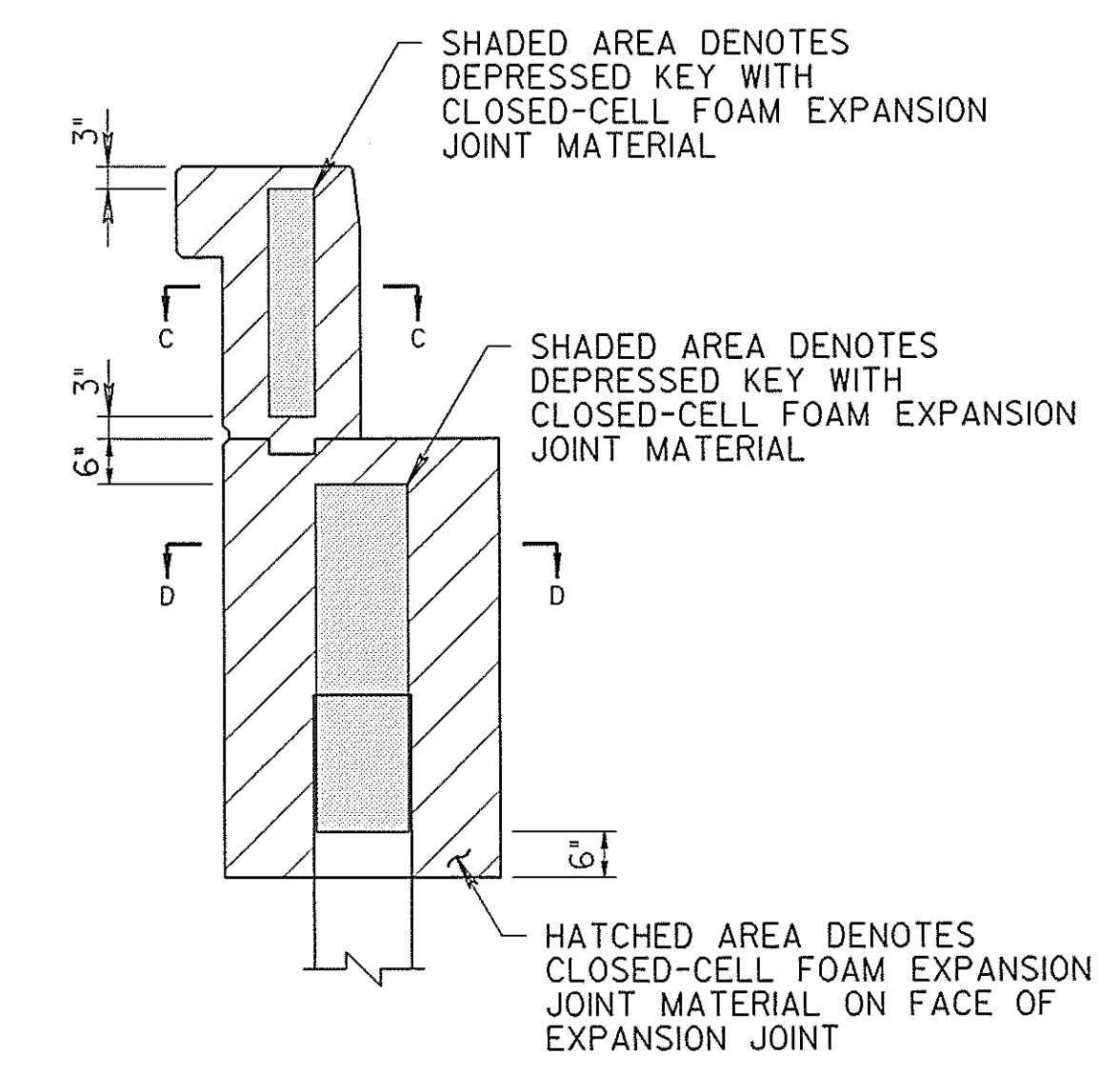


SECTION B-B
SCALE: 3/4" = 1'-0"

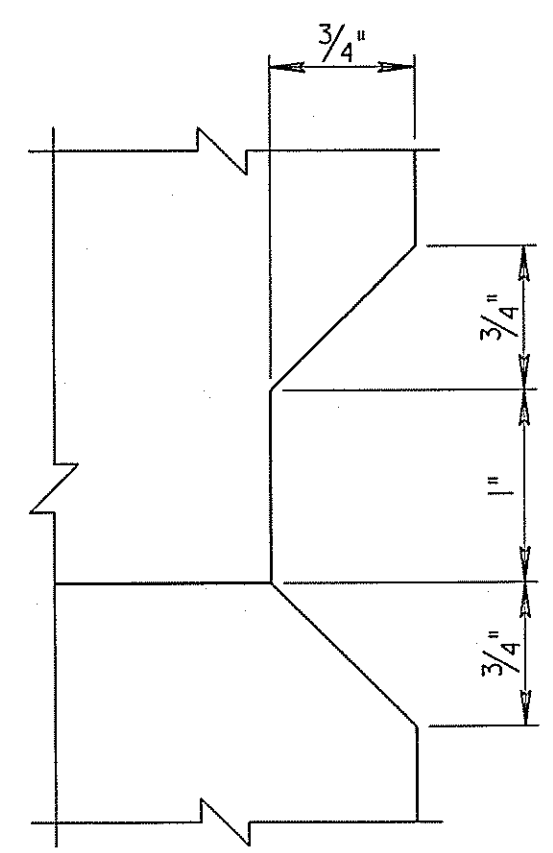


REINFORCING DETAIL SECTION B-B
SCALE: 3/4" = 1'-0"

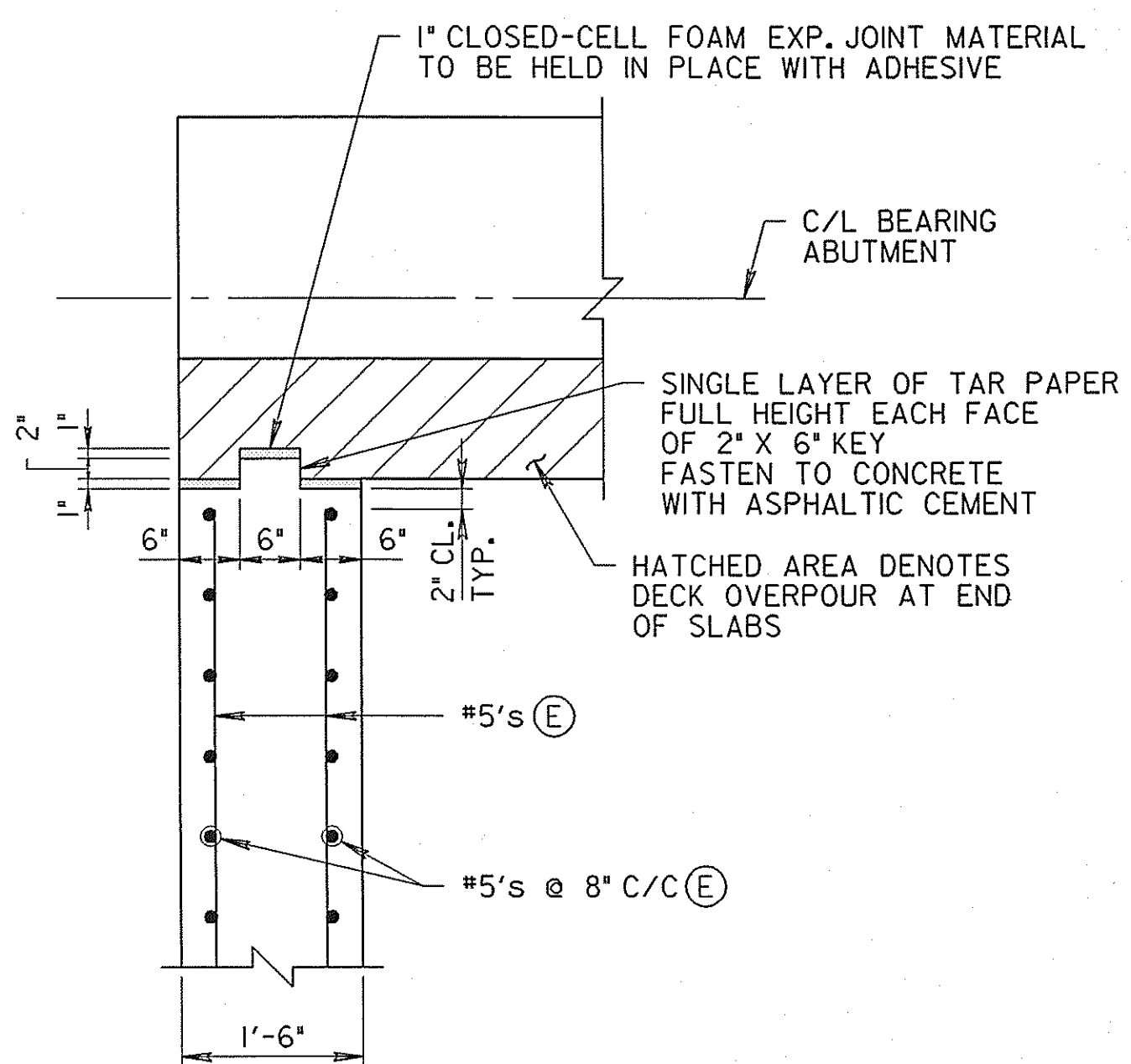
NOTES:
FOR ADDITIONAL WING WALL DETAILS, SEE SHEET NO. SI-8 AND SI-9
FOR ABUTMENT DETAILS, SEE SHEET NO. SI-5 TO SI-7
ⓔ INDICATES REINFORCING STEEL TO BE EPOXY COATED.



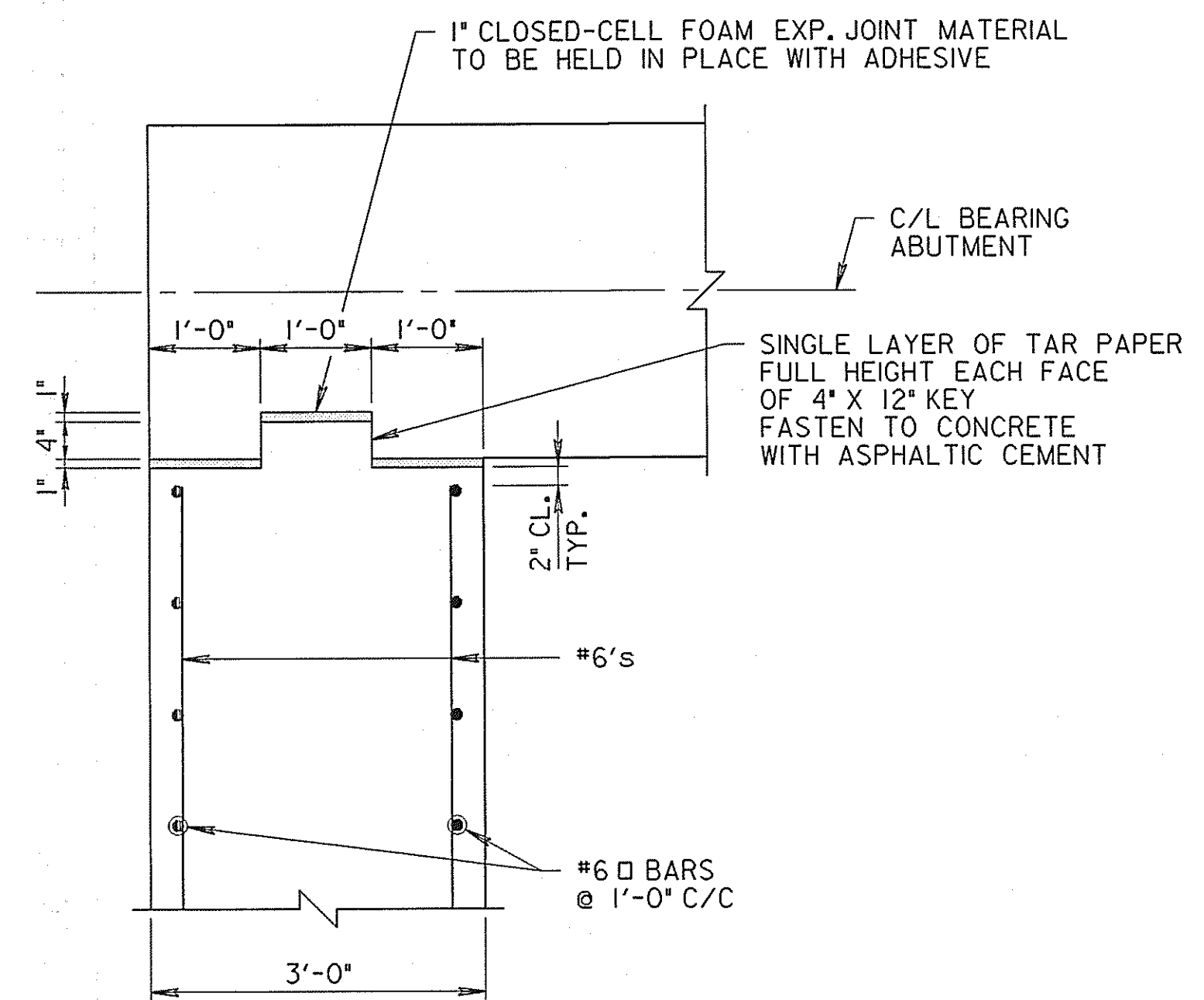
WING WALL EXPANSION JOINT SECTION DETAIL
SCALE: 1/2" = 1'-0"



GROOVE DETAIL
SCALE: 1" = 1"



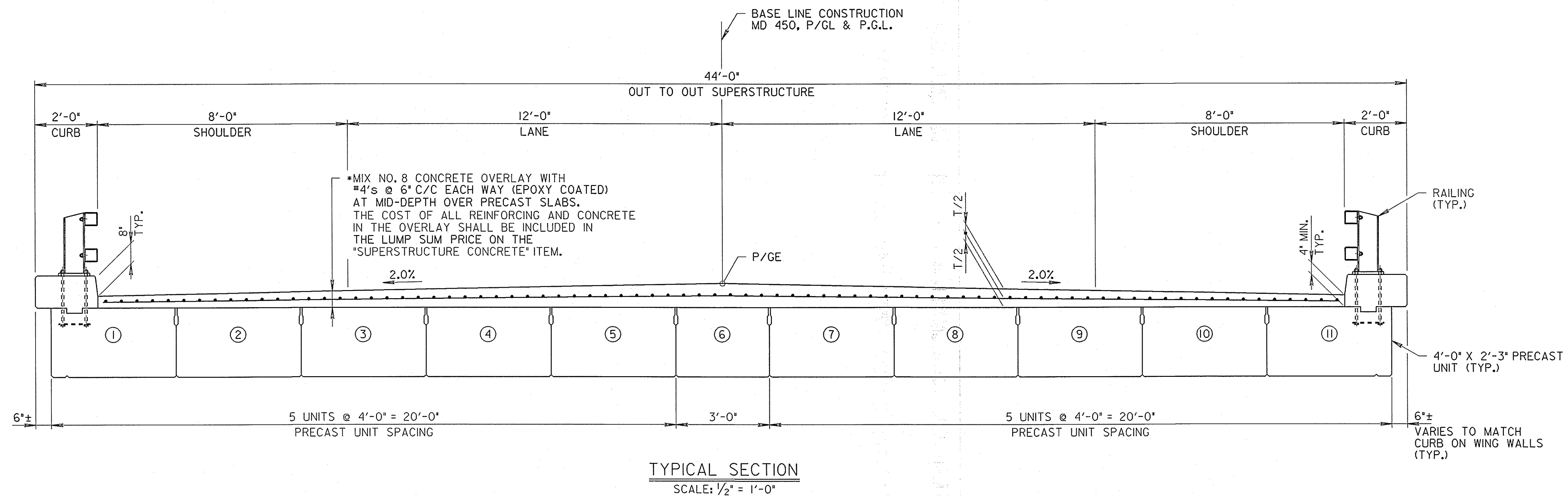
SECTION C-C
SCALE: 3/4" = 1'-0"



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

SI - 10

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH WING WALL DETAILS	
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180	
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.	E.S.F. JAN. 8, 2008
OTHER CONTRACTS FOR THIS STRUCTURE		SHEET NO. 33 OF 66

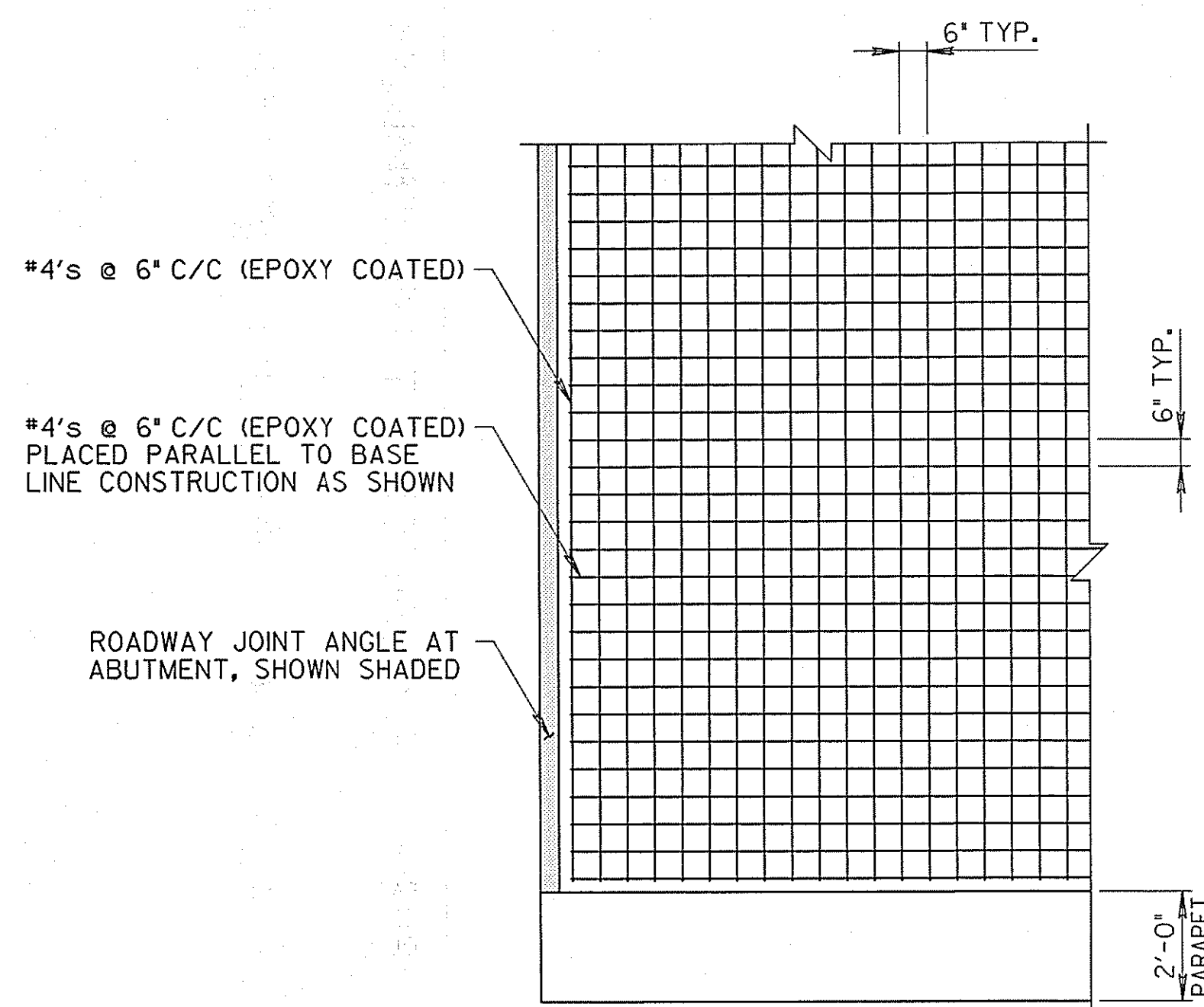


TYPICAL SECTION
SCALE: 1/2" = 1'-0"

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. THERE SHALL BE A MINIMUM OF 48 HOURS BETWEEN THE PLACEMENT OF THE CONCRETE CURBS AND THE TENSIONING OF THE TIE RODS AND GROUTING OF THE SHEAR KEYS.
2. PLACEMENT OF THE OVERLAY MAY OCCUR ONCE THE CURBS 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 440.03.21.
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.

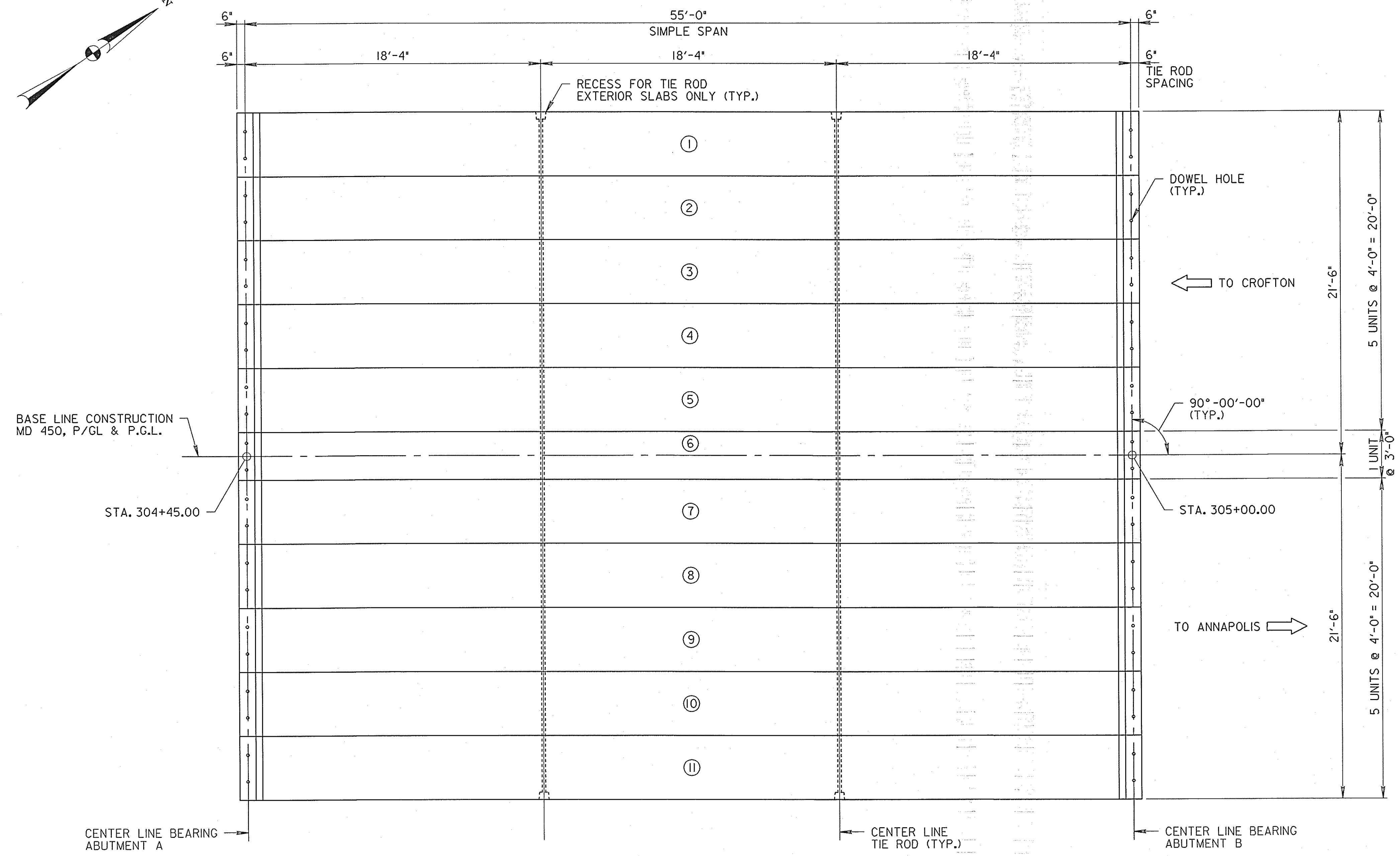
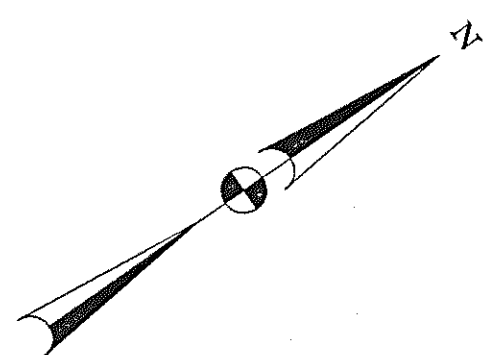


OVERLAY REINFORCING PLAN PLACEMENT DETAIL
SCALE: 3/8" = 1'-0"

- NOTES:
FOR GENERAL NOTES, SEE SHEET NO. SI-1
FOR ABUTMENT DETAILS, SEE SHEET NO. SI-4 TO SI-7
FOR DETAILS OF SUPERSTRUCTURE SLABS, SEE SHEET NO. SI-12 TO SI-17
FOR CURB DETAILS, SEE SHEET NO. SI-17
FOR RAILING DETAILS, SEE SHEET NO. SI-19
THE ENTIRE CONCRETE OVERLAY SHALL BE MADE IN ONE CONTINUOUS POUR.
T = OVERLAY THICKNESS

SI - 11

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH TYPICAL SECTION AND SUPERSTRUCTURE DETAILS	
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180	
	DESIGNED BY S.S.S.	
	DRAWN BY D.A.C.	
	CHECKED BY J.L.R.	
	E.S.F. JAN. 8, 2008	
		SHEET NO. 34 OF 66



PRESTRESSED CONCRETE SLAB LAYOUT
SCALE: 1/4" = 1'-0"

NOTES:
FOR GENERAL PLAN AND ELEVATION, SEE SHEET NO. SI-1
FOR ABUTMENT DETAILS, SEE SHEET NO. SI-4 TO SI-7
FOR DETAILS OF SUPERSTRUCTURE SLABS, SEE SHEET NO. SI-12 TO SI-17
FOR TIE ROD DETAILS, SEE SHEET NO. SI-17

CONTRACTOR'S NOTE:
AFTER THE PRESTRESSED SLABS HAVE BEEN FABRICATED, PRIOR TO SHIPPING THEM TO THE BRIDGE SITE, THE FABRICATOR SHALL ERECT THE SLABS IN SUCH A MANNER AS TO DUPLICATE THE FIELD CONDITIONS TO VERIFY THAT THEY CAN BE PLACED AS INTENDED AND THAT ALL TIE ROD HOLES ALIGN WITH EACH OTHER. SHOULD THE SLAB UNITS NOT ALLOW FOR THE PLACEMENT OF THE TIE RODS, THE FABRICATOR WILL BE REQUIRED TO RECAST THE SLAB UNITS WHICH ARE IN ERROR. NO DRILLING OR CORING OF THE SLAB UNITS WILL BE ALLOWED TO CORRECT ANY MISPLACEMENT OF THE TIE ROD HOLES. ANY COST ASSOCIATED WITH THE RECASTING OF SLAB UNITS WILL BE AT NO ADDITIONAL COST TO THE ADMINISTRATION.

NOTE:
NO OTHER TIE ROD LAYOUTS WILL BE ALLOWED FOR THIS PROJECT.

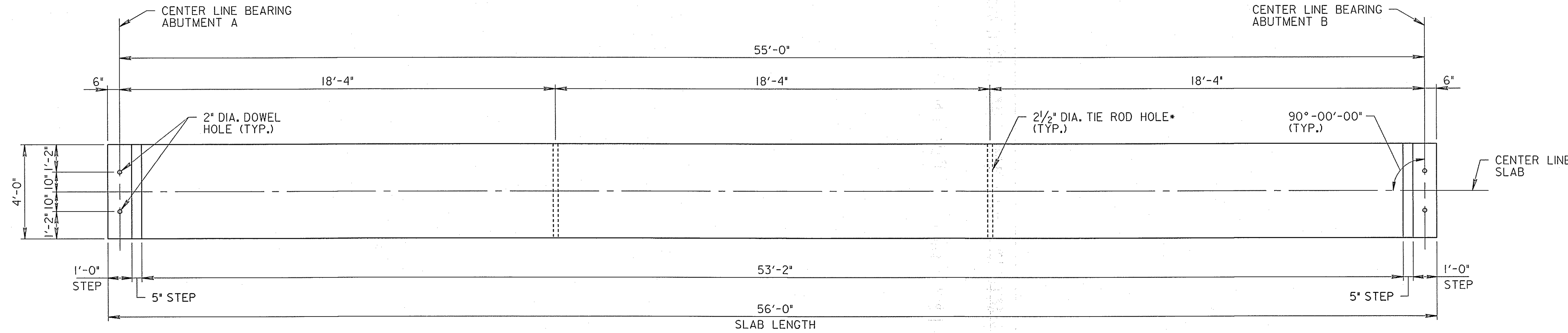
THE CONTRACTOR WILL NOT BE ALLOWED TO PLACE EQUIPMENT ON THE SLABS PRIOR TO PLACING THE OVERLAY UNLESS ALL UNITS FOR THE SPAN ARE IN PLACE WITH ANCHOR BOLTS, THE JOINTS BETWEEN ALL SLABS HAVE BEEN GROUTED, AND THE TIE RODS TENSIONED FOR A MINIMUM PERIOD OF TWO DAYS.

ALL SLAB SURFACES SHALL BE CLEANED IN ACCORDANCE WITH THE SPECIFICATIONS IMMEDIATELY PRIOR TO PLACING OVERLAY.

SI - 12

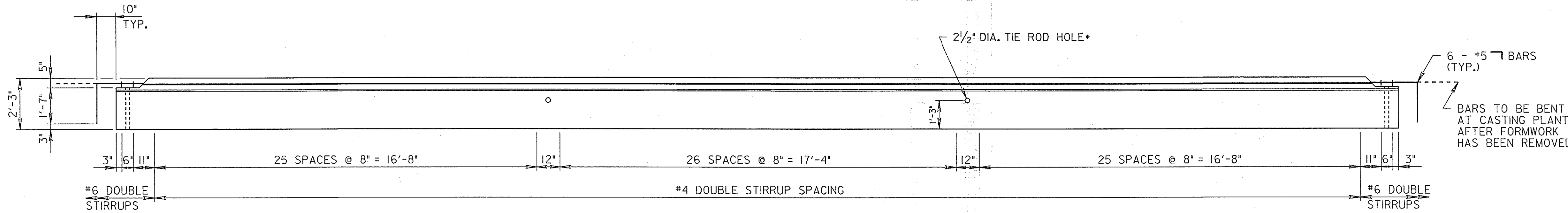
REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH SLAB LAYOUT	
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180	
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.	E.S.F. JAN. 8, 2008
OTHER CONTRACTS FOR THIS STRUCTURE _____		STRUCTURE INVENTORY NO. 0207200
SURVEY BOOK NO. _____		C:\bridge\bdd\2072slt.dgn PRINT DATE: Friday, December 07, 2007 at 11:09:24 AM
INDEXED		SHEET NO. 35 OF 66

NOTES:
 FOR ADDITIONAL SLAB DETAILS, SEE SHEET NO. SI-16 AND SI-17
 FOR DETAILS OF ELASTOMERIC BEARING PAD, SEE SHEET NO. SI-16
 ALL REINFORCING STEEL TO BE EPOXY COATED.
 THE CONTRACTOR SHALL SHOW THE TYPE AND 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.



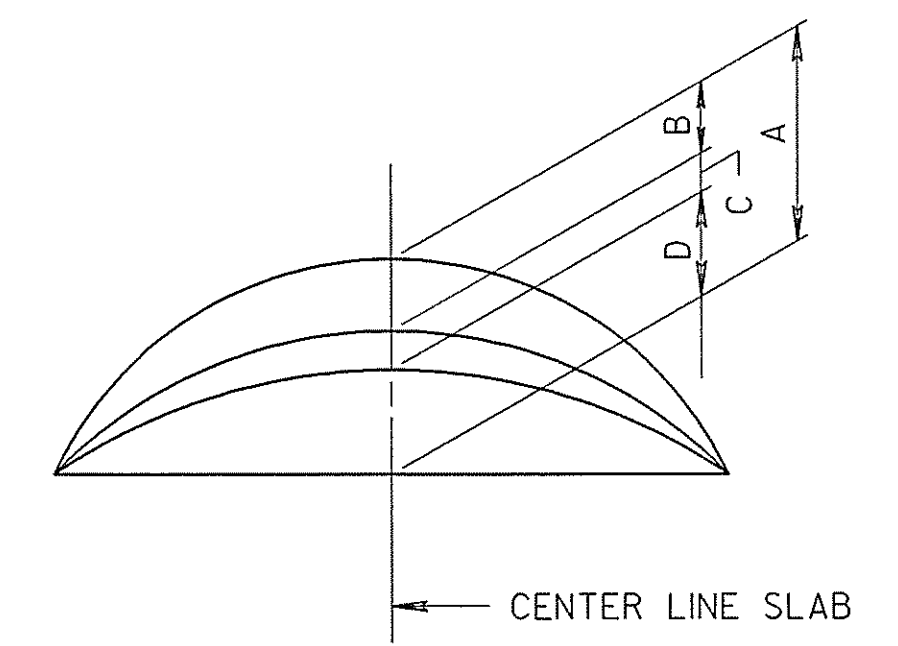
4'-0" INTERIOR SLAB PLAN
 SCALE: 3/8" = 1'-0"

*ADJUST REBAR TO AVOID TIE ROD HOLES AS NEEDED.



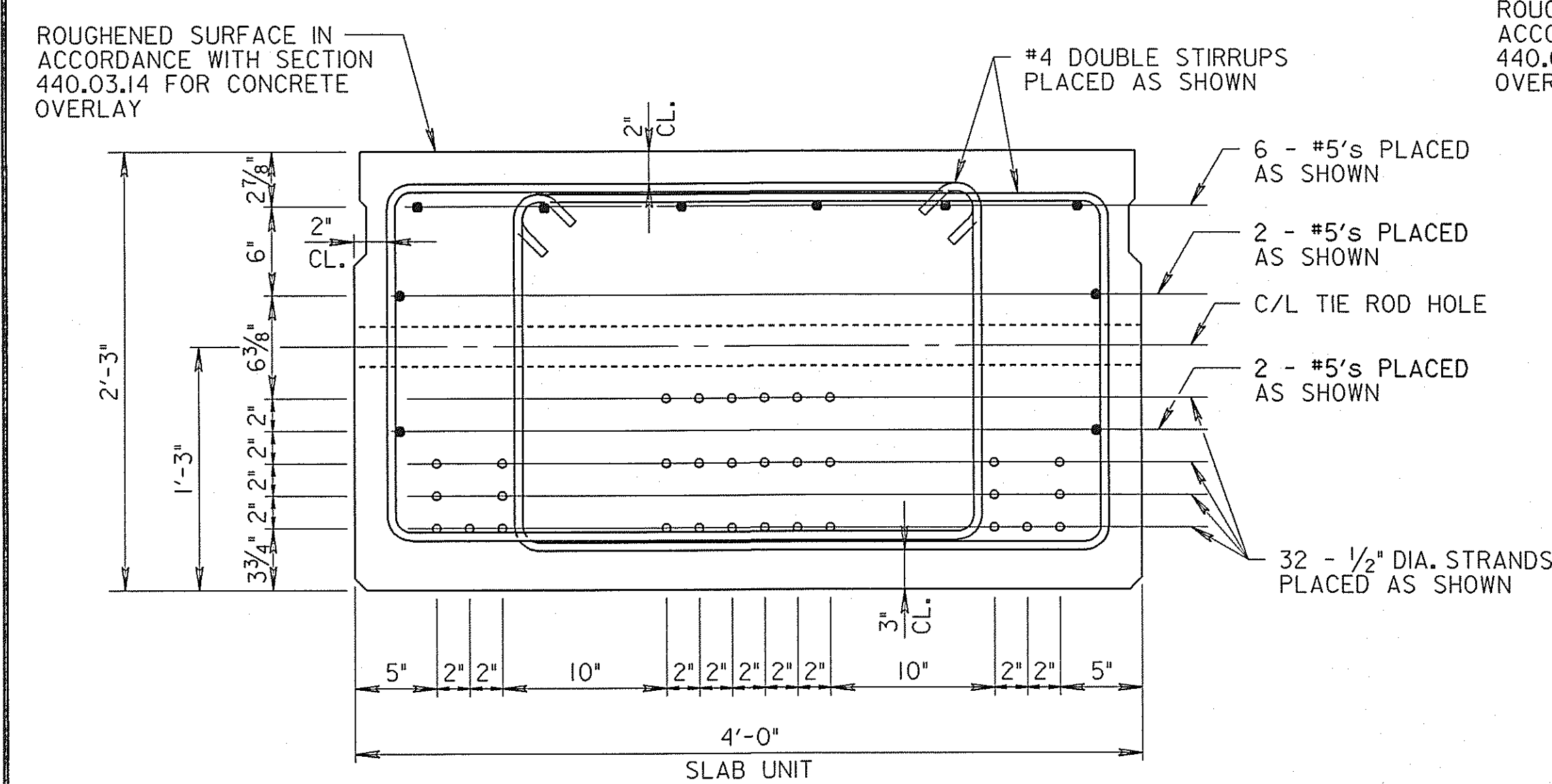
4'-0" INTERIOR SLAB ELEVATION
 SCALE: 3/8" = 1'-0"

TIE-ROD HOLE NOTE:
 EXTREME CARE SHALL BE USED IN LOCATING THESE HOLES DURING THE CASTING OPERATION. ANY MISALIGNMENT OF THE HOLES WILL BE CAUSE FOR REJECTION OF THE SLAB UNIT. NO DRILLING OR CORING OF THE SLABS WILL BE PERMITTED.

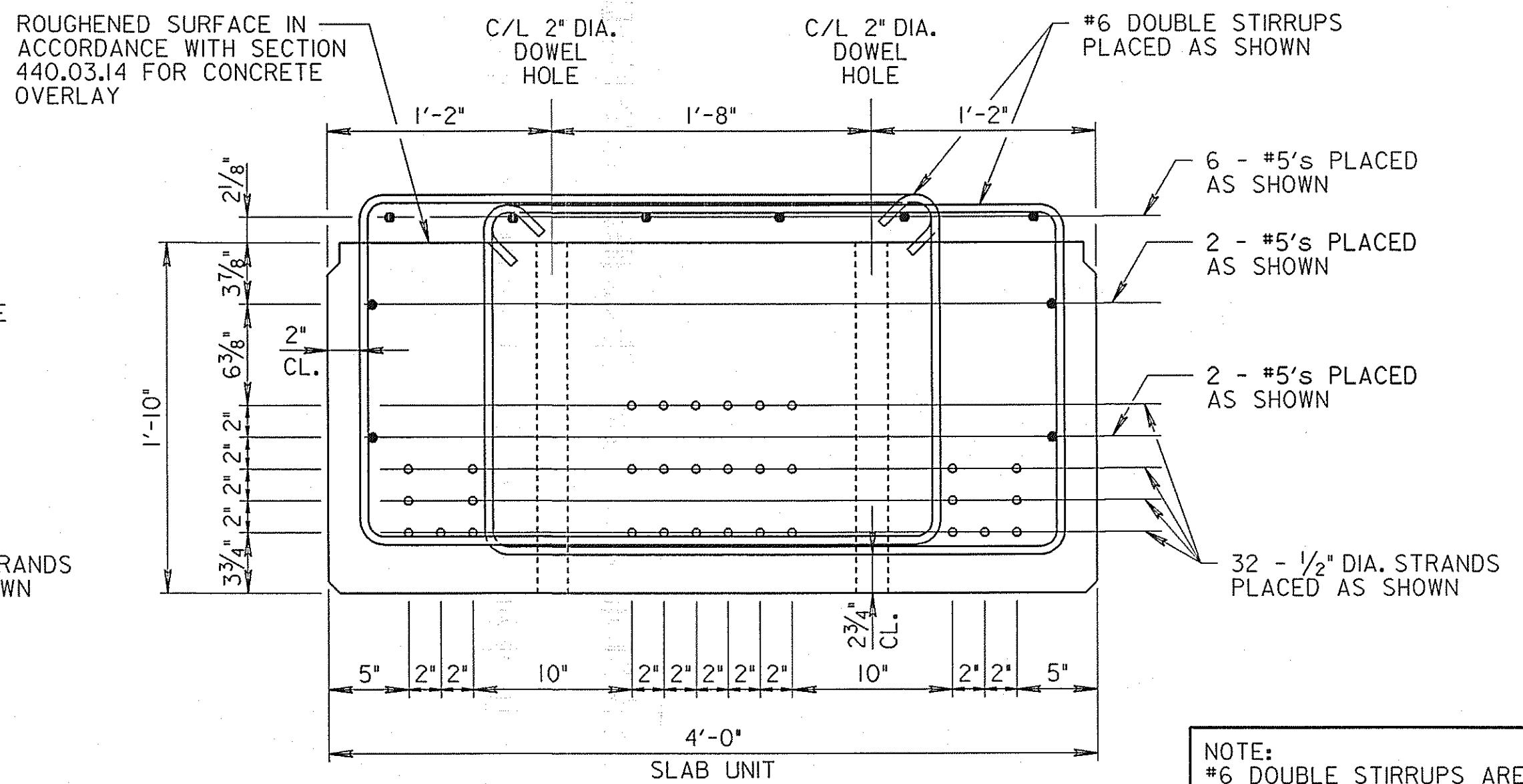


CAMBER DIAGRAM
 SCALE: NONE

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.
 POSITIVE CAMBER IS IN THE UPWARD DIRECTION. POSITIVE DEFLECTION IS IN THE DOWNWARD DIRECTION.
 A = 1/16" (ESTIMATED CAMBER DUE TO PRESTRESS)
 B = 3/4" (DEFLECTION DUE TO DEAD LOAD OF PRESTRESSED SLABS)
 C = 3/16" (DEFLECTION DUE TO DEAD LOAD OF CAST-IN-PLACE CONCRETE OVERLAY AND PARAPETS)
 D = -1/4" (NET FINAL CAMBER)



SLAB SECTION DETAIL
 SCALE: 1 1/2" = 1'-0"

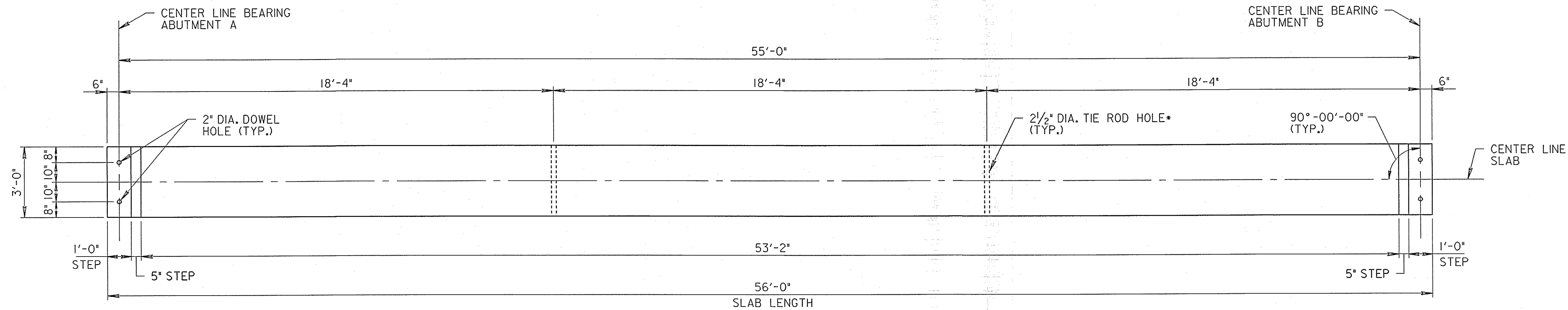


SLAB SECTION DETAIL AT ENDS
 SCALE: 1 1/2" = 1'-0"

NOTE:
 #6 DOUBLE STIRRUPS ARE USED AT THE ENDS OF THE SLAB.

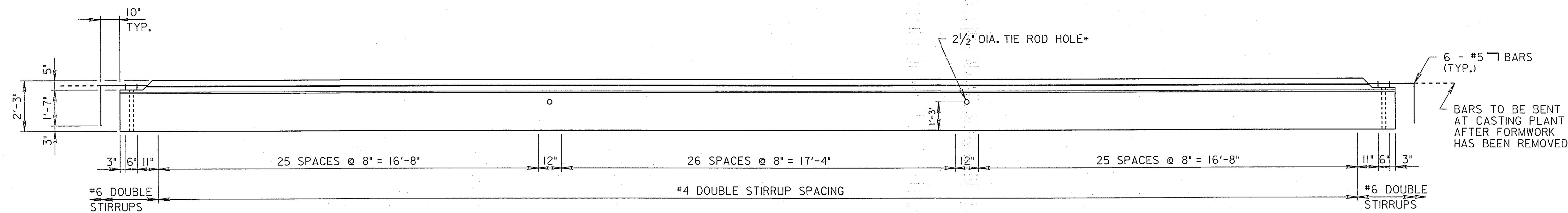
S1 - 13	
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH 4'-0" INTERIOR SLAB DETAILS	
SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180	
DESIGNED BY S.S.S.	
DRAWN BY D.A.C.	
CHECKED BY J.L.R.	
E.S.F.	
JAN. 8, 2008	
SHEET NO. 36 OF 66	

NOTES:
 FOR ADDITIONAL SLAB DETAILS, SEE SHEET NO. SI-16 AND SI-17
 FOR DETAILS OF ELASTOMERIC BEARING PAD, SEE SHEET NO. SI-16
 ALL REINFORCING STEEL TO BE EPOXY COATED.
 THE CONTRACTOR SHALL SHOW THE TYPE AND 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.



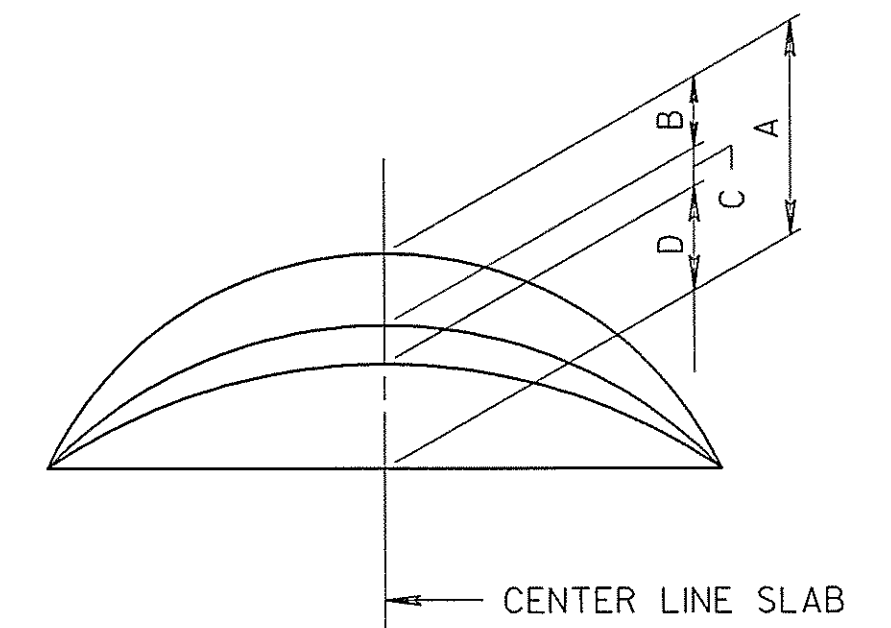
3'-0" INTERIOR SLAB PLAN
 SCALE: 3/8" = 1'-0"

*ADJUST REBAR TO AVOID TIE ROD HOLES AS NEEDED.



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

TIE-ROD HOLE NOTE:
 EXTREME CARE SHALL BE USED IN LOCATING THESE HOLES DURING THE CASTING OPERATION. ANY MISALIGNMENT OF THE HOLES WILL BE CAUSE FOR REJECTION OF THE SLAB UNIT. NO DRILLING OR CORING OF THE SLABS WILL BE PERMITTED.



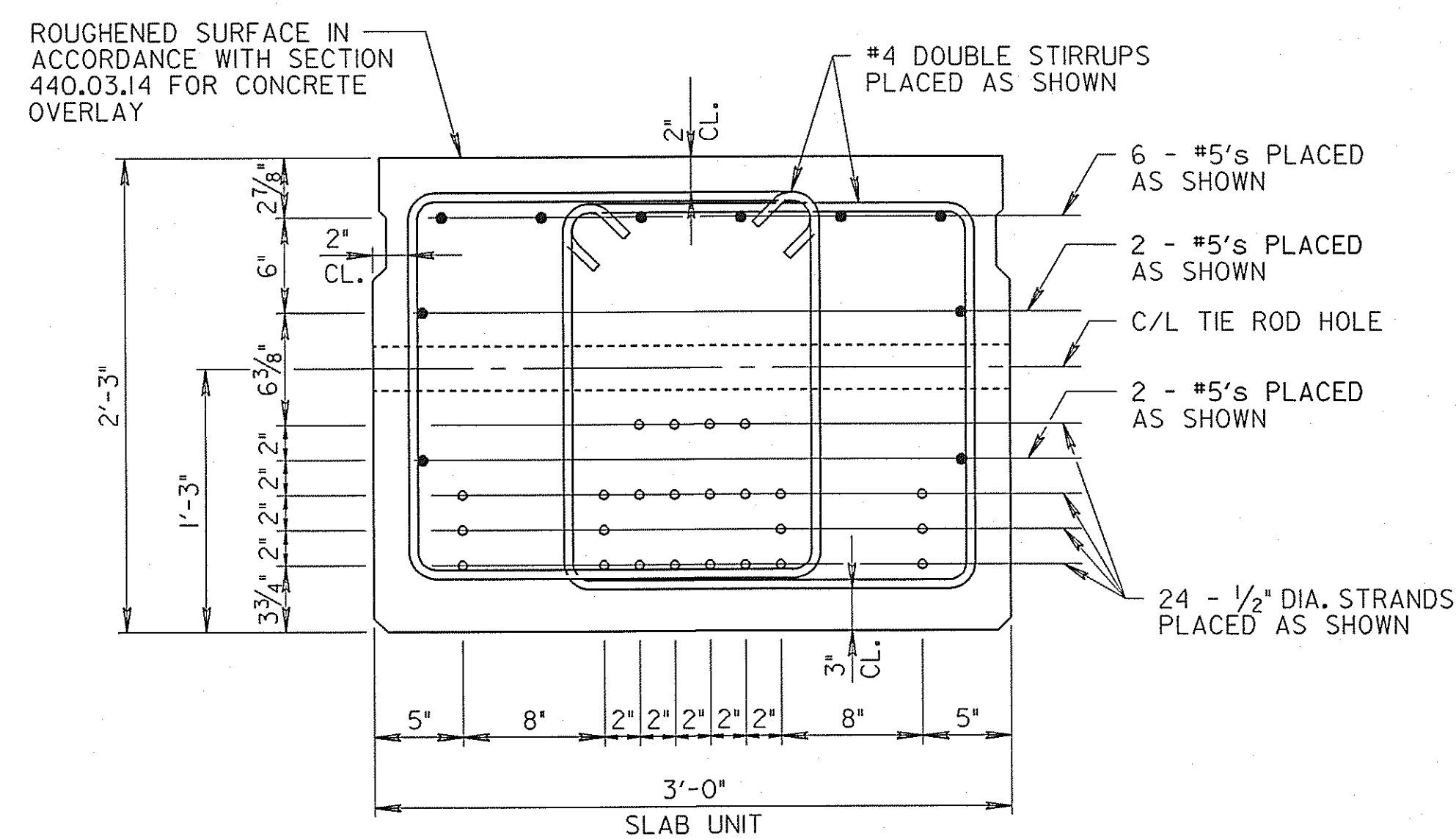
CAMBER DIAGRAM
 SCALE: NONE

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.

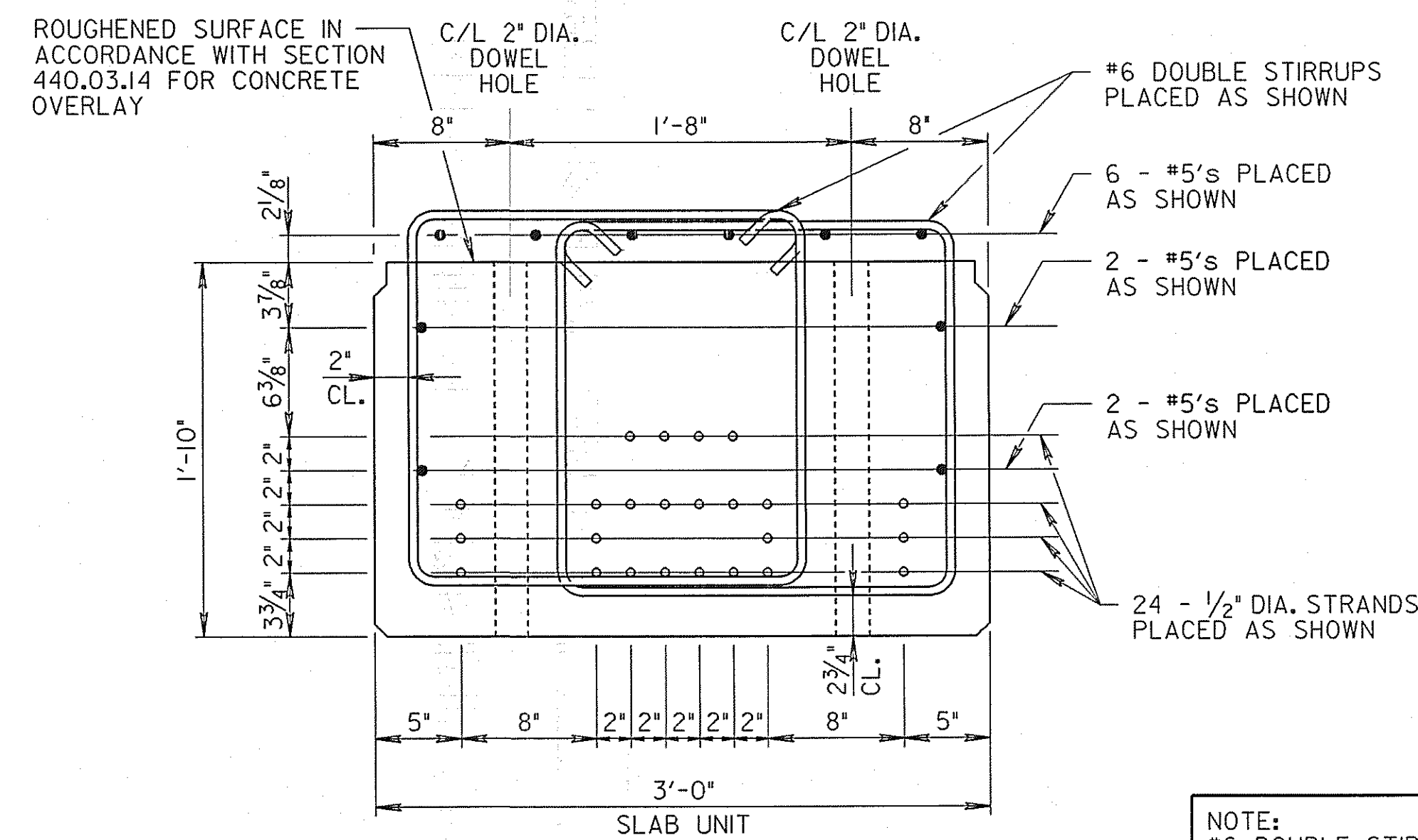
CAMBER IN SLABS WILL INCREASE DUE TO CONCRETE CREEP DURING STORAGE. PRECAUTIONS SHALL BE TAKEN BY LOADING OR OTHER MEANS TO PREVENT ADDITIONAL CAMBER FROM DEVELOPING DURING STORAGE OF PRESTRESSED SLABS.

POSITIVE CAMBER IS IN THE UPWARD DIRECTION.
 POSITIVE DEFLECTION IS IN THE DOWNWARD DIRECTION.

A = 5/8" (ESTIMATED CAMBER DUE TO PRESTRESS)
 B = 3/16" (DEFLECTION DUE TO DEAD LOAD OF PRESTRESSED SLABS)
 C = 1/4" (DEFLECTION DUE TO DEAD LOAD OF CAST-IN-PLACE CONCRETE OVERLAY AND PARAPETS)
 D = -3/16" (NET FINAL CAMBER)



SLAB SECTION DETAIL
 SCALE: 1 1/2" = 1'-0"



SLAB SECTION DETAIL AT ENDS
 SCALE: 1 1/2" = 1'-0"

NOTE:
 #6 DOUBLE STIRRUPS ARE USED AT THE ENDS OF THE SLAB.

SI - 14

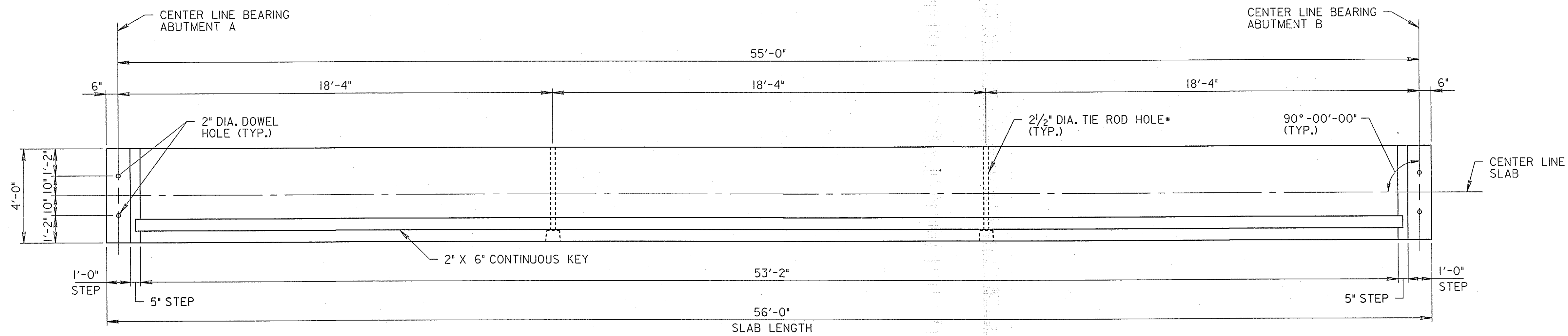
REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH 3'-0" INTERIOR SLAB DETAILS	
	SCALE AS SHOWN	DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S.	
	DRAWN BY D.A.C.	
	CHECKED BY J.L.R.	
	E.S.F.	
	JAN. 8, 2008	
		SHEET NO. 37 OF 66

NOTES:
FOR ADDITIONAL SLAB DETAILS, SEE SHEET NO. SI-16 AND SI-17

FOR DETAILS OF ELASTOMERIC BEARING PAD,
SEE SHEET NO. SI-16

ALL REINFORCING STEEL TO BE EPOXY COATED.

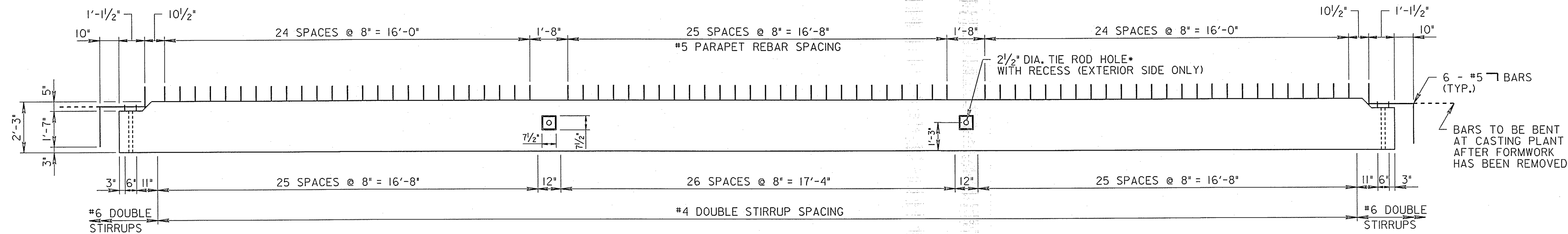
THE CONTRACTOR SHALL SHOW THE TYPE AND LOCATION
OF THE LIFTING INSERTS. THE CONTRACTOR SHALL ENSURE
THE LIFTING DEVICES HAVE THE SAFE WORKING CAPACITY TO
LIFT THE SLAB PANELS INTO POSITION DURING ERECTION
WITHOUT OVERSTRESSING THE PANELS.



4'-0" EXTERIOR SLAB PLAN

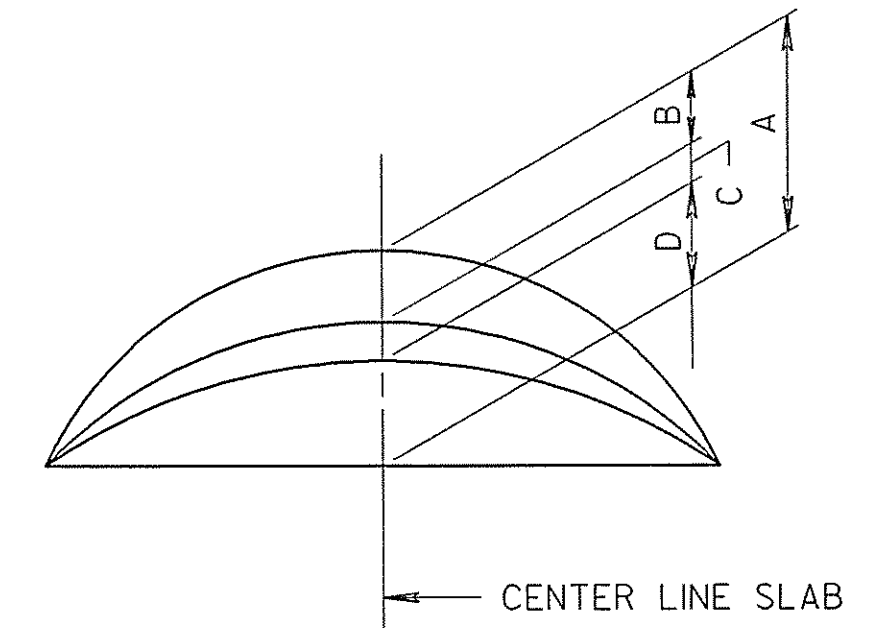
SCALE: 3/8" = 1'-0"

*ADJUST REBAR TO AVOID
TIE ROD HOLES AS NEEDED.



4'-0" EXTERIOR SLAB ELEVATION

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



CAMBER DIAGRAM

SCALE: NONE

TIE-ROD HOLE NOTE:
EXTREME CARE SHALL BE USED IN LOCATING THESE HOLES
DURING THE CASTING OPERATION. ANY MISALIGNMENT OF THE
HOLES WILL BE CAUSE FOR REJECTION OF THE SLAB UNIT.
NO DRILLING OR CORING OF THE SLABS WILL BE PERMITTED.

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

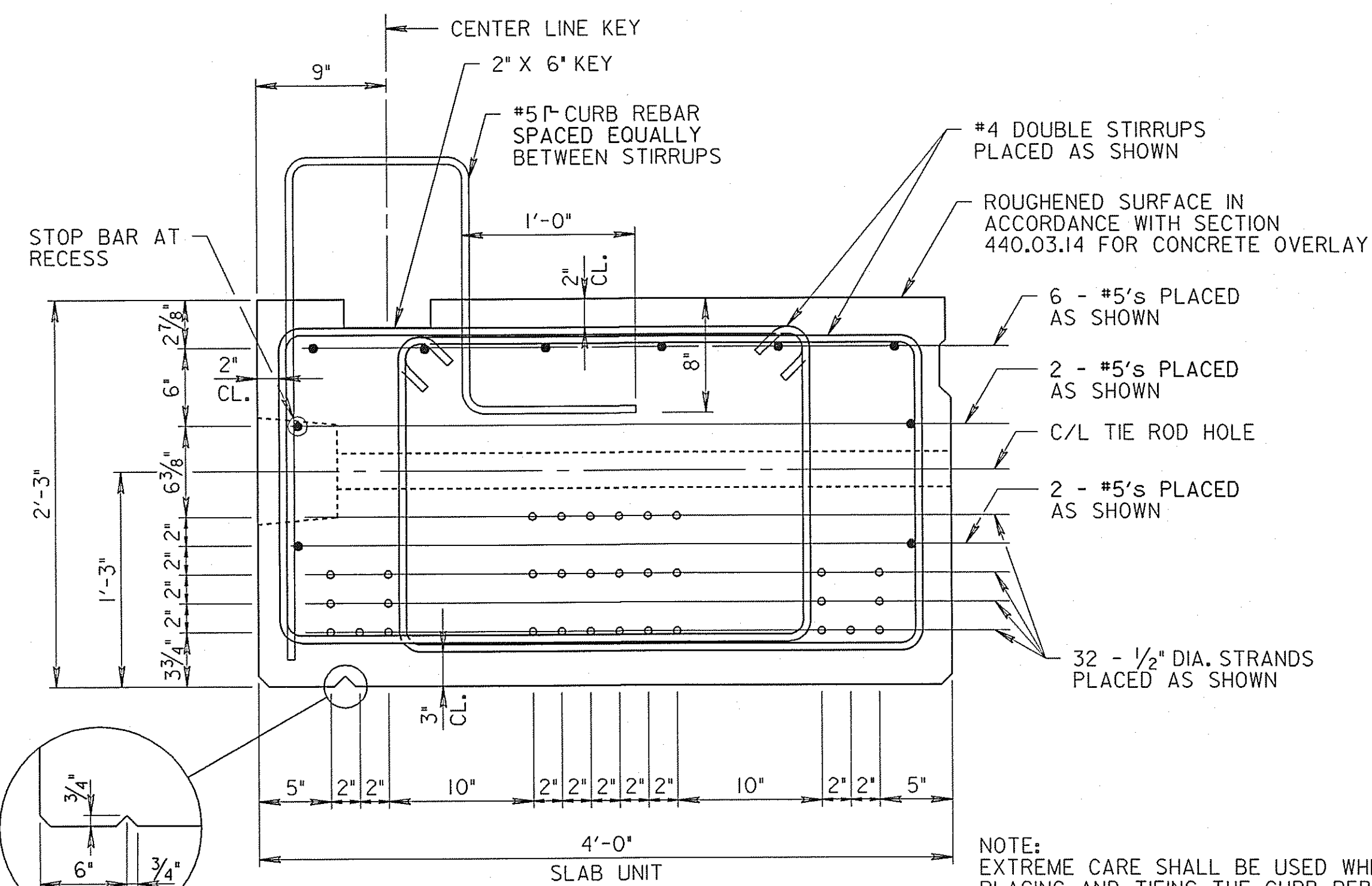
THE THICKNESS OF THE CONCRETE OVERLAY SHALL BE VARIED TO
COMPENSATE FOR ANY INACCURACIES IN THE CAMBER OF SLABS.

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.

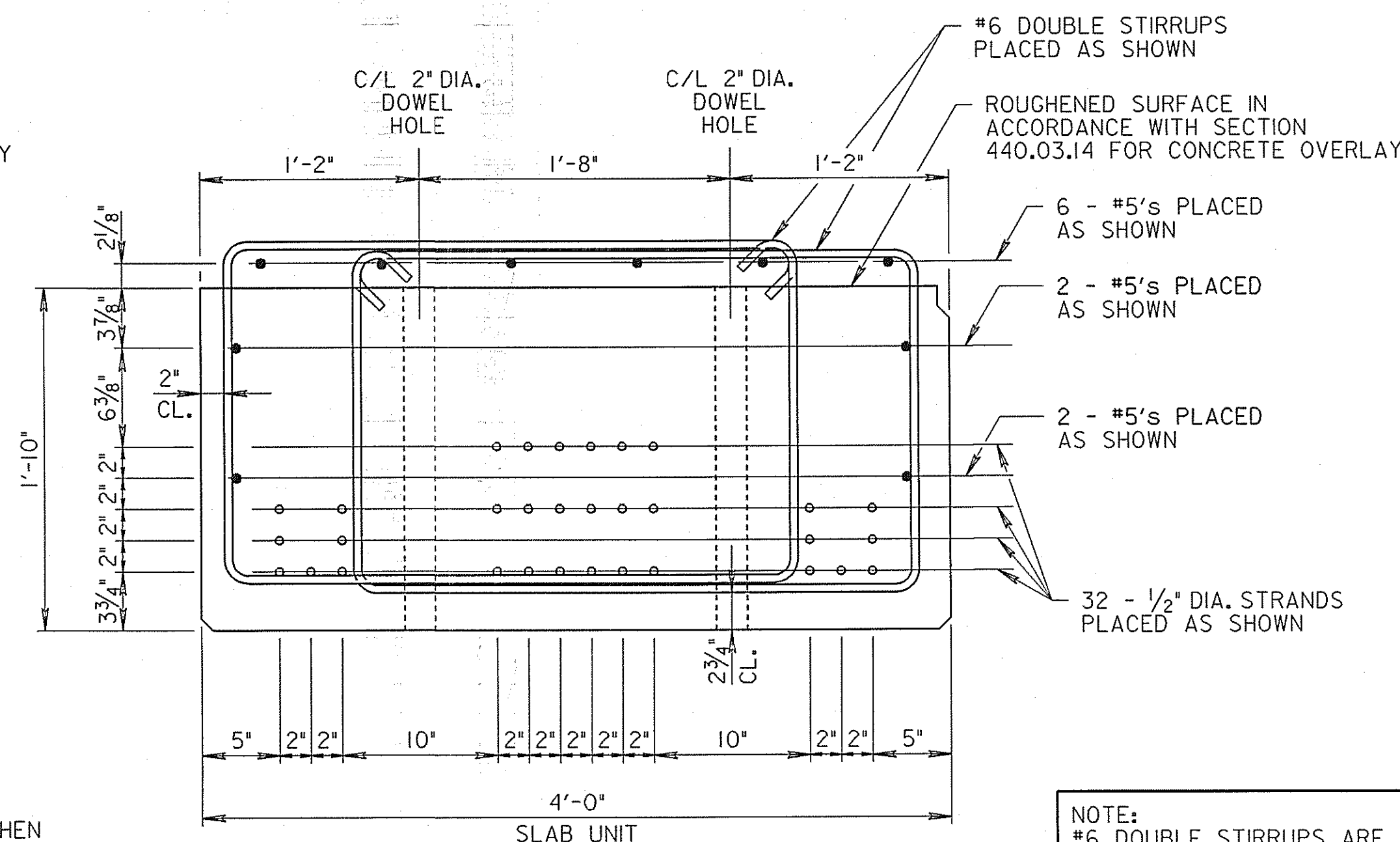
POSITIVE CAMBER IS IN THE UPWARD DIRECTION.
POSITIVE DEFLECTION IS IN THE DOWNWARD DIRECTION.

A = 1/16" (ESTIMATED CAMBER DUE TO PRESTRESS)
B = 3/4" (DEFLECTION DUE TO DEAD LOAD OF PRESTRESSED SLABS)
C = 5/16" (DEFLECTION DUE TO DEAD LOAD OF CAST-IN-PLACE
CONCRETE OVERLAY AND PARAPETS)
D = -1/4" (NET FINAL CAMBER)



SLAB SECTION DETAIL

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



SLAB SECTION DETAIL AT ENDS

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

NOTE:
#6 DOUBLE STIRRUPS ARE USED
AT THE ENDS OF THE SLAB.

NOTE:
EXTREME CARE SHALL BE USED WHEN
PLACING AND TIEING THE CURB REBAR
AND ANCHOR BOLTS TO PROVIDE FOR THE
REQUIRED CLEARANCES. ANY MISPLACED
REBAR OR ANCHOR BOLTS WILL BE CAUSE
FOR REJECTION OF THE PRECAST SLAB UNIT.

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

SI - 15

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH 4'-0" EXTERIOR SLAB DETAILS
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 8, 2008
	SHEET NO. 38 OF 66

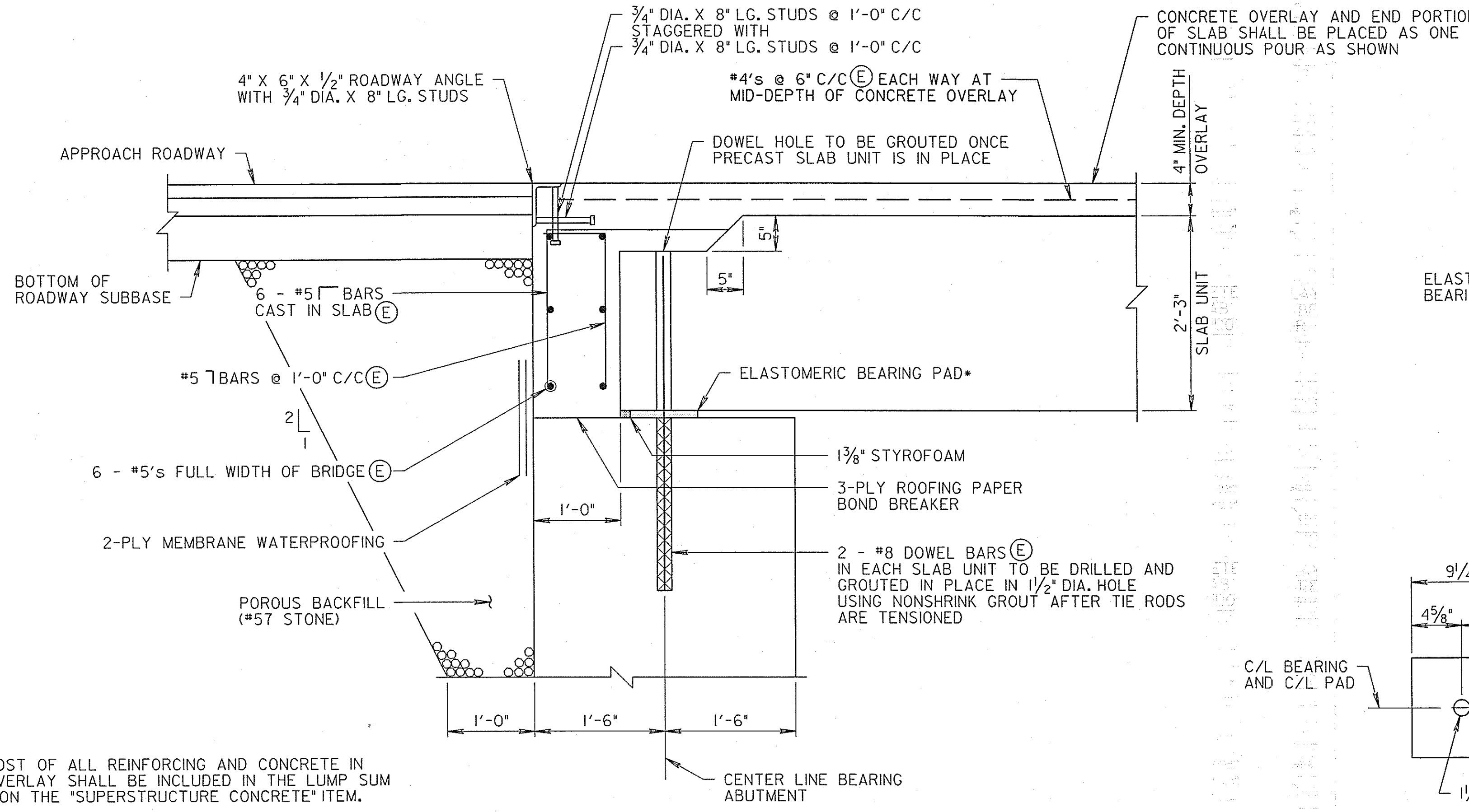
OTHER CONTRACTS FOR THIS STRUCTURE

STRUCTURE
INVENTORY NO. 0207200

SURVEY
BOOK NO.

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PRINT DATE: Friday, December 07, 2007 at 11:08:57 AM

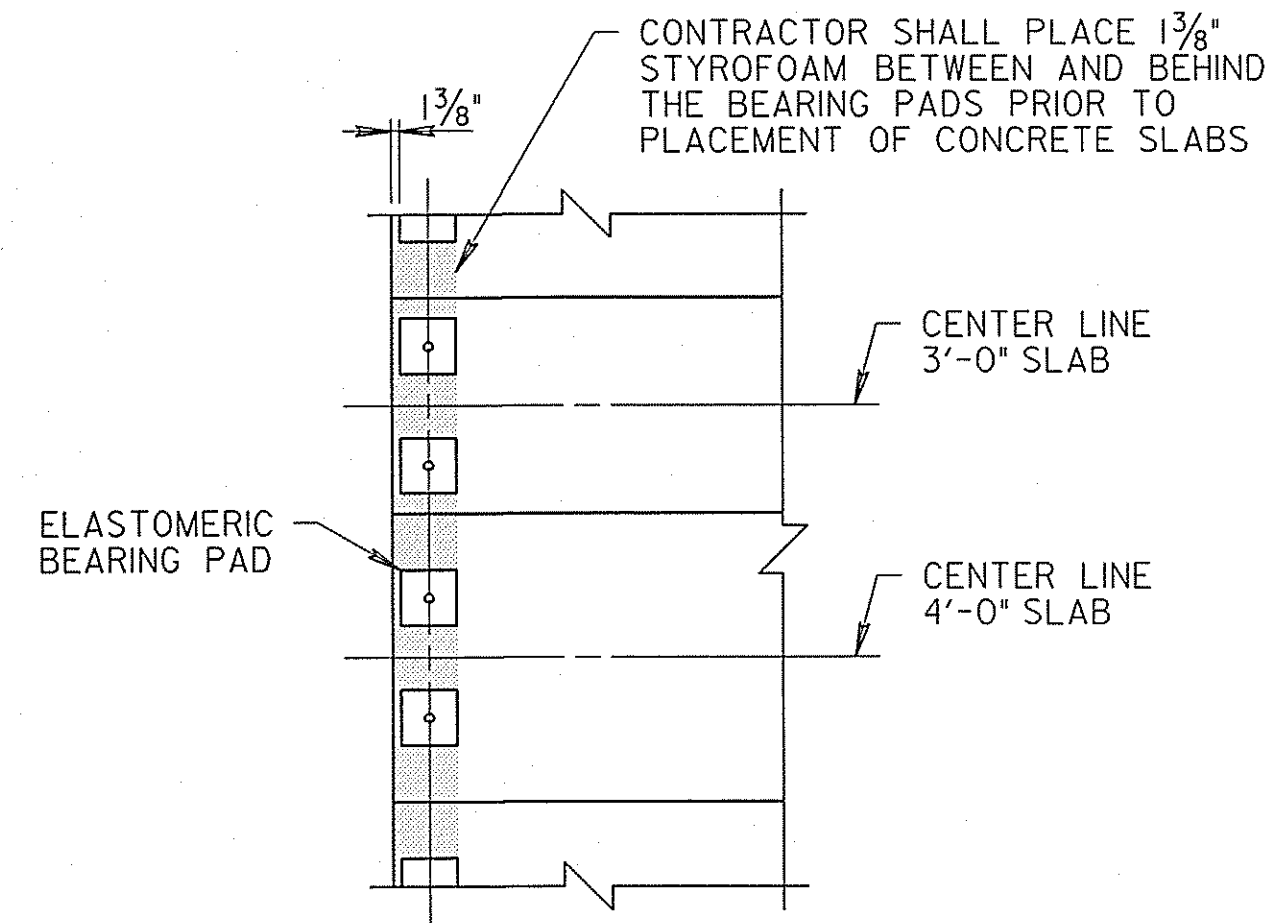
INDEXED



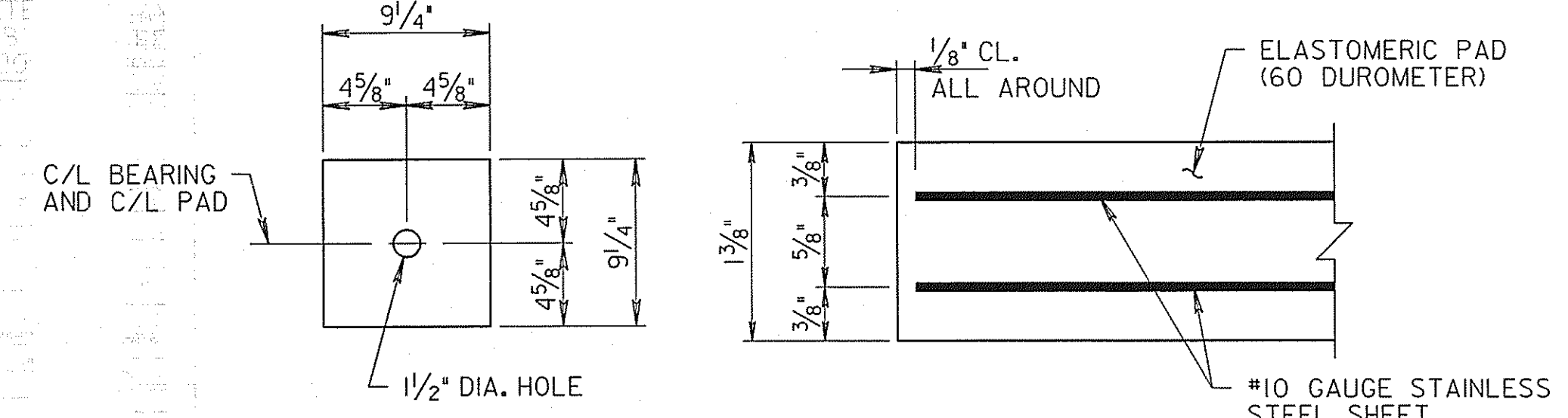
SLAB DETAIL AT ABUTMENT
SCALE: 1" = 1'-0"

NOTE:
THE COST OF ALL REINFORCING AND CONCRETE IN THE OVERLAY SHALL BE INCLUDED IN THE LUMP SUM PRICE ON THE "SUPERSTRUCTURE CONCRETE" ITEM.

* ALL ELASTOMERIC BEARING PADS SHALL BE PLACED WITH AN EPOXY ADHESIVE IN ACCORDANCE WITH 432.03.04. ADHESIVE SHALL BE ON BOTTOM AND TOP OF PAD.



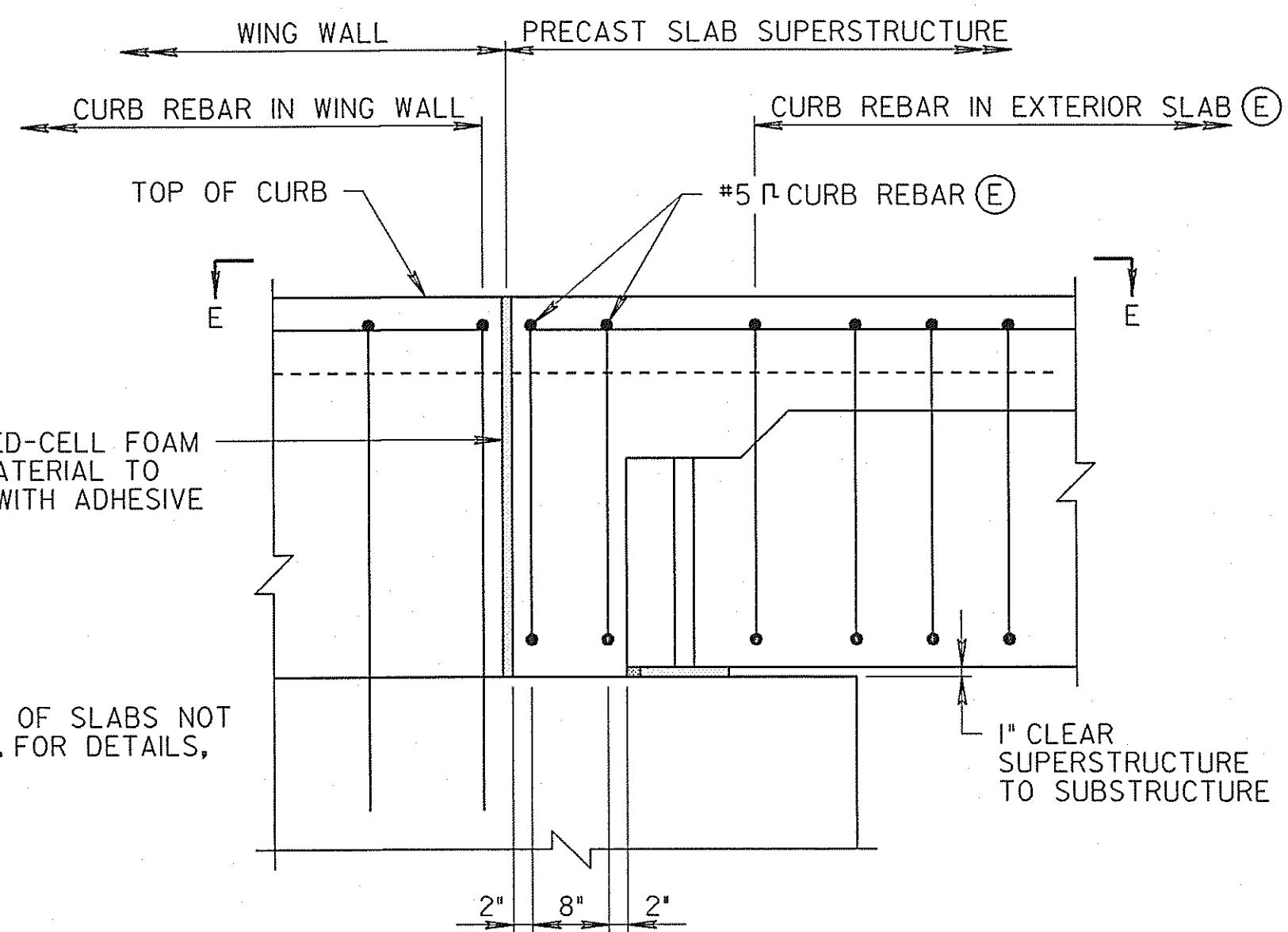
BEARING ORIENTATION PLAN
SCALE: 3/8" = 1'-0"



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

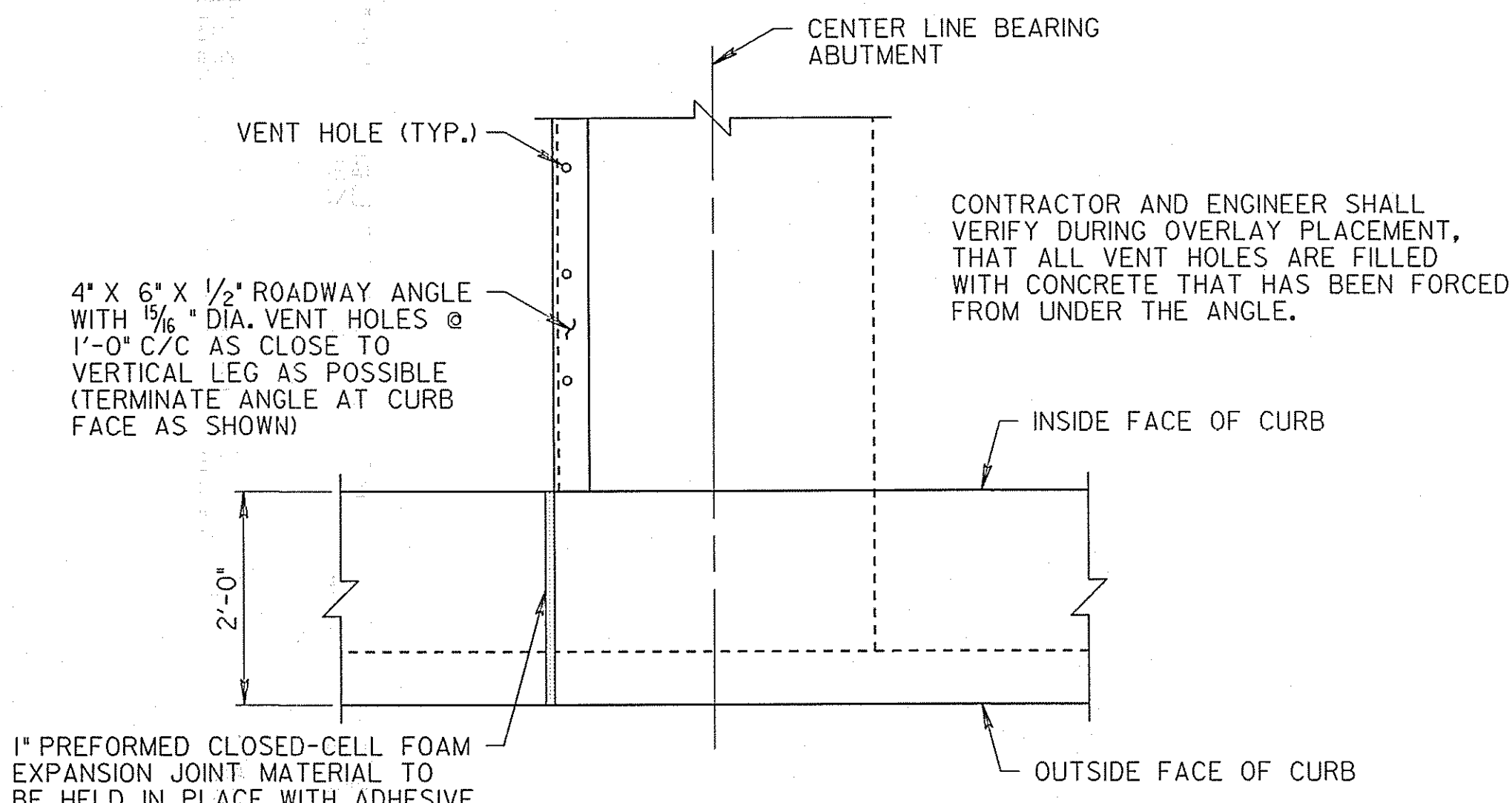
LAMINATED ELASTOMERIC BEARING PAD

NOTES:
FOR ADDITIONAL SLAB DETAILS, SEE SHEET NO. SI-12 TO SI-15 AND SI-17
FOR ABUTMENT DETAILS, SEE SHEET NO. SI-5 TO SI-10
FOR TYPICAL SECTION, SEE SHEET NO. SI-11
FOR CURB DETAILS, SEE SHEET NO. SI-17
FOR TESTING PURPOSES THE DESIGN LOAD FOR ELASTOMERIC BEARING PAD IS 53 KIPS.
PLACE TWO BEARING PADS AT EACH END OF 3'-0" AND 4'-0" SLABS.
(E) INDICATES REINFORCING STEEL TO BE EPOXY COATED.



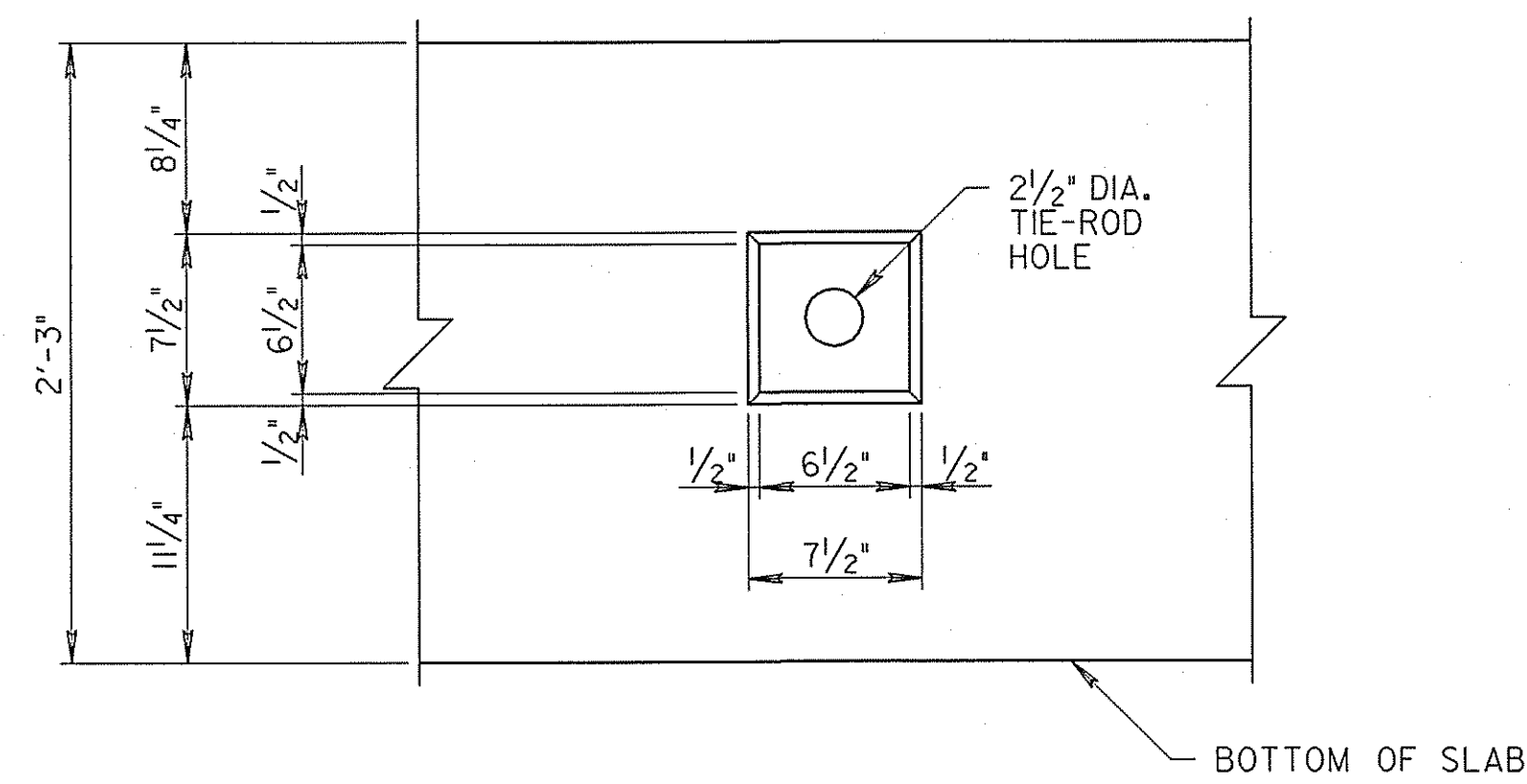
CURB JOINT DETAIL
SCALE: 3/4" = 1'-0"

NOTE:
REINFORCING AT END OF SLABS NOT SHOWN FOR CLARITY. FOR DETAILS, SEE SHEET NO. SI-15

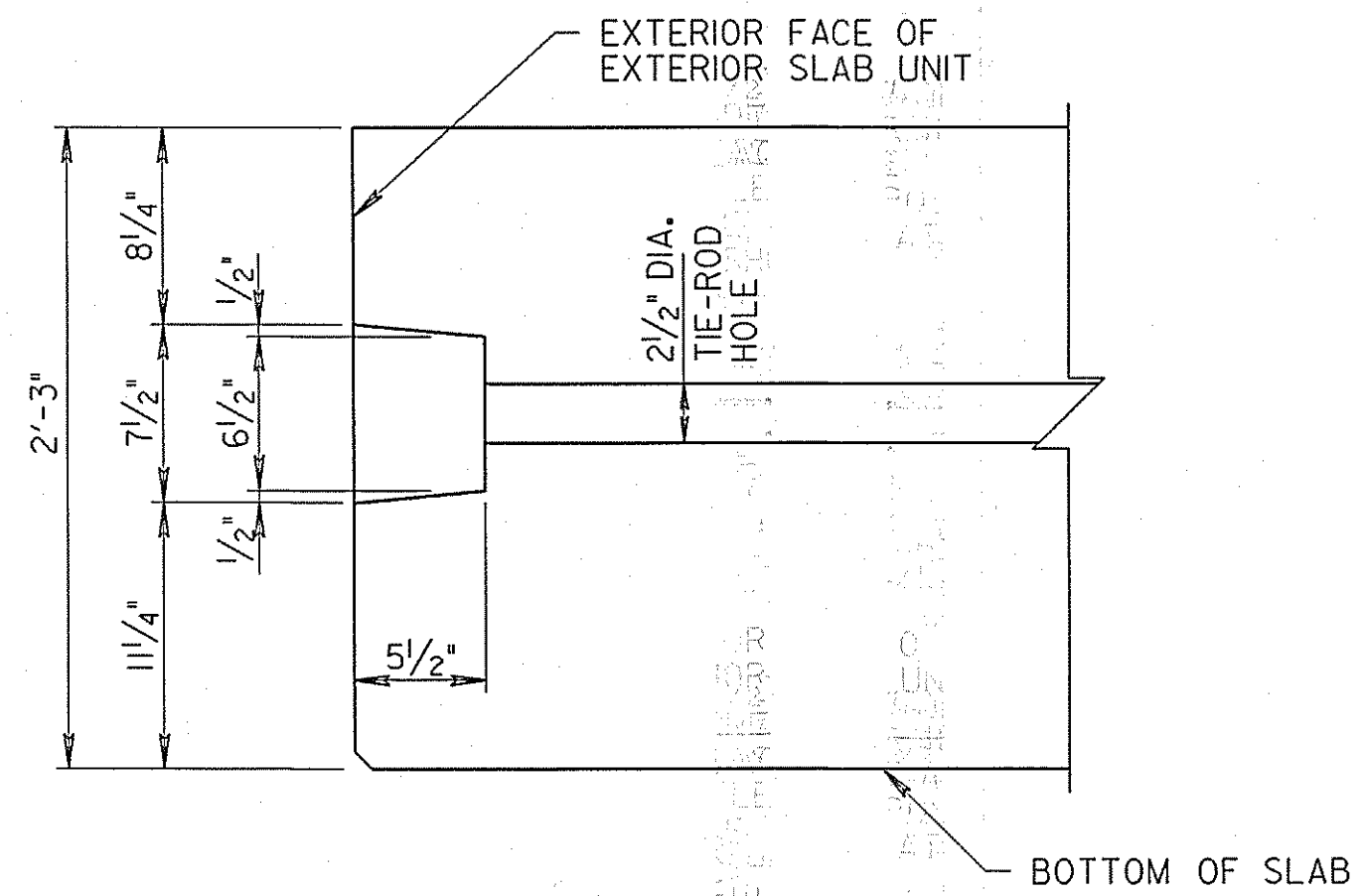


SECTION E-E
SCALE: 3/4" = 1'-0"

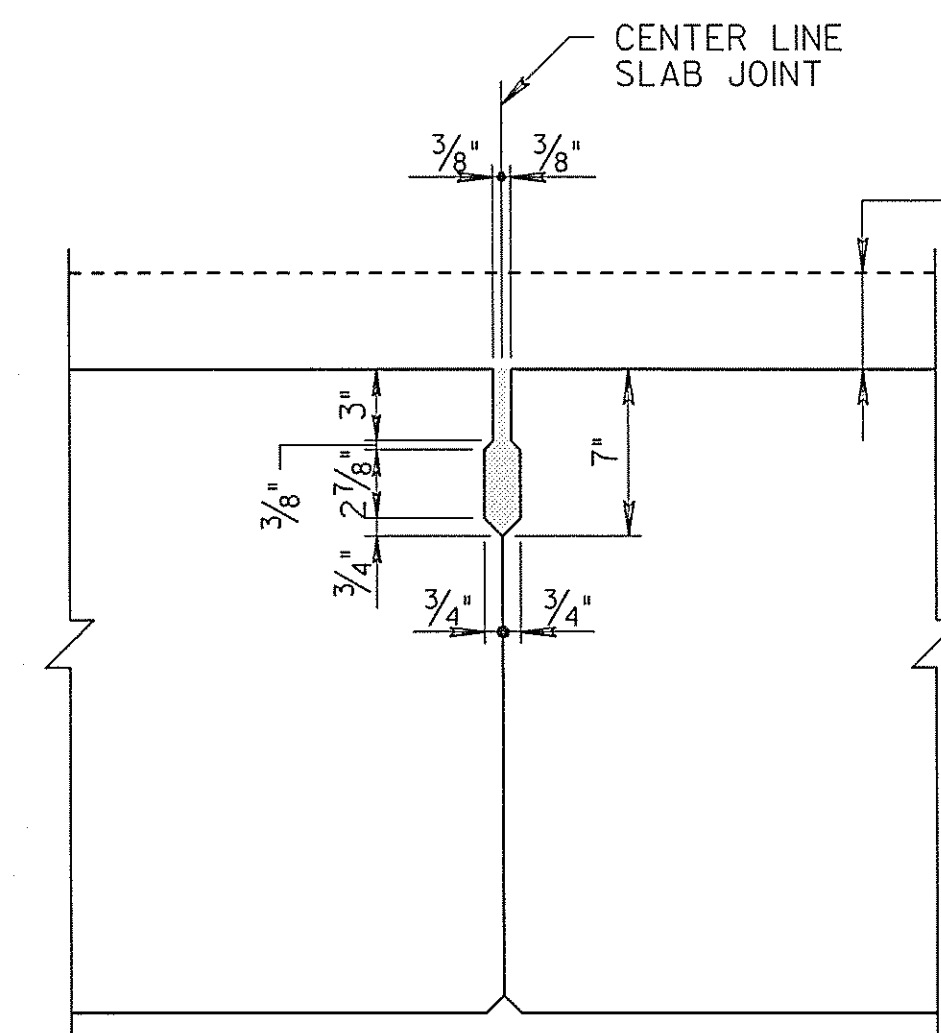
S1 - 16	
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH SUPERSTRUCTURE DETAILS	
SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180	
DESIGNED BY S.S.S.	
DRAWN BY D.A.C.	
CHECKED BY J.L.R.	
E.S.F. JAN. 8. 2008	SHEET NO. 39 OF 66



TIE ROD ELEVATION DETAIL
SCALE: 1/2" = 1'-0"



TIE ROD SECTION DETAIL
SCALE: 1/2" = 1'-0"



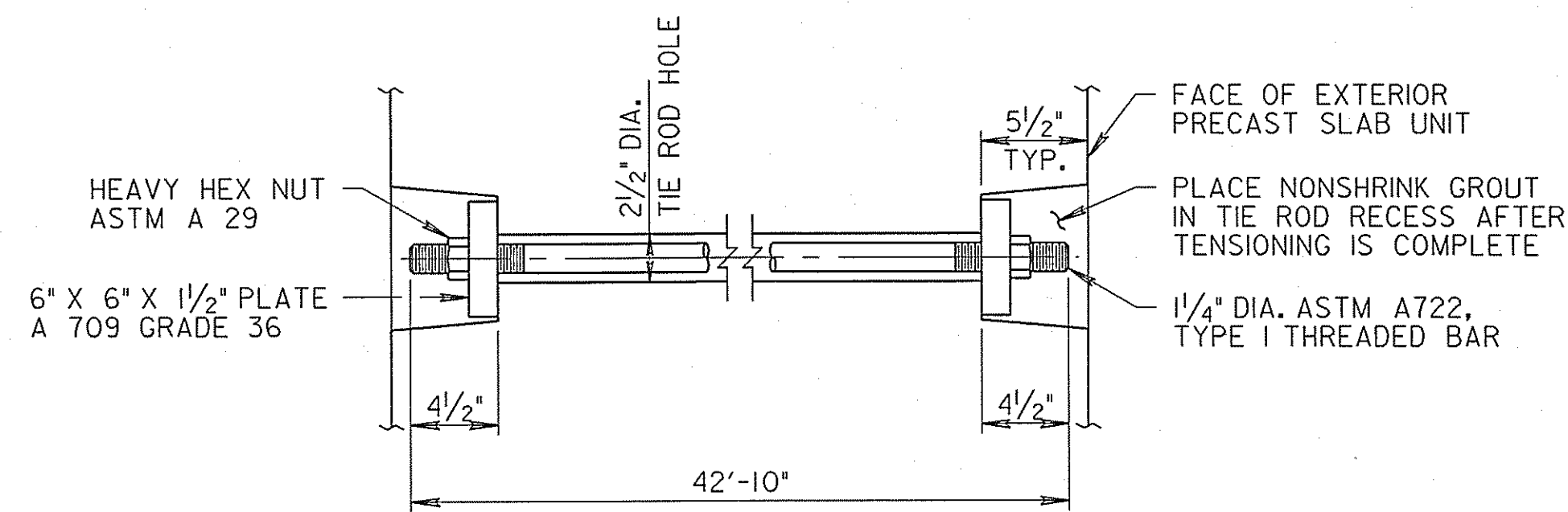
SHEAR KEY DETAIL
SCALE: 1/2" = 1'-0"

OVERLAY SHALL NOT BE PLACED UNTIL GROUTING OF SHEAR KEYS ON WHICH OVERLAY IS TO BE PLACED HAS CURED FOR 48 HOURS. LIGHT EQUIPMENT (PORTABLE GENERATORS, BOBCATS, ETC.) IS ALLOWED ON PANELS DURING THIS 48 HOUR PERIOD.

NOTE:
AFTER LATERAL TIE RODS HAVE BEEN PLACED AND TENSIONED, SHEAR KEYS SHALL BE FILLED WITH NONSHRINK GROUT (SHOWN SHADED).

ALL NONSHRINK GROUT SHALL CONFORM TO 902.II(C).

SHEAR KEYS SHALL NOT BE PLACED ON THE EXPOSED FACE OF THE EXTERIOR SLAB UNITS.



LATERAL TIE ROD DETAIL
SCALE: 1/2" = 1'-0"

GENERAL TIE ROD NOTES:

TIE RODS SHALL BE TENSIONED TO 120 KIPS.

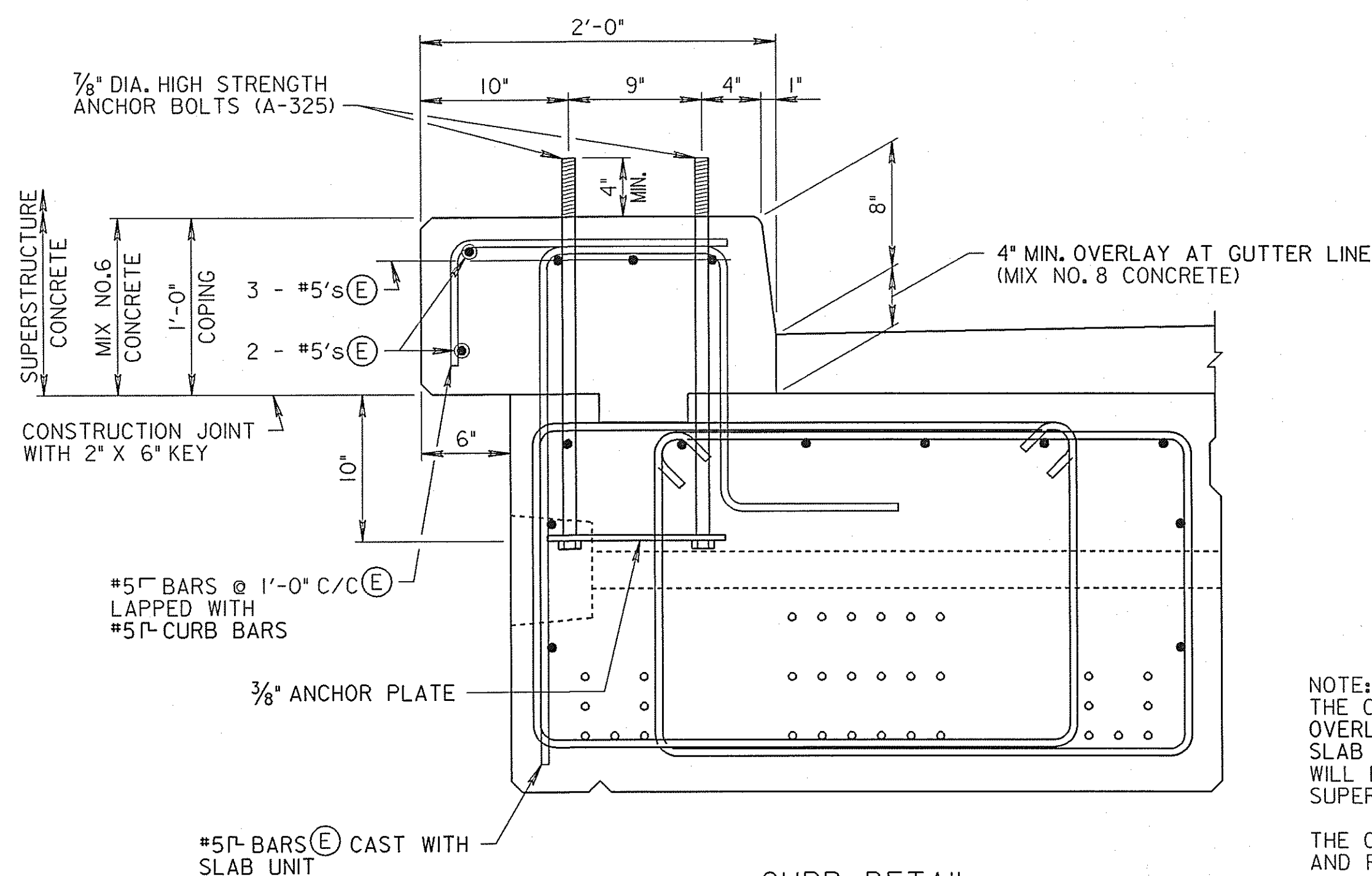
TIE ROD = 1/4" DIA. THREADED BAR WITH A MINIMUM NET AREA THRU THREADS = 0.91" WITH A MINIMUM TENSILE STRENGTH OF 150 KSI. BARS TO BE HOT ROLLED AND COLD STRESSED ALLOY STEEL CONFORMING TO ASTM A 722, TYPE 1. HEAVY HEX NUTS AND COUPLERS - SUPPLIED BY THE TIE ROD MANUFACTURER, SHALL PROVIDE FULL TENSILE STRENGTH OF TIE ROD. BEARING PLATE = ASTM A 709 GRADE 36.

ALL MATERIAL FOR TIE RODS, PLATES, NUTS AND WASHERS TO BE HOT DIPPED GALVANIZED STEEL.

TIE RODS SHALL BE INSTALLED WITH A LOADING APPARATUS, IN CONFORMANCE WITH 440.03.19, CAPABLE OF APPLYING A TENSION OF 120 KIPS PRIOR TO FILLING THE SHEAR KEYS AND PLACING THE OVERLAY AND BARRIERS.

AFTER TENSIONING IS COMPLETE, FILL RECESS ON EXTERIOR UNITS FLUSH WITH FACE OF EXTERIOR PRECAST SLAB UNIT WITH NONSHRINK GROUT. ALL NONSHRINK GROUT SHALL CONFORM TO 902.II (C).

NO ALTERNATIVES WILL BE ALLOWED FOR THE TIE RODS.



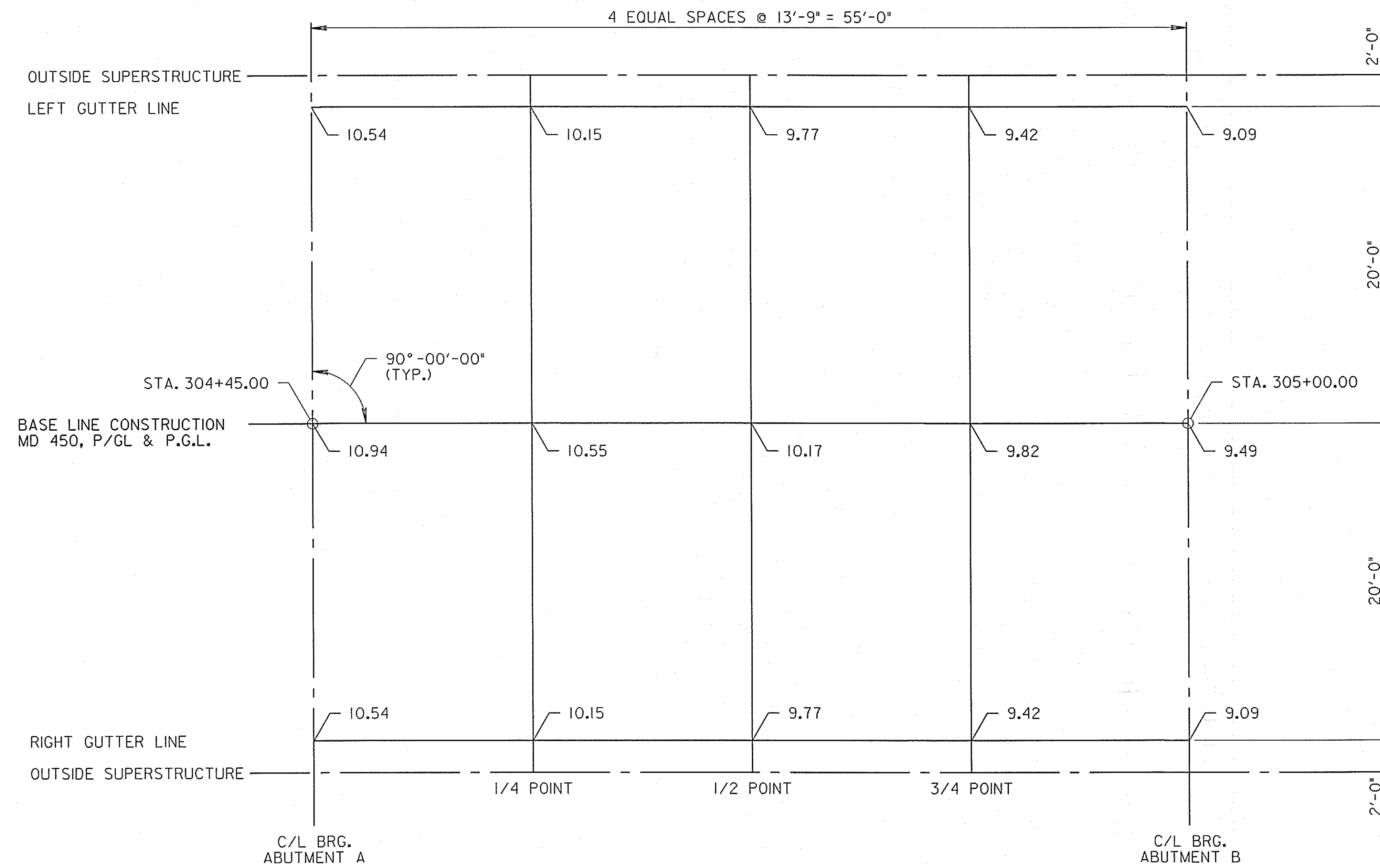
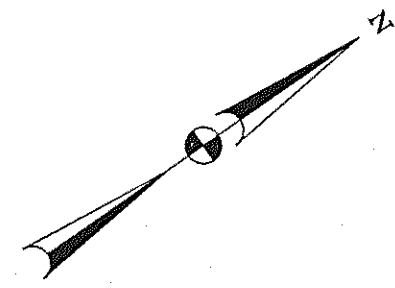
CURB DETAIL
SCALE: 1/2" = 1'-0"

NOTE:
THE COST OF CURB AND CONCRETE OVERLAY AND END PORTION OF SLAB INCLUDING REINFORCING WILL BE PAID FOR UNDER THE SUPERSTRUCTURE CONCRETE ITEM.

THE COST OF ANCHOR BOLTS AND PLATE WILL BE PAID FOR UNDER THE RAILING ITEM.

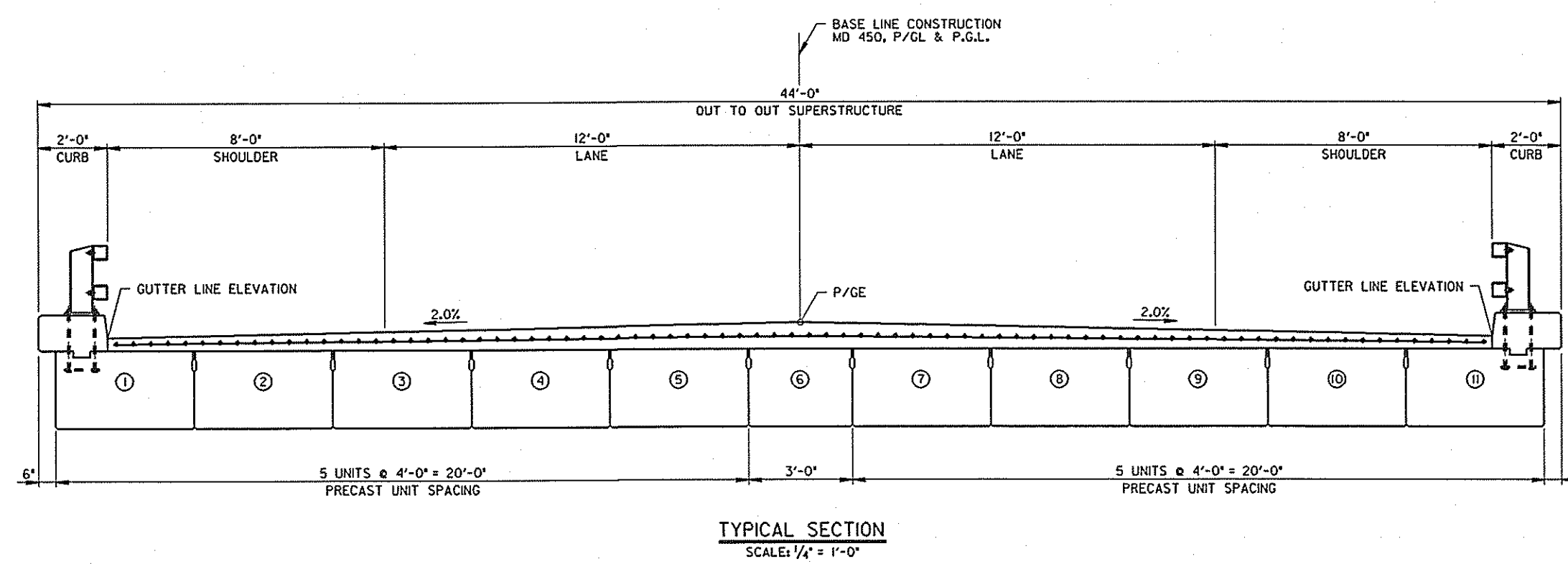
S1 - 17

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT PRESTRESSED CONCRETE SLAB BRIDGE NO. 2072 ON MARYLAND 450 OVER BACON RIDGE BRANCH SUPERSTRUCTURE DETAILS
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 8, 2008
	SHEET NO. 40 OF 66



FINISHED GRADE ELEVATIONS
SCALE: 3/16" = 1'-0"

NOTES:
FOR GENERAL PLAN AND ELEVATION, SEE SHEET NO. SI-1
FOR TYPICAL SECTION, SEE SHEET NO. SI-II
ELEVATIONS ARE AT TOP OF PROPOSED CONCRETE OVERLAY.



TYPICAL SECTION
SCALE: 1/4" = 1'-0"

SI - 18

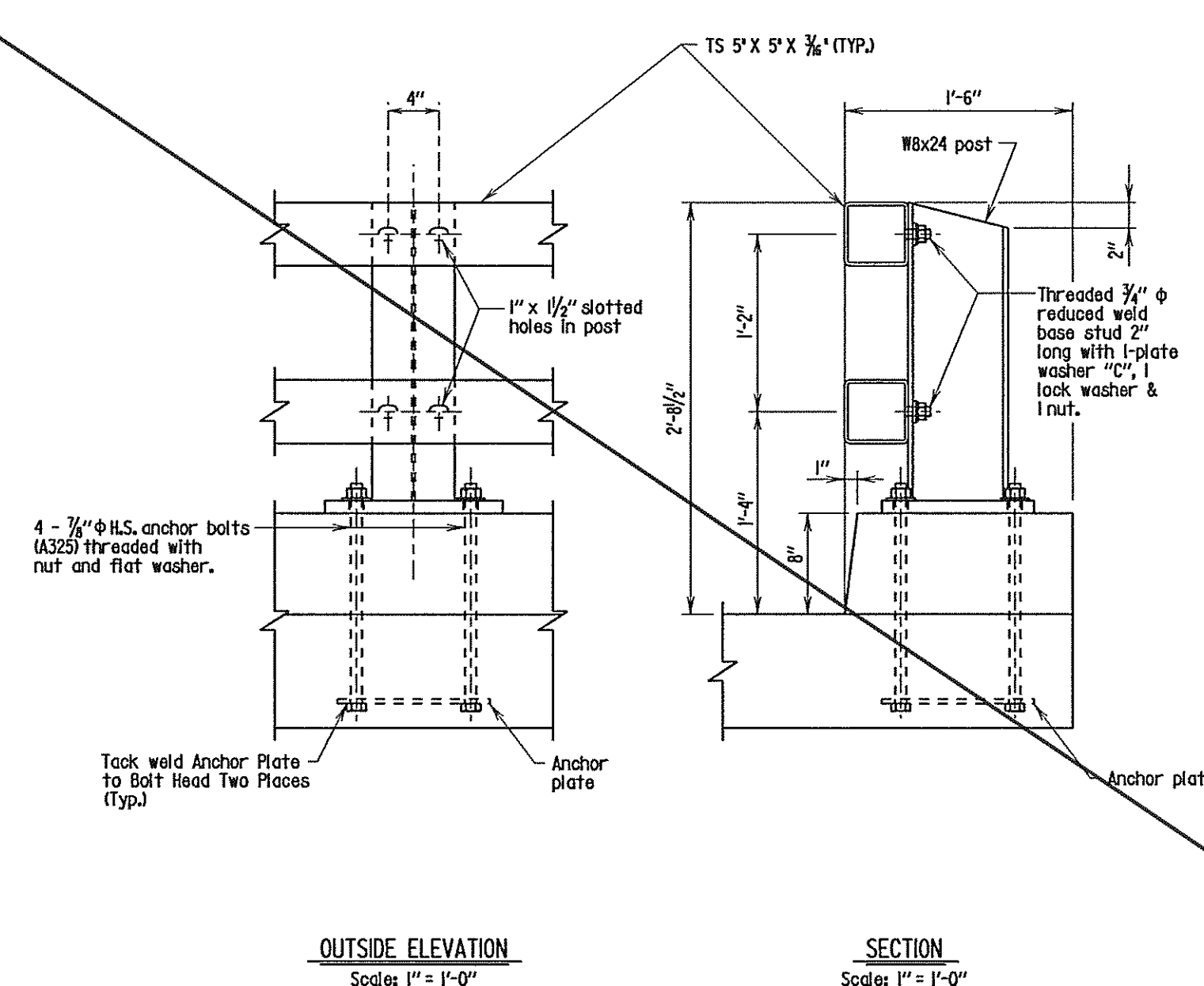
REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH FINISHED GRADE ELEVATIONS	
	SCALE AS SHOWN	DATE JAN, 2008 CONTRACT AX4695180
	DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R.	E.S.F. JAN. 8, 2008
OTHER CONTRACTS FOR THIS STRUCTURE		SHEET NO. 41 OF 66

STRUCTURE INVENTORY NO. 0207200

SURVEY BOOK NO.

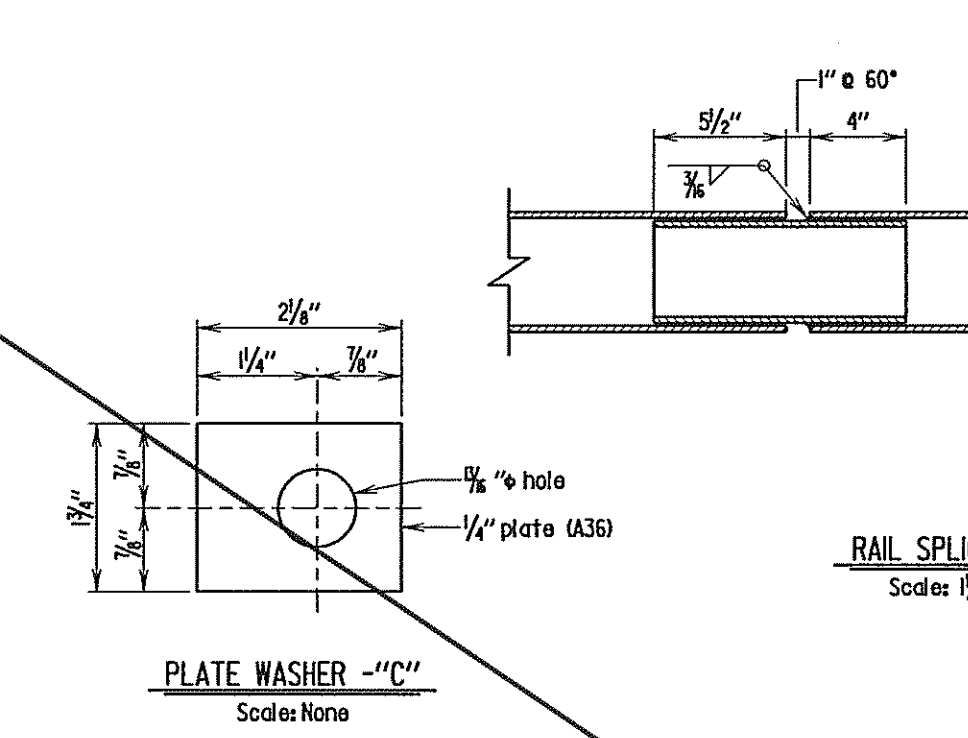
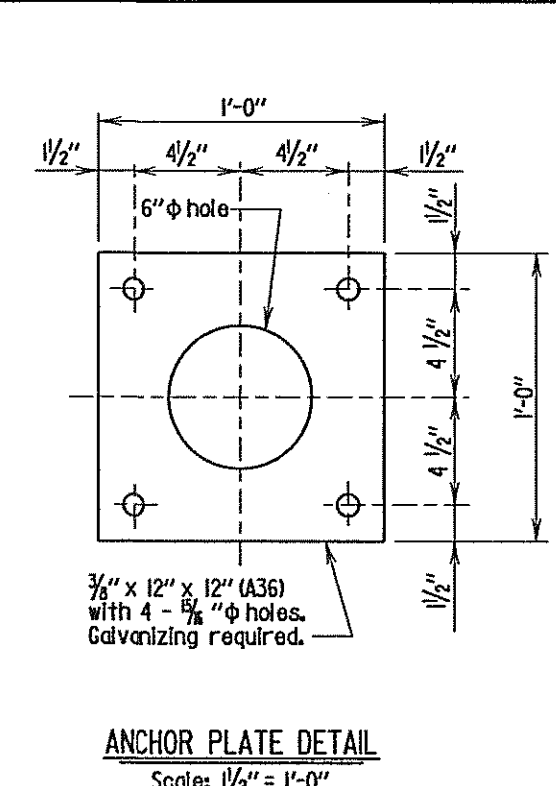
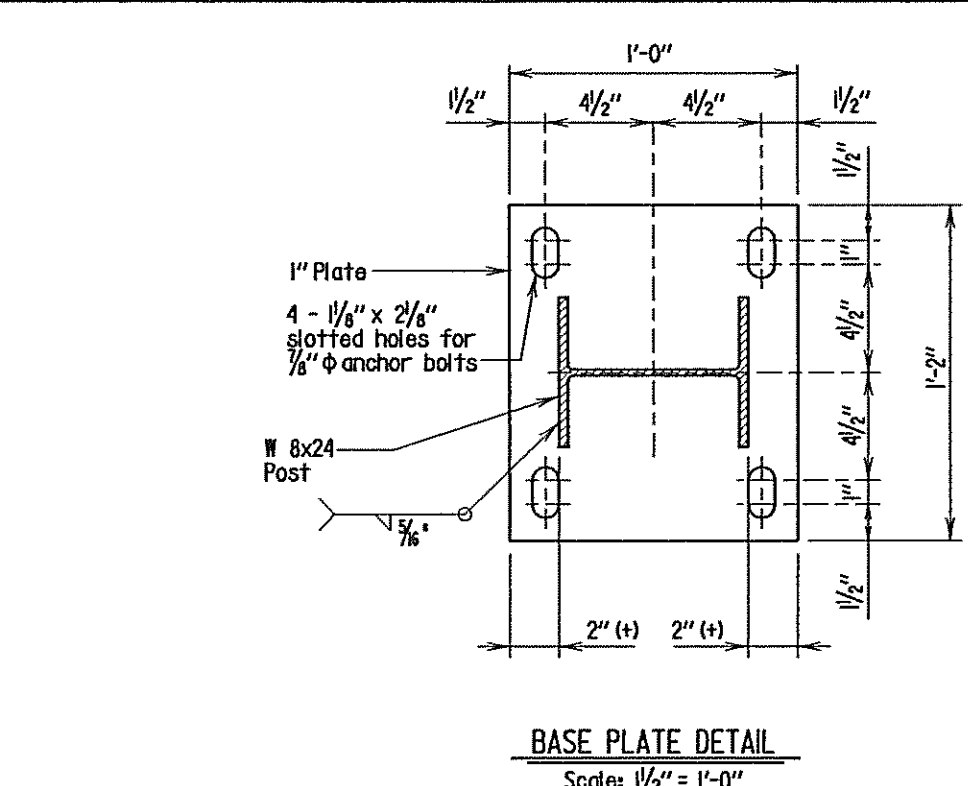
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PRINT DATE: Friday, December 07, 2007 at 10:59:12 AM

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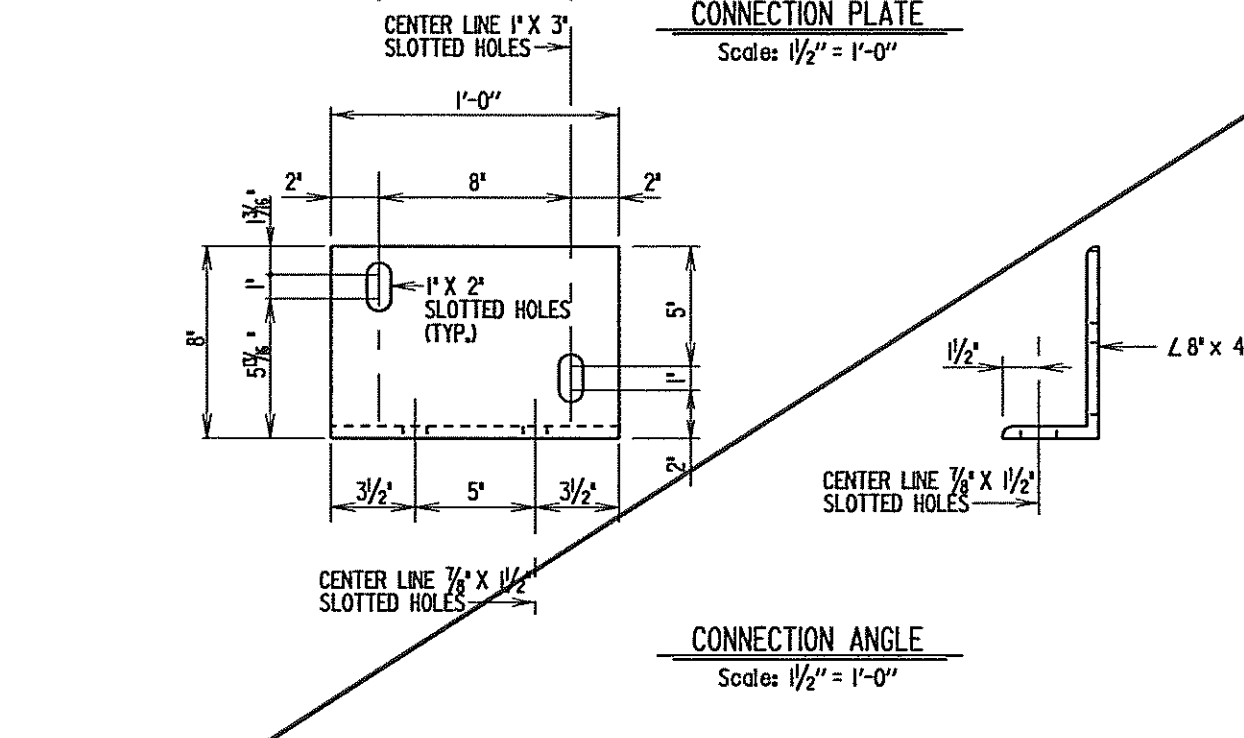
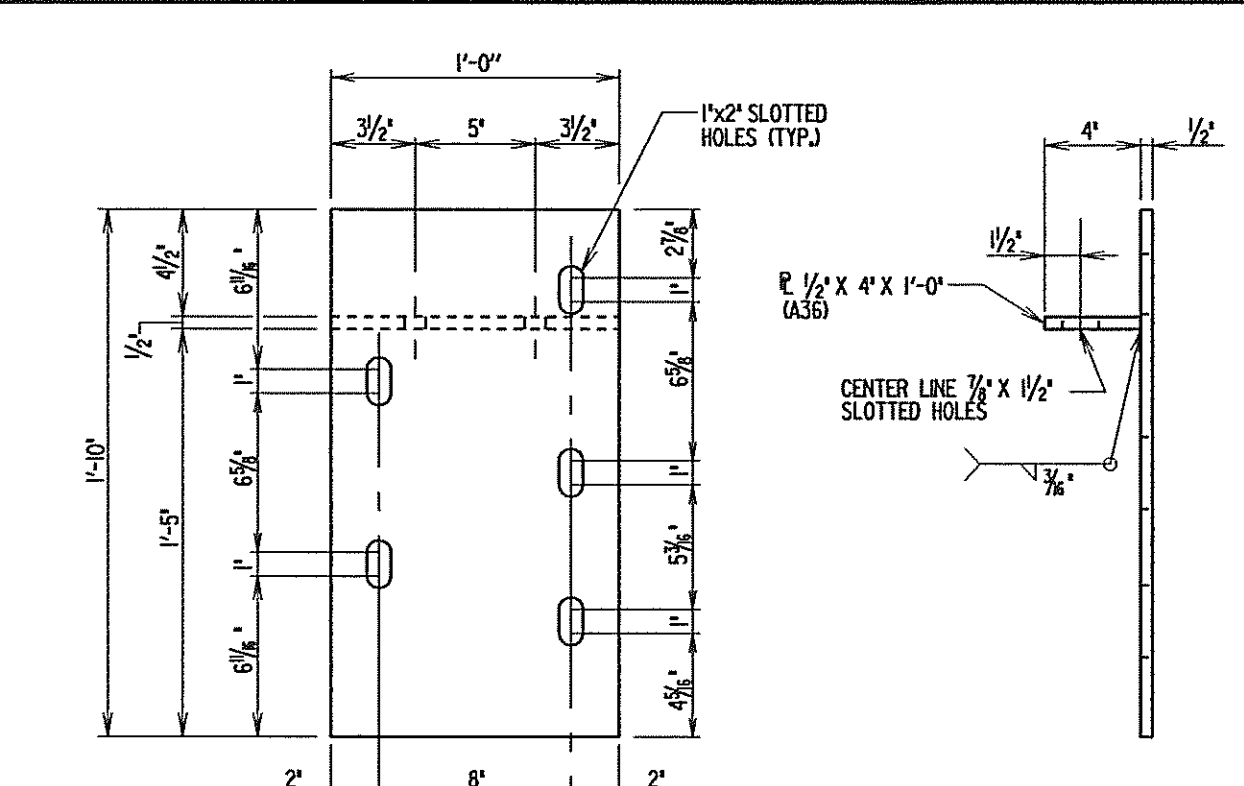


- Notes:
1. Rail elements shall be square structural tubing in accordance with ASTM Specification A500 grade B, A518 or A501.
 2. Steel posts and plates shall conform to ASTM Specification A36 unless otherwise noted.
 3. All structural steel including fasteners shall be hot-dip galvanized after fabrication, except as noted.
 4. Railing shall be fabricated to the horizontal and vertical alignment of the structure. Posts to be normal to grade.
 5. Payment for the railing shall include compensation for furnishing and installing the necessary traffic barrier connection plates and terminal connectors.

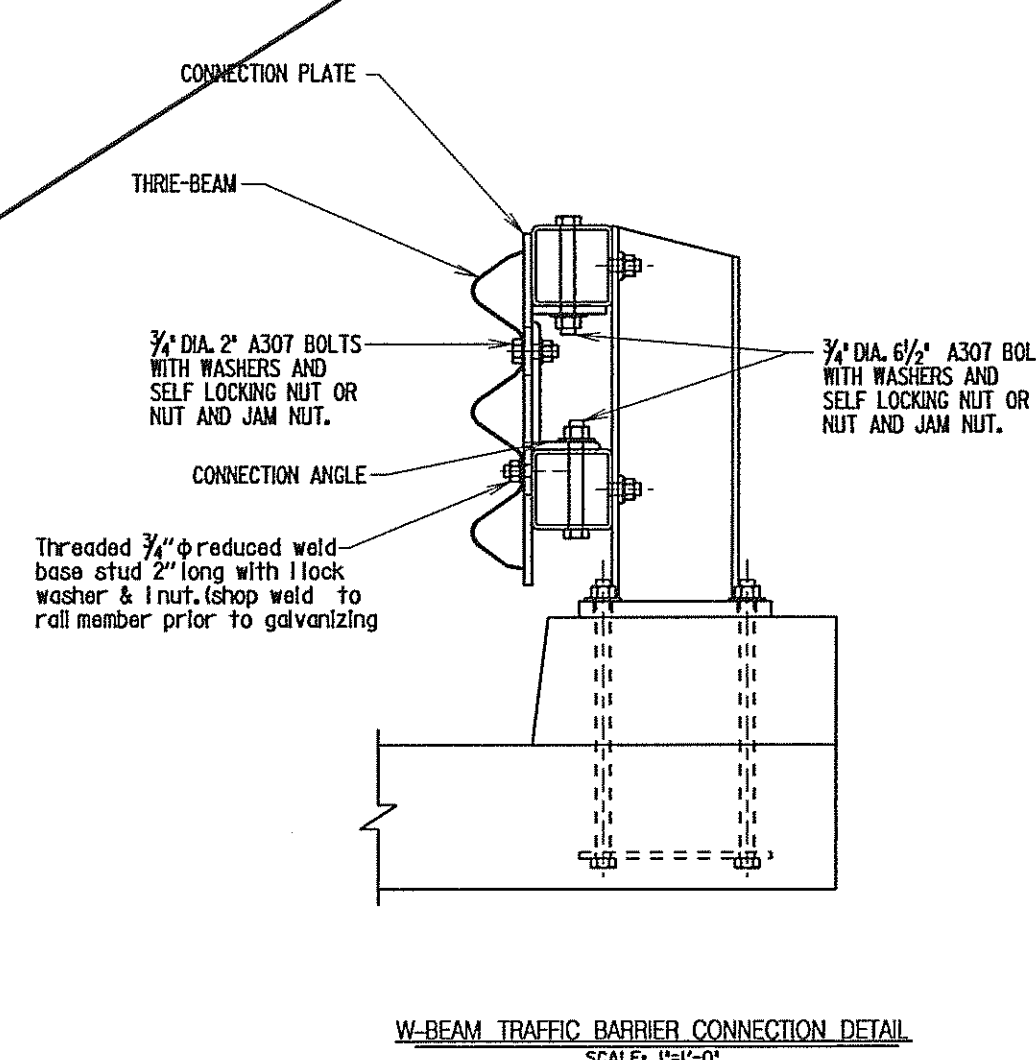
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DESIGNED BY	SHA
CHECKED BY	PMMA
DATE	
REVISIONS	
NO.	SHEET 1 OF 5



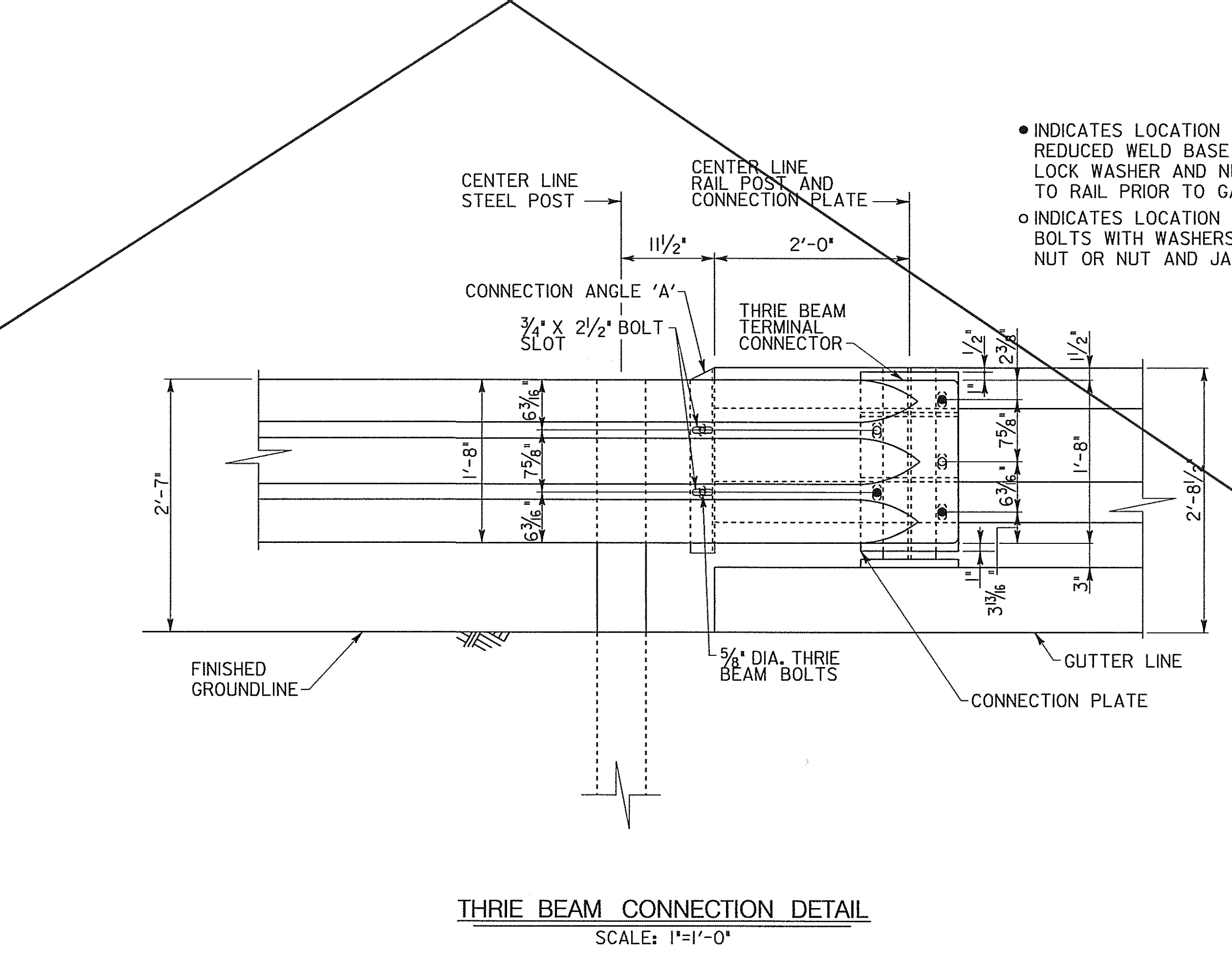
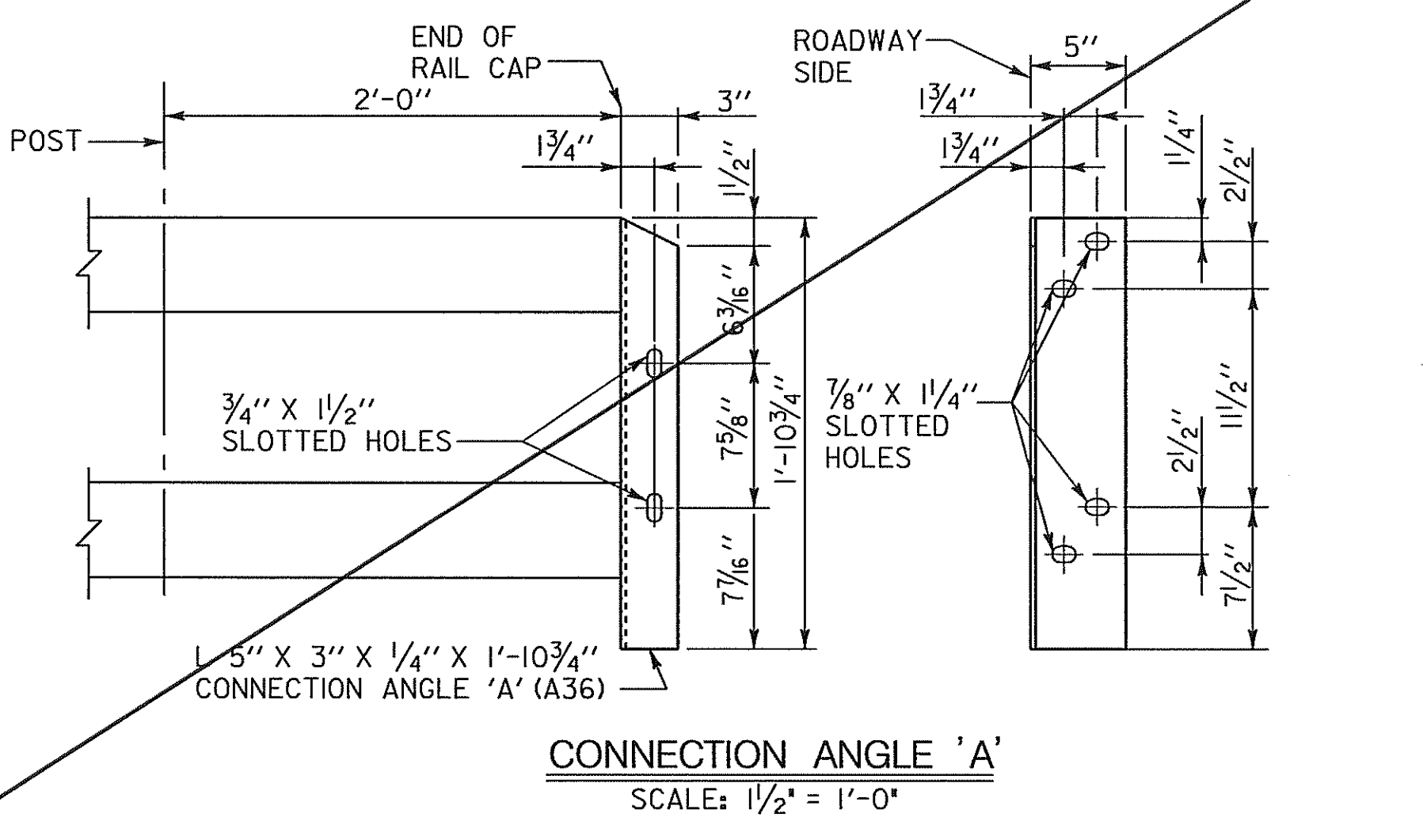
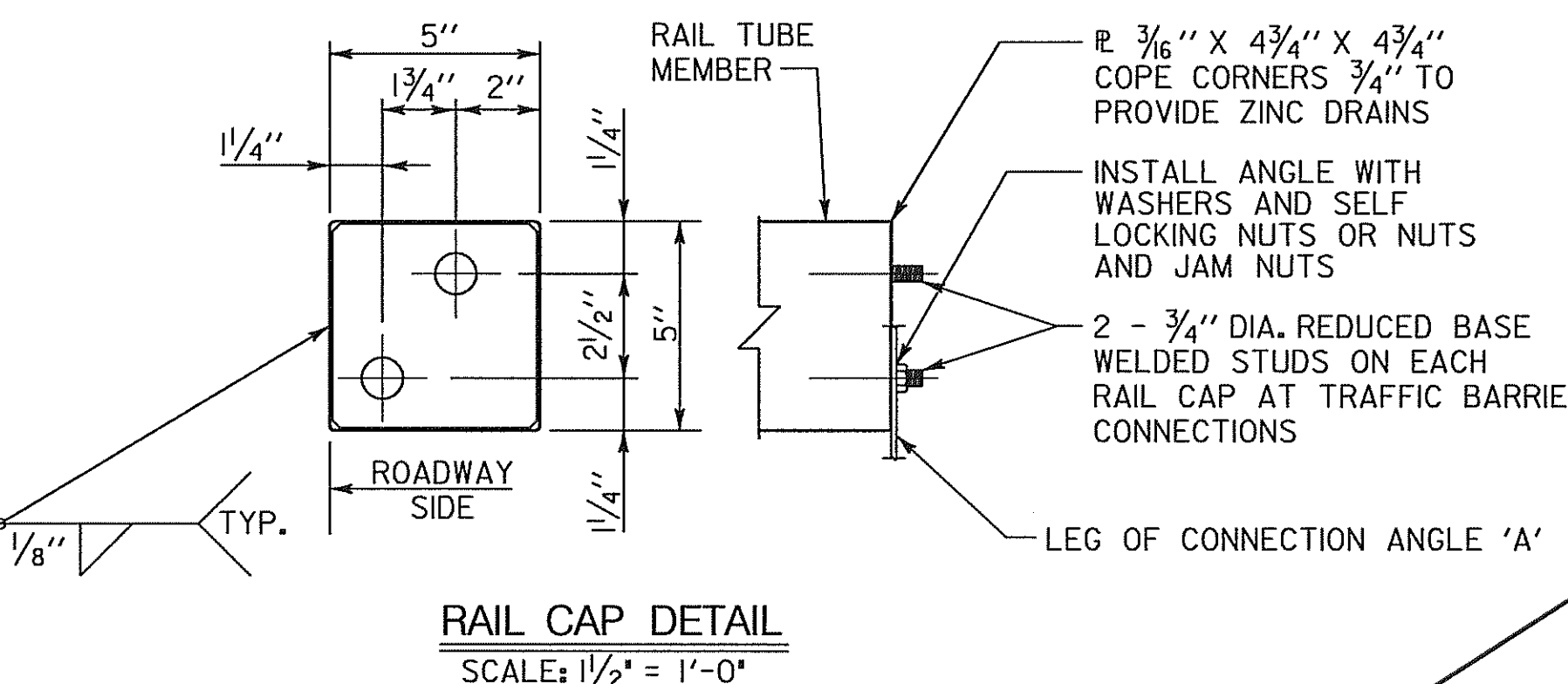
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DESIGNED BY	SHA
CHECKED BY	PMMA
DATE	
REVISIONS	
NO.	SHEET 2 OF 5



APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DESIGNED BY	SHA
CHECKED BY	PMMA
DATE	
REVISIONS	
NO.	SHEET 3 OF 5



APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DESIGNED BY	SHA
CHECKED BY	PMMA
DATE	
REVISIONS	
NO.	SHEET 5 OF 5



- NOTES:
- INDICATES LOCATION OF THREADED 3/4" DIA. REDUCED WELD BASE STUD 2" LONG WITH LOCK WASHER AND NUT. SHOP WELDED TO RAIL PRIOR TO GALVANIZING
 - INDICATES LOCATION OF 3/4" DIA. X 2" A307 BOLTS WITH WASHERS AND SELF LOCKING NUT OR NUT AND JAM NUT.
- FOR DETAILS OF THREE BEAM ANCHORAGE AT BRIDGE END POST, SEE STANDARD NO. MD-605.41-01
FOR RAIL POST SPACING DETAILS, SEE SHEET NO. S1-1

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

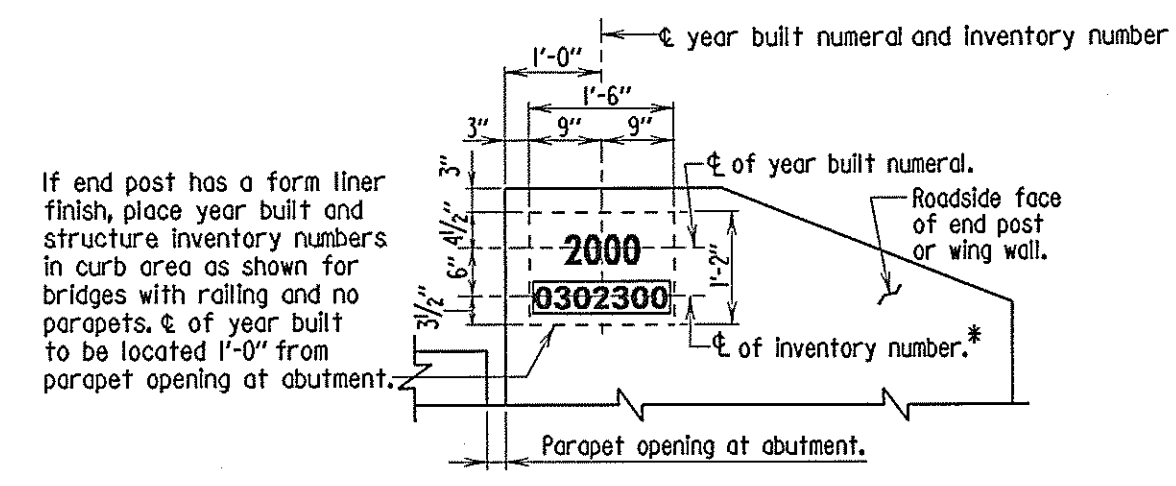
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH
RAILING DETAILS

SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180

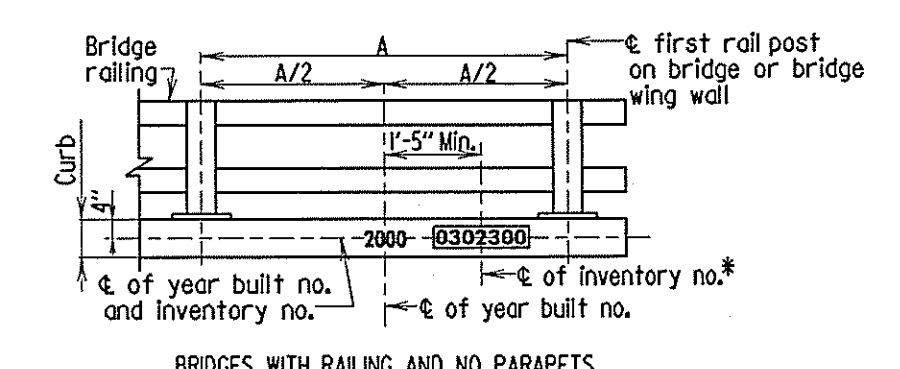
DESIGNED BY S.H.A.
DRAWN BY S.H.A.
CHECKED BY S.H.A.

E.S.F.
JAN. 8, 2008

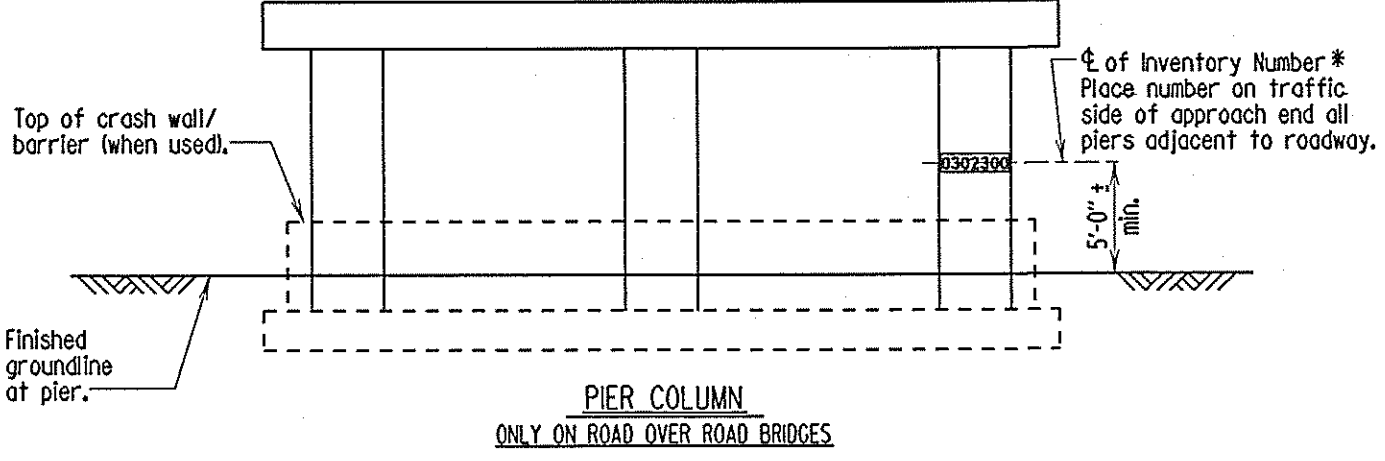
SHEET NO. 42 OF 66



BRIDGES WITH PARAPET
 Location: Dual Bridges-Each Approach End (Outside Shoulder).
 Single Bridge - Approach End - North or East corner.
 Where bridge has a concrete parapet and no definitive end post, place year built marking and structure inventory number on face of parapet as close to center line of bearing at abutment as practical.



BRIDGES WITH RAILING AND NO PARAPETS

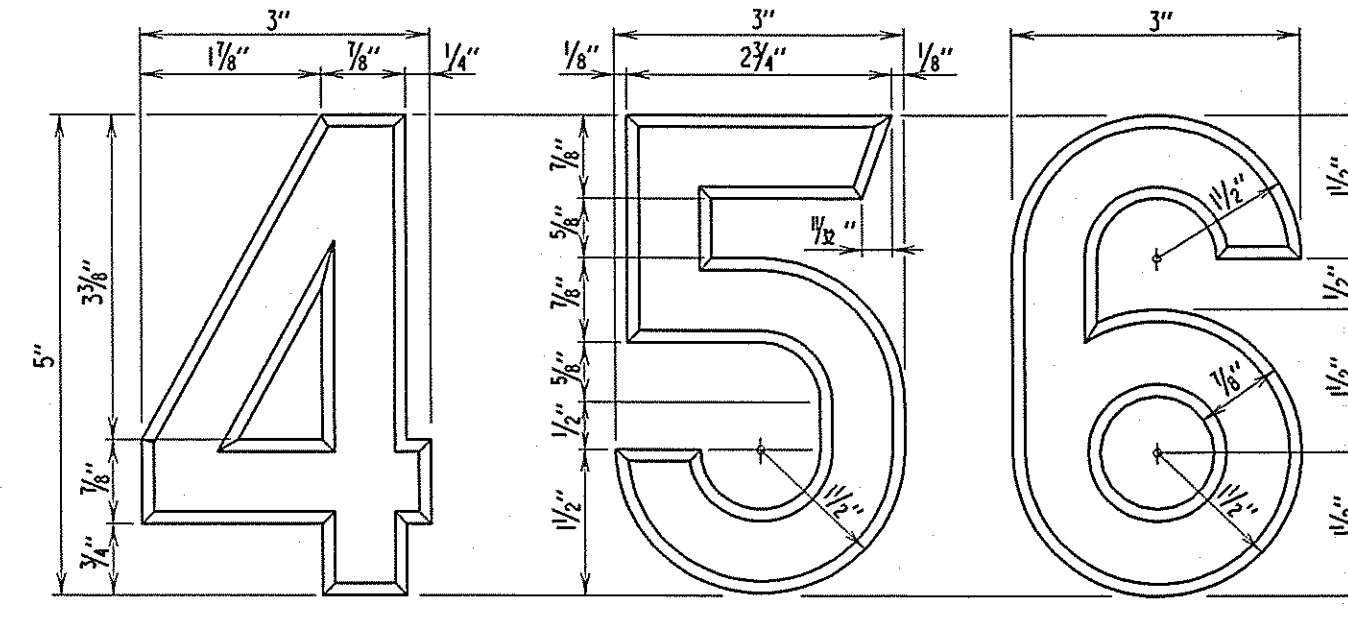
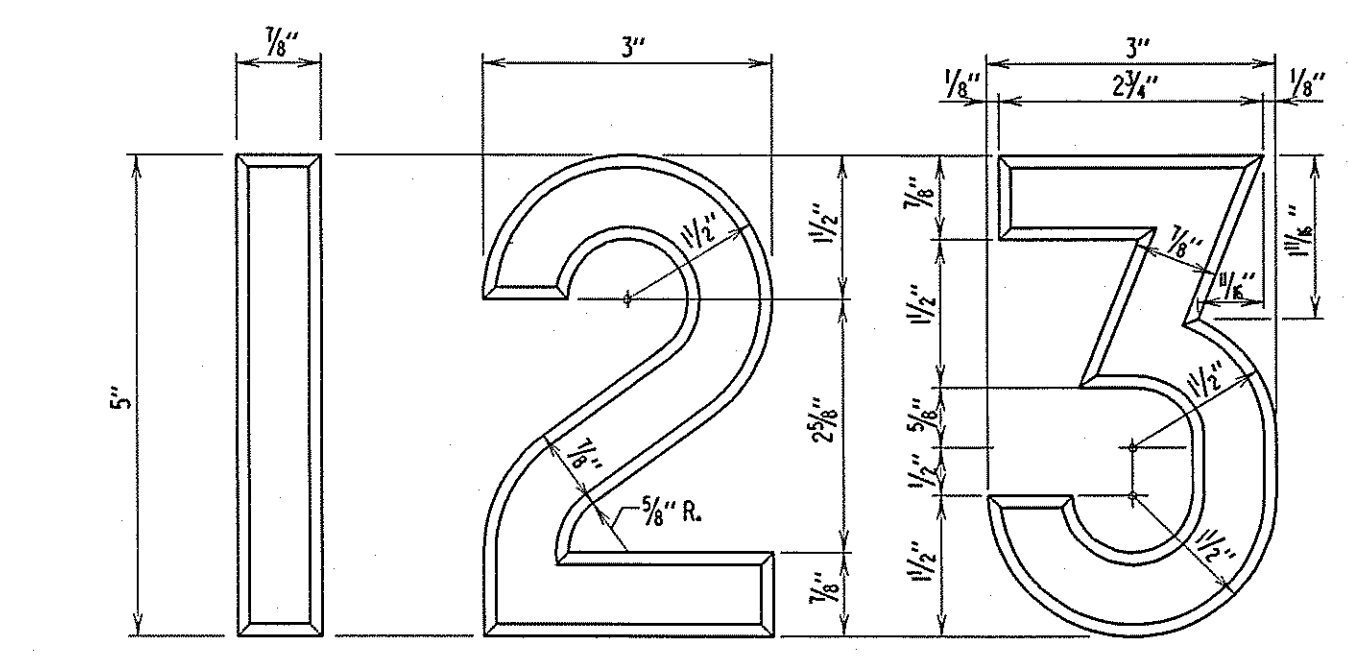


PIER COLUMN
 ONLY ON ROAD OVER ROAD BRIDGES

*Block numbers 3" high on a painted white background, 6" x 11".

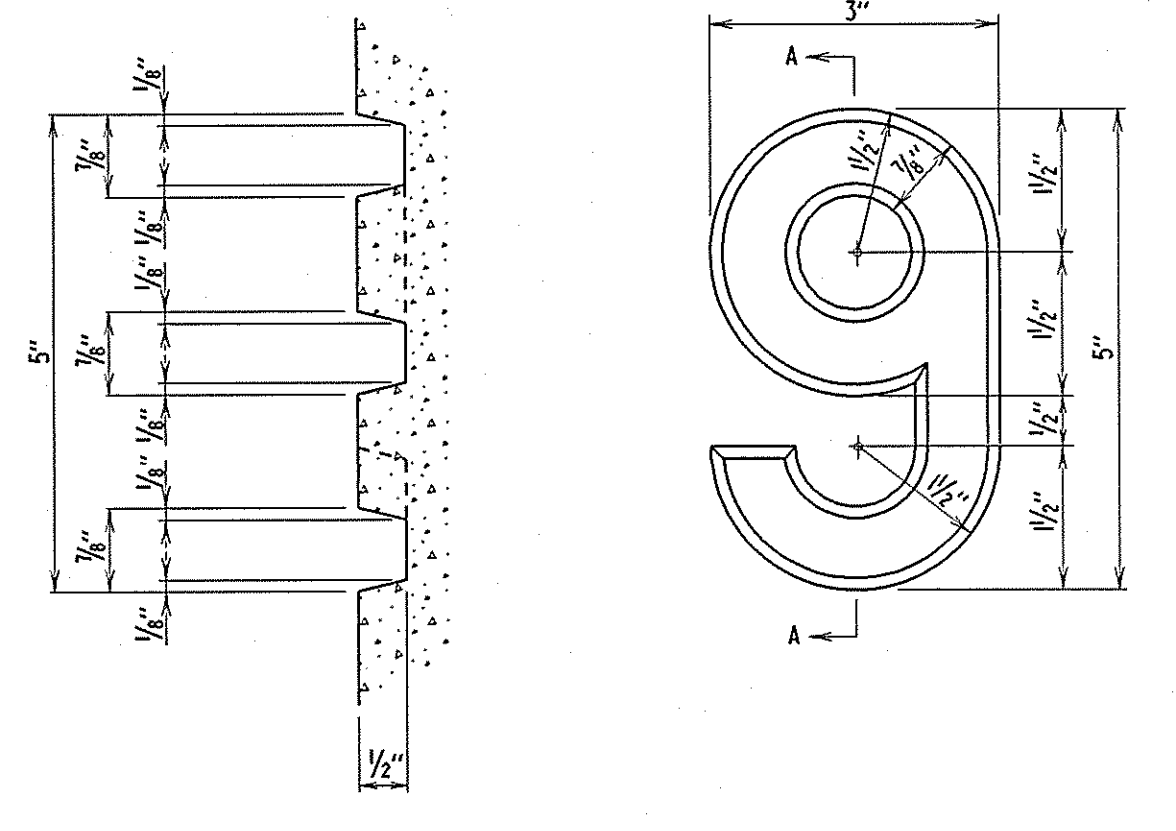
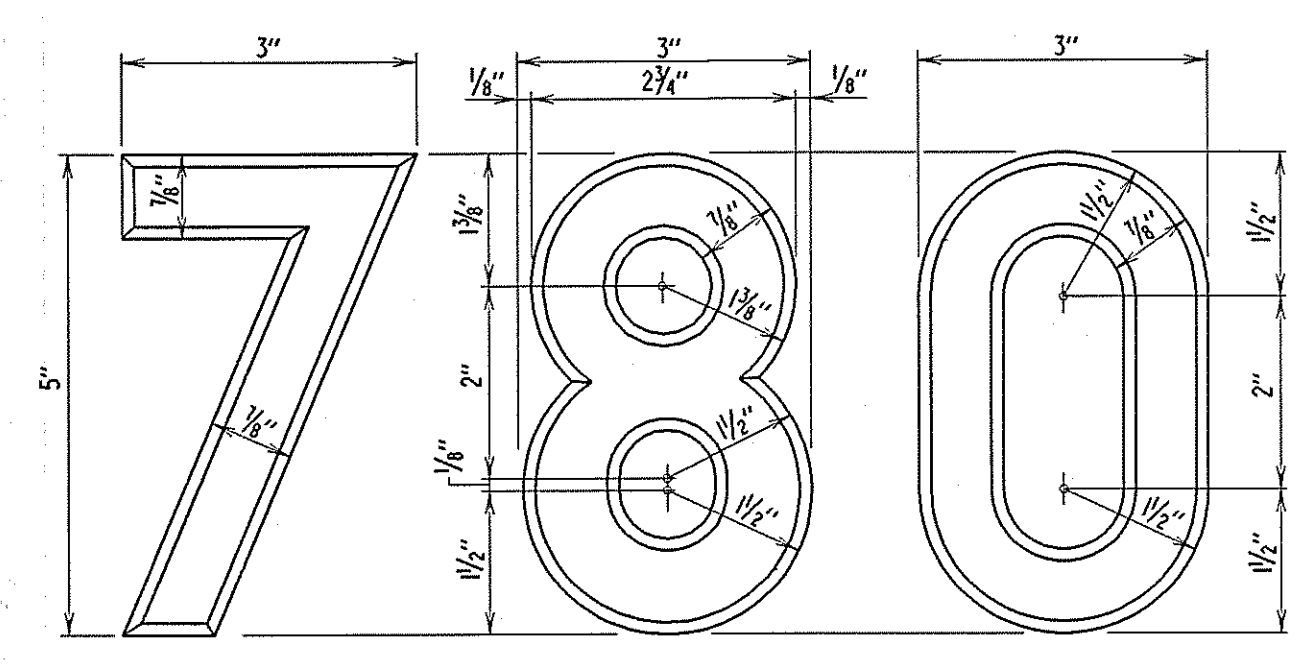
- Notes:
 1. For existing structures, where a year built is shown on the structure and structure is to be rehabilitated, the marking should read 1942-2000 (old year first - new year).
 2. For existing structures with no year built contact the Office of Bridge Development for aid year.
 3. For Year Built Numerals refer to Standard No. M10.071-99-334.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 9/14/99	
REVISIONS	
SHA	FWMA
3-10-00	
12-7-00	
1-22-01	
FWMA APPROVAL DATE: 1-22-01	
NO. M10.041-99-331	SHEET 1 OF 1



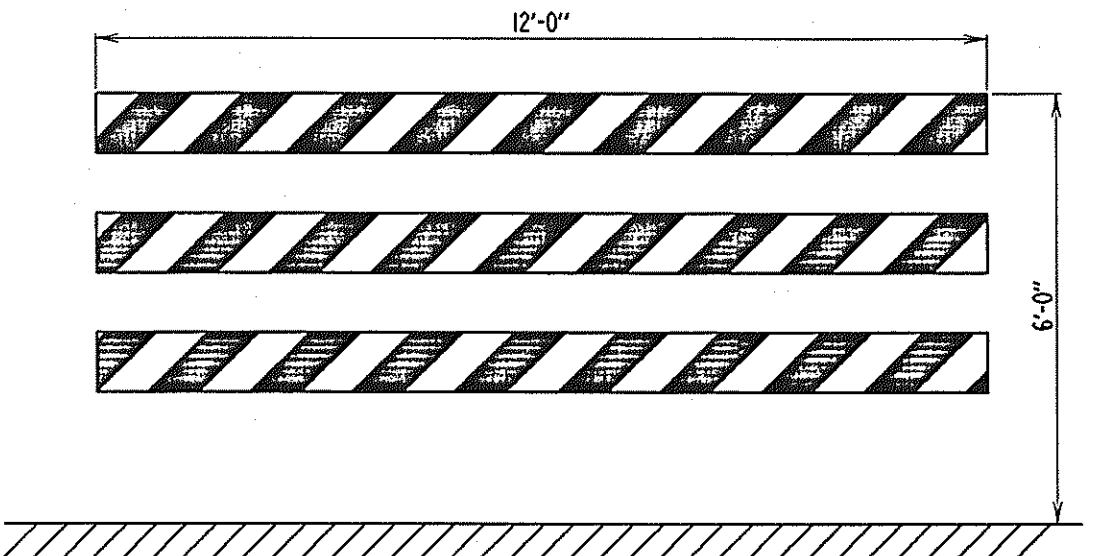
- Notes:
 Year built numerals to be indented into concrete (unpainted) - as indicated on Standard Nos. M10.041-99-331, M10.051-99-332 and M10.061-99-333.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 9/14/99	
REVISIONS	
SHA	FWMA
FWMA APPROVAL DATE:	
NO. M10.071-99-334	SHEET 1 OF 2



SECTION A-A

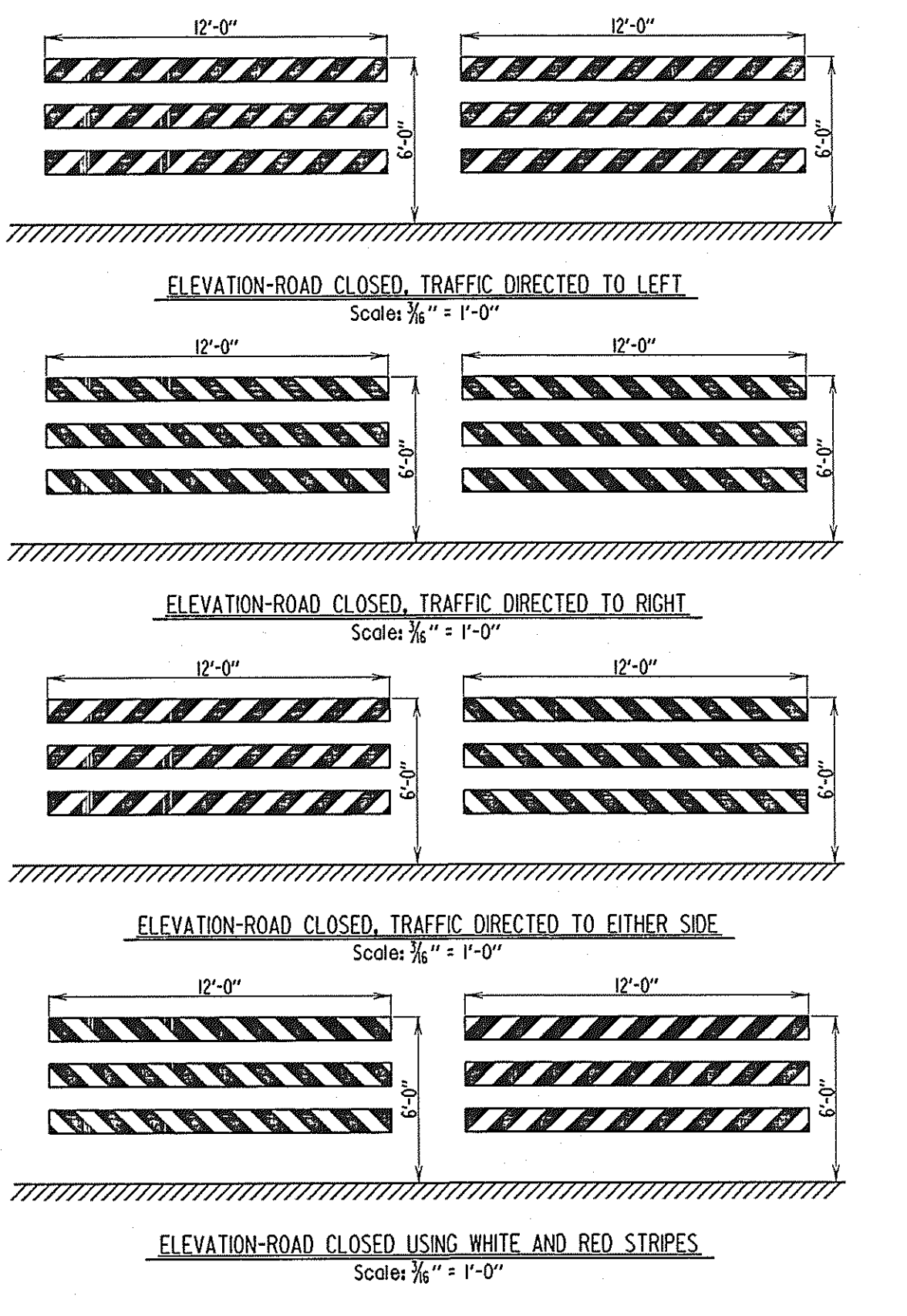
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DATE: 9/14/99	
REVISIONS	
SHA	FWMA
FWMA APPROVAL DATE:	
NO. M10.071-99-334	SHEET 2 OF 2



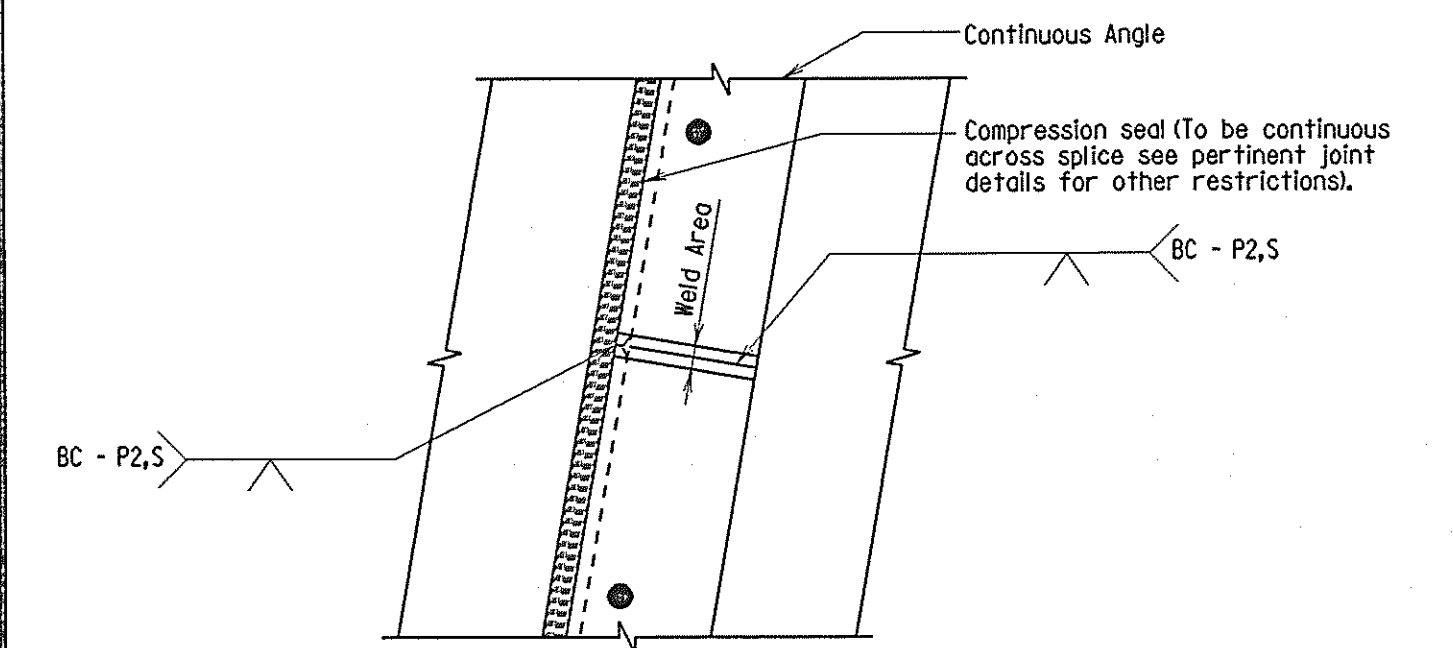
ELEVATION
 Scale: 1/8" = 1'-0"

- Notes:
 1. Type III Barricade 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.
 2. Striping shall be reflectorized alternate orange and white colors. Right (R) Barricade shown. (L) barricade shall have stripes sloping in opposite direction. If barricades are to be used close road, striping shall be reflectorized alternate white and red colors.
 3. Barricade shall be lighted if required by location.
 4. Type III Barricades shall be selected from the Preapproved List maintained by the Office of Materials and Technology. Procedures for coding products to the prequalified list may be obtained from the Office of Materials and Technology.
 5. If signing is attached to the movable barricade, the signs shall be placed so that no more than 1/3 of the reflective surface of the barricade shall be covered.

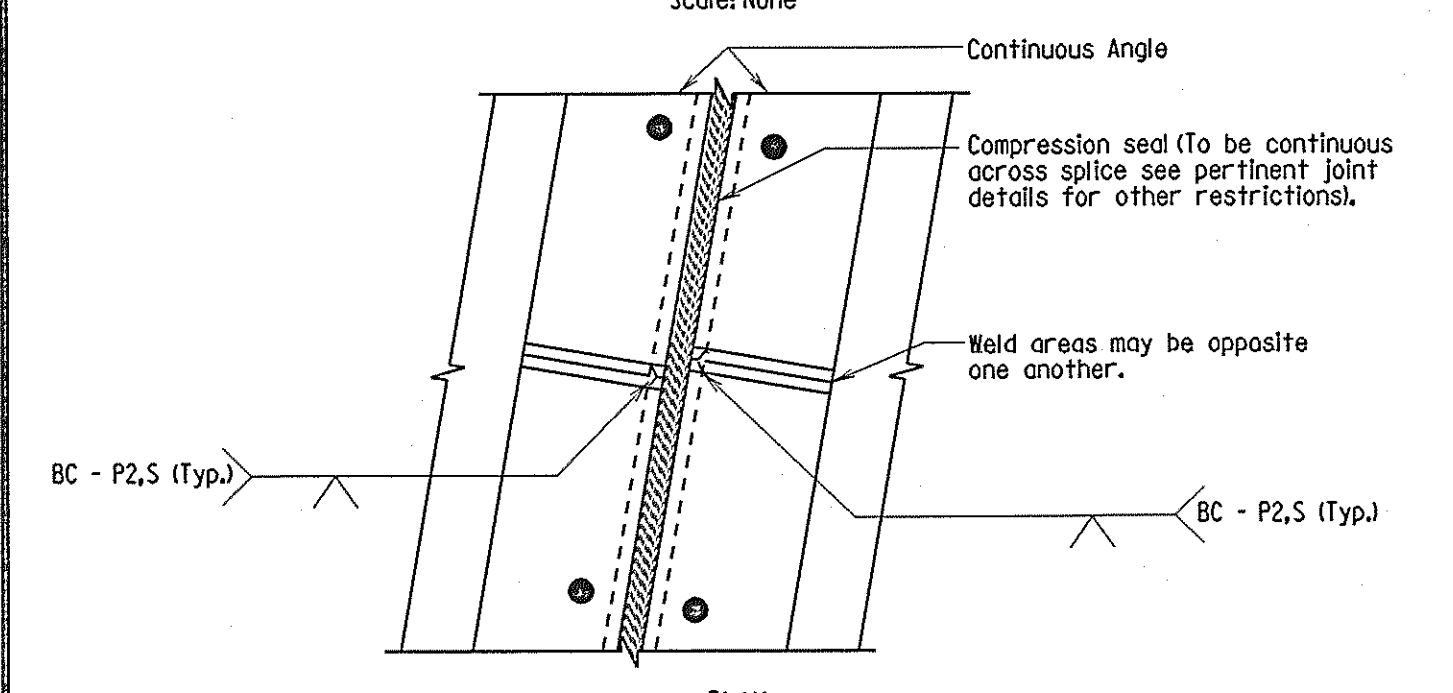
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 8/31/79	
REVISIONS	
SHA	FWMA
12-28-05	
1-6-06	
7-24-07	
FWMA APPROVAL DATE: 1-16-06	
STANDARD NO. M15.081-79-82	SHEET 1 OF 2



APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 1/6/06	
REVISIONS	
SHA	FWMA
12-24-05	
1-6-06	
7-24-07	
FWMA APPROVAL DATE:	
STANDARD NO. M15.081-79-82	SHEET 2 OF 2



PLAN
 JOINT AT ABUTMENTS - WHERE ONE SIDE OF JOINT IS ARMORED
 Scale: None



PLAN
 JOINT AT PIERS AND ABUTMENTS - WHERE BOTH SIDES OF JOINTS ARE ARMORED
 Scale: None

- Notes:
 Whenever possible the need for this splice should be limited. Preferably, the minimum spacing between joints shall be 40'. If there are breaks in the crown or if the joint is skewed, splices may be made at all breaks in slope and may follow the direction of centerline of bridge instead of being perpendicular to center line of bearing.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 1/14/87	
REVISIONS	
SHA	FWMA
1-22-01	
FWMA APPROVAL DATE: 1-22-01	
STANDARD NO. BR-55(J15)-86-198	SHEET 1 OF 1

OTHER CONTRACTS FOR THIS STRUCTURE

STRUCTURE INVENTORY NO. 207200

SURVEY BOOK NO.

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REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH STANDARD DETAILS
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.H.A. DRAWN BY S.H.A. CHECKED BY S.H.A.
	E.S.F. JAN. 8, 2008
	SHEET NO. 43 OF 66

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'-10"	3'-6"	2'-10"
#8	6'-5"	4'-7"	3'-8"
#9	8'-1"	5'-9"	4'-8"
#10	10'-3"	7'-4"	5'-11"
#11	12'-7"	9'-0"	7'-3"

*** 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.

BAR SIZE	* LOCATION CATEGORY			3 Times Bar Diameter	6 Times Bar Diameter	c/c Spacing
	A	B	C			
#4	2'-11"	2'-7"	2'-1"	1 1/2"	3"	3 1/2"
#5	3'-8"	3'-3"	2'-7"	1 1/8"	3 3/4"	4 1/8"
#6	4'-5"	3'-10"	3'-1"	2 1/4"	4 1/2"	5 1/4"
#7	5'-11"	5'-3"	4'-2"	2 5/8"	5 1/4"	6 1/4"
#8	7'-9"	6'-10"	5'-6"	3"	6"	7"
#9	9'-10"	8'-8"	6'-11"	3 3/8"	6 3/4"	7 1/2"
#10	12'-5"	11'-0"	8'-10"	3 3/4"	7 3/8"	8 3/8"
#11	15'-3"	13'-6"	10'-10"	4 1/4"	8 1/2"	9 1/8"

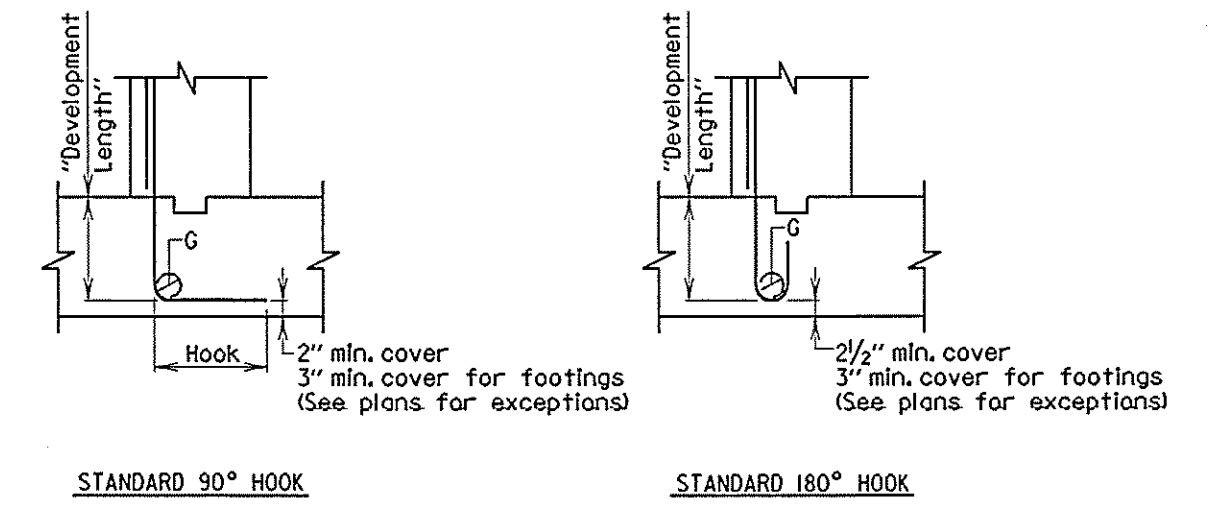
*** LOCATION CATEGORY**

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.

BAR SIZE	* LOCATION CATEGORY		
	A	B	C
#4	2'-11"	2'-1"	1'-8"
#5	3'-7"	2'-7"	2'-1"
#6	4'-4"	3'-1"	2'-6"
#7	5'-9"		3'-4"
#8	7'-7"	Does Not Exist	4'-4"
#9	9'-7"		5'-6"
#10	12'-2"		7'-0"
#11	14'-11"		8'-7"

*** 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.



BAR SIZE	* LOCATION CATEGORY		
	D	E	F
#4	8"	11"	9"
#5	9"	1'-4"	1'-1"
#6	11"	1'-4"	1'-1"
#7	1'-1"	1'-6"	1'-3"
#8	1'-3"	1'-9"	1'-5"
#9	1'-5"	1'-11"	1'-7"
#10	1'-7"	2'-2"	1'-9"
#11	1'-9"	2'-5"	1'-11"

BAR SIZE	RECOMMENDED END HOOKS ALL GRADES		
	Finished bend diameter (in)	180 Degree hooks	90 Degree hooks
#4	3"	6"	8"
#5	3 1/4"	7"	10"
#6	4 1/4"	8"	1'-0"
#7	5 1/4"	10"	1'-2"
#8	6"	11"	1'-4"
#9	6 1/2"	1'-3"	1'-7"
#10	10 1/4"	1'-5"	1'-10"
#11	1'-0"	1'-7"	2'-0"

*** LOCATION CATEGORY:**

D - All bars terminating with a standard 180° hook with side cover (normal to plane of hook) not less than 2 1/2" and for 90° deg. hook cover on bar extension beyond hook not less than 2".
 E - All bars not in Category D.
 F - All bars with hook enclosed vertically or horizontally within ties or stirrup-ties spaced along the full development length not greater than 3d where d is the diameter of the hooked bar.

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, fs= 24,000 p.s.i."

APPROVAL: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
 DATE: 6/20/05
 REVISIONS: SHEET 1 OF 3
 NO. M6.071-81-127

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, fs= 24,000 p.s.i."

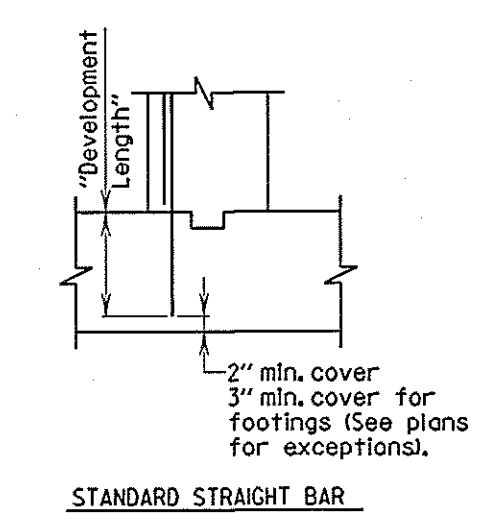
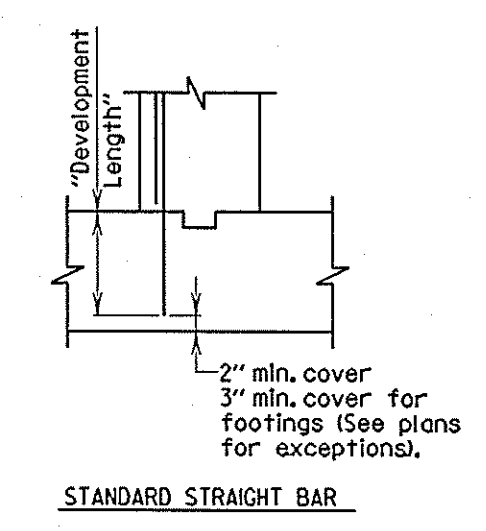
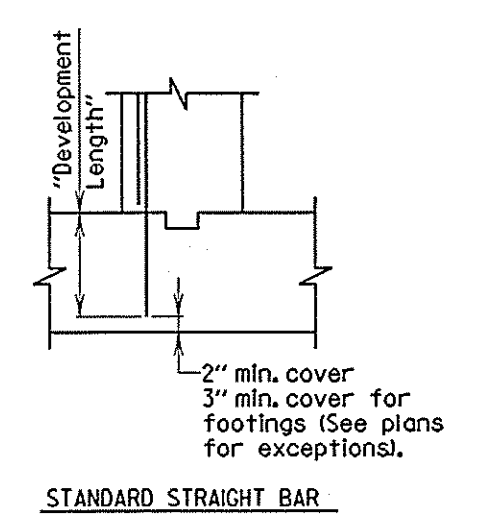
APPROVAL: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
 DATE: 9/20/05
 REVISIONS: SHEET 2 OF 3
 NO. M6.071-81-127

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, fs= 24,000 p.s.i."

APPROVAL: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
 DATE: 9/20/05
 REVISIONS: SHEET 3 OF 3
 NO. M6.071-81-127

Note:
 1. When development length is not specified on the Plans, the above dimensions shall be used.
 2. These development lengths do not apply when bar is in lightweight concrete or any other strength of concrete.
 3. These development lengths only apply where the General Notes indicate "Reinforcing Steel Design, fs= 24,000 p.s.i."
 4. If depth of member does not allow bar development length indicated in Categories A, B, and C Std. No. M6.04-90-24 then hook shall be added to all bars not conforming, as per D, E & F.

APPROVAL: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
 DATE: 6-8-90
 REVISIONS: SHEET 1 OF 1
 NO. M6.081-86-178



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

*** 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.

APPROVAL: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
 DATE: 6/20/05
 REVISIONS: SHEET 1 OF 3
 NO. M6.141-90-214

*** 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.

APPROVAL: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
 DATE: 9/20/05
 REVISIONS: SHEET 2 OF 3
 NO. M6.141-90-214

*** 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.

APPROVAL: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
 DATE: 9/20/05
 REVISIONS: SHEET 3 OF 3
 NO. M6.141-90-214

REVISIONS

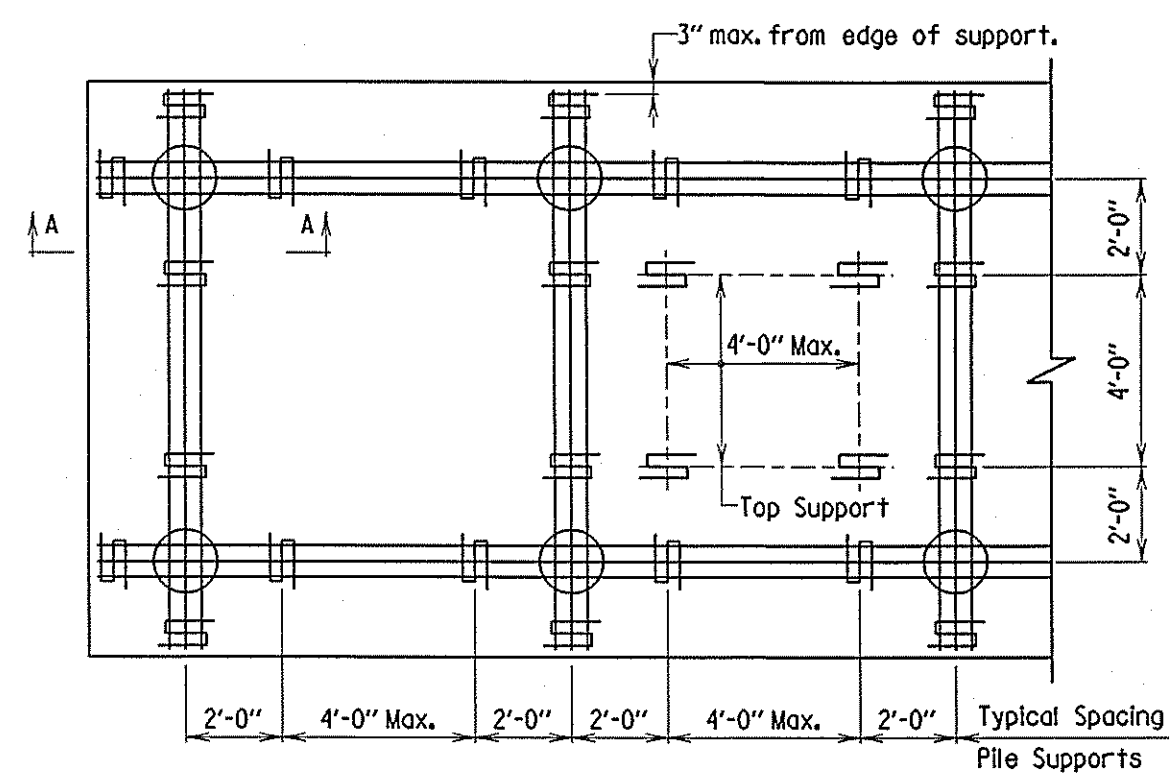
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH STANDARD DETAILS

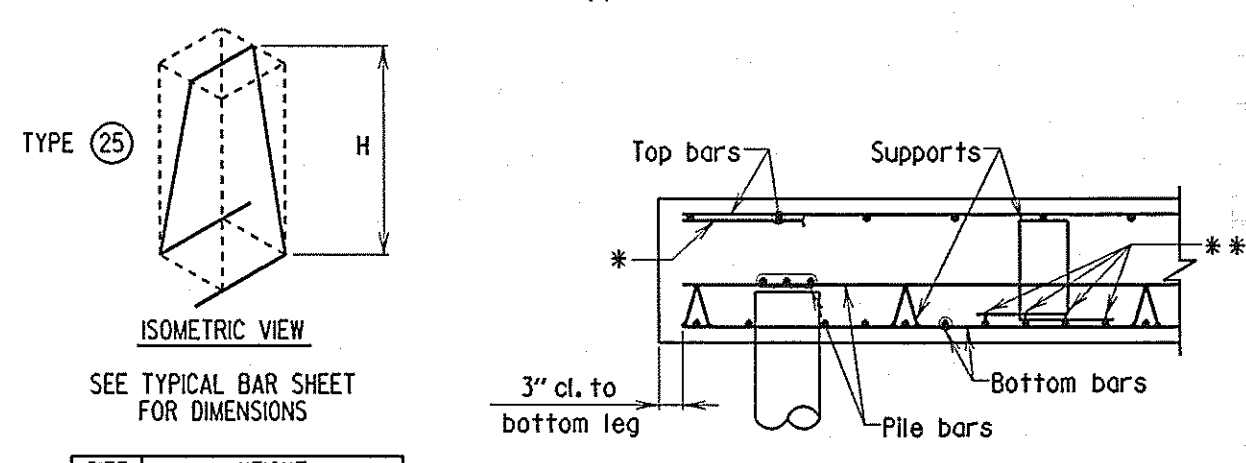
SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180

DESIGNED BY S.H.A.
 DRAWN BY S.H.A.
 CHECKED BY S.H.A.

E.S.F.
 JAN. 8, 2008



PLAN - PILES (SHOWING MAXIMUM SPACING OF BAR SUPPORTS)
Scale: 1/4" = 1'-0"



SIZE	HEIGHT
#4	0'-7" ≤ H ≤ 1'-6"
#5	1'-6" ≤ H ≤ 3'-6"

SEE TYPICAL BAR SHEET FOR DIMENSIONS

SECTION A-A
Scale: None

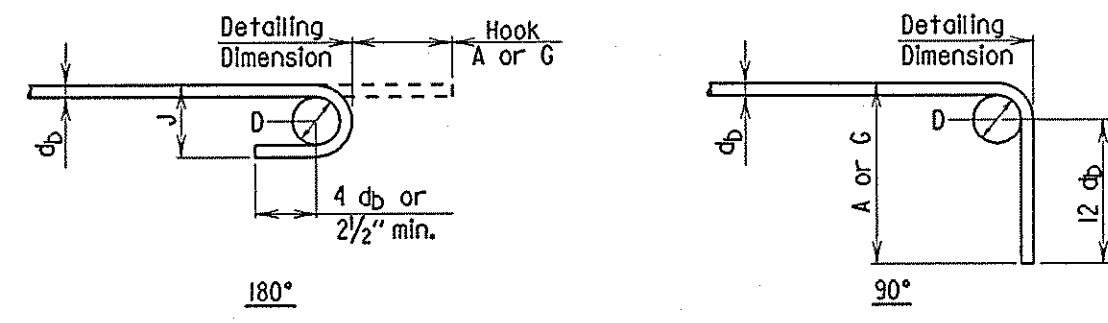
* Top bar cannot be dropped to act as a support bar. If support bar is required, separate #5 bars are to be used.

DIMENSIONS AND QUANTITIES TO BE SUPPLIED BY CONTRACTOR

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DESIGNED BY	REINFORCING
DATE	3/17/99
REVISIONS	
SHA	FRWA
FRWA APPROVAL	
DATE	
	NO. REBAR-PL0.011-91-251
	SHEET 1 OF 1

HOOKS
TABLE I
REFERENCES

1. ACI Types I thru 26
2. SHA Standard Pin Bending
3. SHA Radius Bending



RECOMMENDED END HOOKS, ALL GRADES

BAR SIZE	Finished bend diameter D, in.	180 - deg hook		90 - deg hook	
		A or G in	J, in.	A or G in	J, in.
#3	2 1/4	5	3	6	3
#4	3	6	4	8	4
#5	3 3/4	7	5	10	5
#6	4 1/2	8	6	11-0	6
#7	5 1/4	10	7	12-2	7
#8	6	11	8	13-4	8
#9	6 3/4	11-3	8 1/2	14-7	9
#10	7 1/4	12-5	9 1/2	15-10	10
#11	8	13-7	10 1/2	16-4	11
#14	10 1/4	16-3	12 3/4	19-7	14
#18	14	21-0	16 1/2	24-5	18

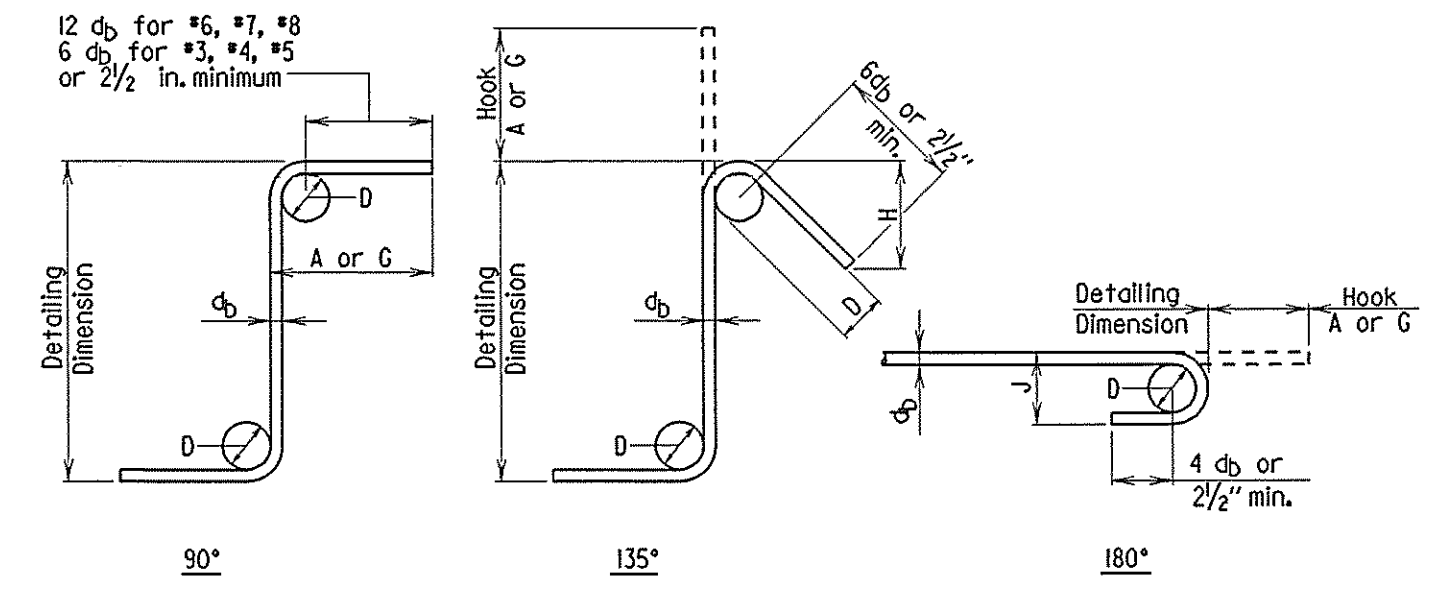
APPROVAL

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
REINFORCING	
DATE: 6/17/99	
SHA	FRWA
FRWA APPROVAL	
DATE:	
	NO. REBAR-BD19.051-97-320
	SHEET 1 OF 2

HOOKS
TABLE II
REFERENCES

1. ACI Types S1 thru S11
 2. ACI Types T1 thru T8
 3. SHA Ties and Stirrups
- Note: Tie and stirrup types supplied in sizes #3-#8

STIRRUP AND TIE HOOKS



STIRRUP AND TIE HOOK DIMENSIONS, IN.

BAR SIZE	D, in.	90 - deg hook		135 - deg hook	
		A or G	H, approx	A or G	H, approx
#3	1 1/2	4	3	4	2 1/2
#4	2	4 1/2	4	5 1/2	3
#5	2 1/2	5	5 1/2	6 1/2	3 1/2
#6	3	5 1/2	6	7 1/2	4
#7	3 1/2	6	7	8 1/2	4 1/2
#8	4	6 1/2	8	9 1/2	5

RECOMMENDED END HOOKS, ALL GRADES

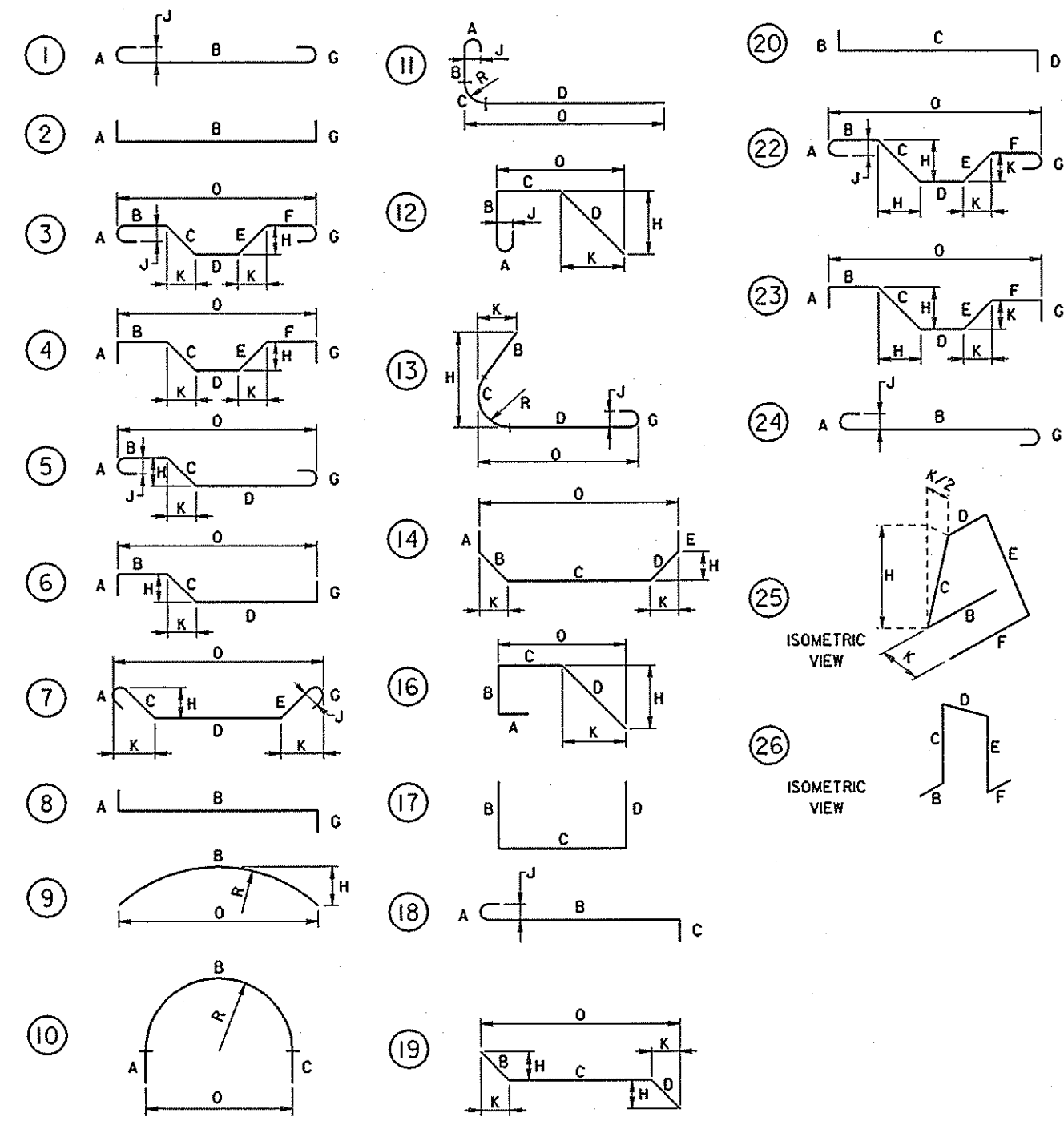
BAR SIZE	Finished bend diameter D, in.	180 - deg hook	
		A or G in	J, in.
#3	2 1/4	5	3
#4	3	6	4
#5	3 3/4	7	5
#6	4 1/2	8	6
#7	5 1/4	10	7
#8	6	11	8

APPROVAL

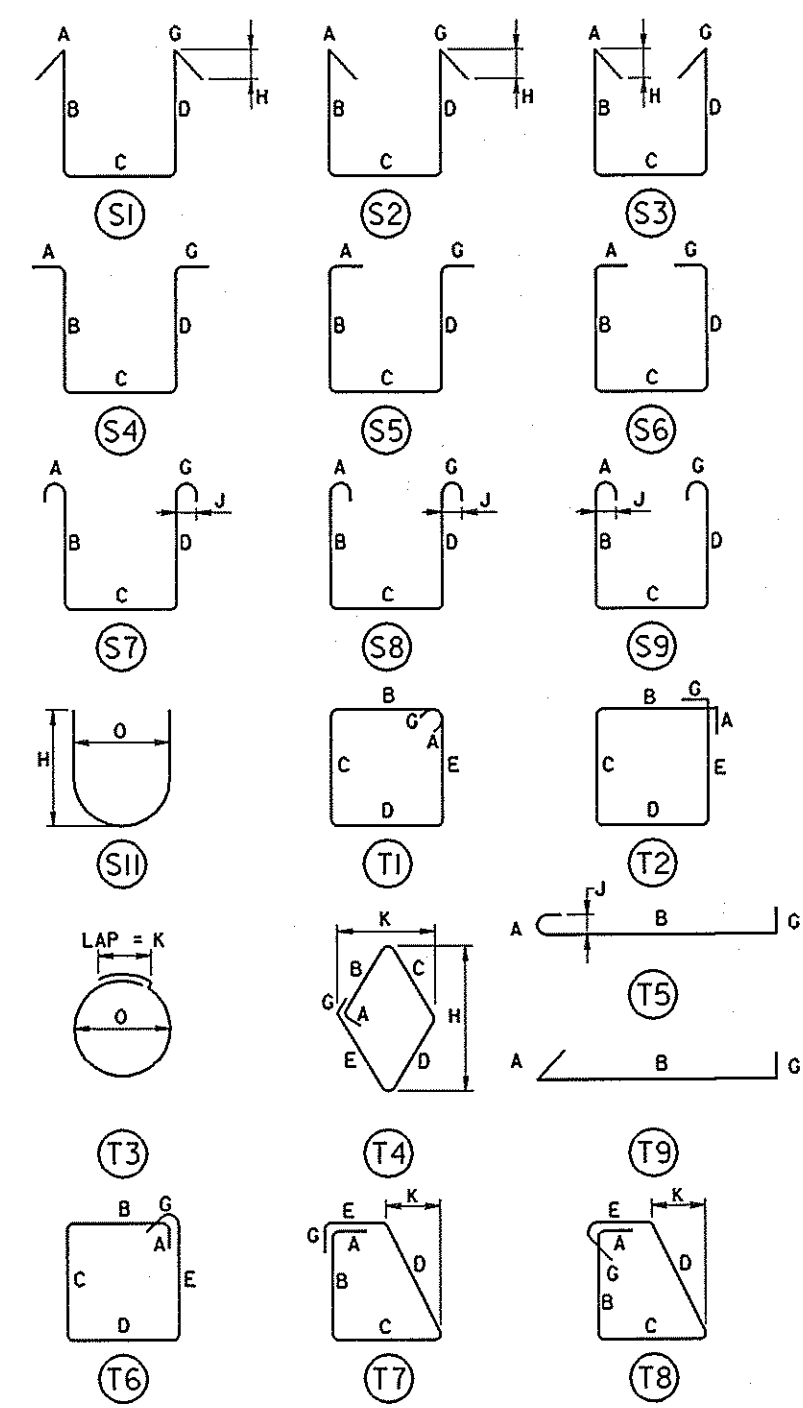
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
REINFORCING	
DATE: 12/17/97	
SHA	FRWA
FRWA APPROVAL	
DATE:	
	NO. REBAR-BD19.051-97-320
	SHEET 2 OF 2

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH STANDARD DETAILS
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.H.A. DRAWN BY S.H.A. CHECKED BY S.H.A.
	E.S.F. JAN. 8, 2008
	SHEET NO. 46 OF 66

ACI TYPICAL BAR BENDS



STANDARD PIN BENDING

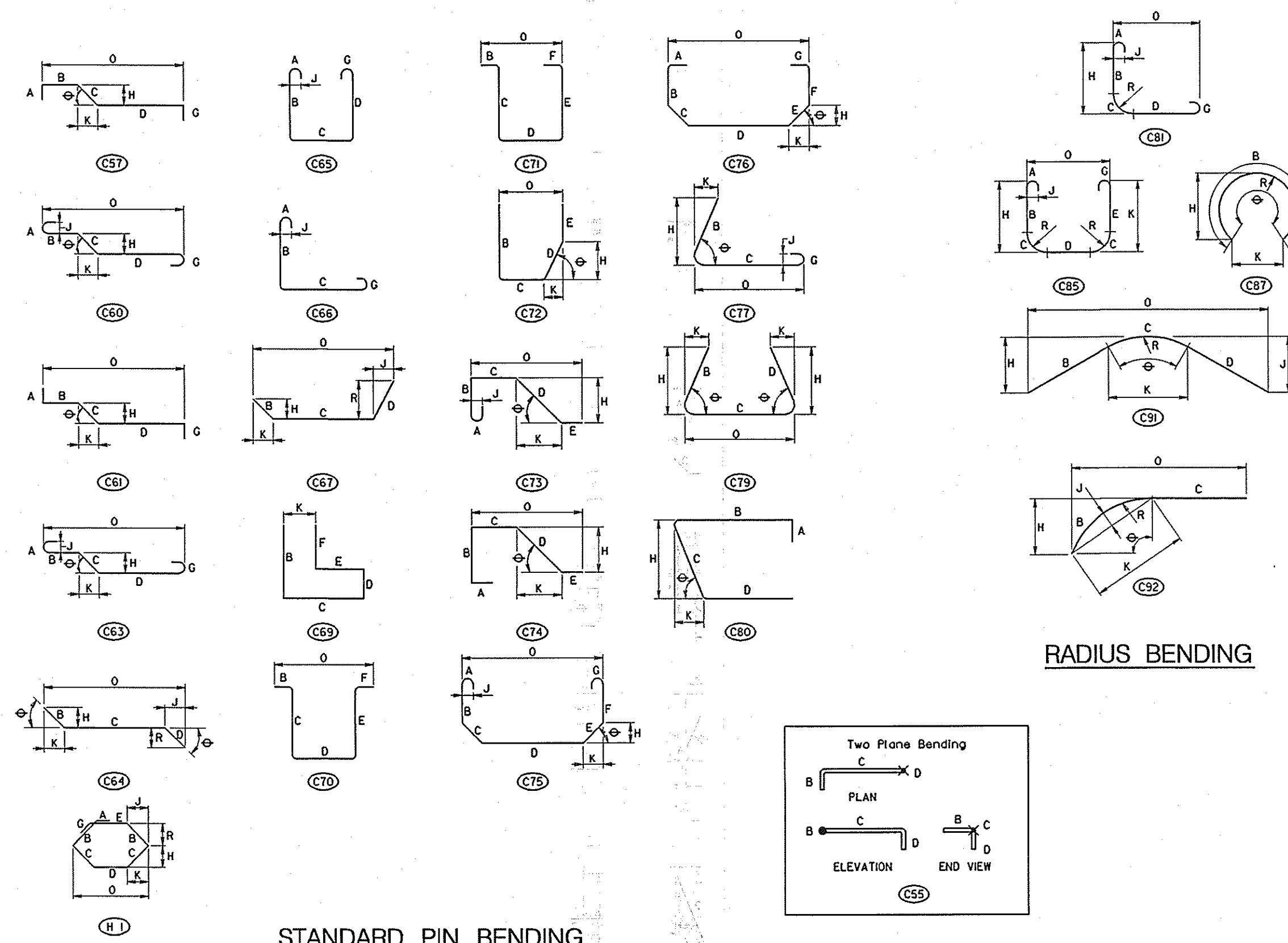


NOTE TO FABRICATOR

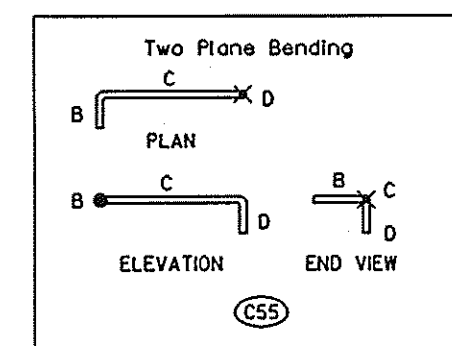
BENDING TOLERANCE NOTE
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

TIES AND STIRRUPS

SHA TYPICAL BAR BENDS

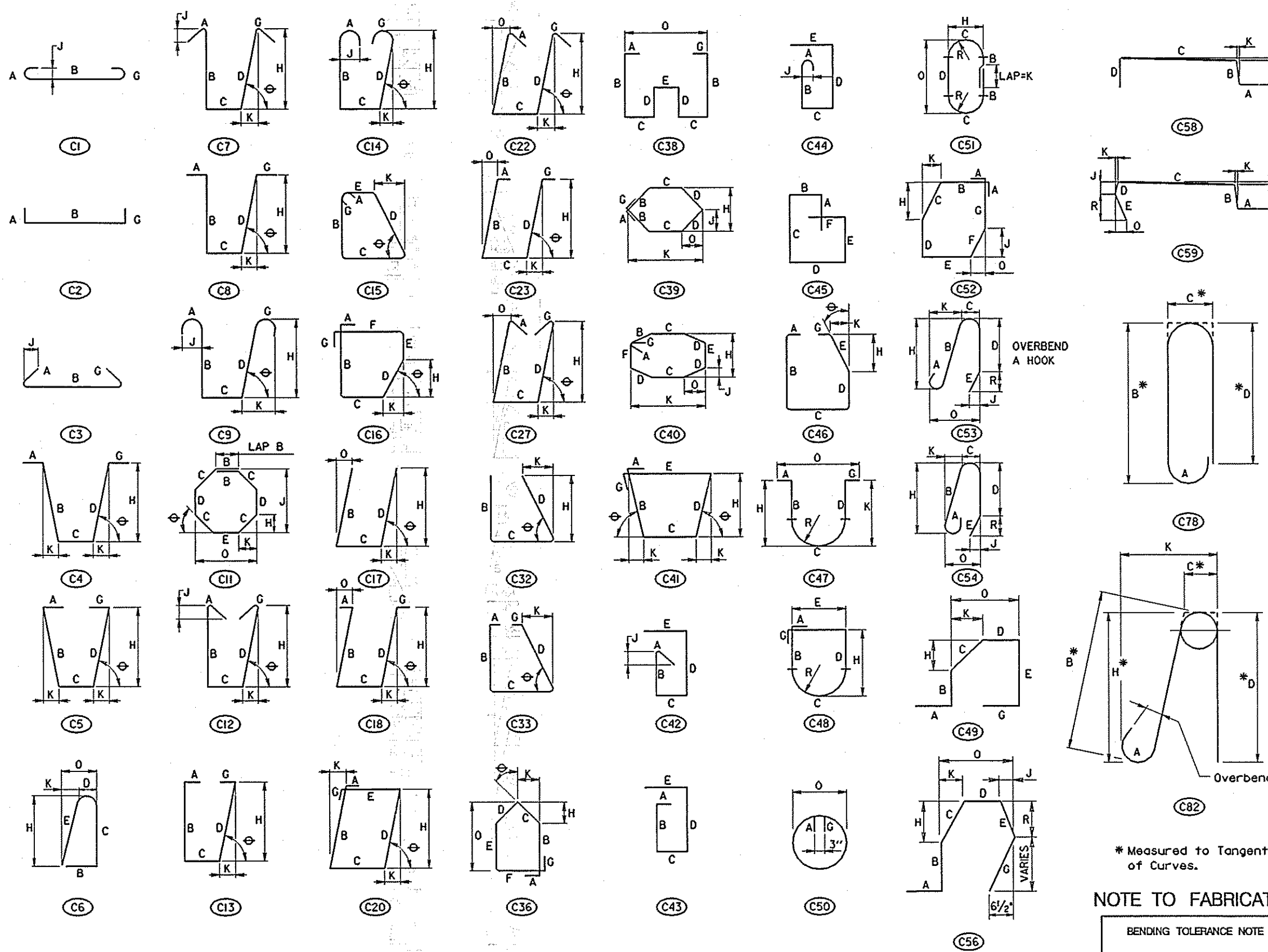


STANDARD PIN BENDING



RADIUS BENDING

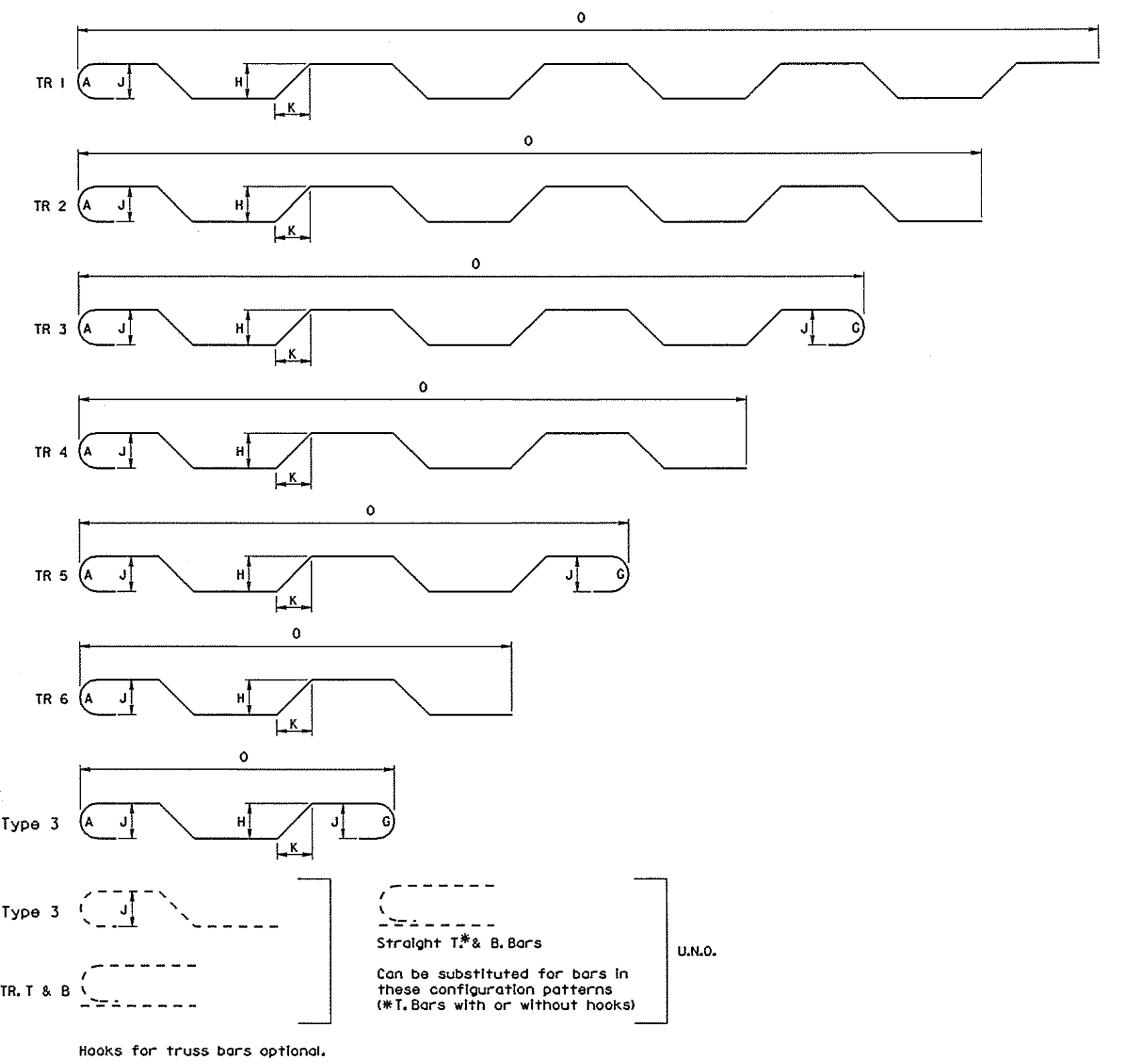
STANDARD PIN BENDING



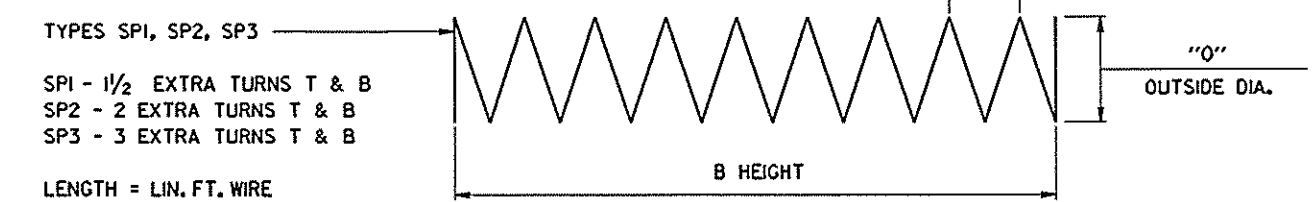
TIES AND STIRRUPS

NOTE TO FABRICATOR

BENDING TOLERANCE NOTE
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES



TRUSS BAR CONFIGURATION



SPIRAL

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

Where slope differs from 45° dimensions 'H' and 'K' must be shown

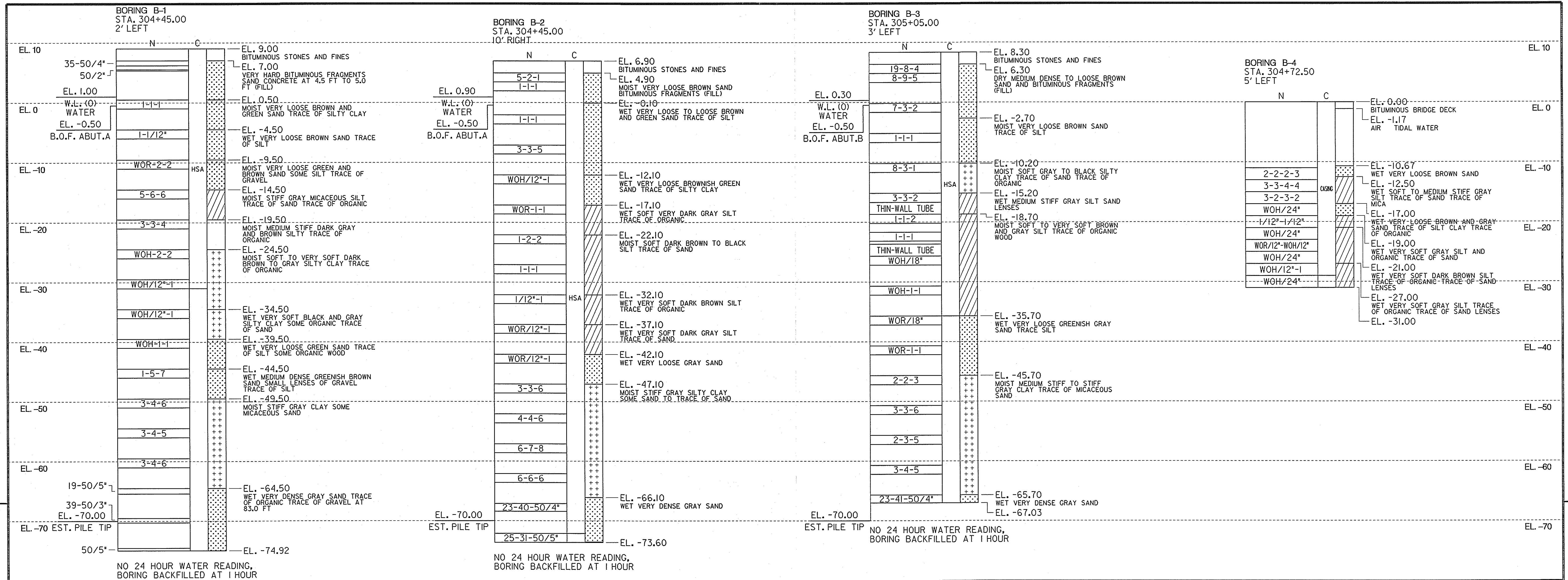
ENLARGED VIEW SHOWING BAR BENDING DETAILS

- Notes:
- All dimensions are out to out of bar or to tangent points for 135° and 180° hooks.
 - 2"x dimensions on 180° hooks to be shown only where necessary to restrict hook size. Otherwise standard hooks are to be used.
 - Where 'J' is not shown, 'J' will be kept equal to or less than 'H' on truss bars, where 'J' can exceed 'H' it should be shown.
 - 'H' dimension on stirrups to be shown where necessary to fit within concrete.
 - Where bars are to be bent more accurately than standard bending tolerances, bending dimensions which require closer fabrication should have limits indicated.

GENERAL NOTES

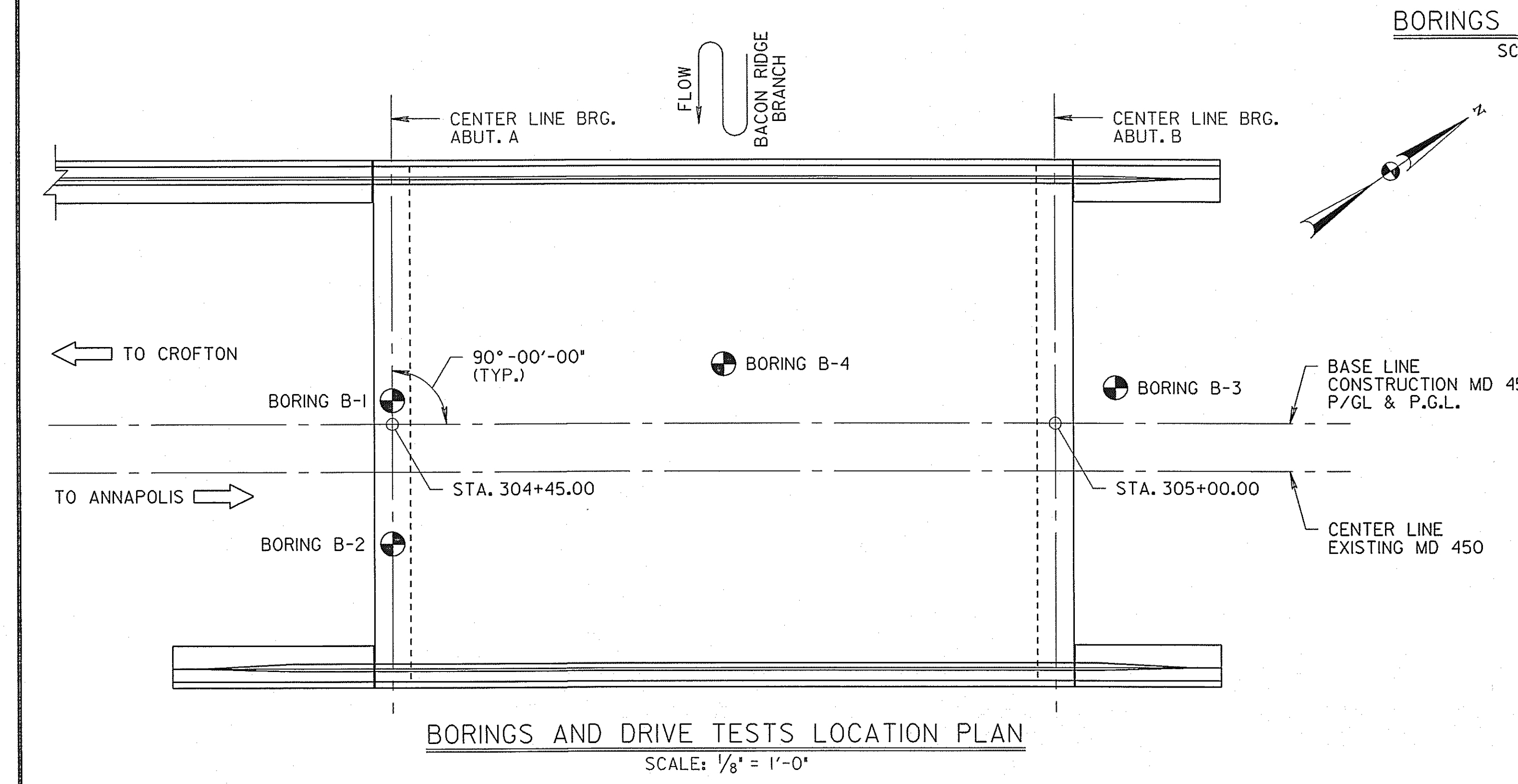
S1 - 24

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH STANDARD DETAILS
	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	DESIGNED BY S.H.A. DRAWN BY S.H.A. CHECKED BY S.H.A.
	E.S.F. JAN. 8, 2008
	SHEET NO. 47 OF 66



DATUM EL. -80

BORINGS AND DRIVE TESTS
SCALE: 1/8" = 1'-0"



- NOTES:
- THE BORINGS AND DRIVE TESTS WERE TAKEN IN JUNE AND JULY, 2007 BY THE STATE HIGHWAY ADMINISTRATION.
 - THE BORING LOG SOIL SYMBOLS REFLECT ONLY THE MAJOR SOIL CONSTITUENT, FOR MORE COMPLETE SOIL CHARACTERISTICS REFER TO THE SOIL DESCRIPTIVE TEXT.
 - THE FIELD BORING LOGS RECORD SAMPLE SPOON RECOVERY. THE LOGS ARE AVAILABLE UPON REQUEST. THE MATERIAL RECOVERED FROM THE SITE INVESTIGATION IS AVAILABLE FOR REVIEW. CONTACT THE GEOTECHNICAL EXPLORATIONS DIVISION AT 1-800-637-1290.
 - N = BLOWS ON A 2 INCH OD SAMPLING SPOON BY 140 LB. DRIVE-WEIGHT FALLING 30 INCHES INDICATING SUCCESSIVE 6 INCH INCREMENTS OF PENETRATION IN LIEU OF BLOWS PER FOOT. PENETRATIONS LESS THAN OR GREATER THAN 6 INCHES ARE INDICATED BY WOH, WOR OR NUMBER OF BLOWS OVER THE NEAREST INCH.
 - WOR = STATIC WEIGHT OF DRILL ROD AND SAMPLING SPOON.
 - WOH = STATIC WEIGHT OF SAMPLING SPOON DRIVE WEIGHT ASSEMBLY, ANVIL (WHEN AUTOMATIC HAMMER IS USED), DRILL ROD AND SAMPLING SPOON.
 - C = DEPTH OF HOLLOW-STEM CONTINUOUS FLIGHT AUGER WITH 3/4 INCH ID AND BW FLUSHJOINT CASING 2 3/8 INCH ID.
 - W.L. = WATER LEVEL READING. THE FIGURE IN PARENTHESIS INDICATES THE READING IN HOURS AFTER COMPLETION OF BORING.

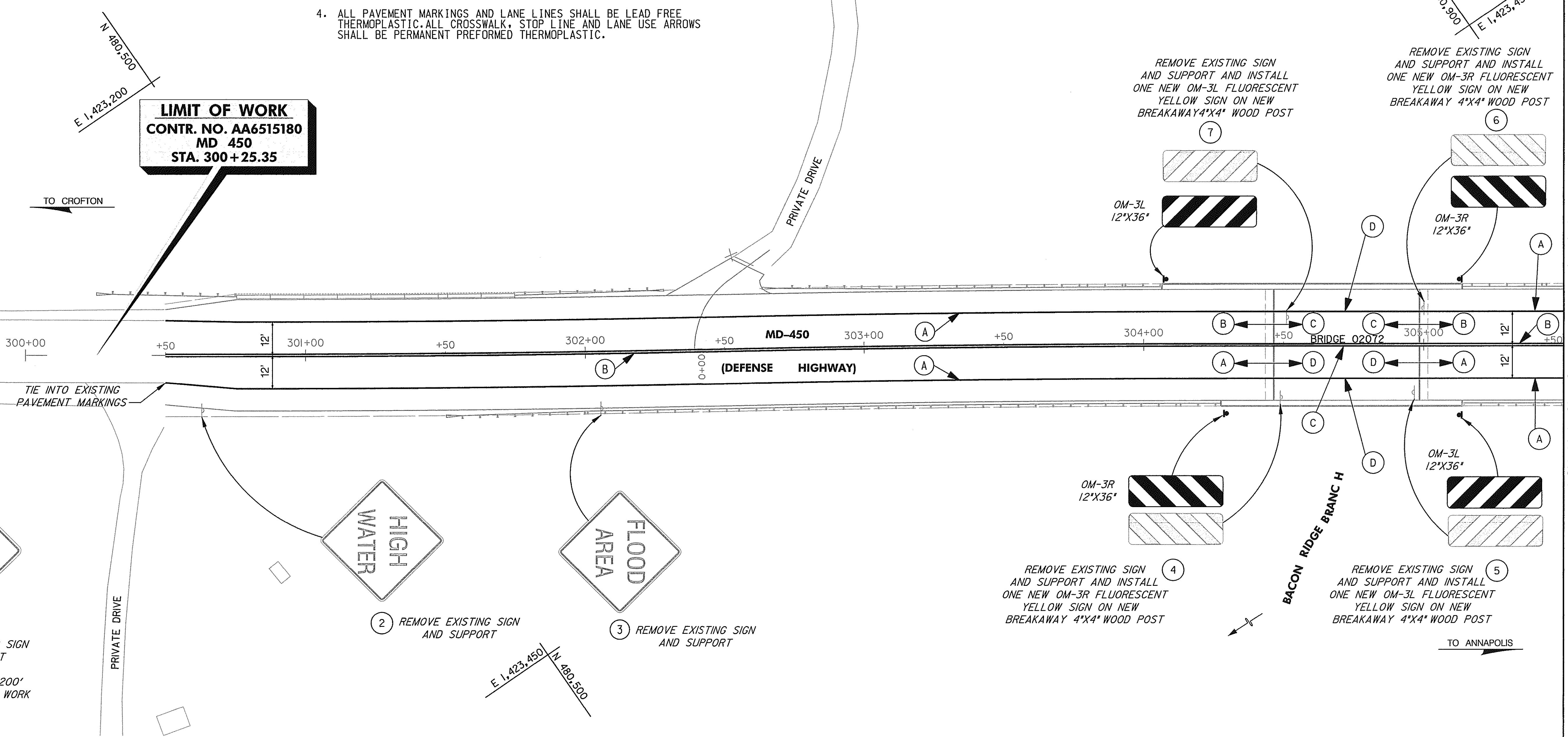
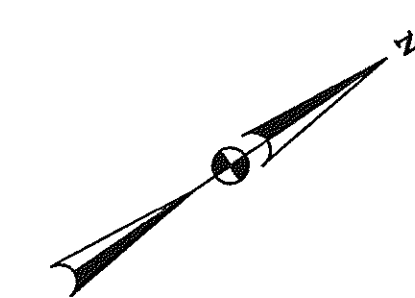
- B.O.F. = BOTTOM OF FOOTING.
- BORINGS AND SAMPLINGS CONFORM TO AASHTO DESIGNATIONS T-206, T-207 AND T-306.
- THE SOIL HAS BEEN CLASSIFIED VISUALLY BY THE DRILLER.

S1 - 25

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MARYLAND 450 OVER BACON RIDGE BRANCH BORINGS AND DRIVE TESTS
DESIGNED BY S.S.S. DRAWN BY D.A.C. CHECKED BY J.L.R. E.S.F. JAN. 8, 2008	SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
	SHEET NO. 48 OF 66

SIGNING AND PAVEMENT MARKINGS NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE MARYLAND SUPPLEMENT TO THE MUTCD, AND MARYLAND SHA STANDARDS AND SPECIFICATIONS.
2. NEW PAVEMENT MARKING LINES SHALL TRANSITION TO TIE-IN TO EXISTING MARKINGS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. ALL WARNING SIGNS SHALL BE CONSTRUCTED WITH FLUORESCENT YELLOW SHEETING.
4. ALL PAVEMENT MARKINGS AND LANE LINES SHALL BE LEAD FREE THERMOPLASTIC. ALL CROSSWALK, STOP LINE AND LANE USE ARROWS SHALL BE PERMANENT PREFORMED THERMOPLASTIC.



LIMIT OF WORK
CONTR. NO. AA6515180
MD 450
STA. 300+25.35

1
 REMOVE EXISTING SIGN AND SUPPORT LOCATED APPROXIMATELY 200' WEST OF LIMIT OF WORK

2 REMOVE EXISTING SIGN AND SUPPORT

3 REMOVE EXISTING SIGN AND SUPPORT

4 REMOVE EXISTING SIGN AND SUPPORT AND INSTALL ONE NEW OM-3R FLUORESCENT YELLOW SIGN ON NEW BREAKAWAY 4'X4' WOOD POST

5 REMOVE EXISTING SIGN AND SUPPORT AND INSTALL ONE NEW OM-3L FLUORESCENT YELLOW SIGN ON NEW BREAKAWAY 4'X4' WOOD POST

REMOVE EXISTING SIGN AND SUPPORT AND INSTALL ONE NEW OM-3L FLUORESCENT YELLOW SIGN ON NEW BREAKAWAY 4'X4' WOOD POST

REMOVE EXISTING SIGN AND SUPPORT AND INSTALL ONE NEW OM-3R FLUORESCENT YELLOW SIGN ON NEW BREAKAWAY 4'X4' WOOD POST

LEGEND

- EXISTING SIGN AND SUPPORTS
- PROPOSED SIGN AND SUPPORTS
- 35 M.P.H. EXISTING SIGN AND SUPPORTS TO BE REMOVED
- 35 M.P.H. PROPOSED SIGN

PAVEMENT MARKING LEGEND

- (A) 5" WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (B) 5" YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (C) 5" YELLOW PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS
- (D) 5" WHITE PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS



SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
 ON MARYLAND 450
 OVER BACON RIDGE BRANCH

SIGNING AND PAVEMENT MARKING PLAN

SCALE As Shown DATE Dec. 2007 CONTRACT NO. AX4695180

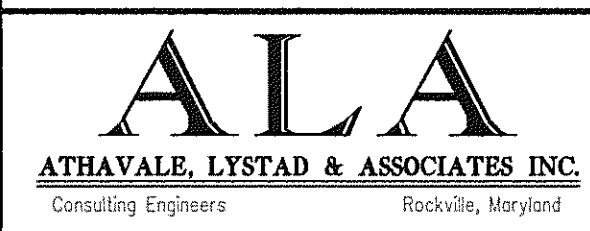
DESIGNED BY M.A. COUNTY ANNE ARUNDEL
 DRAWN BY P.S.C. LOGMILE
 CHECKED BY V.V.S. HORIZONTAL SCALE 1"=20'
 F.A.P. NO. VERTICAL SCALE

DRAWING NO. SN-2.1 OF 2.3 SHEET NO. 49 OF 66

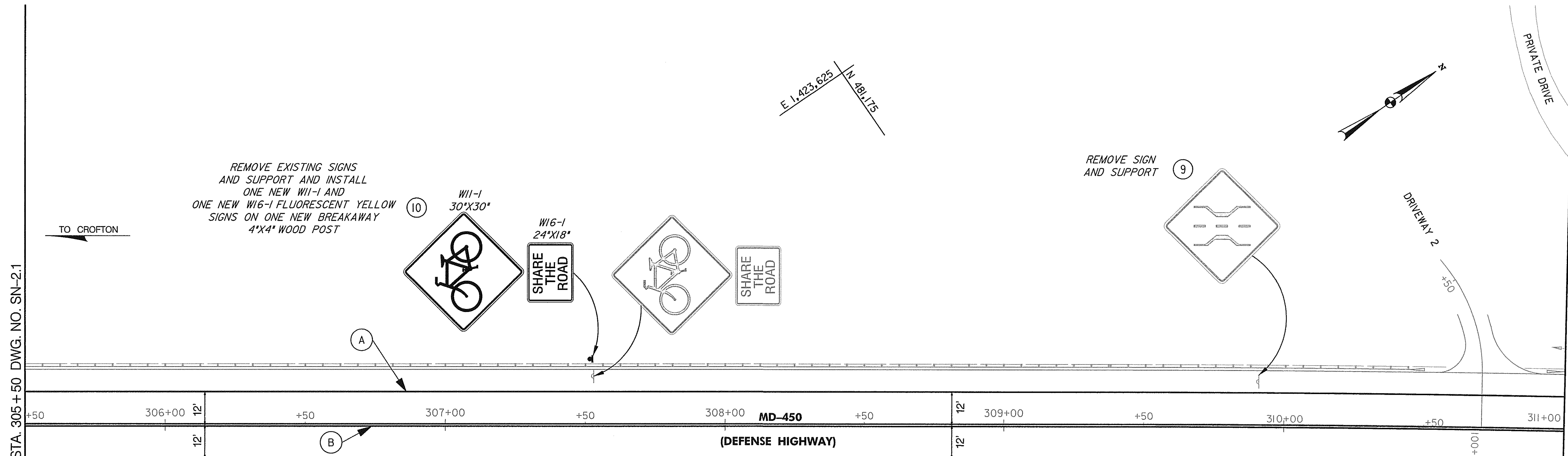
APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

PLOTTED: #DATE# TIME#
 FILE: #FILE#

BY: \$USER\$



MATCH LINE SEE STA. 305+50 DWG. NO. SN-2.2



REMOVE EXISTING SIGNS AND SUPPORT AND INSTALL ONE NEW W11-1 AND ONE NEW W16-1 FLUORESCENT YELLOW SIGNS ON ONE NEW BREAKAWAY 4"x4" WOOD POST

REMOVE SIGN AND SUPPORT

REMOVE EXISTING SIGNS AND SUPPORT AND INSTALL ONE NEW W1-2R AND ONE NEW W13-1 FLUORESCENT YELLOW SIGNS ON ONE NEW BREAKAWAY 4"x4" WOOD POST

SIGNING AND PAVEMENT MARKINGS NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE MARYLAND SUPPLEMENT TO THE MUTCD, AND MARYLAND SHA STANDARDS AND SPECIFICATIONS.
2. NEW PAVEMENT MARKING LINES SHALL TRANSITION TO TIE-IN TO EXISTING MARKINGS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. ALL WARNING SIGNS SHALL BE CONSTRUCTED WITH FLUORESCENT YELLOW SHEETING.
4. ALL PAVEMENT MARKINGS AND LANE LINES SHALL BE LEAD FREE THERMOPLASTIC. ALL CROSSWALK, STOP LINE AND LANE USE ARROWS SHALL BE PERMANENT PREFORMED THERMOPLASTIC.

SIGN LEGEND

- EXISTING SIGN AND SUPPORTS
- PROPOSED SIGN AND SUPPORTS
- EXISTING SIGN AND SUPPORTS TO BE REMOVED
- PROPOSED SIGN

PAVEMENT MARKING LEGEND

- (A) 5" WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (B) 5" YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (C) 5" YELLOW PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS



SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

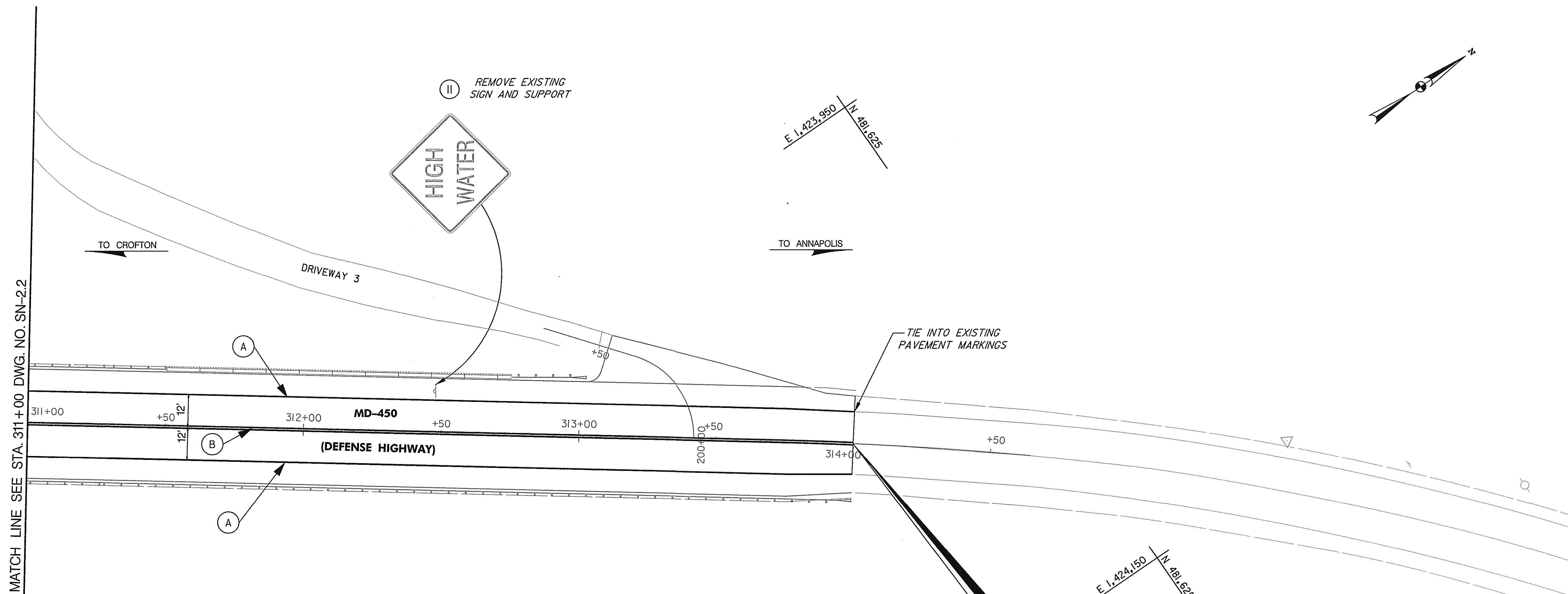
SIGNING AND PAVEMENT MARKING PLAN	
SCALE As Shown	DATE Dec. 2007 CONTRACT NO. AX4695180
DESIGNED BY M.A.	COUNTY ANNE ARUNDEL
DRAWN BY P.S.C.	LOGMILE
CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=20'
F.A.P. NO.	VERTICAL SCALE
DRAWING NO. SN-2.2	OF 2.3 SHEET NO. 50 OF 66

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

PLOTTED: #DATE# TIME#
FILE: #FILE#

BY: \$USER\$





MATCH LINE SEE STA. 311+00 DWG. NO. SN-2.2

SIGNING AND PAVEMENT MARKINGS NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE MARYLAND SUPPLEMENT TO THE MUTCD, AND MARYLAND SHA STANDARDS AND SPECIFICATIONS.
2. NEW PAVEMENT MARKING LINES SHALL TRANSITION TO TIE-IN TO EXISTING MARKINGS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. ALL WARNING SIGNS SHALL BE CONSTRUCTED WITH FLUORESCENT YELLOW SHEETING.
4. ALL PAVEMENT MARKINGS AND LANE LINES SHALL BE LEAD FREE THERMOPLASTIC. ALL CROSSWALK, STOP LINE AND LANE USE ARROWS SHALL BE PERMANENT PREFORMED THERMOPLASTIC.

LIMIT OF WORK
CONTR. NO. AA6515180
MD 450
STA. 314+00

SIGN LEGEND

- EXISTING SIGN AND SUPPORTS
- PROPOSED SIGN AND SUPPORTS
- EXISTING SIGN AND SUPPORTS TO BE REMOVED
- PROPOSED SIGN

PAVEMENT MARKING LEGEND

- 5" WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- 5" YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- 5" YELLOW PREFORMED PATTERNED REFLECTIVE CONTRAST PAVEMENT MARKINGS

SHA STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY DESIGN DIVISION

PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH

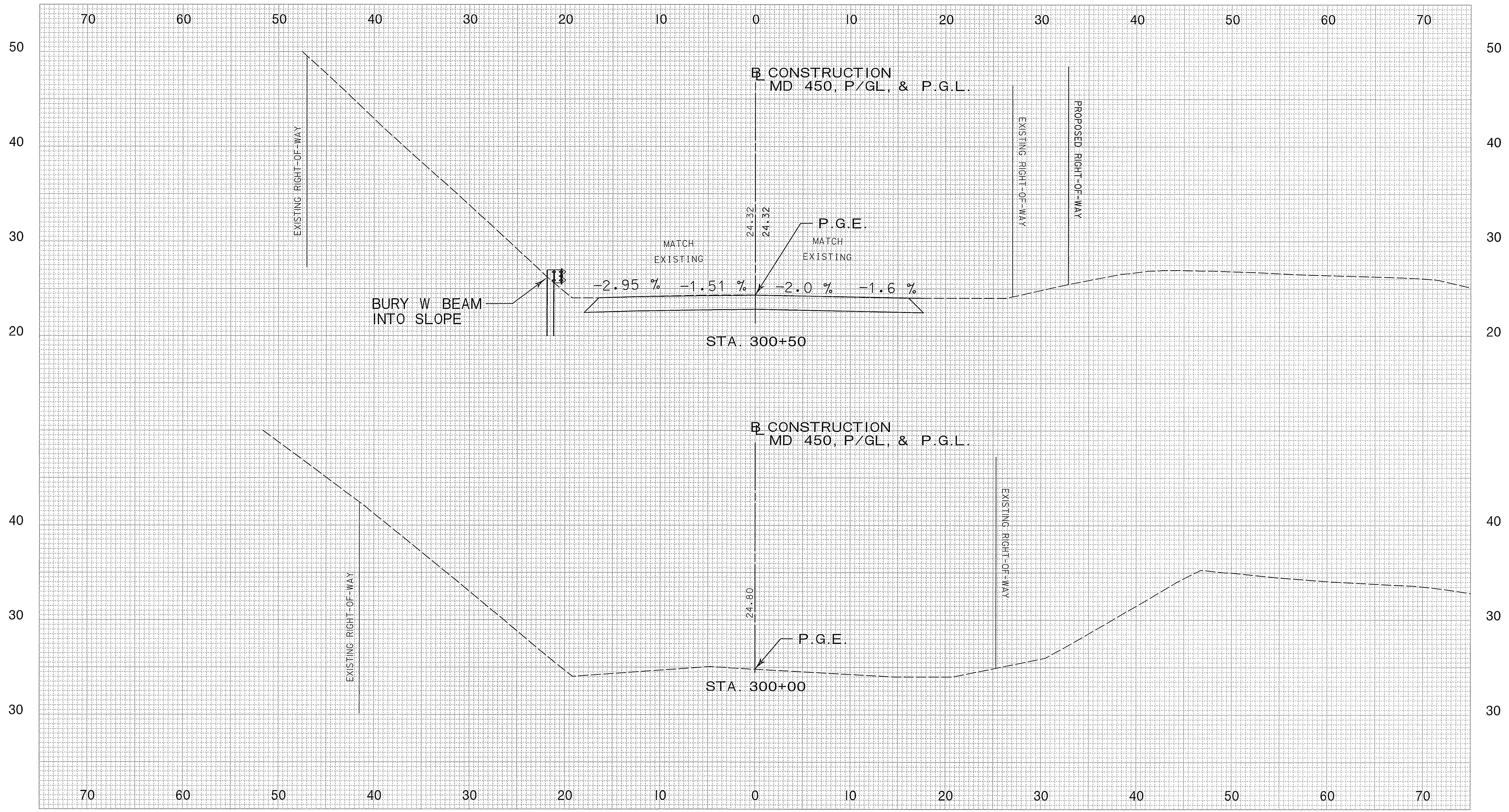
APPROVALS	REVISIONS	SIGNING AND PAVEMENT MARKING PLAN	
TEAM LEADER _____		SCALE As Shown	DATE Dec. 2007
ASST. DIV. CHIEF _____		CONTRACT NO. AX4695180	
DIVISION CHIEF _____		DESIGNED BY M.A.	COUNTY ANNE ARUNDEL
OFFICE DIRECTOR _____		DRAWN BY P.S.C.	LOGMILE _____
		CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=20'
		F.A.P. NO. _____	VERTICAL SCALE _____
		DRAWING NO. SN-2.3	OF 2.3 SHEET NO. 51 OF 66



PLOTTED: #DATE#
FILE: #FILE#


BY: \$USERNAME\$





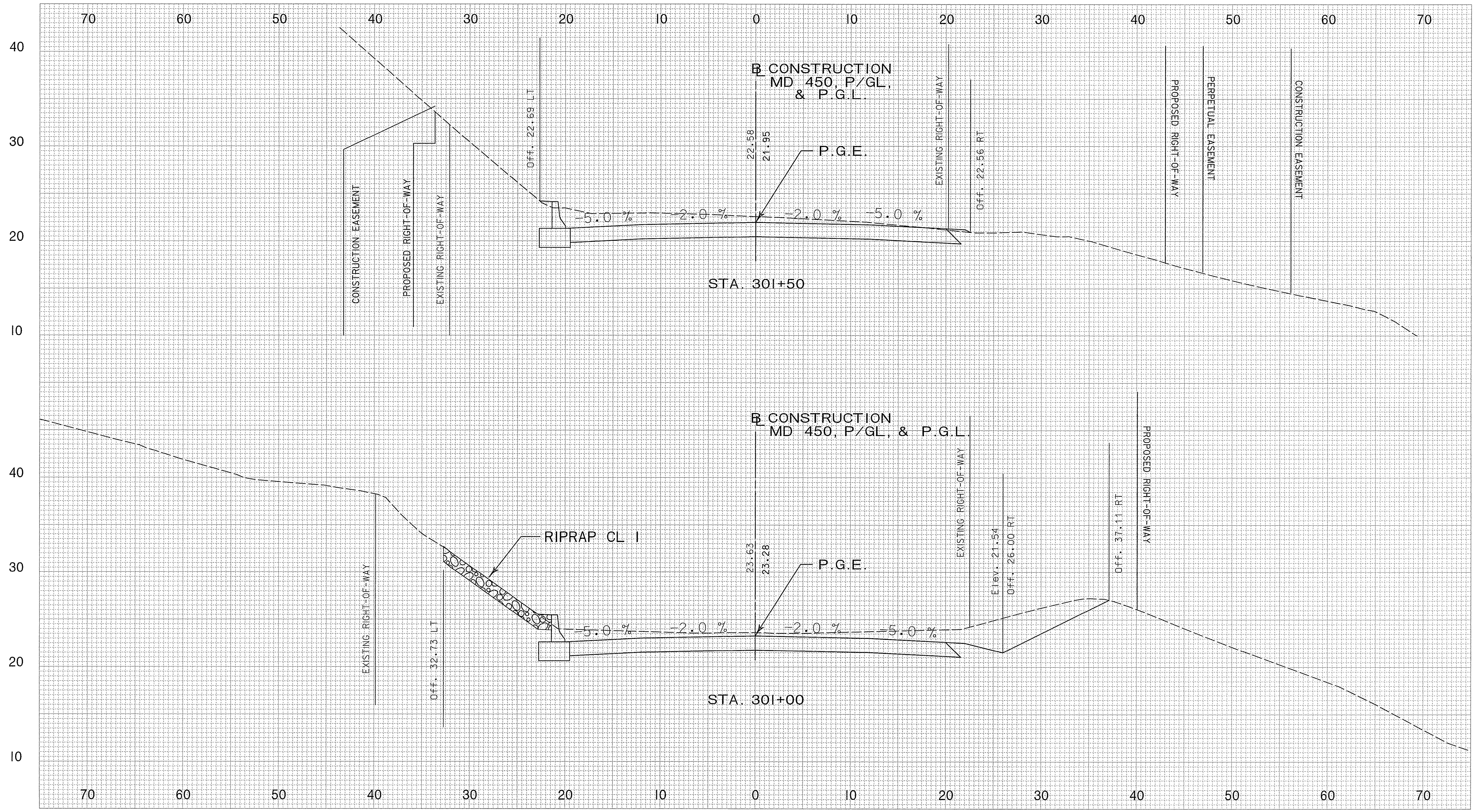
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 300+00 TO STA. 300+50
 SCALE VERT: 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS- 1	OF 15	SHEET NO. 52 OF 66		




BY: \$USERNAME\$



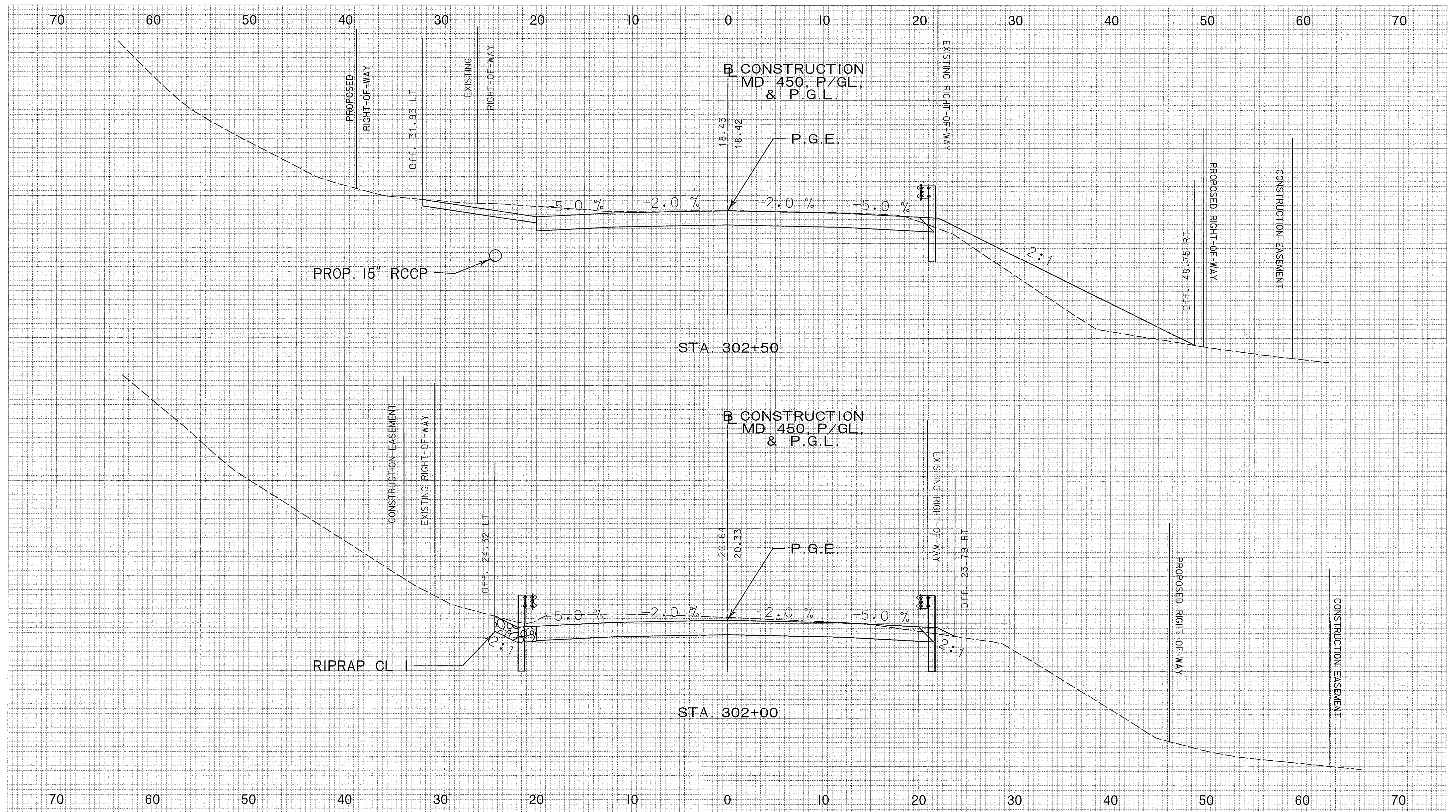
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 301+00 TO STA. 301+50
 SCALE VERT. 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
		F.A.P. NO.	VERTICAL SCALE 1"=5'	
DRAWING NO. CS-2 OF 15		SHEET NO. 53 OF 66		



BY: \$USERNAME\$



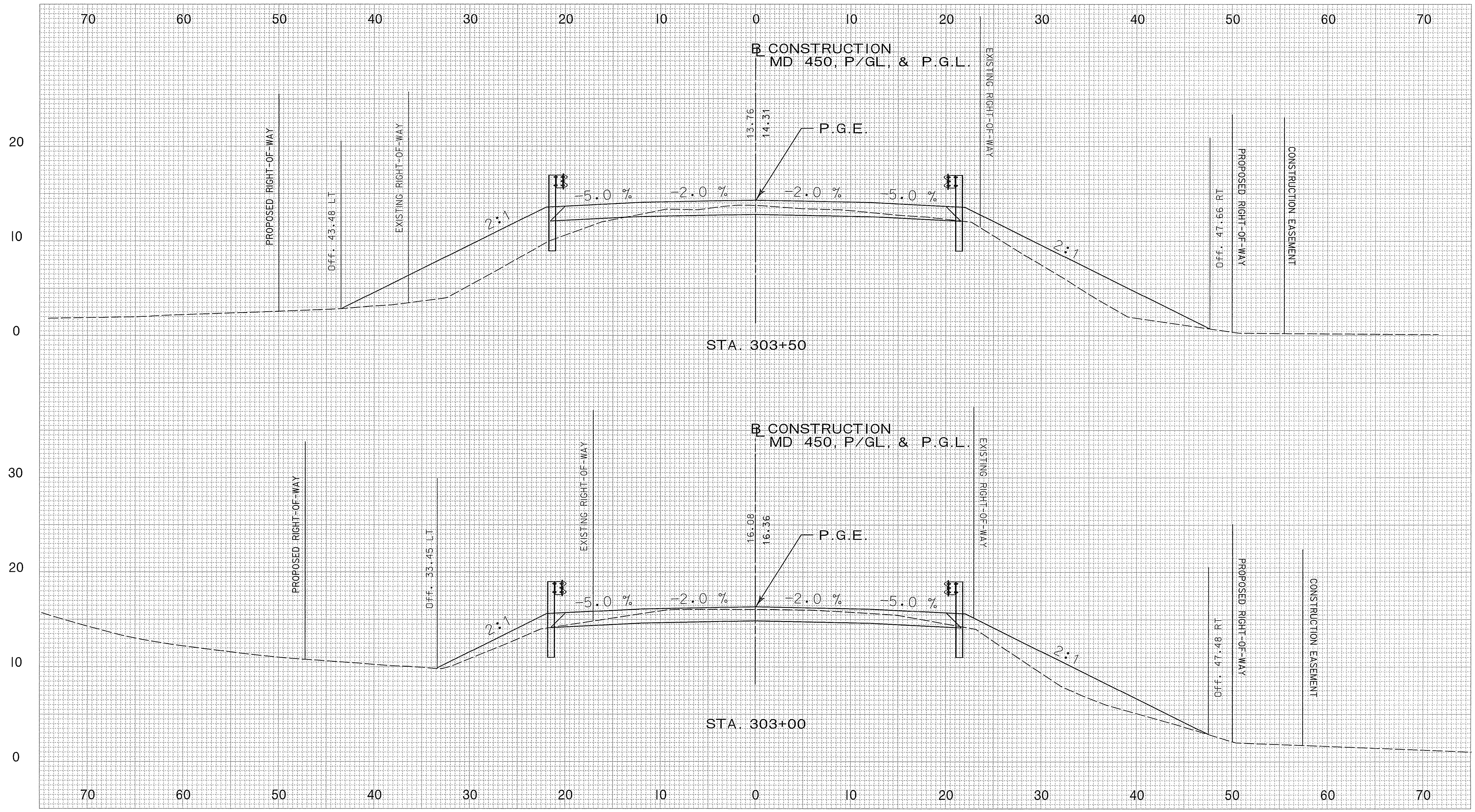
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 302+00 TO STA. 302+50
 SCALE VERT. 1"=5'

BY: \$USERNAME\$




ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS - 3	OF 15	SHEET NO. 54 OF 66		



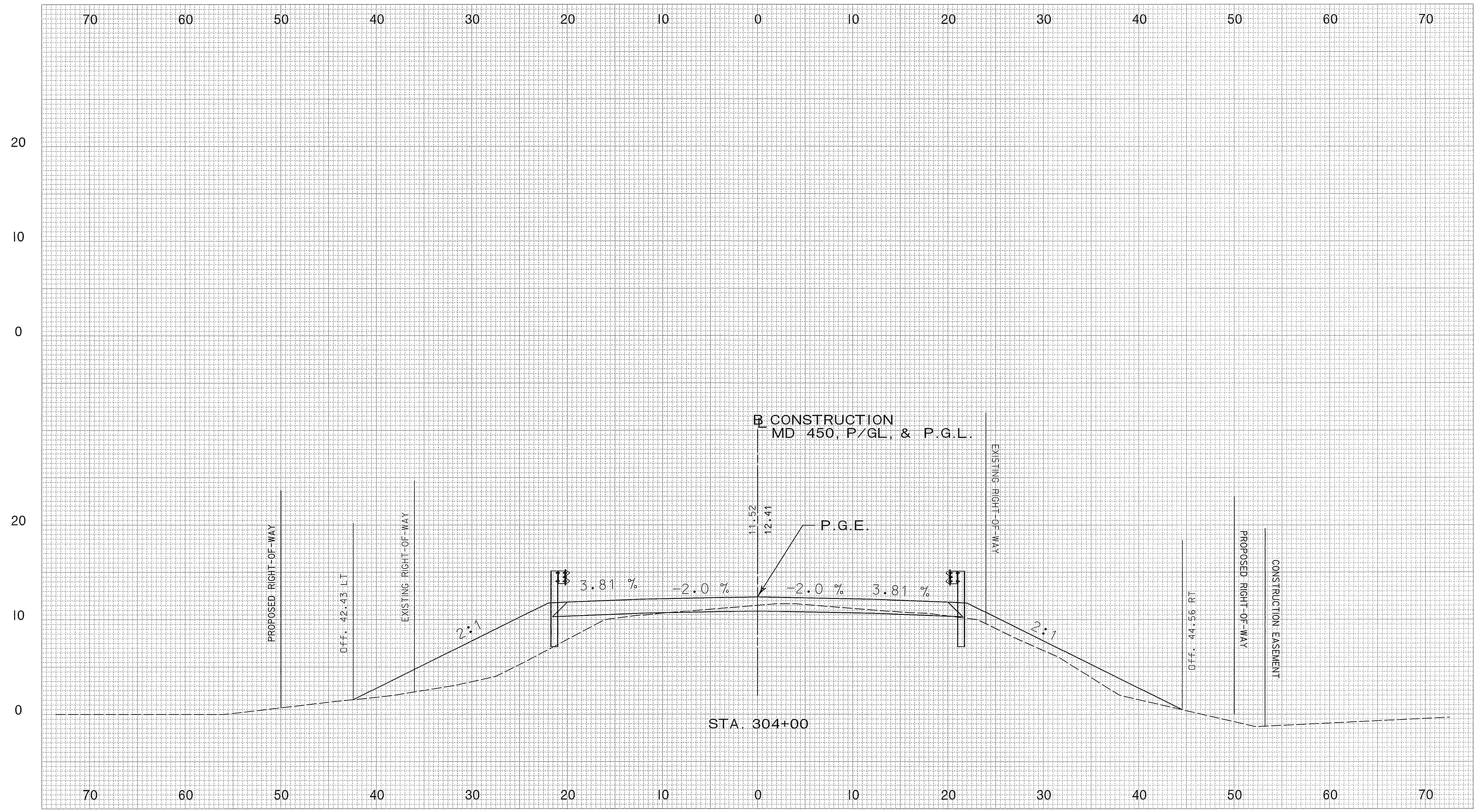
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 303+00 TO STA. 303+50
 SCALE VERT. 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS - 4 OF 15		SHEET NO. 55 OF 66		




BY: \$USERNAME\$



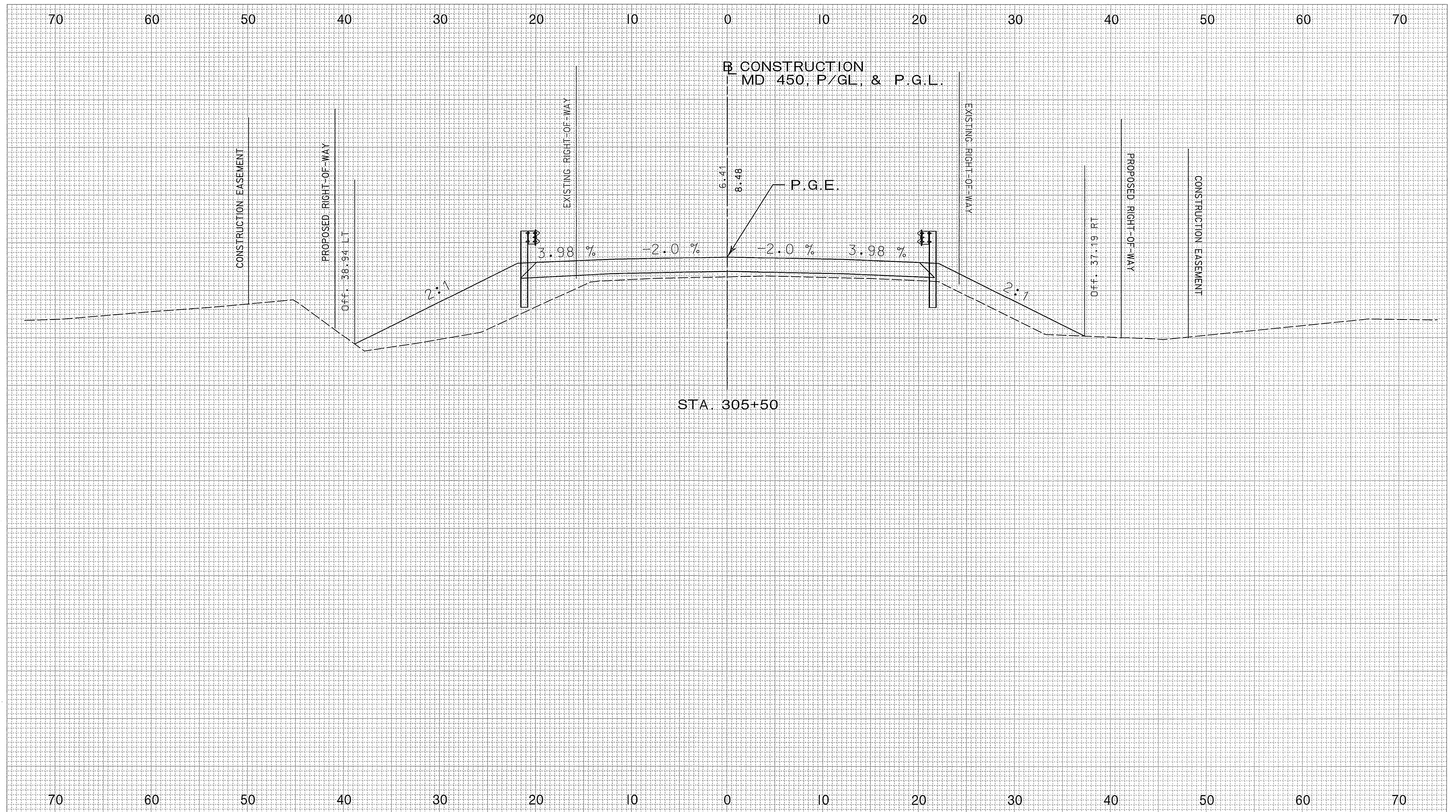
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA65180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 304+00 TO STA. 304+50
 SCALE VERT: 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS- 5 OF 15		SHEET NO. 56 OF 66		




BY: \$USERNAME\$



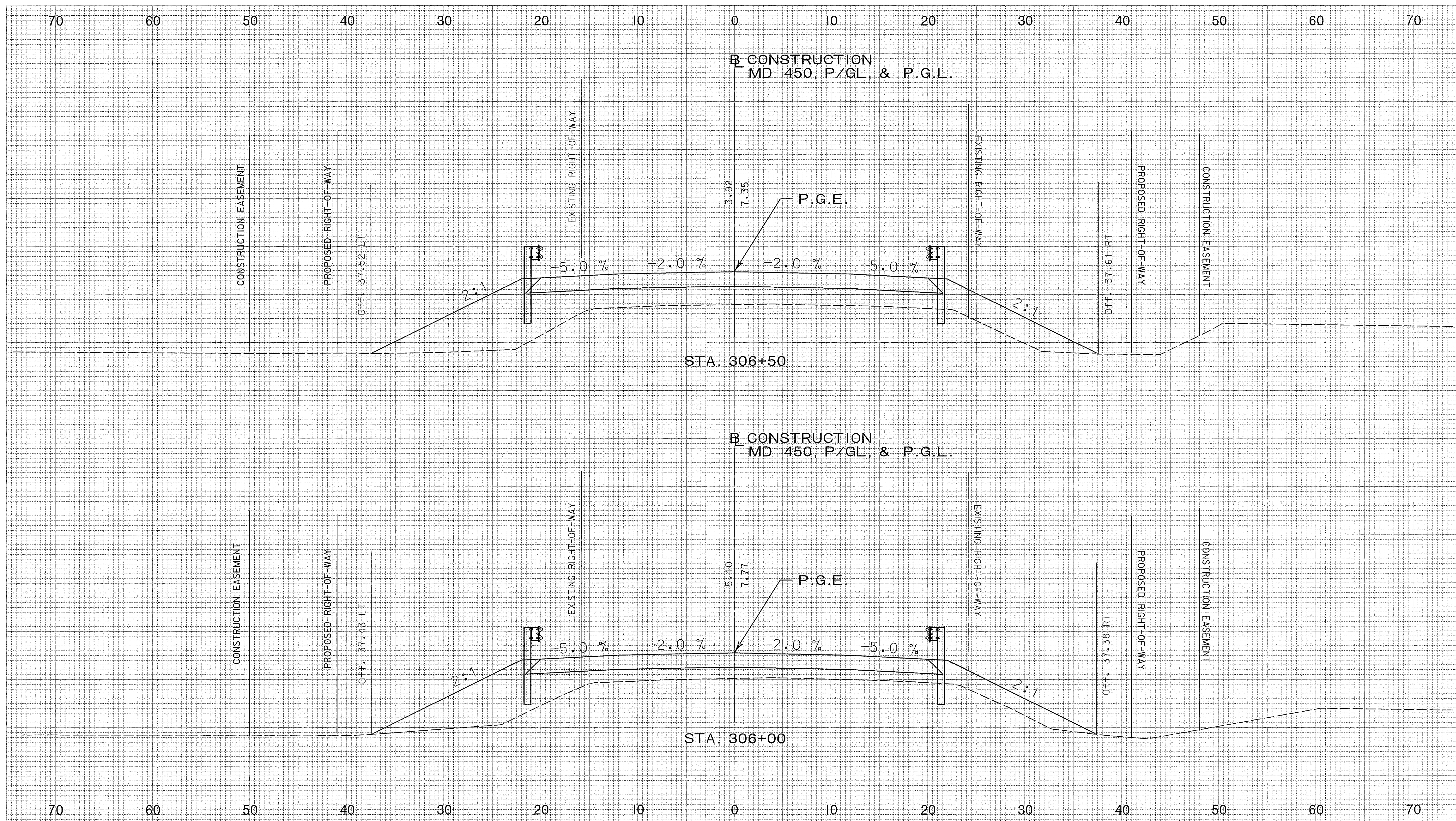
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 305+00 TO STA. 305+50
 SCALE VERT: 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS - 6	OF 15	SHEET NO. 57 OF 66		




BY: \$USERNAME\$



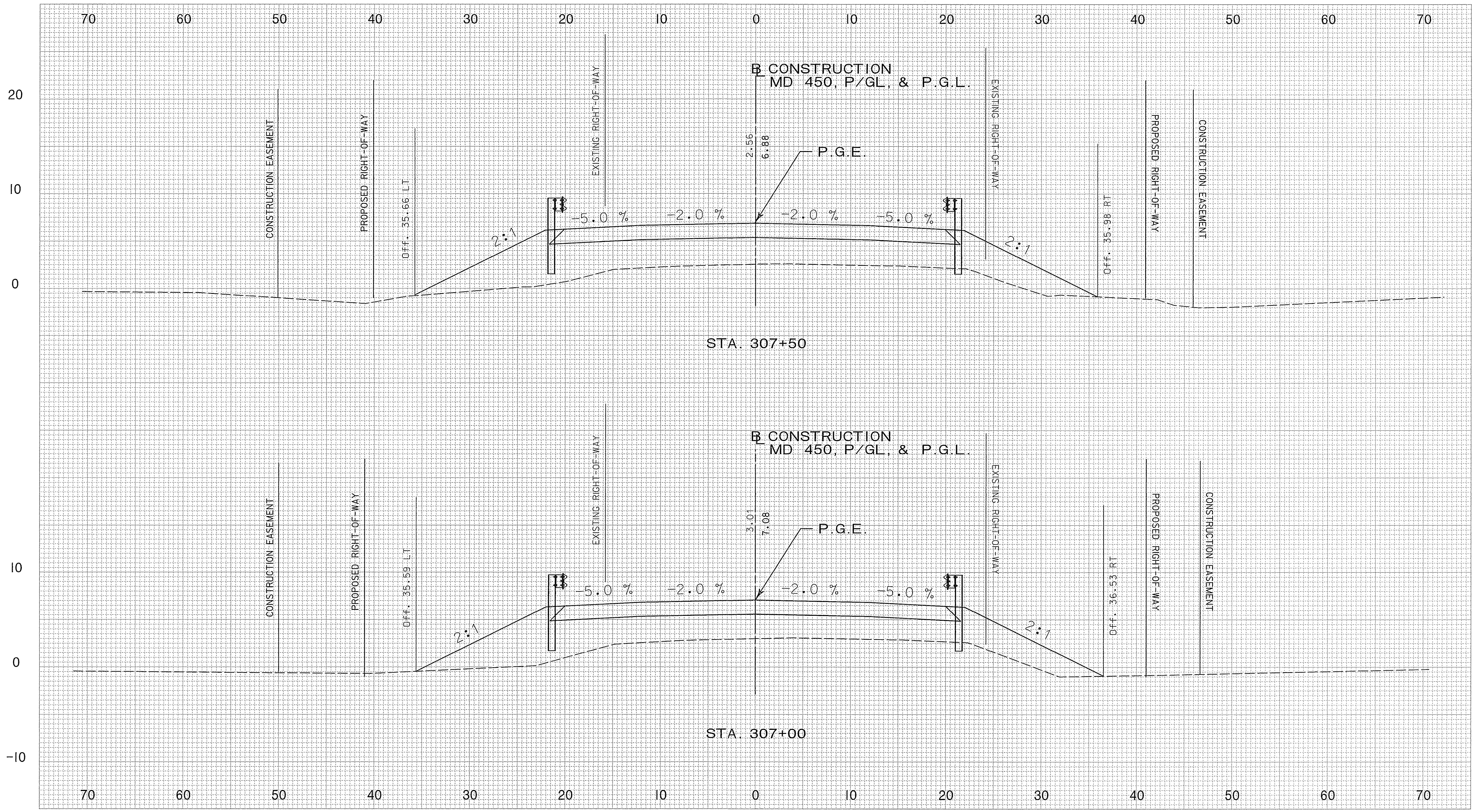
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA65180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 306+00 TO STA. 306+50
 SCALE VERT. 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS - 7 OF 15		SHEET NO. 58 OF 66		




BY: \$USERNAME\$



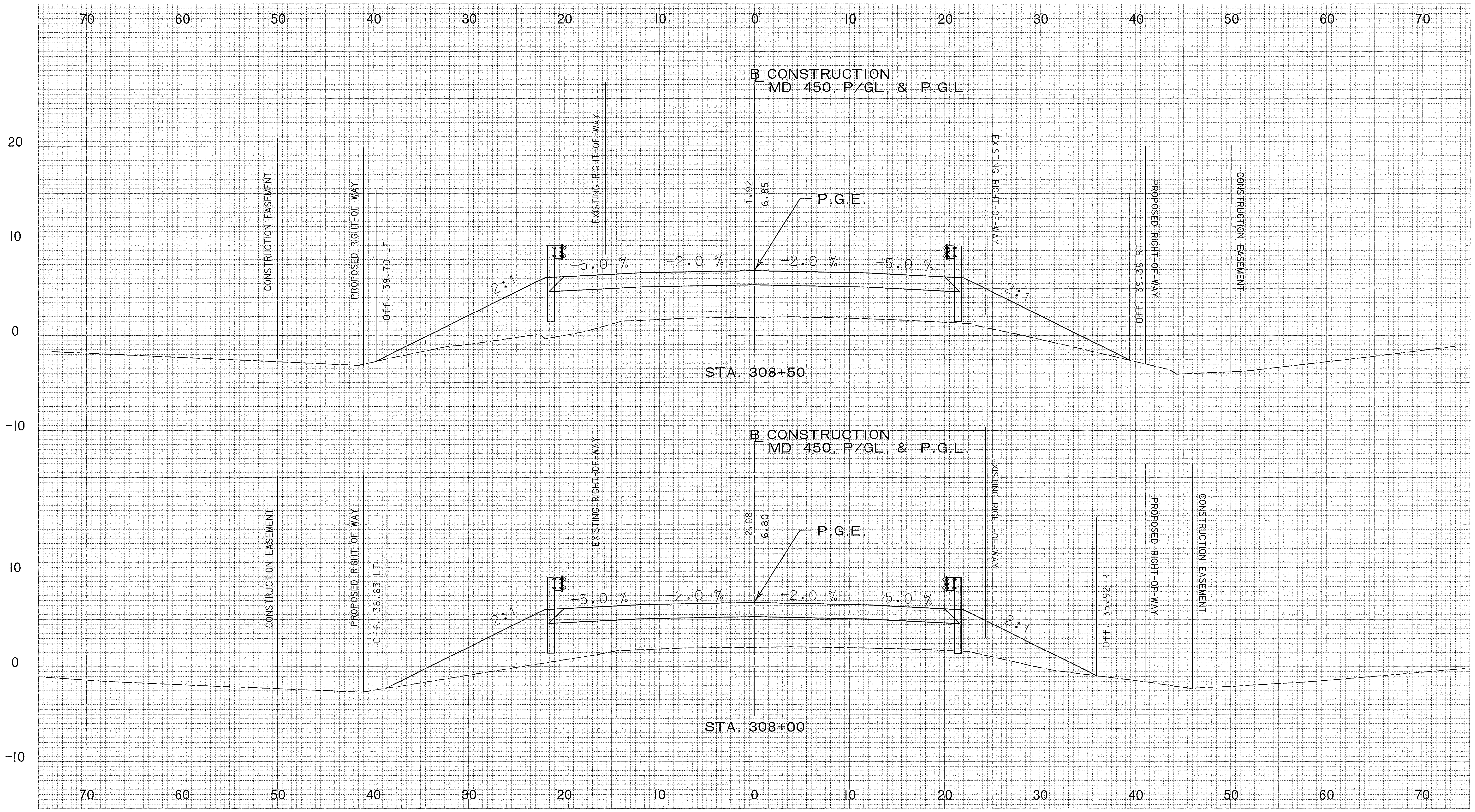
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 307+00 TO STA. 307+50
 SCALE VERT. 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS - 8 OF 15		SHEET NO. 59 OF 66		




BY: \$USERNAME\$



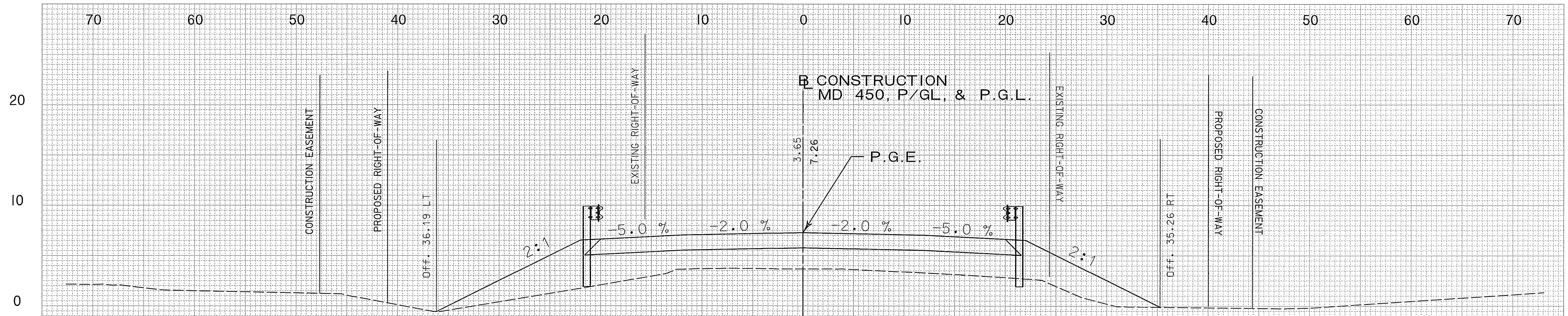
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 308+00 TO STA. 308+50
 SCALE VERT. 1"=5'

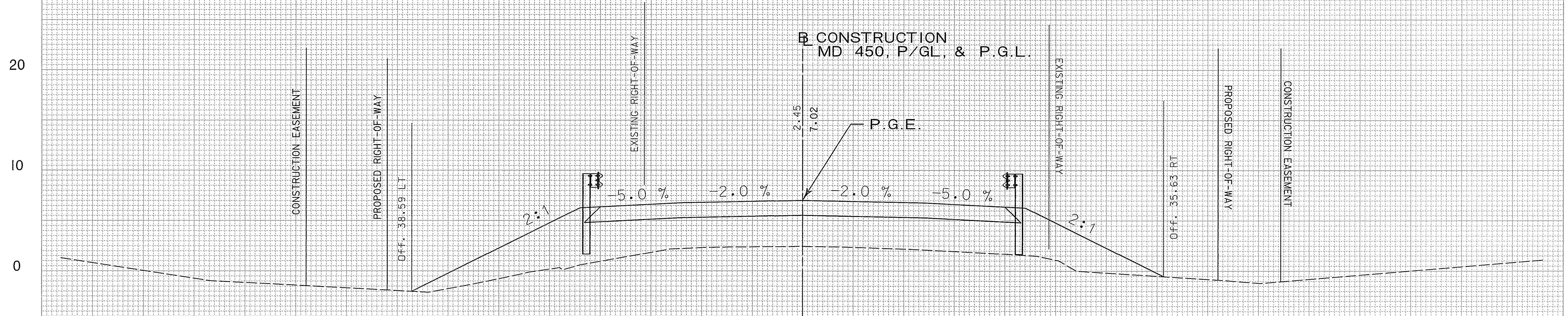
ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS-9 OF 15		SHEET NO. 60 OF 66		



BY: \$USERNAME\$




STA. 309+50



STA. 309+00

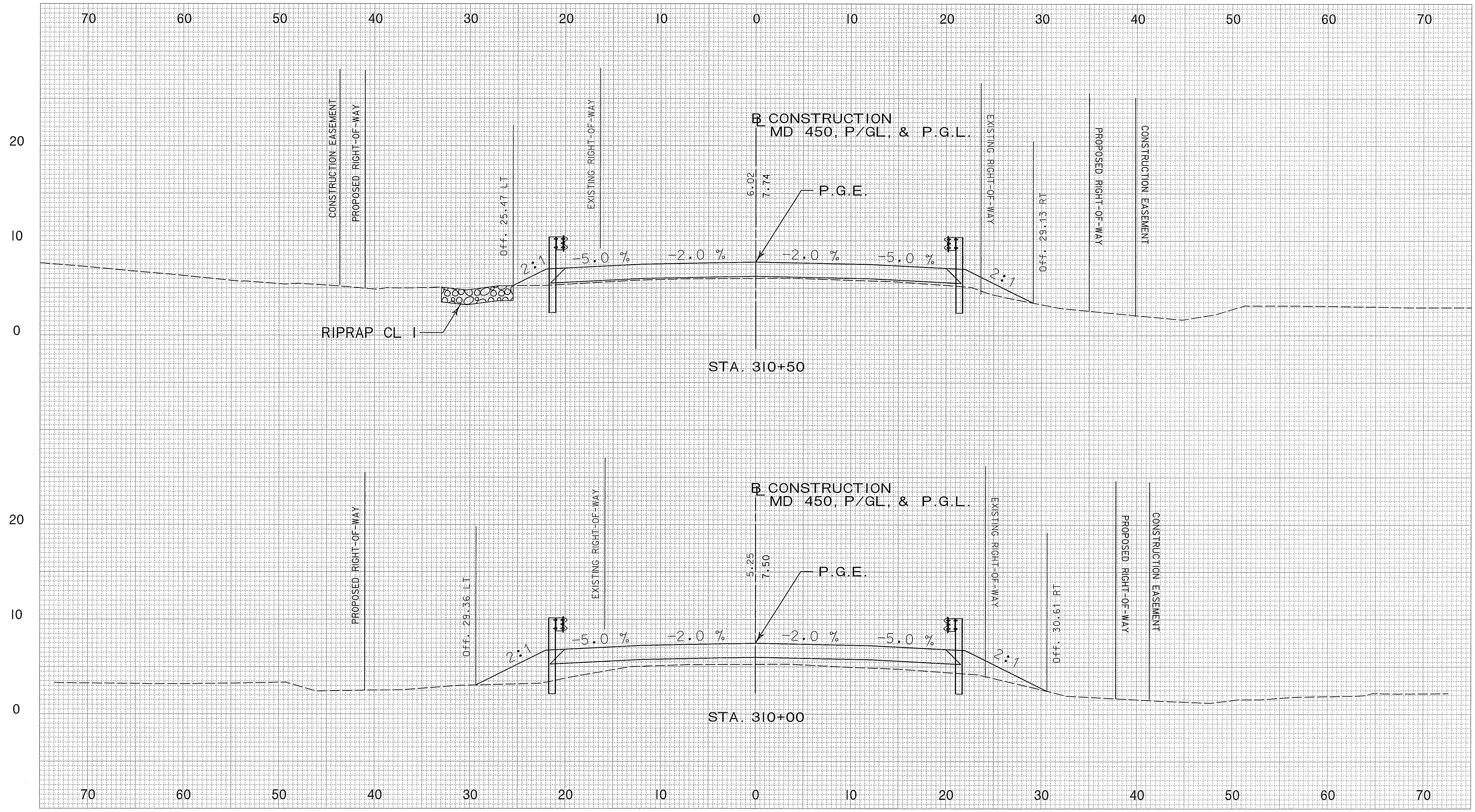
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA65180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 309+00 TO STA. 309+50
 SCALE VERT. 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS - 10 OF 15		SHEET NO. 61 OF 66		




BY: \$USERNAME\$



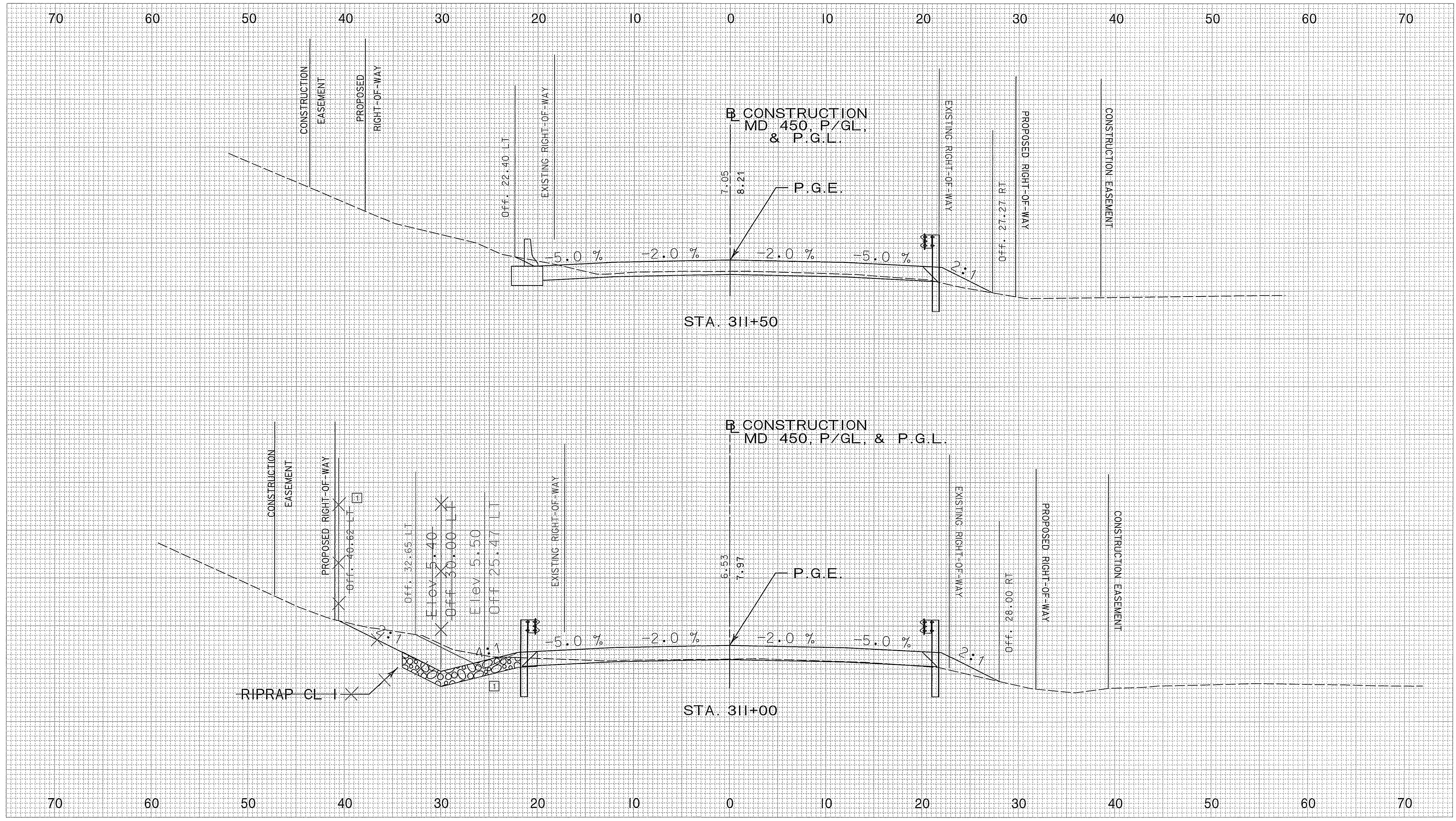
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PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 310+00 TO STA. 310+50
 SCALE VERT: 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS - II	OF 15	SHEET NO. 62 OF 66		




BY: \$USERNAME\$



CROSS SECTION

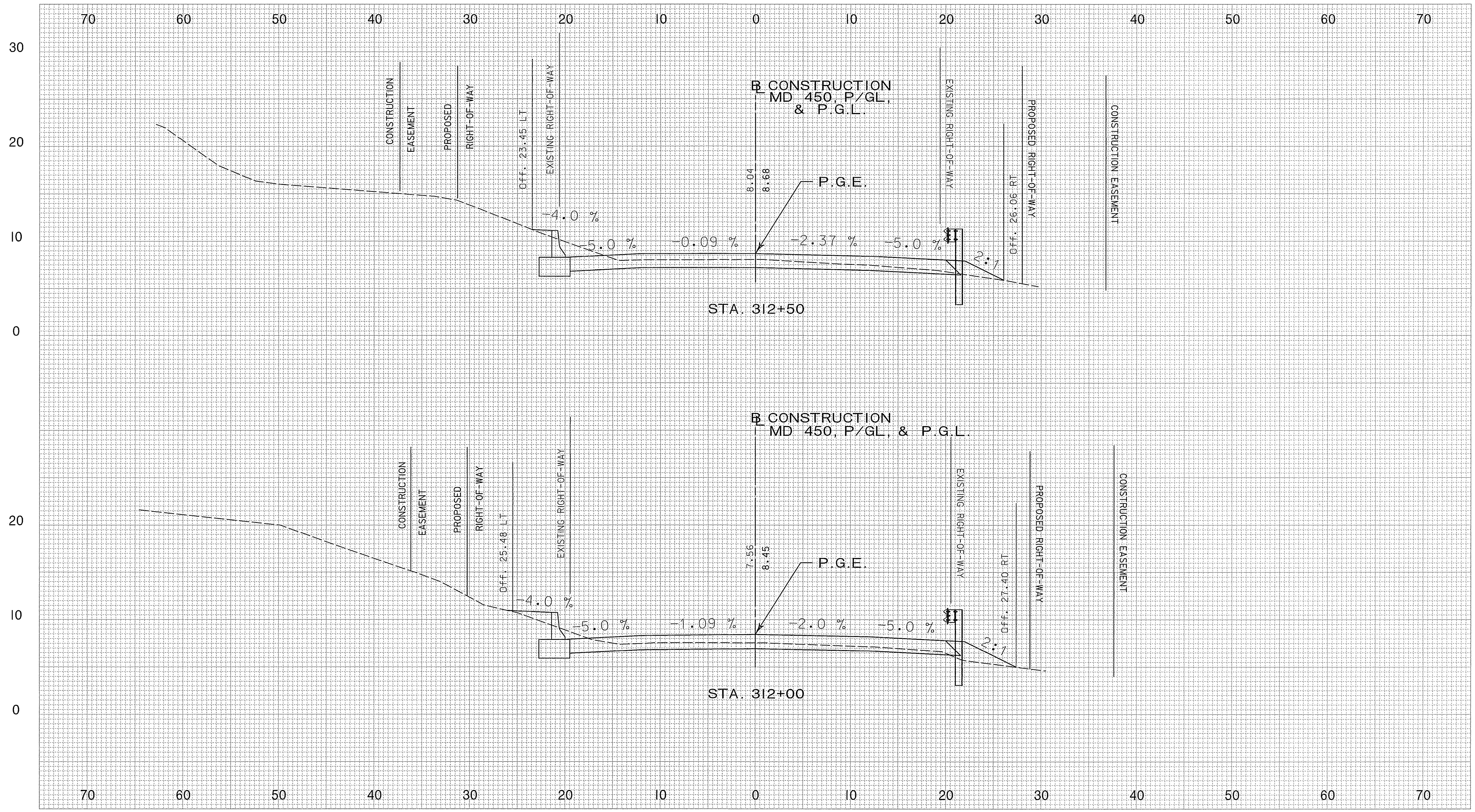
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 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 311+00 TO STA. 311+50
 SCALE VERT: 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS- 12 OF 15	SHEET NO. 63 OF 66			




1 REDLINE NO. 1 4/9/08

BY: \$USERNAME\$



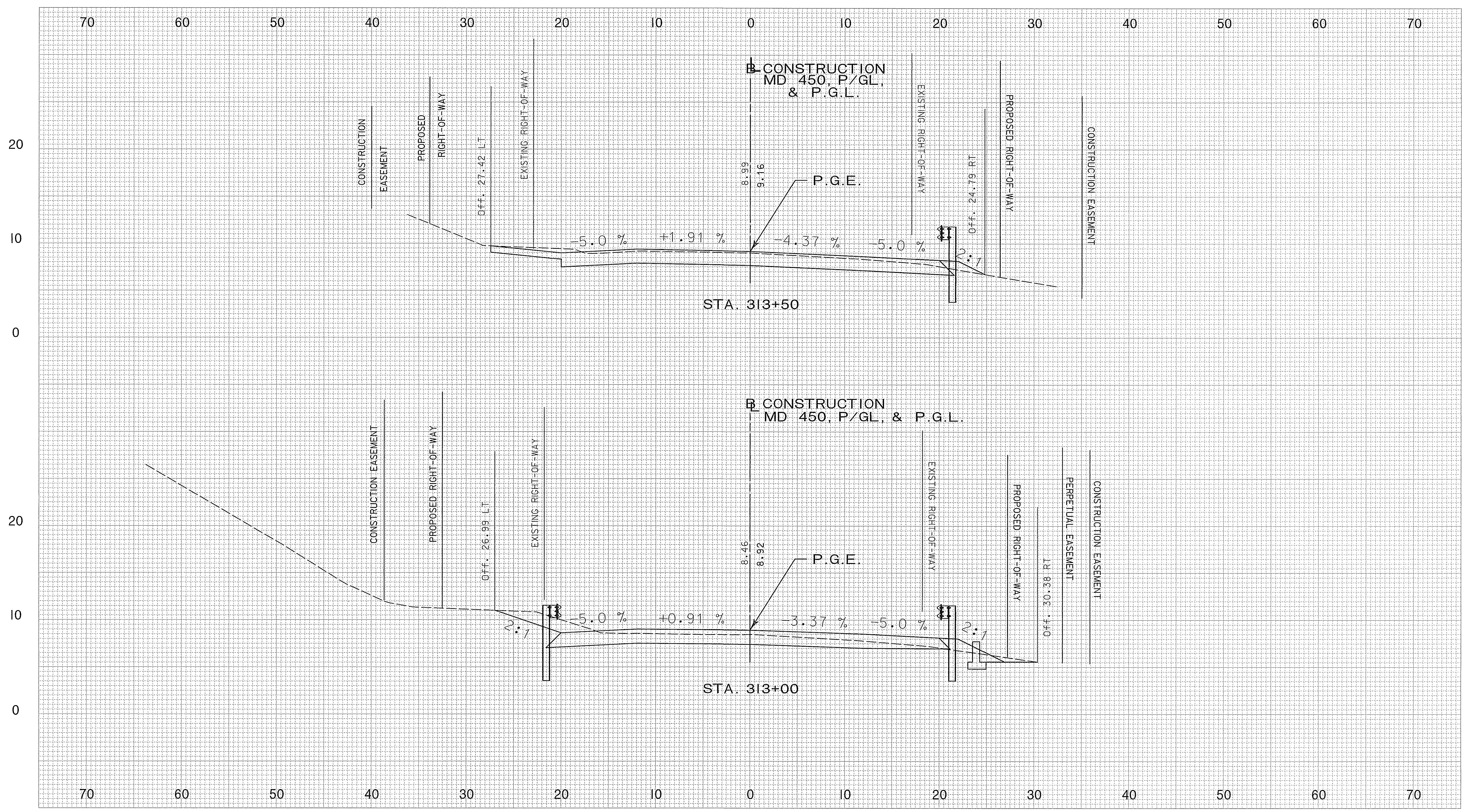
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA651580
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 312+00 TO STA. 312+50
 SCALE VERT: 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS-13 OF 15		SHEET NO. 64 OF 66		



BY: \$USERNAME\$



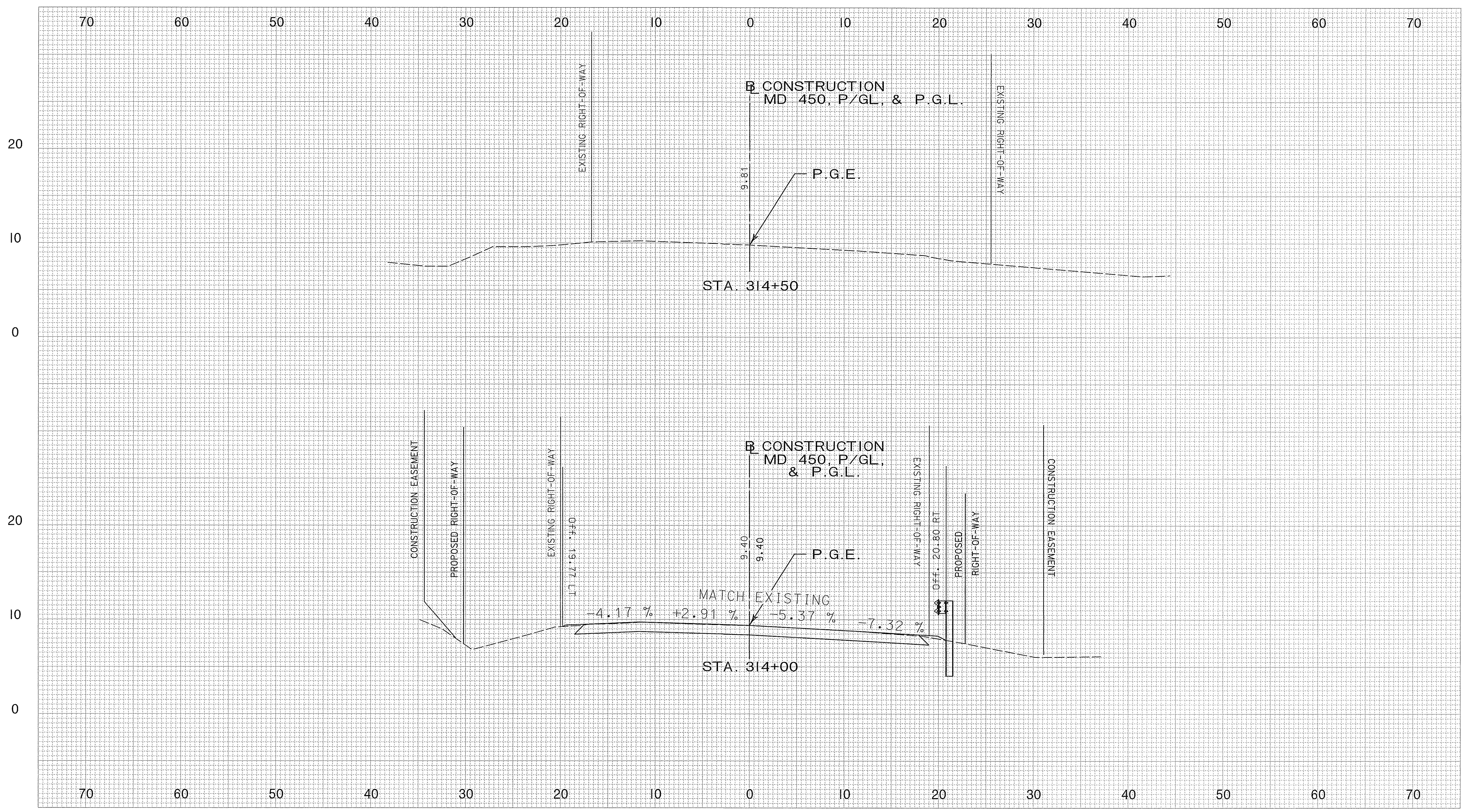
CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 313+00 TO STA. 313+50
 SCALE VERT: 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS-14 OF 15		SHEET NO. 65 OF 66		




BY: \$USERNAME\$



CROSS SECTION

PROJECT MD 450 DEFENSE HIGHWAY CONTRACT NO. AA6515180
 SCALE HORIZ. 1"=5' DESCRIPTION FROM STA. 314+00 TO STA. 314+50
 SCALE VERT. 1"=5'

ROADWAY CROSS SECTION SHEET		SCALE As Shown	DATE December 2007	CONTRACT NO. AX4695180
 STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION HIGHWAY DESIGN DIVISION PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072 ON MD-450 OVER BACON RIDGE BRANCH	DESIGNED BY M.A.	COUNTY ANNE ARUNDEL		
	DRAWN BY P.S.C.	LOGMILE		
	CHECKED BY V.V.S.	HORIZONTAL SCALE 1"=5'		
	F.A.P. NO.	VERTICAL SCALE 1"=5'		
DRAWING NO. CS-15 OF 15		SHEET NO. 66 OF 66		



BY: \$USERNAME\$

00015 3/01/04

MARYLAND STATE HIGHWAY ADMINISTRATION
PILE DRIVING DATA

File No: 16 Item No: 4001 Contract No: AX4695180
Location: ABUT 'A' Structure: ABUT BR 02072 Hammer: ICE 60S
Pile Type: PIPE PILE Bearing Required: 120 Ton B/FI Required: 62 FOR 5' STROKE
Minimum Tip Elev. (from plng): -65.0 FT Batter: NONE Original Ground Elev: -1.5 FT
Cutoff Elevation: +1.5 FT Batter Factor: N/A Length of Pile/Leads: 68.5 FT/100 FT
Reference Elevation: -1.0 FT Minimum DBRE: 65.0 FT Length of Cut Off: 1.0 FT
Date Driven: 7/18/08 Final Tip Elevation: -66.0 FT Pay Length: 67.50 FT

Table with columns: DBRE, Blows per Foot, Remarks, B/min, Stroke, Splice, Bearing, Time, etc. Data rows from 41 to 80.

DBRE = Depth Below Reference Elevation Inspector's Name (Print): Jaswanth Kanna
(Signature): [Signature]

00015 3/01/04

MARYLAND STATE HIGHWAY ADMINISTRATION
PILE DRIVING DATA

File No: 21 Item No: 4001 Contract No: AX4695180
Location: ABUT 'A' Structure: ABUT BR 02072 Hammer: ICE 60S
Pile Type: PIPE PILE Bearing Required: 120 Ton B/FI Required: 62 FOR 5' STROKE
Minimum Tip Elev. (from plng): -65 FT Batter: NONE Original Ground Elev: -1.5 FT
Cutoff Elevation: +1.5 FT Batter Factor: N/A Length of Pile/Leads: 68.5 FT
Reference Elevation: 0.0 FT Minimum DBRE: 66.0 FT Length of Cut Off: 1.0 FT
Date Driven: 7/18/08 Final Tip Elevation: -66.0 Pay Length: 67.50 FT

Table with columns: DBRE, Blows per Foot, Remarks, B/min, Stroke, Splice, Bearing, Time, etc. Data rows from 41 to 80.

DBRE = Depth Below Reference Elevation Inspector's Name (Print): NASEER KHAN
(Signature): [Signature]

00015 3/01/04

MARYLAND STATE HIGHWAY ADMINISTRATION
PILE DRIVING DATA

File No: 25 Item No: 4001 Contract No: AX4695180
Location: WING WALL Structure: ABUT 'A' Hammer: ICE 60S
Pile Type: PIPE PILE Bearing Required: 120 Ton B/FI Required: 62 FOR 5' STROKE
Minimum Tip Elev. (from plng): -65 FT Batter: NONE Original Ground Elev: -1.5 FT
Cutoff Elevation: +1.5 FT Batter Factor: N/A Length of Pile/Leads: 68.5 FT
Reference Elevation: -1.5 FT Minimum DBRE: 65.2 FT Length of Cut Off: 0.30
Date Driven: 7/18/08 Final Tip Elevation: -66.70 FT Pay Length: 68.20

Table with columns: DBRE, Blows per Foot, Remarks, B/min, Stroke, Splice, Bearing, Time, etc. Data rows from 41 to 80.

DBRE = Depth Below Reference Elevation Inspector's Name (Print): NASEER KHAN
(Signature): [Signature]

OOC15 3/01/04

MARYLAND STATE HIGHWAY ADMINISTRATION
PILE DRIVING DATA

File No: 3 Item No: 4001 Contract No: AX4695180
Location: ABUT 'A' Structure: ABUT BR 02072 Hammer: ICE 60S
Pile Type: STEEL PIPE PILE Bearing Required: 120 Ton B/FI Required: 62 FOR 5' STROKE
Minimum Tip Elev. (from plng): -65.0 FT Batter: NONE Original Ground Elev: -1.5 FT
Cutoff Elevation: +1.5 FT Batter Factor: N/A Length of Pile/Leads: 100 FT
Reference Elevation: -1.0 FT Minimum DBRE: 64.25 Length of Cut Off: 3.25
Date Driven: 6/26/08 Final Tip Elevation: -65.25 Pay Length: 66.75

Table with columns: DBRE, Blows per Foot, Remarks, B/min, Stroke, Splice, Bearing, Time, etc. Data rows from 41 to 80.

DBRE = Depth Below Reference Elevation Inspector's Name (Print): NAGENDRA MALIK
(Signature): [Signature]

OOC15 3/01/04

MARYLAND STATE HIGHWAY ADMINISTRATION
PILE DRIVING DATA

File No: 8 Item No: 4001 Contract No: AX4695180
Location: ABUT 'A' Structure: ABUT BR 02072 Hammer: ICE 60S
Pile Type: STEEL PIPE PILE Bearing Required: 120 Ton B/FI Required: 62 FOR 5' STROKE
Minimum Tip Elev. (from plng): -65.0 FT Batter: NONE Original Ground Elev: -1.5 FT
Cutoff Elevation: +1.5 FT Batter Factor: N/A Length of Pile/Leads: 100 FT
Reference Elevation: -1.0 Minimum DBRE: 66.3 FT Length of Cut Off: 3.2 FT
Date Driven: 6/27/08 Final Tip Elevation: -65.3 Pay Length: 66.80 FT

Table with columns: DBRE, Blows per Foot, Remarks, B/min, Stroke, Splice, Bearing, Time, etc. Data rows from 41 to 80.

DBRE = Depth Below Reference Elevation Inspector's Name (Print): NAGENDRA MALIK
(Signature): [Signature]

OOC15 3/01/04

MARYLAND STATE HIGHWAY ADMINISTRATION
PILE DRIVING DATA

File No: 11 Item No: 4001 Contract No: AX4695180
Location: ABUT 'A' Structure: ABUT BR 02072 Hammer: ICE 60S
Pile Type: STEEL PIPE PILE Bearing Required: 120 Ton B/FI Required: 62 FOR 5' STROKE
Minimum Tip Elev. (from plng): -65.0 FT Batter: NONE Original Ground Elev: -1.5 FT
Cutoff Elevation: +1.5 FT Batter Factor: N/A Length of Pile/Leads: 100 FT
Reference Elevation: +1.0 Minimum DBRE: 65.7 FT Length of Cut Off: 2.80 FT
Date Driven: 6/27/08 Final Tip Elevation: -65.7 FT Pay Length: 67.20 FT

Table with columns: DBRE, Blows per Foot, Remarks, B/min, Stroke, Splice, Bearing, Time, etc. Data rows from 41 to 80.

DBRE = Depth Below Reference Elevation Inspector's Name (Print): NAGENDRA MALIK
(Signature): [Signature]

REVISIONS
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT
PRESTRESSED CONCRETE SLAB BRIDGE NO. 02072
ON MARYLAND 450
OVER BACON RIDGE BRANCH
ABUTMENT PILE DRIVING RECORD DATA
SCALE AS SHOWN DATE JAN. 2008 CONTRACT AX4695180
DESIGNED BY S.S.S.
DRAWN BY D.A.C.
CHECKED BY J.L.R.
E.S.F.
JAN. 8, 2008
SHEET NO. 27.01 OF 66