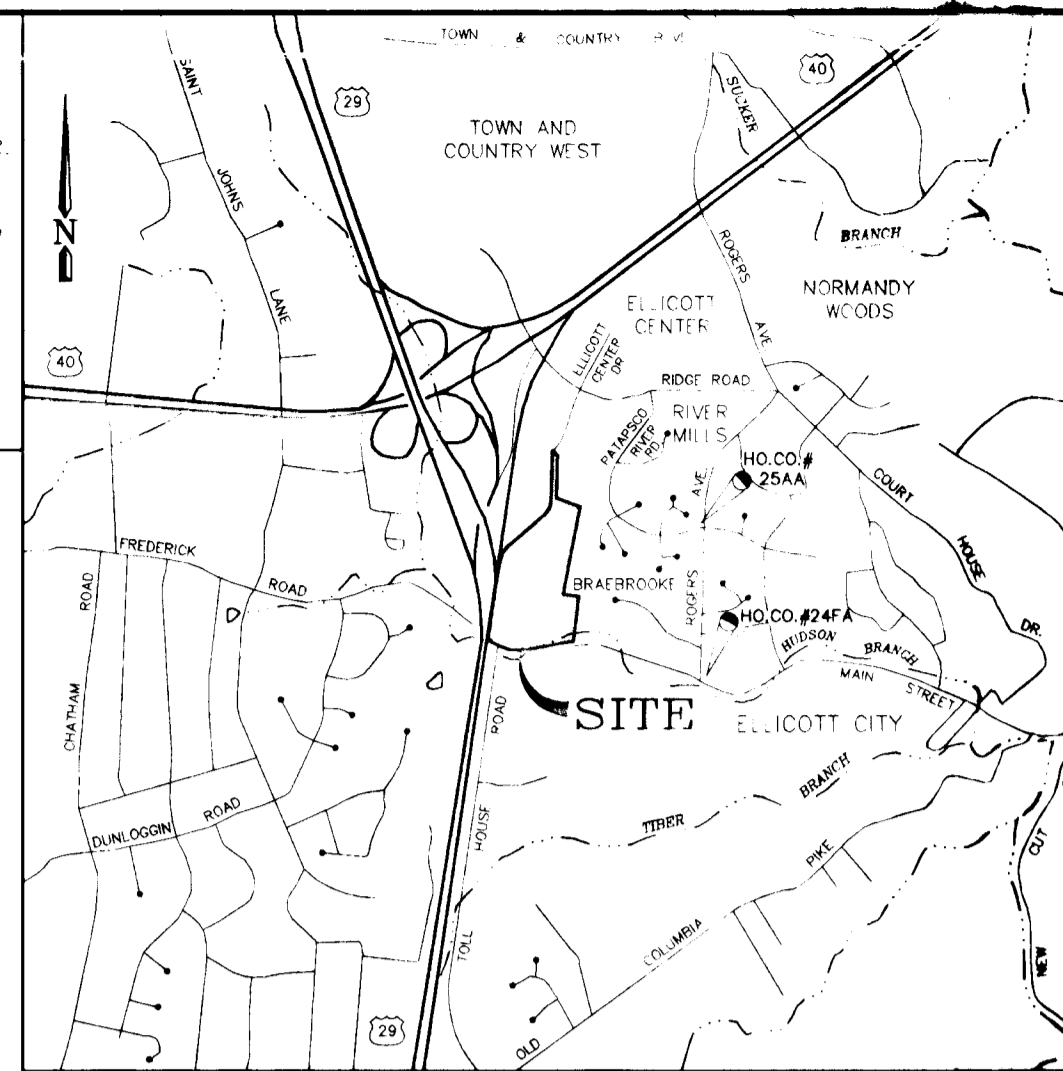


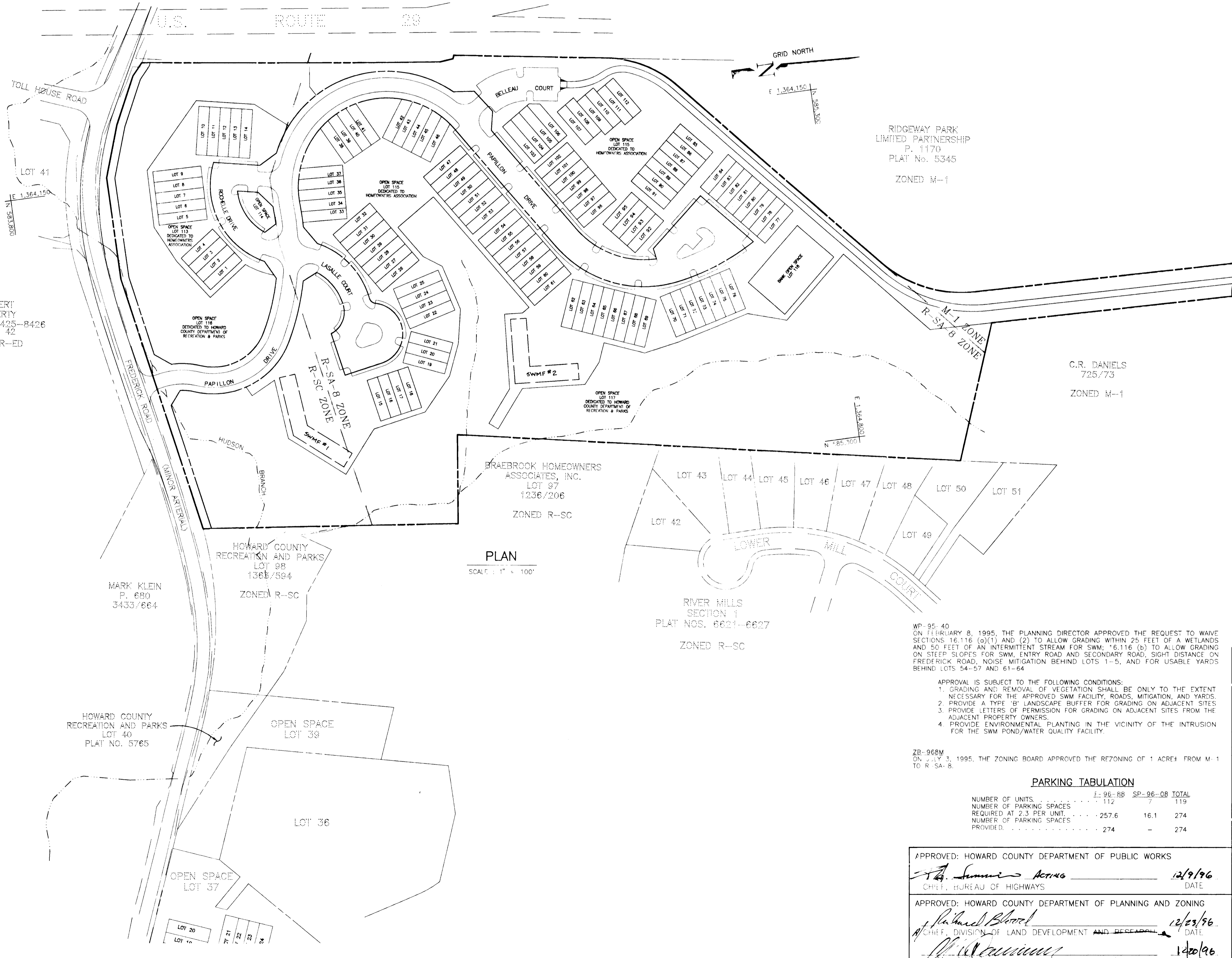
ROADWAYS, STORM DRAINAGE AND STORMWATER MANAGEMENT PAPILLON 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD PLAN
3	ROAD PLAN AND PROFILE
4	ROAD PROFILES
5	ROAD PROFILES
6	FREDERICK ROAD SECTIONS
7	FREDERICK ROAD SECTIONS
8	TRAFFIC CONTROL PLAN, STRIPING PLAN
9	TRAFFIC CONTROL PLAN, STRIPING PLAN
10	DRAINAGE AREA MAP
11	STORM DRAIN PROFILES
12	GRADING PLAN
13	GRADING PLAN
14	STORMWATER MANAGEMENT DETAILS
15	STORMWATER MANAGEMENT NOTES AND DETAILS
16	SEDIMENT CONTROL PLAN
17	SEDIMENT CONTROL PLAN
18	SEDIMENT CONTROL DETAILS AND NOTES
19	BORING LOGS
20	LANDSCAPE PLAN
21	LANDSCAPE PLAN
22	FOREST CONSERVATION PLAN
23	FOREST CONSERVATION PLAN
24	FOREST CONSERVATION DETAILS AND NOTES

BENCH MARKS (NAD 83)	
HO. CO. #24FA	ELEV. 263.814
STAMPED CONC. MONUMENT NEAR THE S.E. COR. OF THE INTERSECTION OF FREDERICK RD. AND ROGERS AVE.	
N 583751.408	E 1366091.855
HO. CO. #25AA	ELEV. 308.539
STAMPED CONC. MONUMENT NEAR THE N.W. COR. OF THE INTERSECTION OF ROGERS AVE. AND PATAPSCO RIVER RD.	
N 585507.172	E 1366070.971



VICINITY MAP
SCALE: 1"=2000'



PLAN
SCALE: 1" = 100'

WP-95-40
ON FEBRUARY 8, 1995, THE PLANNING DIRECTOR APPROVED THE REQUEST TO WAIVE SECTIONS 16.116 (a)(1) AND (2) TO ALLOW GRADING WITHIN 25 FEET OF A WETLANDS AND 50 FEET OF AN INTERMITTENT STREAM FOR SWM; *6.116 (b) TO ALLOW GRADING ON STEEP SLOPES FOR SWM, ENTRY ROAD AND SECONDARY ROAD, SIGHT DISTANCE ON FREDERICK ROAD, NOISE MITIGATION BEHIND LOTS 1-5, AND FOR USABLE YARDS BEHIND LOTS 54-57 AND 61-64.

- APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
1. GRADING AND REMOVAL OF VEGETATION SHALL BE ONLY TO THE EXTENT NECESSARY FOR THE APPROVED SWM FACILITY, ROADS, MITIGATION, AND YARDS.
 2. PROVIDE A TYPE "B" LANDSCAPE BUFFER FOR GRADING ON ADJACENT SITES.
 3. PROVIDE LETTERS OF PERMISSION FOR GRADING ON ADJACENT SITES FROM THE ADJACENT PROPERTY OWNERS.
 4. PROVIDE ENVIRONMENTAL PLANTING IN THE VICINITY OF THE INTRUSION FOR THE SWM POND/WATER QUALITY FACILITY.

ZR-968M
ON JULY 3, 1995, THE ZONING BOARD APPROVED THE REZONING OF 1 ACRE± FROM M-1 TO R-SA-B.

PARKING TABULATION	
NUMBER OF UNITS	1-96-88 SP-96-08 TOTAL
NUMBER OF PARKING SPACES	112 7 119
REQUIRED AT 2.3 PER UNIT	257.6 16.1 274
NUMBER OF PARKING SPACES PROVIDED	274 274

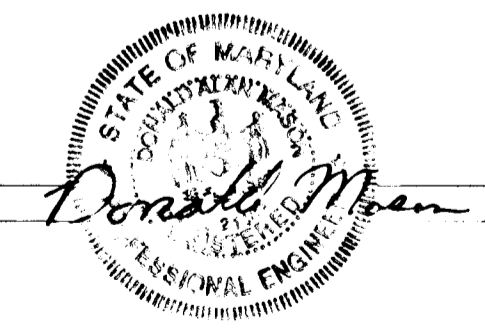
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 12/9/96
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 12/23/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

[Signature] 1/20/96
CHIEF, DEPARTMENT OF ENGINEERING DIVISION MK DATE

- ### GENERAL NOTES
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
 2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST 24 HOURS PRIOR TO THE START OF WORK.
 3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
 4. PROJECT BACKGROUND:
LOCATION: TAX MAP 24 - PARCEL 121
ZONING: R-SC, R-SA-B, AND M-1
SECTION:
TOTAL TRACT AREA: 24.70 AC.
SECTION AREA: 24.70 AC.
NUMBER OF PROPOSED LOTS: 112 BUILDABLE PLUS 1 BANK OPEN SPACE LOT TO BE RESUBDIVIDED (TOTAL 113).
DATE PRELIMINARY PLAN APPROVED: 3/24/95
DPZ REFERENCE #: S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08
 5. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT 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.
 6. TOPOGRAPHY TAKEN FROM FIELD RUN SURVEY BY TSA GROUP, INC., 1/94. CONTOUR INTERVAL IS 2 FEET.
 7. HOWARD COUNTY MONUMENTS 24FA AND 25AA USED FOR HORIZONTAL AND VERTICAL DATUM.
 8. STREET LIGHT PLACEMENT AND TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY THE "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)", WHICH DETERMINE LATERAL AND LONGITUDINAL PLACEMENT.
 9. ALL ROAD FILLS SHALL BE COMPACTED TO 95% AS DETERMINED BY AASHTO T-180.
 10. ALL SIDEWALKS AND SIDEWALK RAMPS SHALL BE IN CONFORMANCE WITH CURRENT ADA CRITERIA.
 11. WATER AND SEWER FOR THIS SUBDIVISION IS PUBLIC. DRAINAGE AREA IS PATAPSCO, CONTRACT NUMBER 14-3455-D.
 12. HUDSON BRANCH STUDY PREPARED BY TSA GROUP, INC. 12/95.
 13. WETLANDS DELINEATION COMPILED BY EXPLORATION RESEARCH, INC., 12/89, AND BIOHABITATS, INC., 11/95.
 14. TRAFFIC STUDY COMPILED BY LEE CUNNINGHAM & ASSOC., 11/93. APPROVED 3/24/95.
 15. NOISE STUDY PREPARED BY TSA GROUP, INC., 4/94. APPROVED 3/24/95.
 16. GEOTECHNICAL REPORT COMPILED BY HILLIS-CARNES ASSOC., INC., 9/95.
 17. FOREST CONSERVATION PLAN PREPARED BY M.A. DIRKS, INC., 5/94. FOREST CONSERVATION REQUIREMENTS ARE SATISFIED BY ONSITE RETENTION.
 18. EXISTING UTILITIES WERE LOCATED BY RECORD DRAWINGS AND/OR FIELD RUN SURVEY BY TSA GROUP, INC., 1/94. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL EXISTING UTILITIES.
 19. UNLESS NOTED AS "PRIVATE" ALL EASEMENTS ARE PUBLIC.
 20. STORMWATER MANAGEMENT SHALL BE PROVIDED BY TWO PRIVATE UNDERGROUND DETENTION FACILITIES (QUANTITY CONTROL). QUALITY CONTROL SHALL BE PROVIDED BY FILTRATION. VEGETATED BUFFERS SHALL PROVIDE WATER QUALITY TREATMENT FOR ANY UNMANAGED AREAS.
 21. MAINTENANCE FOR THE PRIVATE STORMWATER MANAGEMENT FACILITIES SHALL BE BY THE HOMEOWNERS ASSOCIATION.
 22. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLANDS, STREAM BUFFERS OR FOREST CONSERVATION AREAS EXCEPT FOR THE WORK ASSOCIATED WITH THE PAPILLON DRIVE ROAD CROSSING AS REPRESENTED ON THESE PLANS AND AS APPROVED UNDER WP-95-40.
 23. ANY STATE AND FEDERAL PERMITS REQUIRED FOR THE HUDSON BRANCH CROSSING, IF APPLICABLE, SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF WORK.
 24. DEPARTMENT OF PUBLIC WORKS DESIGN MANUAL WAIVERS ARE APPROVED TO PERMIT 1) MINIMUM 125' CENTERLINE RADIUS, PAPILLON DRIVE (SECT.2.3.2.C); 2) CUL-DE-SAC LENGTH IN EXCESS OF 1200' (SECT 1.5.1); 3) INTERSECTION SPACING LESS THAN 750' ON A MINOR ARTERIAL, FREDERICK ROAD (SECT.3.2.2.A); 4) DEFICIENT INTERSECTION SIGHT DISTANCE, PAPILLON DRIVE (SECT.2.5.2.H); 5) NO SIDEWALK AT INTERSECTION OF PAPILLON DRIVE AND FREDERICK ROAD (SECT.2.4.1)
 25. RESIDENTIAL LOTS SHALL BE DESIGNED TO PROVIDE A USABLE YARD NOT EXCEEDING 10 PERCENT GRADE ADJACENT TO THE HOUSE THAT IS AT LEAST 5 FEET DEEP ACROSS THE ENTIRE REAR OF EACH SINGLE FAMILY ATTACHED DWELLING. [SUBDIVISION SECTION 16.102(b)(4)(ii)(c)] THE FINAL DESIGN OF THE LOTS IN COMPLIANCE WITH THIS REGULATION SHALL BE SHOWN ON THE FUTURE SITE DEVELOPMENT PLANS FOR THE DWELLINGS IN THE SUBDIVISION.
 26. RESIDENTIAL LOTS SHALL BE DESIGNED TO PROVIDE AT LEAST 25 FEET OF USABLE YARD BETWEEN THE REAR OF A DWELLING AND ANY PROTECTED WETLAND OR STREAM BUFFER ON A RESIDENTIAL LOT. [SUBDIVISION SECTION 16.116(a)(3)] THE FINAL DESIGN OF THE LOTS IN COMPLIANCE WITH THIS REGULATION SHALL BE INDICATED ON THE FUTURE SITE DEVELOPMENT PLANS FOR THE DWELLINGS IN THIS SUBDIVISION.

NO.	DATE	REVISION



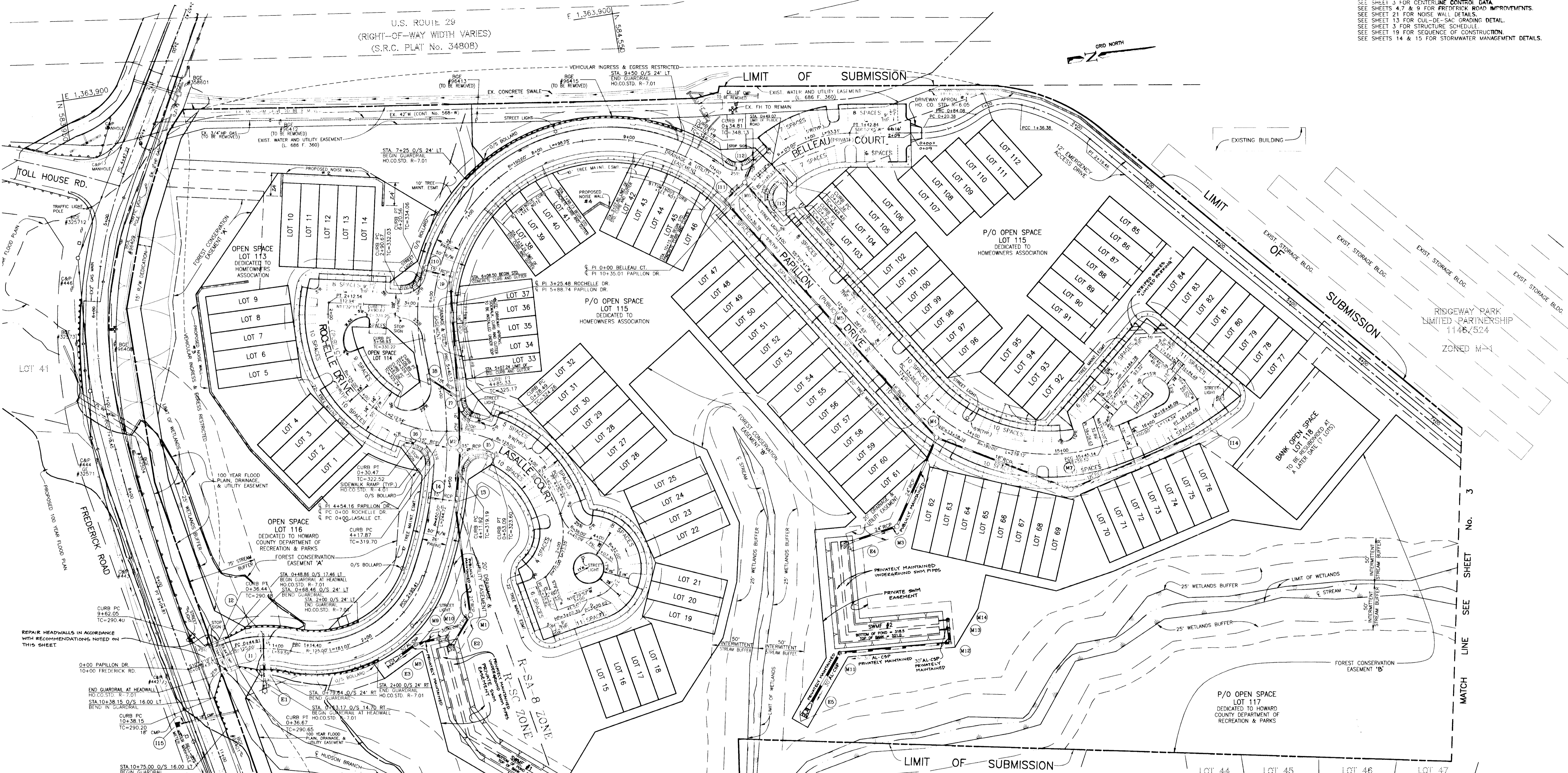
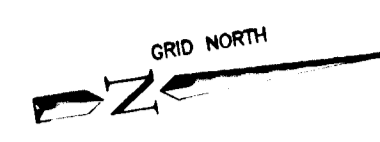
TSA GROUP, INC.
planning • architecture • engineering
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105

OWNER/DEVELOPER:	RIDGEWAY PARK LIMITED PARTNERSHIP P. 1170 PLAT NO. 5345 ZONED M-1
PROJECT:	PAPILLON LOTS 1-118
LOCATION:	TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE:	TITLE SHEET
DATE:	S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08 DECEMBER 22, 1995 AUGUST 16, 1996
DESIGN:	JME Draft: MBB/JH
PROJECT NO.:	0599
SCALE:	AS SHOWN
DRAWING NO.:	1 of 24

1845

NOTE:
 SEE SHEET 3 FOR CENTERLINE CONTROL DATA.
 SEE SHEETS 4, 7 & 9 FOR FREDERICK ROAD IMPROVEMENTS.
 SEE SHEET 21 FOR NOISE WALL DETAILS.
 SEE SHEET 13 FOR CUL-DE-SAC GRADING DETAIL.
 SEE SHEET 3 FOR STRUCTURE SCHEDULE.
 SEE SHEET 19 FOR SEQUENCE OF CONSTRUCTION.
 SEE SHEETS 14 & 15 FOR STORMWATER MANAGEMENT DETAILS.

U.S. ROUTE 29
 (RIGHT-OF-WAY WIDTH VARIES)
 (S.R.C. PLAT No. 34808)



RISGEWAY PARK
 LIMITED PARTNERSHIP
 1146/524
 ZONED M-1

MATCH LINE SEE SHEET No. 3

1845

NOTE:
 SEE SHEET 4 FOR FREDERICK ROAD CONSTRUCTION.

EXIST. 84" CMP CULVERT AT PAPILLON DRIVE HEADWALL AND PIPE REPAIR RECOMMENDATIONS FROM HILLIS-CARNES REPORT DATED AUG. 26, 1996

- REMOVE THE DELAMINATED AND LOOSE CONCRETE TO SOUND CONCRETE. THIS WILL INCLUDE THE SPALLED AREA FOUND IN THE HEAD WALL. REMOVAL CAN BE PERFORMED BY CHIPPING, SAND BLASTING, HIGH PRESSURE WASHING OR A COMBINATION OF THE ABOVE TECHNIQUES.
- PLACE BONDING AGENT OVER THE CLEANED SURFACES. THE BONDING AGENT SHOULD BE COMPATIBLE TO THE SURFACE APPLICATION.
- APPLY A SURFACE APPLICATION OVER THE AREAS PREPARED AS NOTED ABOVE. THE SURFACE APPLICATION SHOULD CONSIST OF A HAND APPLIED POLYMER CONCRETE OR MORTAR SUCH AS METHYL METHACRYLATE OR EPOXY CONCRETE. DETAILED ATTENTION TO THE MANUFACTURERS RECOMMENDATIONS ARE REQUIRED.
- DIVERT FLOW FROM ONE CULVERT BY BLOCKING CULVERT OPENING WITH SANDBAGS, SANDBLAST PIPE INVERT AND LINE INVERT WITH CONCRETE. SEE DETAIL SHEET NO. 3.

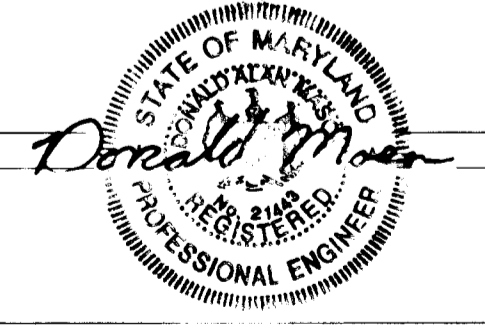
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[Signature] 12/9/96
 CHIEF, BUREAU OF HIGHWAYS DATE

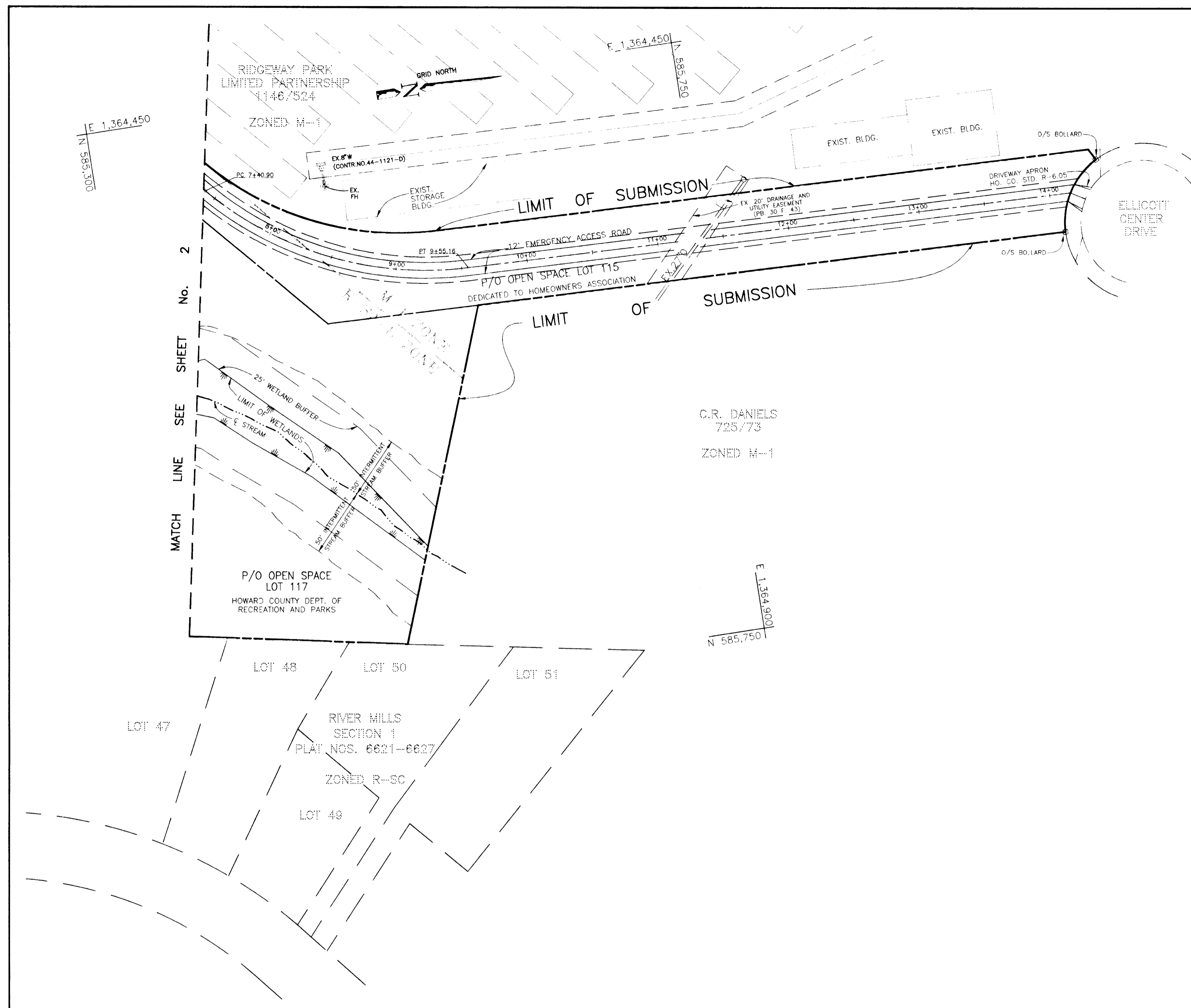
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[Signature] 12/23/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

[Signature] 12/20/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

NO.		DATE		REVISION	
1		11-24-98		REVISE LENGTH OF NOISE WALL WINGS FOR LOTS 10-14	

OWNER/DEVELOPER:		PROJECT:	
SDC GROUP, INC. POST OFFICE BOX 417 ELLCOTT CITY, MARYLAND 21041 (410) 465-4244		PAPILLON LOTS 1-118	
LOCATION:		TITLE:	
TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		ROAD PLAN	
DATE:		SCALE:	
DECEMBER 22, 1995 AUGUST 16, 1996		1"=50' DRAWING 2 OF 24	
DESIGN:	JME	DRAFT:	MBB
PROJECT NO. 0599		DATE: AUGUST 16, 1996	





CENTER LINE CURVE DATA						
STREET NAME	STATION	RADIUS	ARC	DELTA	ANGLE	CHORD
PAPILLON DRIVE	0+44.81 to 1+14.40	125.00'	69.59'	315.34°	35.72'	S 05°03'36" W 88.89'
	1+14.40 to 2+95.41	125.00'	181.02'	82.58°21'	110.54'	N 20°28'41" W 185.61'
	2+95.41 to 5+40.13	450.00'	244.72'	31°09'29"	125.46'	N 77°32'36" E 241.71'
	5+40.13 to 10+38.38	190.00'	498.25'	150°15'02"	715.34'	S 17°59'50" E 387.27'
	13+26.01 to 15+45.14	190.00'	219.12'	66°04'42"	123.57'	N 24°05'21" E 207.18'

CENTERLINE CONTROL DATA				
ROAD	STATION	NORTH	EAST	
PAPILLON DRIVE	PI 0+00	583985.7112	1364527.0009	
	PC 0+44.81	584029.726	1364518.5387	
	PCC 1+14.40	584098.1380	1364524.5952	
	PRC 2+95.41	584253.2828	1364466.6568	
	PRC 5+40.13	584305.4200	1364230.6359	

PAPILLON DRIVE - PARKING AREA CURB DATA						
DESC.	STA.	OFFSET	1/2 C. ELEV.	DESC.	STA.	OFFSET
CURB P.C.	10+38.55	13'	348.90	CURB P.C.	10+35.01	13'
CURB P.L.	10+40.33	31'	348.44	CURB P.L.	10+40.33	31'
CURB P.L.	11+05.55	31'	351.24	CURB P.L.	10+85.33	31'

CENTERLINE CURVE DATA						
STREET NAME	STATION	RADIUS	ARC	DELTA	ANGLE	CHORD
LASALLE COURT	0+00 to 2+12.54	125.00'	212.54'	97.25°14'	142.34'	N 56°32'03" E 187.85'
	0+00 to 2+12.54	125.00'	212.54'	97.25°14'	142.34'	N 56°32'03" E 187.85'
	0+20.38 to 0+48.08	100.00'	63.70'	36°29'11"	32.97'	N 09°22'10" E 62.83'
	0+84.08 to 1+38.38	60.00'	52.30'	49°56'30"	27.94'	S 02°38'50" E 50.66'
	1+38.38 to 2+19.46	180.00'	83.08'	28°26'40"	42.29'	S 35°32'45" W 82.34'

CENTERLINE CONTROL DATA				
ROAD	STATION	NORTH	EAST	
LASALLE COURT	PI 2+09	584848.3404	1364077.2041	
	PC 2+40.62	584389.2420	1364525.9286	
	PCC 3+20.62	584435.0123	1364517.4475	
	PRC 4+07.35	584437.0423	1364454.9635	
	PRC 4+07.35	584437.0423	1364454.9635	

LASALLE COURT - PARKING AREA CURB DATA						
DESC.	STA.	OFFSET	1/2 C. ELEV.	DESC.	STA.	OFFSET
CURB P.C.	0+43.31	13'	324.70	CURB P.C.	0+55.85	13'
CURB P.L.	0+47.68	31'	325.20	CURB P.L.	0+61.69	31'
CURB P.L.	0+88.44	31'	325.87	CURB P.L.	1+57.44	31'

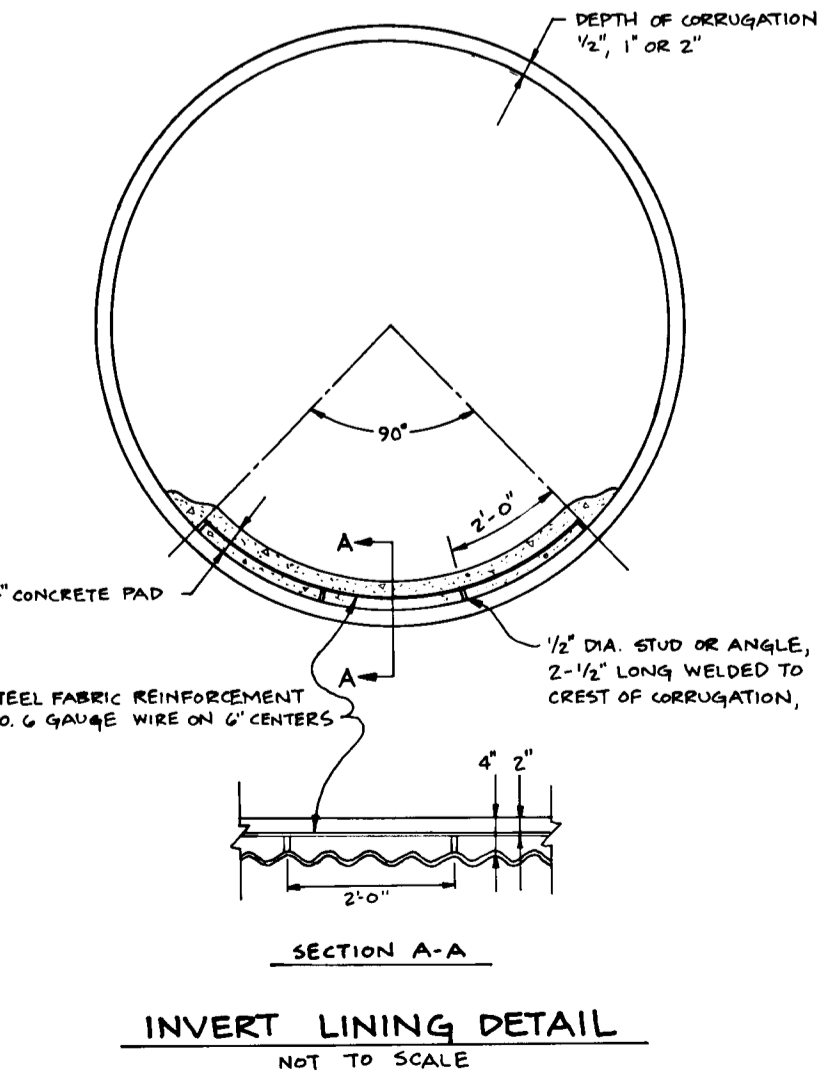
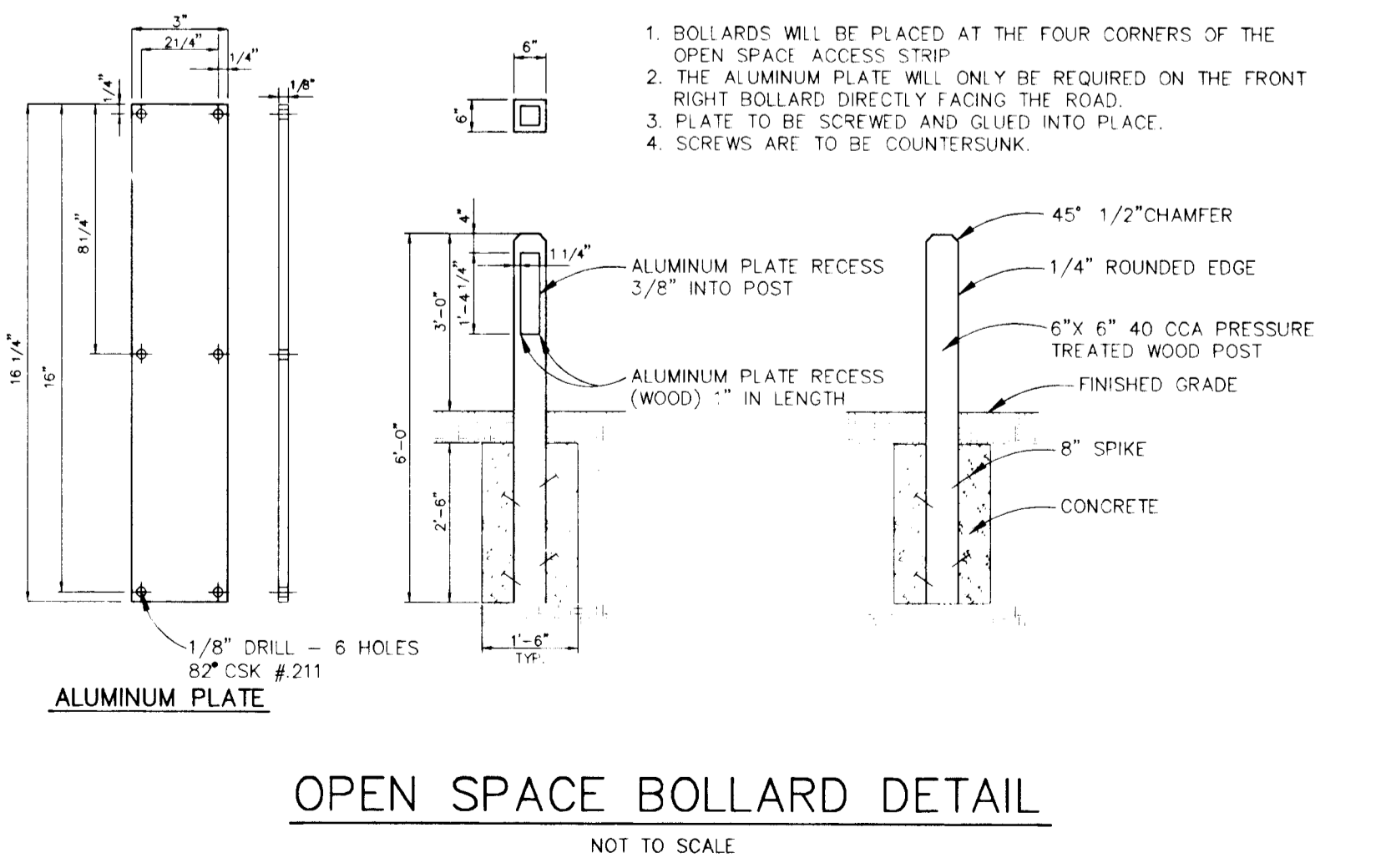
ROCHELLE DRIVE - PARKING AREA CURB DATA						
DESC.	STA.	OFFSET	1/2 C. ELEV.	DESC.	STA.	OFFSET
CURB P.C.	0+45.34	14'	323.23	CURB P.C.	0+62.14	14'
CURB P.L.	0+49.71	32'	323.75	CURB P.L.	0+67.99	32'
CURB P.L.	1+41.23	32'	327.47	CURB P.L.	1+75.70	32'

BELLEAU COURT - PARKING AREA CURB DATA						
DESC.	STA.	OFFSET	1/2 C. ELEV.	DESC.	STA.	OFFSET
CURB P.C.	0+52.56	13'	348.81	CURB P.C.	0+47.18	13'
CURB P.L.	0+56.93	31'	348.34	CURB P.L.	0+52.18	31'
CURB P.L.	1+22.15	31'	352.67	CURB P.L.	1+36.40	31'

STREET LIGHT LEGEND			
ROAD	STATION	OFFSET	TYPE
FREDERICK ROAD	9+70	18' LEFT	150 WATT HP SOODIM VAPOR FIXTURE MOUNTED ON 30' GALVANNEED POLE
	2+45	17' RIGHT	
	6+17	17' LEFT	
	8+25	17' LEFT	100 WATT HP SOODIM VAPOR TRADITIONAL POST TOP FIXTURE MOUNTED ON 16' BLACK FIBERGLASS ENWIDED POLE
	10+25	27' LEFT	

C.R. DANIELS
725.773
ZONED M-1

E 1,364.900
N 585.750



PIPE SCHEDULE			
LOCATION	SIZE & TYPE	LENGTH (FT)	
I 1 TD E 1	18" RCP	16'	
I 2 TD I 1	15" RCP	26'	
I 3 TD M 1	21" RCP	118'	
I 4 TD I 3	15" RCP	26'	
I 5 TD M 2	15" RCP	21'	
I 6 TD M 2	15" RCP	46'	
I 7 TD M 2	18" RCP	51'	
I 8 TD I 7	15" RCP	34'	
I 9 TD I 7	18" RCP	118'	

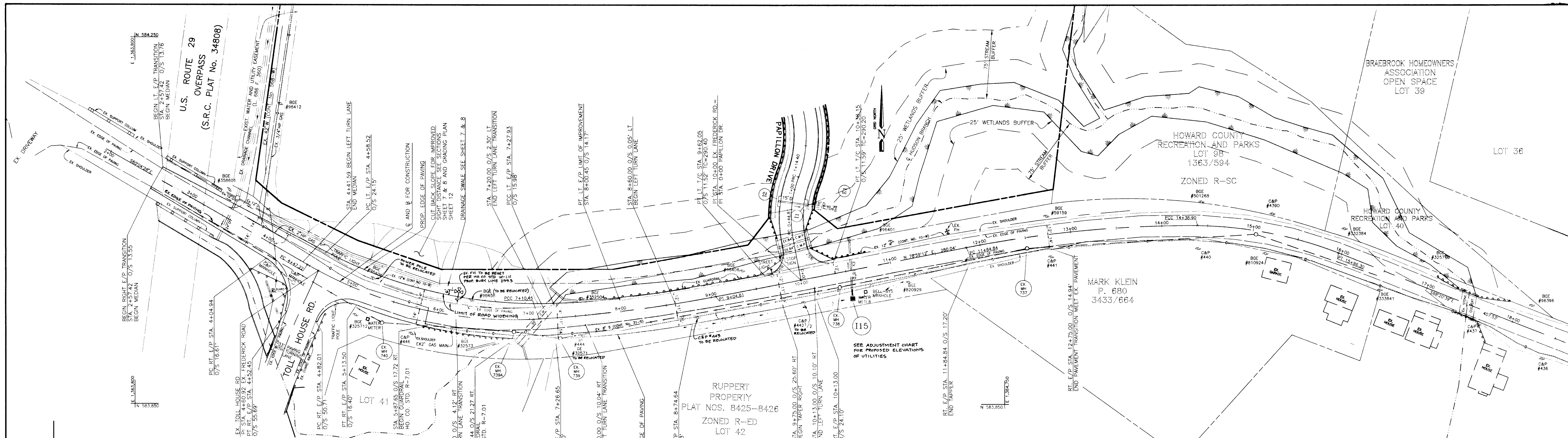
STRUCTURE SCHEDULE							
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.	
I 1	A-10 INLET	CL STA: 0+84.98	13.00	RT PAPILLON DRIVE	287.91	287.66	SD 4.41
I 2	A-10 INLET	CL STA: 0+84.98	13.00	LT PAPILLON DRIVE	288.21	---	SD 4.41
I 3	A-5 INLET W/DEFL.	CL STA: 3+80.00	13.00	RT PAPILLON DRIVE	310.07 (15") 309.57 (18")	309.39	SD 4.40 & SD 4.83
I 4	A-5 INLET W/DEFL.	CL STA: 3+80.00	13.00	LT PAPILLON DRIVE	310.37	---	SD 4.40 & SD 4.83
I 5	A-10 INLET	CL STA: 0+49.56	13.76	RT LASALLE COURT	318.29	---	SD 4.41
I 6	A-10 INLET	CL STA: 0+35.61	13.00	LT ROCHELLE DRIVE	317.73	---	SD 4.41
I 7	A-10 INLET	CL STA: 4+90.85	13.00	RT PAPILLON DRIVE	320.28 (18") 320.58 (15")	320.08	SD 4.41
I 8	A-10 INLET	CL STA: 5+12.74	13.00	LT PAPILLON DRIVE	321.69	---	SD 4.41
I 9	A-10 INLET	CL STA: 6+25.86	13.00	RT PAPILLON DRIVE	330.56	330.36	SD 4.41
I 10	A-10 INLET	CL STA: 6+25.86	13.00	LT PAPILLON DRIVE	330.86	---	SD 4.41
I 11	A-10 INLET	CL STA: 10+28.57	13.00	RT PAPILLON DRIVE	341.60	341.40	SD 4.41
I 12	A-10 INLET	CL STA: 0+40.48	13.00	LT BELLEAU COURT	343.27	---	SD 4.41
I 13	A-10 INLET	CL STA: 10+78.01	13.00	LT PAPILLON DRIVE	343.69	---	SD 4.41
I 14	A-10 INLET SUMP	CL STA: 16+46.88	31.00	RT PAPILLON DRIVE	344.91	---	SD 4.41

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] *[Signature]* 12/9/96
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] *[Signature]* 12/22/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND REDEVELOPMENT DATE
[Signature] *[Signature]* 12/20/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

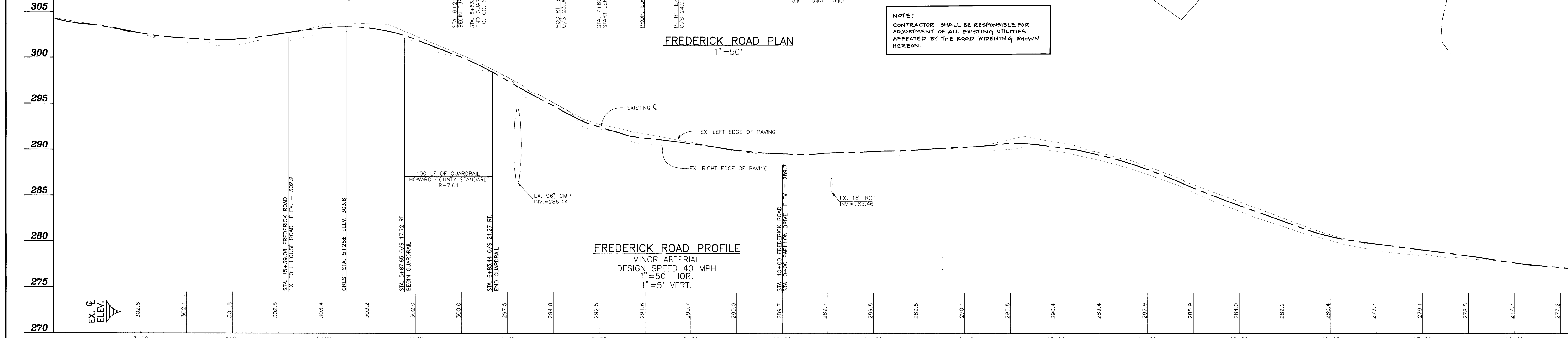
NO.	DATE	REVISION
<p>TSA GROUP, INC. planning • architecture • engineering 8400 Baltimore National Pike • Ellicott City, Maryland 21040 • (410) 465-8106 <i>[Signature]</i></p>		
OWNER/DEVELOPER:	PROJECT:	
SDC GROUP, INC. P.O. BOX 417 ELLCOTT CITY, MARYLAND 21041 (410) 465-4244	PAPILLON LOTS 1-118 TAX MAP 24 - PARCEL 121 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: ROAD PLAN S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08 DATE: DECEMBER 22, 1995 PROJECT NO. 0599 AUGUST 15, 1996 DESIGN: JME DRAFT: MBB SCALE: 1" = 50' DRAWING 3 OF 24	

1845



FREDERICK ROAD PLAN
1"=50'

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR
ADJUSTMENT OF ALL EXISTING UTILITIES
AFFECTED BY THE ROAD WIDENING SHOWN
HEREON.



FREDERICK ROAD PROFILE
MINOR ARTERIAL
DESIGN SPEED 40 MPH
1"=50' HOR.
1"=5' VERT.

CENTERLINE CONTROL DATA			
ROAD	STATION	NORTH	EAST
FREDERICK ROAD	2+57.42	584096.6432	1363823.753
	PC 4+47.22	584001.9558	1363988.2497
	PCC 7+10.45	583942.8423	1364240.9169
	PT 9+04.81	583967.5259	1364433.5624
	PC 11+84.84	584021.0240	1364708.4423
	PCC 14+38.90	584044.9602	1364960.9599
PT 15+96.30	584015.3179	1365114.6059	

UTILITY ADJUSTMENT CHART			
DESCRIPTION	EXISTING LOCATION STATION & OFFSET	EXISTING PROPOSED ELEVATION/ELEVATION	
C&P MH	4+43.85 O/S 24.59' RT	301.90	302.0
SEWER 739A	6+82.94 O/S 13.26' RT	298.83	298.7
SEWER 739	7+31.78 O/S 22.92' RT	296.05	296.4
SEWER 738	10+40.38 O/S 15.85' RT	289.05	288.7
BELL MH	10+74.92 O/S 21.50' RT	289.62	288.8
SEWER 737	12+50.34 O/S 11.95' RT	290.15	290.1
WATER METER	10+66 O/S 26' RT	291.4	290.6

POLE RELOCATION CHART			
DESCRIPTION	EXISTING LOCATION STATION & OFFSET	PROPOSED LOCATION STATION & OFFSET	
BGE #96409	5+20.17 O/S 17.48' LT	5+20 O/S 25.6' LT	
BGE #96408	6+34.59 O/S 19.13' LT	6+35 O/S 23.4' LT	
C&P #444/GE #32571	7+56.97 O/S 22.75' RT	7+57 O/S 27.0' RT	
C&P #443	8+81.28 O/S 19.14' RT	8+81 O/S 32.9' RT	
C&P #4421/2	9+98.85 O/S 24.68' RT	9+99 O/S 33.8' RT	

FIRE HYDRANT RELOCATION CHART			
DESCRIPTION	EXISTING LOCATION STATION & OFFSET	PROPOSED LOCATION STATION & OFFSET	
FIRE HYDRANT	6+18.84 O/S 18.07' LT	6+18.82 O/S 26.00' LT	

CENTERLINE CURVE TABLE					
STREET NAME	STATION	RADIUS	ARC	DELTA	CHORD
FREDERICK ROAD	4+47.22 to 9+04.81	450.00'	263.23'	33°30'54"	135.00'
	7+10.45 to 14+38.90	1500.00'	194.36'	07°25'26"	97.31'
	11+84.84 to 15+96.30	1300.00'	245.43'	10°49'01"	123.08'
	14+38.90 to 15+96.30	450.00'	171.63'	21°51'08"	86.87'

LEFT & RIGHT EDGE OF PAVEMENT CURVE DATA					
STATION	RADIUS	ARC	DELTA	TANGENT	CHORD
4+04.94 O/S 16.81 RT TO 4+52.45 O/S 57.69 RT	48.00'	65.76'	18°29'59"	39.22'	N19°38'01" W 60.74'
4+52.45 O/S 22.15 RT TO 7+27.93 O/S 15.88 LT	498.00'	257.68'	29°38'48"	131.79'	S77°18'57" E 254.82'
4+82.01 O/S 52.71 RT TO 5+13.50 O/S 16.40 RT	33.00'	51.92'	90°08'21"	33.08'	S66°25'23" W 46.73'
5+13.50 O/S 16.40 RT TO 7+26.65 O/S 23.00 RT	537.00'	221.49'	23°37'55"	112.34'	S80°19'24" E 219.92'
7+26.65 O/S 23.00 RT TO 8+74.84 O/S 24.93 RT	1037.00'	150.53'	08°19'01"	75.40'	N83°42'08" E 150.40'
7+27.93 O/S 15.88 LT TO 8+00.45 O/S 14.17 LT	998.00'	71.78'	04°07'14"	35.90'	N85°48'02" E 71.76'

- NOTE:
- ALL UTILITIES SHALL BE LOCATED BY CONTRACTOR PRIOR TO CONSTRUCTION.
 - POWER POLE RELOCATION, FIRE HYDRANT RELOCATION AND MANHOLE ADJUSTMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. (TO BE COORDINATED WITH APPLICABLE UTILITY COMPANY.)
 - SEE SHEET 9 FOR TRAFFIC CONTROL PLAN AND STRIPING PLAN.
 - EXISTING SUPERELEVATION CROSS SLOPES ARE TO BE MAINTAINED WITH PAVEMENT WIDENING.
 - THROUGH LANES ARE STRIPED AT 12'. TURN LANES STRIPED AT 11'. A TWO FOOT SHOULDER, WITH FULL DEPTH PAVING SECTION, IS PROVIDED WHERE WIDENING OCCURS. EDGE OF PAVING REFERS TO THE OUTER EDGE OF THE SHOULDER.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] *Acymc* 12/9/96
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 12/20/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

NO.	DATE	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 6480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105

OWNER/DEVELOPER: SDC GROUP, INC.
 POST OFFICE BOX 417
 ELLICOTT CITY, MARYLAND 21041
 (410) 465-4244

PROJECT: PAPILLON
 LOTS 1-118

LOCATION: TAX MAP 24 - PARCEL 121
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

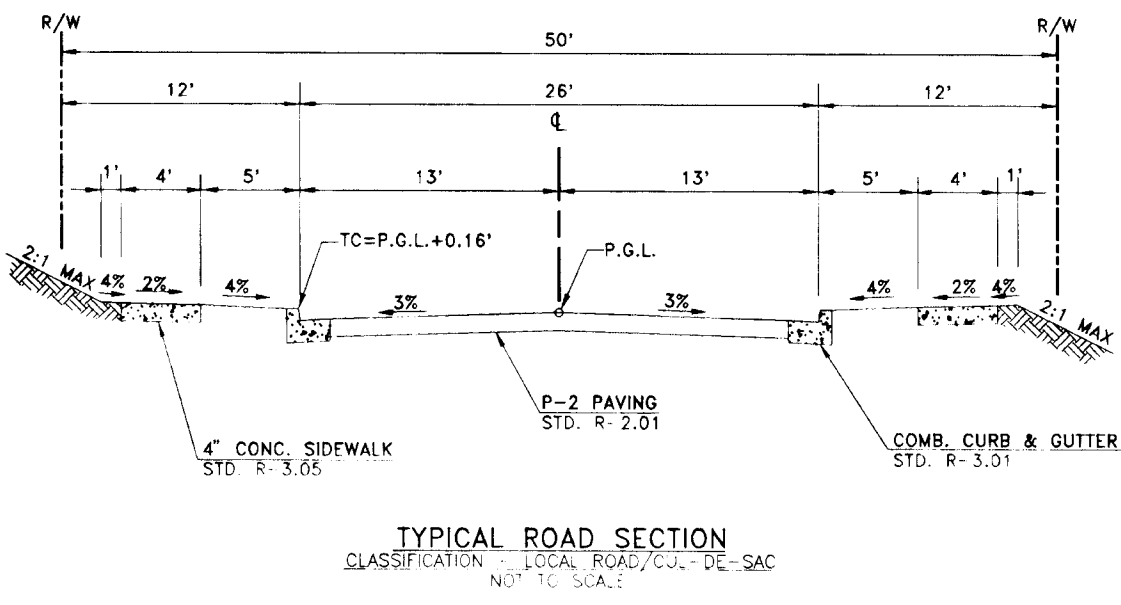
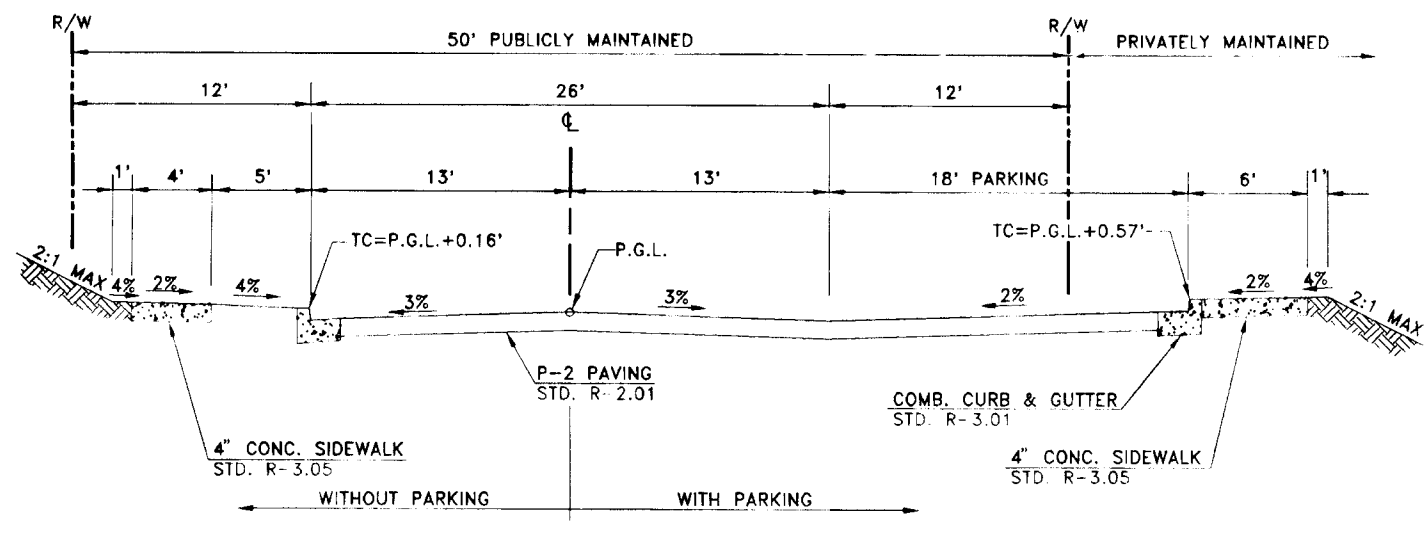
TITLE: ROAD PLAN & PROFILE
 S-94-08.P-94-22.WP-95-40, ZB-96B, SP-96-08

DATE: DECEMBER 22, 1995
 AUGUST 16, 1996

PROJECT NO. 0599

Design: JME Draft: MBB SCALE: AS SHOWN DRAWING 4 OF 24

1895

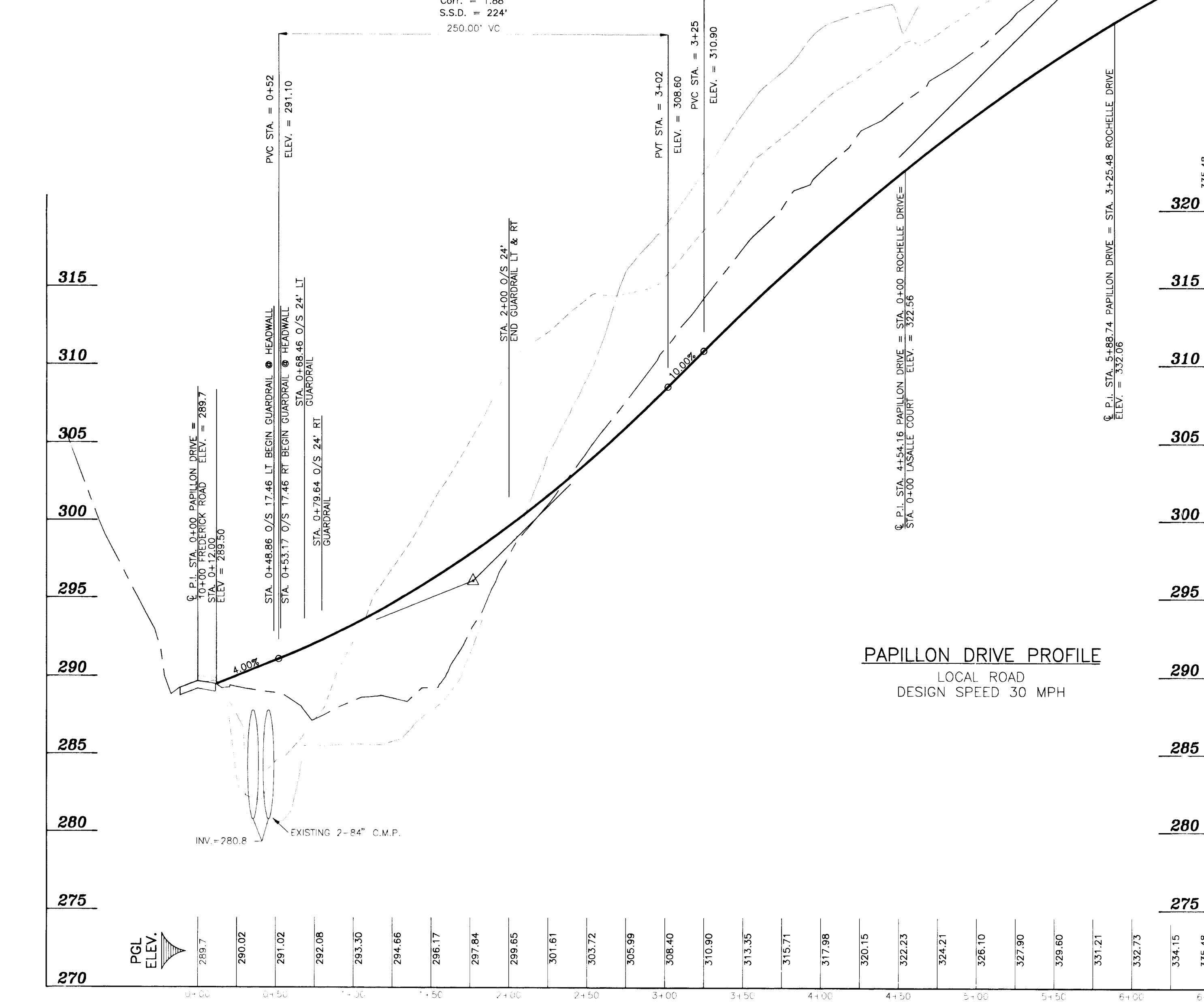


TYPICAL ROAD SECTION
CLASSIFICATION LOCAL ROAD, C.C., DE-SAC
NOT TO SCALE

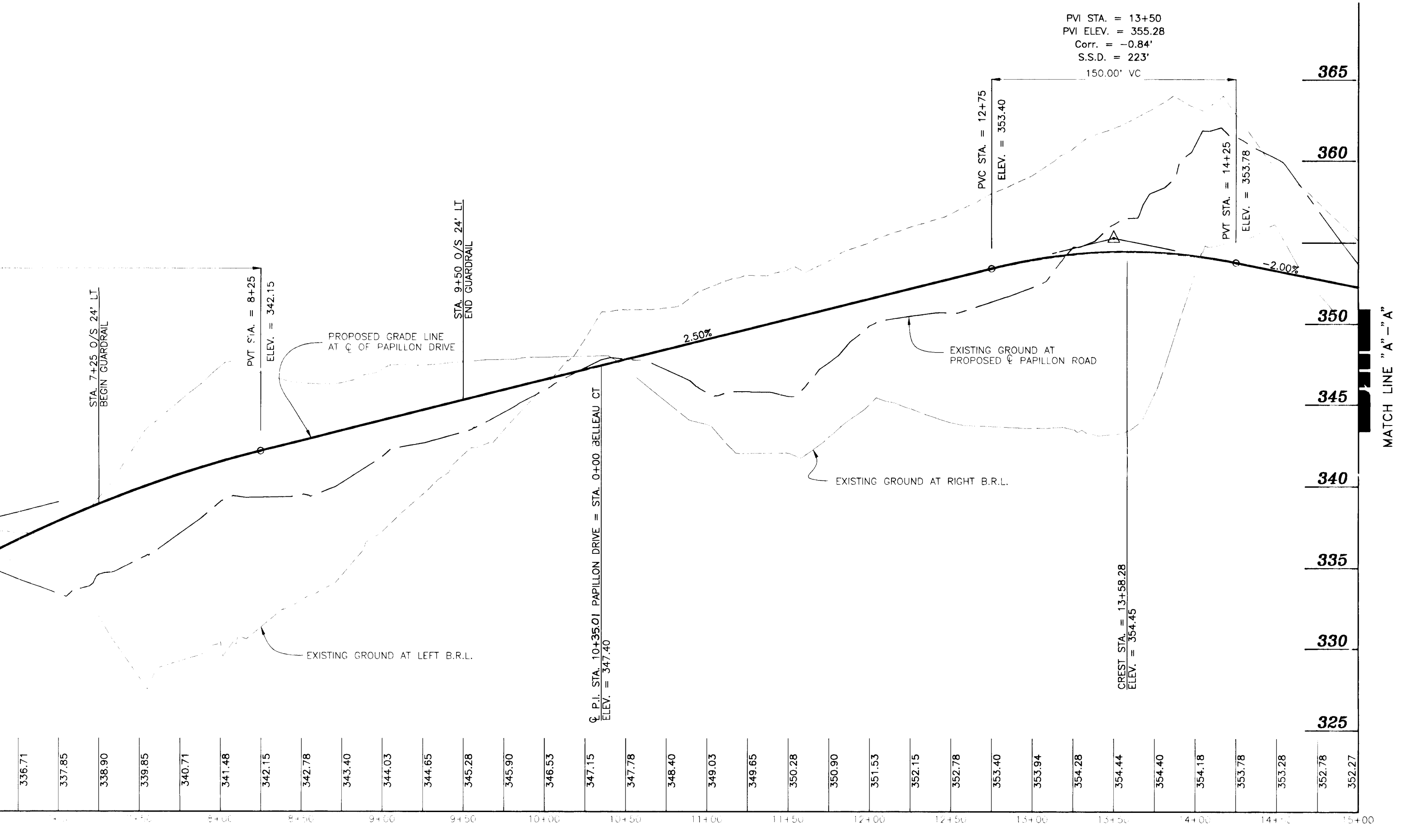
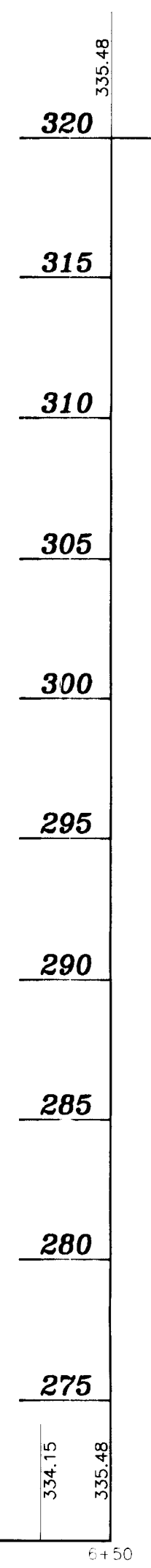
PVI STA. = 54.75
PVI ELEV. = 335.90
Corr. = -4.69'
S.S.D. = 339'
500.00' VC

PVI STA. = 13+50
PVI ELEV. = 355.28
Corr. = -0.84'
S.S.D. = 223'
150.00' VC

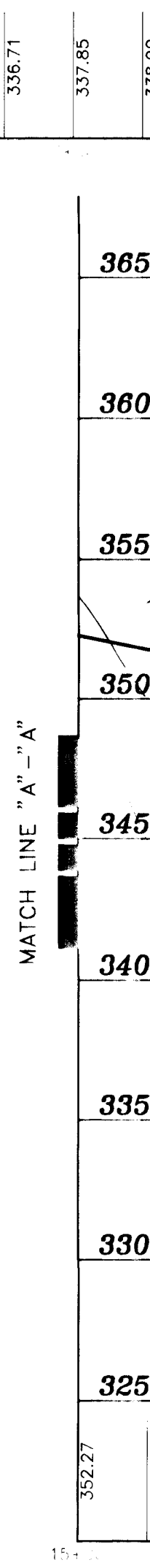
PVI STA. = 1+77
PVI ELEV. = 296.10
Corr. = 1.88'
S.S.D. = 224'
250.00' VC



PAPILLON DRIVE PROFILE
LOCAL ROAD
DESIGN SPEED 30 MPH



PAPILLON DRIVE PROFILE
LOCAL ROAD
DESIGN SPEED 30 MPH



NOTE:
1. SEE SHEET 3 FOR CUL-DE-SAC GRADING DETAIL.
2. SEE SHEET 3 FOR PARKING CURB DATA.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
Richard Blood 12/9/96
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
Richard Blood 12/23/96
DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 12/20/96

NO.	DATE	REVISION

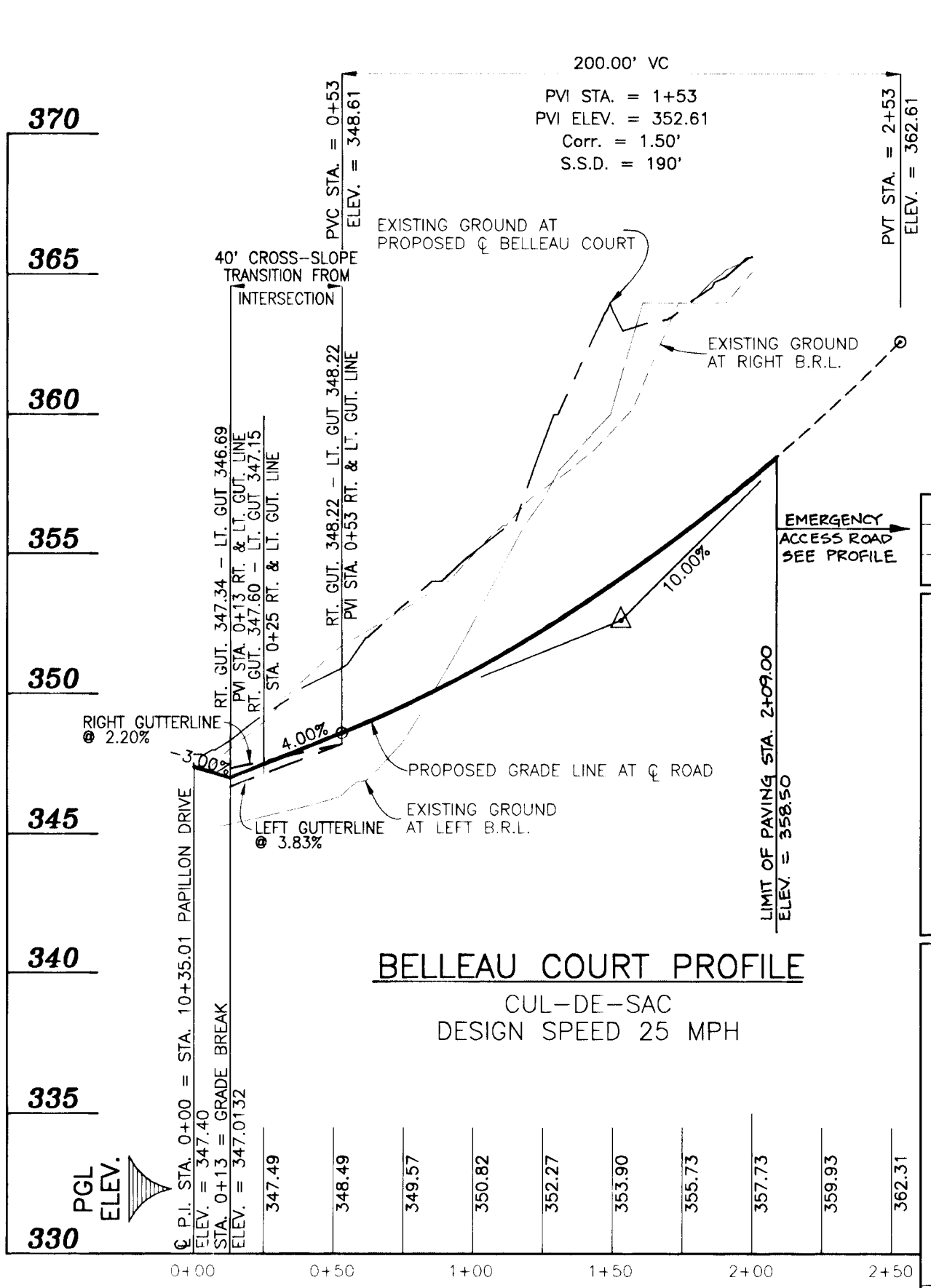
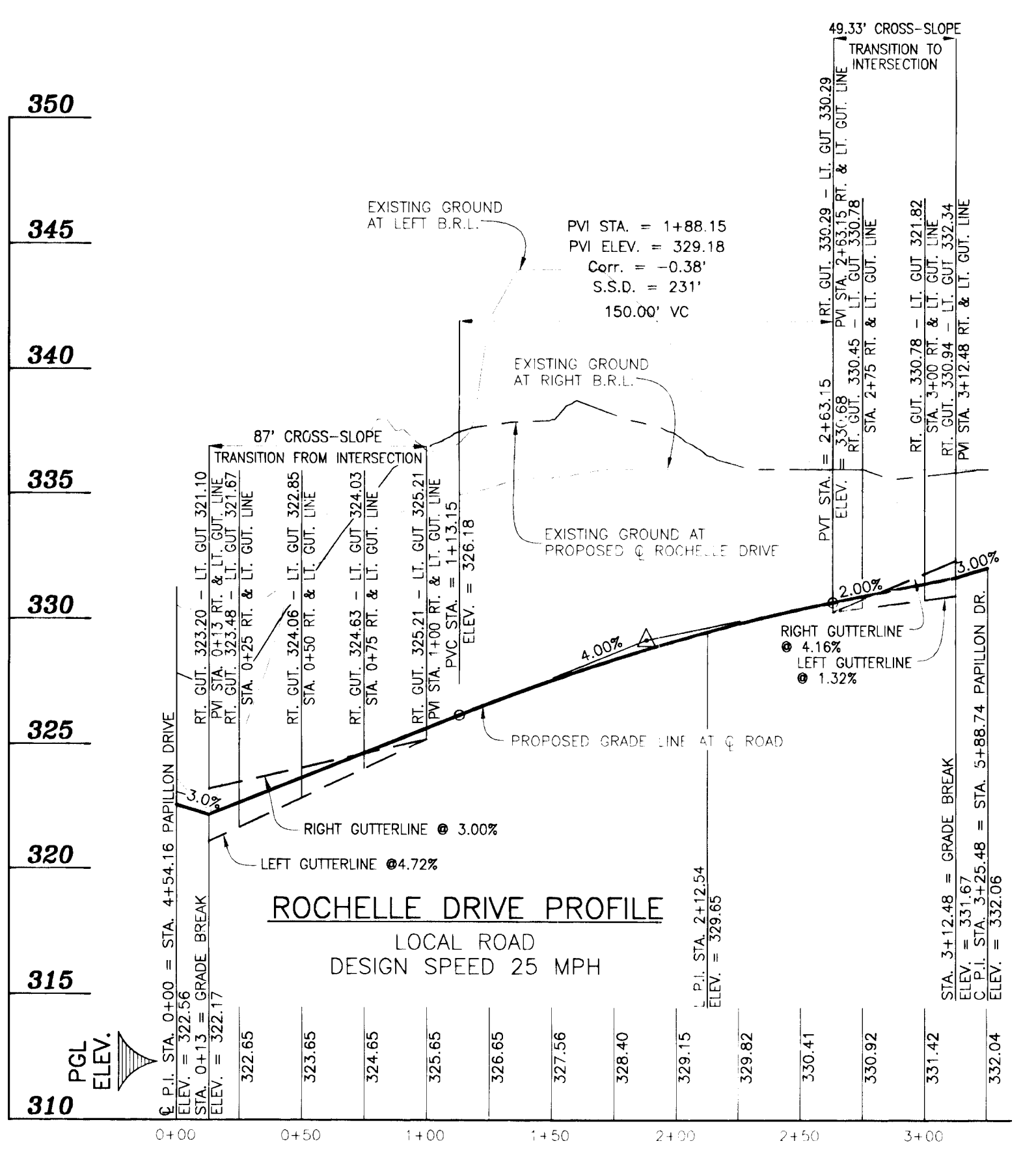
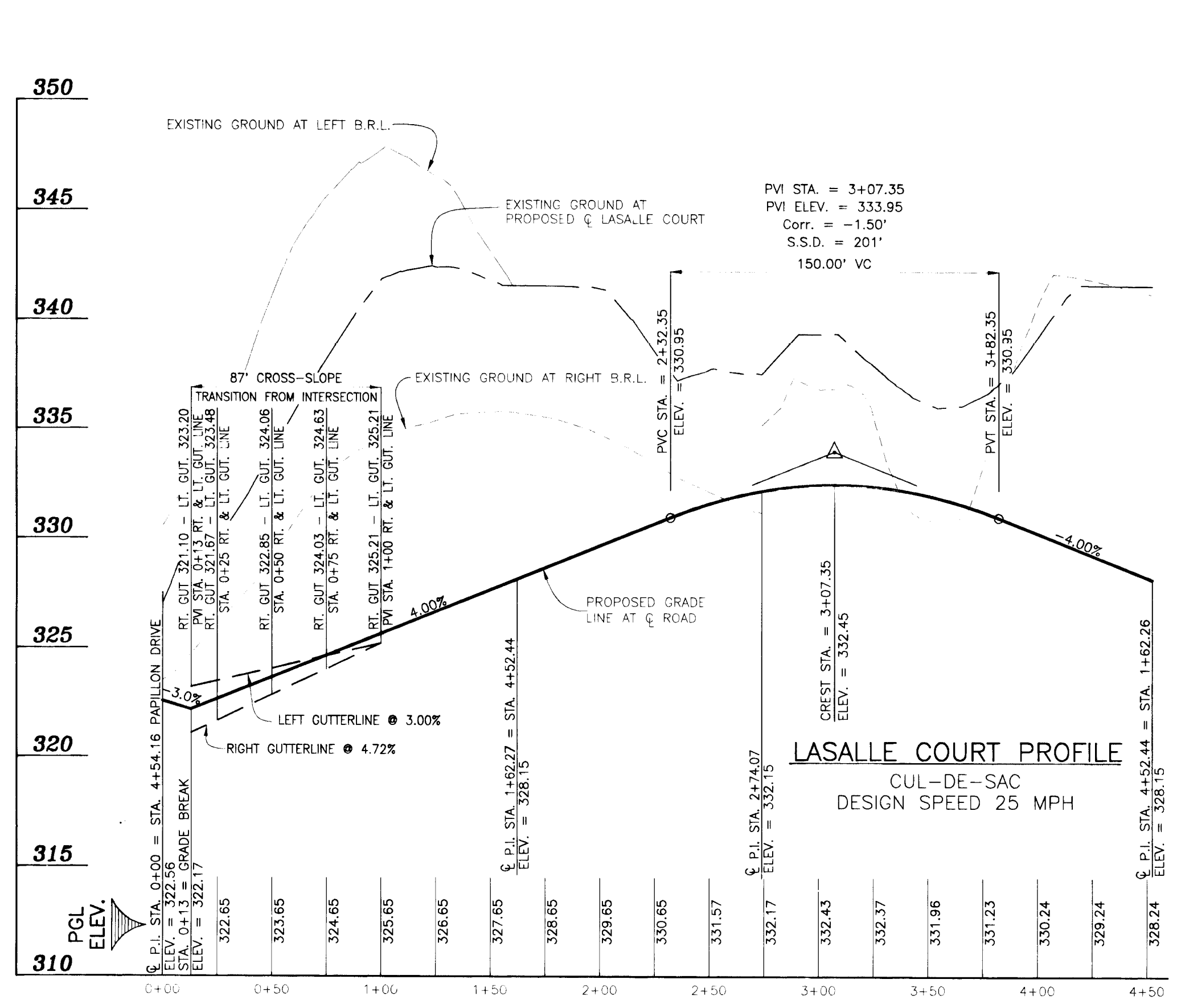
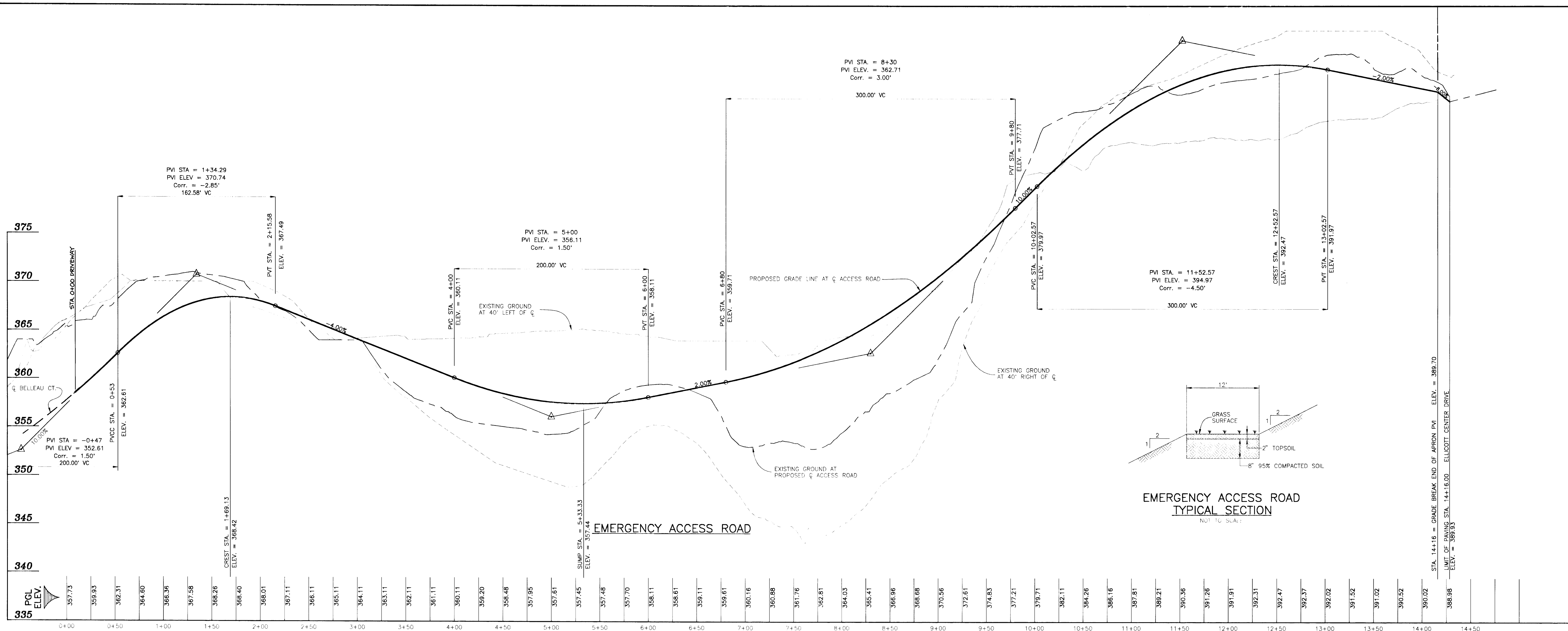
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
Richard Blood 12/9/96
 DATE
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
Richard Blood 12/23/96
 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 12/20/96

TSA GROUP, INC.
 planning • architecture • engineering
 6480 Baltimore National Pike • Ellicott City, Maryland 21045 • (410) 465-6105
Richard Blood
 PROFESSIONAL ENGINEER

OWNER/DEVELOPER: SDC GROUP, INC. POST OFFICE BOX 417 ELLCOTT CITY, MARYLAND 21041 (410) 465-4244	PROJECT: PAPILLON LOTS 1-11B LOCATION: TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: ROAD PROFILES S-94-OR, P-94-22, WP-95-40, ZB-96B, SP-96-08 DATE: DECEMBER 22, 1995 AUGUST 16, 1996 PROJECT NO. 0589
--	--

Design: JME Draft: MBB SCALE: 1"=50'H 1"=5'V DRAWING 5 OF 24

1845



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Richard Acione 12/9/96
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Richard Blood 12/23/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

Chad Damman 12/20/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

NO.	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering

8480 Baltimore National Pike • Elllicott City, Maryland 21043 • (410) 465-6105

Donald Moan
REGISTERED PROFESSIONAL ENGINEER

OWNER/DEVELOPER: SDC GROUP, INC.
POST OFFICE BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: PAPILLON LOTS 1-118

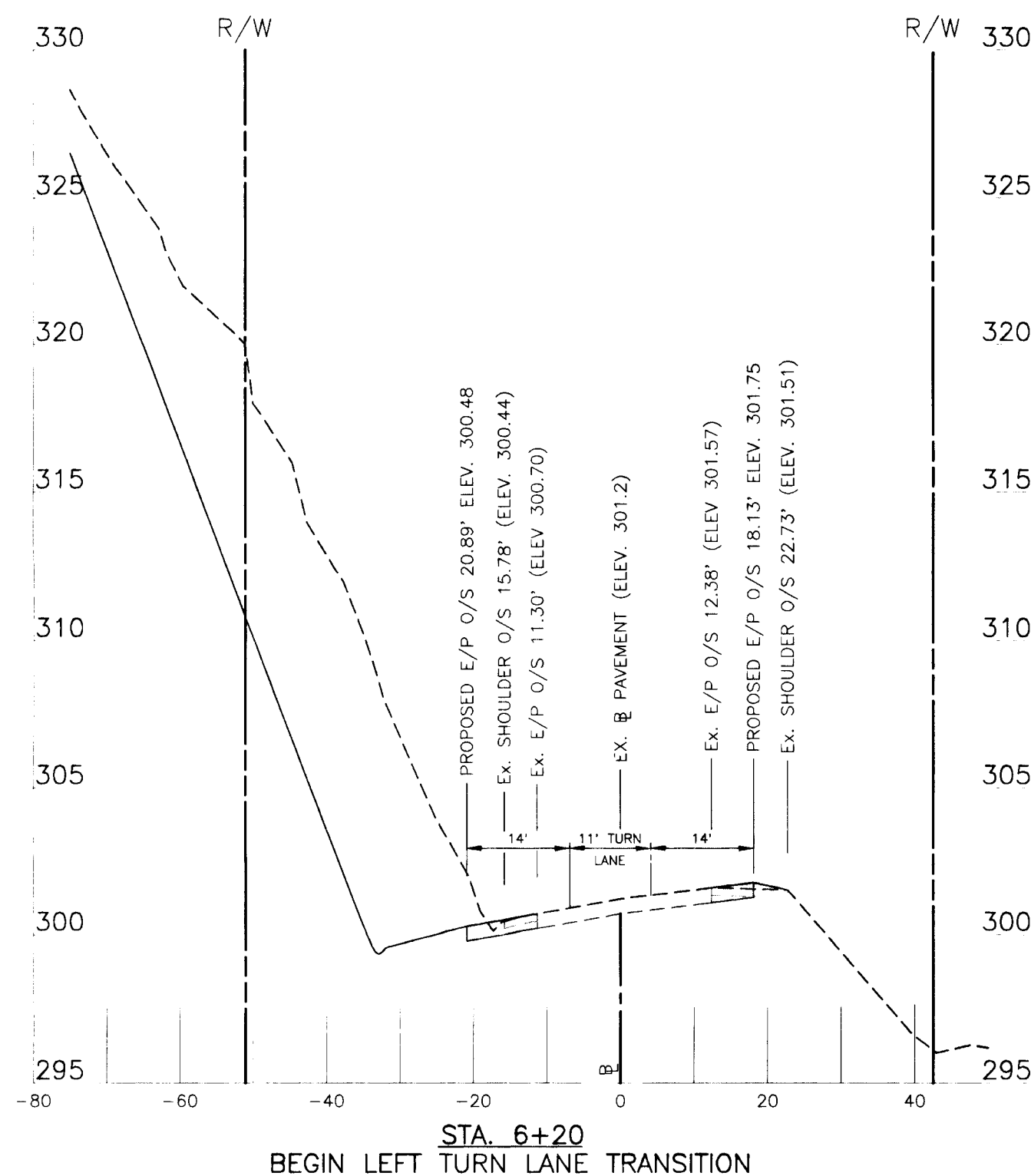
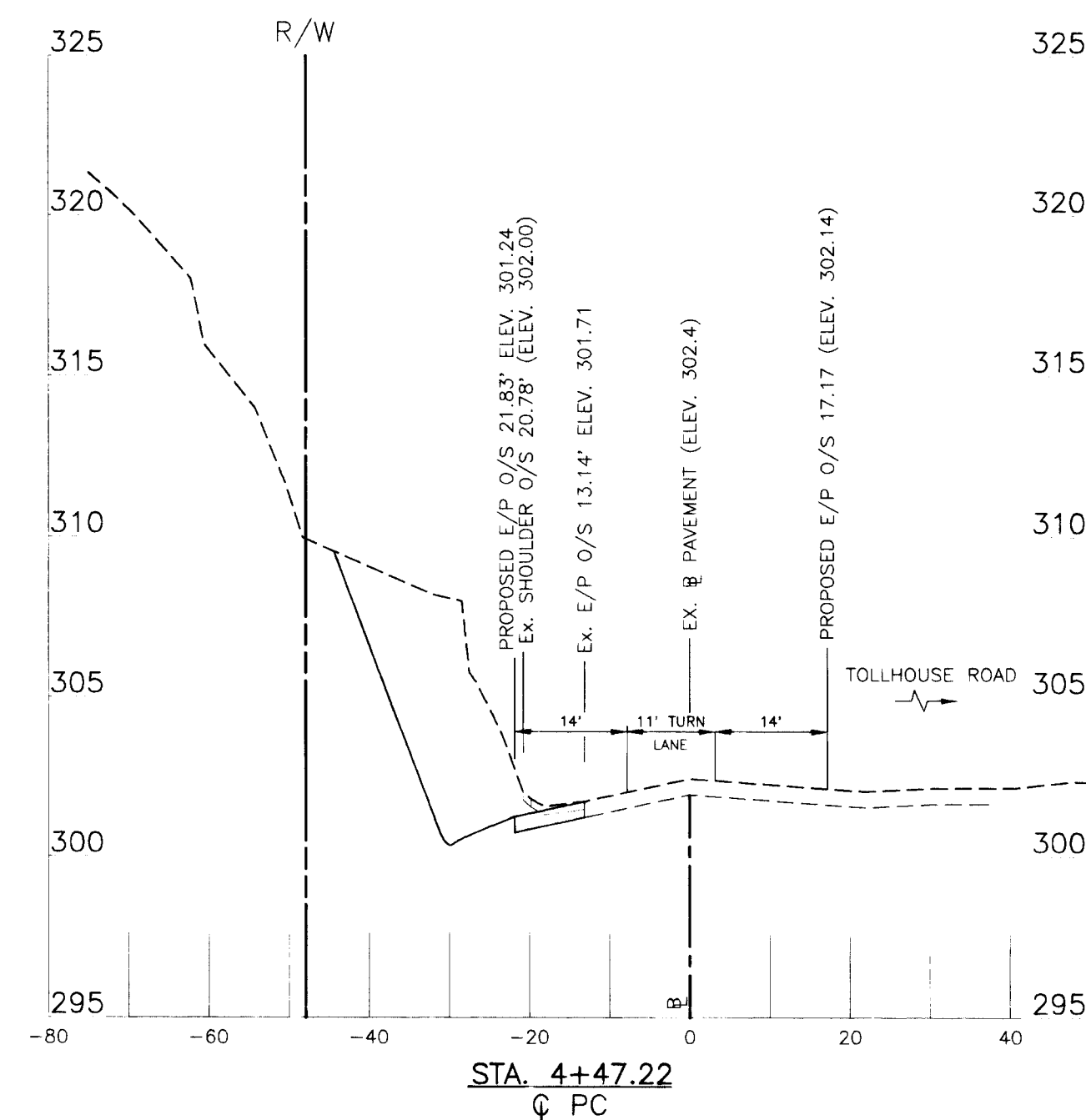
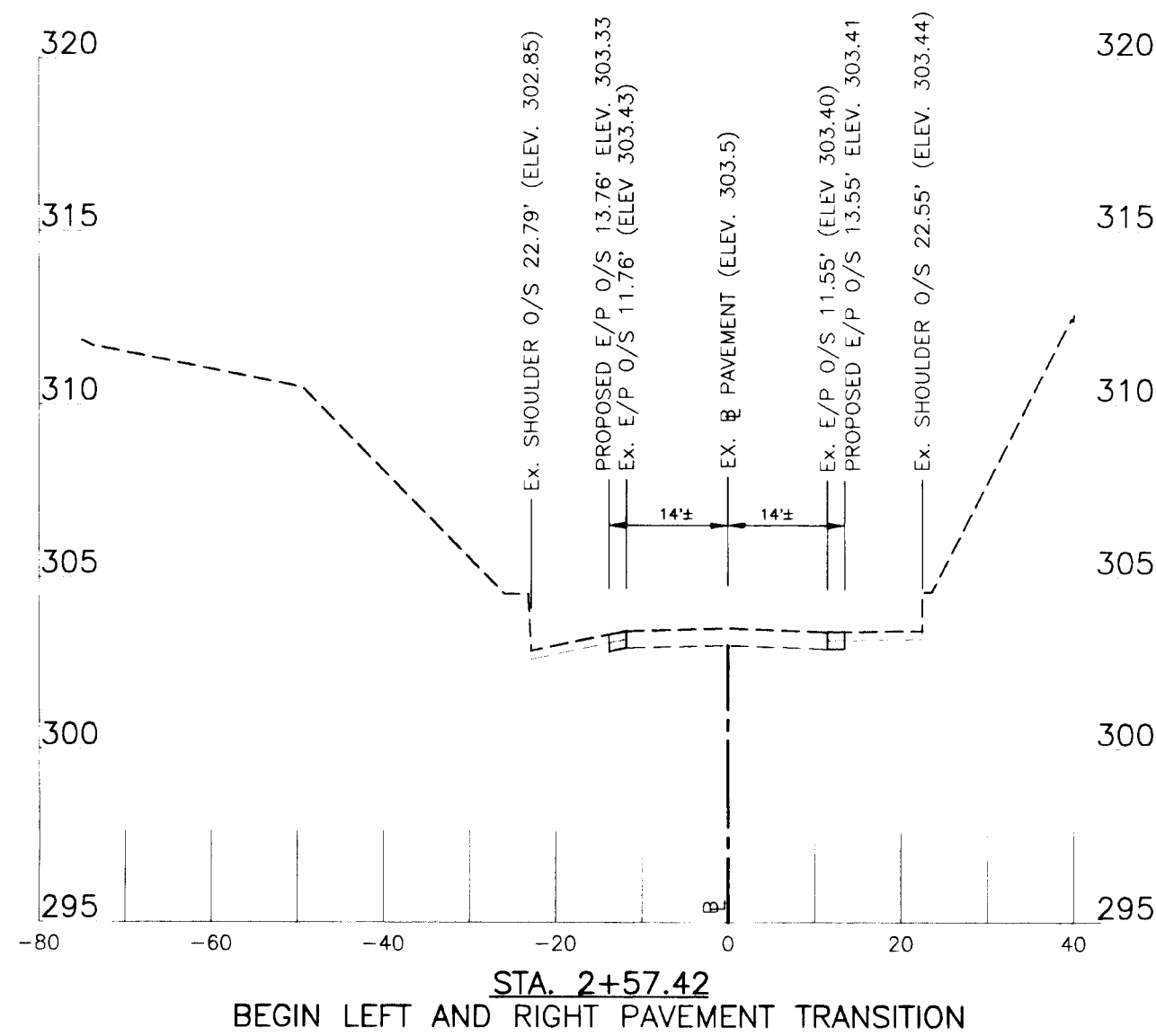
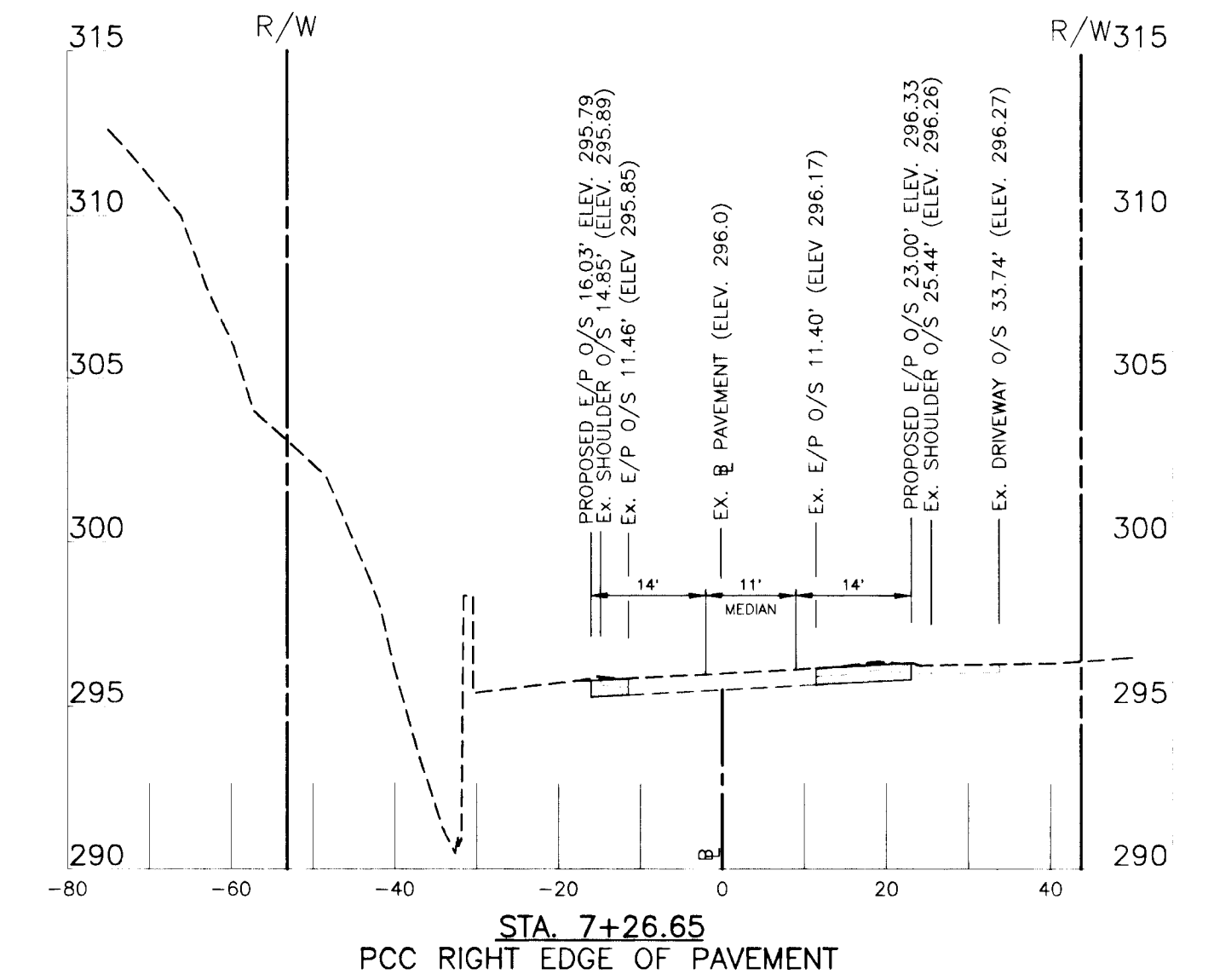
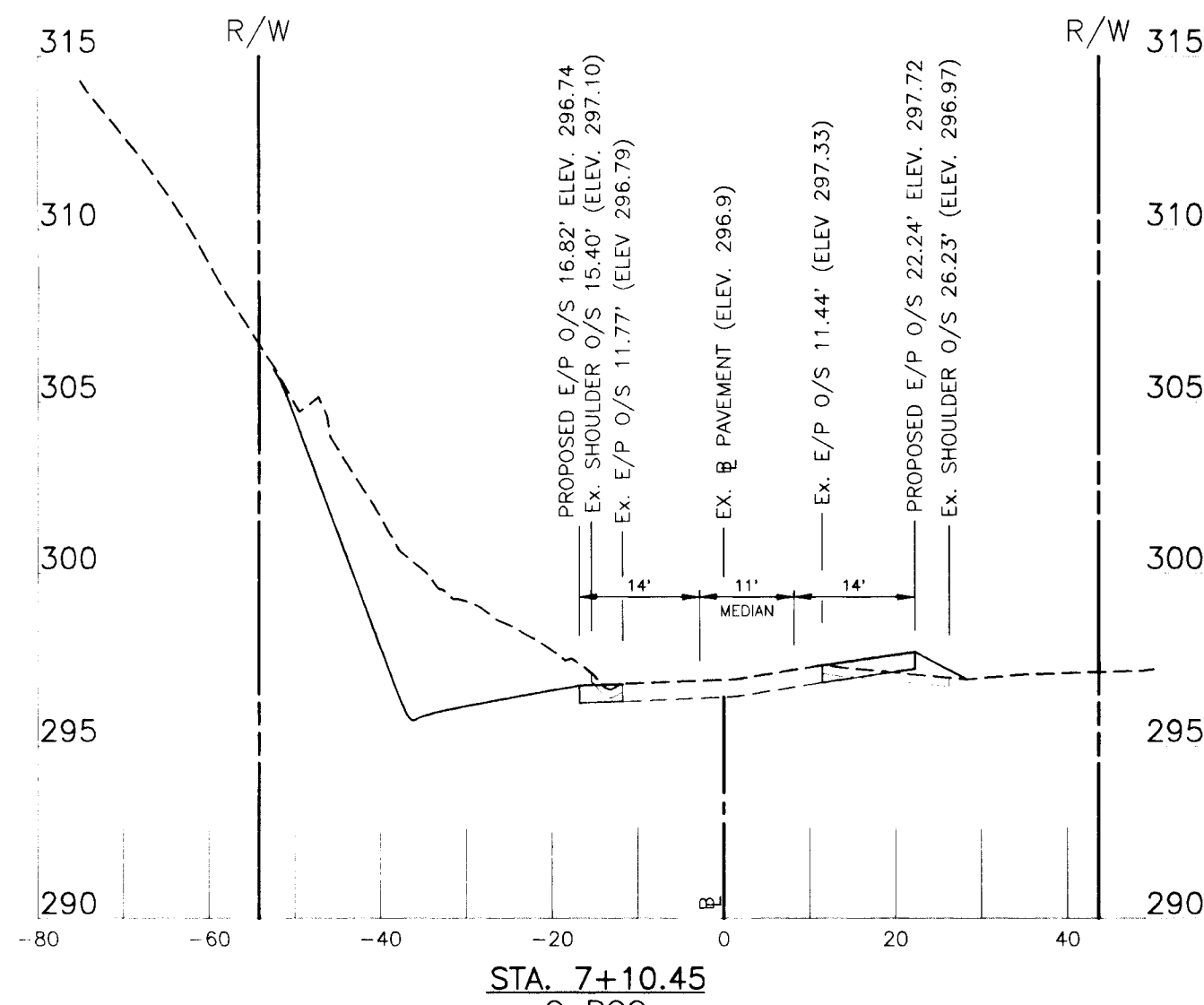
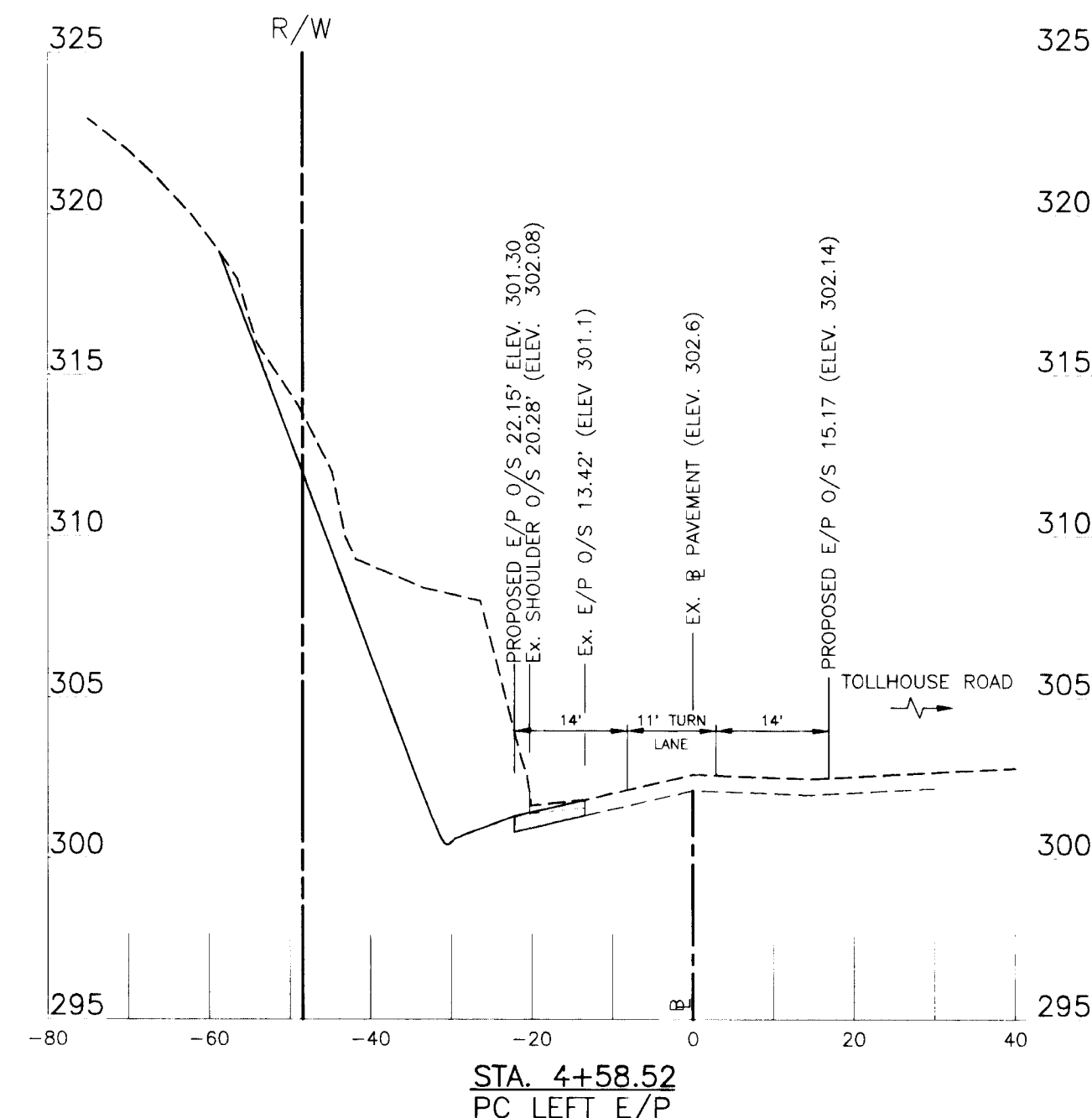
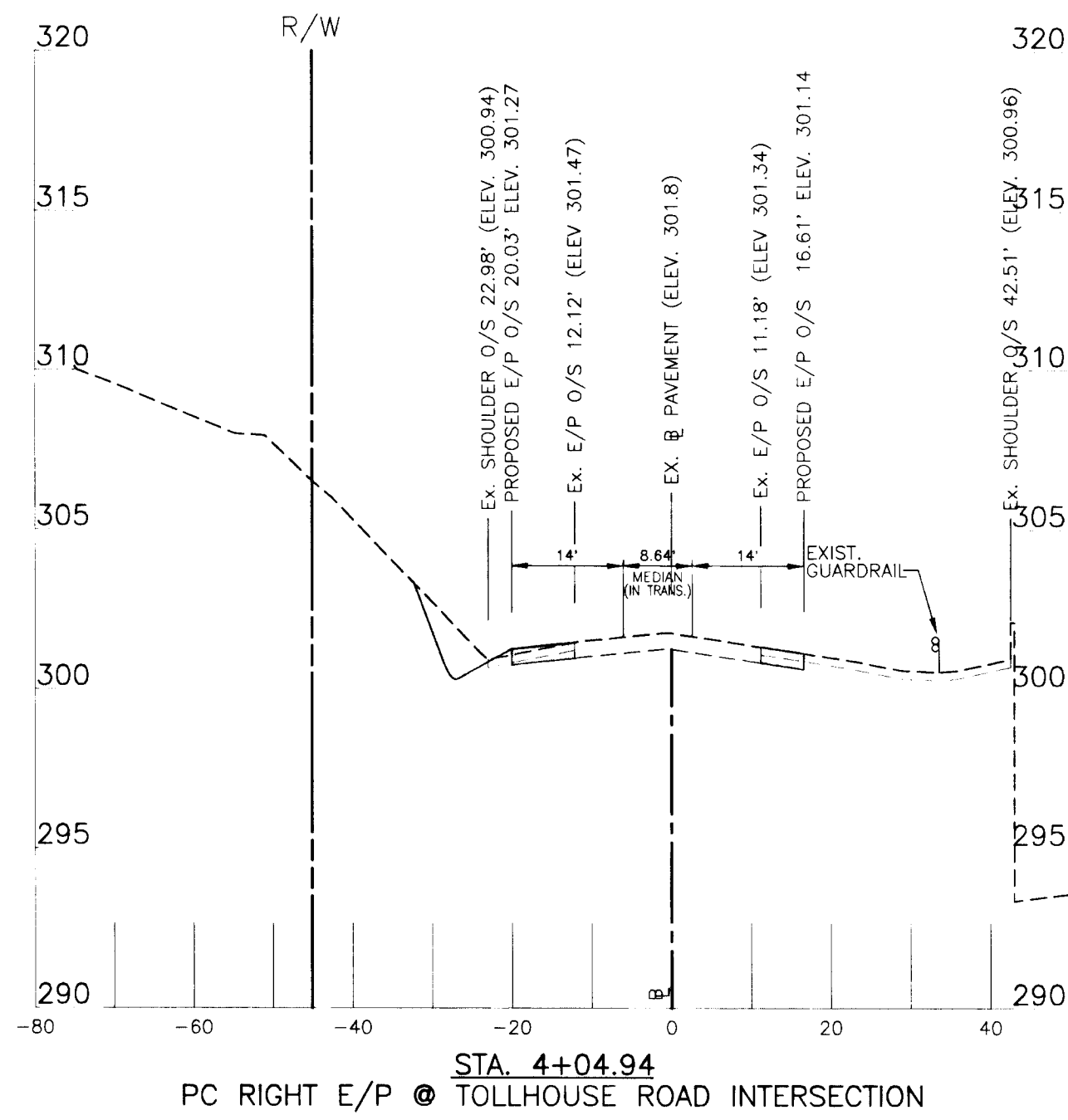
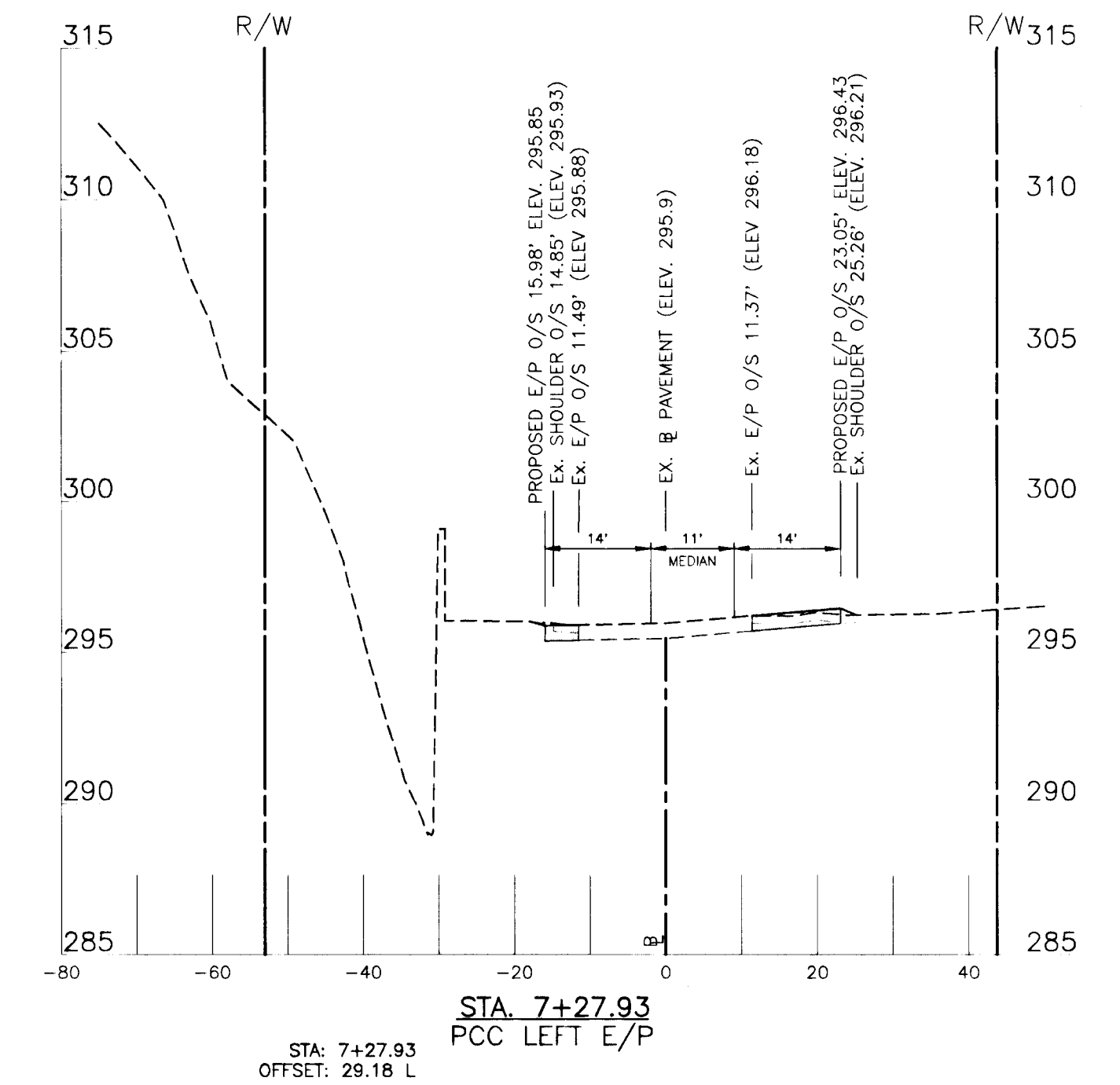
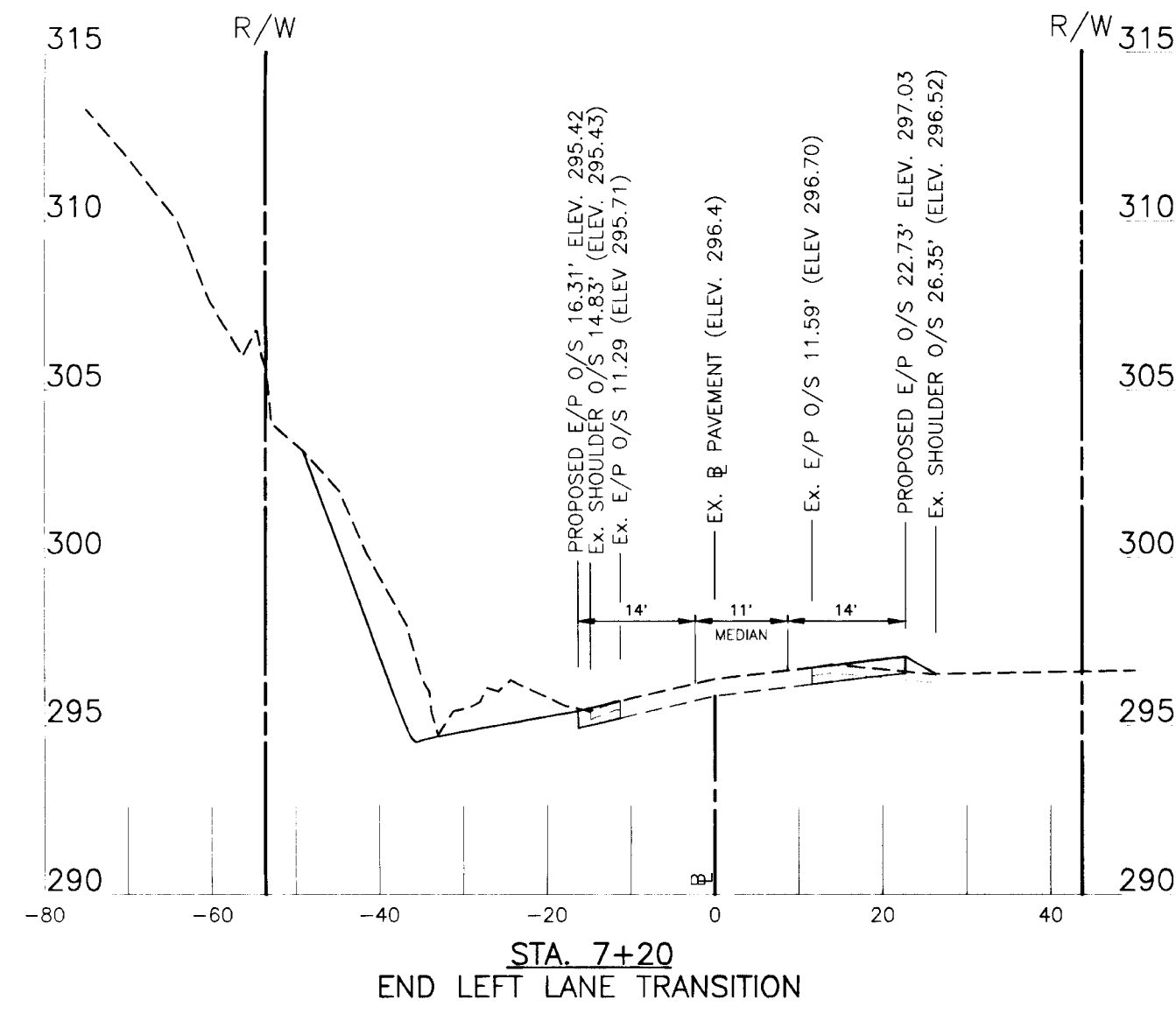
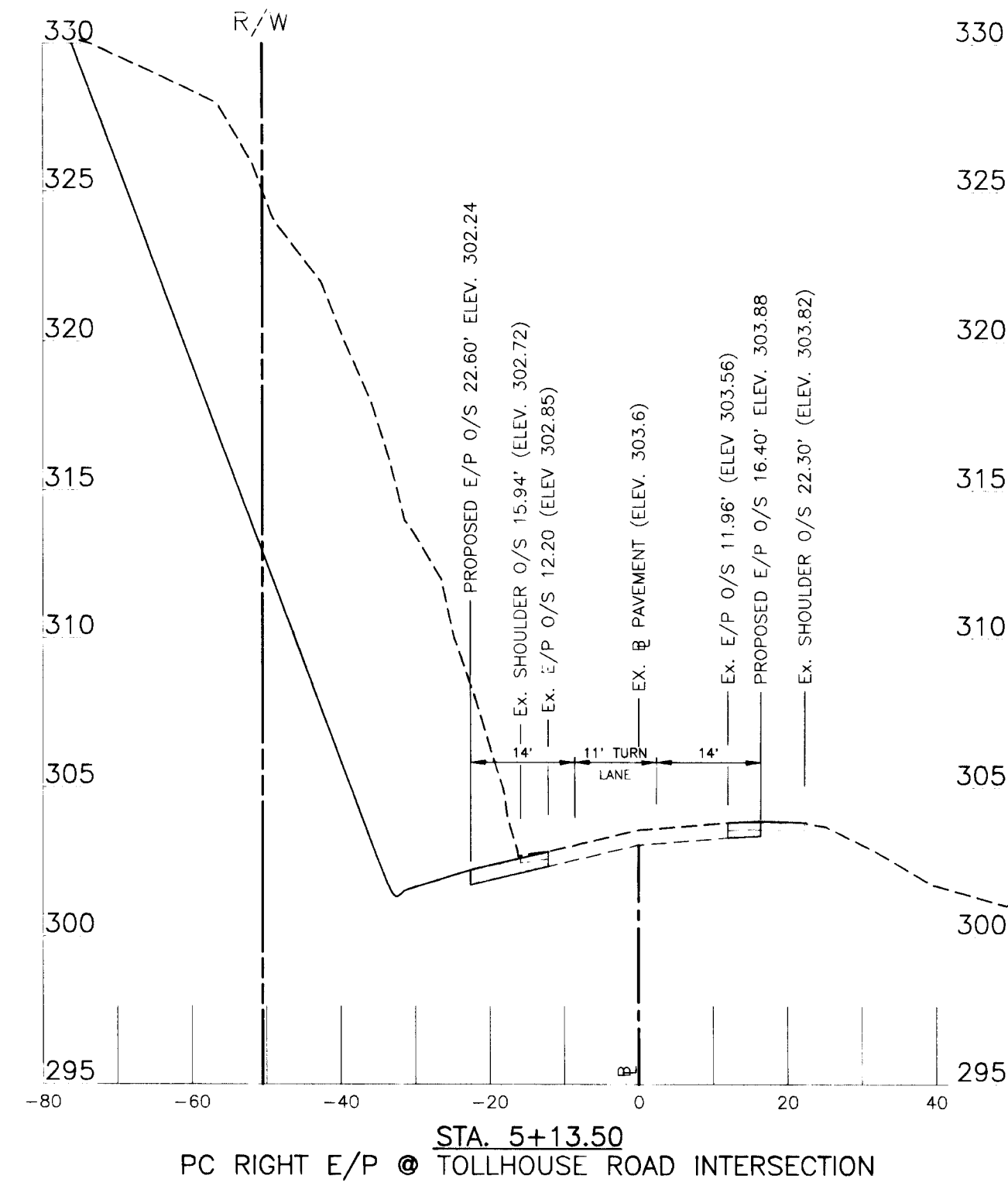
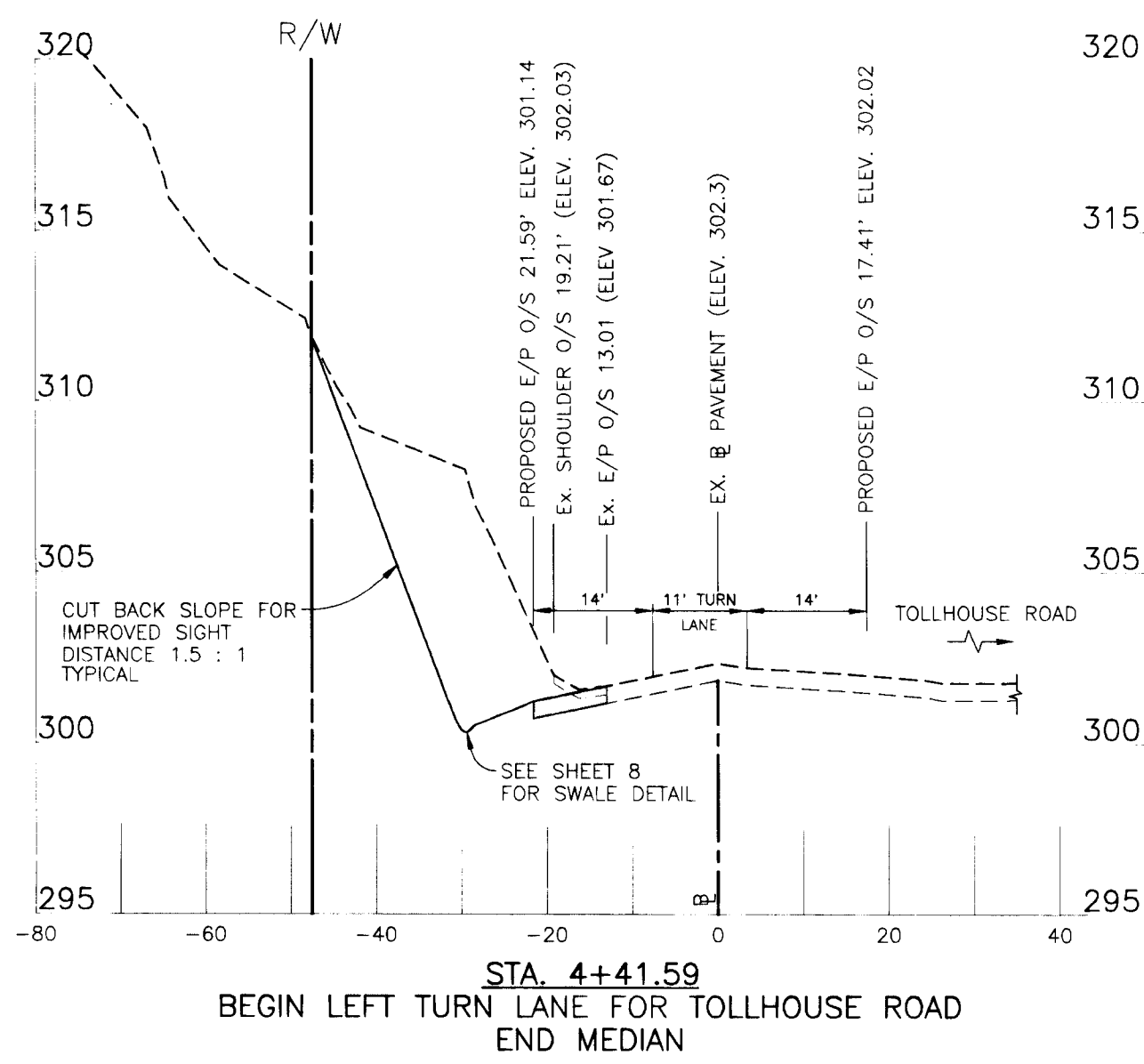
LOCATION: TAX MAP 24 - PARCEL 121
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PROFILES

S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08
DATE: DECEMBER 22, 1995 PROJECT NO. 0599
AWA905T 10, 1996 SCALE: 1"=50'H 1"=5'V DRAWING 6 OF 24

Design: JME Draft: MBB

1895



NOTE:
SEE DETAILS SHEET NO. 8 FOR
TYPICAL ROAD WIDENING.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 12/9/96
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 12/22/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RECREATION
 APPROVED: *[Signature]* 12/20/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK

NO.	DATE	REVISION

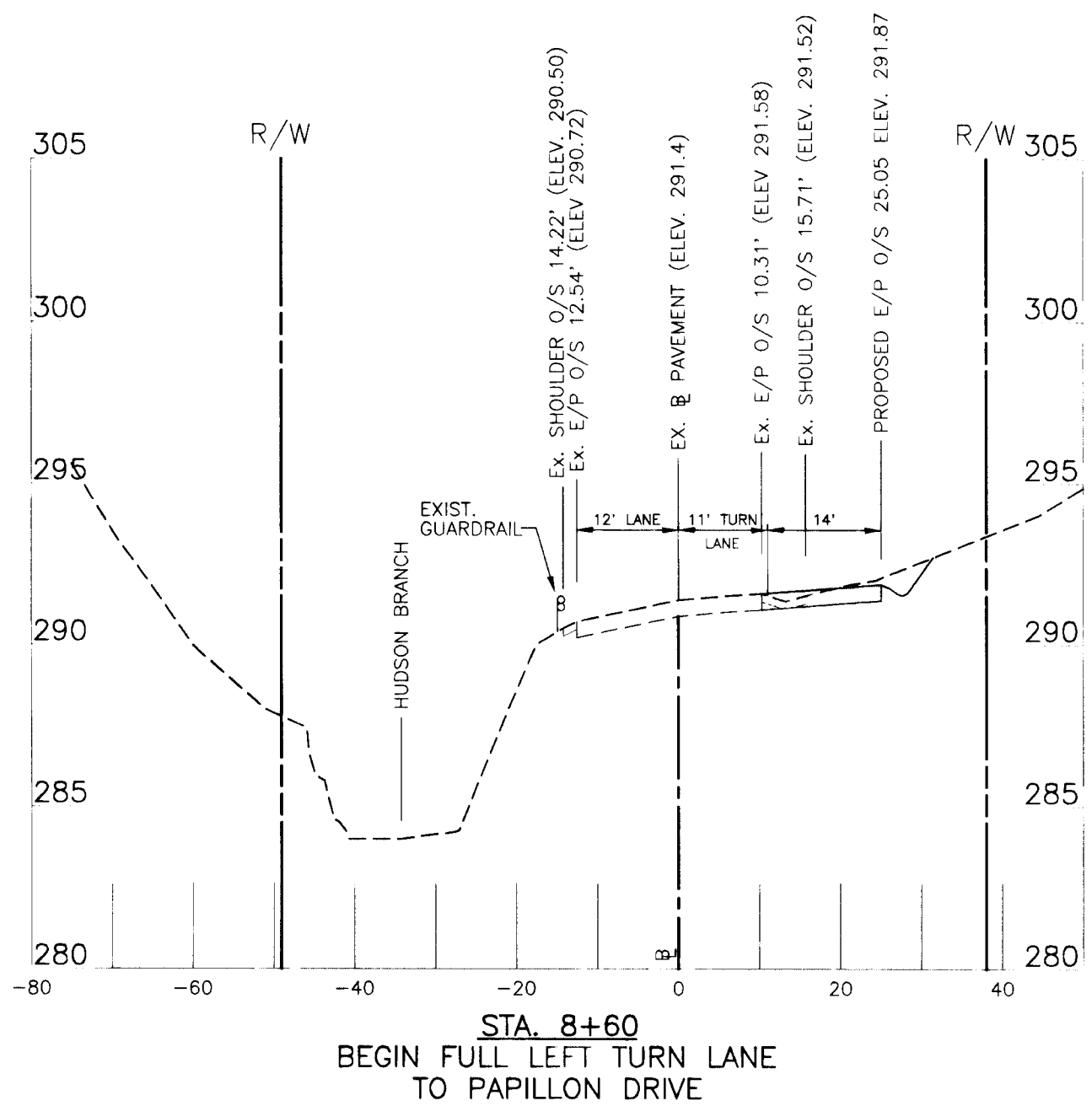
OWNER/DEVELOPER: SDC GROUP, INC.
 POST OFFICE BOX 417
 ELLICOTT CITY, MARYLAND 21041
 (410) 465-4244

PROJECT: PAPHION
 LOTS 1-118
 LOCATION: TAX MAP 24 - PARCEL 121
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

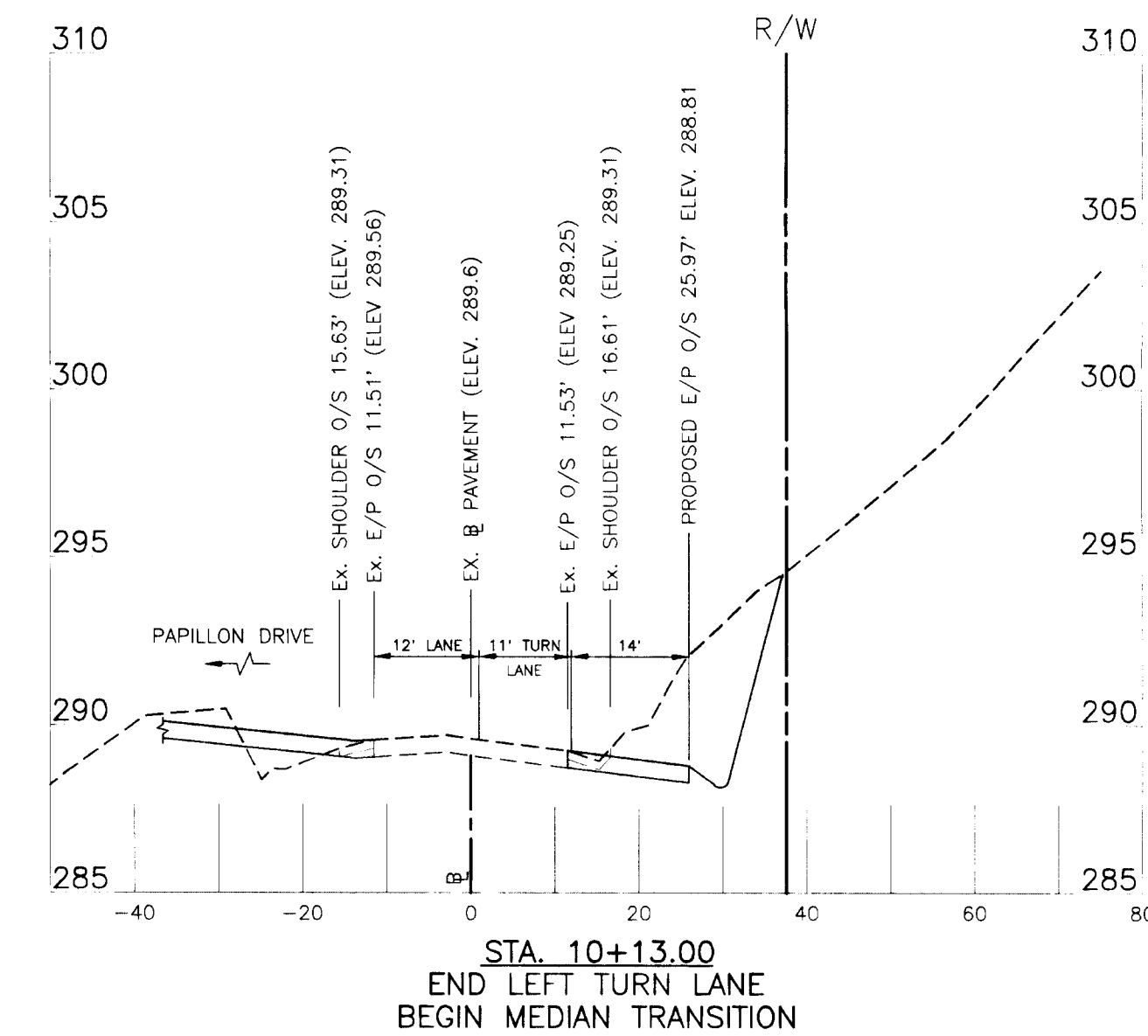
TITLE: FREDERICK ROAD SECTIONS
 S-94-08, P-94-22, WP-95-40, ZB-988M, SP-96-08
 DATE: DECEMBER 22, 1995
 AUGUST 16, 1996
 PROJECT NO. 0599
 DRAWING 7 OF 24

Design: JME Draft: MBB SCALE: 1"=20'H, 1"=5'V

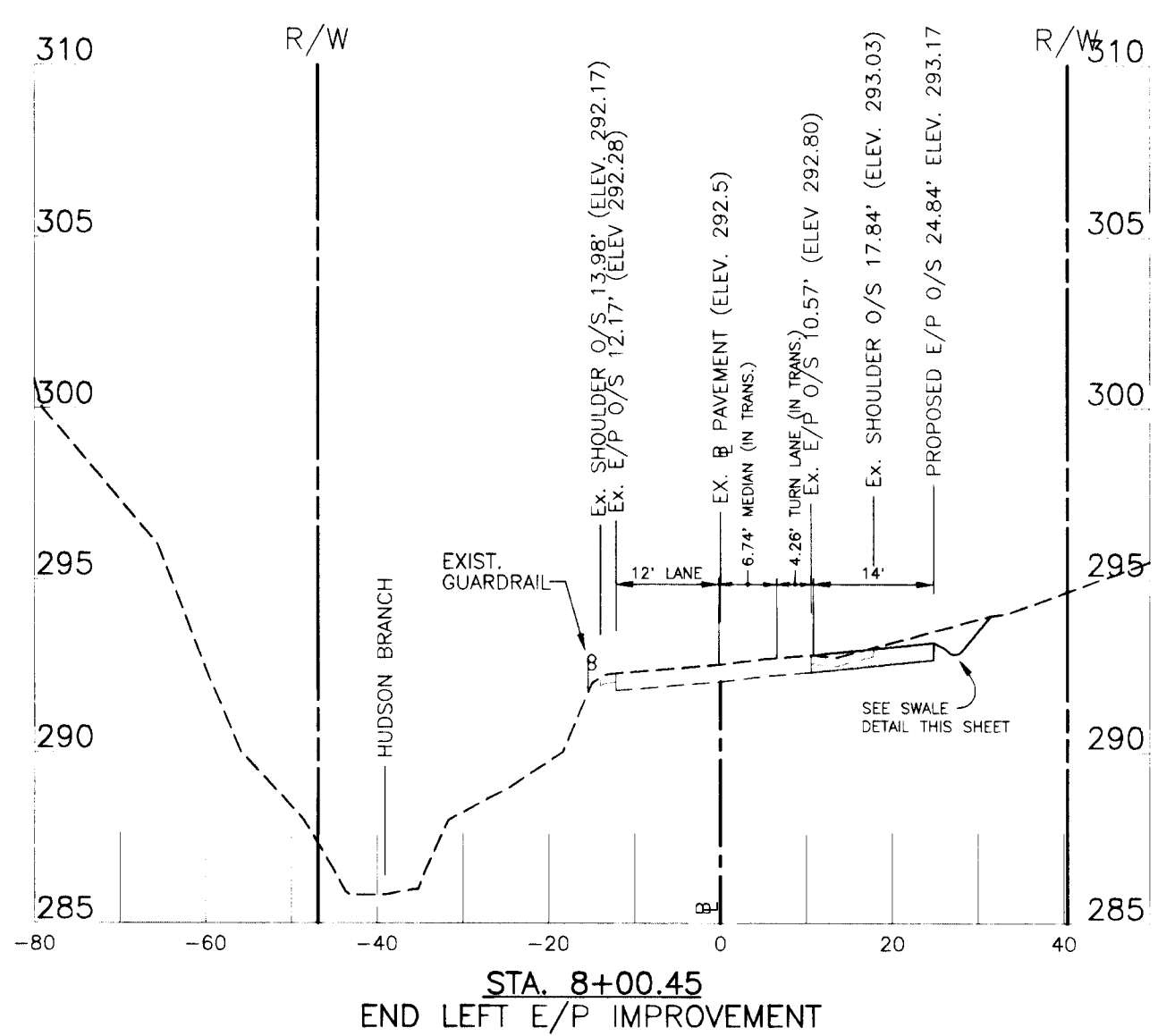
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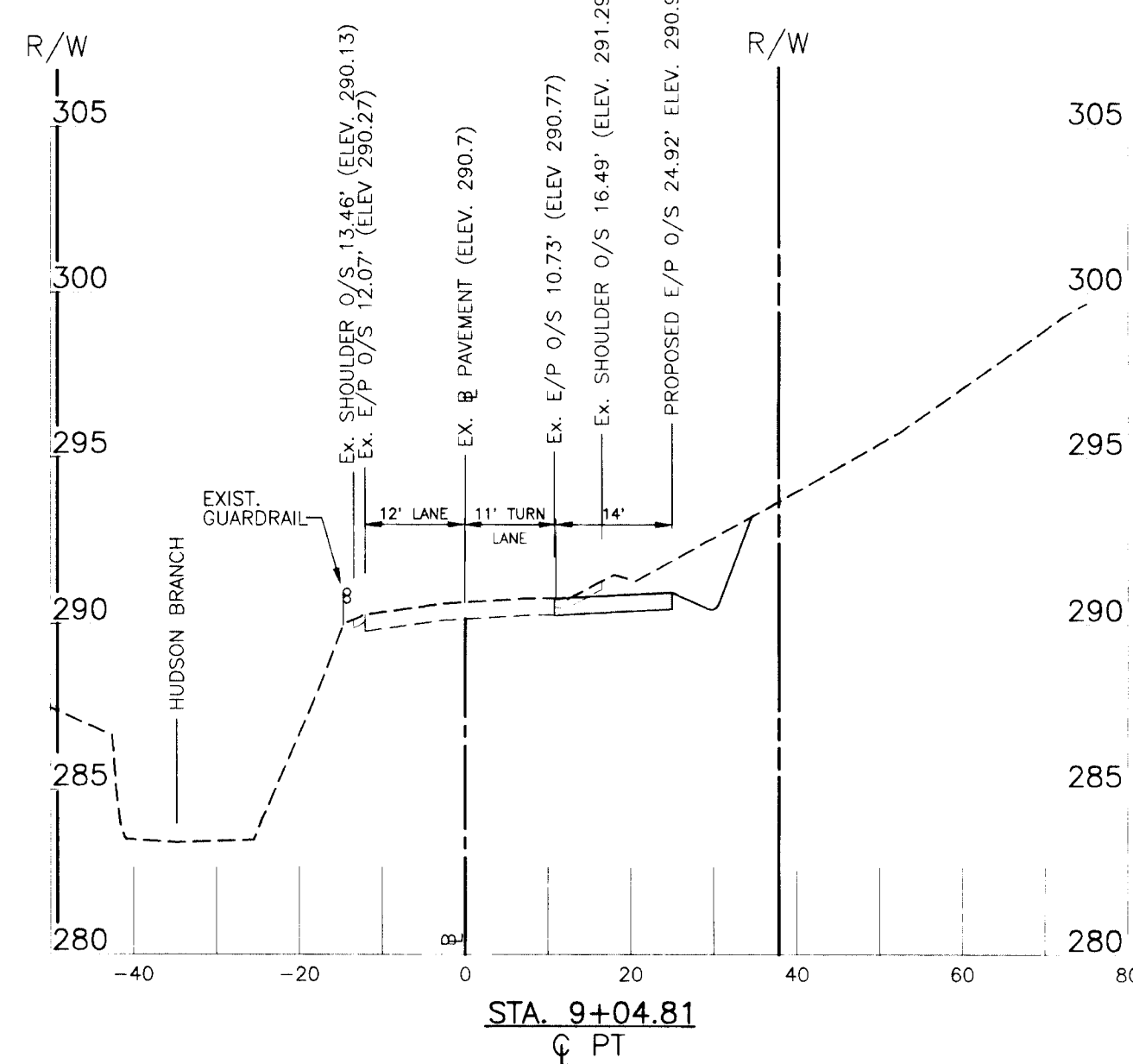
STA. 8+60
BEGIN FULL LEFT TURN LANE
TO PAPILLON DRIVE



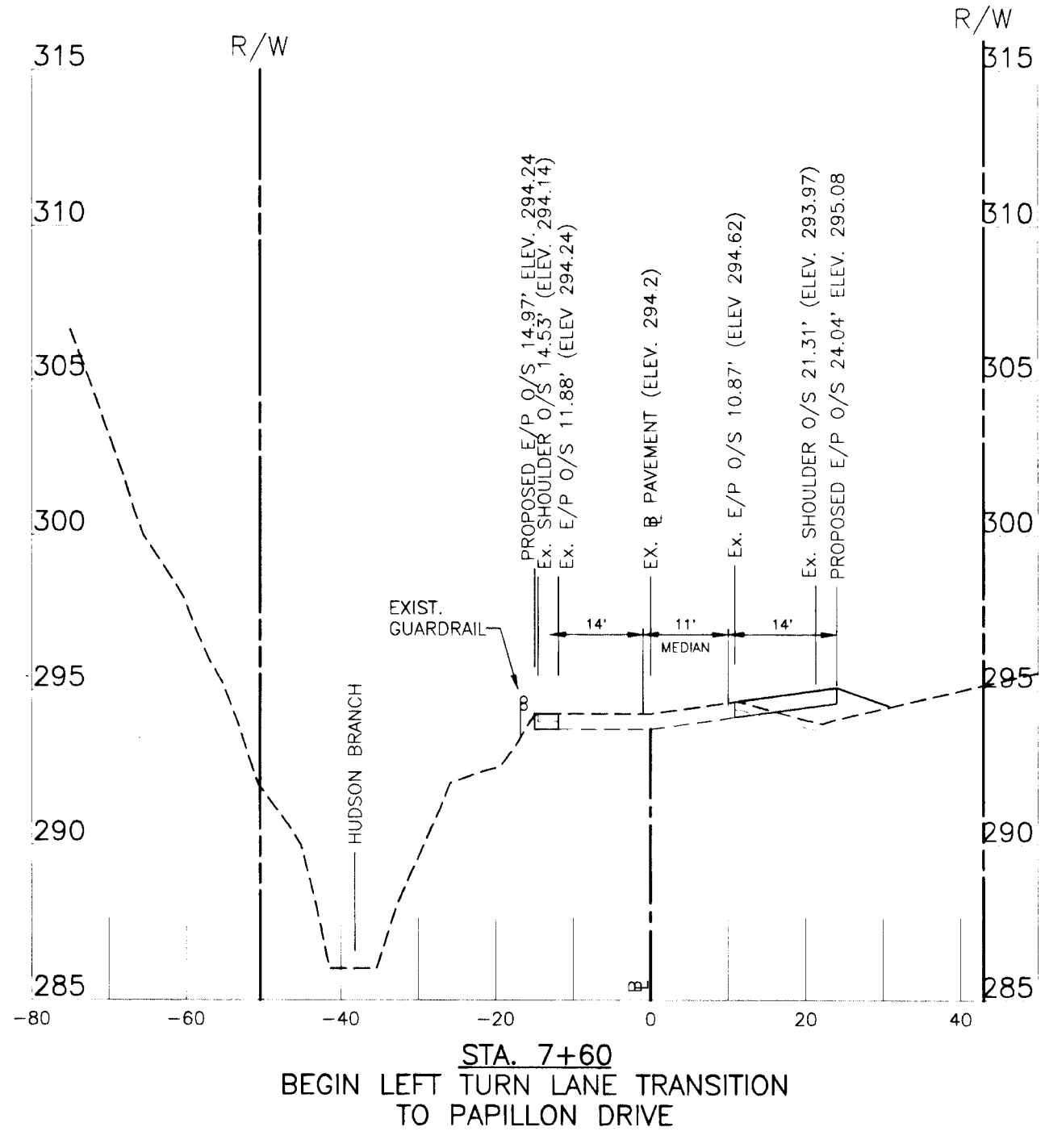
STA. 10+13.00
END LEFT TURN LANE
BEGIN MEDIAN TRANSITION



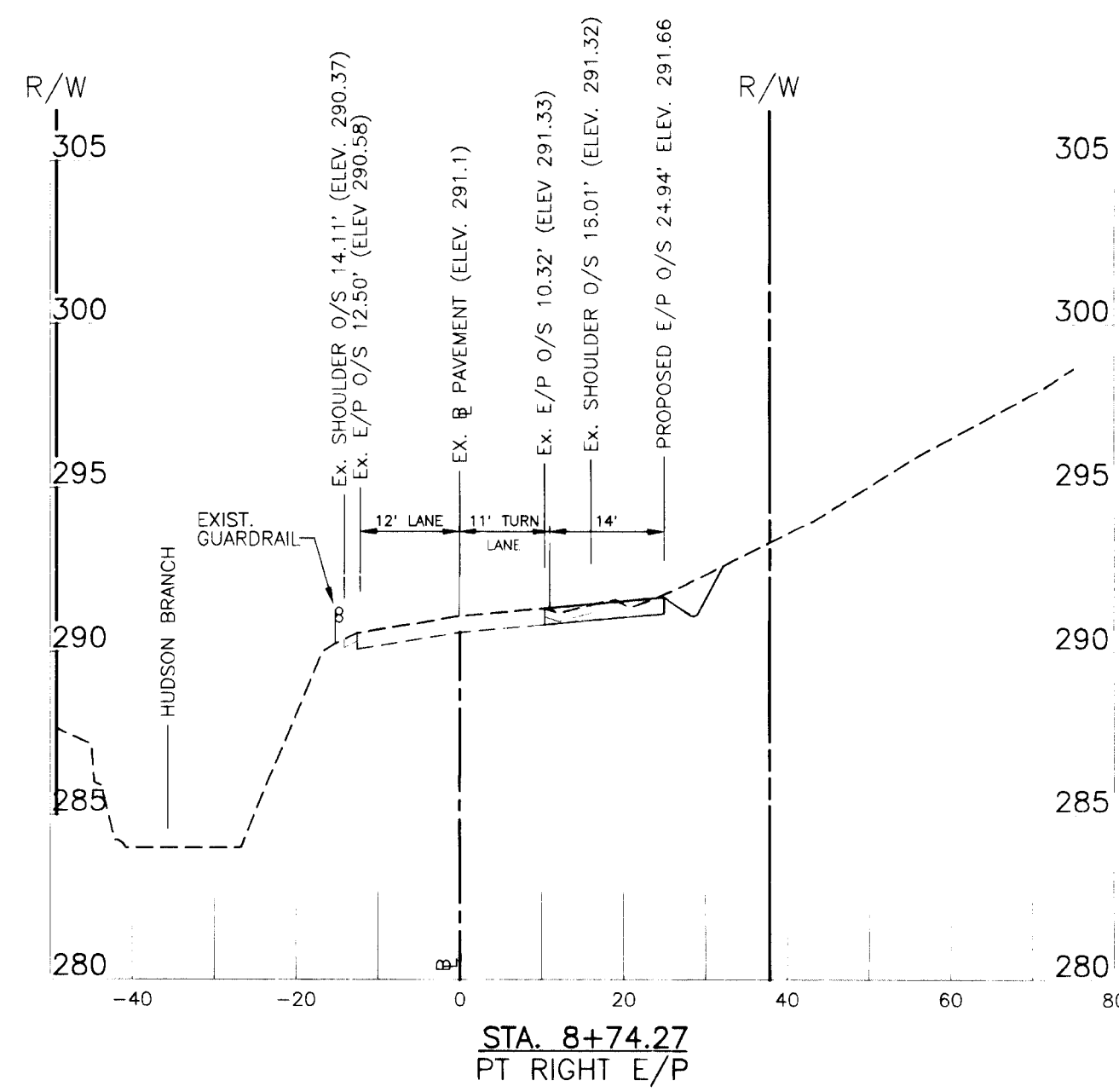
STA. 8+00.45
END LEFT E/P IMPROVEMENT



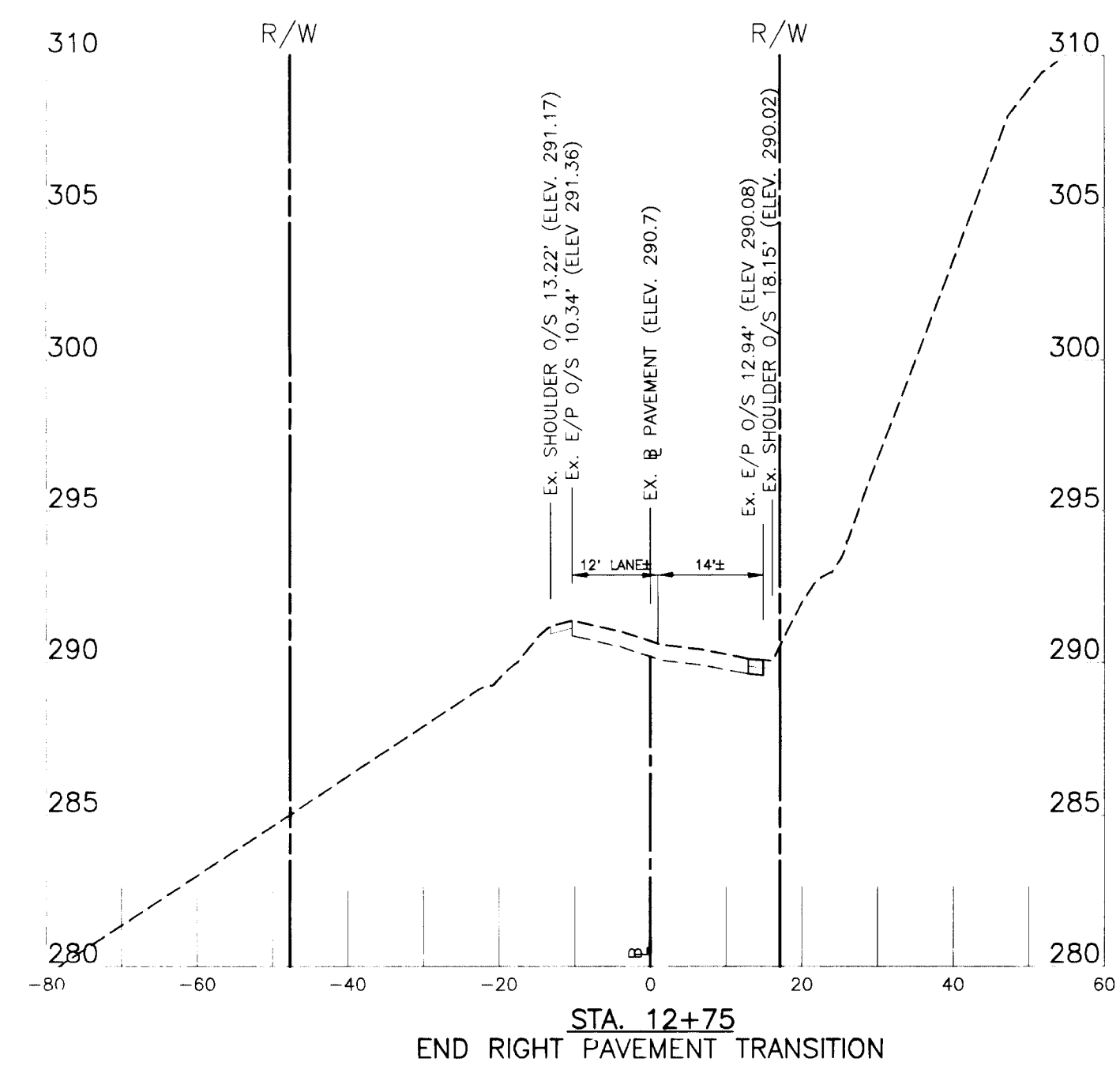
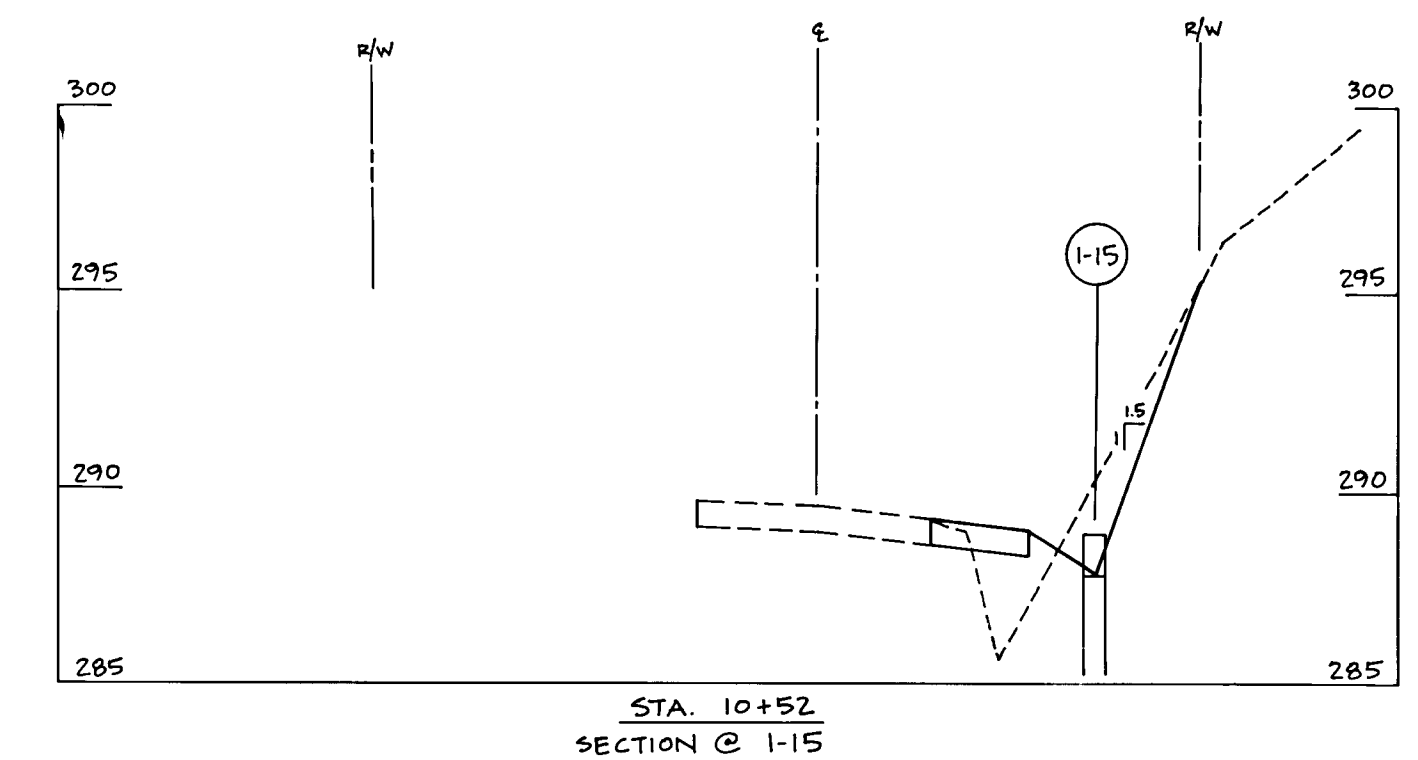
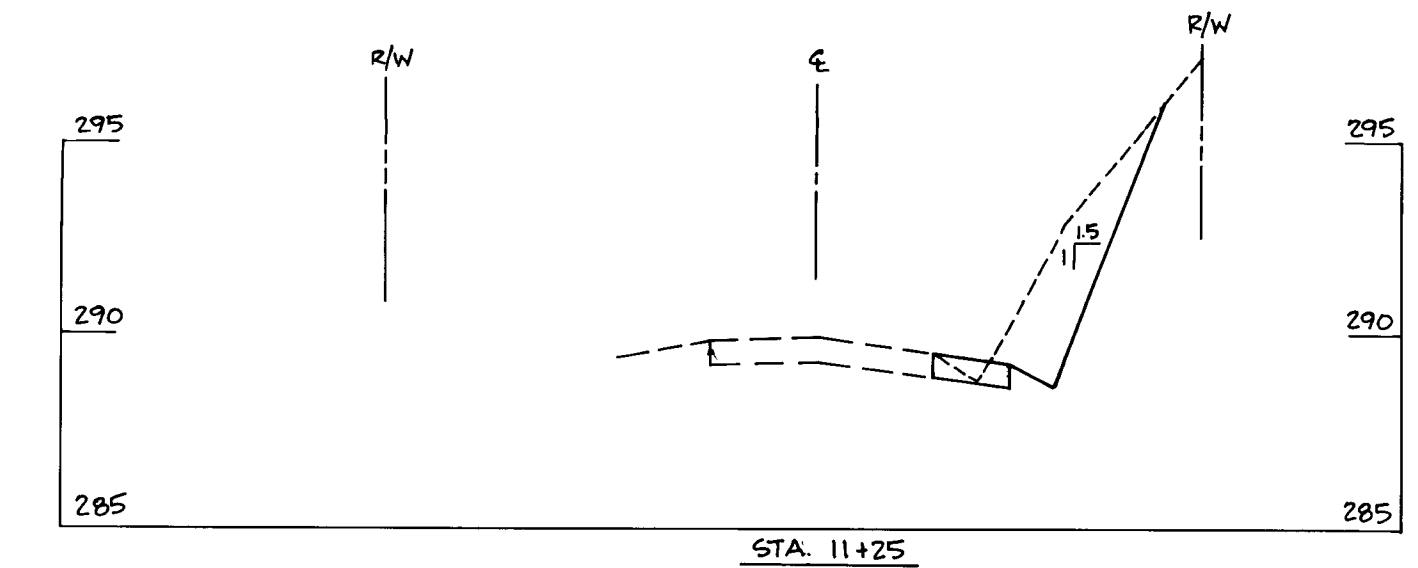
STA. 9+04.81
PT



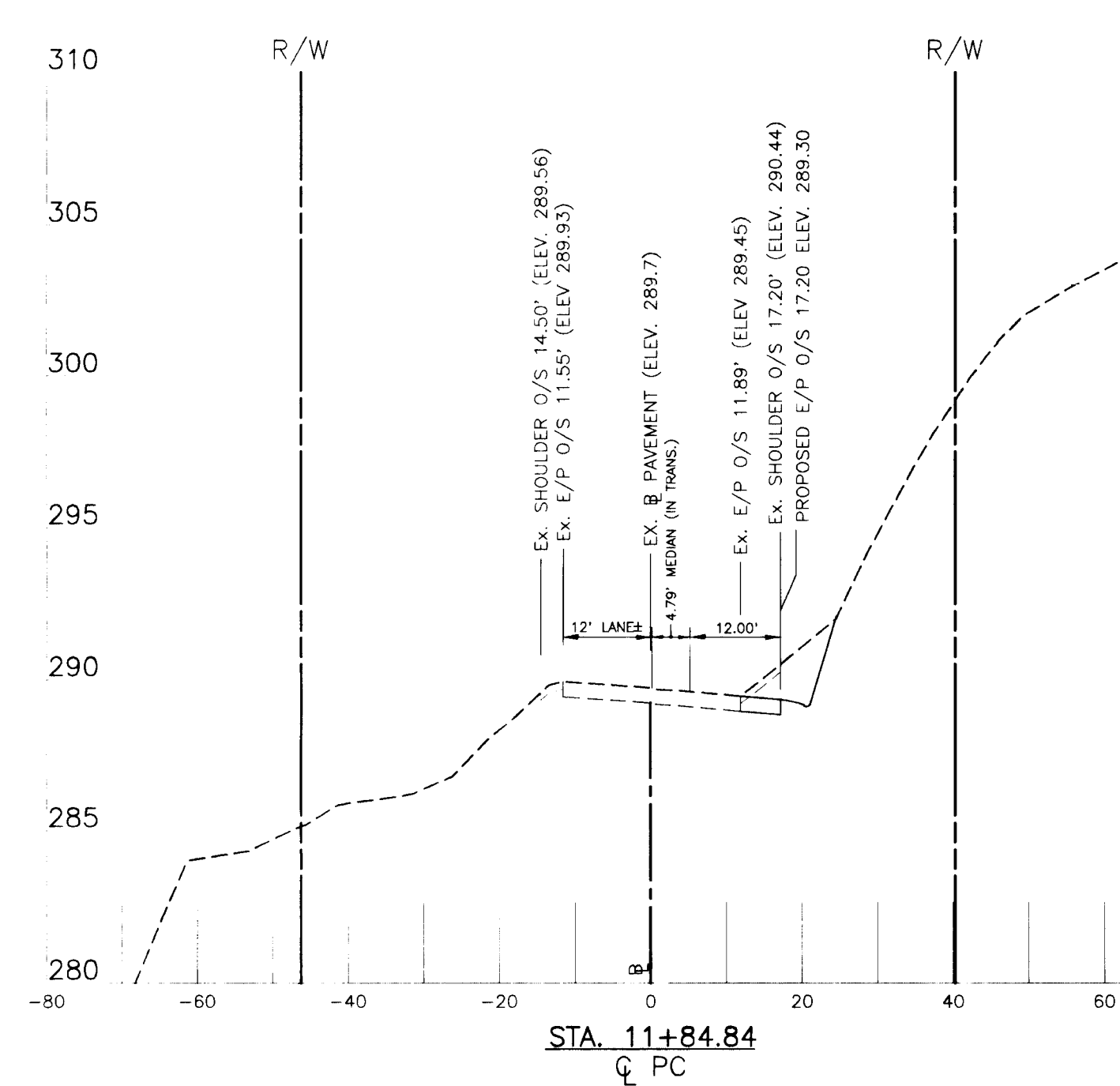
STA. 7+60
BEGIN LEFT TURN LANE TRANSITION
TO PAPILLON DRIVE



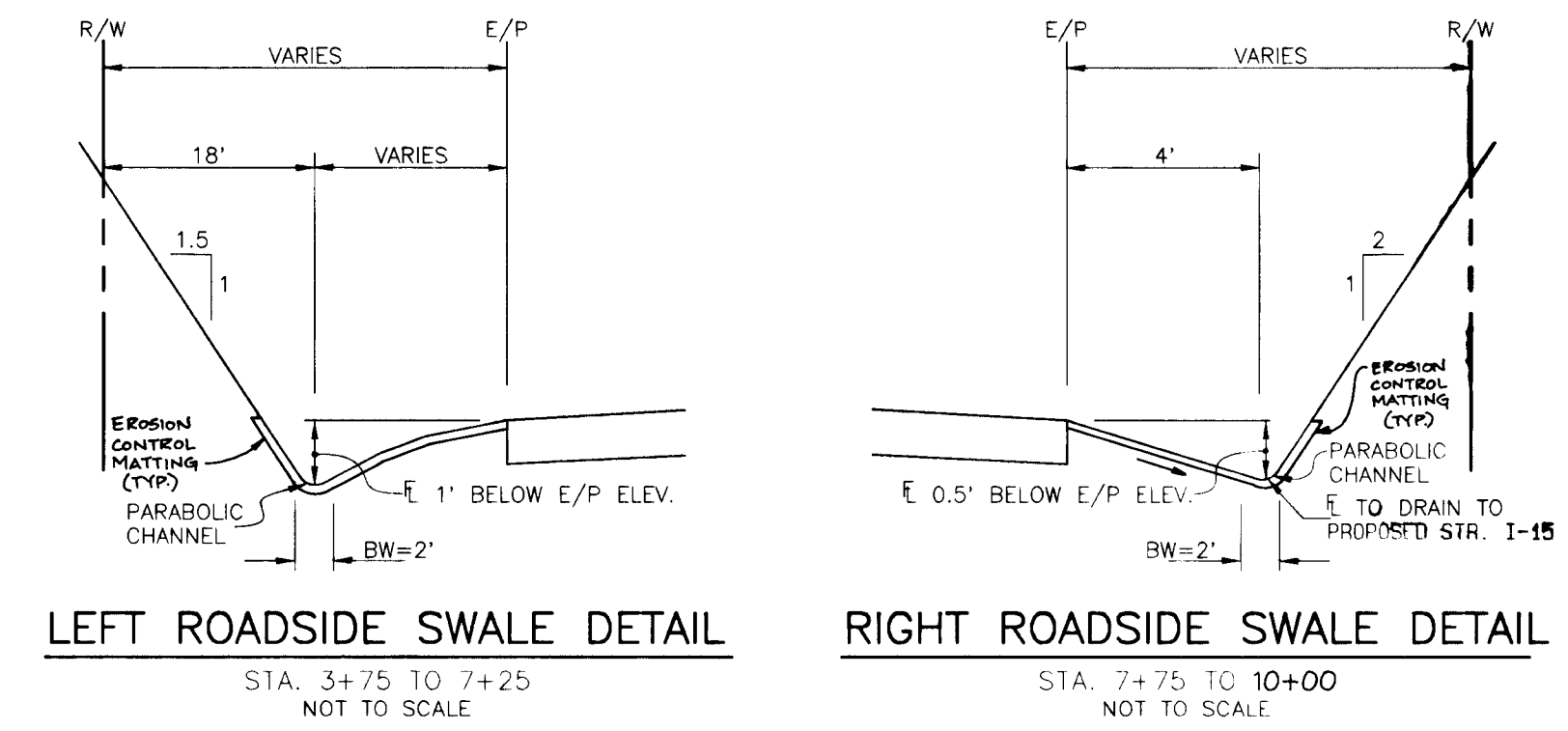
STA. 8+74.27
PT RIGHT E/P



STA. 12+75
END RIGHT PAVEMENT TRANSITION

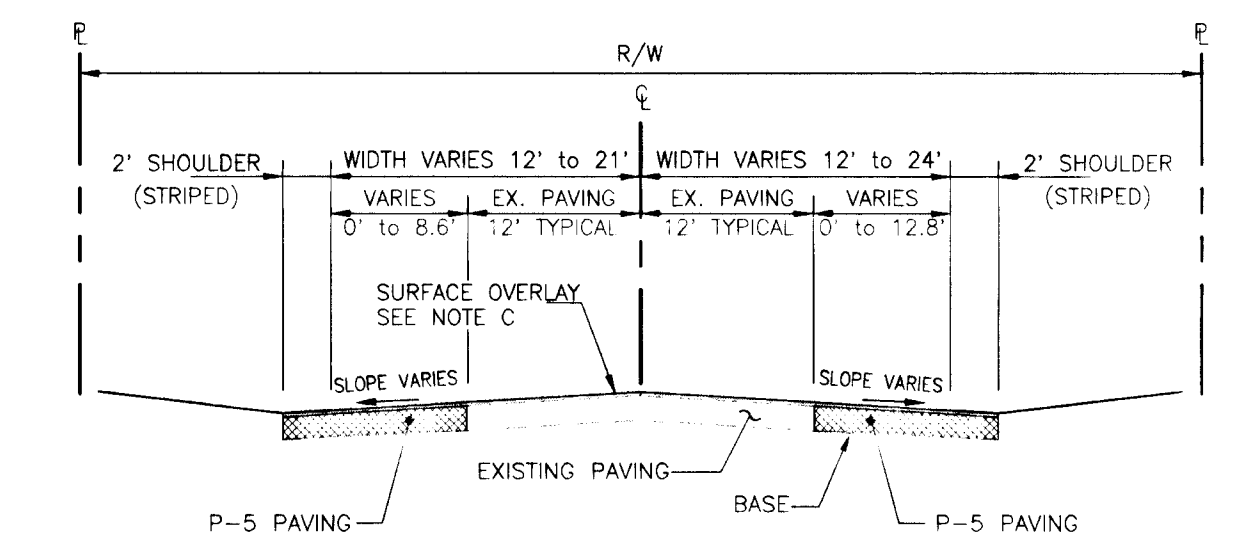


STA. 11+84.84
PC



LEFT ROADSIDE SWALE DETAIL
STA. 3+75 TO 7+25
NOT TO SCALE

RIGHT ROADSIDE SWALE DETAIL
STA. 7+75 TO 10+00
NOT TO SCALE



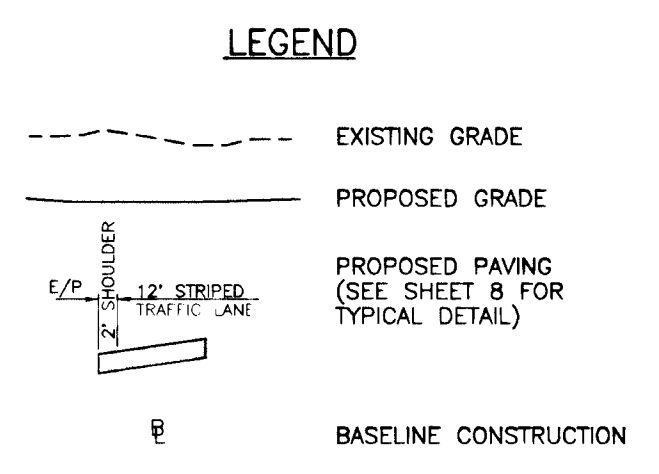
NOTE A: WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE THE CONTRACTOR SHALL REMOVE ENOUGH OF THE EXISTING ROAD BED TO PROVIDE A MINIMUM BASE WIDENING OF 4'.

NOTE B: THE SURFACE OVERLAY SHALL BE CARRIED TO THE E OF THE ROAD AND NOTCHED AND SEALED.

NOTE C: SURFACE OVERLAY COURSE TO BE EQUAL TO SURFACE COURSE OF TYPICAL SECTION OF THE ROADWAY.

NOTE D: E OF ROAD TO BE MILLED AT DEPTH OF 1 1/2" x 1' WIDE USING A MILLING MACHINE.

TYPICAL FREDERICK ROAD WIDENING SECTION
NOT TO SCALE



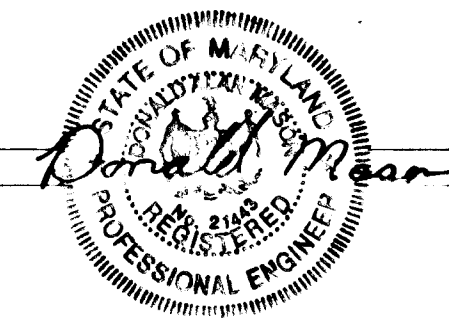
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard Blood Acting Chief, BUREAU OF HIGHWAYS 12/9/96 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Blood Chief, DIVISION OF LAND DEVELOPMENT AND RESEARCH 12/23/96 DATE

Allen Paccanaro Chief, DEVELOPMENT ENGINEERING DIVISION MK 12/20/96 DATE

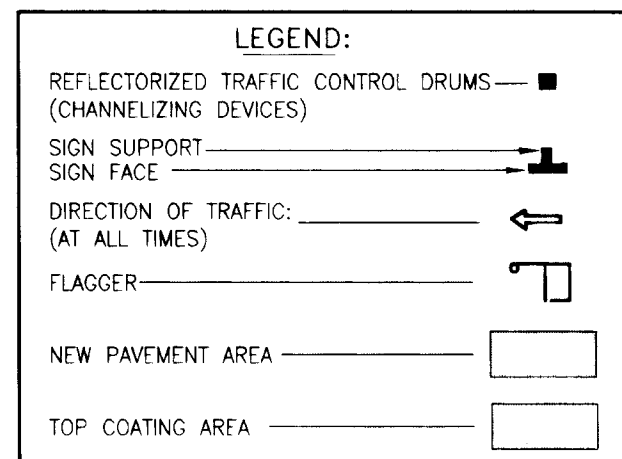
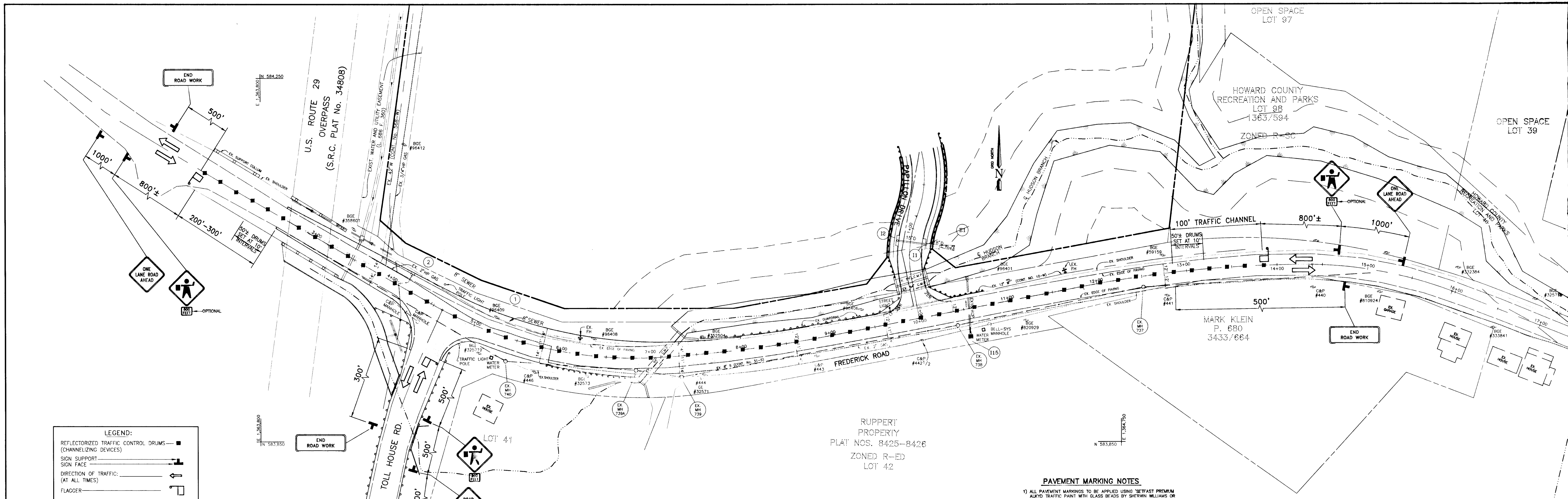
NO.	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105



OWNER/DEVELOPER: SDC GROUP, INC. POST OFFICE BOX 417 ELLCOTT CITY, MARYLAND 21041 (410) 465-4244	PROJECT: PAPILLON LOTS 1-118
LOCATION: TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: FREDERICK ROAD SECTIONS S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08
DATE: DECEMBER 22, 1995 AUGUST 16, 1996	PROJECT NO. 0599
Design: JME Draft: MBB	SCALE: 1"=20'H, 1"=5'V DRAWING 8 OF 24

1845

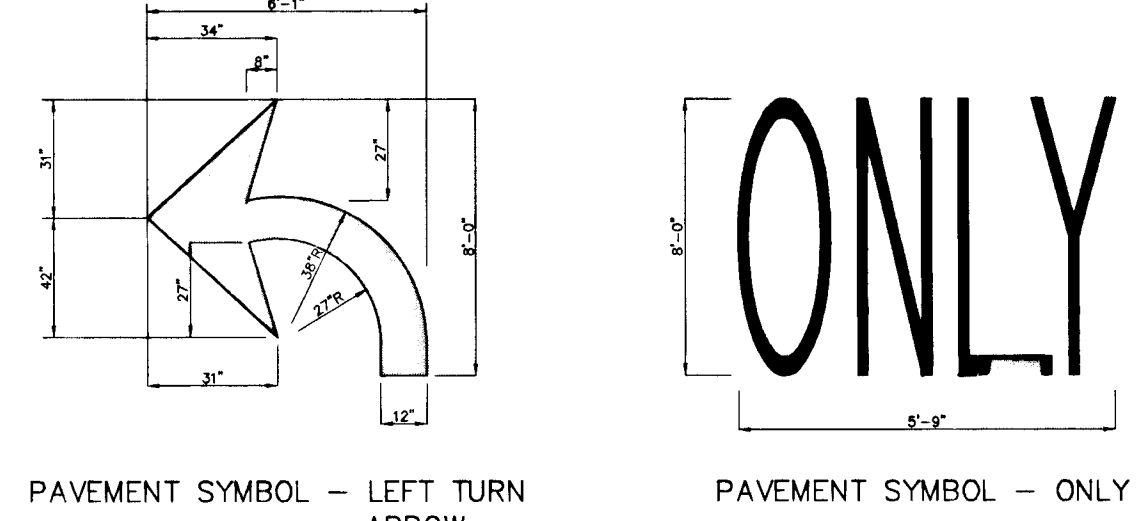


TRAFFIC CONTROL PLAN
SCALE: 1" = 50'

- PAVEMENT MARKING NOTES**
- 1) ALL PAVEMENT MARKINGS TO BE APPLIED USING "SETEAST PREMIUM ALKID" TRAFFIC PAINT WITH GLASS BEADS BY SHERWIN WILLIAMS OR APPROVED EQUAL.
 - 2) ALL WORK SHALL BE IN ACCORDANCE WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (1988 EDITION).
 - 3) EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS FOR THIS CONTRACT WILL BE REMOVED BY THE CONTRACTOR BY SLURRY SEAL IN ACCORDANCE WITH SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (1993), SECTION 507.02.

LEGEND

- ⊙ - PAVEMENT LINES - 4" WHITE SOLID, SINGLE LINE
- ⊖ - PAVEMENT LINES - 4" YELLOW SOLID, DOUBLE LINES
- ⊕ - MEDIAN STRIPING - 12" YELLOW SOLID SPACED EVERY 25 FEET



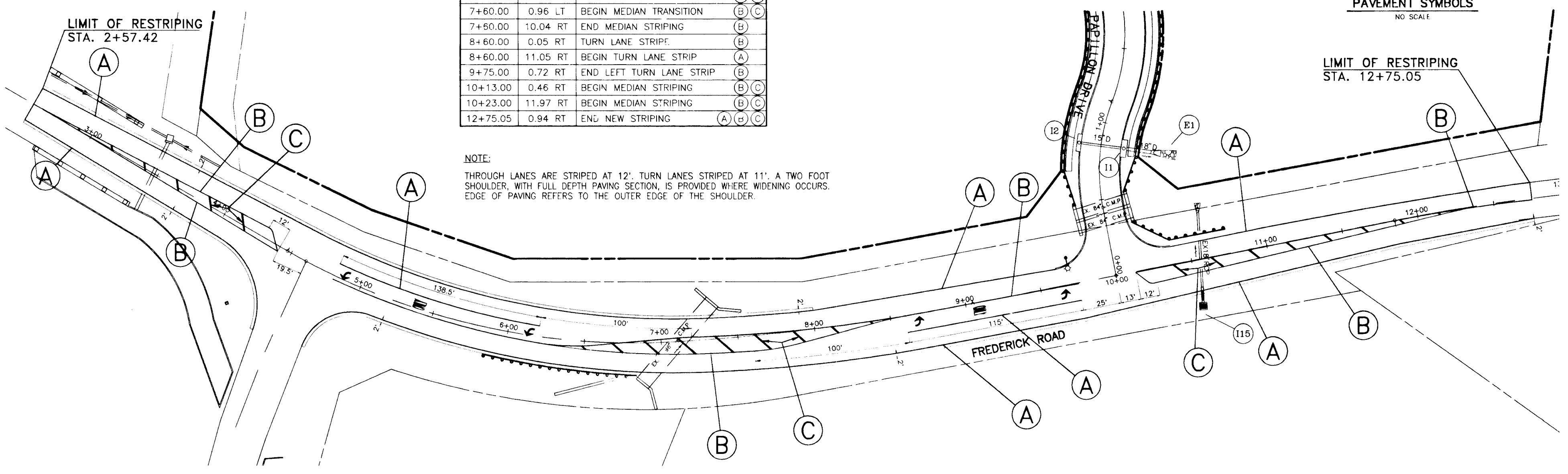
PAVEMENT SYMBOLS
NO SCALE

TRAFFIC CONTROL GENERAL NOTES

1. THE PLAN AS SHOWN IS A MINIMUM REQUIREMENT FOR TRAFFIC CONTROL. ADDITIONAL CONTROL DEVICES SHALL BE PLACED AT THE EXPENSE OF THE CONTRACTOR, AS DIRECTED BY THE COUNTY INSPECTORS.
2. CONTRACTOR TO PROVIDE TRAFFIC CONTROL AT ALL TIMES DURING THE ROADWAY CONSTRUCTION.
3. AT A MINIMUM, ONE LANE OF TRAFFIC MUST BE MAINTAINED DURING CONSTRUCTION. NO OPEN TRENCH SHALL BE PERMITTED BETWEEN 4 PM AND 9 AM. NO OPEN TRENCH SHALL BE PERMITTED WITHOUT COUNTY INSPECTOR PRESENT.
4. TWO TO WIDE LANES OF TRAFFIC ARE TO BE MAINTAINED ON FREDERICK ROAD BETWEEN 4 PM AND 9 AM. AT ALL TIMES, TRAFFIC DRUMS SHALL BE PLACED IN A MANNER TO DIRECT TRAFFIC OFF CONSTRUCTION AREAS BOTH LEFT AND RIGHT, AS NEEDED.
5. ALL UTILITY RELOCATION TO BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANIES TO FACILITATE TIMELY CONSTRUCTION OF THE ROAD IMPROVEMENTS.
6. ALL TRAFFIC CONTROL SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
7. DUE TO SIGHT LIMITATIONS IT WILL BE REQUIRED THAT THE FLAGGERS USE RADIOS OR FIELD TELEPHONES.
8. SEQUENCE OF CONSTRUCTION
 - A. INSTALL ALL SIGNAGE FOR FOR WORK AREA.
 - B. INSTALL TRAFFIC DRUMS TO DIRECT TRAFFIC TO THE RIGHT SIDE OF ROADWAY.
 - C. MOVE BOAE POLES 96408 & 96409 TO PROPOSED LOCATIONS.
 - D. MOVE FIRE HYDRANT TO PROPOSED LOCATION.
 - E. CUT PAVEMENT AND INSTALL SEWER CONNECTION TO EXISTING MANHOLE #740. PLUG SEWER FOR FUTURE CONNECTION. CHANNEL TRAFFIC AS REQUIRED FOR INSTALLATION OF 8" SEWER.
 - F. PERFORM ALL REQUIRED GRADING FOR LEFT SIDE OF ROAD IMPROVEMENT & INSTALL BASE PAVEMENT FOR LEFT SIDE IMPROVEMENT.
 - G. CUT PAVEMENT AS NECESSARY TO INSTALL WATER CONNECTION AT PAVILLON DRIVE. PATCH ROAD AS NECESSARY. CAP WATER LINE FOR FUTURE CONNECTION.
 - H. INSTALL CURB, GUTTER AND BASE PAVEMENT FOR PAVILLON ROAD ENTRANCE.
 - I. INSTALL TRAFFIC DRUMS TO DIRECT TRAFFIC TO THE LEFT SIDE OF ROADWAY.
 - J. MOVE POLES C&P 444/GE 32571, C&P 443, C&P 442/72 TO PROPOSED LOCATIONS & RAISE OR LOWER SEWER MANHOLES 739A, 738, 737, BELL SYSTEM MANHOLE, AND C&P MANHOLE TO PROPOSED ELEVATIONS.
 - K. EXTEND 18" RCP ON RIGHT SIDE OF ROADWAY AND PROVIDE POSITIVE DRAINAGE TO TO PIPE. INSTALL SILT FENCE FOR OUTFALL PROTECTION.
 - L. PERFORM ALL GRADING FOR RIGHT SIDE OF WIDENING AND INSTALL BASE PAVEMENT.
 - M. INSTALL TRAFFIC CHANNELING DRUMS TO DIVERT ALL TRAFFIC TO LEFT SIDE OF ROAD.
 - N. INSTALL PAVEMENT SURFACE FOR NEW PAVEMENT AREA ON RIGHT SIDE OF WIDENING AND AND TOP COAT EXISTING PAVEMENT TO PROVIDE A SMOOTH TRANSITION.
 - O. MOVE TRAFFIC CHANNELING DRUMS TO DIVERT ALL TRAFFIC TO RIGHT SIDE OF ROAD.
 - P. INSTALL PAVEMENT SURFACE FOR NEW PAVEMENT AREA ON LEFT SIDE OF WIDENING. PAVILLON DRIVE ENTRANCE, AND TOP COAT EXISTING PAVEMENT TO PROVIDE A SMOOTH TRANSITION.
 - Q. MOVE TRAFFIC CHANNELING DRUMS TO DIVERT ALL TRAFFIC TO LEFT SIDE OF ROAD.
 - R. PAINT ALL STRIPING FOR RIGHT SIDE & CENTER OF ROADWAY.
 - S. MOVE TRAFFIC CHANNELING DRUMS TO DIVERT ALL TRAFFIC TO RIGHT SIDE OF ROAD.
 - T. PAINT ALL STRIPING FOR LEFT SIDE OF ROADWAY.
 - U. REMOVE ALL DRUMS AND SIGNAGE FOR WORK AREA.

STRIPING LOCATIONS			
STATION	OFFSET	DESCRIPTION	
2+57.42	0.00 RT	START NEW STRIPING	(A)(U)(C)
4+31.59	7.58 LT	BEGIN MEDIAN STRIPING	(B)(C)
4+41.59	3.37 RT	BEGIN MEDIAN STRIPING	(B)(C)
4+81.53	8.45 LT	BEGIN TURN LANE STRIP	(A)
4+81.50	2.55 RT	BEGIN TURN LANE STRIP	(A)
6+20.00	6.88 LT	END LANE STRIP	(B)
6+20.00	4.12 RT	BEGIN MEDIAN TRANSITION	(B)(C)
7+20.00	2.30 LT	BEGIN MEDIAN STRIPING	(B)(C)
7+20.00	8.72 RT	FULL MEDIAN STRIPING	(B)(C)
7+60.00	0.96 LT	BEGIN MEDIAN TRANSITION	(B)(C)
7+50.00	10.04 RT	END MEDIAN STRIPING	(B)
8+60.00	0.05 RT	TURN LANE STRIP	(A)
8+60.00	11.05 RT	BEGIN TURN LANE STRIP	(A)
9+75.00	0.72 RT	END LEFT TURN LANE STRIP	(B)
10+13.00	0.46 RT	BEGIN MEDIAN STRIPING	(B)(C)
10+23.00	11.97 RT	BEGIN MEDIAN STRIPING	(B)(C)
12+75.05	0.94 RT	END NEW STRIPING	(A)(U)(C)

NOTE:
THROUGH LANES ARE STRIPED AT 12". TURN LANES STRIPED AT 11". A TWO FOOT SHOULDER, WITH FULL DEPTH PAWING SECTION, IS PROVIDED WHERE WIDENING OCCURS. EDGE OF PAWING REFERS TO THE OUTER EDGE OF THE SHOULDER.



STRIPING PLAN
STA. 2+57.42 TO 12+75.05
SCALE: 1" = 50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Active 12/19/96
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Blood 12/23/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

Chad Dammann 12/20/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

NO.	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105

OWNER/DEVELOPER: SDC GROUP, INC.
POST OFFICE BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: PAVILLON
LOTS 1-118

LOCATION: TAX MAP 24 - PARCEL 121
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: TRAFFIC CONTROL PLAN
STRIPING PLAN
S-94-08, P-94-22, WP-85-40, ZB-968M, SP-96-08

DATE: DECEMBER 22, 1995
August 16, 1996 PROJECT NO. 0599

Design: JME Draft: MBB SCALE: AS SHOWN DRAWING 9 OF 24

1845



SOILS LEGEND		
MAP SYMBOL	SOIL TYPE	SOIL CLASSIFICATION
B/C2	C	BRANDYWINE LOAM - 8 TO 15 PERCENT SLOPES - MODERATELY ERODED
BrD2	C	BRANDYWINE LOAM - 15 TO 25 PERCENT SLOPES - MODERATELY ERODED
BrD3	C	BRANDYWINE LOAM - 15 TO 25 PERCENT SLOPES - SEVERELY ERODED
G1B2	B	GLENELG LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
G1C2	B	GLENELG LOAM - 8 TO 15 PERCENT SLOPES - MODERATELY ERODED
G1D2	B	GLENELG LOAM - 15 TO 25 PERCENT SLOPES - MODERATELY ERODED
GnB2	C	GLENVILLE SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
LeB2	B	LENORE SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
M/E	C	MONTALTO AND RELAY SOILS - 15 TO 45 PERCENT SLOPES

STORMWATER RUNOFF DATA								
STRUCTURE	D.A.(Ac.)	C	IMPERVIOUS	T.C.(min.)	I ₂ (in/hr)	I ₁₀ (in/hr)	Q ₂ (cfs)	Q ₁₀ (cfs)
I-1	0.28	0.60	60	5.4	5.90	8.50	1.00	1.43
I-2	0.33	0.45	39	6.6	5.34	7.60	0.79	1.13
I-3	0.18	0.34	24	5.0	5.90	8.50	0.36	0.52
I-4	0.12	0.49	45	5.0	5.90	8.50	0.35	0.50
I-5	1.28	0.49	45	9.0	4.78	6.90	3.00	4.34
I-6	0.71	0.46	44	5.4	5.90	8.50	1.93	2.81
I-7	0.35	0.43	38	6.6	5.34	7.60	0.80	1.14
I-8	0.13	0.64	69	5.0	5.90	8.50	0.49	0.68
I-9	0.71	0.52	54	5.0	5.90	8.50	2.18	3.14
I-10	0.33	0.53	52	7.2	5.34	7.60	0.93	1.27
I-11	0.36	0.58	61	5.0	5.90	8.50	1.23	1.78
I-12	0.69	0.44	40	10.8	4.36	6.30	1.32	1.89
I-13	1.08	0.43	38	11.9	4.22	6.05	1.96	2.78
I-14 (SUMP)	2.71	0.43	36	8.4	8.40 (25 YR)	9.83	8.42	
I-15 (SUMP)	4.15	0.16	4	13.2	6.79 (25 YR)	4.48	3.35	

PLAN
SCALE: 1" = 100'

LEGEND	
	EXISTING CONTOURS
	PROPOSED CONTOURS
	WETLAND LIMIT
	EXISTING TREELINE
	PROPOSED TREELINE
	SOILS DELINEATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Scottie 12/19/96
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Blood 12/23/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

Chad Deussen 12/20/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

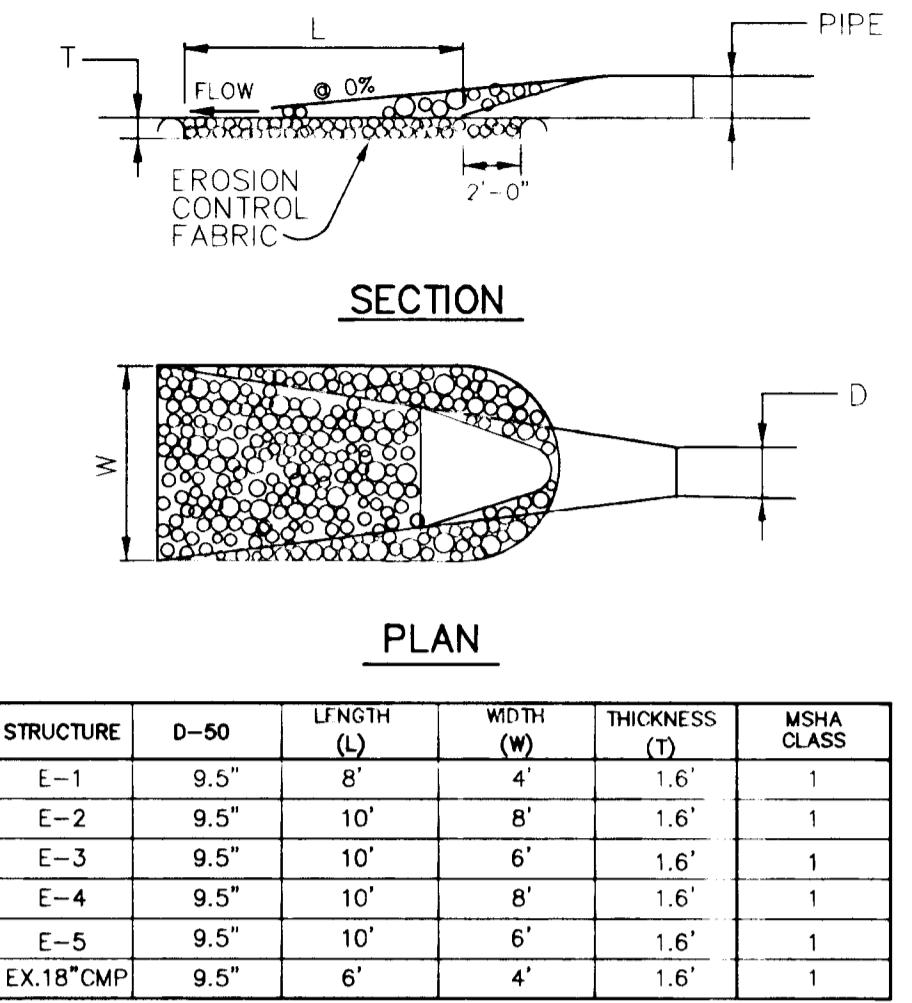
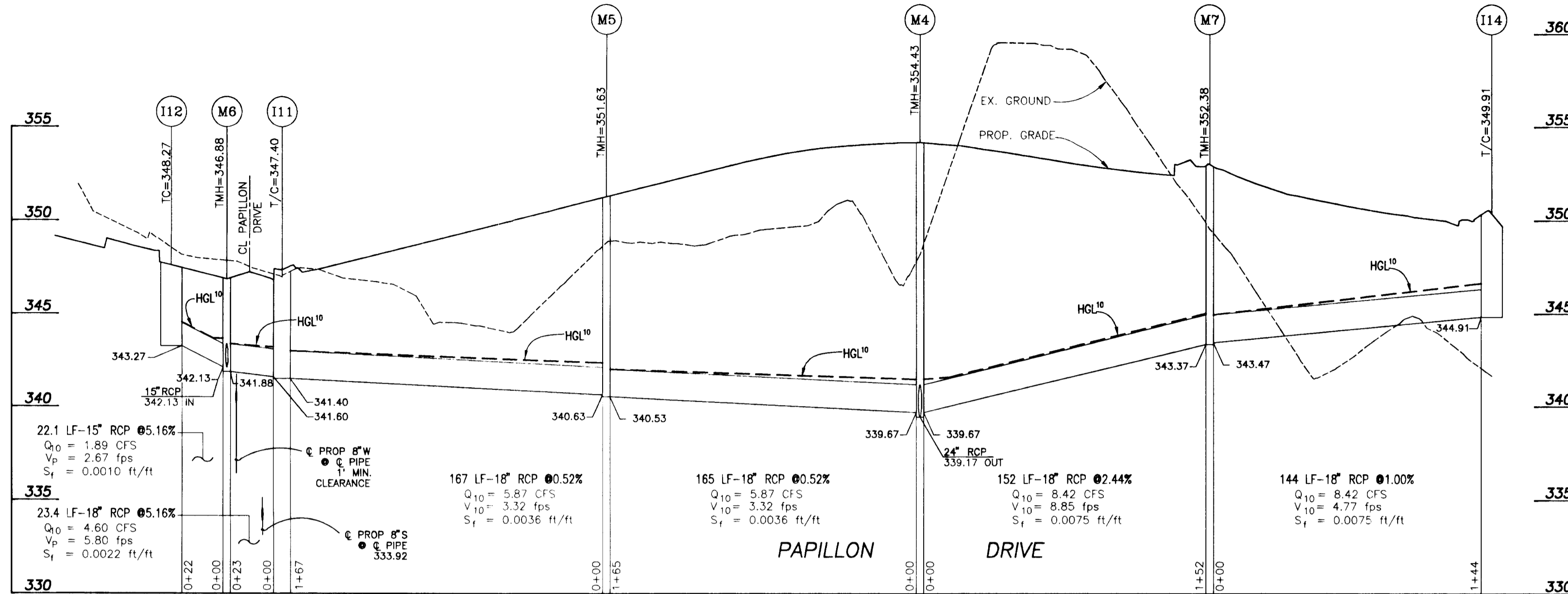
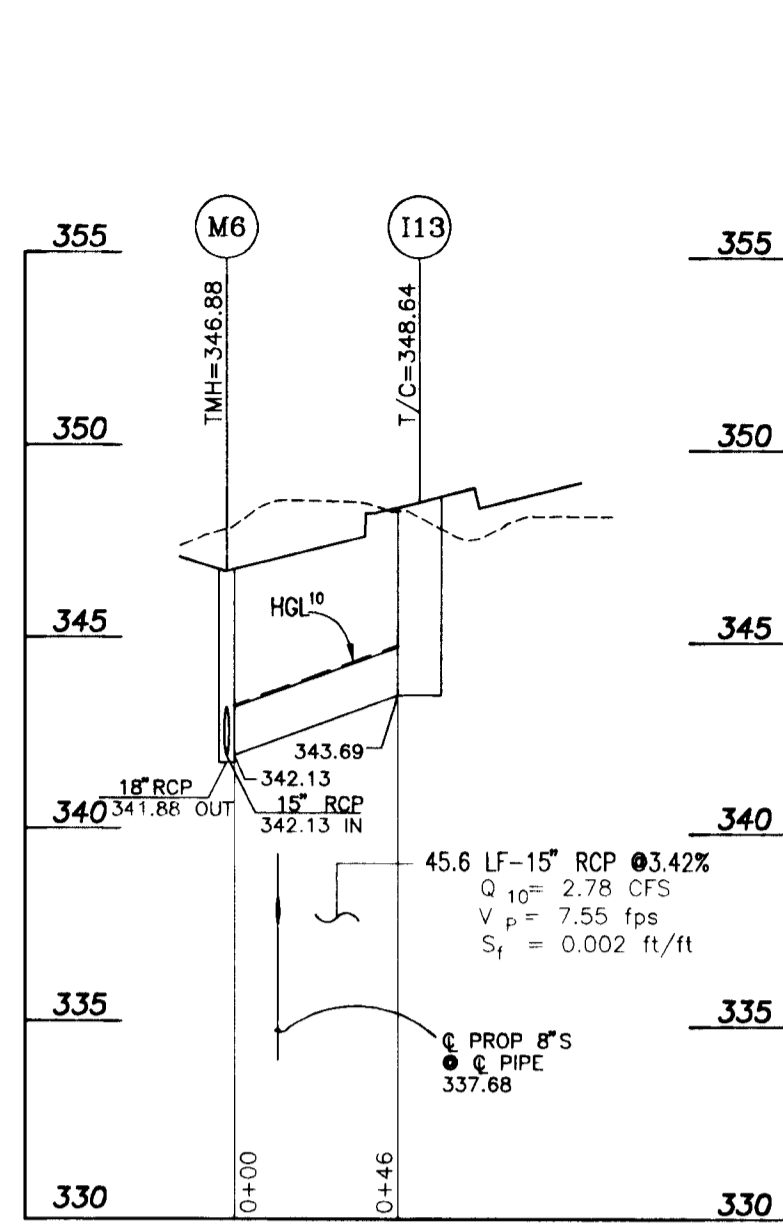
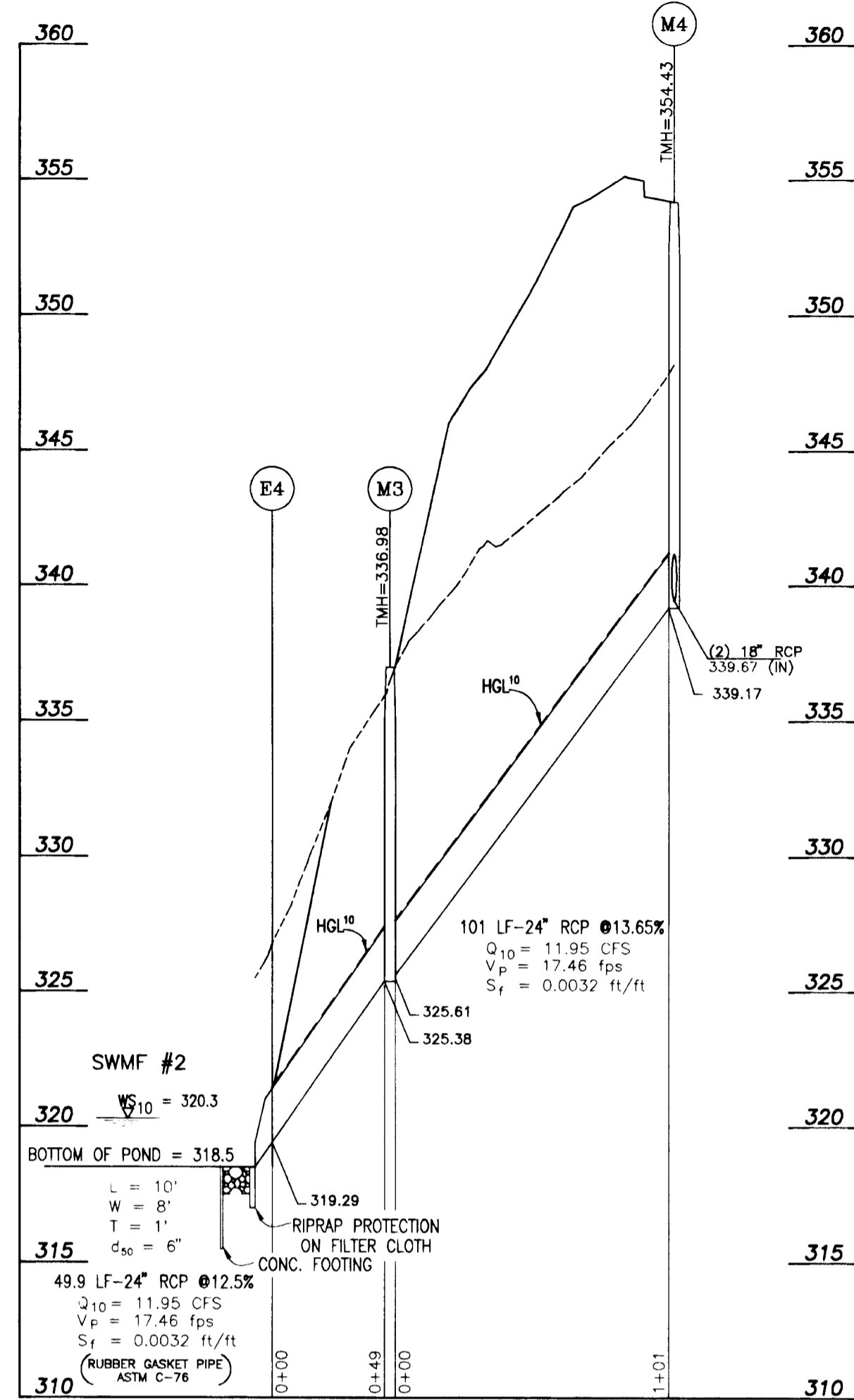
NO.	DATE	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 5480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105



OWNER/DEVELOPER: SDC GROUP, INC. POST OFFICE BOX 417 ELLICOTT CITY, MARYLAND 21041 (410) 465-4244	PROJECT: PAPILLON LOTS 1-118
LOCATION: TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: DRAINAGE AREA MAP S-94-08, P-94-22, WP-95-40, ZB-96BM, SP-96-08 DECEMBER 22, 1995 DATE: AUGUST 1996 PROJECT NO. 0599
Design: JME/JH Draft: MBB/JH	SCALE: 1"=100' DRAWING 10 OF 24

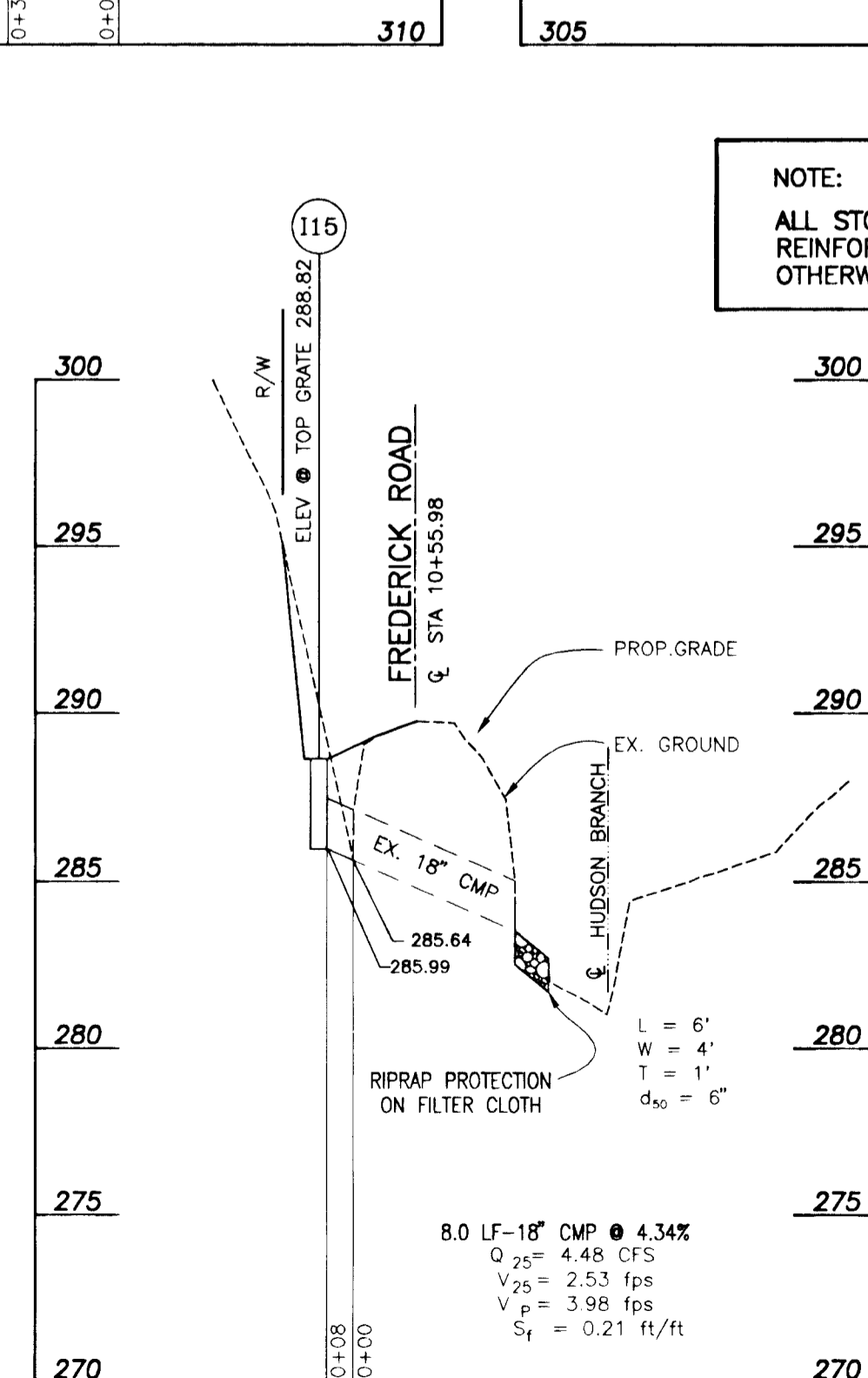
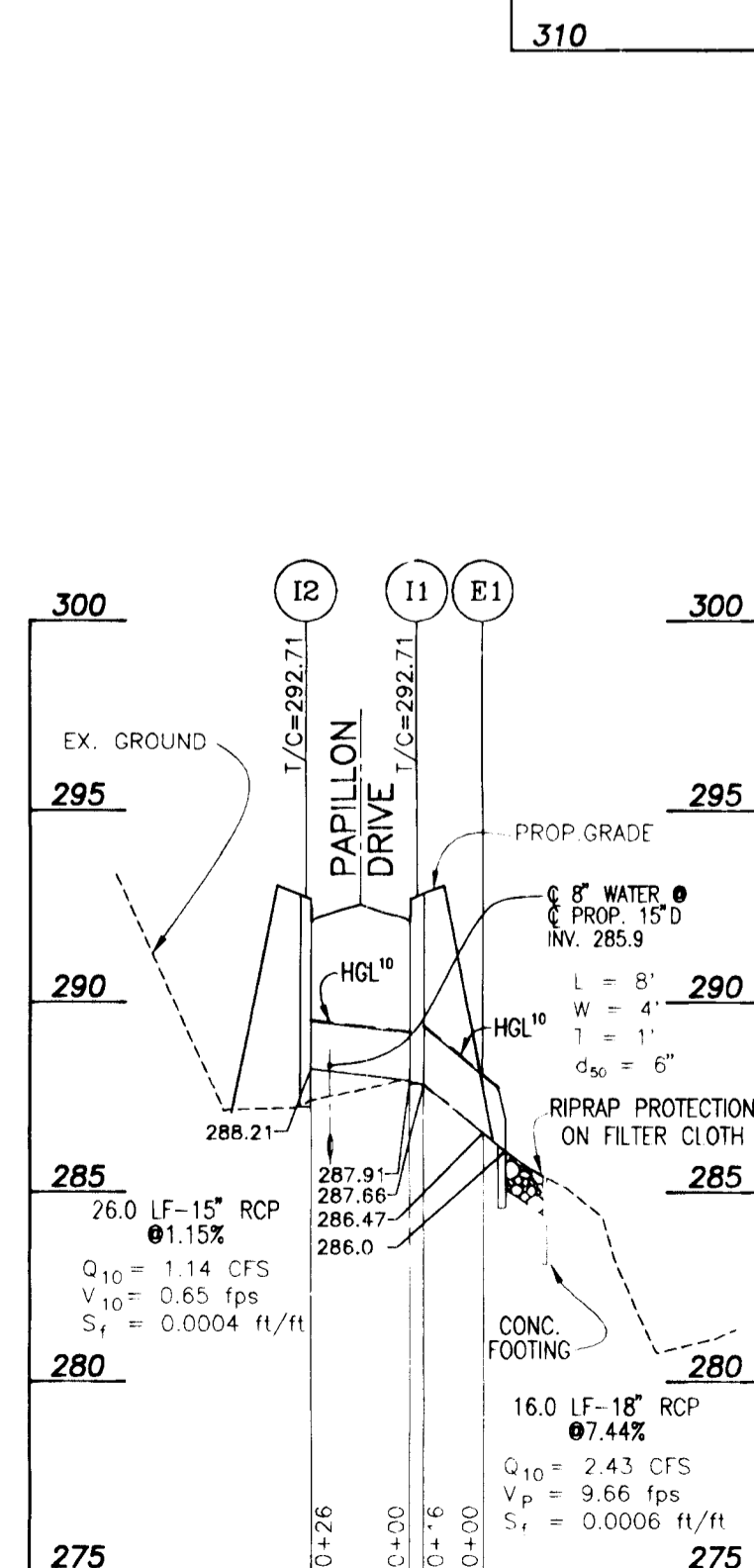
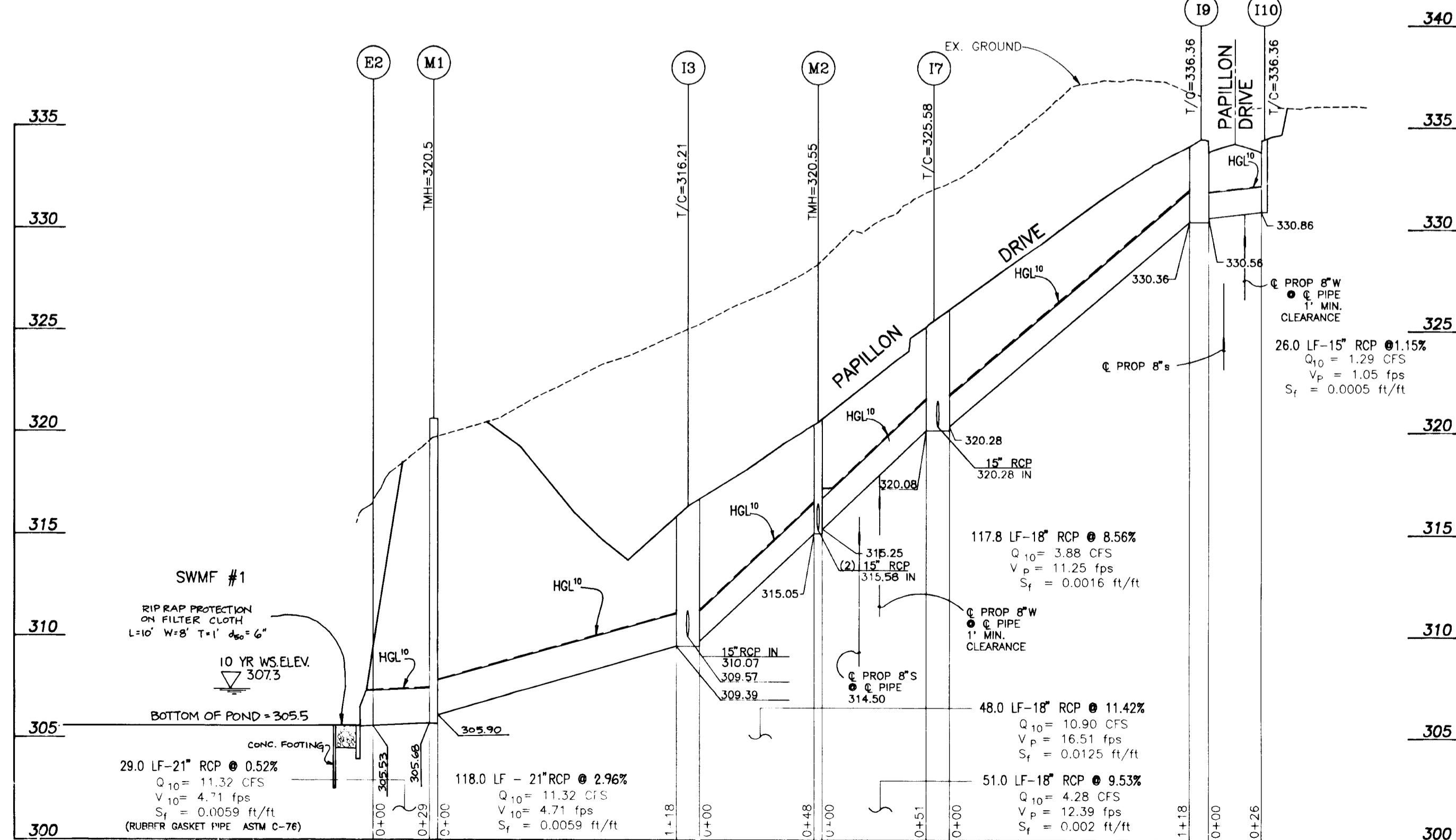
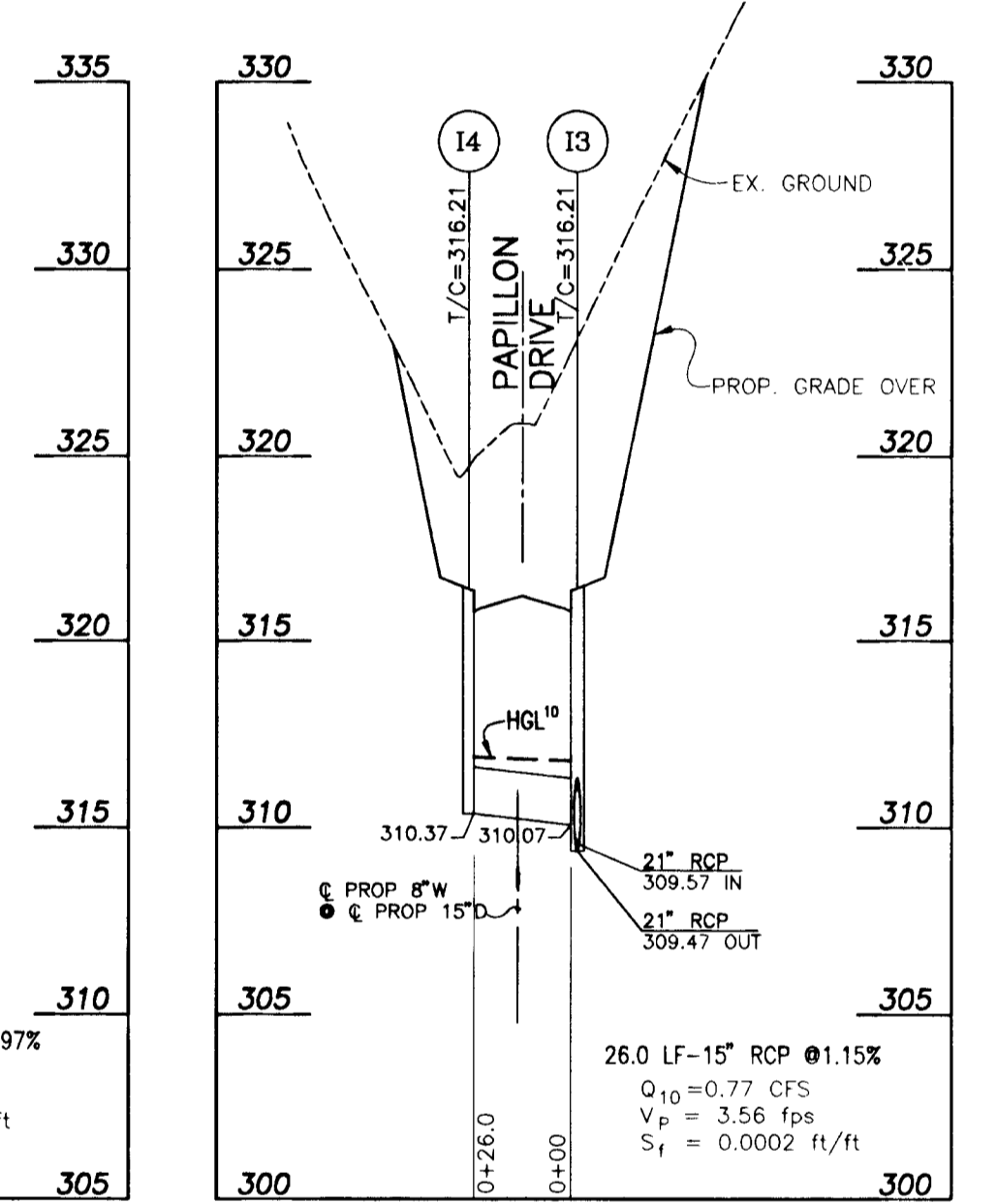
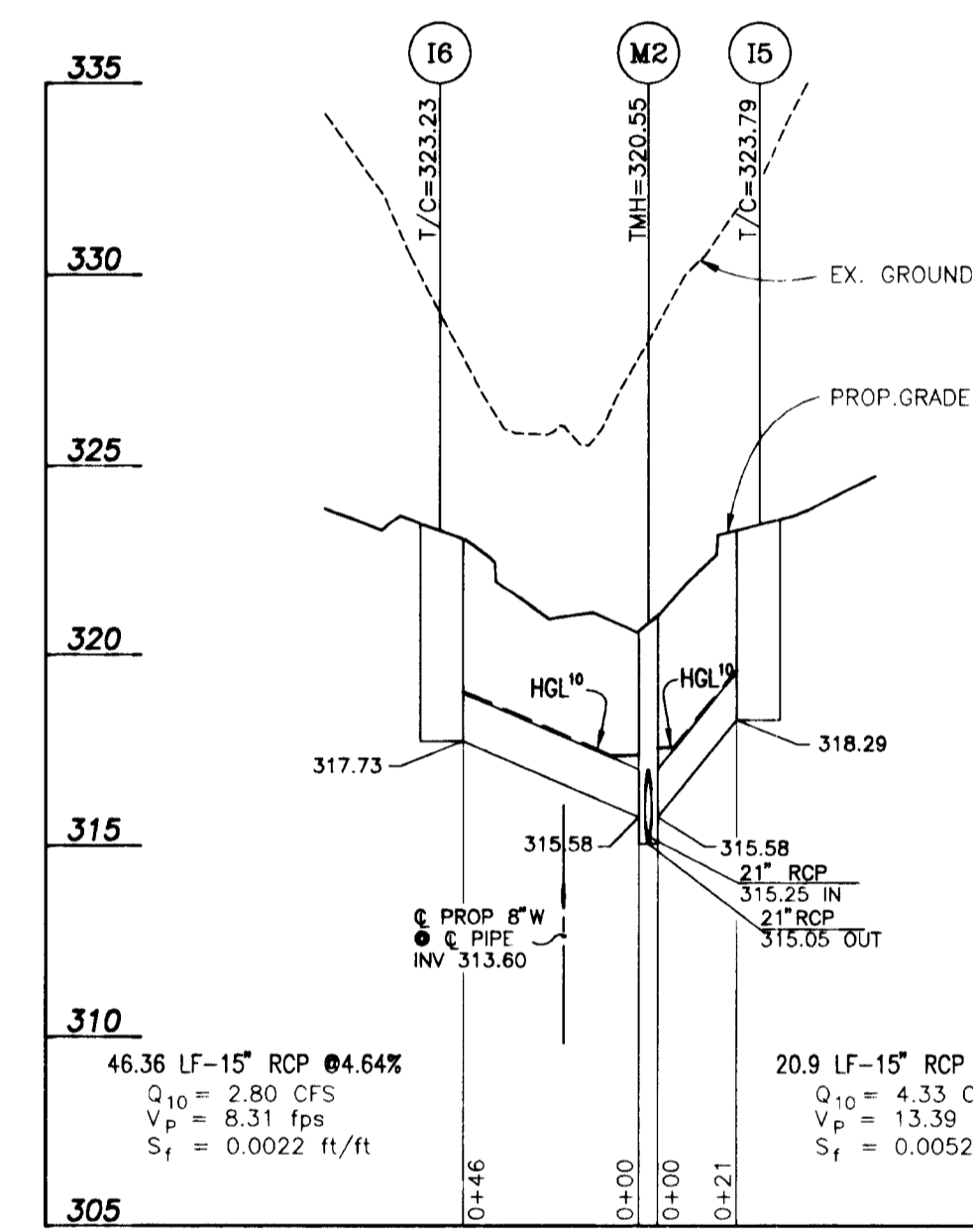
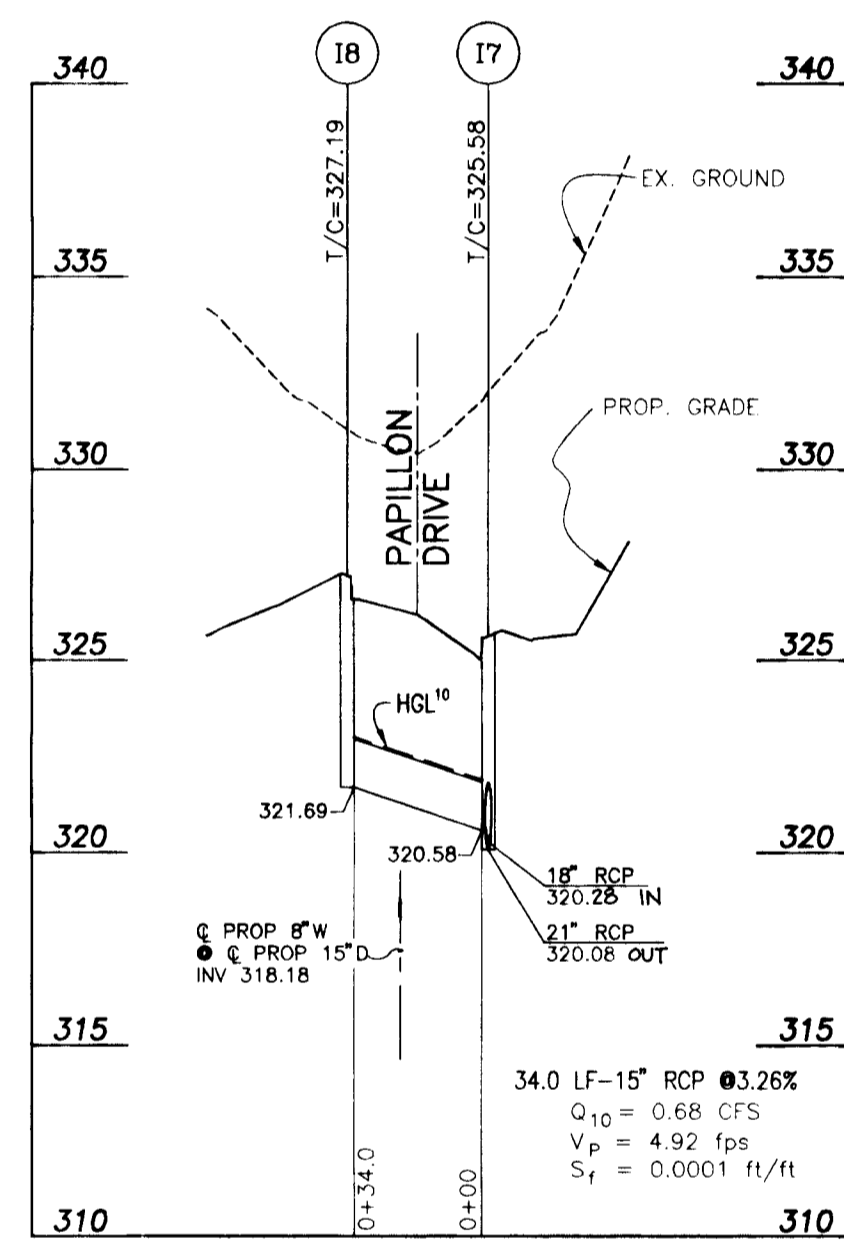
1845



STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (D)	MSHA CLASS
E-1	9.5'	10'	4'	1.6'	1
E-2	9.5'	10'	8'	1.6'	1
E-3	9.5'	10'	6'	1.6'	1
E-4	9.5'	10'	8'	1.6'	1
E-5	9.5'	10'	6'	1.6'	1
EX. 18\"/>					

OUTLET PROTECTION DETAIL
NOT TO SCALE

NOTES:
UNLESS OTHERWISE NOTED:
1) ALL STORM DRAINS SHALL BE CLASS 4 REINFORCED CONCRETE PIPE.
2) SEE SHEET 3 FOR STRUCTURE SCHEDULE.
3) PRECAST STRUCTURE MEETING HS-25 LOADING MAY BE USED.



NOTE:
ALL STORM DRAINS SHALL BE CLASS 4 REINFORCED CONCRETE PIPE UNLESS OTHERWISE NOTED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard County 12/2/96
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Bloedel 12/23/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
DATE

John Dammann 12/22/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE

NO.	DATE	REVISION

OWNER/DEVELOPER: SDC GROUP, INC.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: PAPILLON LOTS 1-118

LOCATION: TAX MAP 24 - PARCEL 121
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: STORM DRAIN PROFILES AND DETAILS

S-94-08, P-94-22, WP-95-40, ZB-96BM, SP-96-08

DATE: DECEMBER 22, 1995
AUGUST, 1996

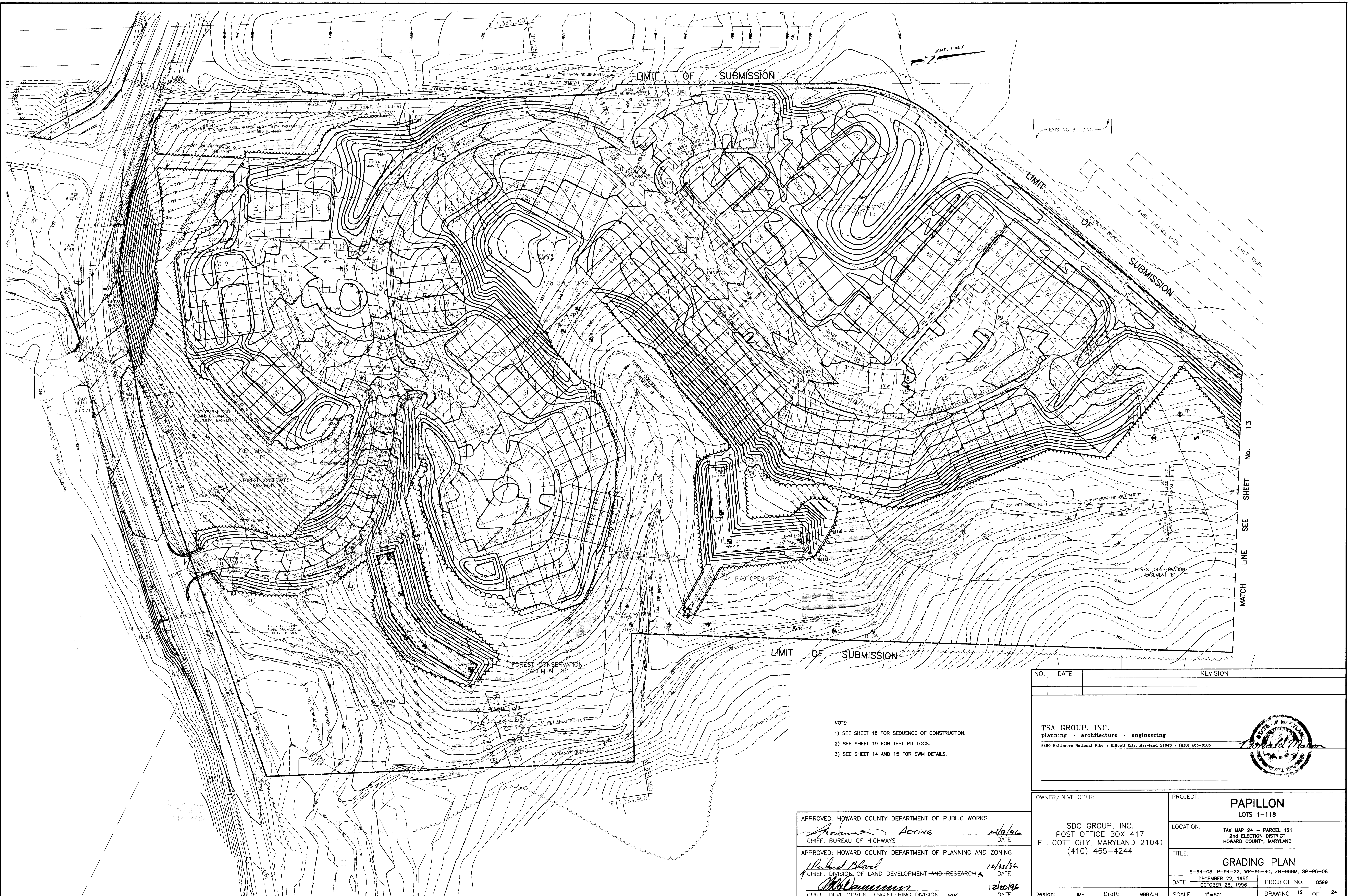
PROJECT NO. 0599

SCALE: 1"=50'H 1"=5'V

DRAWING 11 OF 24

1845





SCALE: 1"=50'

LIMIT OF SUBMISSION

EXISTING BUILDING

LIMIT OF SUBMISSION

LIMIT OF SUBMISSION

MATCH LINE SEE SHEET No. 13

- NOTE:
- 1) SEE SHEET 18 FOR SEQUENCE OF CONSTRUCTION.
 - 2) SEE SHEET 19 FOR TEST PIT LOGS.
 - 3) SEE SHEET 14 AND 15 FOR SWM DETAILS.

NO.	DATE	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6106

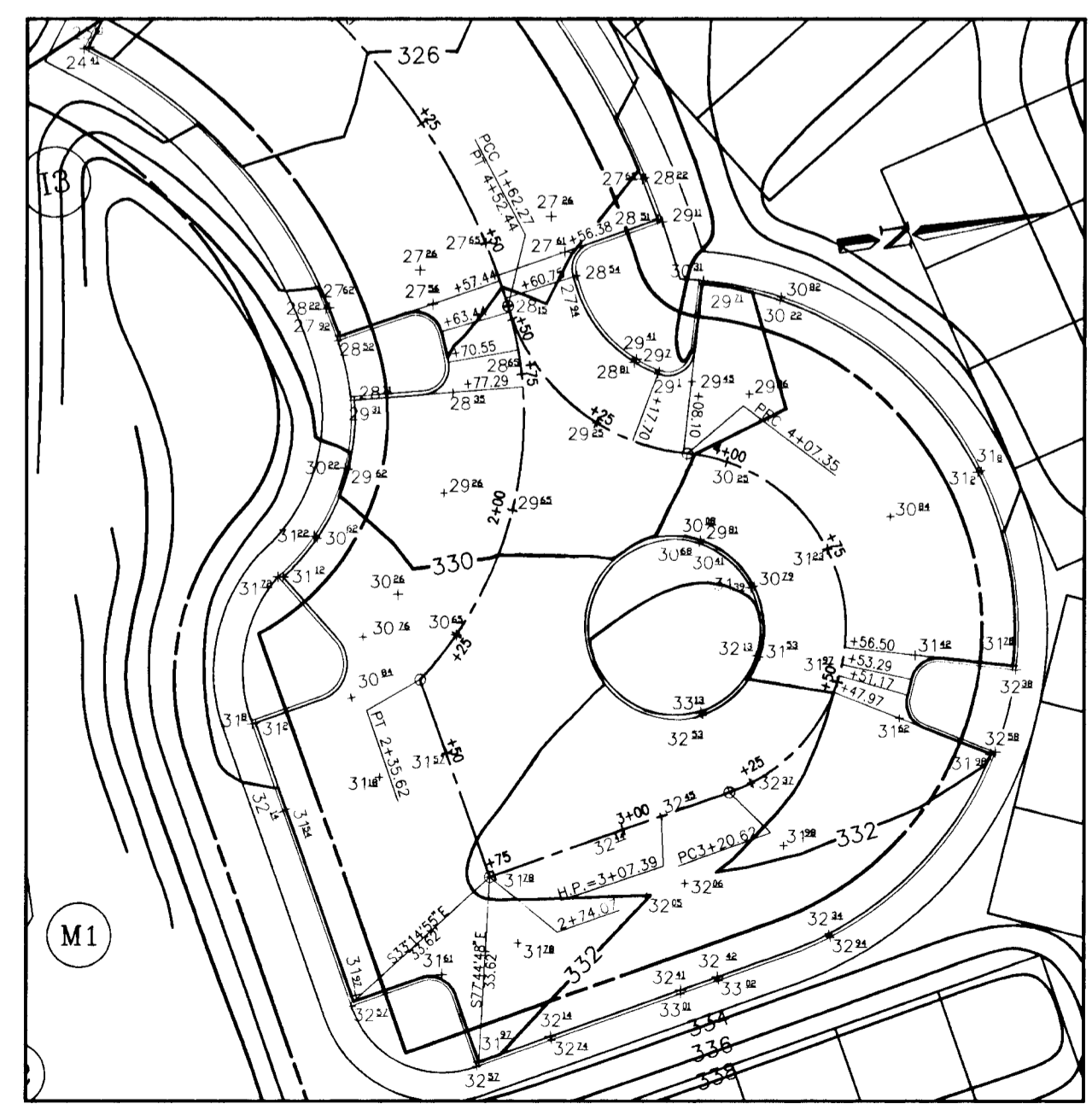
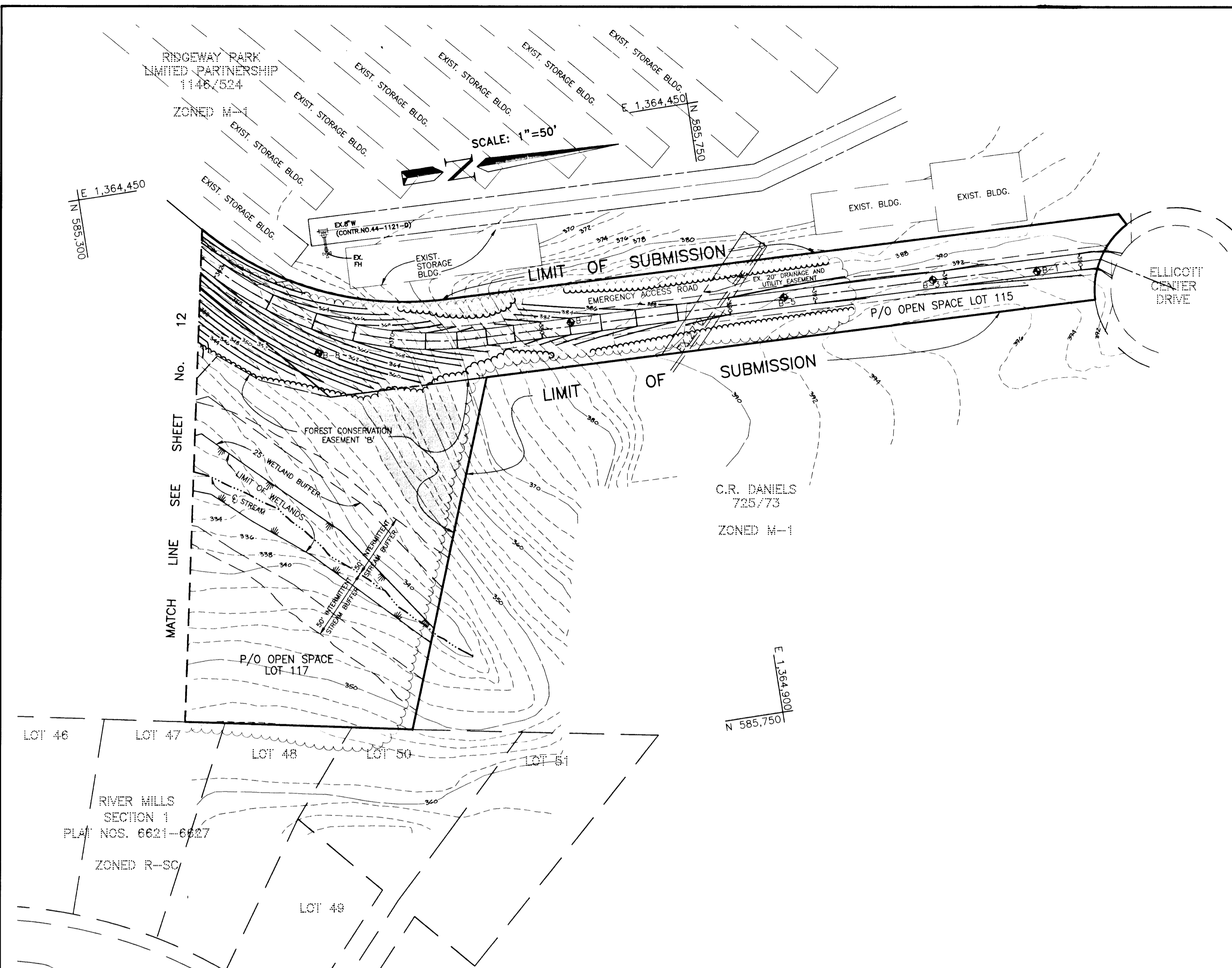
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Adam Acting DATE 11/9/96
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Blaz DATE 12/22/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

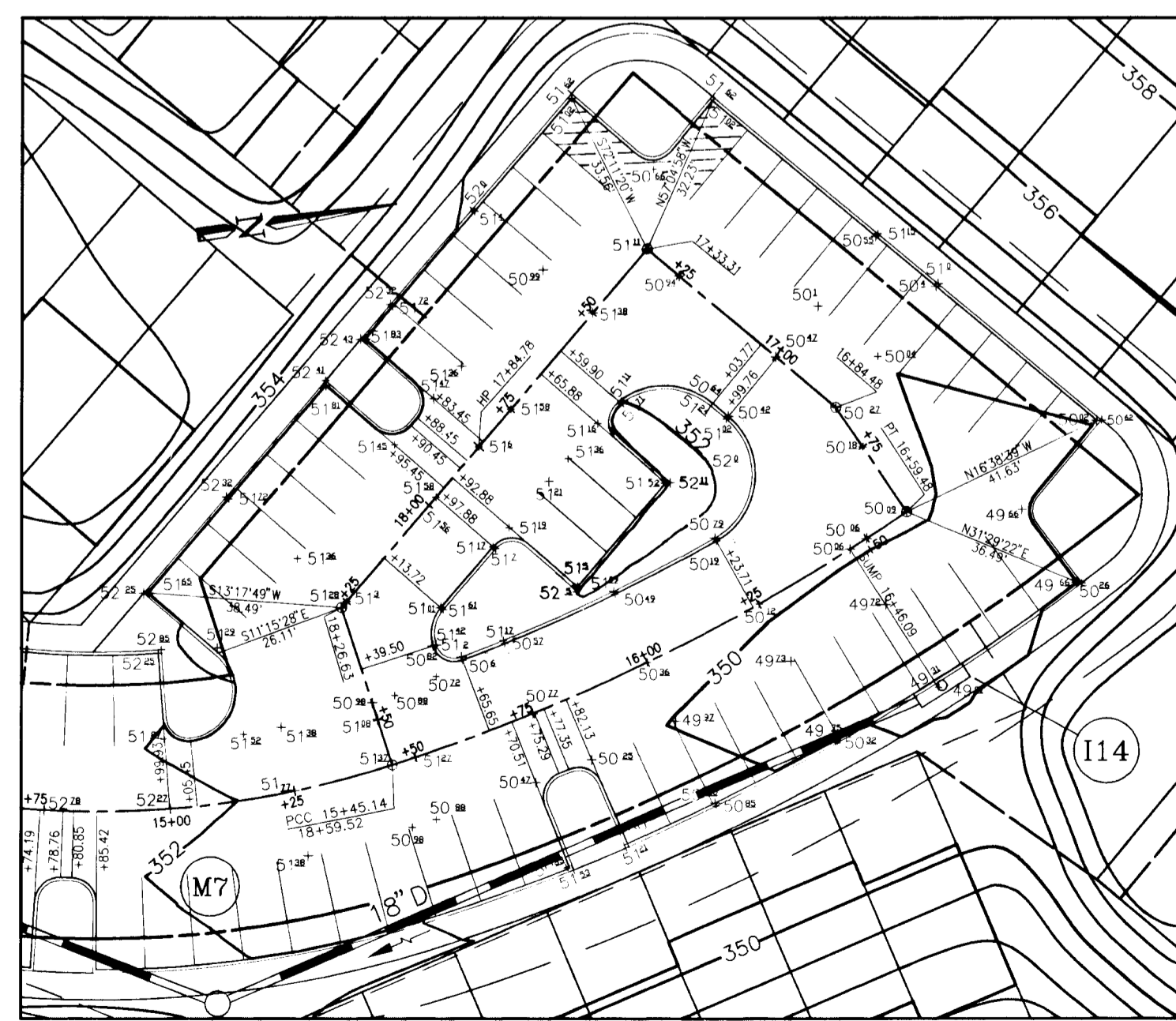
MK DATE 12/20/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

OWNER/DEVELOPER:	PROJECT:
SDC GROUP, INC. POST OFFICE BOX 417 ELLCOTT CITY, MARYLAND 21041 (410) 465-4244	PAPILLON LOTS 1-118
TITLE:	LOCATION:
GRADING PLAN S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08	TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE:	PROJECT NO.
DECEMBER 22, 1995 OCTOBER 28, 1996	0599
DESIGN: JME	DRAFT: MBB/JH
SCALE: 1"=50'	DRAWING 12 OF 24

18-PS



LASALLE COURT
GRADING DETAIL
SCALE: 1"=30'



PAPILLON DRIVE
GRADING DETAIL
SCALE: 1"=30'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] *[Signature]* 12/9/96
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 12/23/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

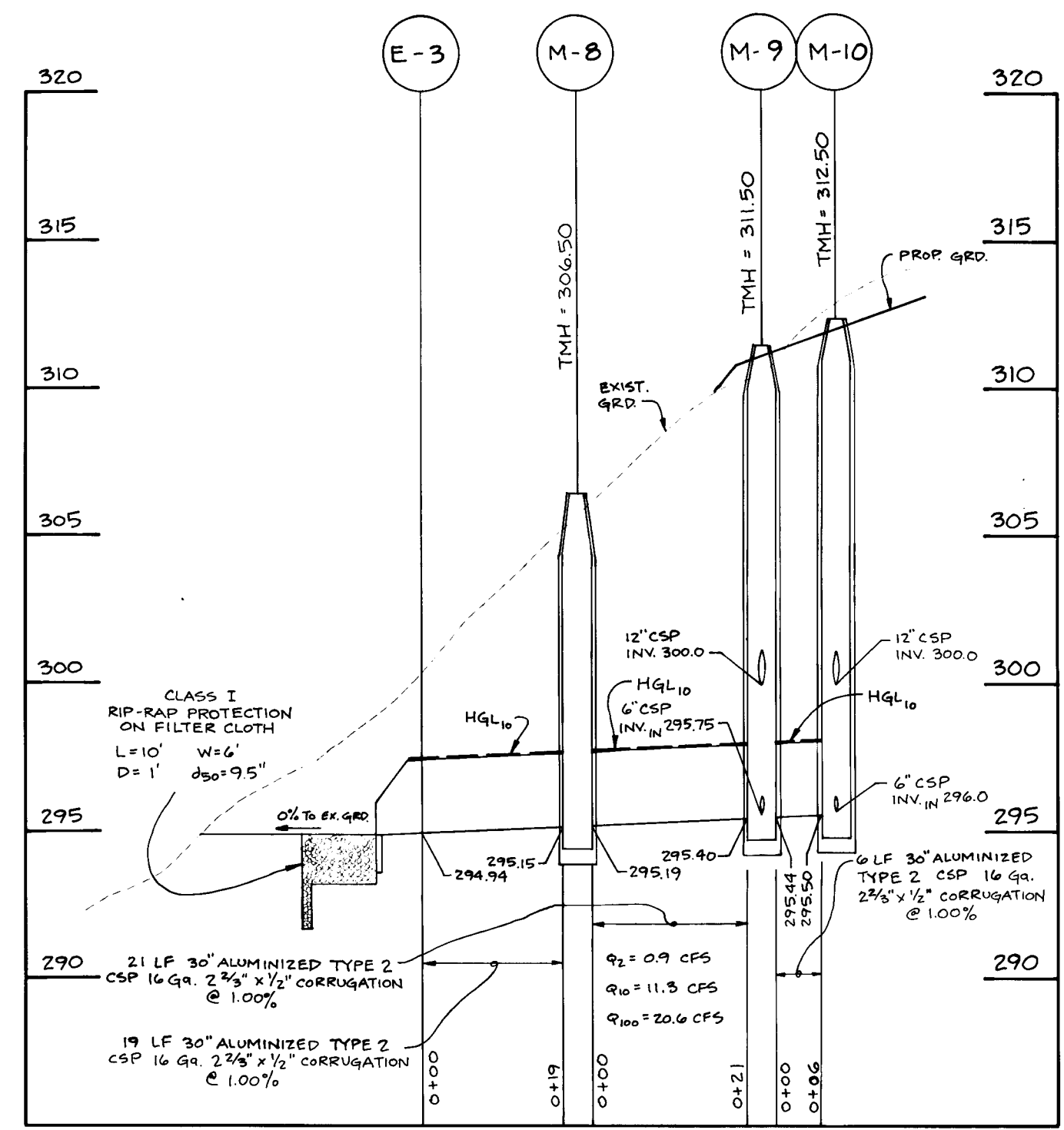
[Signature] 12/20/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

NO.	DATE	REVISION

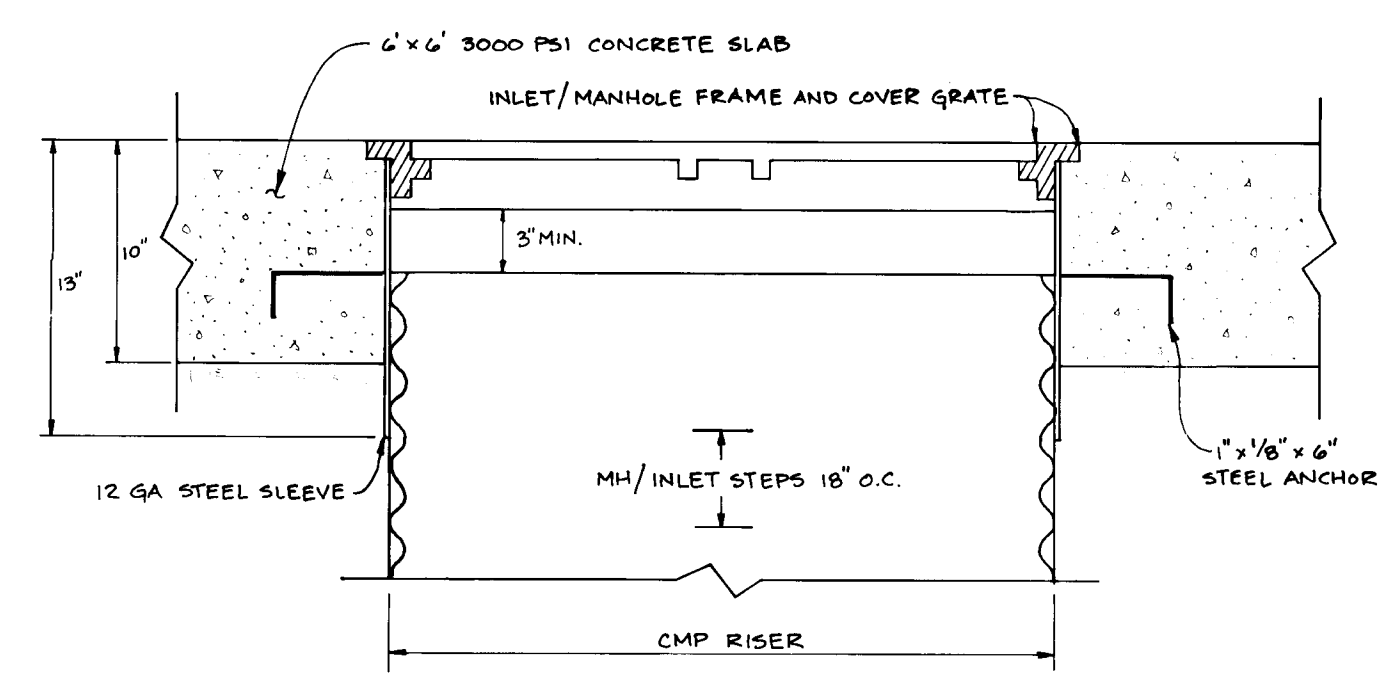
TSA GROUP, INC.
 planning • architecture • engineering
 8460 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105

OWNER/DEVELOPER:	PROJECT:
SDC GROUP, INC. POST OFFICE BOX 417 ELLICOTT CITY, MARYLAND 21041 (410) 465-4244	PAPILLON LOTS 1-118
LOCATION:	TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE:	GRADING PLAN S-94-08, P-94-22, WP-95-40, ZB-969M, SP-96-08
DATE:	DECEMBER 22, 1995 AUGUST 16, 1996
PROJECT NO. 0599	DRAWING 13 OF 24
Design: JME	Draft: MBB
SCALE: 1"=50'	

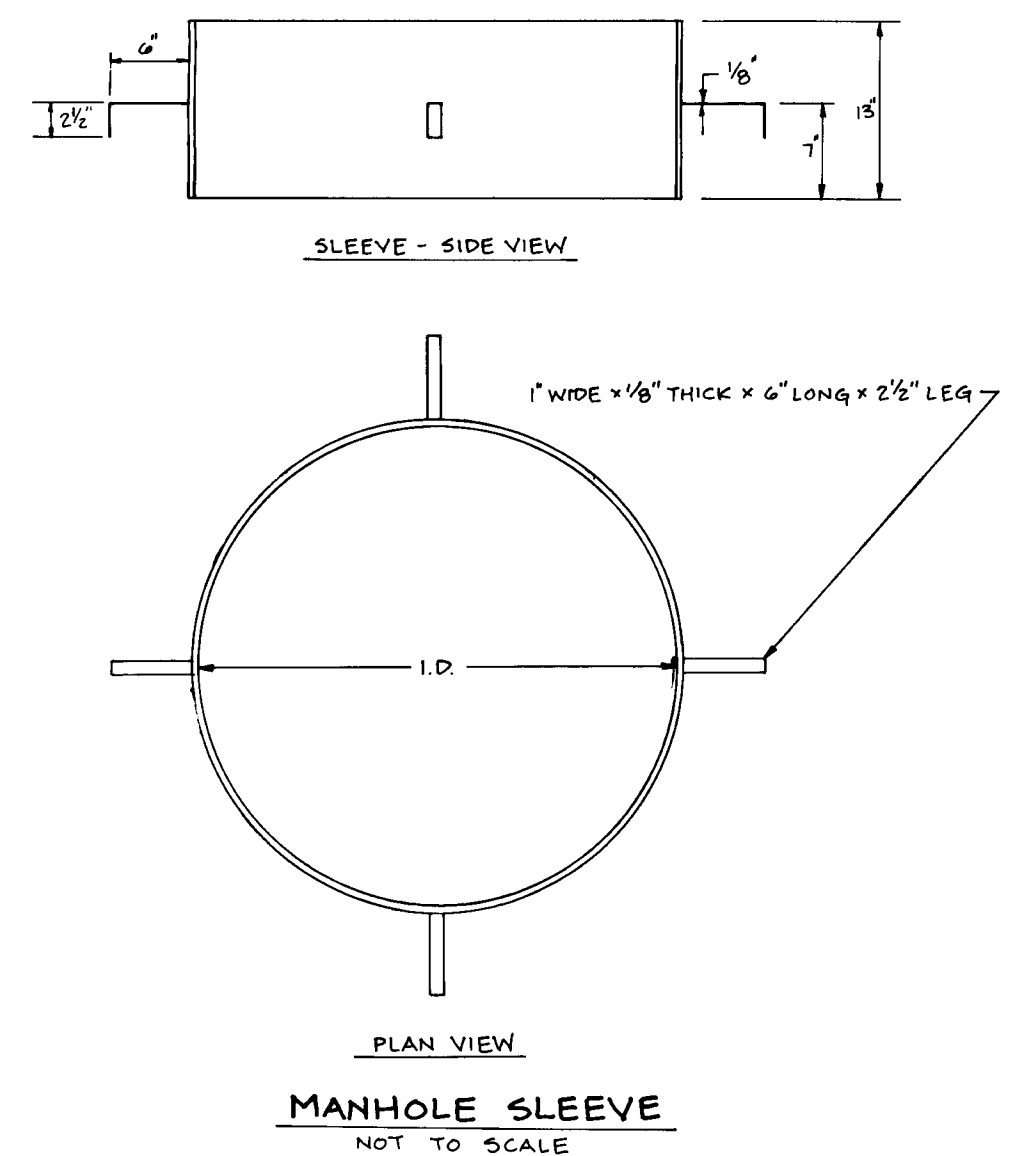
18-45



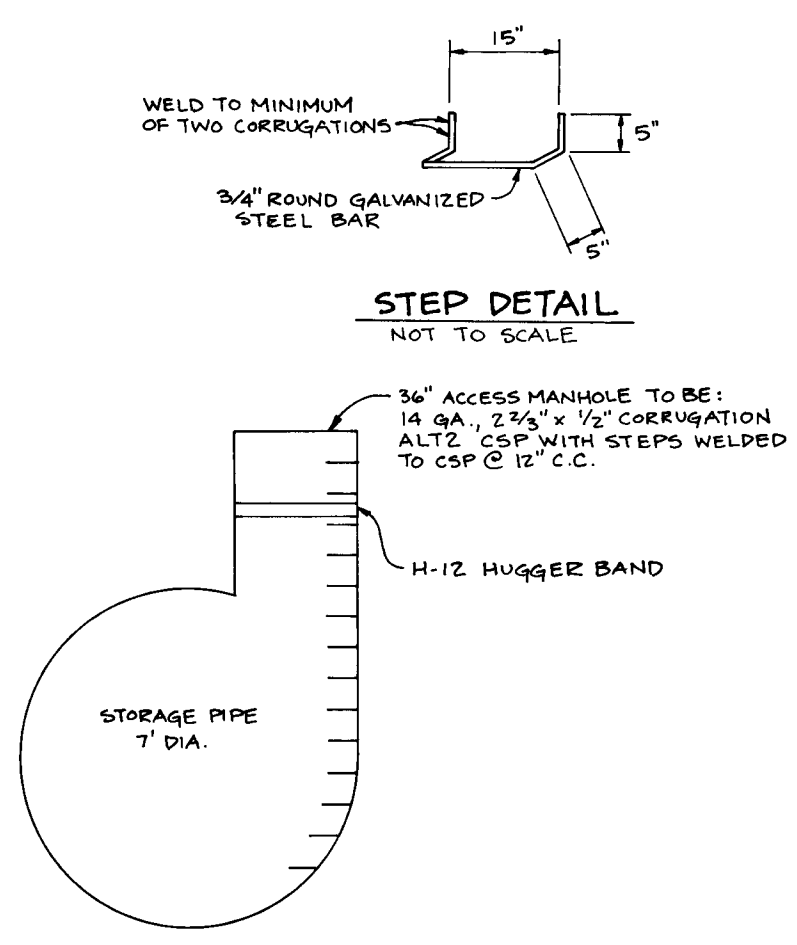
SWMF #1 OUTFALL PROFILE
SCALE: 1" = 20' HORIZ, 1" = 5' VERT.



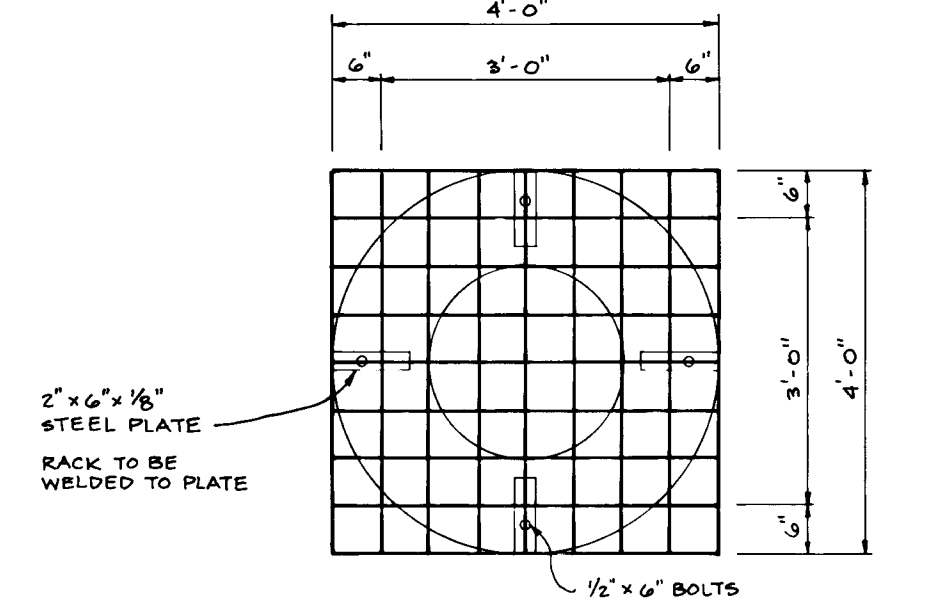
**CSP RISER
MANHOLE SLEEVE DETAIL**
NOT TO SCALE



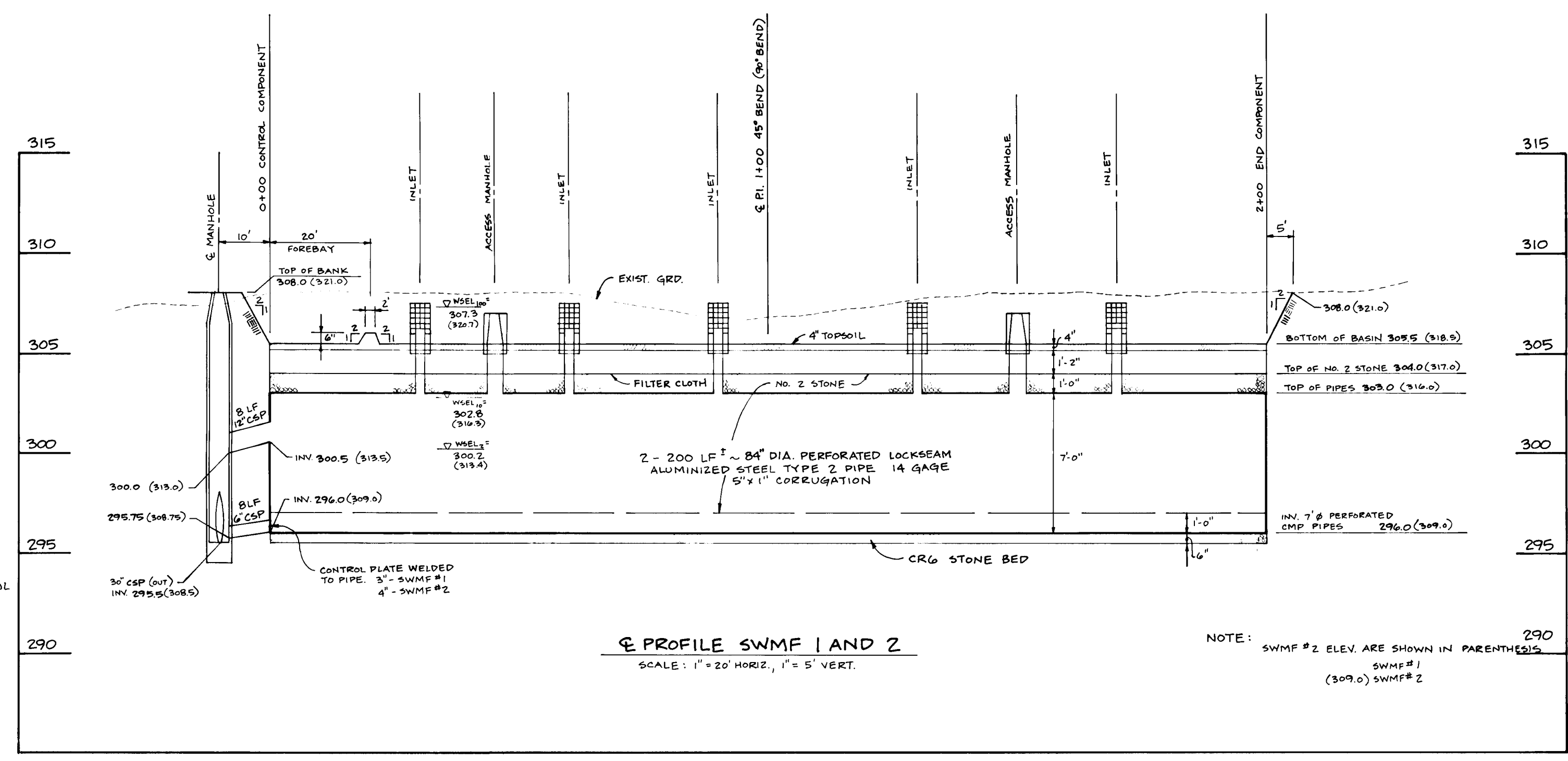
MANHOLE SLEEVE
NOT TO SCALE



ACCESS MANHOLE
NOT TO SCALE



TRASH RACK DETAIL
SCALE: 1" = 2'



E PROFILE SWMF 1 AND 2
SCALE: 1" = 20' HORIZ, 1" = 5' VERT.

- NOTES:**
1. THE PIPE FABRICATOR SHALL PROVIDE SPECIFICATIONS OF ALL MATERIALS (BASED ON HS25 LOADING).
 2. SHOP DRAWINGS ARE TO BE PROVIDED BY FABRICATOR. APPROVAL BY ENGINEER IS REQUIRED PRIOR TO CONSTRUCTION.
 3. CONTRACTOR IS REQUIRED TO COORDINATE APPROVAL OF SHOP DRAWINGS AND SPECIFICATIONS AND OBLIGATED FOR ANY COST THEREOF.
 4. LANDSCAPING OF THE PRIVATE FACILITIES IS PERMITTED.
 5. STONE AND SAND LAYERS AT THE TOP OF THE SWMF SHALL NOT BE INSTALLED UNTIL THE CONTRIBUTING DRAINAGE AREA TO THE TRAP HAS BEEN STABILIZED.

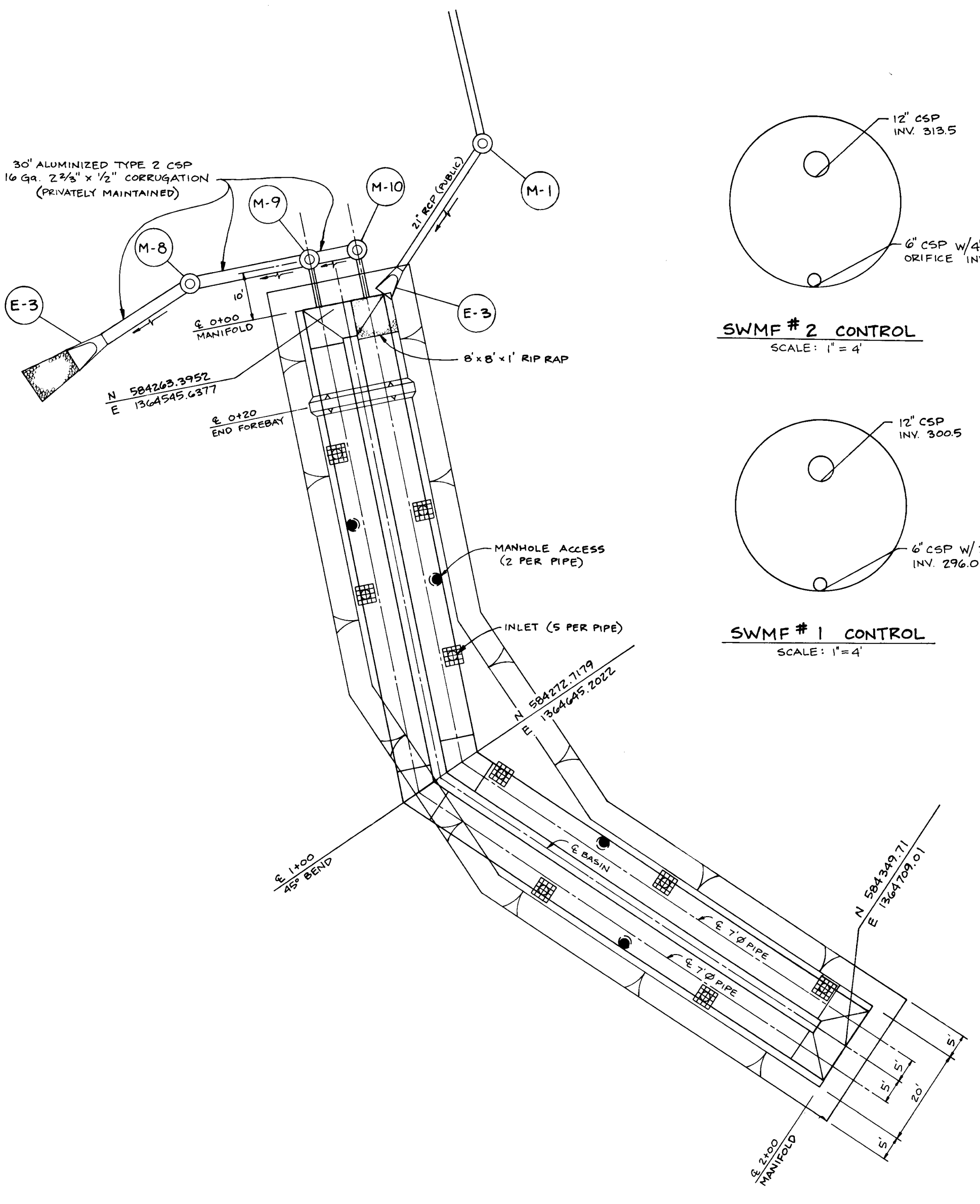
**OPERATION AND MAINTENANCE SCHEDULE
STORMWATER MANAGEMENT FACILITIES**

1. THE FACILITIES AND MAINTENANCE ACCESS SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER.
2. DEBRIS AND LITTER NEXT TO THE INLET AND OUTLET STRUCTURES SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
3. WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, SEDIMENT SHOULD BE REMOVED FROM THE POND.
4. THE STORMWATER MANAGEMENT FACILITIES OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR SAFETY OF THE FACILITIES AND CONTINUED OPERATION, SURVEILLANCE INSPECTION AND MAINTENANCE THEREOF. THE OWNERS SHALL EMPLOY A QUALIFIED ENGINEER TO MAKE YEARLY INSPECTIONS OF THE UNDERGROUND SYSTEM AND RECOMMEND REPAIRS AS DEEMED NECESSARY.

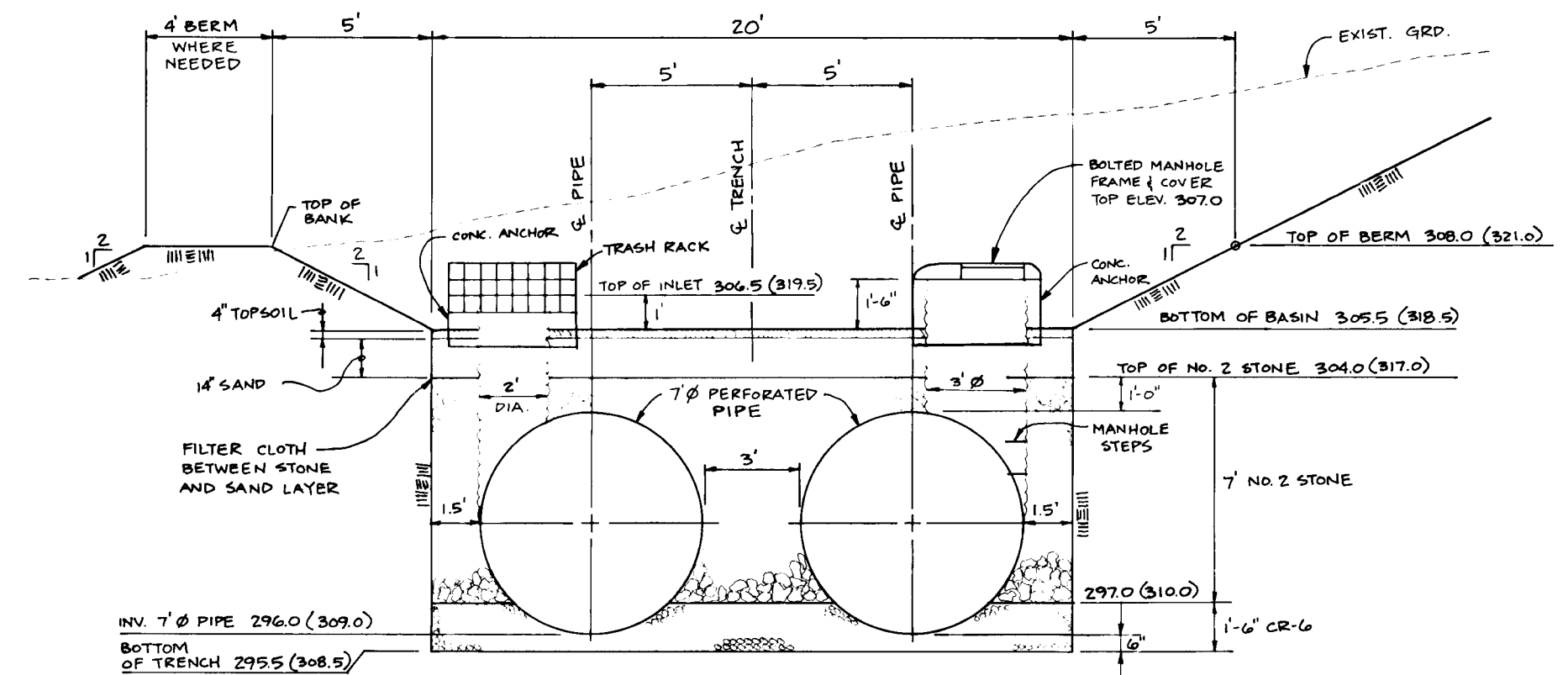
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] **ACRG** 12/19/96
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 12/23/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

[Signature] 12/20/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



STORMWATER MANAGEMENT FACILITY #1
SCALE: 1" = 20'



SECTION
SCALE: 1" = 5'

NO.	DATE	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Bellicott City, Maryland 21040 • (410) 465-8106

OWNER/DEVELOPER: SDC GROUP, INC.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21041
 (410) 465-4244

PROJECT: PAPILLON
 LOTS 1-118

LOCATION: TAX MAP 24 - PARCEL 121
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: STORMWATER MANAGEMENT DETAILS

DATE: DECEMBER 22, 1995
 AUGUST 16, 1996

DESIGN: JME DRAFT: DBT

SCALE: AS SHOWN DRAWING 14 OF 24

1845

STORMWATER MANAGEMENT NOTES

Site Preparation

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

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

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

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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

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

Where a minimum required density is specified, it 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 that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

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

Structure Backfill

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

Pipe Conduits

1. Corrugated metal pipe - all of the following criteria shall apply for stormwater management facilities:

The 84" diameter pipe will be 14 gage with 5 x 1 inch corrugations. The pipe will be fully perforated lockseam ALUMINIZED STEEL Type 2 only, and manufactured in accordance with AASHTO M-274 and AASHTO M-36 class 2 perforations only. The perforations will be 3/8" holes and provide an open area of 3.3 square inches per square foot of pipe surface.

All elbows, tees, stubs and access manholes will be as shown on the plans, profiles, details and manufacturers shop drawings.

The use of asphalt coating on perforated pipe is expressly prohibited.

If due to limited availability of perforated coil, and to expedite the projects completion, the manufacturer shall have the option to substitute fully slotted pipe per the manufacturers recommended drawing. However, slots will not exceed 1" wide and be of sufficient length and quantity to provide 3.3 sq. inches/sq. foot of pipe surfaces.

2. Coupling bands shall be AASHTO M-36 huggie type, Aluminized Type 2, 10 1/2" min. width double bar bolt and strap connectors.

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

4. Backfilling shall conform to "Structure Backfill."

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

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill."

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

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

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

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

4. Backfilling shall conform to "Structure Backfill."

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

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

Rock Riprap

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subangular in shape. The least dimension of an individual rock fragment shall be not less than one third the greatest dimension of the fragment.

The rock shall have the following properties:

- Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
- Absorption not more than three percent.
- Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

Core of Water during Construction

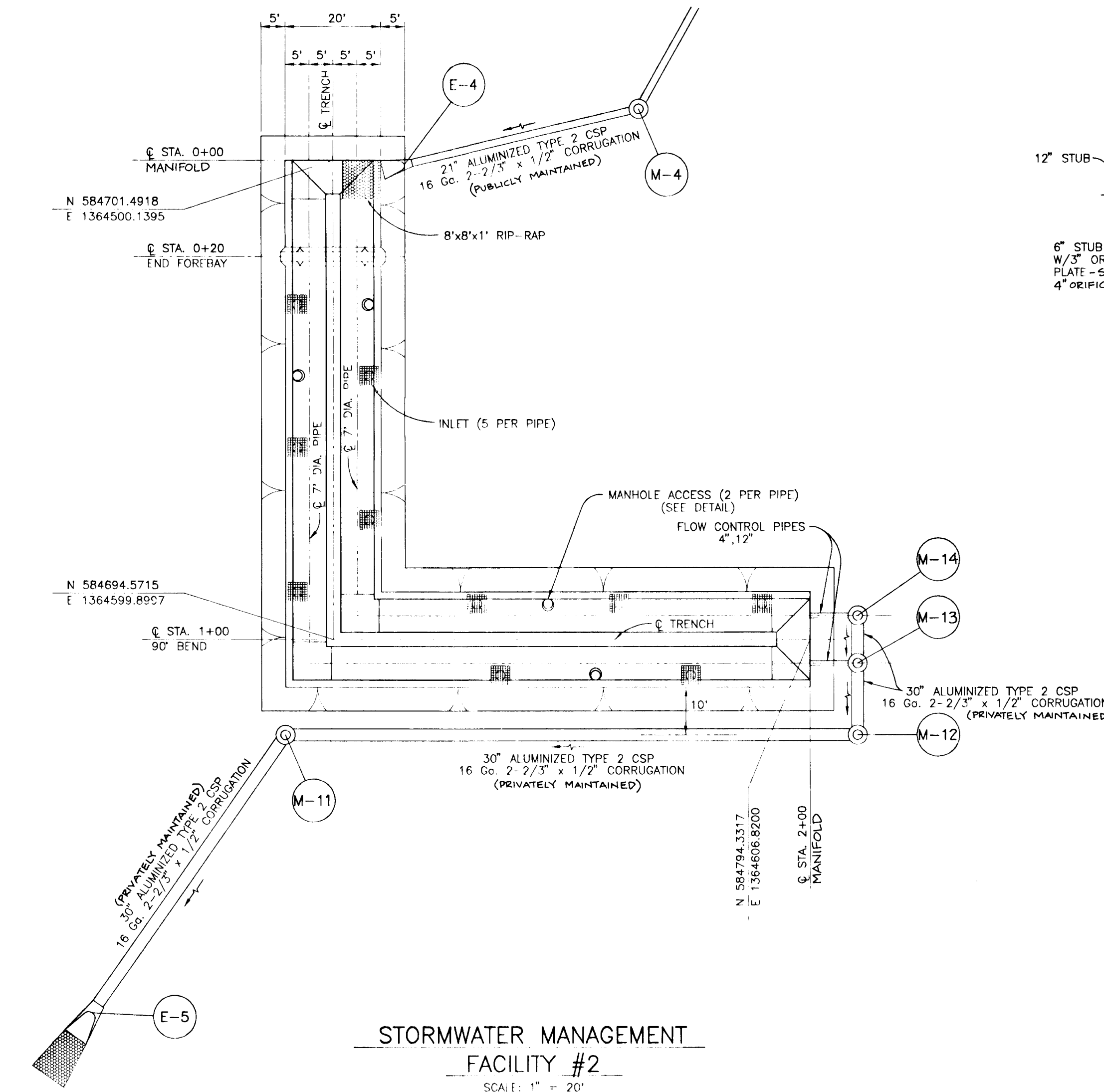
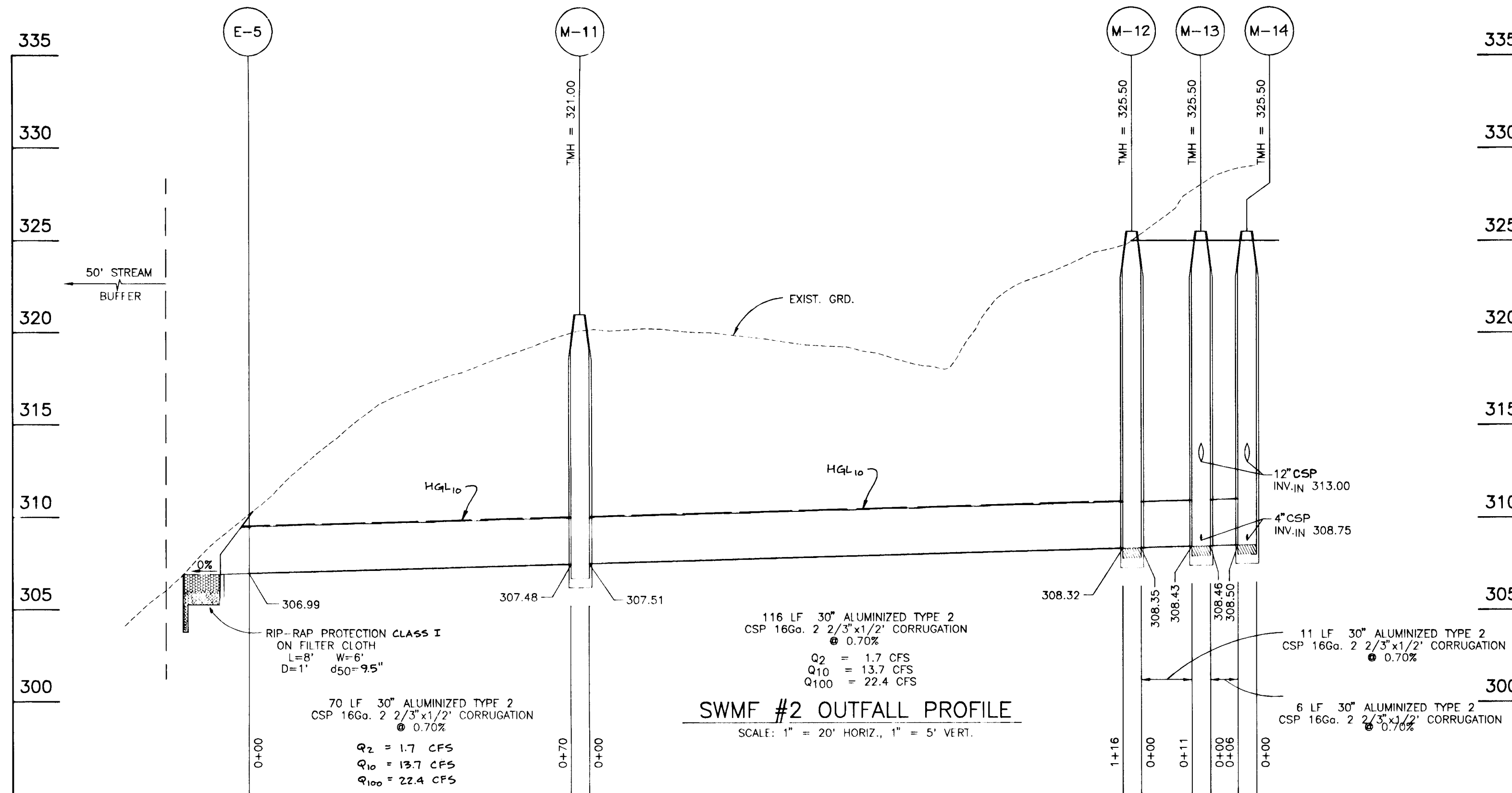
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also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

Stabilization

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

Erosion and Sediment Control

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



* SEE SHEET 14 FOR DETAILS

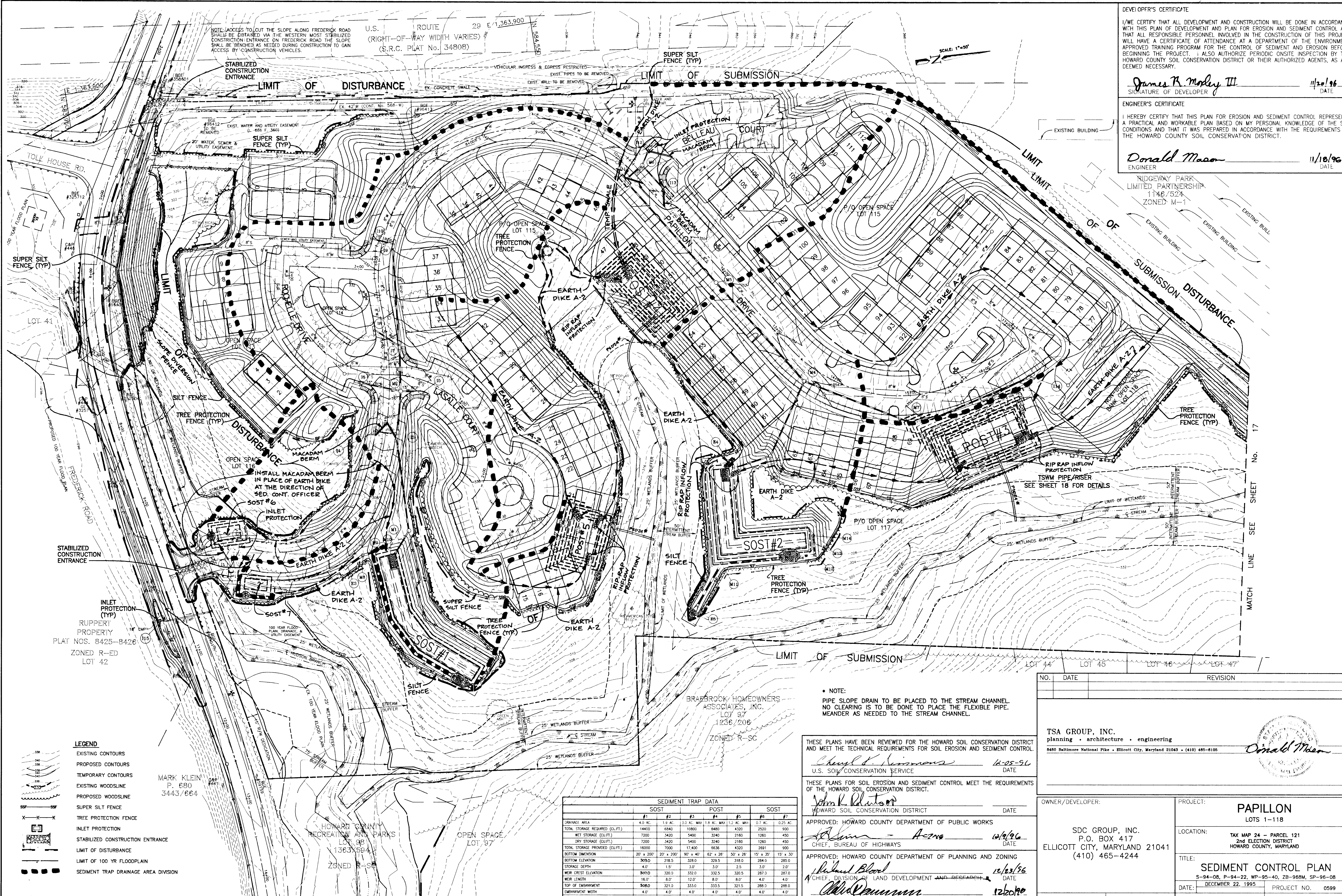
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard County 12/19/96
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Hood 12/22/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

Michael D. ... 12/22/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION
<p>TSA GROUP, INC. planning • architecture • engineering 8400 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6100</p>		
<p>OWNER/DEVELOPER: SDC GROUP, INC. P.O. BOX 417 ELLCOTT CITY, MARYLAND 21041 (410) 465-4244</p>		<p>PROJECT: PAPILLON LOTS 1-1'8</p> <p>LOCATION: TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p> <p>TITLE: STORMWATER MANAGEMENT NOTES AND DETAILS S-94-08, P-94-22, WP-95-40, 7B-96BM, SP-96-08</p> <p>DATE: DECEMBER 22, 1995 AUGUST 16, 1996</p> <p>PROJECT NO. 0599</p>
DESIGN:	JME	DRAFT: DBT
SCALE:	AS SHOWN	DRAWING 15 OF 24

18481



DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS 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. ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 James R. Mosley III 11/20/96
 SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
 Donald Mason 11/18/96
 ENGINEER DATE

SUDGEBAY PARK LIMITED PARTNERSHIP
 11467524
 ZONED M-1

STABILIZED CONSTRUCTION ENTRANCE
 INLET PROTECTION (TYP)
 RUPPERT PROPERTY
 PLAT NOS. 8425-8426
 ZONED R-ED
 LOT 42

MARK KLEIN
 P. 680
 3443/664

BRAEBROOK HOMEOWNERS ASSOCIATES, INC.
 LOT 97
 1236/206
 ZONED R-SC

* NOTE:
 PIPE SLOPE DRAIN TO BE PLACED TO THE STREAM CHANNEL. NO CLEARING IS TO BE DONE TO PLACE THE FLEXIBLE PIPE. MEANDER AS NEEDED TO THE STREAM CHANNEL.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
 Cheryl Simmons 11-05-96
 U.S. SOIL CONSERVATION SERVICE DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 John K. Bluto
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways 12/19/96
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development and Research 12/23/96
 DATE

Chief, Development Engineering Division MK 12/20/96
 DATE

	SEDIMENT TRAP DATA						
	SOST #1	SOST #2	SOST #3	POST #1	POST #2	POST #3	SOST #7
STORAGE AREA	4.0 AC	1.9 AC	3.0 AC	1.8 AC	1.1 AC	0.7 AC	0.25 AC
TOTAL STORAGE REQUIRED (CU.FT.)	14400	6840	10800	6480	4320	2520	900
WET STORAGE (CU.FT.)	7200	3420	5400	3240	2160	1260	450
DRY STORAGE (CU.FT.)	7200	3420	5400	3240	2160	1260	450
TOTAL STORAGE PROVIDED (CU.FT.)	16000	17400	17400	6636	4320	2691	900
BOTTOM DIMENSION	20' x 200'	20' x 200'	90' x 40'	62' x 26'	50' x 26'	15' x 35'	15' x 30'
BOTTOM ELEVATION	302.0	328.0	328.0	328.5	318.0	284.0	285.0
STORAGE DEPTH	4.0'	1.5'	3.0'	3.0'	2.5'	3.0'	2.0'
WEIR CREST ELEVATION	307.0	320.0	332.0	332.5	320.5	287.0	287.0
WEIR LENGTH	16.0'	8.0'	12.0'	8.0'	8.0'	4.0'	4.0'
TOP OF EMBANKMENT	308.0	321.0	333.0	333.5	321.5	288.0	288.0
EMBANKMENT WIDTH	4.0'	4.0'	4.0'	4.0'	4.0'	4.0'	4.0'
CLEANOUT ELEVATION	305.0	319.25	329.4	331.0	319.0	285.5	286.0

NO.	DATE	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 8460 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 485-8105



OWNER/DEVELOPER: SDC GROUP, INC.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21041
 (410) 465-4244

PROJECT: PAPILLON
 LOTS 1-118

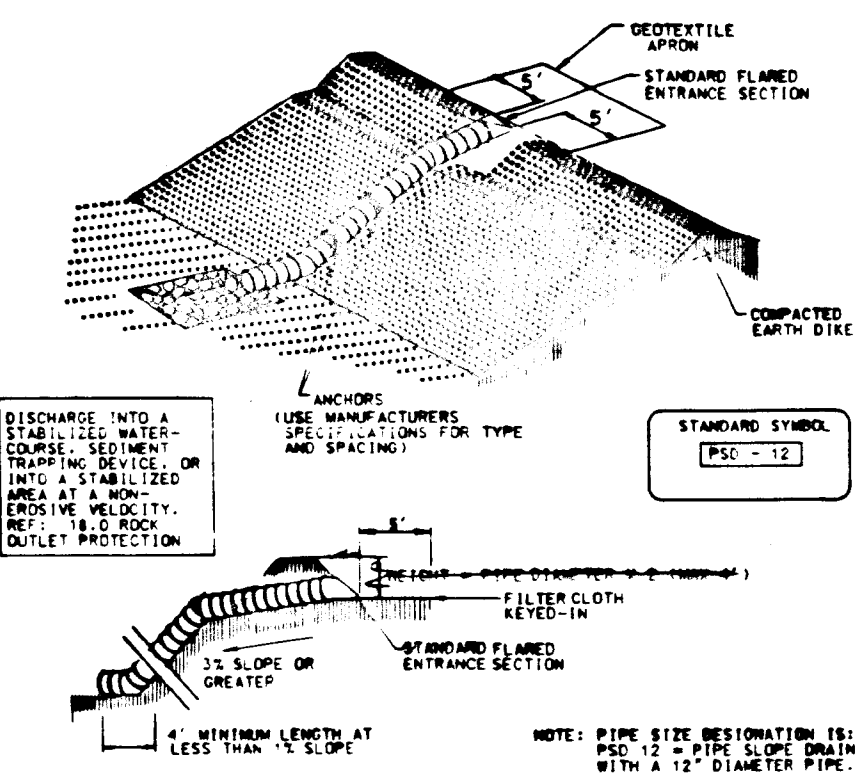
LOCATION: TAX MAP 24 - PARCEL 121
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT CONTROL PLAN
 S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-09

DATE: DECEMBER 22, 1995 PROJECT NO. 0599

Design: JME/JH Draft: MBB/JH SCALE: 1"=50' DRAWING 16 OF 24

1845

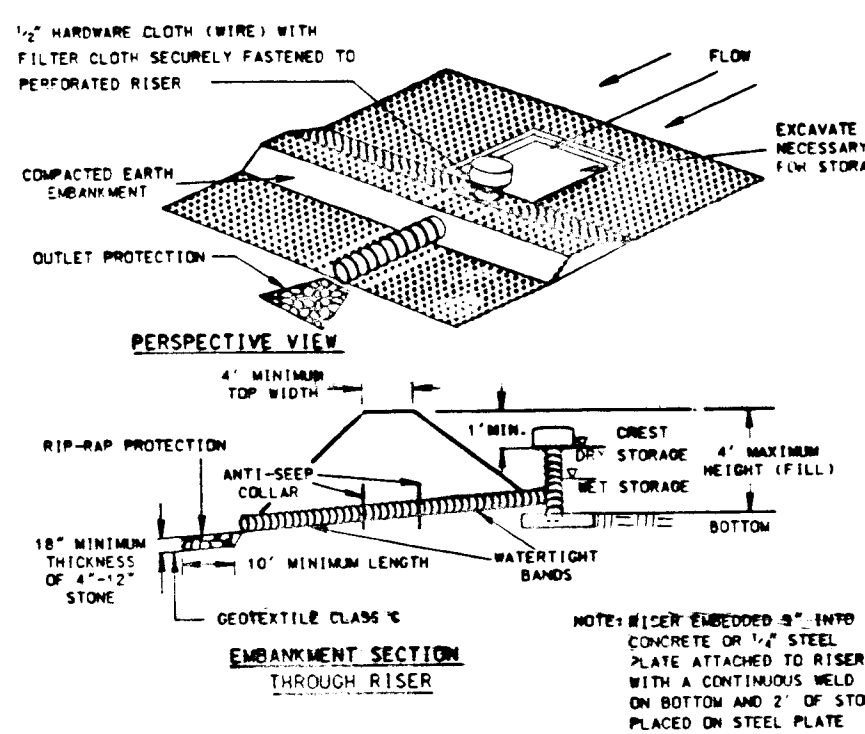


- Construction Specifications - Pipe Slope Drain**
- The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.
 - The top of the earth disk over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.
 - Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.
 - A filter and section shall be attached to the inlet and of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.
 - The Pipe Slope Drain shall be securely anchored to the slope by staking of the geotextile provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than 12" spacing be provided. Anchors shall be spaced along the length of pipe. These details shall be provided by pipe suppliers.
 - The soil around and under the pipe and section shall be hand tamped in 4 inch lifts to the top of the earth disk.
 - All pipe connections shall be watertight.
 - Whenever possible where a PSD drains an unutilized area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a grassed area or into a ditch or stream. The remainder of the interior slope shall be stabilized with grass or other vegetation. The discharge from the PSD must be as dry as possible from the sediment control outlet or possible.
 - When the drainage area is stabilized, the PSD shall be removed or stabilized as a separate velocity.
 - Inspection and any required maintenance shall be performed periodically and after each rain event.
 - The inlet must be kept open at all times.

Table 6 Design Criteria for Pipe Slope Drain

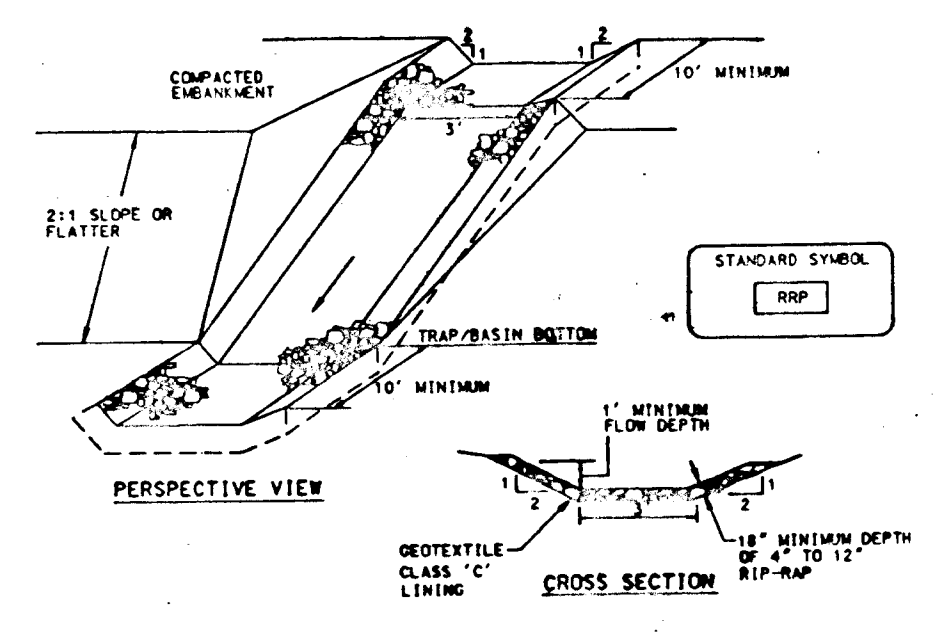
Size	Pipe/ tubing Diameter (DI) in	Maximum Drainage Area (Acres)
PSD-12	12	0.5
PSD-18	18	1.5
PSD-21	21	2.5
PSD-24	24	3.5
PSD-24 (2)	24	5.0

PIPE SLOPE DRAIN
NOT TO SCALE



- The area under the embankment shall be cleared, graded and stripped of any vegetation and root mat. The soil area shall be cleared.
- The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic materials, or other objectionable material. The embankment shall be constructed by troweling with equipment while it is being constructed.
- The total trap volume as measured from the bottom to riser crest elevation shall be 3000 cubic feet per acre of drainage area (see Table 6).
- Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half of the trap storage depth of the trap (5000/200). The sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected periodically and after each rain and repairs made as necessary.

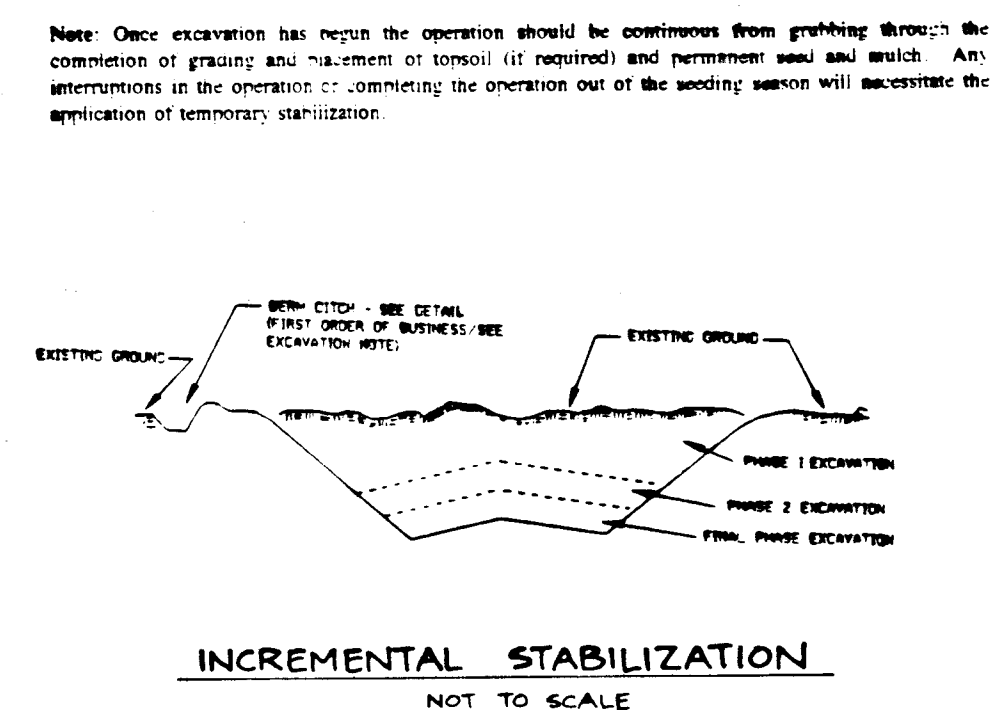
PIPE OUTLET SEDIMENT TRAP
NOT TO SCALE



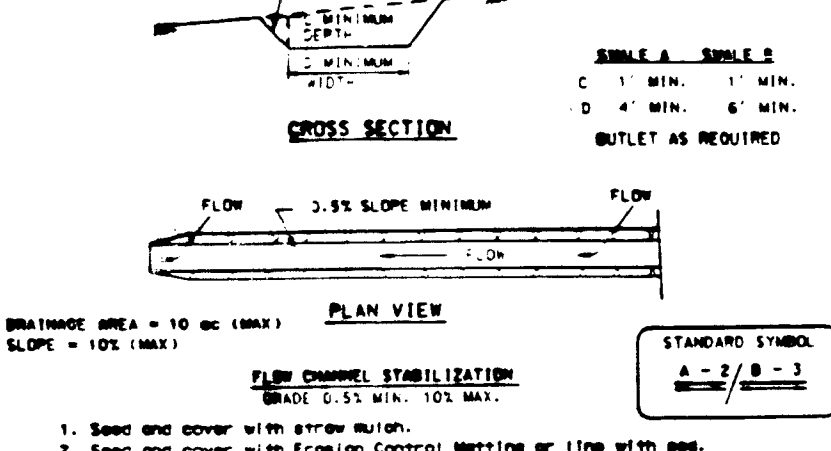
- Construction Specifications**
- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
 - Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
 - Entrance and exit sections shall be installed as shown on the detail section.
 - Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
 - Gravel Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
 - Rip-rap should blend into existing ground.
 - Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Disk or Temporary Swale Lining criteria.

RIP RAP INFLOW PROTECTION
NOT TO SCALE

- Incremental Stabilization - Cut Slopes**
- All cut slopes shall be dressed, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in small increments not to exceed 15'.
 - Construction sequence (Refer to Figure 3 below):
 - Excavate and stabilize all temporary swales, side ditches, or areas that will be used to convey runoff from the excavation.
 - Perform phase 1 excavation, dress and stabilize.
 - Perform phase 2 excavation, dress, and stabilize. Overseed phase 1 areas as necessary.
 - Perform final phase excavation, dress, and stabilize. Overseed previously seeded areas as necessary.

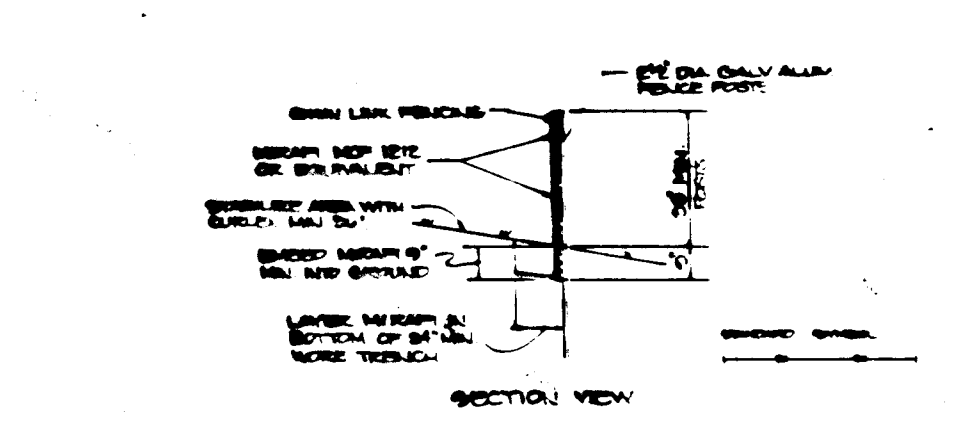
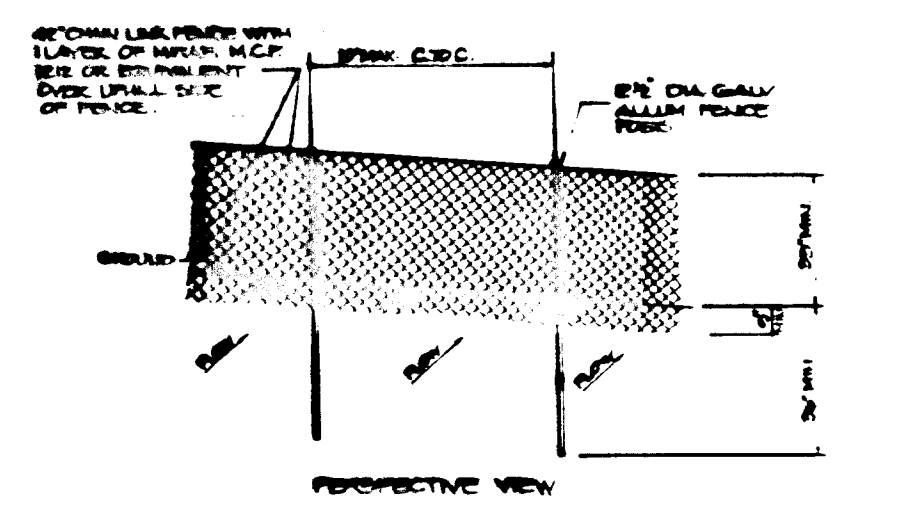


INCREMENTAL STABILIZATION
NOT TO SCALE



- Construction Specifications**
- All temporary swales shall have uniform positive grade to an outlet. Soon elevations may be necessary for grades less than 1%.
 - Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
 - Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a non-erosive velocity.
 - All trees, brush, stumps, obstructions, and other obstructions shall be removed and disposed of so as not to interfere with the proper functioning of the swale.
 - The swale shall be covered or sealed to limit grass and weed growth as required to meet the criteria specified herein and be free of bare projections or other irregularities which will impede normal flow.
 - Fill, if necessary, shall be compacted by earth moving equipment.
 - All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.
 - Inspection and maintenance must be provided periodically and after each rain event.

TEMPORARY SWALE
NOT TO SCALE



- Fencing shall be 42" high chain constructed in accordance with the latest Maryland State Highway Administration Standard Details 690.01 and 690.02. The specifications for a 5'-0" fence shall be used, substituting 42" fabric and 10' posts. Posts shall be placed without concrete embedment.
- Chain link fence to be fastened securely to fence posts with wire ties or staples.
- Diversion cloth to be fastened securely to chain link fence with ties spaced every 24" at top and mid-section.
- When two sections of diversion cloth adjoin each other, they shall be overlapped by six inches and folded.
- Maintenance shall be performed as needed.

SLOPE DIVERSION FENCE
NOT TO SCALE

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION OF THIS PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

James R. Morley III 11/20/96
SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

Donald Mason 11/20/96
ENGINEER DATE

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

John K. Scoville 12-05-96
U.S. SOIL CONSERVATION SERVICE DATE

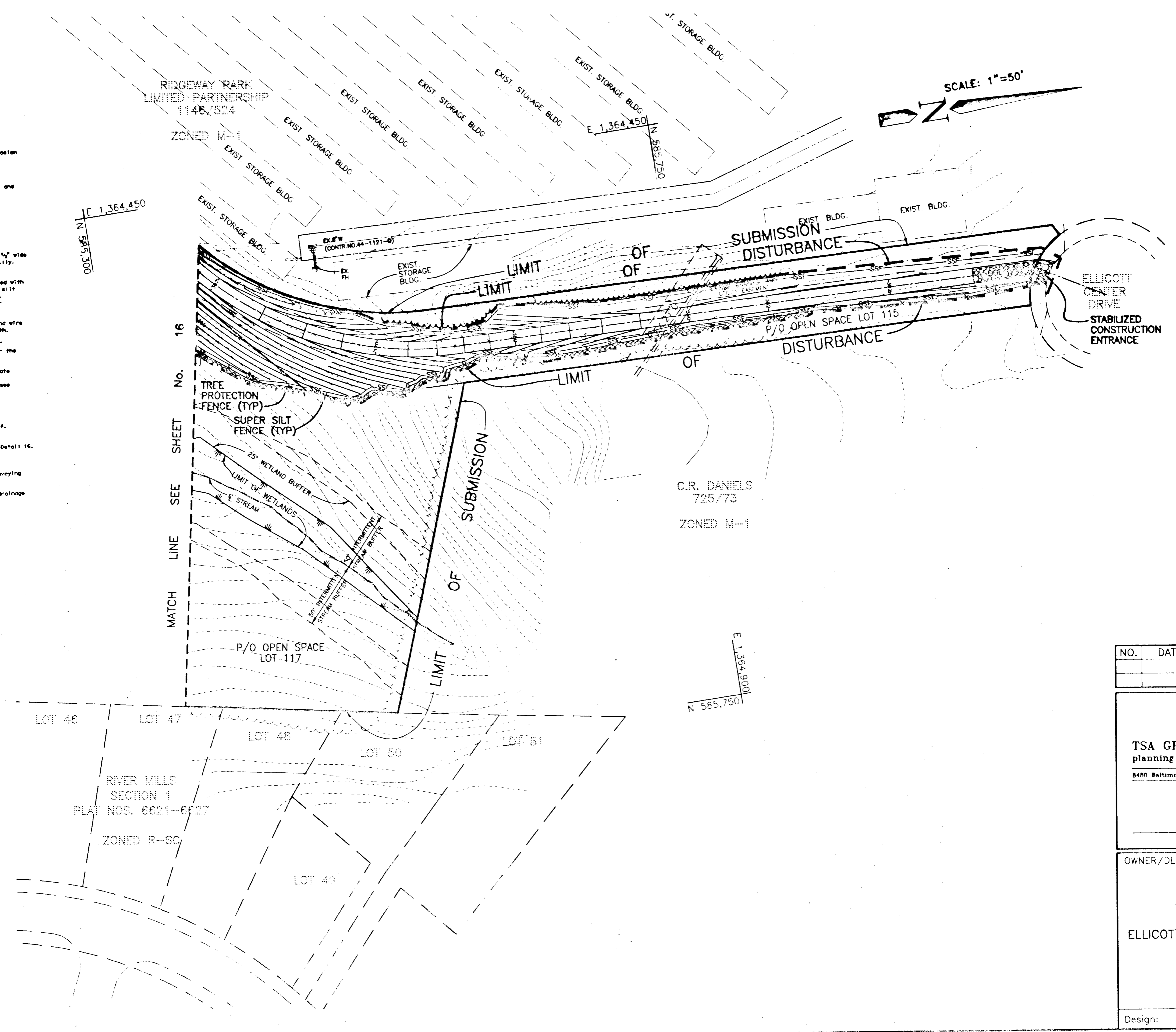
THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

John R. Khatter 12/5/96
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Ed Sims Acting 12/19/96
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Blosser 12/23/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

Mike Danner 12/20/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE



1845

NO.	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering
5480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105

Donald Mason
REGISTERED PROFESSIONAL ENGINEER
STATE OF MARYLAND
NO. 10868

OWNER/DEVELOPER: SDC GROUP, INC. P.O. BOX 417 ELLCOTT CITY, MARYLAND 21041 (410) 465-4244	PROJECT: PAPILLON LOTS 1-118
LOCATION: TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: SEDIMENT CONTROL PLAN S-94-08, P-94-22, WP-95-40, ZB-98B, SP-96-08
DATE: DECEMBER 22, 1996 AUGUST 16, 1996	PROJECT NO. 0599
Design: JME	Draft: MBB
SCALE: 1" = 50'	DRAWING 17 OF 24

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
12/22/96	08:30	0.0	Topsoil (Fill)		...
12/22/96	08:30	1.0
12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
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12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

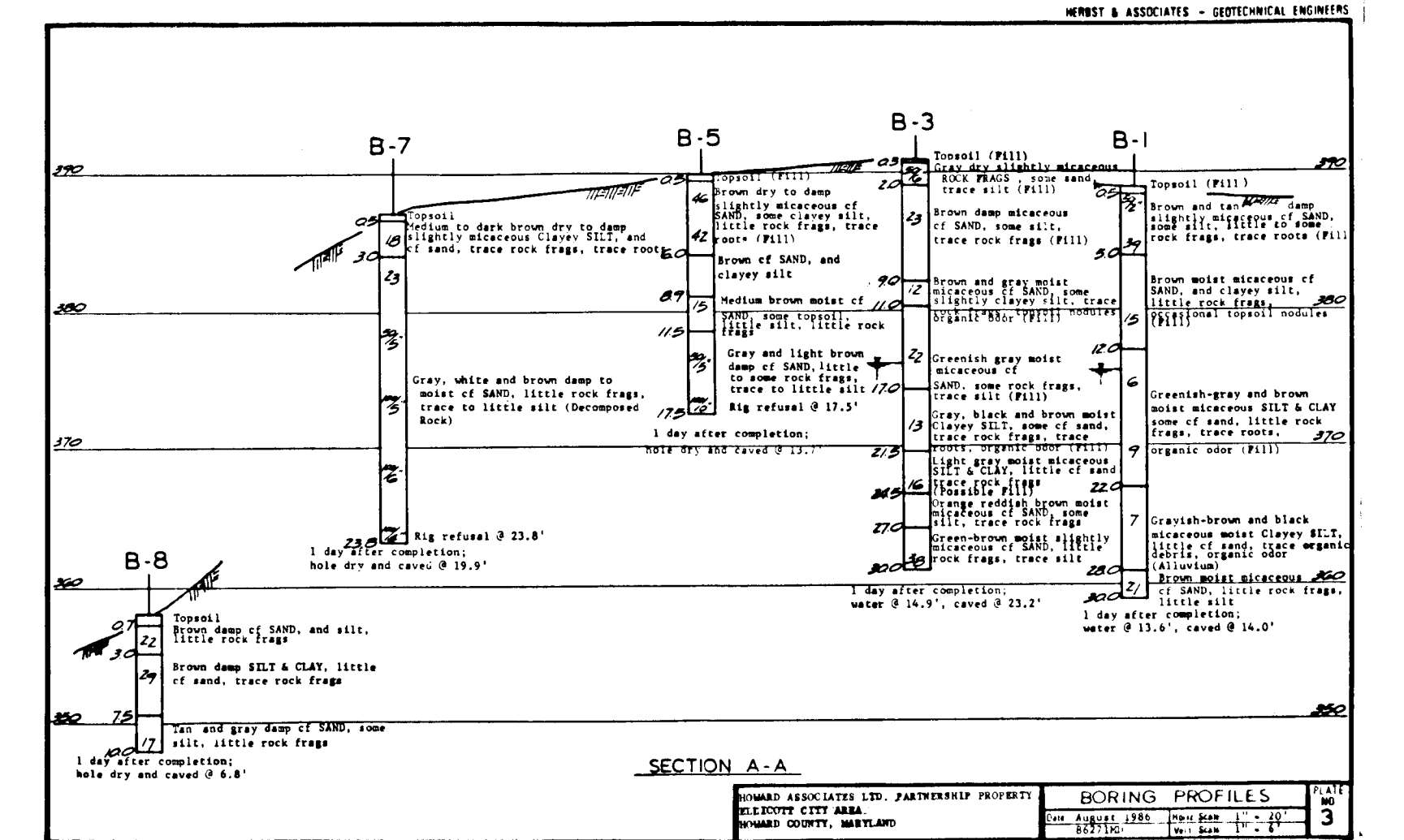
DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
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12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
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12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS



HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
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12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
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12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

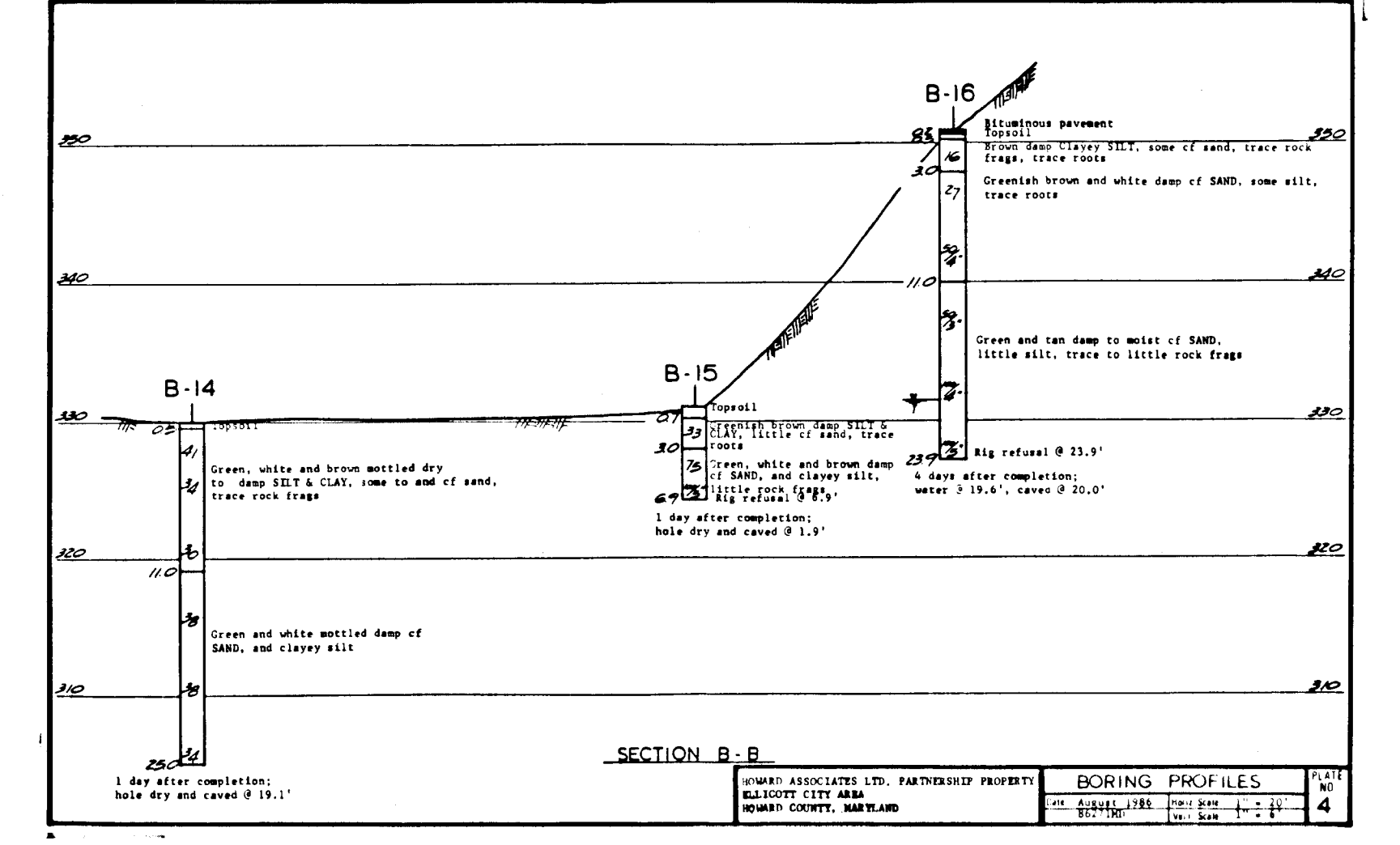
DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
12/22/96	08:30	0.0	Topsoil (Fill)		...
12/22/96	08:30	1.0
12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
12/22/96	08:30	0.0	Topsoil (Fill)		...
12/22/96	08:30	1.0
12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS



HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
12/22/96	08:30	0.0	Topsoil (Fill)		...
12/22/96	08:30	1.0
12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
12/22/96	08:30	0.0	Topsoil (Fill)		...
12/22/96	08:30	1.0
12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

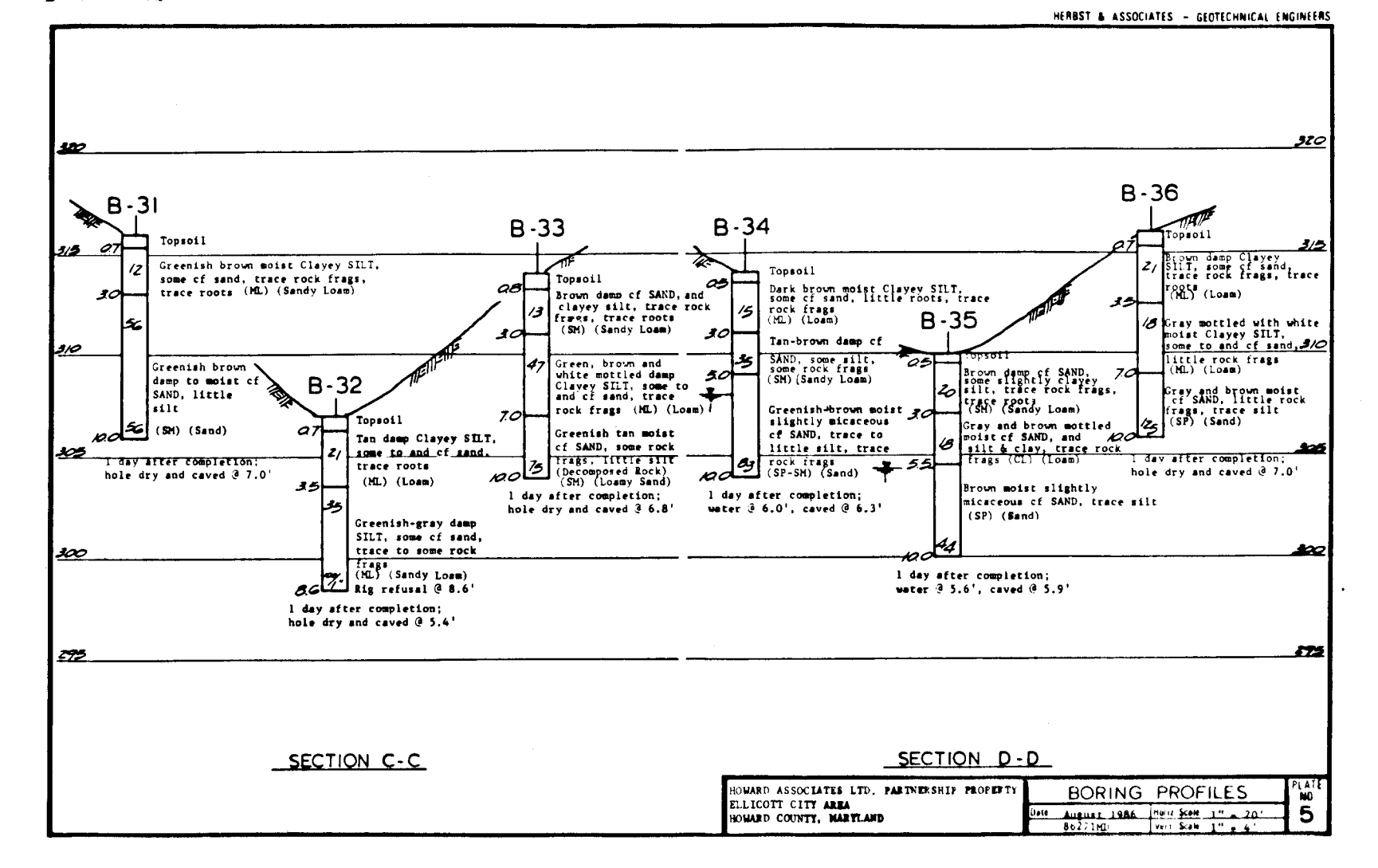
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12/22/96	08:30	1.0
12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS

HILLS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

DATE	TIME	DEPTH	SOIL DESCRIPTION	WATER DEPTH	REMARKS
12/22/96	08:30	0.0	Topsoil (Fill)		...
12/22/96	08:30	1.0
12/22/96	08:30	2.0
12/22/96	08:30	3.0
12/22/96	08:30	4.0
12/22/96	08:30	5.0
12/22/96	08:30	6.0
12/22/96	08:30	7.0
12/22/96	08:30	8.0
12/22/96	08:30	9.0
12/22/96	08:30	10.0

STANDARD PENETRATION TEST: OWNERS OF SOILS... WITH 100 HAMMER FALLS BY COURT MADE AT 15 INTERVALS



NO.	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering
8880 Baltimore National Pike • Ellicott City, Maryland 21040 • (410) 465-4100

OWNER/DEVELOPER: SDG GROUP, INC.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: PAPILLON
LOTS 1-118

LOCATION: TAX MAP 24 - PARCEL 121
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: SOIL BORING LOGS

DATE: DECEMBER 22, 1995 PROJECT NO. 0599

DESIGN: JME DRAFT: DBT SCALE: AS SHOWN DRAWING 19 OF 24

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Richard Blood Acting
CHIEF, BUREAU OF HIGHWAYS 12/19/96 DATE

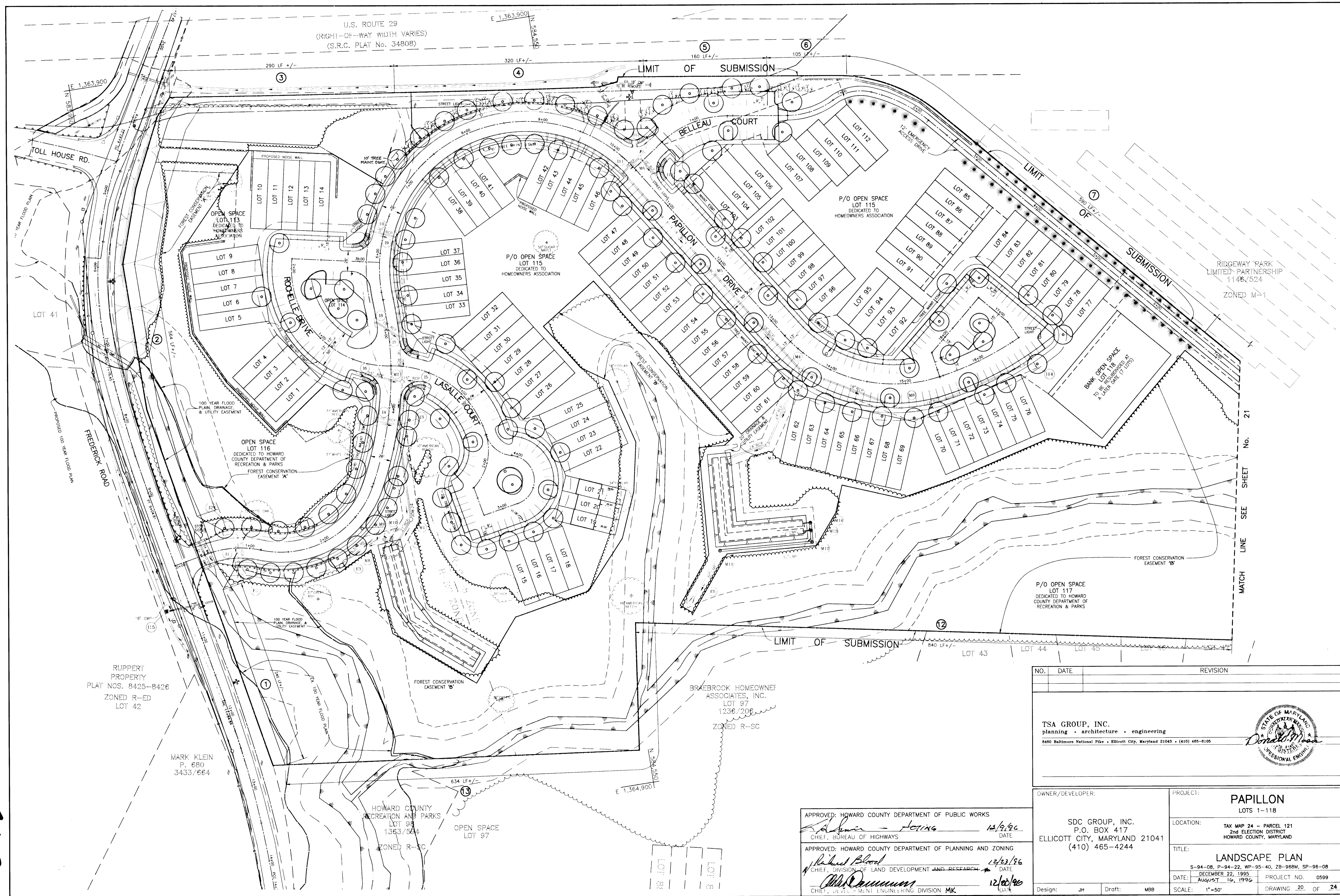
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Richard Blood
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH 12/23/96 DATE

John Dammann
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 12/20/96 DATE

1345

1845



RUPPERT PROPERTY
PLAT NOS. 8425-8426
ZONED R-ED
LOT 42

MARK KLEIN
P. 680
3433/664

HOWARD COUNTY
RECREATION AND PARKS
LOT 98
1363/544
ZONED R-SC

OPEN SPACE
LOT 97

BRAEBROOK HOMEOWNER
ASSOCIATES, INC.
LOT 97
1236/206
ZONED R-SC

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard Blood - Acting
CHIEF, BUREAU OF HIGHWAYS
DATE 12/23/96

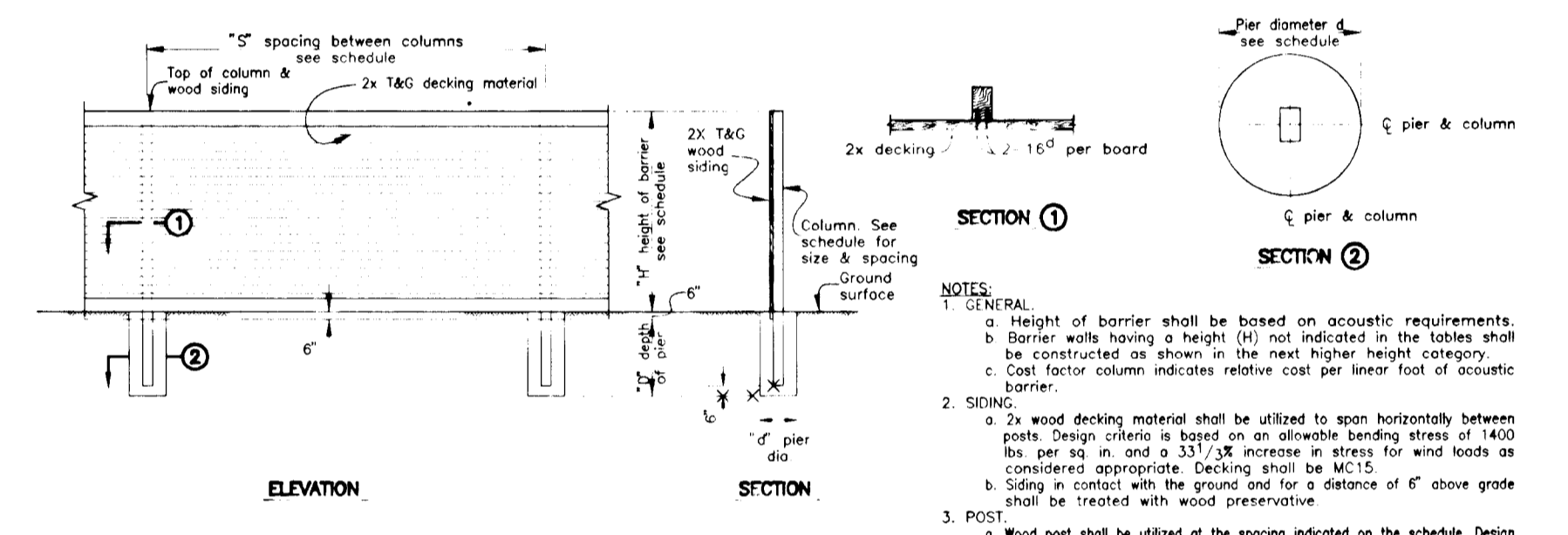
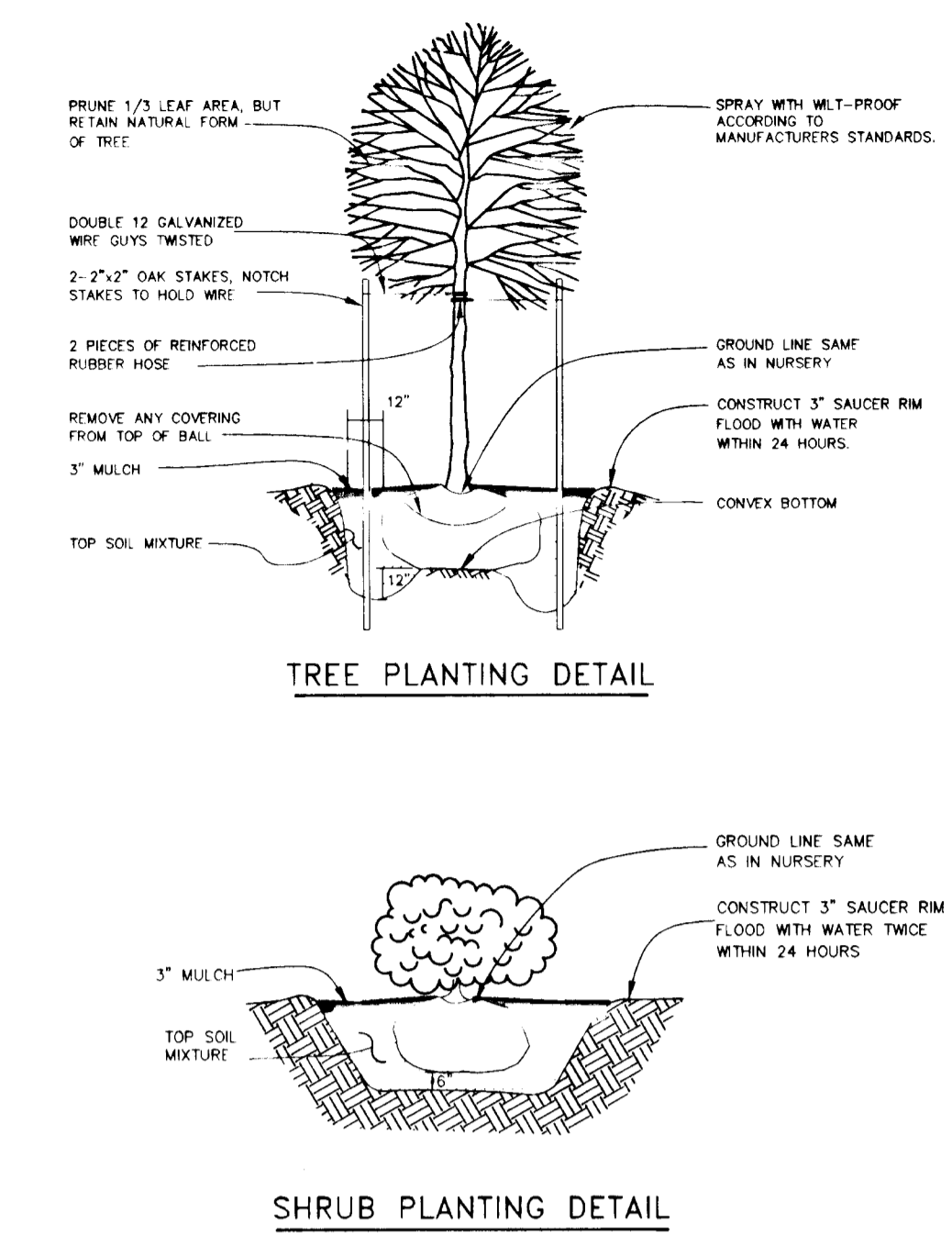
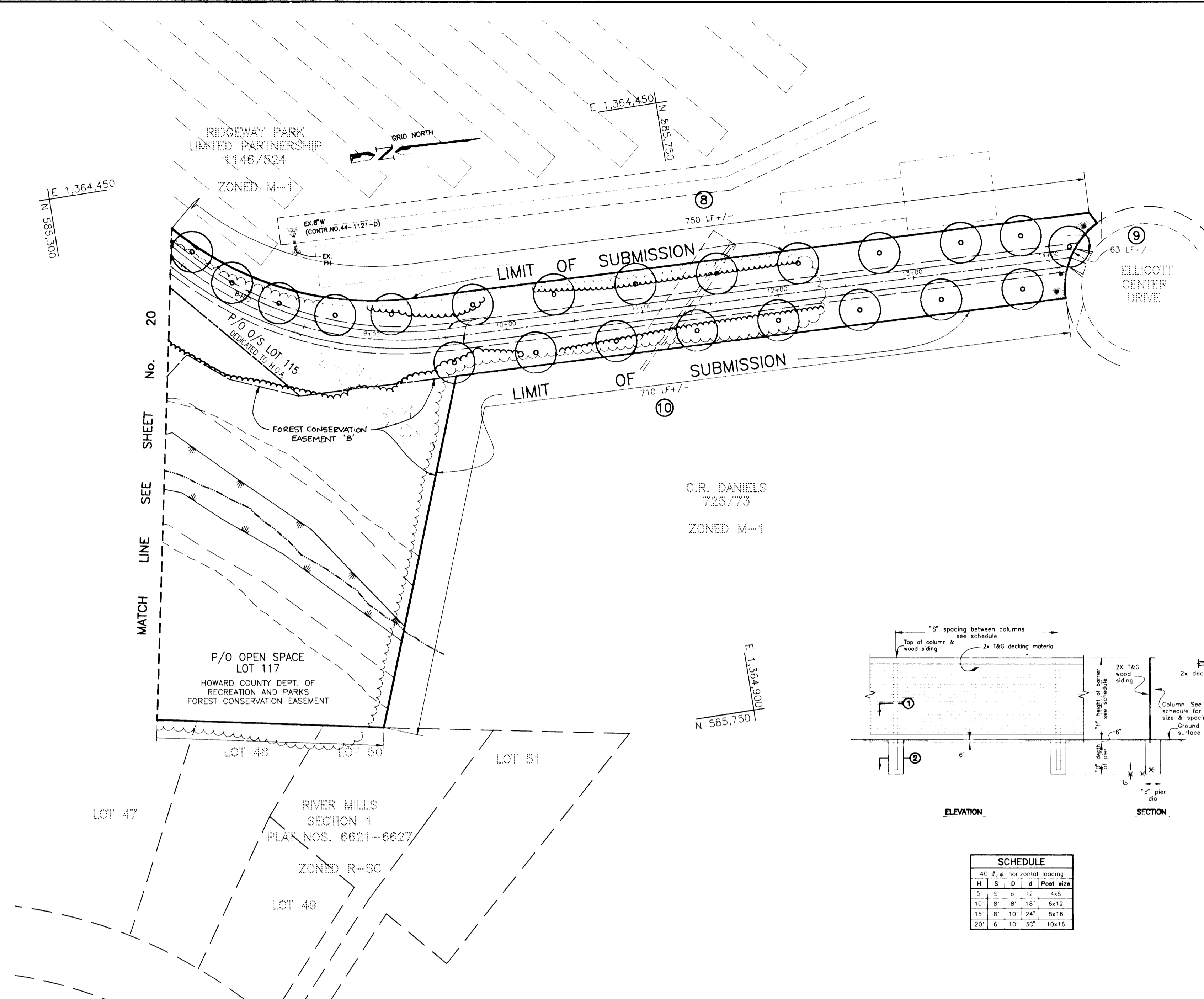
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Blood
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
DATE 12/23/96

Mark Klein
CHIEF, DEPARTMENT ENGINEERING DIVISION MK
DATE 12/20/96

NO.	DATE	REVISION
<p>TSA GROUP, INC. planning • architecture • engineering 880 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105</p>		
OWNER/DEVELOPER:		PROJECT:
SDC GROUP, INC. P.O. BOX 417 ELLCOTT CITY, MARYLAND 21041 (410) 465-4244		PAPILLON LOTS 1-118
LOCATION:		TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE:		LANDSCAPE PLAN
DATE:		S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08 DECEMBER 22, 1995 August 16, 1996
Design: JH	Draft: MBB	PROJECT NO. 0599
SCALE: 1"=50'		DRAWING 20 OF 24

MATCH LINE SEE SHEET No. 21

RIDGEWAY PARK
LIMITED PARTNERSHIP
1146/524
ZONED M-1



SCHEDULE			
H	S	D	Post size
40'	4'	4"	4x4
10'	8'	4"	4x12
10'	8'	24"	8x16
20'	6'	30"	10x16

NOTES:

- GENERAL
 - Height of barrier shall be based on acoustic requirements.
 - Barrier walls having a height (H) not indicated in the tables shall be constructed as shown in the next higher height category.
 - Cost factor column indicates relative cost per linear foot of acoustic barrier.
- SIDING
 - 2x wood decking material shall be utilized to span horizontally between posts. Design criteria is based on an allowable bending stress of 1400 lbs. per sq. in. and a 33 1/3% increase in stress for wind loads as considered appropriate. Decking shall be 1x12.
 - Siding in contact with the ground and for a distance of 6" above grade shall be treated with wood preservative.
- POST
 - Wood post shall be utilized at the spacing indicated on the schedule. Design criteria is based on an allowable bending stress of 1400 lbs. per sq. in. and a 33 1/3% increase for wind loadings.
 - Post embedded in concrete shall be treated with a wood preservative in the area of embedment and 12" above grade.
- CONCRETE
 - Concrete in the piers shall have a 28 day compressive strength of 2000 lbs. per sq. in.
 - Concrete shall be placed in drilled piers utilizing the earth as the forms.
- FOUNDATIONS
 - The drilled piers have been designed utilizing an allowable passive pressure of 300 lbs. per sq. ft. and the following formulae:
 $D = \sqrt{\frac{1452M}{P}}$
 M = Moment at top of drilled pier (ft./lbs.)
 P = Allowable passive pressure (300 lbs. per sq. ft.)
 D = Depth of pier (ft.)
- ALTERNATE #1 (Decorative treatment) Alternate #1 Represents the additional cost factor for treating the basic wood structure indicated on the reference plan. The necessity for treatment and the type of preservative will be subject to local conditions. All treatments shall conform to ANPA Standard C-14.
- ALTERNATE #2 (Painting) Alternate #2 represents the additional cost factor required to paint one side of the basic wood structure shown on this reference plan. Painting shall consist of 3 applications of paint. 2 coats of latex base paint conforming to Federal Specification TT-P-00966 shall be applied over a primer coat conforming to Federal Specification TT-P-00250.
- ALTERNATE #3 (Slapping) Alternate #3 represents the additional cost factor required to stain one side of the basic wood structure. Stain shall consist of 2 coats of semi-transparent sealer stain applied in accordance with manufacturer's written instructions.

CATEGORY	PERIMETER LANDSCAPE EDGE													
	ADJACENT TO ROADWAY	ADJACENT TO PERIMETER FRONTAGES	1A	2C	3N/A	4E	5N/A	6A	7B	8A	9A	10A	11C	12A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	240	564	290	320	160	105	590	750	63	710	840	634		
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 240	YES 564	YES 290	N/A	NO	N/A	NO	NO	NO	NO	YES 260	YES 840	YES 634	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	YES 185	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED														
SHADE TREES							4		7	13	1	8		
EVERGREEN TREES											2			
OTHER TREES (2:1 SUBSTITUTE)							40							
SHRUBS														
NUMBER OF PLANTS PROVIDED														
SHADE TREES									7	63	1	8		
EVERGREEN TREES											3			
OTHER TREES (2:1 SUBSTITUTE)							40							
SHRUBS (10:1 SUBSTITUTE)														
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)														

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	940 LF
NUMBER OF TREES REQUIRED	N/A
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES 100%
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	N/A
NUMBER OF TREES PROVIDED	N/A
SHADE TREES	
EVERGREEN TREES	
OTHER TREES (2:1 SUBSTITUTE)	

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	274
NUMBER OF TREES REQUIRED	*SEE LANDSCAPING NOTE #2

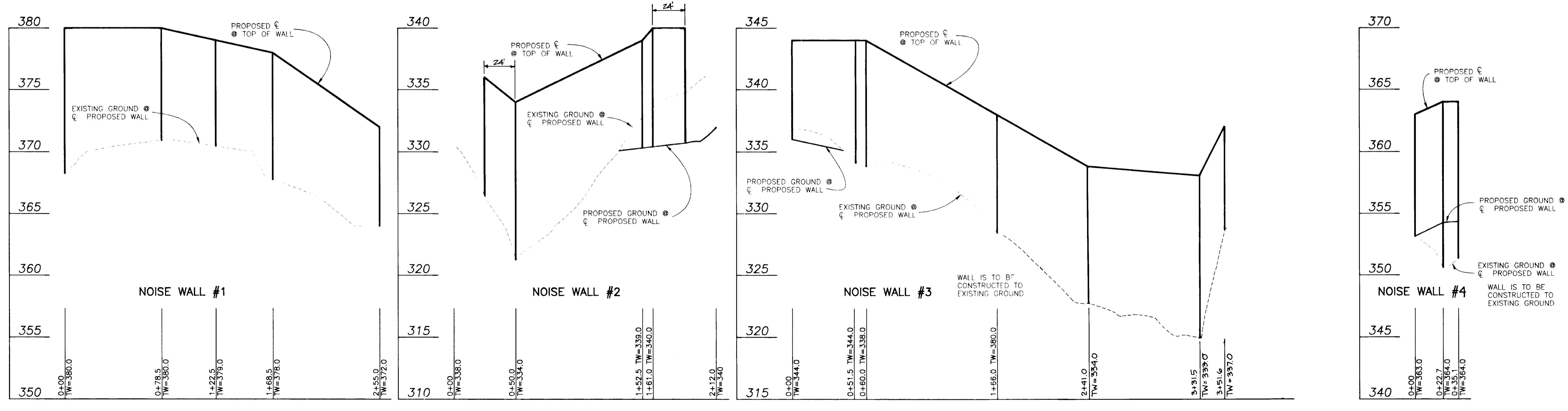
SCHEDULE C RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING	
NUMBER OF DWELLING UNITS	119
NUMBER OF TREES REQUIRED	*SEE LANDSCAPING NOTE #2

PLANTING LIST		
SYMBOL	QUANTITY	REMARKS
(Tree symbol)	AS SHOWN ON PLANS	SPECIMEN TREE
(Circle with dot)	145	ACER SACCHARUM (SUGAR MAPLE) 2 1/2" MIN. CAL. B & B FULL HEAD
(Circle with cross)	15	ACER PLATANOIDES (NORWAY MAPLE) 2 1/2" MIN. CAL. B & B FULL HEAD
(Star symbol)	63	PINUS STROBUS (EASTERN WHITE PINE) 5'-6" HT. UNSHEARED
(Circle with plus)	40	EUONYMUS ALATUS 'COMPACTA' (Dwarf Winged Euonymus) 5'-6" HT. UNSHEARED

LANDSCAPING NOTES

- PERIMETER LANDSCAPING SHALL BE PROVIDED BY THE EXISTING VEGETATION TO REMAIN AND BY THE PLANTINGS AS SHOWN ON THESE PLANS.
- THE BUILDER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL INTERNAL LANDSCAPING TO BE SHOWN ON THE SITE DEVELOPMENT PLAN.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR THE STREET TREES, STORMWATER MANAGEMENT POND PLANTING, AND THE PRESERVATION OF THE PERIMETER VEGETATION AS SHOWN ON THESE PLANS.

NOTE: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPE TREES IN THE AMOUNT OF \$7,500.00 MUST BE POSTED AS PART OF THE DEVELOPER AGREEMENT.



NOISE WALL PROFILES
T=50' H
T=5' V

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 12/9/96
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 12/23/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

[Signature] 12/26/96
 CHIEF, LEVEL OF MEANT ENGINEERING DIVISION

NO.	DATE	REVISION
1	11-24-98	REVISE LENGTH OF NOISE WALL WALLS FOR LOTS 10-14

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105

[Professional Engineer Seal]

OWNER/DEVELOPER: SDC GROUP, INC.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21041
 (410) 465-4244

PROJECT: PAPILLON
 LOTS 1-118

LOCATION: TAX MAP 24 - PARCEL 121
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPE PLAN AND
 NOISE WALL PROFILES & DETAILS
 S-94-08, P-94-22, WP-95-40, ZB-96B, SP-96-08

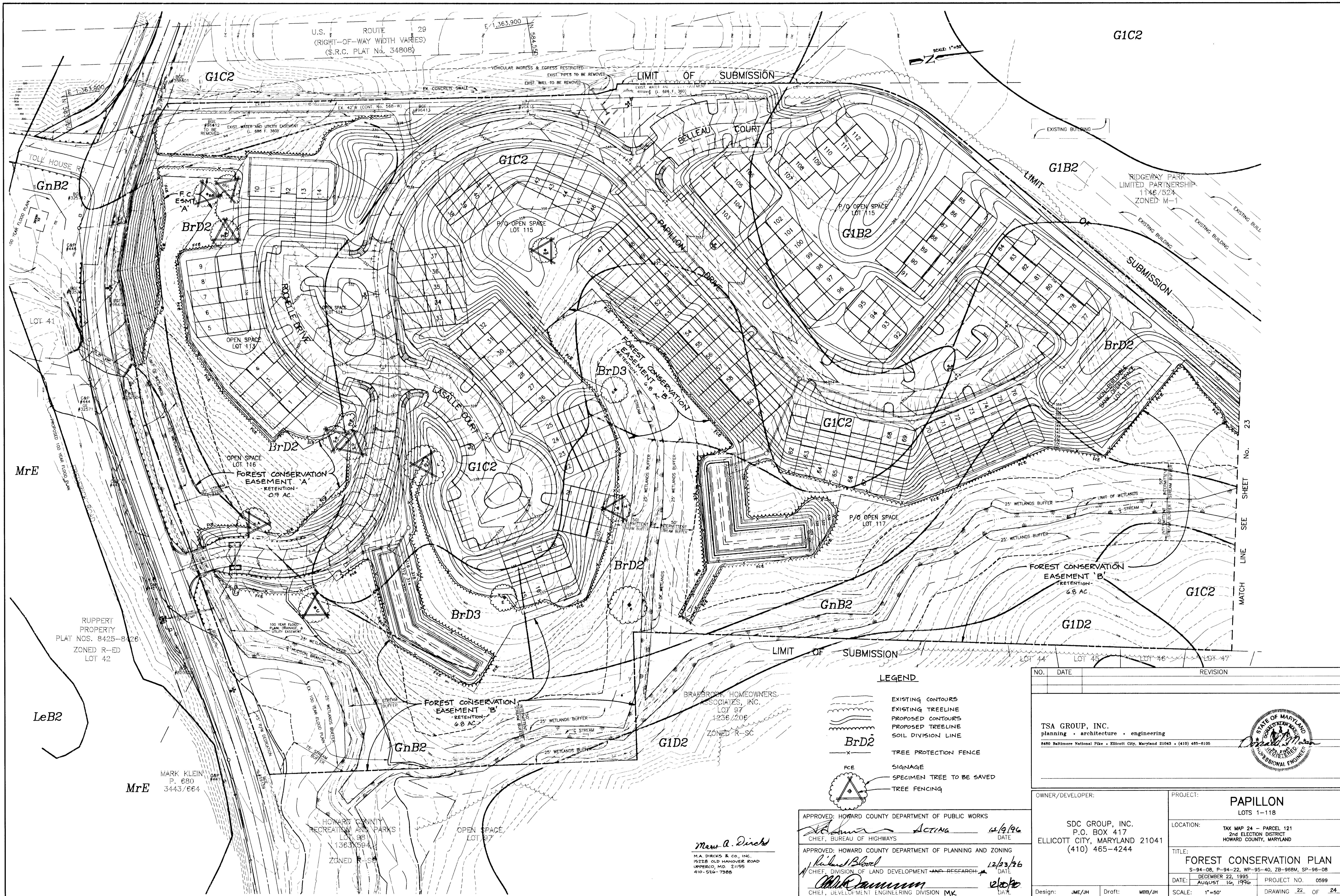
DATE: DECEMBER 22, 1995
 AUGUST 16, 1996

PROJECT NO. 0599
 DRAWING 21 OF 24

Design: JME Draft: MBB SCALE: 1"=50'

1845

18481



U.S. ROUTE 29
 (RIGHT-OF-WAY WIDTH VARIES)
 (S.R.C. PLAT No. 34808)

SCALE: 1"=50'

G1C2

LIMIT OF SUBMISSION

G1B2

RIDGEWAY PARK LIMITED PARTNERSHIP
 1146/524
 ZONED M-1

SUBMISSION

BrD2

SHEET No. 23

G1C2

G1D2

LIMIT OF SUBMISSION

RUPPERT PROPERTY
 PLAT NOS. 8425-8426
 ZONED R-ED
 LOT 42

MARK KLEIN
 P. 680
 MrE 3443/664

HOWARD COUNTY
 RECREATION AND PARKS
 LOT 89
 1363/584
 ZONED R-S

OPEN SPACE
 LOT 97

BRADBROOK HOMEOWNERS
 ASSOCIATES, INC.
 LOT 97
 1236/208
 ZONED R-SC

Mary A. Dircks
 M.A. DIRCKS & CO., INC.
 15228 OLD HANOVER ROAD
 UPPERCO, MD. 21155
 410-526-7888

LEGEND

- EXISTING CONTOURS
- EXISTING TREELINE
- PROPOSED CONTOURS
- PROPOSED TREELINE
- SOIL DIVISION LINE
- TREE PROTECTION FENCE
- SIGNAGE
- SPECIMEN TREE TO BE SAVED
- TREE FENCING

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] ACTING 12/9/96
 CHIEF, BUREAU OF HIGHWAYS DATE

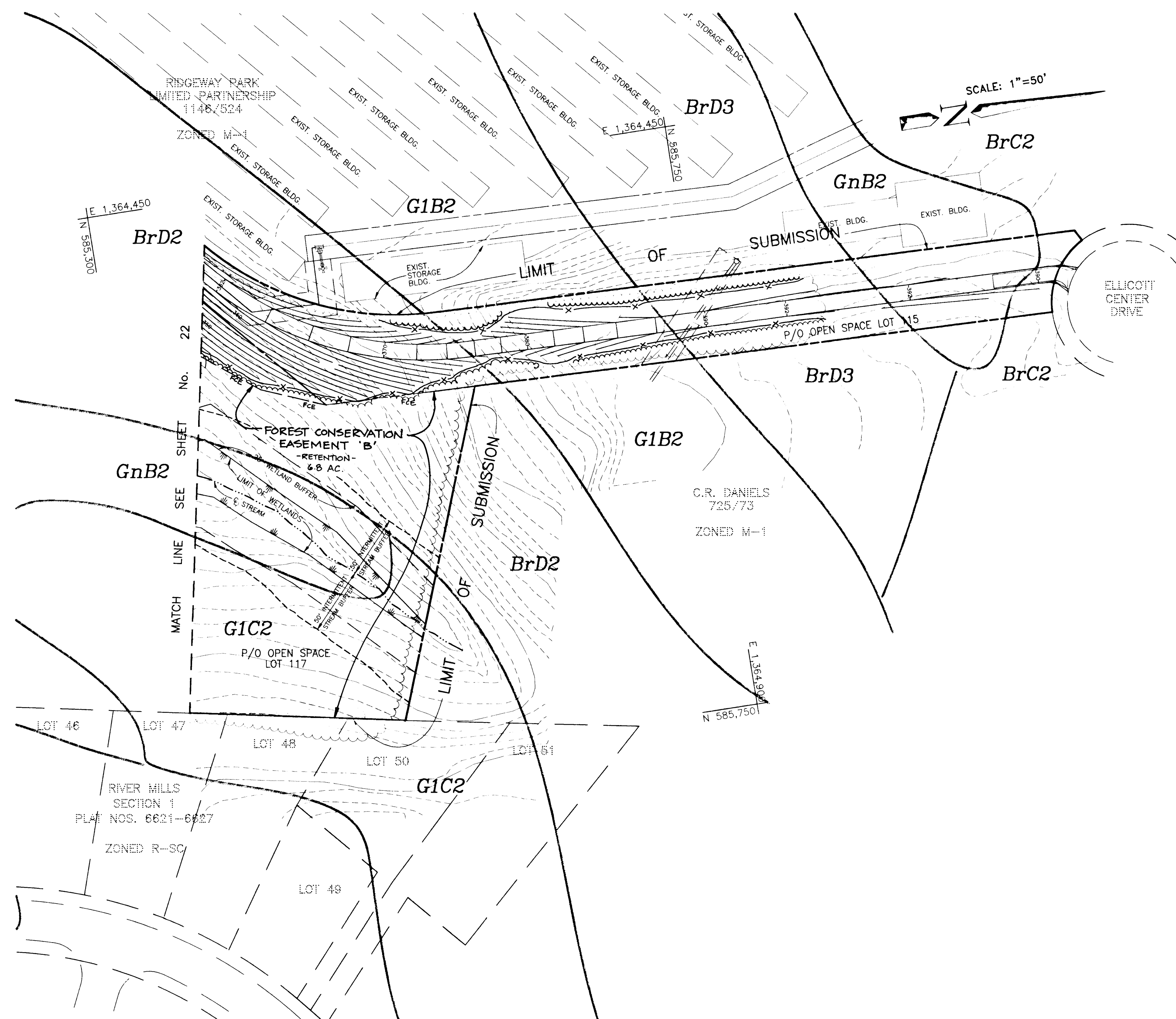
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 12/23/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

[Signature] 12/29/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

NO.	DATE	REVISION
<p>TSA GROUP, INC. planning • architecture • engineering 6450 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105</p>		
OWNER/DEVELOPER:		PROJECT:
SDC GROUP, INC. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 (410) 465-4244		PAPILLON LOTS 1-118
LOCATION:		TITLE:
S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND		FOREST CONSERVATION PLAN
DATE:		PROJECT NO.
DECEMBER 22, 1995 AUGUST 16, 1996		0599
Design: JME/JH	Draft: MBB/JH	SCALE: 1"=50'
DRAWING 22 OF 24		



SOILS LEGEND		
MAP SYMBOL	SOIL TYPE	SOIL CLASSIFICATION
BrC2	C	BRANDYWINE LOAM - 8 TO 15 PERCENT SLOPES - MODERATELY ERODED
BrD2	C	BRANDYWINE LOAM - 15 TO 25 PERCENT SLOPES - MODERATELY ERODED
BrD3	C	BRANDYWINE LOAM - 15 TO 25 PERCENT SLOPES - SEVERELY ERODED
G1B2	B	GLENELG LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
G1C2	B	GLENELG LOAM - 8 TO 15 PERCENT SLOPES - MODERATELY ERODED
G1D2	B	GLENELG LOAM - 15 TO 25 PERCENT SLOPES - MODERATELY ERODED
GnB2	C	GLENVILLE SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
LsB2	B	LENORE SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
MtE	C	MONTALTO AND RELAY SOILS - 15 TO 45 PERCENT SLOPES



Mary A. Dircks
 M.A. DIRCKS & CO., INC.
 15228 OLD HANOVER ROAD
 UPPERCO, MD. 21195
 410-526-7988

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard Deorio 12/9/96
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Richard Blood 12/23/96
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

Chad Dammann 12/20/96
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

NO.	DATE	REVISION

TSA GROUP, INC.
 planning • architecture • engineering
 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-8105

OWNER/DEVELOPER: SDC GROUP, INC.
 P.O. BOX 417
 ELLICOTT CITY, MARYLAND 21041
 (410) 465-4244

PROJECT: PAPHILLON
 LOTS 1-118

LOCATION: TAX MAP 24 - PARCEL 121
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: FOREST CONSERVATION PLAN
 S-94-08, P-94-22, WP-95-40, ZB-968M, SP-96-08

DATE: DECEMBER 22, 1995
 August 16, 1996 PROJECT NO. 0599

Design: JME Draft: WBB SCALE: 1" = 50' DRAWING 23 OF 24

5181

FOREST PROTECTION PROCEDURES - Preconstruction Phase

- The edge of the woods to be protected will be marked (staked or flagged) in the field per the limits of disturbance shown in the approved site development plan prior to the start of construction activity. All areas within protective fences are to be considered "off limits" to any construction activities. The protective fencing shall be installed at the outside edge of forested areas and specimen trees to be retained and should be combined with sediment control devices when possible. The limit of the critical root zone and therefore the location of the protective devices is to be determined as follows:
Edge of Forested Area - 1 foot of protective radius/inch of DBH or an eight foot protective radius, which ever is greater.
- Construction activities expressly prohibited within the preservation areas are:
Placing or stockpiling backfill or top soil in protected areas
Felling trees into protected areas
Driving construction equipment into or through protected areas
Burning in or in close proximity to protected areas
Stacking or storing supplies of any kind
Concrete wash-off areas
Conducting trenching operations
Grading beyond the limits of disturbance
Parking vehicle or construction equipment
Removal of root mat or topsoil
Siting and construction of:
Utility lines
Access roads
Impervious surfaces
Stormwater management devices
Staging areas
- Protective fencing (see Figure "Protective Fencing") shall be the responsibility of the general contractor. The general contractor shall affix signs to the fencing at 25' minimum intervals indicating that these areas are "Forest Retention Area" (see Figure "Signage"). The general contractor shall take great care to ensure the restricted areas are not violated and that root systems are protected from smothering, flooding, excessive wetting from de-watering operations, off-site run-off, spillage, and drainage or solutions containing materials hazardous to tree roots.
- The general contractor shall be responsible for any tree damage or destroyed within the preservation areas whether caused by the contractor, his agents, employees, subcontractors, or licensees.
- Foot traffic shall be kept to a minimum in the protective areas.
- All trees which are not to be preserved within fifty feet of any tree preservation areas are to be removed in a manner that will not damage those trees that are designated for preservation. It is highly recommended that tree stumps within this fifty foot area be ground out with a stump grinding machine to minimize damage.
- The general contractor shall designate a "wash out" area on-site for concrete trucks which will not drain toward a protected area.
- A pre-construction meeting shall be held with local authorities before any disturbance has taken place on site.

FOREST PROTECTION PROCEDURES - Construction Phase

- Forest and tree conditions should be monitored during construction and corrective measures taken when appropriate.
- The following shall be monitored:
- Soil compaction
 - Root injury - prune and monitor; consider crown reduction
 - Limb injury - prune and monitor
 - Flooded conditions - drain and monitor; correct problem
 - Drought conditions - water and monitor; correct problem
 - Other stress signs - determine reason, correct, and monitor.

FOREST PROTECTION PROCEDURES - Post Construction Phase

- The following measures shall be taken:
- Corrective measures if damages were incurred due to negligence:
 - Stress reduction.
 - Removal of dead or dying trees. This may be done only if trees pose an immediate safety hazard.
 - Removal of temporary structures:
 - No burial of discarded materials will occur on-site within the conservation areas.
 - No open burning within 100 feet of a wooded area.
 - All temporary forest protection structures will be removed after construction.
 - Remove temporary roads by removing stone or broadcasting mulch; pre-construction elevation should be maintained.
 - Aerate compacted soil.
 - Replant disturbed sites with trees, shrubs and/or herbaceous plants.
 - Retain signs for retention areas or specimen trees.
 - A county official shall inspect the entire site.
 - Future protection measures:
 - Howard County and the developer shall arrange for the dedication of an appropriate forest conservation easement at a later date.

**APPENDIX G
FOREST CONSERVATION WORKSHEET**

I. BASIC SITE DATA		ACRES (1/10 acre)
GROSS SITE AREA		24.7
AREA WITHIN 100 YEAR FLOODPLAIN		1.0
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)		N/A
NET TRACT AREA		23.7
LAND USE CATEGORY (R-RLD, R-RMD, R-S, C/V/O, I)		R-S
II. INFORMATION FOR CALCULATIONS		ACRES (1/10 acre)
A. NET TRACT AREA		23.7
B. REFORESTATION THRESHOLD (20% x A)		4.7
C. AFFORESTATION MINIMUM (15% x A)		3.6
D. EXISTING FOREST ON NET TRACT AREA		19.5
E. FOREST AREAS TO BE CLEARED		11.6
F. FOREST AREAS TO BE RETAINED		7.7
III. REFORESTATION CALCULATIONS		ACRES (1/10 acre)
A. NET TRACT AREA		23.7
B. REFORESTATION THRESHOLD (20% x A)		4.7
C. EXISTING FOREST ON NET TRACT AREA		19.5
D. FOREST AREAS TO BE CLEARED		11.6
E. FOREST AREAS TO BE RETAINED		7.7
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-F, if F equals or is greater than B, Alternate 1) (D-B, if F is less than B, Alternate 2)		11.6
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (B-F, if applicable)		N/A
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD (F-B, Retention Credit, if applicable)		3.0

Select the alternative that applies:

- Clearing above the threshold only

If forest areas to be retained equal or are greater than the reforestation threshold (if F equals or is greater than B), the following calculations apply:

REFORESTATION FOR CLEARING ABOVE THRESHOLD $G \times 1/4$	3.0
CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD $1 \times$ Retention Credit	3.0
TOTAL REFORESTATION REQUIRED $(G \times 1/4) - 1$	0

If the total reforestation requirement is equal to or less than 0, no reforestation is required.

FOREST PROTECTION PROCEDURES - Preconstruction Phase

Stress Reduction and Protection of Specimen Trees Isolated from Forest Retention Areas and General Forest Retention Areas (As They May Apply)

Isolated specimen trees that are to be preserved will be examined to determine if stress reduction techniques are needed. Protective measures and their evaluation criteria are provided on this plan only if they are employed herein.

Root Pruning

Evaluation Criteria

Will the critical root zone be affected by construction activities such as grade changes, digging for foundations and roots or utility installation?

Design Considerations

- Prune prior to construction as shown on the plan (see Figure "Root Pruning Detail").
- Prune root with a clean cut using proper pruning equipment such as vibratory knife.
- Exact location of pruning trench should be identified, and immediately back-filled to cover exposed roots after pruning material or with other high organic soil.
- For trees over 15" in diameter, root pruning may be done up to one year in advance of construction.
- Tree(s) will be monitored for signs of stress.

Crown Reduction for Pruning

Evaluation Criteria

Has the root system been significantly reduced (>30%) or are there dead, damaged, or diseased limbs?

Design Considerations

- Reduce only at specified times of the year:
Flowering trees - only after flowering and before bud set
Non-flowering trees - in late winter, early spring or mid-summer
- No more than 2/3 of the crown should be removed at one time using acceptable pruning methods (see Figure "Crown Reduction Detail").
- Monitor for signs of stress.

Watering

Evaluation Criteria

Will construction activities alter the hydrology of the site? Has or will root pruning occur?

Design Considerations

- Water only as necessary
- Monitor for signs of stress (see Figure "Tree Planting and Maintenance Calendar")

Fertilizing

Evaluation Criteria

Is or will the tree(s) be under stressful conditions? Will root pruning occur?

Design Considerations

- Use low nitrogen and slow release fertilizers
- Apply in late fall or early spring (see Figure "Tree Planting and Maintenance Calendar")
- For small trees (<3" in diameter), use broadcast method.
- For larger trees (>3" in diameter), use punch hole method or pressurized injection method (see Figure "Application of Fertilizers by Injection").
- Do not apply fertilizer any closer than 3' from trunk for pressurized injection method.
- Monitor for signs of stress.

Delineation of the Critical Root Zone

Calculation of the CRZ for isolated Specimen Trees:

1.5 feet of protective radius per inch of DBH

Calculation of the CRZ for trees in the forest interior:

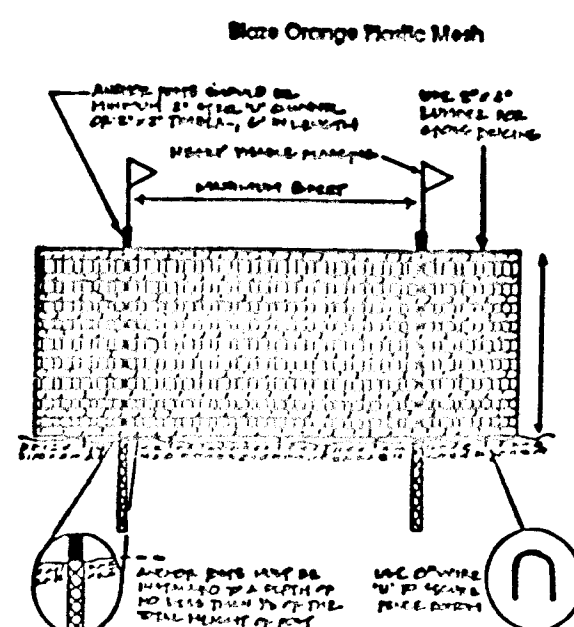
1 foot of protective radius per inch of DBH

Radii for the respective trees found on the site are set forth in the table above.

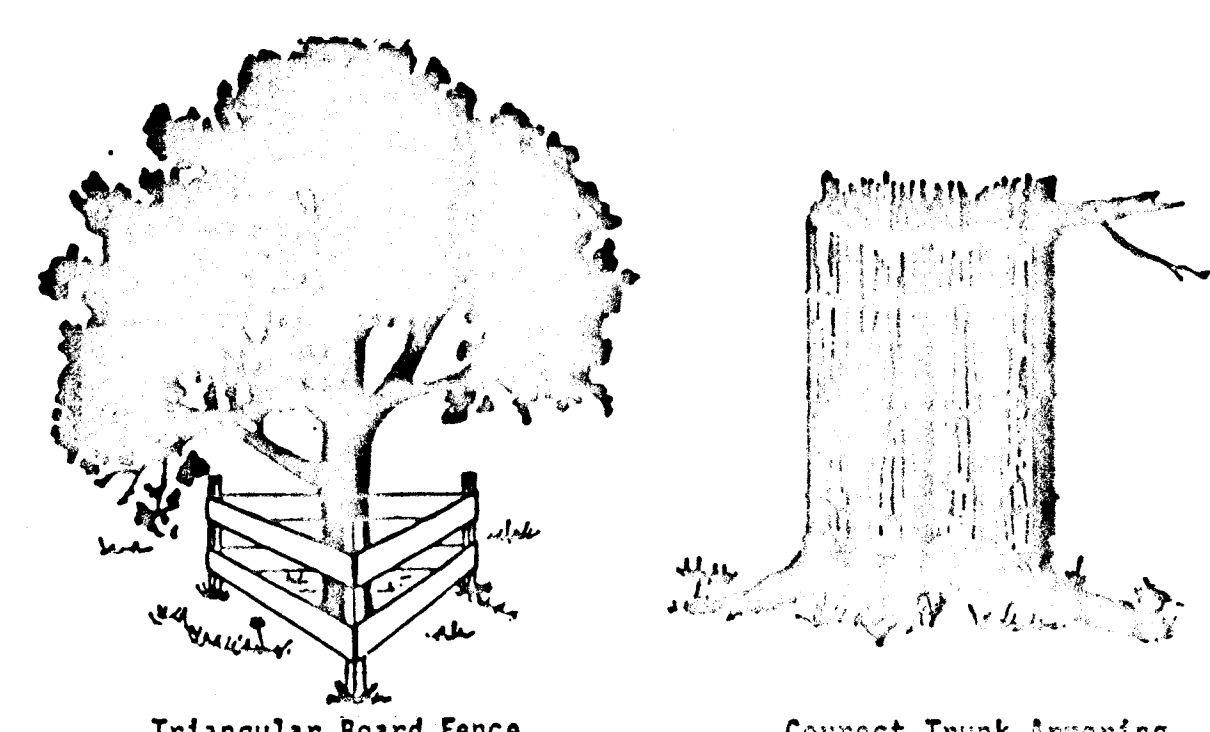
Protection of the Critical Root Zone

Upon determining the CRZ, bi-oz orange protective fencing (see Figure "Protective Fencing") shall be erected one foot from the limits of the CRZ so as to completely surround the tree or trees to be protected. No disturbance, storage, parking, or alteration of drainage of any kind shall be permitted within the CRZ Protective Area except prior allowable root pruning. Signs designating a specimen tree protective area shall be placed atop the protective fencing at a minimum interval of 25 feet (see Figure "Signage"). No signs are to be attached to the specimen tree itself.

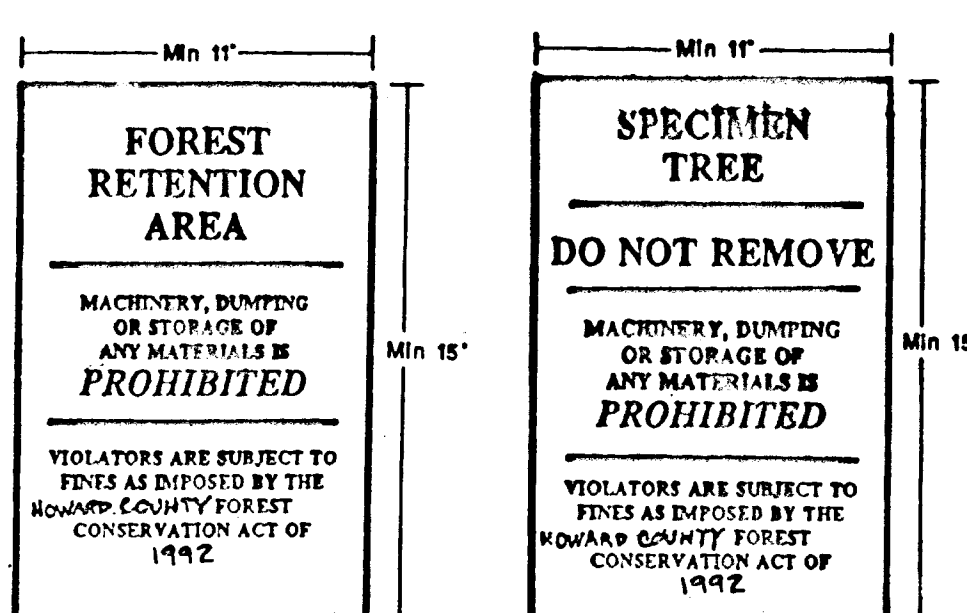
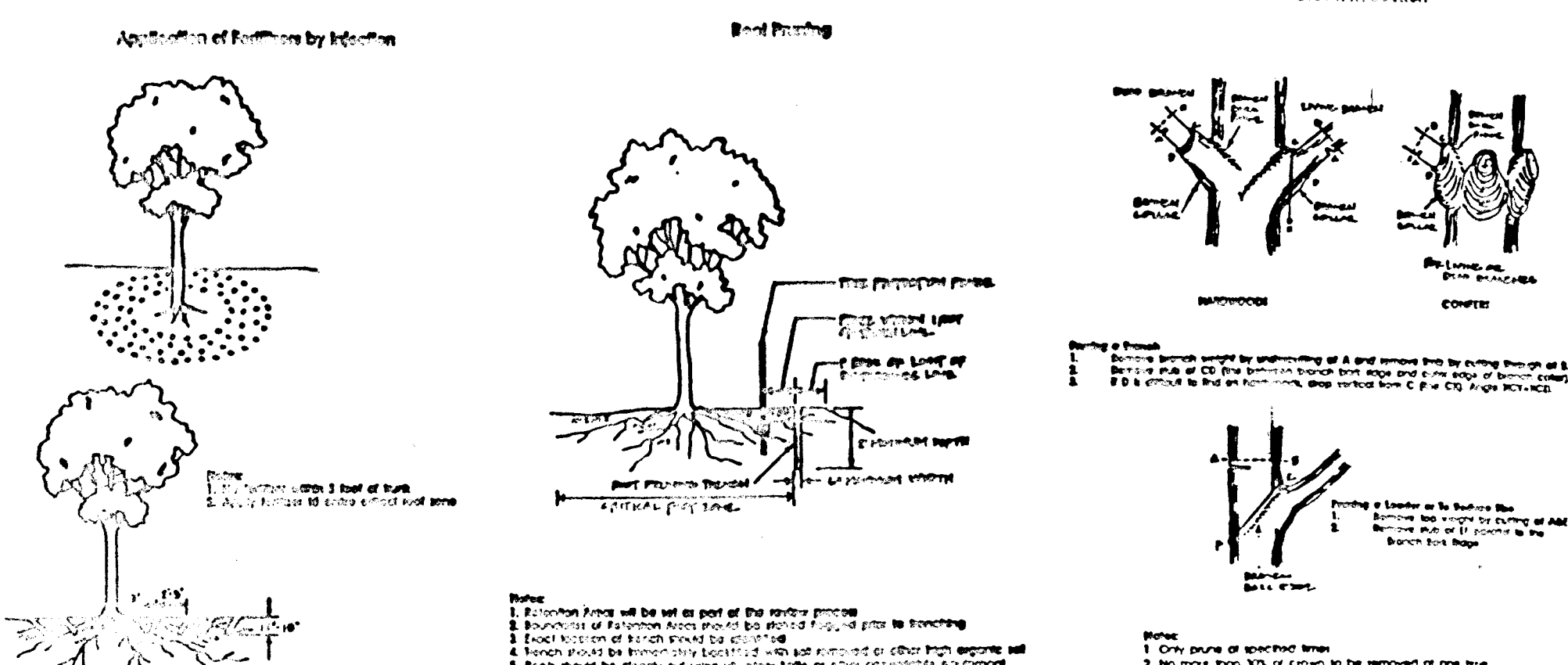
SPECIMEN TREE LEGEND					
TREE	SIZE	TYPE	TREE	SIZE	TYPE
A	42"	WHITE OAK	N	31"	AM BEECH
C	37"	GREEN ASH	U	35"	POPLAR
E	36"	HICKORY	BB	31"	WHITE OAK
F	46"	AM BEECH	CC	30"	AM BEECH
H	34"	POPLAR	DD	35"	AM BEECH
L	50"	AM BEECH	NN	50"	SUGAR MAPLE
N	37"	WHITE OAK			



PROTECTIVE FENCING



FENCING AND ARMORING



SIGNAGE

Mary A. Dircks
M.A. Dircks & Co., Inc.
15228 Old Hanover Road
Upperco, MD 21155
410-526-7388

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>[Signature]</i> Active CHIEF, BUREAU OF HIGHWAYS DATE: 12/19/96
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING <i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE: 12/23/96
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE: 12/20/96

NO.	DATE	REVISION
TSA GROUP, INC. planning • architecture • engineering 8480 Baltimore National Pike • Elliott City, Maryland 21045 • (410) 465-8100 <i>[Signature]</i>		
OWNER/DEVELOPER:	PROJECT: PAPILLON LOTS 1-118	
SDC GROUP, INC. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 (410) 465-4244	LOCATION:	TAX MAP 24 - PARCEL 121 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: FOREST CONSERVATION DETAILS AND NOTES		
DATE: DECEMBER 22, 1995 AUGUST 16, 1996	PROJECT NO. 0595	SCALE: NONE
Design: JME	Draft: DBT	DRAWING 24 OF 24

1845