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# ROADS, STORM DRAINS & SWM PLANS

# EMERSON

## SECTION ONE AREA ONE

### LOTS 1 - 39 & PARCEL A

### 6th ELECTION DISTRICT

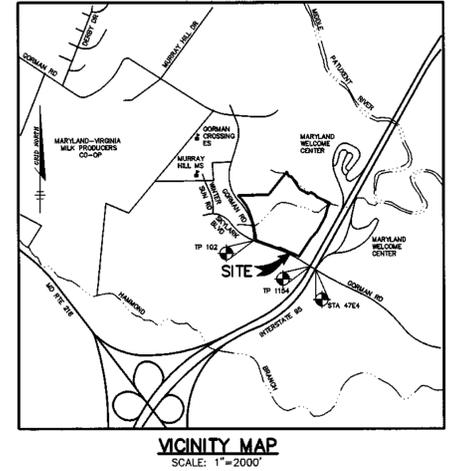
### HOWARD COUNTY, MARYLAND

**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

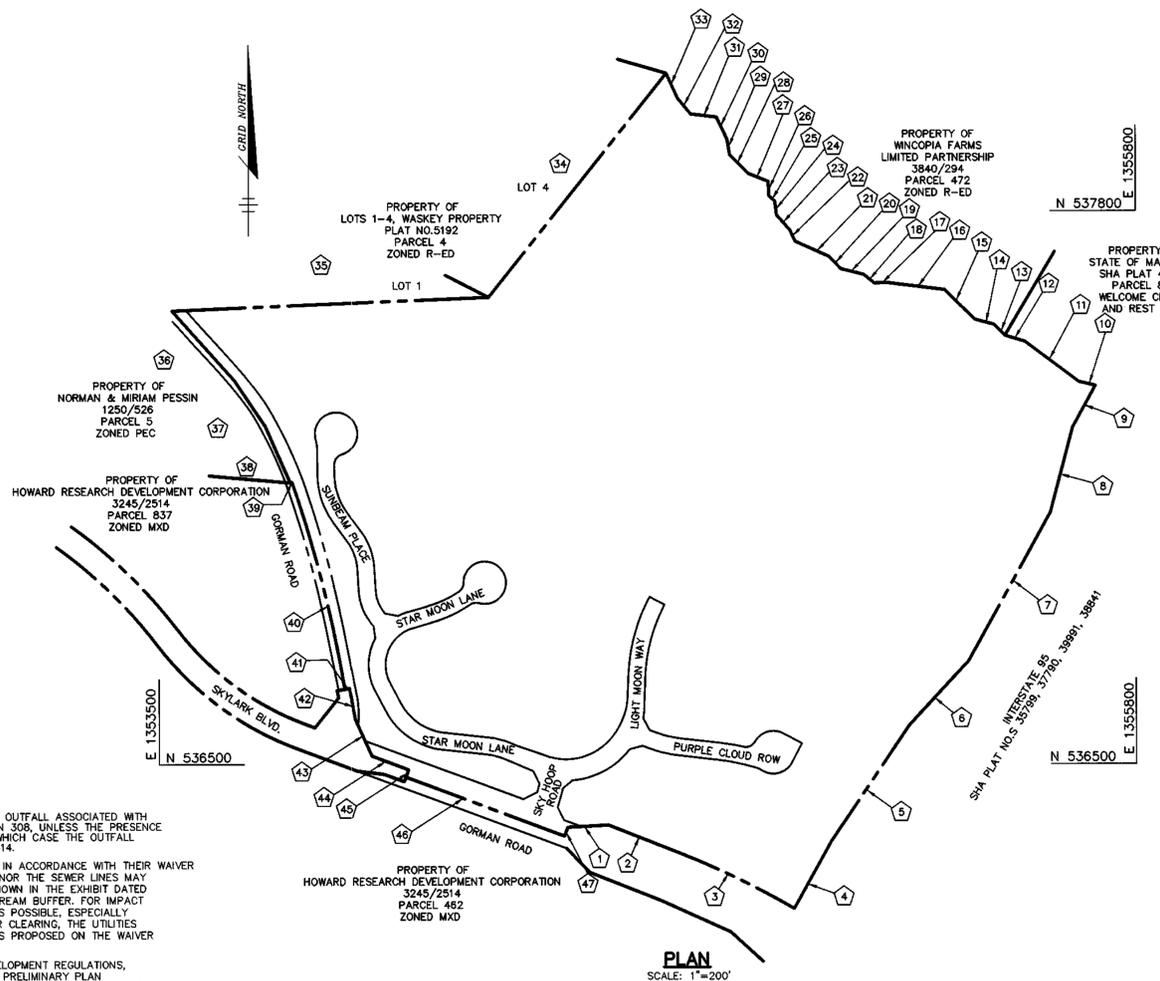
CONTROL STATION 47E4  
ELEVATION 339.00  
N 535,846.16  
E 1,355,431.23  
LOCATED NEAR THE  
I-95 BRIDGE ALONG  
GORMAN ROAD



### GENERAL NOTES

- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- 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.
- 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.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY MAPS WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY AIR SURVEY CORP. FLOWN IN APRIL 1998.
- 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.
- WATER IS PUBLIC. CONTRACT NO. 34-3832-D
- SEWER IS PUBLIC. SEWER DRAINAGE AREA: PATUXENT CONTRACT NO. 34-3832-D
- 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.
- 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.
- THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY DAFT MCGUINE & WALKER, INC. DATED FEBRUARY 2000.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY WELLS & ASSOCIATES DATED FEBRUARY 2000.
- THE NOISE STUDY FOR THIS PROJECT WAS PREPARED BY CENTURY ENGINEERING DATED MARCH 1999.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY DAFT, MCGUINE & WALKER, INC. JULY 2000.
- SUBJECT PROPERTY ZONED R-ED PER 10-18-93 COMPREHENSIVE ZONING PLAN. DATED JUNE 1999.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S: S-00-12, WP-00-87, WP-01-39, WP-01-99.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- 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.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- 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.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- 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.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
- ALL STREET CURB RETURNS SHALL HAVE 25' RADII UNLESS OTHERWISE NOTED.
- ALL STREET LIGHTS SHALL BE LOCATED BETWEEN 2'-0" AND 4'-0" BEHIND FACE OF CURB.
- STREET TREES (22) 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 ACCOMMODATE 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.
- WP-00-87 - A WAIVER OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116(c)(2)(i), WHICH PROHIBITED GRADING, REMOVAL OF VEGETATION WITHIN 75 FEET OF A STREAM, DATED JULY 21, 2000. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
  - 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 CONCURRENT 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.

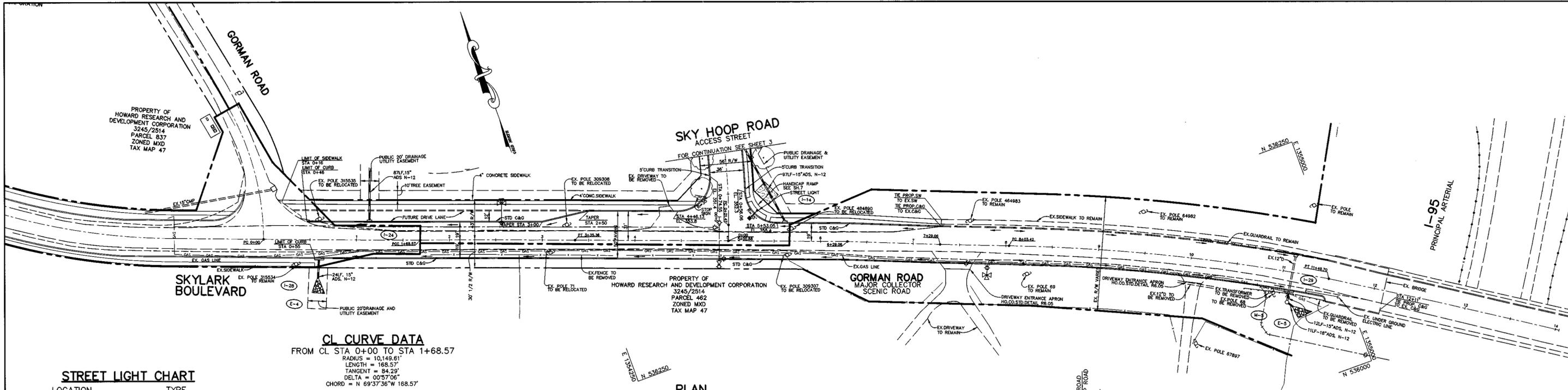
- AS INDICATED IN THE COMMENTS FROM THE SCD, THE OUTFALL ASSOCIATED WITH IMPACT AREA #2 IS TO OUTFALL AT GRADE ELEVATION 308, UNLESS THE PRESENCE OF ROCK IS FOUND DURING FIELD INVESTIGATION, IN WHICH CASE THE OUTFALL MAY BE SHIFTED TO OUTFALL AT GRADE ELEVATION 314.
- THE L.O.D. FOR IMPACT AREAS #3 AND #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.
- 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.
- THERE ARE 50 TENTATIVE HOUSING UNIT ALLOCATIONS RESERVED FOR THE 3FA UNITS ON BULK PARCEL A, AS SHOWN ON S-00-12, AND IN ACCORDANCE WITH SECTION 16.1106.h.2.(i) OF THE SUBDIVISION REGULATIONS. THE DEADLINE TO SUBMIT A PRELIMINARY PLAN FOR THAT PARCEL WILL BE ESTABLISHED WHEN IT IS RECORDED ON A PLAT.
- THERE ARE NO EXISTING PERMANENT STRUCTURES ON-SITE.
- 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.c.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.
- FOREST CONSERVATION EASEMENT AREAS E, F & G ARE FUTURE POSSIBLE REFORESTATION AREAS THAT CAN BE UTILIZED AT A LATER DATE TO SATISFY OFFSITE REQUIREMENTS.



### 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	111.28'
10	S 76°50'08"	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=	503.78'
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.		
<i>Richard M. Daniels</i> 7-6-01 CHIEF, BUREAU OF HIGHWAYS	DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.		
<i>Carole A. Howard</i> 7/17/01 CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	
<i>Christopher J. Reid</i> 7/10/01 CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	
DATE	NO.	REVISION
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 Patton Harris Rust & Associates, pc ENGINEERS • SURVEYORS • PLANNERS LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS 8818 Centre Park Drive, Columbia, MD 21045 • Tel 410.997.8800 Fax 410.997.8222		
6-26-01 DATE		
DESIGNED BY: CJR		
DRAWN BY: DAM		
PROJECT NO. 99212/FINALS RDI.DWG		
DATE: JUNE 19, 2001		
SCALE: AS SHOWN		
DRAWING NO. 1 OF 25		



**PLAN**  
SCALE: 1" = 50'

**CL CURVE DATA**  
FROM CL STA 0+00 TO STA 1+68.57  
RADIUS = 10149.61'  
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 = 21190.97'  
LENGTH = 186.79'  
TANGENT = 83.39'  
DELTA = 00°27'03"  
CHORD = N 69°52'37"W 166.79'

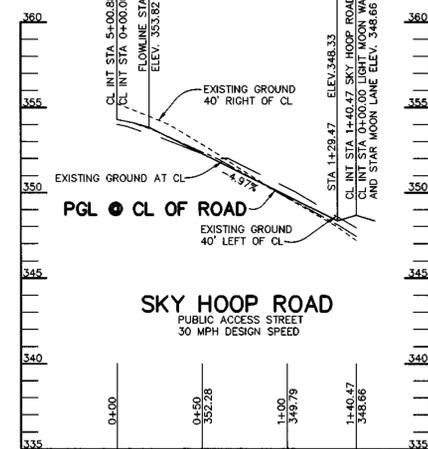
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FROM CL STA 0+21.47 TO STA 1+40.47  
RADIUS = 700.00'  
LENGTH = 119.00'  
TANGENT = 59.64'  
DELTA = 09°44'25"  
CHORD = N 15°34'28"W 118.86'

**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'

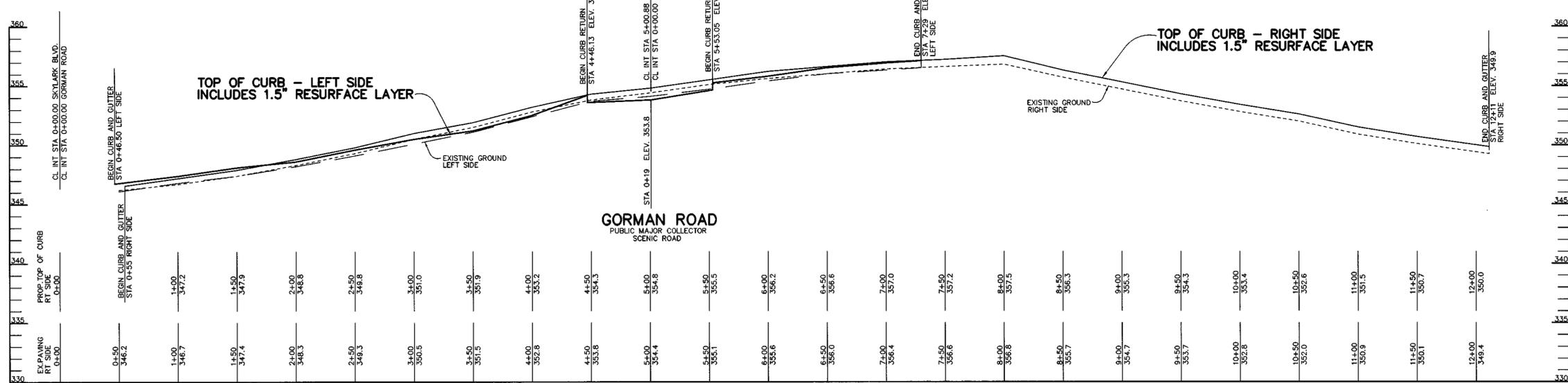
**STREET LIGHT CHART**

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

PROP TOP OF CURB LT SIDE 0+00	0+50	1+00	1+50	2+00	2+50	3+00	3+50	4+00	4+50	5+00	5+50	6+00	6+50	7+00
346.8	346.8	347.4	348.1	348.6	349.1	350.5	351.2	352.5	353.7	354.7	355.8	356.6	357.3	356.9
EXISTING LT SIDE 0+00	346.1	346.8	347.4	348.2	348.1	350.1	351.1	352.4	353.7	354.7	355.4	356.0	356.3	356.3



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



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

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Andrew M. Dangler* 7-6-01  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Andy Hunter* 7/17/01  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Bill Dammers* 7/10/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

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

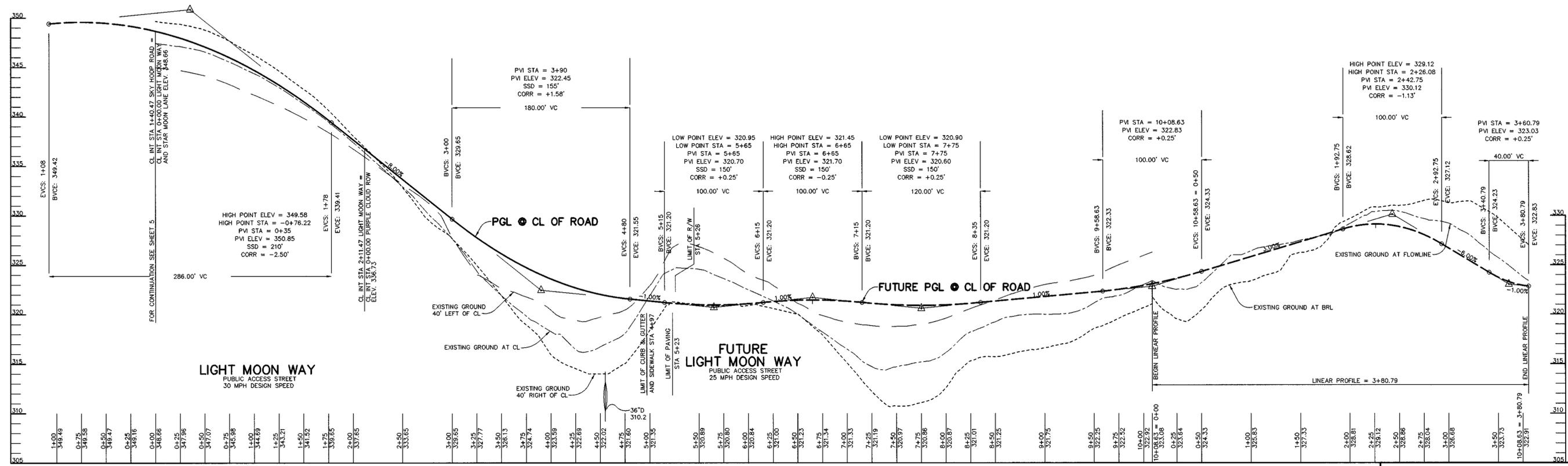
TITLE  
**PLAN AND PROFILE OF  
GORMAN ROAD AND  
SKY HOOP ROAD**

**RIEMER MUEGGE**  
a division of  
**Patton Harris Rust & Associates, pc**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
8818 Centre Park Drive, Columbia, MD 21045 • Tel 410.987.8800 fax 410.987.8282

DATE: 6-26-01

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

CHRISTOPHER J. REID #10240



**LIGHT MOON WAY**  
PUBLIC ACCESS STREET  
30 MPH DESIGN SPEED

**FUTURE LIGHT MOON WAY**  
PUBLIC ACCESS STREET  
25 MPH DESIGN SPEED

**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'

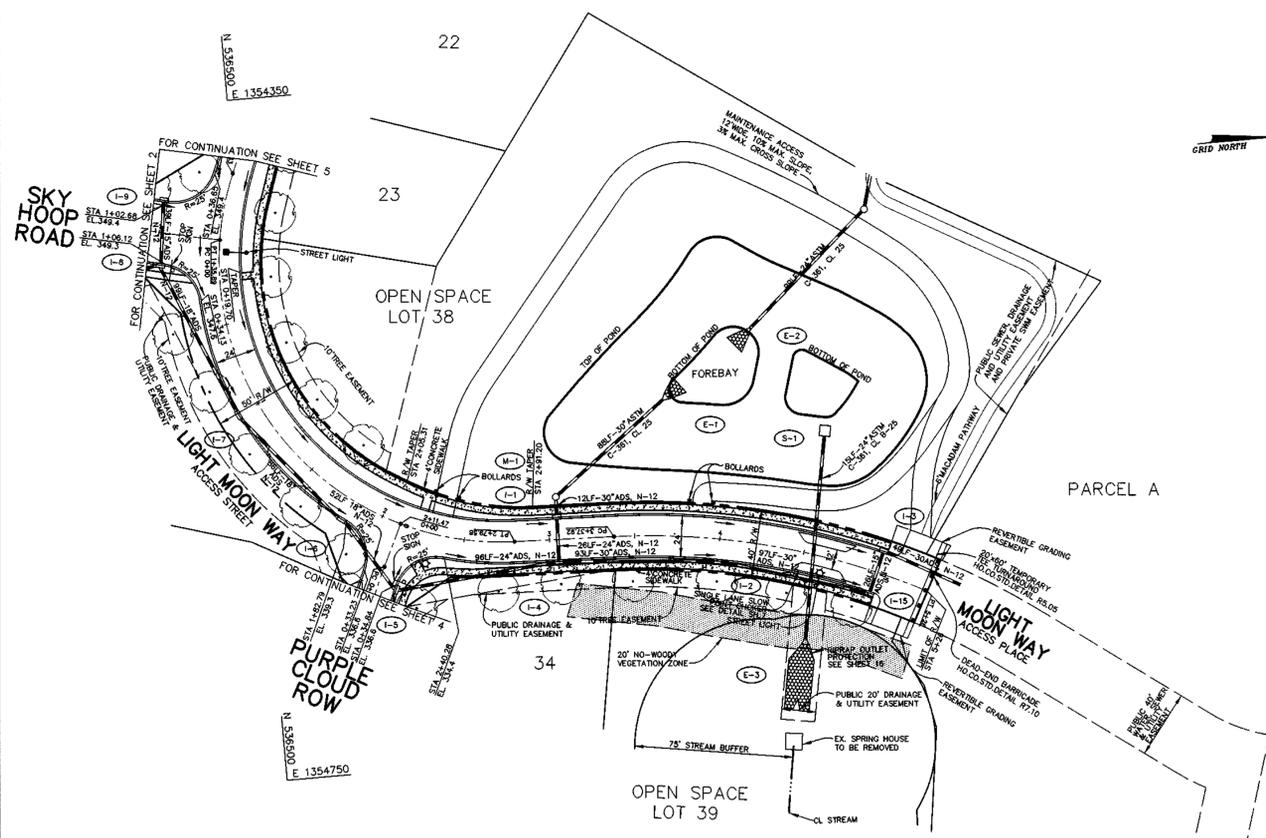
**CL CURVE DATA**  
FROM CL STA 3+37.92 TO STA 5+26  
RADIUS = 420.00'  
LENGTH = 188.08'  
TANGENT = 95.84'  
DELTA = 25°59'27"  
CHORD = S 14°57'03"W 186.51'

**CURB TRANSITION DATA**  
FROM CL STA 0+50.80 STAR MOON LANE  
TO CL STA 0+19.70 LIGHT MOON LANE  
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'

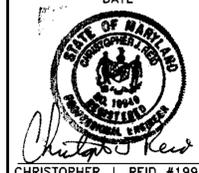
**STREET LIGHT CHART**

LOCATION	TYPE
7' LEFT OF STA 0+07 LIGHT MOON WAY	150 WATT HPS VAPOR PENDANT POST TOP MOUNTED 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



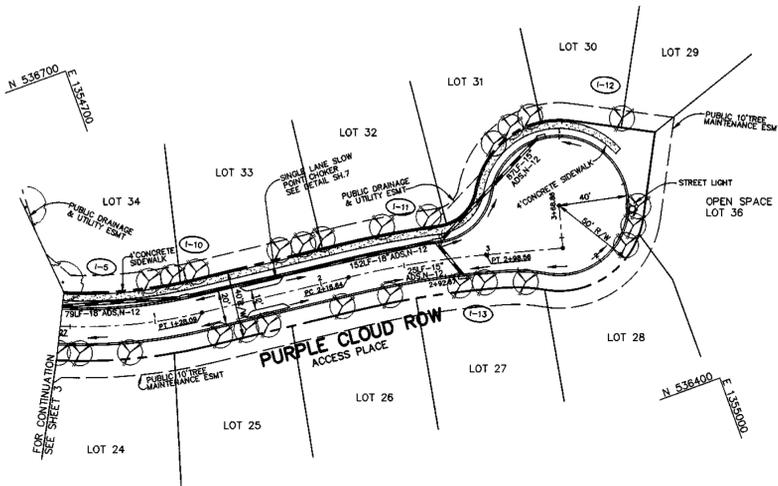
**PLAN**  
SCALE - 1" = 50'

AS BUILT CERTIFICATE	
DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Dunder</i>	7-6-01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>David Stanton</i>	7/17/01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF ENGINEERING DIVISION.	
<i>Chris Dammann</i>	7/10/01 DATE
DATE NO.	REVISION
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	
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 410.997.9000 fax 410.997.9282	
6.26.01 DATE	DESIGNED BY: CJR
DRAWN BY: DAM	
PROJECT NO: 99212/FINALS RD3.DWG	
DATE: JUNE 19, 2001	
SCALE: AS SHOWN	
DRAWING NO. 3 OF 25	



**STREET LIGHT CHART**

LOCATION TYPE  
 3' LEFT OF LINEAR 100 WATT HPS VAPOR COLONIAL  
 PROFILE STA 1+65.5 POST TOP MOUNTED ON A 14'  
 PURPLE CLOUD ROW BLACK FIBERGLASS POLE  
 IN CUL-DE-SAC



**PLAN**

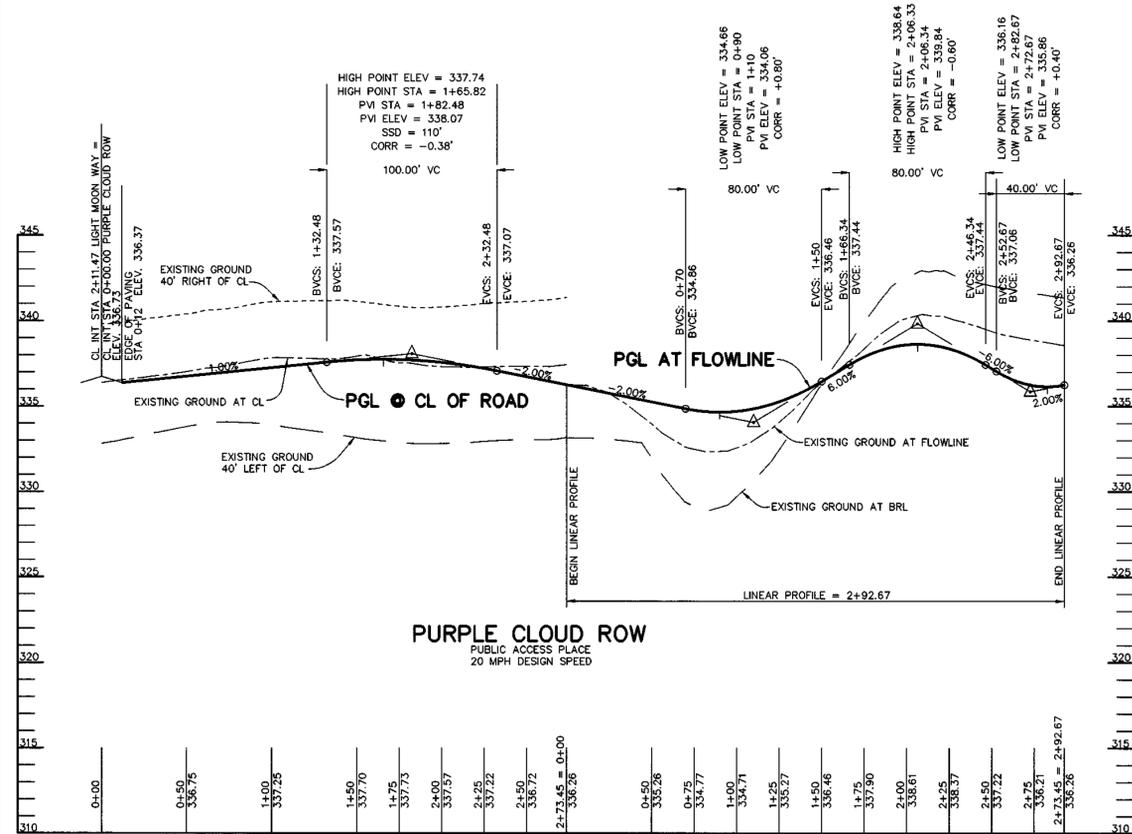
SCALE: 1" = 50'

**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'

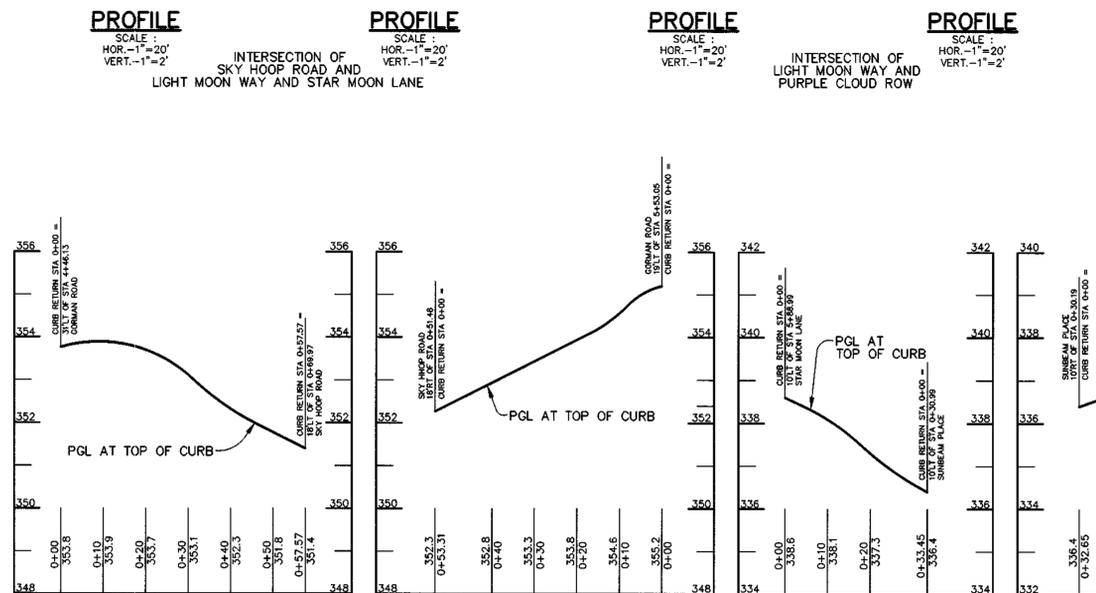
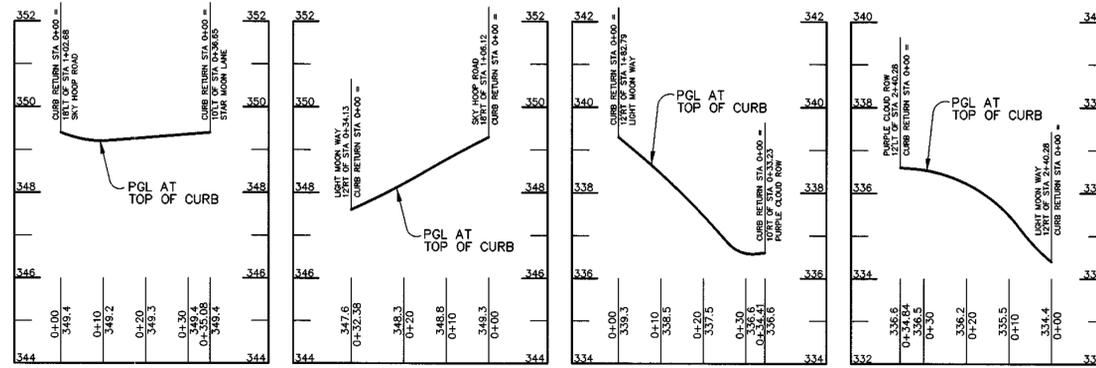
**CL CURVE DATA**

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'



**PROFILE**

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



**PROFILE**

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

**PROFILE**

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

**PROFILE**

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

**PROFILE**

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

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DATE: 7-6-01  
 DATE: 7/7/01  
 DATE: 7/10/01

DATE NO. REVISION

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

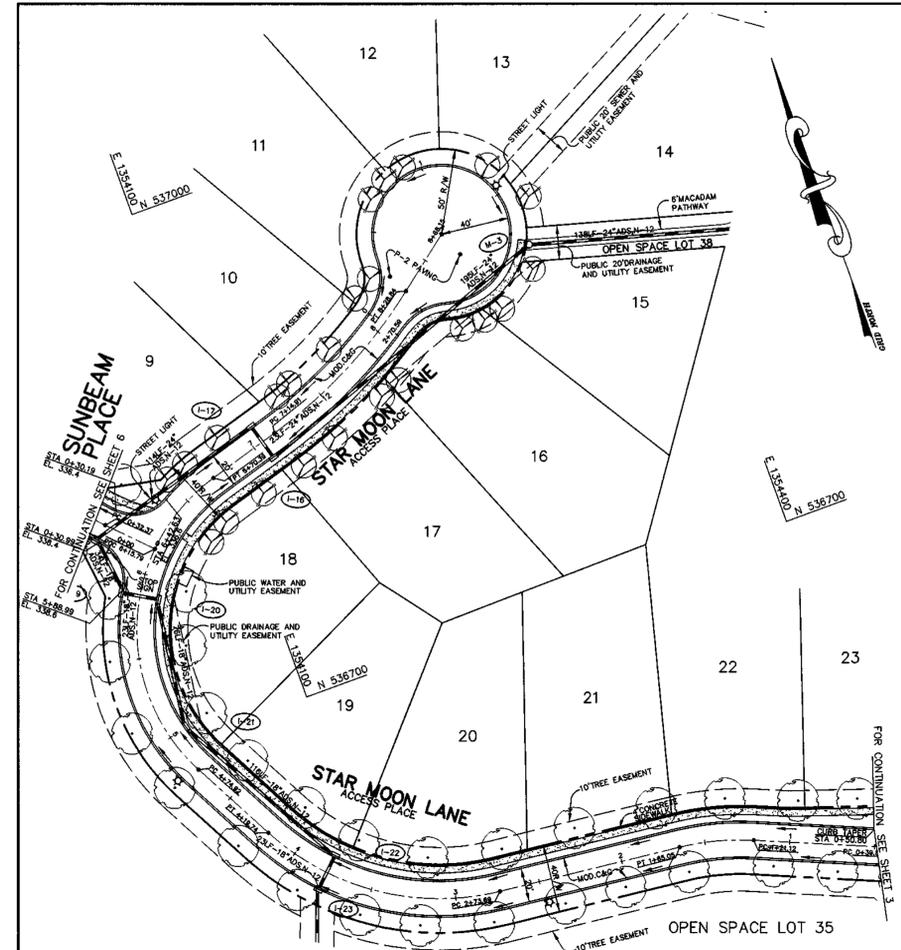
TITLE  
**PLAN AND PROFILE OF  
 PURPLE CLOUD ROW AND  
 CURB RETURN PROFILES**

**RIEMER MUEGGE**  
 a division of  
**Patton Harris Rust & Associates, pc**  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
 2818 Corbin Park Drive, Columbia, MD 21046 • tel 410.997.8800 fax 410.997.8282

DATE: 6.26.01

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

CHRISTOPHER J. REID #19949



**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 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 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**

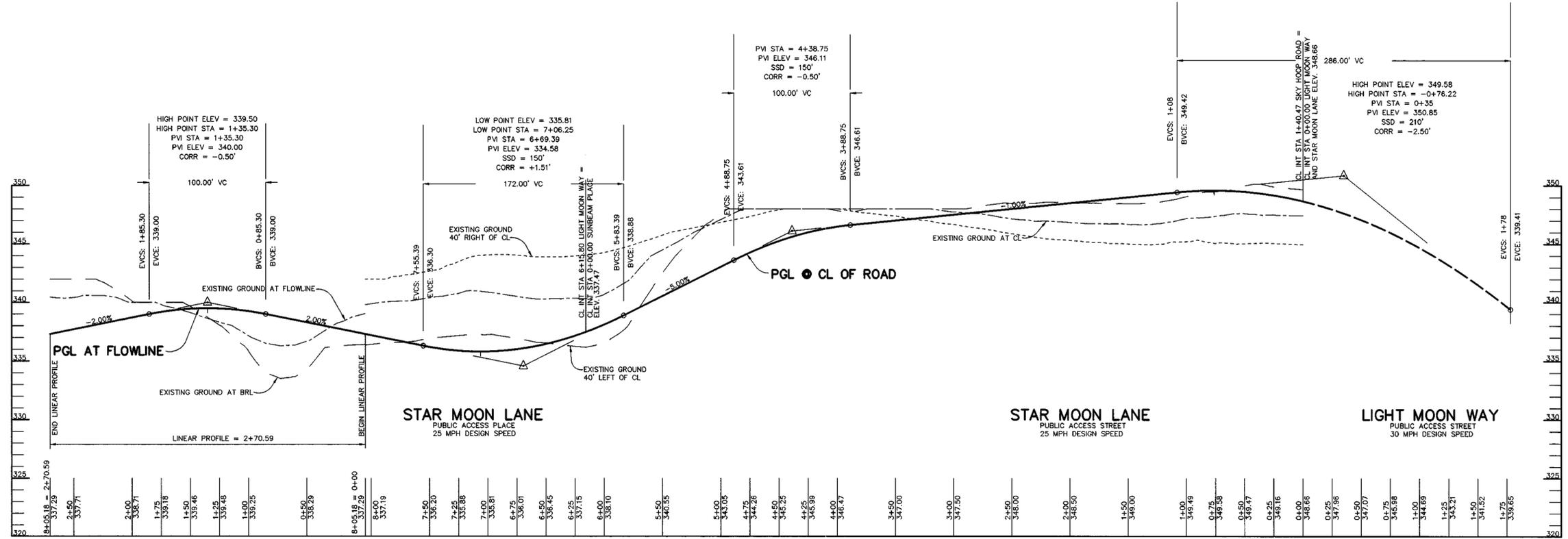
FROM CL STA 7+14.91 TO STA 8+28.84  
 RADIUS = 300.0'  
 LENGTH = 113.93'  
 TANGENT = 57.66'  
 DELTA = 21°45'34"  
 CHORD = S 62°58'57"W 113.25'

**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'

**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 = 86.40'  
 TANGENT = 33.57'  
 DELTA = 20°40'12"  
 CHORD = N 77°17'57"W 66.05'



**PROFILE**

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

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. *Christopher J. Reid* 7/6/01  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. *Wendy Hamilton* 7/17/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*Christopher J. Reid* 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE NO. REVISION

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  
 8th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

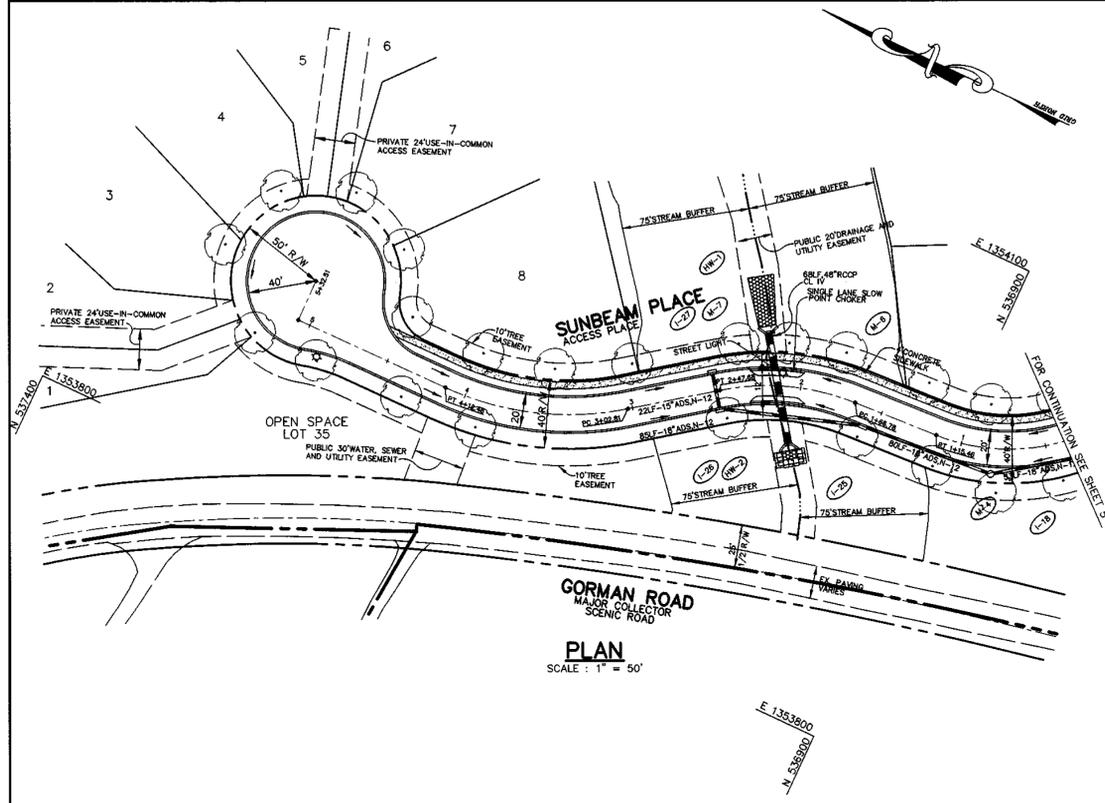
TITLE  
**PLAN AND PROFILE OF  
 STAR MOON LANE**

**RIEMER MUEGGE**  
 a division of:  
**Patton Harris Rust & Associates, pc**  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
 8818 Centre Park Drive, Columbia, MD 21046 • tel 410.997.8800 fax 410.997.9282

DATE: 6-26-01

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

CHRISTOPHER J. REID #19949



**STREET LIGHT CHART**

LOCATION	TYPE
10' RIGHT OF STA 2+11 SUNBEAM PLACE PURPLE CLOUD ROW IN CUL-DE-SAC	100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE
15' LEFT OF STA 4+89 SUNBEAM PLACE 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+32.37 TO STA 1+15.46  
 RADIUS = 115.00'  
 LENGTH = 83.09'  
 TANGENT = 43.45'  
 DELTA = 41°23'48"  
 CHORD = N 23°52'47"W 81.29'

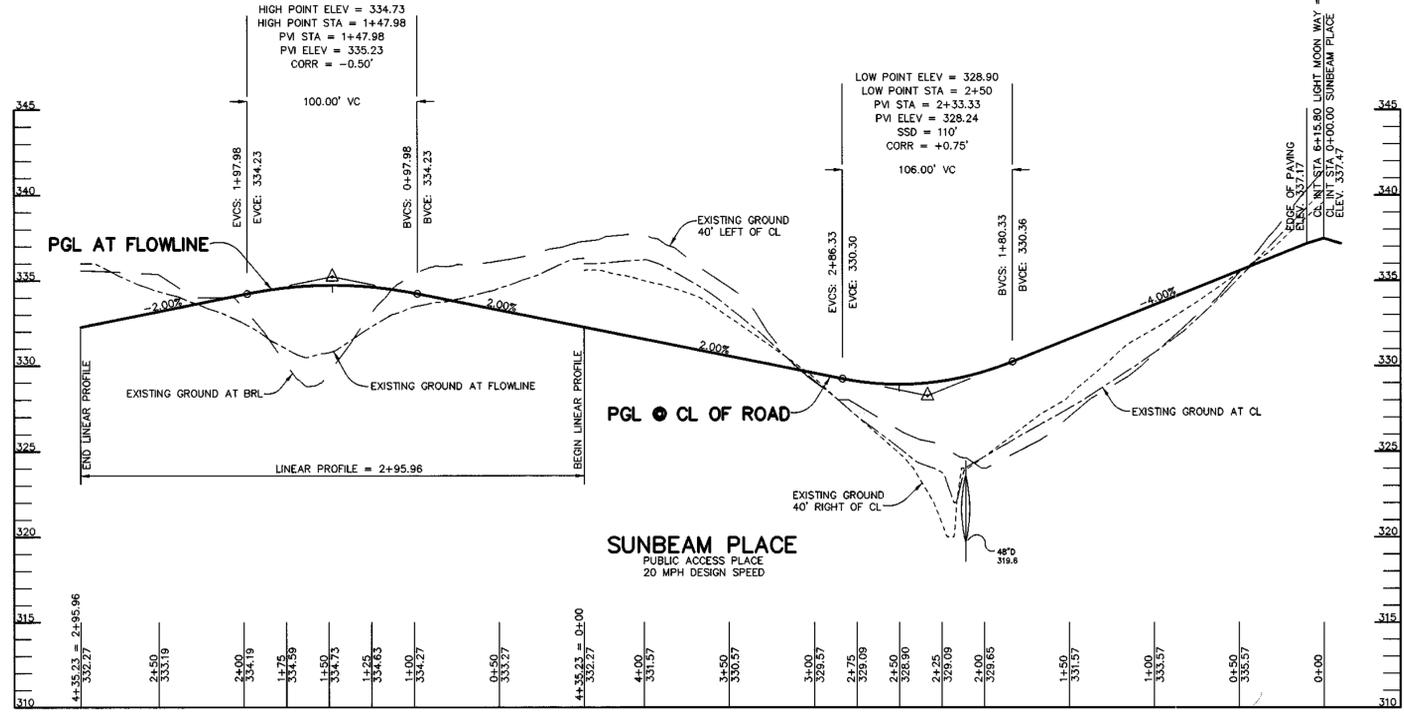
**CL CURVE DATA**

FROM CL STA 1+66.78 TO STA 2+47.68  
 RADIUS = 140.00'  
 LENGTH = 80.90'  
 TANGENT = 41.62'  
 DELTA = 33°08'36"  
 CHORD = S 19°44'11"E 79.78'

**CL CURVE DATA**

FROM CL STA 1+66.78 TO STA 2+47.68  
 RADIUS = 175.00'  
 LENGTH = 109.67'  
 TANGENT = 56.70'  
 DELTA = 35°54'23"  
 CHORD = N 18°20'18"E 107.88'

**PLAN**  
SCALE: 1" = 50'



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

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Andrew M. Daniels* 7-6-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Carole Hanata* 7/10/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mr. Dan...* 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

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 SUNBEAM PLACE**

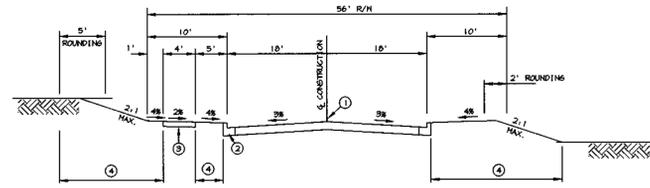
**RIEMER MUEGGE**  
 a division of:  
**Patton Harris Rust & Associates, pc**  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
 8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8800 fax 410.997.9282

6.26.01  
DATE

DESIGNED BY: CJR  
 DRAWN BY: DAM  
 PROJECT NO: 99212/FINALS  
 RDB.DWG  
 DATE: JUNE 19, 2001  
 SCALE: AS SHOWN  
 DRAWING NO. 6 OF 25

CHRISTOPHER J. REID #19949

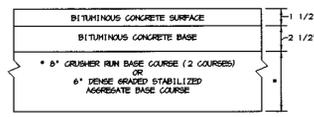
P:\proj\sect\99212\FINALS\RD6.dwg Fr. Jun 22 10:40:27 2001 Riemer Muegge, a division of PH&A



- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (MOD. COMB. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

**TYPICAL SECTION ACCESS STREET**

NO SCALE  
SKY HOOP ROAD FROM STA 0+19 TO STA 1+29 - 30 MPH DESIGN SPEED



(ALTERNATE)

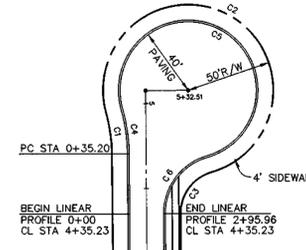


(ALTERNATE)

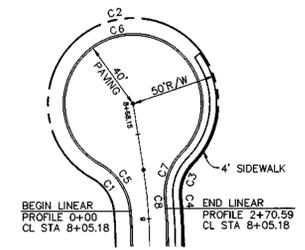
HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

**P-2 PAVING**

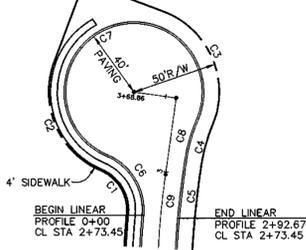
**P-3 PAVING**



CURVE	LENGTH	RADIUS	TANGENT	CHORD	DELTA
C1	25.89	100.00	13.02	25.82	14°30'06"
C2	235.07	50.00	50.35	71.10	289°22'09"
C3	32.52	25.00	18.02	30.28	124°32'07"
C4	26.81	100.00	13.48	26.73	15°21'32"
C5	188.42	40.00	40.07	56.52	289°53'34"
C6	45.33	35.00	26.63	42.39	174°32'02"



CURVE	LENGTH	RADIUS	TANGENT	CHORD	DELTA
C1	24.82	25.00	13.54	23.82	56°53'21"
C2	249.69	50.00	37.60	60.10	286°07'05"
C3	21.92	25.00	11.72	21.22	50°13'44"
C4	5.59	320.00	2.79	5.59	1°00'00"
C5	34.75	35.00	18.96	33.34	56°53'21"
C6	199.75	40.00	30.08	48.08	286°07'05"
C7	30.68	35.00	16.41	29.71	50°13'44"
C8	5.41	310.00	2.71	5.41	1°00'00"



CURVE	LENGTH	RADIUS	TANGENT	CHORD	DELTA
C1	31.59	25.00	18.30	29.53	72°24'34"
C2	76.57	50.00	48.07	69.31	87°44'46"
C3	80.31	50.00	51.80	71.95	92°01'31"
C4	24.08	100.00	12.10	24.02	13°47'51"
C5	32.97	530.00	16.49	32.97	3°33'51"
C6	44.23	35.00	25.62	41.35	72°24'34"
C7	188.76	40.00	39.73	56.38	270°23'00"
C8	26.81	100.00	13.48	26.73	15°21'32"
C9	24.65	540.00	12.32	24.64	2°38'54"

**CUL-DE-SAC DETAIL SUNBEAM PLACE**

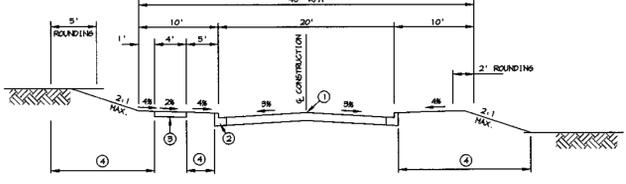
NO SCALE

**CUL-DE-SAC DETAIL STAR MOON LANE**

NO SCALE

**CUL-DE-SAC DETAIL PURPLE CLOUD ROW**

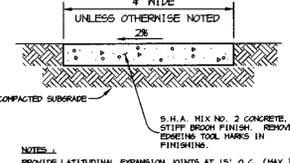
NO SCALE



- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (MOD. COMB. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

**TYPICAL SECTION ACCESS PLACE**

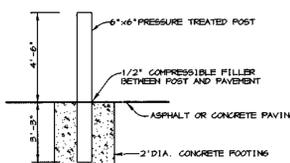
NO SCALE  
PURPLE CLOUD ROW FROM STA 0+00 TO STA 2+73 - 20 MPH DESIGN SPEED  
STAR MOON LANE FROM STA 6+16 TO STA 8+05 - 25 MPH DESIGN SPEED  
SUNBEAM PLACE FROM STA 0+00 TO STA 4+35 - 20 MPH DESIGN SPEED



UNLESS OTHERWISE NOTED  
4" WIDE  
2"

**SIDEWALK DETAIL**

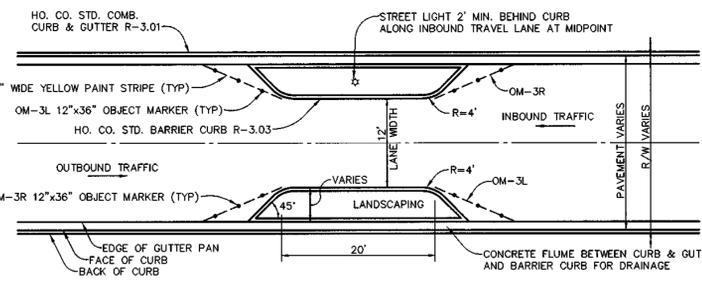
NO SCALE



6"x6" PRESSURE TREATED POST  
1/2" COMPRESSIBLE FILLER BETWEEN POST AND PAVEMENT  
ASPHALT OR CONCRETE PAVING  
2" DIA. CONCRETE FOOTING

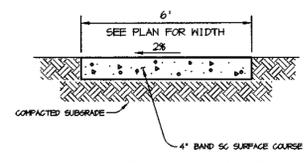
**BOLLARD DETAIL**

NO SCALE



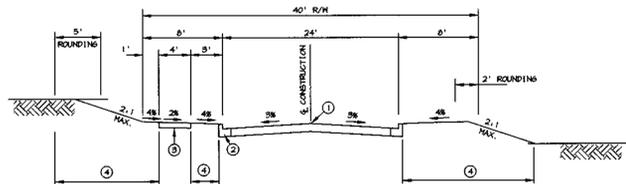
**SINGLE LANE SLOW POINT (CHOKER)**

NO SCALE



**ASPHALT WALK DETAIL**

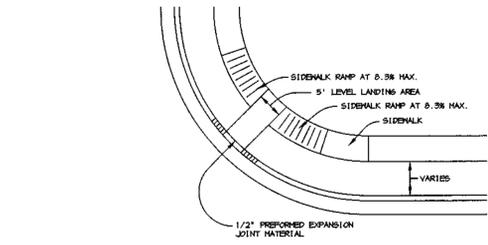
NO SCALE



- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (MOD. COMB. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

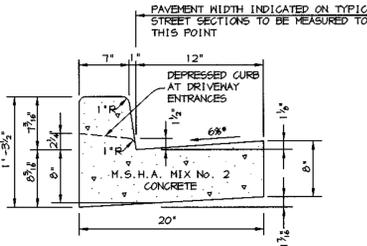
**TYPICAL SECTION ACCESS STREET**

NO SCALE  
LIGHT MOON WAY FROM STA 2+11 TO STA 5+26 - 25 MPH DESIGN SPEED  
STAR MOON LANE FROM STA 0+00 TO STA 6+16 - 25 MPH DESIGN SPEED



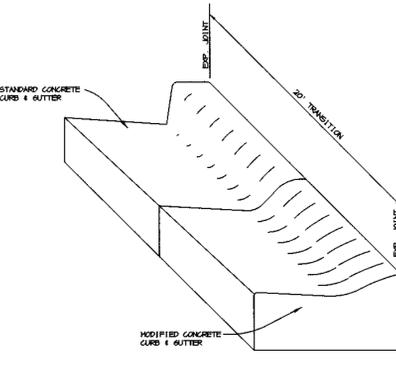
**HANDICAP RAMP DETAIL**

NO SCALE



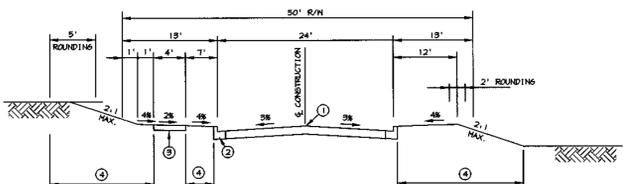
**STANDARD 7" COMBINATION CURB AND GUTTER**

NO SCALE



**CONCRETE CURB AND GUTTER TRANSITION**

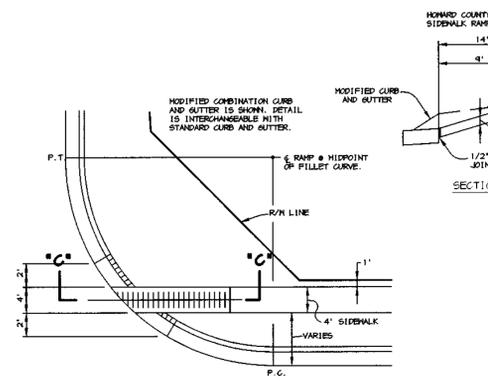
NO SCALE



- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (STD. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

**TYPICAL SECTION ACCESS STREET**

NO SCALE  
LIGHT MOON WAY FROM STA 0+00 TO STA 2+11 - 30 MPH DESIGN SPEED



**HANDICAP RAMP DETAIL**

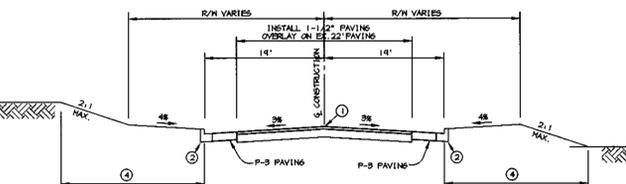
NO SCALE

HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01).

**STANDARD 7" COMBINATION CURB AND GUTTER**

NO SCALE

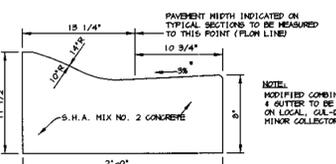
\* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.



- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (STD. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ INDICATES 2" TOPSOIL, SEED AND MULCH.

**TYPICAL SECTION GORMAN ROAD**

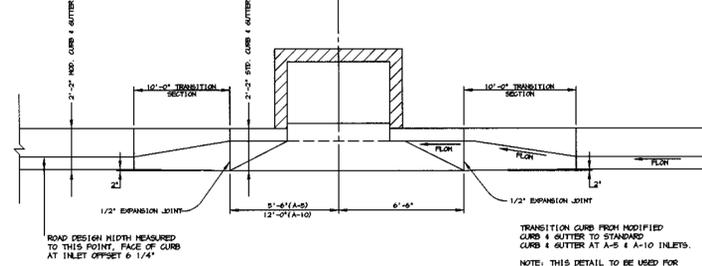
NO SCALE  
FROM STA 0+00 TO STA 12+00



**MODIFIED COMBINATION CURB AND GUTTER**

NO SCALE

\* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.



**MODIFIED COMBINATION CURB AND GUTTER TRANSITION CURB SECTION AT "A" TYPE INLETS**

NO SCALE

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Richard M. D... 7-6-01*  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Chris Hunter 7/7/01*  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Chris Hunter 7/10/01*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE NO. REVISION

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  
**ROAD DETAILS**

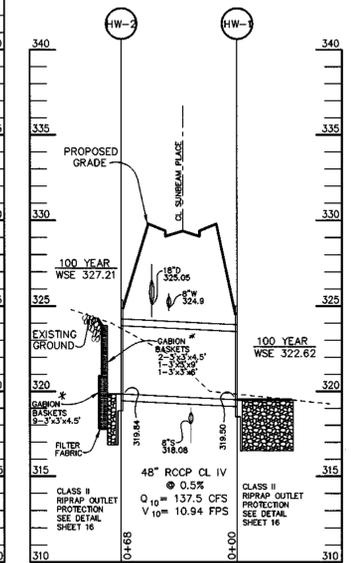
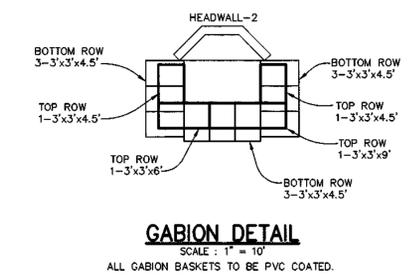
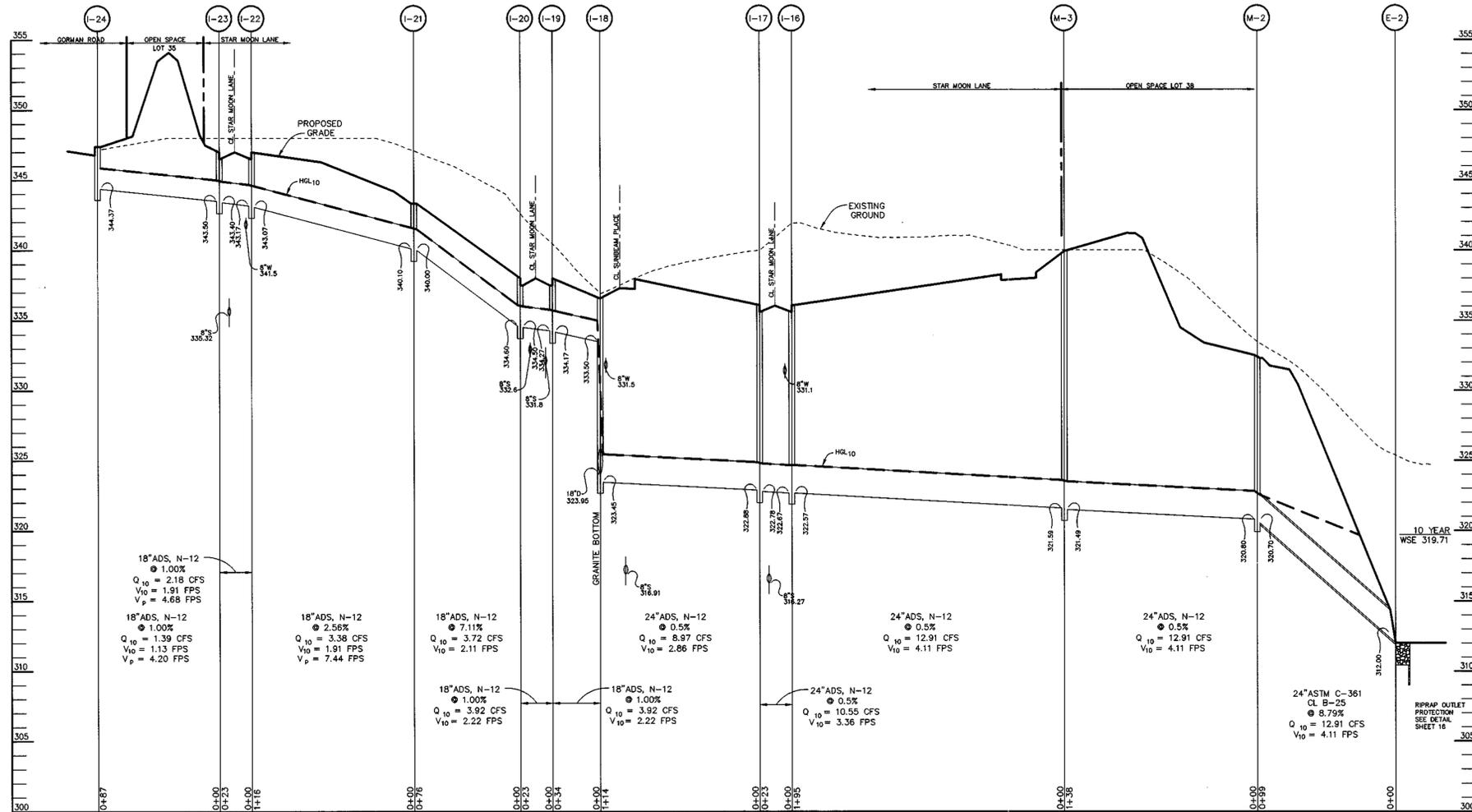
RIEMER MUEGGE  
a division of:  
Patton Harris Rust & Associates, pc  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
8818 Centro Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282

6.26.01  
DATE

DESIGNED BY: CJR  
DRAWN BY: DAM  
PROJECT NO: 99212/FINALS  
RD7.DWG  
DATE: JUNE 19, 2001  
SCALE: AS SHOWN  
DRAWING NO. 7 OF 25

CHRISTOPHER J. REID #19949

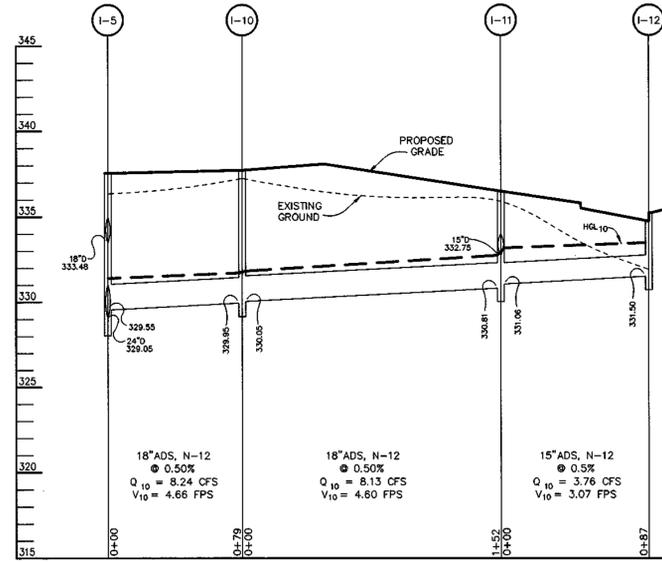
STAR MOON LANE



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

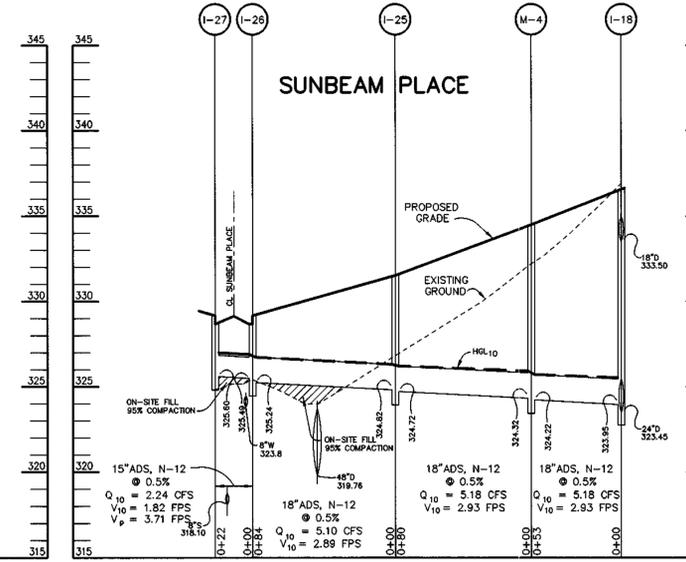
PROFILE  
SCALE: HOR.-1"=50'  
VERT.-1"=5'

PURPLE CLOUD ROW



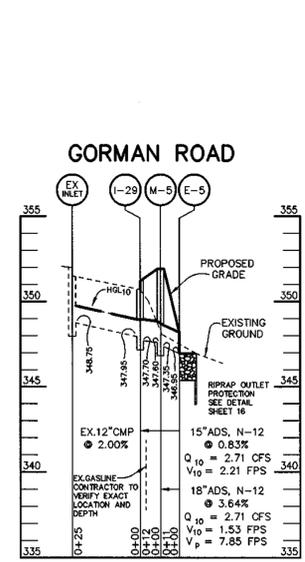
PROFILE  
SCALE: HOR.-1"=50'  
VERT.-1"=5'

SUNBEAM PLACE



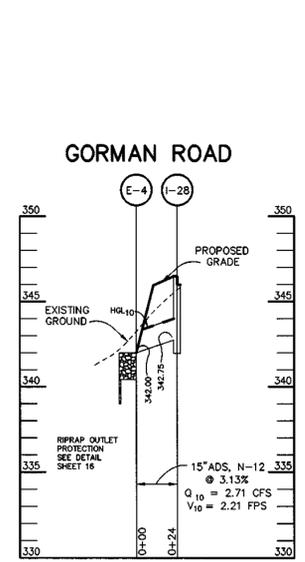
PROFILE  
SCALE: HOR.-1"=50'  
VERT.-1"=5'

GORMAN ROAD



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

GORMAN ROAD



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

\*REFER TO THE 5/30/01 GEOTECH REPORT BY THE ROBERT B. BALTER COMPANY FOR FURTHER REQUIREMENTS AND RECOMMENDATIONS.

AS BUILT CERTIFICATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	DATE: 7-6-01
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	DATE: 7/10/01
APPROVED: HOWARD COUNTY DEPARTMENT OF ENGINEERING DIVISION.	DATE: 7/10/01
DATE NO.	REVISION
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	
RIEMER MUEGGE a division of: Patton Harris Rust & Associates, pc ENGINEERS & SURVEYORS & PLANNERS LANDSCAPE ARCHITECTS & ENVIRONMENTAL SPECIALISTS 8818 Centra Park Drive, Columbia, MD 21045 • tel 410.987.8900 fax 410.987.8282	
DATE: 6.26.01	DESIGNED BY: CJR
	DRAWN BY: DAM
	PROJECT NO: 99212/FINALS 'SD1.DWG
	DATE: JUNE 19, 2001
	SCALE: AS SHOWN
CHRISTOPHER J. REID #19949	DRAWING NO. 9 OF 25

**LEGEND**

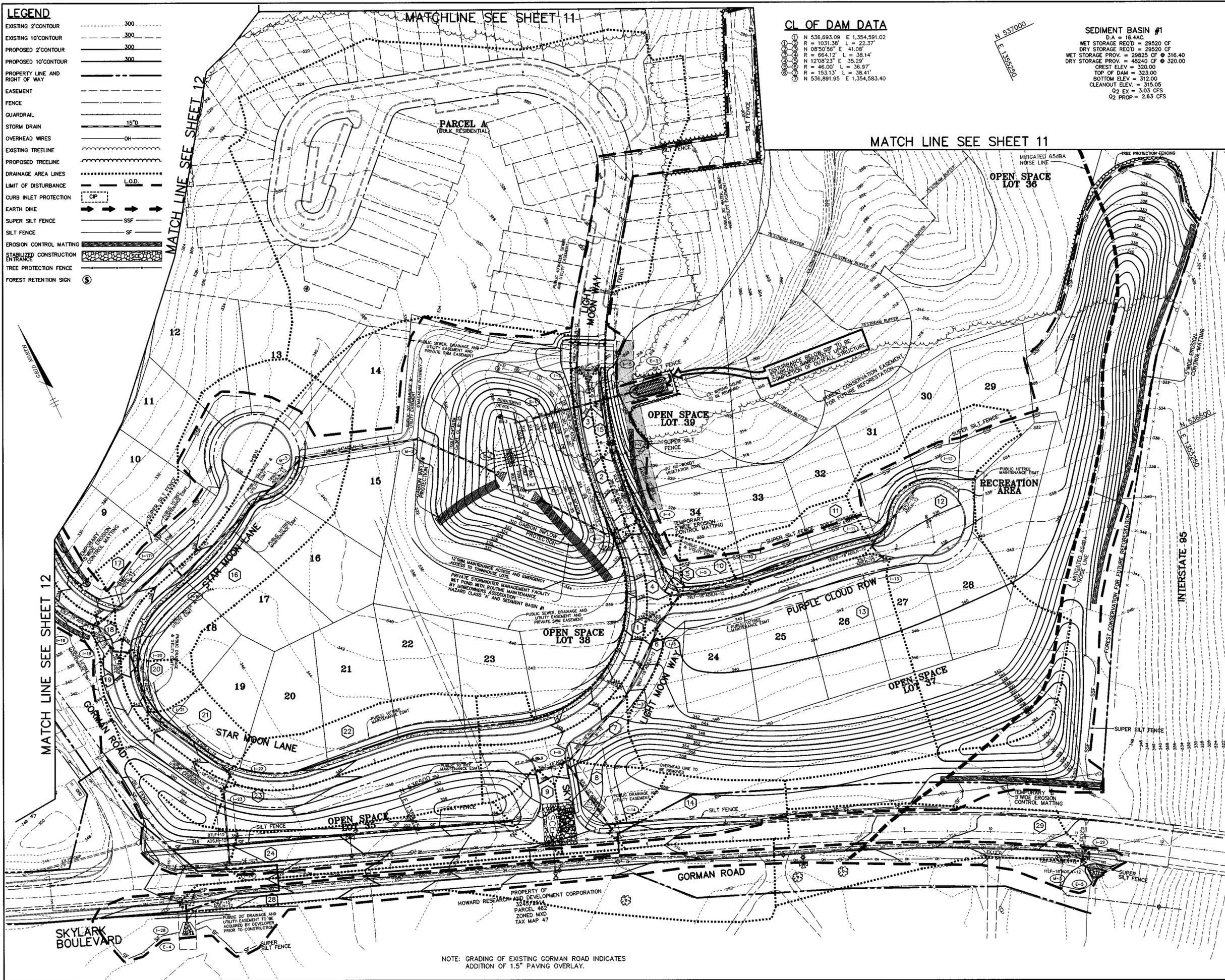
EXISTING 2' CONTOUR	300
EXISTING 10' CONTOUR	300
PROPOSED 2' CONTOUR	300
PROPOSED 10' CONTOUR	300
PROPERTY LINE AND RIGHT OF WAY	
EASEMENT	
FENCE	
GUARDRAIL	
STORM DRAIN	15" D
OVERHEAD WIRES	OH
EXISTING TREELINE	
PROPOSED TREELINE	
DRAINAGE AREA LINES	L.O.D.
LIMIT OF DISTURBANCE	
CURB INLET PROTECTION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

**CL OF DAM DATA**

1	N 536.893.09	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.	= 18 AC.
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



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: *John W. [Signature]* 6/26/01  
 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.

ENGINEER: *Christopher J. Reid* 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.

*Jim [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.

*John [Signature]* 7/2/01  
 HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE  
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Andrew M. [Signature]* 7-6-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Wanda [Signature]* 7/17/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris [Signature]* 7/16/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

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 B37  
 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: **GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP**

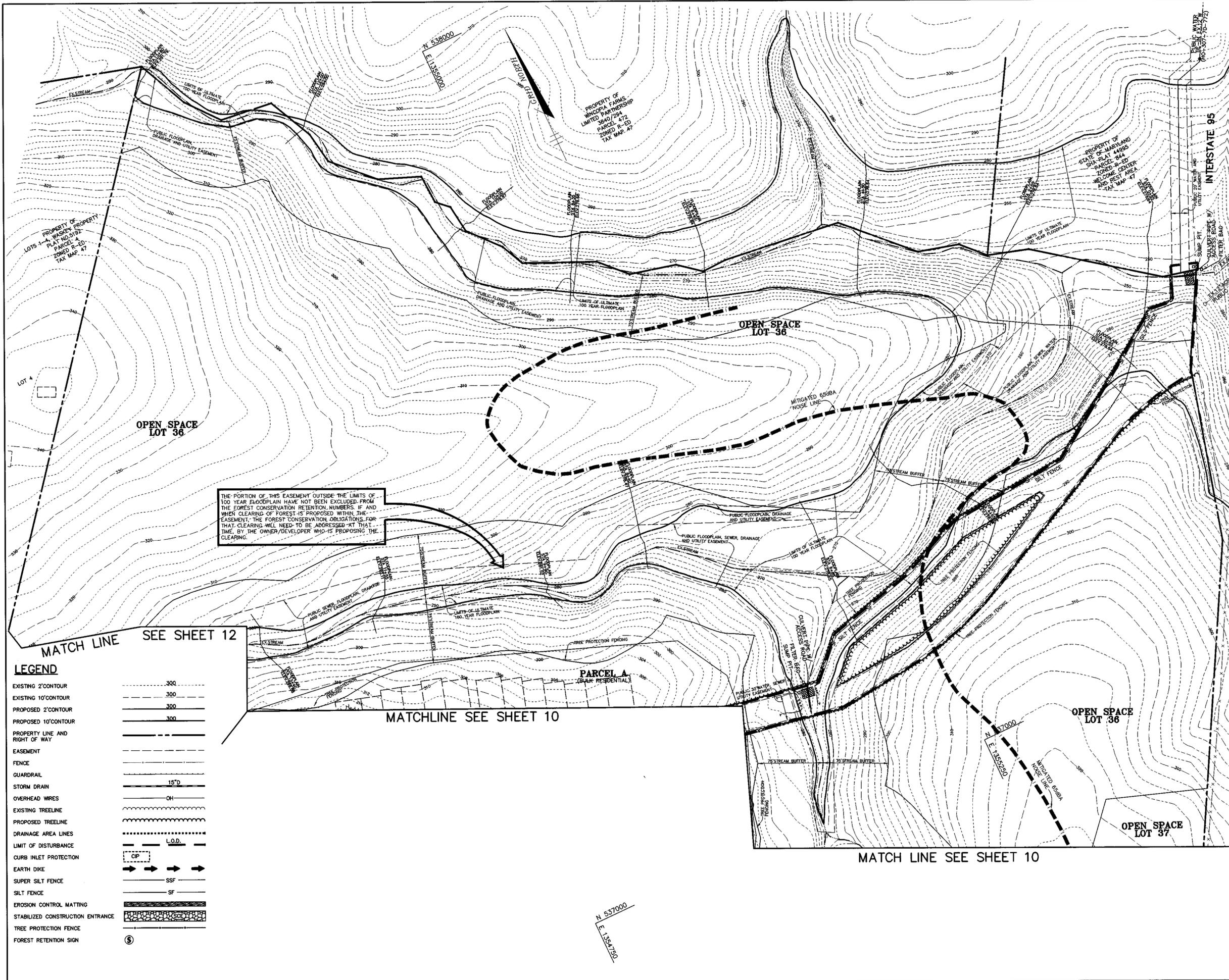
RIEMER MUEGGE  
 a division of:  
 Patton Harris Rust & Associates, pc  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
 8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8800 fax 410.997.9282

6.26.01  
 DATE

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

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

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



THE PORTION 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.

**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	---	
TREE PROTECTION FENCE	---	
FOREST RETENTION SIGN	Ⓢ	

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.

*Jeff Nij* 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.

*Christopher J. Reid* 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.

*Jim Hynes* 7/6/01  
 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.

*Yuhua Sun* 7/2/01  
 HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. Quake* 7-6-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Andy Hamilton* 7/17/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris Pannunzio* 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

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:

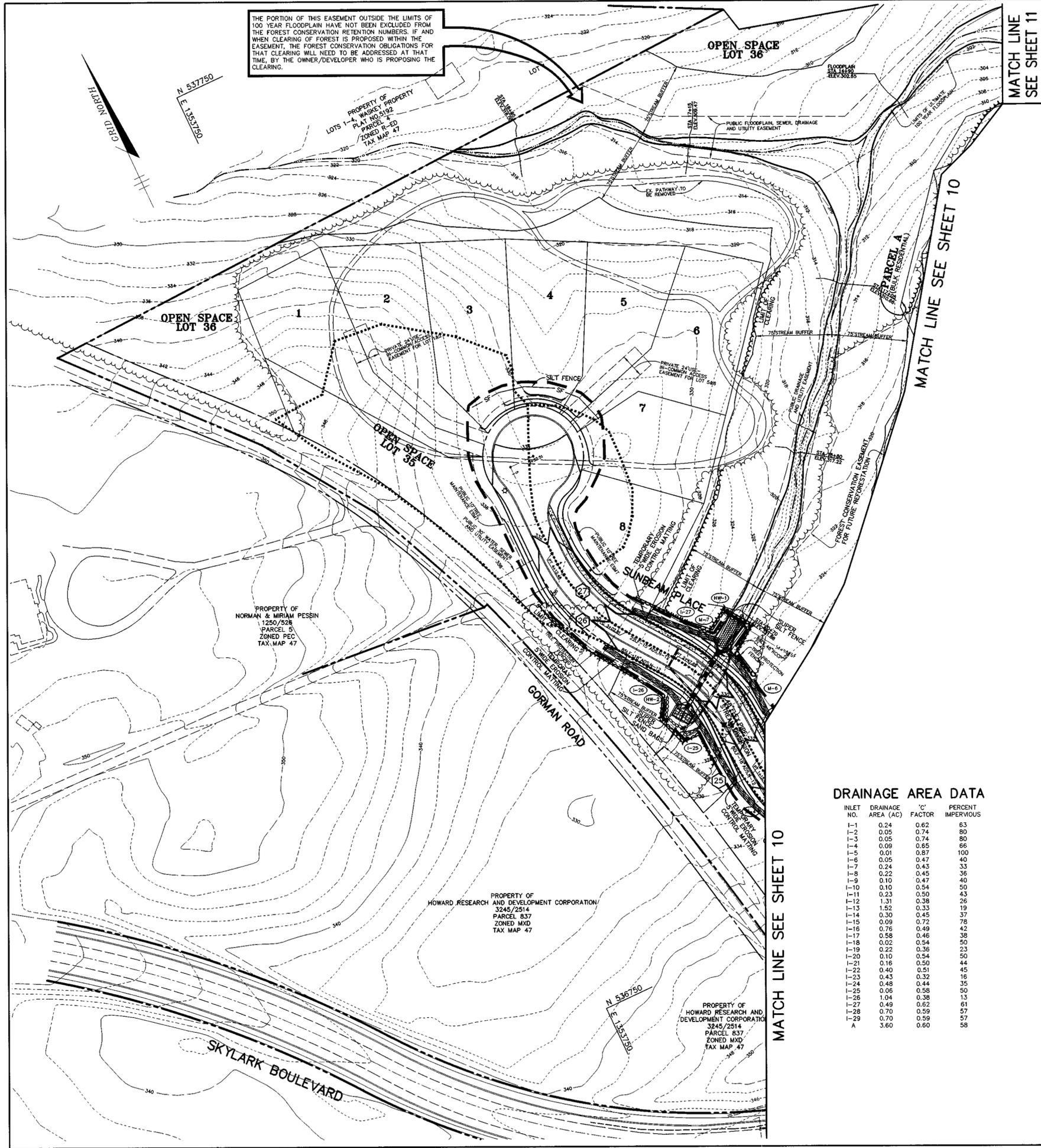
**Patton Harris Rust & Associates, pc**  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
 8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8800 fax 410.997.9282

DATE 6.26.01

DESIGNED BY : CJR  
 DRAWN BY : DAM  
 PROJECT NO .99212/FINALS  
 SEDCON2.DWG  
 DATE : JUNE 19, 2001  
 SCALE : 1" = 50'  
 DRAWING NO. 11 OF 25

*Christopher J. Reid*  
 CHRISTOPHER J. REID #19949

THE PORTION 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.

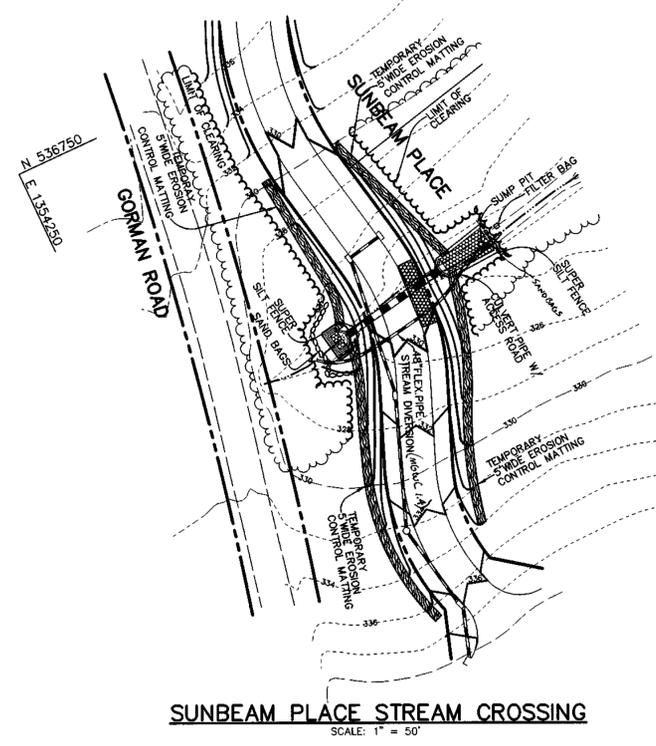


**LEGEND**

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"Ø
OVERHEAD WIRES	----	ØH
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	----	
TREE PROTECTION FENCE	----	
FOREST RETENTION SIGN	----	Ⓢ

**DRAINAGE AREA DATA**

INLET NO.	DRAINAGE AREA (AC)	'C' FACTOR	PERCENT IMPERVIOUS
T-1	0.24	0.62	63
T-2	0.05	0.74	80
T-3	0.05	0.74	80
T-4	0.09	0.65	66
T-5	0.01	0.87	100
T-6	0.05	0.47	40
T-7	0.24	0.43	33
T-8	0.22	0.45	36
T-9	0.10	0.47	40
T-10	0.10	0.54	50
T-11	0.23	0.50	43
T-12	1.31	0.38	26
T-13	1.52	0.33	19
T-14	0.30	0.45	37
T-15	0.09	0.72	78
T-16	0.76	0.49	42
T-17	0.58	0.46	38
T-18	0.02	0.54	50
T-19	0.22	0.36	23
T-20	0.10	0.54	50
T-21	0.16	0.50	44
T-22	0.40	0.51	45
T-23	0.43	0.32	16
T-24	0.48	0.44	35
T-25	0.06	0.58	50
T-26	1.04	0.38	13
T-27	0.49	0.62	61
T-28	0.70	0.59	57
T-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: *[Signature]* 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: *[Signature]* 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: 7/6/01

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.  
*[Signature]* DATE: 7-6-01  
CHIEF, BUREAU OF HIGHWAYS

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*[Signature]* DATE: 7/7/01  
CHIEF, DIVISION OF LAND DEVELOPMENT

*[Signature]* DATE: 7/10/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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

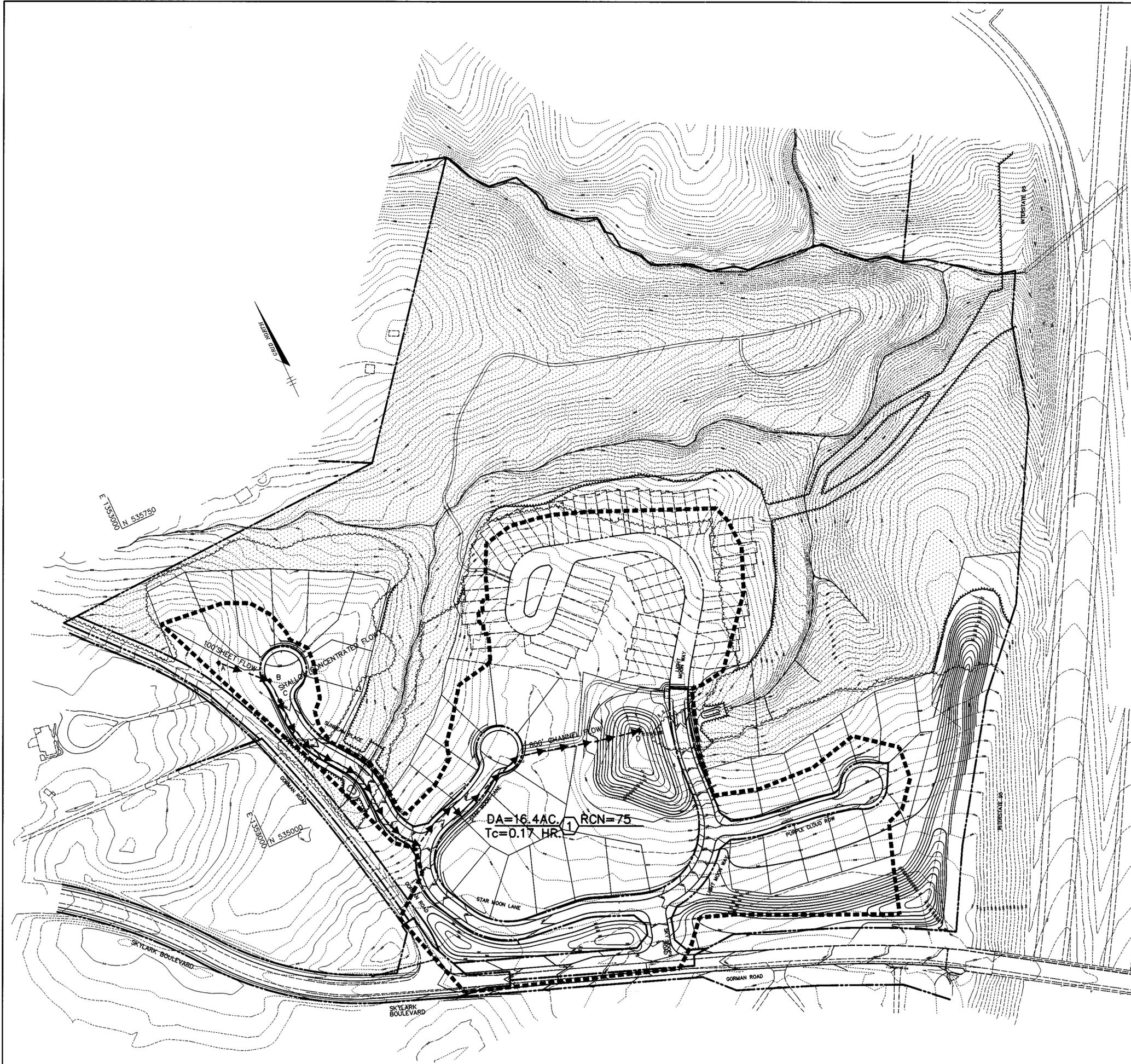
PROJECT  
**EMERSON**  
SECTION ONE AREA ONE  
LOTS 1 - 39 & PARCEL A

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 21046 • tel 410.997.8900 fax 410.997.9282

DATE: 6-26-01  
DESIGNED BY : CJR  
DRAWN BY: DAM  
PROJECT NO. 99212/FINALS  
SCALE : 1" = 50'  
DRAWING NO. 12 OF 25

P:\proj\ec1\99212\FINALS\SEDCONT3.DWG Tue Jun 26 14:13:26 2001 RIEMER MUEGGE A DIVISION OF PHRBA



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



E 135520  
N 535000

AS BUILT CERTIFICATE

---

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Christopher M. Swales* 7-6-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*David H. ...* 7/10/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris ...* 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

---

DATE NO. REVISION

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**

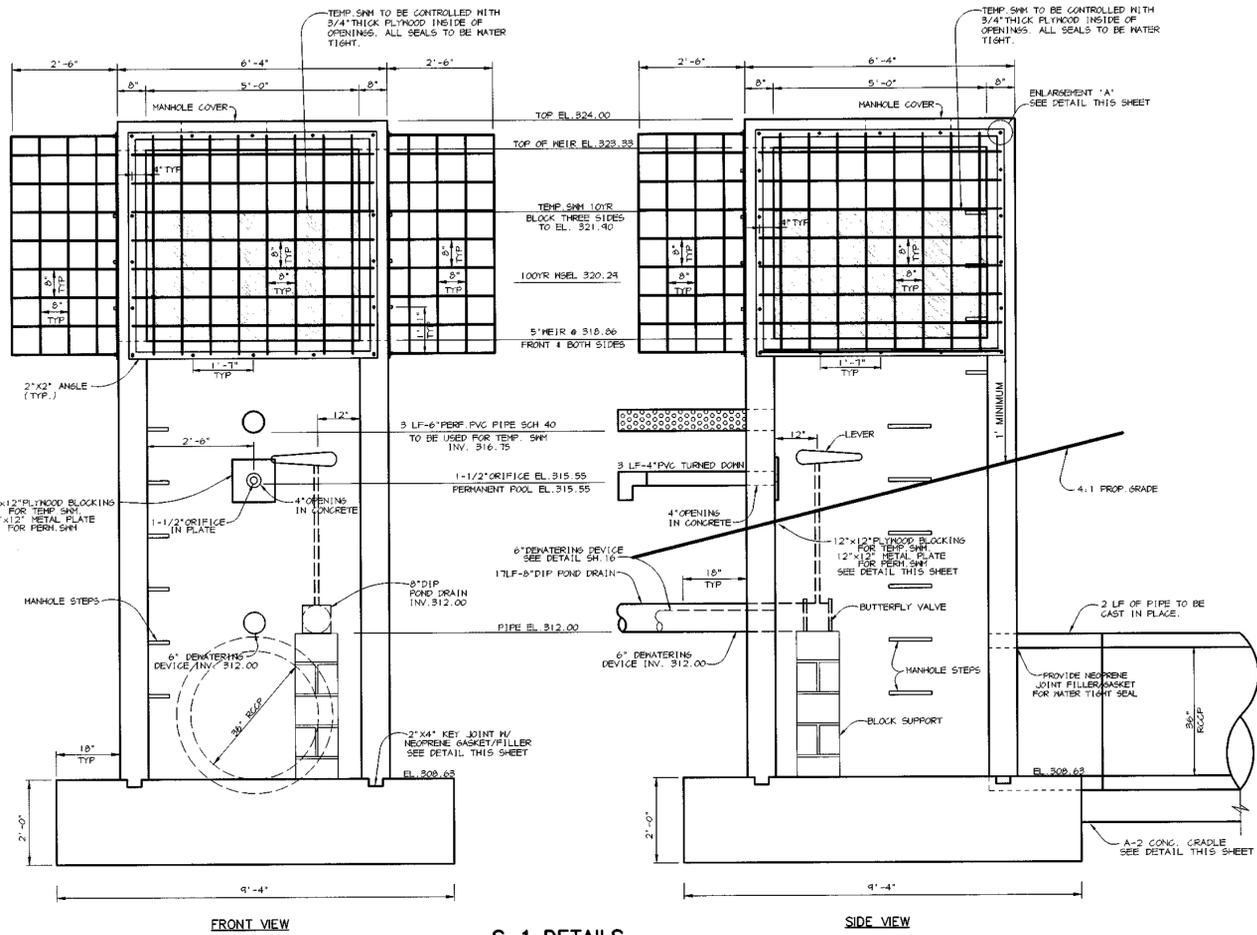
**RIEMER MUEGGE**  
 a division of:  
**Patton Harris Rust & Associates, pc**  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
 8818 Centre Park Drive, Columbia, MD 21045 • tel 410.697.8600 fax 410.997.3282

DATE 6-26-01

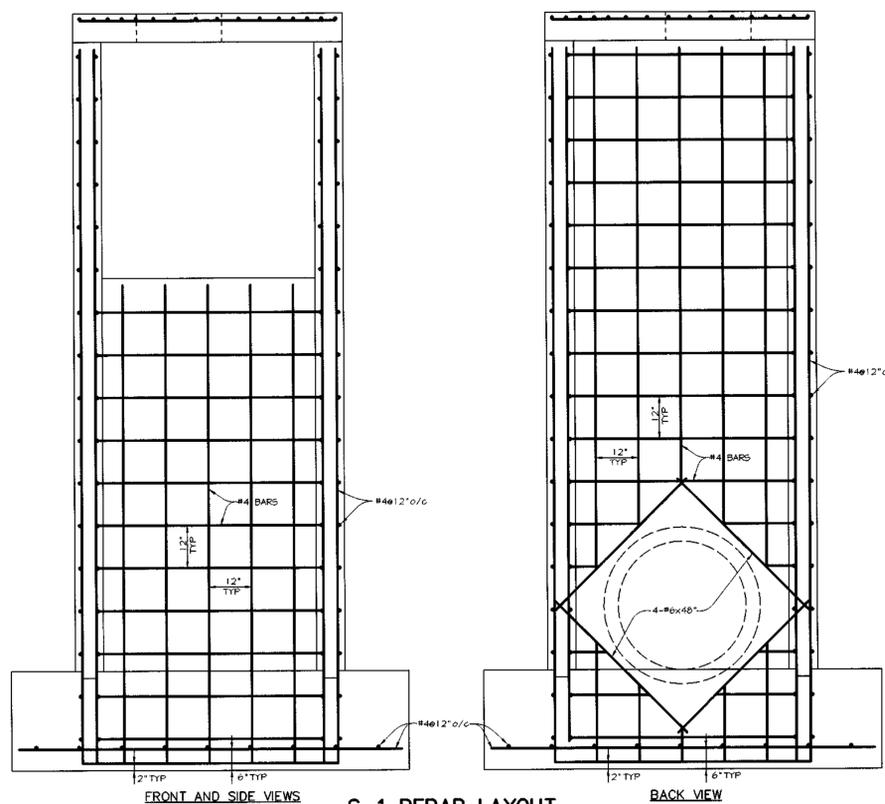
DESIGNED BY : CJR  
 DRAWN BY : DAM  
 PROJECT NO : 99212/FINALS PRDA.DWG  
 DATE : JUNE 19, 2001  
 SCALE : 1"=100'  
 DRAWING NO. 13 OF 25

CHRISTOPHER J. REID #19999

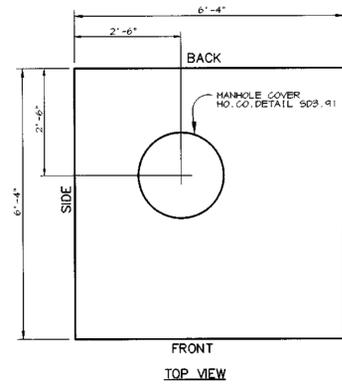
P:\projects\99212\FINALS\PRDA.DWG Tue Jun 19 11:37:22 2001 Riemer Muegge, a division of PH&A



**S-1 DETAILS**  
SCALE 1"=2'



**S-1 REBAR LAYOUT**  
SCALE 1"=2'

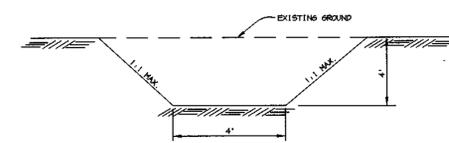


**RISER STRUCTURE NOTES FOR S-1**

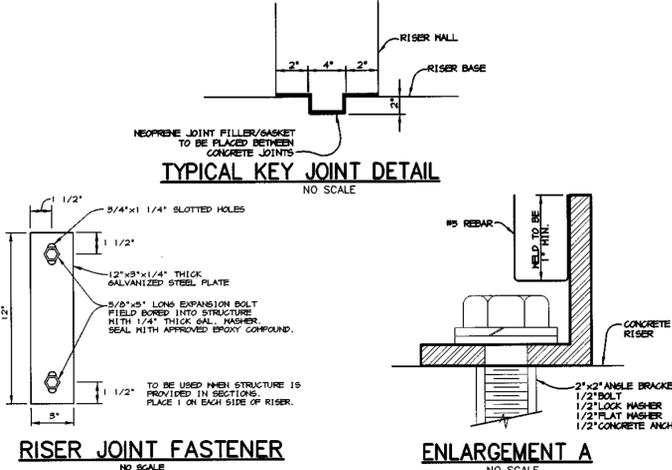
- RISER TO BE CAST IN PLACE. SHOP DRAWINGS FOR THIS CONCRETE STRUCTURE SHALL MEET THE MINIMUM ASTM REQUIREMENTS FOR CAST IN PLACE STRUCTURES. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A HAWKLAND REGISTERED PROFESSIONAL ENGINEER.
- SEE THIS SHEET FOR REINFORCEMENT DETAILS.
- CONCRETE SHALL BE MSHA MIX NO. 3 (FC=3,500 PSI MINIMUM)
- WHEN POND IS CONVERTED INTO A PERMANENT FACILITY, THE DRAINDOWN DEVICE HOLE SHALL BE REMOVED.
- REFER TO HOWARD COUNTY STD. 6-5.21 FOR MANHOLE STEP DETAILS.
- RISER JOINTS SHALL BE WATER TIGHT USING NEOPRENE GASKETS.
- ALL PIPE CONNECTIONS SHALL PROVIDE RUBBER GASKET FOR WATER TIGHTNESS.
- RISER SHALL BE PLACED ON A FIRMLY COMPACTED SUBGRADE AND SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.
- A 3" OPEN LEFT GATE VALVE (ANNA C-155, 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 VALVE BOX AND COVER IN THE TOP SLAB DIRECTLY OVERTOP THE GATE VALVE.

**REMOVABLE TRASH RACK NOTES**

- STEEL TO CONFORM TO ASTM A-56. #5 BARS TO BE SMOOTH. SEE DETAIL FOR SPACING.
- ALL REBAR TO BE WELDED AT ALL INTERSECTIONS.
- ALL BENDS TO BE 2" RADIUS. 2" x 2" ANGLE IRON AND 1/2" DIAMETER ANCHOR BOLTS TO BE USED FOR TRASH RACK FRAME.
- GALVANIZE TRASH RACK AFTER FABRICATION AND PAINT BATTLESHIP GRAY.

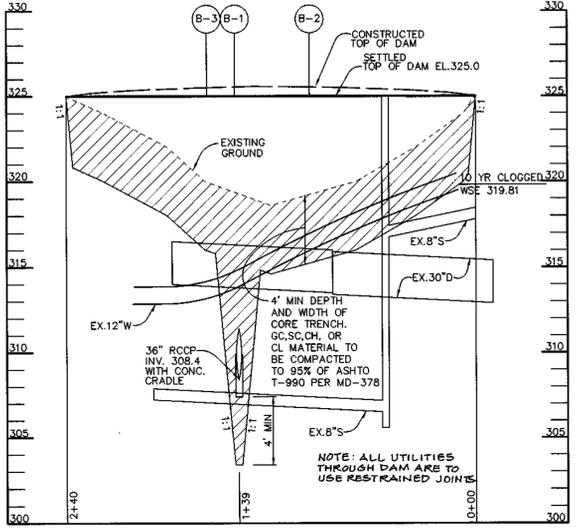


**CORE TRENCH DETAIL**  
NO SCALE

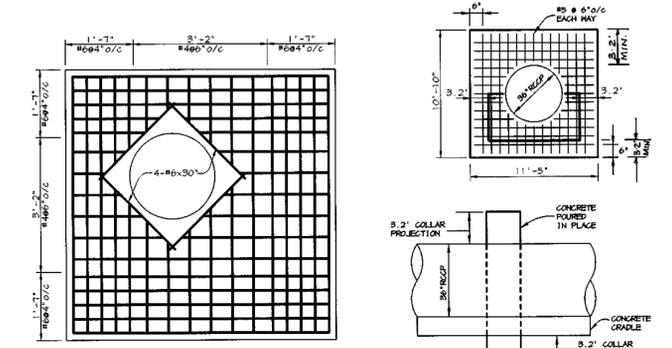


**RISER JOINT FASTENER**  
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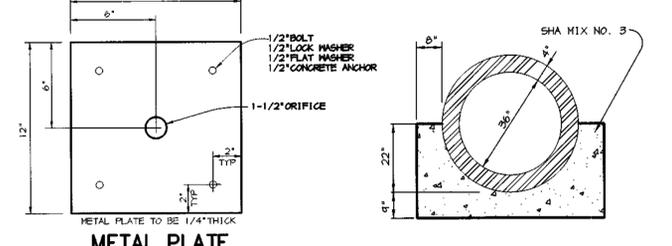
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NO SCALE



**CENTERLINE OF EMBANKMENT PROFILE**  
SCALE: HOR.-1"=50' VERT.-1"=5'

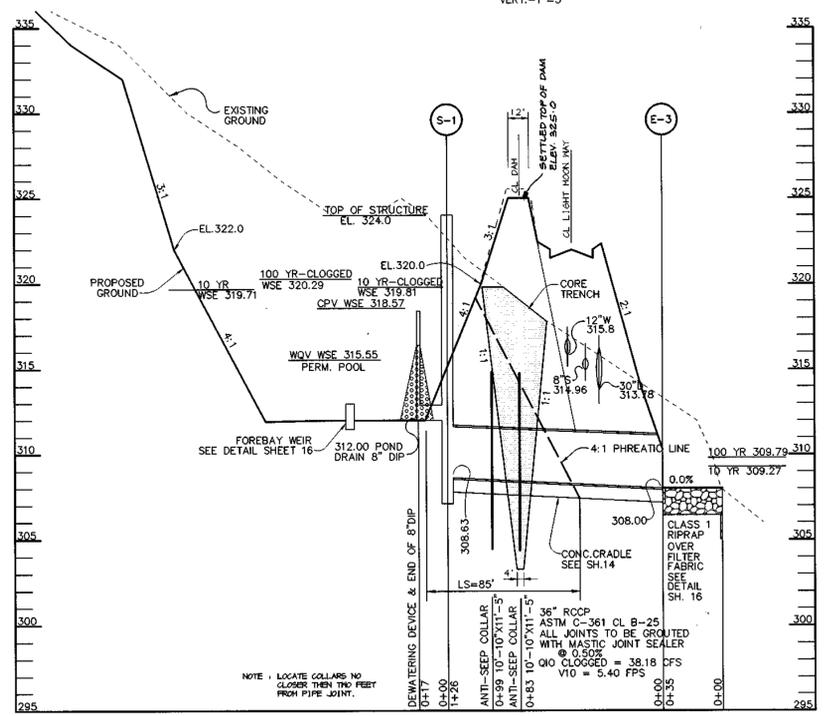


**CONCRETE ANTI-SLEEP COLLAR**  
NO SCALE



**METAL PLATE**  
SCALE 1"=6"

**A-2 CONCRETE CRADLE**  
NO SCALE



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

<p>BY THE DEVELOPER :</p> <p>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.</p> <p><i>Jeff N. H. J.</i> 6/22/01 DEVELOPER DATE</p>	
<p>BY THE ENGINEER :</p> <p>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.</p> <p><i>Chris J. Reid</i> 6-26-01 ENGINEER DATE</p>	
<p>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.</p> <p><i>Jim Lopez</i> 7/6/01 NATURAL RESOURCES CONSERVATION SERVICE DATE</p>	
<p>THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>Chris J. Reid</i> 7/6/01 HOWARD SOIL CONSERVATION DISTRICT DATE</p>	
<p>AS BUILT CERTIFICATE</p> <p>DATE</p>	
<p>APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.</p> <p><i>Andrew M. Daniels</i> 7-6-01 CHIEF, BUREAU OF HIGHWAYS DATE</p>	
<p>APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.</p> <p><i>Chris Hanover</i> 7/7/01 CHIEF, DIVISION OF LAND DEVELOPMENT DATE</p>	
<p><i>Chris Daniels</i> 7/10/01 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE</p>	
DATE NO.	REVISION
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 B37 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	
STORMWATER MANAGEMENT NOTES AND DETAILS	
<p><b>RIEMER MUEGGE</b> a division of: <b>Patton Harris Rust &amp; Associates, pc</b> ENGINEERS • SURVEYORS • PLANNERS LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS 8818 Centon Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282</p>	
DATE	DESIGNED BY :
6-26-01	CJR
DATE	DRAWN BY :
JUNE 19, 2001	DAM
DATE	PROJECT NO :
JUNE 19, 2001	99212/FINALS
DATE	SCALE :
JUNE 19, 2001	AS SHOWN
DATE	DRAWING NO. :
JUNE 19, 2001	14 OF 25

MD-370 STANDARDS AND SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-370. All references to ASTM and ASHSTO specifications apply to the most recent version.

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-370. All references to ASTM and ASHSTO specifications apply to the most recent version.

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.

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 layers.

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 track of the equipment or sheepsfoot roller.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within 2% of the optimum.

Cutoff trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment or shown on the plans.

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.

Structure Backfill - Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material.

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- 3. Laying pipe - Bell and spigot pipe shall be placed with the bell and upper joint...

Plastic Pipe - The following criteria shall apply for pipe.

- 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1185 or ASTM D-2241...

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

Backfilling shall conform to Structure Backfill.

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

Concrete Pipe - The following criteria shall apply for pipe.

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets...

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

- 2. Connections - All connections with pipes must be completely watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections.

- 3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

Backfilling shall conform to Structure Backfill.

- 4. 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...

Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding/grade for their entire length.

- 2. Connections - All reinforced concrete pipe conduits shall be laid in a concrete bedding/grade...

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

- 3. Connections - All connections with pipes must be completely watertight.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

- 4. Backfilling shall conform to Structure Backfill.

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

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets...

Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding/grade for their entire length.

- 2. Connections - All reinforced concrete pipe conduits shall be laid in a concrete bedding/grade...

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

- 3. Connections - All connections with pipes must be completely watertight.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

- 4. Backfilling shall conform to Structure Backfill.

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

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

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

- 1. 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...

Construction and Material Specifications

- 1. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications.

- 1. 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.

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

- 1. 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.

- 1. On soil meeting Topsoil specifications, obtain test results indicating 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.

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

- 1. 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.

- 1. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4".

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

- 1. 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:

- 1. 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 sites having disturbed areas over 5 acres shall conform to the following requirements:

- 1. 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 9.0.

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

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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 THEREOF.

- 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. 6.). 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 PERMITS 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 CONTROL, 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.

- 4. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (1 WEEK)

- 5. AS SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL STORM DRAINS, WATER, SEWER AND INLET PROTECTION ON I-28 AND I-29. (4 WEEKS)

- 6. INSTALL CURB AND GUTTER AND PAVE ROADWAYS. (2 WEEKS)

- 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)

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ONCE QUARTERLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USACE, SCS "STANDARDS AND SPECIFICATION FOR PONDS" (MD-370).

THE POND OWNER AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, MAINTENANCE, 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

NOTE: REFER TO 11/4/00 GEOTECH REPORT FOR FURTHER FILL, EARTHWORK AND OTHER GEOTECHNICAL REQUIREMENTS BY THE ROBERT B. BALTER COMPANY (NO. 15987 MD).

ROUTINE MAINTENANCE

- 1. Facility shall be inspected annually 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.

- 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 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.

Table with 3 columns: Boring ID (BORING B-1, BORING B-2, BORING B-3), Depth (0' to 24.3'), and Soil Description (e.g., BROWN, MOIST MF SAND, SOME SILT AND CLAY, LITTLE ROCK FRAGMENTS, TR MICA (SH)).

DEVELOPER: [Signature] 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. [Signature] 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. [Signature] DATE: 7/2/01

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. [Signature] DATE: 7/2/01

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. [Signature] DATE: 7-6-01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. [Signature] DATE: 7/17/01

CHIEF, DIVISION OF LAND DEVELOPMENT. [Signature] DATE: 7/10/01

CHIEF, DEVELOPMENT ENGINEERING DIVISION. [Signature] DATE: 7/10/01

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

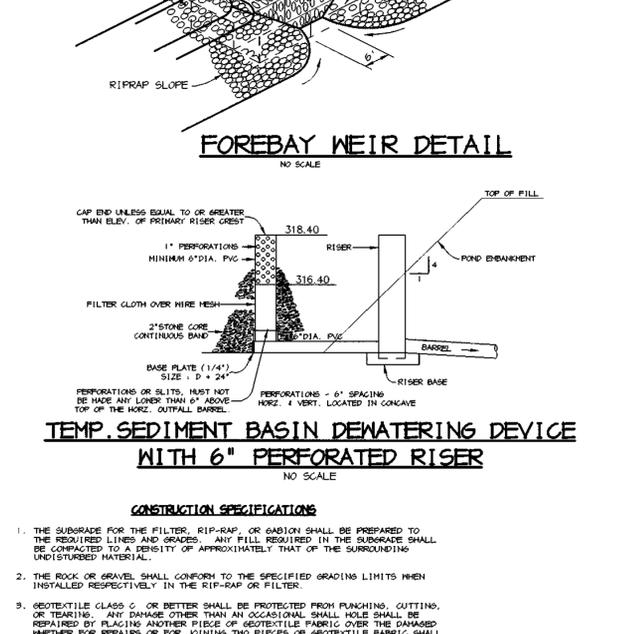
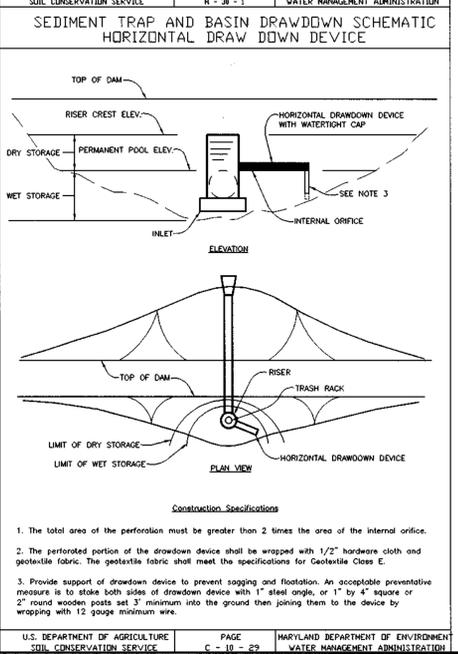
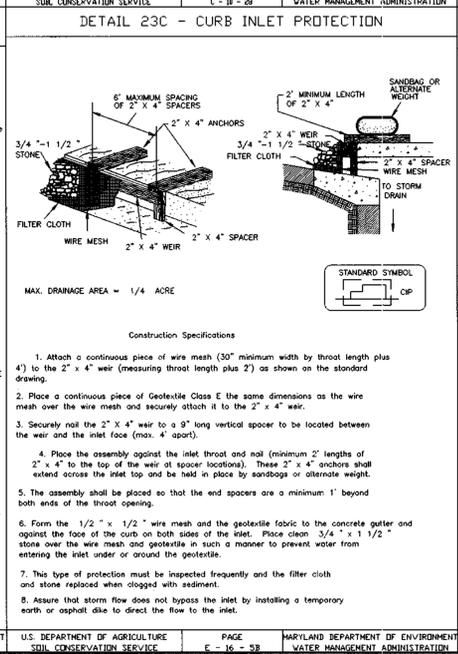
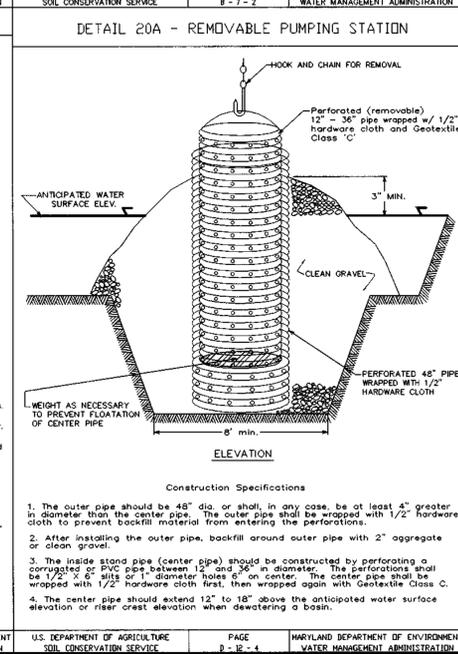
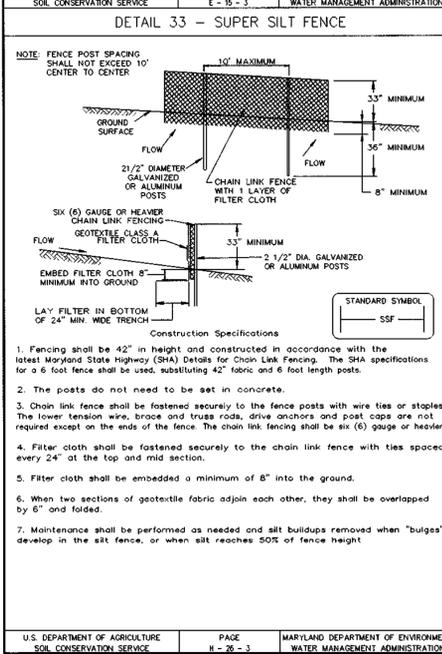
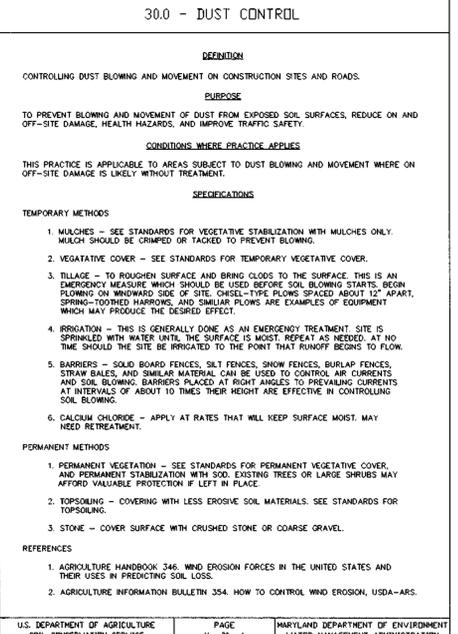
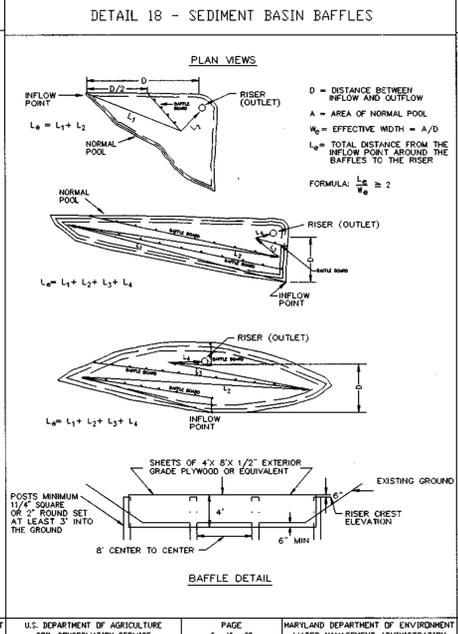
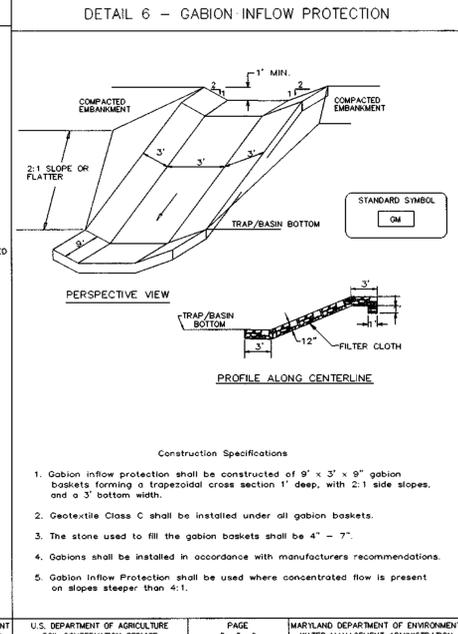
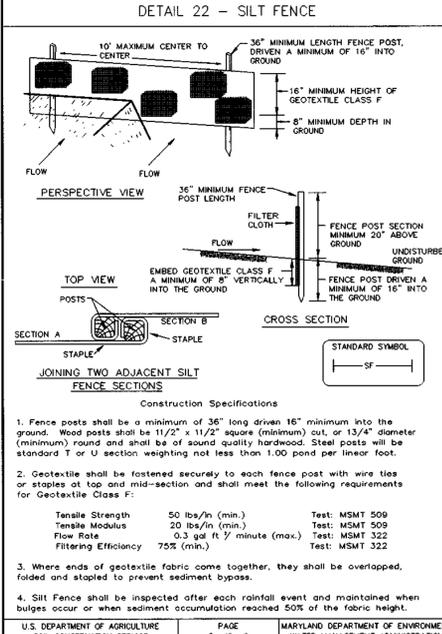
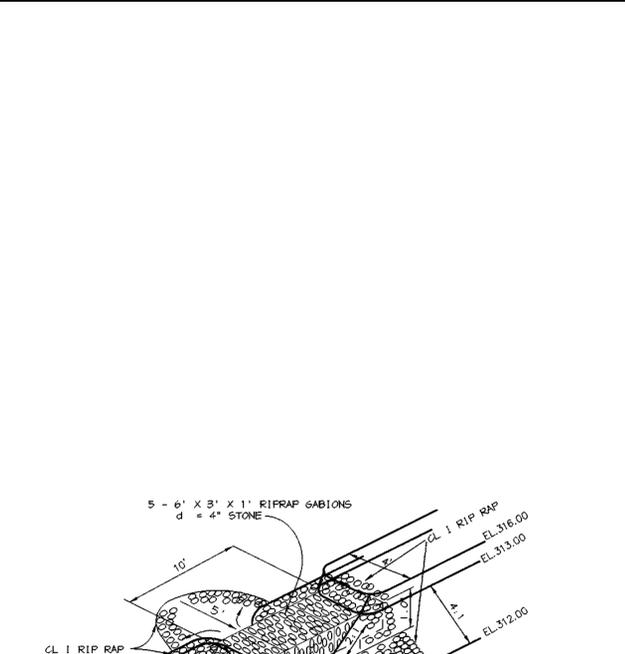
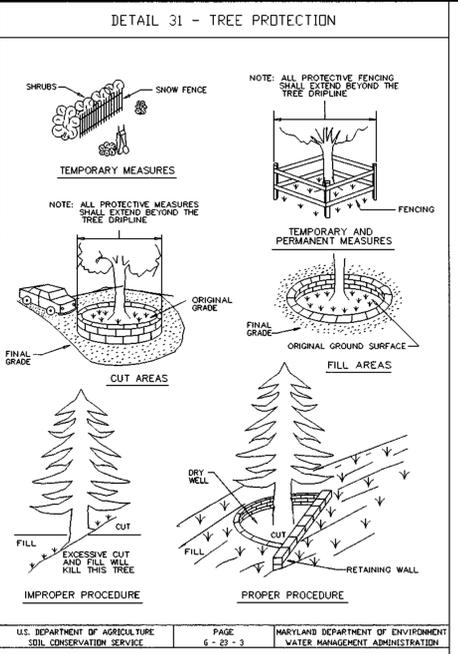
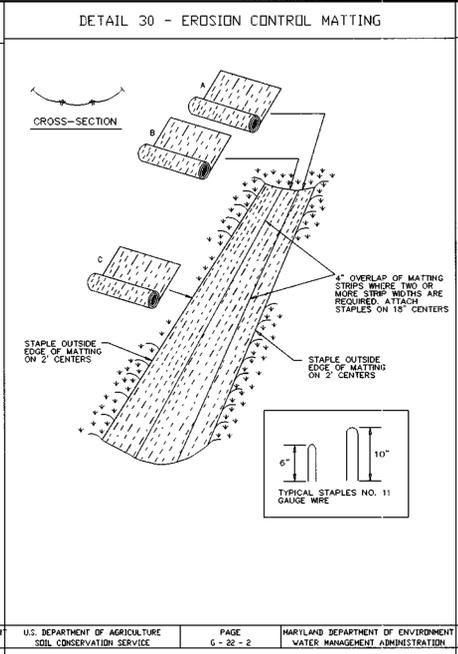
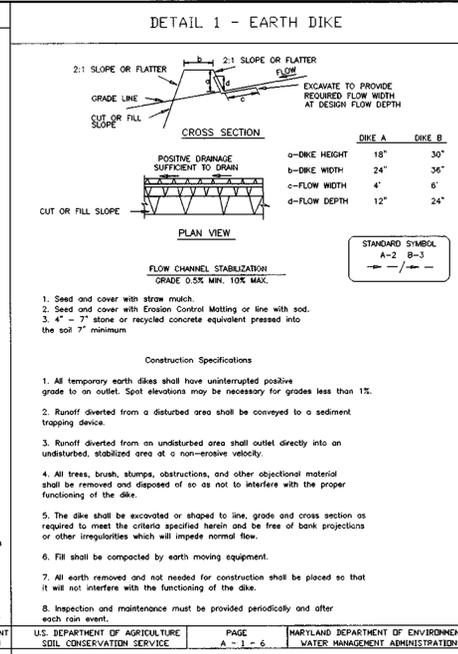
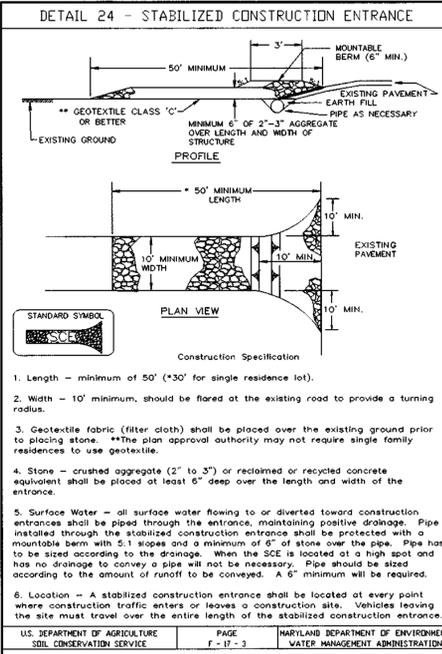
PROJECT: EMERSON SECTION ONE AREA ONE LOTS 1 - 39 & PARCEL A

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

DESIGNED BY: CJR DRAWN BY: DAM PROJECT NO: 99212/FINALS SEED21.DWG DATE: JUNE 19, 2001 SCALE: AS SHOWN DRAWING NO. 15 OF 25

STATE OF MARYLAND CHRISTOPHER J. REID #19949 F-01-140



### RIPRAP OUTLET PROTECTION DETAIL

NO SCALE

STRUCTURE	STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)	Q <sub>50</sub>	V	DEPTH
E-1	9.5"	10'	13'	19"	22.1	1.39	1.36
E-2	9.5"	10'	12'	19"	12.91	1.20	1.06
E-3	9.5"	29'	15'	19"	40.8	5.00	1.27
E-4	9.5"	10'	12'	19"	2.71	0.71	0.43
E-5	9.5"	10'	12'	19"	2.71	0.71	0.43
HW-1	16"	30'	14'	32"	137.54	10.94	7.39
HW-2	16"	5'	9'	32"	137.54	10.94	3.12

\* 100 YEAR STORM

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: *John N. [Signature]* 6/22/01  
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.

ENGINEER: *Chad J. [Signature]* 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.

*Jim [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.

*John [Signature]* 7/6/01  
HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Richard M. [Signature]* 7-6-01  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Chris [Signature]* 7/10/01  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris [Signature]* 7/10/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

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 DETAILS**

RIEMER MUEGGE  
a division of:  
Patton Harris Rust & Associates, pc  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
8918 Centre Park Drive, Columbia, MD 21046 • tel 410.997.8800 fax 410.997.9282

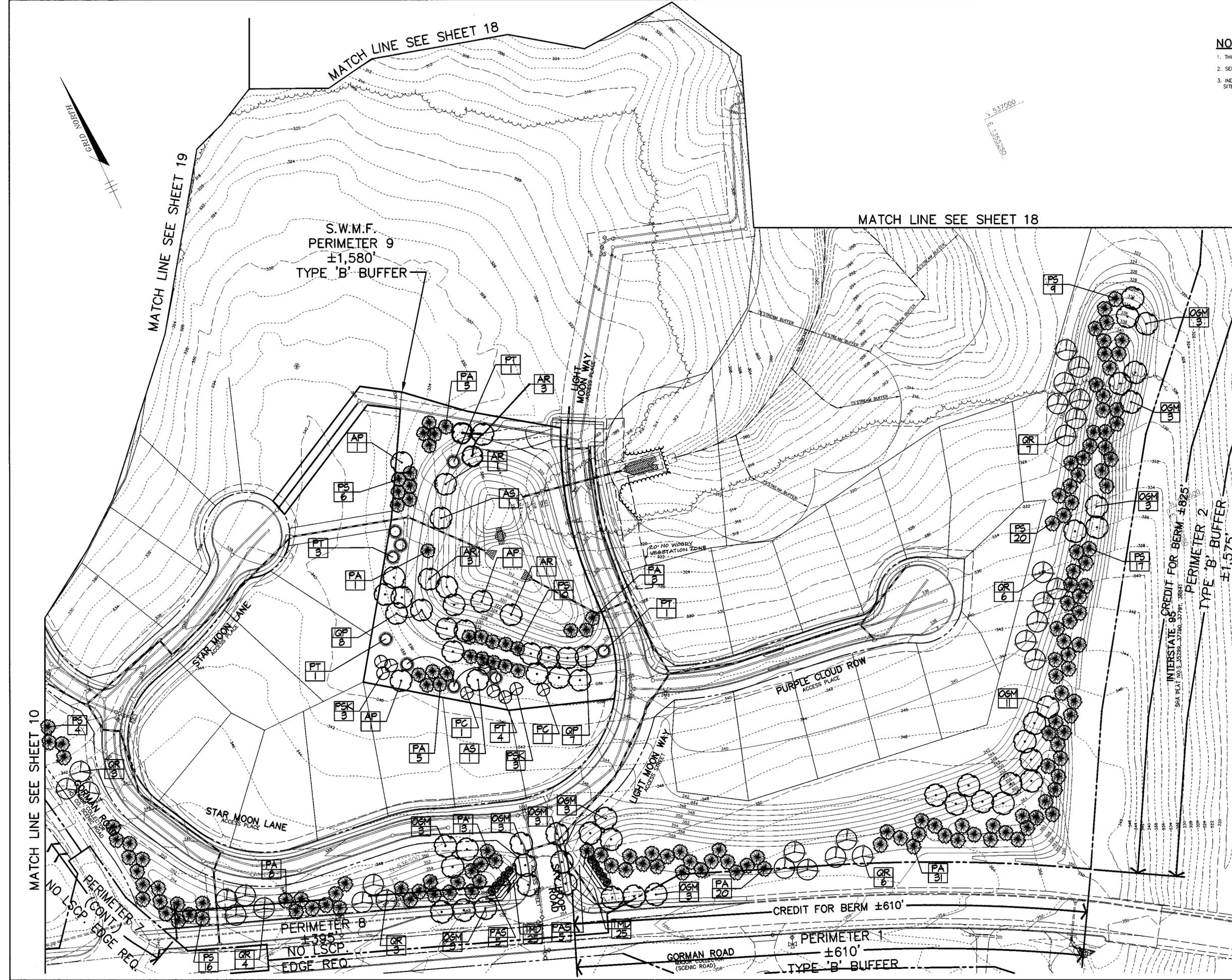
DATE: 6.26.01

DESIGNED BY : CJR  
DRAWN BY: DAM  
PROJECT NO : 99212/FINALS/SEDD01.DWG  
DATE : JUNE 19, 2001  
SCALE : AS SHOWN  
DRAWING NO. 16 OF 25

CHRISTOPHER J. REID #19949

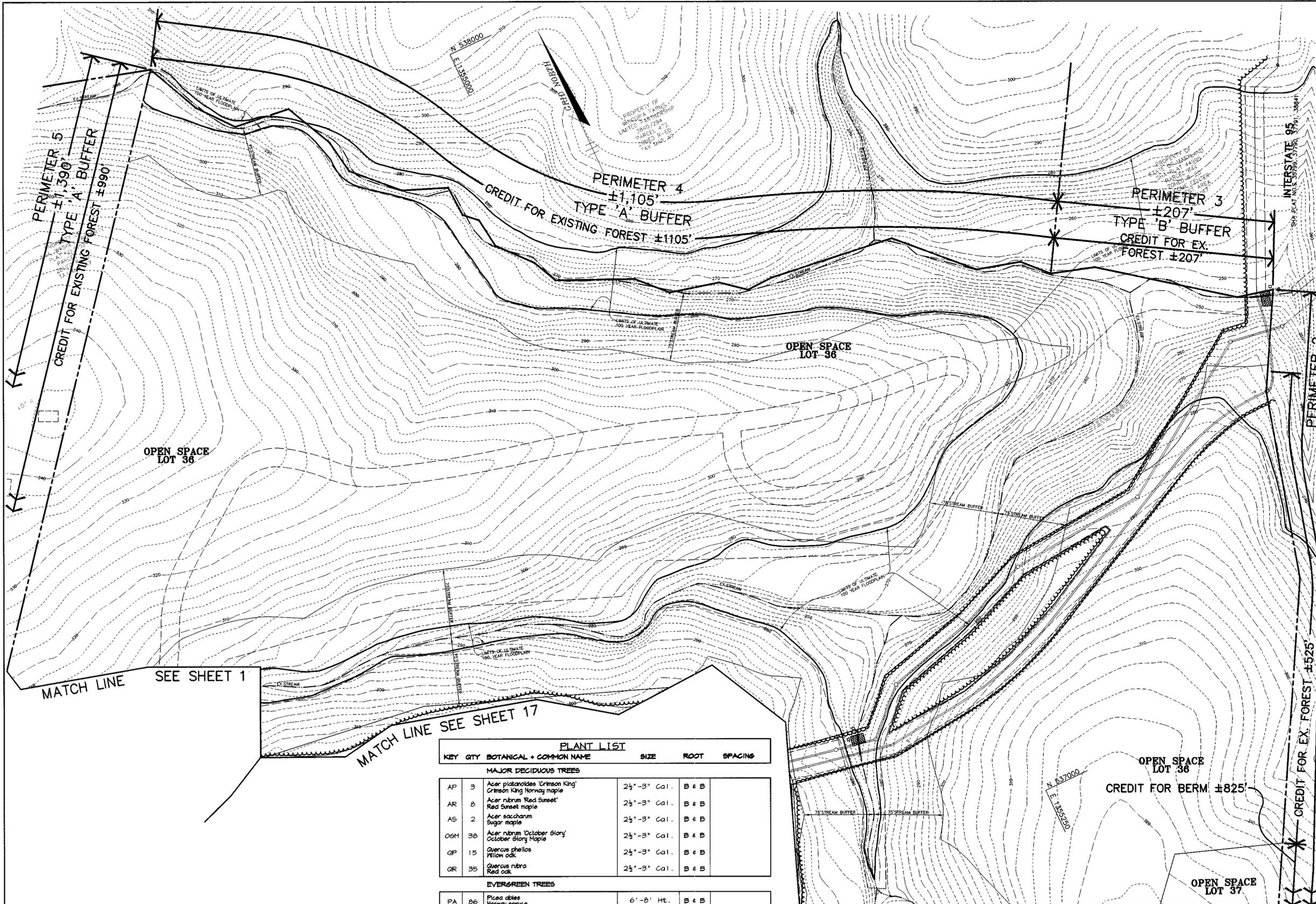
**NOTES:**

1. THIS PLAN IS FOR LANDSCAPE INSTALLATION ONLY.
2. SEE ROAD PLAN SHEETS 2-6 FOR STREET TREES.
3. INDIVIDUAL LOT LANDSCAPING WILL BE PROVIDED AT SITE DEVELOPMENT PLAN STAGE.



AS BUILT CERTIFICATE	
DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Danks</i>	7-6-01
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Andy Hunter</i>	7/17/01
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>David T. Dows</i>	7/10/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
DATE NO.	REVISION
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 410.997.9222	
6-22-01 DATE	DESIGNED BY: CJR
	DRAWN BY: DAM
DATE	PROJECT NO: 99212/FINALS_LSCP/FINAL.DWG
DATE: JUNE 19, 2001	SCALE: 1" = 50'
DATE	DRAWING NO. 17 OF 25

2:\project\99212\FINALS\LSCP\FINAL.DWG Fri Jun 22 09:24:35 2001 Riemer Muegge, a division of PHRA



PLANT LIST					
KEY	QTY	BOTANICAL + COMMON NAME	SIZE	ROOT	SPACING
<b>MAJOR DECIDUOUS TREES</b>					
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	
OSM	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	
<b>EVERGREEN TREES</b>					
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	
<b>MINOR DECIDUOUS TREES</b>					
PC	2	Prunus caroliniana atropurpurea 'Thundercloud' Thundercloud purpleleaf plum	1½"-2" Cal.	B & B	
PSK	6	Prunus serrulata 'Kwanan' Kwanan cherry	1½"-2" Cal.	B & B	
<b>SHRUBS</b>					
THD	50	Taxus media densiformis Densiformis Yew	18"-24"	B & B	

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Andrew M. Quack* 7-6-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*John Hunter* 7/17/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*David Dows* 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

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

DESIGNED BY: CJR

DRAWN BY: DAM

PROJECT NO. 99212/FINALS  
 LSCP2FINAL.DWG

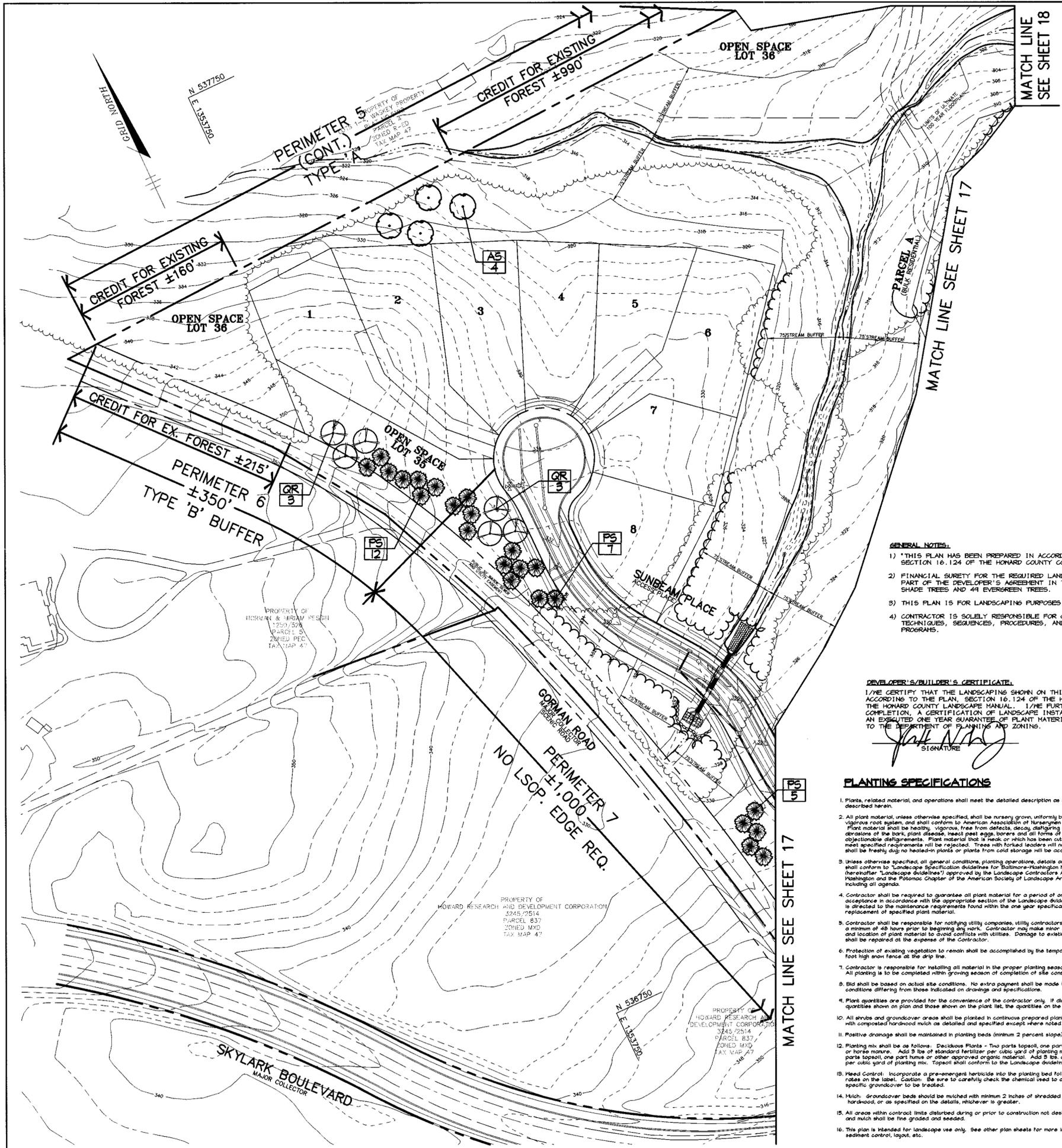
DATE: JUNE 19, 2001

SCALE: 1" = 50'

DRAWING NO. 18 OF 25

DAVID T. DOWS

2:\project\99212\FINALS\LSCP2\FINAL.DWG Fri Jun 22 09:25:43 2001 Riemer Muegge, a division of PH&A



PERIMETER	ADJACENT TO PERIMETER PROPERTIES			ADJACENT TO ROADWAYS				
	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'	±345'
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	0'	0'	240'	610'	1,050'	135'	NA	NA
NUMBER OF PLANTS REQUIRED 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 EVERGREEN TREES	-	-	4	7	21	3	*NA	**NA
SMALL FLOWERING TREES	-	-	-	***10	-	-	-	-

**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')	32
EVERGREEN TREES (± 1 E.T. / 40')	40
NUMBER OF PLANTS PROVIDED:	
SHADE TREES	28*
EVERGREEN TREES (2:1 SUBSTITUTION, 50% MAX.)	40
OTHER TREES (2:1 SUBSTITUTION, 50% MAX.)	8*

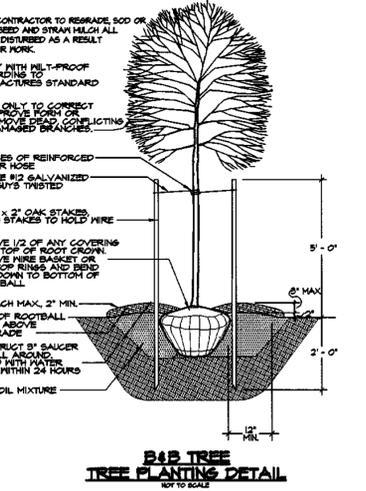
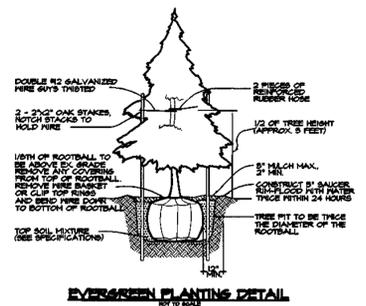
\* SUBSTITUTION 2:1 FLOWERING TREES FOR SHADE TREES.

- GENERAL NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
  - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$28,282 FOR 12 SHADE TREES AND 41 EVERGREEN TREES.
  - THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.
  - 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 EXHIBITED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

*John A. King*  
 SIGNATURE  
 6/22/01  
 DATE

- PLANTING SPECIFICATIONS**
- Plants, related material and operations shall meet the detailed description as given on the plans and as described herein.
  - All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to American Association of Nurserymen (AANU) Standards. Plant material shall be healthy, vigorous, free from defects, decay, distorting roots, unsound injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable infestations. Plant material that is heeled or which has been out 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.
  - Unless otherwise specified, all general conditions, planting operations, details and planting specifications 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 Architects, latest edition, including all agenda.
  - Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.
  - Contractor shall be responsible for notifying utility companies, utility contractors and "Tee Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
  - Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snare fence at the drip line.
  - Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction.
  - 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.
  - 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 plant list take precedence.
  - 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.
  - Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
  - Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 9 lbs of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 9 lbs of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.
  - Seed 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.
  - Mulch: groundcover beds should be mulched with minimum 2 inches of shredded composted hardwood, or as specified on the details, whichever is greater.
  - All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
  - This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.



AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Andrew M. Quaker* 7-6-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Wish Hamner* 7/17/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*David T. Dows* 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

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 21046 • tel 410.997.8800 fax 410.997.9282

6-22-01  
 DATE  
 DESIGNED BY: CJR  
 DRAWN BY: DAM  
 PROJECT NO: 99212/FINALS  
 DATE: JUNE 19, 2001  
 SCALE: 1" = 50'  
 DRAWING NO. 19 OF 25

DAVID T. DOWS

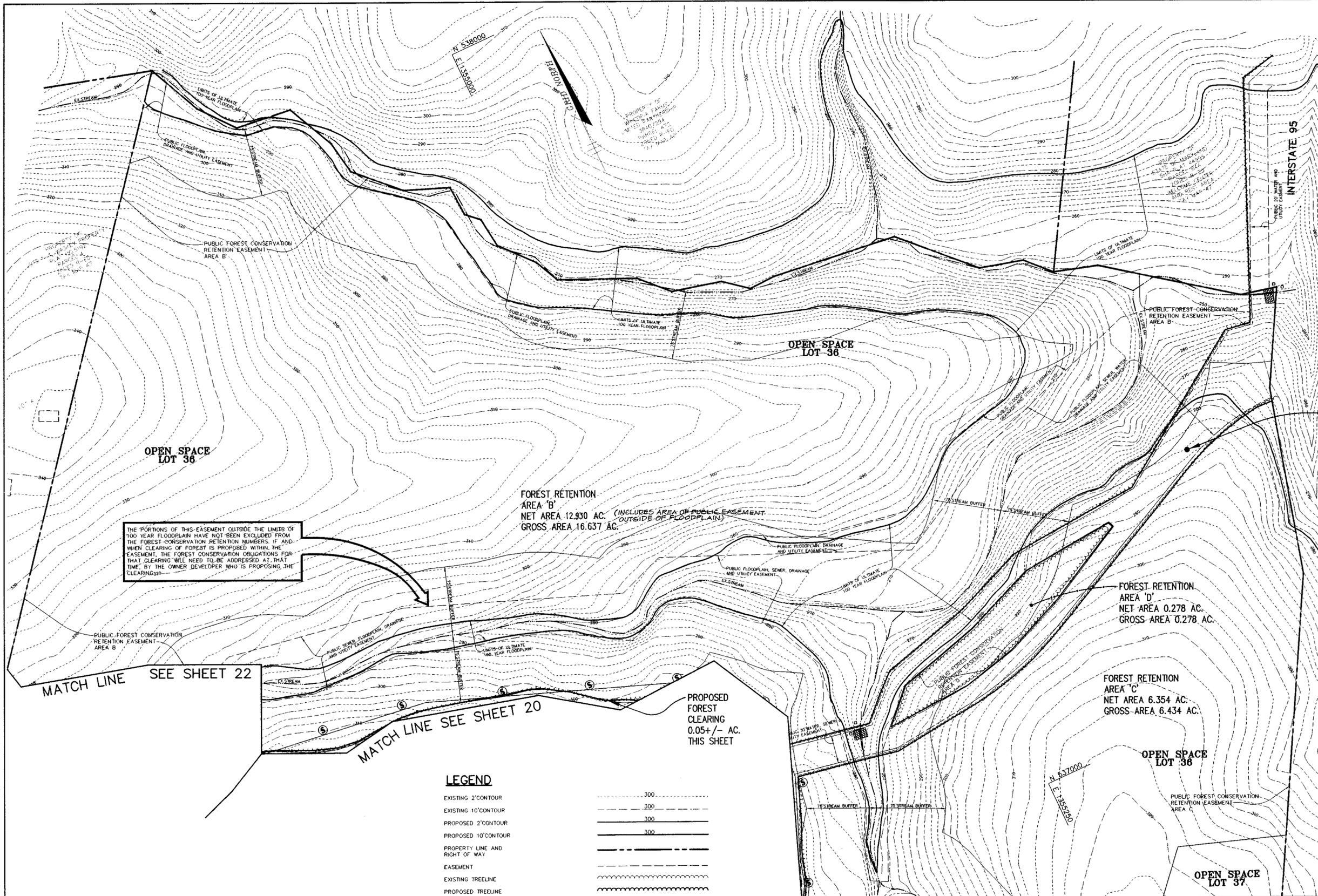


**LEGEND**

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	⑤

AS BUILT CERTIFICATE	
DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Daniels</i>	7-6-01 DATE
CHIEF, BUREAU OF HIGHWAYS	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Wanda Hunter</i>	7/17/01 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	
<i>John DeMunnis</i>	7/10/01 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
DATE NO.	REVISION
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	
DATE	6-20-01
DESIGNED BY:	CJR
DRAWN BY:	DAM
PROJECT NO.	99212/FINALS FOREST1.DWG
DATE:	JUNE 19, 2001
SCALE:	1" = 50'
DRAWING NO.	20 OF 25

p:\proj\sect\99212\FINALS\Forest1.dwg Tue Jun 19 12:16:05 2001 Riemer Nuegge, a division of DMW



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.

FOREST RETENTION AREA 'B'  
NET AREA 12.930 AC. (INCLUDES AREA OF PUBLIC EASEMENT OUTSIDE OF FLOODPLAIN)  
GROSS AREA 16.637 AC.

FOREST RETENTION AREA 'D'  
NET AREA 0.278 AC.  
GROSS AREA 0.278 AC.

FOREST RETENTION AREA 'C'  
NET AREA 6.354 AC.  
GROSS AREA 6.434 AC.

PROPOSED FOREST CLEARING  
0.05+/- AC.  
THIS SHEET

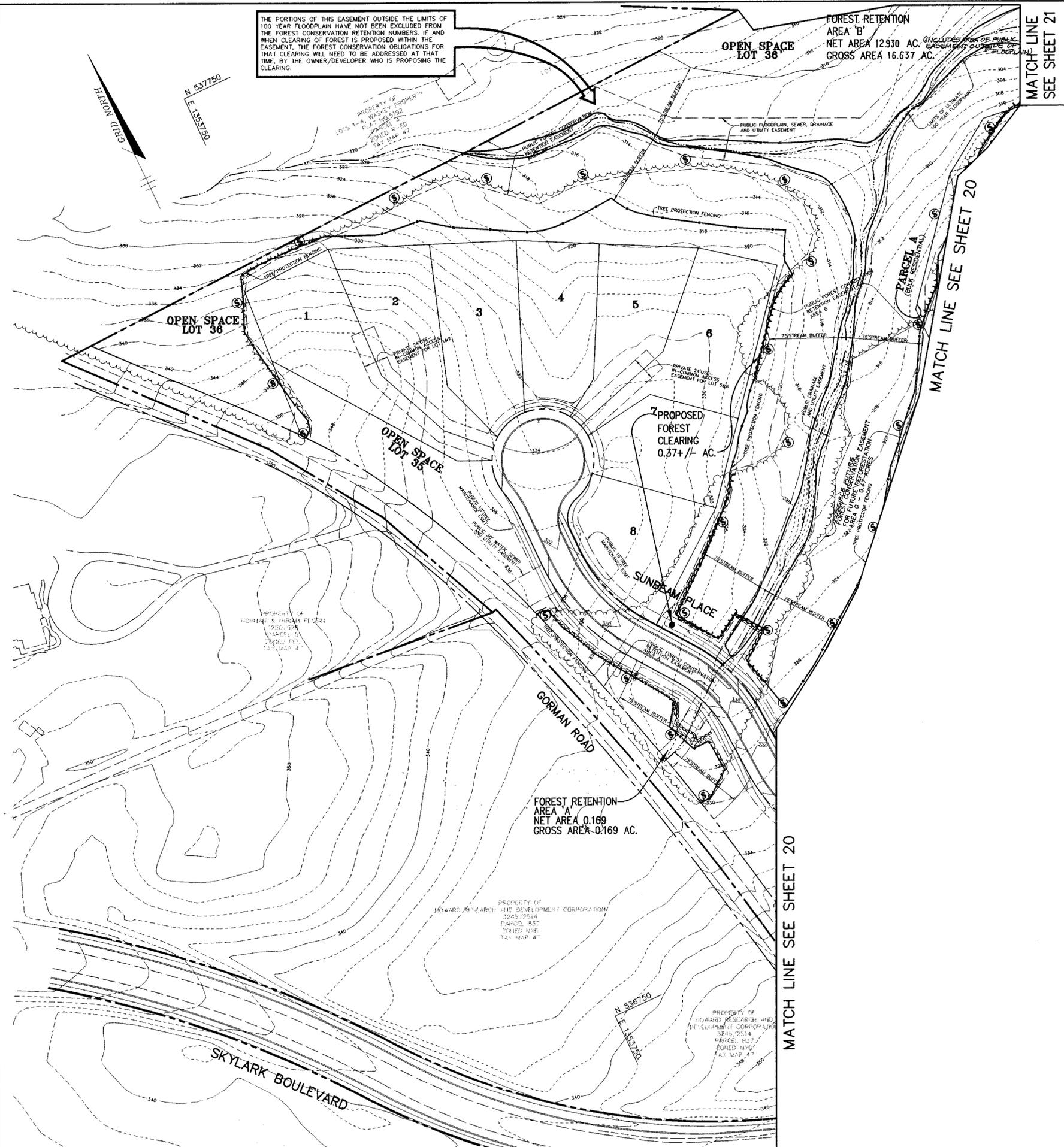
PROPOSED FOREST CLEARING  
0.72+/- AC.

**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

AS BUILT CERTIFICATE	
APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	DATE
<i>Andrew M. Daniels</i> CHIEF, BUREAU OF HIGHWAYS	7-6-01 DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	DATE
<i>Craig Hunter</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/17/01 DATE
<i>John DeLuca</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/10/01 DATE
DATE NO.	REVISION
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	
<b>DMW</b> Duff 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	DESIGNED BY : CJR
	DRAWN BY: DAM
	PROJECT NO : 99212/FINALS FOREST2.DWG
	DATE : JUNE 19, 2001
	SCALE : 1" = 50'
	DRAWING NO. 21 OF 25

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.



**LEGEND**

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

AS BUILT CERTIFICATE	
	DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Danville</i>	7-6-01 DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Wendy Hamilton</i>	7/17/01 DATE
APPROVED : ENGINEERING DIVISION.	
<i>Chris Deamun</i>	7/16/01 DATE
DATE	REVISION
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	
<span style="font-size: small; display: inline-block; vertical-align: middle;">             Daft McCune-Walker, Inc.              200 East Pennsylvania Avenue              Towson, Maryland 21286              (410) 286-3333              Fax 296-4705           </span> <span style="font-size: x-small; display: inline-block; vertical-align: middle; margin-left: 20px;">             A Team of Land Planners,              Landscape Architects,              Engineers, Surveyors &amp;              Environmental Professionals           </span>	
 6-20-01 STATE OF MARYLAND MELANIE WALKER 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

p:\project\99212\FINALS\FORREST3.dwg Tue Jun 19 12:20:05 2001 R:riener Mueggler, e:division of RHEA

**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:**  
I. THERE SHALL 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 =	7.22
F. CONSERVATION THRESHOLD	20%	x d =	9.63

**EXISTING FOREST COVER**

G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN)	23.29
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	16.08
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	13.67

**BREAK EVEN POINT**

J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	12.36
K. CLEARING PERMITTED WITHOUT MITIGATION	10.94

**PROPOSED FOREST CLEARING**

L. TOTAL AREA OF FOREST TO BE CLEARED	3.56
M. TOTAL AREA OF FOREST TO BE RETAINED	19.73

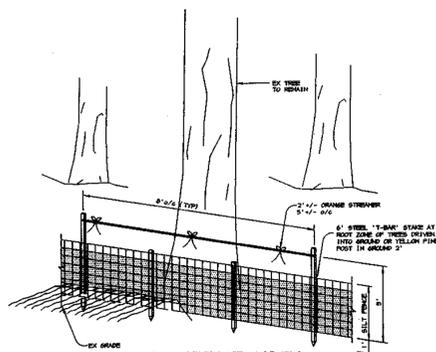
**PLANTING REQUIREMENTS**

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD	0.87
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	0.00
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	10.00
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	2.2

**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.	12.930 Ac.
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.	21.923 Ac.

\* 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.



- NOTES:**
- SILT FENCE TO BE NEEDED INTO THE SOIL.
  - HIRE, SAND FENCE, ETC. FOR TREE PROTECTION ONLY.
  - BOUNDARIES OF RETENTION AREA SHALL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
  - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
  - AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
  - DEVICE SHOULD BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION.
  - PROTECTION SIGNS ARE ALSO REQUIRED. SEE FOREST CONSERVATION PLAN FOR DETAIL AND LOCATION.
  - LOCATE FENCE OUTSIDE THE CRITICAL ROOT ZONE.

**FOREST CONSERVATION SEQUENCE OF OPERATIONS**

- 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 shall include the Contractor and representatives from Runer Haggis & Associates, Inc. (RHA), The Howard County Department of Planning and Zoning (DPZ) and the owner. The Contractor shall be notified by the DPZ to the time and place of the field meeting, should they wish to send a representative. The purpose of this meeting shall be to review the approved PCP and to field verify the correct Limits of Disturbance (LOD).
- 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.
- 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.
- 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.
- 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 indicators), 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.
- 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 observation 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.
- 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.
- 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.

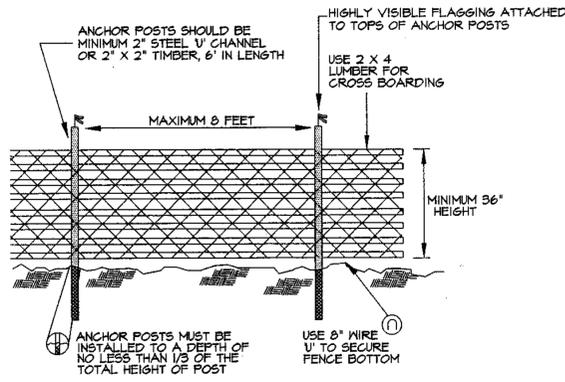
**GOALS AND OBJECTIVES**

DEVELOPMENT OF EMERSON SECTION I UNDER THE CURRENT FOREST CONSERVATION ACT REQUIRES THE CLEARING OF APPROXIMATELY 8.56 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 19.73 ACRES OF FOREST; THIS AMOUNT IS 7.37 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)

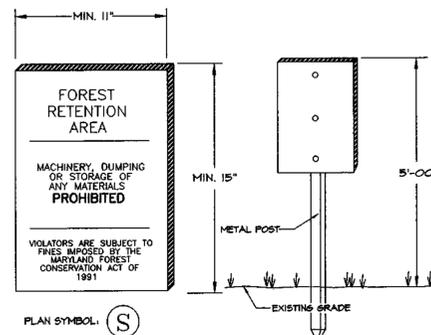
THE GOALS AND OBJECTIVES OF THIS FOREST CONSERVATION PLAN ARE TO PROVIDE FOR SHORT TERM FOREST RETENTION AREA PROTECTION BY IDENTIFYING THOSE AREAS AND INDICATING THE LOCATIONS OF FOREST PROTECTION FENCING AND SIGNAGE. ESTABLISHING THESE SHORT TERM PROTECTION MEASURES PRIOR TO ANY EARTH MOVING ACTIVITIES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

**SEQUENCE OF OPERATIONS**

- PRE-CONSTRUCTION SITE PREPARATION**
- INSTALL TREE PROTECTION FENCE AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
  - INSTALL TREE PROTECTION SIGNAGE.
  - STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.



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



- NOTES:**
- SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION / REFORESTATION / AFFORESTATION EASEMENT BORDER.
  - SEE PLAN FOR SPACINGS.
  - 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.  
*Andrew M. Squire* 7-6-01  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Chris Houston* 7/17/01  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mark Dammann* 7/12/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

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**  
Dan McCune-Walker, Inc.  
280 East Pennsylvania Avenue  
Towson, Maryland 21286  
(410) 296-3333  
Fax: 296-4705

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

DESIGNED BY: CJR

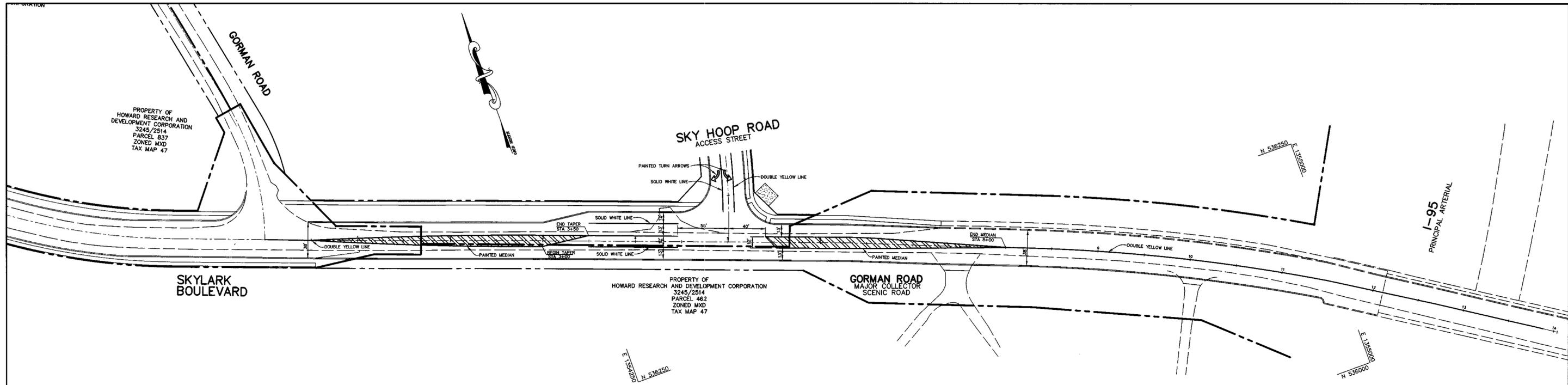
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PROJECT NO: 99212/FINALS  
"FOREST4.DWG"

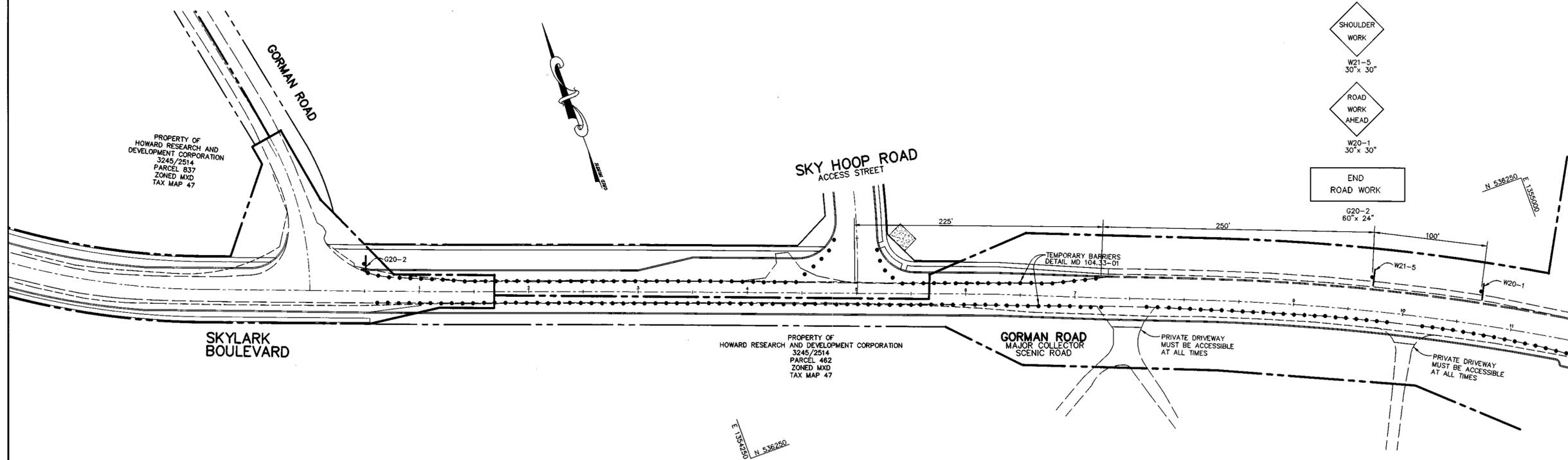
DATE: JUNE 19, 2001

SCALE: AS SHOWN

DRAWING NO. 23 OF 25



**STRIPING PLAN**  
SCALE: 1" = 50'



**TRAFFIC CONTROL PLAN**  
SCALE: 1" = 50'

**TRAFFIC CONTROL SIGNAGE LEGEND**

- ↑ SIGN
- TEMPORARY BARRIER
- ◇ SHOULDER WORK  
W21-5  
30" x 30"
- ◇ ROAD WORK AHEAD  
W20-1  
30" x 30"
- END ROAD WORK  
G20-2  
60" x 24"

AS BUILT CERTIFICATE	
DATE	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	7-6-01
<i>Richard M. Runko</i> CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	7/17/01
<i>Cindy Hamstra</i> CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Chris Dammann</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/10/01
DATE NO.	REVISION
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 5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	
GORMAN ROAD TRAFFIC CONTROL PLAN AND STRIPING PLAN	

**RIEMER MUEGGE**  
a division of  
**Patton Harris Rust & Associates, pc**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
5818 Centre Park Drive, Columbia, MD 21045 • Tel 410.997.8800 Fax 410.997.8232

DATE: 6.26.01

DESIGNED BY: CJR  
DRAWN BY: DAM  
PROJECT NO.: 99212/FINALS  
DATE: JUNE 19, 2001  
SCALE: AS SHOWN  
DRAWING NO.: 24 OF 25

CHRISTOPHER J. REID #19949

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**DETAIL 5.2: UTILITY CROSSING**

**Description**  
The work shall consist of installing erosion control devices in and adjacent to the construction of utility crossings.

**Material Specifications**  
Materials for sandbag and stone stream diversions shall meet the following requirements:  

- Riprap Riprap shall be washed and have a minimum diameter of 6 inches (15 centimeters).
- Sandbags Sandbags shall consist of materials which are resistant to ultraviolet radiation, tearing, and puncture and shall be woven tightly enough to prevent leakage of the fill material (sand, fine gravel, etc.).

**Installation Guidelines**  
All erosion and sediment control devices, including dewatering basins, shall be implemented as the first order of business according to a plan approved by the Water Management Administration (WMA). (See Maryland Standards and Specifications for Sediment Control.) The proposed construction sequence is as follows (refer to the attached figures):  

- The contractor shall insure that a continuous perimeter control barrier is in place to minimize the amount of pollutants entering the flow.
- Excavated topsoil and subsoil shall be kept separate, placed on the upland side of the excavation and replaced in their natural order.
- All construction shall take place during stream low flows. The length of construction time shall be limited to a maximum of 5 days for each crossing.
- All utility crossings shall be placed a minimum of 3 feet (1 meter) beneath the streambed unless an alternative section is specifically approved by the WMA. (For instances where a 3-foot cover is not viable, two alternate stabilization options are given in the attached detail.)
- The stream shall be diverted by an approved temporary stream diversion, the construction area shall be dewatered, and any disturbed banks shall be stabilized. (The contractor may elect to construct the utility crossing in two stages. In this case, a WMA approved flow barrier may be constructed to keep the construction area dry.)
- Once the crossing is completed, the diversion shall be removed from up-stream to downstream. Sediment control devices, including perimeter erosion controls, are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspection authority approves their removal.

**DETAIL 5.2(a): UTILITY CROSSING**

**PLAN VIEW**  
Diagram showing utility pipe access, filter bag, sump pit, flow, stream bed, units of disturbance, utility pipe access, utility centerline, stream bed, bank protection, utility pipe, and a 3-foot minimum distance.

**SECTION A-A**  
Cross-section showing utility pipe, bank protection, and stream bed.

**SECTION B-B**  
Cross-section showing utility pipe and stream bed.

**DETAIL 5.2(b): UTILITY CROSSING (Continued)**

**SECTION VIEW ALTERNATE OPTION 1**  
Cross-section showing flow, 6 ft (2 m) width, 18 in (46 cm) height, cutoff wall, concrete encasement, and fabric.

**SECTION VIEW ALTERNATE OPTION 2**  
Cross-section showing 12-in (30-cm) riprap, 18 in (46 cm) height, 6 in (15 cm) washed gravel, and compacted fill.

**STAKE THROUGH CONSTRUCTION FENCE TO RESTRAIN, IF SLOPE IS GREATER THAN 5 PERCENT.**

**2x2' STAKES**  
**2.5' MAX**  
**15'**  
**CUT OPEN CORNER OF BAG AND CLAMP ON DOWELING HOSE**

**STAKE @ 2.5' C.C. TO HOLD ON SLOPES**  
**CONSTRUCTION FENCE FOR RESTRAINT AND AID IN LIFTING USED BAG.**  
**0 TO 10% SLOPE**  
**5'**  
**SECTION**  
**FILTER FABRIC (GEOTEXTILE F)**

**NOTES:**  

- FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREA.
- WIDTH AND LENGTH SHALL BE AS SHOWN.
- THE FILTER BAG MUST BE STOKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
- FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
- SENSE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.
- FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:  

APPROXIMATE	30 LBS/100 SQ YD	TEST METHOD D1978
MINIMUM	20 LBS/100 SQ YD	TEST METHOD D1978
MINIMUM	62 LB/100 SQ YD	TEST METHOD D1978
MINIMUM	1.5 LB/100 SQ YD	TEST METHOD D1978

**FILTER BAG**  
TEMPORARY EROSION CONTROL MEASURE (FB)

**DETAIL 2.1A: CULVERT PIPE W/ACCESS ROAD NOTES**

**Description**  
The work shall consist of installing a culvert pipe and associated access road for the purpose of erosion control when construction activities occur within the stream corridor.

**Material Specifications**  
Materials for culverts with temporary access roads shall meet the following requirements:  

- Riprap Riprap shall be sized to resist a stream's baseflow if the duration of the project is less than one month. Otherwise, the riprap shall be designed to resist bankfull discharge.
- Sandbags/Sandbags shall consist of materials that are resistant to ultraviolet radiation, tearing, and puncture and shall be woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
- Sheeting Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

**Installation Guidelines**  
All erosion and sediment control devices (including mandatory dewatering basins) shall be installed as the first order of business according to a plan approved by the Water Management Administration (WMA). Additionally, all excavated material shall be disposed of in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA. A culvert pipe with a temporary access road shall be constructed as follows (refer to the attached figure):  

- Culverts shall have a minimum capacity sufficient to convey the stream's base flow for projects with duration of 2 weeks or less. For projects of longer duration, culverts shall have a capacity sufficient to convey bankfull flow.
- Sandbag or stone flow barriers shall be sized and installed as detailed in the installation guidelines. The materials shall be sized to withstand normal streamflow velocities.
- Temporary culvert crossings shall be constructed in accordance with Standard Detail (TAC-1), 1990 Maryland Standards and Specifications for Sediment Control and erosion control.
- Sediment control devices shall remain in place until all disturbed areas have been stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

**DETAIL 2.1: CULVERT PIPE W/ACCESS ROAD**

**TEMPORARY STREAM**  
Cross-section showing area of disturbance, diversion pipe (24" diameter), flow barrier, temporary culvert crossing, dewatering basin, and stream bank.

**PROFILE VIEW**  
Profile view showing design flow level, area of disturbance, diversion pipe (24" diameter), and stream bank.

**DETAIL 20B - SUMP PIT**

**CROSS SECTION**  
Cross-section showing clean water discharge, suction line to pump, 3" minimum, existing ground line, standpipe wrapped in 1/2" hardware cloth and geotextile class E, side slope (varies), 12" - 36" diameter perforated corrugated metal or PVC pipe, watertight cap or plate, clean gravel or #57 aggregate fill, and a 12" base of #57 stone.

**Construction Specifications**  

- Pit dimensions are variable, with the minimum diameter being 2 times the standpipe diameter.
- The standpipe should be constructed by perforating a 12" to 24" diameter corrugated or PVC pipe. Then wrapping with 1/2" hardware cloth and Geotextile Class E. The perforations shall be 1/2" x 6" slots or 1" diameter holes.
- A base of filter material consisting of clean gravel or #57 stone should be placed in the pit to a depth of 12". After installing the standpipe, the pit surrounding the standpipe should then be backfilled with the same filter material.
- The standpipe should extend 12" to 18" above the top of the pit or the riser crest elevation (basin dewatering only) and the filter material should extend 3" minimum above the anticipated standing water elevation.

**DETAIL 36 - TEMPORARY ACCESS CULVERT**

**CROSS SECTION**  
Cross-section showing aggregate fill, filter cloth, and high flow areas.

**MULTIPLE PIPES**  
Diagrams showing aggregate fill, filter cloth, and high flow areas for multiple pipes.

**NOTE:** SEE DETAIL 1.4: DIVERSION PIPE OF THE MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION FOR PROPER INSTALLATION OF DIVERSION PIPE, AVAILABLE FROM THE ENGINEER.

**TEMPORARY STREAM DIVERSION**  
PAGE 7-8  
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE**  
PAGE 0-13-2  
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE**  
PAGE 0-29-40  
MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**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 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**  
*[Signature]* 6/22/01  
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.

**ENGINEER**  
*[Signature]* 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**  
*[Signature]* 7/6/01  
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**  
*[Signature]* 7/6/01  
DATE

**AS BUILT CERTIFICATE**  
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

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

**CHIEF, DEVELOPMENT ENGINEERING DIVISION**  
*[Signature]* 7/16/01  
DATE

DATE NO. REVISION

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

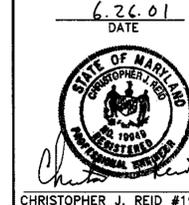
**PROJECT**  
EMERSON  
SECTION ONE AREA ONE  
LOTS 1 - 39 & PARCEL A

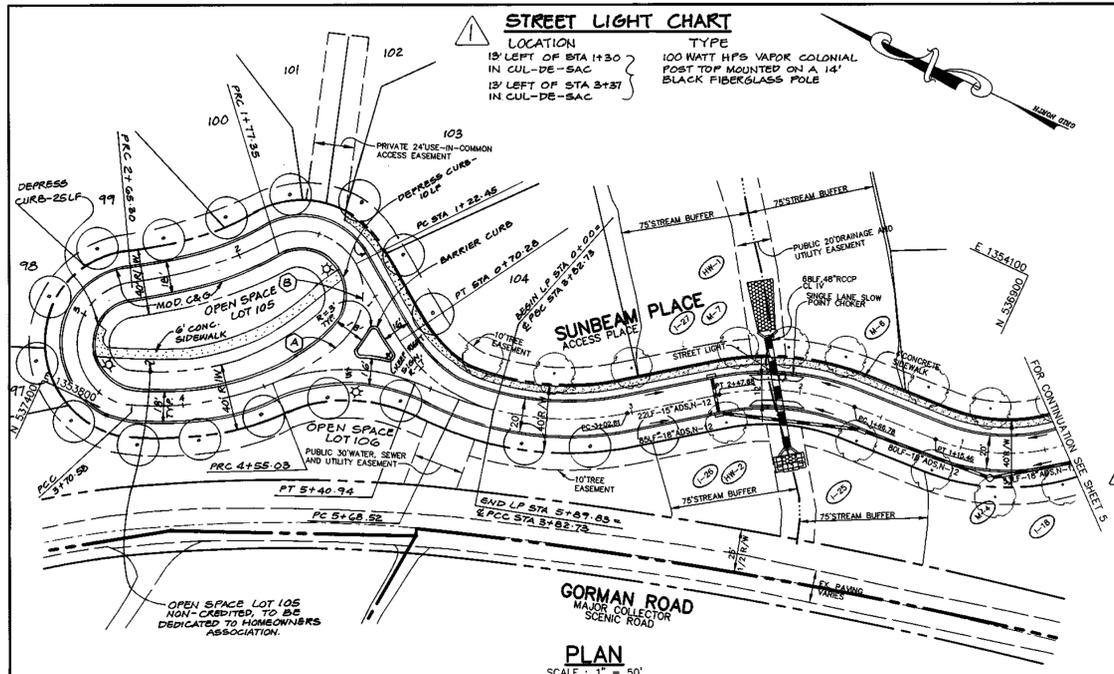
**AREA**  
TAX MAP 47 BLOCK 3.8 & 9  
ZONED: R-ED PARCEL: P/O 837  
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**TITLE**  
SEDIMENT CONTROL 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 410.997.8800 Fax 410.997.8282

6.26.01  
DATE  
DESIGNED BY: CJR  
DRAWN BY: DAM  
PROJECT NO: 99212/FINALS  
SEDDETA.DWG  
DATE: JUNE 19, 2001  
SCALE: AS SHOWN  
DRAWING NO. 25 OF 25





**STREET LIGHT CHART**

LOCATION TYPE  
 15' LEFT OF STA 1+30 IN CUL-DE-SAC  
 100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE

**STREET LIGHT CHART**

LOCATION TYPE  
 10' RIGHT OF STA 2+11 SUNBEAM PLACE  
 100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE

**CL CURVE DATA**

FROM CL STA 0+32.37 TO STA 1+15.46  
 RADIUS = 115.00'  
 LENGTH = 83.09'  
 TANGENT = 43.45'  
 DELTA = 41°23'48"  
 CHORD = N 23°52'47" W 81.29'

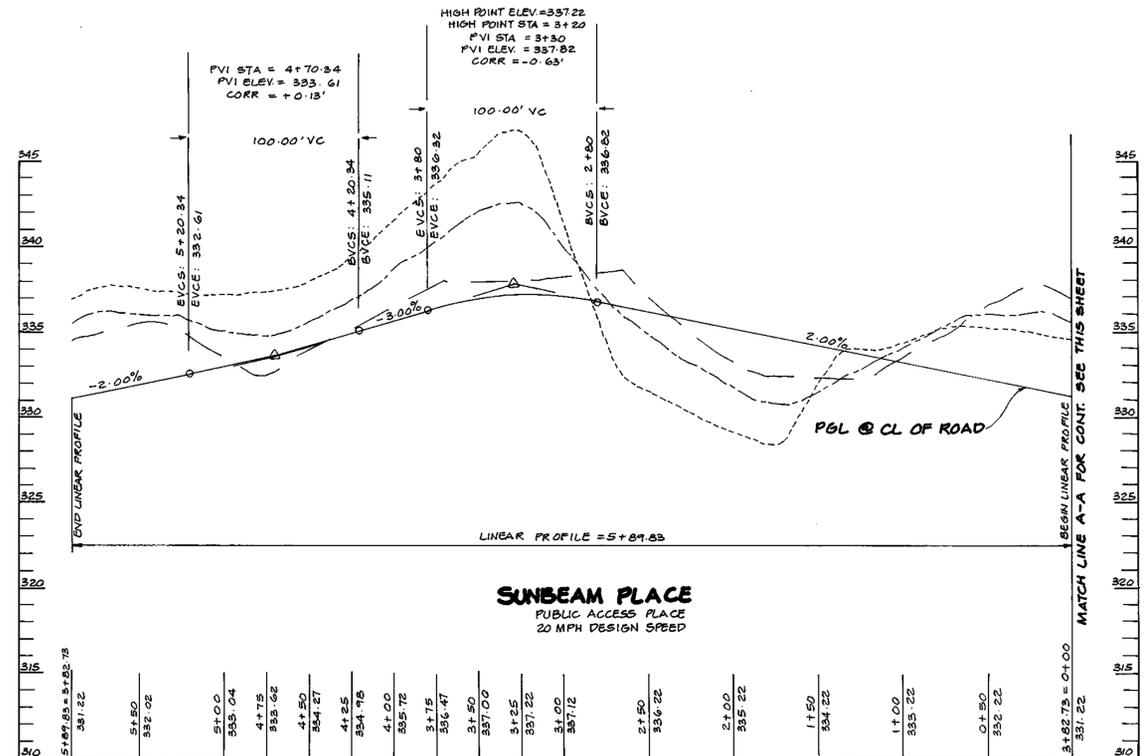
**CL CURVE DATA**

FROM CL STA 1+66.78 TO STA 2+47.68  
 RADIUS = 140.00'  
 LENGTH = 80.90'  
 TANGENT = 41.62'  
 DELTA = 33°06'36"  
 CHORD = S 19°44'11" E 79.78'

**CL CURVE DATA**

FROM CL STA 3+02.81 TO STA 3+82.73  
 RADIUS = 175.00'  
 LENGTH = 79.92'  
 TANGENT = 40.67'  
 DELTA = 28°10'02"  
 CHORD = N 25°12'28" W 74.28'

**PLAN**  
 SCALE: 1" = 50'



**SUNBEAM PLACE**  
 PUBLIC ACCESS PLACE  
 20 MPH DESIGN SPEED

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

**CL CURVE DATA**

FROM CL STA 0+00 TO STA 0+70.28  
 RADIUS = 70.00'  
 LENGTH = 70.28'  
 TANGENT = 31.04'  
 DELTA = 44°44'21"  
 CHORD = N 12°14'43" E 65.50'

**CL CURVE DATA**

FROM CL STA 1+22.45 TO STA 1+77.55  
 RADIUS = 36.00'  
 LENGTH = 54.90'  
 TANGENT = 34.39'  
 DELTA = 87°22'38"  
 CHORD = N 08°43'31" W 49.73'

**CL CURVE DATA**

FROM CL STA 1+77.35 TO STA 2+66.50  
 RADIUS = 240.00'  
 LENGTH = 87.95'  
 TANGENT = 44.47'  
 DELTA = 20°59'48"  
 CHORD = N 41°54'56" W 87.46'

**CL CURVE DATA**

FROM CL STA 2+66.30 TO STA 3+70.58  
 RADIUS = 36.00'  
 LENGTH = 103.28'  
 TANGENT = 33.015'  
 DELTA = 167°33'14"  
 CHORD = S 64°48'22" W 71.56'

**CL CURVE DATA**

FROM CL STA 3+70.58 TO STA 4+55.03  
 RADIUS = 165.00'  
 LENGTH = 84.45'  
 TANGENT = 45.18'  
 DELTA = 29°19'39"  
 CHORD = S 53°36'05" E 85.54'

**CL CURVE DATA**

FROM CL STA 4+55.03 TO STA 5+40.94  
 RADIUS = 101.00'  
 LENGTH = 85.91'  
 TANGENT = 45.32'  
 DELTA = 45°07'15"  
 CHORD = S 25°43'17" E 85.70'

**CL CURVE DATA**

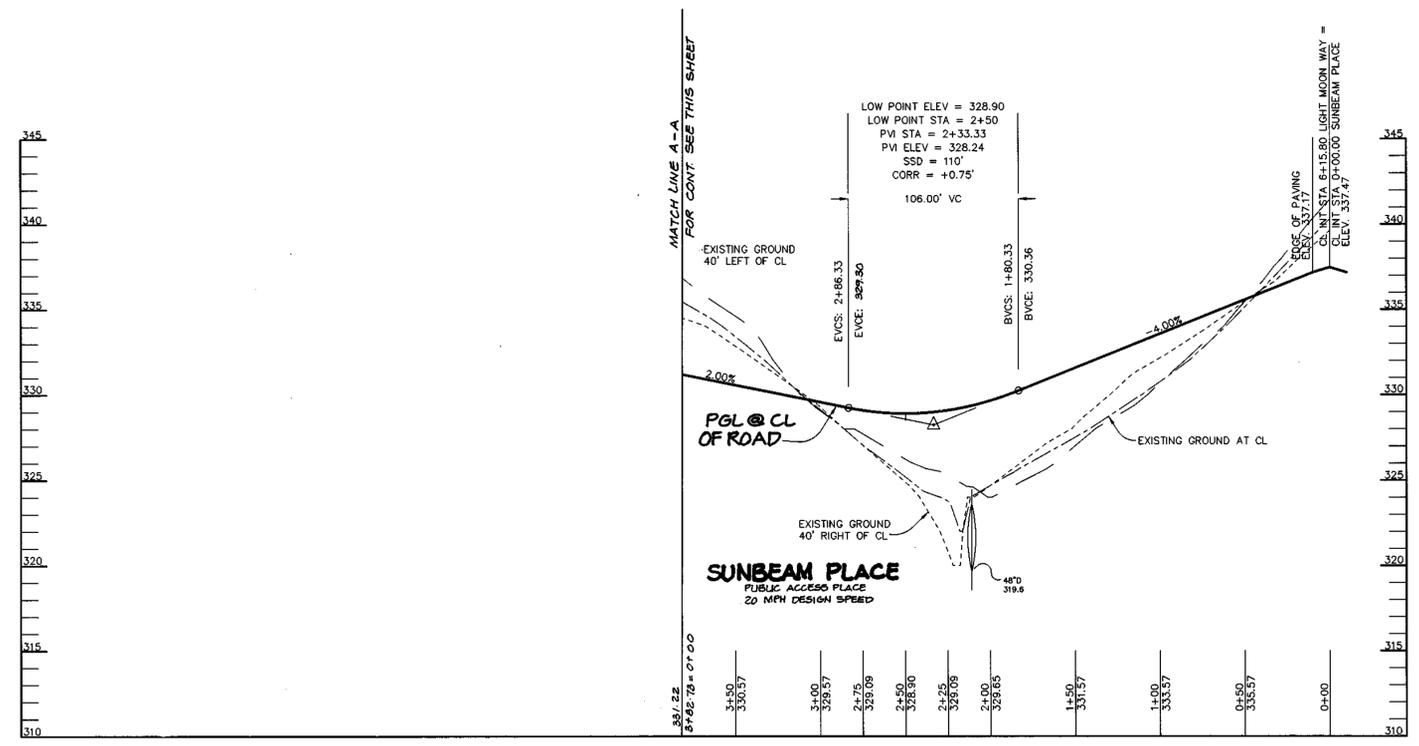
FROM CL STA 5+40.94 TO STA 5+89.89  
 RADIUS = 175.00'  
 LENGTH = 21.51'  
 TANGENT = 10.67'  
 DELTA = 08°58'34"  
 CHORD = S 06°58'10" E 21.24'

**CL CURVE DATA**

RADIUS = 173.07'  
 LENGTH = 47.68'  
 TANGENT = 23.91'  
 DELTA = 15°43'46"  
 CHORD = S 56°34'45" E 47.53'

**CL CURVE DATA**

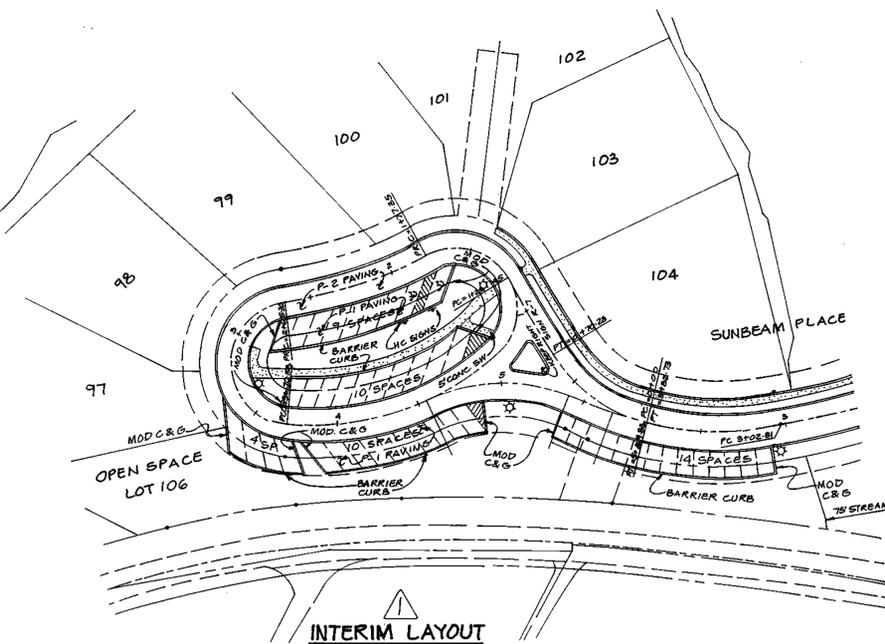
RADIUS = 36.00'  
 LENGTH = 30.88'  
 TANGENT = 30.30'  
 DELTA = 80°10'36"  
 CHORD = N 75°08'06" E 46.37'



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

**TEMPORARY STREET LIGHT CHART**

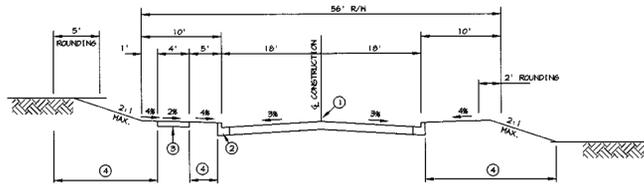
LOCATION TYPE  
 14' LEFT OF STA 3+04 SUNBEAM PLACE  
 100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE



**INTERIM LAYOUT**  
 SCALE: 1" = 50'

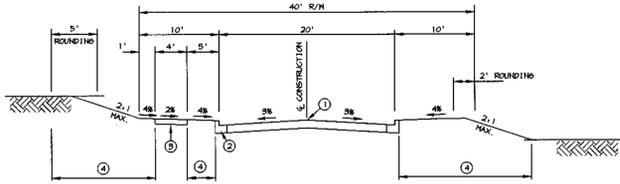
AS BUILT CERTIFICATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	DATE: 7-6-01
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	DATE: 7/17/01
APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE: 7/10/01
01-02-02	MODIFIED SUNBEAM PLACE CUL-DE-SAC
OWNER / DEVELOPER	THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
PROJECT	EMERSON SECTION ONE AREA ONE
AREA	TAX MAP 47 BLOCK 3,8 & 9
TITLE	PLAN AND PROFILE OF SUNBEAM PLACE
RIEMER MUEGGE a division of: Patton Harris Rust & Associates, pc	
DESIGNED BY: CJR	
DRAWN BY: DAM	
PROJECT NO: 99212/FINALS	
DATE: JUNE 19, 2001	
SCALE: AS SHOWN	
DRAWING NO. 6 OF 25	

P:\proj\199212\FINALS\006.dwg Fri Jun 22 10:40:27 2001 Riemer Muegge, a division of PH&RA



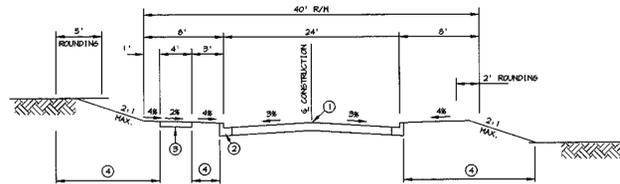
- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (MOD. COMB. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

**TYPICAL SECTION ACCESS STREET**  
NO SCALE  
SKY HOOP ROAD FROM STA 0+19 TO STA 1+29 - 30 MPH DESIGN SPEED



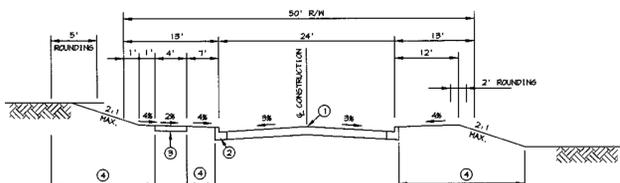
- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (MOD. COMB. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

**TYPICAL SECTION ACCESS PLACE**  
NO SCALE  
PURPLE CLOUD ROW FROM STA 0+00 TO STA 2+73 - 20 MPH DESIGN SPEED  
STAR MOON LANE FROM STA 6+16 TO STA 8+05 - 25 MPH DESIGN SPEED  
SUNBEAM PLACE FROM STA 0+00 TO STA 3+82 - 20 MPH DESIGN SPEED



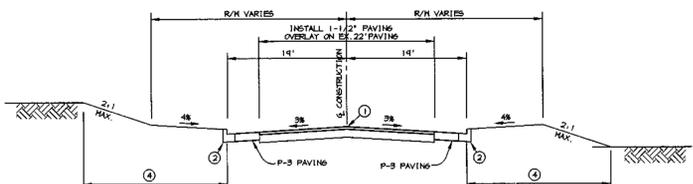
- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (MOD. COMB. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

**TYPICAL SECTION ACCESS STREET**  
NO SCALE  
LIGHT MOON WAY FROM STA 2+11 TO STA 5+26 - 25 MPH DESIGN SPEED  
STAR MOON LANE FROM STA 0+00 TO STA 6+16 - 25 MPH DESIGN SPEED



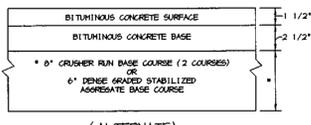
- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (MOD. COMB. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

**TYPICAL SECTION ACCESS STREET**  
NO SCALE  
LIGHT MOON WAY FROM STA 0+00 TO STA 2+11 - 30 MPH DESIGN SPEED



- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB (STD. CURB & GUTTER) SEE DESIGN MANUAL.
- ③ INDICATES 2" TOPSOIL, SEED AND MULCH.

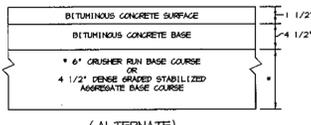
**TYPICAL SECTION GORMAN ROAD**  
NO SCALE  
FROM STA 0+00 TO STA 12+00



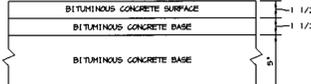
(ALTERNATE)



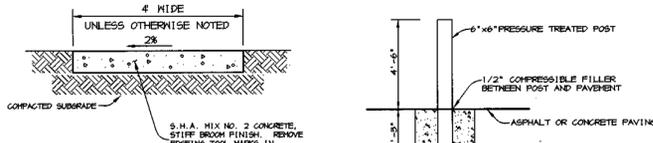
**P-2 PAVING**  
NO SCALE



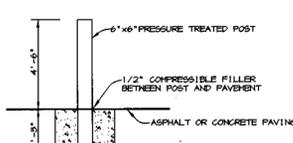
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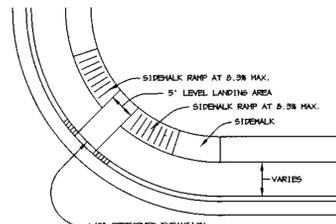
**P-3 PAVING**  
NO SCALE



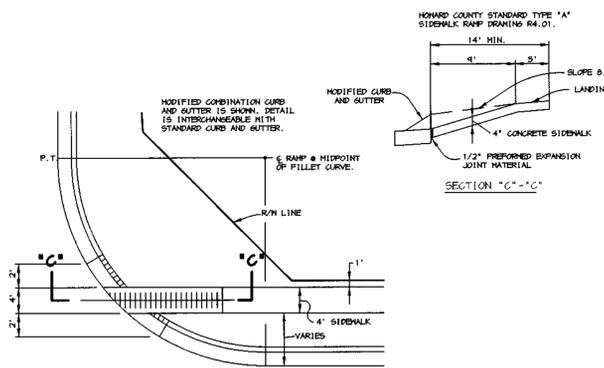
**SIDEWALK DETAIL**  
NO SCALE



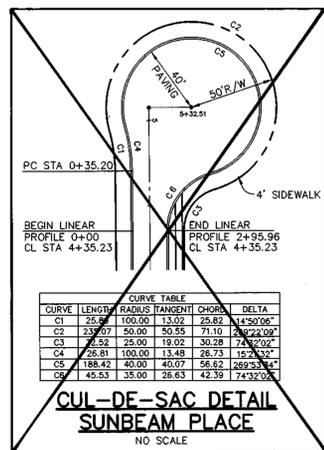
**BOLLARD DETAIL**  
NO SCALE



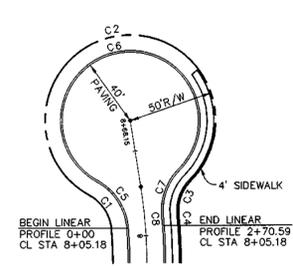
**HANDICAP RAMP DETAIL**  
NO SCALE



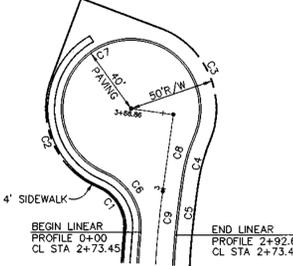
**HANDICAP RAMP DETAIL**  
NO SCALE



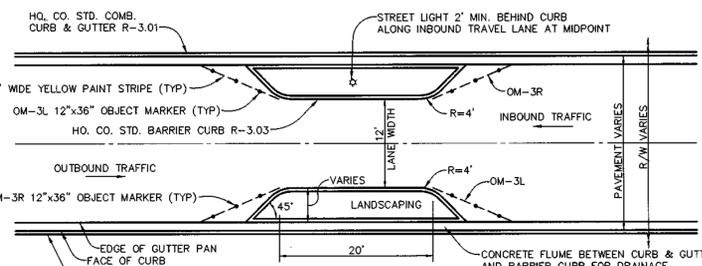
**CUL-DE-SAC DETAIL**  
**SUNBEAM PLACE**  
NO SCALE



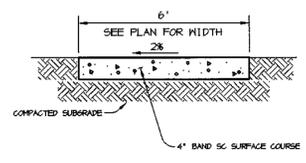
**CUL-DE-SAC DETAIL**  
**STAR MOON LANE**  
NO SCALE



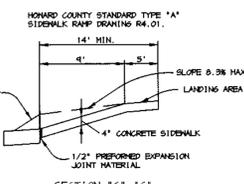
**CUL-DE-SAC DETAIL**  
**PURPLE CLOUD ROW**  
NO SCALE



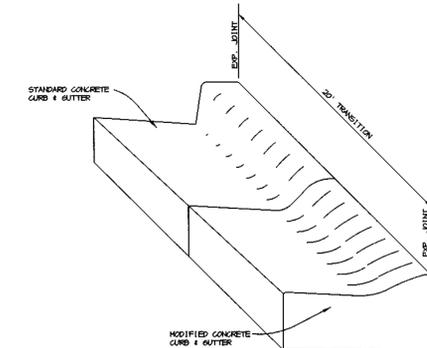
**SINGLE LANE SLOW POINT**  
**(CHOKER)**  
NO SCALE



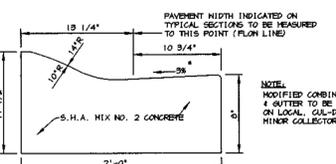
**ASPHALT WALK DETAIL**  
NO SCALE



**STANDARD 7" COMBINATION**  
**CURB AND GUTTER**  
NO SCALE

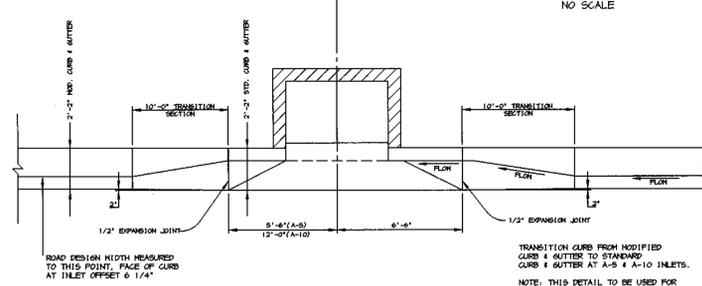


**CONCRETE CURB AND GUTTER TRANSITION**  
NO SCALE



**MODIFIED COMBINATION**  
**CURB AND GUTTER**

\* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.



**MODIFIED COMBINATION**  
**CURB AND GUTTER**  
**TRANSITION CURB SECTION**  
**AT "A" TYPE INLETS**

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Richard M. Danvers* 7-6-01  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Janet Hamilton* 7/17/01  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Chris Danvers* 7/10/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

010202 DELETED CUL-DE-SAC DETAIL OF SUNBEAM PLACE, ADDED BARRIER CURB DETAIL.

DATE NO. REVISION

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 **ROAD DETAILS**

**RIEMER MUEGGE**  
a division of:  
**Patton Harris Rust & Associates, pc**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
8819 Centra Park Drive, Columbia, MD 21045 • tel 410.997.8800 fax 410.997.8822

6.26.01  
DATE

DESIGNED BY: CJR

DRAWN BY: DAM

PROJECT NO 99212/FINALS  
R07.DWG

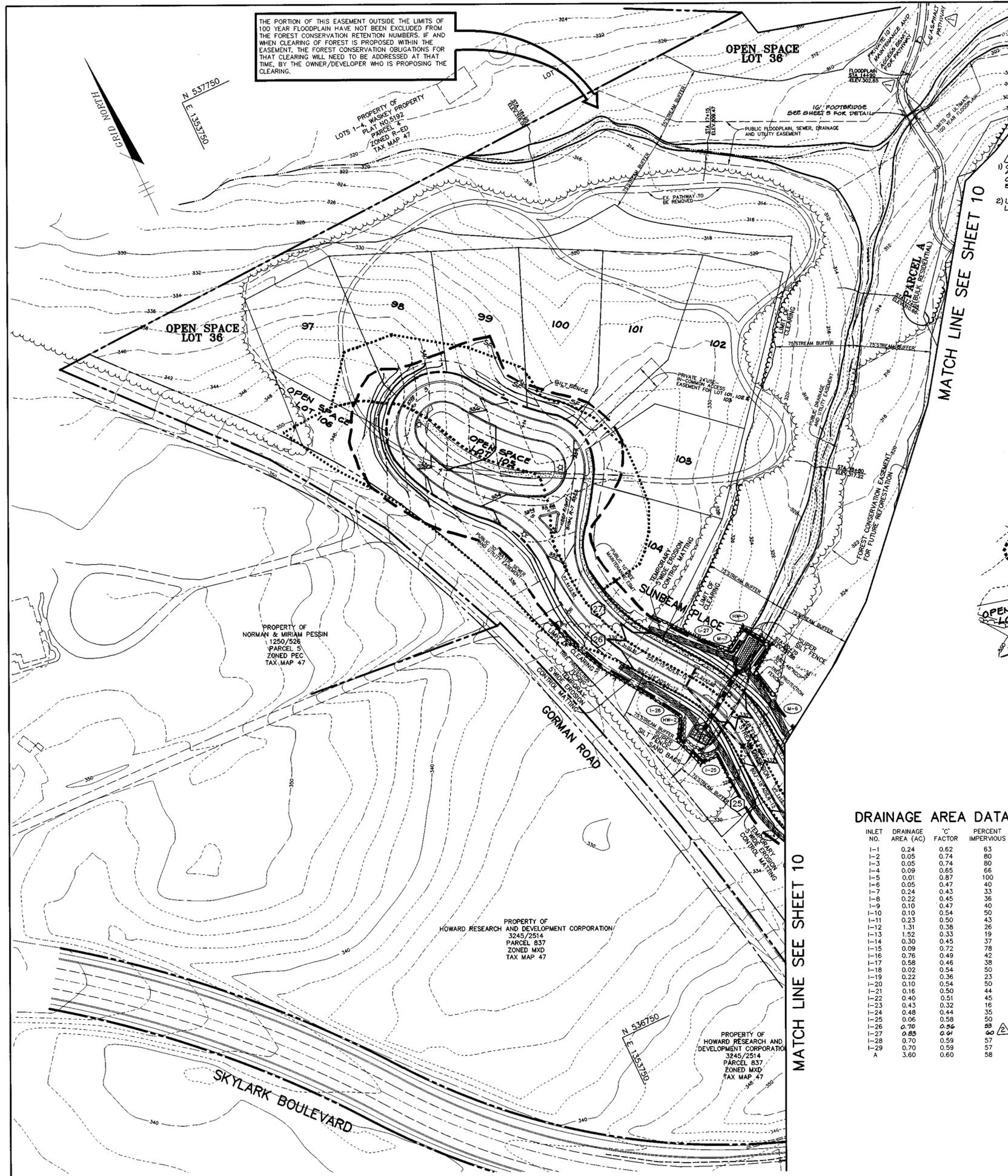
DATE: JUNE 19, 2001

SCALE: AS SHOWN

DRAWING NO. 7 OF 25

CHRISTOPHER J. REID #19949

F-01-140

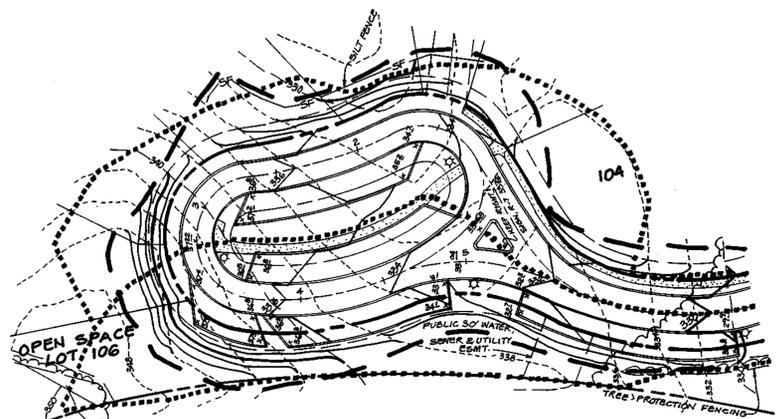


THE PORTION OF THIS EASEMENT OUTSIDE THE LIMITS OF 100 YEAR FLOODPLAIN HAVE NOT BEEN EXCLUDED FROM THE FOREST CONSERVATION RETENTION NUMBERS. IF AND WHEN CLEARING OF FOREST IS PROPOSED WITHIN THE EASEMENT, THE FOREST CONSERVATION OBLIGATIONS FOR THAT CLEARING WILL NEED TO BE ADDRESSED AT THAT TIME, BY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

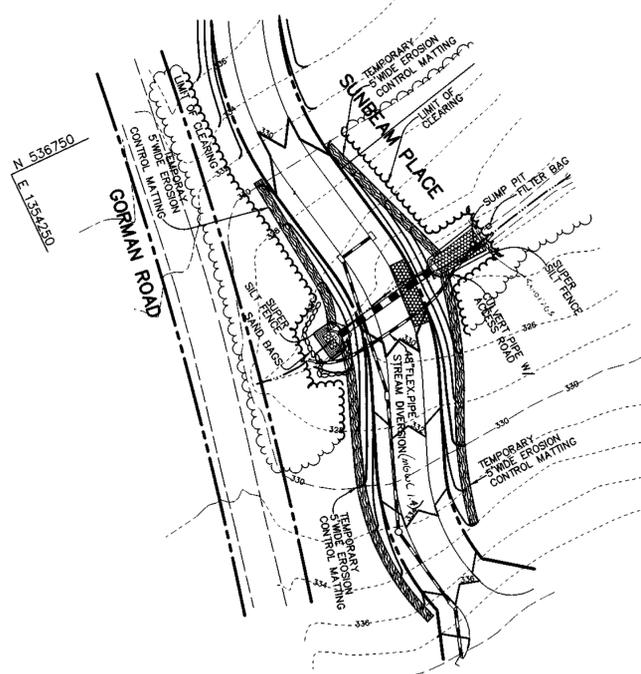
NOTE:  
 1) CONTRACTOR TO GRADE AND STABILIZE LENGTH OF PATHWAY THAT CAN BE BUILT IN ONE DAY.  
 2) LIMIT OF DISTURBANCE LIMITED TO 10' EASEMENT.

**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 ----- L.O.D.
- LIMIT OF DISTURBANCE -----
- CURB INLET PROTECTION ----- CIP
- EARTH DIKE -----
- SUPER SILT FENCE ----- SSF
- SILT FENCE ----- SF
- EROSION CONTROL MATTING -----
- STABILIZED CONSTRUCTION ENTRANCE -----
- TREE PROTECTION FENCE -----
- FOREST RETENTION SIGN -----



2 INTERIM GRADING PLAN  
 SCALE: 1" = 50'



SUNBEAM PLACE STREAM CROSSING  
 SCALE: 1" = 50'

**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	35
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	0.52	46
I-24	0.48	0.44	35
I-25	0.06	0.58	50
I-26	0.70	0.26	16
I-27	0.88	0.54	40
I-28	0.70	0.59	57
I-29	0.70	0.59	57
A	3.60	0.60	58

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: *Jeff W. King* 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: *Christopher J. Reid* 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

HOWARD SOIL CONSERVATION DISTRICT DATE: 7/2/01

AS BUILT CERTIFICATE

DATE: \_\_\_\_\_

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Richard M. Daniels* DATE: 7-6-01  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*David Hamilton* DATE: 7/17/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*Chris Dammann* DATE: 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

01.02.02/2 MODIFIED SUNBEAM PLACE GRADING, INLET DATA  
 10.30.01/1 ADDED 6" ASPHALT PATHWAY AND PRIVATE 10' CONCRETE DRIVEWAY AND ACCESS EBMT. FOR PATHWAY.

DATE NO. REVISION

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 PARCEL: P/O 837 ZONED: R-ED 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

DATE: 6-26-01

DESIGNED BY : CJR

DRAWN BY: DAM

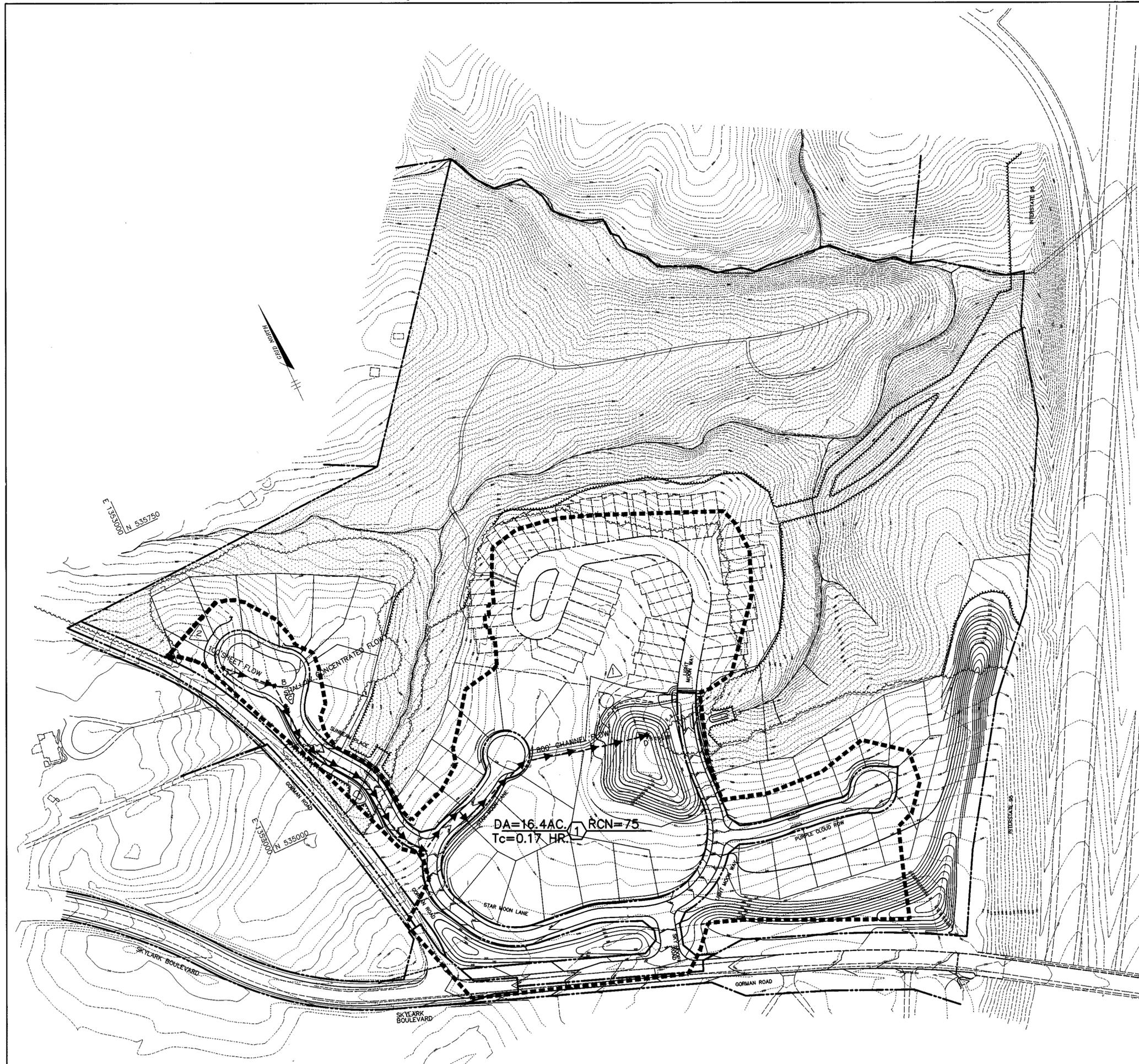
PROJECT NO 99212/FINALS/SEDCONT3.DWG

DATE : JUNE 19, 2001

SCALE : 1" = 50'

DRAWING NO. 12 OF 25

CHRISTOPHER J. REID #19949



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	0.87 Ac-ft.*	0.45 Ac-ft.	315.65	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	△ 0.51	318.87	0.82
10	△ 40.41	319.70	1.125
100	80.22	320.29	1.353

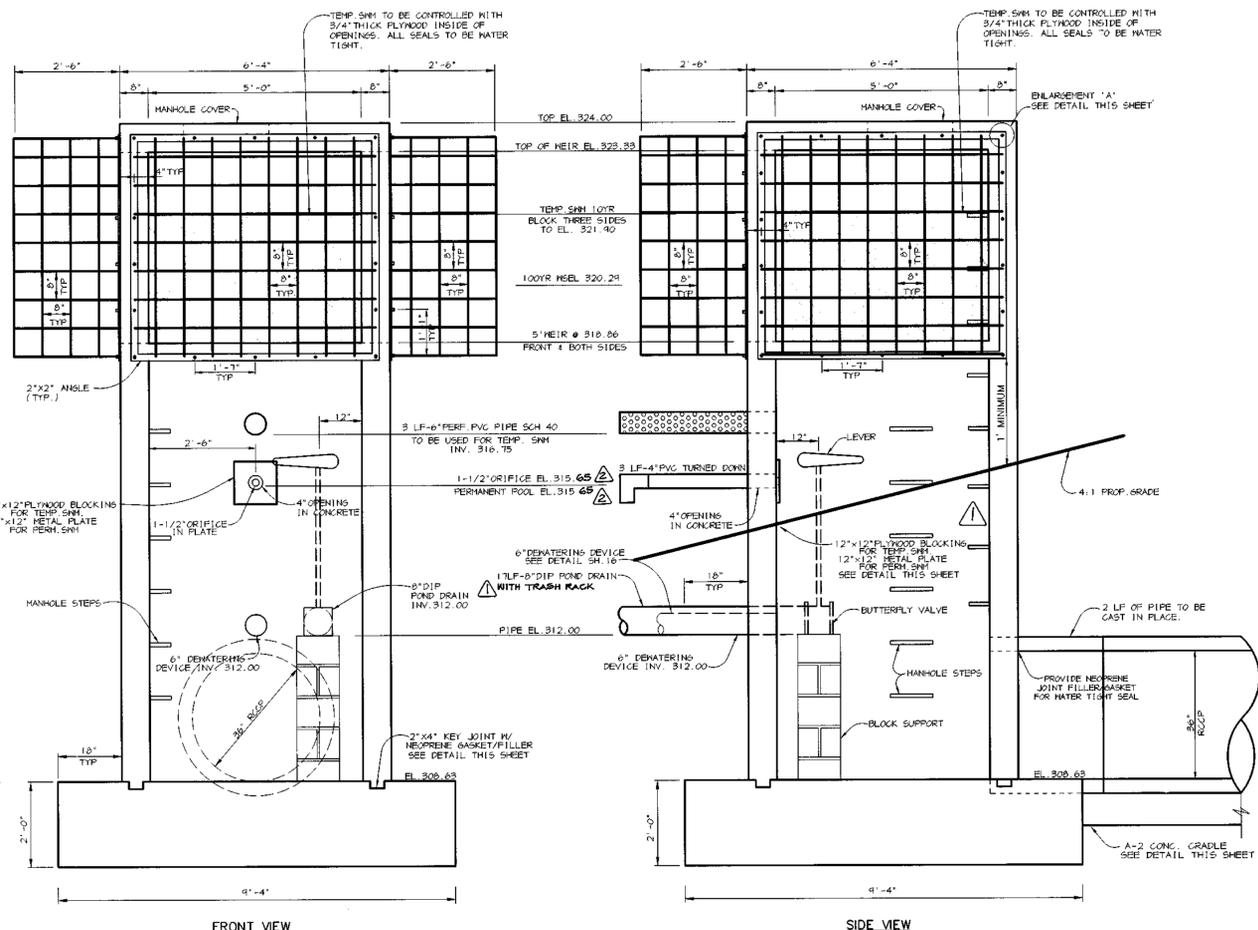
A wet pond (P-2) is being used as the Best Management Practice (BMP) to manage the required volumes. A forebay sized for 0.1 inch of runoff per impervious acre is provided. A central permanent pool will provide the recharge and water quality volume with a non-clogging reverse-slope, low flow pipe designed 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.

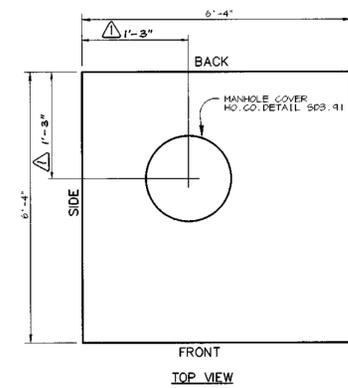
NATURAL AREA CONSERVATION CREDIT  
= 25.84 ACRES TOTAL

AS BUILT CERTIFICATE	
APPROVED :	DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Dwyer</i> CHIEF, BUREAU OF HIGHWAYS	7-6-01 DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Vicki Hamilton</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/10/01 DATE
<i>Chris Dammann</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/10/01 DATE
01.02.02/2 REVISOR SWM SUMMARY & SUNBEAM PLACE	
10.30.01/1 ADDED TOT LOT LOCATION, CHANGED LOCATION OF PATHWAY, MODIFIED PUB. ESMT & PRIV. SWM ESMT.	
DATE NO.	REVISION
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 410.997.8282	
DATE 6-26-01	DESIGNED BY : CJR
	DRAWN BY: DAM
CHRISTOPHER J. REID #19949	PROJECT NO : 99212/FINALS PRDA.DWG
	DATE : JUNE 19, 2001
	SCALE : 1"=100'
	DRAWING NO. 13 OF 25

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



**S-1 DETAILS**  
SCALE 1"=2'

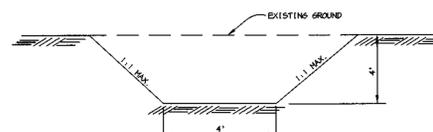


**RISER STRUCTURE NOTES FOR S-1**

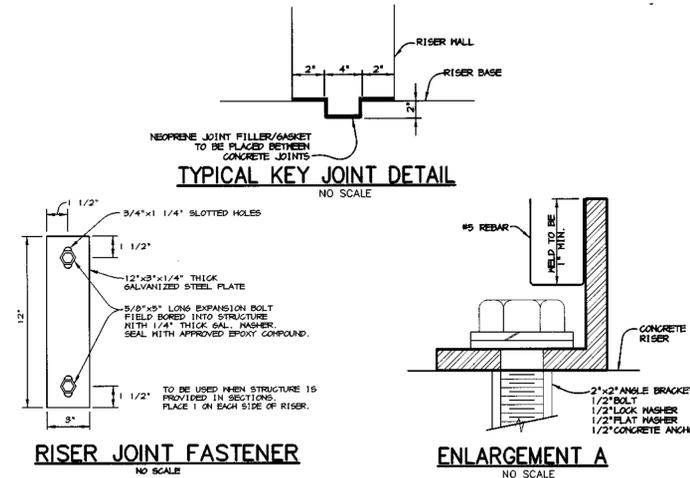
- RISER TO BE CAST IN PLACE. SHOP DRAWINGS FOR THIS CONCRETE STRUCTURE SHALL MEET THE MINIMUM ASTM REQUIREMENTS FOR CAST IN PLACE STRUCTURES. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
- SEE THIS SHEET FOR REINFORCEMENT DETAILS.
- CONCRETE SHALL BE MSHA MIX NO. 3 (F<sub>c</sub>=3,500 psi MINIMUM)
- WHEN POND IS CONVERTED INTO A PERMANENT FACILITY, THE DRAIN/DRY DEVICE HOLE SHALL BE REMOVED.
- REFER TO HOWARD COUNTY STD. 6-5.21 FOR MANHOLE STEP DETAILS.
- RISER JOINTS SHALL BE WATERTIGHT USING NEOPRENE GASKETS.
- ALL PIPE CONNECTIONS SHALL PROVIDE RUBBER GASKET FOR WATERTIGHTNESS.
- RISER SHALL BE PLACED ON A FIRMLY COMPACTED SUBGRADE AND SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.
- A 6" OPEN LEFT GATE VALVE (MVA 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 VALVE BOX AND COVER IN THE TOP SLAB DIRECTLY OVER THE GATE VALVE.

**REMOVABLE TRASH RACK NOTES:**

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

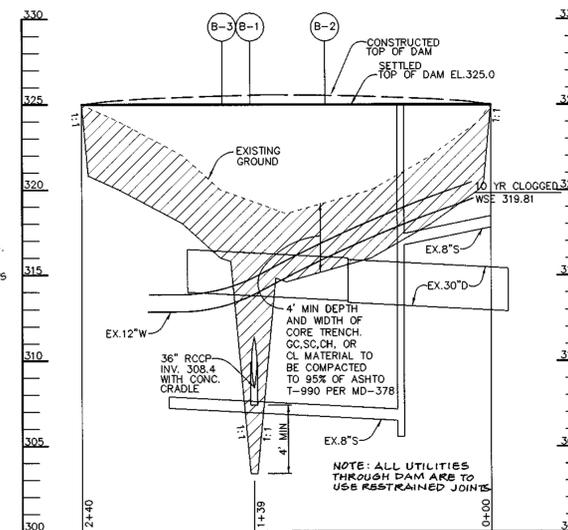


**CORE TRENCH DETAIL**  
NO SCALE

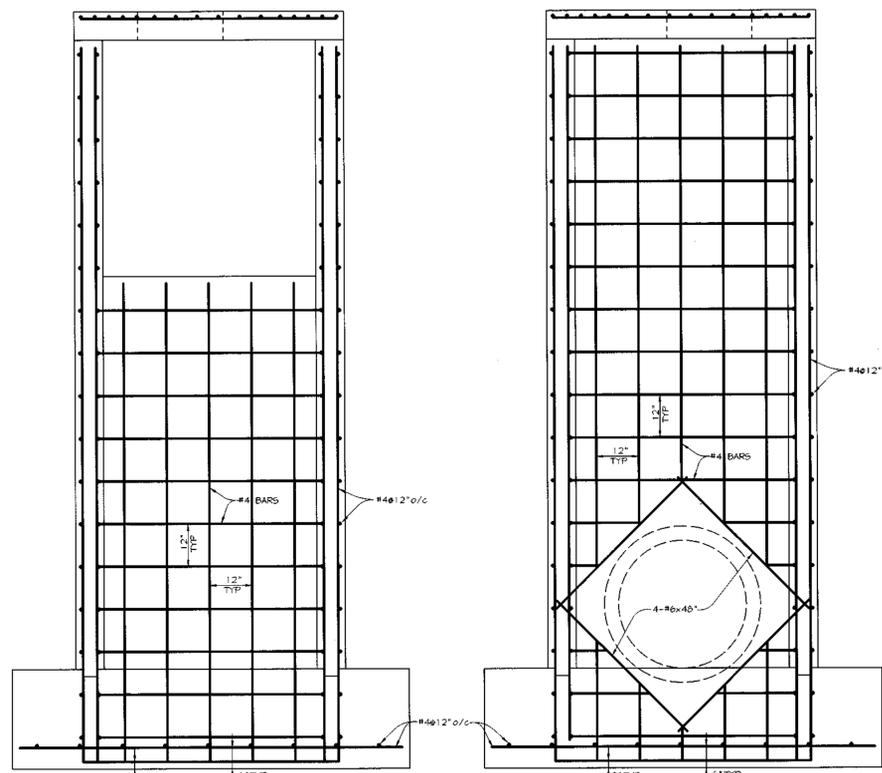


**RISER JOINT FASTENER**  
NO SCALE

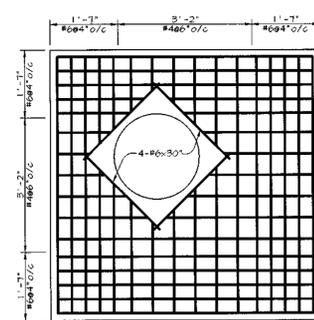
**ENLARGEMENT A**  
NO SCALE



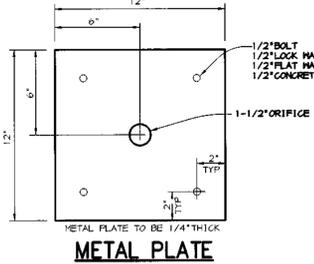
**CENTERLINE OF EMBANKMENT PROFILE**  
SCALE  
HOR. - 1"=50'  
VERT. - 1"=5'



**S-1 REBAR LAYOUT**  
SCALE 1"=2'

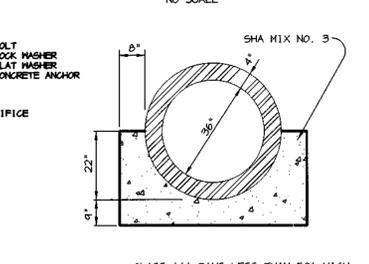


**TOP VIEW RISER LID**

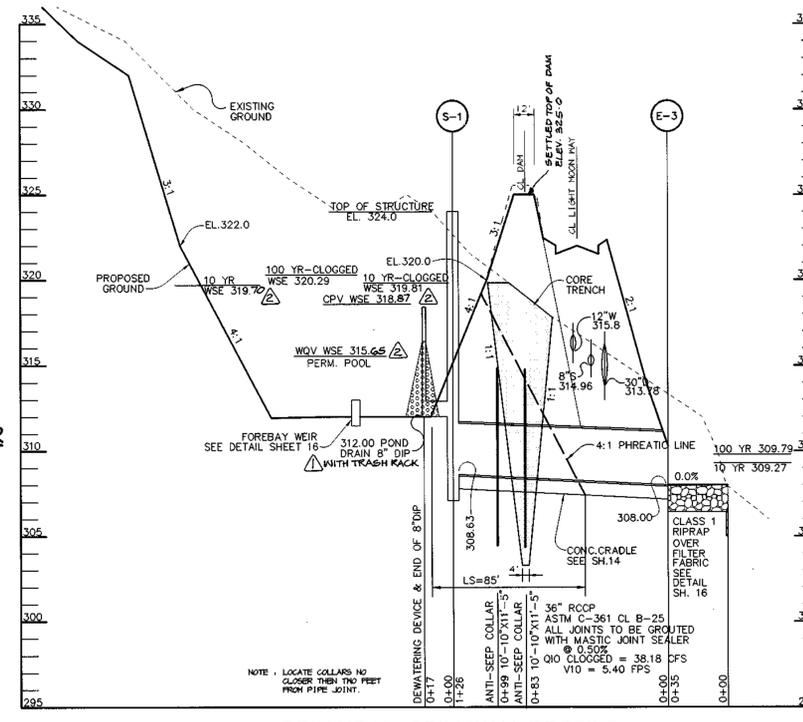


**METAL PLATE**  
SCALE 1"=6"

**CONCRETE ANTI-SEEP COLLAR**  
NO SCALE



**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.

*John N. King* 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.

*Christopher J. Reid* 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.

*Jim Reynolds* 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.

*Chris M. Sells* 7/2/01  
HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. Daniels* 7-6-01  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Chris Stewart* 7/7/01  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris Daniels* 7/10/01  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

01.02.02/11 REVISED ORIFICE ON S-1  
10.30.01/11 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**  
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DRAWING NO. 14 OF 25

