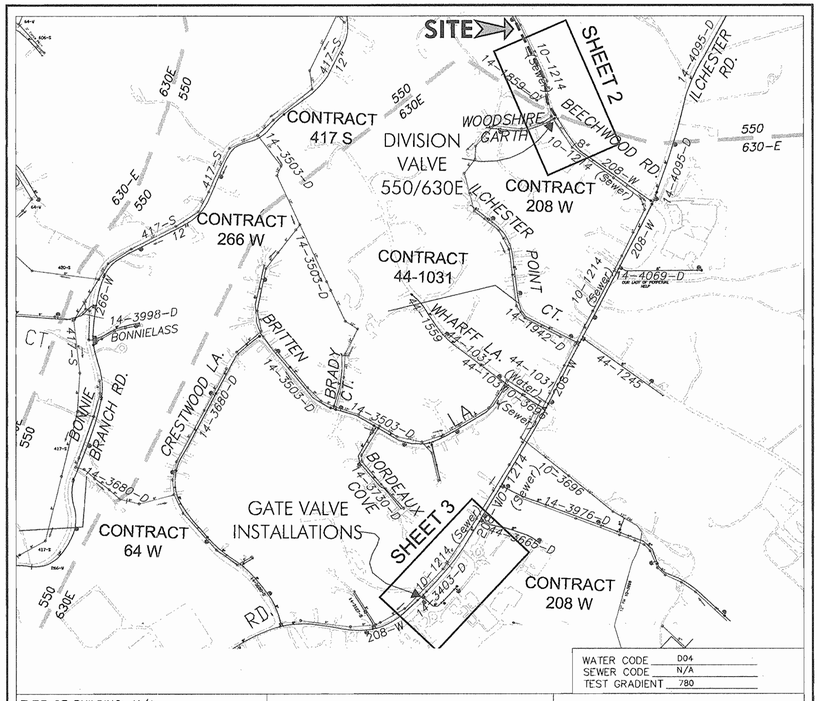
BEECHWOOD ROAD WATER MAIN LOOP
CAPITAL PROJECT W-8252
CONTACT NO. 44-4196
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

COORDINATE TABLE		
WATER		
FITTING	NORTHING	EASTING
STA. 6+11, 45° BEND	573172.679	1376978.246
STA. 6+47, DIVISION VALVE	573163.343	1377011.622
STA. 6+62, 45° BEND	573159.147	1377026.623
STA. 0+47, PC	573697.503	1376784.756
STA. 0+66, PT	573680.725	1376793.677
STA. 3+38, PC	573436.313	1376914.467
STA. 4+58, PT	573321.469	1376946.453
STA. 4+99, PC	573281.177	1376949.856
STA. 5+94, PT	573189.191	1376971.637
GATE VALVE #1	570080.413	1376149.529
GATE VALVE #2	570108.593	1376177.932

QUANTITIES				
ITEM	QUANTITIES		TYPE MATERIAL	SUPPLIER
	ESTIMATE	AS BUILT		
8-INCH DIAMETER WATER MAIN	662 L.F.	680 L.F.	D.I.P.	
8-INCH DIVISION VALVE	1	1	D.I.P.	
8-INCH GATE VALVE	2	2	D.I.P.	

NOTE:

"SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STDS. & SPECS. (VOL. IV) OF THE HOWARD COUNTY DESIGN MANUAL AND THESE PLANS."



TYPE OF BUILDING: N/A NUMBER OF PARCELS: 0 WATER HOUSE CONNECTIONS: 0 SEWER HOUSE CONNECTIONS: 0 DRAINAGE AREA: PATAPSCO	**VICINITY MAP** SCALE:1 = 600'	WATER CODE FOR COUNTY USE ONLY: WATER No. D04

WATER CODE D04
SEWER CODE N/A
TEST GRADIENT 780

DEVELOPER'S CERTIFICATION

"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."

Ronald G. Lepsm. — DATE 9/16/05
SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE

ENGINEER'S CERTIFICATION

"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 COUNTY SOIL CONSERVATION DISTRICT."

DATE 5/20/2005

McCRONE, INC.
20 RIDGELY AVENUE
ANNAPOLIS, MARYLAND 21401
(410) 267-8621

REVIEWED FOR HOWARD COUNTY S.C.D.
MEETS TECHNICAL REQUIREMENTS

U.S. SOIL CONSERVATION SERVICE — DATE 10/4/05

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

APPROVED — DATE 10/4/05
HOWARD S.C.D.

INDEX OF DRAWINGS	
SHEET NO:	DESCRIPTION
1	TITLE SHEET, INDEX OF DRAWINGS, GENERAL NOTES
2	WATER PLAN VIEW
3	WATER PROFILE & DIVISION VALVE PLAN VIEW
4	SEDIMENT CONTROL MEASURES

GENERAL NOTES

PART I

1. APPROXIMATE LOCATION 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.
2. ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES, NAD 83/91.
3. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
4. FIELD SURVEY PREFORMED BY McCRONE INC.,JUNE 2003.
5. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
6. CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED. 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 MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
7. 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). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
8. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. 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 HIS OWN EXPENSE.
9. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
   AT&T.....1-800-252-1133
   BGE (CONTRACTOR SERVICES).....410-850-4620
   BGE (UNDERGROUND DAMAGE CONTROL).....410-787-9068
   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
10. 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.
11. 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.
12. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD 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.

PART II - WATER

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

PART III - TRAFFIC ENGINEERING

1. THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC CONTROL MEASURES AS INDICATED ON THE SHA STANDARDS MD 104.02.10 AND MD 104.02.14. (SEE SHEET 2 FOR DETAILS)
2. THE CONTRACTOR SHALL PROVIDE A CERTIFIED TRAFFIC CONTROL MANAGER AND CERTIFIED FLAGGERS.
3. THE CONTRACTOR SHALL MAINTAIN TRAFFIC AND ACCESS TO ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION. TRAFFIC SHALL BE OPEN TO TWO-WAY OPERATION WHEN PRACTICAL. WHEN ONE-LANE OPERATION IS NECESSARY, THE CONTRACTOR SHALL PERFORM ALL OPERATIONS SUCH THAT TWO-LANE TRAFFIC WILL BE OPEN AS SOON AS PRACTICAL.

As-Built SEPTEMBER 2006

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 9/20/05
CHIEF, BUREAU OF ENGINEERING — DATE 9/16/05
CHIEF, BUREAU OF UTILITIES — DATE 9.19.05
CHIEF, UTILITY DESIGN DIVISION — DATE 9/16/05

McCRONE
ENGINEERING ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING CONSTRUCTION SERVICES
20 RIDGELY AVENUE
ANNAPOLIS, MARYLAND 21401
(410) 267-8621
ANNAPOLIS-CENTREVILLE-EASTON-ELKTON-PRINCE FREDERICK

STATE OF MARYLAND — ROBERT G. LEPSM — No. 21620 — PROFESSIONAL ENGINEER — 9/16/05

DES: R. SELL
DRN: S.HINES
CHK: R.SELL
DATE: FEB.2005

BY	No.	REVISION	DATE
DLD	1	AS-BUILTS	9/06

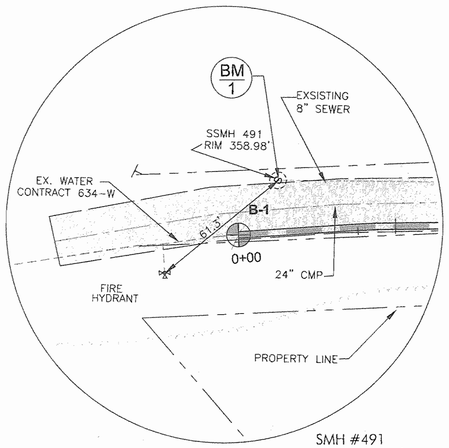
TITLE SHEET, INDEX OF DRAWINGS, GENERAL NOTES

600' SCALE MAP No. 31 — BLOCK No. 5, 11, 15

BEECHWOOD ROAD WATER MAIN LOOP
CAPITAL PROJECT W-8252
CONTRACT No. 44-4196
ELECTION DISTRICT No. 1
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 1 OF 4



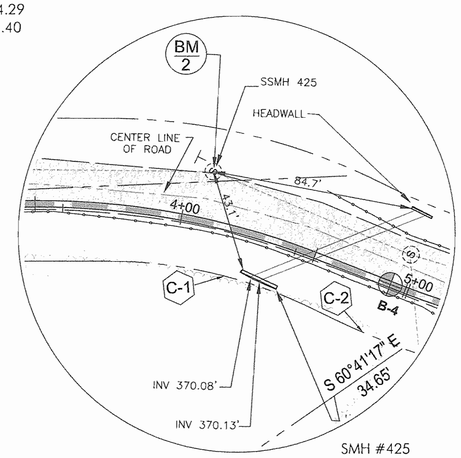
BENCHMARK #1
CENTER SMH #491

1"=30'

SMH #491
RIM EL.= 358.98
N 512984.29
E 864371.40

TRAVERSE POINTS	NORTHING	EASTING
106 NS	573691.329	1376782.111
105 NS	573612.861	1376823.880
104 NS	573455.765	1376898.522
102 NS	573353.563	1376968.719
103 NS	573352.861	1376968.690
101 NS	573112.568	1376985.358

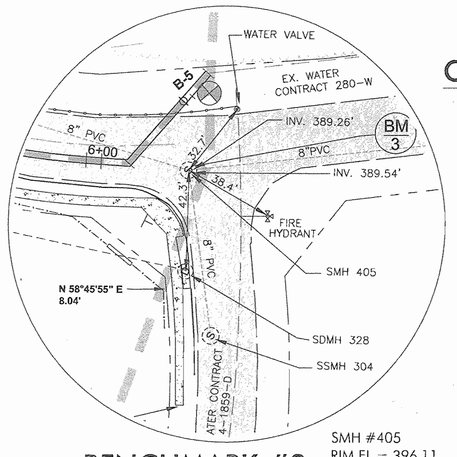
TRAVERSE TABLE



BENCHMARK #2
CENTER SMH #425

1"=30'

SMH #425
RIM EL.= 380.78
N 512626.36
E 864541.25



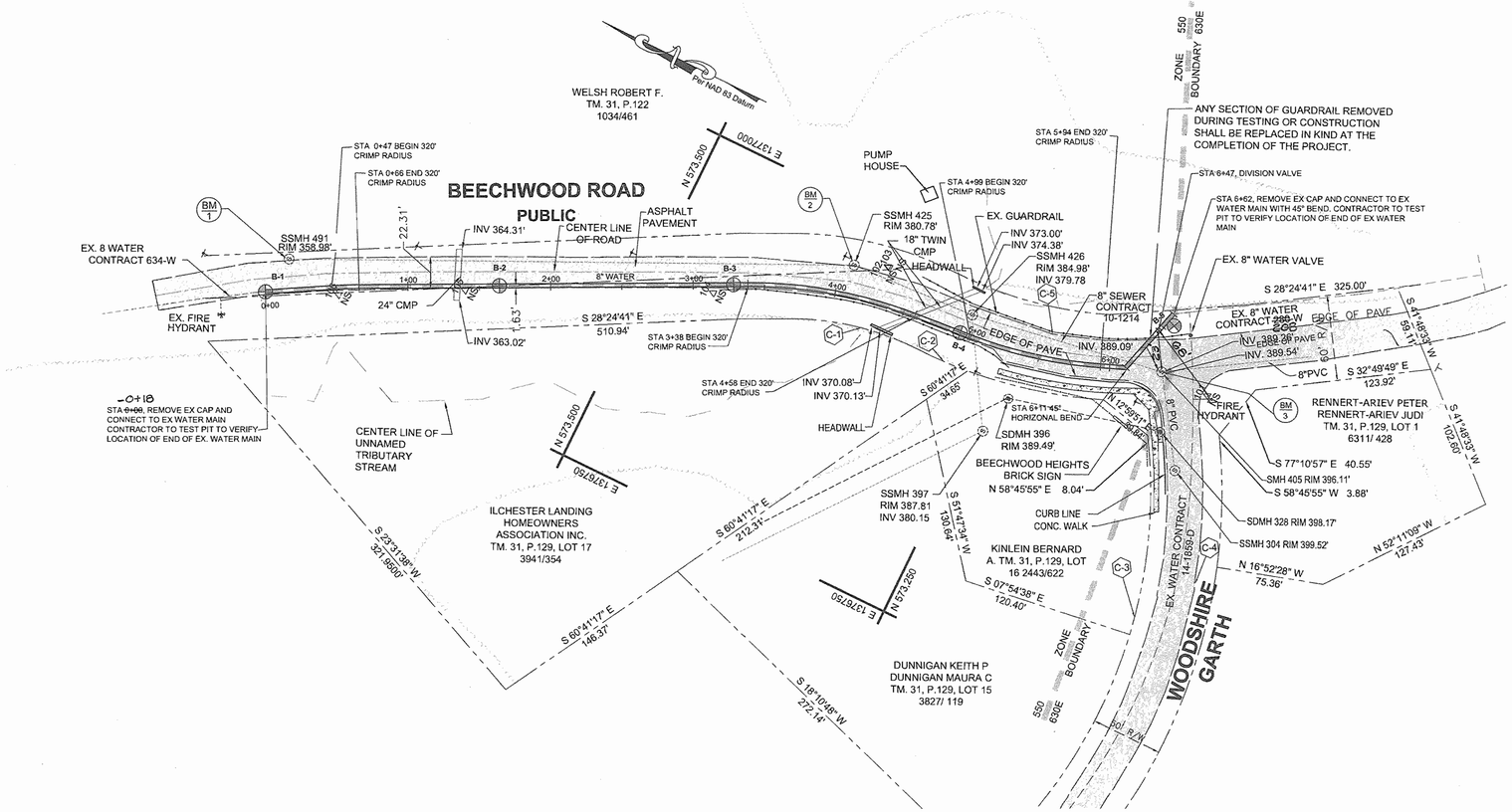
BENCHMARK #3
CENTER SMH #405

1"=30'

SMH #405
RIM EL.= 396.11
N 512399.76
E 864568.48

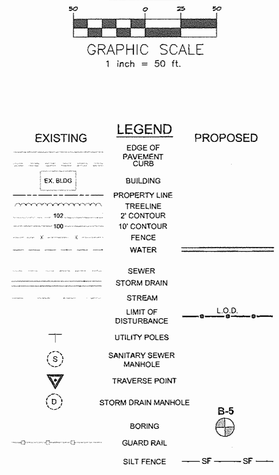
CURVE #	DATA	CURVE LENGTH	RADIUS
C-1	N 12°-34'-46"W	90.62'	195.10'
C-2	S 10°-39'-47"E	135.74'	340.07'
C-3	N 80°-49'-50"E	262.96'	350.00'
C-4	N 81°-14'-50"E	305.91'	400.00'
C-5	S 15°-49'-26"E	135.74'	310.07'

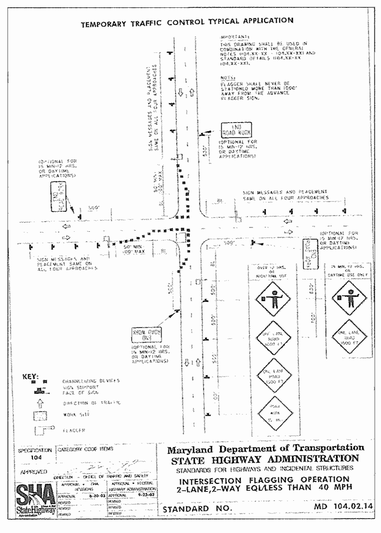
CURVE DATA CHART

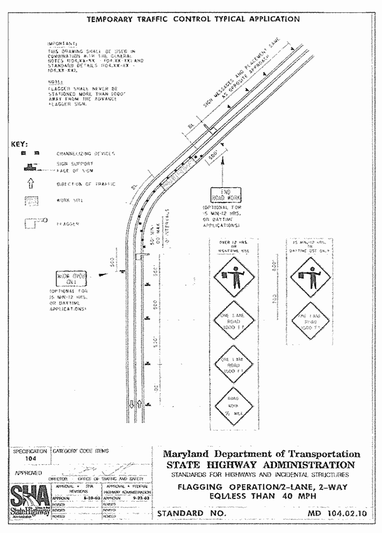


PLAN

GRAPHIC SCALE
50 0 25 50
1 inch = 50 ft.







As-Built SEPTEMBER 2006

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 9/20/05
CHIEF, BUREAU OF ENGINEERING — DATE 9/16/05
CHIEF, BUREAU OF UTILITIES — DATE 9-19-05
CHIEF, UTILITY DESIGN DIVISION — DATE 9/16/05

McCRONE
ENGINEERING ENVIRONMENTAL SCIENCES
LAND PLANNING & SURVEYING CONSTRUCTION SERVICES
20 ROCKLEY AVENUE
ANNAPOLIS, MARYLAND 21401
(410) 267-8821
ANNAPOLIS–CENTREVILLE–EASTON–ELKTON–PRINCE FREDERICK

STATE OF MARYLAND — No. 17747 — REGISTERED PROFESSIONAL ENGINEER — 9/12/05

DES: R. SELL				
DRN: S.HINES				
CHK: R.SELL				
DATE: FEB.2005	DLD	1	AS-BUILTS	9/06
	BY	No.	REVISION	DATE

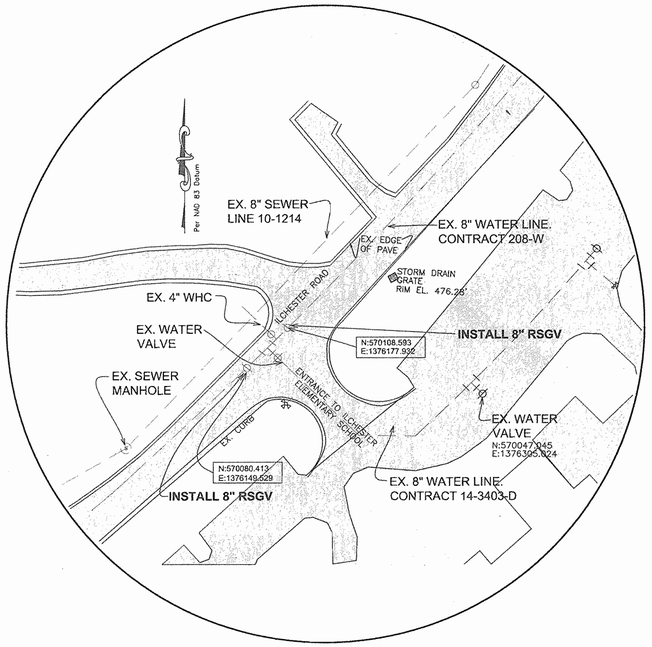
WATER PLAN VIEW

600' SCALE MAP No. 31 BLOCK No. 5, 11, 15

BEECHWOOD ROAD WATER MAIN LOOP
CAPITAL PROJECT W-8252
CONTRACT No. 44-4196
ELECTION DISTRICT No. 1
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 4



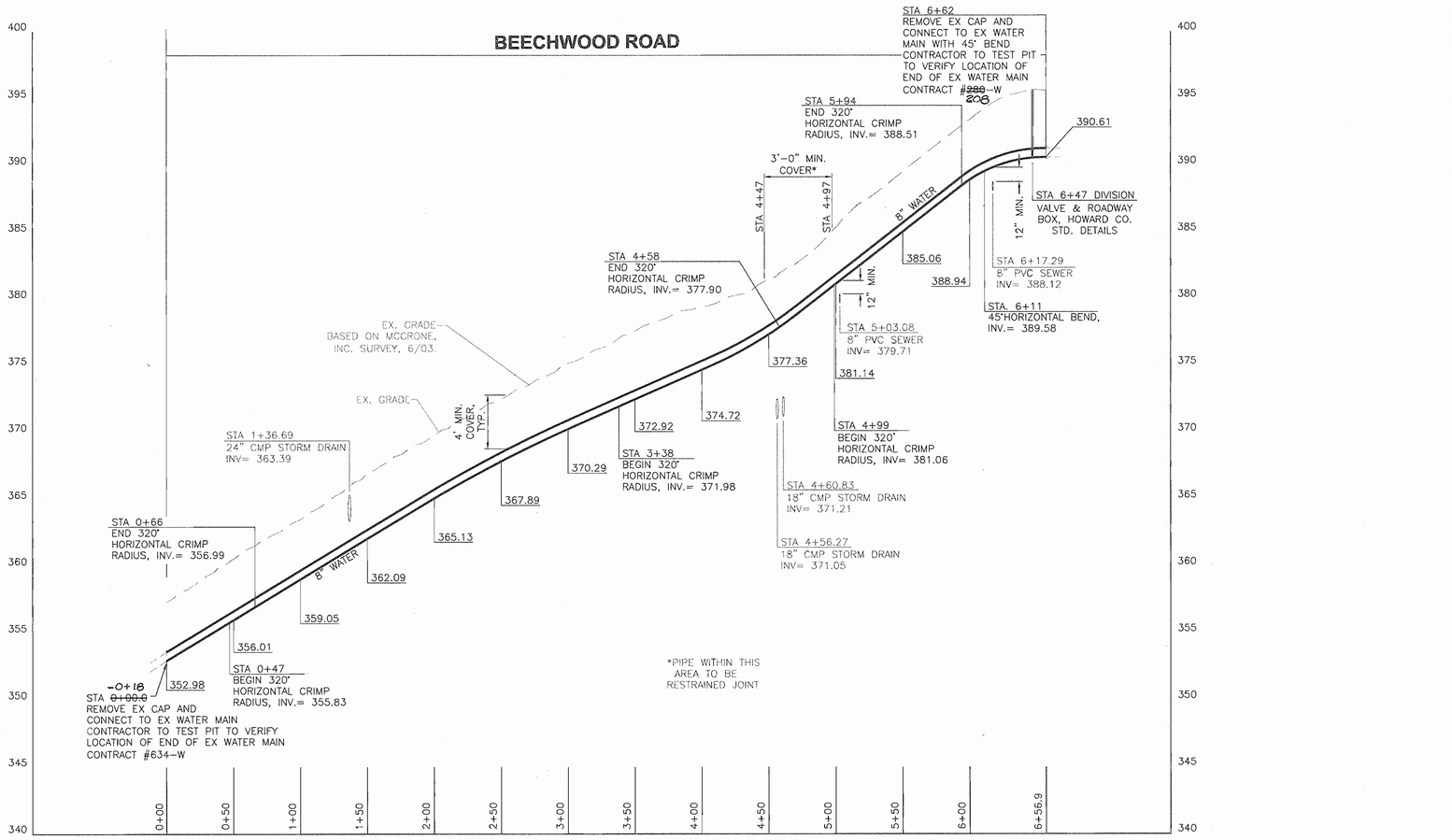
GATE VALVE INSTALLATIONS

1" = 50'

NOTE:

1. CONTRACTOR TO TEST PIT TO VERIFY LOCATION OF ALL EXISTING LINES(CONTRACTS 208-W AND 14-3403-D) AND ADJUST LOCATIONS OF PROPOSED GATE VALVES IF NEEDED. THE INTENT IS FOR ONE OF THE PROPOSED GATE VALVES TO BE NORTH OF THE EXISTING 4" WATERLINE AND THE OTHER PROPOSED GATE VALVE TO BE SOUTH OF THE EXISTING WATERLINE THAT FEEDS THE SCHOOL.

2. **ALL WORK TO BE DONE AT NIGHT OR WHEN SCHOOL IS CLOSED.**



BEECHWOOD ROAD PROFILE

SCALE: H-1"=50', V-1"=5'

As-Built SEPTEMBER 2006

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 9/26/05
CHIEF, BUREAU OF ENGINEERING — DATE 9/16/05
CHIEF, BUREAU OF UTILITIES — DATE 9-19-05
CHIEF, UTILITY DESIGN DIVISION — DATE 9/16/05

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LAND PLANNING & SURVEYING CONSTRUCTION SERVICES
20 RIDGELY AVENUE
ANNAPOLIS, MARYLAND 21401
(410) 267-8821
ANNAPOLIS-CENTREVILLE-EASTON-ELKTON-PRINCE FREDERICK

STATE OF MARYLAND — MICHAEL R. SELL — 17751 — REGISTERED PROFESSIONAL ENGINEER — 9/6/2005

DES: R. SELL					
DRN: S.HINES					
CHK: R.SELL					
DATE: FEB.2005	DLD	1	AS-BUILTS	9/06	
	BY	No.	REVISION	DATE	

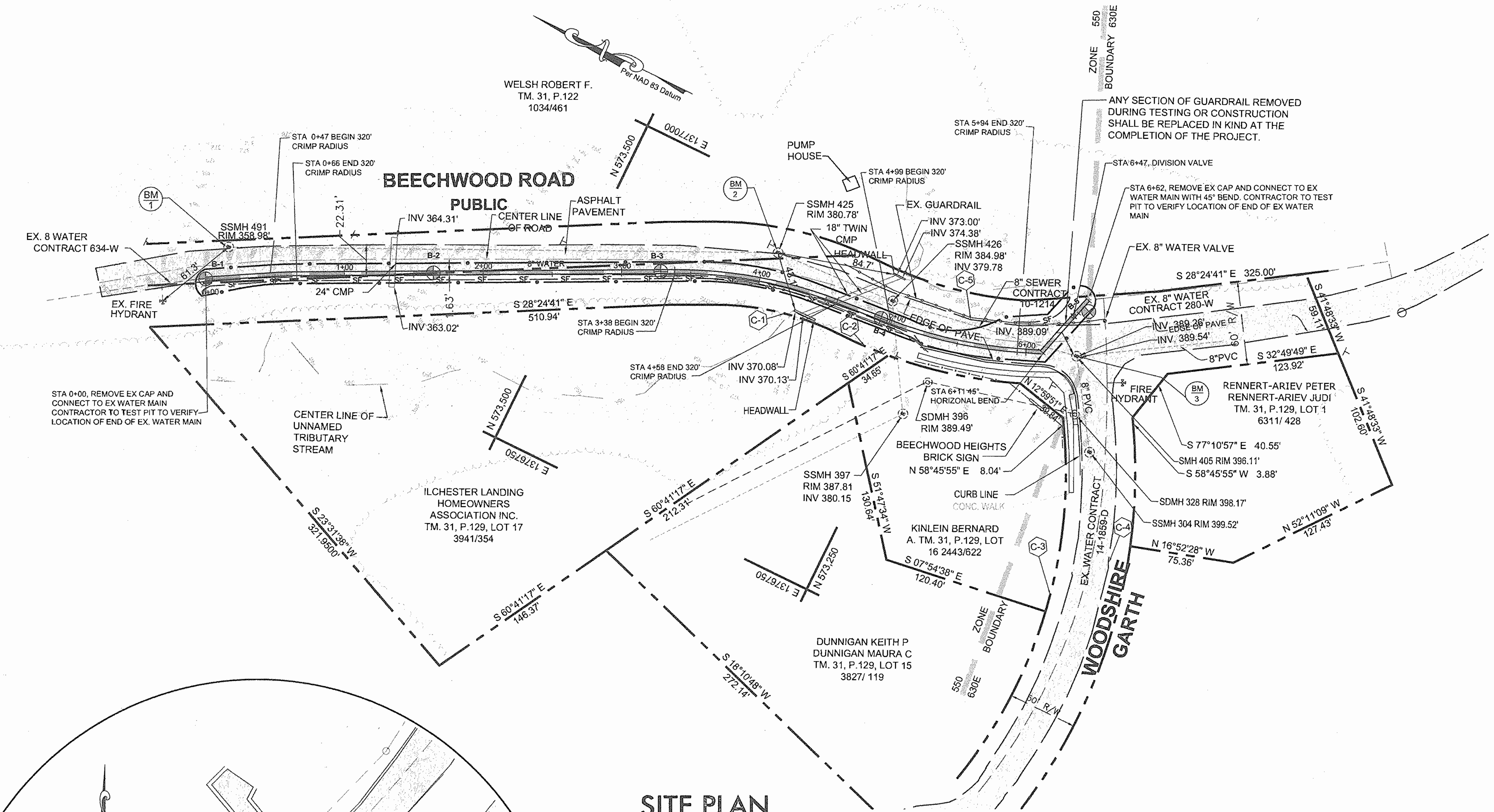
WATER PROFILE & DIVISION VALVE PLAN VIEW

600' SCALE MAP No. 31 — BLOCK No. 5, 11, 15

BEECHWOOD ROAD WATER MAIN LOOP
CAPITAL PROJECT W-8252
CONTRACT No. 44-4196
ELECTION DISTRICT No. 1
HOWARD COUNTY, MARYLAND

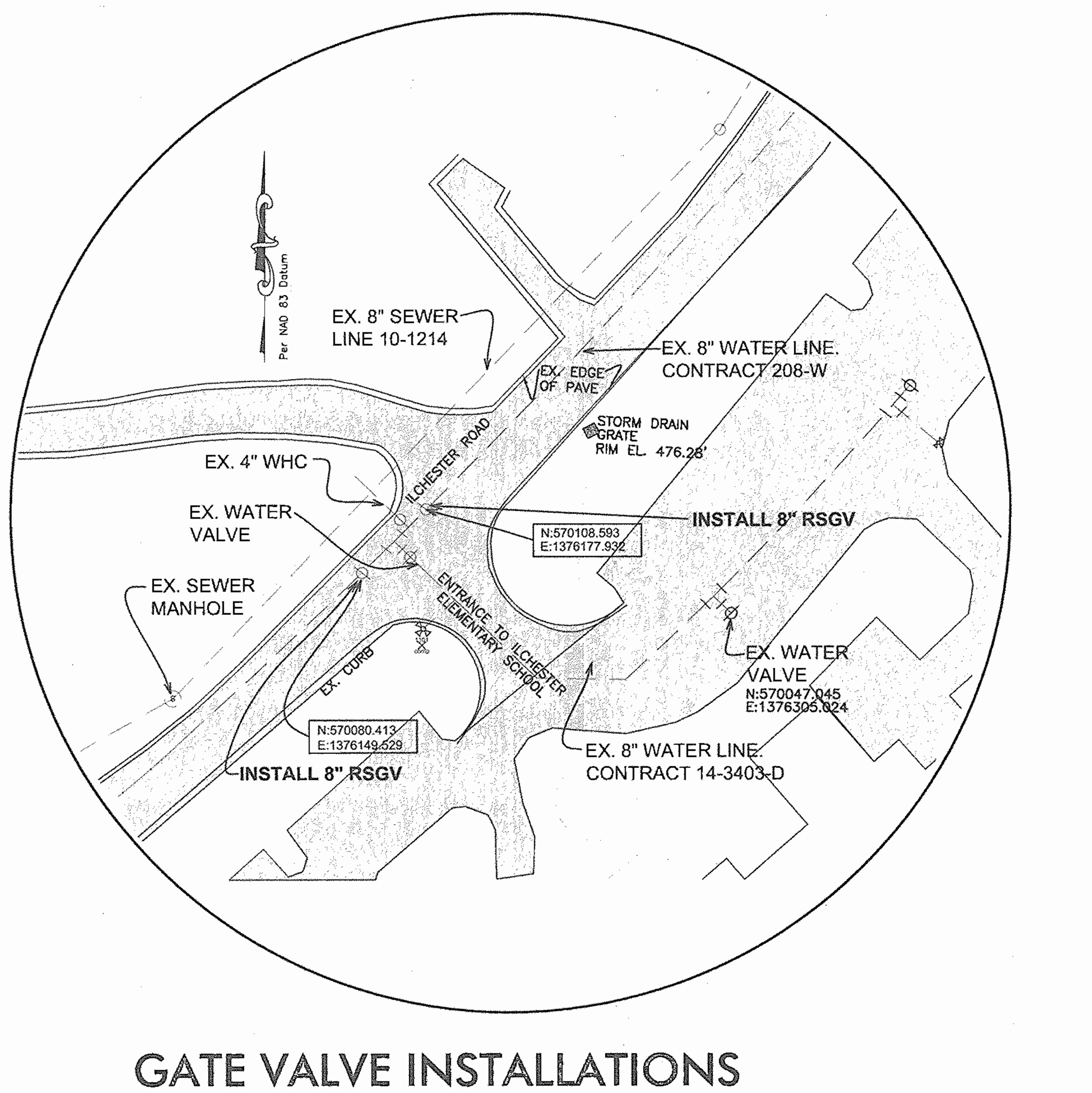
SCALE AS SHOWN

SHEET 3 OF 4



SITE PLAN

GRAPHIC SCALE
1 inch = 50 ft.

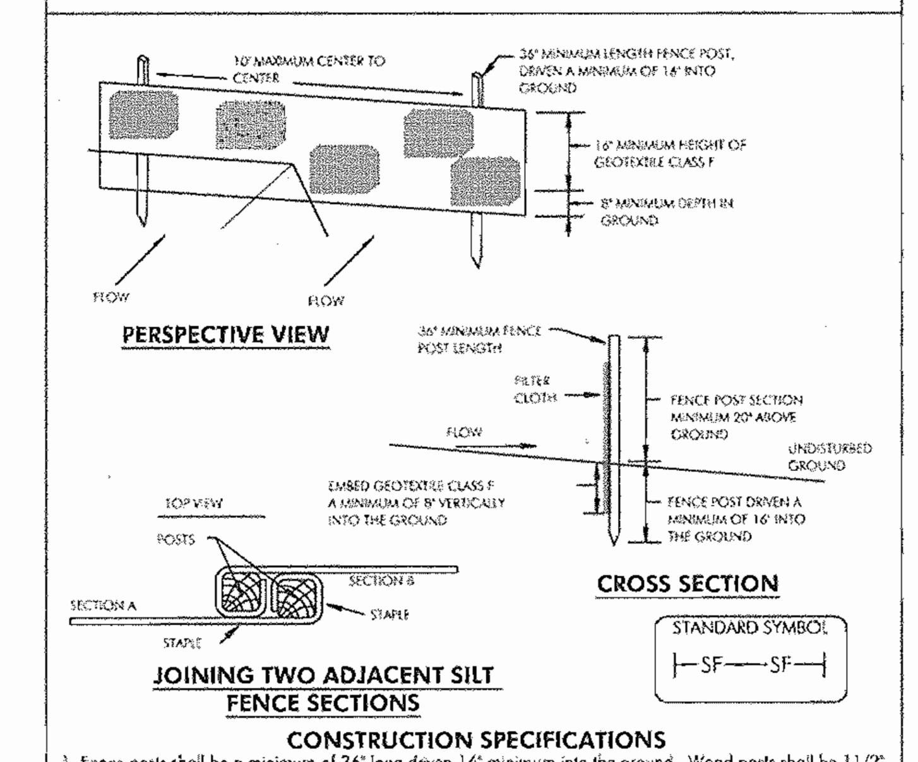


GATE VALVE INSTALLATIONS

1" = 50'

NOTE: ALL WORK TO BE DONE AT NIGHT OR WHEN SCHOOL IS CLOSED.(TYP. OF 2)

DETAIL 22 - SILT FENCE



CONSTRUCTION SPECIFICATIONS

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

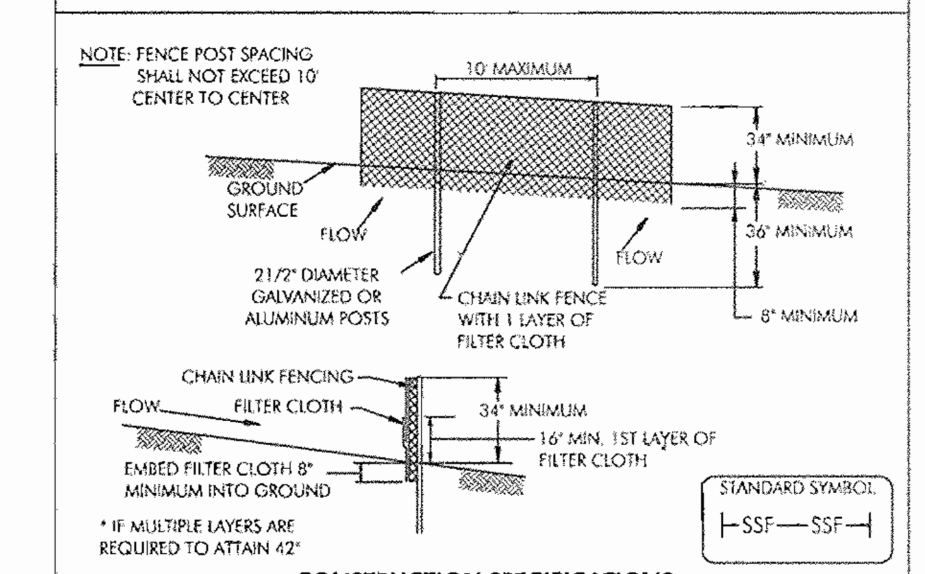
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 - SUPER SILT FENCE



CONSTRUCTION SPECIFICATIONS

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

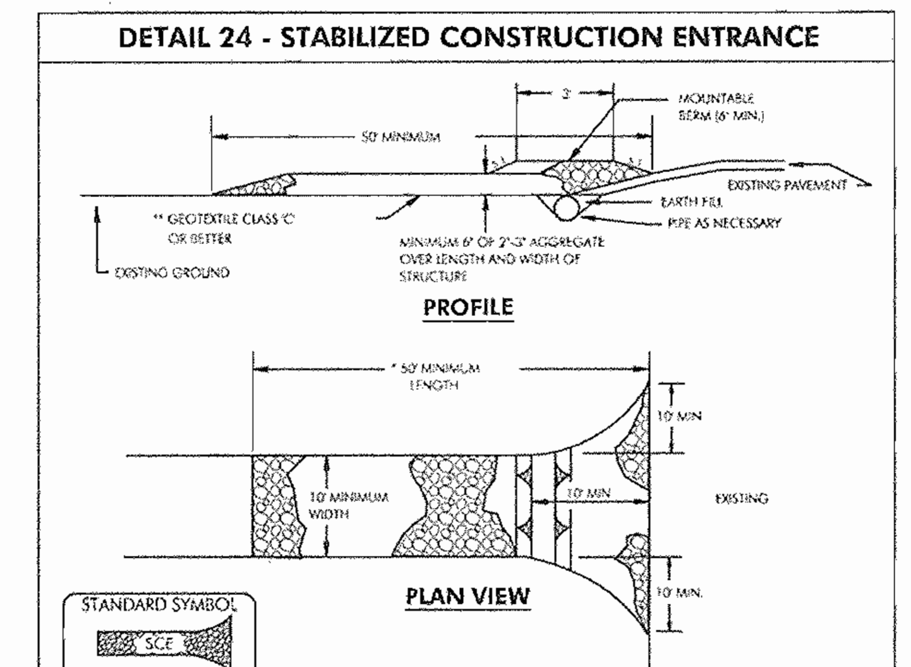
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



CONSTRUCTION SPECIFICATIONS

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.).

SEEDING: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by applying 2 tons per 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 small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 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 RATE AND METHODS NOT COVERED.

Conditions Where Practice Applies

I. This practice 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.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

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, discing or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:

1) Preferred-Apply 2 tons per acre dolomitic limestone (92 lbs/100 sq.ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq.ft.)

2) Acceptable-Apply 2 tons per acre dolomatic limestone (92 lbs/1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10- fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

SEEDING: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs/1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre 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 31 Tall Fescue 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/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

MAINTENANCE: Inspect all seeded areas and make needed repairs, replacements and reseedings.

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetable growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (410-313-1855).

2. All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. and revisions thereto.

3. Following initial soil disturbance or redisturbance, 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 as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. 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, sod, temporary seeding, and mulching (Sec. G). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. 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.

7. Site Analysis :

Total Area	0.23 Ac.
Area Disturbed	0.23 Ac.
Area to be roofed or paved	0.17 Ac.
Area to be vegetatively stabilized	0.06 Ac.
Total Cut	300.00 C.Y.
Total Fill	300.00 C.Y.
Offsite waste/borrow area location	0.00 C.Y.

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10. 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.

11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.

Construction and Material Specifications

I. 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 Experimental Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

I. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger that 1 and 1/2" in diameter.

II. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

III. 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.

III. For sites having disturbed areas under 5 acres:

I. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

II. For sites having disturbed areas over 5 acres:

I. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

a. 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.

b. Organic content of topsoil shall be not less than 1.5 percent by weight.

c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.

d. No sod or seed shall be placed on soil 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.

III. Place topsoil (if required) and apply soil ammendments specified in 20.0 Vegetative Stabilization-Section I-Vegetative Stabilization Methods and Materials.

V. Topsoil Application

I. 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.

II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

III. 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.

IV. Topsoil shall not be place 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.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.	....1 DAY
2. INSTALL SEDIMENT CONTROL DEVICES.	....1 WEEK
3. INSTALL WATER AND SEWER MAINS.	....4 WEEKS
4. BACKFILL TRENCH AND RESTABILIZE.	....4 WEEKS
5. CLEAN UP CONSTRUCTION SITE.	....1 WEEK
6. REMOVE SEDIMENT CONTROL DEVICES.	....1 WEEK

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	DATE 9/20/05	CHIEF, BUREAU OF ENGINEERING	DATE 9/16/05
CHIEF, BUREAU OF UTILITIES	DATE 9-19-05	CHIEF, UTILITY DESIGN DIVISION	DATE 9/16/05

McCRONE
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ANNAPOLIS-CENTREVILLE-EASTON-ELKTON-PRINCE FREDERICK

DES: R. SELL
DRN: S.HINES
CHK: R.SELL
DATE: FEB.2005

BY	No.	REVISION	DATE
DLD	1	AS-BUILTS	9/06

SEDIMENT CONTROL MEASURES

600' SCALE MAP No. 31 BLOCK No. 5, 11, 15

BEECHWOOD ROAD WATER MAIN LOOP
CAPITAL PROJECT W-8252
CONTRACT No. 44-4196
ELECTION DISTRICT No. 1
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

As-Built SEPTEMBER 2006