

SITE ANALYSIS DATA CHART

- SUBJECT PROPERTY IS ZONED: MXD-3 (PER COMPREHENSIVE PLAN 2-02-04 AND ZB CASE NO. 9794)
- UNIT TYPE PROPOSED: SINGLE FAMILY ATTACHED
- NUMBER OF LOTS PROPOSED: 44
 - NUMBER OF OPEN SPACE LOTS: 3
 - NUMBER OF TOWNHOUSE LOTS: 41
- NUMBER OF PARKING SPACES REQUIRED: 95 (2.0 SPACES ARE REQUIRED PER THE EMERSON DEVELOPMENT CRITERIA AND 0.3 PARKING SPACES ARE REQUIRED PER UNIT FOR OVERFLOW/VISITORS PER THE DESIGN MANUAL)
- NUMBER OF PARKING SPACES PROVIDED: 112 SPACES (30 COMMON ON-STREET SPACES AND AT LEAST 82 SPACES ON LOTS)
- AREA TABULATION:
 - TOTAL AREA OF PARCEL: 5.462 ACRES
 - TOTAL LOT AREA: 2.015 ACRES
 - TOTAL OPEN SPACE AREA: 2.555 ACRES
 - TOTAL AREA OF ROADWAY TO BE RECORDED: 0.891 ACRES
 - LIMIT OF DISTURBED AREA 4.97 ACRES.

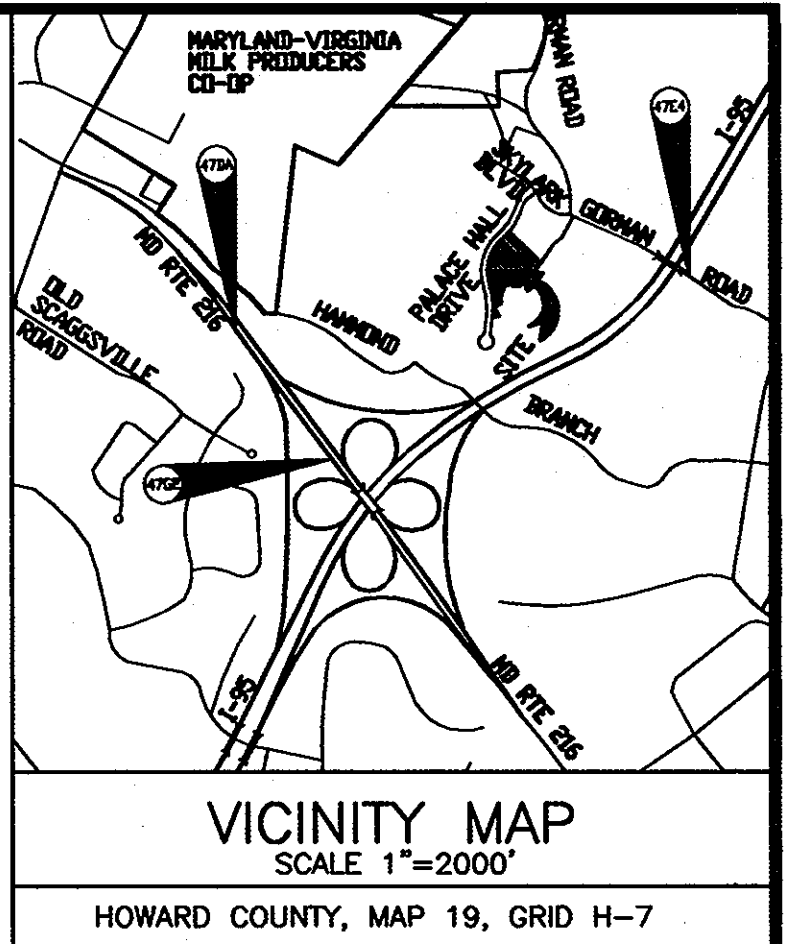
GENERAL NOTES

- TOPOGRAPHY SHOWN HAS A 2' CONTOUR INTERVAL AND WAS OBTAINED FROM FIELD RUN AND AERIAL TOPO PROVIDED BY Christopher Consultants, Ltd, DECEMBER 2005.
- APPLICABLE DPZ FILE REFERENCES: S 99-12, F 02-178, PB-339, ZB-979-11, F-04-68, F-01-145, F-02-55, PB-359, P 05-16, NP-04-13, F 06-25, F 06-143, PLAT NO 2-2981-62, F-10-024
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 315-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- UTILITIES SHOWN AS EXISTING ARE TAKEN FROM WATER AND SEWER PLANS CONTRACT #14-4322-D, CONTRACT #14-4318-D, ROAD CONSTRUCTION PLANS F 06-143, AND ACTUAL FIELD SURVEY.
- FOR DRIVEWAY ENTRANCE DETAILS, REFER TO HO.C.O. DESIGN MANUAL VOLUME IV, DETAILS R.6.03 & R.6.05.
- ANY DAMAGE TO COUNTY OWNED RIGHTS-OF-WAY SHALL BE CORRECTED AT OWNER'S EXPENSE.
- STORMWATER MANAGEMENT IS PROVIDED PER: F 02-178 & F 01-145.
- SHC ELEVATIONS SHOWN ARE AT THE PROPERTY LINES.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MD PLAN COORDINATE SYSTEM: HOWARD COUNTY MONUMENTS 470A, 470Z & 47EA.
- PUBLIC WATER & SEWER IS TO BE UTILIZED. (CONTRACT NO. 14-4322-D)
- IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- SFA SETBACKS IN ACCORDANCE WITH THE APPROVED EMERSON DEVELOPMENT CRITERIA PER PB-339
 - FRONT - 5' FROM R/W LINE OR PROPERTY LINE TO THE HOUSE OR GARAGE.
 - SIDE - 5' TO THE PROPERTY LINE FOR END UNITS.
 - REAR - 15' FROM THE REAR PROPERTY LINE.
 MINIMUM DISTANCE BETWEEN SFA BUILDINGS:
 - FRONT TO FRONT - 30'
 - BACK TO BACK - 50'
 - FRONT TO BACK - 50'
 - ALL OTHER CONDITIONS - 15'
 - FROM THE EDGE OF PARKING LOT SPACES - 15'
- SOME ROADS WITHIN THE DEVELOPMENT ARE PRIVATE.
- THERE ARE NO 100 YR. FLOODPLAINS WITHIN THIS PROPERTY BOUNDARY.
- TRAFFIC STUDY WAS SUBMITTED AND APPROVED AS PART OF THE SKETCH PLAN S 99-12, FEBRUARY, 2000.
- A NOISE STUDY BY CENTURY ENGINEERING HAS SUBMITTED AND APPROVED FOR THE AREA COVERED BY THIS PLAN UNDER S 99-12, MARCH, 1999.
- FOREST CONSERVATION OBLIGATIONS AND OPEN SPACE REQUIREMENTS FOR THIS PHASE OF EMERSON TOWN PROJECT HERE ADDRESSED UNDER F-04-68.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE, THE LANDSCAPE MANUAL AND THE EMERSON LANDSCAPE DESIGN CRITERIA. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$41,280 MUST BE POSTED AS PART OF THE BUILDER'S GRADING PERMIT APPLICATION (215 SHADE TREES, 10 EVERGREEN TREES AND 11 SHRUBS.)
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YR FLOODPLAIN.
- DRIVEWAYS SHALL BE PROVIDED TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE)
 - SURFACE - 6" OF CONTRACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN);
 - GEOMETRY - MAX. 1% GRADE, MAX. 10% GRADE CHANGE AND MIN. 45' TURNING RADIUS;
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING);
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE;
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- THIS SDP IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2005 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT APPLICATIONS.
- TRASH SERVICE WILL BE PROVIDED AT THE PUBLIC RIGHT OF WAY FOR LOTS 1-41. MAIL WILL BE PROVIDED IN A CENTRAL KIOSK SERVICE.
- 50 HOUSING UNIT ALLOCATIONS WERE RESERVED FOR THIS PARCEL. 9 ALLOCATIONS SHALL BE SHIFTED TO PARCEL "A-1", EMERSON SECTION 2 PHASE 7 (F-05-93).
- THE MINIMUM BUILDING SETBACK RESTRICTIONS FROM PROPERTY LINES AND PUBLIC ROAD RIGHT OF WAY LINES FOR ALL SFA LOTS SHALL BE IN ACCORDANCE WITH THE COMPREHENSIVE SKETCH PLAN DEVELOPMENT CRITERIA APPROVED UNDER S-99-12, PB-339 AND PB-359.
- THIS DEVELOPMENT WILL NOT INCLUDE ANY MODERATE INCOME HOUSING UNITS.
- FOR LOTS 1-6 AND 31-36, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED AT THE JUNCTION OF SHEET MAPLE LANE & TWILIGHT BEECH LANE AND THE ROAD RIGHT OF WAY LINE ONLY AND NOT ONTO SHEET MAPLE LANE & TWILIGHT BEECH LANE.

SITE DEVELOPMENT PLAN FOR EMERSON TOWNHOUSES

SECTION 2, PHASE 6A, LOTS 23-30, 92-124, OPEN SPACE LOTS 125, 126 & 127 AND PARCEL A-1 A RESUBDIVISION OF PARCEL "A-1" AND "B-1"

6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND



ADDRESS CHART

LOT NO.	ADDRESS
92	9211 SHEET MAPLE LANE
93	9209 SHEET MAPLE LANE
94	9207 SHEET MAPLE LANE
95	9205 SHEET MAPLE LANE
96	9203 SHEET MAPLE LANE
97	9201 SHEET MAPLE LANE
98	9220 JUNE FLOWERS WAY
99	9222 JUNE FLOWERS WAY
100	9224 JUNE FLOWERS WAY
101	9226 JUNE FLOWERS WAY
102	9228 JUNE FLOWERS WAY
103	9230 JUNE FLOWERS WAY
104	9232 JUNE FLOWERS WAY
105	9234 JUNE FLOWERS WAY
106	9236 JUNE FLOWERS WAY
107	9240 JUNE FLOWERS WAY
108	9242 JUNE FLOWERS WAY
109	9244 JUNE FLOWERS WAY
110	9246 JUNE FLOWERS WAY
111	9248 JUNE FLOWERS WAY
112	9250 JUNE FLOWERS WAY
113	9252 JUNE FLOWERS WAY
23	9716 SCENTLESS ROSE WAY
24	9714 SCENTLESS ROSE WAY
25	9712 SCENTLESS ROSE WAY
26	9710 SCENTLESS ROSE WAY
27	9708 SCENTLESS ROSE WAY
28	9706 SCENTLESS ROSE WAY
29	9704 SCENTLESS ROSE WAY
30	9702 SCENTLESS ROSE WAY
124	9212 TWILIGHT BEECH LANE
125	9210 TWILIGHT BEECH LANE
122	9208 TWILIGHT BEECH LANE
121	9206 TWILIGHT BEECH LANE
120	9204 TWILIGHT BEECH LANE
119	9202 TWILIGHT BEECH LANE
118	9221 JUNE FLOWERS WAY
117	9223 JUNE FLOWERS WAY
116	9225 JUNE FLOWERS WAY
115	9227 JUNE FLOWERS WAY
114	9229 JUNE FLOWERS WAY

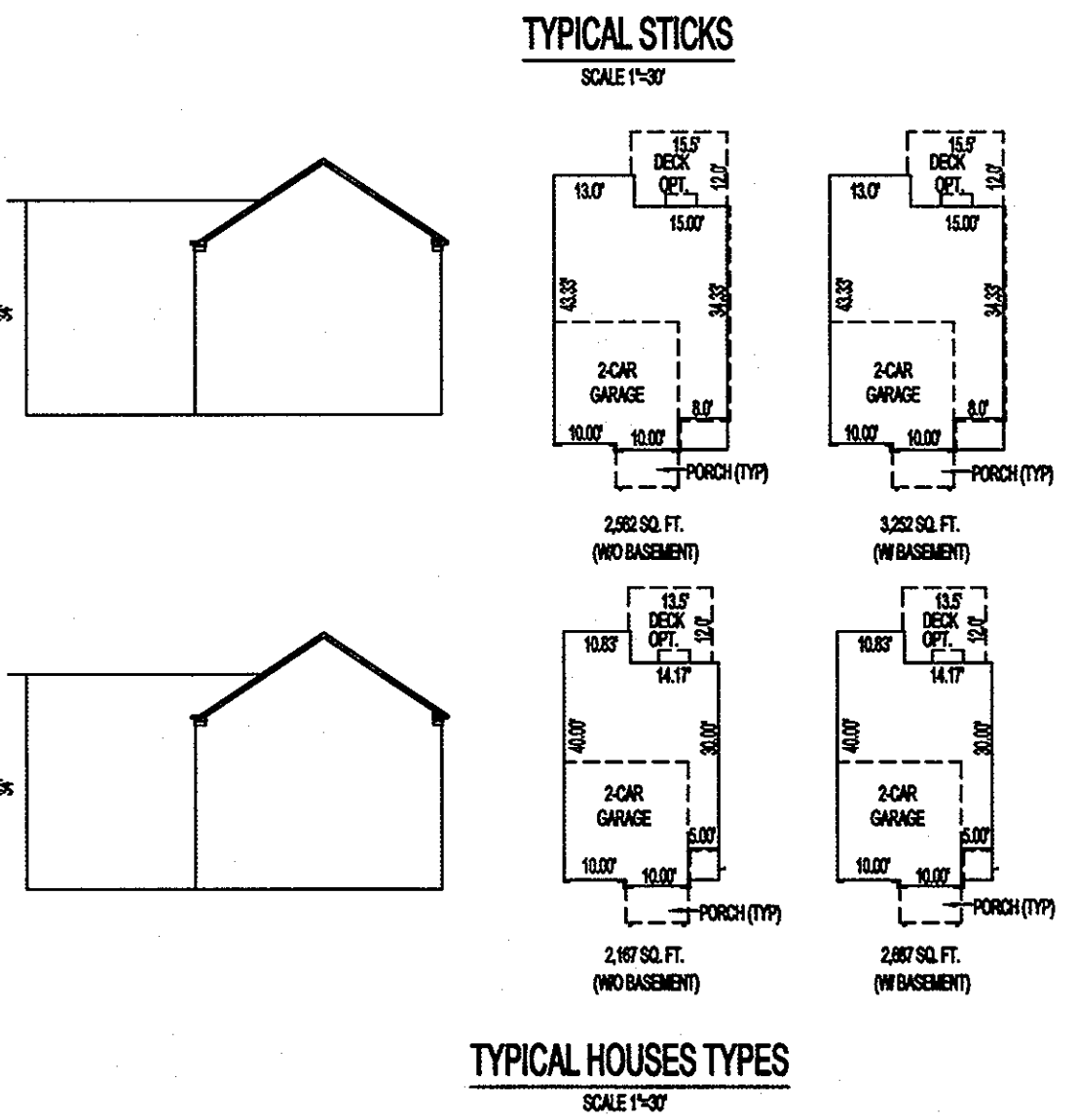
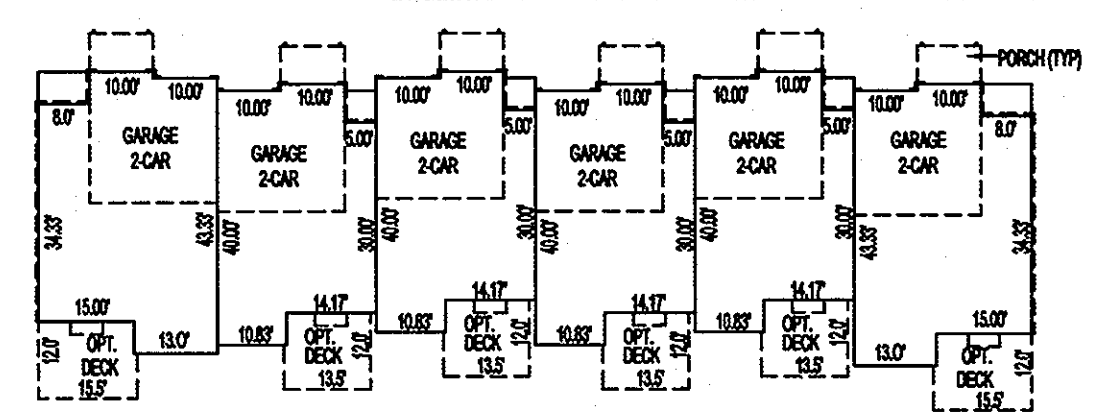
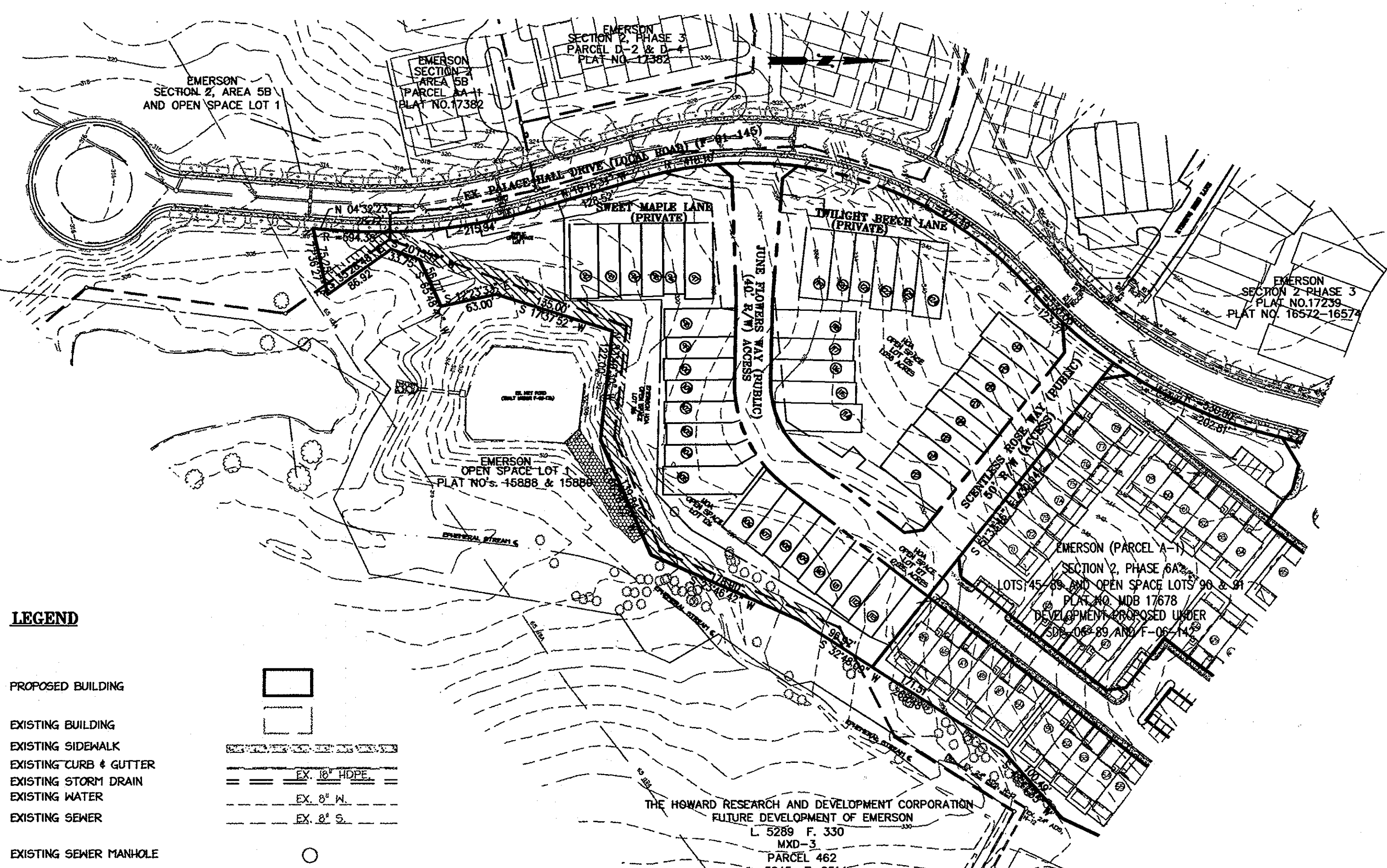
SHEET INDEX

NO.	TITLE
1	COVER SHEET
2	SITE DEVELOPMENT PLAN
3	EROSION & SEDIMENT CONTROL PLAN
4	EROSION AND SEDIMENT CONTROL NOTES & DETAILS
5	LANDSCAPE PLAN
6	LANDSCAPE PLAN DETAILS

BENCHMARKS

HOWARD COUNTY MONUMENT # 47EA
ELEVATION: 339.26
NORTHING: 535846.193
EASTING: 1355491.196

HOWARD COUNTY MONUMENT # 47DA
ELEVATION: 315.90
NORTHING: 535405.46
EASTING: 1349562.71

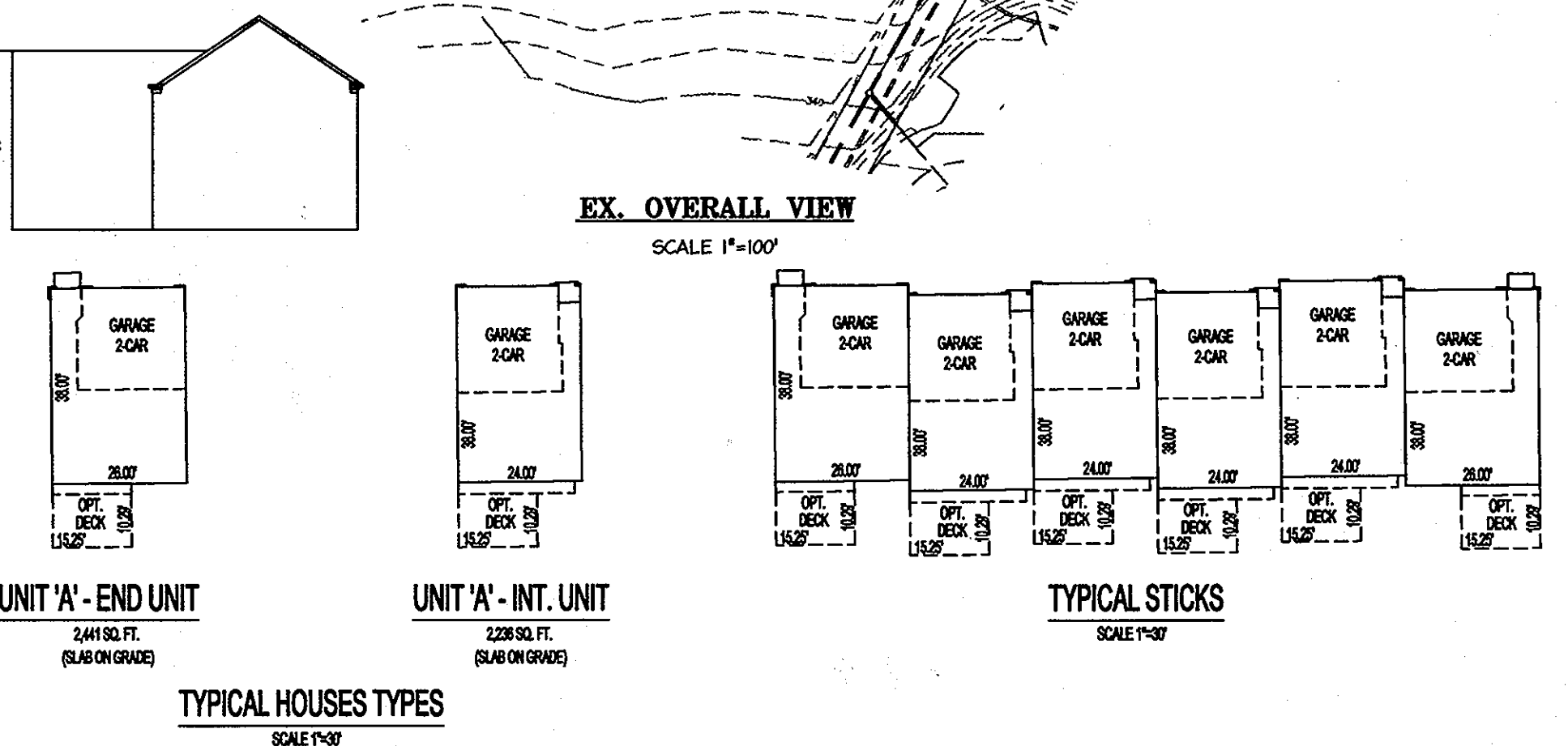


LOT AREA TABLE

LOT NO.	AREA (S.F.)
92	2,598
93	1,942
94	1,894
95	1,942
96	1,894
97	2,640
98	2,472
99	1,838
100	1,840
101	1,838
102	1,950
103	2,065
104	2,306
105	3,315
106	2,499
107	1,848
108	1,800
109	1,752
110	1,800
111	1,768
112	1,792
113	2,364
23	2,700
24	2,075
25	2,025
26	2,075
27	2,025
28	1,475
29	2,025
30	2,833
124	2,653
123	1,912
122	1,960
121	1,792
120	1,840
119	2,493
118	2,924
117	2,192
116	2,240
115	2,266
114	2,947

LEGEND

PROPOSED BUILDING	[Symbol]
EXISTING BUILDING	[Symbol]
EXISTING SIDEWALK	[Symbol]
EXISTING CURB & GUTTER	[Symbol]
EXISTING STORM DRAIN	[Symbol]
EXISTING WATER	[Symbol]
EXISTING SEWER	[Symbol]
EXISTING SEWER MANHOLE	[Symbol]
EXISTING FIRE HYDRANT	[Symbol]
EXISTING WATER TEE	[Symbol]
EXISTING WATER VALVE	[Symbol]
CURB INLET PROTECTION (CIP)	[Symbol]
STANDARD INLET PROTECTION (SIP)	[Symbol]
EXISTING CONTOURS	[Symbol]
PROPOSED CONTOUR	[Symbol]
PROPOSED LOT LINE	[Symbol]
PROPERTY LINE	[Symbol]
EXISTING TREELINE	[Symbol]
WETLAND	[Symbol]
WETLAND BUFFER	[Symbol]
SUPER SILT FENCE	[Symbol]
SILT FENCE	[Symbol]
LIMIT OF DISTURBANCE	[Symbol]
STABILIZE CONSTRUCTION ENTRANCE	[Symbol]
EARTH DIKE	[Symbol]
STONE-OUTLET STRUCTURE	[Symbol]



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Walter W. III
Chief, Division of Land Development
Date: 12/24/09

William J. ...
Chief, Development Engineering Division
Date: 12/15/09

Thomas S. ...
Director, Department of Planning and Zoning
Date: 12/22/09

REVISIONS

Date	No.	Revision Description
11/20/09	01	UNIT TYPE AND LOT REVISIONS FOR LOTS 92-124 (FORMERLY LOTS 1-22 & 31-41)

REVISIONED SITE DEVELOPMENT PLANS

EMERSON TOWNHOUSES

SECTION 2, PHASE 6A, LOTS 23-30, 92-124 & OPEN SPACE LOTS 125, 126, & 127

OWNER / DEVELOPER

STEWART KRET HOMES
CONTACT: BILL MCELNEE
7090 SAMUEL HORSE DRIVE SUITE 500
COLUMBIA, MARYLAND 21046
TEL. (410) 312-5163 FAX (410) 315-5170

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engineering • surveying • land planning
christopher consultants, inc.
7172 columbia gateway drive (suite 100) • columbia, md. 21046-2880
410.872.2880 • fax: 410.872.2888

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
EMERSON TOWNHOUSES	NO. 23-30	606902
LOT/PARCEL NO.	92-124	
PLAT NO.	20281-02	
GRID NO.	8 & 9	
ZONE	MXD-3-OR	
TAX MAP	47	
ELECTION DISTRICT	6TH ELECTION DISTRICT	
WATER CODE	#24-4322-D	
SEWER CODE	#24-4322-D	

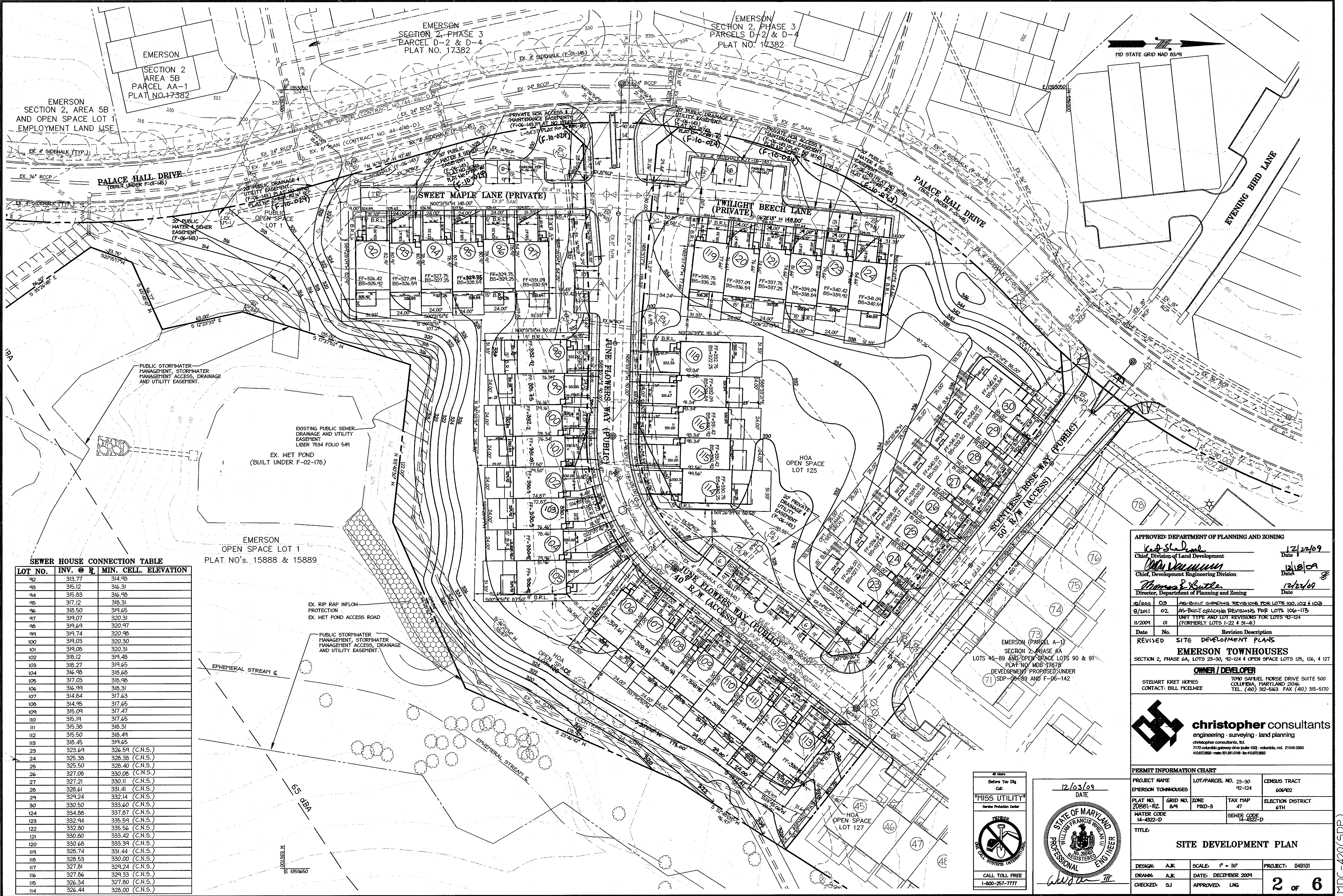
TITLE: **COVER SHEET**

DESIGN:	SCALE:	PROJECT:
AJK	AS SHOWN	049101
DRAWN:	DATE:	
AJK	DECEMBER 2009	
CHECKED:	APPROVED:	
SJ	WFW	

1 of 6



NOTE:
THIS PLAN IS FOR HOUSE SITING AND LOT GRADING ONLY. IMPROVEMENTS SHOWN WITHIN THE PRIVATE HOA AREAS ON THE S.D.P. ARE NOT TO BE USED FOR CONSTRUCTION. FOR CONSTRUCTION, SEE ROAD CONSTRUCTION PLANS F 06-143 AND/OR WATER AND SEWER PLANS CONTRACT # 14-4322-D.



SEWER HOUSE CONNECTION TABLE

LOT NO.	INV. @ R	MIN. CELL. ELEVATION
42	313.77	314.98
43	315.12	316.31
44	315.83	316.98
45	317.12	318.31
46	318.50	319.65
47	319.07	320.31
48	319.64	320.97
49	319.74	320.98
100	319.03	320.30
101	319.08	320.31
102	318.12	319.48
103	318.27	319.65
104	316.98	318.68
105	317.03	318.98
106	316.99	318.31
107	314.84	317.63
108	314.95	317.65
109	315.04	317.47
110	315.19	317.65
111	315.38	318.31
112	315.50	318.49
113	318.45	319.65
23	323.64	326.54 (C.N.S.)
24	325.38	328.38 (C.N.S.)
25	325.50	328.40 (C.N.S.)
26	327.08	330.08 (C.N.S.)
27	327.21	330.11 (C.N.S.)
28	328.61	331.41 (C.N.S.)
29	329.24	332.14 (C.N.S.)
30	330.50	333.60 (C.N.S.)
124	334.88	337.87 (C.N.S.)
123	332.94	335.54 (C.N.S.)
122	332.80	335.56 (C.N.S.)
121	330.80	333.42 (C.N.S.)
120	330.68	333.34 (C.N.S.)
119	328.74	331.44 (C.N.S.)
118	328.53	330.00 (C.N.S.)
117	327.81	329.24 (C.N.S.)
116	327.86	329.33 (C.N.S.)
115	326.34	327.80 (C.N.S.)
114	326.44	328.00 (C.N.S.)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *[Signature]* 12/22/09
 Chief, Development Engineering Division: *[Signature]* 12/18/09
 Director, Department of Planning and Zoning: *[Signature]* 12/22/09

Date	No.	Revision Description
10/20/01	03	AS-BUILT GRADING REVISIONS FOR LOTS 100, 102 & 103
8/20/11	02	AS-BUILT GRADING REVISIONS FOR LOTS 106-113
11/20/09	01	UNIT TYPE AND LOT REVISIONS FOR LOTS 92-124 (FORMERLY LOTS 1-22 & 31-41)

REVISED SITE DEVELOPMENT PLANS
EMERSON TOWNHOUSES
 SECTION 2, PHASE 3, PARCELS D-2 & D-4
 PLAT NO. 17382

OWNER / DEVELOPER
 STEWART KRET HOMES
 CONTACT: BILL MCNEEL
 7090 SAMUEL HORSE DRIVE SUITE 500
 COLUMBIA, MARYLAND 21046
 TEL. (410) 312-5163 FAX (410) 315-5170

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 410.527.8880 · mso: 301.281.0140 · fax: 410.527.2880

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT		
EMERSON TOWNHOUSES	NO. 23-30 92-124	60402		
PLAT NO.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
20881-82	8/4	POD-3	47	6TH
WATER CODE	SEWER CODE			
14-4822-D	14-4822-D			

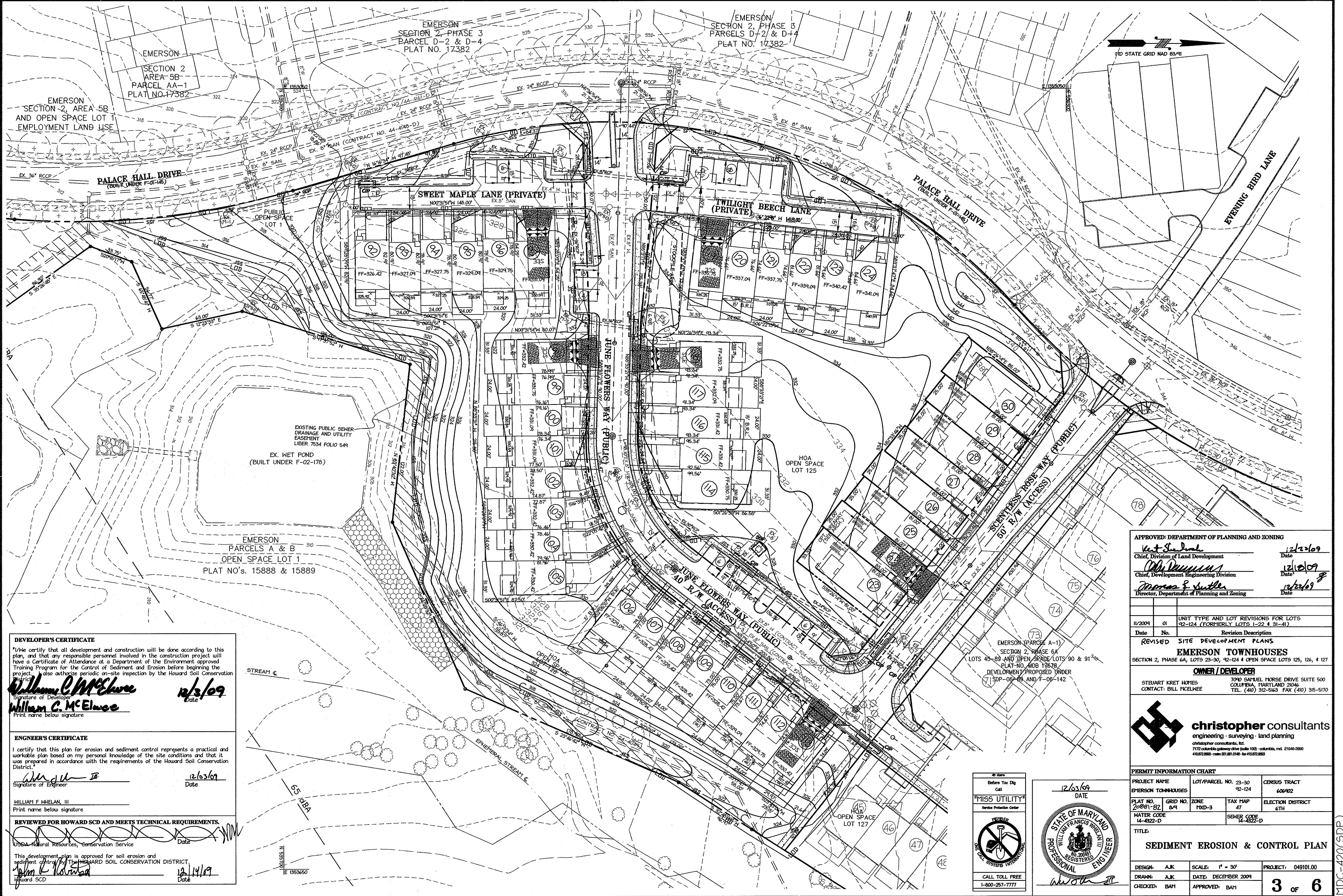
TITLE: SITE DEVELOPMENT PLAN

DESIGN: AJK	SCALE: 1" = 30'	PROJECT: 049101
DRAWING: AJK	DATE: DECEMBER 2009	
CHECKED: SJ	APPROVED: LMG	2 of 6

MISS UTILITY
 Service Protection Center
 CALL TOLL FREE 1-800-257-1777

12/03/09 DATE
 STATE OF MARYLAND
 WILLIAM FRANCIS WHELAN III
 REGISTERED PROFESSIONAL ENGINEER

MDC-420(SDP)



MD STATE GRID NAD 83/91

EMERSON
SECTION 2
AREA 5B
PARCEL AA-1
PLAT NO. 17382

EMERSON
SECTION 2, PHASE 3
PARCEL D-2 & D-4
PLAT NO. 17382

EMERSON
SECTION 2, PHASE 3
PARCELS D-2 & D-4
PLAT NO. 17382

EMERSON
SECTION 2, AREA 5B
AND OPEN SPACE LOT 1
EMPLOYMENT LAND USE

PALACE HALL DRIVE
(BUILT UNDER F-01-145)

SWEET MAPLE LANE (PRIVATE)

TWILIGHT BEECH LANE
(PRIVATE)

PALACE HALL DRIVE
(BUILT UNDER F-01-145)

EVENING BIRD LANE

EXISTING PUBLIC SEWER
DRAINAGE AND UTILITY
EASEMENT
LIBER 7534 FOLIO 549

EMERSON
PARCELS A & B
OPEN SPACE LOT 1
PLAT NO's. 15888 & 15889

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>W. J. St. John</i> Chief, Division of Land Development	12/21/09 Date
<i>John D. ...</i> Chief, Development Engineering Division	12/10/09 Date
<i>Thomas E. ...</i> Director, Department of Planning and Zoning	12/21/09 Date

11/20/09	01	UNIT TYPE AND LOT REVISIONS FOR LOTS 42-124 (FORMERLY LOTS 1-22 & 31-41)
Date	No.	Revision Description
REVISED SITE DEVELOPMENT PLANS		
EMERSON TOWNHOUSES		
SECTION 2, PHASE 6A, LOTS 23-30, 42-124 & OPEN SPACE LOTS 125, 126, & 127		
OWNER / DEVELOPER		
STUART KRET HOMES CONTACT: BILL MCELHEE		
7049 SARAJEV HORSE DRIVE SUITE 500 COLLETFIELD, MARYLAND 21046 TEL. (410) 312-5163 FAX (410) 315-5170		

PERMIT INFORMATION CHART			
PROJECT NAME EMERSON TOWNHOUSES	LOT/PARCEL NO. 23-30 42-124	CENSUS TRACT 606402	
PLAT NO. 20081-82	GRID NO. 8/4	ZONE MD-3	TAX MAP 47
WATER CODE 14-4322-D		SEWER CODE 14-4322-D	
TITLE: SEDIMENT EROSION & CONTROL PLAN			

DESIGN: A.K.	SCALE: 1" = 30'	PROJECT: 049101.00
DRAWN: A.K.	DATE: DECEMBER 2009	3 OF 6
CHECKED: B.M.	APPROVED: B.M.	

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/We also authorize periodic on-site inspection by the Howard Soil Conservation District.
William C. McElwee
Signature of Developer
William C. McElwee
Print name below signature
Date: 12/21/09

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.
William F. Whelan, III
Signature of Engineer
Date: 12/13/09
WILLIAM F. WHELAN, III
Print name below signature

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
USDA Natural Resources Conservation Service
Date: 12/14/09
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
John C. ...
Signature of Howard SCD
Date: 12/14/09
Howard SCD

MISS UTILITY
Service Protection Center
CALL TOLL FREE
1-800-257-1777

12/21/09
DATE
STATE OF MARYLAND
WILLIAM FRANCIS WHELAN III
REGISTERED
ENGINEER

MDC-420(SDP)

19.0 Standards and Specifications For Land Grading

Definitions

Reshaping of the existing land surface in accordance with a plan as determined by engineering survey and layout.

Purpose

The purpose of a land grading specification is to provide for erosion control and vegetative establishment on those areas where the existing land surface is to be reshaped by grading according to plan.

Design Criteria

The grading plan should be based upon the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surrounding to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, effect on adjacent properties and drainage patterns, measured for drainage and water removal and vegetative treatment, etc.

Many countries have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they should be followed. The plan must show existing and proposed contours of the area(s) to be graded. The plan shall also include practices for erosion control, slope stabilization, safe disposal of runoff water and drainage, such as waterways, lined ditches, reverse slope benches (including grade and cross-section), grade stabilization structures, retaining walls, and surface and subsurface drains. The plan shall also include phasing of these practices. The following shall be incorporated into the plan:

1. Provisions shall be made to safely conduct surface runoff to storm drains, protected outlets or to stable water courses to insure that surface runoff will not damage slopes or other graded areas.

2. Cut and fill slopes that are to be stabilized with grasses shall not be steeper than 2:1. (Where the slope is to be mowed the slope should be no steeper than 3:1: 4:1 is preferred because of safety factors related to mowing steep slopes.)

3. Reverse benches shall be provided whenever the vertical interval (height) of any 2:1 slopes exceeds 20 feet; for 3:1 slopes it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slopes face as equally as possible and shall convey the water to a stable outlet. Soils, seeps, rock outcrops, etc., shall also be taken into consideration when designing benches.

a. Benches shall be a minimum of six-feet wide to provide ease of maintenance.

b. Benches shall be designed with a reverse slope of 6:1 of flatter to the top of the upper slope and with a minimum of one foot in depth. Bench gradient to the outlet shall be between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

c. The flow length within a bench shall not exceed 800' unless accompanied by appropriate design and computations. For flow channel stabilization see temporary swales.

4. Surface water shall be diverted from the face of all cut and/or fill slopes by the use of earth dikes, ditches and swales or conveyed downslope by the use of a designated structure, except where:

a. The face of the slope is or shall be stabilized and the face of all graded slopes shall be protected for surface runoff until they are stabilized.

b. The face of the slope shall not be subjected to any concentrated flows of surface water such as from natural drainways, graded swales, downspouts, etc.

c. The face of the slope will be protected by special erosion control materials, to include, but not limited to: approved vegetative stabilization practices (see section G), rip-rap or other approved stabilization methods.

5. Cut slopes occurring in rippled rock shall be serrated as shown on the following diagram. These serrations shall be made with conventional equipment as the excavation is made. Each step or serration shall be constructed on the contour and will have steps cut as normal two-foot intervals with nominal three-foot horizontal shelves. These steps will vary depending on the slope ratio or the cut slope. The nominal slope line is H. These steps will weather and act to hold moisture, lime, fertilizer and seed thus producing a much quicker and longer lived vegetative cover and better slope stabilization. Over land flow shall be diverted from the top of all serrated cut slopes and carried to a suitable outlet.

6. Surface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

7. Slopes shall not be created to close to property lines as the danger adjoining properties without adequately protecting such properties against sediment, erosion, slippage, settlement, subsidence or other related damages.

8. Fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris, and other objectionable material. It should be free of stones over two (2) inches in diameter where compacted by hand or mechanical tampers over eight (8) inches in diameter where compacted by rollers or other equipment. Frozen material shall not be placed in the fill nor shall the fill material be placed on a frozen foundation.

9. Stockpiles, borrow areas and spoil shall be shown on the plans and shall be subjected to the provisions of the Standard and Specifications.

All disturbed areas shall be stabilized structurally or vegetatively in compliance with 20.0 Standards and Specifications for Vegetative Stabilization.

21.0 Standard and Specifications For Topsoil

Definitions

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

Purpose

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

Conditions Where Practice Applies

This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains materials toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

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

Construction and Material Specifications

Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

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

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/4" in diameter.

ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or other as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread to the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked in to the soil in conjunction with tillage operations as described in the following procedures.

For sites having disturbed areas under 5 acres:

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

For sites having disturbed areas over 5 acres:

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

a. pH for topsoil shall be between 6.0 and 7.5. If tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise pH to 6.5 or higher.

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

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

d. No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 day min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments as recommended by a qualified agronomist or soil scientist approved by the appropriate approval authority, may be used in lieu of natural topsoil.

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

Topsoil Application

When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grap Stabilization Structures, Earth Dikes, Slope Silt Fences and Sediment Traps and Basins.

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

Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

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

Composted Sludge Materials for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

a. Composted sludge shall be supplied by, or originated from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

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

30.0 Dust Control

Definition

Controlling dust blowing and movement on construction sites and roads.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies

This practice is applicable to areas subject to dust blowing and movement when in and off-site damage is likely without treatment.

Specifications

Temporary Methods

1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.

2. **Vegetative Cover** - See standards for temporary vegetative cover.

3. **Tillage** - To roughen surface and bring clods to the surface. This is an emergency measure which should be used only when blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12' apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.

4. **Irrigation** - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.

5. **Barriers** - Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar materials can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.

6. **Calcium Chloride** - Apply at rates that will keep surface moist. May need retreatment.

Permanent Methods

1. **Permanent Vegetation** - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.

2. **Topsoil** - Covering with less erosive materials. See Standards for topsoiling.

3. **Stone** - Cover surface with crushed stone or coarse gravel.

References

1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.

2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA - ARS.

PERMANENT SEEDING NOTES

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

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

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

1. Preferred--Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

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

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

Option 1 - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.

Option 2 - Use sod. Option 3 -- Seed with 60 lbs/acre Kentucky 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 2lb gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 340 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

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

TEMPORARY SEEDING NOTES.

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

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

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 -- February 28 protect the site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 2lb gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 340 gal. per acre (8 gal/1000 sq. ft.) for anchoring.

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

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.

William C. McEwee
Signature of Developer
Date: 12/3/09

William C. McEwee
Print name below signature

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.

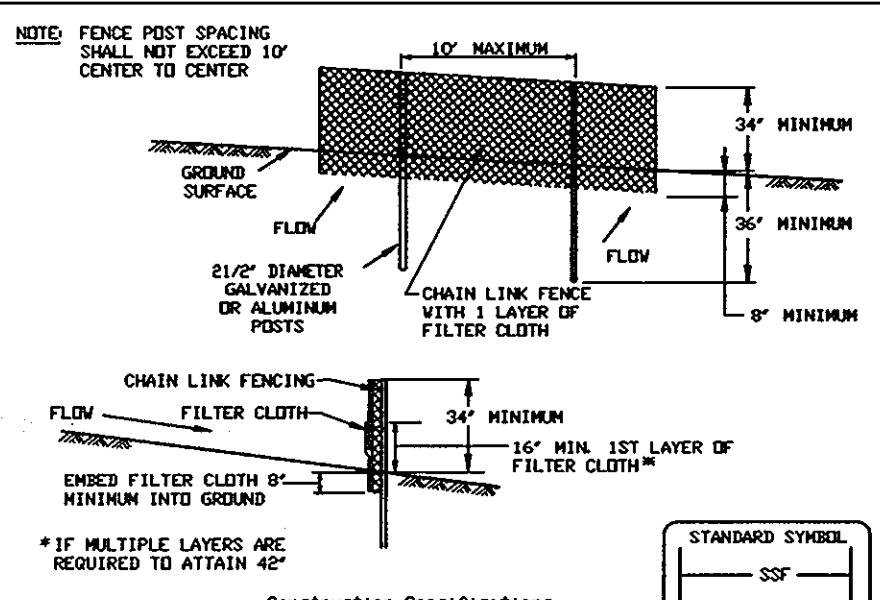
William H. Mielan, III
Signature of Engineer
Date: 12/03/09

WILLIAM H. MIELAN, III P.E.
Print name below signature

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
USDA-Natural Resources, Conservation Service
Date: 12/14/09

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
Howard SCD
Date: 12/14/09

DETAIL 33 - SUPER SILT FENCE

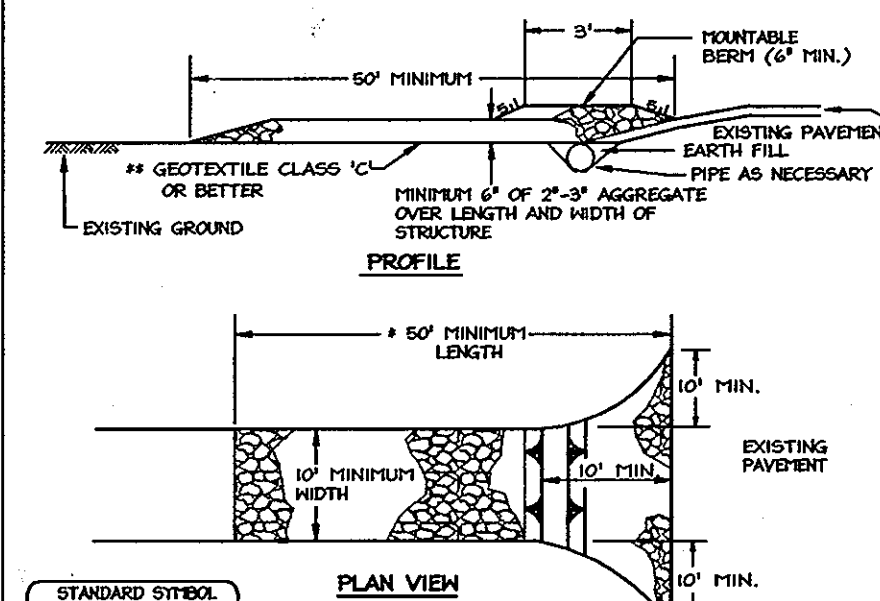


Construction Specifications

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details For Chain Link Fencing. For a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- 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.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8' into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and all bulges removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- 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 MSRT 509
 - Tensile Modulus 20 lbs/in (min.) Test MSRT 509
 - Fiber Rate 0.3 gal/1000 sq ft (max.) Test MSRT 322
 - Filtering Efficiency 75% (min.) Test MSRT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE: H - 25 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specifications

- Length - minimum of 50' (80' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. If the plan approval authority may not require single family residences to use geotextile.
- 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.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipes installed through the stabilized construction entrance shall be protected with a removable berm with 5:1 slopes and a minimum of 6" of slope over the pipe. Pipe shall be sized according to the drainage. When the SCE is located at a high spot and has no drainage to remove a pipe will not be required. Pipe shall be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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

HOWARD COUNTY

SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

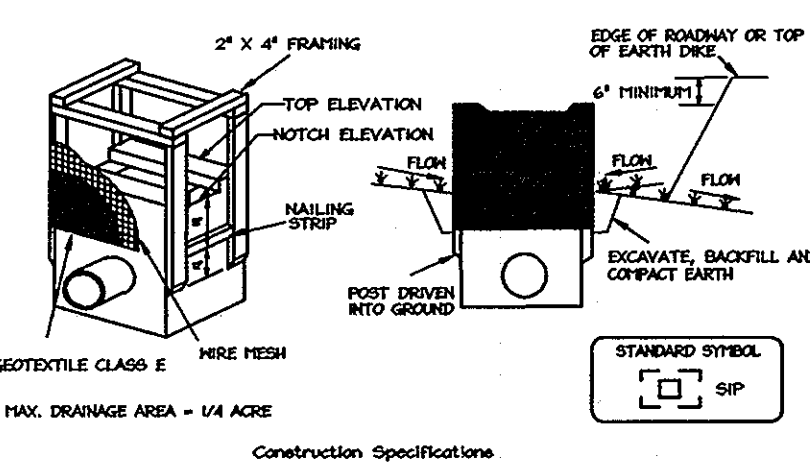
- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol 1, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specific above in accordance with the 1995 MARYLAND STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Section 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained by the Howard County Sediment Control Inspector.
- Site Analysis:
Total Area of Site: 5.51 Acres
Area Disturbed: 4.97 Acres
Area to be seeded or paved: 0.89 Acres
Area to be vegetatively stabilized: 4.08 Acres
Total Cut: 6,754 Cu. Yds.
Total Fill: 10,510 Cu. Yds.
Offsite waste/borrow area location: N/A
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all site with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized any construction as shown on these plans by the end of each work day, whichever is shorter.

SUPER SILT FENCE

Slope	Slope Steepness	Slope Length (Maximum)	Silt Fence Length (Minimum)
0 - 10%	0 - 1:1	Unlimited	Unlimited
10 - 20%	1:1 - 2:1	200 feet	1,500 feet
20 - 30%	2:1 - 3:1	100 feet	1,000 feet
30 - 50%	3:1 - 4:1	100 feet	500 feet
50% +	4:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE: H - 34 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23A - STANDARD INLET PROTECTION



Construction Specifications

- Excavate completely around the inlet to a depth of 10" below the notch elevation.
- Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place notches 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 (top) must be 6" below adjacent roadway where flooding and safety issues may arise.
- Stretch the 1/2" x 1/2" wire mesh tightly across the frame and fasten secure. The ends must meet and overlap at a post.
- Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 10" 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.
- 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.
- If the inlet is not in a curve, construct a compacted earth dike across the dike line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
- The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

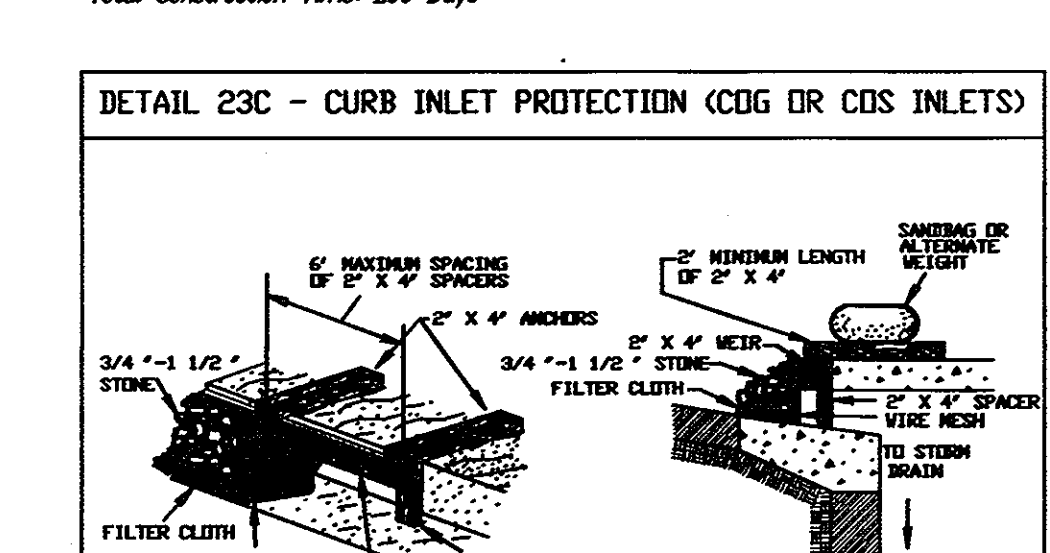
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE: E - 16 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

- The contractor is responsible for obtaining all required permits prior to commencing any land disturbance activities. (1 day)
- An on-site preconstruction meeting shall be conducted with the contractor and the Howard County Inspector at least 48 hours prior to the start of construction. Contact the Howard County Department of Inspections, Licenses and Permits at (410) 313-1800 to schedule. (1 day)
- Clear and grub for and install the perimeter sediment control devices including super silt fence, temporary stone outlet structures, and the stabilized construction entrance. Remove inlet blocking from F-06-14B and install standard inlet protection & curb inlet protections. (5 days)
- Begin grading the site (1 day).
- Begin driveway construction and entrance from the main roads. (5 days)
- Complete all base grading. (7 day).
- Construct buildings. (80 days).
- Stabilize all remaining disturbed areas (1 day).
- With the permission of the sediment control inspector remove any remaining sediment control devices.

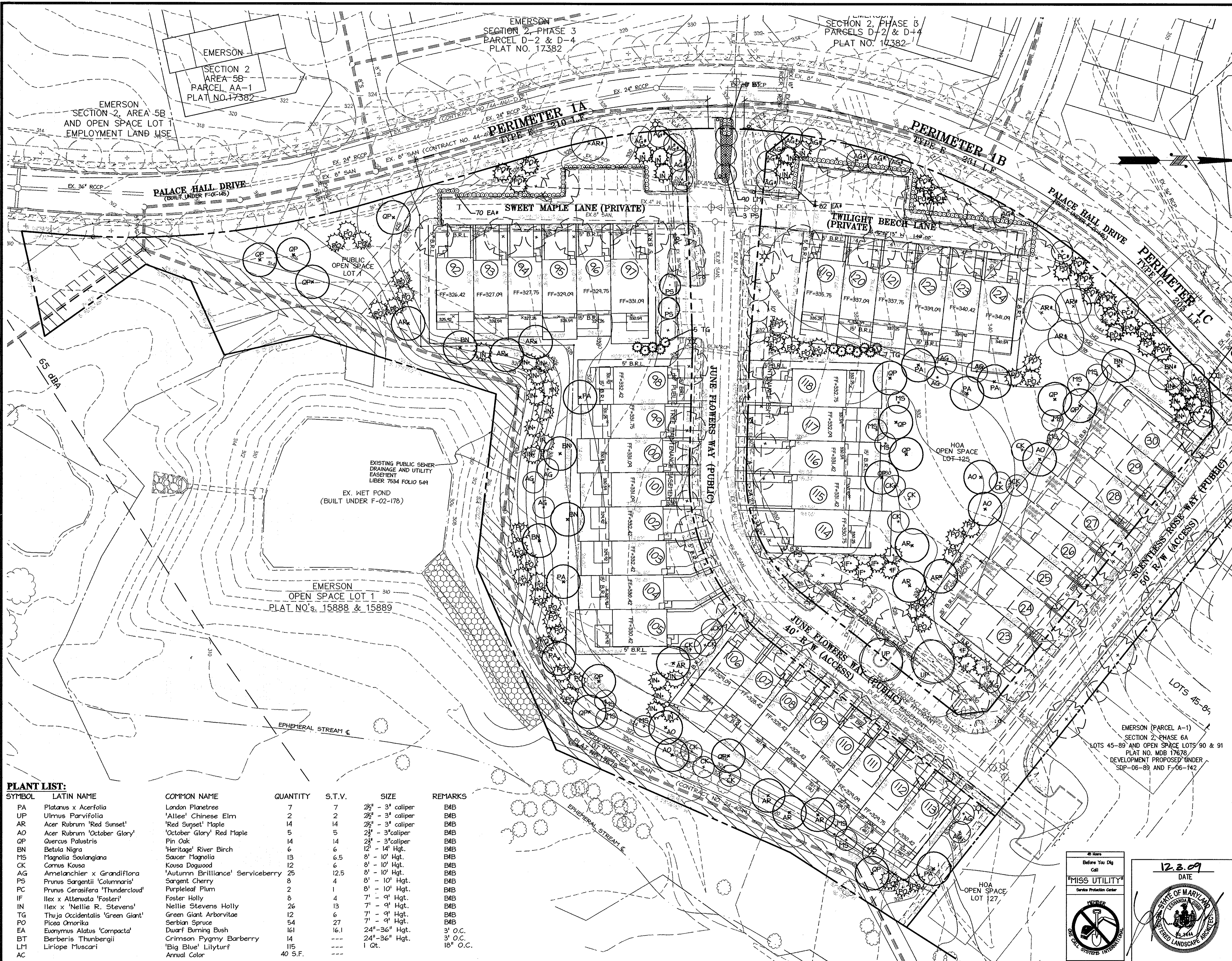
Total Construction Time: 200 Days

DETAIL 23C - CURB INLET PROTECTION (ODG OR DCS INLETS)



Construction Specifications

- Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4" to the 2" x 4" wire measuring throat length plus 2" as shown on the standard drawing.
- Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" wire.
- Securely nail the 2" x 4" wire to a 9" long vertical spacer to be located between the wire and the inlet face (max. 4' apart).
- Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the wire at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.



LEGEND

EXISTING CONTOURS	---	416
EXISTING STORM DRAIN	---	EX. 12" RCP
EXISTING SANITARY SEWER	---	EX. 6" SAN
EXISTING WATER	---	EX. 6" WATER
EXISTING FENCE	---	
PROPERTY LINE	---	
EX. TREELINE	---	
PROPOSED CONTOUR	---	418
PROPOSED SETBACK LINES	---	
PROPOSED PRIVACY FENCE	---	
PROPOSED SHADE TREE	(Symbol)	
PROPOSED ORNAMENTAL TREE	(Symbol)	
PROPOSED EVERGREEN TREE	(Symbol)	
PROPOSED SHRUB	(Symbol)	
PROPOSED STREET TREE (PER F-04-143)	(Symbol)	
PROPOSED PARKING LOT TREE	(Symbol)	
EX. STREET TREE PALACE HALL DRIVE (PER F-01-145)	(Symbol)	

PLANT LIST:

SYMBOL	LATIN NAME	COMMON NAME	QUANTITY	S.T.V.	SIZE	REMARKS
PA	Platanus x Acerfolia	London Planetree	7	7	2 1/2" - 3" caliper	B4B
UP	Ulmus Parvifolia	'Allee' Chinese Elm	2	2	2 1/2" - 3" caliper	B4B
AR	Acer Rubrum 'Red Sunset'	'Red Sunset' Maple	14	14	2 1/2" - 3" caliper	B4B
AO	Acer Rubrum 'October Glory'	'October Glory' Red Maple	5	5	2 1/2" - 3" caliper	B4B
QP	Quercus Palustris	Pin Oak	14	14	2 1/2" - 3" caliper	B4B
BN	Betula Nigra	'Heritage' River Birch	6	6	12' - 14' Hgt.	B4B
MS	Magnolia Soulangiana	Saucer Magnolia	6	6.5	8' - 10' Hgt.	B4B
CK	Cornus Kousa	Kousa Dogwood	6	6	8' - 10' Hgt.	B4B
AG	Amelanchier x Grandiflora	'Autumn Brilliance' Serviceberry	12.5	12.5	8' - 10' Hgt.	B4B
PS	Prunus Sargentii 'Columnaris'	Sargent Cherry	8	4	8' - 10' Hgt.	B4B
PC	Prunus Cerasifera 'Thundercloud'	Purpleleaf Plum	2	1	8' - 10' Hgt.	B4B
IF	Ilex x Attenuata 'Fosteri'	Foster Holly	8	4	7' - 9' Hgt.	B4B
IN	Ilex x 'Nellie R. Stevens'	Nellie Stevens Holly	26	13	7' - 9' Hgt.	B4B
TG	Thuja Occidentalis 'Green Giant'	Green Giant Arborvitae	12	6	7' - 9' Hgt.	B4B
PO	Picea Omorika	Serbian Spruce	54	27	7' - 9' Hgt.	B4B
EA	Euonymus Alatus 'Compacta'	Dwarf Burning Bush	161	16.1	24" - 36" Hgt.	3' O.C.
BT	Berberis Thunbergii	Crimson Pygmy Barberry	14	---	24" - 36" Hgt.	3' O.C.
LM	Liriope Muscari	'Big Blue' Lilyturf	115	---	1 Qt.	18" O.C.
AC		Annual Color	40 S.F.	---		

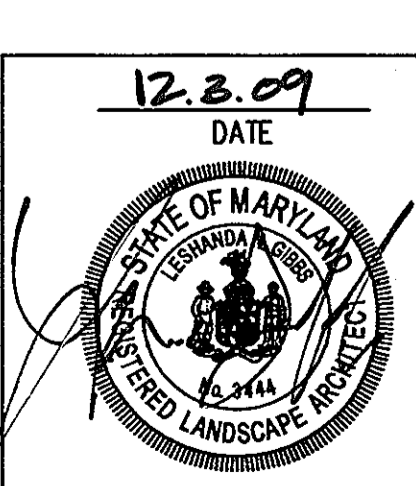
NOTES:
 1.) S.T.V. = SHADE TREE VALUE (TOTAL S.T.V. PROVIDED --- 144.1)
 2.) ALL PLANTS IDENTIFIED WITH AN ASTERISK (*) SATISFIES PERIMETER PLANTING REQUIREMENTS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 12/22/09
 Chief, Division of Land Development Date
 [Signature] 12/22/09
 Chief, Development Engineering Division Date
 [Signature] 12/22/09
 Director, Department of Planning and Zoning Date

UNIT TYPE AND LOT REVISIONS FOR LOTS 122-124 (FORMERLY LOTS 1-22 & 31-41)
 Date No. Revision Description
 11/2009 01 REVISD SITE DEVELOPMENT PLAN
EMERSON TOWNHOUSES
 SECTION 2, PHASE 6A, LOTS 23-30, 42-124 & OPEN SPACE LOTS 125, 126, & 127
OWNER / DEVELOPER
 STEUART KRET HOMES 7040 SARTWEL MORSE DRIVE SUITE 500
 CONTACT: BILL MCELNEE COLLETSVILLE, MARYLAND 21046
 TEL: (410) 312-5163 FAX (410) 315-5170

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 410.872.2880 · mobile 301.821.0148 · fax 410.872.2883

MISS UTILITY
 Service Protection Center
 CALL TOLL FREE
 1-800-257-7177



PERMIT INFORMATION CHART

PROJECT NAME	EMERSON TOWNHOUSES	LOT/PARCEL NO.	23-30	CENSUS TRACT	6068.02
PLAT NO.	20081-82	GRID NO.	8A9	TAX MAP	47
WATER CODE	24-8322-D	SEWER CODE	24-8322-D	ELECTION DISTRICT	6TH
TITLE: LANDSCAPE PLAN					
DESIGN:	LNG	SCALE:	1" = 30'	PROJECT:	049101
DRAWN:	LNG/ADL	DATE:	DECEMBER 2009		
CHECKED:	BKC	APPROVED:			

5 of 6
SDP-06-90

MDC-420(SDP)

**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS			
LANDSCAPE TYPE 'C'			P IC	
LINEAR FEET OF PERIMETER				205 LF.
LANDSCAPE TYPE 'E'	P IA	P IB		
LINEAR FEET OF PERIMETER	210 LF.	231 LF.		
CREDIT FOR EXISTING VEGETATION (DESCRIBE BELOW IF NEEDED)	N/A	N/A	N/A	
REMAINING LINEAR FEET OF PERIMETER (PERIMETER - CREDIT)	210 LF.	231 LF.	205 LF.	
				S.T.V. ⁶⁰
NUMBER OF PLANTS REQUIRED:				
SHADE TREES	5	6	5	16.0
EVERGREEN TREES	-	-	10	5.0
SHRUBS	53	58	-	11.1
TOTAL REQUIRED S.T.V.				32.1
NUMBER OF PLANTS PROVIDED:				
SHADE TREES	1#	0#	4#	5.0
EVERGREEN TREES	3	3	10	8.0
OTHER TREES (2:1 SUBSTITUTION)	5	9	2	8.0
SHRUBS (10:1 SUBSTITUTION)	70	82	-	15.2
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)				
				TOTAL S.T.V. PROVIDED
				36.2

- * NOTES:
- 1.) PIA - 3 EVERGREEN TREES AND 5 ORNAMENTAL TREES HAVE BEEN SUBSTITUTED FOR 4 SHADE TREES.
 - 2.) PIB - 3 EVERGREEN TREES AND 9 ORNAMENTAL TREES HAVE BEEN SUBSTITUTED FOR 6 SHADE TREES.
 - 3.) PIC - TWO (2) ORNAMENTAL TREES HAVE BEEN SUBSTITUTED FOR 1 SHADE TREE.
 - 4.) S.T.V. = SHADE TREE VALUE

GENERAL PLANTING NOTES

1. ALL PLANT MATERIAL TO MEET A.A.N. STANDARDS.
2. LANDSCAPING CONTRACTOR TO FOLLOW LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE WASHINGTON METRO AREA APPROVED BY LCAPM.
3. NO SUBSTITUTIONS TO BE MADE WITHOUT CONSENT OF LANDSCAPE ARCHITECT OR OWNER.
4. IN THE EVENT OF VARIATION BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND THE PLANS, THE PLANS SHALL CONTROL. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES PRIOR TO THE COMMENCEMENT OF WORK. 50% QUANTITY TAKE-OFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING. THE CONTRACTOR SHALL FURNISH PLANT MATERIAL IN SIZES AS SPECIFIED IN THE PLANT LIST.
5. ALL BEDS TO BE TOPPED WITH THREE INCHES OF HARDWOOD MULCH.
6. LANDSCAPE CONTRACTOR TO VERIFY LOCATION OF UTILITIES WITH OWNERS BEFORE PLANTING.
7. LANDSCAPE ARCHITECT/OWNER SHALL SELECT, VERIFY AND/OR APPROVE ALL PLANT MATERIAL. AT OWNER'S DISCRETION, SPECIMEN AND OTHER PLANT MATERIAL WILL BE SELECTED.
8. LANDSCAPE CONTRACTOR SHALL COORDINATE PLANT BED FILLING OPERATIONS AND PLANT MATERIAL INSTALLATION WITH GENERAL CONTRACTOR AND UTILITIES CONTRACTOR. AT THE TIME OF FINAL INSPECTION WITH ACCEPTANCE, ALL ELECTRIC, WATER, DRAINAGE, AND FOUNTAIN UTILITIES, AS WELL AS ALL PLANT MATERIALS, SHALL REMAIN UNDAUNAGED. LIKEWISE, LANDSCAPE CONTRACTOR AND UTILITIES CONTRACTOR SHALL COORDINATE EFFORTS TO ENSURE THAT SURFACE UTILITIES ARE AT THE PROPER ELEVATION RELATIVE TO FINAL GRADES.
9. CONTRACTOR SHALL NOTIFY MISS UTILITY 72 HOURS PRIOR TO CONSTRUCTION.
10. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERRIS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
11. TOPSOIL MIX
 - a. Planting mix shall be prepared at approved on-site staging area using approved on-site existing soil. Mix minimum quantities of 20 cubic yards or sufficient mix for entire job if less than 20 cubic yards is required.
 - b. Thoroughly mixed in the following proportions for tree and shrub planting mix:
 - 5 cy existing soil
 - 2 cy sharp sand
 - 3 cy wood residuals
 - 4.5 lbs treble superphosphate
 - 5 lbs dolomite limestone (eliminate for acid loving plants)
 - c. For bed planting, shrubs and groundcover spaces 24 inches or closer, incorporate the following ingredients per 20 sf and incorporate into top 8 inches of existing soils by rototilling or similar method of incorporation.
 - 2 cy sharp sand
 - 3 cy organic material
 - 4.5 lbs treble superphosphate
 - 5 lbs dolomite limestone (eliminate for acid loving plants)
12. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HO. CO. CODE AND THE DEVELOPMENT CRITERIA FOR EMERSON. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF \$41,430.00 MUST BE POSTED AS PART OF THE GRADING PERMIT APPLICATION. (122 SHADE TREES, 10 EVERGREEN TREES, AND 111 SHRUBS).
13. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
14. 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 TREES COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

William J. McEwen NAME DATE 12/3/09

**SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING**

NUMBER OF PARKING SPACES	30	S.T.V.
NUMBER OF TREES REQUIRED	3	3.0
NUMBER OF TREES PROVIDED	2	2.0
SHADE TREES	2	1.0
OTHER TREES (2:1 SUBSTITUTION)		
TOTAL S.T.V. PROVIDED		3.0

SUMMARY OF SHADE TREE VALUES (S.T.V.)

SCHEDULE	REQUIRED	PROVIDED
SCHEDULE 'A'	32.1	36.2
SCHEDULE 'B'	3.0	3.0
SCHEDULE 'C'	102.5	104.9
Total Required	137.6	
Total Provided (Plant List)		144.1

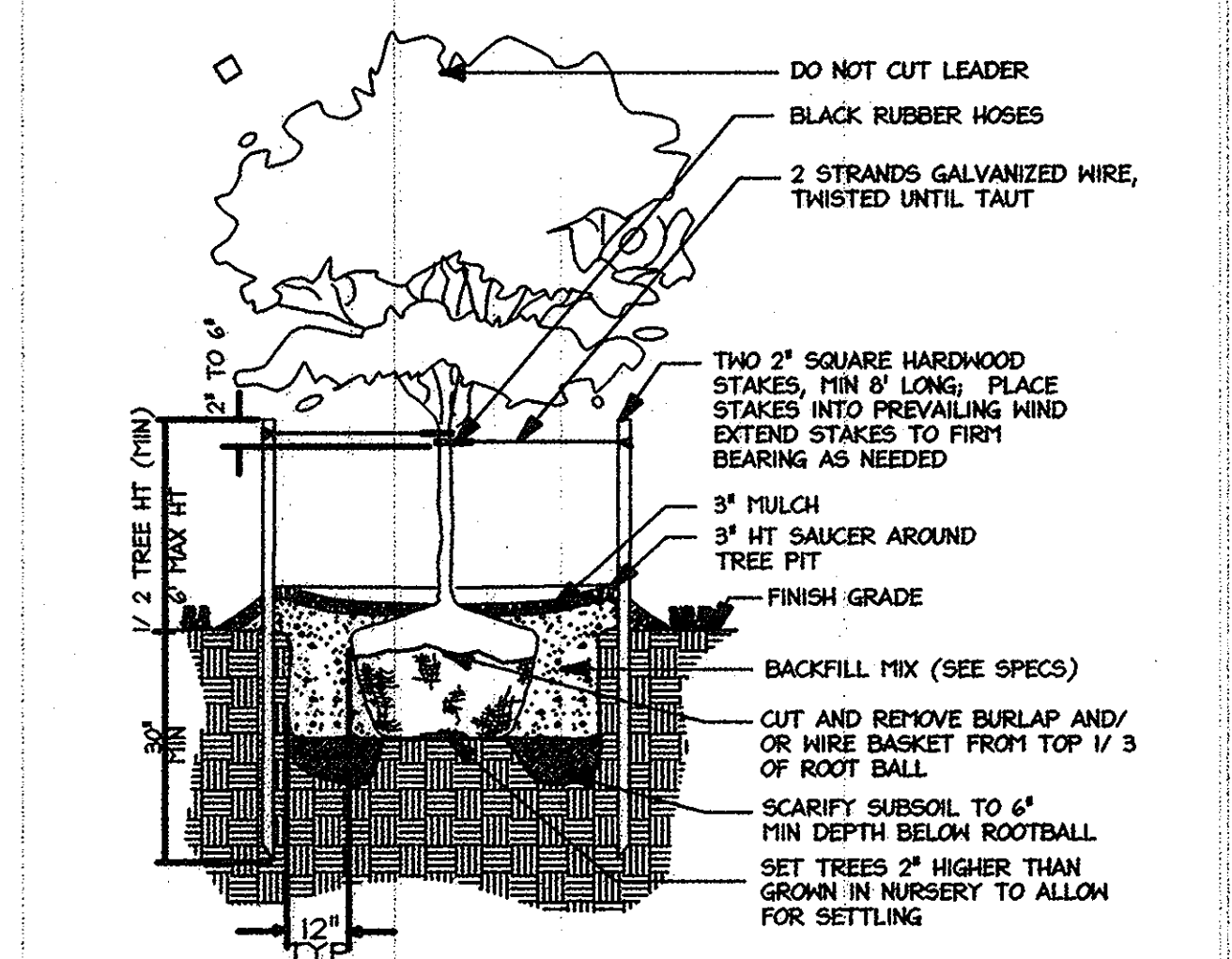
**MODIFIED SCHEDULE C
RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING**

NUMBER OF DWELLING UNITS: 41 SINGLE-FAMILY ATTACHED DWELLING UNITS		
LOT CLASSIFICATION:	NON-WOODED	
NUMBER OF TREES REQUIRED (SEE NOTE #1 BELOW)	2.5 SHADE TREES/S.F.A. DWELLING UNIT (OR 122.5 SHADE TREES)	
NUMBER OF TREES PROVIDED:		S.T.V.
SHADE TREES	41 SHADE TREES	41.0
INTERMEDIATE TREES (2:1) SUBSTITUTION	42 INTERMEDIATE TREES	21.0
EVERGREEN TREES (2:1) SUBSTITUTION	84 EVERGREEN TREES	42.0
SHRUBS (10:1) SUBSTITUTION	9 SHRUBS	0.9
TOTAL SHADE TREE VALUE (S.T.V.)		104.9

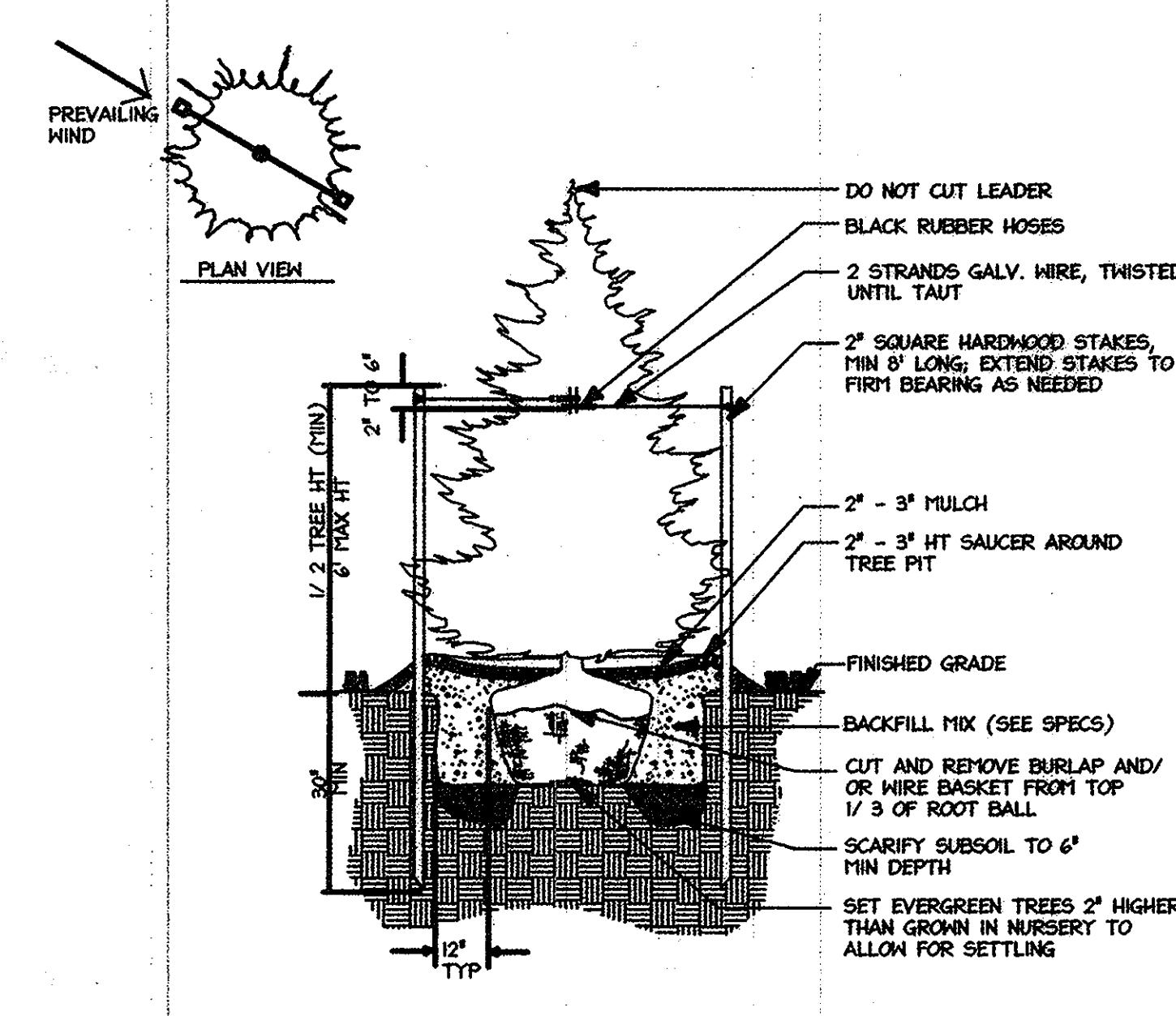
- NOTE:
1. ALTHOUGH THE DEVELOPMENT CRITERIA PRESCRIBES (3) S.T.V./D.U. FOR THIS NON-WOODED SITE, UPON REVIEW OF THIS PLAN THE ARCHITECTURAL COMMITTEE (AC) HAS DETERMINED THAT IN ORDER TO AVOID OVERCROWDING, A VALUE OF (2.5) S.T.V./D.U. IS MORE APPROPRIATE FOR THIS PARTICULAR PROJECT.
 2. THE PROPOSED STREET TREES WERE SUBMITTED UNDER THE "ROAD AND STORM DRAIN CONSTRUCTION PLANS, JUNE FLOWERS MAY AND SCENTLESS ROSE MAY, EMERSON TOWNHOUSES" (F-06-148).

**KEY PROPERTY DEVELOPMENT CRITERIA, APPROVED 7/1/99
SECTION VII RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING**

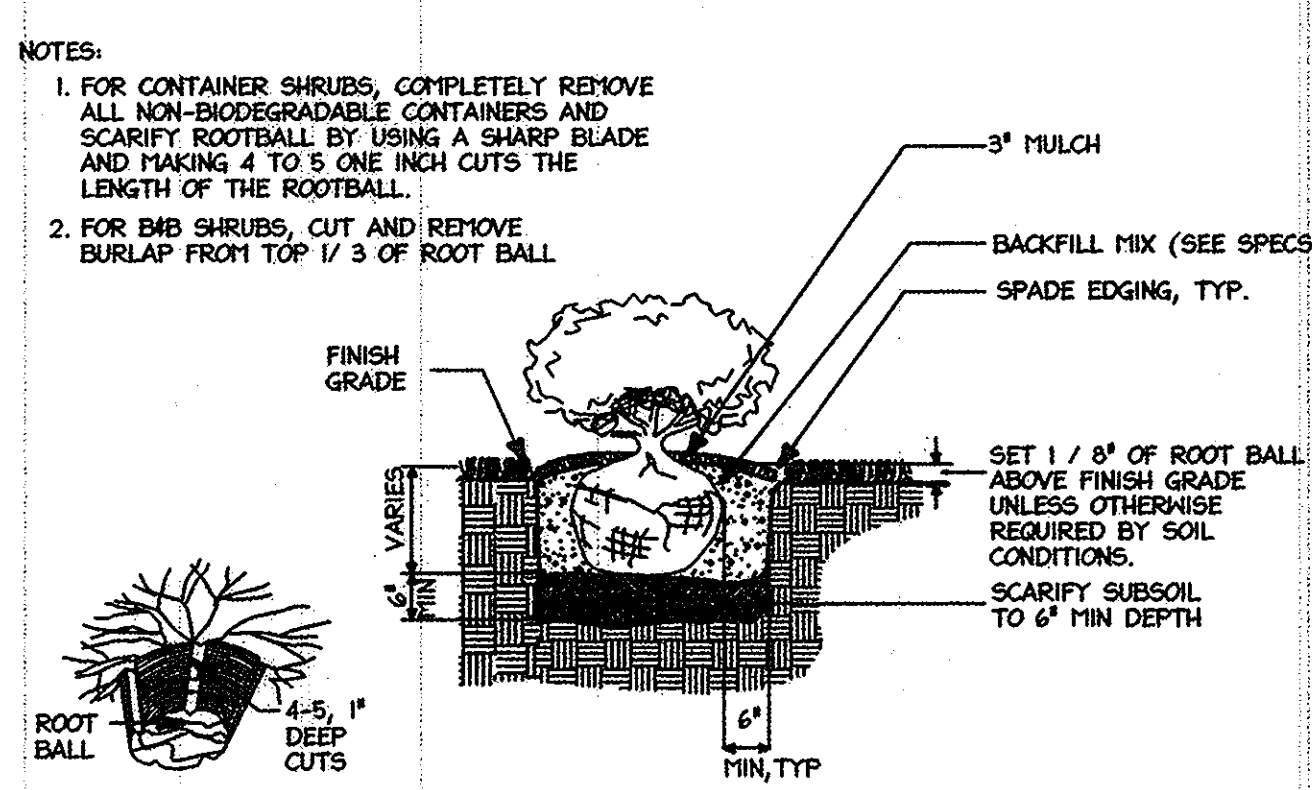
THE QUANTITY AND GENERAL LOCATION OF TREES REQUIRED FOR INTERNAL LANDSCAPING ARE DETERMINED BY CRITERIA APPLIED BY THE ARCHITECTURAL COMMITTEE. THE COMMITTEE WILL CLASSIFY DURING ARCHITECTURAL REVIEW, ALL LOTS AND PARCELS AS 1) NON-WOODED, 2) SEMI-WOODED, AND 3) WOODED. SUCH CLASSIFICATION SHALL TAKE INTO ACCOUNT THE EXISTING TREE COVER AND THE POTENTIAL FOR SAVING TREES IN CONNECTION WITH GRADING AND SITING. THIS CRITERIA ALSO SHALL CONSIDER THE SIZE OF THE LOT, AMOUNT OF EXISTING VEGETATION AND THE TYPE AND SITING OF RESIDENTIAL UNITS. IF, DURING OR AFTER CONSTRUCTION THE COMMITTEE DETERMINES THAT A BUILDER HAS VIOLATED ANY PROVISION OF TREE PRESERVATION, THE BUILDER WILL BE REQUIRED TO ADD NEW PLANT MATERIAL. SHADE TREE REQUIREMENTS FOR THIS PROJECT HAVE BEEN ALTERED BY THE ARCHITECTURAL COMMITTEE PER NOTE # ABOVE.



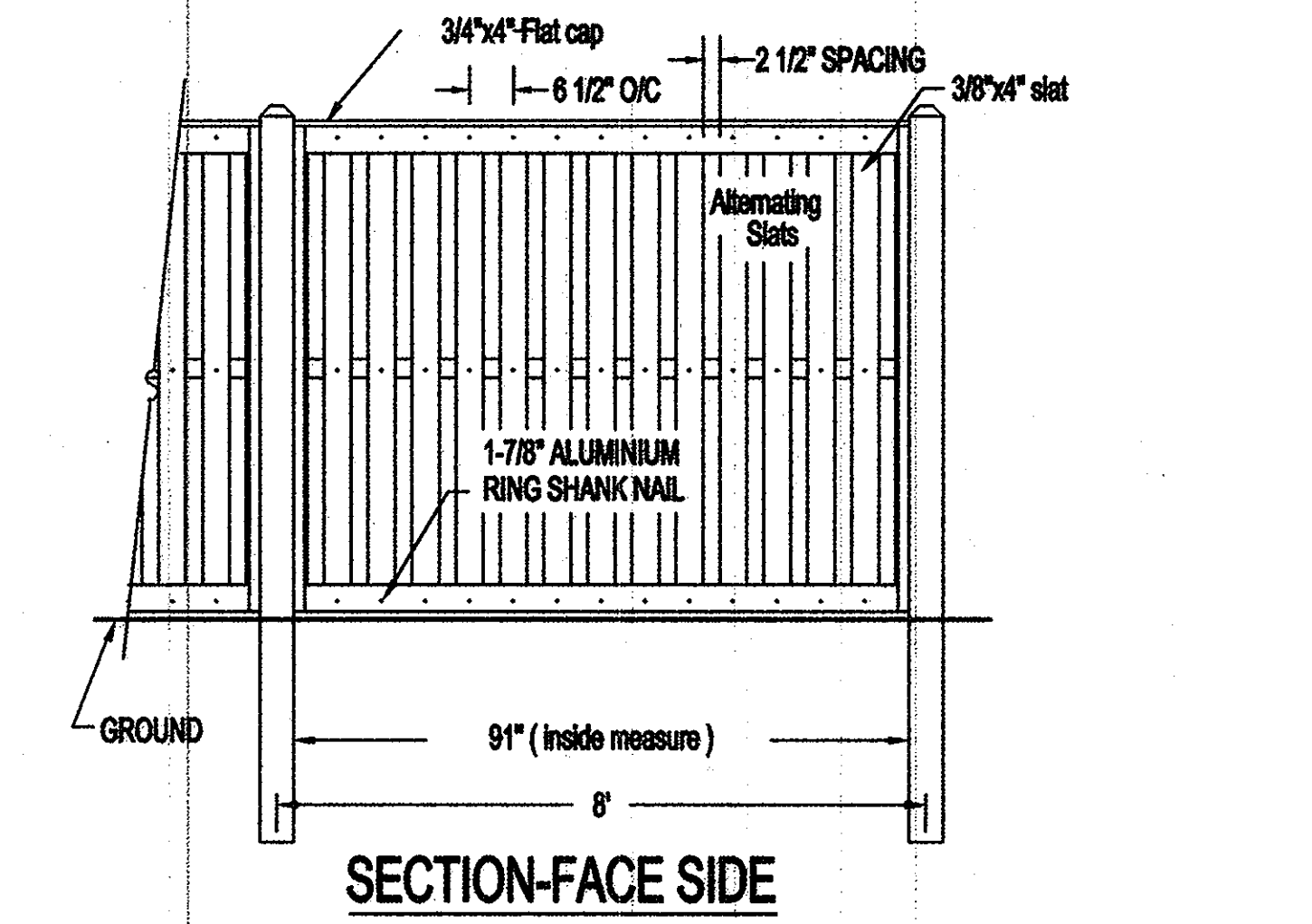
A) Tree Planting Detail
Not To Scale



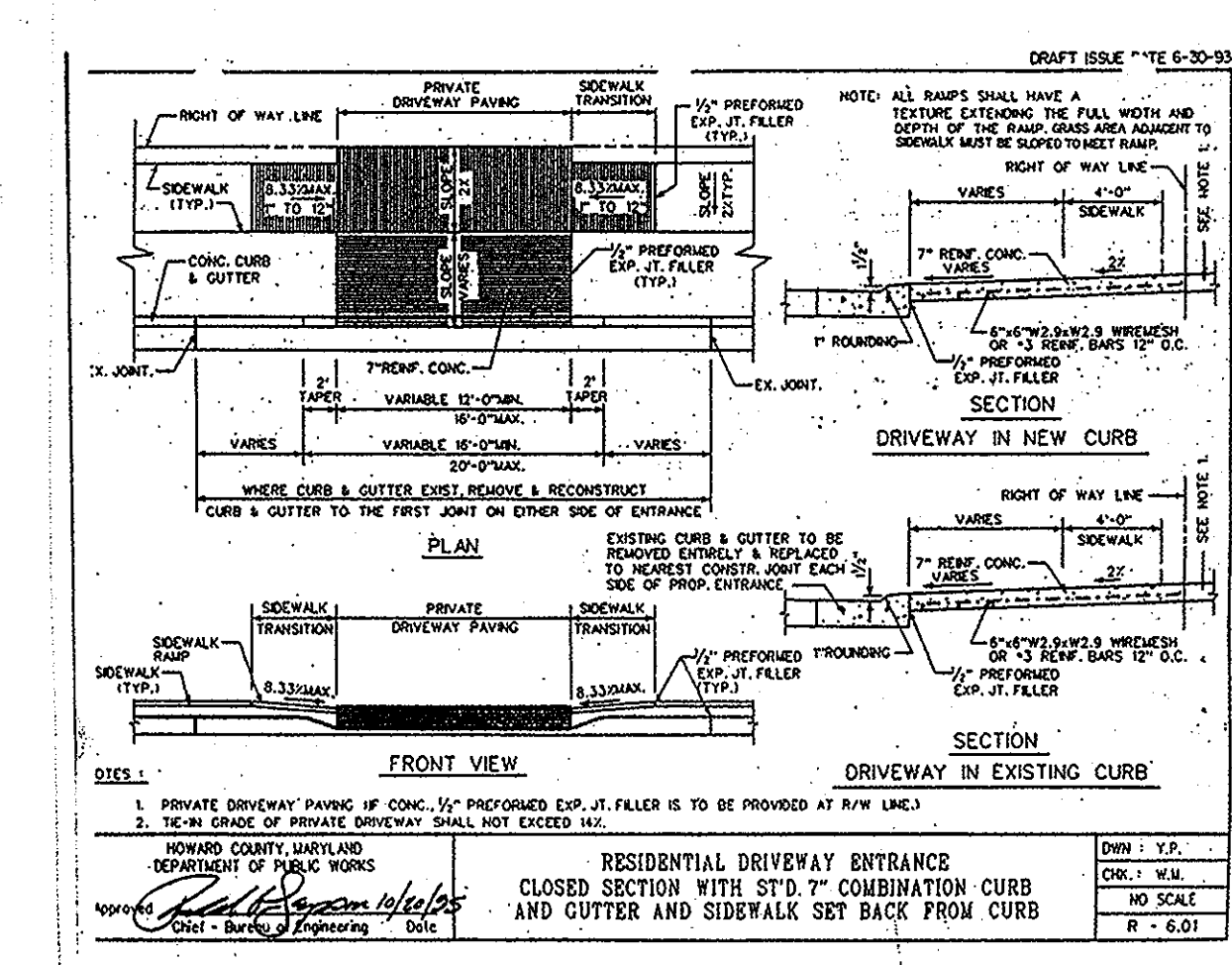
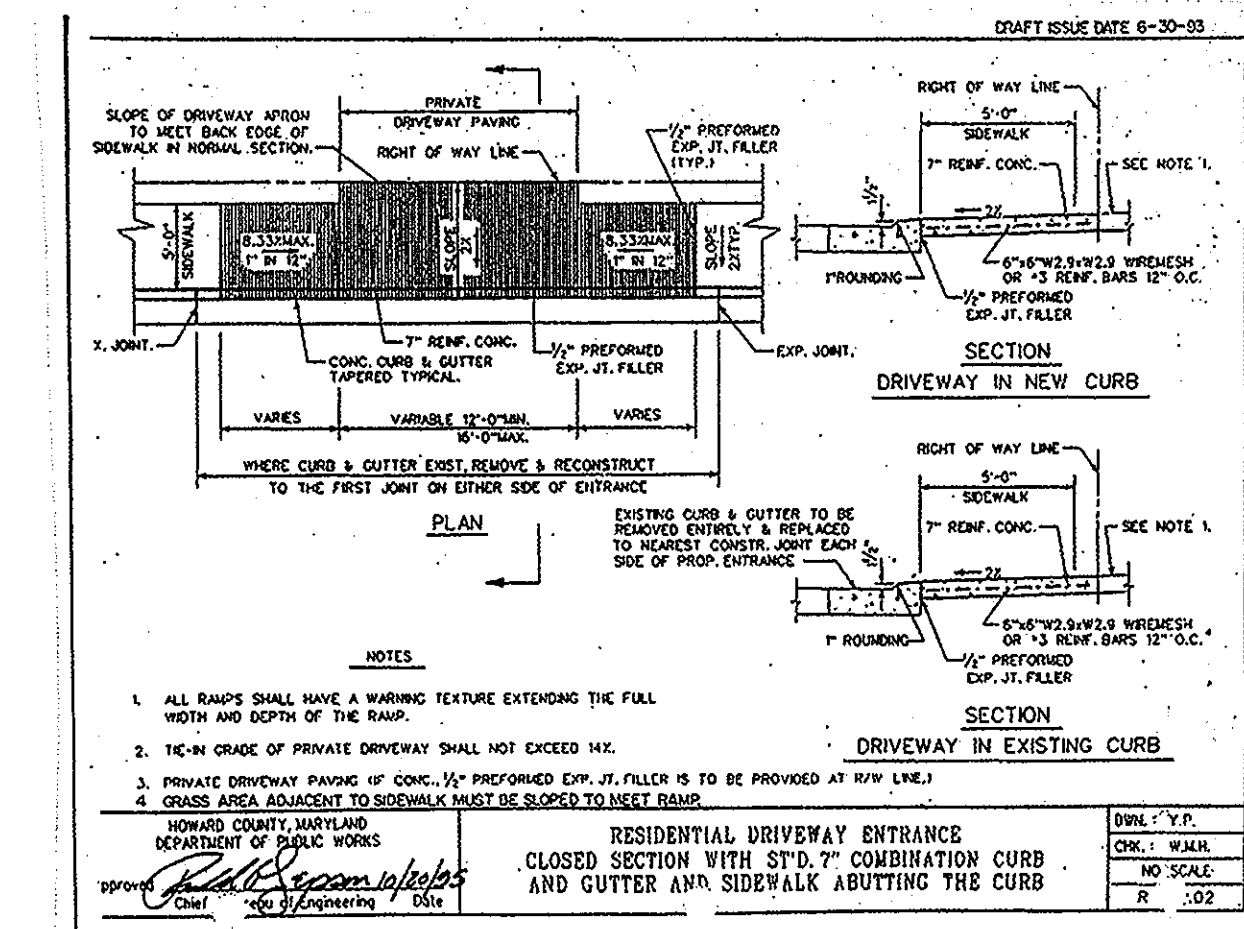
B) Evergreen Tree Planting Detail
Not To Scale



C) Shrub Planting Detail
Not To Scale



D) Typical Privacy Fence Detail
Not To Scale



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Neil Shuler 12/24/09
Chief, Division of Land Development Date

Mike J... 12/24/09
Chief, Development Engineering Division Date

Thomas A. Butler 12/24/09
Director, Department of Planning and Zoning Date

11/2009 01 UNIT TYPE AND LOT REVISIONS FOR LOTS 92-124 (FORMERLY LOTS 1-22 & 31-41)

REVISION SITE DEVELOPMENT PLANS

EMERSON TOWNHOUSES

SECTION 2, PHASE 6A, LOTS 23-30, 42-124 & OPEN SPACE LOTS 125, 126, & 127

OWNER/DEVELOPER

STEWART KRET HOMES 7090 SAMUEL MORSE DRIVE SUITE 500
COLUMBIA, MARYLAND 21046
CONTACT: BILL FICELMEE TEL. (410) 312-5463 FAX (410) 315-5170

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410.321.2800 · fax 410.321.2802

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	GENESIS TRACT		
EMERSON TOWNHOUSES	23-30	42-124		
		6068.02		
PLAT NO.	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
2008-182	B4	FXD-3	47	6TH
WATER CODE	SEWER CODE			
24-4322-D	24-4322-D			

TITLE

LANDSCAPE DETAILS

DESIGN: LMG SCALE: 1" = 30' PROJECT: 049101
DRAWN: LMG DATE: DECEMBER 2009
CHECKED: BKC APPROVED:

