

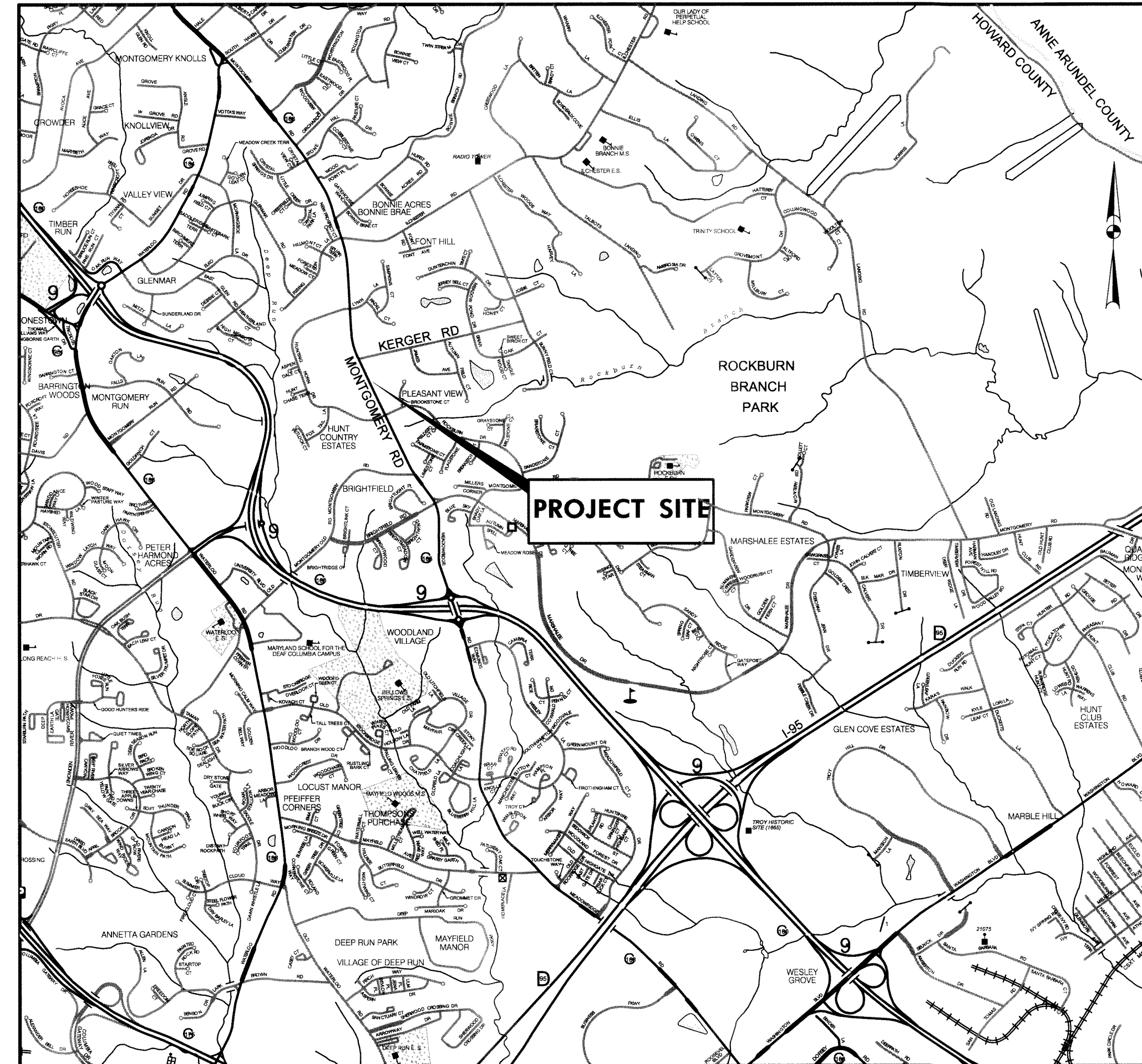
MONTGOMERY ROAD STORM DRAIN IMPROVEMENT PROJECT AT BONNIE ORCHARD

DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT No. D-1124

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FROM SELECTED AVAILABLE RECORDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SOLICIT ALL UTILITY RECORDS AND VERIFY ALL EXISTING UTILITIES TO HIS OWN SATISFACTION, INCLUDING THE USE OF TEST PITS. 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.
- COORDINATES SHOWN HEREON ARE BASED UPON SURVEY BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- ALL TOPOGRAPHIC INFORMATION PROVIDED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON PLANS.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION) OR THE MSHA STANDARD DETAILS AND SPECIFICATIONS. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB. HOWARD COUNTY DESIGN MANUAL SHALL GOVERN WHERE APPLICABLE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - STATE HIGHWAY ADMINISTRATION (410) 531-5533
 - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES (410) 850-4620
 - BALTIMORE GAS & ELECTRIC CO. - UNDERGROUND DAMAGE CONTROL SERVICES (410) 859-9004
 - BALTIMORE GAS & ELECTRIC CO. - TROUBLE SHOOTING (410) 298-9040
 - MISS UTILITY - 1(800) 257-7777 (TO HAVE ALL UTILITIES LOCATED IN THE FIELD)
 - VERIZON - (410) 224-9452
 - BUREAU OF UTILITIES, HOWARD CO. DEPT. OF PUBIC WORKS (410) 313-4900
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT PRACTICAL.
- CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICES BID FOR CLEARING AND GRUBBING.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.



<u>DEVELOPER'S CERTIFICATION</u>	
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.	
DATE	
SIGNATURE OF DEVELOPMENT	
<u>ENGINEER'S CERTIFICATION</u>	
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.	
DATE 10/4/13	THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
FR&K 81 MOSHER STREET BALTIMORE, MARYLAND 21217 (410) 728-2900	DATE HOWARD SOIL CONSERVATION DISTRICT

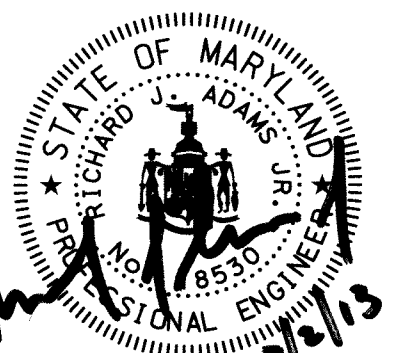
THE CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777, FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

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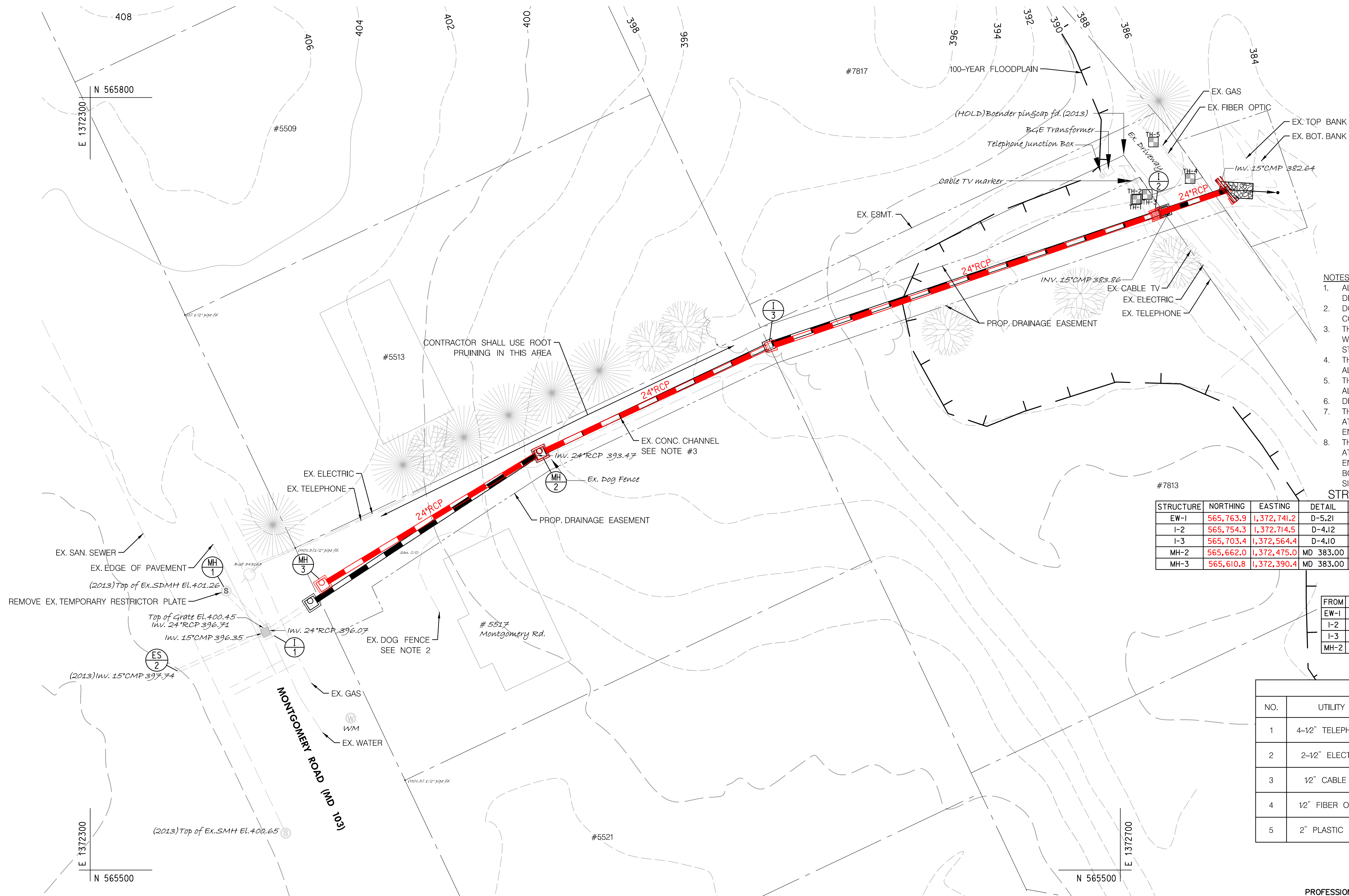
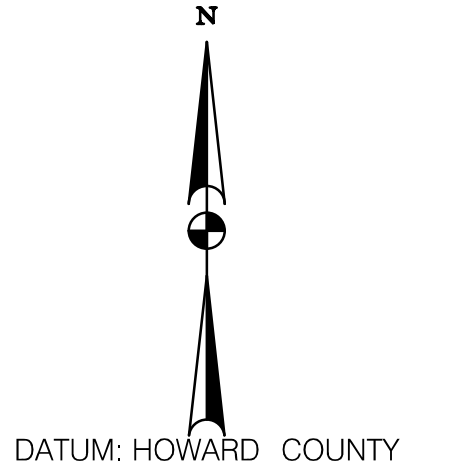
AS-BUILT 8/6/2014

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. 18530 EXPIRATION DATE: DECEMBER 15, 2013.



Wednesday, October 02, 2013 AT 02:10 PM \\balsrv03\1\2010\2010\0023.HC\Civil\Task #04-Montgomery Rd Drainage\CADD\Sheet\pCN-T000-Montgomery-rfoc.dgn

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS DATE 10/4/13 CHIEF, BUREAU OF HIGHWAYS DATE 10/4/13	Rummel, Klepper & Kahl, LLP 81 MOSHER STREET BALTIMORE, MD 21217 PH: (410) 728-2900 FAX: (410) 728-3160 CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE 10/4/13	DES: CPS DRN: CPS CHK: RJA DATE: JUN 14	AS-BUILT TITLE SHEET	MONTGOMERY ROAD STORM DRAIN IMPROVEMENT AT BONNIE ORCHARD CAPITAL PROJECT NO. HOWARD COUNTY, MARYLAND	SCALE 1" = 2000' SHEET NO. 1 of 5
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- NOTES:**
1. ALL TOPOGRAPHIC INFORMATION PROVIDED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 2. DOG FENCE SHALL BE RESTORED TO ORIGINAL LOCATION AND CONDITION AFTER CONSTRUCTION.
 3. THE CONCRETE DITCH ON #5517 SHALL BE REMOVED, FILLED WITH SOIL TO THE TOP OF DITCH THEN PERMANENTLY STABILIZED PER THE DETAIL ON SHEET 3.
 4. THE SUMP PUMP OUTLETS FROM #5517 AN #5513 SHALL BE ALTERED TO DRAIN TO THE PROPOSED GROUND.
 5. THE CONTRACTOR SHALL MAINTAIN PRIVATE DRIVEWAY ACCESS AT ALL TIMES.
 6. DRIVEWAY RESTORATION SHALL BE IN-KIND REPLACEMENT.
 7. THE CONTRACTOR SHALL COORDINATE ALL OTHER UTILITY WORK AT THE DRIVEWAY FOR #7817 WITH THE HOWARD COUNTY ENGINEER.
 8. THE CONTRACTOR SHALL RELOCATE THE CABLE TV DUCT AT I-2 AT THE ELEVATION SHOWN ON THE DRAINAGE PROFILE. THE ENDS OF THE PROPOSED DUCT WILL BE CAPPED AND MARKER BOARDS WILL BE INSTALLED AT EACH END WITH A COMCAST SIGN.

STRUCTURE TABLE

STRUCTURE	NORTHING	EASTING	DETAIL	TOP	INVERT	NOTES
EW-1	565,763.9	1,372,741.2	D-5.21	-	380.00	MODIFIED FOR 30° SKEW
I-2	565,754.3	1,372,714.5	D-4.12	385.18	380.19	SINGLE OPENING WEST FACE W/O CONC. GUTTER
I-3	565,703.4	1,372,564.4	D-4.10	391.72	383.45	SINGLE OPENING WEST FACE
MH-2	565,662.0	1,372,475.0	MD 383.00	395.00	388.33	
MH-3	565,610.8	1,372,390.4	MD 383.00	400.88	393.24	

STORM DRAIN TABLE

FROM	TO	INVERT OUT	INVERT IN	LENGTH	SLOPE	TYPE
EW-1	I-2	380.00	380.19	27.0 LF	0.7%	24" RCP CL. III
I-2	I-3	380.46	383.45	155.0 LF	1.9%	24" RCP CL. III
I-3	MH-2	386.32	388.33	95.2 LF	2.1%	24" RCP CL. III
MH-2	MH-3	390.29	393.24	94.9 LF	3.1%	24" RCP CL. III

TEST HOLE DATA

NO.	UTILITY	NORTHING	EASTING	TOP UTILITY ELEVATION	SURFACE ELEVATION
1	4-12" TELEPHONE	565,760	1,372,706	00.00	00.00
2	2-12" ELECTRIC	565,761	1,372,707	00.00	00.00
3	12" CABLE TV	565,762	1,372,710	00.00	00.00
4	12" FIBER OPTIC	565,769	1,372,727	00.00	00.00
5	2" PLASTIC GAS	565,783	1,372,713	00.00	00.00

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Jan J. Dan 10/14/13
DIRECTOR OF PUBLIC WORKS DATE

Steve Shanes 10/14/13
CHIEF, BUREAU OF HIGHWAYS DATE

Steve Shanes 10/14/13
CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160
Engineers | Construction Managers | Planners | Scientists
www.rkk.com

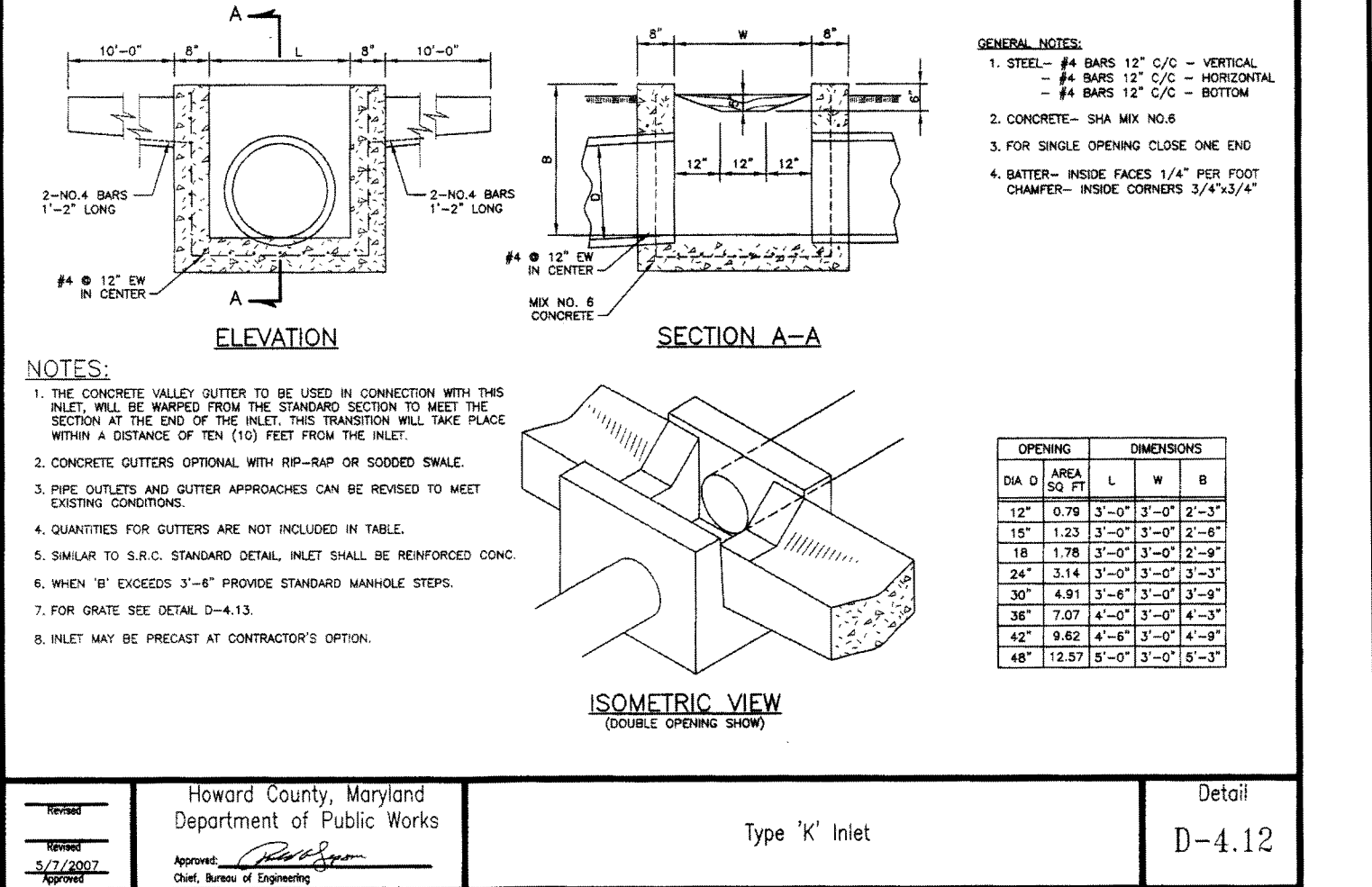
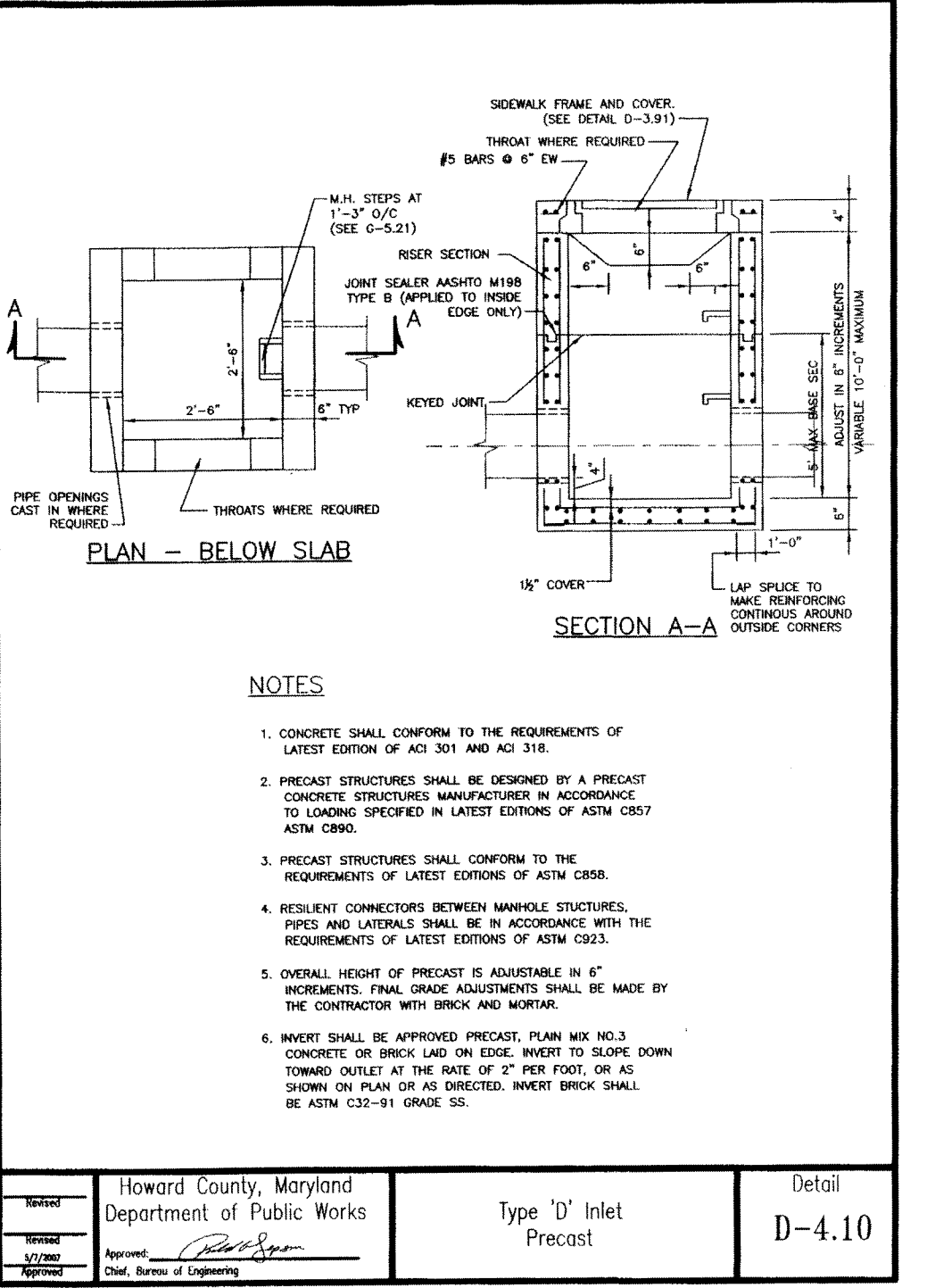
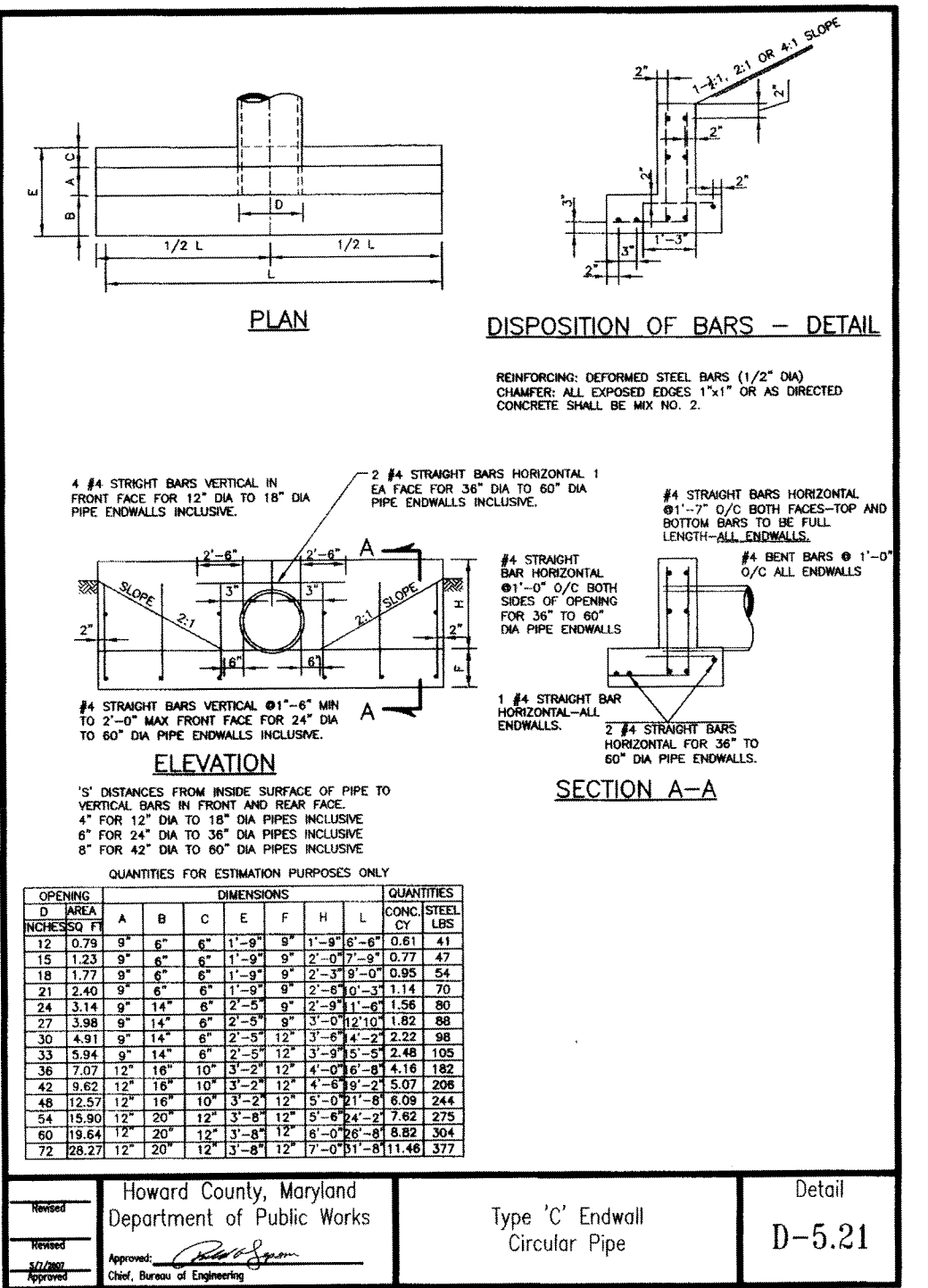
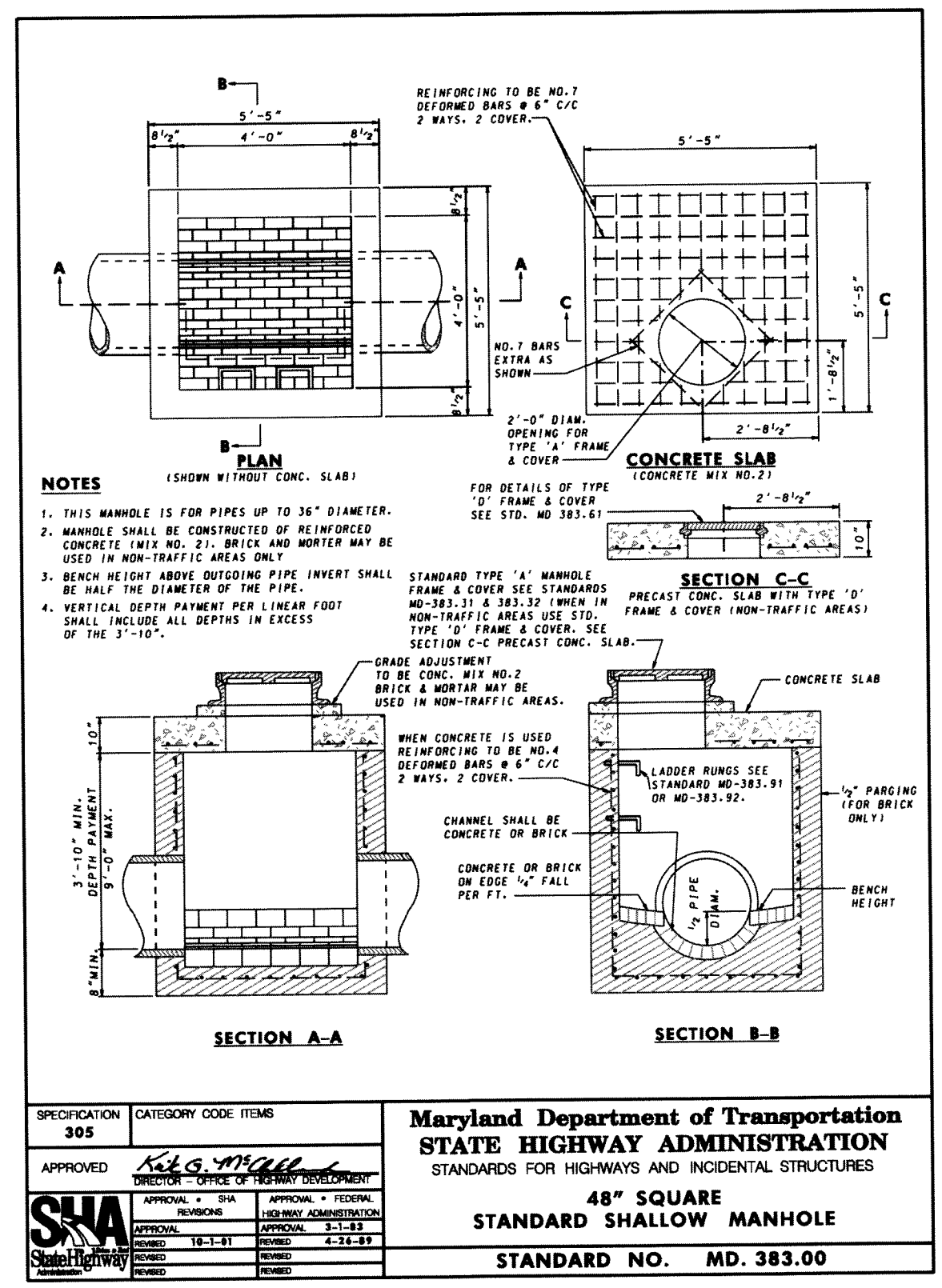
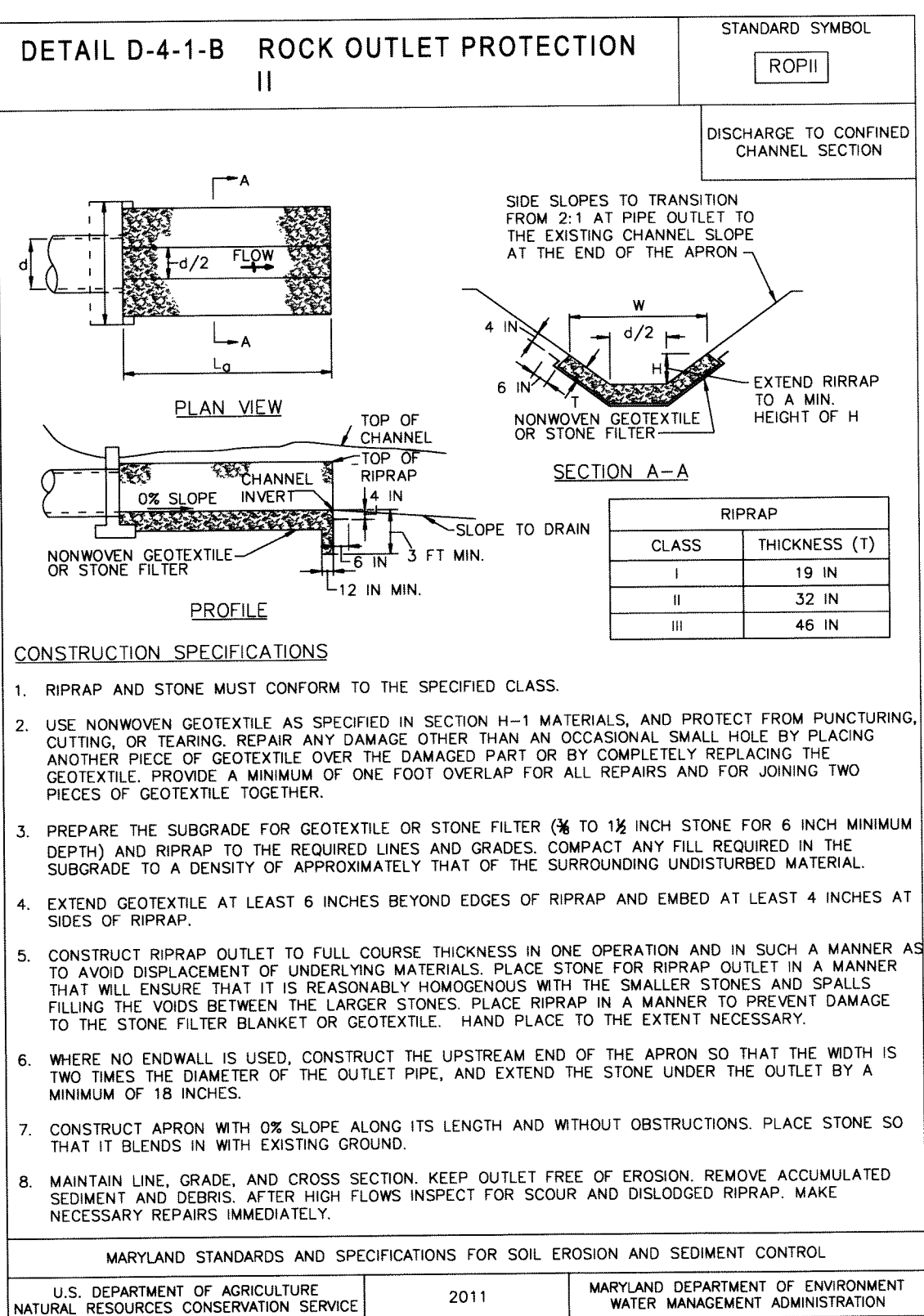
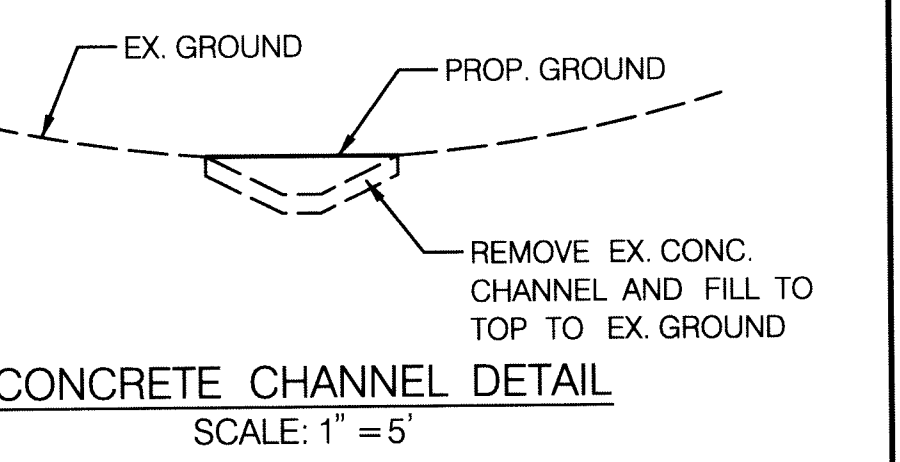
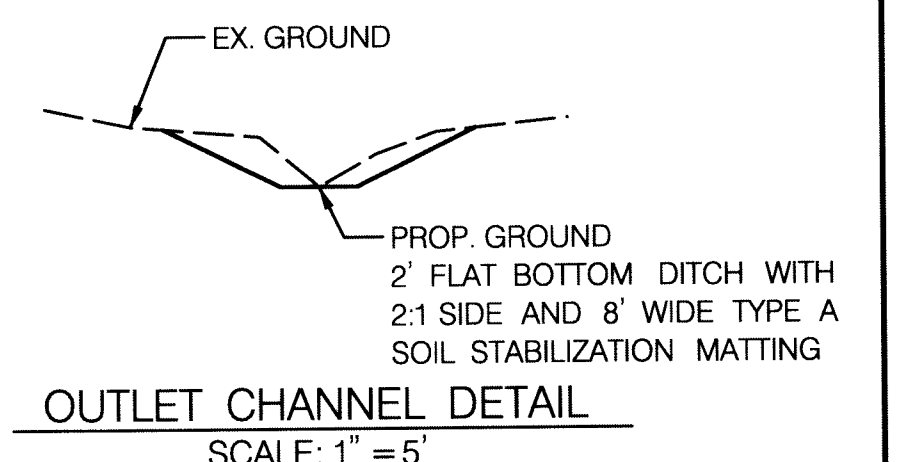
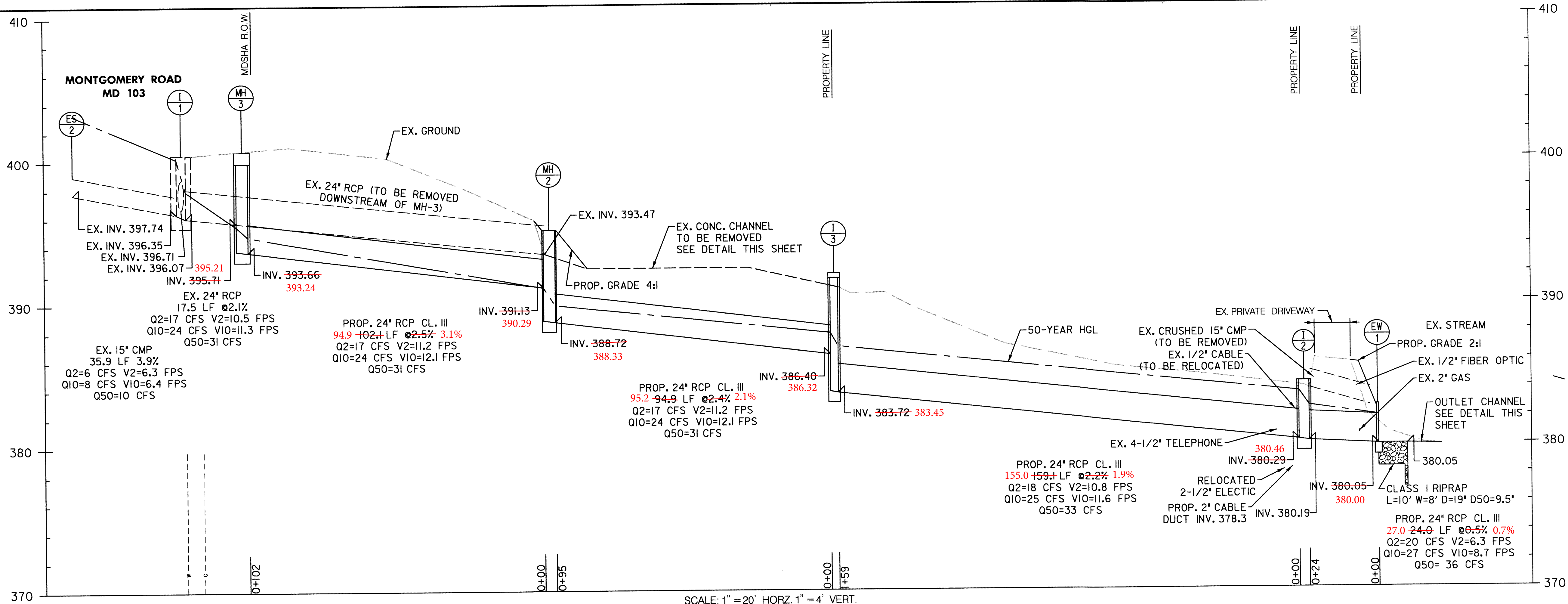
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CHK: RJA				
DATE: JUN 14	BY	NO.	REVISION	DATE

**AS-BUILT
DRAINAGE PLAN**

**MONTGOMERY ROAD STORM DRAIN
IMPROVEMENT AT BONNIE ORCHARD
CAPITAL PROJECT NO.
HOWARD COUNTY, MARYLAND**

SCALE
1"=20'

SHEET NO.
2 of 5



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works DATE 10/2/13
Chief, Bureau of Highway DATE 10/4/13

Act. Chief, Bureau of Engineering DATE 10/14/13
Chief, Transportation & Special Projects Division DATE 10/4/13

RK&K
Rummel, Klepper & Kahl, LLP
 81 MOSHER STREET | BALTIMORE, MD 21217
 PH: (410) 728-2900 FAX: (410) 728-3160

DES:	CPS	BY:	NO.	REVISION	DATE
DRN:	CPS				
CHK:	RJA				
DATE:	JUN 14				

AS-BUILT
DRAINAGE PROFILE

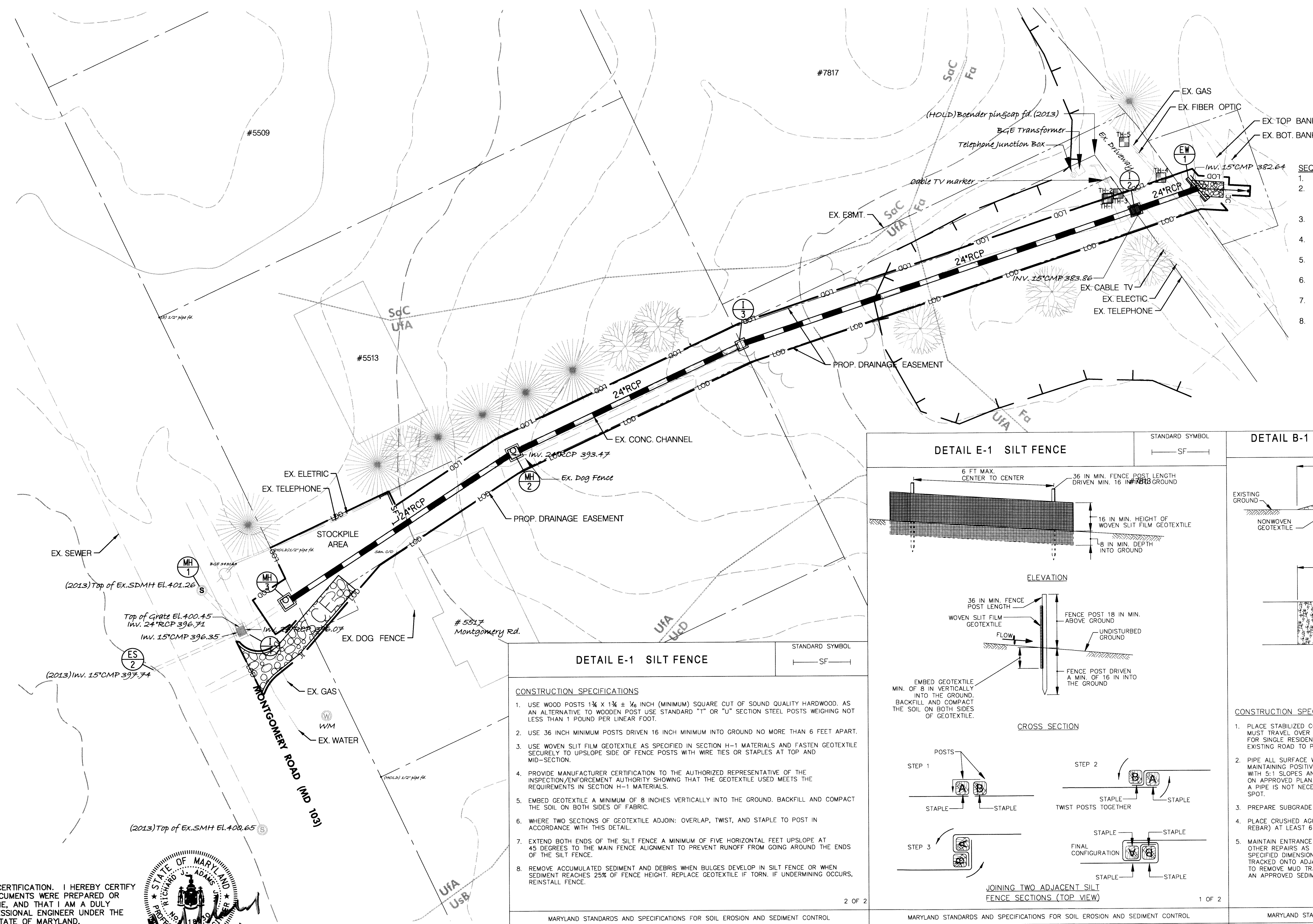
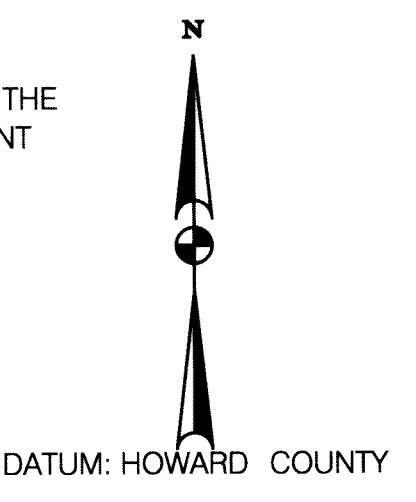
MONTGOMERY ROAD STORM DRAIN IMPROVEMENT AT BONNIE ORCHARD CAPITAL PROJECT NO. HOWARD COUNTY, MARYLAND

SCALE
 As Shown

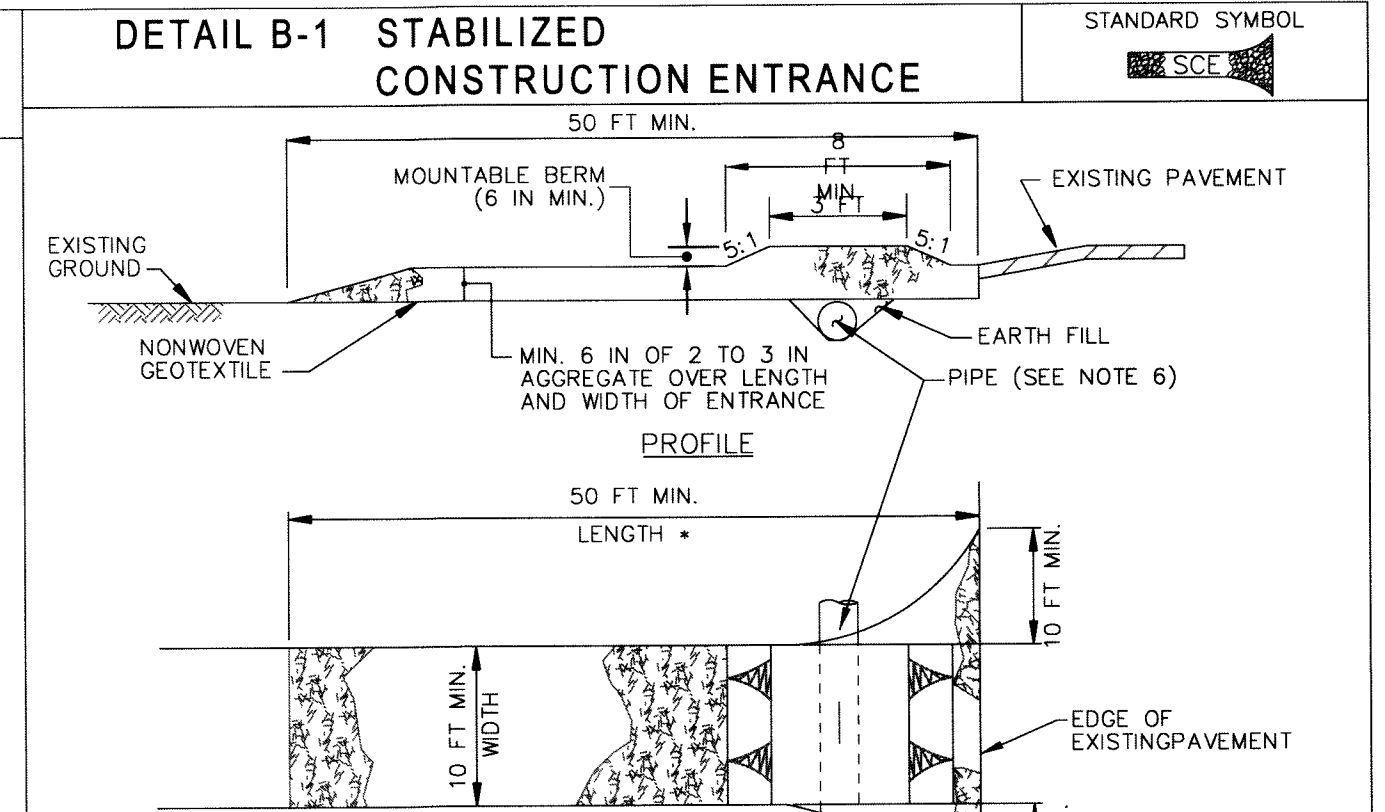
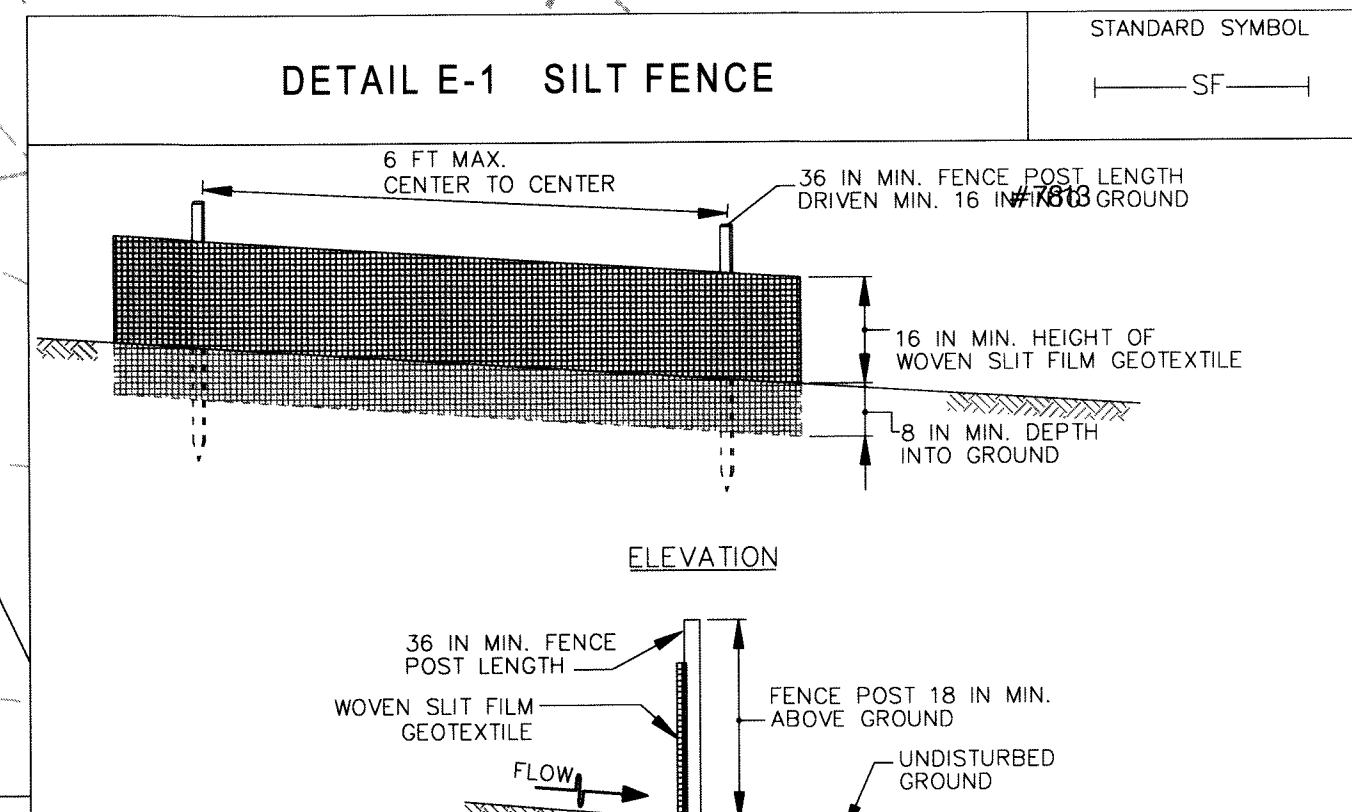
SHEET NO.
 3 of 5



NOTE
SILT FENCE IS TO BE INSTALLED AT THE
DIRECTION OF THE HOWARD SEDIMENT
CONTROL INSPECTOR.



- SEQUENCE OF CONSTRUCTION**
1. OBTAIN A GRADING PERMIT.
 2. CONTACT THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION AND SCHEDULE PRECONSTRUCTION MEETING.
 3. CONSTRUCT EW-1 TO I-2 DURING A MINIMUM 72-HOUR DRY WEATHER FORECAST FROM THE EXISTING DRIVEWAY.
 4. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AT STOCKPILE AREA.
 5. CONSTRUCT I-2 TO MH-2 USING SAME-DAY STABILIZATION WORKING FROM I-2 UPHILL TO MH-2.
 6. CONSTRUCT MH-2 TO MH-3 DURING A MINIMUM 72-HOUR DRY WEATHER FORECAST.
 7. PERMANENTLY STABILIZE ALL DISTURBED AREAS. REMOVE THE TEMPORARY RESTRICTOR PLATE FROM MH-1.
 8. WITH PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR REMOVE ALL SEDIMENT CONTROL PRACTICES AND PERMANENTLY STABILIZE ANY REMAINING DISTURBED AREAS.



DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1 3/4 X 1 3/4 ± 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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CROSS SECTION

EMBED GEOTEXTILE MIN. OF 8 IN VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF GEOTEXTILE.

JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

STEP 1: POSTS, STAPLE, STAPLE

STEP 2: STAPLE, TWIST POSTS TOGETHER, STAPLE

STEP 3: STAPLE, STAPLE

FINAL CONFIGURATION: STAPLE, STAPLE

1 OF 2

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

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. MAINTAIN 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

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. 18530. EXPIRATION DATE: DECEMBER 15, 2013.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: Jan 7, 2013, 10/6/13
Steve Slawson, 10/4/13
Steve Slawson, 10/4/13

Steve Slawson, 10/4/13
Steve Slawson, 10/4/13

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PH: (410) 728-2900 FAX: (410) 728-3160

DES: CPS				
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DATE: JUN 14	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL PLAN

MONTGOMERY ROAD STORM DRAIN IMPROVEMENT AT BONNIE ORCHARD
CAPITAL PROJECT NO.
HOWARD COUNTY, MARYLAND

SCALE: 1"=20'
SHEET NO. 4 of 5

Wednesday, October 02, 2013 AT 02:41 PM \\balsr-v03v2010\2010\10023_Hcivil\Task #04-Montgomery Rd Drainage\CADD\Sheet\DES-P000-MontgomeryRoad.dgn

HOWARD COUNTY SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
 - 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 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 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 DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 - TOTAL AREA OF SITE 0.16 ACRES
 - AREA DISTURBED 0.16 ACRES
 - AREA TO BE ROOFED OR PAVED 0.02 ACRES
 - AREA TO BE VEGETATIVELY STABILIZED 0.14 ACRES
 - TOTAL CUT 1 CU. YDS.
 - TOTAL FILL 15 CU. YDS.
 - OFFSITE WASTE/BORROW ARE LOCATION TO BE DETERMINED BY HOWARD COUNTY DPW
- ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- 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 BE STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

B-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

- 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.
- FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- 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): 6B 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 LB/ACRE	3/1 - 5/15 8/1 - 10/15	1/2"	436 LB/AC (10 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
	FOXTAIL MILLET	30 LB/ACRE	5/16 - 7/31	1/2"		

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 PLANTING.
 - 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 *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.
 - 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.
 - 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.
 - 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.
 - 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* 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)

- 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* INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
- IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (*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

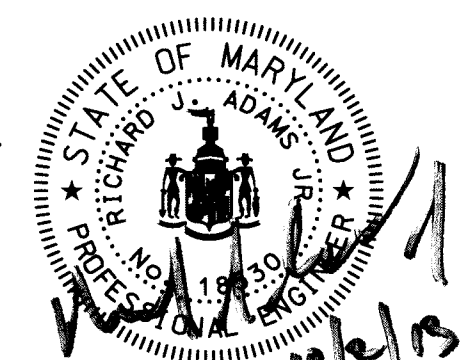
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
					N	P205	K20	
1	SWITCH GRASS CREEPING RED FESCUE PATRIDGE PEA	10 15 4	3/1 - 5/15 5/16 - 6/15		45 LB/AC (1.0 LB/1000 SF)	90 LB/AC (2 LB/1000 SF)	90 LB/AC (2 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
8	TALL FESCUE (85%),	100	3/1 - 5/15 8/1 - 10/15	1/4" - 1/2"				
9	TALL FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	60 40 20	3/1 - 5/15 8/1 - 10/15					

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 *INCH, PLUS OR MINUS *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 ??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.

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. 18530
EXPIRATION DATE: DECEMBER 15, 2013.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

10/7/13
10/14/13

DIRECTOR OF PUBLIC WORKS DATE
CHIEF, BUREAU OF HIGHWAYS DATE

10/14/13
10/14/13

CHIEF, BUREAU OF ENGINEERING DATE
CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE

RK&K
Rummel, Klepper & Kahl, LLP
81 MOSHER STREET | BALTIMORE, MD 21217
PH: (410) 728-2900 FAX: (410) 728-3160

DES: CPS			
DRN: CPS			
CHK: RJA			
DATE: JUN 14	BY	NO.	REVISION

**EROSION AND
SEDIMENT CONTROL NOTES**

**MONTGOMERY ROAD STORM DRAIN
IMPROVEMENT AT BONNIE ORCHARD
CAPITAL PROJECT NO.
HOWARD COUNTY, MARYLAND**

SCALE
N.T.S.
SHEET NO.
5 of 5

Wednesday, October 02, 2013 AT 02:12 PM
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