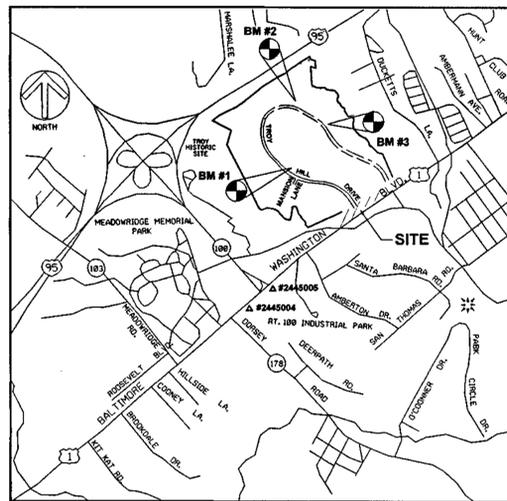


# TROY HILL CORPORATE CENTER

## IMPROVEMENTS TO U.S. ROUTE 1 F-99-11

### SHEET INDEX

COVER SHEET	1
TYPICAL ROAD SECTIONS AND STORM DRAIN PROFILES	2
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**VICINITY MAP**  
SCALE: 1" = 2000'

(COORDINATES BASED ON N.A.D. 27, AS PROJECTED BY  
HOWARD COUNTY GEOMETRIC CONTROL STATIONS #2445004 AND #2445005.)

## 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND TAX MAP NO. 37

**BENCHMARK #1**

IRON PIN @ TRAVERSE #1066  
N 496501.3597 E 869134.4576  
ELEV. = 175.92

**BENCHMARK #2**

IRON PIN @ TRAVERSE #1061  
N 498036.6945 E 868791.1502  
ELEV. = 242.49

**BENCHMARK #3**

IRON PIN @ TRAVERSE #1034  
N 497636.7437 E 869835.6586  
ELEV. = 214.85

**OWNER / APPLICANT**

TROY HILL BUSINESS PARK PARTNERSHIP  
C/O MANEKIN CORP.  
7185 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MARYLAND 21046  
(301) 290-1400  
ATTN : COLE SCHNORF

**GENERAL NOTES**

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, DETAILS AND SPECIFICATIONS FOR CONSTRUCTION.
  2. ALL UTILITY COMPANIES SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF CONSTRUCTION.
  3. ALL INLETS SHALL BE SHA STANDARD UNLESS OTHERWISE SHOWN.
  4. ALL STREET CURB RETURNS SHALL HAVE 30" RADII UNLESS OTHERWISE NOTED.
  5. STORM DRAIN TRENCHES WITHIN RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY STANDARD SPECIFICATIONS.
  6. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
  7. THE CONTRACTOR SHALL TEST FIT EXISTING UTILITIES WHERE SHOWN OR NEEDED AS APPROVED BY THE ENGINEER, A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY CONSTRUCTION.
  8. CONTRACTOR TO NOTIFY THE STATE HIGHWAY ADMINISTRATION AT LEAST 3 DAYS PRIOR TO STARTING WORK SHOWN ON THESE DRAWINGS.
  9. DISTURBED SLOPE AREA TO BE STABILIZED AS SOON AS GRADING IS COMPLETED.
  10. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3500 P.S.I.
  11. ALL SWALES AND SLOPES SHALL BE PERMANENTLY SEEDED. SEE THE SEED SPECIFICATIONS ON SHEET.
  12. TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1988 REVISED EDITION.
  13. FLOY-FILTER-X OR EQUAL SHALL BE PLACED UNDER ALL STONE RIP-RAP (FULL WIDTH AND LENGTH OF STONE).
  14. STONE FOR RIP-RAP SHALL BE AS SPECIFIED ON THESE DRAWINGS. ALL RIP-RAP SHALL BE NON-GROUTED UNLESS OTHERWISE NOTED.
  15. STUBS FOR 6" PVC UNDERDRAIN PIPE TO BE INSTALLED AT CENTER OF EACH WALL OF EVERY INLET.
  16. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS :  
STATE HIGHWAY ADMINISTRATION : 631-6633  
BALTIMORE GAS & ELECTRIC COMPANY / CONTRACTOR SERVICES 860-4620.  
BALTIMORE GAS & ELECTRIC COMPANY / UNDERGROUND DAMAGE CONTROL : 787-9068  
BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS : 313-4900.  
COLONIAL PIPELINE : 795-1390  
MISS UTILITY : 1-800-257-7777.
  17. STREET TREES LOCATION, TYPE, AND NUMBER OF TREES SHOWN ON THIS PLAN ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF THE TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM. BOND RELEASE IS CONTINGENT UPON SECTION 15.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS PROVIDED BY THE OFFICE OF PLANNING AND ZONING.
  18. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE FOR AND SUBMIT SHOP DRAWINGS THAT INDICATE ALL REQUIRED STIFFENING, BRACING AND SUPPORTS AT ALL FACTORY OR FABRICATED METAL PIPE CONNECTIONS AND APPURTENANCES.
  19. THE CONTRACTOR IS COMPLETELY RESPONSIBLE TO INSURE THAT ALL CONDITIONS OF CORPS OF ENGINEER, MDE AND DNR WETLAND AND WATERWAY CONSTRUCTION PERMITS ARE STRICTLY ADHERED TO. A PRE-CONSTRUCTION MEETING IS TO BE ARRANGED BY THE CONTRACTOR BETWEEN ALL SUB-CONTRACTORS, THE OWNER, THE ENVIRONMENTAL CONSULTANT AND COUNTY OFFICIALS TO VERIFY COMPLIANCE. A FAILURE TO COMPLY WITH FEDERAL AND STATE PERMIT REGULATIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
  20. CONTRACTOR TO VERIFY THAT ALL UNDERGROUND UTILITIES UNDERNEATH THE ROADBED AND WITHIN THE RIGHT-OF-WAY HAVE BEEN CONSTRUCTED. TO EACH LOT AND ADJOINING PROPERTY AND LOCATION MARKED IN THE FIELD PRIOR TO PLACEMENT OF STONE SUB-BASE AND PAVING. UTILITIES INCLUDE BUT ARE NOT LIMITED TO WATER, SANITARY SEWER, STORM DRAINS, LATERALS AND CONNECTIONS, TELEPHONE, ELECTRIC, GAS, AND CABLE TV, ETC. CUTTING OF CURB, GUTTER AND PAVEMENTS TO INSTALL SAID CONNECTIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
  21. PROPOSED "B" COMBINATION INLETS SHALL MEET BICYCLE SAFETY AS PER STATE HIGHWAY ADMINISTRATION - BOOK OF STANDARDS - STD. NO. 379.04
  22. HANDICAP RAMPS MUST MEET A.D.A. REQUIREMENTS.
  23. PROPOSED DETENTION STORMWATER MANAGEMENT PONDS ARE PRIVATELY OWNED AND MAINTAINED.
- TOPOGRAPHIC SURVEY  
THIS PLAT IS BASED ON A FIELD RUN SURVEY PERFORMED ON MARCH 2, 1988 BY CHARLES A. RISH, JR. PROFESSIONAL LAND SURVEYOR (MARYLAND NO. 10708) OF VIKI INCORPORATED AND A FIELD RUN SURVEY PERFORMED ON JANUARY 8, 1990 BY ROBERT P. HENRY, PROFESSIONAL LAND SURVEYOR (MARYLAND NO. 10856) OF GEORGE WILLIAM STEPHENS, JR. AND ASSOCIATES, INC.
- WAIVERS/APPROVALS/PERMITS  
1. WAIVER PETITION FILE #WP91-89TO PERMIT GRADING AND DEVELOPMENT ACTIVITIES WITHIN 100 YEAR FLOOD PLAIN, TO PERMIT GRADING FILLING AND REMOVAL OF VEGETATION COVER WITHIN WETLANDS AND 25' BUFFER SECTIONS 16.116(A)(1); 16.116(C)(6) APPROVED JULY 12, 1991.  
2. CERTAIN PORTIONS OF THE WETLANDS AND WETLAND BUFFERS SHOWN ON THESE PLANS MAY BE FILLED AND/OR IMPACTED IN ACCORDANCE WITH CORPS OF ENGINEERS NATIONWIDE PERMIT CENAB-OP-RP90-00883-3. MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER QUALITY CERTIFICATE 91-WQC-0326 MARYLAND WATER RESOURCES ADMINISTRATION WATERWAYS CONSTRUCTION PERMIT 90-WC-0647 AND HOWARD COUNTY WAIVER PETITION FILE # WP 91-188. EXPIRATION DATE NOVEMBER 6, 1997.  
3. PRELIMINARY P-90-23 APPROVED AUGUST 9, 1991.  
4. WORK IN U.S. ROUTE #1 PERFORMED UNDER S.H.A. PERMIT NO. B-HO-6914-96 F91-24 WATERMAIN CROSSING IN U.S. ROUTE #1 PERFORMED UNDER CONTRACT NO. 44-3502-D.  
5. MASS GRADING TO BE ACCOMPLISHED UNDER GP 96-121.  
6. WAIVER PETITION FILE #WP 96-91 TO PERMIT PROCESSING A MASS GRADING PLAN WITHOUT AN APPROVED SITE DEVELOPMENT PLAN.

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Frank* 3-24-99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamstra* 4/1/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*William J. ...* 3/29/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



**GEORGE W. STEPHENS, JR.  
AND ASSOCIATES, INC.**  
Civil Engineers and Land Surveyors  
658 Kenilworth Drive, Suite 100  
Towson Maryland 21204 (410) 825-8120  
203 East Broadway  
Bel Air, Maryland 21014 (410) 838-3800



DESIGNED : RLM  
DRAFTED : RLM  
CHECKED : RLU

COVER SHEET

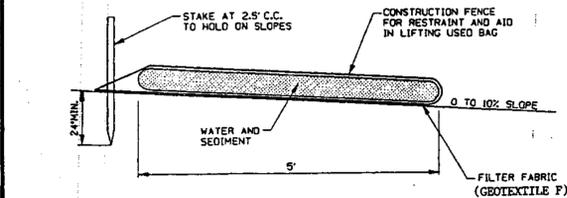
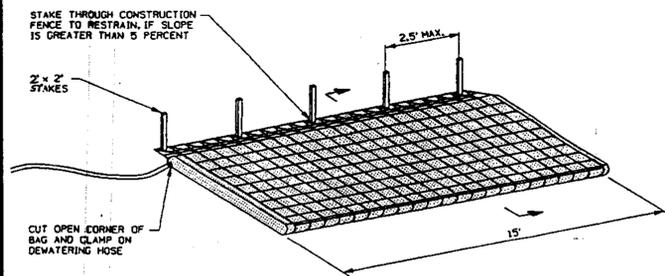
SCALE : AS SHOWN

**TROY HILL CORPORATE CENTER**  
PHASE II

HOWARD COUNTY, MARYLAND  
ELECTION DISTRICT #1

FILE NO. F-99-11  
OCT. 15, 1998  
SHEET 1 OF 23

F99-11



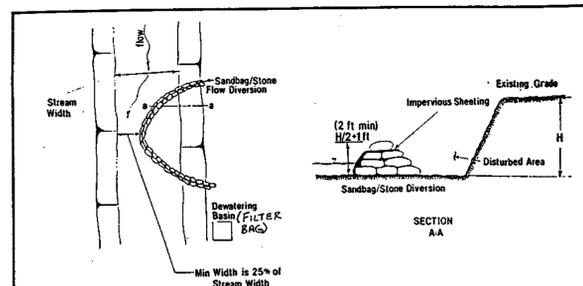
SECTION

NOTES:

1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENGTH SHALL BE AS SHOWN
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.
6. FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE

CLASS F:	Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
	Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
	Flow Rate	0.3 gal ft <sup>2</sup> /minute (max.)	Test: MSMT 322
	Filtering Efficiency	75% (min.)	Test: MSMT 322

**FILTER BAG**  
TEMPORARY EROSION CONTROL MEASURE (FB)



1. 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 excavated materials shall be disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the MRA.  
5. All dewatering of the construction area shall be pumped to a dewatering basin 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.

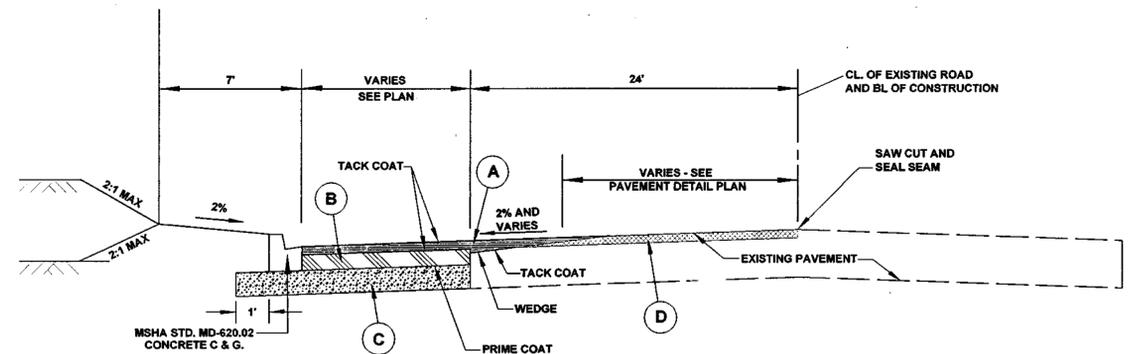
WATER RESOURCES ADMINISTRATION	Sandbag/Stone Diversion	Approved On: 1/24/99 Chief, Waterway Permits	WPD 2.3
--------------------------------	-------------------------	---	---------

OWNER / APPLICANT

TROY HILL BUSINESS PARK PARTNERSHIP  
C/O MANEKIN CORP.  
7185 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MARYLAND 21046  
(301) 290-1400  
ATTN: COLE SCHNORF

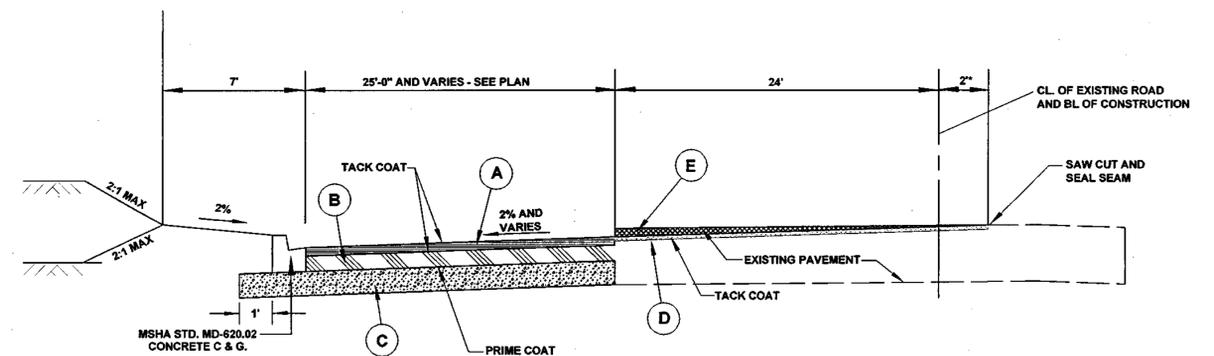
PAVEMENT INDEX

- A. 3" BITUMINOUS CONCRETE SURFACE COURSE (2 LIFTS) AND WEDGE/LEVELING COURSE.
- B. 6" BITUMINOUS CONCRETE BASE COURSE (2 LIFTS)
- C. 6" AGGREGATE BASE COURSE.
- D. MILL EXISTING PAVEMENT AS REQUIRED AND RESURFACE WITH A MINIMUM 1-1/2" BITUMINOUS CONCRETE SURFACE COURSE TO MEET PROPOSED GRADES.
- E. MILL EXISTING PAVEMENT.



U.S. ROUTE 1 TYPICAL SECTION #1

NO SCALE



U.S. ROUTE 1 TYPICAL SECTION #2

NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Howard W. Sparks* 3-24-99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

*Cindy Hammett* 4/1/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*William D. ...* 5/25/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



GEORGE W. STEPHENS, JR.  
AND ASSOCIATES, INC.

Civil Engineers and Land Surveyors

658 Kenilworth Drive, Suite 100  
Towson Maryland 21204 (410) 825-8120  
203 East Broadway  
Bel Air, Maryland 21014 (410) 838-3800



DESIGNED: RLM

DRAFTED: RLM

CHECKED: RLU

TROY HILL CORP. CENTER  
U.S. ROUTE 1  
TYPICAL ROAD SECTIONS  
AND STORM DRAIN PROFILES

SCALE: AS SHOWN

TROY HILL CORPORATE CENTER

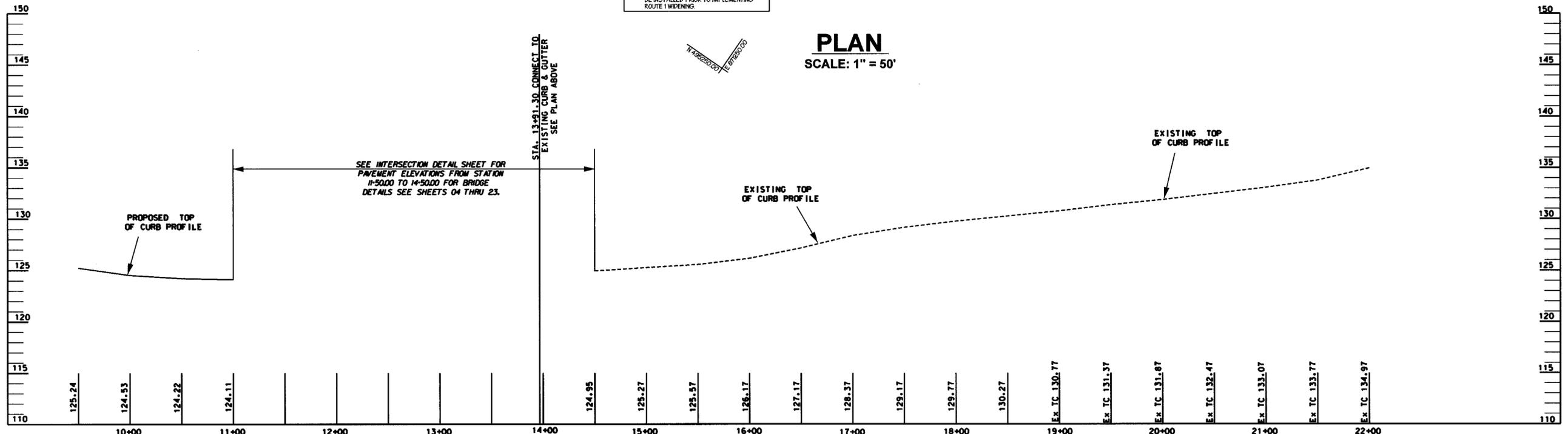
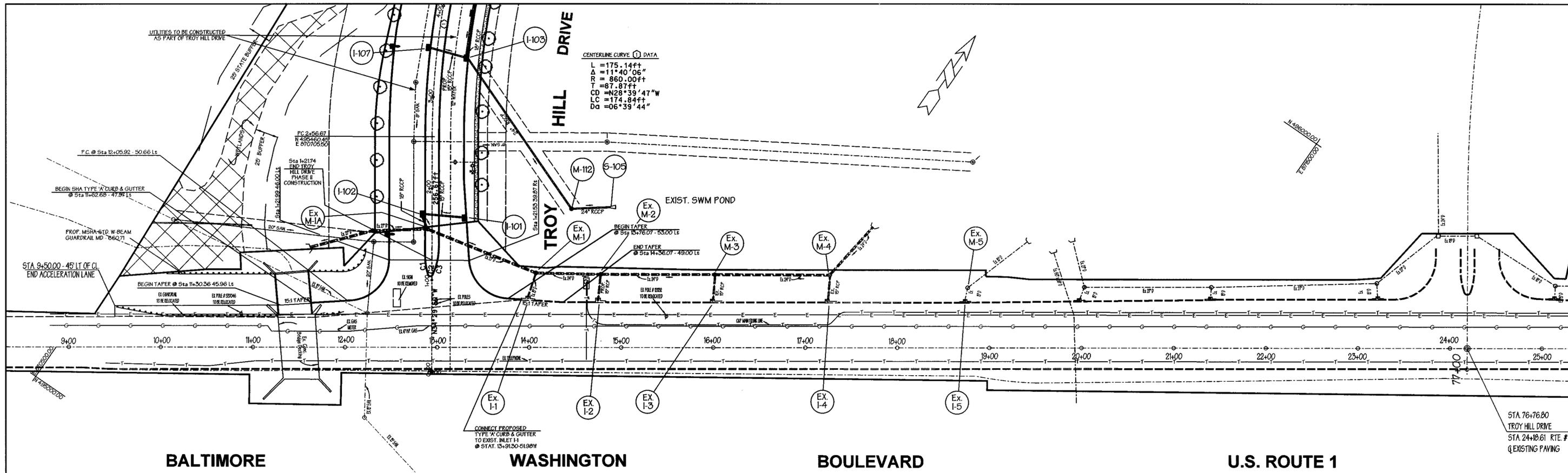
PHASE II

HOWARD COUNTY, MARYLAND  
ELECTION DISTRICT #1

FILE NO. F-99-11  
OCT. 15, 1998  
SHEET 2 OF 23

F9911

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OWNER / APPLICANT  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 C/O MANEKIN CORPORATION  
 7165 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MARYLAND 21046  
 410-290-1400

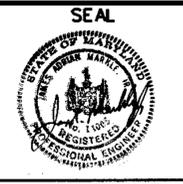
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Danek* 3-24-99  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Christy Hamilton* 4/1/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

*Chris Williams* 3/29/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**GWS**

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
 Civil Engineers and Land Surveyors  
 658 Kenilworth Drive, Suite 100  
 Towson Maryland 21204 (410) 825-8120  
 203 East Broadway  
 Bel Air, Maryland 21014 (410) 838-3800



DESIGNED : CWC  
 DRAFTED : RLM  
 CHECKED : RLU

**TROY HILL DRIVE**  
**U.S. ROUTE 1 IMPROVEMENTS**  
**PLAN & PROFILE SHEET**

SCALE : 1" = 50'

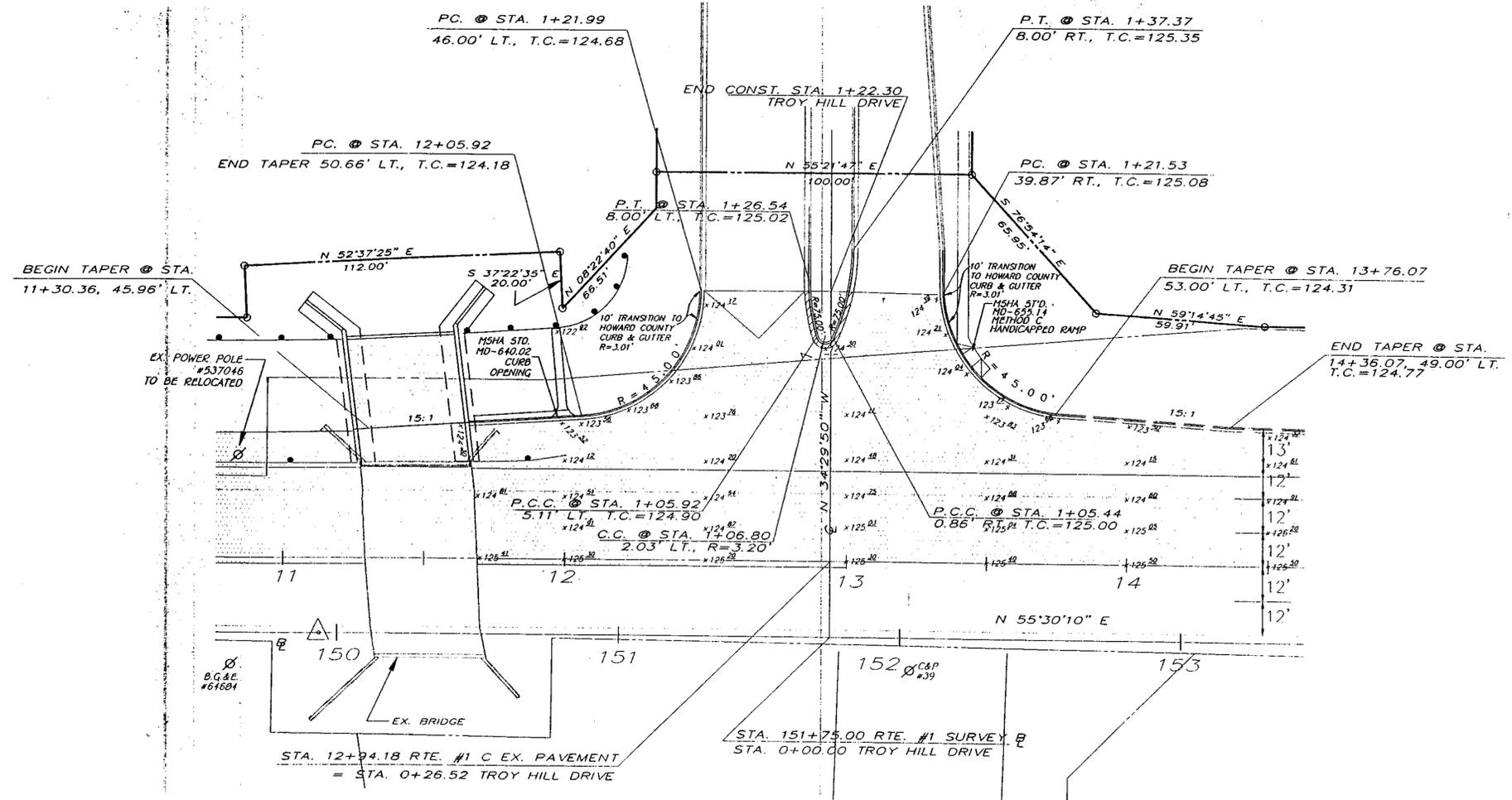
**TROY HILL CORPORATE CENTER**  
 PHASE II

HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT \*1

F 99-1  
 APR. 15, 1998  
 SHEET 3 OF 23

*F9911*

NOTE: CONTRACTOR TO EXERCISE EXTREME CARE IN MEETING PROPOSED INTERSECTION GRADES SUCH THAT POSITIVE DRAINAGE IS PROVIDED.



PAVEMENT IMPROVEMENT

OWNER / APPLICANT  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 C/O MANEKIN CORPORATION  
 7165 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MARYLAND 21046  
 410-290-1400

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Dwyer* 3-24-99  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 4/1/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*Paul D. ...* 3/28/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



GEORGE W. STEPHENS, JR.  
 AND ASSOCIATES, INC.  
 Civil Engineers and Land Surveyors  
 658 Kenilworth Drive, Suite 100  
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 203 East Broadway  
 Bel Air, Maryland 21014 (410) 838-3800



DESIGNED: CWC  
 DRAFTED: RLM  
 CHECKED: RLU

TROY HILL CORP. CENTER  
 U.S. ROUTE 1 IMPROVEMENTS  
 INTERSECTION DETAILS

SCALE: 1" = 25'

TROY HILL CORPORATE CENTER  
 PHASE II

HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT #1

F99-11  
 APRIL 3, 1998  
 SHEET 4 OF 23

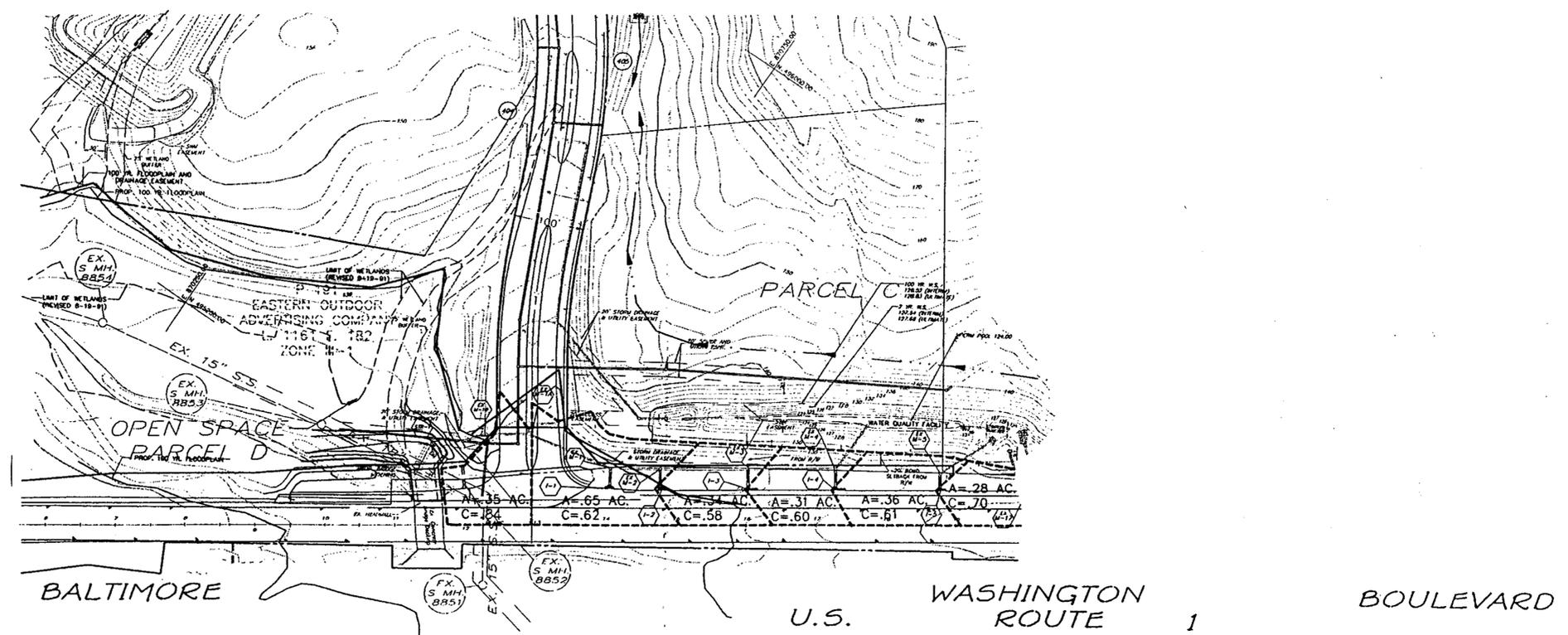
F99-11

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MD. STATE GRID 110214  
Scale: 1" = 100'

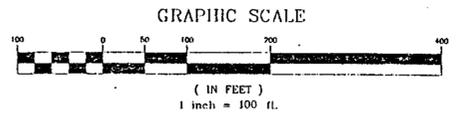
PIPE SCHEDULE			
DIAMETER	TYPE	CLASS	LENGTH (FT.)
15"	RCP	IV	66
18"	RCP	IV	220
24"	RCP	IV	120

STORM DRAIN STRUCTURE SCHEDULE									
STR. NO.	TYPE	INVERTS			TOP ELEV.		Q ROAD STATION	OFFSET	REMARKS
		IN	IN	OUT	LT. COR.	RT. COR.			
1-1	MSHA STD MD-374.31 INLET	---	---	120.02	125.11	125.38	---	14+74.49 LFC	49.00' T = 15'
1-2	MSHA STD MD-374.31 INLET	---	---	121.61	126.17	126.48	---	15+99.49 LFC	49.00' T = 15'
1-3	MSHA STD MD-374.31 INLET	---	---	124.12	128.76	129.02	---	17+24.49 LFC	49.00' T = 15'
1-4	MSHA STD MD-374.31 INLET	---	---	126.10	130.61	130.66	---	18+74.60 LFC	49.00' T = 15'



**LEGEND**

—	AREA (AC)	TYPE OF ZONING
—	RUNOFF COEFFICIENT	% OF IMPERVIOUS AREA
---		PARCEL DRAINAGE DIVIDE
---		ROADWAY DRAINAGE DIVIDE
---		LIMIT OF WETLANDS
---		FLOODPLAIN
---		GRASS DITCH



OWNER / APPLICANT  
TROY HILL BUSINESS PARK PARTNERSHIP  
CIO MANEKIN CORPORATION  
7165 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MARYLAND 21046  
410-290-1400

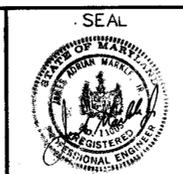
THIS SHEET FOR DRAINAGE DIVIDES ONLY

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard M. Danz* 3-24-99  
CHIEF, BUREAU OF HIGHWAYS  
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Chris Hamilton* 4/1/98  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE

*Chris Hamilton* 3/21/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

**GWS**  
GEORGE W. STEPHENS, JR.  
AND ASSOCIATES, INC.  
Civil Engineers and Land Surveyors  
658 Kenilworth Drive, Suite 100  
Towson Maryland 21204 (410) 825-8120  
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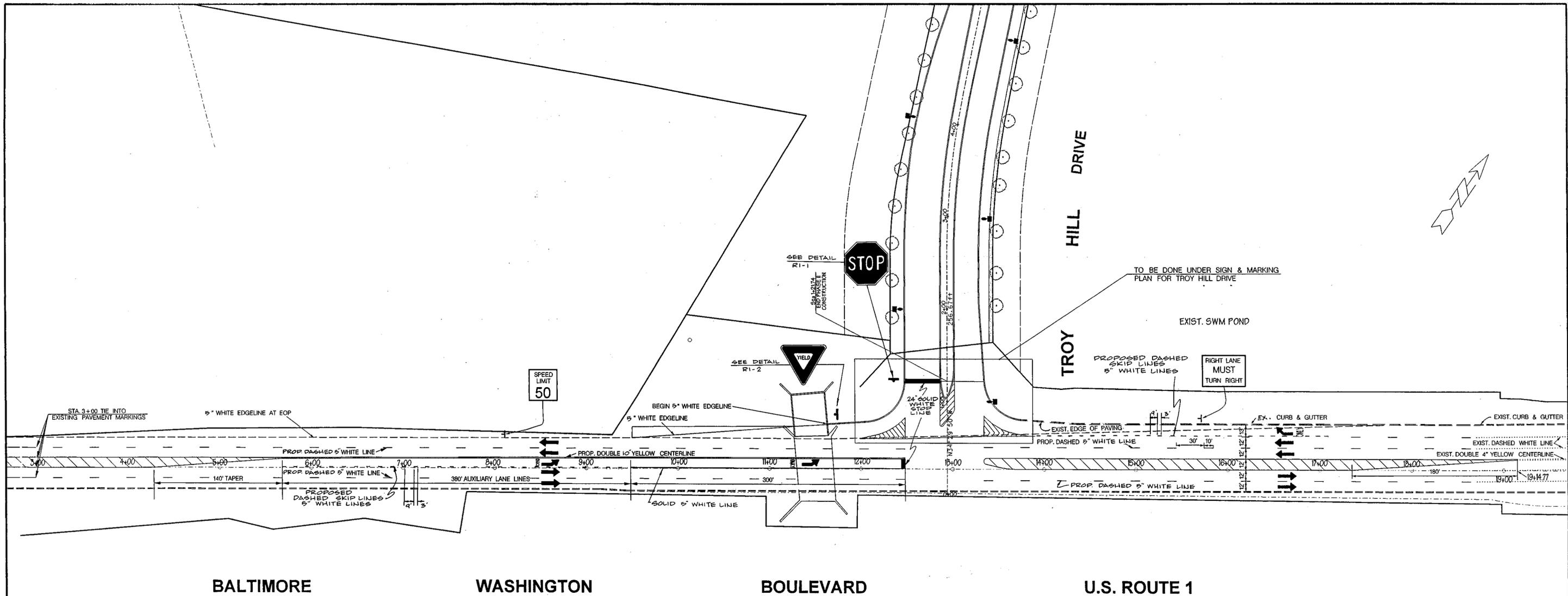


DESIGNED: CWC  
DRAFTED: RLM  
CHECKED: RLU

TROY HILL CORP. CENTER  
U.S. ROUTE 1 IMPROVEMENTS  
DRAINAGE AREA MAP  
SCALE: 1" = 100'

TROY HILL CORPORATE CENTER  
PHASE II  
HOWARD COUNTY, MARYLAND  
ELECTION DISTRICT #1  
F99-11  
APRIL 3, 1998  
SHEET 5 OF 23

F99-11



BALTIMORE

WASHINGTON

BOULEVARD

U.S. ROUTE 1

PAVEMENT MARKING NOTES

- 1) MARKING WILL INCLUDE DOUBLE SOLID YELLOW CENTER LINES AND SOLID WHITE EDGE LINES IN ADDITION TO THE INDICATED BROKEN WHITE LANE LINES.
- 2) ALL LINES ON THE PROJECT, UNLESS OTHERWISE NOTED SHALL BE 5" IN. WIDE AND REFLECTORIZED.
- 3) THE INDICATED BROKEN WHITE LANE LINES SHALL HAVE 10 FT. MARKS SEPARATED BY 30 FT. GAPS.
- 4) PAINTED MEDIANS SHALL HAVE 10 IN. WIDE, YELLOW EDGELINES AND HATCHING SHALL BE 24 IN. WIDE AND YELLOW WITH 25 FT. BETWEEN MARKINGS.
- 5) FOR TRANSITION ZONES, E.G., ENTRANCES TO TURNING LANES AND DECELERATION LANES, AUXILIARY LANE LINES SHALL HAVE 3 FT. MARKS SEPARATED BY 4 FT. GAPS.
- 6) ALL PAVEMENT MARKINGS INSTALLED IN ACCORDANCE WITH THE MUTCD AND MARYLAND SUPPLEMENTS.
- 7) ALL EXISTING PAINTED PAVEMENT MARKINGS SHALL BE GRINDED OFF WITHIN THE PROJECT LIMITS.

OWNER / APPLICANT  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 C/O MANEKIN CORPORATION  
 7165 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MARYLAND 21046  
 410-290-1400

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 3-24-91  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Chris Hamulla* 4/1/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Chris Dammann* 3/22/97  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



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 Civil Engineers and Land Surveyors  
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 Towson Maryland 21204 (410) 825-8120  
 203 East Broadway  
 Bel Air, Maryland 21014 (410) 838-3800



DESIGNED : CWC  
 DRAFTED : RLM  
 CHECKED : RLU

TROY HILL DRIVE  
 U.S. ROUTE 1 IMPROVEMENTS  
 SIGN & PAVEMENT MARKING PLAN

SCALE : 1" = 50'

TROY HILL CORPORATE CENTER  
 PHASE II

HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT #1

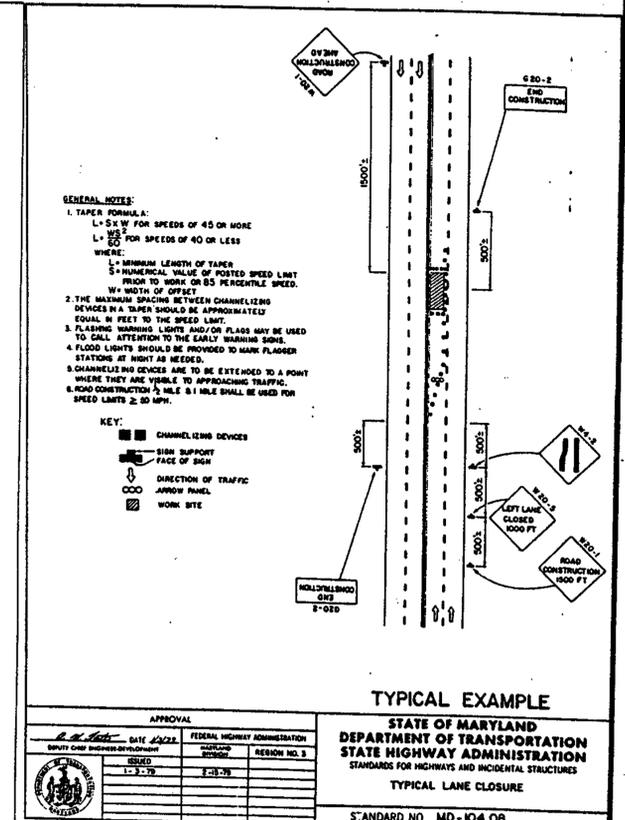
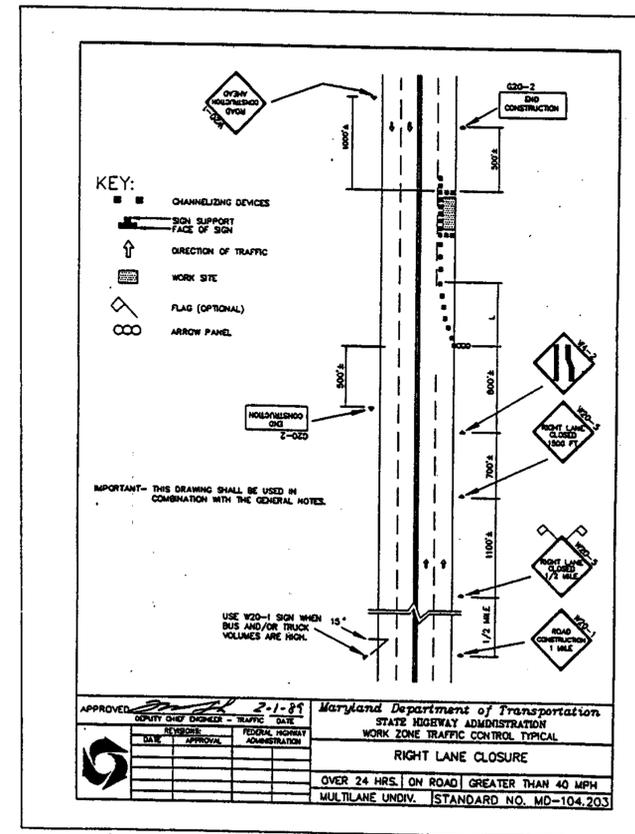
FILE NO. F-99-11  
 OCT. 15, 1998  
 SHEET 6 OF 23

**STAGE 1B**

BRIDGE WIDENING WEST SIDE OF U.S. ROUTE 1 - BRIDGE STAGES I TO II AS INDICATED ON SHEET 2A  
STATIONS 9 + 50 TO 12 + 00

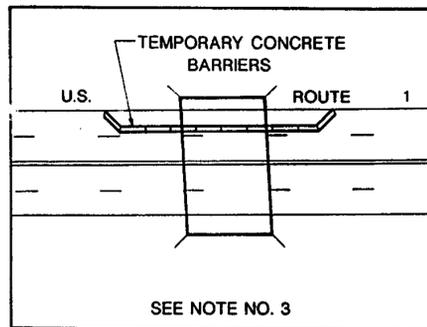
**STAGE 1C**

MILLING, OVERLAY, AND PAVEMENT WIDENING WEST SIDE OF U.S. ROUTE 1  
STATIONS 9+50 TO 18+70



APPROVED: <i>[Signature]</i> 2-1-89	Maryland Department of Transportation
IDENTIFY CHIEF ENGINEER - SIGNIFIC DATE	STATE HIGHWAY ADMINISTRATION
REVISIONS	WORK ZONE TRAFFIC CONTROL TYPICAL
DATE	RIGHT LANE CLOSURE
APPROVAL	OVER 24 HRS.   ON ROAD   GREATER THAN 40 MPH
DATE	MULTILANE UNDIV.   STANDARD NO. MD-104.203

APPROVAL		STATE OF MARYLAND	
DATE: 2/2/89	FEDERAL HIGHWAY ADMINISTRATION	DEPARTMENT OF TRANSPORTATION	
ISSUED: 1-2-79	SECTION NO. 3	STATE HIGHWAY ADMINISTRATION	
DATE: 7-13-79		STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES	
		TYPICAL LANE CLOSURE	
		STANDARD NO. MD-104.06	



- NOTES:**
1. TRAFFIC CONTROL DURING THE VARIOUS STAGES OF CONSTRUCTION SHOULD FOLLOW THE STANDARDS AND SPECIFICATIONS OF MARYLAND STATE HIGHWAY ADMINISTRATION "WORK ZONE TRAFFIC CONTROL STANDARDS". THE LAYOUTS DEPICTED ARE TYPICAL FOR THE TYPE OF TRAFFIC CONTROL. PRECISE LOCATIONS OF TRAFFIC CONTROL DEVICES SHOULD BE DEFINED AT THE SITE TO MEET FIELD CONDITIONS.
  2. CHANNELIZING DEVICES SHALL BE DRUMS AS SPECIFIED IN MUTCD SECTION 6C-6.
  3. TEMPORARY CONCRETE BARRIERS SHALL BE USED DURING STAGE 1B ON THE BRIDGE APPROACHES AND ON THE BRIDGE (SEE DETAIL & LEFT DRAWING 2A) TYPE A LOW INTENSITY FLASHING WARNING LIGHTS SHALL BE PLACED UPON THE BARRIERS AND ON THE DRUMS ON THE APPROACHES TO THE BRIDGE.
  4. TAPER LENGTH, L, FOR LANE CLOSURE SHALL BE 600 FEET.
  5. SPACING OF CHANNELIZING DRUMS SHALL BE:
    - 50 FEET FOR TAPER
    - 100 FEET FOR TANGENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 3-24-99  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Chris Hamilton* 4/1/99  
CHIEF, DIVISION OF LAND DEVELOPMENT

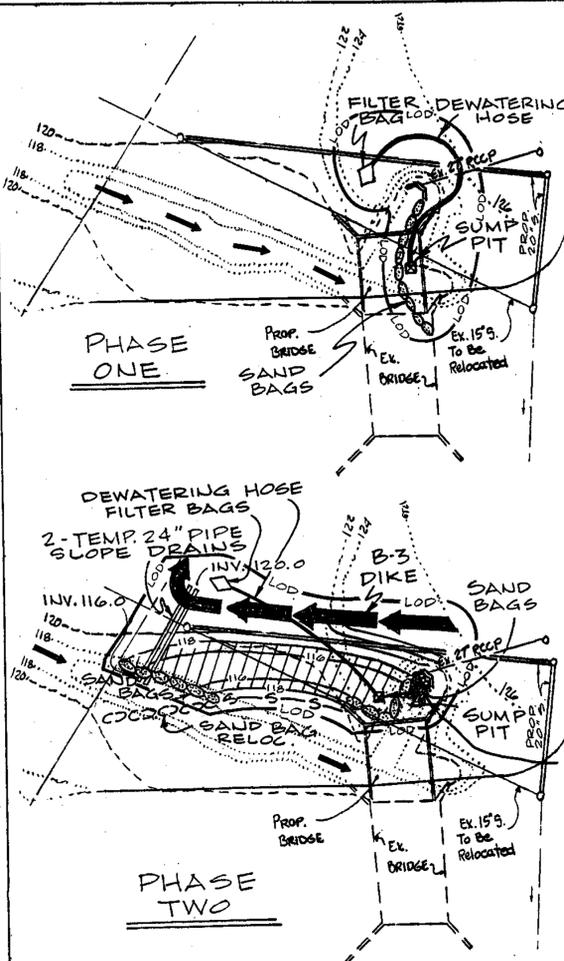
*[Signature]* 3/20/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION



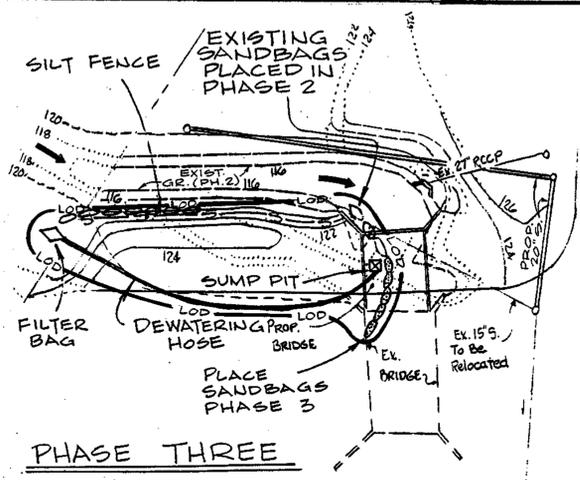
OWNER/APPLICANT  
TROY HILL BUSINESS PARK PARTNERSHIP  
C/O MANEKIN CORPORATION  
7165 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MARYLAND 21046  
410-290-1400

REVISIONS	PREPARED BY:	DATE: 12/17/90
	<b>GWS</b>	GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC. Civil Engineers and Land Surveyors 658 Kenilworth Drive, Suite 100 Towson Maryland 21204 (410) 825-8120 303 East Broadway Bel Air, Maryland 21014 (410) 838-2800
	U.S. ROUTE 1 TRAFFIC CONTROL PLAN F 99-11	COUNTY: HOWARD
		SHEET NO. 7 OF 23

DATE	
BY	
REVISIONS	
NO.	DESCRIPTION
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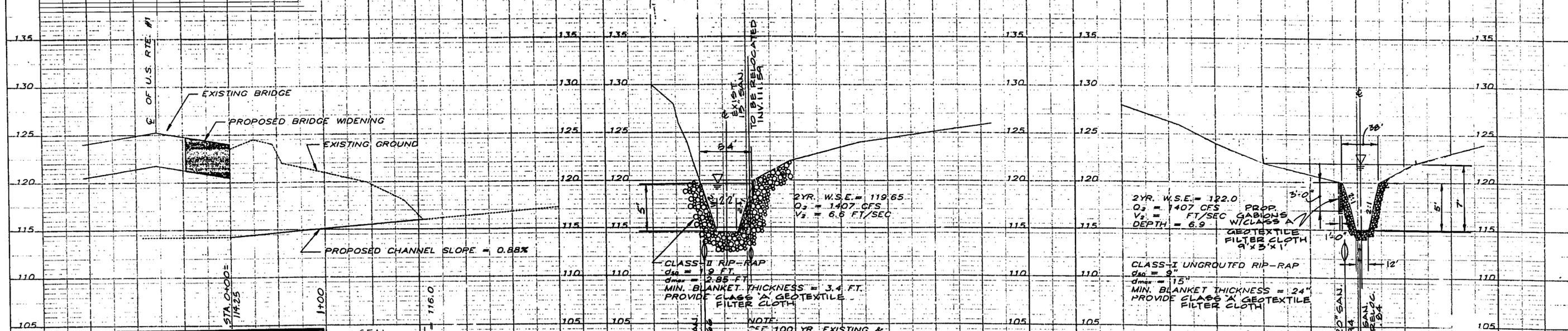


- PHASE 1**
1. Install Sandbag Diversion at east bridge abutment.
  2. Install sump pit and sediment filter bag. Pump water and sediment from the sump pump to the filter bag.
  3. Excavate for construction of east abutment.
  4. Begin abutment construction.
  5. Backfill behind abutment and stabilize.
  6. With permission of inspector proceed to Phase 2.
- PHASE 2**
1. Install B-3 earth dike diversion and temporary slope drain outlet. Turn dike uphill to create a sump at the pipe inlet such that no flow bypasses the pipe.
  2. Place sandbags at the edge of the 27" RCCP. Place stone downstream of the 27" RCCP immediately.
  3. Excavate sump pit within the sandbagged area and install filter bag as shown. Pump water and sediment from sump pit to filter bag.
  4. Excavate hatched area and place stone stabilization immediately as excavation proceeds. (See Sht 8 of 23 for stone limits and details).
  5. Place sandbags upstream of the excavation of the new channel to divert flow into the existing channel.
  6. After the new channel is completely stabilized and with permission of the inspector, remove the sandbags which are downstream of the excavation. Then relocate the sandbags which are upstream of the excavation of the new channel and divert the stream into the new channel.
  7. Place silt fence at the top of stone.
  8. With permission of inspector proceed to Phase 3.



- PHASE 3**
1. Extend sandbags across old stream bed. Install sump pit and filter bag.
  2. Pump water and sediment from sump pit to filter bag.
  3. Begin filling in existing stream.
  4. Construct west bridge abutment.
  5. Backfill behind abutment and stabilize.
  6. Stabilize remaining areas.
  7. With permission of inspector remove sandbags and place stone in channel immediately.

**PROPOSED CHANNEL PROFILE SECTION 6.0 SECTION 6.5**



APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. ...* 3-24-99  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Chris Hamilton* 4/1/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT

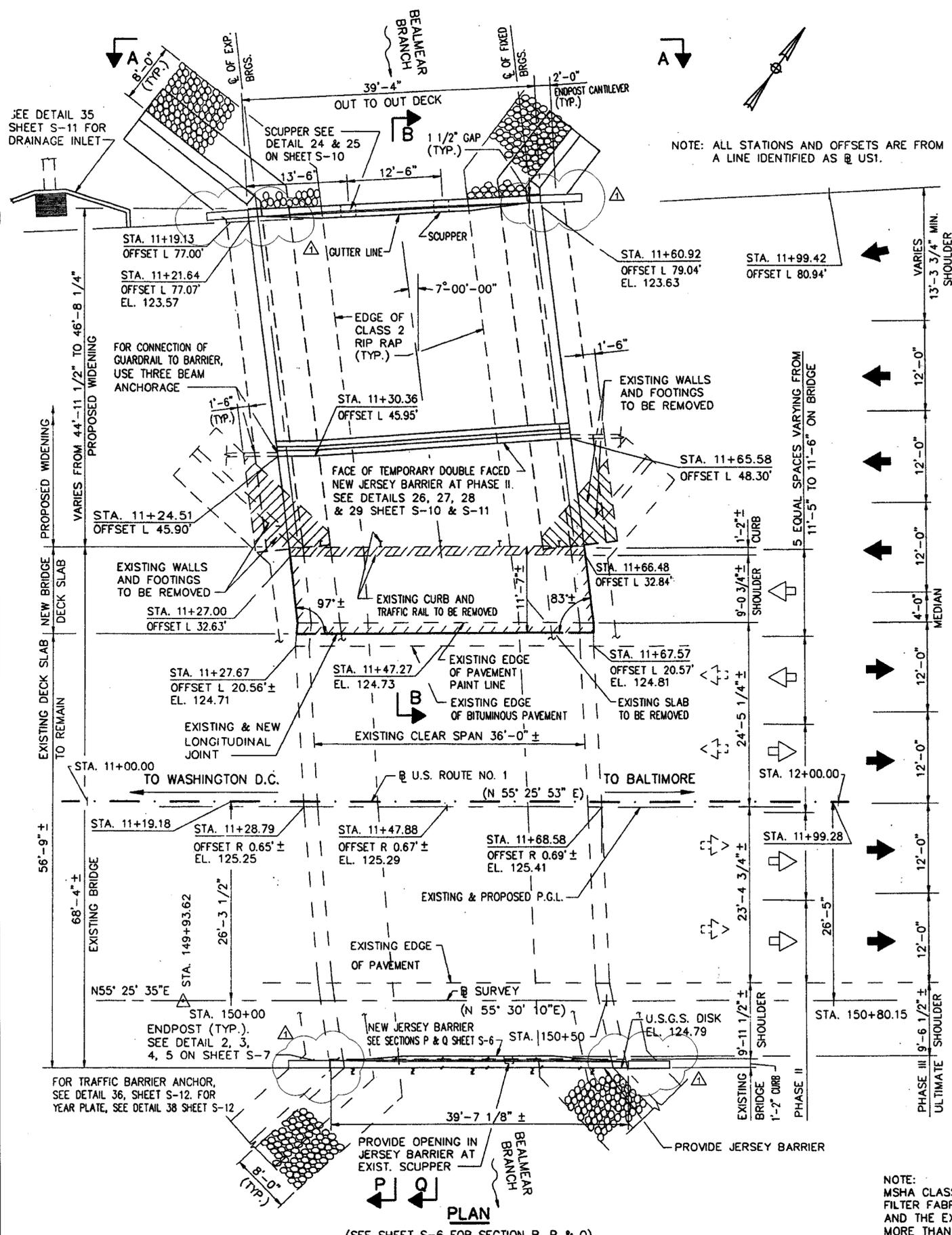
APPROVED  
*...* 5/21/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



OWNER / APPLICANT  
 TROY HILL BUSINESS PARK PARTNERSHIP  
 C/O MANEIKIN CORPORATION  
 7165 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MARYLAND 21046  
 410-290-1400

**GWS**  
 GEORGE W. STEPHENS, JR.  
 AND ASSOCIATES, INC.  
 Civil Engineers and Land Surveyors  
 658 Kenilworth Drive, Suite 100  
 Towson Maryland 21284 (410) 825-8120  
 203 East Broadway  
 Bel Air, Maryland 21014 (410) 838-3800

DATA REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			



**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 FOR DESIGN INCLUDING ALL INTERIM SPECIFICATIONS THRU 1998.

CONCRETE DESIGN: SERVICE LOAD DESIGN METHOD  
 $f_c = 1200$  PSI EXCEPT THAT IN BRIDGE DECK SLABS SUPPORTED BY STRINGERS IT SHALL BE 1350 PSI.

REINFORCING STEEL DESIGN:  $f_s = 24,000$  PSI.

STRUCTURAL STEEL DESIGN: ELASTIC DESIGN METHOD

LOADING: HS 25-44 WITH PROVISIONS FOR FUTURE 2" WEARING SURFACE AND 15 LBS/SQ. FT. FOR USE OF BRIDGE DECK FORMS FOR PROPOSED WIDENING.

CONCRETE: ALL CONCRETE FOR ABUTMENT BACKWALL, PARAPETS AT ABUTMENTS AND ENTIRE SUPERSTRUCTURE SHALL BE MIX NO. 6(4500 PSI). ALL OTHER STRUCTURE CONCRETE SHALL BE MIX NO. 3 (3500 PSI). 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, WITH THE EXCEPTION OF BARS AT THE BOTTOM OF ALL FOOTINGS WHICH SHALL HAVE 3" MINIMUM COVER. TIES AND STIRRUPS SHALL HAVE MINIMUM 2" COVER.

ONLY GRADE 60 CAN BE USED ON THIS PROJECT

REINFORCING STEEL IN THE FOLLOWING AREAS SHALL BE EPOXY COATED:  
 ENTIRE SUPERSTRUCTURE (INCLUDING PARAPETS & DECK SLAB)  
 ABUTMENT BACKWALLS  
 ALL BEARING SEAT PADS  
 ABUTMENT BRIDGE SEAT AREAS  
 ENDPOSTS

KEYS: ALL KEYS ARE NOMINAL SIZE.

STRUCTURAL STEEL: STRUCTURAL STEEL SHALL CONFORM TO ASTM A 709, GRADE 50, INCLUDING THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M 270 FOR PRIMARY LOAD CARRYING MEMBERS.

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.  
 PORTION OF EXISTING STRUCTURE SHOWN HATCHED, TO BE REMOVED.  
 WHEREVER POSSIBLE ALL EXPOSED EXISTING REINFORCING STEEL SHALL BE THOROUGHLY CLEANED AND INCORPORATED IN THE FINISHED STRUCTURE.

SAFE BEARING PRESSURE ON FOUNDATION SOIL 8 KIPS/SQ. FT.

BENCH MARK U.S.G.S. DISK ON DOWNSTREAM LEFT WINGWALL TOP (SEE PLAN) EL. 124.79.

EXISTING STRUCTURE TYPE CONCRETE GIRDER BRIDGE WIDENED WITH STEEL BEAM AND SLAB DECK ON BOTH SIDES

OPENING UNDER CLEARANCE 6.5' ± ABOVE NORMAL WATER SURFACE

DATE BUILT ORIGINAL BRIDGE - UNKNOWN  
 FIRST WIDENING 1929  
 SECOND WIDENING 1954

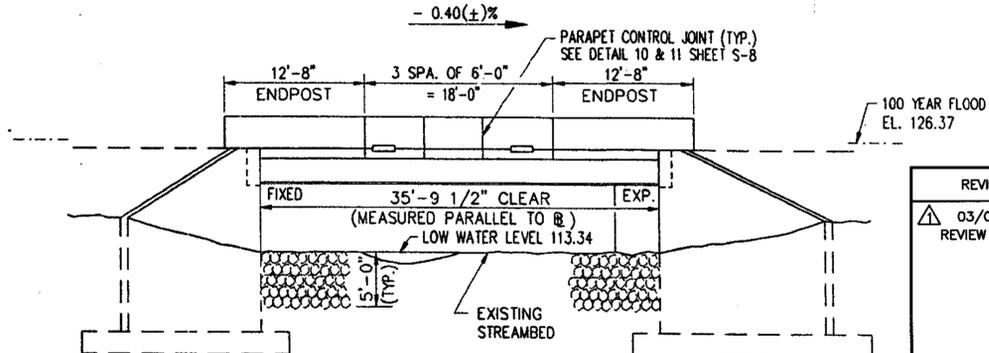
DISPOSITION TO REMAIN

REMARKS TO BE WIDENED ON THE UPSTREAM SIDE WITH STEEL BEAM-SLAB CONSTRUCTION

HYDRAULIC DATA  
 DRAINAGE AREA 1.92 SQ.M. = 1,234 ACRES  
 100 YEAR FLOOD DISCHARGE 3,863 CUBIC FEET PER SECOND  
 TIDAL FLOW PER HOUR = 0 CUBIC FEET PER SECOND  
 MAXIMUM FLOW ELEV. AT 100 YEAR FLOOD = 126.37

WATERWAY AT 100 YEAR FLOOD 497 SQ. FT.  
 VELOCITY AT 100 YEAR FLOOD 13 FEET PER SECOND

SHEET NO.	TITLE
S-1	GENERAL PLAN & ELEVATION
S-2	SEQUENCE OF CONSTRUCTION
S-3	WEST ABUTMENT & WINGWALL
S-4	EAST ABUTMENT & WINGWALL
S-5	FRAMING PLAN & BEAMS
S-6	DECK SLAB & DECK ELEVATIONS
S-7	STANDARDS - I
S-8	STANDARDS - II
S-9	STANDARDS - III
S-10	STANDARDS - IV
S-11	STANDARDS - V
S-12	STANDARDS - VI
S-13	BORINGS AND DRIVE TESTS



**SWSG**

SHAFFER WILSON SARVER & GRAY

1821 Michael Paraday Drive Suite 302 Reston, VA 22190

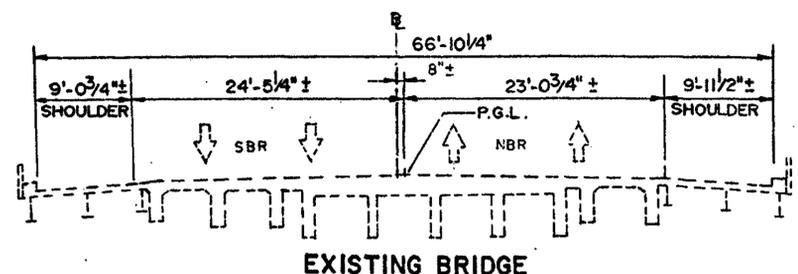
A PROFESSIONAL CORPORATION

Engineering • Architecture • Construction Management

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
03/08/99 REVIEW COMMENTS	WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEARMEAR CREEK
SCALE	GENERAL PLAN AND ELEVATION DATE OCT 1998 CONTRACT
DESIGNED BY MJD 1/8"=1'-0"	F-99-11
DRAWN BY MJD	
CHECKED BY RAS	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>Andrew M. Danks</i> 3-24-99	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING <i>John Hamilton</i> 4/1/99	
	SHEET NO. 9 OF 23

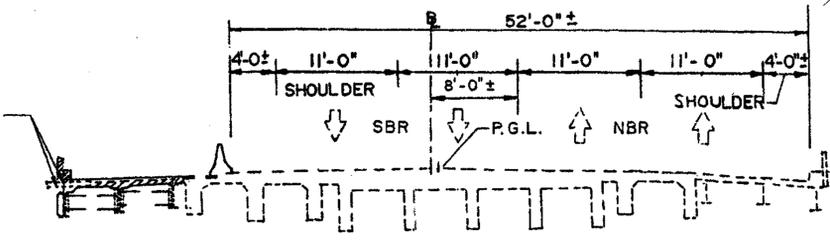
NOTE: MSHA CLASS 2 RIP RAP TO BE PLACED ON MSHA STD. 919.12 FILTER FABRIC FOR THE FULL LENGTH OF PROPOSED IMPROVEMENTS AND THE EXISTING BRIDGE. CONTRACTOR SHALL NOT EXCAVATE MORE THAN 1 FOOT BELOW THE TOP OF EXISTING FOOTINGS.

F.A.M.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			

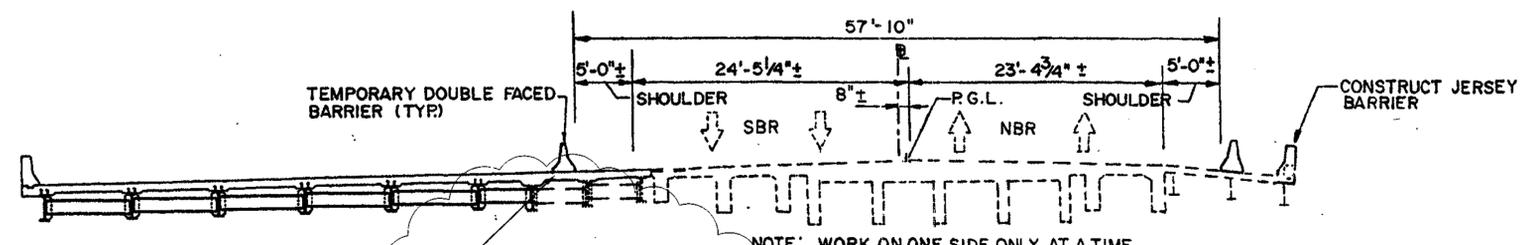


EXISTING BRIDGE

CONTINUE REINFORCEMENT FOR SPLICE

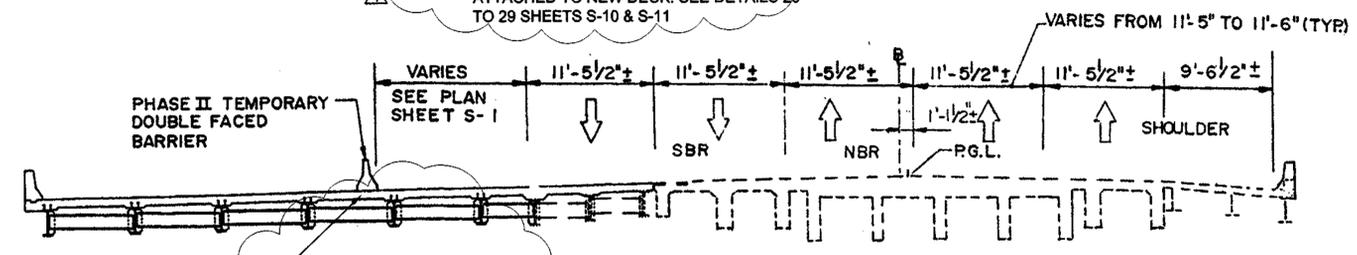


STAGE I



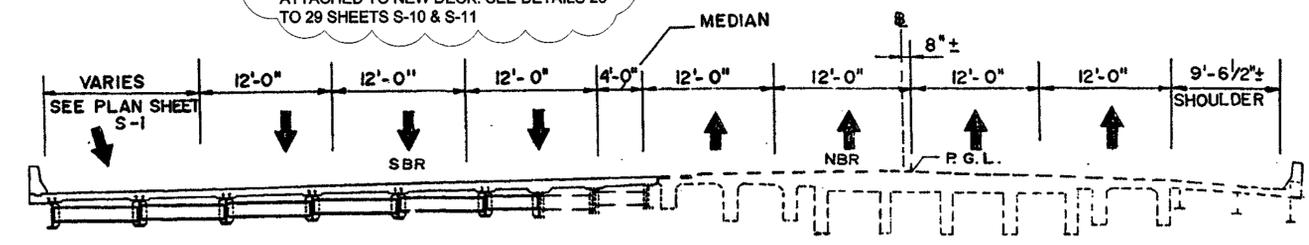
STAGE II

NOTE: WORK ON ONE SIDE ONLY AT A TIME.  
NEW TEMPORARY BARRIER SHALL BE "GRAVITY HELD" AND SHALL NOT BE ATTACHED TO NEW DECK. SEE DETAILS 26 TO 29 SHEETS S-10 & S-11



STAGE III

NEW TEMPORARY BARRIER SHALL BE "GRAVITY HELD" AND SHALL NOT BE ATTACHED TO NEW DECK. SEE DETAILS 26 TO 29 SHEETS S-10 & S-11



STAGE IV

CONSTRUCTION NOTES:

- STAGE I
- 1) MOVE TRAFFIC AS SHOWN AND PLACE TEMPORARY PRECAST BARRIERS.
  - 2) REMOVE HATCHED PORTION OF DECK.
  - 3) PROVIDE SHEAR STUDS ON TOP FLANGE OF EXISTING THREE BEAMS.
  - 4) CONSTRUCT STAGE I CONCRETE DECK UP TO LONG JT.
- STAGE II
- 1) MOVE TRAFFIC AS SHOWN AND RELOCATE TEMPORARY PRECAST BARRIERS.
  - 2) REMOVE PORTION OF EXISTING ABUTMENT AND WINGWALL MASONRY.
  - 3) CONSTRUCT SUBSTRUCTURE AND SUPERSTRUCTURE.
  - 4) REPLACE EXISTING SOUTH BARRIER WITH NEW JERSEY BARRIER.
- STAGE III
- 1) MOVE TRAFFIC AS SHOWN FOR PHASE II OF TROY HILL DEVELOPMENT & RELOCATE TEMPORARY PRECAST BARRIERS.
- STAGE IV
- 1) BRIDGE FOR PHASE III (ULTIMATE) TRAFFIC



S2

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT
03/08/99 REVIEW COMMENTS	WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK
	SCALE: SEQUENCE OF CONSTRUCTION DATE: OCT 1998 CONTRACT: F-99-11
	DESIGNED BY: MJD DRAWN BY: MJD CHECKED BY: RAS
	APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>Howard M. Conner</i> 3-24-99
	APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING <i>W. Hamlin</i> 4/1/99
	APPROVED: <i>W. Hamlin</i> 4/1/99
	SHEET NO. 10 OF 23
	INDEXED

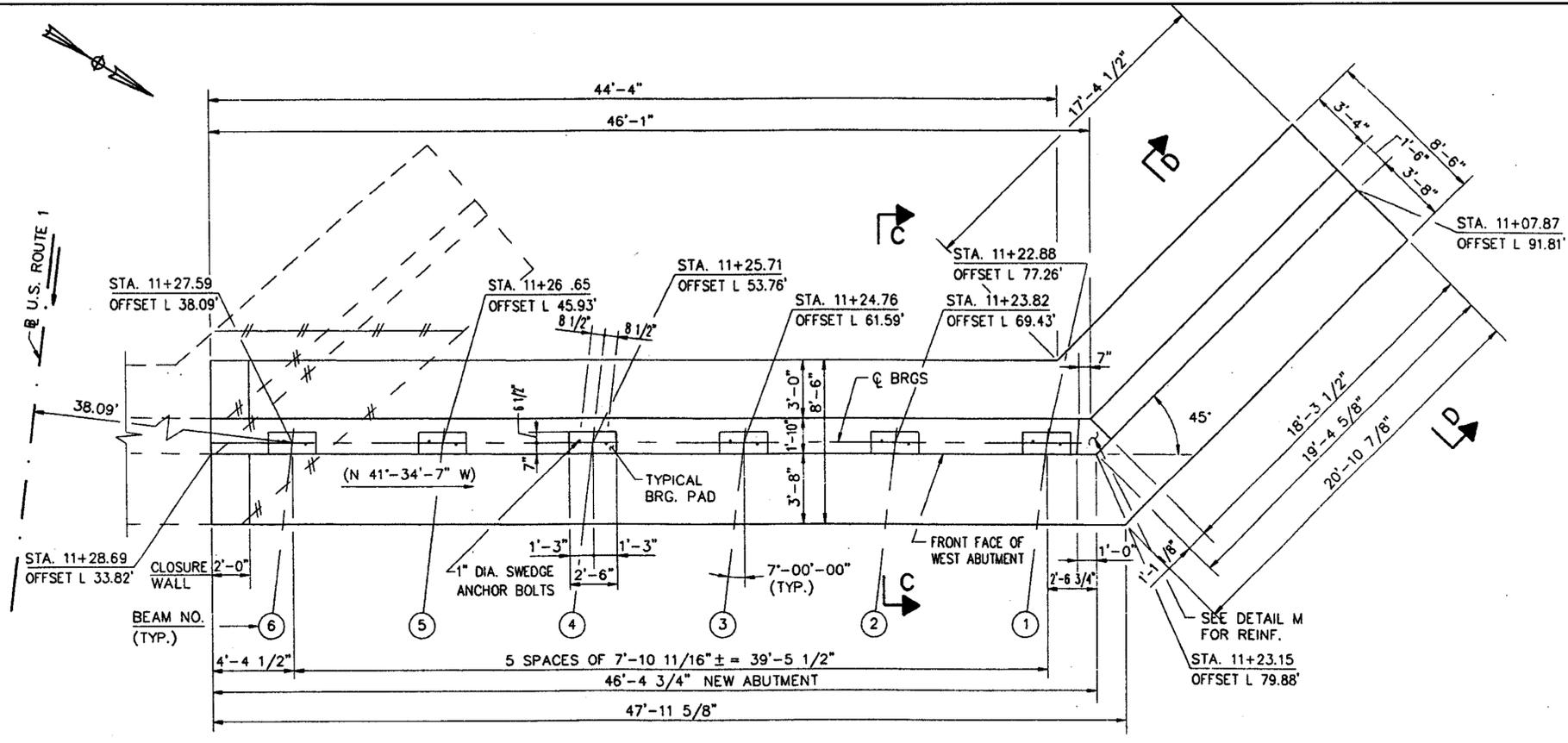
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SHAFPER  
WILSON  
SARVER  
& GRAY  
1821 Michael Faraday Drive  
Suite 302  
Reston, VA 22180  
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OTHER CONTRACTS FOR THIS STRUCTURE \_\_\_\_\_

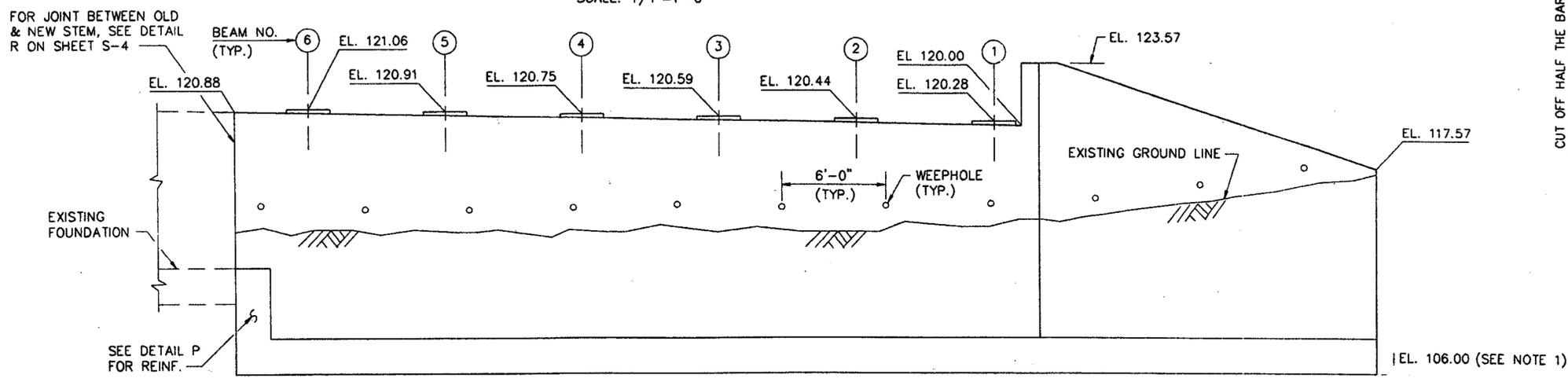
BRIDGE NO. 13002 SURVEY BOOK NO. \_\_\_\_\_

F99-11

PLAN NO.	DATE	REV. NO.	SHEET NO.	TOTAL SHEETS
3	MD			

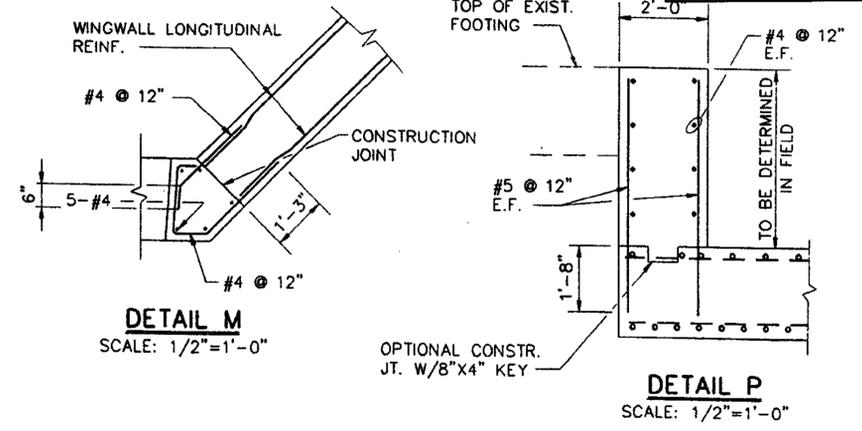


**PLAN**  
SCALE: 1/4"=1'-0"



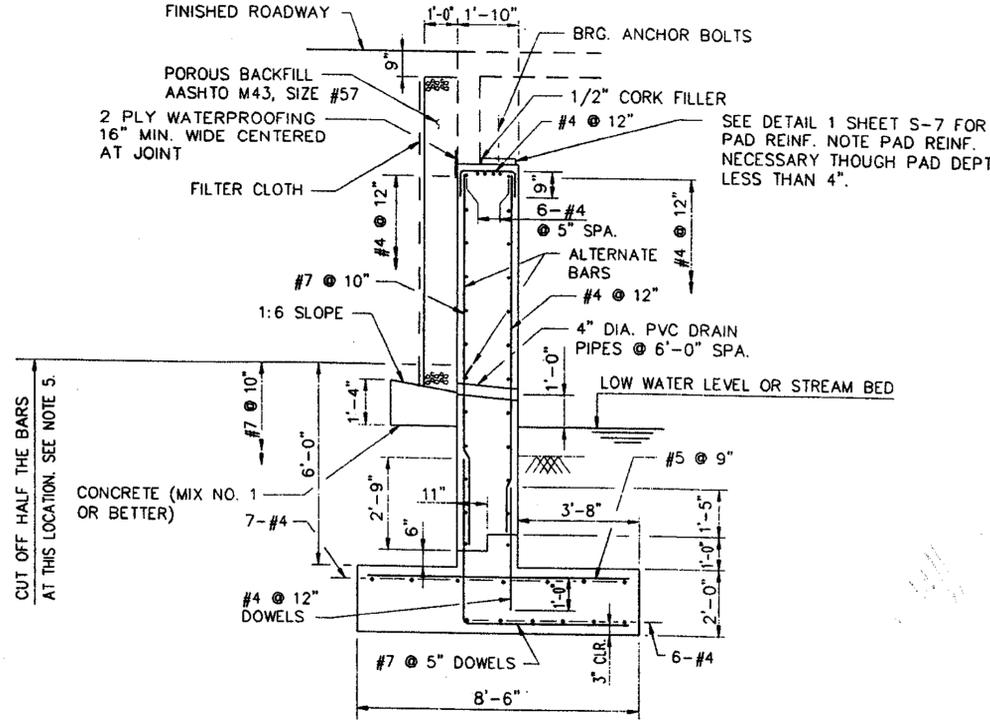
**DEVELOPED ELEVATION**  
SCALE: 1/4"=1'-0"

- NOTES:**
- FOUNDATION ELEVATION AND STEP LOCATION TO BE DETERMINED IN FIELD TO ENSURE 1'-6" EMBEDMENT IN SOLID SCOUR RESISTANT ROCK IF MET AT HIGHER LOCATION. FOR FOUNDATION STEP, SEE DETAIL N ON SHEET S-4.
  - FOUNDATION ELEVATION SHALL NOT BE HIGHER THAN THAT OF ADJACENT FOUNDATION OF EXISTING MASONRY.
  - MINIMUM SAFE BEARING CAPACITY 8 KIPS PER SQ. FT.
  - FOR SECTION D-D, SEE SHEET S-4.
  - CONTRACTOR MAY EXTEND THE DOWELS UP TO THE INDICATED LOCATION WITHOUT A LAP.
  - SEE DETAILS 31 AND 32 ON SHEET S-11 FOR REINF. BAR LAP AND DEVELOPMENT LENGTH.



**DETAIL M**  
SCALE: 1/2"=1'-0"

**DETAIL P**  
SCALE: 1/2"=1'-0"



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

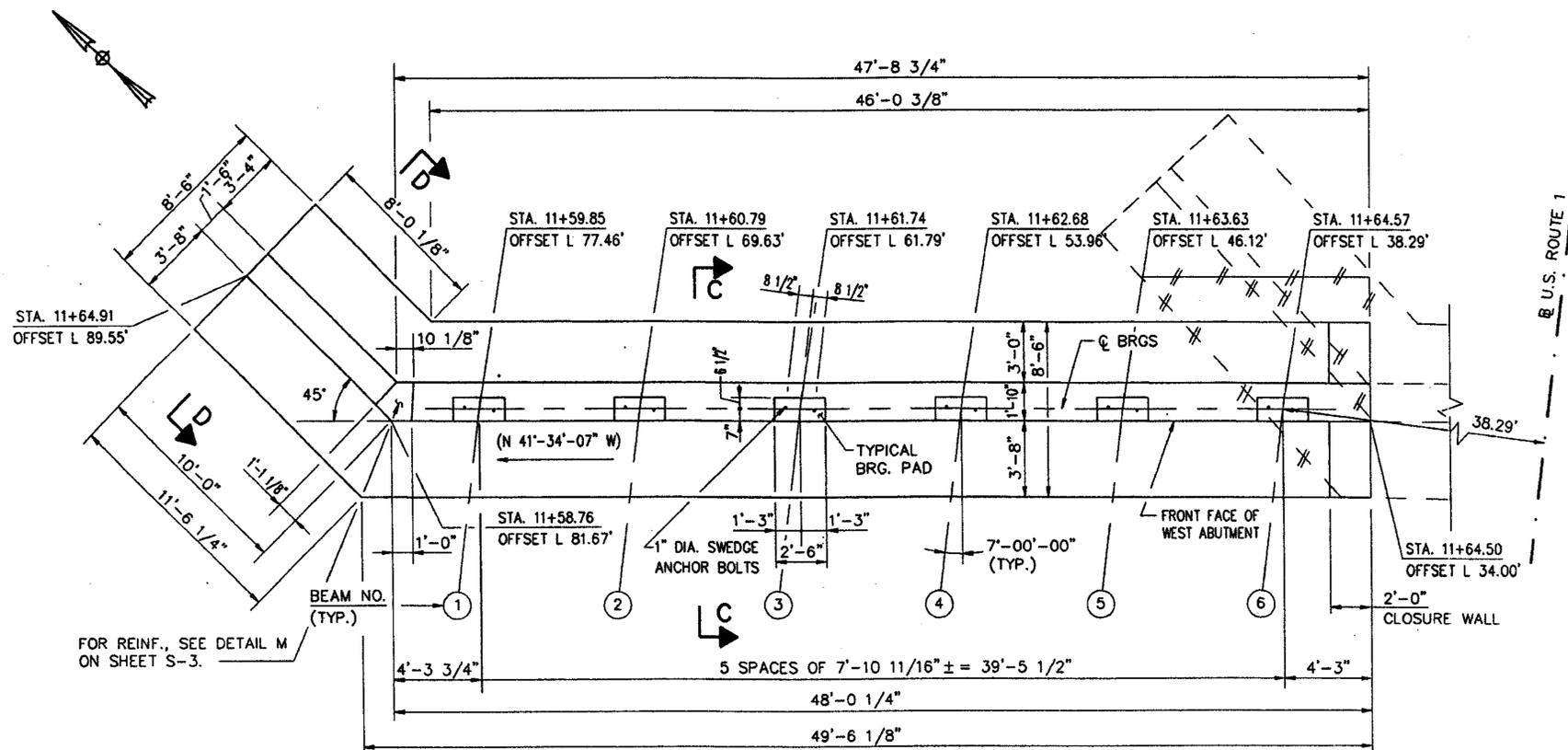
POROUS BACKFILL, FILTER CLOTH & CONCRETE BLOCK WILL BE PROVIDED IN PHASE III (ULTIMATE) WHERE EARTH BACKFILL DOES NOT EXIST IN PHASE II.



**S3**

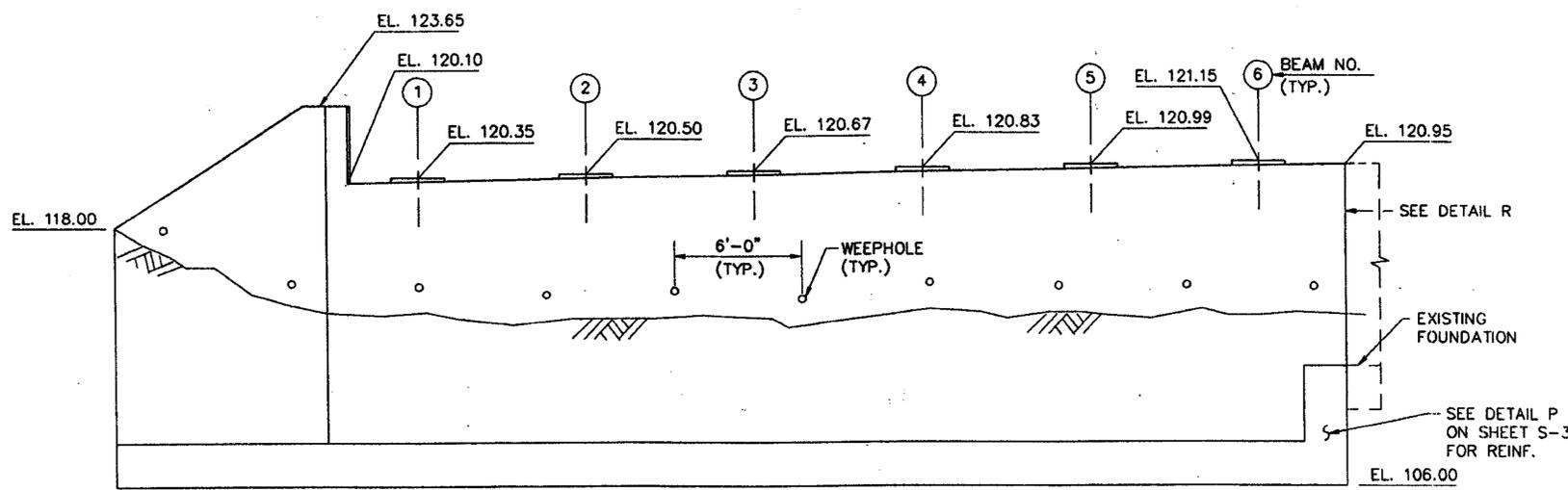
<b>REVISIONS</b> 03/08/99 REVIEW COMMENTS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK	
	SCALE WEST ABUTMENT AND WINGWALL DATE OCT 1998 CONTRACT	F-99-11
DESIGNED BY MJD AS SHOWN DRAWN BY MJD CHECKED BY RAS	APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>[Signature]</i> 3-24-99 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING <i>[Signature]</i> 4/1/99 DATE 3/24/99	
<b>SWSG</b> SHAFER WILSON SARVER & GRAY 1821 Michael Faraday Drive Suite 302 Reston, VA 22190 A PROFESSIONAL CORPORATION Engineering • Architecture • Construction Management	SHEET NO. 11 OF 23	

FED. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			



**PLAN**

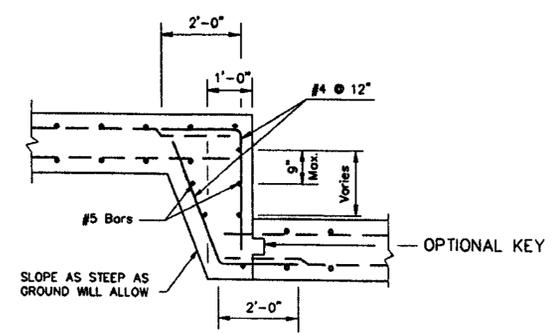
SCALE: 1/4"=1'-0"



**DEVELOPED ELEVATION**

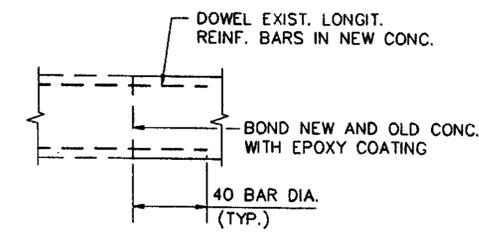
SCALE: 1/4"=1'-0"

- NOTES:**
- SEE NOTES 1, 2 AND 3 ON SHEET S-3.
  - FOR SECTION C-C, SEE SHEET S-3.
  - SEE DETAIL 36 AND 38 FOR INVENTORY NUMBER AND YEAR MARKING.



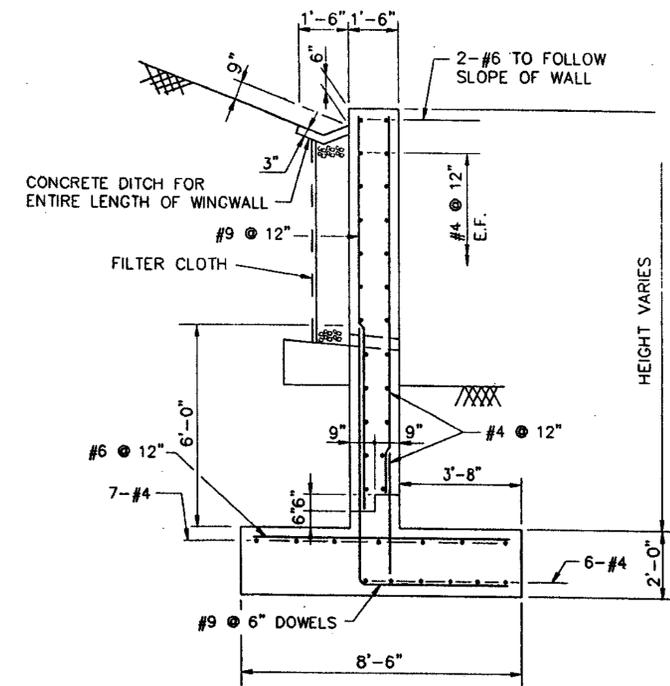
**DETAIL N  
FOUNDATION STEP**

N. T. S.



**DETAIL R  
CONNECTION OF OLD  
AND NEW ABUT. STEM**

N. T. S.



**SECTION D-D**

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

(SEE SECTION C-C ON SHEET S-3 FOR INFORMATION NOT SHOWN)



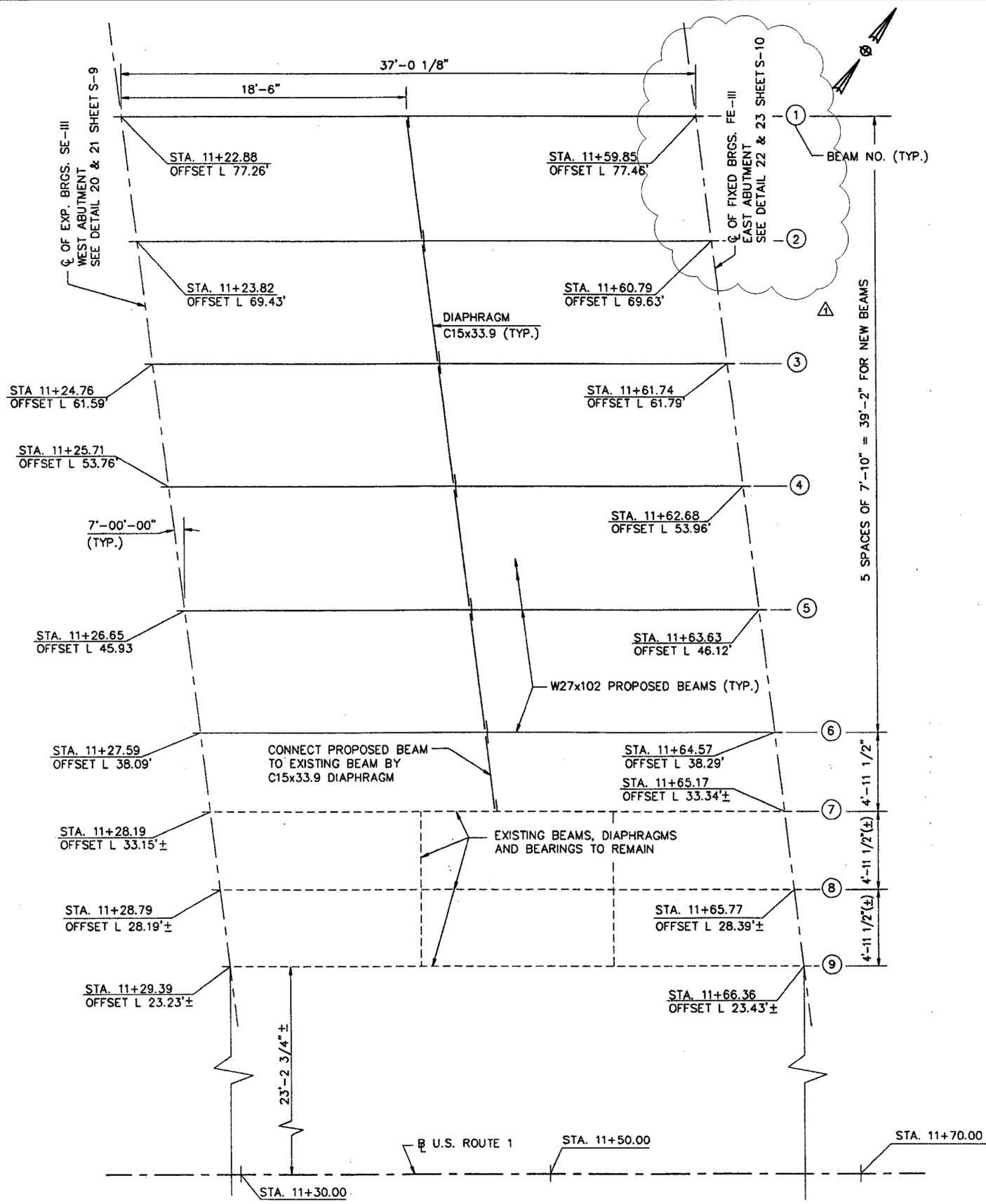
**S4**

<b>REVISIONS</b> 03/08/99 REVIEW COMMENTS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
	WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK	
SCALE	EAST ABUTMENT AND WINGWALL	
DESIGNED BY	MJD	F-99-11
DRAWN BY	MJD	
CHECKED BY	RAS	

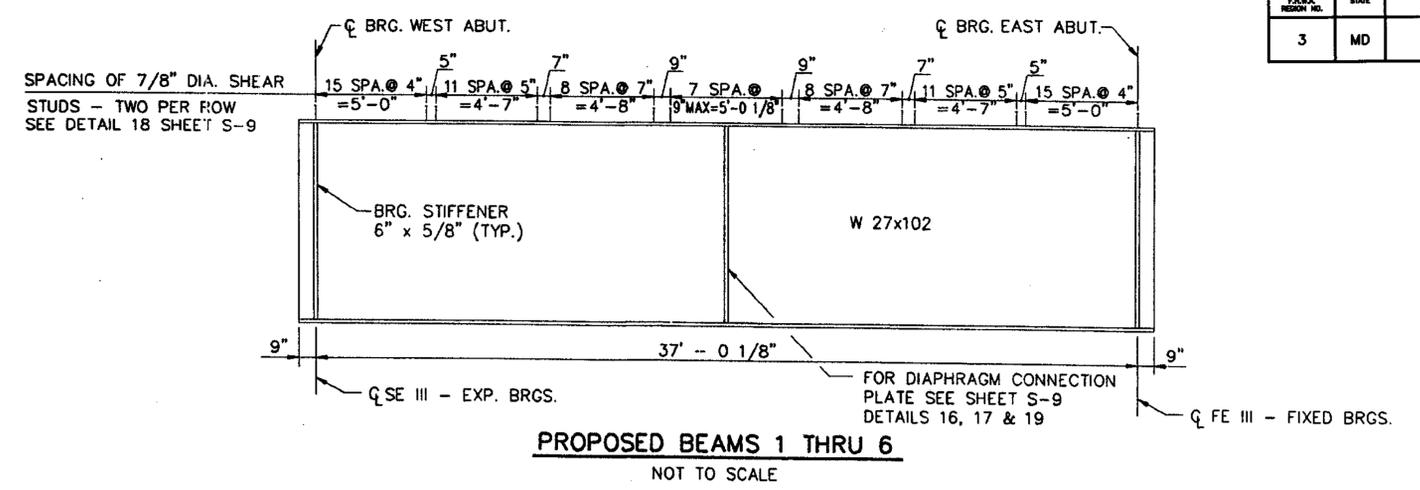
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 & GRAY  
 1821 Michael Faraday Drive  
 Suite 302  
 Reston, VA 22190  
 A PROFESSIONAL CORPORATION  
 Engineering • Architecture • Construction Management

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>Richard M. Daucher</i> 3-24-99	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING <i>Wanda Hamilton</i> 4/1/99	
APPROVED: <i>John Dammann</i> 3/27/99	
SHEET NO. 12 OF 23	

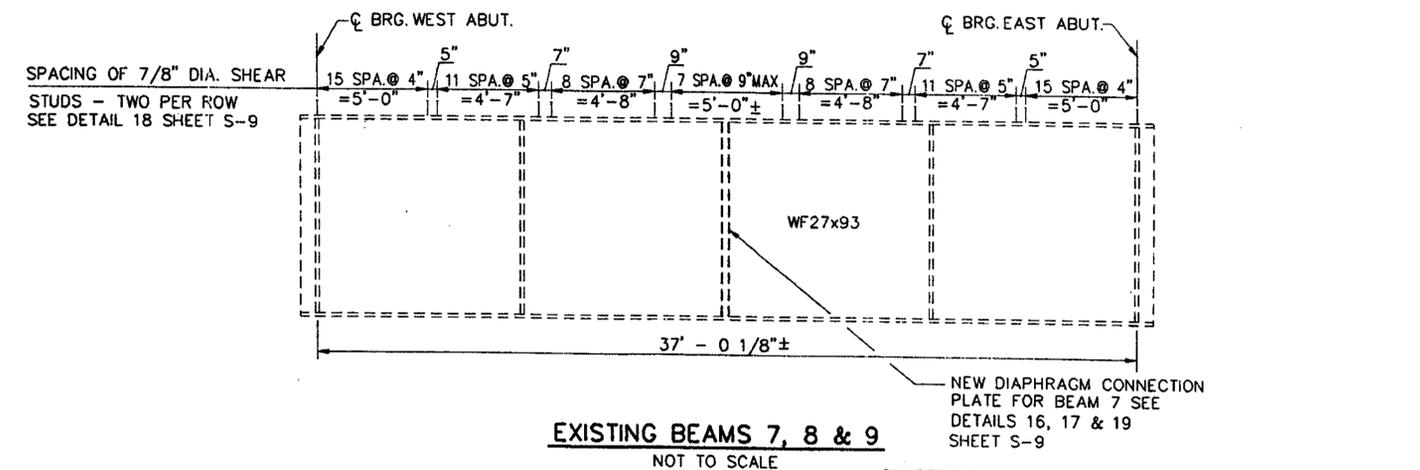
F.A.M.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			



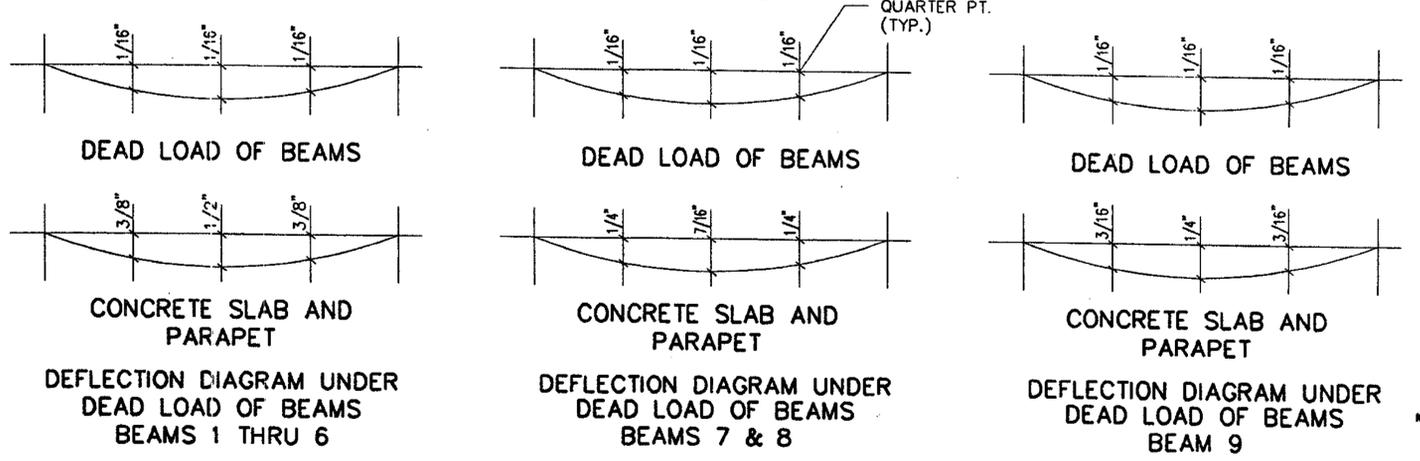
**FRAMING PLAN**  
SCALE: 1/4" = 1'-0"



**PROPOSED BEAMS 1 THRU 6**  
NOT TO SCALE



**EXISTING BEAMS 7, 8 & 9**  
NOT TO SCALE



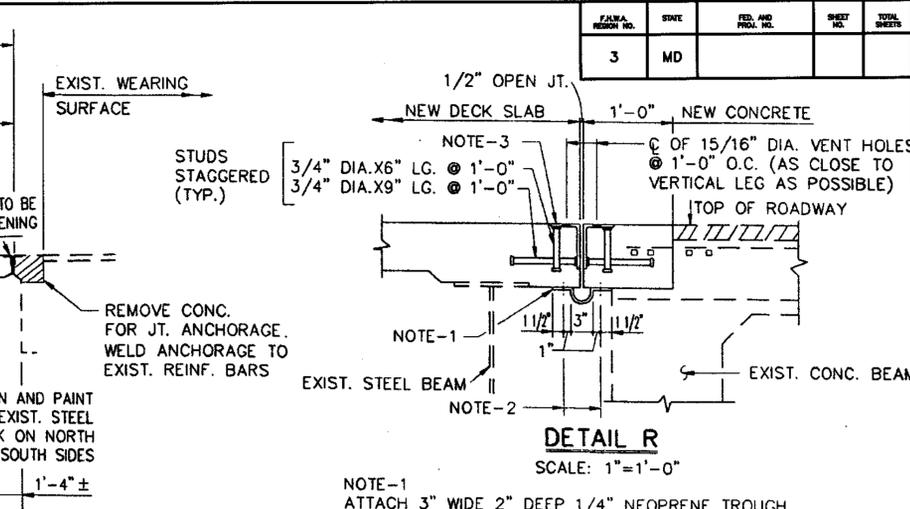
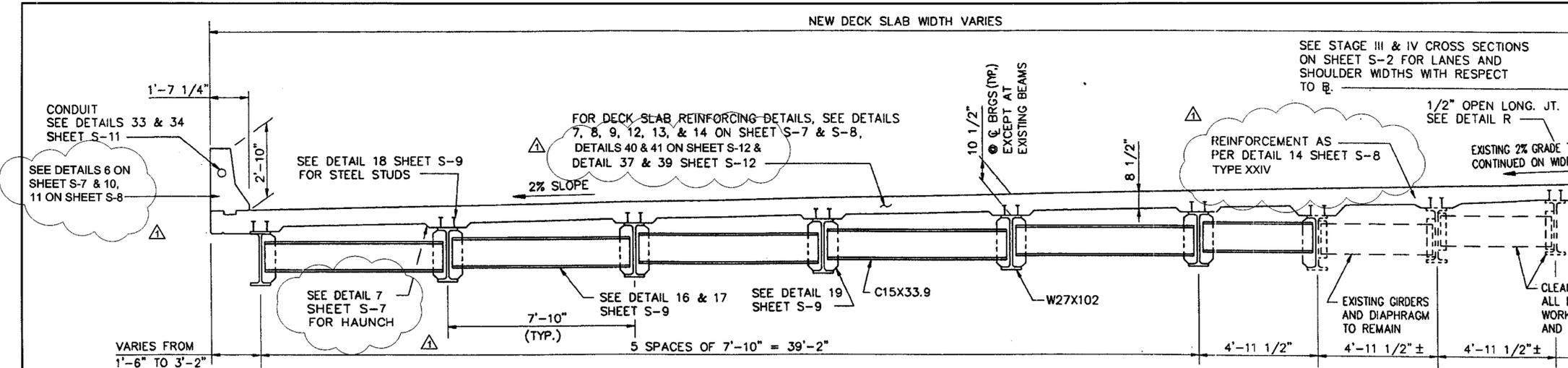
- NOTES:
- NO DEAD LOAD AND VERTICAL CAMBER IS REQUIRED FOR BEAMS. IF THESE BEAMS ARE NOT ROLLED EXACTLY TRUE, THEY SHALL BE FABRICATED AND ERECTED WITH THEIR CONCAVE SIDES DOWN WITH A CAMBER TOLERANCE OF ONE-HALF (1/2) INCH OVER.
  - TOTAL ESTIMATED NUMBER OF SHEAR STUDS FOR THIS BRIDGE IS 1,476.

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REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK
03/08/99 REVIEW COMMENTS	FRAMING PLAN AND BEAMS DATE: OCT 1998 CONTRACT: F-99-11
DESIGNED BY MJD AS SHOWN DRAWN BY MJD CHECKED BY RAS	APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>Richard M. Chandler</i> 3-24-99 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING <i>Wanda H. Hester</i> 4/11/99 DATE: 3/20/99
OTHER CONTRACTS FOR THIS STRUCTURE	SHEET NO. 13 OF 23



**S5**

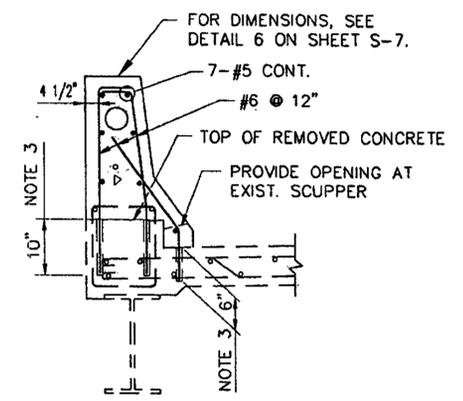


NOTE-1 ATTACH 3" WIDE 2" DEEP 1/4" NEOPRENE TROUGH CONT. SHEET TO DRAIN 4'-0" AWAY FROM WEST ABUT.

NOTE-2 1/2" DIA. A307 GALV. BOLTS W/2" DIA. WASHERS IN 1/2" FERRULE.

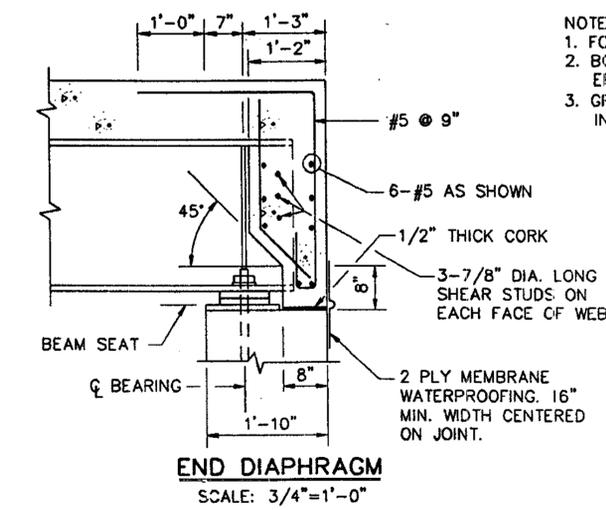
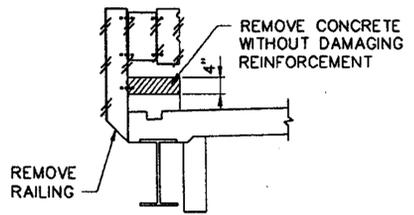
NOTE-3 - L6X4X3/8 A-36 STEEL. APPLY EPOXY COATING WITH NON SKID ELEMENT ON TOP SURFACE.

**SECTION B-B**  
SCALE: 3/8"=1'-0"  
(FOR LOCATION OF SECTION B-B, SEE SHEET S-1)



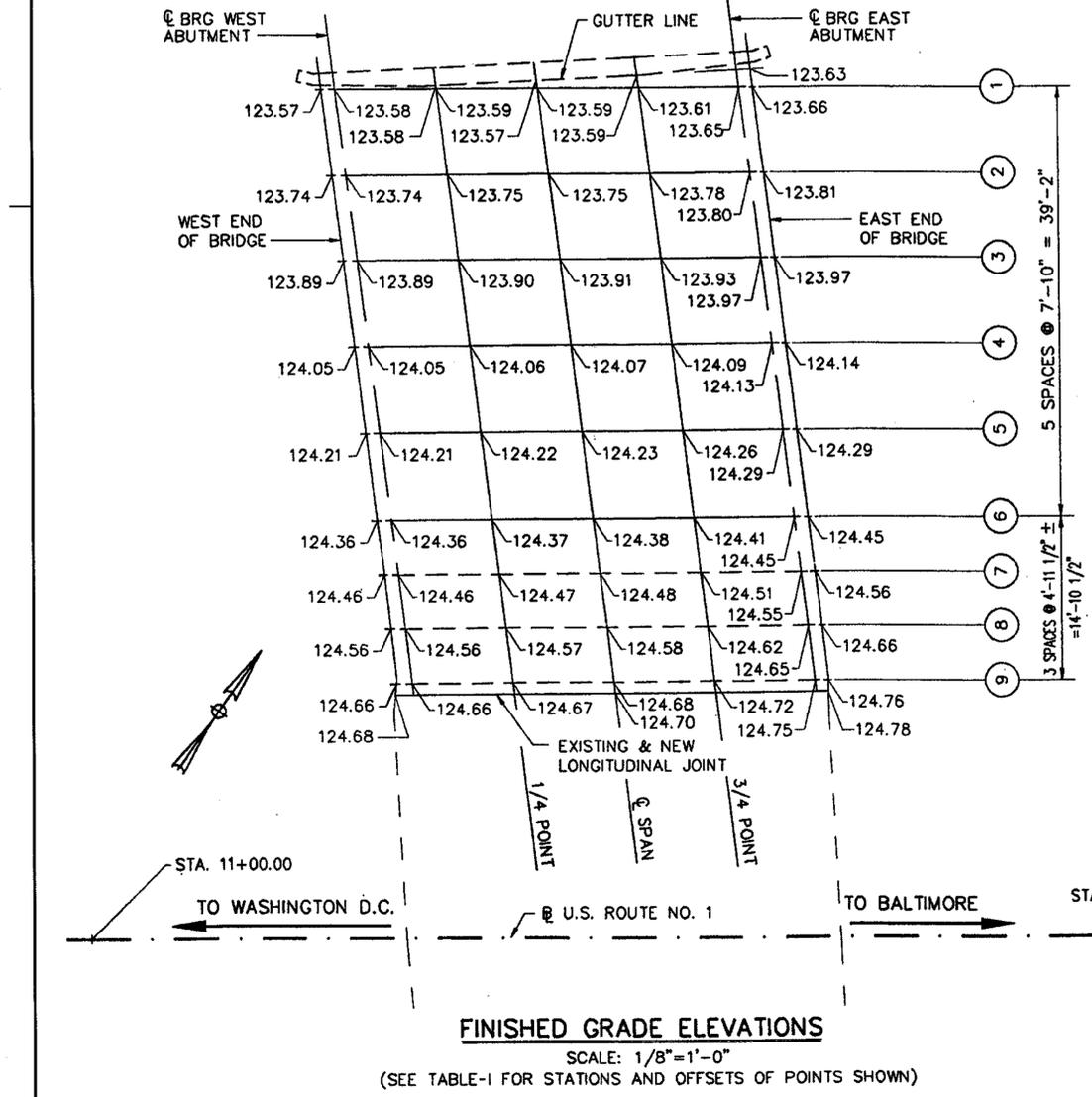
**TABLE - 1**  
**STATIONS AND OFFSETS**

LOCATION	BRIDGE WEST END		WEST @ BRGS.		1/4 PT.		. @ SPAN		3/4 PT.		EAST @ BRGS.		BRIDGE EAST END	
	STA. 11+	LEFT OFFSET	STA. 11+	LEFT OFFSET	STA. 11+	LEFT OFFSET	STA. 11+	LEFT OFFSET	STA. 11+	LEFT OFFSET	STA. 11+	LEFT OFFSET	STA. 11+	LEFT OFFSET
GUTTER	21.64	77.07	22.90	77.13	32.09	77.59	41.28	78.06	50.47	78.52	59.66	78.98	60.92	79.04
BEAM-1	21.63	77.25	22.88	77.26	32.12	77.31	41.37	77.36	50.61	77.41	59.85	77.46	61.10	77.47
BEAM-2	22.57	69.42	23.82	69.43	33.06	69.48	42.31	69.53	51.55	69.58	60.79	69.63	62.04	69.64
BEAM-3	23.51	61.58	24.76	61.59	34.00	61.64	43.25	61.69	52.50	61.74	61.74	61.79	62.99	61.80
BEAM-4	24.46	53.75	25.71	53.76	34.95	53.81	44.20	53.86	53.44	59.91	62.68	53.96	63.93	53.97
BEAM-5	25.40	45.92	26.65	45.93	35.90	45.98	45.14	46.03	54.39	46.08	63.63	46.12	64.88	46.13
BEAM-6	26.34	38.08	27.59	38.09	36.84	38.14	46.08	38.19	55.33	38.24	64.57	38.29	65.82	38.30
BEAM-7	26.94	33.14	28.19	33.15	37.44	33.20	46.68	33.25	55.93	33.30	65.17	33.34	66.42	33.53
BEAM-8	27.54	28.18	28.79	28.19	38.04	28.24	47.28	28.29	56.53	28.34	65.77	28.39	67.02	28.40
BEAM-9	28.14	23.22	29.39	23.23	38.63	23.28	47.88	23.33	57.12	23.38	66.38	23.43	67.61	23.44
LONG. JT.	27.81	22.23	29.06	22.23	38.37	22.28	47.68	22.33	56.99	22.38	66.30	22.43	67.55	22.43



NOTE:

1. FINISHED ROADWAY ELEVATIONS ARE DETERMINED BY PROVIDING 2% CROSS SLOPE FROM THE ELEVATIONS AT THE LONGITUDINAL JOINT OF THE EXISTING DECK SLAB AND TO BE FIELD CHECKED BEFORE POURING OF NEW DECK SLAB.
2. FINISHED GRADE ELEVATIONS SHOWN ARE TOP OF PROPOSED CONCRETE DECK INCLUDING 1/2" INTEGRAL WEARING SURFACE. RAISE DECK FORMS TO ACCOUNT FOR DEFLECTIONS DUE TO WEIGHT OF CONCRETE SLAB AND PARAPET AS SHOWN ON SHEET S-5.
3. ALL DECK CONCRETE WILL BE IN ONE POUR.



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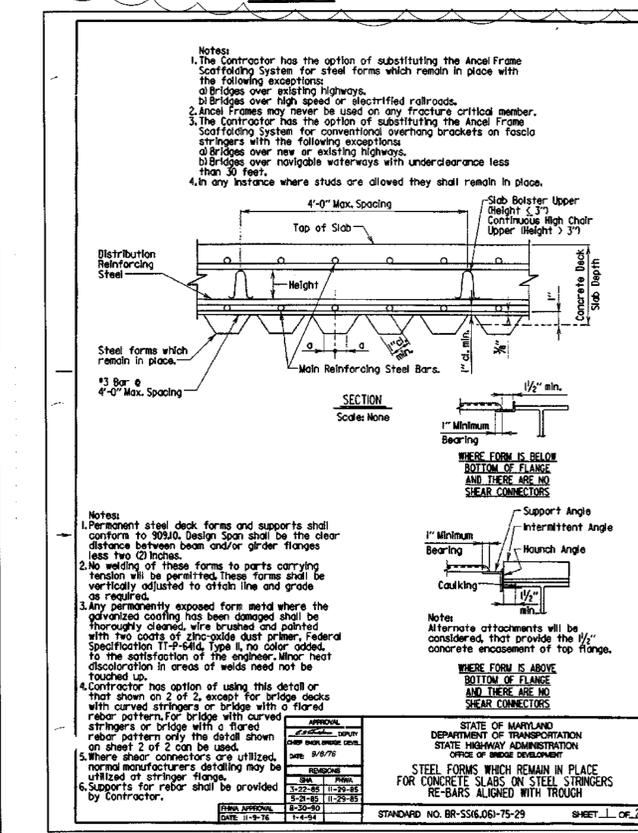
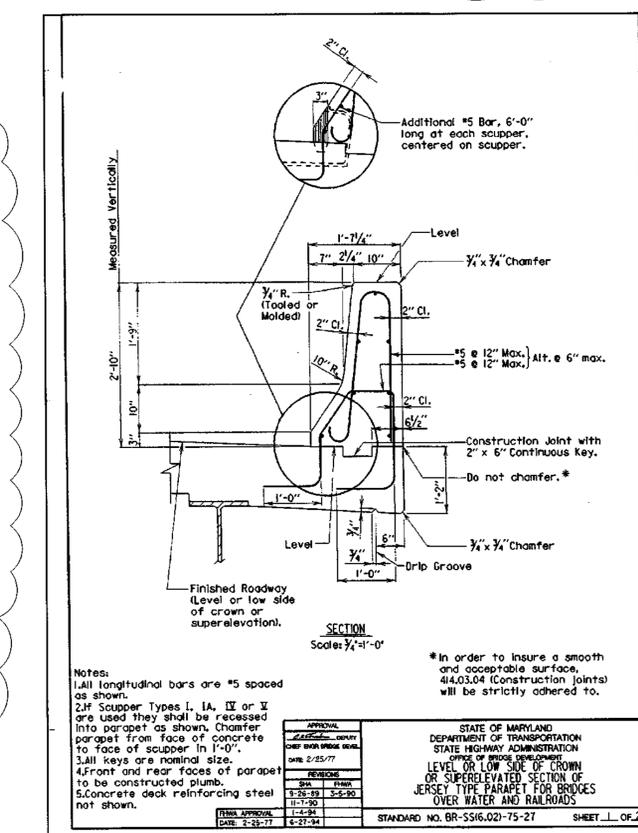
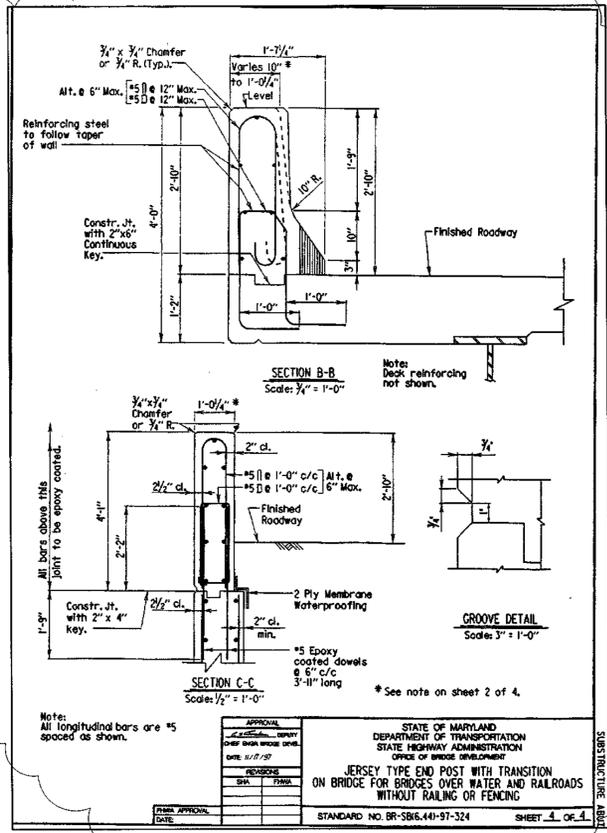
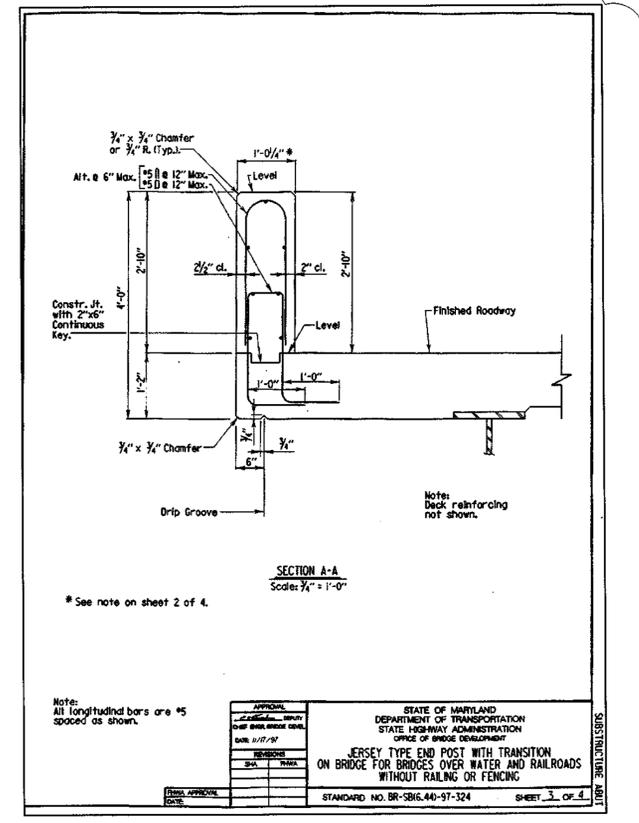
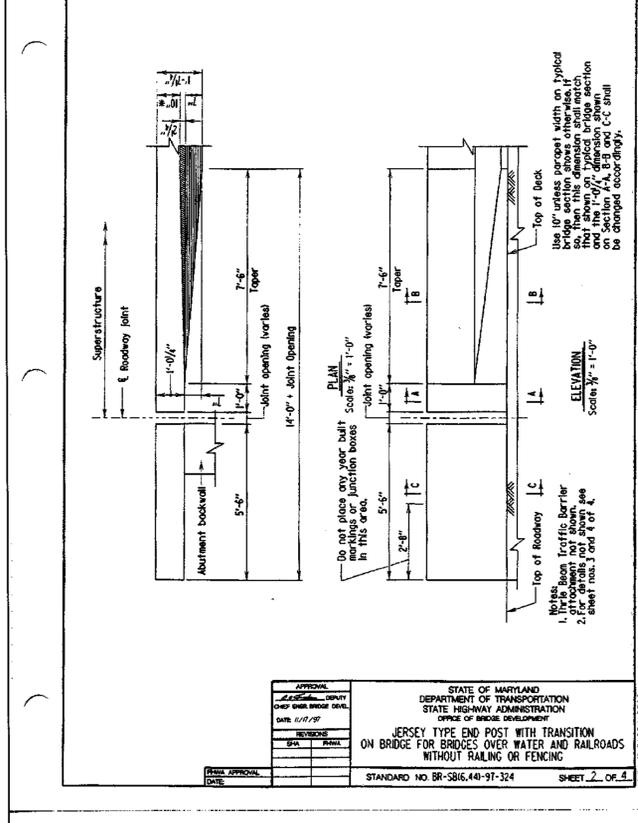
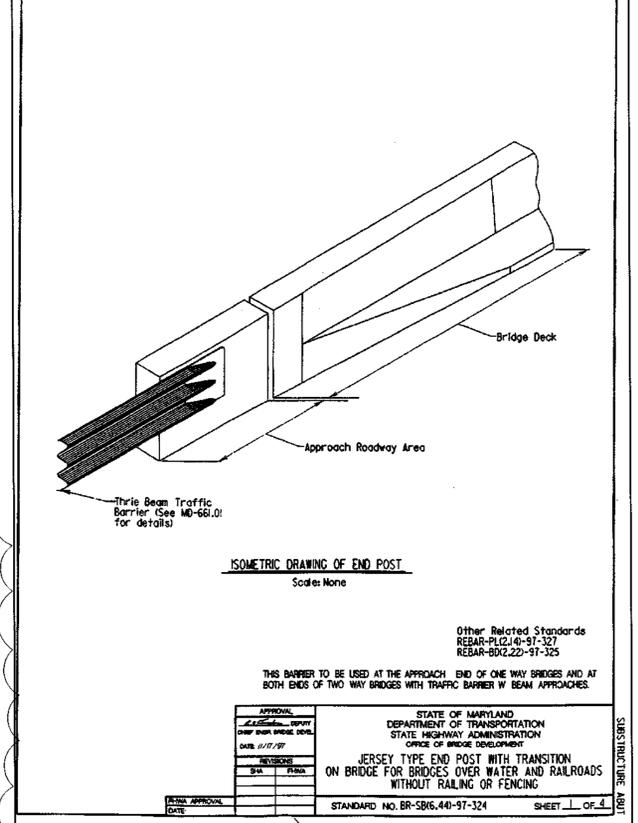
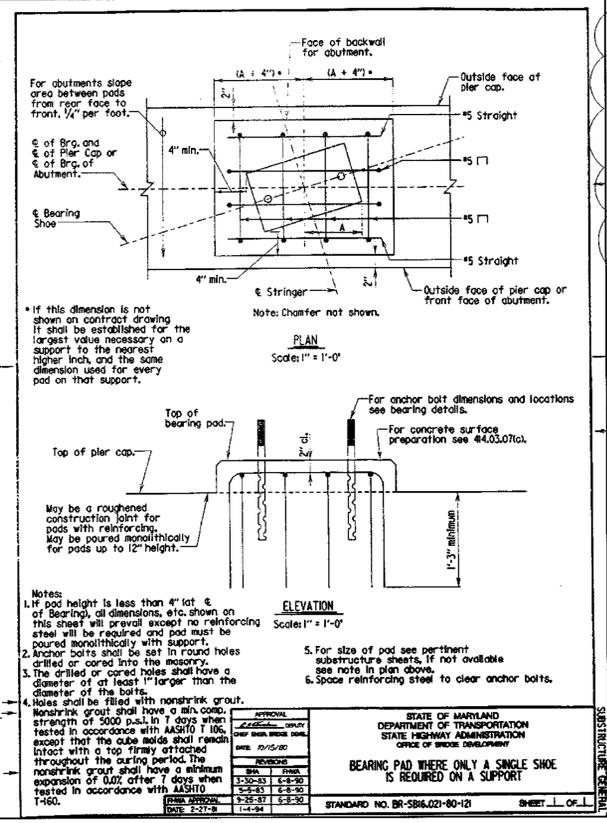
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REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT	
03/08/99 REVIEW COMMENTS	WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK	
	SCALE	DECK SLAB AND DECK ELEVATIONS DATE OCT 1998 CONTRACT
	DESIGNED BY MJD AS SHOWN	F-99-11
	DRAWN BY MJD	
	CHECKED BY RAS	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	
<i>Howard County Seal</i>	<i>Howard County Seal</i>	
		SHEET NO. 14 OF 23



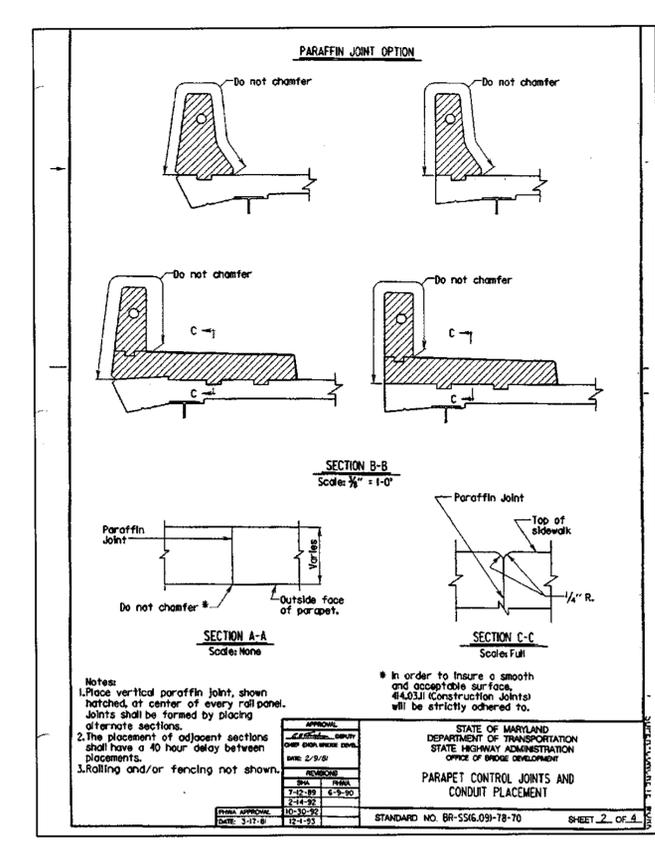
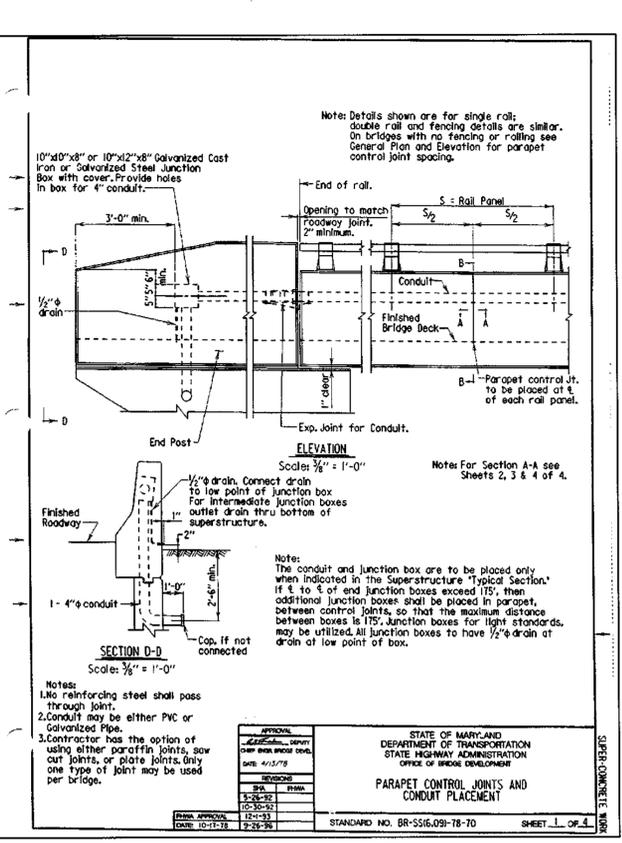
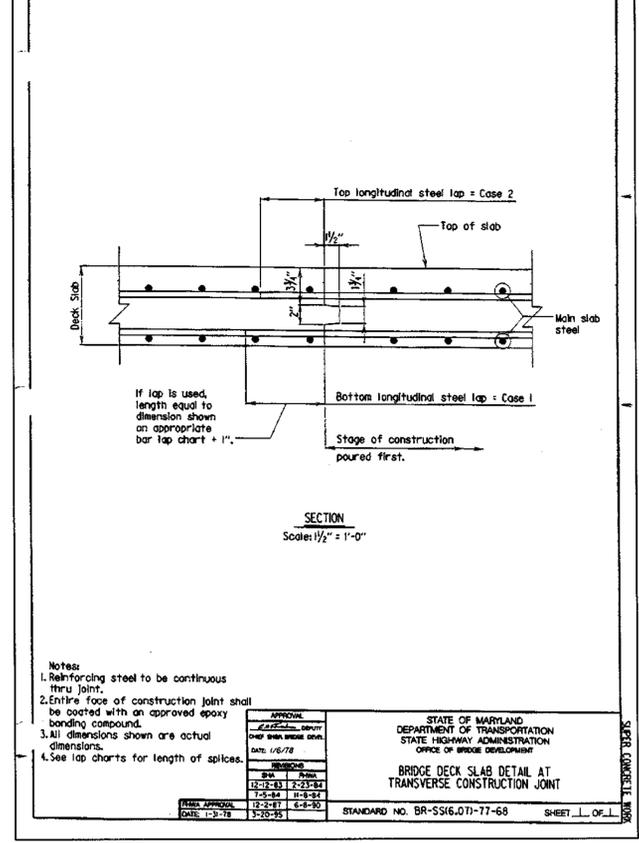
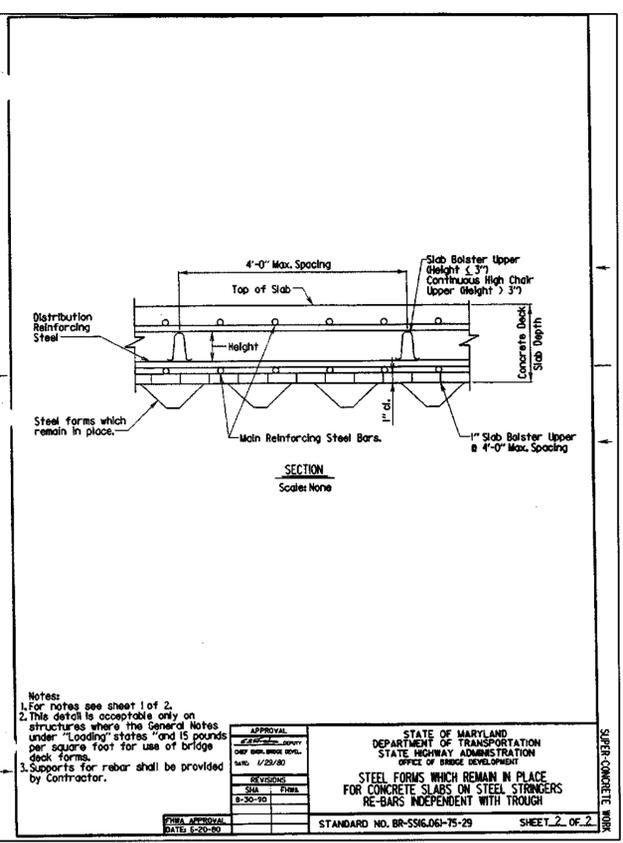
REVISIONS 03/08/99 REVIEW COMMENTS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK DATE OCT 1998 CONTRACT	F-99-11 DESIGNED BY MJD AS SHOWN DRAWN BY MJD CHECKED BY RAS
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>Howard County</i> 3-27-99	APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING <i>Howard County</i> 4/1/99	SHEET NO. 15 OF 23 INDEXED

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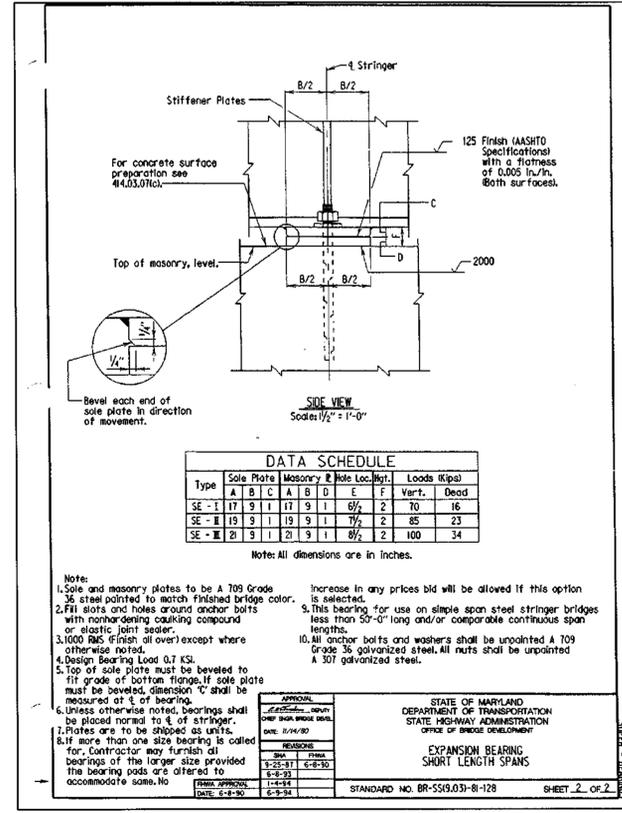
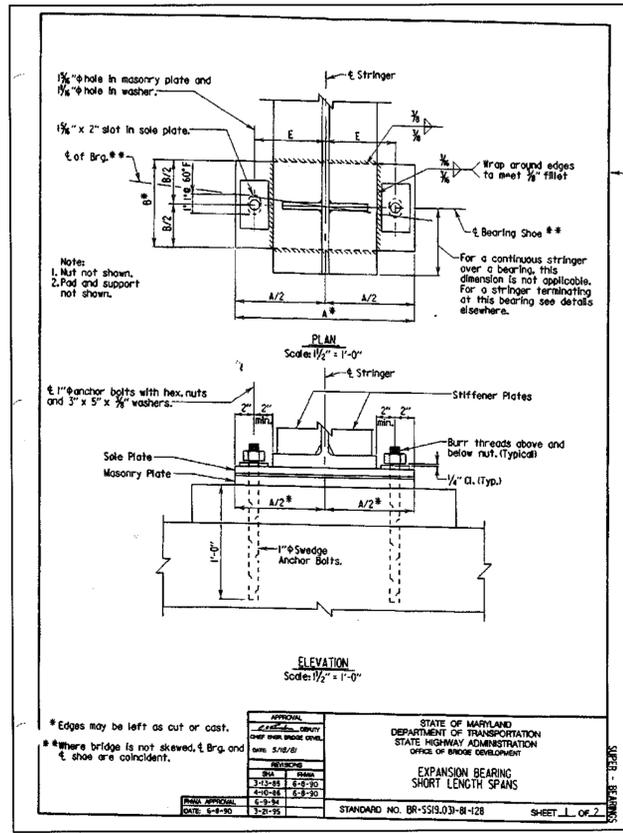
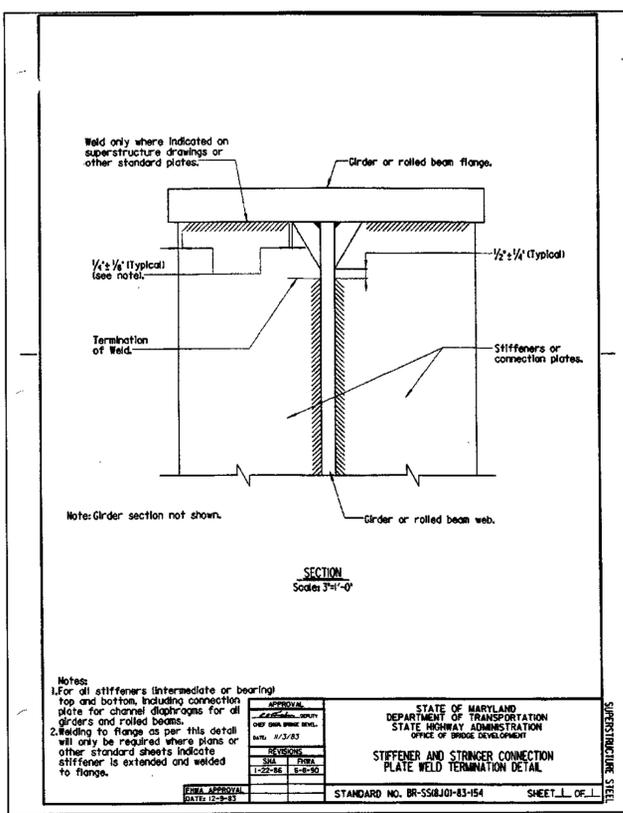
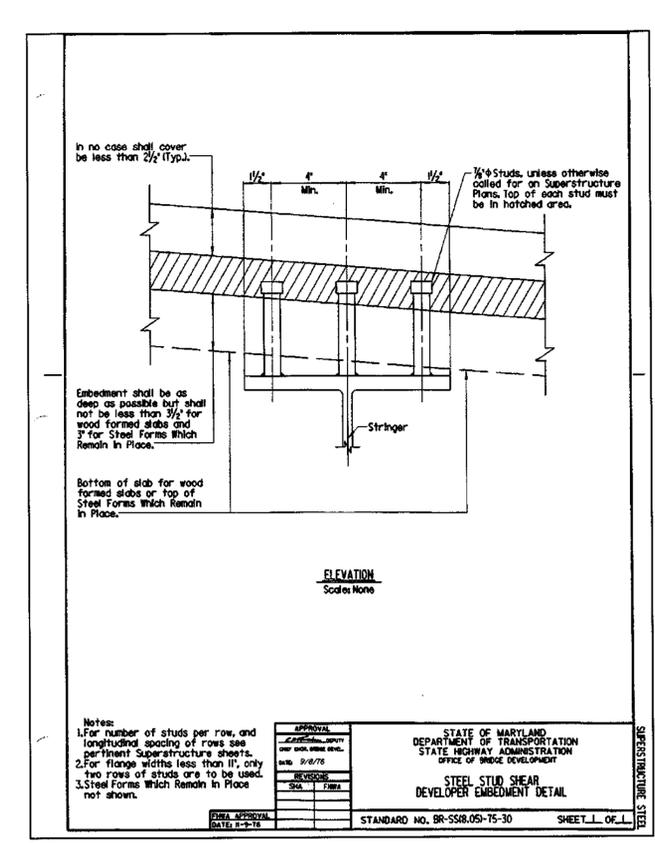
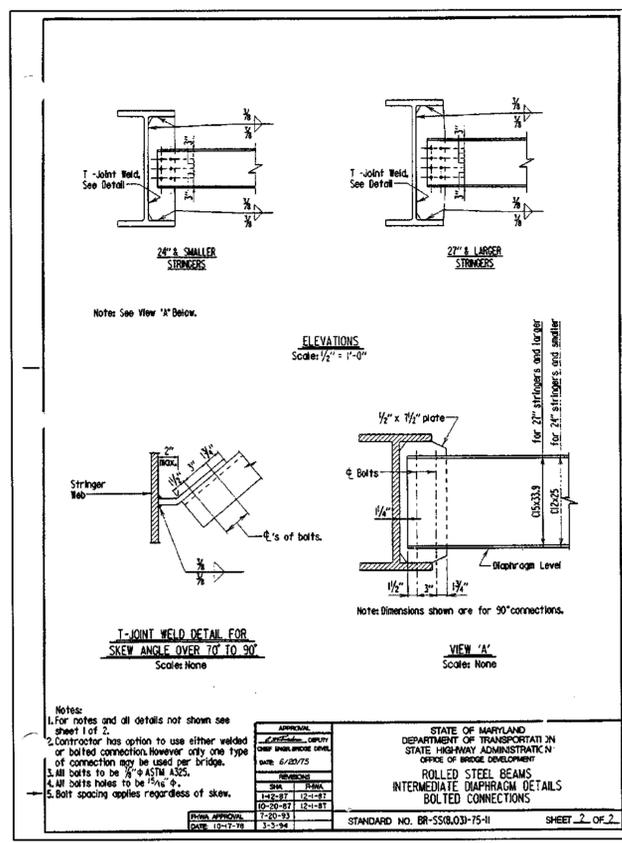
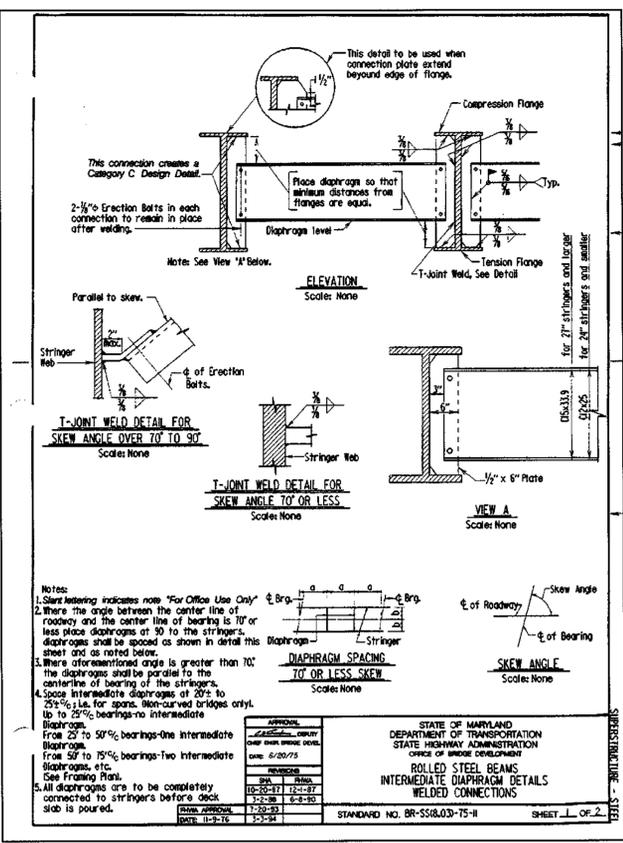
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FED. AID REGION NO.	ROUTE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD			



OMITTED

DETAIL 15



NR 1 © 1993

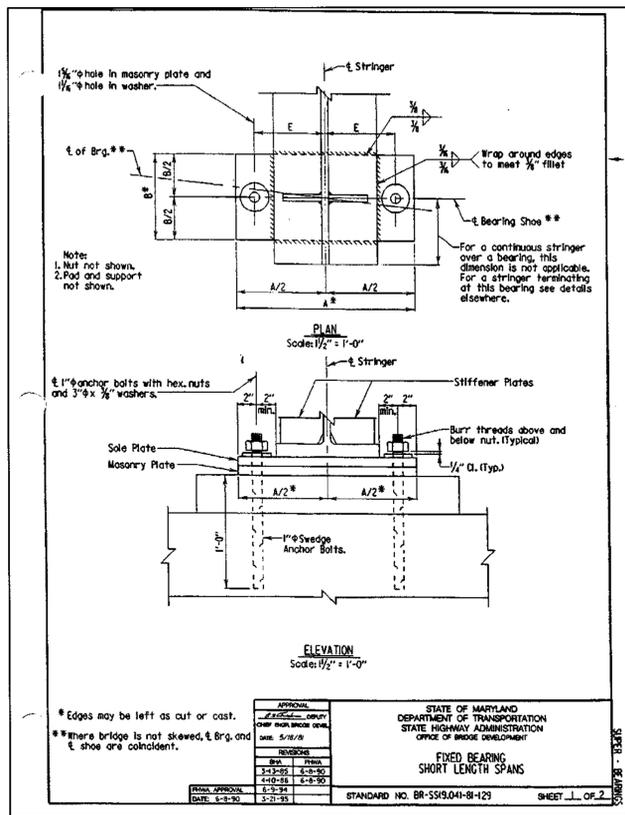
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REVISIONS 03/08/99 REVIEW COMMENTS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK
SCALE: 1" = 1'-0" DATE: OCT 1998 DESIGNED BY: MJD AS SHOWN DRAWN BY: MJD CHECKED BY: RAS	STANDARDS II CONTRACT: F-99-11
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS [Signature] 3-24-99	APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING [Signature] 4/1/99
APPROVED: [Signature] 3/20/99	SHEET NO. 17 OF 23

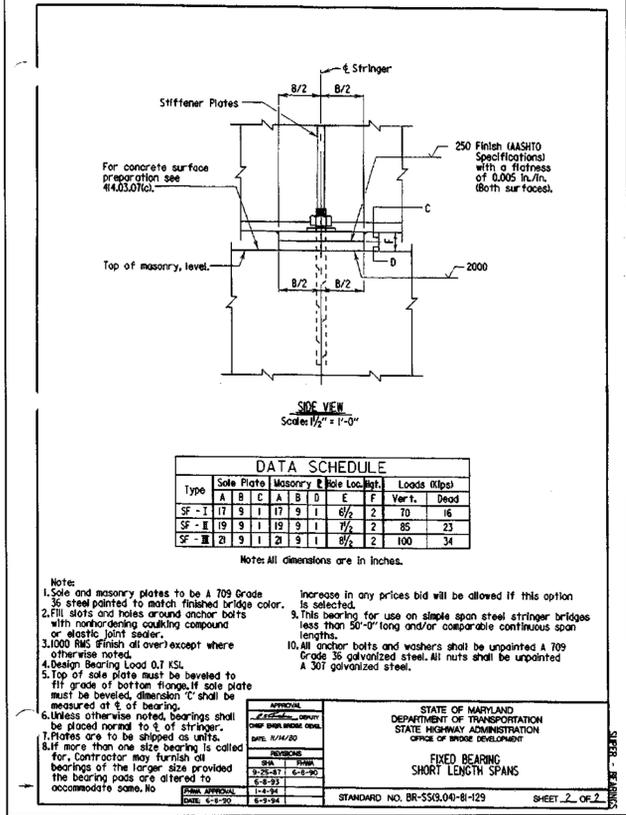
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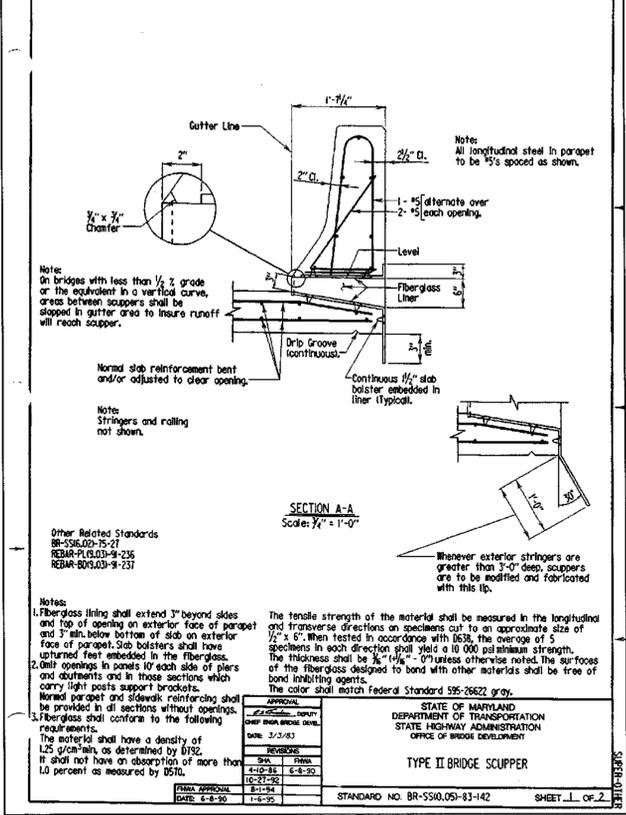
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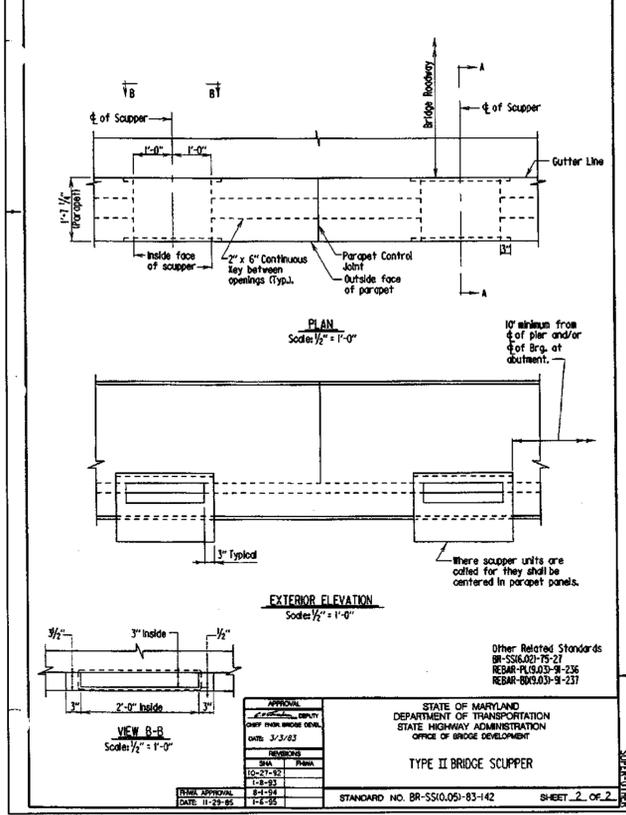
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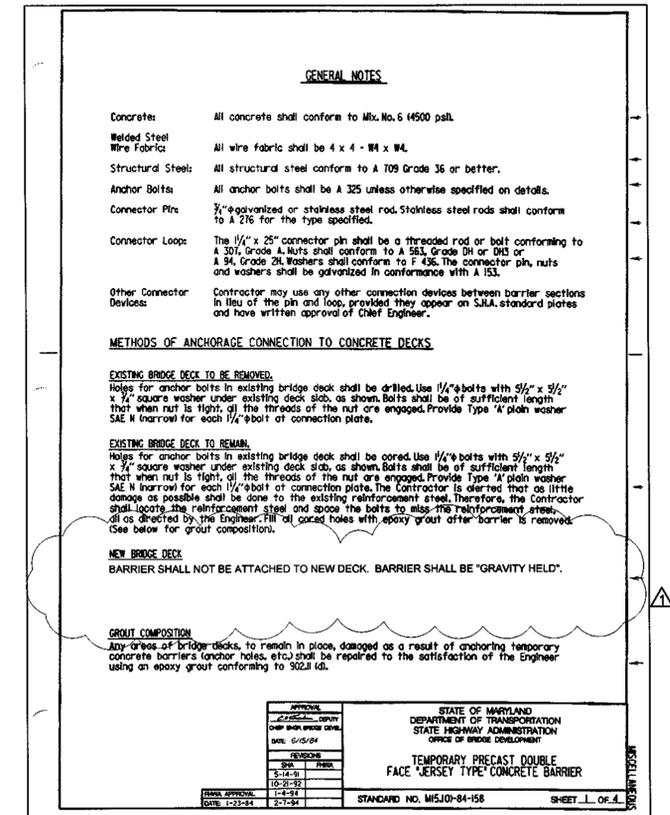
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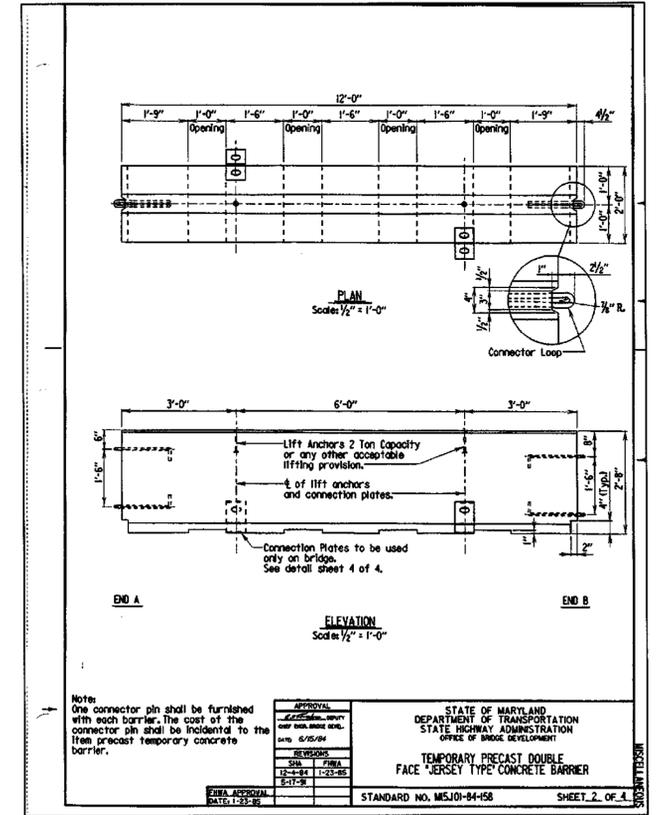
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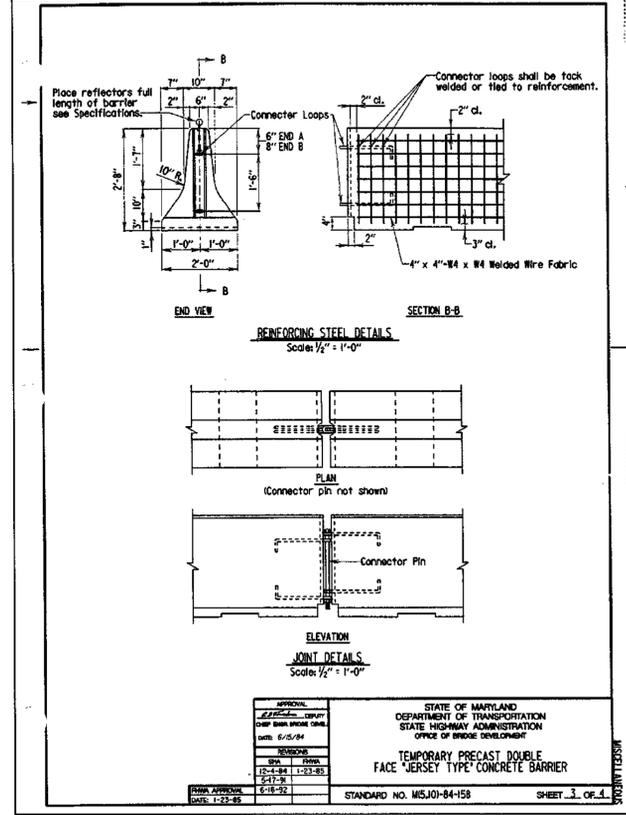
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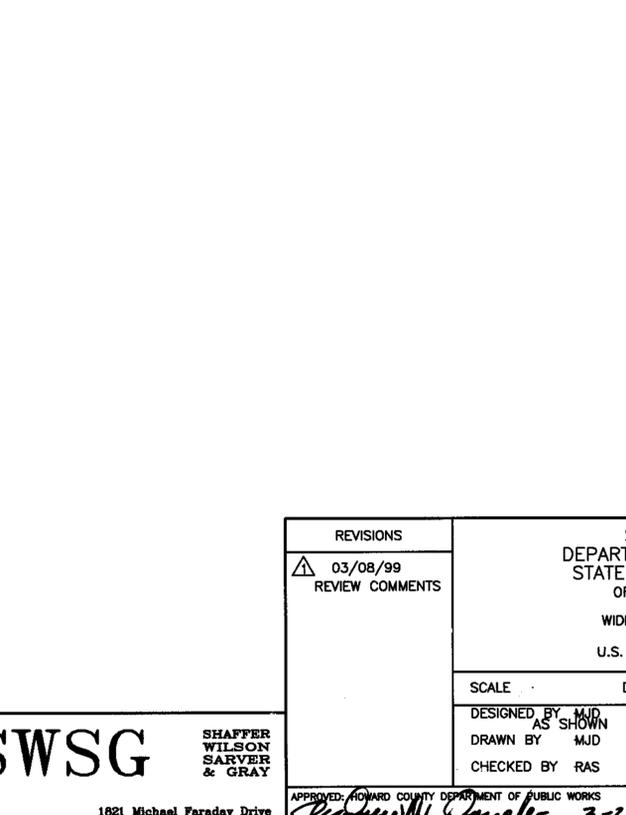
DETAIL 26



DETAIL 27



DETAIL 28



DETAIL 29

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 03/08/99 REVIEW COMMENTS

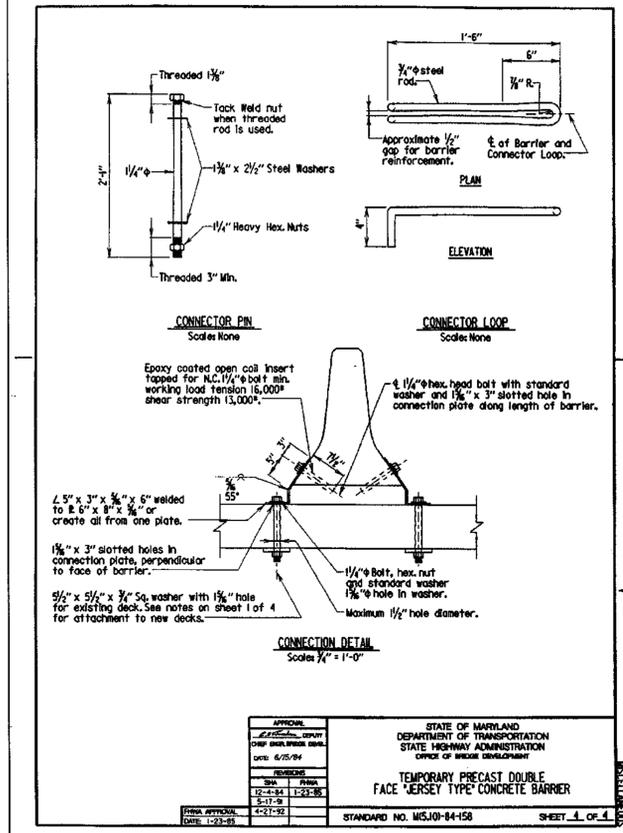
STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT  
 WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK

SCALE DATE STANDARDS IN CONTRACT  
 DESIGNED BY MJD AS SHOWN F-99-11  
 DRAWN BY MJD  
 CHECKED BY RAS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

SHEET NO. 18 OF 23

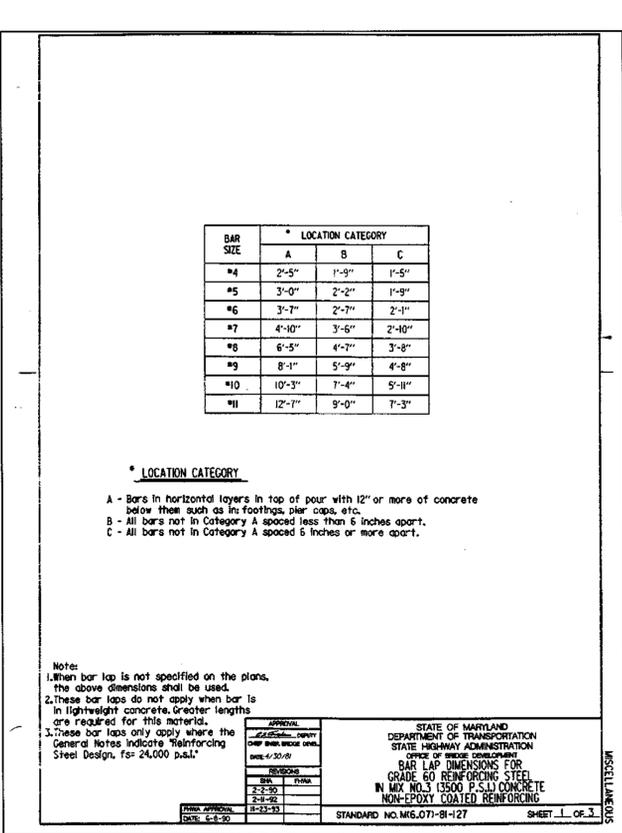




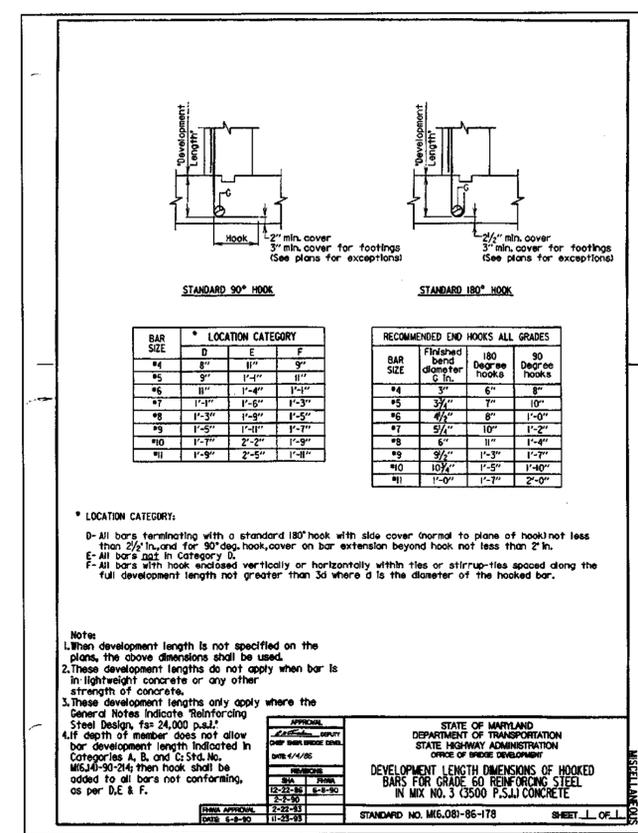
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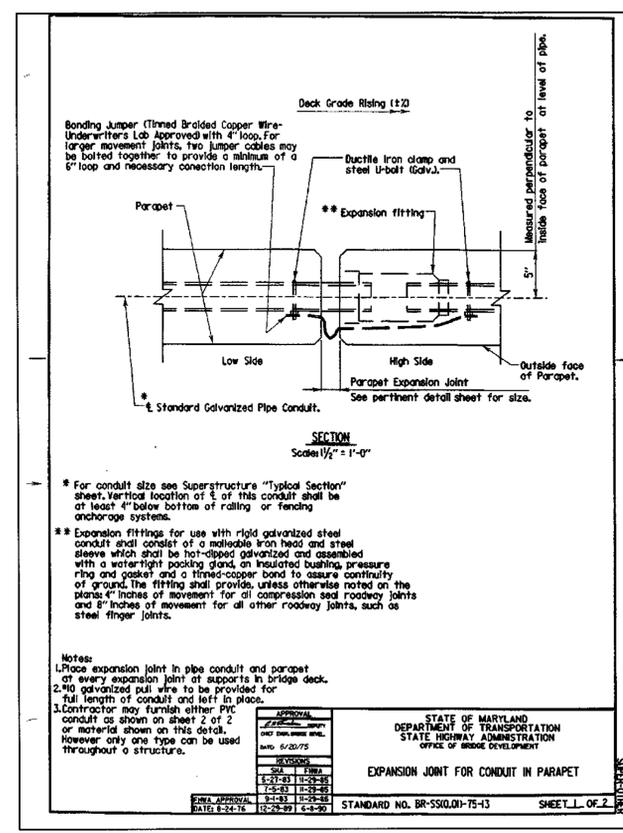
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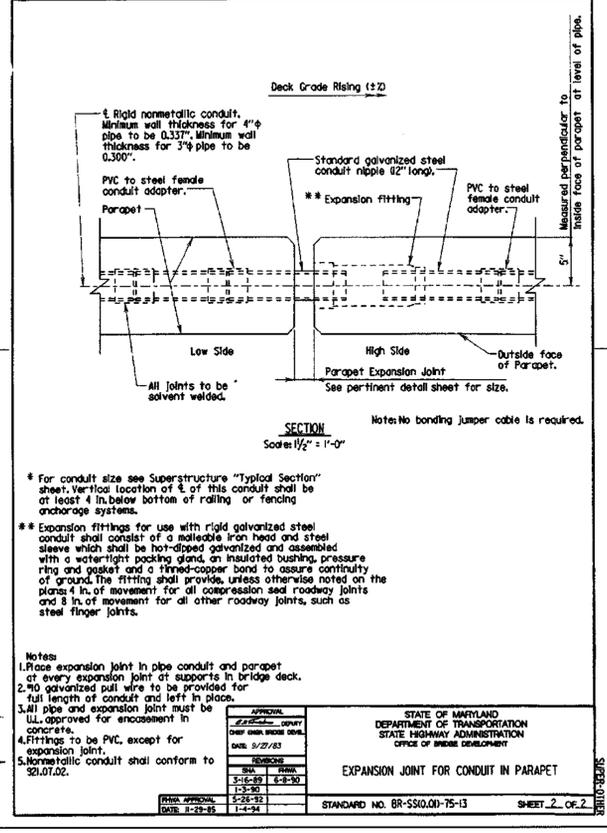
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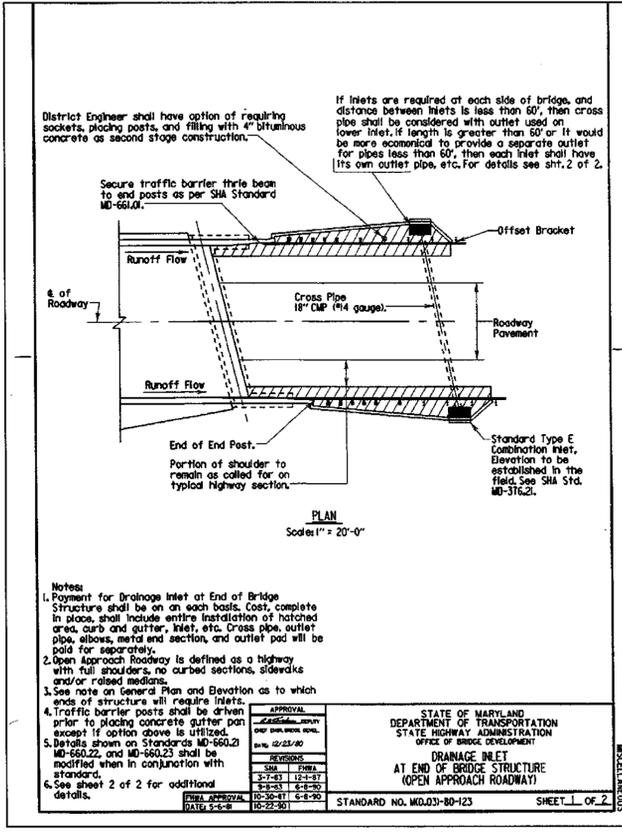
DETAIL 32



DETAIL 33



DETAIL 34



DETAIL 35

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03/08/99 REVIEW COMMENTS

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

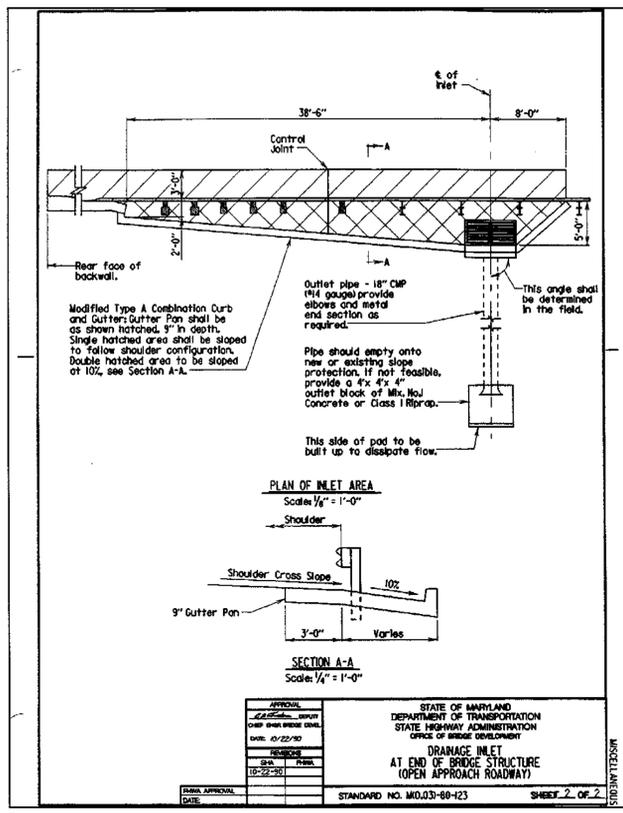
WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK

SCALE: DATE OCT 1998 STANDARDS CONTRACT

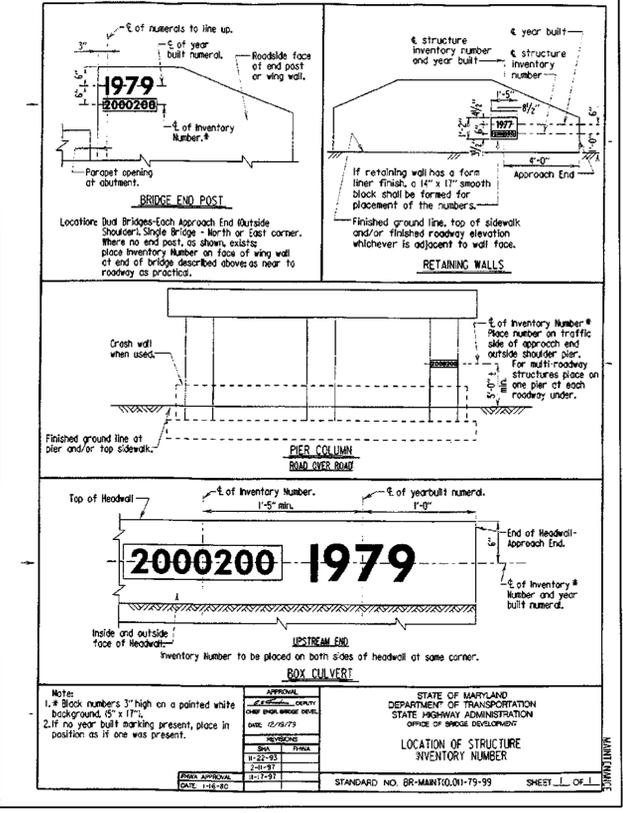
DESIGNED BY MJD AS SHOWN F-99-11  
DRAWN BY MJD  
CHECKED BY RAS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

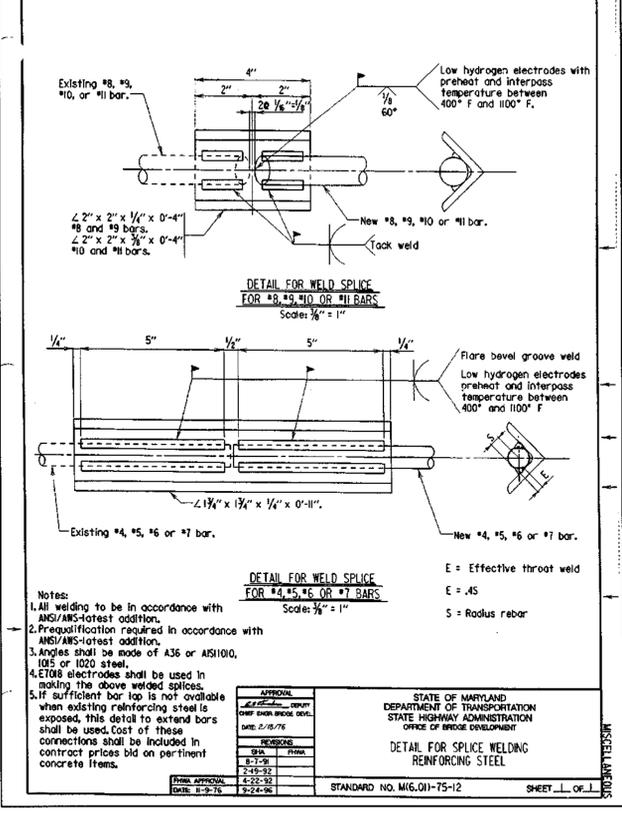
SHEET NO. 19 OF 23



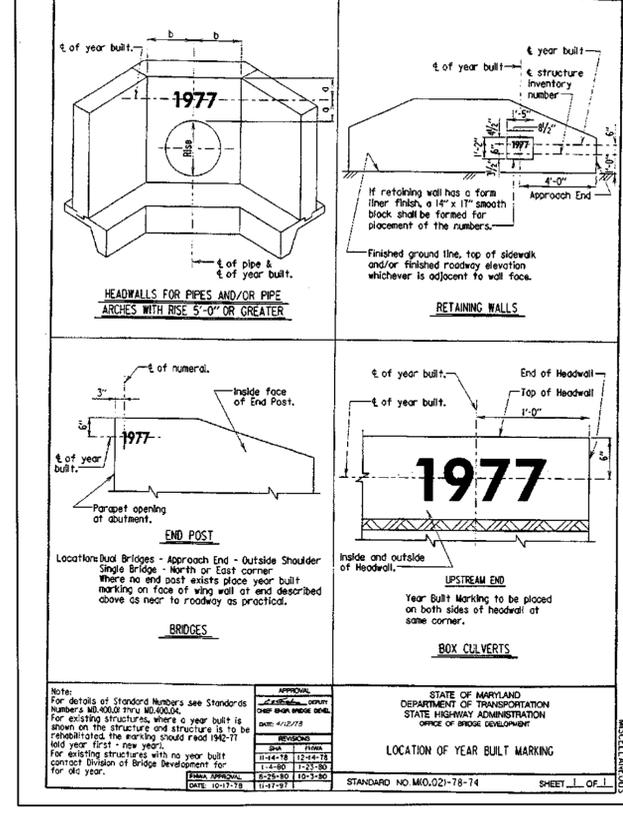
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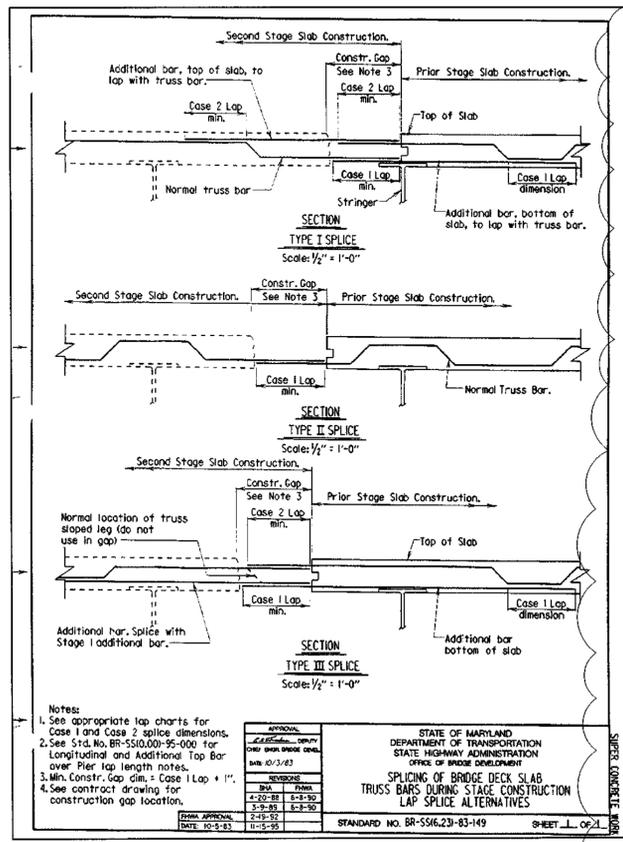
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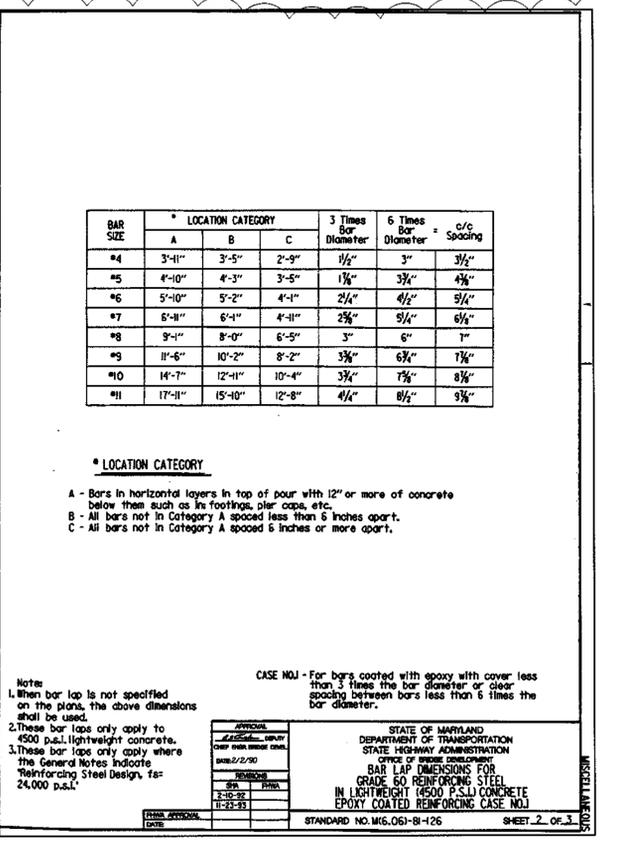
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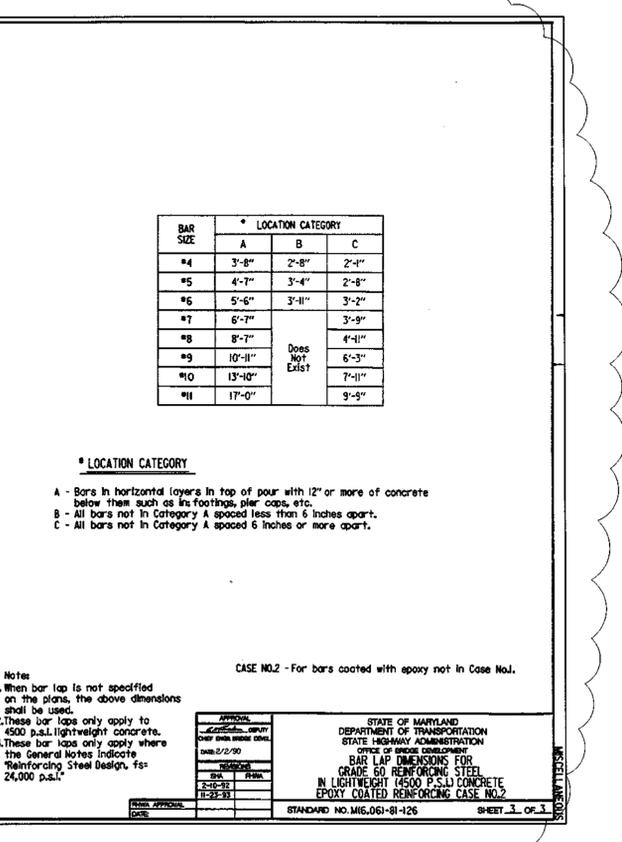
DETAIL 38



DETAIL 39



DETAIL 40



DETAIL 41

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03/08/99 REVIEW COMMENTS

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF BRIDGE DEVELOPMENT  
WIDENING AND DECK REPLACEMENT  
FOR BRIDGE NO. 13002 ON  
U.S. RTE. 1 OVER BEALMEAR CREEK  
DATE OCT 1998 CONTRACT F-99-11

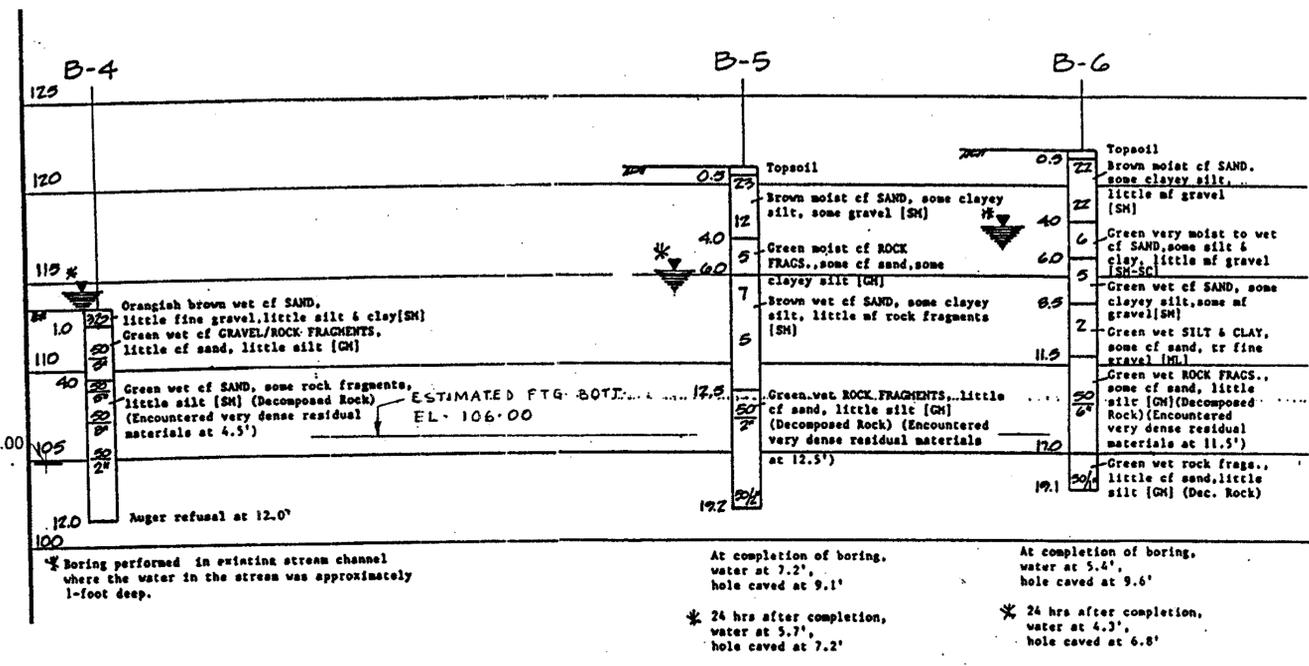
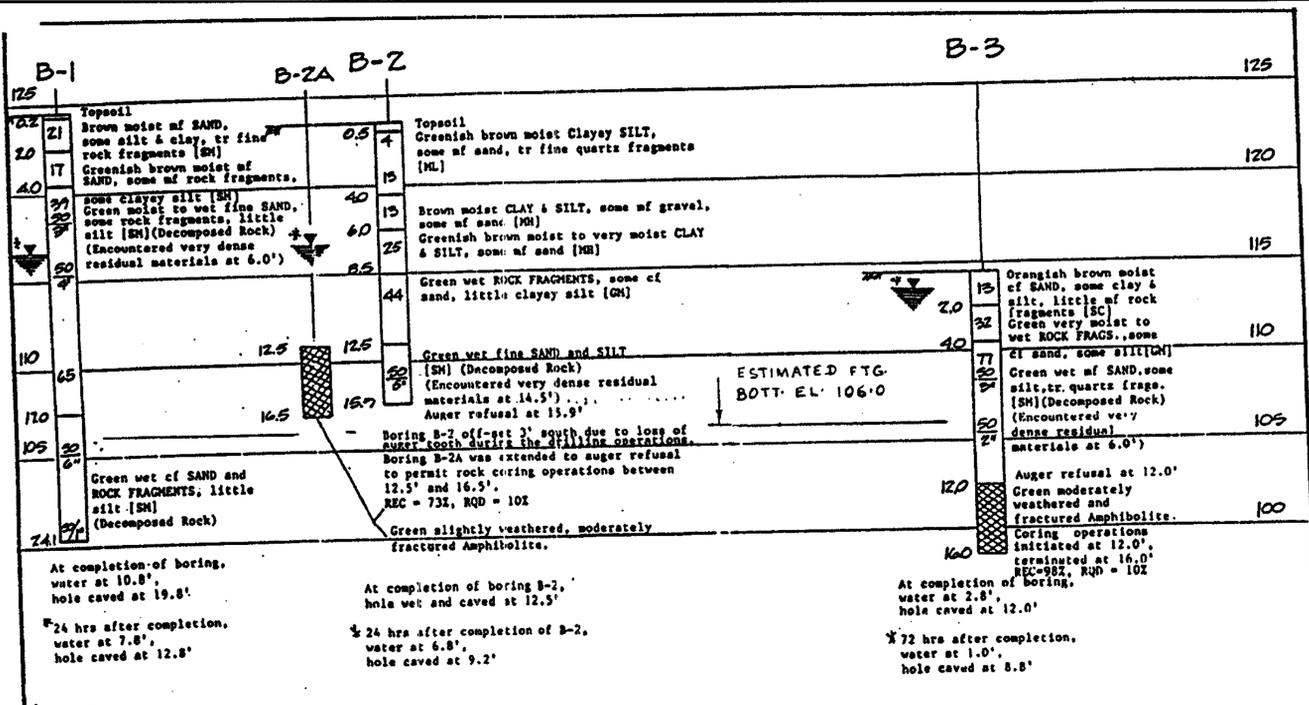
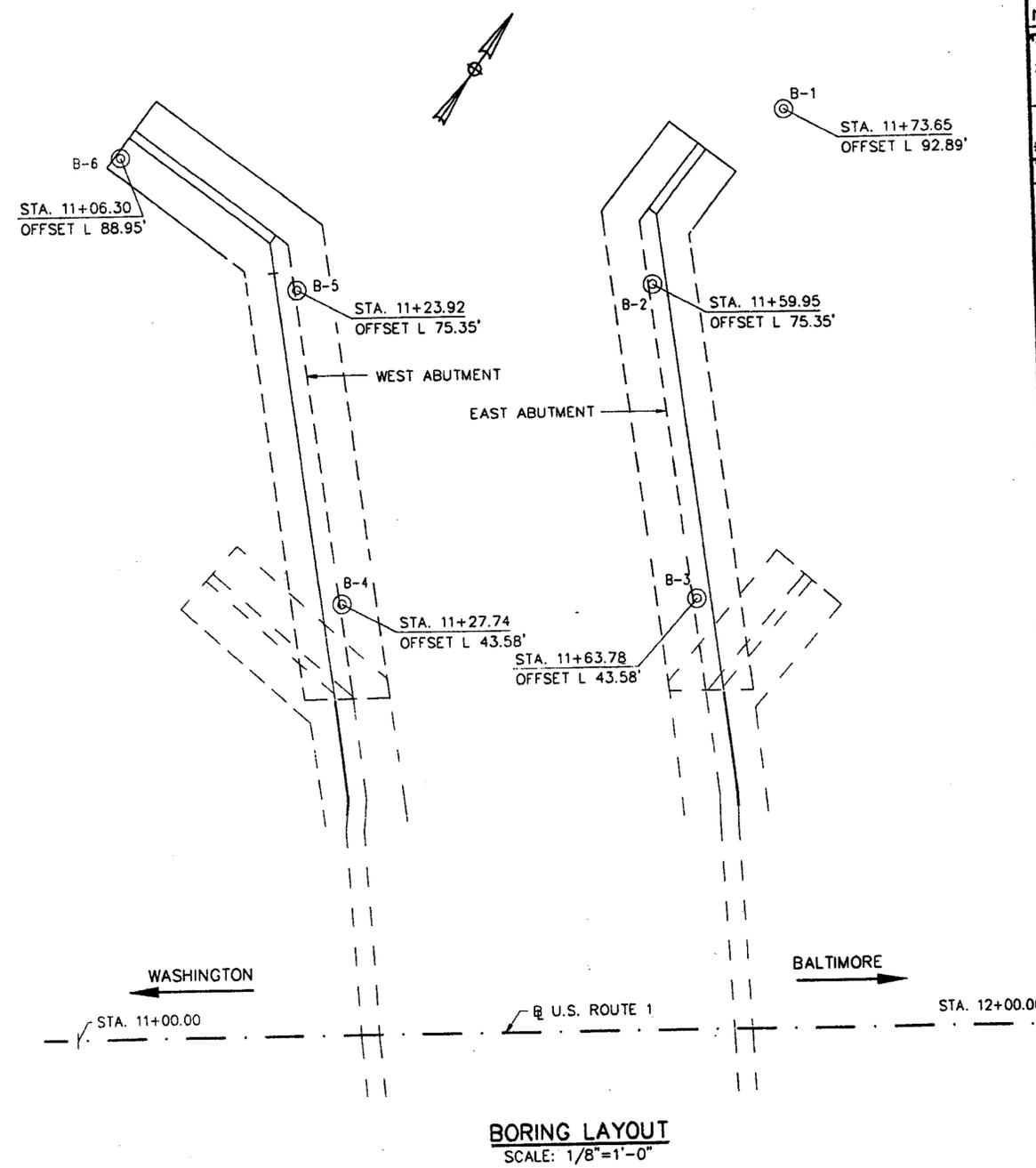
DESIGNED BY MJD AS SHOWN  
DRAWN BY MJD  
CHECKED BY RAD

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Howard County Seal*  
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Howard County Seal*

SHEET NO. 20 OF 23



S12



- NOTES:**
- BORINGS B-1 THROUGH B-6 WERE PERFORMED BY THE CONSULTANT DURING JULY, 1990.
  - FIGURES IN COLUMNS ON BORING PROFILES ARE STANDARD PENETRATION TEST (SPT) RESULTS, WHICH REPRESENT THE NUMBER OF BLOWS REQUIRED TO DRIVE A STANDARD 2" O.D. SAMPLING SPOON ONE FOOT, UNLESS OTHERWISE NOTED, WITH A 140 LB. HAMMER FREELY FALLING 30".
  - METHOD OF BURMISTER SOIL CLASSIFICATION IS EXPLAINED ON IDENTIFICATION OF SOIL SAMPLES.
  - UNIFIED SOIL CLASSIFICATION DESIGNATIONS BASED UPON VISUAL EXAMINATION.
  - SOILS DESCRIBED AS "DECOMPOSED ROCK" ON THE BORING PROFILES REPRESENT SOILS WHICH EXHIBIT THE REMNANT STRUCTURE OF THE ROCK.
  - ROCK RECOVERY (REC): RATIO OF THE LENGTH OF ACTUAL ROCK CORE RECOVERED TO THE LENGTH OF THE CORE RUN.
  - ROCK QUALITY DESIGNATION (RQD): RATIO OF INTACT ROCK CORE PIECES, GREATER THAN 4-INCHES IN LENGTH, TO THE LENGTH OF THE CORE RUN.



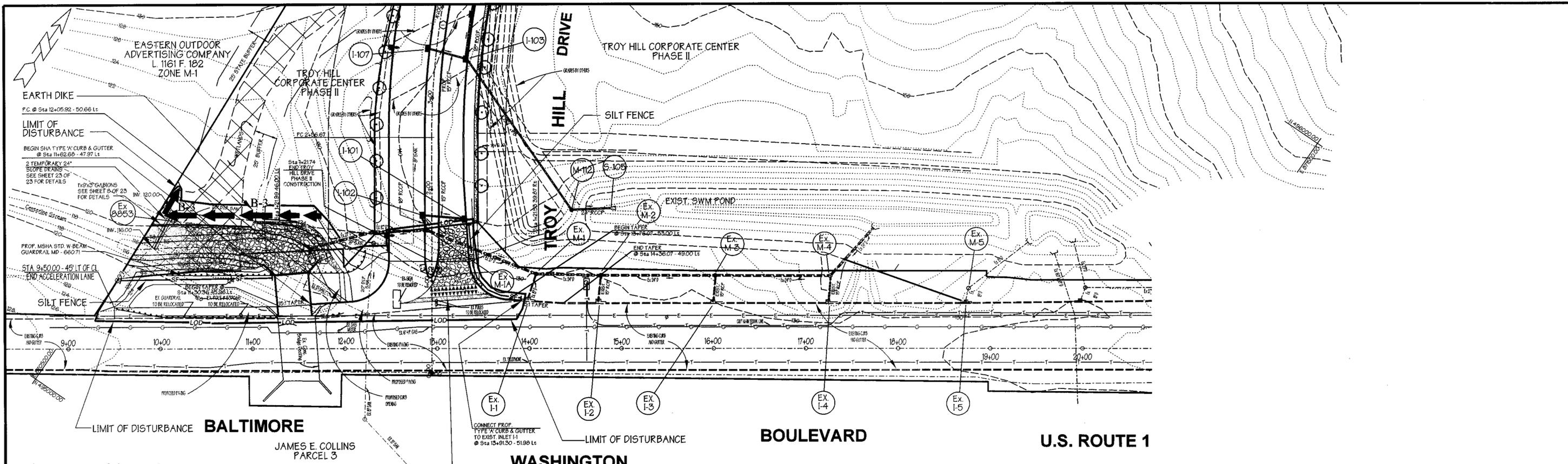
**S13**

REVISIONS 03/08/99 REVIEW COMMENTS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF BRIDGE DEVELOPMENT  WIDENING AND DECK REPLACEMENT FOR BRIDGE NO. 13002 ON U.S. RTE. 1 OVER BEALMEAR CREEK  SCALE: BORINGS AND DRIVE TESTS DATE: OCT 1998 CONTRACT: F-99-11  DESIGNED BY: MJD AS SHOWN DRAWN BY: MJD CHECKED BY: RAS
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>[Signature]</i> 3-24-99	SHEET NO. 21 OF 23
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING <i>[Signature]</i> 3/24/99	INDEXED

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NOTE: ALL UTILITIES TO BE CONSTRUCTED WITHIN U.S. ROUTE 1 PROPOSED WIDENING AS PART OF TROY HILL DRIVE CONSTRUCTION SHALL BE INSTALLED PRIOR TO IMPLEMENTING ROUTE 1 WIDENING.

**PLAN**  
SCALE: 1" = 50'

NOTE: SEE SHEET 1 OF 23 FOR WAIVERS, APPROVALS, AND PERMITS.

NOTE: THIS PLAN IS TO BE USED FOR THE INSTALLATION AND MAINTENANCE OF THE SEDIMENT AND EROSION CONTROL MEASURES AND DEVICES ONLY. SEE SITE PLAN FOR MORE SPECIFIC DETAILS.

**Legend**

- Ex. 2' Contours
- Ex. 10' Contours
- Prop. 2' Contours
- Prop. 10' Contours
- Ex. Curb & Gutter
- Prop. Curb & Gutter
- Ex. Sanitary
- Ex. Storm Drain
- Prop. Storm Drain
- Limit of Disturbance
- Silt Fence
- Stabilized Construction Entrance
- Proposed Paving

**UTILITY CONSTRUCTION NOTES:**

- OPEN ONLY THAT PORTION OF TRENCH WHICH CAN BE BACKFILLED AND STABILIZED EACH DAY
- PLACE ALL EXCAVATED MATERIAL ON UP GRADE SIDE OF TRENCH
- ALL SEDIMENT CONTROL MEASURES DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY BEFORE LEAVING THE WORK SITE AT THE END OF EACH DAY
- IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY SILT FENCE SHALL BE PLACED DOWN GRADE TO TRENCH.

**INLET PROTECTION**

THE CONTRACTOR IS REQUIRED TO INSTALL INLET PROTECTION ON ALL STORM DRAIN INLETS WITH THE EXCEPTION OF THE FOLLOWING:

- ANY INLET OUTFALLING DIRECTLY INTO A SEDIMENT TRAPPING DEVICE.
- INLETS ON PRIVATE OR PUBLIC PAVED ROADWAYS OPEN TO THE PUBLIC.

ALL INLET PROTECTION WILL BE INSTALLED AS DIRECTED BY THE INSPECTOR IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND CONTROL, PAGE E-16-1 (OR AS MAY BE AMENDED). THE REMOVAL OF ANY INLET PROTECTION DEVICES WILL REQUIRE APPROVAL FROM THE INSPECTOR. (STORM DRAINS TO BE FLUSHED PRIOR TO TRAPPING DEVICE REMOVAL)

- Sequence of Operation**
- A MEETING WITH THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR SHALL BE HELD PRIOR TO THE START OF ANY CONSTRUCTION (1 DAY)
  - OBTAIN GRADING PERMIT. (1 DAY)
  - NOTIFY THE HOWARD COUNTY DEPARTMENT OF PERMITS AND LICENSES 48 HOURS BEFORE BEGINNING WORK. (1 DAY)
  - INSTALL STABILIZED CONSTRUCTION ENTRANCE (1 DAY)
  - INSTALL SILT FENCE (1 DAY)
  - RELOCATE EX. 19" SANITARY (3 DAYS)
  - SEE SHEET 8 OF 23 FOR SEQUENCE/PHASING OF STREAM DIVERSION OPERATIONS.
    - COMPLETE PHASE 1 OPERATIONS WITH PERMISSION OF THE INSPECTOR PROCEED TO PHASE 2. (5 DAYS)
    - COMPLETE PHASE 2 OPERATIONS WITH PERMISSION OF THE INSPECTOR PROCEED TO PHASE 3. (5 DAYS)
    - COMPLETE PHASE 3 OPERATIONS. (5 DAYS)
  - CONTINUE GRADING, FINE GRADE AND INSTALL STONE SUBBASE AND CURB & GUTTER. STABILIZE ANY REMAINING AREAS. (5 DAYS)
  - WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR FLUSH THE STORM DRAIN SYSTEM. REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES AND DEVICES. (3 DAYS)
  - PROCEED WITH PAVING AND LANDSCAPING OPERATIONS. (4 DAYS)

**ENGINEER CERTIFICATION:**

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Engineer James A. Markle Jr. Date 3/17/99  
Name JAMES A. MARKLE JR. PE # 11005

**DEVELOPER CERTIFICATION:**

I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a certificate of attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Developer David E. Meiners Date 3/14/99  
Name DAVID E. MEINERS

**OWNER / APPLICANT**

TROY HILL BUSINESS PARK PARTNERSHIP  
C/O MANEKIN CORPORATION  
7165 COLUMBIA GATEWAY DRIVE  
COLUMBIA, MARYLAND 21046  
410-290-1400

These plans for soil erosion and sediment control meet the requirements of Howard Soil Conservation District.

APPROVED: HOWARD SOIL CONSERVATION DISTRICT 3/23/99  
DATE

PLAN NUMBER \_\_\_\_\_

Reviewed for the Howard Conservation District and meets technical requirements.

Cheryl Simmons/GS 3/23/99  
NATURAL RESOURCES CONSERVATION SERVICE DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Andrew M. Quaker 3-24-99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
Cindy Hamilton 4/1/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Allyson 3/27/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**GEORGE W. STEPHENS, JR. AND ASSOCIATES, INC.**  
Civil Engineers and Land Surveyors  
658 Kenilworth Drive, Suite 100  
Towson Maryland 21204 (410) 825-8120  
203 East Broadway  
Bel Air, Maryland 21014 (410) 838-3800

DESIGNED : CWC  
DRAFTED : RLM  
CHECKED : RLU

**TROY HILL DRIVE**  
**U.S. ROUTE 1 IMPROVEMENTS**  
EROSION & SEDIMENT CONTROL PLAN & DETAILS

SCALE: 1" = 50'

**TROY HILL CORPORATE CENTER**  
PHASE II

HOWARD COUNTY, MARYLAND  
ELECTION DISTRICT #1

APR. 15, 1998  
SHEET 22 OF 23

F99-11  
P/N 8130 - rttledcon.s01 MARCH 02, 1999

# Stabilization Specifications

## Section I - Vegetative Stabilization Methods and Materials

- A. Site Preparation
1. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, siltways, or sediment control basins.
  2. Perform all grading operations at right angles to the slope. Final grading and chiseling is not usually necessary for temporary structures.
  3. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.

- B. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples may be taken for engineering purposes as well as for chemical analysis.
  2. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Uniformity may be substantiated for fertilizer by prior approval from the appropriate approval authority. Fertilizers shall be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
  3. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 90% calcium oxide plus maximum acid insoluble material. Limestone shall be applied to reach thickness that at least 50% will pass through a 100 mesh sieve and 90-100% will pass through a 20 mesh sieve.

- C. Seeded Temporary Seeding
1. Seeded preparation shall consist of loosening soil to a depth of suitable agricultural or construction equipment, such as disc harrow or chisel plow, on construction equipment. After the soil is loosened it should not be rolled or dragged smooth by surface in the roughened condition. Sloped areas (greater than 3%) should be treated leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
  2. Apply fertilizer and lime as prescribed in the plan.
  3. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

- D. Soil Amendments - Use only one of the following conditions:
1. Preferred - Apply 2 tons per acre double limestone (92 lbs./100 sq ft) and 600 lbs. per acre 10-10-10 fertilizer (4 lbs./100 sq ft). Before seeding, harrow or also into three inches of soil. At time of seeding, apply 100 lbs. per acre 50-0-0 uniform fertilizer (31 lbs./100 sq ft).
  2. Acceptable - Apply 2 tons per acre double limestone (92 lbs./100 sq ft) and 1000 lbs. per acre 10-10-10 fertilizer (20 lbs./100 sq ft) before seeding, harrow or also into three inches of soil.

- E. Seeded Permanent Seeding
1. Seeded preparation shall consist of loosening soil to a depth of suitable agricultural or construction equipment, such as disc harrow or chisel plow, on construction equipment. After the soil is loosened it should not be rolled or dragged smooth by surface in the roughened condition. Sloped areas (greater than 3%) should be treated leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
  2. Apply fertilizer and lime as prescribed in the plan.
  3. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

- F. Permanent Seeding
1. Minimum soil conditions required for permanent vegetative establishment:
  2. Soil pH shall be between 6.0 and 7.0.
  3. Soil shall contain less than 1000 parts per million (ppm) of sodium.
  4. Soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is for loess or siltstone or sandstone soils which may contain 40% or more clay but are not to be seeded.
  5. Soil shall contain 1.5% minimum organic matter by weight.
  6. Soil must contain sufficient pore space to permit adequate root penetration.
  7. If these conditions cannot be met by soil or site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.

- G. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bedding of the topsoil to the surface area and to create horizontal erosion check dams to prevent topsoil from sliding down a slope.

- H. Apply soil amendments as per soil test or as included on the plan.
1. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seed preparation, loose soil shall be brought up by a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3%) should be seeded by a laser level to the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 3-5" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

- I. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of seeding such material in this job.

- J. Inoculant - The inoculant for treating legume seed in the seed mixture shall be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. And fresh inoculant as directed on the package. Use the time recommended rate when hydroseeding. NOTE: It is very important to keep inoculant as cool as possible until used. Temperatures above 70-80 degrees F. can weaken bacteria and make inoculant less effective.

- K. NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.

- L. Methods of Seeding
1. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cutspreader seeder.
  2. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen: maximum of 100 lbs. per acre total soluble nitrogen; P205 (phosphorus): 200 lbs./ac; K2O (potassium): 200 lbs./ac.
  3. Lime - use only ground agricultural limestone. (Up to 2 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.)
  4. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

- M. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
1. Seed spread rate shall be incorporated into the method as the rates prescribed on the Temporary or Permanent Seeding Summary on Table 20 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
  2. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- N. Drill or Cutspreader Seeding: Mechanized seeders that apply and cover seed with soil.
1. Cutspreader seeders are required to bury the seed such a fashion as to provide at least 1/4 inch of soil covering. Seeded areas may be firm after planting.
  2. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- O. Match Specifications (In order of preference)
1. Straw shall consist of chemically treated wheat, rye, or oat straw, reasonably bright in color, and shall be messy, mucky, clumpy, decayed, or excessively dirty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
  2. Wood Cellulose Fiber Mulch (WCFM)
  3. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
  4. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly located.
  5. WCFM, including dye, shall contain no germination or growth inhibiting factors.
  6. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with soil, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a porous-like ground cover, on application, having moisture retention and porosity properties and shall cover and hold green seed in contact with the soil without inhibiting the growth of the grass species.
  7. WCFM must conform to the following physical requirements: Fiber length to approximately 10 mm, diameter approximately 1mm, pH range of 4.0 to 8.5, ash content of 10% maximum and water holding capacity of 95% minimum.

- P. NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

- Q. Misting Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
1. If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

# Sediment Control Notes

- A. Turfgrass Mixtures
1. Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and eastern shore. Recommended Certified Kentucky Bluegrass Cultivar Seeding Rate: 15 to 20 pounds/1000 square feet. A minimum of three Bluegrass cultivars should be chosen ranging from a minimum of 10% to a maximum of 20% of the mixture by weight.
  2. Kentucky Bluegrass/Perennial Ryegrass - Full sun mixture - For use in areas where rapid establishment is necessary and when turf will receive moderate to intensive management. Certified Perennial Ryegrass Cultivar Seeding Rate: 20 pounds/1000 square feet. A minimum of three Kentucky Bluegrass Cultivars must be chosen, with each cultivar ranging from 10% to 20% of the mixture by weight.
  3. Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in drought prone areas and/or for areas requiring low to medium management in full sun to medium shade. Recommended mixture includes: certified Tall Fescue Cultivars 50-50% and certified Kentucky Bluegrass Cultivars 0-15%. Seeding rate 5 to 8 lb/1000 square feet. One or more cultivars may be blended.
  4. Kentucky Bluegrass/Fine Fescue - Shade Mixture - For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: certified Kentucky Bluegrass Cultivars 50-40% and certified Fine Fescue and 60-70%. Seeding rate: 11/2 - 2 lbs/1000 square feet. A minimum of 3 Kentucky Bluegrass cultivars must be chosen, with each cultivar ranging from a minimum of 10% to a maximum of 20% of the mixture by weight.

- B. Ideal times of seeding
1. Western MD: March 15-June 1, August 1-October 1 (Hardness Zones - 6b)
  2. Central MD: March 15-May 15, August 1-October 15 (Hardness Zones - 6a)
  3. Southern MD, Eastern Shore: March 15-May 15, August 1-October 15 (Hardness Zones - 7a-7b)

- C. Irrigation
1. If seed mixture is deficient, apply seedlings with adequate water for plants germinating (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true in sandy areas where water is lost to the planting season, in unusually dry or hot seasons, or on adverse sites.

- D. Repairs and Maintenance
1. Inspect all seeded areas for failure and make necessary repairs, replacements, and reseedings within the planting season.
  2. Once the vegetation is established, the site shall have 90% groundcover to be considered adequately established.
  3. If the stand provides less than 40% ground cover, reseed/establish following original limit, fertilizer, seeded preparation and seeding recommendations.
  4. If the stand provides between 40% and 94% ground cover, overseeding and fertilizing using half of the rates originally applied may be necessary.
  5. Maintenance fertilizing rates for permanent seedings are shown in Table 24. For lawn and other medium to high maintenance turfgrass areas, refer to the University of Maryland publication "Lawn Care in Maryland" Bulletin No. 171.

- E. Soil Amendments
1. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 3) and enter them in Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this Summary is not part of the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, dunes or for special purposes such as wildlife or aesthetic treatments may be found in USDA-SCS Technical Field Office Guide, Section 34-2 - Critical Area Planting, for special lawn maintenance areas, see Section IV Soil and Turfgrass.
  2. For sites having disturbed areas over 5 acres, the rates shown in this table shall be deleted and the rates recommended by the testing agency shall be written in.
  3. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3-1/2 lbs/1000 sq. ft. (50 lbs./acre), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

- F. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bedding of the topsoil to the surface area and to create horizontal erosion check dams to prevent topsoil from sliding down a slope.

- G. Apply soil amendments as per soil test or as included on the plan.
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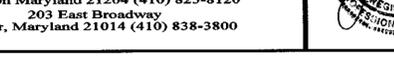
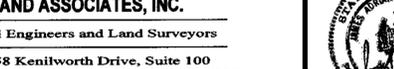
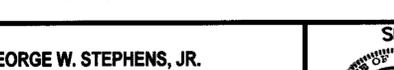
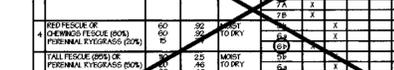
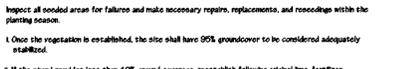
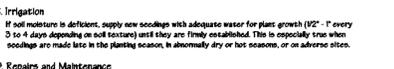
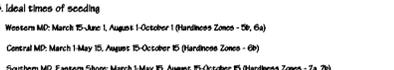
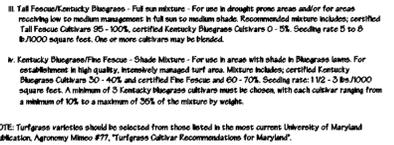
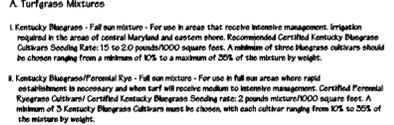
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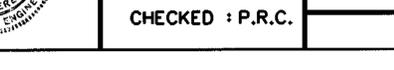
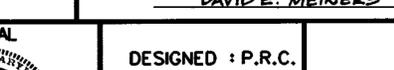
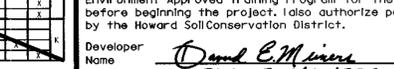
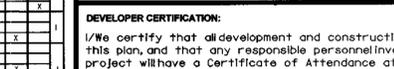
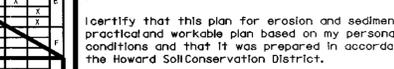
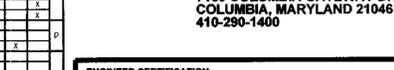
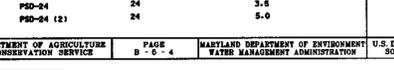
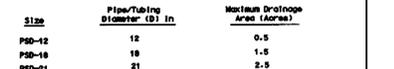
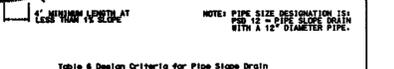
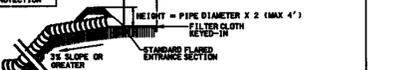
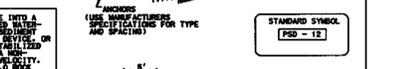
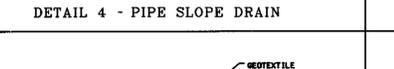
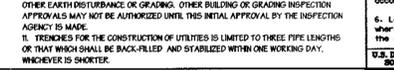
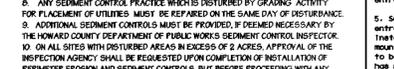
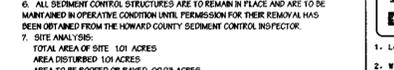
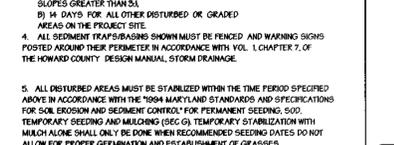
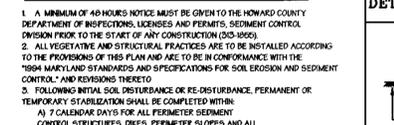
- O. NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

- P. Misting Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
1. If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

# DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



# DETAIL 22 - SILT FENCE



# DETAIL 22 - SILT FENCE

