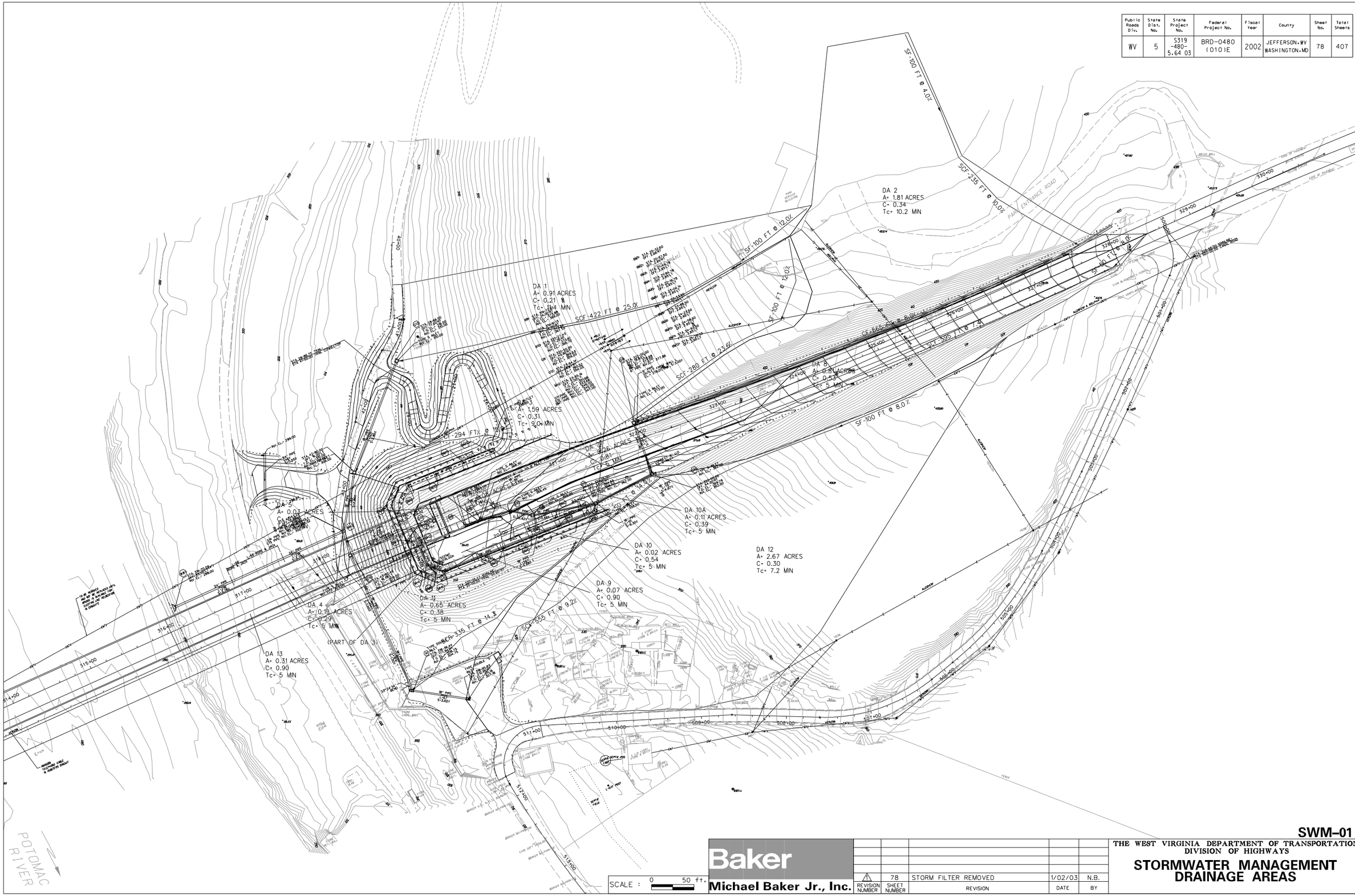
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	78	407



SWM-01

Baker

Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
1	78	STORM FILTER REMOVED	1/02/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STORMWATER MANAGEMENT DRAINAGE AREAS

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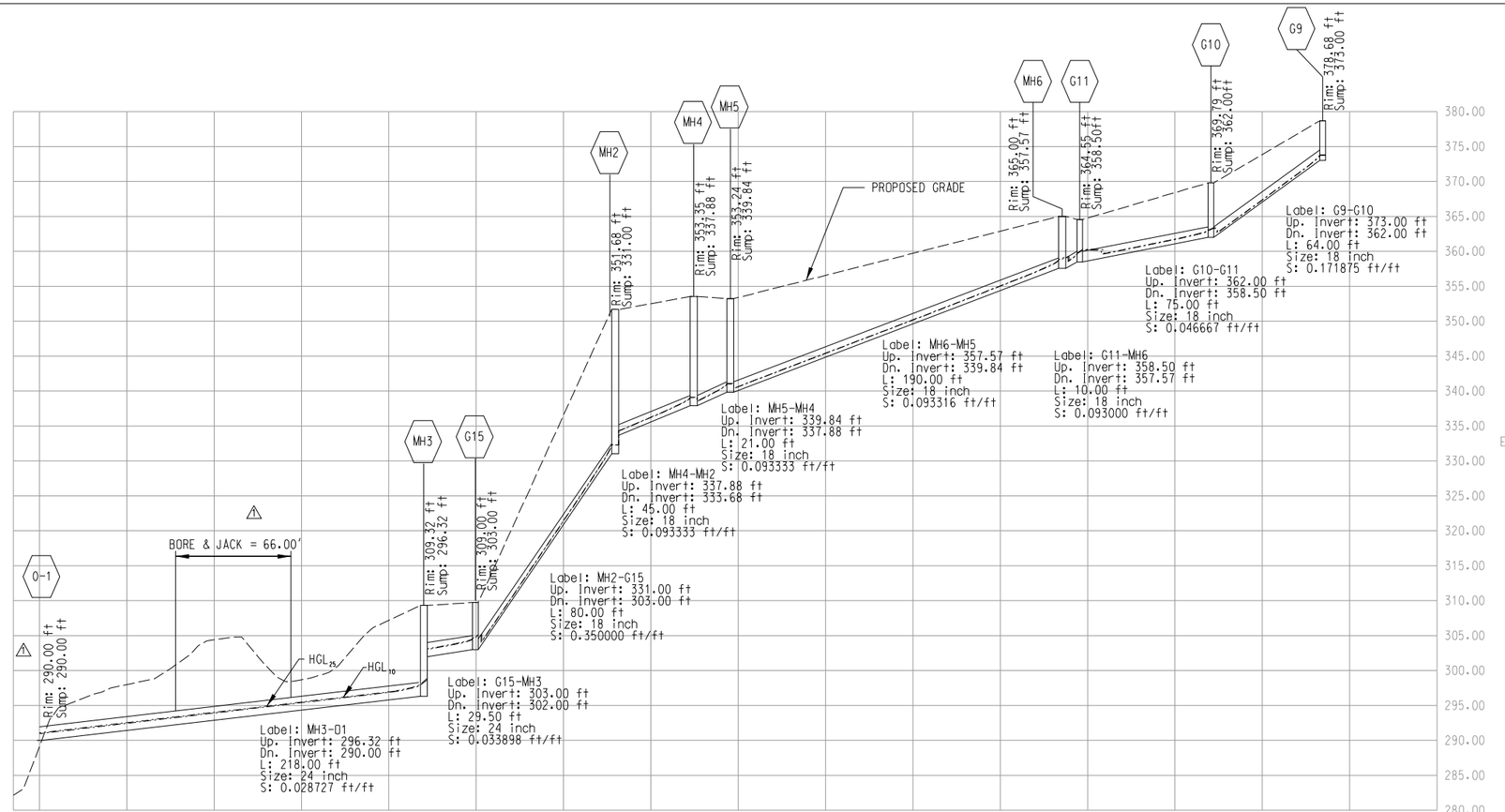
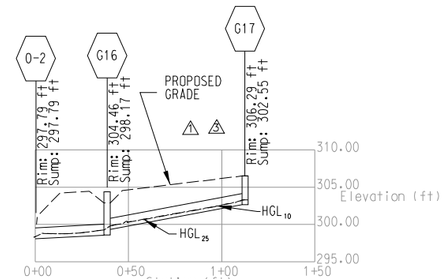
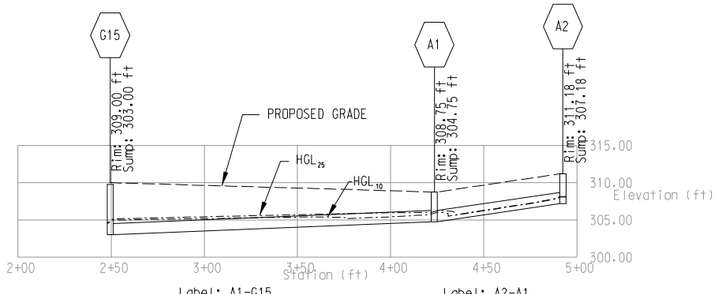
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	79	407





Label: G16-O2
Up. Invert: 298.17 ft
Dn. Invert: 297.79 ft
L: 40.00 ft
Size: 18 inch
S: 0.009000 ft/ft

Label: G17-G16
Up. Invert: 302.55 ft
Dn. Invert: 299.10 ft
L: 71.00 ft
Size: 18 inch
S: 0.048600 ft/ft



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Dn. Invert: 303.00 ft
L: 174.00 ft
Size: 18 inch
S: 0.010057 ft/ft

Label: A2-A1
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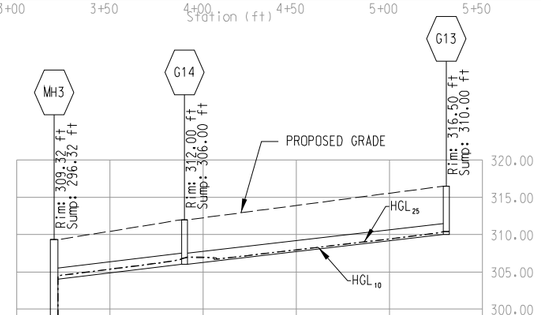
L: 69.00 ft
Size: 18 inch
S: 0.035217 ft/ft



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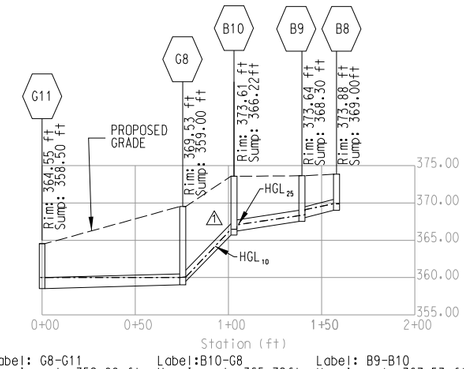
Up. Invert: 306.00 ft
Dn. Invert: 304.00 ft
L: 70.00 ft
S: 0.028571 ft/ft

Label: G13-G14
Up. Invert: 310.00 ft
Dn. Invert: 306.00 ft
L: 140.50 ft
S: 0.028470 ft/ft



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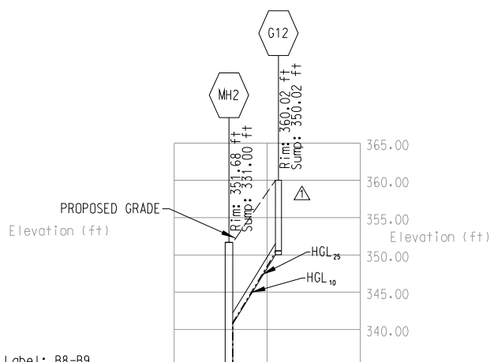
Dn. Invert: 358.50 ft
L: 76.00 ft
Size: 18 inch
S: 0.0066ft/ft

Label:B10-G8
Up. Invert: 365.72ft
Dn. Invert: 359.50ft
L: 27.50ft
Size: 18 inch
S: 0.02262 ft/ft

Label: B9-B10
Up. Invert: 367.53 ft
Dn. Invert: 366.22t
L: 36.50ft
Size: 18 inch
S: 0.0359ft/ft

Label: B8-B9
Up. Invert: 369.00 ft
Dn. Invert: 368.30 ft
L: 18.50 ft
Size: 18 inch
S: 0.037838 ft/ft



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Up. Invert: 350.02 ft
Dn. Invert: 340.72ft
L: 26.50 ft
Size: 18 inch
S: 0.349811 ft/ft

SWM-02

VERTICAL SCALE : 0 10 ft.

HORIZONTAL SCALE : 0 40 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
3	79	PROFILE REVISED DUE TO PARKING LOT	1/20/03	N.B.
1	79	ALL PROFILES CHANGED AND UPDATED	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STORMWATER MANAGEMENT PROFILES

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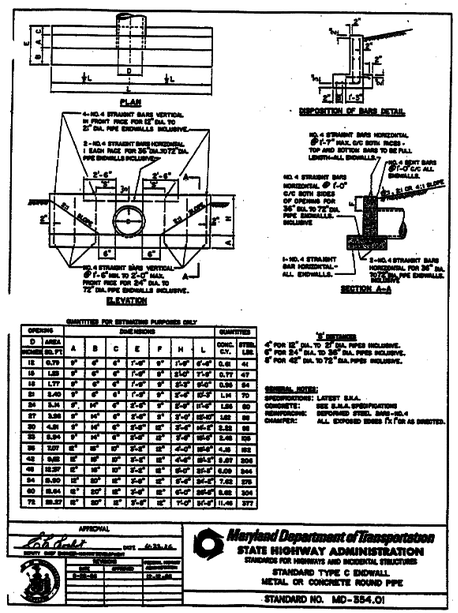
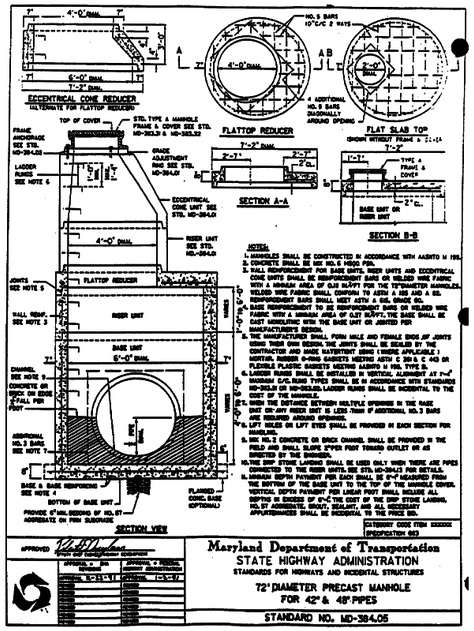
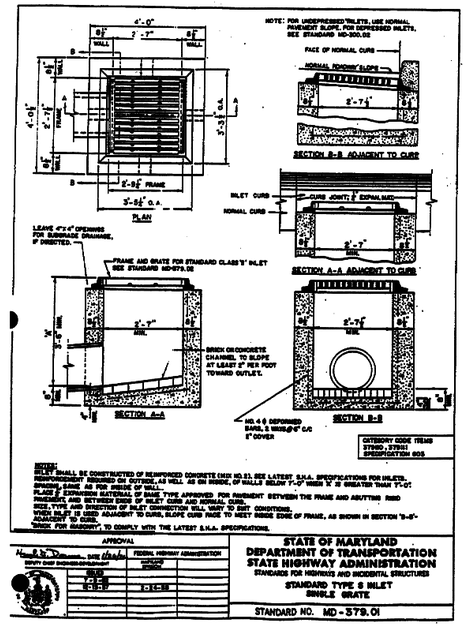
– MD SIDE ONLY –

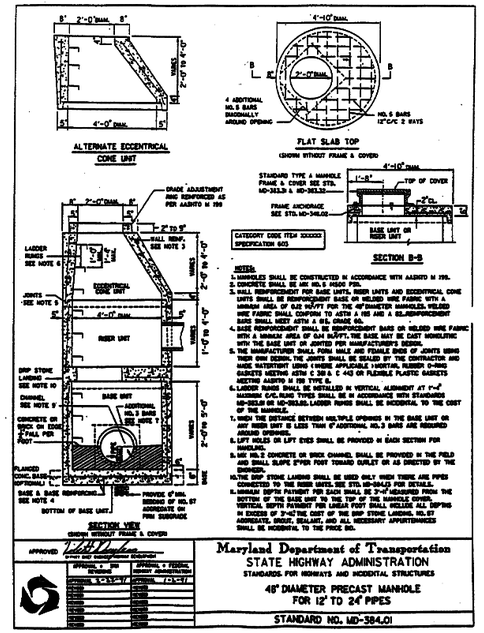
⚠ FOR INFORMATION ONLY

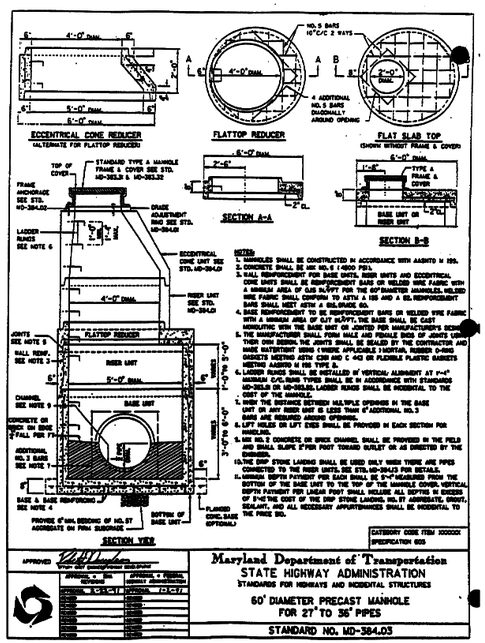
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	80	407

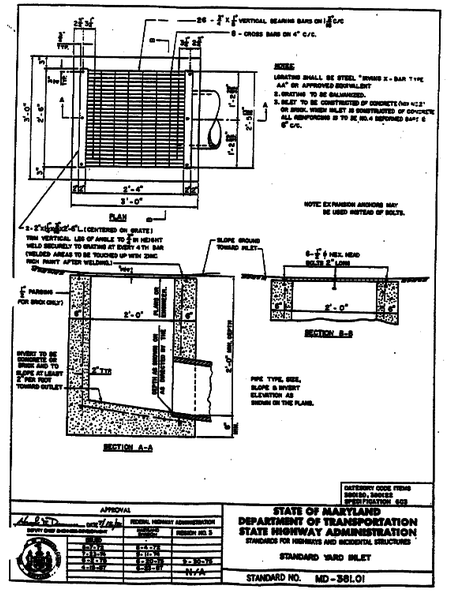


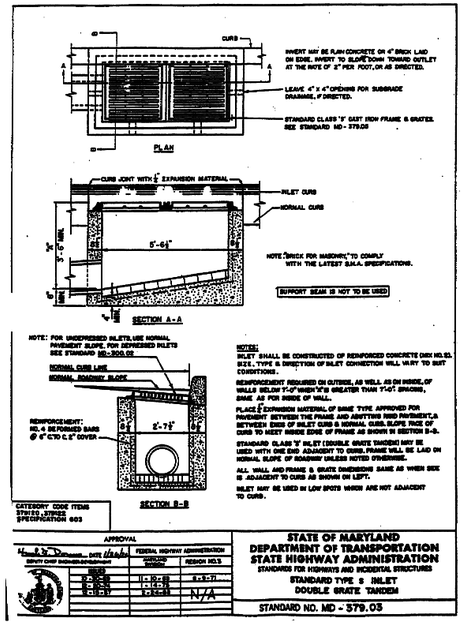


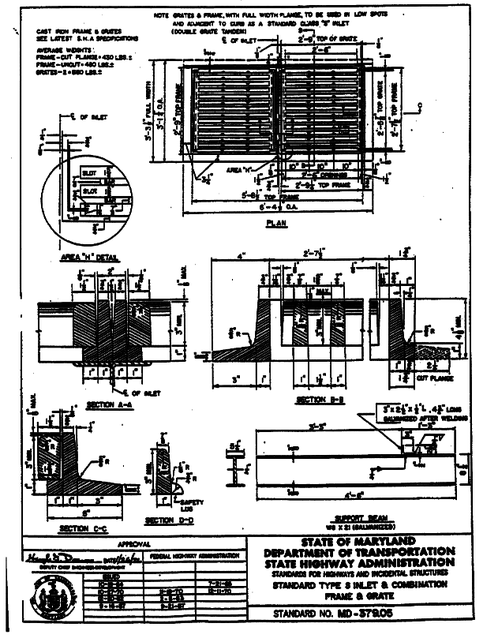












SWM–03

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
⚠	80	NOTE ADDED "FOR INFORMATION ONLY"	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

STORMWATER MANAGEMENT DETAILS

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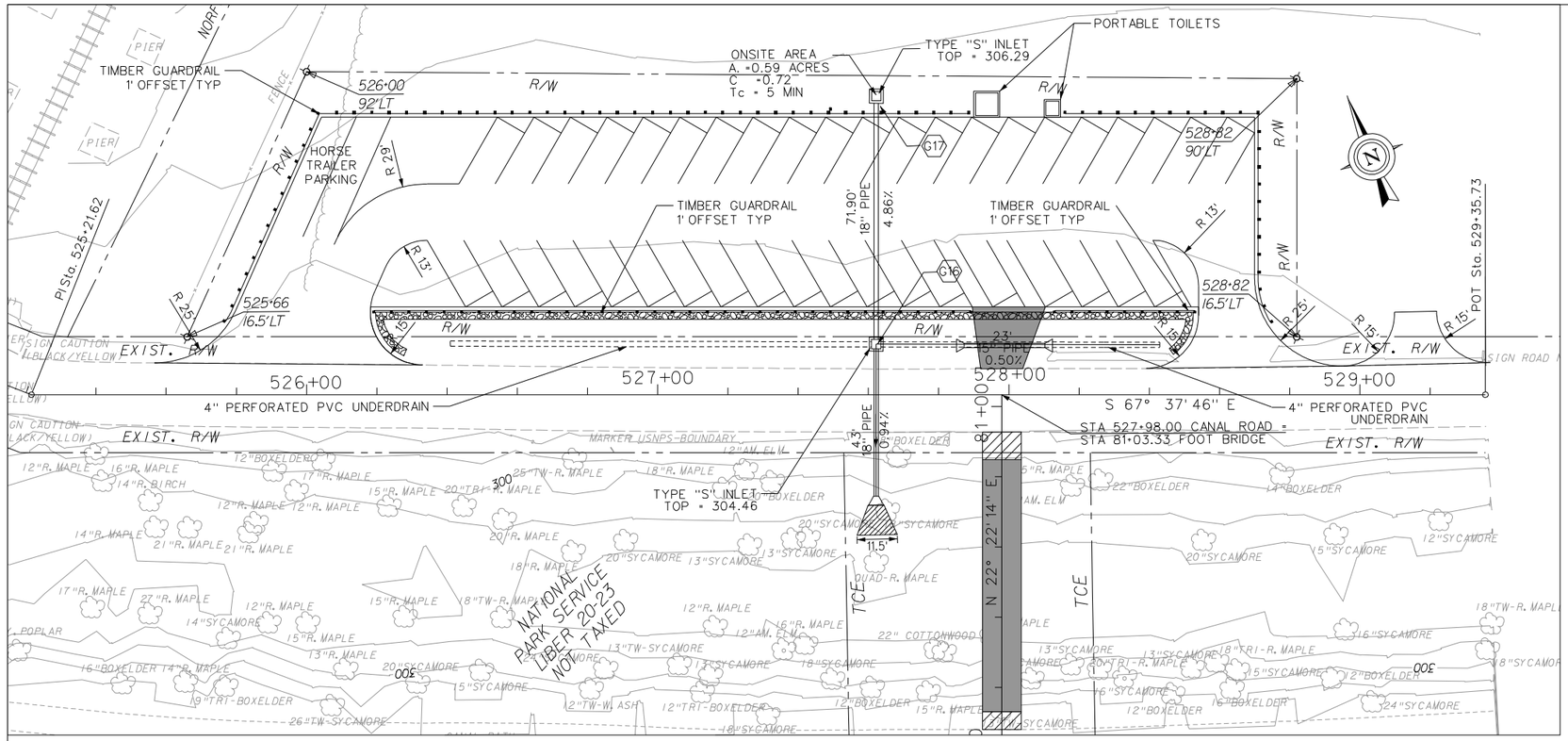
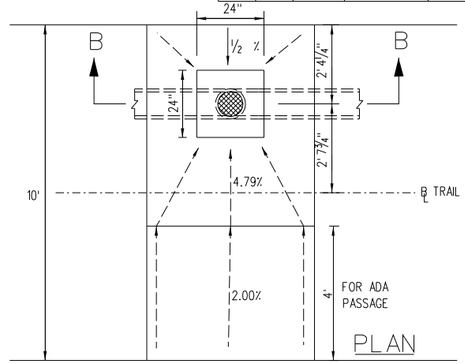
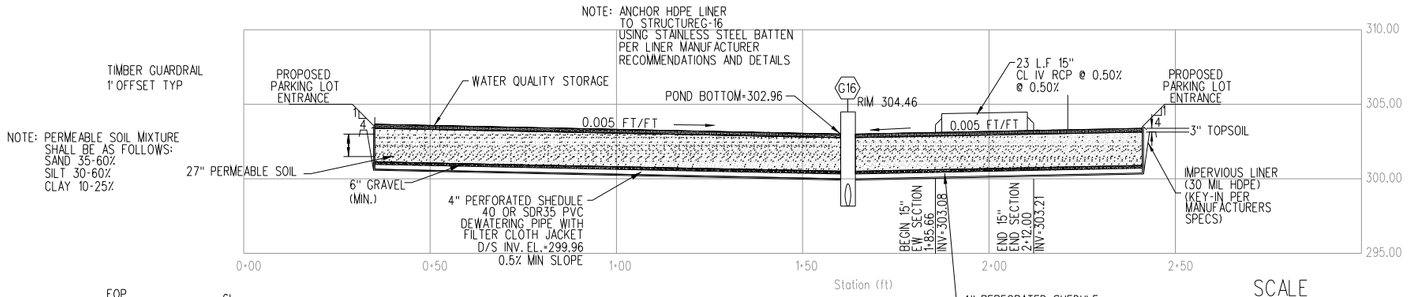
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	81	407

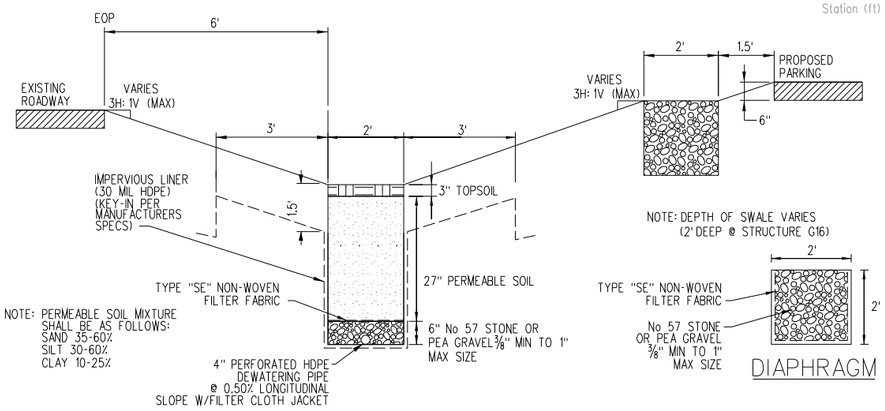




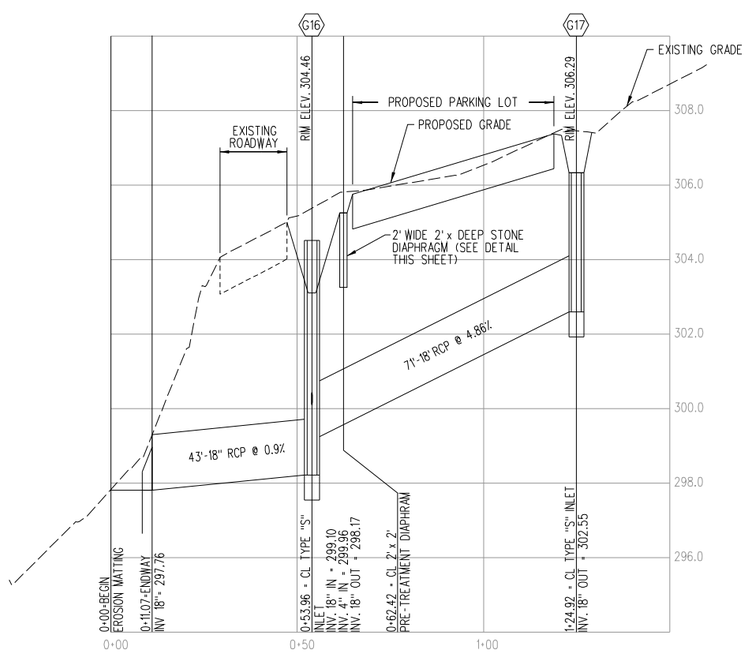
SECTION B-B
YARD DRAINS
NOT TO SCALE



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



DRY SWALE AND DIAPHRAGM
TYPICAL X-SECTION
NOT TO SCALE



SWM-04

2	81	ENTIRE SHEET REVISED	1/20/03	N.B.
1	81	FILTER DELETED, PROFILE ADDED	1/03/03	N.B.
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

Baker
Michael Baker Jr., Inc.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STORMWATER MANAGEMENT DETAILS

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- MD SIDE ONLY -

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON.WV WASHINGTON.MD	82	407

GENERAL NOTES (MD SIDE ONLY)

1. DESCRIPTION

THIS WORK SHALL CONSIST OF THE APPLICATION OF MEASURES THROUGH-OUT THE LIFE OF THE PROJECT TO CONTROL EROSION AND MINIMIZE THE SEDIMENTATION OF RIVERS, STREAMS AND IMPOUNDMENTS (LAKES, RESERVOIRS, BAYS, AND COASTAL WATERS). THE MEASURES SHALL INCLUDE BUT ARE NOT LIMITED TO THE USE OF BERMS, DIKES, DAMS, SEDIMENT BASINS AND/OR TRAPS, GEOTEXTILES, STONE CHECKS, SILT FENCES, SURFACE ROUGHING, MATS & NETS, AGGREGATE, MULCH, GRASSES, SLOPE DRAINS AND OTHER APPROVED METHODS. EROSION AND SEDIMENT CONTROL MEASURES AS DESCRIBED HEREIN AND APPROVED BY M.D.E. SHALL BE APPLIED TO ERODIBLE MATERIAL EXPOSED BY ANY ACTIVITY ON THIS PROJECT.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH THE CONSTRUCTION OF THE PAVEMENT. DRAINAGE FACILITIES SUCH AS PIPES, CULVERTS, HEADWALLS, DITCH PAVING, FLUMES, ETC., WHICH SHALL BE CONSTRUCTED CONCURRENT WITH THE COMMENCEMENT OF THE GRADING OPERATION TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS EROSION AND SEDIMENT CONTROL.

2. TEMPORARY CONTROLS

IN ACCORDANCE WITH THE DEPARTMENT OF THE ENVIRONMENT, TITLE 4, SUBTITLE 106, SEDIMENT CONTROL, ANNOTATED CODE OF MARYLAND REGULATIONS, AND GENERAL PROVISION 7.12 OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, THE CONTRACTOR WILL PROVIDE TEMPORARY POLLUTION CONTROL MEASURES FOR THE PURPOSE OF CORRECTING CONDITIONS THAT DEVELOP DURING CONSTRUCTION NOT FORESEEN DURING THE DESIGN OF THE PROJECT AND FOR THE PURPOSE OF PROVIDING CONTINUOUS EROSION AND SEDIMENT CONTROL FOR THE DURATION OF THE PROJECT.

3. STANDARDS & SPECIFICATIONS

THIS PLAN WILL BE IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION'S STANDARD SPECIFICATIONS TITLED "STANDARD SPECIFICATIONS FOR CONSTRUCTION & MATERIALS" DATED OCTOBER 1993, AND REVISIONS THEREOF, AND ADDITIONS THERETO INCLUDED IN THESE CONTRACT DOCUMENTS.

THE 1994 "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" (AND AMENDMENTS) WILL BE AN ACCEPTABLE REFERENCE FOR THIS PROJECT.

THIS INFORMATION MUST BE PRESENT ON THE PROJECT AT ALL TIMES.

4. DEFINITIONS

CLEARING: SHALL MEAN THE CLEARING OF TREES, BRUSH, SHRUBS, DOWN TIMBER, ROTTEN WOOD, RUBBISH, AND ANY OTHER VEGETATION (EXCEPT WHERE EXCLUDED BY THE DEFINITION FOR GRUBBING), AS WELL AS THE REMOVAL OF FENCES AND INCIDENTAL STRUCTURES, AND FOOTINGS.

GRUBBING: SHALL MEAN THE REMOVAL FROM THE GROUND OF STUMPS, ROOTS AND STUBS, BRUSH, FOREST LITTER, ORGANIC MATERIAL, AND DEBRIS.

DISTURBED AREA: SHALL MEAN AN AREA WHERE GRUBBING AND/OR GRADING HAS BEEN INITIATED.

STABILIZATION/STABILIZED: (CASE 1) - TO MEET THE REQUIREMENTS TO PROCEED WITH THE NEXT GRADING UNIT(S) OR OPERATION SHALL MEAN THE PLACEMENT OF SEED AND MULCH, SOD, ETC.

(CASE 2) - TO MEET THE REQUIREMENT FOR REMOVAL OF THE CONTROLS SHALL MEAN THAT THE COMPLETE GROWTH OF VEGETATION HAS OCCURRED (I.E., 3" HEIGHT OF PERMANENT GRASS OVER ALL AREAS).

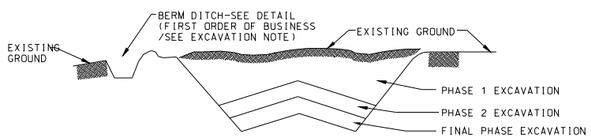
5. CLEARING AND GRUBBING

EROSION AND SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED AT THE BEGINNING OF THE GRUBBING PORTION OF THIS OPERATION. GRUBBING WILL BE RESTRICTED TO THE GRADING UNIT CURRENTLY ACTIVE.

6. EXCAVATION

IF BERM DITCHES ARE TO BE USED IN A CUT SECTION, THEY WILL BE EXCAVATED AND STABILIZED AS THE FIRST ORDER OF BUSINESS. LOCATION OF BERM DITCHES MUST BE APPROVED BY THE ENGINEER.

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15 FEET.



CONSTRUCTION SEQUENCE:

1. EXCAVATE AND STABILIZE BERM, SIDE AND OUTLET DITCHES.
2. PERFORM PHASE 1 EXCAVATION, DRESS, SEED & MULCH SLOPES WITH PERMANENT SEED & MULCH.
3. PERFORM PHASE 2 EXCAVATION, DRESS, SEED & MULCH SLOPES WITH PERMANENT SEED & MULCH.
4. PERFORM FINAL PHASE EXCAVATION, DRESS, SEED & MULCH SLOPES WITH PERMANENT SEED & MULCH. STABILIZE SURFACE DRAIN DITCHES. OVERSEED PHASE 1 & 2 SLOPES. IF REQUIRED, AS DETERMINED BY THE ENGINEER.

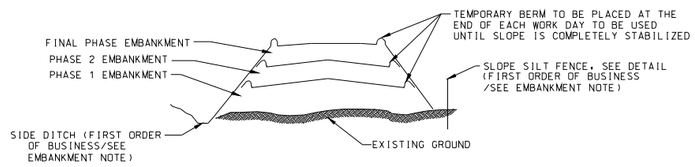
PHASING PLAN-CUT SECTION

NOTE:ONCE THE EXCAVATION WITHIN A SPECIFIC AREA HAS BEGUN, THE OPERATION SHALL BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF THE GRADING AND PLACEMENT OF PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OF 14 DAYS OR MORE MUST BE APPROVED BY THE ENGINEER. ANY VIOLATION OF THIS REQUIREMENT WILL RESULT IN THE CONTRACTOR ASSUMING THE RESPONSIBILITY OF PLACING TEMPORARY STABILIZATION AT HIS OWN COST AND EXPENSE.

7. EMBANKMENT

THE FIRST ORDER OF BUSINESS WILL BE THE EXCAVATION AND STABILIZATION OF SIDE DITCHES AND PLACEMENT OF PERIMETER CONTROL (SILT FENCE, ETC.). THE EMBANKMENT WILL BE MADE IN LIFTS MEETING THE SAME HEIGHT REQUIREMENTS AS PREVIOUSLY STATED FOR CUT SECTIONS. THE SLOPES WILL BE STABILIZED IMMEDIATELY FOLLOWING THE COMPLETION OF THE INTERMEDIATE STAGE(S).

AT THE END OF EACH WORK DAY, TEMPORARY BERMS (EARTH) AND SLOPE DRAINS WILL BE CONSTRUCTED ALONG THE TOP EDGE(S) OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF.



CONSTRUCTION SEQUENCE:

1. EXCAVATE AND STABILIZE SIDE DITCH AND/OR INSTALL PROPOSED CONTROLS AT THE TOE OF SLOPE.
2. PLACE PHASE 1 EMBANKMENT, PROVIDE TEMPORARY SEEDING OR STRAW MULCH.
3. PLACE PHASE 2 EMBANKMENT, DRESS. PROVIDE TEMPORARY SEEDING OR STRAW MULCH.
4. PLACE FINAL PHASE EMBANKMENT. DRESS. PREPARE & PLACE PERMANENT SEED & MULCH ON THE ENTIRE SLOPE.

PHASING PLAN-FILL SECTION

8. STABILIZATION / LIMITS OF DISTURBANCE

OTHER THAN LISTED BELOW, ONE UNIT EQUALING 20 ACRES (872,800 SQUARE FEET) THAT HAS BEEN CLEARED AND GRUBBED CAN BE ACTIVELY GRADED AT ONE TIME. ONCE GRADING BEGINS IN THE FIRST UNIT, A SECOND UNIT CLEARING AND GRUBBING OPERATION MAY BE STARTED.
A GRADING OPERATION IS DEFINED AS THE CONTRACTOR'S ABILITY TO PROVIDE ADEQUATE RESOURCES TO PERFORM THE GRADING IN A TIMELY MANNER AND PROVIDE AND MAINTAIN THE PROPER EROSION AND SEDIMENT CONTROL MEASURES. THE DISTRICT ENGINEER OR HIS DESIGNATE WILL BE THE FINAL AUTHORITY IN THIS DETERMINATION. A GRADING UNIT NEED NOT BE 20 CONTINUOUS ACRES. ALL APPROPRIATE PERIMETER CONTROLS WILL BE INSTALLED PRIOR TO ANY GRUBBING OPERATION. AREAS ARE TO BE PERMANENTLY OR TEMPORARILY SEEDED AND MULCHED WHEN SITE DEVELOPMENT WORK, GRADING OR OTHER EARTH DISTURBING ACTIVITIES CEASE TO BE CONTINUOUS FOR A PERIOD TO EXCEED 14 CALENDAR DAYS. UPON COMPLETION OF THE GRADING OR CONSTRUCTION, THE AREA WILL BE PERMANENTLY STABILIZED WITHIN 7 CALENDAR DAYS. THIS PERTAINS TO OTHER PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND OTHER SLOPES GREATER THAN 3:1. SLOPES LESS THAN 3:1 NEED NOT BE TEMPORARILY STABILIZED, HOWEVER, THE PERMANENT STABILIZATION WITHIN 7 DAYS IS REQUIRED. ONCE THE EXCAVATION OR EMBANKMENT REACHES THE "BOTTOM OR SUBGRADE," (I.E., CAPPING MATERIAL OR AGGREGATE SUBGRADE IN PLACE), THOSE AREAS IN WHICH PAVING WILL BE PLACED WILL BE EXEMPT FROM THE STABILIZATION REQUIREMENTS." ROADWAYS AND HAUL ROADS ACTIVELY BEING USED FOR DAILY CONVEYANCE OF EQUIPMENT WILL ALSO BE EXEMPT FROM THE STABILIZATION REQUIREMENTS. AREAS BETWEEN "TEMPORARY BERMS" EXCEPT MEDIAN AREAS NEED NOT BE STABILIZED UPON COMPLETION OF GRADING. THE 7 / 14 DAY REQUIREMENTS IS TAKEN TO MEAN THAT THE STABILIZATION OPERATION IS COMPLETE OR NEARING COMPLETION.

WHEN BALANCING EARTHWORK (BORROW FROM A CUT USED AS FILL AT A LOCATION DISTANT FROM THE CUT), CONSIDERATION WILL BE ALLOWED FOR GREATER THAN ONE UNIT OF GRADING. IN SUCH CASES, ONE UNIT OF CUT AND ONE GRADING UNIT OF FILL WILL BE ALLOWED TO BE GRUBBED AND GRADED. GREATER THAN ONE UNIT OF GRUBBED AND GRADED AREA SHALL BE ALLOWED FOR INTERCHANGE CONSTRUCTION. WHEN WET SOIL CONDITIONS ARE ENCOUNTERED, THE CONTRACTOR WILL BE ALLOWED TO GRUB AND GRADE ANOTHER UNIT PROVIDING THE INITIAL UNIT HAS BEEN PROPERLY STABILIZED.

NO SLOPE SHALL BE LEFT DISTURBED WITHOUT BENEFIT OF SURFACE ROUGHENING FOR MORE THAN 5 DAYS.

THE MOST STRINGENT REQUIREMENTS FOR STABILIZATION UNDER EXCAVATION, EMBANKMENT OR STABILIZATION/LIMITS OF DISTURBANCE WILL BE PREFERENTIALLY ENFORCED.

9. MAINTENANCE

SEDIMENT TRAPS, SEDIMENT BASINS, DITCHES, STRAW BALES, SILT FENCES, STONE OUTLET STRUCTURES, EARTH BERMS, ETC. SHALL BE MAINTAINED DURING THE CONSTRUCTION SEASON AS WELL AS THE WINTER MONTHS AND OTHER TIMES WHEN THE PROJECT IS CLOSED DOWN. THE MAINTENANCE INTERVAL SHALL BE AS SPECIFIED IN THE DOT/SHA STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS AND PLANS OR WHEN DIRECTED BY THE ENGINEER.

TRAPS WILL BE CLEANED WHEN THEY ARE 50% FILLED. SILT FENCE STONE OUTLET STRUCTURES AND STRAW BALES SHALL HAVE SEDIMENTATION REMOVED WHEN IT REACHES 50% THE HEIGHT OF THE CONTROL DEVICE. THESE SPOILS WILL BE REMOVED TO AN APPROVED SITE.

CONTROLS WILL BE INSPECTED IMMEDIATELY FOLLOWING RAIN STORMS. THE CONTRACTOR WILL IMMEDIATELY REPAIR CONTROLS WHEN DAMAGED.

ACCESS SHALL BE MAINTAINED TO ALL SEDIMENT CONTROL REQUIRING MAINTENANCE UNTIL THOSE CONTROLS ARE NO LONGER REQUIRED.

MAINTENANCE OF THE CONTROL DEVICES IS ESSENTIAL. LACK OF COOPERATION ON THE PART OF THE CONTRACTOR WILL BE CONSIDERED AS A MAJOR VIOLATION TO THE PLAN AND GROUNDS FOR A "SHUT DOWN" OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE A POINT OF CONTACT TO ADDRESS MAINTENANCE ISSUES.

10. EROSION AND SEDIMENT CONTROL EXCAVATION

THIS ITEM HAS BEEN ESTABLISHED TO INCLUDE THE EXCAVATION, BACKFILLING AND MAINTENANCE OF SEDIMENT TRAPS. IT SHALL ALSO INCLUDE THE REMOVAL OF SILT IN AND AROUND SEDIMENT BASINS, SILT FENCE, STRAW BALE DITCH CHECKS, TEMPORARY STONE OUTLET STRUCTURE, EARTH BERMS, SWALES AND DITCHES. MEASUREMENT AND PAYMENT WILL BE BASED ON THE CUBIC YARD WHICH SHALL INCLUDE ALL EQUIPMENT, TOOLS AND LABOR REQUIRED.

11. STOCKPILED MATERIAL

SALVAGED TOPSOIL WILL BE PLACED ON WELL DRAINED LAND AWAY FROM LIVE STREAMS AND IN ACCORDANCE WITH APPROVED EROSION AND SEDIMENT CONTROL MEASURES. IT SHALL BE PLACED IN PILES OF NEAT CONFORMATIONS AND SEEDED WITH TEMPORARY SEED IMMEDIATELY AFTER FINAL SHAPING OF THE PILE IN ACCORDANCE WITH SECTION 704 OF THE DOT/SHA STANDARD SPECIFICATIONS. THE CONTRACTOR WILL PROVIDE AN ADEQUATE QUANTITY OF SILT FENCE TO CONTROL THE PERIMETER OF THE STOCKPILE UNTIL SUITABLE VEGETATION IS ESTABLISHED. IF HE ELECTS, THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, MAY CONSTRUCT AN EARTH BERM IN LIEU OF SILT FENCE. THE COST FOR THESE CONTROLS WILL BE IN ACCORDANCE WITH THE APPROPRIATE CONTRACT ITEMS.

12. EXCAVATED MATERIAL

MATERIALS EXCAVATED FOR THE CONSTRUCTION OF SEDIMENT TRAPS WILL NOT BE STOCKPILED IN THE AREA OF THE TRAP. IT WILL EITHER BE PLACED IN AN EMBANKMENT OR WASTED AS DIRECTED BY THE ENGINEER. EXCAVATION FROM CUTS TO BE USED FOR EMBANKMENTS WILL NOT BE STOCKPILED UNLESS PERIMETER CONTROLS ARE UTILIZED. COSTS FOR THESE CONTROLS WILL BE BORNE BY THE CONTRACTOR. IF THIS MATERIAL IS STOCKPILED UNDER THE DIRECTION OF THE ENGINEER, THE ADMINISTRATION WILL ASSUME THE COSTS OF THE CONTROLS.

13. DEWATERING DISCHARGE

SEDIMENT - LADEN DEWATERING DISCHARGE MUST BE DIRECTED TO AN APPROVED SEDIMENT TRAPPING MEASURE PRIOR TO RELEASE FROM THE SITE.

14. TEMPORARY SLOPE DRAINS

ALL TEMPORARY SLOPE DRAINS WILL DISCHARGE INTO THE BACK OF SEDIMENT TRAPS, INTO SEDIMENT BASINS, OR DITCHES DISCHARGING INTO TRAPS OR BASINS.

15. GEOTEXTILE

GEOTEXTILE WILL BE USED WITH ALL RIPRAP DITCHES (BY TYPE), TEMPORARY STONE OUTLET STRUCTURES (T.S.O.S.) AND STABILIZED CONSTRUCTION ENTRANCES (S.C.E.), BOTH LIGHT AND HEAVY DUTY.

A LIGHT DUTY S.C.E. IS USED WHERE MOST TRAVEL WILL BE SINGLE AXLE VEHICLES WITH AN OCCASIONAL MULTI-AXLE TRUCK AND THE AREA HAS BEEN GRADED TO OR NEAR SUBGRADE. A HEAVY DUTY S.C.E. IS WHERE THE AREA IS ROUGH GRADED AND THE MAJORITY OF THE TRAFFIC IS MULTI-AXLED.

TO PREVENT DAMAGE TO THE GEOTEXTILE, THE MAXIMUM DROP HEIGHT FOR THE MATERIALS SHALL BE:

MATERIAL	MAXIMUM DROP HEIGHT
4" - 12" STONE FOR T.S.O.S.	3 FT.
CLASS I RIPRAP	3 FT.
CLASS II, III RIPRAP	PLACED WITHOUT FREEFALL

THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS, HYDRO-CARBONS, MILDEW, ROT RESISTANT AND CONFORM TO THE FOLLOWING PROPERTIES:

GEOTEXTILES SHALL MEET THE CLASS SPECIFIED IN THE SPECIAL PROVISIONS, PLANS OR STANDARDS, AND SHALL BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS, COMPOSED AS A MINIMUM OF 85 PERCENT BY WEIGHT OF POLYOLEPHINS, POLYESTERS OR POLYAMIDES. THE GEOTEXTILE SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE. GEOTEXTILES USED IN THE CONSTRUCTION OF SILT FENCE SHALL CONTAIN SUFFICIENT AMOUNTS OF ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 12 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF UP TO 120 DEGREES F.

ALL VALUES SPECIFIED ARE MINIMUM OR MAXIMUM ROLL VALUES.

WOVEN GEOTEXTILES FOR SILT FENCE SHALL HAVE A 50 LB./IN. MINIMUM TENSILE STRENGTH AND A 20 LB./IN. MINIMUM TENSILE MODULUS WHEN TESTED IN ACCORDANCE WITH MSMT 509. THE MATERIAL SHALL ALSO HAVE A 0.3 GAL/SQ. FT./ MINUTE MINIMUM LOW RATE AND A 75 PERCENT MINIMUM FILTERING EFFICIENCY WHEN TESTED IN ACCORDANCE WITH MSMT 322.

ALL GEOTEXTILES SHALL BE LISTED IN THE NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPEP) FOR GEOTEXTILES. THE GEOTEXTILE SHALL BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS, COMPOSED OF A MINIMUM 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS. THE FIBERS SHALL BE FORMED INTO A STABLE NETWORK SO THAT THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SELVAGES. GEOTEXTILES SHALL CONFORM TO THE FOLLOWING:

MARYLAND APPLICATION CLASS	TYPE OF GEOTEXTILE	GRAB STRENGTH LB D 4632	PUNCTURE STRENGTH LB D 4833	PERMITTIVITY SEC-1 D 4491	APPARENT OPENING SIZE MAX MM D 4751	TRAPEZOID TEAR STRENGTH LB D 4533
SD TYPE I	NONWOVEN	160	56	0.50	0.43	55
	WOVEN, MONOFILAMENT	250	90	0.50	0.43	90
TYPE II	NONWOVEN	160	56	0.20	0.25	55
	WOVEN, MONOFILAMENT	250	90	0.20	0.25	90
PE TYPE I	WOVEN, MONOFILAMENT	250	90	0.70	0.43	90
	NONWOVEN	200	80	0.70	0.43	80
TYPE II	WOVEN, MONOFILAMENT	250	90	0.20	0.25	90
	NONWOVEN	200	80	0.20	0.25	80
TYPE III	WOVEN, MONOFILAMENT	250	90	0.10	0.22	90
	NONWOVEN	200	80	0.10	0.22	80
SE	WOVEN	250	90	0.02	0.30	90
	NONWOVEN	200	80	0.02	0.30	80
ST	WOVEN	300*	110	0.05	0.15**	110
F	WOVEN	100	-	0.05	0.60	-
E	NONWOVEN	90	30	0.50	0.30	30

NOTE 1: ALL PROPERTY VALUES ARE BASED ON MINIMUM AVERAGE ROLL VALUES IN THE WEAKEST PRINCIPLE DIRECTION, EXCEPT FOR APPARENT OPENING SIZE.
NOTE 2: THE ULTRAVIOLET STABILITY SHALL BE 50 PERCENT AFTER 500 HOURS OF EXPOSURE FOR ALL CLASSES, EXCEPT CLASS F, WHICH SHALL BE 70 PERCENT (D 4355).

*MINIMUM 15 PERCENT ELONGATION.
**THIS IS A MINIMUM APPARENT OPENING SIZE, NOT A MAXIMUM

ONLY THOSE GEOTEXTILES WHICH HAVE BEEN TESTED BY NTPEP WILL BE CONSIDERED CANDIDATES FOR USE. IN ADDITION, THE GEOTEXTILES SHALL CONFORM TO THE CONTRACT DOCUMENTS AND TO THE GEOTEXTILE ACCEPTANCE AND QUALITY ASSURANCE PROCEDURE, MSMT 732.

GEOTEXTILES USED FOR REINFORCEMENT APPLICATIONS SHALL HAVE A SEPARATE APPROVAL PROCESS.

SEAM AND OVERLAP D 4884. WHEN GEOTEXTILES ARE JOINED BY SEWING, THE GEOTEXTILE SEAM SHALL CONFORM TO THE FOLLOWING:

(A) SEAMS SHALL BE EITHER "J" OR "BUTTERFLY" TYPE AND SHALL UTILIZE A LOCK STITCH.

(B) SEAMS SHALL CONFORM TO THE TENSILE STRENGTH REQUIREMENTS FOR THE GEOTEXTILE WHEN TESTED ACROSS THE SEAM.

(C) THE DURABILITY OF THE THREAD FOR SEAMING SHALL BE AT LEAST EQUAL TO THE GEOTEXTILE ITSELF.

SECURING PINS OR STAPLES. SECURING PINS OR STAPLES SHALL HAVE A MINIMUM 10 IN. LENGTH AND SHALL BE DESIGNED TO SECURELY HOLD THE GEOSYNTHETIC IN PLACE DURING CONSTRUCTION.

16. CONTRACTOR PAYMENT

THE CONTRACTOR WILL ONLY BE COMPENSATED FOR WORK THAT IS DONE IN ACCORDANCE WITH THE SPECIFICATION, SPECIAL PROVISIONS AND THESE PLANS. ANY CORRECTIONS BROUGHT ABOUT BY NON-COMPLIANCE OR ERRORS BY THE CONTRACTOR WILL BE MADE AT HIS EXPENSE.

STANDARD STABILIZATION NOTE

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

EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED.

ESC-01

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL GENERAL NOTES

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- MD SIDE ONLY -

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	83	407

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE ADMINISTRATION (WMA) AT (410) 631-3510 SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE ADMINISTRATION, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF WMA.

2. THE CONTRACTOR MUST NOTIFY WMA IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:

   A. THE REQUIRED PRE-CONSTRUCTION MEETING.

   B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES.

   C. DURING THE INSTALLATION OF SEDIMENT BASINS (TO BE CONVERTED INTO PERMANENT STORMWATER MANAGEMENT STRUCTURES) AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION OF EACH STEP IS MANDATORY.

   D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).

   E. PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.

   F. PRIOR TO FINAL ACCEPTANCE.

3. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND SHALL HAVE THEM INSPECTED AND APPROVED BY THE AGENCY INSPECTOR OR WMA INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE WMA INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM WMA INSPECTOR AND AGENCY INSPECTOR. THE CONTRACTOR MUST OBTAIN PRIOR AGENCY AND WMA APPROVAL FOR CHANGES TO THE SEDIMENT CONTROL PLAN AND/OR SEQUENCE OF CONSTRUCTION.

4. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.

5. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM WMA INSPECTOR AND AGENCY INSPECTOR.

6. ALL SEDIMENT BASINS, TRAP EMBANKMENTS AND SLOPES, PERIMETER DIKES, SWALES, AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES, AS SOON AS POSSIBLE BUT NO LATER THAN SEVEN (7) CALENDAR DAYS AFTER ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT FOR STABILIZATION MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.)

7. THE CONTRACTOR SHALL APPLY SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS AND STOCKPILES WITHIN FOURTEEN (14) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED IN THE AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT MAY BE REDUCED TO SEVEN (7) DAYS FOR SENSITIVE AREAS.)

8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION FOR ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENT AND AN APPROVED ANCHOR MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10 PERCENT AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NO LATER THAN FOURTEEN (14) CALENDAR DAYS AFTER ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, TEMPORARY SEED AND ANCHORED STRAW MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE APPLIED BY MARCH 15 OR EARLIER IF GROUND AND WEATHER CONDITIONS ALLOW.

9. THE SITE'S APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, DAILY LOG BOOKS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF WMA AND AGENCY RESPONSIBLE FOR PROJECT.

10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO LOWER THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING, RIPRAP OR OTHER APPROVED STABILIZATION MEASURES.

12. TEMPORARY SEDIMENT CONTROL DEVICES MAY BE REMOVED, WITH PERMISSION OF WMA INSPECTOR AND AGENCY INSPECTORS, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.

14. FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS, WHICH MAY DRAIN AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL. AREAS DESIGNED TO HAVE STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.

15. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION WHICH IS EXISTING OR UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT TRAP OR BASIN.

16. THE WMA INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SAFETY OR SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.

17. ALL TRAP DEPTH DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. ALL TRAPS MUST HAVE A STABLE OUTFALL. ALL TRAPS AND BASINS SHALL HAVE STABLE INFLOW POINTS.

18. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO APPROPRIATE SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SODDING, AND GROUND COVERS.

19. TEMPORARY SEDIMENT TRAP(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A POINT ONE-HALF (1/2) THE DEPTH BETWEEN THE OUTLET CREST AND THE BOTTOM OF THE TRAP. SEDIMENT BASINS SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE-HALF (1/2) THE DEPTH BETWEEN THE DEWATERING ELEVATION AND THE BOTTOM OF THE BASIN.

20. SEDIMENT REMOVED FROM TRAPS (AND BASINS) SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR TREE-SAVE AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE.

21. WHERE DEEMED APPROPRIATE BY THE ENGINEER OR INSPECTOR, SEDIMENT BASINS AND TRAPS MAY NEED TO BE SURROUNDED WITH AN APPROVED SAFETY FENCE. THE FENCE MUST CONFORM TO LOCAL ORDINANCES AND REGULATIONS. THE DEVELOPER OR OWNER SHALL CHECK WITH LOCAL BUILDING OFFICIALS ON APPLICABLE SAFETY REQUIREMENTS. WHERE SAFETY FENCE IS DEEMED APPROPRIATE AND LOCAL ORDINANCES DO NOT SPECIFY FENCING SIZES AND TYPES, THE FOLLOWING SHALL BE USED AS A MINIMUM STANDARD: THE SAFETY FENCE MUST BE MADE OF WELDED WIRE AND AT LEAST FORTY-TWO (42) INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN EIGHT (8) FEET, HAVE MESH OPENINGS NO GREATER THAN TWO (2) INCHES IN WIDTH AND FOUR (4) INCHES IN HEIGHT WITH A MINIMUM OF FOURTEEN (14) GAUGE WIRE. FENCE MUST BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.

22. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION FOR AREAS OUTSIDE OF DESIGNED CONTROLS OR AS DIRECTED BY ENGINEER OR WMA INSPECTOR:

   A. CALL "MISS UTILITY" AT 1-800-257-7777 FORTY-EIGHT (48) HOURS PRIOR TO THE START OF WORK.

   B. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.

   C. TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY, UNLESS OTHERWISE DIRECTED.

   D. TEMPORARY SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

23. OFF-SITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY MUST HAVE PRIOR APPROVAL BY WMA; OTHERWISE, APPROVAL MUST BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE MUST BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.

24. SITES WHERE INFILTRATION DEVICES ARE USED FOR THE CONTROL OF STORMWATER, EXTREME CARE MUST BE TAKEN TO PREVENT RUNOFF FROM UNSTABILIZED AREAS FROM ENTERING THE STRUCTURE DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISH GRADE BOTTOM ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING A SEDIMENT TRAP TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.

25. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS IN UNPAVED AREAS SHALL BE STABILIZED AND PROTECTED TO PREVENT TRACKING OF MUD ONTO PUBLIC WAYS.

26. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT TRAP OR SEDIMENT BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARILY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO THE INLETS TO AVOID SURCHARGING AND OVERFLOW OF INLETS IN SUMP AREAS.

27. SITE INFORMATION:

TOTAL AREA OF SITE	12.30	ACRES
AREA DISTURBED	6.09	ACRES
AREA TO BE ROOFED OR PAVED	1.89	ACRES
TOTAL CUT	N/A	
TOTAL FILL	N/A	
OFF-SITE WASTE/BORROW AREA	N/A	
LOCATION	N/A	

DESIGN CERTIFICATION

"I hereby certify that this Plan has been designed in accordance with the 1994 Standards and Specifications for Soil Erosion and Sediment Control or current revisions thereof, and Department of the Environment Stormwater Management Regulations."

Date _____ Designer's Signature _____

P.E., R.L.S. OR R.L.A. (Circle) Md. Registration No. _____ Printed Name _____

OWNER'S/DEVELOPER'S CERTIFICATION

"I/We hereby certify that all clearing, grading, construction, and/or development will be done pursuant to the Plan and that any responsible personnel involved in the construction project will have a certificate or attendance at a Maryland Department of the Environment approved training program for the control of sediment and erosion before beginning the project. I hereby authorize the right of entry for periodic on-site evaluation by State of Maryland, Department of the Environment, Compliance Inspectors."

Date _____ Owner/Developer Signature _____

Card No. _____ Printed Name and Title _____

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

ESC-02

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTES AND DETAIL 1

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON,WV WASHINGTON,MD	84	407

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. LENGTH - MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).

2. WIDTH - 10' MINIMUM SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.

4. STONE - CRUSHED AGGREGATE (2" to 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.

5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE ISS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.

6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

SILT FENCE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 1 1/2" X 1 1/2" SQUARE (MINIMUM) CUT, OR 1 3/4" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.

2. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND 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 FT2/MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.) TEST: MSMT 322	

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.

4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50 % OF THE FABRIC HEIGHT.

SUPER SILT FENCE

NOT TO SCALE

CONSTRUCTION SPECIFICATION

FENCING SHALL BE 42 INCHES IN HIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATON FOR A 6 FOOT FENCE SHALL BE USED, SUBSTITUTING 42 INCH FABRIC AND 6 FOOT LENGTH POST

1. POLES DO NOT NEED TO SET IN CONCRETE.

2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH WIRE TIES OR STAPLES.

3. FILTER CLOTH SHALL BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.

4. FILTER CLOTH SHALL BE EMBEDED A MINIMUM OF 8" INTO THE GROUND.

5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVER LAPPED BY 6" AND FOLDED.

6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUIL DUST REMOVED WHEN "BULGES" DEVELOP IN TO SILT FENCE.

DESIGN CRITERIA

SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM)	SILT FENCE LENGTH (MAXIMUM)
0 - 10 %	0 - 10:1	UNLIMITED	UNLIMITED
10 - 10 %	10:1 - 5:1	200 FEET	1500 FEET
20 - 10 %	5:1 - 3:1	100 FEET	1000 FEET
33 - 10 %	3:1 - 2:1	100 FEET	500 FEET
50 %+	2:1+	50 FEET	250 FEET

SUMP PIT

NOT TO SCALE

DETAIL - SUMP PIT

CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. PIT DIMENSIONS ARE VARIABLE, WITH THE MINIMUM DIAMETER BEING 2 TIMES THE STANDPIPE DIAMETER.

2. THE STANDPIPE SHOULD BE CONSTRUCTED BE PERFORATING A 12" TO 24" DIAMETER CORRUGATED OR PVC PIPE. THEN WRAPPING WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE CLASS E. THE PERFORATIONS SHALL BE 1/2" X 6" SLITS OR 1" DIAMETER HOLES.

3. A BASE OF FILTER MATERIAL CONSISTING OF CLEAN GRAVEL OR #57 STONE SHOULD BE PLACED IN THE PIT TO A DEPTH OF 12". AFTER INSTALLING THE STANDPIPE, THE PIT SURROUNDING THE STANDPIPE SHOULD THEN BE BACKFILLED WITH THE SAME FILTER MATERIAL.

4. THE STANDPIPE SHOULD EXTEND 12" TO 18" ABOVE THE LIP OF THE PIT OR THE RISER CREST ELEVATION (BASIN DEWATERING ONLY) AND THE FILTER MATERIAL SHOULD EXTEND 3" MINIMUM ABOVE THE ANTICIPATED STANDING WATER ELEVATION.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE — PAGE D - 13 - 2 — MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

EARTH DIKE

NOT TO SCALE

	DIKE A	DIKE B
a - DIKE HEIGHT	18"	30"
b - DIKE WIDTH	24"	36"
c - FLOW WIDTH	4'	6'
d - FLOW DEPTH	12"	24"

STANDARD SYMBOL A-2 B-3

"EARTH DIKE TYPE" MATCH PLAN

1. SEED AND COVER WITH STRAW MULCH.

2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOD.

3. 4" - 7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO THE SOIL 7" MINIMUM.

CONSTRUCTION SPECIFICATION

1. ALL TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1%.

2. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.

3. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED, STABILIZED AREA AT A NON-EROSIVE VELOCITY.

4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OPTIONAL MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE.

5. THE DIKE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.

6. FILL SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.

7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIKE.

8. INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

TREE PROTECTION

NOT TO SCALE

CORRECT METHODS OF TREE FENCING

a. Snow Fence - Standard 40-inch high snow fence shall be placed at the limits of clearing on standard steel posts set 6 feet apart.

b. Board Fence - Board fencing consisting of 4-inch square posts set securely in the ground and protruding at least 4 feet above the ground shall be placed at the limits of clearing with a minimum of two horizontal boards between posts. If it is not practical to erect a fence at the drip line, construct a triangular fence nearer the trunk. The limits of clearing will still be located at the drip line, since the root zone within the drip line will still require protection.

c. Cord Fence - Posts with a minimum size of 2 inches square or 2 inches in diameter set securely in the ground and protruding at least 4 feet above the ground shall be placed at the limits of clearing with two rows of cord 57/64 -inch or thicker at least 2 feet apart running between posts with strips of colored surveyor's flagging tied securely to the string at intervals not greater than 3 feet.

d. Plastic Fencing- 40-inch"international orange" plastic (polyethylene) web fencing secured to conventional metal "T" or "U" posts driven to a minimum depth of 18 inches on 6-foot minimum centers shall be installed at the limits of clearing. The fence should have the following minimum physical qualities:

Tensile yield: Average 2,000 lbs. per 4-foot width (ASTM D638)

Ultimate tensile yield: Average 2,900 lbs. per 4-foot width (ASTM D638)

Elongation at break %): Greater than 1000% (ASTM D638)

Chemical resistance: Inert to most chemicals and acids

ESC-03

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTES AND DETAIL 2

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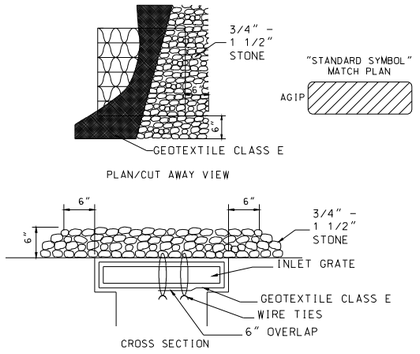
- MD SIDE ONLY -

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON.WV WASHINGTON.MD	85	407

CONSTRUCTION SPECIFICATIONS

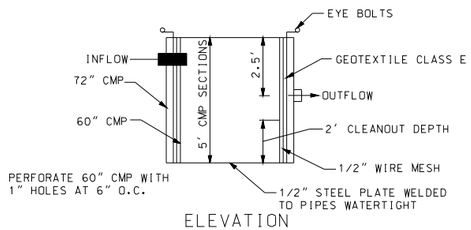
1. LIFT GRATE AND WRAP WITH GEOTEXTILE CLASS E TO COMPLETELY COVER ALL OPENINGS. THEN SET GRATE BACK IN PLACE.

2. PLACE 3/4" TO 1 1/2" STONE, 4"-6" THICK ON THE GRATE TO SECURE THE FABRIC AND PROVIDE ADDITIONAL FILTRATION.

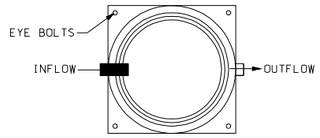


AT GRADE INLET PROTECTION (AGIP)

NOT TO SCALE



ELEVATION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. THE FOLLOWING FORMULA SHOULD BE USED IN DETERMINING THE STORAGE VOLUME OF THE SEDIMENT TANK: 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP DISCHARGE CAPACITY.
2. AN EXAMPLE OF A TYPICAL SEDIMENT TANK IS SHOWN ABOVE. OTHER CONTAINER DESIGNS CAN BE USED IF THE STORAGE VOLUME IS ADEQUATE AND APPROVAL IS OBTAINED FROM THE LOCAL APPROVING AGENCY.
3. TANKS MAY BE CONNECTED IN SERIES.
4. THE PORTABLE SEDIMENT TANK SHALL BE USED TO DEWATER AREAS WHERE PAVEMENT HAS BEEN REMOVED.

PORTABLE SEDIMENT TANK

NOT TO SCALE

STANDARD INLET PROTECTION CONSTRUCTION SPECIFICATIONS

1. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18" BELOW THE NOTCH ELEVATION.
2. DRIVE THE 2" x 4" CONSTRUCTION GRADE LUMBER POSTS 1' INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2" x 4" FRAME USING THE OVERLAP JOINT SHOWN ON DETAIL 23A. THE TOP OF THE FRAME (WEIR) MUST BE 6" BELOW ADJACENT ROADWAYS WHERE FLOODING AND SAFETY ISSUES MAY ARISE.
3. STRETCH THE 1/2" x 1/2" WIRE MESH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. THE ENDS MUST MEET AND OVERLAP AT A POST.
4. STRETCH THE GEOTEXTILE CLASS E TIGHTLY OVER THE WIRE MESH WITH THE GEOTETILE EXTENDING FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. FASTEN THE GEOTEXTILE FIRMLY TO THE FRAME. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST. BE OVERLAPPED. AND FOLDED. THEN FASTENED DOWN.
5. UNTIL THE LAYER OF EARTH IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
6. IF THE INLET IS NOT IN A SUMP. CONSTRUCT A COMPACTED EARTH DIKE ACROSS THE DITCH LINE DIRECTLY BELOW IT. THE TOP OF THE EARTH DIKE SHOULD BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME.
7. THE STRUCTURE MUST BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND THE GEOTEXTILE REPLACED WHEN WHEN IT BECOMES CLOGGED.

CONSTRUCTION SPECIFICATIONS

DETAIL 4 - PIPE SLOPE DRAIN

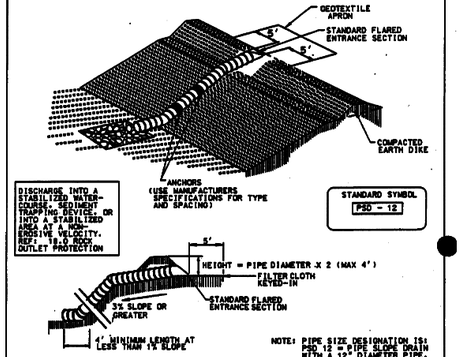


Table 6 Design Criteria for Pipe Slope Drain

Size	Pipe/Tubing Diameter (D) in	Maximum Drainage Area (Acres)
PSD-12	12	0.5
PSD-18	18	1.5
PSD-21	21	2.5
PSD-24	24	3.5
PSD-24 (2)	24	5.0

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PIPE SLOPE DRAIN

Construction Specifications - Pipe Slope Drain

1. The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.
2. The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.
3. Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.
4. A flared end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.
5. The Pipe Slope Drain shall be securely anchored to the slope by staking at the grommets provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should be provided by pipe suppliers.
6. The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.
7. All pipe connections shall be watertight.
8. Whenever possible where a PSD drains an unstabilized area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyance that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be as far away from the sediment control outlet as possible.
9. When the drainage area is stabilized, the PSD shall discharge onto a stabilized area at a non-erosive velocity.
10. Inspection and any required maintenance shall be performed periodically and after each rain event.
11. The inlet must be kept open at all times.

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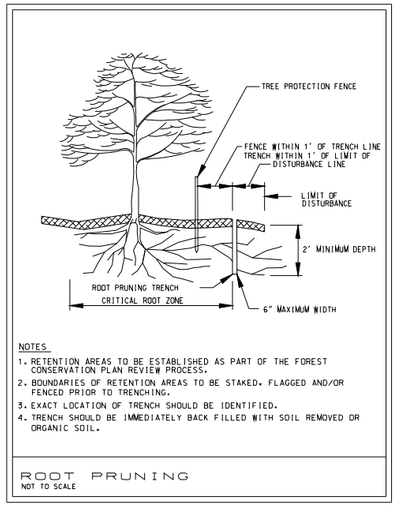
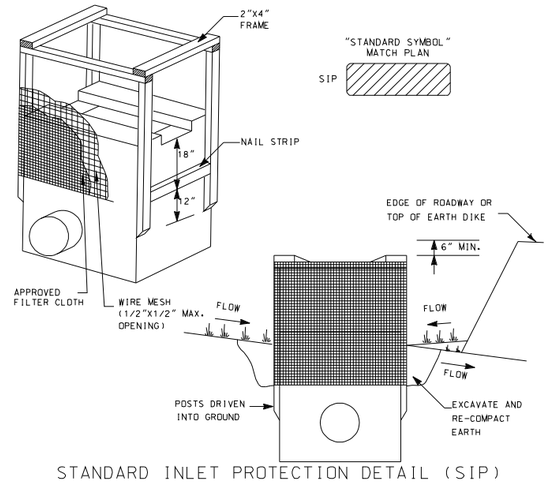


NOTES

1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS TO BE STAKED. FLAGGED AND/OR FENCED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
4. TRENCH SHOULD BE IMMEDIATELY BACK FILLED WITH SOIL REMOVED OR ORGANIC SOIL.

ROOT PRUNING

NOT TO SCALE



STANDARD INLET PROTECTION DETAIL (SIP)

NOT TO SCALE

ESC-04

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTES AND DETAIL 3

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

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- MD SIDE ONLY -

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON,WV WASHINGTON,MD	86	407

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

SEDIMENT CONTROL DEVICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING AND VEGETATIVE ESTABLISHMENT TO PREVENT LARGE QUANTITIES OF SEDIMENT AND ASSOCIATED CHEMICALS AND NUTRIENTS FROM WASHING INTO SURFACE WATERS.

SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. SITE PREPARATION
- i. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.
- ii. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.
- iii. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREA OVER 5 ACRES.

B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
- i. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
- ii. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME TRADE NAME OR TRADEMARK AND WARRANTEE OF THE PRODUCER.
- iii. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50 % WILL PASS THROUGH A #100 MESH SIEVE AND 90 - 100 % WILL PASS THROUGH A #200 MESH SIEVE.
- iv. INCORPORATE LIME AND FERTILIZER INTO HE TOP 3" - 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

C. SEEDBED PREPARATION
- i. TEMPORARY SEEDING
  - a. SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED IT SHOULD NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
  - b. APPLY FERTILIZER AND LIME AS PRESCRIBED PLAN ESC-06.
  - c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3" - 5" OF SOILED BY DISKING OR OTHER SUITABLE MEANS.
- ii. PERMANENT SEEDING
  - a. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:
    1. SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
    2. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
    3. THE 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 IF LOVEGRASS OR SERCIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (>30 %) SILT PLUS CLAY) WOULD BE ACCEPTABLE.
    4. SOIL SHALL CONTAIN 1.5 % MINIMUM ORGANIC MATTER BY WEIGHT.
    5. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
    6. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL SECTION 21 FOR TOPSOIL.

  - b. 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 BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.
  - c. APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS.
  - d. MIX SOIL AMENDMENTS INTO THE TOP 3" - 5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. WHERE SITE CONDITION WILL NOT PERMIT NORMAL SEEDBED PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE. STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1" - 3" OF SOIL SHOULD BE LOOSE AND FRIABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

D. SEED SPECIFICATIONS
- 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 SOWING SUCH MATERIAL ON THIS JOB. NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.
- ii. INOCULANT - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES 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. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75° TO 80° F CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

E. METHODS OF SEEDING
- i. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER), BROADCAST OR DROP SEEDER, OR A CULTIPACKER SEEDER.
  - a. 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 OF SOLUBLE NITROGEN; P205 (PHOSPHORUS): 200 LBS/AC; K20 (POTASSIUM): 200 LBS/AC.
  - b. LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE, (UP TO 3 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.
  - c. SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.
- ii. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
  - a. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING SUMMARIES ON SHEET ESC-06. THE SEEDED AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
  - b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- iii. DRIII OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
  - a. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
  - b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)
- i. STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLY BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.
- ii. WOOD CELLULOSE FIBER MULCH (WCFM)
  - a. WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
  - b. 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 SPREAD SLURRY.
  - c. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
  - d. WCFM MATERIAL 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 SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
  - e. WCFM MATERIAL SHALL CONTAIN NO ELEMENT OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
  - f. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENTH TO APPROXIMATELY 10mm., DIAMETER APPROXIMATELY 1mm., PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 % MAXIMUM AND WATER HOLDING CAPACITY OF 90 MINIMUM. NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

G. MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- i. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.
- ii. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE.
- iii. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

H. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE FO THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD:
- i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF TWO (2) INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE.
- ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- iii. APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. THE REMAINDER OF AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS - SUCH AS ACRYLIC CLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH.
- iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

ESC-05

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
VEGETATION STABILIZATION NOTES 1

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- MD SIDE ONLY -

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	87	407

SECTION II - TEMPORARY SEEDING

VEGETATION - ANNUAL GRASS USED TO PROVIDE COVER ON DISTURBED AREAS FOR UP TO 12 MONTHS. FOR LONGER DURATION OF VEGETATIVE COVER, PERMANENT SEEDING IS REQUIRED.

A. SEED MIXTURES - TEMPORARY SEEDING
 i. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES IN TABLE 26 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 5) AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW, ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLANS AND COMPLETED, THEN TABLE 26 MUST BE PUT ON THE PLANS.
 ii. FOR SITES HAVING SOIL TESTS PERFORMED, THE RATES SHOWN ON THIS TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE TESTING AGENCY SHALL BE WRITTEN IN. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

TEMPORARY SEEDING SUMMARY

SEED MIXTURE (HARDINESS ZONE 6B) FROM TABLE 26					FERTILIZER RATE (10-10-10)	LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS		
1.	ANNUAL RYEGRASS	50	3/1-4/30 8/15-11/1	1/4" TO 1/2"	600 LB/AC (15 LB/ 1000 SF)	2 TONS/AC (100 LB/ 1000 SF)
2.	WEEPING LOVEGRASS	4	5/1-8/14	1/4" TO 1/2"		
3.	MILLET	~~13.6~~ 50 ⚠	5/1-8/14	1/2"		

SECTION III - PERMANENT SEEDING

SEEDING GRASS TO ESTABLISH GROUND COVER FOR A MINIMUM PERIOD OF ONE YEAR ON DISTURBED AREAS GENERALLY RECEIVING LOW MAINTENANCE.

A. SEED MIXTURES - PERMANENT SEEDING
 i. SELECT ONE OF THE MIXTURES LISTED IN THE PERMANENT SEEDING SUMMARY TABLE BELOW FOR THE APPROPRIATE LOCATION/SLOPE/HYDROLOGY. DURING WARM SEASONS, STABILIZE WITH TEMPORARY SEEDING AND FOLLOW WITH PERMANENT COOL SEASON GRASSES AFTER 8/1. SEEDING SEASONS ARE BASED ON TYPICAL YEARS AND CAN BE SUBJECT TO VARIATION.
 ii. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, THE RATES SHOWN ON THIS TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY SHALL BE WRITTEN IN.
 iii. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UNIFORM FERTILIZER (46-0-0) AT 3 1/2 LBS/1000 SQ. FT. (150 LBS/AC), IN ADDITION TO THE ABOVE SOIL AMENDMENTS SHOWN IN THE TABLE BELOW, TO BE PERFORMED AT THE TIME OF SEEDING.

PERMANENT SEEDING SUMMARY

SEED MIXTURE (HARDINESS ZONE 6B) FROM TABLE 25					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	LOCATION	N	P205	K20	
1.	CERTIFIED TURF-TYPE TALL FESCUE (75%) KENTUCKY BLUEGRASS (10%) CANADA BLUEGRASS (10%) REDTOP (5%)	150	3/1-5/15 8/15-10/15	RELATIVELY FLAT AREAS: GRADE LESS THAN 3:1: SUBJECT TO NORMAL CONDITIONS AND REGULAR MOWING	90 LB/AC (2.0 LB/1000 SF)	175 LB/AC (4.0 LB/1000 SF)	175 LB/AC (4 .0LB/1000 SF)	2 TONS/AC (100 LB/1000 SF)
2.	KENTUCKY BLUEGRASS (50%) CREEPING RED FESCUE OR HARD FESCUE (40%) REDTOP (10%)	150	3/1-5/15 8/15-10/15	USED IN MEDIAN AREAS: SHADE				
3.	TALL FESCUE (85%) PERENNIAL RYEGRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1-5/15 8/15-10/15	POPULAR MIX PRODUCERS PERMANENT GROUND COVER QUICKLY				
4.	RED FESCUE OR CHEWINGS FESCUE (80%) PERENNIAL RYEGRASS (20%)	60 15	3/1-5/15 8/15-10/15	USE ON SHADY SLOPES NOT ON POORLY DRAINED CLAYS				

⚠NOTE: ALL CHEMICAL APPLICATIONS TO FEDERAL LAND REQUIRE PRE-APPROVAL.

SECTION IV - SOD: TO PROVIDE QUICK COVER ON DISTURBED AREA (2:1 GRADE OR FLATTER).

A. GENERAL SPECIFICATIONS
 i. CLASS OF TURFGRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED OR APPROVED. SOD LABELS SHALL BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
 ii. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4", PLUS OR MINUS 1/4", AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIERS WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTH SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL BE NOT BE ACCEPTABLE.
 iii. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
 iv. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
 v. SOD SHALL BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

B. SOD INSTALLATION
 i. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL THE SUBSOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD.
 ii. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 iii. WHEREVER POSSIBLE, SOD SHALL BE LAID WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. SOD SHALL BE ROLLED AND TAMPED, PEGGED OR OTHERWISE SECURED TO PREVENT SLIPPAGE ON SLOPES AND THE ENSURE SOLID CONTACT BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
 iv. SOD SHALL BE WATERED IMMEDIATELY FOLLOWING ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

C. SOD MAINTENANCE
 i. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4". WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 ii. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 iii. THE FIRST MOWING OF SOD SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2" AND 3" UNLESS OTHERWISE SPECIFIED.

SEQUENCE OF CONSTRUCTION FOR EROSION AND SEDIMENT CONTROL

JAMES RUMSEY BRIDGE
EROSION AND SEDIMENT CONTROL PLAN
THE WORK WILL BE PERFORMED IN PHASED SEQUENCES TO LIMIT THE DISTURBED AREA TO A MORE MANAGABLE SIZE AT ANY GIVEN TIME.

GENERAL PHASING
THE EROSION AND SEDIMENT CONTROLS FOR THE PROJECT WILL BE PERFORMED IN TWO PHASES FOR THE BRIDGE PROJECT AS FOLLOWS:

INITIAL PHASE- BRIDGE PROJECT

1.CONTACT THE MDE INSPECTOR AT LEAST (7) DAYS PRIOR TO THE BEGINNING OF EARTH DISTURBANCE AT (410) 537-3510 TO ARRANGE A PRE-CONSTRUCTION MEETING.
2.CLEAR, GRUB AND STRIP FOR THE INSTALLATION OF PERIMETER E&S CONTROLS AND INSTALL THESE CONTROLS AT LOCATIONS INDICATED ON THE PLANS.
3.PERFORM INITIAL PHASE CLEARING, GRUBBING AND EARTHWORK FOLLOWED BY THE CONSTRUCTION OF THE CAUSEWAYS, NEW STORM DRAIN SYSTEM FROM OUTFALL TO MH-2 (INCLUDING G-13 AND G-14), THE NORTH SIDE RETAINING WALLS AND STABILIZATION WALL AND THE NEW TRAIL SYSTEM UP TO MH-2.
4.CONTINUE WITH STORM DRAIN CONSTRUCTION FROM G-15 TO A-1.
5.WHEN CONVENIENT REMOVE CULVERT PIPES AND EMBANKMENT WITHIN THE CANAL AND CONSTRUCT NEW CANAL CROSSING.
6.WITH COMPLETION OF THE NORTHSIDE RETAINING WALLS AND STABILIZATION WALL,BEGIN CONSTRUCTION OF THE BRIDGE ABUTMENT AND APPROACHES. WHEN CONVENIENT EXTEND STORM DRAIN SYSTEM FROM MH-2 TO G12.
7.AS THE BRIDGE ABUTMENT IS BEING CONSTRUCTED, USE A SUMP PIT TO CAPTURE AND PUMP TRAPPED STORMWATER. USE SEDIMENT TANK TO STORE AND TRANSPORT SEDIMENT LADEN STORMWATER TO SAFE DICHARGE LOCATION APPROVED BY THE MDE INSPECTOR. AS PRACTICAL BACKFILL THE WALL AND BRIDGE ABUTMENT TO ACHIEVE POSITIVE DRAINAGE. DIRECT RUNOFF FROM DISTURBED AREAS INTO PROTECTED INLETS OR PERIMETER SUPER SILT FENCE.
8. WHEN THE CAUSEWAYS ARE CONSTRUCTED, BEGIN CONSTRUCTION OF THE NEW BRIDGE SUBSTRUCTURE AND SUPERSTRUCTURE.
9. WHEN THE NEW BRIDGE ABUTMENT, NORHTSIDE RETAINING AND STABILIZATION WALLS ARE COMPLETED, CONSTRUCT THE NORTHSIDE DRAINAGE SWALE. STORM DRAIN PIPE CROSSING FROM G-9 TO THE NORTH EDGE OF EXISTING ROADWAY (Use temporary plugs at both ends and backfill) AND WIDEN THE EXISTING ROADWAY ALONG THE NORTHSIDE FOR TRAFFIC USE BEGINNING IN STAGE 2. NOTE GRATE INLET G-9 IS NOT TO BE CONSTRUCTED DURING STAGE 1.
10.CONTINUE WITH NEW BRIDGE SUBSTRUCTURE AND SUPER STRUCTURE TO COMPLETION.
11.WHEN THE BRIDGE HAS BEEN COMPLETED, CONNECT BRIDGE DRAINAGE PIPING INTO INLET G-12 AND CHANGE TRAFFIC PATTERN TO THE NEW BRIDGE.
12.AS FINAL GRADES ARE ACHIEVED AND LAND DISTURBING ACTIVATE HAVE BEEN COMPLETED, STABILIZE ALL DISTURBED AREAS REMOVE TEMPORARY CONTROLS AND PROCEED TO FINAL PHASE AFTER OBTAINING APPROVAL OF THE MDE INSPECTOR.

FINAL PHASE- BRIDGE PROJECT

1. WITH NEW TRAFFIC PATTERN CHANGED, DISMANTLE AND REMOVE PORTIONS OF THE EXISTING BRIDGE TO ALLOW DEMOLITION OF THE EXISTING BRIDGE ABUTMENT AND BEGIN THIS WORK. CONTINUE WITH DISMANTLING AND REMOVAL OF THE EXISTING BRIDGE. AND DEMOLITION OF THE EXISTING BRIDGE ABUTMENT UNTIL COMPLETION FOLLOWED BY THE DEMOLITION OF THE EXISTING BRIDGE FOUNDATIONS.
2. WHEN THE EXISTING BRIDGE ABUTMENT HAS BEEN REMOVED, PERFORM CLEARING, GRUBBING, AND EARTHWORK AND EXTEND THE RETAINING AND STABILIZATION WALLS ALONG THE SOUTH SIDE.
3. AS CONSTRUCTION OF THE RETAINING AND STABILIZATION WALL ALLOW, EXTEND STORM DRAINAGE PIPING FROM MH-2 TO G-11 THEN TO G-10 TOWARDS G-9 AND CONNECT TO THE END OF EXISTING PIPE INSTALLED DURING STAGE 1 LOCATED ON THE NORTH SIDE OF THE EXISTING ROADWAY. NEXT CONSTRUCT INLET G-9 AND ESTABLISH FINAL DRAINAGE PATTERN.
⚠5 4. COMPLETE THE REMAINING DRAINAGE SYSTEM (i.e., G-8, B-8, B-9, B-10 and associated drainage piping).
5. PERFORM FINAL EARTHORK AND PAVING TO COMPLETE THE OVERLOOK AREA AND THE REMAINING TRAIL SYSTEM.
6. WHEN CONVENIENT DURING THE PROGRESSION OF THE STAGE 2 WORK, BEGIN WORK RELATED TO THE EXISTING PARKING LOT TO BE PAVED. NOTE THAT THIS WORK SHOULD COMMENCE AFTER THE BRIDGE WORK IS SUBSTANTIALLY COMPLETE AND AFTER HEAVY CONSTRUCTION EQUIPMENT HAS BEEN DEMOBILIZED.
7. COMPLETE WORK ASSOCIATED WITH THE PARKING LOT.
8. WHEN ALL CONSTRUCTION AND LAND DISTURBING ACTIVITIES ARE COMPLETED,WITH APPROVAL OF THE MDE INSPECTOR REMOVE THE REMAINING TEMPORARY E&S CONTROLS AND STABILIZE ALL REMAINING DISTURBED AREAS.

SEED MIXTURE (HARDINESS ZONE 6B) FROM TABLE 25					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	LOCATION	N	P205	K20	
5.	TALL FESCUE (85%) OR PERENNIAL RYEGRASS (50%) PLUS CROWN VETCH OR FLATPEA	110 20 20 20	3/1-5/15 8/15-10/15	USE ON LOW MAINTENANCE STEEP SLOPES USE TALL FESCUE IN DRAUGHTY CONDITIONS	90 LB/AC (2.0 LB/1000 SF)	175 LB/AC (4.0 LB/1000 SF)	175 LB/AC (4 .0LB/1000 SF)	2 TONS/AC (100 LB/1000 SF)
6.	HARD FESCUE (100%)	75	3/1-5/15 8/15-10/15	LOW FERTILITY GRASS REQIRES INFREQUENT MOWING GOOD COMPANION FOR WILD FLOWERS				
⚠5 7.	BLUE SHEEP FESCUE (30%) RED (CHEWINGS) FECUE (30%) PERENNIAL RYEGRASS (20%) RED TOP GRASS (10%) ANNUAL RYEGRASS (10%)	20 OF PURE LIVE SEED (90% PURITY)	3/1-5/15 8/15-10/15	NPS MIX				
⚠5 8.	ANNUAL RYEGRASS (40%) NIAGRA BIG BLUESTERM (26%) CAMPER LITTLE BLUESTEM (14%) INDIANGRASS (14%) SHELTER SWITCHGRASS (6%)	42	3/1-5/15 8/15-10/15	NPS MIX				

ESC–06

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
⚠5	87	SEED MIX AND NOTE ADDED	2/13/03	N.B.
⚠3	87	REVISED NARRATIVE, NO STORM FILTER	1/20/03	N.B.
⚠1	87	APPLICATION RATE CHANGED, LABEL ADDED	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
VEGETATION STABILIZATION NOTES 2

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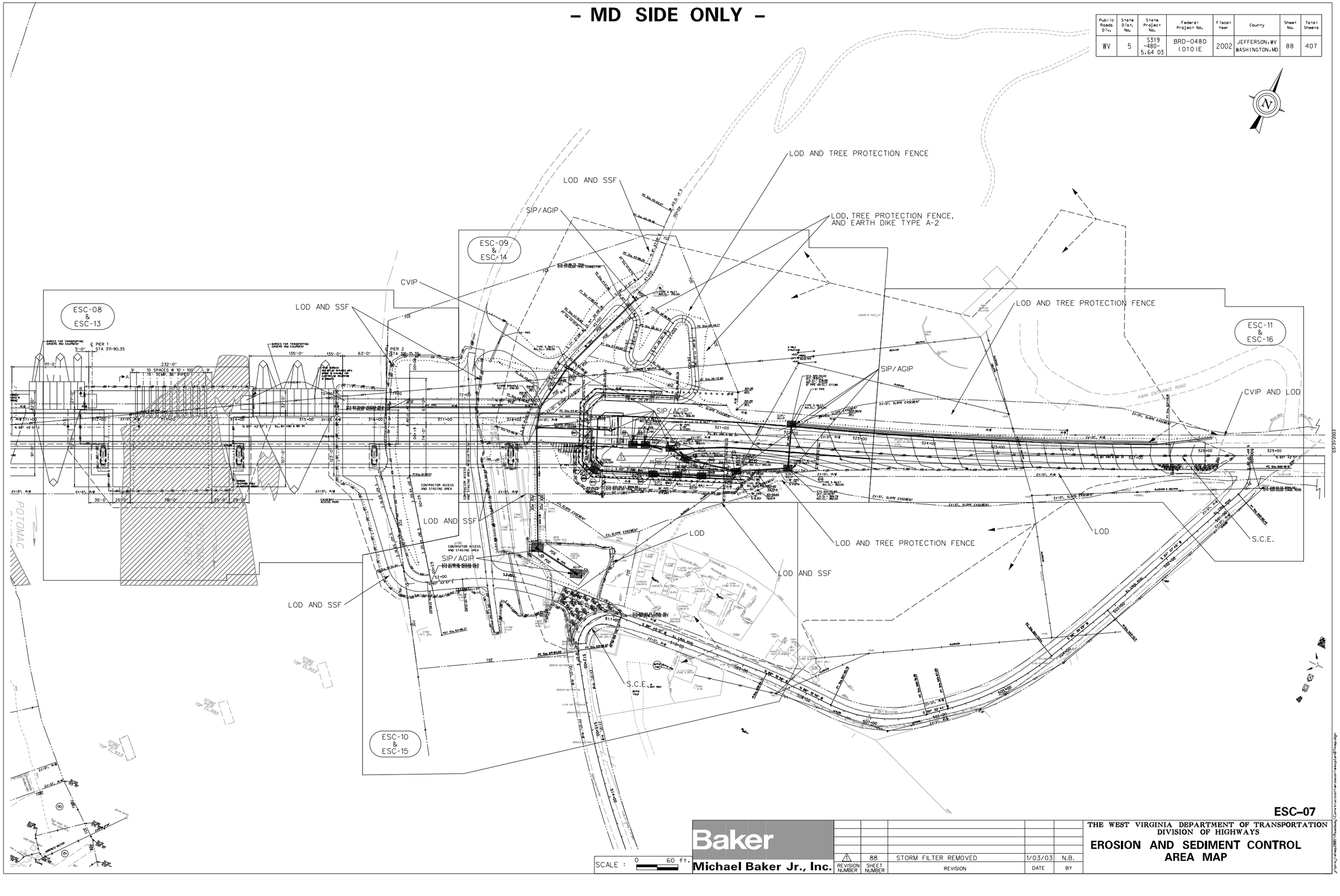
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	88	407



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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
1	88	STORM FILTER REMOVED	1/03/03	N.B.

ESC–07

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL AREA MAP

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON,WV WASHINGTON,MD	89	407

CAUSEWAY CONSTRUCTION

Causeway Access Road

The ground surface of the area to be covered by the causeway access road shall have minimum disturbed by excavation equipment. The preparation of the area for the engineering fabric or geotextile will consist mostly of hand labor.

The original ground surface shall be covered with a geogrid with a minimum Wide Width Tensile Strength of 3300 lb/ft, as tested by the ASTM D4595 Method @ 5% Strain. To prevent the loss of aggregate through the aperture openings of the geogrid, an engineering fabric that meets the requirements of Section 715 Miscellaneous Materials, Paragraph, 715.11.8-Engineering Fabric for Separation, West Virginia Division of Highways Standard Specifications Roads and Bridges shall be placed on the geogrid.

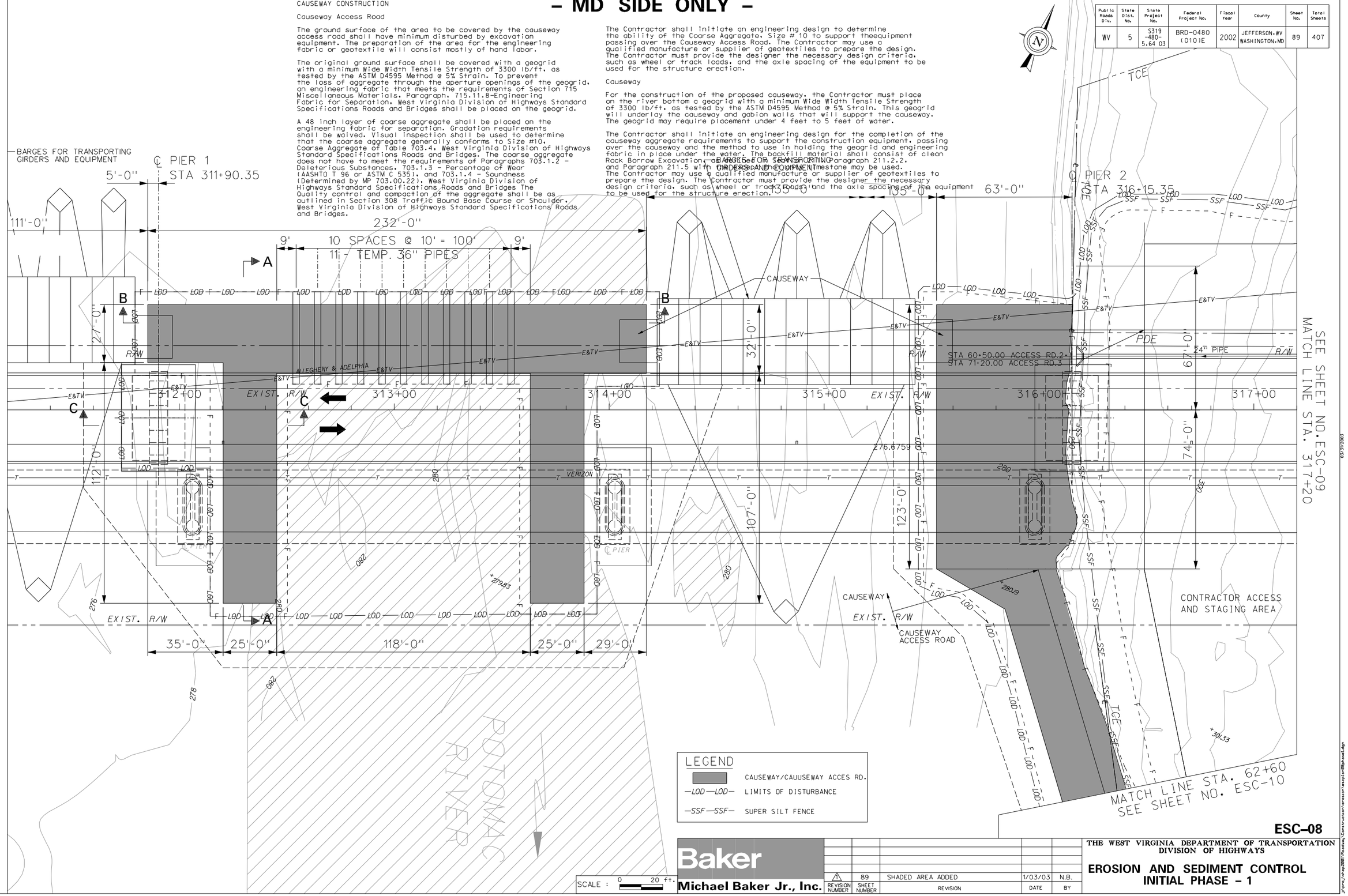
A 48 inch layer of coarse aggregate shall be placed on the engineering fabric for separation. Gradation requirements shall be waived. Visual inspection shall be used to determine that the coarse aggregate generally conforms to Size #10, Coarse Aggregate of Table 703.4, West Virginia Division of Highways Standard Specifications Roads and Bridges. The coarse aggregate does not have to meet the requirements of Paragraphs 703.1.2 - Deleterious Substances, 703.1.3 - Percentage of Wear (AASHTO T 96 or ASTM C 535), and 703.1.4 - Soundness (Determined by MP 703.00.22), West Virginia Division of Highways Standard Specifications Roads and Bridges The Quality control and compaction of the aggregate shall be as outlined in Section 308 Traffic Bound Base Course or Shoulder, West Virginia Division of Highways Standard Specifications Roads and Bridges.

The Contractor shall initiate an engineering design to determine the ability of the Coarse Aggregate, Size # 10 to support theequipment passing over the Causeway Access Road. The Contractor may use a qualified manufacture or supplier of geotextiles to prepare the design. The Contractor must provide the designer the necessary design criteria, such as wheel or track loads, and the axle spacing of the equipment to be used for the structure erection.

Causeway

For the construction of the proposed causeway, the Contractor must place on the river bottom a geogrid with a minimum Wide Width Tensile Strength of 3300 lb/ft, as tested by the ASTM D4595 Method @ 5% Strain. This geogrid will underlay the causeway and gabion walls that will support the causeway. The geogrid may require placement under 4 feet to 5 feet of water.

The Contractor shall initiate an engineering design for the completion of the causeway aggregate requirements to support the construction equipment, passing over the causeway and the method to use in holding the geogrid and engineering fabric in place under the water. The backfill material shall consist of clean Rock Borrow Excavation, as defined in Section 211.2.2, Paragraph 211.2.2, and Paragraph 211.5 with the gradation of the Limestone may be used. The Contractor may use a qualified manufacture or supplier of geotextiles to prepare the design. The Contractor must provide the designer the necessary design criteria, such as wheel or track loads, and the axle spacing of the equipment to be used for the structure erection.



ESC–08

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
1	89	SHADED AREA ADDED	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL INITIAL PHASE – 1

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WV	5	S319-480-5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	90	407

– MD SIDE ONLY –

NOTE: CONTRACTOR SHALL PLACE PSD ON GROUND SURFACE WITHOUT CLEARING AND GRUBBING WHEN OUTSIDE OF LIMIT OF DISTURBANCE.

LEGEND

- LOD — LOD — LIMITS OF DISTURBANCE
- SF — SF — SILT FENCE
- SSF — SSF — SUPER SILT FENCE
- EARTH DIKE TYPE A-2
- SIP/AGIP STANDARD/AT GRADE INLET PROTECTION
- TPF — TPF — TREE PROTECTION FENCE
- PIPE SLOPE DRAIN
- NEW STORM DRAIN
- NEW STORM DRAIN INLET
- SUMP PIT
- PST PORTABLE SEDIMENT TANK
- DRAINAGE AREA

STA 28+86.75 TRAIL = STA 41+50.00 TRAIL CONNECTOR

TYPE S INLET INV. EL.= 310.00

EARTH DIKE TYPE A-2

PSD-24

TYPE S INLET INV. EL.= 306.00

STORM MANHOLE INV. EL.= 296.32

STORM MANHOLE INV. EL.= 333.68

TYPE S INLET INV. EL.= 303.00

TYPE S INLET INV. EL.= 355.02

REMOVE EXISTING TWIN CULVERTS AND CROSSING. PROTECT WITH TEMPORARY SILT FENCE UNTIL STABILIZED. PLACE SUPER SILT FENCE AT TOP OF SLOPES AFTER AREA IS STABILIZED.

TRACTOR ACCESS STAGING AREA

MATCH LINE STA. 317+20 SEE SHEET NO. ESC-08

MATCH LINE STA. 317+20 SEE SHEET NO. ESC-11

ALLEGHENY & ADELPHIA

EAST MD 34

EXIST. SLOPE EASEMENT

EXIST. R/W

ESC-09

SCALE : 0 20 ft.

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
4	90	LOD LOCATION REVISED	3/07/03	N.B.
1	90	NOTE ADDED	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL INITIAL PHASE – 3

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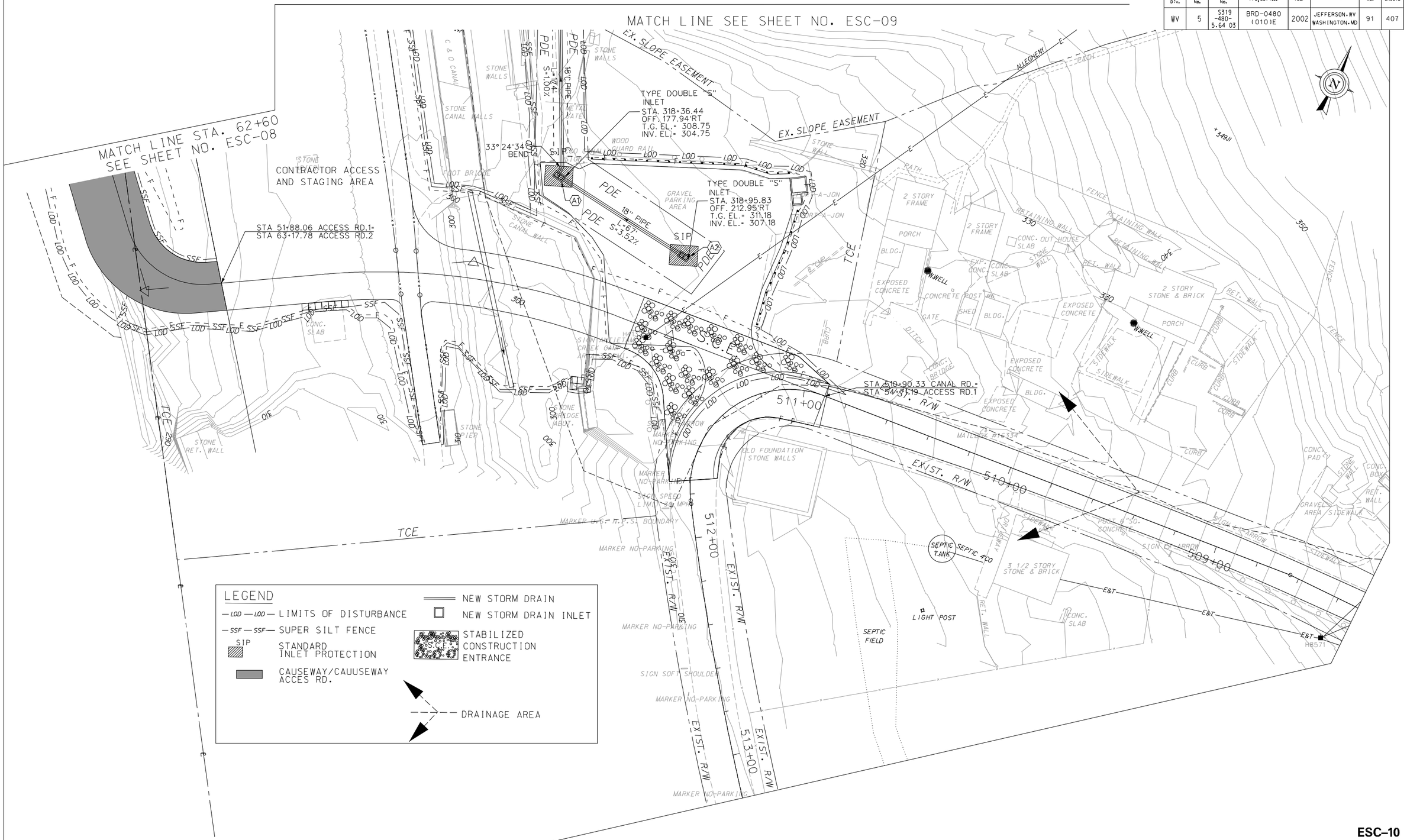
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON.WV WASHINGTON.MD	91	407



ESC–10

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REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
1	91	SHADED AREA ADDED	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL INITIAL PHASE – 3

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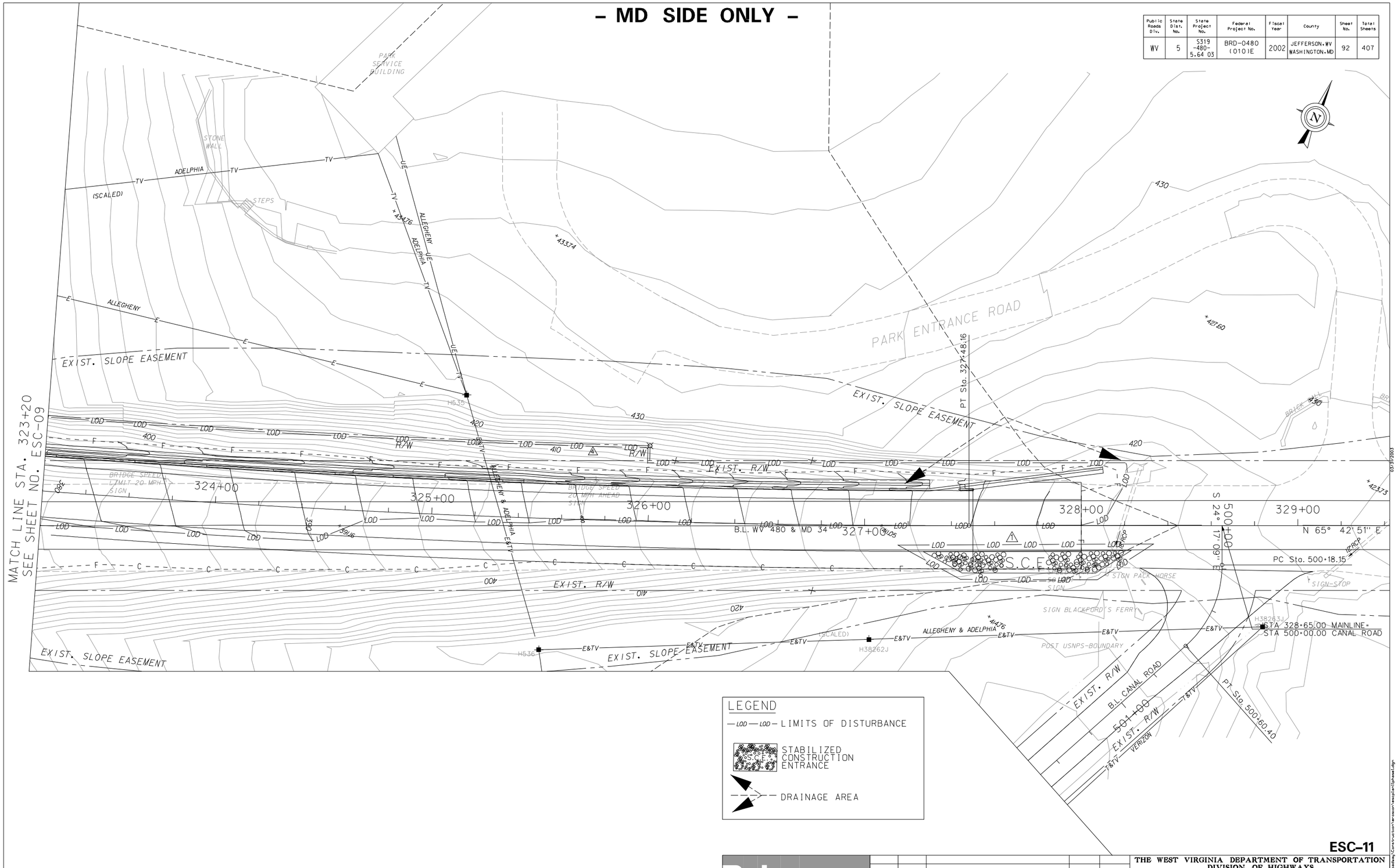
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	92	407



LEGEND

— LOD — LOD — LIMITS OF DISTURBANCE

STABILIZED CONSTRUCTION ENTRANCE

DRAINAGE AREA

SCALE : 0 20 ft.

Baker

Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
4	92	LOD LOCATION REVISED	3/07/03	N.B.
1	92	LOD LOCATION REVISED	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL INITIAL PHASE – 4

ESC–11

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- MD SIDE ONLY -

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	93	407

LEGEND

- LOD — LOD — LIMITS OF DISTURBANCE
- SSF — SSF — SUPER SILT FENCE
- SF — SF — SILT FENCE
- SIP — STANDARD INLET PROTECTION
- NEW STORM DRAIN
- NEW STORM DRAIN INLET
- STABILIZED CONSTRUCTION ENTRANCE
- PERMANENT EROSION CONTROL MATTING

⚠3

JAMES RUMSEY BRIDGE
EROSION AND SEDIMENT CONTROL PLAN THE WORK WILL BE PERFORMED IN PHASED SEQUENCES TO LIMIT THE DISTURBED AREA TO A MORE MANAGABLE SIZE AT ANY GIVEN TIME.

GENERAL PHASING

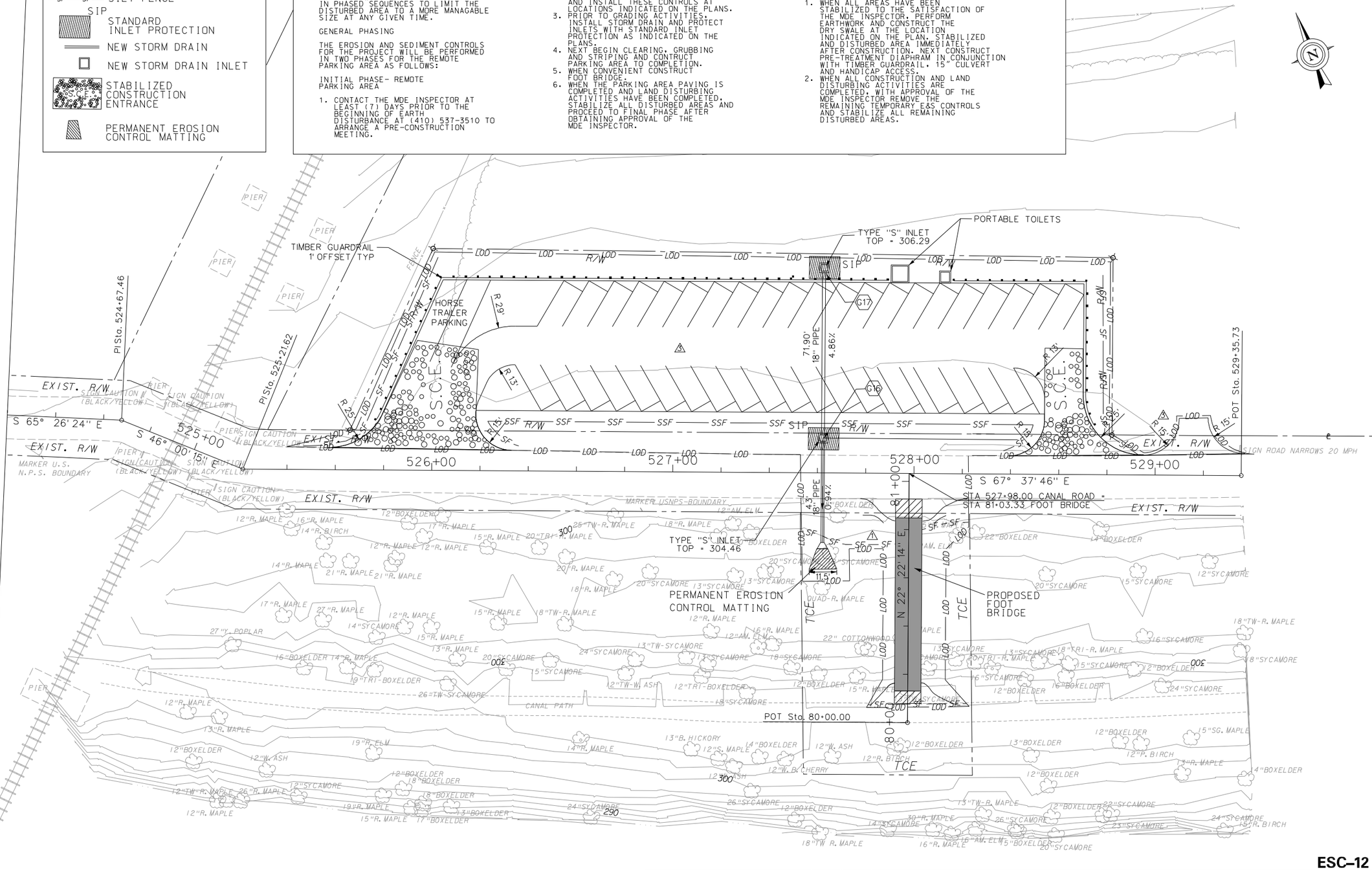
THE EROSION AND SEDIMENT CONTROLS FOR THE PROJECT WILL BE PERFORMED IN TWO PHASES FOR THE REMOTE PARKING AREA AS FOLLOWS:

INITIAL PHASE- REMOTE PARKING AREA

1. CONTACT THE MDE INSPECTOR AT LEAST (7) DAYS PRIOR TO THE BEGINNING OF EARTH DISTURBANCE AT (410) 537-3510 TO ARRANGE A PRE-CONSTRUCTION MEETING.
2. CLEAR, GRUB AND STRIP FOR THE INSTALLATION OF PERIMETER E&S CONTROLS AND INSTALL THESE CONTROLS AT LOCATIONS INDICATED ON THE PLANS.
3. PRIOR TO GRADING ACTIVITIES, INSTALL STORM DRAIN AND PROTECT INLETS WITH STANDARD INLET PROTECTION AS INDICATED ON THE PLANS.
4. NEXT BEGIN CLEARING, GRUBBING AND STRIPING AND CONTRUCT PARKING AREA TO COMPLETION.
5. WHEN CONVENIENT CONSTRUCT FOOT BRIDGE.
6. WHEN THE PARKING AREA PAVING IS COMPLETED AND LAND DISTURBING ACTIVITIES HAVE BEEN COMPLETED, STABILIZE ALL DISTURBED AREAS AND PROCEED TO FINAL PHASE AFTER OBTAINING APPROVAL OF THE MDE INSPECTOR.

FINAL PHASE- REMOTE PARKING AREA

1. WHEN ALL AREAS HAVE BEEN STABILIZED TO THE SATISFACTION OF THE MDE INSPECTOR, PERFORM EARTHWORK AND CONSTRUCT THE DRY SWALE AT THE LOCATION INDICATED ON THE PLAN. STABILIZED AND DISTURBED AREA IMMEDIATELY AFTER CONSTRUCTION. NEXT CONSTRUCT PRE-TREATMENT DIAPHRAM IN CONJUNCTION WITH TIMBER GUARDRAIL, 15" CULVERT AND HANDICAP ACCESS.
2. WHEN ALL CONSTRUCTION AND LAND DISTURBING ACTIVITIES ARE COMPLETED, WITH APPROVAL OF THE MDE INSPECTOR REMOVE THE REMAINING TEMPORARY E&S CONTROLS AND STABILIZE ALL REMAINING DISTURBED AREAS.



ESC–12

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
⚠3	93	PARKING LOT LAYOUT CHANGED, NARRATIVE TO INCLUDE DRY SWALE	1/20/03	N.B.
⚠1	93	ADDED SILT FENCE	1/03/03	N.B.

Baker
Michael Baker Jr., Inc.

SCALE : 0 20 ft.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL INITIAL PHASE – 5

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EXISTING BRIDGE DISMANTLING METHODS

Prior to starting any work under this item, the Contractor will prepare and present to the Department a detailed plan and schedule for dismantling the bri dge. The plan shall include drawings, sketches, and calculations. The plan will be subject to approval by the Department. Implosion of the existing bridge will not be permitted as a removal method. 0:p18;

The Contractor shall prepare a detailed plan and schedule for proper handling and disposal of the existing bridge steel. The plan will be subject to approval by the Department.

The bridge pier in the C&O Canal NHP will be removed from the park, and the stonework will be restored where the pier was removed. Work will be performed by a qualified speciality contractor approved to work on the restoration of historical property.

Qualifications for the specialty contractor shall be submitted to the engineer for approval. The restoration work performed by the speciality contractor will be included in the bid price for Dismantling Structures.

The contractor is responsible for preventing lead based paint and other debris from accessing the waterway . The National Park Service and the Health Department will test the waterway for lead and other contaminants on a regular basis during construction.

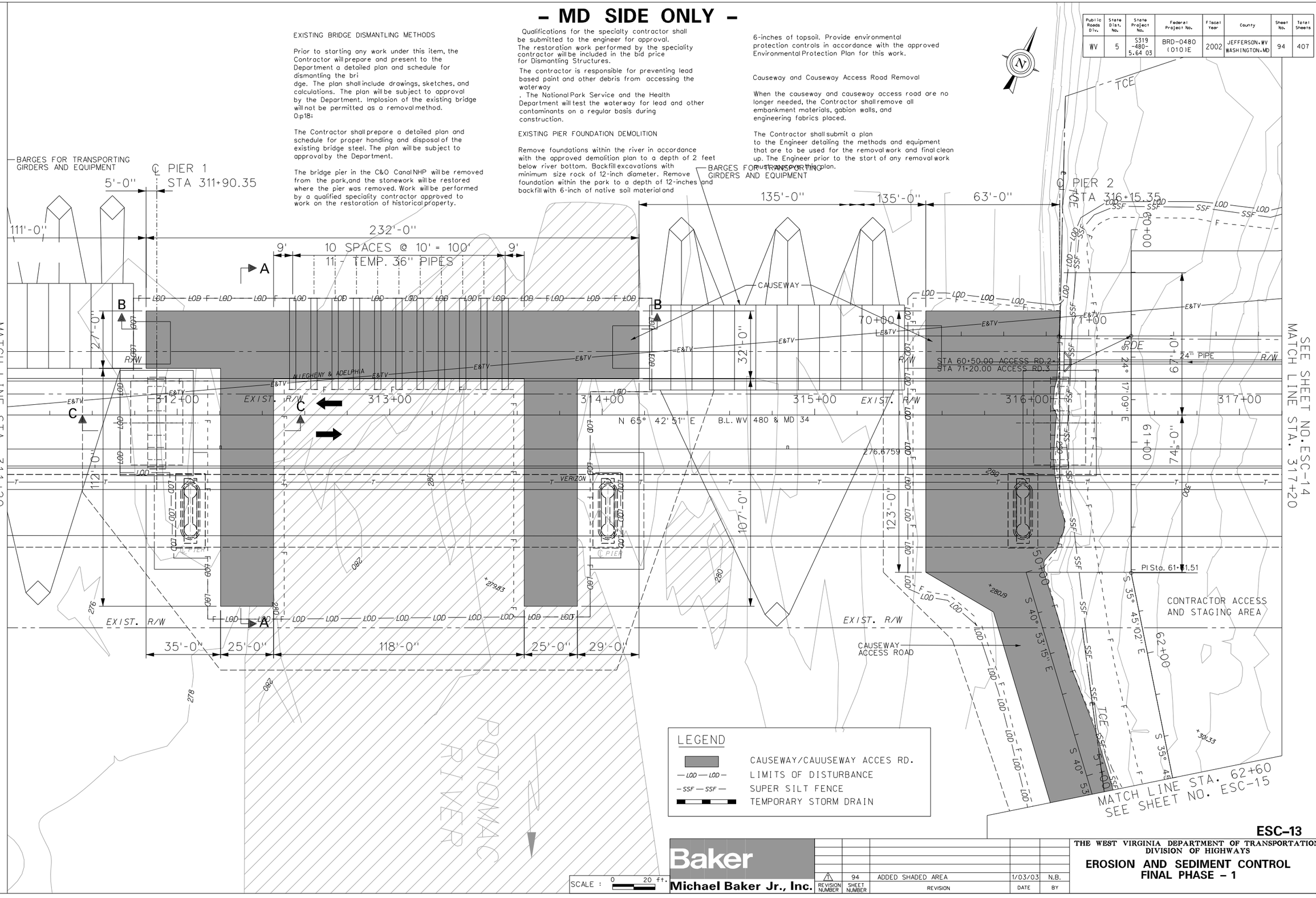
EXISTING PIER FOUNDATION DEMOLITION

Remove foundations within the river in accordance with the approved demolition plan to a depth of 2 feet below river bottom. Backfill excavations with minimum size rock of 12-inch diameter. Remove foundation within the park to a depth of 12-inches and backfill with 6-inch of native soil material and 6-inches of topsoil. Provide environmental protection controls in accordance with the approved Environmental Protection Plan for this work.

Causeway and Causeway Access Road Removal

When the causeway and causeway access road are no longer needed, the Contractor shall remove all embankment materials, gabion walls, and engineering fabrics placed.

The Contractor shall submit a plan to the Engineer detailing the methods and equipment that are to be used for the removal work and final clean up. The Engineer prior to the start of any removal work must approve this plan.



ESC–13

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
1	94	ADDED SHADED AREA	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL FINAL PHASE – 1

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	95	407

LEGEND

- —LOD—LOD— LIMITS OF DISTURBANCE
- —SSF—SSF— SUPER SILT FENCE
- DRAINAGE AREA
- NEW STORM DRAIN
- NEW STORM DRAIN INLET
- SIP/AGIP STANDARD/AT GRADE INLET PROTECTION
- —TPF—TPF— TREE PROTECTION FENCE

STA 28+86.75 TRAIL = STA 41+50.00 TRAIL CONNECTOR

TYPE S INLET INV. EL.= 310.00

TYPE S INLET INV. EL.= 306.00

24" PIPE

STORM MANHOLE INV. EL.= 296.32

STORM MANHOLE INV. EL.= 333.68

TYPE S INLET INV. EL.= 303.00

TYPE S INLET INV. EL.= 355.02

TYPE S INLET INV. EL.= 369.00

TYPE S INLET INV. EL.= 368.30

CONNECT 6" U.D. TO B INLET TYP.

TYPE S INLET INV. EL.= 369.45

TYPE S INLET INV. EL.= 359.00

STA 320+06.47 MAINLINE = STA 20+00.00 TRAIL 50.95' RT

STA 321+25.00 OFF. 54.00' RT T.G. EL.= 364.55 INV. EL.= 358.50 BM2 PIPE INV. EL.= 362.00

CONNECT 6" U.D. TO G INLET

TYPE S INLET INV. EL.= 358.50

STA 322+00.00 OFF. 19.83' LT GG. EL.= 378.68 INV. EL.= 373.00 6" PIPE INV. EL.= 377.86

TYPE S INLET INV. EL.= 373.00

TYPE S INLET INV. EL.= 362.00

STA 322+00.00 OFF. 44.00' RT T.G. EL.= 369.79 INV. EL.= 362.00

3 POLE STRUCTURE — H533 — H8660 — H534 — GUYWIRES

MATCH LINE STA. 317+20 SEE SHEET NO. ESC-13

MATCH LINE STA. 323+20 SEE SHEET NO. ESC-16

MATCH LINE SEE SHEET NO. ESC-15

CONTRACTOR ACCESS AND STAGING AREA

ALLEGHENY & ADELPHIA

SCALE : 0 20 ft.

Baker

Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
1	95	REMOVED STORM FILTER	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL FINAL PHASE – 2

ESC-14

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WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	96	407

MATCH LINE SEE SHEET NO. ESC-14

MATCH LINE STA. 62+60
SEE SHEET NO. ESC-13

CONTRACTOR ACCESS AND STAGING AREA

STA 51+88.06 ACCESS RD.1=
STA 63+17.78 ACCESS RD.2

TYPE DOUBLE "S" INLET
STA. 318+36.44
OFF. 177.94'RT
T.G. EL.= 308.75
INV. EL.= 304.75

TYPE DOUBLE "S" INLET
STA. 318+95.83
OFF. 212.95'RT
T.G. EL.= 311.18
INV. EL.= 307.18

33°24'34" BEND

18" PIPE L=104' S=1.00%

18" PIPE L=67' S=3.52%

AGIP

EX. SLOPE EASEMENT

STA 519+90.33 CANAL RD.=
STA 94+31.19 ACCESS RD.1

EXIST. R/W

511+00

512+00

513+00

510+00

509+00

TCE

C & O CANAL

STONE CANAL WALLS

STONE WALLS

METAL GATE

WOOD GUARD RAIL

FOOT BRIDGE

GRAVEL PARKING AREA

STONE CANAL WALL

STONE ARCH BRIDGE ABUT.

STONE PIER

STONE RET. WALL

CONC. SLAB

SILT FENCE

CREEK

MARKER NO-PARKING

STOP SPEED LIMIT 35 MPH

MARKER U.S.-M.D. ST. BOUNDARY

SIGN SOFT SHOULDER

OLD FOUNDATION STONE WALLS

2 STORY FRAME

PORCH

BLDG.

CONC. OUT HOUSE SLAB

EXP. CONC. SLAB

EXPOSED CONCRETE

CONCRETE POST #6

SHED

GATE

DITCH

CONC. BRIDGE

2 STORY STONE & BRICK

W.WELL

RETAINING WALL

RET. WALL

FENCE

CURB

SIDEWALK

MAILBOX #15334

PORT-A-JON

SEPTIC TANK

SEPTIC ACC

3 1/2 STORY STONE & BRICK

LIGHT POST

SEPTIC FIELD

PORCH

CONC. PAD

CONC. BOX

GRAVEL AREA

SIDEWALK

SIGN "T" ARROW

SIGN "Y" ARROW

POST 6"x6" CONCRETE

E&T

HB571

ALLEGHENY PATH

+34911

330

320

310

300

350

LEGEND

- LOD — LOD — LIMITS OF DISTURBANCE
- SSF — SSF — SUPER SILT FENCE
- AGIP — STANDARD INLET PROTECTION
- CAUSEWAY/CAUUSEWAY ACCES RD.
- NEW STORM DRAIN
- NEW STORM DRAIN INLET
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- DRAINAGE AREA

SCALE : 0 20 ft.

ESC–15

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
1	96	SHADED AREA ADDED	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**EROSION AND SEDIMENT CONTROL
FINAL PHASE – 3**

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- MD SIDE ONLY -

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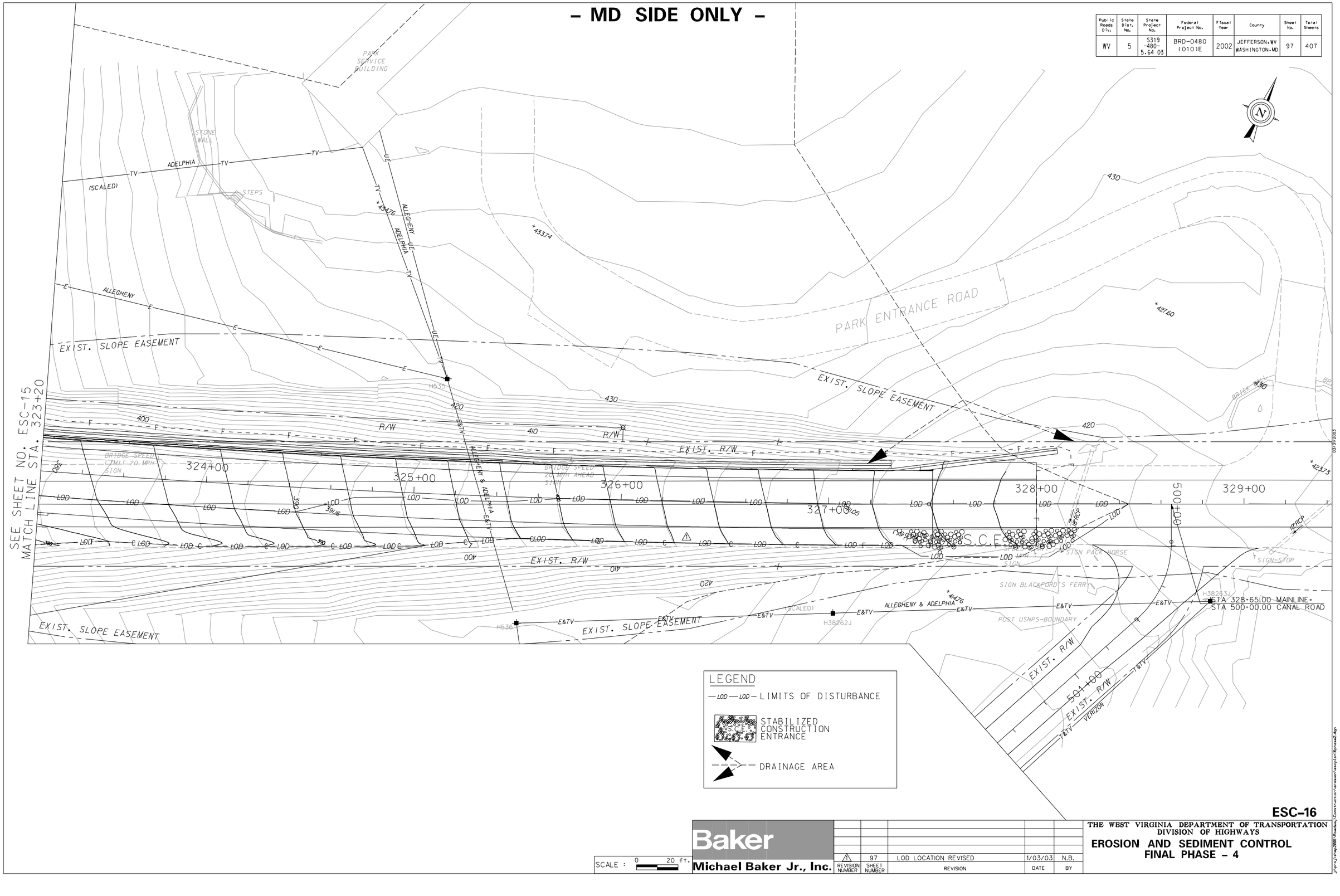
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	97	407



LEGEND

— LOD — LOD — LIMITS OF DISTURBANCE

S.C.E. STABILIZED CONSTRUCTION ENTRANCE

DRAINAGE AREA

ESC-16

SCALE : 0 20 ft.

Baker

Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
1	97	LOD LOCATION REVISED	1/03/03	N.B.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL
FINAL PHASE - 4

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64 03	BRD-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	98	407

LEGEND

— LOD — LOD — LIMITS OF DISTURBANCE

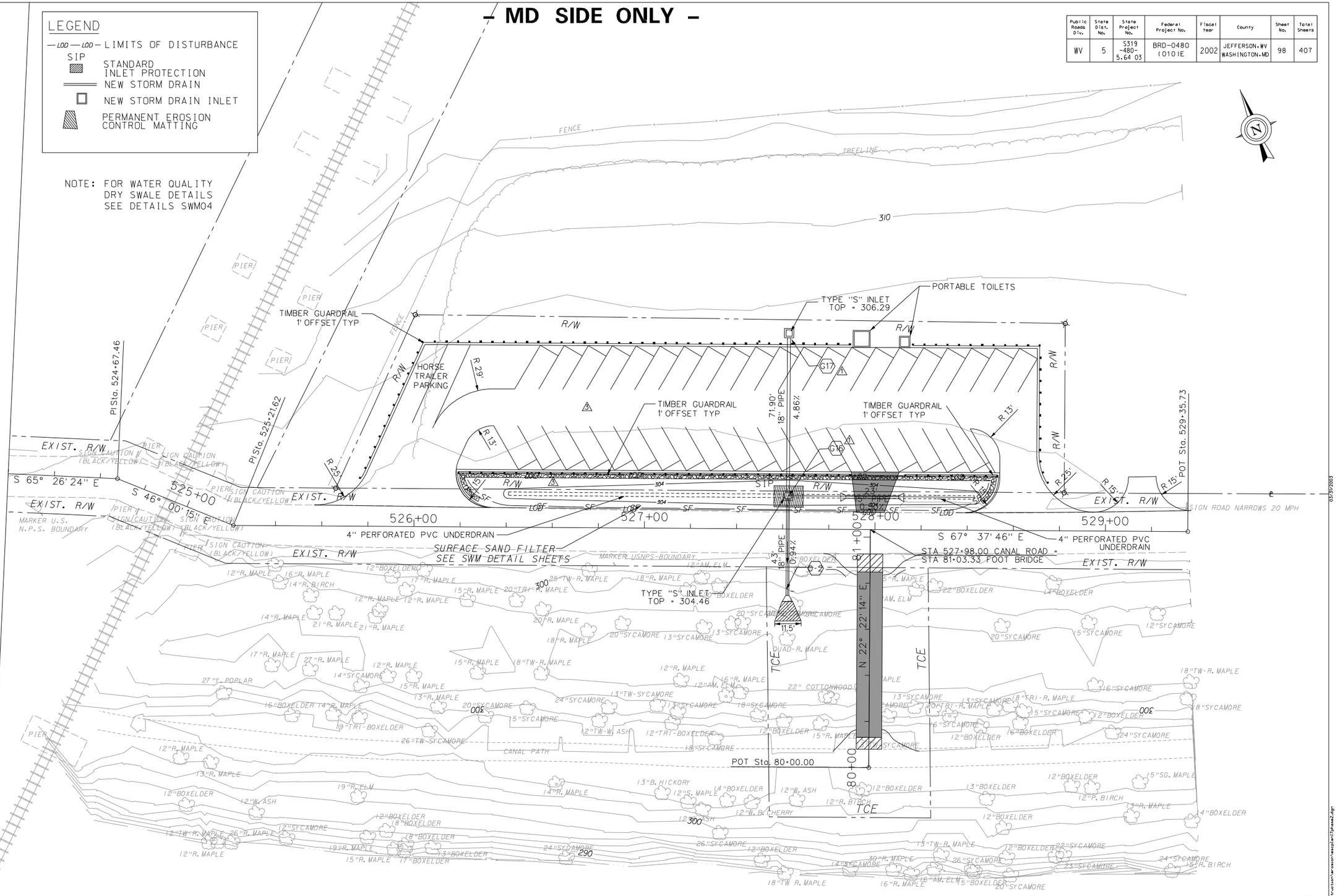
SIP STANDARD INLET PROTECTION

NEW STORM DRAIN

NEW STORM DRAIN INLET

PERMANENT EROSION CONTROL MATTING

NOTE: FOR WATER QUALITY DRY SWALE DETAILS SEE DETAILS SWM04



ESC-17

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY
3	98	PARKING LOT LAYOUT CHANGED.	1/20/03	N.B.
		REPLACED SAND FILTER W/ DRY SWALE		
1	98	INLET ID ADDED	1/03/03	N.B.

Baker

Michael Baker Jr., Inc.

SCALE : 0 20 ft.

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EROSION AND SEDIMENT CONTROL FINAL PHASE - 5

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WV	5	S319 -480- 5.64	BR-0480 (010)E	2002	JEFFERSON.WV WASHINGTON.MD	99	407

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF OF THE EXISTING PUMP STATION INFLUENT PIPE AND THE EXISTING MANHOLE ON DUKE ST. PRIOR TO BEGINNING CONSTRUCTION.

2. WHERE THE CONTRACTOR IS REQUIRED TO CONNECT TO EXISTING SANITARY SEWER FACILITIES, BY-PASS PUMPING SHALL BE PROVIDED SO THE WORK CAN BE PERFORMED. THERE SHALL BE NO SEPARATE MEASUREMENT OR PAYMENT REQUIRED TO COMPLETE THIS WORK.

3. LOCATION, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THE UTILITY ADJUSTMENT PLANS ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY WITH TEST HOLES THE LOCATION, ELEVATION, TYPE, ROUNDNESS, GRADE AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AND POINTS OF CONNECTION. PRIOR TO EXCAVATION, ORDERING OF MATERIALS AND INSTALLATION FOR THIS PROJECT.

4. THE CONTRACTOR SHALL NOTE THAT THE FORCE MAIN RELOCATION AND DUPLEX GRINDER PUMP STATION PLANS ARE ONLY FOR TASKS RELATED TO SEWER WORK. THE CONTRACTOR SHALL REFER TO THE ROADWAY PLANS FOR ROADWAY AND DRAINAGE DESIGN. ALL MATERIALS OF CONSTRUCTION COMMON TO THE ROADWAY WORK, INCLUDING BUT NOT LIMITED TO; AGGREGATES, CONCRETE, BITUMINOUS PAVEMENT, SEEDING AND MULCHING, EROSION CONTROLS, ETC. SHALL BE PROVIDED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS.

5. THE CONTRACTOR SHALL NOT PERFORM ANY GRADING OPERATIONS OVER EXISTING SEWER FACILITIES WITHIN THE PROJECT WHICH WOULD IN ANY WAY JEOPARDIZE SERVICES UNTIL THE PROPOSED SEWER FACILITIES ARE INSTALLED AND PLACED INTO OPERATION AND EXISTING SEWER FACILITIES ARE ABANDONED. ANY DEVIATION MUST BE APPROVED BY THE ENGINEER.

6. CONTRACTOR TO SCHEDULE FORCEMAIN AND SANITARY PUMP STATION WORK WITH THE BAVARIAN INN (304) 876-2551, THE OPERATOR OF THE EXISTING LIFT STATION, SNYDER ENVORONMENTAL SERVICES (MIKE MERCER) (304) 725-9140 AND THE SHEPHERDSTOWN PUBLIC WORKS DEPARTMENT (304) 876-3322.

7. ALL EXISTING SANITARY SEWER MANHOLES AND CLEANOUTS SHALL BE RELOCATED AND/OR ADJUSTED TO FINISH GRADE AS REQUIRED, REGARDLESS IF THEY ARE SHOWN OR NOT SHOWN ON THE PLANS.

8. THE CONTRACTOR, WITH HIS ASSOCIATED MATERIAL SUPPLIERS, SHALL PROVIDE CERTIFICATION ACCEPTABLE TO THE ENGINEER, THAT ALL PIPE MATERIALS SUPPLIED ON THE PROJECT MEET OR EXCEED THE SPECIFICATIONS.

9. ALL THRUST PROTECTION INSTALLED UNDER THIS CONTRACT SHALL BE PLACED BEFORE BACKFILLING OF THE TRENCH AND INSPECTED BY THE ENGINEER. TEMPORARY BUTTRESSING FOR TESTING SHALL BE PROVIDED. INSTALLATION OF APPROVED RETAINER GLANDS, TIE RODS, AND OTHER THRUST RESTRAINTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

10. CONTRACTOR SHALL RESTRAIN EXISTING PIPE AT CONNECTIONS TO PROPOSED PIPE AND AT THE PLUGS IN ACCORDANCE WITH THE RESTRAINED LENGTH OF PIPE SCHEDULE SHOWN IN THE DRAWINGS.

11. THE CONTRACTOR SHALL COMPLY WITH "MISS UTILITY" REQUIREMENTS PRIOR TO PERFORMING ANY EXCAVATION (TEL. (800) 552-7001).

12. SYSTEM SHUTDOWN OPERATION:

A. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF UTILITY CONSTRUCTION A MINIMUM OF 30 DAYS PRIOR TO UTILITY ADJUSTMENT FIELD EFFORTS. THE SEQUENCE OF UTILITY CONSTRUCTION SHALL CONSIST OF A PRELIMINARY LIST OF DATES FOR UTILITY TIE-INS, CONNECTIONS AND SHUTDOWNS. THE CONTRACTOR SHALL ALSO PROVIDE AT THIS TIME THE ANTICIPATED SHUTDOWN TIME REQUIRED, AS WELL AS ANTICIPATED TIME OF DAY SCHEDULE FOR THE TIE-INS, CONNECTIONS AND SHUTDOWNS.

B. CONTRACTOR SHALL GIVE A TWO (2) WEEK NOTICE IN WRITING TO THE ENGINEER, THE BAVARIAN INN, THE SHEPHERDSTOWN PUBLIC WORKS DEPARTMENT AND SYNDER ENVIRONMENTAL SERVICES PRIOR TO BEGINNING MODIFICATIONS TO THE EXISTING FACILITIES.

C. THE EXISTING FACILITIES SHALL BE DEACTIVATED FOR A MAXIMUM PERIOD OF SIX (6) HOURS FOR EACH SCHEDULED SHUTDOWN. THE CONTRACTOR SHALL MAKE AS MANY CONNECTIONS AS PRACTICAL DURING EACH SHUTDOWN PERIOD.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SEWAGE OVERFLOWS OR SPILLAGE DURING SANITARY SEWER SYSTEM SHUTDOWN OR CONNECTIONS. ONCE GRAVITY SANITARY SEWER FACILITIES HAVE BEEN SHUTDOWN OR PUMP STATIONS PUMPED DOWN, THE CONTRACTOR SHALL PROVIDE STANDBY SEWAGE PUMPING AND HAULING OR BY-PASS PUMPING TECHNIQUES FOR THE DISPOSAL OF ALL OVERFLOWS WHICH MAY OCCUR IN THE SHUTDOWN OF THE SANITARY SEWER SYSTEM FACILITIES. THE METHOD FOR MAINTAINING SEWAGE CONVEYANCE SHALL BE APPROVED BY THE ENGINEER PRIOR TO SYSTEM SHUTDOWN.

14. CONTRACTOR SHALL FURNISH SIX (6) COPIES OF ALL SHOP DRAWINGS TO THE ENGINEER PRIOR TO CONSTRUCTION AND/OR INSTALLATION OF THE FACILITIES AND RELATED ITEMS. ANY ITEMS INSTALLED PRIOR TO APPROVAL OF SHOP DRAWINGS ARE DONE AT THE CONTRACTOR'S RISK AND MAY BE SUBJECT TO REMOVAL AND CORRECT INSTALLATION AT THE CONTRACTOR'S EXPENSE.

15. SUBMITTALS:

1. SUBMIT SHOP DRAWINGS (SIX (6) COMPLETE SETS) OF THE FOLLOWING, IN ADDITION TO SUBMITTALS REQUIRED BY OTHER SECTIONS OF THE CONTRACT DOCUMENTS:

DUPLEX GRINDER PUMP STATION PACKAGE
HIGH DENSITY POLYETHYLENE PIPE (HDPE) FORCEMAIN
POLYVINYL CHLORIDE (PVC) SCHEDULE 80 PIPE AND FITTINGS
VALVES
FITTINGS
GASKETS
RESTRAINED JOINTS
RETAINER GLANDS
DETECTABLE UTILITY MARKING TAPE
DISSIMILAR MATERIAL PIPE JOINTS
METHOD OF JOINT RESTRAINT
SEQUENCE OF CONSTRUCTION
FLOWABLE BACKFILL METHOD
AGGREGATES
CONCRETE
DOUBLE LEAF ALUMINUM HATCHES
APPURTENANT ITEMS
CONDUIT
WIRE
CALIBRATION CERTIFICATES FOR TEST EQUIPMENT

2. UPON COMPLETION, TESTING AND ACCEPTANCE OF THE PUMP STATION AND FORCEMAIN INSTALLATION, SUBMIT:

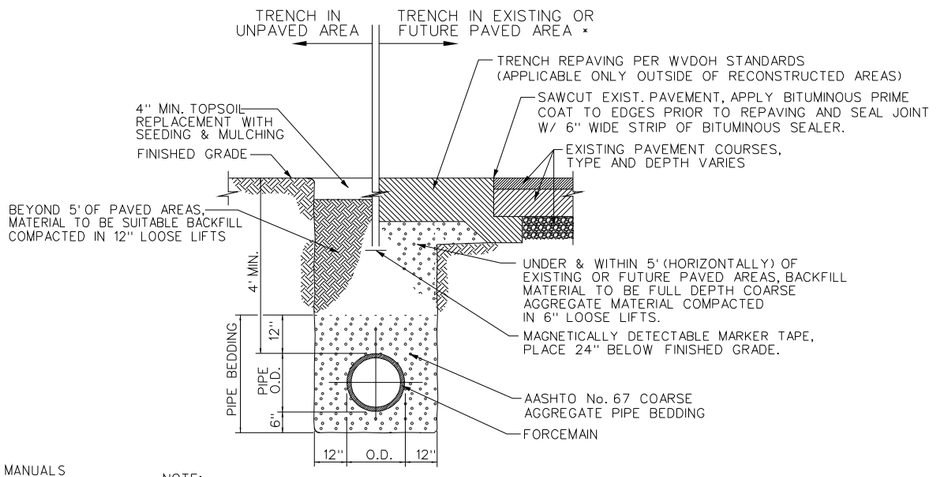
DUPLEX GRINDER PUMP STATION PACKAGE OPERATION AND MAINTENANCE MANUALS
CERTIFICATE FROM MANUFACTURER'S REPRESENTATIVE ATTESTING THAT THE INSTALLATION AND OPERATION CONFORMS TO THE MANUFACTURER'S REQUIREMENTS.
ELECTRICAL INSPECTION CERTIFICATE

16. NOTES ON PLAN SHEETS WITH AN ITEM CODE NUMBER ARE REFERRED TO PAY ITEMS INDICATED ON THIS SHEET. NOTES ON PLAN AND DETAIL SHEETS WITHOUT AN ITEM CODE NUMBER ARE TO CLARIFY CONSTRUCTION REQUIRED AND SHALL BE INCLUDED IN THE UNIT PRICE FOR THE ASSOCIATED PAY ITEM.

ALL ITEMS OF MATERIAL, LABOR, SUPPLIES OR EQUIPMENT THAT ARE NOT SPECIFICALLY ENUMERATED FOR PAYMENT AS SEPARATE ITEMS, BUT WHICH ARE REASONABLY REQUIRED TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS, ARE CONSIDERED SUBSIDIARY OBLIGATIONS OF THE CONTRACTOR. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR THEM.

TABULATION OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
675025	SPECIAL STRUCTURE	LUMP SUM	1
675008	4" HDPE FORCEMAIN	L.F	1200



NOTE:

1. MEASUREMENT AND PAYMENT FOR FORCEMAIN IS UNDER ITEM NO. 675008. ITEMS CONSIDERED AS INCIDENTAL TO FORCEMAIN CONSTRUCTION INCLUDE, BUT ARE NOT LIMITED TO; LAYOUT WORK, EXCAVATION, BEDDING, PIPE MATERIALS, AGGREGATE BACKFILL, MARKER TAPE, CONNECTION TO EXISTING MANHOLE, TESTING, ETC.

NOTES (WITHIN EXISTING PAVED AREAS):

1. ALL PAVING, BEDDING AND BACKFILL MATERIALS SHALL CONFORM TO APPLICABLE SECTIONS OF WVDOH REQUIREMENTS, LATEST EDITION.
2. PAVING AND SUBBASE DEPTHS SHALL BE AS SHOWN OR ADJUSTED TO MATCH EXISTING DEPTHS, WHICHEVER IS GREATER.

* NOTE (WITHIN FUTURE PAVED AREAS):

1. FULL DEPTH COARSE AGGREGATE BACKFILL SHALL BE PLACED SUCH THAT TOP SURFACE IS EVEN WITH THE EXISTING ROUGH GRADE.

FORCEMAIN TRENCH DETAIL

NTS

FM-01

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GENERAL NOTES AND DETAILS

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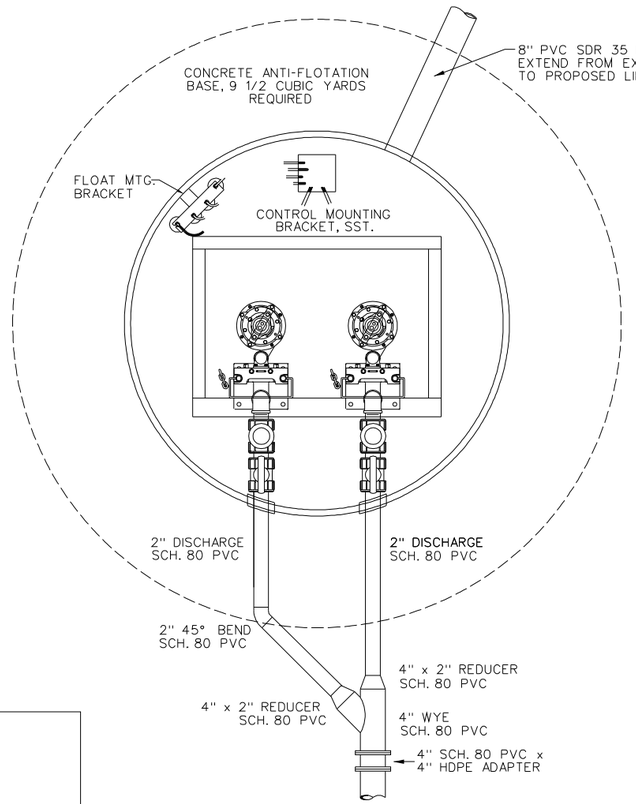
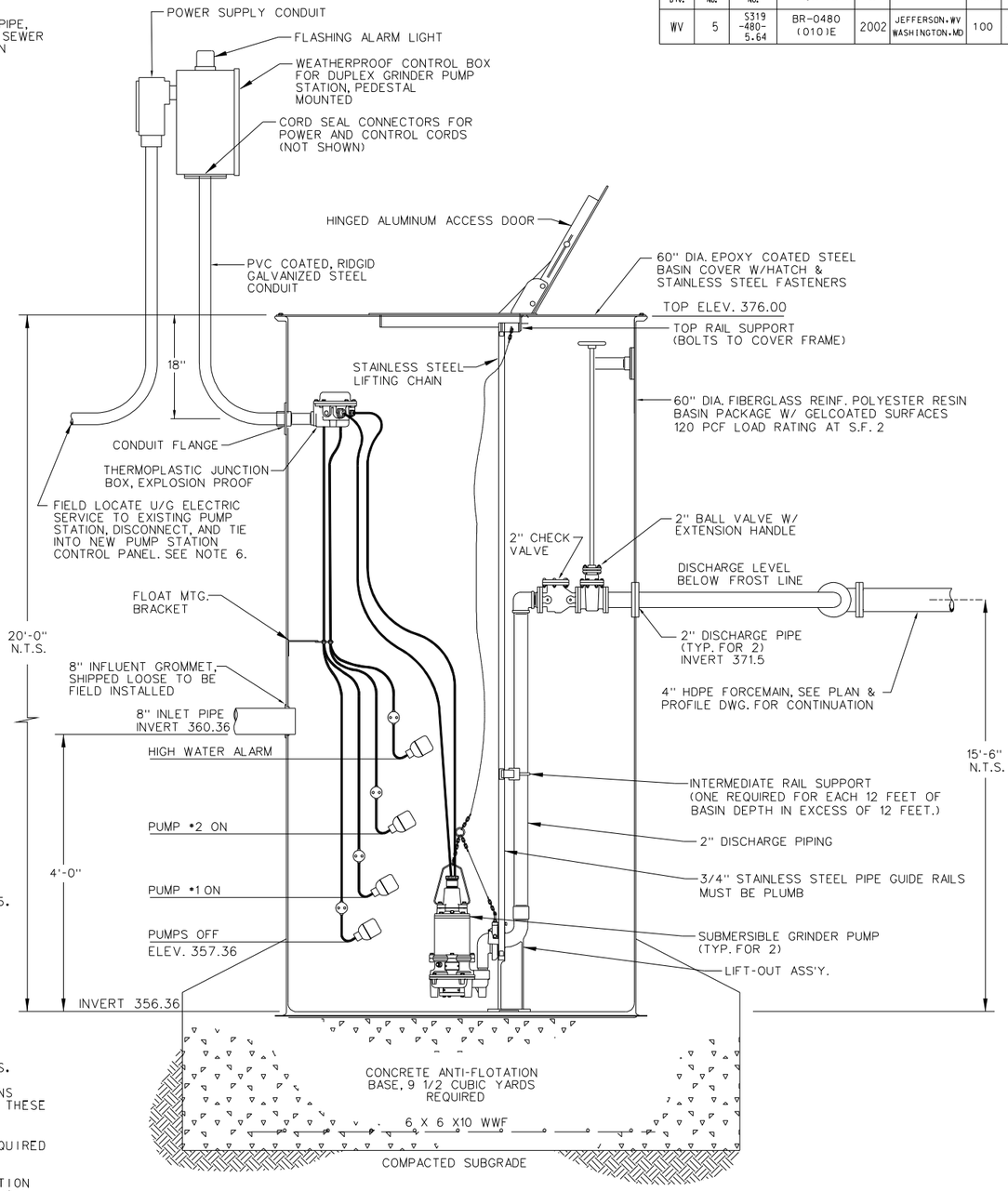
WV	5	S319 -480- 5.64	BR-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	100	407

DESIGN PARAMETERS:

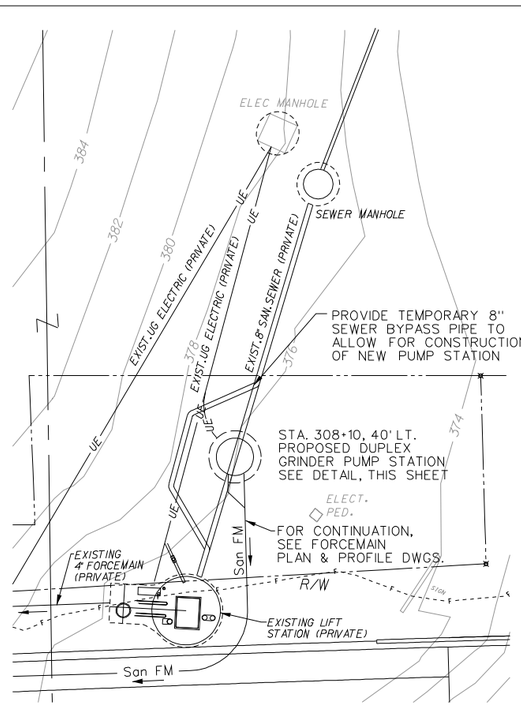
DUPLEX SEWAGE GRINDER PUMP STATION
PUMP OPERATING POINT: 100 GPM @ 55' TDH
FORCEMAIN LENGTH : 1,200 FT
FORCEMAIN MATERIAL : 4" HDPE



PLAN VIEW
N.T.S.



ELEVATION VIEW
N.T.S.



SITE PLAN
SCALE : 0 10 ft.

NOTES:

1. THE EXISTING SEWAGE PUMP STATION AND FORCEMAIN MUST REMAIN IN SERVICE UNTIL THE NEW PUMP STATION AND FORCEMAIN IS COMPLETE, TESTED AND ACCEPTED FOR SERVICE. AS SUCH, TEMPORARY BYPASS PIPING FOR THE EXISTING GRAVITY SEWER AND TEMPORARY ELECTRICAL SERVICE MODIFICATIONS MAY BE REQUIRED TO FACILITATE CONSTRUCTION. ALL TEMPORARY MEASURES THAT MAY BE REQUIRED ARE CONSIDERED INCIDENTAL TO ITEM NO. 675025.
2. WHEN THE NEW PUMP STATION AND FORCEMAIN IS COMPLETE, TESTED AND ACCEPTED FOR SERVICE, THE CONTRACTOR SHALL SHUT DOWN, DECOMMISSION AND REMOVE THE EXISTING PUMP STATION STRUCTURE AND ALL APPURTENANCES. WORK SHALL BE PERFORMED IN ACCORDANCE WITH STATE AND LOCAL HEALTH DEPARTMENT REGULATIONS. ALL WORK REQUIRED SHALL BE CONSIDERED INCIDENTAL TO ITEM NO. 675025.
3. THE DETAIL FOR THE DUPLEX GRINDER PUMP STATION PACKAGE IS SCHEMATIC IN NATURE AND MAY NOT ACCURATELY DEPICT THE TYPE, SIZE, LOCATION AND CONFIGURATION OF ALL COMPONENTS, AS WELL AS MISCELLANEOUS APPURTENANCES THAT MAY REQUIRED. REFER TO THE TECHNICAL SPECIFICATION FOR COMPLETE PERFORMANCE REQUIREMENTS.
4. THE CONTRACTOR SHALL FIELD VERIFY ALL SIZES, DEPTHS, AND POSITIONS OF EXISTING UTILITY STRUCTURES AND PIPES. ANY DISCREPANCIES WITH THESE PLANS SHALL BE REPORTED TO THE ENGINEER FOR REVIEW.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL START-UP SERVICES REQUIRED TO BRING THE PUMP STATION UP TO NORMAL OPERATION. THE CONTRACTOR SHALL BE REQUIRED TO ENLIST THE SERVICES OF THE MANUFACTURER'S REPRESENTATIVE TO ASSIST WITH START-UP SERVICES AND FINAL INSPECTION OF THE COMPLETED PUMP STATION INSTALLATION. THE REPRESENTATIVE SHALL BE REQUIRED TO PROVIDE DOCUMENTATION THAT THE PUMP STATION CONFORMS TO THE MANUFACTURER'S REQUIREMENTS FOR INSTALLATION AND OPERATION. THE OWNER OR OWNER'S REPREESNTATIVE SHALL BE NOTIFIED PRIOR TO START-UP SO THAT THEY MAY BE PRESENT FOR OPERATOR TRAINING.
6. THE CONTRACTOR SHALL INSPECT THE SIZE AND CONDITION OF THE EXISTING ELECTRICAL SERVICE WIRING FROM THE HOTEL DISCONNECT POINT TO THE EXISTING PUMP STATION CONTROL PANEL. IF THE CONDITION OR CONDUCTOR SIZE IS NOT IN ACCORDANCE WITH CURRENT ELECTRICAL CODES, THE CONTRACTOR SHALL PULL NEW CONDUCTORS FROM THE DISCONNECT TO THE DUPLEX PUMP CONTROL PANEL.

DUPLEX GRINDER PUMP STATION

ITEM NO. 675025 "SPECIAL STRUCTURE"

FM-02

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DUPLEX GRINDER PUMP STATION

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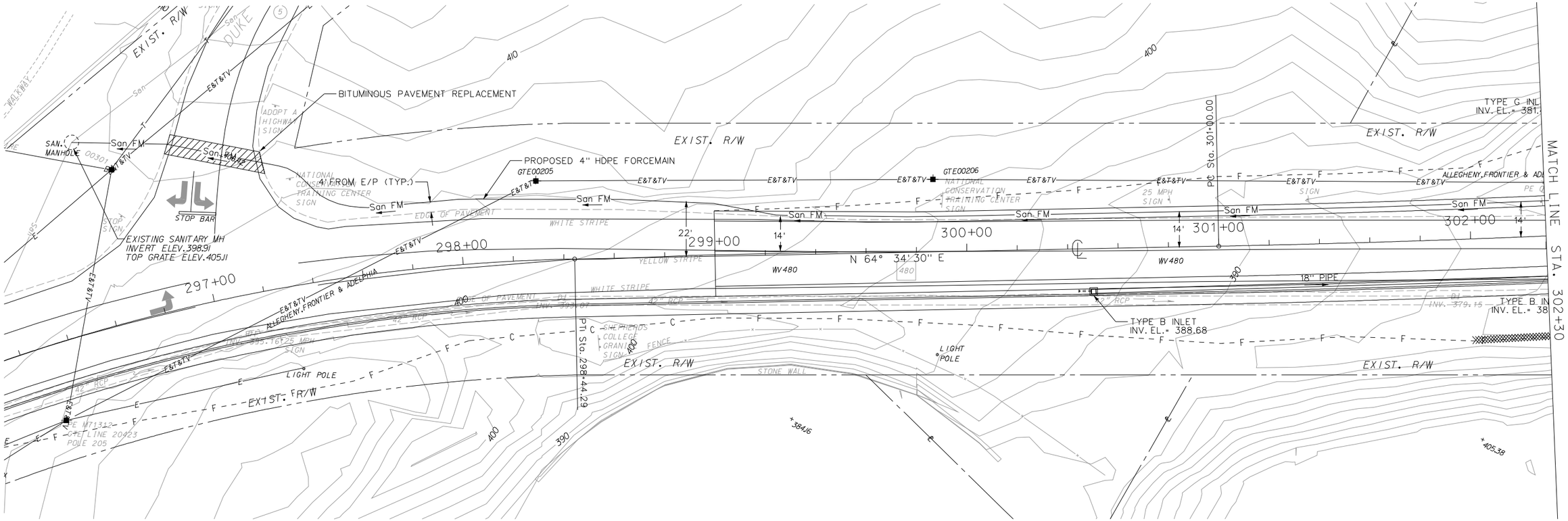
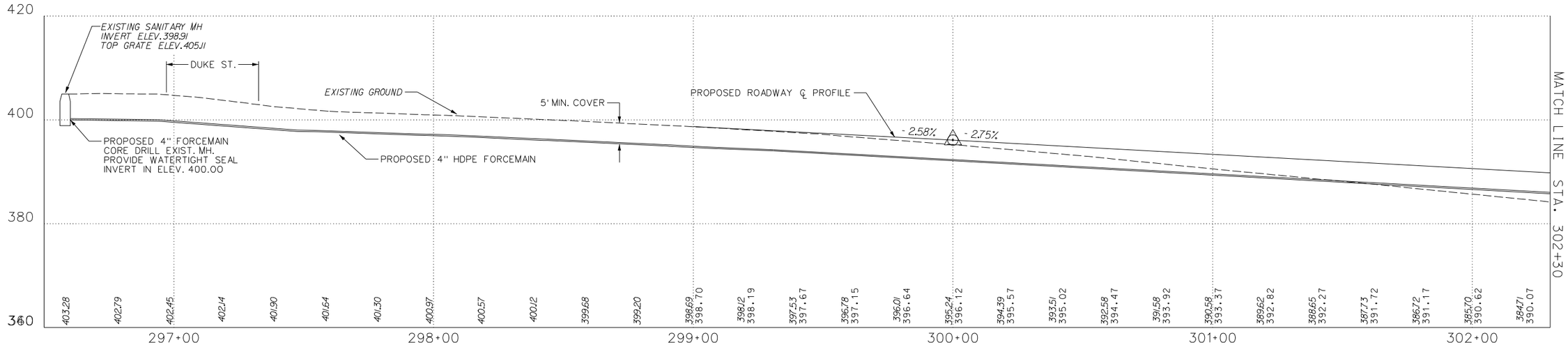
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319 -480- 5.64	BR-0480 (010)E	2002	JEFFERSON, WV WASHINGTON, MD	101	407





NOTE: ELEVATIONS SHOWN ALONG BOTTOM OF PROFILE REPRESENT EXISTING AND PROPOSED ELEVATIONS ALONG ROADWAY ℄. FORCEMAIN IS OFFSET 14' LEFT AND PARALLEL TO ROADWAY ℄, EXCEPT BEFORE STA. 299+00. BEYOND STA. 299+00, MAINTAIN 5' MINIMUM COVER FROM TO TOP OF FORCEMAIN TO FINISHED GRADE AT 14' LEFT OF ℄, AND BEFORE STA. 299+00, MAINTAIN 5' OF COVER TO EXISTING GRADE.

SCALE : 0 20 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FORCEMAIN PLAN & PROFILE

FM-03

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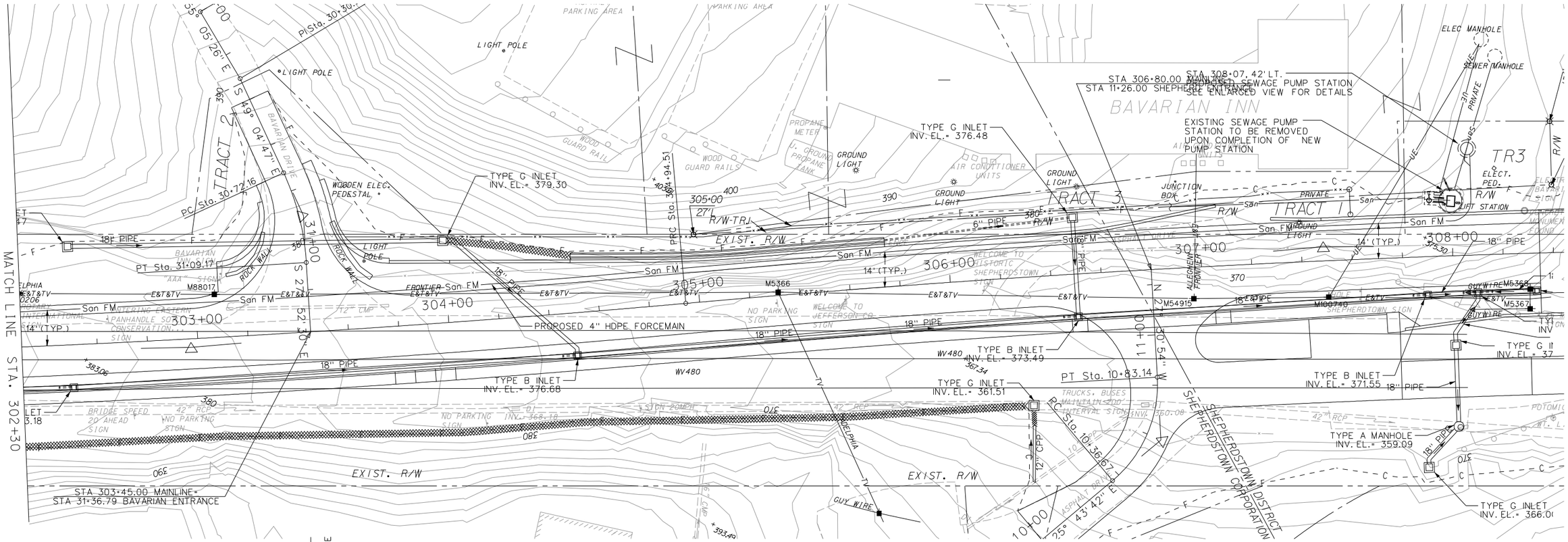
Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
WV	5	S319-480-5.64	BR-0480(010)E	2002	JEFFERSON, WV WASHINGTON, MD	102	407



NOTE: ELEVATIONS SHOWN ALONG BOTTOM OF PROFILE REPRESENT EXISTING AND PROPOSED ELEVATIONS ALONG ROADWAY ℄. FORCEMAIN IS OFFSET 14' LEFT AND PARALLEL TO ROADWAY ℄, EXCEPT BEYOND STA. 308+00. MAINTAIN 5' MINIMUM COVER FROM TO TOP OF FORCEMAIN TO FINISHED GRADE AT 14' LEFT OF ℄.

SCALE : 0 20 ft.

Baker
Michael Baker Jr., Inc.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FORCEMAIN PLAN & PROFILE

FM-04

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