CENTERLINE CONTROL DATA			
ROAD	STATION	NORTH	EAST
DONCASTER DRIVE	LIMIT PAV. 15+14.37	514435.6612	859927.8571
	L.O.S. P.C. 15+50.00	514448.1841	859961.2139
	P.T. 16+67.08	514498.2902	860066.8847
	P.C. 19+34.25	514632.5234	860297.8043
	P.T. 21+42.09	514686.6664	860496.1269
	P.C. 23+22.15	514687.8947	860676.1865
	P.T. 24+95.67	514674.0567	860848.9304
	LIMIT 30+82.60	514576.6712	861427.7282
CHEWS VINEYARD	0+00	514608.7435	860256.9618
	P.C. 1+25.00	514716.8208	860194.1583
	P.T. 3+01.87	514884.1356	860141.4244
	P.C. 4+03.42	514985.3266	860132.8798
	P.T. 5+81.22	515153.4511	860079.6741
	LIMIT 13+12.81	515785.1325	859710.8233
SAMMUAL COURT	0+00	514854.2799	860145.0804
	P.C. 2+15.00	514820.1421	859932.8079
	P.T. 3+41.26	514770.1228	859818.3402
WORTHINGTON MANOR WAY	0+00	515436.9934	859914.0185
	P.C. 2+90.00	515290.7023	859663.6210
	P.T. 6+23.79	515027.7587	859473.9879
TULIP WAY	0+00	515436.9934	859914.0185
	P.C. 2+19.52	515547.7331	860103.5647
	P.T. 3+50.42	515548.3767	860228.5631
	END 4+50.42	515498.8233	860315.4219

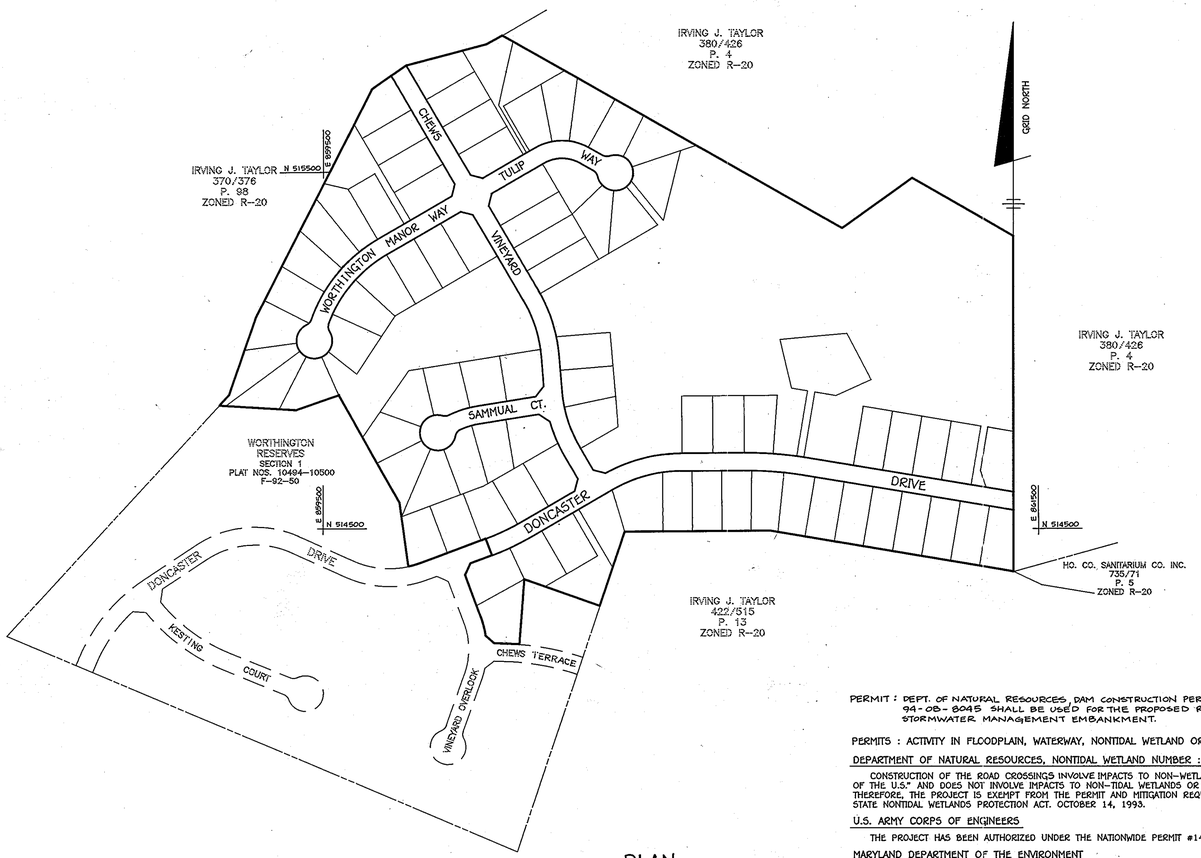
ROADWAYS, STORM DRAINAGE AND STORM WATER MANAGEMENT

WORTHINGTON RESERVE

SECTION TWO

2nd ELECTION DISTRICT

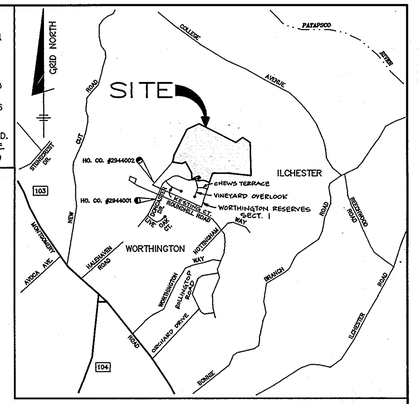
HOWARD COUNTY, MARYLAND



PLAN

SCALE : 1" = 200'

BENCH MARKS (NAD 27)	
HO. CO. #2944001	ELEV. 528.211
CONC. MONUMENT AT SURFACE, ON THE EAST SIDE OF DONCASTER DRIVE SOUTH OF ROUNDHILL ROAD,	
N 513669.929	E 858664.268
HO. CO. #2944002	ELEV. 535.366
CONC. MONUMENT 0.1' ABOVE SURFACE, NEAR NE COR. OF LOT, HOUSE #4587 ROUNDHILL RD. 220' ± NORTH OF ROUNDHILL RD. CENTERLINE.	
N 514196.358	E 858596.389



VICINITY MAP

SCALE : 1"=2000'

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 31 - PARCEL 3
   ZONING : R-20
   SECTION 2
   TOTAL TRACT AREA : 77.39 AC.
   SECTION AREA : 52.97 AC.
   NUMBER OF PROPOSED LOTS : 87
   DATE PRELIMINARY PLAN APPROVED : 10/26/93
   DPZ REFERENCE # : P-93-09
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., 9/92. CONTOUR INTERVAL IS 2 FEET.
7. HOWARD COUNTY MONUMENTS 2944001 AND 2944002 USED FOR HORIZONTAL AND VERTICAL DATUM. NAD 27 DATUM USED TO REMAIN CONSISTENT WITH SECTION 1 (PLAT NOS. 10494-10500).
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 14-3358-D.
12. STORMWATER MANAGEMENT FOR THIS SUBDIVISION IS PROVIDED BY (1) A DETENTION FACILITY (CLASS 'D' STRUCTURE) WITH UPLAND WATER QUALITY INFILTRATION FACILITY AND (2) AN EXTENDED DETENTION FACILITY/SHALLOW MARSH FOR QUANTITY AND QUALITY CONTROL. (CLASS 'A' STRUCTURE) ALL STORMWATER MANAGEMENT FACILITIES ARE TO BE PUBLICLY MAINTAINED.
13. FLOODPLAIN STUDY COMPILED BY TSA GROUP, INC., 9/92. APPROVED 10/26/93.
14. WETLANDS DELINEATION COMPILED BY M.A. DIRCKS & CO., INC., 9/92. APPROVED 10/26/93.
15. TRAFFIC STUDY COMPILED BY LEE CUNNINGHAM & ASSOC., 10/93, AT THE REQUEST OF THE DEPT. OF PUBLIC WORKS.
16. NOISE STUDY NOT REQUIRED FOR THIS PROJECT.
17. GEOTECHNICAL REPORT COMPILED BY ATEC ASSOC., INC., 10/92. APPROVED 10/26/93.
18. EXISTING UTILITIES WERE LOCATED BY RECORD DRAWINGS AND FIELD RUN SURVEY BY TSA GROUP, INC., 9/92.
19. UNLESS NOTED AS "PRIVATE" ALL EASEMENTS ARE PUBLIC.
20. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLANDS, STREAM BUFFERS OR FOREST CONSERVATION AREAS EXCEPT FOR THE WORK ASSOCIATED WITH THE DONCASTER DRIVE AND CHEWS VINEYARD ROAD CROSSINGS AND STORMWATER MANAGEMENT FACILITIES AS REPRESENTED ON THESE PLANS.
21. A LETTER OF PERMISSION FOR THE OFFSITE GRADING ASSOCIATED WITH THE TEE-TURNAROUND CONSTRUCTION HAS BEEN OBTAINED.
22. THE DEPT. OF PUBLIC WORKS, BUREAU OF ENGINEERING HAS WAIVED THE MAXIMUM LENGTH ALLOWED FOR A TEMPORARY NON-THROUGH STREET AND THE REQUIREMENT FOR A SECOND ACCESS AS SPECIFIED IN SECTION 1.5.1, "TEMPORARY NON-THROUGH STREET", OF THE HOWARD COUNTY DESIGN MANUAL, VOLUME III-ROADS AND BRIDGES.
23. ON DECEMBER 8, 1993, THE PLANNING DIRECTOR APPROVED WP-94-01, THE REQUEST TO WAIVE SECTION 16.144 FOR SUBMISSION OF SKETCH AND PRELIMINARY PLANS, 16.145 FOR SKETCH PLAN REQUIREMENTS AND 16.146 FOR PRELIMINARY PLAN REQUIREMENTS FOR THREE (3) LOTS IN ADDITION TO THE 128 LOTS APPROVED FOR THE DEVELOPMENT UNDER SKETCH PLAN S-89-50 FOR A TOTAL OF 131 BUILDABLE LOTS ALLOWED.
24. *THERE IS NO HOMEOWNERS ASSOCIATION FOR THIS DEVELOPMENT AND ALL MAINTENANCE OF THE STORMWATER MANAGEMENT AND DRAINAGE FACILITIES SHALL BE THE RESPONSIBILITY OF HOWARD COUNTY.*
25. ALL STATE AND FEDERAL PERMITS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF APPLICABLE CONSTRUCTION.

SHEET INDEX	
No.	DESCRIPTION
1	TITLE SHEET
2	ROAD PLAN
3	ROAD PLAN
4	ROAD PLAN
5	ROAD PROFILES
6	ROAD PROFILES
7	ROAD PROFILES AND DETAILS
8	DRAINAGE AREA MAP
9	STORM DRAIN PROFILES
10	STORM DRAIN PROFILES AND DETAILS
11	GRADING PLAN
12	GRADING PLAN
13	GRADING PLAN
14	STORMWATER MANAGEMENT DETAILS
15	STORMWATER MANAGEMENT DETAILS
16	SEDIMENT CONTROL PLAN
17	SEDIMENT CONTROL PLAN
18	SEDIMENT CONTROL PLAN
19	SWM NOTES, SED. CONTROL NOTES AND DET.
20	SEDIMENT CONTROL DETAILS
21	LANDSCAPE PLAN

PERMIT : DEPT. OF NATURAL RESOURCES, DAM CONSTRUCTION PERMIT NUMBER 94-08-8045 SHALL BE USED FOR THE PROPOSED ROAD/STORMWATER MANAGEMENT EMBANKMENT.

PERMITS : ACTIVITY IN FLOODPLAIN, WATERWAY, NONTIDAL WETLAND OR BUFFER

DEPARTMENT OF NATURAL RESOURCES, NONTIDAL WETLAND NUMBER : 93-NT-1019

CONSTRUCTION OF THE ROAD CROSSINGS INVOLVE IMPACTS TO NON-WETLAND "WATERS OF THE U.S." AND DOES NOT INVOLVE IMPACTS TO NON-TIDAL WETLANDS OR THE REGULATIONS; THEREFORE, THE PROJECT IS EXEMPT FROM THE PERMIT AND MITIGATION REQUIREMENTS OF THE STATE NONTIDAL WETLANDS PROTECTION ACT. OCTOBER 14, 1993.

U.S. ARMY CORPS OF ENGINEERS

THE PROJECT HAS BEEN AUTHORIZED UNDER THE NATIONWIDE PERMIT #14. OCTOBER 14, 1993.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

WATER QUALITY CERTIFICATION #93-WQ-0317 ISSUED FOR THIS PROJECT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/13/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/12/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT:
WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION:
TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
TITLE SHEET
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994
JULY 27, 1994

PROJECT NO. 0482

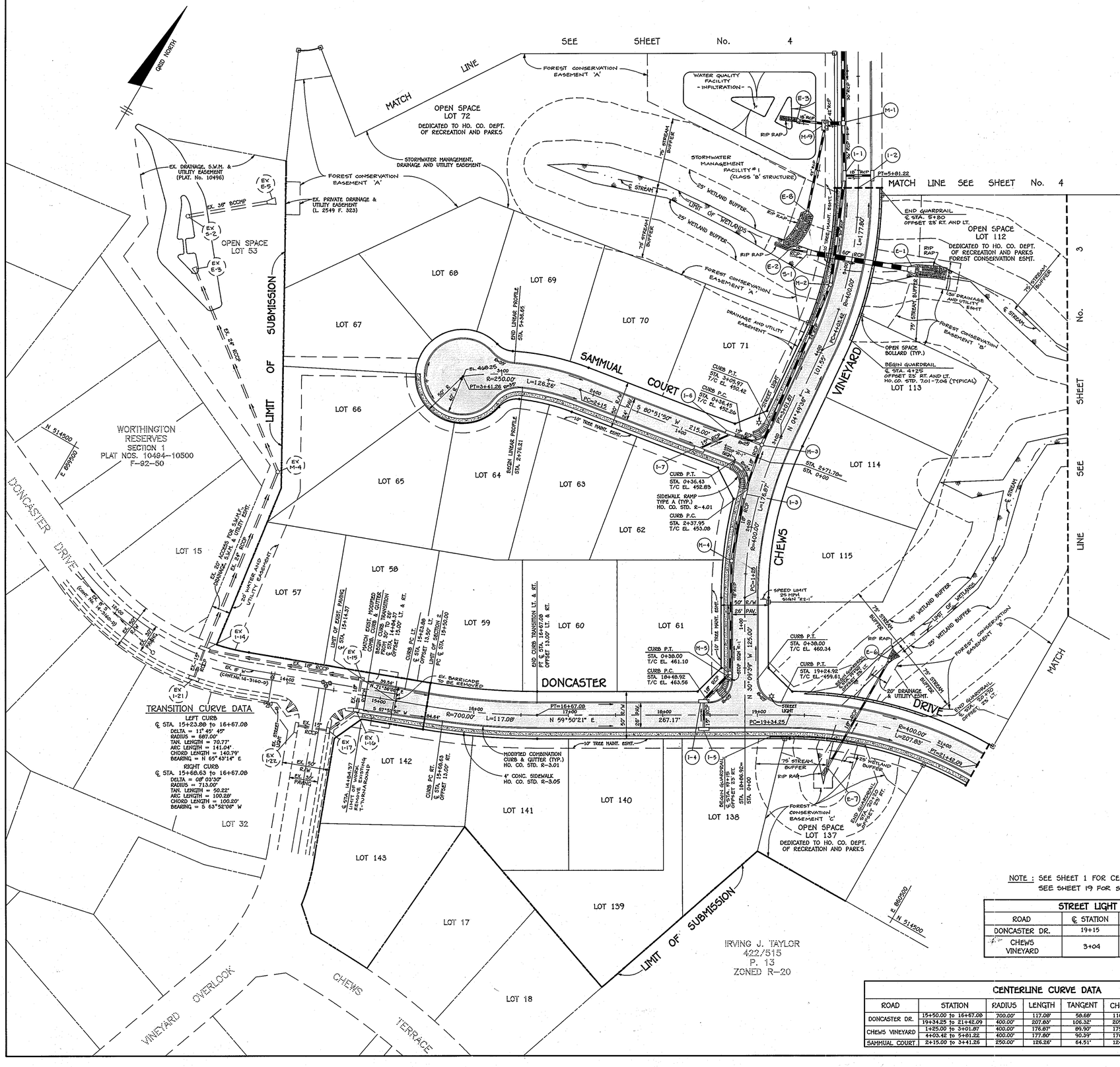
DES: JME/DRK DRN: DRK/DBT

SCALE: AS SHOWN

DRAWING 1 OF 21

1638

F-94-102



STRUCTURE SCHEDULE						
No.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.
I-1	A-10	13.43' LT. STA. 5+94.24 CHEWS VINEYARD	440.47	440.27	445.52	SD 4.02
I-2	A-10	13.43' RT. STA. 5+94.24 CHEWS VINEYARD	---	441.02	445.52	SD 4.02
I-3	A-10	13.43' LT. STA. 2+32.62 CHEWS VINEYARD	447.82	447.62	453.62	SD 4.02
I-4	A-10	13.43' LT. STA. 18+43.42 DONCASTER DRIVE	458.40	458.20	464.20	SD 4.02
I-5	A-10 W/DEFLECTORS	13.43' RT. STA. 18+43.42 DONCASTER DRIVE	---	458.70	464.20	SD 4.02 & SD 4.83
I-6	A-10	12.43' RT. STA. 0+50 SAMMUAL COURT	447.27	447.07	453.16	SD 4.02
I-7	A-10 W/DEFLECTORS	12.43' LT. STA. 0+75 SAMMUAL COURT	---	448.20	454.63	SD 4.01 & SD 4.83
I-8	A-10	13.43' LT. STA. 9+53.11 CHEWS VINEYARD	443.90	443.70	448.70	SD 4.02
I-9	A-10	13.43' RT. STA. 9+53.11 CHEWS VINEYARD	---	444.20	448.70	SD 4.02
I-10	A-10	13.43' LT. STA. 11+12.63 CHEWS VINEYARD	---	447.72	452.72	SD 4.02
I-11	A-10	13.43' LT. STA. 0+50 WORTHINGTON MANOR WAY	443.82	443.62	449.88	SD 4.02
I-12	A-10 W/DEFLECTORS	13.43' RT. STA. 0+75 WORTHINGTON MANOR WAY	---	444.62	450.88	SD 4.02 & SD 4.83
I-13	A-10	12.43' RT. STA. 0+50 TULIP WAY	444.83	444.63	449.63	SD 4.02
I-14	A-10 W/DEFLECTORS	12.43' LT. STA. 0+75 TULIP WAY	---	445.63	450.63	SD 4.02 & SD 4.83
I-15	A-10	13.43' LT. STA. 29+66.67 DONCASTER DRIVE	421.39	421.19	428.19	SD 4.02
I-16	A-10	13.43' RT. STA. 29+66.67 DONCASTER DRIVE	---	421.69	428.19	SD 4.02
I-17	A-10	13.43' LT. STA. 25+24.61 DONCASTER DRIVE	442.45	442.25	448.25	SD 4.02
I-18	A-10	13.43' RT. STA. 25+24.61 DONCASTER DRIVE	442.95	442.75	448.25	SD 4.02
I-19	A-10	13.43' RT. STA. 22+57.63 DONCASTER DRIVE	---	449.07	454.57	SD 4.02
M-1	MANHOLE	15.95' LT. STA. 6+50 CHEWS VINEYARD	439.86	439.66	445.54	G 5.03
M-2	MANHOLE	15.95' LT. STA. 4+73.01 CHEWS VINEYARD	441.60	441.40	446.28	G 5.11
M-3	MANHOLE	15.00' LT. STA. 2+85.64 CHEWS VINEYARD	445.63	445.43	451.43	G 5.12
M-4	MANHOLE	15.95' LT. STA. 1+82.70 CHEWS VINEYARD	450.56	450.36	456.24	G 5.12
M-5	MANHOLE	15.95' LT. STA. 0+45 CHEWS VINEYARD	455.27	455.07	460.95	G 5.12
M-6	MANHOLE	17.22' LT. STA. 8+93.36 CHEWS VINEYARD	442.87	442.67	447.67	G 5.11
M-7	MANHOLE	N 514810.59 E 861349.53	401.70	401.50	408.20	G 5.12
M-8	MANHOLE	15.00' LT. STA. 27+90.80 DONCASTER DRIVE	423.58	423.38	431.88	G 5.12
E-1	60" CONC. END SECT.	59.97' RT. STA. 5+05.82 CHEWS VINEYARD	---	423.50	---	SD 5.51
E-2	15" TYPE 'C' ENDWALL	67.01' LT. STA. 5+03.23 CHEWS VINEYARD	430.88	---	---	SD 5.21
E-3	18" CONC. END SECT.	58.00' LT. STA. 6+54.00 CHEWS VINEYARD	---	440.50	---	SD 5.51
E-4	24" CONC. END SECT.	N 514840.68 E 861338.63	---	400.21	---	SD 5.51
E-5	24" CONC. END SECT.	N 514956.31 E 861301.02	---	398.25	---	SD 5.51
E-6	18" CONC. END SECT.	68.35' LT. STA. 20+24.16 DONCASTER DRIVE	---	433.50	---	SD 5.51
E-7	18" CONC. END SECT.	52.00' RT. STA. 19+80.92 DONCASTER DRIVE	444.50	---	---	SD 5.51
S-1	SWM CONTROL STRUCT.	46.01' LT. STA. 5+03.78 CHEWS VINEYARD	430.88	429.50	444.50	SEE SHT.14 FOR DET.
S-2	SWM CONTROL STRUCT.	N 514909.30 E 861318.04	398.75	398.50	408.00	SEE SHT.15 FOR DET.
M-9	MANHOLE	35.00' LT. STA. 6+50.00 CHEWS VINEYARD	439.53	44 (.50 @ 8") 438.33 (24")	446.20	G 5.03
E-8	42" CONC. END SECT.	53.00' LT. STA. 5+48.98 CHEWS VINEYARD	---	432.50	---	SD 5.51

UNLESS OTHERWISE NOTED:

1. ALL STORM DRAIN PIPE SHALL BE CLASS 4 REINFORCED CONCRETE.
2. ALL STORM DRAIN BEDDING BACKFILL & COMPACTION SHALL BE BASED ON AASHTO T-180.
3. TOP OF CURB ELEVATIONS GIVEN FOR ON GRADE INLETS ARE @ CENTER OF INLET.

NOTE:
MANHOLE M-9 IS A DIVERSION STRUCTURE FOR THE PURPOSE OF DIVERTING THE FIRST FLUSH (WATER QUALITY VOLUME) TO THE WATER QUALITY FACILITY.

STORM DRAIN PIPE SCHEDULE			
FROM	TO	DIA. (IN.)	LENGTH
I-5	I-4	15	28
I-4	M-5	18	38
M-5	M-4	18	116
M-4	I-3	18	66
I-3	M-3	18	48
M-3	I-6	15	29
I-6	I-7	15	36
*M-3	M-2	24	181
*M-2	I-1	30	110
E-7	E-6	18	128
E-2	S-1	15	19
*S-1	E-1	60	104

NOTE: ALL LENGTHS ARE ROUNDED UP TO NEAREST FOOT.

* ASTM C-361 (C-25)

NOTE : SEE SHEET 1 FOR CENTERLINE CONTROL DATA.
SEE SHEET 19 FOR SEQUENCE OF CONSTRUCTION.

STREET LIGHT LEGEND			
ROAD	℄ STATION	OFFSET	TYPE
DONCASTER DR.	19+15	20' LEFT	100 WATT HP SODIUM VAPOR TRADITIONAIRE POST TOP FIXTURE MOUNTED ON 14' BLACK FIBERGLASS EMBEDDED POLE
CHEWS VINEYARD	3+04	26' LEFT	

CENTERLINE CURVE DATA							
ROAD	STATION	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
DONCASTER DR.	15+50.00 to 16+67.08	700.00'	117.08'	58.68'	116.95'	N 64°37'52" E	09°35'01"
	19+34.25 to 21+42.09	400.00'	207.83'	106.32'	205.50'	N 74°43'27" E	29°46'12"
CHEWS VINEYARD	1+25.00 to 3+01.87	400.00'	176.87'	89.90'	175.43'	N 17°29'57" W	25°20'05"
	4+03.42 to 5+81.22	400.00'	177.80'	90.39'	176.34'	N 17°33'39" W	25°28'08"
SAMMUAL COURT	2+15.00 to 3+41.26	250.00'	126.26'	64.51'	124.92'	S 66°23'45" W	28°56'09"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/13/94
CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94
CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PLAN
5-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482
DES: JME/DRK — DRN: DRK/DBT — SCALE: 1" = 50' — DRAWING 2 OF 21

1638

F-94-102

STORM DRAIN PIPE SCHEDULE

FROM	TO	DIA. (IN.)	LENGTH
I-19	I-18	15	254
I-18	I-17	18	28
I-17	M-8	18	259
M-8	I-15	18	170
I-15	I-16	18	28
I-15	M-7	24	200
*M-7	E-4	24	30
*S-2	E-5	24	48

* ASTM C-361 (B-25)

NOTE: ALL LENGTHS ARE ROUNDED UP TO NEAREST FOOT.
UNLESS OTHERWISE NOTED, ALL STORM DRAINS ARE CLASS IV REINFORCED CONCRETE PIPE.

NOTE : SEE SHEET 1 FOR CENTERLINE CONTROL DATA.

STREET LIGHT LEGEND

ROAD	℄ STATION	OFFSET	TYPE
DONCASTER DRIVE	24+00	18' LEFT	100 WATT HP SODIUM VAPOR TRADITIONAIRE POST TOP FIXTURE MOUNTED ON 14' BLACK FIBERGLASS EMBEDDED POLE
	29+57	20' LEFT	

CENTERLINE CURVE DATA

ROAD	STATION	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
DONCASTER DR.	23+22.15 to 24+95.67	1000.00'	173.51'	86.98'	173.30'	S 85°25'12" E	09°56'30"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/19/94
CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94
CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PLAN
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

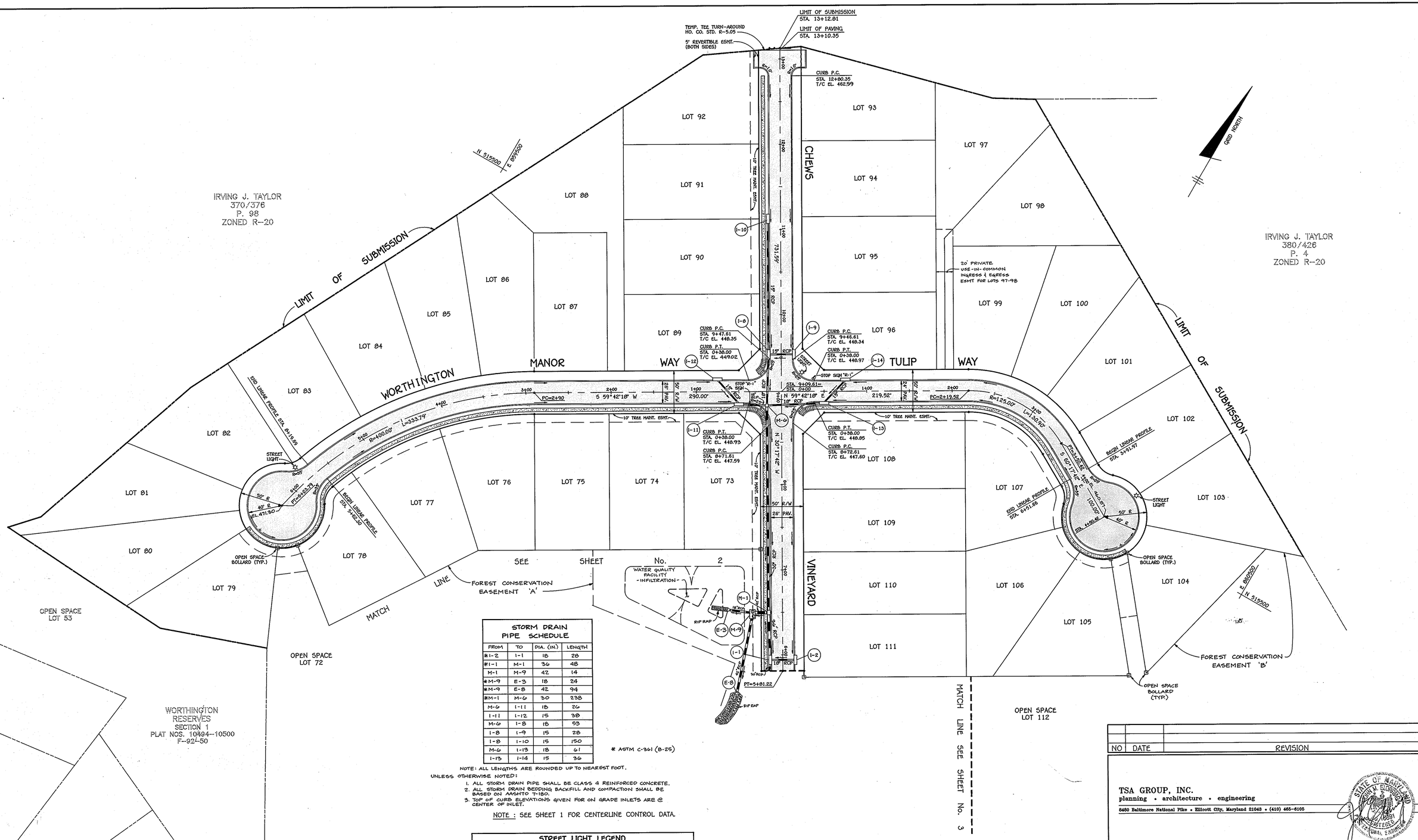
DATE: APRIL 5, 1994
JULY 27, 1994

PROJECT NO. 0482

DES: JME/DRK DRN: DRK/DBT SCALE: 1" = 50' DRAWING 3 OF 21

F-94-102

1638



STORM DRAIN PIPE SCHEDULE			
FROM	TO	DIA. (IN.)	LENGTH
*I-2	I-1	18	28
*I-1	M-1	36	48
M-1	M-9	42	14
*M-9	E-3	18	24
*M-9	E-8	42	94
*M-1	M-6	30	238
M-6	I-11	18	26
I-11	I-12	15	38
M-6	I-8	18	53
I-8	I-9	15	28
I-8	I-10	15	150
M-6	I-13	18	61
I-13	I-14	15	36

* ASTM C-361 (B-25)

NOTE: ALL LENGTHS ARE ROUNDED UP TO NEAREST FOOT.

UNLESS OTHERWISE NOTED:
1. ALL STORM DRAIN PIPE SHALL BE CLASS 4 REINFORCED CONCRETE.
2. ALL STORM DRAIN BEDDING BACKFILL AND COMPACTION SHALL BE BASED ON AASHTO T-180.
3. TOP OF CURB ELEVATIONS GIVEN FOR ON GRADE INLETS ARE @ CENTER OF INLET.

NOTE : SEE SHEET 1 FOR CENTERLINE CONTROL DATA.

STREET LIGHT LEGEND			
ROAD	℄ STATION	OFFSET	TYPE
CHEWS VINEYARD	9+32	24' RIGHT	100 WATT HP SODIUM VAPOR TRADITIONAIRE POST TOP FIXTURE MOUNTED ON 14' BLACK FIBERGLASS EMBEDDED POLE
WORTHINGTON MANOR WAY	5+82	21' RIGHT	
TULIP WAY	4+48	45' LEFT	

CENTERLINE CURVE DATA							
ROAD	STATION	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
WORTHINGTON MANOR WAY	2+90.00 to 6+23.79	400.00'	333.79'	177.31'	324.19'	S 35°47'56" W	47°48'44"
TULIP WAY	2+19.52 to 3+50.42	125.00'	130.90'	72.17'	125.00'	N 89°42'18" E	60°00'00"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/4/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/10/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

NO	DATE	REVISION

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

STATE OF MARYLAND — JOHN W. ELDRIDGE — 10824 — REGISTERED PROFESSIONAL ENGINEER

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

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PLAN

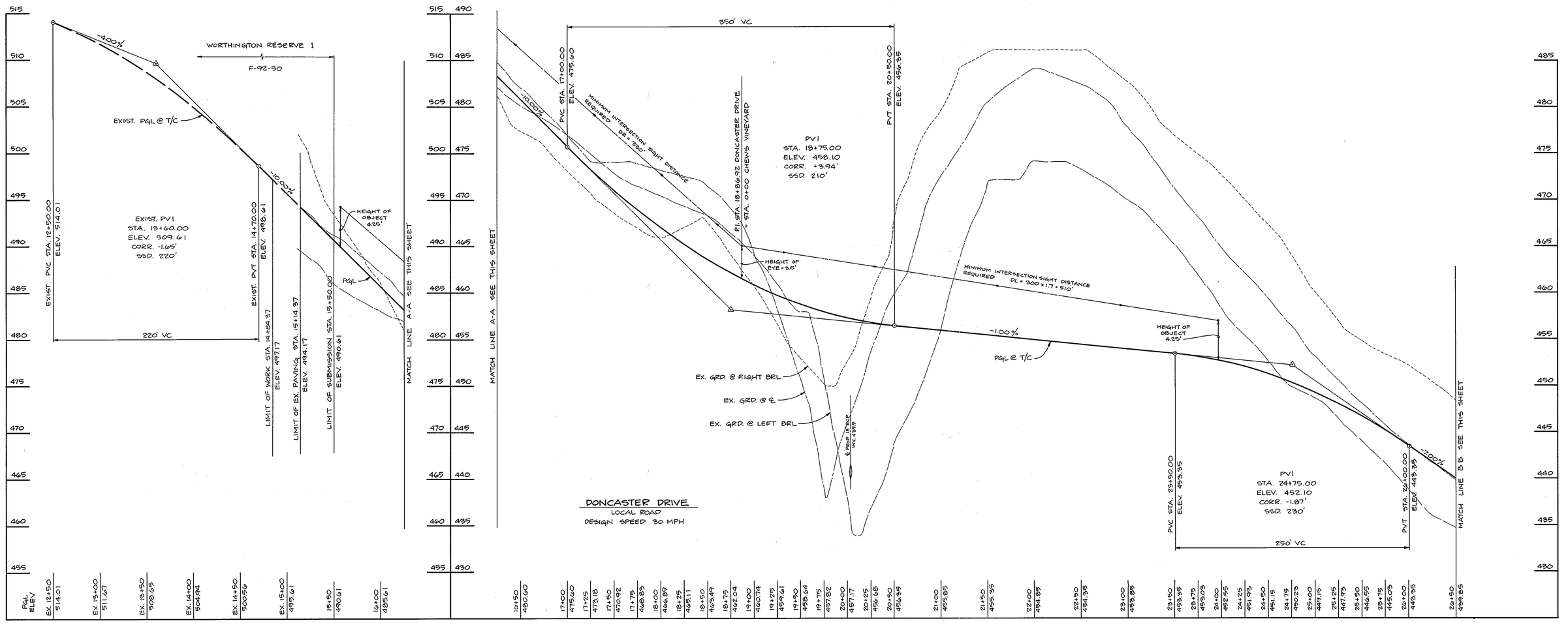
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

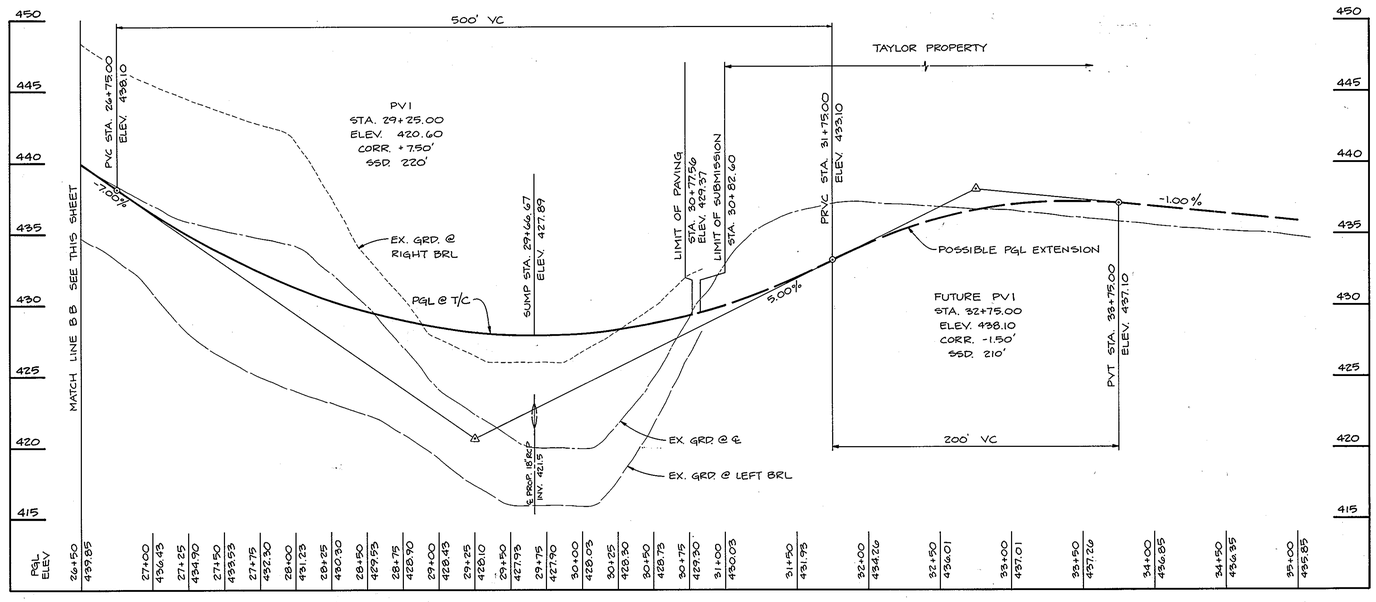
DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482

DES: JME/DRK — DRN: DRK/DBT — SCALE: 1" = 50' — DRAWING 4 OF 21

F-94-102

1638





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/18/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT:
WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

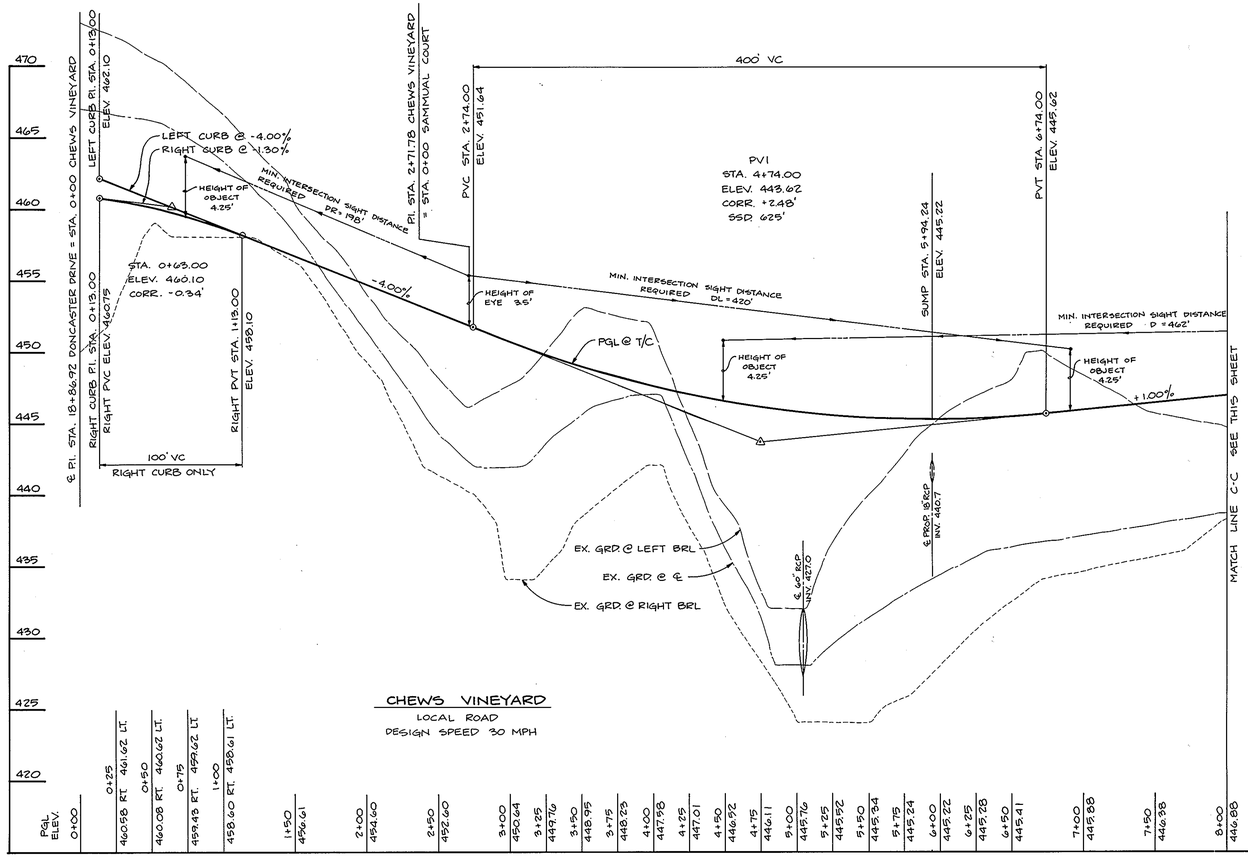
TITLE:
ROAD PROFILES
5-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

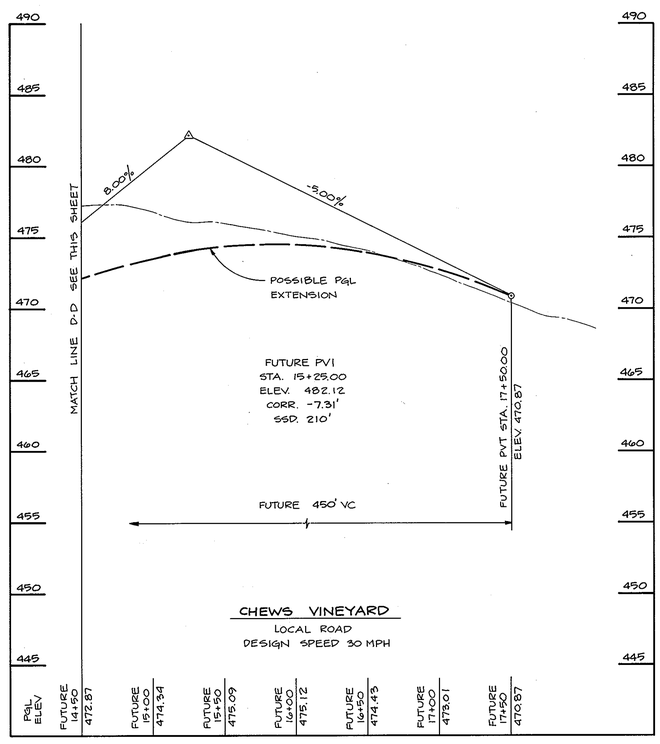
DATE: APRIL 5, 1994; JULY 27, 1994 — PROJECT NO. 0482

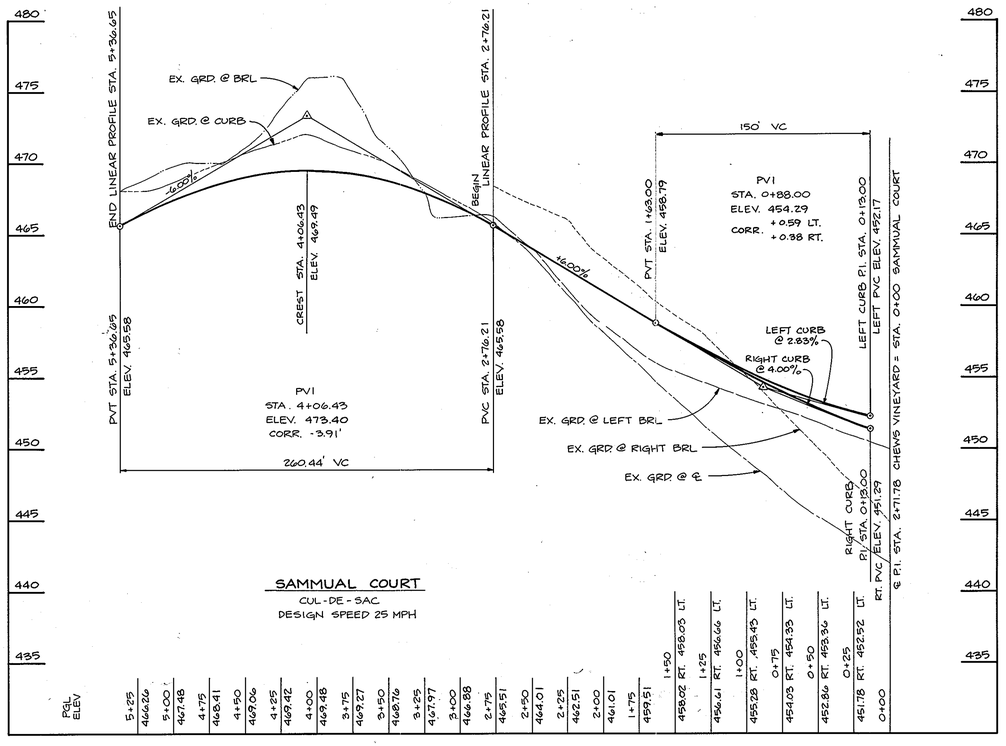
DES: JME — DRN: DBT — SCALE: 1" = 50' HORIZ. 1" = 5' VERT. — DRAWING 5 OF 21

1638

F-94-102







APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/19/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

NO	DATE	REVISION

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

OWNER/DEVELOPER:

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

PROJECT:
WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
ROAD PROFILES
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

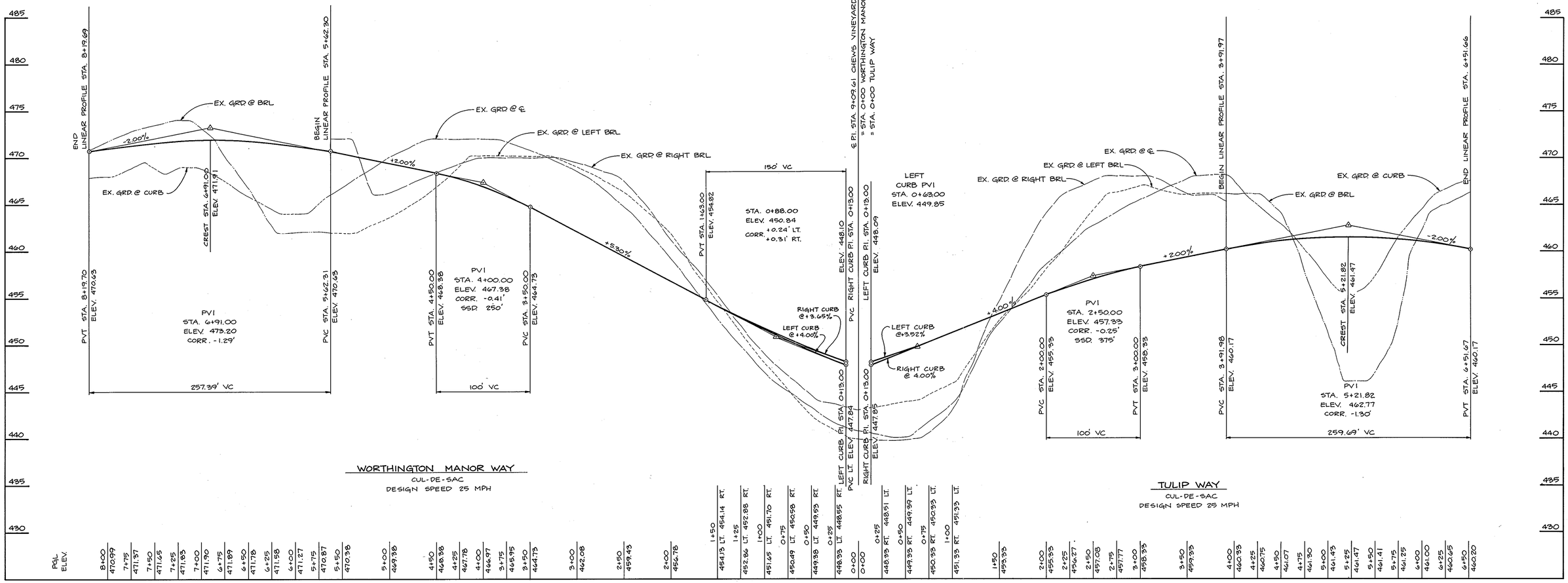
DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482

SCALE: 1" = 50' HORIZ. / 1" = 5' VERT. — DRAWING 6 OF 21

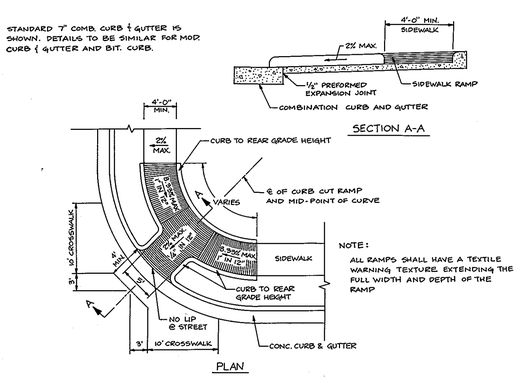
DES: JME — DRN: DBT

1638

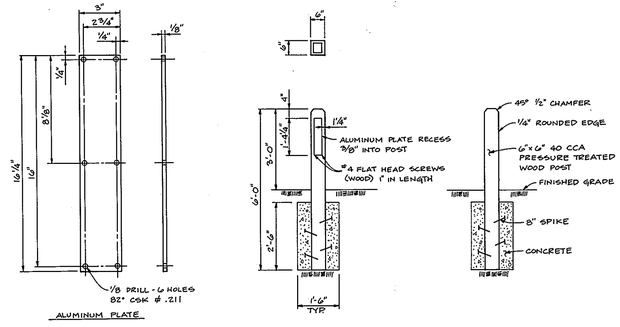
F-94-102



STANDARD 7" COMB. CURB & GUTTER IS SHOWN. DETAILS TO BE SIMILAR FOR MOD CURB & GUTTER AND BIT. CURB.

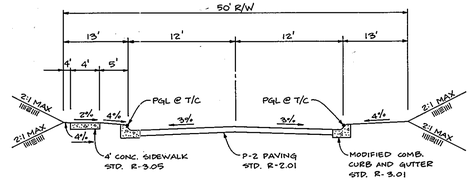


HO. CO. STD DETAIL NO. R-4.01
SIDEWALK RAMP DETAIL
TYPE A
NO SCALE

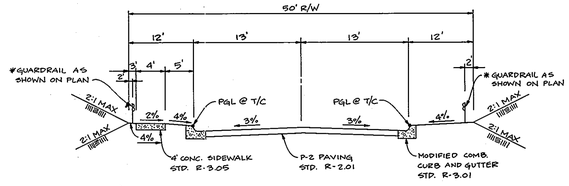


1. BOLLARDS WILL BE PLACED AT THE FOUR CORNERS OF THE OPEN SPACE ACCESS STRIP.
2. THE ALUMINUM PLATE WILL ONLY BE REQUIRED ON THE FRONT RIGHT BOLLARD DIRECTLY FACING THE ROAD.
3. PLATE TO BE SCREWED AND GLUED INTO PLACE.
4. SCREWS ARE TO BE COUNTERSUNK.

OPEN SPACE BOLLARD DETAIL
NO SCALE



SAMMUAL COURT
TULIP WAY
TYPICAL SECTION
NO SCALE



* GUARDRAIL TO BE LOCATED ON:
DONCASTER DRIVE
℄ STA. 19+50 TO 20+70 OFFSET 23' LT.
℄ STA. 19+15 TO 20+20 OFFSET 23' RT.
CHEWS VINEYARD
℄ STA. 4+25 TO 5+80 OFFSET 23' LT. & RT.
HO. CO. STD. DETAILS R-7.01 - 7.04

DONCASTER DRIVE
CHEWS VINEYARD
WORTHINGTON MANOR WAY
TYPICAL SECTION
NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/15/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

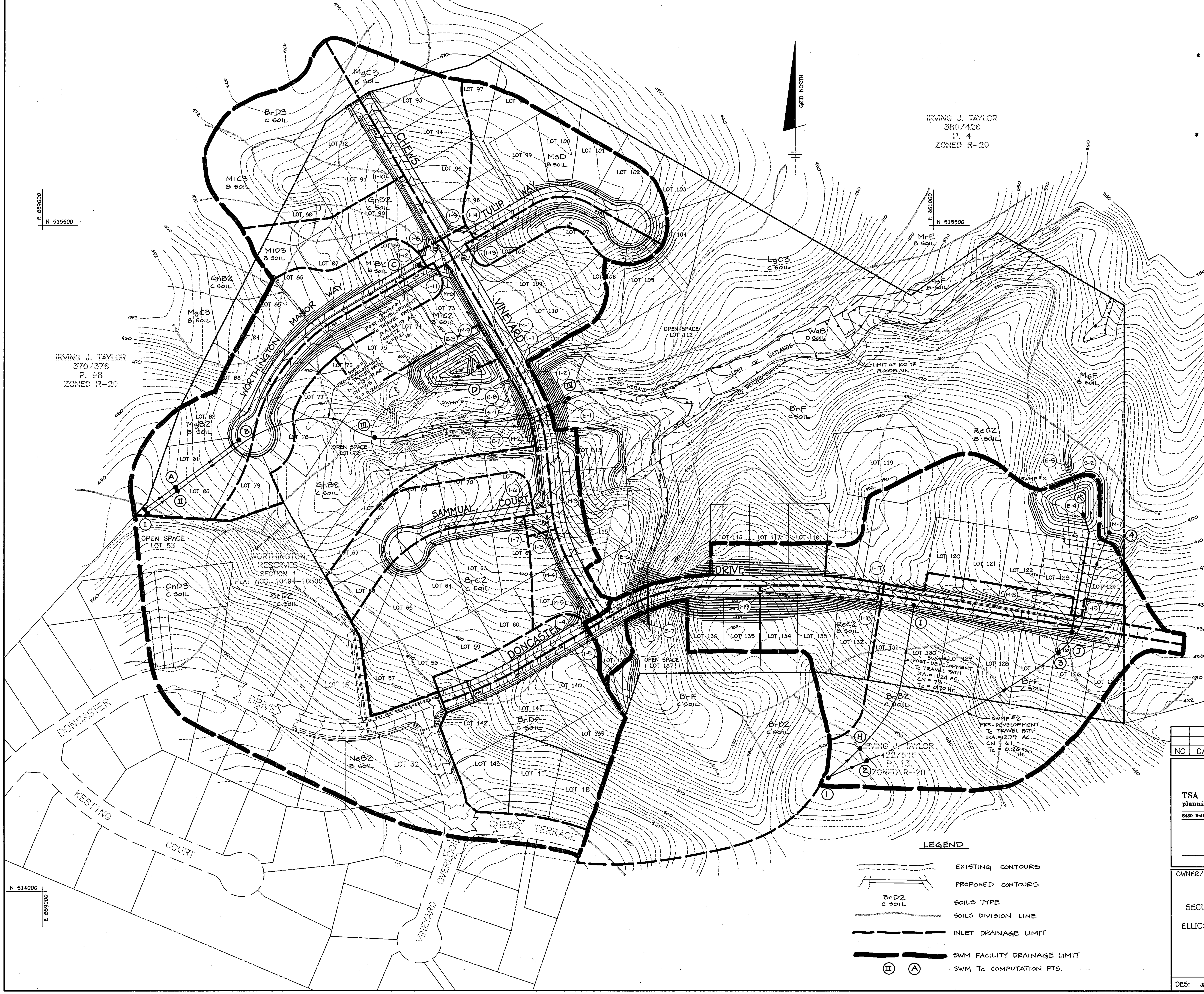
TITLE: ROAD PROFILES AND DETAILS
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994; JULY 27, 1994
PROJECT NO. 0482

DES: JME DRN: DBT
SCALE: 1" = 50' HORIZ. 1" = 5' VERT.
DRAWING 7 OF 21

1638

F-94-102



SOIL CLASSIFICATION

	C	BrB2	BRANDYWINE LOAM, 3 TO 8 % SLOPES, MODERATELY ERODED.
	C	BrC2	BRANDYWINE LOAM, 8 TO 15 % SLOPES, MODERATELY ERODED.
	C	BrD2	BRANDYWINE LOAM, 15 TO 25% SLOPES, MODERATELY ERODED.
	C	BrD3	BRANDYWINE LOAM, 15 TO 25% SLOPES, SEVERELY ERODED.
	C	BrF	BRANDYWINE LOAM, 25 TO 60% SLOPES.
	C	CnD3	CHILLUM-FAIRFAX LOAMS, 5 TO 15% SLOPES, SEVERELY ERODED.
*	C	GnB2	GLENVILLE SILT LOAM, 3 TO 8 % SLOPES, MODERATELY ERODED.
	C	LgC3	LEGORE SILTY CLAY LOAM, 8 TO 15% SLOPES, SEVERELY ERODED.
	B	MIB2	MANOR LOAM, 3 TO 8 % SLOPES, MODERATELY ERODED.
	B	MIC2	MANOR LOAM, 8 TO 15% SLOPES, MODERATELY ERODED.
	B	MIC3	MANOR LOAM, 8 TO 15% SLOPES, SEVERELY ERODED.
	B	MID3	MANOR LOAM, 15 TO 25% SLOPES, SEVERELY ERODED.
	B	MgB2	MANOR GRAVELLY LOAM, 3 TO 8% SLOPES, MODERATELY ERODED.
	B	MgC3	MANOR GRAVELLY LOAM, 8 TO 15% SLOPES, SEVERELY ERODED.
	B	MrE	MONTALTO AND RELAY SOILS, 15 TO 45% SLOPES.
	B	MsD	MONTALTO AND RELAY VERY STONY SILT LOAMS, 3 TO 25% SLOPES.
	B	MsF	MONTALTO AND RELAY VERY STONY SILT LOAMS, 25 TO 60% SLOPES.
	B	NeB2	NESHAMINY SILT LOAM, 3 TO 8 % SLOPES, MODERATELY ERODED.
	B	ReC2	RELAY SILT LOAM, 3 TO 15% SLOPES, MODERATELY ERODED.
*	D	WaB	WATCHUNG SILT LOAM, 3 TO 8 % SLOPES.

* INDICATES HYDRIC SOILS

STORM RUNOFF DATA

INLET NO.	AREA	% IMPERVIOUS	C	Tc
I-1	1.65 AC.	25 %	0.39	12 MIN.
I-2	2.22 AC.	24 %	0.39	9 MIN.
I-3	0.46 AC.	30 %	0.43	10 MIN.
I-4	0.53 AC.	32 %	0.44	8 MIN.
I-5	2.75 AC.	20 %	0.37	10 MIN.
I-6	1.26 AC.	33 %	0.45	9 MIN.
I-7	2.69 AC.	21 %	0.37	10 MIN.
I-8	1.17 AC.	19 %	0.35	11 MIN.
I-9	1.60 AC.	21 %	0.35	11 MIN.
I-10	2.45 AC.	9 %	0.28	11 MIN.
I-11	1.23 AC.	35 %	0.44	10 MIN.
I-12	2.79 AC.	28 %	0.38	11 MIN.
I-13	0.72 AC.	38 %	0.46	9 MIN.
I-14	2.07 AC.	28 %	0.39	10 MIN.
I-15	0.78 AC.	35 %	0.44	8 MIN.
I-16	4.97 AC.	14 %	0.32	11 MIN.
I-17	0.84 AC.	40 %	0.48	10 MIN.
I-18	1.25 AC.	29 %	0.38	11 MIN.
I-19	0.80 AC.	43 %	0.49	11 MIN.
E-7	5.20 AC.	1 %	0.24	9 MIN.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/18/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

NO	DATE	REVISION

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

OWNER/DEVELOPER:
SECURITY DEVELOPMENT CORP.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: **WORTHINGTON RESERVE**
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: **DRAINAGE AREA MAP**

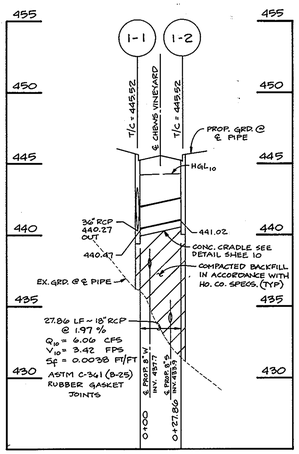
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

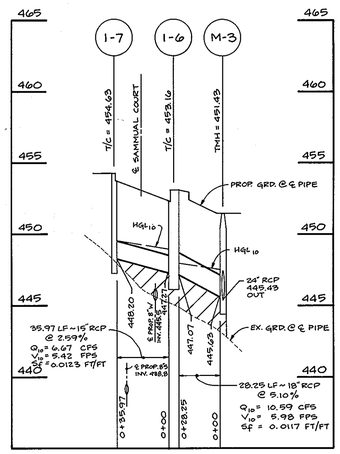
DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482

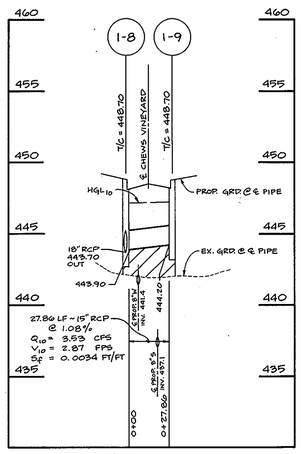
DES: JME — DRN: DRK/DBT — SCALE: 1" = 100' — DRAWING 8 OF 21

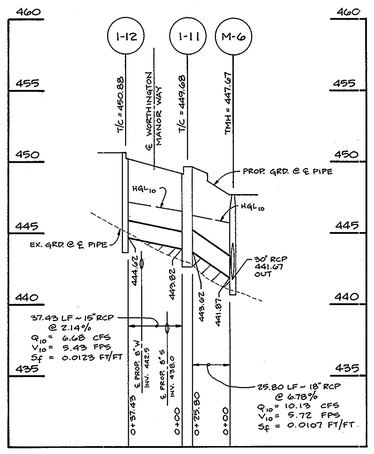
F-94-102

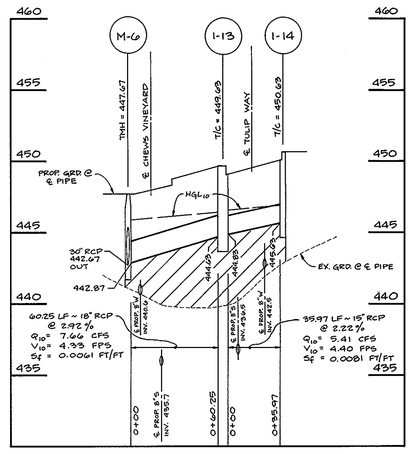
1638

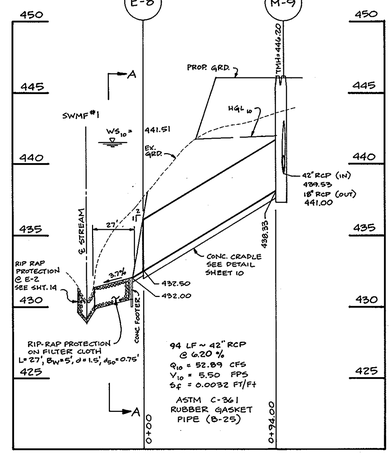


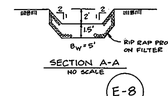


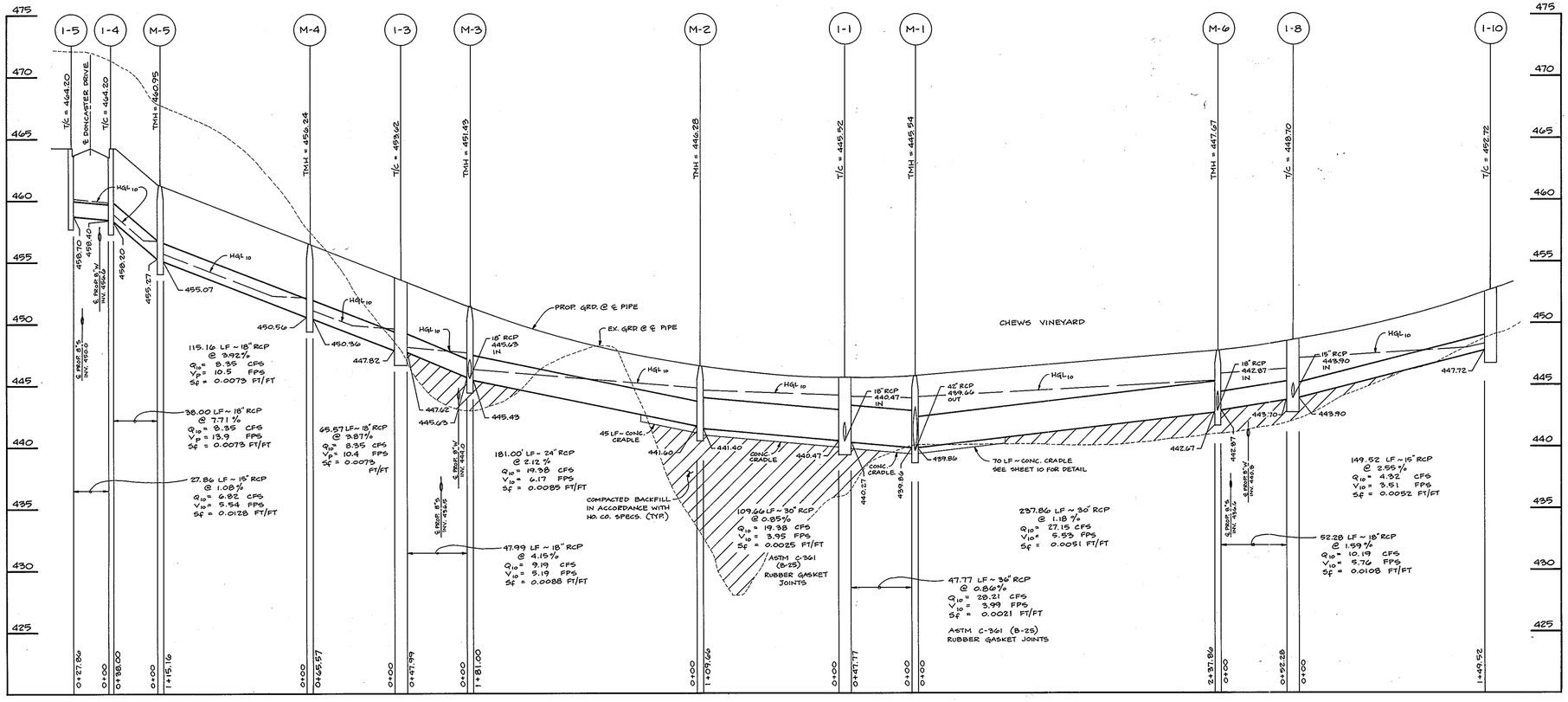












UNLESS OTHERWISE NOTED:

1. ALL STORM DRAIN PIPE SHALL BE CLASS 4 REINFORCED CONCRETE.
2. ALL STORM DRAIN BEDDING BACKFILL AND COMPACTION SHALL BE BASED ON AASHTO T-180.
3. TOP OF INLETS SHOWN INCLUDE THE 0.3' ADDED TO P&L FOR TRANSITION FROM MODIFIED TO STANDARD CURB AND GUTTER, HO. CO. STD. R-3.06.
4. TOP OF ONGRADE INLET ARE AT CENTER OF INLET.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/19/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: STORM DRAIN PROFILES

S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994 / JULY 27, 1994

PROJECT NO. 0482

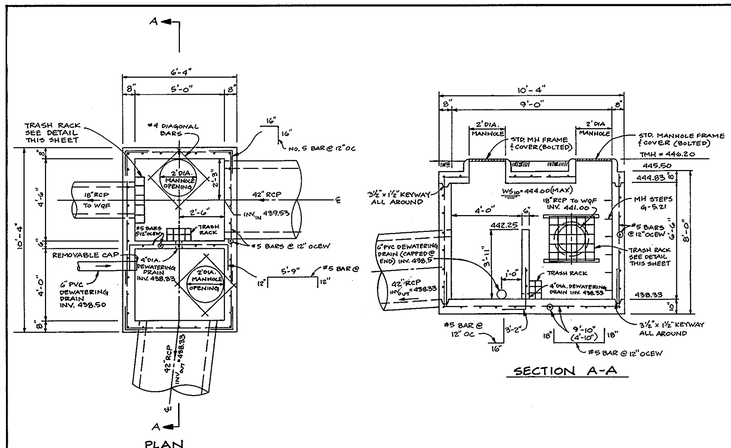
SCALE: 1" = 50' HORIZ. 1" = 5' VERT.

DRAWING 9 OF 21

DES: JME DRN: DBT

1638

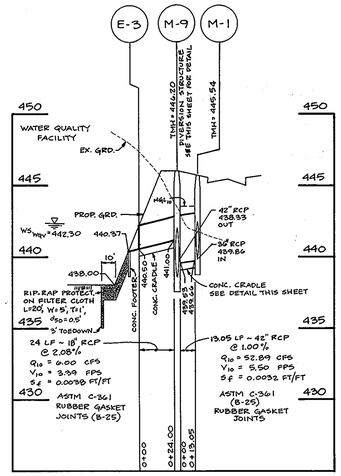
F-94-102

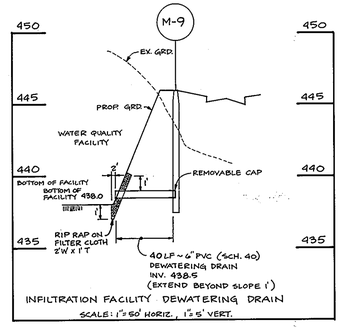


MANHOLE M-9 DIVERSION DETAIL

SCALE: 1/4" = 1'-0"

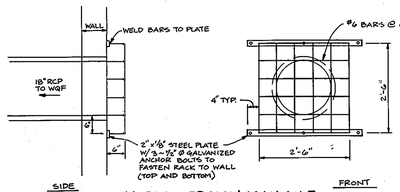
SECTION A-A





INFILTRATION FACILITY DEWATERING DRAIN

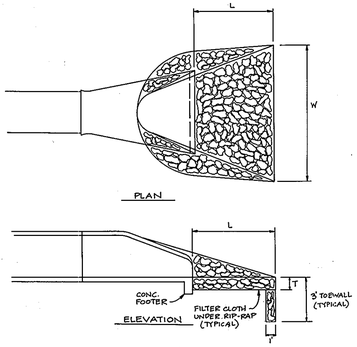
SCALE: 1"=50' HORIZ., 1"=5' VERT.



* TRASH RACK TO BE GALVANIZED AFTER FABRICATION AND PAINTED BATTLESHIP GRAY.

M-9 DIVERSION MANHOLE TRASH RACK DETAIL

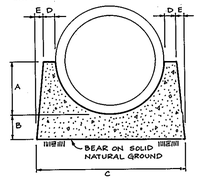
SCALE: 1/2" = 1'



STRUCTURE	d-50	LENGTH	WIDTH	THICKNESS
E-1	1.5'	32'	B_W=6'	2.50'
E-2	0.5'	13'	5'	1.50'
E-3	0.50'	20'	5'	1.00'
E-4	0.50'	10'	6'	1.00'
E-5	0.50'	12'	B_W+3'	1.00'
E-6	0.75'	10'	12'	1.25'
E-7	0.50'	10'	5'	1.00'
E-8	0.75'	27'	B_W+5'	1.50'

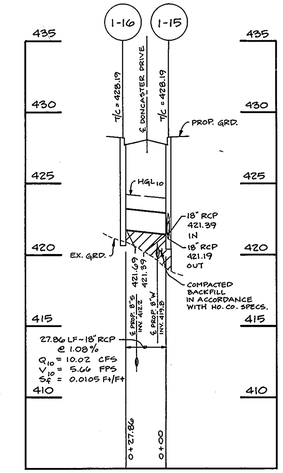
OUTLET PROTECTION DETAIL

NOT TO SCALE

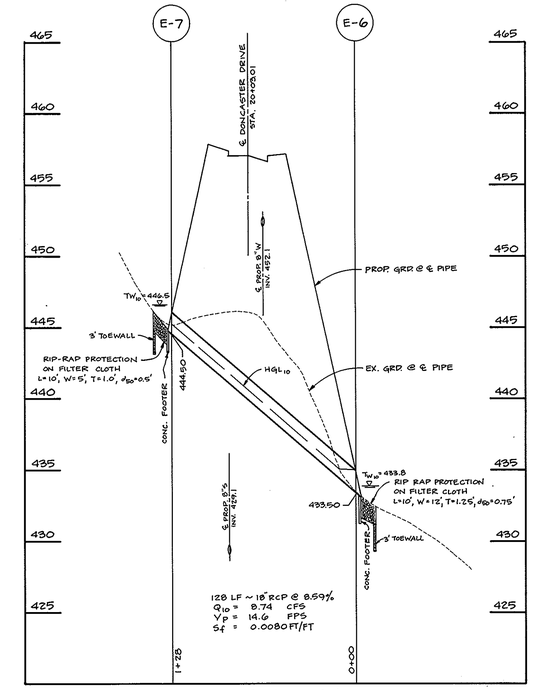


PIPE SIZE	A	B	C	D	E
18"	12"	6"	3'-3"	6"	1.5"
24"	1'-3"	6"	3'-10"	6"	2"
30"	1'-6"	7.5"	4'-6"	6"	2.5"
36"	1'-10"	9"	5'-2"	6"	3"
42"	2'-1"	10.5"	6'-0"	7"	3.5"

1. POUR CONCRETE TO UNDISTURBED EARTH. REMOVE SHEETING BEFORE POURING CONCRETE OR LEAVE LOWER PORTION OF SHEETING IN PLACE.
2. CONCRETE CRADLE TO BE PLACED FOR ENTIRE LENGTH OF PIPE.
3. ASPHALT JOINT FILLER TO BE INSERTED BETWEEN ALL CONCRETE SURFACES EXCEPT BETWEEN CRADLE AND PIPE.

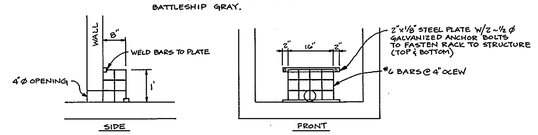


SCALE: 1"=50' HORIZ., 1"=5' VERT.



SCALE: 1"=50' HORIZ., 1"=5' VERT.

* TRASH RACK TO BE GALVANIZED AFTER FABRICATION AND PAINTED BATTLESHIP GRAY.



M-9 TRASH RACK FOR 4' DIA. OPENING

NOT TO SCALE

SCALE: 1"=50' HORIZ., 1"=5' VERT.

SCS TR 46 CRADLE RE: ES-120 CONCRETE CRADLE DETAIL

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/17/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: STORM DRAIN PROFILES
5-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994 / JULY 27, 1994

PROJECT NO. 0482

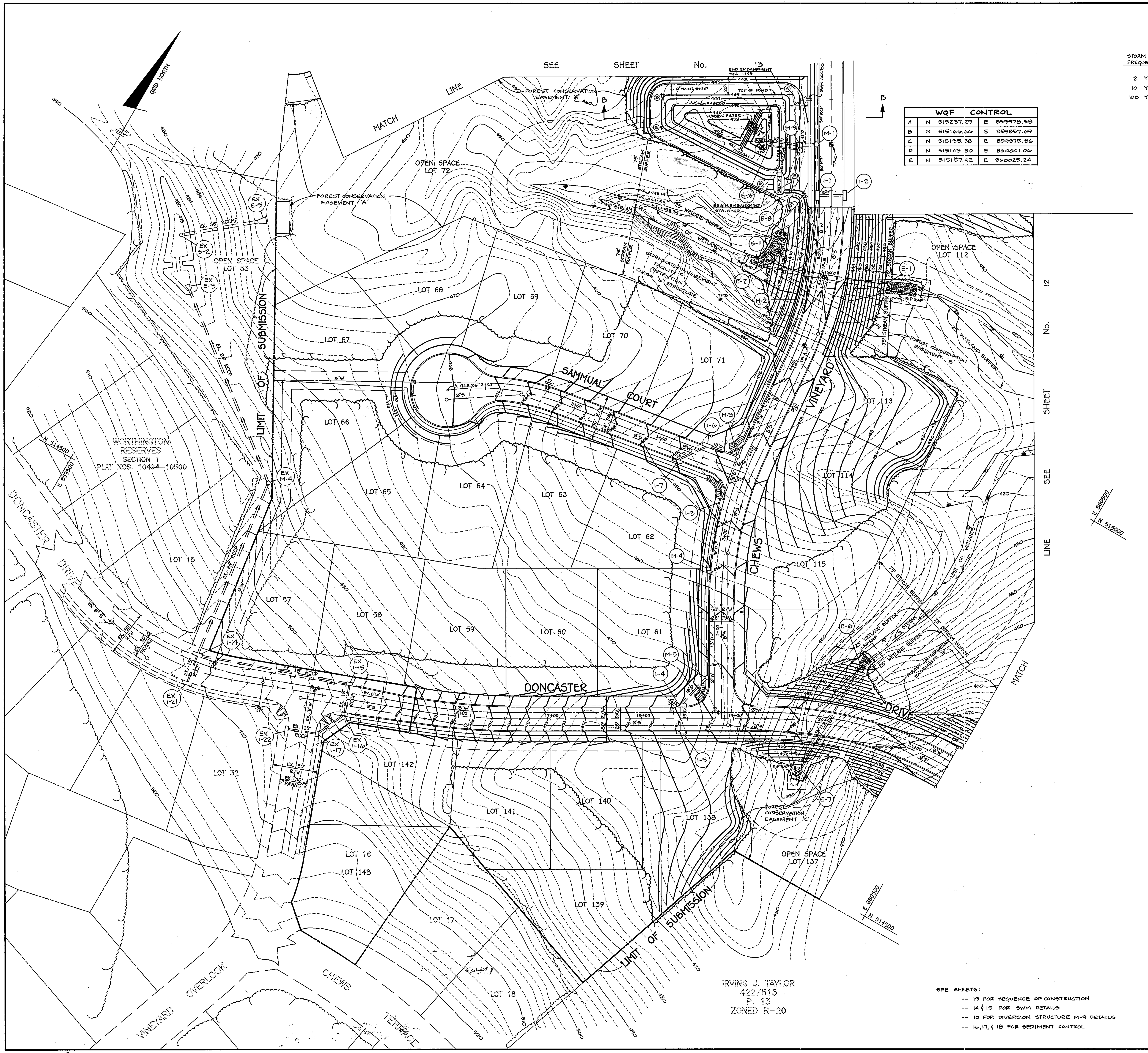
DES: JME DRN: DBT

SCALE: AS SHOWN

DRAWING 10 OF 21

F-94-102

1038



WQF	CONTROL	
A	N 515237.29	E 859978.58
B	N 515166.66	E 859857.69
C	N 515135.58	E 859875.86
D	N 515143.30	E 860001.06
E	N 515157.42	E 860025.24

SEE SHEETS:
- 19 FOR SEQUENCE OF CONSTRUCTION
- 14 & 15 FOR SWM DETAILS
- 10 FOR DIVERSION STRUCTURE M-9 DETAILS
- 16, 17, & 18 FOR SEDIMENT CONTROL

STORMWATER MANAGEMENT FACILITY # 1

DRAINAGE AREA TO FAC. 34.19 AC.
UNMANAGED AREA 2.90 AC

TOP OF DAM = 445.2 (MIN.)
BOTTOM OF DAM = 430.9
OUTFALL : 60" DIA. BARREL INV. 429.5

STORM FREQUENCY	MAXIMUM ALLOWABLE DISCHARGE	INFLOW	ROUTED DISCHARGE	WS ELEV.	STORAGE	ROUTED + CREDIT TOTAL DISCHARGE
2 YR	17.81 CFS	36.81 CFS	15.47 CFS	438.34	0.47 AC-FT	17.55 CFS
10 YR	64.69 CFS	93.50 CFS	62.05 CFS	441.53	1.23 AC-FT	64.65 CFS
100 YR		181.30 CFS	166.29 CFS	443.14	1.78 AC-FT	174.24 CFS

STORMWATER MANAGEMENT FACILITIES ARE TO BE PUBLICLY MAINTAINED.

NOTE :

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JOHN M. ELORRIAGA — PE No. ________ DATE ________

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James R. Moxley Jr. — 4-11-94
DEVELOPER – JAMES R. MOXLEY JR. — DATE
PRESIDENT – SDC GROUP, INC.

BY THE ENGINEER:

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

John Elorriaga — 4/7/94
ENGINEER – JOHN M. ELORRIAGA, P.E. # 16891 — DATE

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

Patricia Engler /G.S. *POND #2 ONLY — 8/8/94
U.S. SOIL CONSERVATION SERVICE — DATE

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

Robert W. Zich /G.S. — 8/8/94
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

8/19/94
CHIEF, LAND DEVELOPMENT DIVISION — DATE

Andrew M. Danelo — 8-17-94
CHIEF, BUREAU OF HIGHWAYS HS — DATE

8/19/94
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Gina Turmmany — 8/24/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH JA — 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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT:
WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

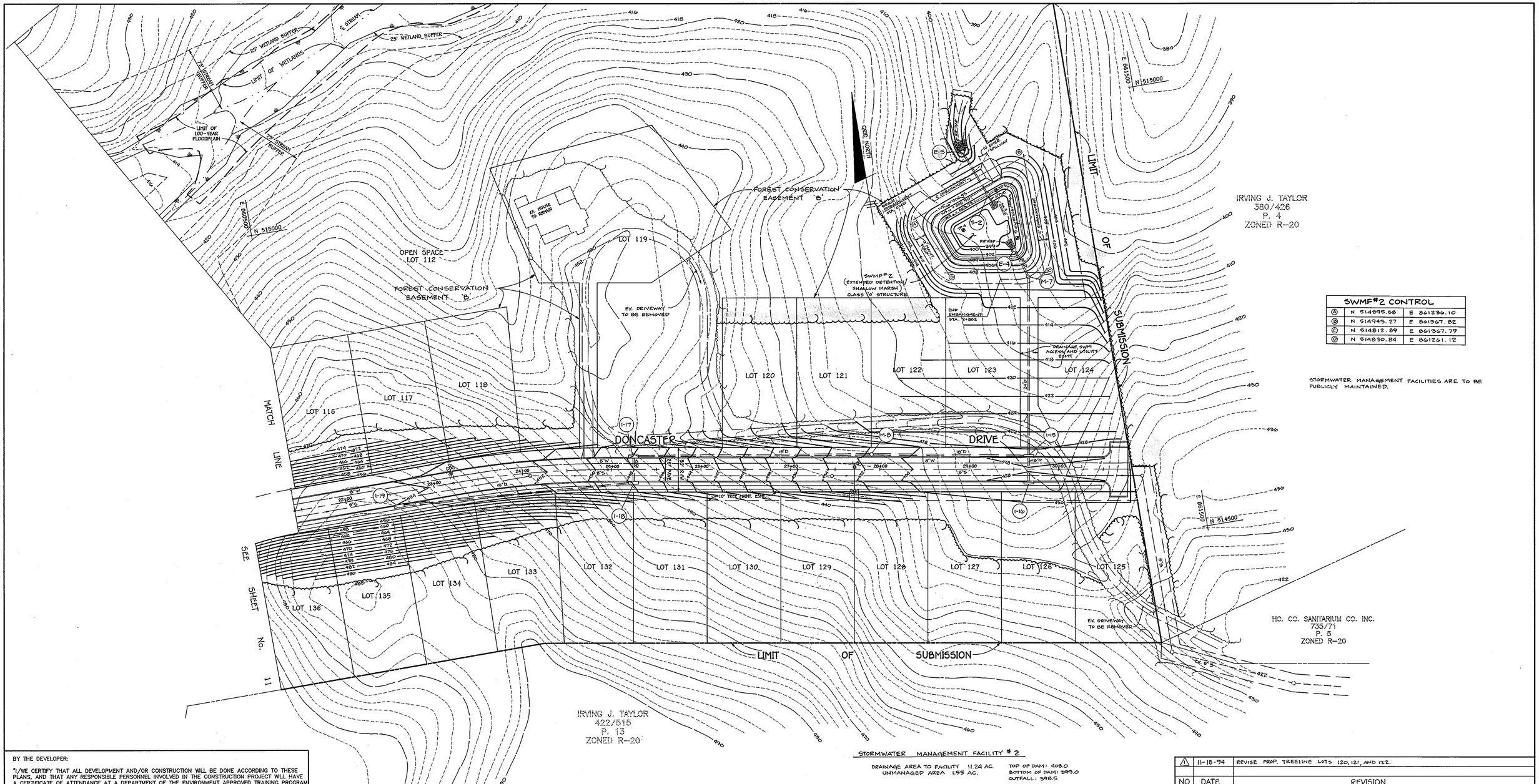
LOCATION:
TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
GRADING PLAN
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482
DES: JME/DRK — DRN: DRK/DBT — SCALE: 1" = 50' — DRAWING 11 OF 21

F-94-102

1638



SWMF#2 CONTROL		
Ⓐ	N 514895.58	E 861236.10
Ⓑ	N 514943.27	E 861367.82
Ⓒ	N 514812.89	E 861367.79
Ⓓ	N 514830.84	E 861261.12

STORMWATER MANAGEMENT FACILITIES ARE TO BE PUBLICLY MAINTAINED.

STORMWATER MANAGEMENT FACILITY # 2

DRAINAGE AREA TO FACILITY 11.24 AC.
UNMANAGED AREA 1.55 AC.

TOP OF DAM: 408.0
BOTTOM OF DAM: 399.0
OUTFALL: 398.5

STORM FREQUENCY	MAX. ALLOWABLE DISCHARGE	INFLOW	ROUTED DISCHARGE	WS ELEV	STORAGE	ROUTED + CREDIT TOTAL DISCHARGE
2 YR	4.84 CFS	13.12 CFS	2.67 CFS	403.73	0.36 AC-FT	2.98 CFS
10 YR	19.98 CFS	32.65 CFS	17.27 CFS	405.96	0.71 AC-FT	18.71 CFS
100 YR		60.93 CFS	54.66 CFS	406.93	0.93 AC-FT	60.31 CFS

NOTE :
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James R. Moxley Jr. — 4-11-94
DEVELOPER – JAMES R. MOXLEY JR. PRESIDENT – SDC GROUP, INC. — DATE

BY THE ENGINEER:

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

John M. Elorriaga — 4/7/94
ENGINEER – JOHN M. ELORRIAGA, P.E. # 16891 — DATE

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

Patricia Engler — Acting State Conservationist — 8/8/94
U.S. SOIL CONSERVATION SERVICE — DATE

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

Robert W. Zech, Jr.
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/17/94
CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94
CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JOHN M. ELORRIAGA — PE No. _____ DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

NO	DATE	REVISION
1	11-18-94	REVISE PROP. TREELINE LOTS 120, 121, AND 122.

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

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

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

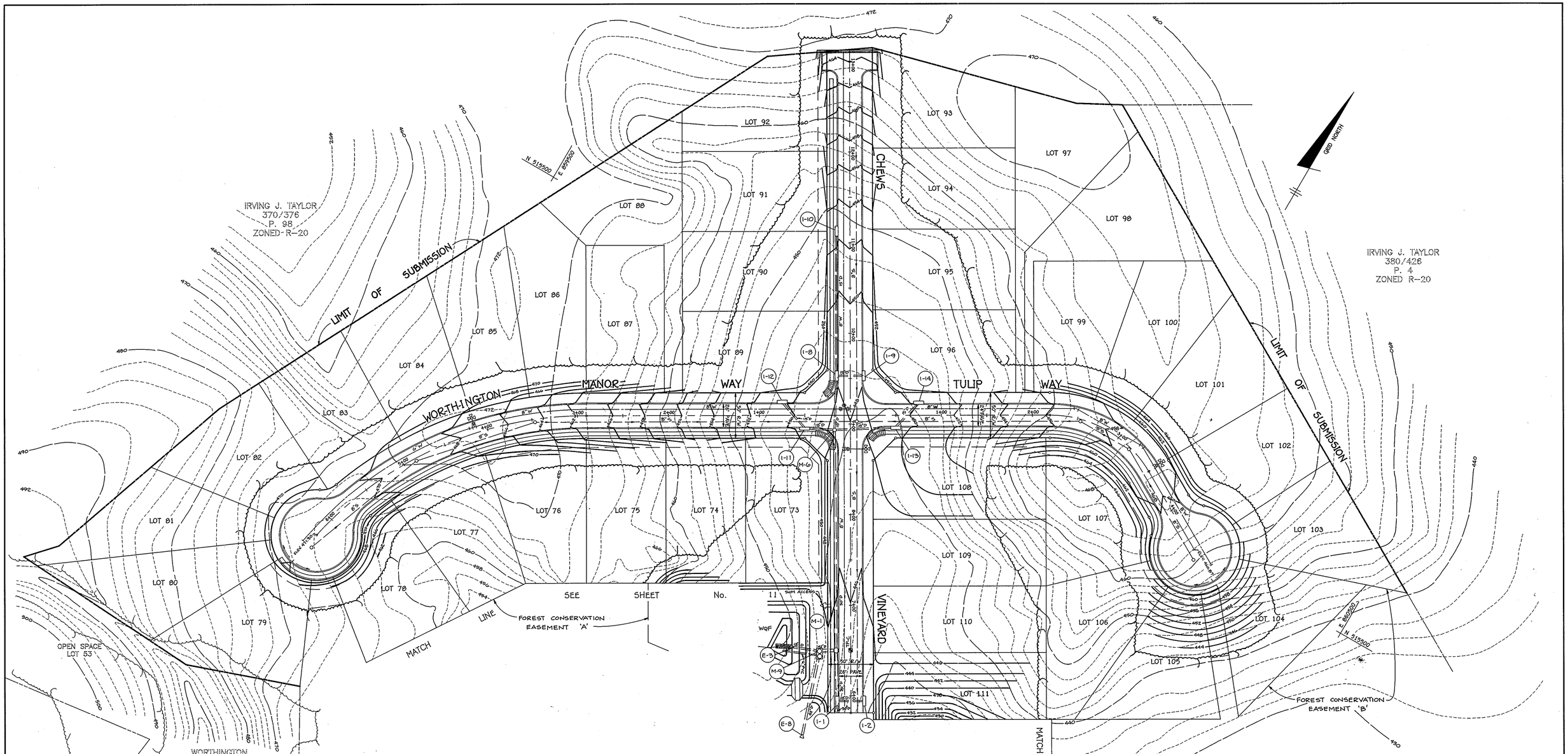
TITLE: GRADING PLAN
5-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0402

DES: JME/DRK — DRN: DRK/DBT — SCALE: 1" = 50' — DRAWING 12 OF 21

1638

F-94-102



NOTE :

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JOHN M. ELORRIAGA — PE No. _____ DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James R. Moxley Jr. — 4-11-94

DEVELOPER – JAMES R. MOXLEY JR. PRESIDENT – SDC GROUP, INC. — DATE

BY THE ENGINEER:

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

John Elorriaga — 4/7/94

ENGINEER – JOHN M. ELORRIAGA, P.E. # 16891 — DATE

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

Patricia Englar — 8/8/94

U.S. SOIL CONSERVATION SERVICE — DATE

* AMD #2 ONLY

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

Robert W. Zirkle — 8/8/94

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION (DPW) — DATE 8/15/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/10/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT:
WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION:
TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
GRADING PLAN
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994 / JULY 27, 1994

PROJECT NO. 0482

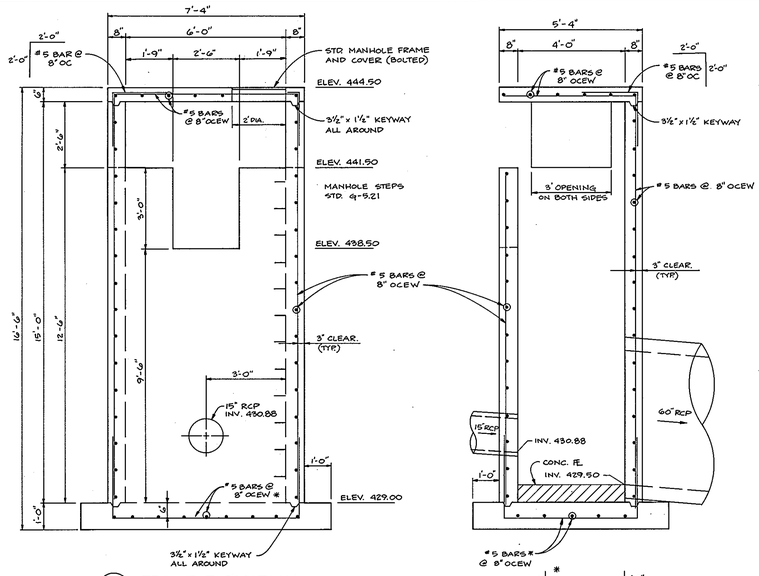
DES: JME/DRK DRN: DRK/DBT

SCALE: 1" = 50'

DRAWING 13 OF 21

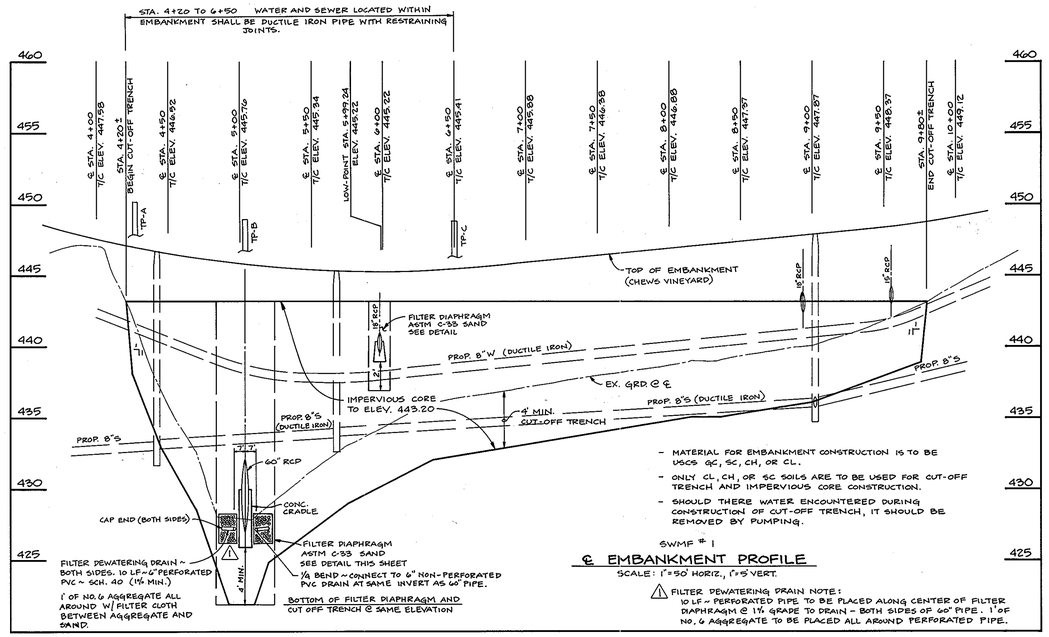
F-94-102

1638



S-1 FRONT ELEVATION
SCALE: 3/8" = 1'-0"

S-1 SIDE ELEVATION
SCALE: 3/8" = 1'-0"



- MATERIAL FOR EMBANKMENT CONSTRUCTION IS TO BE USCS GC, SC, CH, OR CL.
- ONLY CL, CH, OR SC SOILS ARE TO BE USED FOR CUT-OFF TRENCH AND IMPERVIOUS CORE CONSTRUCTION.
- SHOULD THERE WATER ENCOUNTERED DURING CONSTRUCTION OF CUT-OFF TRENCH, IT SHOULD BE REMOVED BY PUMPING.

SWMF # 1

℄ EMBANKMENT PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

⚠ FILTER DEWATERING DRAIN NOTE: 10 LF ~ PERFORATED PIPE TO BE PLACED ALONG CENTER OF FILTER DIAPHRAGM @ 1% GRADE TO DRAIN ~ BOTH SIDES OF 60" PIPE. 1' OF NO. 6 AGGREGATE TO BE PLACED ALL AROUND PERFORATED PIPE.

NOTES:

1. ALL CONCRETE SHALL BE MIX. NO. 3
2. ALL REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENT OF ASTM A615 GRADE 60.
3. ALL EXPOSED CORNERS ARE TO BE CHAMFERED 3/4 INCH.
4. SEE SHEET 19 FOR CONSTRUCTION SPECIFICATIONS AND NOTES.
5. SEE SHEET 19 FOR TEST PIT DATA.

NOTE :

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JOHN M. ELORRIAGA — PE No. _____ DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James R. Moxley Jr. — 4-11-94
DEVELOPER – JAMES R. MOXLEY JR. PRESIDENT – SDC GROUP, INC. — DATE

BY THE ENGINEER:

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

John M. Elorriaga — 4/7/94
ENGINEER – JOHN M. ELORRIAGA, P.E. # 16891 — DATE

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

Patricia Endler for — 8/8/94
U.S. SOIL CONSERVATION SERVICE — DATE

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

Robert W. Zieh for — 8/8/94
HOWARD SOIL CONSERVATION DISTRICT — DATE

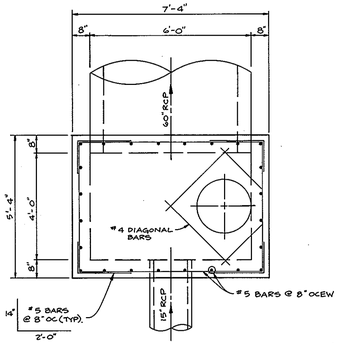
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 8/17/94 DATE
CHIEF, BUREAU OF HIGHWAYS — 8-17-94 DATE
CHIEF, BUREAU OF ENGINEERING — 8/10/94 DATE

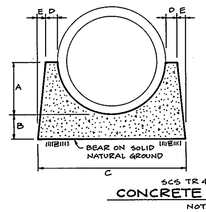
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 8/24/94 DATE

NO	DATE	REVISION
⚠1	11-14-94	REVISE FILTER DIAPHRAGM AND ADD 6" DEWATERING DRAINS.



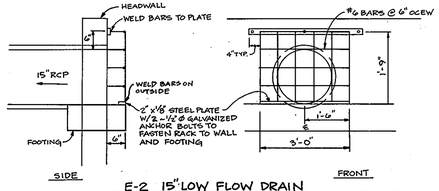
S-1 PLAN
3/8" = 1'-0"



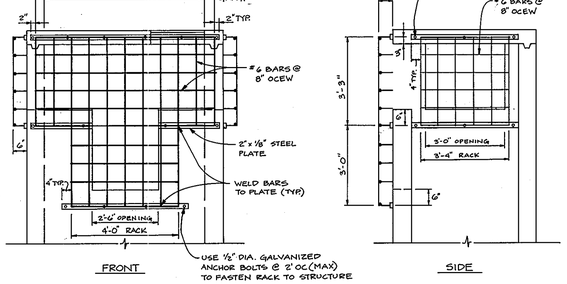
SCS TR 46 CRADLE RE: ES-120
CONCRETE CRADLE DETAIL
NOT TO SCALE

1. POUR CONCRETE TO UNDISTURBED EARTH. REMOVE SHEETING BEFORE POURING CONCRETE OR LEAVE LOWER PORTION OF SHEETING IN PLACE.
2. CONCRETE CRADLE TO BE PLACED FOR ENTIRE LENGTH OF PIPE.
3. ASPHALT JOINT FILLER TO BE INSTALLED BETWEEN ALL CONCRETE SURFACES EXCEPT BETWEEN CRADLE AND PIPE.

PIPE SIZE	A	B	C	D	E
15"	10"	4"	2'-11"	6"	1.5"
24"	1'-3"	6"	3'-10"	6"	2"
60"	3'-0"	1'-3"	8'-2"	8"	5"

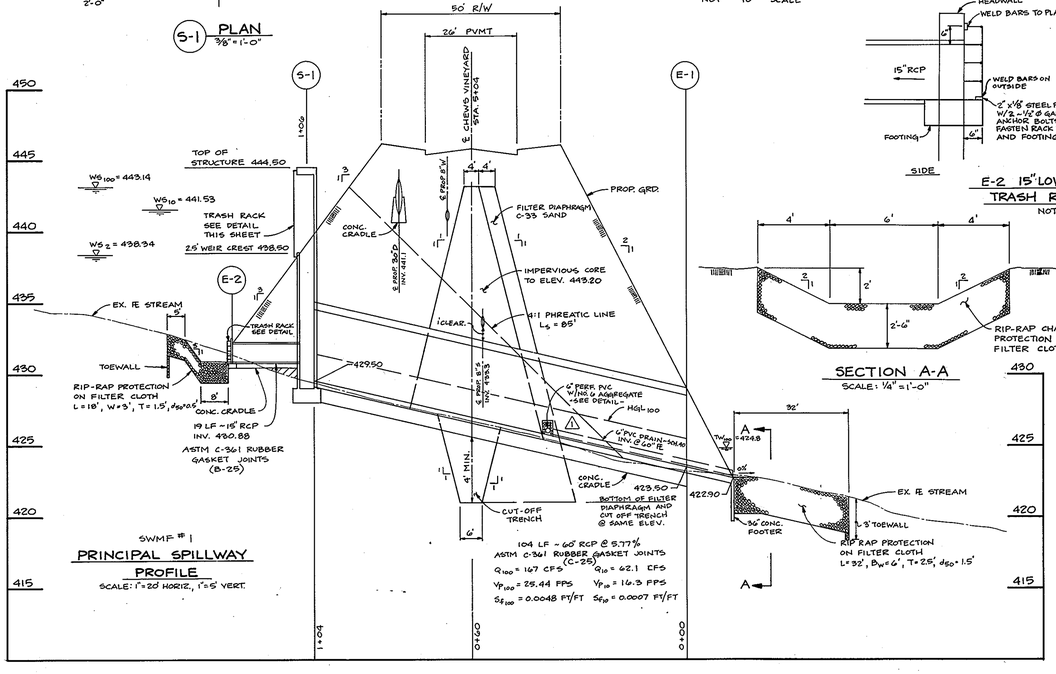


E-2 15" LOW FLOW DRAIN
TRASH RACK DETAIL
NOT TO SCALE



RACK IS TO BE GALVANIZED AFTER FABRICATION. PAINT TRASH RACK BATTLESHIP GRAY.

S-1 TRASH RACK DETAIL
SCALE: 3/8" = 1'-0"



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

SECTION A-A
SCALE: 1/4" = 1'-0"

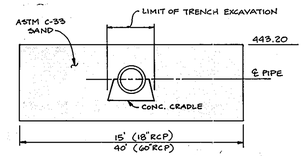
NOTES:

1. MINIMUM THICKNESS OF FILTER DIAPHRAGM IS 4 FEET.
2. FILTER DIAPHRAGM IS TO BE CONSTRUCTED ON DOWN STREAM SIDE OF IMPERVIOUS CORE.

FILTER DIAPHRAGM GRADATION

SIEVE SIZE	mm	% PASSING
3/4 IN	20	90-100
3/8 IN	9.5	75-100
NO. 4	4.75	55-100
NO. 20	0.850	20-60
NO. 40	0.300	5-50
NO. 100	0.150	0-20
NO. 200	0.075	0-5

⚠



FILTER DIAPHRAGM SECTION
NOT TO SCALE

NOTES:

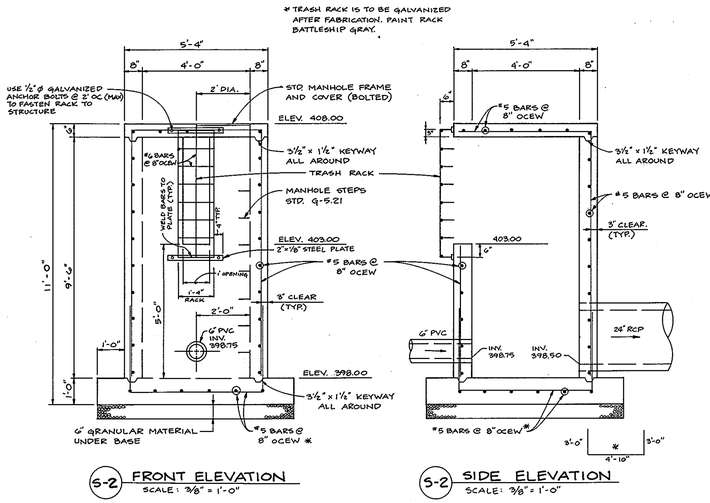
1. ALL PIPES IN SWM EMBANKMENT SHALL HAVE RESTRAINING JOINTS.
2. ALL PIPES CROSSING THROUGH THE DAM SHALL HAVE FILTER DIAPHRAGMS ON DOWNSTREAM SIDE OF IMPERVIOUS CORE.
3. ALL UTILITY LINES NOT PART OF THIS CONTRACT (I.E. ELECTRIC, GAS, ETC.) SHALL BE ENCASED IN FLOWABLE FILL, MIN. 1 FOOT ALL AROUND. (500 PSI MINIMUM STRENGTH AND MAXIMUM PERMEABILITY OF 8x10⁻⁶ CM/SEC)
4. NO GRAVEL IS ALLOWED UNDER ANY UTILITY LINE WITHIN THE LIMIT OF THE DAM ℄ ROAD STA. 4+20 TO 6+50.
5. THE PLACEMENT OF UTILITIES WITHIN THE EMBANKMENT IS TO BE SEQUENCED WITH THE CONSTRUCTION OF THE EMBANKMENT RATHER THAN BY TRENCHING.
6. NO TREE PLANTING IS ALLOWED IN THE EMBANKMENT, CHEWS VINEYARD ℄ STA. 4+20 TO 6+50. NO TREES ARE ALLOWED WITHIN 25 FEET OF THE EMBANKMENT.
7. AN ARTICULATED JOINT IS REQUIRED WITHIN 2 FEET OF THE RISER-BARREL CONNECTION.
8. 60" PIPE SHALL HAVE STEEL JOINT RINGS PER DNR REQUIREMENT.
9. INSPECTION AND TESTING OF MATERIAL USED IN THE CONSTRUCTION OF THE DAM EMBANKMENT SHALL BE CONDUCTED UNDER THE SUPERVISION OF THE "ENGINEER-IN-CHARGE."

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

OWNER/DEVELOPER:	PROJECT: WORTHINGTON RESERVE
SDC GROUP, INC. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 (410) 465-4244	SECTION 2 LOTS 57-143 LOCATION: TAX MAP 31-PARCEL 3, 2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND TITLE: STORMWATER MANAGEMENT DETAILS S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102 DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482 SCALE: AS SHOWN — DRAWING 14 OF 21
DES: JME — DRN: DBT	

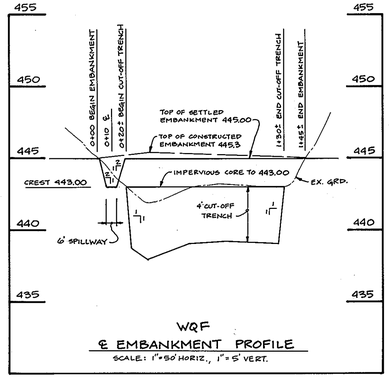
1638

F-94-102

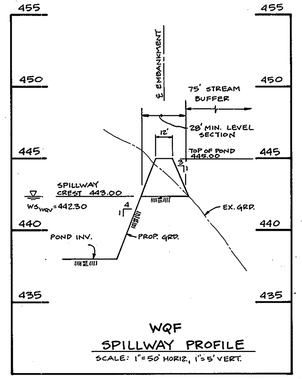


S-2 FRONT ELEVATION
SCALE: 3/8" = 1'-0"

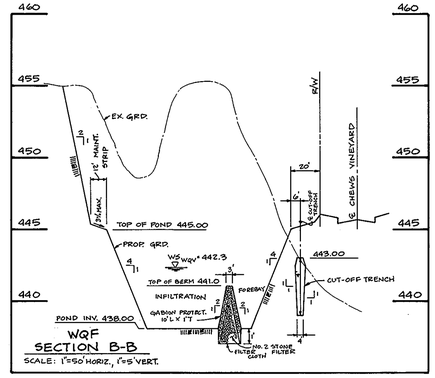
S-2 SIDE ELEVATION
SCALE: 3/8" = 1'-0"



WQF
℄ EMBANKMENT PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

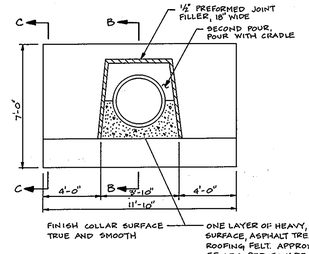


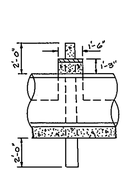
WQF
SPILLWAY PROFILE
SCALE: 1"=50' HORIZ, 1"=5' VERT.



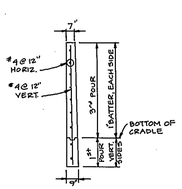
WQF
SECTION B-B
SCALE: 1"=50' HORIZ., 1"=5' VERT.

NOTE :
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.





SECTION B-B



SECTION C-C

SIDES OF ANTI-SEEP COLLARS TO BE FORMED ABOVE BOTTOM OF CRADLE.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JOHN M. ELORRIAGA — PE No. _____ DATE _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James R. Moxley Jr. — 4-11-94
DEVELOPER - JAMES R. MOXLEY JR. — DATE
PRESIDENT - SDC GROUP, INC.

BY THE ENGINEER:

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

John Elorriaga — 4/11/94
ENGINEER - JOHN M. ELORRIAGA, P.E. # 16891 — DATE

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

Patricia Eadr — 8/8/94
U.S. SOIL CONSERVATION SERVICE — DATE

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

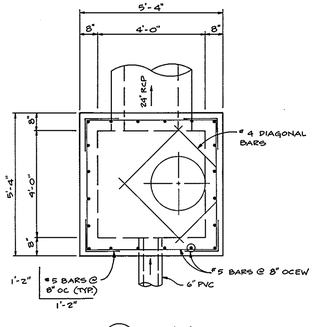
Robert W. Eich
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

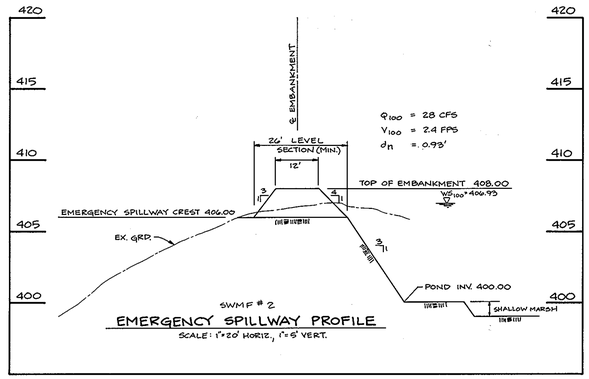
CHIEF, ZONING DEVELOPMENT DIVISION — DATE 8/16/94
CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94
CHIEF, BUREAU OF ENGINEERING — DATE 8/10/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

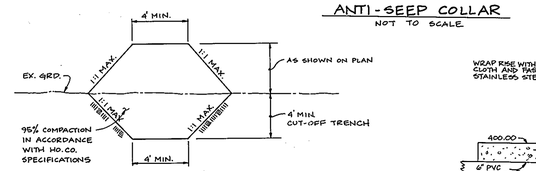
Anna Shimanski — 8/24/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE



S-2 PLAN
3/8" = 1'-0"

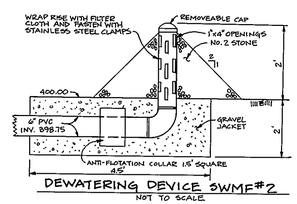


SWMF # 2
EMERGENCY SPILLWAY PROFILE
SCALE: 1"=20' HORIZ., 1"=5' VERT.

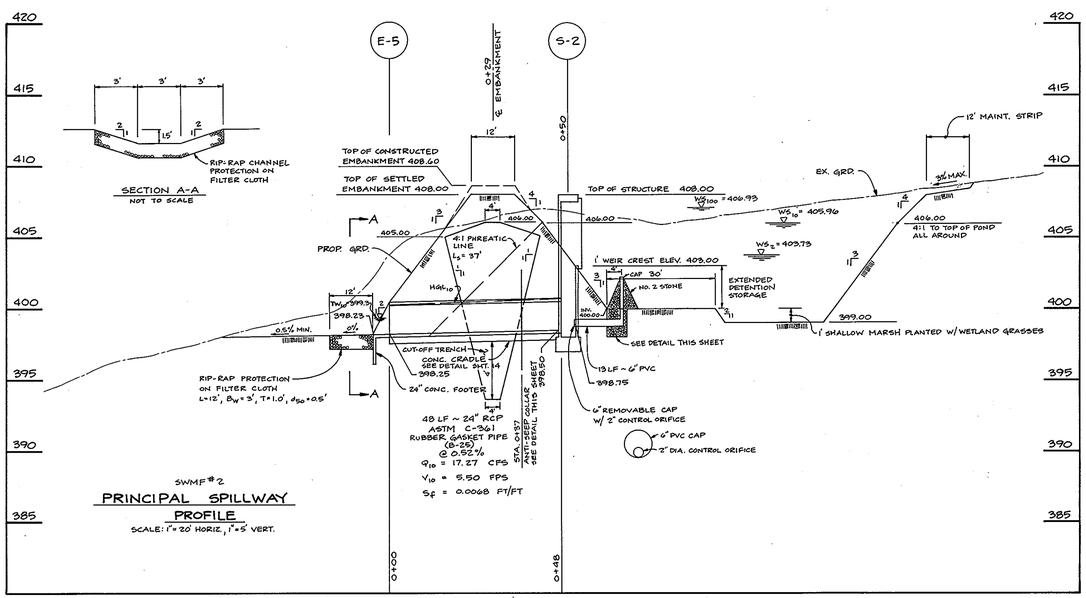


CORE TRENCH SECTION
NOT TO SCALE

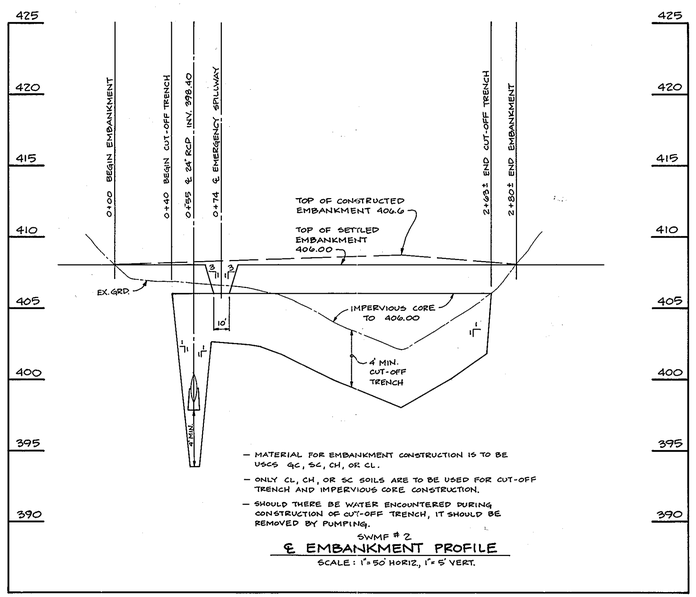
SCS DETAIL
RE: ES-154
ANTI-SEEP COLLAR
NOT TO SCALE



DEWATERING DEVICE SWMF#2
NOT TO SCALE



SWMF # 2
PRINCIPAL SPILLWAY PROFILE
SCALE: 1"=20' HORIZ., 1"=5' VERT.



- MATERIAL FOR EMBANKMENT CONSTRUCTION IS TO BE USCS GC, SC, CH, OR CL.
- ONLY CL, CH, OR SC SOILS ARE TO BE USED FOR CUT-OFF TRENCH AND IMPERVIOUS CORE CONSTRUCTION.
- SHOULD THERE BE WATER ENCOUNTERED DURING CONSTRUCTION OF CUT-OFF TRENCH, IT SHOULD BE REMOVED BY PUMPING.

SWMF # 2
℄ EMBANKMENT PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

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.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT:
WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION:
TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

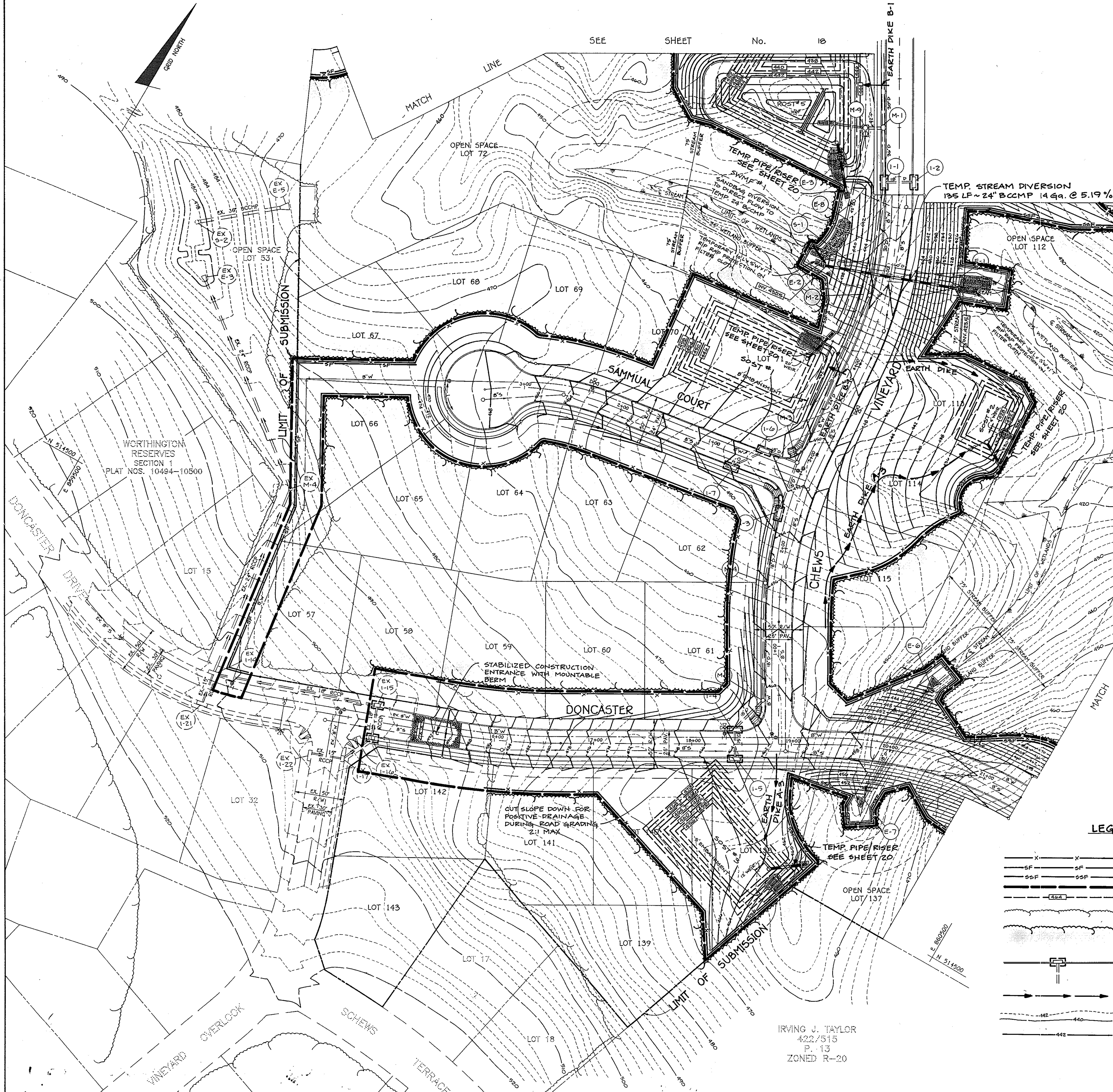
TITLE:
STORMWATER MANAGEMENT DETAILS
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994; JULY 27, 1994 — PROJECT NO. 0482

DES: JME — DRN: DBT — SCALE: AS SHOWN — DRAWING 15 OF 21

1938

F-94-102



LEGEND

- TREE PROTECTION FENCE
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- TEMP. CONTOURS DURING CONSTRUCTION
- EXISTING TREELINE
- PROPOSED TREELINE
- CURB INLET PROTECTION
- EARTH DIKE
- EXISTING CONTOURS
- PROPOSED CONTOURS

SEDIMENT TRAP DATA

	STONE OUTLET			RIP RAP OUTLET
	#1	#2	#3	#5
DRAINAGE AREA	5.0 AC.	1.0 AC.	3.0 AC.	8.3
TOTAL STORAGE REQUIRED	18,000 CF	3,600 CF	10,800 CF	29,880 CF
WET STORAGE	9,000 CF	1,800 CF	5,400 CF	14,940 CF
DRY STORAGE	9,000 CF	1,800 CF	5,400 CF	14,940 CF
TOTAL STORAGE PROVIDED	18,750 CF	5,300 CF	14,800 CF	37,200 CF
BOTTOM DIMENSION	105'x 50'	25'x 50'	45'x90'	SEE PLAN
STORAGE DEPTH	3'	3'	3'	6'
BOTTOM ELEVATION	446.00	428.00	456.00	438.00
WEIR CREST ELEVATION	449.00	431.00	459.00	444.00
WEIR LENGTH	20'	4'	12'	10'
TOP OF EMBANKMENT	450.00	432.00	460.00	446.00
EMBANKMENT WIDTH	8'	5'	5'	8'
CLEANOUT ELEVATION	446.75	428.75	456.75	440.00

— SEE SHEET 19 FOR SEQUENCE OF CONSTRUCTION.
— SEE SHEET 20 FOR SEDIMENT CONTROL AND TEMPORARY SWM DETAILS.

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER – JAMES R. MOXLEY JR. PRESIDENT – SDC GROUP, INC. 4-11-94 DATE

BY THE ENGINEER:

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

ENGINEER – JOHN M. ELORRIAGA, P.E. # 16891 4/7/94 DATE

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

U.S. SOIL CONSERVATION SERVICE 8/8/94 DATE

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

HOWARD SOIL CONSERVATION DISTRICT 8/10/94 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION 8/17/94 DATE

CHIEF, BUREAU OF HIGHWAYS 8-17-94 DATE

CHIEF, BUREAU OF ENGINEERING 8/10/94 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH JA 8/24/94 DATE

NO	DATE	REVISION

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

STATE OF MARYLAND — JOHN M. ELORRIAGA — 16891 — REGISTERED PROFESSIONAL ENGINEER

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

PROJECT:
WORTHINGTON RESERVE
SECTION 2 LOTS 57–143

LOCATION:
TAX MAP 31–PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

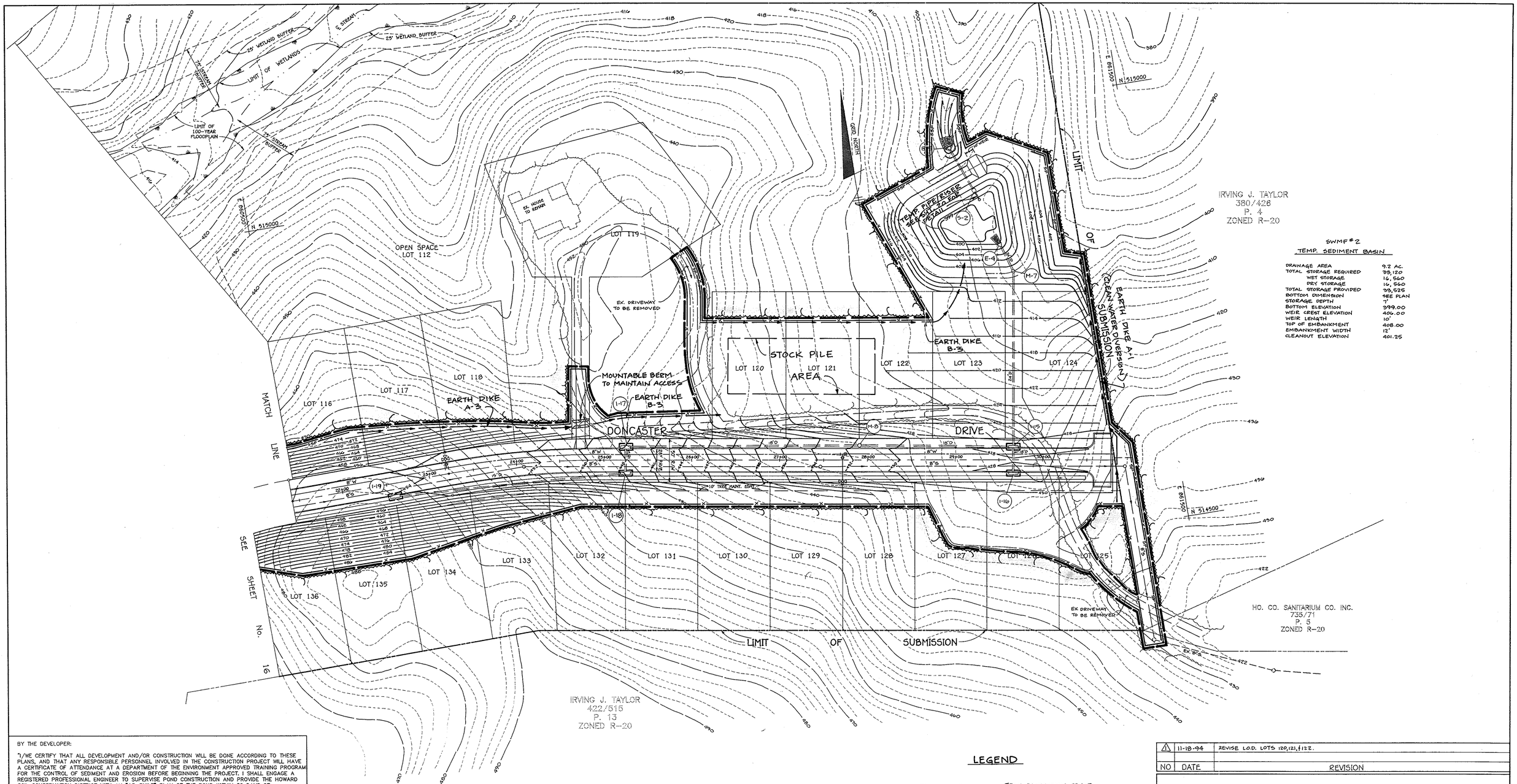
TITLE:
SEDIMENT CONTROL PLAN
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482

DES: JME/DRK — DRN: DRK/DBT — SCALE: 1" = 50' — DRAWING 16 OF 21

F-94-102

1638



SWMF #2

TEMP. SEDIMENT BASIN

DRAINAGE AREA	9.2 AC.
TOTAL STORAGE REQUIRED	33,120
WET STORAGE	16,560
DRY STORAGE	16,560
TOTAL STORAGE PROVIDED	33,525
BOTTOM DIMENSION	SEE PLAN
STORAGE DEPTH	3'
BOTTOM ELEVATION	399.00
WEIR CREST ELEVATION	406.00
WEIR LENGTH	10'
TOP OF EMBANKMENT	408.00
EMBANKMENT WIDTH	12'
CLEANOUT ELEVATION	401.25

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James R. Moxley Jr. — 4-11-94

DEVELOPER – JAMES R. MOXLEY JR.
PRESIDENT – SDC GROUP, INC. — DATE

BY THE ENGINEER:

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

John C. Elorriaga — 4/11/94

ENGINEER – JOHN M. ELORRIAGA, P.E. # 16891 — DATE

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

Patricia Engler — 8/8/94

U.S. SOIL CONSERVATION SERVICE — DATE

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

John R. Robertson — 8/10/94

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 8/16/94 DATE

CHIEF, BUREAU OF HIGHWAYS — 8-17-94 DATE

CHIEF, BUREAU OF ENGINEERING — 8/19/94 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 8/24/94 DATE

LEGEND

- TREE PROTECTION FENCE
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- TEMP. CONTOURS DURING CONSTRUCTION
- EXISTING TREELINE
- PROPOSED TREELINE
- CURB INLET PROTECTION
- EARTH DIKE
- EXISTING CONTOURS
- PROPOSED CONTOURS

NO	DATE	REVISION
1	11-18-94	REVISE L.O.D. LOTS 120,121,122.

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

STATE OF MARYLAND — JOHN M. ELORRIAGA — No. 16891 — REGISTERED PROFESSIONAL ENGINEER

OWNER/DEVELOPER:

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

PROJECT:
WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
SEDIMENT CONTROL PLAN

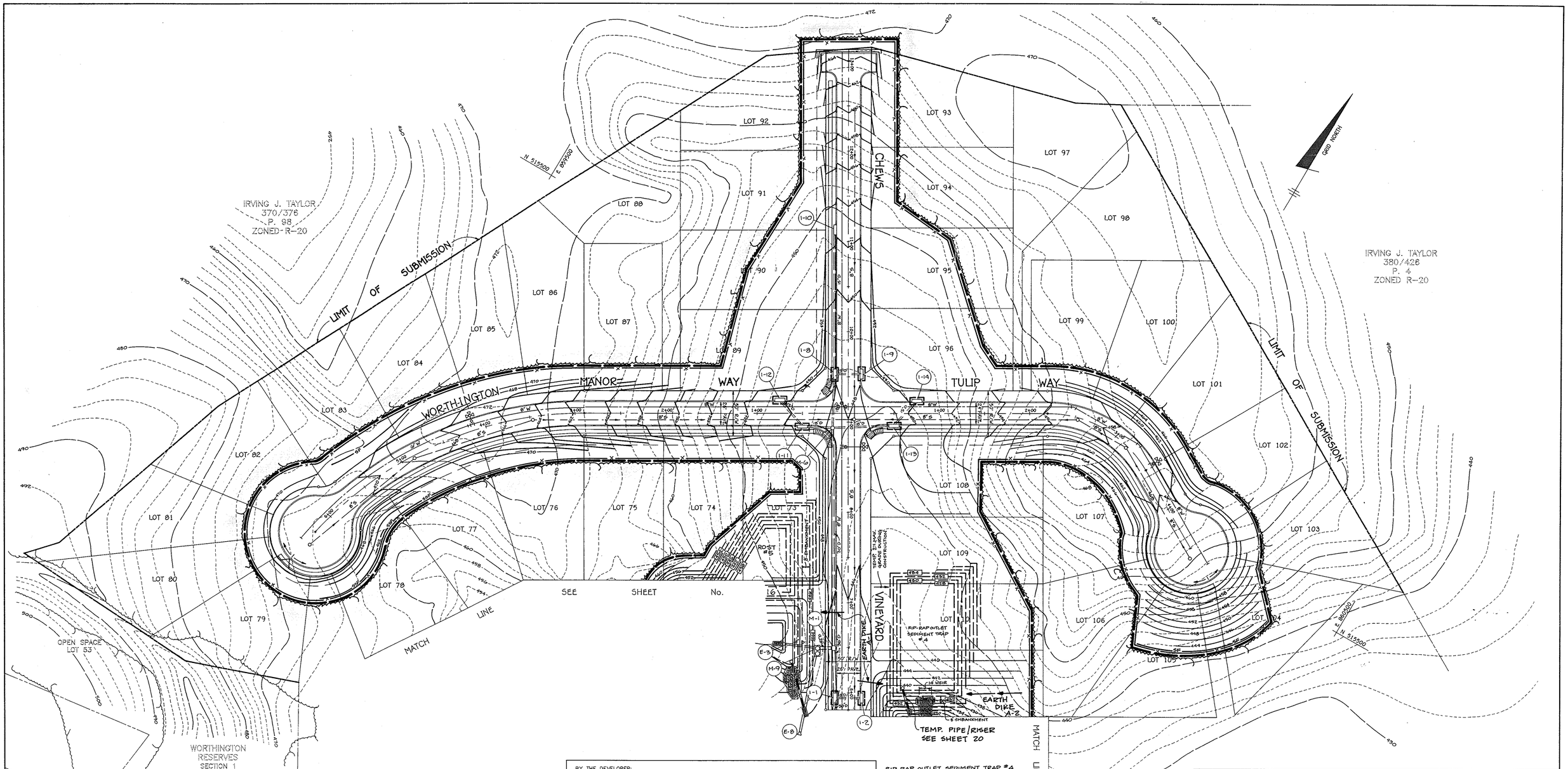
5-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994; JULY 27, 1994 — PROJECT NO. 0482

DES: JME/DRK — DRN: DRK/DBT — SCALE: 1" = 50' — DRAWING 17 OF 21

F-94-102

1638



LEGEND

- TREE PROTECTION FENCE
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- TEMP. CONTOURS DURING CONSTRUCTION
- EXISTING TREELINE
- PROPOSED TREELINE
- CURB INLET PROTECTION
- EARTH DIKE
- EXISTING CONTOURS
- PROPOSED CONTOURS

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER - JAMES R. MOXLEY JR. / PRESIDENT - SDC GROUP, INC. — DATE 4-11-94

BY THE ENGINEER:

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

ENGINEER - JOHN M. ELORRIAGA P.E. # 16891 — DATE 4/7/94

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

U.S. SOIL CONSERVATION SERVICE — DATE 8/8/94

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/16/94

RIP-RAP OUTLET SEDIMENT TRAP #4

DRAINAGE AREA	5.5 AC.
TOTAL STORAGE REQUIRED	19,800 CF
WET STORAGE	9,900 CF
DRY STORAGE	9,900 CF
TOTAL STORAGE PROVIDED	25,050 CF
BOTTOM DIMENSION	60'x120'
STORAGE DEPTH	3'
BOTTOM ELEVATION	428.00
WEIR CREST ELEVATION	431.00
WEIR LENGTH	14'
TOP OF EMBANKMENT	432.00
EMBANKMENT WIDTH	8'
CLEANOUT ELEVATION	428.75

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/12/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/12/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering
8460 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-8105

STATE OF MARYLAND — JOHN MICHAEL ELORRIAGA — NO. 16891 — REGISTERED PROFESSIONAL ENGINEER

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

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT CONTROL PLAN

5-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482

DES: JME/DRK — DRN: DRK/DBT — SCALE: 1" = 50' — DRAWING 18 OF 21

F-94-102

1638

STORMWATER MANAGEMENT NOTES

Site Prepdration

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 sheepsfoot, 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

All pipes shall be circular in cross section.

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

1. Materials – (Steel Pipe) – This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   Materials – (Aluminum Coated Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Materials – (Aluminum Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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

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

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24". Helically corrugated pipe shall have either continuously welded seams or have lock seams.

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

5. Backfilling shall conform to "Structure Backfill."

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

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

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

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
2. Absorption not more than three percent.
3. 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.

Care of Water during Construction

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

Stabilization

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

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1850).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL", REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	53.0	ACRES
AREA DISTURBED	17.2	ACRES
AREA TO BE ROOFED OR PAVED	3.2	ACRES
AREA TO BE VEGETATIVELY STABILIZED	14.0	ACRES
TOTAL CUT (18,000 CY ~ TOPSOIL)	61,000	CY
TOTAL FILL	76,000	CY
OFFSITE WASTE/BORROW AREA LOCATION	N/A	

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDBED PREPARATION

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).

SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATION

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ON OF THE FOLLOWING SCHEDULES:

1. PREFERRED – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0- UREAFORM FERTILIZER (9 LBS/1000 SQ FT).
2. ACCEPTABLE – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

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.

ATEC Associates, Inc. — GEOTECHNICAL AND MATERIALS ENGINEERS — RECORD OF SUBSURFACE EXPLORATION

PROJECT: WORTHINGTON RESERVES - II
CLIENT: SDC Group, Inc.
LOCATION: Howard County, MD
INSPECTOR: Siva Balu
NO: TP-1 JOB NO: 30-03-92-00122 DATE: 9-29-92 ELEVATION: 449.3

SAMPLE #	DEPTH (FEET)	DESCRIPTION OF MATERIALS	REMARKS
	1.5	Topsoil and root mat	
	3.5	Brown, moist, Clayey SILT (ML-SM), some Sand. (SANDY CLAY LOAM)	
1	10.0	Tan, moist, Silty SAND (SM-ML), trace mica, trace to little decomposed rock fragments (SANDY LOAM)	In-Situ Test @ 10± ft.
	13.75	Terminated at 13.75 ft	WATER LEVEL: Dry

PROJECT: WORTHINGTON RESERVES - II
CLIENT: SDC Group, Inc.
LOCATION: Howard County, MD
INSPECTOR: Siva Balu
NO: TP-3 JOB NO: 30-03-92-00122 DATE: 9-29-92 ELEVATION: 444.0

SAMPLE #	DEPTH (FEET)	DESCRIPTION OF MATERIALS	REMARKS
	4.0	Brown, moist, Clayey SAND (SC-CL), little silt (SANDY CLAY LOAM)	Topsoil: 12 in
1	9.0	Tan, grey, moist, Silty SAND (SM-ML), trace mica, trace to little fine Gravel (SANDY LOAM)	In-Situ Test @ 10± ft.
2	13.0		
	13.5	Terminated at 13.5 ft	WATER LEVEL: Dry

PROJECT: WORTHINGTON RESERVES - II
CLIENT: SDC Group, Inc.
LOCATION: Howard County, MD
INSPECTOR: Siva Balu
NO: TP-5 JOB NO: 30-03-92-00122 DATE: 9-28-92 ELEVATION: 406.4

SAMPLE #	DEPTH (FEET)	DESCRIPTION OF MATERIALS	REMARKS
1	3.0	Brown, red, moit, Clayey SILT (ML-CL), little fine sand, gravel (SANDY CLAY LOAM/LOAM)	Topsoil: 12 in
	5.0		
2	8.0	Brown, greenish brown, moist, Silty SAND (SM-ML), trace mica, trace decomposed rock fragments from 8 ft. (SANDY LOAM)	In-Situ Test @ 10± ft.
	12.0		
3	13.0	Grey, moist, Sandy SILT (SM-ML) with Decomposed Rock Fragments, trace mica (SANDY LOAM)	WATER LEVEL: Dry
	14.0	Terminated at 14 ft	

PROJECT: WORTHINGTON RESERVES - II
CLIENT: SDC Group, Inc.
LOCATION: Howard County, MD
INSPECTOR: Siva Balu
NO: TP-2 JOB NO: 30-03-92-00122 DATE: 9-29-92 ELEVATION: 450.2

SAMPLE #	DEPTH (FEET)	DESCRIPTION OF MATERIALS	REMARKS
	1.5	Topsoil and root mat	
	3.0	Brown, moist, Clayey SILT and SAND (ML-SC), little gravel (SANDY CLAY LOAM)	
1	5.0	White, tan, micaceous Silty GRAVEL and SAND (GM-SM) (VERY GRAVELLY SAND)	
	9.0		
2	10.0	Grey, brown, moist, micaceous Silty SAND (SM), little to some Decomposed Rock Fragments (SANDY LOAM)	In-Situ Test @ 10± ft.
	12.0		
	14.0	Tan, white, moist, Silty GRAVEL and SAND (GM-SM), trace mica. (VERY GRAVELLY SAND) Terminated at 14 ft	WATER LEVEL: Dry

PROJECT: WORTHINGTON RESERVES - II
CLIENT: SDC Group, Inc.
LOCATION: Howard County, MD
INSPECTOR: Siva Balu
NO: TP-4 JOB NO: 30-03-92-00122 DATE: 9-28-92 ELEVATION: 409.5

SAMPLE #	DEPTH (FEET)	DESCRIPTION OF MATERIALS	REMARKS
	3.0	Red, moist, Clayey SILT (ML-CL) trace sand, gravel (SANDY CLAY LOAM)	Topsoil: 8 in
1	8.0	Red, orange, moist, micaceous Clayey SILT (MLc), little sand, trace gravel (SANDY CLAY LOAM)	In-Situ Test @ 10± ft.
	12.0		
2	13.0	Greenish brown, moist, micaceous Sandy SILT (ML), with decomposed rock fragments (SANDY LOAM)	WATER LEVEL: Dry
	14.0		

PROJECT: WORTHINGTON RESERVES - II
CLIENT: SDC Group, Inc.
LOCATION: Howard County, MD
INSPECTOR: Siva Balu
NO: TP-6 JOB NO: 30-03-92-00122 DATE: 9-28-92 ELEVATION: 405.0

SAMPLE #	DEPTH (FEET)	DESCRIPTION OF MATERIALS	REMARKS
	4.0	Brown, red, moist, Clayey SILT (ML-CL), little sand, trace gravel (SANDY CLAY LOAM)	Topsoil: 8 in
1	7.0	Orange, moist, micaceous Sandy SILT (ML) (SANDY LOAM)	
	8.5		
	13.5	Greenish brown, grey, moist, micaceous Sandy SILT (ML-SM) little to some decomposed rock fragments (SANDY LOAM)	In-Situ Test @ 10± ft. WATER LEVEL: Dry

SEQUENCE OF CONSTRUCTION

NOTE: STORM DRAINS AND UTILITY LINES WITHIN THE SWM EMBANKMENT CHEWS VINEYARD STA. 4+20 TO 6+50 SHALL BE BUILT WITH THE EMBANKMENT RATHER THAN BY TRENCHING.

1. OBTAIN GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, TREE PROTECTION FENCE, SILT FENCE AND SUPER SILT FENCE. INSTALL TEMPORARY STREAM CROSSING WITH SELECT GRADING AS REQUIRED AFTER SEDIMENT CONTROLS ARE IN PLACE. COMPLETE TREE PROTECTION, SILT FENCE AND SUPER SILT FENCE INSTALLATION. (DAY 1-4)
3. INSTALL CLEAN WATER DIVERSION EARTH DIKE AT SWMF # 2. CONSTRUCT SWMF # 2 (EXCAVATION, CONTROL STRUCTURE, OUTFALL, ETC.) WITH TEMPORARY DEWATERING CONTROLS FOR USE DURING CONSTRUCTION AS SEDIMENT BASIN. INSTALL EARTH DIKES TO BASIN. STABILIZE ALL DISTURBED AREAS. (DAY 4-9)
4. INSTALL SEDIMENT TRAPS AND DEWATERING DEVICES. INSTALL EARTH DIKES. STABILIZE. (DAY 9-13)
5. COMMENCE SITE GRADING. ALL SEDIMENT CONTROLS ARE TO BE PROPERLY MAINTAINED. EARTH DIKES AND SLOPES ADJACENT TO SEDIMENT TRAPS SHALL BE ADJUSTED AS REQUIRED DURING GRADING OPERATION. (DAY 13)
6. CONSTRUCT CUT-OFF TRENCH IN CHEWS VINEYARD FOR PERMANENT SWMF # 1 EMBANKMENT. (DAY 13-18)
7. CONSTRUCT SWMF # 1 CONTROL STRUCTURE AND OUTFALL. STABILIZE ALL DISTURBED AREAS. REMOVE TEMPORARY STREAM DIVERSION. (DAY 18-25)
8. COMPLETE ROAD GRADING TO SUBGRADE AND SITE GRADING. STABILIZE. (DAY 25-39)
9. CONSTRUCT SANITARY SEWER, WATER, STORM DRAIN SYSTEMS. (DAY 39-67)
10. INSTALL INLET PROTECTION TO REMAIN UNTIL SITE STABILIZED. (DAY 67)
11. CONSTRUCT CONCRETE CURB AND GUTTER. (DAY 67-81)
12. CONSTRUCT PAVING. (DAY 81-95)
13. COMPLETE FINAL GRADING OF SITE (TO EXTENT POSSIBLE) AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDBED NOTES. (DAY 95-99)
14. CONVERT RIP RAP OUTLET SEDIMENT TRAP # 5 TO WATER QUALITY FACILITY. SHAPE FACILITY PER CONSTRUCTION PLANS AND EXCAVATE TO FINAL GRADE. ROTARY TILL BOTTOM OF FACILITY. PERMANENTLY STABILIZE. (DAY 99-101)
15. CONVERT TEMPORARY SEDIMENT BASIN TO PERMANENT SWMF # 2 PER CONSTRUCTION PLANS. PERMANENTLY STABILIZE. (DAY 101-103)
16. INSTALL SIDEWALKS AND STREET TREES. (DAY 103-108)
17. UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR; REMOVE SEDIMENT TRAPS, COMPLETE FINAL GRADING AND STABILIZE. REMOVE ALL SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE AS NEEDED. (DAY 108-109)

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER – JAMES R. MOXLEY JR. PRESIDENT – SDC GROUP, INC. — DATE 4-11-94

BY THE ENGINEER:

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

ENGINEER – JOHN M. ELORRIAGA, P.E. # 16891 — DATE 4/7/94

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

U.S. SOIL CONSERVATION SERVICE — DATE 8/8/94

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/10/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/17/94
CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94
CHIEF, BUREAU OF ENGINEERING — DATE 8/19/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

Boring Logs

TP-A

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Properties)	STRA. DEPTH	CON	BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
441.6	SURFACE						Topsoil at 4 inches; W.O.R. - None; Cave in at 10.0'
	Orange brown, moist, very loose, fine to coarse silty sand, trace quartz, rock fragments and mica (SM)	3.0	D	2-2-3	1	12"	
	Greyish white, moist, loose, micaceous silty sand, some quartz gravel fragments (SM)	7.0	D	2-2-4	2	14"	GROUND WATER DEPTH: AT COMPLETION DRY FT.; AFTER 24 Hr DRY FT.; AFTER ___ FT.
	Tannish white, moist, very dense, silty sand and decomposed rock (SM)	10.0	D	22-33-49	3	18"	
	Greyish white, moist, dense silty sand, decomposed rock and quartz rock fragments (SM)	12.0	D	8-14-18	4	18"	
	Boring Terminated at 12.0'						

TP-B

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Properties)	STRA. DEPTH	CON	BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
427.7	SURFACE						Topsoil - 8 inches
	Brown, moist, soft, sandy clay trace mica, trace gravel (CL)	3.0	D	2-2-2	1	12"	
	Dark brown and tannish white wet, medium dense to very dense, fine to coarse silty sand and quartz gravel fragments (SM/GM)	12.0	D	5-6-9	2	14"	GROUND WATER DEPTH: AT COMPLETION 8.0 FT.; AFTER 24 Hr. 6.5 FT.; AFTER ___ FT.
			D	50/3"	3	3"	
	Greyish white, dry, very dense, decomposed rock (SM)	15.0	D	50/1"	4	1"	
	Boring Terminated at 15.0' (Auger refusal)						

TP-C

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Properties)	STRA. DEPTH	CON	BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
436.2	SURFACE						Topsoil - 6.0 inches; W.O.R. - None; Cave in - 10.0'
	Brown, wet, medium soft, silty clay, trace root matter (CL)	3.0	I	2-2-4	1	10"	
	Brown, moist, loose, micaceous silty sand, trace quartz rock fragments, trace clay (SM)	7.0	D/I	3-4-5	2	12"	GROUND WATER DEPTH: AT COMPLETION DRY FT.; AFTER 24 Hr DRY FT.; AFTER ___ FT.
	Greyish white and brown, moist, sandy silt, trace decomposed rock fragments (ML)	12.0	D	7-8-13	3	16"	
			D/I	13-12-10	4	18"	
	Boring Terminated at 12.0'						

TP-D

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Properties)	STRA. DEPTH	CON	BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE						Topsoil - 10 inches; W.O.R. - 8.0'; Caved in - 10.0'
	Dark brown, moist, medium stiff, silty clay, trace gravel, trace sand, trace organics (CL)	3.0	D	3-3-4	1	12"	
	Brown, moist, medium dense, micaceous sandy silt, trace gravel (ML)	7.0	D	4-8-18	2	18"	GROUND WATER DEPTH: AT COMPLETION 6.5 FT.; AFTER 24 Hr 6.5 FT.; AFTER ___ FT.
	Yellowish brown and grey, moist, medium dense, silty sand and quartz rock fragments (SM/GM)	10.0	D	4-12-16	3	18"	
	Greyish white, moist, medium dense, micaceous sandy silt trace decomposed rock fragments (ML)	12.0	D	6-12-14	4	14"	
	Boring Terminated at 12.0'						

NO	DATE	REVISION

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

STATE OF MARYLAND — JOHN M. ELORRIAGA — 16891 — REGISTERED PROFESSIONAL ENGINEER

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

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3, 2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

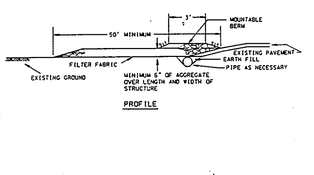
TITLE: STORMWATER MANAGEMENT NOTES, SEDIMENT CONTROL NOTES AND DETAILS
S-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

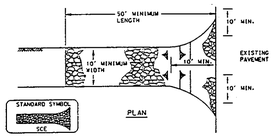
DATE: APRIL 5, 1994 / JULY 27, 1994 — PROJECT NO. 0482

DES: JME — DRN: DBT — SCALE: AS SHOWN — DRAWING 19 OF 21

F-94-102

1638





Construction Specification

1. Length - minimum of 50' (30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

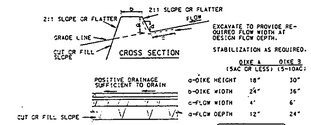
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval aumority may not require single family residence to use geotextile.

4. Stone - crushed aggregate (2" to 3"), or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

STABILIZED CONSTRUCTION ENTRANCE



1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. Line with geotextile Class C and Class I rip-rap or recycled concrete equivalent.
4. (Type B only) Line with geotextile Class C and Class II rip-rap.

CONSTRUCTION SPECIFICATIONS

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from an disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectonal material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

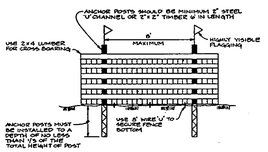
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed on construction shall be placed so that it will not interfere with the functioning of the dike.

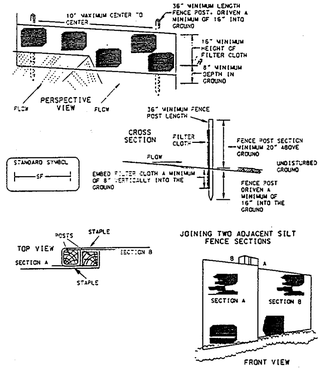
8. Inspection and maintenance must be provided periodically and after each rain event.

EARTH DIKE



1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLATION.
4. ROOT DAMAGE SHOULD BE AVOIDED
5. PROTECTIVE SIGNAGE MAY ALSO BE USED
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCE



Construction Specifications

1. A detail of the silt fence shall be shown on the plan, and contain the following minimum requirements:
   a. The type, size, and spacing of fence posts.
   b. The type of filter cloth used.
   c. The method of fastening the filter cloth to the fencing support.
   d. Accumulated sediment must be removed when it reaches 50% of the height of the fabric.

2. Where ends of filter cloth come together, they shall be overlapped, folded and sealed to prevent sediment bypass.

3. Design computations are not required.

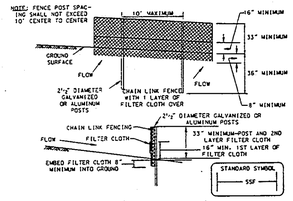
4. All silt fences shall be placed as close to the contour as possible.

5. The area below the fence must be undisturbed or stabilized.

6. Silt Fence Fabric: The fabric shall meet the Filter fabric specifications listed in Table 27.

7. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts: 2"x 2", with a minimum cross sectional area of 3.0 square inches will be of sound quality hardwood. Steel posts will be standard T or U section weighing nor less than 1.00 pound per linear foot.

SILT FENCE



Construction Specifications

Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

1. The poles do not need to set in concrete.

2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.

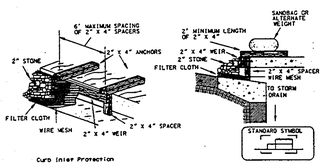
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

SUPER SILT FENCE



Curb Inlet Protection

1. Attach a continuous piece of wire mesh (30" minimum width by throat length, plus 4") to the 2" x 4" weir timesuring throat length plus 2") as shown on the standard drawing.

2. Place a continuous piece of approved filter cloth (40 + 80 sleve) of the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 6' apart).

4. Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

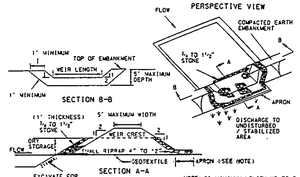
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the 1/2" x 1/2" wire mesh and the filter cloth to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 2" stone over the wire mesh and filter cloth in such a manner to prevent water from entering the inlet under or around the filter cloth.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

CURB INLET PROTECTION



Construction Specifications

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.

3. All cut and fill slopes shall be 2:1 or flatter.

4. The stone used in the outlet shall be small rip rap 4" to 12" in size with a 1" thick layer of ¾" to 1½" washed aggregate placed on the upstream face of the outlet. Stone facing shall be maintained as necessary to prevent clogging.

5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will nor erode.

6. The structure shall be inspected periodically and after each rain and repairs made as needed.

7. Construction of traps shall be carried out in such a manner that sediment pollution is abated.

8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

9. Refer to Section D for specifications concerning trap dewatering.

10. Minimum trap depth shall be measured from the weir elevation.

11. The elevation of the top of any dike directing water into the trap must equal or exceed the elevation of the trap embankment.

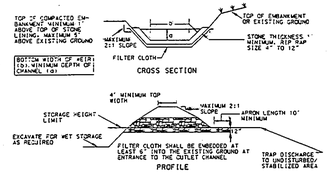
12. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance of the outlet channel.

13. Stone used in the outlet channel shall be 4" to 12" rip rap.

14. Outlet - an outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge end shall be provided as necessary in accordance with the Standards and Specifications for Rock Outlet Protection.

15. For storage requirements see Table 5.

STONE OUTLET SEDIMENT TRAP



Construction Specifications for Rip rap Outlet Sediment Trap

1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.

3. All cut and fill slopes shall be 2:1 or flatter.

4. Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.

5. Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 9).

6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.

7. Stone used in the outlet channel shall be 4" to 12" rip rap.

8. Outlet - An outlet shall be provided, which includes a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge end shall be provided as necessary in accordance with the Standards and Specifications for Rock Outlet Protection.

9. Outlet channel must have positive drainage from the trap.

10. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

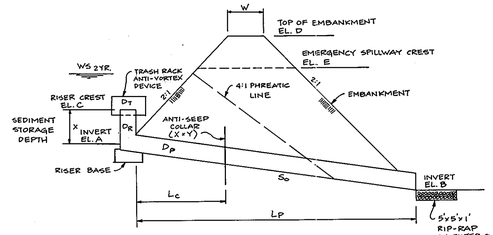
11. The structure shall be inspected periodically after each rain and repaired as needed.

12. Construction of traps shall be carried out in such a manner that sediment pollution is abated.

13. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

14. Drainage area for this practice is limited to 10 acres or less.

RIP RAP OUTLET SEDIMENT TRAP

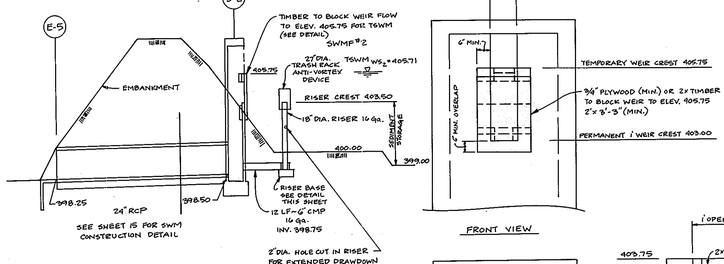


ALL PIPE TO BE BCCMP, 16 ga.

TABLE

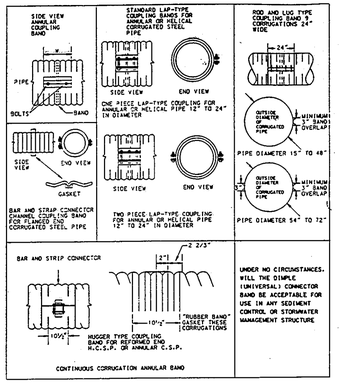
	TRAP # 1	TRAP # 2	TRAP # 3	TRAP # 4	TRAP # 5
EL. A	446.00	428.00	456.00	428.0	441.50
EL. B	445.25	427.50	454.00	428.5	440.50
EL. C	447.50	429.50	457.50	429.5	443.00
EL. D	450.00	432.00	460.00	432.0	446.00
EL. E	449.00	431.00	459.00	430.0	444.00
Dp	8"	8"	8"	10"	10"
Dr	18"	18"	18"	18"	18"
DT	27"	27"	27"	27"	27"
Lp	32'	20'	32'	24'	56'
So	0.023 FT/FT	0.025 FT/FT	0.063 FT/FT	0.063 FT/FT	0.018 FT/FT
Lc	12'	10'	10'	12'	12'
X+Y	4'x 4'	4' x 4'	4'x 4'	5'x 5'	5'x 5'
WS 2 YR.	448.75	429.99	457.95	430.06	442.01

SEDIMENT TRAP DEWATERING DEVICE TEMPORARY SWM PIPE & RISER

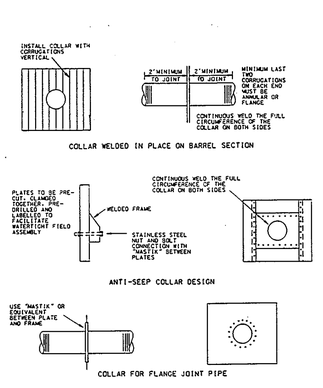


TIMBER BLOCKING DETAIL FOR S-2 DURING CONSTRUCTION

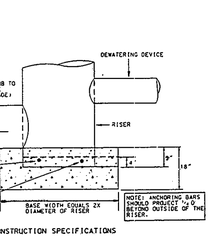
SWMF #2 TEMPORARY SEDIMENT BASIN



TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE



TYPICAL ANTI-SEEP COLLARS



CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE DESIGN TABLE

CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

CONSTRUCTION SPECIFICATIONS

The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers ten feet or less in height are:

1. A concrete base 18" thick with the riser embedded 9" in the base.
2. A ¼" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2.5 feet of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

NOTE: For risers greater than ten feet high computations shall be made to design a base which will prevent flotation. The minimum factor of safety shall be 1.20 (downward forces ÷ 1.20 = upward forces).

RISER BASE DETAIL

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James R. Moxley Jr. 4-11-94
DEVELOPER - JAMES R. MOXLEY JR. DATE
PRESIDENT - SDC GROUP, INC.

BY THE ENGINEER:

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

4/7/94
ENGINEER - JOHN H. ELORRIAGA, P.E. # 16891 DATE

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

Patricia Eyler 8/8/94
U.S. SOIL CONSERVATION SERVICE DATE

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

John R. Robertson 8/10/94
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

8/16/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

8-17-94
CHIEF, BUREAU OF HIGHWAYS DATE

8/19/94
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

8/24/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

NO	DATE	REVISION

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

STATE OF MARYLAND — JOHN H. ELORRIAGA — No. 16891 — REGISTERED PROFESSIONAL ENGINEER

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

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT CONTROL DETAILS
5-79-13 5-89-50 P-90-07 F-92-50 F-94-102

DATE: APRIL 5, 1994; JULY 27, 1994
PROJECT NO. 0482
SCALE: NONE
DRAWING 20 OF 21

DES: JME DRN: DBT

1638

F-94-102

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJ. TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	N/A	A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	N/A	5,305 LF
CREDIT FOR EXISTING VEGETATION	N/A	YES 4,605 LF 87%
CREDIT FOR WALL, FENCE, OR BERM	N/A	NO
NUMBER OF PLANTS REQUIRED	N/A	
SHADE TREES		89
EVERGREEN TREES		0
SHRUBS		0
NUMBER OF PLANTS PROVIDED		
SHADE TREES		14

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

LANDSCAPE TYPE ____ D
LINEAR FEET OF PERIMETER ____ 900

NUMBER OF TREES REQUIRED
- SHADE TREES 1/50 LF ____ 18
- EVERGREEN TREES 1/40 LF ____ 23

CREDIT FOR EXISTING VEGETATION ____ YES, 66%

CREDIT FOR OTHER LANDSCAPING ____ NO

NUMBER OF TREES PROVIDED
- SHADE TREES ____ 8
- EVERGREEN TREES ____ 10

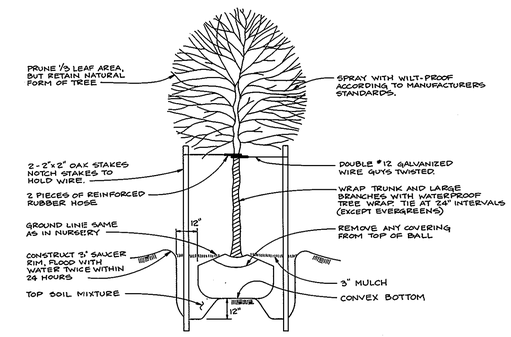
PLANT LIST

SYMBOL	QUANTITY	NAME	REMARKS
⊙	161	QUERCUS RUBRA Red Oak	2½ MIN. CALIPER B|B FULLHEAD
⊕	65	ACER RUBRUM Red Maple	2½ MIN. CALIPER B|B FULLHEAD
⊗	10	PINUS STROBUS White Pine	4'-6' HEIGHT B|B|B

LANDSCAPE NOTES

1. PERIMETER LANDSCAPING SHALL BE PROVIDED BY THE EXISTING VEGETATION TO REMAIN. PERIMETER LANDSCAPING IS ONLY SHOWN WHERE THE EXISTING VEGETATION IS BEING DISTURBED BY CONSTRUCTION.
2. THE BUILDER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL INTERNAL LANDSCAPING AND PERIMETER LANDSCAPING ON LOTS ADJACENT TO PROPERTIES NOT INCLUDED IN THE WORTHINGTON RESERVES PROJECT TO BE SHOWN ON THE SITE DEVELOPMENT PLAN.
3. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE STREET TREES, STORMWATER MANAGEMENT POND PLANTING, AND THE PRESERVATION OF THE PERIMETER VEGETATION.
4. ALL STREET TREES ARE TO BE LOCATED A MINIMUM OF 4' FROM SIDEWALK, AND LOCATED 20' FROM ANY STREET LIGHT.

PER DEPT. OF NATURAL RESOURCES DAM CONSTRUCTION PERMIT NO TREE PLANTING IS ALLOWED ON DAM. (CHEWS VINEYARD E STA. 4+20 TO 6+80)



TREE PLANTING DETAIL
NOT TO SCALE

Landscape financial surety for 82 required landscape trees in the amount of $32,800.00 will be provided in conjunction with the DPW Developer's Agreement.

PLAN
SCALE : 1" = 100'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 8/5/94

CHIEF, BUREAU OF HIGHWAYS — DATE 8-17-94

CHIEF, BUREAU OF ENGINEERING — DATE 8/10/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 8/24/94

NO	DATE	REVISION

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

OWNER/DEVELOPER:

SECURITY DEVELOPMENT CORP.
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
(410) 465-4244

PROJECT: WORTHINGTON RESERVE
SECTION 2 LOTS 57-143

LOCATION: TAX MAP 31-PARCEL 3
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPE PLAN

5-89-50 P-93-09 WP-94-01 F-92-50 F-94-102

DATE: APRIL 5, 1994; JULY 27, 1994

PROJECT NO. 0482

DES: JME | DRN: DRK/DBT

SCALE: AS SHOWN

DRAWING 21 OF 21

F-94-102

1638