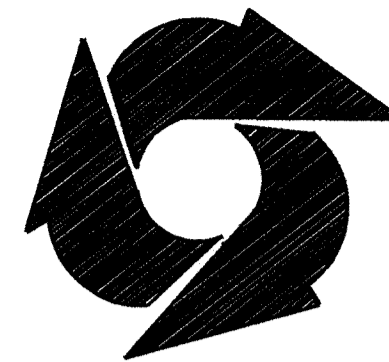


INDEX OF SHEETS

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- 2 DETOUR PLAN
- 3 DETOUR PLAN
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- 5 ROADWAY DETAILS
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- 7 GENERAL NOTES
- 8 STREAM DIVERSION PLAN
- 9 STREAM DIVERSION DETAILS
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- 12 EROSION AND SEDIMENT CONTROL DETAILS
- 13 ABUTMENT A PLAN AND DETAILS
- 14 ABUTMENT A DETAILS
- 15 ABUTMENT B PLAN AND DETAILS
- 16 ABUTMENT B DETAILS
- 17 ABUTMENT DETAILS
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- 19 TYPICAL SECTION
- 20 FIBER REINFORCED POLYMER DECK DETAILS
- 21 FIBERGLASS SPLASH PANEL DETAILS
- 22 FIBERGLASS SPLASH PANEL DETAILS
- 23 RAIL POST SPACING
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- 25 STANDARD DETAILS
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- 27 STANDARD DETAILS



Maryland Department of Transportation

STATE HIGHWAY ADMINISTRATION

PLANS FOR REHABILITATION - INCLUDING DECK REPLACEMENT UTILIZING FIBER REINFORCED POLYMER DECK - OF BRIDGE NO. 12016 ON MARYLAND ROUTE 24 OVER DEER CREEK

S.H.A. CONTRACT NO. HA2095180
F.A.P. CONTRACT NO. BH-IBRC-1247 (10) N

- ▲ ADDENDUM NO.1
SHEETS NO. 1, 8, 9, 13, 15, 19,
20 - 24 2/21/01
- ① RED LINE NO. 1
SHEETS NO. 10, 21 AND 23 6/11/01
- ② RED LINE NO. 2
SHEETS NO. 6, 17, 17A, 18 AND 18A 8/27/01

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.

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.

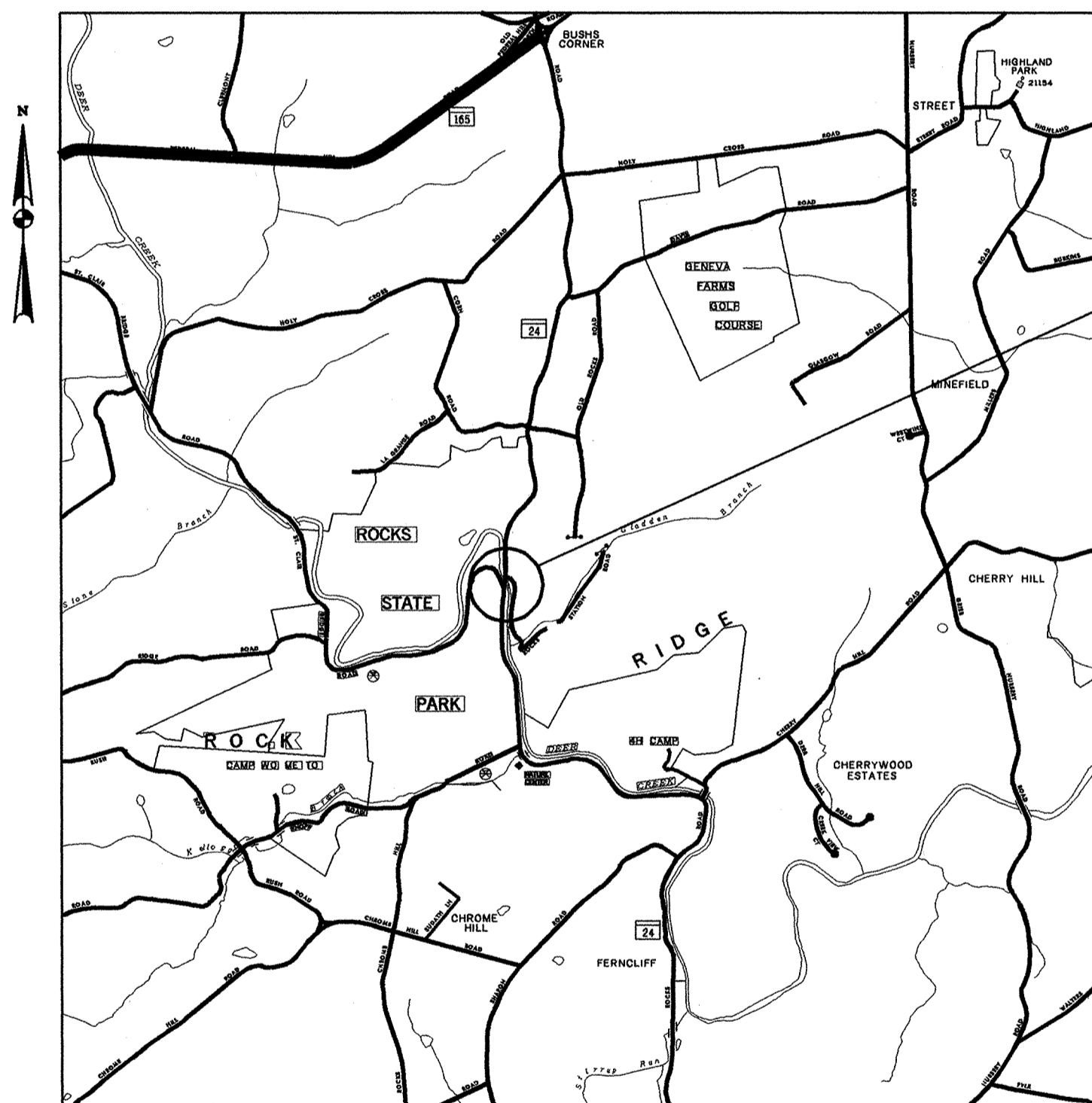
STANDARD STABILIZATION NOTE:
FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDER DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1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

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR THIS CONTRACT SHALL BE INSPECTED BIANNUALLY WITH MAINTENANCE PROVIDED WHEN REQUIRED.

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.

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.

▲ ENVIRONMENTAL INFORMATION:
MDE# 01-SF-0188



BRIDGE NO. 12016 ON MARYLAND ROUTE 24 OVER DEER CREEK

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 FOR YOUR USE ARE:
SHEETS NO. 2, 4-6 OF 6 CONTRACT NO. H-136-1-48-PWA

CONVENTIONAL SIGNS

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

HARFORD COUNTY
LOCATION MAP

SCALE: NONE
PROJECT LENGTH=0.08 MILES

DESIGN TRAFFIC DATA

	2000	2020(EST.)
A.D.T.	3,700	5,200
D.H.V.	10%	10%
DIRECTIONAL DISTRIBUTION	70%	70%
PERCENT TRUCKS-A.D.T.	4%	4%
PERCENT TRUCKS-D.H.V.	4%	4%
DESIGN SPEED	30 MPH	30 MPH

REVIEWED AND APPROVAL RECOMMENDED

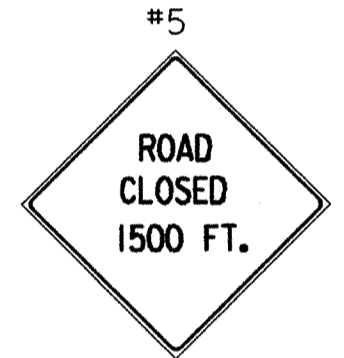
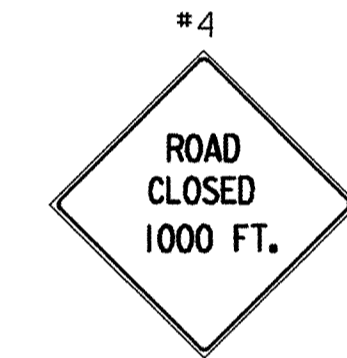
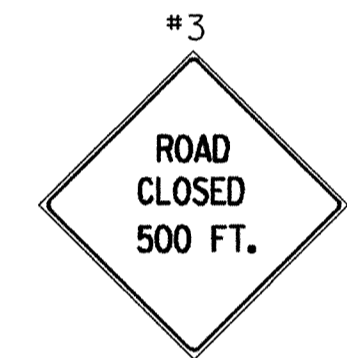
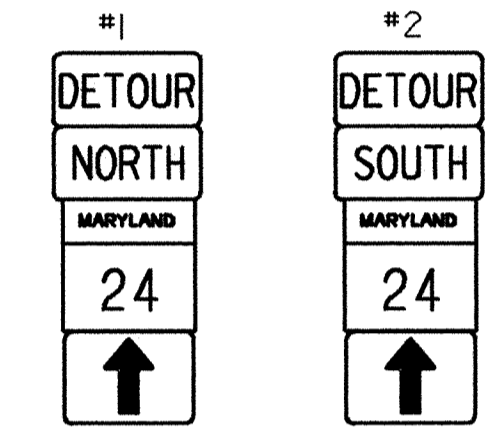
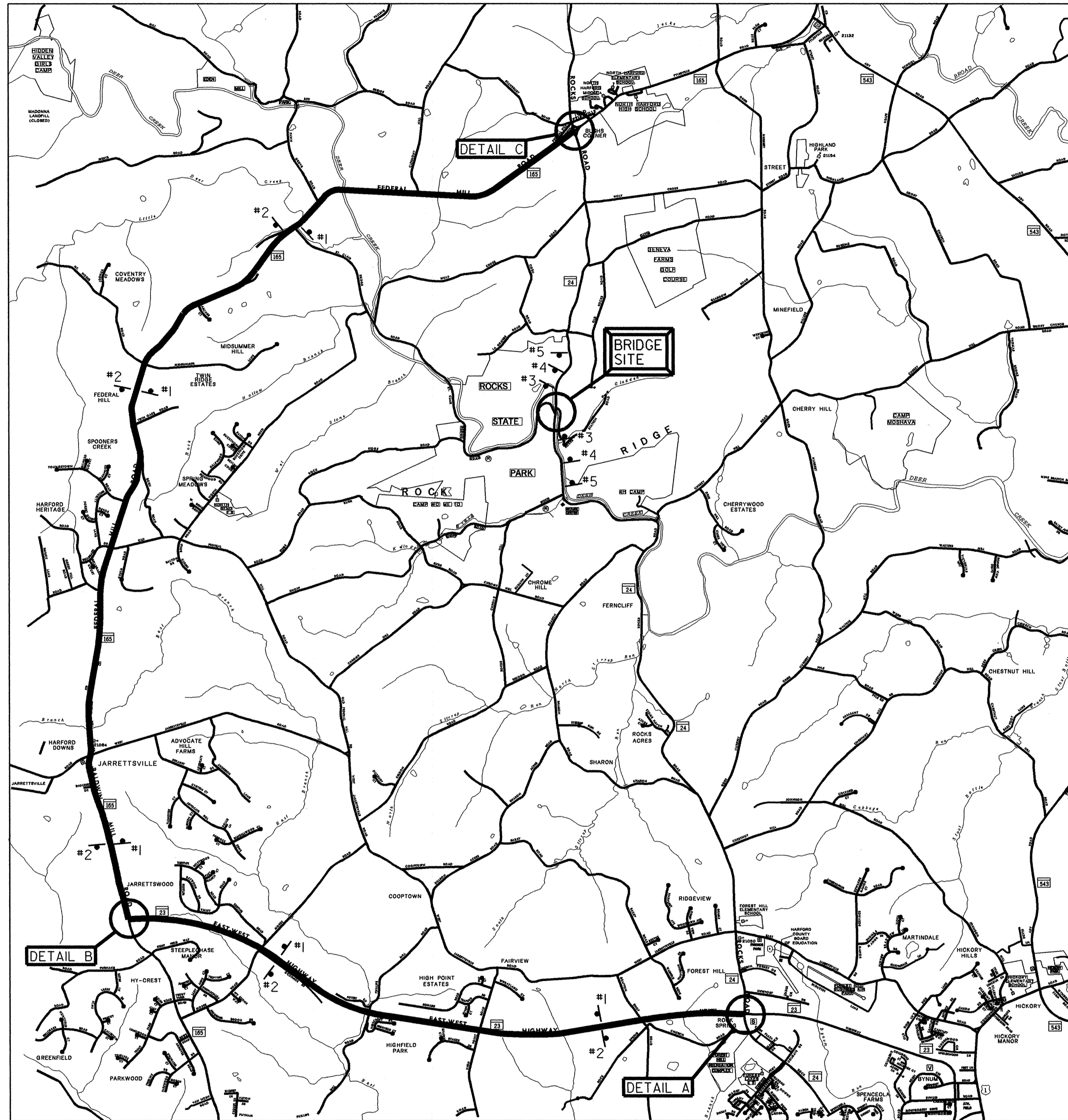
Sam Coakley 01/11/01
CHIEF, BRIDGE DESIGN DIVISION

APPROVAL RECOMMENDED

E. S. Freedman 01/11/01
DIRECTOR, OFFICE OF BRIDGE DEVELOPMENT

APPROVED

Neil J. Fedorow 01/12/01
DEPUTY ADMINISTRATOR - PLANNING AND ENGINEERING

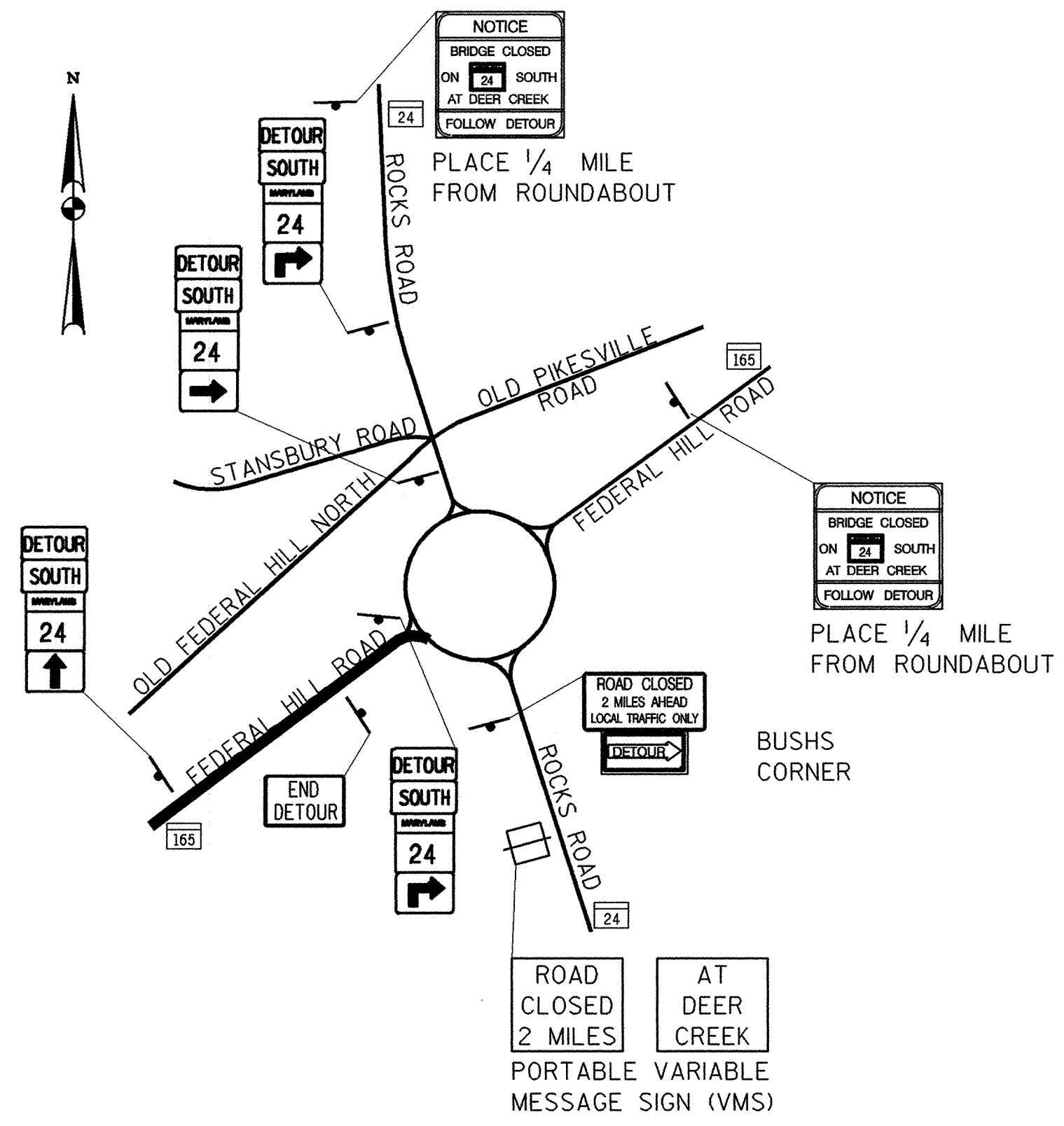


DETOUR PLAN
SCALE : 1"=3000'

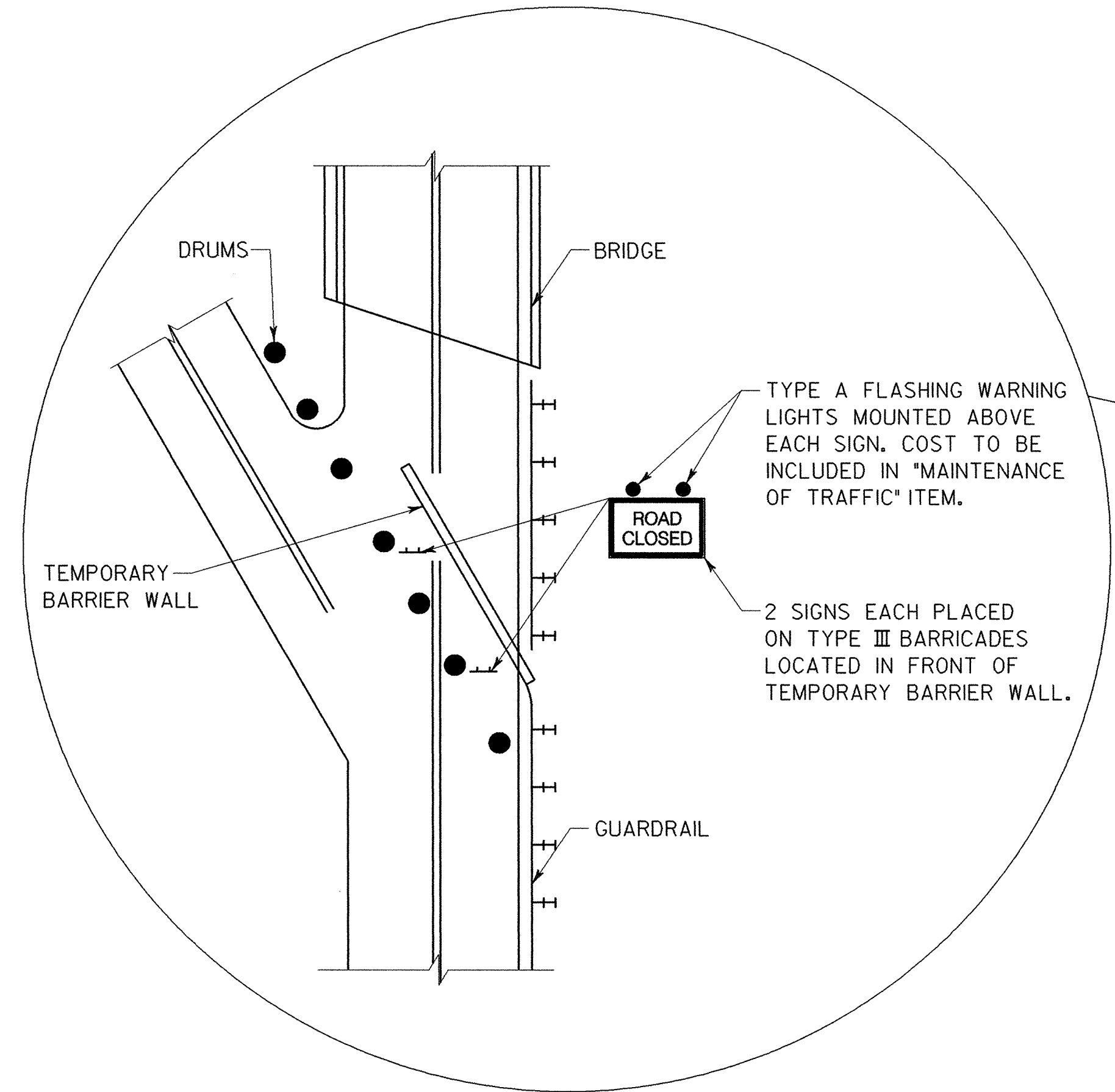
————— = DETOUR ROUTE

NOTES:
 NUMBERS ABOVE SIGNS MATCH NUMBERS PLACED AT SIGN LOCATIONS.
 FOR ENLARGEMENT DETAILS, SEE SHEET NO. 3
 FOR SIGN LEGEND, SEE SHEET NO. 4
 TRAFFIC TO BE DETOURED FOR ALL MAJOR WORK ON BRIDGE. FOR DATES, RESTRICTIONS AND PENALTIES SEE SPECIAL PROVISIONS.

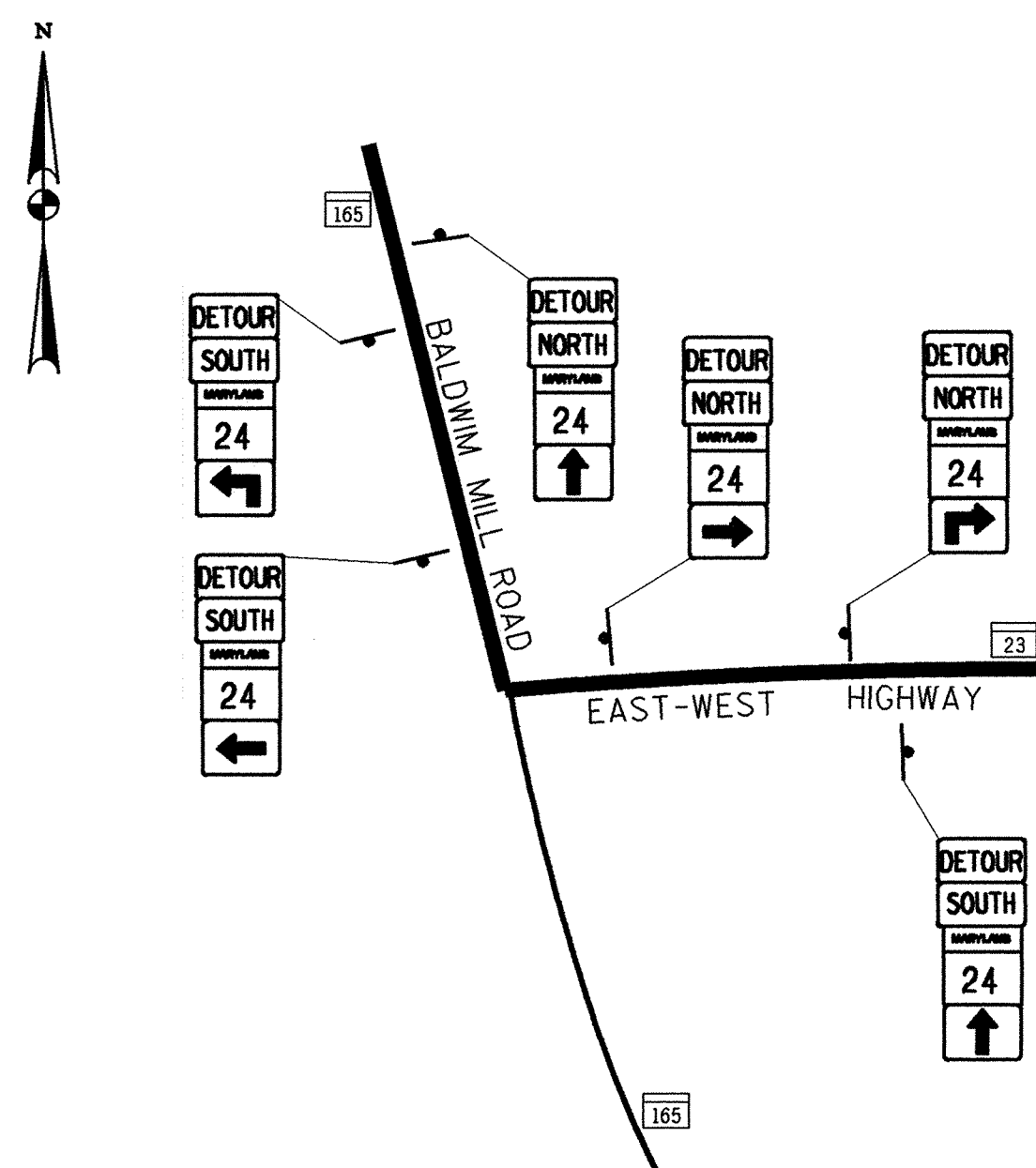
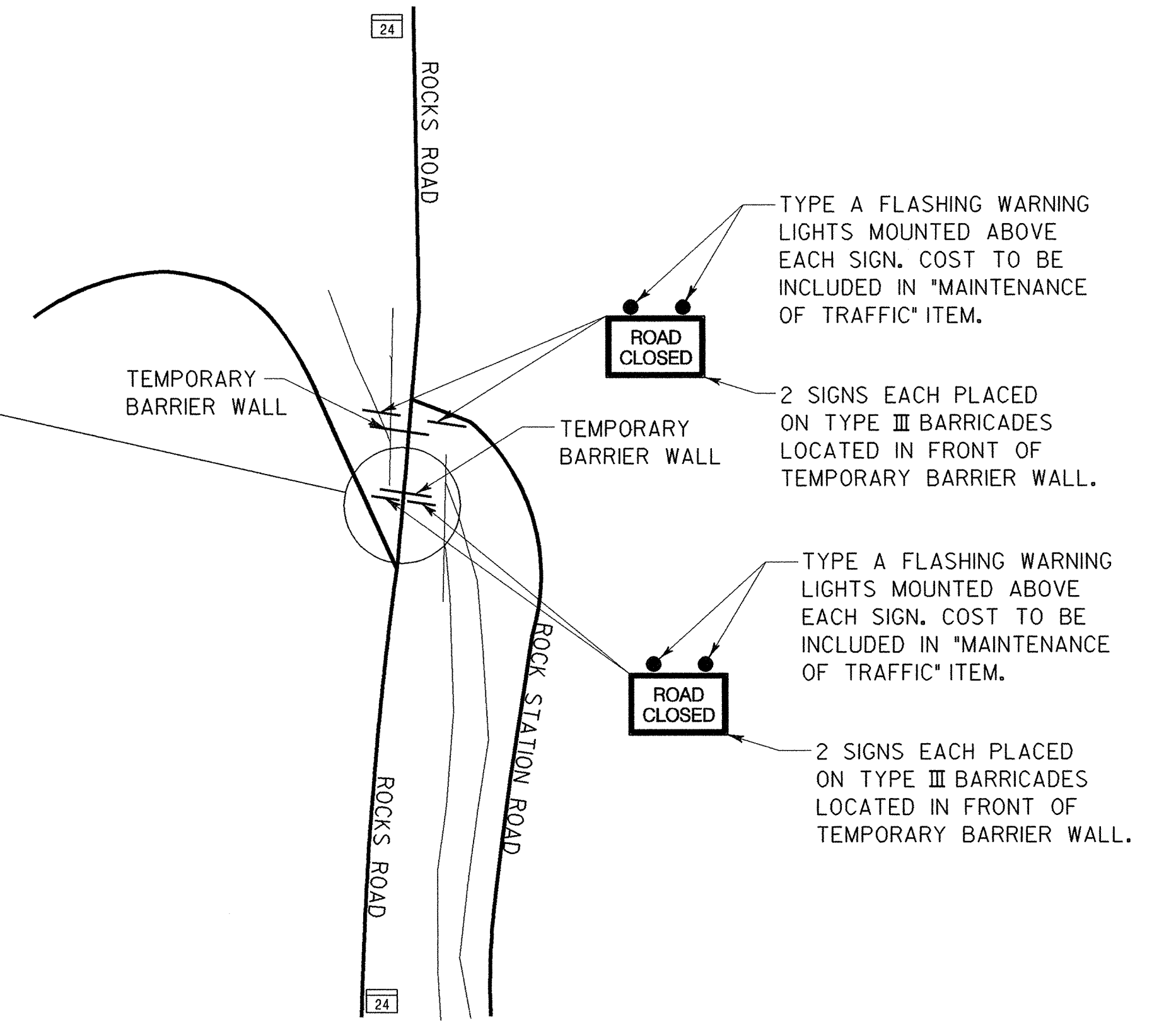
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK DETOUR PLAN	
SCALE	AS SHOWN
DATE	JAN. 2001
CONTRACT	HA2095180
DESIGNED BY	J.A.M.
DRAWN BY	J.A.M.
CHECKED BY	J.L.R.
E. S. F. JAN 30 2001	
SHEET NO. 2 OF 27	



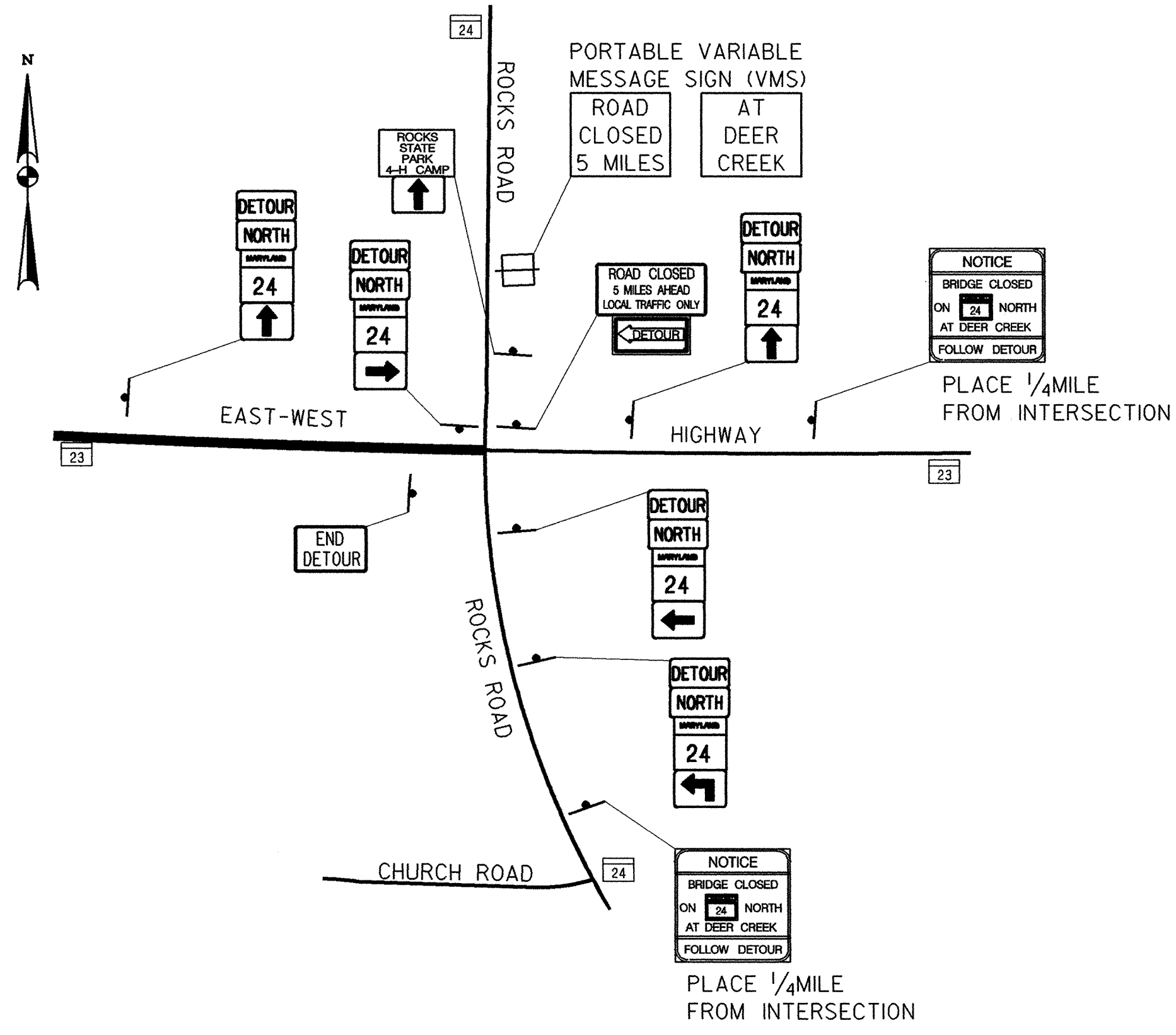
DETAIL C
SCALE: NONE



BRIDGE SITE
SCALE: NONE



DETAIL B
SCALE: NONE



DETAIL A
SCALE: NONE

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK DETOUR PLAN	
SCALE	AS SHOWN
DATE	JAN. 2001
CONTRACT	HA2095180
DESIGNED BY	J.A.M.
DRAWN BY	J.A.M.
CHECKED BY	J.L.R.
E. S. F. JAN 30 2001	
SHEET NO. 3 OF 27	

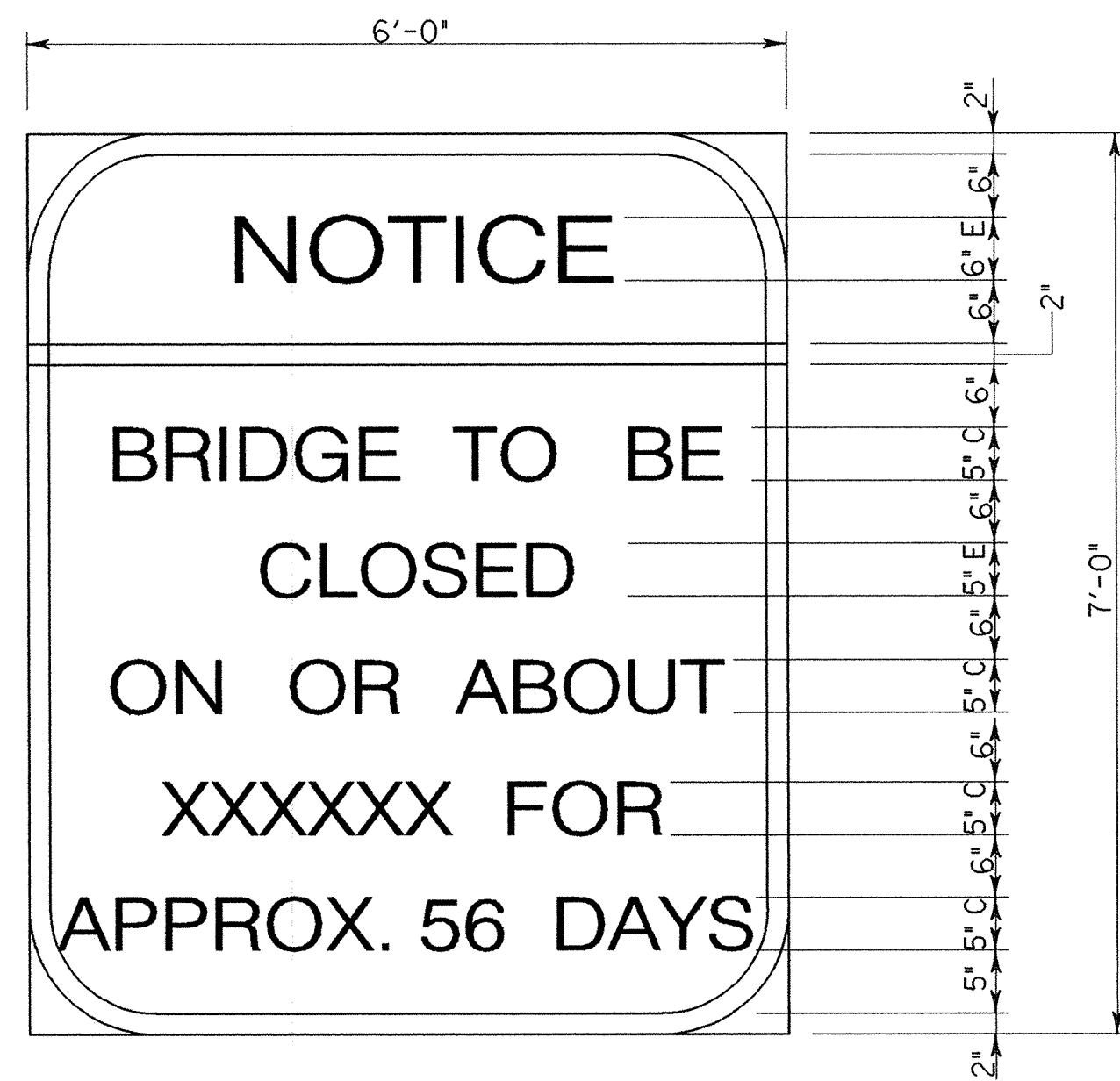
OTHER CONTRACTS FOR THIS STRUCTURE _____

BRIDGE NO. _____

SURVEY BOOK NO. _____

i:\misc\bridgebackup\JUSTIN\JEFF\12016\detour.dgn

INDEXED

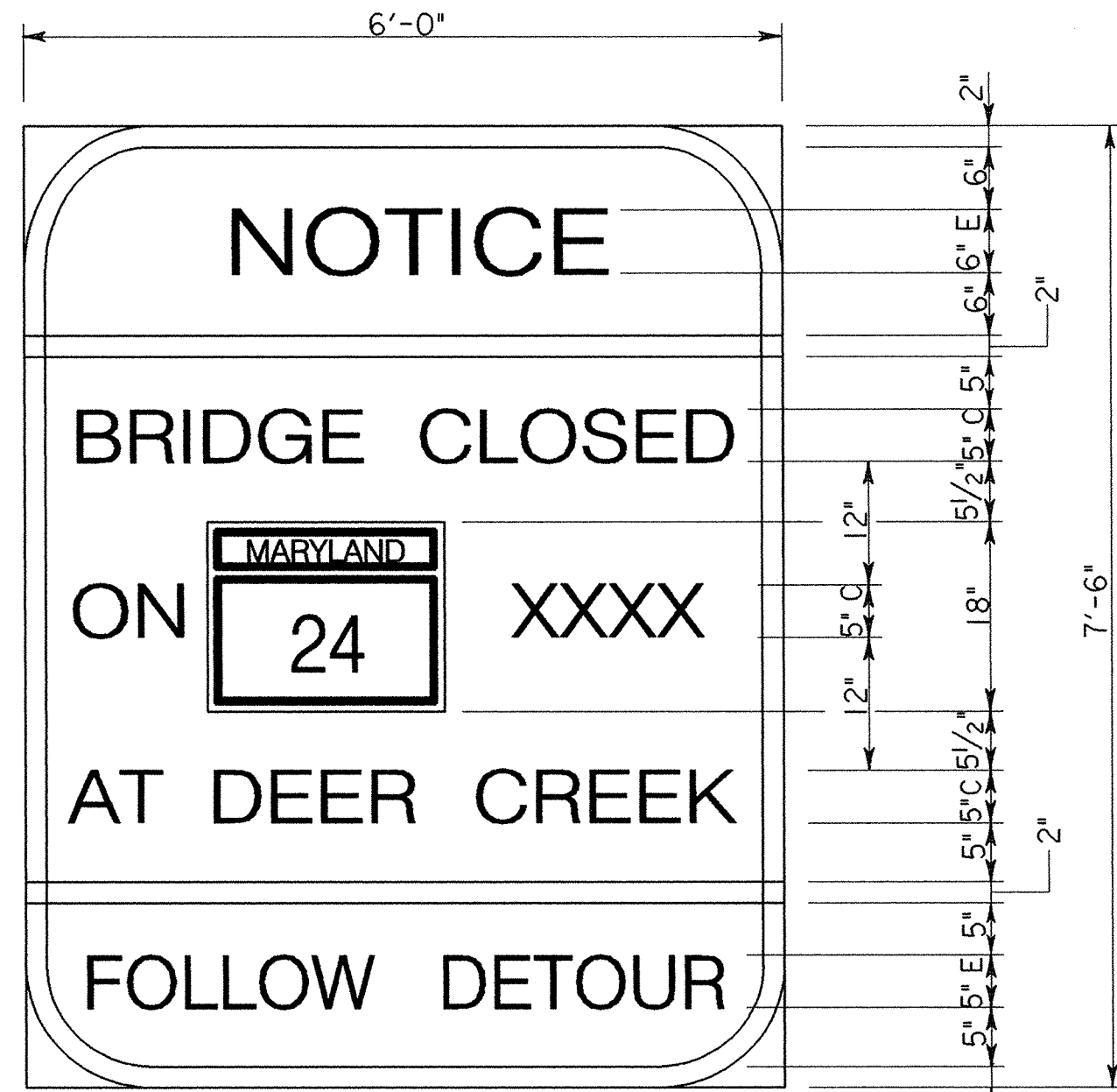


SIGN A
SCALE: 3/4" = 1'-0"

BLACK/YELLOW
BLACK/WHITE

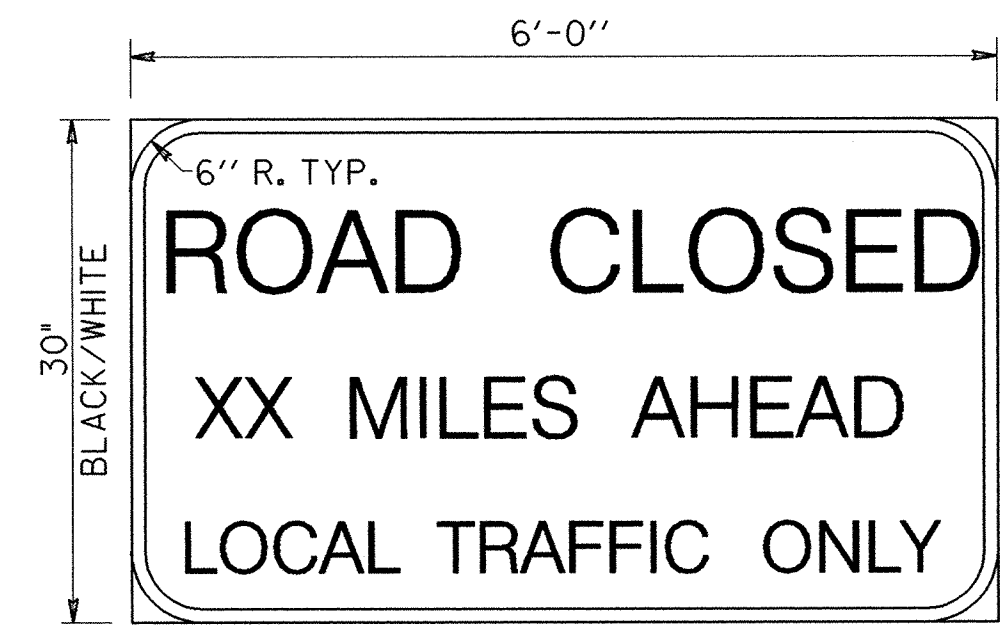
NOTE:
PLACE TWO SIGNS (ONE IN EACH DIRECTION) AT BRIDGE SITE AT LEAST TWO WEEKS IN ADVANCE OF BRIDGE CLOSURE. ONCE DETOUR IS IN PLACE THESE SIGNS MAY BE REMOVED.

THE CONTRACTOR SHALL CLEAR AN AREA ADJACENT TO THE BRIDGE FOR PLACEMENT OF THESE SIGNS. COST OF CLEARING SHALL BE INCIDENTAL TO THE 'TEMPORARY TRAFFIC SIGNS' ITEM.



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

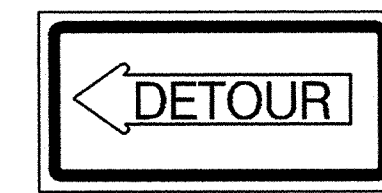
BLACK/ORANGE
BLACK/WHITE
BLACK/ORANGE



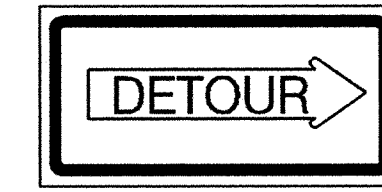
SIGN C STD R11-3A
SCALE: 3/4" = 1'-0"



R 11-2
48" X 30"
BLACK/WHITE



M 4-10 (L)
30" X 15"
BLACK/ORANGE



M 4-10 (R)
30" X 15"
BLACK/ORANGE



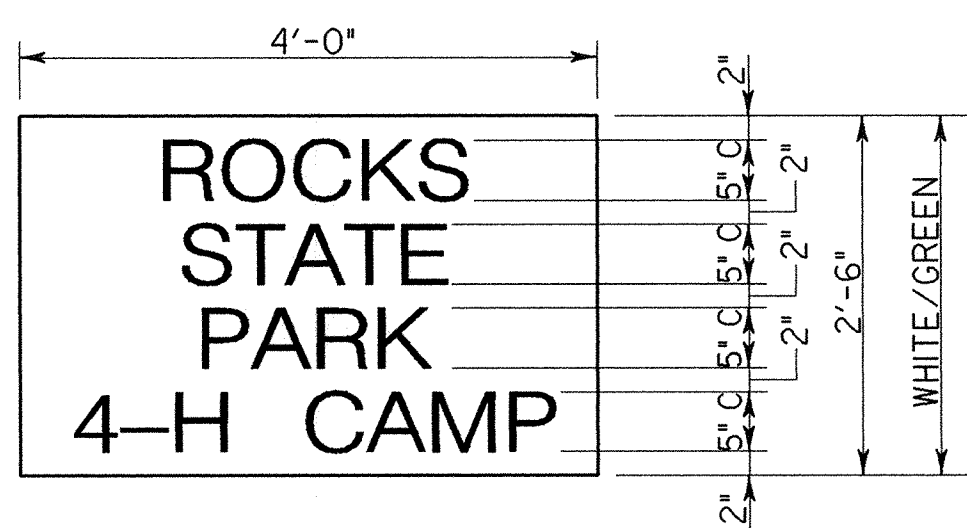
M 1-5
24" X 24"
BLACK/WHITE



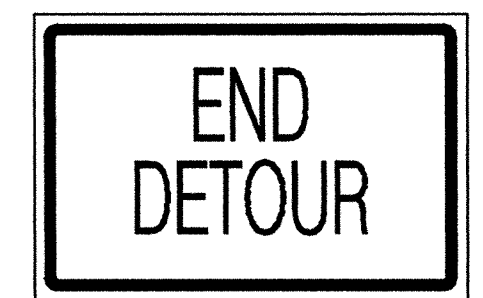
W 20-2
48" X 48"
BLACK/ORANGE



W 20-3
48" X 48"
BLACK/ORANGE



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



M 4-8a
36" X 24"
BLACK/ORANGE



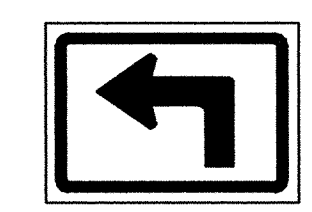
M 3-1
24" X 12"
BLACK/WHITE



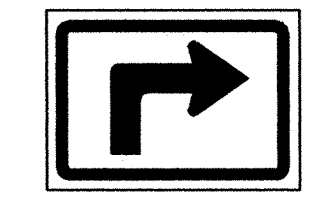
M 3-3
24" X 12"
BLACK/WHITE



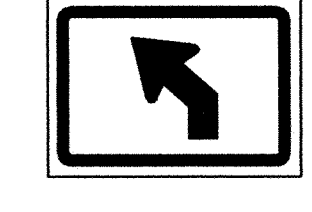
M 4-8
24" X 12"
BLACK/ORANGE



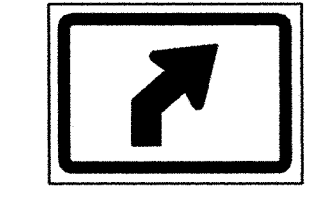
M 5-1 L
21" X 15"
BLACK/WHITE



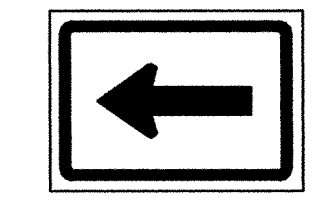
M 5-1 R
21" X 15"
BLACK/WHITE



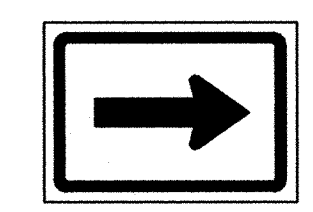
M 5-2 L
21" X 15"
BLACK/WHITE



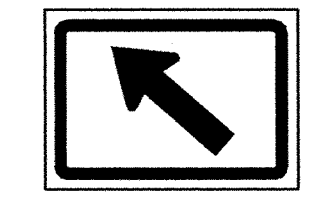
M 5-2 R
21" X 15"
BLACK/WHITE



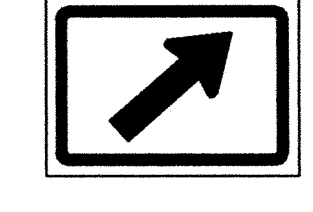
M 6-1 L
21" X 15"
BLACK/WHITE



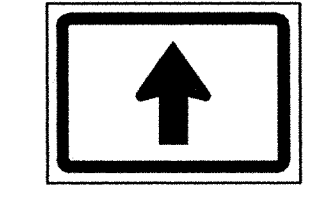
M 6-1 R
21" X 15"
BLACK/WHITE



M 6-2 L
21" X 15"
BLACK/WHITE



M 6-2 R
21" X 15"
BLACK/WHITE



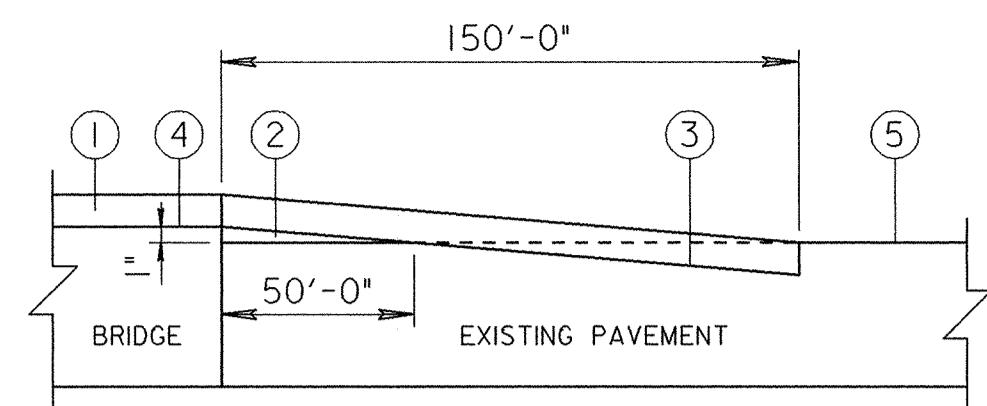
M 6-3
21" X 15"
BLACK/WHITE

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

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK DETOUR PLAN	
SCALE AS SHOWN	DATE JAN. 2001
CONTRACT HA2005180	
DESIGNED BY J.A.M.	
DRAWN BY J.A.M.	
CHECKED BY J.L.R.	
E. S. F. JAN 30 2001	
SHEET NO. 4	OF 27

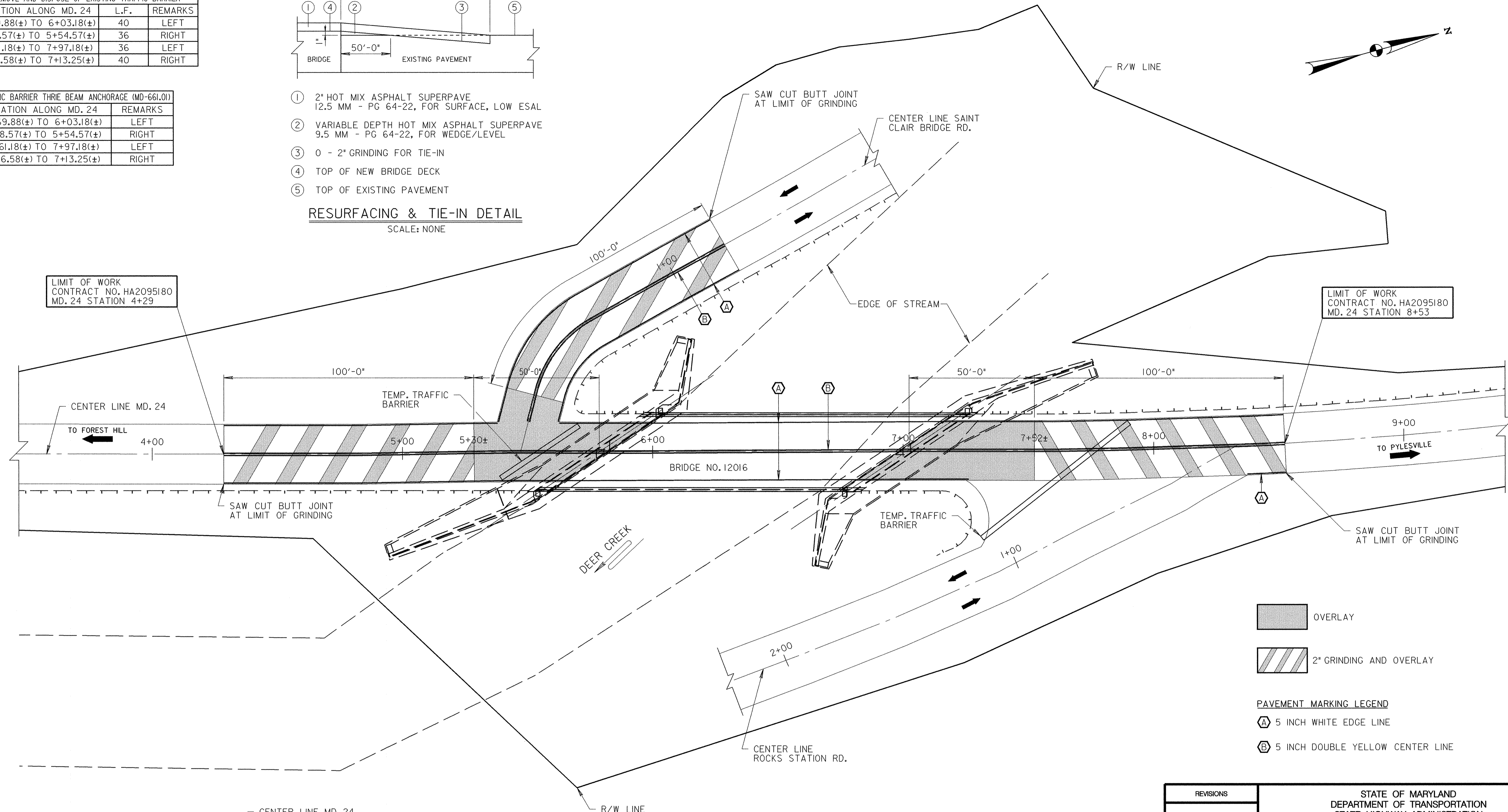
REMOVE AND DISPOSE OF EXISTING TRAFFIC BARRIER		
STATION ALONG MD. 24	L.F.	REMARKS
5+69.88(±) TO 6+03.18(±)	40	LEFT
5+18.57(±) TO 5+54.57(±)	36	RIGHT
7+61.18(±) TO 7+97.18(±)	36	LEFT
7+16.58(±) TO 7+13.25(±)	40	RIGHT

TRAFFIC BARRIER THRIE BEAM ANCHORAGE (MD-66L01)	
STATION ALONG MD. 24	REMARKS
5+69.88(±) TO 6+03.18(±)	LEFT
5+18.57(±) TO 5+54.57(±)	RIGHT
7+61.18(±) TO 7+97.18(±)	LEFT
7+16.58(±) TO 7+13.25(±)	RIGHT



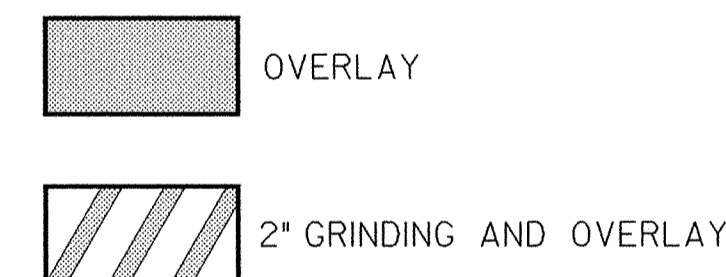
- ① 2" HOT MIX ASPHALT SUPERPAVE 12.5 MM - PG 64-22, FOR SURFACE, LOW ESAL
- ② VARIABLE DEPTH HOT MIX ASPHALT SUPERPAVE 9.5 MM - PG 64-22, FOR WEDGE/LEVEL
- ③ 0 - 2" GRINDING FOR TIE-IN
- ④ TOP OF NEW BRIDGE DECK
- ⑤ TOP OF EXISTING PAVEMENT

RESURFACING & TIE-IN DETAIL
SCALE: NONE

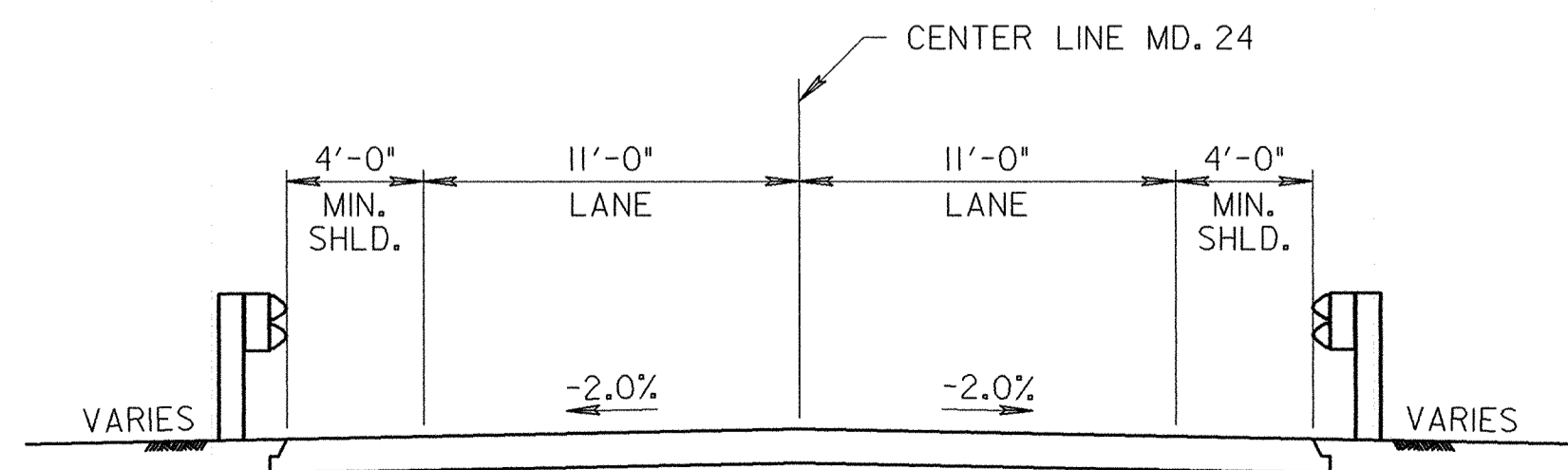


LIMIT OF WORK
CONTRACT NO. HA2095180
MD. 24 STATION 4+29

LIMIT OF WORK
CONTRACT NO. HA2095180
MD. 24 STATION 8+53



- PAVEMENT MARKING LEGEND**
- Ⓐ 5 INCH WHITE EDGE LINE
 - Ⓑ 5 INCH DOUBLE YELLOW CENTER LINE

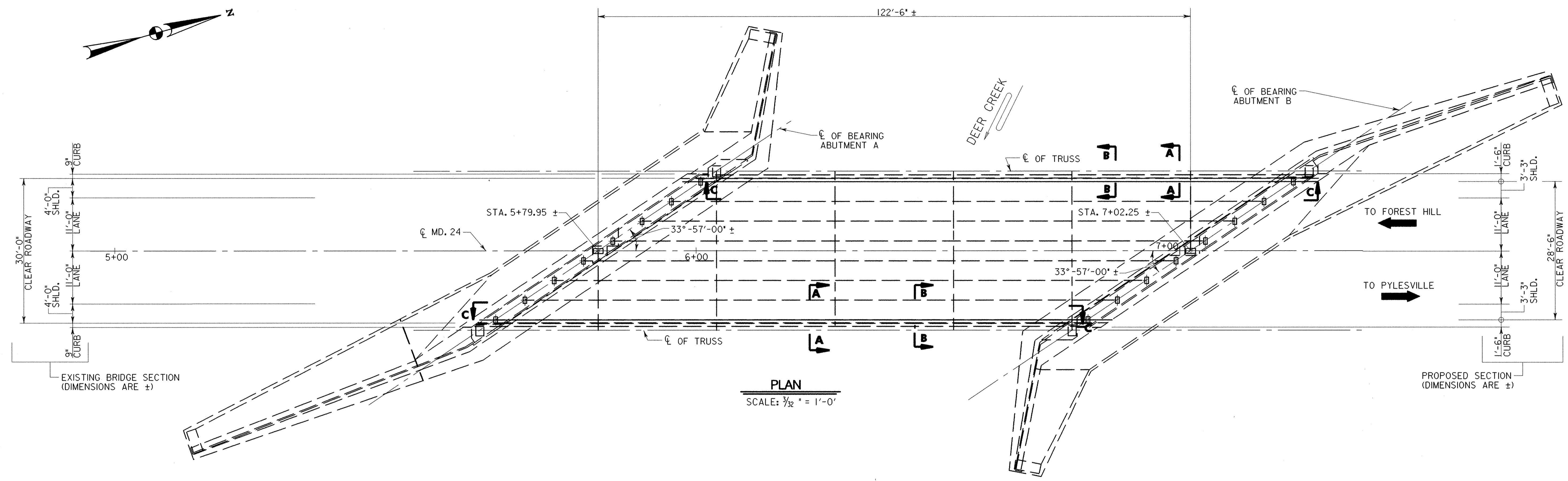
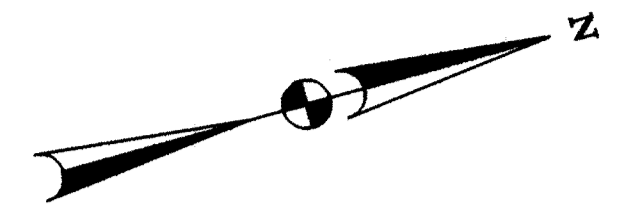


TYPICAL SECTION
SCALE: 3/16" = 1'-0"

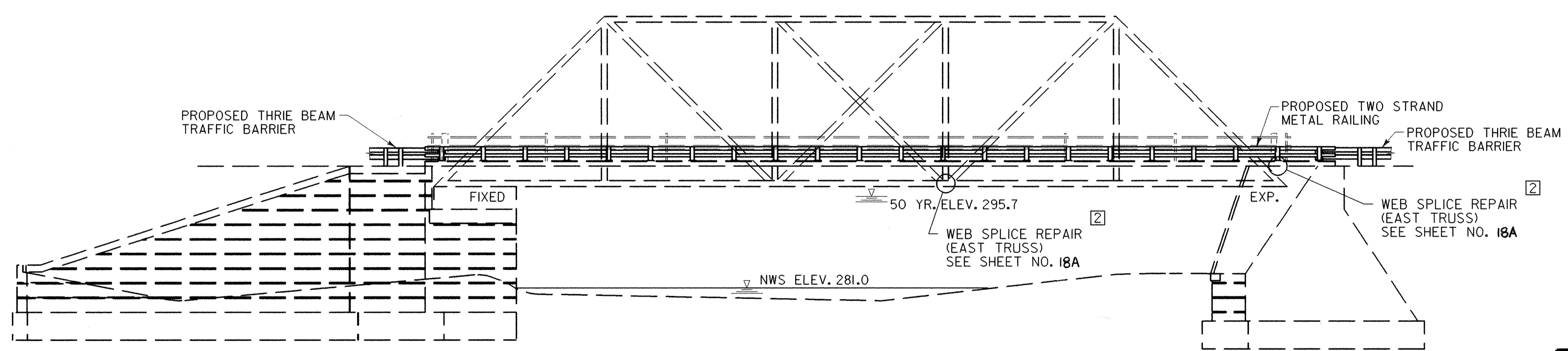
ROADWAY PLAN
SCALE: 1" = 20'-0"

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK ROADWAY DETAILS
	SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180
	DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 30, 2001

SHEET NO. 5 OF 27



PLAN
SCALE: 3/32" = 1'-0"



ELEVATION
SCALE: 3/32" = 1'-0"

DATUM
EL. 265.00

- NOTES:**
1. SEE SHEET 22 FOR SECTIONS A-A & B-B.
 2. SEE SHEET 21 FOR VIEW C-C.
 3. FOR GENERAL NOTES, SEE SHEET 7

REVISIONS [2] WEB SPLICE REPAIR LOCATION 8/27/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT		
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK GENERAL PLAN AND ELEVATION		
SCALE AS SHOWN		DATE JAN. 2001	CONTRACT HA2095180
DESIGNED BY B.A.G.		DRAWN BY J.A.M.	
CHECKED BY J.L.R.		E.S.F. JAN. 30, 2001	
			SHEET NO. 6 OF 27

OTHER CONTRACTS FOR THIS STRUCTURE _____

BRIDGE NO. 1201600

SURVEY BOOK NO.

C:\bridge\bdd\12016gp1A.dgn

INDEXED

NOTE:

THIS IS A SPECIAL PROJECT THAT WILL BE UTILIZING A NEW PRODUCT FOR THE DECK IDENTIFIED AS FIBER REINFORCED POLYMER DECK. THE STATE HAS NEGOTIATED WITH MARTIN MARIETTA TO DESIGN THE DECK PANELS, PREPARE THE PLANS, CREATE THE MEMBERS REQUIRED FOR THIS BRIDGE, DELIVER ALL OF THE ELEMENTS TO THE BRIDGE SITE, AND PROVIDE FIELD PERSONNEL TO ASSIST IN ADVISING DURING FIELD INSTALLATION. A COST FOR ALL THE ABOVE HAS BEEN AGREED TO AND PAYMENT OF SAME WILL BE PASSED THROUGH THE CONTRACTOR DURING THIS WORK. SEE SPECIAL PROVISIONS FOR MORE DETAILS.

GENERAL NOTES

SPECIFICATIONS: -SHA SPECIFICATIONS DATED OCTOBER, 1993
 -REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION.
 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 1996 AND ALL INTERIM SPECIFICATIONS THRU 1999.
 CONCRETE DESIGN: SERVICE LOAD DESIGN METHOD $f_c = 1350$ psi
 REINFORCING STEEL DESIGN: $f_s = 24,000$ PSI

LOADING: HS-20 AND NO PROVISION FOR FUTURE WEARING SURFACE.

CONCRETE: ALL CONCRETE SHALL BE MIX NO. 6 (4500 psi)

FIBERGLASS: REFER TO 921.13. COLOR TO MATCH EXISTING CONCRETE.

EPOXY INJECTION: REFER TO SECTION 466.

FIBER REINFORCED POLYMER DECK: SEE SPECIAL PROVISIONS.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A 615, 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.
ONLY GRADE 60 CAN BE USED ON THIS PROJECT.
 ALL REINFORCING STEEL SHALL BE EPOXY COATED:

KEYS: ALL KEYS ARE NOMINAL SIZE.

STRUCTURAL STEEL: EXISTING STRUCTURAL STEEL IS ASSUMED TO BE A7.

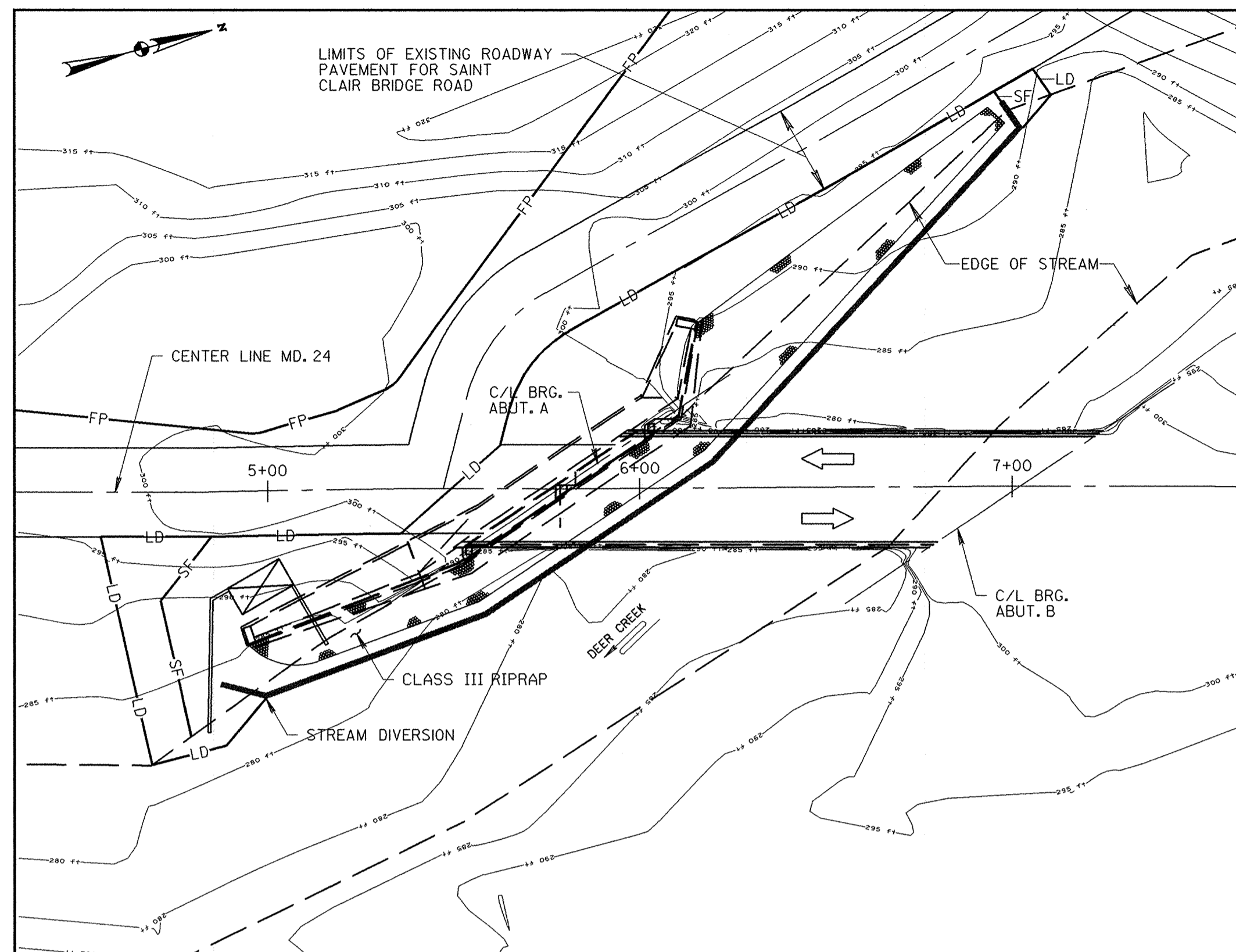
EXISTING STRUCTURE: ALL DIMENSIONS AFFECTED BY THE GEOMETRICS, AND/OR LOCATION OF THE EXISTING STRUCTURE SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR, BEFORE ANY CONSTRUCTION IS DONE, AND BEFORE ANY REINFORCING STEEL, ETC. IS ORDERED OR FABRICATED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY THE ENGINEER WITH ALL FIELD DIMENSIONS REQUIRED TO CHECK DETAIL DRAWINGS. THE (±) MARKS SHOWN WITH DIMENSIONS AND STATIONS DO NOT INDICATE ANY DEGREE OF PRECISION. THESE MARKS (±) INDICATE EXISTING DIMENSIONS AND STATIONS THAT MAY VARY AND DO REQUIRE FIELD VERIFICATION BY THE CONTRACTOR.
 EXISTING STRUCTURE SHOWN IN LONG DASHED LINES.

HYDROLOGICAL AND HYDRAULIC DATA: FOR HYDROLOGICAL AND HYDRAULIC DATA, SEE SHEET NO. 11

MAJOR ITEMS OF PROPOSED WORK

1. REPAIR DESIGNATED ABUTMENT AREAS
2. MODIFY ABUTMENTS TO RECEIVE NEW DECK MATERIAL.
3. REMOVE EXISTING BRIDGE DECK.
4. REPLACE DECK WITH FIBER REINFORCED POLYMER MATERIAL
5. APPLY ASPHALT OVERLAY.
6. CLEAN AND PAINT BRIDGE.
7. SUPPLY NEW RAILING FOR BRIDGE.
8. PERFORM DESIGNATED APPROACH ROADWAY WORK.
9. PLACE RIPRAP AS INDICATED.
10. PERFORM OTHER WORK AS SPECIFIED ON PLANS AND IN SPECIAL PROVISIONS.

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK GENERAL NOTES	
	SCALE AS SHOWN	DATE JAN. 2001 CONTRACT HA2095180
	DESIGNED BY B.A.G. DRAWN BY J.A.M. CHECKED BY J.L.R.	E. S. F. JAN 30 2001
	SHEET NO. 7 OF 27	
OTHER CONTRACTS FOR THIS STRUCTURE _____		BRIDGE NO. 1201600
		SURVEY BOOK NO.
		i:\misc\bridgebackup\JUSTIN\JEFF\12016\12016notes.dgn
		INDEXED



SEQUENCE OF CONSTRUCTION FOR PLACING RIPRAP AT ABUTMENT A

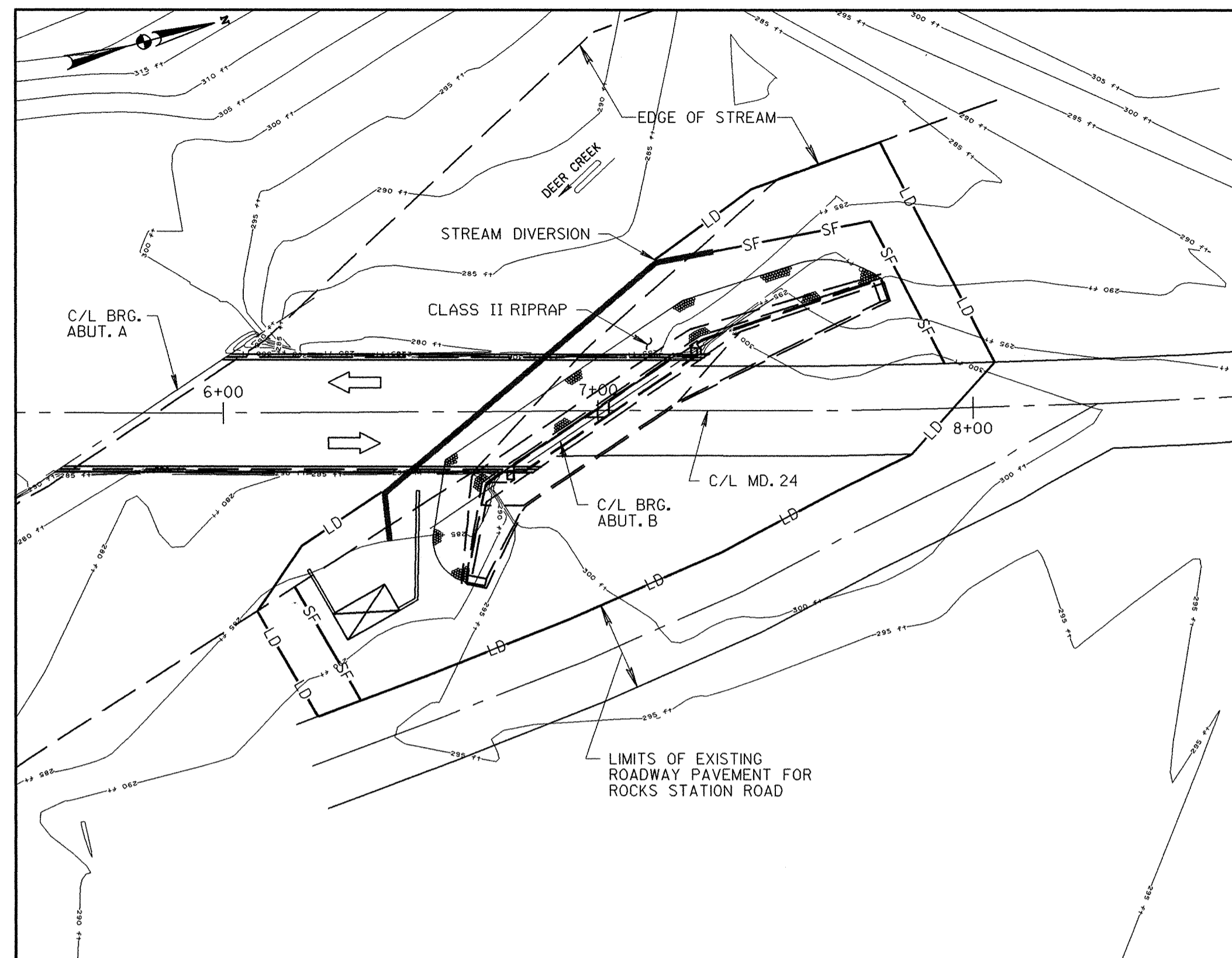
1. INSTALL SILT FENCE (SF) AS SHOWN ABOVE.
2. INSTALL STREAM DIVERSION AS SHOWN FROM UPSTREAM TO DOWNSTREAM AT ABUTMENT A USING PORTABLE SEDIMENT TANK (PST) FOR DEWATERING.
3. INSTALL RIPRAP AS SHOWN AT ABUTMENT A.
4. REMOVE STREAM DIVERSION FROM DOWNSTREAM TO UPSTREAM.
5. ALL DISTURBED AREAS SHALL BE GRADED TO THEIR FINAL CONTOURS AND SHALL BE STABILIZED BY SEEDING AND MULCHING.
6. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND CONSTRUCTION IS COMPLETE, THE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REMOVED UPON APPROVAL OF THE MDE INSPECTOR.

THERE SHALL BE NO IN-STREAM CONSTRUCTION PERMITTED DURING THE PERIOD OF MARCH 1 TO MAY 31 INCLUSIVE.

THE COST FOR STREAM DIVERSION SHALL BE INCIDENTAL TO THE "MAINTENANCE OF STREAM FLOW" ITEM.

ALL EQUIPMENT AND WORK MUST TAKE PLACE WITHIN THE LIMITS OF DISTURBANCE (SHOWN ABOVE) AND WITHIN SHA RIGHT-OF-WAY. SEE HIGHWAY PLAN SHEET.

ALL INGRESS AND EGRESS POINTS, OFF THE ROADWAY BY CONSTRUCTION EQUIPMENT, SHALL BE ON A "STABILIZED CONSTRUCTION ENTRANCE". THE NEED AND LOCATION FOR STABILIZED CONSTRUCTION ENTRANCES SHALL BE DETERMINED AT THE PRECONSTRUCTION MEETING WITH THE ENGINEER AND THE MDE FIELD INSPECTOR. STABILIZED CONSTRUCTION ENTRANCES, IF NEEDED, SHALL BE INCIDENTAL TO OTHER PERTINENT ITEMS.



SEQUENCE OF CONSTRUCTION FOR PLACING RIPRAP AT ABUTMENT B

1. INSTALL SILT FENCE (SF) AS SHOWN ABOVE.
2. INSTALL STREAM DIVERSION AS SHOWN FROM UPSTREAM TO DOWNSTREAM AT ABUTMENT B USING PORTABLE SEDIMENT TANK (PST) FOR DEWATERING.
3. INSTALL RIPRAP AS SHOWN AT ABUTMENT B.
4. REMOVE STREAM DIVERSION FROM DOWNSTREAM TO UPSTREAM.
5. ALL DISTURBED AREAS SHALL BE GRADED TO THEIR FINAL CONTOURS AND SHALL BE STABILIZED BY SEEDING AND MULCHING.
6. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND CONSTRUCTION IS COMPLETE, THE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REMOVED UPON APPROVAL OF THE MDE INSPECTOR.

NOTES:
NOTIFY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AT 410-631-3510 AT LEAST SEVEN DAYS PRIOR TO BEGINNING CONSTRUCTION. NO WORK SHALL COMMENCE ON STREAM DIVERSION UNTIL APPROVAL IS RECEIVED FROM MDE.

EXISTING APPROACH ROADWAYS AND CLEARINGS SHALL BE FULLY UTILIZED FOR EQUIPMENT AND MATERIALS STORAGE BEFORE ANY OTHER AREAS ARE CLEARED. ALL WORK, STORAGE OR ANY OTHER STAGING AREAS SHALL BE STABILIZED AS NECESSARY DURING CONSTRUCTION AND UNPAVED TRAFFIC AREAS SHALL BE MATTED OR GRAVELED. ALL STAGING/STORAGE AREAS OUTSIDE THE DESIGNATED LIMIT OF DISTURBANCE MAY REQUIRE ADDITIONAL SEDIMENT CONTROLS AND MUST BE APPROVED BY THE INSPECTOR PRIOR TO USE.

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.

THE STREAM DIVERSION DETAILS ARE SUGGESTED METHODS OF CONSTRUCTION ONLY. THE CONTRACTOR HAS THE OPTION OF SUBMITTING A WRITTEN PLAN OF AN ALTERNATE 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, AT NO ADDITIONAL COST. THIS REVIEW MAY TAKE UP TO 30 DAYS. IF THE ALTERNATE IS NOT APPROVED, THE CONTRACTOR AGREES TO UTILIZE THE AS SHOWN DETAILS AT NO ADDITIONAL COST.

EROSION AND SEDIMENT CONTROL DETAILS ARE ESSENTIAL FOR THIS PROJECT.

STREAM DIVERSIONS SHOWN ON THESE PLANS ARE FOR SCHEMATIC PURPOSES ONLY. ACTUAL DIVERSION LENGTHS MAY BE ADJUSTED AS LONG AS ALL CONSTRUCTION IS DONE IN THE DRY.

STREAM DIVERSIONS SHALL BE IN PLACE FOR THE SHORTEST TIME POSSIBLE.

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE BEST MANAGEMENT PRACTICES. SEE SPECIAL PROVISIONS.

FOR DETAILS OF RIPRAP PLACEMENT, SEE SHEET NO. 10

FOR ROADWAY DETAILS, SEE SHEET NO. 5

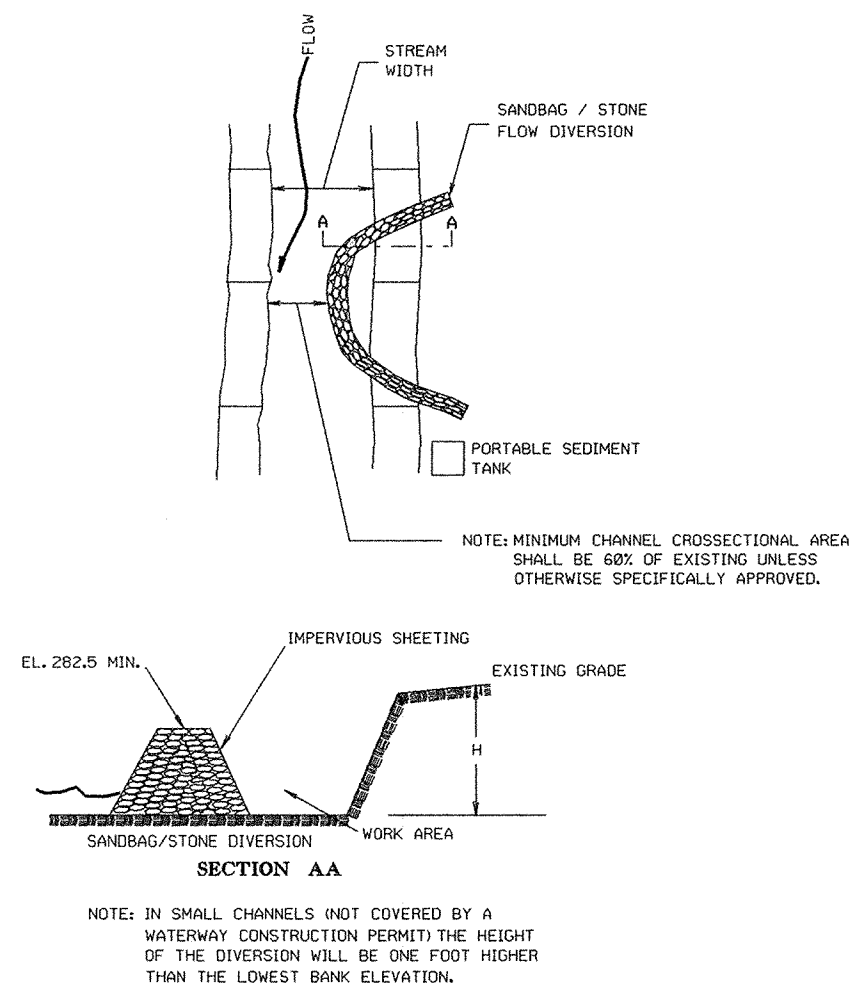
LEGEND:

- LD— INDICATES MAXIMUM LIMITS OF DISTURBANCE
- SF— INDICATES LOCATION OF SILT FENCE
- FP— INDICATES FLOODPLAIN BOUNDARY
- ☒ PORTABLE SEDIMENT TANK

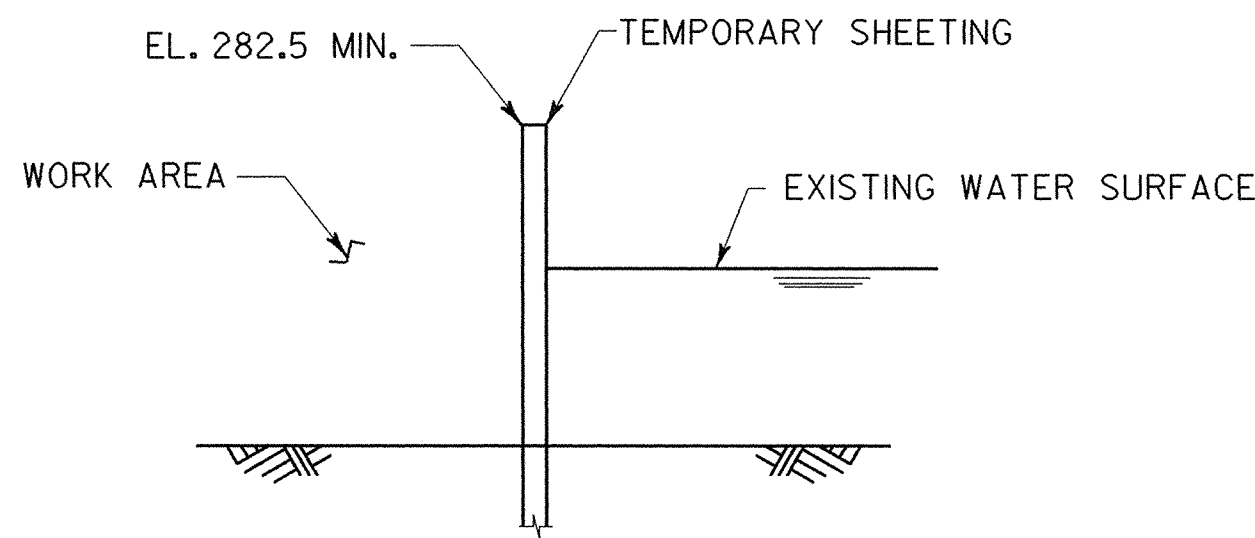
REVISIONS ▲ SHEET REPLACED 2/21/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK STREAM DIVERSION PLAN
SCALE 1" = 30'-0" DATE JAN. 2001 CONTRACT HA2095180	
DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.	
E.S.F. JAN. 30, 2001	
SHEET NO. 8 OF 27	

SANDBAG / STONE DIVERSION

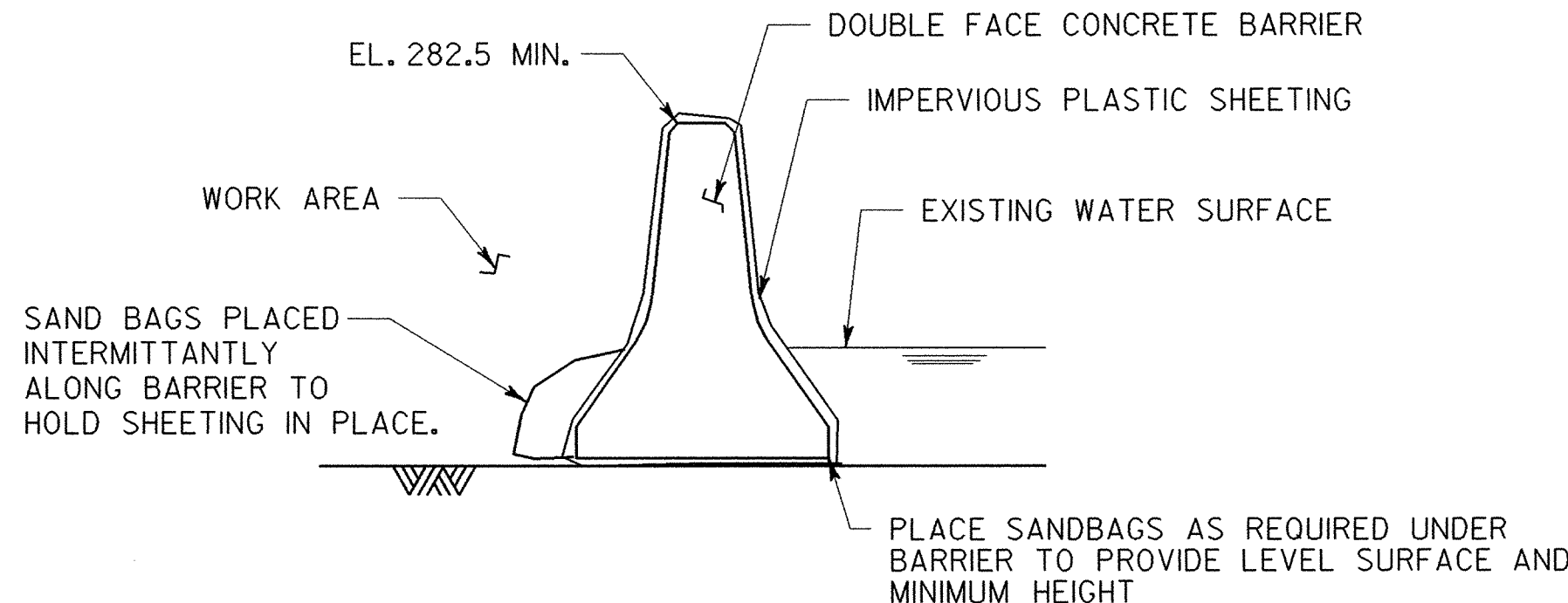
- I. DESCRIPTION**
 THE WORK SHALL CONSIST OF INSTALLING FLOW DIVERSIONS FOR THE PURPOSE OF EROSION CONTROL WHEN CONSTRUCTION ACTIVITIES TAKE PLACE WITHIN THE STREAM CHANNEL SUCH AS BANK STABILIZATION OR BRIDGE ABUTMENT CONSTRUCTION.
- II. MATERIAL SPECIFICATIONS**
1. SANDBAGS: SANDBAGS SHALL CONSIST OF MATERIALS WHICH ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL (I.E., SAND, FINE GRAVEL, ETC.).
 2. STONE: STONE SHALL BE WASHED AND HAVE A MINIMUM DIAMETER OF 6 INCHES.
 3. SHEETING: SHEETING SHALL CONSIST OF POLYETHYLENE OR OTHER MATERIAL WHICH IS IMPERVIOUS AND RESISTANT TO PUNCTURE AND TEARING.
- III. CONSTRUCTION REQUIREMENTS**
1. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF WORK.
 2. THE DIVERSION STRUCTURE SHALL BE INSTALLED FROM UPSTREAM TO DOWNSTREAM.
 3. THE HEIGHT OF THE DIVERSION STRUCTURE SHALL BE ONE HALF THE DISTANCE FROM STREAM BED TO STREAM BANK PLUS ONE FOOT, AS INDICATED ON THE CROSS-SECTION VIEW.
 4. ALL EXCAVATION MATERIALS FROM STRUCTURE DEMOLITION ACTIVITIES SHALL BE DISPOSED OF IN AN APPROVED DISPOSAL AREA OUTSIDE THE 100-YEAR FLOODPLAIN UNLESS OTHERWISE APPROVED ON THE PLANS.
 5. ALL DEWATERING OF THE CONSTRUCTION AREA SHALL BE PUMPED TO A PORTABLE SEDIMENT TANK PRIOR TO RE-ENTERING THE STREAM.
 6. SHEETING SHALL BE OVERLAPPED SUCH THAT THE UPSTREAM PORTION COVERS THE DOWNSTREAM PORTION WITH AT LEAST AN 18-INCH OVERLAP.
 7. SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED, IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN AND THE INSPECTING AUTHORITY APPROVES THEIR REMOVAL.



ALTERNATE DIVERSION DETAIL USING SAND BAGS
 SCALE: NONE



ALTERNATE DIVERSION DETAIL USING TEMPORARY SHEETING
 SCALE: 1/4" = 1'-0"



ALTERNATE DIVERSION DETAIL USING CONCRETE BARRIER
 SCALE: 3/4" = 1'-0"

DIVERSION DEVICE ALTERNATES

DEFINITION
 A SEDIMENT TANK IS A COMPARTMENTED TANK CONTAINER THROUGH WHICH SEDIMENT LADEN WATER IS PUMPED TO TRAP AND RETAIN THE SEDIMENT.

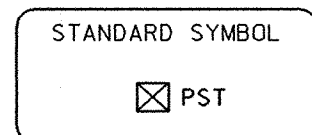
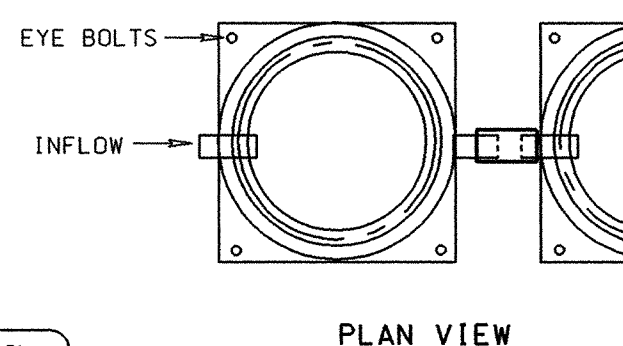
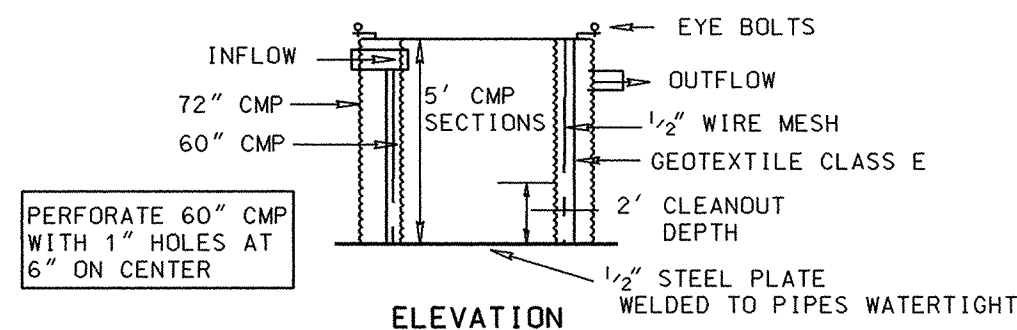
PURPOSE
 TO TRAP AND RETAIN SEDIMENT PRIOR TO PUMPING THE WATER TO DRAINAGEWAYS, ADJOINING PROPERTIES, AND RIGHTS-OF-WAY BELOW THE SEDIMENT TANK SITE.

CONDITIONS WHERE PRACTICE APPLIES
 A SEDIMENT TANK SHALL BE USED ON SITES WHERE EXCAVATIONS ARE DEEP, AND SPACE IS LIMITED, SUCH AS URBAN CONSTRUCTION, WHERE DIRECT DISCHARGE OF SEDIMENT LADEN WATER TO STREAM AND STORM DRAINAGE SYSTEMS SHALL BE AVOIDED.

DESIGN CRITERIA
 THE SEDIMENT TANK SHALL BE LOCATED FOR EASE OF CLEAN-OUT AND DISPOSAL OF THE TRAPPED SEDIMENT, AND TO MINIMIZE THE INTERFERENCE WITH CONSTRUCTION ACTIVITIES AND PEDESTRIAN TRAFFIC.

PAYMENT
 THIS ITEM WILL BE INCIDENTAL TO THE MAINTENANCE OF STREAM FLOW.

DETAIL 21 - PORTABLE SEDIMENT TANK



Construction Specifications

1. The following formula should be used in determining the storage volume of the sediment tank: 1 cubic foot of storage for each gallon per minute of pump discharge capacity.
2. An example of a typical sediment tank is shown above. Other container designs can be used if the storage volume is adequate and approval is obtained from the local approving agency.
3. Tanks may be connected in series.

NOTE:

THE CONTRACTOR SHALL HAVE THE OPTION OF USING ANY OF THE DIVERSION DEVICE METHODS SHOWN. ONCE THE SELECTED OPTION IS APPROVED BY MDE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DEWATER THE WORK AREA. NO ADDITIONAL COMPENSATION WILL BE ALLOWED IF THE METHOD OF DEWATERING OR THE DIVERSION OPTION IS CHANGED BECAUSE OF DEWATERING DIFFICULTY.

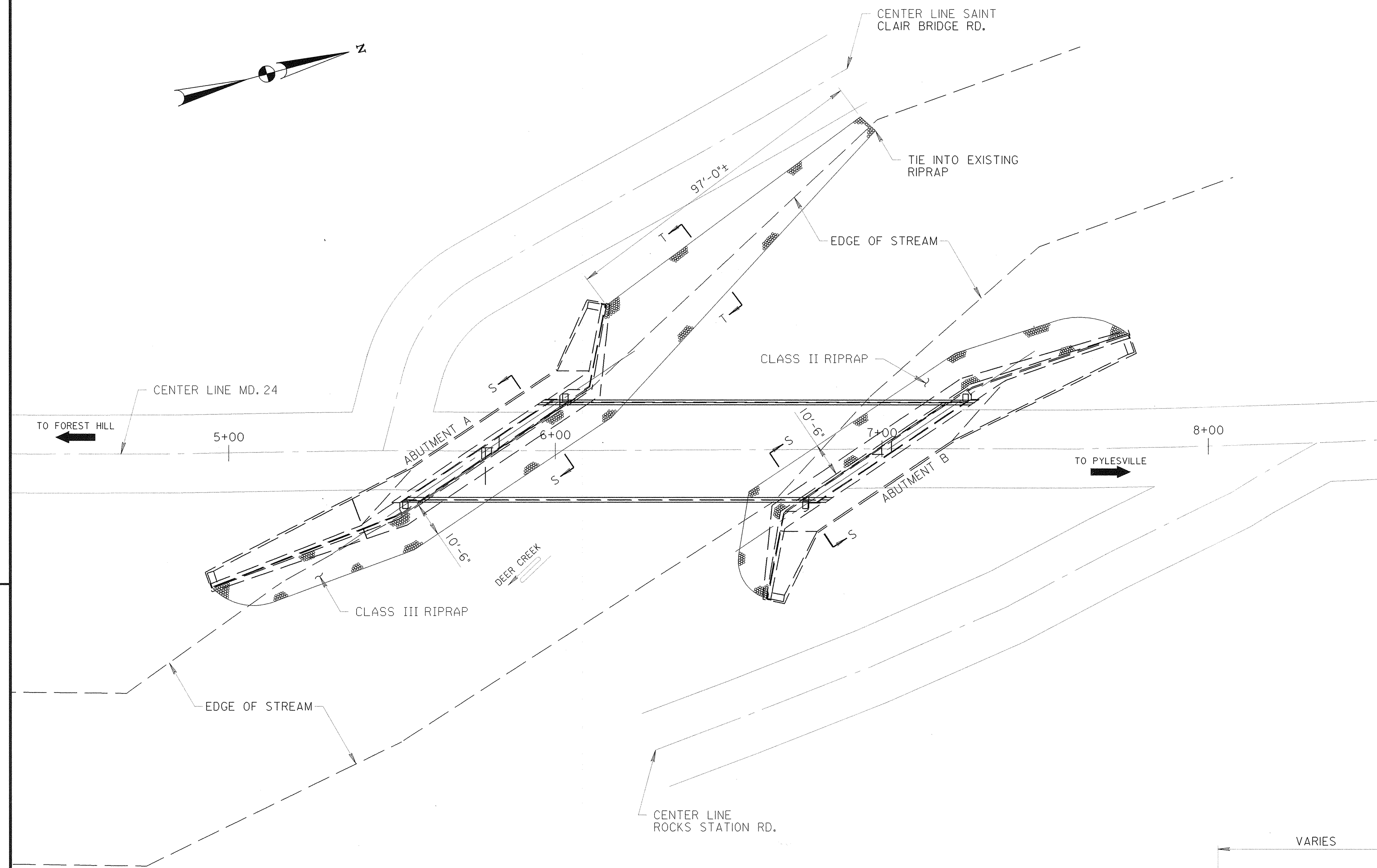
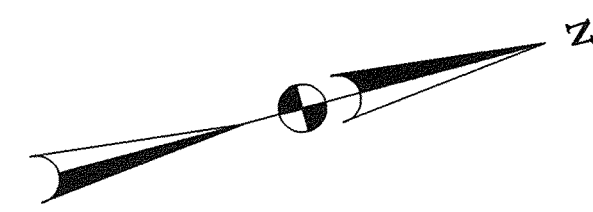
THE DIVERSION SHALL BE PLACED SO THAT IT IS LOCATED WITHIN THE EXISTING SHA RIGHT-OF-WAY AND ALLOWS CONSTRUCTION, WITHIN THE DIVERSION AREA, TO BE COMPLETED IN THE DRY.

THE DIVERSION IS NOT INTENDED TO BLOCK HIGHWATER EVENTS FROM FLOODING THE DEWATERED AREAS.

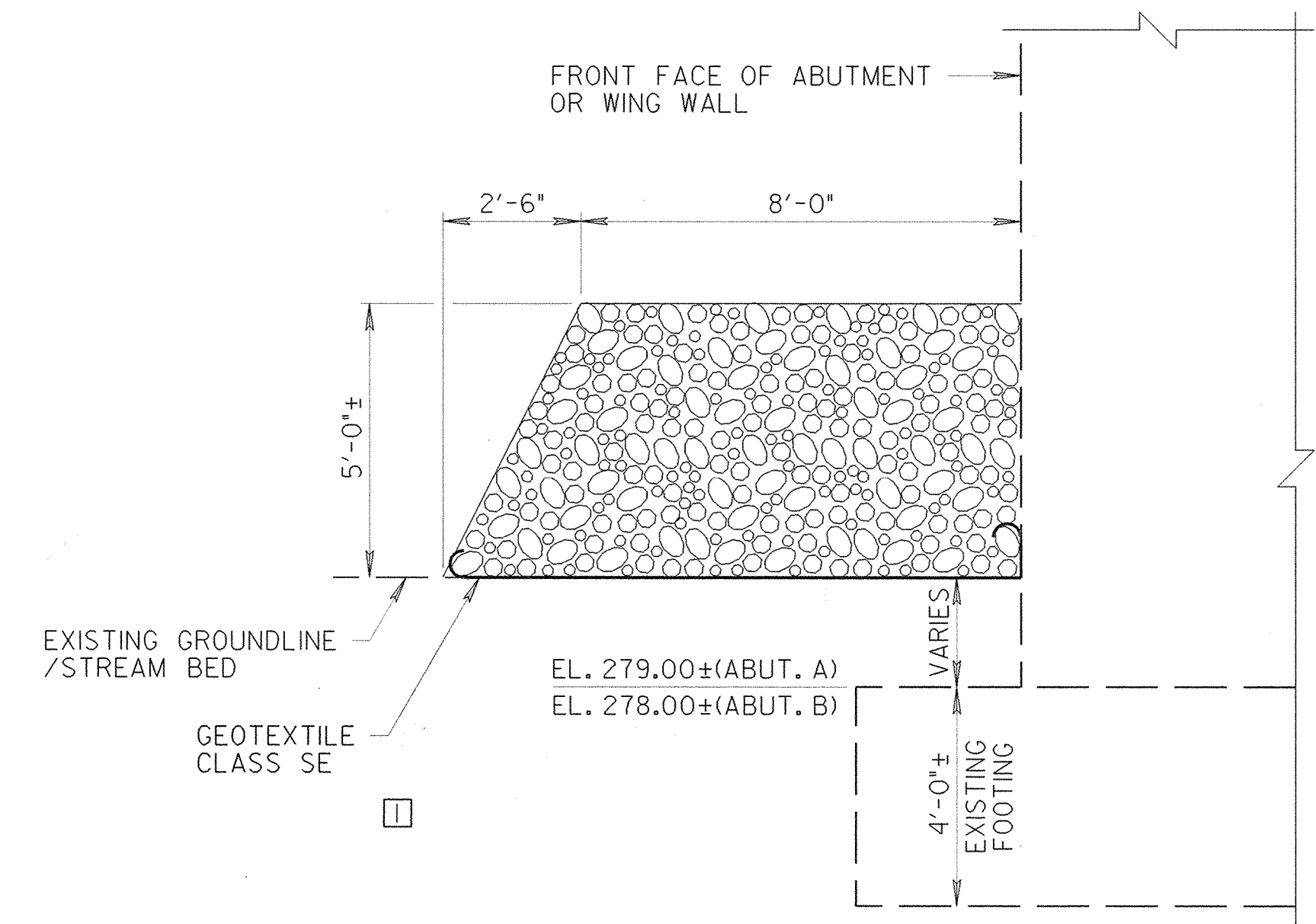
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE D - 14 - 2 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

PORTABLE SEDIMENT TANK

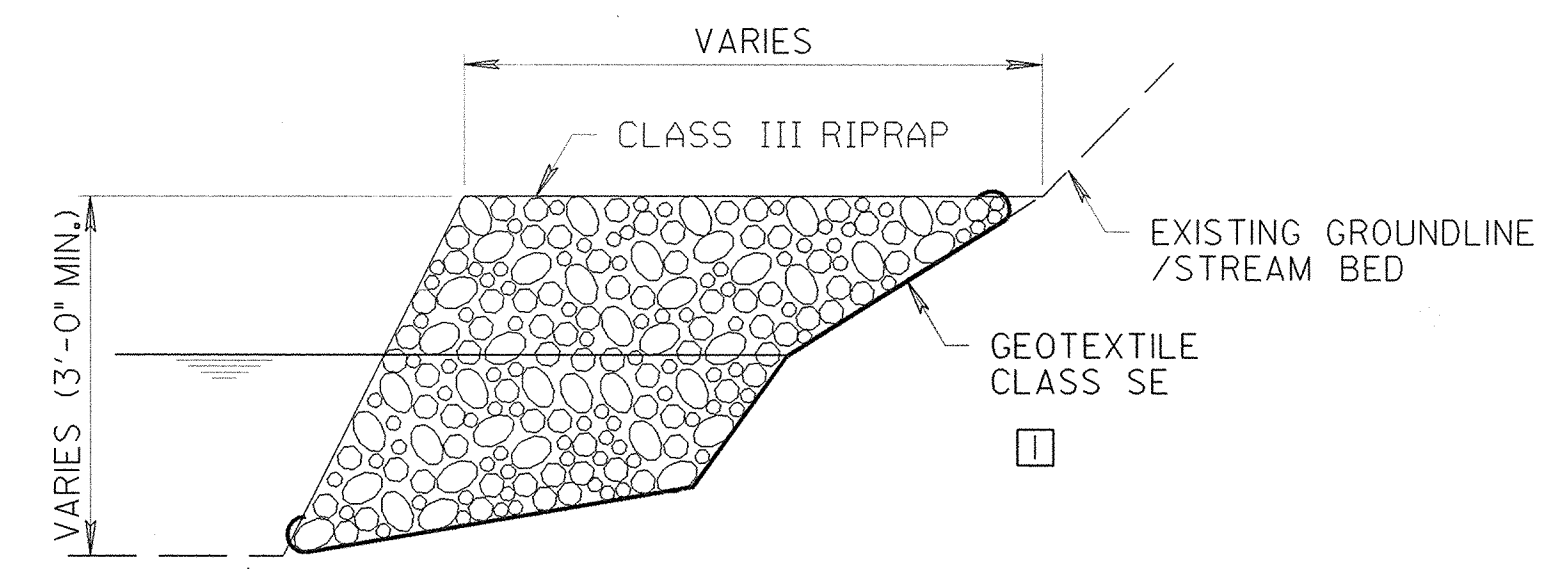
REVISIONS SHEET REPLACED 2/21/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK STREAM DIVERSION DETAILS	
SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180		
DESIGNED BY B.A.C. DRAWN BY D.A.C. CHECKED BY J.L.R.		
E.S.F. JAN. 30, 2001		
		SHEET NO. 9 OF 27



RIPRAP PLACEMENT PLAN
SCALE: 1" = 20'-0"



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



SECTION T-T
SCALE: 3/8" = 1'-0"

NOTE:
TAPER SECTION T-T FROM
SECTION S-S TO EXISTING
RIPRAP SLOPE PROTECTION

REVISIONS
1 ADD GEOTEXTILE CLASS SE 6/1/01 D.A.C.

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

REHABILITATION INCLUDING DECK REPLACEMENT
FOR STEEL TRUSS BRIDGE NO. 12016
ON MARYLAND 24 OVER DEER CREEK
RIPRAP PLACEMENT PLAN

SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180

DESIGNED BY B.A.G.
DRAWN BY D.A.C.
CHECKED BY J.L.R.

E.S.F.
JAN. 30, 2001

SHEET NO. 10 OF 27

HYDROLOGIC DATA

I. SOURCE: GISHYDRO

PREPARED BY: [X] SHA [] CONSULTANT: DATE: 10/16/00

FILE LOCATION: Structure H&H Archive ITEM 71 RATING 7

II. DRAINAGE AREA: ACRES 44741 SQUARE MILES 71.97

III. METHOD(S) OF ANALYSIS:

- USGS GAGE DATA ANALYSIS
GAGING STATION NO.
LOCATION
DRAINAGE AREA
YEARS OF CONTINUOUS RECORD
[X] USGS REGRESSION EQUATIONS
REFERENCE
SCS TR - 20 METHOD - VERSION USED (DATE)
RCN (EXISTING-HOMOGENEOUS WATERSHED)
RCN (ULTIMATE HOMOGENEOUS WATERSHED)
Tc (HOMOGENEOUS WATERSHED)
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. Rows for 2, 10, 25, 50, 100, 500 year returns.

V. HISTORIC FLOODS

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

VI. STREAM MORPHOLOGY (WAS NOT DONE)

STREAM TYPE VALLEY TYPE

STREAM BED MATERIAL: DESCRIPTION D16 D50 D84

BANK FULL CHARACTERISTICS: Q AREA WIDTH DEPTH SLOPE MANNINGS 'n' VALUE SINUOSITY

VII. TIDAL FLOWS

100-YEAR STORM TIDE ELEVATION (FT) NA MAXIMUM DISCHARGE (CFS) 500-YEAR STORM TIDE ELEVATION (FT) MAXIMUM DISCAHRGE (CFS) SOURCE OF INFORMATION

DESIGN DISCHARGE (CFS) RETURN PERIOD YEARS TIDAL PERIOD (HRS) HOW DETERMINED? (EXPLAIN) WATER SURFACE-ELEVATION FOR DESIGN CONDITION (FT) (IF TIDAL FLOW GOVERNS HYDRAULIC DESIGN)

VII. COMMENTS:

HYDRAULIC DATA

I. SOURCE: HEC-RAS

PREPARED BY: [X] SHA [] CONSULTANT: DATE: 10/16/00

FILE LOCATION: Structure H&H Archive ITEM 71 RATING 7

METHOD(S) OF ANALYSIS: HEC-RAS

II. HYDRAULIC DATA

Large table with columns: FLOW CONDITIONS, CHANNEL CROSS-SECTION, STRUCTURE WATERWAY AREA, ENERGY SLOPE, WATER SURFACE ELEVATION, CHANNEL (O, W, V, D), LEFT OVERBANK LOOKING DOWNSTREAM (O, W, V, D), RIGHT OVERBANK LOOKING DOWNSTREAM (O, W, V, D), DISCHARGE OVER ROAD. Rows for Q DESIGN, Q 100, and Q OVERTOPPING.

III. BRIDGE SCOUR DATA SEE SECTION VII (COMMENTS)

A. SCOUR EVALUATION STUDY TITLE: MD 24 CROSSING OF DEER CREEK (DECK REPLACEMENT)

PREPARED BY: [X] SHA [] CONSULTANT: DATE: 10/25/00

FILE LOCATION: SCOUR NOTEBOOKS OF H&H ARCHIVE ITEM 113 RATING 7

B. SCOUR ESTIMATES:

Table for Scour Estimates with columns: DESIGN CONDITIONS, FLOOD DISCHARGE, LONG TERM DEGRADATION / AGGRADATION, CONTRACTION SCOUR DEPTH, CHANNEL BED LOAD, TYPE OF SCOUR. Includes a section for TOTAL SCOUR and a table for SCOUR COUNTER MEASURES.

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 FEDERAL BRIDGE INVENTORY ITEMS
3. RECORD FLOOD CONDITIONS USED IN ANALYSIS: DISCHARGE (Q), TAILWATER CONDITION AND WHY SELECTED, ETC.
4. FOR DEPRESSED CULVERTS, RECORD THE ASSUMPTIONS FOR CULVERTS; USE THESE THREE COLUMNS TO RECORD: DEPTH OF FLOW AT CULVERT INLET AND OUTLET, WATER-SURFACE ELEVATION AT CULVERT INLET AND OUTLET, 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 NEAR POINT OF MAXIMUM BACKWATER (TYPICALLY ONE BRIDGE LENGTH UPSTREAM)
9. 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
10. DESCRIBE TYPE OF INLET/OUTLET AND EROSION PROTECTION
11. TOTAL UPSTREAM FACE FLOW AREA THROUGH STRUCTURE FOR 100/500 YEAR FLOODS
12. 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
13. DESCRIBE TYPE OF INLET/OUTLET AND EROSION PROTECTION
14. COMPOSITE 'N' VALUE OF STRUCTURE

IV. ROADWAY AND STRUCTURE DATA

Table with columns: ITEM, EXISTING STRUCTURE, PROPOSED STRUCTURE. Rows for NAME OF WATERWAY, DATE BUILT, OVERTOPPING ELEVATION, OVERTOPPING LOCATION, 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

VI. FLOOD PLAIN MANAGEMENT DATA

DATE OF FLOOD INSURANCE STUDY COMMUNITY PANEL NO.

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 [] 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 08.05.03)? Y/N

VII. COMMENTS: THE BED ROCK IS ONLY 4 FEET UNDER THE FOOTING AND FOR THIS REASON THE SCOUR ANALYSIS WAS NOT PERFORMED. THE HEC-RAS SHOWS AN AVERAGE VELOCITY OF 8.5 SQ. FT. PROPOSED SCOUR PROTECTION IS A RIP RAP BLANKET 5 FT DEEP AND 8 FT WIDE WHICH SLOPES DOWN AT 2:1 SLOPE. THIS SCOUR COUNTER MEASURE PROMOTES THE SCOUR RATING FROM 3A TO 7.

Project title block: STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK HYDROLOGIC AND HYDRAULIC DATA. Includes scale, date, contract, and designer information.

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

1. MDE NOTIFICATION

THE CONTRACTOR AND/OR SHA MUST NOTIFY MDE IN WRITING AND/OR BY TELEPHONE (410) 631-3510 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, MDE EROSION AND SEDIMENT CONTROL GUIDELINES FOR STATE AND FEDERAL PROJECTS DATED JANUARY 1990 AS WELL AS THE STATE HIGHWAY ADMINISTRATIONS (SHA) SPECIFICATIONS TITLED "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS" DATED OCTOBER 1993 AND ALL REVISIONS THEREOF AND ADDITIONS THERETO INCLUDED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL HAVE A COPY OF THE 1994 "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" ON THE SITE.

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 TO ALL SLOPES, 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: 0.7 ACRES
 AREA DISTURBED: 0.5 ACRES
 AREA TO BE ROOFED OR PAVED: 0 ACRES
 TOTAL CUT: 0 CU. YDS.
 TOTAL FILL: 0 CU. YDS.
 OFFSITE WASTE/BORROW: _____
 AREA LOCATION (IF KNOWN) UNKNOWN ACRES

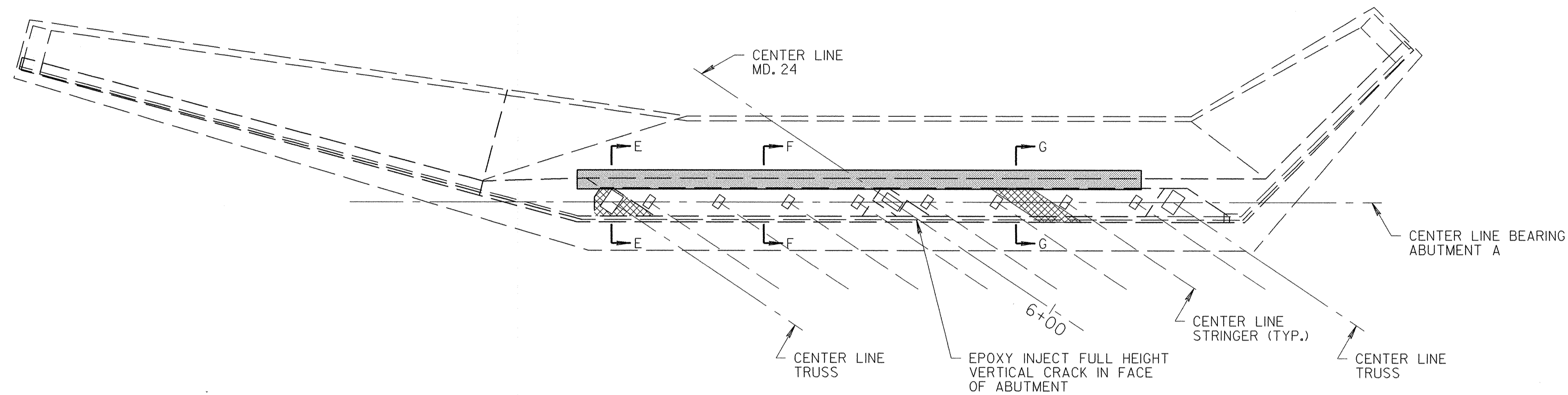
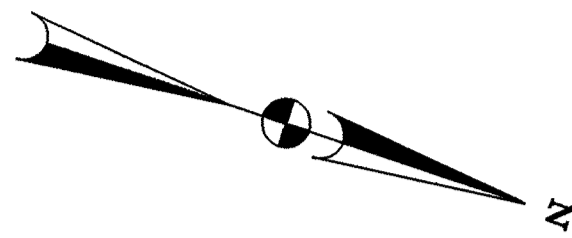
12. INCREMENTAL STABILIZATION

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

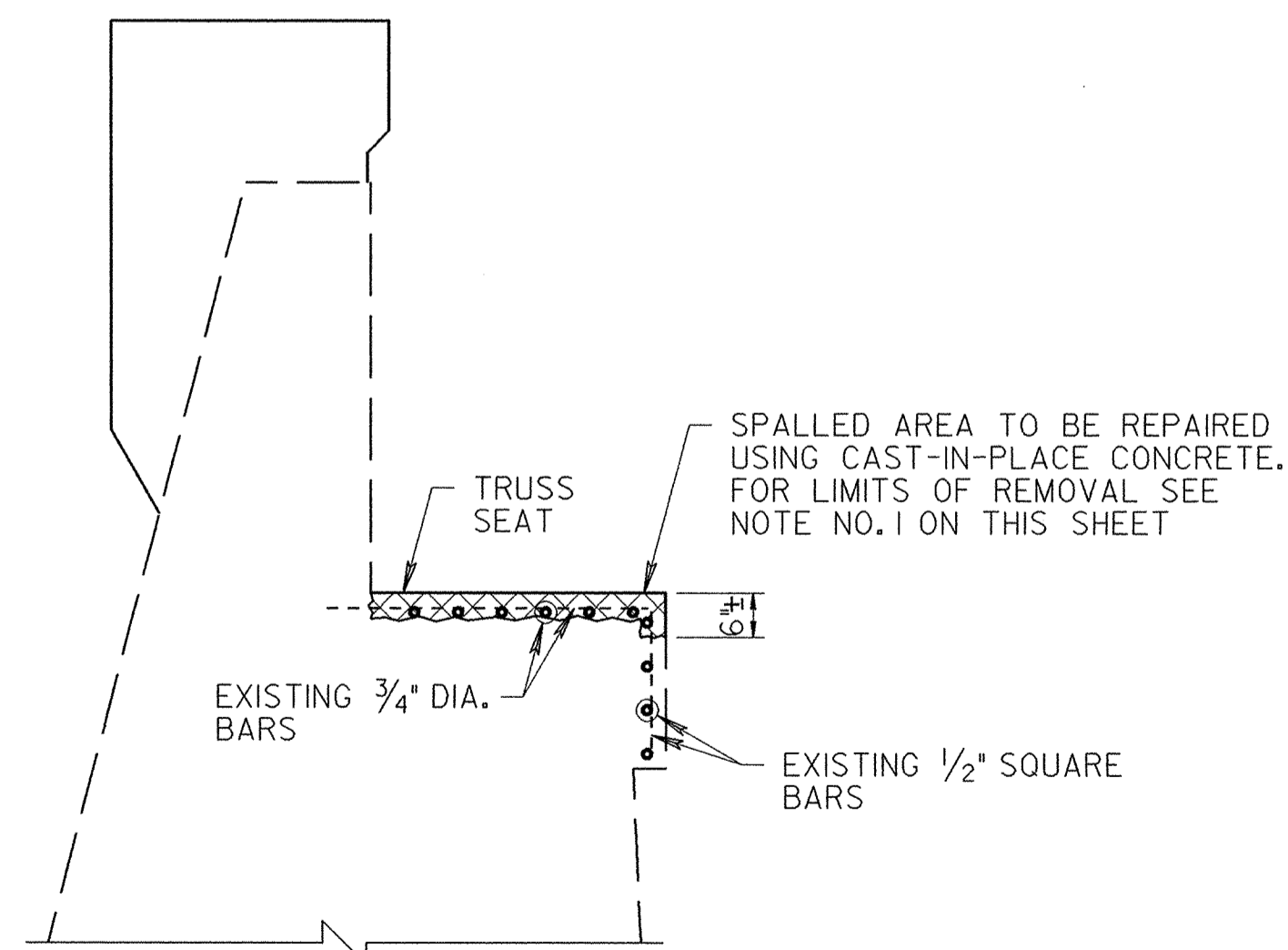
STANDARD SYMBOLS

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	
REMOVABLE PUMPING STATION	
PORTABLE SEDIMENT TANK	
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	
EXISTING CONTOURS	
PROPOSED CONTOURS	

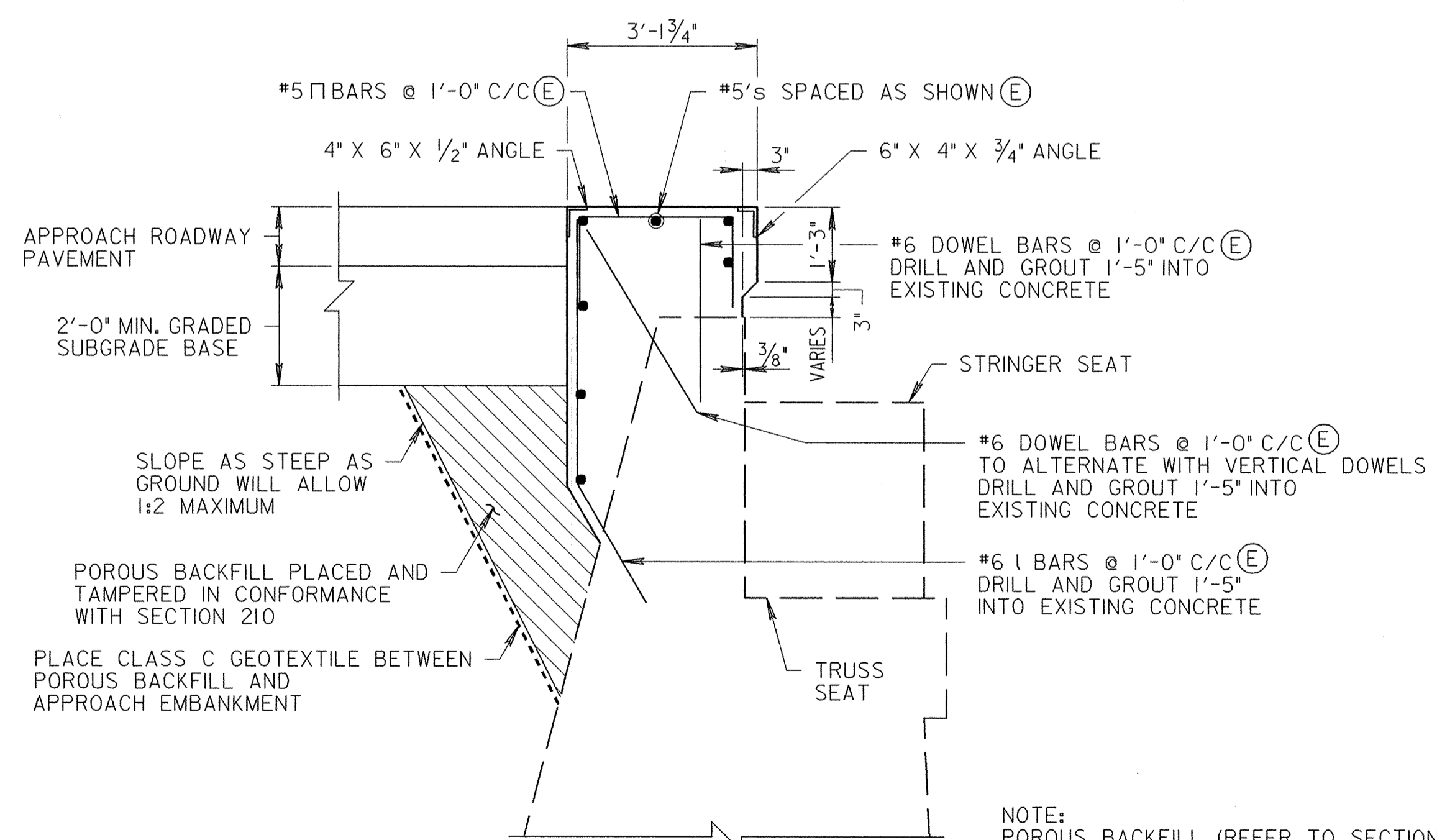
REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK EROSION AND SEDIMENT CONTROL DETAILS
	SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180
DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.	
E.S.F. JAN. 30, 2001	SHEET NO. 12 OF 27



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



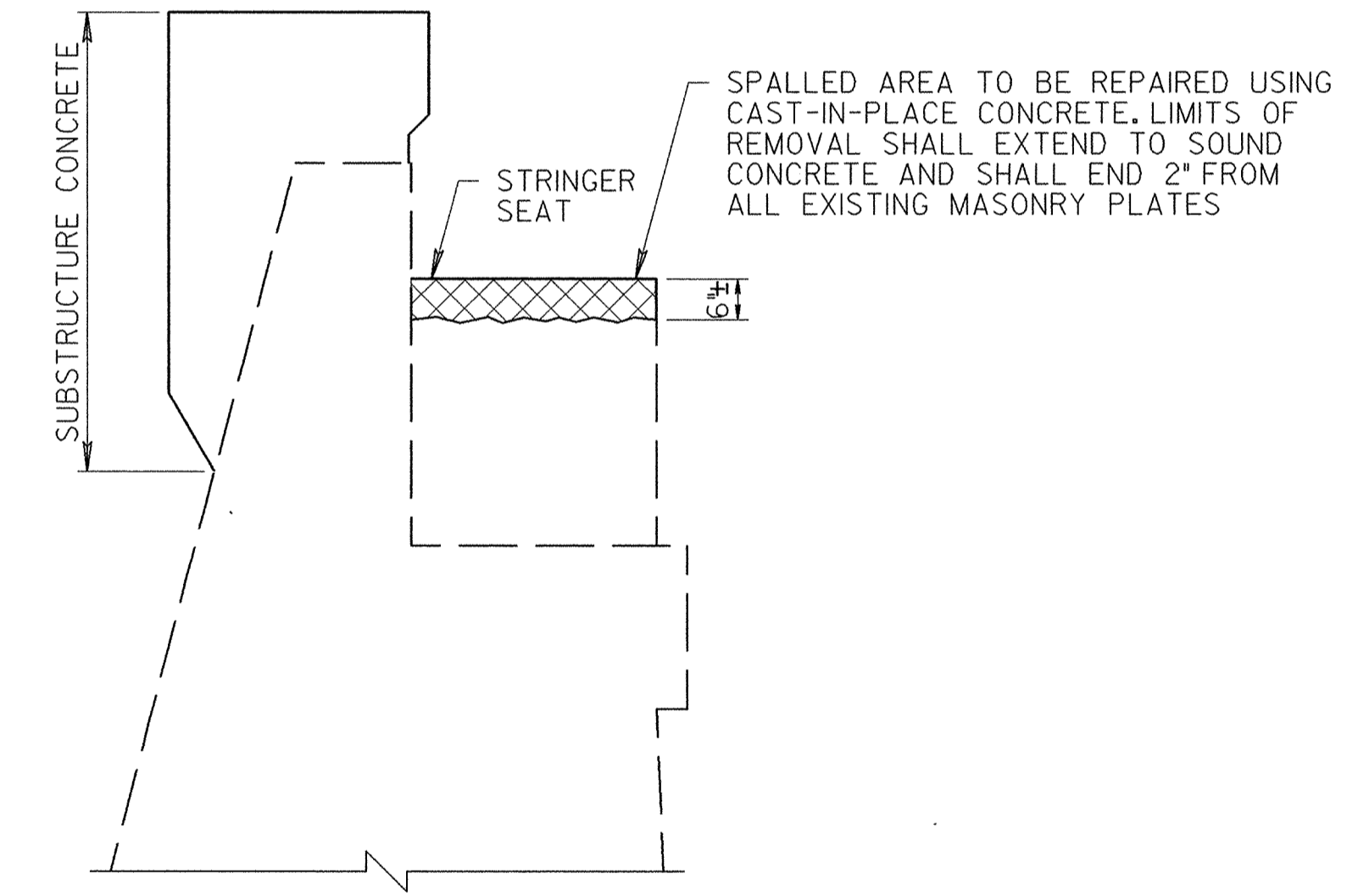
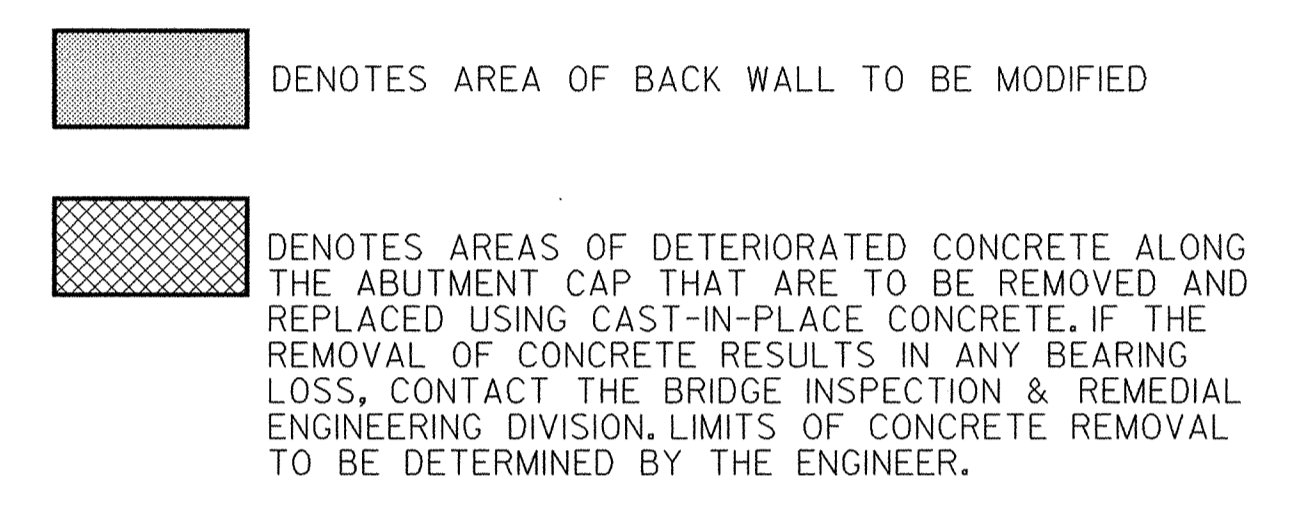
SECTION E-E
SCALE: 1/2" = 1'-0"



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

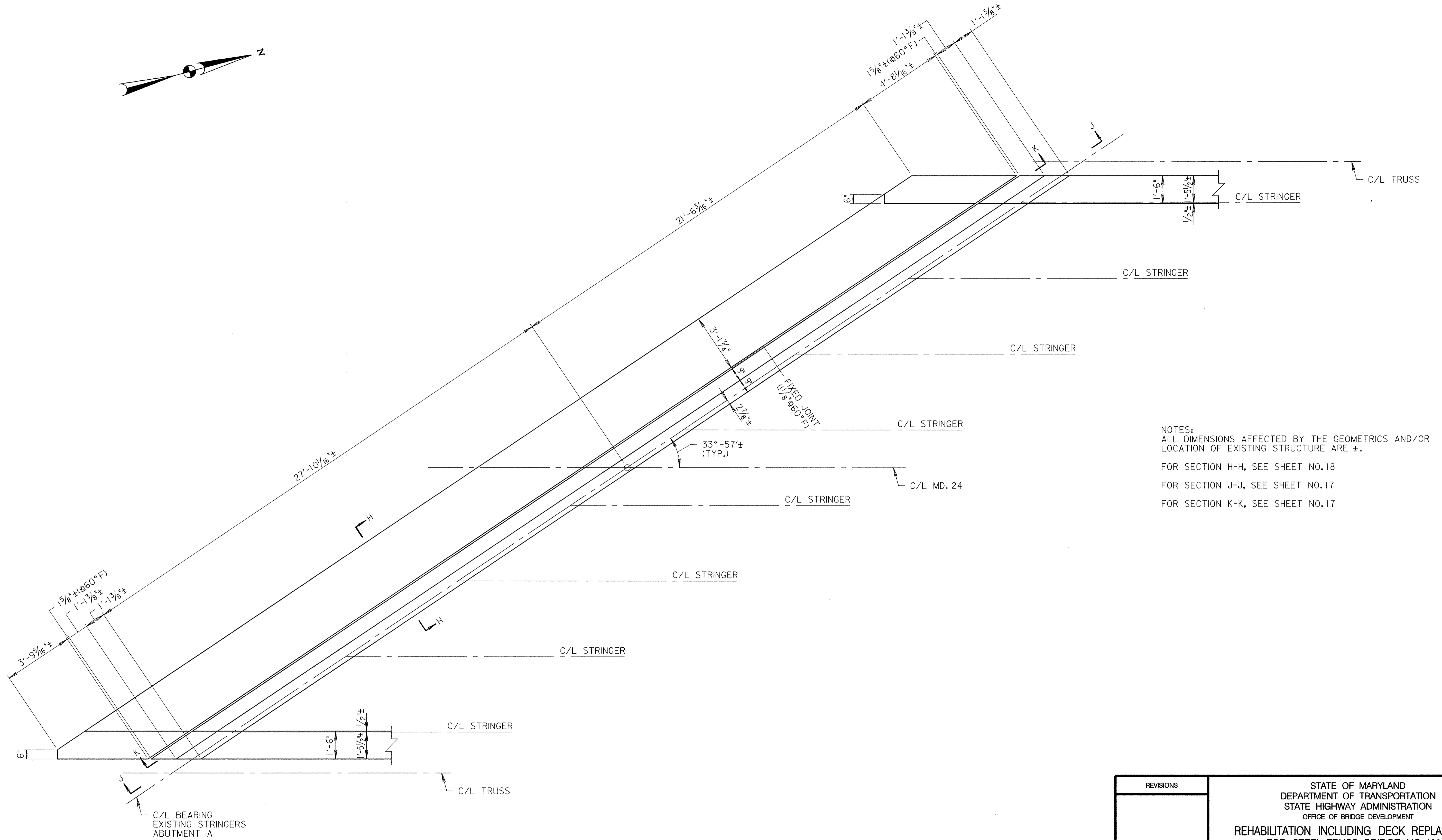
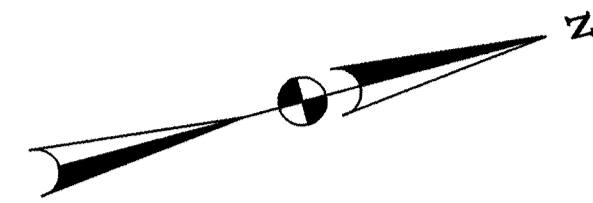
NOTE:
POROUS BACKFILL (REFER TO SECTION 405) SHALL BE PLACED AS SHOWN BEHIND THE ABUTMENT.
THE COST OF THE STONE GRADED AGGREGATE BASE AND GEOTEXTILE WILL BE INCIDENTAL TO THE PERTINENT STRUCTURE CONCRETE ITEM.

- NOTES:
1. REMOVE THE DETERIORATED CONCRETE AND REPAIR WITH CAST-IN-PLACE CONCRETE. LIMIT OF CONCRETE REMOVAL SHALL EXTEND 1" MIN. BELOW THE EXISTING REINFORCEMENT AND SHALL END 2" FROM ALL EXISTING MASONRY PLATES. ALL EXPOSED REBARS SHALL BE CLEANED, EPOXY COATED AND ENCAPSULATED IN NEW CONCRETE. TOP OF NEW CONCRETE SHALL BE 3" MIN. ABOVE EXISTING TOP REINFORCEMENT.
 2. ALL DIMENSIONS AFFECTED BY THE GEOMETRICS AND/OR LOCATION OF EXISTING STRUCTURE ARE ±.
 3. DOWEL BARS SHALL BE INSTALLED IN CONFORMANCE WITH 416.03.07.
 4. (E) INDICATES REINFORCING STEEL TO BE EPOXY COATED.



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

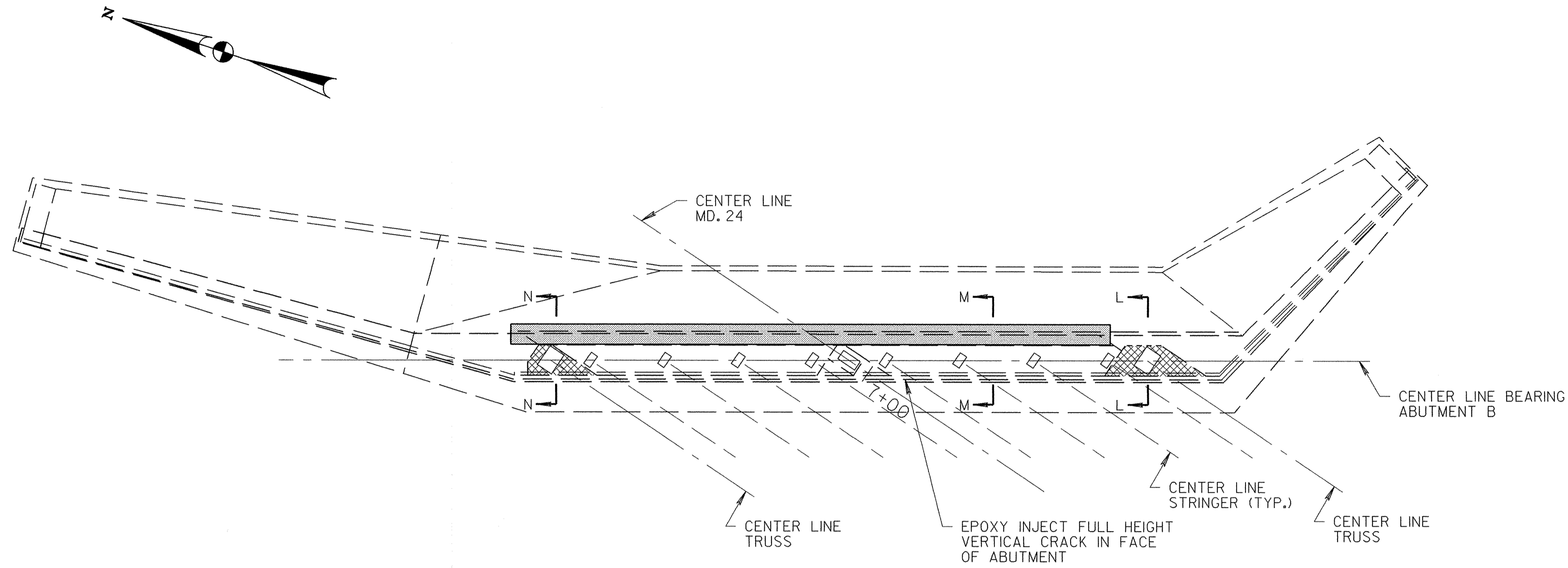
REVISIONS SHEET REPLACED 2/21/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK ABUTMENT A PLAN AND DETAILS	
SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180		
DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.		
E.S.F. JAN. 30, 2001		
		SHEET NO. 13 OF 27



NOTES:
 ALL DIMENSIONS AFFECTED BY THE GEOMETRICS AND/OR
 LOCATION OF EXISTING STRUCTURE ARE ±.
 FOR SECTION H-H, SEE SHEET NO.18
 FOR SECTION J-J, SEE SHEET NO.17
 FOR SECTION K-K, SEE SHEET NO.17

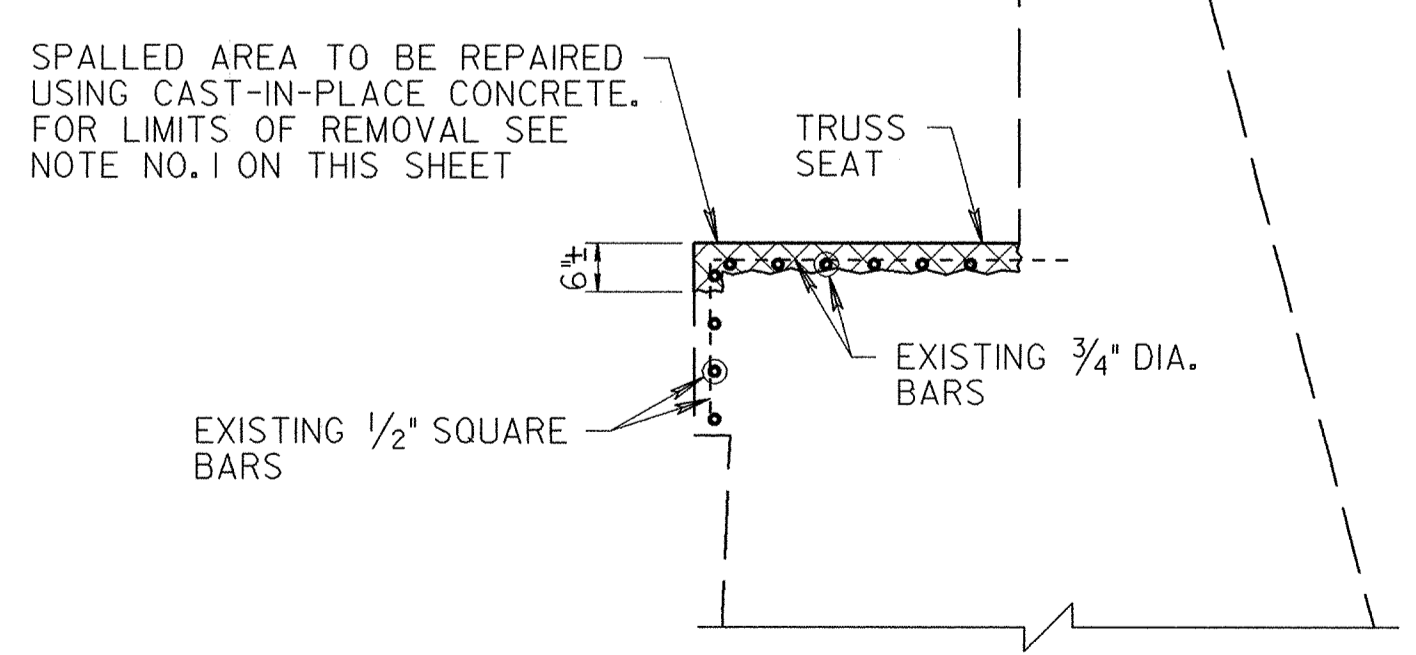
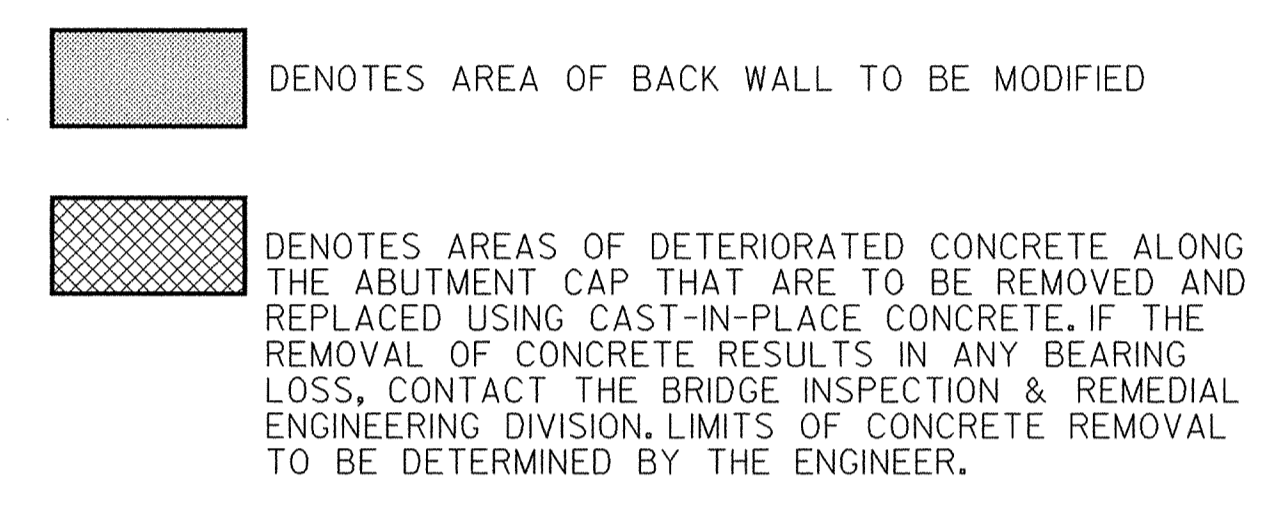
ABUTMENT A DIAPHRAGM PLAN
 SCALE: 3/8" = 1'-0"

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO.12016 ON MARYLAND 24 OVER DEER CREEK ABUTMENT A DETAILS
	SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180
	DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 30, 2001
	SHEET NO. 14 OF 27

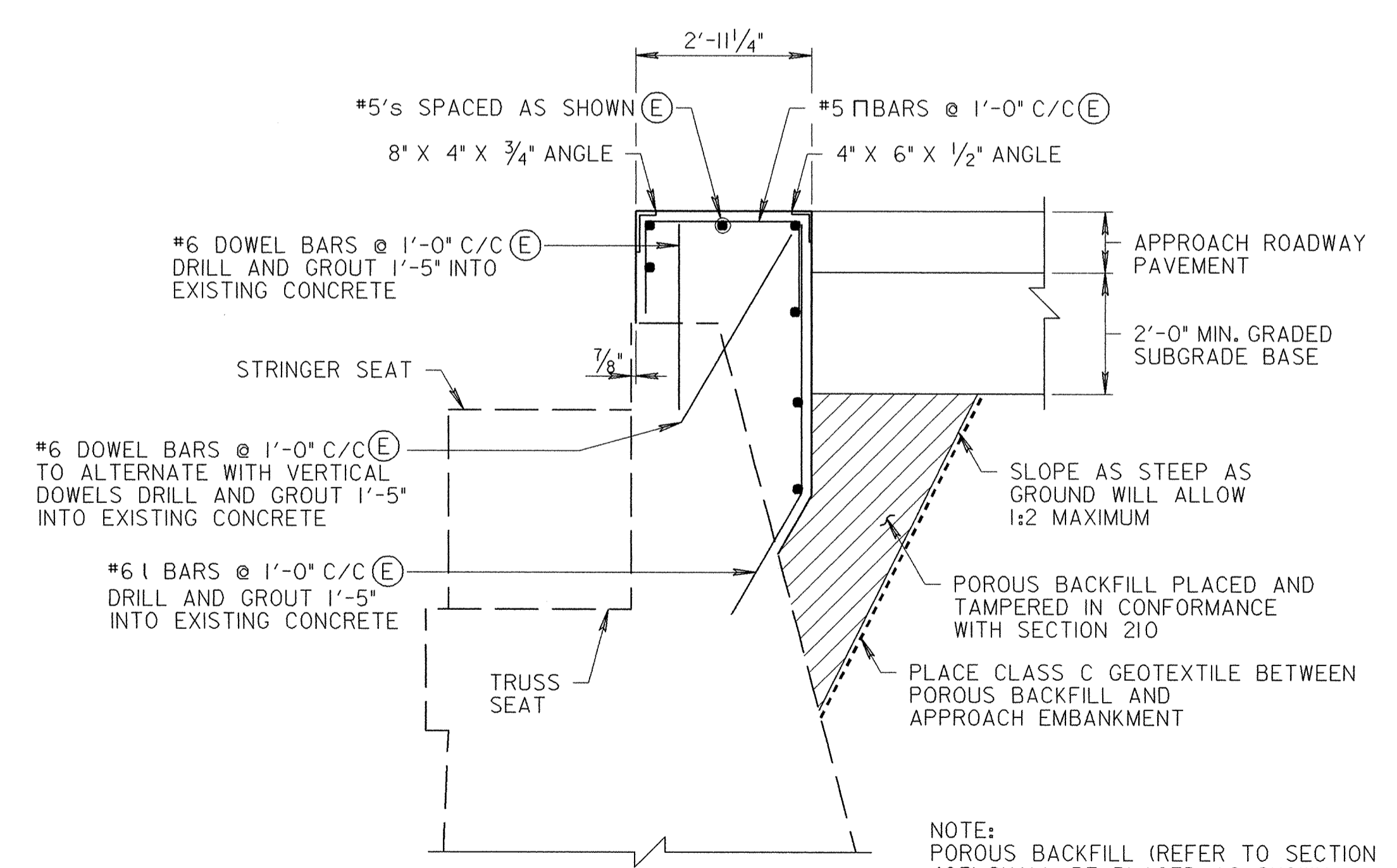


PLAN
SCALE: 1/8" = 1'-0"

- NOTES:
1. REMOVE THE DETERIORATED CONCRETE AND REPAIR WITH CAST-IN-PLACE CONCRETE. LIMIT OF CONCRETE REMOVAL SHALL EXTEND 1" MIN. BELOW THE EXISTING REINFORCEMENT AND SHALL END 2" FROM ALL EXISTING MASONRY PLATES. ALL EXPOSED REBARS SHALL BE CLEANED, EPOXY COATED AND ENCAPSULATED IN NEW CONCRETE. TOP OF NEW CONCRETE SHALL BE 3" MIN. ABOVE EXISTING TOP REINFORCEMENT.
 2. ALL DIMENSIONS AFFECTED BY THE GEOMETRICS AND/OR LOCATION OF EXISTING STRUCTURE ARE ±.
 3. DOWEL BARS SHALL BE INSTALLED IN CONFORMANCE WITH 416.03.07.
 4. (E) INDICATES REINFORCING STEEL TO BE EPOXY COATED.

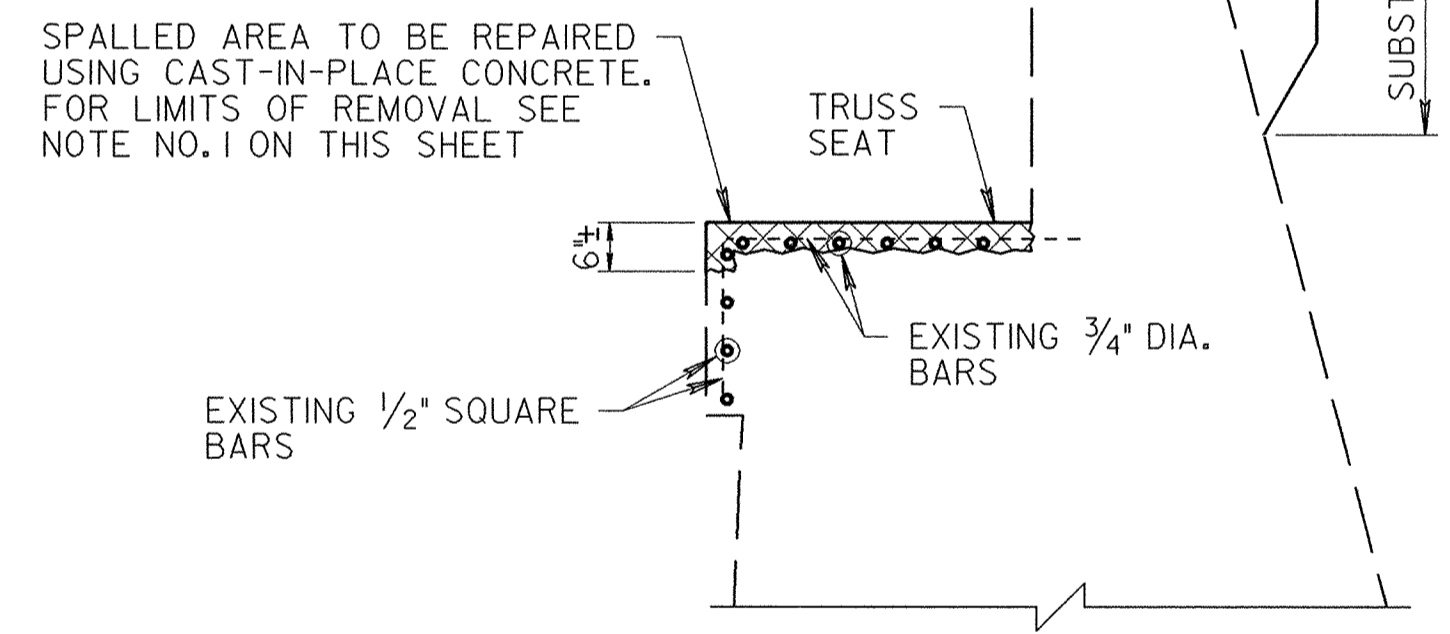


SECTION L-L
SCALE: 1/2" = 1'-0"



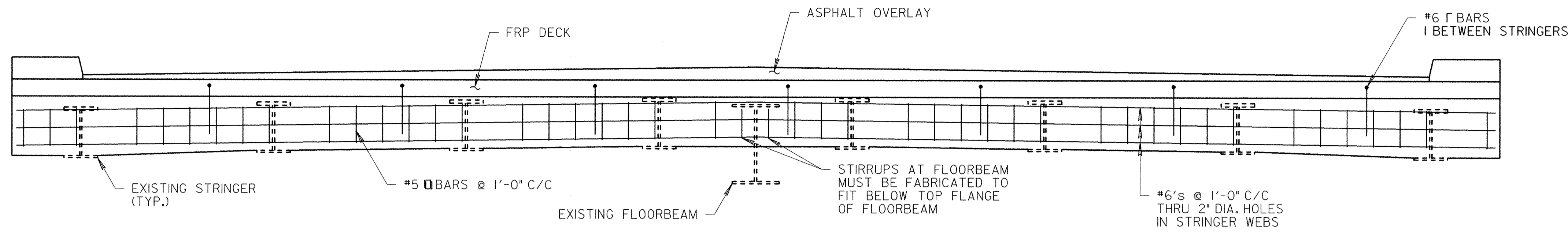
SECTION M-M
SCALE: 1/2" = 1'-0"

NOTE:
POROUS BACKFILL (REFER TO SECTION 405) SHALL BE PLACED AS SHOWN BEHIND THE ABUTMENT.
THE COST OF THE STONE GRADED AGGREGATE BASE AND GEOTEXTILE WILL BE INCIDENTAL TO THE PERTINENT STRUCTURE CONCRETE ITEM.



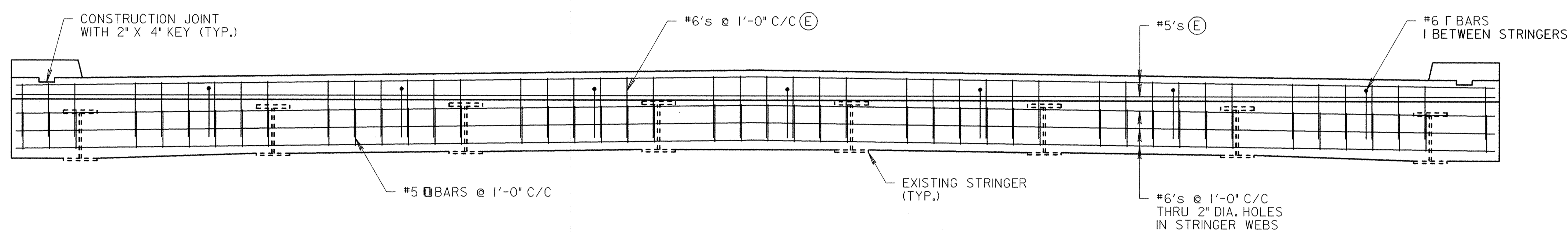
SECTION N-N
SCALE: 1/2" = 1'-0"

REVISIONS SHEET REPLACED 2/21/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK ABUTMENT B PLAN AND DETAILS	
SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180		
DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.		
E.S.F. JAN. 30, 2001		
		SHEET NO. 15 OF 27

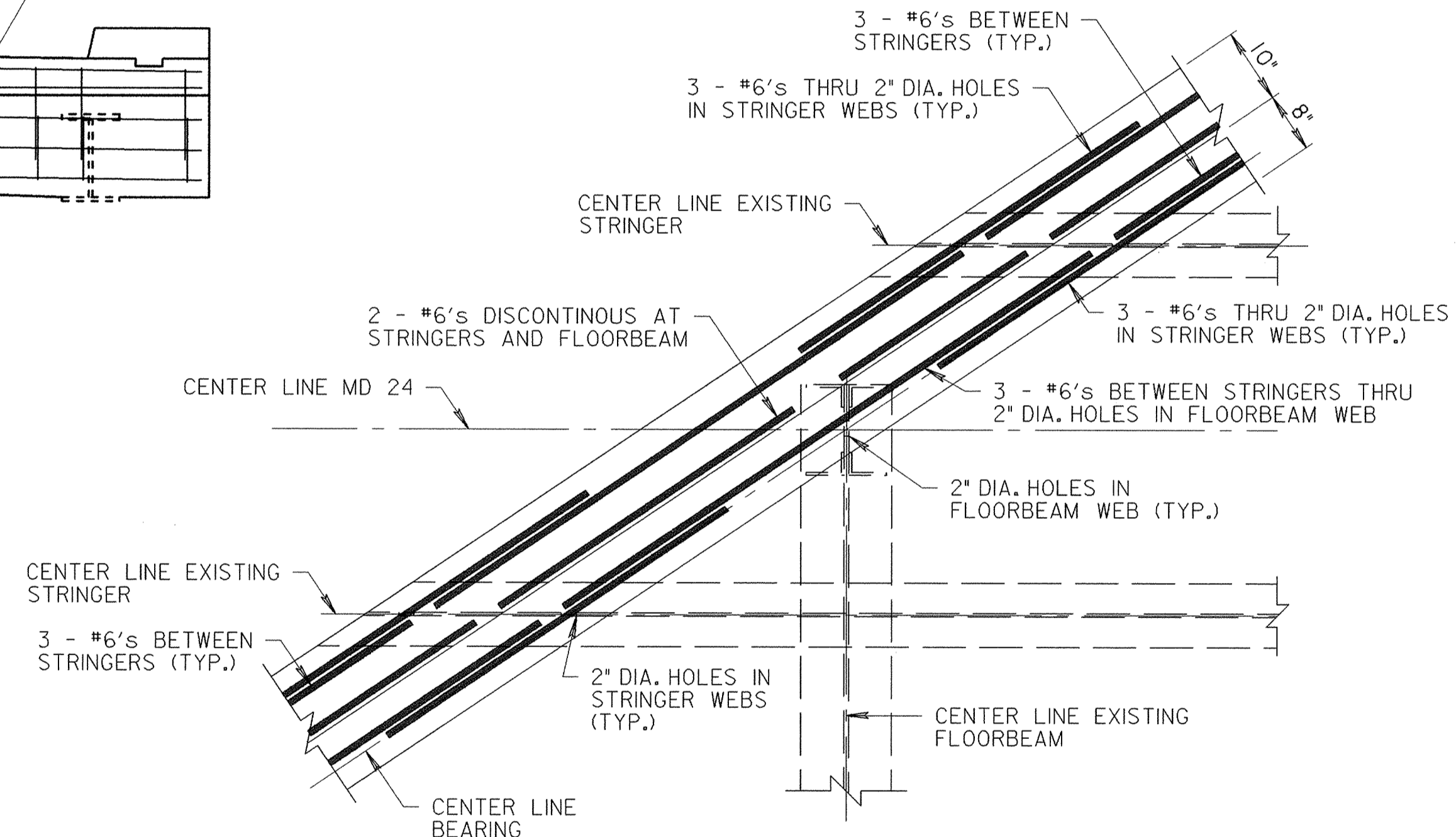


SECTION J-J
SCALE: 3/8" = 1'-0"

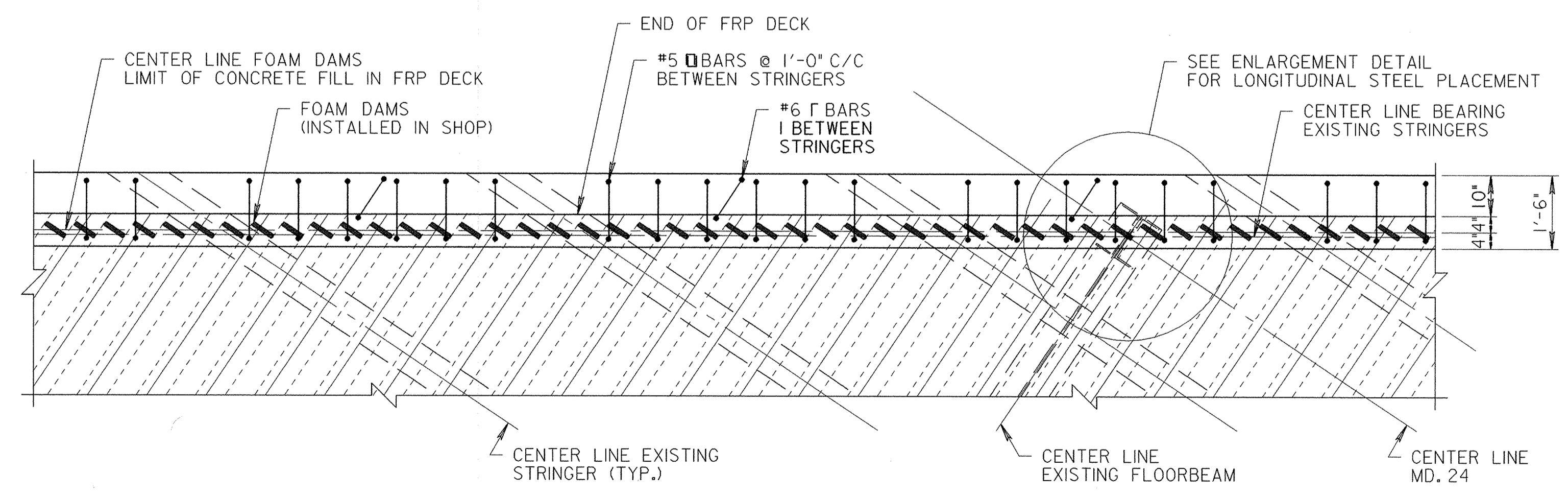
NOTES:
FOR ADDITIONAL ABUTMENT DETAILS, SEE SHEET NO. 13 - 16, 18A
(E) INDICATES REINFORCING STEEL TO BE EPOXY COATED.



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



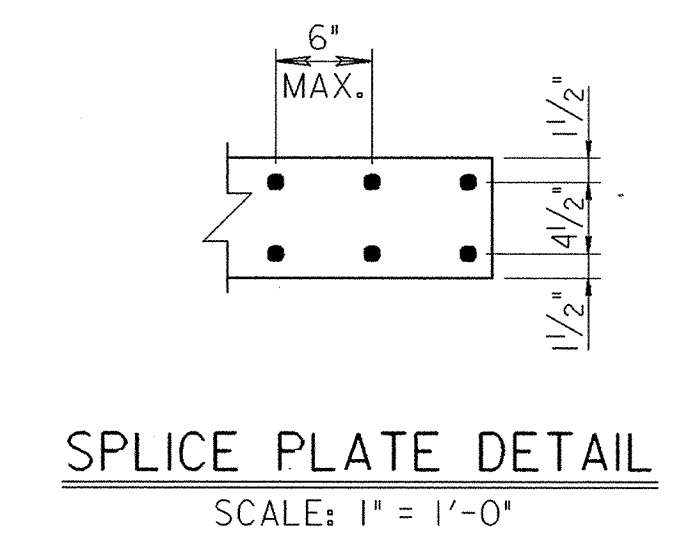
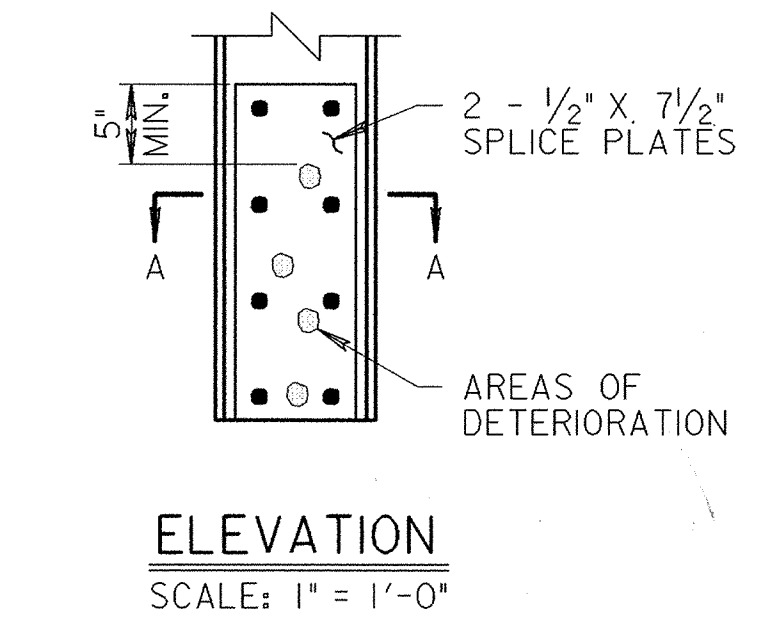
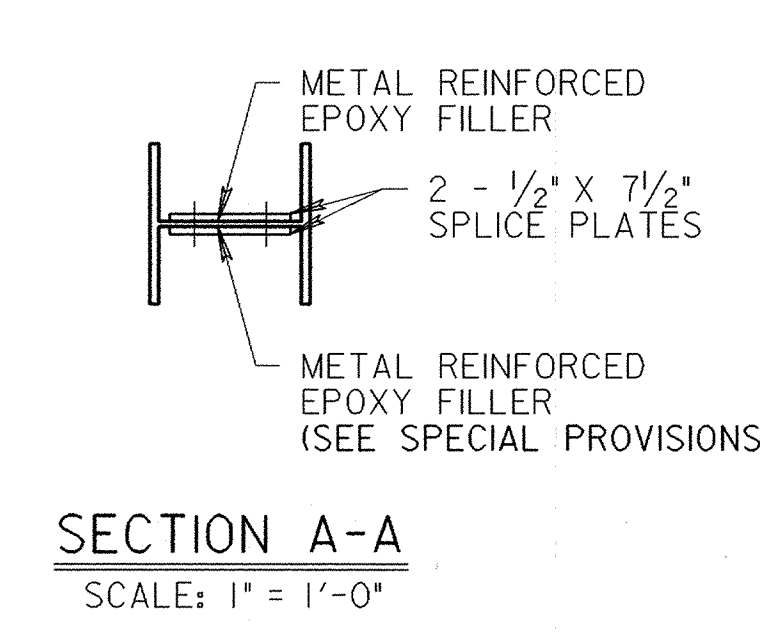
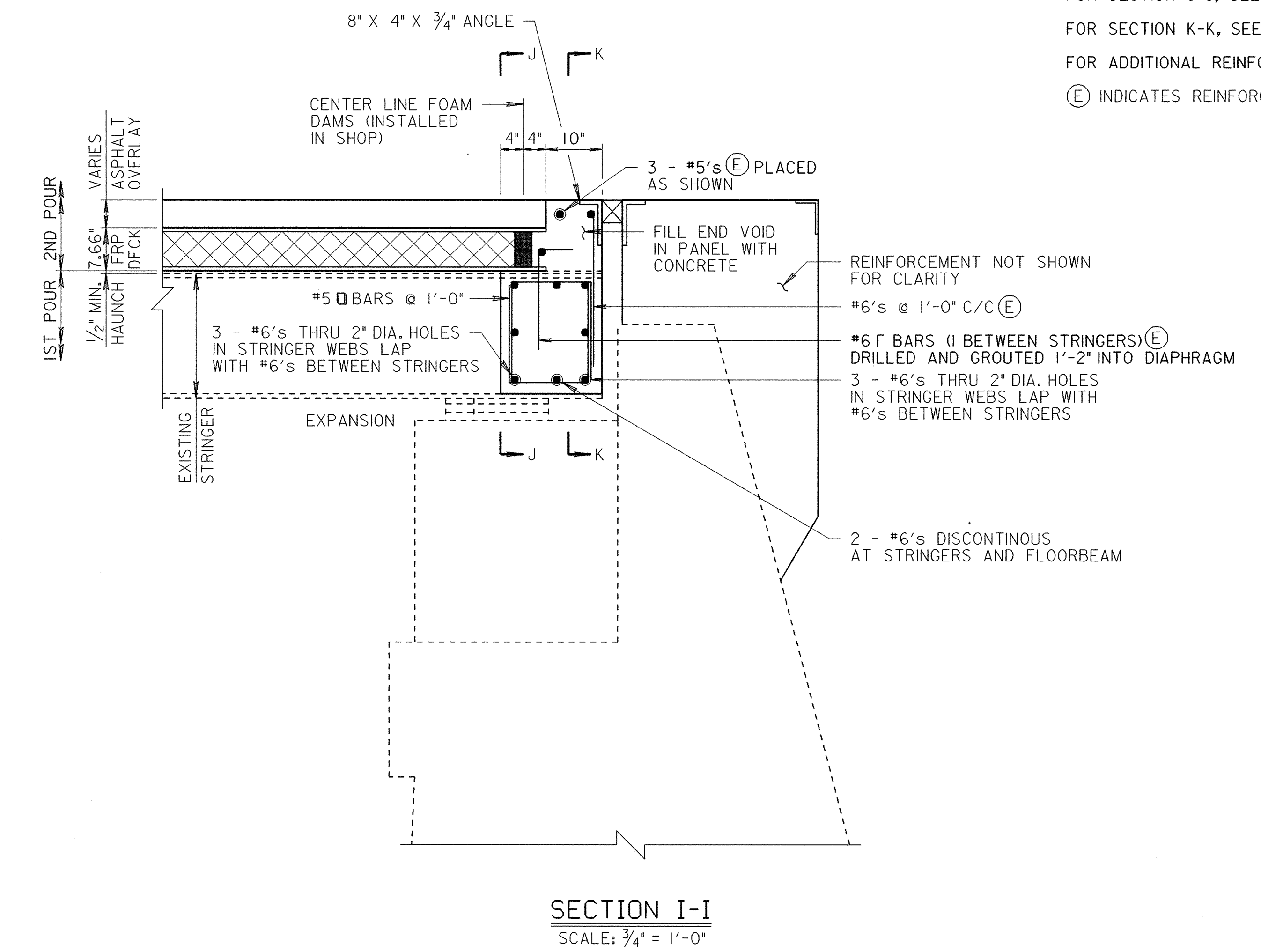
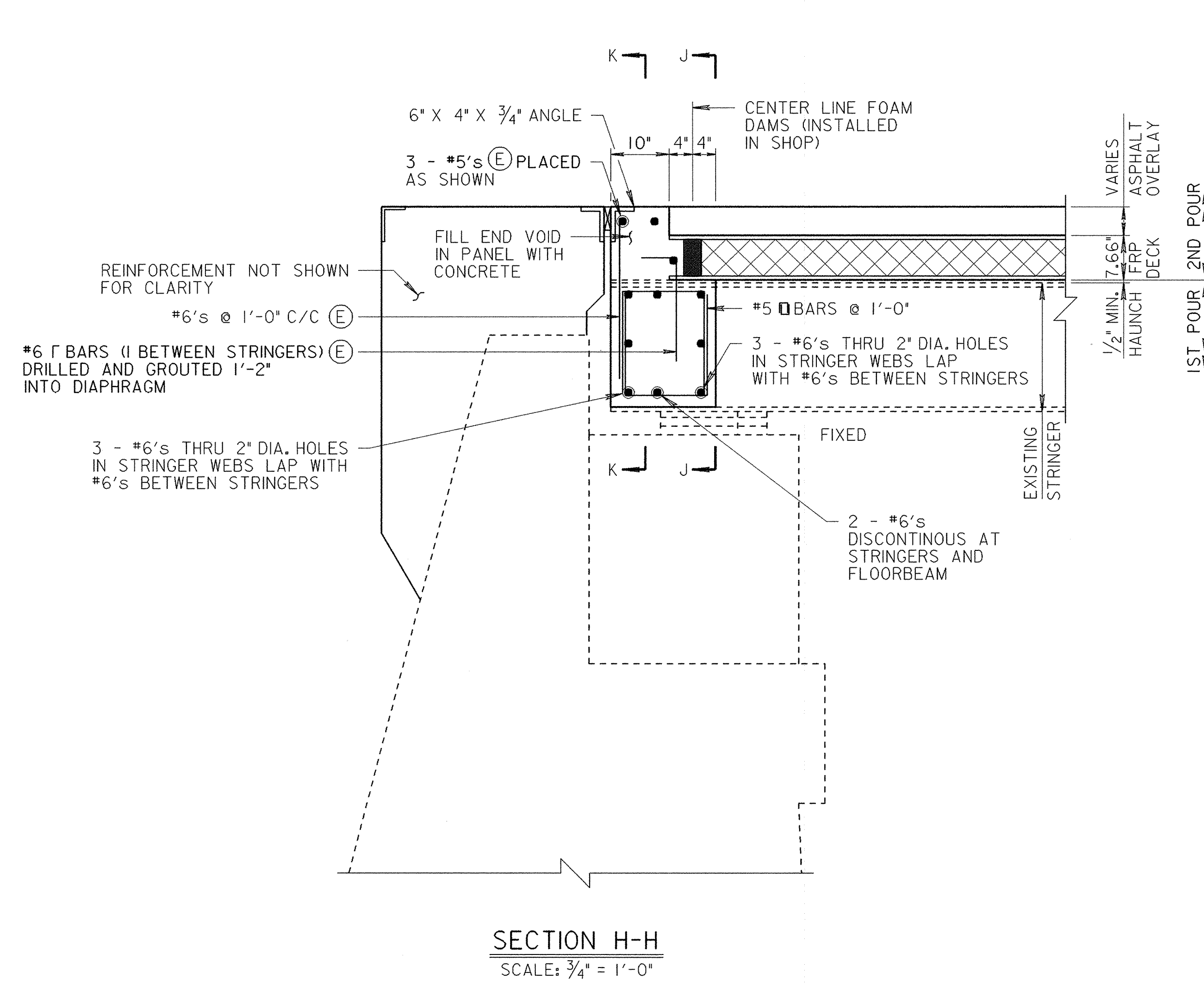
ENLARGEMENT DETAIL
SCALE: 3/4" = 1'-0"



TYPICAL DIAPHRAGM STIRRUP REINFORCEMENT PLAN
SCALE: 1/2" = 1'-0"

REVISIONS 2 NEW SHEET ADDED 8/27/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK ABUTMENT DETAILS	
	SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180	
	DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.	E.S.F. JAN. 30, 2001

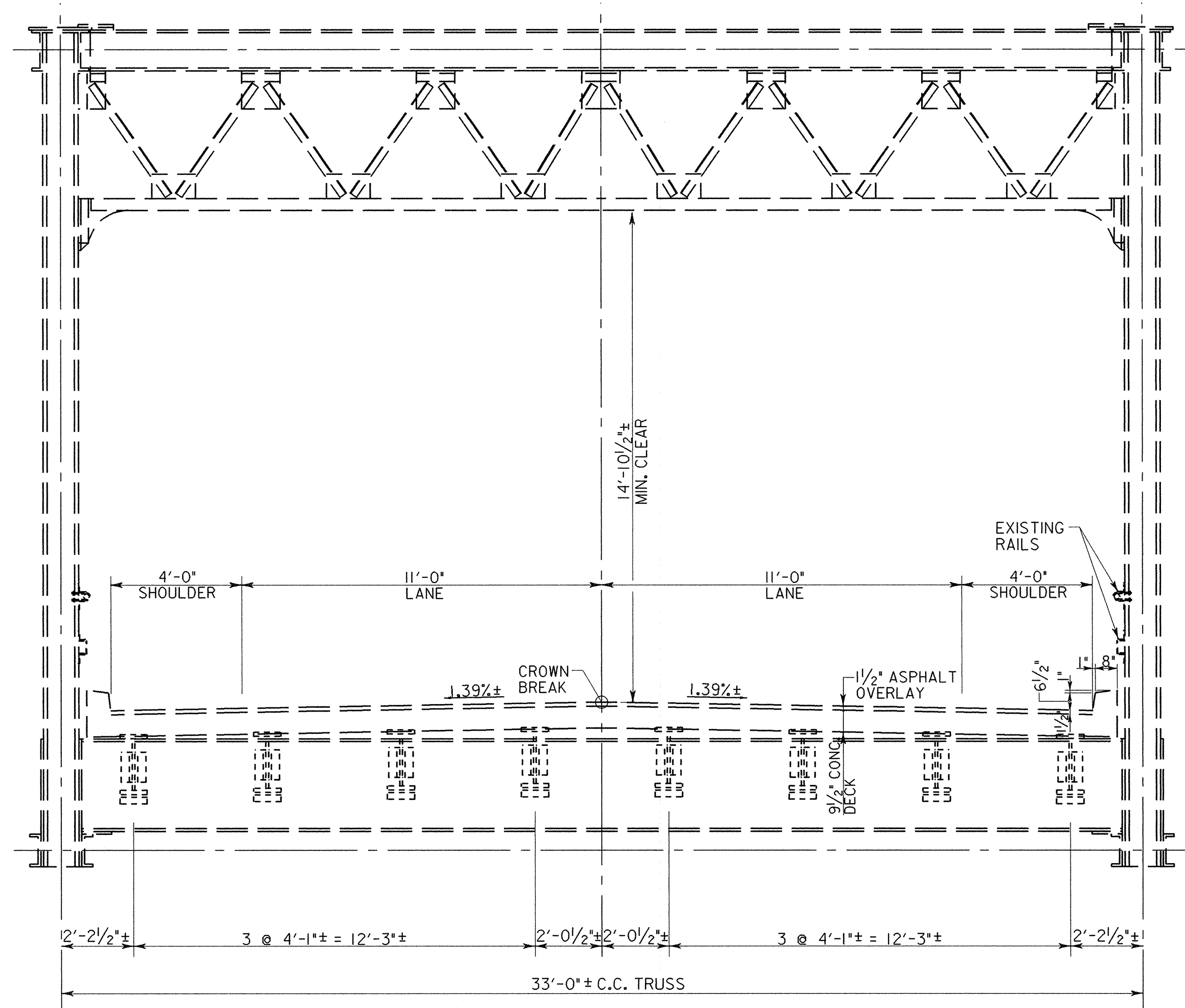
NOTES:
 ALL DIMENSIONS AFFECTED BY THE GEOMETRICS AND/OR LOCATION OF EXISTING STRUCTURE ARE ±.
 DOWEL BARS SHALL BE INSTALLED IN CONFORMANCE WITH 416.03.07.
 FOR SECTION J-J, SEE SHEET NO.17A
 FOR SECTION K-K, SEE SHEET NO.17A
 FOR ADDITIONAL REINFORCING DETAILS, SEE SHEET NO.17A
 (E) INDICATES REINFORCING STEEL TO BE EPOXY COATED.



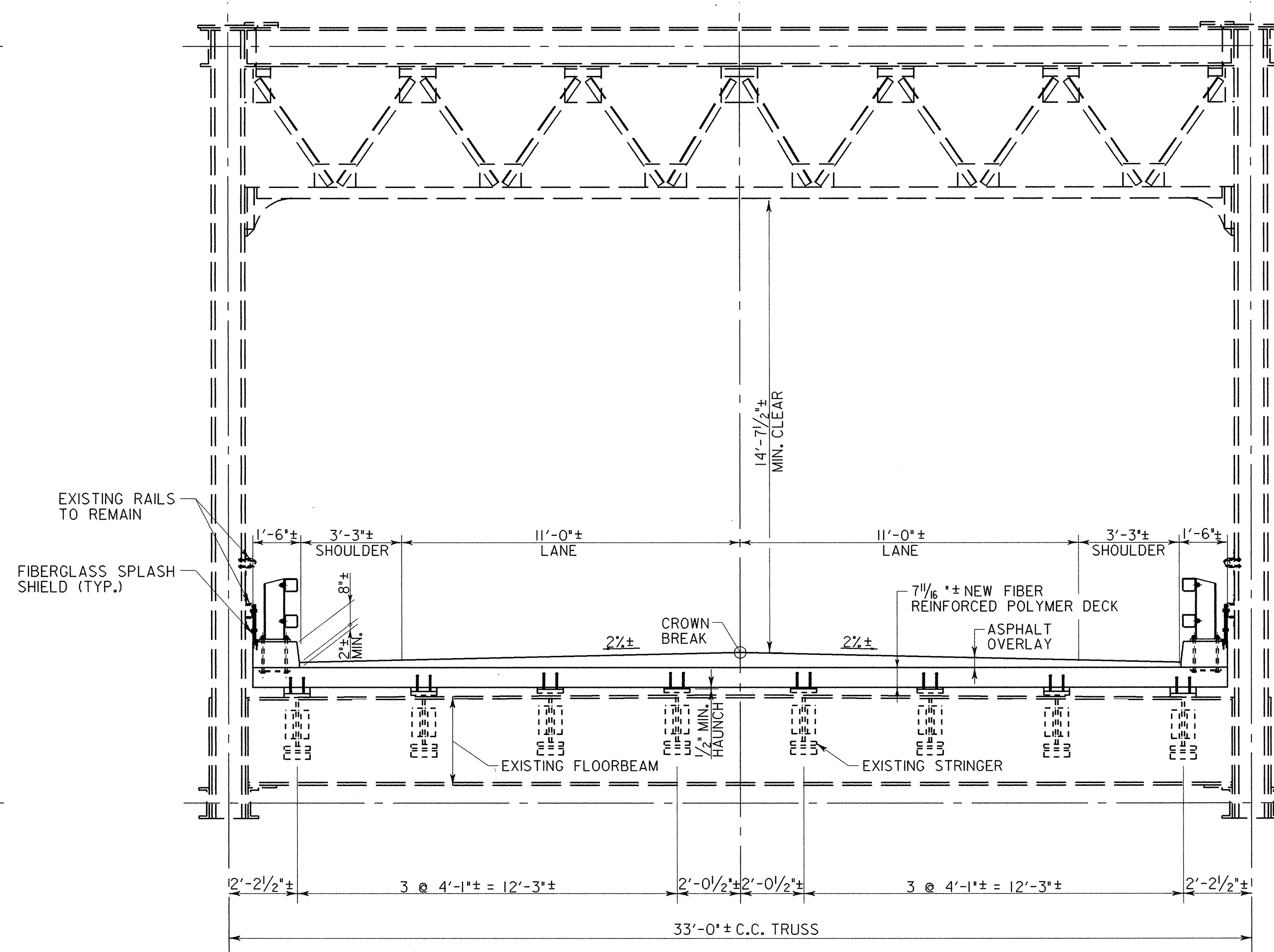
TRUSS REPAIR

NOTE:
 ALL BOLT HOLES TO BE 1" DIAMETER. ALL BOLTS TO BE 7/8" DIAMETER HIGH STRENGTH BOLTS (ASTM A-325).
 STRUCTURAL STEEL SHALL CONFORM TO A 709 GRADE 36 STEEL.

REVISIONS [2] NEW SHEET ADDED 8/27/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO.12016 ON MARYLAND 24 OVER DEER CREEK DIAPHRAGM DETAILS
SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180	DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.
E.S.F. JAN. 30, 2001	SHEET NO. 18A OF 27



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



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

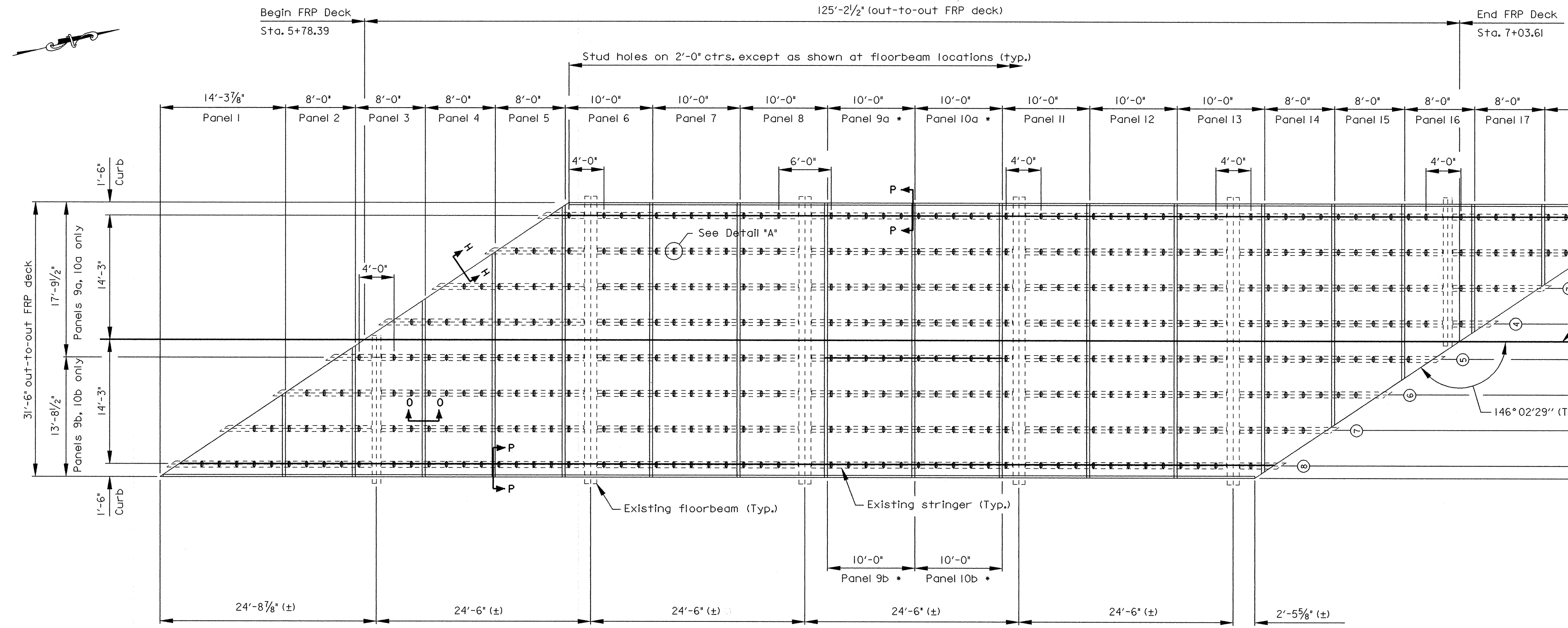
NOTE:
EXISTING TRUSSES, FLOOR BEAMS AND STRINGERS TO REMAIN.
STEEL ANGLES THAT SUPPORT THE FRP DECK SHALL BE INCIDENTAL TO THE "NONSHRINK GROUT FOR HAUNCHES AND SHEAR STUD POCKETS" ITEM.

SEQUENCE OF CONSTRUCTION FOR DECK REPLACEMENT:

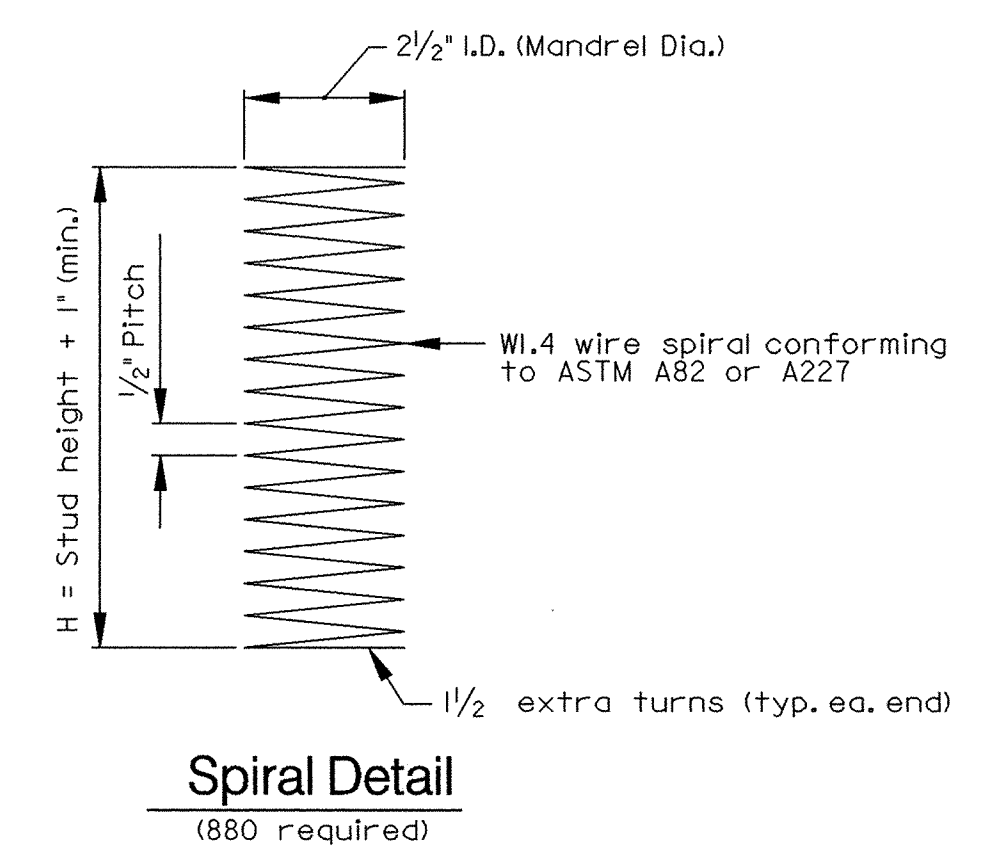
1. COMPLETELY REMOVE EXISTING CONCRETE DECK.
2. ACCURATELY SURVEY (SEE SPECIAL PROVISIONS) EXISTING FRAMING PLAN AS TO ELEVATIONS, LOCATIONS, ETC., NOTING ANY DIFFERENCES THAT WERE NOT EXPECTED (NOTE: ANY DIFFERENCE BETWEEN THE EXISTING CONDITION AND THE AS BUILT PLANS MUST BE REPORTED TO THE ENGINEER).
3. INSPECT CONDITION OF EXISTING GIRDERS (NOTE: THIS WILL BE PERFORMED BY THE SHA BRIDGE OFFICE. THE CONTRACTOR SHALL NOTIFY JEFF ROBERT (410-545-8327) FIVE DAYS PRIOR TO REMOVAL OF THE BRIDGE DECK. IF ANY REPAIRS ARE REQUIRED, DETAILS WILL BE PROVIDED AND REPAIRS MADE.)
4. CONSTRUCT MODIFICATIONS TO ABUTMENT BACK WALLS.
5. INSTALL STEEL ANGLES TO EXISTING STRINGERS (NOTE: STEEL ANGLES MUST BE CAPABLE OF SUPPORTING THE FRP DECK, ALL CONSTRUCTION EQUIPMENT AND PERSONNEL THAT WILL BE PLACED ON THE DECK, AS HAUNCHES WILL NOT BE IN PLACE).
6. FORM CONCRETE DIAPHRAGMS AT ABUTMENTS.
7. INSTALL DECK AND FIELD SPLICES.
8. INSTALL STEEL STUDS.
9. GROUT HAUNCHES AND ALL OPEN POCKETS.
10. CONSTRUCT CONCRETE DIAPHRAGMS, CONCRETE CURBS, AND RAIL SYSTEMS.
11. PERFORM BRIDGE SURVEY (SEE SPECIAL PROVISIONS).
12. CONSTRUCT ASPHALT OVERLAY. THE SURFACE SHALL BE CLEANED BY AIR BLAST FOLLOWED BY FLUSHING WITH WATER PRIOR TO PLACING THE OVERLAY.

NOTE:
FOR GENERAL NOTES, SEE SHEET NO. 7
FOR DETAILS OF FRP DECK, SEE SHEET NO. 20
FOR RAILING DETAILS, SEE SHEET NO. 23, 24

△ SHEET REPLACED 2/21/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK TYPICAL SECTION	
SCALE	AS SHOWN	DATE JAN. 2001
DESIGNED BY	B.A.G.	
DRAWN BY	J.A.M.	
CHECKED BY	J.L.R.	
E.S.F. JAN. 30, 2001		SHEET NO. 19 OF 27

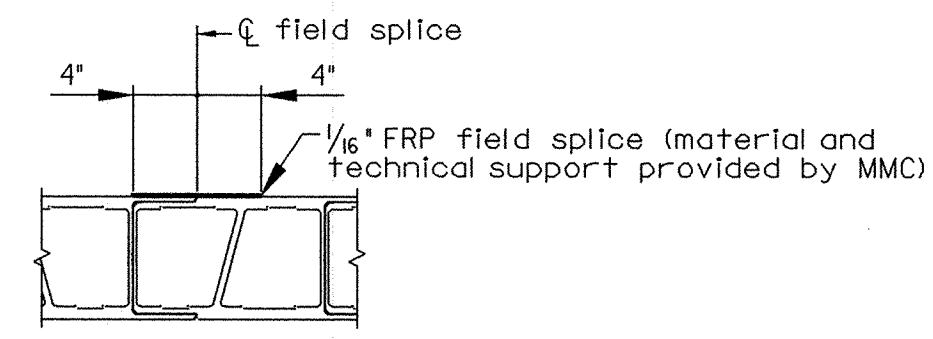


Notes:
 All dimensions are based on the existing plans and shall be verified by the Contractor.
 Weight of FRP deck is 19 p.s.f.
 For curb/railing details, see Sheets No. 23 & 24.
 For Section H-H, see Sheet No. 18.
 For Section I-I, see Sheet No. 18.
 For nonshrink grout, see Special Provisions.

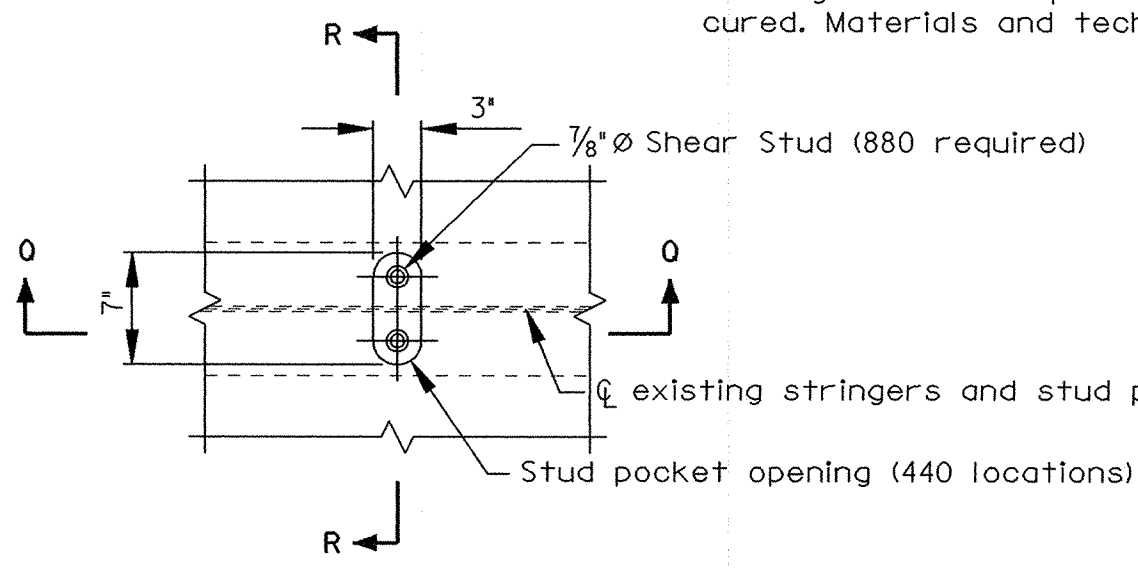


Plan of Deck Panels

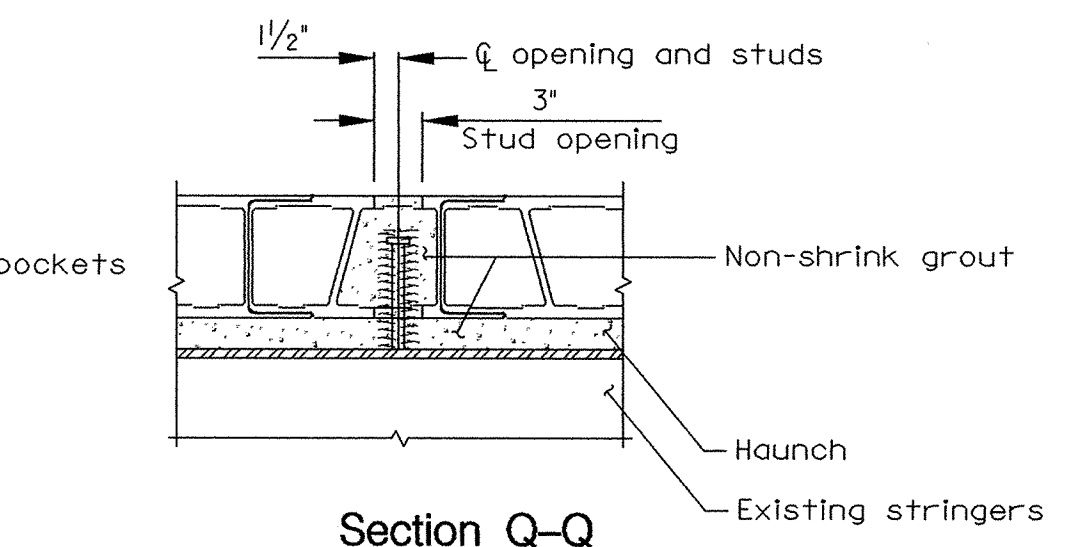
Showing major dimensions, stud hole locations, and panel field splices.
 For clarity, only stud holes are shown.
 See shop drawings for details on individual panels.
 • Panels 9 & 10 will be partial width panels butted together at stringer 5.
 Purpose is to demonstrate durability of "staged construction". Two layers of longitudinal FRP splice strips shall be applied after the grout has sufficiently cured. Materials and technical support will be provided by MMC.



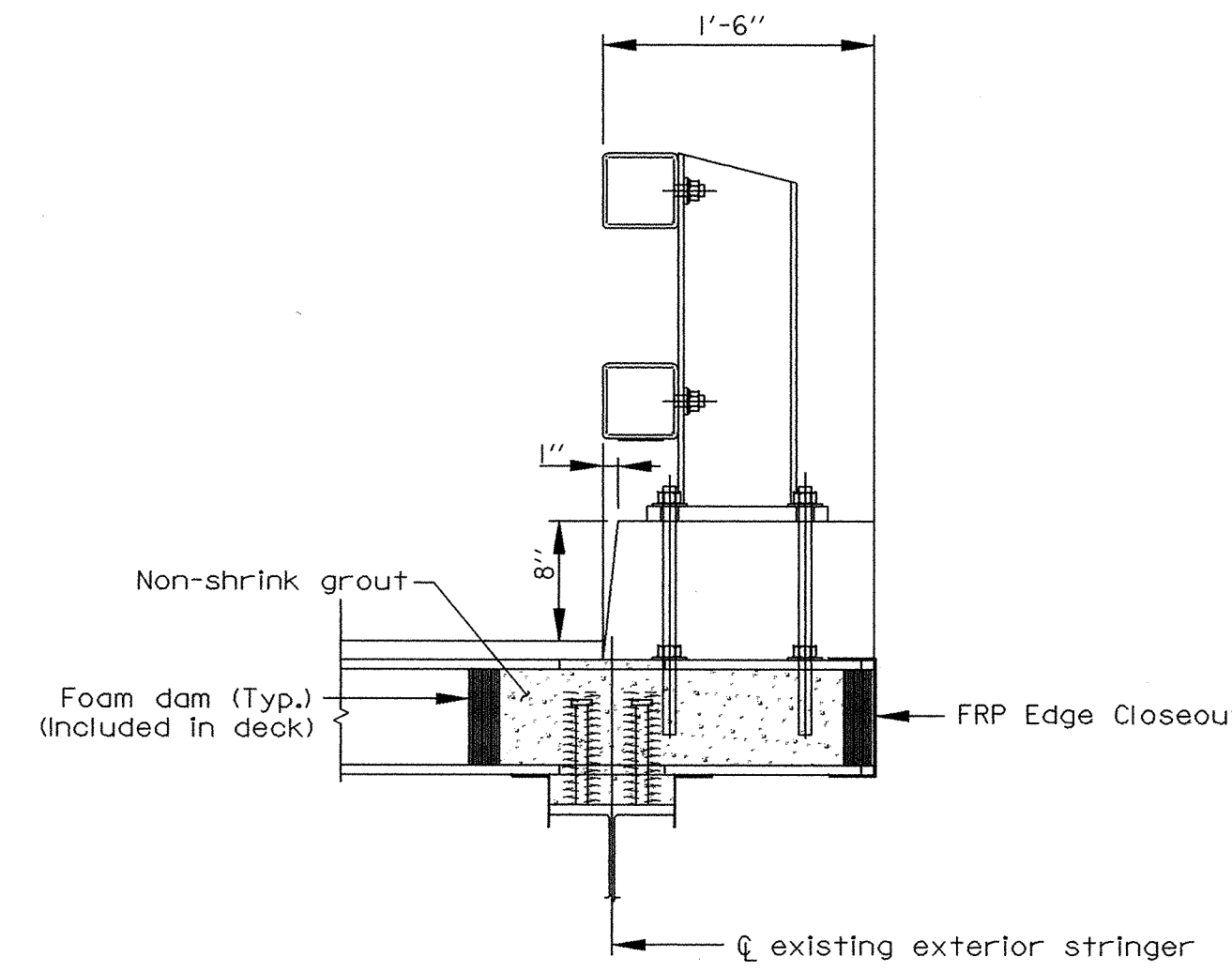
Section O-O
 (Typical field splice of deck panels)



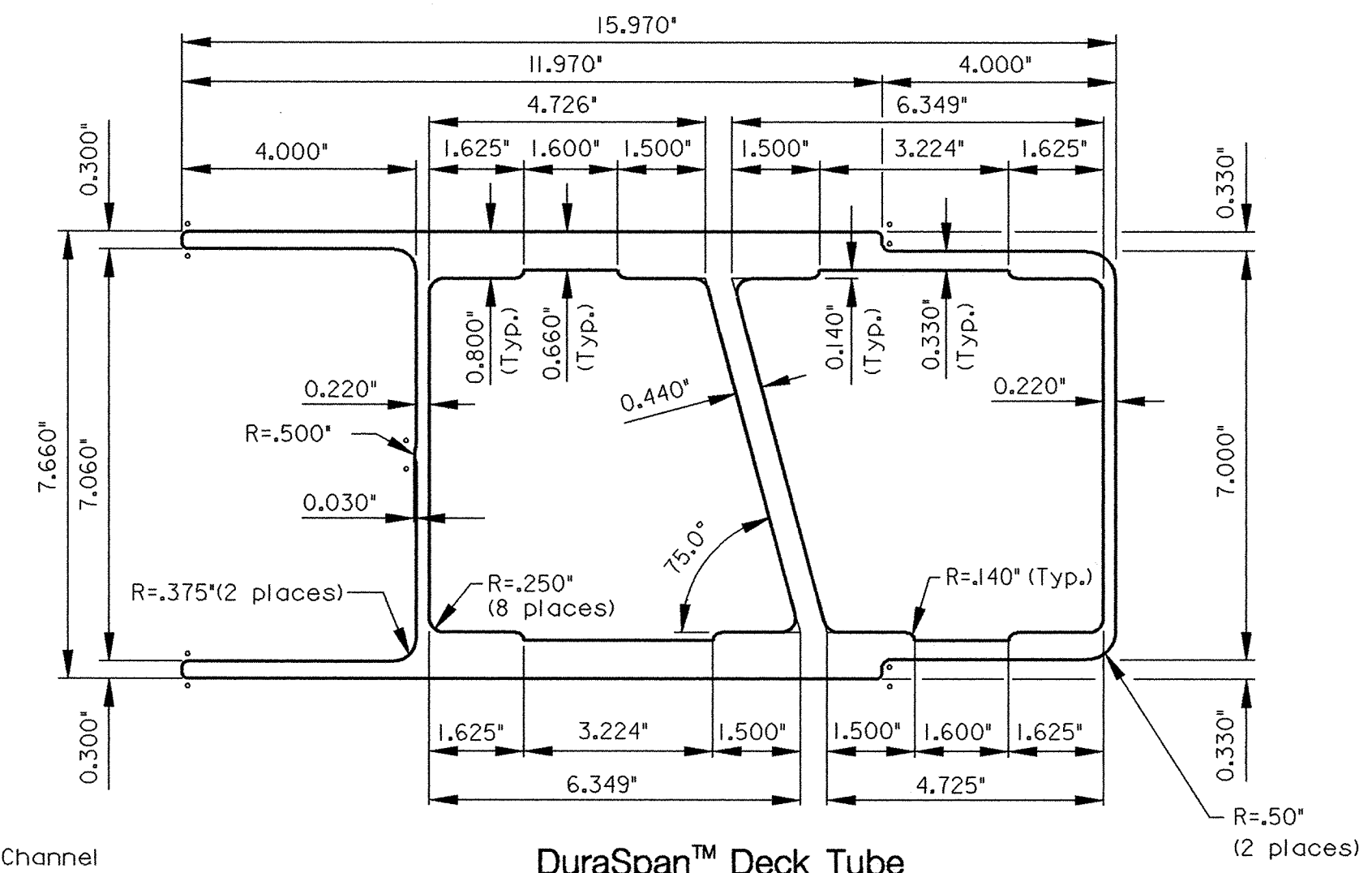
Detail "A"



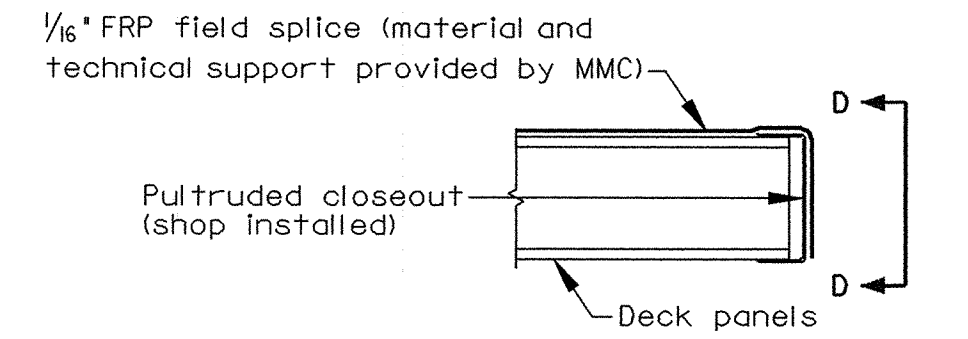
Section Q-Q
 (Looking in direction perpendicular to traffic)



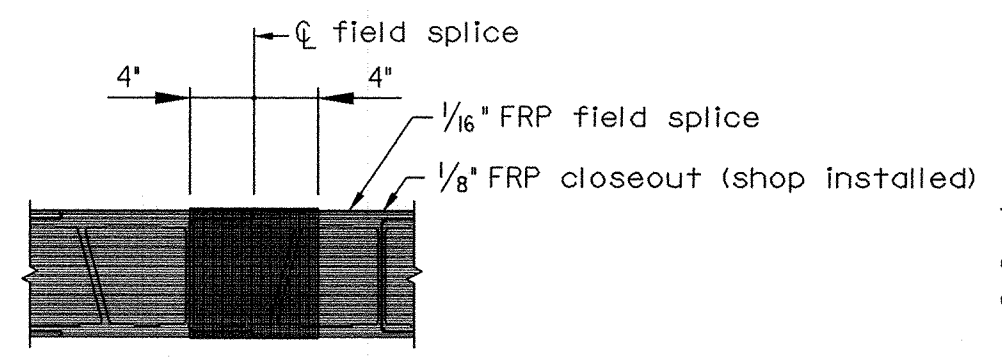
Rail Post Anchor Bolt Detail
 Showing curb/railing attachment @ stud pocket locations



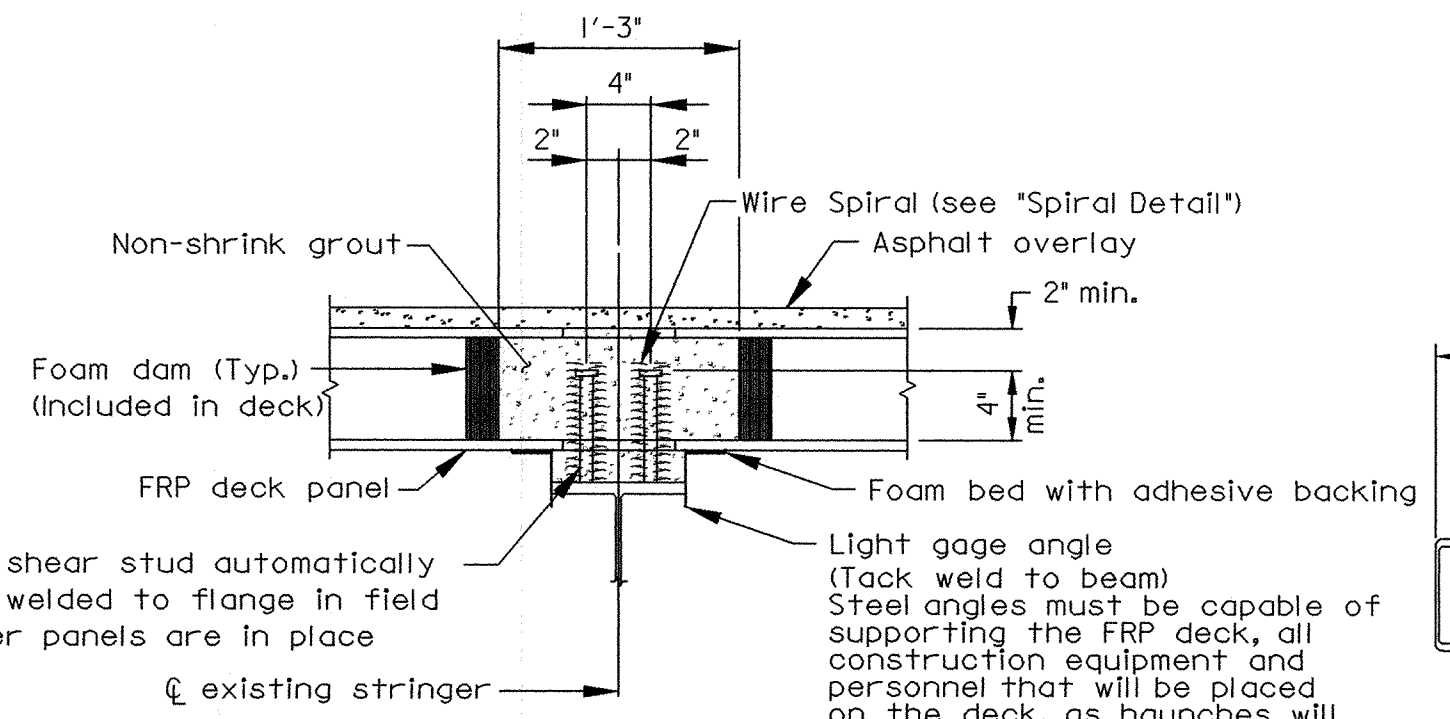
DuraSpan™ Deck Tube



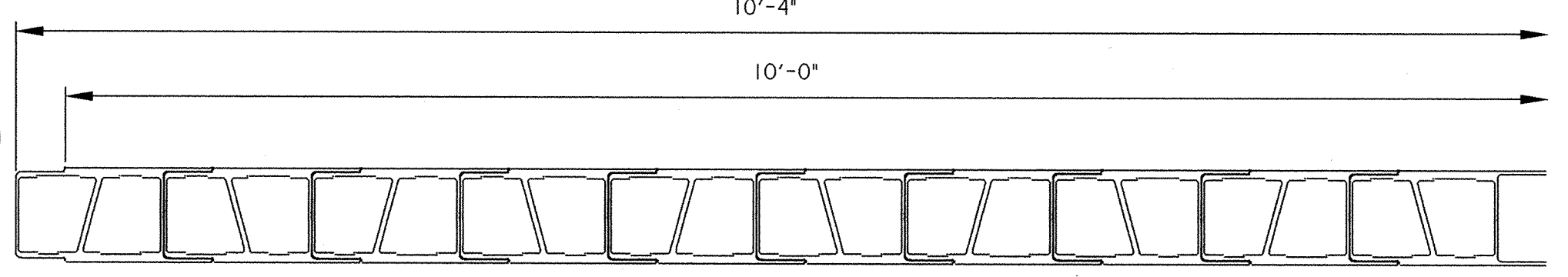
Section P-P
 Curb/Railing not shown for clarity



View D-D
 (Typical field splice of deck panels)



Section R-R
 Showing typical stud pocket
 Looking in direction of traffic



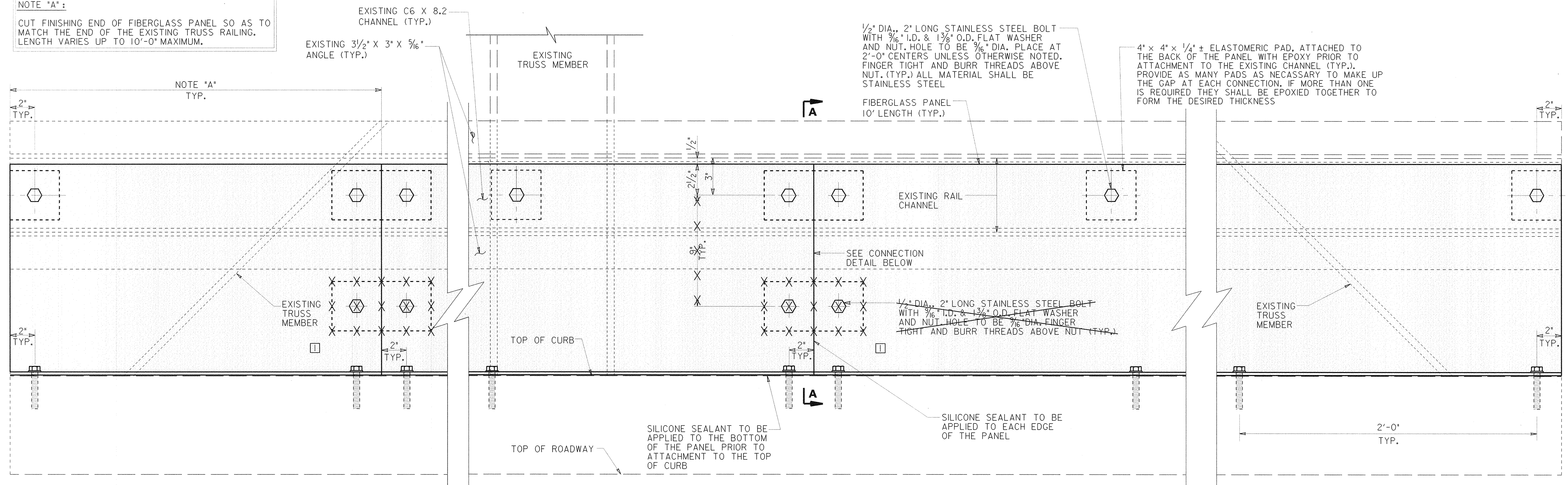
Typical Interior Deck Panel

REVISIONS
△ SHEET REPLACED 2/21/01 D.A.C.

STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 OFFICE OF BRIDGE DEVELOPMENT
**REHABILITATION INCLUDING DECK REPLACEMENT
 FOR STEEL TRUSS BRIDGE NO. 12016
 ON MARYLAND 24 OVER DEER CREEK
 FIBER-REINFORCED POLYMER DECK DETAILS**

SCALE NO SCALE DATE JAN, 2001 CONTRACT HA2095180
 DESIGNED BY G.S.
 DRAWN BY G.S.
 CHECKED BY D.R.
E.S.F.
 JAN. 30, 2001

NOTE "A":
 CUT FINISHING END OF FIBERGLASS PANEL SO AS TO MATCH THE END OF THE EXISTING TRUSS RAILING. LENGTH VARIES UP TO 10'-0" MAXIMUM.

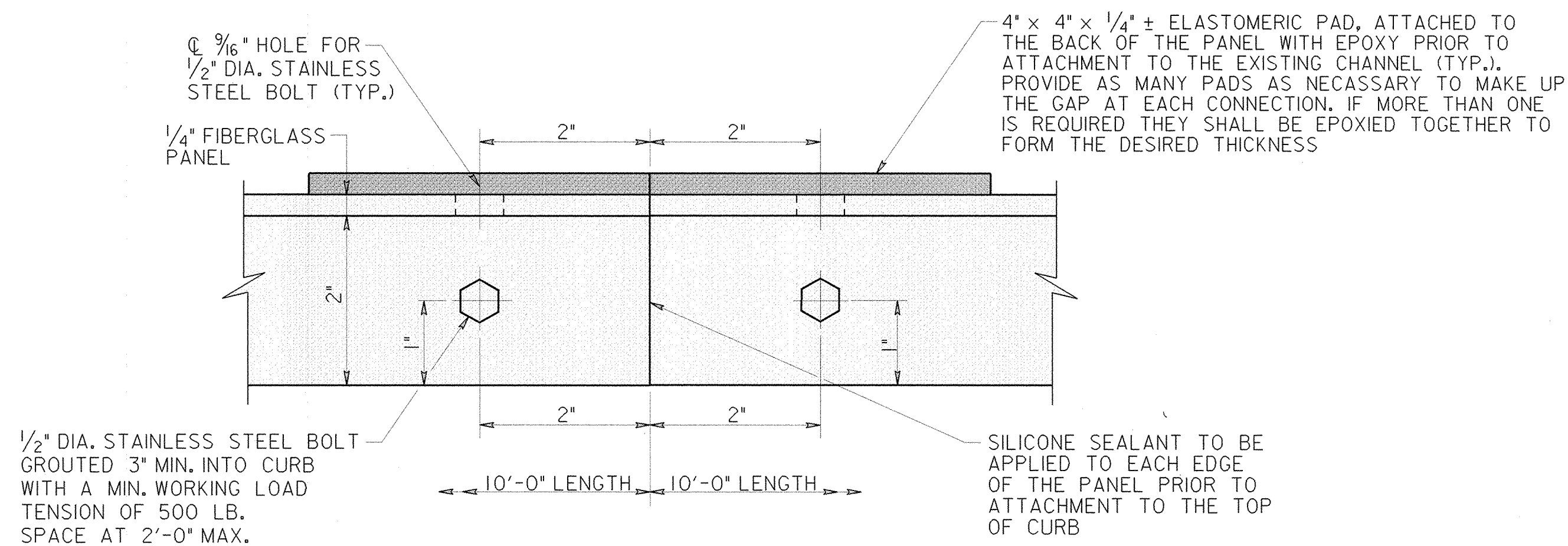


ELEVATION - FINISHING END

ELEVATION - CONNECTION

ELEVATION - STARTING END

VIEW C-C
 SCALE: 3" = 1'-0"

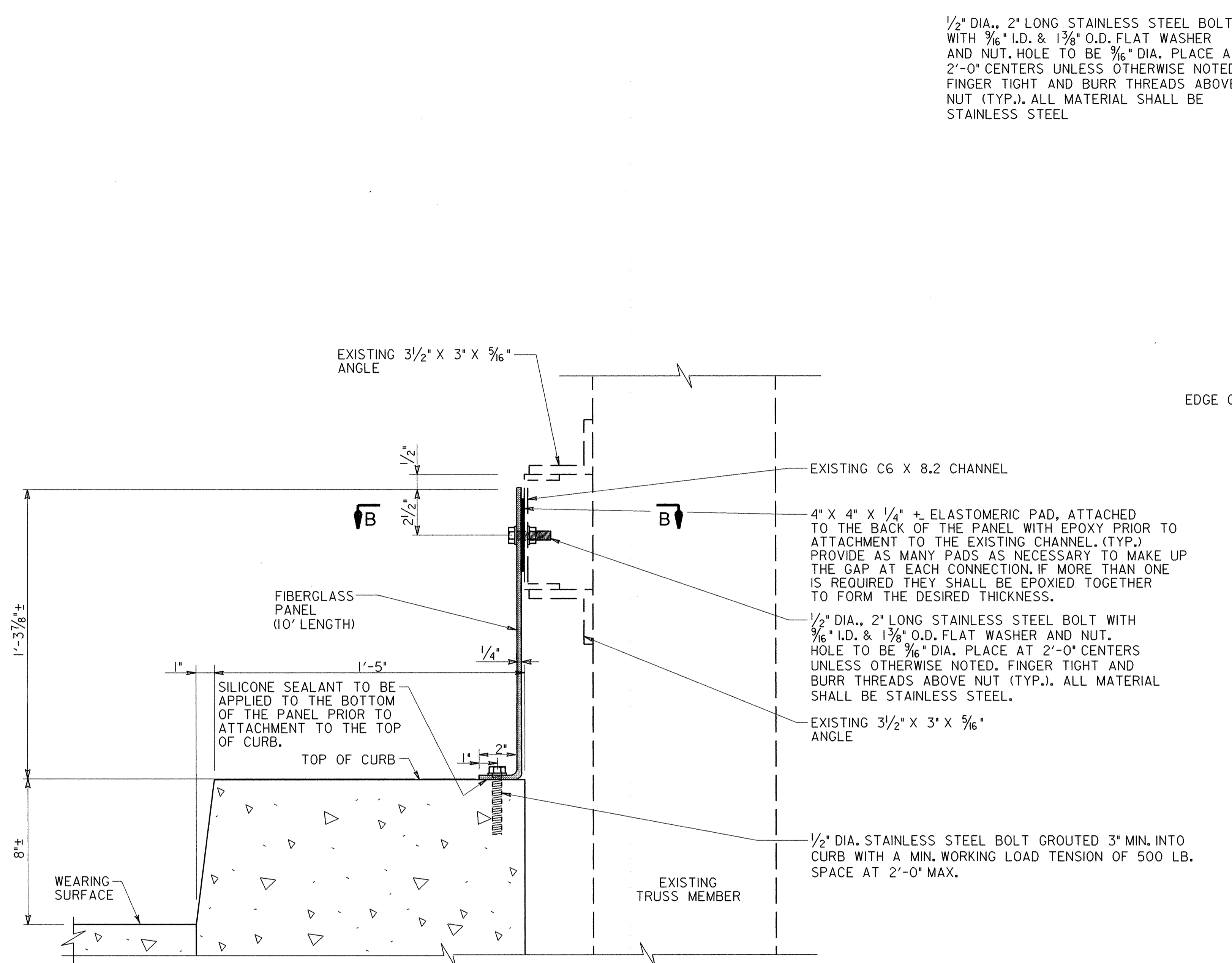


PLAN - CONNECTION DETAIL
 SCALE: 9" = 1'-0"

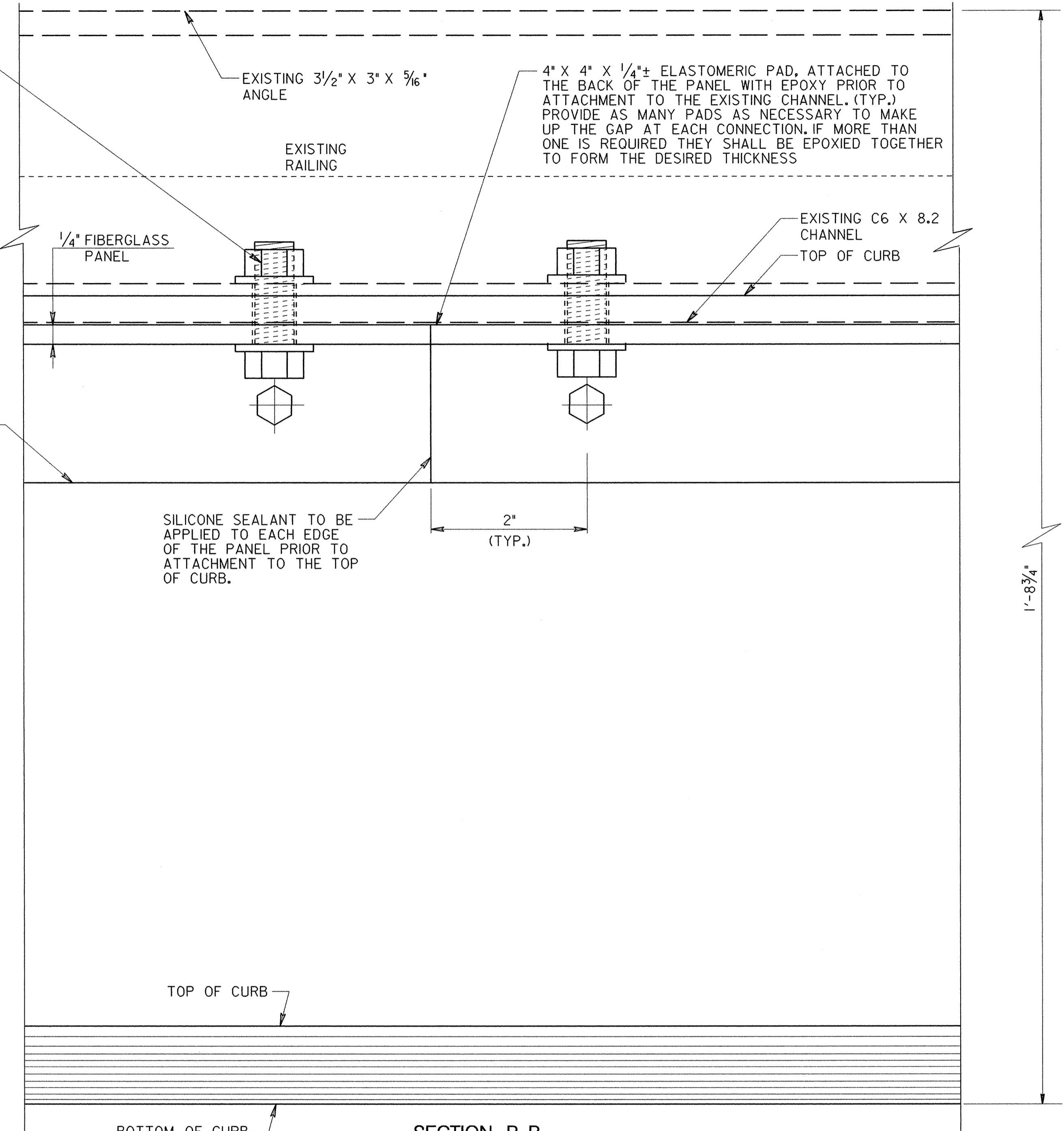
NOTES:

1. ALL HARDWARE SHALL BE STAINLESS STEEL TYPE 304
2. SILICONE SEALANT SHALL CONFORM TO SECTION 911.01.01
3. SEE SHEET NO. 6 FOR LOCATION OF VIEW C-C
4. SEE SHEET NO. 22 FOR SECTION A-A
5. ELASTOMERIC PADS AND ALL HARWARE SHALL BE INCIDENTAL TO THE "FIBERGLASS SPLASH PANEL" ITEM
6. GROUT SHALL CONFORM TO SECTION 902.11(c)

REVISIONS △ SHEET REPLACED 2/21/01 D.A.C. □ ELIMINATE BOLT AND WASHER 6/1/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK FIBERGLASS SPLASH PANEL DETAILS	
	SCALE AS SHOWN	DATE JAN. 2001
DESIGNED BY	J. K. MYERS, B.A.G.	
DRAWN BY	R. L. MERRITT, J.MOHR	
CHECKED BY	J.L.R.	
E.S.F. JAN. 30, 2001		
		SHEET NO. 21 OF 27



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



SECTION B-B
SCALE: 1" = 1'

1/2" DIA., 2" LONG STAINLESS STEEL BOLT WITH 3/16" I.D. & 1 3/8" O.D. FLAT WASHER AND NUT. HOLE TO BE 3/16" DIA. PLACE AT 2'-0" CENTERS UNLESS OTHERWISE NOTED. FINGER TIGHT AND BURR THREADS ABOVE NUT (TYP.). ALL MATERIAL SHALL BE STAINLESS STEEL

4" X 4" X 1/4" ± ELASTOMERIC PAD, ATTACHED TO THE BACK OF THE PANEL WITH EPOXY PRIOR TO ATTACHMENT TO THE EXISTING CHANNEL. (TYP.) PROVIDE AS MANY PADS AS NECESSARY TO MAKE UP THE GAP AT EACH CONNECTION. IF MORE THAN ONE IS REQUIRED THEY SHALL BE EPOXIED TOGETHER TO FORM THE DESIRED THICKNESS.

1/2" DIA., 2" LONG STAINLESS STEEL BOLT WITH 3/16" I.D. & 1 3/8" O.D. FLAT WASHER AND NUT. HOLE TO BE 3/16" DIA. PLACE AT 2'-0" CENTERS UNLESS OTHERWISE NOTED. FINGER TIGHT AND BURR THREADS ABOVE NUT (TYP.). ALL MATERIAL SHALL BE STAINLESS STEEL.

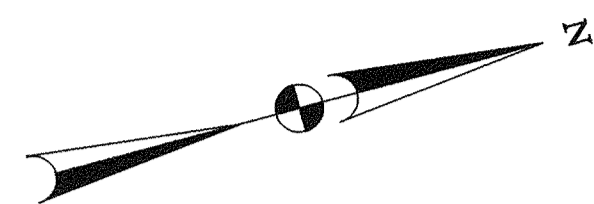
EXISTING 3 1/2" X 3" X 5/16" ANGLE

1/2" DIA. STAINLESS STEEL BOLT GROUDED 3" MIN. INTO CURB WITH A MIN. WORKING LOAD TENSION OF 500 LB. SPACE AT 2'-0" MAX.

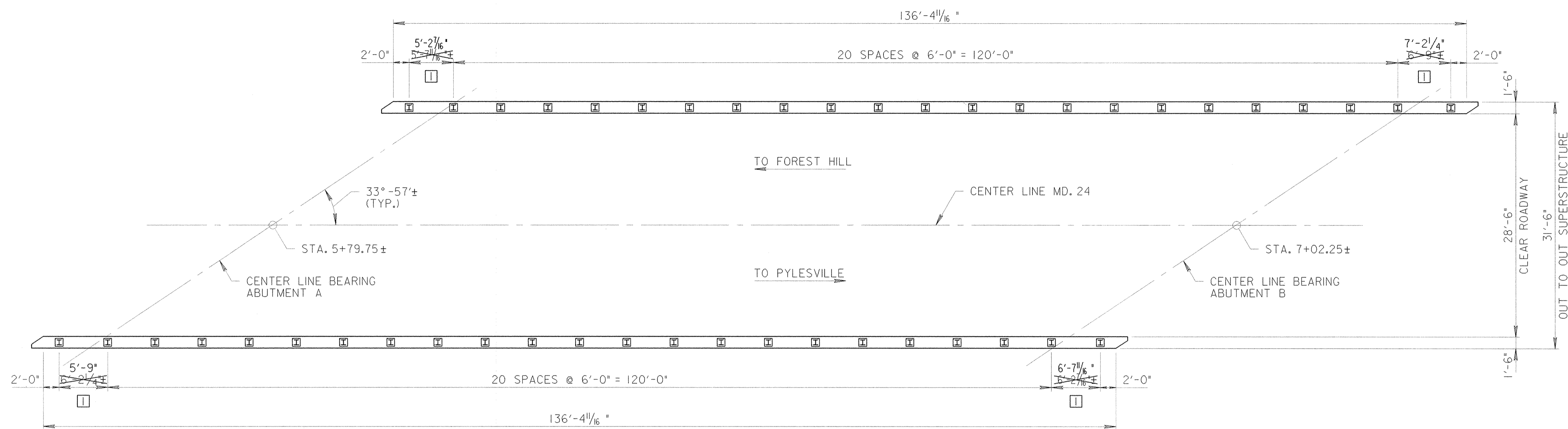
NOTES:

1. SEE SHEET NO. 21 FOR LOCATION OF SECTION A-A.
2. ELASTOMERIC PADS AND ALL HARDWARE SHALL BE INCIDENTAL TO THE "FIBERGLASS SPLASH PANEL" ITEM.
3. PROPOSED RAILING NOT SHOWN FOR CLARITY.

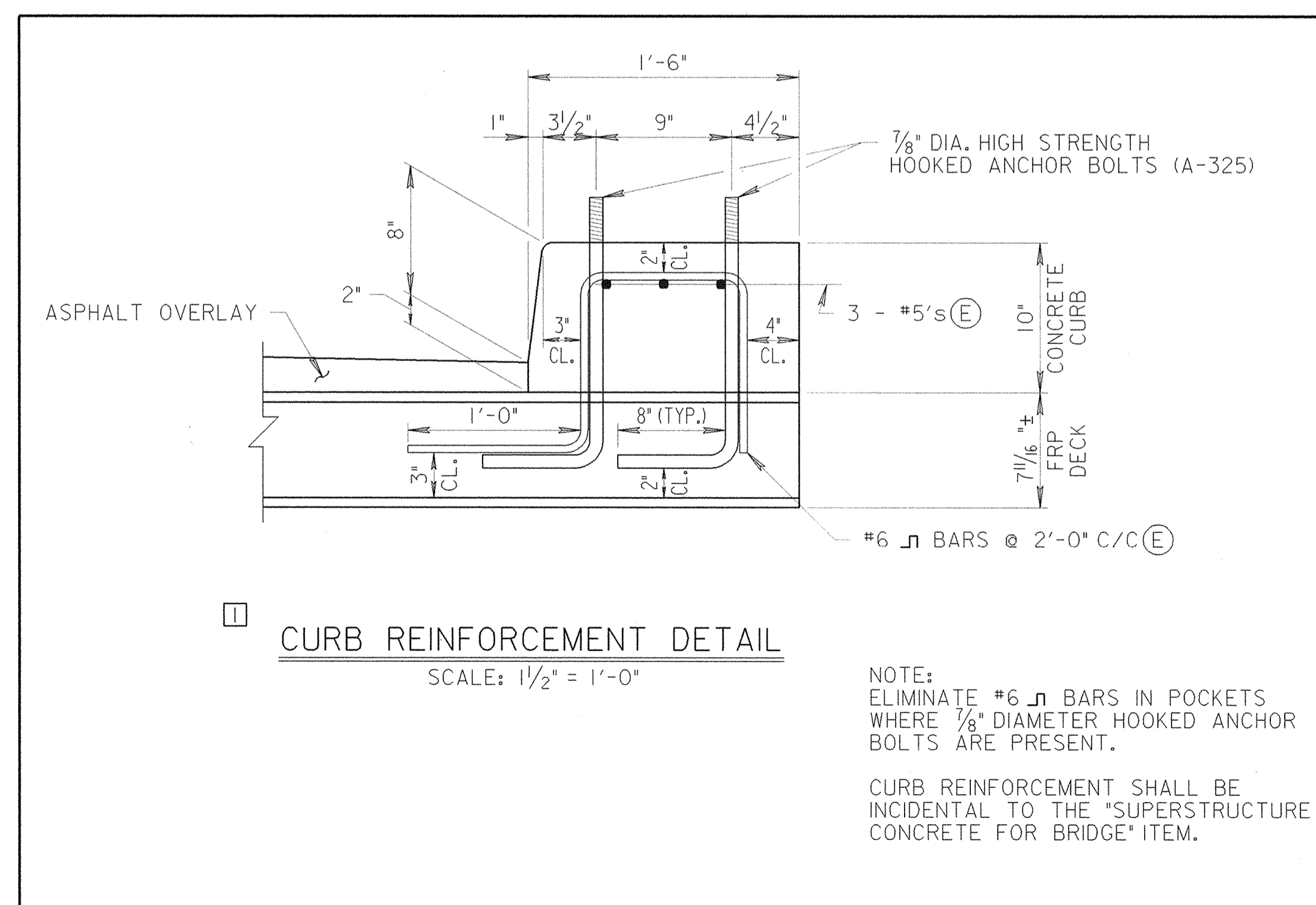
REVISIONS △ SHEET REPLACED 2/21/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT		
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK FIBERGLASS SPLASH PANEL DETAILS		
	SCALE	AS SHOWN	
	DATE	JAN. 2001	
DESIGNED BY	J. K. MYERS, B.A.G.	CONTRACT	HA2095180
DRAWN BY	R. L. MERRITT, J. MOHR		
CHECKED BY	J.L.R.		
E.S.F. JAN. 30, 2001			
		SHEET NO.	22 OF 27



NOTES:
 RAIL POSTS ANCHORAGE MUST COINCIDE WITH LOCATION OF FRP DECK POCKETS.
 FOR ADDITIONAL RAILING DETAILS, SEE SHEET NO. 24
 (E) INDICATES REINFORCING STEEL TO BE EPOXY COATED.

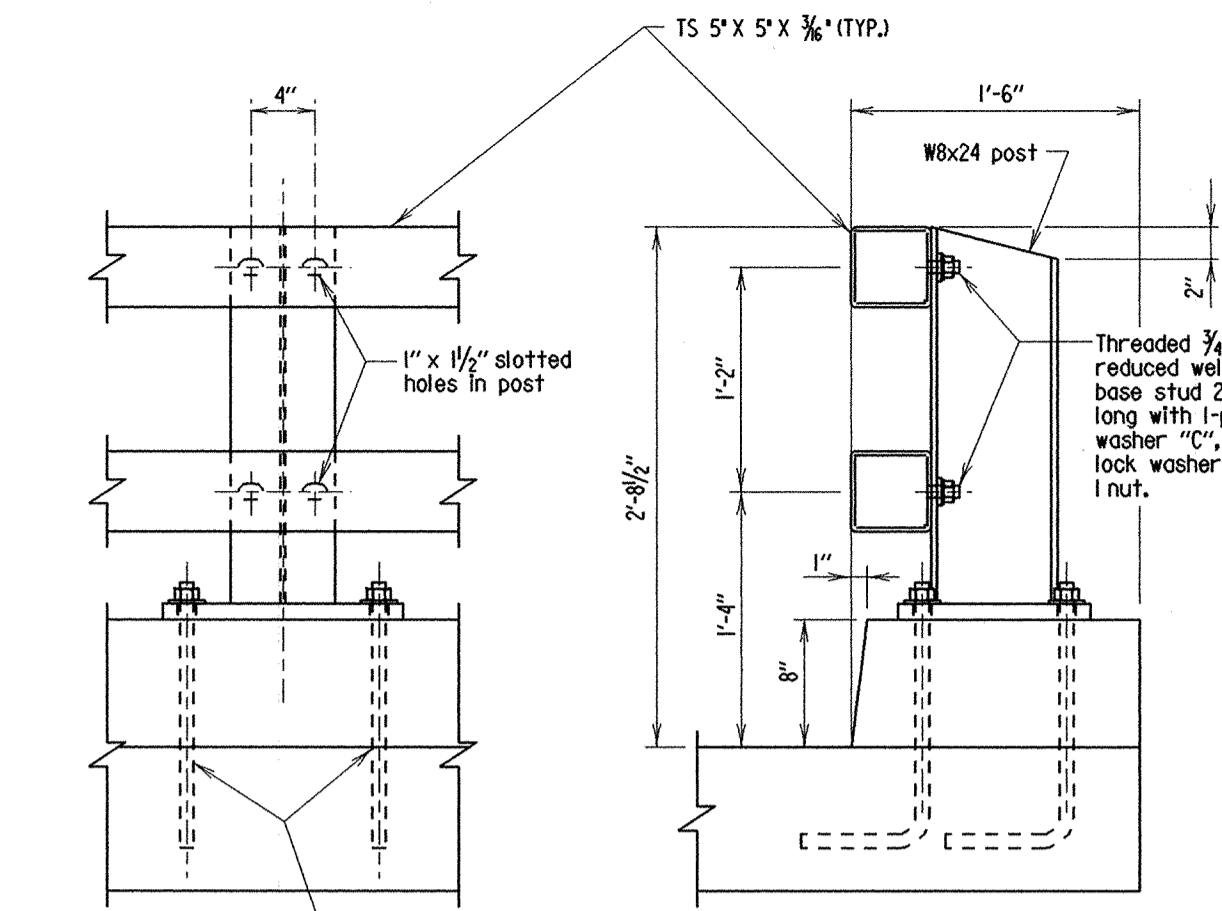


RAIL POST SPACING
 SCALE: 1/8" = 1'-0"

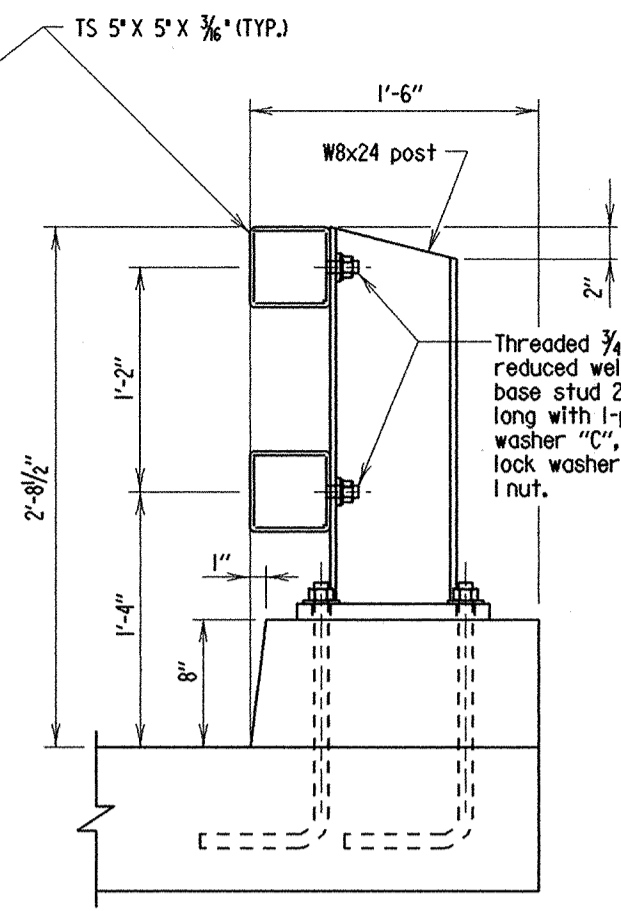


CURB REINFORCEMENT DETAIL
 SCALE: 1/2" = 1'-0"

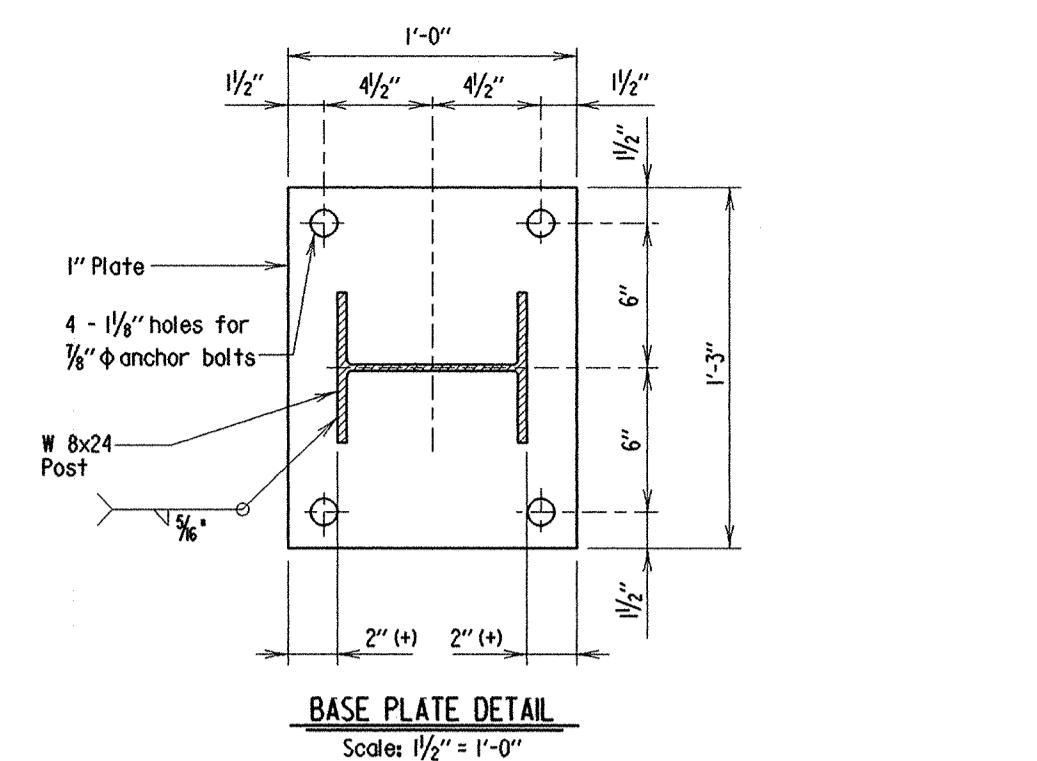
REVISIONS △ SHEET REPLACED 2/21/01 D.A.C. □ REPLACE DETAIL, REVISE SPACING 6/1/01 D.A.C.	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK RAIL POST SPACING
SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180	
DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.	
E.S.F. JAN. 30, 2001	
SHEET NO. 23 OF 27	



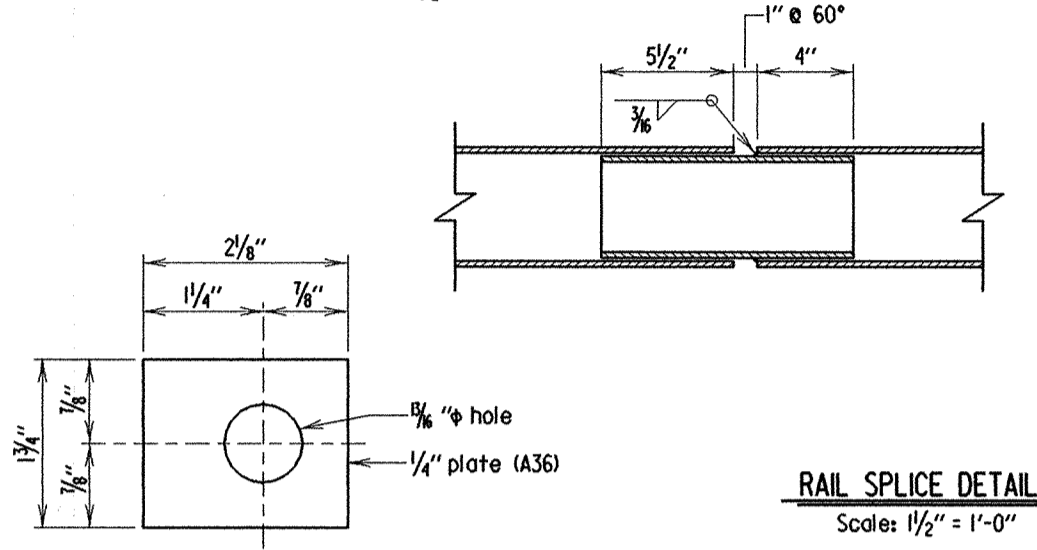
OUTSIDE ELEVATION
Scale: 1" = 1'-0"



SECTION
Scale: 1" = 1'-0"



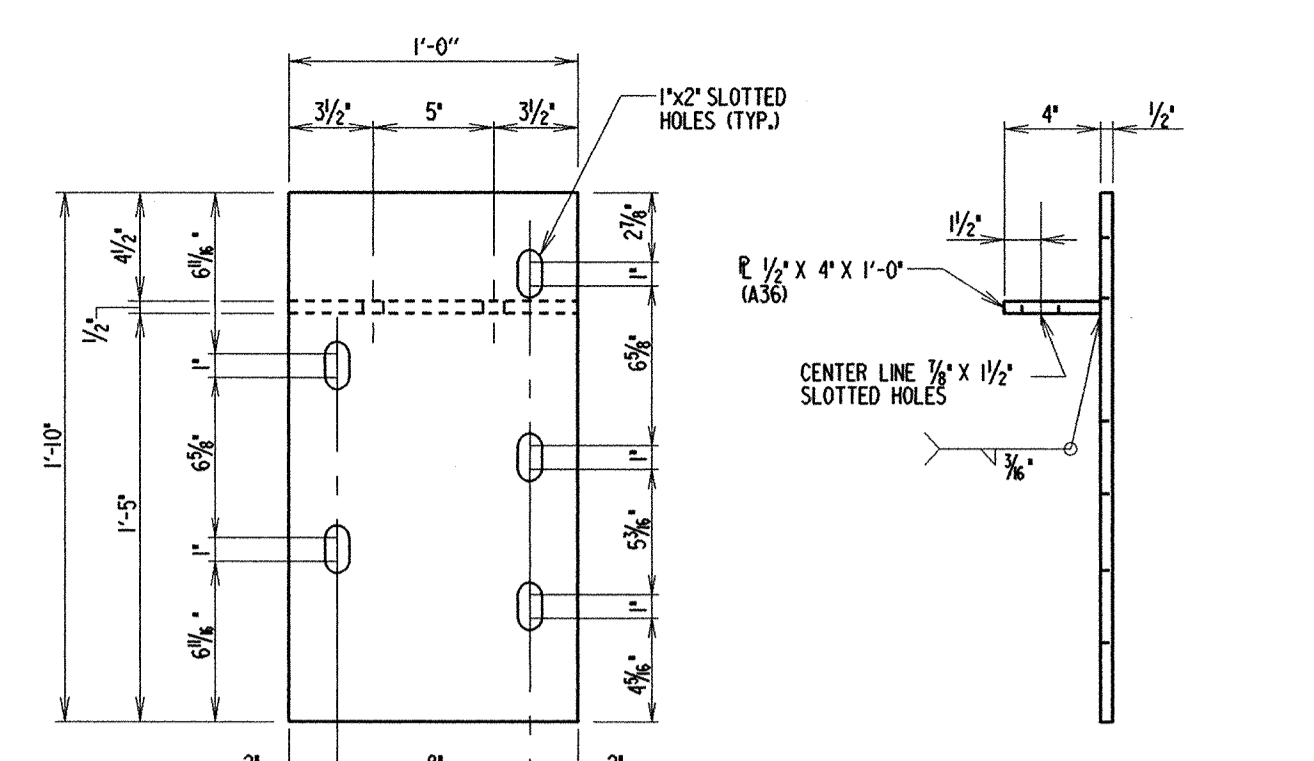
BASE PLATE DETAIL
Scale: 1/2" = 1'-0"



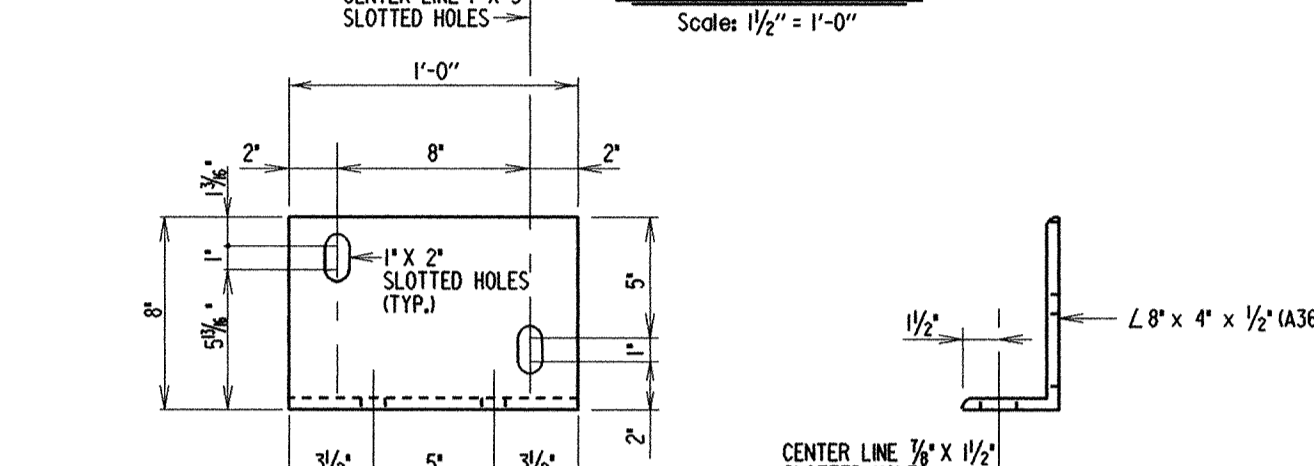
RAIL SPLICE DETAILS
Scale: 1/2" = 1'-0"



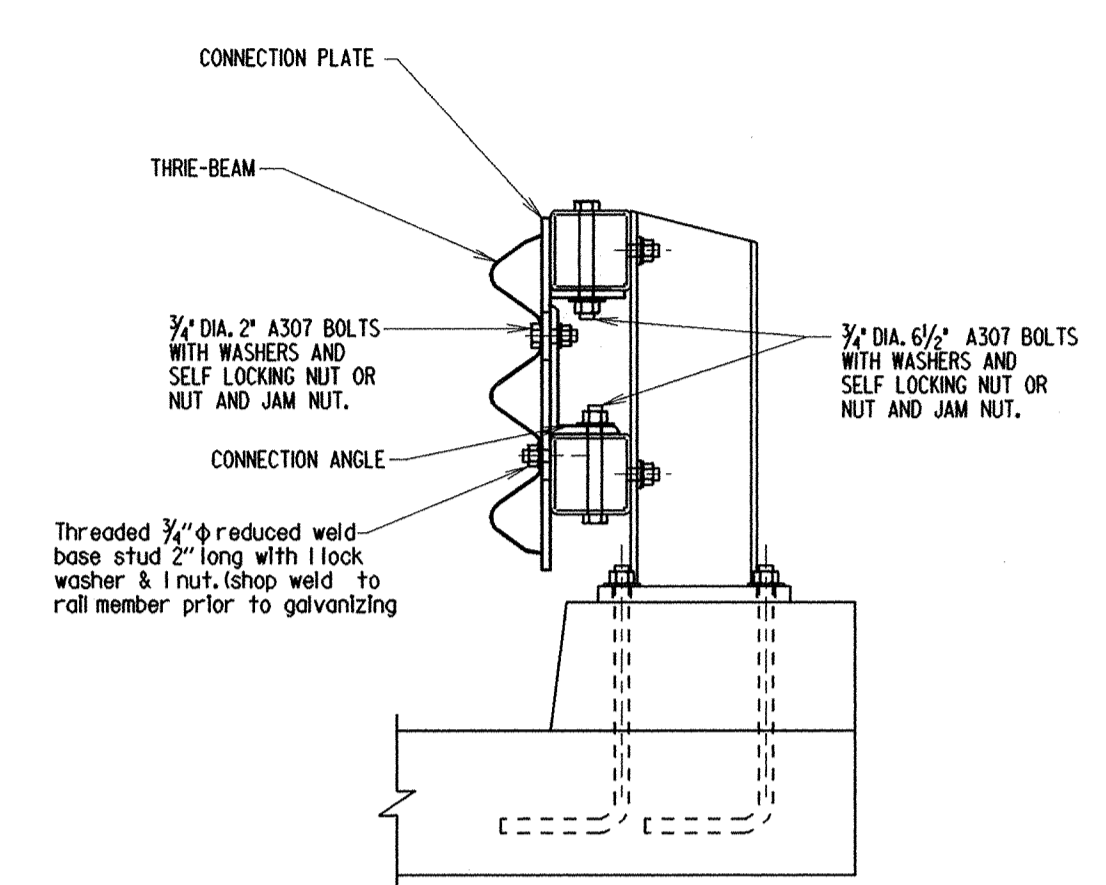
PLATE WASHER -\"/>



CONNECTION PLATE
Scale: 1/2" = 1'-0"



CONNECTION ANGLE
Scale: 1/2" = 1'-0"



W-BEAM TRAFFIC BARRIER CONNECTION DETAIL
Scale: 1/4" = 1'-0"

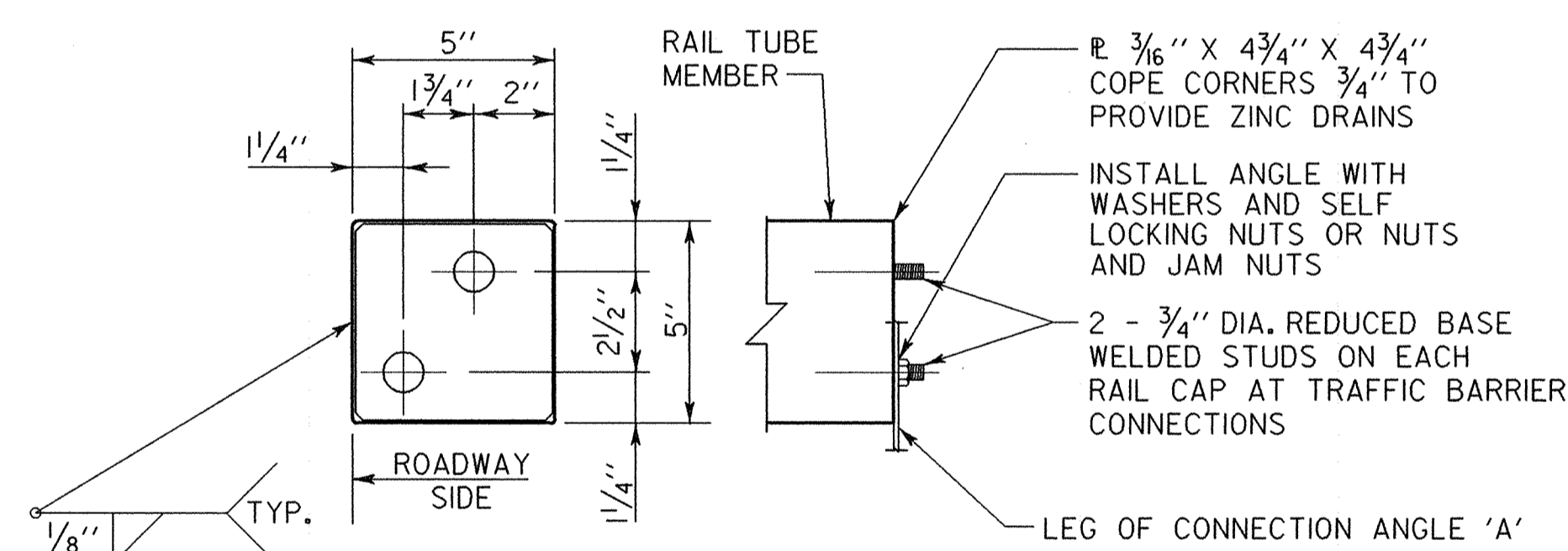
- Notes:
1. Rail elements shall be square structural tubing in accordance with ASTM Specification A500 grade B, A618 or A501.
 2. Steel posts and plates shall conform to ASTM Specification A36 unless otherwise noted.
 3. For Coating System, See Special Provisions.
 4. Railing shall be fabricated to the 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
DATE:	
REVISIONS	STANDARD 5" STRUCTURAL TUBING RAIL
SMA	PRWA
NO.	SHEET 1 OF 5

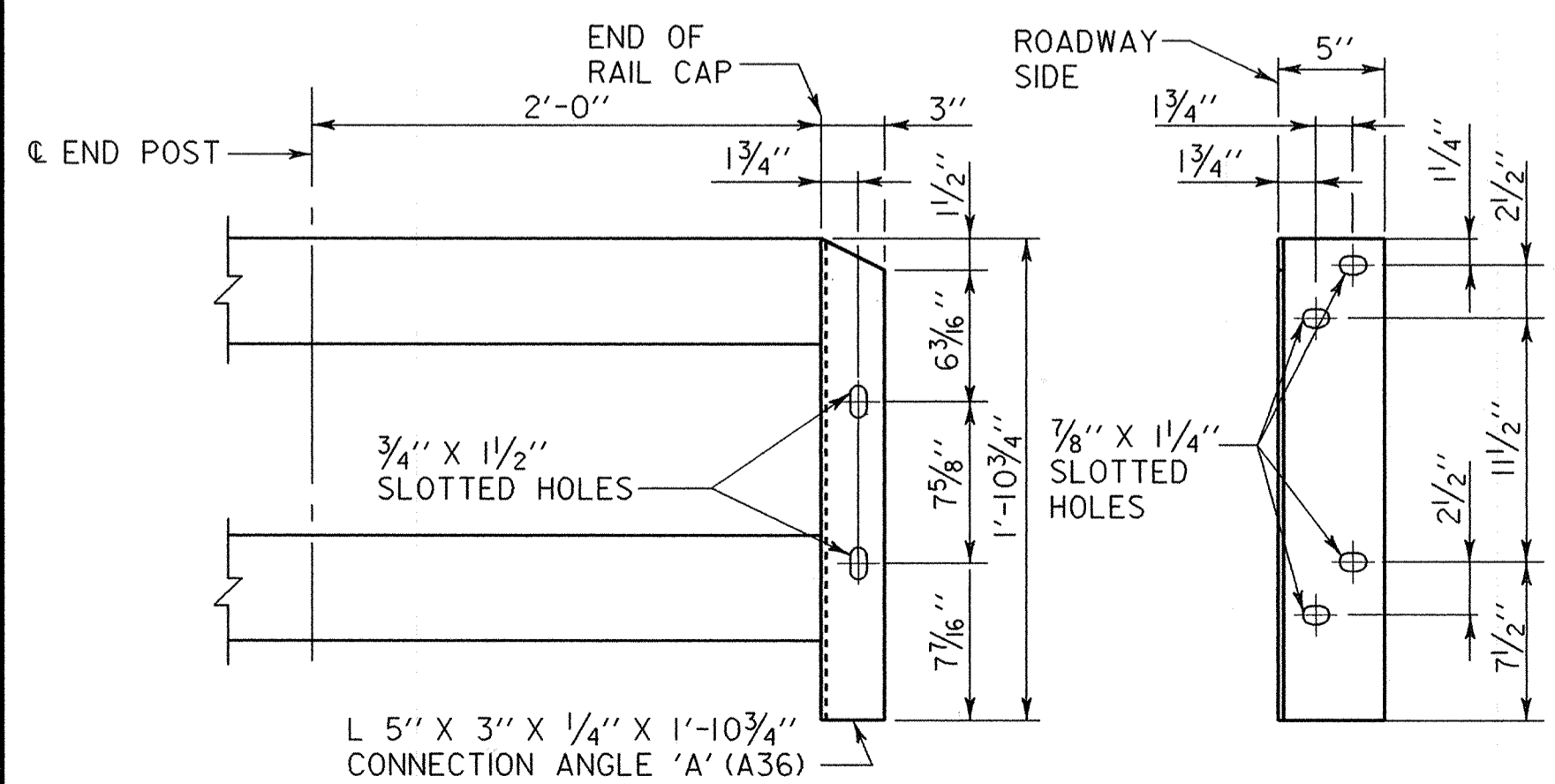
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE:	
REVISIONS	STANDARD 5" STRUCTURAL TUBING RAIL
SMA	PRWA
NO.	SHEET 2 OF 5

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE:	
REVISIONS	STANDARD 5" STRUCTURAL TUBING RAIL
SMA	PRWA
NO.	SHEET 3 OF 5

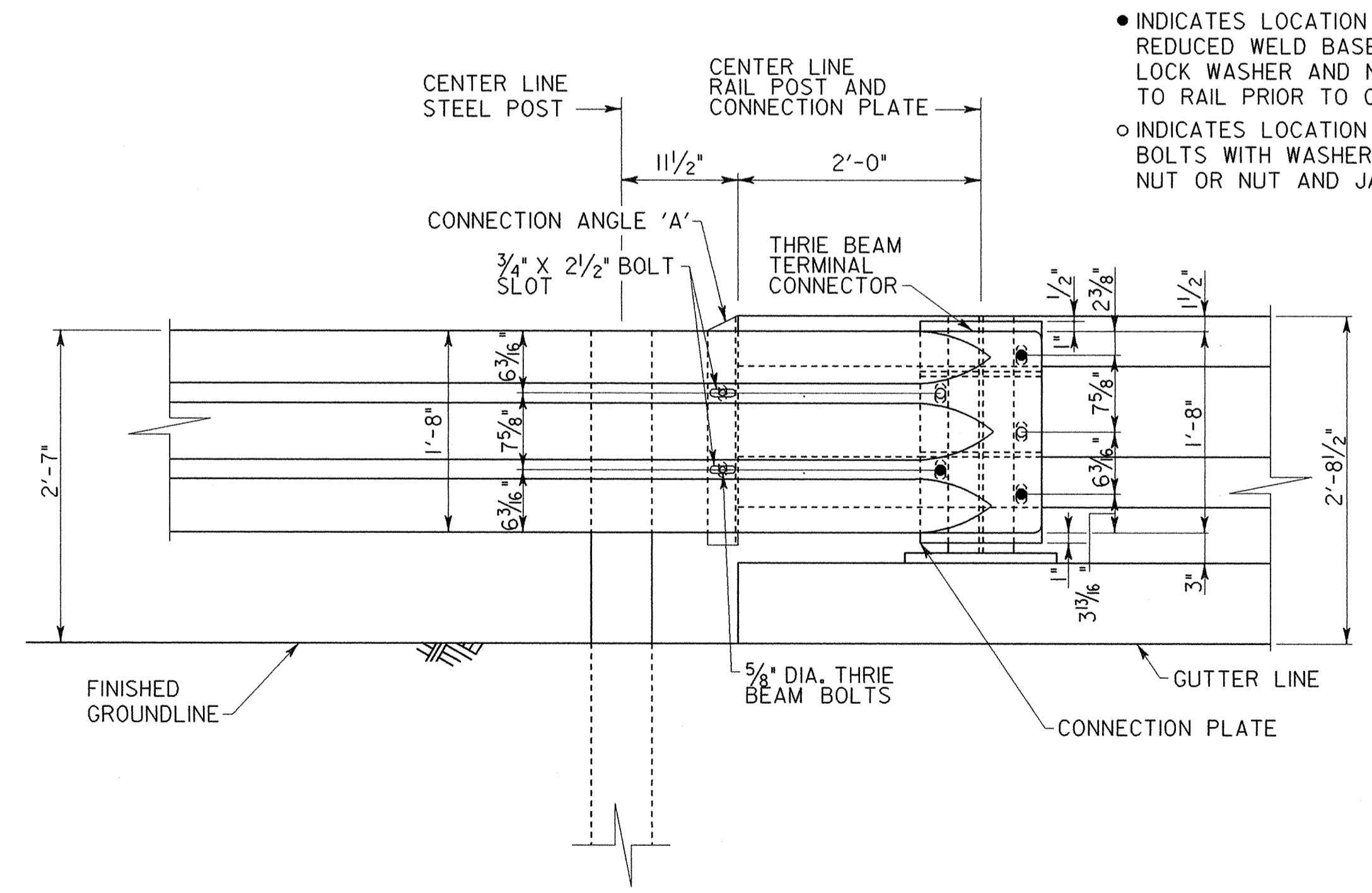
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE:	
REVISIONS	STANDARD 5" STRUCTURAL TUBING RAIL
SMA	PRWA
NO.	SHEET 5 OF 5



RAIL CAP DETAIL
Scale: 1/2" = 1'-0"



CONNECTION ANGLE 'A'
Scale: 1/2" = 1'-0"

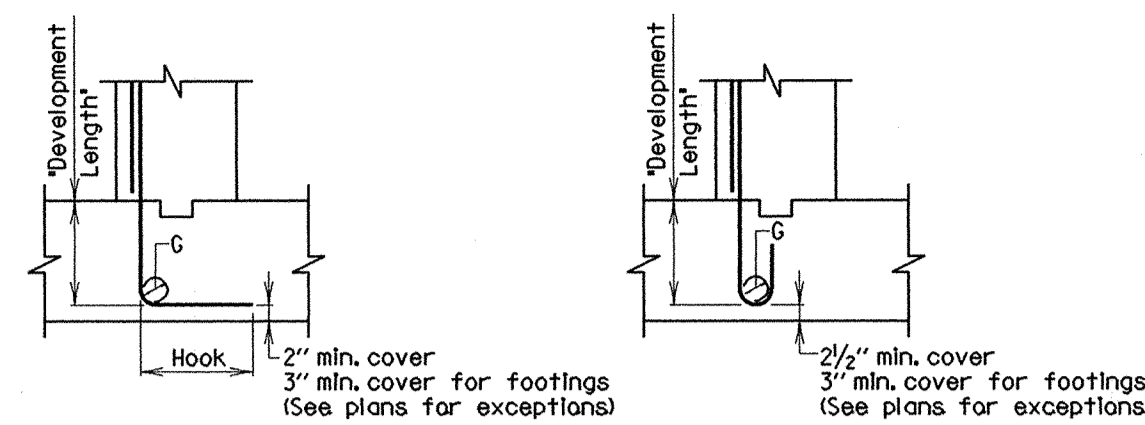


THREE BEAM CONNECTION DETAIL
Scale: 1" = 1'-0"

- 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.

NOTES:
FOR RAIL POST SPACING DETAILS, SEE SHEET NO. 23

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
△ SHEET REPLACED 2/21/01 D.A.C.	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK RAILING DETAILS
	SCALE AS SHOWN DATE JAN. 2001 CONTRACT HA2095180
	DESIGNED BY B.A.G. DRAWN BY D.A.C. CHECKED BY J.L.R.
	E.S.F. JAN. 30, 2001

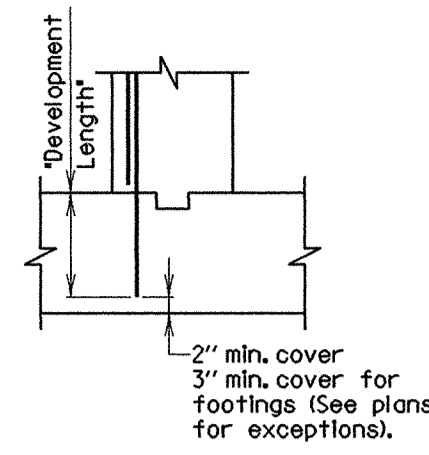


STANDARD 90° HOOK

BAR SIZE	* LOCATION CATEGORY		
	D	E	F
#4	7"	9"	8"
#5	8"	1'-0"	9"
#6	10"	1'-2"	11"
#7	11"	1'-4"	1'-1"
#8	1'-1"	1'-6"	1'-3"
#9	1'-3"	1'-9"	1'-5"
#10	1'-4"	1'-11"	1'-7"
#11	1'-6"	2'-2"	1'-9"

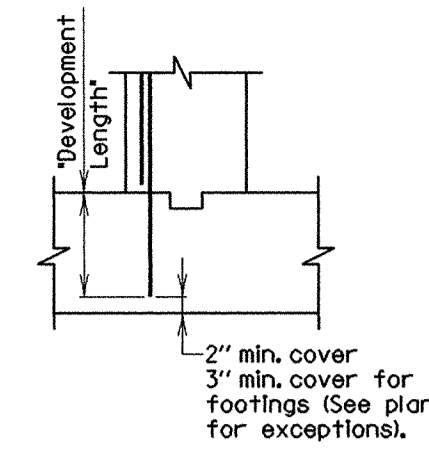
STANDARD 180° HOOK

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



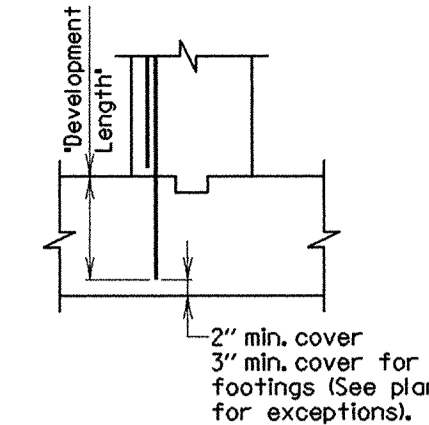
STANDARD STRAIGHT BAR

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



STANDARD STRAIGHT BAR

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



STANDARD STRAIGHT BAR

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

* 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' inches or more apart.

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 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: 2/2/90	REVISIONS
SHA	FRWA
2-10-92	
11-23-93	
FRWA APPROVAL	NO. M6.141-90-214 SHEET 3 OF 3

* 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" in, and for 90° deg. hook, cover on bar extension beyond hook not less than 2" in.
 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 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.
 4. If depth of member does not allow bar development length indicated in Categories A, B, and C; 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: 4/4/86	REVISIONS
SHA	FRWA
12-22-86	6-8-90
2-22-90	
11-23-93	
FRWA APPROVAL	NO. M6.101-86-180 SHEET 1 OF 1

* 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' inches or more apart.

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.
 4. If depth of member does not allow bar development length indicated in Categories A, B, and C; then hook shall be added to all bars not conforming, as per D, E, and F per Std. No. M6.081-86-178.

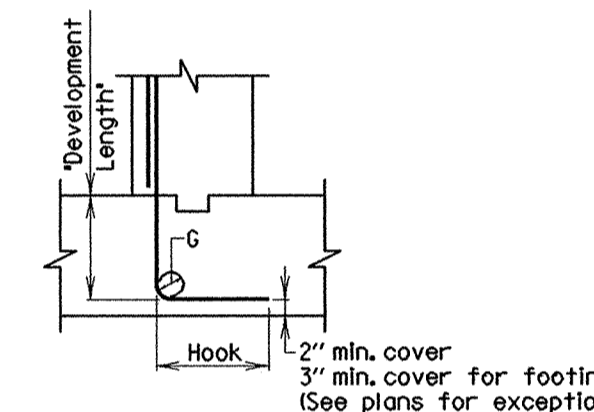
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 2/2/90	REVISIONS
SHA	FRWA
11-23-93	
FRWA APPROVAL	NO. M6.141-90-214 SHEET 1 OF 3

* 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' inches or more apart.

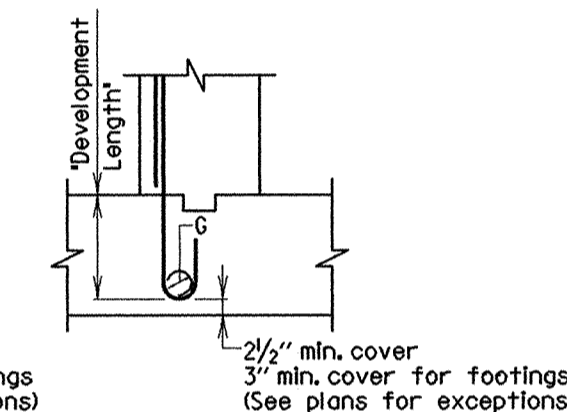
Note:
 1. When development length is not specified on the plans, the above dimensions shall be used.
 2. These development lengths do not apply when bar is in lightweight concrete or any other strength of concrete.
 3. These bar laps only apply where the General Notes indicate.
 Reinforcing Steel Design, fs= 24,000 p.s.i.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 2/2/90	REVISIONS
SHA	FRWA
2-10-92	
11-23-93	
FRWA APPROVAL	NO. M6.141-90-214 SHEET 2 OF 3



STANDARD 90° HOOK

BAR SIZE	* LOCATION CATEGORY		
	D	E	F
#4	8"	11"	9"
#5	9"	1'-1"	11"
#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"



STANDARD 180° HOOK

BAR SIZE	RECOMMENDED END HOOKS ALL GRADES		
	Finished bend diameter & Id.	180 Degree hooks	90 Degree hooks
#4	3"	6"	8"
#5	3 3/4"	7"	10"
#6	4 1/4"	8"	1'-0"
#7	5 1/4"	10"	1'-2"
#8	6"	11"	1'-4"
#9	9 1/2"	1'-3"	1'-7"
#10	10 1/2"	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" in, and for 90° deg. hook, cover on bar extension beyond hook not less than 2" in.
 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 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.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 4/4/86	REVISIONS
SHA	FRWA
12-22-86	6-8-90
2-22-90	
11-23-93	
FRWA APPROVAL	NO. M6.081-86-178 SHEET 1 OF 1

* 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' inches or more apart.

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.
 4. If depth of member does not allow bar development length indicated in Categories A, B, and C; then hook shall be added to all bars not conforming, as per D, E, and F per Std. No. M6.101-86-180.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 2/2/90	REVISIONS
SHA	FRWA
11-23-93	
FRWA APPROVAL	NO. M6.161-90-216 SHEET 1 OF 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' inches or more apart.

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.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 2/2/90	REVISIONS
SHA	FRWA
11-23-93	
FRWA APPROVAL	NO. M6.161-90-216 SHEET 2 OF 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' inches or more apart.

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.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 2/2/90	REVISIONS
SHA	FRWA
2-10-92	
11-23-93	
FRWA APPROVAL	NO. M6.161-90-216 SHEET 3 OF 3

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK STANDARD DETAILS	
SCALE	AS SHOWN DATE JAN. 2001 CONTRACT HA2085180
DESIGNED BY	B.A.G.
DRAWN BY	J.A.M.
CHECKED BY	J.L.R.
E. S. F. JAN 30 2001	
SHEET NO. 25 OF 27	

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 inches apart.
- C - All bars not in Category A spaced 6 inches 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"
#5	3'-8"	3'-3"	2'-7"	1 7/8"	3 3/4"
#6	4'-5"	3'-10"	3'-1"	2 1/4"	4 1/2"
#7	5'-11"	5'-3"	4'-2"	2 5/8"	5 1/4"
#8	7'-9"	6'-10"	5'-6"	3"	6"
#9	9'-10"	8'-8"	6'-11"	3 3/4"	6 3/4"
#10	12'-5"	11'-0"	8'-10"	3 3/4"	7 1/2"
#11	15'-3"	13'-6"	10'-10"	4 1/4"	8 1/2"

* 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 inches apart.
- C - All bars not in Category A spaced 6 inches or more apart.

BAR SIZE	* LOCATION CATEGORY		
	A	B	C
#4	2'-9"	2'-0"	1'-7"
#5	3'-6"	2'-6"	2'-0"
#6	4'-2"	3'-0"	2'-5"
#7	5'-7"		3'-3"
#8	7'-4"	Does Not Exist	4'-3"
#9	9'-4"		5'-4"
#10	11'-10"		6'-9"
#11	14'-6"		8'-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 inches apart.
- C - All bars not in Category A spaced 6 inches or more apart.

- Note:
- When bar lap is not specified on the plans, the above dimensions shall be used.
 - These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
 - These bar laps only apply where the General Notes indicate Reinforcing Steel Design, fs= 24,000 p.s.i.

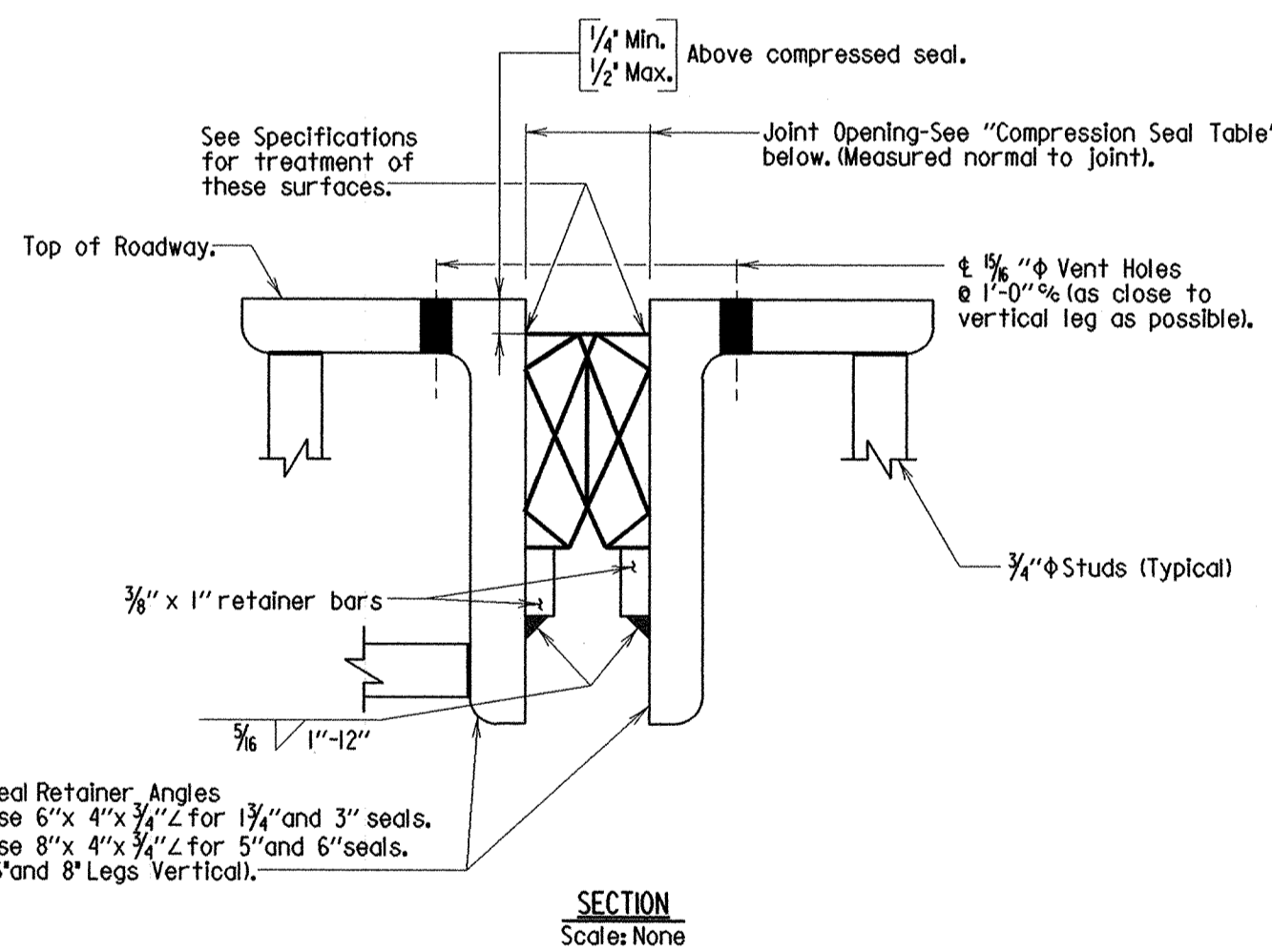
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 4/30/91	CHIEF ENGR. BRIDGE DEVEL.
REVISIONS	
2-2-92	SHA PWMA
2-11-92	
11-23-93	
11-23-93	
NO. M16.071-81-127	SHEET 1 OF 3

- Note:
- When bar lap is not specified on the plans, the above dimensions shall be used.
 - These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
 - 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: 2/2/90	CHIEF ENGR. BRIDGE DEVEL.
REVISIONS	
2-10-92	SHA PWMA
11-23-93	
NO. M16.071-81-127	SHEET 2 OF 3

- Note:
- When bar lap is not specified on the plans, the above dimensions shall be used.
 - These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
 - 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: 2/2/90	CHIEF ENGR. BRIDGE DEVEL.
REVISIONS	
2-10-92	SHA PWMA
11-23-93	
NO. M16.071-81-127	SHEET 3 OF 3



Location	Uncompressed Seal Width	Joint Opening @					Movement Rating
		40°F	50°F	60°F	70°F	80°F	
ABUTMENT A	1 3/4"	1 5/8"	1 1/4"	1 1/8"	1"	5/8"	0.66"
	3"		1 1/8"				1.25"
ABUTMENT B	5"			3"			2.50"
	6"	3 3/8"	3 3/4"	3 3/8"	3 1/2"	3 3/8"	2.85"

- Note:
- The 1 1/4" and 3" seals to be one piece for full length of seal (no joints).
 - The 5" and 6" seals may have one shop splice per joint, if the length of joint exceeds 50'. Splice shall be at least 15' from gutter line.

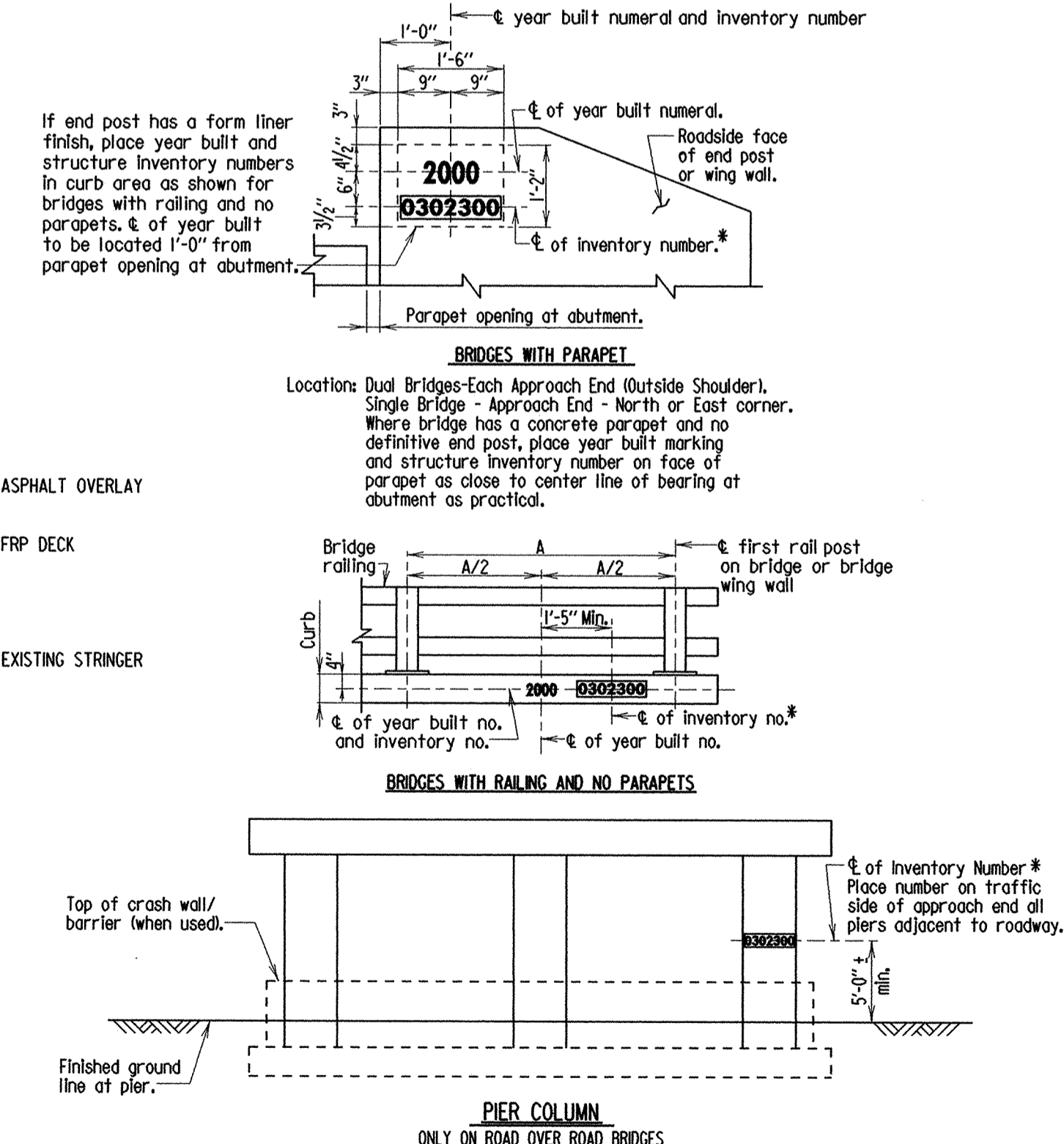
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
COMPRESSION SEAL JOINT AND RETAINING ANGLE DETAIL
SHEET 1 OF 1

- Notes:
- New bridge details shown.
 - See Standard No. BR-SS16.06)-78-72 showing special attachment of new clip angle.
 - Compression seal to be placed in one continuous piece, after joint angles are set, and deck and entire backwall are in place.
 - See Standard No. BR-SS17.01)-77-63 and BR-SS16.02)-75-4 for additional details.
 - Ship and erect seal retaining angles as a unit.

STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
COMPRESSION SEAL ROADWAY JOINTS AT ABUTMENTS
SHEET ___ OF ___

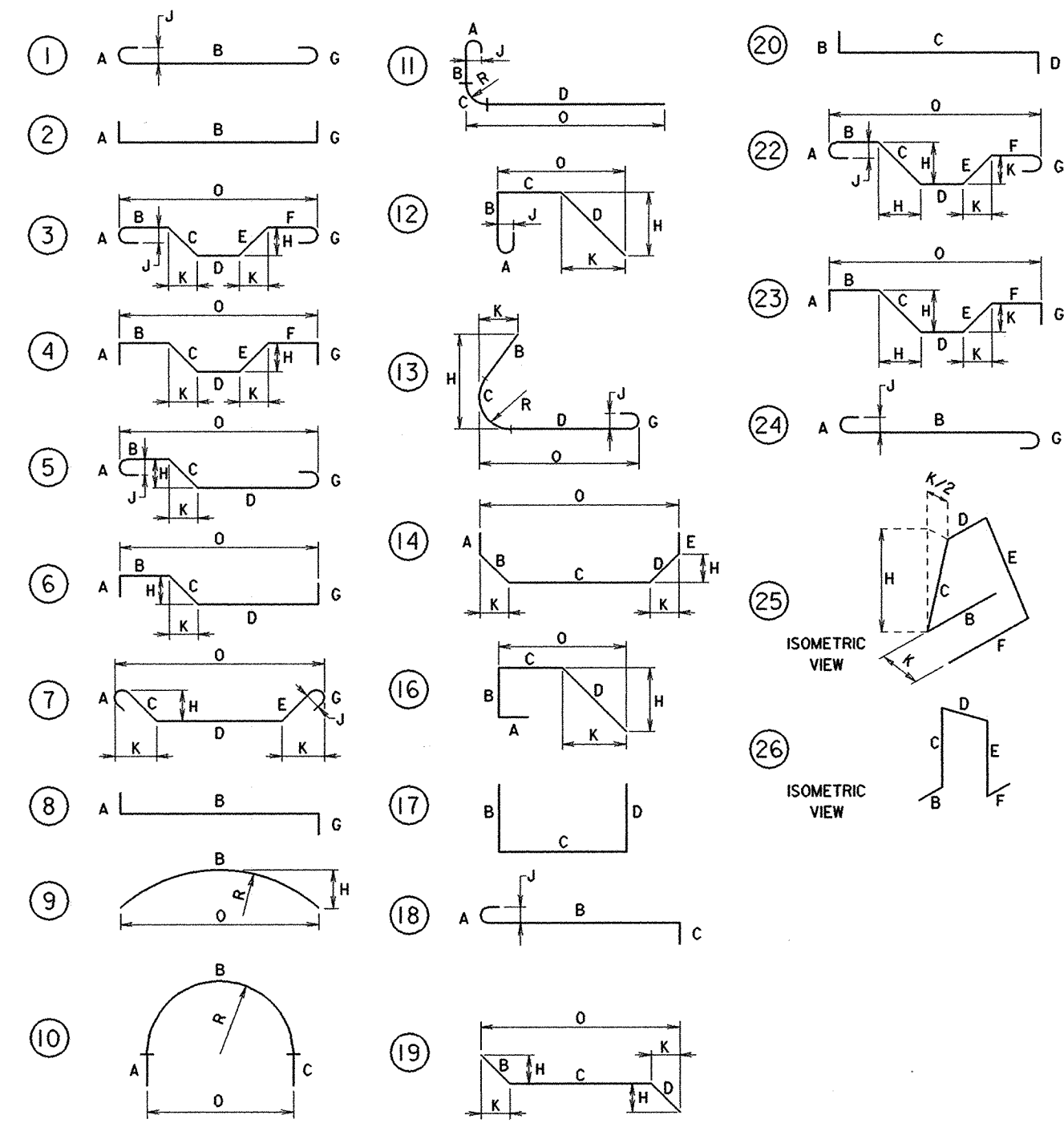
- Notes:
- For existing structures, where a year built is shown on the structure and structure is to be rehabilitated, the marking should read 1942-2000 (old year first - new year).
 - For existing structures with no year built contact the Office of Bridge Development for old year.
 - For Year Built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

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
DATE: 3/14/99	CHIEF ENGR. BRIDGE DEVEL.
REVISIONS	
3-10-00	SHA PWMA
12-7-00	
NO. M10.041-99-331	SHEET 1 OF 1

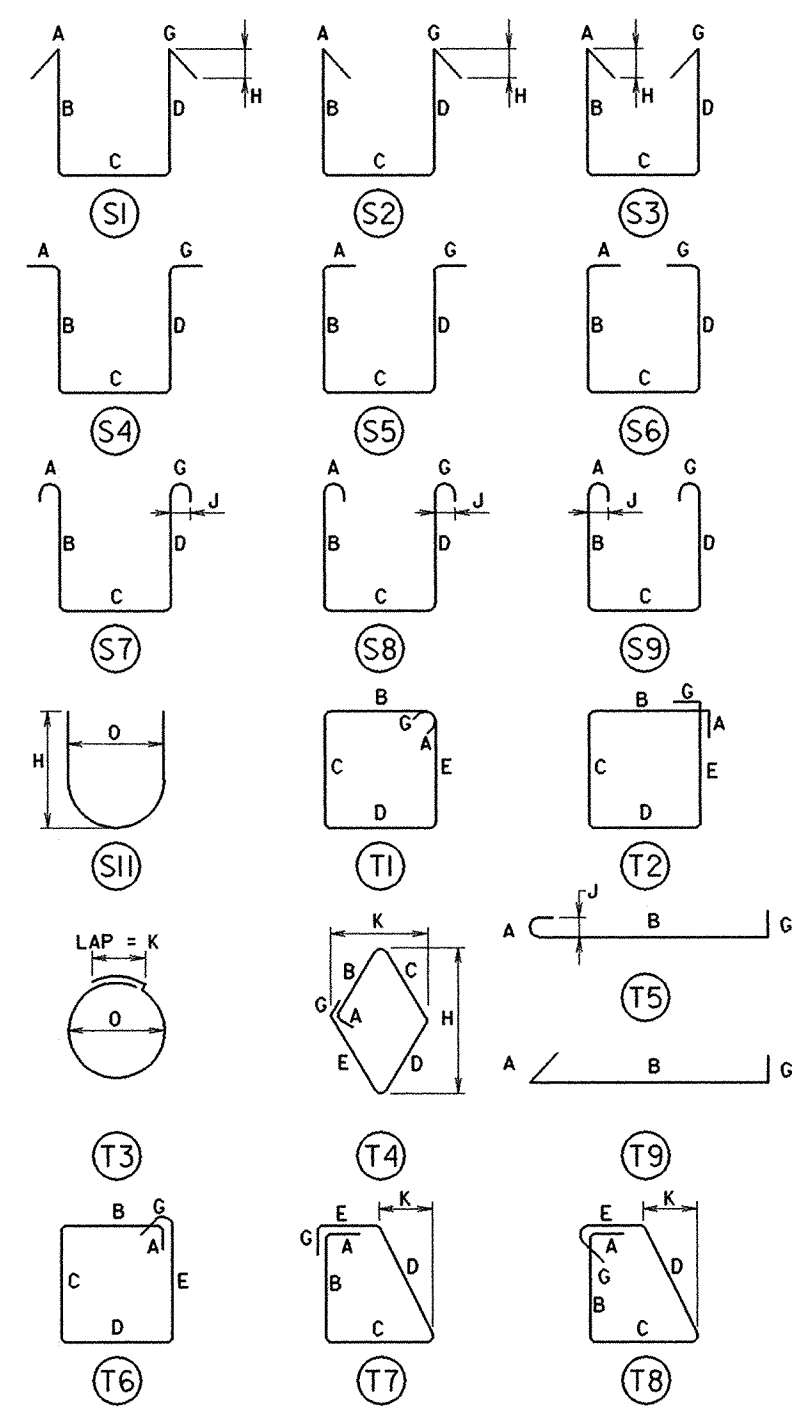


REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK STANDARD DETAILS
SCALE AS SHOWN	DATE JAN. 2001 CONTRACT HA2095180
DESIGNED BY B.A.G.	
DRAWN BY J.A.M.	
CHECKED BY J.L.R.	
E. S. F.	
JAN 30 2001	
SHEET NO. 26 OF 27	

ACI TYPICAL BAR BENDS



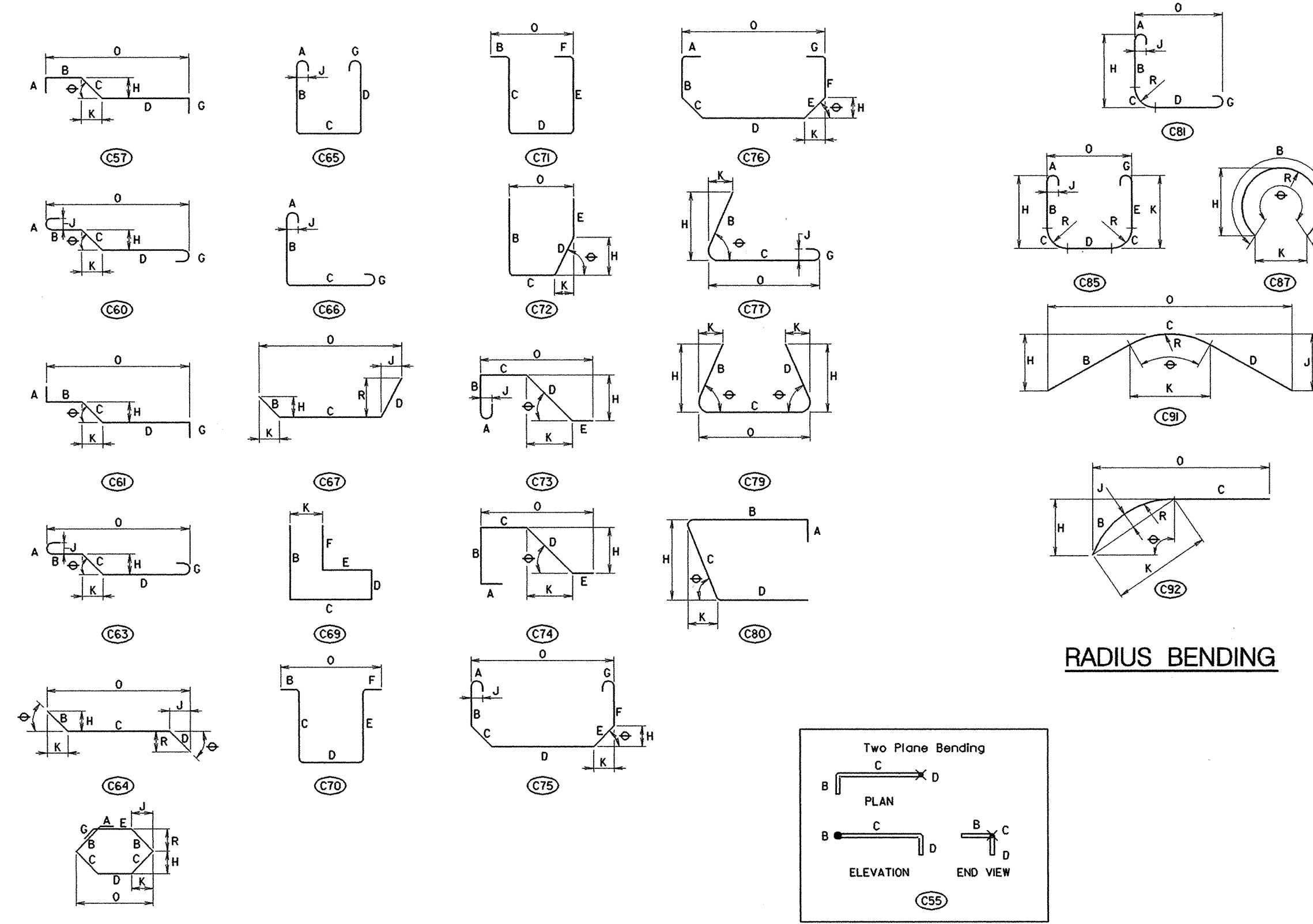
STANDARD PIN BENDING



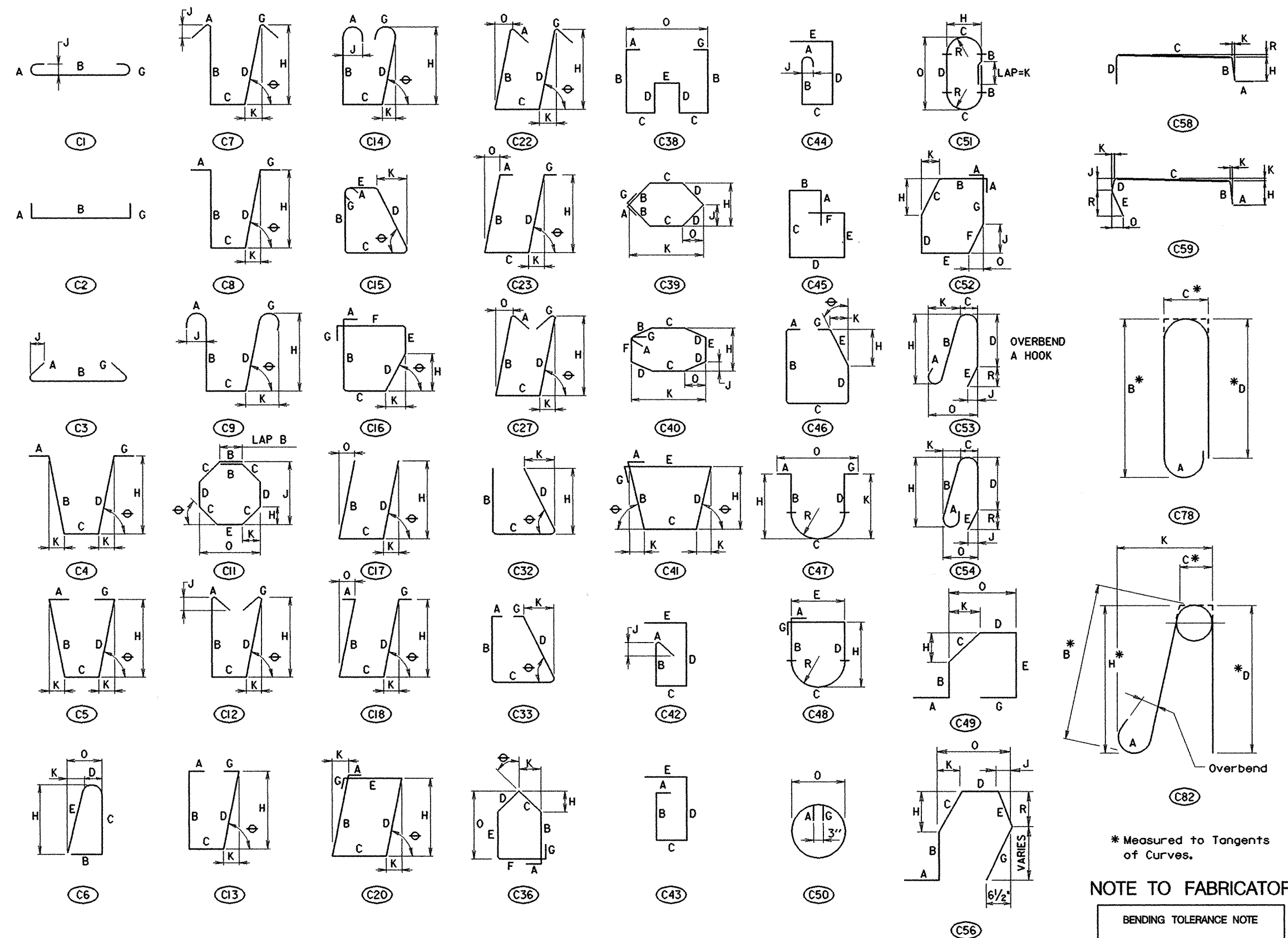
NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0) MINUS (3) NORMAL ACI BENDING TOLERANCES

TIES AND STIRRUPS

SHA TYPICAL BAR BENDS



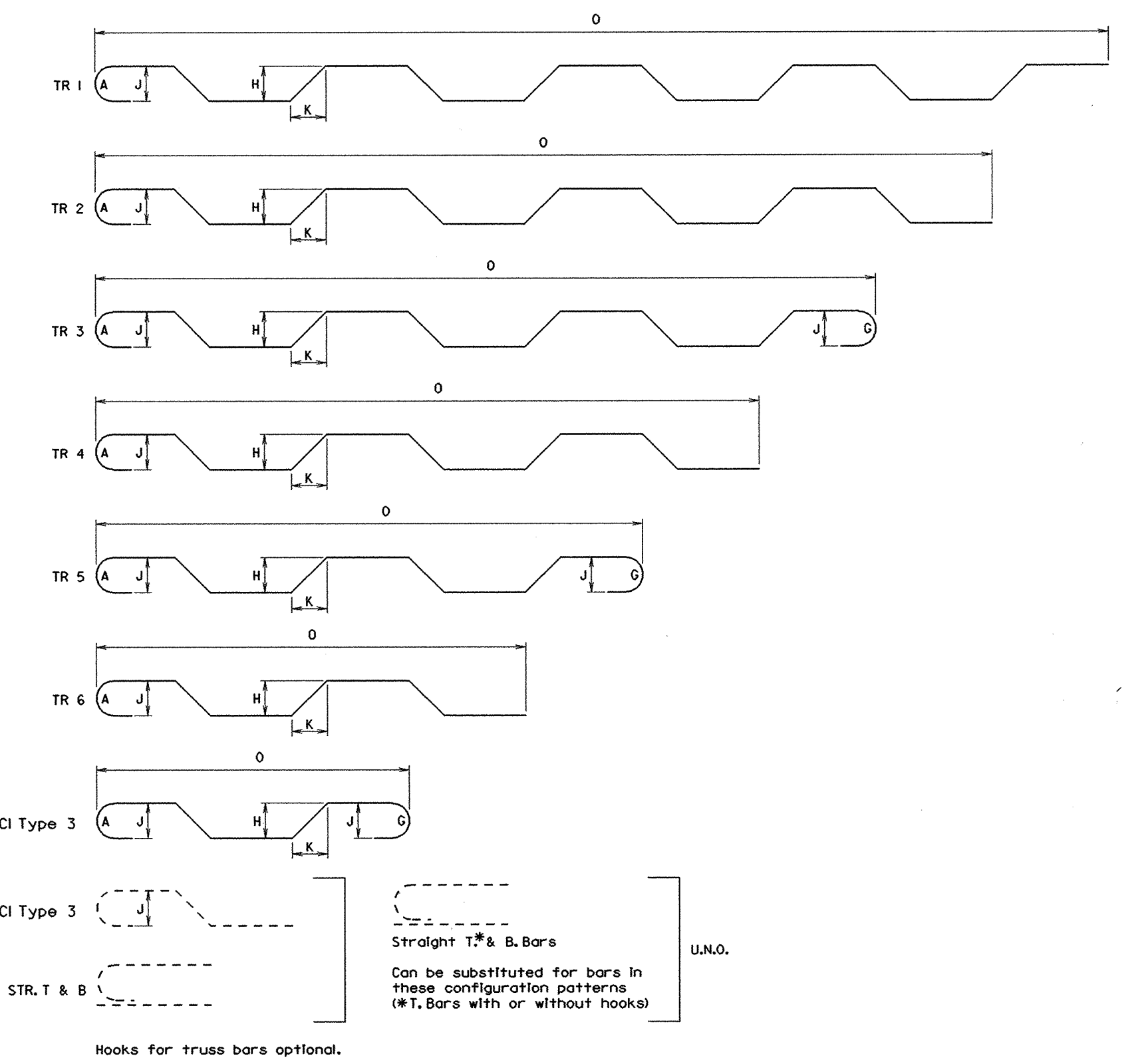
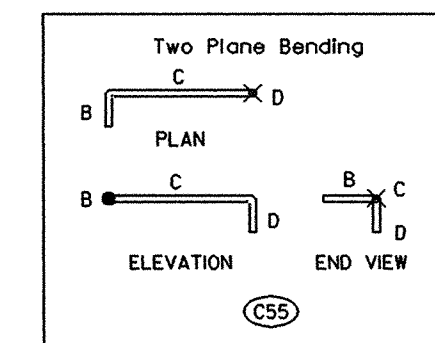
STANDARD PIN BENDING



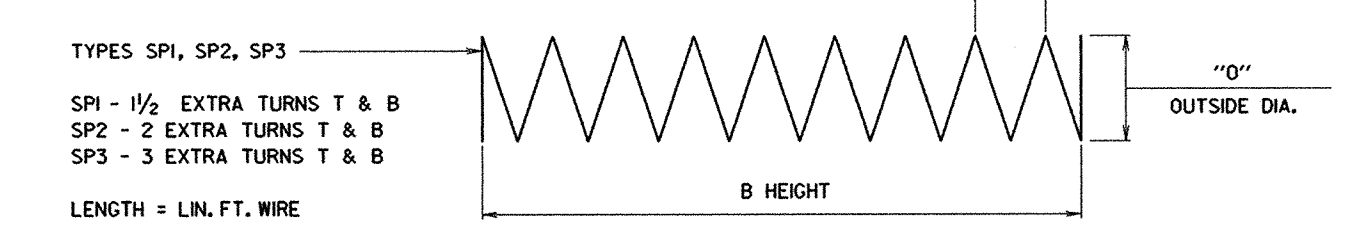
TIES AND STIRRUPS

NOTE TO FABRICATOR
 BENDING TOLERANCE NOTE
 TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0) MINUS (3) NORMAL ACI BENDING TOLERANCES

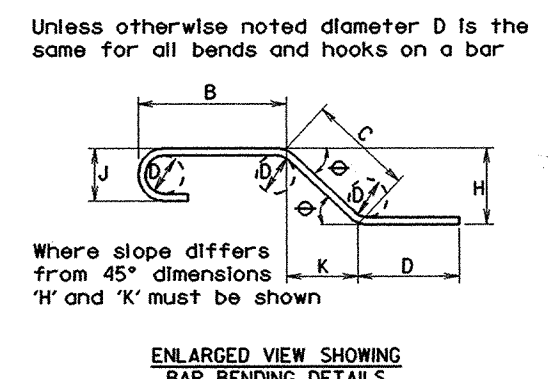
RADIUS BENDING



TRUSS BAR CONFIGURATION



SPIRAL



Notes:
 1. All dimensions are out to out of bar or to tangent points for 135° and 180° hooks.
 2. 'J' dimensions on 180° hooks to be shown only where necessary to restrict hook size. Otherwise standard hooks are to be used.
 3. 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.
 4. 'H' dimension on stirrups to be shown where necessary to fit within concrete.
 5. Where bars are to be bent more accurately than standard bending tolerances, bending dimensions which require closer fabrication should have limits indicated.

GENERAL NOTES

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	REHABILITATION INCLUDING DECK REPLACEMENT FOR STEEL TRUSS BRIDGE NO. 12016 ON MARYLAND 24 OVER DEER CREEK STANDARD DETAILS	
	SCALE AS SHOWN	DATE JAN. 2001 CONTRACT HA2095180
	DESIGNED BY B.A.G.	
	DRAWN BY J.A.M.	
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	E. S. F.	
	JAN 30 2001	