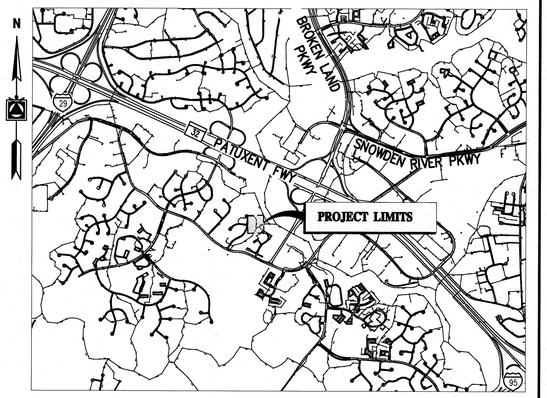
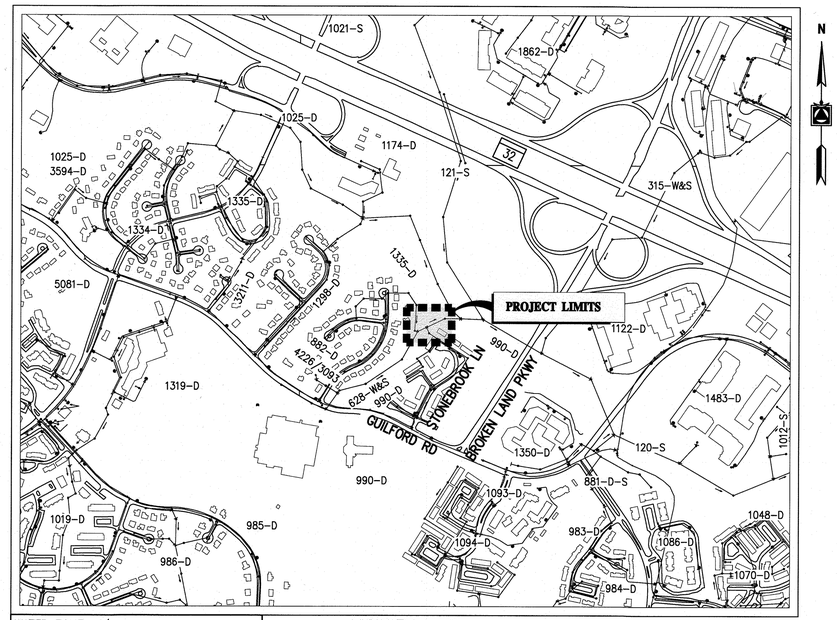
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE

HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1



LOCATION MAP
SCALE: 1"=2,000'



VICINITY MAP
SCALE: 1"=600'

WATER ZONE: N/A
TEST GRADIENT: N/A
TYPE OF BUILDINGS: N/A
NUMBER OF PARCELS: N/A
NO. OF WATER CONNECTIONS: N/A
NO. OF SEWER CONNECTIONS: N/A
DRAINAGE AREA: LITTLE PATUXENT

HOWARD COUNTY GEODETIC SURVEY CONTROL POINTS:

POINT NO.	NORTH	EAST	ELEVATION
TRAV 101	547156.9912	1351833.7148	338.89
TRAV 102	547286.3544	1352424.5407	325.57
TRAV 103	547558.5339	1352768.9132	309.54
TRAV 105	547614.5584	1353042.5694	280.15
TRAV 106	547554.4627	1352713.7065	314.19
TRAV 107	547346.1323	1352473.6804	323.97

GENERAL NOTES:

1. APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON DECEMBER 2019 THROUGH JANUARY 2020 BY DANIEL CONSULTANTS, INC. (DCI). ADDITIONAL BASE MAPPING WAS PROVIDED BY HOWARD COUNTY GIS.
3. HORIZONTAL AND VERTICAL SURVEY CONTROLS:
   3.1. THE COORDINATES ON THE DRAWING ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NOTED ON THIS SHEET.
   3.2. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES
6. FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
7. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOLS IN THE LEGEND AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT THEIR OWN EXPENSE.
8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

AT&T	800-252-1133
BGE (CONTRACTOR SERVICES)	410-637-8713
BGE (EMERGENCY)	410-685-0123
BUREAU OF UTILITIES	410-313-4900
COLONIAL PIPELINE CO	410-795-1390
MISS UTILITY	800-257-7777
STATE HIGHWAY ADMINISTRATION	410-531-5533
VERIZON	800-743-0033

9. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR
10. THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION.
11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313- 7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(A) OF THE HOWARD COUNTY CODE
12. MDE AUTHORIZED CONSTRUCTION PRIOR TO JPA APPROVAL DUE TO THE EMERGENCY NATURE OF THE PROJECT. MDE TRACKING NUMBER 21-NT-3118.

GENERAL SEWER PLAN NOTES

1. ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED
2. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED
3. FORCE MAINS SHALL BE D.I.P. ONLY
4. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY
5. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER. STANDARD DETAIL G5.52.
   WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS
6. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED

INDEX OF DRAWINGS

AS-BUILT
03/01/2022

2000 0 2000 4000
SCALE IN FEET
600 0 600 1200
SCALE IN FEET

PURPOSE STATEMENT:
CONTRACT NO. 628-W&S-ADD 1 INVOLVES REPLACEMENT AND STABILIZATION A SANITARY SEWER. THE SECTION OF 8-INCH PVC SANITARY SEWER HAS BECOME EXPOSED BY ONGOING CHANNEL EROSION, WHERE IT CROSSES A TRIBUTARY TO THE LITTLE PATUXENT RIVER NEAR STONEBROOK LN. THE PREVIOUS ACP SEWER WAS REPLACED WITH PVC PIPE ACROSS THE TRIBUTARY, BUT A MORE COMPREHENSIVE JOINT-TO-JOINT PIPE REPLACEMENT WITH CLASS 54 DIP AND RIPRAP, TO PROVIDE STABILIZATION, IS REQUIRED TO MITIGATE RISK OF DAMAGE TO THE SEWER WHICH IS CURRENTLY FREE-SPAN IN THE STREAM. .

OWNER/DEVELOPER CERTIFICATION:
I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

Owner's/Developer's Signature — Date 10/27/2021

HSCD: EP-21-09

HOWARD SOIL CONSERVATION DISTRICT:
THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT (HSCD).

Howard Soil Conservation District — Date 11/2/21

ENGINEER'S CERTIFICATION:
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Engineer's Signature – Registration Number 20821 — Date 10/1/2021

EROSION AND SEDIMENT CONTROL NARRATIVE
THE STREAM RESTORATION AND SEWER REPAIR WILL PROTECT NATURAL RESOURCES AND PREVENT POSSIBLE SURFACE WATER CONTAMINATION BY SEWAGE. THE SEWER FLOW AND THE NATURAL CHANNEL FLOW WILL BE TEMPORARILY PUMPED AROUND THE WORK AREA AND RETURNED UPON COMPLETION OF THE REPAIRS. MDE STANDARD PRACTICES FOR WATERWAY CONSTRUCTION AND EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED. ALL DISTURBED AREAS WILL RECEIVE SAME DAY STABILIZATION.

OWNER/DEVELOPER
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
UTILITY DESIGN DIVISION
7125 RIVERWOOD DRIVE, SUITE B
COLUMBIA, MD 21046
SANJAY KULKARNI, PE, 410-313-6122

ENGINEER
GANNETT FLEMING, INC.
7133 RUTHERFORD ROAD, SUITE 300
BALTIMORE, MD 21233
JEFFREY STAMM, PE, 443-676-8238

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/28/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-28-21
CHIEF, BUREAU OF UTILITIES — DATE 10-25-21
CHIEF, UTILITY DESIGN DIVISION — DATE 10/27/2021 SRK

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2023

Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JEFFREY M. STAMM — 20821 — PROFESSIONAL ENGINEER

DES:	JRW
DRN:	SJM
CHK:	JMS
SIGN DATE:	10/1/2021

BY	NO.	REVISION	DATE
JMS	1	AS-BUILT	3/22

OCTOBER 2021

TITLE SHEET, GENERAL NOTES, AND INDEX OF DRAWINGS

600' SCALE MAP NO. 42

PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

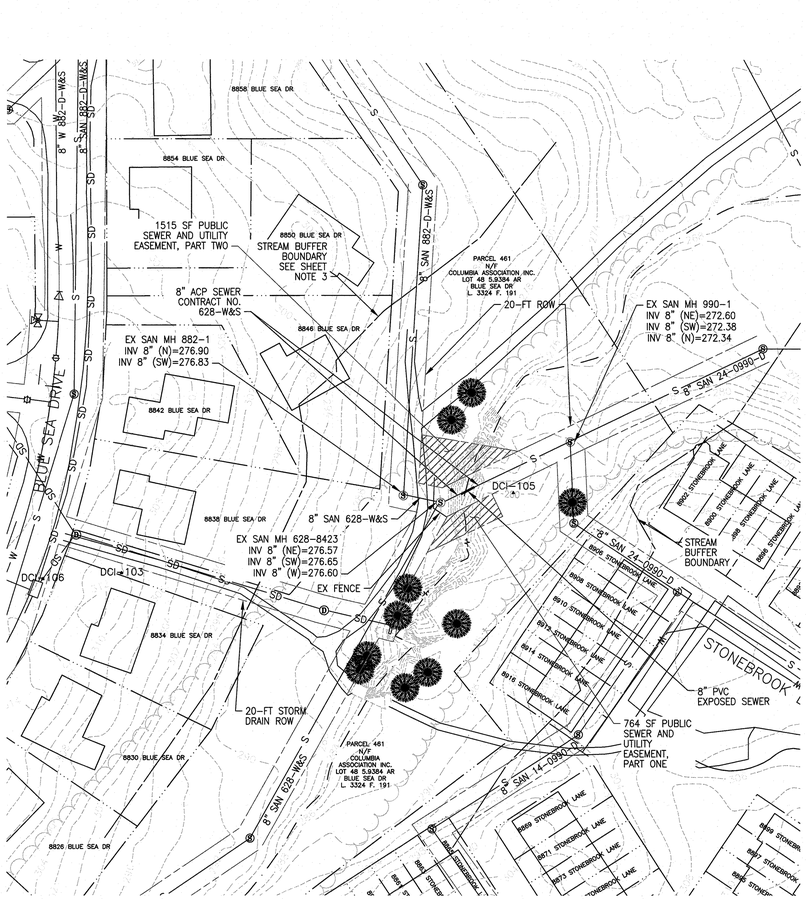
SHEET NO. 1 OF 9

SHEET NOTES:

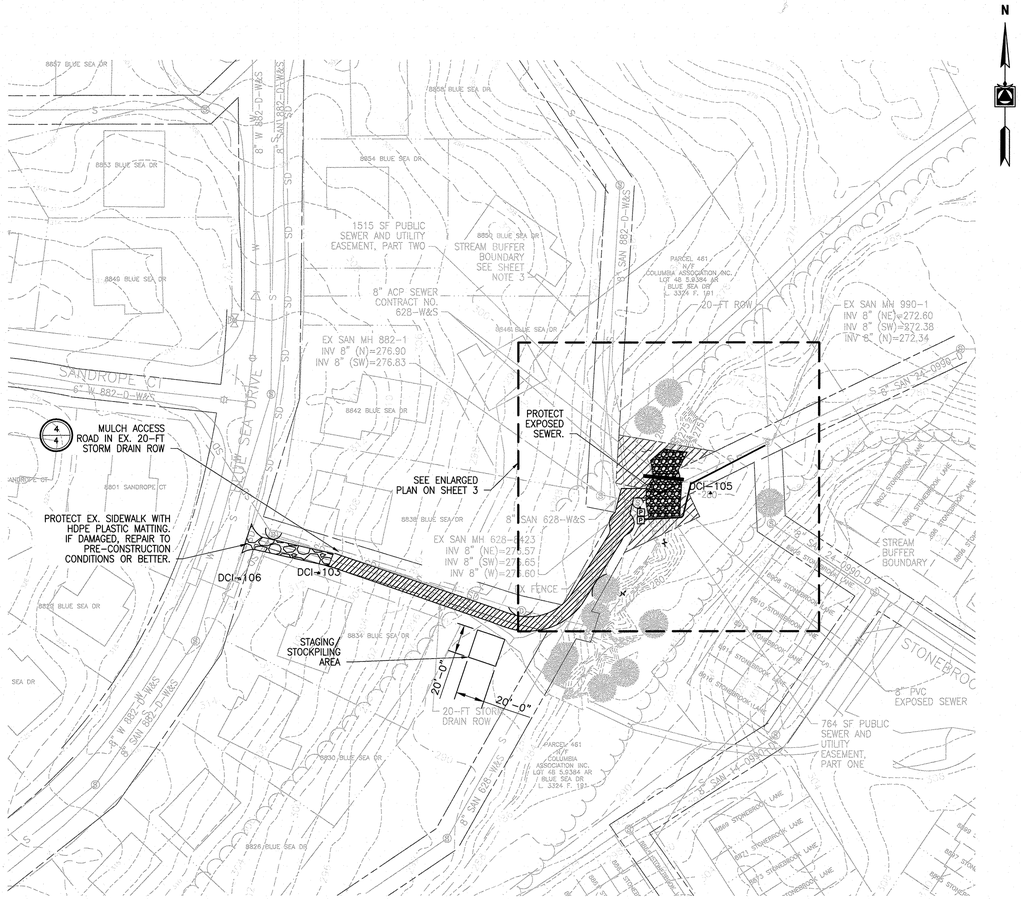
1. EXISTING SITE CONDITIONS ARE BASED ON GIS, RECORD DRAWINGS, AND FIELD MEASUREMENTS OF SURFACE FEATURES COLLECTED ON NOVEMBER 11, 2019. NEITHER THE OWNER OR ENGINEER WARRANT OR GUARANTEES THE ACCURACY OF THIS PORTRAYAL. VERIFY THE LOCATIONS AND CHARACTERISTICS OF BELOW-GRADE UTILITIES AND OTHER FACILITIES AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL STANDARDS, SPECIFICATIONS, AND REQUIREMENTS.
3. STREAM DOES NOT HAVE A USE CLASS, BUT IS A TRIBUTARY TO A THE LITTLE PATUXENT RIVER, WHICH IS A USE CLASS IV-P STREAM. A USE CLASS IV STREAM BUFFER OF 100 FEET IS SHOWN. LITTLE PATUXENT RIVER IS IMPAIRED BY SEDIMENT (CATEGORY 4A) AND CHLORIDES (CATEGORY 5).

LEGEND

- EXISTING STREAM CENTERLINE
- EXISTING SANITARY SEWER EASEMENT
- EXISTING TREELINE
- EXISTING TREE
- 350 EXISTING MAJOR CONTOUR
- 352 EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- (S) EXISTING SANITARY SEWER MANHOLE
- S EXISTING SANITARY SEWER LINE
- W EXISTING WATER LINE
- SD EXISTING STORM DRAIN
- EXISTING BUILDING
- EXISTING LIMITS OF STREAM BUFFER (75-FT)
- NEW SANITARY SEWER EASEMENT
- ACCESS ROAD
- STABILIZED CONSTRUCTION ENTRANCE
- TREE/UTILITY PROTECTION FENCE
- (P) STREAM BYPASS/DEWATERING PUMP AND PIPING
- P SANITARY SEWER BYPASS PUMP AND PIPING
- 2/6 DETAIL DESIGNATION / DRAWING NUMBER WHERE SHOWN



EXISTING SITE PLAN
SCALE: 1"=50'



PROPOSED SITE PLAN
SCALE: 1"=50'

AS-BUILT
03/01/2022

50 0 50 100
SCALE IN FEET

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/29/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-28-21
CHIEF, BUREAU OF UTILITIES — DATE 10-29-21
CHIEF, UTILITY DESIGN DIVISION — DATE 10/27/2021 SRK

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Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JEFFREY M. STANLEY — 20821 — PROFESSIONAL ENGINEER

DES:	JRW
DRN:	JRW
CHK:	JMS
SIGN DATE:	10/1/2021

BY	NO.	REVISION	DATE
JMS	1	AS-BUILT	3/22

OCTOBER 2021

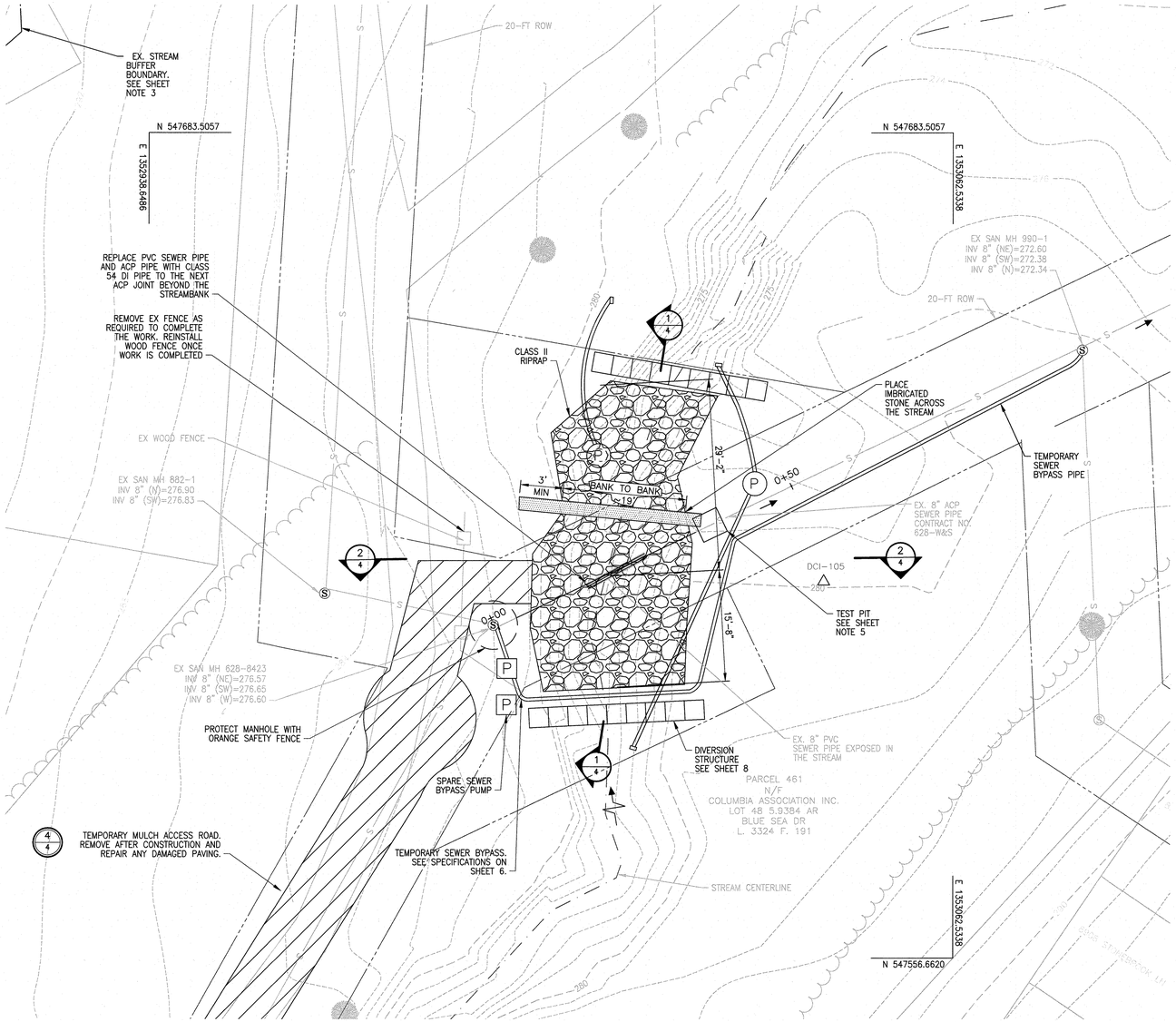
EXISTING AND PROPOSED SITE PLANS

600' SCALE MAP NO. 42

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET NO. 2 OF 9



ENLARGED SITE PLAN
SCALE: 1"=10'

SHEET NOTES:

1. EXISTING SITE CONDITIONS ARE BASED ON GIS, RECORD DRAWINGS, AND FIELD MEASUREMENTS OF SURFACE FEATURES COLLECTED ON NOVEMBER 11, 2019. NEITHER THE OWNER OR ENGINEER WARRANT OR GUARANTEES THE ACCURACY OF THIS PORTRAYAL. VERIFY THE LOCATIONS AND CHARACTERISTICS OF BELOW-GRADE UTILITIES AND OTHER FACILITIES AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
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3. STREAM DOES NOT HAVE A USE CLASS, BUT IS A TRIBUTARY TO A THE LITTLE PATUXENT RIVER, WHICH IS A USE CLASS IV-P STREAM. A USE CLASS IV STREAM BUFFER OF 100 FEET IS SHOWN. LITTLE PATUXENT RIVER IS IMPAIRED BY SEDIMENT (CATEGORY 4A) AND CHLORIDES (CATEGORY 5).
4. ONCE RIPRAP IS PLACED, COVER REPAIR WITH STREAMBED MATERIAL TO FILL VOIDS.
5. TEST PIT EXISTING SEWER TO LOCATE THE NEAREST ACP PIPE JOINT BEYOND THE STREAMBANK. REPLACE PIPE LENGTH AS DIRECTED BY THE ENGINEER.

LEGEND

- EXISTING STREAM CENTERLINE
- EXISTING SANITARY SEWER EASEMENT
- EXISTING TREELINE
- EXISTING TREE
- 350 EXISTING MAJOR CONTOUR
- 352 EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- (S) EXISTING SANITARY SEWER MANHOLE
- S EXISTING SANITARY SEWER LINE
- W EXISTING WATER LINE
- SD EXISTING STORM DRAIN
- EXISTING BUILDING
- EXISTING FENCE
- LIMITS OF STREAM BUFFER (100-FT)
- ACCESS ROAD
- (P) STREAM BYPASS/DEWATERING PUMP AND PIPING
- P SANITARY SEWER BYPASS PUMP AND PIPING
- 2/6 DETAIL DESIGNATION / DRAWING NUMBER WHERE SHOWN
- SECTION DIRECTION / 2/5 SECTION DESIGNATION / DRAWING NUMBER WHERE SHOWN

BREAKDOWN OF IMPACTS

1. TOTAL AREA OF SITE: 0.25 ACRES (11,084 SQUARE FEET)
2. AREA DISTURBED: 0.25 ACRES (11,084 SQUARE FEET)
3. AREA TO BE ROOFED OR PAVED: 0 ACRES
4. AREA TO BE VEGETATIVELY STABILIZED: 0.25 ACRES (11,084 SQUARE FEET)
5. TOTAL CUT: 0 CU. YDS.
6. TOTAL FILL: 84 CU. YDS.
7. OFFSITE WASTE/BORROW AREA LOCATION: TBD AFTER CONTRACTOR SELECTION.
8. STREAM AREA DISTURBED: 0.03 ACRES (1,408 SQUARE FEET)
9. STREAM BUFFER AREA DISTURBED: 0.15 ACRES (6,757 SQUARE FEET)

AS-BUILT
03/01/2022

10 0 10 20
SCALE IN FEET

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/19/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-20-21
CHIEF, BUREAU OF UTILITIES — DATE 10-29-21
CHIEF, UTILITY DESIGN DIVISION — DATE 10/27/2021 SRK

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2023

Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JEFFREY M. SWAN — 20821 — PROFESSIONAL ENGINEER

DES:	JRW
DRN:	JRW
CHK:	JMS
SIGN DATE:	10/1/2021

BY	NO.	REVISION	DATE
JWS	1	AS-BUILT	3/22

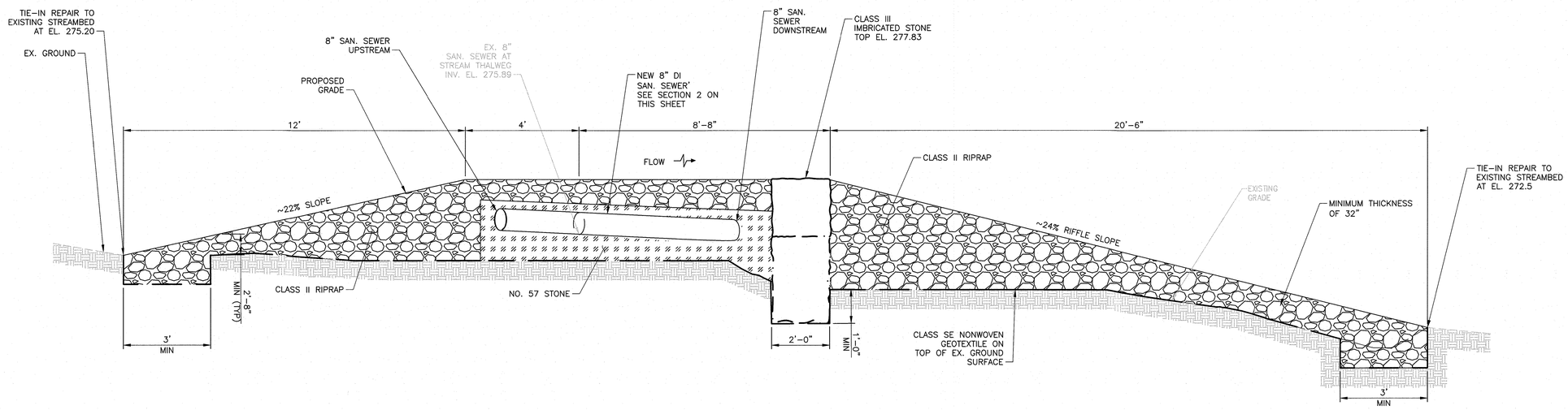
OCTOBER 2021

ENLARGED SITE PLAN

600' SCALE MAP NO. 42

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET NO. 3 OF 9



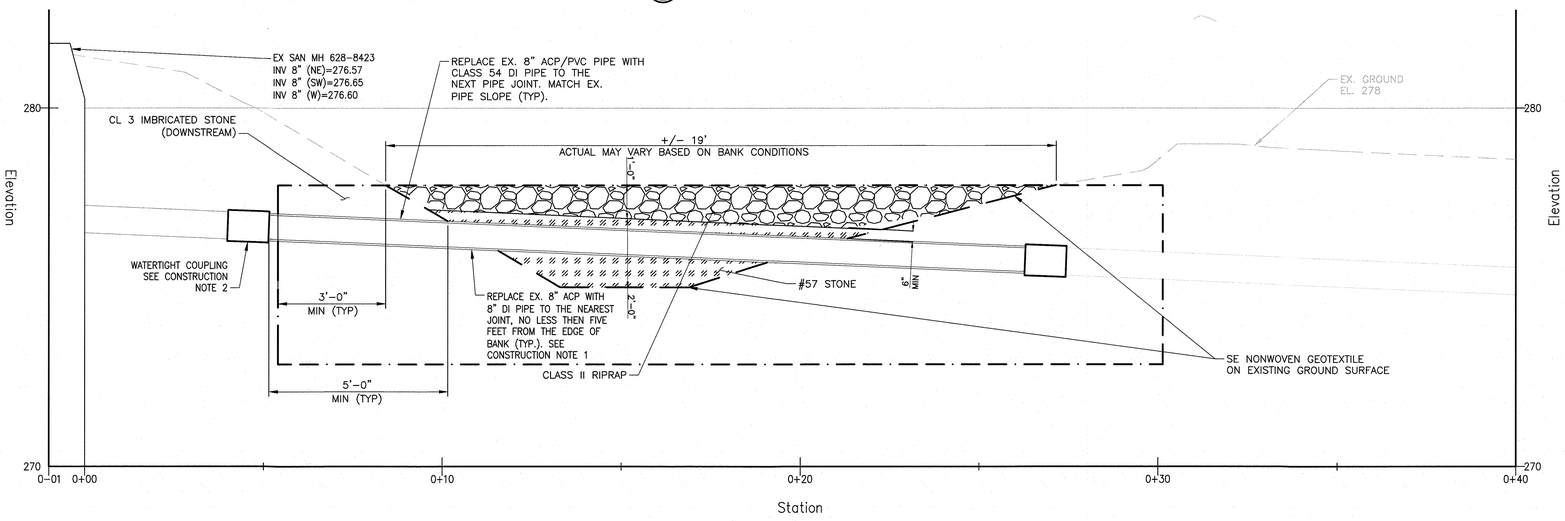
1/3 SEWER STABILIZATION SECTION
SCALE: NOT TO SCALE

SHEET NOTES:

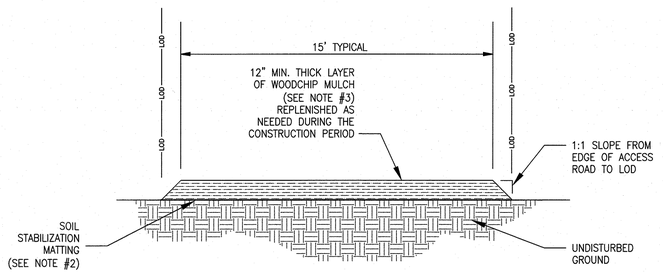
1. SUB-GRADE BENEATH THE PROPOSED STONE SHALL HAVE A MINIMUM BEARING CAPACITY OF 1,500 PSF. THE CONTRACTOR IS TO PERFORM MECHANICAL CONE PENETRATION TESTING (ASTM D3441-16) TO DETERMINE SUBGRADE STRENGTH.

CONSTRUCTION NOTES

1. REMOVE PVC SEWER SECTION AND ACP SEWER TO THE NEXT JOINT BEYOND THE STREAMBANK. REPLACE PVC/ACP SEWER WITH CLASS 54 DI SEWER. NO FIELD CUTTING OF ACP IS REQUIRED.
2. ATTACH DIP TO ACP PIPE WITH SMITH BLAIR 441 OMNI WATERTIGHT COUPLING SYSTEM OR APPROVED EQUAL AS DESCRIBED IN THE SPECIFICATIONS LISTED ON SHEET 5.
3. CUT DI PIPE AS NECESSARY TO FIT REPAIR SECTION LENGTH.

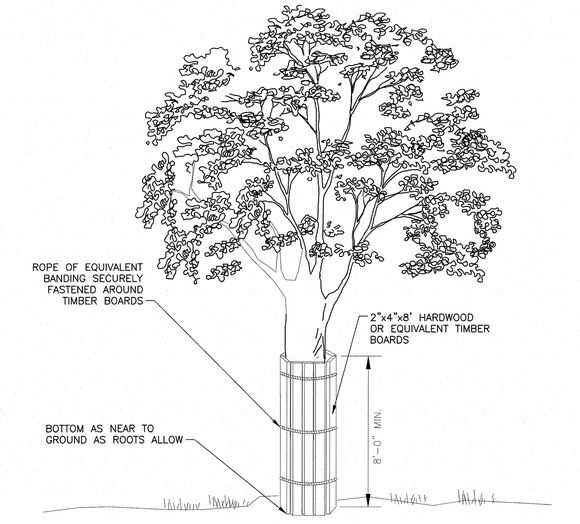


2/3 PIPE REPLACEMENT PROFILE
SCALE: 1/2"= 1'-0"



1. SOIL STABILIZATION MATTING SHALL BE PLACED WITH THE SEAMS PARALLEL TO THE FLOW OF TRAFFIC. OVERLAP MATTING 18-INCH MINIMUM AT SEAMS.
2. SOIL STABILIZATION MATTING SHALL CONSIST OF 100% HIGH STRENGTH COCONUT FIBER WHICH IS TWISTED AND WOVEN IN A GRID WITH AN OPEN AREA OF 38%; THE THICKNESS OF THE MATTING SHALL BE 0.35 INCH WITH A DRY WEIGHT OF 29 OZ/SY. AN EXAMPLE OF AN ACCEPTABLE PRODUCT IS ROLANKA BIOD-MAT 90 (WWW.ROLANKA.COM).
3. WOODCHIP MULCH SHALL BE DERIVED FROM FRESH OR AGED HARDWOOD OR PINE MATERIALS INCLUDING BARK AND WOOD FRAGMENTS. WOOD CHIPS SHALL BE FREE OF LEAVES, VINES INCLUDING POISON IVY, TRASH AND FOREIGN MATTER, AND MAY INCLUDE CHUNKS UP TO 3 INCHES IN ANY DIMENSION.
4. CONTRACTOR SHALL MAINTAIN MULCH LAYER THROUGHOUT CONSTRUCTION PERIOD.
5. WITH APPROVAL OF ESC INSPECTOR, MULCH ACCESS ROAD CAN BE REDUCED TO 6" THICKNESS IN AREAS WITH MINIMAL ACTIVITY AND WHERE GROUND IS NOT WET AND TREE ROOTS ARE NOT IMPACTED.

2/2 MULCH ACCESS ROAD
SCALE: NO SCALE



3/3 TREE PROTECTION DETAIL
SCALE: NO SCALE

AS-BUILT
03/01/2022

1' 6" 0 1' 2' 3' 4' 5'
1/2" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/29/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-28-21
CHIEF, BUREAU OF UTILITIES — DATE 10-29-21
CHIEF, UTILITY DESIGN DIVISION — DATE 10/28/21 SRK

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2023

Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JEFFREY M. STEIN — 20821 — PROFESSIONAL ENGINEER

DES:	JRW
DRN:	JRW
CHK:	JMS
SIGN DATE:	10/1/2021

BY	NO.	REVISION	DATE
JHG	1	AS-BUILT	3/22

OCTOBER 2021

SECTION AND PROFILE

600' SCALE MAP NO. 42

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET NO. 4 OF 9

PIPE SPECIFICATIONS

1. THE NEW GRAVITY SANITARY SEWER SHALL BE CLASS 54 D.I.P.
2. PIPE JOINTS, IF REQUIRED, SHALL BE RESTRAINED JOINTS.
3. ASBESTOS CONCRETE PIPE TO DUCTILE IRON PIPE COUPLING:
   - 3.1. SLEEVE: DUCTILE IRON ASTM A536. ENDS HAVE SMOOTH INSIDE TAPER FOR UNIFORM GASKET SEATING
   - 3.2. GASKET: NITRILE (BUNA N) CERTIFIED TO NSF/ANSI 61G. COMPOUNDED TO PRODUCE SUPERIOR STORAGE AND PERFORMANCE CHARACTERISTICS WHILE RESISTING WASTEWATER.
   - 3.3. FOLLOWER FLANGES: DUCTILE IRON ASTM A536. DESIGNED FOR HIGH STRENGTH TO WEIGHT RATIO
   - 3.4. BOLTS & NUTS: 316 STAINLESS STEEL BOLTS WITH FLUOROPOLYMER COATED NUTS TO PREVENT GALLING.
   - 3.5. FINISH: FUSION-BONDED EPOXY FINISH
   - 3.6. PRODUCT: SMITH BLAIR 441 OMNI COUPLING SYSTEM, OR APPROVED EQUAL.
   - 3.7. INSTALL PER MANUFACTURERS RECOMMENDATIONS.

RIPRAP SPECIFICATIONS

1. IMBRICATED STONE/RIPRAP: IMBRICATED STONE SHALL BE CLASS 3, AS DEFINED IN HOWARD COUNTY SPECIFICATION VOLUME IV, RIPRAP: IMBRICATED RIPRAP SHALL BE ANGULAR AND BLOCKY IN SHAPE SUCH THAT THEY CAN BE STACKED TO PREVENT DISPLACEMENT.

TEMPORARY SOIL STABILIZATION MATTING

1. MATERIALS:
   - 1.1. THE MATTING SHALL CONSIST OF 100% HIGH STRENGTH COCONUT FIBER WHICH IS TWISTED AND WOVEN IN A GRID WITH AN OPEN AREA OF 50% (+/- 2%); NO SYNTHETIC FIBERS ARE PERMISSIBLE. THE THICKNESS OF THE MATTING SHALL BE 0.35 INCH WITH A DRY WEIGHT OF 23 OZ/SY.
   - 1.2. STAPLES: LANDSCAPE STAPLES SHALL BE U-SHAPED STEEL WIRE, TWELVE (12) INCHES IN LENGTH AND A MINIMUM OF 1 INCH WIDE.
   - 1.3. DEAD STOUT STAKES: DEAD STOUT STAKES MAY BE PURCHASED OR PREPARED BY THE CONTRACTOR. THESE STAKES ARE CONSTRUCTED FROM UNTREATED, MILLED, 2X4 HARDWOOD LUMBER. THE DEAD STOUT STAKES ARE CONSTRUCTED BY CUTTING THE LUMBER INTO 3-FOOT LENGTHS. EACH LENGTH SHALL BE CUT AGAIN DIAGONALLY AND LONGITUDINALLY ACROSS THE ENTIRE LENGTH TO MAKE TWO TRIANGULAR (OR WEDGED) SHAPED STAKES FROM EACH LENGTH. THE DIAGONAL CUT BEGINS AND ENDS 1/8 INCH FROM THE EDGE OF THE PIECE SO THE FINISHED STAKE WILL HAVE A 1/8 INCH WIDE TIP WHICH WILL BE INSERTED INTO THE SUBSTRATE OR MATERIAL.
   - 1.4. ACCEPTABLE PRODUCTS: ROLANKA BIOD-MAT 70 OR APPROVED EQUAL.

2. CONSTRUCTION
   - 2.1. SLOPE TO BE COVERED SHALL BE FINE GRADED, SEEDED AT THE RATE SHOWN ON THE PLANS, AND TAMPED SO THERE ARE NO AIR POCKETS, VOIDS, OR PROTRUSIONS, INCLUDING ROOTS AND SOIL CLODS.
   - 2.2. LAY MATTING BEGINNING AT THE TOE OF THE SLOPE AT THE UPSTREAM LIMIT OF THE MATTING, AND FASTEN EDGE OF MATTING USING STAPLES.
   - 2.3. UNROLL MATTING PARALLEL TO SLOPE, MAKING SURE THERE IS FULL CONTACT BETWEEN SOIL AND MATTING. THERE SHALL BE NO VOIDS BETWEEN THE MATTING AND THE SOIL. CONSECUTIVE ROLLS SPLICED ACROSS THE SLOPE SHALL BE OVERLAPPED 3 INCHES FROM UPSTREAM TO DOWNSTREAM. PLACE STAPLES 1-FOOT APART ALONG EDGES AND WHERE MATTING SECTIONS OVERLAP.
   - 2.4. CONTINUE THE PROCESS MOVING UP-SLOPE. OVERLAP MATTING EDGES 3 INCHES, AND SHINGLE SUCH THAT THE UP-SLOPE MATTING OVERLAPS THE DOWNSLOPE MATTING.
   - 2.5. CONTINUE PROCESS UNTIL THE AREA SHOWN ON THE PLANS IS COVERED. AT THE UP-SLOPE LIMITS OF THE MATTING, CUT A 6-INCH BY 6-INCH TRENCH AND PLACE THE EDGE OF THE MATTING INTO THE TRENCH. SECURE WITH STAPLES, THEN BACKFILL WITH SOIL AND COMPACT.
   - 2.6. AT THE TOE OF SLOPE, SECURE MATTING WITH DEAD STOUT STAKES PLACED IN TRIANGULAR PATTERN IN TWO ROWS AT THE BOTTOM AND APPROXIMATELY 18 INCHES ABOVE THE BOTTOM OF THE MATTING. THE MATTING SHALL BE PROPERLY SECURED SUCH THAT IT WILL NOT BE DISPLACED DURING STORM EVENTS. SPACING BETWEEN THE STAKES SHALL BE 3 FEET.

HANDLING ASBESTOS CONTAINING MATERIAL

1. THE EXISTING SEWER MAIN CROSSING THE STREAM IS PVC; HOWEVER THE PVC IS CONNECTED TO ASBESTOS CEMENT PIPE (ACP) BEYOND THE STREAMBANK. IF ACP REMOVAL IS REQUIRED, IT MUST BE REMOVED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING BUT NOT LIMITED TO: 29 CFR1926.1101, 40CFR61, 262 AND 263 AND COMAR 21.11.21.

2. WORK ON ACP REQUIRES SUBMISSION AND ACCEPTANCE OF AN ASBESTOS ABATEMENT WORK PLAN THAT DESCRIBES IN DETAIL THE METHODS THE CONTRACTOR WILL USE TO COMPLY WITH APPLICABLE REGULATIONS, INCLUDING TRAINING, RESPIRATORY PROTECTION, AND WASTE DISPOSAL.

3. DESIGN AND IMPLEMENTATION OF ENGINEERING CONTROLS AND DUST CONTROL MEASURES ARE REQUIRED TO REDUCE VISIBLE EMISSIONS WHILE PERFORMING ASBESTOS ABATEMENT.

4. THE CONTRACTOR SHALL DISPOSE OF ALL ACP AT A PERMITTED FACILITY.

5. IF THE WORK REQUIRES ENTRY INTO PERMIT-REQUIRED CONFINED SPACES, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING PERMITS AND COMPLYING WITH APPLICABLE REGULATIONS; SUCH AS 29 CFR1910.146.

TEMPORARY SANITARY SEWER BYPASS PUMPING SYSTEM

A, GENERAL

1. MINIMUM REQUIREMENTS FOR INSTALLATION, OPERATION AND MAINTENANCE FOR TEMPORARY SANITARY SEWER BYPASS PUMPING SYSTEMS FOR DIVERTING EXISTING SANITARY WASTEWATER FLOW AROUND THE INDIVIDUAL WORK AREAS FOR THE DURATION OF CONSTRUCTION ARE DESCRIBED AS FOLLOWS.
2. PUMPING SYSTEM CAPACITY LISTED AS FOLLOWS. PROVIDE PUMPS OF ADEQUATE SIZE TO HANDLE PEAK FLOW, AND PRESSURE TIGHT TEMPORARY DISCHARGE PIPING TO ENSURE TOTAL FLOW OF MAIN CAN BE SAFELY DIVERTED AROUND PIPE SECTIONS BEING REPAIRED. PUMPS SHALL BE CAPABLE OF 24 HOUR PER DAY OPERATION. KEEP SPARE PARTS FOR PUMPS AND PIPING ON SITE, AS REQUIRED.
   a. STONEBROOK: ESTIMATED PEAK FLOW 700 GPM
   b. THE CONTRACTOR SHALL FIELD VERIFY ACTUAL WASTEWATER FLOWS PRIOR TO SUBMITTING BYPASS PUMPS AND PIPING INFORMATION FOR REVIEW BY THE ENGINEER.
3. LEAK DETECTION
   a. PERFORM LEAKAGE AND PRESSURE TESTS ON DISCHARGE PIPING USING CLEAN WATER PRIOR TO OPERATION. NOTIFY ENGINEER 24-HOURS PRIOR TO TESTING. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF HOWARD COUNTY STANDARD SPECIFICATION SECTION 1011.04.

B. SUBMITTALS

1. SUBMIT FOLLOWING FOR REVIEW AND APPROVAL BY THE ENGINEER.
   a. DETAILED PLAN AND DESCRIPTION OF PROPOSED PUMPING SYSTEM. INDICATE NUMBER, SIZE, MATERIAL, LOCATION AND METHOD OF INSTALLATION OF SUCTION AND DISCHARGE PIPING, SIZE OF PIPELINE OR CONVEYANCE SYSTEM TO BE BYPASSED, STAGING AREA FOR PUMPS, SITE ACCESS POINT, AND EXPECTED FLOW.
      i. SIZE AND LOCATION OF MANHOLE OR ACCESS POINTS FOR SUCTION AND DISCHARGE HOSE OR PIPING.
      ii. TEMPORARY PIPE SUPPORTS AND ANCHORING REQUIRED.
      iii. THRUST AND RESTRAINT BLOCK SIZES AND LOCATIONS.
      iv. SEWER PLUGGING METHOD AND TYPE OF PLUGS.
      v. BYPASS PUMP SIZES, CAPACITY, NUMBER OF EACH SIZE TO BE ON SITE AND POWER REQUIREMENTS.
      vi. BACKUP PUMP, POWER AND PIPING EQUIPMENT.
      vii. CALCULATIONS OF STATIC LIFT, FRICTION LOSSES, AND FLOW VELOCITY. PUMP CURVES SHOWING PUMP OPERATING RANGE.
      ix. DESIGN PLANS AND COMPUTATION FOR ACCESS TO BYPASS PUMPING LOCATIONS INDICATED ON DRAWINGS.
      x. CALCULATIONS FOR SELECTION OF BYPASS PUMPING PIPE SIZE.
      xi. SCHEDULE FOR INSTALLATION AND MAINTENANCE OF BYPASS PUMPING LINES.
      xii. PROCEDURES TO MONITOR UPSTREAM MAINS FOR BACKUP IMPACTS.
      xiii. PROCEDURES FOR SETUP AND BREAKDOWN OF PUMPING OPERATIONS.
      xiv. EMERGENCY PLAN DETAILING PROCEDURES TO BE FOLLOWED IN EVENT OF PUMP FAILURES, SEWER OVERFLOWS, SERVICE BACKUPS, AND SEWAGE SPILLAGE.

C. MATERIALS AND EQUIPMENT

1. DISCHARGE AND SUCTION PIPING SIZE DETERMINED BY CONTRACTOR ACCORDING TO FLOW CALCULATIONS, PUMP SIZE AND SYSTEM OPERATING CONDITIONS.
2. ACCEPTABLE PIPING MATERIALS.
   a. POLYETHYLENE (PE) PLASTIC PIPE: HIGH DENSITY, SOLID WALL PIPING MEETING ASTM F714 REQUIREMENTS.
   b. HIGH DENSITY POLYETHYLENE (HDPE): PRESSURE PIPE MANUFACTURED FROM PE4710 RESIN.
   c. FLEXIBLE HOSE AND CONNECTORS: ABRASION RESISTANT, SUITABLE FOR INTENDED SERVICE AND RATED FOR ANTICIPATED INTERNAL AND EXTERNAL LOADS INCLUDING TEST PRESSURE.
3. VALVES AND FITTINGS: DETERMINED ACCORDING TO FLOW CALCULATIONS, PUMP SIZING AND SYSTEM OPERATING PRESSURES.
4. PLUGS: SELECTED AND INSTALLED ACCORDING TO THE SIZE OF LINE TO BE PLUGGED, PIPE AND MANHOLE CONFIGURATIONS AND SUITABLE FOR SPECIFIC SITE CONSTRAINTS.
5. ALUMINUM "IRRIGATION TYPE" PIPING OR GLUED PVC PIPING WILL NOT BE PERMITTED.
6. DISCHARGE HOSE WILL ONLY BE ALLOWED IN SHORT SECTIONS WHEN APPROVED BY THE ENGINEER.
7. PUMPS.
   a. FULLY AUTOMATIC SELF-PRIMING UNITS THAT DO NOT REQUIRE THE USE OF FOOT-VALVES OR VACUUM PUMPS IN PRIMING SYSTEM.
   b. ELECTRIC OR DIESEL POWERED.
   c. CONSTRUCTED TO ALLOW DRY RUNNING FOR LONG PERIODS OF TIME TO ACCOMMODATE CYCLICAL NATURE OF EFFLUENT FLOWS.
   d. PROVIDE NECESSARY STOP/START CONTROLS FOR EACH PUMP, ONE STANDBY PUMP OF EACH SIZE MAINTAINED ON SITE AND ON-LINE ISOLATED FROM THE PRIMARY SYSTEM BY A VALVE.

D. EXECUTION

1. PROVISIONS AND REQUIREMENTS MUST BE REVIEWED BY CONTRACT MANAGER BEFORE STARTING CONSTRUCTION.
2. REMOVE MANHOLE SECTIONS OR MAKE CONNECTIONS TO EXISTING SEWER AND CONSTRUCT TEMPORARY BYPASS PUMPING STRUCTURES AT ACCESS LOCATION INDICATED ON DRAWINGS AND AS REQUIRED TO PROVIDE ADEQUATE SUCTION CONDUIT.
3. PLUGGING OR BLOCKING OF SEWAGE FLOWS SHALL INCORPORATE A PRIMARY AND SECONDARY PLUGGING DEVICE. WHEN PLUGGING OR BLOCKING IS NO LONGER NEEDED FOR PERFORMANCE AND ACCEPTANCE OF WORK, REMOVE IN A MANNER THAT PERMITS THE SEWAGE FLOW TO SLOWLY RETURN TO NORMAL WITHOUT SURGE, TO PREVENT SURCHARGING OR CAUSING OTHER MAJOR DISTURBANCES DOWNSTREAM.
4. WHEN WORKING INSIDE MANHOLE OR FORCE MAIN, EXERCISE CAUTION. FOLLOW OSHA, LOCAL, STATE AND FEDERAL REQUIREMENTS. TAKE REQUIRED MEASURES TO PROTECT WORKFORCE AGAINST SEWER GASES AND/OR COMBUSTIBLE OR OXYGEN-DEFICIENT ATMOSPHERE.

AS-BUILT
03/01/2022

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/29/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-28-21
CHIEF, BUREAU OF UTILITIES — DATE 10-29-21
CHIEF, UTILITY DESIGN DIVISION — DATE SRK

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2023

Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JAMES W. STAMP — 20821 — PROFESSIONAL ENGINEER

DES:	JRW
DRN:	JRW
CHK:	JMS
SIGN DATE:	10/1/2021

BY	NO.	REVISION	DATE
JWS	1	AS-BUILT	3/22

OCTOBER 2021

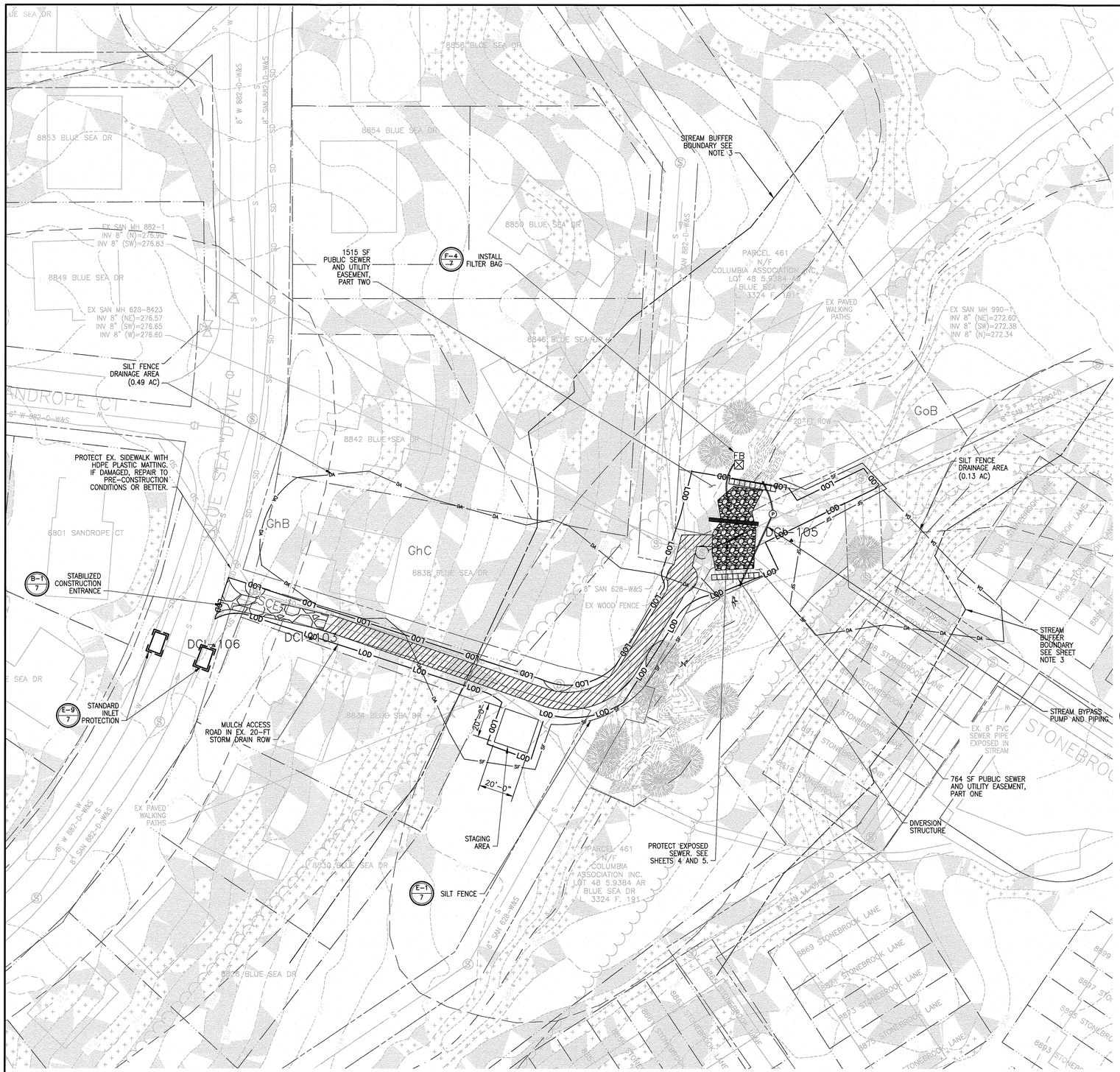
NOTES AND SPECIFICATIONS

600' SCALE MAP NO. 42

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1
SANITARY SEWER STABILIZATION
AT STREAM CROSSING NEAR
STONEBROOK LANE
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET NO. 5 OF 9



EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=30'

SHEET NOTES:

1. EXISTING SITE CONDITIONS ARE BASED ON GIS, RECORD DRAWINGS, AND FIELD MEASUREMENTS OF SURFACE FEATURES COLLECTED ON NOVEMBER 11, 2019. NEITHER THE OWNER OR ENGINEER WARRANT OR GUARANTEES THE ACCURACY OF THIS PORTRAYAL. VERIFY THE LOCATIONS AND CHARACTERISTICS OF BELOW-GRADE UTILITIES AND OTHER FACILITIES AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL STANDARDS, SPECIFICATIONS, AND REQUIREMENTS.
3. STREAM DOES NOT HAVE A USE CLASS, BUT IS A TRIBUTARY TO A THE LITTLE PATUXENT RIVER, WHICH IS A USE CLASS IV-P STREAM. A USE CLASS IV STREAM BUFFER OF 100 FEET IS SHOWN. LITTLE PATUXENT RIVER IS IMPAIRED BY SEDIMENT (CATEGORY 4A) AND CHLORIDES (CATEGORY 5).
4. CONTRACTOR TO CUT AND REPLACE OR PROTECT SIDEWALK. TREES TO BE TRIMMED AT THE END OF ACCESS ROAD FOR VEHICULAR ACCESS.

LEGEND

- EXISTING STREAM CENTERLINE
- EXISTING SANITARY SEWER EASEMENT
- EXISTING TREELINE
- EXISTING TREE
- 350 EXISTING MAJOR CONTOUR
- 352 EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- S EXISTING SANITARY SEWER MANHOLE
- S EXISTING SANITARY SEWER LINE
- W EXISTING WATER LINE
- SD EXISTING STORM DRAIN
- EXISTING BUILDING
- LIMITS OF STREAM BUFFER (100-FT)
- GnB SOIL TYPE BOUNDARY
- LOD LIMITS OF DISTURBANCE
- ACCESS ROAD
- SCE STABILIZED CONSTRUCTION ENTRANCE
- FB FILTER BAG
- SF SILT FENCE
- STORMWATER INLET PROTECTION
- DA ESC STRUCTURE DRAINAGE AREA
- 2/5 DETAIL DESIGNATION / DRAWING NUMBER WHERE SHOWN
- EXISTING SLOPE 15%-20%
- EXISTING SLOPE >=20%

AS-BUILT
03/01/2022

50 0 50 100
SCALE IN FEET

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/29/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-28-21
CHIEF, BUREAU OF UTILITIES — DATE 10-29-21
CHIEF, UTILITY DESIGN DIVISION — DATE 10/27/2021 SRK

PROFESSIONAL CERTIFICATION:
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Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JEFFREY M. STARKEY — 20821 — PROFESSIONAL ENGINEER

DES:	JRW
DRN:	JRW
CHK:	JMS
SIGN DATE:	10/1/2021

BY	NO.	REVISION	DATE
JMS	1	AS-BUILT	3/22

OCTOBER 2021

EROSION AND SEDIMENT CONTROL PLAN

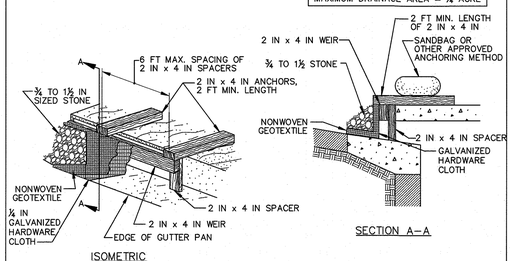
600' SCALE MAP NO. 42

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET NO. 6 OF 9

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP



CONSTRUCTION SPECIFICATIONS

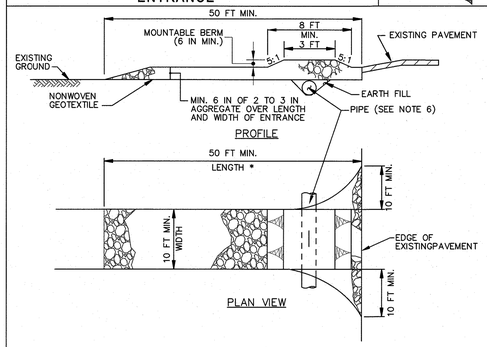
1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON–SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

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

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

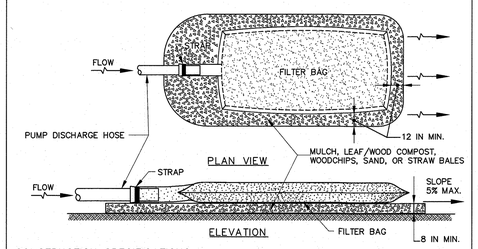
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

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

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: ☒FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D–4632
PUNCTURE	150 LB	ASTM D–4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D–4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D–4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D–4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D–4751
SEAM STRENGTH	90%	ASTM D–4632

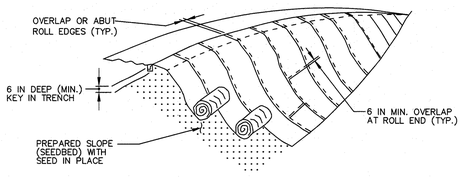
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

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

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS 3.6 lb/ft²



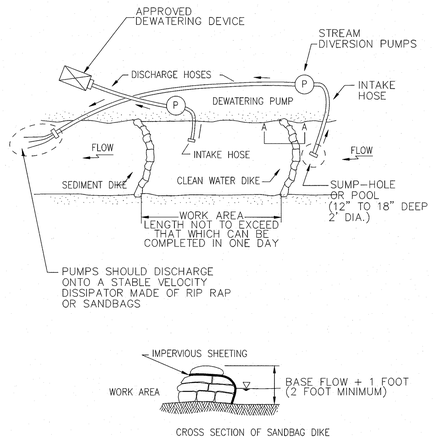
ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN–MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON–LEACHING AND NON–TOXIC TO VEGETATION AND SEED GERMINATION AND NON–INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH–SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET 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



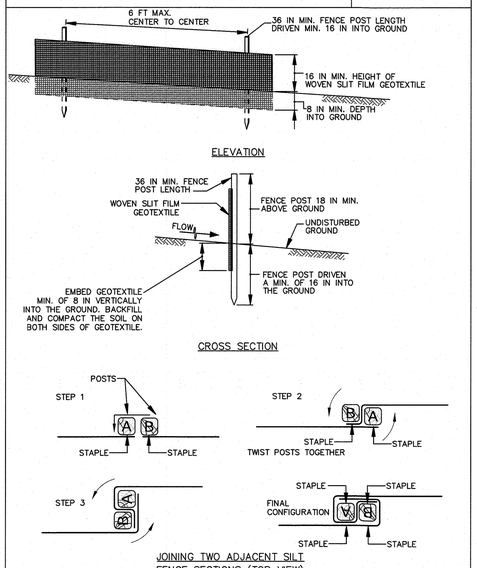
NOTES

1. MAINTAIN STREAM FLOW PER HOWARD COUNTY STANDARD SPECIFICATIONS; INCLUDING BUT NOT LIMITED TO, SECTION 101.03.03.30.
2. IMPLEMENT STREAM PUMP AROUND IN ACCORDANCE WITH MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION (MGWC) SECTION 1.2

C6 3 PUMP–AROUND PRACTICE
SCALE: NO SCALE

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 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

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1): AND

B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

AS-BUILT
03/01/2022

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/29/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-28-21
CHIEF, BUREAU OF UTILITIES — DATE 10-29-21
CHIEF, UTILITY DESIGN DIVISION SRK — DATE 10/27/2021

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2023

Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JAMES M. SMITH — 20821 — PROFESSIONAL ENGINEER

DES:	JRW
DRN:	JRW
CHK:	JMS
SIGN DATE:	10/1/2021

BY	NO.	REVISION	DATE
JMS	1	AS-BUILT	3/22

OCTOBER 2021

EROSION AND SEDIMENT CONTROL DETAILS

600' SCALE MAP NO. 42

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628–W&S–ADD 1
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SHEET NO. 7 OF 9

HOWARD SOIL CONSERVATON DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
   a. PRIOR TO THE START OF EARTH DISTURBANCE.
   b. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
   c. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
   d. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

   OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.
6. SITE ANALYSIS:
   TOTAL AREA OF SITE: 0.25 ACRES (11,084 SQUARE FEET)
   AREA DISTURBED: 0.25 ACRES (11,084 SQUARE FEET)
   AREA TO BE ROOFED OR PAVED: 0 ACRES
   AREA TO BE VEGETATIVELY STABILIZED: 0.25 ACRES (11,084 SQUARE FEET)
   TOTAL CUT: 0 CU. YDS.
   TOTAL FILL: 84 CU. YDS.
   OFFSITE WASTE/BORROW AREA LOCATION: TBD AFTER CONTRACTOR SELECTION.
7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
   - INSPECTION DATE
   - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
   - NAME AND TITLE OF INSPECTOR
   - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
   - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
   - EVIDENCE OF SEDIMENT DISCHARGES
   - IDENTIFICATION OF PLAN DEFICIENCIES
   - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
   - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
   - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
   - PHOTOGRAPHS
   - MONITORING/SAMPLING
   - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
   - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
   - USE I AND IP MARCH 1 - JUNE 15
   - USE III AND IIIP OCTOBER 1 - APRIL 30
   - USE IV MARCH 1 - MAY 31
16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

SEQUENCE OF CONSTRUCTION

1. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID) AT 410-313-1855 AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EARTH DISTURBANCE ACTIVITIES. [1 DAY]
2. CONTACT "MISS UTILITY" AT 1-800-257-7777 FOR FIELD LOCATION OF ALL PUBLIC AND PRIVATE UTILITY LINES, PIPES, CABLES AND ASSOCIATED FEATURES AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION WORK. THE CONTRACTOR SHALL UTILIZE THE SERVICES OF A PRIVATE UTILITY LOCATOR TO LOCATE AND MARK EXISTING UNDERGROUND UTILITIES NOT MARKED BY "MISS UTILITY". NO WORK MAY BEGIN WITHOUT CLEAR UTILITY MARKINGS AND A DIG PERMIT AUTHORIZATION FROM MISS UTILITY. [1 WEEK]
3. SCHEDULE AN ONSITE COORDINATION MEETING BETWEEN THE CID AND ENGINEER TO DISCUSS PROJECT SCOPE AND OBJECTIVES, ON-SITE CONDITIONS, ADDRESS, COORDINATION WITH ON-GOING WORK AND NECESSARY PRACTICES TO PROTECT EXISTING RESOURCES AND PROPERTY. [1 DAY]
4. IMPLEMENTING EROSION AND SEDIMENT CONTROL PRACTICES SHOWN ON SHEET 6. STAKEOUT LIMITS OF DISTURBANCE PRIOR TO INITIATING WORK. [2 DAYS]
5. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AND ACCESS ROAD. [2 DAYS]
6. INSTALL SANDBAG STREAM DIVERSION AND BYPASS PUMP AND PIPING [1 DAY].
7. DEWATER WORK AREA [1 DAY]. WASTE WATER FROM DEWATERING ACTIVITIES SHALL BE DISCHARGED THROUGH A FILTER BAG OR OTHER APPROVED SEDIMENT CAPTURE DEVICE FOR THE DURATION OF THE PROJECT.
8. SETUP THE SEWER BYPASS AND REPLACE THE EXPOSED SANITARY SEWER TO THE NEAREST JOINT. [2 DAYS]
9. CONSTRUCT IMPROVEMENTS AS SHOWN ON THE SITE PLAN, SHEET 4. STABILIZE THE WORK AREA AT THE END OF EACH WORKDAY. [2 WEEKS]
10. PERFORM SLOPE GRADING. TOPSOIL, SEED, AND MULCH ON ANY AREAS DISTURBED OUTSIDE OF ROADWAY PAVING. REMOVE THE MULCH ACCESS ROAD AND RESTORE PAVED WALKING PATH AS NEEDED. [2 DAYS]
11. SEED AND MULCH ANY REMAINING DISTURBED AREAS. [1 DAY]
12. WITH WRITTEN APPROVAL OF THE CID INSPECTOR ADDRESS ANY REMAINING ISSUES AND DEMOBILIZE FROM SITE. [1 DAY]

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

SECTION B-4-1: INCREMENTAL STABILIZATION

DEFINITION: ESTABLISHMENT OF VEGETATIVE COVER ON CUT AND FILL SLOPES.

PURPOSE: TO PROVIDE TIMELY VEGETATIVE COVER ON CUT AND FILL SLOPES AS WORK PROGRESSES.

CONDITIONS WHERE PRACTICE APPLIES: ANY CUT OR FILL SLOPE GREATER THAN 15 FEET IN HEIGHT. THIS PRACTICE ALSO APPLIES TO STOCKPILES.

CRITERIA:
A. INCREMENTAL STABILIZATION- CUT SLOPES

1. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS WORK PROGRESSES.
2. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):
   a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
   b. PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
   c. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
   d. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

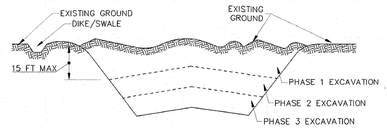


Figure B.1: Incremental Stabilization - Cut

B. INCREMENTAL STABILIZATION - FILL SLOPES

1. CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
2. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
3. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
4. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
   a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
   b. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
   c. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
   d. PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
   e. PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

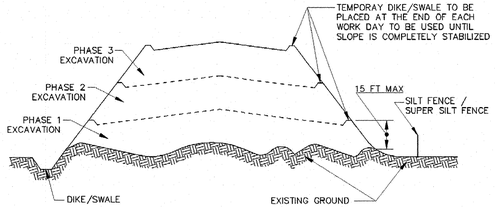


Figure B.2: Incremental Stabilization - Fill

SECTION B-4-2: SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION: THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION
PURPOSE: TO PROVIDE 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 LOOSENED, 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 LOOSENED 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 CINDERS, 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.

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1): AND
B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

AS-BUILT
03/01/2022

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/29/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-28-21
CHIEF, BUREAU OF UTILITIES — DATE 10-29-21
CHIEF, UTILITY DESIGN DIVISION — DATE 10/27/2021 SRK

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2023

Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JOSEPH M. MARTIN — 20821 — PROFESSIONAL ENGINEER

DES: JRW
DRN: JRW
CHK: JMS
SIGN DATE: 10/1/2021

BY	NO.	REVISION	DATE
JMS	1	AS-BUILT	3/22

OCTOBER 2021

EROSION AND SEDIMENT CONTROL NOTES- 1

600' SCALE MAP NO. 42

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE

ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SCALE: NONE

SHEET NO. 8 OF 9

SECTION B-4-3: 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.
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.
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.
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.
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).
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.
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.
MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
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.
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.
WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
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.
WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL 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:
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.
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.
SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, 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.
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.

SECTION B-4-4: 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

HARDINESS ZONE (from Figure B.3): 7a SEED MIXTURE (from Table B.1):					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS		
	ANNUAL RYEGRASS	40	2/15 - 4/30 8/15 - 11/30	0.5 in.	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	FOXTAIL MILLET	30	5/1 - 8/14	0.5 in.		

SECTION B-4-5: 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 COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA:

A. SEED MIXTURES

1. GENERAL USE

a. 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.

b. 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 PLANTING.

c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 ½ 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

a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

b. 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: 1½ 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 1½ 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 (½ 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.

PERMANENT SEEDING SUMMARY

	HARDINESS ZONE (from Figure B.3): 7a SEED MIXTURE (from Table B.3):				FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (lbs/ac)	**SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	
1	SWITCH GRASS CREEPING RED FESCUE PARTRIDGE PEA	10 15 4	2/15 - 4/30* 5/1 - 5/31**	1/4"-1/2"	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
11	CREEPING RED FESCUE CHEWING FESCUE KENTUCKY BLUEGRASS ROUGH BLUEGRASS	30 30 20 15	3/1 - 5/15 8/1 - 10/15	1/4"-1/2"	45 lb/ac (1 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)

* WARM-SEASON GRASSES NEED A SOIL TEMPERATURE OF AT LEAST 50 DEGREES F IN ORDER TO GERMINATE. IF SOIL TEMPERATURES ARE COLDER THAN 50 DEGREES, OR MOISTURE IS NOT ADEQUATE, THE SEEDS WILL REMAIN DORMANT UNTIL CONDITIONS ARE FAVORABLE. IN GENERAL, PLANTING DURING THE LATTER PORTION OF THIS PERIOD ALLOWS MORE TIME FOR WEED EMERGENCE AND WEED CONTROL PRIOR TO PLANTING. WHEN SELECTING A PLANTING DATE, CONSIDER THE NEED FOR WEED CONTROL VS. THE LIKELIHOOD OF HAVING SUFFICIENT MOISTURE FOR LATER PLANTINGS, ESPECIALLY ON DROUGHTY SITES.

** ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT.

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

1. GENERAL SPECIFICATIONS

c. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

d. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ¾ INCH, PLUS OR MINUS ¼ 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.

e. 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.

f. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

g. 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

a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

b. 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.

c. 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.

d. 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

a. 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.

b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.

c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN ⅓ 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

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE AND REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1): AND

B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

AS-BUILT
03/01/2022

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 10/29/2021
CHIEF, BUREAU OF ENGINEERING — DATE 10-28-21
CHIEF, BUREAU OF UTILITIES — DATE 10-29-21
CHIEF, UTILITY DESIGN DIVISION — DATE 10/27/2021

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20821, EXPIRATION DATE: 05/02/2023

Gannett Fleming
BALTIMORE, MARYLAND

STATE OF MARYLAND — JAMES R. WEBB — 20821 — PROFESSIONAL ENGINEER

DES: JRW
DRN: JRW
CHK: JMS
SIGN DATE: 10/1/2021

BY	NO.	REVISION	DATE
JMS	1	AS-BUILT	3/22

OCTOBER 2021

EROSION AND SEDIMENT CONTROL NOTES- 2

600' SCALE MAP NO. 42

CAPITAL PROJECT NO. S6268/S6601
CONTRACT NO. 628-W&S-ADD 1
SANITARY SEWER STABILIZATION AT STREAM CROSSING NEAR STONEBROOK LANE
ELECTION DISTRICT NO. 3 — HOWARD COUNTY, MARYLAND

SCALE: NONE

SHEET NO. 9 OF 9