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# ROADS, STORM DRAINS & SWM PLANS

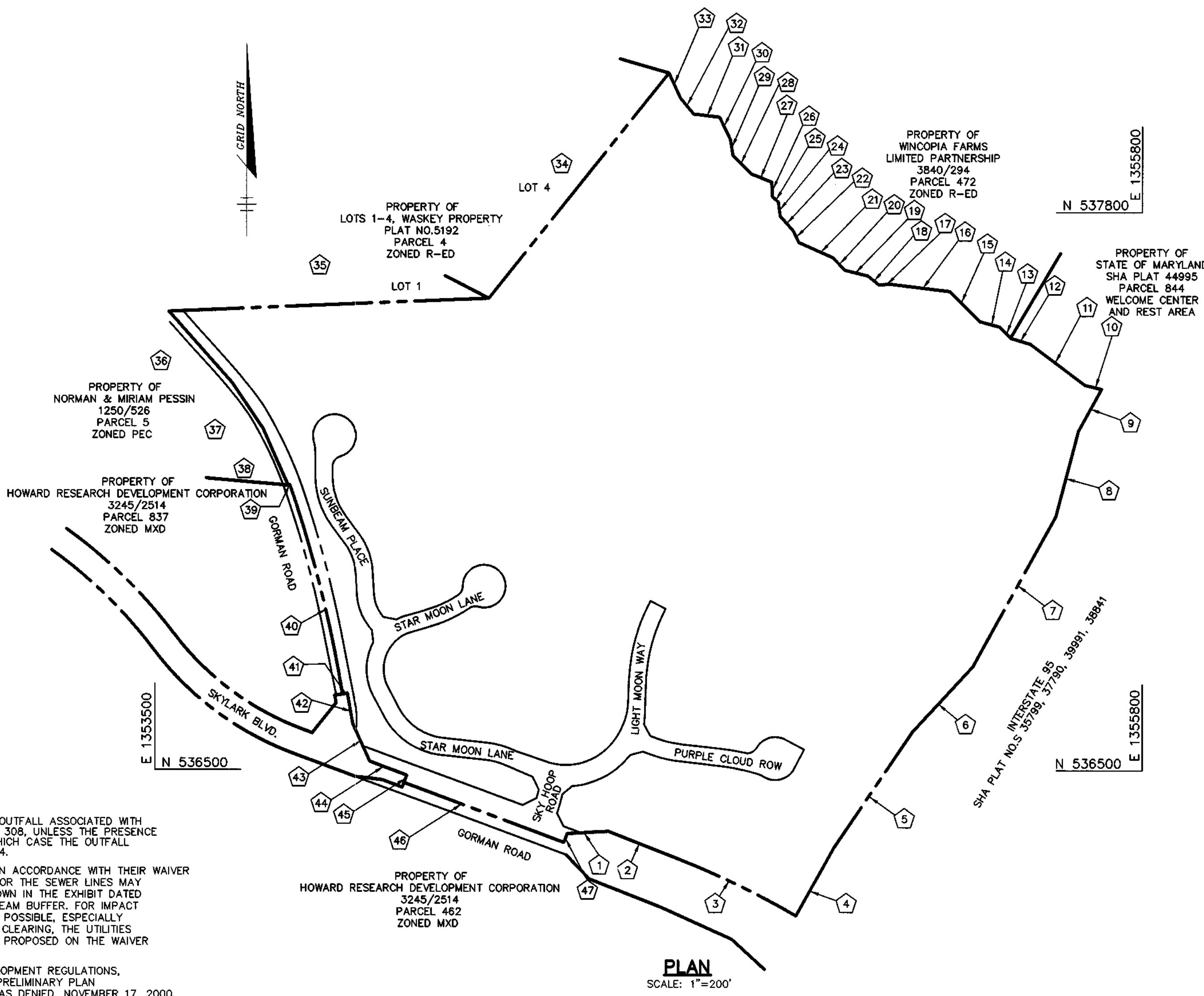
# EMERSON

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

### 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 1996)". 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 MCCUNE & WALKER, INC.
- 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, MCCUNE & 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, WP-02-15
- 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 (122) LOCATION, TYPE AND NUMBER OF TREES SHOWN ON THIS PLAN ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF LOCATION AND VARIETY OF TREES MAY VARY TO 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.

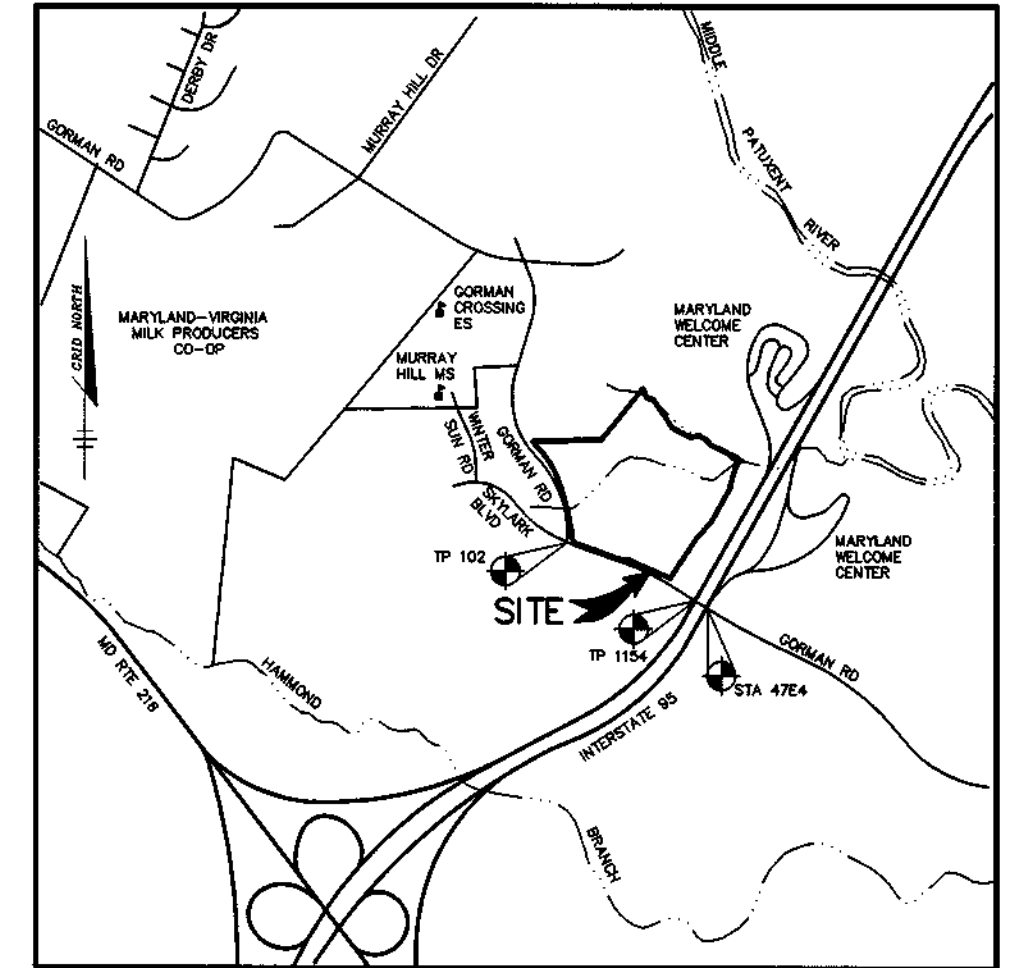
- AS INDICATED IN THE COMMENTS FROM THE SCD, THE OUTFALL ASSOCIATED WITH IMPACT AREA #2 IS TO OUTFALL AT GRADE ELEVATION 308. UNLESS THE PRESENCE OF ROCK IS FOUND DURING FIELD INVESTIGATION, IN WHICH CASE THE OUTFALL MAY BE SHIFTED TO OUTFALL AT GRADE ELEVATION 314.
- THE L.O.D. FOR IMPACT AREAS #3 AND #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 95 TENTATIVE HOUSING UNIT ALLOCATIONS RESERVED FOR THE SPA UNITS ON BULK PARCEL A, AS SHOWN ON S-00-12, AND IN ACCORDANCE WITH SECTION 16.1106.2(c) 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.g.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.
- WP-02-15 - A WAIVER OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116 (a) (2) (ii), TO ALLOW GRADING AND CLEARING WITH 75' STREAM BUFFER, AND SECTION 16.115 (c) TO ALLOW WORK IN A FLOODPLAIN AREA IN ORDER TO CONSTRUCT A PEDESTRIAN PATHWAY SYSTEM AS SHOWN ON THE WAIVER EXHIBIT. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
  - THE DISTURBANCE SHALL BE LIMITED TO WORK ASSOCIATED WITH THE CONSTRUCTION OF THE PEDESTRIAN PATHWAY ONLY.
  - THE ROAD CONSTRUCTION DRAWINGS FOR F-01-140 WILL HAVE TO BE REPLINED TO REFLECT THE LOCATION OF THE PATHWAY AND ALL ASSOCIATED GRADING AND CLEARING.



PLAN  
SCALE: 1"=200'

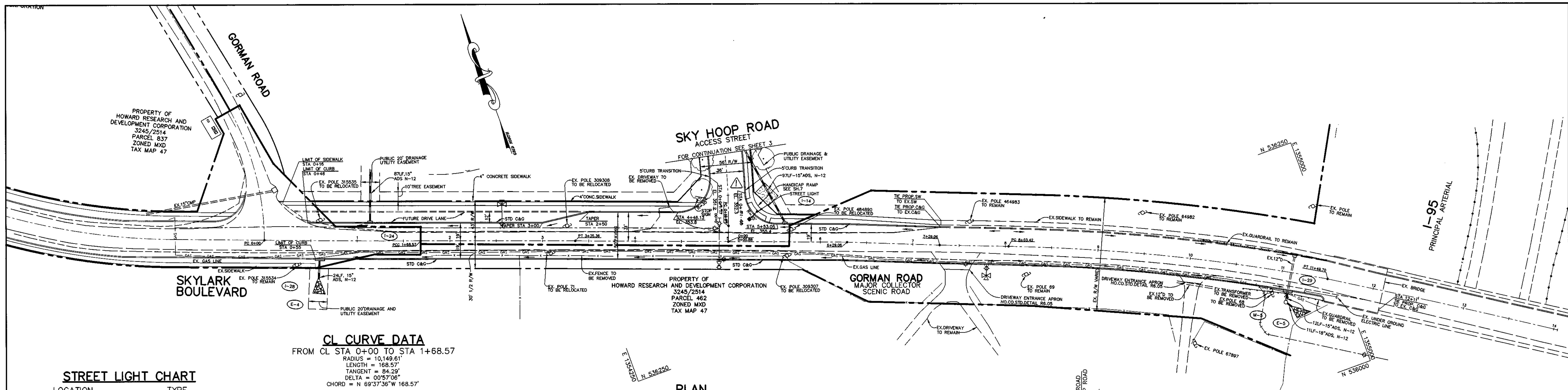
### BOUNDARY CHART

1	S 86°49'15" W	95.82'
2	N 68°30'18" W	177.86'
3	R = 1969.86' L = 302.16'	
4	S 29°01'05" W	325.62'
5	S 34°06'42" W	325.62'
6	S 42°51'42" W	206.16'
7	S 28°49'32" E	400.00'
8	S 14°47'22" W	206.16'
9	S 28°49'32" W	111.29'
10	S 76°50'06" E	39.79'
11	S 53°11'44" E	158.71'
12	S 73°06'29" E	48.46'
13	S 43°54'39" E	35.46'
14	S 74°53'26" E	48.61'
15	S 44°49'31" E	98.51'
16	S 82°58'46" 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	40.85'
21	S 83°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 48°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°40'33" 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	S 38°36'08" E	672.75'
35	N 87°37'58" 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'



VICINITY MAP  
SCALE: 1"=2000'

AS BUILT CERTIFICATE	
DATE	NO.
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	DATE
<i>Andrew M. Daniels</i> 7-6-01 CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	DATE
<i>Janis H. Harts</i> 7/10/01 CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Christopher J. Reid</i> 7/10/01 CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
10/30/01	REV. GENERAL NOTES.
DATE	NO.
OWNER / DEVELOPER	REVISION
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT	EMERSON
AREA	SECTION ONE AREA ONE LOTS 1 - 39 & PARCEL A
TAX MAP 47	BLOCK 3 & 9
ZONED: R-ED	PARCEL: P/O 837
6th ELECTION DISTRICT	HOWARD COUNTY, MARYLAND
TITLE	TITLE SHEET
RIEMER MUEGGE a division of: Patton Harris Rust & Associates, pc ENGINEERS • SURVEYORS • PLANNERS LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS 8818 Centre Park Drive, Columbia, MD 21046 • tel 410.987.8900 fax 410.987.8282	
DATE	DESIGNED BY: CJR
7-26-01	DRAWN BY: DAM
PROJECT NO	99212/FINALS
DATE	JUNE 19, 2001
SCALE	AS SHOWN
DRAWING NO.	1 OF 25
CHRISTOPHER J. REID # 10040	



**STREET LIGHT CHART**

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

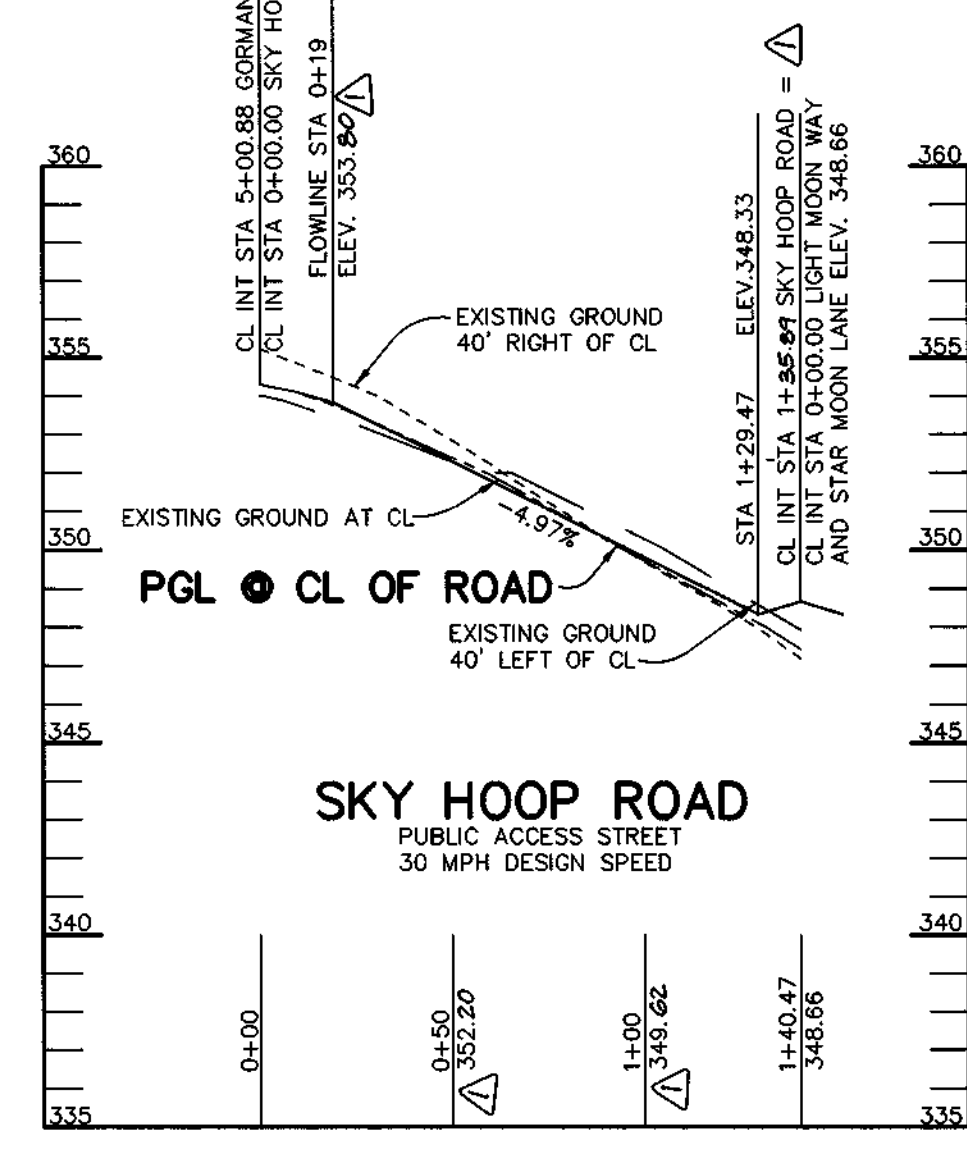
**CL CURVE DATA**  
FROM CL STA 0+00 TO STA 1+68.57  
RADIUS = 10,149.61'  
LENGTH = 168.57'  
TANGENT = 84.29'  
DELTA = 00°57'08"  
CHORD = N 69°37'36"W 168.57'

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

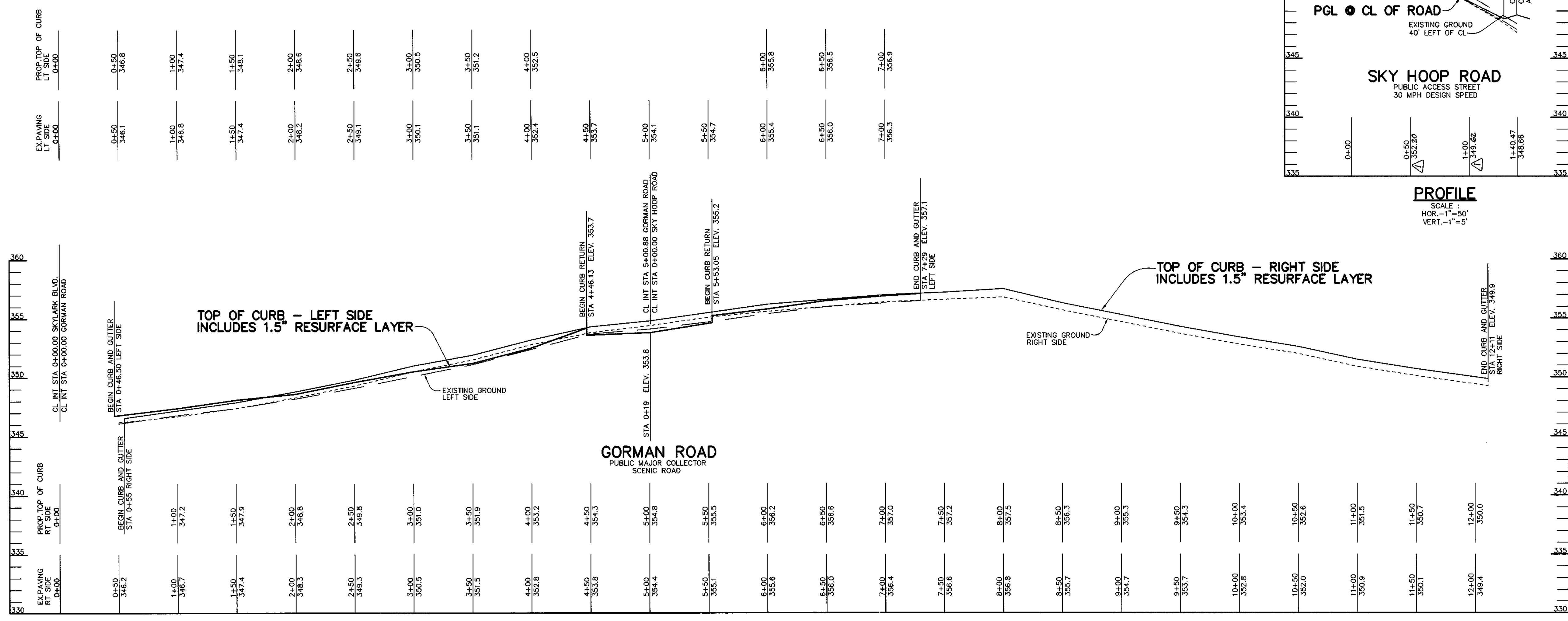
**CL CURVE DATA**  
FROM CL STA 8+03.42 TO STA 11+49.70  
RADIUS = 2086.04'  
LENGTH = 346.28'  
TANGENT = 173.54'  
DELTA = 09°30'40"  
CHORD = S 64°08'17"E 345.88'

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

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



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



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

AS BUILT CERTIFICATE	
APPROVED	DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<i>Andrew M. Dangler</i> CHIEF, BUREAU OF HIGHWAYS	7-6-01 DATE
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>Chris Hunter</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/17/01 DATE
<i>Chris Hunter</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/10/01 DATE

DATE	NO.	REVISION
10-30-01	1	REV. PLAN, CURVE DATA & PROFILE OF SKY HOOP RD.
OWNER / DEVELOPER		
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000		
PROJECT		
EMERSON SECTION ONE AREA ONE LOTS 1 - 39 & PARCEL A		
AREA		
TAX MAP 47 BLOCK 3.8 & 9 ZONED: R-ED PARCEL: P/O 837 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TITLE		
PLAN AND PROFILE OF GORMAN ROAD AND SKY HOOP ROAD		

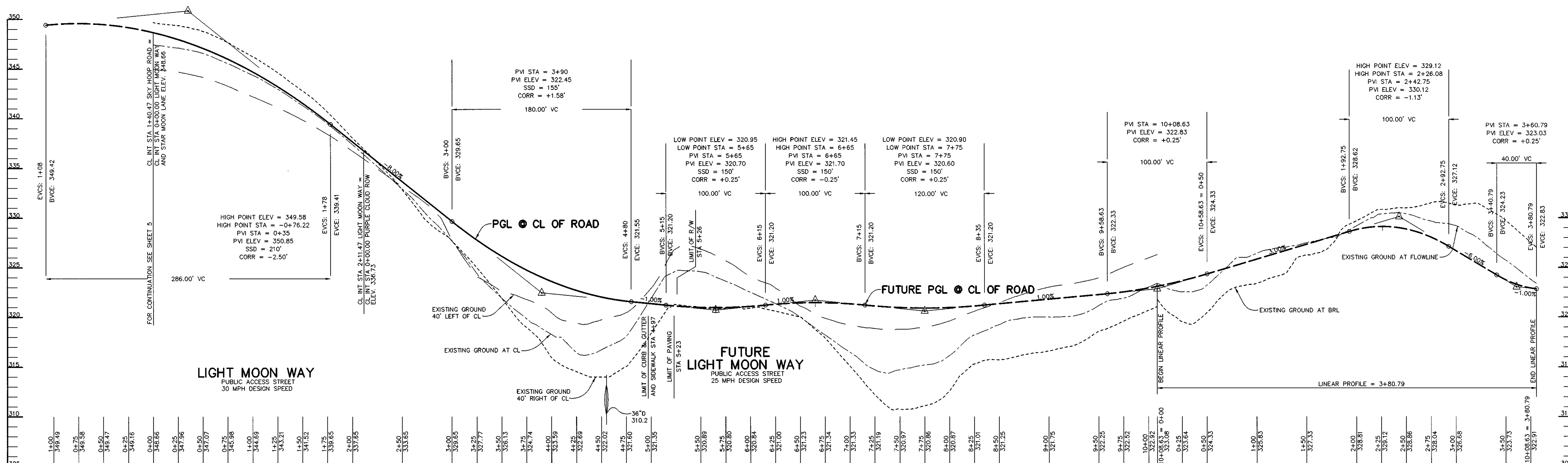
**RIEMER MUEGGE**  
a division of  
**Patton Harris Rust & Associates, pc**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
8818 Centre Park Drive, Columbia, MD 21045 • Tel 410.997.8800 Fax 410.997.8282

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 #10040





**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 = 95.64'  
DELTA = 25°39'27"  
CHORD = S 145°7'03"W 186.51'

**CURB TRANSITION DATA**

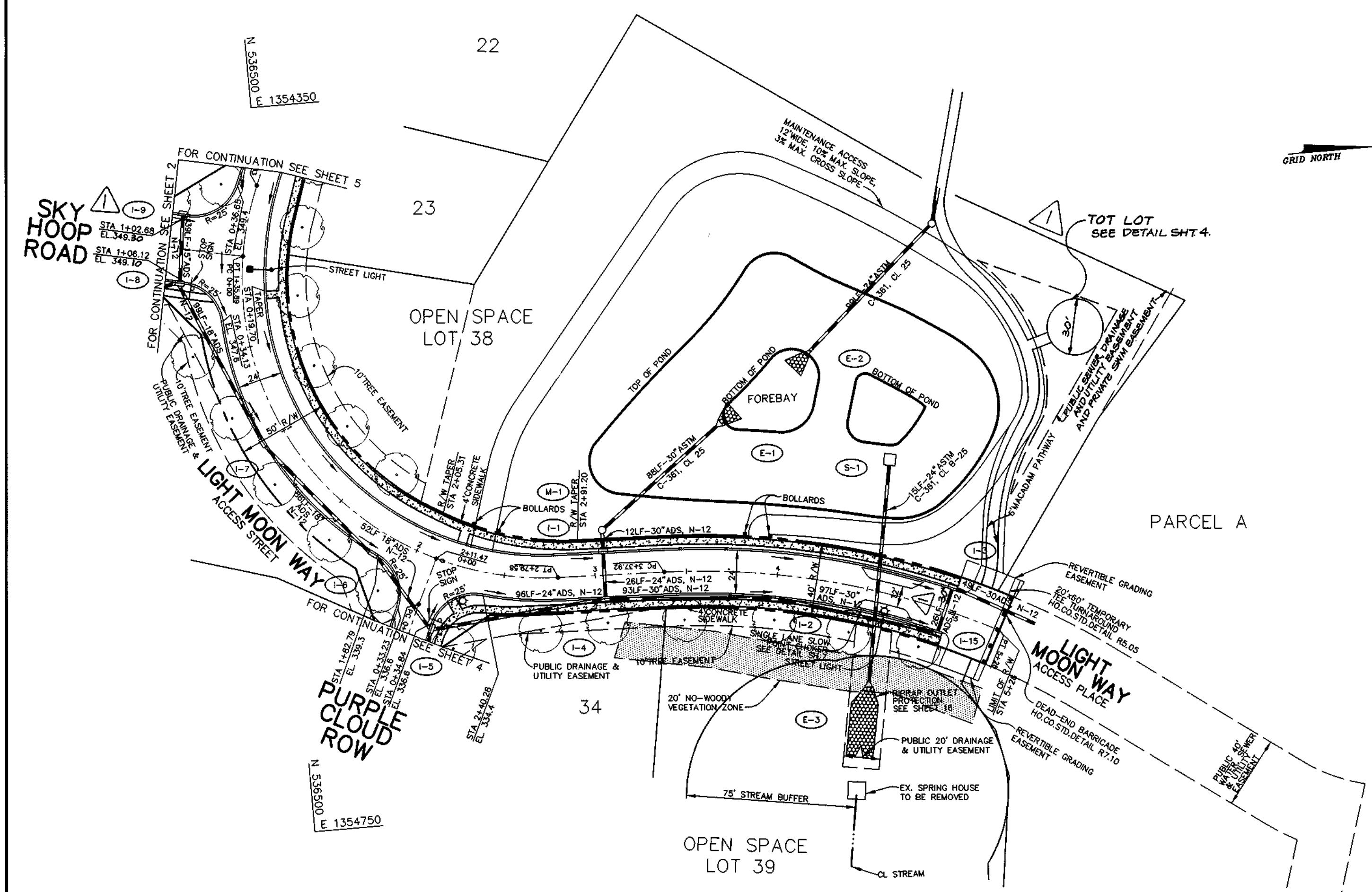
FROM CL STA 0+50.80 STAR MOON LANE  
TO CL STA 0+19.70 LIGHT MOON WAY  
RADIUS = 184.07'  
LENGTH = 66.40'  
TANGENT = 33.57'  
DELTA = 20°40'12"  
CHORD = N 77°17'57"W 66.05'

**R/W TRANSITION DATA**

FROM CL STA 2+05.31 TO STA 2+91.20  
RADIUS = 150.00'  
LENGTH = 75.80'  
TANGENT = 38.73'  
DELTA = 28°57'18"  
CHORD = N 16°35'59"W 75.00'

**STREET LIGHT CHART**

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



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

**AS BUILT CERTIFICATE**

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

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

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

10-30-01 / 1  
REV. ELEV. ON PLAN - SKY HOOP ROAD.  
REV. 1-5 TO 1-15 PIPE

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

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

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

TITLE  
**PLAN AND PROFILE OF LIGHT MOON WAY**

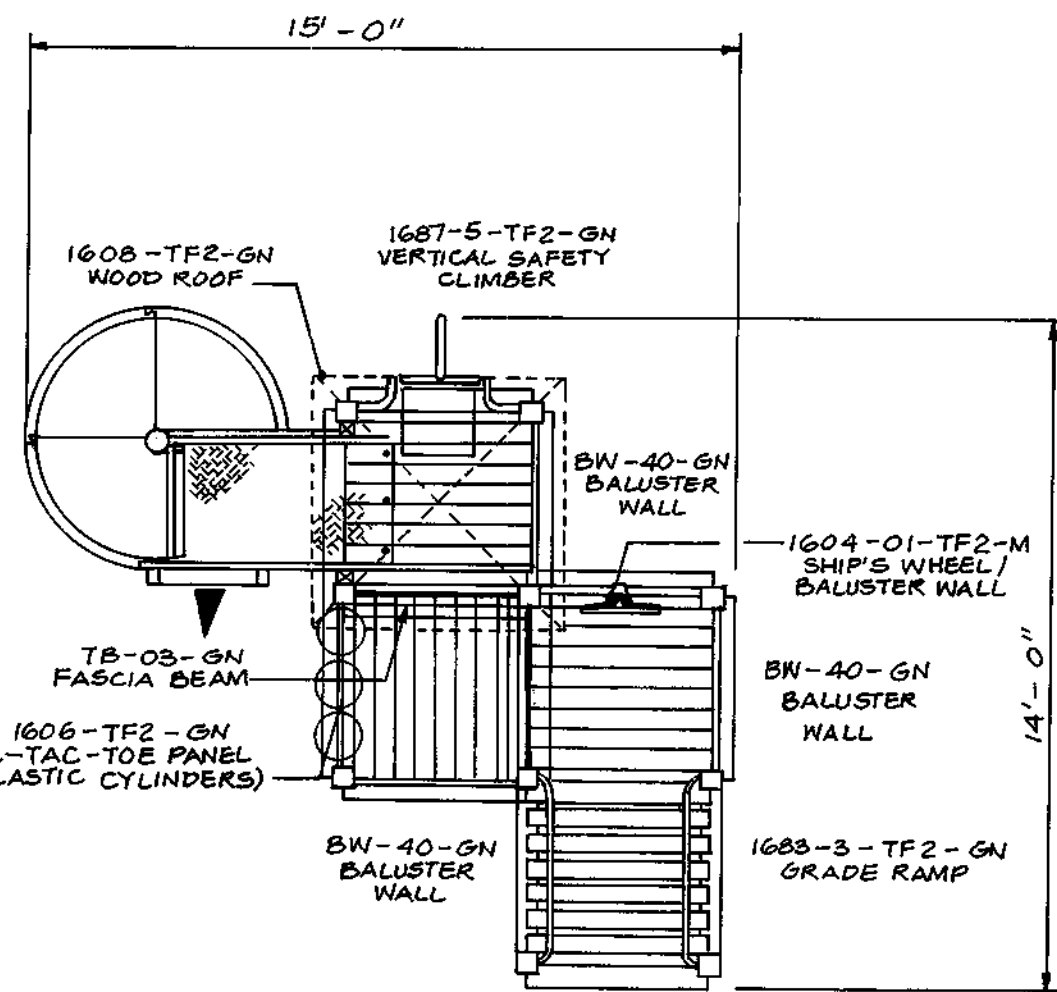
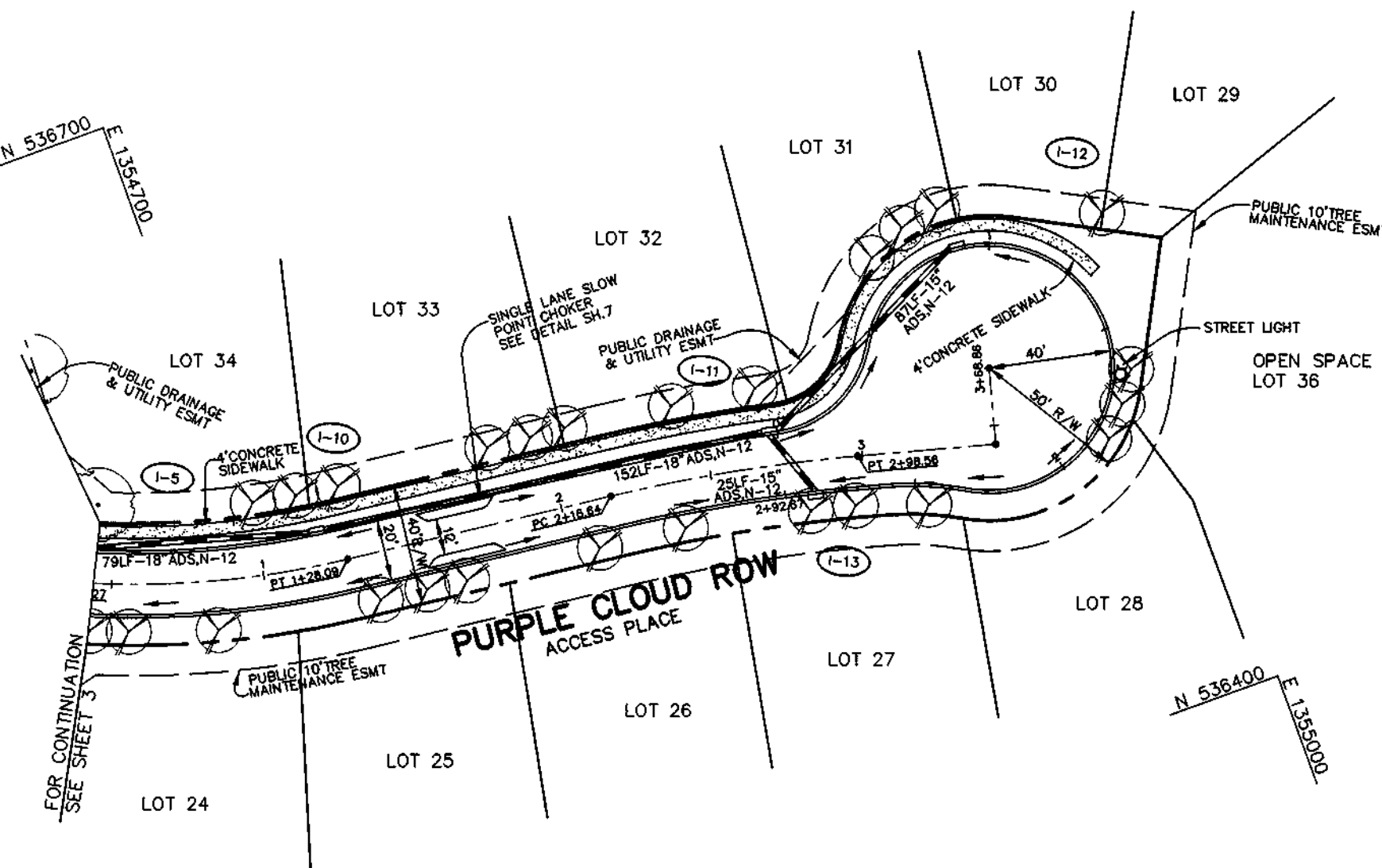
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8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.9900 fax 410.997.9282

6.2.0.1  
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

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

**STREET LIGHT CHART**

LOCATION TYPE  
 3' LEFT OF LINEAR PROFILE STA 1+85  
 PURPLE CLOUD ROW IN CUL-DE-SAC 100 WATT HPS VAPOR COLONIAL POST TOP MOUNTED ON A 14" BLACK FIBERGLASS POLE

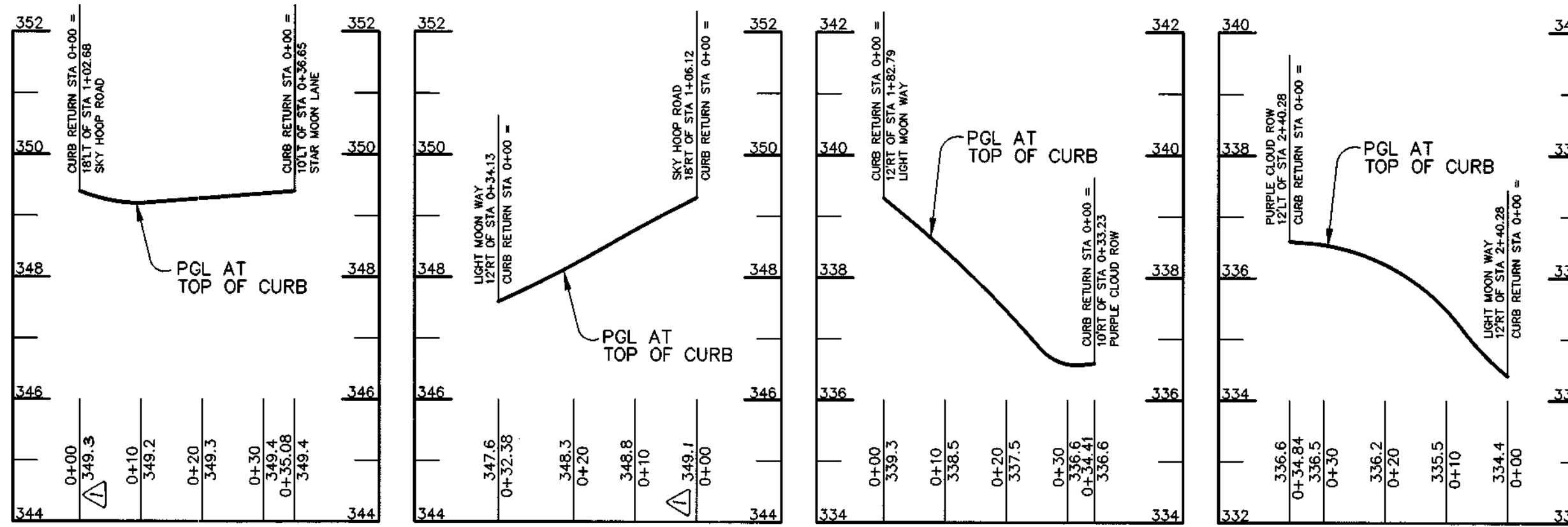


**TOT LOT DETAIL**  
NO SCALE

**CL CURVE DATA**  
 FROM CL STA 0+27 TO STA 1+28.09  
 RADIUS = 300.00'  
 LENGTH = 101.09'  
 TANGENT = 51.03'  
 DELTA = 19°18'27"  
 CHORD = S 73°52'47"E 100.62'

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

**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**

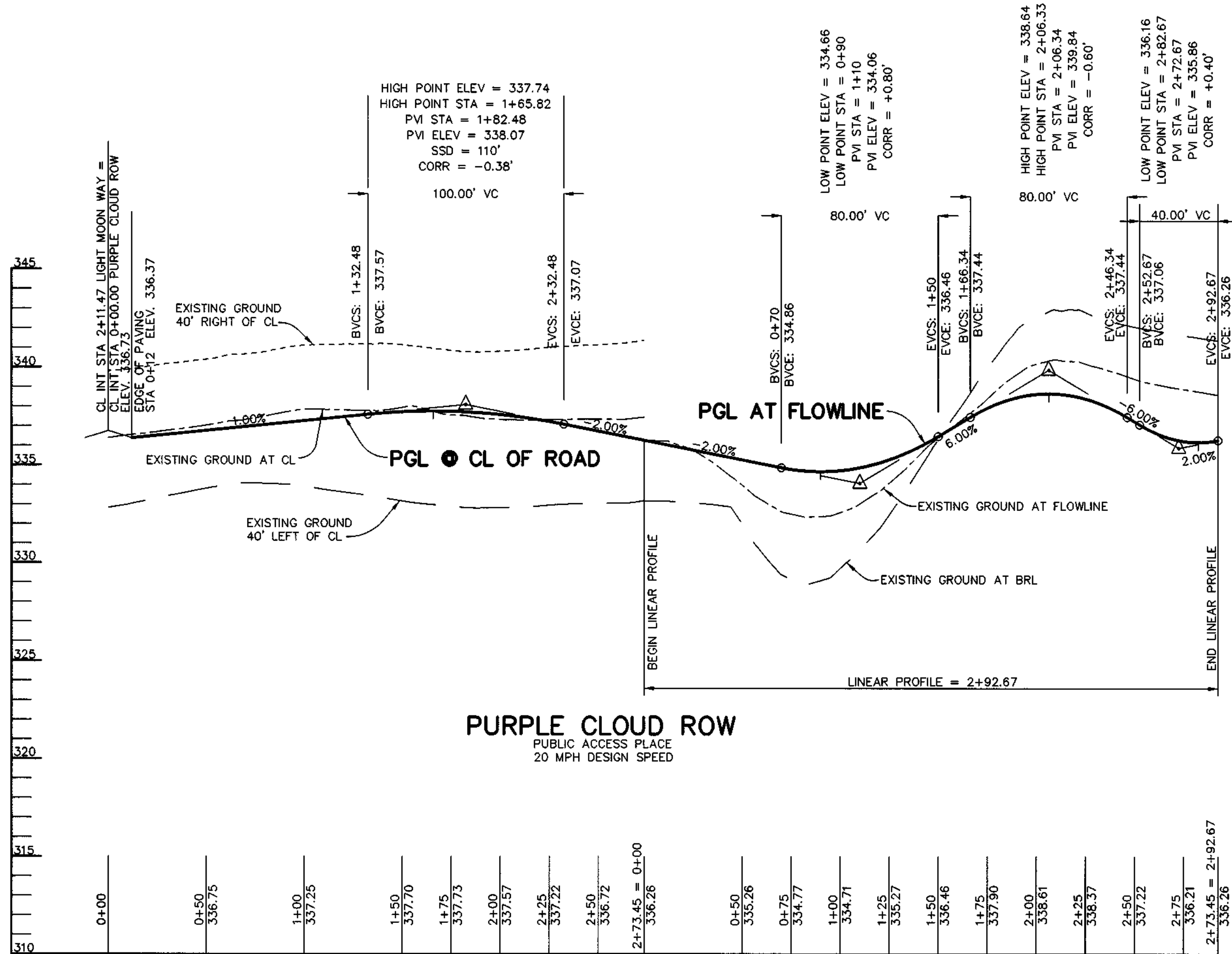
**PROFILE**

**PROFILE**

**PROFILE**

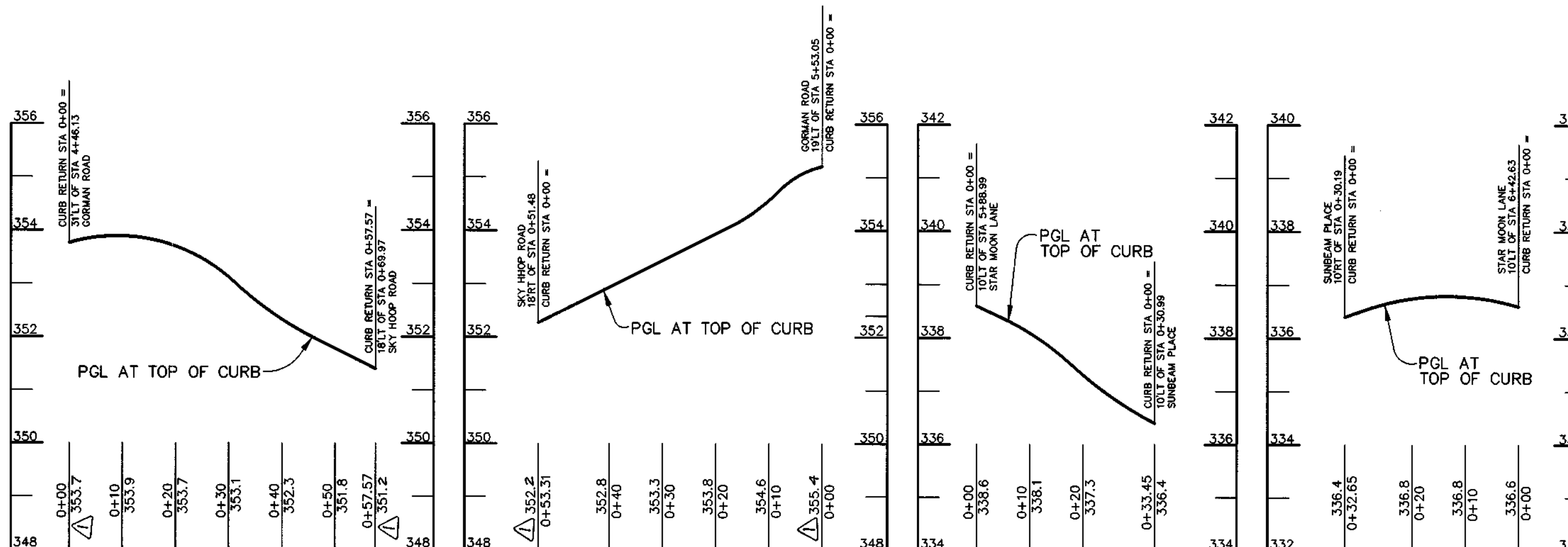
SCALE: HOR.-1"=20' VERT.-1"=2'  
 INTERSECTION OF SKY HOOP ROAD AND LIGHT MOON WAY AND STAR MOON LANE

SCALE: HOR.-1"=20' VERT.-1"=2'  
 INTERSECTION OF LIGHT MOON WAY AND PURPLE CLOUD ROW



**PROFILE**

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



**PROFILE**

**PROFILE**

**PROFILE**

**PROFILE**

SCALE: HOR.-1"=20' VERT.-1"=2'  
 INTERSECTION OF GORMAN ROAD AND SKY HOOP ROAD

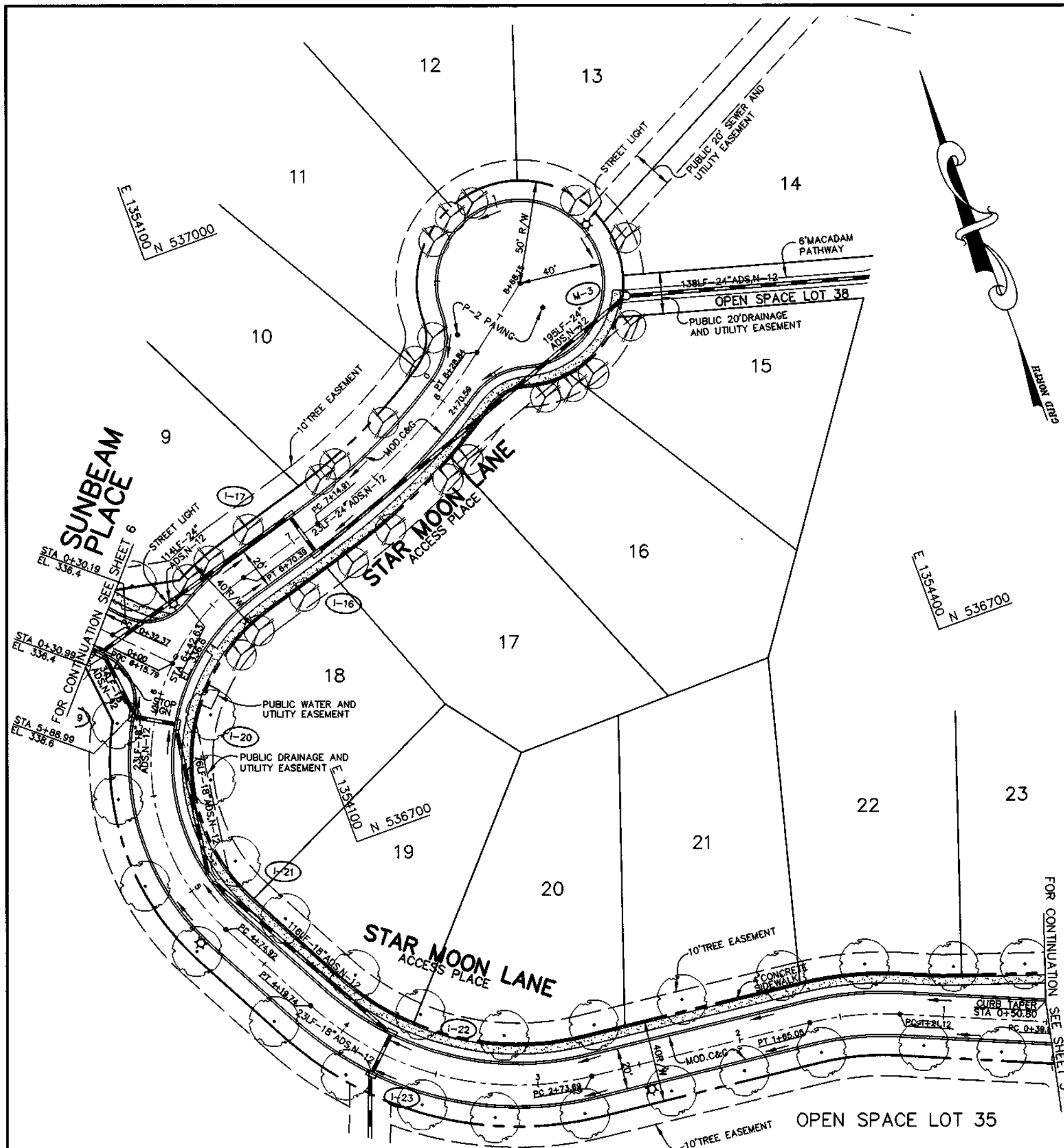
SCALE: HOR.-1"=20' VERT.-1"=2'

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

SCALE: HOR.-1"=20' VERT.-1"=2'  
 INTERSECTION OF STAR MOON LANE AND SUNBEAM PLACE

AS BUILT CERTIFICATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	DATE
<i>Richard M. Daniels</i> CHIEF, BUREAU OF HIGHWAYS	7-6-01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	DATE
<i>David Harvath</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/17/01 DATE
<i>Chris D...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/10/01 DATE
10-30-01	REV. PROFILES, ADDED TOT LOT 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	
PLAN AND PROFILE OF PURPLE CLOUD ROW AND CURB RETURN PROFILES	
RIEMER MUEGGE a division of: Patton Harris Rust & Associates, pc ENGINEERS • SURVEYORS • PLANNERS LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS 8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8900 fax 410.997.9282	
6.26.01 DATE	DESIGNED BY: CJR
	DRAWN BY: DAM
CHRISTOPHER J. REID #19949	PROJECT NO: 99212/FINALS RD4.DWG
	DATE: JUNE 19, 2001
	SCALE: AS SHOWN
	DRAWING NO. 4 OF 25





**STREET LIGHT CHART**

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

**CL CURVE DATA**

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

**CL CURVE DATA**

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

**CL CURVE DATA**

FROM CL STA 2+73.69 TO STA 4+19.74  
 RADIUS = 150.00'  
 LENGTH = 146.05'  
 TANGENT = 79.40'  
 DELTA = 58°47'19"  
 CHORD = N 55°51'00"W 140.35'

**CL CURVE DATA**

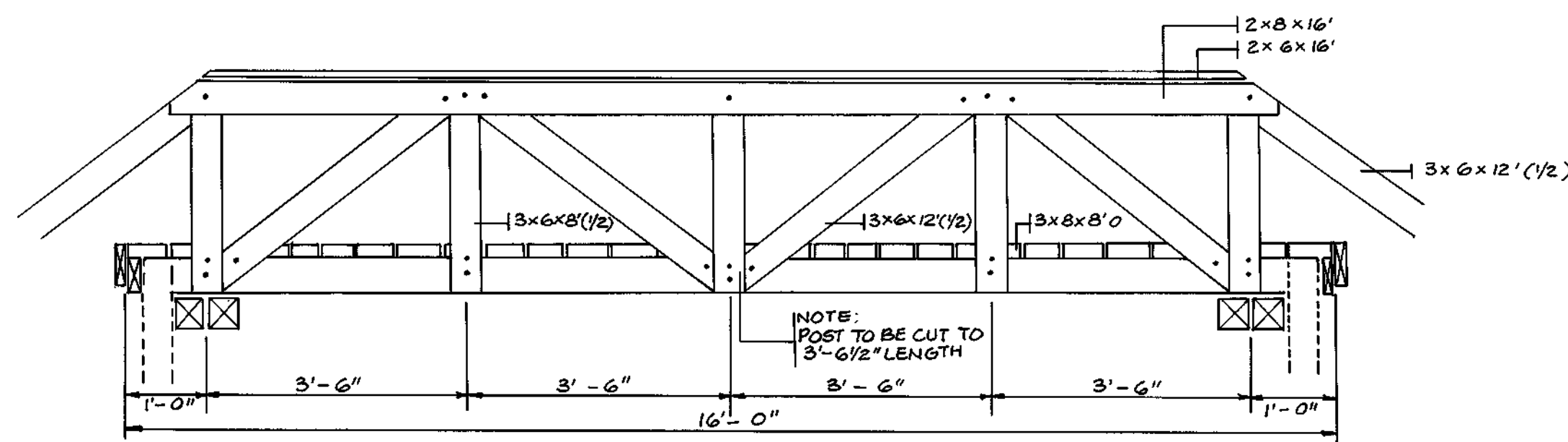
FROM CL STA 4+74.92 TO STA 6+70.39  
 RADIUS = 110.00'  
 LENGTH = 140.87'  
 TANGENT = 81.96'  
 DELTA = 73°22'39"  
 CHORD = N 08°43'59"E 131.44'

**CL CURVE DATA**

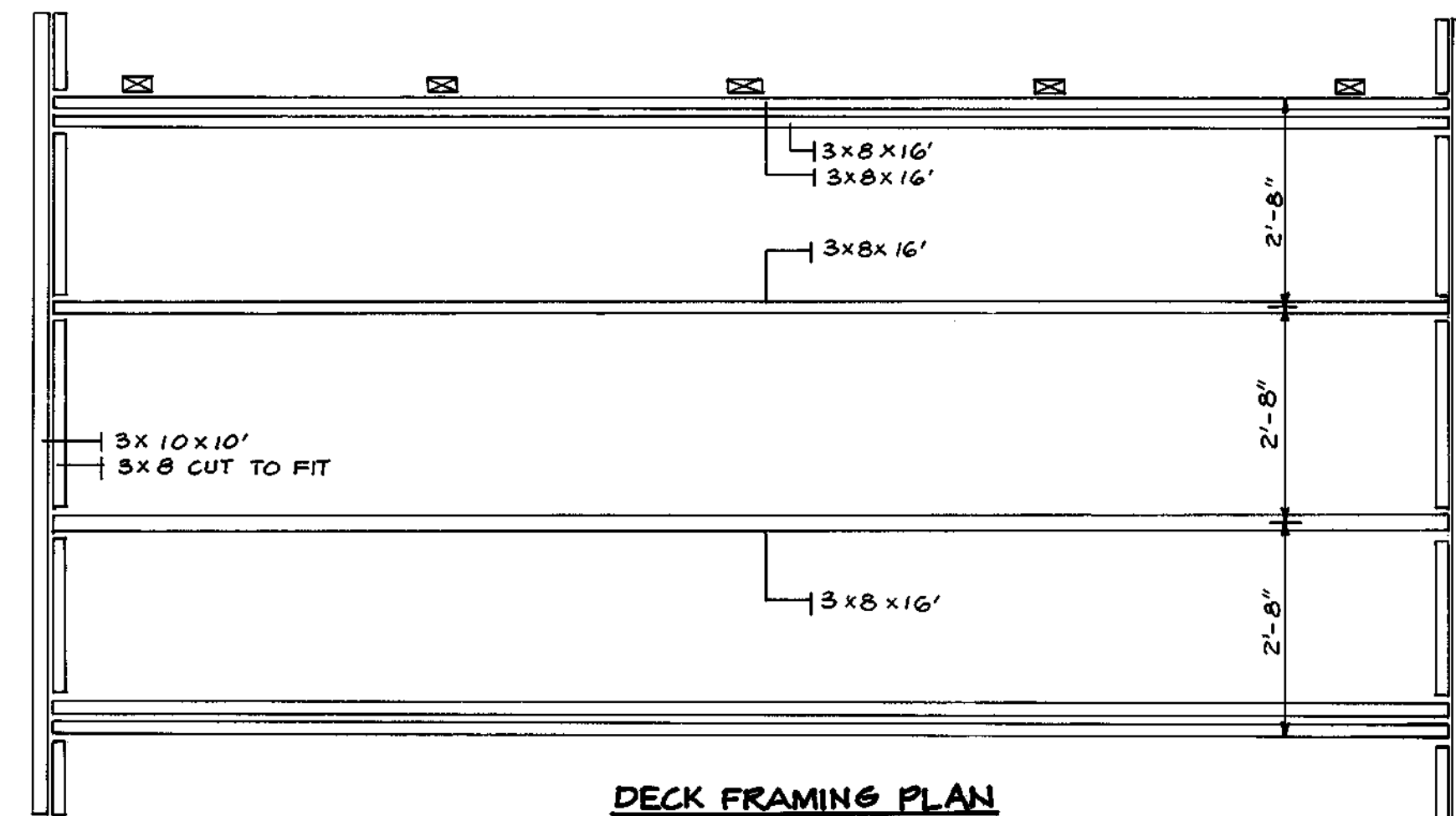
FROM CL STA 7+14.91 TO STA 8+28.84  
 RADIUS = 300.0'  
 LENGTH = 113.93'  
 TANGENT = 57.66'  
 DELTA = 21°45'34"  
 CHORD = S 62°58'57"W 113.25'

**CURB TRANSITION DATA**

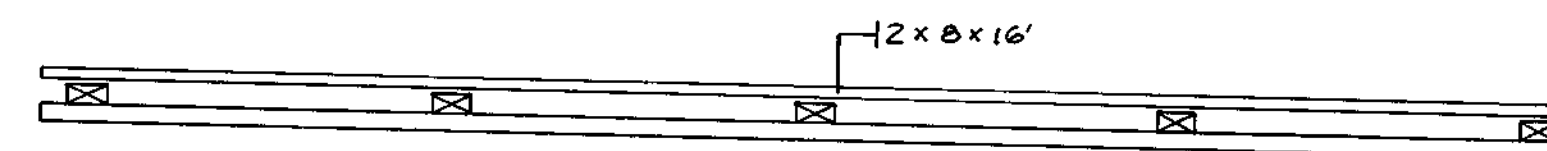
FROM CL STA 0+50.80 STAR MOON LANE  
 TO CL STA 0+19.70 LIGHT MOON WAY  
 RADIUS = 184.07'  
 LENGTH = 65.40'  
 TANGENT = 33.57'  
 DELTA = 20°40'12"  
 CHORD = N 77°17'57"W 66.05'



**SIDE VIEW**

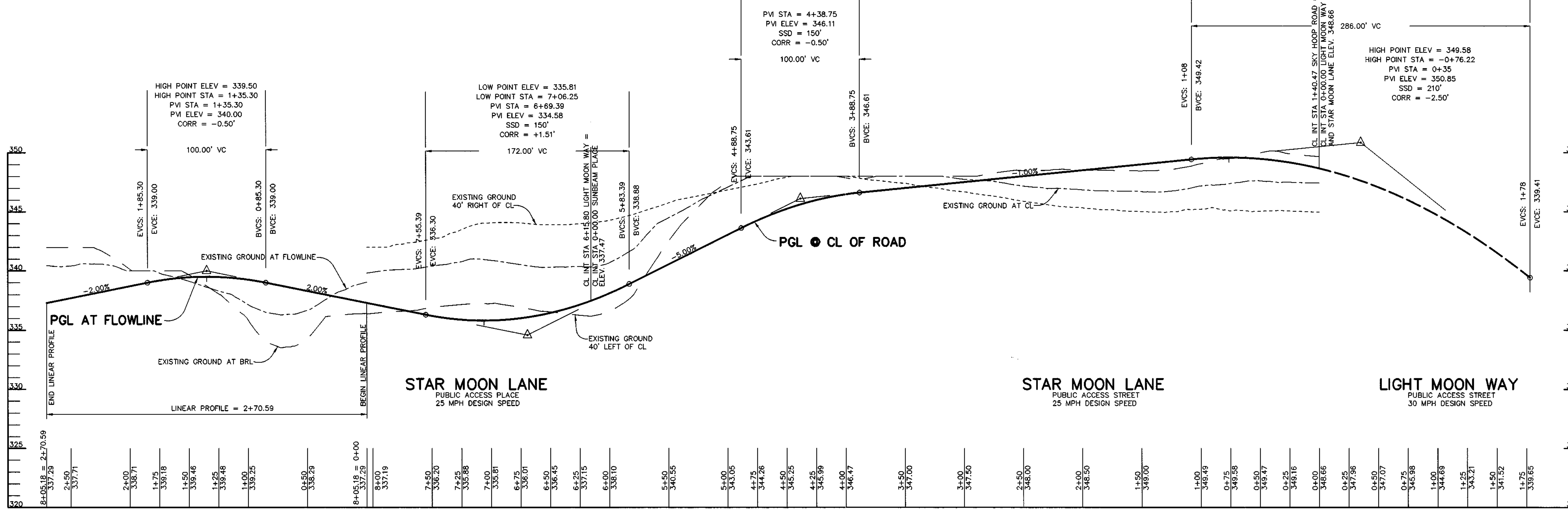


**DECK FRAMING PLAN**



**TOP CHORD**

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



**PROFILE**

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

AS BUILT CERTIFICATE

DATE

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

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

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

10-30-01 ADDED TYPICAL 16' FOOTBRIDGE 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  
**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: 410.997.9222

6-26-01  
 DATE

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

STRUCTURE SCHEDULE						
STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	A-5 4" WIDE	12.52 LT OF CL STA 3+05.00 LIGHT MOON WAY	312.70 (30")	312.60 (30")	329.47	HOCO STD. DETAIL SD-4.40
I-2	A-5 4" WIDE	12.52 LT OF CL STA 4+00.00 LIGHT MOON WAY	313.41 (30")	313.31 (30")	323.81	HOCO STD. DETAIL SD-4.40
I-3	A-5 4" WIDE	12.52 LT OF CL STA 4+94.22 LIGHT MOON WAY	314.27 (30")	314.17 (30")	321.62	HOCO STD. DETAIL SD-4.40
I-4	A-5 4" WIDE	12.52 LT OF CL STA 3+05.00 LIGHT MOON WAY	324.87 (24") 312.15 (30")	312.05 (30")	329.47	HOCO STD. DETAIL SD-4.40
I-5	A-5 2.5" WIDE	10.52 LT OF CL STA 0+10.43 PURPLE CLOUD ROW	333.48 (18") 329.55 (18")	329.05 (24")	337.21	HOCO STD. DETAIL SD-4.40
I-6	A-5 2.5" WIDE	12.52 RT OF CL STA 1+80.46 LIGHT MOON WAY	334.10 (18")	334.00 (18")	339.49	HOCO STD. DETAIL SD-4.40
I-7	A-5 2.5" WIDE	12.52 RT OF CL STA 1+00.00 LIGHT MOON WAY	341.10 (18")	341.00 (18")	344.94	HOCO STD. DETAIL SD-4.40
I-8	A-5 2.5" WIDE	18.52 RT OF CL STA 1+3.68 SKY HOOP ROAD	346.25 (15") 346.25 (15")	346.00 (18")	349.71	HOCO STD. DETAIL SD-4.40
I-9	A-5 2.5" WIDE	18.52 LT OF CL STA 1+00.12 SKY HOOP ROAD	-	346.64 (15")	349.70	HOCO STD. DETAIL SD-4.40
I-10	A-5 2.5" WIDE	10.52 LT OF CL STA 1+20.00 PURPLE CLOUD ROW	330.05 (18")	329.95 (18")	337.73	HOCO STD. DETAIL SD-4.40
I-11	A-5 2.5" WIDE	10.52 LT OF CL STA 2+42.62 PURPLE CLOUD ROW	331.06 (15") 332.75 (15")	330.81 (18")	336.60	HOCO STD. DETAIL SD-4.40
I-12	A-5 2.5" WIDE	LP STA 0+58.80 PURPLE CLOUD ROW	-	331.50 (15")	335.24	HOCO STD. DETAIL SD-4.40
I-13	A-5 2.5" WIDE	10.52 RT OF CL STA 2+83.48 PURPLE CLOUD ROW	-	333.00 (15")	336.74	HOCO STD. DETAIL SD-4.40
I-14	A-5 2.5" WIDE	19.00 LT OF CL STA 5+61.67 GORMAN ROAD	-	351.10 (15")	355.18	HOCO STD. DETAIL SD-4.40
I-15	A-5 2.5" WIDE	12.52 RT OF CL STA 4+94.22 LIGHT MOON WAY	314.04 (30")	313.94 (30")	321.62	HOCO STD. DETAIL SD-4.40
I-16	A-5 4" WIDE	10.52 RT OF CL STA 7+06.00 STAR MOON LANE	322.67 (24")	322.57 (24")	336.09	HOCO STD. DETAIL SD-4.40
I-17	A-5 4" WIDE	10.52 LT OF CL STA 7+06.00 STAR MOON LANE	322.88 (24")	322.78 (24")	336.09	HOCO STD. DETAIL SD-4.40
I-18	A-5 2.5" WIDE	10.52 LT OF CL STA 0+33.40 SUNBEAM PLACE	333.50 (18") 323.95 (18")	323.45 (24")	336.57	HOCO STD. DETAIL SD-4.40
I-19	A-5 2.5" WIDE	10.52 LT OF CL STA 5+86.70 STAR MOON LANE	334.27 (18")	334.17 (18")	338.01	HOCO STD. DETAIL SD-4.40
I-20	A-5 2.5" WIDE	10.52 RT OF CL STA 5+86.70 STAR MOON LANE	334.60 (18")	334.50 (18")	338.01	HOCO STD. DETAIL SD-4.40
I-21	A-5 2.5" WIDE	10.52 RT OF CL STA 5+00.00 STAR MOON LANE	340.10 (18")	340.00 (18")	343.33	HOCO STD. DETAIL SD-4.40
I-22	A-5 2.5" WIDE	10.52 RT OF CL STA 3+78.16 STAR MOON LANE	343.17 (18")	343.07 (18")	347.00	HOCO STD. DETAIL SD-4.40
I-23	A-5 2.5" WIDE	10.52 LT OF CL STA 3+78.16 STAR MOON LANE	343.50 (18")	343.40 (18")	347.00	HOCO STD. DETAIL SD-4.40
I-24	A-5 2.5" WIDE	19.00 LT OF CL STA 1+13.88 GORMAN ROAD	-	344.37 (18")	347.39	HOCO STD. DETAIL SD-4.40
I-25	A-5 2.5" WIDE	10.52 LT OF CL STA 1+58.00 SUNBEAM PLACE	324.82 (18")	324.72 (18")	331.53	HOCO STD. DETAIL SD-4.40
I-26	A-5 2.5" WIDE	10.52 LT OF CL STA 2+50.00 SUNBEAM PLACE	325.49 (18")	325.24 (18")	329.18	HOCO STD. DETAIL SD-4.40
I-27	A-5 2.5" WIDE	10.52 RT OF CL STA 0+50.00 SUNBEAM PLACE	-	325.60 (15")	329.18	HOCO STD. DETAIL SD-4.40
I-28	A-10 2.5" WIDE	19.00 RT OF CL STA 0+60.07 GORMAN ROAD	-	342.75 (15")	346.50	HOCO STD. DETAIL SD-4.41
I-29	A-10 2.5" WIDE	19.00 RT OF CL STA 11+09.56 GORMAN ROAD	347.95 (12")	347.70 (15")	351.20	HOCO STD. DETAIL SD-4.41
M-1	4"-0" DIA.	25.00 LT OF CL STA 3+5.00 LIGHT MOON WAY	312.54 (30")	312.49(30")	327.89	HOCO STD. DETAIL G-5.11
M-2	4"-0" DIA.	N 536,867.00 E 1,354,446.00	320.80 (24")	320.70 (24")	332.45	HOCO STD. DETAIL G-5.11
M-3	4"-0" DIA.	11.68 RT STA 1+79.28 STAR MOON LANE	321.59 (24")	321.49 (24")	339.91	HOCO STD. DETAIL G-5.11
M-4	4"-0" DIA.	15.00 LT OF CL STA 0+81.29 SUNBEAM PLACE	324.32 (18")	324.22 (18")	334.50	HOCO STD. DETAIL G-5.11
M-5	4"-0" DIA.	32.60 RT OF CL STA 11+9.44 GORMAN ROAD	347.60 (15")	347.35 (18")	351.90	HOCO STD. DETAIL G-5.11
E-1	30" ASTM END SECTION	N 536,741.00 E 1,354,545.00	312.00 (30")	-	-	HOCO STD. DETAIL SD-5.51
E-2	24" ASTM END SECTION	N 536,791.00 E 1,354,512.00	312.00 (24")	-	-	HOCO STD. DETAIL SD-5.51
E-3	36" ASTM END SECTION	N 536,810.00 E 1,354,697.00	308.00 (36")	-	-	HOCO STD. DETAIL SD-5.51
E-4	15" ADS END SECTION	44.23 RT OF CL STA 0+58.80 GORMAN ROAD	342.00 (15")	-	-	ADS, N-12
E-5	18" ADS END SECTION	37.90 RT OF CL STA 11+19.71 GORMAN ROAD	346.95 (18")	-	-	ADS, N-12
S-1	MODIFIED STRUCTURE	N 536,832.00 E 1,354,574.00	312.00 (8")	308.63 (36")	324.00	SEE SHEET 14
HW-1	TYPE "A" HEADWALL	34.74 RT OF CL STA 2+19.62 SUNBEAM PLACE	319.50 (48")	-	-	HOCO STD. DETAIL SD-5.11
HW-2	TYPE "A" HEADWALL	33.33 LT OF CL STA 2+03.45 SUNBEAM PLACE	-	319.84 (48")	-	HOCO STD. DETAIL SD-5.11

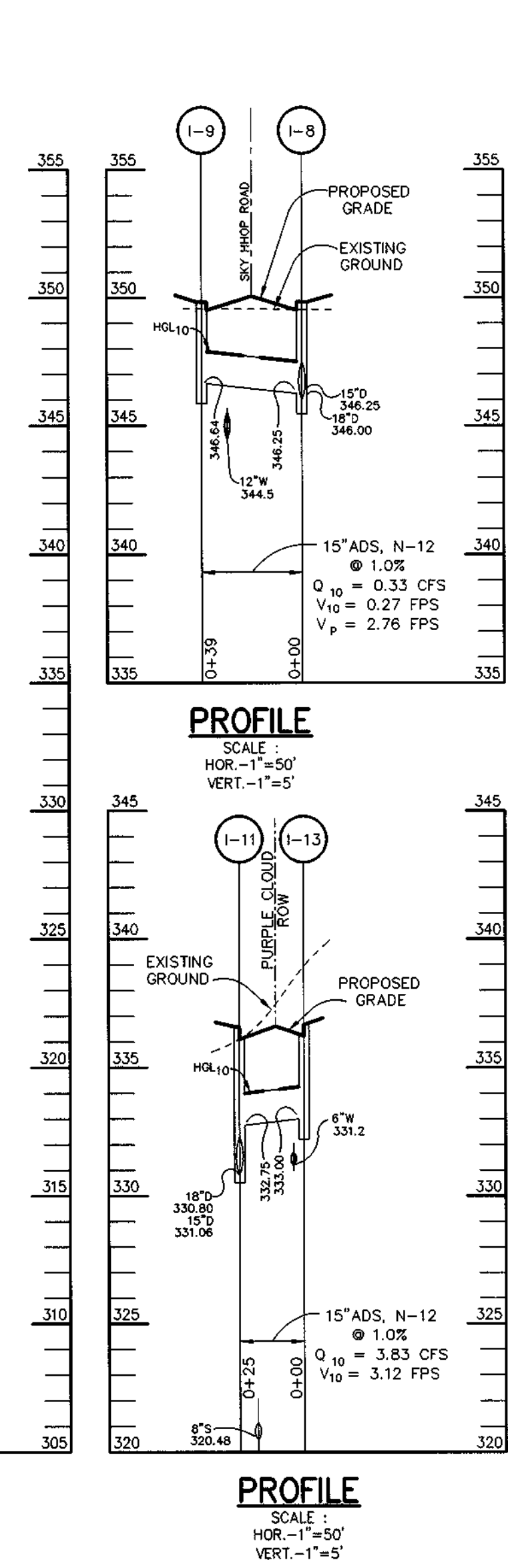
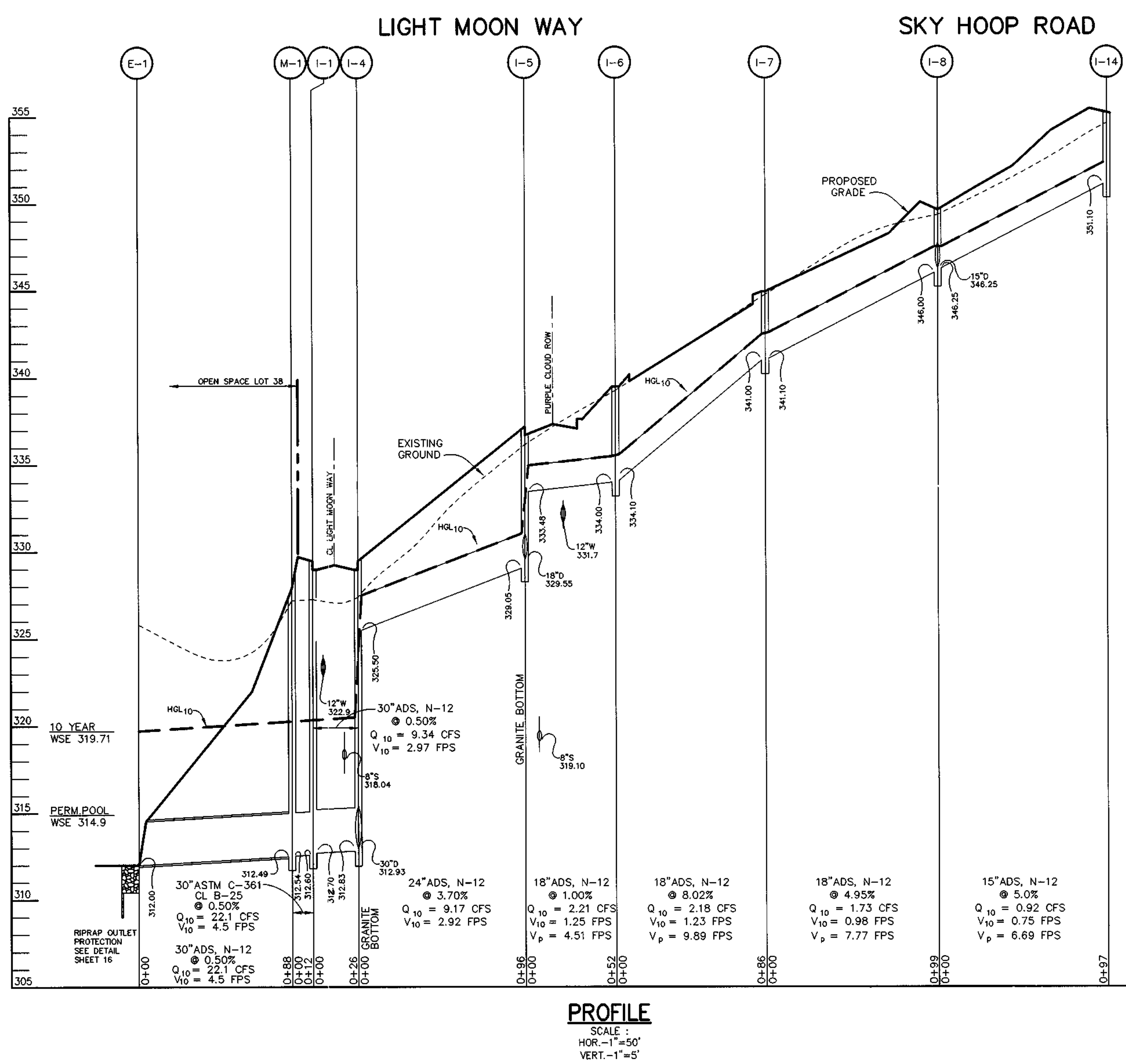
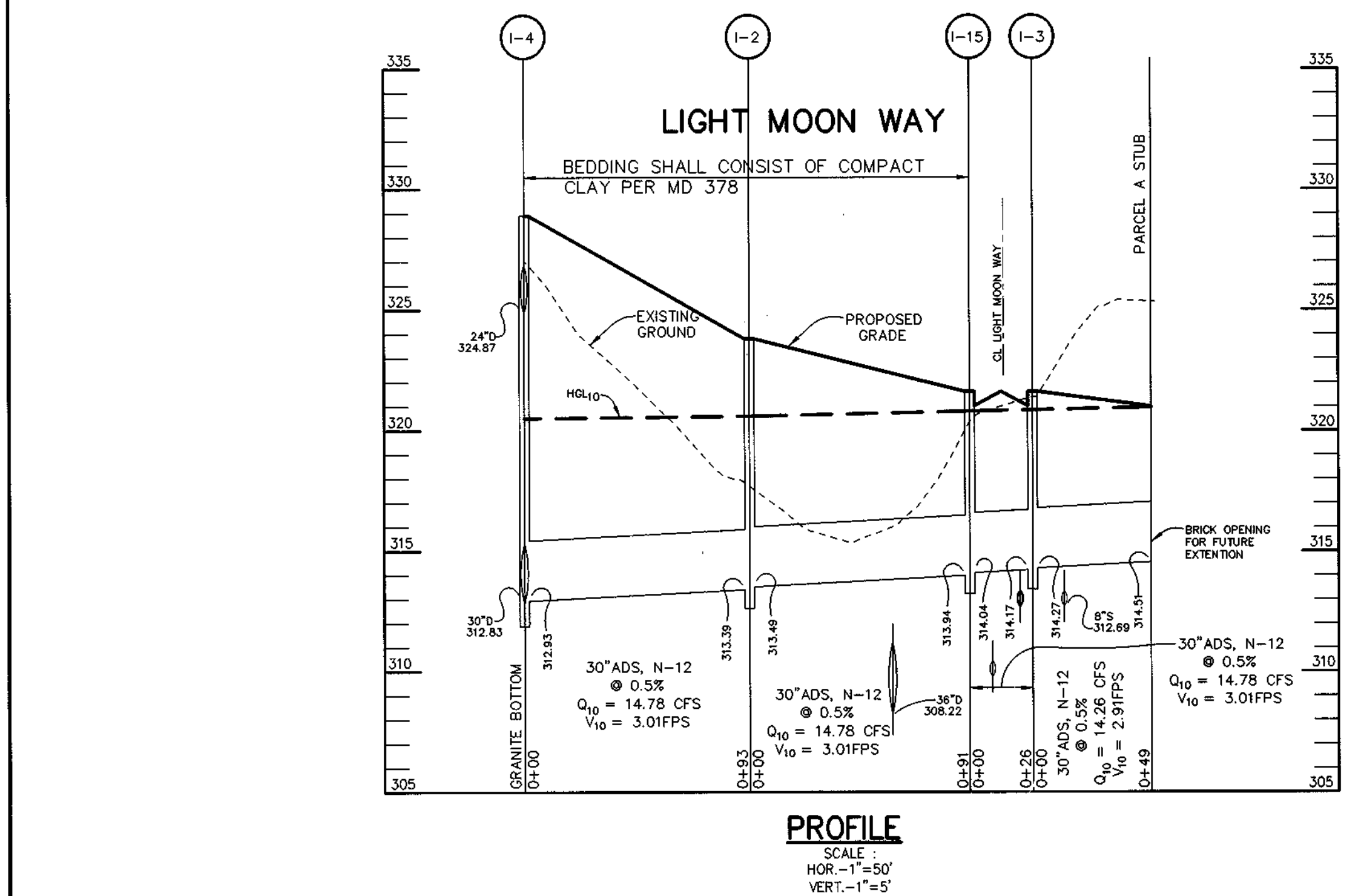
PIPE SCHEDULE		
PIPE LENGTH	SIZE	TYPE
308	15"	ADS, N-12
1074	18"	ADS, N-12
592	24"	ADS, N-12
255	30"	ADS, N-12
99	24"	ASTM
88	30"	ASTM
118	36"	ASTM
64	48"	RCCP

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

Earthwork:  
All fill placed for the core trench, access roadway, embankments, utility backfill, or any other location requiring stable support or minimal settlement shall be constructed as controlled compacted fill. Controlled compacted fill shall meet the following requirements:  
a) Within the described construction areas, in which new fill is to be placed, strip the vegetation, topsoil, and any organic, contaminated, or otherwise unsuitable materials to expose clean soils. The subject area shall extend outward from the exterior edges of the proposed construction a minimum of 5 feet plus 1 additional foot horizontally for every foot of new fill to be placed.  
b) Proofroll the stripped soil surface with a fully loaded, tandem-axle dump truck, or other approved equipment, under the observation of a geotechnical engineer or highly qualified senior level soils technician, to verify and establish a uniform, dense and stable condition. Any soft, yielding, organic, contaminated or otherwise unacceptable spots detected shall be cut out and replaced with controlled compacted fill.  
c) Compacted fill should be placed in relatively horizontal 8-inch loose lifts. Each lift should be uniformly and evenly blade mixed during spreading to ensure uniformity of the material in each layer. Each layer should be compacted to a minimum of 95 percent of the standard proctor maximum dry density as determined by ASTM D-998 (AASHTO T-99). The moisture content of the materials shall be maintained in order to attain the required degree of compaction.  
d) Where fills are to be placed on slopes the original ground should be deeply scarified or where slopes are steeper than 5 horizontal to 1 vertical the slope should be stepped or bermed, when considered necessary by the Engineer, in order that the placement of fill may be accomplished in horizontal lifts.  
It is noted that this methodology is recommended both as preparation for areas to receive new fill, as well as locations where cut is required to establish the proposed grades. In cut areas, the proofrolling and selective undercutting shall be accomplished after excavation down to the proposed grades has been completed.  
Provided that the on-site materials are placed and compacted as specified in the previous requirements, these materials should be acceptable for use as controlled fill. However, as previously stated, the on-site materials are not acceptable for re-use as core-trench materials.  
It is noted that the natural moisture contents vary with respect to the optimum moisture values for most efficient compaction. Accordingly, some wetting or drying of these soils may be required in order to achieve the specified degree of compaction. Also, the usage of any soil as fill must be closely monitored and tested to assure that the embankment is free of deleterious contamination and is being rolled to the required density.

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

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



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 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: 6/26/01

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: [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.  
HOWARD SOIL CONSERVATION DISTRICT: [Signature] 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: 7/17/01  
CHIEF, DIVISION OF LAND DEVELOPMENT

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

10:30 AM  
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 AND STRUCTURE SCHEDULE

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 410.997.8800 fax 410.997.9282

DATE: 6-26-01  
DESIGNED BY: CJR  
DRAWN BY: DAM  
PROJECT NO: 99212/FINALS SD1.DWG  
DATE: JUNE 19, 2001  
SCALE: AS SHOWN  
DRAWING NO. 8 OF 25  
CHRISTOPHER J. REID #19949



**LEGEND**

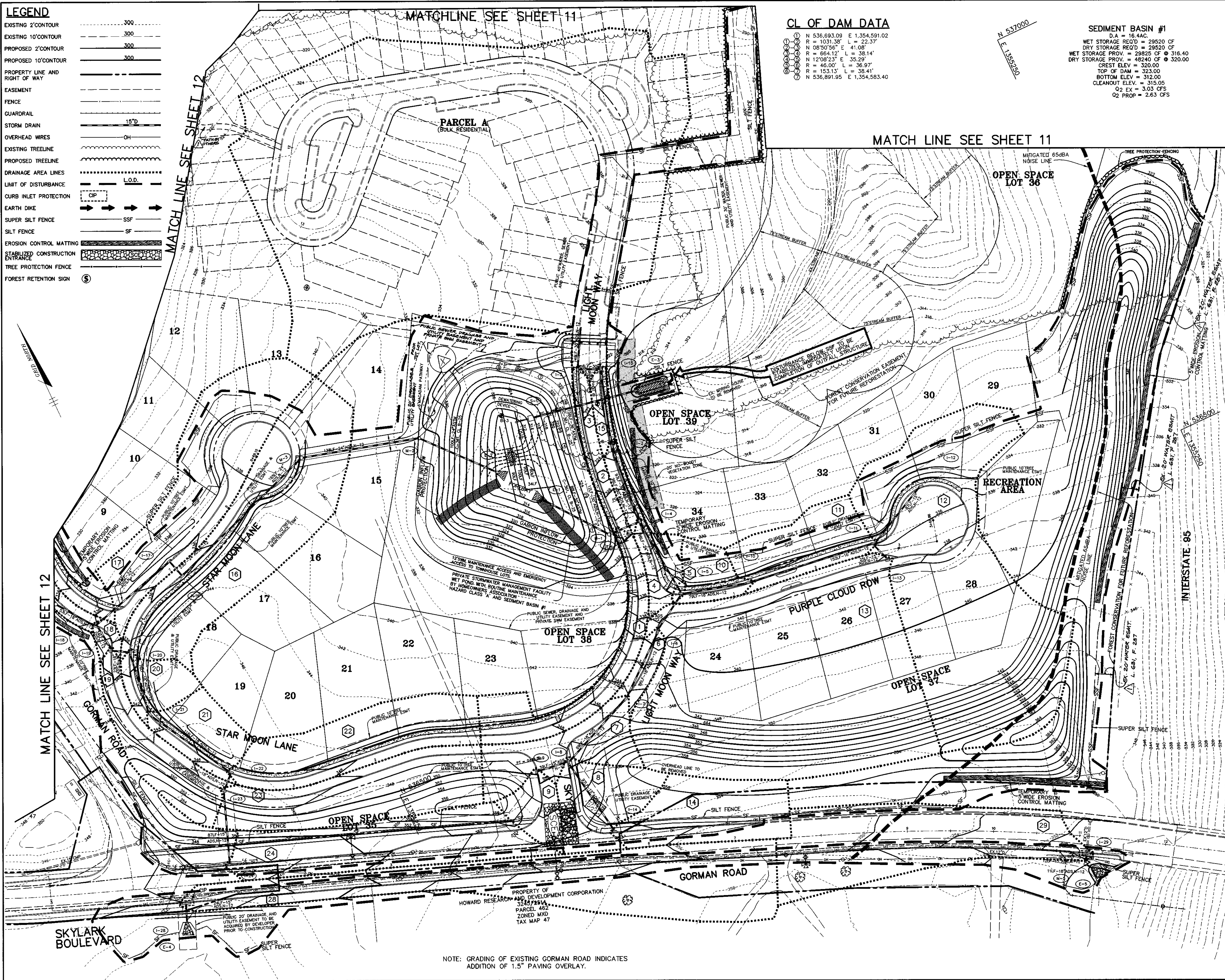
EXISTING 2' CONTOUR	---	300
EXISTING 10' CONTOUR	---	300
PROPOSED 2' CONTOUR	---	300
PROPOSED 10' CONTOUR	---	300
PROPERTY LINE AND RIGHT OF WAY	---	
EASEMENT	---	
FENCE	---	
GUARDRAIL	---	
STORM DRAIN	---	15" D
OVERHEAD WIRES	---	OH
EXISTING TREELINE	---	
PROPOSED TREELINE	---	
DRAINAGE AREA LINES	---	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	---	S

**CL OF DAM DATA**

1	N 536.693.09	E 1,354,591.02
2	N 1031.38'	L = 22.37'
3	N 08°50'56"	E 41.08'
4	R = 664.12'	L = 38.14'
5	N 12°08'23"	E 35.29'
6	R = 46.00'	L = 36.97'
7	R = 153.13'	L = 38.41'
8	N 536,891.95	E 1,354,583.40

**SEDIMENT BASIN #1**

D.A.	= 16.44G
WET STORAGE REQ'D	= 29520 CF
DRY STORAGE PROV.	= 29825 CF @ 318.40
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.

*John N. D. J.* 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 Myers/65* 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.

*Guth Se* 7/2/01  
HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Richard M. Dwyer* 7-6-01  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Wendy Hamstra* 7/17/01  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mr. Damman* 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:

**ma** Patton Harris Rust & Associates, pc  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8000 fax 410.997.9282

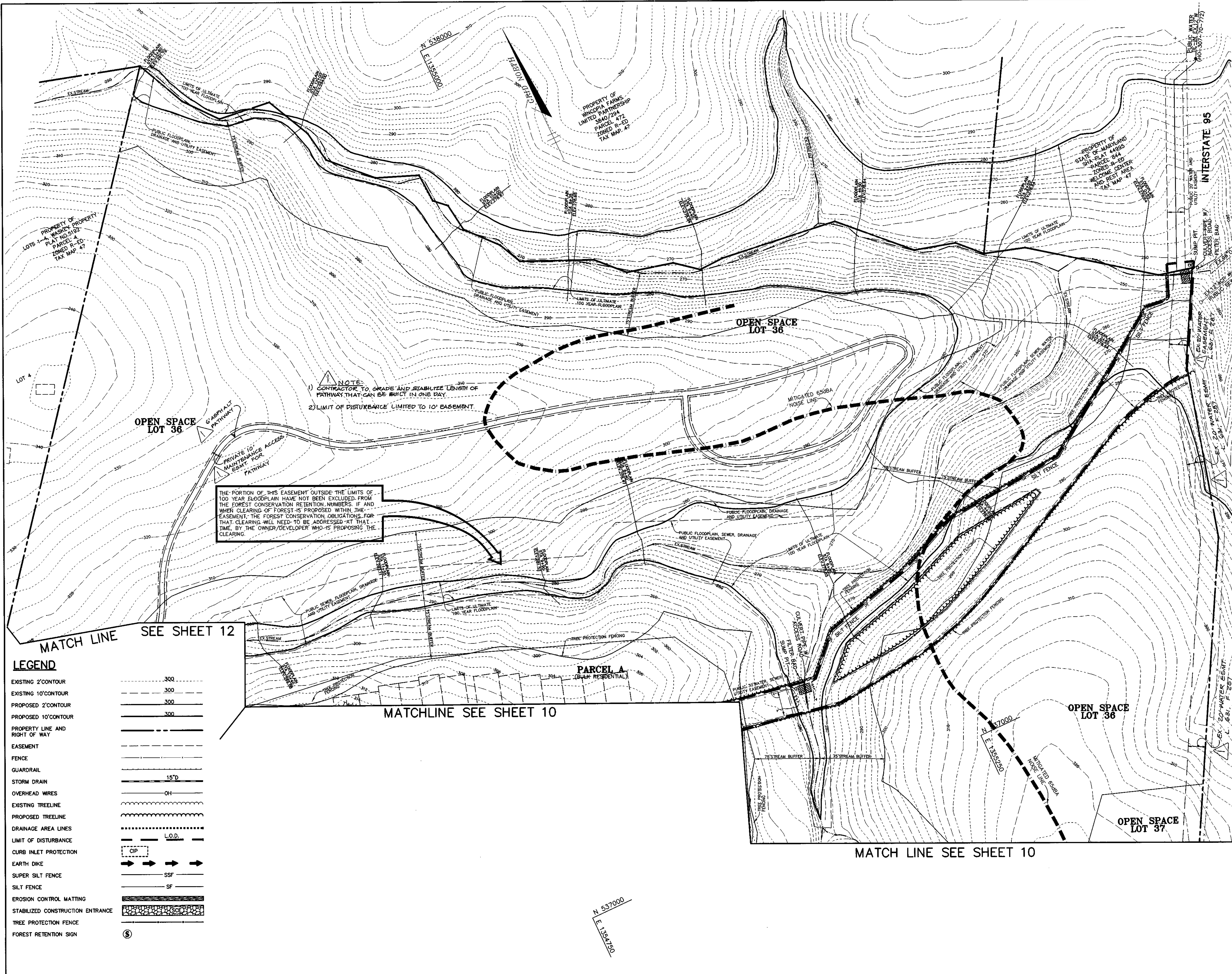
6.26.01  
DATE

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

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

P:\project\99212\FINALS\SitePlan.dwg Tue Jun 26 13:56:41 2001 RIEMER MUEGGE A DIVISION OF PHRGA





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

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	---	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	---	

BY THE DEVELOPER :  
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*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.

*Chris 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 Myers* 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.

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

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. Donahue* 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 J. Reid* 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

10.30.01 [X] ADDED EX. 20' WATER EASEMENT, ADDED 6" ASPHALT PATHWAY AND PRIV. 10' MAINT. ACCESS ESMT 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  
 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

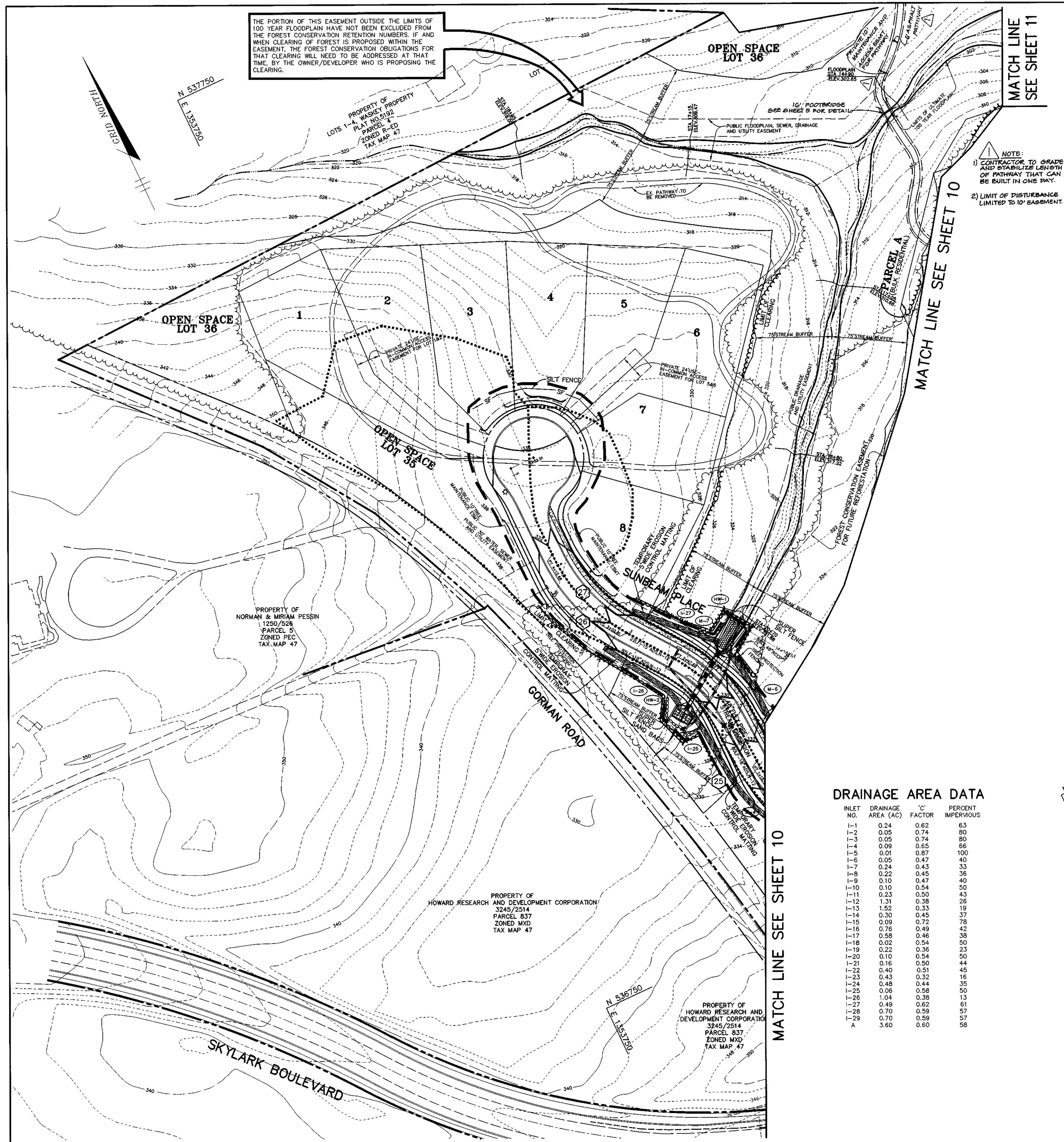
**ma** a division of  
 Patton Harris Rust & Associates, pc  
 ENGINEERS • SURVEYORS • PLANNERS  
 LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
 8818 Centre Park Drive, Columbia, MD 21046 • tel 410.997.8800 fax 410.997.9282

6.26.01  
 DATE

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.

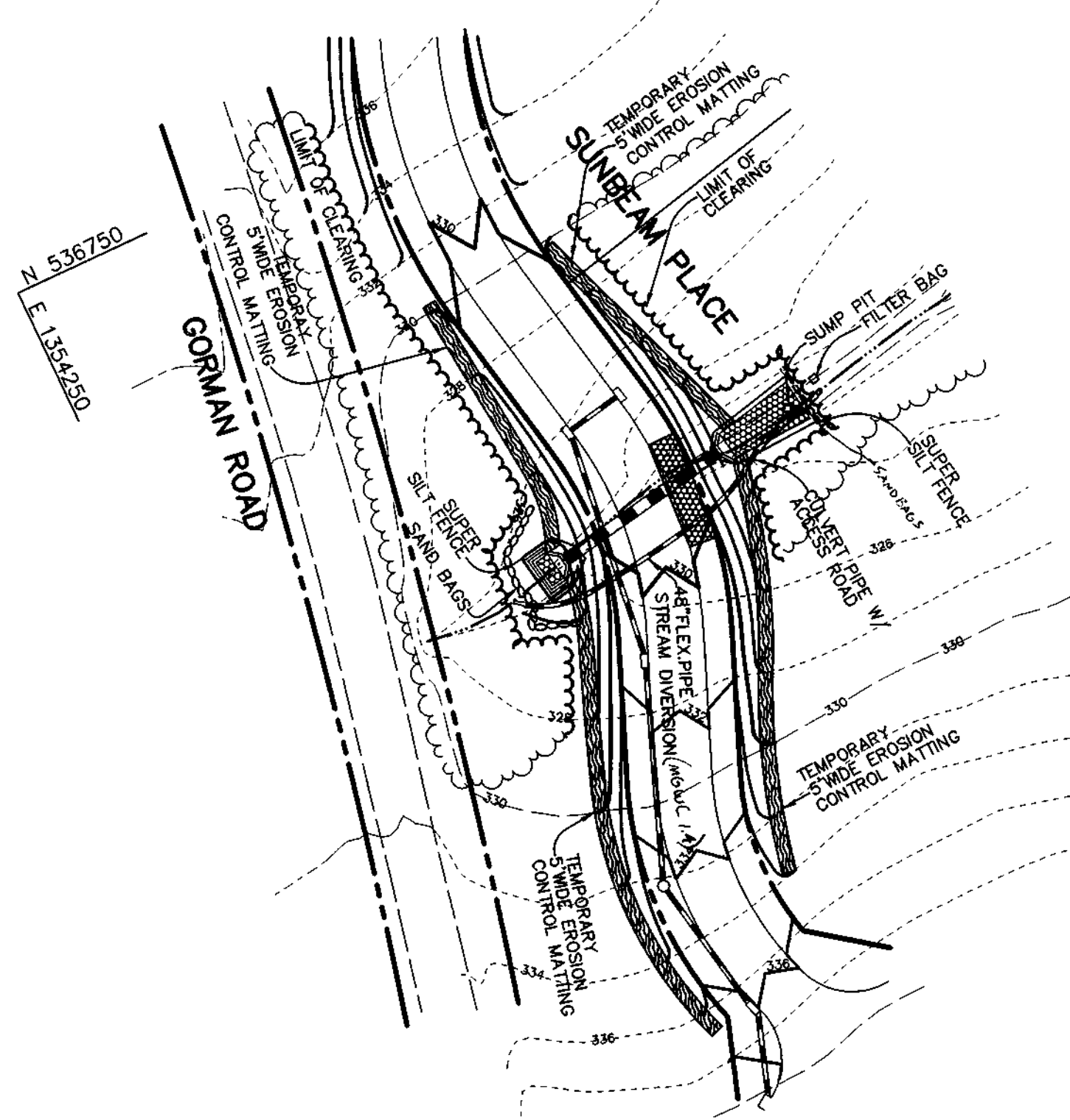
NOTE:  
1) CONTRACTOR TO GRADE AND STABILIZE LENGTH OF PATHWAY THAT CAN BE BUILT IN ONE PAY.  
2) LIMIT OF DISTURBANCE LIMITED TO 10' EASEMENT.

**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 ---
- OVERHEAD WIRES ---
- EXISTING TREELINE ---
- PROPOSED TREELINE ---
- DRAINAGE AREA LINES ---
- LIMIT OF DISTURBANCE ---
- CURB INLET PROTECTION ---
- EARTH DIKE ---
- SUPER SILT FENCE ---
- SILT FENCE ---
- EROSION CONTROL MATTING ---
- STABILIZED CONSTRUCTION ENTRANCE ---
- TREE PROTECTION FENCE ---
- FOREST RETENTION SIGN (S)

**DRAINAGE AREA DATA**

INLET NO.	DRAINAGE AREA (AC)	C FACTOR	PERCENT IMPERVIOUS
I-1	0.24	0.62	83
I-2	0.05	0.74	80
I-3	0.05	0.74	80
I-4	0.09	0.65	86
I-5	0.01	0.87	100
I-6	0.05	0.47	40
I-7	0.24	0.43	33
I-8	0.22	0.45	36
I-9	0.10	0.47	40
I-10	0.10	0.54	50
I-11	0.23	0.50	43
I-12	1.31	0.38	28
I-13	1.52	0.33	19
I-14	0.30	0.45	37
I-15	0.09	0.72	78
I-16	0.76	0.49	42
I-17	0.58	0.46	38
I-18	0.02	0.54	50
I-19	0.22	0.36	23
I-20	0.10	0.54	50
I-21	0.16	0.50	44
I-22	0.40	0.51	45
I-23	0.43	0.32	16
I-24	0.48	0.44	35
I-25	0.06	0.58	50
I-26	1.04	0.38	13
I-27	0.49	0.62	61
I-28	0.70	0.58	57
I-29	0.70	0.59	57
A	3.60	0.60	58



**SUNBEAM PLACE STREAM CROSSING**  
SCALE: 1" = 50'

BY THE DEVELOPER :

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DEVELOPER: *Jeff W. King* 6/22/01 DATE

BY THE ENGINEER :

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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.

NATURAL RESOURCES CONSERVATION SERVICE: *Jin Anna Cox* 7/2/01 DATE

HOWARD SOIL CONSERVATION DISTRICT: *John L. Allen* 7/2/01 DATE

AS BUILT CERTIFICATE

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.  
*David Harvitt* 7/17/01  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris Dammann* 7/16/01  
 CHIEF DEVELOPMENT ENGINEERING DIVISION DATE

10.30.01 ADDED 6" ASPHALT PATHWAY AND PRIVATE 10' MAINTENANCE AND ACCESS EASEMENT 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  
 ZONED: R-ED PARCEL: P/O 837  
 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE **GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP**  
 a division of:  
**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 410.997.9282

DATE 6.26.01

DESIGNED BY : CJR

DRAWN BY: DAM

PROJECT NO 99212/FINALS  
 'SEDCONT3.DWG

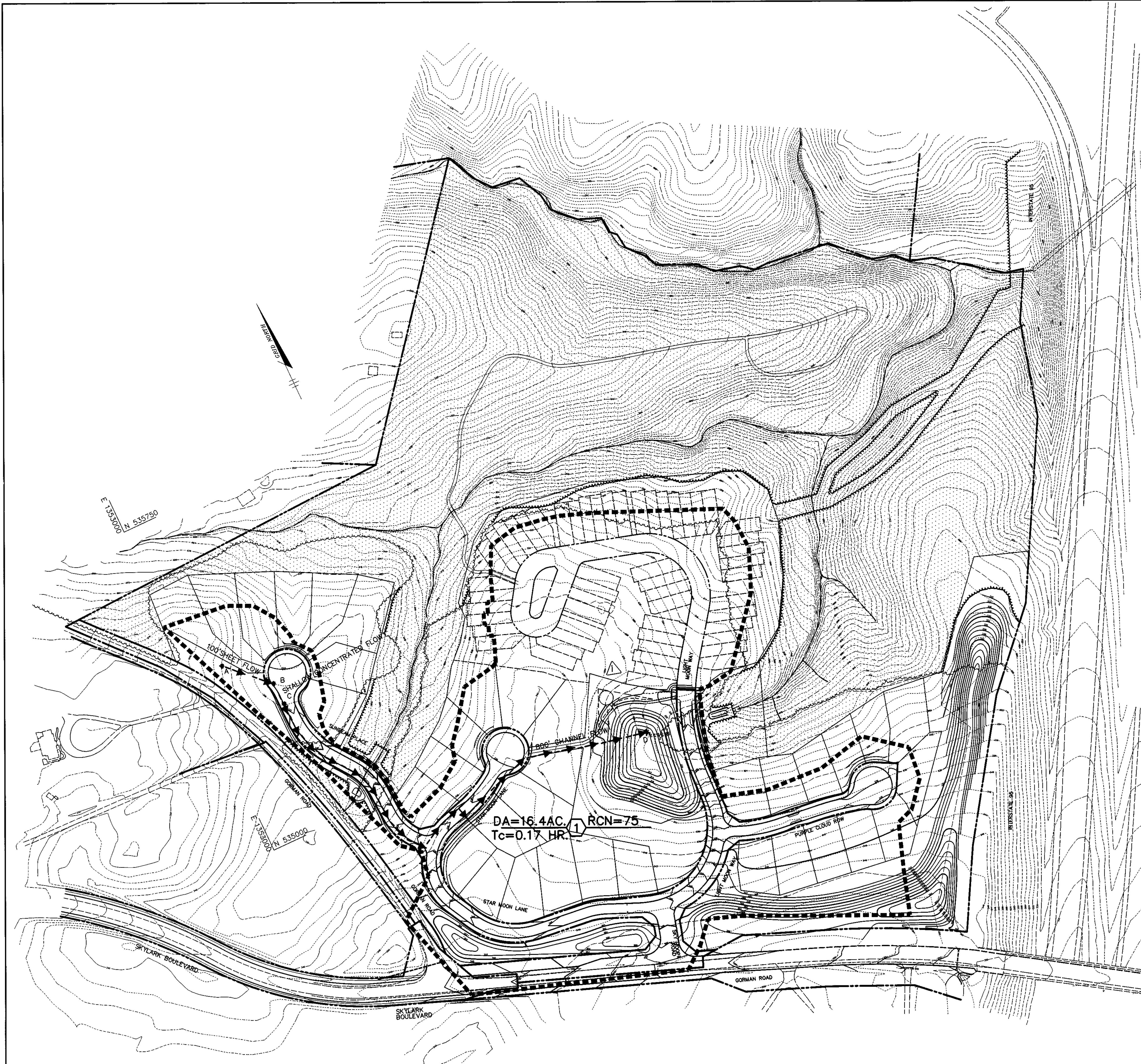
DATE : JUNE 19, 2001

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	0.86 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.

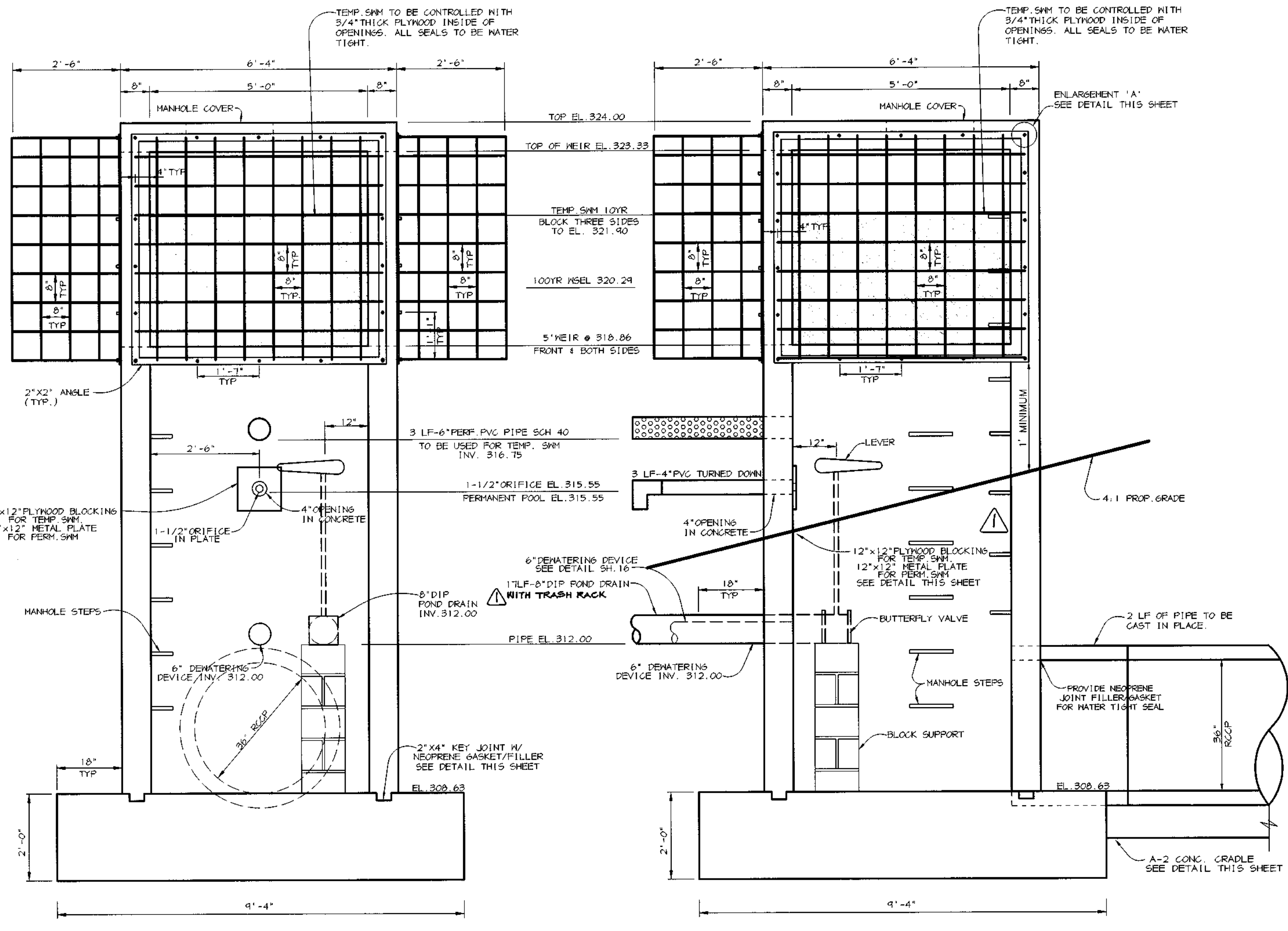
The pond is a low hazard class "A" facility, as any breach of the embankment would impact only open space and floodplain.

NATURAL AREA CONSERVATION CREDIT  
= 25.84 ACRES TOTAL

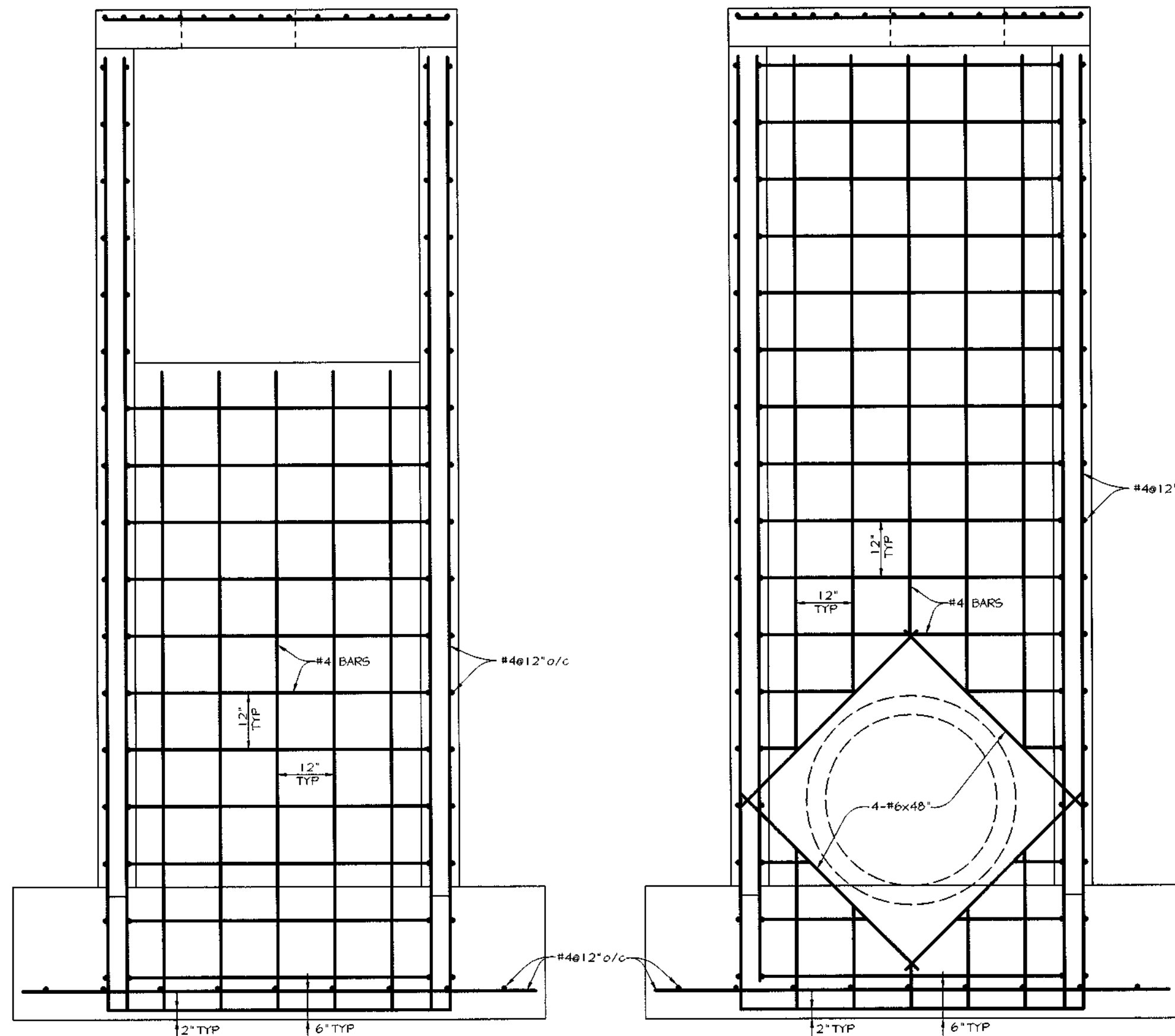
E 135300  
N 535000

AS BUILT CERTIFICATE	
APPROVED :	DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	7-6-01
<i>Richard M. Swartz</i> CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED :	DATE
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	7/10/01
<i>Wendy Hampton</i> CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
APPROVED :	DATE
<i>Chris Dammann</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/10/01
10-30-01 <input checked="" type="checkbox"/> ADDED TOT LOT LOCATION, CHANGED LOCATION OF PATHWAY, MODIFIED PUB. RIGHT & PREV. SWM REGIM.	
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 410.997.8800 fax 410.997.9282	
DATE	DESIGNED BY :
6-26-01	CJR
DRAWN BY: DAM	
PROJECT NO : 99212/FINALS PRDA.DWG	
DATE : JUNE 19, 2001	
SCALE : 1"=100'	
DRAWING NO. 13 OF 25	

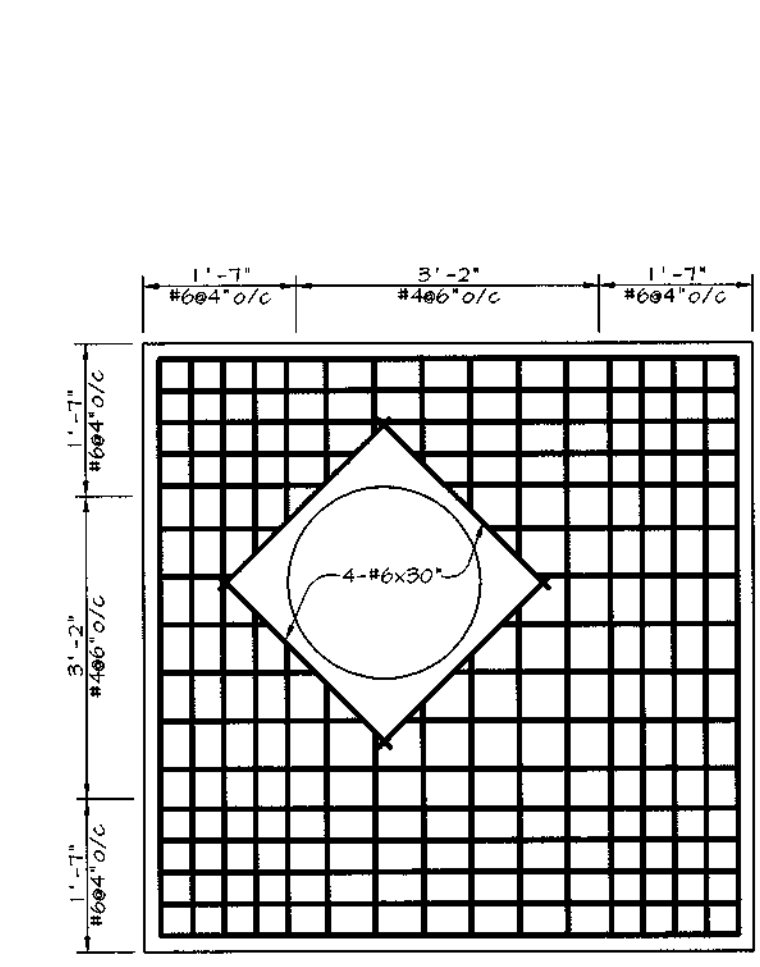




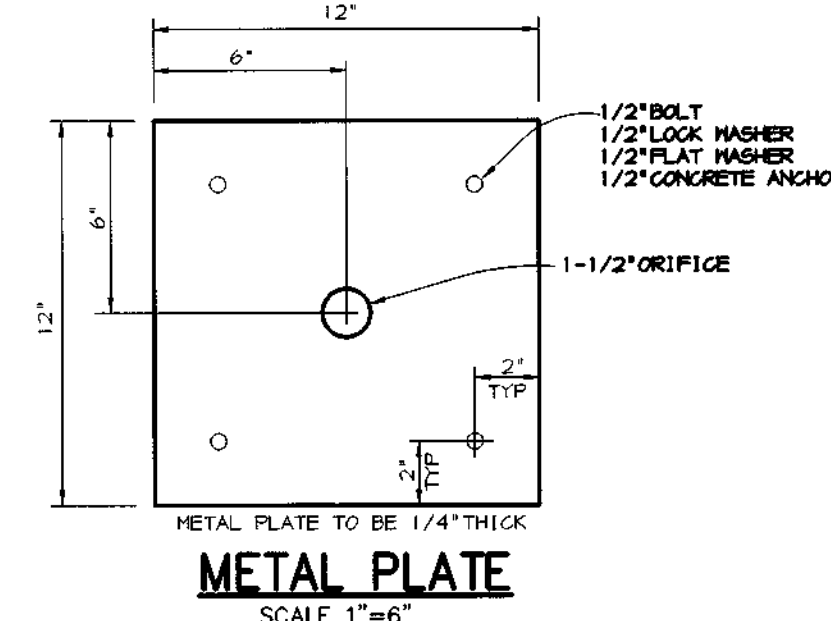
**S-1 DETAILS**  
SCALE 1"=2'



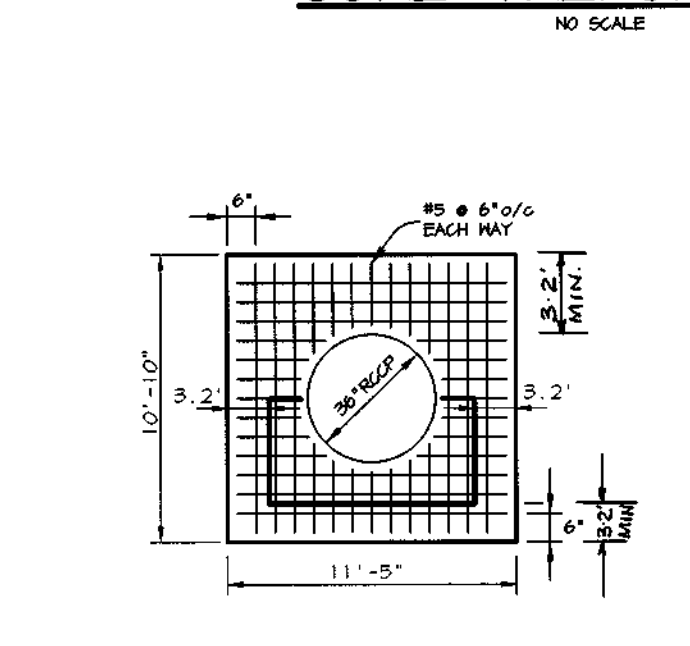
**S-1 REBAR LAYOUT**  
SCALE 1"=2'



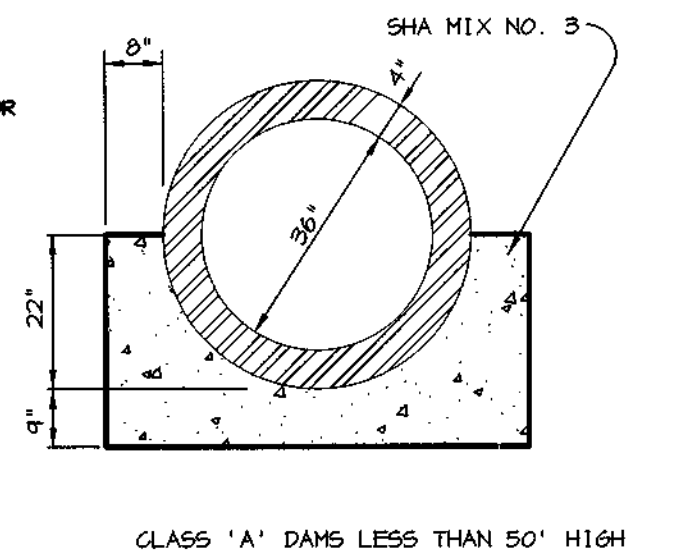
**RISER LID**



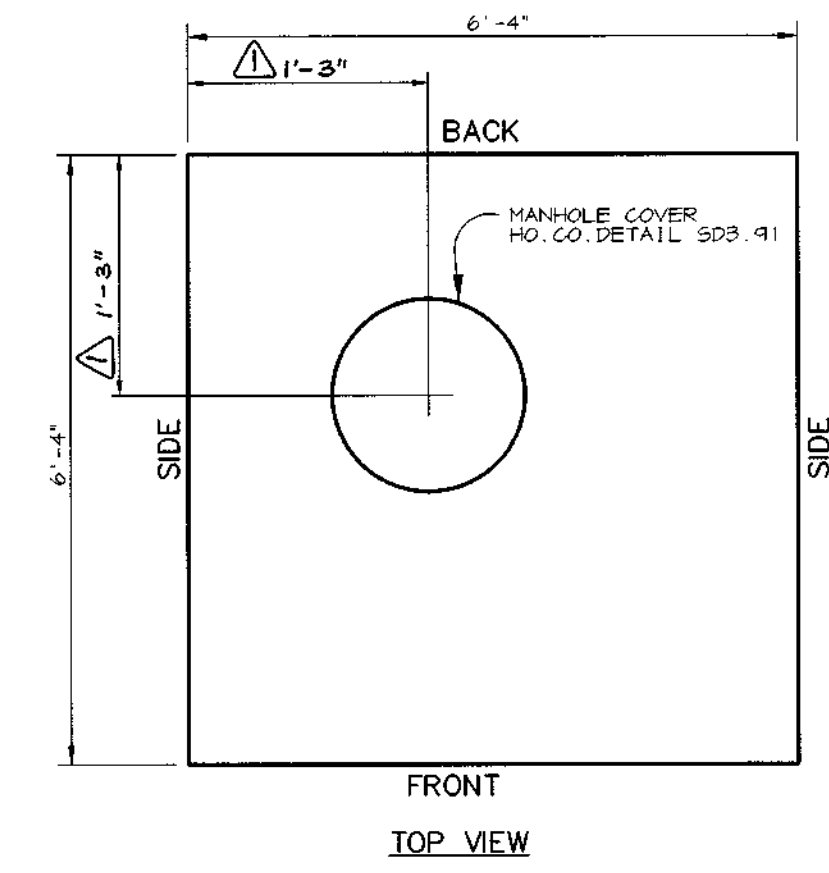
**METAL PLATE**  
SCALE 1"=6"



**CONCRETE ANTI-SEEP COLLAR**  
NO SCALE



**A-2 CONCRETE CRADLE**  
NO SCALE



**RISER STRUCTURE NOTES FOR S-1**

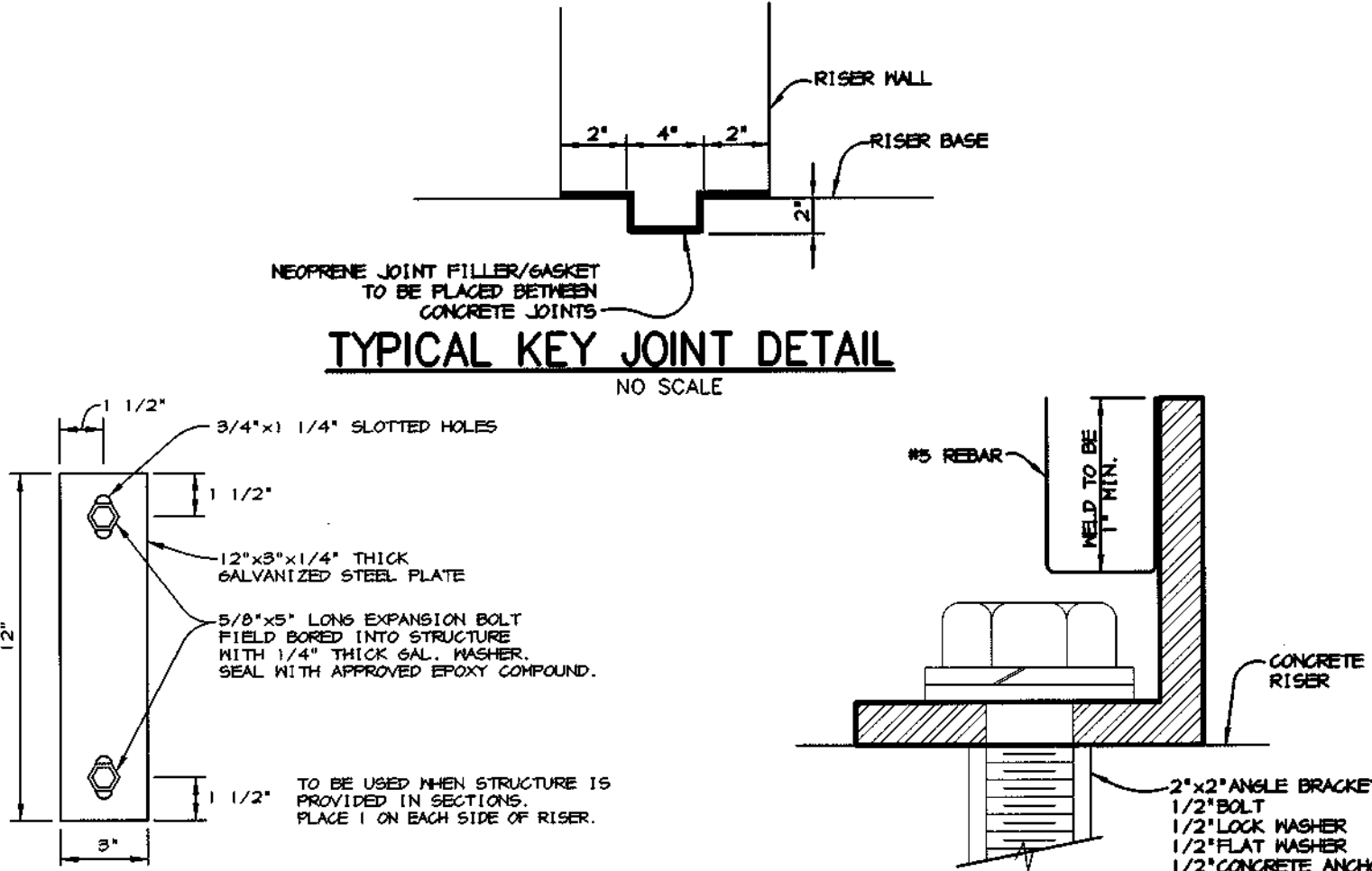
- RISER TO BE CAST IN PLACE. SHOP DRAWINGS FOR THIS CONCRETE STRUCTURE SHALL MEET THE MINIMUM ASTM REQUIREMENTS FOR CAST IN PLACE STRUCTURES. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
- SEE THIS 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 (ANNA C-155, CL. 350) SHALL BE CONNECTED TO THE RISER HALL WITH ALL-THREADED ROD AND A FLANGE JOINT. PROVIDE A STEM EXTENSION ON THE GATE VALVE AND FIRMLY SECURE TO RISER HALL 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.



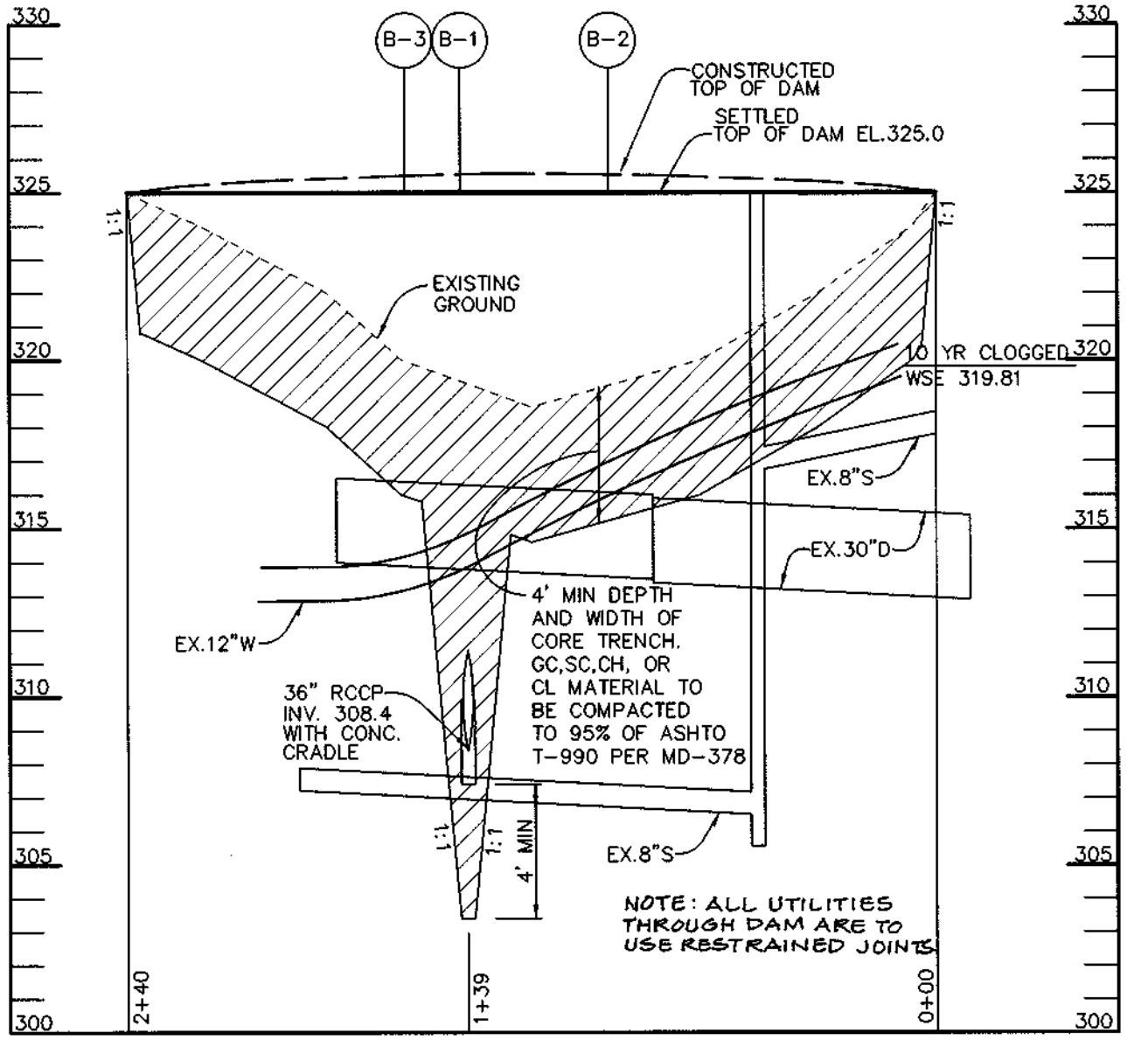
**CORE TRENCH DETAIL**  
NO SCALE



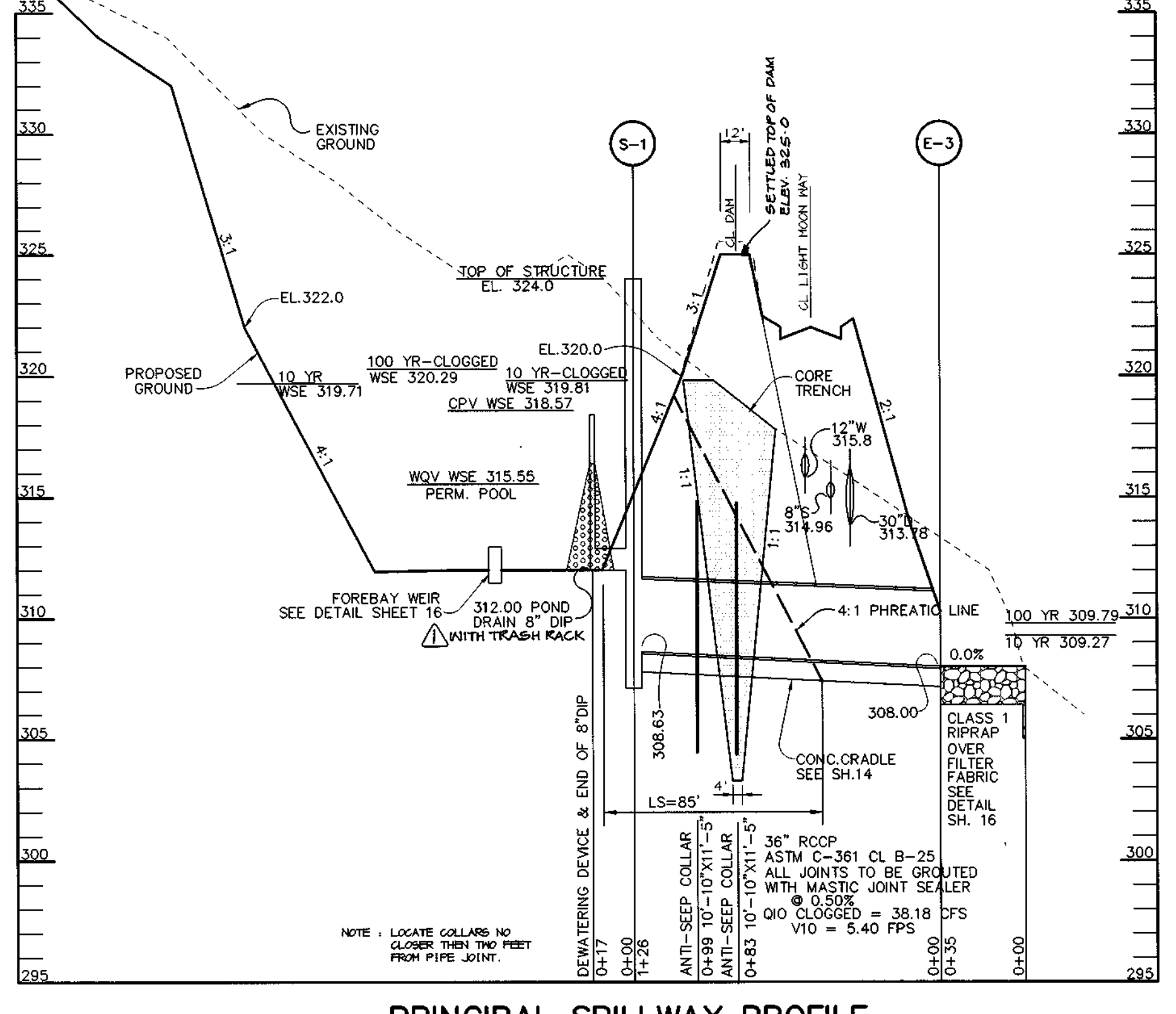
**RISER JOINT FASTENER**  
NO SCALE



**ENLARGEMENT A**  
NO SCALE



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



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

BY THE DEVELOPER:  
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*Jeff N. King* 6/22/01  
DEVELOPER DATE

BY THE ENGINEER:  
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*Chris 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 Lopez* 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 J. Reid* 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 Hamilton* 7/7/01  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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

10-30-01/11 ADDED STEPS IN S-1, TRASH RACK ON DRAIN.

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  
**STORMWATER MANAGEMENT NOTES AND DETAILS**

**RIEMER MUEGGE**  
a division of  
**Patton Harris Rust & Associates, pc**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS  
8819 Centro 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/SEDDT3.DWG  
DATE: JUNE 19, 2001  
SCALE: AS SHOWN  
DRAWING NO. 14 OF 25



MD-378 STANDARDS AND SPECIFICATIONS

SPECIFICATIONS

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

SITE PREPARATION

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

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, material and other obstructions. All trees, brush, logs, fences, material and other obstructions shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

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

EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas and shall be free of roots, stumps, mud, rocks, frozen or other objectionable materials. Fill material for the center of the embankment, and cut-off trench shall conform to the following: 4 - 10 inch pipe 2' thick, 6" frozen or other objectionable materials. Fill material for the center of the embankment, and cut-off trench shall conform to the following: 4 - 10 inch pipe 2' thick, 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 which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillways must be installed concurrently with fill placement and not excavated later.

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

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. Each layer of fill shall be compacted as necessary to obtain this density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by ASHTO Method T-99 (Standard Proctor).

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

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

STRUCTURE BACKFILL

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other means usually directed compaction. The material shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other means usually directed compaction equipment. The material shall completely fill all voids adjacent to the structure. No settling shall be permitted. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other means usually directed compaction equipment. The material shall completely fill all voids adjacent to the structure. No settling shall be permitted.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 5.

Flowable Fill - The flowable fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other means usually directed compaction. The material shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other means usually directed compaction equipment. The material shall completely fill all voids adjacent to the structure. No settling shall be permitted.

PIPE CONSULTS

All pipes shall be circular in cross section.

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

- 1. Materials - (Polymer Coated Steel Pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 2.01 inch (0.011) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of ASHTO Specifications M-245 4' to 24' with exterior protective bands or flanges.

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

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of ASHTO Specifications M-190 Type A with watertight coupling bands or flanges. Aluminum pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of ASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or the coats of asphalt.

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

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

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

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

Backfilling shall conform to "Structure Backfill."

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

Reinforced concrete pipe - All of the following criteria shall apply for reinforced concrete pipe.

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

Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding/grade for their entire length. This bedding/grade shall consist of one 4" thick layer of concrete under the pipe and one 4" thick layer of concrete 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete grade is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Level bedding is not permitted.

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. b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients. c. The original soil is vegetative containing material toxic to plant growth. d. The soil is so acidic that treatment with limestone is not feasible.

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

CONSTRUCTION AND MATERIAL SPECIFICATIONS

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

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

- 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. Reported topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.

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

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

IV. For sites having disturbed areas over 5 acres:

- 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. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher. b. Organic content of topsoil shall be not less than 1.5 percent by weight. c. Topsoil having suitable soil content greater than 500 parts per million shall not be used. d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

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

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

VI. Topsoil Application

- 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.

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

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

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

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

- 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 site having disturbed areas over 5 acres shall conform to the following requirements: a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06. b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 9.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use. c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet. d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sowing, HDVA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1978.

OPERATION, MAINTENANCE AND INSPECTION

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

NOTE: REFER TO 1/14/10 GEOTECH REPORT FOR FURTHER FILL, EARTHWORK AND OTHER GEOTECHNICAL REQUIREMENTS BY THE ROBERT B. BALTER COMPANY (NO. 13987 MD).

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

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, interferes with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (513-1855).

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 1974 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND MARKING 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 1974 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 ESTABLISHMENT 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.

SITE ANALYSIS

Table with 2 columns: AREA, ACRES. Includes rows for DISTURBED AREA, AREA TO BE VEGETATIVELY STABILIZED, TOTAL CUT, TOTAL FILL, OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT.

7. 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. PUMP OUT STANDING WATER IN BASIN USING PUMPING STATION. S-1 TO HAVE ORRICE CONSTRUCTED FOR SEDIMENT CONTROL BLOCK 10 YEAR WEIR AS SHOWN ON RISER DETAILS. (1 MONTH AFTER PERMITS ARE GRANTED FROM THE INSPECTOR, BEGIN SITE GRUBBING & GRADING.)

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 FORELAY AS SHOWN ON GRADING PLAN. (2 DAYS)
- D. REMOVE TEMPORARY DRAW DOWN DEVICES AND PLYWOOD. (1 DAY)
- E. INSTALL POND DRAIN AND ORRICE PLATES. (3 DAYS)
- F. REMOVE ACCUMULATED SEDIMENT. (1 DAY)
- G. STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)

10.30-01 - ADDED MAINTENANCE NOTES FOR WET POND.

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/D 837 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE SEDIMENT CONTROL NOTES

RIEMER MUEGGE a division of Patton Harris Rust & Associates, pc ENGINEERS • SURVEYORS • PLANNERS LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS 8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8600 fax 410.997.2822

DATE 6.26.01

DESIGNED BY: CJR

DRAWN BY: DAM

PROJECT NO. 99212/FINALS SEDDET2.DWG

DATE: JUNE 19, 2001

SCALE: AS SHOWN

DRAWING NO. 15 OF 25

CHRISTOPHER J. REID #19949

SEAL OF MARYLAND

NO SCALE BORING B-1

NO SCALE BORING B-2

NO SCALE BORING B-3

F-01-140

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: 7/6/01

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

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

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

ADDED MAINTENANCE NOTES FOR WET POND.

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/D 837 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE SEDIMENT CONTROL NOTES

RIEMER MUEGGE a division of Patton Harris Rust & Associates, pc ENGINEERS • SURVEYORS • PLANNERS LANDSCAPE ARCHITECTS • ENVIRONMENTAL SPECIALISTS 8818 Centre Park Drive, Columbia, MD 21045 • tel 410.997.8600 fax 410.997.2822

DATE 6.26.01

DESIGNED BY: CJR

DRAWN BY: DAM

PROJECT NO. 99212/FINALS SEDDET2.DWG

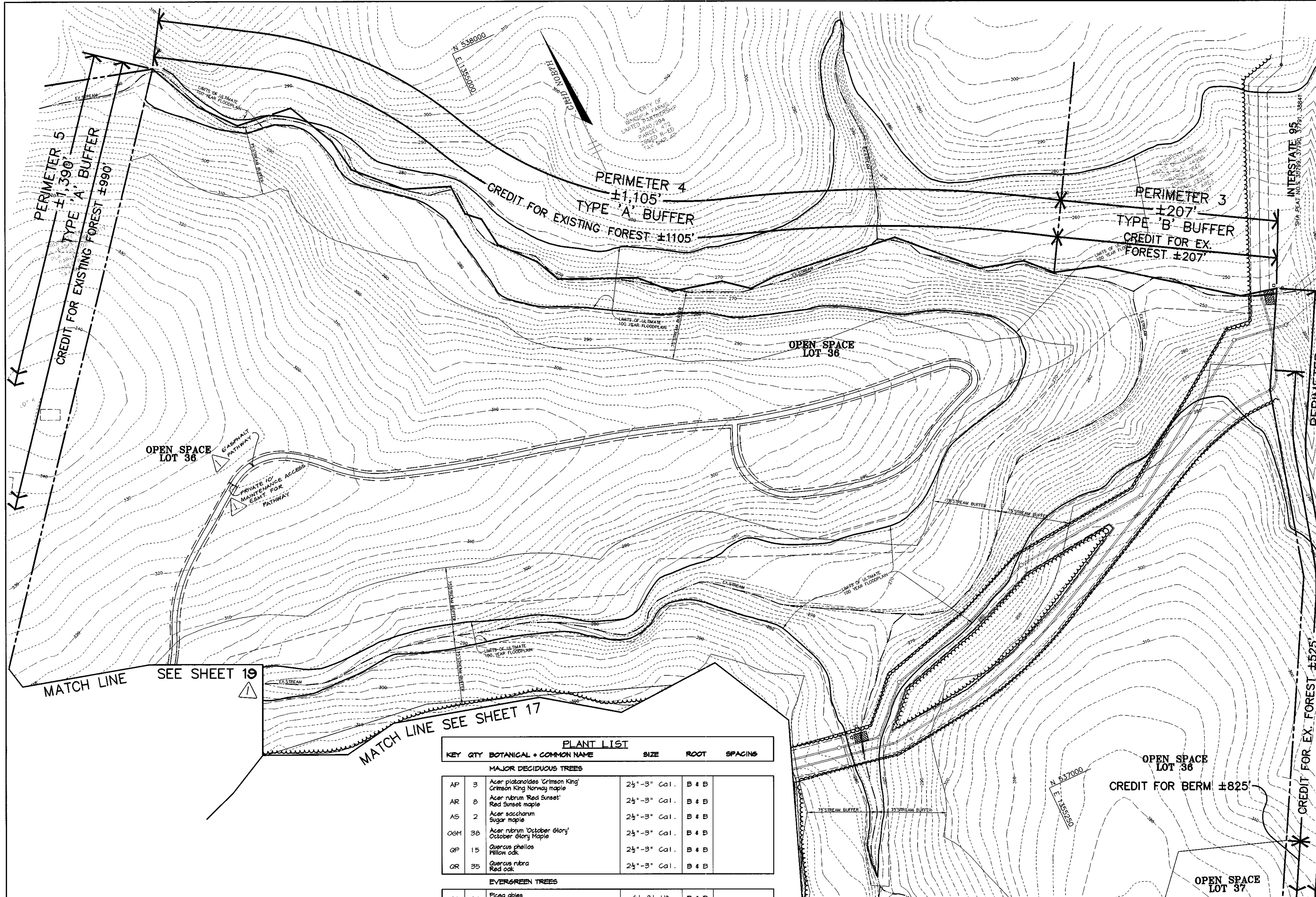
DATE: JUNE 19, 2001

SCALE: AS SHOWN

DRAWING NO. 15 OF 25

CHRISTOPHER J. REID #19949





KEY	QTY	BOTANICAL & COMMON NAME	SIZE	ROOT	SPACING
<b>PLANT LIST</b>					
<b>MAJOR DECIDUOUS TREES</b>					
AP	3	Acer platanoides 'Crimson King' Crimson King Norway maple	2 1/2" - 3" Cal.	B # B	
AR	8	Acer rubrum 'Red Sunset' Red Sunset maple	2 1/2" - 3" Cal.	B # B	
AS	2	Acer saccharum Sugar maple	2 1/2" - 3" Cal.	B # B	
OGM	38	Acer rubrum 'October Glory' October Glory Maple	2 1/2" - 3" Cal.	B # B	
QP	15	Quercus phellos Willow oak	2 1/2" - 3" Cal.	B # B	
QR	35	Quercus rubra Red oak	2 1/2" - 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 cerasifera atropurpurea 'Thundercloud' Thundercloud purpleleaf plum	1 1/2" - 2" Cal.	B # B	
PSK	6	Prunus serrulata 'Kwanzan' Kwanzan cherry	1 1/2" - 2" Cal.	B # B	
<b>SHRUBS</b>					
TMD	50	Taxus media densiformis Densiformis Yew	18" - 24"	B # B	

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Andrew M. Quach* 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 T. Dows* 7/10/01  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

10-30-01 / 1 / ADDED 6" ASPHALT PATHWAY, MODIFIED EX. ESMNT. TO PRIV. 10' MAINTENANCE & ACCESS ESMNT. 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  
 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

DESIGNED BY: CJR

DRAWN BY: DAM

PROJECT NO. 99212/FINALS  
 USCP2/FINAL.DWG

DATE: JUNE 19, 2001

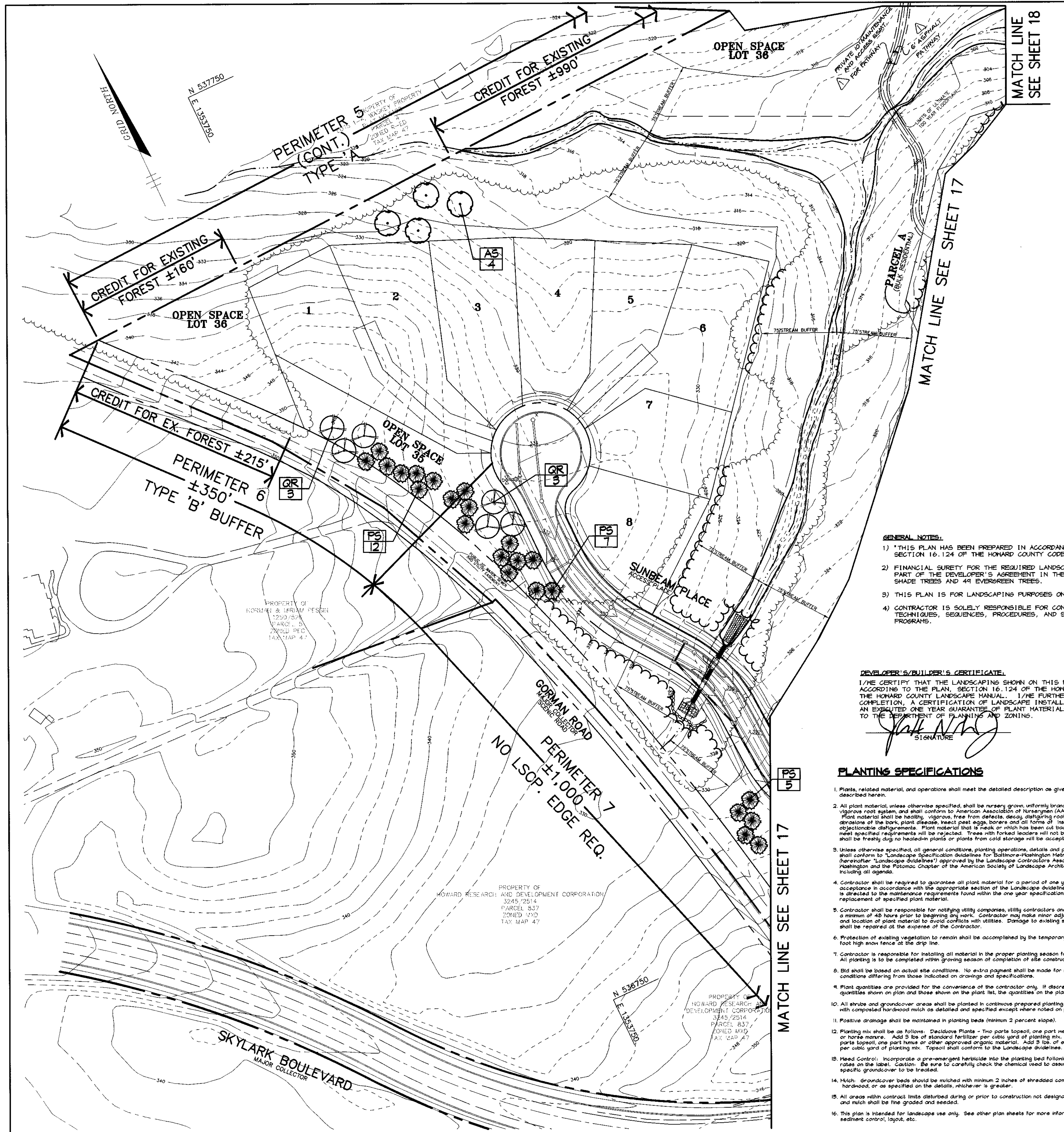
SCALE: 1" = 50'

DRAWING NO. 18 OF 25

*David T. Dows*  
 DAVID T. DOWS

2: \project\99212\FINALS\USCP2\FINAL.DWG Fri Jun 22 09:25:43 2001 Riemer Muegge, a division of PHRSA





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'	±395'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES ±207'	YES ±1,105'	YES ±1,150'	NO	YES ±525'	YES ±215'	NA	NA
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO) (LINEAR FEET)	NO	NO	NO	YES ±610'	YES ±825'	NO	NA	NA
LINEAR FEET REMAINING								
SHADE TREES	0'	0'	240'	610'	1,050'	135'	NA	NA
EVERGREEN TREES	0'	NA	NA	0'	225'	135'	NA	NA
NUMBER OF PLANTS REQUIRED								
EVERGREEN TREES	-	-	①1/60'=4	①1/50'=12	①1/50'=21	①1/50'=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 1 S.T. / 50')	32
EVERGREEN TREES (① 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.)	0*

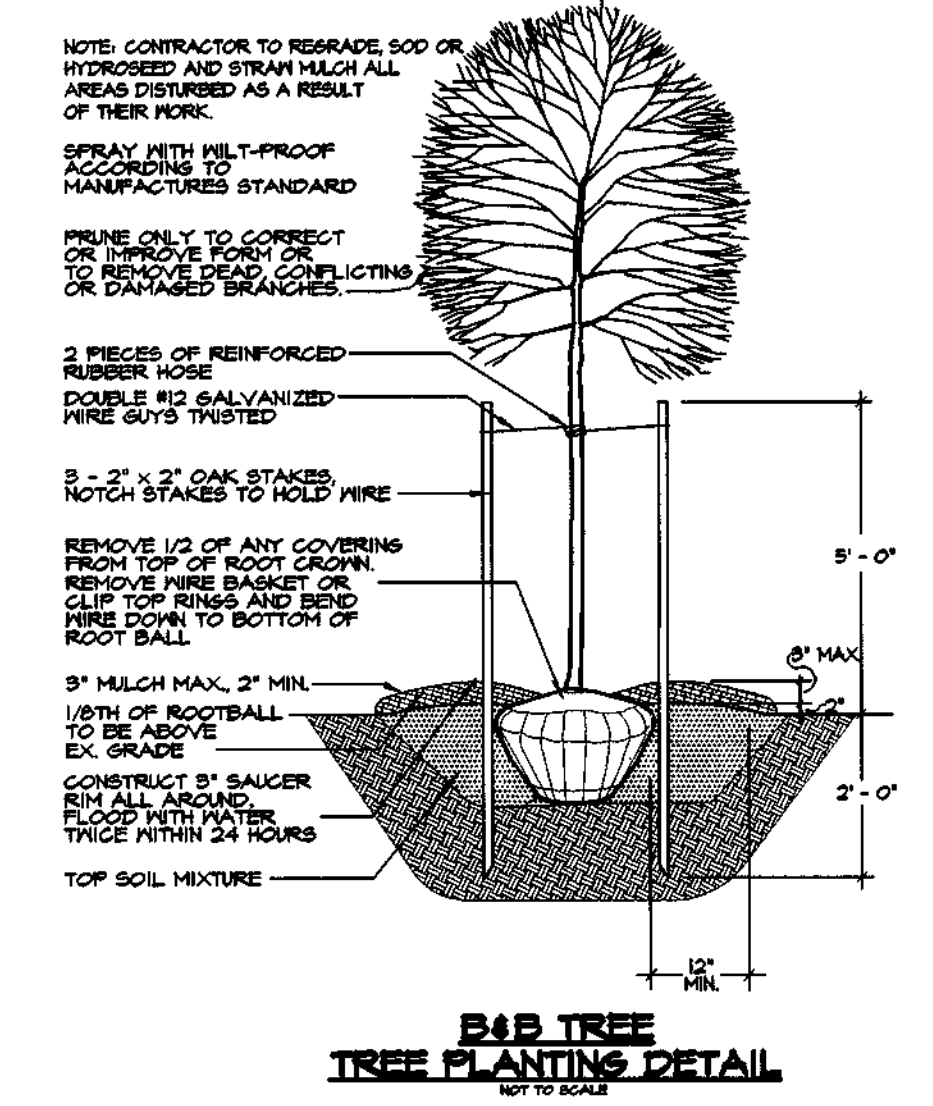
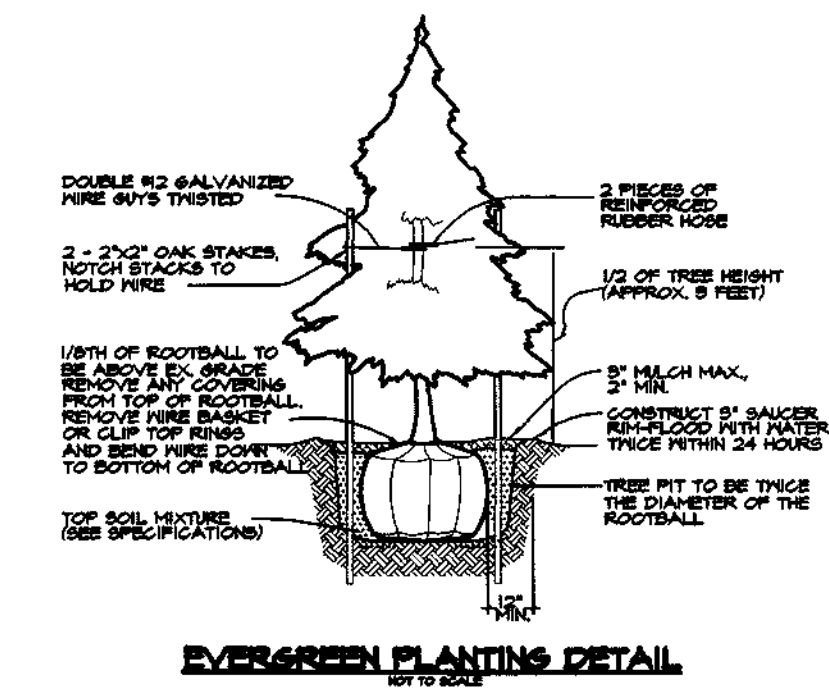
\* SUBSTITUTION 2:1 FLOWERING TREES FOR SHADE TREES.

- 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 72 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 ESCORTED 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 (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, distorting roots, unsound injuries, diseases of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been 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 heated-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 Area" (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Planning 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 "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
  - Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence 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 plan take precedence.
  - All shrub 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 5 lbs of standard fertilizer per cubic yard of planting mix. Evergreen Plants - Two parts topsoil, one part horse or other approved organic material. Add 5 lbs of evergreen (solid) 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. Dwyer* 7-6-01  
 CHIEF, BUREAU OF HIGHWAYS DATE

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

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

10-30-01/11 ADDED 6' ASPHALT 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  
 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  
 2818 Centre Park Drive, Columbia, MD 21045 • 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  
 STATE OF MARYLAND  
 PROFESSIONAL SEAL  
 680  
 6-22-01





**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	Ⓢ

PROPOSED FOREST CLEARING  
0.46+/- AC.  
THIS SHEET

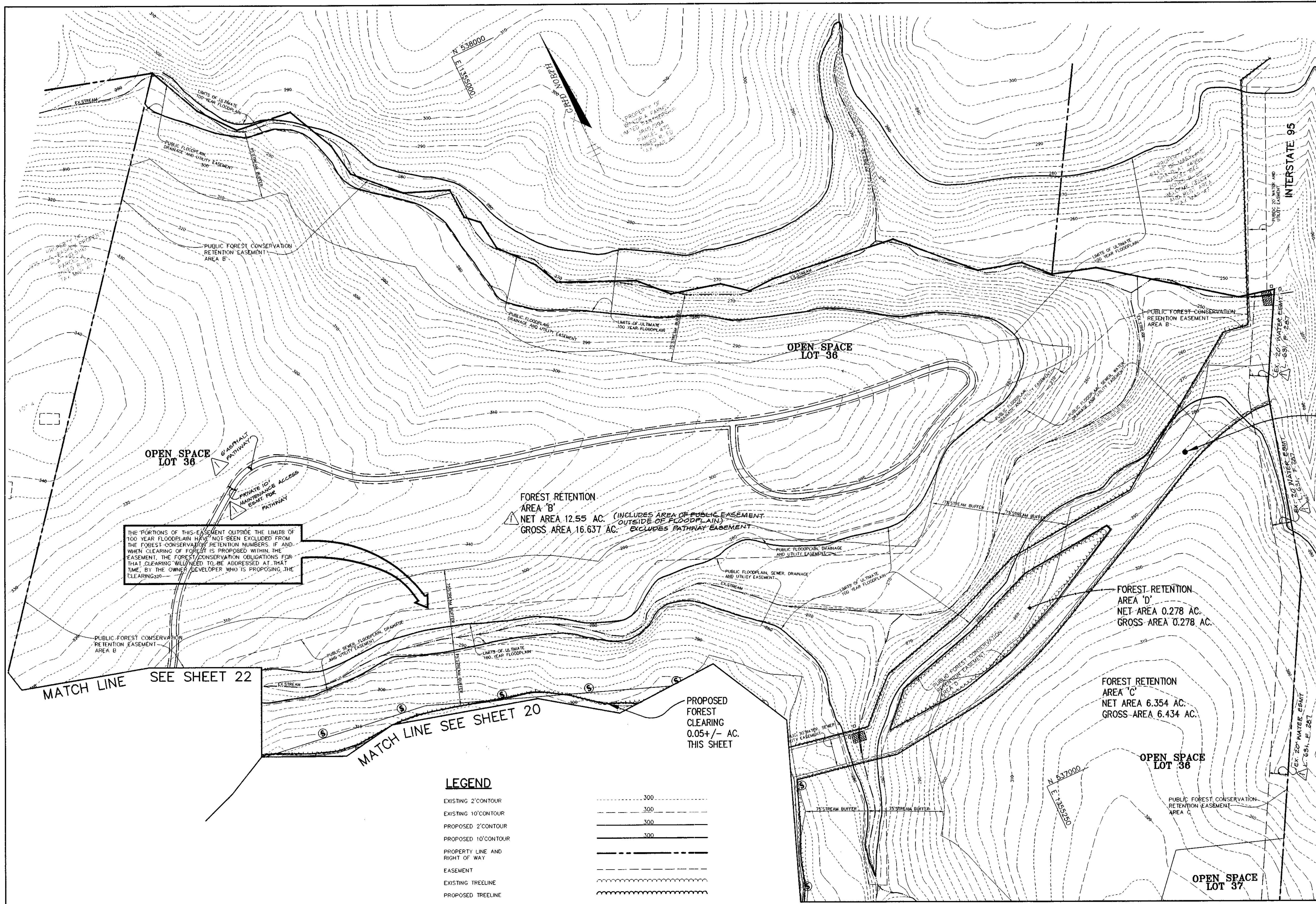
PROPOSED FOREST CLEARING  
1.54+/- AC.  
THIS SHEET

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

AS BUILT CERTIFICATE	
DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Parker</i>	7-6-01
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Wanda Hunter</i>	7/17/01
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>William D. ...</i>	7/10/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
10/30/01	ADDED EX. 20' WATER EASEMENT AND PATH.
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	
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	
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	

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

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

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

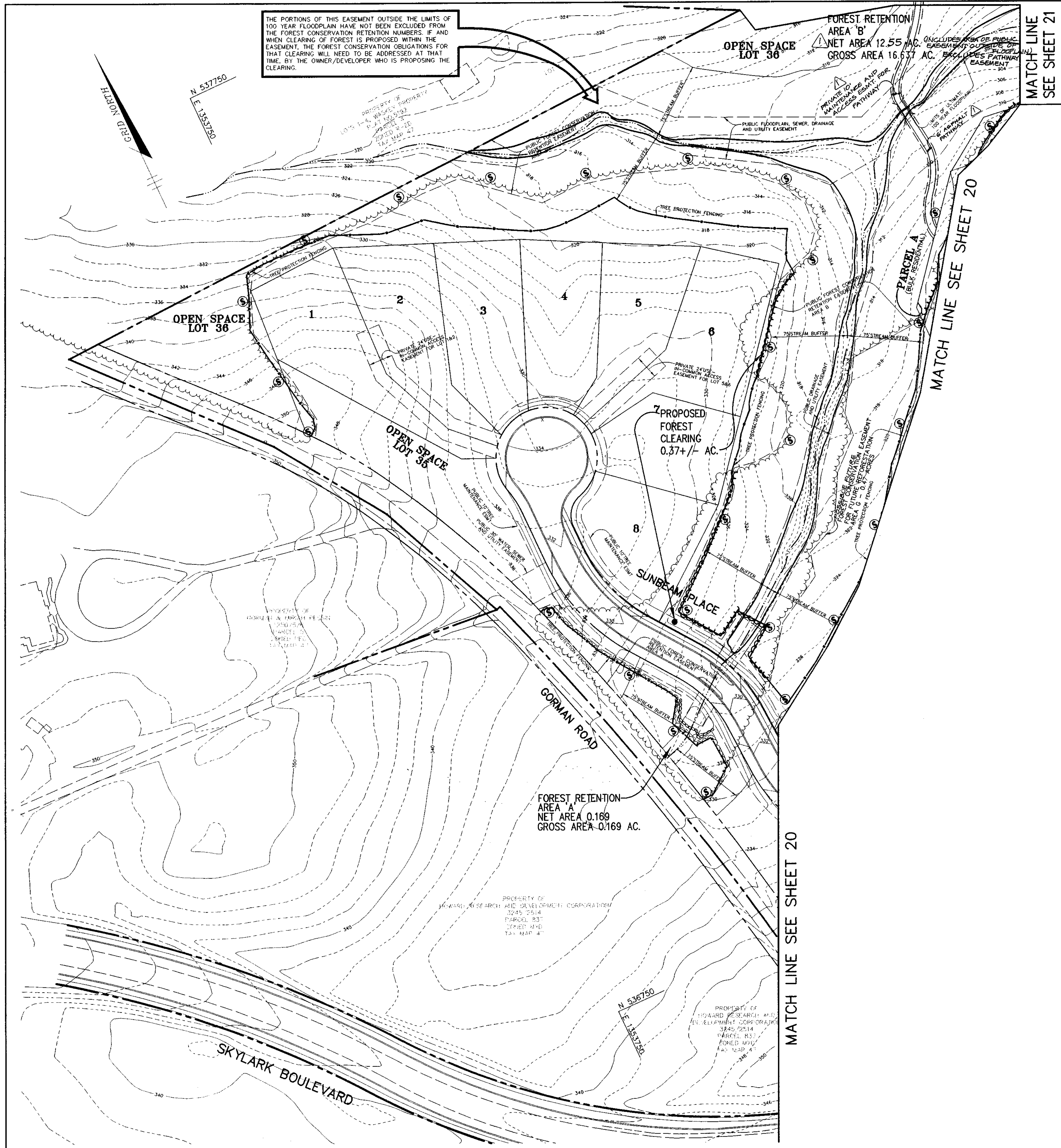
**LEGEND**

- 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 Ⓢ

PROPOSED FOREST CLEARING  
 0.72+/- AC.

AS BUILT CERTIFICATE	
DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	<i>Andrew M. Donato</i> 7-6-01 CHIEF, BUREAU OF HIGHWAYS DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	<i>Chris Hunter</i> 7/17/01 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
	<i>John Deamann</i> 7/10/01 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
10-30-01	ADDED EX. 20' WATER ESMT., ADDED 6' PATHWAY & PATHWAY ESMT., REV. NET AREA FOR FOREST RET. AREA 'C'
DATE NO.	REVISION
OWNER / DEVELOPER	
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE FAUXENT 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> Daft McCune Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296-3333 Fax 296-4705	
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals	
6-20-01 DATE	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
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Clair Hamster</i>	7/17/01
APPROVED : ENGINEERING DIVISION.	
<i>Chris Danville</i>	7/10/01
10-30-01 / <input checked="" type="checkbox"/> ADDED 6" ASPHALT PATHWAY AND PRIVATE TO MAINTENANCE AND ACCESS ESMY. 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 ZONED: R-ED PARCEL: P/D 837 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	
FOREST CONSERVATION PLAN	
 Draft-McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296-1333 Fax 296-4705	
DESIGNED BY :	CJR
DRAWN BY :	DAM
PROJECT NO :	99212/FINALS FOREST3.DWG
DATE :	JUNE 19, 2001
SCALE :	1" = 50'
DRAWING NO. :	22 OF 25

2: \pco\ect\99212\FINALS\FORST3.DWG Tue Jun 19 12:20:05 2001 Riener Muegge - a division of DMW



**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 WILL BE NO STAGING OR STORING OF EQUIPMENT WITHIN 15' OF THE STREAM.
- IV. POST CONSTRUCTION MANAGEMENT PRACTICE:**  
A TWO (2) YEAR POST-CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE PROBABILITY OF A HIGH SURVIVAL RATE INCLUDES THE FOLLOWING:  
- MAINTENANCE OF SIGNS, FENCES AND TREE PROTECTION DEVICES TO PREVENT UNWARRANTED INTRUSIONS AND DAMAGE.  
- CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER CONSTRUCTION.  
- ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.  
- PROVIDE SUITABLE THINNING, WATERING AND FERTILIZING TO ENSURE PROPER GROWTH AND SURVIVAL.

**FOREST CONSERVATION WORKSHEET**

**NET TRACT AREA**

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

**LAND USE CATEGORY (FROM TABLE 3.2.1, PAGE 40, MANUAL)**  
INPUT THE NUMBER '1' UNDER THE APPROPRIATE LAND USE ZONING AND LIMIT TO ONLY ONE ENTRY.

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

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

**EXISTING FOREST COVER**

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

**BREAK EVEN POINT**

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

**PROPOSED FOREST CLEARING**

L. TOTAL AREA OF FOREST TO BE CLEARED	3.76
M. TOTAL AREA OF FOREST TO BE RETAINED	19.33

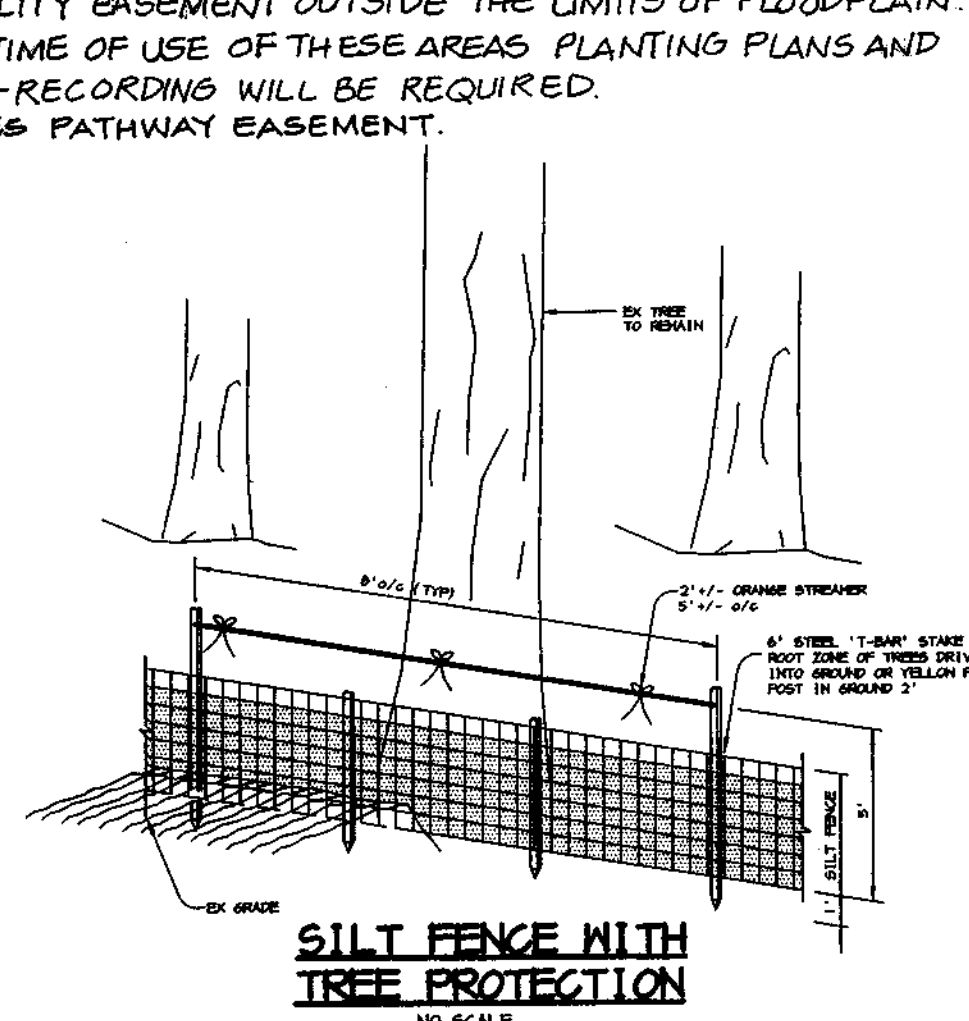
**PLANTING REQUIREMENTS**

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD	0.94
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD	0.00
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	9.74
R. TOTAL REFORESTATION REQUIRED	0.00
S. TOTAL AFFORESTATION REQUIRED	0.00
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED	0.00
U. FOREST CONSERVATION EASEMENT FOR FUTURE REFORESTATION	0.00

**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.  
\*\*\* EXCLUDES PATHWAY EASEMENT.



- NOTES:**
- SILT FENCE TO BE NEELED INTO THE SOIL.
  - WIRE, BARN 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 AND 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 is to include the Contractor and representatives from Rumer Muegge & Associates, Inc. (RMA). The Howard County Department of Planning and Zoning (DPZ) and the owner will be notified by the Contractor as to the time and place of the field meeting, should they wish to send a representative. The purpose of this meeting will be to review the approved FCP and to field verify the correct Limits of Disturbance (LOD).
- 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 indicator), damage within respective critical root zones or any dead wood or other conditions which might be hazardous to pedestrians, buildings, utility lines, vehicular access ways or parked vehicles.
- 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 assessed 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 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.

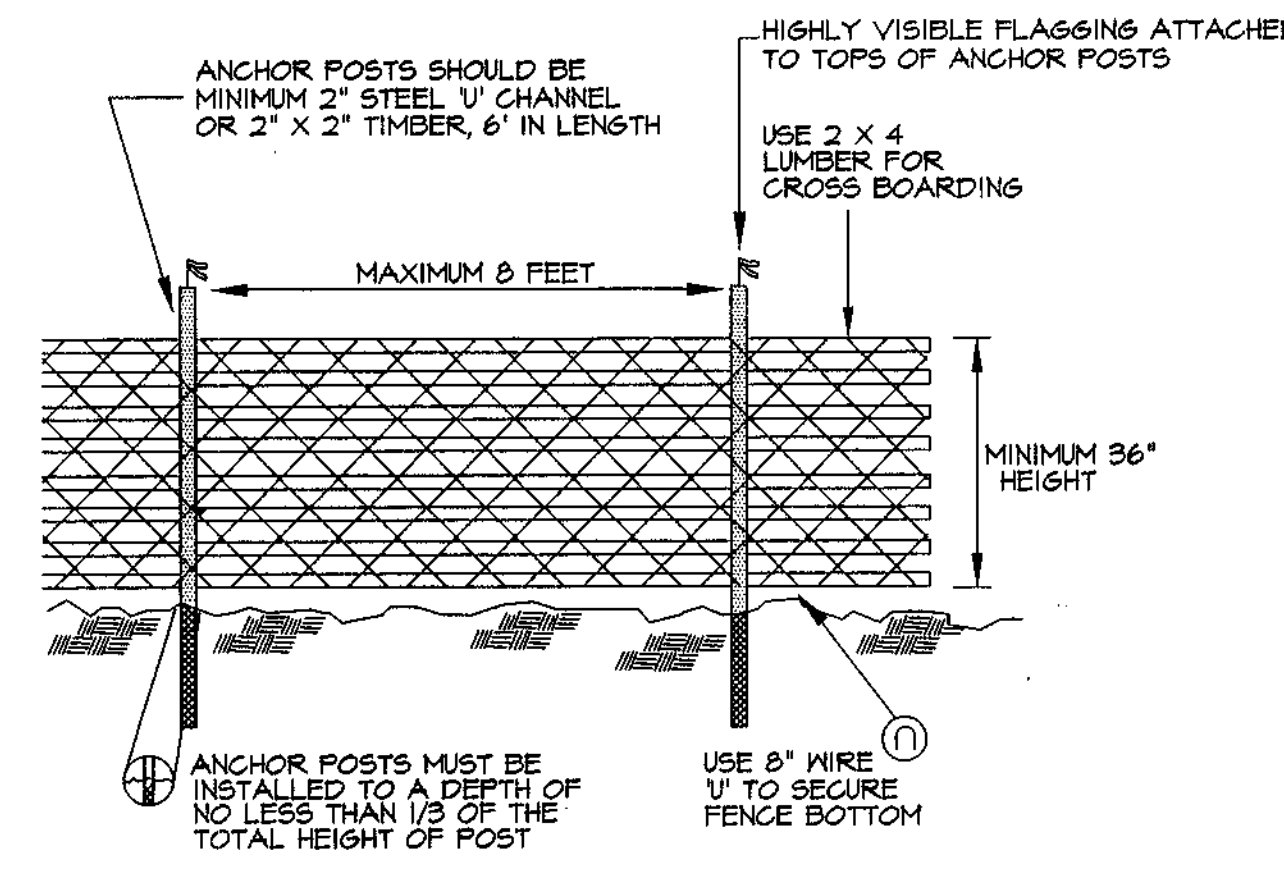
**GOALS AND OBJECTIVES**

DEVELOPMENT OF EMERSON SECTION I UNDER THE CURRENT FOREST CONSERVATION ACT REQUIRES THE CLEARING OF APPROXIMATELY 3.76 ACRES OF EXISTING FOREST. CREDIT FOR RETENTION OF FORESTS ABOVE THE CONSERVATION THRESHOLD WILL OFFSET ANY REFORESTATION REQUIREMENT. AS SUCH, NO REFORESTATION WILL BE REQUIRED. THIS PLAN PROPOSES RETENTION OF APPROXIMATELY 19.33 ACRES OF FOREST; THIS AMOUNT IS 7.08 ACRES IN EXCESS OF THE AMOUNT OF REQUIRED RETENTION. THE ADDITIONAL RETENTION ACREAGE WILL BE USED TO PARTIALLY DEFRAY REFORESTATION OBLIGATIONS ASSOCIATED WITH DEVELOPMENT OF THE STONE LAKE PROJECT. (P-01-15)

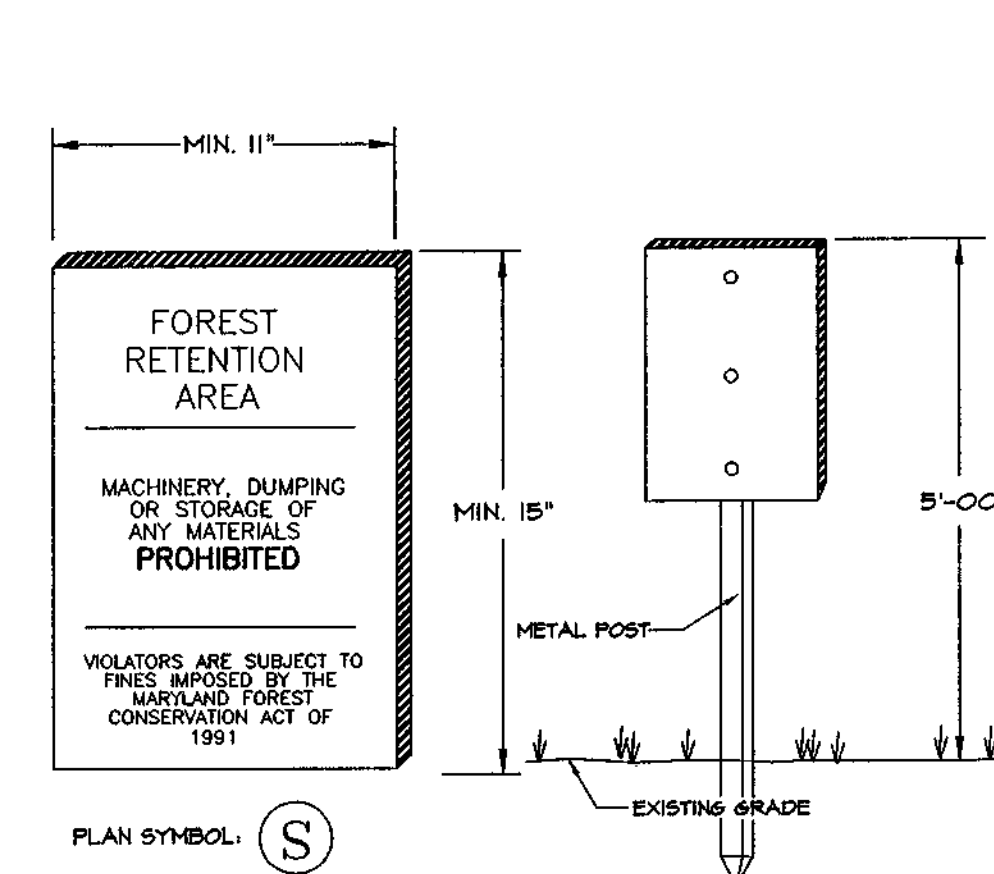
THE GOALS AND OBJECTIVES OF THIS FOREST CONSERVATION PLAN ARE TO PROVIDE FOR SHORT TERM FOREST RETENTION AREA PROTECTION BY IDENTIFYING THOSE AREAS AND INDICATING THE LOCATIONS OF FOREST PROTECTION FENCING AND SIGNAGE. ESTABLISHING THESE SHORT TERM PROTECTION MEASURES PRIOR TO ANY EARTH MOVING ACTIVITIES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

**SEQUENCE OF OPERATIONS**

- PRE-CONSTRUCTION SITE PREPARATION**
- 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 SPACING.
  - SIGNS TO BE PLACED ON METAL POSTS 5' +/- ABOVE FINISH GRADE. PLACE SIGNS EVERY 100' AROUND PERIMETER OF FOREST RETENTION AREA.

**AS BUILT CERTIFICATE**

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

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

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DATE: 7/12/01

REV. FOREST CONSERVATION WORKSHEET, REV. GOALS AND OBJECTIVES, REV. EASEMENT TABULATION.

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

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

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

TITLE: FOREST CONSERVATION DETAILS AND NOTES

DMW: Dan-McCauley-Walker, Inc., 200 East Pennsylvania Avenue, Takoma, Maryland 21286, (410) 296-3333, Fax: 296-4705

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

DESIGNED BY: CJR

DRAWN BY: DAM

PROJECT NO: 99212/FINALS FOREST4.DWG

DATE: JUNE 19, 2001

SCALE: AS SHOWN

DRAWING NO. 23 OF 25