

WASHINGTON COUNTY, MARYLAND

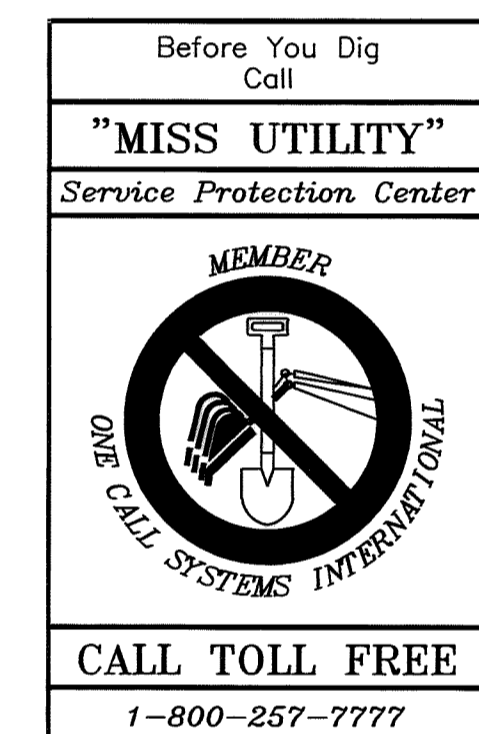
DIVISION OF ENGINEERING



FROG EYE ROAD

BRIDGE REPLACEMENT

PROJECT NO. 14-225
CONTRACT NO. BR-FE-225-14



WASHINGTON COUNTY SOIL CONSERVATION DISTRICT
 SOIL EROSION AND SEDIMENT CONTROL PLAN APPROVAL

BY: *Scott Hobbs*
 DATE: 4/20/2021
 (PLAN IS VALID FOR TWO YEARS FROM DATE OF APPROVAL)

THE WAIVER OF STORMWATER MANAGEMENT HAS BEEN GRANTED FOR THIS PROJECT.

Scott Hobbs 4/1/21
 SCOTT HOBBS, P.E.
 DIRECTOR OF ENGINEERING
 FOR WASHINGTON COUNTY, MD

ENGINEER / ARCHITECT DESIGN CERTIFICATION

I HEREBY CERTIFY THIS PLAN FOR SOIL EROSION AND SEDIMENT CONTROL HAS BEEN DESIGNED IN ACCORDANCE WITH LOCAL ORDINANCES, COMAR 26.17.01.07, AND MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

Scott Hobbs 31179 4/1/21
 SIGNATURE REGISTRATION NUMBER DATE

APPROVED FOR CONSTRUCTION

Scott Hobbs 4/1/21
 SCOTT HOBBS, P.E.
 DIRECTOR OF ENGINEERING
 FOR WASHINGTON COUNTY, MD

SEAL:

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

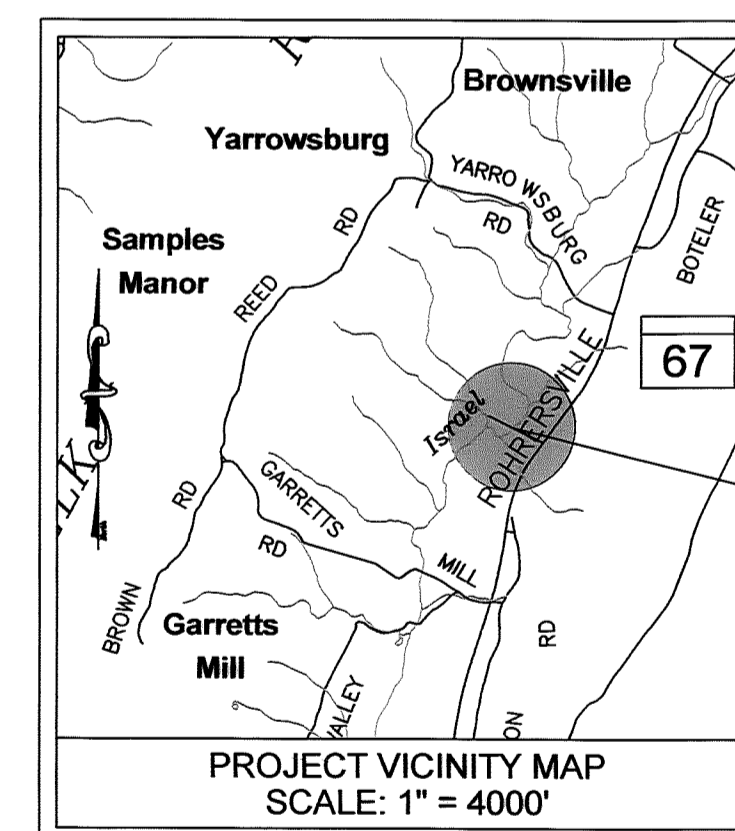
LICENSE No. 31179 EXPIRATION DATE: 1/19/23

OWNER / DEVELOPER CERTIFICATION

WE CERTIFY ALL / ANY PARTIES RESPONSIBLE FOR CLEARING, GRADING, CONSTRUCTION, AND / OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SOIL EROSION AND SEDIMENT.

Scott Hobbs 4/1/21
 SCOTT HOBBS, P.E.
 DIRECTOR OF ENGINEERING
 FOR WASHINGTON COUNTY, MD

OWNER/DEVELOPER:
 BOARD OF COUNTY COMMISSIONERS
 FOR WASHINGTON COUNTY, MD
 AGENT: SCOTT HOBBS, P.E., DIRECTOR OF ENGINEERING
 80 WEST BALTIMORE STREET
 HAGERSTOWN, MARYLAND 21740
 PHONE: 240-313-2460
 FAX: 240-313-2401



BOARD OF COUNTY COMMISSIONERS:

JEFFREY A. CLINE, PRESIDENT
 TERRY L. BAKER, VICE PRESIDENT
 WAYNE K. KEEFER
 RANDALL E. WAGNER

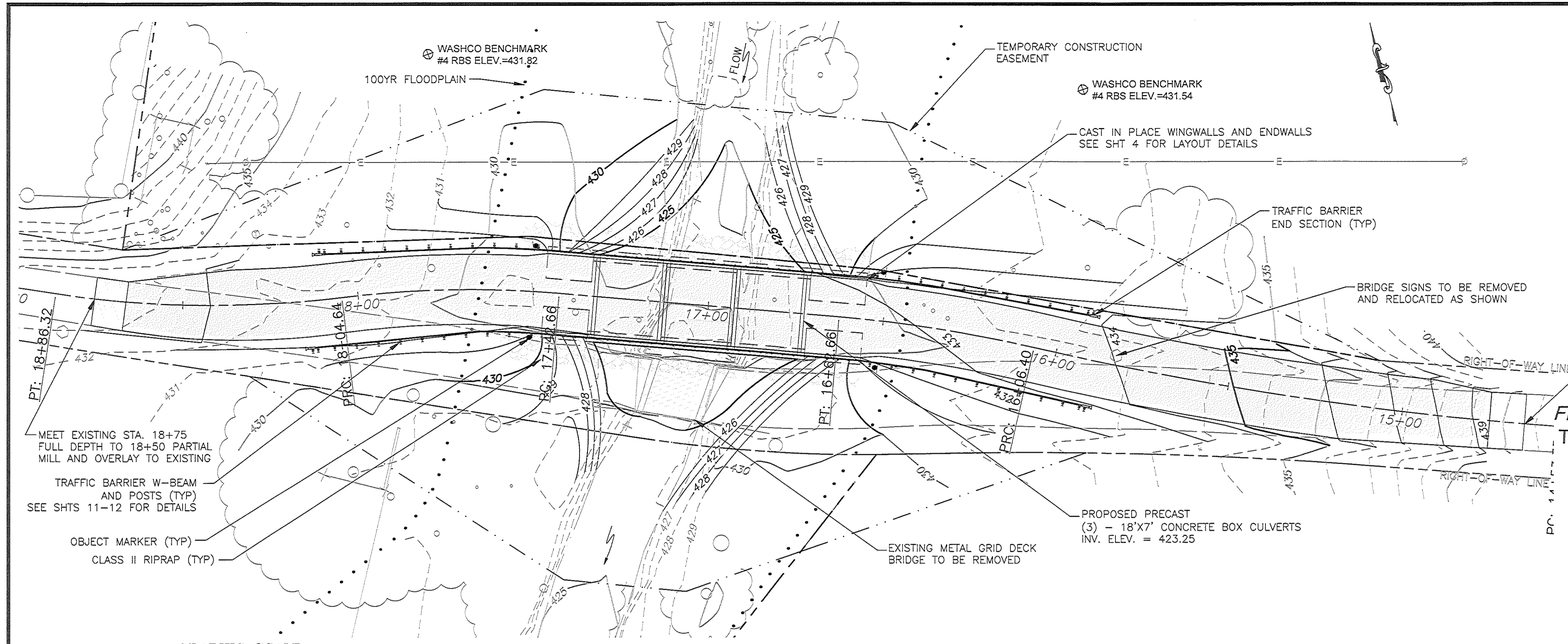
JOHN M. MARTIRANO, COUNTY ADMINISTRATOR
 SCOTT HOBBS, P.E., DIRECTOR OF ENGINEERING

DISTURBED AREA QUANTITY	
THE TOTAL AREA TO BE DISTURBED SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE APPROXIMATELY <u>0.9</u> ACRES AND THE TOTAL AMOUNT OF EXCAVATION AND FILL SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE APPROXIMATELY <u>1875</u> CU. YDS. OF EXCAVATION AND APPROXIMATELY <u>900</u> CU. YDS. OF FILL.	

INDEX OF SHEET(S):

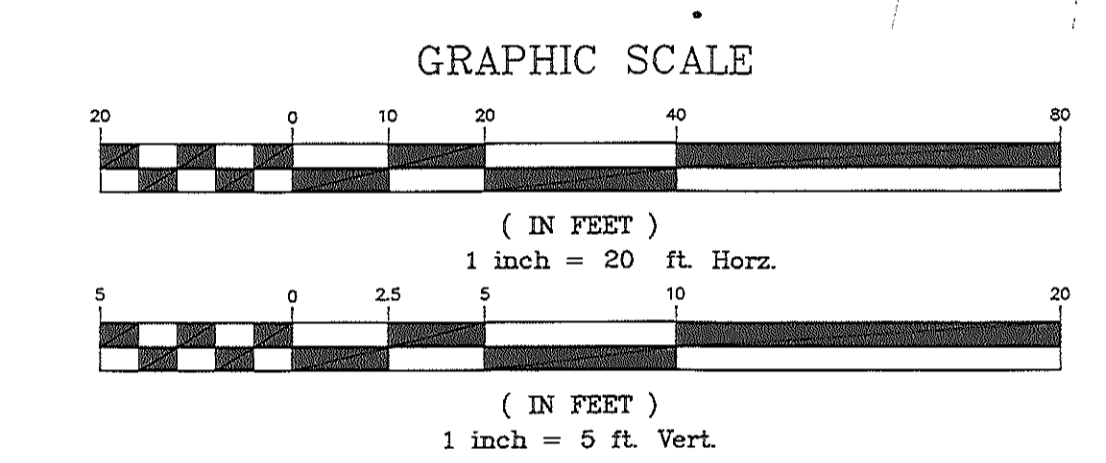
SHEET 1	COVER SHEET
SHEET 2	PLAN AND PROFILE
SHEET 3	TYPICAL SECTIONS
SHEET 4	OFFSET AND LAYOUT
SHEET 5	ENDWALLS UPSTREAM
SHEET 6	ENDWALLS DOWNSTREAM
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SHEET 11	DETAILS
SHEET 12	QUANTITIES AND DETAILS

14-225-01



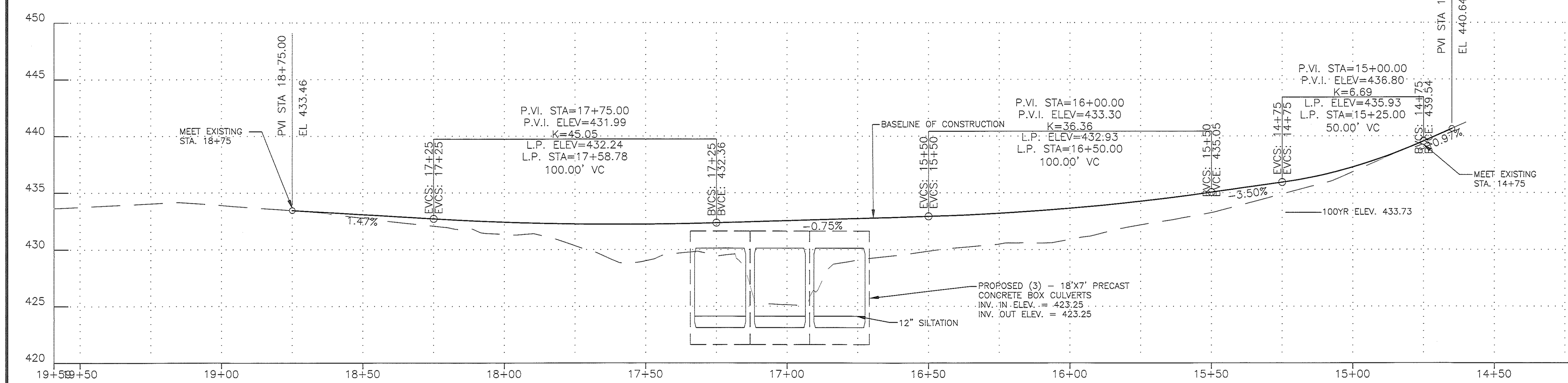
LEGEND

EX. CONTOURS	---
PROP. CONTOURS	—
APPROX. EDGE OF STREAM	~
EX. RIGHT-OF-WAY LINE	---
EX. PROPERTY LINE	---
EX. EDGE OF PAVEMENT	---
EXISTING ELECTRIC LINE	---
PROPOSED CLASS II RIPRAP	[Pattern]



PLAN
SCALE: 1"=20'-0"

- NOTES:**
1. W.S.ELEV. = 426.13 WATER SURFACE ELEVATION MEASURED AND OBSERVED ON MARCH, 2020. THIS IS NO INDICATION OF THE ACTUAL ELEVATION TO BE EXPECTED DURING CONSTRUCTION.
 2. 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 BEGINS, AND BEFORE ANY PRODUCTS ARE ORDERED OR FABRICATED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY THE ENGINEER WITH ALL FIELD DIMENSIONS REQUIRED TO CHECK DETAILED SHOP DRAWINGS.



PROFILE
SCALE: 1"=20'H
1"=5' V

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: SH
DRAWN BY: BM
CHECKED BY: SH
DATE: 3/23/2021

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
80 W. Baltimore St., Hagerstown, MD 21740
Phone: 240-315-2460 Fax: 240-315-2401

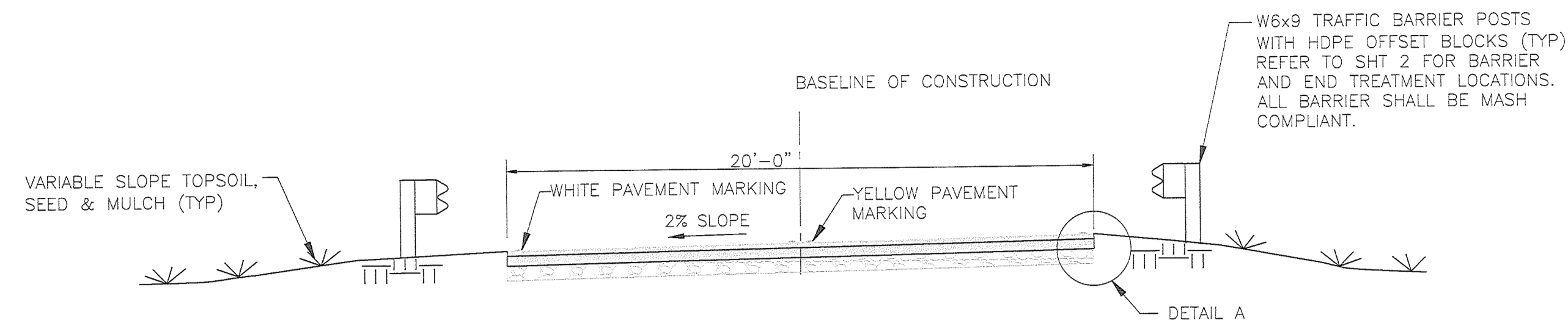
**FROG EYE ROAD
BRIDGE REPLACEMENT
PLAN AND PROFILE**



SCALE
AS SHOWN

SHEET NO.
2

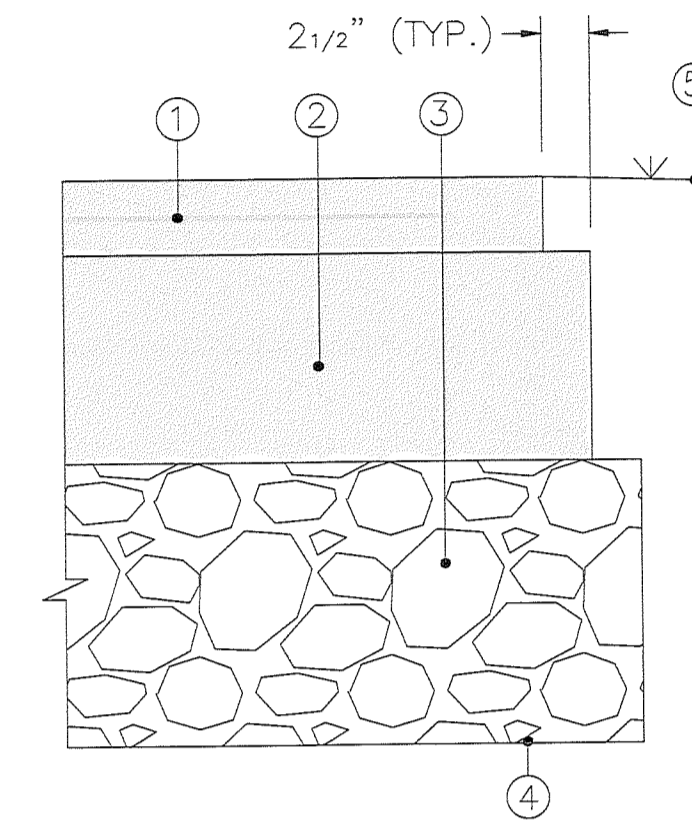
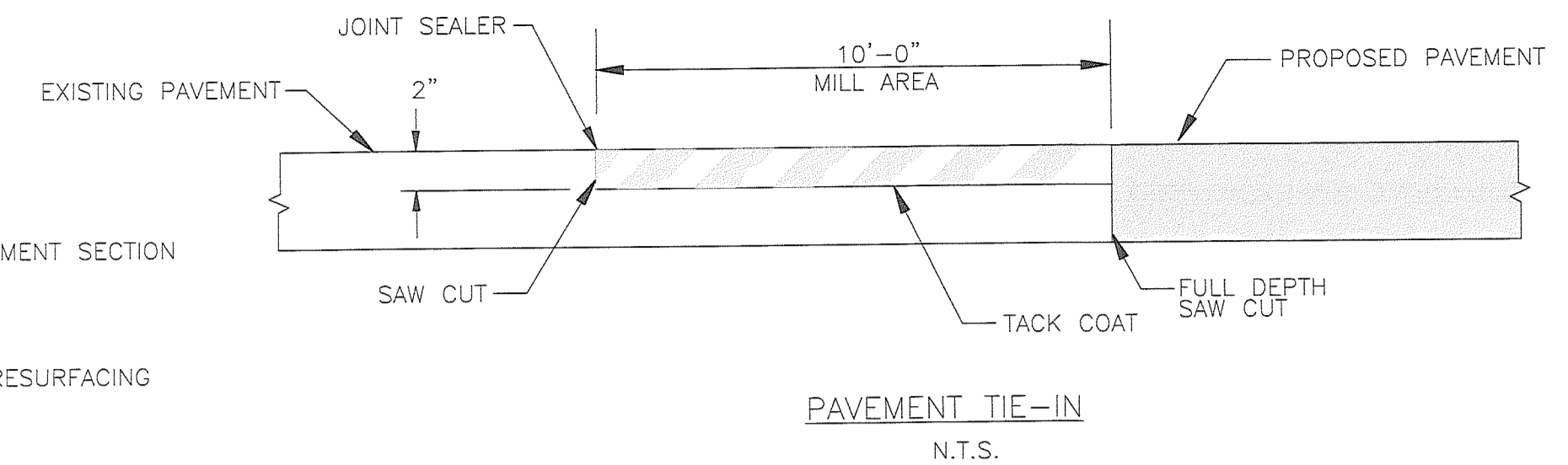
PROJECT NO.
14-225



TYPICAL PROPOSED ROADWAY SECTION (LOOKING WEST)
SCALE: 1/4" = 1'

LEGEND:

- FULL DEPTH PAVEMENT SECTION
- 2" MILLING AND RESURFACING



- ① 2" HMA SUPERPAVE SURFACE, 9.5mm (1 - 2" LIFT)
- ② 4" HMA SUPERPAVE BASE, 19.0mm (2 - 2" LIFTS)
- ③ 6" GRADED AGGREGATE BASE
- ④ SUBGRADE
- ⑤ GRADED SHOULDER

DETAIL A - ROADWAY FULL DEPTH PAVEMENT SECTION
N.T.S.

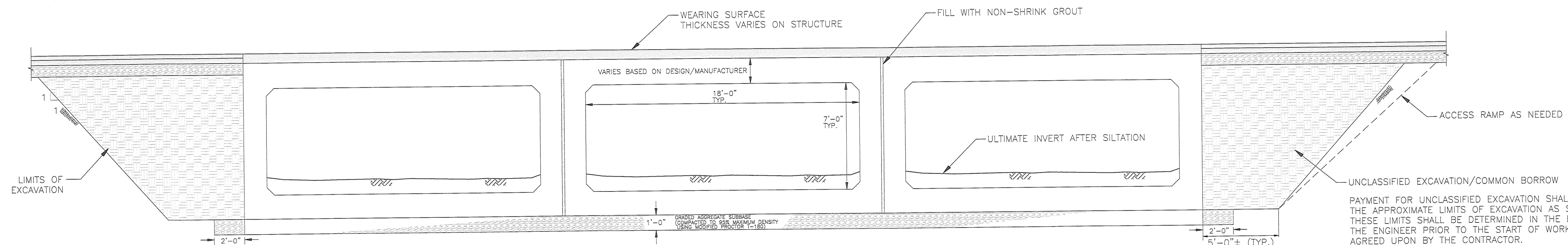
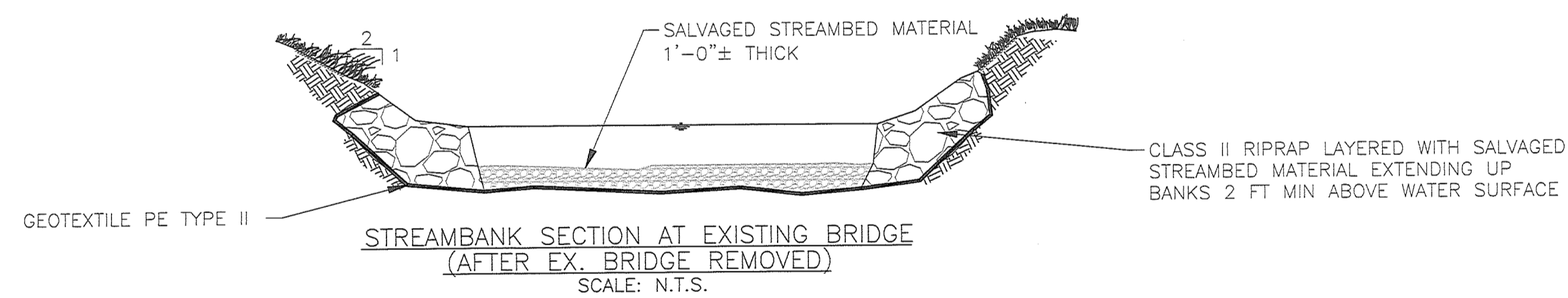
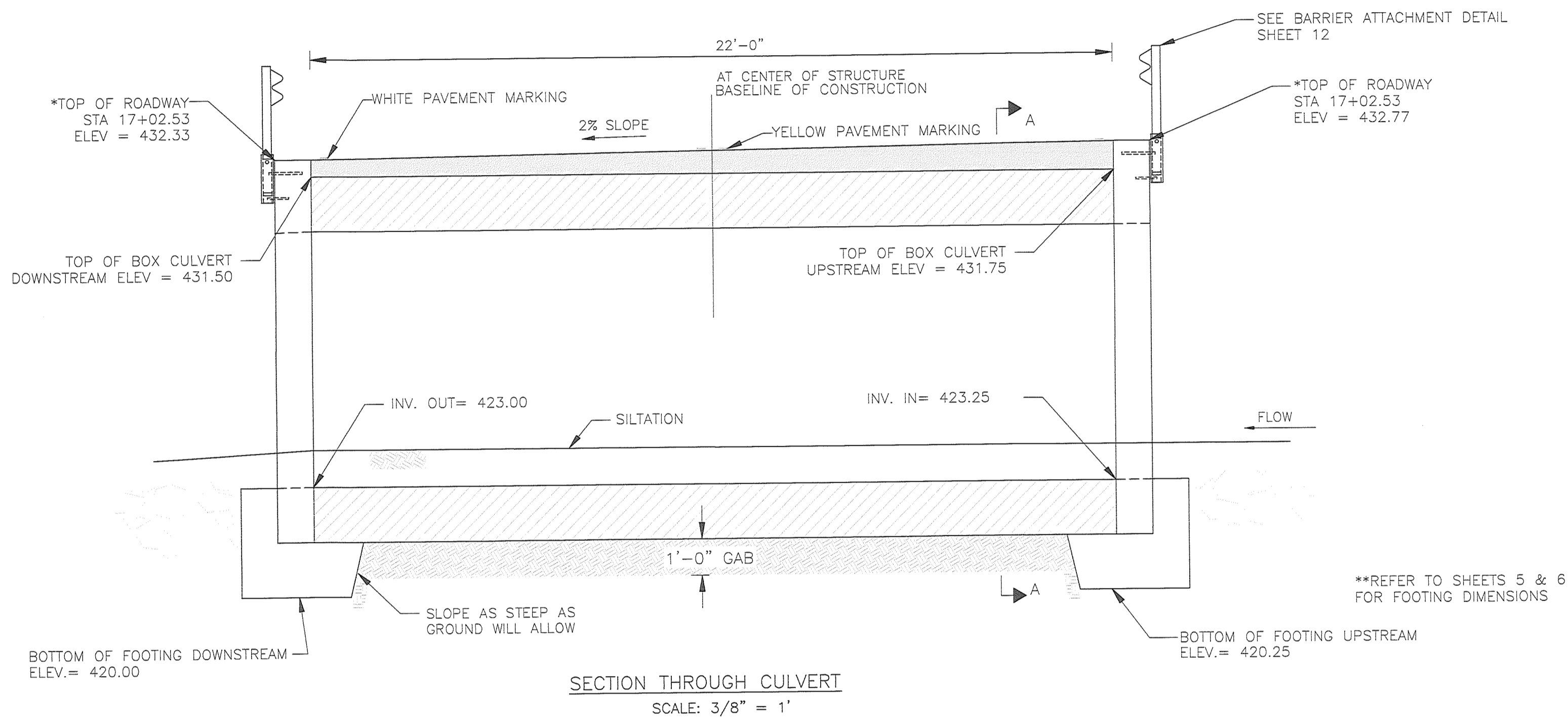
NOTES:

1. NEW PAVEMENT SECTIONS SHALL CLOSELY MATCH EXISTING ELEVATIONS AND PROFILE AS SHOWN ON SHEET 2.
2. SAWCUTS SHALL BE PROVIDED AT TIE-INS TO EXISTING PAVEMENT. REFER TO TIE-IN DETAIL ON THIS SHEET.
3. MILLING THE EXISTING PAVEMENT IS INCIDENTAL TO PAY ITEM HOT MIX ASPHALT SUPERPAVE SURFACE.
4. REFER TO SPECIFICATIONS FOR BACKFILL AND COMPACTION REQUIREMENTS.
5. REFER TO SHEET 7 FOR REINFORCING DETAILS.

* TOP OF ROADWAY VARIES ALONG THE BRIDGE. REFER TO STATION ELEVATIONS ON THIS SHEET AND ENDWALL SHEETS. PAVEMENT SHALL BE ADJUSTED IN THE FIELD BY THE PAVING CONTRACTOR

CULVERT DIMENSIONS SHOWN ARE THOSE FOUND IN ASTM C850 AND AASHTO M273 WHERE APPLICABLE. THE CONTRACTOR MAY USE PRECAST SECTIONS WITH OTHER DIMENSIONS PROVIDING THE WATERWAY OPENING REMAINS THE SAME. THE ROADWAY SURFACE OVERLAY IS ADEQUATE, AND ALL DETAILS AFFECTED BY THIS CHANGE ARE ADJUSTED ACCORDINGLY.

THE PRE-CAST SECTIONS AND REINFORCING ARE SHOWN FOR GRAPHICAL REPRESENTATION ONLY.



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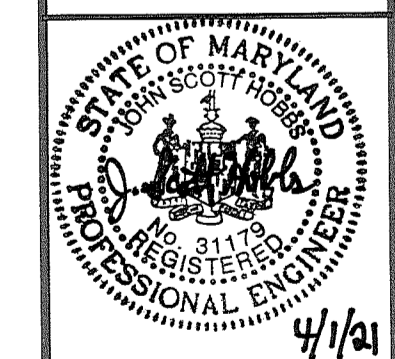
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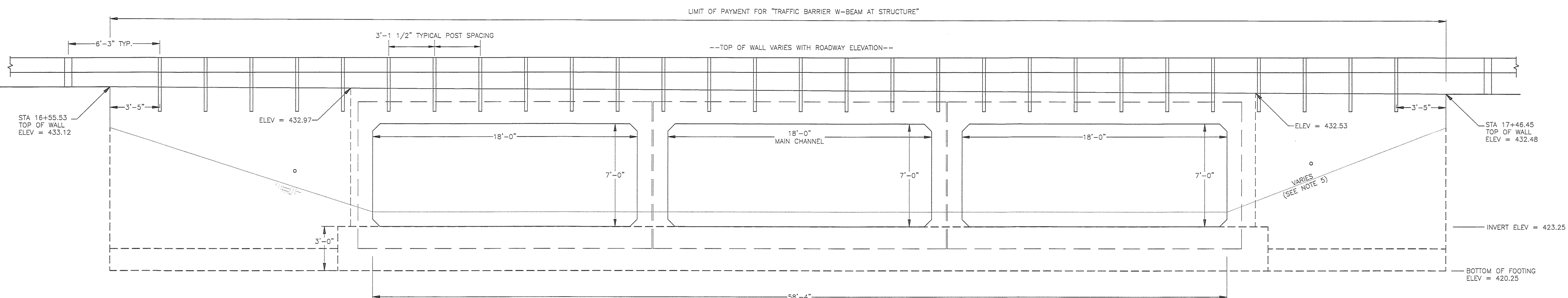
FROG EYE ROAD
BRIDGE REPLACEMENT
TYPICAL SECTIONS



SCALE
AS SHOWN

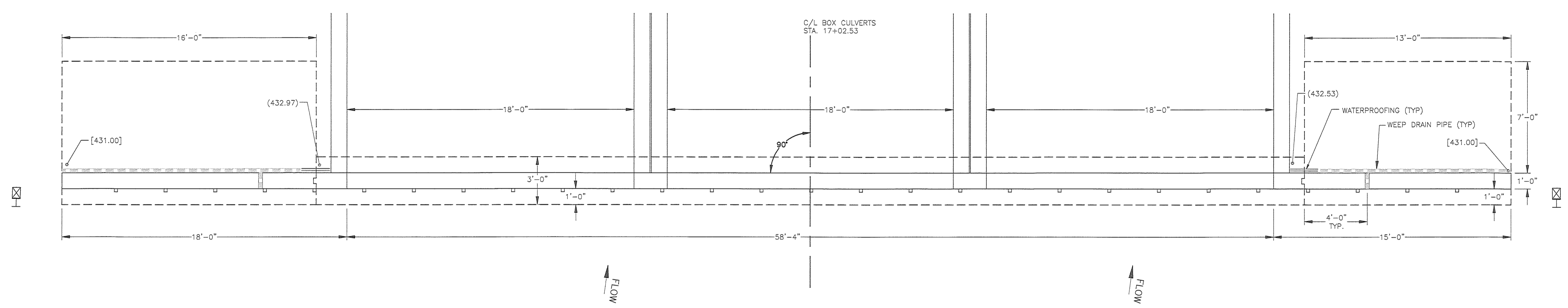
SHEET NO.
3

PROJECT NO.
14-225



UPSTREAM ENDWALL - ELEVATION VIEW
SCALE: 1/4" = 1'

NOTE: (xxx) = FINISHED ROADWAY ELEVATION
[xxx] = FINISHED GROUND SPOT ELEVATION



UPSTREAM ENDWALL - PLAN VIEW
SCALE: 1/4" = 1'

NOTES:

1. THE PROPOSED ENDWALL FOOTINGS HAVE BEEN DESIGNED FOR A BEARING PRESSURE OF 3,000 PSF WHICH SHALL BE VERIFIED DURING CONSTRUCTION BY A MARYLAND LICENSED GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR. SHOULD THE ACTUAL BEARING PRESSURE AT THE PLANNED BOTTOM OF FOOTING ELEVATION BE FOUND TO BE LESS THAN ASSUMED, THE FOOTING DIMENSIONS SHALL BE ADJUSTED AT THE DIRECTION OF THE ENGINEER.
2. WATERPROOFING MEMBRANE SHALL BE 2-PLY AND 16" MINIMUM WIDTH CENTERED ON ALL CONCRETE JOINTS.
3. DAMPPROOFING SHALL BE APPLIED TO ALL CONCRETE SURFACES IN CONTACT WITH BACKFILL.
4. REFER TO REINFORCING DETAILS ON SHEET 7.
5. SLOPE WILL VARY. GRADE EMBANKMENTS AS SHOWN ON SHEET 2 AND AS DIRECTED BY THE ENGINEER.
6. REFER TO SHEET 6 FOR WEEP DRAIN DETAIL.

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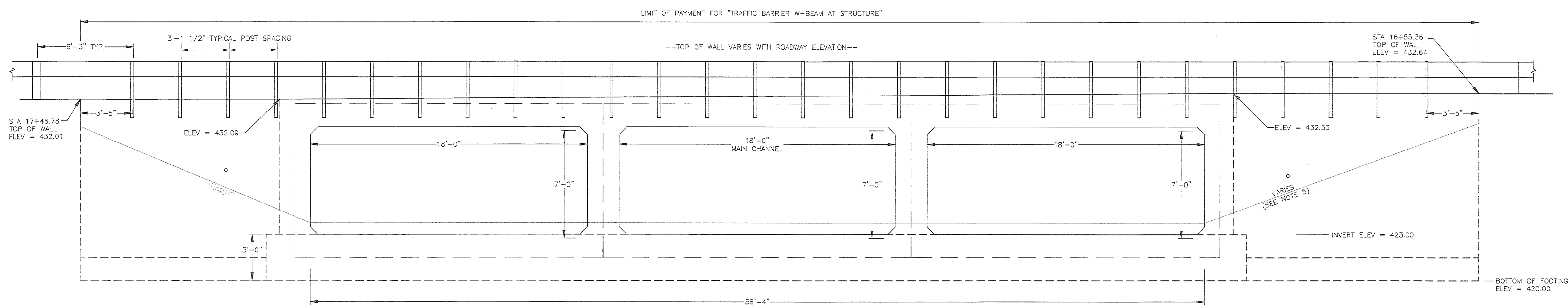
FROG EYE ROAD
BRIDGE REPLACEMENT
ENDWALLS - UPSTREAM



SCALE
AS SHOWN

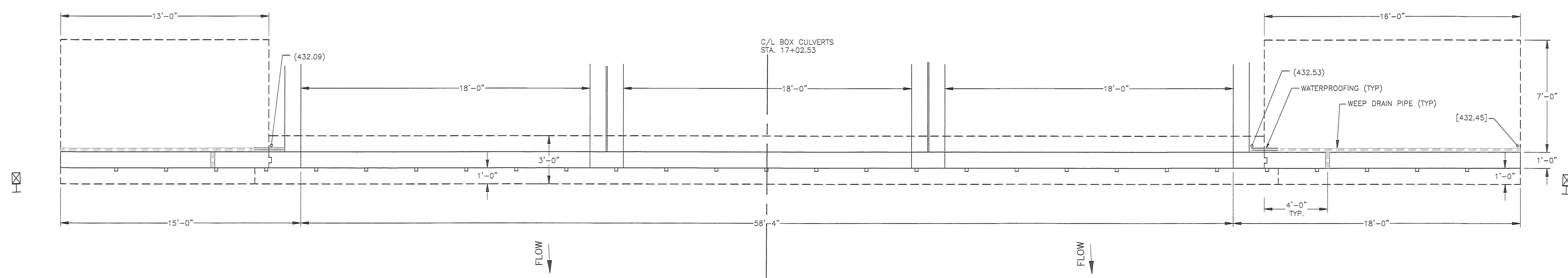
SHEET NO.
5

PROJECT NO.
14-225

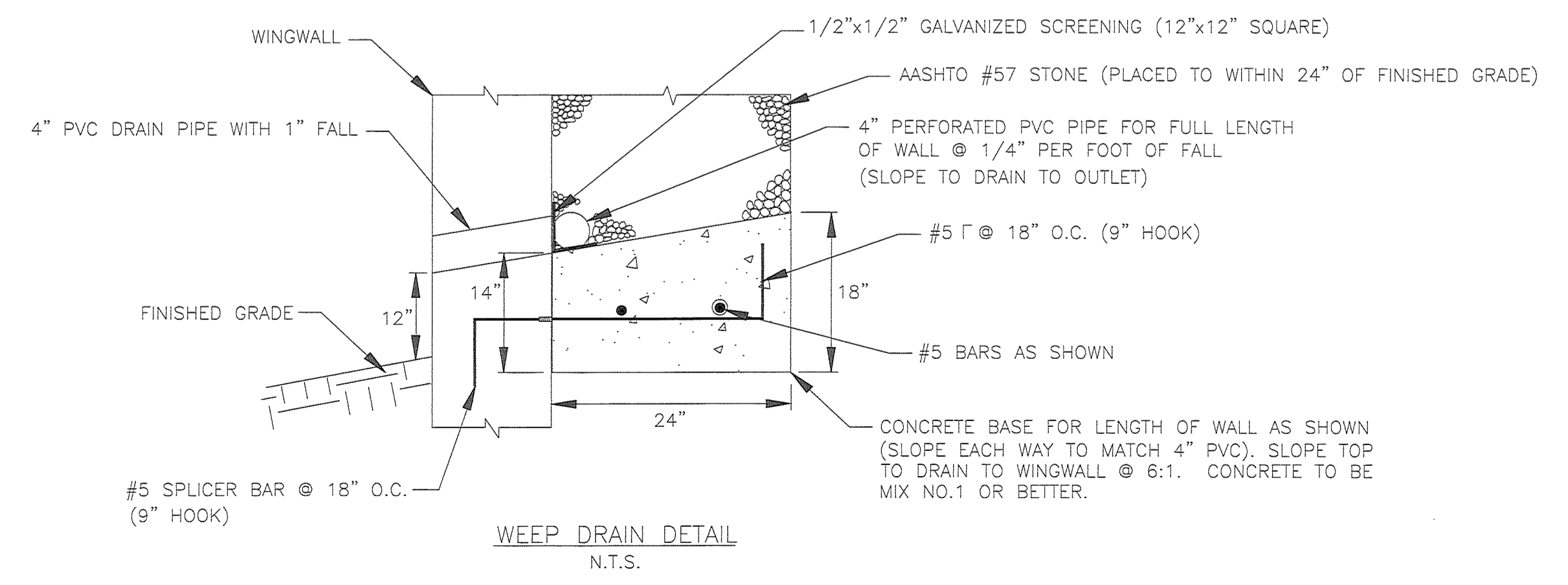


DOWNSTREAM ENDWALL - ELEVATION VIEW
SCALE: 1/4" = 1'

NOTE: (xxx) = FINISHED ROADWAY ELEVATION
[xxx] = FINISHED GROUND SPOT ELEVATION



DOWNSTREAM ENDWALL - PLAN VIEW
SCALE: 1/4" = 1'



WEEP DRAIN DETAIL
N.T.S.

NOTES:

1. THE PROPOSED ENDWALL FOOTINGS HAVE BEEN DESIGNED FOR A BEARING PRESSURE OF 3,000 PSF WHICH SHALL BE VERIFIED DURING CONSTRUCTION BY A MARYLAND LICENSED GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR. SHOULD THE ACTUAL BEARING PRESSURE AT THE PLANNED BOTTOM OF FOOTING ELEVATION BE FOUND TO BE LESS THAN ASSUMED, THE FOOTING DIMENSIONS SHALL BE ADJUSTED AT THE DIRECTION OF THE ENGINEER.
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3. DAMPPROOFING SHALL BE APPLIED TO ALL CONCRETE SURFACES IN CONTACT WITH BACKFILL.
4. REFER TO REINFORCING DETAILS ON SHEET 7.
5. SLOPE WILL VARY, GRADE EMBANKMENTS AS SHOWN ON SHEET 2 AND AS DIRECTED BY THE ENGINEER.

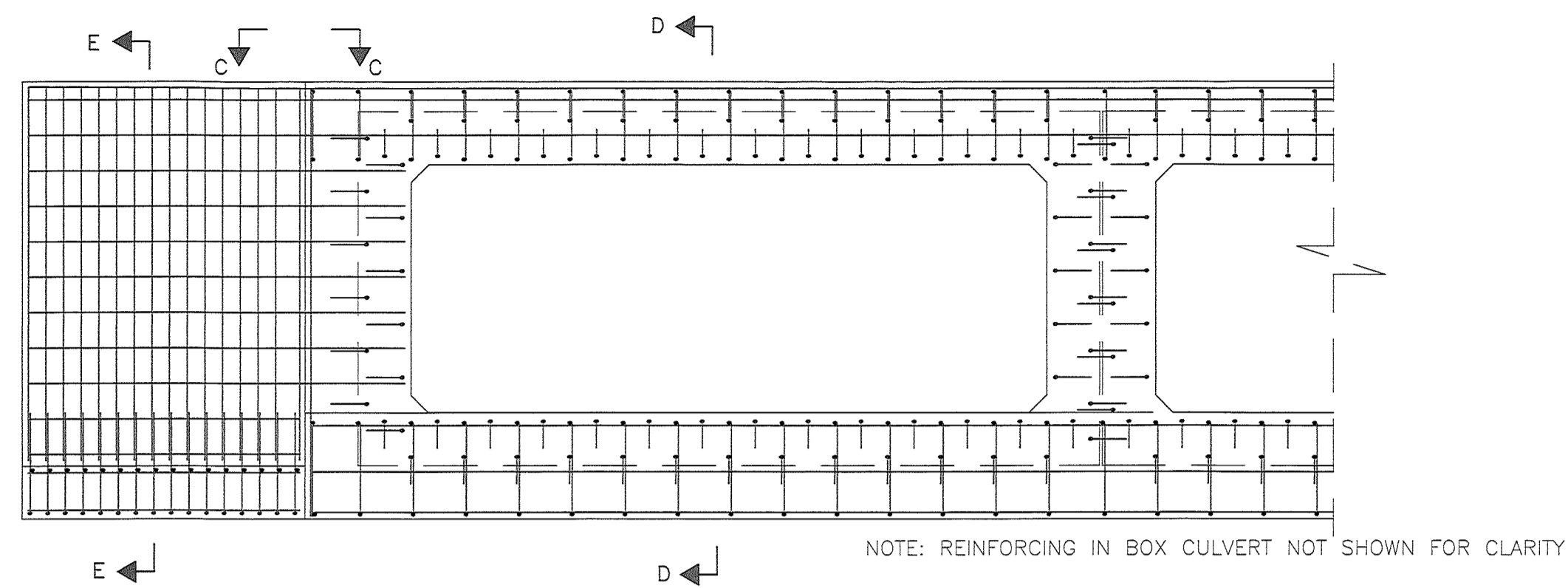
REVISION DESCRIPTION	NO.	DESIGNED BY:	SH	DATE

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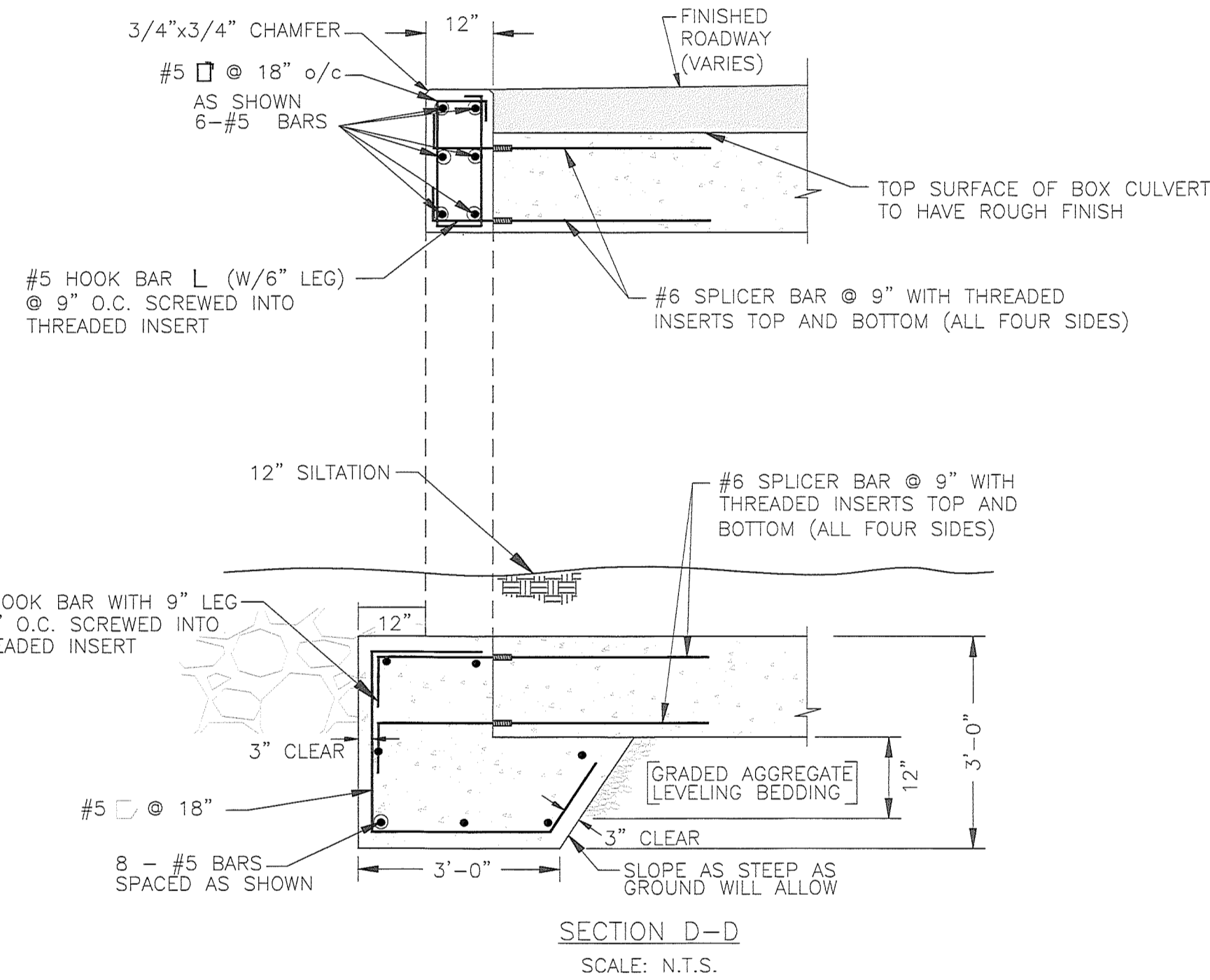
FROG GEY ROAD
BRIDGE REPLACEMENT
ENDWALL - DOWNSTREAM



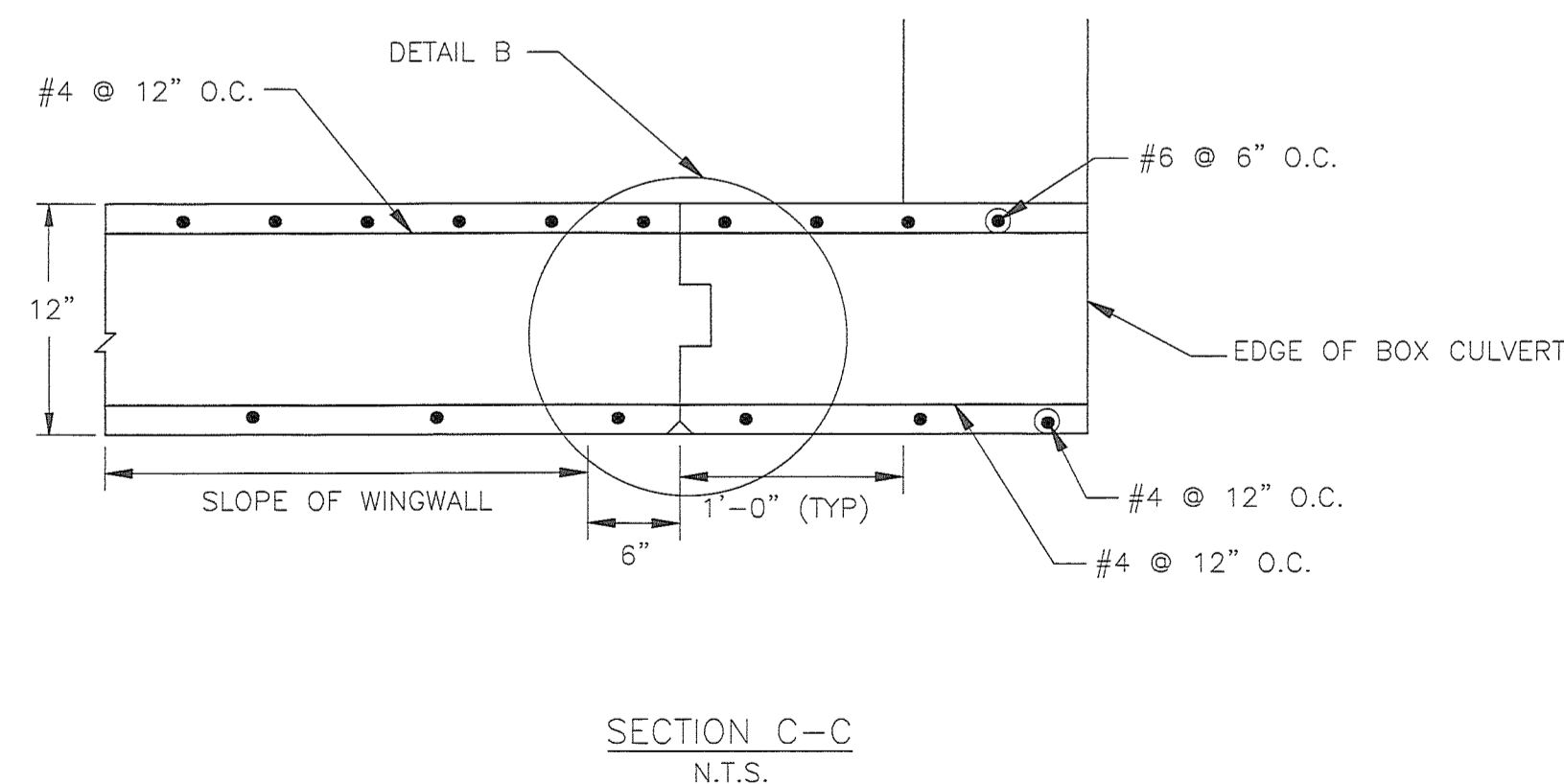
SCALE	AS SHOWN
SHEET NO.	6
PROJECT NO.	14-225



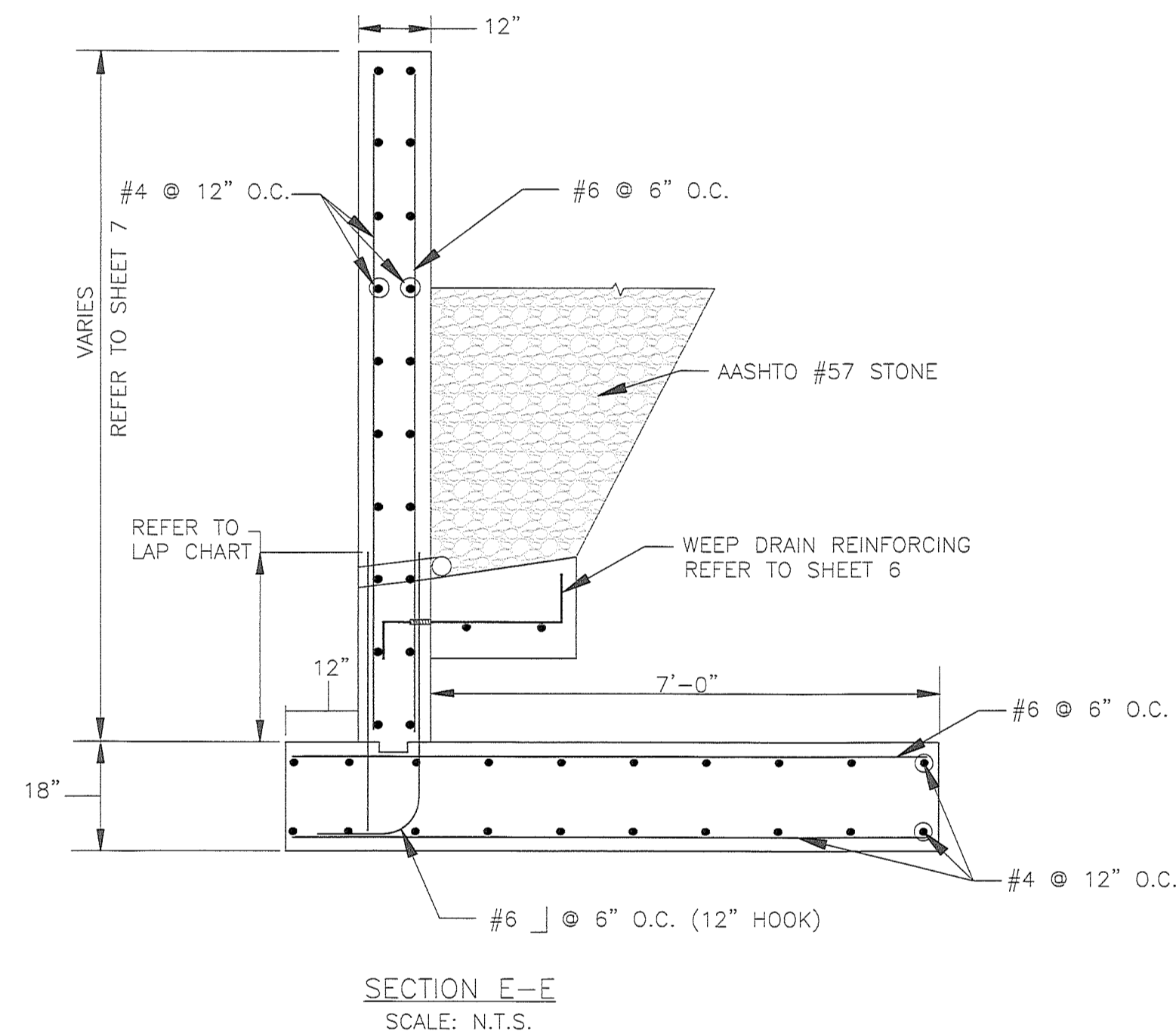
TYPICAL ELEVATION - UPSTREAM ENDWALL SHOWN
SCALE: N.T.S.



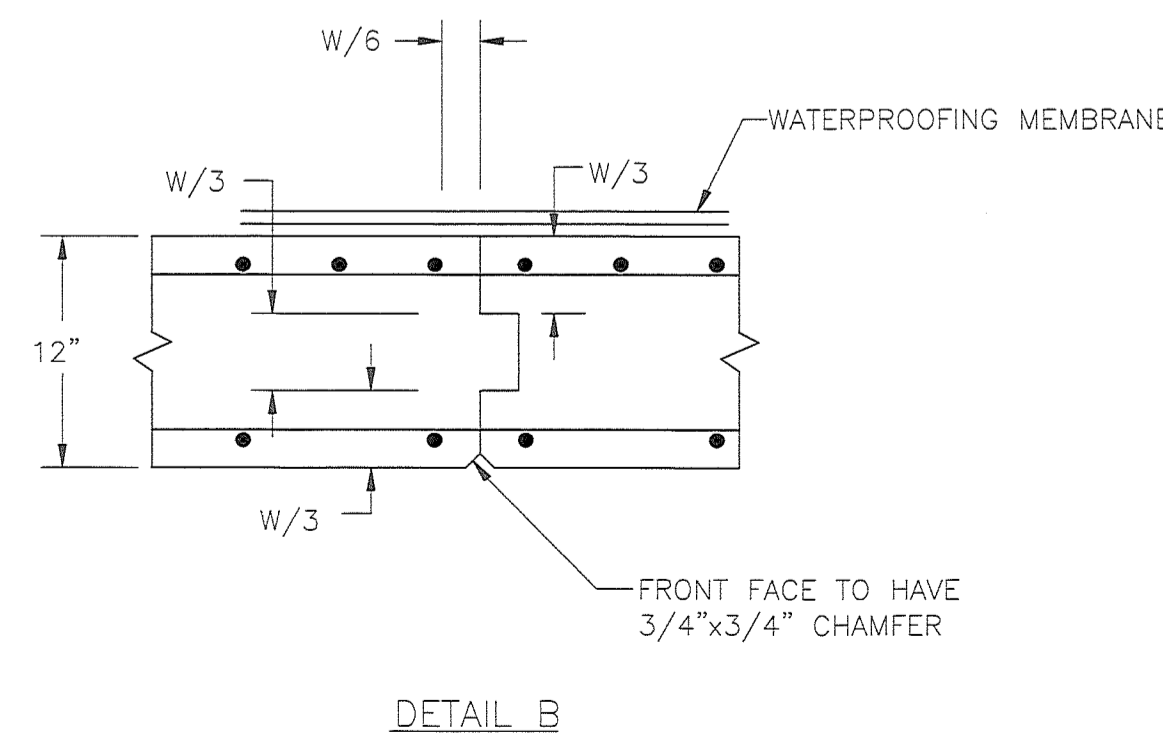
SECTION D-D
SCALE: N.T.S.



SECTION C-C
N.T.S.



SECTION E-E
SCALE: N.T.S.



DETAIL B

NOTES:

DESIGN SPECIFICATIONS: AASHTO LOAD AND RESISTANCE FACTOR DESIGN (LRFD) BRIDGE DESIGN SPECIFICATIONS, LATEST EDITION.

DESIGN/LOADING: STRUCTURAL DESIGN OF PRECAST CONCRETE BOX SHALL MEET OR EXCEED AASHTO HL-9.3 LOADING.

PRECAST CONCRETE: ALL CONCRETE FOR THE PRECAST BOX CULVERT UNITS SHALL BE 5,000 PSI MIN. AT 28 DAYS.

CULVERT SLAB THICKNESSES, WALL DIMENSIONS, AND REINFORCING DESIGNED TO MEET LOADING REQUIREMENTS MAY VARY FROM THOSE FOUND IN ASTM AND AASHTO SPECIFICATIONS.

REFER TO ASTM C1433/AASHTO M259 AND AASHTO M273 (FORMERLY ASTM C789/AASHTO M259 FOR CULVERTS WITH FILL HEIGHTS OF 2 FEET OR GREATER AND ASTM C850/AASHTO M273 FOR CULVERTS WITH FILL HEIGHTS OF LESS THAN 2 FEET).

ALL CONCRETE EDGES SHALL BE CHAMFERED 3/4" x 3/4".

LIFTING EYES/HOLES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING. THEY SHALL BE FILLED AS DIRECTED BY THE MANUFACTURER AFTER THE BOX SECTIONS ARE IN PLACE.

AN APPROVED BUTYL RUBBER, FLEXIBLE FOAM, OR BITUMINOUS MASTIC FROM THE MANUFACTURER SHALL BE PROVIDED IN EACH JOINT TO PROVIDE A WATERTIGHT SEAL.

ALL SIDES OF THE BOX CULVERT SHALL BE DAMPPROOFED WITH AN APPROVED ASPHALT BASED PAINT/PRIMER.

ALL BOX SECTIONS SHALL BE MARKED AS FOLLOWS IN ACCORDANCE WITH AASHTO M273 BY INDENTATION OR WATERPROOF PAINT: 1.) SECTION RISE, SPAN AND SPECIFICATION; 2.) DATE OF MANUFACTURE; 3.) NAME OR TRADEMARK OF MANUFACTURER; 4.) PLANT IDENTIFICATION; 5.) MARKED BY INDENTATION ON INSIDE OR OUTSIDE SO THAT THE LOCATION OF THE TOP WILL BE EVIDENT IMMEDIATELY AFTER THE FORMS ARE STRIPPED.

THE MANUFACTURER/ENGINEER SHALL SUBMIT SHOP DRAWINGS OF THE CULVERT TO THE WASHINGTON COUNTY ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE MANUFACTURE OF THE STRUCTURE.

CAST-IN-PLACE CONCRETE: ALL CONCRETE FOR HEADWALLS AND WINGWALLS SHALL BE MSHA MIX NO. 3 (3,500 PSI MIN.).

ALL EXPOSED CORNERS OF CONCRETE SHALL BE CHAMFERED WITH 3/4" x 3/4" MILLED CHAMFER STRIPS.

DAMP-PROOFING SHALL BE APPLIED TO ALL CONCRETE SURFACES COMING IN CONTACT WITH BACKFILL. WATERPROOFING MEMBRANE SHALL BE 2-PLY AND 16" MIN. WIDTH CENTERED ON THE CONSTRUCTION JOINTS.

REINFORCING STEEL: REINFORCING STEEL FOR THE PRECAST BOX CULVERT SHALL BE WELDED WIRE FABRIC (WWF) WITH DEFORMED WIRES PER AASHTO M221 AND M225 (MIN. FY=65,000 PSI) OR DEFORMED REBAR CONFORMING TO ASTM A615, GRADE 60 (MIN. FY=60,000 PSI). SPLICES SHALL BE LAPPED ACCORDING TO AASHTO REQUIREMENTS OR BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR IN THE PRECAST BOX CULVERT SHALL BE 1".

ALL REINFORCING STEEL IN THE TOP SLAB OF THE PRECAST CULVERT UNITS AND IN THE CAST-IN-PLACE HEADWALLS SHALL BE EPOXY COATED.

REINFORCING STEEL FOR CAST-IN-PLACE HEADWALLS AND WINGWALLS SHALL CONFORM TO ASTM 615, GRADE 60. SPLICES NOT SHOWN SHALL BE LAPPED ACCORDING TO AASHTO REQUIREMENTS OR BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2 INCHES, UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM OF ALL FOOTINGS, WHICH SHALL HAVE 3 INCH MINIMUM COVER.

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

BAR LAP DIMENSIONS FOR GRADE 60 REINFORCING STEEL

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"

MIX NO. 3
(3500 psi) CONCRETE

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

MIX NO. 3 - EPOXY COATED
(3500 psi) CONCRETE

END HOOKS

BAR SIZE	FINISHED BEND DIAMETER	90° HOOKS
#4	3"	8"
#5	3-3/4"	10"
#6	4-1/2"	1'-0"
#7	5-1/4"	1'-2"
#8	6"	1'-4"
#9	9-1/2"	1'-7"
#10	10-3/4"	1'-10"
#11	1'-0"	2'-0"

* 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 CLEAR SPACING APART.
- C - ALL BARS NOT IN CATEGORY A SPACED 6 INCHES CLEAR SPACING OR MORE APART.

NOTE:

1. WHEN BAR LAP IS NOT SPECIFIED ON THE PLANS, THE ABOVE DIMENSIONS SHALL BE USED.

DESIGNED BY	NO.	REVISION DESCRIPTION	BY	DATE
SH				
DRAWN BY	NO.	REVISION DESCRIPTION	BY	DATE
BM				
CHECKED BY	NO.	REVISION DESCRIPTION	BY	DATE
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DATE	NO.	REVISION DESCRIPTION	BY	DATE
3/23/2021				

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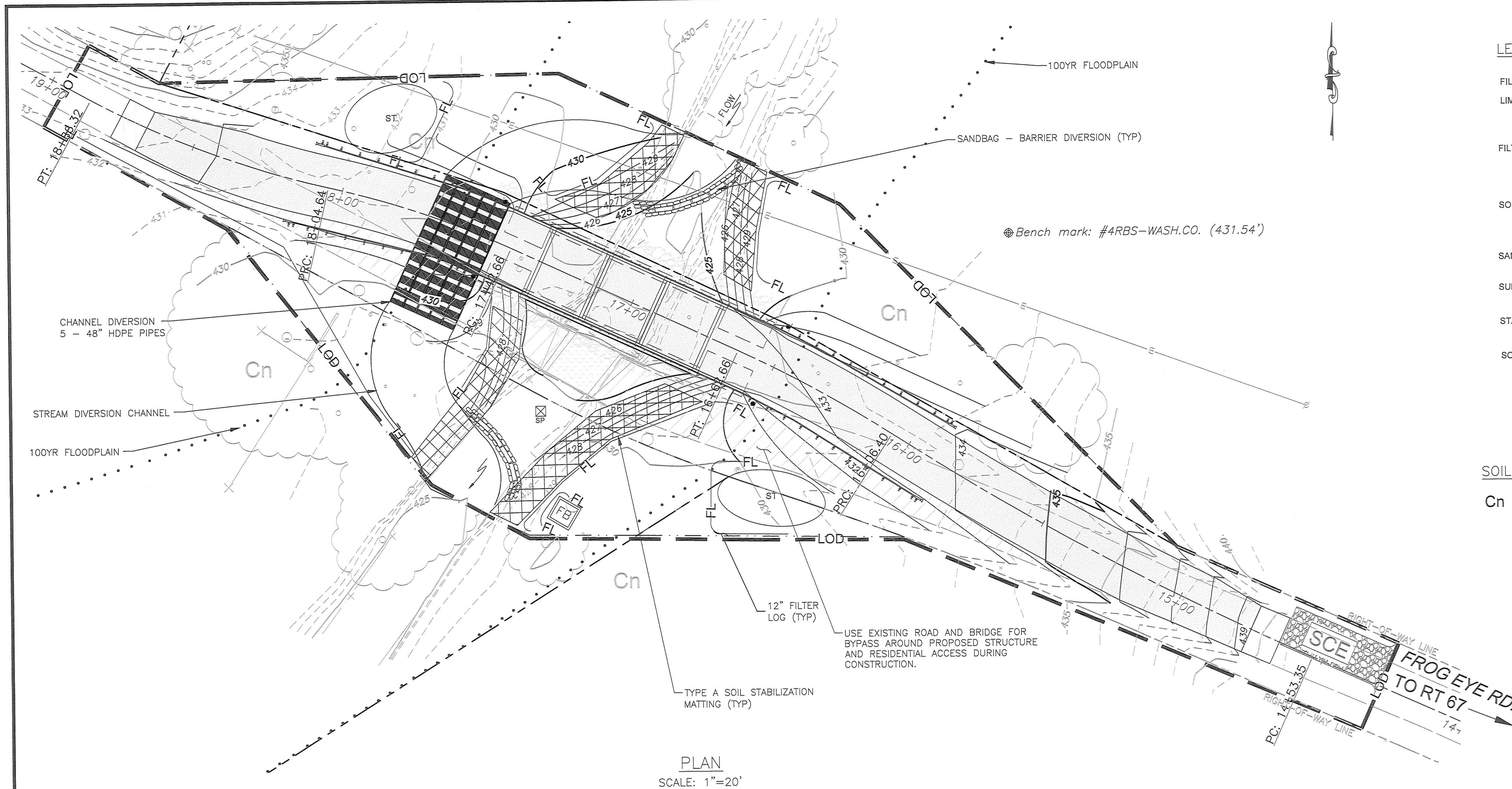
FROG EYE ROAD
BRIDGE REPLACEMENT

REINFORCING

SCALE
AS SHOWN

SHEET NO.
7

PROJECT NO.
14-225

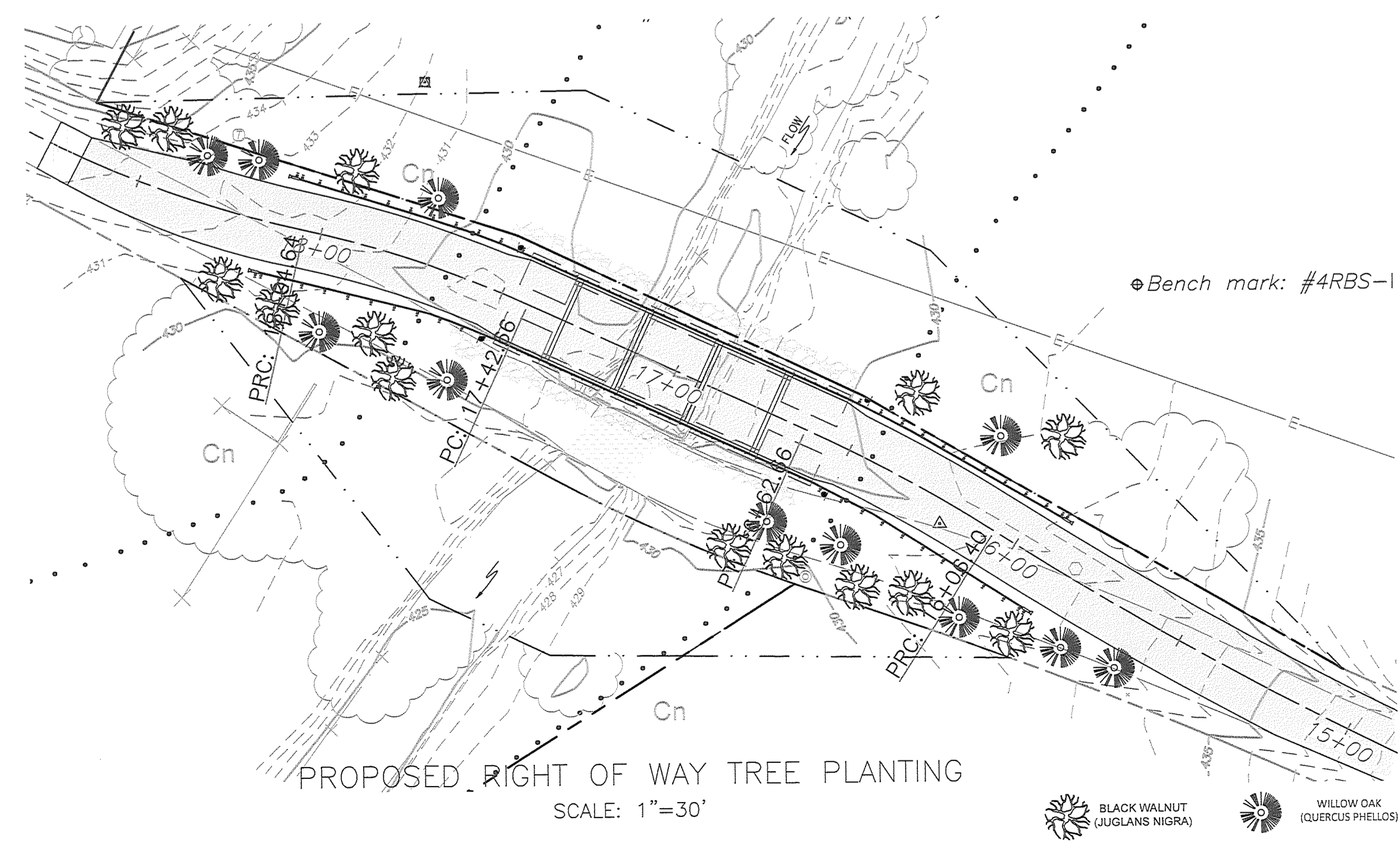


LEGEND

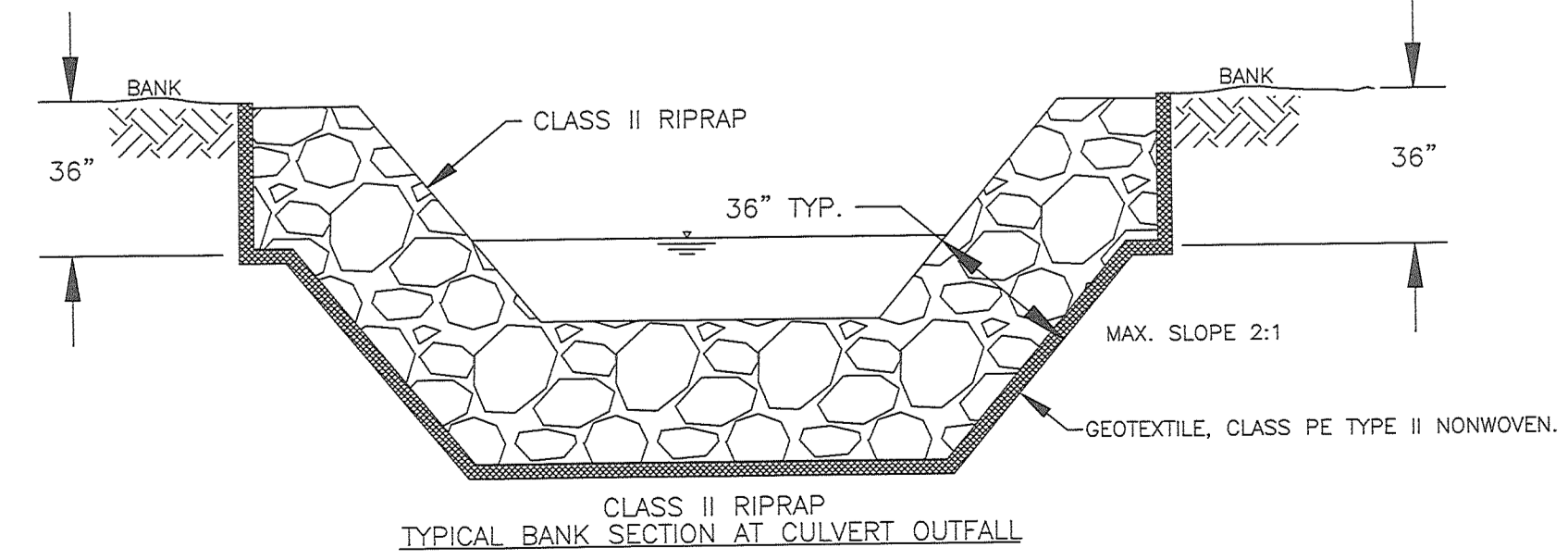
FILTER LOG	FL
LIMITS OF DISTURBANCE	LOD
FILTER BAG	FB
SOIL/MATERIAL STOCKPILE	ST
SANDBAGS / BARRIER DIVERSION	[Symbol]
SUMP PIT	SP
STABILIZED CONSTRUCTION ENTRANCE	SCE
SOIL STABILIZATION MATTING	[Symbol]

SOILS DESCRIPTIONS
 Cn CODORUS GRAVELLY SANDY LOAM

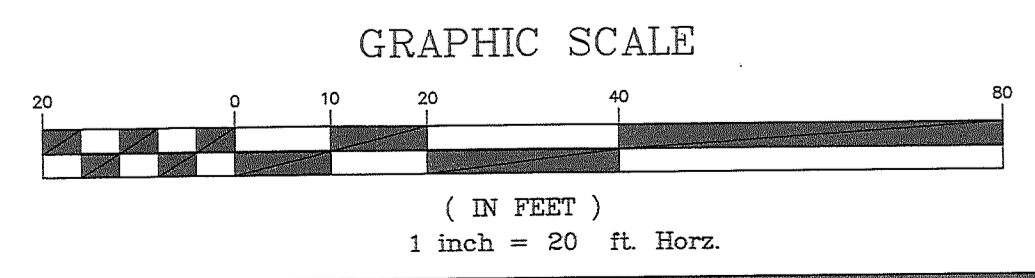
PLAN
 SCALE: 1"=20'



- RIPRAP NOTES:**
1. PLACE RIPRAP STONES TO A 36" MIN. DEPTH FLUSH WITH THE EXISTING STREAM BED/BANK IN THE LOCATION AS SHOWN AND/OR AS DIRECTED BY THE ENGINEER.
 2. STONES FOR RIPRAP MAY BE PLACED BY EQUIPMENT. STONES SHALL BE PLACED TO THE FULL DEPTH COURSE THICKNESS IN ONE OPERATION IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIPRAP SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS.



- CONSTRUCTION SPECIFICATIONS**
1. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING AND PUNCTURE, AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
 2. USE BARRIER MADE OF CONCRETE OR OTHER APPROVED MATERIAL.
 3. USE 10 MIL OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNCTURING AND TEARING.
 4. ESTABLISH TOP ELEVATION AT H/2 +1 FOOT FOR PROJECTS OF DURATION LESS THAN 2 WEEKS OR AS SPECIFIED ON APPROVED PLAN.
 5. INSTALL DIVERSION STRUCTURE FROM DOWNSTREAM TO UPSTREAM.
 6. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 2 FEET.
 7. USE SANDBAG BASE FOR LEVELING AND TO ESTABLISH MINIMUM TOP ELEVATION OF THE BARRIER AS REQUIRED.
 8. DISPOSE OF ALL EXCAVATED MATERIALS IN AN APPROVED DISPOSAL AREA OUTSIDE THE OF THE 100-YEAR FLOODPLAIN
 9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
 10. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.



DESIGNED BY:	NO.	REVISION DESCRIPTION	BY	DATE
SH				
DRAWN BY:				
BM				
CHECKED BY:				
SH				
DATE:				3/23/2021

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

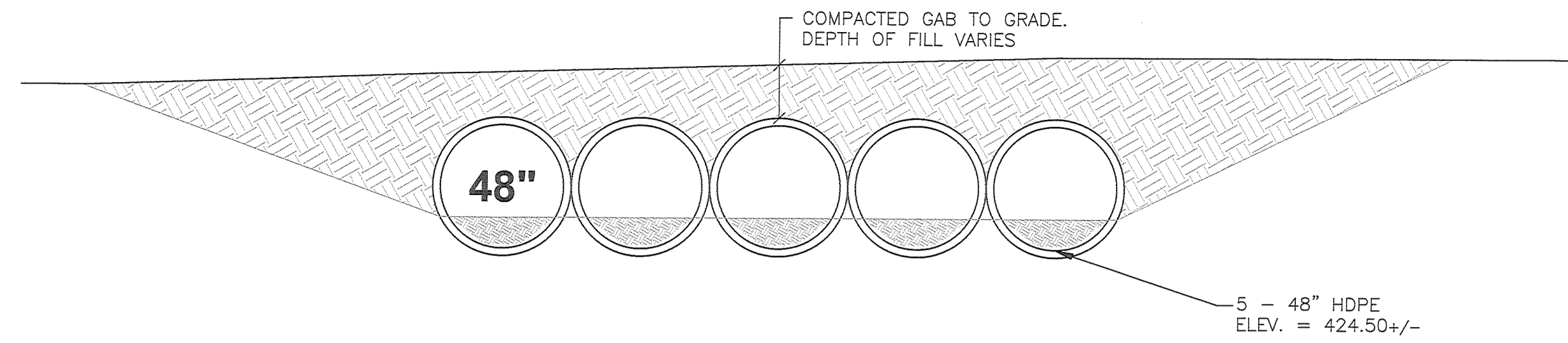
Washington County Administrative Annex, Building
 800 State Highway, Martinsburg, MD 21740
 Phone: 240-319-2460 Fax: 240-319-2401

**FROG EYE ROAD
 BRIDGE REPLACEMENT
 EROSION AND SEDIMENT
 CONTROL PLAN**

SCALE
 AS SHOWN

SHEET NO.
 8

PROJECT NO.
 14-225



ELEVATION — BYPASS CULVERTS
SCALE: 1/4" = 1'-0"

STREAM DIVERSION NOTES:

1. THE MAXIMUM FLOW DEPTH RESULTING FROM A 2 YEAR STORM EVENT IS ESTIMATED AT 428.26 FT FOR THE EXISTING STRUCTURE. PLEASE NOTE THAT THE ABOVE LISTED DEPTH IS BASED ON THE EXISTING BRIDGE AND CHANNEL AND DOES NOT CONSIDER THE CHANNEL CONSTRUCTION RESULTING FROM THE PLACEMENT OF THE STREAM DIVERSION.
2. IN THE EVENT OF A STORM THAT OVERTOPS A STREAM DIVERSION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OR PROTECTION OF ANY EQUIPMENT, TOOLS, MATERIALS, OR OTHER ITEMS NEEDED TO COMPLETE THE WORK THAT COULD BE AFFECTED BY THE STORM FLOWS. THE REMOVAL AND/OR REPLACEMENT OF ANY EQUIPMENT OR MATERIALS IS INCIDENTAL TO THE "STREAM DIVERSION" PAY ITEM.

SEQUENCE OF CONSTRUCTION:

1. ISRAEL CREEK IS A CLASS IV-P STREAM WITH INSTREAM WORK PROHIBITED DURING THE CLOSURE PERIOD (MARCH 1 — MAY 31).
2. NOTIFY THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT AT 301-797-6821, EXT. 3, THE MARYLAND DEPARTMENT OF ENVIRONMENT (MDE INSPECTOR) AT 443-835-9397, AND THE WASHINGTON COUNTY DIVISION OF ENGINEERING AT 240-313-2460 AT LEAST FIVE (5) DAYS BEFORE CONSTRUCTION BEGINS TO SCHEDULE A PRE-CONSTRUCTION MEETING. THE ANTICIPATED PROJECT LENGTH IS 180 DAYS. A COPY OF THE CONTRACTOR'S SCHEDULE SHALL BE PROVIDED TO WASHINGTON COUNTY AND MDE PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR IS TO NOTIFY MISS UTILITY AT 1-800-257-7777 A MINIMUM OF 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
4. INSTALL TRAFFIC CONTROL AND STABILIZED CONSTRUCTION ENTRANCE.
5. TRIM AND REMOVE TREES WITHIN THE LOD ONLY AS NECESSARY FOR COMPLETION OF THE WORK.
6. INSTALL STOCKPILE AREA IN THE LOCATIONS AS SHOWN, WITH FILTER LOG ALONG THE DOWNSTREAM SIDE OF THE PILE. ALL FILL MUST COME FROM OR GO TO A SITE THAT HAS A CURRENT, APPROVED SOIL, EROSION AND SEDIMENT CONTROL PLAN.
7. INSTALL FILTER LOG, CLEAR AND GRUB ONLY THOSE AREAS NECESSARY FOR COMPLETION OF THE WORK.
8. ACCESS TO THE RESIDENCES MUST BE MAINTAINED AT ALL TIMES. RESIDENTS MUST BE INFORMED WHEN STREAM DIVERSION WILL BE INSTALLED AT EXISTING ROADWAY. ALL IMPACTS TO TRAFFIC MUST OBTAIN ENGINEER'S APPROVAL.
9. PLACE TEMPORARY SANDBAG-BARRIER DIVERSION ALONG THE STREAM BANK WHERE THE TEMPORARY STREAM DIVERSION WILL TIE INTO THE EXISTING STREAM TO CONTAIN THE EXISTING STREAM DURING DIVERSION EXCAVATION. EXCAVATE AREAS NECESSARY TO INSTALL STREAM DIVERSION. INSTALL (5)-48 INCH ACCESS CULVERTS PER DETAIL AND WITHIN THE FABRIC BASED DIVERSION CHANNEL TO ALLOW TRAFFIC FLOW. REMOVE TEMPORARY SANDBAG-BARRIER DIVERSIONS AND DIVERT WATER THROUGH DIVERSION CHANNEL; RELOCATE SANDBAG-BARRIERS AS SHOWN ON THE PLAN.
10. INSTALL SUMP PIT AND FILTER BAG. ALL SEDIMENT LADEN WATER FROM DEWATERING SHALL BE PUMPED TO AN APPROVED DEWATERING DEVICE (FILTER BAG) PRIOR TO DISCHARGING TO A VEGETATED AREA.
11. EXCAVATE THE UPSTREAM AREA OF THE EXISTING BRIDGE FOR PLACEMENT OF NEW REINFORCED CONCRETE BOX CULVERTS AND ENDWALLS. EXCAVATE AND GRADE FOR PLACEMENT OF BEDDING MATERIAL FOR THE CULVERTS AND WINGWALLS. REFER TO PLAN SHEET 4 FOR LOCATION OF NEW STRUCTURE.
12. PLACE PRECAST CONCRETE BOX CULVERTS ON COMPACTED BEDDING MATERIAL. GRADED AGGREGATE SUBBASE IS TO BE COMPACTED TO 95% MAXIMUM DENSITY. CONSTRUCT CONCRETE ENDWALLS.
13. BACKFILL CONCRETE ENDWALLS AND BOX CULVERTS. GRADE AND PLACE RIPRAP ALONG THE UPSTREAM SIDE OF CULVERTS AS SHOWN ON SHEETS 2 & 3 AND AS DIRECTED BY THE ENGINEER. DOWNSTREAM RIPRAP WILL BE INSTALLED AFTER EXISTING BRIDGE IS REMOVED AND STREAMBANK RESTORED TO NATURAL CONDITIONS.
14. PLACE GAB AND COMPACT PROPOSED ROADWAY EAST OF THE BRIDGE. REDIRECT RESIDENTIAL TRAFFIC OVER NEW ROADWAY.
15. REMOVE THE EXISTING BRIDGE ABUTMENTS, METAL GRID DECK AND ASPHALT WEARING SURFACE IN ITS ENTIRETY. RE-GRADE AND PLACE RIPRAP ALONG DOWNSTREAM SIDE OF CULVERT AND WINGWALLS.
16. GRADE AND INSTALL STABILIZATION MATTING ON THE EAST STREAM BANK UPSTREAM AND DOWNSTREAM OF BOX CULVERTS. ENSURE BANKS ARE STABILIZED BEFORE PROCEEDING TO NEXT ITEM.
17. REMOVE SUMP PIT AND EXCESS SEDIMENT. RELOCATE SANDBAG BARRIER DIVERSION TO DIRECT STREAM THROUGH THE CENTER AND EAST CONCRETE BOX CULVERTS. REMOVE DIVERSION CHANNEL AND BACKFILL CHANNEL.
18. RE-INSTALL SUMP PIT TO DEWATER AREA TO THE WEST OF THE SANDBAGS. ALL SEDIMENT LADEN WATER FROM DEWATERING SHALL BE PUMPED TO AN APPROVED DEWATERING DEVICE (FILTER BAG) PRIOR TO DISCHARGING TO A VEGETATED AREA.
19. GRADE AND INSTALL SOIL STABILIZATION MATTING ALONG THE WEST STREAM BANKS.
20. WHEN ALL BANKS ARE STABILIZED REMOVE SUMP PIT, EXCESS SEDIMENT, AND SANDBAG DIVERSION. RETURN STREAM TO NATURAL CONDITIONS.
21. INSTALL 12" FILTER LOG AT THE TOP OF THE BANKS TO PREVENT SEDIMENT FROM GETTING INTO THE STREAM CHANNEL.
22. PLACE GAB WEST OF THE BOX CULVERTS. PLACE FULL DEPTH ASPHALT.
23. FINE GRADE AND TOPSOIL ALL DISTURBED AREAS SHOWN ON SHEET 2 AND AS DIRECTED BY THE ENGINEER. PROVIDE PERMANENT SEEDING AND PLANT TREES SHOWN ON SHEET 8.
24. SET TRAFFIC BARRIER.
25. NOTIFY WCDE, WSCSD, AND MDE INSPECTOR FIVE DAYS PRIOR TO FINAL INSPECTION. REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES.
26. REMOVE TRAFFIC CONTROL.

SEDIMENT AND EROSION CONTROL NOTES

1. ALL SOIL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND THE PROVISIONS OF THE APPROVED PLAN.
2. ALL GRADING AND STABILIZATION SHALL COMPLY WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, "SECTION B - GRADING AND STABILIZATION" AND THE PROVISIONS OF THE APPROVED PLAN.
3. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES (BMP'S) ARE TO BE CONSTRUCTED AND/OR INSTALLED PRIOR TO OR AT THE INITIATION OF GRADING IN ACCORDANCE WITH "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND THE APPROVED PLAN.
4. A GRADING UNIT IS THE MAXIMUM CONTIGUOUS AREA ALLOWED TO BE GRADED AT A GIVEN TIME AND IS LIMITED TO 20 ACRES. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY AND/OR THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT (APPROVAL AUTHORITY). UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
5. FOR INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, TEMPORARY OR PERMANENT STABILIZATION MUST BE COMPLETED WITHIN:
 - a) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - b) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
6. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITHIN THE 7 DAY STABILIZATION REQUIREMENT, AS WELL AS, STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION (AS APPLICABLE).
7. ALL CONSTRUCTED CHANNELS AND SWALES SHALL HAVE SPECIFIED TREATMENT INSTALLED TO THE DESIGN FLOW DEPTH COMPLETED DOWNSTREAM TO UPSTREAM AS CONSTRUCTION PROGRESSES. AN INSTALLATION DETAIL SHALL BE SHOWN ON THE PLANS.
8. ALL STORM DRAIN AND SANITARY SEWER LINES NOT IN PAVED AREAS ARE TO BE MULCHED AND SEEDING WITHIN 3 DAYS OF INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
9. ELECTRIC POWER, TELEPHONE, AND GAS LINES ARE TO BE COMPACTED, SEEDED, AND MULCHED WITHIN 3 DAYS AFTER INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
10. NO SLOPE SHALL BE GREATER THAN 2:1.
11. AS REQUIRED BY SECTION B, OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, "ADEQUATE VEGETATIVE STABILIZATION", IS DEFINED AS 95 PERCENT GROUND COVER. THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT REQUIRES THE PROJECT ADHERE TO THIS FOR SCHEDULING OF THE FINAL SITE CLOSEOUT REVIEW, AND/OR RELEASE OF THE SITE FOR SOIL EROSION AND SEDIMENT CONTROL.

H-4.2 STANDARDS AND SPECIFICATIONS

FOR
TEMPORARY ACCESS CULVERT

Definition

A waterway crossing consisting of circular pipe(s) and aggregate.

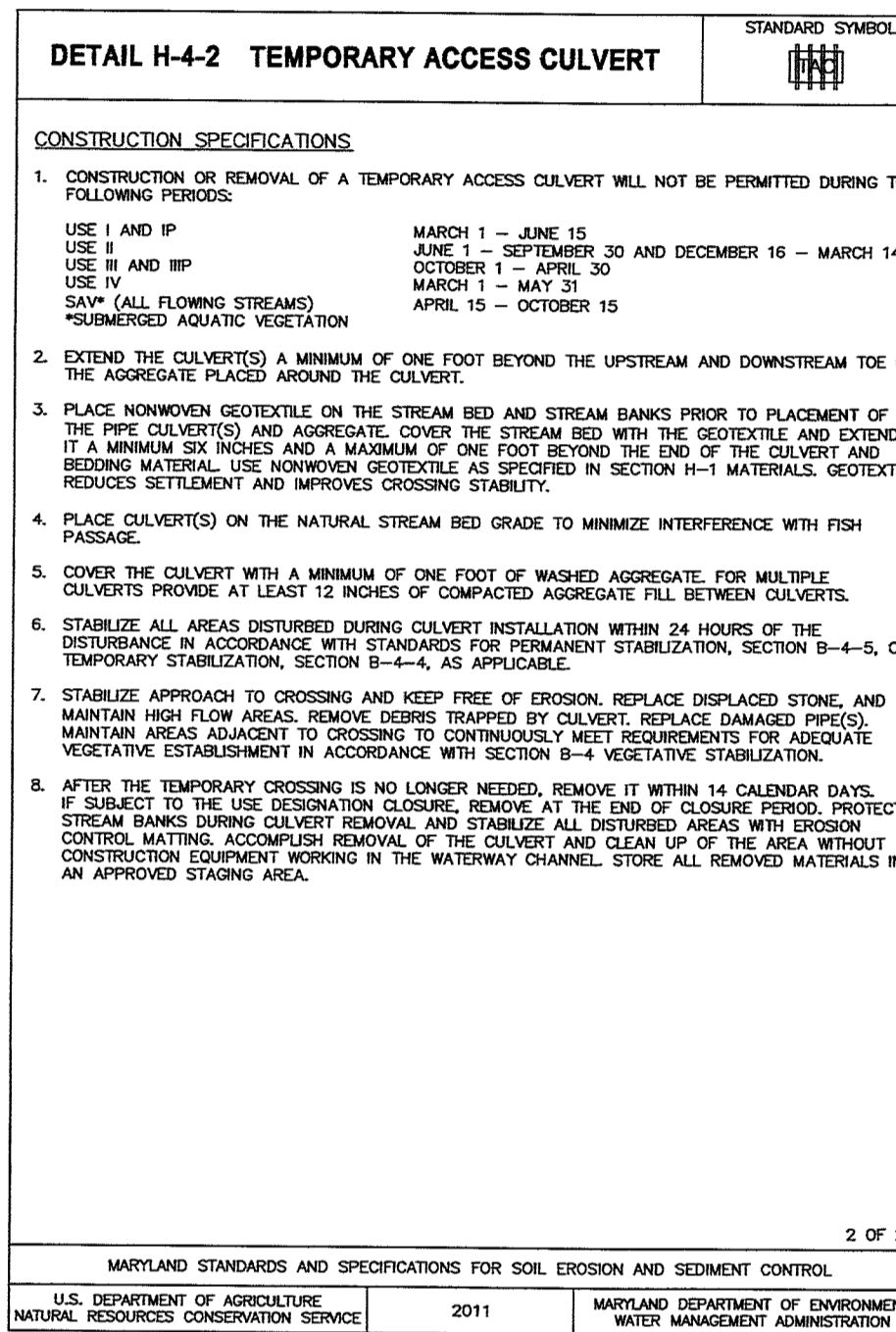
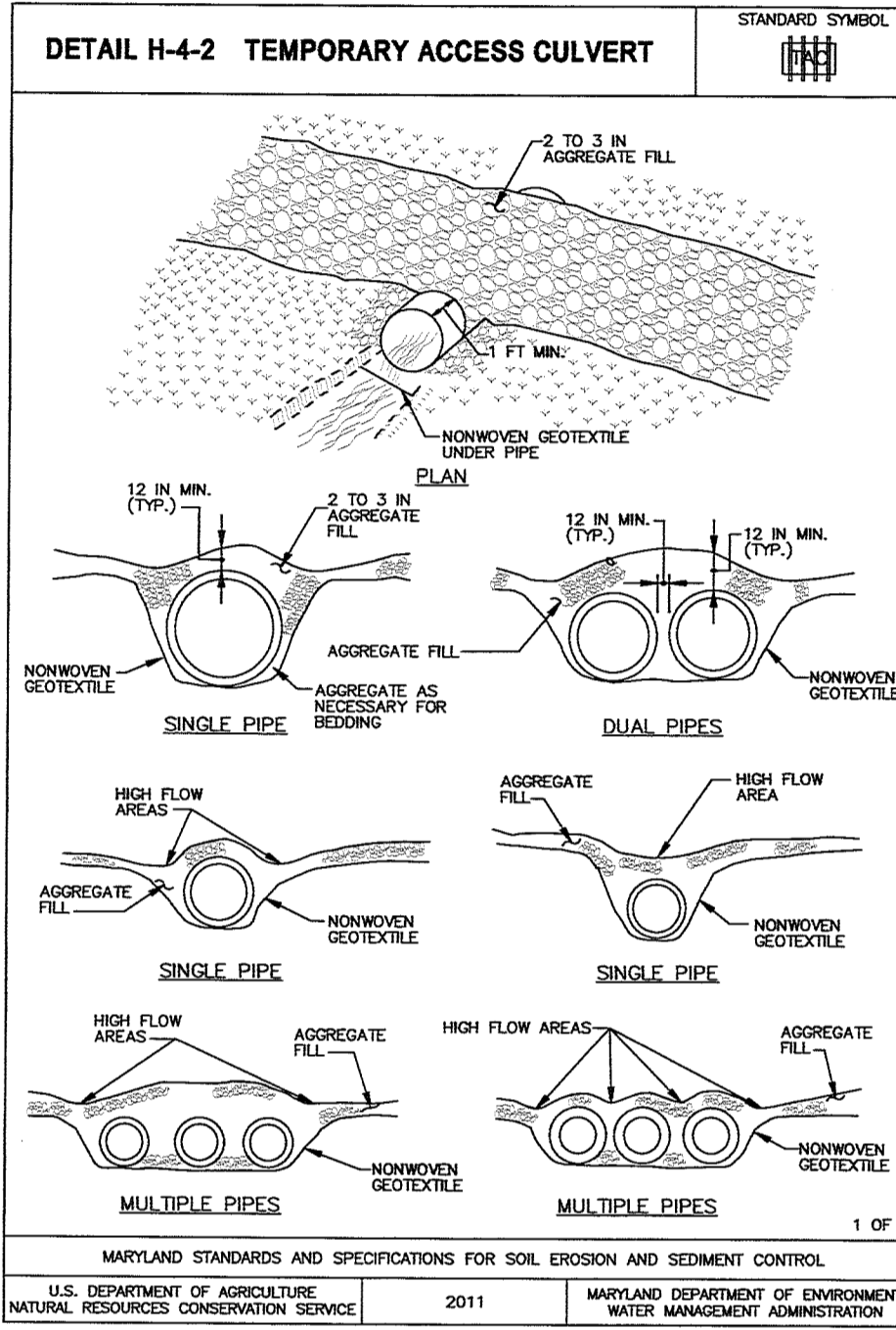
Design Criteria

1. Temporary culverts are used where the channel is too wide for a single span bridge or the anticipated loading may prove unsafe. The culvert type and cross sectional area must be strong enough to support the maximum expected load.
2. Size the pipe(s) to convey the normal stream flow. The cross-sectional area of the culvert must be greater than 60 percent of the cross-sectional area of the existing bankfull channel. Size the culvert for the largest pipe diameters that will fit into the existing waterway channel without excavation of the channel or without major approach fills. The minimum pipe diameter that may be used is 12 inches.
3. Time-of-year restrictions apply to the construction or removal of a temporary access culvert.

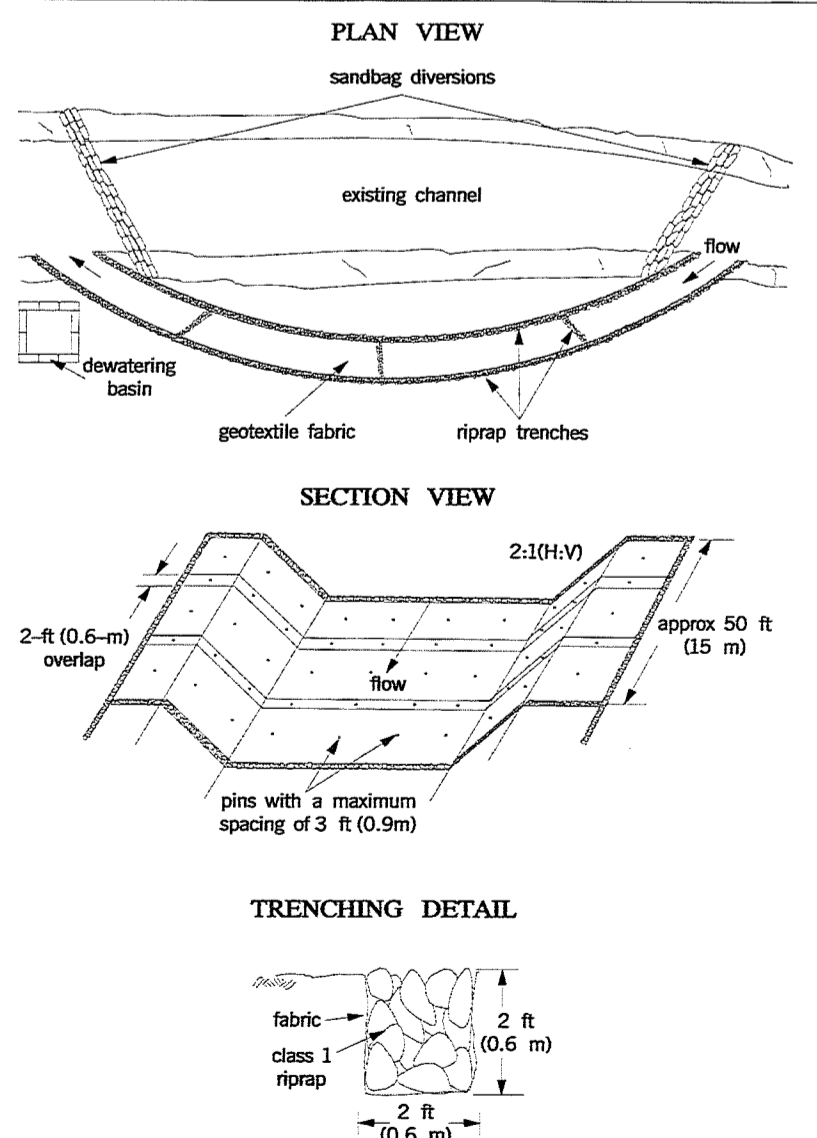
Maintenance

The approach to the access culvert must be stabilized and kept free of erosion. Displaced stone must be replaced, and high flow areas must be maintained. Debris trapped by the culvert must be removed. Damaged pipe(s) must be replaced. The areas adjacent to the crossing must be maintained to continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization.

H.19



Maryland's Guidelines To Waterway Construction
DETAIL 1.6: FABRIC-BASED DIVERSION



TEMPORARY SEEDING SUMMARY

Seed Mixtures (Hardness Zone 6b) From Figure B.3 (2011 MDE Standards)				Fertilizer Rate (10-20-20)	Lime Rate
Species	Application Rate (lb/oc)	Seeding Dates	Seeding Depths		
Barley (Hordeum Vulgare)	(86 lbs.)	3/15-5/31 8/1-9/30	1 in.	436 lb/oc (10 lb/1000 sf)	2 tons/oc (90 lb/1000 sf)

TURFGRASS ESTABLISHMENT SEEDING SUMMARY

Seed Mixtures (Hardness Zone 6b) From Figure B.3 (2011 MDE Standards)				Fertilizer Rate (10-20-20)			Lime Rate
Species	Application Rate (lb/oc)	Seeding Dates	Seeding Depths	N	P205	K20	
Tall Fescue (65%)	125	3/1-5/15 8/15-10/15	1/4" to 1/2"	45 lb/oc (1.0 lb/ 1000 sf)	90 lb/oc (2 lb/ 1000 sf)	90 lb/oc (2 lb/ 1000 sf)	2 tons/oc (90 lb/1000 sf)
Perennial Ryegrass (10%)	15						
Kentucky Bluegrass (5%)	10						

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex: Building
80 W. Baltimore St., Hagerstown, MD 21740
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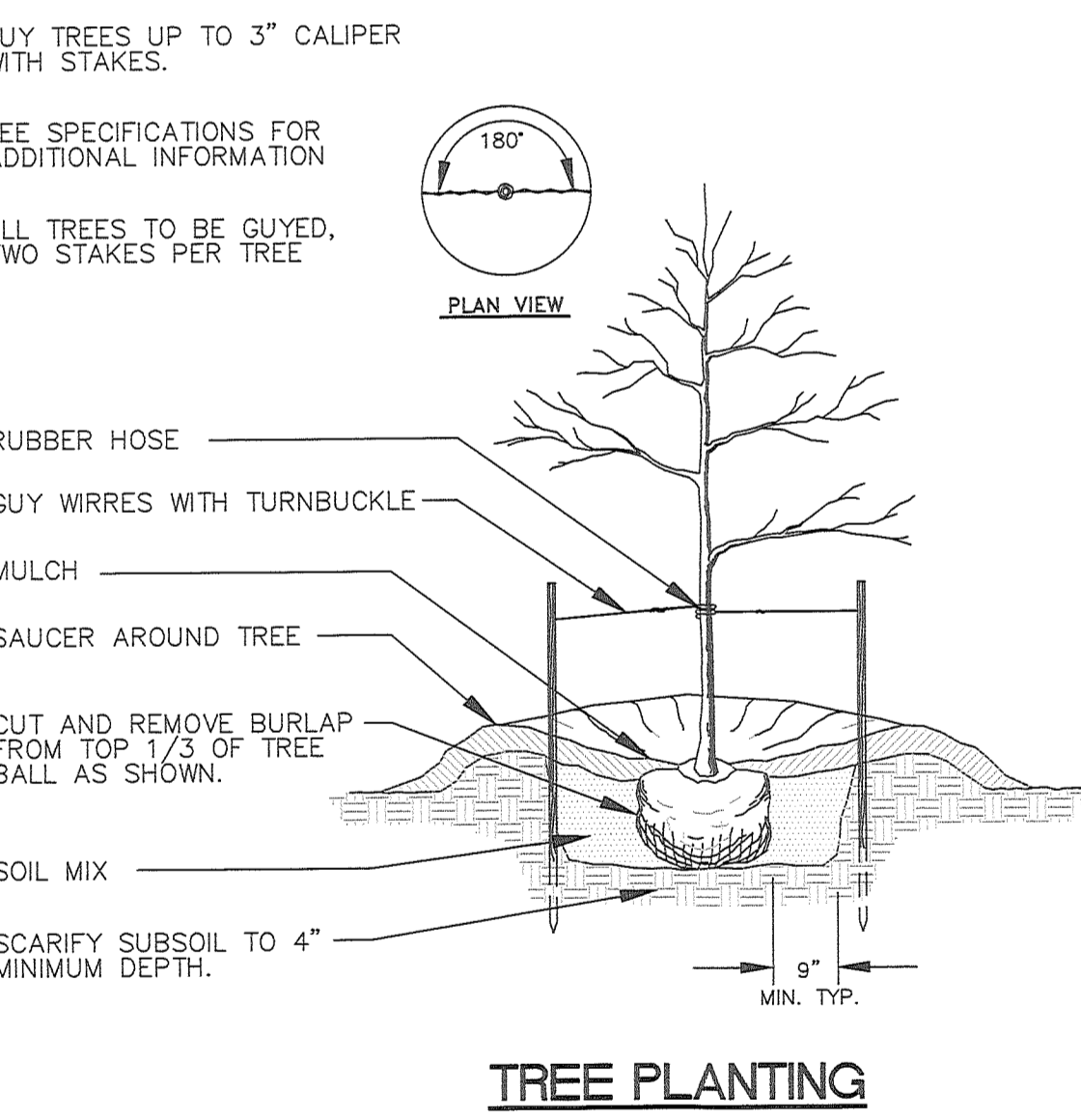
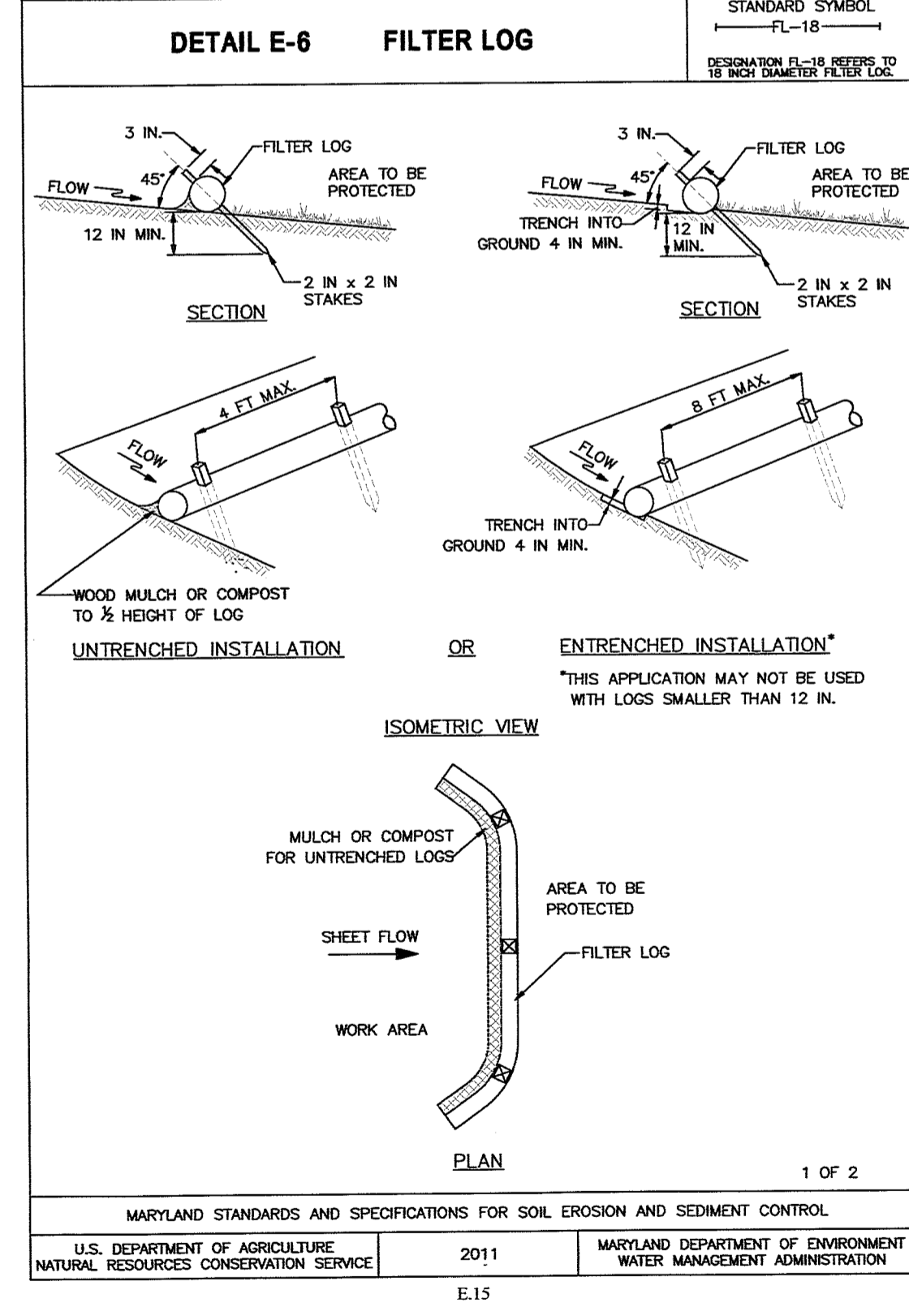
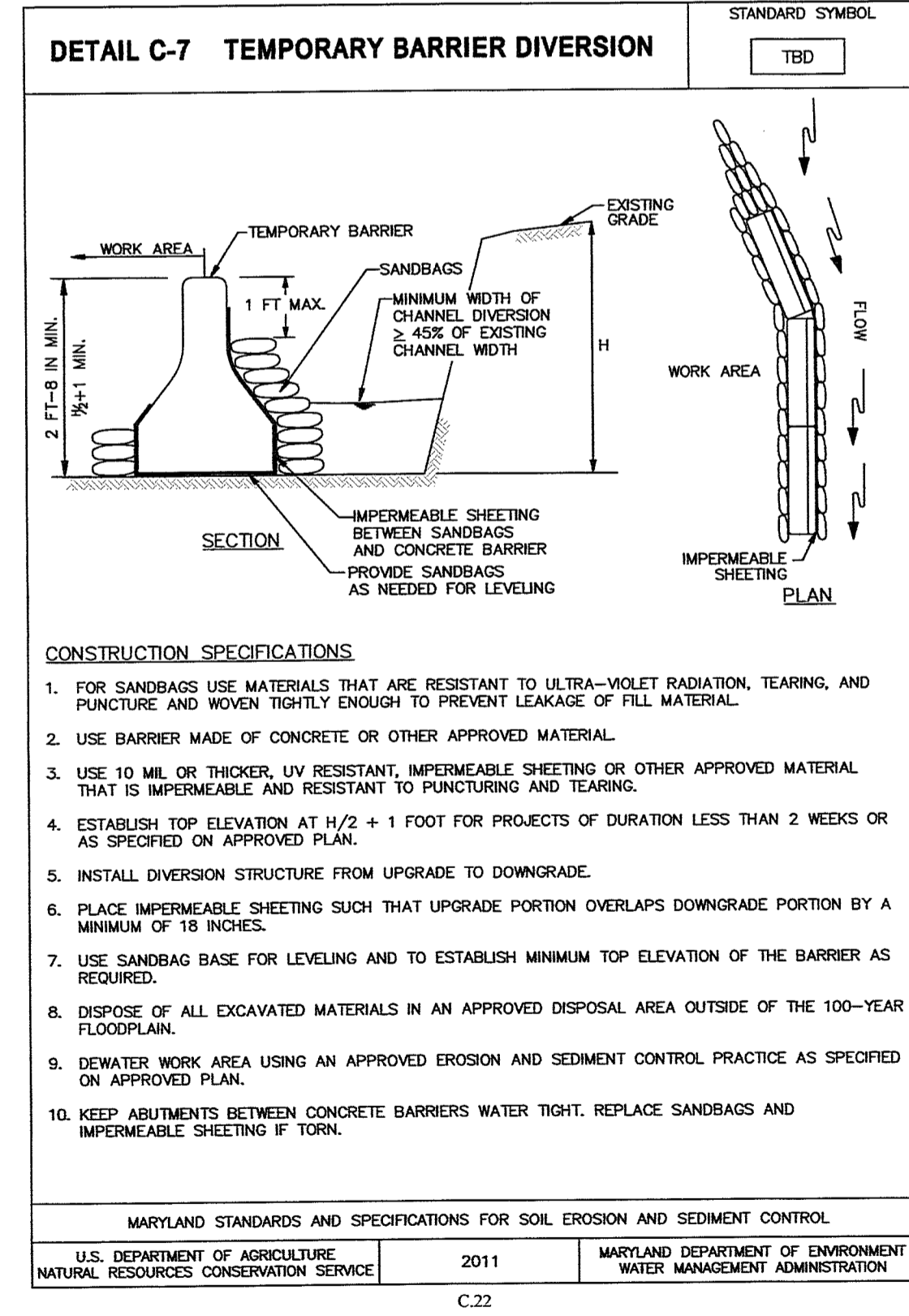
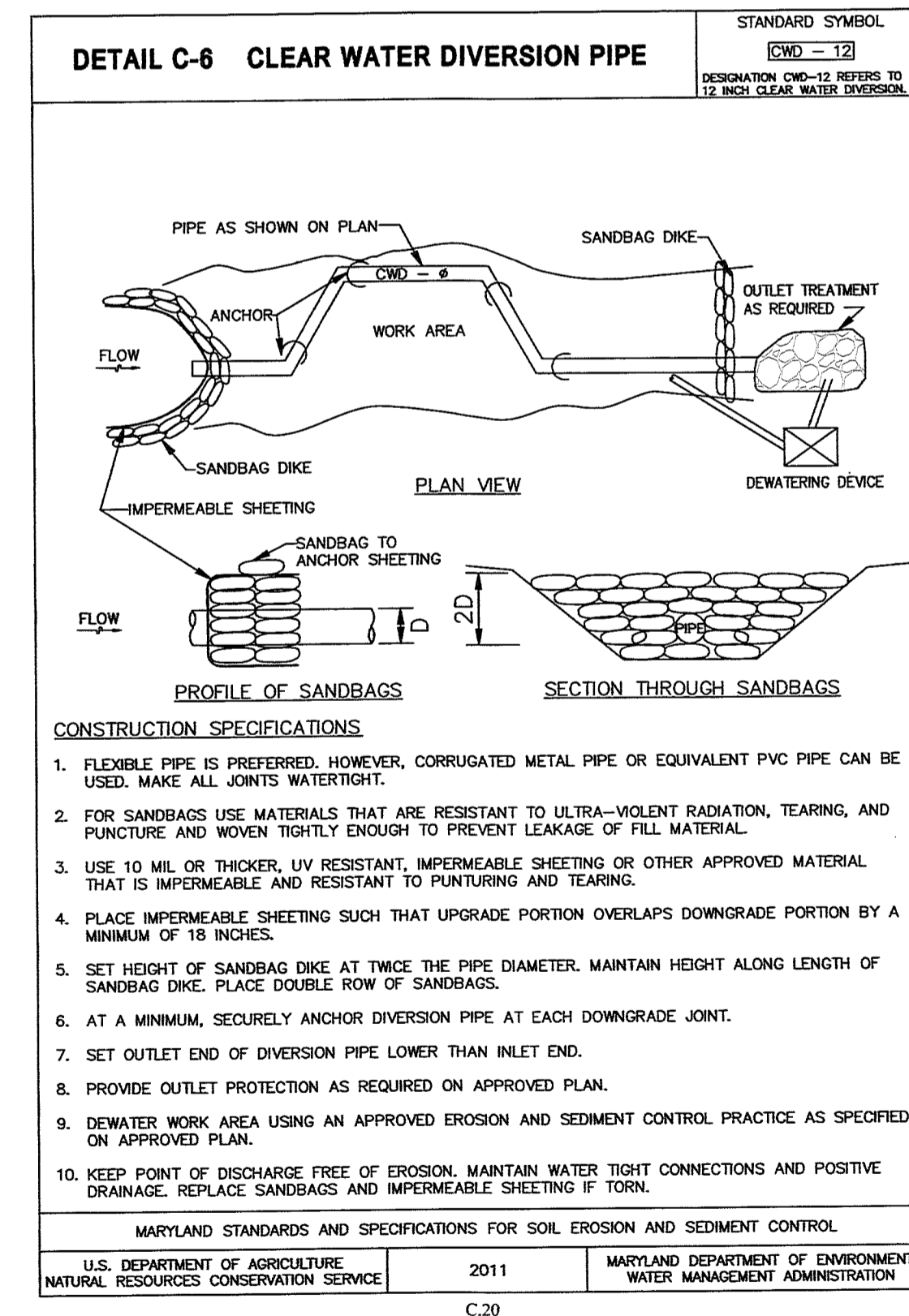
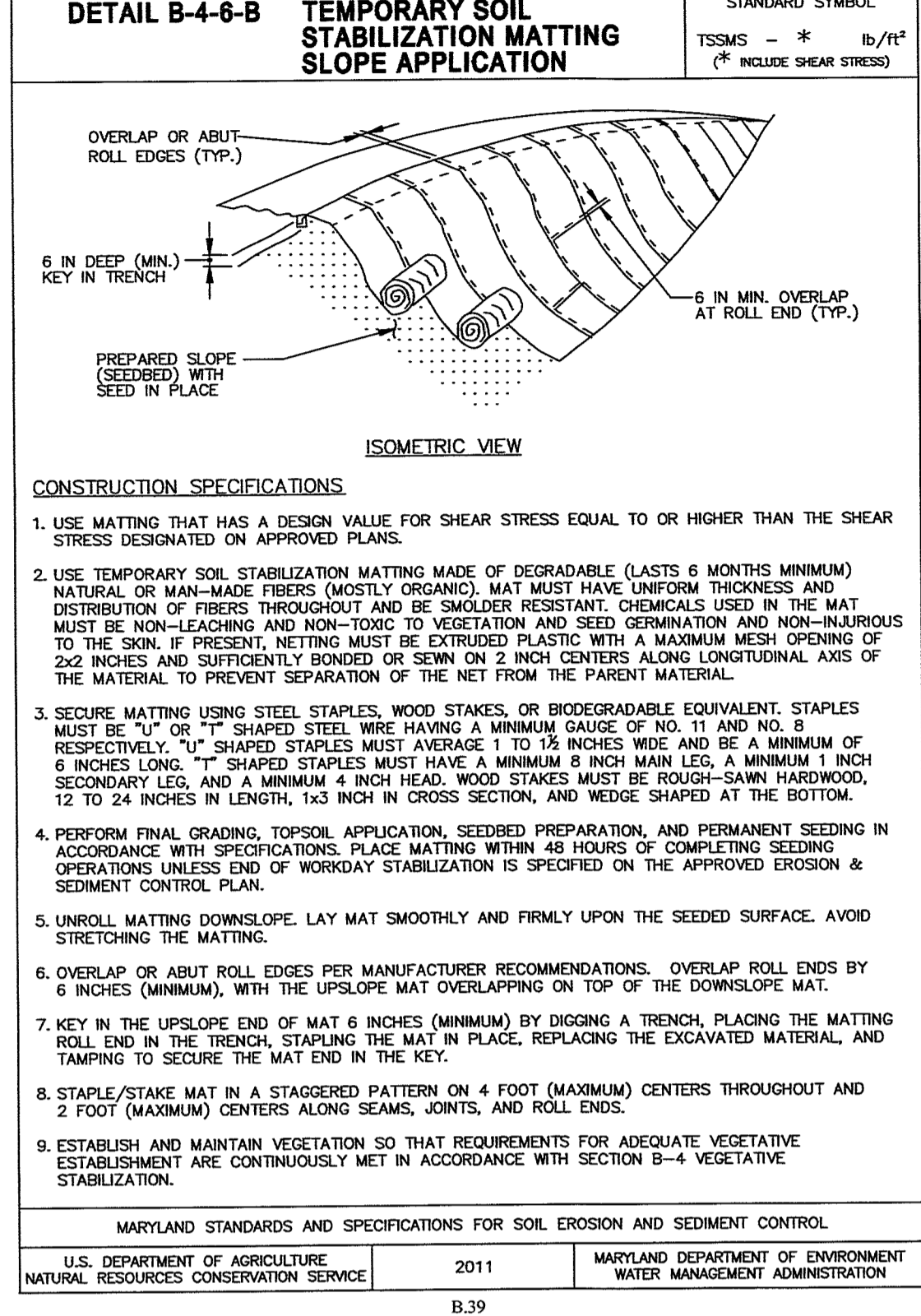
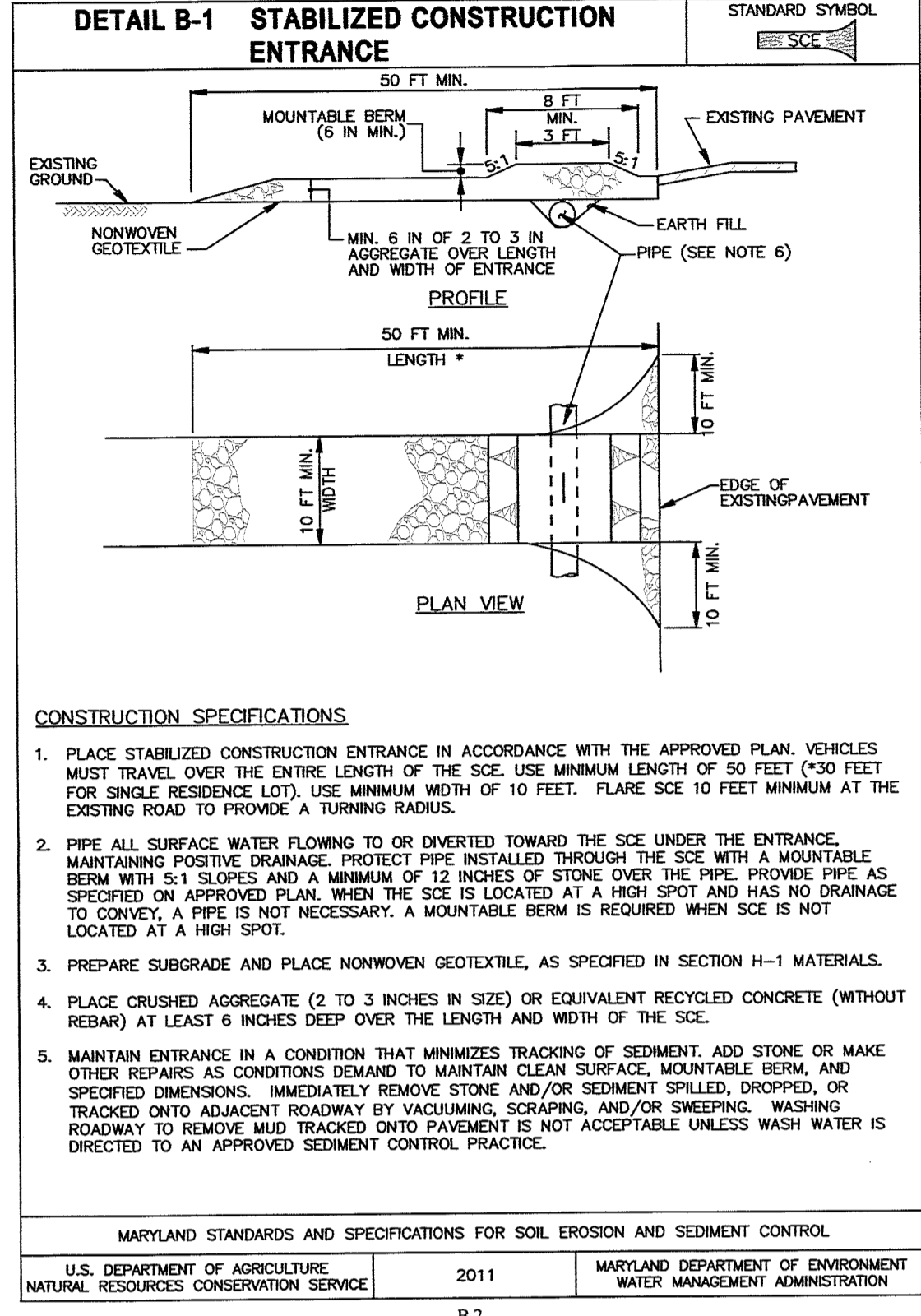
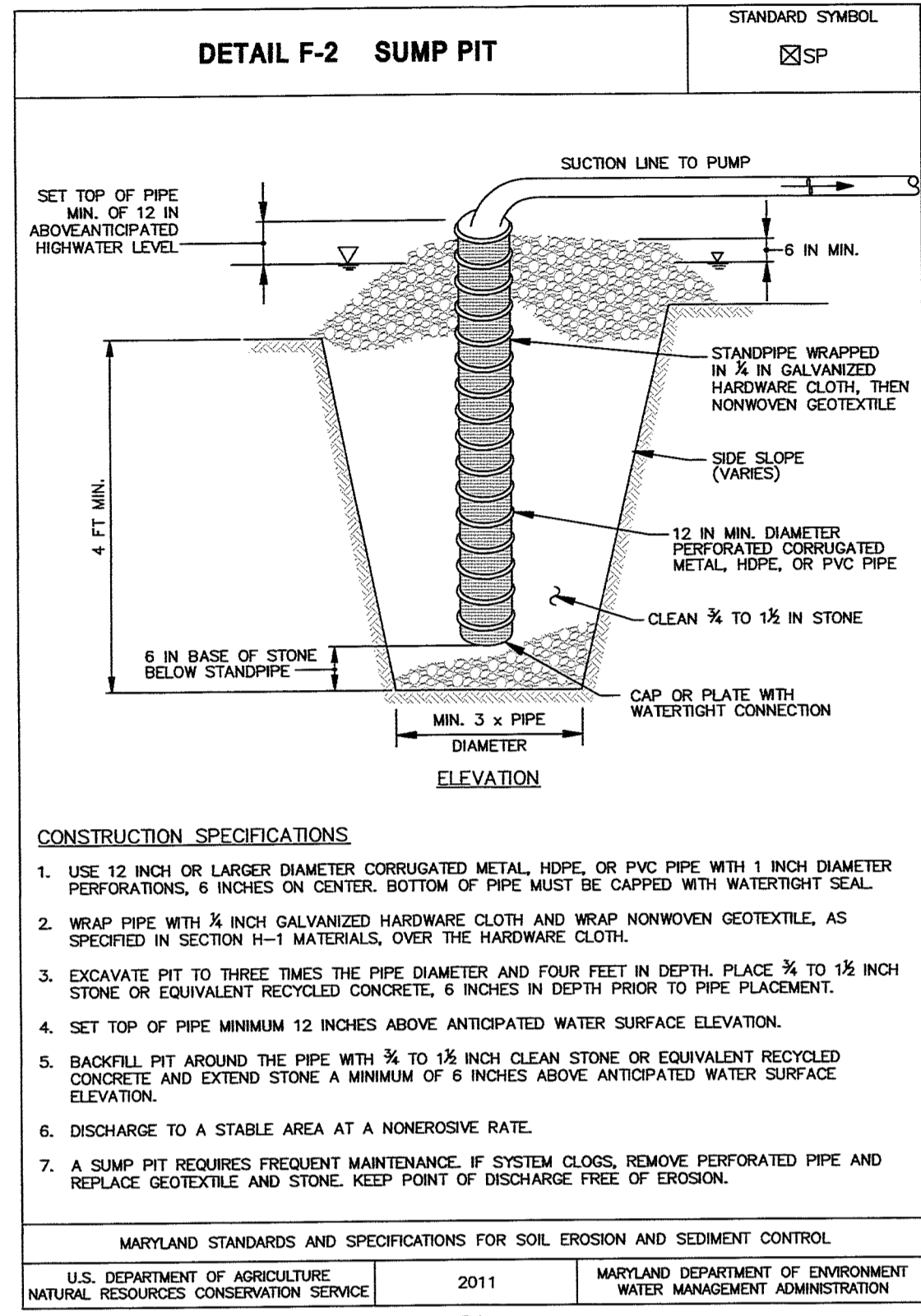
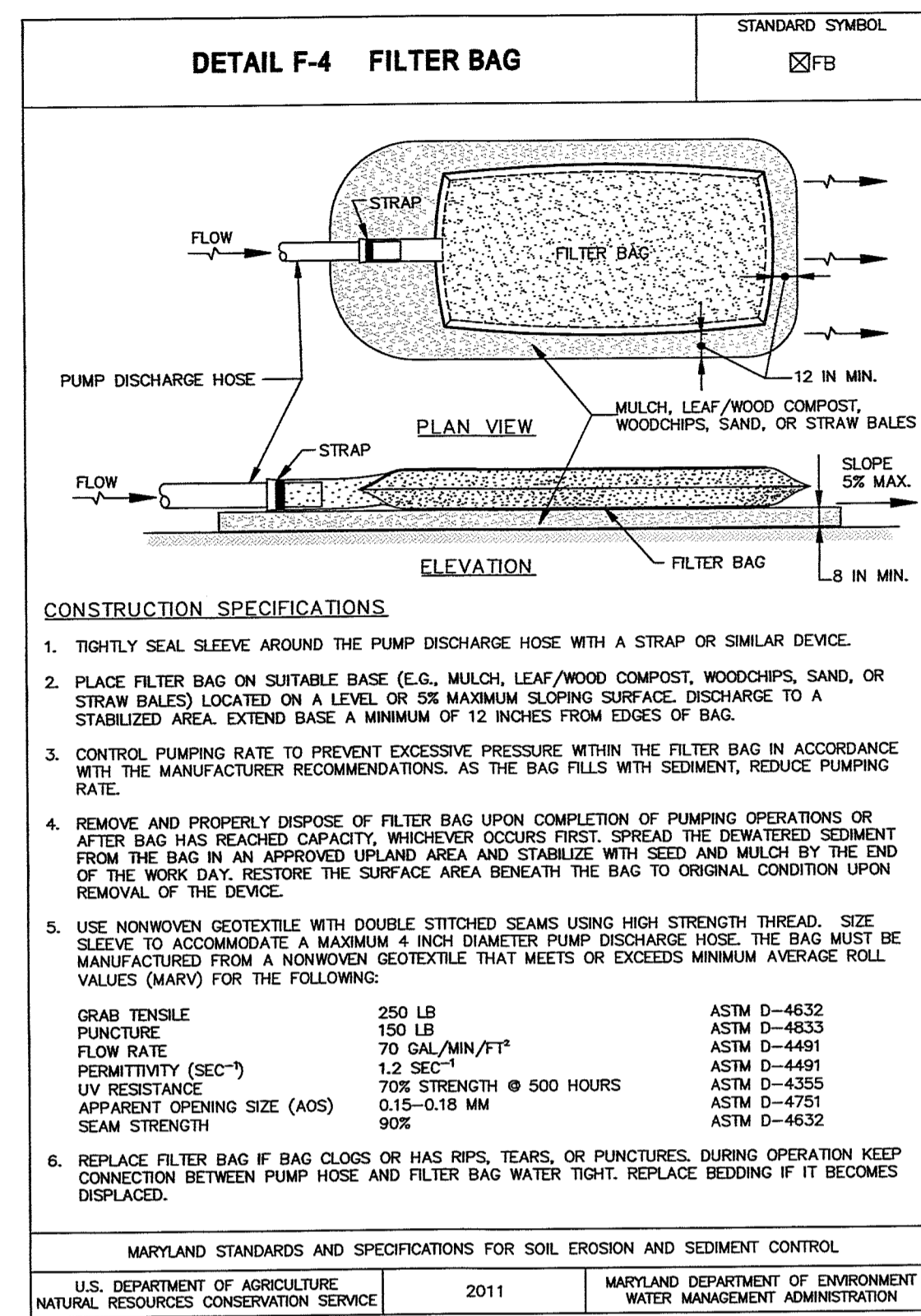
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DRAWN BY: BM
CHECKED BY: SH
DATE: 3/23/2021

FROG EYE ROAD
BRIDGE REPLACEMENT
EROSION AND SEDIMENT
CONTROL DETAILS & NOTES

SCALE
AS SHOWN

SHEET NO.
9

PROJECT NO.
14-225



NOTES:

CONTRACTOR SHALL CALL MISS UTILITY AND HAVE ALL UNDERGROUND UTILITIES MARKED PRIOR TO ANY DIGGING OR PLANTING.

AREAS BENEATH THE TREES SHALL BE MULCHED WITH A HARDWOOD BARK MULCH TO A DEPTH OF APPROX. 3", UNLESS NOTED OTHERWISE.

ALL MULCHED AREAS SHALL BE FIRST COVERED WITH AN APPROVED WEED BARRIER.

ALL PLANTS SHALL BE WATERED THOROUGHLY DURING INSTALLATION AND PRIOR TO FINAL ACCEPTANCE.

ALL PLANTS SHALL MEET THE AMERICAN NURSERYMAN'S ASSOCIATION STANDARDS FOR PLANT MATERIAL QUALITY

PLANTING SCHEDULE SHALL BE APPROVED BY THE ENGINEER PRIOR TO ORDERING MATERIALS.

DATE	
BY	
REVISION DESCRIPTION	
NO.	
DESIGNED BY:	SH
DRAWN BY:	EM
CHECKED BY:	SH
DATE:	9/23/2021

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex - Building
80 W. Baltimore St., Hagerstown, MD 21740
Phone: 240-313-2400 Fax: 240-313-2410

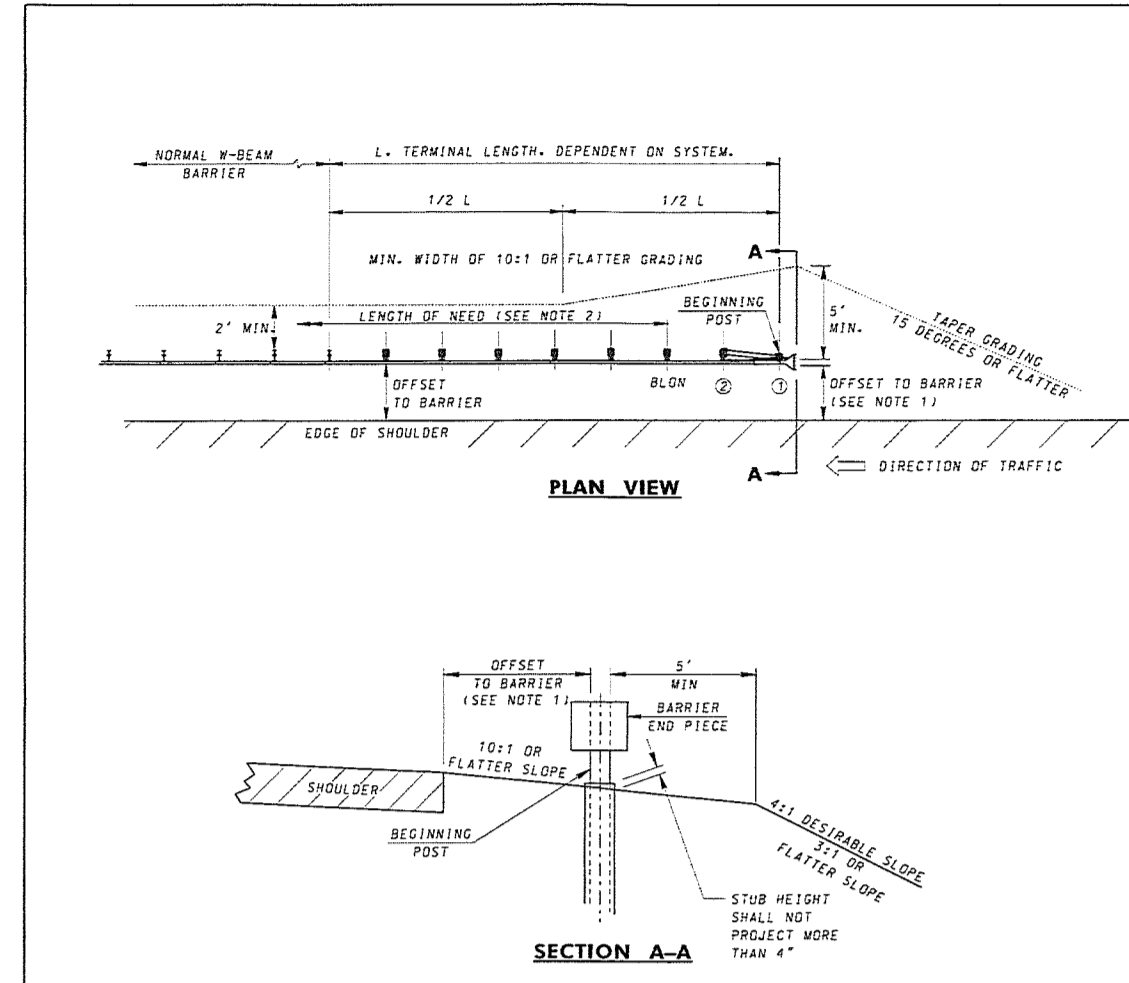
**FROG EYE ROAD
BRIDGE REPLACEMENT
EROSION AND SEDIMENT
CONTROL DETAILS**

SCALE
AS SHOWN

SHEET NO.
10

PROJECT NO.
14-225

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
REGISTERED PROFESSIONAL ENGINEER
4/1/21

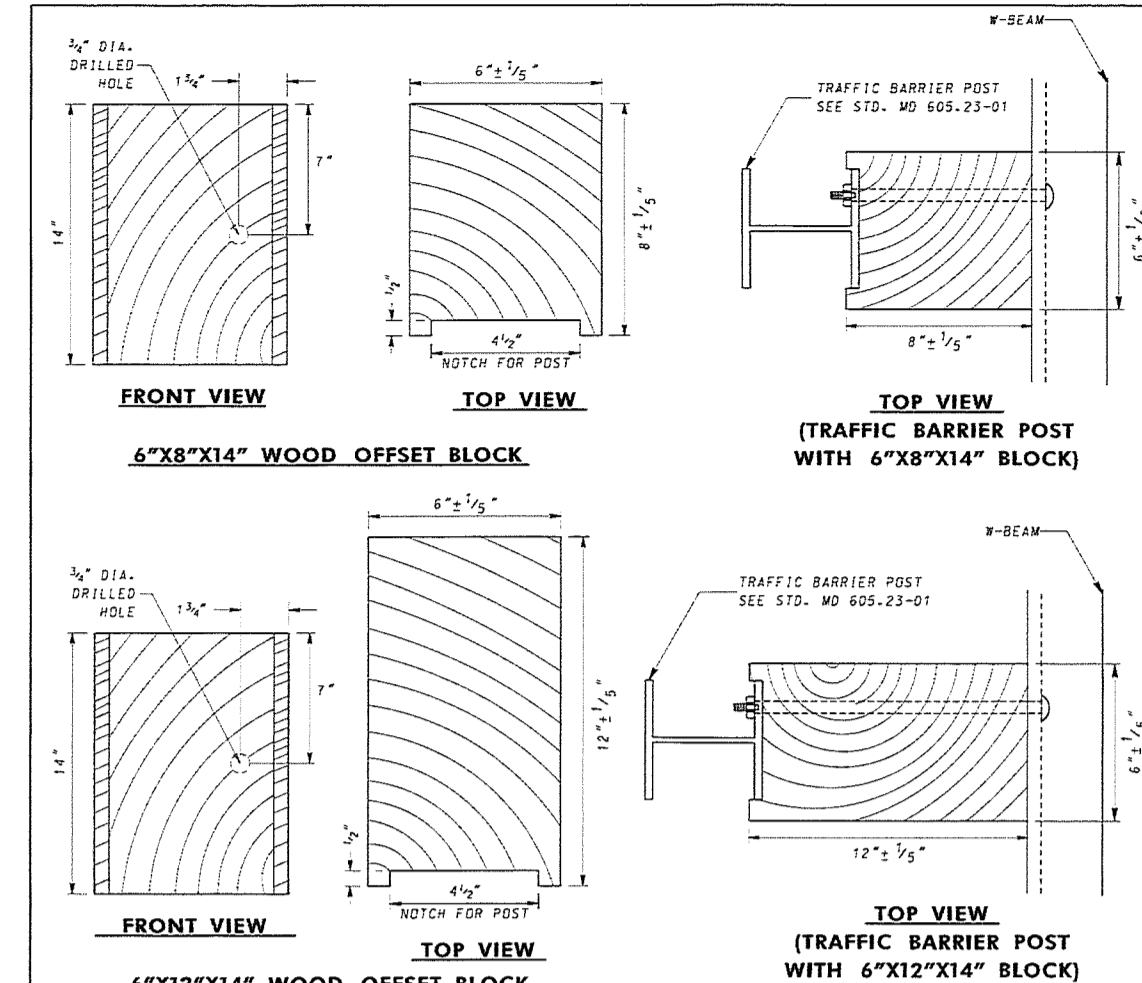


NOTES

1. WHEN THE TRAFFIC BARRIER POST IS PLACED LESS THAN 4' FROM THE EDGE OF SHOULDER/PAVEMENT, THE END TREATMENT SHALL BE PLACED AT A RATE OF 20% OVER THE FULL LENGTH AND ON A STRAIGHT LINE.
2. AN EFFECTIVE LON OF 34" SHALL BE INCLUDED IN THE END TREATMENT.
3. SYSTEM MUST BE INSTALLED AT A HEIGHT OF 31".
4. FOR DELINEATION, SEE STANDARD NO. 605-14.
5. THIS DRAWING IS SCHEMATIC ONLY FOR ILLUSTRATION PURPOSES. SEE WOOD SHS OPL FOR APPROVED SYSTEMS THAT USE JOINT BUSH COUPLERS.

SPECIFICATION	CATEGORY CODE ITEMS	605	
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	APPROVAL	
REVISIONS	APPROVAL	REVISIONS	
APPROVAL	11-10-99	APPROVAL	7-2-99
REVISION	12-17-13	REVISION	10-22-06
REVISION	1-10-17	REVISION	12-1-14
REVISION	2-20-18	REVISION	6-1-18

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TRAFFIC BARRIER W-BEAM ONE-SIDED PARALLEL END TREATMENT (TYPE C)
 STANDARD NO. MD 605.03



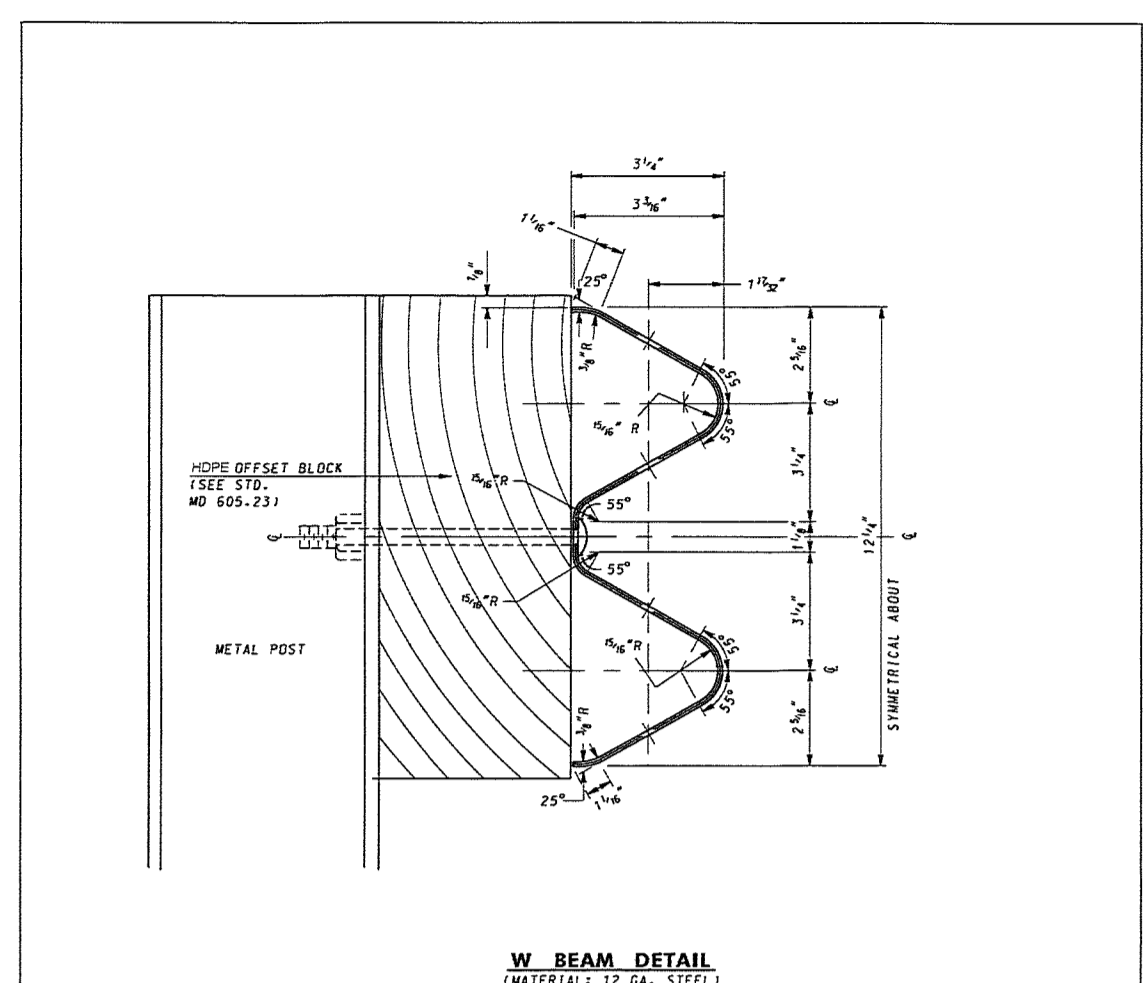
NOTES

1. WOOD OFFSET BLOCKS 6"x8"x14" TO BE USED UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.
2. FOR BOLT AND NUT DETAILS, SEE STD. NO. 605-23.
3. COMPOSITE OFFSET BLOCKS THAT ARE APPROVED BY THE ADMINISTRATION MAY BE USED IN LIEU OF WOOD OFFSET BLOCKS (EITHER DUE TO CONTRACTOR'S CHOICE OR WHEN SPECIFIED IN THE CONTRACT DOCUMENTS). REFER TO OPL FOR APPROVED SUBSTITUTES.

** USE COMPOSITE HDPE OFFSET BLOCKS **

SPECIFICATION	CATEGORY CODE ITEMS	605	
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	APPROVAL	
REVISIONS	APPROVAL	REVISIONS	
APPROVAL	11-10-99	APPROVAL	7-2-99
REVISION	12-17-13	REVISION	10-22-06
REVISION	1-10-17	REVISION	12-1-14
REVISION	2-20-18	REVISION	6-1-18

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TRAFFIC BARRIER W-BEAM ONE-SIDED WOOD OFFSET BLOCK
 STANDARD NO. MD 605.21

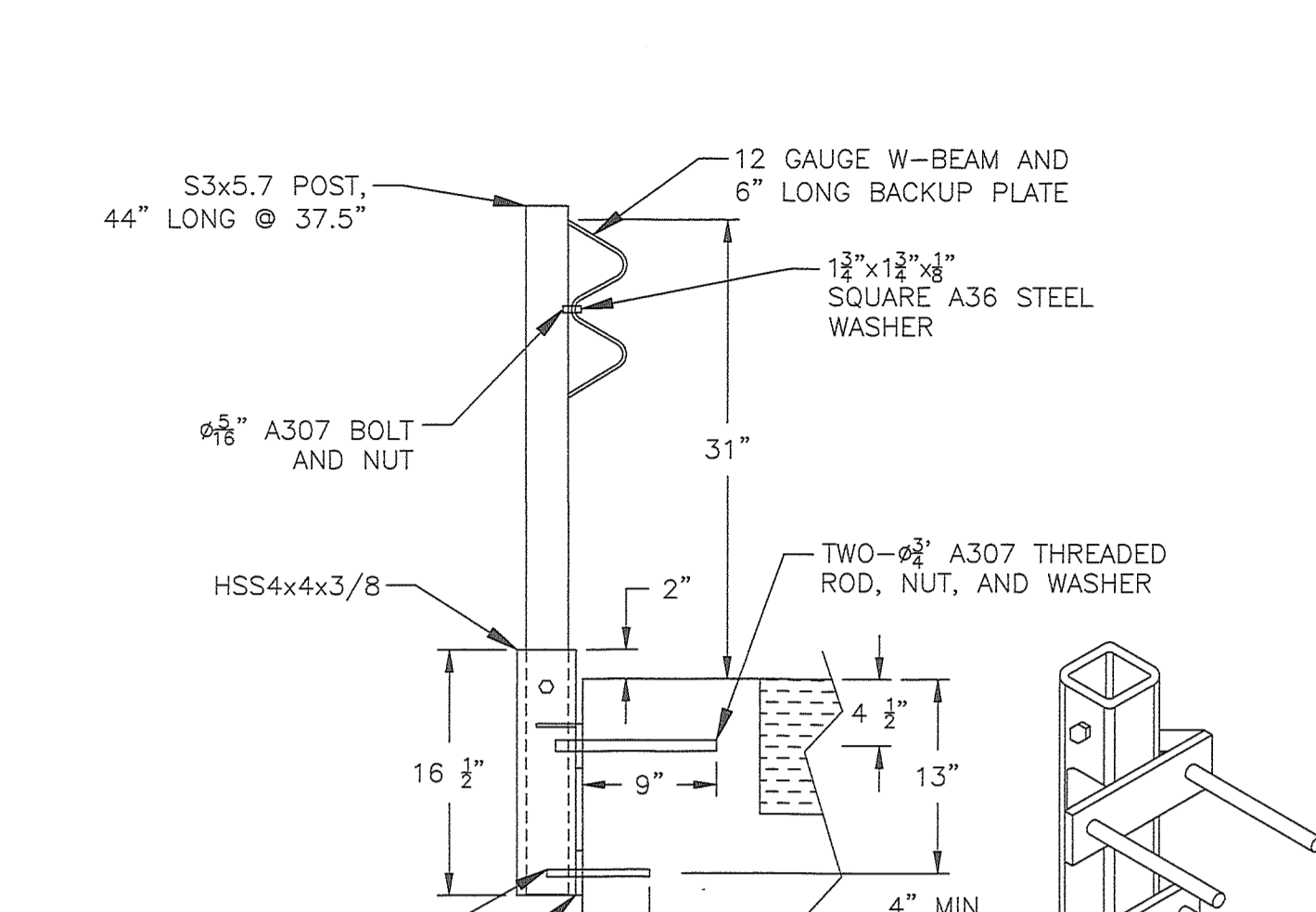


NOTES

1. RAIL ELEMENTS ARE FURNISHED SHOP CURVED, CONCAVE OR CONVEX TO RADIUS BETWEEN 20 FT. & 150 FT.
2. BARRIER SECTIONS SHALL BE 12'-4" OR 21'-0" LENGTHS.
3. FOR COMPOSITE OFFSET BLOCKS SEE NOTE 5 ON MD 605-21

SPECIFICATION	CATEGORY CODE ITEMS	605	
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	APPROVAL	
REVISIONS	APPROVAL	REVISIONS	
APPROVAL	11-10-99	APPROVAL	7-2-99
REVISION	12-17-13	REVISION	10-22-06
REVISION	1-10-17	REVISION	12-1-14
REVISION	2-20-18	REVISION	6-1-18

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TRAFFIC BARRIER W-BEAM SINGLE FACE
 STANDARD NO. MD 605.22

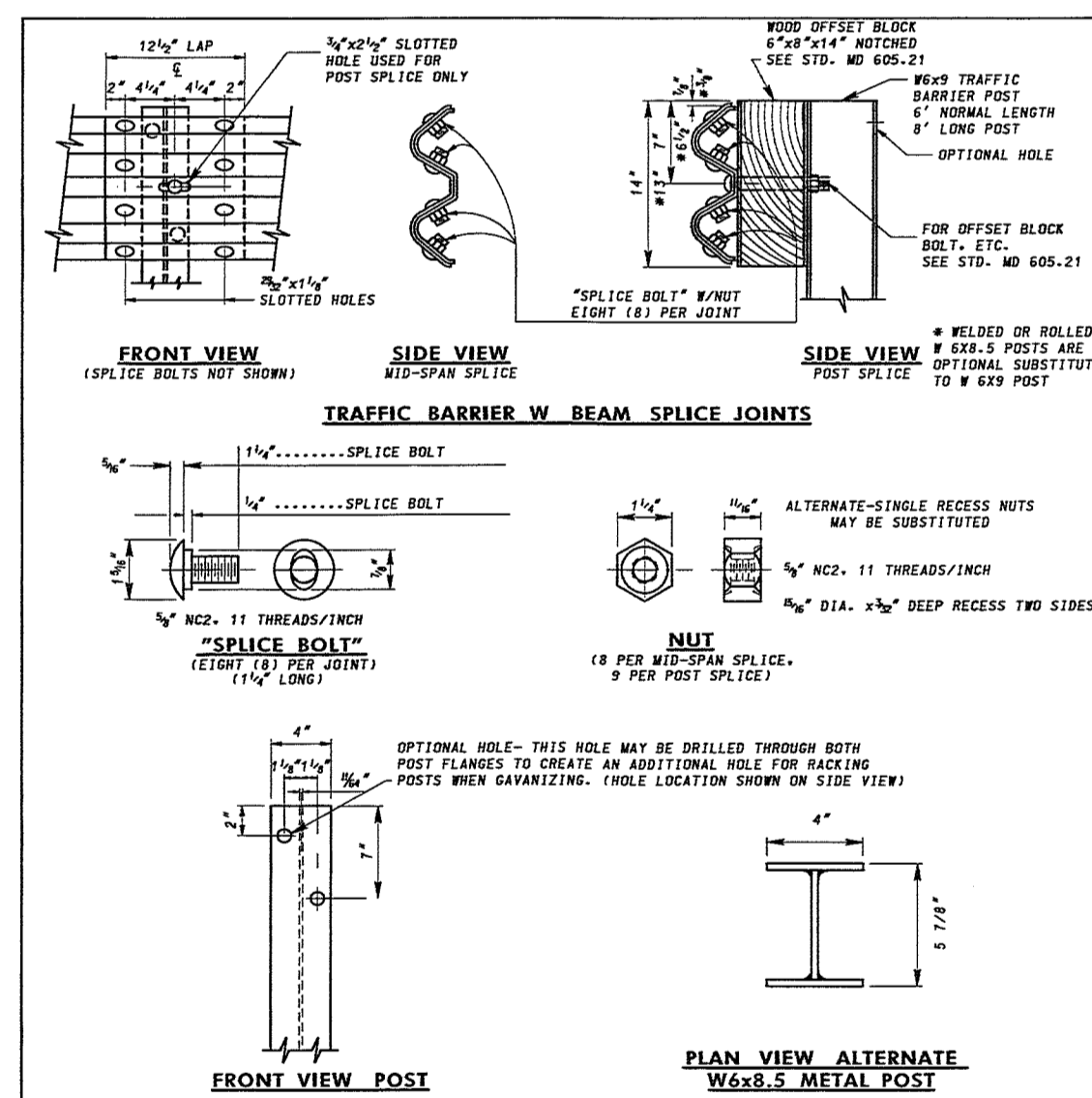


NOTES

1. THE 4"x4" SQUARE TUBE SHALL BE ASTM A500 GRADE B GALVANIZED STEEL.
2. THE TOP AND BOTTOM MOUNTING PLATES SHALL BE ASTM A572 GRADE 50 GALVANIZED STEEL.
3. THE TOP MOUNTING PLATE GUSSET SHALL BE ASTM A572 GRADE 50 GALVANIZED STEEL.
4. MEETS MASH TL-2 AT 6'-3" SPACING AND MASH TL-3 AT 3'-1 1/2" SPACING PER FHWA LETTER OF ELIGIBILITY B-264.

SPECIFICATION	CATEGORY CODE ITEMS	605	
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	APPROVAL	
REVISIONS	APPROVAL	REVISIONS	
APPROVAL	11-10-99	APPROVAL	7-2-99
REVISION	12-17-13	REVISION	10-22-06
REVISION	1-10-17	REVISION	12-1-14
REVISION	2-20-18	REVISION	6-1-18

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TRAFFIC BARRIER W-BEAM SINGLE FACE
 STANDARD NO. MD 605.22

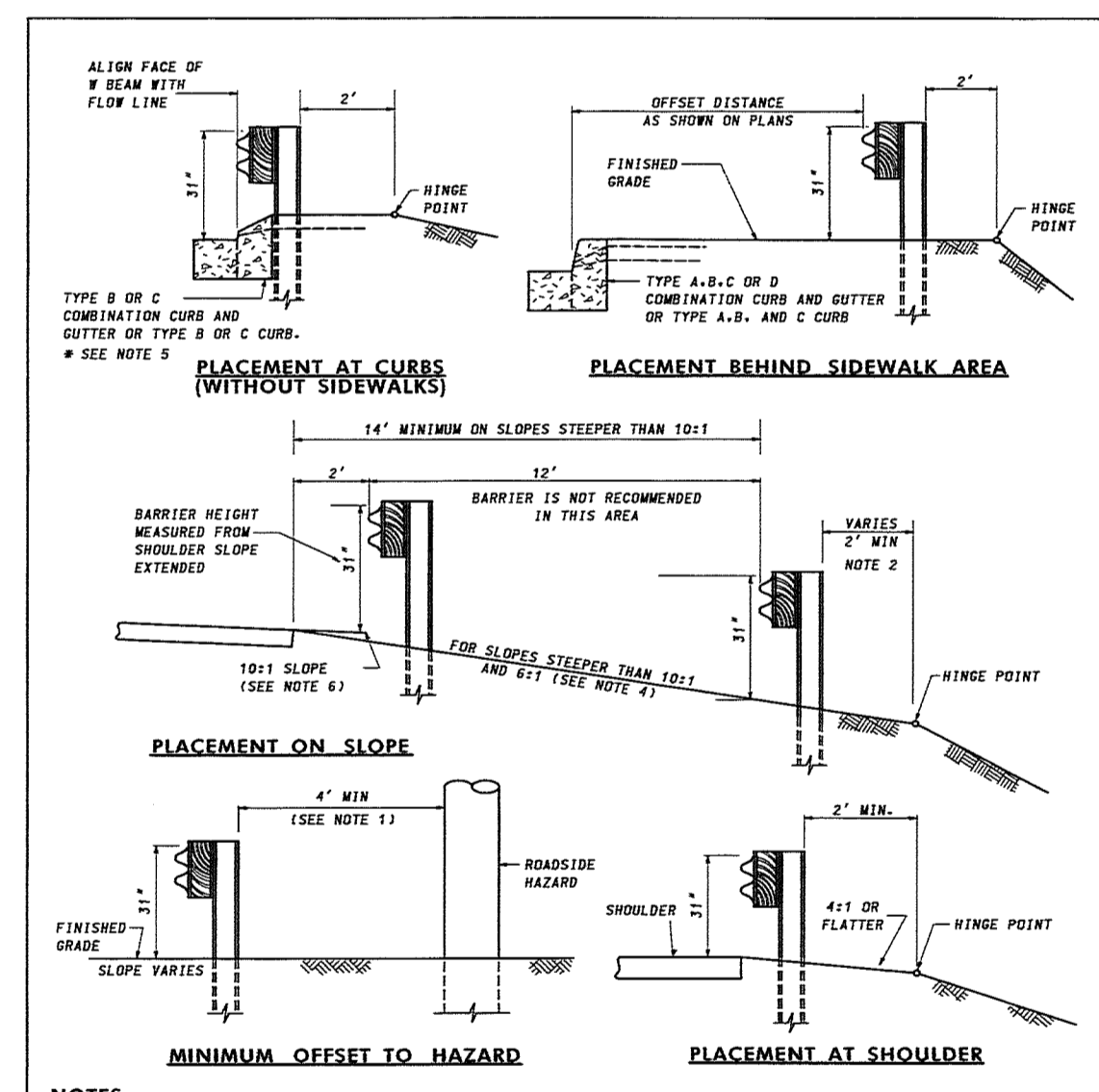


NOTES

1. EXCEPT FOR THE DIMENSIONS SHOWN ON THE ALTERNATE WELDED W-BEAM PLAN VIEW, ALL DIMENSIONS FOR HOLES, HOLE SPACING, LENGTHS, ETC. WILL REMAIN THE SAME AS THEY ARE FOR THE W-BEAM POSTS AND WOOD OFFSET BLOCKS.
2. FOR COMPOSITE OFFSET BLOCKS SEE NOTE 5 ON MD 605-21
3. POSTS SHALL BE SPACED 4'-3" C/C, UNLESS OTHERWISE STATED ON THE PLANS OR DIRECTED BY THE ENGINEER.
4. UNLESS OTHERWISE SPECIFIED, SPLICES SHALL BE PLACED AT THE MIDPOINT BETWEEN POSTS
5. FOR ALL SPLICES, LAP W-BEAM PANELS IN DIRECTION OF TRAFFIC
6. TRAFFIC BARRIER IS BASED ON A MASH 2016 COMPLIANT DESIGN

SPECIFICATION	CATEGORY CODE ITEMS	605	
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	APPROVAL	
REVISIONS	APPROVAL	REVISIONS	
APPROVAL	4-4-94	APPROVAL	10-22-06
REVISION	3-28-07	REVISION	10-22-06
REVISION	12-17-13	REVISION	12-29-17
REVISION	6-22-18	REVISION	4-20-18

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TRAFFIC BARRIER W-BEAM, W-BEAM SPLICES, AND WOOD OFFSET BLOCK
 STANDARD NO. MD 605.23

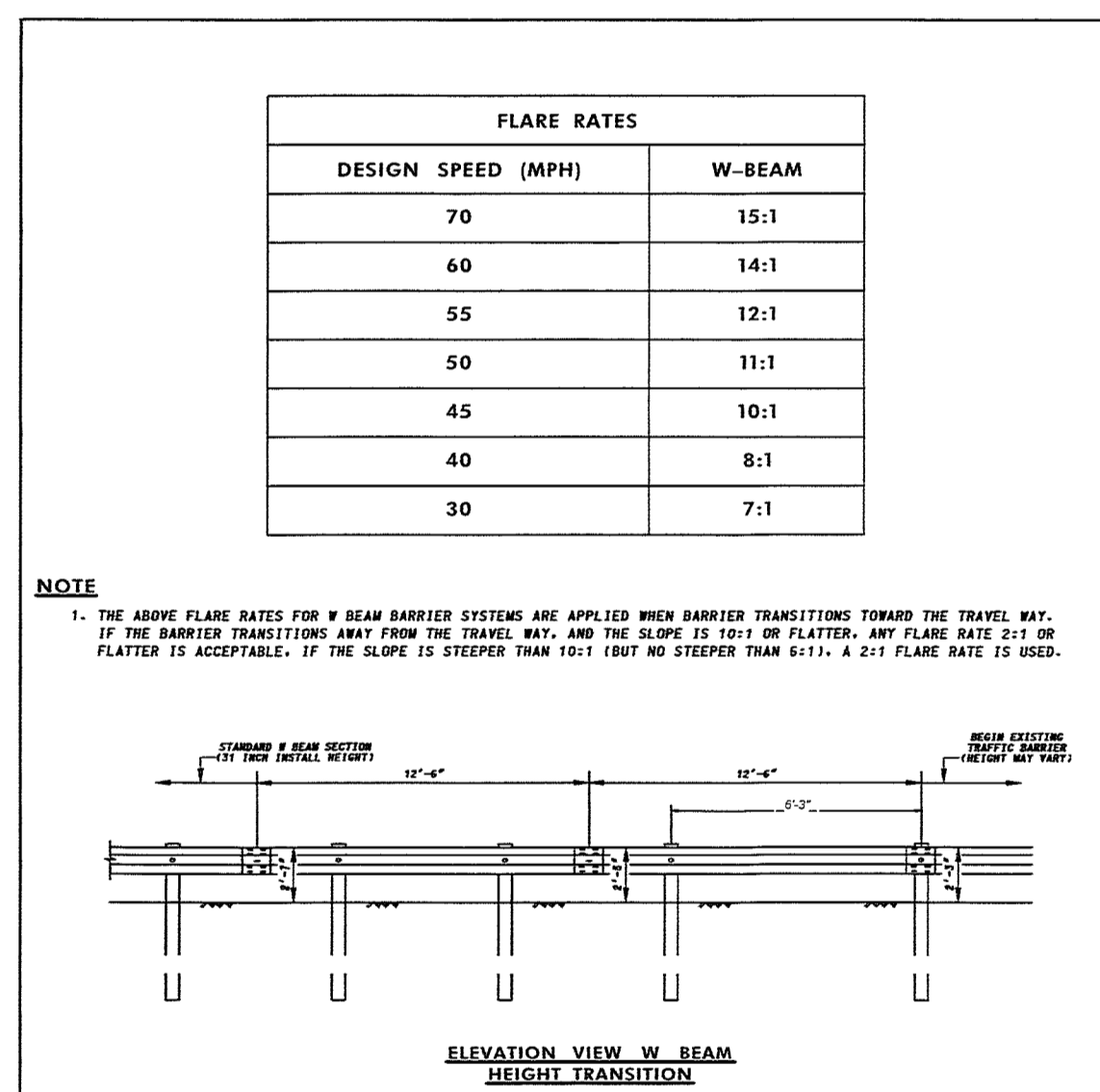


NOTES

1. THE MINIMUM DIMENSION SHOWN CAN BE REDUCED BY STIFFENING THE TRAFFIC BARRIER SYSTEM.
2. 8'-0" LONG POSTS ARE TO BE USED WHEN THE DISTANCE FROM THE BACK OF THE W-BEAM POST TO THE HINGE POINT IS LESS THAN 2' AND THE SLOPE BEYOND THE HINGE IS STEEPER THAN 4:1.
3. WHEN THE FACE OF THE TRAFFIC BARRIER IS MORE THAN 2' FROM THE SHOULDER EDGE THE HEIGHT MEASURED FROM THE EXISTING GROUND SHALL BE 31".
4. WHEN SLOPE IS STEEPER THAN 4:1, THE FACE OF THE BARRIER MUST BE ALIGNED WITH THE EDGE OF SHOULDER.
5. STIFFEN THE TRAFFIC BARRIER W-BEAM WITH TYPE 'A' COMBINATION CURB OR TYPE 'B' CURB.
6. IS USED AT POSTED SPEEDS 45 MPH OR GREATER.
7. SLOPE IN FRONT OF BARRIER INSTALLED 2' OFFSET FROM SHOULDER EDGE MUST BE 10:1 OR SHALLOWER.
8. HEIGHT OF TRAFFIC BARRIER IS MEASURED TO THE TOP OF THE W-BEAM.

SPECIFICATION	CATEGORY CODE ITEMS	605	
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	APPROVAL	
REVISIONS	APPROVAL	REVISIONS	
APPROVAL	4-4-94	APPROVAL	10-22-06
REVISION	4-13-06	REVISION	11-17-10
REVISION	12-17-13	REVISION	10-22-06
REVISION	6-22-18	REVISION	4-20-18

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TRAFFIC BARRIER W-BEAM PLACEMENT DETAILS
 STANDARD NO. MD 605.31



NOTE

1. FOR CHANGES IN W-BEAM INSTALLATION HEIGHT, WHEN TYING IN TO EXISTING, UNDAMAGED TRAFFIC BARRIER THAT IS NOT BEING REPLACED AS PART OF THE CONTRACT, USE A MAXIMUM TRANSITION OF 2 INCHES IN HEIGHT PER 12'-4" PANEL OF W-BEAM INSTALLED.
2. FOR TRANSITIONS TO BARRIER CONFIGURATIONS WITH SPLICES AT THE POST RATHER THAN THE MID-SPAN, DELETE FINAL POST AS SHOWN.

SPECIFICATION	CATEGORY CODE ITEMS	605	
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	APPROVAL	
REVISIONS	APPROVAL	REVISIONS	
APPROVAL	4-4-94	APPROVAL	10-22-06
REVISION	12-17-13	REVISION	10-22-06
REVISION	12-21-17	REVISION	12-29-17
REVISION	6-22-18	REVISION	4-20-18

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
TRAFFIC BARRIER W-BEAM FLARE RATES AND HEIGHT TRANSITION
 STANDARD NO. MD 605.32

DESIGNED BY:	NO.	REVISION DESCRIPTION	DATE
DRAWN BY:	BY		
CHECKED BY:			
DATE:			

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
 80 W. Baltimore St., Hagerstown, MD 21740
 Phone: 240-315-2460 Fax: 240-315-2401

SCALE
 AS SHOWN

SHEET NO.
 11

PROJECT NO.
 14-225

