ROADS, STORM DRAINS & SWM PLANS

EMERSON

SECTION ONE AREA ONE
LOTS 1 – 39 & PARCEL A
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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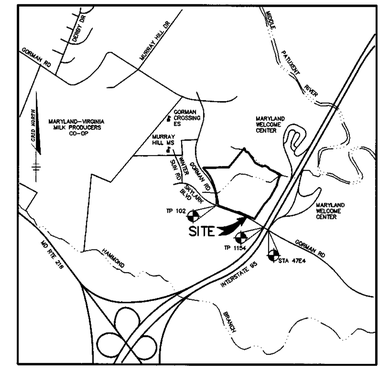
BENCHMARKS

TRAVERSE POINT 102
ELEVATION 346.19
N 536,499.165
E 1,353,974.017
LOCATED NEAR THE
INTERSECTION OF GORMAN
ROAD AND SKYLARK BLVD.

TRAVERSE POINT 1154
ELEVATION 347.45
N 536,018.069
E 1,355,129.333
LOCATED NEAR THE
I-95 BRIDGE ALONG
GORMAN ROAD

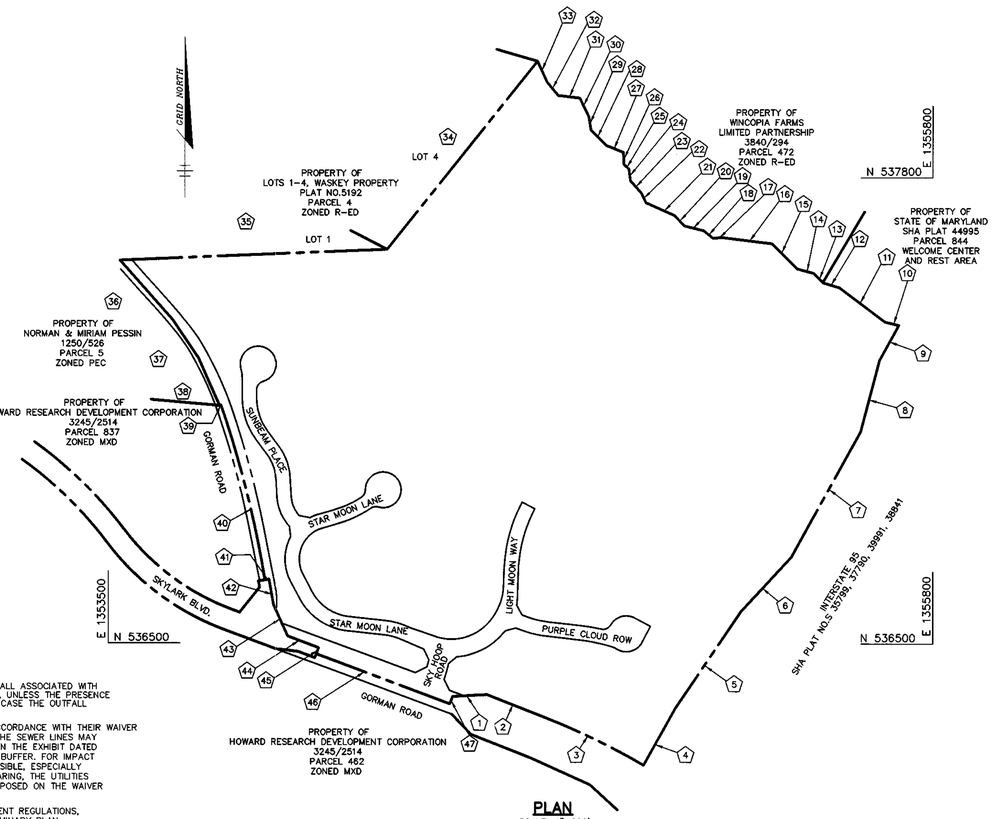
CONTROL STATION 47E4
ELEVATION 339.00
N 535,846.16
E 1,355,431.23
LOCATED NEAR THE
I-95 BRIDGE ALONG
GORMAN ROAD



VICINITY MAP
SCALE: 1"=2000'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AY LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
5. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS, (JANUARY 1998)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
6. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY MAPS WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY AIR SURVEY CORP. FLOWN IN APRIL 1998.
7. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 47 E4 ALONG WITH 2 TRAVERSE POINTS WERE USED FOR THIS PROJECT.
8. WATER IS PUBLIC. CONTRACT NO. 34-3832-D
9. SEWER IS PUBLIC. SEWER DRAINAGE AREA: PATUXENT CONTRACT NO. 34-3832-D
10. STORMWATER MANAGEMENT FOR THIS DEVELOPMENT INCLUDING FUTURE DEVELOPMENT OF PARCEL A IS PROVIDED IN ACCORDANCE WITH THE 2000 MDE STORMWATER MANAGEMENT MANUAL. PORTIONS OF OPEN SPACE LOTS 35, 36 & 39 ARE BEING USED AS NATURAL AREA CONSERVATION CREDIT AREAS, A CENTRAL PRIVATELY MAINTAINED STORMWATER WET POND IS BEING USED TO PROVIDE THE WATER QUALITY AND CHANNEL PROTECTION VOLUMES FOR THIS DEVELOPMENT.
11. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
12. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY DAFT McCUNE & WALKER, INC.
13. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY WELLS & ASSOCIATES DATED FEBRUARY 2000.
14. THE NOISE STUDY FOR THIS PROJECT WAS PREPARED BY CENTURY ENGINEERING DATED DATED MARCH 1999.
15. THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY DAFT, McCUNE & WALKER, INC. JULY 2000.
16. SUBJECT PROPERTY ZONED R-ED PER 10-18-93 COMPREHENSIVE ZONING PLAN. DATED JUNE 1999.
17. ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
18. SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S.: S-00-12, WP-00-87, WP-01-39, WP-01-99, WP-02-15 △1
19. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
20. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
21. PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
22. NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
23. ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
24. ALL PIPE ELEVATIONS SHOWN ARE INVERT ( ) ELEVATIONS.
25. STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, i.e., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
26. PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
27. DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOL. III. ALL 40' AND 50' RIGHT OF WAYS 20 TO 35 M.P.H.
28. ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
29. ALL STREET CURB RETURNS SHALL HAVE 25' RADII UNLESS OTHERWISE NOTED.
30. ALL STREET LIGHTS SHALL BE LOCATED BETWEEN 2'-0" AND 4'-0" BEHIND FACE OF CURB.
31. STREET TREES (122) LOCATION, TYPE AND NUMBER OF TREES SHOWN ON THIS PLAN ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMODATE FIELD CONDITIONS INCLUDING 20' CLEARANCE OF ANY STREET LIGHT AND SHALL BE IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. BOND RELEASE IS CONTINGENT UPON SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.
32. WP-00-87 – A WAIVER OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116(a)(2)(ii), WHICH PROHIBITED GRADING, REMOVAL OF VEGETATION WITHIN 75 FEET OF A STREAM, DATED JULY 21,2000. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
    1. THE GRADING AND CLEARING ASSOCIATED WITH IMPACT AREA #1, FOR SUNBEAM PLACE TO CROSS THE STREAM, SHALL BE MINIMIZED AND COMPLY WITH THE FINAL ROAD PLANS, WHICH WILL BE REVIEWED AND APPROVED BY THE SRC. AS PROPOSED BY THE DEVELOPER WITH THIS WAIVER PETITION, THE UTILITY CROSSING OF THE STREAM MUST BE COINCIDENTAL WITH THE ROAD CROSSING. AS POSSIBLE, THE DEVELOPER SHALL COMPLY WITH COMMENT #1 OF THE JUNE 1,2000, REVIEW COMMENTS FROM THE SOIL CONSERVATION DISTRICT (SCD) REGARDING ROAD DESIGN AND LOCATION, AND SHALL CONFIGURE THE ROAD SO THAT ANY REQUIRED CALMING FEATURE ALIGNS WITH THE STREAM CROSSING, AND THEREBY LESSENS THE ASSOCIATED GRADING/CLEARING.
    2. AS INDICATED IN THE COMMENTS FROM THE SCD, THE OUTFALL ASSOCIATED WITH IMPACT AREA #2 IS TO OUTFALL AT GRADE ELEVATION 308, UNLESS THE PRESENCE OF ROCK IS FOUND DURING FIELD INVESTIGATION, IN WHICH CASE THE OUTFALL MAY BE SHIFTED TO OUTFALL AT GRADE ELEVATION 314.
    3. THE L.O.D. FOR IMPACT AREAS #3 AND #4 SHALL BE IN ACCORDANCE WITH THEIR WAIVER EXHIBIT DATED MARCH 17,2000. NEITHER THE WATER NOR THE SEWER LINES MAY BE EXTENDED BEHIND PROPOSED LOTS 34-40 (AS SHOWN IN THE EXHIBIT DATED MAY 8,2000), DUE TO ADDITIONAL IMPACT TO THE STREAM BUFFER. FOR IMPACT AREAS #3 AND #4, LIMIT TREE CLEARING AS MUCH AS POSSIBLE, ESPECIALLY SPECIMEN TREES. TO FURTHER DECREASE GRADING OR CLEARING, THE UTILITIES MUST BE CONSOLIDATED INTO A SINGLE EASEMENT, AS PROPOSED ON THE WAIVER EXHIBIT. REVISED BY WP-01-99.
33. WP-01-39 – A WAIVER OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.146, WHICH REQUIRES THE SUBMISSION OF A PRELIMINARY PLAN AFTER A SKETCH PLAN HAD BEEN SIGNED. THE WAIVER WAS DENIED, NOVEMBER 17, 2000.
34. THERE ARE 55 TENTATIVE HOUSING UNIT ALLOCATIONS RESERVED FOR THE SFA UNITS ON BULK PARCEL A, AS SHOWN ON S-00-12, AND IN ACCORDANCE WITH SECTION 16.1106.h.2.(ii) OF THE SUBDIVISION REGULATIONS. THE DEADLINE TO SUBMIT A PRELIMINARY PLAN FOR THAT PARCEL WILL BE ESTABLISHED WHEN IT IS RECORDED ON A PLAT.
35. THERE ARE NO EXISTING PERMANENT STRUCTURES ON-SITE.
36. WP-01-99 – A WAIVER OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.115.c.(2) TO ALLOW GRADING AND CLEARING IN A FLOODPLAIN AREA, AND SECTION 16.116.a.2.(ii) TO ALLOW GRADING AND CLEARING IN A STREAM BUFFER. FOR WORK ASSOCIATED WITH THE INSTALLATION OF THE WATER AND SEWER EXTENSIONS FROM THE ADJOINING SHA REST AREA PROPERTY.
37. FOREST CONSERVATION EASEMENT AREAS E, F & G ARE FUTURE POSSIBLE REFORESTATION AREAS THAT CAN BE UTILIZED AT A LATER DATE TO SATISFY OFFSITE REQUIREMENTS.
38. △1 WP-02-15 – A WAIVER OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116 (a) (2) (ii), TO ALLOW GRADING AND CLEARING WITH 75' STREAM BUFFER, AND SECTION 16.115 (c) TO ALLOW WORK IN A FLOODPLAIN AREA IN ORDER TO CONSTRUCT A PEDESTRIAN PATHWAY SYSTEM AS SHOWN ON THE WAIVER EXHIBIT. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
    1. THE DISTURBANCE SHALL BE LIMITED TO WORK ASSOCIATED WITH THE CONSTRUCTION OF THE PEDESTRIAN PATHWAY ONLY.
    2. THE ROAD CONSTRUCTION DRAWINGS FOR F-01-140 WILL HAVE TO BE REPLINED TO REFLECT THE LOCATION OF THE PATHWAY AND ALL ASSOCIATED GRADING AND CLEARING. THE PATHWAY SHALL BE LOCATED AS SHOWN ON THE WAIVER EXHIBIT (EXHIBIT 1.) THE ROAD PLANS SHALL ALSO INCLUDE A FOOTBRIDGE DETAIL.
    3. THE PETITIONER SHALL COMPLY WITH THE COMMENTS ISSUED BY THE SOIL CONSERVATION DISTRICT (SCD), DATED 8/29/01.



PLAN
SCALE: 1"=200'

BOUNDARY CHART

1	S 86°49'15" W		95.82'
2	N 68°30'18" W		177.86'
3	R =1969.86'	L =302.16'	
4	S 29°01'05" W		325.62'
5	S 34°06'42" W		325.62'
6	S 42°51'42" W		206.16'
7	S 28°49'32" W		400.00'
8	S 14°47'22" W		206.16'
9	S 28°49'32" W		111.29'
10	S 76°50'06" E		39.79'
11	S 53°11'44" E		158.71'
12	S 73°06'29" E		48.46'
13	S 43°54'39" E		35.46'
14	S 74°53'26" E		48.61'
15	S 44°49'31" E		98.51'
16	S 82°58'48" E		137.82'
17	N 88°04'21" E		28.92'
18	S 51°06'14" E		32.58'
19	S 76°15'13" E		55.01'
20	S 43°55'10" E		40.88'
21	S 65°52'50" E		86.51'
22	S 25°16'19" E		29.59'
23	S 41°30'55" E		46.49'
24	S 07°33'07" E		33.12'
25	S 46°49'26" E		18.70'
26	S 03°01'44" E		33.78'
27	S 68°17'36" E		50.72'
28	S 44°47'14" E		61.16'
29	S 09°32'59" E		37.57'
30	S 25°40'03" E		57.56'
31	S 83°15'33" E		61.16'
32	S 39°26'43" E		47.94'
33	S 24°42'10" E		64.18'
34	N 38°36'06" E		672.75'
35	N 87°37'38" E		745.82'
36	N 41°37'56" W		221.00'
37	N 34°03'35" W		129.47'
38	N 23°44'06" W		144.31'
39	S 71°05'08" W		4.28'
40	R =3003.89'	L =503.76'	
41	S 80°41'39" W		11.80'
42	N 09°55'02" W		72.81'
43	N 24°33'43" W		95.27'
44	N 69°33'43" W		92.00'
45	N 20°26'17" E		18.36'
46	S 69°33'20" E		397.89'
47	S 21°29'42" W		22.17'

AS BUILT CERTIFICATE

_____ DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	REV. GENERAL NOTES.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 – 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
TITLE SHEET

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

6.26.01
DATE

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER J. REID — No. 10040

CHRISTOPHER J. REID # 10040

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO :	99212/FINALS RD1.DWG
DATE :	JUNE 19, 2001
SCALE :	AS SHOWN
DRAWING NO.	1 OF 25

F-01-140

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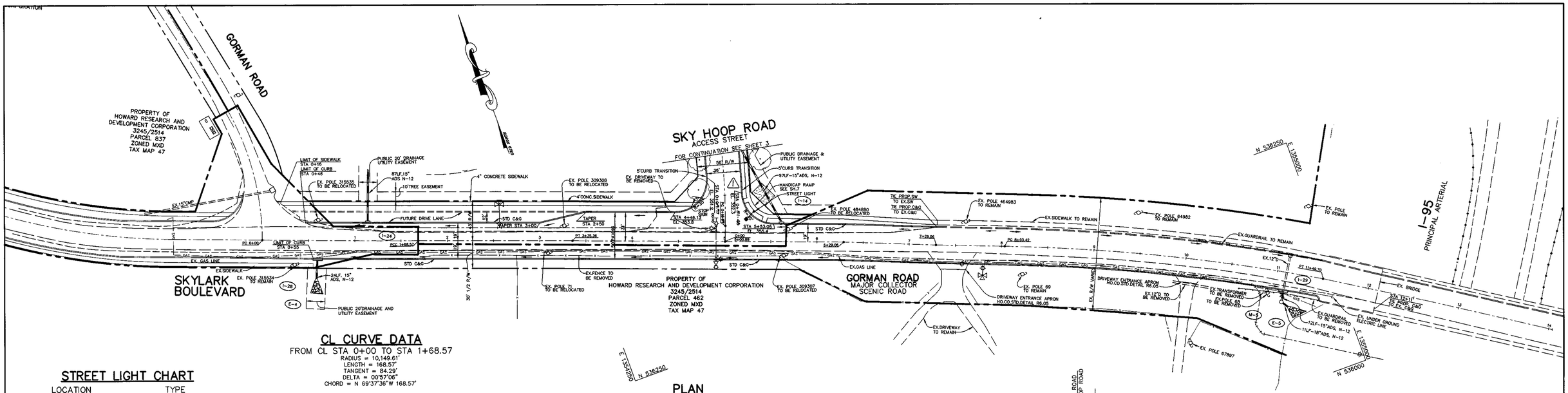


PLAN

SCALE : 1" = 50'

STREET LIGHT CHART

LOCATION	TYPE
31' RIGHT OF STA 0+32 SKY HOOP ROAD ANGLE TO CENTER OF INTERSECTION	250 WATT HPS VAPOR PENDANT (SAG) FIXTURE MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE WITH 12' ARM

CL CURVE DATA

FROM CL STA 0+00 TO STA 1+68.57
RADIUS = 10,149.61'
LENGTH = 168.57'
TANGENT = 84.29'
DELTA = 00°57'06"
CHORD = N 69°37'36"W 168.57'

CL CURVE DATA

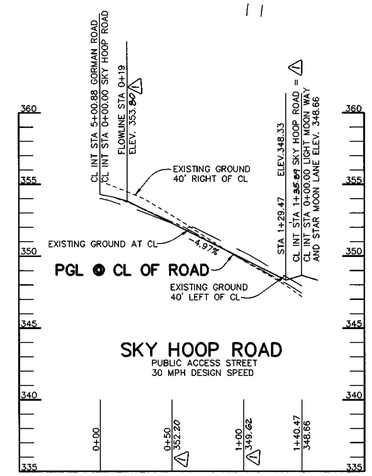
FROM CL STA 1+68 TO STA 3+35.36
RADIUS = 21,190.97'
LENGTH = 166.79'
TANGENT = 83.39'
DELTA = 00°27'03"
CHORD = N 69°52'37"W 166.79'

CL CURVE DATA

FROM CL STA 8+03.42 TO STA 11+49.70
RADIUS = 2086.04'
LENGTH = 346.28'
TANGENT = 173.54'
DELTA = 09°30'40"
CHORD = S 64°08'17"E 345.88'

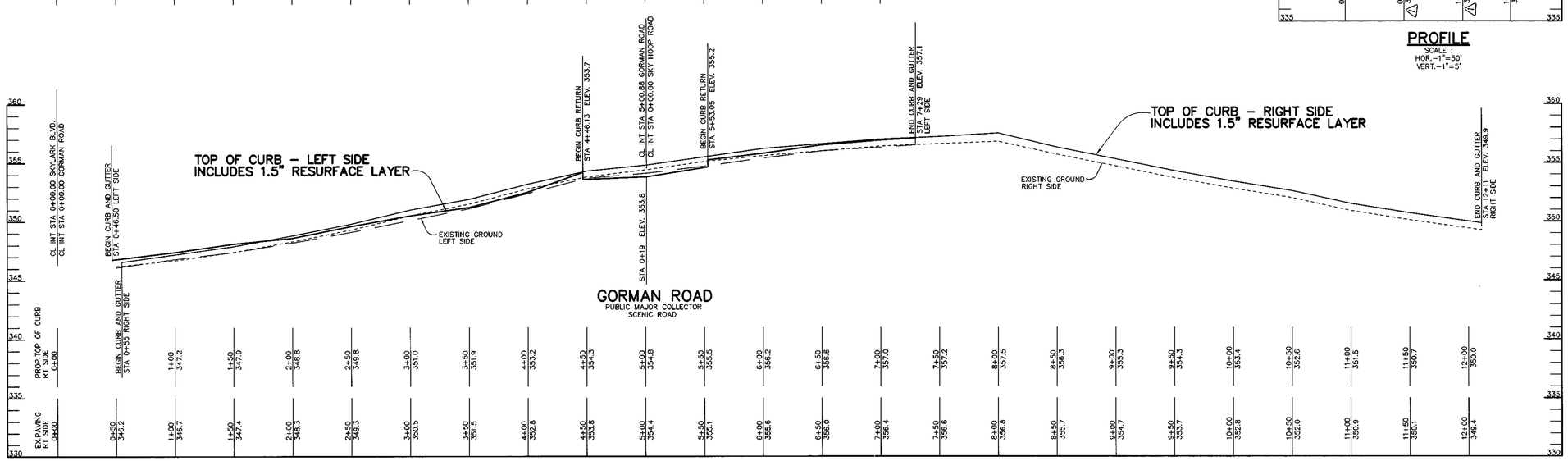
CL CURVE DATA

FROM CL STA 0+16.89 TO STA 1+35.89 △1
RADIUS = 700.00'
LENGTH = 119.00'
TANGENT = 59.64'
DELTA = 09°44'25"
CHORD = N 15°34'28"W 118.86'



PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'



PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	REV. PLAN, CURVE DATA & PROFILE OF SKY HOOP RD.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **EMERSON**
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE **PLAN AND PROFILE OF GORMAN ROAD AND SKY HOOP ROAD**

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS ◆ SURVEYORS ◆ PLANNERS
LANDSCAPE ARCHITECTS ◆ ENVIRONMENTAL SPECIALISTS
8618 Centre Park Drive, Columbia, MD 21045 ◆ tel 410.997.8900 fax 410.997.9282

6.26.01
DATE

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

CHRISTOPHER J. REID #10040

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO	99212/FINALS RD2.DWG
DATE :	JUNE 19, 2001
SCALE :	AS SHOWN
DRAWING NO.	2 OF 25

F-01-140

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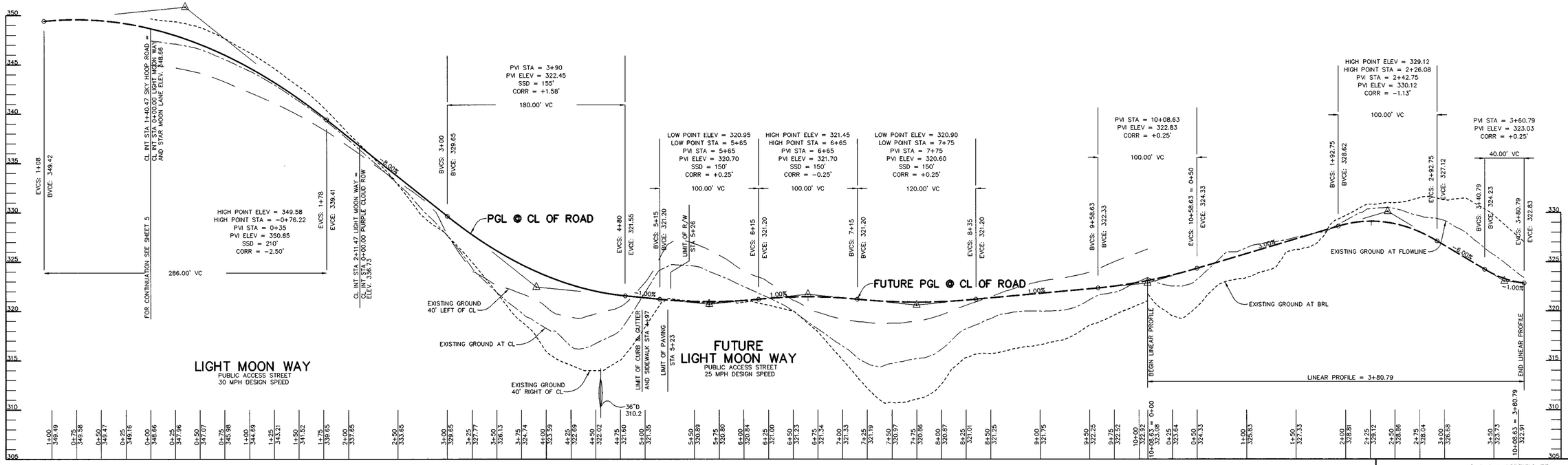


PROFILE

SCALE : HOR.-1"=50' VERT.-1"=5'

CL CURVE DATA

FROM CL STA 0+00 TO STA 2+79.50

RADIUS = 165.00'
LENGTH = 279.58'
TANGENT = 186.77'
DELTA = 97°05'00"
CHORD = S 50°39'50"W 247.31'

CL CURVE DATA

FROM CL STA 3+37.92 TO STA 5+26

RADIUS = 420.00'
LENGTH = 188.08'
TANGENT = 95.64'
DELTA = 25°39'27"
CHORD = S 14°57'03"W 186.51'

CURB TRANSITION DATA

FROM CL STA 0+50.80 STAR MOON LANE TO CL STA 0+19.70 LIGHT MOON WAY

RADIUS = 184.07'
LENGTH = 66.40'
TANGENT = 33.57'
DELTA = 20°40'12"
CHORD = N 77°17'57"W 66.05'

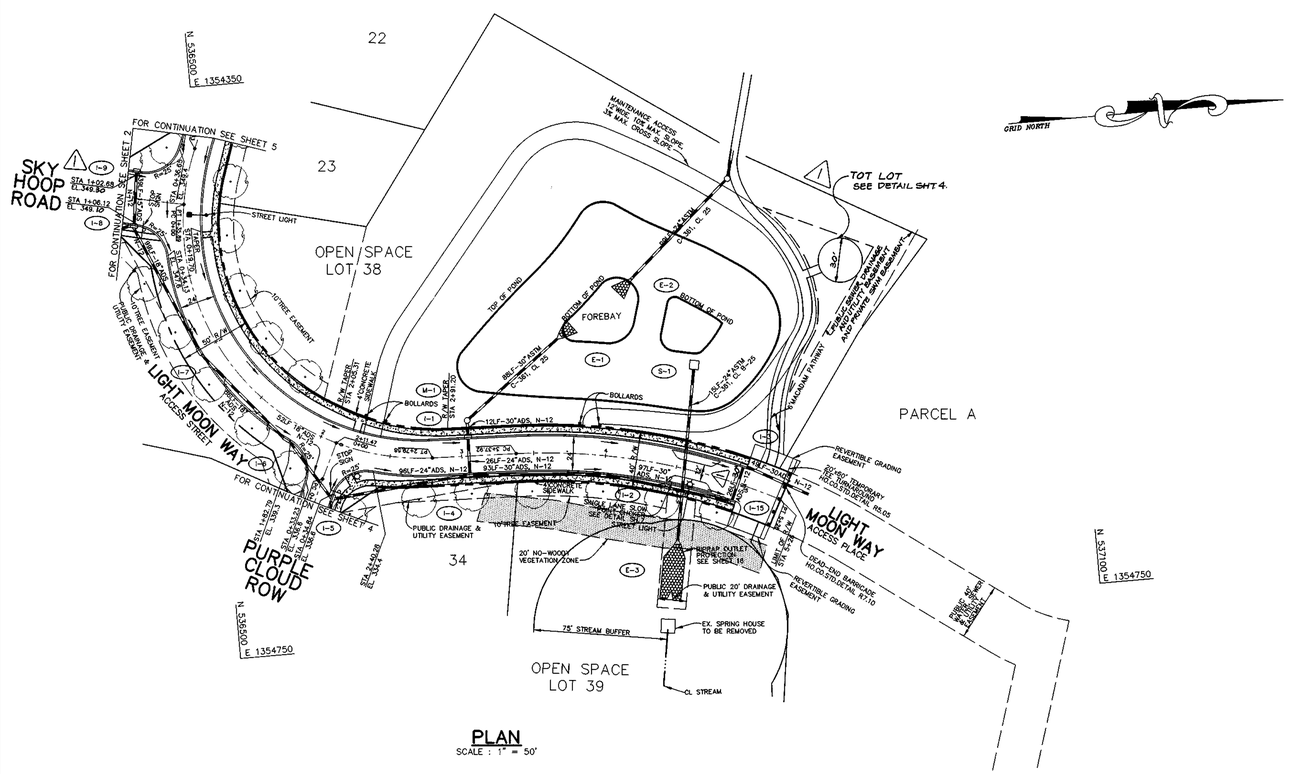
R/W TRANSITION DATA

FROM CL STA 2+05.31 TO STA 2+91.20

RADIUS = 150.00'
LENGTH = 75.80'
TANGENT = 38.73'
DELTA = 28°57'18"
CHORD = N 16°35'59"W 75.00'

STREET LIGHT CHART

LOCATION	TYPE
7' LEFT OF STA 0+07 LIGHT MOON WAY	150 WATT HPS VAPOR PENDANT MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE WITH 12' ARM
18' RIGHT OF STA 2+31 LIGHT MOON WAY	100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE
10' RIGHT OF STA 4+62 LIGHT MOON WAY AT CHOKER	100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE



PLAN

SCALE : 1" = 50'

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED TOT LOT LOCATION. CHANGED LOCATION OF PATHWAY. MODIFIED PUBLIC ESMT. & PRIV. SWM ESMT.
		REV. ELEVS. ON PLAN- SKY HOOP ROAD.
		REV. I-5 TO I-15 PIPE SIZE.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT

EMERSON

SECTION ONE AREA ONE
LOTS 1 – 39 & PARCEL A

AREA

TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE

PLAN AND PROFILE OF LIGHT MOON WAY

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6.26.01
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STATE OF MARYLAND CHRISTOPHER J. REID No. 19949 PROFESSIONAL ENGINEER

CHRISTOPHER J. REID #19949

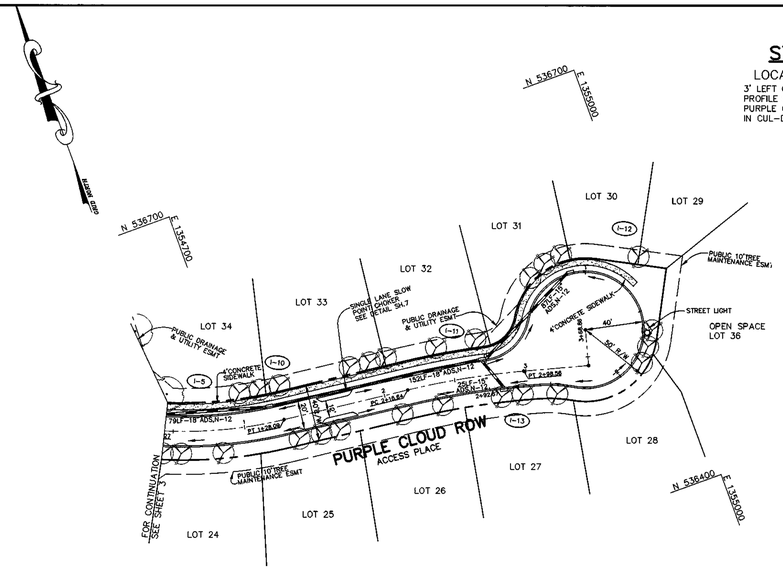
DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO :	99212/FINALS RD3.DWG
DATE :	JUNE 19, 2001
SCALE :	AS SHOWN
DRAWING NO.	3 OF 25

F-01-140

P:\project\99212\FINALS\RD3.DWG Tue Jun 26 13:53:54 2001 RIEMER MUEGGE A DIVISION OF PHR&A

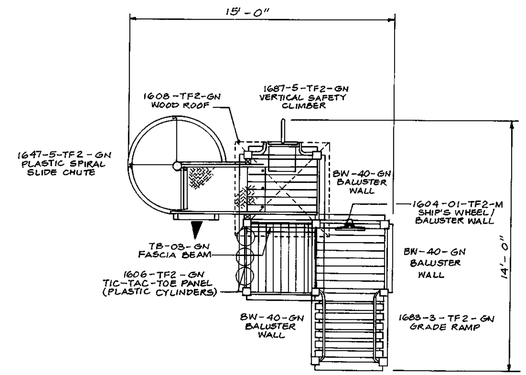
STREET LIGHT CHART

LOCATION	TYPE
3' LEFT OF LINEAR PROFILE STA 1+65 PURPLE CLOUD ROW IN CUL-DE-SAC	100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE



PLAN

SCALE : 1" = 50'



⚠1 TOT LOT DETAIL

NO SCALE

CL CURVE DATA

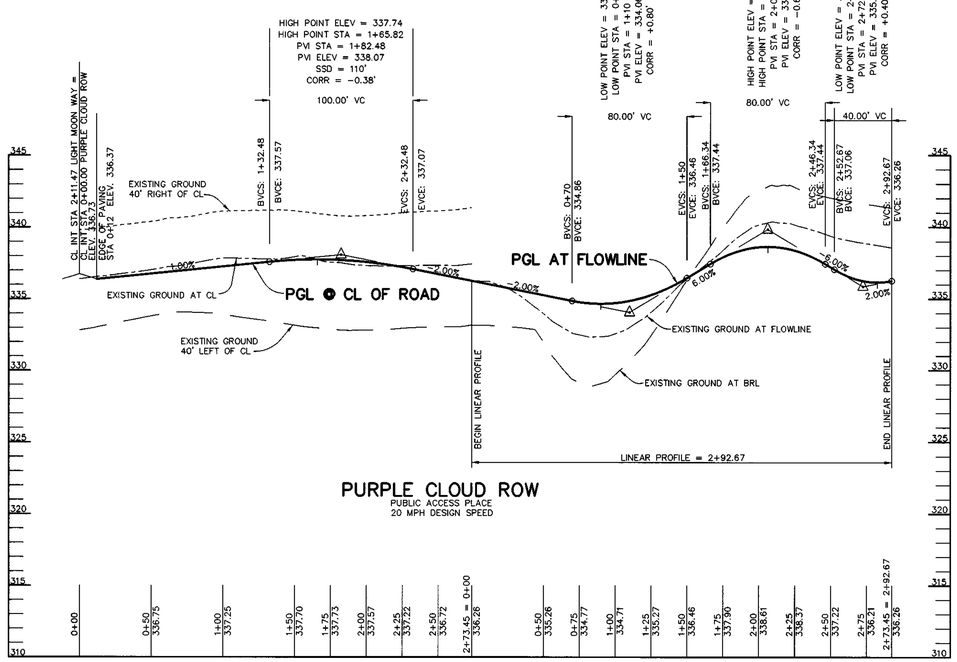
FROM CL STA 0+27 TO STA 1+28.09

RADIUS = 300.00'
LENGTH = 101.09'
TANGENT = 51.03'
DELTA = 19°18'27"
CHORD = S 73°52'47"E 100.62'

CL CURVE DATA

FROM CL STA 2+16.64 TO STA 2+98.56

RADIUS = 550.00'
LENGTH = 81.92'
TANGENT = 41.03'
DELTA = 08°32'00"
CHORD = N 79°16'00"W 81.84'

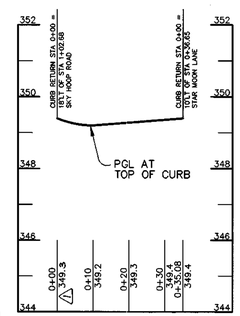


PURPLE CLOUD ROW

PUBLIC ACCESS PLACE
20 MPH DESIGN SPEED

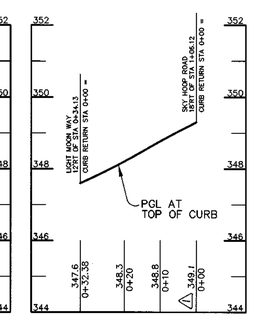
PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'



PROFILE

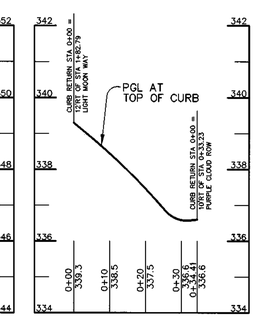
SCALE :
HOR.-1"=20'
VERT.-1"=2'



PROFILE

SCALE :
HOR.-1"=20'
VERT.-1"=2'

INTERSECTION OF SKY HOOP ROAD AND LIGHT MOON WAY AND STAR MOON LANE



PROFILE

SCALE :
HOR.-1"=20'
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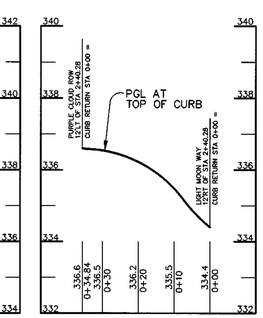
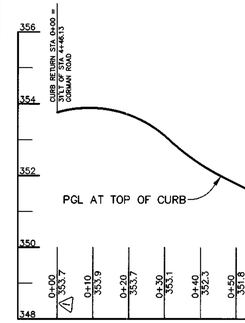


PROFILE

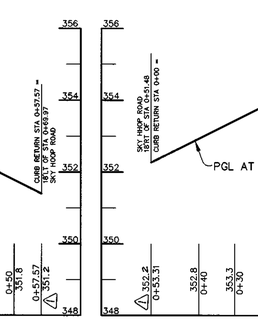
SCALE :
HOR.-1"=20'
VERT.-1"=2'

INTERSECTION OF LIGHT MOON WAY AND PURPLE CLOUD ROW



PROFILE

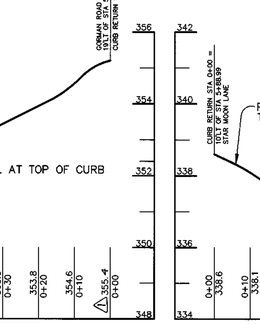
SCALE :
HOR.-1"=20'
VERT.-1"=2'



PROFILE

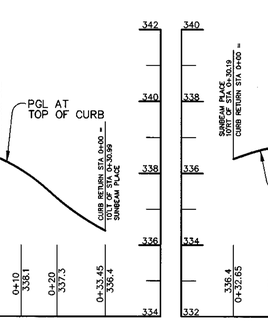
SCALE :
HOR.-1"=20'
VERT.-1"=2'

INTERSECTION OF GORMAN ROAD AND SKY HOOP ROAD



PROFILE

SCALE :
HOR.-1"=20'
VERT.-1"=2'



PROFILE

SCALE :
HOR.-1"=20'
VERT.-1"=2'

INTERSECTION OF STAR MOON LANE AND SUNBEAM PLACE

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	REV. PROFILES, ADDED TOT LOT DETAIL

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **EMERSON**
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE **PLAN AND PROFILE OF PURPLE CLOUD ROW AND CURB RETURN PROFILES**

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

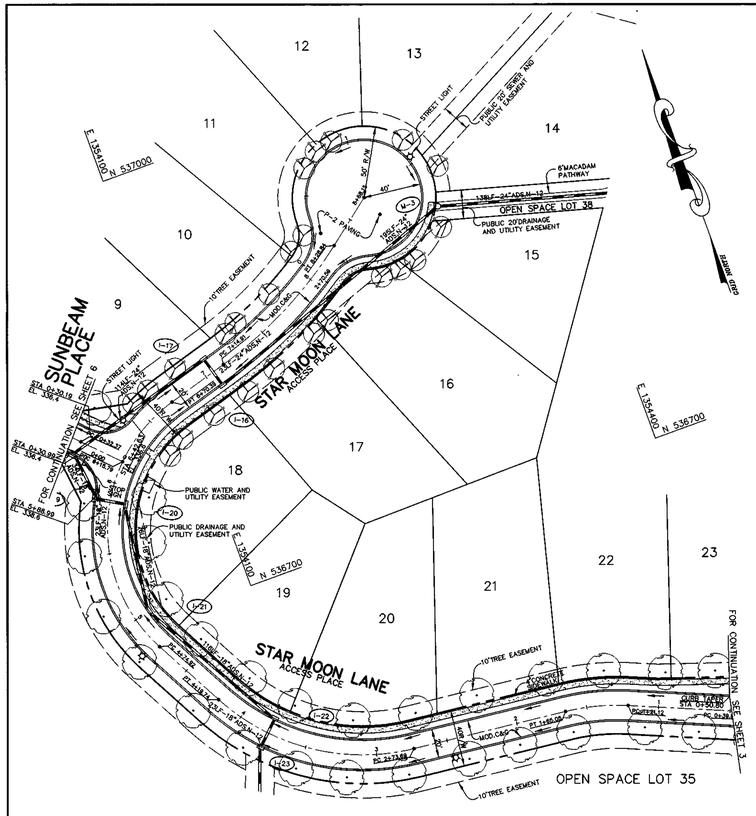
6.26.01
DATE

STATE OF MARYLAND — CHRISTOPHER J. REID #19949

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO :	99212/FINALS RD4.DWG
DATE :	JUNE 19, 2001
SCALE :	AS SHOWN
DRAWING NO.	4 OF 25

F-01-140

P:\project\99212\FINALS\RD4.DWG Fri Jun 22 10:36:21 2001 Riemer Muegge, a division of PHRSA



STREET LIGHT CHART

LOCATION	TYPE
13' LEFT OF STA 2+57 STAR MOON WAY	100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE
13' LEFT OF STA 4+79 STAR MOON WAY	100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE
15' LEFT OF STA 6+39 STAR MOON WAY	100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE
3' LEFT OF LINEAR PROFILE STA 1+45 STAR MOON WAY IN CUL-DE-SAC	100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE

CL CURVE DATA
FROM CL STA 0+00 TO STA 0+39.83
RADIUS = 165.00'
LENGTH = 39.83'
TANGENT = 20.01'
DELTA = 13°49'49"
CHORD = N 73°52'46"W

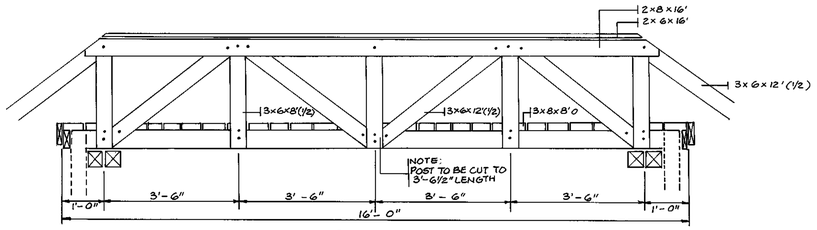
CL CURVE DATA
FROM CL STA 1+21.12 TO STA 1+65.05
RADIUS = 150.00'
LENGTH = 43.93'
TANGENT = 22.12'
DELTA = 16°46'48"
CHORD = N 75°21'15"W 43.77'

CL CURVE DATA
FROM CL STA 2+73.69 TO STA 4+19.74
RADIUS = 150.00'
LENGTH = 146.05'
TANGENT = 79.40'
DELTA = 55°47'19"
CHORD = N 55°51'00"W 140.35'

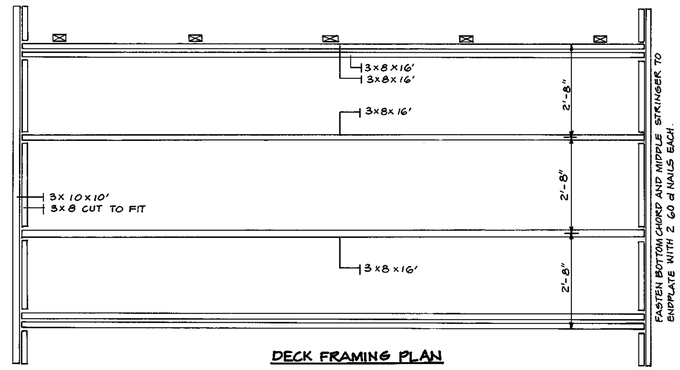
CL CURVE DATA
FROM CL STA 4+74.92 TO STA 6+70.39
RADIUS = 110.00'
LENGTH = 140.87'
TANGENT = 81.96'
DELTA = 73°22'39"
CHORD = N 08°43'59"E 131.44'

CL CURVE DATA
FROM CL STA 7+14.91 TO STA 8+28.84
RADIUS = 300.0'
LENGTH = 113.93'
TANGENT = 57.66'
DELTA = 21°45'34"
CHORD = S 62°58'57"W 113.25'

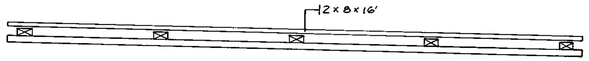
CURB TRANSITION DATA
FROM CL STA 0+50.80 STAR MOON LANE
TO CL STA 0+19.70 LIGHT MOON WAY
RADIUS = 184.07'
LENGTH = 66.40'
TANGENT = 33.57'
DELTA = 20°40'12"
CHORD = N 77°17'57"W 66.05'



SIDE VIEW

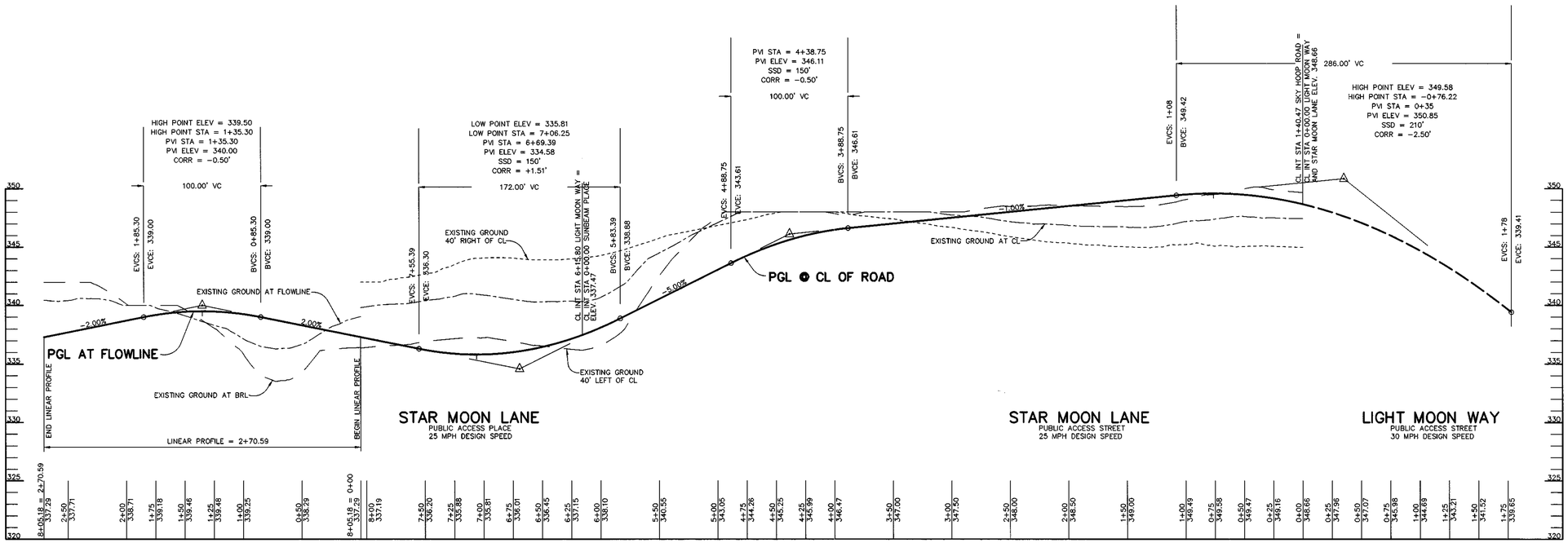


DECK FRAMING PLAN



TOP CHORD

1 TYPICAL 16' FOOTBRIDGE DETAIL
SCALE: 1/2" = 1'-0"



PROFILE
SCALE :
HOR.-1"=50'
VERT.-1"=5'

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED TYPICAL 16' FOOTBRIDGE DETAIL

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 – 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE OF STAR MOON LANE

RIEMER MUEGGE
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6-26-01
DATE

STATE OF MARYLAND PROFESSIONAL ENGINEER CHRISTOPHER J. REID No. 19949

CHRISTOPHER J. REID #19949

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO	.99212/FINALS 'RD5.DWG
DATE :	JUNE 19, 2001
SCALE :	AS SHOWN
DRAWING NO.	5 OF 25

F-01-140

P:\project\99212\FINALS\RD5.DWG Fri Jun 22 10:39:19 2001 Riemer Muegge, a division of PHR&A

STRUCTURE SCHEDULE

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	A-5 4'WIDE	12.52 LT OF CL STA 3+05.00 LIGHT MOON WAY △1	312.70 (30")	312.60 (30")	329.47	HOCO STD. DETAIL SD-4.40
I-2	A-5 4'WIDE	12.52 LT OF CL STA 4+00.00 LIGHT MOON WAY △1	313.49 (30")	313.39 (30")	323.81	HOCO STD. DETAIL SD-4.40
I-3	A-5 4'WIDE	12.52 LT OF CL STA 4+94.22 LIGHT MOON WAY △1	314.27 (30")	314.17 (30")	321.62	HOCO STD. DETAIL SD-4.40
I-4	A-5 4'WIDE	12.52 RT OF CL STA 3+05.00 LIGHT MOON WAY △1	324.87 (24") 312.83 (30")	312.83 (30")	329.47	HOCO STD. DETAIL SD-4.40
I-5	A-5 2.5'WIDE	10.52 LT OF CL STA 0+10.43 PURPLE CLOUD ROW	333.48 (18") 329.55 (18")	329.05 (24")	337.21	HOCO STD. DETAIL SD-4.40
I-6	A-5 2.5'WIDE	12.52 RT OF CL STA 1+80.46 LIGHT MOON WAY	334.10 (18")	334.00 (18")	339.49	HOCO STD. DETAIL SD-4.40
I-7	A-5 2.5'WIDE	12.52 RT OF CL STA 1+00.00 LIGHT MOON WAY	341.10 (18")	341.00 (18")	△1 344.94	HOCO STD. DETAIL SD-4.40
I-8	A-5 2.5'WIDE	18.52 RT OF CL STA 1+3.68 SKY HOOP ROAD	346.25 (15") 346.25 (15")	346.00 (18")	△1 349.71	HOCO STD. DETAIL SD-4.40
I-9	A-5 2.5'WIDE	18.52 LT OF CL STA 1+00.12 SKY HOOP ROAD	–	346.64 (15")	△1 349.90	HOCO STD. DETAIL SD-4.40
I-10	A-5 2.5'WIDE	10.52 LT OF CL STA 1+20.00 PURPLE CLOUD ROW	330.05 (18")	329.95 (18")	337.73	HOCO STD. DETAIL SD-4.40
I-11	A-5 2.5'WIDE	10.52 LT OF CL STA 2+42.62 PURPLE CLOUD ROW	331.06 (15") 332.75 (15")	330.81 (18")	336.60	HOCO STD. DETAIL SD-4.40
I-12	A-5 2.5'WIDE	LP STA 0+89.80 PURPLE CLOUD ROW	–	331.50 (15")	335.24	HOCO STD. DETAIL SD-4.40
I-13	A-5 2.5'WIDE	10.52 RT OF CL STA 2+83.48 PURPLE CLOUD ROW	–	333.00 (15")	336.74	HOCO STD. DETAIL SD-4.40
I-14	A-5 2.5'WIDE	19.00 LT OF CL STA 5+61.67 GORMAN ROAD	–	351.10 (15")	355.18	HOCO STD. DETAIL SD-4.40
I-15	A-5 2.5'WIDE	12.52 RT OF CL STA 4+94.22 LIGHT MOON WAY △1	314.04 (30")	313.94 (30")	321.62	HOCO STD. DETAIL SD-4.40
I-16	A-5 4'WIDE	10.52 RT OF CL STA 7+06.00 STAR MOON LANE	322.67 (24")	322.57 (24")	336.09	HOCO STD. DETAIL SD-4.40
I-17	A-5 4'WIDE	10.52 LT OF CL STA 7+06.00 STAR MOON LANE	322.88 (24")	322.78 (24")	336.09	HOCO STD. DETAIL SD-4.40
I-18	A-5 2.5'WIDE	10.52 LT OF CL STA 0+33.40 SUNBEAM PLACE	333.50 (18") 323.95 (18")	323.45 (24")	336.57	HOCO STD. DETAIL SD-4.40
I-19	A-5 2.5'WIDE	10.52 LT OF CL STA 5+86.70 STAR MOON LANE	334.27 (18")	334.17 (18")	338.01	HOCO STD. DETAIL SD-4.40
I-20	A-5 2.5'WIDE	10.52 RT OF CL STA 5+86.70 STAR MOON LANE	334.60 (18")	334.50 (18")	338.01	HOCO STD. DETAIL SD-4.40
I-21	A-5 2.5'WIDE	10.52 RT OF CL STA 5+00.00 STAR MOON LANE	340.10 (18")	340.00 (18")	343.33	HOCO STD. DETAIL SD-4.40
I-22	A-5 2.5'WIDE	10.52 RT OF CL STA 3+78.16 STAR MOON LANE	343.17 (18")	343.07 (18")	347.00	HOCO STD. DETAIL SD-4.40
I-23	A-5 2.5'WIDE	10.52 LT OF CL STA 3+78.16 STAR MOON LANE	343.50 (18")	343.40 (18")	347.00	HOCO STD. DETAIL SD-4.40
I-24	A-5 2.5'WIDE	19.00 LT OF CL STA 1+13.88 GORMAN ROAD	–	344.37 (18")	347.39	HOCO STD. DETAIL SD-4.40
I-25	A-5 2.5'WIDE	10.52 LT OF CL STA 1+58.00 SUNBEAM PLACE	324.82 (18")	324.72 (18")	331.53	HOCO STD. DETAIL SD-4.40
I-26	A-5 2.5'WIDE	10.52 LT OF CL STA 2+50.00 SUNBEAM PLACE	325.49 (18")	325.24 (18")	329.18	HOCO STD. DETAIL SD-4.40
I-27	A-5 2.5'WIDE	10.52 RT OF CL STA 2+50.00 SUNBEAM PLACE	–	325.60 (15")	329.18	HOCO STD. DETAIL SD-4.40
I-28	A-10 2.5'WIDE	19.00 RT OF CL STA 0+60.07 GORMAN ROAD	–	342.75 (15")	346.50	HOCO STD. DETAIL SD-4.41
I-29	A-10 2.5'WIDE	19.00 RT OF CL STA 11+09.56 GORMAN ROAD	347.95 (12")	347.70 (15")	351.20	HOCO STD. DETAIL SD-4.41
M-1	4'-0" DIA.	25.00 LT OF CL STA 3+5.00 LIGHT MOON WAY	312.54 (30")	312.49(30")	327.89	HOCO STD. DETAIL G-5.11
M-2	4'-0" DIA.	N 536,867.00 E 1,354,446.00	320.80 (24")	320.70 (24")	332.45	HOCO STD. DETAIL G-5.11
M-3	4'-0" DIA.	11.68 RT STA 1+79.28 STAR MOON LANE	321.59 (24")	321.49 (24")	339.91	HOCO STD. DETAIL G-5.11
M-4	4'-0" DIA.	15.00 LT OF CL STA 0+81.29 SUNBEAM PLACE	324.32 (18")	324.22 (18")	334.50	HOCO STD. DETAIL G-5.11
M-5	4'-0" DIA.	32.60 RT OF CL STA 11+9.44 GORMAN ROAD	347.60 (15")	347.35 (18")	351.90	HOCO STD. DETAIL G-5.11
E-1	30" ASTM END SECTION	N 536,741.00 E 1,354,545.00	312.00 (30")	–	–	HOCO STD. DETAIL SD-5.51
E-2	24" ASTM END SECTION	N 536,791.00 E 1,354,512.00	312.00 (24")	–	–	HOCO STD. DETAIL SD-5.51
E-3	36"ASTM END SECTION	N 536,810.00 E 1,354,697.00	308.00 (36")	–	–	HOCO STD. DETAIL SD-5.51
E-4	15" ADS END SECTION	44.23 RT OF CL STA 0+58.80 GORMAN ROAD	342.00 (15")	–	–	ADS, N-12
E-5	18" ADS END SECTION	37.90 RT OF CL STA 11+19.71 GORMAN ROAD	346.95 (18")	–	–	ADS, N-12
S-1	MODIFIED STRUCTURE	N 536,832.00 E 1,354,574.00	312.00 (8")	308.63 (36")	324.00	SEE SHEET 14
HW-1	TYPE "A" HEADWALL	34.74 RT OF CL STA 2+19.62 SUNBEAM PLACE	319.50 (48")	–	–	HOCO STD. DETAIL SD-5.11
HW-2	TYPE "A" HEADWALL	33.33 LT OF CL STA 2+03.45 SUNBEAM PLACE	–	319.84 (48")	–	HOCO STD. DETAIL SD-5.11

NOTES: ✕ LOCATION OF INLETS AND MANHOLES IS AT CENTER OF TOP COVER; FOR "A" INLETS LOCATION IS GIVEN FOR CENTER OF THROAT OPENING AT FACE OF CURB; FOR END SECTIONS AND HEADWALLS THE LOCATION IS CENTER OF THROAT OPENING AT FACE OF STRUCTURE.

PIPE SCHEDULE

PIPE LENGTH	SIZE	TYPE
308	15"	ADS, N-12
1074	18"	ADS, N-12
542	24"	ADS, N-12
255	30"	ADS, N-12
99	24"	ASTM
88	30"	ASTM
118	36"	ASTM
64	48"	RCCP

NOTE: MINIMUM 1' VERTICAL CLEARANCE TO BE PROVIDED BETWEEN UTILITIES.

GEOTECHNICAL CONSIDERATIONS by Robert B. Balter Co. 1/14/2000

Earthwork:

All fill placed for the core trench, access roadway, embankments, utility backfill, or any other location requiring
stable support or minimal settlement shall be constructed as controlled compacted fill. Controlled compacted

fill shall meet the following requirements:

a) Within the described construction areas, in which new fill is to be placed, strip the vegetation, topsoil, and
any organic, contaminated, or otherwise unsuitable materials to expose clean soils. The subject area shall extend outward from the exterior edges of the proposed construction a minimum of 5 feet plus 1 additional foot horizontally for every foot of new fill to be placed.

b) Proofroll the stripped soil surface with a fully loaded, tandem-axle dump truck, or other approved equipment, under the observation of a geotechnical engineer or highly qualified senior level soils technician, to verify and establish a uniform, dense and stable condition. Any soft, yielding, organic, contaminated or otherwise unacceptable spots detected shall be cut out and replaced with controlled compacted fill.

c) Compacted fill should be placed in relatively horizontal 8-inch loose lifts. Each lift should be uniformly and
evenly blade mixed during spreading to ensure uniformity of the material in each layer. Each layer should be

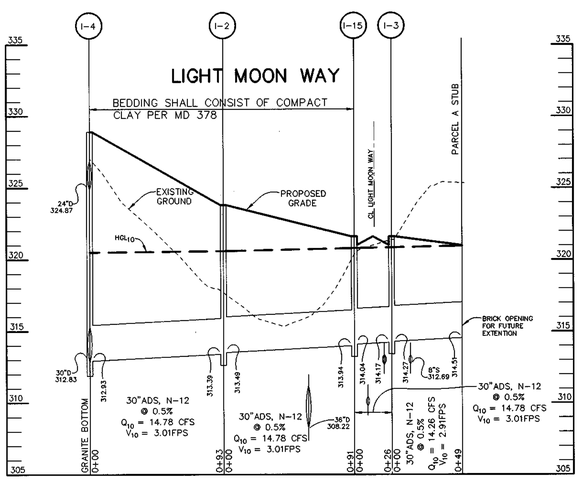
compacted to a minimum of 95 percent of the standard proctor maximum dry density as determined by ASTM
D-698 (AASHTO T-99). The moisture content of the materials shall be maintained in order to attain the required degree of compaction.

d) Where fills are to be placed on slopes the original ground should be deeply scarified or where slopes are steeper than 5 horizontal to 1 vertical the slope should be stepped or benched, when considered necessary by the Engineer, in order that the placement of fill may be accomplished in horizontal lifts.

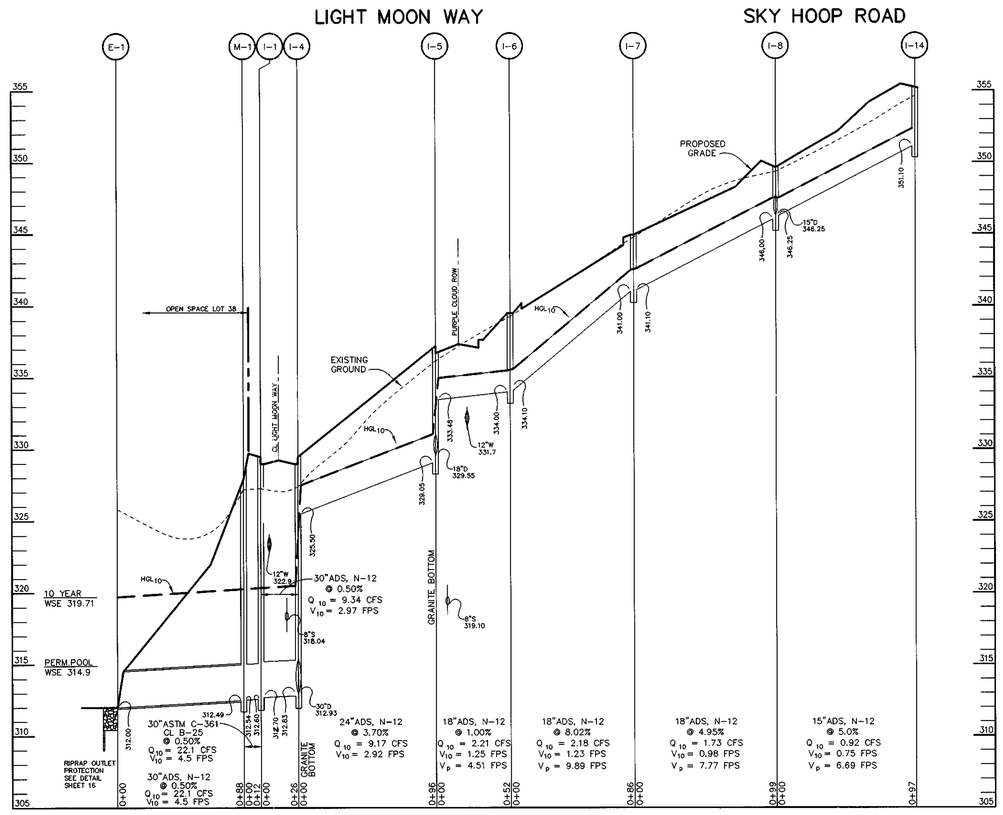
It is noted that this methodology is recommended both as preparation for areas to receive new fill, as well as
locations where cut is required to establish the proposed grades. In cut areas, the proofrolling and selective undercutting shall be accomplished after excavation down to the proposed grades has been completed.

Provided that the on-site materials are placed and compacted as specified in the previous requirements, these materials should be acceptable for use as controlled fill. However, as previously stated, the on-site materials are not acceptable for re-use as core-trench materials.

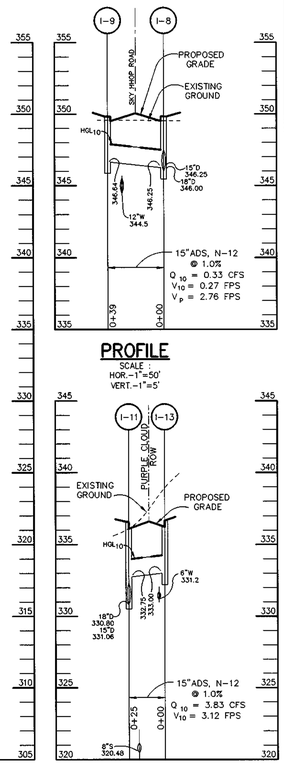
It is noted that the natural moisture contents vary with respect to the optimum moisture values for most efficient compaction. Accordingly, some wetting or drying of these soils may be required in order to achieve the specified degree of compaction. Also, the usage of any soil as fill must be closely monitored and tested to
assure that the embankment is free of deleterious contamination and is being rolled to the required density.



PROFILE
SCALE : HOR.-1"=50' VERT.-1"=5'



PROFILE
SCALE : HOR.-1"=50' VERT.-1"=5'



PROFILE
SCALE : HOR.-1"=50' VERT.-1"=5'

BY THE DEVELOPER :
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER DATE 6/22/01

BY THE ENGINEER :
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER 6-26-01 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE 7/2/01 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT 7/2/01 DATE

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS 7-6-01 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT 7/12/01 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 7/10/01 DATE

DATE	NO.	REVISION
10-30-01	1	REV. STRUCTURE SCHEDULE

OWNER / DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
STORM DRAIN PROFILES AND STRUCTURE SCHEDULE

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

6-26-01
DATE

STATE OF MARYLAND CHRISTOPHER J. REID No. 19949 PROFESSIONAL ENGINEER

CHRISTOPHER J. REID #19949

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO :	99212/FINALS SD1.DWG
DATE :	JUNE 19, 2001
SCALE :	AS SHOWN
DRAWING NO.	8 OF 25

F-01-140

P:\project\99212\FINALS\SD1.DWG Tue Jun 26 14:54:55 2001 RIEMER MUEGGE A DIVISION OF PHRGA

LEGEND

EXISTING 2'CONTOUR	300
EXISTING 10'CONTOUR	300
PROPOSED 2'CONTOUR	300
PROPOSED 10'CONTOUR	300
PROPERTY LINE AND RIGHT OF WAY	
EASEMENT	
FENCE	
GUARDRAIL	
STORM DRAIN	15"D
OVERHEAD WIRES	OH
EXISTING TREELINE	
PROPOSED TREELINE	
DRAINAGE AREA LINES	
LIMIT OF DISTURBANCE	L.O.D.
CURB INLET PROTECTION	CIP
EARTH DIKE	
SUPER SILT FENCE	SSF
SILT FENCE	SF
EROSION CONTROL MATTING	
STABILIZED CONSTRUCTION ENTRANCE	SCE
TREE PROTECTION FENCE	
FOREST RETENTION SIGN	(S)

CL OF DAM DATA

1. N 536,693.09 E 1,354,591.02
2. R = 1031.38' L = 22.37'
3. N 08°50'56" E 41.08'
4. R = 664.12' L = 38.14'
5. N 12°08'23" E 35.29'
6. R = 46.00' L = 36.97'
7. R = 153.13' L = 38.41'
8. N 536,891.95 E 1,354,583.40

SEDIMENT BASIN #1

D.A = 16.4AC.
WET STORAGE REQ'D = 29520 CF
DRY STORAGE REQ'D = 29520 CF
WET STORAGE PROV. = 29825 CF @ 316.40
DRY STORAGE PROV. = 48240 CF @ 320.00
CREST ELEV = 320.00
TOP OF DAM = 323.00
BOTTOM ELEV = 312.00
CLEANOUT ELEV. = 315.05
Q2 EX = 3.03 CFS
Q2 PROP = 2.63 CFS

NOTE: GRADING OF EXISTING GORMAN ROAD INDICATES ADDITION OF 1.5" PAVING OVERLAY.

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 6/22/01

BY THE ENGINEER :

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ENGINEER — DATE 6.26.01

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE — DATE 7/2/01

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/2/01

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED 8' X 20' WATER ESMT, ADDED TOT LOT LOCATION, CHANGED PATHWAY LOCATION. MODIFIED PUD. & PRIV. SWIM ESMTS.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

6.26.01
DATE

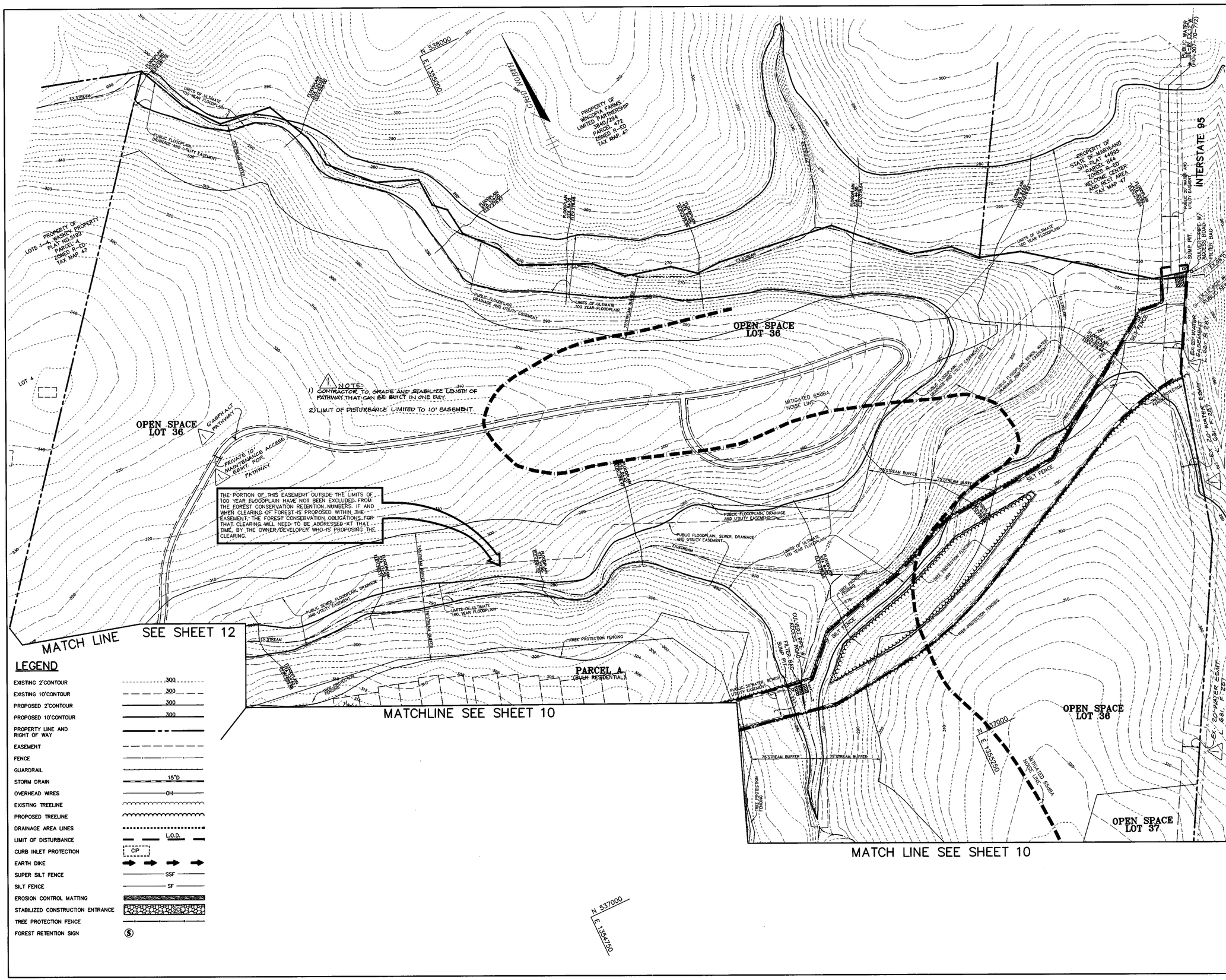
STATE OF MARYLAND — CHRISTOPHER J. REID — No. 19949 — PROFESSIONAL ENGINEER

CHRISTOPHER J. REID #19949

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO	.99212/FINALS 'SEDCONT1.DWG
DATE :	JUNE 19, 2001
SCALE :	1" = 50'
DRAWING NO.	10 OF 25

F-01-140

P:\project\99212\FINALS\Sedcont1.dwg Tue Jun 26 13:58:41 2001 RIEMER MUEGGE A DIVISION OF PHRSA



LEGEND

EXISTING 2'CONTOUR	300
EXISTING 10'CONTOUR	300
PROPOSED 2'CONTOUR	300
PROPOSED 10'CONTOUR	300
PROPERTY LINE AND RIGHT OF WAY	
EASEMENT	
FENCE	
GUARDRAIL	
STORM DRAIN	15"D
OVERHEAD WIRES	OH
EXISTING TREELINE	
PROPOSED TREELINE	
DRAINAGE AREA LINES	
LIMIT OF DISTURBANCE	L.O.D.
CURB INLET PROTECTION	CIP
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SUPER SILT FENCE	SSF
SILT FENCE	SF
EROSION CONTROL MATTING	
STABILIZED CONSTRUCTION ENTRANCE	SCE
TREE PROTECTION FENCE	
FOREST RETENTION SIGN	(S)

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER _____ DATE 6/22/01

BY THE ENGINEER :

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ENGINEER _____ DATE 6.26.01

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE _____ DATE 7/2/01

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT _____ DATE 7/2/01

AS BUILT CERTIFICATE

_____ DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS _____ DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT _____ DATE 7/12/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED EX. 20' WATER EASEMENT, ADDED 6' ASPHALT PATHWAY AND PRIV. 10' MAINT. ACCESS ESMT. FOR PATHWAY.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

6.26.01
DATE

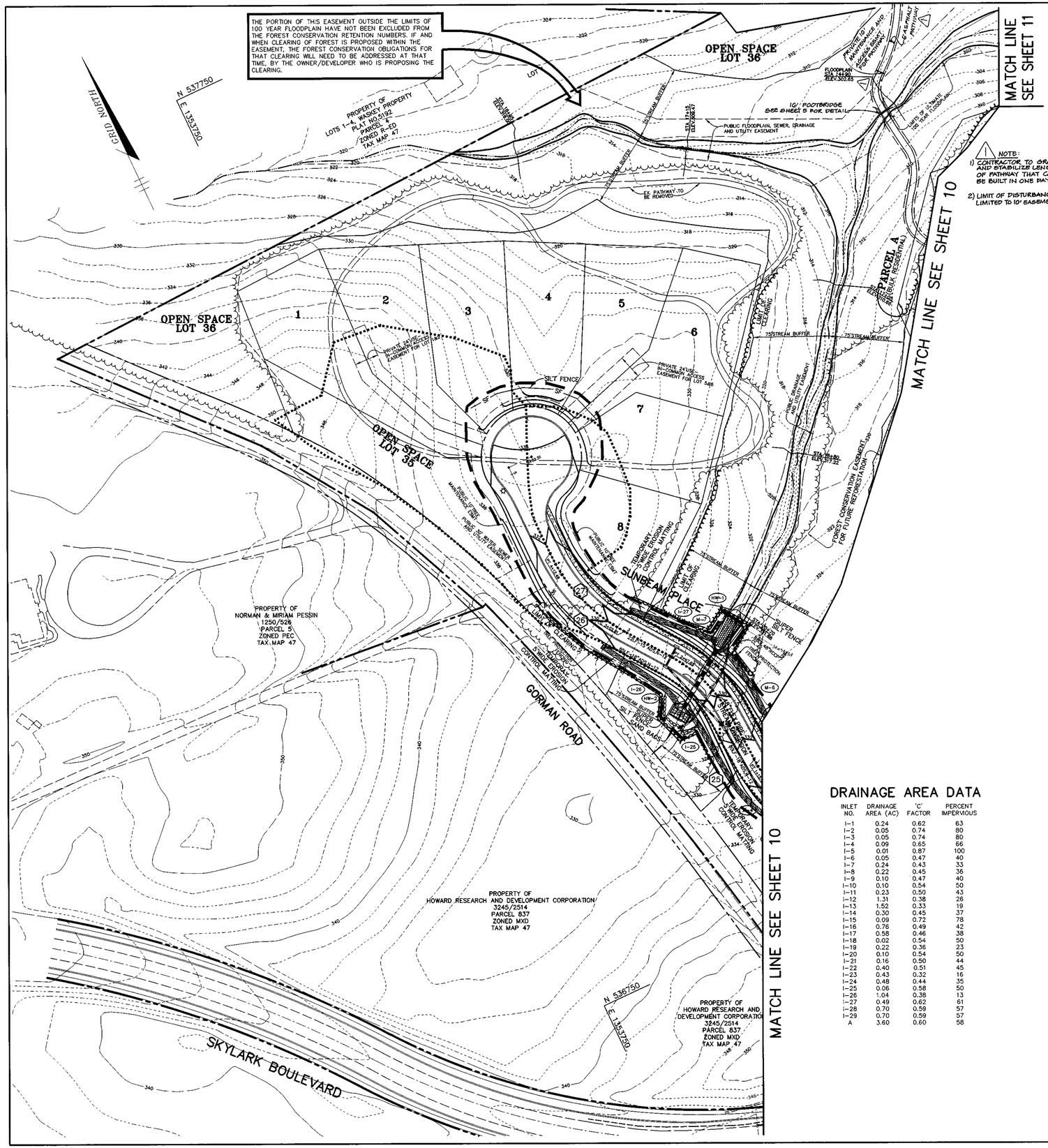
STATE OF MARYLAND — CHRISTOPHER J. REID — No. 19949 — REGISTERED PROFESSIONAL ENGINEER

CHRISTOPHER J. REID #19949

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO :	99212/FINALS :SEDCONT2.DWG
DATE :	JUNE 19, 2001
SCALE :	1" = 50'
DRAWING NO.	11 OF 25

F-01-140

P:\project\99212\FINALS\SEDCONT2.DWG Tue Jun 26 13:57:33 2001 RIEMER MUEGGE A DIVISION OF PHR&A



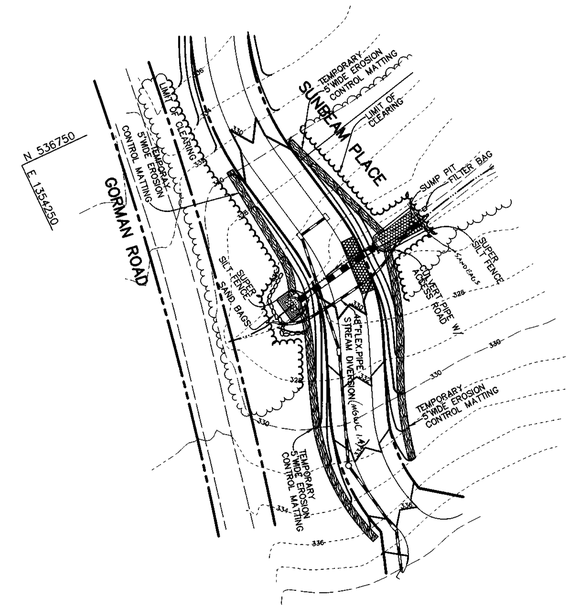
NOTE:
1) CONTRACTOR TO GRADE AND STABILIZE LENGTH OF PATHWAY THAT CAN BE BUILT IN ONE DAY.
2) LIMIT OF DISTURBANCE LIMITED TO 10' EASEMENT.

LEGEND

EXISTING 2'CONTOUR	300
EXISTING 10'CONTOUR	300
PROPOSED 2'CONTOUR	300
PROPOSED 10'CONTOUR	300
PROPERTY LINE AND RIGHT OF WAY	
EASEMENT	
FENCE	
GUARDRAIL	
STORM DRAIN	15"D
OVERHEAD WIRES	OH
EXISTING TREELINE	
PROPOSED TREELINE	
DRAINAGE AREA LINES	
LIMIT OF DISTURBANCE	L.O.D.
CURB INLET PROTECTION	CIP
EARTH DIKE	
SUPER SILT FENCE	SSF
SILT FENCE	SF
EROSION CONTROL MATTING	
STABILIZED CONSTRUCTION ENTRANCE	SCE
TREE PROTECTION FENCE	
FOREST RETENTION SIGN	S

DRAINAGE AREA DATA

INLET NO.	DRAINAGE AREA (AC)	'C' FACTOR	PERCENT IMPERVIOUS
I-1	0.24	0.62	63
I-2	0.05	0.74	80
I-3	0.05	0.74	80
I-4	0.09	0.65	66
I-5	0.01	0.87	100
I-6	0.05	0.47	40
I-7	0.24	0.43	33
I-8	0.22	0.45	36
I-9	0.10	0.47	40
I-10	0.10	0.54	50
I-11	0.23	0.50	43
I-12	1.31	0.38	26
I-13	1.52	0.33	19
I-14	0.30	0.45	37
I-15	0.09	0.72	78
I-16	0.76	0.49	42
I-17	0.58	0.46	38
I-18	0.02	0.54	50
I-19	0.22	0.36	23
I-20	0.10	0.54	50
I-21	0.16	0.50	44
I-22	0.40	0.51	45
I-23	0.43	0.32	16
I-24	0.48	0.44	35
I-25	0.06	0.58	50
I-26	1.04	0.38	13
I-27	0.49	0.62	61
I-28	0.70	0.59	57
I-29	0.70	0.59	57
A	3.60	0.60	58



SUNBEAM PLACE STREAM CROSSING
SCALE: 1" = 50'

BY THE DEVELOPER :
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 6/22/01

BY THE ENGINEER :
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER — DATE 6.26.01

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE — DATE 7/2/01

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/2/01

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED 6' ASPHALT PATHWAY AND PRIVATE 10' MAINTENANCE AND ACCESS ESMT. FOR PATHWAY.

OWNER / DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

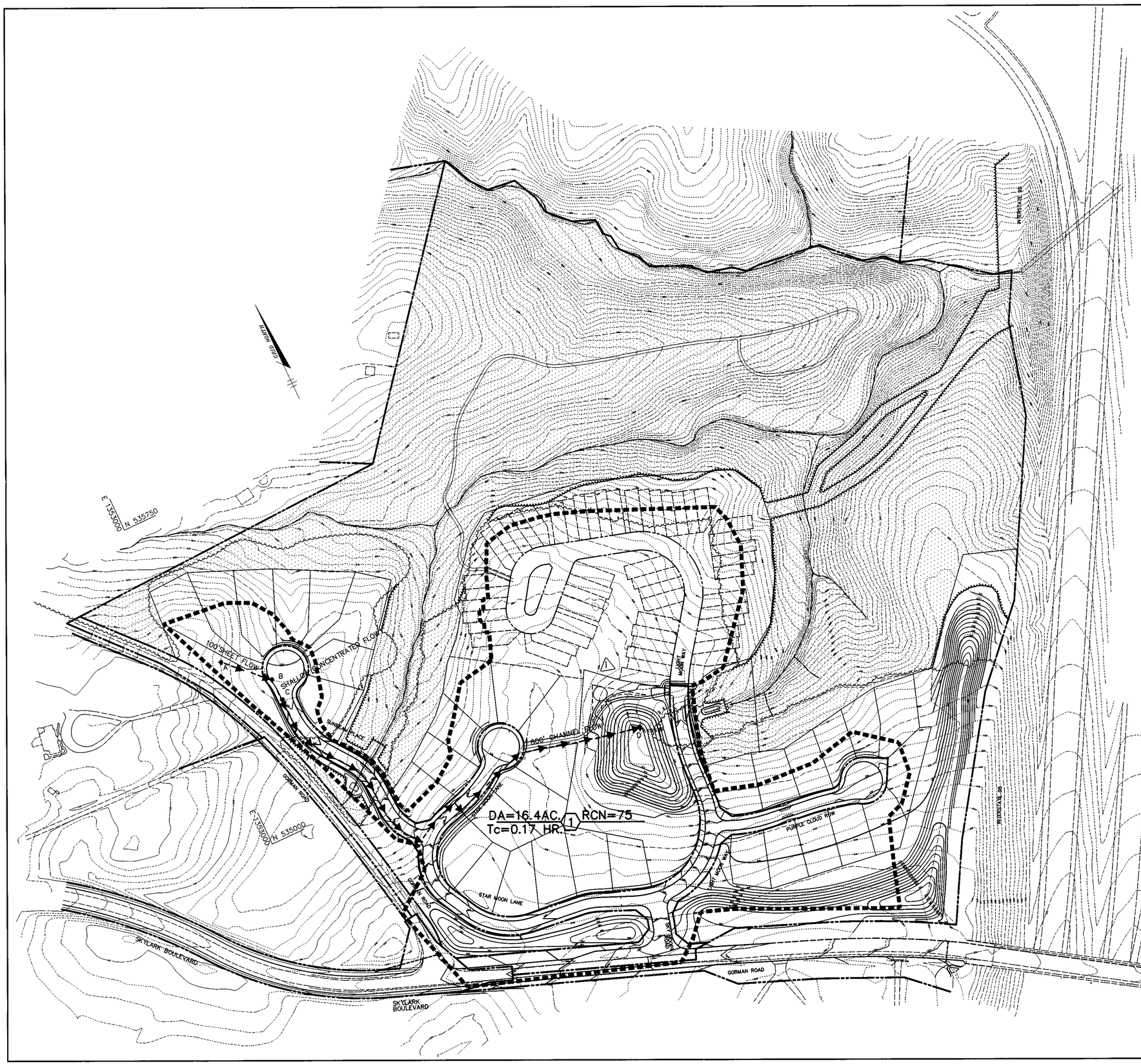
6.26.01
DATE

STATE OF MARYLAND — CHRISTOPHER J. REID — No. 19949
CHRISTOPHER J. REID #19949

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO .	99212/FINALS SEDCONT3.DWG
DATE :	JUNE 19, 2001
SCALE :	1" = 50'
DRAWING NO.	12 OF 25

F-01-140

P:\project\99212\FINALS\SEDCONT3.DWG Tue Jun 26 14:13:26 2001 RIEMER MUEGGE A DIVISION OF PHRSA



Summary

The results of the pond stage storage and routing are presented below along with a summary of the required volumes to be stored within the stormwater management facility.

Storm	Required	Provided	Elevation	Remarks
WQv	0.86 Ac–ft.*	0.43 Ac–ft.	315.55	Natural Area Credit
Cpv	0.82 Ac–ft.	0.82 Ac–ft.	318.86	Weir Crest set at Elev. 318.86
Rev	0.22 Ac–ft.	N/A	N/A	Contained within WQv

* This project is employing the Natural Area Conservation Credit, which gives a credit based on the amount of open space that is being preserved (25.84 acres). This credit was used to reduce the WQv required from 0.86 ac–ft to 0.43 ac–ft.

Storm Event (yr)	Proposed Discharge (cfs)	Pond Elevation (ft)	Storage Above WQv (ac–ft)
1	0.42	318.57	0.726
10	40.78	319.71	1.125
100	80.36	320.29	1.353

A wet pond (P–2) is being used as the Best Management Practice (BMP) to manage the required volumes. A forebay sized for 0.1 inch of runoff per impervious acre is provided. A central permanent pool will provide the recharge and water quality volume with a non–clogging reverse–slope, low flow pipe designed to provide extended detention control for the channel protection volume. The 100 year storm will be safely conveyed through the principal spillway with two feet of freeboard. Computations for the wet pond are included in the stormwater management report. No 10–year or 100–year storage volumes are required for this development.

The pond is a low hazard class "A" facility, as any breach of the embankment would impact only open space and floodplain.

NATURAL AREA CONSERVATION CREDIT
= 25.84 ACRES TOTAL

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/12/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED TOT LOT LOCATION, CHANGED LOCATION OF PATHWAY, MODIFIED PUB. ESMT & PRIV. SWM ESMT.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410–992–6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 – 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R–ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
PROPOSED SWM DRAINAGE AREA MAP

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

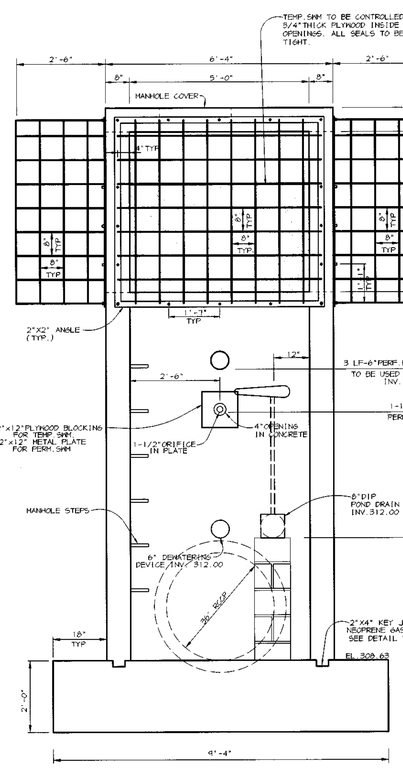
6.26.01
DATE

STATE OF MARYLAND
CHRISTOPHER J. REID #19949
PROFESSIONAL ENGINEER

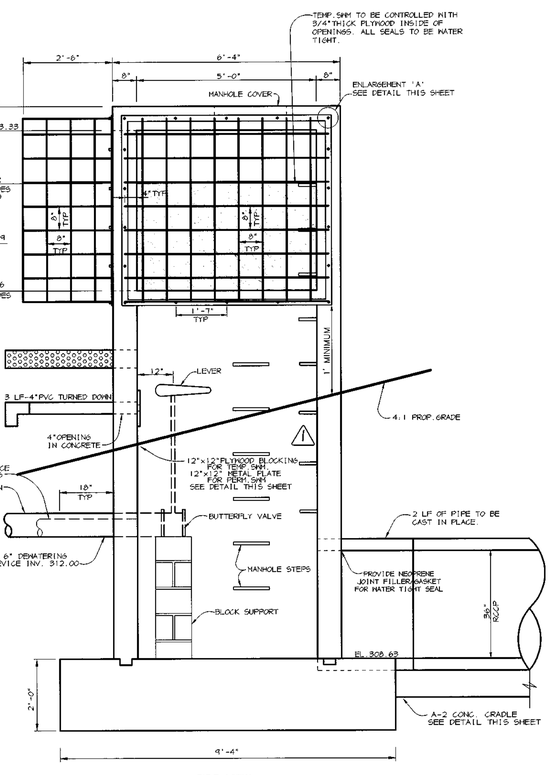
DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO	.99212/FINALS 'PRDA.DWG
DATE :	JUNE 19, 2001
SCALE :	1"=100'
DRAWING NO.	13 OF 25

F-01-140

P:\project\99212\FINALS\PRDA.DWG Tue Jun 19 11:37:22 2001 Riemer Muegge, a division of PHRA



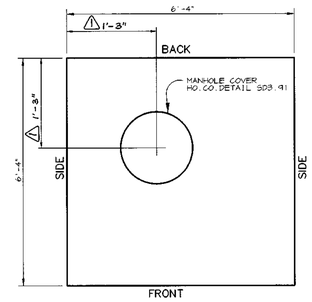
FRONT VIEW



SIDE VIEW

S-1 DETAILS

SCALE 1"=2'



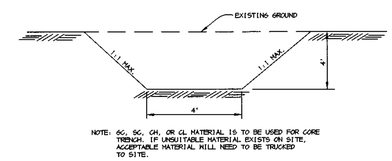
TOP VIEW

RISER STRUCTURE NOTES FOR S-1

1. RISER TO BE CAST IN PLACE. SHOP DRAWINGS FOR THIS CONCRETE STRUCTURE SHALL MEET THE MINIMUM ASTM REQUIREMENTS FOR CAST IN PLACE STRUCTURES. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
2. SEE THIS SHEET FOR REINFORCEMENT DETAILS.
3. CONCRETE SHALL BE MSHA MIX NO. 3 (f'c=3,500 psi MINIMUM)
4. WHEN POND IS CONVERTED INTO A PERMANENT FACILITY, THE DRAWDOWN DEVICE HOLE SHALL BE REMOVED.
5. REFER TO HOWARD COUNTY STD. 6-5.21 FOR MANHOLE STEP DETAILS.
6. RISER JOINTS SHALL BE WATERTIGHT USING NEOPRENE GASKETS.
7. ALL PIPE CONNECTIONS SHALL PROVIDE RUBBER GASKET FOR WATERTIGHTNESS.
8. RISER SHALL BE PLACED ON A FIRMLY COMPACTED SUBGRADE AND SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.
9. A 8" OPEN LEFT GATE VALVE (AWWA C-153, CL. 350) SHALL BE CONNECTED TO THE RISER WALL WITH ALL-THREADED ROD AND A FLANGE JOINT. PROVIDE A STEM EXTENSION ON THE GATE VALVE AND FIRMLY SECURE TO RISER WALL WITH BRACKET(S). PROVIDE A STANDARD VALE BOX AND COVER IN THE TOP SLAB DIRECTLY OVERTOP THE GATE VALVE.

REMOVABLE TRASH RACK NOTES:

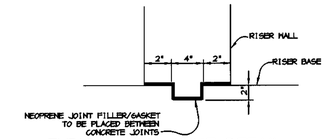
1. STEEL TO CONFORM TO ASTM A-36. #5 BARS TO BE SMOOTH. SEE DETAIL FOR SPACING.
2. ALL REBAR TO BE WELDED AT ALL INTERSECTIONS.
3. ALL BENDS TO BE 2" RADIUS. 2" x 2" ANGLE IRON AND 1/2" DIAMETER ANCHOR BOLTS TO BE USED FOR TRASH RACK FRAME.
4. GALVANIZE TRASH RACK AFTER FABRICATION AND PAINT BATTLESHIP GRAY.



NOTE: GC, SC, CH, OR CL MATERIAL IS TO BE USED FOR CORE TRENCH. IF UNSUITABLE MATERIAL EXISTS ON SITE, ACCEPTABLE MATERIAL WILL NEED TO BE TRUCKED TO SITE.

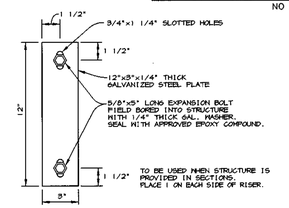
CORE TRENCH DETAIL

NO SCALE



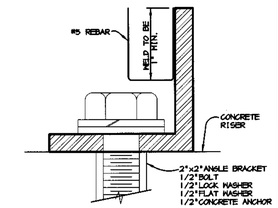
TYPICAL KEY JOINT DETAIL

NO SCALE



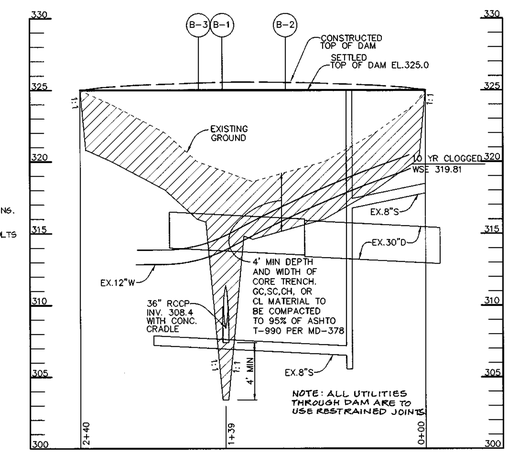
RISER JOINT FASTENER

NO SCALE



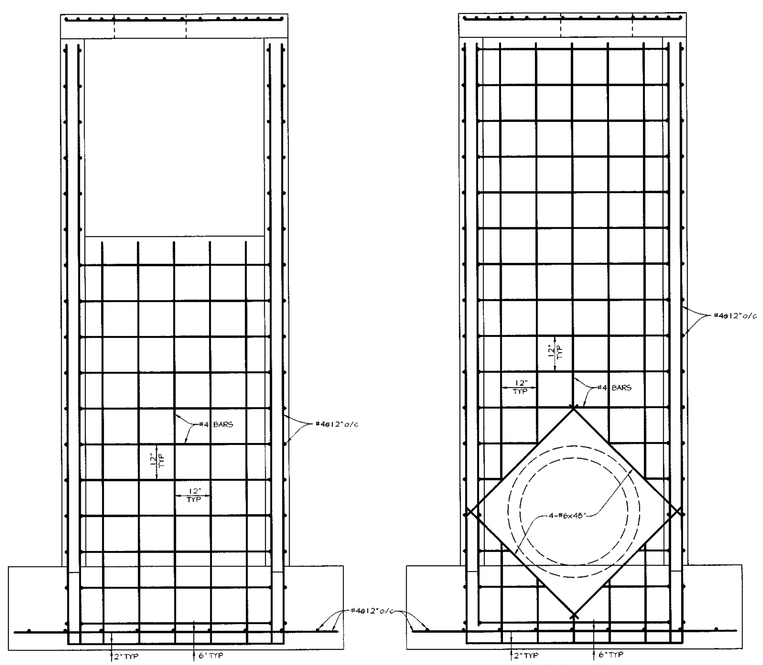
ENLARGEMENT A

NO SCALE



CENTERLINE OF EMBANKMENT PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'

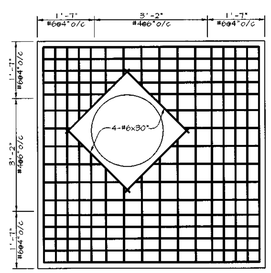


FRONT AND SIDE VIEWS

BACK VIEW

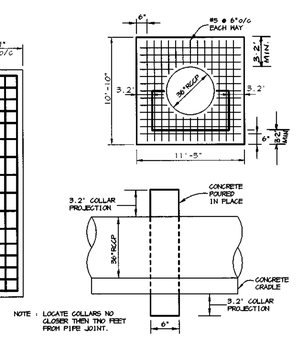
S-1 REBAR LAYOUT

SCALE 1"=2'



TOP VIEW

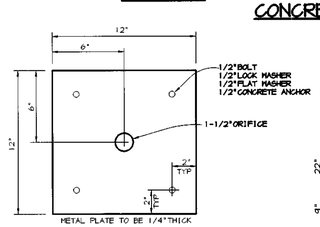
RISER LID



NOTE : LOCATE COLLARS NO CLOSER THEN TWO FEET FROM PIPE JOINT.

CONCRETE ANTI-SEEP COLLAR

NO SCALE

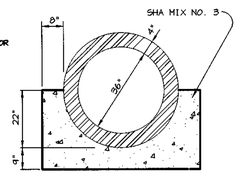


METAL PLATE TO BE 1/4" THICK

METAL PLATE

SCALE 1"=6"

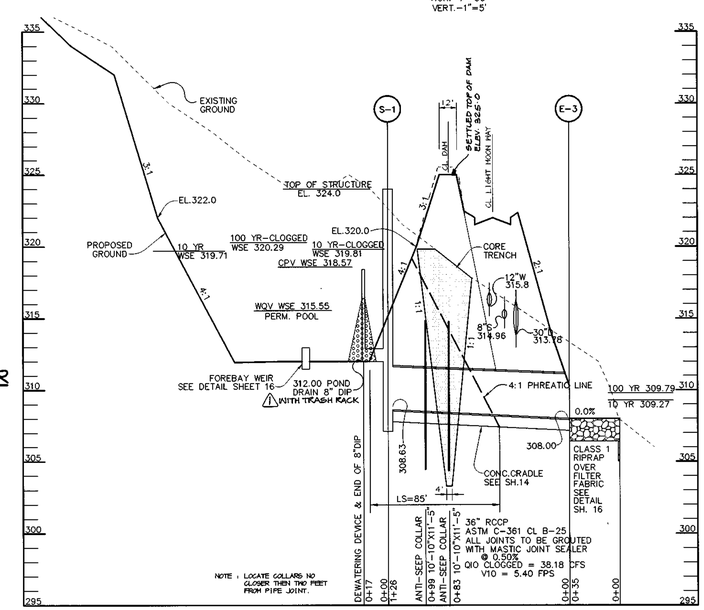
GALVANIZE METAL PLATE AFTER FABRICATION AND PAINT BATTLESHIP GRAY.



CLASS 'A' DAMS LESS THAN 50' HIGH

A-2 CONCRETE CRADLE

NO SCALE



PRINCIPAL SPILLWAY PROFILE

SCALE :
HOR.-1"=50'
VERT.-1"=5'

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 10/22/01

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER — DATE 6.26.01

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE — DATE 7/2/01

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/2/01

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED STEPS IN S-1, TRASH RACK ON DRAIN.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT: EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA: TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: STORMWATER MANAGEMENT NOTES AND DETAILS

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

6.26.01
DATE

STATE OF MARYLAND — CHRISTOPHER J. REID — No. 19949 — PROFESSIONAL ENGINEER

CHRISTOPHER J. REID #19949

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO :	99212/FINALS SEDDET3.DWG
DATE :	JUNE 19, 2001
SCALE :	AS SHOWN
DRAWING NO.	14 OF 25

F-01-140

P:\project\99212\FINALS\SEDDET3.dwg Tue Jun 26 13:53:10 2001 RIEMER MUEGGE A DIVISION OF PHRGA

MD-378 STANDARDS AND SPECIFICATIONS

SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be ess than 95% of maximum dry density with a moisture content within +/- 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cutoff Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall compacted with construction equipment, rollers, or hand tampers to assure maximum density and maximum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

STRUCTURE BACKFILL

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoinig soil fill shall be placed in horizontal layers not to exceed four inched in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

PIPE CONDUITS

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

   Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

   Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to to the requirements of AASHTO Specifications M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts mat be used for connections. the pH of the surrounding soils shall be betwnen 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coted as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter; flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, prepunched to the flange bolt circle, sandwiched between adjacent flanges; a 12 inch wide standard lap type band with 12 inch wide by 3/8 inch thick closed cell circular neoprene gasket; and a 12 inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe ends. A 24 inch wide by 3/8 inch thick closed cell circular neoprene gasket will be installed with 12 inch on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

   Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill."

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the side of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this stanard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill."

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall apply for pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4 - 10 inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to Structure "Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

CONCRETE

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

ROCK RIPRAP

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

CARE OF WATER DURING CONSTRUCTION

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

EROSION AND SEDIMENT CONTROL

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

Refer to the 2000 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

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. per 1000 sq.ft.).

Seeding : For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 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 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

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

PERMANENT SEEDING NOTES

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

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

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

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

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

Seeding : For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options :

1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.

2) Use sod.

3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching : Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

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

1 MAINTENANCE REQUIREMENTS FOR WET POND

1. REMOVAL OF SILT WHEN ACCUMULATION EXCEEDS SIX (6) INCHES IN FOREBAY.
2. REMOVAL OF ACCUMULATED PAPER, TRASH AND DEBRIS AS NECESSARY.
3. VEGETATION GROWING ON THE EMBARKMENT TOP AND FACES OF THE FOREBAY OR BASIN IS NOT ALLOWED TO EXCEED 18 INCHES IN HEIGHT AT ANY TIME.
4. ANNUAL INSPECTION AND REPAIR OF THE STRUCTURE.
5. CORRECTIVE MAINTENANCE IS REQUIRED ANY TIME A FOREBAY DOES NOT DRAIN WITHIN 60 HOURS (I.E., NO STANDING WATER IS ALLOWED UNLESS DESIGNED FOR).

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

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

Purpose

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

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

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

Construction and Material Specifications

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

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

   I. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or 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 1½" in diameter.

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

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

II. For sites having disturbed areas under 5 acres:
   I. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:

   I. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
      b. Organic content of topsoil shall be not less than 1.5 percent by weight.
      c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
      d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

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

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

V. Topsoil Application

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

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

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

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

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

   I. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, or originate 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.
      d. 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.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ONCE ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATION FOR PONDS" (MD378). THE POND OWNER AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

OPERATION AND MAINTENANCE SCHEDULE OF PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY EXTENDED DETENTION POND

ROUTINE MAINTENANCE

1. Facility shall be inspected anually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
3. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as riprap outlet area shall be repaired as soon as it is noticed.

NON-ROUTINE MAINTENANCE

1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the the detection of any damage. The components should be inspected during routine maintenance operations.
2. Sediment should be removed when its accumulation significantly reduces the design storage, interfere with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

STANDARD SEDIMENT CONTROL NOTES

1. 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).
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 1994 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 THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, 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, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED 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	51.8 ACRES
AREA DISTURBED	17.4 ACRES
AREA TO BE ROOFED OR PAVED	3.7 ACRES
AREA TO BE VEGETATIVELY STABILIZED	13.7 ACRES
TOTAL CUT	30000 CU. YARDS
TOTAL FILL	30000 CU. YARDS

OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT.

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT AND WETLANDS PERMIT. ENSURE THAT THE MDE REPRESENTATIVE IS NOTIFIED FIVE (5) DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING AND START OF WORK.
2. STREAM WORK IS PROHIBITED FROM MARCH 1 TO JUNE 15 INCLUSIVE OF ANY YEAR.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, SEDIMENT BASIN, AND STREAM DIVERSION.
   INSTALL CONTROL STRUCTURE (S-1), CORE TRENCH AND ANTI-SEEP COLLARS.
   S-1 TO HAVE ORIFICE CONSTRUCTED FOR SEDIMENT CONTROL. BLOCK 10 YEAR WEIR AS SHOWN ON RISER DETAILS. (1 MONTH). AFTER PERMISSION IS GRANTED FROM THE INSPECTOR, BEGIN SITE GRUBBING & GRADING.
4. AS SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL STORM DRAINS, WATER, SEWER AND INLET PROTECTION ON I-28 AND I-29. (4 WEEKS)
5. INSTALL CURB AND GUTTER AND PAVE ROADWAYS. (2 WEEKS)
6. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (1 WEEK)
7. PERFORM FINE GRADING, LANDSCAPING, LIGHTING AND SIDEWALKS. (3 WEEKS)
8. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND CONVERT SEDIMENT BASIN TO PERMANENT STORM WATER MANAGEMENT FACILITY. CONVERT FACILITY IN THE FOLLOWING STEPS:
   A. CLEAN STORM DRAIN INLETS AND FLUSH OUT PIPES. (2 DAYS)
   B. PUMP OUT STANDING WATER IN BASIN USING PUMPING STATION. (1 DAY)
   C. INSTALL FOREBAY AS SHOWN ON GRADING PLAN. (2 DAYS)
   D. REMOVE TEMPORARY DRAW DOWN DEVICE AND PLYWOOD. (1 DAY)
   E. INSTALL POND DRAIN AND ORIFICE PLATES. (3 DAYS)
   F. REMOVE ACCUMULATED SEDIMENT. (1 DAY)
   G. STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)

NOTE: REFER TO 1/14/00 GEOTECH REPORT FOR FURTHER FILL, EARTHWORK AND OTHER GEOTECHNICAL REQUIREMENTS BY THE ROBERT B. BALTER COMPANY (NO. 13987 MD).

BORING B-1
NO SCALE

Depth	Description
0' – 2'	BROWN, MOIST MF SAND, SOME SILT AND CLAY, LITTLE ROCK FRAGMENTS, TR MICA (SM)
2' – 6'	GRAY MOIST MF SAND, SOME CLAYEY SILT, TR ROCK FRAGMENTS TR MICA (SM)
6' – 18'	TAN MOIST MICACEOUS MF SAND, LITTLE SILT, TR ROCK FRAGMENTS (DECOMPOSED ROCK) (SM)
18' – 19.7'	GRAY WET MF SAND, SOME SILT (DECOMPOSED ROCK) (SM)

BORING B-2
NO SCALE

Depth	Description
0' – 5.5'	BROWN, MOIST SILT AND CLAY, SOME ROCK FRAGMENTS, SOME CF SAND, TR MICA (SM)
5.5' – 8'	BROWN MOIST MF SAND, SOME CLAYEY SILT, TR ROCK FRAGMENTS TR MICA (SM)
8' – 16'	GRAY MOIST MF SAND, LITTLE SILT, TR MICA (DECOMPOSED ROCK) (SM)
16' – 19.7'	GRAY MOIST MF SAND, SOME SILT, TR ROCK FRAGMENTS (DECOMPOSED ROCK) (SM)

BORING B-3
NO SCALE

Depth	Description
0' – 1.5'	BROWN, MOIST SILT AND CLAY, SOME CF SAND, SOME ROCK FRAGMENTS, TR MICA (SM)
1.5' – 8'	GRAY TAN MOIST MICACEOUS MF SAND, SOME CLAYEY SILT, TR ROCK FRAGMENTS (DECOMPOSED ROCK) (SM)
8' – 16'	TAN MOIST MF SAND, LITTLE SILT, LITTLE CF ROCK FRAGMENTS (DECOMPOSED ROCK) (SM)
16' – 22.5'	GRAY MOIST MICACEOUS MF SAND, LITTLE SILT, TR MICA (DECOMPOSED ROCK) (SM)
22.5' – 24.3'	GRAY ROCK

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[signature] 6/22/01
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[signature] 6.26.01
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

[signature] 7/2/01
NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[signature] 7/2/01
HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[signature] 7-6-01
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[signature] 7/17/01
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[signature] 7/10/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION
10.30.01	1	ADDED MAINTENANCE NOTES FOR WET POND.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
SEDIMENT CONTROL NOTES

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

6.26.01
DATE

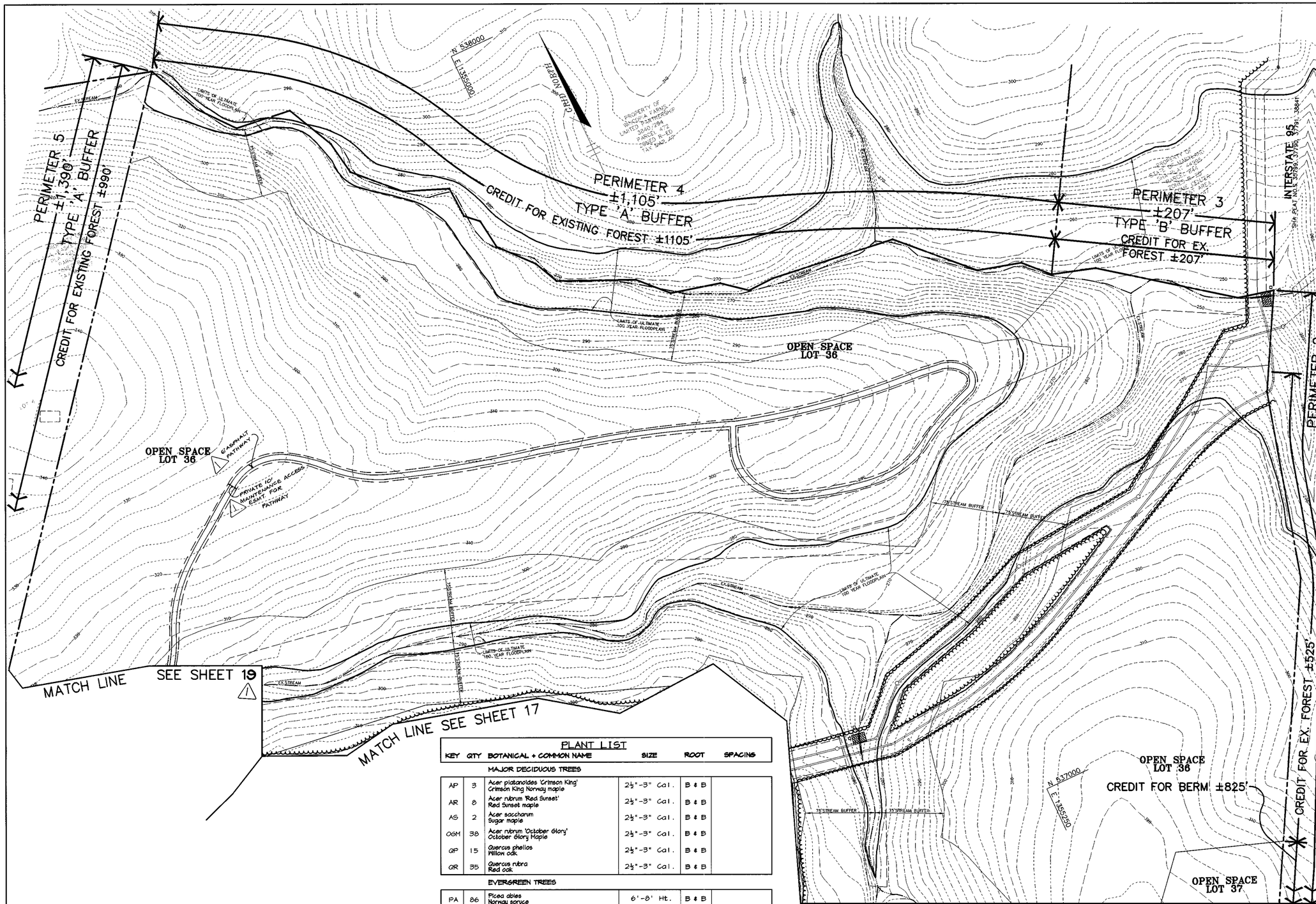
STATE OF MARYLAND CHRISTOPHER J. REID NO. 19949 REGISTERED PROFESSIONAL ENGINEER

CHRISTOPHER J. REID #19949

DESIGNED BY : CJR
DRAWN BY: DAM
PROJECT NO : 99212/FINALS SEDDET2.DWG
DATE : JUNE 19, 2001
SCALE : AS SHOWN
DRAWING NO. 15 OF 25

F-01-140

P:\project\99212\FINALS\SEDDET2.dwg Fri Jun 22 10:54:55 2001 Riemer Muegge, a division of PHR&A



PLANT LIST

KEY	QTY	BOTANICAL + COMMON NAME	SIZE	ROOT	SPACING
		MAJOR DECIDUOUS TREES			
AP	3	Acer platanoides 'Crimson King' Crimson King Norway maple	2½"-3" Cal.	B & B	
AR	8	Acer rubrum 'Red Sunset' Red Sunset maple	2½"-3" Cal.	B & B	
AS	2	Acer saccharum Sugar maple	2½"-3" Cal.	B & B	
OGM	38	Acer rubrum 'October Glory' October Glory Maple	2½"-3" Cal.	B & B	
QP	15	Quercus phellos Willow oak	2½"-3" Cal.	B & B	
QR	35	Quercus rubra Red oak	2½"-3" Cal.	B & B	
		EVERGREEN TREES			
PA	86	Picea abies Norway spruce	6'-8' Ht.	B & B	
PAS	10	Picea abies Norway spruce	10'-12' Ht.	B & B	
PS	106	Pinus strobus Eastern white pine	6'-8' Ht.	B & B	
PT	10	Pinus thunbergiana Japanese black pine	6'-8' Ht.	B & B	
		MINOR DECIDUOUS TREES			
PC	2	Prunus cerasifera atropurpurea 'Thundercloud' Thundercloud purpleleaf plum	1½"-2" Cal.	B & B	
PSK	6	Prunus serrulata 'Kwanzan' Kwanzan cherry	1½"-2" Cal.	B & B	
		SHRUBS			
TMD	50	Taxus media densiformis Densiformis Yew	18"-24"	B & B	

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10·30·01	1	ADDED 6' ASPHALT PATHWAY, MODIFIED EX. ESMT. TO PRIV. 10' MAINTENANCE & ACCESS ESMT FOR PATHWAY.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
LANDSCAPE PLAN

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8816 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8800 fax 410.997.9282

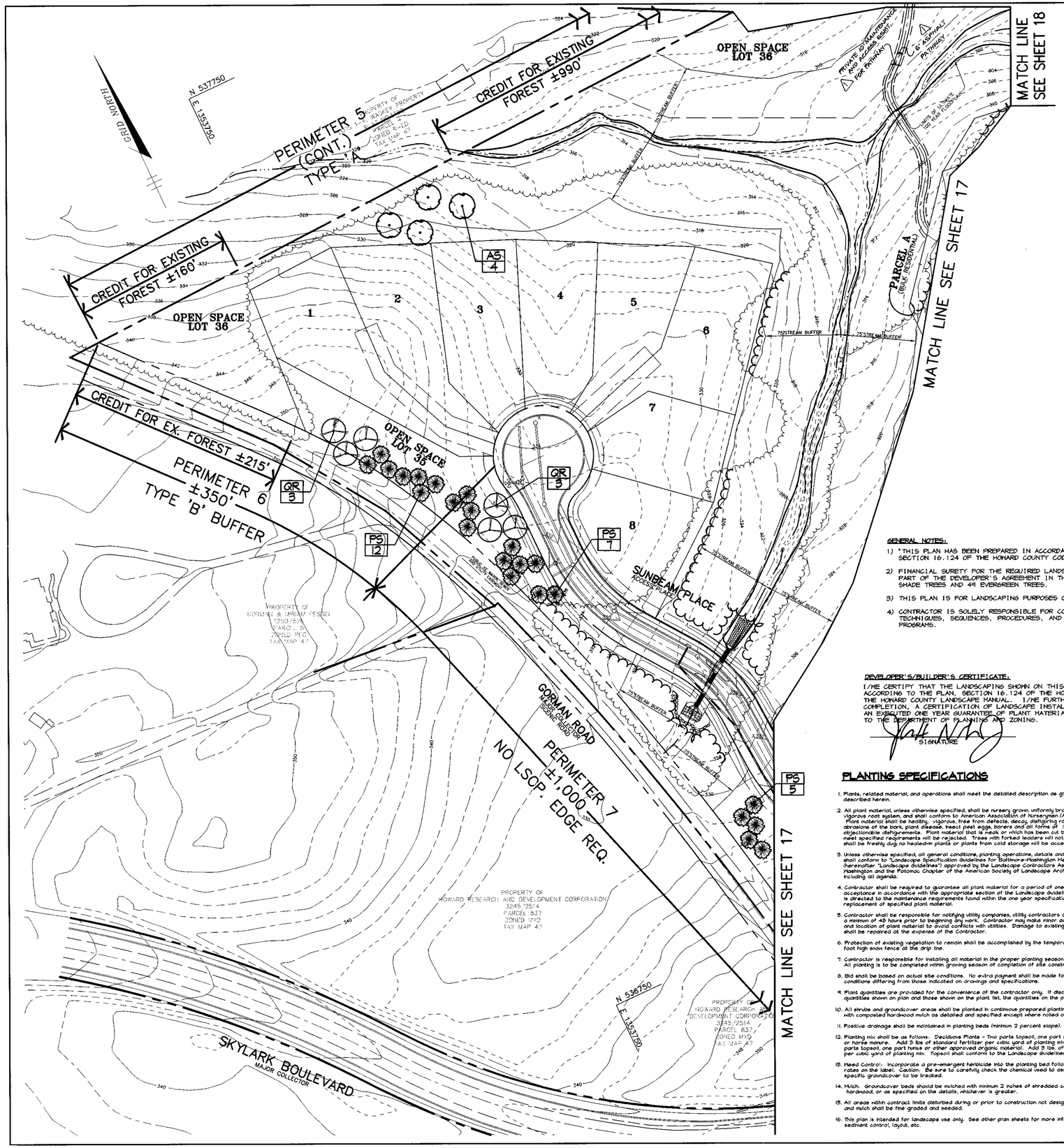
6.22.01
DATE

DAVID T. DOWS

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO :	99212/FINALS LSCP2FINAL.DWG
DATE :	JUNE 19, 2001
SCALE :	1" = 50'
DRAWING NO.	18 OF 25

F-01-140

P:\project\99212\FINALS\LSCP2FINAL.dwg Fri Jun 22 09:25:43 2001 Riemer Muegge, a division of PHR&A



SCHEDULE A - PERIMETER LANDSCAPE EDGE

	ADJACENT TO PERIMETER PROPERTIES			ADJACENT TO ROADWAYS				
PERIMETER	3	4	5	1	2	6	7	8
LANDSCAPE TYPE	B	A	A	B	B	B	NA	NA
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	±207'	±1,105'	±1,390'	±610'	±1,575'	±350'	±1000'	±395'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES ±207'	YES ±1,105'	YES ±1,150'	NO	YES ±525'	YES ±215'	NA	NA
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO) (LINEAR FEET)	NO	NO	NO	YES ±610'	YES ±825'	NO	NA	NA
LINEAR FEET REMAINING SHADE TREES EVERGREEN TREES	0' 0'	0' NA	240' NA	610' 0'	1,050' 225'	135' 135'	NA NA	NA NA
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES	- -	- -	@1/60'=4 -	@1/50'=12 -	@1/50'=21 @1/40'=6	@1/50'=3 @1/40'=3	*NA	**NA
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SMALL FLOWERING TREES	- - -	- - -	4 - -	7 - ***10	21 6 -	3 4 -	*NA	**NA

SCHEDULE 'A' NOTES:

* NO LANDSCAPE EDGE REQUIRED.
** NON-LOT TO ROADWAY, NO REQUIREMENT NECESSARY.
*** SUBSTITUTION 2:1 FLOWERING TREES FOR SHADE TREES.

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING

S.W.M. PERIMETER	9
LANDSCAPE TYPE	B
LINEAR FEET OF TOTAL PERIMETER	±1,580'
CREDIT FOR LINEAR FEET SHARED ALONG PERIMETER EDGE	N/A
CREDIT FOR EX. VEGETATION (NO OR YES & %)	NO
CREDIT FOR OTHER LANDSCAPING (NO OR YES & %)	NO
LINEAR FEET OF REMAINING PERIMETER	±1,580'
NUMBER OF TREES REQUIRED: SHADE TREES (@ 1 S.T. / 50') EVERGREEN TREES (@ 1 E.T. / 40')	 32 40
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES (2:1 SUBSTITUTION, 50% MAX.) OTHER TREES (2:1 SUBSTITUTION, 50% MAX.)	 28* 40 8*

* SUBSTITUTION 2:1 FLOWERING TREES FOR SHADE TREES.

GENERAL NOTES:

1) THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
2) FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $28,982 FOR 72 SHADE TREES AND 49 EVERGREEN TREES.
3) THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.
4) CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.

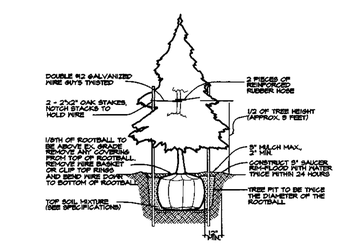
DEVELOPER'S/BUILDER'S CERTIFICATE.

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.

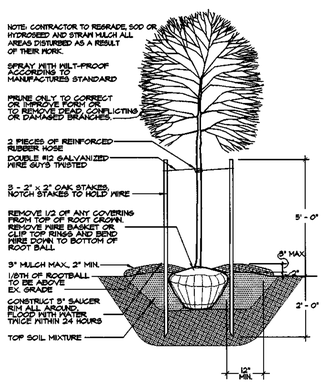
SIGNATURE — DATE 6/22/01

PLANTING SPECIFICATIONS

1. Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.
2. All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sunscald 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 heeled-in plants or plants from cold storage will be accepted.
3. 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.
4. 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.
5. 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.
6. Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence at the drip line.
7. Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction.
8. Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
9. 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.
10. All shrubs and groundcover areas shall be planted in continuous prepared planting beds mulched with composted hardwood mulch as detailed and specified except where noted on plans.
11. Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
12. Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 5 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.
13. 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 groundcover to be treated.
14. Mulch: Groundcover beds should be mulched with minimum 2 inches of shredded composted hardwood, or as specified on the details, whichever is greater.
15. All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
16. This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.



EVERGREEN PLANTING DETAIL
NOT TO SCALE



B&B TREE
TREE PLANTING DETAIL
NOT TO SCALE

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/7/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED 6' ASPHALT PATHWAY

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
LANDSCAPE PLAN

RIEMER MUEGGE
a division of:
Patton Harris Rust & Associates, pc
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8800 fax 410.997.9282

6-22-01
DATE

DAVID T. DOWS

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO	99212/FINALS \SCP3FINAL.DWG
DATE :	JUNE 19, 2001
SCALE :	1" = 50'
DRAWING NO.	19 OF 25

F-01-140

Project\99212\FINALS\SCP3FINAL.dwg Fri Jun 22 09:27:06 2001 Riemer Muegge, a division of PHRSA

LEGEND

EXISTING 2'CONTOUR	300
EXISTING 10'CONTOUR	300
PROPOSED 2'CONTOUR	300
PROPOSED 10'CONTOUR	300
PROPERTY LINE AND RIGHT OF WAY	
EASEMENT	
EXISTING TREELINE	
PROPOSED TREELINE	
TREE PROTECTION FENCE	
FOREST RETENTION SIGN	(S)

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED EX. 20' WATER EASEMENT AND PATH.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
FOREST CONSERVATION PLAN

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

6-20-01
DATE

STATE OF MARYLAND — MELANIE MOYER — LANDSCAPE ARCHITECT — 661

DESIGNED BY : CJR
DRAWN BY: DAM
PROJECT NO .99212/FINALS FOREST1.DWG
DATE : JUNE 19, 2001
SCALE : 1" = 50'
DRAWING NO. 20 OF 25

F-01-140

P:\project\99212\FINALS\Forest1.dwg Tue Jun 19 12:16:05 2001 Riemer Muegge, a division of PHR&A

LEGEND

EXISTING 2' CONTOUR	300
EXISTING 10' CONTOUR	300
PROPOSED 2' CONTOUR	300
PROPOSED 10' CONTOUR	300
PROPERTY LINE AND RIGHT OF WAY	
EASEMENT	
EXISTING TREELINE	
PROPOSED TREELINE	
TREE PROTECTION FENCE	
FOREST RETENTION SIGN	(S)

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED EX. 20' WATER EASEMENT AND PATH.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT: EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA: TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: FOREST CONSERVATION PLAN

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

6.20.01
DATE

STATE OF MARYLAND — MELANIE MOSER — No. 651 — LANDSCAPE ARCHITECT

DESIGNED BY : CJR
DRAWN BY: DAM
PROJECT NO 99212/FINALS FOREST1.DWG
DATE : JUNE 19, 2001
SCALE : 1" = 50'
DRAWING NO. 20 OF 25

F-01-140

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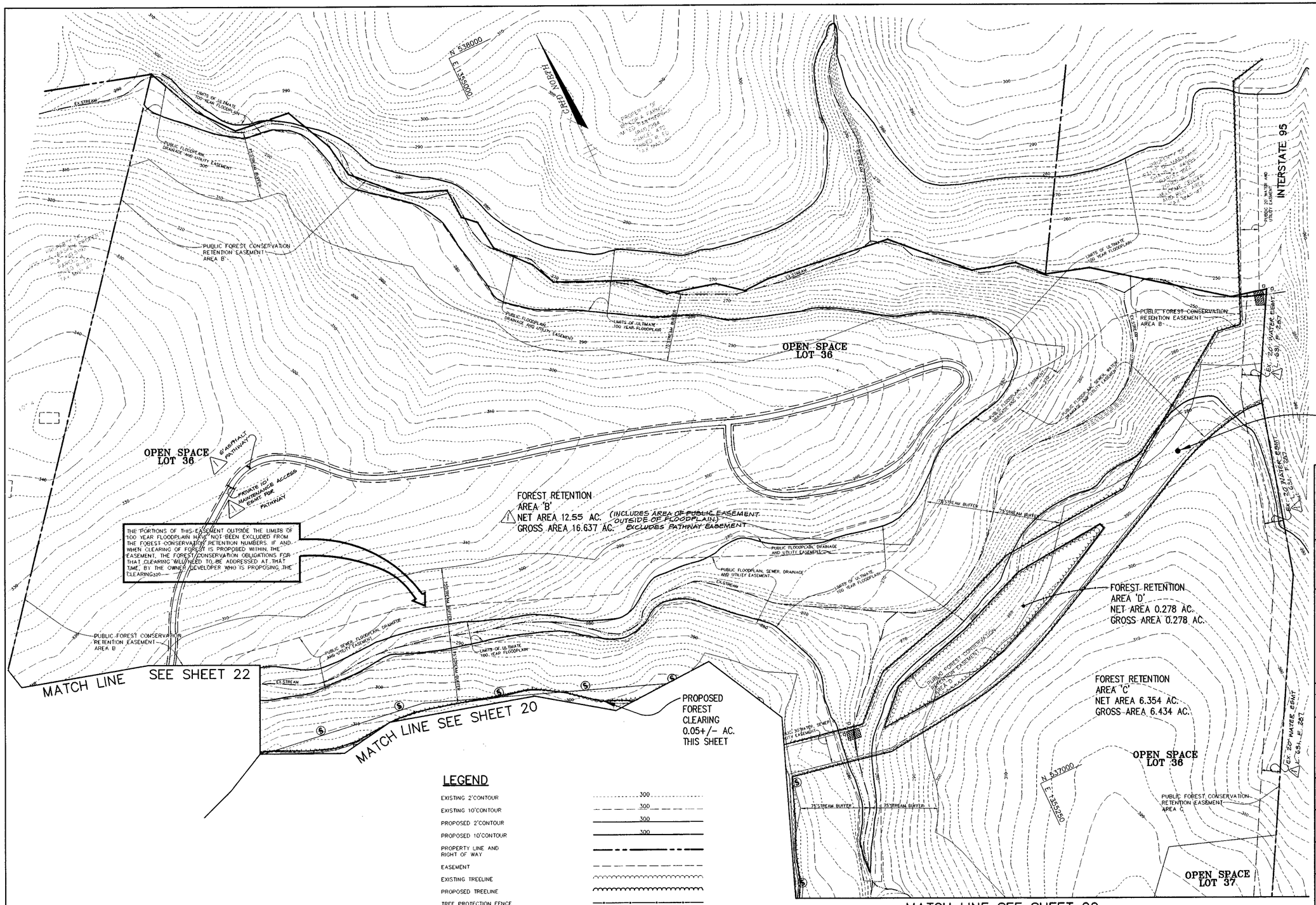

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED EX. 20' WATER ESMT., ADDED 6' PATHWAY & PATHWAY ESMT., REV. NET AREA FOR FOREST RET. AREA 'B'

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
FOREST CONSERVATION PLAN

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

6.20.01
DATE

STATE OF MARYLAND — MELANIE MOYER — No. 551 — LANDSCAPE ARCHITECT

DESIGNED BY : CJR
DRAWN BY: DAM
PROJECT NO : 99212/FINALS FOREST2.DWG
DATE : JUNE 19, 2001
SCALE : 1" = 50'
DRAWING NO. 21 OF 25

F-01-140

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THE PORTIONS OF THIS EASEMENT OUTSIDE THE LIMITS OF 100 YEAR FLOODPLAIN HAVE NOT BEEN EXCLUDED FROM THE FOREST CONSERVATION RETENTION NUMBERS. IF AND WHEN CLEARING OF FOREST IS PROPOSED WITHIN THE EASEMENT, THE FOREST CONSERVATION OBLIGATIONS FOR THAT CLEARING WILL NEED TO BE ADDRESSED AT THAT TIME, BY THE OWNER/DEVELOPER WHO IS PROPOSING THE CLEARING.

GRID NORTH

N 537750
E 1357750

OPEN SPACE LOT 36

FOREST RETENTION AREA 'B'
NET AREA 12.55 AC. (INCLUDES AREA OF PUBLIC EASEMENT OUTSIDE OF 100 YR FLOODPLAIN)
GROSS AREA 16.637 AC. (EXCLUDES PATHWAY EASEMENT)

PRIVATE 10' MAINTENANCE AND ACCESS EMMT. FOR PATHWAY

LIMITS OF PRIVATE 100 YEAR FLOODPLAIN

6' ASPHALT PATHWAY

PUBLIC FLOODPLAIN, SEWER, DRAINAGE AND UTILITY EASEMENT

PUBLIC FOREST CONSERVATION RETENTION EASEMENT

75' STREAM BUFFER

TREE PROTECTION FENCING

PARCEL A
(BLAS. RESIDential)

MATCH LINE SEE SHEET 21

MATCH LINE SEE SHEET 20

1 2 3 4 5 6 7 8

PRIVATE 14' INGRESS-EGRESS EASEMENT OF LOT 842

PRIVATE 24' INGRESS-EGRESS EASEMENT FOR LOT 586

PROPOSED FOREST CLEARING 0.37+/- AC.

PUBLIC DRAINAGE AND UTILITY EASEMENT

PUBLIC FOREST CONSERVATION EASEMENT AREA 'C' 0.7 ACRES

PUBLIC 10' WATER MAINTENANCE EMT.

PUBLIC 20' WATER, SEWER AND UTILITY EASEMENT

SUNBEAM PLACE

GORMAN ROAD

FOREST RETENTION AREA 'A'
NET AREA 0.169
GROSS AREA 0.169 AC.

PROPERTY OF HOWARD RESEARCH AND DEVELOPMENT CORPORATION
3245/2514
PARCEL 837
ZONED MXD
TAX MAP 47

N 536750
E 1357750

SKYLARK BOULEVARD

LEGEND

EXISTING 2' CONTOUR	300
EXISTING 10' CONTOUR	300
PROPOSED 2' CONTOUR	300
PROPOSED 10' CONTOUR	300
PROPERTY LINE AND RIGHT OF WAY	
EASEMENT	
EXISTING TREELINE	
PROPOSED TREELINE	
TREE PROTECTION FENCE	
FOREST RETENTION SIGN	(S)

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — DATE 7-6-01

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/17/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/10/01

DATE	NO.	REVISION
10-30-01	1	ADDED 6' ASPHALT PATHWAY AND PRIVATE 10' MAINTENANCE AND ACCESS ESMT. FOR PATHWAY.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA
TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE
FOREST CONSERVATION PLAN

DMW
Daft-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

10-20-01

STATE OF MARYLAND — MELANIE MOSER — No. 551 — REGISTERED LANDSCAPE ARCHITECT

DESIGNED BY :	CJR
DRAWN BY:	DAM
PROJECT NO :	99212/FINALS FOREST3.DWG
DATE :	JUNE 19, 2001
SCALE :	1" = 50'
DRAWING NO.	22 OF 25

F-01-140

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FOREST CONSERVATION PROGRAM

I. OBJECTIVE:

IT IS THE OBJECTIVE OF THE FOREST RETENTION PORTION OF THE EMERSON SUBDIVISION TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING AND ENHANCING EXISTING WOODED AREAS.

II. PRESERVATION:

FOREST PRESERVATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.

III. GENERAL CONSTRUCTION NOTES:

1. THERE WILL BE NO STAGING OR STORING OF EQUIPMENT WITHIN 75' OF THE STREAM.

IV. POST CONSTRUCTION MANAGEMENT PRACTICE:

A TWO (2) YEAR POST-CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE PROBABILITY OF A HIGH SURVIVAL RATE INCLUDES THE FOLLOWING:

- MAINTENANCE OF SIGNS, FENCES AND TREE PROTECTION DEVICES TO PREVENT UNWARRANTED INTRUSIONS AND DAMAGE.
- CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER CONSTRUCTION.
- ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.
- PROVIDE SUITABLE THINNING, WATERING AND FERTILIZING TO ENSURE PROPER GROWTH AND SURVIVAL.

FOREST CONSERVATION WORKSHEET

NET TRACT AREA

A. TOTAL TRACT AREA	51.83
B. AREA WITHIN 100 YEAR FLOODPLAIN	4.04
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00
D. NET TRACT AREA	47.79

LAND USE CATEGORY (FROM TABLE 3.2.1, PAGE 40, MANUAL)

INPUT THE NUMBER '1' UNDER THE APPROPRIATE LAND USE ZONING AND LIMIT TO ONLY ONE ENTRY.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. AFFORESTATION THRESHOLD	15%	x D =	7.17 ⚠1
F. CONSERVATION THRESHOLD	20%	x D =	9.56

EXISTING FOREST COVER

G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN)	23.11
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	15.94 ⚠1
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	13.55

BREAK EVEN POINT

J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	12.27 ⚠1
K. CLEARING PERMITTED WITHOUT MITIGATION	10.84

PROPOSED FOREST CLEARING

L. TOTAL AREA OF FOREST TO BE CLEARED	3.76 ⚠1
M. TOTAL AREA OF FOREST TO BE RETAINED	19.35

PLANTING REQUIREMENTS

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD	0.94 ⚠1
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	0.00
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	9.79 ⚠1
R. TOTAL REFORESTATION REQUIRED	0.00
S. TOTAL AFFORESTATION REQUIRED	0.00
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED	0.00
U. FOREST CONSERVATION EASEMENT FOR FUTURE REFORESTATION	0.00 ⚠1

FOREST CONSERVATION EASEMENT TABULATION

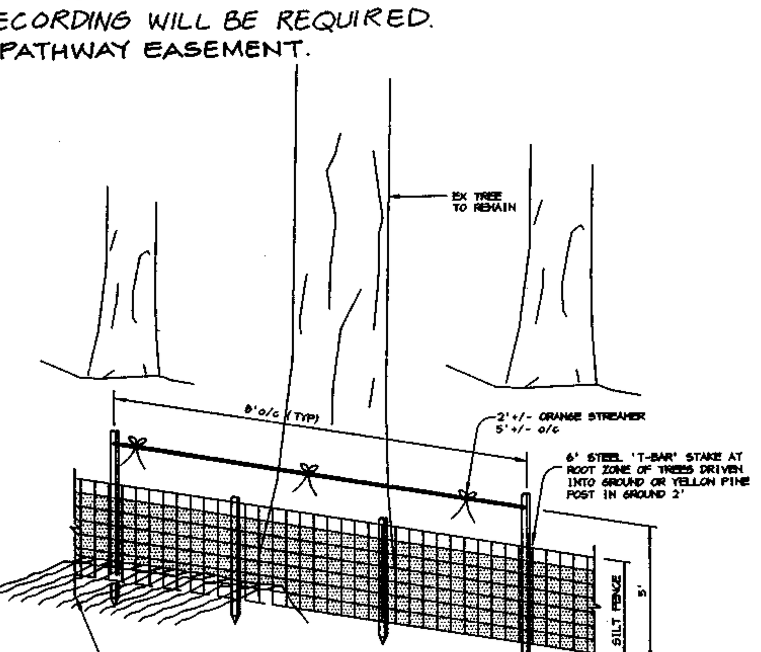
AREA	GROSS AREA	FLOODPLAIN*	NET AREA**	
A	0.169 Ac.	0 Ac.	0.169 Ac.	
B	16.637 Ac.	3.707 Ac.	12.55 Ac.**	⚠1
C	6.434 Ac.	0.080 Ac.	6.354 Ac.	
D	0.278 Ac.	0 Ac.	0.278 Ac.	
***E	1.258 Ac.	0 Ac.	1.258 Ac.	
***F	0.467 Ac.	0 Ac.	0.467 Ac.	
***G	0.467 Ac.	0 Ac.	0.467 Ac.	
TOTAL	25.71 Ac.	3.787 Ac.	21.543 Ac.	⚠1

* FLOODPLAIN CONTAINED WITHIN FOREST CONSERVATION EASEMENTS

** INCLUDES THE AREA OF THE FLOODPLAIN, SEWER, DRAINAGE, AND UTILITY EASEMENT OUTSIDE THE LIMITS OF FLOODPLAIN.

*** AT THE TIME OF USE OF THESE AREAS PLANTING PLANS AND PLAT RE-RECORDING WILL BE REQUIRED.

⚠1 ** EXCLUDES PATHWAY EASEMENT.



SILT FENCE WITH TREE PROTECTION

NO SCALE

1. SILT FENCE TO BE HEELED INTO THE SOIL.
2. WIRE, SNOW FENCE, ETC. FOR TREE PROTECTION ONLY.
3. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
4. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
5. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
6. DEVICE SHOULD BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION.
7. PROTECTION SIGNS ARE ALSO REQUIRED. SEE FOREST CONSERVATION PLAN FOR DETAIL AND LOCATION.
8. LOCATE FENCE OUTSIDE THE CRITICAL ROOT ZONE.

FOREST CONSERVATION SEQUENCE OF OPERATIONS

1. Prior to beginning any grading operations on this site or on a respective lot, there shall be a preconstruction meeting held at the site which is to include the Contractor and representatives from Riemer Muegge & Associates, Inc. (RMA). The Howard County Department of Planning and Zoning (DPZ) and the owner will be notified by the Contractor as to the time and place of the field meeting, should they wish to send a representative. The purpose of this meeting will be to review the approved FCP and to field verify the correct Limits of Disturbance (LOD).

2. The Limits of Disturbance (LOD) pertinent to the preservation of wooded areas shall be staked in the field with final adjustments being made as necessary to insure adequate protection of the Critical Root Zone of trees designated for retention. Stakes to be used shall be those specified for the "TREE PROTECTION DEVICE" to which approved protective material will be attached. Alternate means of defining the LOD may be used if approved by the DPZ.

3. All forest retention areas shall be protected by highly visible, well anchored temporary protection devices (see detail), which shall be securely in place prior to any clearing or grading operations.

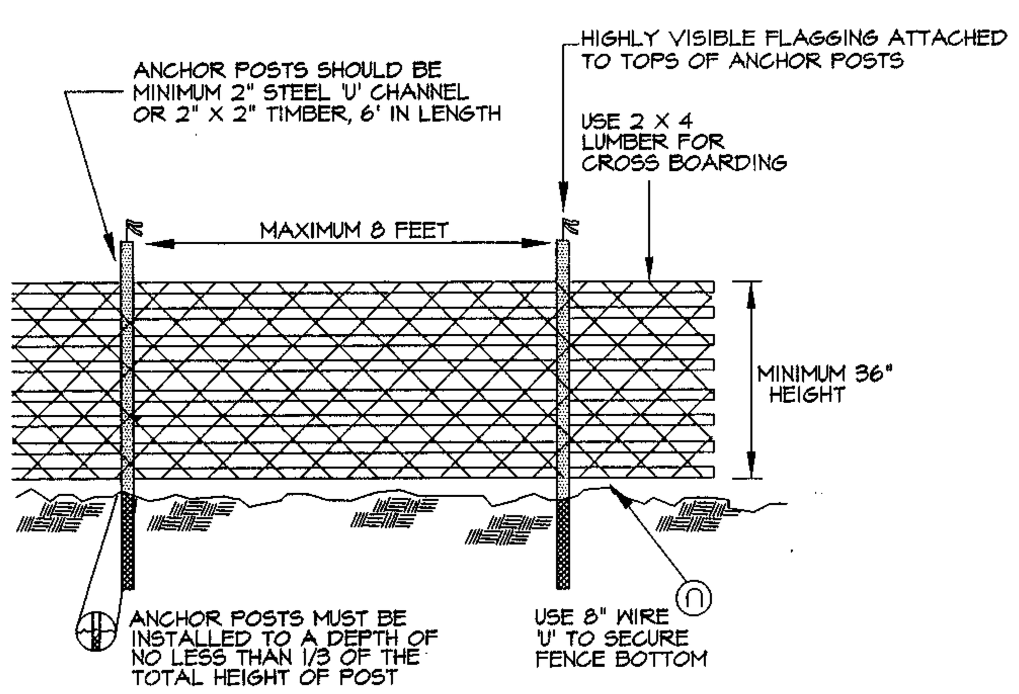
4. Grading operations or other construction operations which could dislodge or otherwise damage the protective devices shall be avoided along the edges of the LOD lines if possible. Any protective devices which are damaged during site construction operations shall be properly repaired immediately by the Contractor.

5. After site grading, utility access road, and driveway construction have been completed, all trees adjacent to the LOD line shall be inspected for indications of crown die-back (summer indicator), damage within respective critical root zones or any dead wood or other conditions which might be hazardous to pedestrians, buildings, utility lines vehicular access ways or parked vehicles.

6. Should there be evidence of any damage to tree trunks, branches or the critical root zone of trees within the protected areas, or to isolated specimen trees to be preserved, the damage shall be examined within a period of two (2) days from the date of observance by a licensed tree care professional. Exposed roots should be covered immediately to a depth of 6 - 8 inches with soil, preferably mixed with 50% peat moss or leaf mold.

7. Remove damaged, dead or dying trees or limbs only if the trees or limbs pose an immediate safety hazard to buildings, utility lines, vehicles, or access and egress drives or pedestrian areas. Trees designated for pruning or removal shall be pruned or removed using equipment and methods which will not damage or destroy adjacent large trees or understory trees or shrubs designated for retention.

8. All temporary forest protection devices will be carefully removed after all general construction, necessary tree surgery, removal of debris, etc. regrading and reseeding of sediment and erosion control disturbance have been completed and acceptance and approval of the work and site conditions have been given by the DPZ.



NOTES:

1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
2. SUPER SILT FENCE MAY BE SUBSTITUTED FOR TREE PROTECTION FENCING.
3. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
4. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
5. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
6. PROTECTION SIGNS ARE REQUIRED, SEE SIGN DETAIL.
7. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING

NOT TO SCALE

GOALS AND OBJECTIVES

⚠1 DEVELOPMENT OF EMERSON SECTION I UNDER THE CURRENT FOREST CONSERVATION ACT REQUIRES THE CLEARING OF APPROXIMATELY 3.76 ACRES OF EXISTING FOREST. CREDIT FOR RETENTION OF FORESTS ABOVE THE CONSERVATION THRESHOLD WILL OFFSET ANY REFORESTATION REQUIREMENT; AS SUCH, NO REFORESTATION WILL BE REQUIRED. THIS PLAN PROPOSES RETENTION OF APPROXIMATELY ⚠1 19.35 ACRES OF FOREST; THIS AMOUNT IS 7.08 ACRES IN EXCESS OF THE AMOUNT OF REQUIRED RETENTION. THE ADDITIONAL RETENTION ACREAGE WILL BE USED TO PARTIALLY DEFRAY REFORESTATION OBLIGATIONS ASSOCIATED WITH DEVELOPMENT OF THE STONE LAKE PROJECT. (P-01-15)

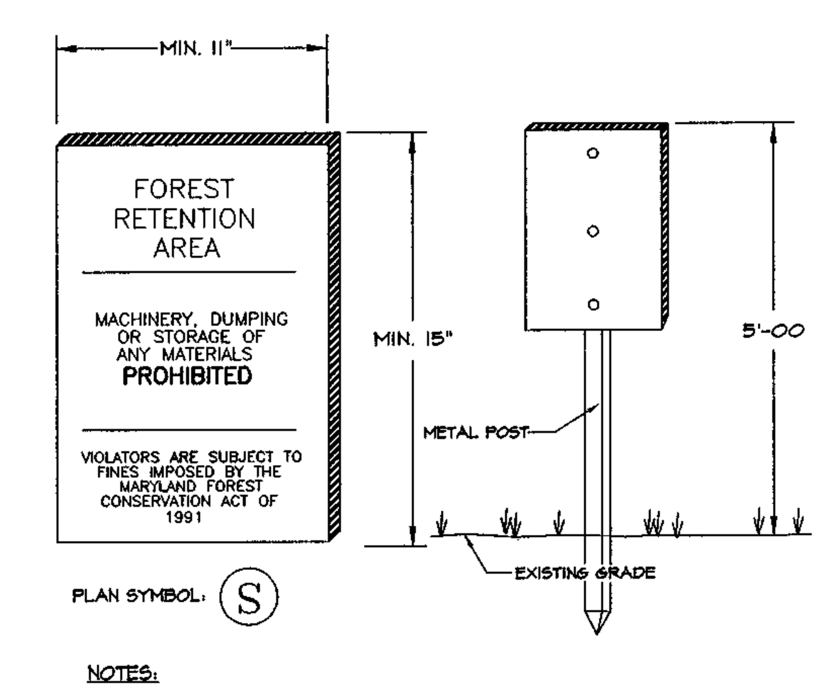
THE GOALS AND OBJECTIVES OF THIS FOREST CONSERVATION PLAN ARE TO PROVIDE FOR SHORT TERM FOREST RETENTION AREA PROTECTION BY IDENTIFYING THOSE AREAS AND INDICATING THE LOCATIONS OF FOREST PROTECTION FENCING AND SIGNAGE. ESTABLISHING THESE SHORT TERM PROTECTION MEASURES PRIOR TO ANY EARTH MOVING ACTIVITIES WILL HELP ENSURE THAT THESE AREAS WILL NOT BE DISTURBED DURING CONSTRUCTION ACTIVITIES.

SEQUENCE OF OPERATIONS

PRE-CONSTRUCTION

SITE PREPARATION

1. INSTALL TREE PROTECTION FENCE AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
2. INSTALL TREE PROTECTION SIGNAGE.
3. STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.



NOTES:

1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION / REFORESTATION / AFFORESTATION EASEMENT BORDER.
2. SEE PLAN FOR SPACING.
3. SIGNS TO BE PLACED ON METAL POSTS 5' +/- ABOVE FINISH GRADE. PLACE SIGNS EVERY 100' AROUND PERIMETER OF FOREST RETENTION AREA.

FOREST RETENTION AREA SIGN DETAIL

NOT TO SCALE

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS — 7-6-01 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT — 7/17/01 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 7/10/01 DATE

DATE	NO.	REVISION
10.30.01	1	REV. FOREST CONSERVATION WORKSHEET, REV. GOALS AND OBJECTIVES, REV. EASEMENT TABULATION.

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

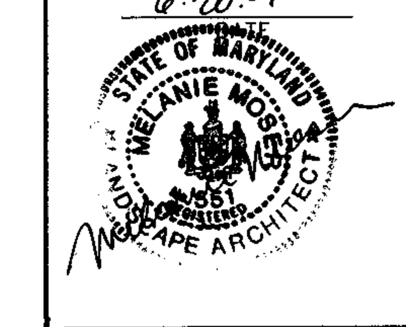
PROJECT: EMERSON
SECTION ONE AREA ONE
LOTS 1 - 39 & PARCEL A

AREA: TAX MAP 47 BLOCK 3,8 & 9
ZONED: R-ED PARCEL: P/O 837
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: FOREST CONSERVATION DETAILS AND NOTES

DMW
Daft·McCune·Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals



6.20.01

DESIGNED BY : CJR

DRAWN BY: DAM

PROJECT NO : 99212/FINALS FOREST4.DWG

DATE : JUNE 19, 2001

SCALE : AS SHOWN

DRAWING NO. 23 OF 25

F-01-140

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