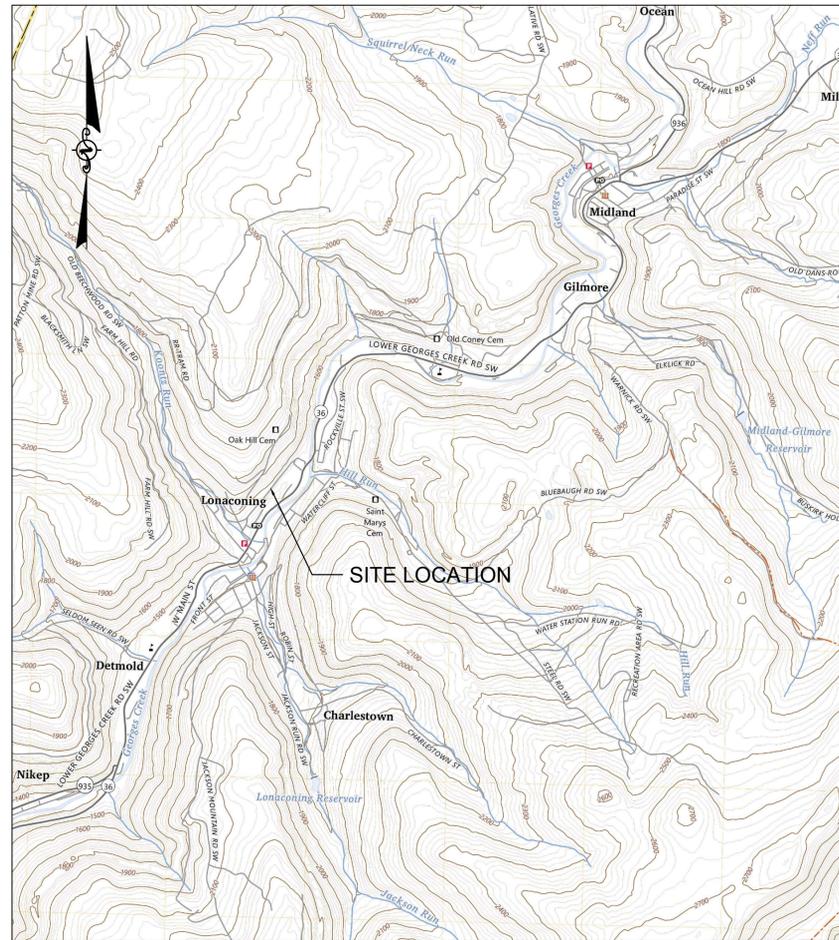


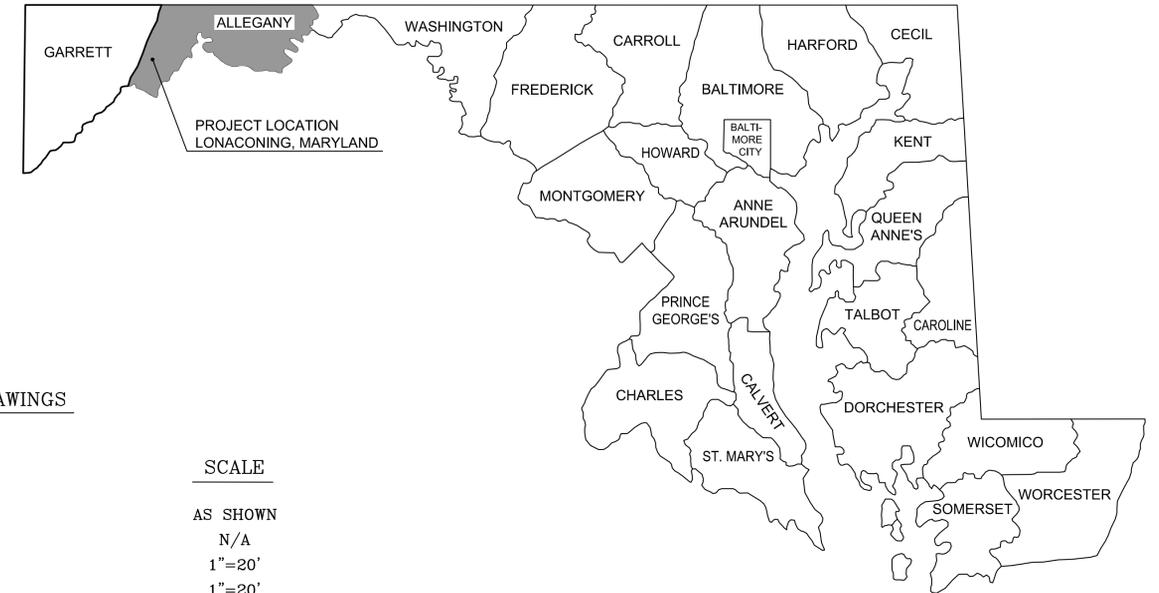
FURNACE STREET SUBSIDENCE REPAIR PROJECT

LOCATION MAP



LONACONING, MD USGS QUAD
SCALE 1" = 2,000'

VICINITY MAP



SCHEDULE OF DRAWINGS

SHEET NO.	DESCRIPTION	SCALE
1	COVER SHEET	AS SHOWN
2	GENERAL NOTES	N/A
3	EXISTING SITE CONDITIONS	1"=20'
4	RECLAMATION SITE PLAN	1"=20'
5	EROSION AND SEDIMENT CONTROL PLAN	1"=20'
6	SITE SECTIONS	AS SHOWN
7	SITE PROFILE B	AS SHOWN
8	DRAINAGE PROFILES	AS SHOWN
9	MISCELLANEOUS DETAILS	N/A
10-12	EROSION & SEDIMENT CONTROL DETAILS	N/A
13-14	BORING LOGS	N/A



Maryland Department of the Environment
Land and Materials Administration
Abandoned Mine Land Division



BOARD OF PUBLIC WORKS
WES MOORE, GOVERNOR
BROOKE LIERMAN, COMPTROLLER
DERECK DAVIS, TREASURER



POTESTA & ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL CONSULTANTS
125 Lakeview Drive, Morgantown, WV 26508
TEL: (304) 255-2245 FAX: (304) 225-2246
E-Mail Address: potesta@potesta.com

SURVEYED BY
DRAWN BY
DESIGN BY

MDE LMA AMLD APPROVAL
REGULATORY & COMPLIANCE ENG DATE
BOM PROJECT NO.

Maryland Department of the Environment
Land and Materials Administration
Abandoned Mine Land Division

TITLE	COVER SHEET	PROJECT NO.
LOCATION	LONACONING ALLEGANY COUNTY, MARYLAND	DATE 03/10/2025
DESCRIPTION	FURNACE STREET SUBSIDENCE REPAIR DESIGN	1 SHEET 1 OF 14

GENERAL NOTES:

THE PROJECT IS BEING COMPLETED BY THE MDE ABANDONED MINE LAND DIVISION AND THE TOWN OF LONAONING TO REPAIR MINE SUBSIDENCE THAT IS OCCURRING IN FURNACE STREET. THE PROJECT ALSO INCLUDES INSTALLATION OF A CONCRETE CURB AND GUTTER, AND GUARDRAIL REPLACEMENT.

THE CONTRACTOR IS REQUIRED TO COORDINATE WITH THE TOWN OF LONAONING FOR TRAFFIC CONTROL AND ALL OTHER RELATED WORK IN THE TOWN OF LONAONING. TREE REMOVAL SHALL BE MINIMIZED TO ONLY THE REQUIRED AREA NEEDED TO PERFORM THE SITE WORK IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS.

REVEGETATION OF THE SITE WILL BE THE STANDARD ABANDONED MINE LAND PLANTING MIX AS SHOWN ON THE EROSION AND SEDIMENTATION PLANS AND IN THE REVEGETATION SECTION OF THE CONSTRUCTION SPECIFICATIONS.

THE PROPOSED WORK MUST BE CONDUCTED UNDER THE MOST RIGOROUS CONFORMITY WITH STATE, FEDERAL AND COUNTY GUIDELINES, AND REGULATIONS, FOR EROSION AND SEDIMENT CONTROL - BACKED BY STRICT MONITORING AND ENFORCEMENT BY MDE COMPLIANCE INSPECTORS THROUGHOUT THE CONSTRUCTION PROCESS.

THE CONTRACTOR SHALL VIDEO OR ADEQUATELY PHOTOGRAPH THE PROJECT AREA PRIOR TO STARTING CONSTRUCTION AND MAINTAIN A COPY IN THE EVENT OF ANY ISSUES THAT MAY ARISE DURING OR AFTER CONSTRUCTION.

THE EXISTING WATERLINE, WATER VALVE, AND WATER METER SHOWN WITHIN THE LIMITS OF DISTURBANCE ARE ABANDONED AND MAY BE REMOVED AND NOT REPLACED WHERE NECESSARY.

THE CONTRACTOR SHALL REMOVE THE EXISTING GUARDRAIL AS SHOWN ON THE PLANS. THE GUARDRAIL SHALL BE REMOVED IN A WAY THAT IT CAN BE RE-USED BY THE TOWN OF LONAONING. THE CONTRACTOR SHALL DELIVER THE GUARDRAIL TO AND COORDINATE WITH THE TOWN OF LONAONING'S CONTACT LISTED BELOW.

SUBSURFACE:

THREE BORINGS WERE DRILLED IN FURNACE STREET TO DETERMINE THE SUBSURFACE CONDITIONS AND MATERIAL TYPES. DRILL LOGS ARE BEING PROVIDED AS PART OF THE CONTRACT DOCUMENTS. SEE SHEETS 13 AND 14.

UTILITIES:

THE CONTRACTOR SHALL BE RESPONSIBLE TO FIELD IDENTIFY ALL UTILITIES INSIDE THE LIMITS OF DISTURBANCE. THE CONTRACTOR SHALL FOLLOW ALL OSHA AND UTILITY OWNER GUIDELINES WHEN WORKING NEAR UTILITIES. IT IS REQUIRED THAT MISS UTILITY OF MARYLAND BE CONTACTED AT 1-800-257-7777 BEFORE EXCAVATION IS STARTED AND EVERY 8 BUSINESS DAYS TO COMPLY DURING THE EXCAVATION PERIOD.

SITE CONTACTS:

TIM MILLER
REGULATORY & COMPLIANCE ENGINEER SENIOR
ABANDONED MINE LAND DIVISION
MARYLAND DEPARTMENT OF ENVIRONMENT
160 SOUTH WATER STREET FROSTBURG, MARYLAND 21532
TIM.MILLER@MARYLAND.GOV
301-689-1465

TYLER RAYNER, ADMINISTRATOR
TOWN OF LONAONING
301-697-7085

CONSTRUCTION EQUIPMENT:

THE CONTRACTOR WILL BE REQUIRED TO CHOOSE AND FURNISH APPROPRIATE EQUIPMENT FOR CONSTRUCTION. THE CONTRACTOR WILL ALSO BE REQUIRED TO PROVIDE MANAGEMENT, LABOR, MATERIALS, AND ALL OTHER ITEMS NECESSARY FOR ALL WORK AS DETAILED ON THE CONTRACT DRAWINGS, AND PLACEMENT OF EROSION AND SEDIMENT CONTROL MEASURES. ALL EARTH-MOVING EQUIPMENT SHALL BE SERVICED PRIOR TO START OF WORK EACH MORNING. EQUIPMENT SHALL BE MAINTAINED TO PREVENT FUEL, OIL, AND LUBRICANT SPILLS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTAIN AND CLEAN UP ANY ACCIDENTAL SPILLS THAT MAY OCCUR. A SPILL KIT IS REQUIRED ON SITE FOR THE DURATION OF THE PROJECT.

CONSTRUCTION SIGNAGE:

THE CONTRACTOR SHALL PROVIDE SIGNS ON BOTH ENDS OF THE CONSTRUCTION AREA TO ALERT TRAFFIC OF UPCOMING CONSTRUCTION. SIGNS SHALL BE ORANGE/BLACK WORK AREA AHEAD SIGNS WITH A MINIMUM SIZE OF 36" BY 36" AS SHOWN IN THE DETAILS.

SITE/EASEMENT:

CONTRACTOR IS RESPONSIBLE TO KEEP ALL PUBLIC ROADWAYS AND DRAINAGE SYSTEMS FREE FROM DIRT, MUD, AND CONSTRUCTION DEBRIS AT ALL TIMES. NO TRACKING OF MUD AND/OR DEBRIS ONTO ADJACENT ROADWAYS OR PROPERTIES WILL BE PERMITTED.

THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS TO ANY ITEMS DAMAGED DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO FENCES, ROADS, UTILITIES, PARKING LOTS, PRIVATE PROPERTY, ETC.

EROSION CONTROL MEASURES DURING CONSTRUCTION:

DURING CONSTRUCTION, THE CONTRACTOR MAY BE RESPONSIBLE FOR INSTALLING ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES NOT SHOWN ON THE PLANS. THESE MAY BECOME EVIDENT ONLY AFTER CONSTRUCTION BEGINS AND SHALL BE REQUIRED TO CONTROL EXCESS SEDIMENT AS PER CONSULTATION WITH DESIGNER. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL MEET THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

EROSION CONTROL:

ALL WORK SHALL BE IN COMPLIANCE WITH REGULATIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM AND THE REQUIREMENTS OF THE MDE SEDIMENT AND EROSION CONTROL PROGRAM. PRIOR TO THE INITIATION OF CONSTRUCTION, THE CONTRACTOR MUST TRANSFER THE APPROVED NPDES PERMIT INTO THEIR NAME AND BE RESPONSIBLE FOR ALL COMPLIANCE REQUIREMENTS.

THE EXCAVATION AND MOVEMENT OF SOIL MATERIALS SHALL BE MINIMIZED TO LIMIT THE AREA DISTURBED, AS WELL AS THE TIME SOIL IS LEFT UNPROTECTED.

THROUGHOUT THE DURATION OF THE PROJECT, SOIL STOCKPILE AREAS SHALL BE CONTROLLED WITH SILT FENCE. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY AND PERMANENT PROTECTION OF STOCKPILE AREAS AS WELL AS ALL SOIL INTENTIONALLY TRANSPORTED FROM THE SITE. IF OFFSITE DISPOSAL IS REQUIRED, THE CONTRACTOR MUST USE A COMMERCIAL SITE THAT IS FULLY PERMITTED AND IN COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS. THE DISPOSAL SITE MUST BE APPROVED BY AMLD.

SILT FENCE SHALL BE PROPERLY ANCHORED IN STAGING AND STOCKPILE AREAS TO PREVENT EROSION. ONCE STAGING AND STOCKPILE AREAS ARE NO LONGER NEEDED, CONTRACTOR SHALL REMOVE SILT FENCE AND GRADE, SEED, AND MULCH ALL DISTURBANCE.

THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS PERMANENT STABILIZATION OF EXPOSED SOIL OCCURS. THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE EROSION CONTROL INSPECTOR SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY EROSION CONTROL MEASURES ARE NO LONGER NEEDED. SITE INSPECTIONS SHALL CONTINUE DURING THIS PERIOD UNTIL TEMPORARY SEEDING BECOMES ESTABLISHED.

WHERE SOIL MATERIAL IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, DAILY CLEANING (OR MORE OFTEN IF NEEDED) IS REQUIRED AND SHALL BE COMPLETED PRIOR TO EXITING THE SITE. SOIL MATERIALS SHALL BE REMOVED FROM THE ROADS BY SHOVELING, OR SWEEPING, AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA.

SEDIMENT AND EROSION CONTROLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL EROSION CONTROL REGULATIONS.

PUMPING STATION:

IF THE EXCAVATED AREAS FILL WITH WATER DURING CONSTRUCTION, THE WATER SHALL BE PUMPED OUT USING THE REMOVABLE PUMPING STATION (SEE DETAIL SHEET 12). WATER PUMPED OUT OF EXCAVATED AREAS MUST FIRST PASS THROUGH AN APPROPRIATE EROSION AND SEDIMENT CONTROL STRUCTURE PRIOR TO EXITING THE SITE.

VEGETATION PLAN:

AS SOON AS FINAL GRADING IS COMPLETED, THE FINAL SEEDING MIXTURE OF GRASSES WILL BE PLANTED ON ALL DISTURBED SURFACES. EXACT SPECIFICATIONS FOR SEED MIX, SOIL AMENDMENTS, AND MULCH ARE INCLUDED IN THE REVEGETATION SECTION OF THE CONSTRUCTION SPECIFICATIONS.

TREE CUTTING/REMOVAL:

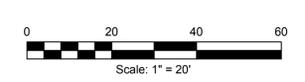
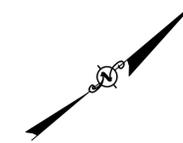
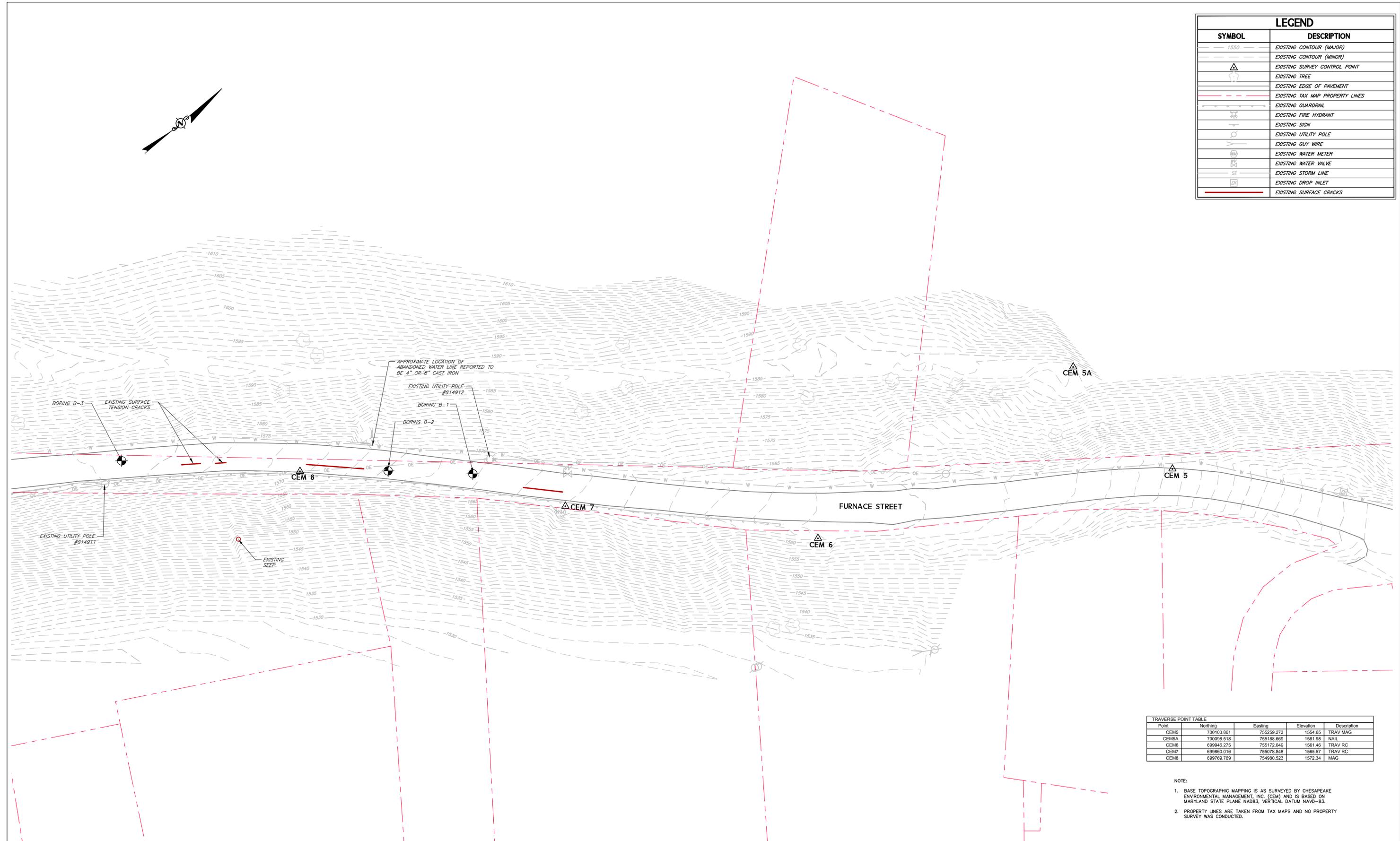
ANY TREES REMOVED DURING CLEARING AND GRUBBING WILL NEED TO BE MOVED TO A LOCATION ACCESSIBLE TO THE PROPERTY OWNER. TREE CUTTING SHALL BE COORDINATED WITH THE PROPERTY OWNERS.

SEQUENCE OF CONSTRUCTION:

1. THE CONTRACTOR SHALL NOTIFY MDE INSPECTOR AT (301-689-1440), 7 DAYS PRIOR TO CONSTRUCTION.
2. INSTALL ALL E&S CONTROLS, I.E., SILT FENCE, FILTER LOGS, STRAW WATTLES, EROSION CONTROL MATTING, ETC., WHERE INDICATED ON CONSTRUCTION PLANS.
3. CLEARING AND GRUBBING.
4. SUBSIDENCE REPAIR.
5. PROPOSED STORM DRAIN INSTALLATION.
6. CONCRETE CURB AND GUTTER INSTALLATION.
7. REPLACE GUARDRAIL.
8. PERFORM FINAL DRESS UP OF ALL DISTURBED AREAS AND THEN SEED AND MULCH TO CONDITION AS GOOD AS OR BETTER THAN ORIGINAL CONDITION.

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		DRAWN BY	 Land and Materials Administration	LOCATION	LONAONING ALLEGANY COUNTY, MARYLAND	DATE	03/10/2025
		DESIGN BY	 Abandoned Mine Land Division	DESCRIPTION	FURNACE STREET SUBSIDENCE REPAIR DESIGN		2
						SHEET 2 OF 14	

LEGEND	
SYMBOL	DESCRIPTION
	EXISTING CONTOUR (MAJOR)
	EXISTING CONTOUR (MINOR)
	EXISTING SURVEY CONTROL POINT
	EXISTING TREE
	EXISTING EDGE OF PAVEMENT
	EXISTING TAX MAP PROPERTY LINES
	EXISTING GUARDRAIL
	EXISTING FIRE HYDRANT
	EXISTING SIGN
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING STORM LINE
	EXISTING DROP INLET
	EXISTING SURFACE CRACKS



Point	Northing	Easting	Elevation	Description
CEM5	700103.961	755259.273	1554.65	TRAV MAG
CEM5A	700098.518	755188.669	1581.98	NAIL
CEM6	699946.275	755172.049	1561.46	TRAV RC
CEM7	699860.016	755078.848	1565.57	TRAV RC
CEM8	699769.769	754980.523	1572.34	MAG

- NOTE:
- BASE TOPOGRAPHIC MAPPING IS AS SURVEYED BY CHESAPEAKE ENVIRONMENTAL MANAGEMENT, INC. (CEM) AND IS BASED ON MARYLAND STATE PLANE NAD83, VERTICAL DATUM NAVD-83.
 - PROPERTY LINES ARE TAKEN FROM TAX MAPS AND NO PROPERTY SURVEY WAS CONDUCTED.



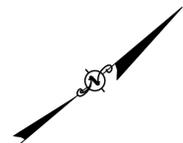
POTESTA & ASSOCIATES, INC.
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 125 Lakeview Drive, Morgantown, WV 26508
 TEL: (304) 255-2245 FAX: (304) 225-2246
 E-Mail Address: potesta@potesta.com

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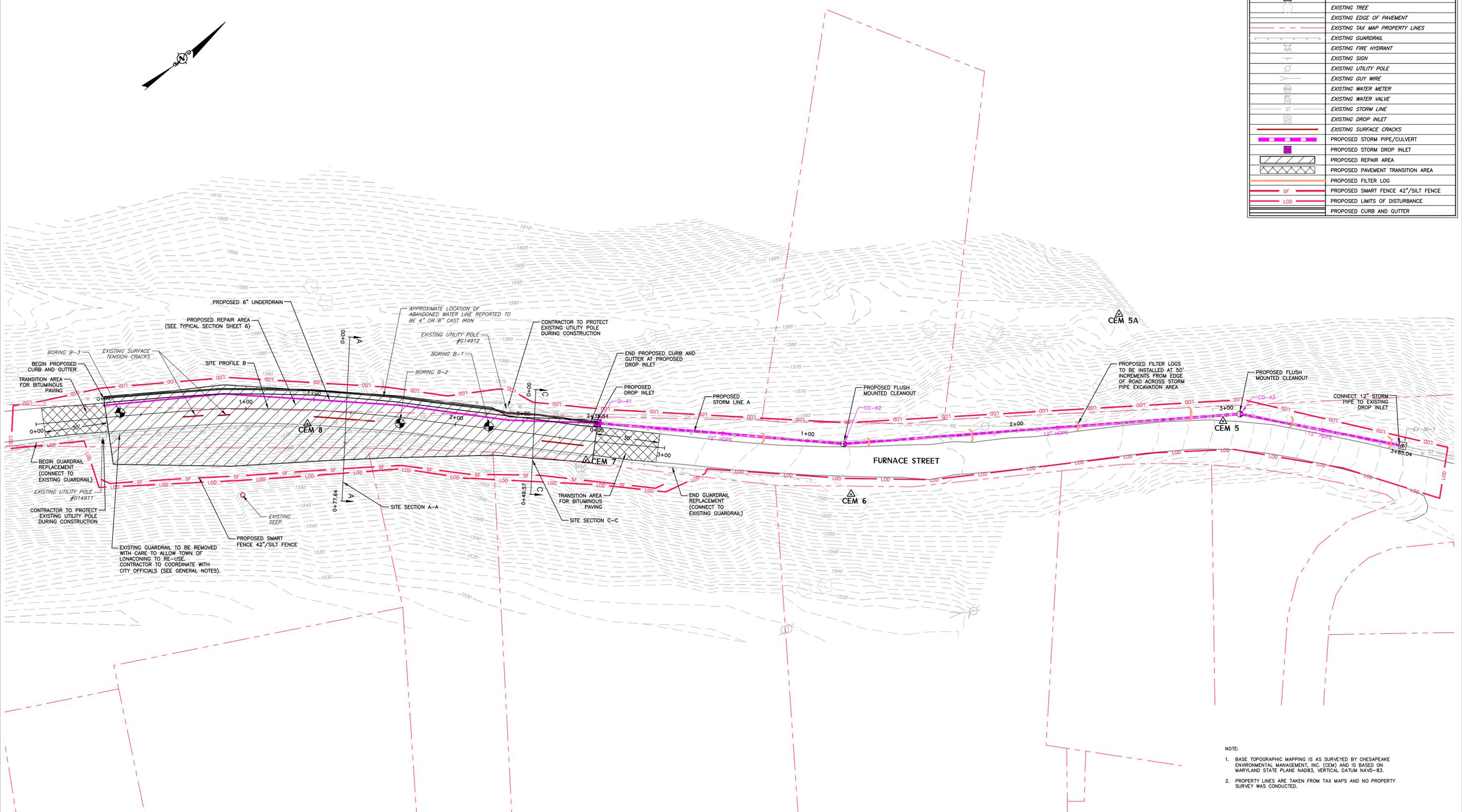
Maryland Department of the Environment
 Land and Materials Administration
 Abandoned Mine Land Division

TITLE
 EXISTING SITE CONDITIONS
 LOCATION
 LONACONING ALLEGANY COUNTY, MARYLAND
 DESCRIPTION
 FURNACE STREET SUBSIDENCE REPAIR DESIGN

PROJECT NO.
 DATE
 03/10/2025
 3
 SHEET 3 OF 14



LEGEND	
SYMBOL	DESCRIPTION
	EXISTING CONTOUR (MAJOR)
	EXISTING CONTOUR (MINOR)
	EXISTING SURVEY CONTROL POINT
	EXISTING TREE
	EXISTING EDGE OF PAVEMENT
	EXISTING TAX MAP PROPERTY LINES
	EXISTING GUARDRAIL
	EXISTING FIRE HYDRANT
	EXISTING SIGN
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING STORM LINE
	EXISTING DROP INLET
	EXISTING SURFACE CRACKS
	PROPOSED STORM PIPE/CULVERT
	PROPOSED STORM DROP INLET
	PROPOSED REPAIR AREA
	PROPOSED PAVEMENT TRANSITION AREA
	PROPOSED FILTER LOG
	PROPOSED SMART FENCE 42"/SILT FENCE
	PROPOSED LIMITS OF DISTURBANCE
	PROPOSED CURB AND GUTTER



NOTE:
 1. BASE TOPOGRAPHIC MAPPING IS AS SURVEYED BY CHESAPEAKE ENVIRONMENTAL MANAGEMENT, INC. (CEM) AND IS BASED ON MARYLAND STATE PLANE NAD83, VERTICAL DATUM NAVD-83.
 2. PROPERTY LINES ARE TAKEN FROM TAX MAPS AND NO PROPERTY SURVEY WAS CONDUCTED.



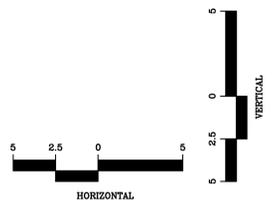
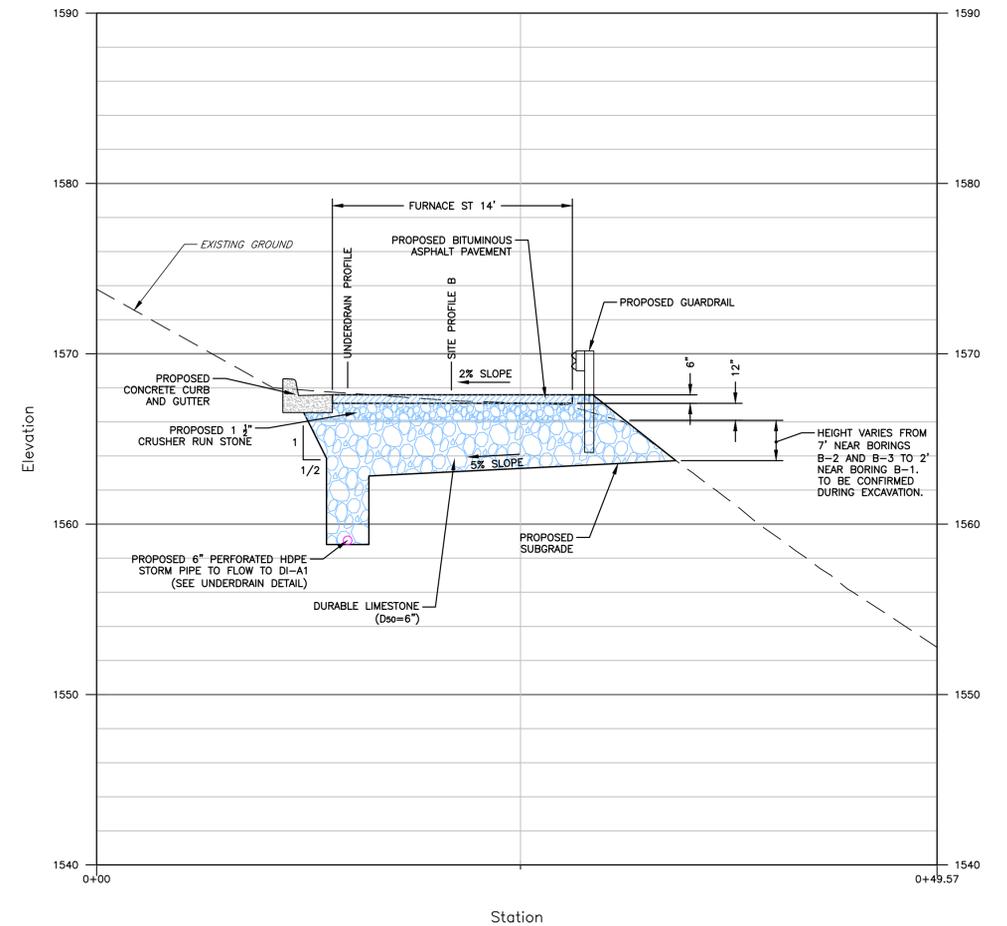
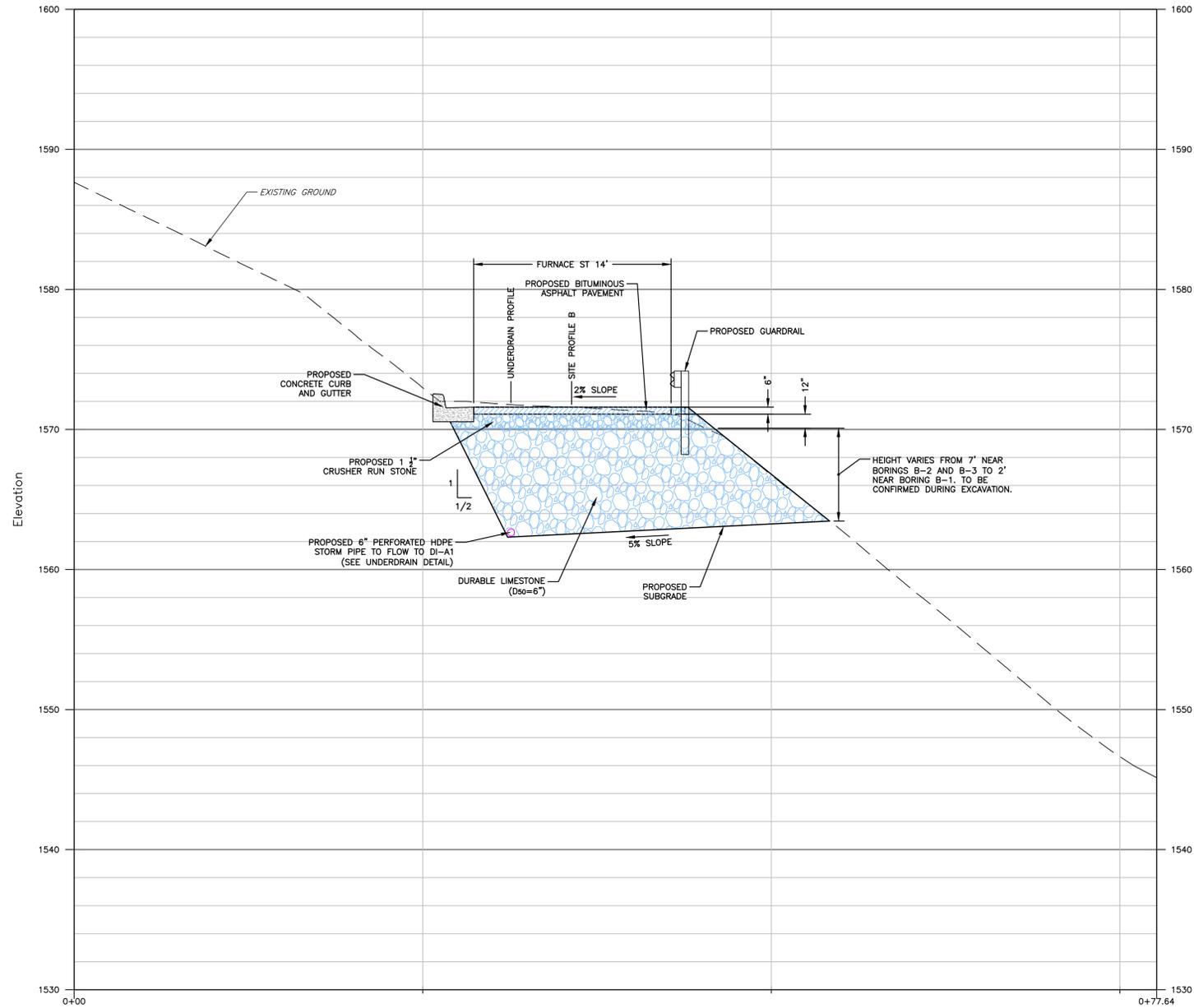
POTESTA & ASSOCIATES, INC.
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Maryland Department of the Environment
 Land and Materials Administration
 Abandoned Mine Land Division

TITLE: EROSION & SEDIMENT CONTROL PLAN
 LOCATION: LONA CONING ALLEGANY COUNTY, MARYLAND
 DESCRIPTION: FURNACE STREET SUBSIDENCE REPAIR DESIGN

PROJECT NO.
 DATE: 03/10/2025
 5
 SHEET 5 OF 14



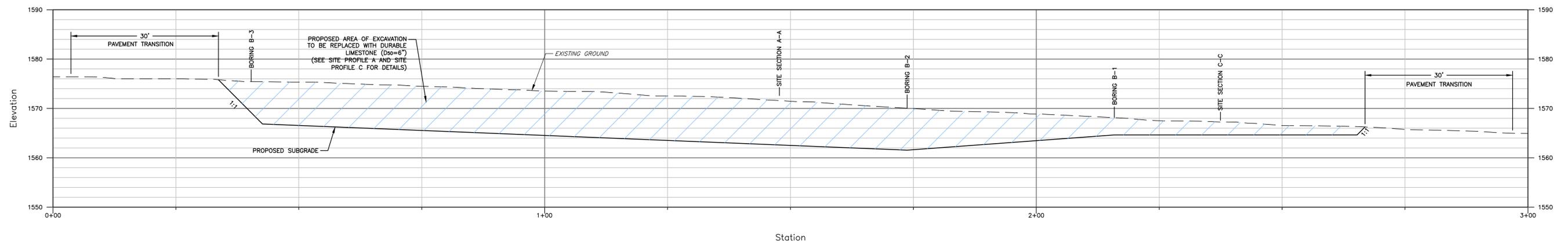
POTESTA & ASSOCIATES, INC.
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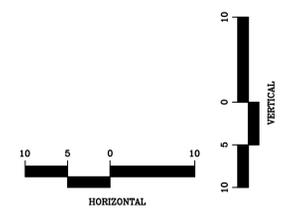
Maryland Department of the Environment
 Land and Materials Administration
 Abandoned Mine Land Division

TITLE
 LOCATION
 DESCRIPTION
 SITE SECTIONS
 LONACONING
 ALLEGANY COUNTY, MARYLAND
 FURNACE STREET SUBSIDENCE
 REPAIR DESIGN

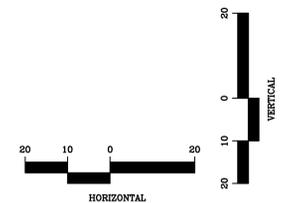
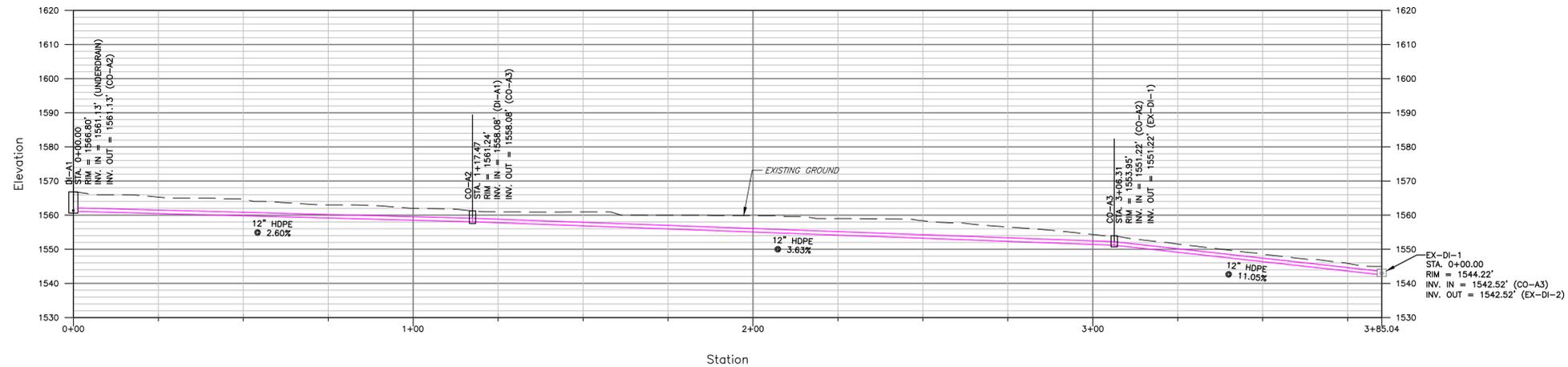
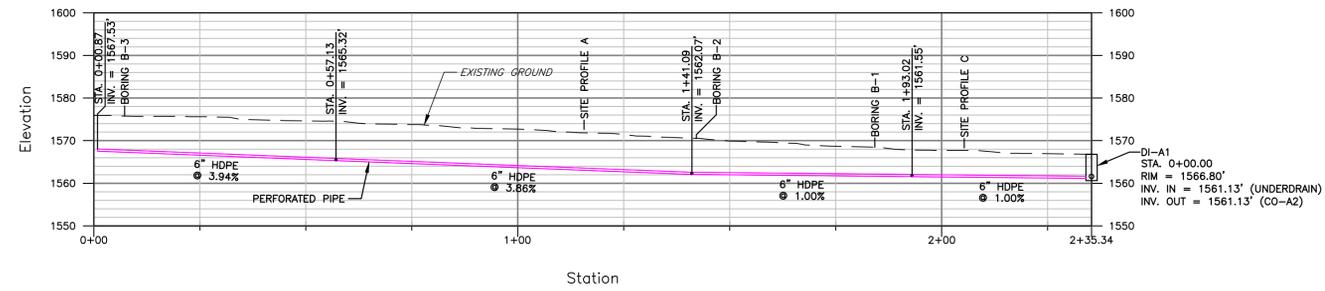
PROJECT NO.
 DATE
 SHEET 6 OF 14



SITE PROFILE B



	POTESTA & ASSOCIATES, INC. ENGINEERS AND ENVIRONMENTAL CONSULTANTS 125 Lakeview Drive, Morgantown, WV 26508 TEL: (304) 255-2245 FAX: (304) 225-2246 E-Mail Address: potesta@potesta.com	SURVEYED BY	Maryland Department of the Environment	TITLE	SITE PROFILE B	PROJECT NO.	
		DRAWN BY	 Land and Materials Administration	LOCATION	LONACONING ALLEGANY COUNTY, MARYLAND	DATE	03/10/2025
		DESIGN BY	 Abandoned Mine Land Division	DESCRIPTION	FURNACE STREET SUBSIDENCE REPAIR DESIGN	7	SHEET 7 OF 14



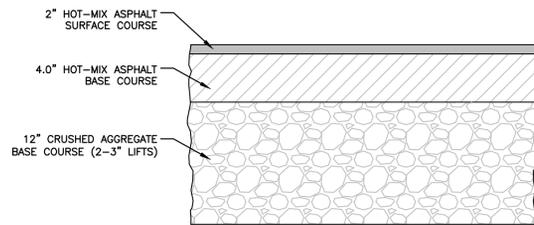
POTESTA & ASSOCIATES, INC.
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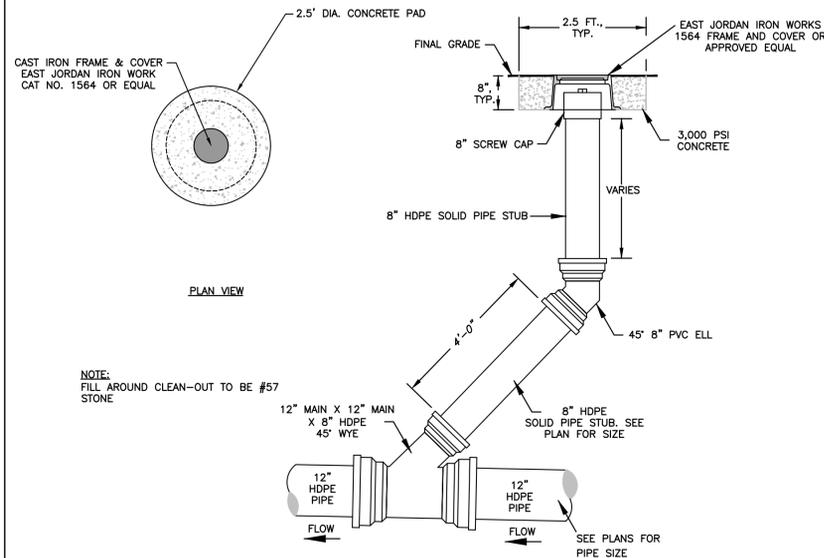
Maryland Department of the Environment
 Land and Materials Administration
 Abandoned Mine Land Division

TITLE: DRAINAGE PROFILES
 LOCATION: LONACONING ALLEGANY COUNTY, MARYLAND
 DESCRIPTION: FURNACE STREET SUBSIDENCE REPAIR DESIGN

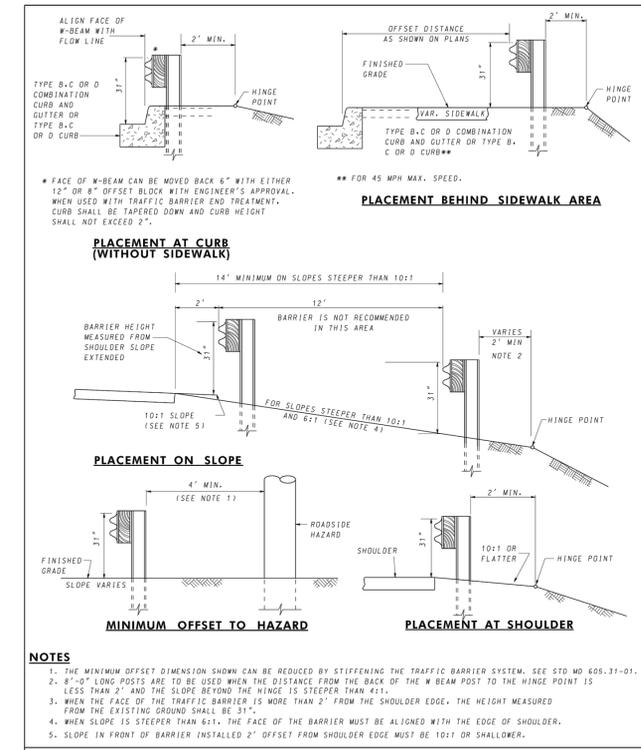
PROJECT NO.
 DATE: 03/10/2025
 SHEET 8 OF 14



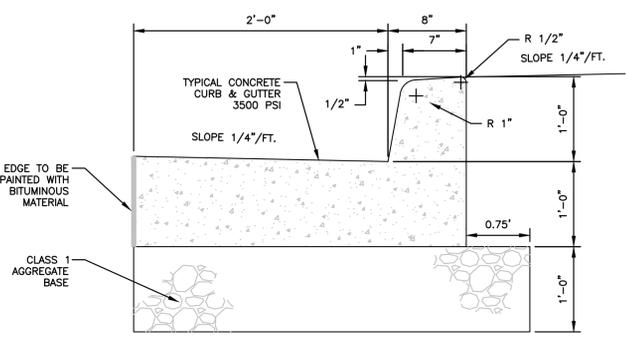
ASPHALT PAVEMENT SECTION DETAIL
NO SCALE



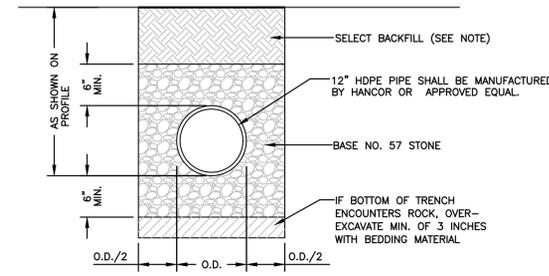
12" STORM CLEAN-OUT (FLUSH)



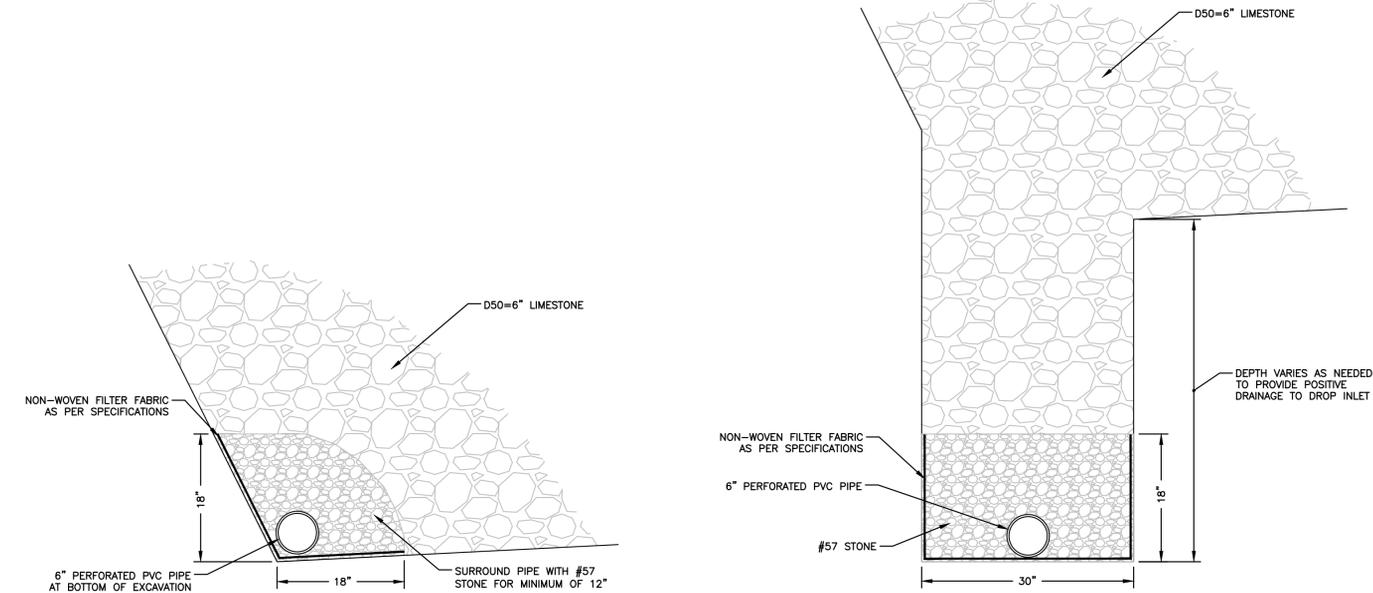
SPECIFICATION		CATEGORY CODE ITEMS	MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES TRAFFIC BARRIER W-BEAM PLACEMENT DETAILS STANDARD NO. MD 605.31
605			
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT		
APPROVAL REVISIONS	8-4-84	APPROVAL FEDERAL HIGHWAY ADMINISTRATION	8-1-94
REVISED	12-21-17	REVISED	12-20-17
REVISED	4-22-18	REVISED	4-20-18
REVISED	1-9-20	REVISED	12-23-19



TYPICAL CURB AND GUTTER DETAIL
NO SCALE



STORM PIPE BEDDING DETAIL
NO SCALE



UNDERDRAIN DETAIL
NO SCALE



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SURVEYED BY	Maryland Department of the Environment	TITLE	MISCELLANEOUS DETAILS	PROJECT NO.
DRAWN BY	Land and Materials Administration	LOCATION	LONACONING ALLEGANY COUNTY, MARYLAND	DATE
DESIGN BY	Abandoned Mine Land Division	DESCRIPTION	FURNACE STREET SUBSIDENCE REPAIR DESIGN	03/10/2025
				9
				SHEET 9 OF 14

STANDARD SEDIMENT CONTROL NOTES

NOTE TO CONTRACTOR: THESE NOTES ARE ALL REQUIRED BY MDE HOWEVER, ALL MAY NOT APPLY TO THIS CONTRACT. PLEASE READ CAREFULLY.

- THE CONTRACTOR SHALL NOTIFY THE ADMINISTRATION (MDE) AT (301) 689-1481 72 HOURS 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 MDE.
- THE CONTRACTOR MUST NOTIFY MDE BY TELEPHONE AT THE FOLLOWING POINTS:
 - THE REQUIRED PRE-CONSTRUCTION MEETING
 - FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES.
 - 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.
 - PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).
 - PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.
 - PRIOR TO FINAL ACCEPTANCE.
- 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 PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE MDE 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 MDE INSPECTOR AND AGENCY INSPECTOR. THE CONTRACTOR MUST OBTAIN PRIOR AGENCY AND MDE APPROVAL FOR CHANGES TO THE SEDIMENT CONTROL PLAN AND/OR SEQUENCE OF CONSTRUCTION.
- 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.
- 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 MDE INSPECTOR AND AGENCY INSPECTOR.
- 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.)
- 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.)
- 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 AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10% 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.
- 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 MDE AND AGENCY RESPONSIBLE FOR PROJECT.
- 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.
- PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING, RIPRAP OR BY OTHER APPROVED STABILIZATION MEASURES.
- TEMPORARY SEDIMENT CONTROL DEVICES MAY BE REMOVED, WITH PERMISSION OF MDE 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.
- 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.
- 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.
- 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.
- THE MDE INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SAFETY, OR SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.
- 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.
- 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.
- 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.
- 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.
- 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 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 4 INCHES IN HEIGHT WITH A MINIMUM OF 14-GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.
- SEDIMENT CONTROL FOR UTILITY CONSTRUCTION FOR AREAS OUTSIDE OF DESIGNED CONTROLS OR AS DIRECTED BY ENGINEER OR MDE INSPECTOR:
 - CALL "MISS UTILITY" AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.
 - EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
 - TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCHES SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY, UNLESS:
 - TEMPORARY SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.
- OFF-SITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY MUST HAVE PRIOR APPROVAL BY MDE, OTHERWISE, APPROVAL MUST BE GRANTED BY THE LO AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE MUST BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.
- 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.
- ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS IN UNPAVED AREAS SHALL BE STABILIZED AND PROTECTED TO PREVENT TRACKING MUD ONTO PUBLIC WAYS.
- 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.
- SITE INFORMATION

AREA OF SITE	0.42 ACRES
AREA OF DISTURBED	0.42 ACRES
AREA TO BE ROOFED OR PAVED	4044 SF
TOTAL CUT	2000 CUBIC YARDS
TOTAL FILL	2000 CUBIC YARDS
OFFSITE WASTE/BORROW AREA	2000 LOCATION

OWNER'S/DEVELOPER'S CERTIFICATION

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

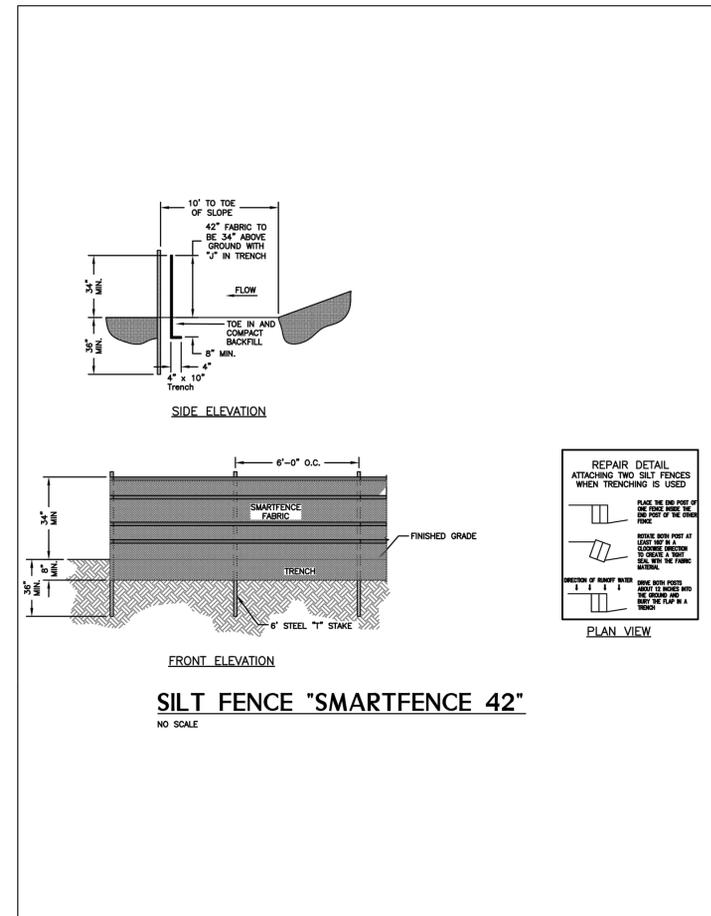
DATE _____ AGENT FOR MDE LMA MINING _____
 CARD NO. _____ PRINTED NAME AND TITLE OF AGENT _____

STANDARD STABILIZATION NOTE:

"FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN (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 DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE"

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2011 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR CURRENT REVISIONS THEREOF, AND THE DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT REGULATIONS."

DATE _____ DESIGNER'S SIGNATURE _____
 PRINTED NAME _____



SILT FENCE "SMARTFENCE 42"
NO SCALE

E-1 STANDARDS AND SPECIFICATIONS

FOR

SILT FENCE

Definition

A temporary barrier of woven geotextile used to intercept, retain, and filter surface runoff from disturbed areas.

Purpose

To intercept sediment-laden sheet flow runoff allowing the deposition of sediment transported from upslope. Silt fence is not to be used as a velocity check in swales or placed where it will intercept concentrated flow.

Conditions Where Practice Applies

Silt fence is limited to intercepting sheet flow runoff from small disturbed areas. The use of silt fence is based on slope length and steepness of the contributing drainage area.

Design Criteria

Table E.1: Silt Fence Design Constraints

Average Slope Steepness	Maximum Slope Length	Maximum Silt Fence Length
Flatter than 50:1 (<2%)	300 feet*	Unlimited
50:1 to 10:1 (2-10%)	125 feet	1,000 feet
<10:1 to 5:1 (10-20%)	100 feet	750 feet
<5:1 (>20%)	40 feet	250 feet

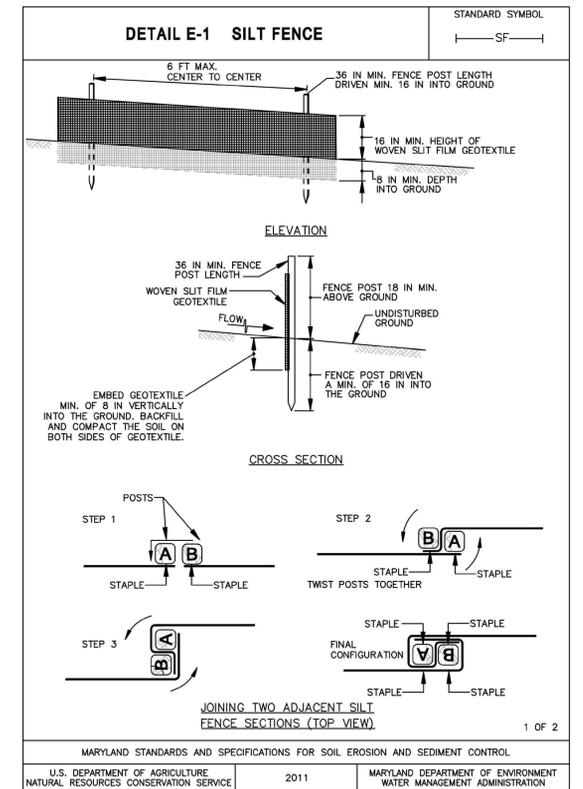
*Maximum slope length is unlimited on Hydrologic Soil Group (HSG) "A" soils.

- The use of silt fence must conform to the design constraints listed in Table E.1 above.
- The area downgrade of the silt fence must be undisturbed ground.
- Silt fence is to be placed on the contour.
- Silt fence should be used with caution in areas where rocky soils may prevent trenching.
- Extend both ends of the silt fence a minimum five (5) feet horizontally upslope at 45 degrees to the main fence alignment to prevent runoff from going around the ends of the silt fence.

Maintenance

Accumulated sediment and debris must be removed when bulges develop in the silt fence or when sediment reaches 25 percent of the fence height. The geotextile must be replaced if torn. If undermining occurs, reinstall fence.

E.1



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



POTESTA & ASSOCIATES, INC.
 ENGINEERS AND ASSOCIATE CONSULTANTS
 125 Lakeview Drive, Morgantown, WV 26508
 TEL: (304) 255-2245 FAX: (304) 225-2246
 E-Mail Address: potesta@potesta.com

SURVEYED BY _____
 DRAWN BY _____
 DESIGN BY _____

Maryland Department of the Environment
 Land and Materials Administration
 Abandoned Mine Land Division

TITLE: EROSION & SEDIMENT CONTROL DETAILS
 LOCATION: LONA CONING ALLEGANY COUNTY, MARYLAND
 DESCRIPTION: FURNACE STREET SUBSIDENCE REPAIR DESIGN

PROJECT NO. _____
 DATE: 03/10/2025
 10
 SHEET 10 OF 14

R-4 STANDARDS AND SPECIFICATIONS

FOR

VEGETATIVE STABILIZATION

DEFINITION

USING VEGETATION AS COVER TO PROTECT EXPOSED SOIL FROM EROSION.

PURPOSE

TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES

ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS, THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION; SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING; SEEDING AND MULCHING; TEMPORARY STABILIZATION; AND PERMANENT STABILIZATION.

EFFECTS ON WATER QUALITY AND QUANTITY

STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS.

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH.

VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE.

SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT

INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUND COVER.
2. IF AN AREA HAS LESS THAN 40 PERCENT GROUND COVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUND COVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

R-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

- a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES 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 LOOSENEED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

- a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - i. SOIL PH BETWEEN 6.0 AND 7.0.
 - ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
- c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENEED TO A DEPTH OF 3 TO 5 INCHES.
- d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
- e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CONCRETE, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
 - b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
 - a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION. WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

R-4-3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

A. SEEDING

1. SPECIFICATIONS

- a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
- b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
- c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE 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 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
- d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

- a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - i. 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.
 - ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 - i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE.
 - ii. 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.
 - iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

- a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
- b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - i. WCFM IS TO 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.
 - ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - iii. WCFM MATERIALS ARE TO 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 MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - v. WCFM MUST CONFORM TO THE FOLLOWING REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

2. APPLICATION

- a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
- c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

- a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE 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 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 FOLLOW THE CONTOUR.
 - ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSEK, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

R-4-4 STANDARDS AND SPECIFICATIONS

FOR

TEMPORARY STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), 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 PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

Hardness Zone (from Figure B.3): 6A					Fertilizer Rate (10-20-20)	Lime Rate
Seed Mixture (from Table B.1):						
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
	Annual Rye Grass	40	3/15-5/31 8/1-9/30	1/2"	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)



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Maryland Department of the Environment
Land and Materials Administration
Abandoned Mine Land Division

TITLE: EROSION & SEDIMENT CONTROL DETAILS
LOCATION: LONA CONING ALLEGANY COUNTY, MARYLAND
DESCRIPTION: FURNACE STREET SUBSIDENCE REPAIR DESIGN

PROJECT NO.
DATE: 03/10/2025
11
SHEET 11 OF 14

B-4-5 STANDARDS AND SPECIFICATIONS

FOR PERMANENT STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

A. SEED MIXTURES

1. GENERAL USE

- SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
- ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANNING.
- FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
- FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

- AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
- SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND"

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)

CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)

SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

Abandoned Mine Land - Permanent Seeding Mix Summary

Hardiness Zone:		6a (Reforestation)			Fertilizer Rate (20 - 20 - 20)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths (in)		
	Orchard Grass	15	3/1 to 9/15	1/4 to 1/2	400 lb/ac (9.5 lb / 1000 sf)	4 tons/ac (184 lb / 1000 sf)
	Timothy	10				
	Red Top	5				
	Red Clover	5				
	Perennial Rye	8				
	Birdsfoot Trefoil	10				
	Annual Rye	5				

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

- CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
- SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
- STANDARD SIZE SECTIONS OF SOD MUST 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.
- SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION

- DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
- LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS 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.
- WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP. PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
- WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

3. SOD MAINTENANCE

- IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
- AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
- DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

DETAIL F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL: RPS

CONSTRUCTION SPECIFICATIONS

- USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
- USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
- WRAP EACH PIPE WITH 1/4 INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
- EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
- SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
- BACKFILL PIT AROUND THE OUTER PIPE WITH 3/4 TO 1 1/2 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE, AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
- DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
- A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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F.3

F-1 STANDARDS AND SPECIFICATIONS

FOR

REMOVABLE PUMPING STATION

Definition

A perforated, vertical standpipe wrapped with hardware cloth and geotextile and placed inside a larger perforated pipe. The outer pipe is enveloped by hardware cloth and washed stone. Water is pumped from the inner pipe and discharged to a stable area.

Purpose

To remove and filter sediment-laden water from excavations, traps, or basins.

Conditions Where Practice Applies

When dewatering is needed in association with excavations, trenches, cofferdams, sediment traps or basins. This practice is preferred over sump pits on projects where a long duration of pumping is expected.

Design Criteria

The location of removable pumping stations must be included on the plan. When used in a trap or basin, install pumping station concurrently with the construction of the trap or basin. A removable pumping station may be relocated to optimize its use, but changes to the discharge location must be coordinated with the appropriate enforcement authority.

Maintenance

The removable pumping station requires frequent maintenance. If the system clogs, the inner pipe needs to be pulled out and the geotextile replaced. The point of discharge must be kept free of erosion.

F.2

E-6 STANDARDS AND SPECIFICATIONS

FOR

FILTER LOG

Definition

A temporary, tubular casing filled with compost filter media.

Purpose

To intercept sheet flow, retain sediment, and filter runoff through the log media.

Conditions Where Practice Applies

Filter logs are an alternative to silt fence and can be used in hard to reach areas, on frozen ground and pavement, and near tree roots.

Note: fiber rolls are not interchangeable with filter logs. Although similar in appearance, fiber rolls are filled with rice or wheat straw, flax, coconut fiber, or wood excelsior, and are used when stabilizing and revegetating slopes because they slow and spread overland flow, thereby minimizing erosion, rills, and gullies.

Design Criteria

Table E.6: Filter Log Design Constraints

Log Diameter Average Slope	8 to 15 inches	>15 to 24 inches
	Maximum Slope	Length (ft)
Flatter than 50:1 (<2%)	125	250
50:1 to 10:1 (2-10%)	65	125
<10:1 to 5:1 (10-20%)	50	100
<5:1 to 2:1 (>20-50%)	N/A	50

- Filter logs must be placed on the contour with the ends turned up to prevent bypass.
- Filter logs can only be used with sheet flow.
- Filter logs must be used in accordance with the design constraints in Table E.6.
- The filter media must be compost in accordance with Table H.3 or other approved biodegradable materials.
- Filter logs must either be staked every 4 feet maximum, or trenched a minimum of 4 inches into the ground and staked every 8 feet maximum.

Maintenance

Sediment and debris must be removed and mulch replaced when sediment has accumulated to a depth of one half the exposed height of the log. The filter log must be replaced if clogged or torn. The filter log needs to be reinstalled if undermined or dislodged. For permanent applications, vegetation must be established and maintained so that the requirements for Adequate Vegetative Establishment are met in accordance with Section B-4 Vegetative Stabilization.

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18
DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.

UNTRENCHED INSTALLATION OR **ENTRENCHED INSTALLATION***

*THIS APPLICATION MAY NOT BE USED WITH LOGS SMALLER THAN 12 IN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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E.15

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18
DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.

CONSTRUCTION SPECIFICATIONS

- PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
- FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
- INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
- FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
- STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
- USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
- WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
- REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF 1/2 THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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E.16



POTESTA & ASSOCIATES, INC.
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E-Mail Address: potesta@potesta.com

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DESIGN BY

Maryland Department of the Environment
Land and Materials Administration
Abandoned Mine Land Division

TITLE: EROSION & SEDIMENT CONTROL DETAILS
LOCATION: LONA CONING ALLEGANY COUNTY, MARYLAND
DESCRIPTION: FURNACE STREET SUBSIDENCE REPAIR DESIGN

PROJECT NO.
DATE: 03/10/2025
12
SHEET 12 OF 14

BORING LOG RECORD

BORING NO. B-1 PAGE 1 OF 3

Client : Maryland Dept of Environment Project No. : 0102-20-0317-060
Project Name : Furnace Street Subsidence Repair Boring Method : HSA, SS, RC
Location : Lonaconing, Maryland Weather/ Temp. : Partly Cloudy 73°
Start Date : 08-30-23 Field Engineer/ Geologist : Cole Davis
Completion Date : 08-30-23 Driller : Geo Mechanics

Surface Elevation : Benchmark/Elev. :
Water Level Observations : Immediate : 13.0 Ft. At completion/# hours /
Station : Offset : Boring Depth: 51.8 Ft.

Table with columns: Station Elevation/Depth (ft.), Lithology, Soil/Rock Description, Sample Type/Number, Sample Depth, SPT Blows, N-Value, Moisture (%), Recovery (%), Unconf. Comp., Tsf

BORING METHOD: HSA - Hollow Stem Auger, SFA - Solid Flight Auger, CC - Concrete Coring, MD - Mud Drilling, HA - Hand Auger, RC - Rock Coring
SAMPLE TYPE: SS - Split Spoon Sample, ST - Shelby Tube Sample, RC - Rock Core Sample, BS - Bag Sample



BORING NO. B-1 PAGE 2 OF 3

BORING LOG RECORD

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BORING LOG RECORD

BORING NO. B-1 PAGE 3 OF 3

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BORING NO. B-2 PAGE 1 OF 3

BORING LOG RECORD

Client : Maryland Dept of Environment Project No. : 0102-20-0317-060
Project Name : Furnace Street Subsidence Repair Boring Method : HSA, SS, RC
Location : Lonaconing, Maryland Weather/ Temp. : Partly Cloudy 63°
Start Date : 08-30-23 Field Engineer/ Geologist : Cole Davis
Completion Date : 08-30-23 Driller : Geo Mechanics

Surface Elevation : Benchmark/Elev. :
Water Level Observations : Immediate : 3.4 Ft. At completion/# hours /
Station : Offset : Boring Depth: 51.0 Ft.

Table with columns: Station Elevation/Depth (ft.), Lithology, Soil/Rock Description, Sample Type/Number, Sample Depth, SPT Blows, N-Value, Moisture (%), Recovery (%), Unconf. Comp., Tsf

BORING METHOD: HSA - Hollow Stem Auger, SFA - Solid Flight Auger, CC - Concrete Coring, MD - Mud Drilling, HA - Hand Auger, RC - Rock Coring
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BORING LOG RECORD

BORING NO. B-2 PAGE 2 OF 3

Client : Maryland Dept of Environment Project No. : 0102-20-0317-060
Project Name : Furnace Street Subsidence Repair Boring Method : HSA, SS, RC
Location : Lonaconing, Maryland Weather/ Temp. : Partly Cloudy 63°
Start Date : 08-30-23 Field Engineer/ Geologist : Cole Davis
Completion Date : 08-30-23 Driller : Geo Mechanics

Surface Elevation : Benchmark/Elev. :
Water Level Observations : Immediate : 3.4 Ft. At completion/# hours /
Station : Offset : Boring Depth: 51.0 Ft.

Table with columns: Station Elevation/Depth (ft.), Lithology, Soil/Rock Description, Sample Type/Number, Sample Depth, SPT Blows, N-Value, Moisture (%), Recovery (%), Unconf. Comp., Tsf

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BORING NO. B-2 PAGE 3 OF 3

BORING LOG RECORD

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Maryland Department of the Environment
Land and Materials Administration
Abandoned Mine Land Division

TITLE: BORING LOGS
LOCATION: LONACONING ALLEGANY COUNTY, MARYLAND
DESCRIPTION: FURNACE STREET SUBSIDENCE REPAIR DESIGN
PROJECT NO.:
DATE: 03/10/2025
SHEET 13 OF 14

Client : Maryland Dept of Environment Project No. : 0102-20-0317-060
 Project Name : Furnance Street Subsidence Repair Boring Method : HSA, SS, RC
 Location : Lonaconing, Maryland Weather/ Temp. : Cloudy 70°
 Start Date : 08-30-23 Field Engineer/ Geologist : Cole Davis
 Completion Date : 08-30-23 Driller : Geo Mechanics

Surface Elevation : _____ Benchmark/Elev. : _____
 Water Level Observations : Immediate : 4.2 Ft. At completion/# hours /
 Station : _____ Offset : _____ Boring Depth: 48.0 Ft.

Station Elevation/Depth (ft.)	Soil/Rock Description	Sample Type / Number	Sample Depth	SPT Blows	N-Value	Moisture (%)	Recovery (%)	U ₂₀₀ (No. / 100)	U ₁₀₀ (No. / 100)
0.5	Road Subgrade TOPSOIL	SS-1	5	11					
	Stiff, Moist, Orange Brown, SILTY CLAY With Gravel (FILL)	SS-2	4	14		66.5			
3	Medium Stiff, Moist, Brown, CLAY With Gravel	SS-3	10	35					
4.5	Very Stiff, Moist, Grey Brown, CLAY Mottling and Gravel	SS-4	15	34		66.5			
7	Medium Stiff, Moist, Orange Brown, CLAY With Sand	SS-5	7	12		6.5			
		SS-6	6	25		6.5			
		SS-7	12	54		100			
10.5	Very Stiff, Moist, Brown Grey, SANDY CLAY	SS-8	20	51		100			
13	Stiff, Moist, Red Brown, SANDY CLAY With Gravel	SS-9	10	29		100			
		SS-10	7	23		100			
		SS-11	15			0			
		SS-12	8	10		100			
17.7	Sandstone, Boulder	SS-13	50/2	50/1		25			

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Client : Maryland Dept of Environment Project No. : 0102-20-0317-060
 Project Name : Furnance Street Subsidence Repair Boring Method : HSA, SS, RC
 Location : Lonaconing, Maryland Weather/ Temp. : Cloudy 70°
 Start Date : 08-30-23 Field Engineer/ Geologist : Cole Davis
 Completion Date : 08-30-23 Driller : Geo Mechanics

Surface Elevation : _____ Benchmark/Elev. : _____
 Water Level Observations : Immediate : 4.2 Ft. At completion/# hours /
 Station : _____ Offset : _____ Boring Depth: 48.0 Ft.

Station Elevation/Depth (ft.)	Soil/Rock Description	Sample Type / Number	Sample Depth	SPT Blows	N-Value	Moisture (%)	Recovery (%)	U ₂₀₀ (No. / 100)	U ₁₀₀ (No. / 100)
	Sandstone, Boulder								
21	Medium Stiff, Saturated, Brown, CLAY With Gravel	SS-14	7	18		100			
23	Very Stiff, Saturated, Brown and Grey, CLAY With Gravel	SS-15	31	57		33.5			
		SS-16	32	57		100			
25.5	Auger Incapable of Advancing, Utilized Rock Coring to Find Top of Rock, Core to 30'	SS-17	25	50/1		100			
30	Hard, Saturated, Grey Brown, GRAVEL With Clay and Sand								
30.7	Very Soft Rock, Grey, CLAYEY SHALE, Broken	RC-1				72.5	0		
32	Average Rock, Grey, SANDY SHALE, Broken (Intermittent Clay Seams)								
		RC-2				100	22		
37	Very Soft, Black, COAL, Very Broken								
39	Average Rock, Grey, LIMEY SHALE, Blocky	RC-3				80	38		

POTESTA
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Station Elevation/Depth (ft.)	Soil/Rock Description	Sample Type / Number	Sample Depth	SPT Blows	N-Value	Moisture (%)	Recovery (%)	U ₂₀₀ (No. / 100)	U ₁₀₀ (No. / 100)
	Average Rock, Grey, LIMEY SHALE, Blocky								
41.8	Average Rock, Grey, SILTSTONE								
		RC-4	45			40	0		
48	END OF BORING(48')								
		RC-5				0	0		

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TITLE	BORING LOGS	PROJECT NO.
LOCATION	LONAONING ALLEGANY COUNTY, MARYLAND	DATE
DESCRIPTION	FURNACE STREET SUBSIDENCE REPAIR DESIGN	14
		SHEET 14 OF 14