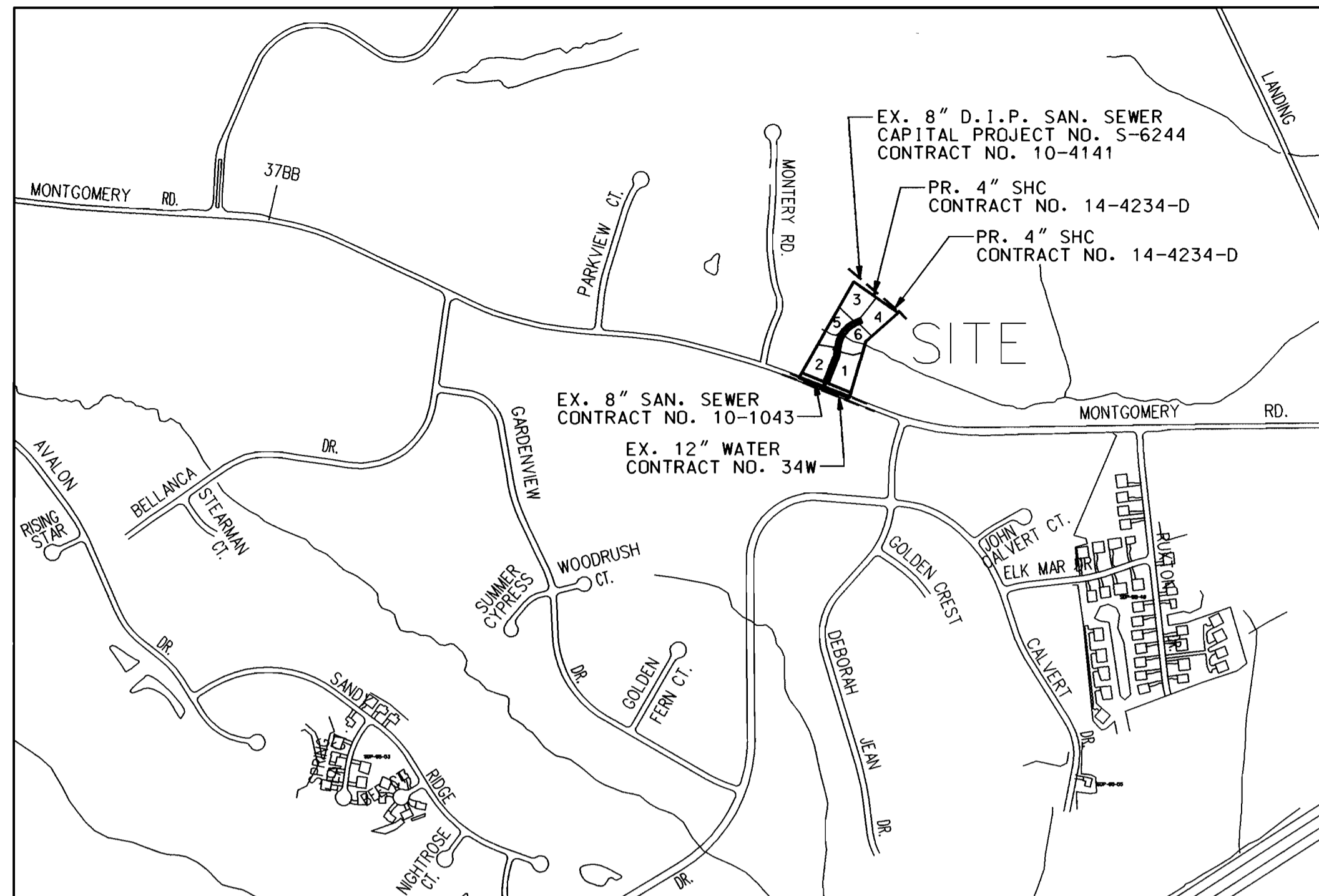


QUANTITIES				
ITEM	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
8" DIP WATER	213 L.F.			
1" WHC	41 L.F.			
4" SHC	54 L.F.			
6" DIP WATER	15 L.F.			
STD. FIRE HYDRANT	1 EA.			
8" x 6" x 8" TEE	1 EA.			
12" x 8" TAPPING TEE AND VALVE	1 EA.			
8" x 4" REDUCER	1 EA.			
4" DIP WATER	195 L.F.			
4" VALVE	1 EA.			
NAME OF UTILITY CONTRACTOR		CHECK BOX: SURVEY AND DRAFTING DIVISION AS-BUILT DATE:		

LEGEND

DESCRIPTION	EXISTING	PROPOSED
WATER MAIN	EX. 8" WATER	PROP. 8" WATER
WATER VALVE		
FIRE HYDRANT		
SEWER MAIN	EX. 8" SEWER	PROP. 8" SEWER
SEWER MANHOLE		
STORM DRAIN		
STORM DRAIN INLET		
PROPERTY BOUNDARY		
LOT LINE		
RIGHT-OF-WAY		
EASEMENT		



TYPE OF BUILDINGS:	RESIDENTIAL
NUMBER OF LOTS/PARCELS:	6 LOTS (4 BUILDABLE)
NUMBER OF W.H.C.'S:	3 + 1 EXISTING
NUMBER OF S.H.C.'S:	3 + 1 EXISTING
DRAINAGE AREA:	ROCKBURN (PATAPSCO)
TREATMENT PLANT:	PATAPSCO

LOCATION MAP
SCALE 1"=600'

WATER AND SEWER CODE
(COUNTY USE)
SEWER NO. 2150562
WATER NO. D-01
TEST GRADIENT 100

Water and Sewer Plans
Contract No. 14-4234-D
Hawk's Watch
Lots 1-6
Tax Map No. 37 Parcel 58
1st Election District - Howard County, Maryland

GENERAL NOTES

PART I

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN DEC. 2002 BY G&O, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 37BA AND NO. 37BB. ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE CONCRETE MONUMENTS WITH SATAMPED BRASS OR ALUMINUM DISCS ON TOP.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- 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.
- FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND FOR 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.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION 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 THE TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

AT&T	1-800-252-1133
BGE (CONSTRUCTION SERVICES)	410-850-4620
BGE (EMERGENCY)	410-685-1400
BUREAU OF UTILITIES	410-313-4900
COLONIAL PIPELINE CO.	410-795-1390
MISS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	410-531-5533
VERIZON	1-800-743-0033 / 410-224-9210
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST FIVE (5) WORKING DAYS BEFORE ANY 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 (g) OF THE HOWARD COUNTY CODE.

PART II: WATER

- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.

PART III: SEWER

- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- 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.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

INDEX OF DRAWINGS

- Sheet 1 COVER SHEET
- Sheet 2 WATER AND SEWER PLAN AND PROFILE
- Sheet 3 SEDIMENT AND EROSION CONTROL PLAN
- Sheet 4 SEDIMENT AND EROSION CONTROL DETAILS

HOWARD COUNTY GEODETIC SURVEY CONTROL

NO.	37BB	
N	563663.415	
E	1378040.417	
ELEV.	373.825	
NO.	37BA	NAD83(91) (HORIZONTAL)
N	563785.618	NGVD88 (VERTICAL)
E	1376343.172	
ELEV.	394.776	

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

Jim Meyer 3-24-04
SIGNATURE DATE
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

John K. Roberts 3-24-04
SIGNATURE DATE
HOWARD SOIL CONSERVATION DISTRICT

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Standard Specification. Sediment control measures for the proposed utility construction will be implemented under final road construction plans F-03-138.

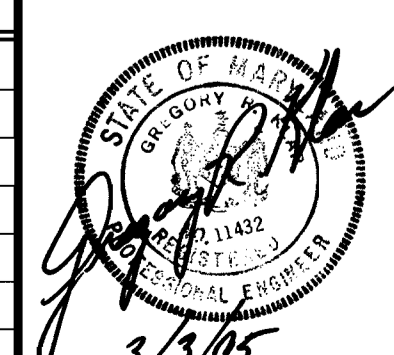
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Robert M. Buehler 3-29-05
CHIEF - BUREAU OF UTILITIES - DATE

John K. Roberts 4/6/05
CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

No.	REVISION	DATE	BY

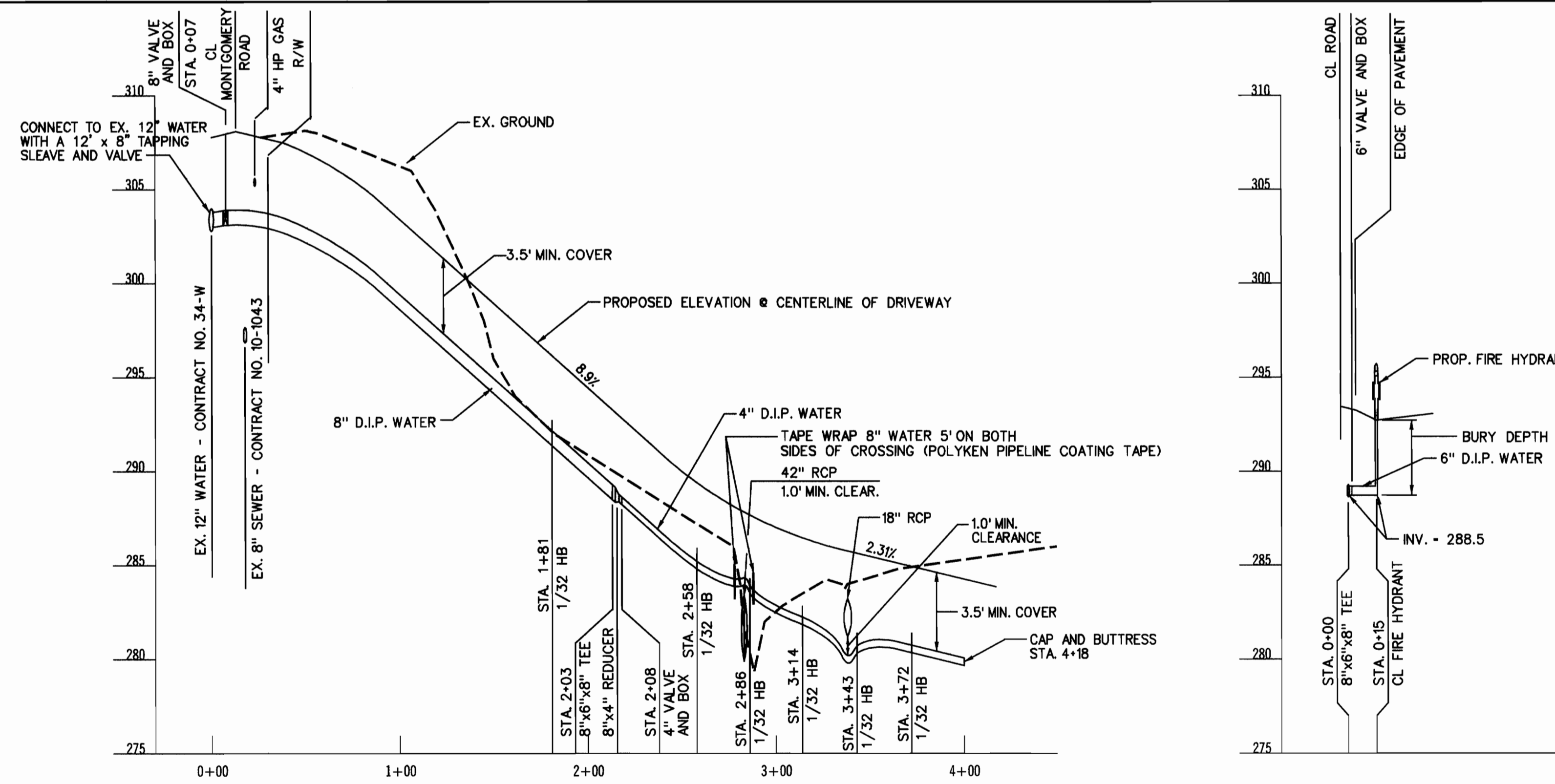
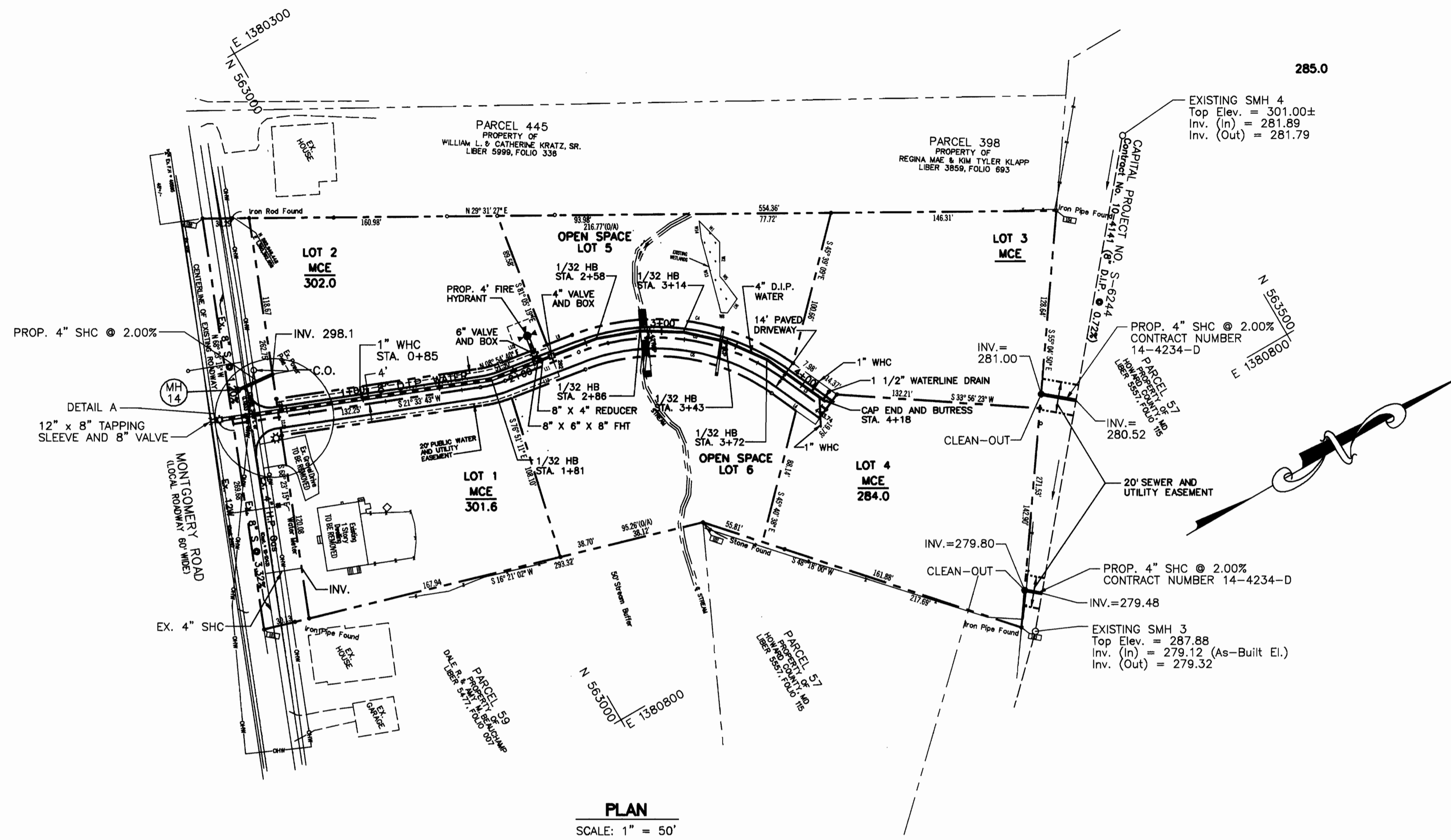
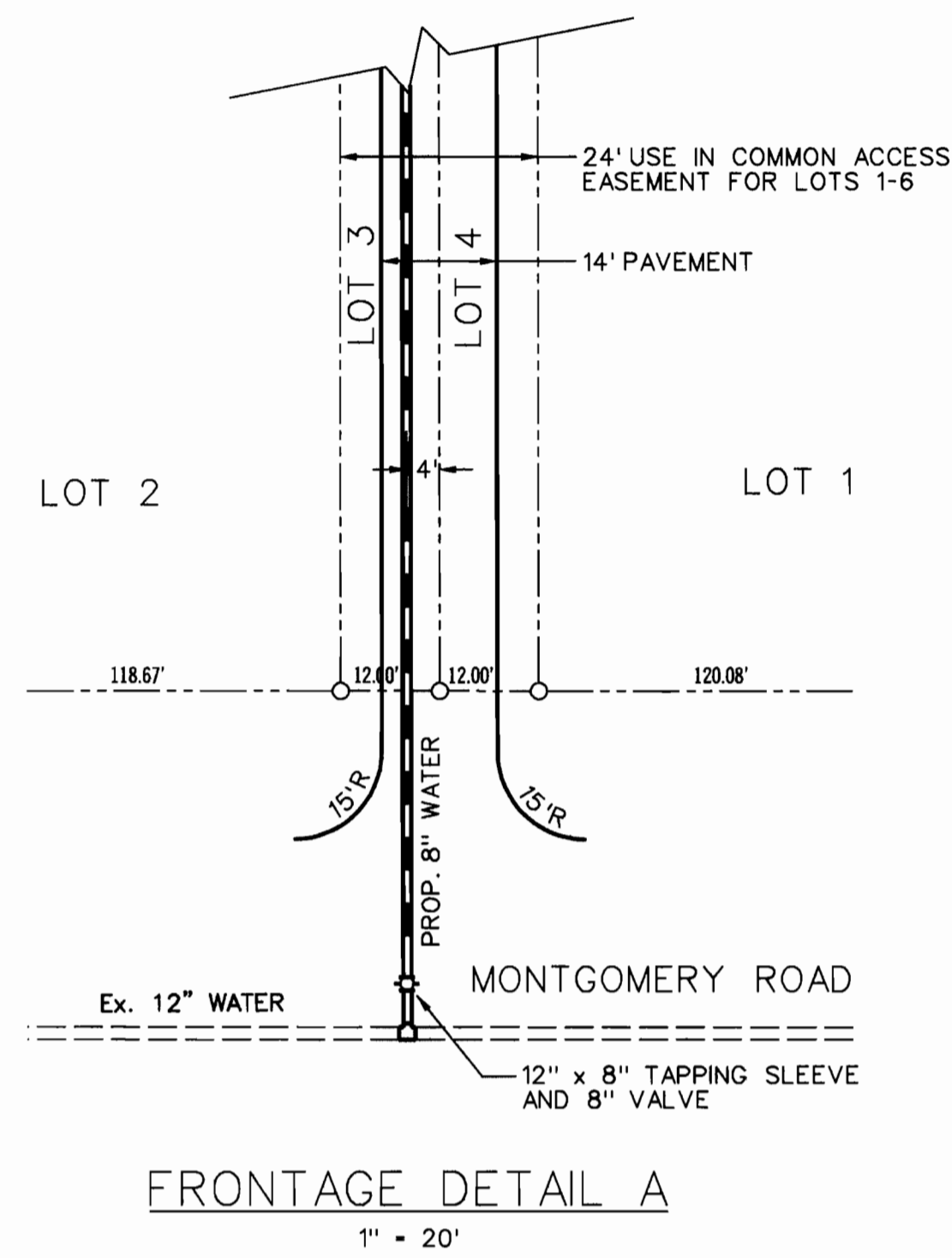


ENGINEERS • PLANNERS • SCIENTISTS • SURVEYORS
GREENHORNE & O'MARA, INC.
 200 HARRY S TRUMAN PKWY. SUITE-200 ANNAPOLIS, MARYLAND 21401
 (410) 266-0066
 Greenbelt, MD - Annapolis, MD - Atlanta, GA - Fairfax, VA - Fredericksburg, VA - Mechanicsburg, PA
 Raleigh, NC - Rockville, MD - Tampa, FL - West Palm Beach, FL

OWNER/DEVELOPER
HAWK'S WATCH, LLC
 4747 BONNIE BRANCH ROAD
 ELLICOTT CITY, MD 21043

FINAL WATER AND SEWER CONSTRUCTION PLANS
 Hawks' Watch Minor Subdivision
 LOTS 1-6
 MONTGOMERY ROAD
 TAX MAP NO. 37 PARCEL 58, BLOCK 5
 CONTRACT NO. 14-4234-D

JES DESIGN	SCALE	AS SHOWN
KML DRAWN	1	OF 4
GRK CHECKED	SHEET	
NOV, 2004 DATE	PROJ No.	F-03-138 FILE No.

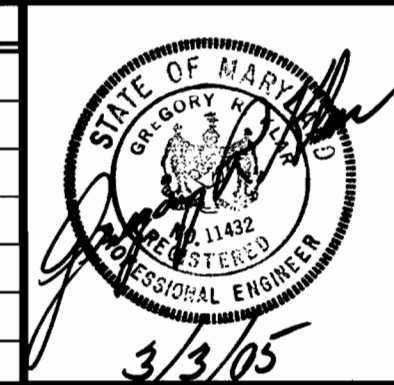


OWNER/DEVELOPER
 HAWK'S WATCH, LLC
 4747 BONNIE BRANCH ROAD
 ELLICOTT CITY, MD 21043

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND

No.	REVISION	DATE	BY



ENGINEERS • PLANNERS • SCIENTISTS • SURVEYORS
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 200 HARRY S TRUMAN PKWY. SUITE-200 ANNAPOLIS, MARYLAND 21401
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FINAL WATER AND SEWER CONSTRUCTION PLANS
Hawks' Watch Minor Subdivision
 LOTS 1-6
 MONTGOMERY ROAD
 TAX MAP NO. 37 PARCEL 58, BLOCK 5
 CONTRACT NO. 14-4234-D

JES DESIGN	AS SHOWN
KML DRAWN	SCALE 2 OF 4
GRK CHECKED	SHEET
NOV., 2004 DATE	F-03-138 FILE No.
PROJ No.	

Robert M. Berger 3-29-05
 CHIEF - BUREAU OF UTILITIES - DATE

Michael J. ... 4/5/05
 CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

MGWC 4.5: DEPRESSED CULVERTS

DESCRIPTION
The work should consist of depressing stream culverts 1 foot (0.3 meters) below the natural stream invert.

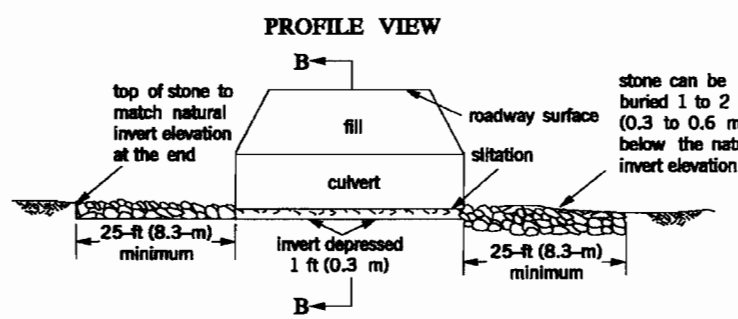
EFFECTIVE USES & LIMITATIONS
Depressed culverts encourage channelization and enhance fish passage by allowing water to pool and sediments to deposit in the culvert barrel. During storm events, depressed culverts wash away, ensuring the effectiveness and integrity of the culvert.

Depressed culverts may not be suited to streams with high slope gradients since high flow velocities may scour the barrel and nearby sedimentation.

INSTALLATION GUIDELINES
Construction of depressed culverts should proceed the same as for standard culverts as detailed in MGWC 4.2. Culvert installation. In the case of double or triple-culvert culverts, only one or two culverts should be depressed as necessary. Additionally, the streambed adjacent to the entrance and exit of the barrel should be reinforced with riprap and filter fabric.

Refer to Detail 4.5 for typical details of depressed culverts.

**Maryland's Guidelines To Waterway Construction
DETAIL 4.5: DEPRESSED CULVERTS**

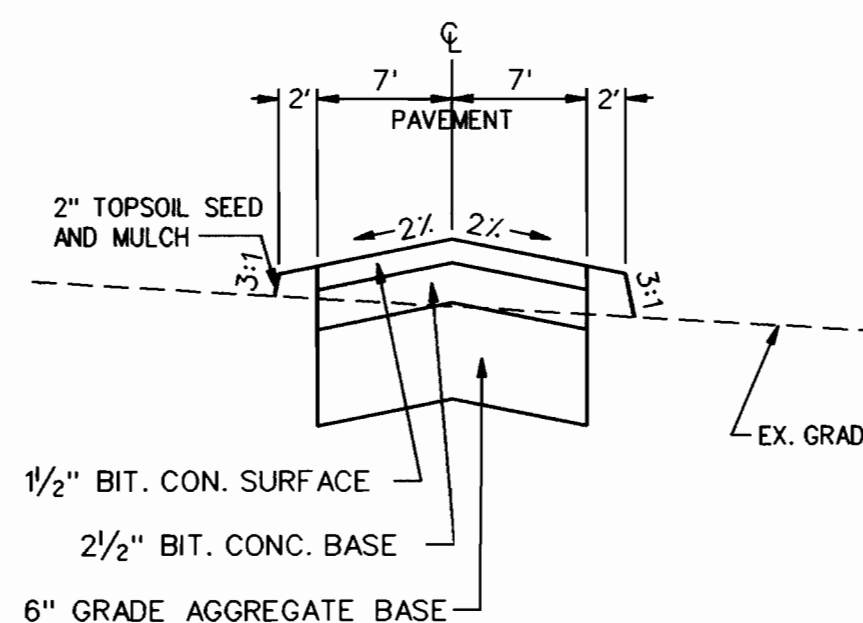


Curve	Station	PC	PVI	PT	Length	Grade	Vertical Curve	Offset
C1	43.00	13.81	17.30	20.80	6.99	4.00	4.00	0.00
C2	74.00	14.36	17.85	21.35	7.00	4.00	4.00	0.00
C3	77.00	15.11	18.60	22.10	7.00	4.00	4.00	0.00
C4	132.00	19.85	24.55	29.40	17.40	4.00	4.00	0.00
C5	140.00	20.76	25.46	30.31	10.31	4.00	4.00	0.00
C6	150.00	21.88	26.58	31.43	11.43	4.00	4.00	0.00

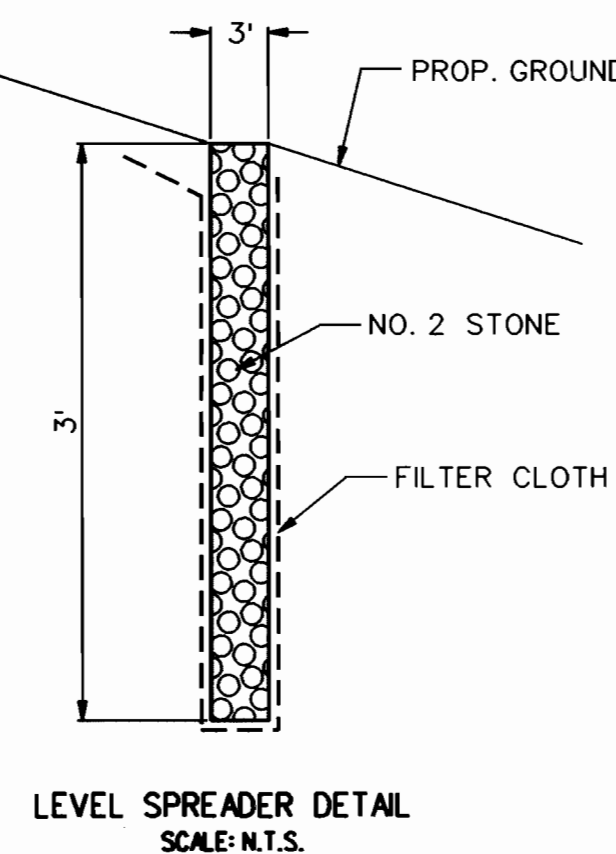
Line	Length	Bearing
L3	34.87	S 65° 41' 54" W
L4	35.58	S 65° 41' 54" W
L6	6.33	S 24° 18' 00" E
L9	17.36	S 08° 54' 40" W
L10	33.34	S 08° 54' 40" W
L11	51.30	S 08° 54' 40" W
L12	51.30	S 08° 54' 40" W
W1	19.15	N 75° 21' 14" E
W2	22.14	S 60° 08' 50" E
W5	18.33	N 82° 41' 32" E
W7	11.16	S 25° 13' 13" E
W8	4.08	S 32° 12' 43" W
W13	49.92	N 74° 39' 29" W
W14	11.37	N 66° 35' 22" W

SEQUENCE OF CONSTRUCTION

1. NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT 410-313-1855 48 HOURS PRIOR TO BEGINNING CONSTRUCTION ON THIS PERMIT. 1 DAY
 2. CLEAR JUST ENOUGH AREA TO CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (SCE); CONSTRUCT SCE WHERE SHOWN ON THE PLANS. 1 DAY
 3. STAKE OUT LIMIT OF DISTURBANCE (LOD) IN THE FIELD. 2 DAYS
 4. INSTALL SILT FENCE, SUPER SILT FENCE AND TREE PROTECTION FENCE WITH SIGNAGE. 5 DAYS
 5. WHEN ALL SEDIMENT CONTROLS AND TREE PROTECTION FENCE HAVE BEEN INSTALLED, OBTAIN THE SEDIMENT CONTROL INSPECTOR'S APPROVAL BEFORE BEGINNING ANY WORK ON THIS PERMIT. 1 DAY
 6. CLEAR SITE WITHIN THE LOD (EXCEPT FOR LOTS. LOTS WILL NOT BE CLEARED OR GRADED UNTIL A BUILDING PERMIT IS OBTAINED FOR THAT LOT). ROUGH GRADE PRIVATE USE IN COMMON DRIVEWAY. 1 WEEK
 - * 7. INSTALL 42" RCP DRIVEWAY CULVERT AND RIPRAP INLET AND OUTLET PROTECTION. 3 DAYS
 - * 8. INSTALL 18" RCP DRIVEWAY CULVERT AND RIPRAP OUTLET PROTECTION. 3 DAYS
 - * 9. CONSTRUCT SEWER AND WATERLINE. 1 WEEK
 10. FINE GRADE USE IN COMMON DRIVEWAY AND PAVE. CONSTRUCT STORMWATER MANAGEMENT DEVICES. 1 WEEK
 11. INSTALL LANDSCAPING AND REFORESTATION. 3 DAYS
 12. STABILIZE ALL DISTURBED AREAS. 1 DAY
 13. WITH SEDIMENT CONTROL INSPECTOR'S APPROVAL, REMOVE ALL SEDIMENT CONTROL DEVICES. 1 DAY
- * NOTE: ITEMS 7, 8 AND 9 MAY BE PERFORMED CONCURRENTLY OR IN ANY ORDER WITH THE SEDIMENT CONTROL INSPECTOR'S APPROVAL.



**TYPICAL DRIVEWAY SECTION
SCALE: N.T.S.**



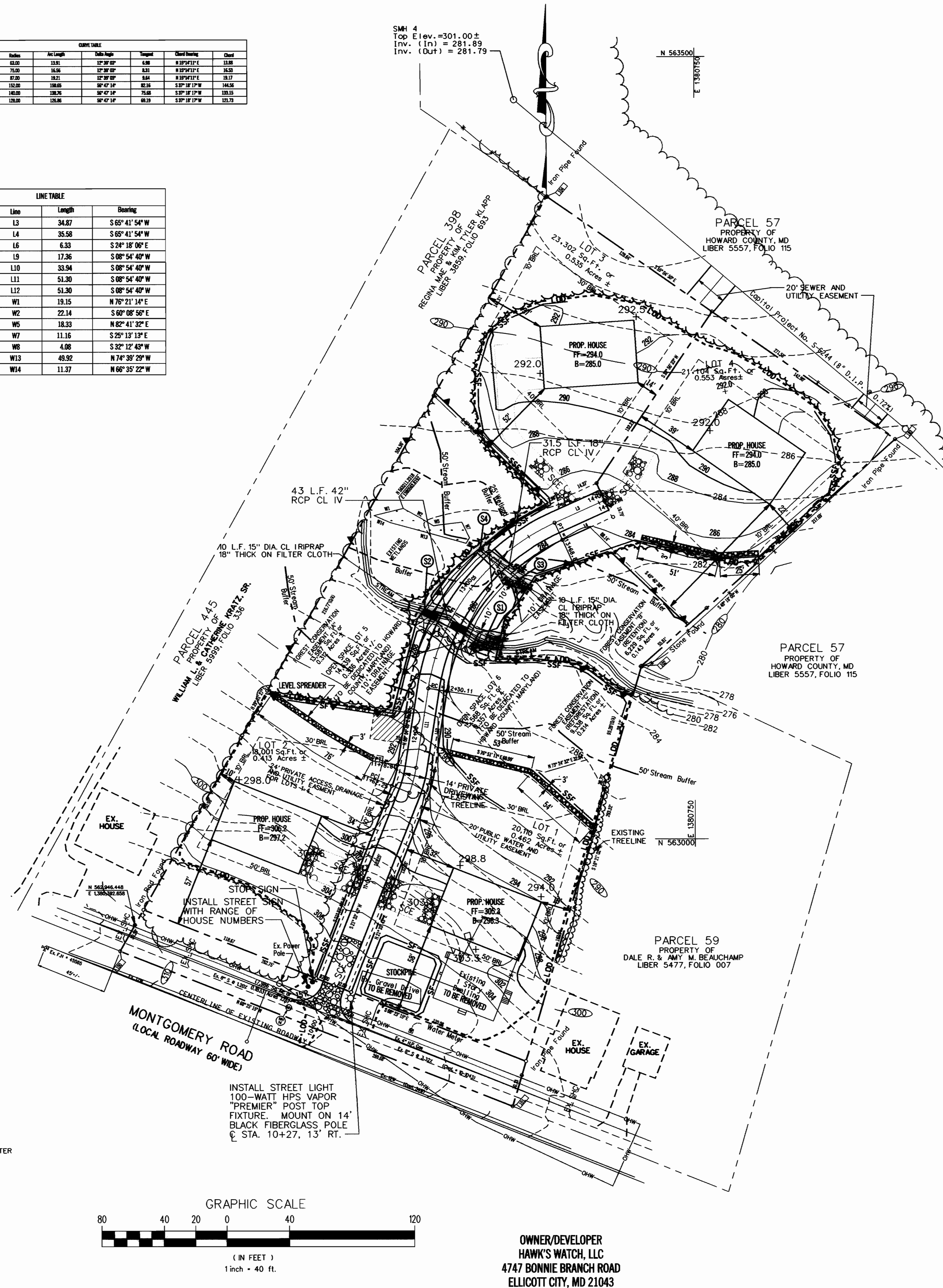
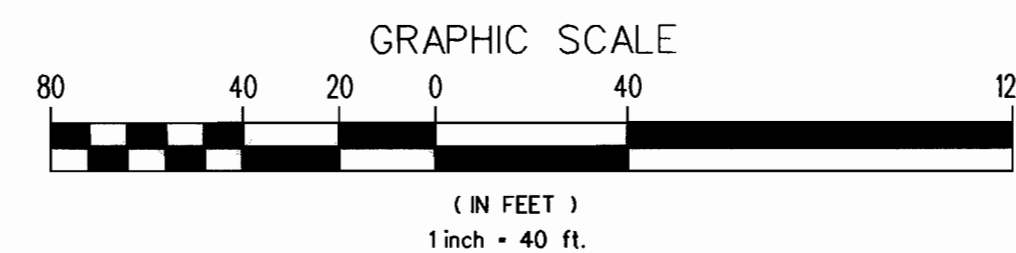
**LEVEL SPREADER DETAIL
SCALE: N.T.S.**

LEGEND

DESCRIPTION	EXISTING	PROPOSED
2' CONTOUR	--- 142 ---	--- 142 ---
10' CONTOUR	--- 140 ---	--- 140 ---
SPOT ELEVATION	• (25.5)	• 25.5
WATER MAIN	EX. 8" WATER	PROP. 8" WATER
WATER VALVE	⊕	⊕
FIRE HYDRANT	⊕	⊕
SEWER MAIN	EX. 8" SEWER	PROP. 8" SEWER
SEWER MANHOLE	⊙	⊙
STORM DRAIN	⊕	⊕
STORM DRAIN INLET	⊕	⊕
CURB/CURB & GUTTER	—	—
PROPERTY BOUNDARY	---	---
LOT LINE	---	---
RIGHT-OF-WAY	---	---
TREE LINE	---	---
TREE PROTECTION FENCE WITH SIGNAGE	---	---

LEGEND

	DENOTES 24" PRIVATE USE-IN-COMMON ACCESS, WATER & UTILITY EASEMENT FOR LOTS 1-8
	DENOTES 20" PUBLIC WATER & UTILITY EASEMENT
	DENOTES FOREST CONSERVATION EASEMENT (RETENTION)
	DENOTES FOREST CONSERVATION EASEMENT (REFORESTATION)



REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

Jim Meyer 3-24-04
SIGNATURE DATE

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John R. Roberts 3-24-04
HOWARD SCD DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert W. Berman 3-29-05
CHIEF - BUREAU OF UTILITIES - DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Michael J. ... 4/5/05
CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

No.	REVISION	DATE	BY

STATE OF MARYLAND
Professional Engineer
John R. Roberts
3/3/05

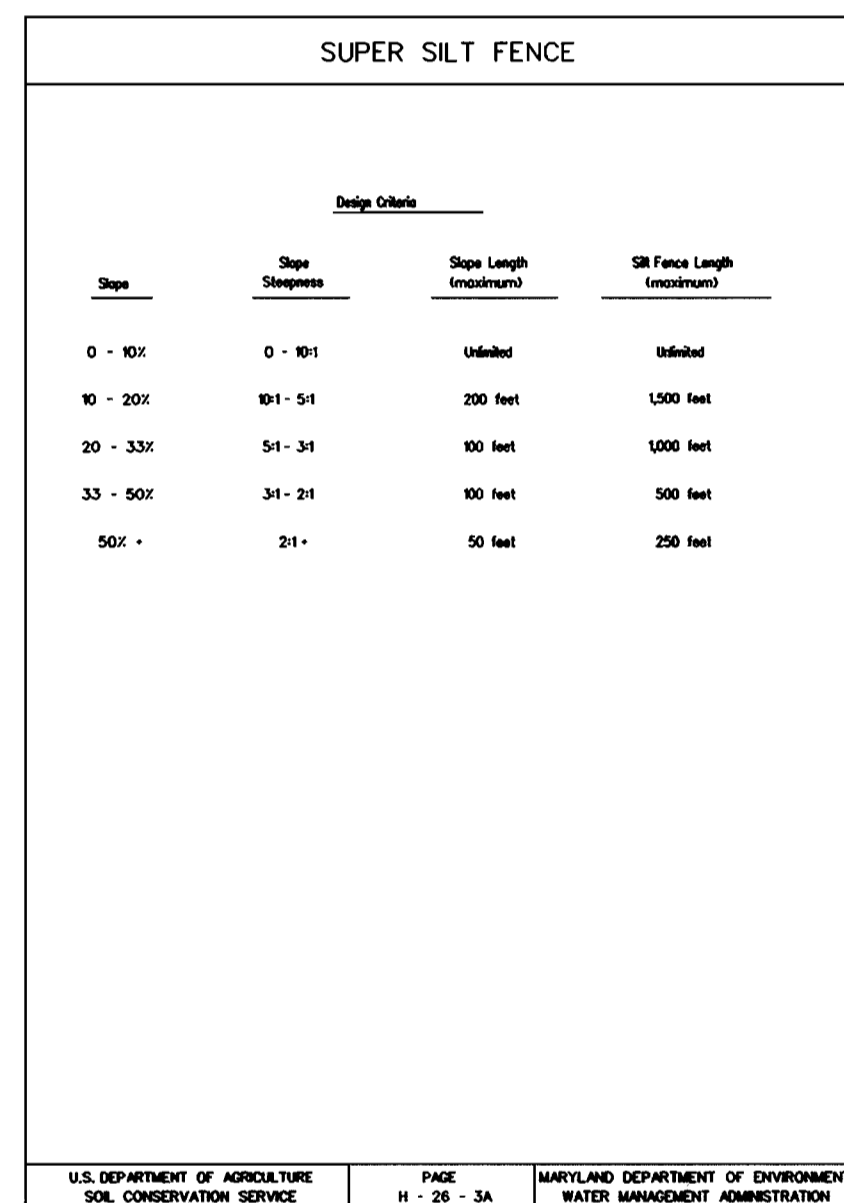
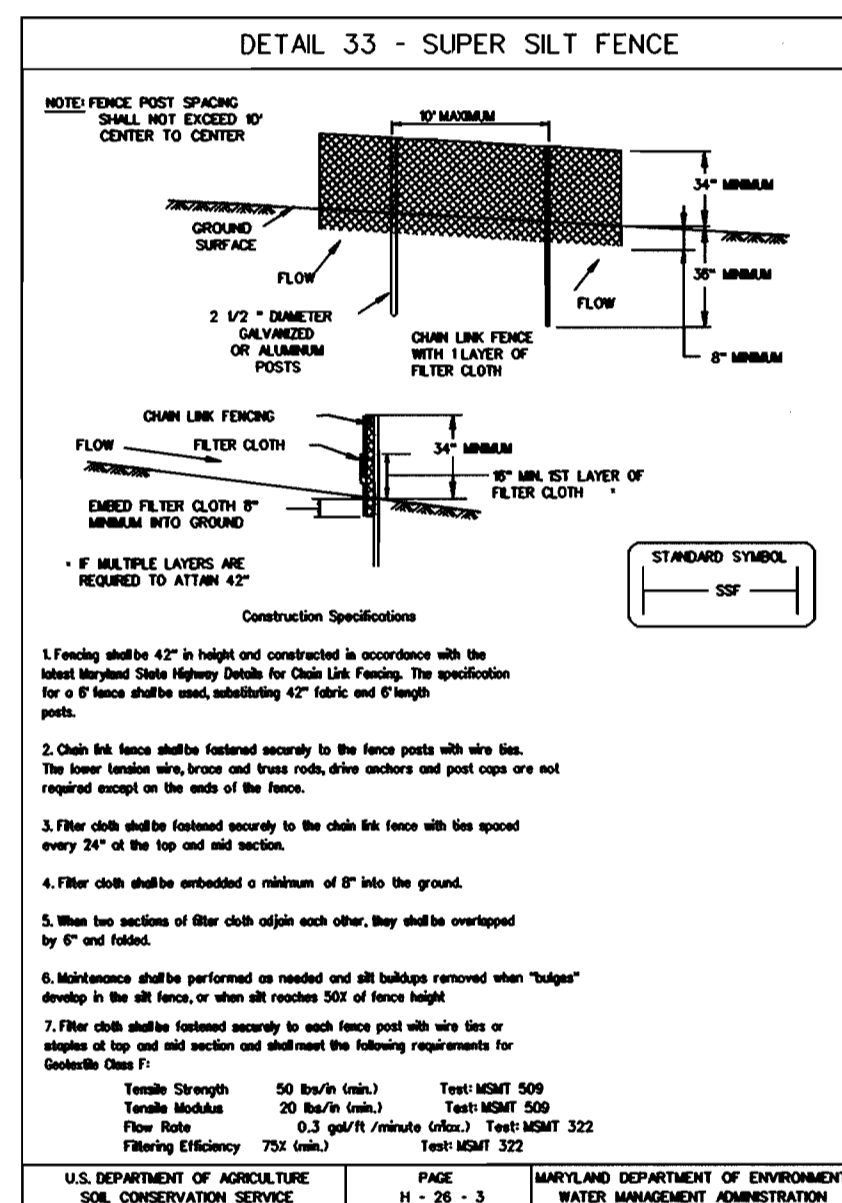
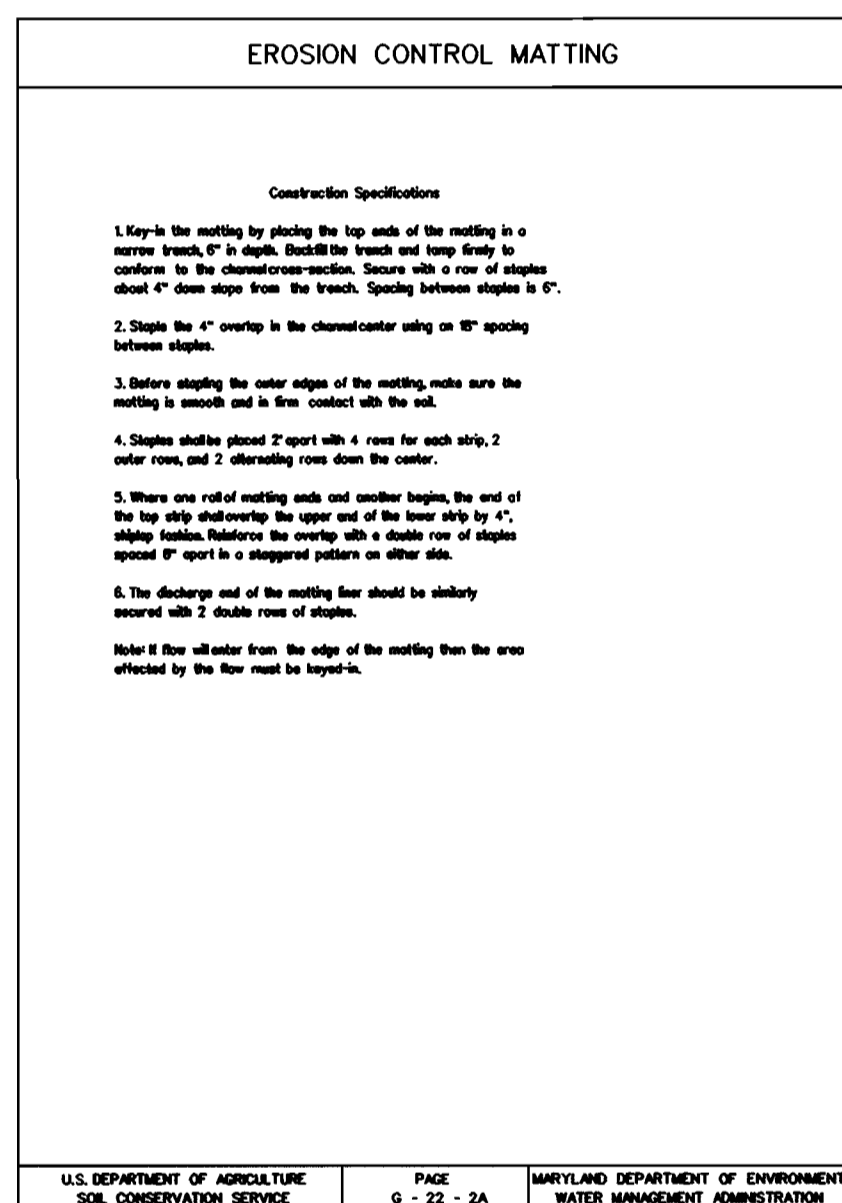
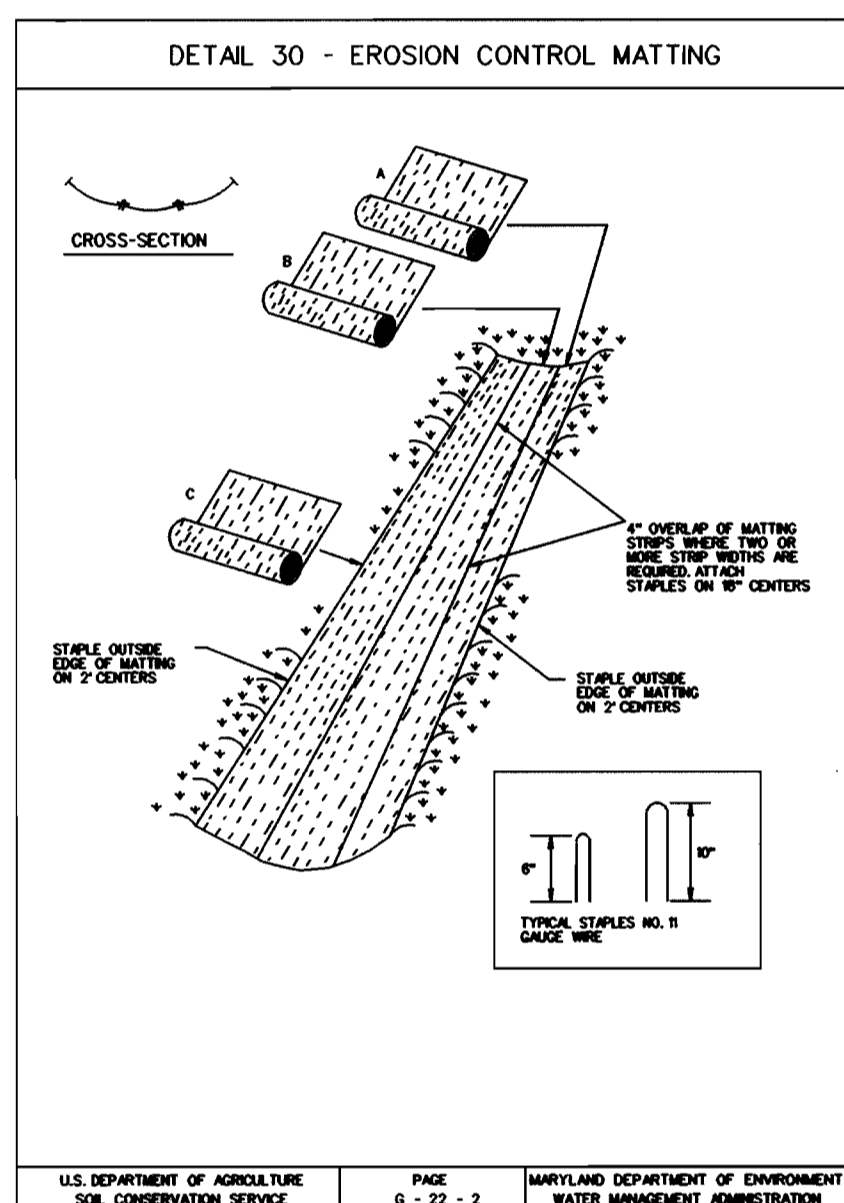
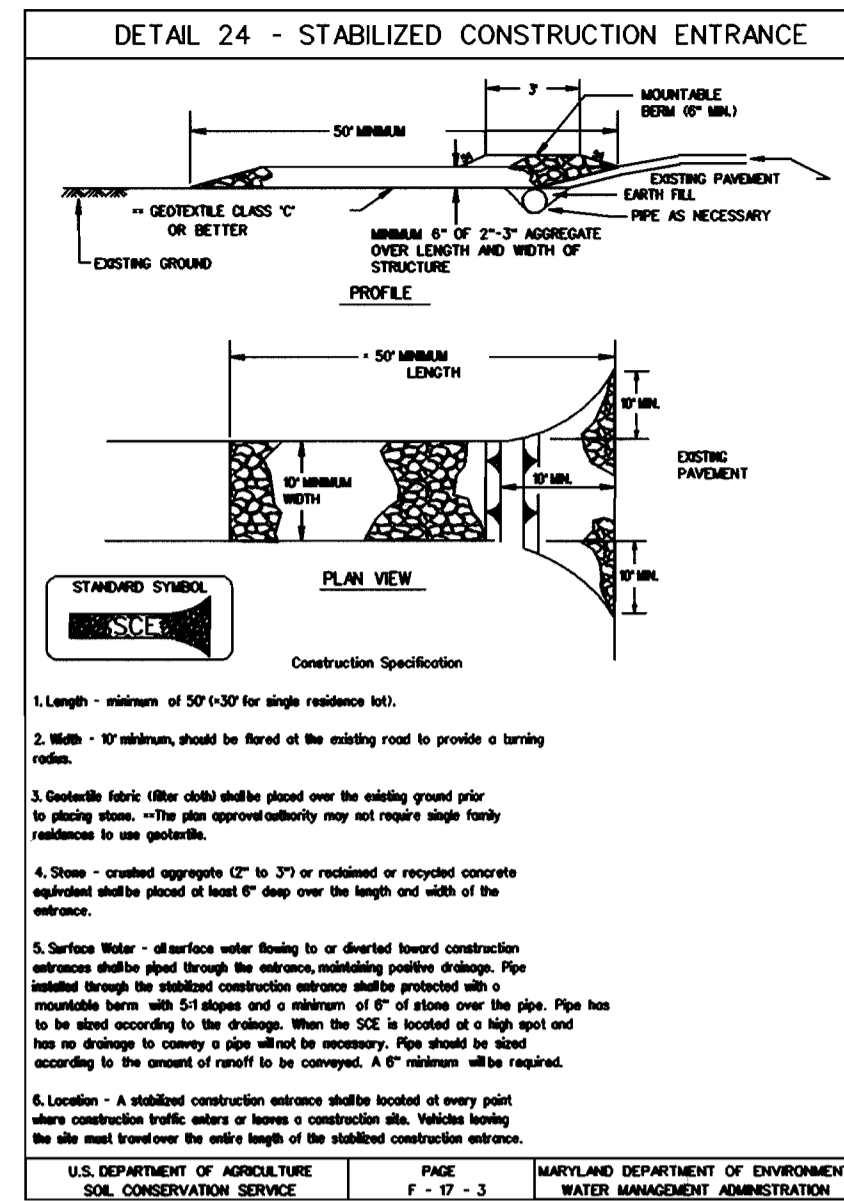
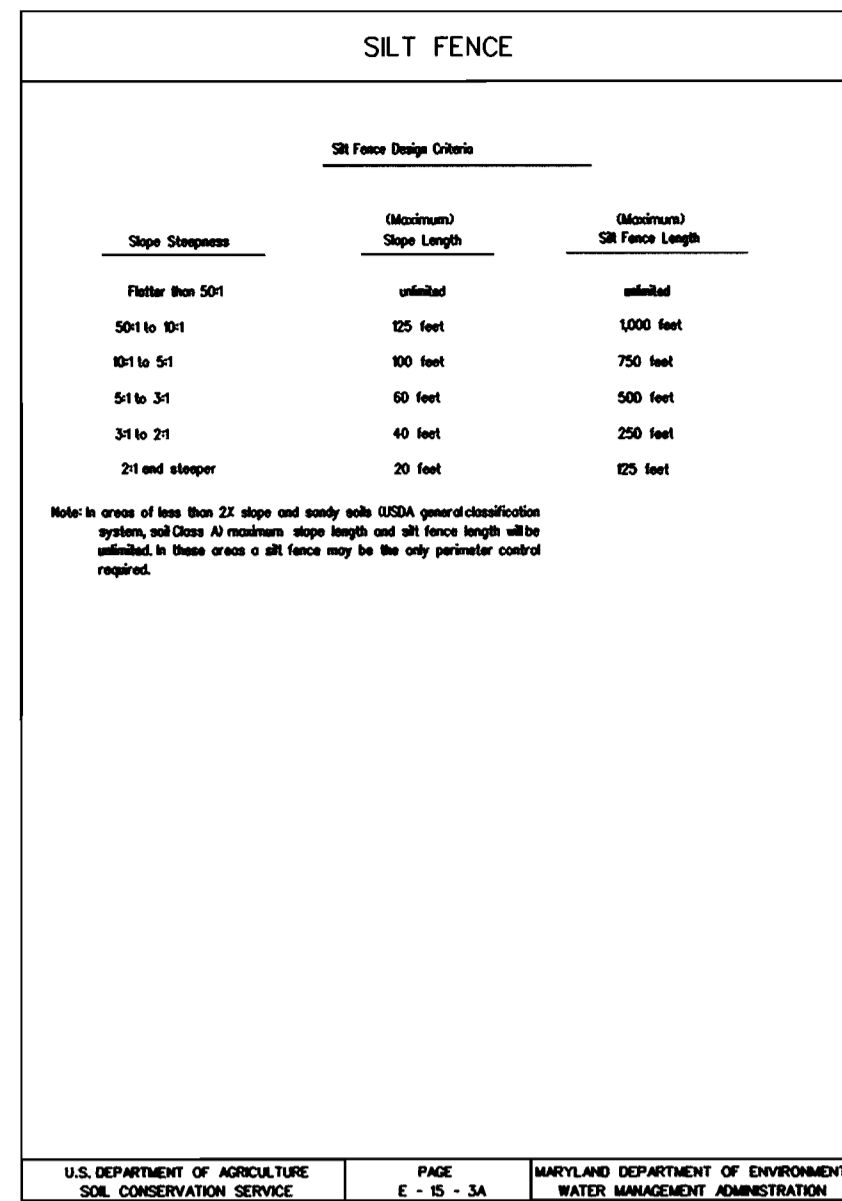
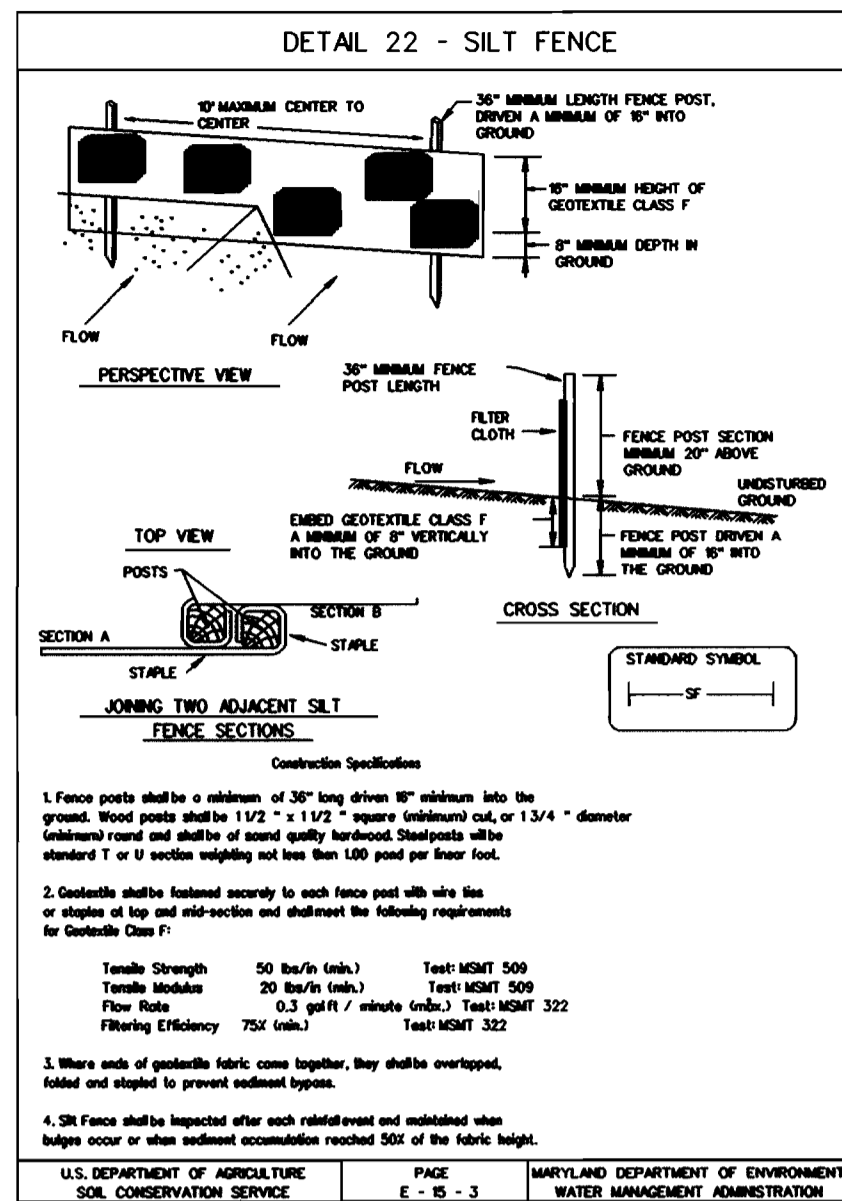
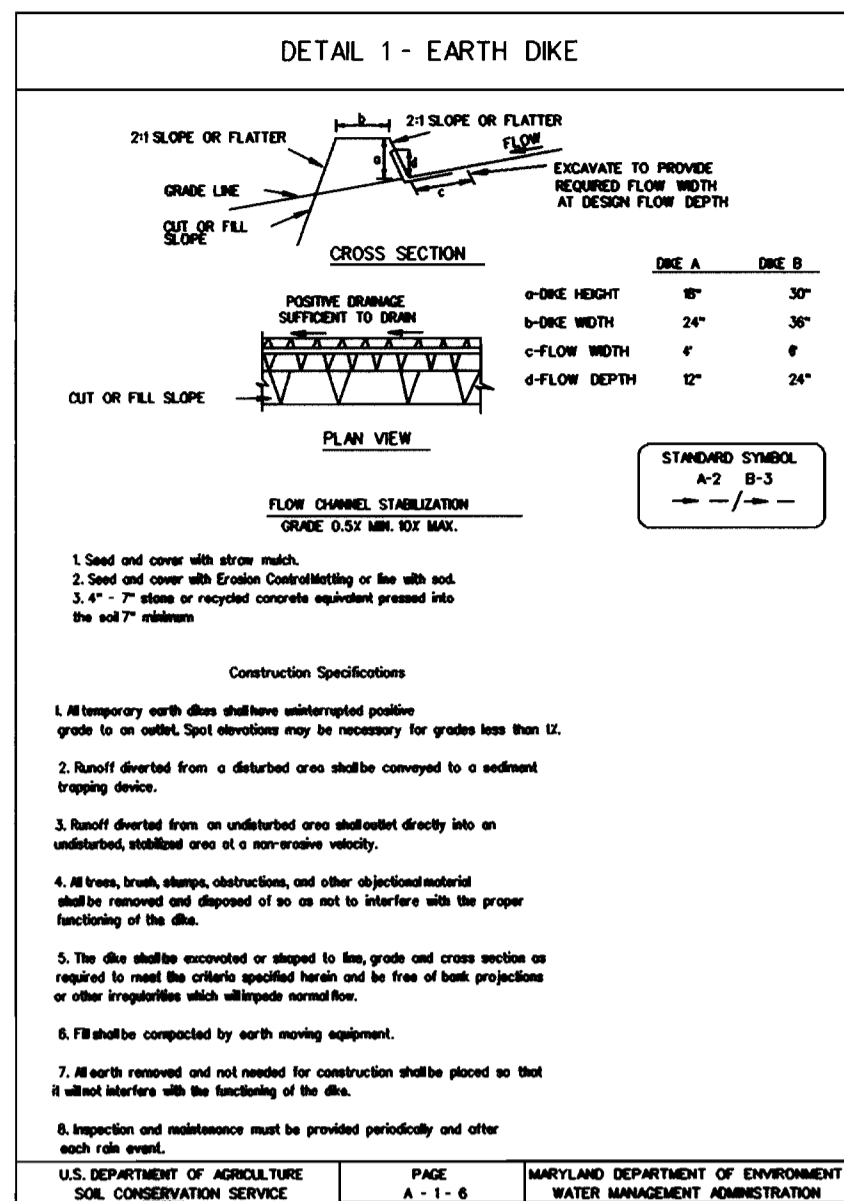


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FINAL WATER AND SEWER CONSTRUCTION PLANS
Hawks' Watch Minor Subdivision
LOTS 1-6
MONTGOMERY ROAD
TAX MAP NO. 37 PARCEL 58, BLOCK 5
CONTRACT NO. 14-4234-D

JES DESIGN AS SHOWN
KML DRAWN 3 OF 4
GRK CHECKED SHEET
NOV., 2004 DATE
F-03-138 PROJ No. FILE No.



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: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1 b) 14 days to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 12 of the Howard County design Manual, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50), and mulching (Sec. 52). 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	2.65 Acres
Area Disturbed	1.95 Acres
Area to be Roofed or Paved	0.665 Acres
Area to be Vegetatively Stabilized	1.285 Acres
Total Fill	1250 Cu. Yards
Offsite Waste/Borrow Area Location	0
- Any Sediment control practice, which 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 work day, whichever is shorter.

FOR TOPSOIL (continued)

Construction and Material Specifications

- Topsoil salvaged from the existing site may be used provided that 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 - SCS in cooperation with Maryland Agricultural Experiment Station.
 - Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sand loam, clay loam, silt loam, sandy clay loam, loamy sand, approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% of volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash or other materials larger than 1 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as bermuda grass, Quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
 - For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in Section I - Vegetative Stabilization Methods and Materials.
 - For sites having disturbed areas over 5 acres:
 - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - Ph for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a Ph of less than 6.0, sufficient lime shall be prescribed to raise the Ph to 6.5 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No sod or seed shall 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.
- Note: 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.
- Place topsoil (if required) and apply soil amendments as specified in Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established shall be maintained, albeit 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall 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 shall be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil shall not be placed while 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.

VI Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
 - Composted sludge shall be supplied by, or originate from, a person or persons that area permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
 - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
 - Composted sludge shall be amended with a potassium fertilizer applied to the rate of 4 lb /1,000 square feet, and 1/3 the normal lime application rate.
- Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb /1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding, MD-VA Pub #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.

OWNER/DEVELOPER
HAWK'S WATCH, LLC
4747 BONNIE BRANCH ROAD
ELICOTT CITY, MD 21043

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

Jim Meyer 3-24-04
SIGNATURE DATE

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *John R. Roberts* 3-24-04
SIGNATURE DATE

HOWARD SCD DATE

HOWARD COUNTY SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or any other acceptable means before seeding, if not previously loosened.

Soil Amendments: In Lieu of soil test recommendations, use one of the following schedules:

- Preferred:** Apply 2 tons dolomitic limestone (92 lbs/sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.)
- Acceptable:** Apply 2 tons/acre dolomitic limestone (92 lbs/sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding.

Seeding: For the periods March 1-April 30, August 1- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 TallFescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of Weeping Lovegrass. During the period of October 16-February 28, protect site by:

- Option 1: Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.
- Option 2: Use Sod
- Option 3: Seed with 60 lbs/acre Kentucky 30 TallFescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance: Inspect all seeding areas and make needed repairs, replacements and reseeding.

HOWARD COUNTY SOIL CONSERVATION DISTRICT

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where short-term vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or any other acceptable means before seeding, if not previously loosened.

Soil Amendments: In Lieu of soil test recommendations, use one of the following schedules:

- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.)
- Seeding: For the periods March 1-April 30, August 1- October 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sq. ft.) For the period May 1 - August 14, seed with 3lbs/acre Weeping Lovegrass (.07 lbs/1000sq.ft.) For the period November 16-February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
- Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

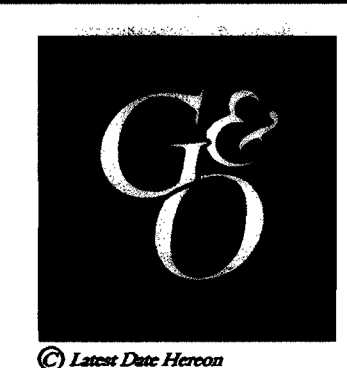
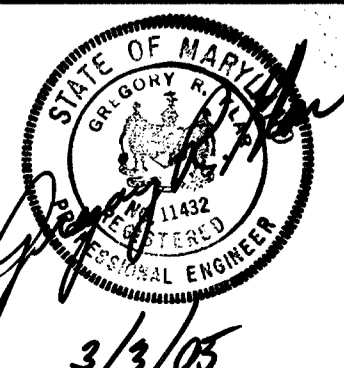
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Berger 3-29-05
CHIEF BUREAU OF UTILITIES - DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

John R. Roberts 4/5/05
CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

No.	REVISION	DATE	BY



ENGINEERS • PLANNERS • SCIENTISTS • SURVEYORS

GREENHORNE & O'MARA, INC.

200 HARRY S TRUMAN PKWY. SUITE 200 ANNAPOLIS, MARYLAND 21401
(410) 266-0066

Greenbelt, MD - Annapolis, MD - Atlanta, GA - Fairfax, VA - Fredericksburg, VA - Mechanicsburg, PA
Raleigh, NC - Rockville, MD - Tampa, FL - West Palm Beach, FL

FINAL WATER AND SEWER CONSTRUCTION PLANS
Hawks' Watch Minor Subdivision

LOTS 1-6
MONTGOMERY ROAD
TAX MAP NO. 37 PARCEL 58, BLOCK 5

CONTRACT NO. 14-4234-D

JES DESIGN	AS SHOWN SCALE
KML DRAWN	4 OF 4
GRK CHECKED	SHEET
NOV, 2004 DATE	PROJ No.
F-03-138 FILE No.	