

SEWER HOUSE CONNECTION TABLE

LOT	INV. AT R	MIN. C
1	---	Ex.
2	---	Ex.
3	425.5	430.3
4	425.5	432.0

* MIN C is minimum floor elevation of unit that can be served by proposed sanitary connection.

CONTRACT NO. 14 - 3792- D

WATER & SEWER MAIN EXTENSION

FLESHMAN PROPERTY

SUBDIVISION

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

GENERAL NOTES

PART I

- Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the engineer at the contractor's expense.
- All horizontal controls are based on Maryland state coordinates (North American Datum of 1983 (NAD 83)).
- All vertical controls are based on U.S.G.S. data.
- All pipe elevations shown are invert elevations.
- Clear all utilities by a minimum of 12". Clear all poles by 2' - 0" minimum or tunnels as required. The owner has contracted 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 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.
- For details not shown on the drawings and for materials and construction methods use Howard County Design Manual, Volume IV, Standard Specifications and Detail 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 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.
- Contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

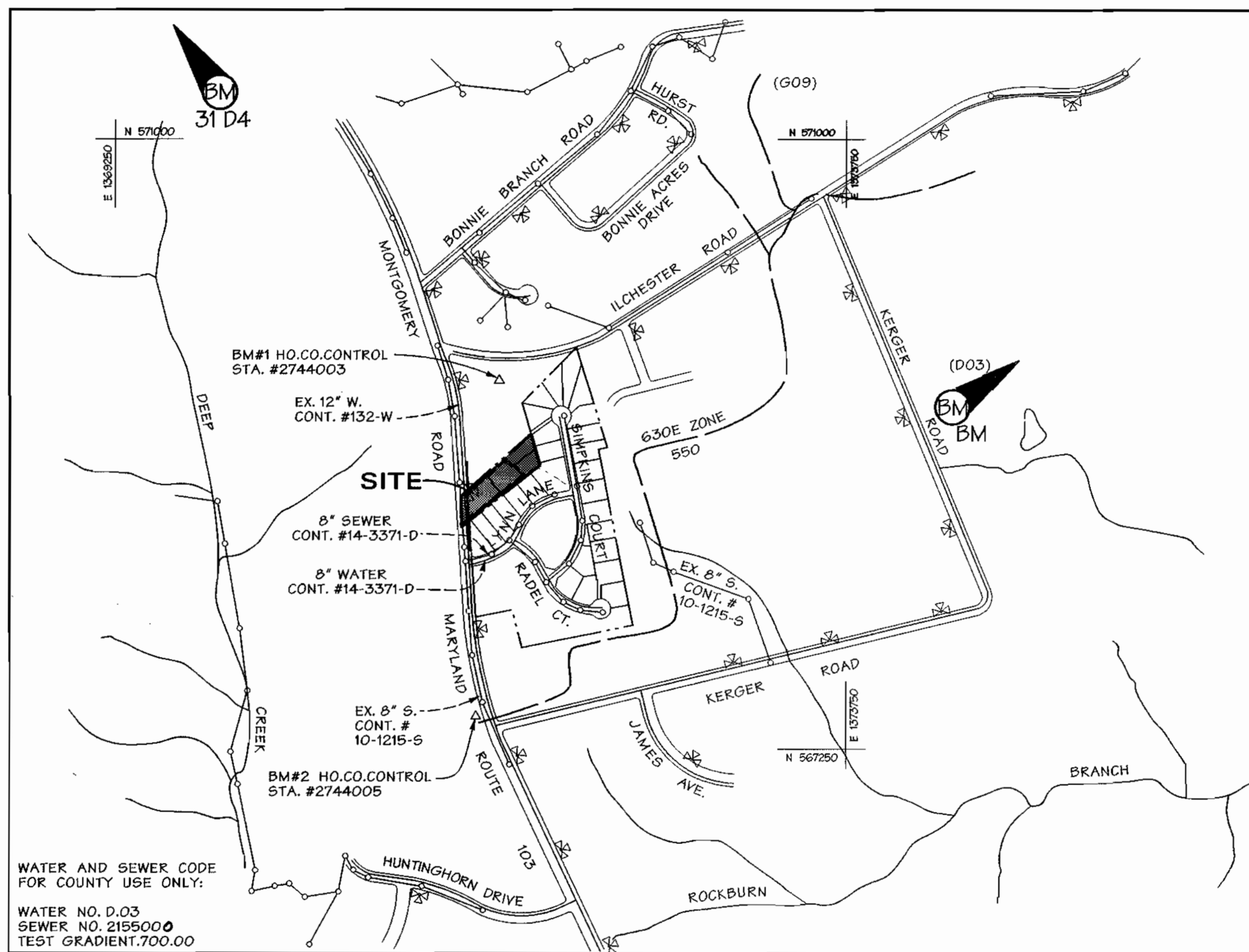
State Highway Administration	(410) 531-5533
BGS&E CO. Contractor Services	(410) 950-4620
BGS&E CO. Under Ground Damage Control	(410) 787-9068
Miss Utility	1-800-257-7777
Colonial Pipeline CO.	(410) 795-1390
Howard County Department of Public Works Bureau of Utilities	(410) 313-4900
- Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the contractor.
- 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) 313-2450 at least five working days before any open cut of any county road or boring/jacking operation in county roads 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

- All water main to be D.I.P. Class 52 unless otherwise noted.
- Tops of all water mains to have a minimum of 3'-12" cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed 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 restrained and buttressed with concrete in accordance with standard details. 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.
- All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
- All W.H.C.'s to be 1" with 3/4" meter.

PART III - SEWER

- All sewer mains shall be DIP AND 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 covers, standard detail G5.52. Where watertight manhole frame and cover is 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.



WATER AND SEWER CODE FOR COUNTY USE ONLY:

WATER NO. D.03
SEWER NO. 2155000
TEST GRADIENT.700.00

TYPE OF BUILDING: RESIDENTIAL
NUMBER OF LOTS: 4
NO. OF WATER HOUSE CONNECTIONS: 4
NO. OF SEWER HOUSE CONNECTIONS: 4
DRAINAGE AREA: FATAPSCO

LOCATION MAP

SCALE: 1"=600'

QUANTITIES				
ITEM	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
4" W.	341'			
12" X 4" TAPPING SLEEVE & VALVE	1			
4" V.	1			
4" 1/2" H.B.	1			
8" S.	480'			
4" S.	22'			
1" W.H.C.	40'			
4" DIA. M.H.	3			
NAME OF UTILITY CONTRACTOR				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE				

SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	WATER & SEWER - PLAN & PROFILE
3	SEDIMENT CONTROL DETAILS & SPECS.

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 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, DATED APRIL, 1994.

Signature: *John W. Ramon, Jr.*
DATE: 11/10/00

BENCHMARK

DESCRIPTION

1. Coordinates and Bearings shown on this plan are referred to the system of coordinates established in The Maryland Coordinate System - NAD 83 (1991), and are based on the following Geodetic Survey Control Station, provided by the Howard County Department of Public Works:

DESIGNATION	NORTH (GFT)	EAST (GFT)	PID
31D4	571700.6928	13695006.281	N/A
31EA	569641.123	1374815.935	N/A

2. Elevations shown on this plan are referred to The North American Vertical Datum 1988 (NAVD 88) with local reference to the following National Geodetic Survey:

DESIGNATION	ELEVATION (GFT)	PID
31D4	494.477	N/A

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT.

Signature: *John W. Ramon, Jr.* DATE: 12/26/00

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

Signature: *John W. Ramon, Jr.* DATE: 12/26/00

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND THESE PLANS. F-99-19A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Signature: *John W. Ramon, Jr.* DATE: 12-8-00
CHIEF - BUREAU OF UTILITIES - DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Signature: *John W. Ramon, Jr.* DATE: 12/26/00
CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, 200 East Pennsylvania Avenue, Towson, Maryland 21286
Landscape Architects, Engineers, Surveyors & Environmental Professionals
410 296 3333
Fax 296 4705



DESIGN BY:	DRAWN BY:	CHECKED BY:	DATE:
OW	OW	OW	11/10/00
BY	NO.	REVISION	DATE

TITLE SHEET

600 SCALE MAP NO. 31 BLOCK NO. 20

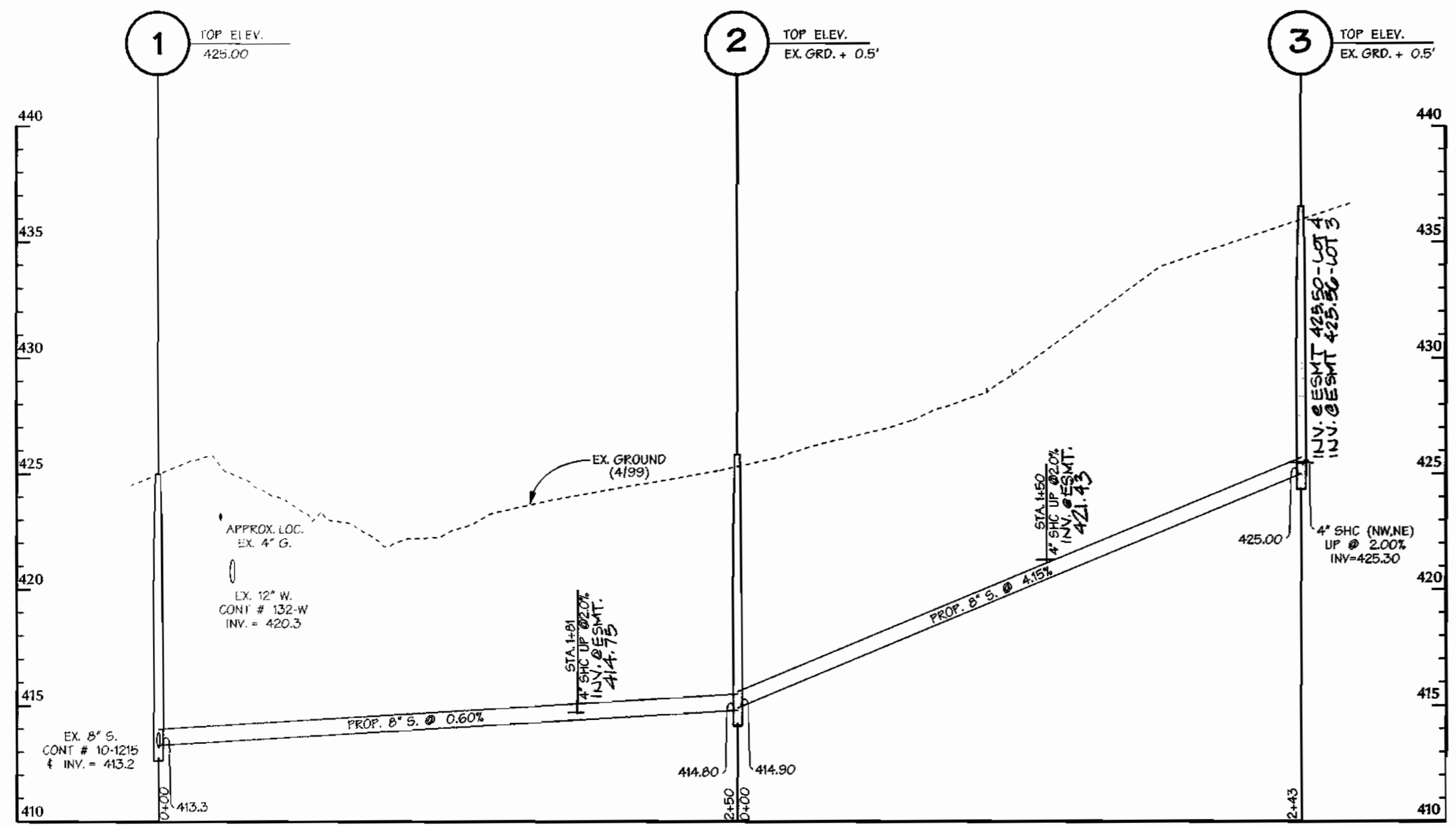
FLESHMAN PROPERTY
RESIDENTIAL SUBDIVISION

1st ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

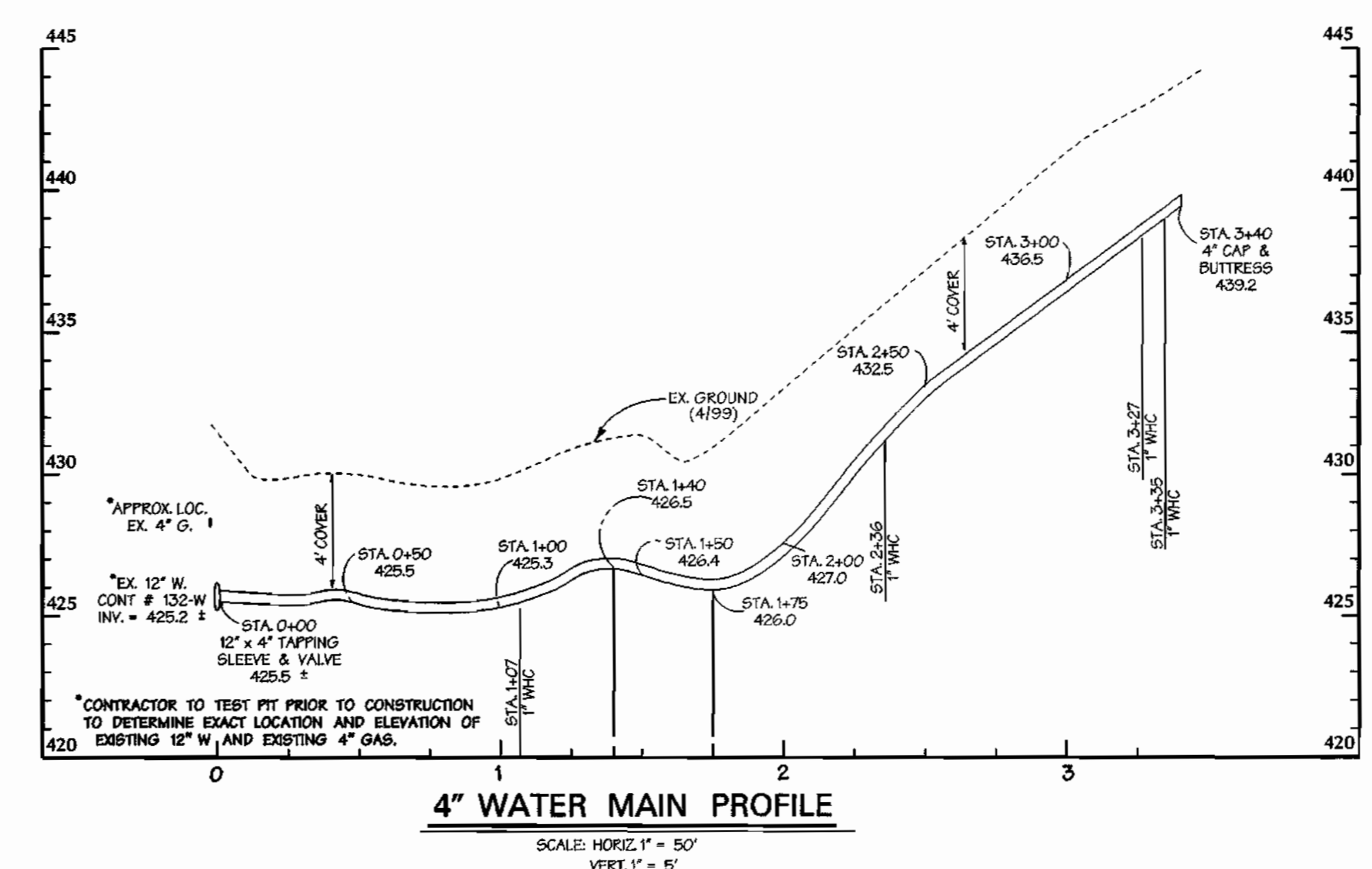
OWNER: BRUCE & ANITA FLESHMAN
5329 MONTGOMERY ROAD
ELLIOTT CITY, MD 21043
DEVELOPER: BRUCE & ANITA FLESHMAN
5329 MONTGOMERY ROAD
ELLIOTT CITY, MD 21043
CONTRACT NO. 14-3792-D

1" = 600'

SHEET
1 OF 3



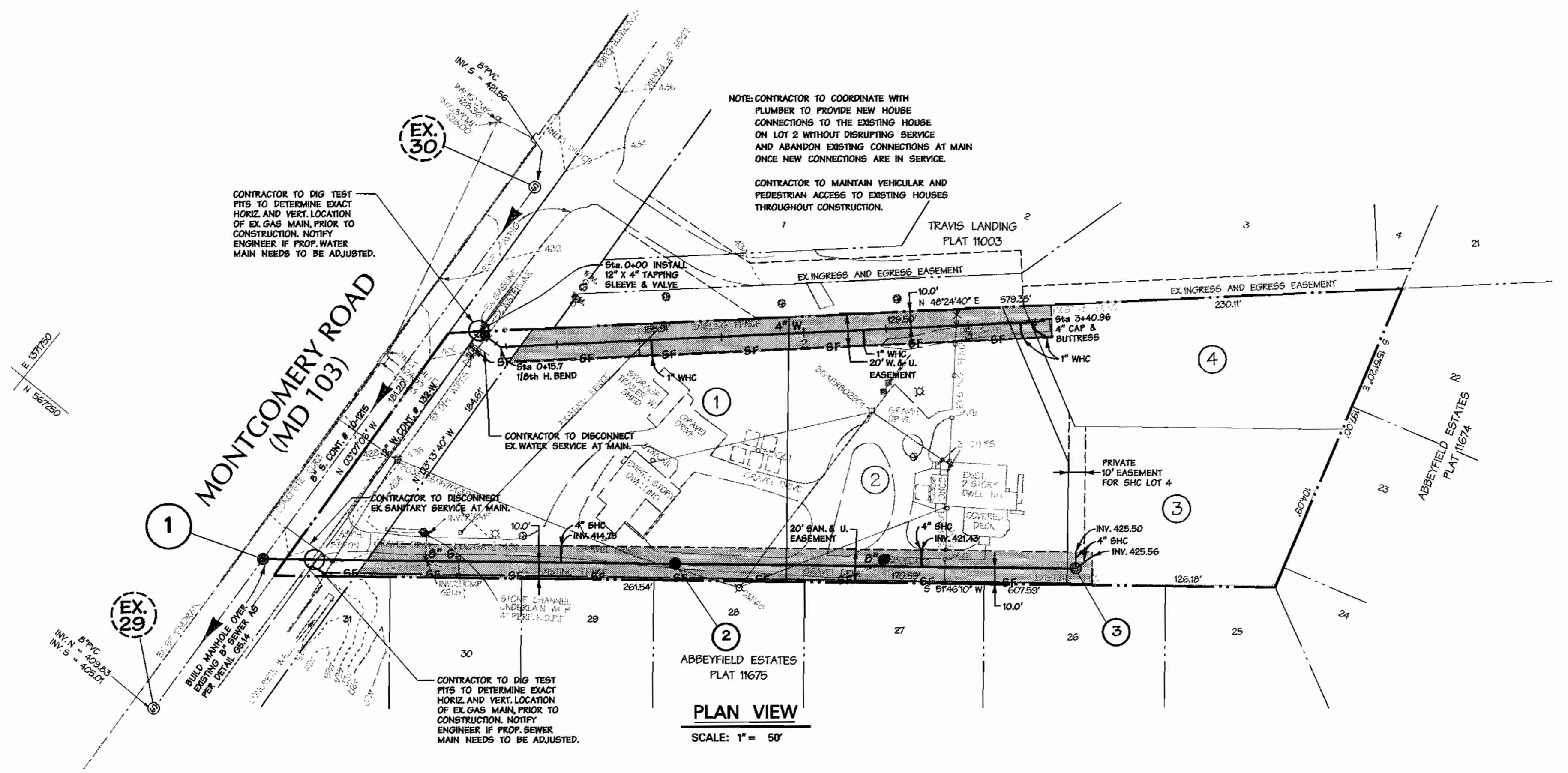
8" SANITARY SEWER PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



4" WATER MAIN PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

WATER & SEWER STRUCTURE SCHEDULE			
ITEMS	COORDINATES		STATION
	NORTH	EAST	
12" x 4" TAPPING SLEEVE & VALVE	* 567,448±	* 1,371,948±	W.L. STA. 0+00
4" 1/8" BEND	567,445.820	1,371,963.450	W.L. STA. 0+15.7
4" CAP & BUTTRESS	567,661.746	1,372,206.748	W.L. STA. 3+40.9
4' DIA. PRECAST MANHOLE - 1	567,255+/-	1,371,932+/-	LOCATE OVER EXISTING SEWER
4' DIA. PRECAST MANHOLE - 2	567,410.192	1,372,128.389	
4' DIA. PRECAST MANHOLE - 3	567,564.899	1,372,224.771	

* CONTRACTOR TO TEST PITS PRIOR TO CONSTRUCTION TO DETERMINE EXACT LOCATION AND ELEVATION OF EXISTING 12" W AND EXISTING 4" GAS.



PLAN VIEW
SCALE: 1" = 50'

KEYVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

U.S. NATURAL RESOURCE CONSERVATION SERVICE DATE _____

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

HOWARD S.C.D. DATE _____

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 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, DATED APRIL, 1994.

SIGNATURE

12/20/00
DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Beaman 12-B-00
CHIEF - BUREAU OF UTILITIES - DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

DMW
Daft · McCune · Walker, Inc.

A Team of Land Planners, 200 East Pennsylvania Avenue
Landscape Architects, Towson, Maryland 21286
Engineers, Surveyors & Environmental Professionals 410 296 3333
Fax 296 4705



DESIGN BY:	CW				
DRAWN BY:	CW				
CHECKED BY:	CW				
DATE:	12/7/00				
BY	NO.	REVISION	DATE		

**WATER & SEWER
PLAN AND PROFILES**

800 SCALE MAP NO. 31 BLOCK NO. 20

FLESHMAN PROPERTY
RESIDENTIAL SUBDIVISION

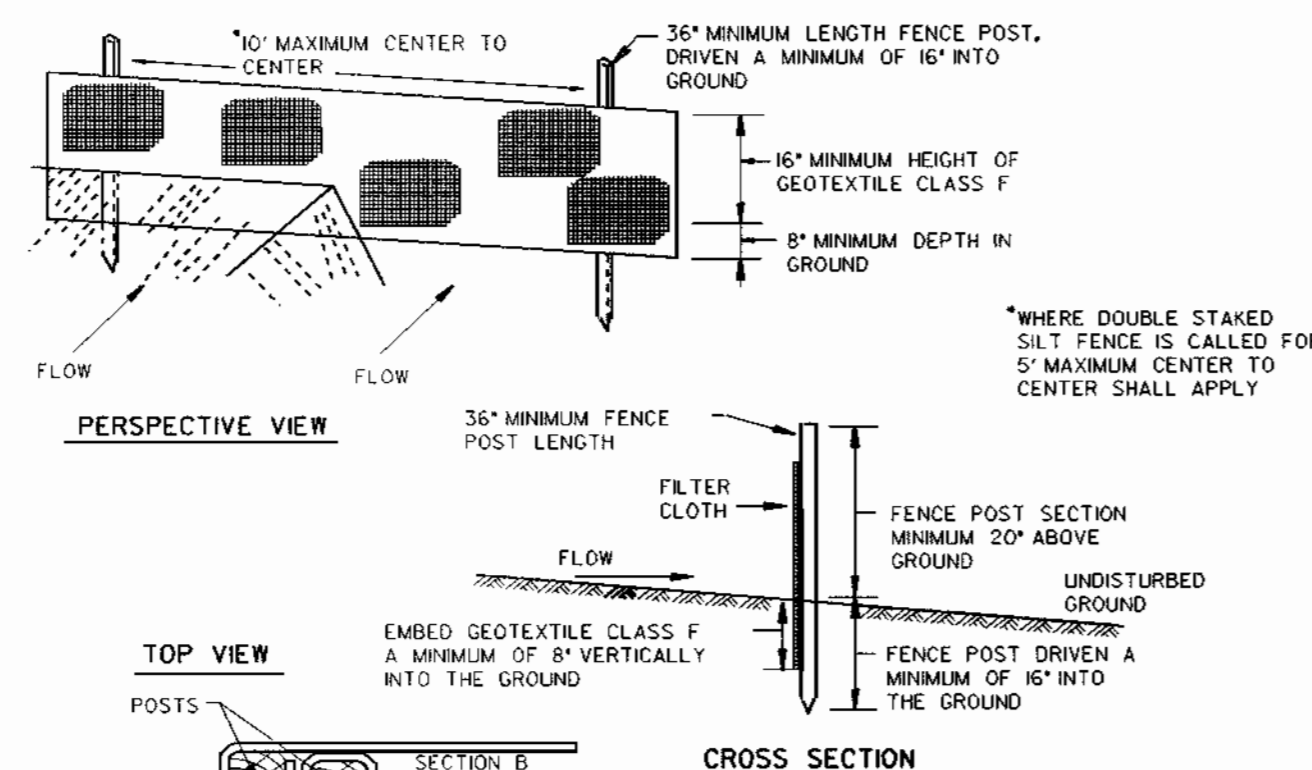
1st ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

OWNER: BRUCE & ANITA FLESHMAN
5329 MONTGOMERY ROAD
ELLCOTT CITY, MD 21043

DEVELOPER: BRUCE & ANITA FLESHMAN
5329 MONTGOMERY ROAD
ELLCOTT CITY, MD 21043

CONTRACT NO. 14-3792-D

AS SHOWN SHEET 2 OF 3



Construction Specifications

- Fence posts shall be a minimum of 36" long driven 18" minimum into the ground. Wood posts shall be 1/2" x 1/2" square (minimum cut), or 1 1/4" 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 pound per linear foot.
- 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 gdf/minute (max)	Test: MSTM 322
Filtering Efficiency	75% (min)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

- 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 (203-18955).
- ALL VEGETATIVE 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 THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
 - FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPBASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, 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 SEEDINGS, SODS, TEMPORARY SEEDING AND MULCHING (SECTION G). 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 OR SITE	2.04 ACRES
AREA DISTURBED	0.35 ACRES
AREA TO BE ROOFED OR PAVED	0.0 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.35 ACRES
TOTAL CUT	0 CUBIC YARDS
TOTAL FILL	0 CUBIC YARDS
OFF-SITE WASTE/ROCKWASH AREA LOCATION WASTE	N/A
- 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 CONTROLS 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 WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

Sequence of Construction

SEQUENCE	NUMBER OF DAYS
1. OBTAIN A GRADING PERMIT.	7
2. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE.	2
3. WHILE CONSTRUCTING UTILITIES THE LIMIT-OF-DISTURBANCE SHALL INCLUDE ONLY THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED IN ONE WORKING DAY. ACCESS TO THE EXISTING HOUSES MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.	14
4. STABILIZE ALL AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS.	14
5. UPON APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE.	7

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE E-18-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SILT FENCE NOT TO SCALE

Sediment Control General Notes

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 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 PER ACRES DOLOMITIC LIMESTONE (92 LBS./1000 SQ.F.T.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.F.T.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.F.T.)
- ACCEPTABLE - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS./1000 SQ.F.T.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.F.T.) BEFORE SEEDING. HARROW OR DISK 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 (14 LBS./1000 SQ.F.T.) 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 (0.5 LBS./1000 SQ.F.T.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 15 THRU FEBRUARY 28, PROTECT SITE BY OPTION (1) - 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE SOO. 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.F.T.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATIONS USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL./1000 SQ.F.T.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL./1000 SQ.F.T.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDING.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING 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.F.T.)

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.F.T.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SQ.F.T.). FOR THE PERIOD NOVEMBER 15 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 SOO.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.F.T.) OF UNROTTED WEEED FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL./1000 SQ.F.T.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL./1000 SQ.F.T.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

DUST CONTROL SPECIFICATIONS

TEMPORARY METHODS:

- MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
- VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
- TILLAGE - TO ROUGHEN SURFACE AND BRING CLOSD TO THE SURFACE, THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
- IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THE RUNOFF BEGINS TO FLOW.
- BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, STRAW PALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
- CALCIUM CHLORIDE - APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHODS:

- PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOO. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
- TOPSOILING - COVERING WITH LESS ERODIBLE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
- STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE H-20-1 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TEMPORARY AND PERMANENT SEEDING NOTES

Dust Control Specifications

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND

Robert M. Beemer 12-8-00
CHIEF - BUREAU OF UTILITIES - DATE

[Signature] 12/29/00
CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

Not To Scale

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

DESIGN BY: CW
DRAWN BY: CW
CHECKED BY: CW
DATE: 10/18/00

BY NO. REVISION DATE

Topsoil Specifications

FOR SEDIMENT CONTROL /STABILIZATION PURPOSES

21.0 STANDARD 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 vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

- This practice is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - 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.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- 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.

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. 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.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - 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 soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slags, coarse fragments, gravel sticks, roots, trash, and other materials larger 1 1/2 inch in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, rutsedge, poison ivy, thistle, or others as specified.
- Where the subsoil is either highly acidic or composed of heavy clays, ground limestones 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 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

Topsoil Specifications

III. 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 contents 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 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- Topsoil Application
 - When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Stop 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 seeded preparation.

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 SOIL CONSERVATION DISTRICT.

DATE: 11/19/00

John W. Remick, Jr.
SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE DATE

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

HOWARD S.C.D. DATE

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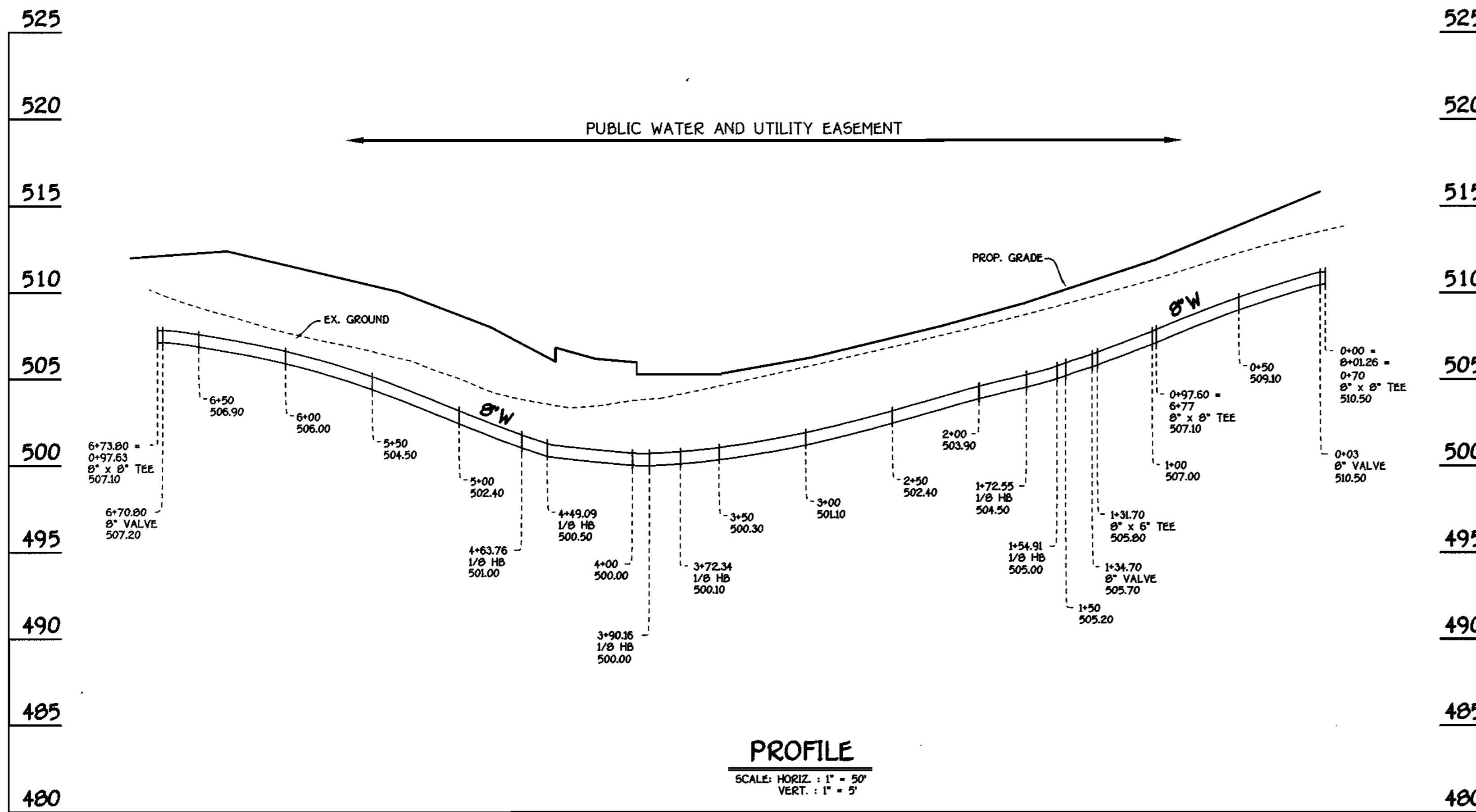
FLESHMAN PROPERTY
RESIDENTIAL SUBDIVISION
1 st ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

DEVELOPER: BRUCE & ANITA FLESHMAN
5329 MONTGOMERY ROAD
ELLCOTT CITY, MD 21043

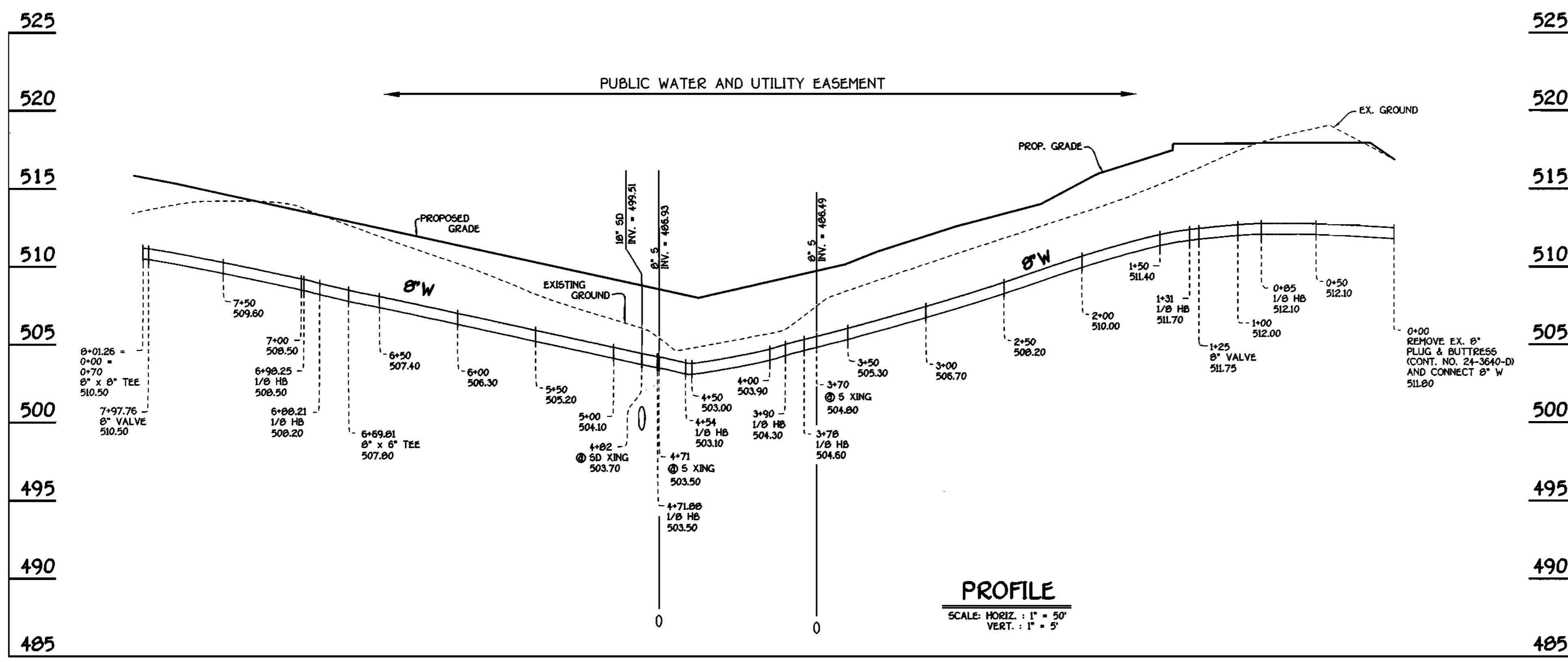
CONTRACT NO. 14-3792-D

SCALE AS SHOWN

SHEET 3 OF 3



8" WATER MAIN: TURN BERRY WAY WEST



8" WATER MAIN: TURN BERRY WAY EAST

WATER MAIN TABULATION CHART			
WM STATION	APPURTENANCE	ROAD STATION	DISTANCE
8" W: TURN BERRY WAY EAST			
0+00	REMOVE EX. 8" PLUG & BUTTRESS AND CONNECT W/ PROPOSED 8" WATER	----	----
0+05	1/8 HB.	----	----
1+31	1/8 HB.	----	----
3+78	1/8 HB.	3+77	11' LT.
3+90	1/8 HB.	3+90	14' LT.
4+54	1/8 HB.	4+41	16' LT.
4+71.80	1/8 HB.	4+53	19' LT.
5+00.49	P.C.	4+74	6' LT.
5+41.05	P.T.	5+14	6' LT.
6+66.81	8" VALVE	6+40	4' LT.
6+69.81	8" x 6" TEE	6+43	4' LT.
6+88.21	1/8 HB.	6+62	4' LT.
6+98.25	1/8 HB.	0+98	4' RT.
7+97.76	8" VALVE	0+03 WEST	4' RT.
8+01.26-0+00-0+70	8" x 8" TEE	0+05 WEST	4' RT.
8" W: TURN BERRY WAY WEST			
0+00-8+01.26-0+70	8" x 8" TEE	0+05	4' RT.
0+03	8" VALVE	0+08	4' RT.
0+97.63	8" x 8" TEE	1+03	1' LT.
1+00.84	P.C.	1+06	1' LT.
1+31.70	8" x 6" TEE	1+37	2' LT.
1+34.70	8" VALVE	1+40	2' LT.
1+37.94	P.T.	1+44	2' LT.
1+54.91	1/8 HB.	1+57	5' RT.
1+72.55	1/8 HB.	1+71	9' RT.
2+93.57	P.C.	2+91	7' RT.
3+24.90	P.T.	3+22	6' RT.
3+72.34	1/8 HB.	3+69	2' RT.
3+90.16	1/8 HB.	3+87	8' LT.
4+49.09	1/8 HB.	4+68	6' LT.
4+63.76	1/8 HB.	4+86	1' RT.
6+70.80	8" VALVE	6+93	6' RT.
6+73.80	8" x 8" TEE	6+96	6' RT.
8" W: FROM BIRMINGHAM TO TURN BERRY WAY			
0+00	12" x 8" TAPPING SLEEVE & VALVE	0+05	5' RT.
0+03	8" VALVE	0+08	5' RT.
0+70-0+00-8+01.26	8" x 8" TEE	0+78	5' RT.
8" W: FROM BIRMINGHAM TO TROON OVERLOOK			
0+00	12" x 8" TAPPING SLEEVE & VALVE	0+06	7' RT.
0+03	8" VALVE	0+09	7' RT.
0+19.87	P.C.	0+27	7' RT.
0+76.53	P.T.	0+85	5' RT.
1+70.80	1/8 HB.	1+78	4' RT.
1+92.45	1/8 HB.	1+96	4' RT.
3+03.05	8" x 8" TEE	3+07	2' RT.
3+17.11	1/8 HB.	3+20	8' RT.
3+49.36	8" x 6" TEE	3+49	6' RT.
3+60.41	1/8 HB.	3+59	8' RT.
3+65.41	8" x 6" TEE	3+63	7' RT.
3+67.41	8" PLUG & BUTTRESS	3+65	7' RT.

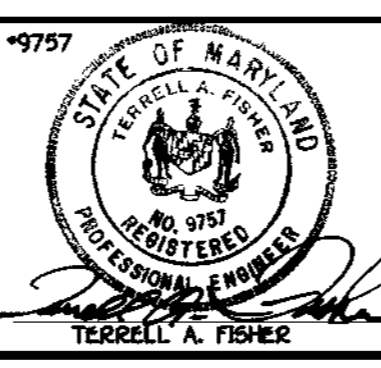
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert D. Quinn
6-9-99
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

Michael J. Fisher
6/15/99
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
2000 NATIONAL SQUARE OFFICE PARK - 10075 BALTIMORE NATIONAL PIKE
ELKROTT CITY, MARYLAND 21842
(410) 461-2295



DESIGNED BY: M.D.T.
DRAWN BY: J.C.L.
CHECKED BY: M.J.M.
DATE: MAY 6, 1999

F.C.C. -- ADDRESS COUNTY COMMENTS PER D.E.D. LETTER OF MAY 27, 1999
6/3/99

WATER MAIN PROFILES

600' SCALE MAP NO. 15 BLOCK NO. 5
F.C.C. WORK ORDER NO. 42271
FILE NAME: G/40271/PHASES 3 & 4/WATSEW/PROFILES2.DWG

VILLAGE GREEN - PHASE 3
GTW'S WAVERLY WOODS SECTION 5
UNITS 1 THRU 49 AND BUILDINGS 'A' & 'B'
CONTRACT NO. 44-3762-D
THIRD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

CONTRACT NO. 44-3762-D
VILLAGE GREEN - PHASE 3
GTW'S WAVERLY WOODS
UNITS 1 THRU 49 AND BUILDINGS 'A' & 'B'
SECTION 5
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 4

SECTION 20 :
STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION:
Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE:
Vegetative stabilization specifications 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, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES:
This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dams, etc. and for Permanent Seeding are levees, dams, cut and fill slopes and other areas of final grade, former stockpiles and eroding areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY:
Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, precipitation, and groundwater recharge. Vegetation over time, 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.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. Site Preparation
1. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
2. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
3. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
- B. 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 over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil sampling plans for engineering purposes may also be used for chemical analysis.
2. Fertilizers shall be uniform in composition, free flowing and application by approved equipment. Nitrogen may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall not be delivered to the site fully banded according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer.
3. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 90% total calcium oxide plus magnesium oxide. Limestone shall be ground to such fineness that at least 50% will pass through a 100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
4. Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.
- C. Seeded Preparation
1. Temporary Seeding
a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or ripper mounted on construction equipment. After the soil is loosened it should not be rolled or diked smooth, but left in the roughened condition. Seeded areas greater than 3d should be tracked leaving the surface in an irregular condition 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 3-5" of soil by diking or other suitable means.
2. Permanent Seeding
a. Minimum soil conditions required for permanent vegetative establishment:
1. Soil pH shall be between 5.0 and 7.0.
2. Soluble salts shall be less than 500 parts per million ppm.
3. The soil shall contain less than 40% clay, but enough fine grained material (30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if loesslike or silt loesslike material is to be planted then a sandy soil (50% silt plus clay) would be acceptable.
4. Soil shall contain 1.2% minimum organic matter by weight.
5. Soil must contain sufficient pore space to permit adequate root penetration.
6. If these conditions cannot be met by soils on site, adding topsoil is required. In accordance with Section 21 Standard and Specification for Topsoil.
b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
c. Apply soil amendments as per soil test or as included on the plans.
d. Mix soil amendments into the top 3-5" of topsoil by diking or other suitable means. Lawn areas should be rolled to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seeded preparation, loosen surface soil by diking with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seeded loosening may not be necessary on newly disturbed areas.

- D. Seed Specifications
1. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months preceding the date of sowing such seed on the site.
Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
2. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used after the date indicated on the container. Add inoculant as directed on the container. 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°F or F can weaken bacteria and make the inoculant less effective.
- E. Methods of Seeding
1. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeds or cut/packer seeder.
a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: Nitrogen maximum of 100 lbs per acre total of soluble nitrogen P2O5 (phosphorous) 200 lbs/acre K2O (potassium) 200 lbs/acre.
b. Line - use only ground agricultural limestone 450 to 500 mesh per acre may be applied by hydroseeding. Normally, not more than 2 tons per acre may be applied by any one time. Do not use burnt or hydrated lime when hydroseeding.
c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
- ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summary or Tables 509 or 508. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- iii. Drill or Cut/packer Seeding: Mechanized seeders that apply and cover seed with soil.
a. Cut/packer seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded material must be firm after planting.
b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- F. Muck Specifications (in order of preference)
1. Straw shall consist of thoroughly threshed wheat, rice or oat straw, free of roots, bright in color, and shall not be more than 1/4 inch in diameter, or excessively dirty and shall be free of noxious weed seeds and other noxious material. The straw shall be tested for noxious weed seeds.
2. Wood Cellulose Fiber Muck (WCFM)
a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical elastic.
b. WCFM shall be dry or contain a green dye in the package that will provide an appropriate dye to facilitate visual inspection of the uniformly spread slurry.
c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber muck will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The muck material shall form a looter-like ground cover, on application having moisture absorption and precipitation properties and shall cover and hold seed in contact with the soil without inhibiting the growth of the grass seedlings.
e. WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm, diameter approximately 1 mm, pH range of 6.0 to 8.5, ash content of 12% maximum and water holding capacity of 90% minimum.

- ii. Mucking Seeded Areas - Muck shall be applied to all seeded areas immediately after seeding.
1. If grading is completed outside of the seeding season, muck along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
2. When straw muck is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Muck shall be applied to a uniform loose depth of between 1" and 2". Muck applied shall achieve a uniform distribution and depth of between 1" and 2". If a muck anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
- iii. Wood cellulose fiber used as a muck shall be applied at a net dry weight of 1500 lbs per acre. The wood cellulose fiber shall be covered with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
- H. Securing Straw Muck (Muck Anchoring) - Muck anchoring shall be performed immediately following muck application to minimize loss by wind or water. This may be done by one of the following methods listed by preference, depending upon size of area and erosion hazard.
1. A muck anchoring tool is a tractor drawn implement designed to punch and anchor muck into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment is used. Used on steeper land, this practice should be used on the contour if possible.
2. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 50 lbs per acre. The wood cellulose fiber shall be covered with water. The mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Application of liquid binders should be heavier at the edges where wind catches muck, such as in mounds and areas of bare soil. The remainder of area should be evenly treated with binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 (Pretreat), Terra Tack II, Terra Tack A6 or other approved equal may be used by rates recommended by the manufacturer to anchor muck.
4. Lightweight plastic netting may be stapled over the muck according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

SEDIMENT CONTROL NOTES

- D. 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 (33-105.13).
- 1. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND DEVIATIONS THERE TO.
- 2. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 7 CALENDAR DAYS FOR ALL PERPECTIVE SEDIMENT CONTROL STRUCTURES, DICES, PERPECTIVE SLOPES AND ALL SLOPES STEEPER THAN 3:1, BY 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 3. ALL SEDIMENT TRAPS/BAINS SHOW MUST BE FENCED AND WARNING SIGNS POSTED AROUND THESE PERPECTIVE IN ACCORDANCE WITH VOL. 1, CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 4. 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. 30, 500 (SEC. 34), TEMPORARY SEEDING (SEC. 30, 500 (SEC. 35)), AND REPAIRING (SEC. 20), TEMPORARY STABILIZATION WITH MULCH (SEC. 30, 500 (SEC. 36)). THESE SEEDING DATES DO NOT ALLOW FOR PROPER OBSERVATION AND ESTABLISHMENT OF GRASSES.
- 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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 7. SITE ANALYSIS:
TOTAL AREA OF SITE: 7.791 ACRES
AREA DISTURBED: 7.42 ACRES
AREA TO BE ROOTED OR PAVED: 4.31 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 2.27 ACRES
TOTAL: 6.58 ACRES
TOTAL FILL: 21.34 CUYD.
OFFSITE WASTE/BORROW AREA LOCATION: --- CUT/DICED
- 8. ANY SEDIMENT CONTROL PRACTICES TO BE DISTURBED BY NECESSARY ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE DATE OF DISTURBANCE.
- 9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 10. ALL UTILITIES WITH DISTURBED AREAS SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERPECTIVE SEDIMENT AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE OBTAINED 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.

PERMANENT SEEDING NOTES

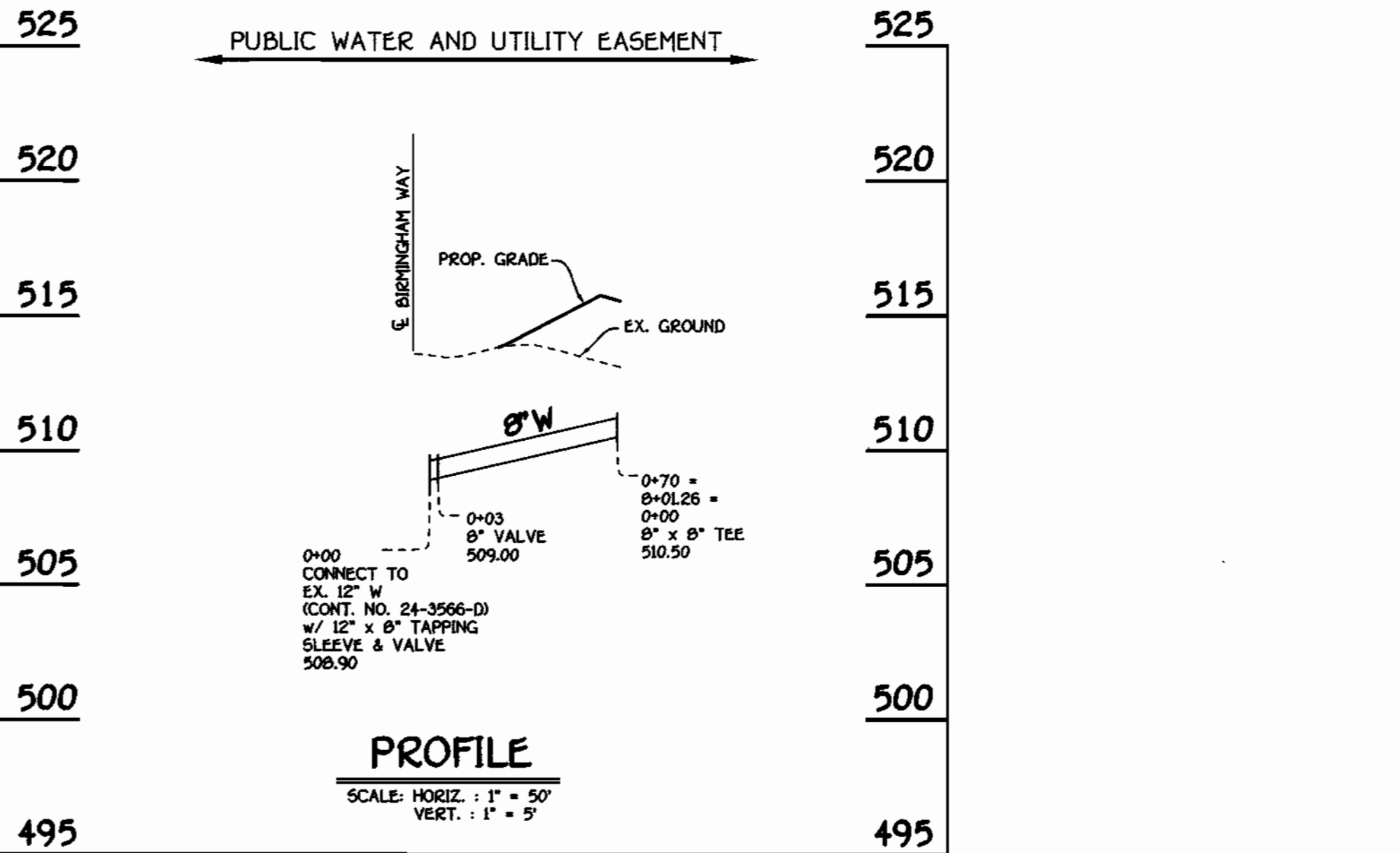
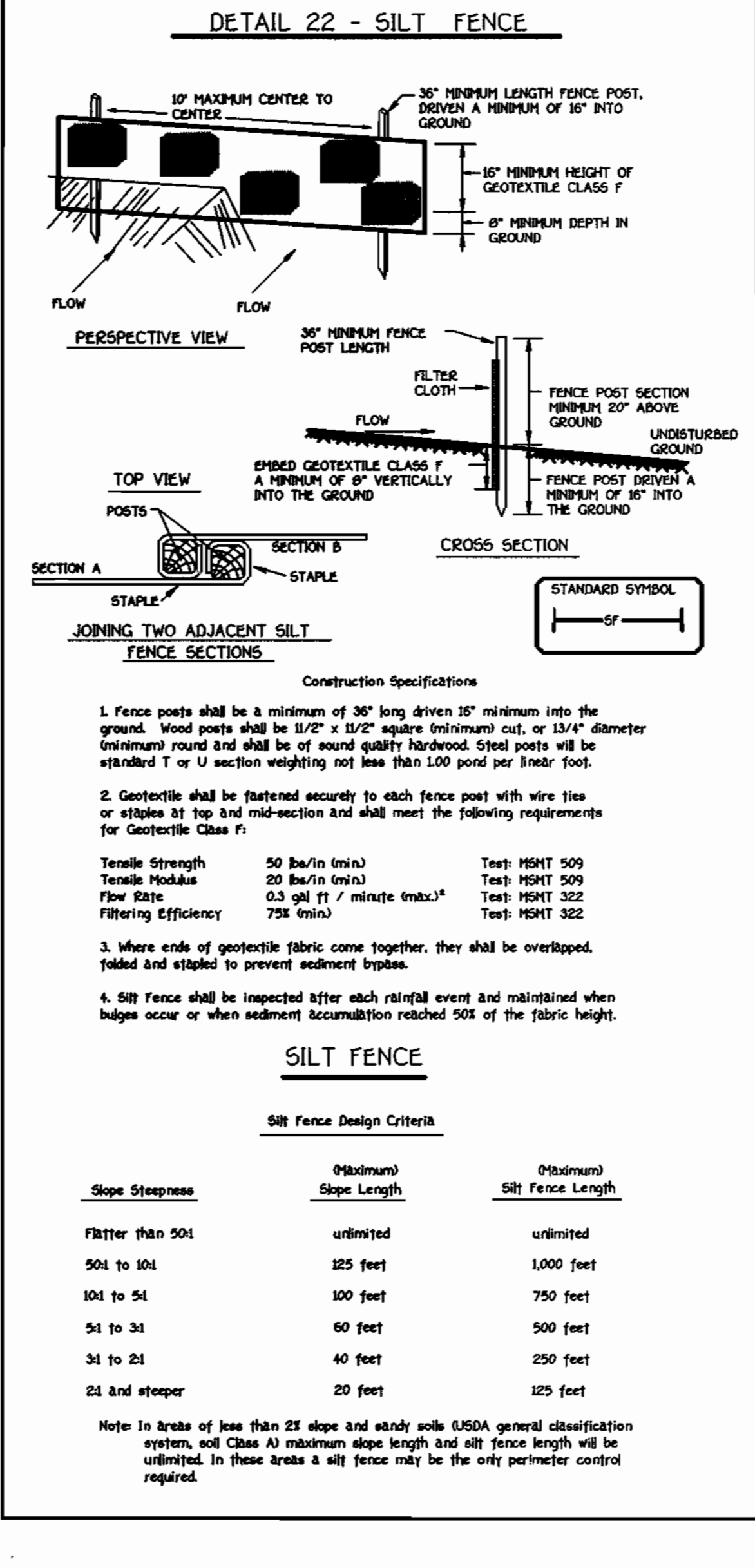
- ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:
- SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY ROLLING, DISING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
- SOIL AMENDMENTS: APPLY TWO TONS PER ACRE DOLOMITE LIMESTONE (92 LBS/1000 SQT) AND 600 LBS PER ACRE 0-20-20 FERTILIZER (50 LBS/1000 SQT) BEFORE SEEDING. APPLY 400 LBS PER ACRE 30-0-0 UREA/FORM FERTILIZER (9 LBS/1000 SQT) AND 500 LBS PER ACRE U.S. LBS./1000 SQT) OF 10-20-20 FERTILIZER.
- SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2 1/2 LBS./1000 SQT) OF KENTUCKY 31 TALL FESCUE, FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 100 LBS./ACRE (2 1/2 LBS./1000 SQT) OF KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1000 SQT) OF WEEPING LOVEGRASS DURING THE PERIOD OF OCTOBER 15 THROUGH FEBRUARY 28. PROJECT SITE BY OPTION ID - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING OPTION ID - USE SOIL OPTION ID - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEEDING.
- MULCHING: APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (6 GALL./1000 SQT) OF EMULSIFIED ASPHALT ON FLAT ACRES OR SLOPES @ FEET @ FEET @ FEET. USE 340 GALLONS PER ACRE (6 GALL./1000 SQT) FOR ANCHORING.
- MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NECESSARY REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RECONSTRUCTED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY ROLLING, DISING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (6 LBS./1000 SQT).
- SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH NOVEMBER 15, SEED WITH 1.5 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE) OR WEEPING LOVEGRASS (37 LBS./1000 SQT). FOR THE PERIOD NOVEMBER 15 THRU FEBRUARY 28, PROJECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOIL.
- MULCHING: APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (6 GALL./1000 SQT) OF EMULSIFIED ASPHALT ON FLAT ACRES OR SLOPES @ FEET @ FEET @ FEET. USE 340 GALLONS PER ACRE (6 GALL./1000 SQT) FOR ANCHORING.
- REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SECTION 21 :
STANDARD AND SPECIFICATIONS FOR TOPSOIL

- D. DEFINITION: PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
- E. PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
- F. SPECIFICATIONS:
1. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND.
2. TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS.
3. TOPSOIL SHALL CONTAIN LESS THAN 5% BY VOLUME OF CHALK, GRAVEL, STONKS, ROOTS, TWIGS, OR OTHER MATERIALS.
4. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 6" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". AVOID SURFACE IRREGULARITIES, SURFACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION.
5. TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDY, OR EXCESSIVELY WET CONDITIONS.
- G. APPLICATION:
Slope Steepness:
Filterer than 50:1: unlimited
50:1 to 10:1: 125 feet
10:1 to 5:1: 100 feet
5:1 to 3:1: 60 feet
3:1 to 2:1: 40 feet
2:1 and steeper: 20 feet
Note: In areas of less than 2% slope and stony soils (USDA general classification system, soil Class A) minimum slope length and silt fence length will be unlimited. In these areas a silt fence will be the only perimeter control required.



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

FISHER COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

STATE OF MARYLAND SEAL

DESIGNED BY: M.D.T. DRAWN BY: J.C.L. CHECKED BY: M.J.M. DATE: MAY 6, 1999


WATER MAIN PROFILES

VILLAGE GREEN - PHASE 3 GTWS WAVERLY WOODS SECTION 5 UNITS 1 THRU 49 AND BUILDINGS 'A' & 'B' CONTRACT NO. 44-3762-D THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 4 OF 4

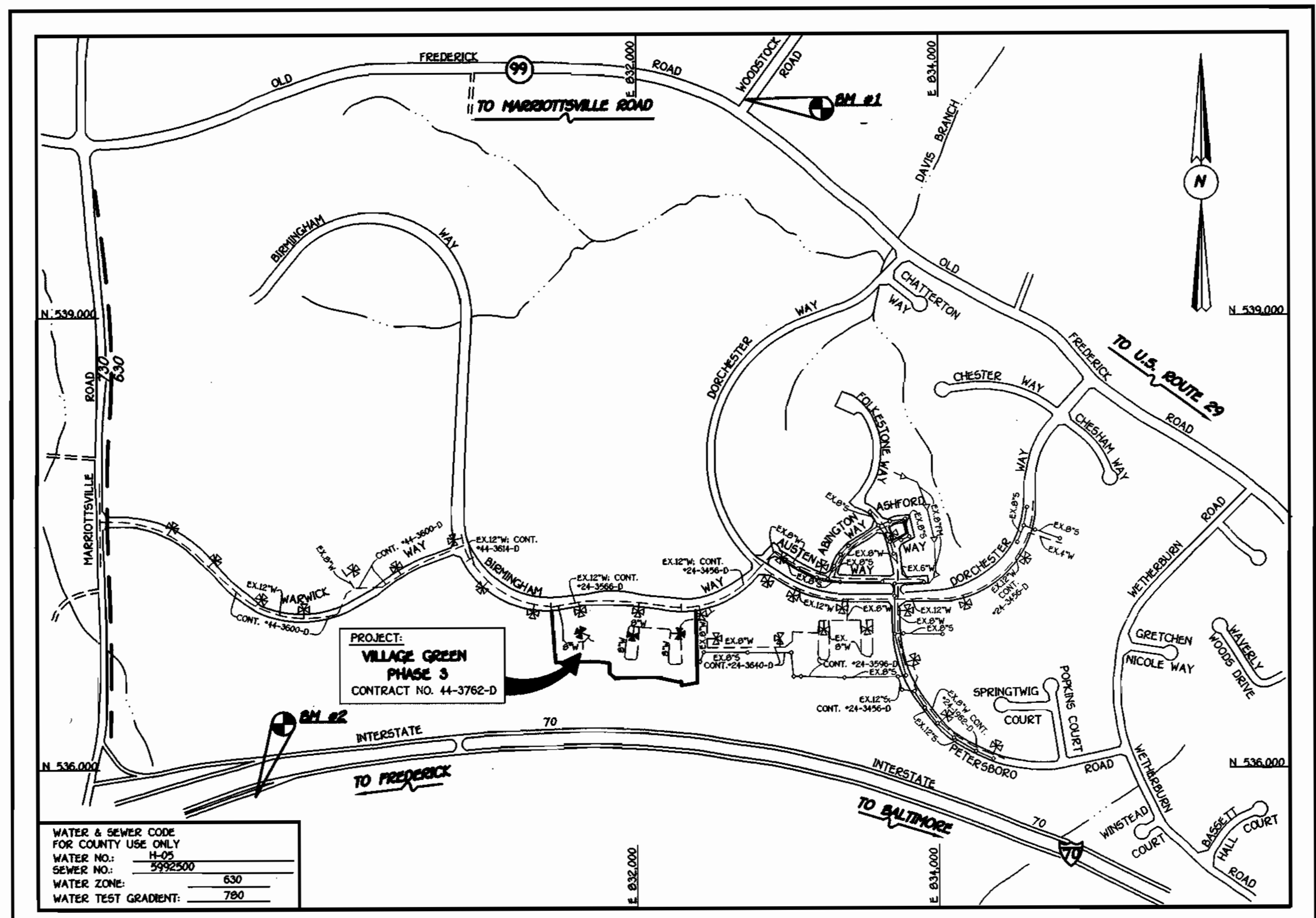
800' SCALE MAP NO. 16	BLOCK NO. 5
F.C.C. WORK ORDER NO. 40271	
FILE NAME: G:\0271\PHASES 3 & 4\WATSEW\PROFILES.DWG	

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM.
- 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 (99I AMENDMENTS) THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
- 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 MADE SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - STATE HIGHWAY ADMINISTRATION - 531-5533
 - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620
 - BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 787-9086
 - M&E UTILITY - 1-800-257-7777
 - COLONIAL PIPELINE CO. - 795-1390
 - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4900
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- 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 OF THE MAIN.
- 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.
- T.B. DENOTES TEST BORING.
- MANHOLES SHOWN WITH 12" AND 18" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATER-TIGHT FRAME AND COVERS, STANDARD DETAIL G.5.52.
- WHERE WATER-TIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- HOUSES WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- MANHOLES LOCATED WITHIN THE PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAMES AND COVERS, STANDARD DETAIL G.5.51.
- WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED AS TO HAVE ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- ALL WATER MAINS SHALL BE D.I.P., CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-1/2" COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED 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 ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (W111 AND W2.15). 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.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATIONS C-153; DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, @ (410) 313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.14(a) OF THE HOWARD COUNTY CODE.

QUANTITIES				
ITEM	ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	SUPPLIER
8" WATER	1,922.47 L.F.	1,919 L.F.	CL 52	U.S. PIPE & FOUNDRY
6" WATER	67.44 L.F.	68 L.F.	CL 52	"
FIRE HYDRANTS	3 EACH	3	BURY SYSTEM	MUELLER CO.
1" WATER	1,084.76 L.F.	1,207 L.F.	SOFT K COPPER	READING TUBE
8" x 8" TEE	3 EACH	3	M.U. DUCTILE	U.S. PIPE & FOUNDRY
8" x 6" TEE	4 EACH	4	"	"
8" VALVE	6 EACH	6	O.R. GATE	MUELLER CO.
6" VALVE	4 EACH	4	"	"
8"-1/8 H.B.	17 EACH	17	M.J. DUCTILE	U.S. PIPE & FOUNDRY
8"-1/16 H.B.	1 EACH	1	"	"
12" x 8" TAPPING SLEEVE & VALVE	2 EACH	2 SLEEVES	STEEL TAPPING	POWER SEAL
8" VALVE	2 EACH	2 VALVE	O.R. TAPPING	MUELLER CO.
8" PLUG & BUTTRESS	2 EACH	2	M.J. DUCTILE	U.S. PIPE & FOUNDRY
6" PLUG & BUTTRESS	1 EACH	1	"	"
8" SEWER	3 L.F.		"	"
8" PLUG	1 EACH		"	"

NAME OF UTILITY CONTRACTOR: _____
 SURVEY & DRAFTING DIVISION AS-BUILT DATE: _____



WATER & SEWER CODE FOR COUNTY USE ONLY

WATER NO.: H-05
 SEWER NO.: 5992500
 WATER ZONE: 630
 WATER TEST GRADIENT: 780

TYPE OF BUILDING: RESIDENTIAL (TOWNHOUSE & CONDOMINIUMS)
 NUMBER OF LOTS & PARCELS: 1 BUILDABLE
 NO. OF WATER HOUSE CONNECTIONS: 51
 NO. OF SEWER HOUSE CONNECTIONS: 0
 DRAINAGE AREA: PATAPSCO
 TREATMENT PLANT: PATAPSCO WASTEWATER TREATMENT PLANT VIA THE ROUTE 100 PUMPING STATION

THE PRIVATE 8" SEWER MAIN AND APPURTENANCES ARE TO BE CONSTRUCTED UNDER S0P 99-112.

VICINITY MAP

SCALE: 1"=600'

PLAN REFERENCE NUMBERS: S0P 99-112

BENCHMARK INFORMATION

B.M.-1 - HOWARD COUNTY MONUMENT NO. 3341002
 ELEV: 440.42; DESCRIPTION: CONC. MONUMENT @ SURFACE APPROX. 9' EAST OF EDGE OF RD. IN GRASS ISLAND IN PARKING LOT OF BETHANY LANE METHODIST CHURCH

B.M.-2 - HOWARD COUNTY MONUMENT NO. 3341001
 ELEV: 421.74; DESCRIPTION: CONC. MONUMENT 1.3' BELOW SURFACE 0.3' EAST OF EDGE OF RD. APPROX. 120' SOUTH OF C/D DRIVEWAY TO BETHANY LANE BAPTIST CHURCH

CONTRACT No. 44-3762-D

VILLAGE GREEN - PHASE 3

GTW'S WAVERLY WOODS
 SECTION 5

UNITS 1 THRU 49 AND BUILDINGS 'A' & 'B'
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND

CONTRACT NO. 44-3762-D
 VILLAGE GREEN - PHASE 3
 GTW'S WAVERLY WOODS
 SECTION 5
 UNITS 1 THRU 49 AND BUILDINGS 'A' & 'B'
 WATER AND SEWER MAIN EXTENSIONS
 HOWARD COUNTY, MARYLAND

DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

W. McCann for Land Design & Development 6/7/99
 SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATION

I HEREBY 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.

John R. Robertson 6/7/99
 SIGNATURE OF ENGINEER DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Cheryl Simmons 6/16/99
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Robertson 6/16/99
 APPROVED BY HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL & STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AS SHOWN ON S0P 99-112.

W. McCann for Land Design & Development 6/7/99
 SIGNATURE OF DEVELOPER DATE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

6-9-99
 DATE

DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY, MARYLAND

6/15/99
 DATE

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

1100 W. 205

STATE OF MARYLAND
 REGISTERED PROFESSIONAL ENGINEER
 TERRILL A. FISHER

DESIGNED BY: M.D.T.
 DRAWN BY: M.D.T.
 CHECKED BY: M.J.M.
 DATE: MAY 6, 1999

TITLE SHEET

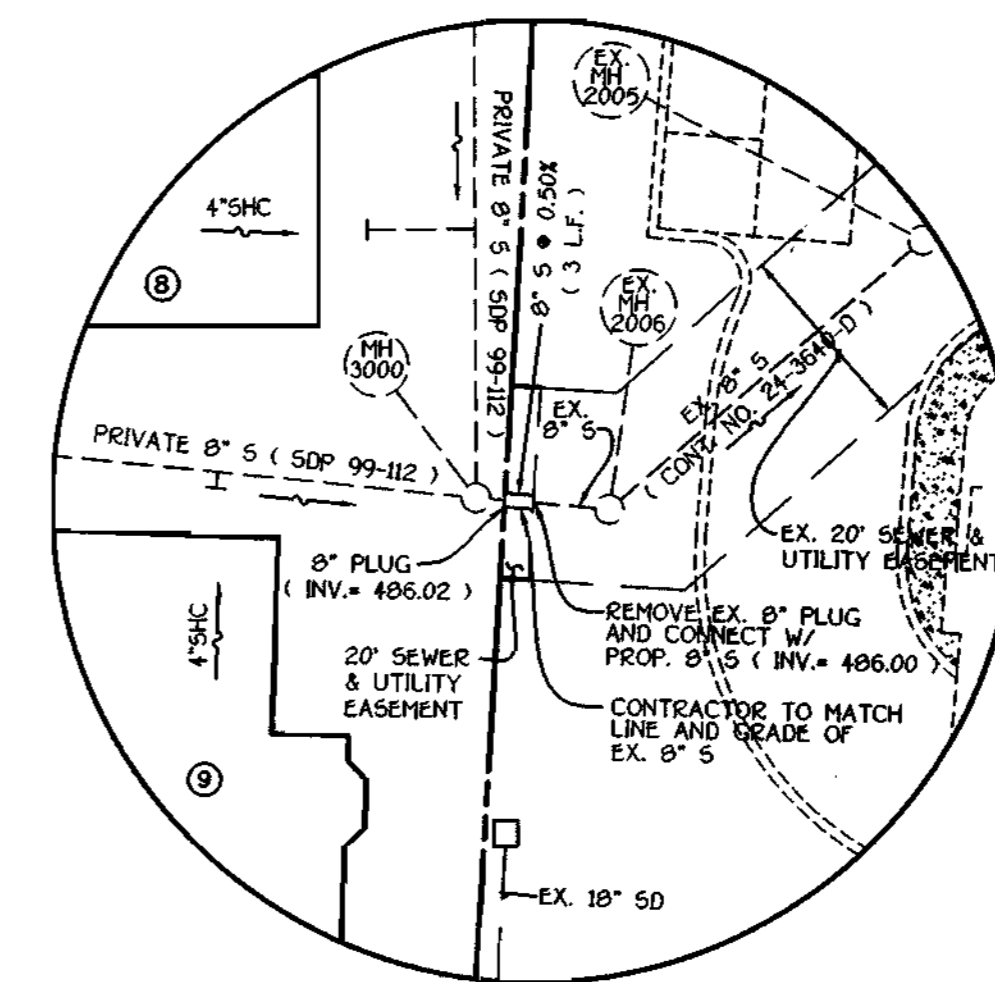
600' SCALE MAP NO. 16 BLOCK NO. 5
 F.C.C. WORK ORDER NO. 40271
 FILE NAME: G/40271/PHASE-3&4/WATSEW/TITLESHEET.DWG

VILLAGE GREEN - PHASE 3
 GTW'S WAVERLY WOODS
 SECTION 5
 UNITS 1 THRU 49 AND BUILDINGS 'A' & 'B'
 THIRD ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 1 OF 4

TURN BERRY WAY (EAST)					TURN BERRY WAY (WEST)						
W.H.C. LOC. @ T.H. UNIT	LOT #	DESCRIPTION & MEASURED DIST.	FT.	DESCRIPTION & MEASURED DIST.	FT.	W.H.C. LOC. @ T.H. UNIT	LOT #	DESCRIPTION & MEASURED DIST.	FT.	DESCRIPTION & MEASURED DIST.	FT.
	1	VALVE BOX @ W/L STA. 6140.81(E)	23	FINHD @ W/L STA. 6140.81(E)	70		24	VALVE BOX @ W/L STA. 6140.81(W)	54	VALVE BOX @ W/L STA. 1+31.20(W)	72
	2	MANHOLE 3012	72		71		25	FINHD @ W/L STA. 1+31.20(W)	71		79
	3		91		70		26		100	VALVE BOX @ W/L STA. 0103 (W)	123
	4		92		112		27		128		137
	5	MANHOLE 2006	126		112		28		137		162
	6		129	R/R CORNER OF INLET I-2	80		29	MANHOLE 3004	117	VALVE BOX @ W/L STA. 0203 (E)	174
	7		102	MANHOLE 3000	80		30		98	MANHOLE 3000	48
	8	MANHOLE 3001	32		89		31		95		39
	9		26		77		32	MANHOLE # 3	96	MANHOLE # 2	81
	10	MANHOLE 2006	100		86		33	MANHOLE # 4	23	MANHOLE # 2	89
	11	R/R CORNER INLET I-2	53	MANHOLE 3002	30		34	S/D MANHOLE	12	MANHOLE # 2	132
	12		85		23		35		23	MANHOLE # 2	137
	13		42	R/R CORNER OF INLET I-2	45		36	R/R CORNER OF INLET I-4	19	R/R CORNER OF INLET I-4	22
	14	L/R CORNER INLET I-2	28		50		37	L/R CORNER OF INLET I-4	15	L/R CORNER OF INLET I-4	18
	15		60	L/R CORNER OF INLET I-2	92		38	MANHOLE 3008	85	MANHOLE 3007	29
	16	MANHOLE 3003	52		28		39		77		2
	17		57		44		40		81		27
	18		89	MANHOLE 3004	105		41		85		47
	19	MANHOLE # 4	105		123		42		110	MANHOLE 3013	86
	20	FINHD @ W/L STA. 6149.81	132	VALVE BOX @ W/L STA. 7+97.74(E)	145		43		118		82
	21		86		139		44		165		81
	22		51		110		45		88		85
	23		45	VALVE BOX @ W/L STA. 6140.81(E)	39		46	MANHOLE 3014	24	VALVE BOX @ W/L STA. 1+21.30(W)	79
							47		83	VALVE BOX @ W/L STA. 1+34.20(W)	72
							48		77		74
							49		76	FINHD @ STA 811 IN BIRMINGHAM WAY	55

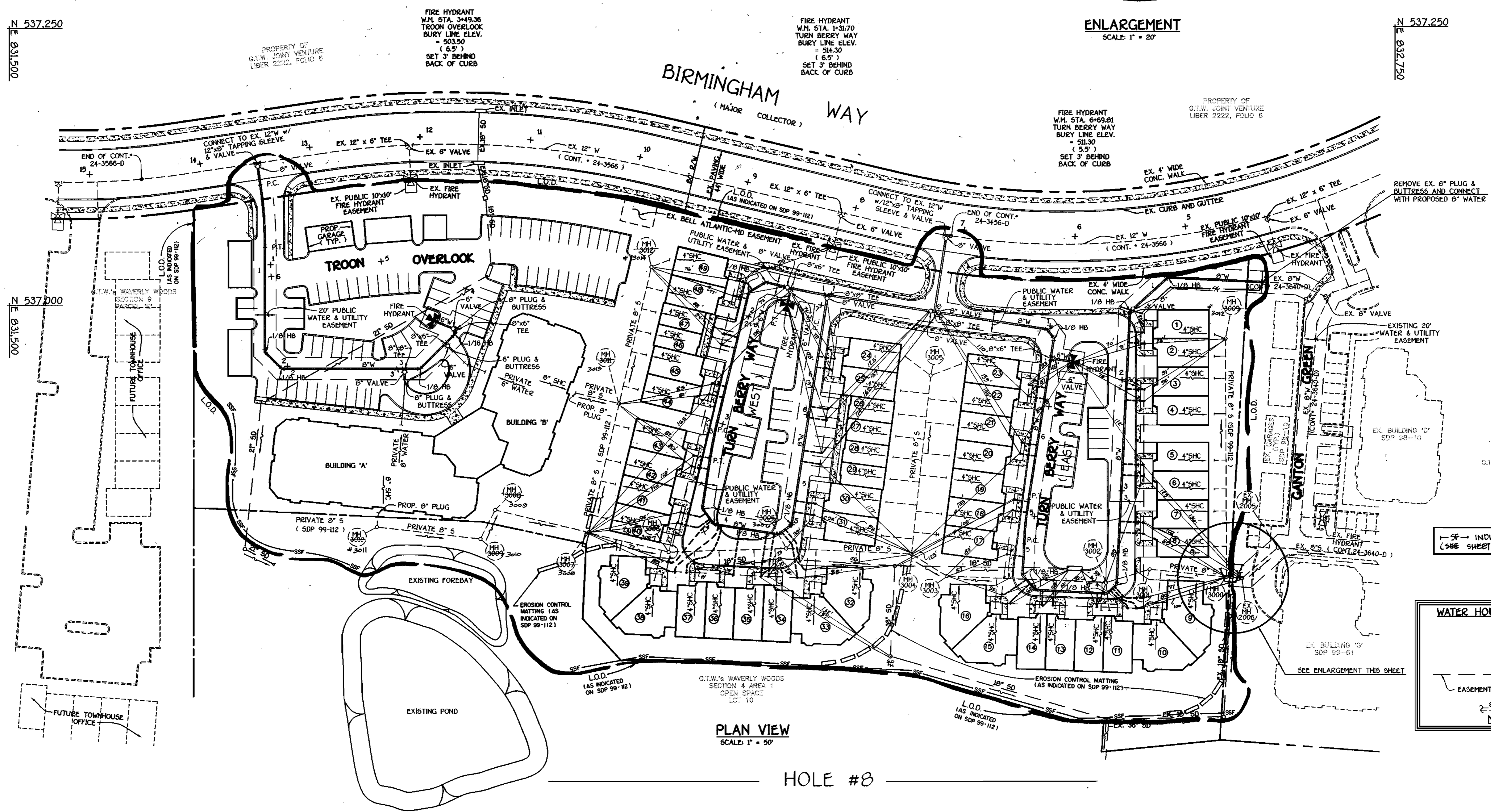
"AS BUILT" FIELD MEASUREMENTS FOR WATER ONLY



ENLARGEMENT
SCALE 1" = 20'

N 537.250
E 831.500

N 537.250
E 832.750



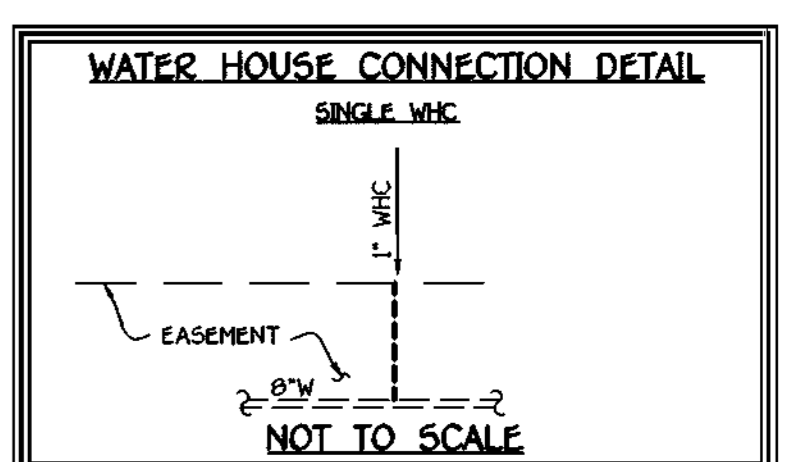
PLAN VIEW
SCALE 1" = 50'

HOLE #3

NOTE: CAST-IRON CURB SERVICE BOXES SHALL BE USED FOR THE WATER HOUSE CONNECTIONS FOR UNIT NOS. 3101, 1151, 1628-29, 3233, 36-39, & 46, 47 THE CURB SERVICE BOX RIM SHALL BE SET FLUSH W/ PROPOSED PAVING AND/OR PROPOSED DRIVEWAY ELEVATIONS.

NOTE:
--- L.O.D. DENOTES LIMIT OF DISTURBANCE
--- SSF DENOTES SUPER SILT FENCE

--- SF --- INDICATES SILT FENCE (SEE SHEET 4 FOR DETAILS)



CONTRACT NO. 44-3762-D
VILLAGE GREEN - PHASE 3
GTW'S WAVERLY WOODS
SECTION 5
UNITS 1 THRU 49 & BUILDINGS 'A' AND 'B'
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Chief, Bureau of Utilities 6-9-99 DATE	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND Chief, Development Engineering Division 6/15/99 DATE	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL FREE ELICOTT CITY, MARYLAND 21042 (410) 481-2202	STATE OF MARYLAND PROFESSIONAL REGISTERED ENGINEER TERRELL A. FISHER	DESIGNED BY: M.D.T. DRAWN BY: M.D.T. CHECKED BY: M.L.M. DATE: MAY 6, 1999	KOT 3. AS-BUILT CONDITIONS ADDED TO PLAN 1/25/00 KOT 2. AS-BUILT CONDITIONS ADDED TO PLAN 1/14/00 F.C.C. -- ADDRESS COUNTY COMMENTS PER D.E.D. LETTER OF MAY 27, 1999 6/3/99	WATER MAIN PLAN VIEW 600' SCALE MAP NO. 16 BLOCK NO. 5 F.C.C. WORK ORDER NO. 40271 FILE NAME: 40271PHASE3WATSEW.DWG	VILLAGE GREEN - PHASE 3 GTW'S WAVERLY WOODS SECTION 5 UNITS 1 THRU 49 & BUILDINGS 'A' AND 'B' HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 2 OF 4
				CONTRACT NO. 44-3762-D VILLAGE GREEN - PHASE 3 GTW'S WAVERLY WOODS SECTION 5 UNITS 1 THRU 49 & BUILDINGS 'A' AND 'B' WATER AND SEWER MAIN EXTENSIONS HOWARD COUNTY, MARYLAND				

SEWER HOUSE CONNECTION TABLE

LOT	INV. AT R	MIN. C
1	---	Ex.
2	---	Ex.
3	425.5	430.3
4	425.5	432.0

* MIN. C is minimum floor elevation of unit that can be served by proposed sanitary connection.

CONTRACT NO. 14 - 3792- D

WATER & SEWER MAIN EXTENSION

FLESHMAN PROPERTY SUBDIVISION

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

GENERAL NOTES

PART I

- Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the engineer at the contractor's expense.
- All horizontal controls are based on Maryland state coordinates (North American Datum of 1983 (NAD 83)).
- All vertical controls are based on U.S.G.S. data.
- All pipe elevations shown are invert elevations.
- Clear all utilities by a minimum of 12". Clear all poles by 2' - 0" minimum or tunnels as required. The owner has contracted 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 costs incurred by the owner for 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.
- For details not shown on the drawings and for materials and construction methods use Howard County Design Manual, Volume IV, Standard Specifications and Detail 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 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.
- Contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

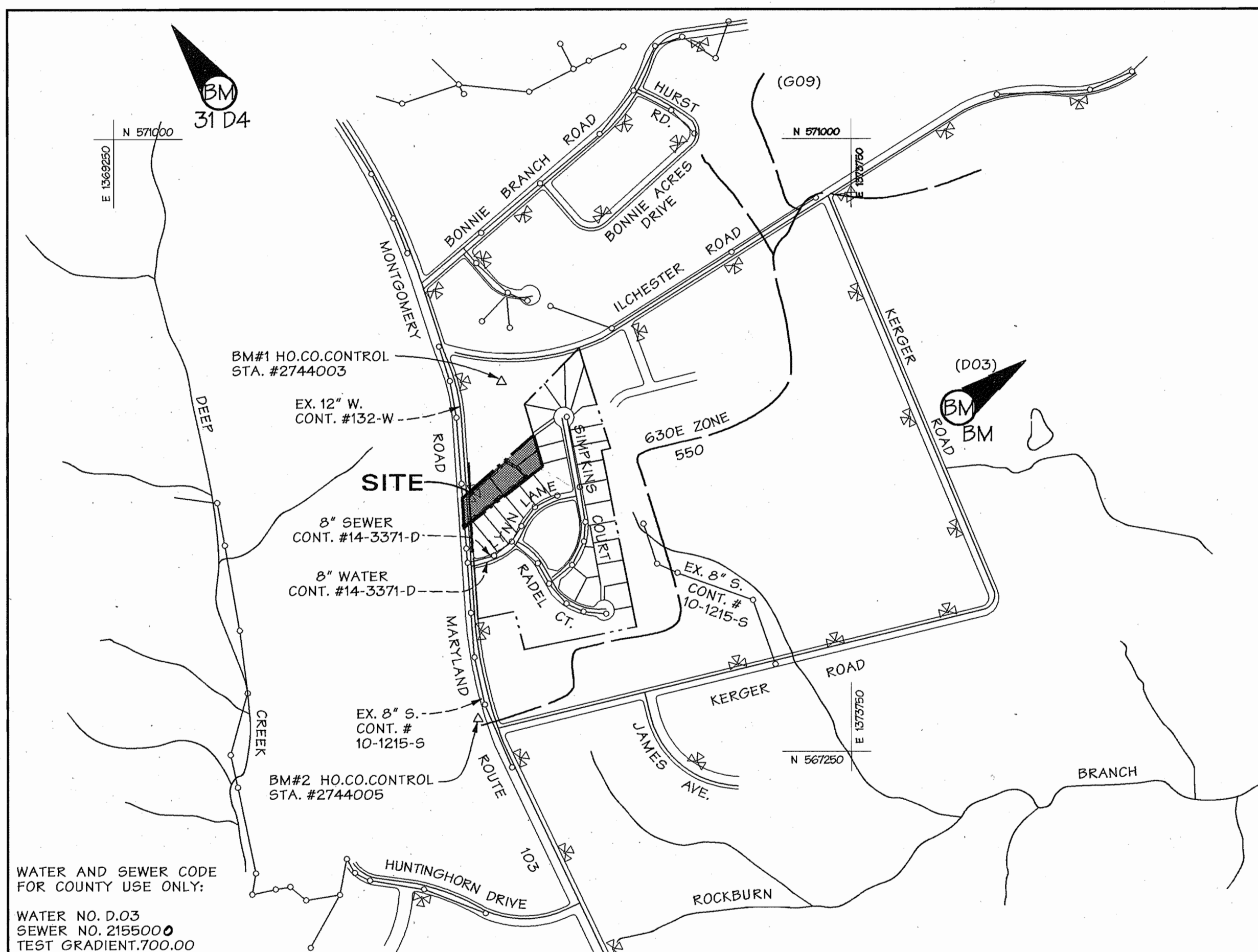
State Highway Administration	(410) 531-5533
B&E CO. Contractor Services	(410) 850-4620
B&E CO. Under Ground Damage Control	(410) 787-9068
Miss Utility	1-800-257-7777
Colonial Pipeline CO.	(410) 795-1330
Howard County Department of Public Works Bureau of Utilities	(410) 313-4900
- Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the contractor.
- 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) 313-2450 at least five working days before any open cut of any county road or boring/jacking operation in county roads 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

- All water main to be D.I.P. Class 52 unless otherwise noted.
- Tops of all water mains to have a minimum of 3-1/2' cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed 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 restrained and buttressed with concrete in accordance with standard details. 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.
- All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
- All WHC's to be 1" with 3/4" meter.

PART III - SEWER

- All sewer mains shall be DIP AND 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 covers standard detail G5.52. Where watertight manhole frame and cover is 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.



WATER AND SEWER CODE FOR COUNTY USE ONLY:
 WATER NO. D.03
 SEWER NO. 2155000
 TEST GRADIENT.700.00

TYPE OF BUILDING: RESIDENTIAL
 NUMBER OF LOTS: 4
 NO. OF WATER HOUSE CONNECTIONS: 4
 NO. OF SEWER HOUSE CONNECTIONS: 4
 DRAINAGE AREA: PATAPSCO

LOCATION MAP

SCALE: 1"=600'

QUANTITIES				
ITEM	QUANTITIES ESTIMATED	QUANTITIES	AS-BUILT	
			TYPE	MANUFACTURER/SUPPLIER
4" W.	341'	342 L.F.	D.I.P. CL. 52	U.S. PIPE/BELAIR RD. SUPPLY
12" X 4" TAPPING BLEEVE & VALVE	1	1 EACH	S.S. TAP	JCM/BELAIR RD. SUPPLY
4" V.	1	1 EACH	S.S. TAP	JCM/BELAIR RD. SUPPLY
4" 90° H.B.	1	1 EACH	45° BEND	JCM/BELAIR RD. SUPPLY
8" S.	489'	487 L.F.	PVC SDR 35	JMMFG/BELAIR RD. SUPPLY
4" S.	22'	35 L.F.	PVC SDR 35	JMMFG/BELAIR RD. SUPPLY
1" WHC	40'	48 L.F.	*K COPPER	READING/BELAIR RD. SUPPLY
4" DIA. MH	3	3 EACH	PRECAST	ATLANTIC CONC. PROD. INC.

NAME OF UTILITY CONTRACTOR: MARTIN CONST.
 SURVEY AND DRAFTING DIVISION AS-BUILT DATE: MAY 6, 2004

SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	WATER & SEWER - PLAN & PROFILE
3	SEDIMENT CONTROL DETAILS & SPECS.

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 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, DATED APRIL, 1994.

Signature: John W. Ramoche, S.E.
 DATE: 11/10/00

BENCHMARK DESCRIPTION

- Coordinates and Bearings shown on this plan are referred to the system of coordinates established in The Maryland Coordinate System - NAD 83 (1991), and are based on the following Geodetic Survey Control Stations, provided by the Howard County Department of Public Works:

DESIGNATION	NORTH (±FT)	EAST (±FT)	PID
31D4	57700.859	126926.291	N/A
31E4	56904.123	127495.395	N/A
- Elevations shown on this plan are referred to the North American Vertical Datum 1988 (NAVD 88) with local reference to the following National Spatial Reference System Benchmark, provided by the National Geodetic Survey:

DESIGNATION	ELEVATION (±FT)	PID
31D4	494.477	N/A

AS BUILT

DATE: MAY 6, 2004

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT.

Signature: John W. Ramoche, S.E.
 DATE: 12/26/00

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

Signature: J. H. Warfield
 DATE: 12/26/00

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND THESE PLANS. F. 99-192

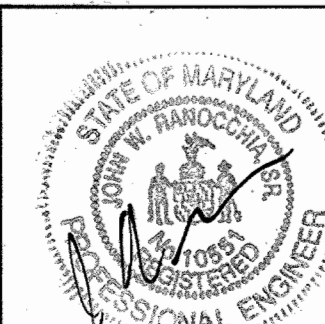
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Signature: Robert Berman
 DATE: 12-8-00
 CHIEF - BUREAU OF UTILITIES - DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

Signature: [Signature]
 DATE: 4/29/00
 CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

DMW
 Daft · McCune · Walker, Inc.
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 410 296 3333
 Fax 296 4705



DESIGN BY:	DATE:	BY	NO.	REVISION	DATE
OW					
OW					
CW	11/10/00				

DESIGNATION	ELEVATION (±FT)	PID
31D4	494.477	N/A

TITLE SHEET

FLESHMAN PROPERTY
 RESIDENTIAL SUBDIVISION
 1st ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

OWNER:
 BRUCE & ANITA FLESHMAN
 5329 MONTGOMERY ROAD
 ELLICOTT CITY, MD 21043

DEVELOPER:
 BRUCE & ANITA FLESHMAN
 5329 MONTGOMERY ROAD
 ELLICOTT CITY, MD 21043

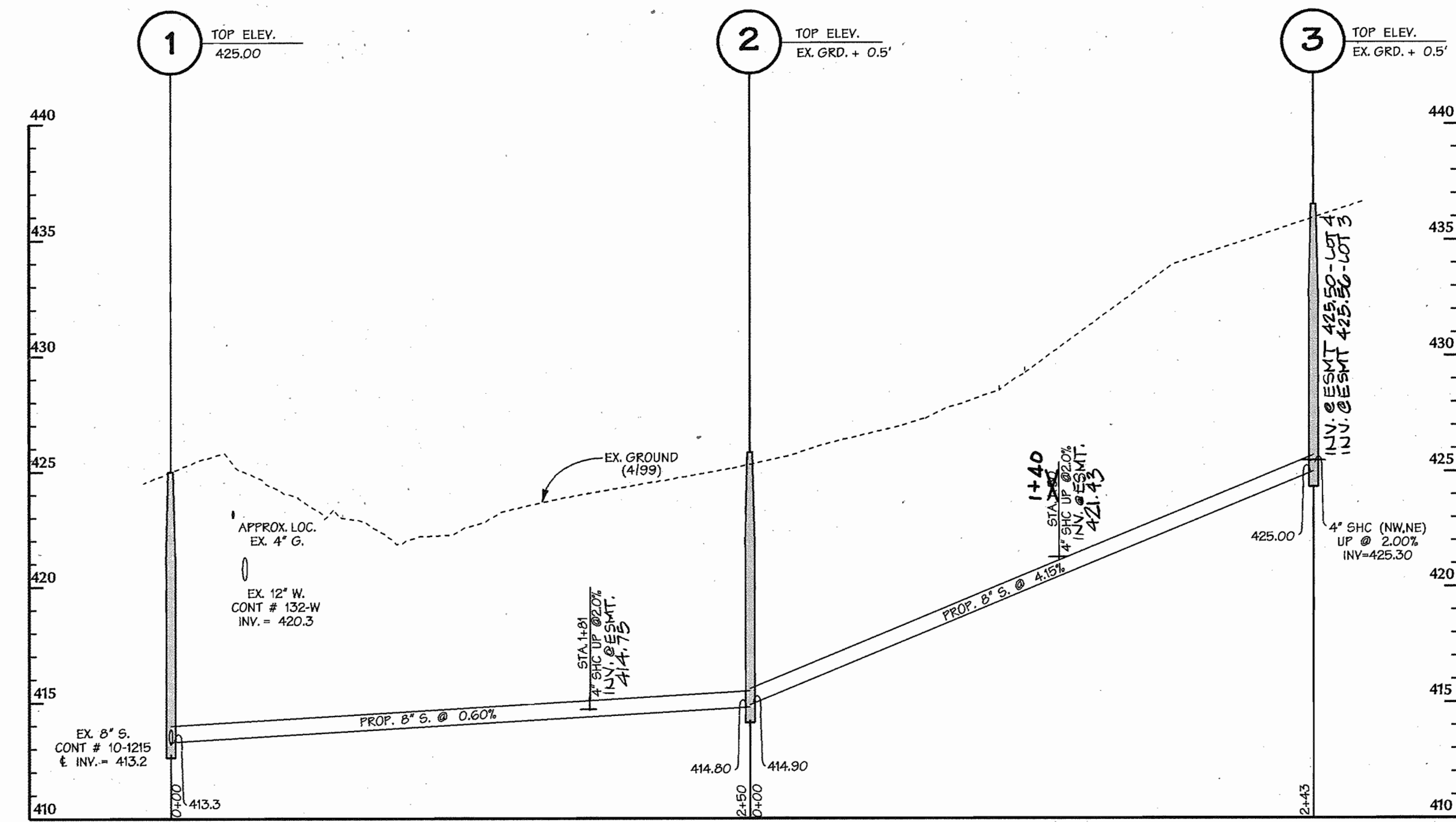
CONTRACT NO. 14-3792-D

600 SCALE MAP NO. 31 BLOCK NO. 20

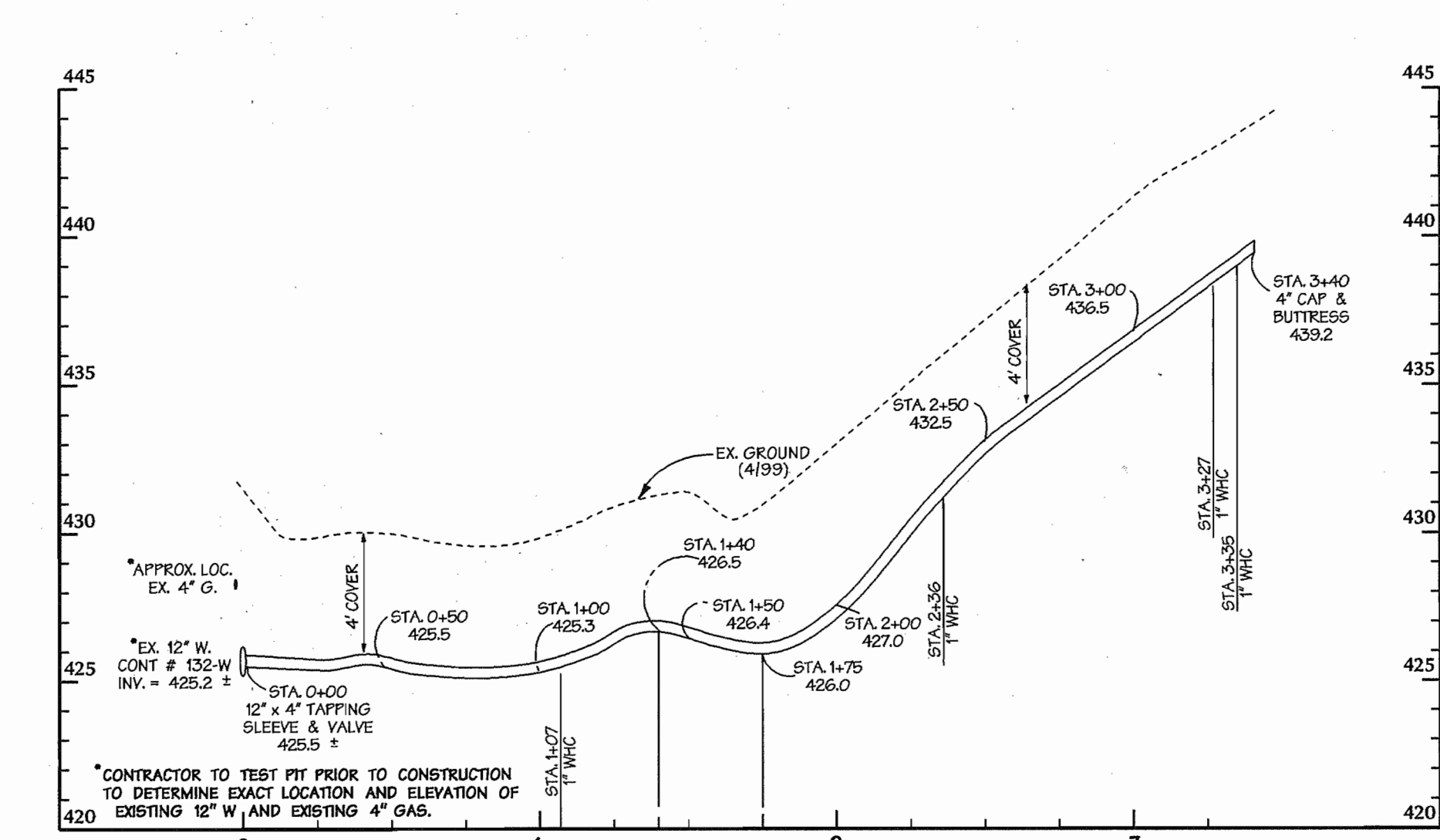
1" = 600'
 SHEET
 1 OF 3

WATER & SEWER STRUCTURE SCHEDULE			
ITEMS	COORDINATES		STATION
	NORTH	EAST	
12" x 4" TAPPING SLEEVE & VALVE	* 567,445.1	* 1,371,940.2	W.L. STA. 0+00
4" 1/8 BEND	567,445.920	1,371,963.450	W.L. STA. 0+15.7
4" CAP & BUTTRESS	567,661.746	1,372,206.746	W.L. STA. 3+40.9
4" DIA. PRECAST MANHOLE - 1	567,255.4	1,371,932.4	LOCATE OVER EXISTING SEWER
4" DIA. PRECAST MANHOLE - 2	567,410.192	1,372,128.369	
4" DIA. PRECAST MANHOLE - 3	567,564.999	1,372,324.771	

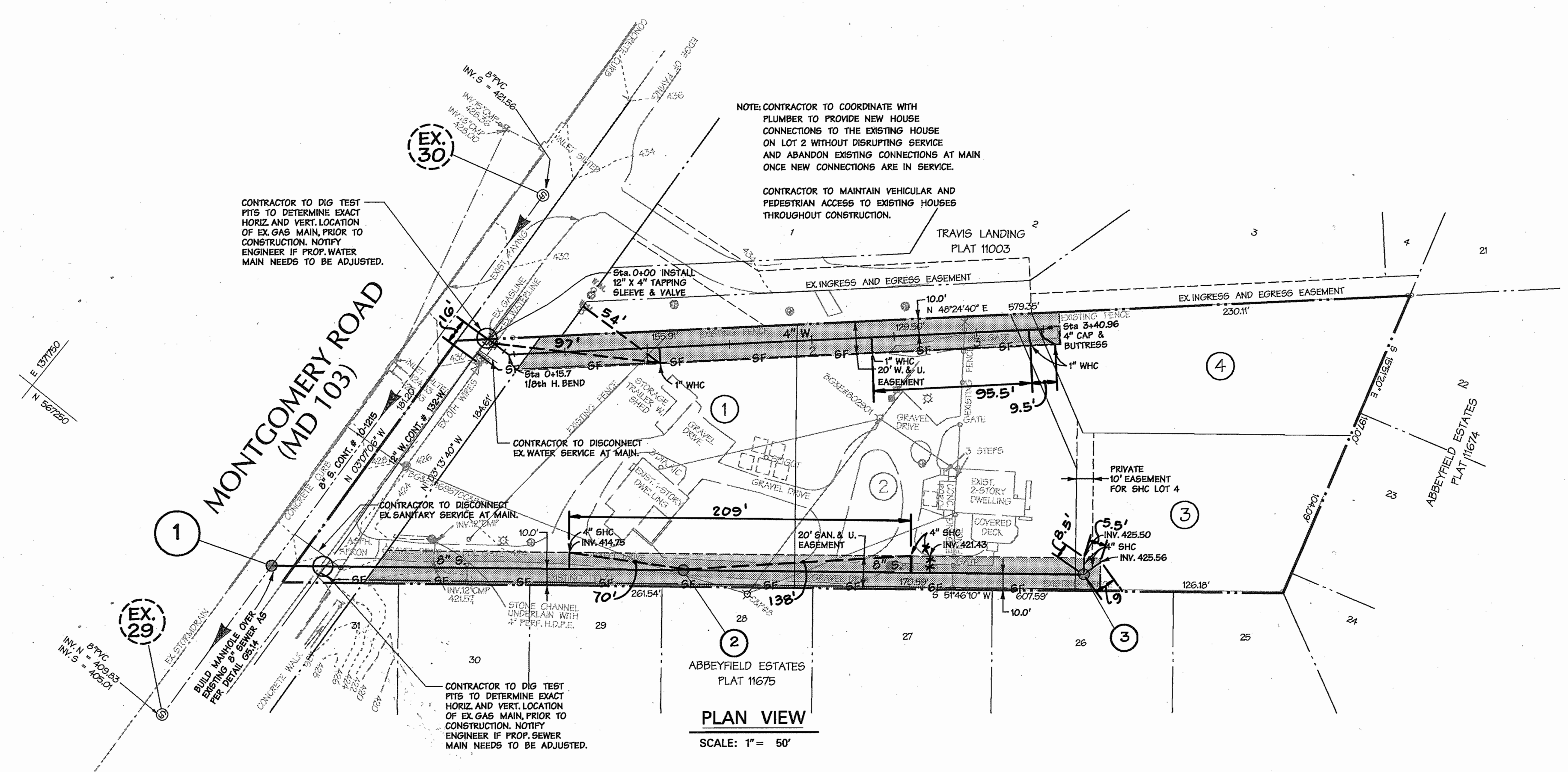
* CONTRACTOR TO TEST PIT PRIOR TO CONSTRUCTION TO DETERMINE EXACT LOCATION AND ELEVATION OF EXISTING 12" W AND EXISTING 4" GAS.



8" SANITARY SEWER PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



4" WATER MAIN PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



PLAN VIEW
SCALE: 1" = 50'

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE DATE _____

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

HOWARD S.C.D. DATE _____

AS BUILT
DATE: MAY 6, 2004

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 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, DATED APRIL, 1994.

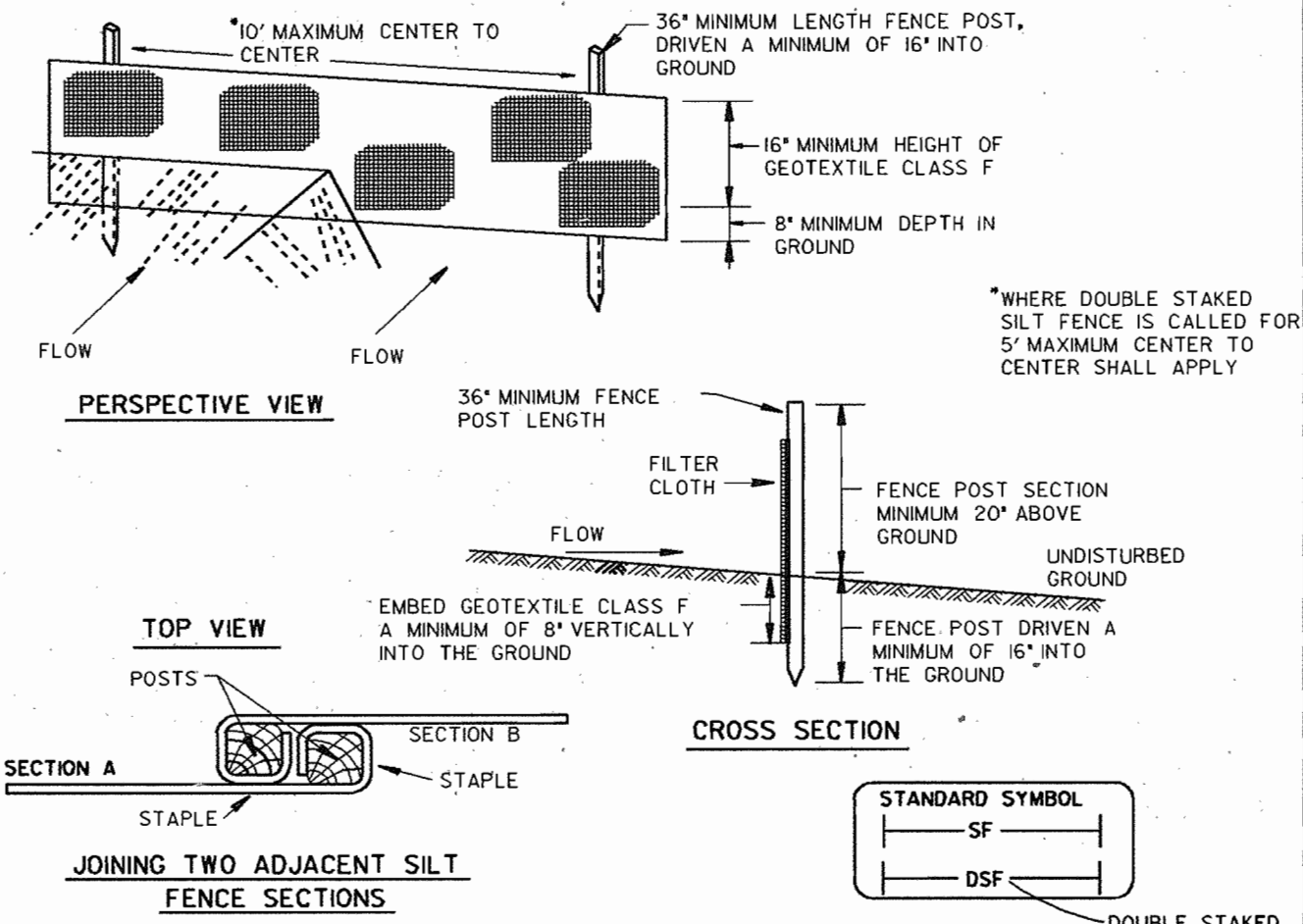
SIGNATURE

12/2/00
DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert M. Beiringer</i> 12-8-00 CHIEF - BUREAU OF UTILITIES - DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>[Signature]</i> CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE	DMW Daft · McCune · Walker, Inc. A Team of Land Planners, 200 East Pennsylvania Avenue Landscape Architects, Towson, Maryland 21286 Engineers, Surveyors & Environmental Professionals 410 296 3333 Fax 296 4705	DESIGN BY: CW DRAWN BY: CW CHECKED BY: CW DATE: 12/7/00	BY NO. _____ REVISION _____ DATE _____	600 SCALE MAP NO. 31 BLOCK NO. 20	FLESHMAN PROPERTY RESIDENTIAL SUBDIVISION 1st ELECTION DISTRICT, HOWARD COUNTY, MARYLAND DEVELOPER: BRUCE & ANITA FLESHMAN 5329 MONTGOMERY ROAD ELLICOTT CITY, MD 21043 CONTRACT NO. 14-3792-D	AS SHOWN SHEET 2 OF 3
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Thu Dec 5 16:59:37 2000 <http://www.dwg2000.com>

Thu Dec 5 16:59:37 2000 <http://www.dwg2000.com>



Construction Specifications

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1/2" x 1/2" square (minimum cut, or 3/4" 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 pound per linear foot.
- 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/ft/minute (max.)	Test: MSTM 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- 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 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

- 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 (93-1995).
- ALL VEGETATIVE 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.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1.
 - FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPPING SHOWS 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 SEEDINGS, SODS, TEMPORARY SEEDING AND MULCHING (SECTION C). 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 OR SITE	2.04 ACRES
AREA DISTURBED	0.35 ACRES
AREA TO BE ROOFED OR PAVED	0.0 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.35 ACRES
TOTAL CUT	0 CUBIC YARDS
TOTAL FILL	0 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION WASTE	N/A
- 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 CONTROLS 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 WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

Sequence of Construction

SEQUENCE	NUMBER OF DAYS
1. OBTAIN A GRADING PERMIT.	7
2. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE.	2
3. WHILE CONSTRUCTING UTILITIES THE LIMIT-OF-DISTURBANCE SHALL INCLUDE ONLY THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED IN ONE WORK DAY. ACCESS TO THE EXISTING HOUSES MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.	14
4. STABILIZE ALL AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS.	14
5. UPON APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES AND STABILIZE.	7

SILT FENCE NOT TO SCALE

Sediment Control General Notes

Topsoil Specifications

FOR SEDIMENT CONTROL /STABILIZATION PURPOSES

- 21.0 STANDARD 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 vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- Conditions Where Practice Applies
- This practice is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - 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.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
 - 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.

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

- Construction and Material Specifications
- Topsoil salvaged from the existing site may be used provided that it meets the standards set forth in these specifications. Topsoil that is 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, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if approved by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slags, coarse fragments, gravel sticks, roots, trash, and other materials larger 1 1/2 inch in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, tristle, 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 4-5 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 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

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 SOIL CONSERVATION DISTRICT.

Signature: *John W. Ramoche, Sr.*
DATE: 11/19/00

AS BUILT
DATE: MAY 6, 2004

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE DATE _____
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. DATE _____

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 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 PER ACRES DOLOMITIC LIMESTONE (92 LBS./1000 SQ.F.T.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.F.T.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.F.T.)
- ACCEPTABLE - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS./1000 SQ.F.T.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.F.T.) BEFORE SEEDING. HARROW OR DISK 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 (14 LBS./1000 SQ.F.T.) 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 (0.5 LBS./1000 SQ.F.T.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY OPTION (1) - 2 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 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.F.T.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATIONS USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.F.T.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.F.T.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDING.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING 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.F.T.)

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.F.T.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SQ.F.T.). FOR THE PERIOD NOVEMBER 16 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.F.T.) OF UNROTTED WOOD FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ.F.T.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FT. OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ.F.T.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

DUST CONTROL SPECIFICATIONS

TEMPORARY METHODS:

- MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
- VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
- TILLAGE - TO ROUGHEN SURFACE AND BRING CLOS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHESEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
- IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THE RUNOFF BEGINS TO FLOW.
- BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURGLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
- CALCIUM CHLORIDE - APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHODS:

- PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
- TOPSOILING - COVERING WITH LESS ERODIBLE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
- STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

TEMPORARY AND PERMANENT SEEDING NOTES

Dust Control Specifications

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

John W. Ramoche, Sr.
12-8-00
CHIEF - BUREAU OF UTILITIES - DATE

John W. Ramoche, Sr.
11/24/00
CHIEF - DEVELOPMENT ENGINEERING DIVISION - DATE

DMW
Daft · McCune · Walker, Inc.

A Team of Land Planners, 200 East Pennsylvania Avenue
Landscape Architects, Towson, Maryland 21286
Engineers, Surveyors & 410 296 3333
Environmental Professionals Fax 296 4705

STATE OF MARYLAND
PROFESSIONAL ENGINEER

DESIGN BY: CW
DRAWN BY: CW
CHECKED BY: CW
DATE: 10/18/00

Not To Scale

BY	NO.	REVISION	DATE

600 SCALE MAP NO. 31 BLOCK NO. 20

FLESHMAN PROPERTY
RESIDENTIAL SUBDIVISION
1 st ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

OWNER: BRUCE & ANITA FLESHMAN
5329 MONTGOMERY ROAD
ELLCOTT CITY, MD 21043

DEVELOPER: BRUCE & ANITA FLESHMAN
5329 MONTGOMERY ROAD
ELLCOTT CITY, MD 21043

CONTRACT NO. 14-3792-D

SCALE: AS SHOWN
SHEET: 3 OF 3