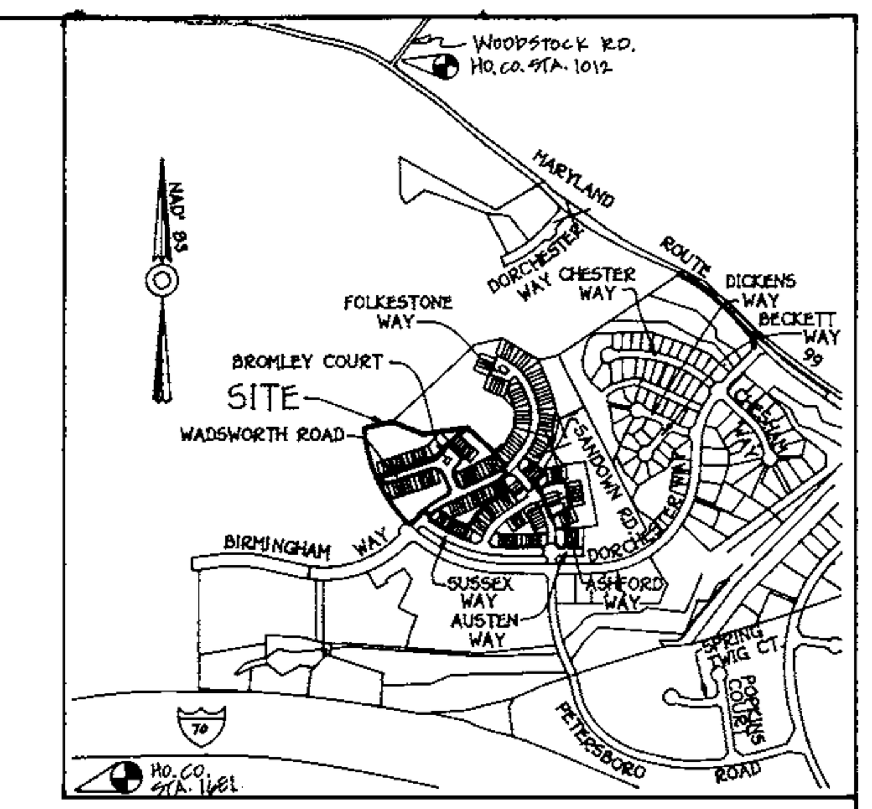
NOTE: HO. CO. CONTROL STATION 16E1 LOCATED AT THE INTERSECTION OF MARRIOTTSVILLE ROAD AND ROUTE 144 FREDERICK ROAD.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (10 DAYS)
2. NOTIFY MISS UTILITY 48 HOURS BEFORE BEGINNING WORK. (1-800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK (410-313-1870). (1 DAY)
3. REGRADE EXISTING SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON PLAN SHEETS AND INSTALL NEW E/S CONTROL DEVICES. INSTALL TEMPORARY SEEDING. (3 DAYS)
4. MASS GRADE SITE TO LIMITS OF DISTURBANCE. (10 DAYS)
5. CONSTRUCT BUILDINGS (365 DAYS)
6. FINE GRADE SITE, INSTALL PERMANENT SEEDING. (7 DAYS)
7. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY S/E CONTROL INSPECTOR. (7 DAYS)
8. INSTALL DRIVEWAYS, WALKWAYS AND LANDSCAPING.
9. REMOVE REMAINING SEDIMENT CONTROL DEVICES AS PERMISSION IS GRANTED BY E/S INSPECTOR.



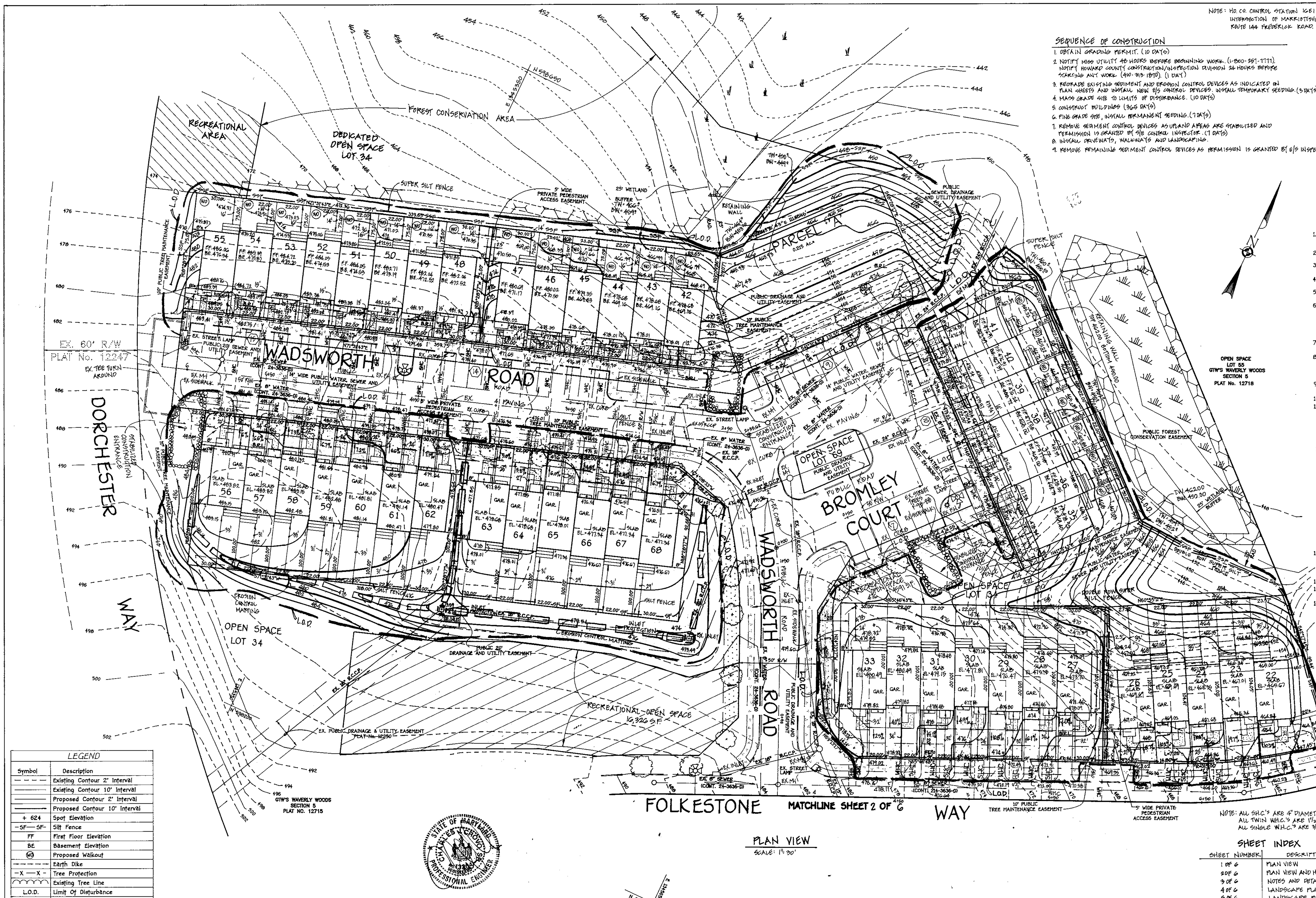
VICINITY MAP
SCALE: 1" = 1200'

GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE THE CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEASE (5) FIVE WORKING DAYS PRIOR TO THE START OF WORK.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEASE 48 HOURS PRIOR TO ANY EXCAVATION WORK.
3. THIS PROJECT IS SUBJECT TO HOWARD COUNTY FILES: S 94-07, P. 97-09, F 98-88, SDP 96-115
4. BOUNDARY SURVEY PERFORMED BY: FISHER COLLINS AND CARTER INC. ON OR ABOUT APRIL, 1996
5. TOPOGRAPHIC SURVEY SHOWN HEREON IS FROM APPROVED ROAD CONSTRUCTION PLANS F 98-88
6. HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS:

HOWARD COUNTY MONUMENT 1012	N 601060.177 E 1345336.7580	ELEV. = 445.577
HOWARD COUNTY MONUMENT 16E1	N 593250.9322 E 1340192.7110	ELEV. = 509.924

7. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
8. THIS PLAN IS FOR HOUSE SITING AND LOT GRADING ONLY. IMPROVEMENTS SHOWN WITHIN THE RIGHT-OF-WAYS OF THIS S.D.P. ARE NOT USED FOR CONSTRUCTION. FOR CONSTRUCTION SEE APPROVED ROAD CONSTRUCTION PLANS F-98-88 AND/OR APPROVED WATER AND SEWER PLANS CONTRACT NO. 24-3636-D
9. CONTRACTOR WILL CHECK SEWER HOUSE CONNECTION ELEVATION AT EASEMENT LINE PRIOR TO CONSTRUCTION.
10. STORMWATER MANAGEMENT OBLIGATIONS ARE FULFILLED UNDER F-98-88
11. OPEN DECKS ARE NOT CONSIDERED STRUCTURES FOR CALCULATING LOT COVERAGE ON SINGLE FAMILY ATTACHED DWELLINGS PER HOWARD COUNTY ZONING REGULATIONS SECTION 128.A(2).
12. SITE ANALYSIS DATA:
    - A. TOTAL PROJECT AREA: 4.31± AC.*
    - B. AREA OF PLAN SUBMISSION: 4.31± AC.*
    - C. LIMIT OF DISTURBED AREA: 4.31± AC.*
    - D. PRESENT ZONING: R-SA-8
    - E. PROPOSED USE FOR SITE AND STRUCTURES: SINGLE FAMILY ATTACHED D.U.
    - F. TOTAL NUMBER OF UNITS ALLOWED: 66
    - G. TOTAL NUMBER OF UNITS PROPOSED: 66
    - H. NUMBER OF PARKING SPACES REQUIRED: 132 (2 SPACES PER DWELLING UNIT)
    - I. NUMBER OF PARKING SPACES PROVIDED: 150
    - J. OPEN SPACE REQUIREMENTS ARE PROVIDED SEE F-96-128
    - K. RECREATIONAL OPEN SPACE REQUIREMENTS ARE PROVIDED (250 S.F. PER D.U.) PROVIDED 20,917 SF. 66 D.U. * 250 PER D.U. = 16,500 S.F.
13. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISION OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE GRADING PERMIT IN THE AMOUNT OF $22,500.
14. ALL DWELLING UNITS ARE WALK OUT CONDITIONS UNLESS NOTED OTHERWISE
15. GARAGES SHALL BE USED FOR PARKING PURPOSE ONLY IN ACCORDANCE WITH SECTION 133.D.2.a. OF THE HOWARD COUNTY ZONING REGULATIONS.
16. TYPICAL DRIVEWAY APRON DETAIL FOR ALL GARAGE UNITS TO BE HOWARD COUNTY CLOSED SECTION DETAIL. SEE SHEET 3 OF 6 FOR SPECIFICATIONS.



PLAN VIEW
SCALE: 1"=30'

NOTE: ALL S.H.C.'S ARE 4" DIAMETER.
ALL TWIN W.H.C.'S ARE 1½" DIAMETER.
ALL SINGLE W.H.C.'S ARE 3/4" DIAMETER.

PARKING ANALYSIS

1. PARKING SPACES REQUIRED:
   2 PARKING SPACES PER DWELLING UNIT
   (2×66 = 132)
2. PARKING SPACES PROVIDED:
   GARAGE UNITS (41) = 82 PARKING SPACES
   ONE CAR PARKED IN GARAGE
   ONE CAR PARKED IN DRIVEWAY

PARKING SPACES PROVIDED:
GARAGE UNITS: 82
SPACES IN R/W: 68
TOTAL SPACES: 150

SHEET INDEX

SHEET NUMBER	DESCRIPTION
1 OF 6	PLAN VIEW
2 OF 6	PLAN VIEW AND HOUSE DETAILS
3 OF 6	NOTES AND DETAILS
4 OF 6	LANDSCAPE PLAN
5 OF 6	LANDSCAPE PLAN
6 OF 6	RETAINING WALL DETAILS

LEGEND

Symbol	Description
– – – –	Existing Contour 2' Interval
———	Existing Contour 10' Interval
———	Proposed Contour 2' Interval
———	Proposed Contour 10' Interval
+ 624	Spot Elevation
–SF—SF–	Silt Fence
FF	First Floor Elevation
BE	Basement Elevation
WO	Proposed Walkout
–·–·–·–	Earth Dike
–X —X –	Tree Protection
⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree
	EROSION CONTROL MATTING

STATE OF MARYLAND
CHARLES V. CROVO, JR.
No. 13204
REGISTERED
PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.#40311 SDP

ENGINEER'S CERTIFICATE

"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."

[illegible] 2/5/99
Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE

"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."

Wayne Flack 6·7·99
Signature of Developer (Print name below signature) Date

Reviewed for HOWARD SCD and meets Technical Requirements.

Cheryl Simmons 6/15/99
U.S.D.A.-Natural Resources Conservation Service Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

[illegible] 6/15/99
Howard SCD Date

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER
N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[illegible] 6/30/99
Director - Department of Planning and Zoning Date

Cindy Hamilton 6/30/99
Chief, Division of Land Development Date

[illegible] 6/30/99
Chief, Development Engineering Division Date

SUBDIVISION				SECTION/AREA		LOT NO.
GTW'S WAVERLY WOODS				6		1-4, 6-33, 35-68
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.	
13512, 13515-13517	6	R-SA	16	THIRD	6030	
WATER CODE			SEWER CODE			
H-05			5993000			

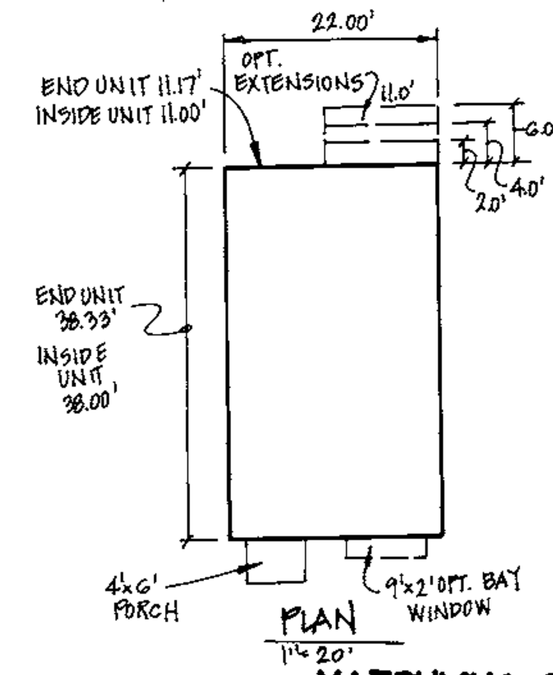
SITE DEVELOPMENT PLAN

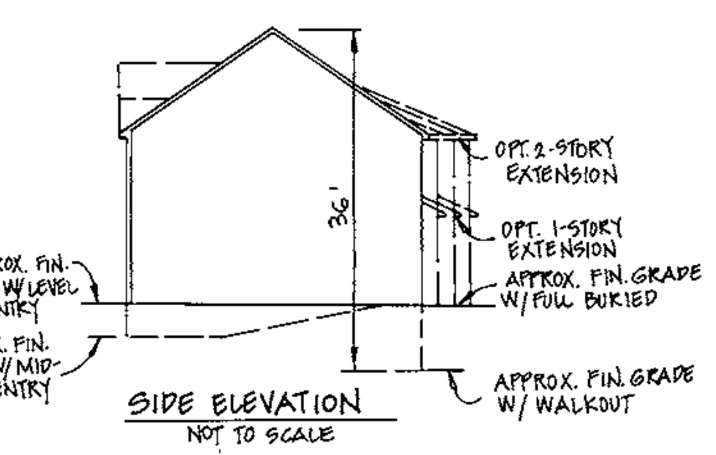
GTW'S WAVERLY WOODS
SECTION 6

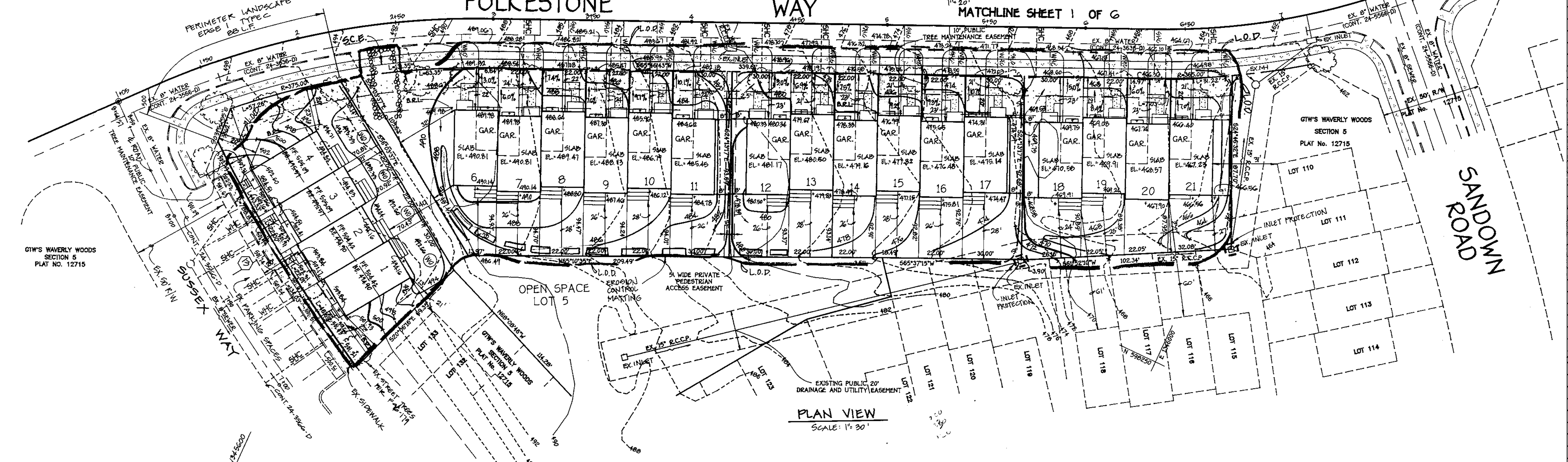
LOTS 1-4, 6-33, 35-68

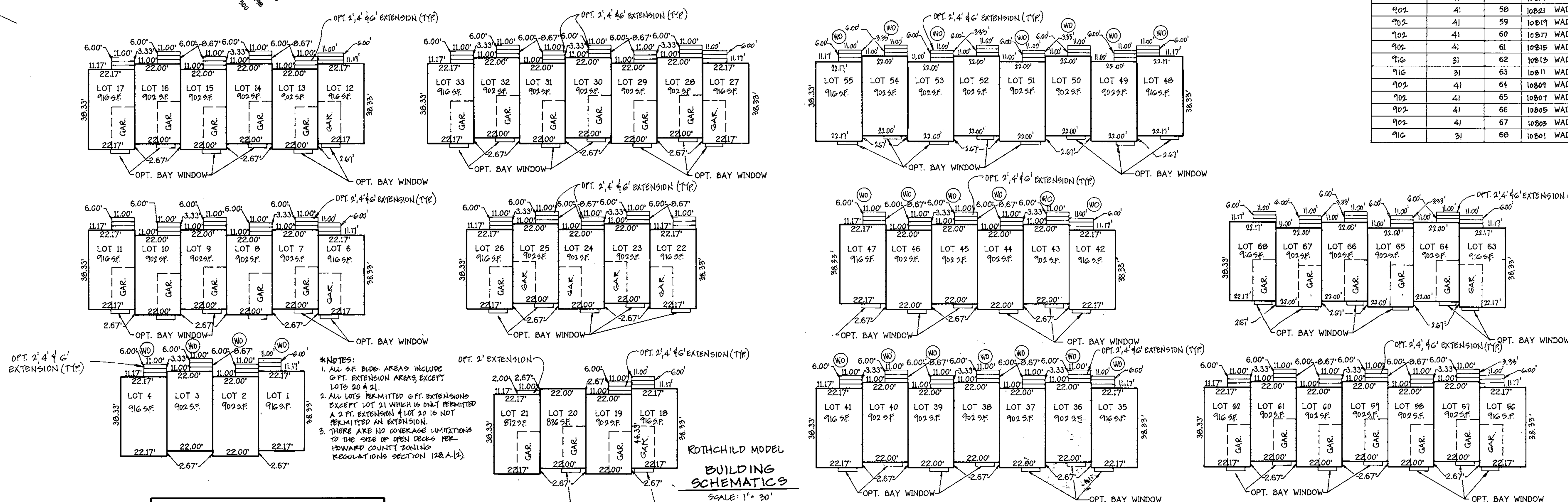
TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE:
SHEET 1 OF 6

S.D.P. 99-90









*NOTES:
1. ALL S.F. BLDG. AREAS INCLUDE 6 FT. EXTENSION AREAS, EXCEPT LOTS 20 & 21.
2. ALL LOTS PERMITTED 6 FT. EXTENSIONS EXCEPT LOT 21 WHICH IS ONLY PERMITTED A 2 FT. EXTENSION & LOT 20 IS NOT PERMITTED AN EXTENSION.
3. THERE ARE NO COVERAGE LIMITATIONS TO THE SIZE OF OPEN DECKS PER HOWARD COUNTY ZONING REGULATIONS SECTION 128.A.(2).

LOT INFORMATION

DWELLING UNIT SIZE (S.F.)	% OF COVERAGE	UNIT NUMBER	STREET ADDRESS	MIN. CELLAR ELEV.	INV. ELEV @ PROPERTY LINE (S.H.C.)	LOT SIZE
916	34	1	2242 SUSSEX WAY	494.7'	490.53'	2,661 Sq. Ft.±
902	58	2	2244 SUSSEX WAY	494.9'	490.80'	1,556 Sq. Ft.±
902	58	3	2246 SUSSEX WAY	495.1'	490.96'	1,560 Sq. Ft.±
916	28	4	2248 SUSSEX WAY	495.4'	491.29'	3,300 Sq. Ft.±
916	23	6	10708 FOLKSTONE WAY	479.0'	474.59'	4,013 Sq. Ft.±
902	43	7	10710 FOLKSTONE WAY	478.4'	473.94'	2,086 Sq. Ft.±
902	43	8	10712 FOLKSTONE WAY	478.0'	473.56'	2,081 Sq. Ft.±
902	43	9	10714 FOLKSTONE WAY	476.0'	472.49'	2,076 Sq. Ft.±
902	43	10	10716 FOLKSTONE WAY	471.6'	467.10'	2,071 Sq. Ft.±
916	32	11	10718 FOLKSTONE WAY	470.0'	465.52'	2,816 Sq. Ft.±
916	33	12	10720 FOLKSTONE WAY	468.5'	464.00'	2,806 Sq. Ft.±
902	34	13	10722 FOLKSTONE WAY	466.8'	462.37'	2,052 Sq. Ft.±
902	44	14	10724 FOLKSTONE WAY	466.1'	461.69'	2,047 Sq. Ft.±
902	44	15	10726 FOLKSTONE WAY	464.5'	460.01'	2,043 Sq. Ft.±
902	44	16	10728 FOLKSTONE WAY	463.8'	459.38'	2,041 Sq. Ft.±
916	34	17	10730 FOLKSTONE WAY	461.9'	457.49'	2,782 Sq. Ft.±
916	33	18	10732 FOLKSTONE WAY	459.8'	456.33'	2,757 Sq. Ft.±
902	45	19	10734 FOLKSTONE WAY	457.6'	454.45'	1,983 Sq. Ft.±
836	43	20	10736 FOLKSTONE WAY	456.9'	453.44'	1,950 Sq. Ft.±
872	32	21	10738 FOLKSTONE WAY	455.2'	451.66'	2,767 Sq. Ft.±
916	25	22	10743 FOLKESTONE WAY	454.1'	450.57'	3,604 Sq. Ft.±
902	39	23	10741 FOLKESTONE WAY	454.4'	450.91'	2,302 Sq. Ft.±
902	39	24	10739 FOLKESTONE WAY	455.3'	451.78'	2,306 Sq. Ft.±
902	40	25	10737 FOLKSTONE WAY	457.0'	453.64'	2,278 Sq. Ft.±
916	29	26	10735 FOLKSTONE WAY	457.9'	454.59'	3,157 Sq. Ft.±
916	31	27	10733 FOLKSTONE WAY	461.3'	456.84'	3,000 Sq. Ft.±
902	41	28	10731 FOLKSTONE WAY	460.9'	457.58'	2,200 Sq. Ft.±
902	41	29	10729 FOLKSTONE WAY	462.6'	459.13'	2,200 Sq. Ft.±
902	41	30	10727 FOLKSTONE WAY	464.5'	460.05'	2,200 Sq. Ft.±
902	41	31	10725 FOLKSTONE WAY	466.1'	461.67'	2,200 Sq. Ft.±
902	41	32	10723 FOLKSTONE WAY	466.8'	462.36'	2,200 Sq. Ft.±
916	31	33	10721 FOLKSTONE WAY	468.5'	464.04'	2,950 Sq. Ft.±
916	38	35	2200 BROMLEY COURT	464.4'	460.32'	2,430 Sq. Ft.±
902	51	36	2202 BROMLEY COURT	464.0'	459.92'	1,782 Sq. Ft.±
902	51	37	2204 BROMLEY COURT	463.9'	459.83'	1,782 Sq. Ft.±
902	51	38	2206 BROMLEY COURT	463.7'	459.02'	1,782 Sq. Ft.±
902	51	39	2208 BROMLEY COURT	463.6'	459.51'	1,782 Sq. Ft.±
902	51	40	2210 BROMLEY COURT	463.3'	459.29'	1,782 Sq. Ft.±
916	38	41	2212 BROMLEY COURT	463.2'	459.11'	2,430 Sq. Ft.±
916	37	42	10800 WADSWORTH ROAD	465.3'	460.82'	2,498 Sq. Ft.±
902	55	43	10802 WADSWORTH ROAD	466.5'	462.02'	1,650 Sq. Ft.±
902	55	44	10804 WADSWORTH ROAD	466.7'	462.21'	1,650 Sq. Ft.±
902	55	45	10806 WADSWORTH ROAD	467.5'	463.05'	1,650 Sq. Ft.±
902	55	46	10808 WADSWORTH ROAD	467.7'	463.27'	1,650 Sq. Ft.±
916	41	47	10810 WADSWORTH ROAD	468.7'	464.25'	2,250 Sq. Ft.±
916	41	48	10812 WADSWORTH ROAD	469.0'	464.54'	2,250 Sq. Ft.±
902	55	49	10814 WADSWORTH ROAD	469.9'	465.45'	1,650 Sq. Ft.±
902	55	50	10816 WADSWORTH ROAD	470.4'	465.98'	1,650 Sq. Ft.±
902	55	51	10818 WADSWORTH ROAD	470.8'	466.39'	1,650 Sq. Ft.±
902	55	52	10820 WADSWORTH ROAD	471.5'	467.08'	1,650 Sq. Ft.±
902	55	53	10822 WADWORTH ROAD	471.9'	467.49'	1,650 Sq. Ft.±
902	55	54	10824 WADSWORTH ROAD	472.6'	468.16'	1,650 Sq. Ft.±
916	41	55	10826 WADSWORTH ROAD	472.9'	468.41'	2,250 Sq. Ft.±
916	31	56	10825 WADSWORTH ROAD	472.5'	468.09'	3,000 Sq. Ft.±
902	41	57	10823 WADSWORTH ROAD	471.8'	467.39'	2,200 Sq. Ft.±
902	41	58	10821 WADSWORTH ROAD	471.6'	467.15'	2,200 Sq. Ft.±
902	41	59	10819 WADSWORTH ROAD	470.7'	466.29'	2,200 Sq. Ft.±
902	41	60	10817 WADSWORTH ROAD	470.6'	466.10'	2,200 Sq. Ft.±
902	41	61	10815 WADWORTH ROAD	469.8'	465.38'	2,200 Sq. Ft.±
916	31	62	10813 WADSWORTH ROAD	469.4'	464.97'	3,000 Sq. Ft.±
916	31	63	10811 WADSWORTH ROAD	468.3'	463.84'	3,000 Sq. Ft.±
902	41	64	10809 WADSWORTH ROAD	468.1'	463.60'	2,200 Sq. Ft.±
902	41	65	10807 WADSWORTH ROAD	467.2'	462.78'	2,200 Sq. Ft.±
902	41	66	10805 WADSWORTH ROAD	466.9'	462.45'	2,200 Sq. Ft.±
902	41	67	10803 WADSWORTH ROAD	466.3'	461.85'	2,200 Sq. Ft.±
916	31	68	10801 WADSWORTH ROAD	465.5'	461.31'	2,961 Sq. Ft.±

LEGEND

Symbol	Description
———	Existing Contour 2' Interval
———	Existing Contour 10' Interval
———	Proposed Contour 2' Interval
———	Proposed Contour 10' Interval
+ 624	Spot Elevation
—SF—SF—	Silt Fence
FF	First Floor Elevation
BE	Basement Elevation
WO	Proposed Walkout
— — —	Earth Dike
—X —X —	Tree Protection
⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.#40311 SDP2.DWG

ENGINEER'S CERTIFICATE

"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."

[illegible] 2/5/99
Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE

"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."

Wayne Flack 6-7-99
Signature of Developer (Print name below signature) Date

Reviewed for HOWARD SCD and meets Technical Requirements.
Cheryl Simmons 6/15/99
U.S.D.A.-Natural Resources Conservation Service Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
[illegible] 6/15/99
Howard SCD Date

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER
N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamilton 6/30/99
Chief, Division of Land Development Date
[illegible] 6/30/99
Chief, Development Engineering Division Date
[illegible] 6/30/99
Director - Department of Planning and Zoning Date

PROJECT		SECTION/AREA		LOT NO.	
GTW'S WAVERLY WOODS		6		1-4, 6-33, 35-68	
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
13512, 13515 - 13517	6	R-SA	16	THIRD	6030
WATER CODE		SEWER CODE			
H-05		5993000			

STATE OF MARYLAND
CHARLES J. CROVO
No. 13204
REGISTERED
PROFESSIONAL ENGINEER

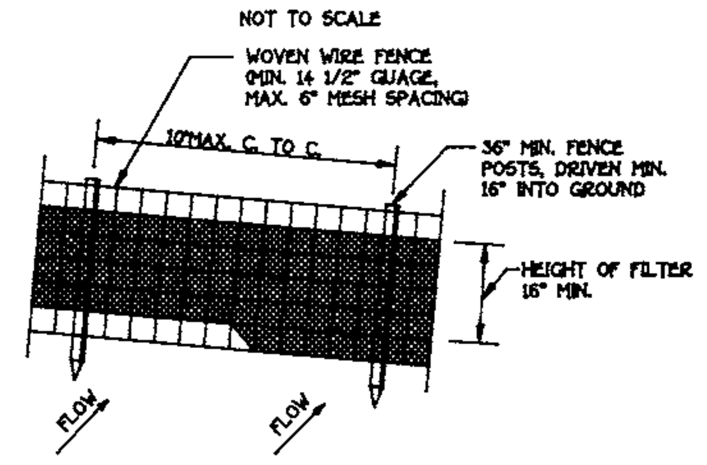
SITE DEVELOPMENT PLAN

GTW'S WAVERLY WOODS
SECTION 6

LOTS 1-4, 6-33, 35-68
TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 1999

SILT FENCE

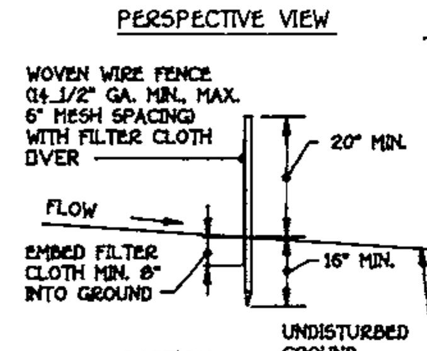
NOT TO SCALE



PERSPECTIVE VIEW

STANDARD SYMBOL

——S——S——



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OF STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

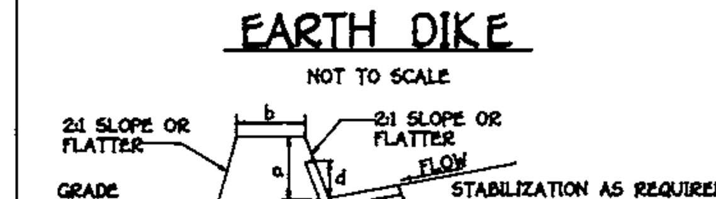
FENCE: WOVEN WIRE, 14. GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T14 ON OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

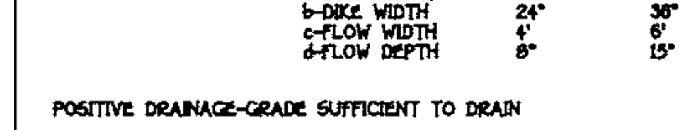
EARTH DIKE

NOT TO SCALE



	DIKE A (5 ac. or less)	DIKE B (5-10 ac.)
a-DIKE HEIGHT	18"	36"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	8"	15"

POSITIVE DRAINAGE-GRADE SUFFICIENT TO DRAIN



STANDARD SYMBOL A-2 B-3

CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

PERMANENT SEEDING NOTES

ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:

SEEDBED PREPARATION:
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS:
APPLY TWO TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (14 LBS./1,000 SQ.FT.) BEFORE SEEDING HARROW OR DISC. INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 38-0-0 UREAFORM FERTILIZER (9 LBS./1,000 SQ.FT.) AND 500 LBS. PER ACRE (11.5 LBS./1,000 SQ.FT.) OF 10-20-20 FERTILIZER.

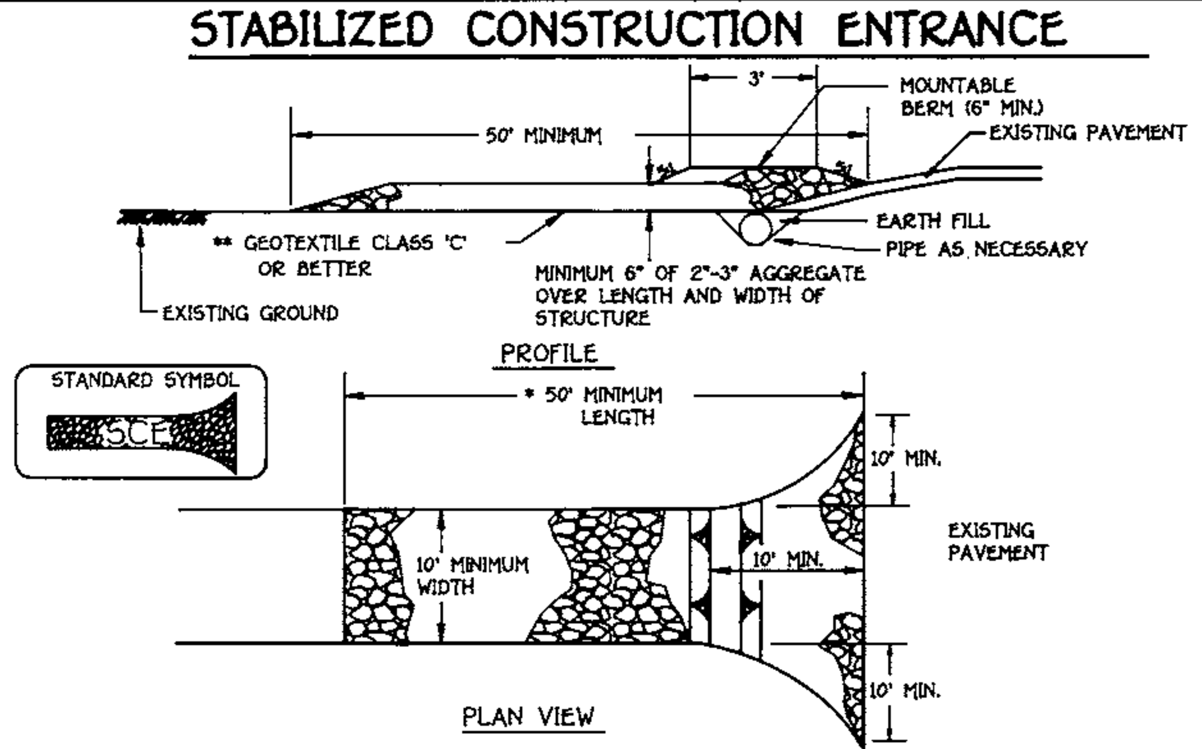
SEEDING:
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE, FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS/ACRE (1.4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROJECT SITE BY: OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OPTION (2) - USE SOD; OPTION (3) - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEEDED.

MULCHING:
APPLY 1 TO 2 TONS PER ACRE (10 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES. ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

MAINTENANCE:
INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

* FOR PUBLIC PONDS SUBSTITUTE CHEMUNG CROWNVETCH AT 15 LBS./ACRE AND KENTUCKY 31 TALL FESCUE AT 40 LBS/ACRE AS THE SEEDING REQUIRMENT. OPTIMUM SEEDING DATE FOR THIS MIXTURE IS MARCH 1 TO APRIL 30.

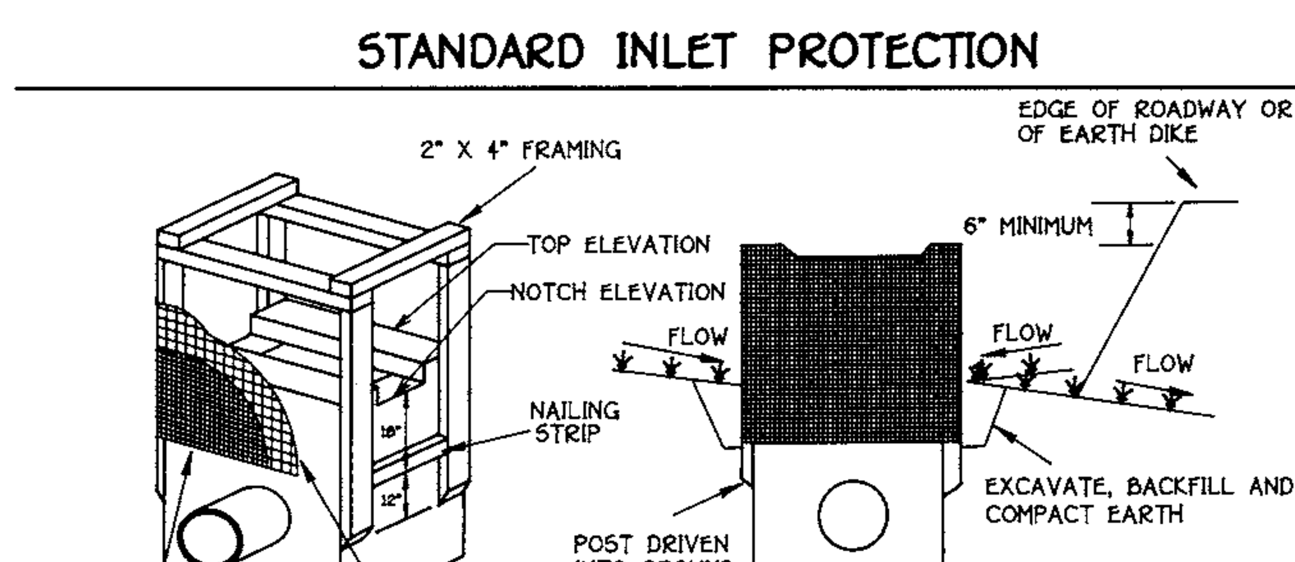
STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

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.

STANDARD INLET PROTECTION



GEOTEXTILE CLASS E

MAX. DRAINAGE AREA = 1/4 ACRE

STANDARD SYMBOL SIP

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

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, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS:
APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1,000 SQ.FT.)

SEEDING:
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 1 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE OF WEEPING LOVEGRASS (.07 LBS./1,000 SQ.FT. 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 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL.1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1988 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SEDIMENT CONTROL NOTES

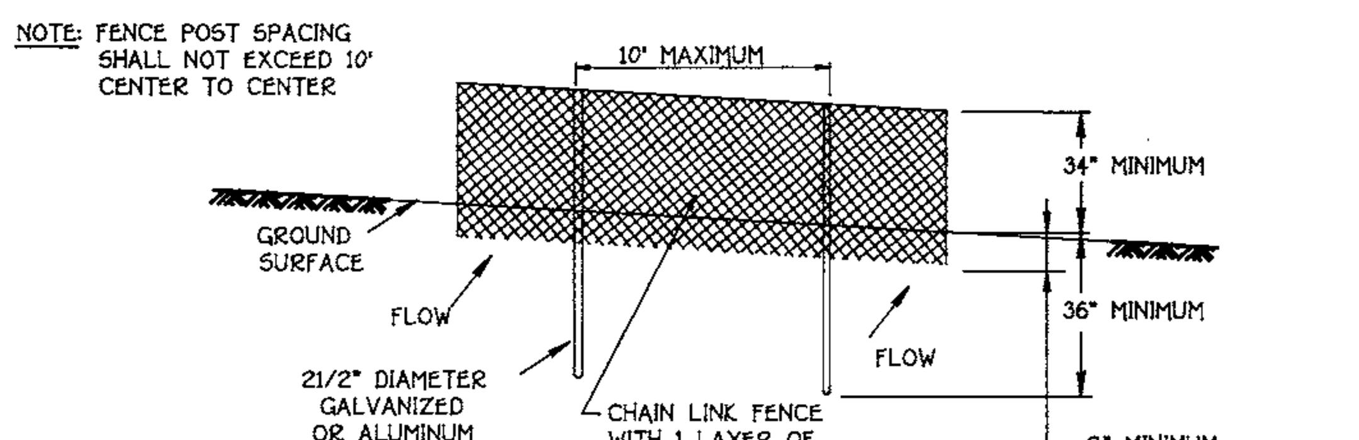
1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER 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. 1, CHAPTER 12, OF THE 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 (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
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:

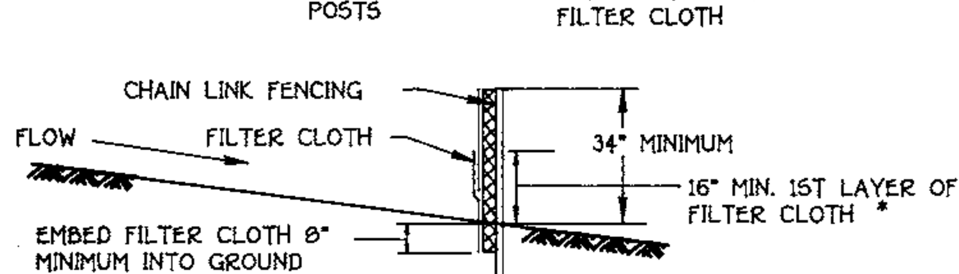
TOTAL AREA OF SITE	4.31	ACRES
AREA DISTURBED	4.31	ACRES
AREA TO BE ROOFED OR PAVED	1.42	ACRES
AREA TO BE VEGETATIVELY STABILIZED	2.89	ACRES
TOTAL CUT	1000	CU.YDS.
TOTAL FILL	1000	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	——	CU.YDS.

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 LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SUPER SILT FENCE

NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER





* IF MULTIPLE LAYERS ARE REQUIRED TO ATTAIN 42"

STANDARD SYMBOL SSF

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.

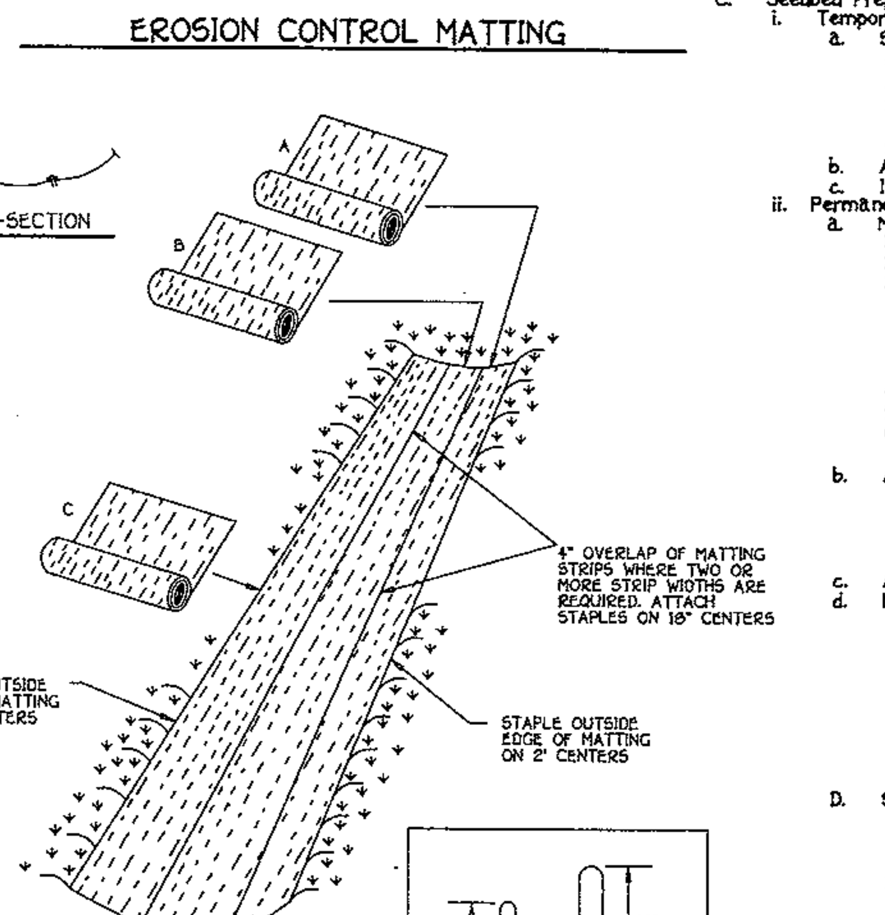
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

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

EROSION CONTROL MATTING



1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
2. Staple the 4" overlap in the channel center using an 18" spacing between staples.
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

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 run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

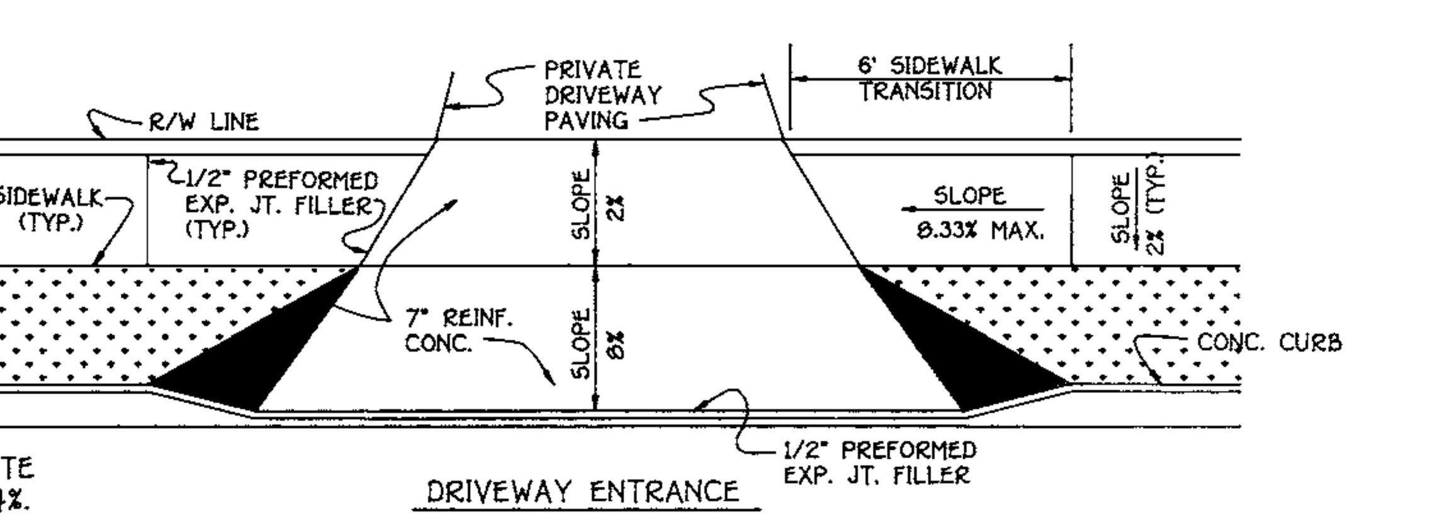
This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (Up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging 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, percolation, 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.
Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

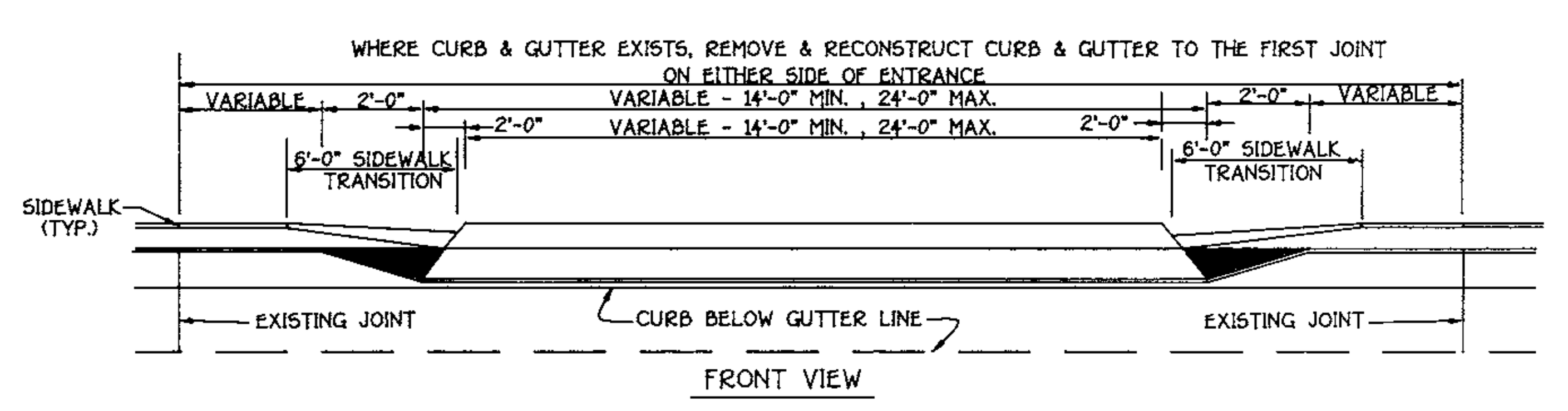
SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
 i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
 i. 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 samples taken for engineering purposes may also be used for chemical analyses.
 ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
 iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (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.
 iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
 i. Temporary Seeding
  a. Seedbed 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 chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) 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. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 ii. Permanent Seeding
  a. Minimum soil conditions required for permanent vegetative establishment:
   1. Soil pH shall be between 6.0 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 lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
   4. Soil shall contain 1.5% 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 disking or other suitable means. Lawn areas should be raked 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 seedbed preparation, loosen surface soil by dragging 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. Seedbed loosening may not be necessary on newly disturbed areas.
D. Seed Specifications
 i. 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 immediately preceding the date of sowing such material on this job.
 Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
 ii. 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 later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
 i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker 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; P205 (phosphorous); 200 lbs/ac; K20 (potassium): 200 lbs/ac.
  b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
  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 Summaries or Tables 265 or 26. 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 Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
  a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
  b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
F. Mulch Specifications (In order of preference)
 i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 ii. Wood Cellulose Fiber Mulch (WCFM)
  a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
  b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
  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 mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass 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 phytol-toxic.
  f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
 Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 i. If grading is completed outside of the seeding season, mulch 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.
 ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch 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:
 i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch 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 can operate safely. If used on sloping land, this practice should be used on the contour if possible.
 ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
 iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

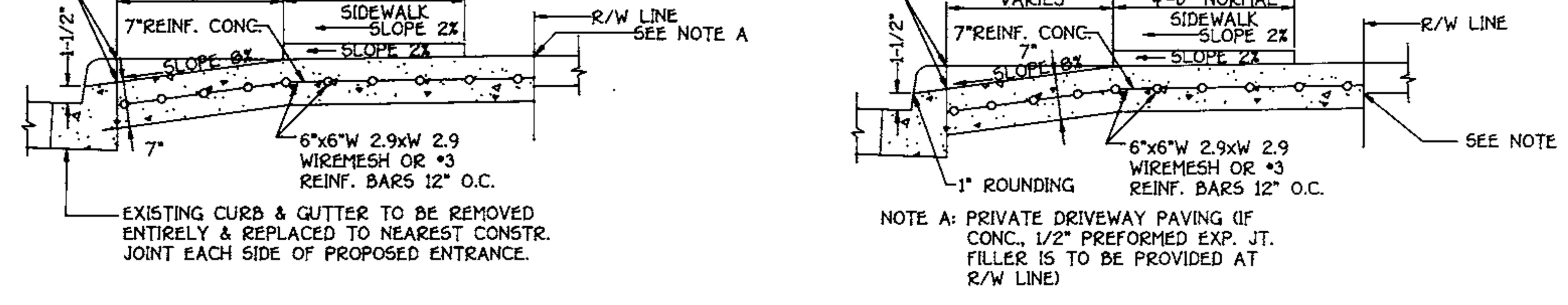


NOTE B: TIE-IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 14%.

DRIVEWAY ENTRANCE



FRONT VIEW



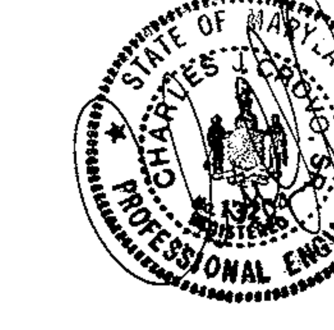
NOTE A: PRIVATE DRIVEWAY PAVING (IF CONC., 1/2" PREFORMED EXP. JT. FILLER IS TO BE PROVIDED AT R/W LINE)

SECTION:DRIVEWAY IN EXISTING CURB

SECTION:DRIVEWAY IN NEW CURB

RESIDENTIAL DRIVEWAY ENTRANCE
CLOSED SECTION W/STD. 7" COMB. CURB
AND GUTTER AND SIDEWALK SET BACK FROM CURB

NO SCALE



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

G:\DWG52\GTW\40311\40311 DETAIL.DWG

ENGINEER'S CERTIFICATE

"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 of Engineer (Print name below signature) — Date 2/5/99

DEVELOPER'S CERTIFICATE

"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."

Wayne Flack

Signature of Developer (Print name below signature) — Date 6·7·99

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date 6/15/99

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date 6/15/99

OWNER AND DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER

N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 6/30/99

Chief, Development Engineering Division — Date 6/30/99

Director - Department of Planning and Zoning — Date 6/30/99

PROJECT		SECTION/AREA	LOT NO.
GTW'S WAVERLY WOODS		6	1-4, 6-33, 35-68

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
13512, 13515-13517	6	R-SA	16	THIRD	6030

WATER CODE	SEWER CODE
H-05	5993000

DETAIL SHEET

GTW'S WAVERLY WOODS

SECTION 6

LOTS 1-4, 6-33, 35-68

TAX MAP No: 16 PARCEL: 21

THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JANUARY, 1999

SHEET 3 OF 6

S.D.P. 99-90

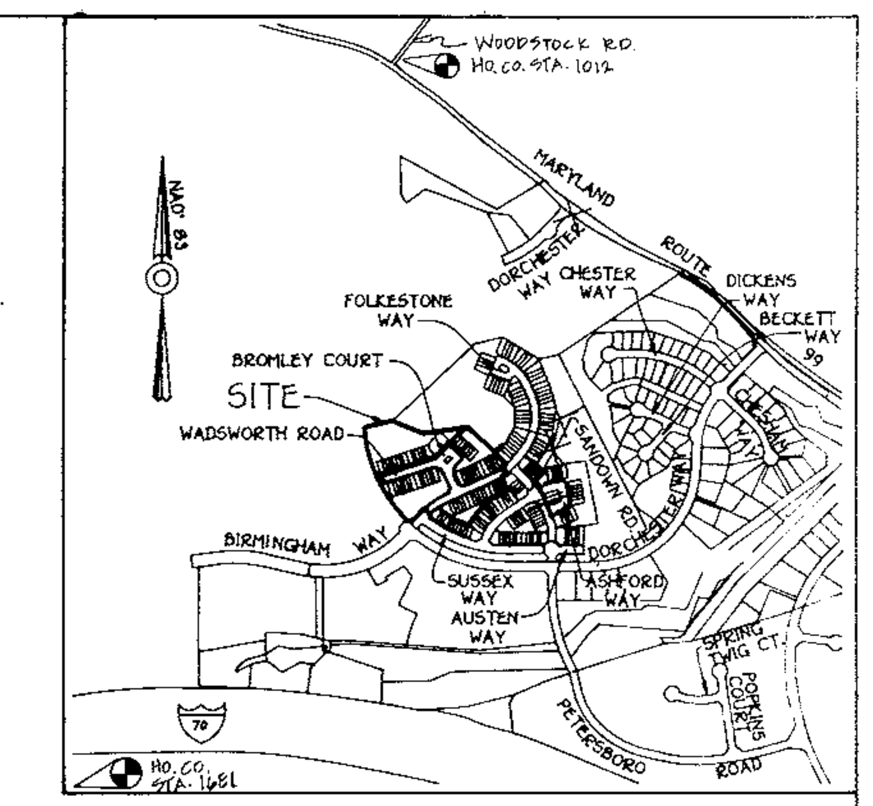
NOTE: HO. CO. CONTROL STATION 16E1 LOCATED AT THE INTERSECTION OF MARRIOTTSVILLE ROAD AND ROUTE 144 FREDERICK ROAD.

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Wayne Black — 6·7·99

NAME — DATE

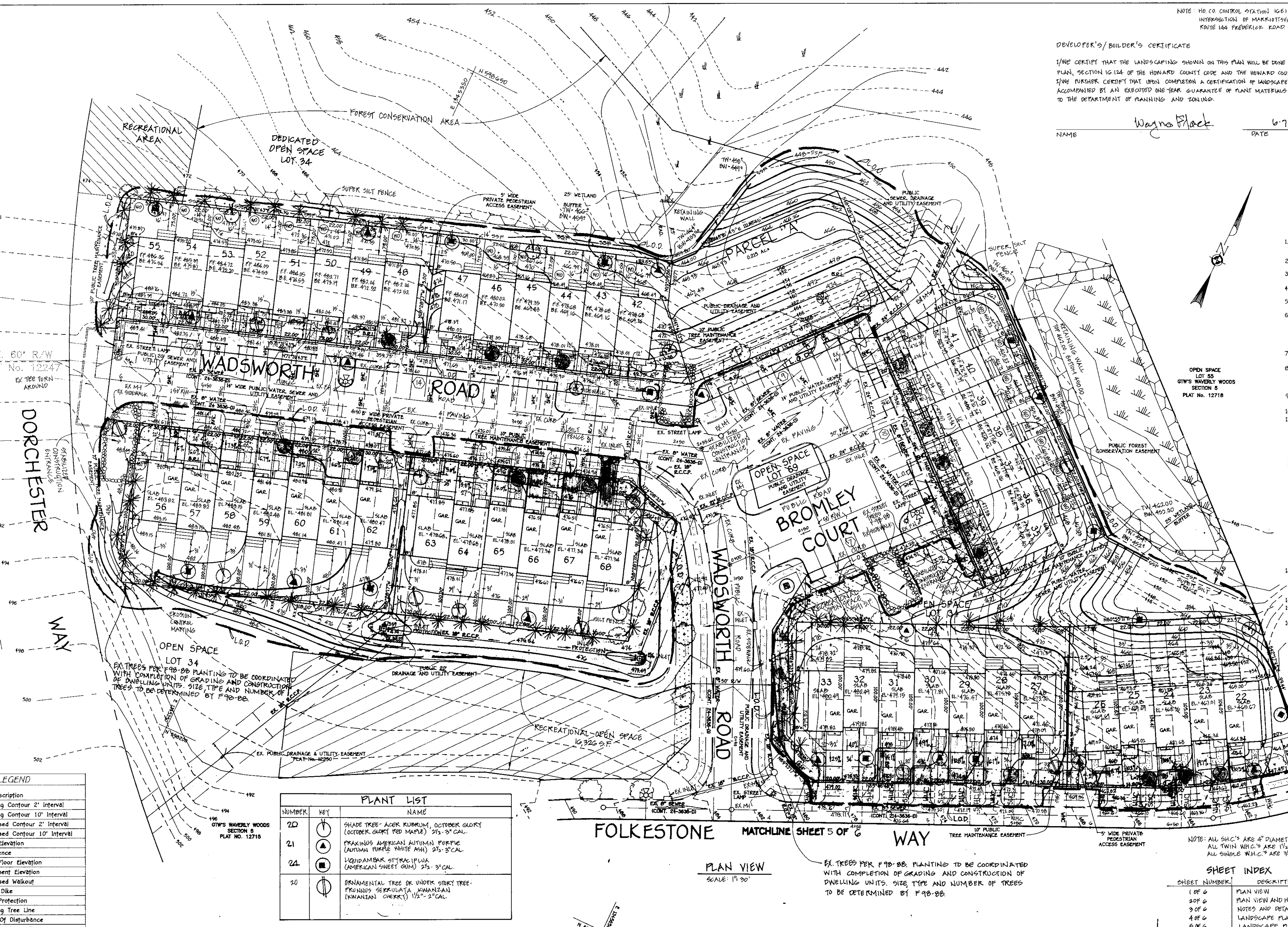


WOODSTOCK RD.
HO. CO. STA. 1012
NAD 83
MARYLAND
ROUTE 99
DORCHESTER WAY
CHESTER WAY
DICKENS WAY
BECKETT WAY
FOLKESTONE WAY
BROMLEY COURT
SITE
WADSWORTH ROAD
BIRMINGHAM WAY
SUSSEX WAY
AUSTEN WAY
ASHFORD WAY
SANDOWN RD.
SPRING TWIG CT.
POPKINS COURT
PETERSBORO ROAD
70
HO. CO. STA. 16E1

VICINITY MAP
SCALE: 1" = 1200'

GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE THE CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEASE (5) FIVE WORKING DAYS PRIOR TO THE START OF WORK.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEASE 48 HOURS PRIOR TO ANY EXCAVATION WORK.
3. THIS PROJECT IS SUBJECT TO HOWARD COUNTY FILES: S 94-07, P 97-09, F 98-88, SDP 96-115
4. BOUNDARY SURVEY PERFORMED BY: FISHER COLLINS AND CARTER INC. ON OR ABOUT APRIL, 1996
5. TOPOGRAPHIC SURVEY SHOWN HEREON IS FROM APPROVED ROAD CONSTRUCTION PLANS F 98-88
6. HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS:
   HOWARD COUNTY MONUMENT 1012 — N 601060.177 E 1345336.7580 — ELEV. = 445.57
   HOWARD COUNTY MONUMENT 16E1 — N 593250.9322 E 1340192.7110 — ELEV. = 509.9
7. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
8. THIS PLAN IS FOR HOUSE SITING AND LOT GRADING ONLY. IMPROVEMENTS SHOWN WITHIN THE RIGHT-OF-WAYS OF THIS S.D.P. ARE NOT USED FOR CONSTRUCTION. FOR CONSTRUCTION SEE APPROVED ROAD CONSTRUCTION PLANS F-98-88 AND/OR APPROVED WATER AND SEWER PLANS CONTRACT NO. 24-3636-D
9. CONTRACTOR WILL CHECK SEWER HOUSE CONNECTION ELEVATION AT EASEMENT LINE PRIOR TO CONSTRUCTION.
10. STORMWATER MANAGEMENT OBLIGATIONS ARE FULFILLED UNDER F-98-88
11. OPEN DECKS ARE NOT CONSIDERED STRUCTURES FOR CALCULATING LOT COVERAGE ON SINGLE FAMILY ATTACHED DWELLINGS PER HOWARD COUNTY ZONING REGULATIONS SECTION 128.A(2).
12. SITE ANALYSIS DATA:
   A. TOTAL PROJECT AREA: 4.31± AC.*
   B. AREA OF PLAN SUBMISSION: 4.31± AC.*
   C. LIMIT OF DISTURBED AREA: 4.31± AC.*
   D. PRESENT ZONING: R-SA-8
   E. PROPOSED USE FOR SITE AND STRUCTURES: SINGLE FAMILY ATTACHED
   F. TOTAL NUMBER OF UNITS ALLOWED: 66
   G. TOTAL NUMBER OF UNITS PROPOSED: 66
   H. NUMBER OF PARKING SPACES REQUIRED: 132 (2 SPACES PER DWELLING UNIT)
   I. NUMBER OF PARKING SPACES PROVIDED: 150
   J. OPEN SPACE REQUIREMENTS ARE PROVIDED SEE F-96-128
   K. RECREATIONAL OPEN SPACE REQUIREMENTS ARE PROVIDED (250 S.F. PER D.U.) PROVIDED 20,917 S.F. 66 D.U. * 250 PER D.U. = 16,500 S.F.
13. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISION OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE GRADING PERMIT IN THE AMOUNT OF $ 22,500.
14. ALL DWELLING UNITS ARE WALK OUT CONDITIONS UNLESS NOTED OTHERWISE
15. GARAGES SHALL BE USED FOR PARKING PURPOSE ONLY IN ACCORDANCE WITH SECTION 133.D.2.a. OF THE HOWARD COUNTY ZONING REGULATIONS.
16. TYPICAL DRIVEWAY APRON DETAIL FOR ALL GARAGE UNITS TO BE HOWARD COUNTY CLOSED SECTION DETAIL. SEE SHEET 3 OF 6 FOR SPECIFICATIONS.



FOREST CONSERVATION AREA
RECREATIONAL AREA
DEDICATED OPEN SPACE LOT 34
SUPER SILT FENCE
5' WIDE PRIVATE PEDESTRIAN ACCESS EASEMENT
25' WETLAND BUFFER
RETAINING WALL
PARCEL "A" 0.215 AC.±
PUBLIC SEWER, DRAINAGE AND UTILITY EASEMENT
PUBLIC DRAINAGE AND UTILITY EASEMENT
10' PUBLIC TREE MAINTENANCE EASEMENT
EX. 60' R/W PLAT No. 12247
EX. TEE TURN AROUND
WADSWORTH ROAD
DORCHESTER WAY
BROMLEY COURT
OPEN SPACE LOT 69 PUBLIC DRAINAGE AND UTILITY EASEMENT
OPEN SPACE LOT 55 GTW'S WAVERLY WOODS SECTION 5 PLAT No. 12718
PUBLIC FOREST CONSERVATION EASEMENT
RETAINING WALL TOP 462.00, BOTTOM 450.00
STABILIZED CONSTRUCTION ENTRANCE
EROSION CONTROL MATTING
OPEN SPACE LOT 34
EX. TREES PER F98-88 PLANTING TO BE COORDINATED WITH COMPLETION OF GRADING AND CONSTRUCTION OF DWELLING UNITS. SIZE, TYPE AND NUMBER OF TREES TO BE DETERMINED BY F98-88.
RECREATIONAL OPEN SPACE 16,326 S.F.
RECREATIONAL OPEN SPACE 4591 S.F.
EX. PUBLIC DRAINAGE & UTILITY EASEMENT PLAT No. 12250
GTW'S WAVERLY WOODS SECTION 5 PLAT NO. 12715
GTW'S WAVERLY WOODS SECTION 5 PLAT No.12716
FOLKESTONE WAY
MATCHLINE SHEET 5 OF 6
5' WIDE PRIVATE PEDESTRIAN ACCESS EASEMENT
EX. TREES PER F98-88. PLANTING TO BE COORDINATED WITH COMPLETION OF GRADING AND CONSTRUCTION OF DWELLING UNITS. SIZE, TYPE AND NUMBER OF TREES TO BE DETERMINED BY F98-88.

LEGEND

Symbol	Description
— — —	Existing Contour 2' Interval
———	Existing Contour 10' Interval
———	Proposed Contour 2' Interval
———	Proposed Contour 10' Interval
+ 624	Spot Elevation
-SF—SF-	Silt Fence
FF	First Floor Elevation
BE	Basement Elevation
WO	Proposed Walkout
→ → →	Earth Dike
-X — X-	Tree Protection
⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree
XXX	EROSION CONTROL MATTING

PLANT LIST

NUMBER	KEY	NAME
20	◯	SHADE TREE - ACER RUBRUM, OCTOBER GLORY (OCTOBER GLORY RED MAPLE) 2½-3" CAL.
21	▲	FRAXINUS AMERICAN AUTUMN PURPLE (AUTUMN PURPLE WHITE ASH) 2½-3" CAL.
24	■	LIQUIDAMBAR STYRACIFLUA (AMERICAN SWEET GUM) 2½-3" CAL.
20	◯	ORNAMENTAL TREE OR UNDER STORY TREE - PRUNNUS SERRULATA, KWANZAN (KWANZAN CHERRY) 1½"-2" CAL.

PLAN VIEW
SCALE: 1" = 30'

NOTE: ALL SH.C.'S ARE 4" DIAMETER
ALL TWIN W.H.C.'S ARE 1½" DIAMETER.
ALL SINGLE W.H.C.'S ARE 3/4" DIAMETER.

PARKING ANALYSIS

1. PARKING SPACES REQUIRED:
   2 PARKING SPACES PER DWELLING UNIT (2×66 = 132)
2. PARKING SPACES PROVIDED:
   GARAGE UNITS (41) = 82 PARKING SPACES
   ONE CAR PARKED IN GARAGE
   ONE CAR PARKED IN DRIVEWAY

PARKING SPACES PROVIDED:
GARAGE UNITS: 82
SPACES IN R/W: 68
TOTAL SPACES: 150

SHEET INDEX

*THIS PLAN FOR LANDSCAPING ONLY!

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.#40311 SDP

ENGINEER'S CERTIFICATE

"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."

[illegible] — 6/7/99

Signature of Engineer (Print name below signature) — Date

DEVELOPER'S CERTIFICATE

"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."

Wayne Black — 6·7·99

Signature of Developer (Print name below signature) — Date

Reviewed for HOWARD SCD and meets Technical Requirements.

Cheryl Simmons — 6/15/99

U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

[illegible] — 6/15/99

Howard SCD — Date

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER
N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[illegible] — 6/30/99
Director - Department of Planning and Zoning — Date

Cindy Hamilton — 6/30/99
Chief, Division of Land Development — Date

[illegible] — 6/30/99
Chief, Development Engineering Division — Date

SUBDIVISION	SECTION/AREA	LOT NO.
GTW'S WAVERLY WOODS	6	1-4, 6-33, 35-68

PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
13512, 13515-13517	6	R-SA	16	THIRD	6030

WATER CODE	SEWER CODE
H-05	5993000

SITE DEVELOPMENT PLAN
LANDSCAPE PLAN

GTW'S WAVERLY WOODS
SECTION 6

LOTS 1-4, 6-33, 35-68

TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY, 1999
SHEET 4 OF 6

S.D.P. 99-90

SCHEDULE B

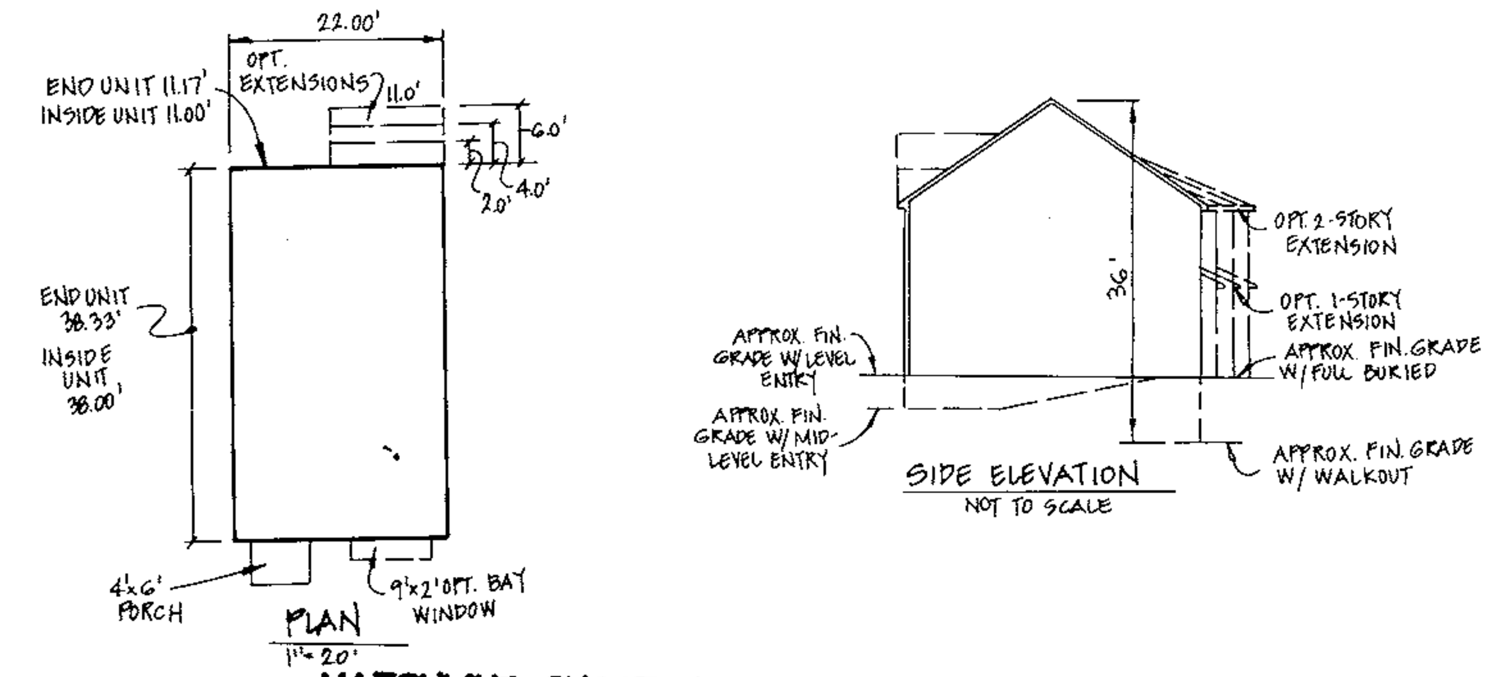
PARKING LOT INTERNAL LANDSCAPING

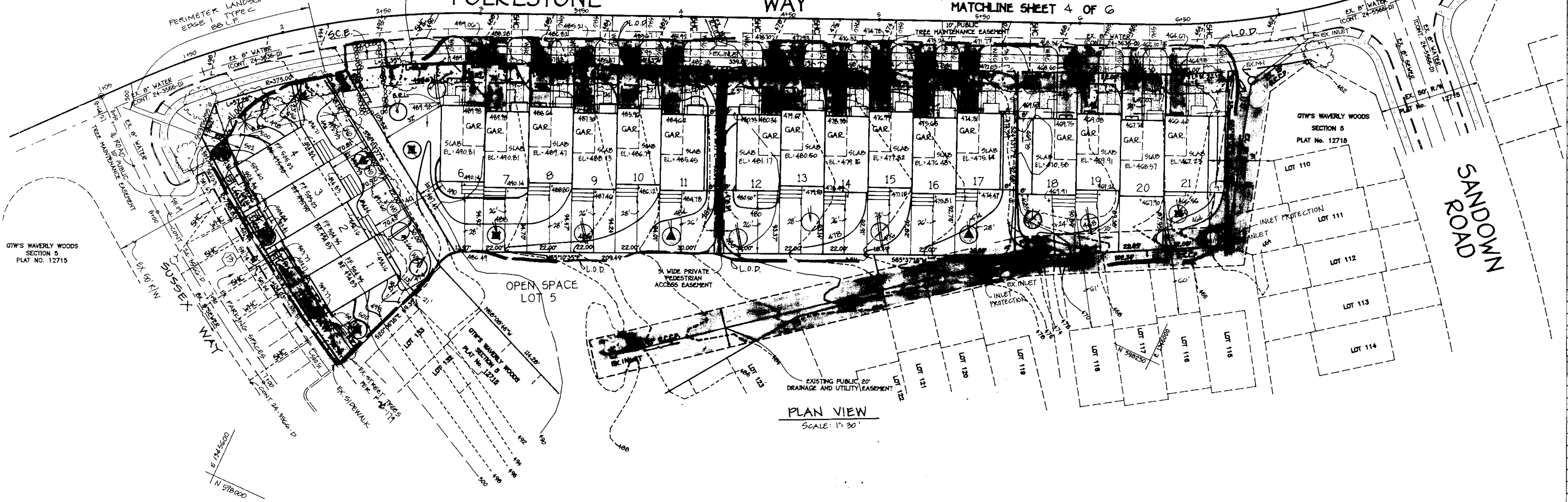
NUMBER OF PARKING SPACES	92
NUMBER OF TREES REQUIRED	9
NUMBER OF TREES PROVIDED	
SHADE TREES	9
OTHER TREES (2:1 SUBSTITUTION)	—

SCHEDULE C

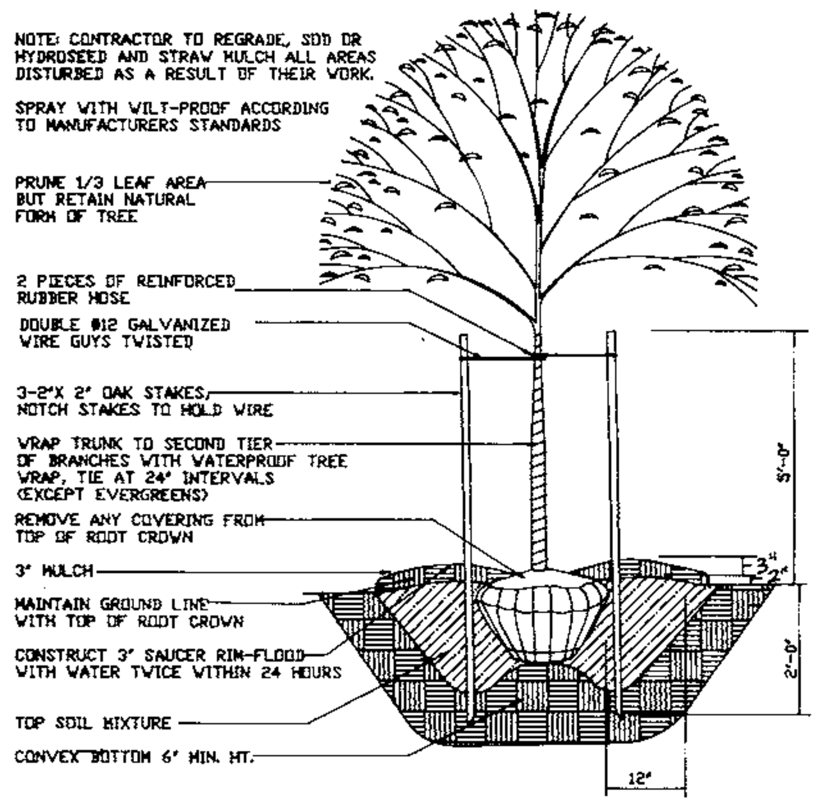
RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING

NUMBER OF DWELLING UNITS	66
NUMBER OF TREES REQUIRED (1 D.U. SFA 1:3 DU APTS)	66
NUMBER OF TREES PROVIDED	
SHADE TREES	56
OTHER TREES (2:1 SUBSTITUTION)	20

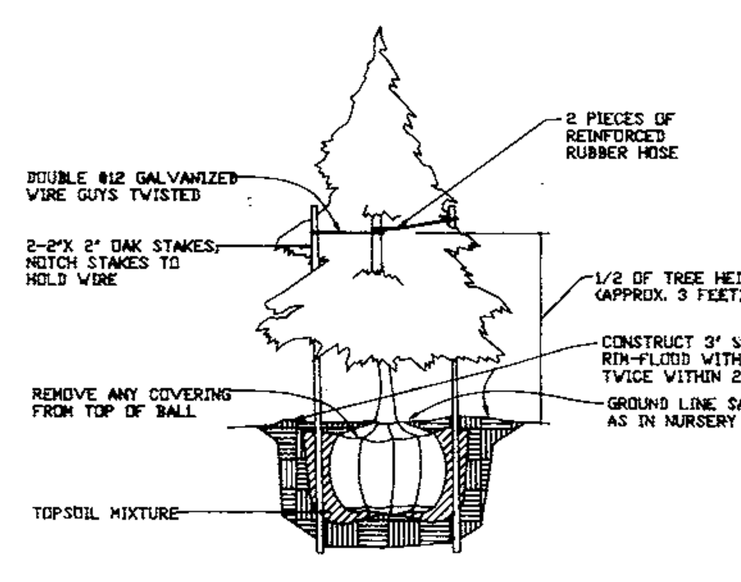




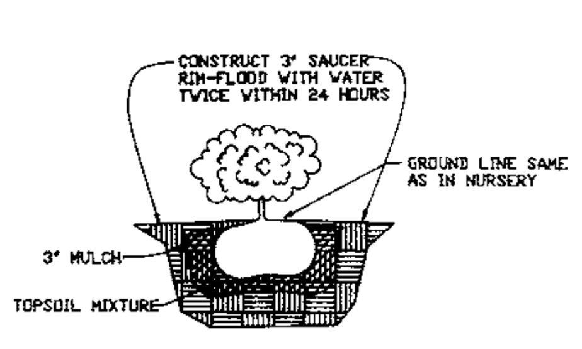
DWELLING UNIT SIZE (S.F.)	% OF COVERAGE	UNIT NUMBER	STREET ADDRESS	MIN. CELLAR ELEV.	INV. ELEV ● PROPERTY LINE (S.H.C.)	LOT SIZE
916	34	1	2242 SUSSEX WAY	494.7'	490.53'	2,661 Sq. Ft.±
902	58	2	2244 SUSSEX WAY	494.9'	490.80'	1,556 Sq. Ft.±
902	58	3	2246 SUSSEX WAY	495.1'	490.96'	1,560 Sq. Ft.±
916	28	4	2248 SUSSEX WAY	495.4'	491.29'	3,300 Sq. Ft.±
916	23	6	10708 FOLKSTONE WAY	479.0'	474.59'	4,013 Sq. Ft.±
902	43	7	10710 FOLKSTONE WAY	478.4'	473.94'	2,086 Sq. Ft.±
902	43	8	10712 FOLKSTONE WAY	478.0'	473.56'	2,081 Sq. Ft.±
902	43	9	10714 FOLKSTONE WAY	476.0'	472.49'	2,076 Sq. Ft.±
902	43	10	10716 FOLKSTONE WAY	471.6'	467.10'	2,071 Sq. Ft.±
916	32	11	10718 FOLKSTONE WAY	470.0'	465.52'	2,816 Sq. Ft.±
916	33	12	10720 FOLKSTONE WAY	468.5'	464.00'	2,806 Sq. Ft.±
902	34	13	10722 FOLKSTONE WAY	466.8'	462.37'	2,052 Sq. Ft.±
902	44	14	10724 FOLKSTONE WAY	466.1'	461.69'	2,047 Sq. Ft.±
902	44	15	10726 FOLKSTONE WAY	464.5'	460.01'	2,043 Sq. Ft.±
902	44	16	10728 FOLKSTONE WAY	463.8'	459.38'	2,041 Sq. Ft.±
916	34	17	10730 FOLKSTONE WAY	461.9'	457.49'	2,782 Sq. Ft.±
916	33	18	10732 FOLKSTONE WAY	459.8'	456.33'	2,757 Sq. Ft.±
902	45	19	10734 FOLKSTONE WAY	457.6'	454.45'	1,983 Sq. Ft.±
836	43	20	10736 FOLKSTONE WAY	456.9'	453.44'	1,950 Sq. Ft.±
872	32	21	10738 FOLKSTONE WAY	455.2'	451.66'	2,767 Sq. Ft.±
916	25	22	10743 FOLKESTONE WAY	454.1'	450.57'	3,604 Sq. Ft.±
902	39	23	10741 FOLKESTONE WAY	454.4'	450.91'	2,302 Sq. Ft.±
902	39	24	10739 FOLKESTONE WAY	455.3'	451.78'	2,306 Sq. Ft.±
902	40	25	10737 FOLKSTONE WAY	457.0'	453.64'	2,278 Sq. Ft.±
916	29	26	10735 FOLKSTONE WAY	457.9'	454.59'	3,157 Sq. Ft.±
916	31	27	10733 FOLKSTONE WAY	461.3'	456.84'	3,000 Sq. Ft.±
902	41	28	10731 FOLKSTONE WAY	460.9'	457.58'	2,200 Sq. Ft.±
902	41	29	10729 FOLKSTONE WAY	462.6'	459.13'	2,200 Sq. Ft.±
902	41	30	10727 FOLKSTONE WAY	464.5'	460.05'	2,200 Sq. Ft.±
902	41	31	10725 FOLKSTONE WAY	466.1'	461.67'	2,200 Sq. Ft.±
902	41	32	10723 FOLKSTONE WAY	466.8'	462.36'	2,200 Sq. Ft.±
916	31	33	10721 FOLKSTONE WAY	468.5'	464.04'	2,950 Sq. Ft.±
916	38	35	2200 BROMLEY COURT	464.4'	460.32'	2,430 Sq. Ft.±
902	51	36	2202 BROMLEY COURT	464.0'	459.92'	1,782 Sq. Ft.±
902	51	37	2204 BROMLEY COURT	463.9'	459.83'	1,782 Sq. Ft.±
902	51	38	2206 BROMLEY COURT	463.7'	459.02'	1,782 Sq. Ft.±
902	51	39	2208 BROMLEY COURT	463.6'	459.51'	1,782 Sq. Ft.±
902	51	40	2210 BROMLEY COURT	463.3'	459.29'	1,782 Sq. Ft.±
916	38	41	2212 BROMLEY COURT	463.2'	459.11'	2,430 Sq. Ft.±
916	37	42	10800 WADSWORTH ROAD	465.3'	460.82'	2,498 Sq. Ft.±
902	55	43	10802 WADSWORTH ROAD	466.5'	462.02'	1,650 Sq. Ft.±
902	55	44	10804 WADSWORTH ROAD	466.7'	462.21'	1,650 Sq. Ft.±
902	55	45	10806 WADSWORTH ROAD	467.5'	463.05'	1,650 Sq. Ft.±
902	55	46	10808 WADSWORTH ROAD	467.7'	463.27'	1,650 Sq. Ft.±
916	41	47	10810 WADSWORTH ROAD	468.7'	464.25'	2,250 Sq. Ft.±
916	41	48	10812 WADSWORTH ROAD	469.0'	464.54'	2,250 Sq. Ft.±
902	55	49	10814 WADSWORTH ROAD	469.9'	465.45'	1,650 Sq. Ft.±
902	55	50	10816 WADSWORTH ROAD	470.4'	465.98'	1,650 Sq. Ft.±
902	55	51	10818 WADSWORTH ROAD	470.8'	466.39'	1,650 Sq. Ft.±
902	55	52	10820 WADSWORTH ROAD	471.5'	467.08'	1,650 Sq. Ft.±
902	55	53	10822 WADWORTH ROAD	471.9'	467.49'	1,650 Sq. Ft.±
902	55	54	10824 WADSWORTH ROAD	472.6'	468.16'	1,650 Sq. Ft.±
916	41	55	10826 WADSWORTH ROAD	472.9'	468.41'	2,250 Sq. Ft.±
916	31	56	10825 WADSWORTH ROAD	472.5'	468.09'	3,000 Sq. Ft.±
902	41	57	10823 WADSWORTH ROAD	471.8'	467.39'	2,200 Sq. Ft.±
902	41	58	10821 WADSWORTH ROAD	471.6'	467.15'	2,200 Sq. Ft.±
902	41	59	10819 WADSWORTH ROAD	470.7'	466.29'	2,200 Sq. Ft.±
902	41	60	10817 WADSWORTH ROAD	470.6'	466.10'	2,200 Sq. Ft.±
902	41	61	10815 WADWORTH ROAD	469.8'	465.38'	2,200 Sq. Ft.±
916	31	62	10813 WADSWORTH ROAD	469.4'	464.97'	3,000 Sq. Ft.±
916	31	63	10811 WADSWORTH ROAD	468.3'	463.84'	3,000 Sq. Ft.±
902	41	64	10809 WADSWORTH ROAD	468.1'	463.60'	2,200 Sq. Ft.±
902	41	65	10807 WADSWORTH ROAD	467.2'	462.76'	2,200 Sq. Ft.±
902	41	66	10805 WADSWORTH ROAD	466.9'	462.45'	2,200 Sq. Ft.±
902	41	67	10803 WADSWORTH ROAD	466.3'	461.85'	2,200 Sq. Ft.±
916	31	68	10801 WADSWORTH ROAD	465.5'	461.31'	2,961 Sq. Ft.±



TREE PLANTING DETAIL



EVERGREEN PLANTING DETAIL



SHRUB PLANTING DETAIL

TREE PLANTING DETAIL

NOT TO SCALE

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no healed-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be base on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

Positive drainage shall be maintained in planting beds 2 percent slope).

Planting mix shall be as follows: Deciduous Plants – Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants – two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

This plan is intended for landscape use only. see other plan sheets for more information on grading, sediment control, layout, etc.

LEGEND

Symbol	Description
- - - -	Existing Contour 2' Interval
—— - ——	Existing Contour 10' Interval
—— ——	Proposed Contour 2' Interval
———	Proposed Contour 10' Interval
+ 624	Spot Elevation
−SF−−SF−	Silt Fence
FF	First Floor Elevation
BE	Basement Elevation
WO	Proposed Walkout
—·—·—	Earth Dike
−X −−X −	Tree Protection
⌒⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree

* THIS PLAN FOR LANDSCAPING ONLY!

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

[illegible]

ENGINEER'S CERTIFICATE

"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."

[illegible] 6/7/99

Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE

"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."

Wayne Black 6·7·99

Signature of Developer (Print name below signature) Date

Reviewed for HOWARD SCD and meets Technical Requirements.

Cheryl Simmons 6/15/99

U.S.D.A.-Natural Resources Conservation Service Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John R Robertson 6/15/99

Howard SCD Date

OWNER AND DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER

N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 6/30/99
Chief, Division of Land Development Date

[illegible] 6/30/99
Chief, Development Engineering Division Date

[illegible] 6/30/99
Director - Department of Planning and Zoning Date

PROJECT			SECTION/AREA		LOT NO.
GTW'S WAVERLY WOODS			6		1-4, 6-33, 35-68
PLAT 13512, 13515 - 13517	BLOCK NO. 6	ZONE R-SA	TAX/ZONE 16	ELEC. DIST. THIRD	CENSUS TR. 6030
WATER CODE H-05			SEWER CODE 5993000		

SITE DEVELOPMENT PLAN
LANDSCAPE PLAN

GTW'S WAVERLY WOODS
SECTION 6

LOTS 1-4, 6-33, 35-68

TAX MAP No: 16 PARCEL: 21

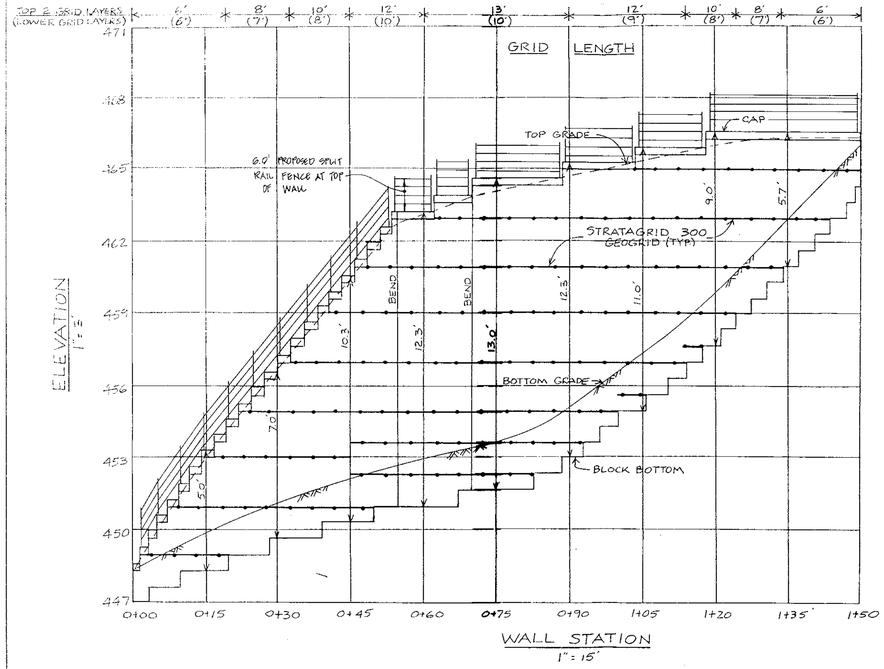
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: JANUARY 1999

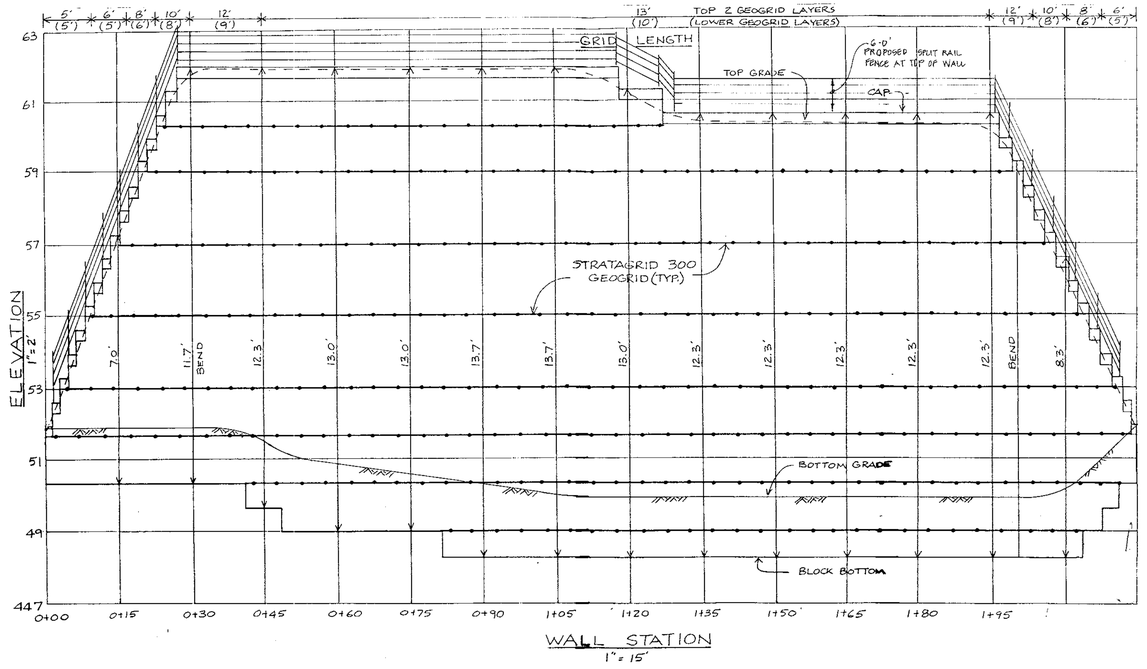
SHEET 5 OF 6

F.C.C.#40311 SDP2.DWG

S.D.P. 99-90



RETAINING WALL 'B' ELEVATION



RETAINING WALL 'A' ELEVATION

SPECIFICATION GUIDELINES
KEYSTONE CONCRETE MODULAR RETAINING WALL

■ PART 1: GENERAL

1.01 DESCRIPTION
- A. Work includes furnishing and installing modular brick retaining wall units to the lines and grades designated on the construction drawings and as specified herein.
- B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit fill and backfill to the lines and grades designated on the construction drawings.
- C. Furnishing and installing all appurtenant materials required for construction of the retaining wall as shown on the construction drawings.

1.02 RELATED WORK
- A. Section 02275 — Geogrid Soil Reinforcement.

1.03 REFERENCE STANDARDS
- A. ASTM C90—85 Hollow Load Bearing Masonry Units.
- B. ASTM C140—75 Sampling and Testing Concrete Masonry Units.
- C. ASTM C145—85 Solid Load Bearing Concrete Masonry Units.

1.04 DELIVERY, STORAGE AND HANDLING
- A. Contractor shall check the materials upon delivery to assure that proper material has been received.
- B. Contractor shall prevent excessive mud, wet cement, epoxy, and like materials which may affix themselves, from coming in contact with the materials.
- C. Contractor shall protect the materials from damage. Damaged material shall not be incorporated into the retaining wall structure.

1.05 SUBMITTALS
- A. Samples of all products used in the work of this section.
- B. Latest edition of manufacturers specifications for proposed materials, method of installation and list of material proposed for use.

1.06 QUALITY ASSURANCE
- A. Soil testing and inspection service for quality control testing during earthwork operations will be supplied by the owner.

■ PART 2: PRODUCTS

2.01 CONCRETE UNITS
- A. Masonry units shall be KeyStone® Retaining Wall Units as manufactured by: _____
- B. Concrete wall units shall have a minimum net 28 day compressive strength of 3000 psi. The concrete shall have a maximum moisture absorption of 6 lb 8 lbs/ft³.
- C. Exterior dimensions may vary in accordance with ASTM C90—85. Standard and Compac units shall have a minimum of 1 square foot face area each. Mini units shall have a minimum 1/2 square foot face area each.
- D. KeyStone Standard units shall provide a minimum of 150 psf of wall face area. Fill which is contained within the dimensions of the units may be considered as 80% effective weight.
- E. Units shall have angled sides capable of concave and convex alignment curves with a minimum radius of 3.5 feet.
  NOTE: Where applicable, for straight walls use non-angled straight side cap units.
- F. Units shall be interlocked with non-corrosive fiberglass pins.
- G. Units shall be interlocked as to provide a minimum 1/4 inch setback per each course of wall height.
  NOTE: Where applicable, zero setback or one inch setback per course options can be used.

2.02 FIBERGLASS CONNECTING PINS
- A. Connecting pins shall be 1/2 inch diameter thermoset isophtalic polyester resin/pultruded fiberglass reinforcement rods.
- B. Pins shall have a minimum flexural strength of 128,000 psi and short beam shear of 6400 psi.

2.03 BASE LEVELING PAD MATERIAL
- A. Material shall consist of compacted sand, gravel, crushed rock or leveling concrete (non-reinforced) as shown on construction drawing. The compacted leveling pad shall be a minimum 6 inches thick. When using a non-reinforced leveling concrete option, 1" to 3" thick, maintain the total leveling pad thickness.

2.04 UNIT FILL
- A. Fill for units shall be free draining crushed stone, 3/8" to 3/4", or coarse gravel (no more than 5% shall pass the No. 200 sieve with a maximum size of 3/4"). Gradation of the fill shall be approved by the Engineer.
- B. Place recommended fill behind the retaining wall units.

2.05 BACKFILL
- A. Material shall be insitu soils when approved by the engineer unless otherwise specified in the drawings. Unsuitable soils for backfill (heavy clays or organic soils) shall not be used in the backfill or in the reinforced soil mass.
- B. Where additional fill is required contractor shall submit sample and specifications to the engineer to determine if acceptable.

■ PART 3: EXECUTION

3.01 EXCAVATION
- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Over excavation shall not be paid for and replacement with compacted fill and/or wall system components will be required at contractor expense. Contractor shall be careful not to disturb embankment materials beyond lines shown.

3.02 FOUNDATION SOIL PREPARATION
- A. Foundation soil shall be excavated as required for footing dimensions shown on the construction drawings, or as directed by the Engineer.
- B. Foundation soil shall be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength. Soils not meeting required strength shall be removed and replaced with acceptable material.
- C. Over-excavated areas shall be filled with approved compacted backfill material.

3.03 BASE LEVELING PAD
- A. Leveling pad materials shall be placed as shown on the construction drawings, upon undisturbed insitu soils, to a minimum thickness of 6 inches.
- B. Material shall be compacted so as to provide a level hard surface on which to place the first course of units. Compaction shall be to 95% of standard proctor for sand or gravel type materials. For crushed rock, material shall be densely compacted.
- C. Leveling pad shall be prepared to insure complete contact of retaining unit with the base.
- D. Leveling pad materials shall be to the depths and widths shown. Contractor may opt for using reduced depth of sands, gravel or crushed rock using a concrete topping. Concrete shall be unreinforced and a maximum of 1" to 3" thick.

3.04 UNIT INSTALLATION
- A. First course of concrete wall units shall be placed on the base leveling pad. The units shall be checked for level and alignment. The first course is the most important to insure accurate and acceptable results.
- B. Insure that units are in full contact with base.
- C. Units are placed side by side for full length of wall alignment. Alignment may be done by means of a string line or offset from base line.
- D. Install fiberglass connecting pins and fill all voids at units with unit fill material. Tamp fill.
- E. Sweep all excess material from top of units and install next course. Insure each course is completely unit filled, backfilled and compacted prior to proceeding to next course.
- F. Lay up each course insuring that pins protrude into adjoining courses above a minimum of one inch. Two pins are required per unit. Pull each unit forward, away from the embankment, against pins in the previous course and backfill as the course is completed. Repeat procedure to the extent of wall height.
- G. As appropriate where the wall changes elevation, units can be stepped with grade or turned into the embankment with a convex return end. Provide appropriate buried units on compacted leveling pad in area of convex return end.

3.05 CAP INSTALLATION
- A. Place KeyStone Cap units over projecting pins from units below. Pull forward to set back position. Back fill and compact to finished grade.
- B. As required, provide permanent mechanical connection to wall units with construction adhesive or epoxy. Apply adhesive or epoxy to bottom surface of cap units and install on units below.

3.06 GEOGRID INSTALLATION
- A. Follow the requirements of Section 02275, GEOGRID SOIL REINFORCEMENT.

GEOGRID SOIL REINFORCEMENT

■ PART 1: GENERAL

1.01 DESCRIPTION
- A. Work includes furnishing and installing geogrid reinforcement, wall fill, and backfill to the lines and grades designated on the construction drawings.
- B. Work includes furnishing and installing all appurtenant materials required for construction of the geogrid reinforced soil retaining wall as shown on the construction drawings.

1.02 RELATED WORK
- A. Section 02276 ..... KEYSTONE CONCRETE MODULAR RETAINING WALL.

1.03 REFERENCE STANDARDS
- A. See specific geogrid manufacturers reference standards.

1.04 DELIVERY, STORAGE AND HANDLING
- A. Contractor shall check the geogrid upon delivery to assure that the proper material has been received.
- B. Geogrids shall be stored above —20°F.
- C. Contractor shall prevent excessive mud, wet cement, epoxy and like materials which may affix themselves to the gridwork, from coming in contact with the geogrid material.
- D. Rolled geogrid material may be laid flat or stood on end for storage.

1.05 SUBMITTALS
- A. Samples of all products used in the work of this section.
- B. Latest edition of manufacturers specifications for proposed materials, method of installation and list of material proposed for use.

1.06 QUALITY ASSURANCE
- A. Soil testing and inspection services for quality control testing during earthwork operation will be supplied by the owner.

■ PART 2 PRODUCTS

2.01 DEFINITIONS
- A. Geogrid products shall be high density polyethylene expanded sheet or polyester woven fiber materials, specifically fabricated for use as soil reinforcement.
- B. Concrete retaining wall units are as detailed on the drawings and are specified under Section: 02276 ..... KEYSTONE CONCRETE MODULAR RETAINING WALL.
- C. Wall fill is a free draining granular material used within the concrete units.
- D. Backfill is the soil which is used as fill for the reinforced soil mass.
- E. Foundation soil is the insitu soil.

2.02 GEOGRID
- A. Geogrid shall be the type as shown on the drawings having the property requirements as described within the manufacturers specifications.

2.03 ACCEPTABLE MANUFACTURERS
- A. A manufacturer's product shall be approved by the Engineer prior to bid opening.

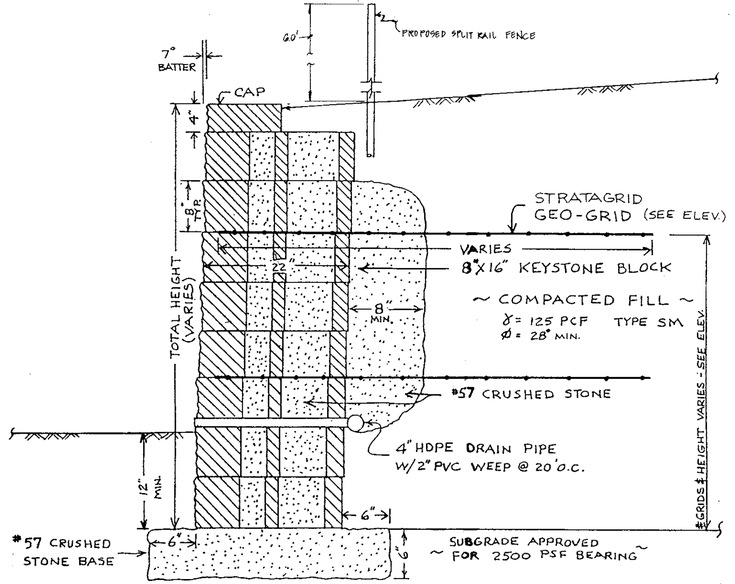
■ PART 3: EXECUTION

3.01 FOUNDATION SOIL PREPARATION
- A. Foundation soil shall be excavated to the lines and grades as shown on the construction drawings or as directed by the Engineer.
- B. Foundation soil shall be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength.
- C. Over-excavated areas shall be filled with approved compacted backfill material.
- D. Foundation soil shall be proof rolled prior to fill and geogrid placement.

3.02 WALL ERECTION
- A. Wall erection shall be as specified under Section: 02276 ..... KEYSTONE CONCRETE MODULAR RETAINING WALL.

3.03 GEOGRID INSTALLATION
- A. The geogrid soil reinforcement shall be laid horizontally on compacted backfill. Connect to the concrete wall units by hooking geogrid over fiberglass pins. Pull taut, and anchor before backfill is placed on the geogrid.
- B. Slack in the geogrid at the wall unit connections shall be removed.
- C. Geogrid shall be laid at the proper elevation and orientation as shown on the construction drawings or as directed by the Engineer.
- D. Correct orientation (roll direction) of the geogrid shall be verified by the contractor.
- E. To pretension geogrid, pull pinned geogrid taut to eliminate loose folds. Stake or secure back edge of geogrid prior to and during backfill and compaction.
- F. Follow manufacturers guidelines relative to overlap requirements of uniaxial and biaxial geogrids.

3.04 FILL PLACEMENT
- A. Backfill material shall be placed in 8 inch lifts and compacted to 95% of Standard Proctor.
- B. Backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack or loss of pretension of the geogrid.
- C. Only hand-operated compaction equipment shall be allowed within 3 feet of the back surface of the KeyStone units.
- D. Backfill shall be placed from the wall rearward into the embankment to insure that the geogrid remains taut.
- E. Tracked construction equipment shall not be operated directly on the geogrid. A minimum backfill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
- F. Rubber-tired equipment may pass over the geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.



TYPICAL WALL PROFILE
N.T.S.

RETAINING WALL STRUCTURAL DETAIL

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

402720ET2.DWG

ENGINEER'S CERTIFICATE

"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 of Engineer (Print name below signature) — Date: 6/7/99

DEVELOPER'S CERTIFICATE

"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."

Wayne Flack
Signature of Developer (Print name below signature) — Date: 6·7·99

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — 6/15/99 Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — 6/15/99 Date

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER
N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date: 6/28/99

Chief, Development Engineering Division — Date: 6/30/99

Director - Department of Planning and Zoning — Date: 6/30/99

PROJECT	SECTION/AREA	LOT NO.
GTW'S WAVERLY WOODS	6	1-4, 6-33, 35-68

PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
19612, 13619-13917	6	R-SA	16	THIRD	6030

WATER CODE	SEWER CODE
H-05	5993000

SITE DEVELOPMENT PLAN
DETAIL SHEET

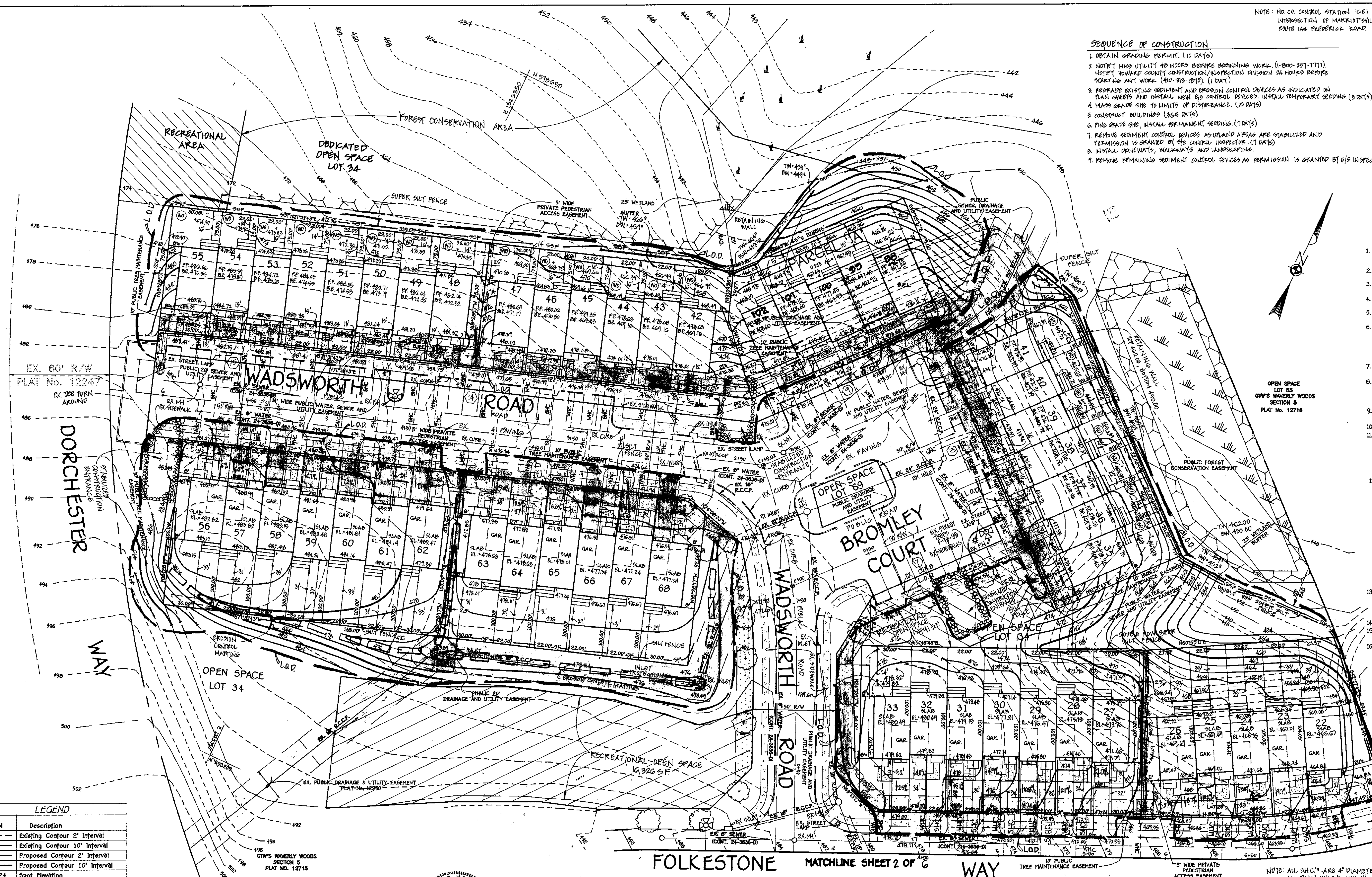
GTW'S WAVERLY WOODS
SECTION 6

LOTS 1-4, 6-33, 35-68

TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY, 1999
SHEET 6 OF 6

SDP 99-90

NOTE: HO. CO. CONTROL STATION 16E1 LOCATED AT THE INTERSECTION OF MARRIOTTSVILLE ROAD AND ROUTE 144 FREDERICK ROAD.

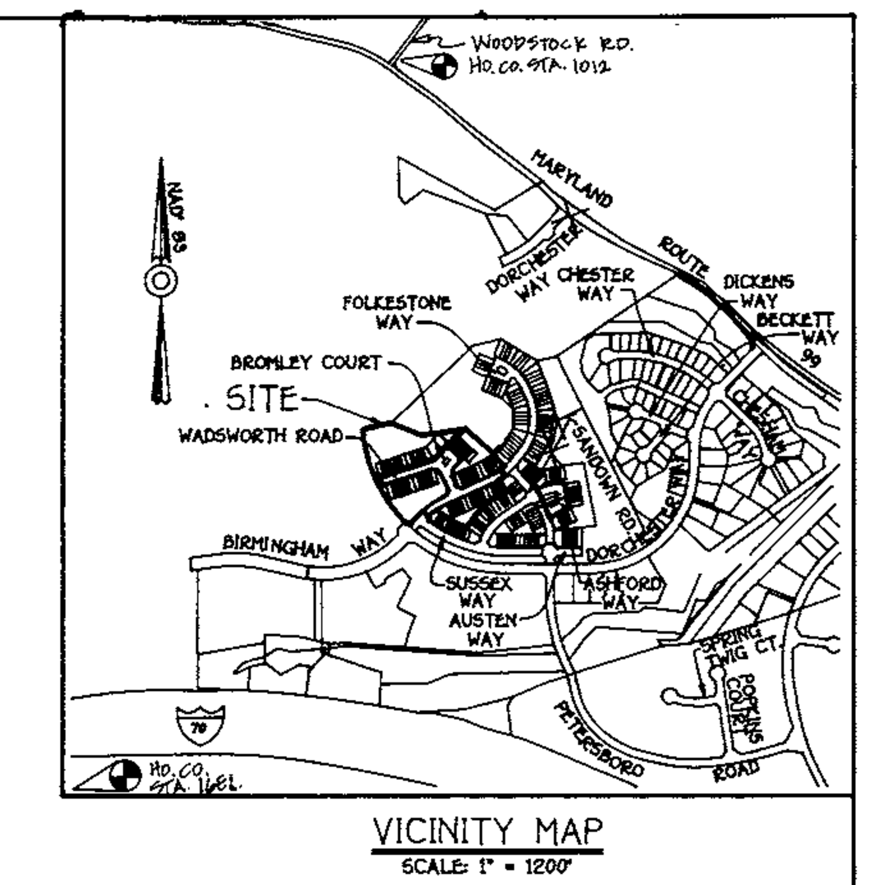


PLAN VIEW

SCALE: 1" = 30'

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (10 DAYS)
2. NOTIFY MISS UTILITY 48 HOURS BEFORE BEGINNING WORK. (1-800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK (410-313-1870). (1 DAY)
3. REGRADE EXISTING SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON PLAN SHEETS AND INSTALL NEW E/S CONTROL DEVICES. INSTALL TEMPORARY SEEDING. (3 DAYS)
4. MASS GRADE SITE TO LIMITS OF DISTURBANCE. (10 DAYS)
5. CONSTRUCT BUILDINGS (365 DAYS)
6. FINE GRADE SITE, INSTALL PERMANENT SEEDING. (7 DAYS)
7. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY S/E CONTROL INSPECTOR. (7 DAYS)
8. INSTALL DRIVEWAYS, WALKWAYS AND LANDSCAPING.
9. REMOVE REMAINING SEDIMENT CONTROL DEVICES AS PERMISSION IS GRANTED BY E/S INSPECTOR.



VICINITY MAP

SCALE: 1" = 1200'

GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE THE CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEASE (5) FIVE WORKING DAYS PRIOR TO THE START OF WORK.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEASE 48 HOURS PRIOR TO ANY EXCAVATION WORK.
3. THIS PROJECT IS SUBJECT TO HOWARD COUNTY FILES: S 94-07, P 97-09, F 98-88, SDP 96-115
4. BOUNDARY SURVEY PERFORMED BY: FISHER COLLINS AND CARTER INC. ON OR ABOUT APRIL, 1996
5. TOPOGRAPHIC SURVEY SHOWN HEREON IS FROM APPROVED ROAD CONSTRUCTION PLANS F 98-88
6. HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS:
   HOWARD COUNTY MONUMENT 1012 — N 601060.177 E 1345336.7580 — ELEV. = 445.577
   HOWARD COUNTY MONUMENT 16E1 — N 593250.9322 E 1340192.7110 — ELEV. = 509.924
7. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
8. THIS PLAN IS FOR HOUSE SITING AND LOT GRADING ONLY. IMPROVEMENTS SHOWN WITHIN THE RIGHT-OF-WAYS OF THIS S.D.P. ARE NOT USED FOR CONSTRUCTION. FOR CONSTRUCTION SEE APPROVED ROAD CONSTRUCTION PLANS F-98-88 AND/OR APPROVED WATER AND SEWER PLANS CONTRACT NO. 24-3636-D
9. CONTRACTOR WILL CHECK SEWER HOUSE CONNECTION ELEVATION AT EASEMENT LINE PRIOR TO CONSTRUCTION.
10. STORMWATER MANAGEMENT OBLIGATIONS ARE FULFILLED UNDER F-98-88
11. OPEN DECKS ARE NOT CONSIDERED STRUCTURES FOR CALCULATING LOT COVERAGE ON SINGLE FAMILY ATTACHED DWELLINGS PER HOWARD COUNTY ZONING REGULATIONS SECTION 128.A(2).
12. SITE ANALYSIS DATA:
   A. TOTAL PROJECT AREA: 4.31± AC.*
   B. AREA OF PLAN SUBMISSION: 4.31± AC.*
   C. LIMIT OF DISTURBED AREA: 4.31± AC.*
   D. PRESENT ZONING: R-SA-8
   E. PROPOSED USE FOR SITE AND STRUCTURES: SINGLE FAMILY ATTACHED D.U.
   F. TOTAL NUMBER OF UNITS ALLOWED: 71
   G. TOTAL NUMBER OF UNITS PROPOSED: 71
   H. NUMBER OF PARKING SPACES REQUIRED: 142 (2 SPACES PER DWELLING UNIT)
   I. NUMBER OF PARKING SPACES PROVIDED: 150
   J. OPEN SPACE REQUIREMENTS ARE PROVIDED SEE F-96-128
   K. RECREATIONAL OPEN SPACE REQUIREMENTS ARE PROVIDED (250 S.F. PER D.U.) PROVIDED 20,917 S.F. 71 D.U. * 250 PER D.U. = 17750 S.F.
13. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISION OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE GRADING PERMIT IN THE AMOUNT OF $ 24,000.
14. ALL DWELLING UNITS ARE WALK OUT CONDITIONS UNLESS NOTED OTHERWISE
15. GARAGES SHALL BE USED FOR PARKING PURPOSE ONLY IN ACCORDANCE WITH SECTION 133.D.2.a. OF THE HOWARD COUNTY ZONING REGULATIONS.
16. TYPICAL DRIVEWAY APRON DETAIL FOR ALL GARAGE UNITS TO BE HOWARD COUNTY CLOSED SECTION DETAIL. SEE SHEET 3 OF 6 FOR SPECIFICATIONS.

PARKING ANALYSIS

1. PARKING SPACES REQUIRED:
   2 PARKING SPACES PER DWELLING UNIT (2 × 71 = 142)
2. PARKING SPACES PROVIDED:
   GARAGE UNITS (41) = 82 PARKING SPACES
   ONE CAR PARKED IN GARAGE
   ONE CAR PARKED IN DRIVEWAY

PARKING SPACES PROVIDED:
GARAGE UNITS: 82
SPACES IN R/W: 68
TOTAL SPACES: 150

NOTE: ALL S.H.C.'S ARE 4" DIAMETER.
ALL TWIN W.H.C.'S ARE 1½" DIAMETER.
ALL SINGLE W.H.C.'S ARE 3/4" DIAMETER.

LEGEND

Symbol	Description
— — — —	Existing Contour 2' Interval
———	Existing Contour 10' Interval
———	Proposed Contour 2' Interval
———	Proposed Contour 10' Interval
+ 624	Spot Elevation
-SF—SF-	Silt Fence
FF	First Floor Elevation
BE	Basement Elevation
(WO)	Proposed Walkout
— · — · —	Earth Dike
-X —X -	Tree Protection
⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree
	EROSION CONTROL MATTING

LOT INFORMATION

DWELLING UNIT SIZE (SF)	% OF COVERAGE	UNIT NUMBER	STREET ADDRESS	MIN. CELLAR ELEV.	INV. ELEV. @ PROPERTY LINE S.H.C.	LOT SIZE
916	42	98	2216 BROMLEY COURT	464.2	459.76	2192
902	55	99	2218 BROMLEY COURT	463.9	459.46	1650
902	55	100	2220 BROMLEY COURT	462.5	458.97	1650
902	55	101	2222 BROMLEY COURT	462.4	458.87	1650
916	41	102	2224 BROMLEY COURT	463.1	458.73	2250

SHEET INDEX

SHEET NUMBER	DESCRIPTION
1 OF 6	PLAN VIEW
2 OF 6	PLAN VIEW AND HOUSE DETAILS
3 OF 6	NOTES AND DETAILS
4 OF 6	LANDSCAPE PLAN
5 OF 6	LANDSCAPE PLAN
6 OF 6	RETAINING WALL DETAILS

STATE OF MARYLAND · CHARLES J. CROVO · No. 13304 · REGISTERED · PROFESSIONAL ENGINEER

11-11-99 ADD UNITS 98-102

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

1. Rev. lot № 98-102 per rec. plat 6-19-01

REVISIONS

F.C.C.#40311 SDP

ENGINEER'S CERTIFICATE

"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."

[illegible] 2/5/99
Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE

"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."

Wayne Flack 6-7-99
Signature of Developer (Print name below signature) Date

Reviewed for HOWARD SCD and meets Technical Requirements.

[illegible] 6/15/99
U.S.D.A.-Natural Resources Conservation Service Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

[illegible] 6/15/99
Howard SCD Date

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER
N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[illegible] 6/30/99
Director - Department of Planning and Zoning Date

Cindy Hamilton JA 6/30/99
Chief, Division of Land Development Date

[illegible] 6/30/99
Chief, Development Engineering Division Date

SUBDIVISION				SECTION/AREA	LOT NO.
GTW'S WAVERLY WOODS				6	1-4, 6-33, 35-68, 98-102
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
13512, 13515-13517	6	R-SA	16	THIRD	6030
WATER CODE			SEWER CODE		
H-05			5993000		

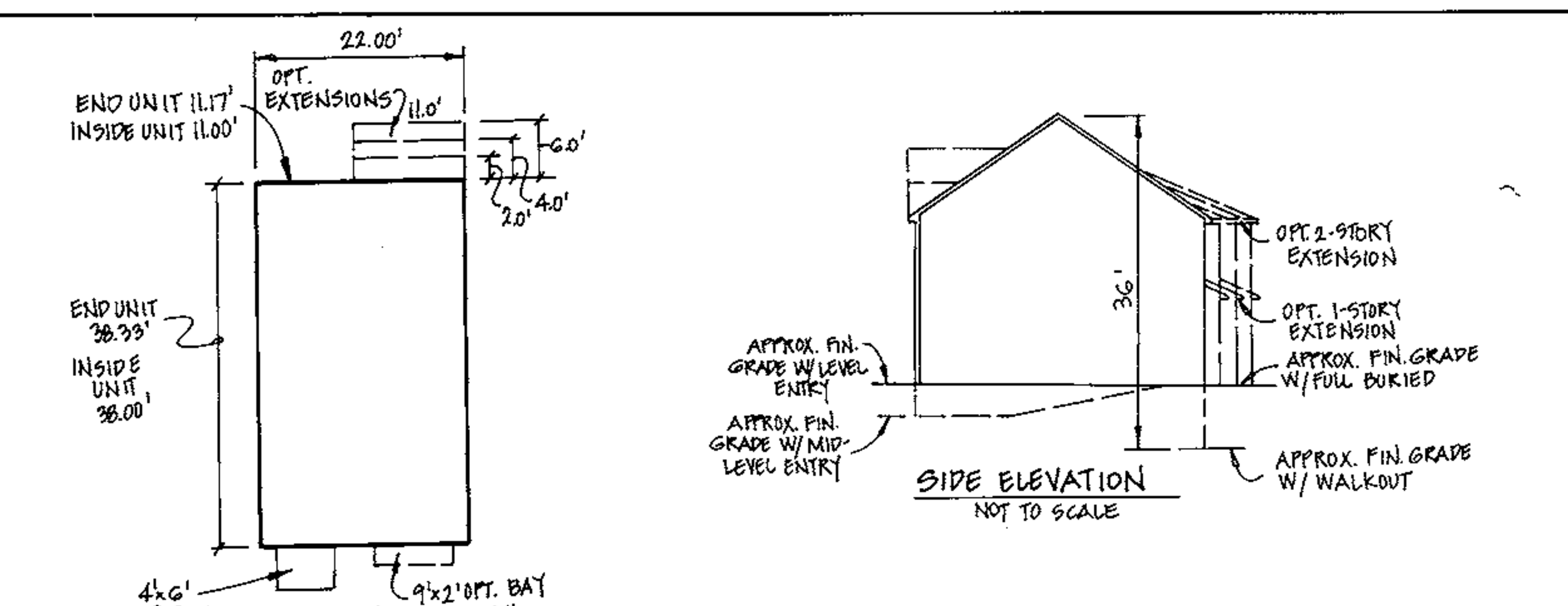
SITE DEVELOPMENT PLAN

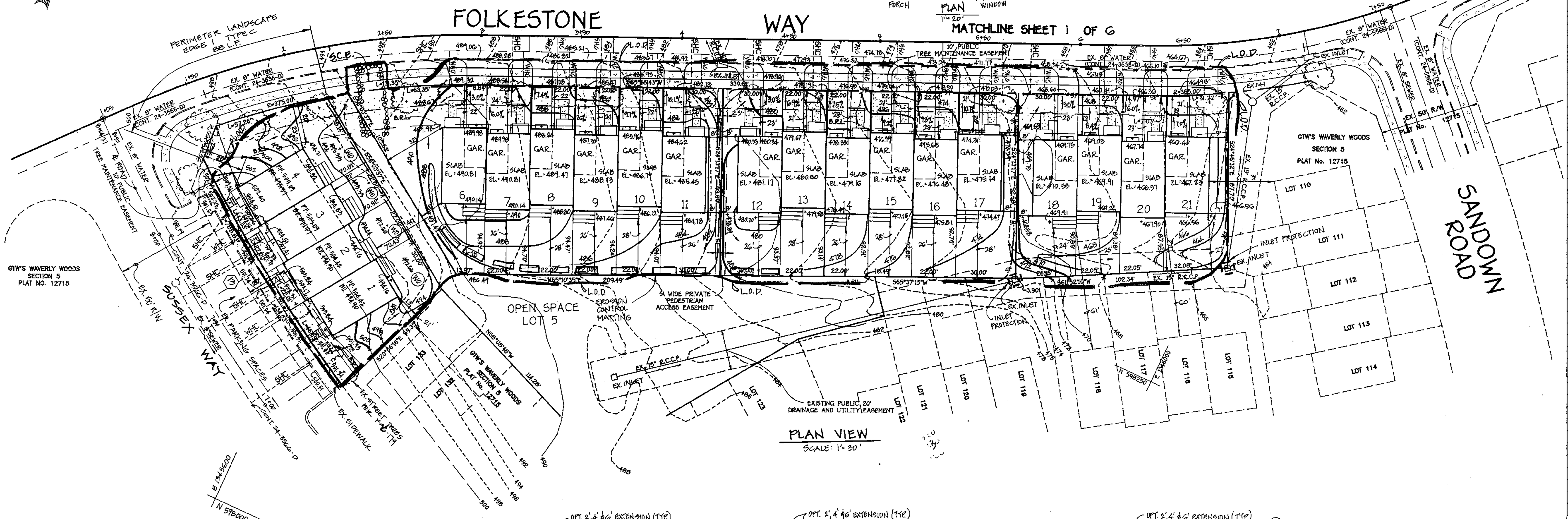
GTW'S WAVERLY WOODS
SECTION 6

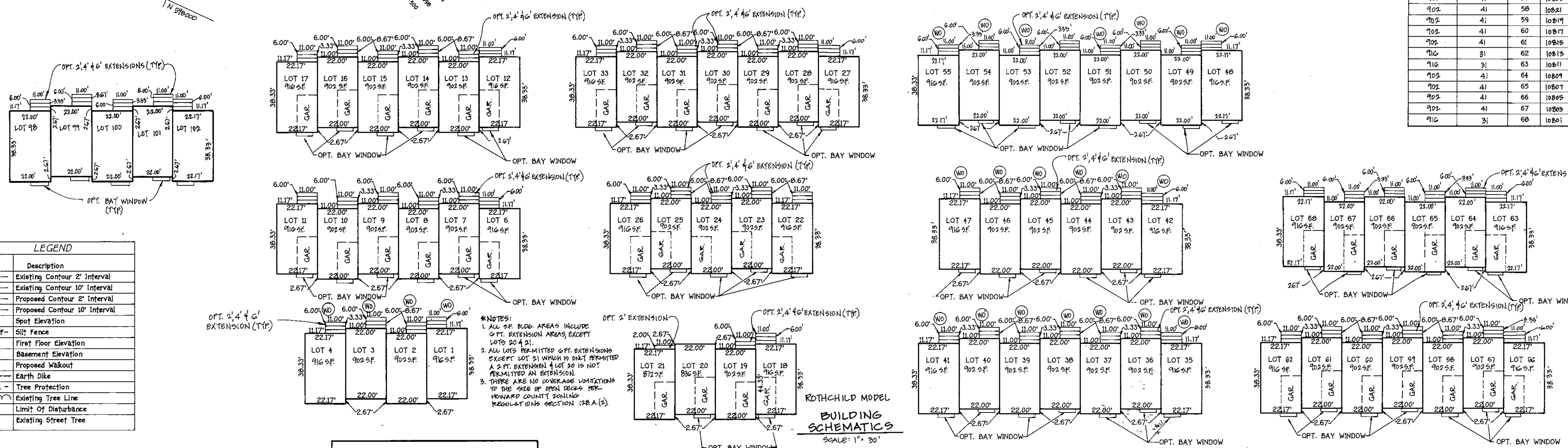
LOTS 1-4, 6-33, 35-68, 98-102

TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE:
SHEET 1 OF 6

S.D.P. 99-90







LOT INFORMATION

DWELLING UNIT SIZE (S.F.)	% OF COVERAGE	UNIT NUMBER	STREET ADDRESS	MIN. CELLAR ELEV.	INV. ELEV • PROPERTY LINE (S.H.C.)	LOT SIZE
916	34	1	2242 SUSSEX WAY	494.7'	490.53'	2,661 Sq. Ft.±
902	58	2	2244 SUSSEX WAY	494.9'	490.80'	1,556 Sq. Ft.±
902	58	3	2246 SUSSEX WAY	495.1'	490.96'	1,560 Sq. Ft.±
916	28	4	2248 SUSSEX WAY	495.4'	491.29'	3,300 Sq. Ft.±
916	23	6	10708 FOLKSTONE WAY	479.0'	474.59'	4,013 Sq. Ft.±
902	43	7	10710 FOLKSTONE WAY	478.4'	473.94'	2,086 Sq. Ft.±
902	43	8	10712 FOLKSTONE WAY	478.0'	473.56'	2,081 Sq. Ft.±
902	43	9	10714 FOLKSTONE WAY	476.0'	472.49'	2,076 Sq. Ft.±
902	43	10	10716 FOLKSTONE WAY	471.6'	467.10'	2,071 Sq. Ft.±
916	32	11	10718 FOLKSTONE WAY	470.0'	465.52'	2,816 Sq. Ft.±
916	33	12	10720 FOLKSTONE WAY	468.5'	464.00'	2,806 Sq. Ft.±
902	34	13	10722 FOLKSTONE WAY	466.8'	462.37'	2,052 Sq. Ft.±
902	44	14	10724 FOLKSTONE WAY	466.1'	461.69'	2,047 Sq. Ft.±
902	44	15	10726 FOLKSTONE WAY	464.5'	460.01'	2,043 Sq. Ft.±
902	44	16	10728 FOLKSTONE WAY	463.8'	459.38'	2,041 Sq. Ft.±
916	34	17	10730 FOLKSTONE WAY	461.9'	457.49'	2,782 Sq. Ft.±
916	33	18	10732 FOLKSTONE WAY	459.8'	456.33'	2,757 Sq. Ft.±
902	45	19	10734 FOLKSTONE WAY	457.6'	454.45'	1,983 Sq. Ft.±
836	43	20	10736 FOLKSTONE WAY	456.9'	453.44'	1,950 Sq. Ft.±
872	32	21	10738 FOLKSTONE WAY	455.2'	451.66'	2,767 Sq. Ft.±
916	25	22	10743 FOLKESTONE WAY	454.1'	450.57'	3,604 Sq. Ft.±
902	39	23	10741 FOLKESTONE WAY	454.4'	450.91'	2,302 Sq. Ft.±
902	39	24	10739 FOLKESTONE WAY	455.3'	451.78'	2,306 Sq. Ft.±
902	40	25	10737 FOLKSTONE WAY	457.0'	453.64'	2,278 Sq. Ft.±
916	29	26	10735 FOLKSTONE WAY	457.9'	454.59'	3,157 Sq. Ft.±
916	31	27	10733 FOLKSTONE WAY	461.3'	456.84'	3,000 Sq. Ft.±
902	41	28	10731 FOLKSTONE WAY	460.9'	457.58'	2,200 Sq. Ft.±
902	41	29	10729 FOLKSTONE WAY	462.6'	459.13'	2,200 Sq. Ft.±
902	41	30	10727 FOLKSTONE WAY	464.5'	460.05'	2,200 Sq. Ft.±
902	41	31	10725 FOLKSTONE WAY	466.1'	461.67'	2,200 Sq. Ft.±
902	41	32	10723 FOLKSTONE WAY	466.8'	462.36'	2,200 Sq. Ft.±
916	31	33	10721 FOLKSTONE WAY	468.5'	464.04'	2,950 Sq. Ft.±
916	38	35	2200 BROMLEY COURT	464.4'	460.32'	2,430 Sq. Ft.±
902	51	36	2202 BROMLEY COURT	464.0'	459.92'	1,782 Sq. Ft.±
902	51	37	2204 BROMLEY COURT	463.9'	459.83'	1,782 Sq. Ft.±
902	51	38	2206 BROMLEY COURT	463.7'	459.02'	1,782 Sq. Ft.±
902	51	39	2208 BROMLEY COURT	463.6'	459.51'	1,782 Sq. Ft.±
902	51	40	2210 BROMLEY COURT	463.3'	459.29'	1,782 Sq. Ft.±
916	38	41	2212 BROMLEY COURT	463.2'	459.11'	2,430 Sq. Ft.±
916	37	42	10800 WADSWORTH ROAD	465.3'	460.82'	2,498 Sq. Ft.±
902	55	43	10802 WADSWORTH ROAD	466.5'	462.02'	1,650 Sq. Ft.±
902	55	44	10804 WADSWORTH ROAD	466.7'	462.21'	1,650 Sq. Ft.±
902	55	45	10806 WADSWORTH ROAD	467.5'	463.05'	1,650 Sq. Ft.±
902	55	46	10808 WADSWORTH ROAD	467.7'	463.27'	1,650 Sq. Ft.±
916	41	47	10810 WADSWORTH ROAD	468.7'	464.25'	2,250 Sq. Ft.±
916	41	48	10812 WADSWORTH ROAD	469.0'	464.54'	2,250 Sq. Ft.±
902	55	49	10814 WADSWORTH ROAD	469.9'	465.45'	1,650 Sq. Ft.±
902	55	50	10816 WADSWORTH ROAD	470.4'	465.98'	1,650 Sq. Ft.±
902	55	51	10818 WADSWORTH ROAD	470.8'	466.39'	1,650 Sq. Ft.±
902	55	52	10820 WADSWORTH ROAD	471.5'	467.08'	1,650 Sq. Ft.±
902	55	53	10822 WADWORTH ROAD	471.9'	467.49'	1,650 Sq. Ft.±
902	55	54	10824 WADSWORTH ROAD	472.6'	468.16'	1,650 Sq. Ft.±
916	41	55	10826 WADSWORTH ROAD	472.9'	468.41'	2,250 Sq. Ft.±
916	31	56	10825 WADSWORTH ROAD	472.5'	468.09'	3,000 Sq. Ft.±
902	41	57	10823 WADSWORTH ROAD	471.8'	467.39'	2,200 Sq. Ft.±
902	41	58	10821 WADSWORTH ROAD	471.6'	467.15'	2,200 Sq. Ft.±
902	41	59	10819 WADSWORTH ROAD	470.7'	466.29'	2,200 Sq. Ft.±
902	41	60	10817 WADSWORTH ROAD	470.6'	466.10'	2,200 Sq. Ft.±
902	41	61	10815 WADWORTH ROAD	469.8'	465.38'	2,200 Sq. Ft.±
916	31	62	10813 WADSWORTH ROAD	469.4'	464.97'	3,000 Sq. Ft.±
916	31	63	10811 WADSWORTH ROAD	468.3'	463.84'	3,000 Sq. Ft.±
902	41	64	10809 WADSWORTH ROAD	468.1'	463.60'	2,200 Sq. Ft.±
902	41	65	10807 WADSWORTH ROAD	467.2'	462.76'	2,200 Sq. Ft.±
902	41	66	10805 WADSWORTH ROAD	466.9'	462.45'	2,200 Sq. Ft.±
902	41	67	10803 WADSWORTH ROAD	466.3'	461.85'	2,200 Sq. Ft.±
916	31	68	10801 WADSWORTH ROAD	465.5'	461.31'	2,961 Sq. Ft.±

LEGEND

Symbol	Description
———	Existing Contour 2' Interval
———	Existing Contour 10' Interval
———	Proposed Contour 2' Interval
———	Proposed Contour 10' Interval
+ 624	Spot Elevation
—SF—SF—	Silt Fence
FF	First Floor Elevation
BE	Basement Elevation
WO	Proposed Walkout
— — — —	Earth Dike
—X —X —	Tree Protection
⌒⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree

*NOTES:
1. ALL S.F. BLDG. AREAS INCLUDE 6 FT. EXTENSION AREAS, EXCEPT LOTS 20 & 21.
2. ALL LOTS PERMITTED 6 FT. EXTENSIONS EXCEPT LOT 21 WHICH IS ONLY PERMITTED A 2 FT. EXTENSION & LOT 20 IS NOT PERMITTED AN EXTENSION.
3. THERE ARE NO COVERAGE LIMITATIONS TO THE SIZE OF OPEN DECKS PER HOWARD COUNTY ZONING REGULATIONS SECTION 128.A.(2).

STATE OF MARYLAND
CHARLES J. CROVO
No. 13204
REGISTERED
PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.#40311 SDP2.DWG

ENGINEER'S CERTIFICATE

"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."

[illegible] 2/5/99
Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE

"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."

Wayne Flack 6-7-99
Signature of Developer (Print name below signature) Date

Reviewed for HOWARD SCD and meets Technical Requirements.
[illegible] 6/15/99
U.S.D.A.-Natural Resources Conservation Service Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
[illegible] 6/15/99
Howard SCD Date

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER
N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[illegible] 6/30/99
Chief, Division of Land Development Date
[illegible] 6/30/99
Chief, Development Engineering Division Date
[illegible] 6/30/99
Director - Department of Planning and Zoning Date

PROJECT			SECTION/AREA		LOT NO.
GTW'S WAVERLY WOODS			6		1-4, 6-33, 35-68, 98-102
PLAT 13512, 13515 - 13517	BLOCK NO. 6	ZONE R-SA	TAX/ZONE 16	ELEC. DIST. THIRD	CENSUS TR. 6030
WATER CODE H-05			SEWER CODE 5993000		

SITE DEVELOPMENT PLAN

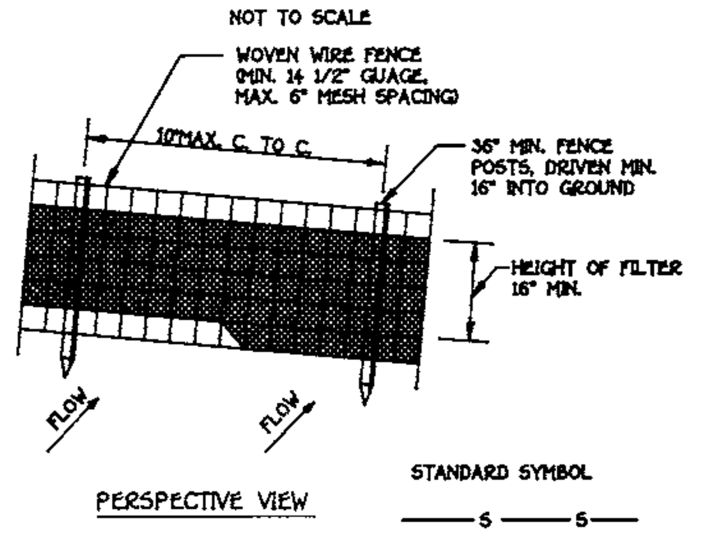
GTW'S WAVERLY WOODS
SECTION 6

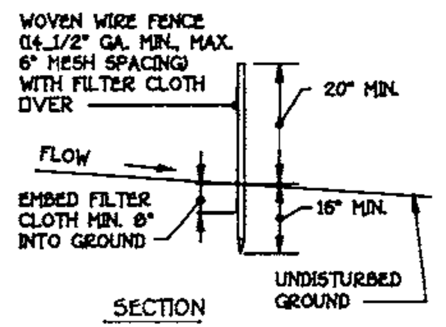
LOTS 1-4, 6-33, 35-68, 98-102
TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY 1999

S.D.P. 99-90

SILT FENCE

NOT TO SCALE





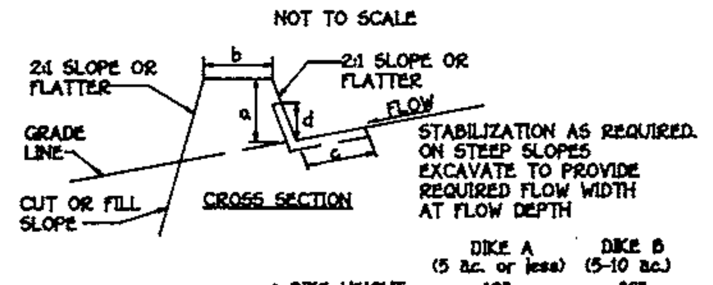
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OF STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
FENCE: WOVEN WIRE, 14. GA. 6" MAX. MESH OPENING
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T14 ON OR APPROVED EQUAL
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

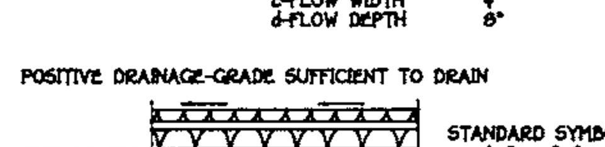
EARTH DIKE

NOT TO SCALE



	DIKE A (5 ac. or less)	DIKE B (5-10 ac.)
a-DIKE HEIGHT	18"	36"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	8"	15"

POSITIVE DRAINAGE-GRADE SUFFICIENT TO DRAIN



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

PERMANENT SEEDING NOTES

ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:

SEEDBED PREPARATION:
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS:
APPLY TWO TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/ 1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (14 LBS./1,000 SQ.FT.) BEFORE SEEDING HARROW OR DISC. INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 38-0-0 UREAFORM FERTILIZER (9 LBS./1,000 SQ.FT.) AND 500 LBS. PER ACRE (11.5 LBS./ 1,000 SQ.FT.) OF 10-20-20 FERTILIZER.

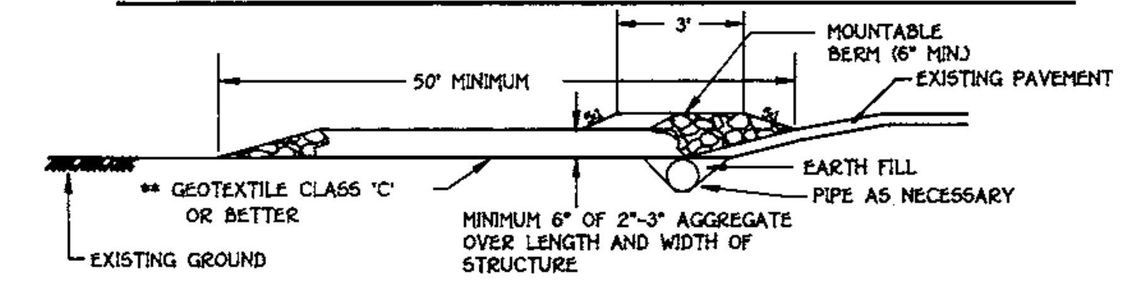
SEEDING:
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS/ACRE (1.4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28. PROJECT SITE BY: OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OPTION (2) - USE SOD; OPTION (3) - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEEDED.

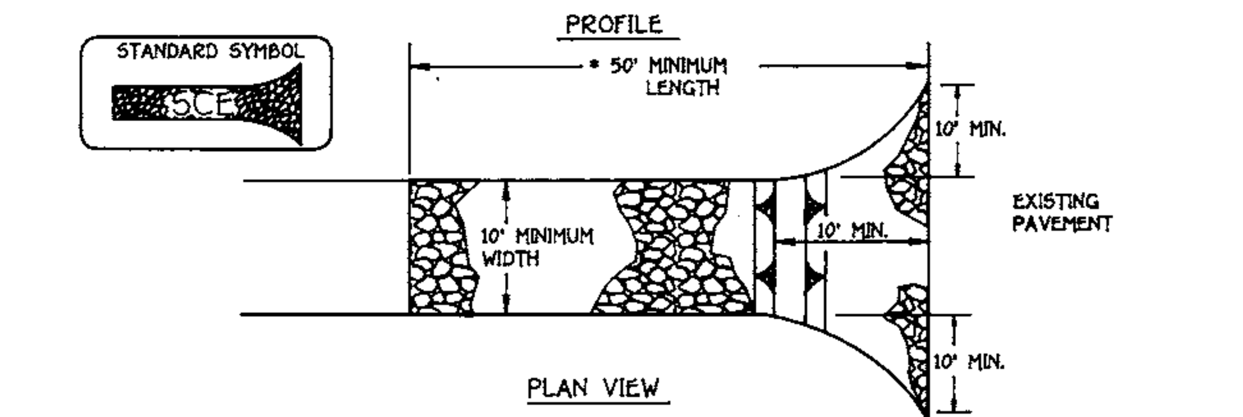
MULCHING:
APPLY 1 TO 2 TONS PER ACRE (10 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL/1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES. ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

MAINTENANCE:
INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

* FOR PUBLIC PONDS SUBSTITUTE CHEMUNG CROWNVETCH AT 15 LBS./ACRE AND KENTUCKY 31 TALL FESCUE AT 40 LBS/ACRE AS THE SEEDING REQUIREMENT. OPTIMUM SEEDING DATE FOR THIS MIXTURE IS MARCH 1 TO APRIL 30.

STABILIZED CONSTRUCTION ENTRANCE

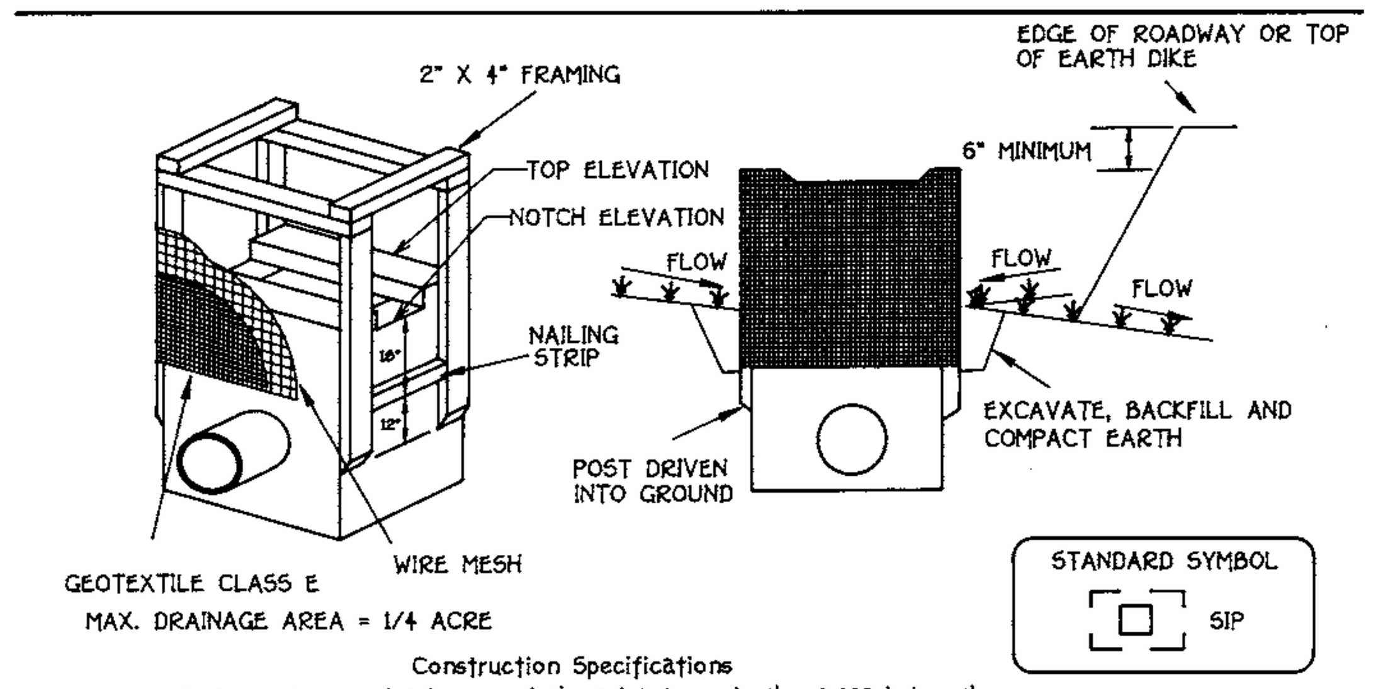




Construction Specification

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.

STANDARD INLET PROTECTION



GEOTEXTILE CLASS E

MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

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, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS:
APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./ 1,000 SQ.FT.)

SEEDING:
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 1 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE OF WEEPING LOVEGRASS (.07 LBS./ 1,000 SQ.FT. 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 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL.1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 8 FEET OR HIGHER. USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

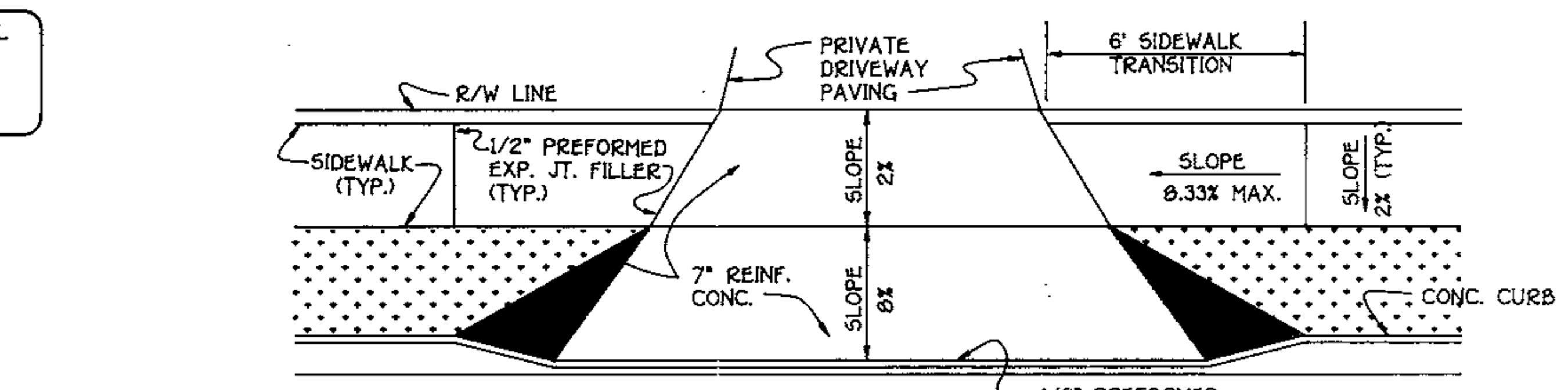
REFER TO THE 1988 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER 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. 1, CHAPTER 12, OF THE 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 (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
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:

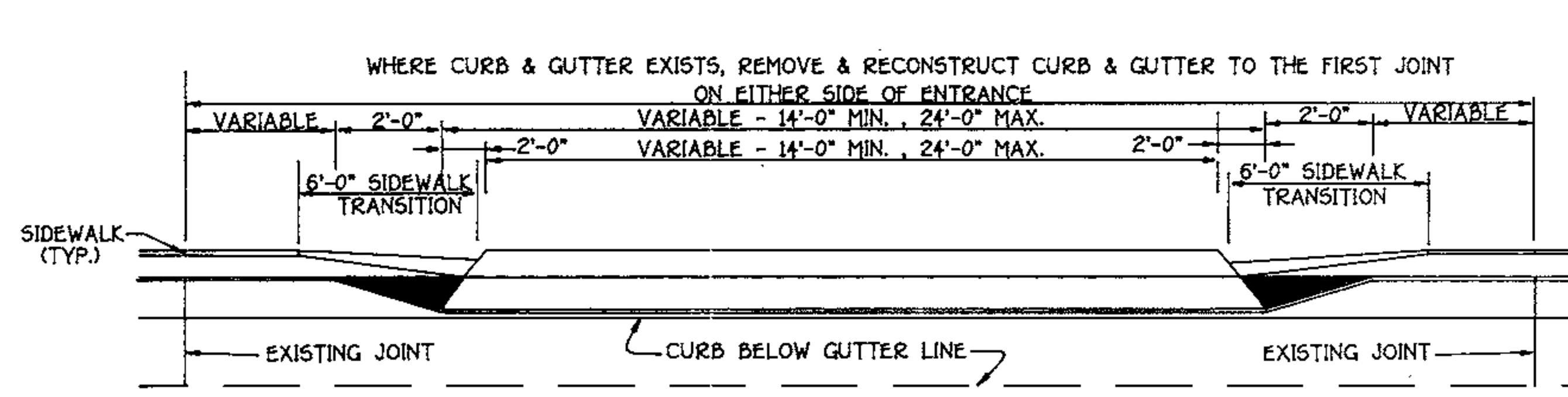
TOTAL AREA OF SITE	4.31	ACRES
AREA DISTURBED	4.31	ACRES
AREA TO BE ROOFED OR PAVED	1.42	ACRES
AREA TO BE VEGETATIVELY STABILIZED	2.89	ACRES
TOTAL CUT	1000	CU.YDS.
TOTAL FILL	1000	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	—	CU.YDS.

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 LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

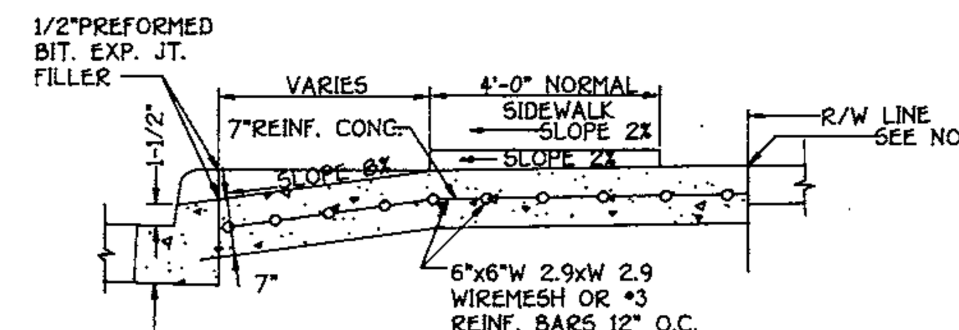


NOTE B: TIE-IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 14%.

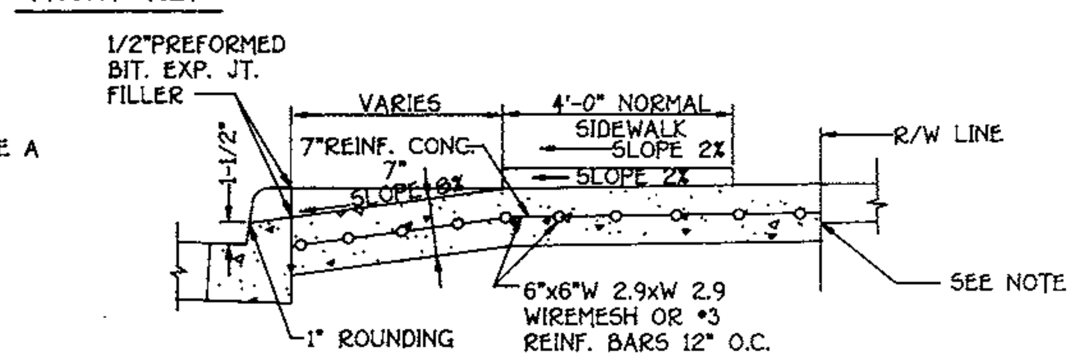
DRIVEWAY ENTRANCE



FRONT VIEW



SECTION:DRIVEWAY IN EXISTING CURB



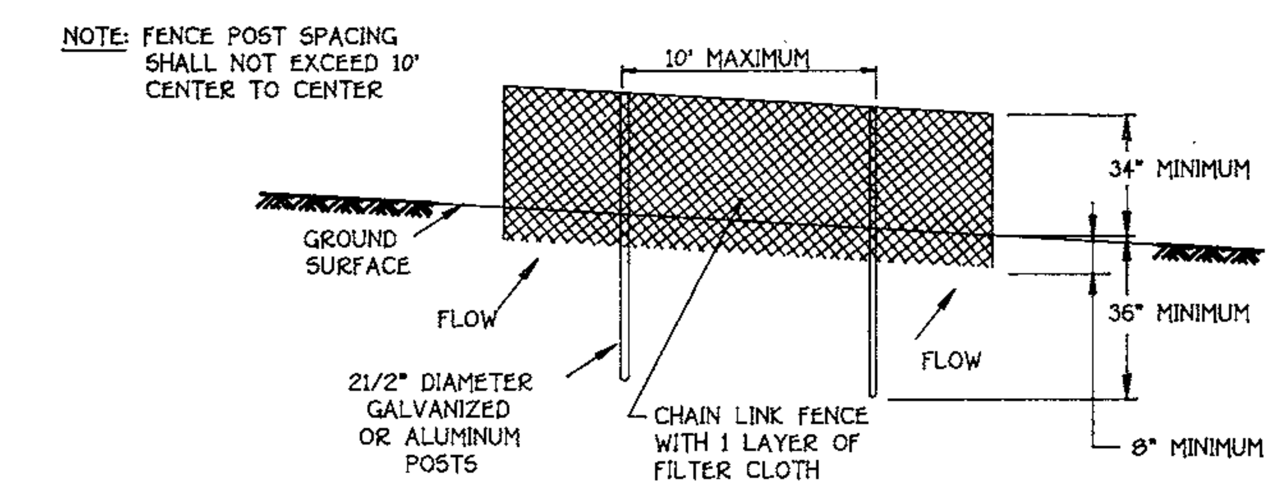
NOTE A: PRIVATE DRIVEWAY PAVING (IF CONC., 1/2" PREFORMED EXP. JT. FILLER IS TO BE PROVIDED AT R/W LINE)

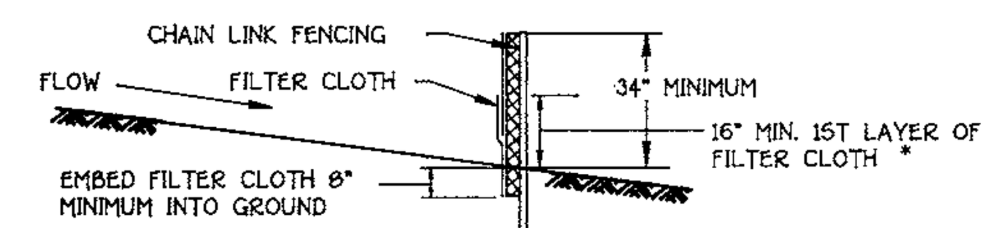
SECTION:DRIVEWAY IN NEW CURB

RESIDENTIAL DRIVEWAY ENTRANCE
CLOSED SECTION W/STD. 7" COMB. CURB
AND GUTTER AND SIDEWALK SET BACK FROM CURB

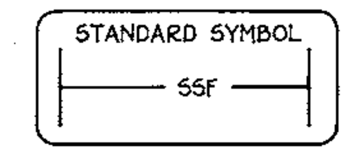
NO SCALE

SUPER SILT FENCE





* IF MULTIPLE LAYERS ARE REQUIRED TO ATTAIN 42"



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.

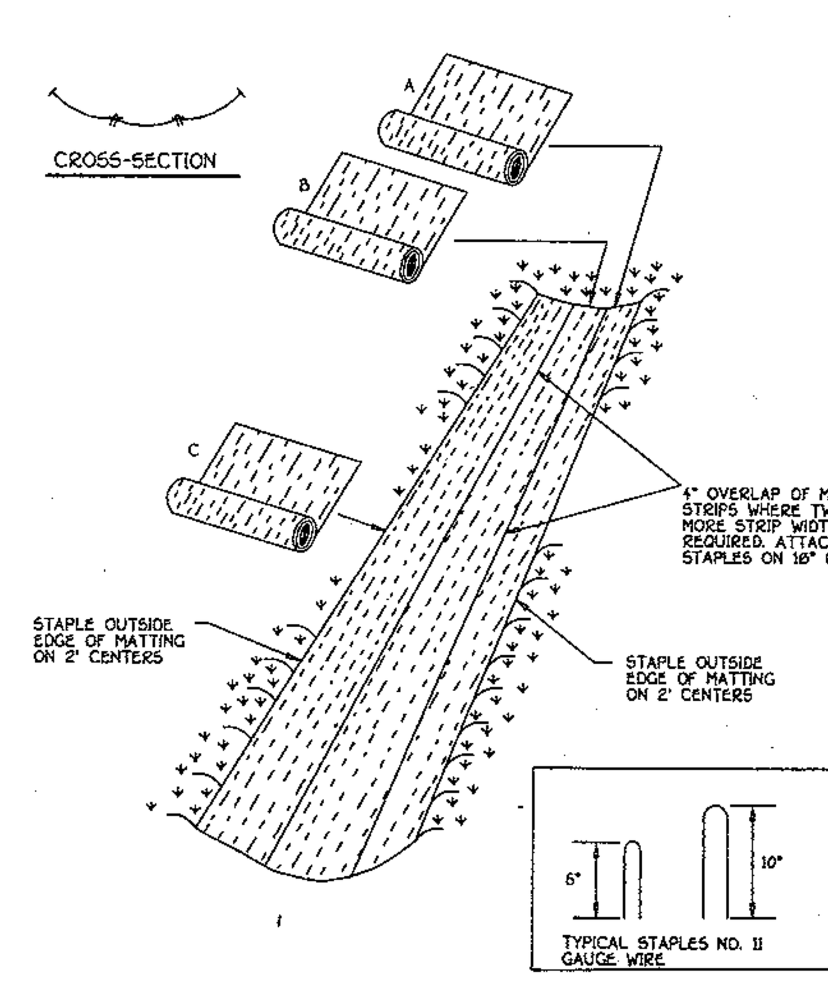
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

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

EROSION CONTROL MATTING



1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
2. Staple the 4" overlap in the channel center using an 18" spacing between staples.
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

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 run-off 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 dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging 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, percolation, 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.
Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
   i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
   ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
   iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
   i. 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 samples taken for engineering purposes may also be used for chemical analyses.
   ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
   iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (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.
   iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
   i. Temporary Seeding
      a. Seedbed 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 chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) 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. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
   ii. Permanent Seeding
      a. Minimum soil conditions required for permanent vegetative establishment:
         1. Soil pH shall be between 6.0 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 lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
         4. Soil shall contain 1.5% 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 disking or other suitable means. Lawn areas should be raked 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 seedbed preparation, loosen surface soil by dragging 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. Seedbed loosening may not be necessary on newly disturbed areas.
D. Seed Specifications
   i. 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 immediately preceding the date of sowing such material on this job.
   Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
   ii. 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 later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
   i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker 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; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.
      b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      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 Summaries or Tables 265 or 26. 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 Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
F. Mulch Specifications (In order of preference)
   i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
   ii. Wood Cellulose Fiber Mulch (WCFM)
      a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
      b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      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 mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass 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 phytol-toxic.
      f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm. , diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
   Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
   i. If grading is completed outside of the seeding season, mulch 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.
   ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
   iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch 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:
   i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch 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 can operate safely. If used on sloping land, this practice should be used on the contour if possible.
   ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
   iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

STATE OF MARYLAND — CHARLES J. CROVO — PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

G:\DWG52\GTW\40311\40311 DETAIL.DWG

ENGINEER'S CERTIFICATE

"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 of Engineer (Print name below signature) — Date 2/5/99

DEVELOPER'S CERTIFICATE

"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."

Wayne Flack — Signature of Developer (Print name below signature) — Date 6·7·99

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date 6/15/99

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date 6/15/99

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER
N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 6/30/99
Chief, Development Engineering Division — Date 6/30/99
Director - Department of Planning and Zoning — Date 6/30/99

PROJECT			SECTION/AREA		LOT NO.
GTW'S WAVERLY WOODS			6		1-4, 6-33, 35-68, 98-102
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
13512, 13515-13517	6	R-SA	16	THIRD	6030
WATER CODE			SEWER CODE		
H-05			5993000		

DETAIL SHEET

GTW'S WAVERLY WOODS
SECTION 6

LOTS 1-4, 6-33, 35-68, 98-102
TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY, 1999
SHEET 3 OF 6

S.D.P. 99-90

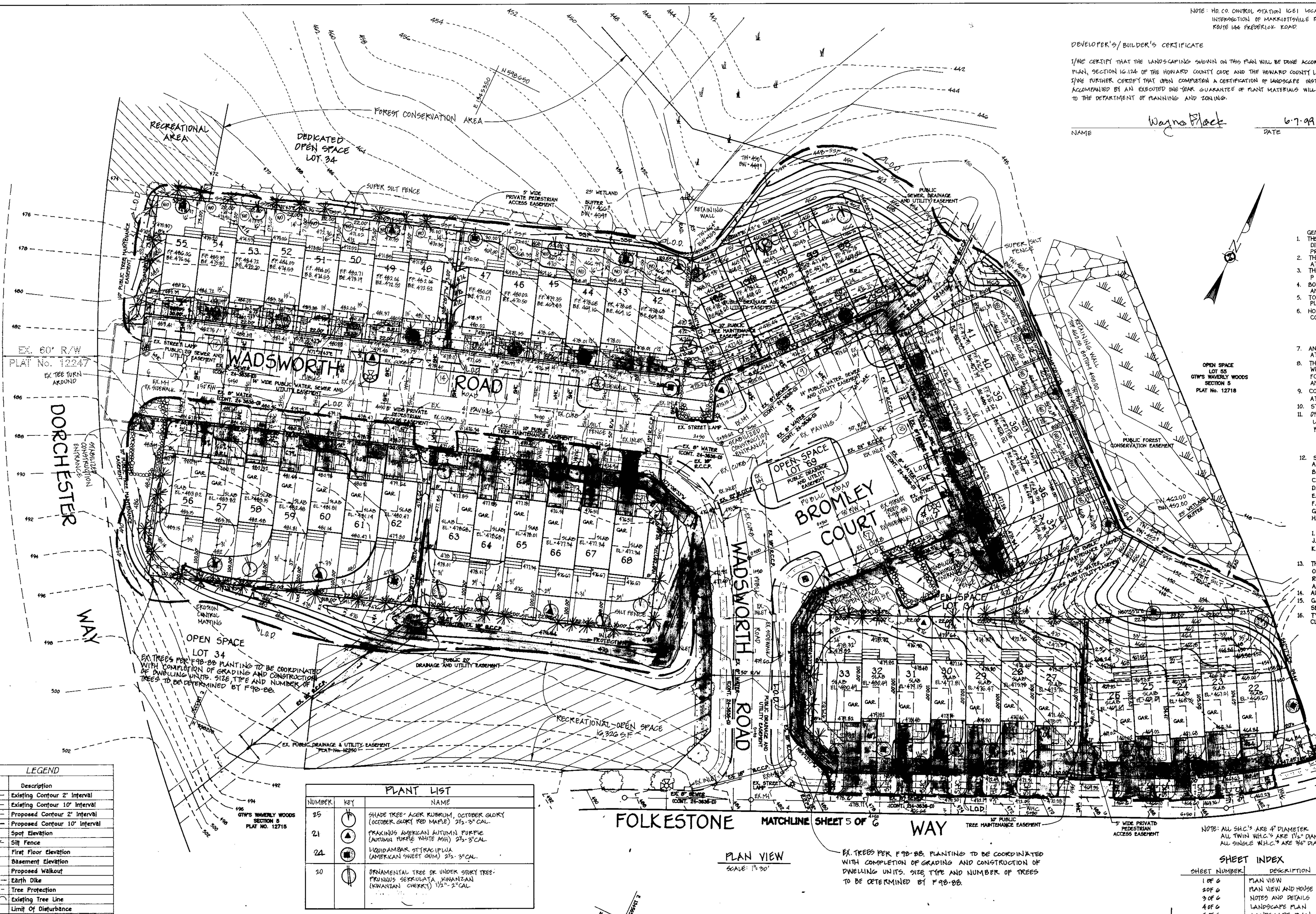
NOTE: HO. CO. CONTROL STATION 16E1 LOCATED AT THE INTERSECTION OF MARRIOTTSVILLE ROAD AND ROUTE 144 FREDERICK ROAD.

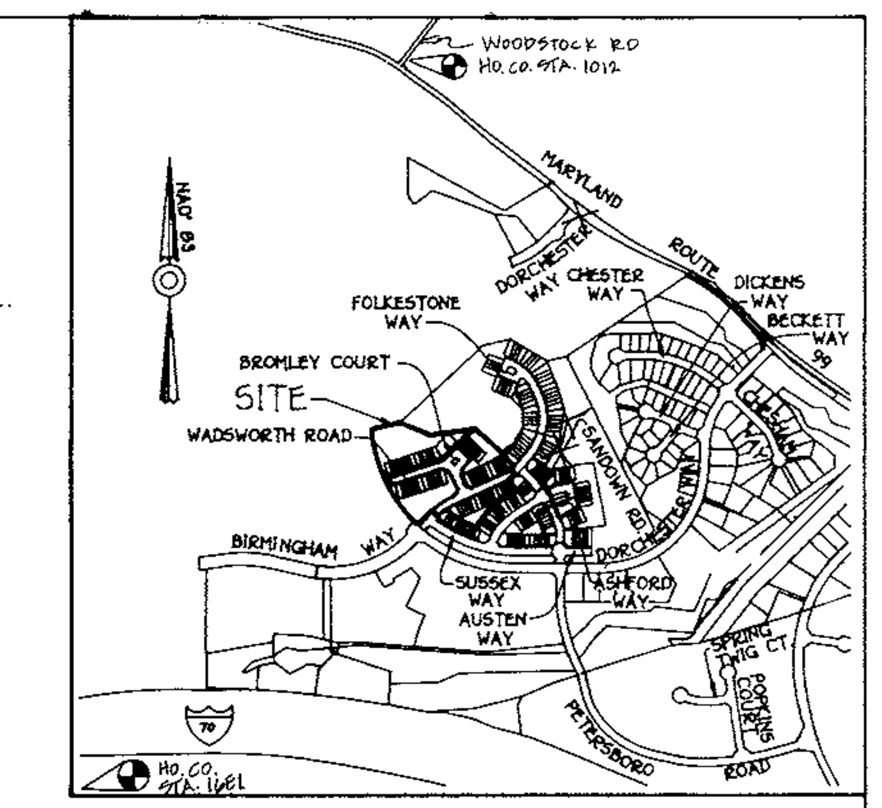
DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Wayne Flack 6·7·99

NAME DATE





VICINITY MAP

SCALE: 1" = 1200'

GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE THE CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEASE (5) FIVE WORKING DAYS PRIOR TO THE START OF WORK.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEASE 48 HOURS PRIOR TO ANY EXCAVATION WORK.
3. THIS PROJECT IS SUBJECT TO HOWARD COUNTY FILES: S 94-07, P 97-09, F 98-88, SDP 96-115
4. BOUNDARY SURVEY PERFORMED BY: FISHER COLLINS AND CARTER INC. ON OR ABOUT APRIL, 1996
5. TOPOGRAPHIC SURVEY SHOWN HEREON IS FROM APPROVED ROAD CONSTRUCTION PLANS F 98-88
6. HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS:

HOWARD COUNTY MONUMENT 1012	N 601060.177 E 1345336.7580	ELEV. = 445.577
HOWARD COUNTY MONUMENT 16E1	N 593250.9322 E 1340192.7110	ELEV. = 509.924

7. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
8. THIS PLAN IS FOR HOUSE SITING AND LOT GRADING ONLY. IMPROVEMENTS SHOWN WITHIN THE RIGHT-OF-WAYS OF THIS S.D.P. ARE NOT USED FOR CONSTRUCTION. FOR CONSTRUCTION SEE APPROVED ROAD CONSTRUCTION PLANS F-98-88 AND/OR APPROVED WATER AND SEWER PLANS CONTRACT NO. 24-3636-D
9. CONTRACTOR WILL CHECK SEWER HOUSE CONNECTION ELEVATION AT EASEMENT LINE PRIOR TO CONSTRUCTION.
10. STORMWATER MANAGEMENT OBLIGATIONS ARE FULFILLED UNDER F-98-88
11. OPEN DECKS ARE NOT CONSIDERED STRUCTURES FOR CALCULATING LOT COVERAGE ON SINGLE FAMILY ATTACHED DWELLINGS PER HOWARD COUNTY ZONING REGULATIONS SECTION 128.A(2).

12. SITE ANALYSIS DATA:
   A. TOTAL PROJECT AREA: 4.31± AC.*
   B. AREA OF PLAN SUBMISSION: 4.31± AC.*
   C. LIMIT OF DISTURBED AREA: 4.31± AC.*
   D. PRESENT ZONING: R-SA-8
   E. PROPOSED USE FOR SITE AND STRUCTURES: SINGLE FAMILY ATTACHED D.U.
   F. TOTAL NUMBER OF UNITS ALLOWED: 71
   G. TOTAL NUMBER OF UNITS PROPOSED: 71
   H. NUMBER OF PARKING SPACES REQUIRED: 142 (2 SPACES PER DWELLING UNIT)
   I. NUMBER OF PARKING SPACES PROVIDED: 150
   J. OPEN SPACE REQUIREMENTS ARE PROVIDED SEE F-96-128
   K. RECREATIONAL OPEN SPACE REQUIREMENTS ARE PROVIDED (250 S.F. PER D.U.) PROVIDED 20,917 S.F. 66 D.U. * 250 PER D.U. = 17,750 S.F.
13. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISION OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE GRADING PERMIT IN THE AMOUNT OF $24,000
14. ALL DWELLING UNITS ARE WALK OUT CONDITIONS UNLESS NOTED OTHERWISE
15. GARAGES SHALL BE USED FOR PARKING PURPOSE ONLY IN ACCORDANCE WITH SECTION 133.D.2.a. OF THE HOWARD COUNTY ZONING REGULATIONS.
16. TYPICAL DRIVEWAY APRON DETAIL FOR ALL GARAGE UNITS TO BE HOWARD COUNTY CLOSED SECTION DETAIL. SEE SHEET 3 OF 6 FOR SPECIFICATIONS.

PARKING ANALYSIS

1. PARKING SPACES REQUIRED:
   2 PARKING SPACES PER DWELLING UNIT (2×66 = 132)
2. PARKING SPACES PROVIDED:
   GARAGE UNITS (41) = 82 PARKING SPACES
   ONE CAR PARKED IN GARAGE
   ONE CAR PARKED IN DRIVEWAY

PARKING SPACES PROVIDED:
GARAGE UNITS: 82
SPACES IN R/W: 68
TOTAL SPACES: 150

NOTE: ALL SH.C.'S ARE 4" DIAMETER.
ALL TWIN W.H.C.'S ARE 1½" DIAMETER.
ALL SINGLE W.H.C.'S ARE 3/4" DIAMETER.

PLAN VIEW

SCALE: 1"=30'

EX. TREES PER F98-88. PLANTING TO BE COORDINATED WITH COMPLETION OF GRADING AND CONSTRUCTION OF DWELLING UNITS. SIZE, TYPE AND NUMBER OF TREES TO BE DETERMINED BY F98-88.

SHEET INDEX

SHEET NUMBER	DESCRIPTION
1 OF 6	PLAN VIEW
2 OF 6	PLAN VIEW AND HOUSE DETAILS
3 OF 6	NOTES AND DETAILS
4 OF 6	LANDSCAPE PLAN
5 OF 6	LANDSCAPE PLAN
6 OF 6	RETAINING WALL DETAILS

*THIS PLAN FOR LANDSCAPING ONLY!

LEGEND

Symbol	Description
— — — —	Existing Contour 2' Interval
———	Existing Contour 10' Interval
———	Proposed Contour 2' Interval
━━━	Proposed Contour 10' Interval
+ 624	Spot Elevation
-SF—SF-	Silt Fence
FF	First Floor Elevation
BE	Basement Elevation
(WO)	Proposed Walkout
- - - - - -	Earth Dike
-X —X -	Tree Protection
⌒⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree
XXX	EROSION CONTROL MATTING

PLANT LIST

NUMBER	KEY	NAME
25	⊕	SHADE TREE- ACER RUBRUM, OCTOBER GLORY (OCTOBER GLORY RED MAPLE) 2½-3" CAL.
21	▲	FRAXINUS AMERICAN AUTUMN PURPLE (AUTUMN PURPLE WHITE ASH) 2½-3" CAL.
24	■	LIQUIDAMBAR STYRACIFLUA (AMERICAN SWEET GUM) 2½-3" CAL.
20	⊕	ORNAMENTAL TREE OR UNDER STORY TREE: PRUNUS SERRULATA KWANZAN (KWANZAN CHERRY) 1½"-2" CAL.

11-11-99 ADD UNITS 98-102, REV. LANDSCAPING & SURETY

1. Rev. lot Nº 98-102 per rec. plat 6-19-01

REVISIONS

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.#40311 SDP

STATE OF MARYLAND PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

[illegible] 6/7/99

Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE

"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."

Wayne Flack 6-7-99

Signature of Developer (Print name below signature) Date

Reviewed for HOWARD SCD and meets Technical Requirements.

Cheryl Simmons 6/15/99

U.S.D.A.-Natural Resources Conservation Service Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John R. Robertson 6/15/99

Howard SCD Date

OWNER AND DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER

N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[illegible] 6/30/99

Director - Department of Planning and Zoning Date

[illegible] 6/30/99

Chief, Division of Land Development Date

[illegible] 6/30/99

Chief, Development Engineering Division Date

SUBDIVISION			SECTION/AREA		LOT NO.
GTW'S WAVERLY WOODS			6		1-4, 6-33, 35-68, 98-102
PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
13512, 13515-13517	6	R-SA	16	THIRD	6030
WATER CODE	H-05		SEWER CODE	5993000	

SITE DEVELOPMENT PLAN
LANDSCAPE PLAN

GTW'S WAVERLY WOODS
SECTION 6

LOTS 1-4, 6-33, 35-68, 98-102

TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY, 1999
SHEET 4 OF 6

S.D.P. 99-90

SCHEDULE B

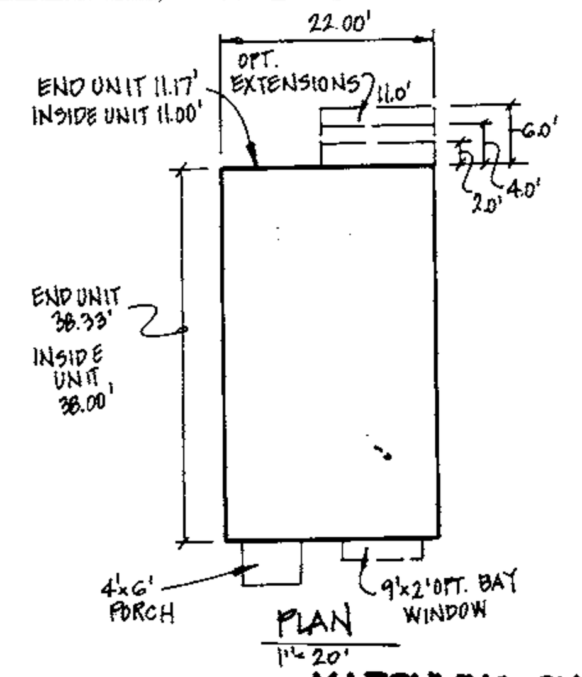
PARKING LOT INTERNAL LANDSCAPING

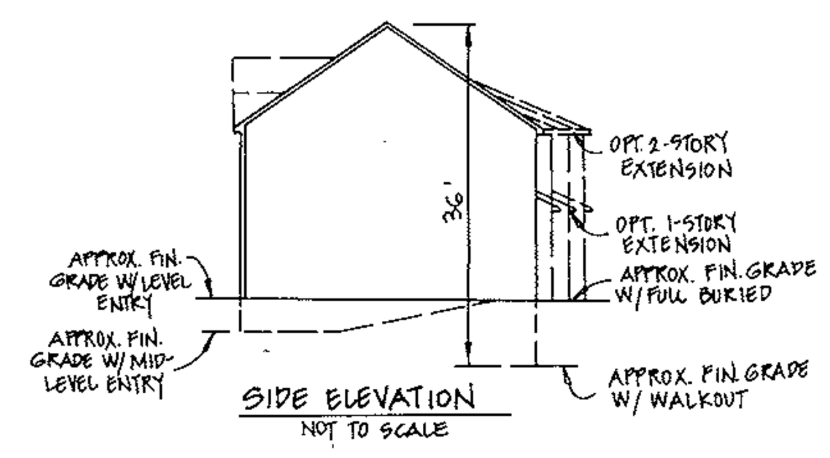
NUMBER OF PARKING SPACES	92
NUMBER OF TREES REQUIRED	9
NUMBER OF TREES PROVIDED	
SHADE TREES	9
OTHER TREES (2:1 SUBSTITUTION)	—

SCHEDULE C

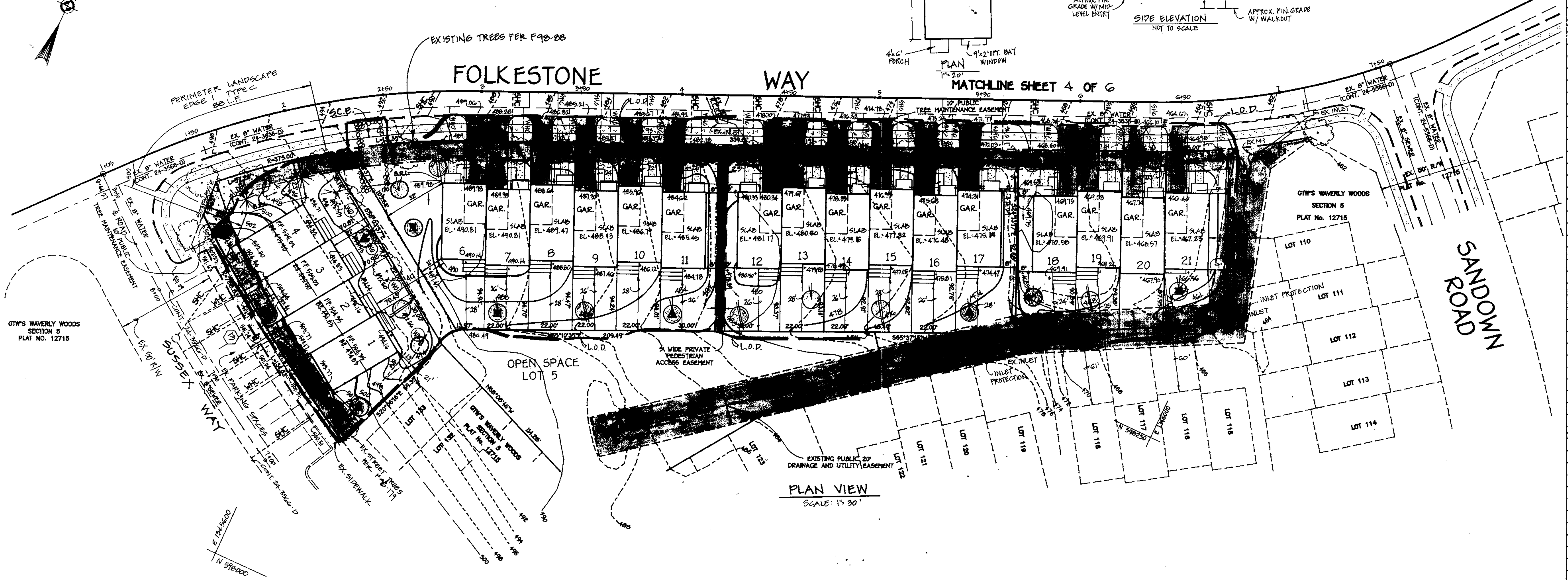
RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING

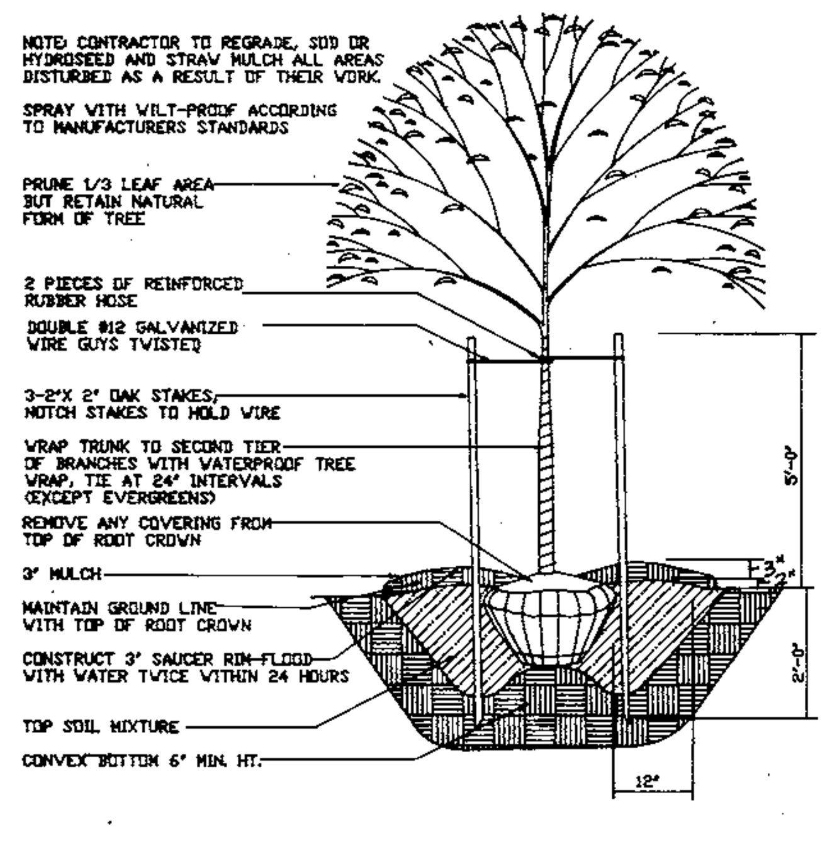
NUMBER OF DWELLING UNITS	71
NUMBER OF TREES REQUIRED (1 D.U. SFA 1:3 DU APTS)	71
NUMBER OF TREES PROVIDED	
SHADE TREES	6L
OTHER TREES (2:1 SUBSTITUTION)	20



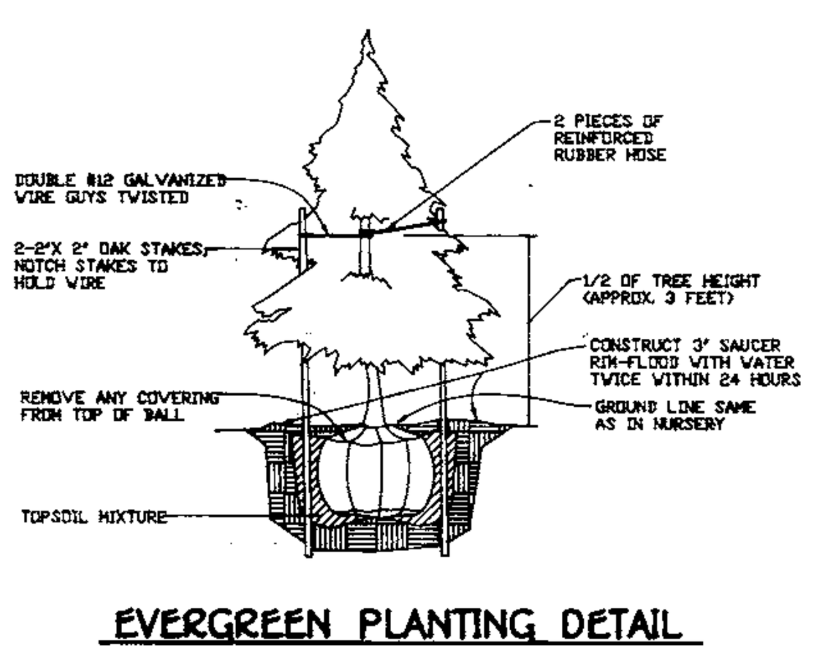


LOT INFORMATION						
DWELLING UNIT SIZE (S.F.)	% OF COVERAGE	UNIT NUMBER	STREET ADDRESS	MIN. CELLAR ELEV.	INV. ELEV • PROPERTY LINE (S.H.C.)	LOT SIZE
916	34	1	2242 SUSSEX WAY	494.7'	490.53'	2,661 Sq. Ft.±
902	58	2	2244 SUSSEX WAY	494.9'	490.80'	1,556 Sq. Ft.±
902	58	3	2246 SUSSEX WAY	495.1'	490.96'	1,560 Sq. Ft.±
916	28	4	2248 SUSSEX WAY	495.4'	491.29'	3,300 Sq. Ft.±
916	23	6	10708 FOLKSTONE WAY	479.0'	474.59'	4,013 Sq. Ft.±
902	43	7	10710 FOLKSTONE WAY	478.4'	473.94'	2,086 Sq. Ft.±
902	43	8	10712 FOLKSTONE WAY	478.0'	473.56'	2,081 Sq. Ft.±
902	43	9	10714 FOLKSTONE WAY	476.0'	472.49'	2,076 Sq. Ft.±
902	43	10	10716 FOLKSTONE WAY	471.6'	467.10'	2,071 Sq. Ft.±
916	32	11	10718 FOLKSTONE WAY	470.0'	465.52'	2,816 Sq. Ft.±
916	33	12	10720 FOLKSTONE WAY	468.5'	464.00'	2,806 Sq. Ft.±
902	34	13	10722 FOLKSTONE WAY	466.8'	462.37'	2,052 Sq. Ft.±
902	44	14	10724 FOLKSTONE WAY	466.1'	461.69'	2,047 Sq. Ft.±
902	44	15	10726 FOLKSTONE WAY	464.5'	460.01'	2,043 Sq. Ft.±
902	44	16	10728 FOLKSTONE WAY	463.8'	459.38'	2,041 Sq. Ft.±
916	34	17	10730 FOLKSTONE WAY	461.9'	457.49'	2,782 Sq. Ft.±
916	33	18	10732 FOLKSTONE WAY	459.8'	456.33'	2,757 Sq. Ft.±
902	45	19	10734 FOLKSTONE WAY	457.6'	454.45'	1,983 Sq. Ft.±
836	43	20	10736 FOLKSTONE WAY	456.9'	453.44'	1,950 Sq. Ft.±
872	32	21	10738 FOLKSTONE WAY	455.2'	451.66'	2,767 Sq. Ft.±
916	25	22	10743 FOLKESTONE WAY	454.1'	450.57'	3,604 Sq. Ft.±
902	39	23	10741 FOLKESTONE WAY	454.4'	450.91'	2,302 Sq. Ft.±
902	39	24	10739 FOLKESTONE WAY	455.3'	451.78'	2,306 Sq. Ft.±
902	40	25	10737 FOLKSTONE WAY	457.0'	453.64'	2,278 Sq. Ft.±
916	29	26	10735 FOLKSTONE WAY	457.9'	454.59'	3,157 Sq. Ft.±
916	31	27	10733 FOLKSTONE WAY	461.3'	456.84'	3,000 Sq. Ft.±
902	41	28	10731 FOLKSTONE WAY	460.9'	457.58'	2,200 Sq. Ft.±
902	41	29	10729 FOLKSTONE WAY	462.6'	459.13'	2,200 Sq. Ft.±
902	41	30	10727 FOLKSTONE WAY	464.5'	460.05'	2,200 Sq. Ft.±
902	41	31	10725 FOLKSTONE WAY	466.1'	461.67'	2,200 Sq. Ft.±
902	41	32	10723 FOLKSTONE WAY	466.8'	462.36'	2,200 Sq. Ft.±
916	31	33	10721 FOLKSTONE WAY	468.5'	464.04'	2,950 Sq. Ft.±
916	38	35	2200 BROMLEY COURT	464.4'	460.32'	2,430 Sq. Ft.±
902	51	36	2202 BROMLEY COURT	464.0'	459.92'	1,782 Sq. Ft.±
902	51	37	2204 BROMLEY COURT	463.9'	459.83'	1,782 Sq. Ft.±
902	51	38	2206 BROMLEY COURT	463.7'	459.02'	1,782 Sq. Ft.±
902	51	39	2208 BROMLEY COURT	463.6'	459.51'	1,782 Sq. Ft.±
902	51	40	2210 BROMLEY COURT	463.3'	459.29'	1,782 Sq. Ft.±
916	38	41	2212 BROMLEY COURT	463.2'	459.11'	2,430 Sq. Ft.±
916	37	42	10800 WADSWORTH ROAD	465.3'	460.82'	2,498 Sq. Ft.±
902	55	43	10802 WADSWORTH ROAD	466.5'	462.02'	1,650 Sq. Ft.±
902	55	44	10804 WADSWORTH ROAD	466.7'	462.21'	1,650 Sq. Ft.±
902	55	45	10806 WADSWORTH ROAD	467.5'	463.05'	1,650 Sq. Ft.±
902	55	46	10808 WADSWORTH ROAD	467.7'	463.27'	1,650 Sq. Ft.±
916	41	47	10810 WADSWORTH ROAD	468.7'	464.25'	2,250 Sq. Ft.±
916	41	48	10812 WADSWORTH ROAD	469.0'	464.54'	2,250 Sq. Ft.±
902	55	49	10814 WADSWORTH ROAD	469.9'	465.45'	1,650 Sq. Ft.±
902	55	50	10816 WADSWORTH ROAD	470.4'	465.98'	1,650 Sq. Ft.±
902	55	51	10818 WADSWORTH ROAD	470.8'	466.39'	1,650 Sq. Ft.±
902	55	52	10820 WADSWORTH ROAD	471.5'	467.08'	1,650 Sq. Ft.±
902	55	53	10822 WADWORTH ROAD	471.9'	467.49'	1,650 Sq. Ft.±
902	55	54	10824 WADSWORTH ROAD	472.6'	468.16'	1,650 Sq. Ft.±
916	41	55	10826 WADSWORTH ROAD	472.9'	468.41'	2,250 Sq. Ft.±
916	31	56	10825 WADSWORTH ROAD	472.5'	468.09'	3,000 Sq. Ft.±
902	41	57	10823 WADSWORTH ROAD	471.8'	467.39'	2,200 Sq. Ft.±
902	41	58	10821 WADSWORTH ROAD	471.6'	467.15'	2,200 Sq. Ft.±
902	41	59	10819 WADSWORTH ROAD	470.7'	466.29'	2,200 Sq. Ft.±
902	41	60	10817 WADSWORTH ROAD	470.6'	466.10'	2,200 Sq. Ft.±
902	41	61	10815 WADWORTH ROAD	469.8'	465.38'	2,200 Sq. Ft.±
916	31	62	10813 WADSWORTH ROAD	469.4'	464.97'	3,000 Sq. Ft.±
916	31	63	10811 WADSWORTH ROAD	468.3'	463.84'	3,000 Sq. Ft.±
902	41	64	10809 WADSWORTH ROAD	468.1'	463.60'	2,200 Sq. Ft.±
902	41	65	10807 WADSWORTH ROAD	467.2'	462.76'	2,200 Sq. Ft.±
902	41	66	10805 WADSWORTH ROAD	466.9'	462.45'	2,200 Sq. Ft.±
902	41	67	10803 WADSWORTH ROAD	466.3'	461.85'	2,200 Sq. Ft.±
916	31	68	10801 WADSWORTH ROAD	465.5'	461.31'	2,961 Sq. Ft.±

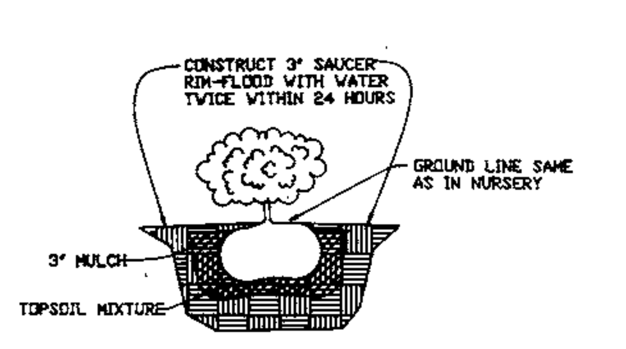




TREE PLANTING DETAIL



EVERGREEN PLANTING DETAIL



SHRUB PLANTING DETAIL

TREE PLANTING DETAIL

NOT TO SCALE

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no healed-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor id responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be base on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

Positive drainage shall be maintained in planting beds 2 percent slope).

Planting mix shall be as follows: Deciduous Plants – Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants – two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

This plan is intended for landscape use only. see other plan sheets for more information on grading, sediment control, layout, etc.

LEGEND	
Symbol	Description
——	Existing Contour 2' Interval
——	Existing Contour 10' Interval
——	Proposed Contour 2' Interval
——	Proposed Contour 10' Interval
+ 624	Spot Elevation
-SF—SF-	Silt Fence
FF	First Floor Elevation
BE	Basement Elevation
WO	Proposed Walkout
– – – –	Earth Dike
-X —X -	Tree Protection
⌒⌒⌒	Existing Tree Line
L.O.D.	Limit Of Disturbance
(x)	Existing Street Tree

* THIS PLAN FOR LANDSCAPING ONLY!

11-11-99 REV. SCHEDULE C

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F.C.C.#40311 SDP2.DWG

ENGINEER'S CERTIFICATE

"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."

[illegible] 6/7/99

Signature of Engineer (Print name below signature) Date

DEVELOPER'S CERTIFICATE

"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."

Wayne Black 6·7·99

Signature of Developer (Print name below signature) Date

Reviewed for HOWARD SCD and meets Technical Requirements.

Cheryl Simmons 6/15/99

U.S.D.A.-Natural Resources Conservation Service Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John R Robertson 6/15/99

Howard SCD Date

OWNER AND DEVELOPER

WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 215
COLUMBIA, MARYLAND 21044

BUILDER

N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 6/30/99

Chief, Division of Land Development Date

[illegible] 6/30/99

Chief, Development Engineering Division Date

[illegible] 6/30/99

Director - Department of Planning and Zoning Date

PROJECT				SECTION/AREA	LOT NO.
GTW'S WAVERLY WOODS				6	1-4, 6-33, 35-68, 98-102
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
13512, 13515-13517	6	R-SA	16	THIRD	6030
WATER CODE			SEWER CODE		
H-05			5993000		

SITE DEVELOPMENT PLAN
LANDSCAPE PLAN

GTW'S WAVERLY WOODS
SECTION 6

LOTS 1-4, 6-33, 35-68, 98-102

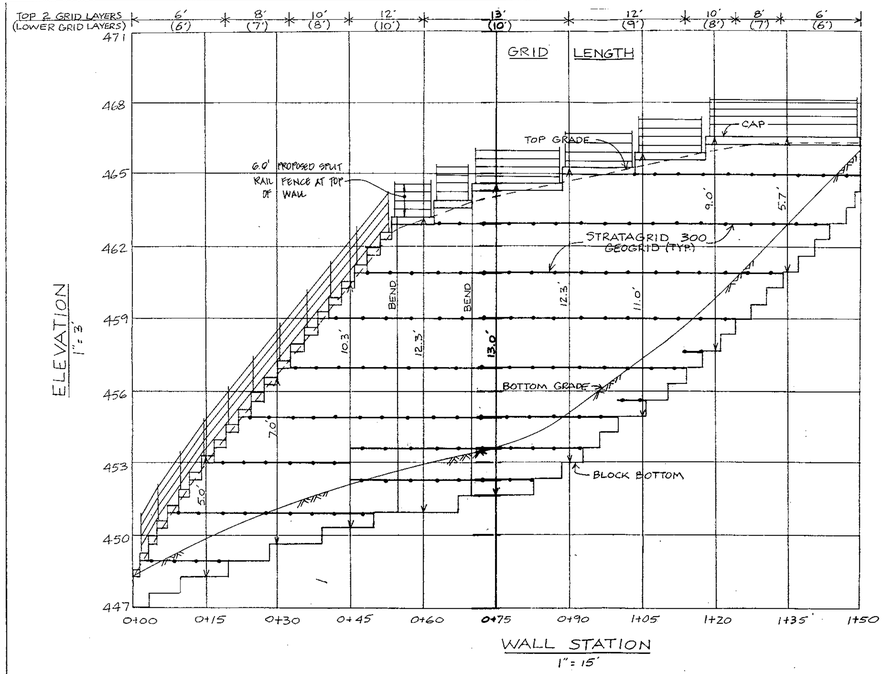
TAX MAP No: 16 PARCEL: 21

THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

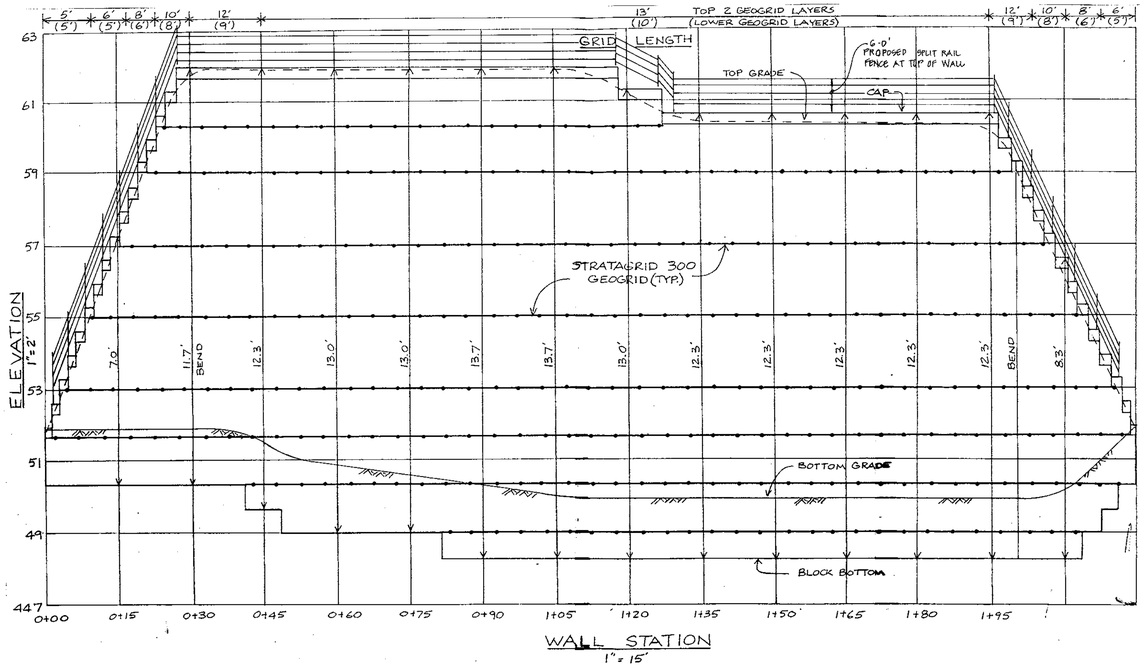
SCALE: AS SHOWN DATE: JANUARY 1999

SHEET 5 OF 6

S.D.P. 99-90



RETAINING WALL 'B' ELEVATION



RETAINING WALL 'A' ELEVATION

SPECIFICATION GUIDELINES
KEYSTONE CONCRETE MODULAR RETAINING WALL

■ PART 1: GENERAL

1.01 DESCRIPTION
- A. Work includes furnishing and installing modular block retaining wall units to the lines and grades designated on the construction drawings and as specified herein.
- B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit fill and backfill to the lines and grades designated on the construction drawings.
- C. Furnishing and installing all appurtenant materials required for construction of the retaining wall as shown on the construction drawings.

1.02 RELATED WORK
- A. Section 02275 — Geogrid Soil Reinforcement.

1.03 REFERENCE STANDARDS
- A. ASTM C90—85 Hollow Load Bearing Masonry Units.
- B. ASTM C140—75 Sampling and Testing Concrete Masonry Units.
- C. ASTM C145—85 Solid Load Bearing Concrete Masonry Units.

1.04 DELIVERY, STORAGE AND HANDLING
- A. Contractor shall check the materials upon delivery to assure that proper material has been received.
- B. Contractor shall prevent excessive mud, wet cement, epoxy, and like materials which may affix themselves, from coming in contact with the materials.
- C. Contractor shall protect the materials from damage. Damaged material shall not be incorporated into the retaining wall structure.

1.05 SUBMITTALS
- A. Samples of all products used in the work of this section.
- B. Latest edition of manufacturers specifications for proposed materials, method of installation and list of material proposed for use.

1.06 QUALITY ASSURANCE
- A. Soil testing and inspection service for quality control testing during earthwork operations will be supplied by the owner.

■ PART 2: PRODUCTS

2.01 CONCRETE UNITS
- A. Masonry units shall be KeyStone® Retaining Wall Units as manufactured by: _____
- B. Concrete wall units shall have a minimum net 28 day compressive strength of 3000 psi. The concrete shall have a maximum moisture absorption of 8 to 8 lbs/ft².
- C. Exterior dimensions may vary in accordance with ASTM C90—85. Standard and Compac units shall have a minimum of 1 square foot face area each. Mini units shall have a minimum 1/2 square foot face area each.
- D. KeyStone Standard units shall provide a minimum of 150 psf of wall face area. Fill which is contained within the dimensions of the units may be considered as 80% effective weight.
- E. Units shall have angled sides capable of concave and convex alignment curves with a minimum radius of 3.5 feet.
  NOTE: Where applicable, for straight walls use non-angled straight side cap units.
- F. Units shall be interlocked with non-corrosive fiberglass pins.
- G. Units shall be interlocked so to provide a minimum 1/4 inch setback per each course of wall height.
  NOTE: Where applicable, zero setback or one inch setback per course options can be used.

2.02 FIBERGLASS CONNECTING PINS
- A. Connecting pins shall be 1/2 inch diameter thermoset isophtalic polyester resin/pultruded fiberglass reinforcement rods.
- B. Pins shall have a minimum flexural strength of 128,000 psi and shall beam shear of 6400 psi.

2.03 BASE LEVELING PAD MATERIAL
- A. Material shall consist of compacted sand, gravel, crushed rock or leveling concrete (non-reinforced) as shown on construction drawing. The compacted leveling pad shall be a minimum 6 inches thick. When using a non-reinforced leveling concrete option, 1" to 3" thick, maintain the total leveling pad thickness.

2.04 UNIT FILL
- A. Fill for units shall be free draining crushed stone, 3/8" to 3/4", or coarse gravel (no more than 5% shall pass the No. 200 sieve with a maximum size of 3/4"). Gradation of the fill shall be approved by the Engineer.
- B. Place recommended fill behind the retaining wall units.

2.05 BACKFILL
- A. Material shall be insitu soils when approved by the engineer unless otherwise specified in the drawings. Unsuitable soils for backfill (heavy clays or organic soils) shall not be used in the backfill or in the reinforced soil mass.
- B. Where additional fill is required contractor shall submit sample and specifications to the engineer to determine if acceptable.

■ PART 3: EXECUTION

3.01 EXCAVATION
- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Over excavation shall not be paid for and replacement with compacted fill and/or wall system components will be required at contractor expense. Contractor shall be careful not to disturb embankment materials beyond lines shown.

3.02 FOUNDATION SOIL PREPARATION
- A. Foundation soil shall be excavated as required for footing dimensions shown on the construction drawings, or as directed by the Engineer.
- B. Foundation soil shall be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength. Soils not meeting required strength shall be removed and replaced with acceptable material.
- C. Over-excavated areas shall be filled with approved compacted backfill material.

3.03 BASE LEVELING PAD
- A. Leveling pad materials shall be placed as shown on the construction drawings, upon undisturbed insitu soils, to a minimum thickness of 6 inches.
- B. Material shall be compacted so as to provide a level hard surface on which to place the first course of units. Compaction shall be to 95% of standard proctor for sand or gravel type materials. For crushed rock, material shall be densely compacted.
- C. Leveling pad shall be prepared to insure complete contact of retaining wall unit with base.
- D. Leveling pad materials shall be to the depths and widths shown. Contractor may opt for using reduced depth of sands, gravel or crushed rock using a concrete topping. Concrete shall be unreinforced and a maximum of 1" to 3" thick.

3.04 UNIT INSTALLATION
- A. First course of concrete wall units shall be placed on the base leveling pad. The units shall be checked for level and alignment. The first course is the most important to insure accurate and acceptable results.
- B. Insure that units are in full contact with base.
- C. Units are placed side by side for full length of wall alignment. Alignment may be done by means of a string line or offset from base line.
- D. Install fiberglass connecting pins and fill all voids at units with unit fill material. Tamp fill.
- E. Sweep all excess material from top of units and install next course. Insure each course is completely unit filled, backfilled and compacted prior to proceeding to next course.
- F. Lay up each course insuring that pins protrude into adjoining courses above a minimum of one inch. Two pins are required per unit. Pull each unit forward, away from the embankment, against pins in the previous course and backfill as the course is completed. Repeat procedure to the extent of wall height.
- G. As appropriate where the wall changes elevation, units can be stepped with grade or turned into the embankment with a convex return end. Provide appropriate buried units on compacted leveling pad in area of convex return end.

3.05 CAP INSTALLATION
- A. Place KeyStone Cap units over projecting pins from units below. Pull forward to set back position. Back fill and compact to finished grade.
- B. As required, provide permanent mechanical connection to wall units with construction adhesive or epoxy. Apply adhesive or epoxy to bottom surface of cap units and install on units below.

3.06 GEOGRID INSTALLATION
- A. Follow the requirements of Section 02275, GEOGRID SOIL REINFORCEMENT.

GEOGRID SOIL REINFORCEMENT

■ PART 1: GENERAL

1.01 DESCRIPTION
- A. Work includes furnishing and installing geogrid reinforcement, wall fill, and backfill to the lines and grades designated on the construction drawings.
- B. Work includes furnishing and installing all appurtenant materials required for construction of the geogrid reinforced soil retaining wall as shown on the construction drawings.

1.02 RELATED WORK
- A. Section 02276.....KEYSTONE CONCRETE MODULAR RETAINING WALL.

1.03 REFERENCE STANDARDS
- A. See specific geogrid manufacturers reference standards.

1.04 DELIVERY, STORAGE AND HANDLING
- A. Contractor shall check the geogrid upon delivery to assure that the proper material has been received.
- B. Geogrids shall be stored above —20°F.
- C. Contractor shall prevent excessive mud, wet cement, epoxy and like materials which may affix themselves to the gridwork, from coming in contact with the geogrid material.
- D. Rolled geogrid material may be laid flat or stood on end for storage.

1.05 SUBMITTALS
- A. Samples of all products used in the work of this section.
- B. Latest edition of manufacturers specifications for proposed materials, method of installation and list of material proposed for use.

1.06 QUALITY ASSURANCE
- A. Soil testing and inspection services for quality control testing during earthwork operation will be supplied by the owner.

■ PART 2 PRODUCTS

2.01 DEFINITIONS
- A. Geogrid products shall be high density polyethylene expanded sheet or polyester woven fiber materials, specifically fabricated for use as soil reinforcement.
- B. Concrete retaining wall units are as detailed on the drawings and are specified under Section 02276.....KEYSTONE CONCRETE MODULAR RETAINING WALL.
- C. Wall fill is a free draining granular material used within the concrete units.
- D. Backfill is the soil which is used as fill for the reinforced soil mass.
- E. Foundation soil is the insitu soil.

2.02 GEOGRID
- A. Geogrid shall be the type as shown on the drawings having the property requirements as described within the manufacturers specifications.

2.03 ACCEPTABLE MANUFACTURERS
- A. A manufacturer's product shall be approved by the Engineer prior to bid opening.

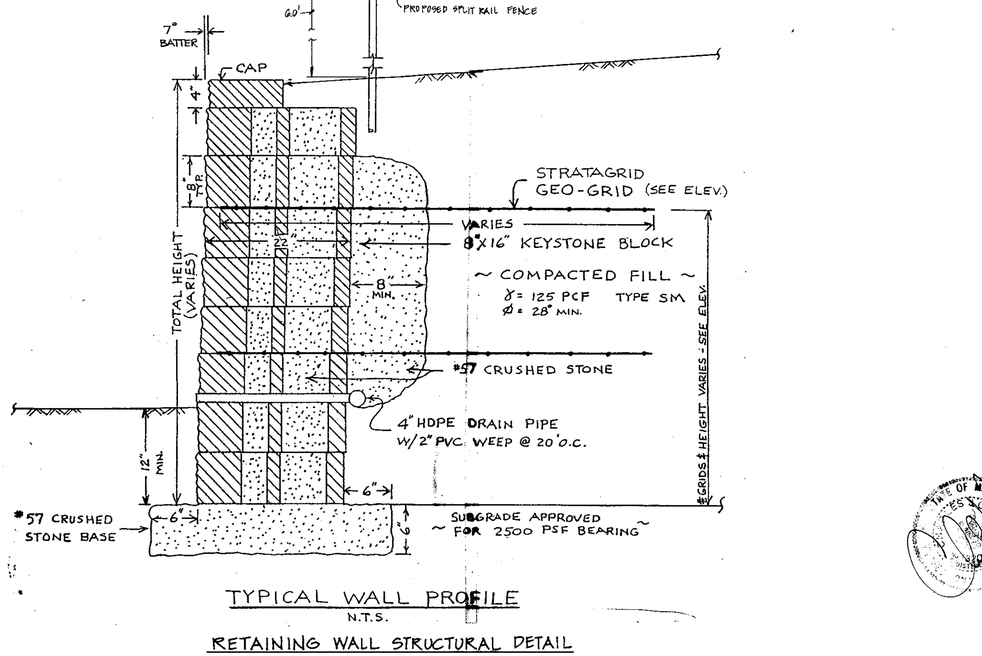
■ PART 3: EXECUTION

3.01 FOUNDATION SOIL PREPARATION
- A. Foundation soil shall be excavated to the lines and grades as shown on the construction drawings or as directed by the Engineer.
- B. Foundation soil shall be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength.
- C. Over-excavated areas shall be filled with approved compacted backfill material.
- D. Foundation soil shall be proof rolled prior to fill and geogrid placement.

3.02 WALL ERECTION
- A. Wall erection shall be as specified under Section 02276.....KEYSTONE CONCRETE MODULAR RETAINING WALL.

3.03 GEOGRID INSTALLATION
- A. The geogrid soil reinforcement shall be laid horizontally on compacted backfill. Connect to the concrete wall units by hooking geogrid over fiberglass pins. Pull taut, and anchor before backfill is placed on the geogrid.
- B. Stack in the geogrid at the wall unit connections shall be removed.
- C. Geogrid shall be laid at the proper elevation and orientation as shown on the construction drawings or as directed by the Engineer.
- D. Correct orientation (roll direction) of the geogrid shall be verified by the contractor.
- E. To pretension geogrid, pull pinned geogrid taut to eliminate loose folds. Stake or secure back edge of geogrid prior to and during backfill and compaction.
- F. Follow manufacturers guidelines relative to overlap requirements of uniaxial and biaxial geogrids.

3.04 FILL PLACEMENT
- A. Backfill material shall be placed in 8 inch lifts and compacted to 95% of Standard Proctor.
- B. Backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack or loss of pretension of the geogrid.
- C. Only hand-operated compaction equipment shall be allowed within 3 feet of the back surface of the KeyStone units.
- D. Backfill shall be placed from the wall rearward into the embankment to insure that the geogrid remains taut.
- E. Tracked construction equipment shall not be operated directly on the geogrid. A minimum backfill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
- F. Rubber-tired equipment may pass over the geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.



TYPICAL WALL PROFILE
N.T.S.

RETAINING WALL STRUCTURAL DETAIL

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

40272DET2.DWG

ENGINEER'S CERTIFICATE

"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 of Engineer (Print name below signature) — Date 6/7/99

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, 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 Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Wayne Black — 6.7.99

Signature of Developer (Print name below signature) — Date

Reviewed for HOWARD SCD and meets Technical Requirements.

Cheryl Simmons — 6/15/99
U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

John Clarkson — 6/15/99
Howard SCD — Date

OWNER AND DEVELOPER
WAVERLY WOODS DEVELOPMENT CORPORATION
C/O LAND DESIGN AND DEVELOPMENT, INC.
10805 HICKORY RIDGE ROAD, SUITE 225
COLUMBIA, MARYLAND 21044

BUILDER
N.V. HOMES
2200 DEFENSE HIGHWAY, SUITE 301
CROFTON, MARYLAND 21114

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 6/30/99

Chief, Development Engineering Division — Date 6/30/99

Director — Department of Planning and Zoning — Date 6/30/99

PROJECT	SECTION/AREA	LOT NO.
GTW'S WAVERLY WOODS	6	1-4, 6-33, 35-68, 98-102

PLAT NO.	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
19912, 13819-13917	6	R-SA	16	THIRD	6030

WATER CODE	SEWER CODE
W-05	5993000

SITE DEVELOPMENT PLAN
DETAIL SHEET

GTW'S WAVERLY WOODS
SECTION 6

LOTS 1-4, 6-33, 35-68, 98-102

TAX MAP No: 16 PARCEL: 21
THIRD ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JANUARY, 1999
SHEET 6 OF 6

SDP 99-90