

FINAL PLAN

VILLAGE OF RIVER HILL

SECTION 4 AREA 4

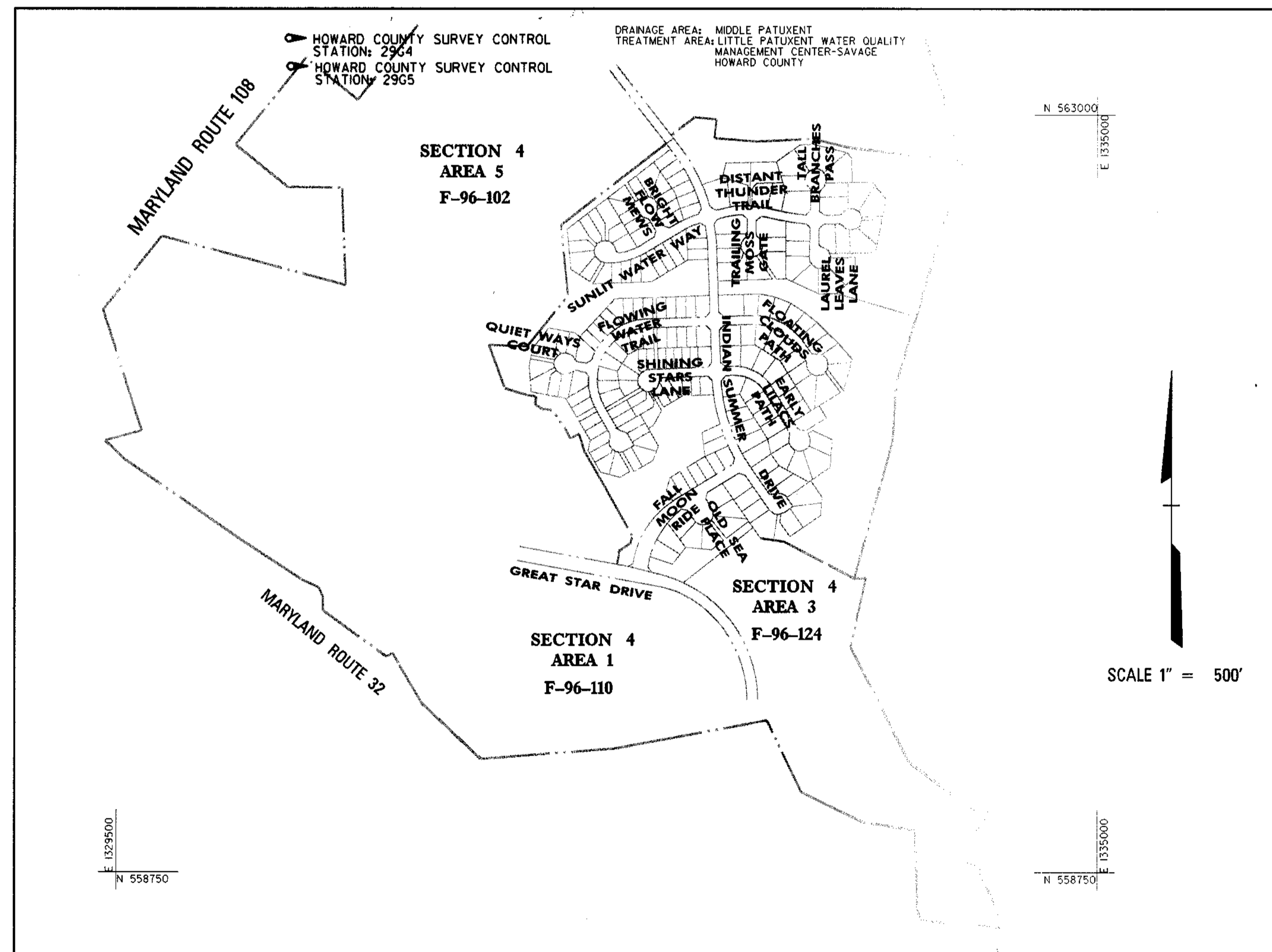
LOTS 1 - 216

5th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at 410-313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify 'Miss Utility' at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs be in place prior to the placement of any asphalt.
- Street light placement and the type of fixture and pole shall be in accordance with the Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993)." A minimum spacing of 20' shall be maintained between any street light and any tree.
- The existing topography is taken from aerial survey with 2' contour intervals prepared by Mapping Associates Inc. dated 1989.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 2904 and 2905 were used for this project.
- Water is Public, Contract No. 34-3420D.
- Sewer is Public, Contract No. 34-3420D.
- Stormwater management quantity and quality for the improvements from Bright Flow Mews, area North of Distant Thunder Trail and DA to M 309 from Section 4 Area 5, F-96-102 will be provided by an excavated pond east of Distant Thunder Trail. Said pond will be jointly maintained. Stormwater management quantity for the improvements west of Indian Summer Drive and south of Sunlit Water Way is provided by Village of River Hill Section 4 Area 1, Phase I, F-96-110. Water quality will be provided by bio-retention or shallow marsh at the storm drain outfalls and will be jointly maintained. Stormwater management quantity for the improvements east of Indian Summer Drive and south of Distant Thunder Trail are provided for in Section 4 Area 1, F-96-110 by proposed features as described in a report prepared by Whitman, Reardon & Assoc. and approved as of 1/20/95. Water quality will be provided by bio-retention or shallow marsh at the storm drain outfalls and will be jointly maintained.
- Existing utilities are based on Existing Construction Plans (contract no. 30-3294-D), Field verified Manholes and proposed plans provided by MRA Engineers and GLW Engineers.
- The floodplain study for this project was prepared by Whitman Reardon and Associates and was approved on January 20, 1995.
- The wetlands delineation study for this project was prepared by Exploration Research, Inc., and was approved on January 20, 1995.
- The traffic study for this project was prepared by Wells and Associates, and was approved on January 20, 1995.
- Sidewalk ramps shall meet current ADA requirements.
- Project background information:
 Subdivision Name: Village of River Hill
 Tax Map: 34 and 35
 Section/Area: Section 4, Area 4
 Lot./Parcel: 3, 22, 53
 Zoning: NT
 Election District: 5th
 Total Tract Area: 100.6 acres
 Section 4 Area 4
 Number of Proposed Lots: 216
 Preliminary Plan Approval Date: 4 / 19 / 95
 DPZ Reference Number: P-95-11
- Alsidewalks at intersections to have handicaps ramps. See detail on sheet 23 of 44.
- Street trees shall be planted at least 5' from any inlet structure.

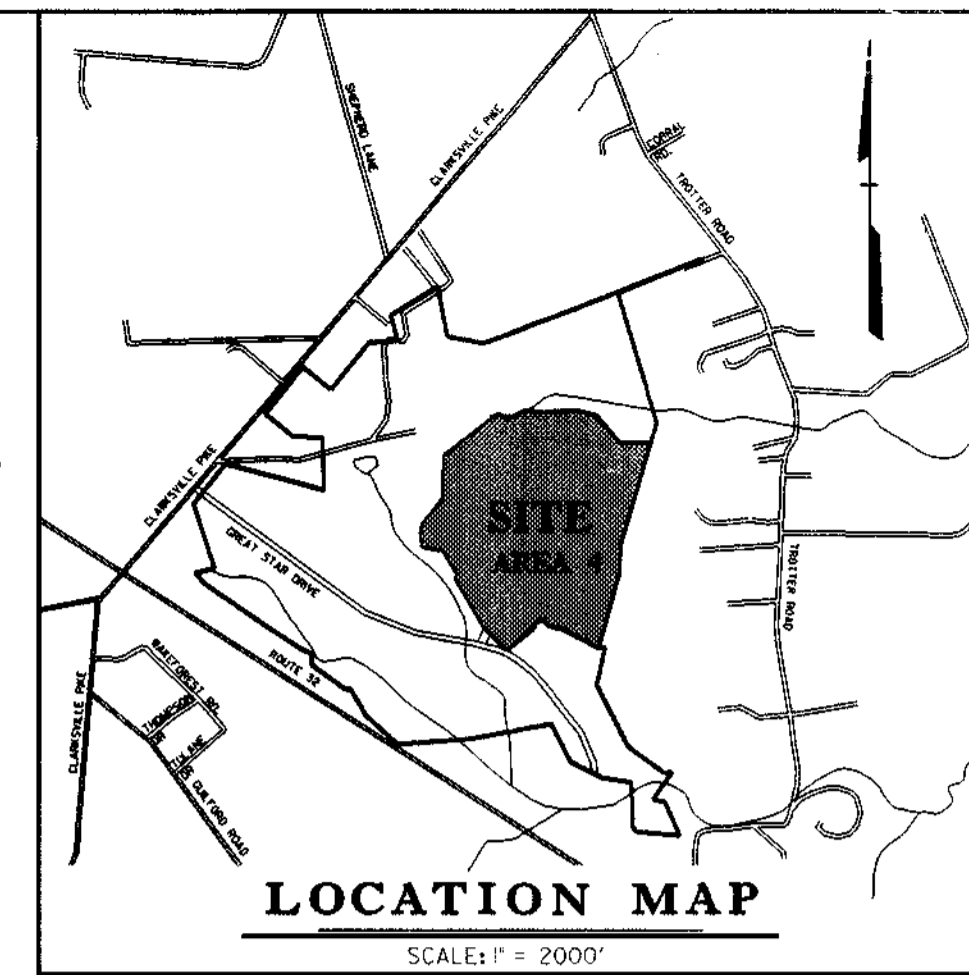


BENCHMARK

DESCRIPTION

HOWARD COUNTY SURVEY CONTROL STATION: 2904
 N 566866.5020 E 1333306.168
 NOTE: HOWARD COUNTY SURVEY CONTROLS ARE STAMPED BRASS OR ALUMINUM DISCS SET ON TOP OF CONCRETE BASE INTERSECTION OF RT. 108 & MEADOW VISTA WAY.

HOWARD COUNTY SURVEY CONTROL STATION: 2905
 N 568341.8 E 1335392.4
 NOTE: HOWARD COUNTY SURVEY CONTROLS ARE STAMPED BRASS OR ALUMINUM DISCS SET ON TOP OF CONCRETE BASE 150' NE OF INTERSECTION OF MIDDLE PATUXENT CT & RT. 108

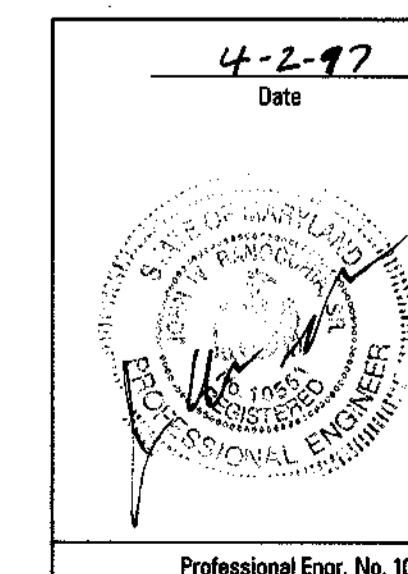


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APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Duncley 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. Harman 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

W. D. ... 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREAS 4

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

DMW
 Draft: McCune Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 298-3038
 Fax 298-4702

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

SUBDIVISION NAME	RIVER HILL	SECTION/AREA	4 - 4	LOT/PARCEL #	3, 27, 53
PLAT OR L/P	BLOCK	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
WATER CODE	SEWER CODE				
TITLE SHEET					
Des By	RTP	Scale	1" = 500'	Proj. No.	94064
Drn By	RTP	Date	FEB 1996		
Chk By	JWR	Approved			1 OF 44

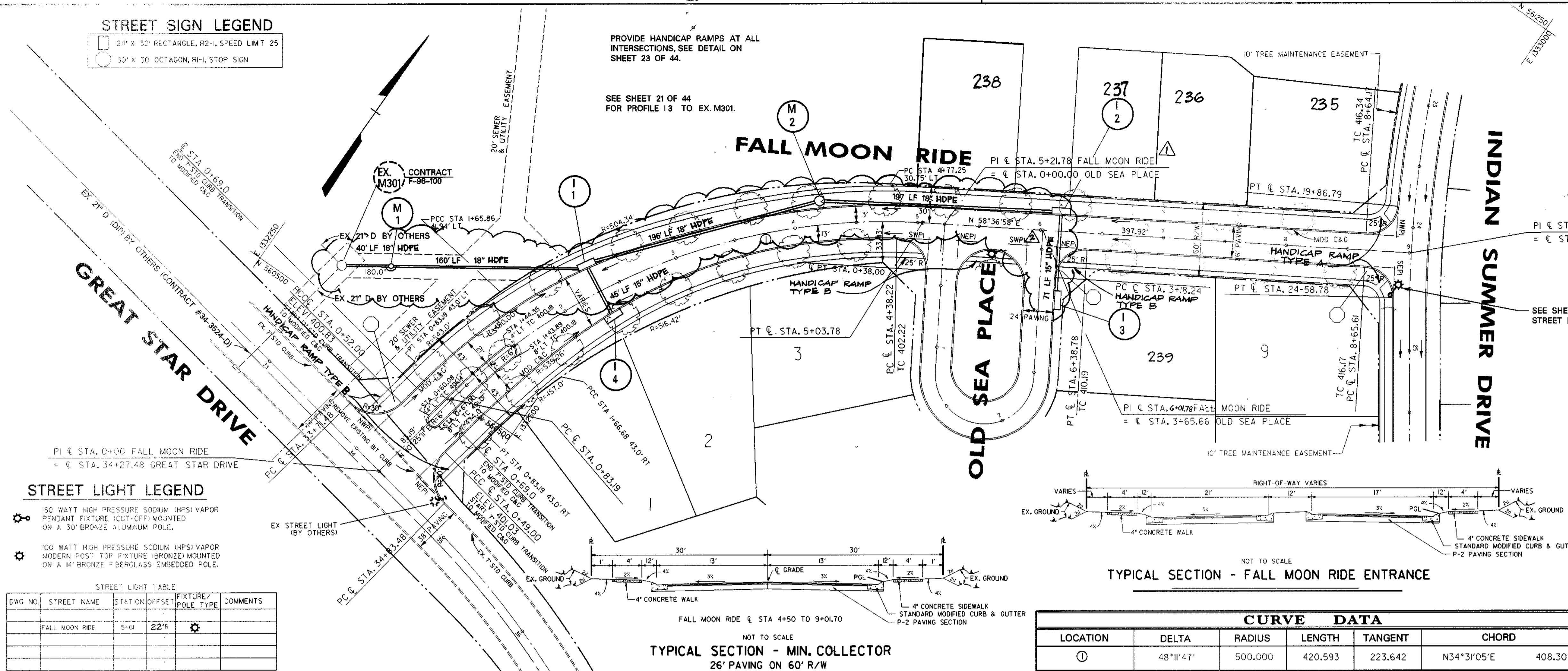
STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-L, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-L, STOP SIGN

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

SEE SHEET 21 OF 44 FOR PROFILE 13 TO EX. M301.

29 TREES PROVIDED THIS SHEET.

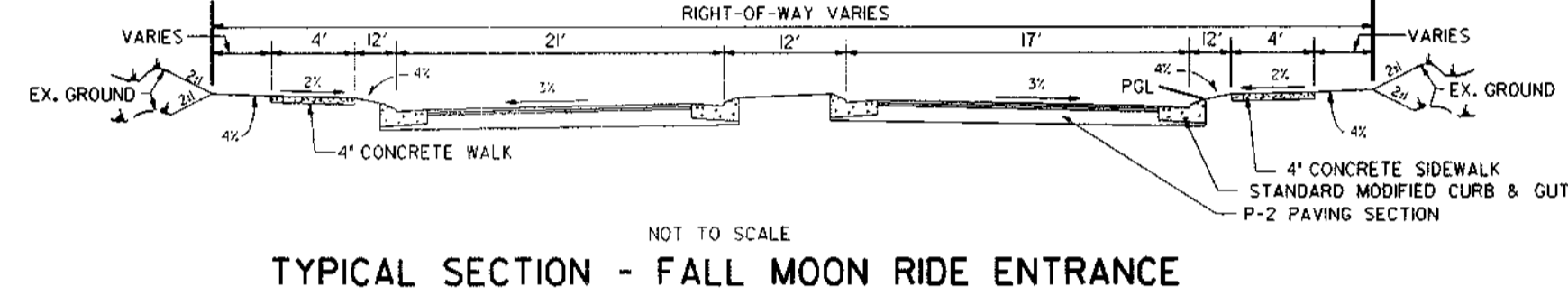


STREET LIGHT LEGEND

- 150 WATT HIGH PRESSURE SODIUM (HPS) VAPOR PENDANT FIXTURE, 121" OFF, MOUNTED ON A 30" BRONZE ALUMINUM POLE.
- 100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POS* TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE = BOROGLASS EMBEDDED POLE.

STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE	COMMENTS
	FALL MOON RIDE	5+61	22'R	☼	



TYPICAL SECTION - MIN. COLLECTOR
26' PAVING ON 60' R/W

CURVE DATA

LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	48°11'47"	500.000	420.593	223.642	N34°31'05"E 408.302

1-19-97
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. Hamilton 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

APPROVED: *W. D. ...* 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/98 LOT# ADJUSTED
8/18/98 REVISED RPT. CIV. GD. TO HOPE SD.
Date No. Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

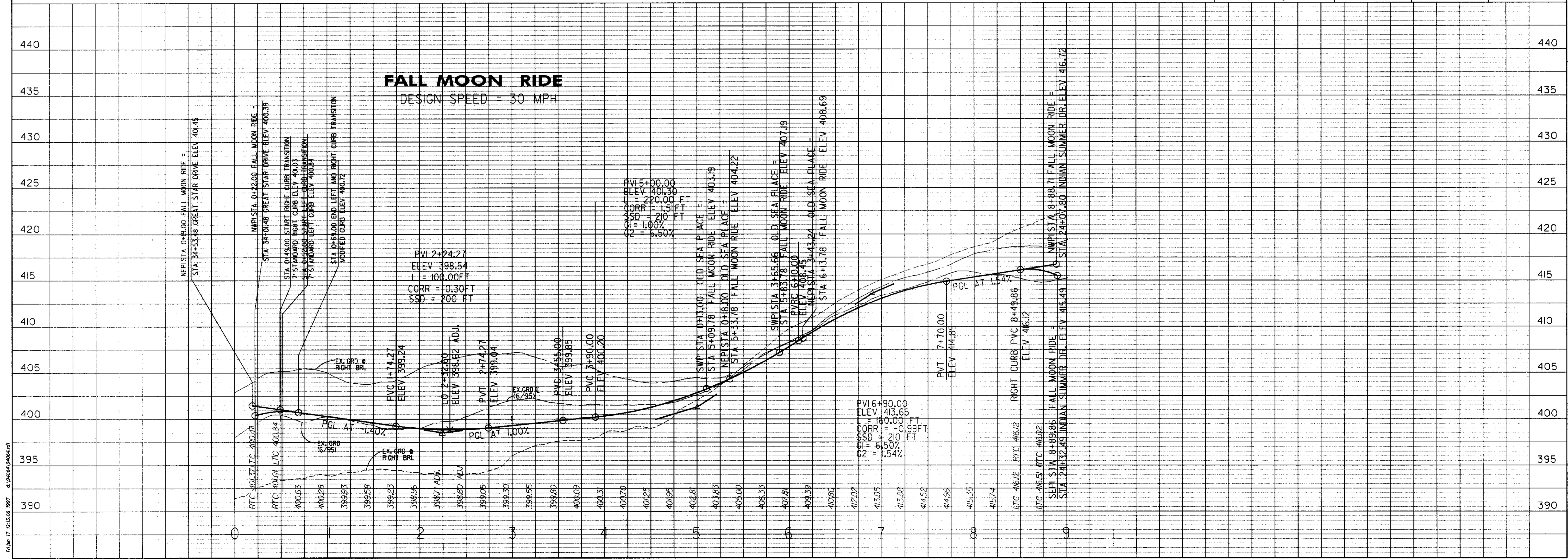
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Dan McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3932
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
FALL MOON RIDE

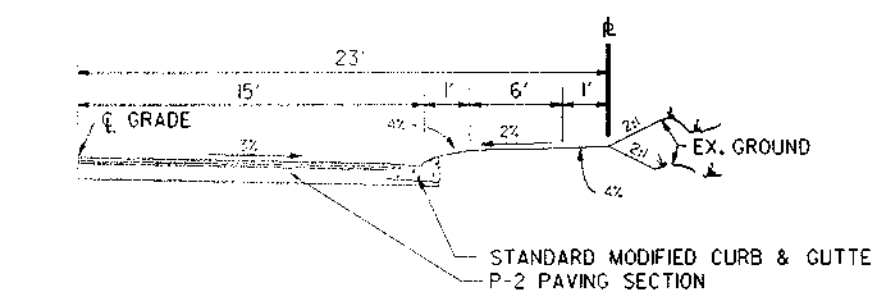
Des By JWS Scale 1" = 50' Proj. No. 94064
Dwn By JEF Date JAN 97
Chk By JWR Approved 2 OF 44



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STREET SIGN LEGEND

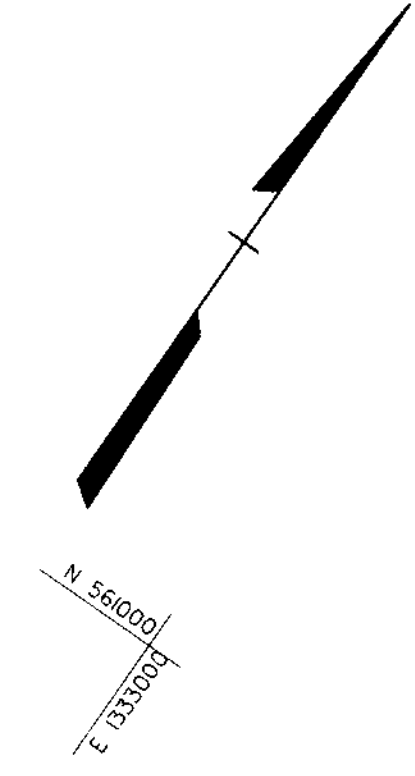
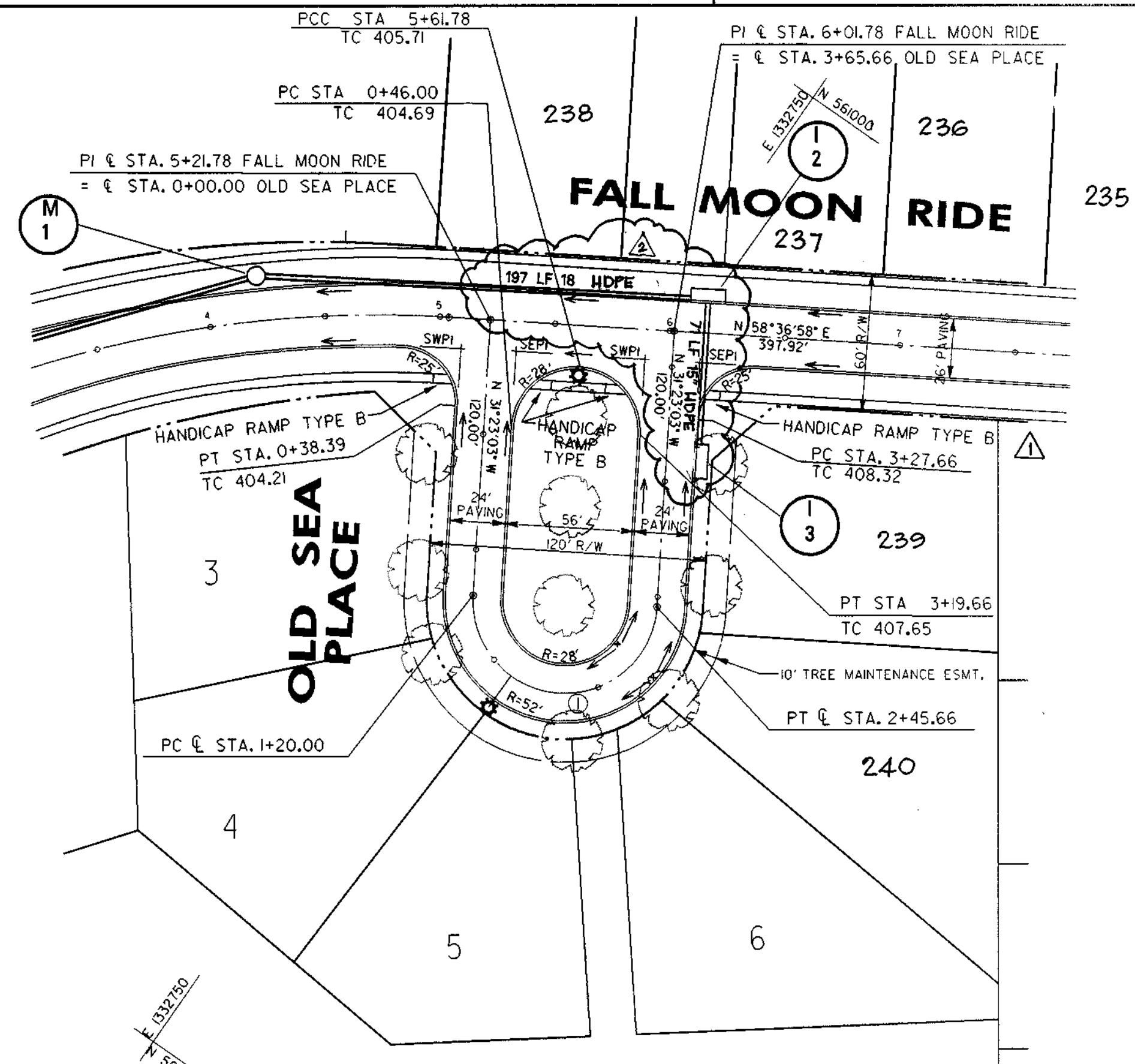
- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-1, STOP SIGN



TYPICAL HALF SECTION
30' PAVING ON 120' R/W

NOT TO SCALE

STREET LIGHT TABLE					
DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE / POLE TYPE	COMMENTS
	FALL MOON RIDE	5+61	22'R	☼	SHOWN ON SHT 2 OF 44
	OLD SEA PLACE	1+57	20'R	☼	



10 TREES PROVIDED THIS SHEET.

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	180°0'0"	40,000	125.66	0.000	N58°36'58"E 80,000

2-4-97
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Omeli 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. K. H. H. H. 1/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: *John Hancock* 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/15/98 LOTS ADJUSTED
 8/18/98 REVISED PROP. CL. IV. 90. TO HDPE SD.

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

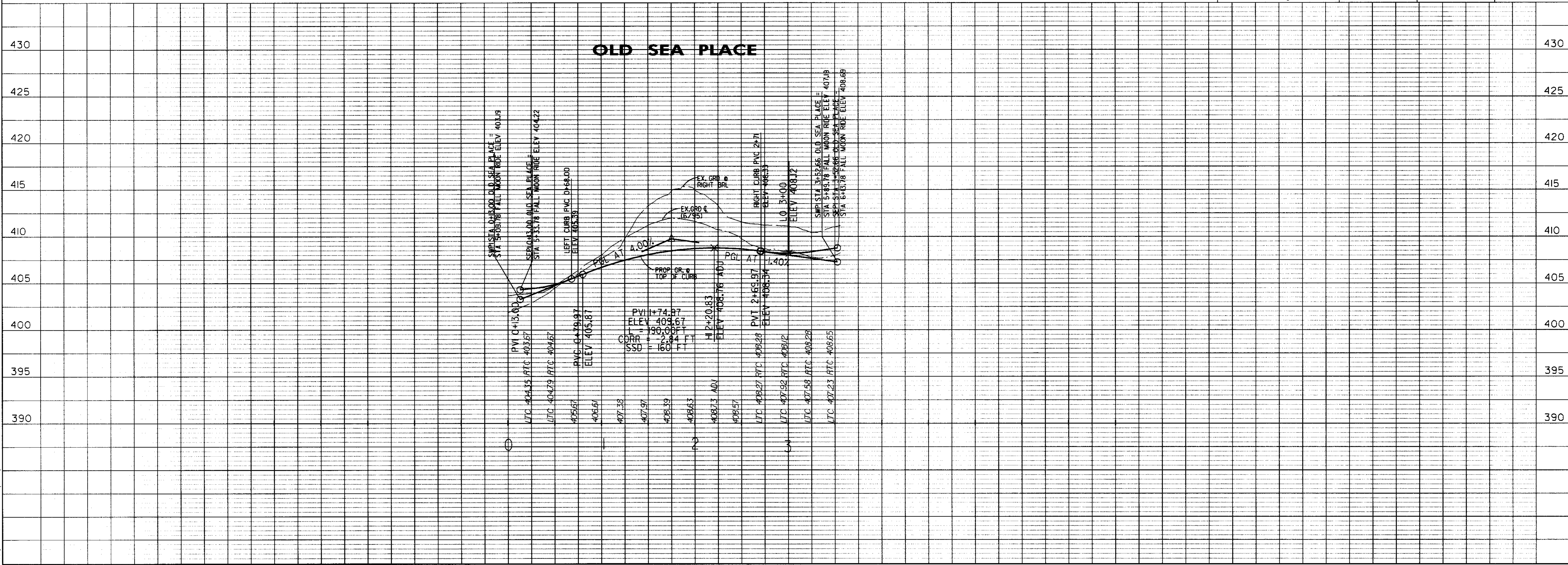
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 (410) 286-3030
 Fax 296-4705
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
 OLD SEA PLACE

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Drn By	JEF	Date	JAN 97		
Chk By	JWR	Approved			3 OF 44

OLD SEA PLACE



The Jan 30 14:52:24 1997 d:\bme\5\0004.r2

STREET SIGN LEGEND

- 24' x 30' RECTANGLE, R2-L, SPEED LIMIT 25
- 30' x 30' OCTAGON, R4-L, STOP SIGN

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

14 TREES PROVIDED THIS SHEET.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Danville 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
William H. ... 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark ... 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/98	1	LOTS ADJUSTED
8/18/98	2	REVISED RCP CLIPPED TO HDPE ED.
Date	No.	Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

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 Dan McCune-Walkers, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4700
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

1-12-97
 Date

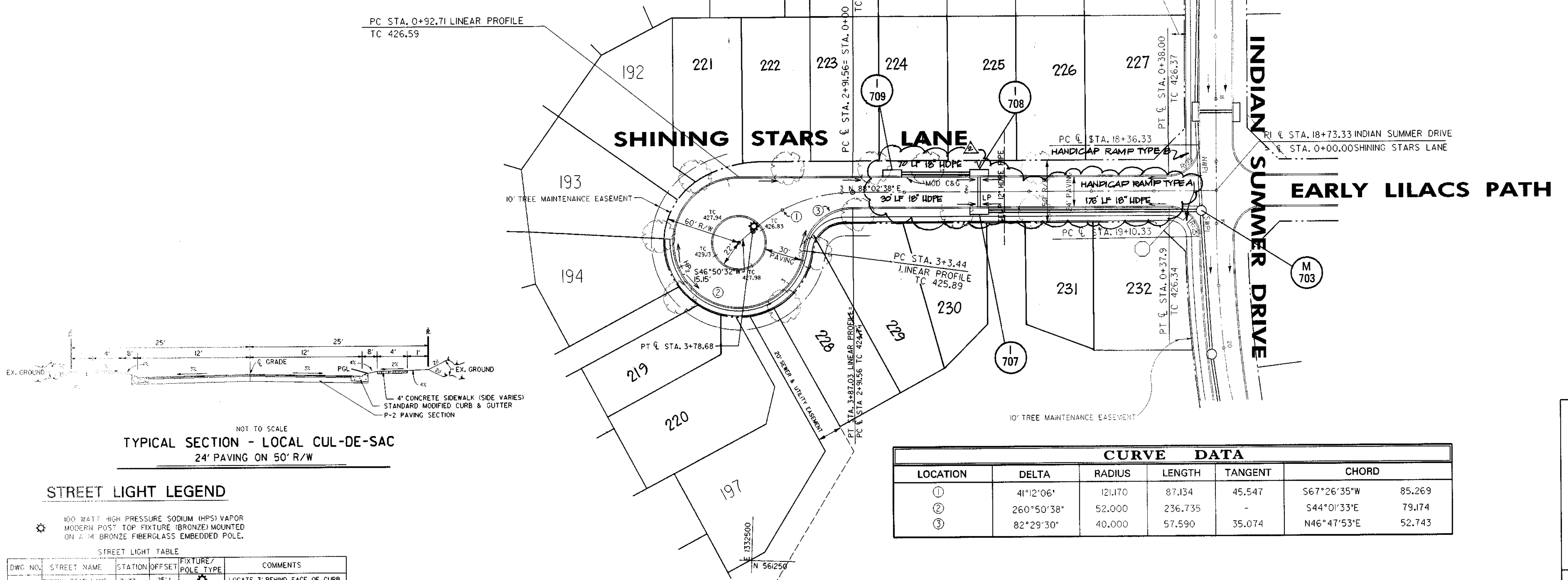


AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ROAD CONSTRUCTION PLANS
 SHINING STARS LANE

Des By JWS Scale 1" = 50' Proj. No. 940964
 Dwn By JEF Date JAN 97
 Chk By JWV Approved 4 OF 44

Professional Engr. No. 10551



CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	41°12'06"	121.170	87.134	45.547	S67°26'35"W 85.269
②	260°50'38"	52.000	236.735	-	S44°01'33"E 79.174
③	82°29'30"	40.000	57.590	35.074	N46°47'53"E 52.743

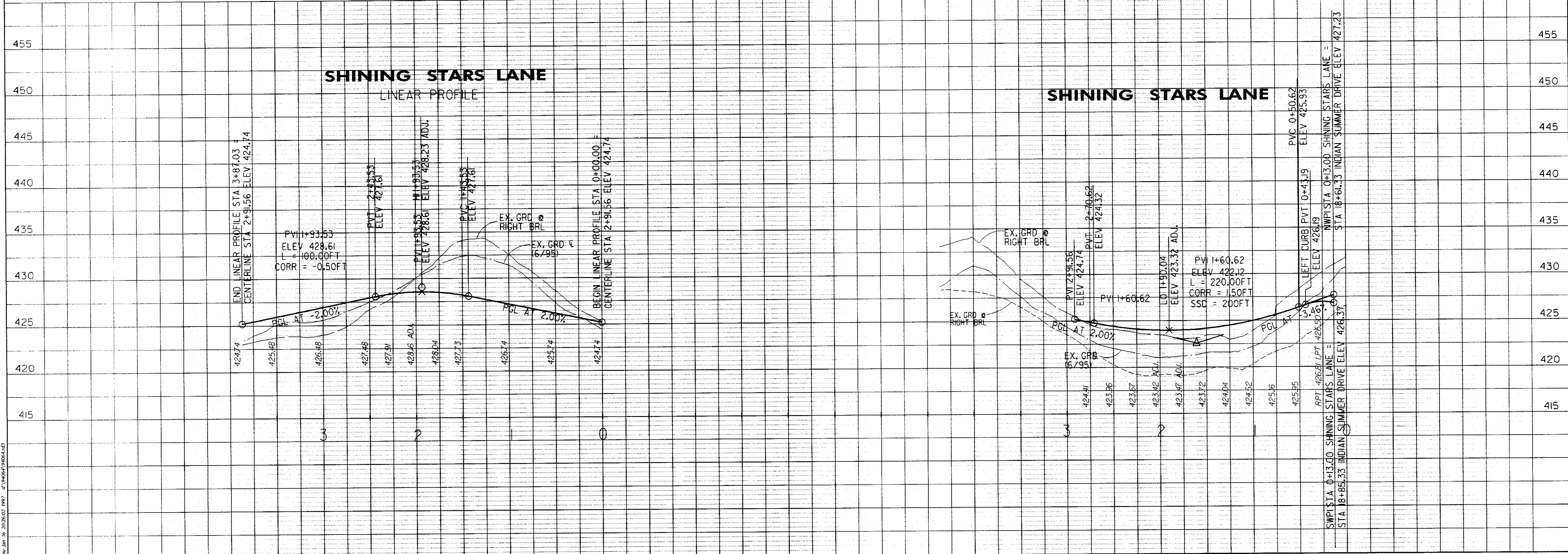
NOT TO SCALE
TYPICAL SECTION - LOCAL CUL-DE-SAC
 24' PAVING ON 50' R/W

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON 2 1/4" BRONZE FIBERGLASS EMBEDDED POLE.

STREET LIGHT TABLE

DWG. NO.	STREET NAME	STATION/OFFSET	FIXTURE/POLE TYPE	COMMENTS
	SHINING STARS LANE	3+73	25' L	LOCATE 3 BEHIND FACE OF CURB



Thu Jan 16 20:26:02 1997 d:\940964\940964.dwg

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE FIBERGLASS EMBEDDED POLE.

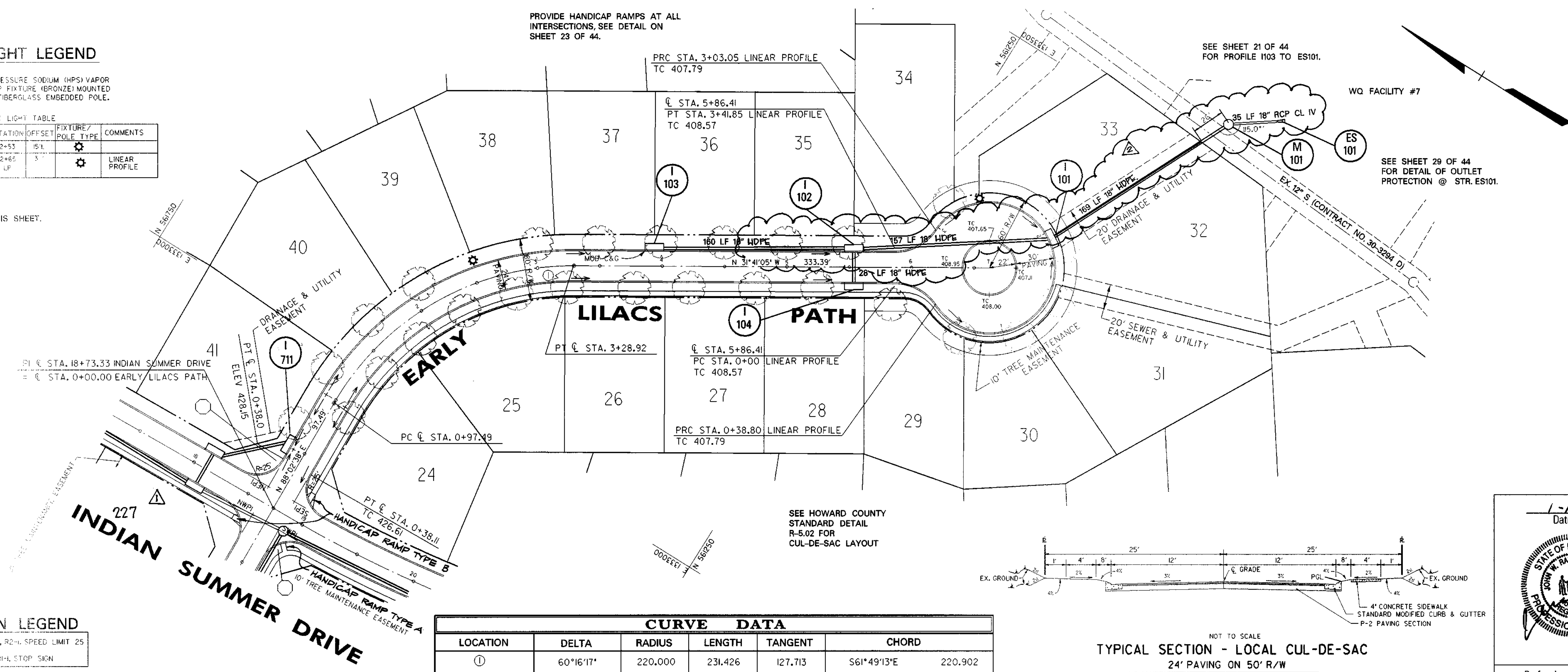
DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE / POLE TYPE	COMMENTS
EARLY LILACS PATH		2+53	5.1		
EARLY LILACS PATH		2+65	3		LINEAR PROFILE

27 TREES PROVIDED THIS SHEET.

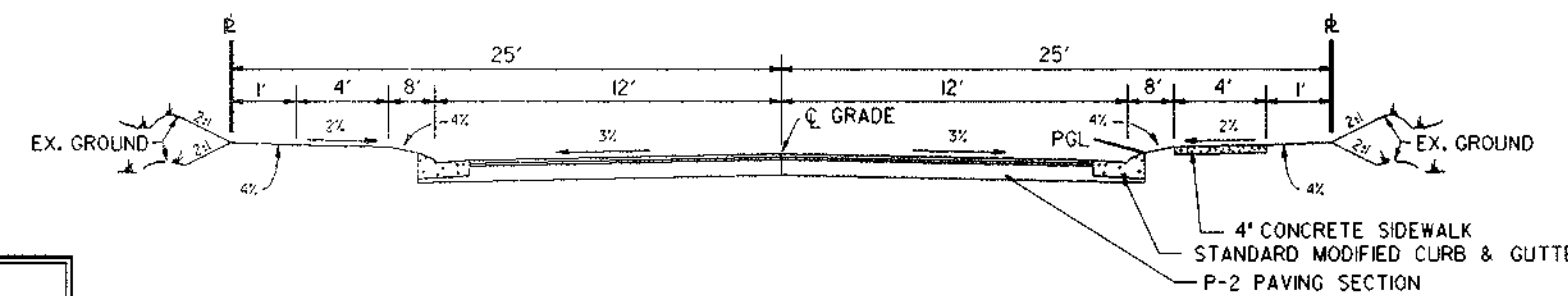
STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-4, SPEED LIMIT 25
- 30" X 30" OCTAGON, R4-4, STOP SIGN

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.



SEE HOWARD COUNTY STANDARD DETAIL R-5.02 FOR CUL-DE-SAC LAYOUT



NOT TO SCALE
TYPICAL SECTION - LOCAL CUL-DE-SAC
24' PAVING ON 50' R/W

CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	60°16'17"	220,000	231,426	127,713	S61°49'13"E 220,902

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Colin Hamilton 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark Dawson 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/98 LOT 227 ADJUSTED
 6/10/98 REVISED FOR CL 13-90 TO HDPE SD.
 Date No. Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

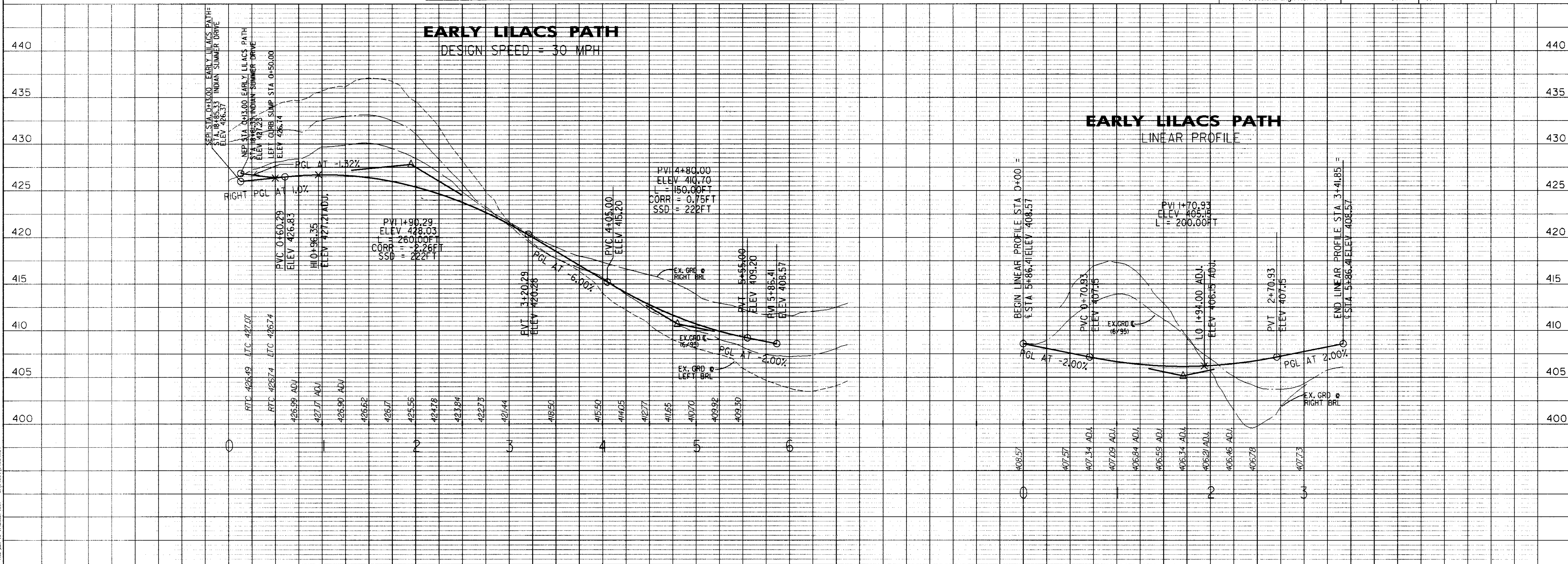
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 200 East Pennsylvania Avenue
 Towson, Maryland 21286
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 Fax 296-4705
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
 EARLY LILACS PATH

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Drn By	JEF	Date	JAN 97		
Chk By	JWR	Approved			5 OF 44

Professional Engr. No. 10551



Thu Jun 16 12:26:27 1997 AT:V:\004\0004.dwg

STREET SIGN LEGEND

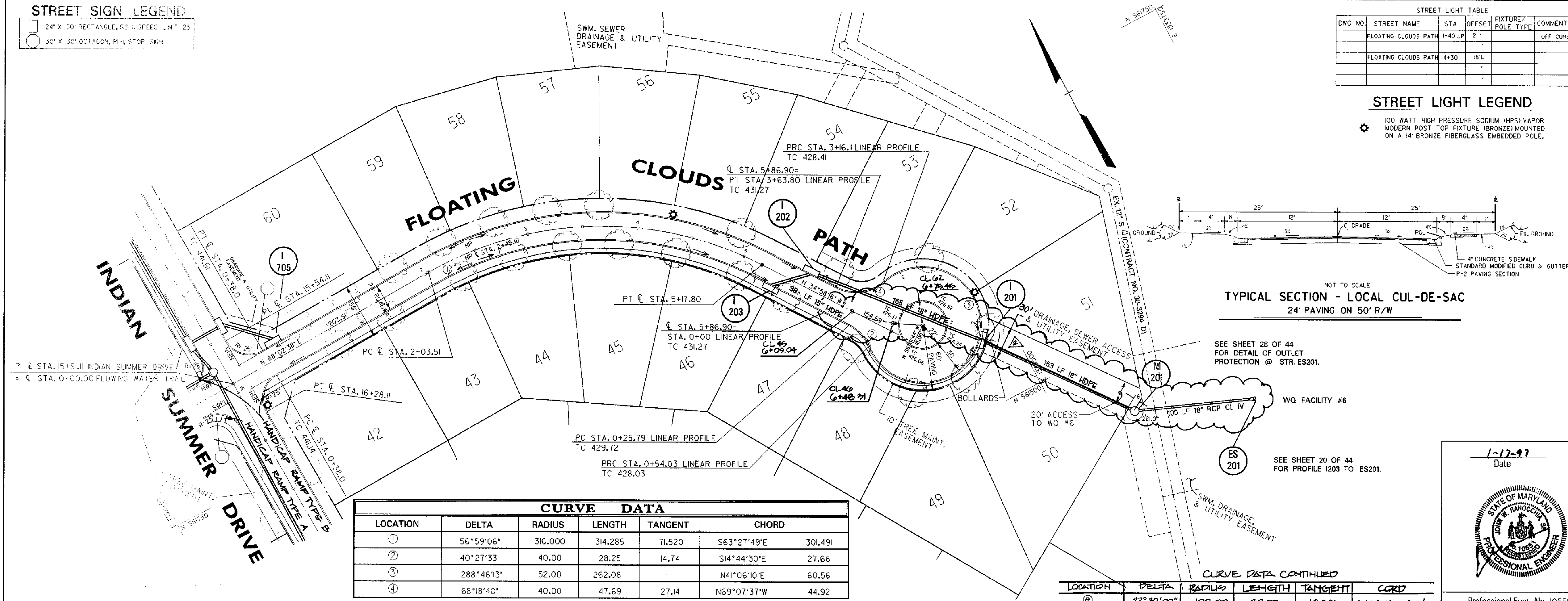
- 24" X 30" RECTANGLE, R-1, SPEED, LIM 25
- 30" X 30" OCTAGON, R-1, STOP SIGN

STREET LIGHT TABLE

DWG NO.	STREET NAME	STA	OFFSET	FIXTURE / POLE TYPE	COMMENTS
	FLOATING CLOUDS PATH	1+40 LP	2'		OFF CURB
	FLOATING CLOUDS PATH	4+30	15'L		

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 1" BRONZE FIBERGLASS EMBEDDED POLE.



TYPICAL SECTION - LOCAL CUL-DE-SAC
24' PAVING ON 50' R/W

SEE SHEET 28 OF 44 FOR DETAIL OF OUTLET PROTECTION @ STR. ES201.

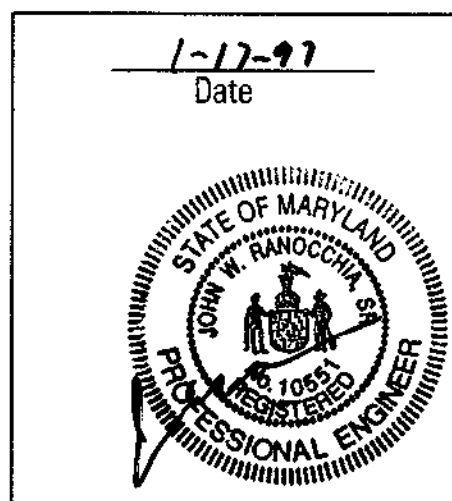
SEE SHEET 20 OF 44 FOR PROFILE 1203 TO ES201.

CURVE DATA

LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
1	56°59'06"	316.000	314.285	171.520	S63°27'49"E 301.491
2	40°27'33"	40.00	28.25	14.74	S14°44'30"E 27.66
3	288°46'13"	52.00	262.08	-	N41°06'10"E 60.56
4	68°18'40"	40.00	47.69	27.14	N69°07'37"W 44.92

CURVE DATA CONTINUED

LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
5	22°30'00"	100.00	39.27	19.891	S46°19'10.8"E 39.018



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Collanitta 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT

Bill Demme 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

REVISION DESCRIPTION

Date	No.	Revision Description
8/18/97	1	REVISED RCP CL IV TO HDPE 30

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Darr McConne Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3883
Fax 296-4788

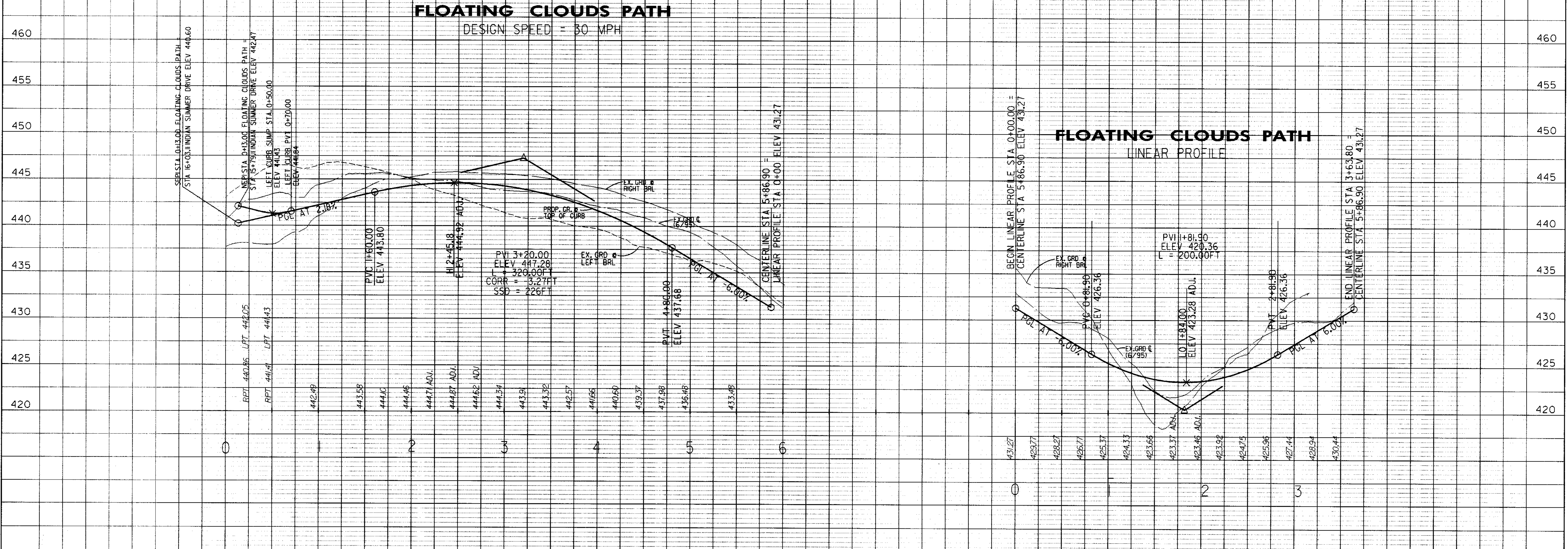
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

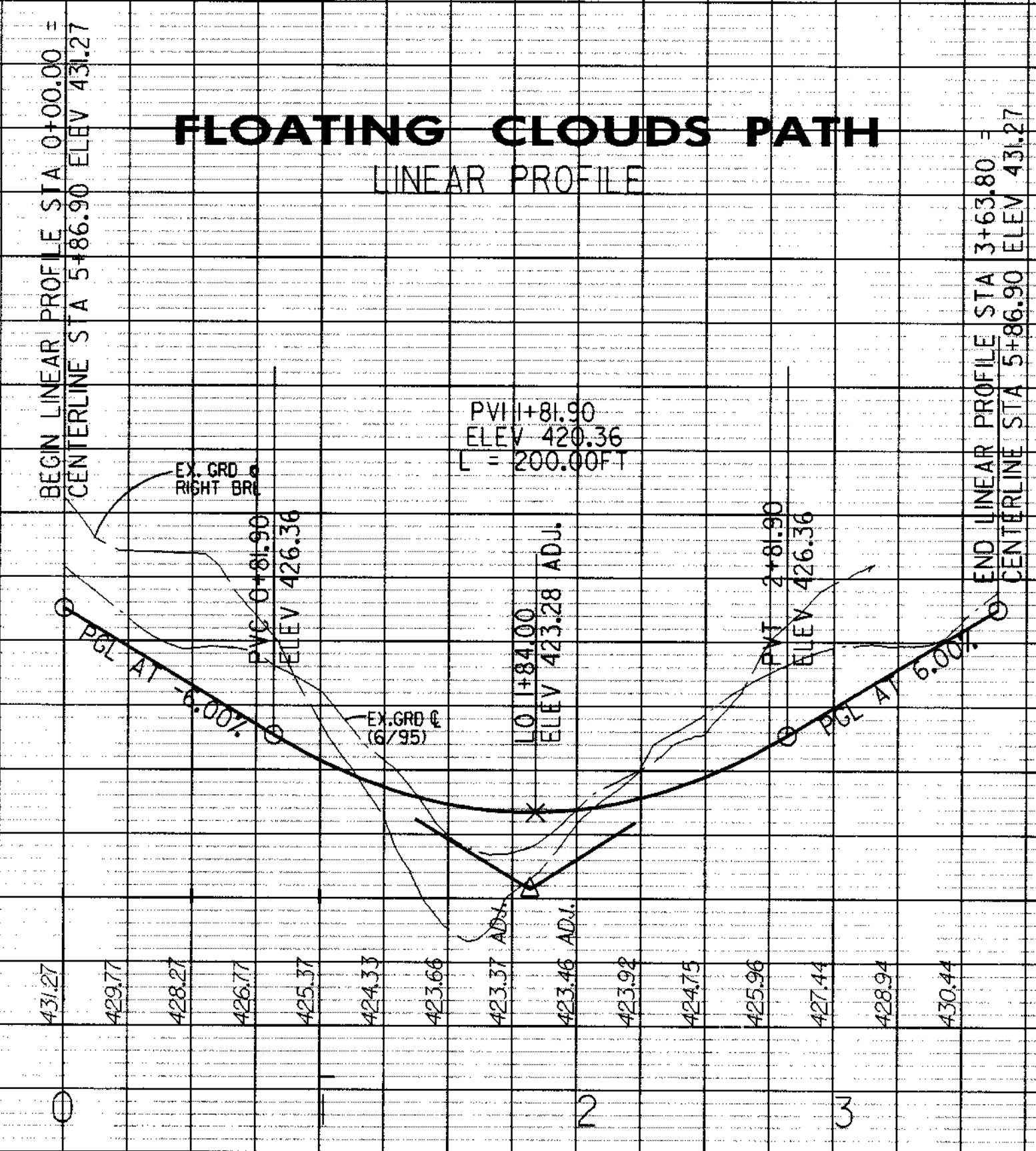
TITLE **ROAD CONSTRUCTION PLANS**
FLOATING CLOUDS PATH

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Drn By	JEF	Date	JAN 97		
Chk By	JWR	Approved			6 OF 44

FLOATING CLOUDS PATH
DESIGN SPEED = 30 MPH



FLOATING CLOUDS PATH
LINEAR PROFILE

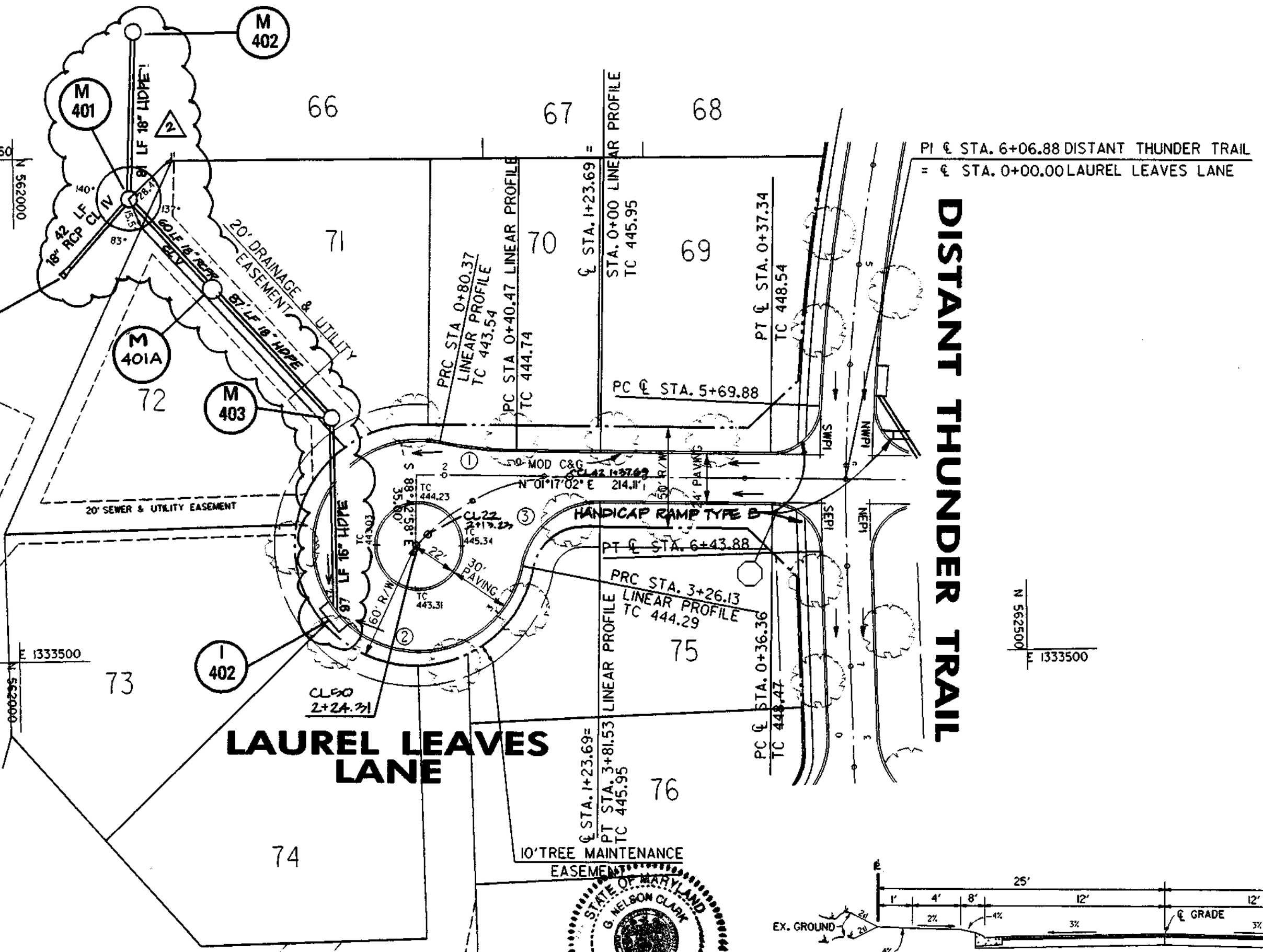


STREET SIGN LEGEND

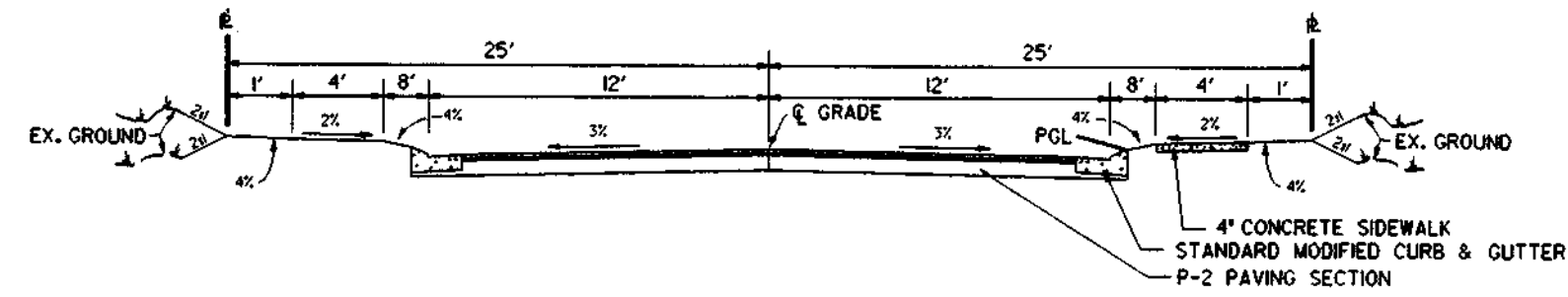
- 24' x 30' RECTANGLE, R2-1, SPEED LIMIT 25
- 30' x 30' OCTAGON, R-1, STOP SIGN

SEE SHEET 19 OF 44 FOR PROFILE M401 TO 1402.

SEE SHEET 28 OF 44 FOR DETAIL OF OUTLET PROTECTION @ STR. ES401.



CURVE DATA						
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD	
①	11°25'57"	200.00	39.91	20.20	S7°00'00"W 39.84	
②	270°47'03"	-	245.76	-	N57°19'28"E 73.03	
③	79°21'06"	42.00	55.40	33.18	N38°23'31"W 51.08	
④	46°00'00"	100.00	78.940	41.421	S21°12'58.1"E 76.587	



FOR CFB REVISION ONLY

3	Add Manhole 401A To Plan View; Revise Pipe Length;	Feb 8, 02	CFB
NR:	Revisors:	Date:	By:

1-12-97
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Daniels 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cottamilton 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
David R. ... 5/21/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

REVISION FOR CLV TO HDPE SD.

Date	No.	Revision Description
------	-----	----------------------

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

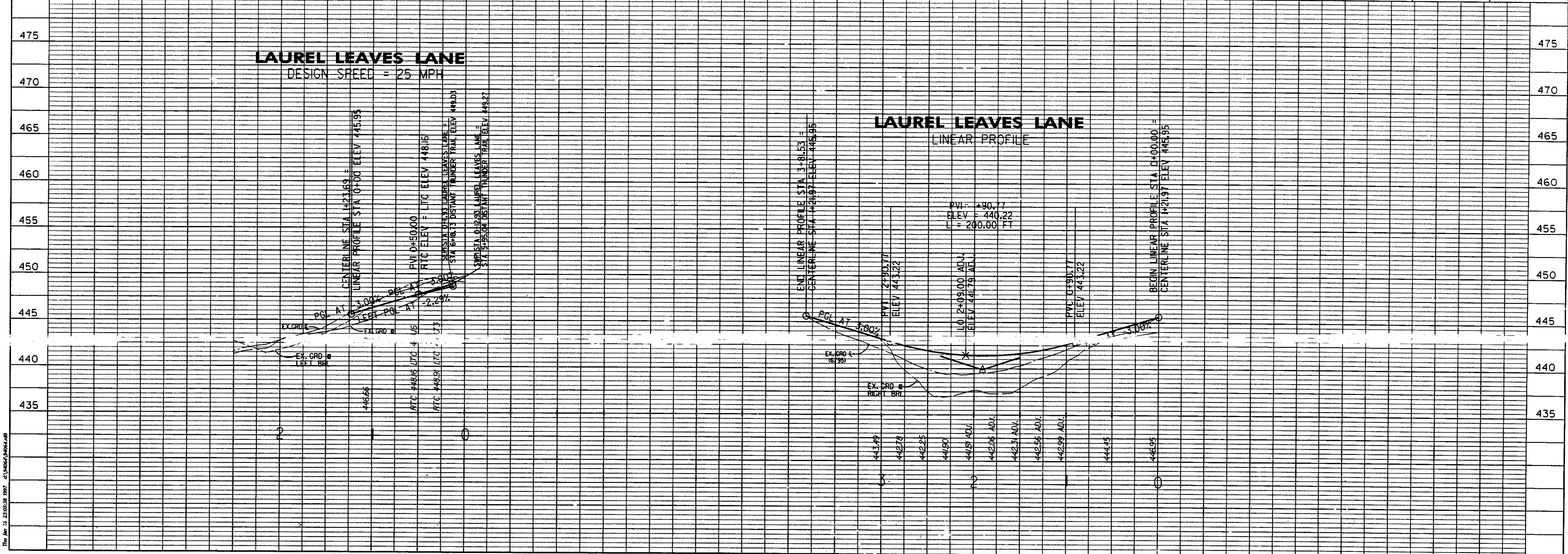
OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

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

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
LAUREL LEAVES LANE

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Dim By	JEF	Date	JAN 97		
Chk By	JWR	Approved			9 OF 44



The Jan 15 2002 08 2027 d:\hmc\p\hmc\c\...

STREET SIGN LEGEND

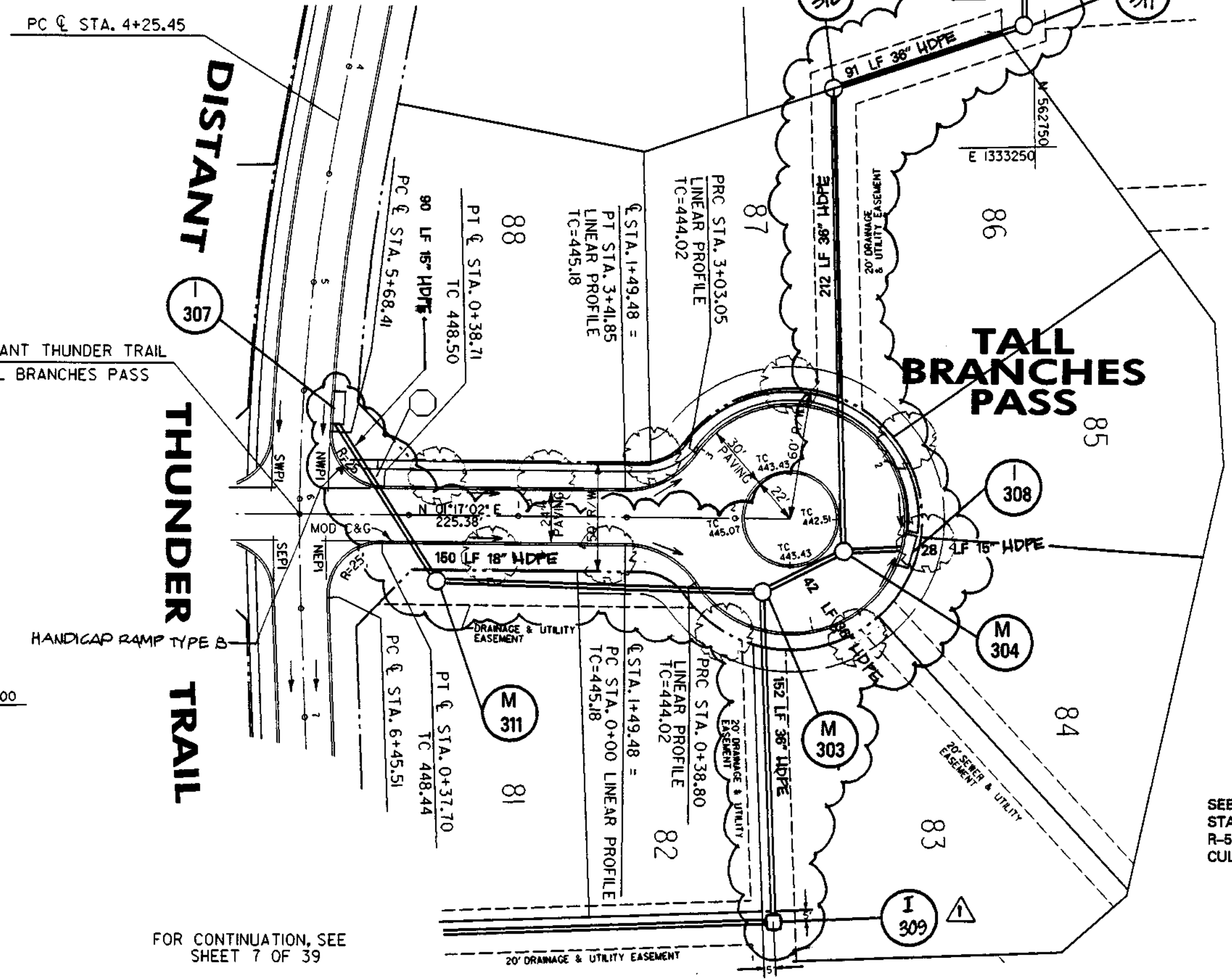
- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-1, STOP SIGN

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

PI @ STA. 6+06.88 DISTANT THUNDER TRAIL
= @ STA. 0+00.00 TALL BRANCHES PASS

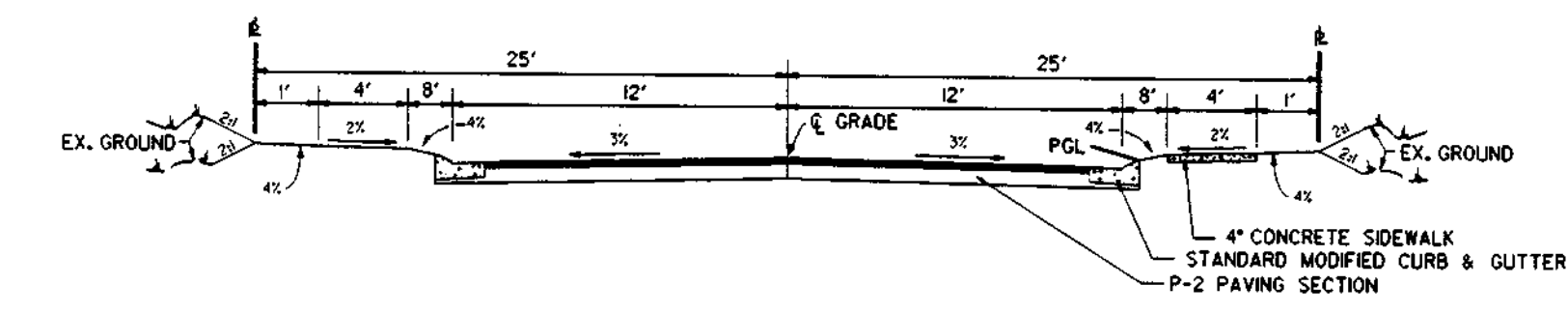
E 1333250
N 562290

E 1333500
N 562290



SEE SHEET 18 & 19 OF 44 FOR SD PROFILES FOR THIS SHEET.

10 TREES PROVIDED THIS SHEET.



NOT TO SCALE
TYPICAL SECTION - LOCAL CUL-DE-SAC
24' PAVING ON 50' R/W

SEE HOWARD COUNTY STANDARD DETAIL R-5.02 FOR CUL-DE-SAC LAYOUT

2-4-97
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>Richard M. Dorek</i> CHIEF, BUREAU OF HIGHWAYS	5-22-97 DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
<i>C. Williams</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/10/97 DATE
<i>M. Williams</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	5/27/97 DATE
6/5/96	M 302 REPLACED BY I 309
8/10/96	REVISED RCP 2/11/97 TO HDPE SD.
Date	No. Revision Description

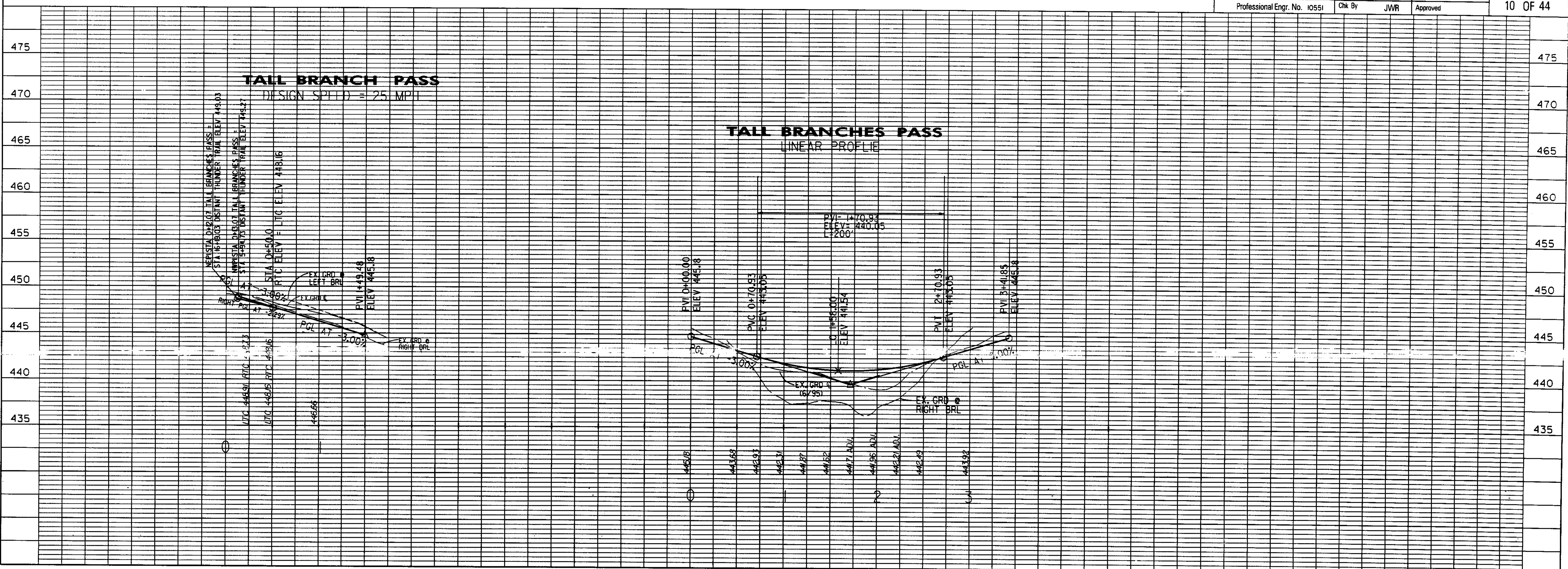
VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

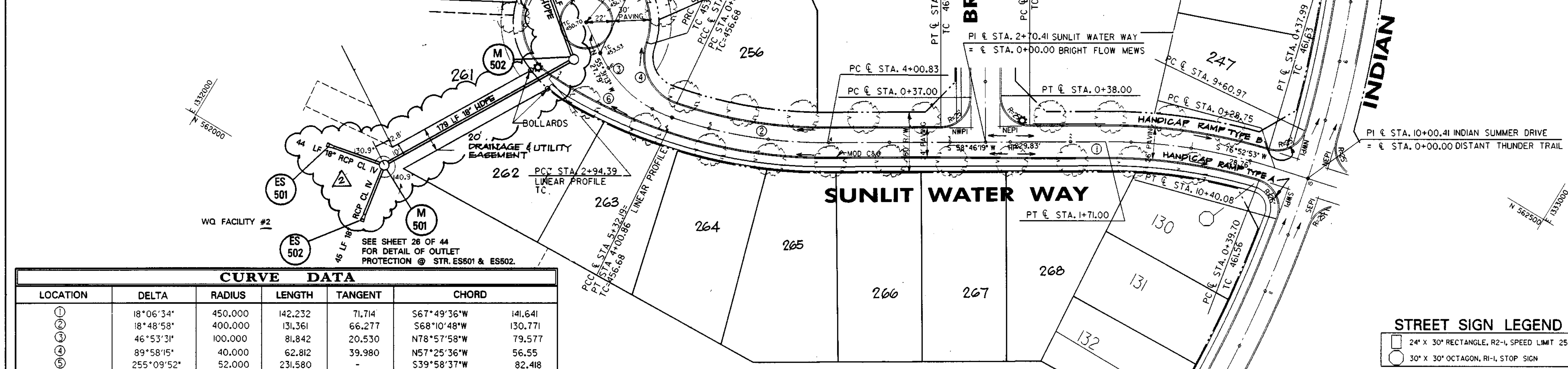
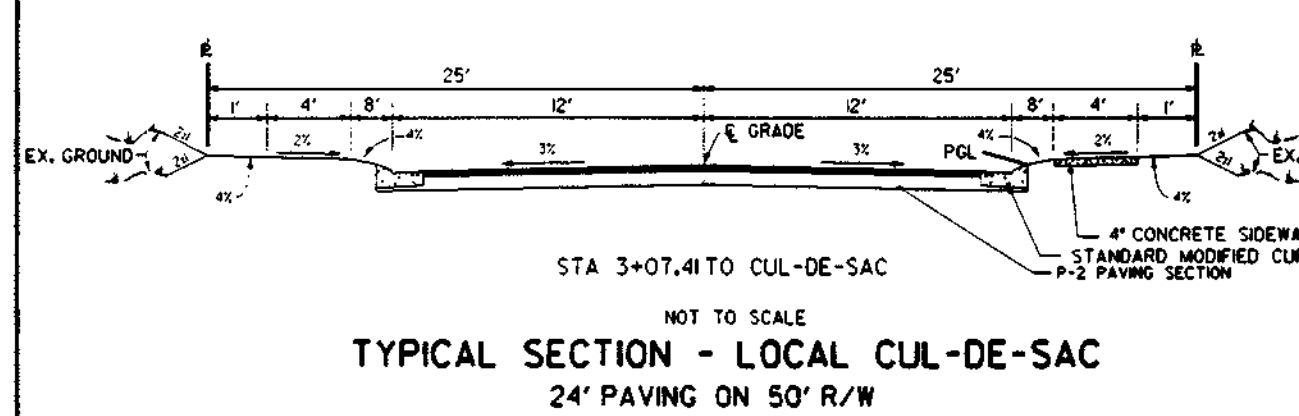
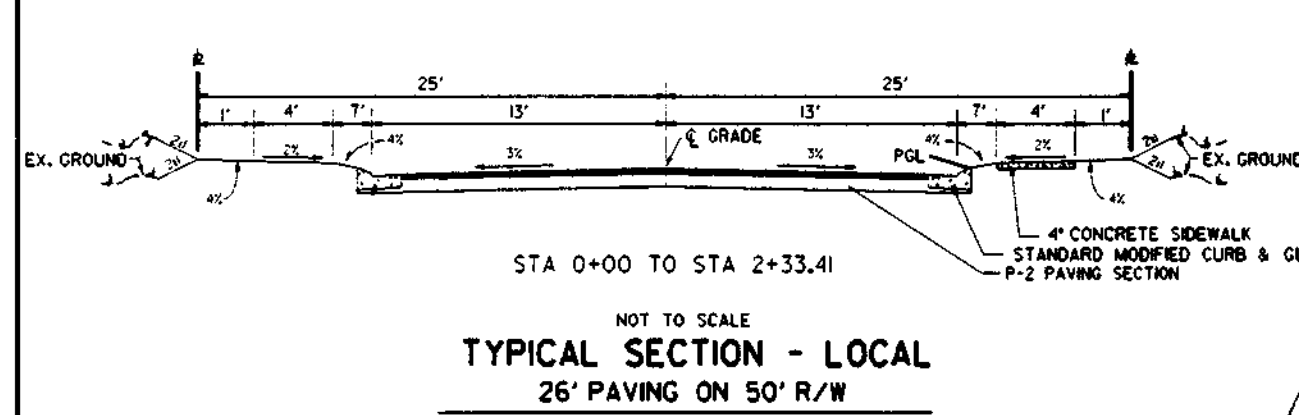
DMW
Duffield & Company, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 286-3353
Fax 286-4705

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

AREA	SECTION 4 AREA 4
TAX MAP	PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	
TITLE	ROAD CONSTRUCTION PLANS TALL BRANCHES PASS
Des By	JWS Scale 1" = 50'
Dm By	JEF Date JAN 97
Proj. No.	94064
Chk By	JWR Approved
Professional Engr. No.	10551
	10 OF 44



File Path: D:\145523\1997... 4/1/1997 10:00:00 AM



CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	18°06'34"	450,000	142,232	71,714	S67°49'36"W 141,641
②	18°48'58"	400,000	131,361	66,277	S68°10'48"W 130,771
③	46°53'31"	100,000	81,842	20,530	N78°57'58"W 79,577
④	89°58'15"	40,000	62,812	39,980	N57°25'36"W 56,555
⑤	255°09'52"	52,000	231,580	-	S39°58'37"W 82,418
⑥	14°48'23"	412,000	106,470	53,53	N84°59'28"E 106,174

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS. SEE DETAIL ON SHEET 23 OF 44.

SEE SHEET 19 OF 44 FOR PROFILE 1501 TO ES602, 501.

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14' BRONZE FIBERGLASS EMBEDDED POLE.

STREET LIGHT TABLE				
DWG NO.	STREET NAME	STATION/OFFSET	FIXTURE/POLE TYPE	COMMENTS
	SUNLIT WATER WAY	2+39	17R	
	SUNLIT WATER WAY	2+70	3 R	OFF CURB LINEAR PROF.

24 TREES PROVIDED THIS SHEET.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daulton 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Costa Miller 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

Mr. Deunman 5/20/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description
6/5/98	1	LOTS ADJUSTED
6/16/98	2	REVISED R/W CLV TO HDPE 90

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4
 OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Durr-Rice-Cross-Walkers, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3883
 Fax 296-4706
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals



STREET SIGN LEGEND

- 24" x 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" x 30" OCTAGON, R1-1, STOP SIGN



The Jan 16, 1993, 1997, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 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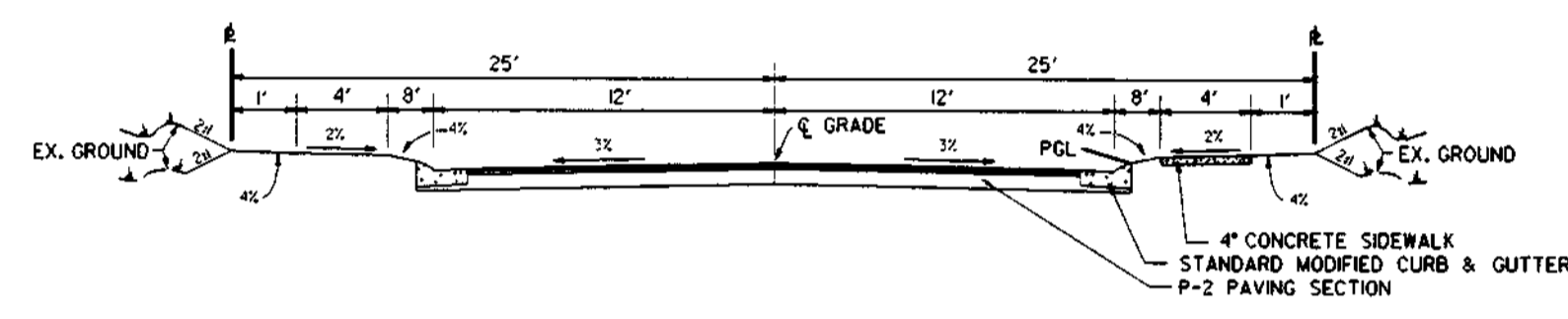
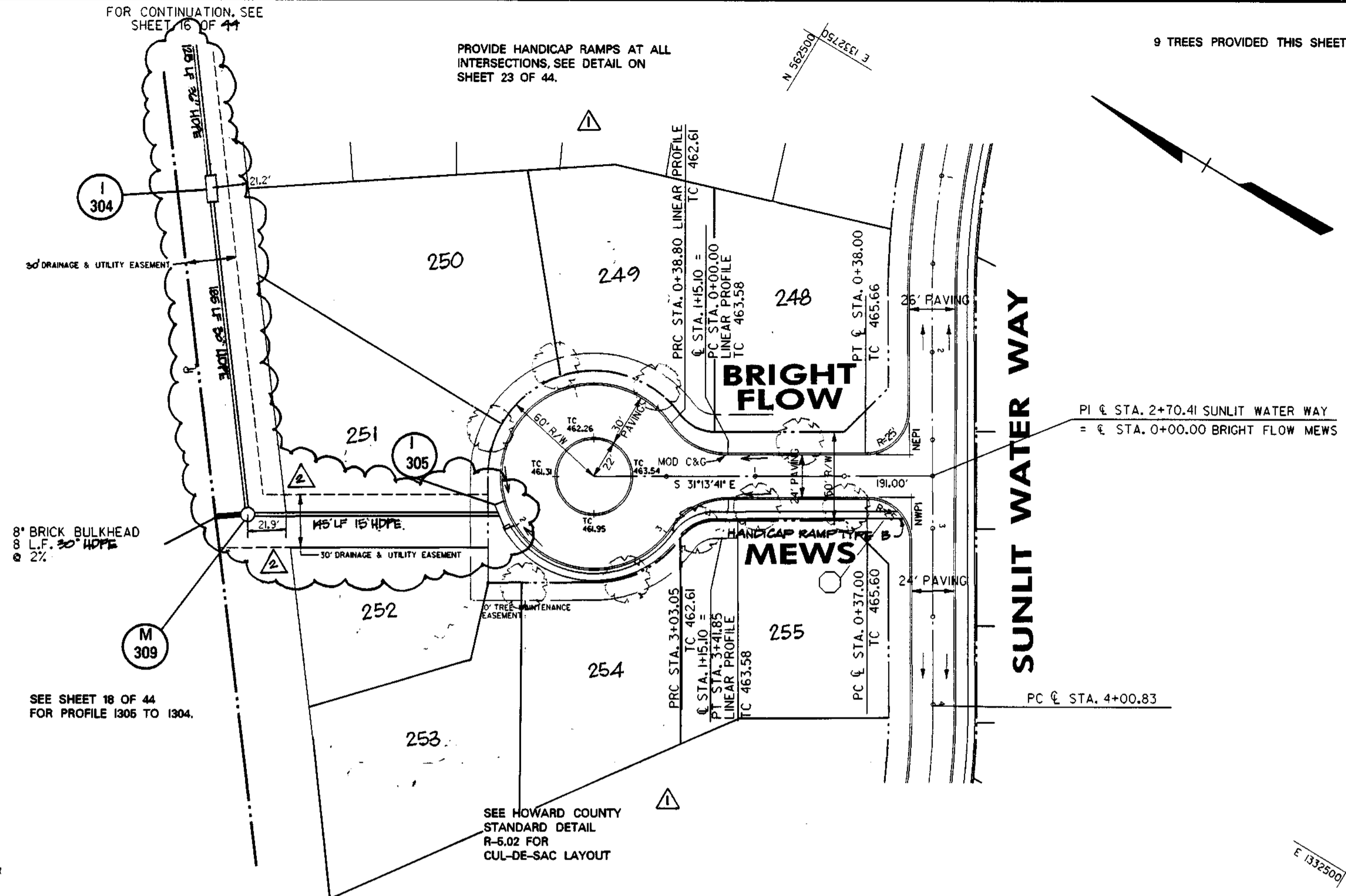
STREET SIGN LEGEND

- 24' X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30' X 30" OCTAGON, R1-1, STOP SIGN

FOR CONTINUATION, SEE SHEET 16 OF 44

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

9 TREES PROVIDED THIS SHEET.



SEE HOWARD COUNTY STANDARD DETAIL R-5.02 FOR CUL-DE-SAC LAYOUT

SEE SHEET 18 OF 44 FOR PROFILE 1306 TO 1304.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Richard M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS AS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

C. Hanrahan 7/19/97
CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

John J. ... 5/2/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description
6/15/97	1	LOTS ADJUSTED
8-18-97	2	REVISED RCP ALIGNED TO HDPE 30'

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Darr McCreary-Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4706

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

1-17-97
Date

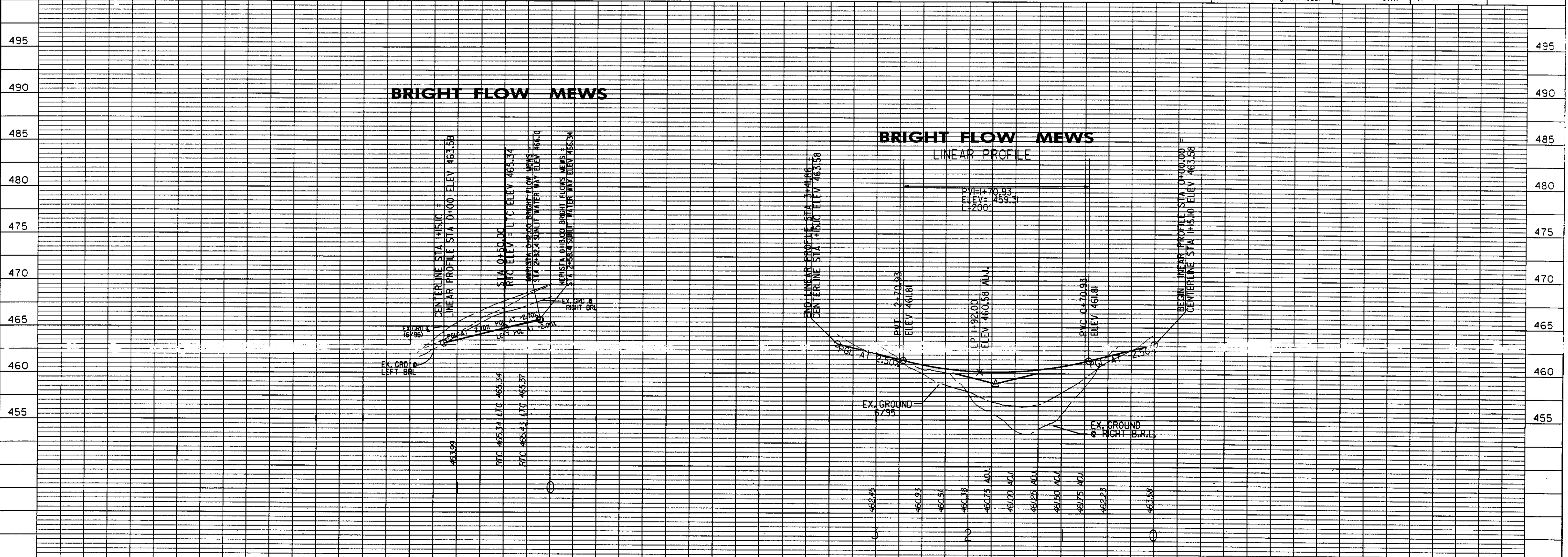
Professional Engr. No. 10551

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
BRIGHT FLOW MEWS

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Drn By	JEF	Date	JAN 97		
Chk By	JWR	Approved			

12 OF 44



Thu Jan 16 17:44:09 1997 d:\paw\paw\paw.dwg

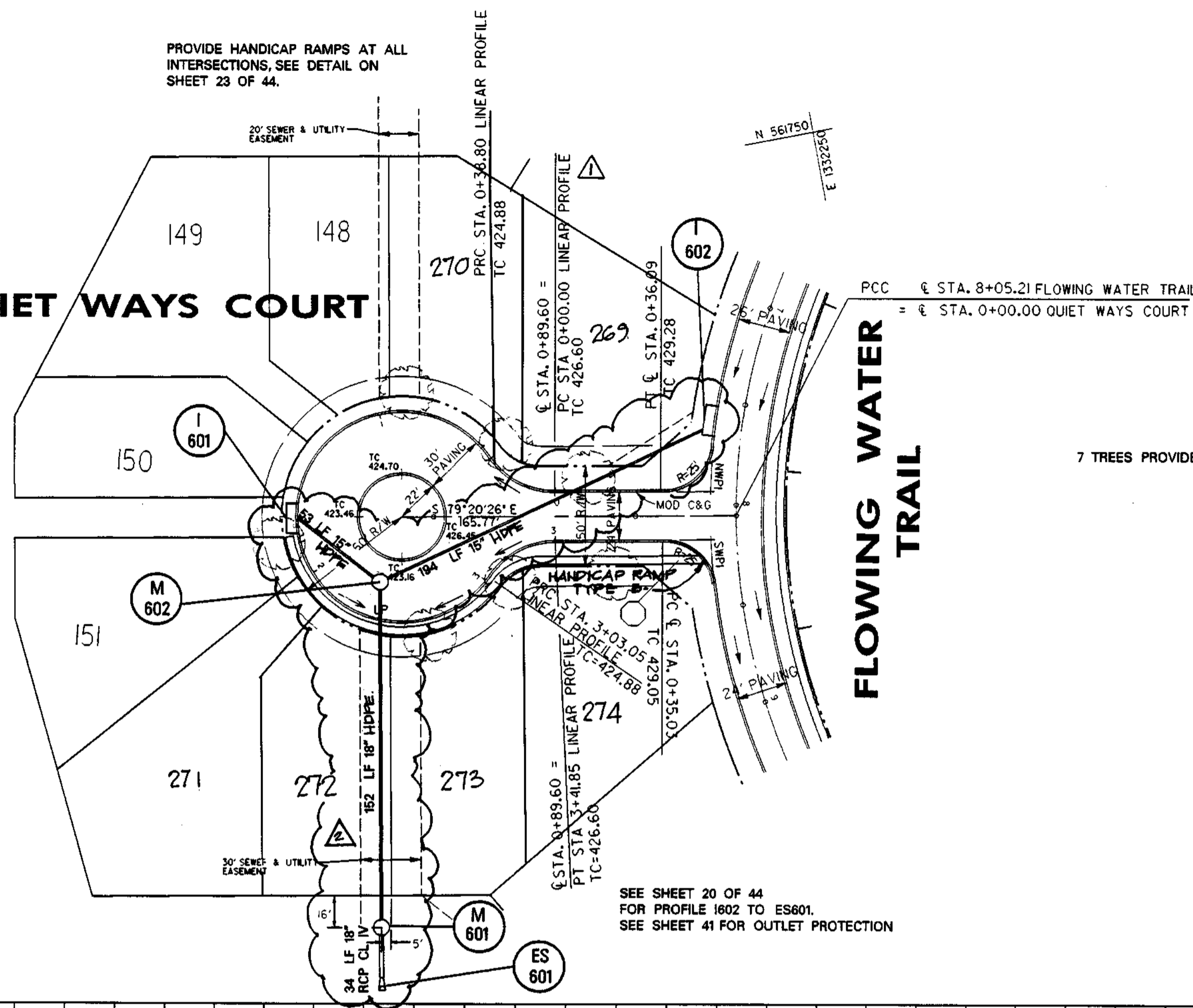
STREET SIGN LEGEND

- 24' X 30' RECTANGLE, R2-1, SPEED LIMIT 25
- 30' X 30' OCTAGON, R-1, STOP SIGN

PROVIDE HANDICAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

QUIET WAYS COURT

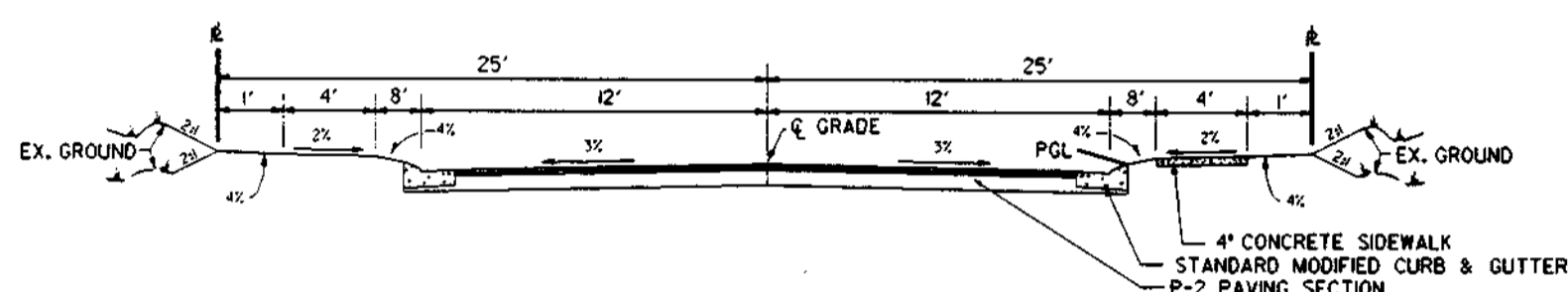
FLOWING WATER TRAIL



SEE HOWARD COUNTY STANDARD DETAIL R-5.02 FOR CUL-DE-SAC LAYOUT

7 TREES PROVIDED THIS SHEET.

SEE SHEET 20 OF 44 FOR PROFILE 1802 TO ES601. SEE SHEET 41 FOR OUTLET PROTECTION



NOT TO SCALE
TYPICAL SECTION - LOCAL CUL-DE-SAC
24' PAVING ON 50' R/W

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Dancik 5-22-97
CHIEF, BUREAU OF HIGHWAYS AS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Williams 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

APPROVED: *Michael Dammann* 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

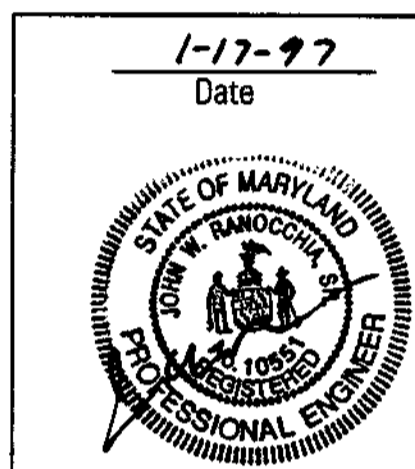
Date	No.	Revision Description
6/5/98	1	LOTS ADJUSTED
8-10-98	2	REMOVED RCP CLV 90 TO HDPE SD.

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW

Dan McCrossen-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 286-3353
Fax 286-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

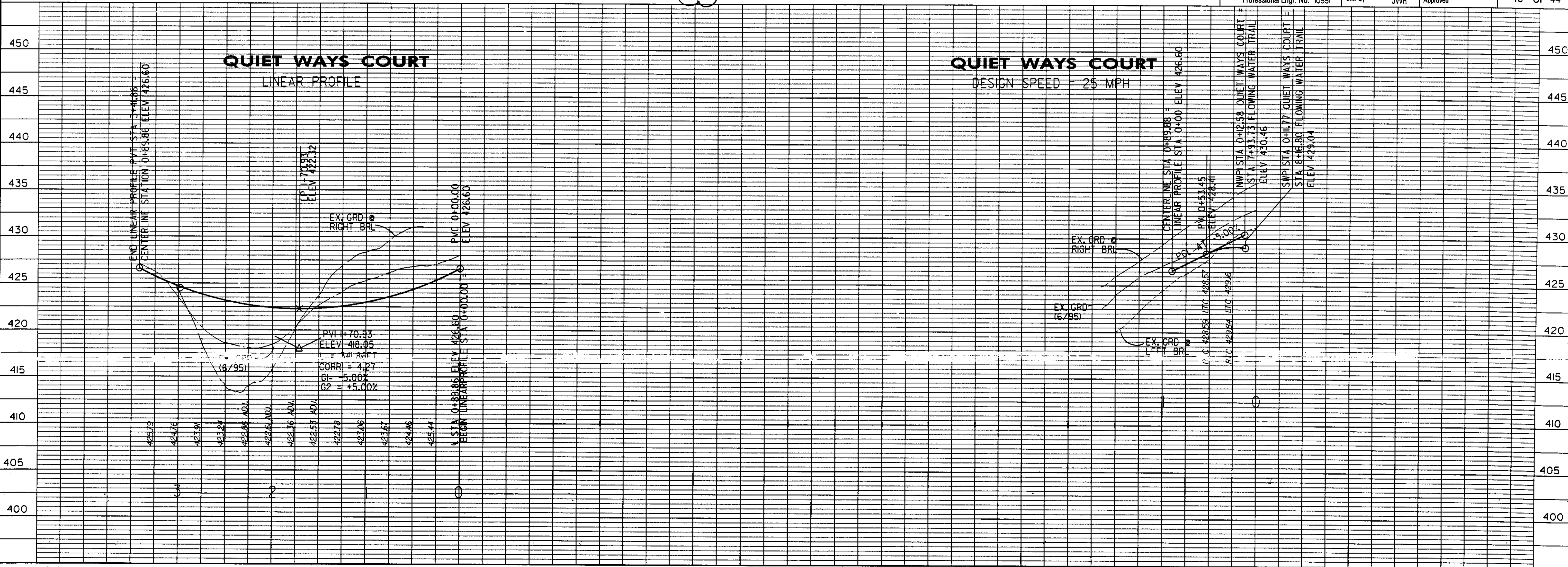


AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ROAD CONSTRUCTION PLANS
QUIET WAYS COURT

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Drn By	JEF	Date	JAN 97		
Chk By	JWR	Approved			13 OF 44

Professional Engr. No. 10551



Thu Jan 16 20:37:18 1997 c:\hrc\m\94064.dwg

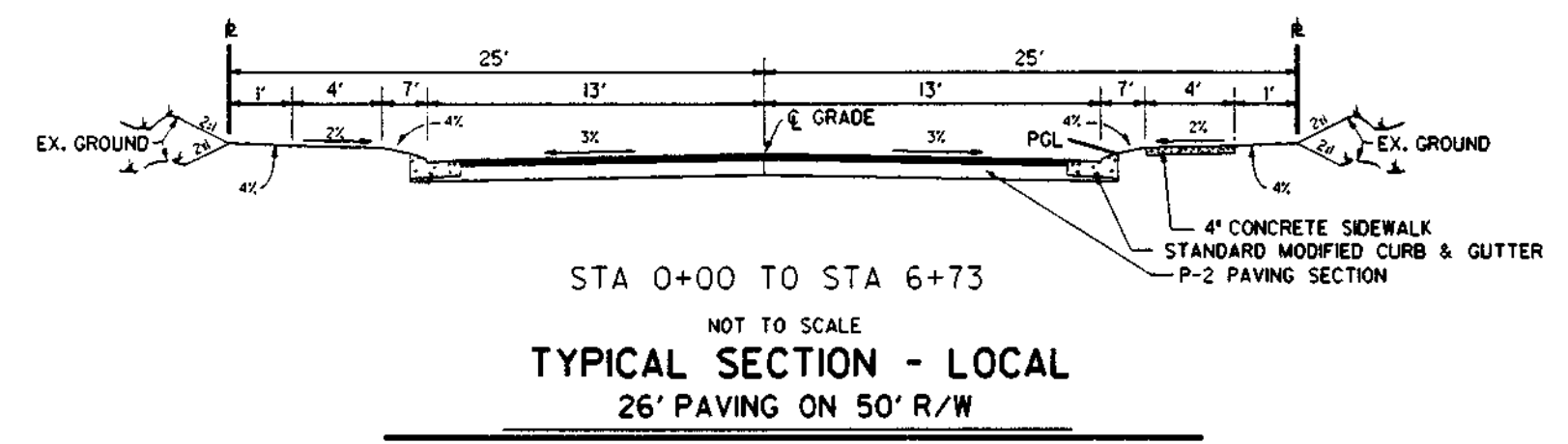
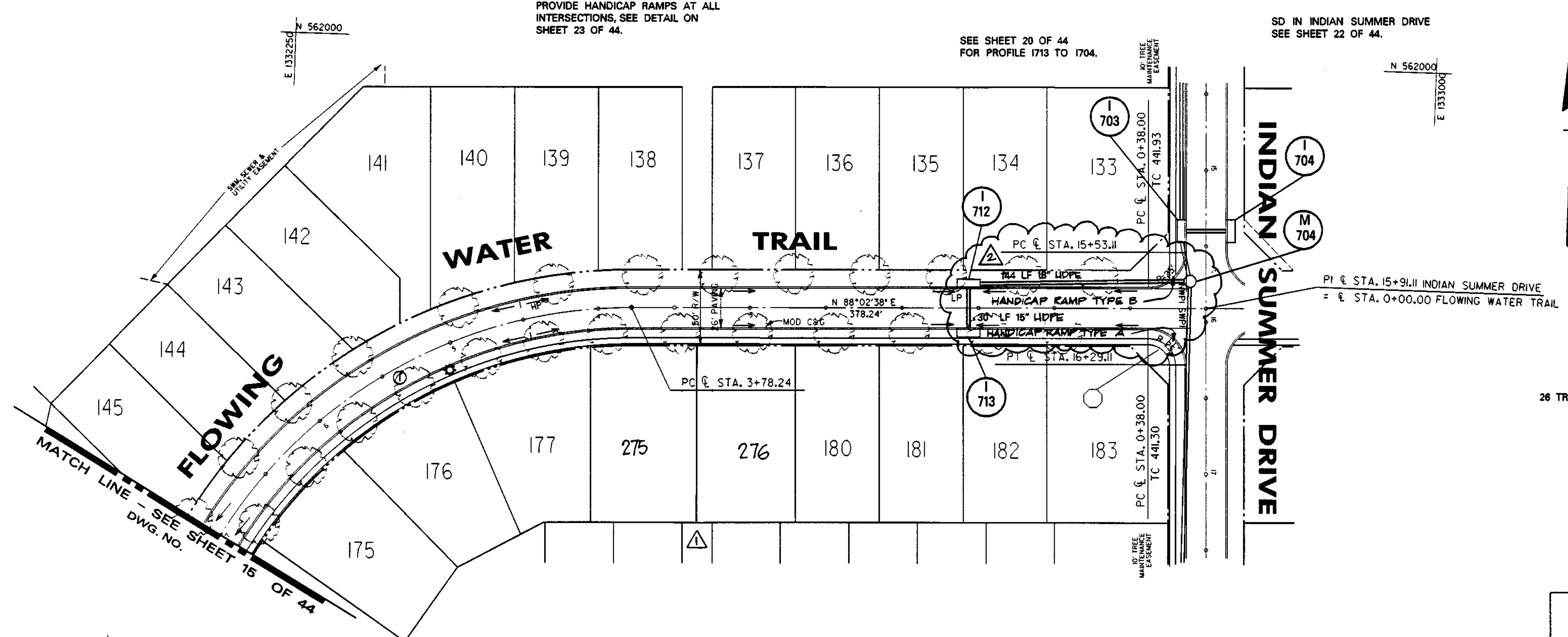
STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-L, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-H, STOP SIGN

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14' BRONZE FIBERGLASS EMBEDDED POLE.

DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE / POLE TYPE	COMMENTS
	FLOWING WATER	5+00	16'R	⊗	
	TRAIL				
	FLOWING WATER	7+80	19'R	⊗	
	TRAIL				



CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	77°25'38"	316.000	427.029	253.286	549'19"49"W 395.270

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Howard M. Daniels
 CHIEF, BUREAU OF HIGHWAYS DATE 5-22-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 7/10/97

John Hamilton
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 5/27/97

6/5/98 LOTS ADJUSTED
 8/18/98 REVISED RCP CL IN SD TO HDPE SD.
 Date No. Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

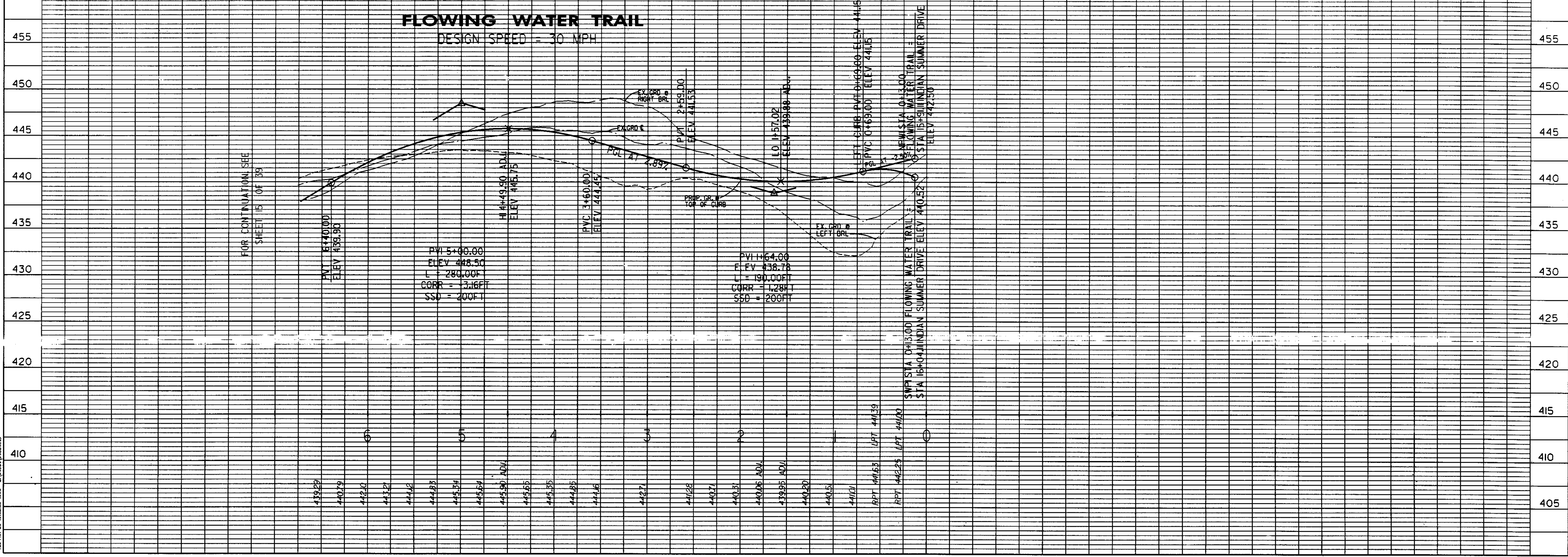
DMW
 Date 12-3-96

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
 FLOWING WATER TRAIL
 STA 0+00 TO 7+00

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Dm By	JEF	Date	MAR 96		
Chk By	JWR	Approved			14 OF 44

Professional Engr. No. 10551



Thu Nov 26 15:02:25 1998 614064/94064.r13

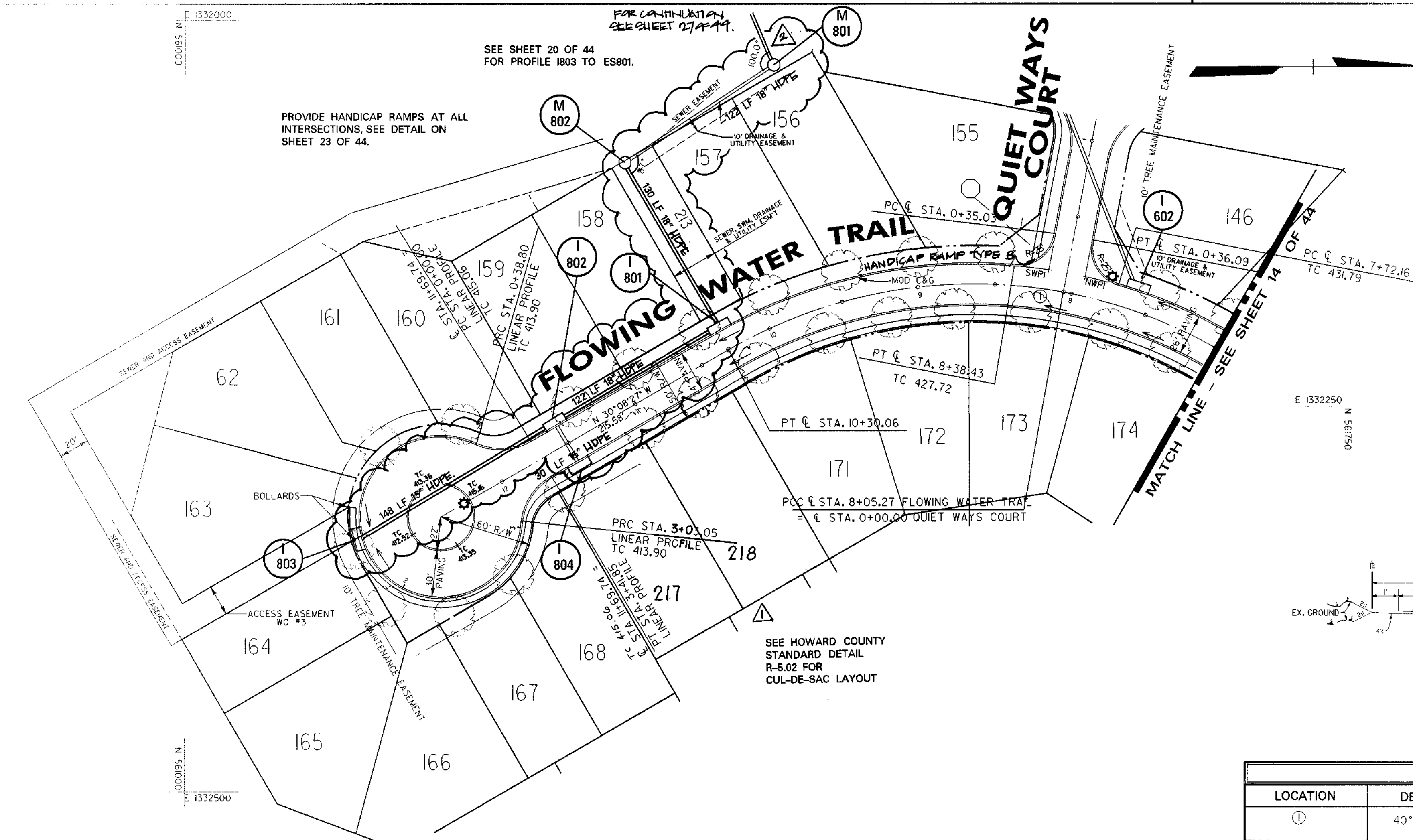
1332000
00095 N
1332500

SEE SHEET 20 OF 44 FOR PROFILE 1803 TO ES801.

FOR CONTINUATION SEE SHEET 17444.

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

SEE HOWARD COUNTY STANDARD DETAIL R-5.02 FOR CUL-DE-SAC LAYOUT



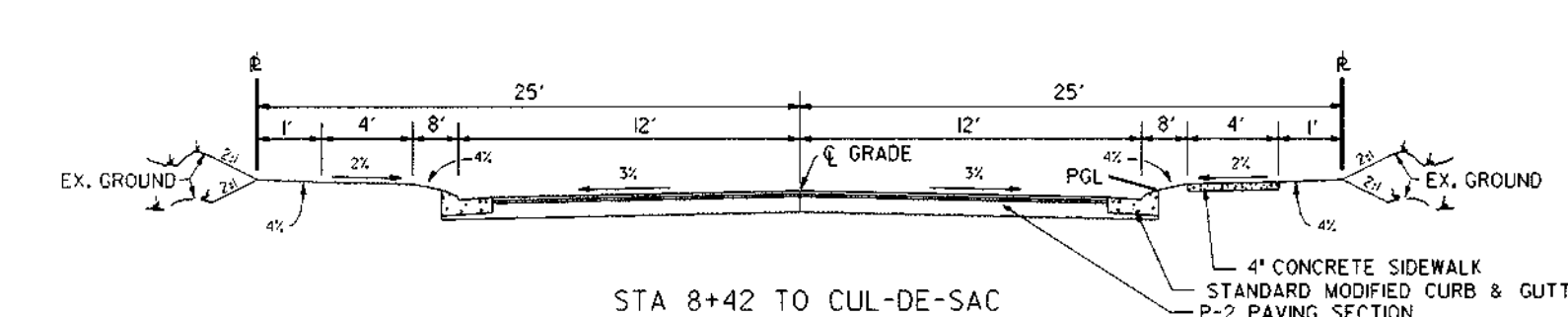
STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-L, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-L, STOP SIGN

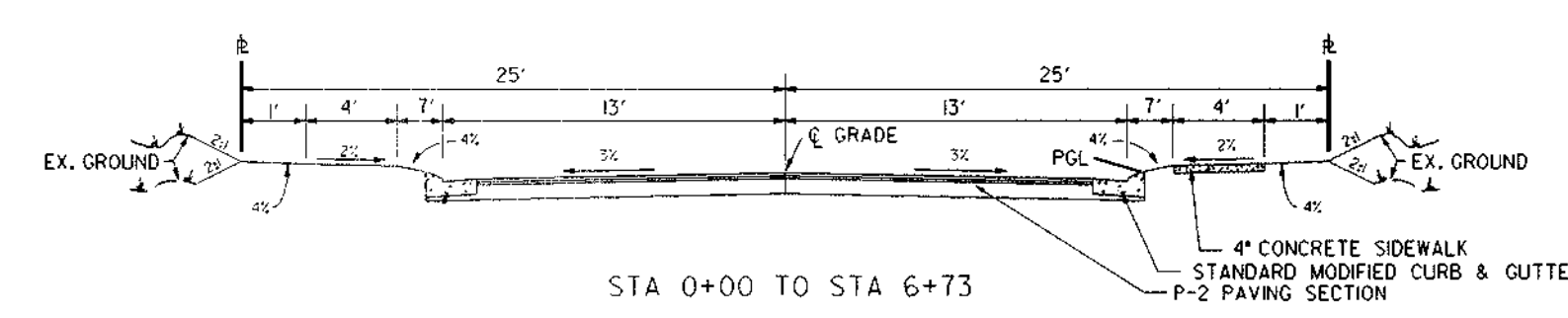
STREET LIGHT LEGEND

- 100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE FIBERGLASS EMBEDDED POLE.

24 TREES PROVIDED THIS SHEET.



TYPICAL SECTION - LOCAL CUL-DE-SAC
24' PAVING ON 50' R/W



TYPICAL SECTION - LOCAL
26' PAVING ON 50' R/W

CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	40°45'28"	316.000	224.788	117.386	509°45'43"E

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Doucette 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Col. Hamilton 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: *Mark Dammann* 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/15/98 **LOTS ADJUSTED**
 6/15/98 REVISED RCP 04-14 90 TO HDPE&D

Date No. Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dick McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 286-4350
 Fax 286-4705

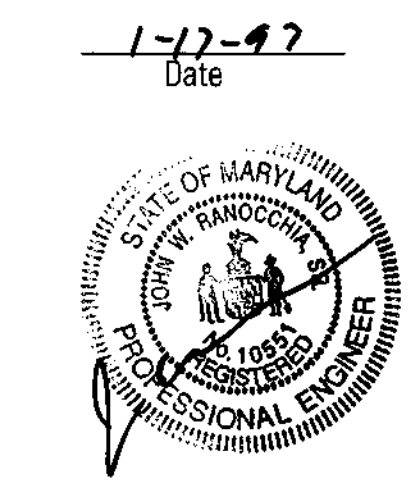
A Team of Land Planners,
 Landscape Architects,
 Engineers, Surveyors &
 Environmental Professionals

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

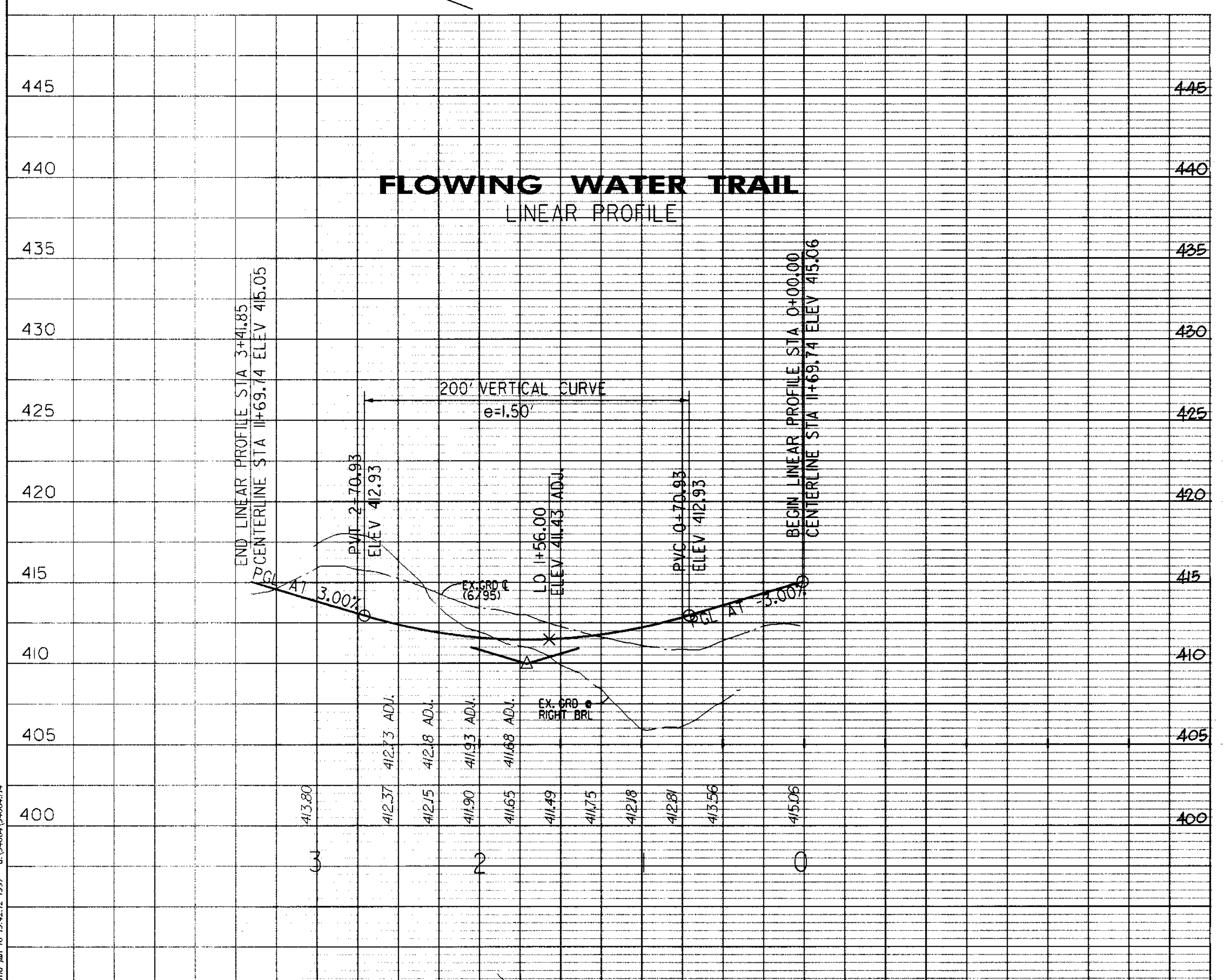
TITLE ROAD CONSTRUCTION PLANS
 FLOWING WATER TRAIL
 STA 7+00 TO 11+70

Des By JWS Scale 1" = 50' Proj. No. 94064
 Dm By JEF Date JAN 97
 Chk By JWR Approved 15 OF 44

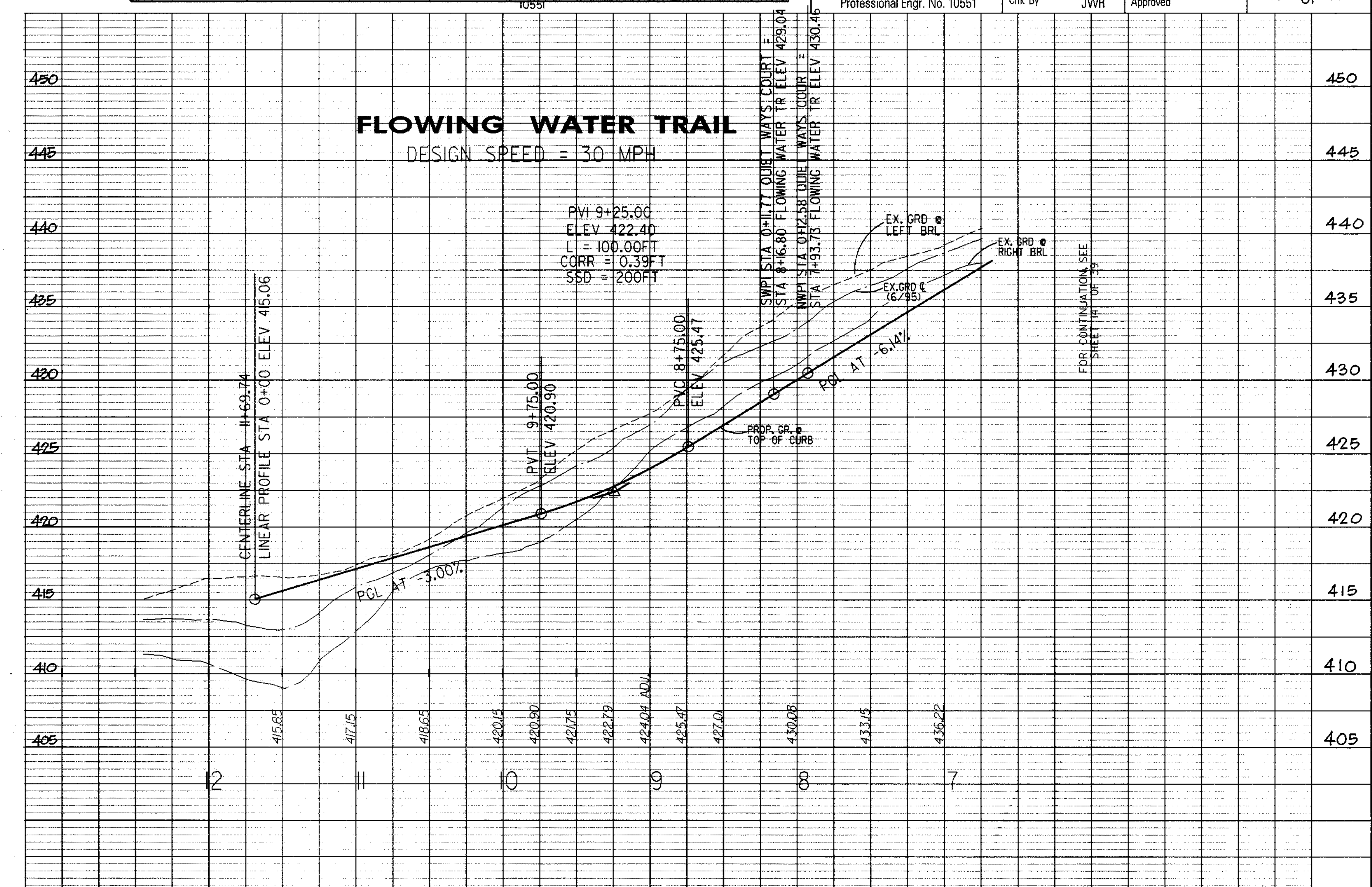
Professional Engr. No. 10551



FLOWING WATER TRAIL
 LINEAR PROFILE



FLOWING WATER TRAIL
 DESIGN SPEED = 30 MPH



Thu Jun 16 10:42:12 1997

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14' BRONZE FIBERGLASS EMBEDDED POLE.

DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE / POLE TYPE	COMMENTS
	INDIAN SUMMER DR	10+30	17'L		
		16+22	18'L		

43 TREES PROVIDED THIS SHEET.

FUTURE CONSTRUCTION SECTION 4 AREA 5

SEE SHEET 18 OF 44 FOR PROFILE 1304 TO M307.

STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-1, STOP SIGN

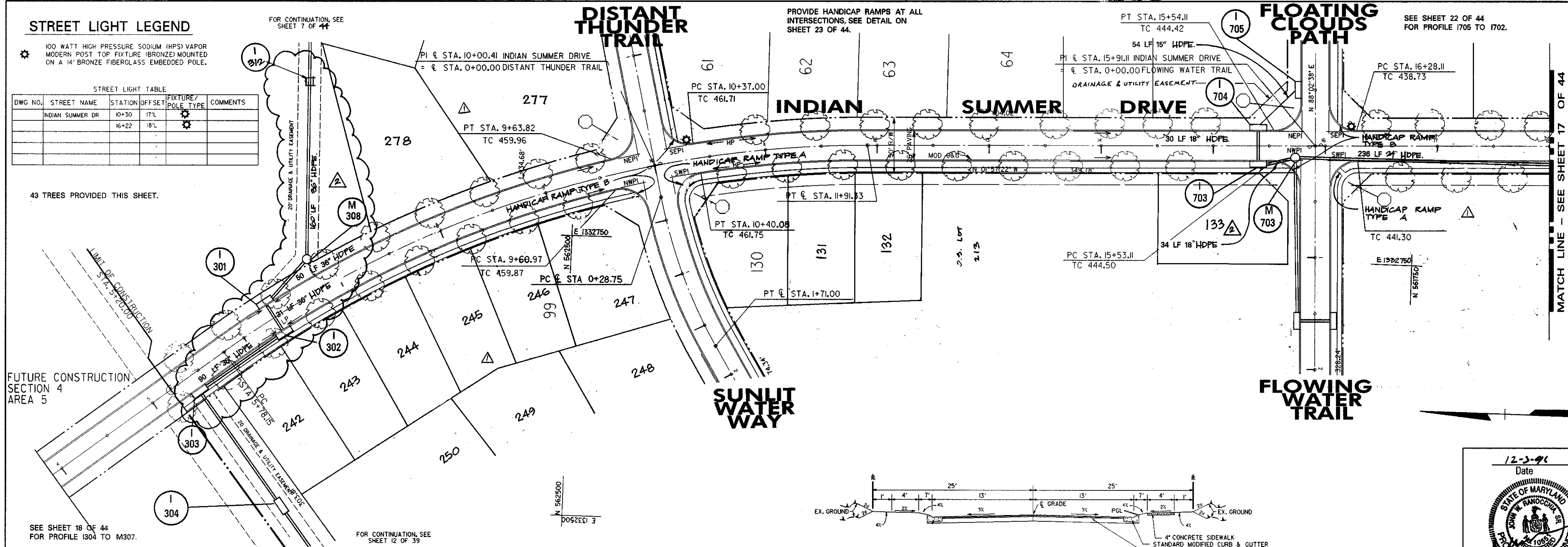
FOR CONTINUATION, SEE SHEET 7 OF 44

DISTANT THUNDER TRAIL

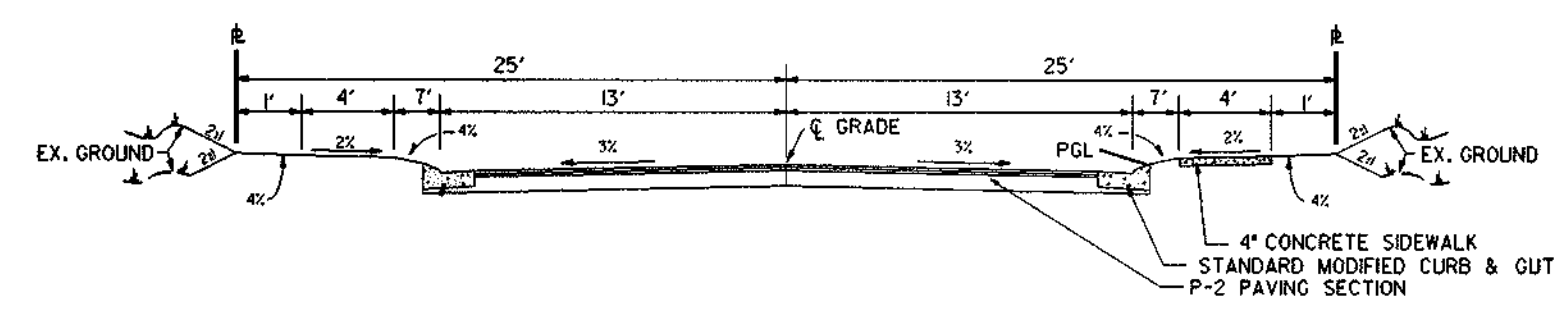
PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

FLOATING CLOUDS PATH

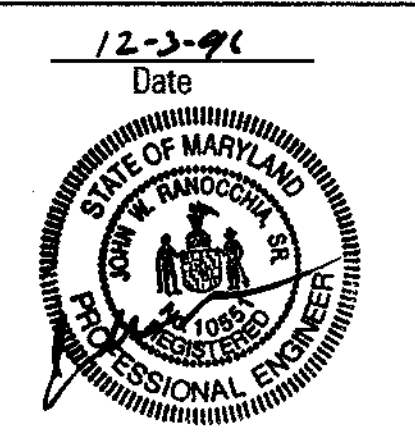
SEE SHEET 22 OF 44 FOR PROFILE 1705 TO 1702.



CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	35°50'57"	980.000	613.173	316.996	S19°52'51"E 603.219



NOT TO SCALE
TYPICAL SECTION - LOCAL
26' PAVING ON 50' R/W



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Druke 5-22-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John M. Miller 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John Damman 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/96	1	LOTS ADJUSTED
8/10/96	2	REVISED FOR CIVIL & P&Z COORD.

VILLAGE OF RIVER HILL
SECTION 4, AREA 4
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

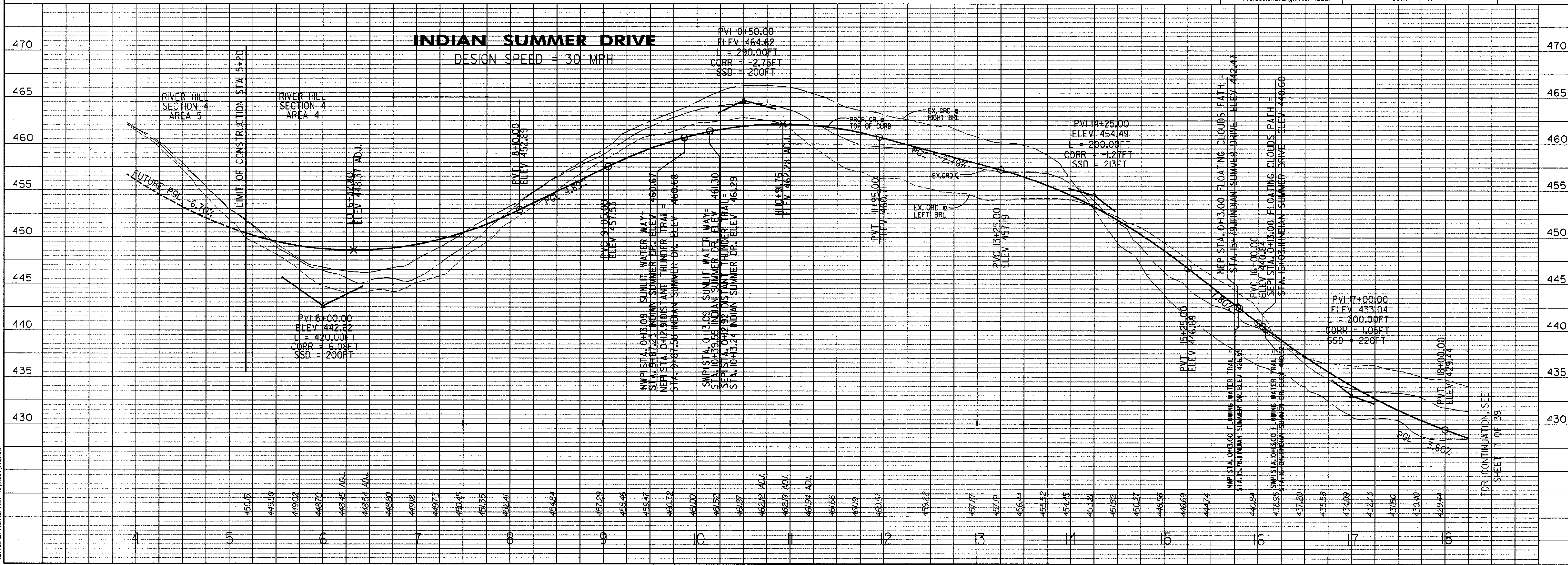
DMW
Dawn MacCann-Waters, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 286-8888
Fax 286-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
INDIAN SUMMER DRIVE
STA 3+90 - 18+00

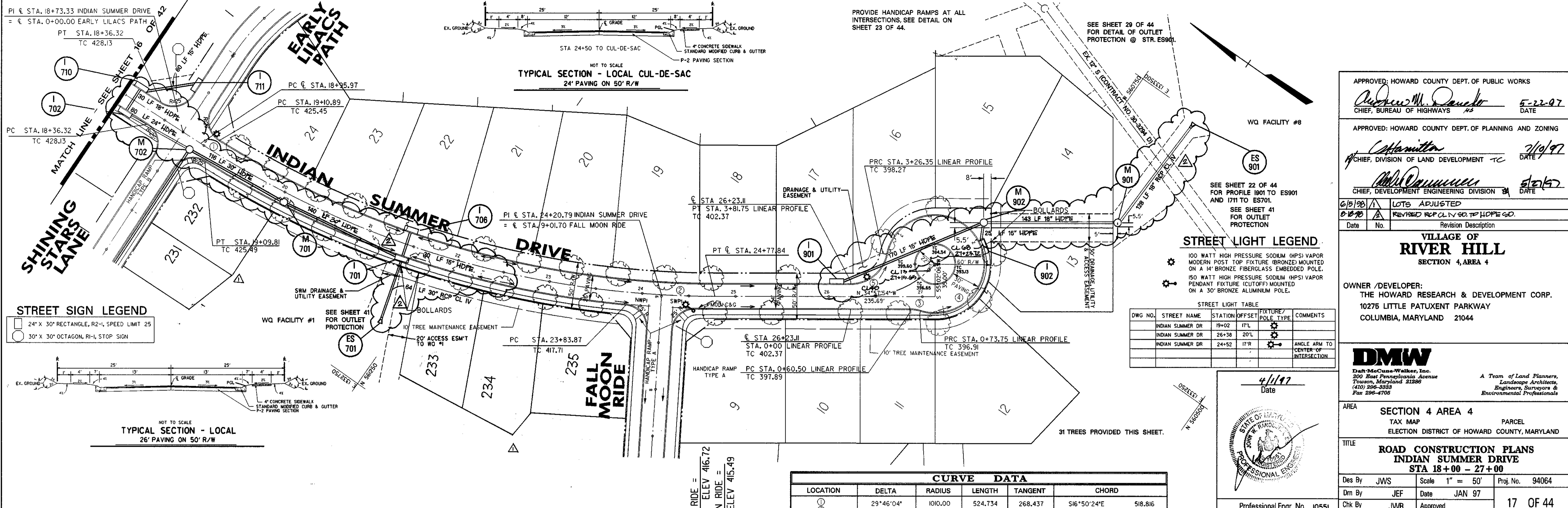
Des By JWS Scale 1" = 50' Proj. No. 94064
Drn By JEF Date MAR 96
Chk By JWR Approved 16 OF 44

Professional Engr. No. 10551



FOR CONTINUATION, SEE SHEET 17 OF 39

Thu Nov 26 10:25:28 1996 c:\prow\10465415



STREET SIGN LEGEND
 □ 24" X 30" RECTANGLE, R2-L, SPEED LIMIT 25
 ○ 30" X 30" OCTAGON, R1-L, STOP SIGN

STREET LIGHT LEGEND
 ⚙ 100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE FIBERGLASS EMBEDDED POLE.
 ⚙ 150 WATT HIGH PRESSURE SODIUM (HPS) VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 30" BRONZE ALUMINUM POLE.

STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION OFFSET	FIXTURE/POLE TYPE	COMMENTS
	INDIAN SUMMER DR	19+02	17'L	
	INDIAN SUMMER DR	26+38	20'L	
	INDIAN SUMMER DR	24+52	17'R	ANGLE ARM TO CENTER-OF-INTERSECTION

NOT TO SCALE
TYPICAL SECTION - LOCAL
 26' PAVING ON 50' R/W

NOT TO SCALE
TYPICAL SECTION - LOCAL CUL-DE-SAC
 24' PAVING ON 50' R/W

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

SEE SHEET 29 OF 44 FOR DETAIL OF OUTLET PROTECTION @ STR. ES901.

WQ FACILITY #8

SEE SHEET 22 OF 44 FOR PROFILE 1901 TO ES901 AND 1711 TO ES701.
 SEE SHEET 41 FOR OUTLET PROTECTION

CURVE DATA

LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	29°46'04"	1010.00	524.734	268.437	S16°50'24"E 518.816
②	03°14'27"	1010.00	57.131	28.573	S33°20'40"E 57.123
③	18°58'35"	40.00	13.248	6.685	S25°28'36"E 13.188
④	278°19'41"	52.00	252.602		N24°50'51"E 68.005
⑤	79°21'06"	40.00	55.398	33.180	N74°38'26"W 51.075
⑥	44°00'00"	100.00	78.542	41.421	S97°21'29.6"E 78.927

4/1/97
 Date
 PROFESSIONAL ENGINEER
 STATE OF MARYLAND
 No. 10551
 Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Howard M. Dando 5-22-97
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Chenetta 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *Michael J. ...* 5/21/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

6/5/98 1/1 LOTS ADJUSTED
 8-10-98 2/1 REVISED R/W CLV TO HOPE RD.

Date No. Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

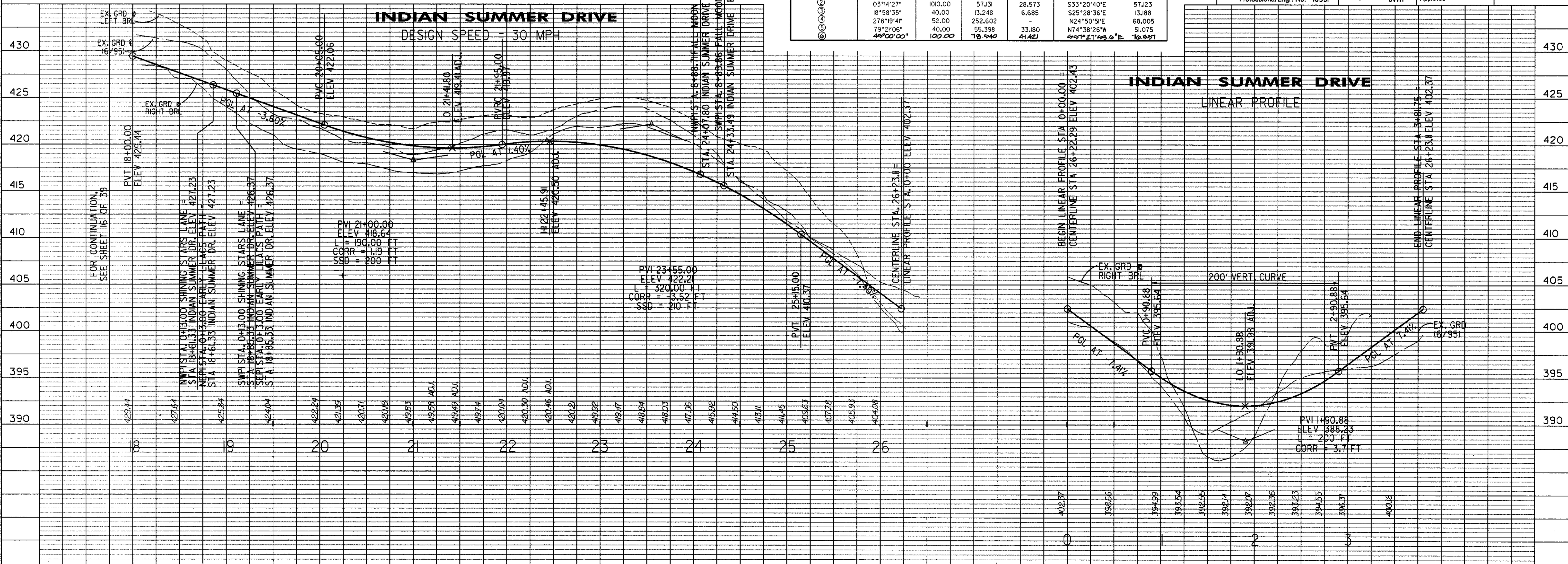
OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dan McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4706
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

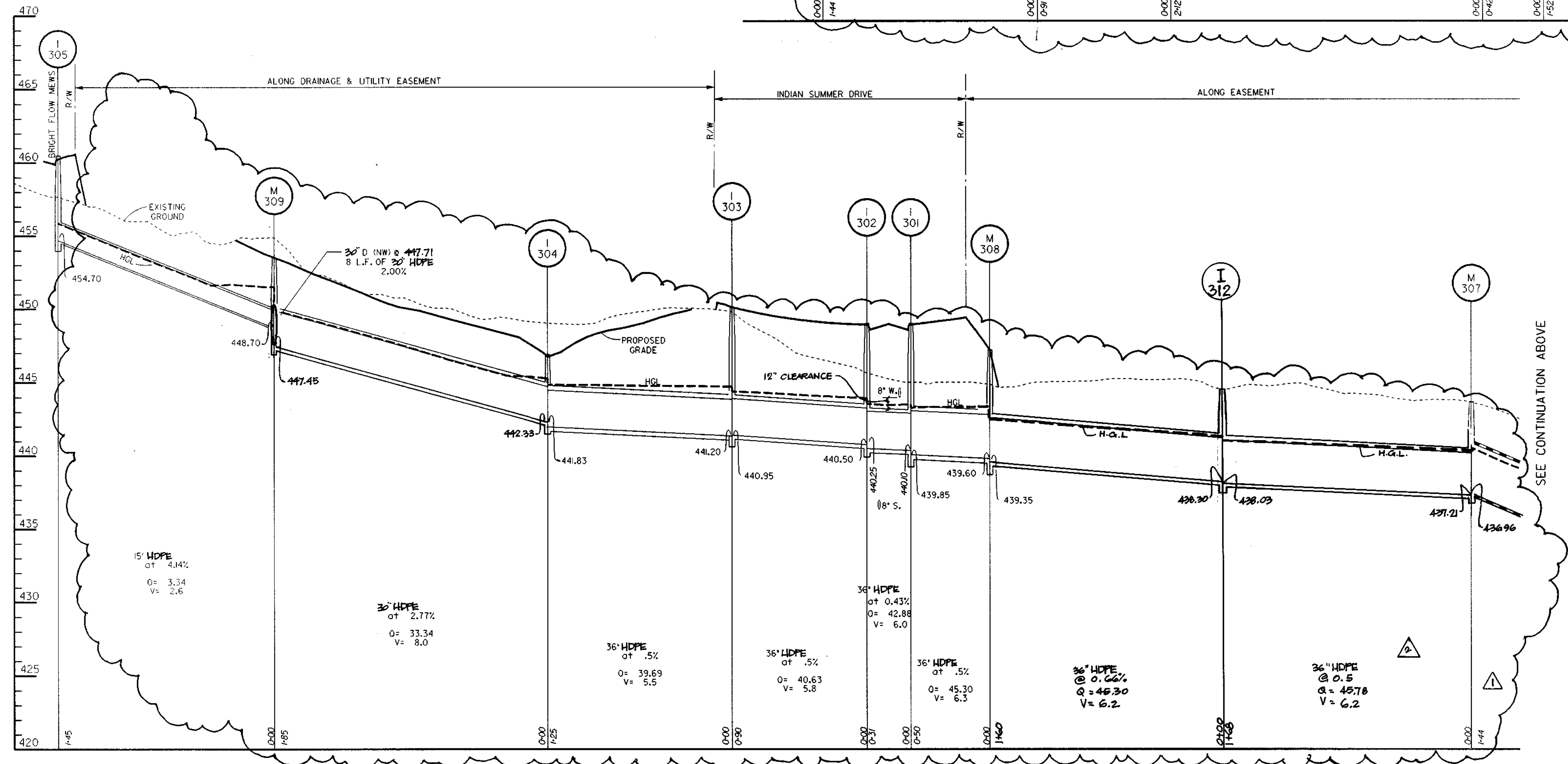
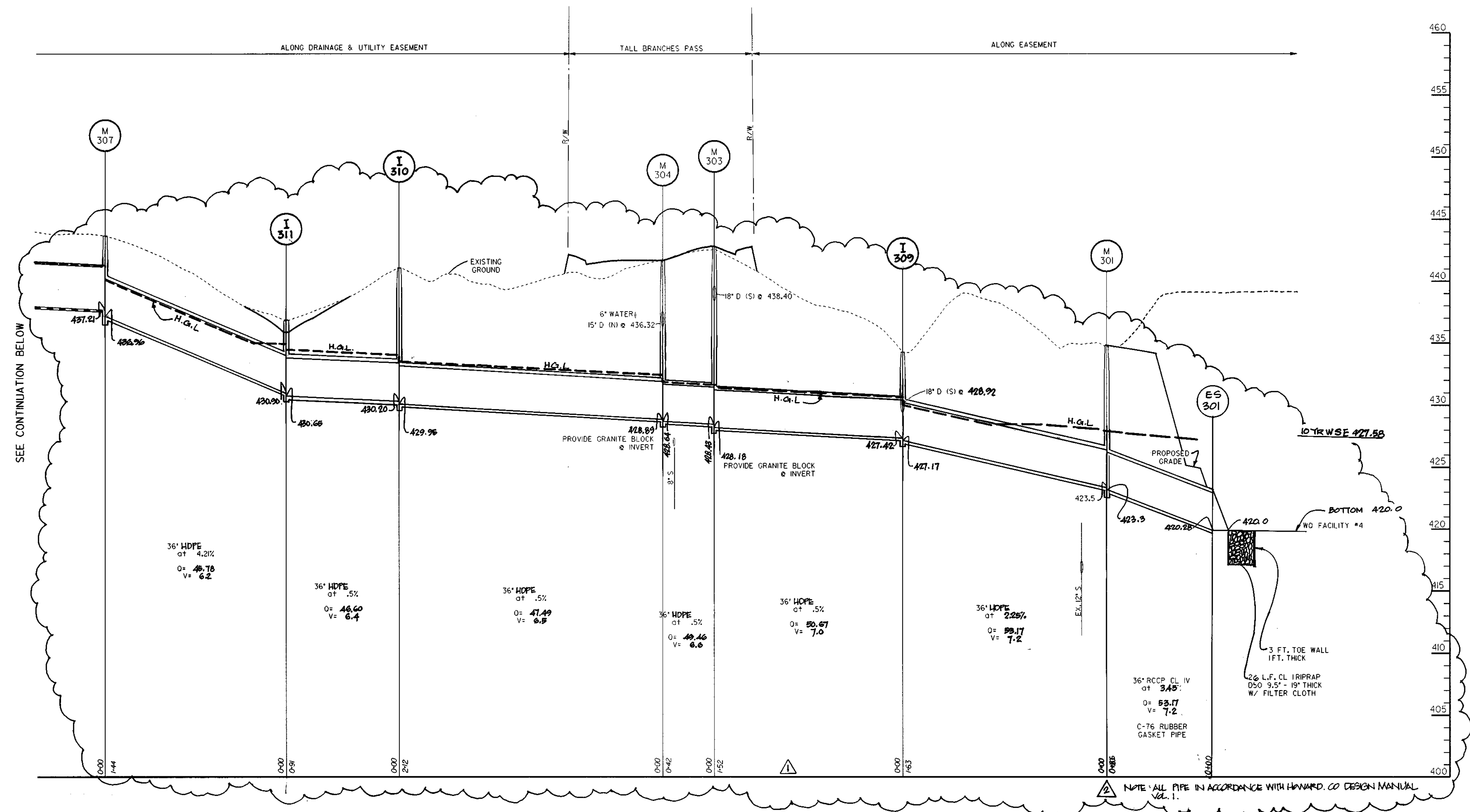
AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
 INDIAN SUMMER DRIVE
 STA 18+00 - 27+00

Des By JWS Scale 1" = 50' Proj. No. 94064
 Dwn By JEF Date JAN 97
 Chk By JWR Approved 17 OF 44



Sta. 18+00 to 27+00 1997 2/1/98/1/98/94/95



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Sander
 CHIEF, BUREAU OF HIGHWAYS 5-22-97
 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
A. J. Hamilton
 CHIEF, DIVISION OF LAND DEVELOPMENT 7/10/97
 DATE

M. J. Williams
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 5/22/97
 DATE

4/26/98 Δ REVERSE INVERT FROM 80 TO 70 TO V. 207, ADDED INLET 207
 8/18/98 Δ REPLACED MH M-302, M-305, M-306 WITH INLET
 8/18/98 Δ REVERSED RCCP CL IV 90 TO HDPE

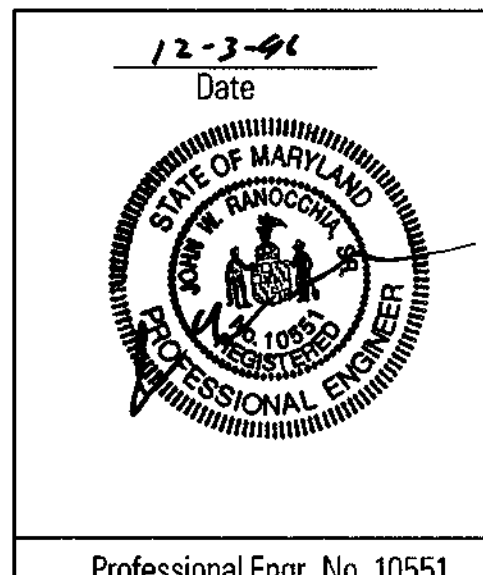
Date	No.	Revision Description

VILLAGE OF
RIVER HILL
 SECTION 4, AREA 4

OWNER /DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

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

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

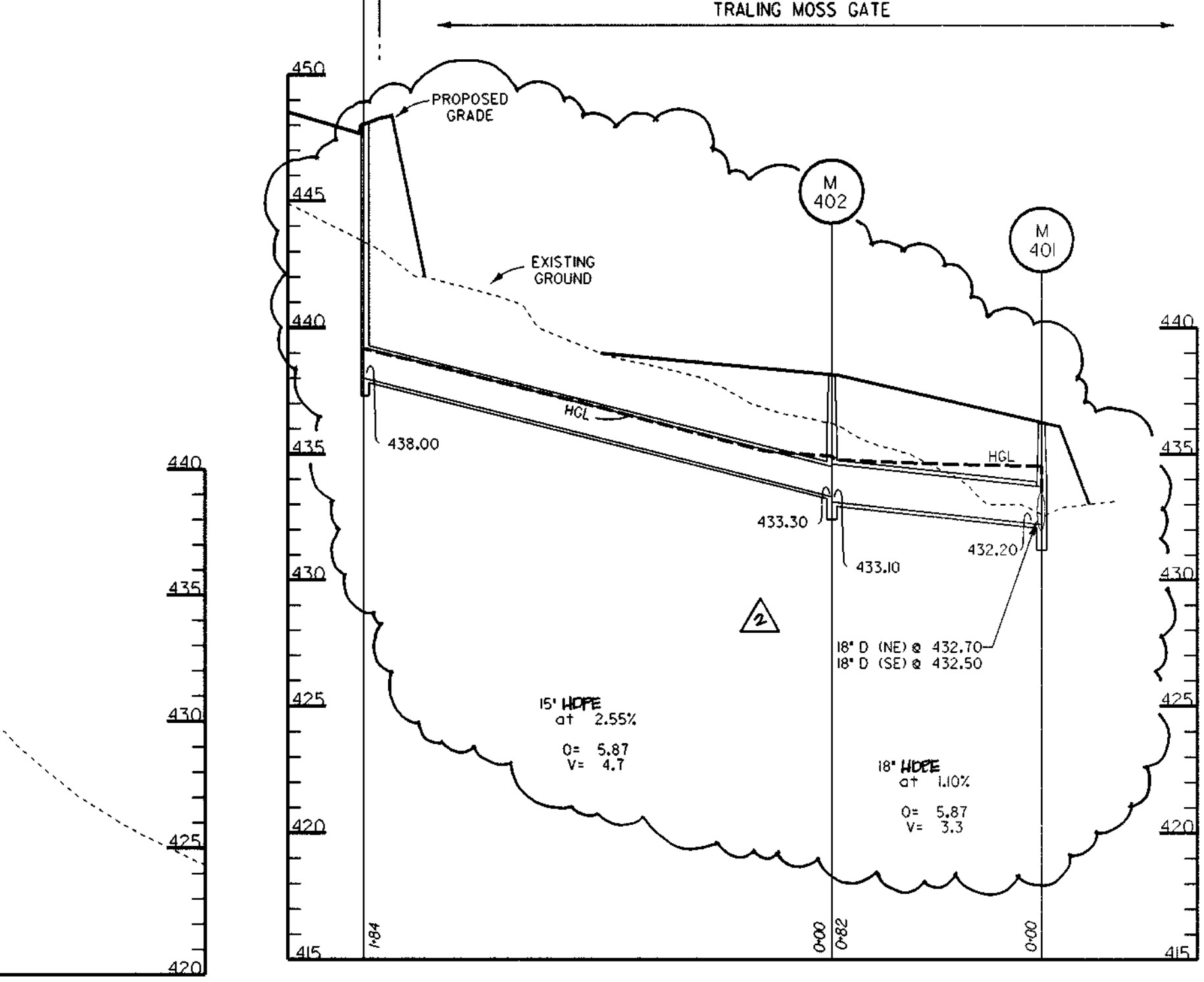
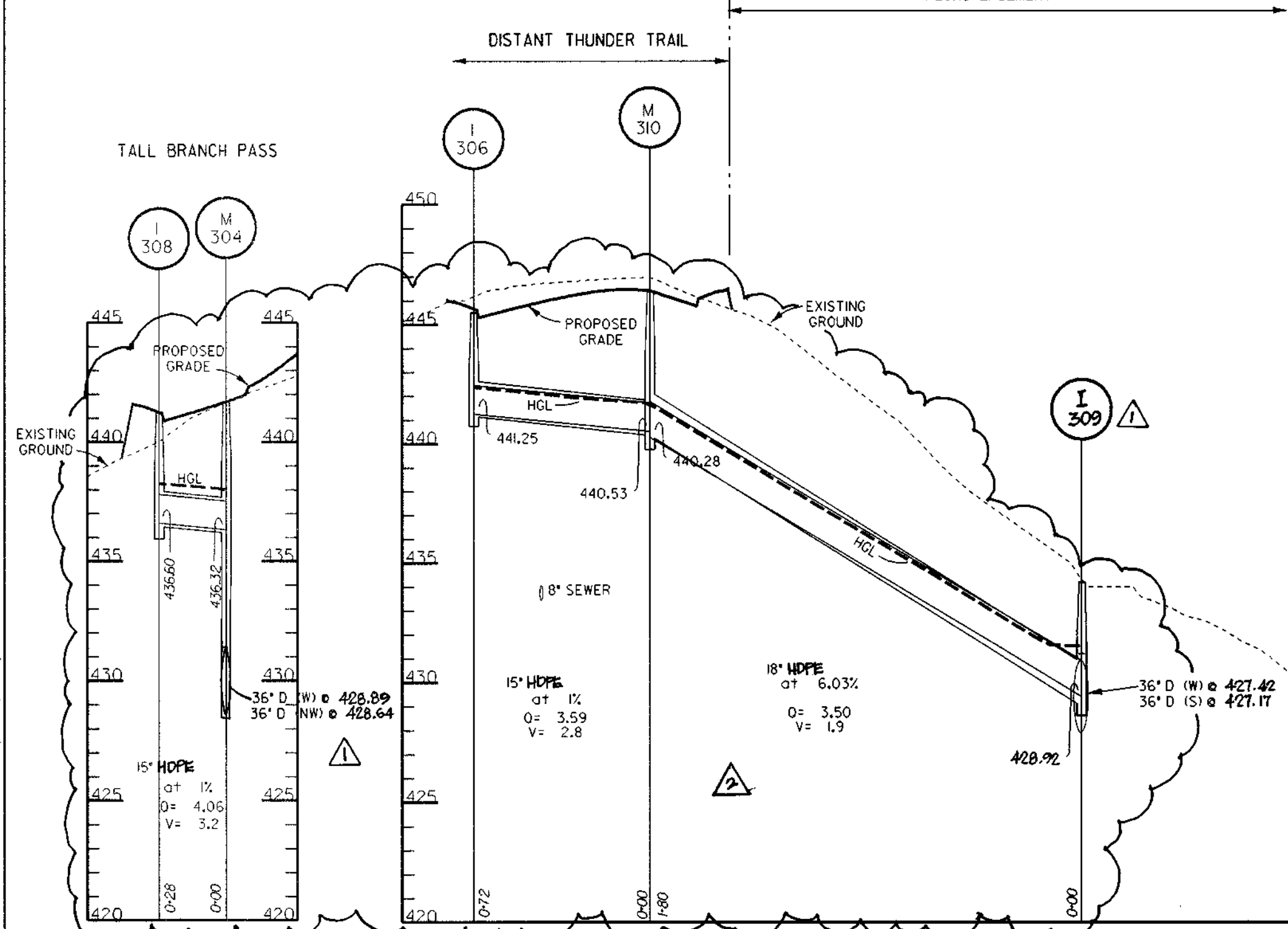
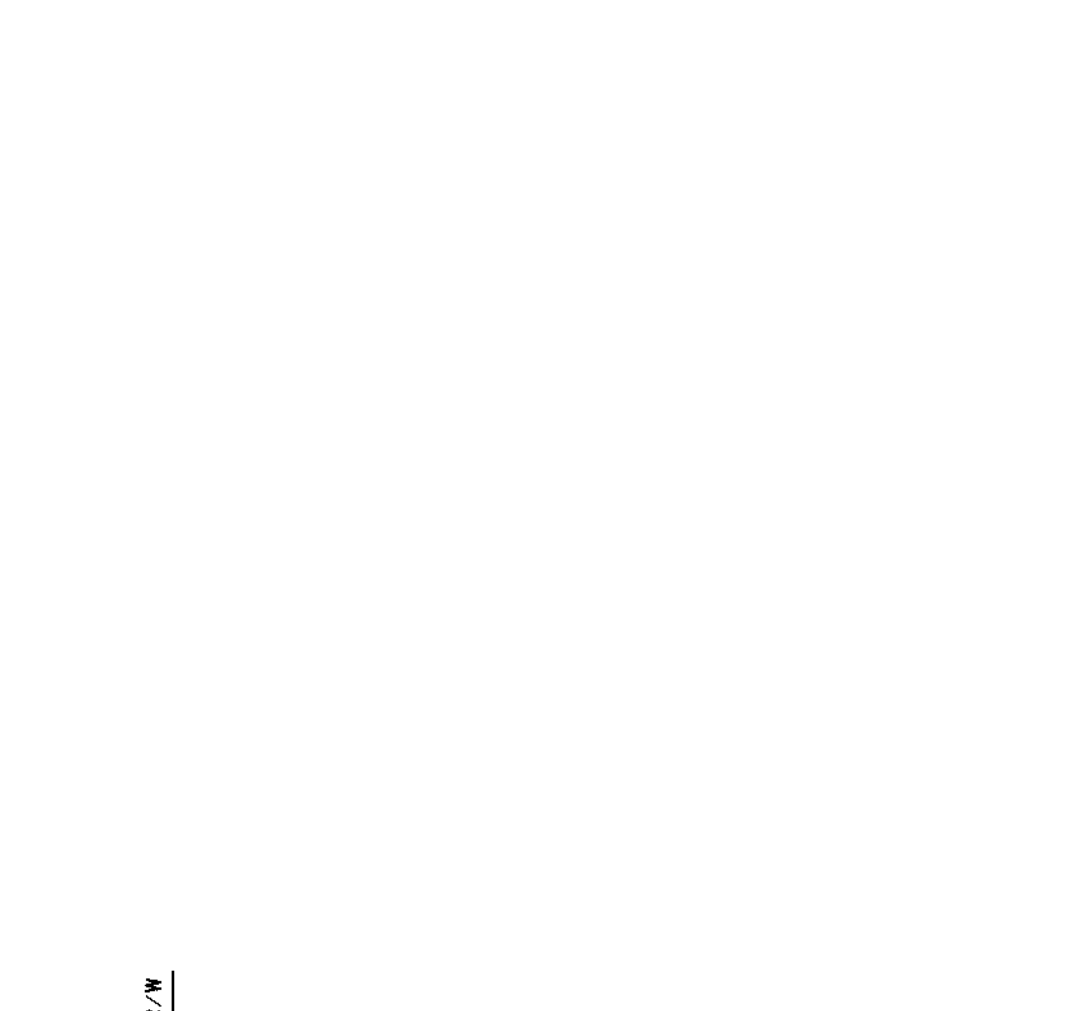
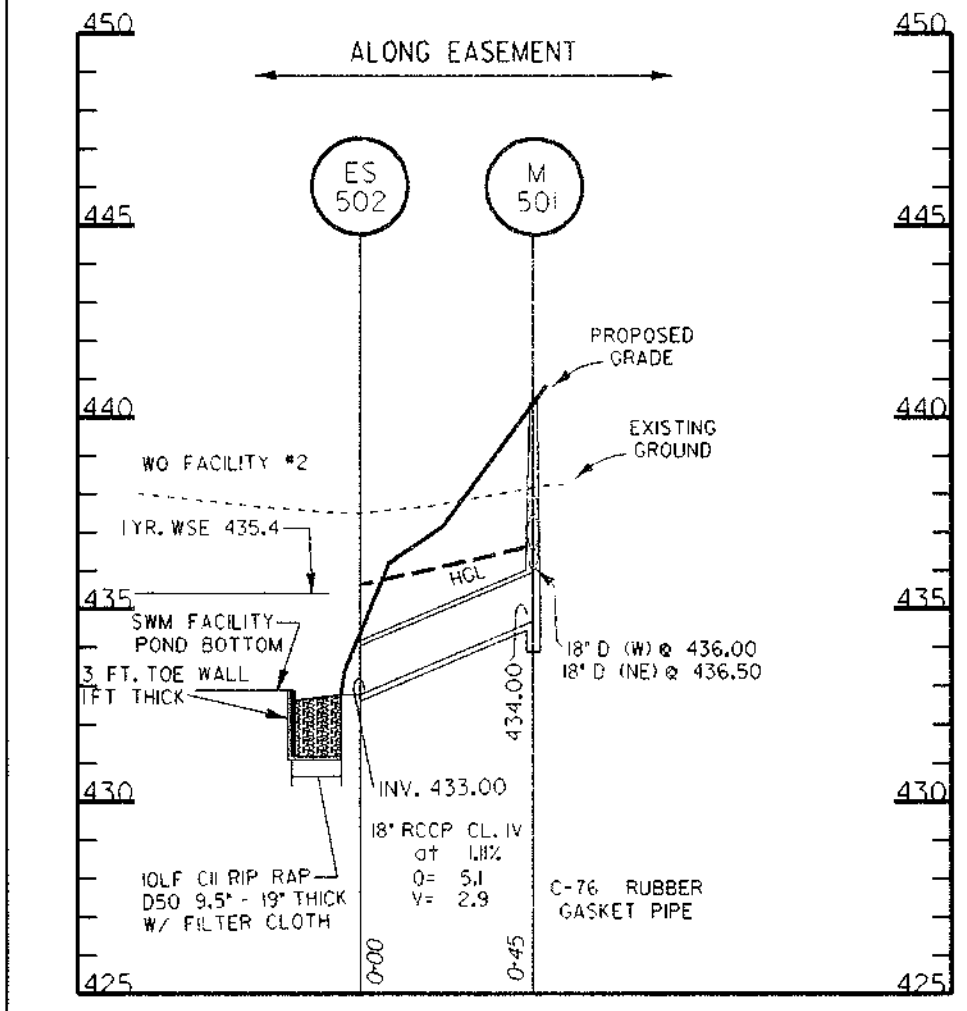
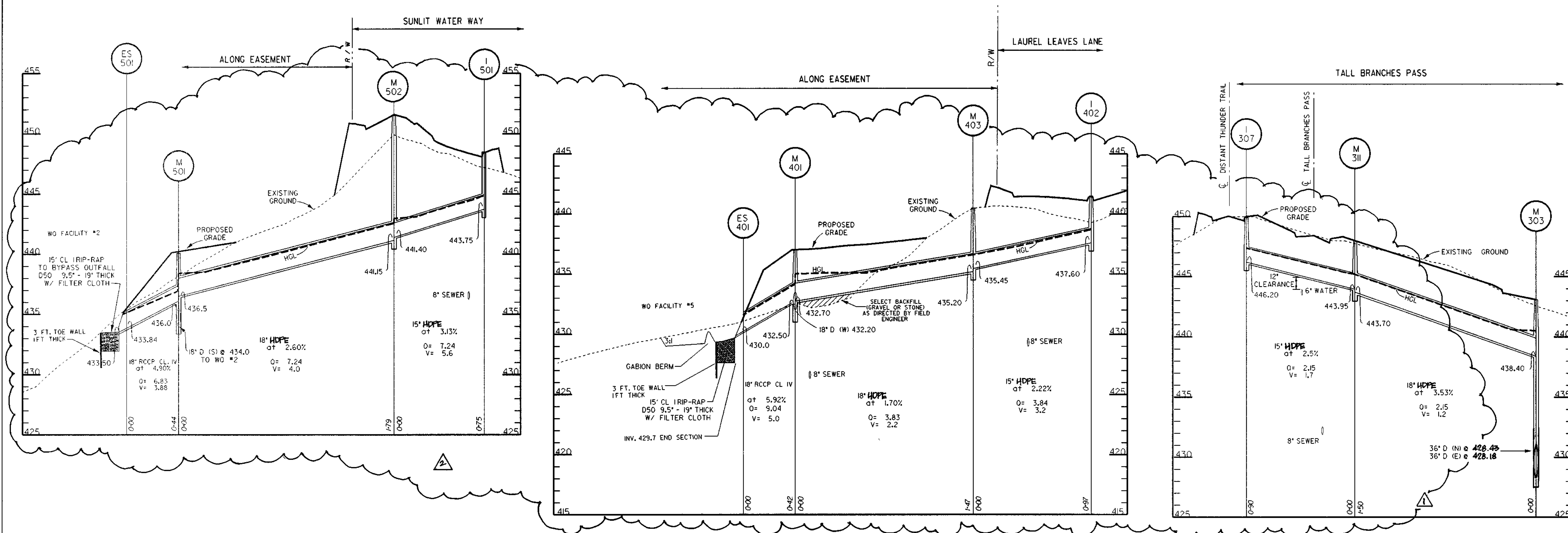


AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **STORM DRAIN PROFILES**

Des By	RS	Scale	1" = 50'	Proj. No.	94064
Drn By	JEF	Date	MAR 96		
Chk By	JWR	Approved			18 OF 44

WWD No. 27 11/09/27 1996 A:\SPARK\SPARK4.P3



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Robert M. Donelle 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. Hamilton 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

M. R. ... 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date	No.	Revision Description
4/28/98	1	REV. INSET OF M-302, M-304, REPLACED M-302 WITH INLET
6/18/98	2	REVISED RCP CL. IV TO HDPE 90.

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

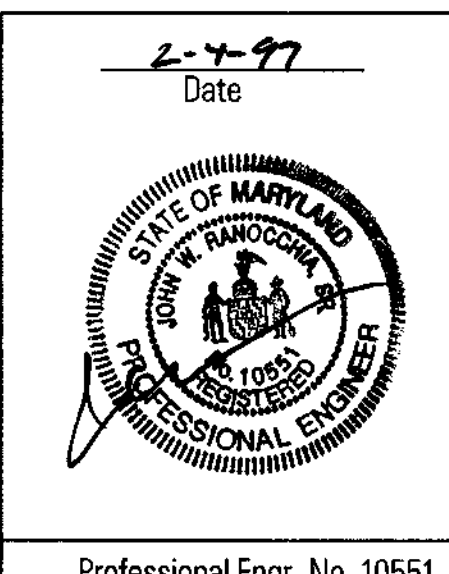
DMW
 Davis McCreary Walker, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3383
 Fax 296-4705

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

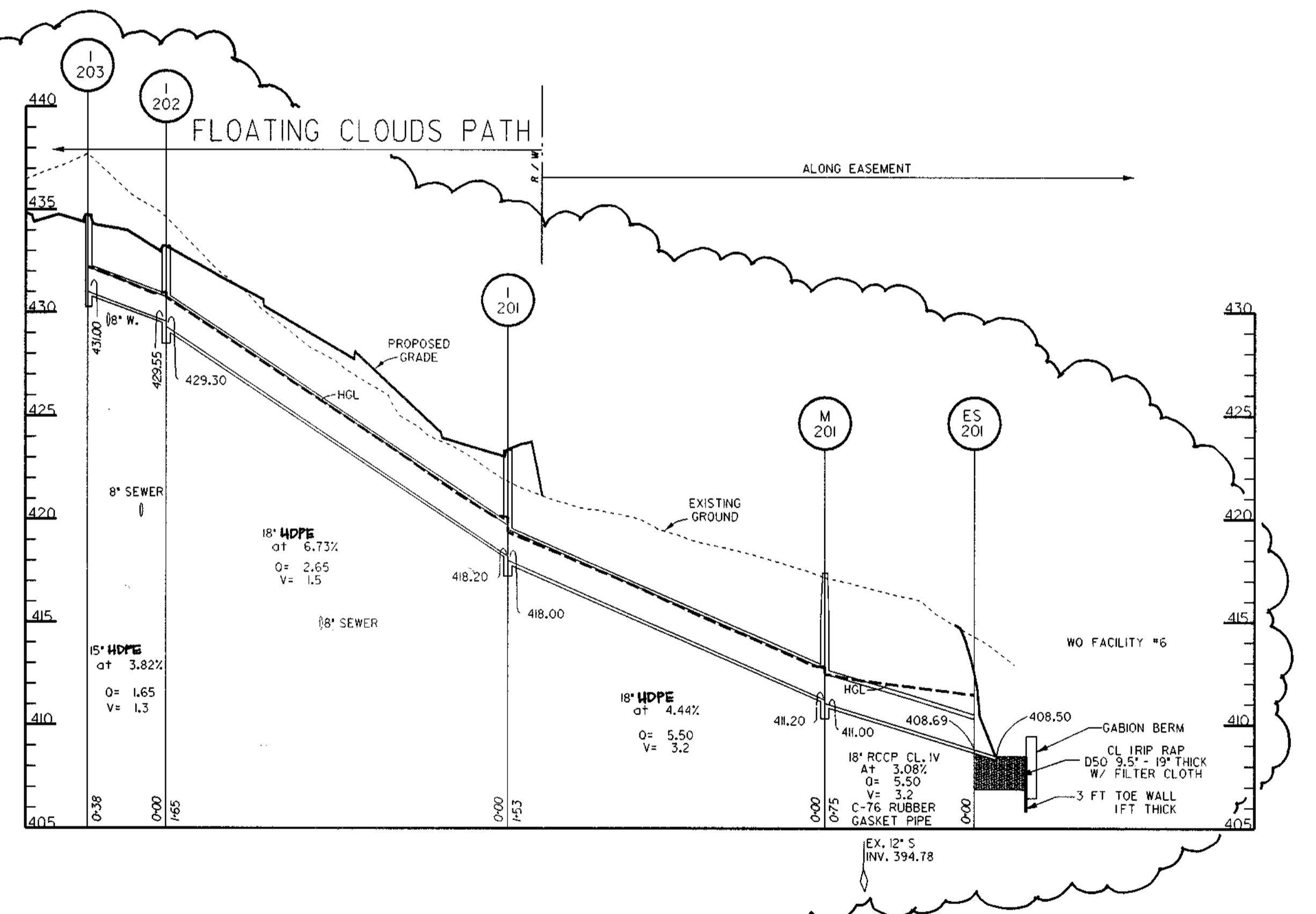
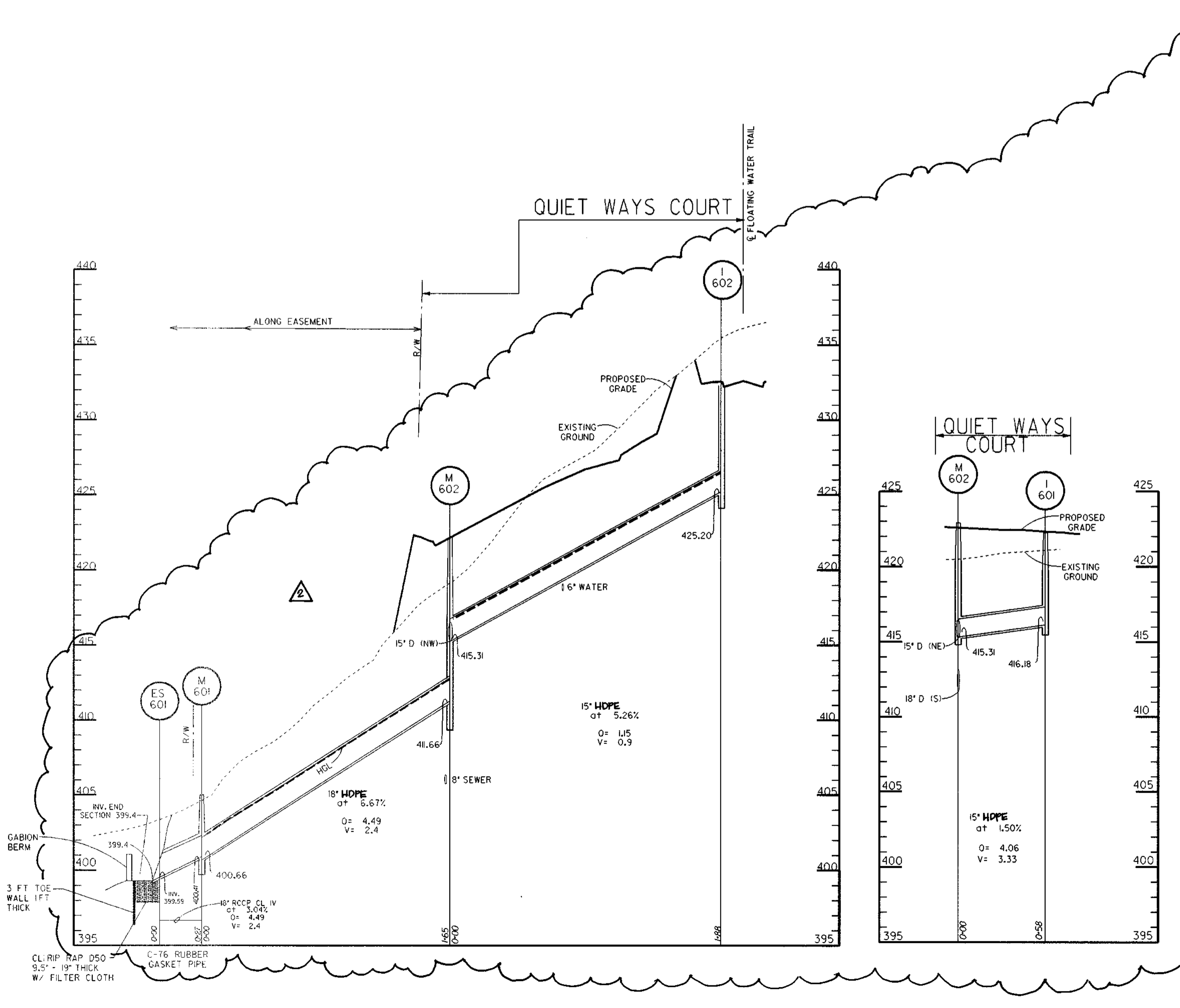
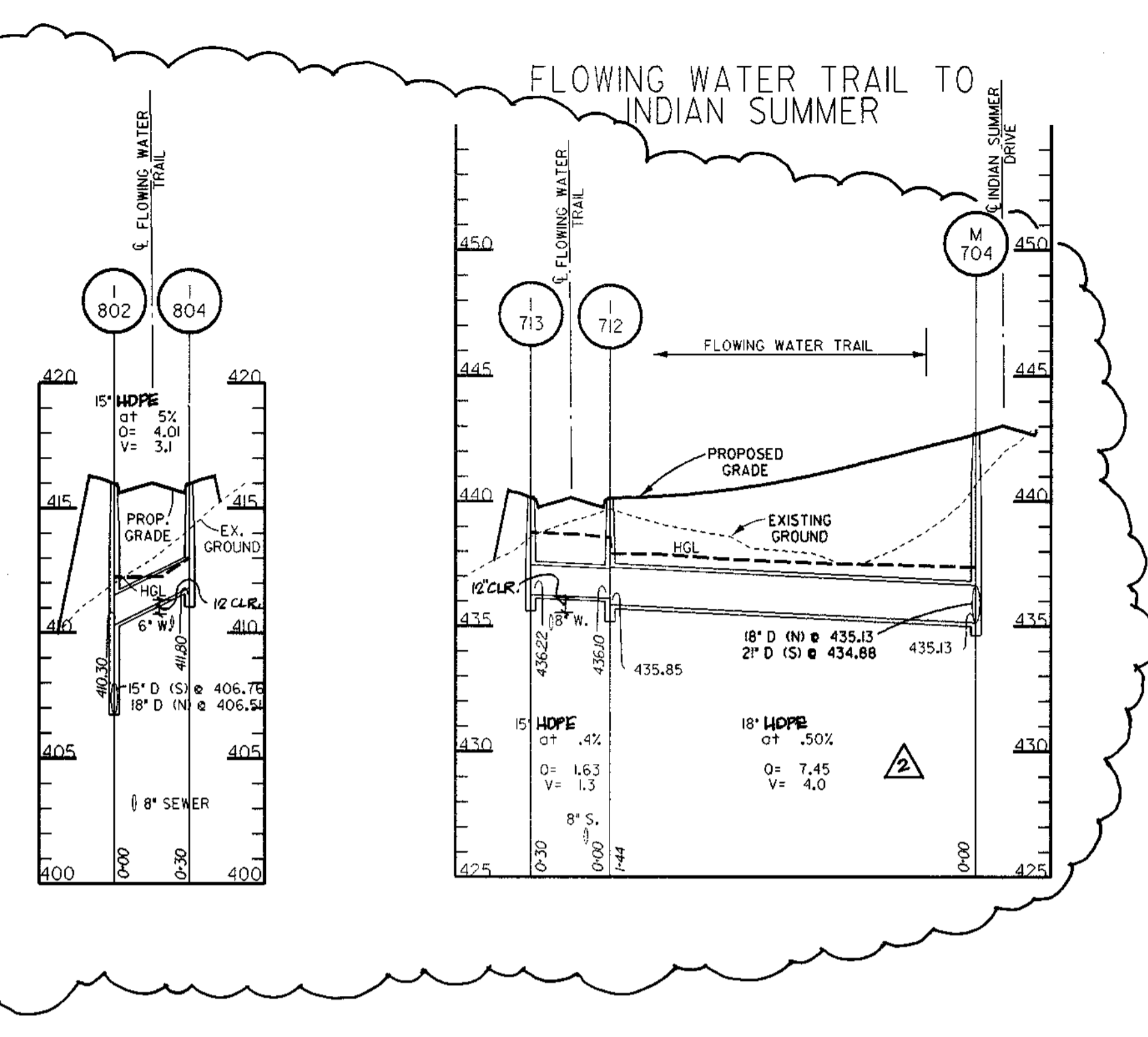
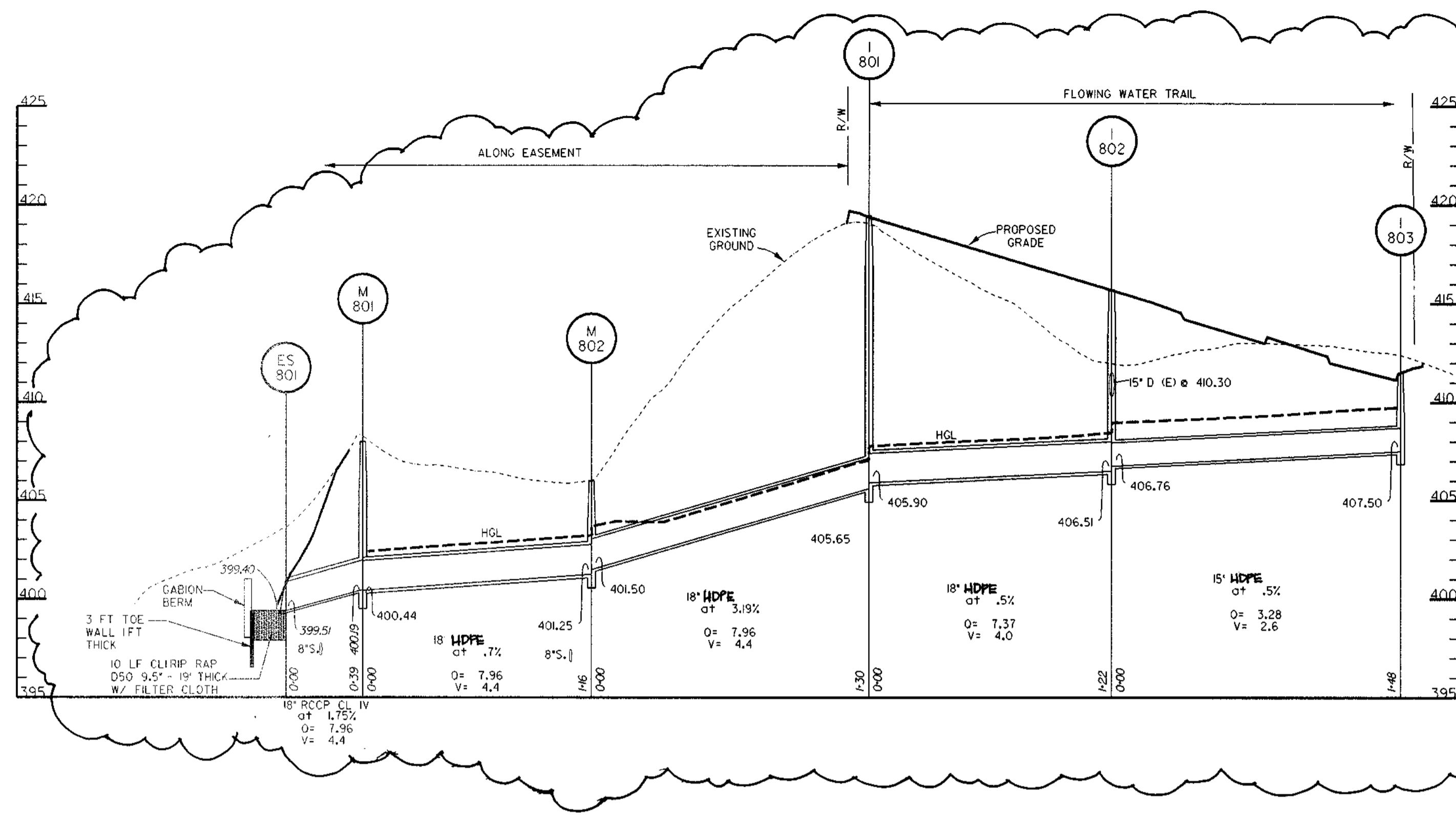
AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **STORM DRAIN PROFILES**

Des By	RS	Scale	1" = 50'	Proj. No.	94064
Drn By	JEF	Date	JAN 97	19 OF 44	
Chk By	JWR	Approved			



Professional Engr. No. 10551



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Demele 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John H. ... 7/1/97
 CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

John ... 5/21/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

8/16/96 **REVISED R/W CL IV 90 TO HDPE GC.**

Revision Description

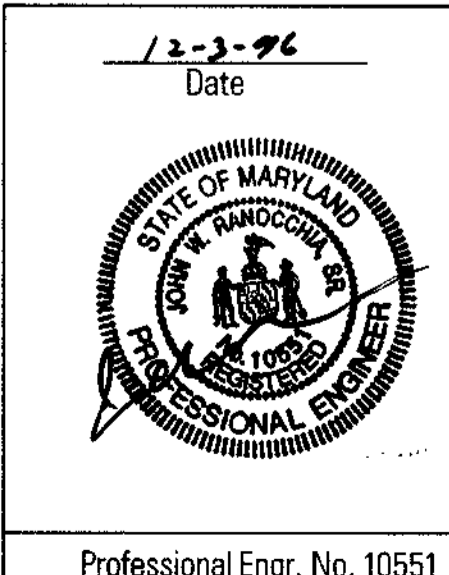
VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

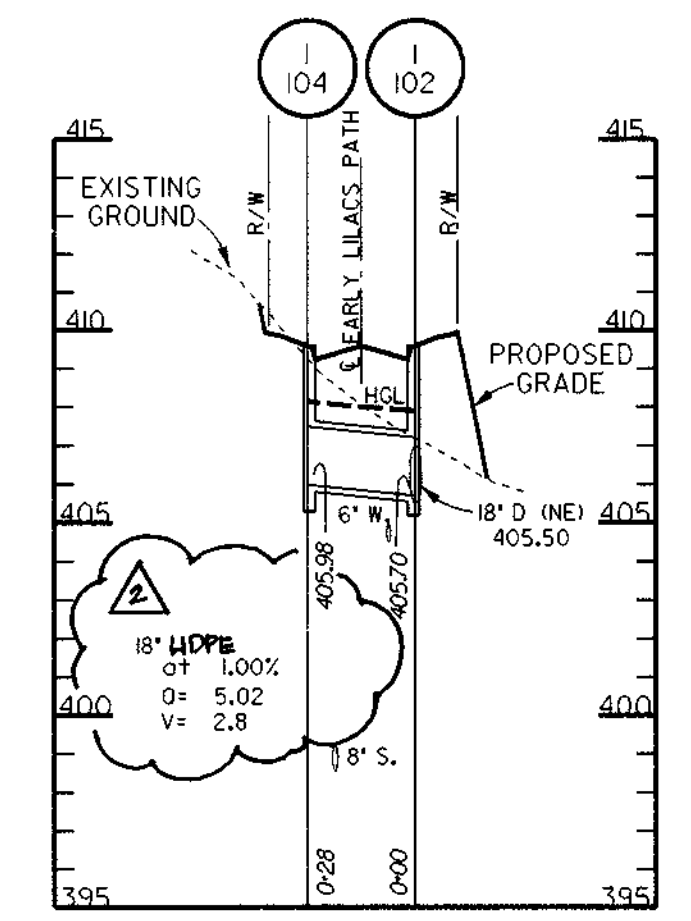
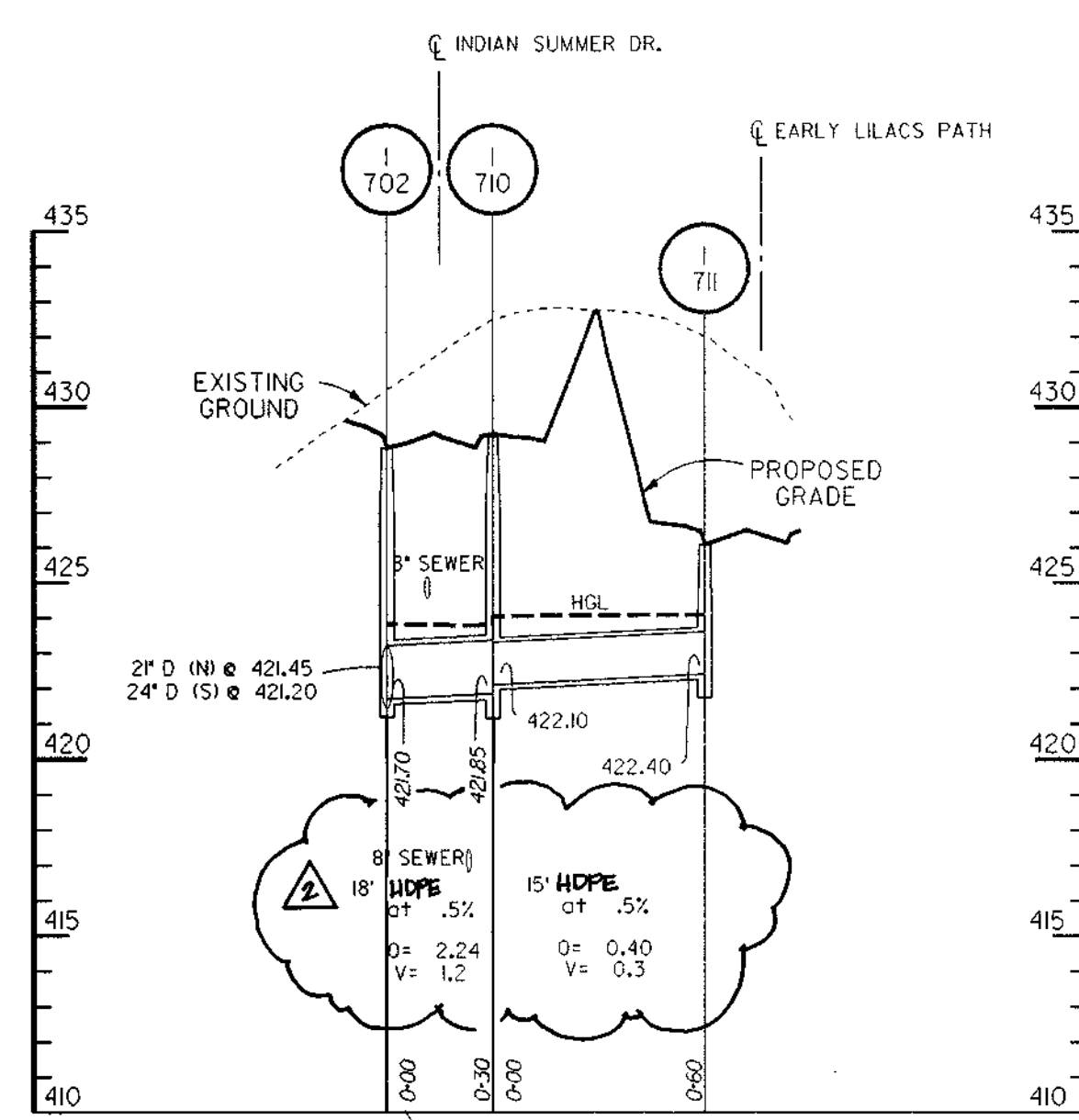
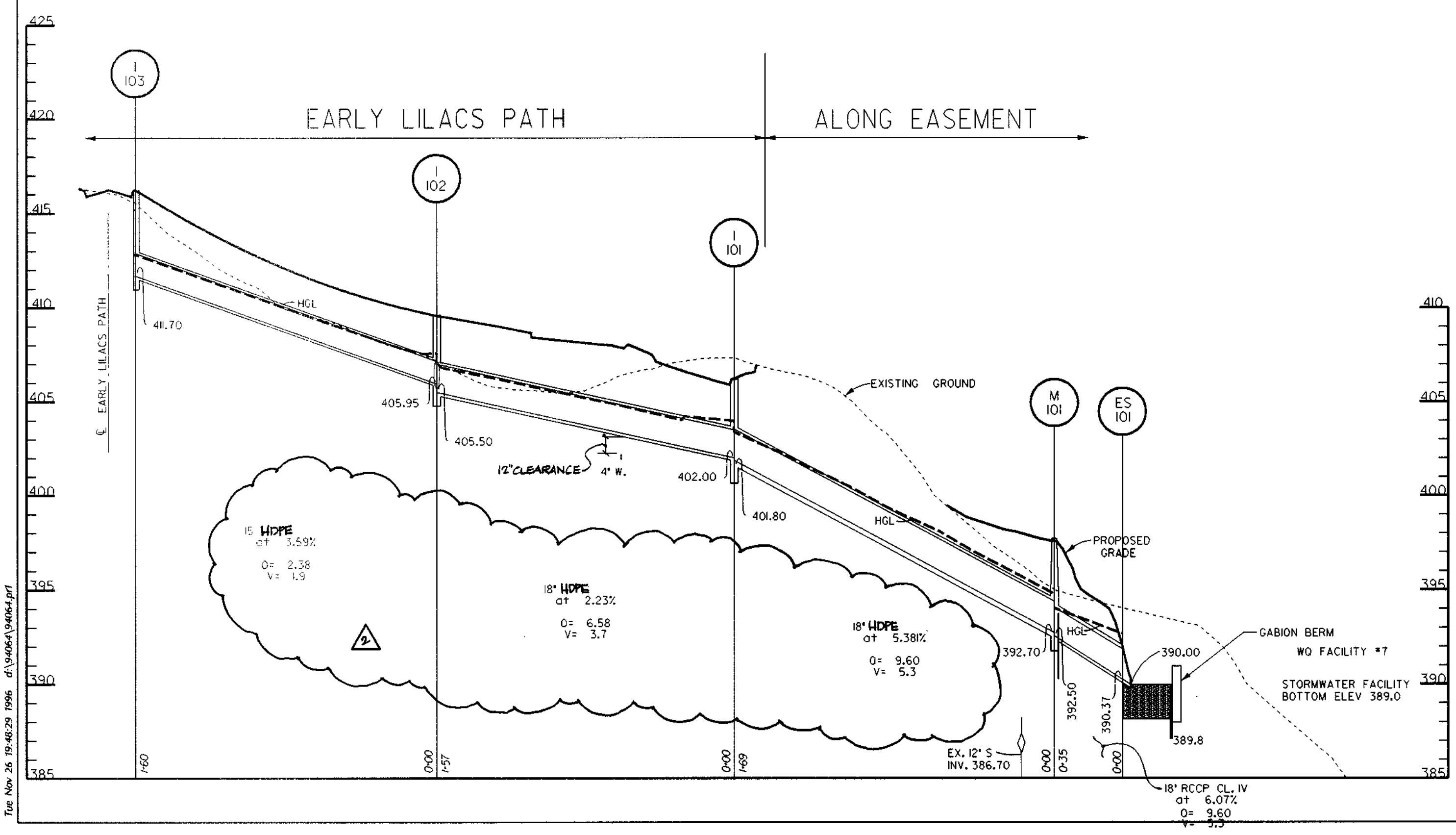
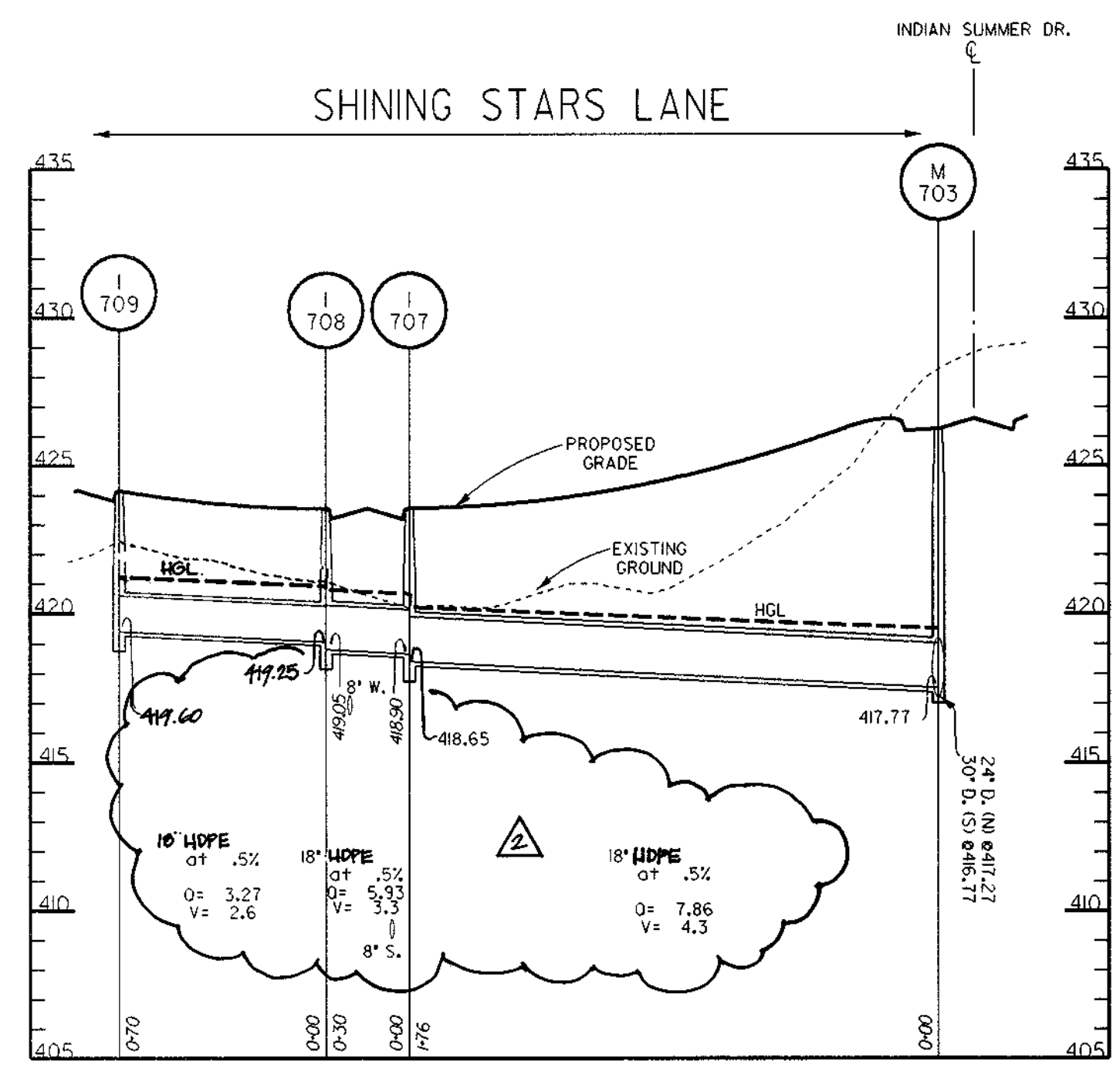
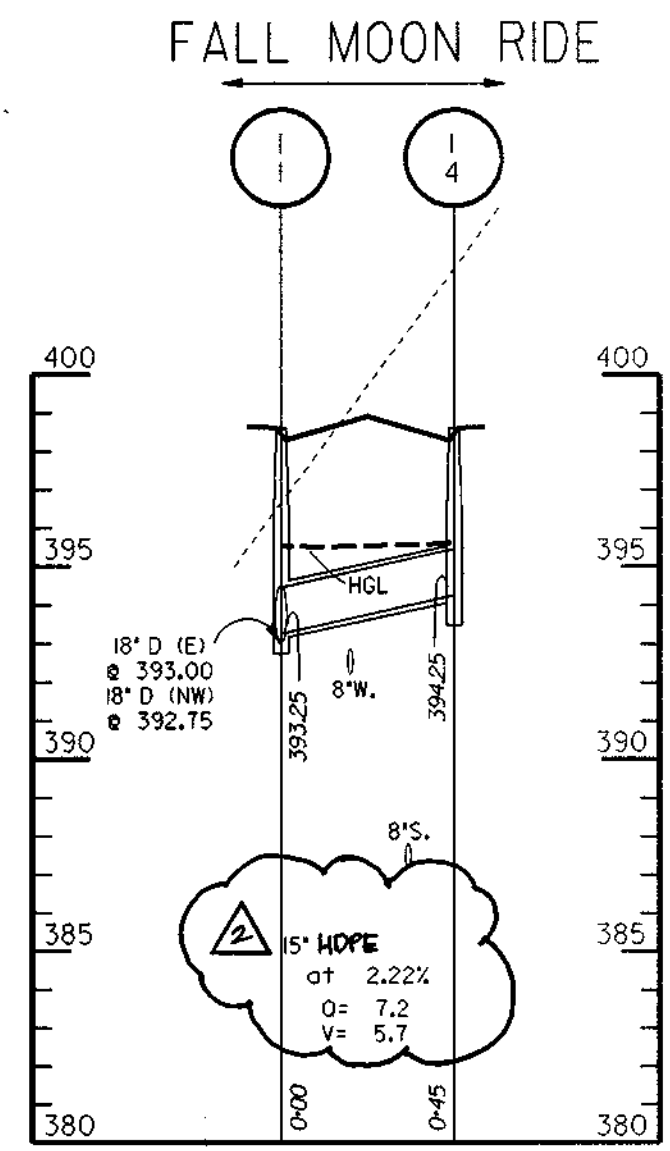
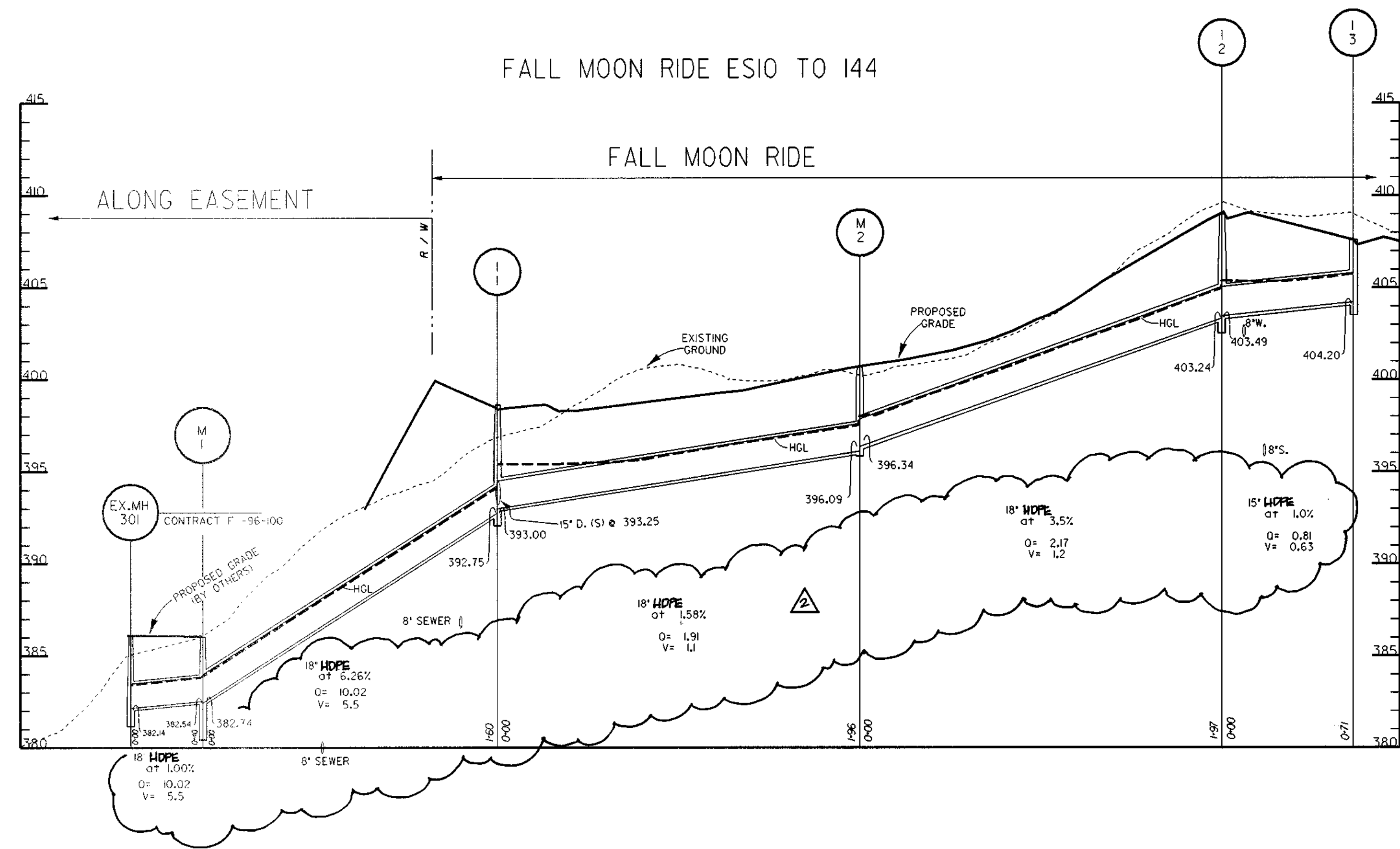
OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dan McCune Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3388
 Fax 296-4708

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

AREA	SECTION 4 AREA 4		
TAX MAP	PARCEL	ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	
TITLE	STORM DRAIN PROFILES		
Des By	RS	Scale 1" = 50'	Proj. No. 94064
Drn By	JEF	Date MAR 96	20 OF 44
Chk By	JWR	Approved	





APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Daniels 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Costantino 7/8/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William J. ... 5/22/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

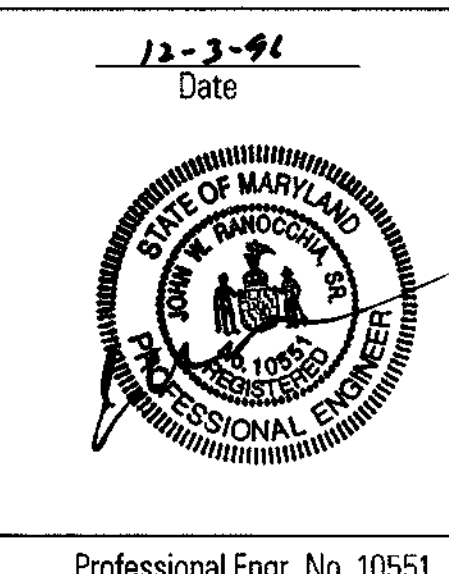
6-10-96 REVISED RCP CL IV GD TO HDPE GD.

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

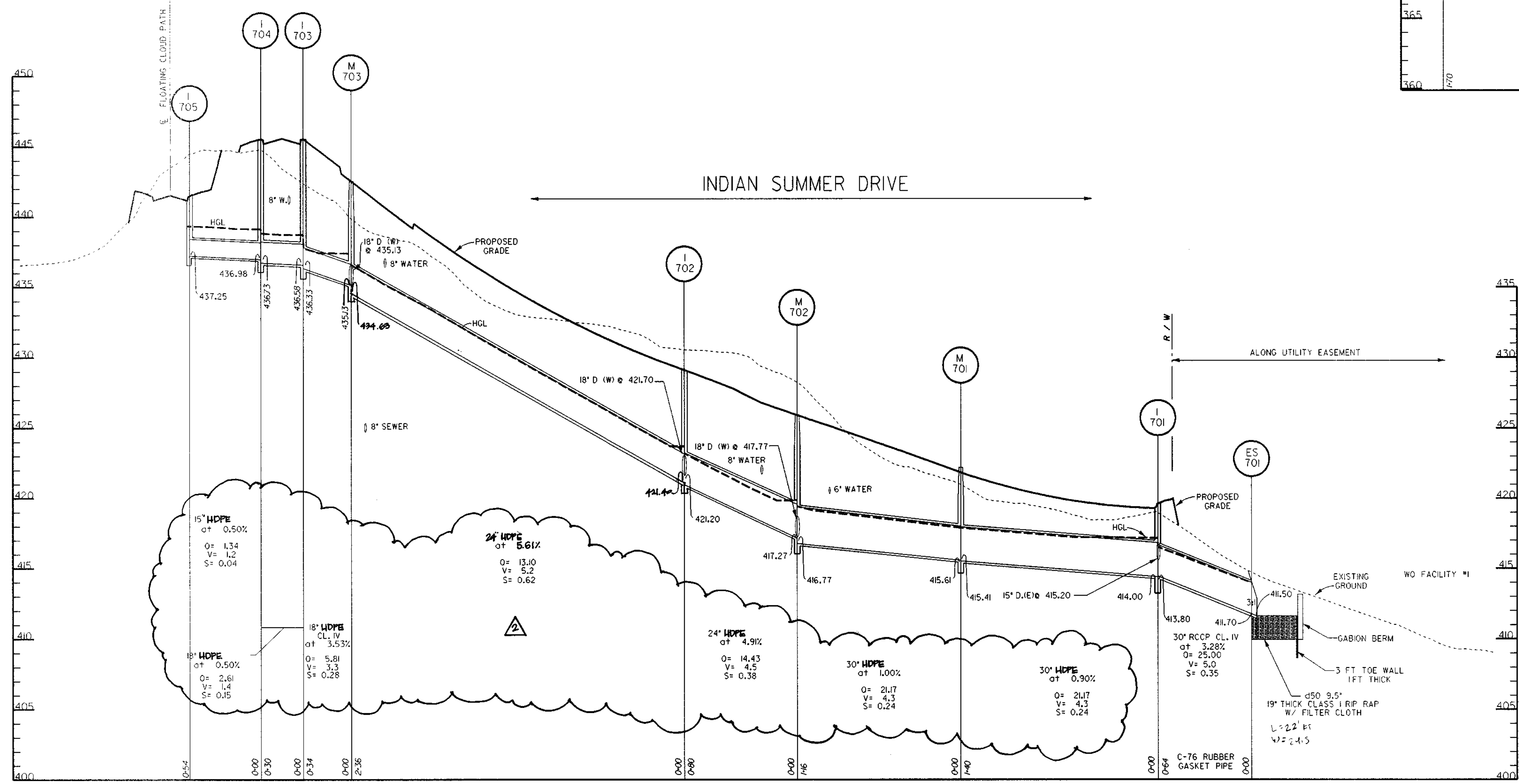
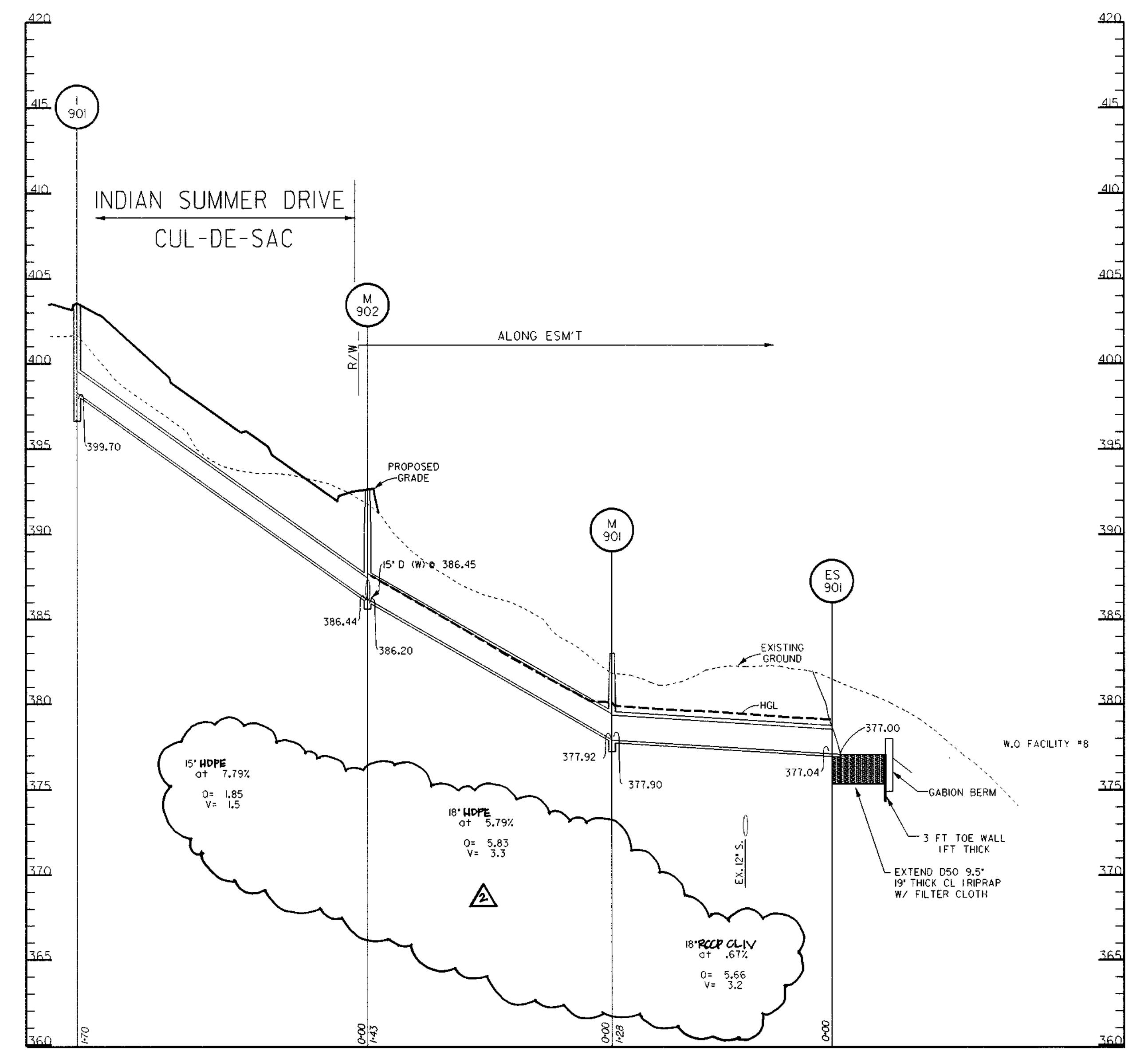
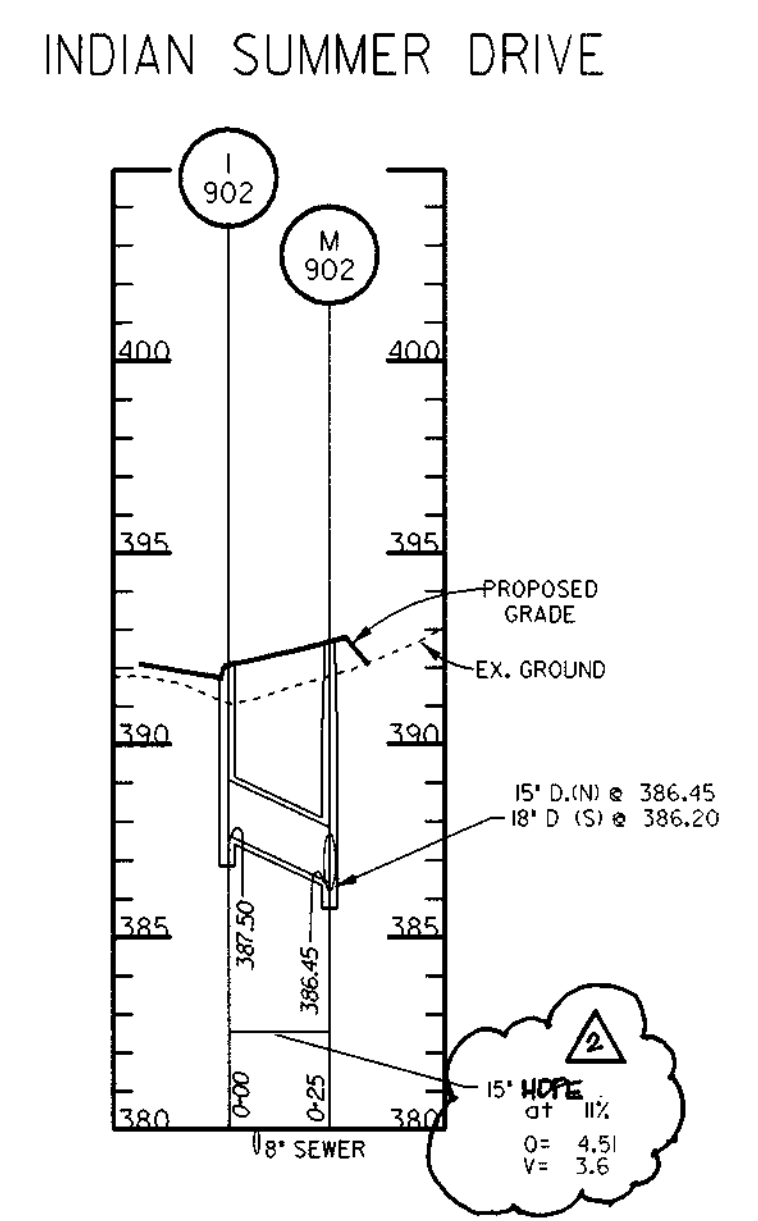
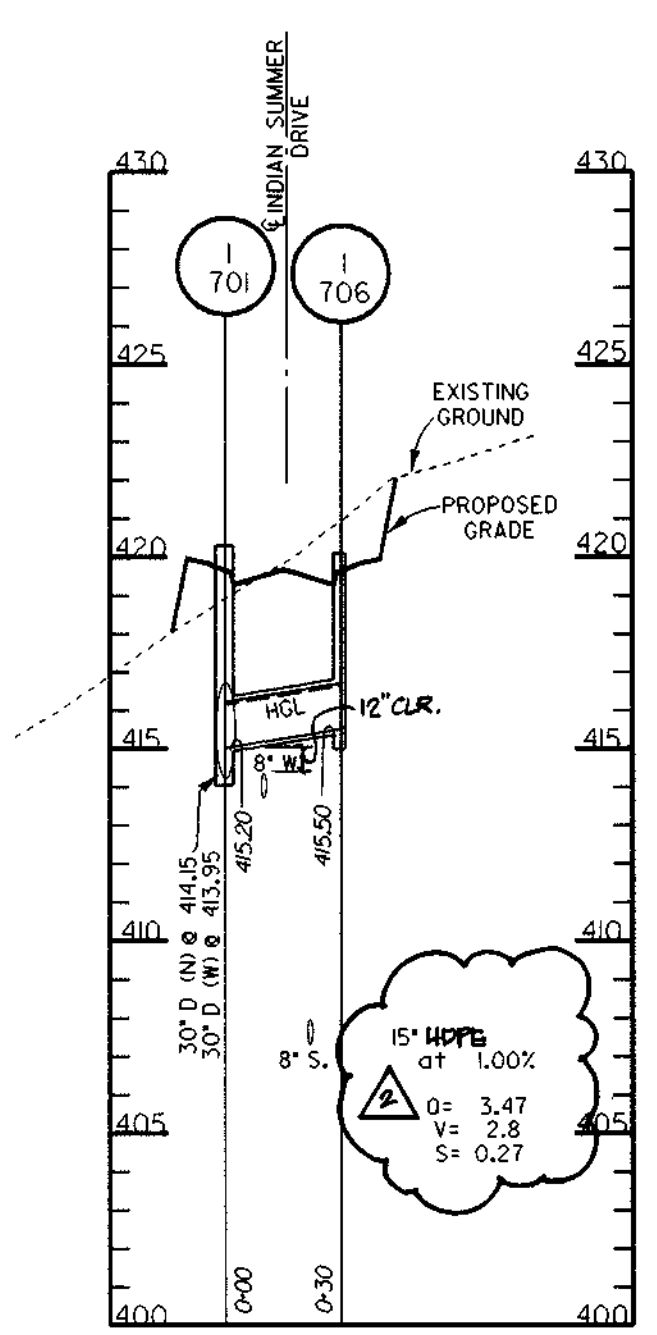
DMW
 Dan-Dee-Cross-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4706

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



AREA	SECTION 4 AREA 4		PARCEL
TITLE	STORM DRAIN PROFILES		
Des By	RS	Scale	1" = 50'
Dm By	JEF	Date	MAR 96
Chk By	JWR	Approved	21 OF 44

File No. 26, 19-46-29, 1996, 41/10000/10000.dwg



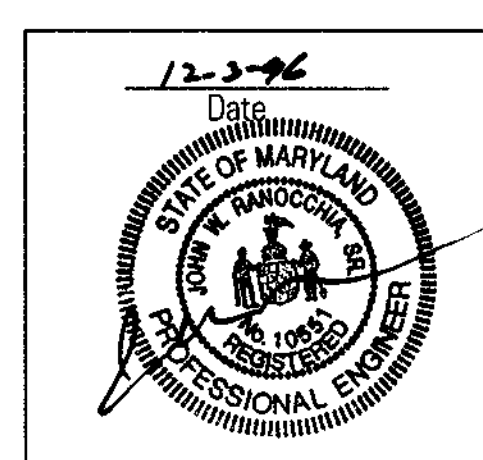
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John M. ... 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

REVISED RCP CL IV SD. 15' HDPE QD

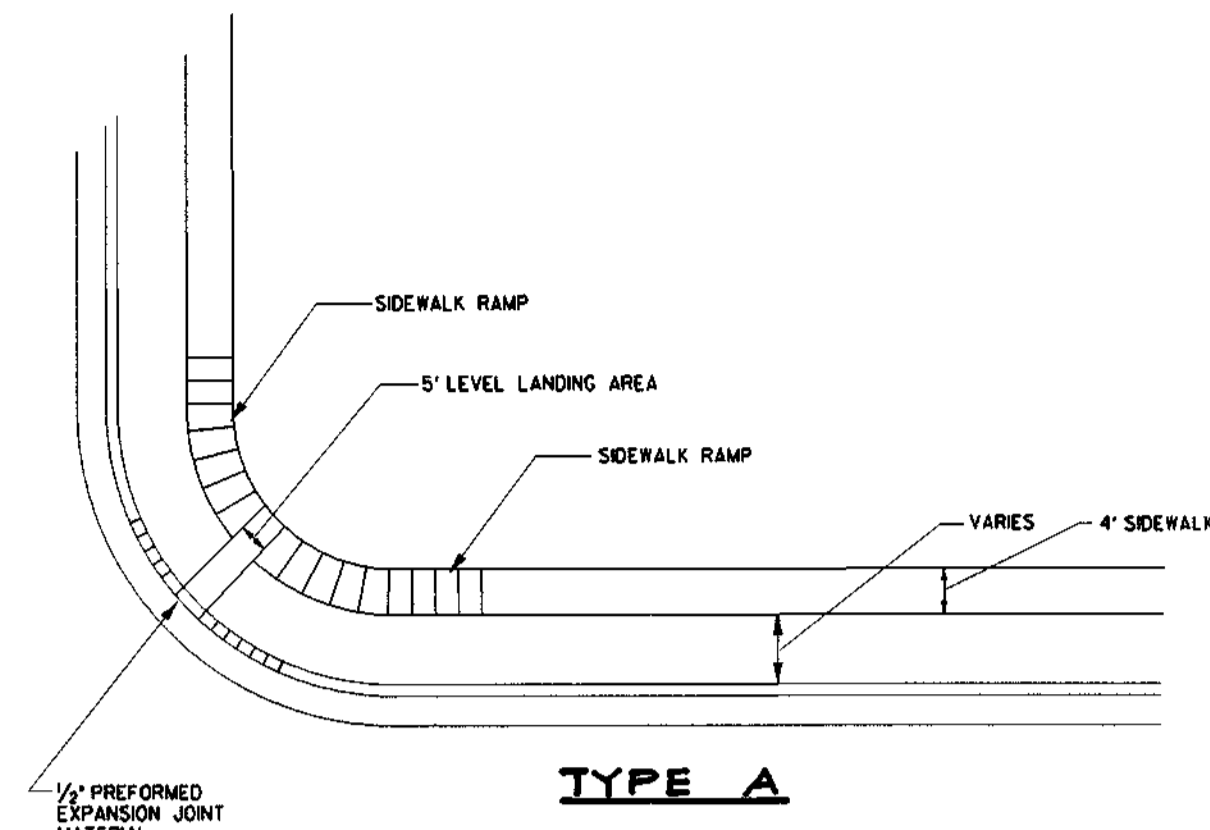
Date	No.	Revision Description
		VILLAGE OF RIVER HILL SECTION 4, AREA 4
OWNER /DEVELOPER: THE HOWARD RESEARCH & DEVELOPMENT CORP. 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044		
DMW <small>Draft McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296-3333 Fax 296-4706</small>		
AREA SECTION 4 AREA 4 TAX MAP PARCEL ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND		
TITLE STORM DRAIN PROFILES		
Des By	Scale 1" = 50'	Proj. No. 94064
Dwn By JEF	Date MAR 96	22 OF 44
Chk By JWR	Approved	



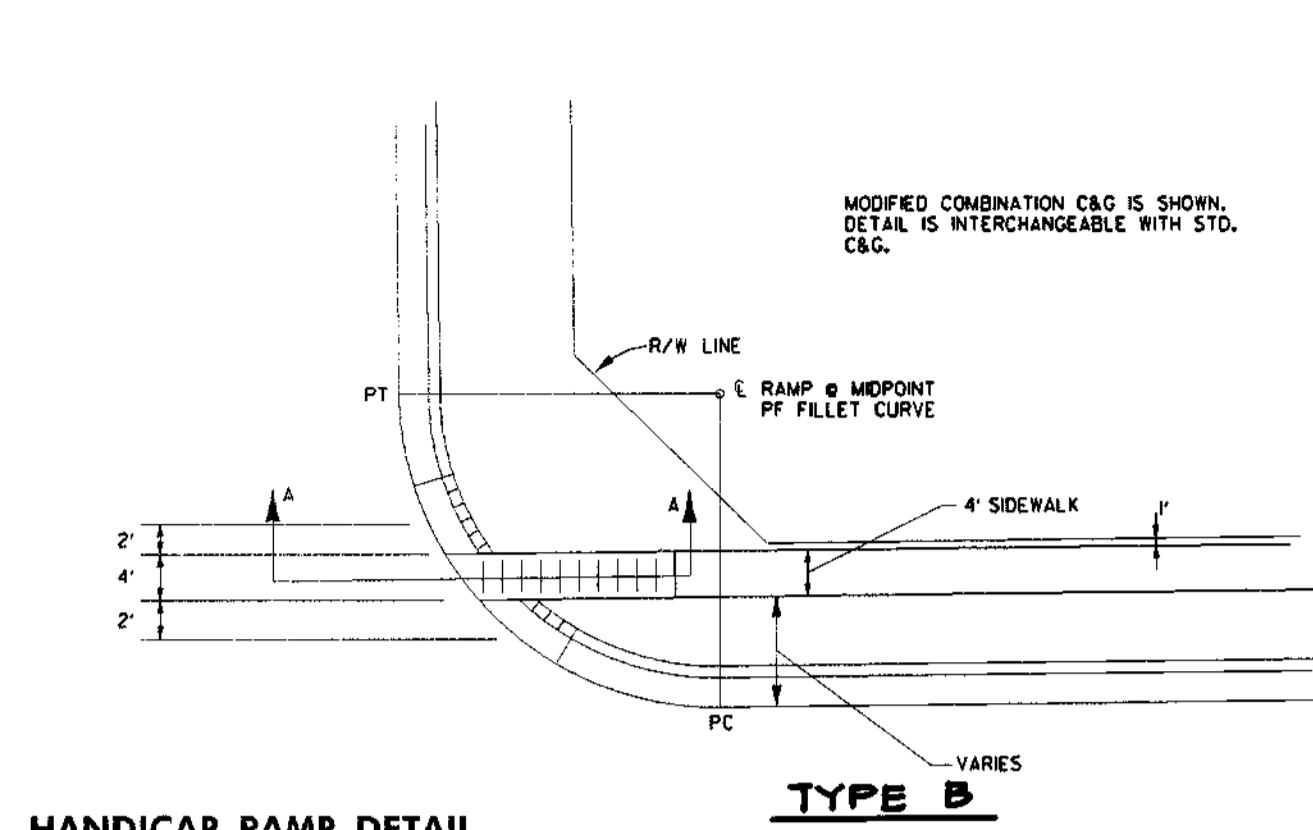
File No. 74 202015 1996 41 1/24/96 10:45 AM

STRUCTURE SCHEDULE

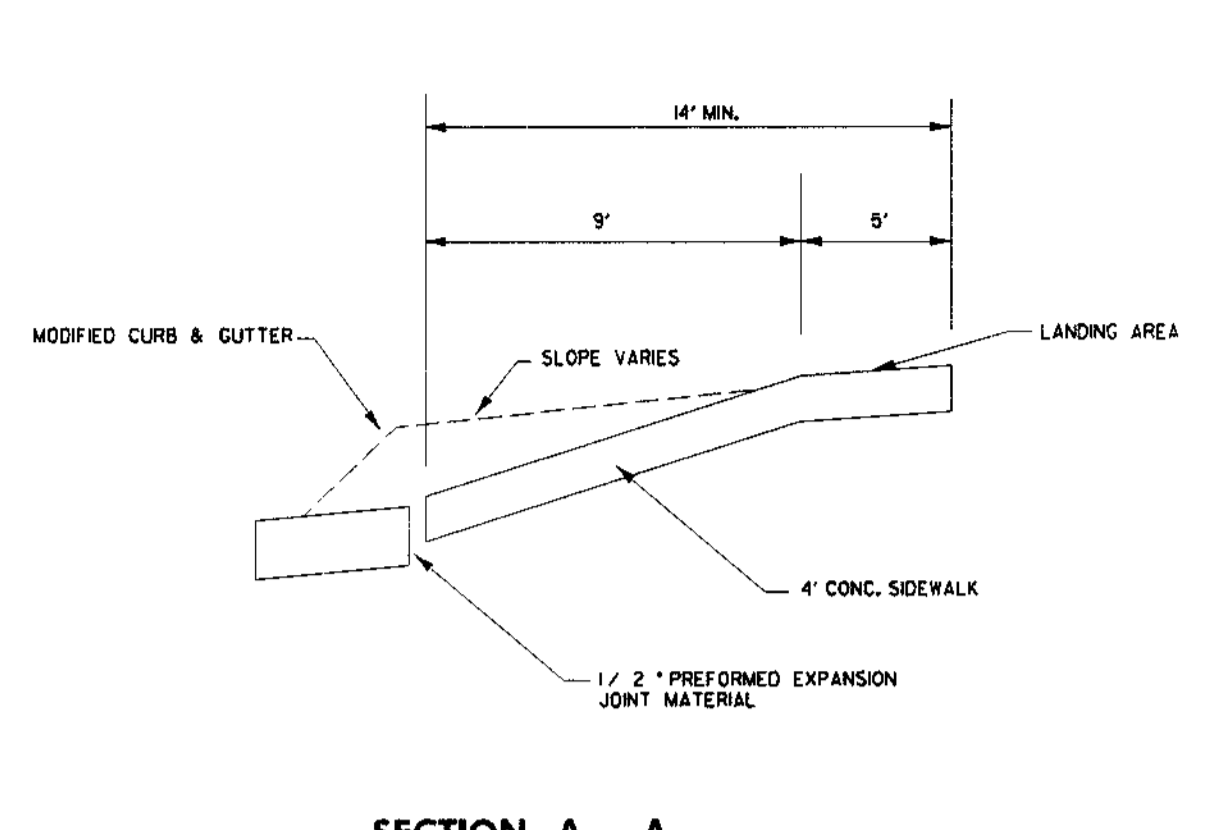
NO.	TYPE	WIDTH	TOP ELEV.	INV. OUT	STD. DETAIL	LOCATION
1602	A-5	3.0	432.84	425.20	SD4.40	FLOWING WATER TRAIL STA 7+60.2
1601	A-5	3.0	422.32	416.18	SD4.40	QUIET WAYS COURT LINEAR PROF. 2+41.6
M601	STD MH	4.0	SET IN FIELD	400.41	G5.01	SEE PLAN (BEHIND LOT 153)
M602	STD MH	4.0	422.90	416.66	G5.01	QUIET WAYS COURT
1803	A-10	3.0	411.78	407.50	SD4.41	FLOWING WATER TRAIL LINEAR PROF 1+56.60
1804	A-10	3.0	415.94	411.80	SD4.41	FLOWING WATER TRAIL STA 11+51.0
1802	A-5	3.0	415.94	406.51	SD4.40	FLOWING WATER TRAIL STA 11+51.0
1801	A-5	3.0	419.63	405.65	SD4.40	FLOWING WATER TRAIL STA 10+28.0
M 802	STD MH	4.0	SET IN FIELD	401.25	G5.01	SEE PLAN
M 801	STD MH	4.0	SET IN FIELD	400.19	G5.01	SEE PLAN
ES801	CONC END SECTION	18"	N/A	399.4	SD5.51	SEE PLAN
ES604	CONC END SECTION	18"	N/A	399.4	SD5.51	SEE PLAN
1713	A-5	3.0	440.20	436.22	SD4.40	FLOWING WATER TRAIL STA 1+57.0
1712	A-10	3.0	440.20	435.85	SD4.41	FLOWING WATER TRAIL STA 1+57.0
1709	A-10	3.0	424.44	419.40	SD4.41	SHINING STARS LANE STA 2+59.7
1708	A-10	3.0	423.64	418.80	SD4.40	SHINING STARS LANE STA 1+90.0
1707	A-5	3.0	423.64	418.80	SD4.40	SHINING STARS LANE STA 1+90.0
1305	A-5	3.0	460.90	454.70	SD4.40	BRIGHT FLOW MEWS LINEAR PROF STA 1+92.00
M 309	STD MH	4.0	SET IN FIELD	417.15	G5.01	SEE PLAN (BEHIND LOTS 106 & 107)
M 304	MOD. Y-1 YARD INLET			441.83		SEE PLAN (BEHIND LOTS 105 & 95)
1303	A-10	5.0	450.06	440.95	SD4.41	INDIAN SUMMER DRIVE STA 5+40.0
1302	A-10	5.0	448.69	440.25	SD4.41	INDIAN SUMMER DRIVE STA 6+32.8
1301	A-10	5.0	448.69	439.87	SD4.41	INDIAN SUMMER DRIVE STA 6+32.8
M 308	STD MH	5.0	SET IN FIELD	439.35	G5.13	INDIAN SUMMER DR. STA 6+83.5 29.8' LT.
M 307	STD MH	5.0	SET IN FIELD	430.96	G5.13	SEE PLAN (BEHIND LOTS 91 & 92)
I-311	MODIFIED Y-1 INLET		WEIR=436.1	430.65	G5.13	SEE PLAN (BEHIND LOT 91)
I-310	MODIFIED Y-1 INLET		WEIR=431.1	429.95	G5.13	SEE PLAN (BEHIND LOTS 91, 87, 86) SET WEIR AT EX. GR.
M 304	STD MH	5.0	441.67	428.64	G5.13	TALL BRANCHES PASS LINEAR PROF STA 1+42.6 23.6' LT
M 303	STD MH	5.0	443.09	428.15	G5.13	TALL BRANCHES PASS LINEAR PROF STA 0+70.6 16.2' LT
I-309	MODIFIED Y-1 INLET		WEIR=434.1	427.17	G5.13	SEE PLAN (LOT 83) SET WEIR AT EX. GROUND
M 301	STD MH	5.0	SET IN FIELD	423.30	G5.13	SEE PLAN
ES301	CONC END SECTION	36"	N/A	422.20	G5.51	SEE PLAN
I-302	MODIFIED Y-1 INLET		WEIR=444.1	438.05		SEE PLAN (BEHIND LOT 270)
1307	A-10	3.0	449.97	446.20	SD4.41	DISTANT THUNDER TRAIL STA 5+57.2
M 311	STD MH	4.0	448.00	443.70	G5.01	TALL BRANCHES PASS STA 0+62.7 30.0 RT
1306	A-10	3.0	445.45	441.25	SD4.41	DISTANT THUNDER TRAIL LINEAR PROF STA 1+65.0
M 310	STD MH	4.0	446.54	440.28	G5.01	DISTANT THUNDER TRAIL LINEAR PROF 2+68.0 19' LT
1308	A-10	3.0	441.86	436.60	SD4.41	TALL BRANCHES PASS LINEAR PROF STA 1+58.0
1501	A-5	3.0	448.64	443.75	SD4.40	SUNLIT WATER WAY LINEAR PROF STA 2+00.4
M 502	STD MH	4.0	451.51	441.5	G5.01	SUNLIT WATER WAY LINEAR PROF STA 3+03.0 20.6' RT
M 501	STD MH	4.0	SET IN FIELD	436.0/434.0	G5.01	SEE PLAN (BEHIND LOTS 120 & 121)
ES 501	CONC END SECTION	18"	N/A	434.0	SD5.51	SEE PLAN
ES502	CONC END SECTION	18"	N/A	433.0	SD5.51	SEE PLAN
11	A-5	3.0	408.12	404.20	SD4.40	OLD SEA PLACE STA 3+00.0
12	A-10	3.0	409.14	403.24	SD4.41	FALL MOON RIDE STA 6+15.8
M 1	STD MH	4.0	401.05	396.09	G5.01	FALL MOON RIDE STA 4+21.9 19.6' LT.
14	A-10	3.0	398.94	394.25	SD4.41	FALL MOON RIDE STA 2+32.6
11	A-5	3.0	398.94	392.75	SD4.40	FALL MOON RIDE STA 2+32.6
1705	A-5	3.0	441.75	437.25	SD4.40	FLOATING CLOUDS PATH STA 0+50.0
1704	A-5	3.0	445.84	436.73	SD4.40	INDIAN SUMMER DRIVE STA 15+40.0
1703	A-10	3.0	445.84	436.33	SD4.41	INDIAN SUMMER DRIVE STA 15+40.0
M 703	STD MH	5.0	421.63	434.88	G5.13	INDIAN SUMMER DRIVE STA 15+74 10' RT.
1702	A-5	3.0	429.40	421.20	SD4.40	INDIAN SUMMER DRIVE STA 18+10.00
M 702	STD MH	4.0	425.93	416.77	G5.01	INDIAN SUMMER DRIVE STA 18+89 12' RT
1701	A-5	3.0	419.73	413.95	SD4.40	INDIAN SUMMER DRIVE STA 21+41
M 701	STD MH	5.0	421.86	415.41	G5.13	INDIAN SUMMER DRIVE STA 20+04 10' RT
ES 701	CONC END SECTION	30"	N/A	415	SD5.51	SEE PLAN
1711	A-5	3.0	427.06	422.40	SD4.40	EARLY LILACS PATH STA 0+50.00
1710	A-10	4.0	429.40	421.85	SD4.41	INDIAN SUMMER DRIVE STA 18+10.0
1706	A-10	3.0	419.73	415.50	SD4.41	INDIAN SUMMER DRIVE STA 21+41
1901	A-10	3.0	403.80	399.70	SD4.41	INDIAN SUMMER DRIVE STA 26+08
M 902	STD MH	4.0	392.50	386.20	G5.01	SEE PLAN
M 901	STD MH	4.0	SET IN FIELD	377.90	G5.01	SEE PLAN
ES 901	CONC END SECTION	18"	N/A	377.00	SD5.51	SEE PLAN
1902	A-10	5.0	392.30	387.50	SD4.41	INDIAN SUMMER DRIVE LINEAR PROF STA 1+90
1401	A-5	3.0	447.70	438.00	SD4.40	TRAILING MOSS GATE LINEAR PROF STA 1+92.0
M 403	STD MH	4.0	SET IN FIELD	433.0	G5.01	SEE PLAN (BEHIND LOT 65)
M 401	STD MH	5.0	SET IN FIELD	432.50	G5.13	SEE PLAN
ES402	CONC END SECTION	18"	N/A	430.00	SD5.51	SEE PLAN
1402	A-5	3.0	441.95	437.60	SD4.40	LAUREL LEAVES LANE LINEAR PROF STA 2+09.0
M 402	STD MH	4.0	SET IN FIELD	435.20	G5.01	LAUREL LEAVES LANE LINEAR PROF STA 1+22.4 25' RT
ES401	CONC END SECTION	18"	N/A	424.70	SD5.51	SEE PLAN
1203	A-10	3.0	434.73	431.00	SD4.41	FLOATING CLOUDS PATH STA 5+34.50
1202	A-10	3.0	433.19	429.30	SD4.41	FLOATING CLOUDS PATH STA 5+60.2
1201	A-10	3.0	423.64	418.00	SD4.41	FLOATING CLOUDS PATH LINEAR PROF STA 1+84.0
M 201	STD MH	4.0	SET IN FIELD	418.00	G5.01	SEE PLAN
ES201	CONC END SECTION	18"	N/A	408.5	SD5.51	SEE PLAN
1103	A-10	3.0	416.20	411.70	SD4.41	EARLY LILACS PATH STA 3+93.6
1102	A-10	3.0	409.54	405.50	SD4.41	EARLY LILACS PATH STA 5+53.6
1104	A-10	3.0	409.54	405.98	SD4.41	EARLY LILACS PATH STA 5+53.6
1101	A-10	3.0	406.07	401.80	SD4.41	EARLY LILACS PATH LINEAR PROF STA 1+94.0
M 101	STD MH	4.0	397.50	392.50	G5.12	SEE PLAN
ES 101	CONC END SECTION	18"	N/A	390.0	SD5.51	SEE PLAN
EI	CONC END SECTION	24"	N/A	409.0	SD5.51	SEE PLAN



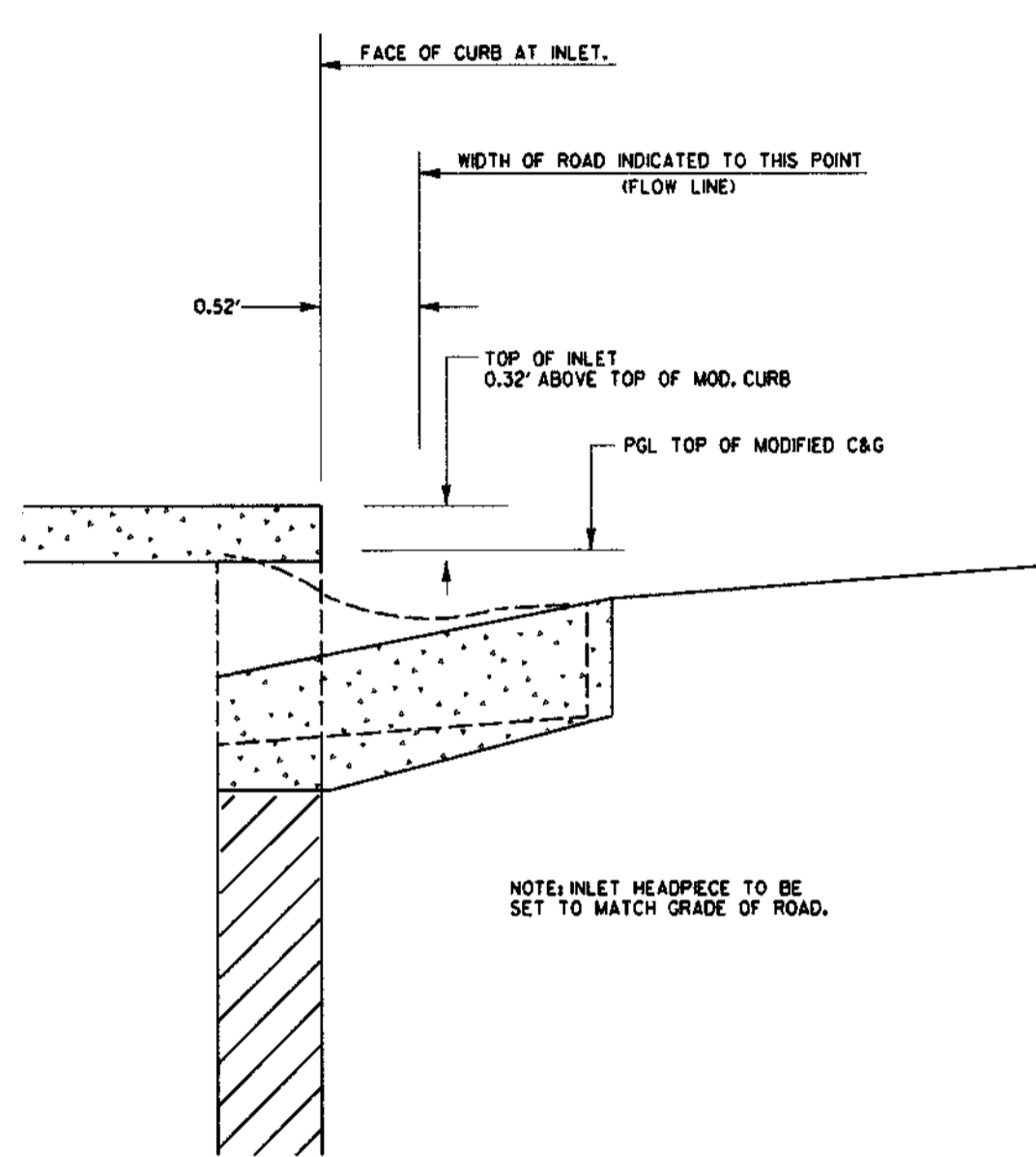
TYPE A



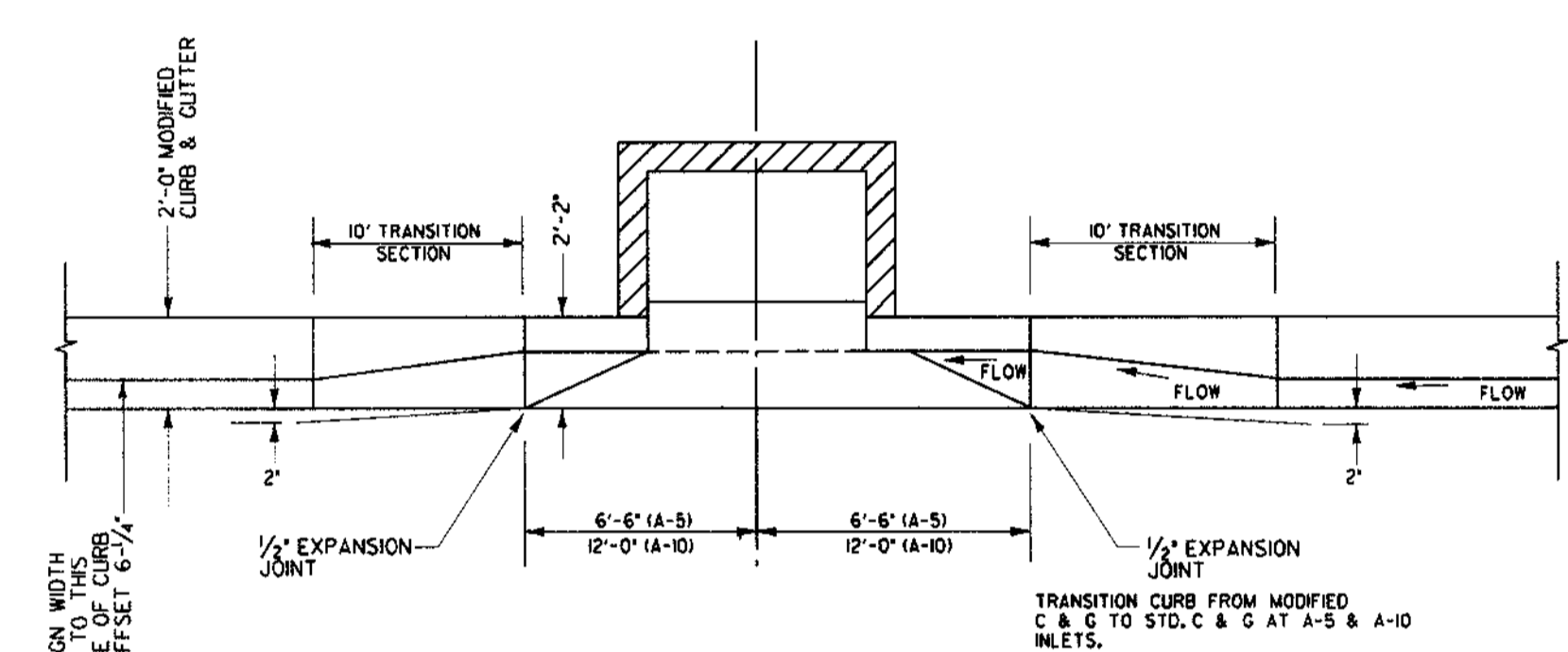
HANDICAP RAMP DETAIL NOT TO SCALE



SECTION A - A

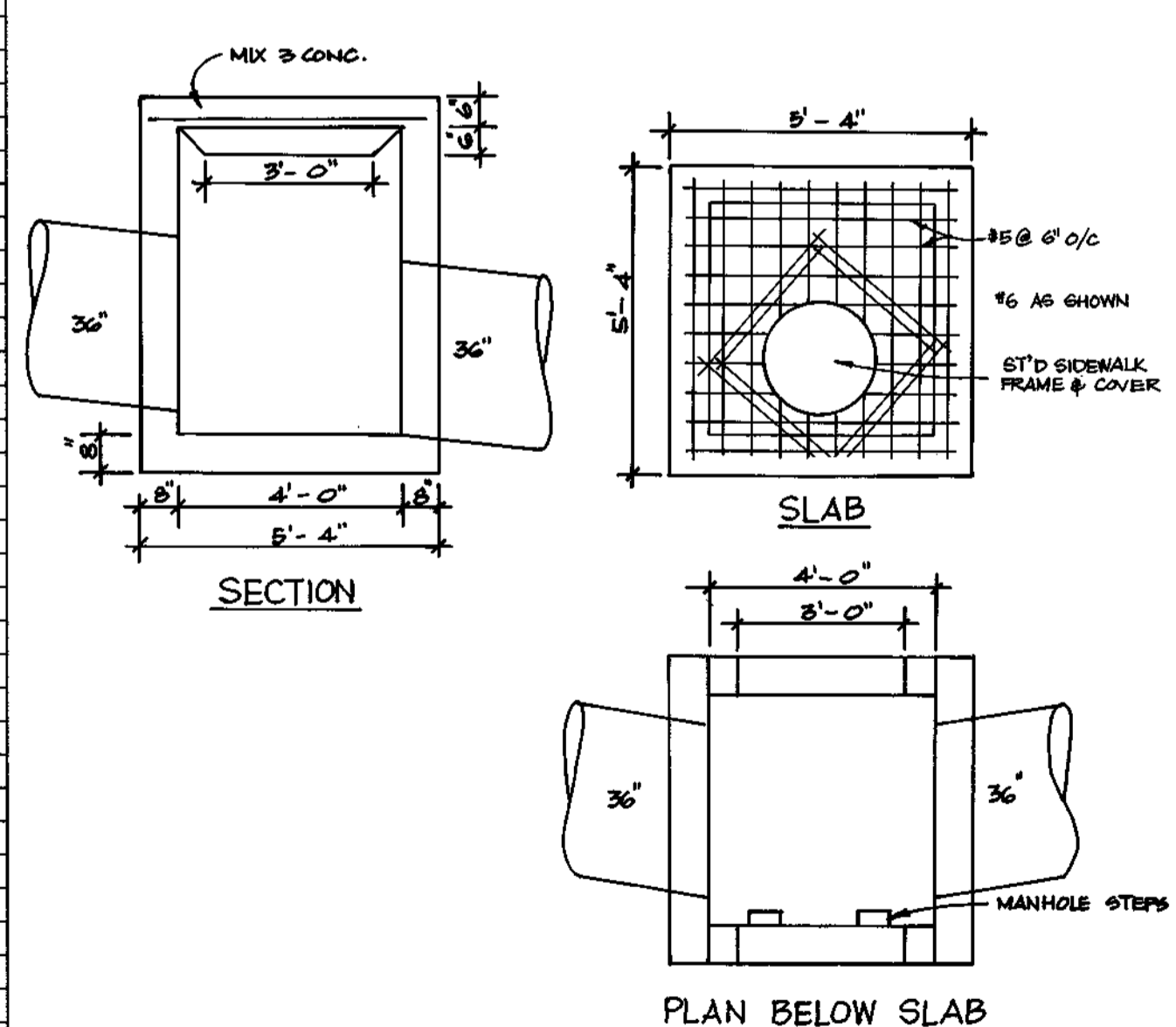


STORM DRAIN INLET DETAIL NOT TO SCALE

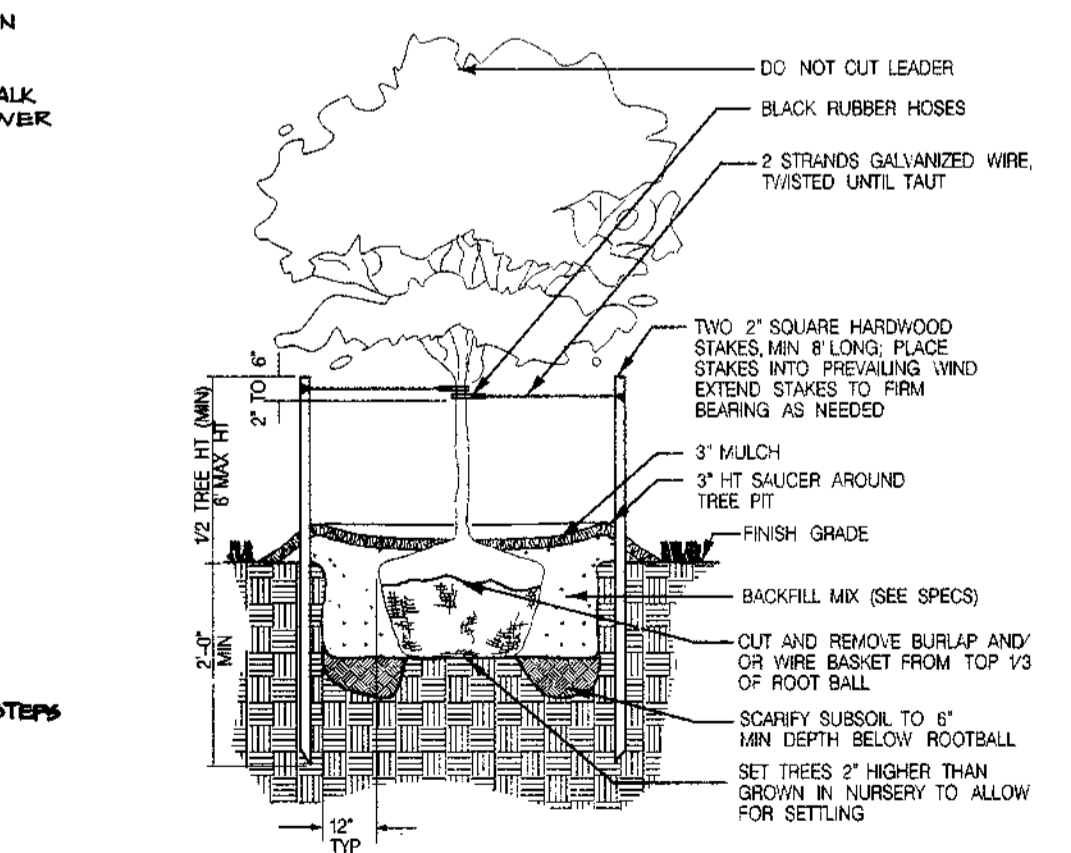


MODIFIED COMBINATION CURB & GUTTER TRANSITION CURB SECTION AT "A" TYPE INLETS NOT TO SCALE

NOTE: THIS DETAIL TO BE USED FOR MODIFIED C & G HAVING AN OVERALL HEIGHT OF 1-1/2' AT BACK OF CURB SECTION.



MODIFIED Y-1 INLET NOT TO SCALE



STREET TREE PLANTING - 2 1/2\"/>

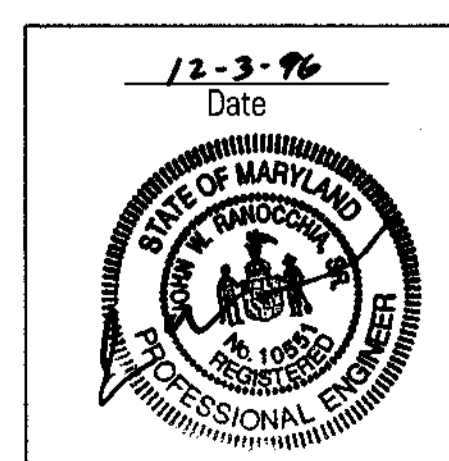
TOTAL QUANTITY OF TREES = 346
 4 TREE SPECIES PROPOSED:
 ACER SACCHARUM "LEGACY"
 ACER FRAXINUM
 OCTOBER GLORY
 FRAXINUS P. "PATMORE"

EACH ROAD WILL HAVE ONE SPECIES OF THE ABOVE TREES THE SPECIES ON EACH ROAD WILL BE DETERMINED BY THE DEVELOPER /LANDSCAPER

0-10-97	REVISED INVERT TO 11-30-97
DATE	REVISION DESCRIPTION
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>Richard M. Daniels</i>	5-22-97
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
<i>Collanitta</i>	7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>John Dammann</i>	5/20/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
4/28/98	REVISED INVERTS FROM EG 301 TO M301, ADDED INLET-302 REPLACED MH'S M-302, M-305 & M-306 WITH INLETS
Date	No.
Revision Description	

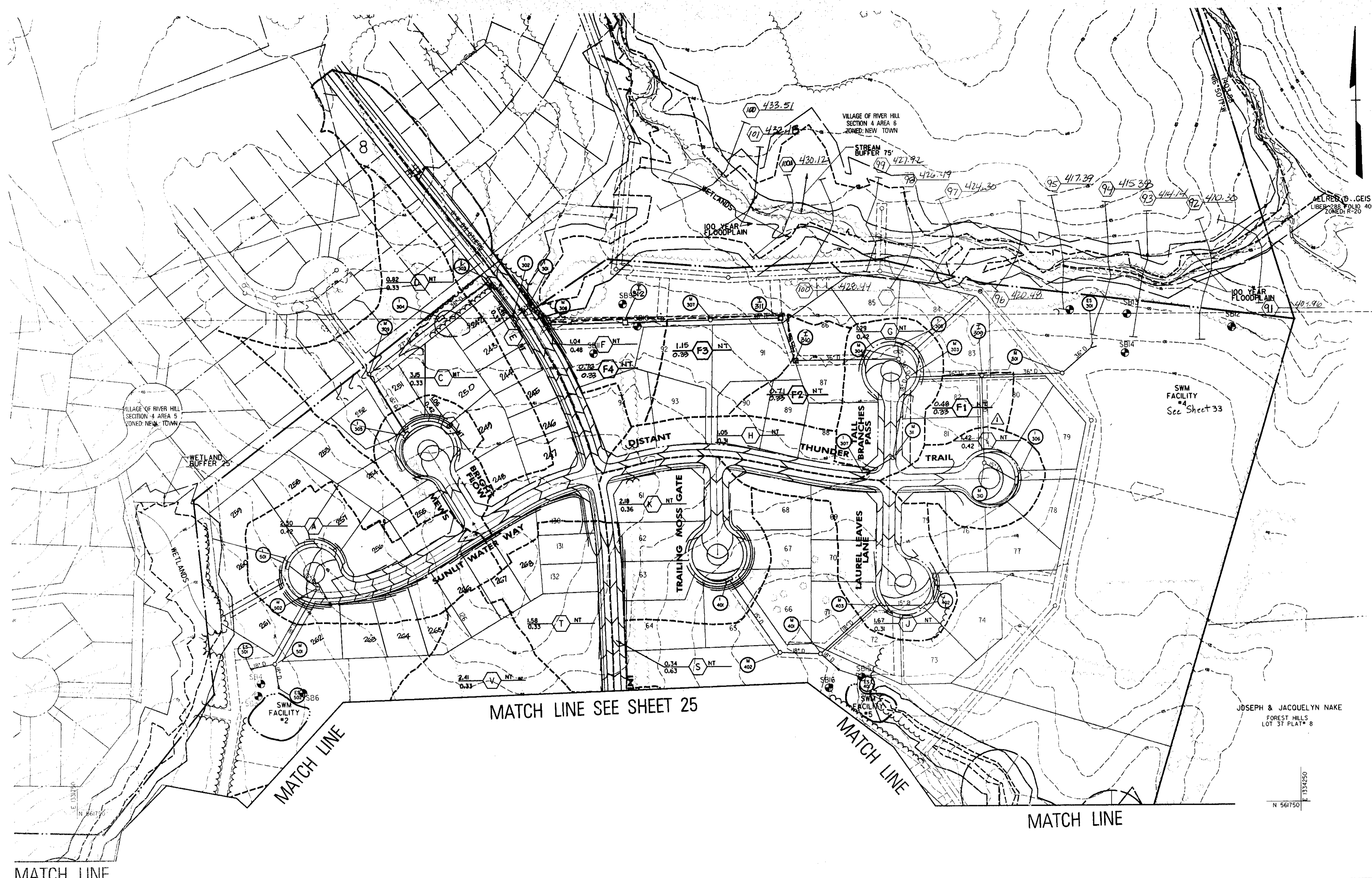
VILLAGE OF RIVER HILL
 SECTION 4, AREA 4
 OWNER /DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
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 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 294-3535
 Fax 294-4705
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals



AREA	SECTION 4 AREA 4
TAX MAP	PARCEL
ELECTION DISTRICT	HOWARD COUNTY, MARYLAND
TITLE	STRUCTURE SCHEDULE & DETAILS
Des By	JWS
Scale	SEE PLAN
Proj. No.	94064
Dwn By	RTP
Date	MAR 1996
23	OF 44
Chk By	JWR
Approved	

Professional Engr. No. 10551



- LEGEND**
- PROPOSED TREE LINE
 - EXISTING TREE LINE
 - 25% AND GREATER SLOPE
 - 15% - 24.99% SLOPE
 - LIMIT OF WETLANDS
 - 25' WETLANDS BUFFER
 - 100 YEAR FLOODPLAIN
 - 75' STREAM BUFFER

ACRES ZONING

Note: Floodplain from Pennsylvania Approval Study by Whitney Krugardt and Assoc.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>Andrew M. Daniels</i> CHIEF, BUREAU OF HIGHWAYS	5-22-97 DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
<i>Collanitta</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/6/97 DATE
<i>M. J. ...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	5/27/97 DATE
4/28/98	REVISION DA NORTH DISTANT THUNDER TRAIL EAST INDIAN SUMMER DRIVE
Date	Revision Description

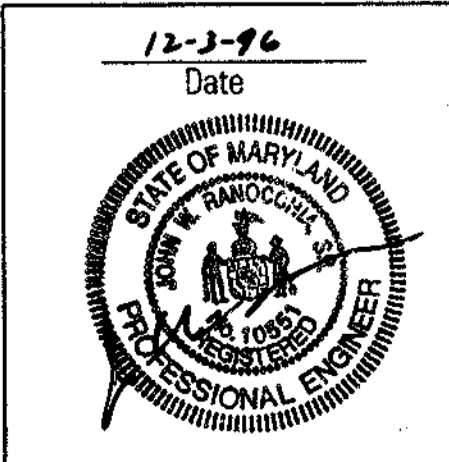
VILLAGE OF RIVER HILL
SECT. 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Dank McQuinn-Walker, Inc.
300 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4708

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

AREA	SECTION 4 AREA 4	
TAX MAP	348.35	PARCEL 3,27,59
ELECTION DISTRICT	OF HOWARD COUNTY, MARYLAND	
TITLE	DRAINAGE AREA MAP & GRADING PLAN	
Des By	JWS	Scale 1" = 100'
Dm By	CEV	Date MAR 96
Chk By	JWR	Approved
Professional Engr. No.	10551	24 OF 44



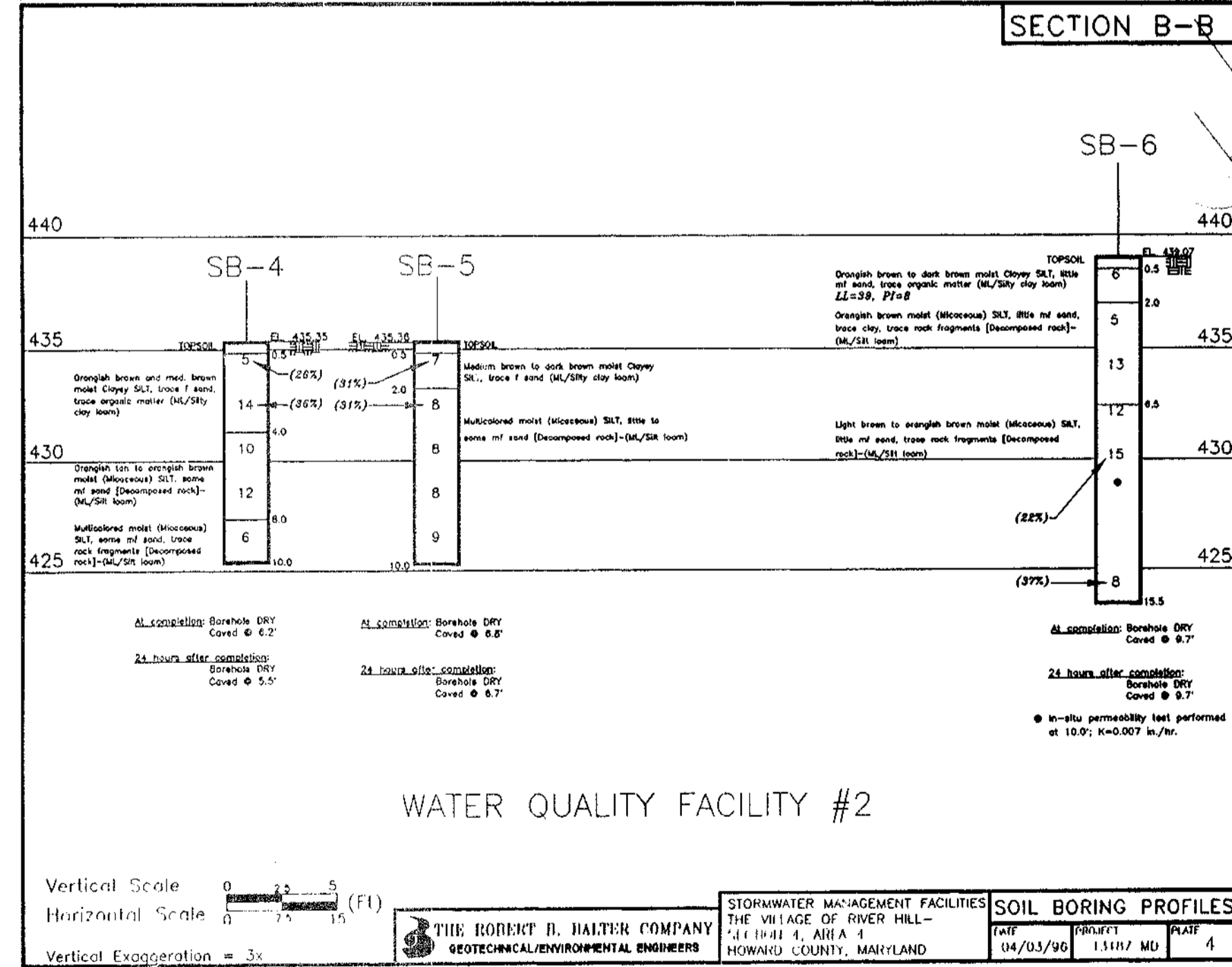
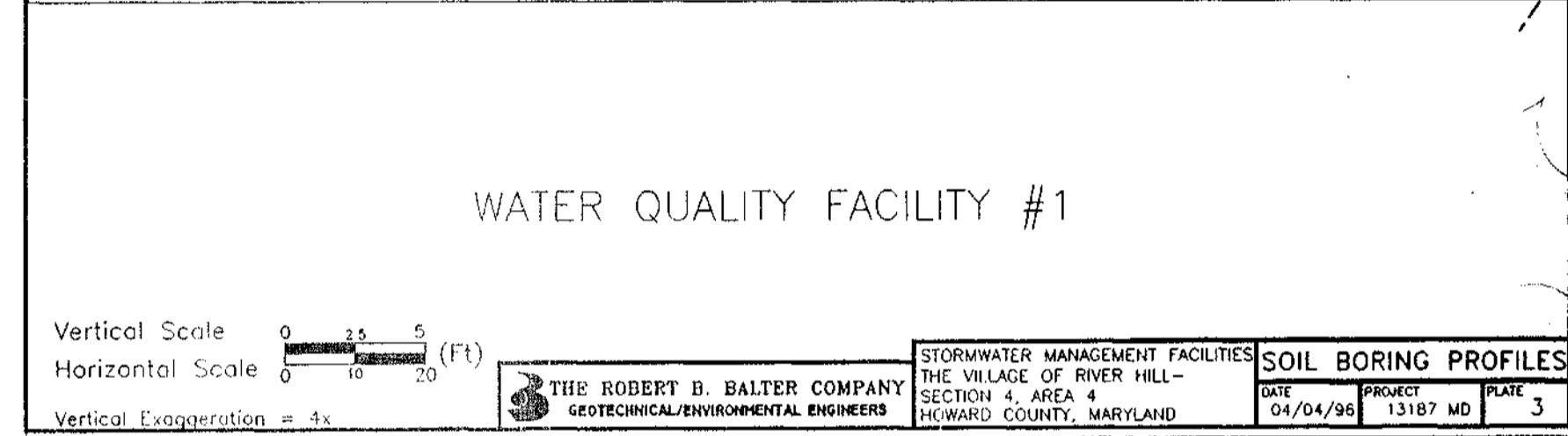
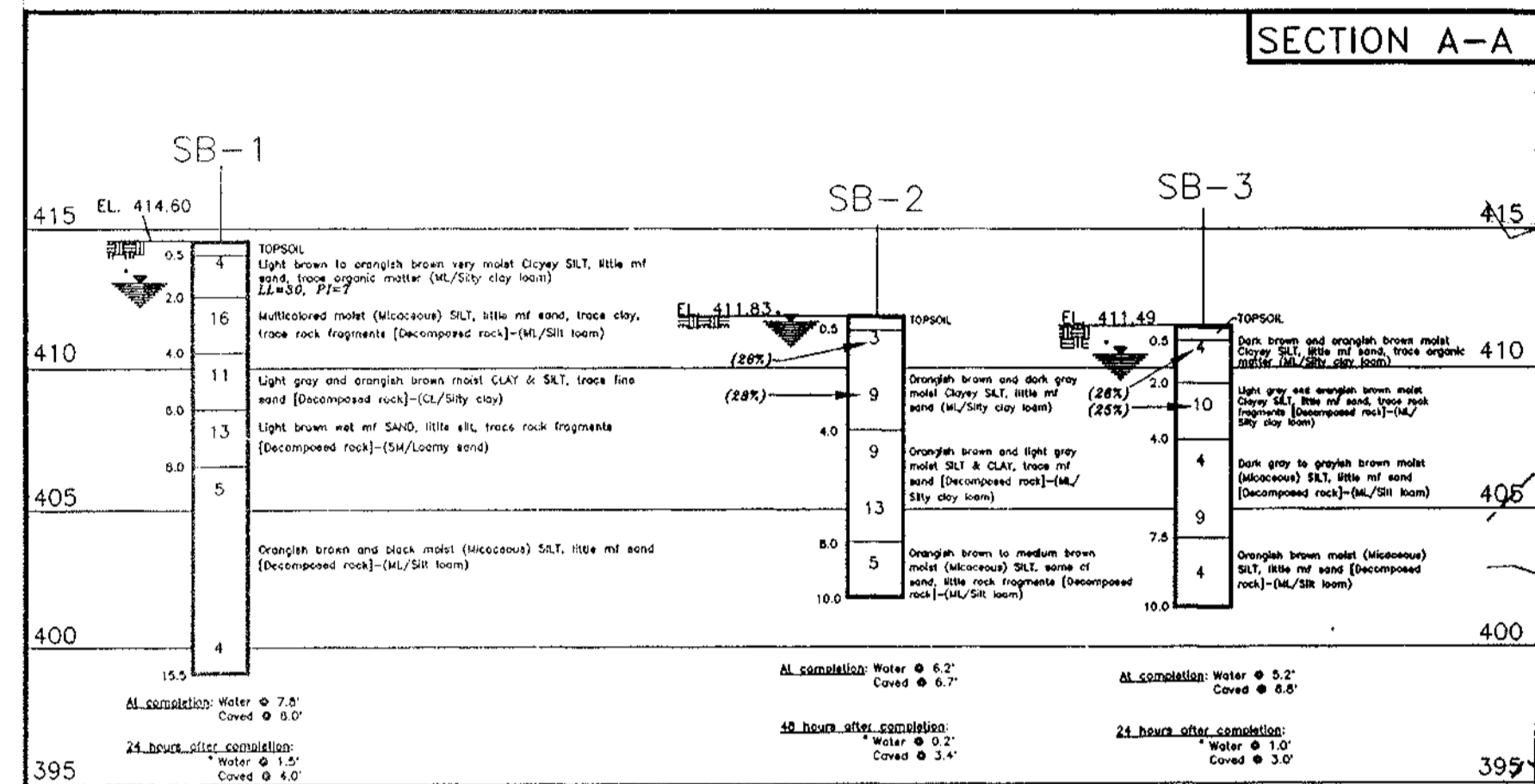
MATCH LINE

MATCH LINE

MATCH LINE SEE SHEET 25

MATCH LINE

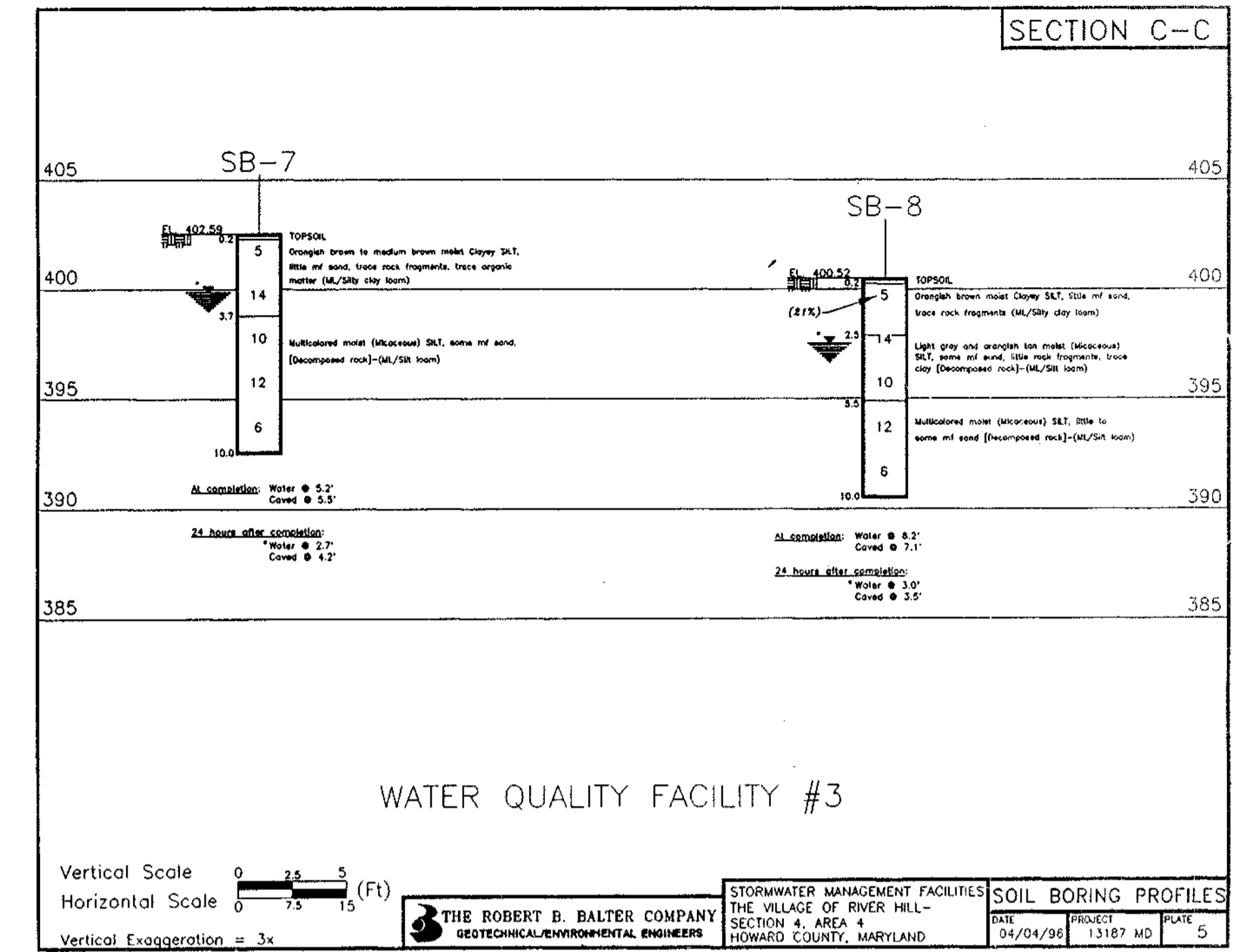
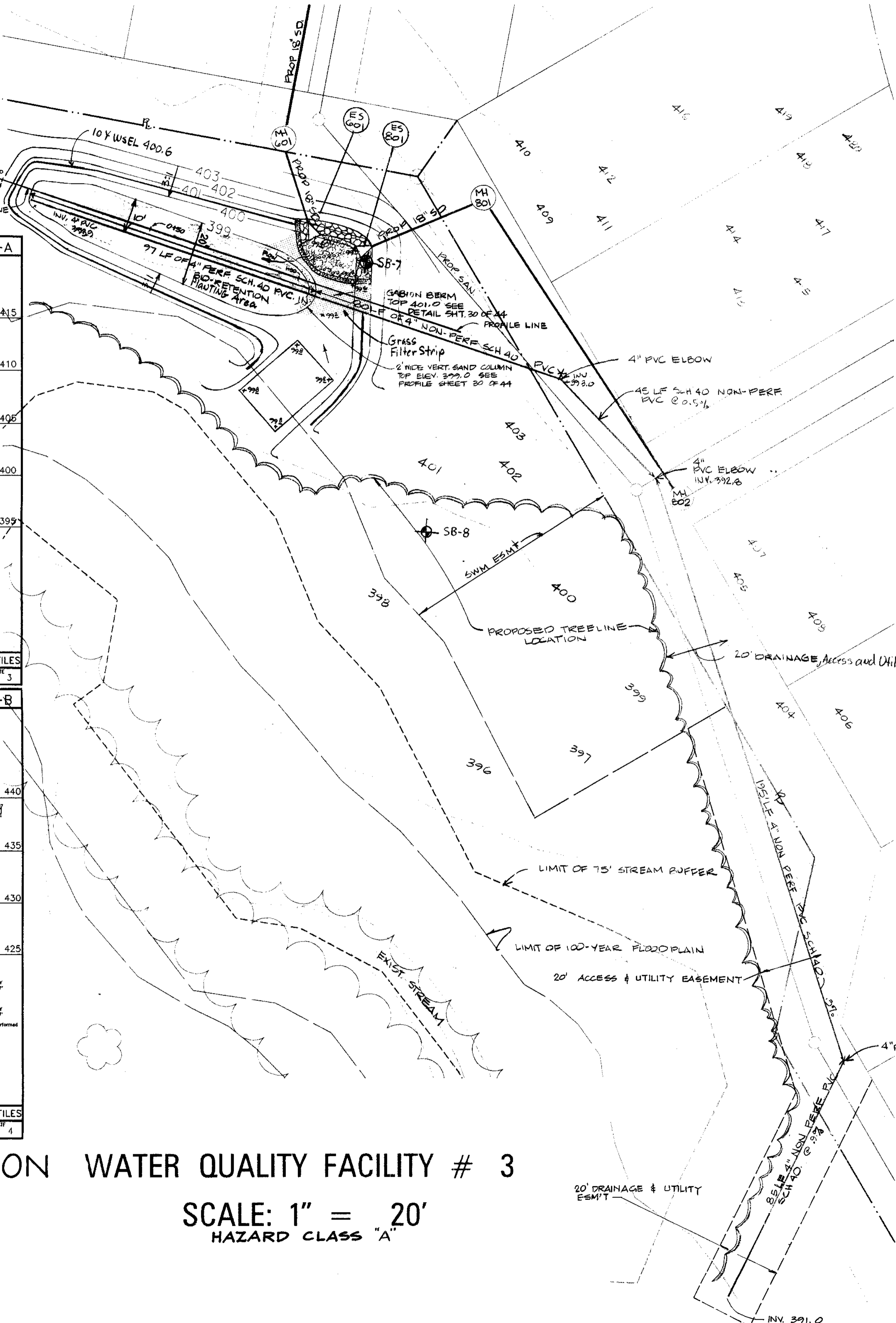
MATCH LINE



BIO-RETENTION WATER QUALITY FACILITY # 3

SCALE: 1" = 20'
HAZARD CLASS "A"

BIO-RETENTION BASE MATERIAL SHOWN ON PROFILE SHEET 30 OF 44



NOTE: FACILITY #3 SHALL BE JOINTLY MAINTAINED BY HOWARD COUNTY AND COLUMBIA ASSOCIATION

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Donohue 5-22-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Hammit 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

Michael P. ... 5/20/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

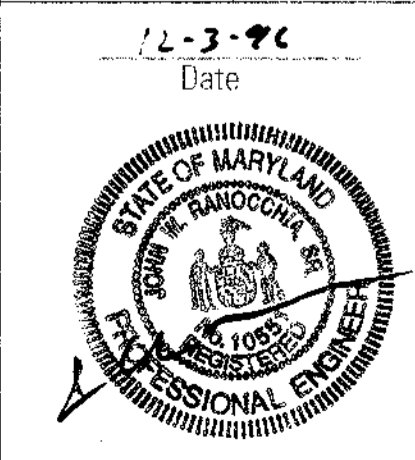
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

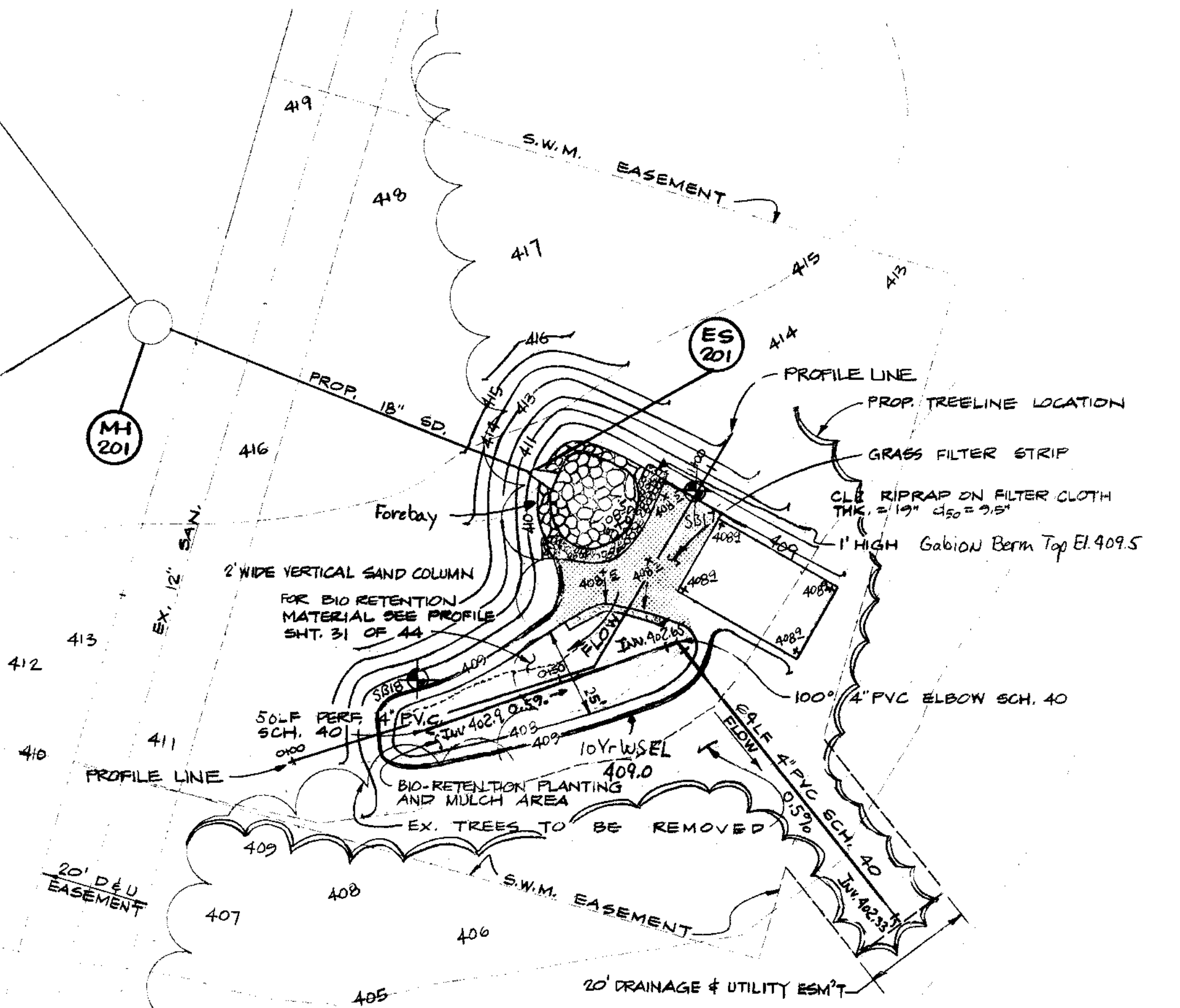
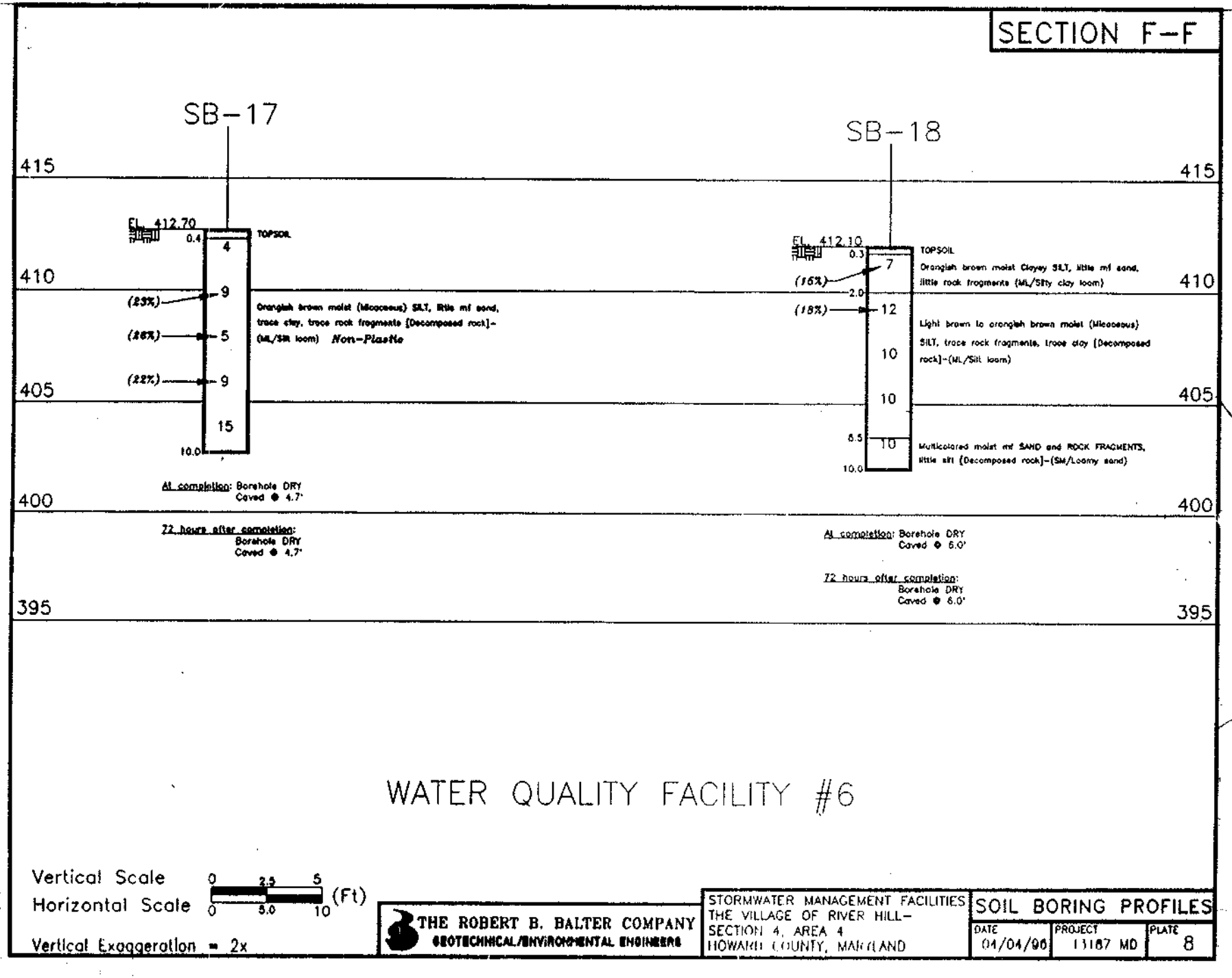
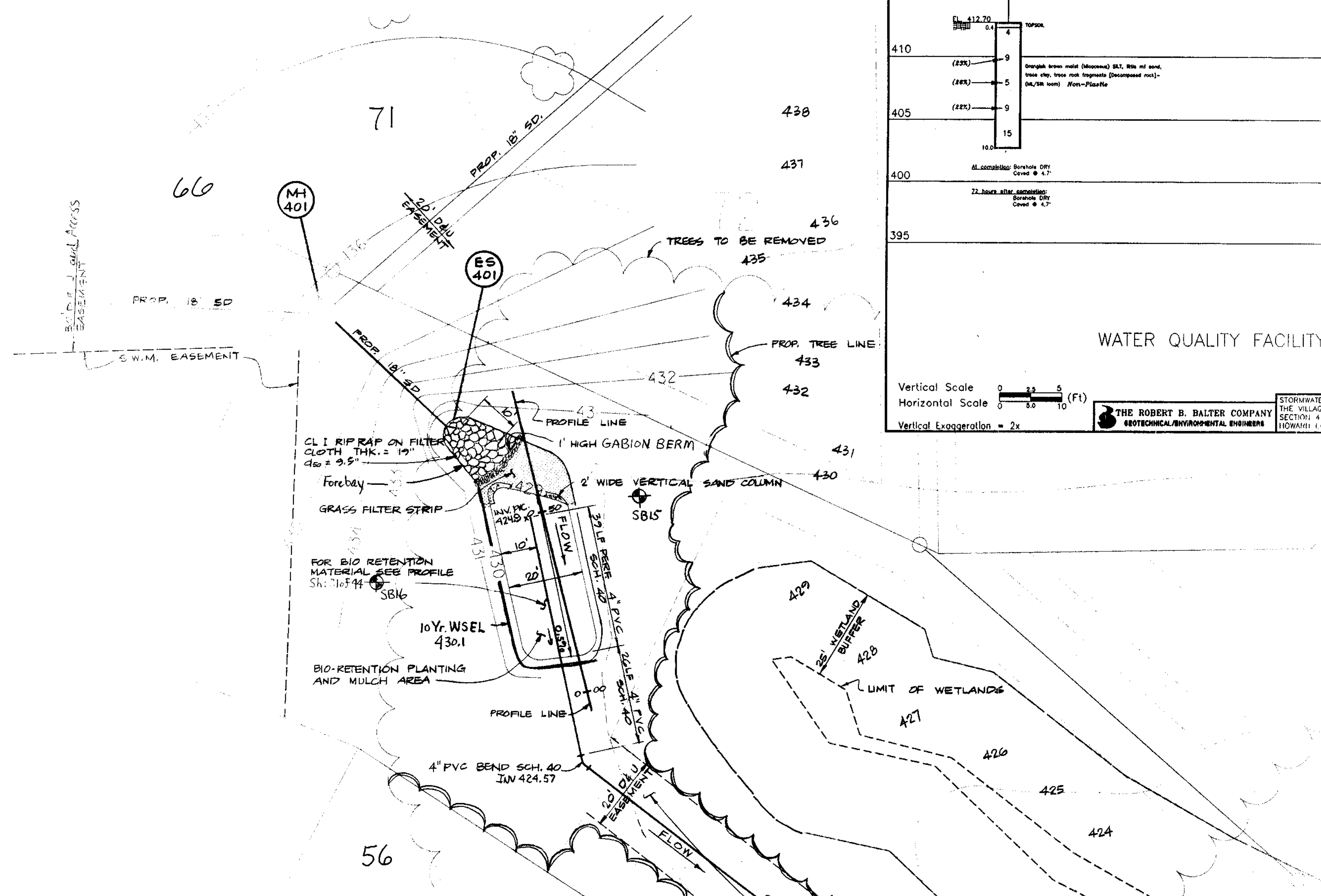
DMW
Duff McCune Walker, Inc.
2540 East Pennsylvania Avenue
Towson, Maryland 21286
410-286-3333
Fax 286-2745

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

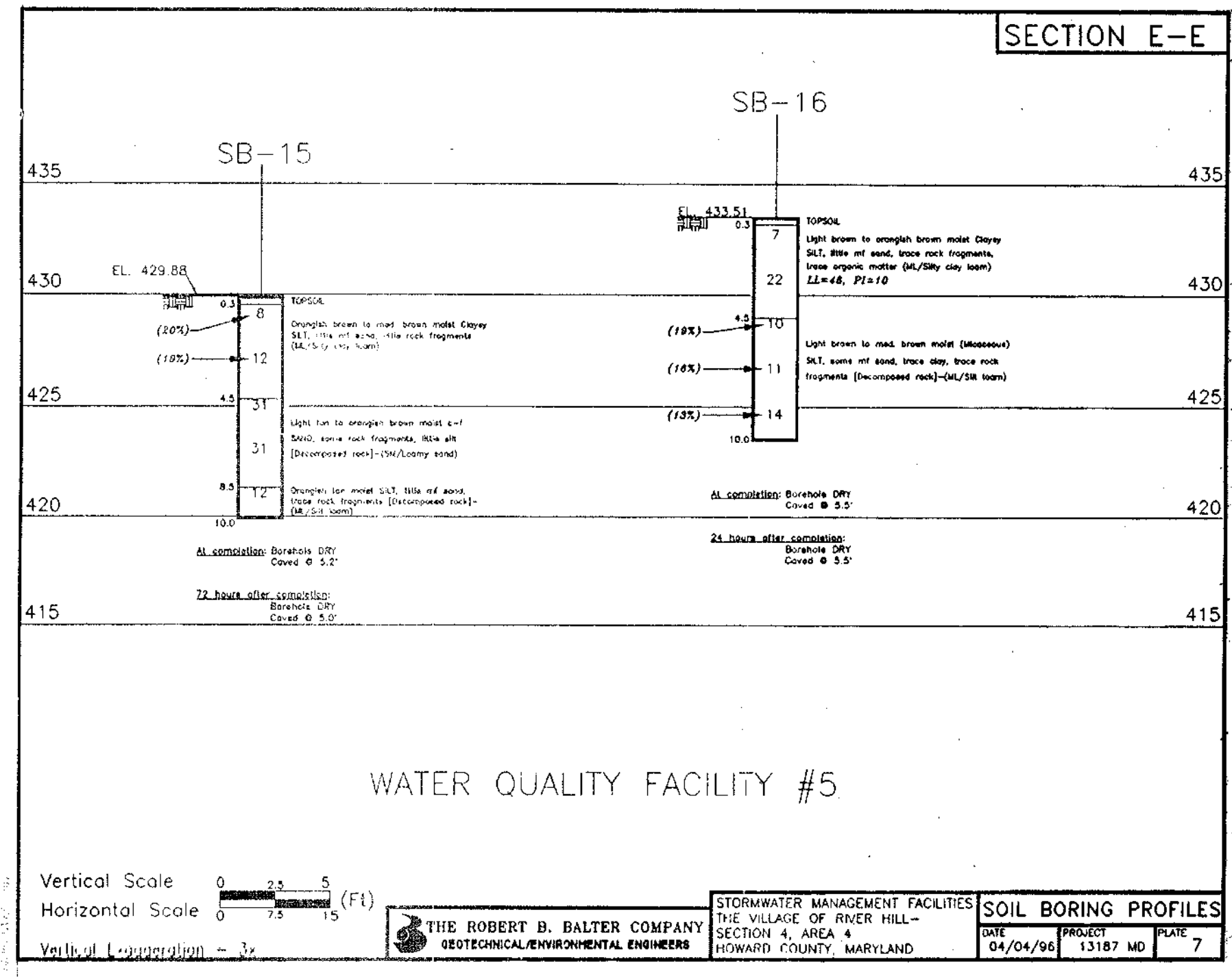
Des By: Scale: 1" = 20' (Rev. No. 04-94)
Dwn By: Date: 04/96
Chk By: JWR Approved: (Rev. No. 04-94)

Professional Eng. No. 110551

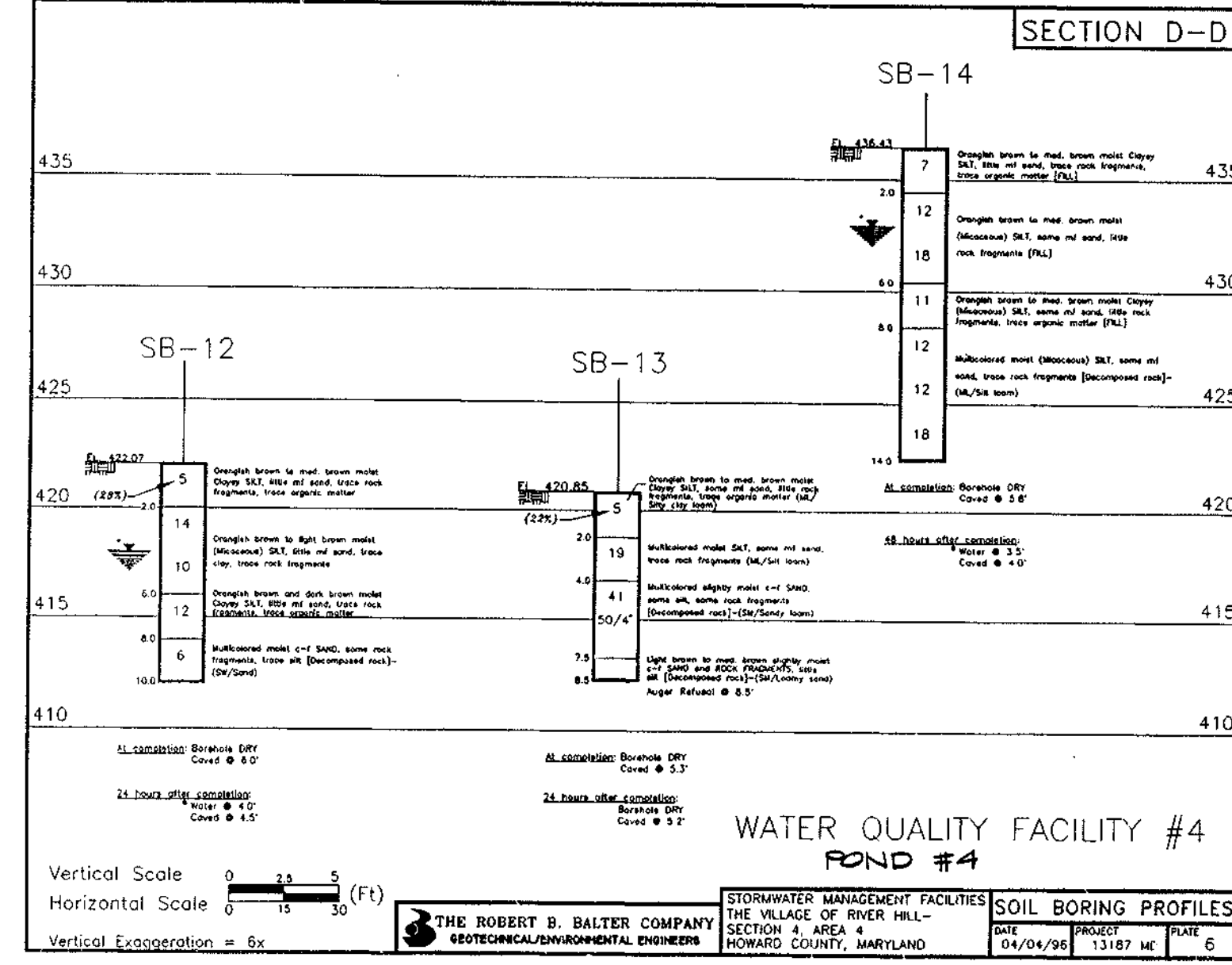




**BIO-RETENTION
WATER QUALITY FACILITY # 6**
SCALE: 1" = 20'
HAZARD CLASS "A"



BIO-RETENTION WATER QUALITY FACILITY # 5
SCALE: 1" = 20'
HAZARD CLASS "A"



NOTE: FACILITIES #5 AND #6 SHALL BE JOINTLY MAINTAINED BY HOWARD COUNTY AND COLUMBIA ASSOCIATION

APPROVED HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daulton 5-22-97
CHIEF, BUREAU OF HIGHWAYS

APPROVED HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Colanitta 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT

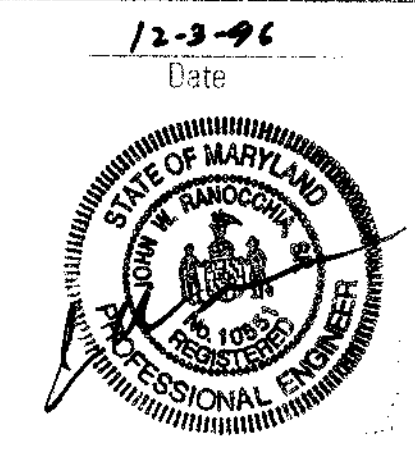
Chad Dammann 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

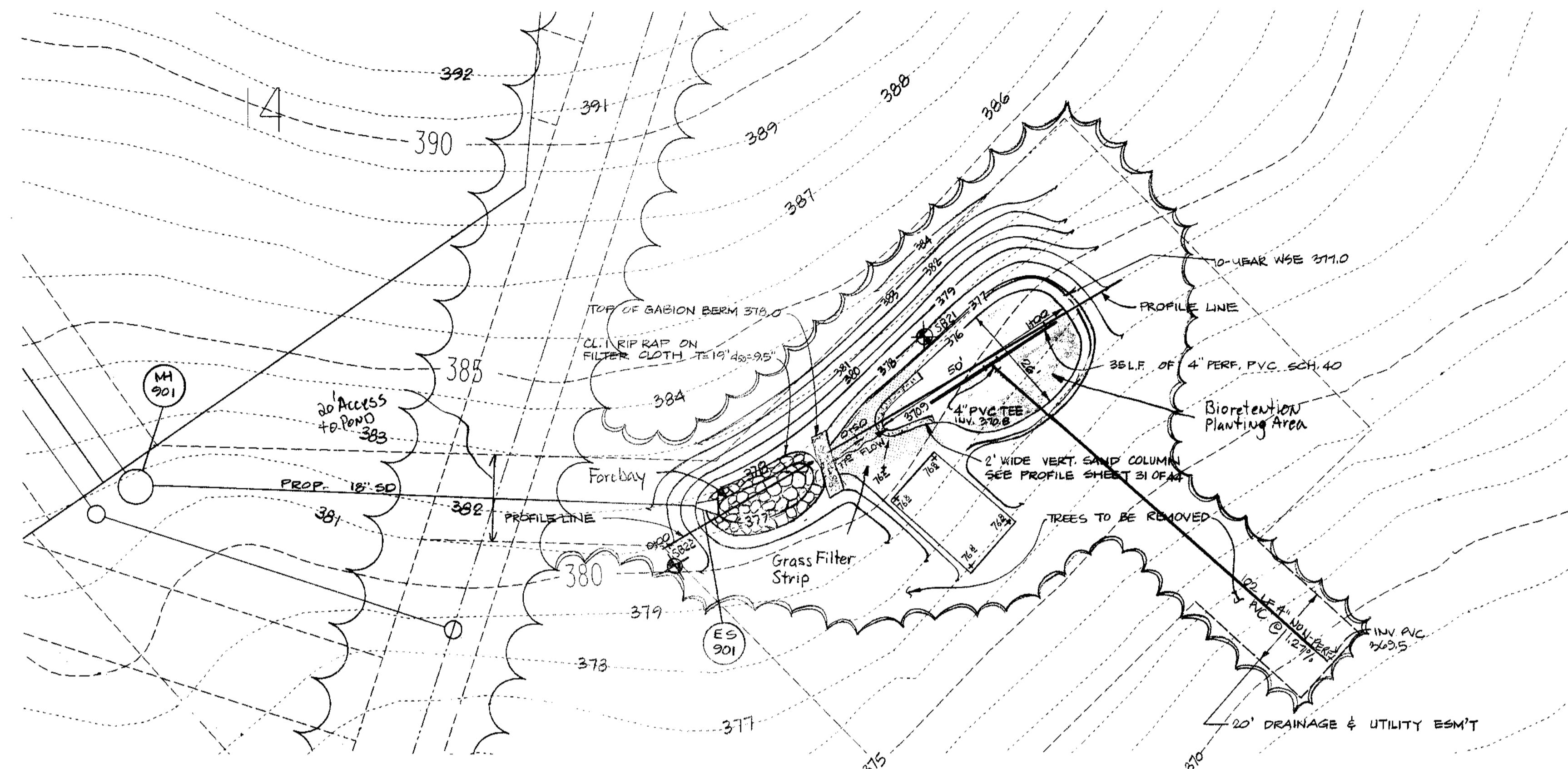
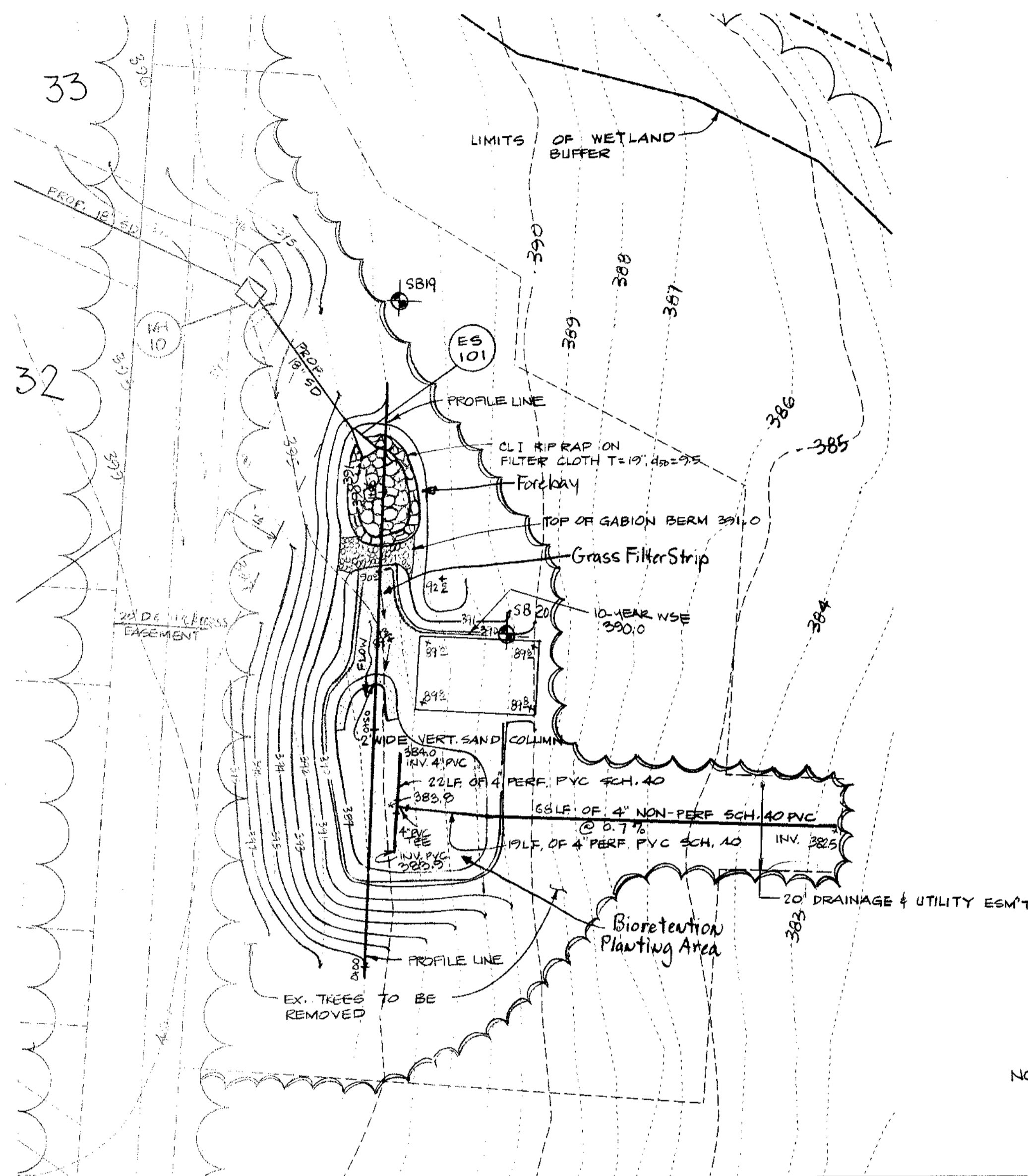
VILLAGE OF RIVER HILL
SECTION 4, AREA 4
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Draft, Inc. & Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
410-298-3333
Fax: 410-298-4705

SECTION 4 AREA 4
TAX MAP
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

Professional Eng. No. 10551
Date: 11/6/96
Approved: JWR





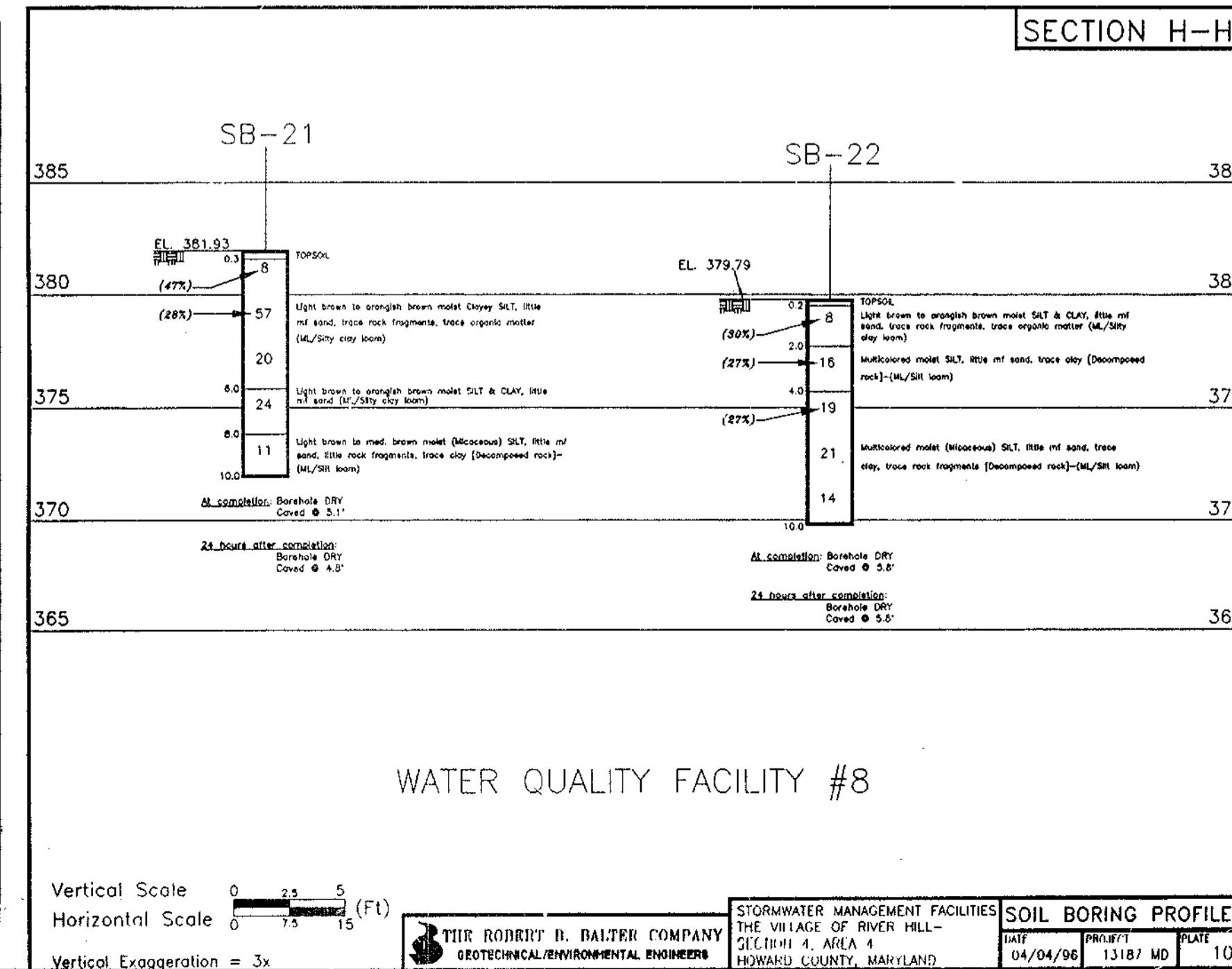
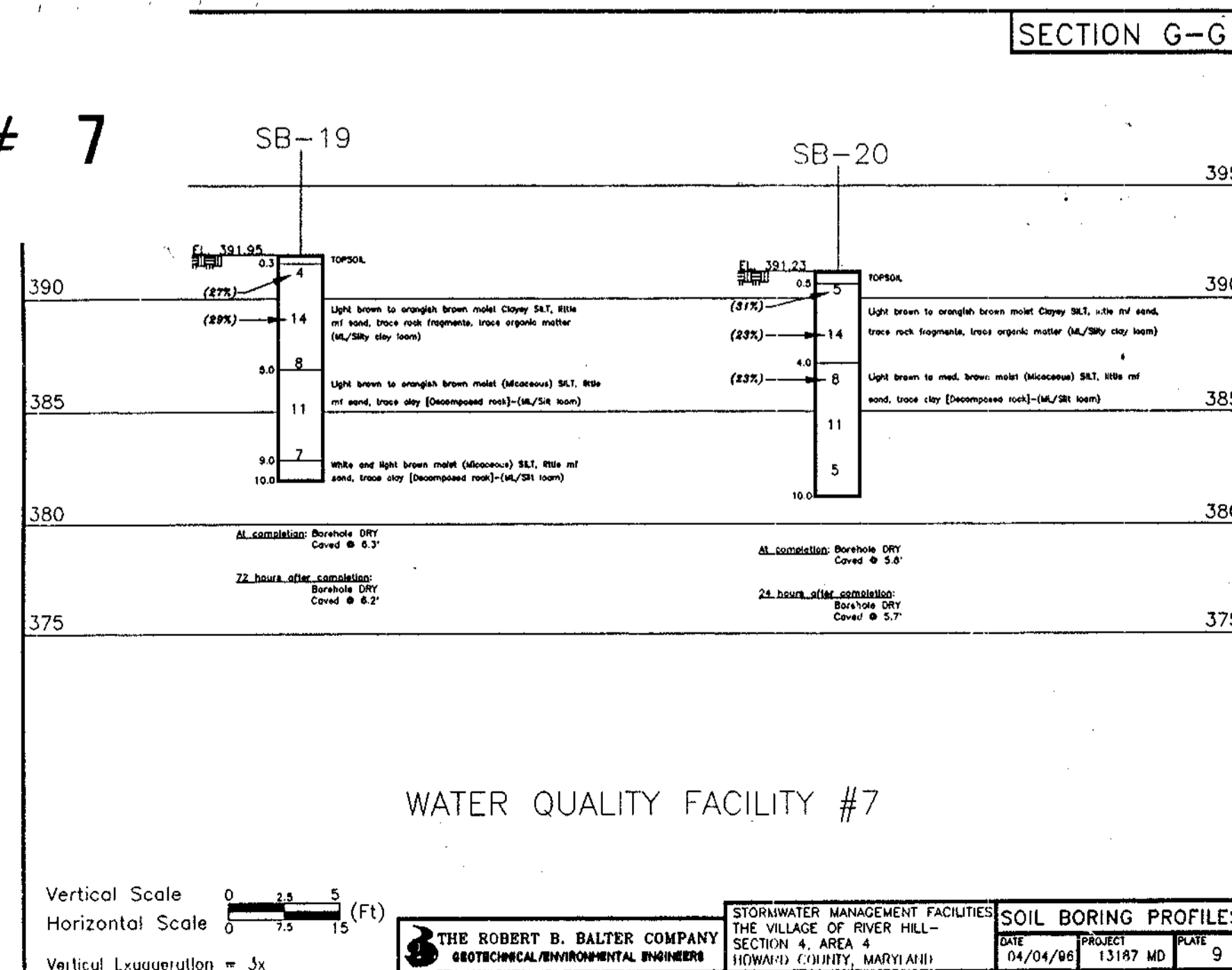
BIO-RETENTION WATER QUALITY FACILITY # 8

SCALE: 1" = 20'
HAZARD CLASS "A"

NOTE: FACILITIES #7 AND #8 SHALL BE JOINTLY MAINTAINED BY HOWARD COUNTY AND COLUMBIA ASSOCIATION

BIO-RETENTION WATER QUALITY FACILITY # 7

SCALE: 1" = 20'
HAZARD CLASS "A"

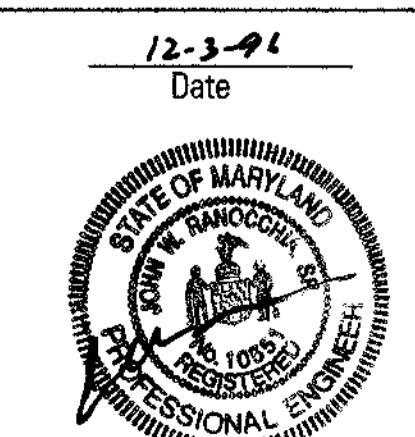


APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>Andrew M. Daniels</i> CHIEF, BUREAU OF HIGHWAYS	5-22-97 DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
<i>John J. Miller</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/10/97 DATE
<i>Chris R. Williams</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	5/21/97 DATE
Date	No. Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

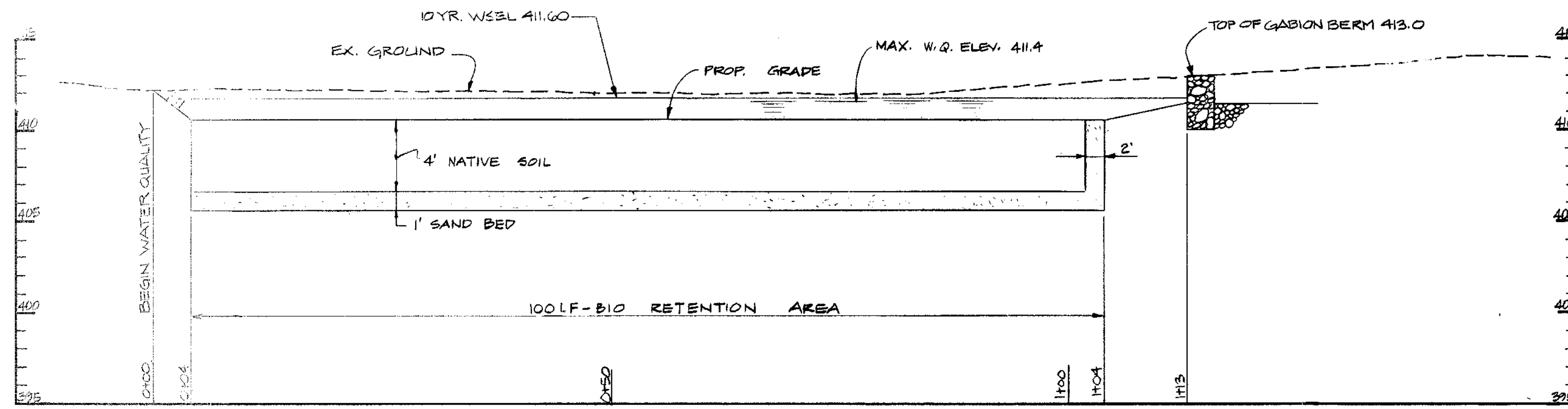
OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW Dault McConne-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 410-286-3513 Fax 296-4705		A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
AREA	SECTION 4 AREA 4	PARCEL
TITLE	WATER QUALITY FACILITIES #7 & 8	
Des By	Scale 1" = 20'	Proj. No. 94064
Dm By	Date MAR 96	
Chk By	JWR Approved	29 OF 44



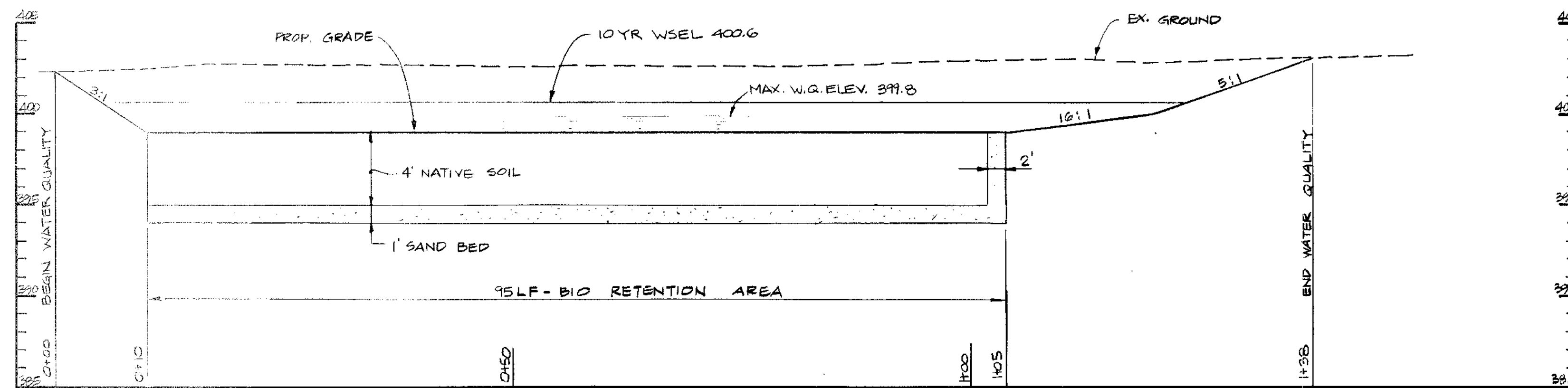
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NOTE: P.V.C. PIPES NOT SHOWN FOR CLARITY, SEE PLAN VIEW FOR LOCATIONS.



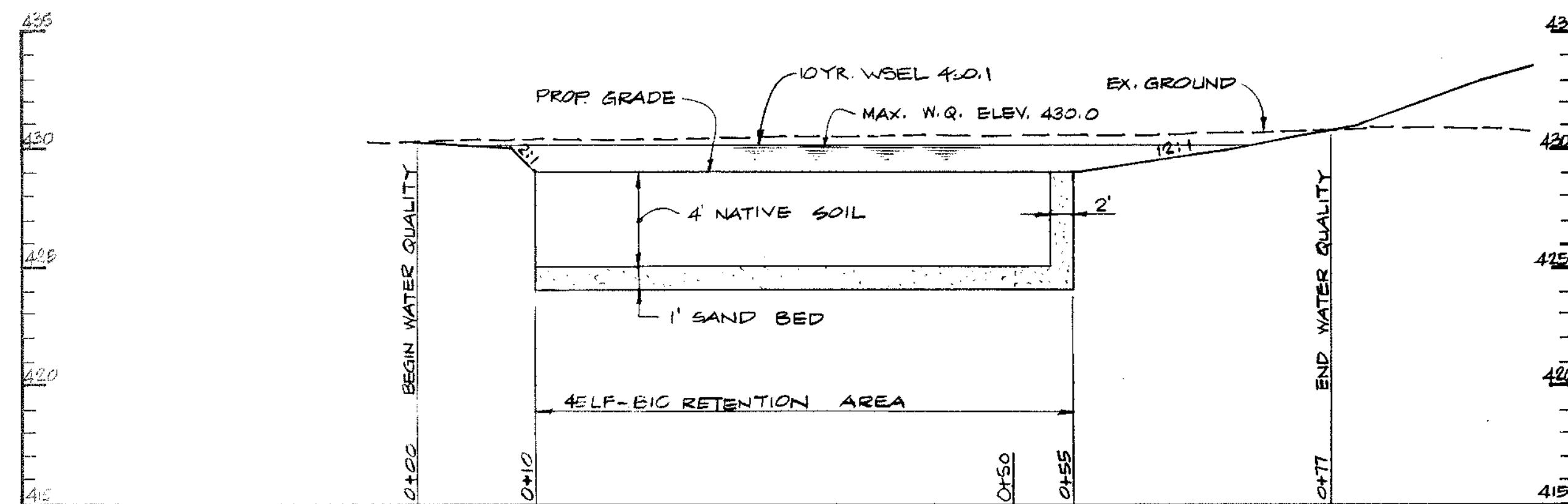
PROFILE WATER QUALITY #1

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



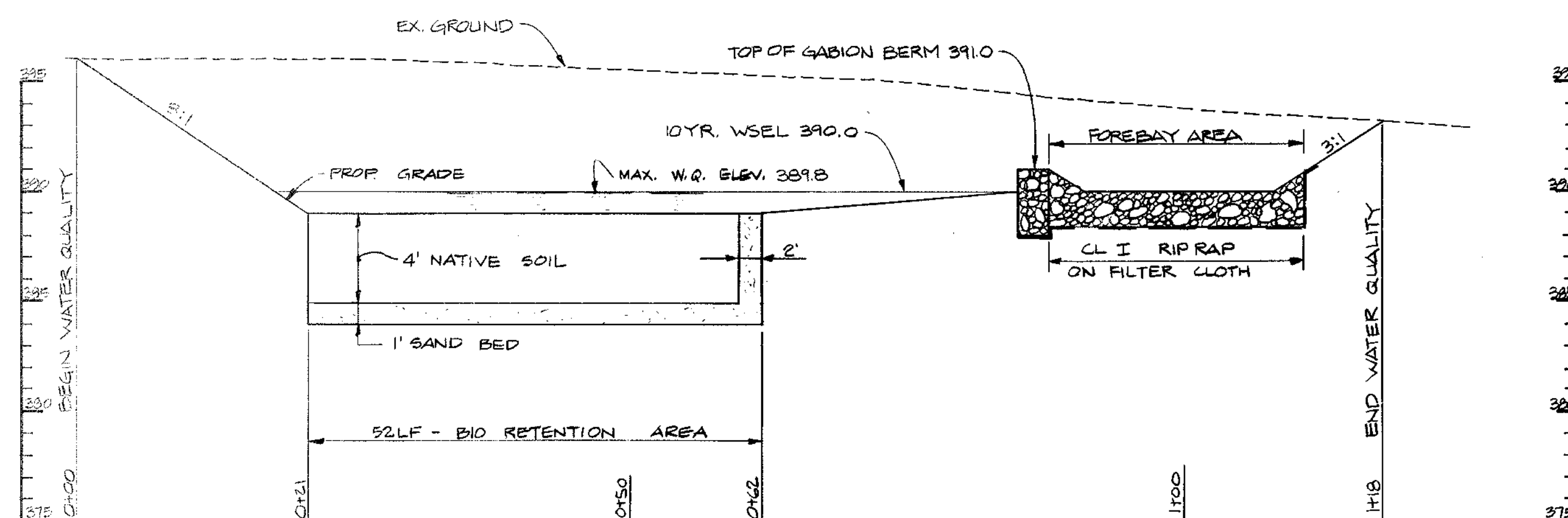
PROFILE WATER QUALITY #3

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



PROFILE WATER QUALITY #5

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



PROFILE WATER QUALITY #7

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels
CHIEF, BUREAU OF HIGHWAYS *MS* DATE 5-22-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. H. Smith
CHIEF, DIVISION OF LAND DEVELOPMENT *TC* DATE 7/10/97

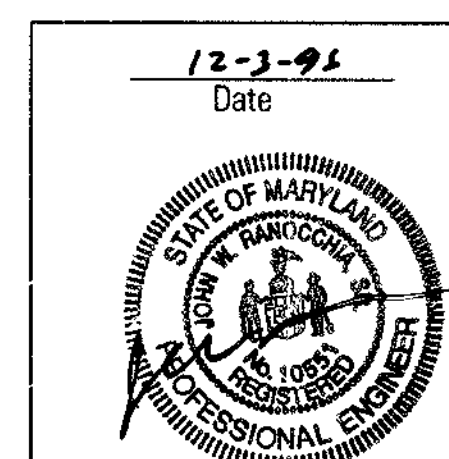
Bill Dammann
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 5/22/97

Date	No.	Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Duff McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax: 296-4705
A Team of Land Planners,
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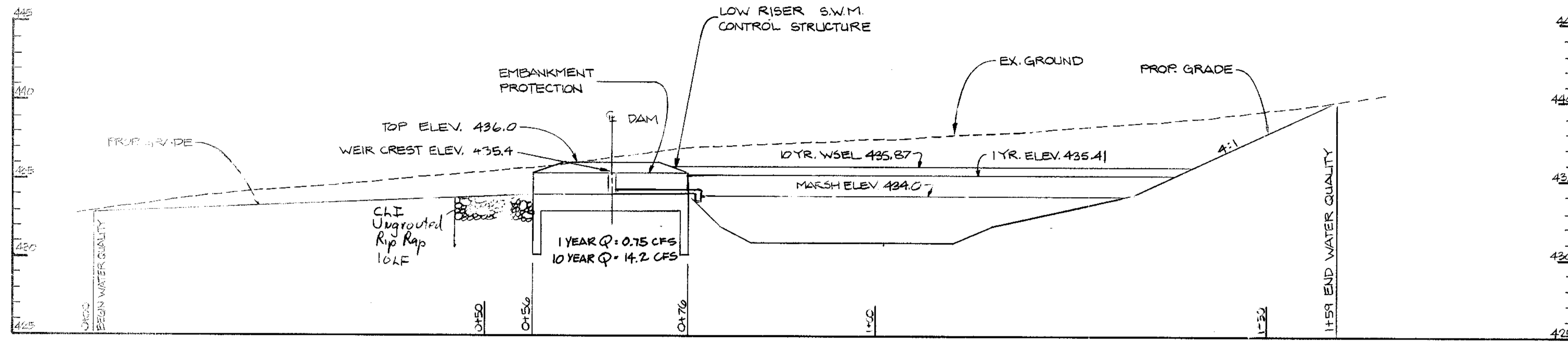


AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE WATER QUALITY PROFILES

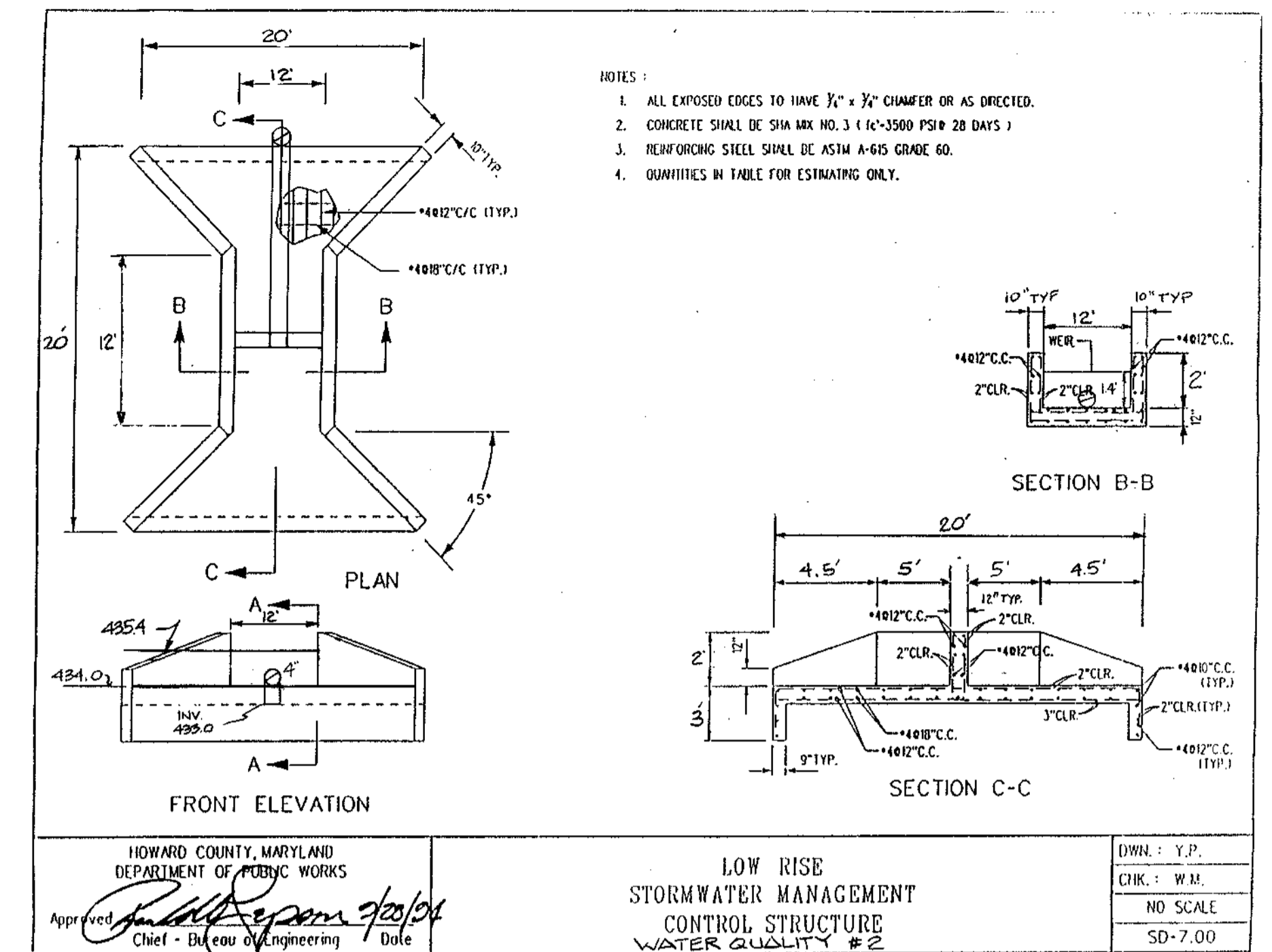
Des By	Scale 1" = 10' HORIZ 1" = 5' VERT	Proj. No. 94064
Dm By	Date	30 OF 44
Chk By	Approved	

Professional Engr. No. 10551



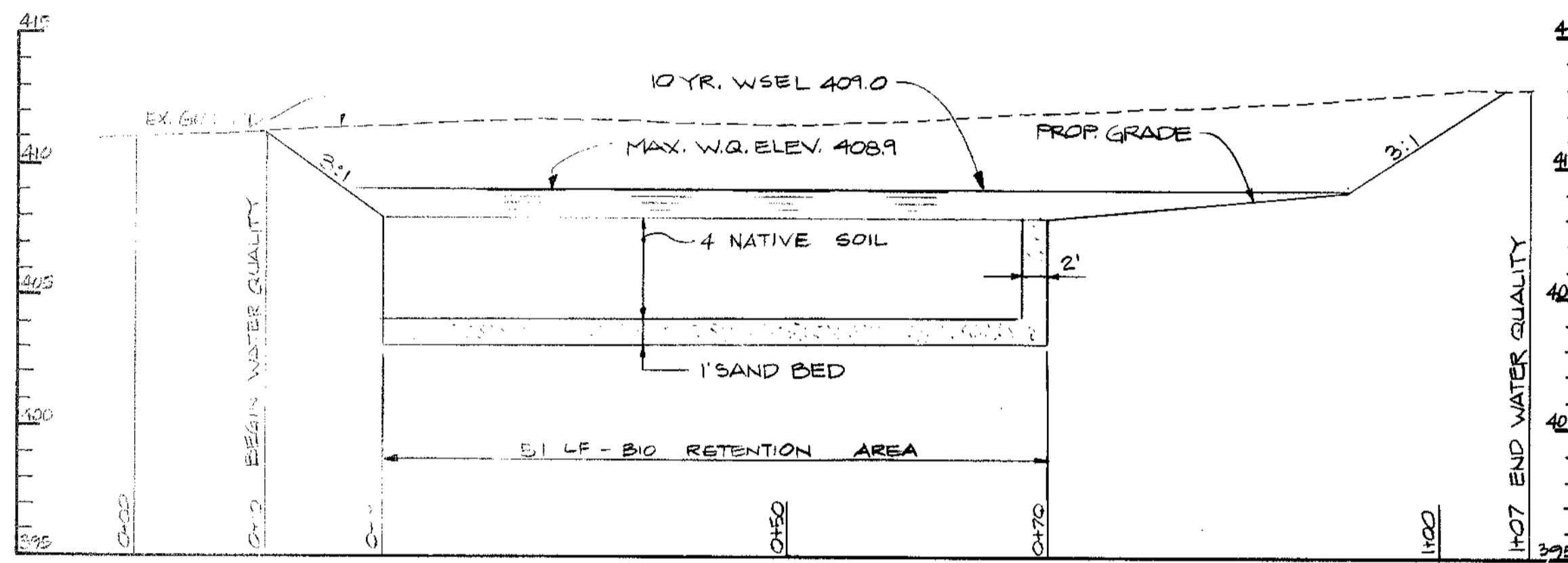
PROFILE STORMWATER MANAGEMENT / WATER QUALITY # 2

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



NOTE: P.V.C. PIPES NOT SHOWN FOR CLARITY, SEE PLAN VIEW FOR LOCATIONS

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved: <i>[Signature]</i> 9/20/94 Chief - Bureau of Engineering	LOW RISE STORMWATER MANAGEMENT CONTROL STRUCTURE WATER QUALITY # 2	DWN: Y.P. CHK: W.M. NO SCALE SD-7.00
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PROFILE WATER QUALITY # 6

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

**OPERATION AND MAINTENANCE SCHEDULE
BIO-RETENTION**

ROUTINE MAINTENANCE (PRIVATE)

1. Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
2. The area outside the Bio-Retention area shall be mowed a minimum of two (2) times a year, once in June and once in September. Vegetation shall not exceed 18 inches in height at any time.
3. Debris and litter shall be removed during regular mowing operations and as needed. Silt shall be removed from the forebay and marsh area when accumulation exceeds four (4) inches.
4. Visible signs of erosion, seepage, sliding, or slumping shall be reported to the Howard County Department of Public Works as soon as it is noticed.
5. Rip-Rap to be inspected and repaired as necessary after each storm event.

NON-ROUTINE MAINTENANCE (PUBLIC)

1. Corrective maintenance to the forebay shall be done if standing water remains more than 60 hours after a rainfall event.
2. Corrective maintenance to the facility drains shall be done whenever standing water remains in the bio-retention area for more than 72 hours after a rainfall event.

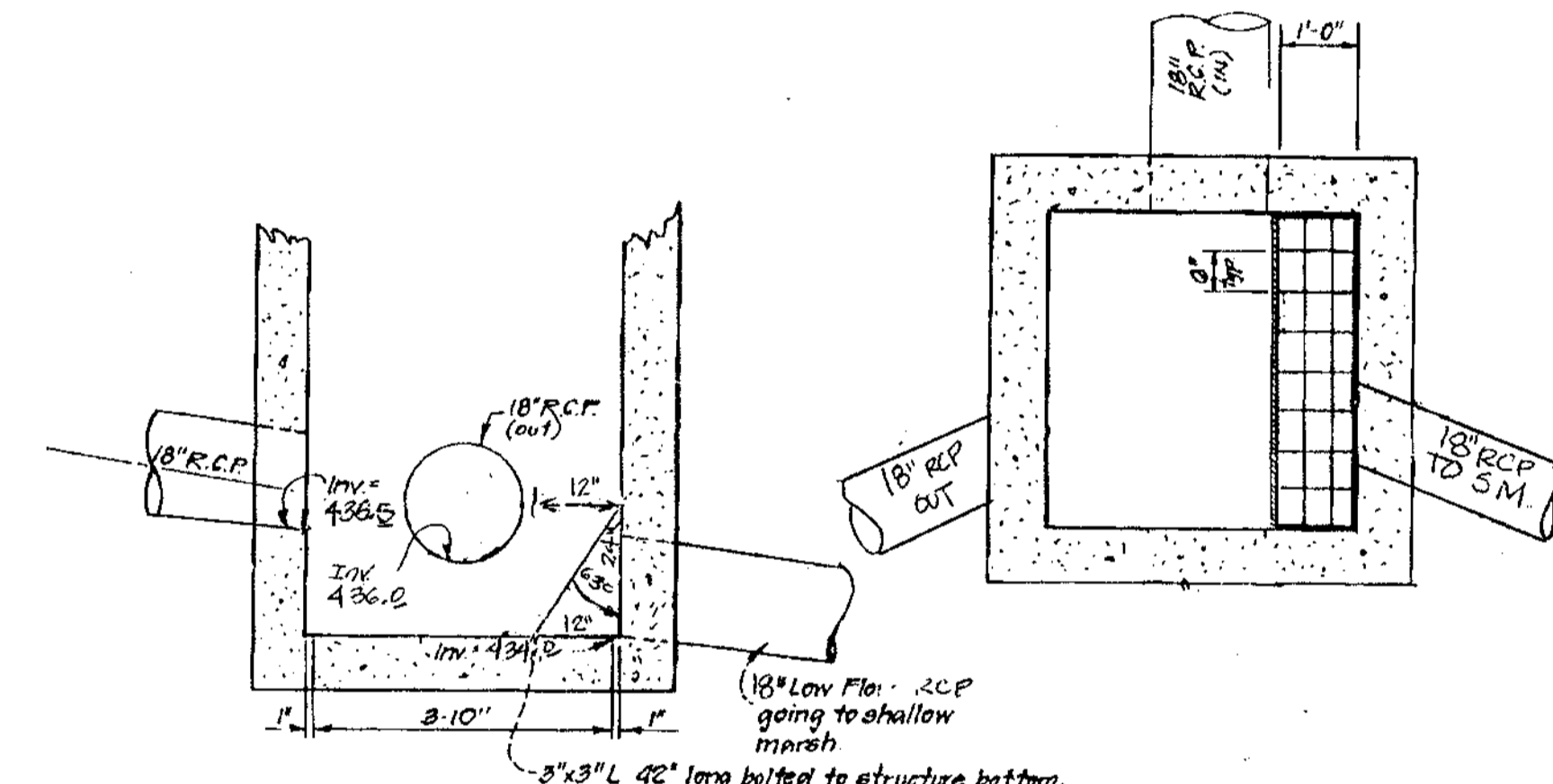
**OPERATION AND MAINTENANCE SCHEDULE
SHALLOW MARSH**

ROUTINE MAINTENANCE (PRIVATE)

1. Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment above the normal pool shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes should be mowed as needed. Vegetation shall not exceed 18 inches in height at any time.
3. Debris and litter shall be removed during regular mowing operations and as needed. Silt shall be removed from the forebay and marsh area when accumulation exceeds four (4) inches.
4. Visible signs of erosion in the pond as well as rip rap outlet area shall be repaired as soon as it is noticed.
5. Rip-Rap to be inspected and repaired as necessary after each storm event.

NON-ROUTINE MAINTENANCE (PUBLIC)

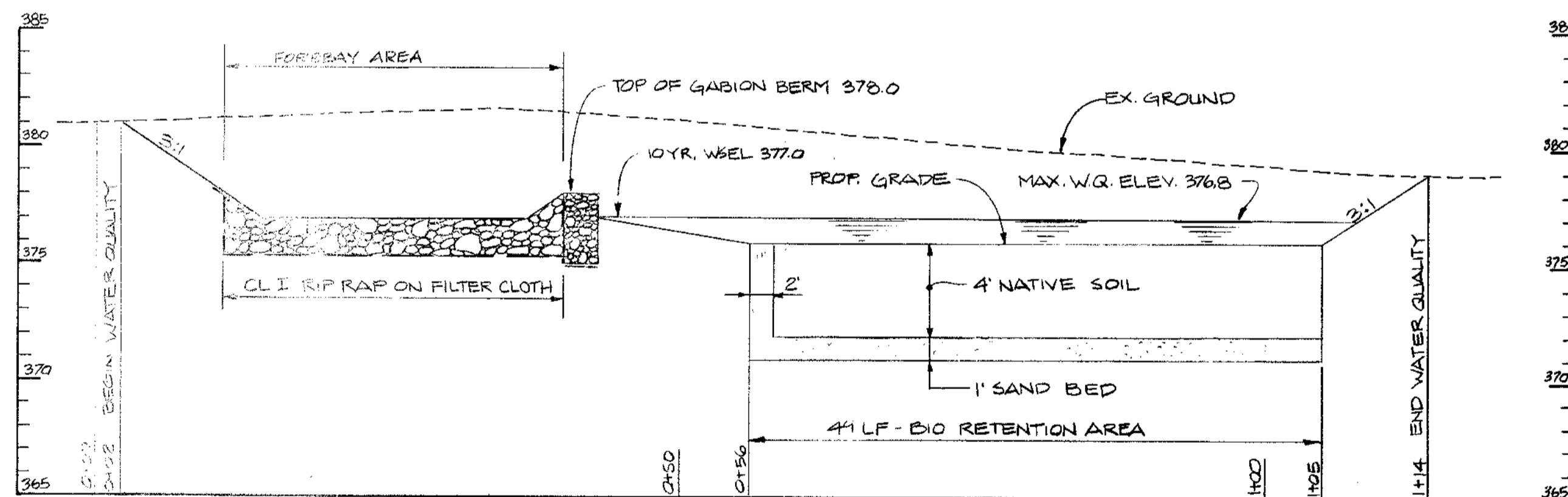
1. Structural components of the pond such as the dam, riser, gabion structures, and the pipes shall be repaired upon the detection of any damage. The components should be inspected during routine maintenance operations.
2. Sediment should be removed from the pond no later than when the capacity of the pond is half full of sediment, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County Department of Public Works.



DETAIL MH 501

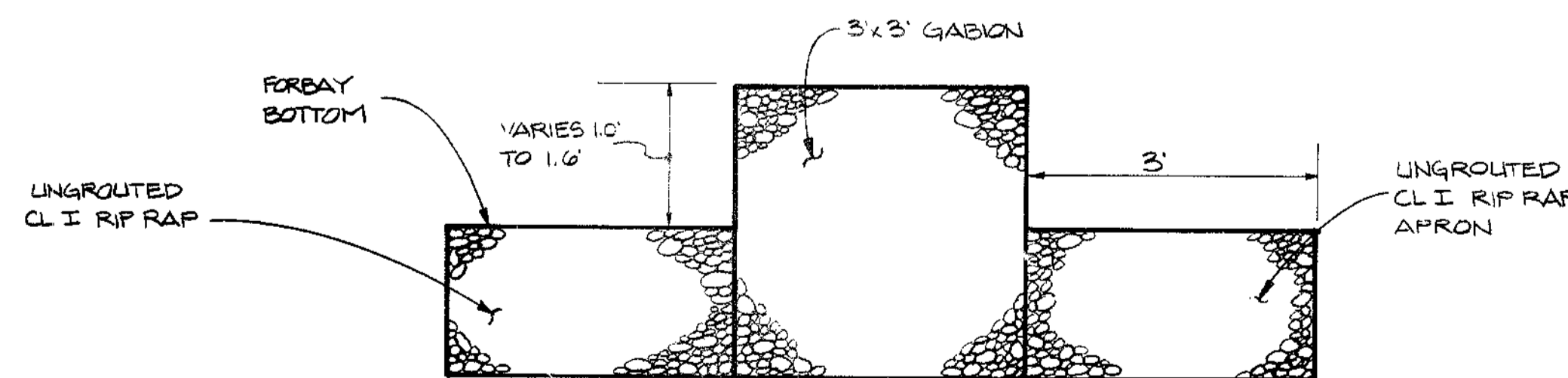
TRASH RACK NOTES

- 1) Removable trash rack is to be placed on the bottom angle and is to rest against the side of the structure at a 45° angle as shown. Removal of the trash rack will allow access to the bottom of the structure for maintenance.
- 2) Trash racks are to lay angled as shown to prevent accumulation of debris in front of the outgoing shallow marsh pipe.
- 3) 3"x3" L's to be placed 1 ft. back from the structure side wall.
- 4) All rebar to be N.B. at 6" unless otherwise noted.
- 5) All rebar to be galvanized after fabrication and painted Battleship Gray.



PROFILE WATER QUALITY # 8

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



**WATER QUALITY FACILITIES
GABION BERM**
N.T.S.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS <i>[Signature]</i> CHIEF, BUREAU OF HIGHWAYS	5-22-97 DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING <i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/10/97 DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	5/2/97 DATE
Date	No.
Revision Description	

**VILLAGE OF
RIVER HILL
SECTION 4, AREA 4**

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW

Duff McCune-Walker, Inc.
209 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4706

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

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE WATER QUALITY PROFILES

Des By	Scale 1" = 10' HORIZ. 1" = 5' VERT.	Proj. No. 94064
Dwn By	Date	
Chk By	Approved	21 OF 44

12-3-96
Date

Professional Engr. No. 0551

I. GENERAL

A. Description

Work consists of all labor, materials, equipment and services necessary for and incidental to the execution and completion of TREES, SHRUBS AND GRASSES as indicated on the Drawings and specified herein.

- Include:
1. Furnishing of all plant material.
 2. Soil preparation, planting operations, mulching and staking.
 3. Maintenance and guarantee.

B. Quality Assurance

1. American Association of Nurserymen (A.A.N.): "American Standard for Nursery Stock", (A.N.S.I. Z60.1) as expanded herein.
2. Nomenclature: In accordance with HORTUS III by L. H. Bailey.
3. United States Department of Agriculture: Textural Classification Diagram for Soils.
4. National Arborist Association "Standard for Pruning of Shade Trees, Guying of Shade Trees, Fertilizing Shade and Ornamental Trees and Pesticides Application Operations."

C. Project Conditions

1. Planting Season: September 15 to May 1; other periods with the written approval of the Landscape Architect. Do not plant when ground is frozen or excessively moist. Do not use frozen or excessively wet planting soil at any time.

D. Definitions

1. Start of Planting: installation of plant material into excavated pits or beds.
2. Project Acceptance:
 - a. Upon determination by the Landscape Architect and Owner that the work meets the requirements of Substantial Completion, the Landscape Architect will prepare a Certificate of Substantial Completion, AIA Document G704, for the approval and acceptance of the Owner and the Contractor.
 - b. The Landscape Architect shall prepare and submit to the Contractor a list of items to be completed or corrected within the time limits established in the Certificate of Substantial Completion.
 - c. The failure to include any items of such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.
 - d. The Landscape Architect and Owner may review and amend the list of items to be completed or corrected within the time limits to the Certificate of Substantial Completion at any time before final Notice of Completion.
 - e. The continued validity of a "Certificate of Substantial Completion" by the Owner and Landscape Architect shall be contingent upon the satisfactory completion of all punch-list items. Failure to meet this date shall be reason for revocation of this Certificate.
 - f. All subsequent expenses including reimbursables and fees incurred by the Landscape Architect shall be paid for by the Owner and deducted from the retainage held by the Owner.
 - g. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion for the work or designated portion thereof unless otherwise provided in the "Certificate of Substantial Completion".
3. Maintenance Period: From start of mobilization and last through 90 days after issuance of "Certificate of Substantial Completion."
4. Guarantee Period: From issuance of AIA "Certificate of Substantial Completion" to expiration of first anniversary (12 months).

Shallow Marsh Planting Plan

Species	Size	Spacing	Quantity	Planting Units	Remarks
Zone "A"					
Acer rubrum	3'-6" cont	as ind	10	na	FAC
Cornus amomum	18"-24" cont	as ind	25	na	FACW
Agrostis alba	PLS	na	5 lb/ac	na	FACW
Zone "B"					
Cephalanthus occidentalis	18"-24" cont	midm	40	na	OBL
Ailanthus altissima	18"-24" cont	midm	40	na	OBL
Azadirachta indica	cont	midm	250	na	OBL
Carex stricta	cont	midm	250	na	OBL
Open Water					
Sagittaria latifolia	cont	midm	350	na	OBL
Periphery/Upland					
Liatris scariosa	1' S	na	20lb/ac	na	40% maturity
Solidago serotina	PLS	na	20lb/ac	na	40% maturity
Sorghastrum nutans	PLS	na	4 lb/ac	na	20% maturity

Note: The precise location of plant masses will be located in the field by landscape architect. Grid patterns will be avoided.

II. BIORETENTION AREA SOIL SPECIFICATIONS

A. Mulch Layer Specifications

A mulch layer shall be provided in the planted filter strip and on top of the planting soil. An acceptable mulch layer shall include shredded hardwood, shredded wood chips, or other similar product approved by the Landscape Architect.

All mulch products must be well aged, uniform in color, and free of foreign material including plant material. Well aged mulch is mulch that has been stockpiled or stored for at least twelve (12) months.

B. Compaction

Soil shall be placed in lifts less than 18 inches and lightly compacted (minimal compactive effort) by tamping with a bucket from a loader, backhoe, or other appropriate equipment.

III. BIORETENTION AREA PLANT SPECIFICATIONS

A. Plants must be:

1. Sound, healthy, vigorous, free from plant diseases, insect pests or their eggs.
2. Nursery stock grown in Maryland, Delaware, New Jersey, Ohio, Pennsylvania, Virginia or West Virginia for at least two (2) years prior to digging.
3. Plants cut back from larger sizes or pruned prior to delivery will not be accepted.
4. Transplanted or root pruned at least once in past three (3) years.
5. Shape and Form: Plant materials shall be symmetrical and typical for the variety and species.

B. Deciduous trees must be:

- a. Single leader, well branched, without suckers or evidence of suckering, with straight trunks, and symmetrically balanced according to their normal habit.
- a. Free of branches for 1.5 feet up the leader from ground level per 1 inch of caliper.
- b. Measurements: The caliper of all deciduous shade trees shall be measured 6 inches above ground level for trees up to and including 4-inch caliper and 12 inches above ground level for material larger than 4-inch caliper.

C. Shrubs shall have:

1. At least 75 percent of the individual branches or canes of a shrub shall be to the height specified.

D. General:

1. Store balled plants that cannot be planted within 48 hours in a sheltered place, balls covered with soil, straw mulch or similar cover; water and maintain as required until planted.
2. Transport and handle plants so that foliage, roots, or balls are protected from breakage, sun and winds. Tops or roots of plants allowed to dry out or which have been damaged or disturbed root balls will be cause for rejection.
3. B & B (balled and burlapped) plants: Firm, natural balls of soil, with size and depth of ball in accordance with A.A.N. Standards.
4. Walls of planting pit shall be dug so that they are vertical, and scarified to eliminate glazing of the wall.
5. The diameter of the planting pit must be a minimum of six inches (6") larger than the diameter of the ball of the tree.
6. The planting pit shall be deep enough to allow 1/4 inch of the pit shall be above the existing grade. Loose soil at the bottom of the pit shall be tamped by hand.
7. Apply fertilizer in bottom of planting pit as specified below.
8. The plant shall be removed from the container and placed in the planting pit by lifting and carrying the plant by its ball. Do not lift by the branches or trunk.
9. Set the plant vertical in the center of the pit so that the top of the ball is approximately 1/4 inch above the final grade.
10. Backfill planting pit with existing soil.
11. Make sure plant remains vertical during backfilling procedure.
12. Never cover the top of the ball with soil. Mound soil around the exposed ball (1/4").
13. Stake all trees requiring staking within 24 hours after planting.
14. Guying shall be in accordance with planting details.
15. Stakes shall be securely driven in ground and plants guyed to provide and maintain adequate support until removal.

E. Fertilization

1. Tree and Shrub fertilizer shall be a 21 gm, tightly compressed, long lasting, slow release (2-year) fertilizer tablet with a minimum guaranteed analysis of 20-10-5:

Total Nitrogen (N) - 20%
Water Soluble Organic Nitrogen - 7%
Water in Soluble Organic Nitrogen - 13%
Available Phosphoric Acid (P₂O₅) - 10%
Soluble Potash (K₂O) - 5%

2. For containerized trees and shrubs, place the specified fertilizer tablet(s) in the bottom of the planting pit according to the following rates:

- | | |
|-------------------------|----------------------|
| 1 gal. Container | 1 ea. 21 gm. Tablets |
| 3 gal. Container | 2 ea. 21 gm. Tablets |
| 5 gal. Container | 3 ea. 21 gm. Tablets |
| 7 gal. Container or B&B | 5 ea. 21 gm. Tablets |

F. Planting Filter Strip

1. The planting holes shall be dug through the mulch with one of the following: hand trowel, shovel, bulb planter, or hoe.
2. Before planting, biodegradable pots shall be split, and non-biodegradable pots shall be removed. Root systems of all potted plants shall be split or crumbled.
3. The grass shall be planted so that any existing stones/rocks are surrounded by soil below the mulch. Potted plants shall be set so that the top of the pot is even with the existing grade.
4. The entire grass filter strip shall be thoroughly watered.

G. Planting Slopes Adjacent to the Bioretention Area

1. Slopes adjacent to the Bioretention Area shall be seeded per the seeding specification shown in the bioretention system general construction specifications.
2. Seed mix used for this area shall be Loft's Eco-mix or other similar mix as approved by the Landscape Architect.

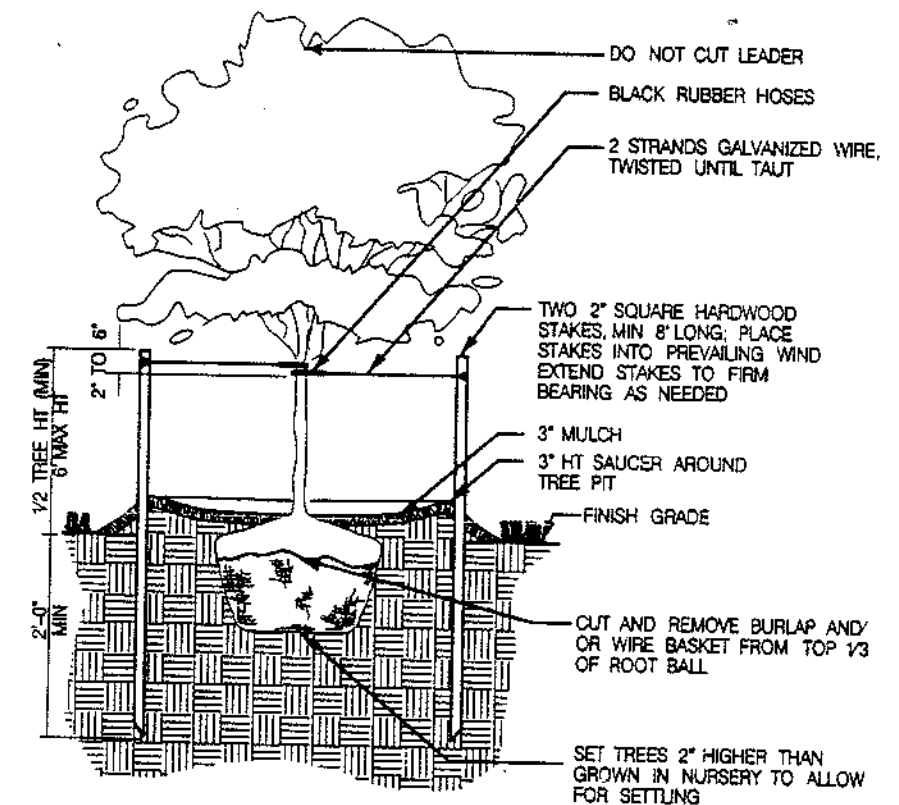
IV. MAINTENANCE

1. The Contractor's Maintenance Period shall begin at mobilization and last through 90 days after the issuance of a Certificate of Substantial Completion.
2. The Contractor's maintenance of new planting shall consist of watering, cultivating, weeding, mulching, re-staking, tightening and repair of guys, resetting plants to proper grades or upright position, and furnishing and applying such pesticide sprays and invigorants as are necessary to keep the plantings free of insects and disease and in thriving condition.
3. Protect planting areas and plants at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary protection barriers and signs as required for protection. If any plants become damaged or injured, because sufficient protection was not provided, treat or replace as directed by Landscape Architect at no additional cost to Owner.

V. WARRANTY

1. Planting shall be warranted by the Contractor to remain alive and healthy for a period of 12 months after the date of Substantial Completion. Within 12 months shall be removed and replaced. New planting and method of placing shall comply with the requirements of the specifications. Plants replacing those removed during the guarantee period shall also be guaranteed to remain alive and healthy for an additional 12 months after installation and acceptance.
2. Contractor shall not be held responsible for failure due to neglect by Owner, vandalism, etc., during warranty period. Report such conditions to the Landscape Architect in writing when discovered.
3. Submit a letter of warranty containing the following information:

"We hereby guarantee that the landscape planting we have furnished and installed is free from disease and in good condition, and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse, or neglect excepted. We agree to repair or replace any defects in material or workmanship which may develop during the period of one year from the date of acceptance and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the Owner. We shall make such repairs or replacements within a reasonable time, as determined by the Owner, after receipt of written notice. In the event of our failure to make such repairs or replacements within a reasonable time after receipt of written notice from the Owner by Certified Mail, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.



TREE PLANTING - LESS THAN 3" CALIPER
NOT TO SCALE

Bioretention Area Planting List
Water Quality Facility #1

Species	Size	Spacing	Quantity	Planting Units	Stratum	Tolerance
Acer rubrum	2.5' B&B	10'-12' rdm	10	na	Canopy	FAC
Liquidambar styraciflua	2.5' B&B	10'-12' rdm	5	na	Canopy	FAC
Quercus rubra	2.5' B&B	10'-12' rdm	5	na	Canopy	FACW
Hemodalis virginiana	3'-4' cont	6'-8' rdm	15	na	Shrub	FAC
Lindera benzoin	3'-4' cont	6'-8' rdm	2	na	Shrub	FACW
Viburnum dentatum	3'-4' cont	6'-8' rdm	2	na	Shrub	FAC
Panicum virgatum	1-3/4" P.PIT	18" oc	175 lb/ac	na	Herb	FAC
TOTALS			37			

Water Quality Facility #7

Species	Size	Spacing	Quantity	Planting Units	Stratum	Tolerance
Acer rubrum	2.5' B&B	10'-12' rdm	5	na	Canopy	FAC
Liquidambar styraciflua	2.5' B&B	10'-12' rdm	0	na	Canopy	FAC
Quercus rubra	2.5' B&B	10'-12' rdm	0	na	Canopy	FACW
Hemodalis virginiana	3'-4' cont	6'-8' rdm	10	na	Shrub	FAC
Lindera benzoin	3'-4' cont	6'-8' rdm	5	na	Shrub	FACW
Viburnum dentatum	3'-4' cont	6'-8' rdm	0	na	Shrub	FAC
Panicum virgatum	1-3/4" P.PIT	18" oc	150 lb/ac	na	Herb	FAC
TOTALS			20			

Water Quality Facility #3

Species	Size	Spacing	Quantity	Planting Units	Stratum	Tolerance
Acer rubrum	2.5' B&B	10'-12' rdm	5	na	Canopy	FAC
Liquidambar styraciflua	2.5' B&B	10'-12' rdm	0	na	Canopy	FAC
Quercus rubra	2.5' B&B	10'-12' rdm	0	na	Canopy	FACW
Hemodalis virginiana	3'-4' cont	6'-8' rdm	15	na	Shrub	FAC
Lindera benzoin	3'-4' cont	6'-8' rdm	5	na	Shrub	FACW
Viburnum dentatum	3'-4' cont	6'-8' rdm	10	na	Shrub	FAC
Panicum virgatum	1-3/4" P.PIT	18" oc	150 lb/ac	na	Herb	FAC
TOTALS			34			

Water Quality Facility #8

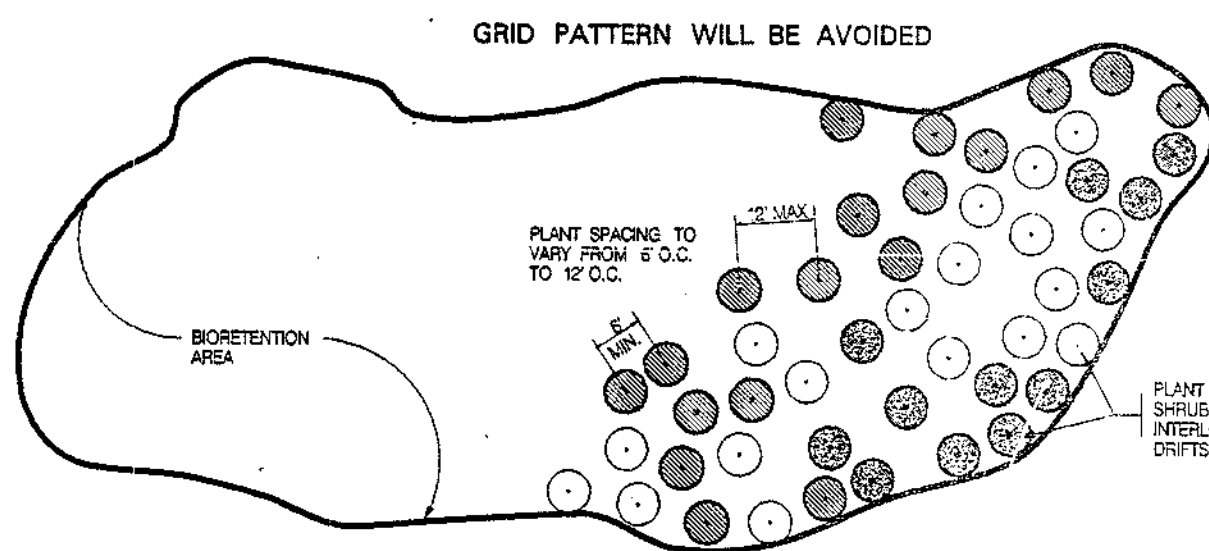
Species	Size	Spacing	Quantity	Planting Units	Stratum	Tolerance
Acer rubrum	2.5' B&B	10'-12' rdm	5	na	Canopy	FAC
Liquidambar styraciflua	2.5' B&B	10'-12' rdm	0	na	Canopy	FAC
Quercus rubra	2.5' B&B	10'-12' rdm	0	na	Canopy	FACW
Hemodalis virginiana	3'-4' cont	6'-8' rdm	5	na	Shrub	FAC
Lindera benzoin	3'-4' cont	6'-8' rdm	5	na	Shrub	FACW
Viburnum dentatum	3'-4' cont	6'-8' rdm	0	na	Shrub	FAC
Panicum virgatum	1-3/4" P.PIT	18" oc	135 lb/ac	na	Herb	FAC
TOTALS			20			

Water Quality Facility #5

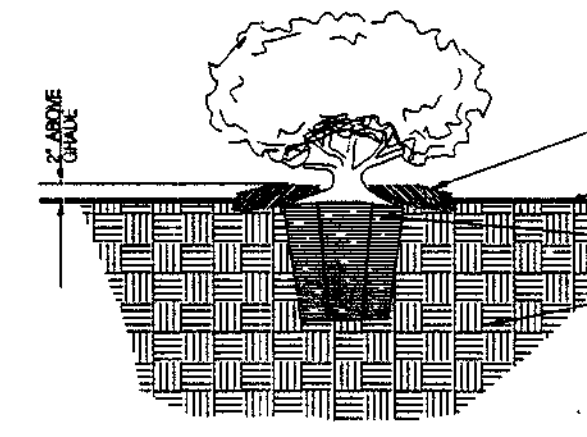
Species	Size	Spacing	Quantity	Planting Units	Stratum	Tolerance
Acer rubrum	2.5' B&B	10'-12' rdm	5	na	Canopy	FAC
Liquidambar styraciflua	2.5' B&B	10'-12' rdm	0	na	Canopy	FAC
Quercus rubra	2.5' B&B	10'-12' rdm	0	na	Canopy	FACW
Hemodalis virginiana	3'-4' cont	6'-8' rdm	0	na	Shrub	FAC
Lindera benzoin	3'-4' cont	6'-8' rdm	15	na	Shrub	FACW
Viburnum dentatum	3'-4' cont	6'-8' rdm	2	na	Shrub	FAC
Panicum virgatum	1-3/4" P.PIT	18" oc	100 lb/ac	na	Herb	FAC
TOTALS			22			

Water Quality Facility #6

Species	Size	Spacing	Quantity	Planting Units	Stratum	Tolerance
Acer rubrum	2.5' B&B	10'-12' rdm	5	na	Canopy	FAC
Liquidambar styraciflua	2.5' B&B	10'-12' rdm	0	na	Canopy	FAC
Quercus rubra	2.5' B&B	10'-12' rdm	0	na	Canopy	FACW
Hemodalis virginiana	3'-4' cont	6'-8' rdm	0	na	Shrub	FAC
Lindera benzoin	3'-4' cont	6'-8' rdm	15	na	Shrub	FACW
Viburnum dentatum	3'-4' cont	6'-8' rdm	5	na	Shrub	FAC
Panicum virgatum	1-3/4" P.PIT	18" oc	275 lb/ac	na	Herb	FAC
TOTALS			23			



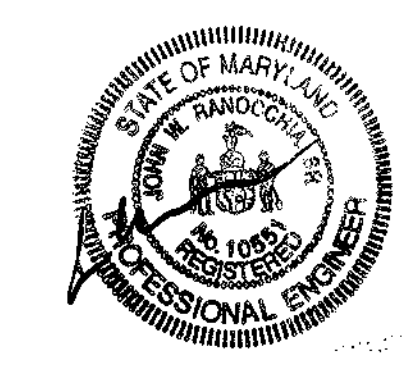
Planting Design Schematic
Not To Scale



Planting of Container Grown Material
Not To Scale

NOTE: All plants will be placed at random locations and spacing as specified. Grid patterns and single-species massings will be avoided. No woody vegetation will be planted within the grass filter strip

12-3-96
Date



Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Howard M. Dangle
CHIEF, BUREAU OF HIGHWAYS
5-22-97
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John A. ...
CHIEF, DIVISION OF LAND DEVELOPMENT
7/10/97
DATE

Michael ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
5/27/97
DATE

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Duff McCune Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3339
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA	SECTION 4 AREA 4	PARCEL
TITLE	ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	
WATER QUALITY NOTES, DETAILS & SPECIFICATIONS		
Des By	Scale	Proj. No. 94064
Drn By	Date	32 OF 44
Chk By	Approved	

STORMWATER MANAGEMENT POND

GENERAL CONSTRUCTION SPECIFICATIONS

All stormwater management facilities shall be constructed in accordance with Howard County's "Design Manual Vol. 1 - Storm Drainage (1989)" and the NRCS Maryland "Standard and Specifications for Ponds" (MD-378, 1992). These specifications are appropriate to all ponds with the scope of the Standard Practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

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

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

All borrow and graded 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 provided in a suitable location for use on the embankment and other designated areas.

2. EARTH FILL
MATERIAL: The fill material shall be taken from approved designated borrow areas. It shall be free of rocks, stumps, logs, rubble, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment and out of trench shall conform to Unified Soil Classification (UC) 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 fills to be placed shall be certified prior to placement of fill. Fill materials shall be placed in maximum 6 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 portion 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 track tread 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 be so wet that water can be squeezed out.

All compaction to be not less than 90 percent of the maximum dry density as determined by AASHTO Specification T-99 (Standard Proctor) with a moisture content within 2 percent of 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.

CUTOFF TRENCH AND IMPERVIOUS CORE: 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 4 feet below existing grade or as shown on the plans. The side slope of the trench shall be 1 to 1 on the face. The top width of the impervious core shall be 4 feet minimum. The height of the core shall be as shown on the plans. The side slope of the core 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.

3. STRUCTURAL 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 4 inches in thickness and compacted by hand tamper, or other manually directed compaction equipment. The

material needs to fill completely all space under and adjacent to the pipe. At no time during the backfilling operation shall equipment be allowed to operate closer than 4 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 inches or greater over the structure or pipe.

4. REMOVAL AND REPLACEMENT OF DEFECTIVE FILL
Fill placed at densities lower than specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be removed to meet the requirements or removed and replaced by acceptable fill. The bottom of such excavations shall be finished flat or gently curving and all the sides of such excavations the adjacent soil shall be trimmed to the slope not steeper than 5 feet horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.

5. PIPE CONDUITS
All pipes shall be circular in cross section. All perforated pipe shall have a minimum of 3.25 square inches of opening per square foot of pipe surface (e.g. 3/8" OD 1/2" hole pipe per square foot). Perforations are to be uniformly spaced around the full periphery of the pipe. Any hole blocked or partially blocked by hummocky coating shall be opened prior to installation.

REINFORCED CONCRETE PIPE: All of the following criteria shall apply for reinforced concrete pipe:

1. Material - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM designation C-308.
2. Cradle - All reinforced concrete pipe conduits shall be laid in a concrete cradle for their entire length. The cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe to at least 50 percent of the outside diameter with a minimum thickness of 6 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 cradle shall be placed so that all voids 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 1" wall.
4. Backfilling - Shall conform to "Structural Backfill".
5. Connections - All connections (anti-seep collars, riser, etc.) shall be watertight.
6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

6. POLYVINYL CHLORIDE (PVC) PIPE
All of the following criteria shall apply for PVC pipe:

1. Material: Non-perforated Outfall Pipe PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Joints and connections shall be completely watertight.
2. Material: Perforated PVC pipe shall be the Filter Drainage Diaphragm PVC pipe and fittings for facility drawdown shall be PVC conforming to the requirements of ASTM D-2728.
3. Joints and connections to anti-seep collars shall be completely watertight.
4. Backfilling shall conform to "Structural Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

7. CAST-IN-PLACE CONCRETE STRUCTURES

1. Specifications: Maryland Department of Transportation, State Highway Administration (SHA) "Standard Specifications for Construction and Materials", October, 1993 edition, for materials and construction, including all interim specifications.
2. AASHTO "Standard Specifications for Highway Bridges", dated 1996, for design, including all interim specifications.
3. Concrete design: by the "Service Load Design Method".
4. Foundation: Formed and bearing capacity = 2500 PSF. The engineer must approve all foundations prior to concrete placement. If unsuitable material is encountered, the material shall be undercut and backfilled with structural backfill.
5. Supply mixture for approval prior to application. Contractor shall supply load and mix tickets for each truckload. No partial field mixes shall be allowed.

8. CAST-IN-PLACE CONCRETE STRUCTURES

1. Specifications: Maryland Department of Transportation, State Highway Administration (SHA) "Standard Specifications for Construction and Materials", October, 1993 edition, for materials and construction, including all interim specifications.
2. AASHTO "Standard Specifications for Highway Bridges", dated 1996, for design, including all interim specifications.
3. Concrete design: by the "Service Load Design Method".
4. Foundation: Formed and bearing capacity = 2500 PSF. The engineer must approve all foundations prior to concrete placement. If unsuitable material is encountered, the material shall be undercut and backfilled with structural backfill.
5. Supply mixture for approval prior to application. Contractor shall supply load and mix tickets for each truckload. No partial field mixes shall be allowed.

9. GABIONS

All gabions shall be PVC coated wire baskets. Stone size shall be 4 inches to 7 inches.

10. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS

The construction of the pond and embankment, and certification that the pond and embankment have been built in accordance with the plans shall be under the supervision of a Registered Professional Engineer. The engineer shall be notified sufficiently in advance of construction in order that arrangements can be made for (1) inspection of pipe trench and building, (2) inspection of riser and anti-seep collars and (3) supervision of embankment construction and compaction testing. The Engineer shall direct the handling of water during construction, minor changes not affecting the integrity of the dam in order to compensate for unusual soil conditions, and the removal and replacement of defective fill.

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

All borrow and graded 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 provided in a suitable location for use on the embankment and other designated areas.

The fill material shall be taken from approved designated borrow areas. It shall be free of rocks, stumps, logs, rubble, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment and out of trench shall conform to Unified Soil Classification (UC) 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.

Areas on which fills to be placed shall be certified prior to placement of fill. Fill materials shall be placed in maximum 6 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 portion of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one track tread 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 be so wet that water can be squeezed out.

All compaction to be not less than 90 percent of the maximum dry density as determined by AASHTO Specification T-99 (Standard Proctor) with a moisture content within 2 percent of 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.

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 4 feet below existing grade or as shown on the plans. The side slope of the trench shall be 1 to 1 on the face. The top width of the impervious core shall be 4 feet minimum. The height of the core shall be as shown on the plans. The side slope of the core 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.

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 4 inches in thickness and compacted by hand tamper, or other manually directed compaction equipment. The

material needs to fill completely all space under and adjacent to the pipe. At no time during the backfilling operation shall equipment be allowed to operate closer than 4 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 inches or greater over the structure or pipe.

Fill placed at densities lower than specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be removed to meet the requirements or removed and replaced by acceptable fill. The bottom of such excavations shall be finished flat or gently curving and all the sides of such excavations the adjacent soil shall be trimmed to the slope not steeper than 5 feet horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.

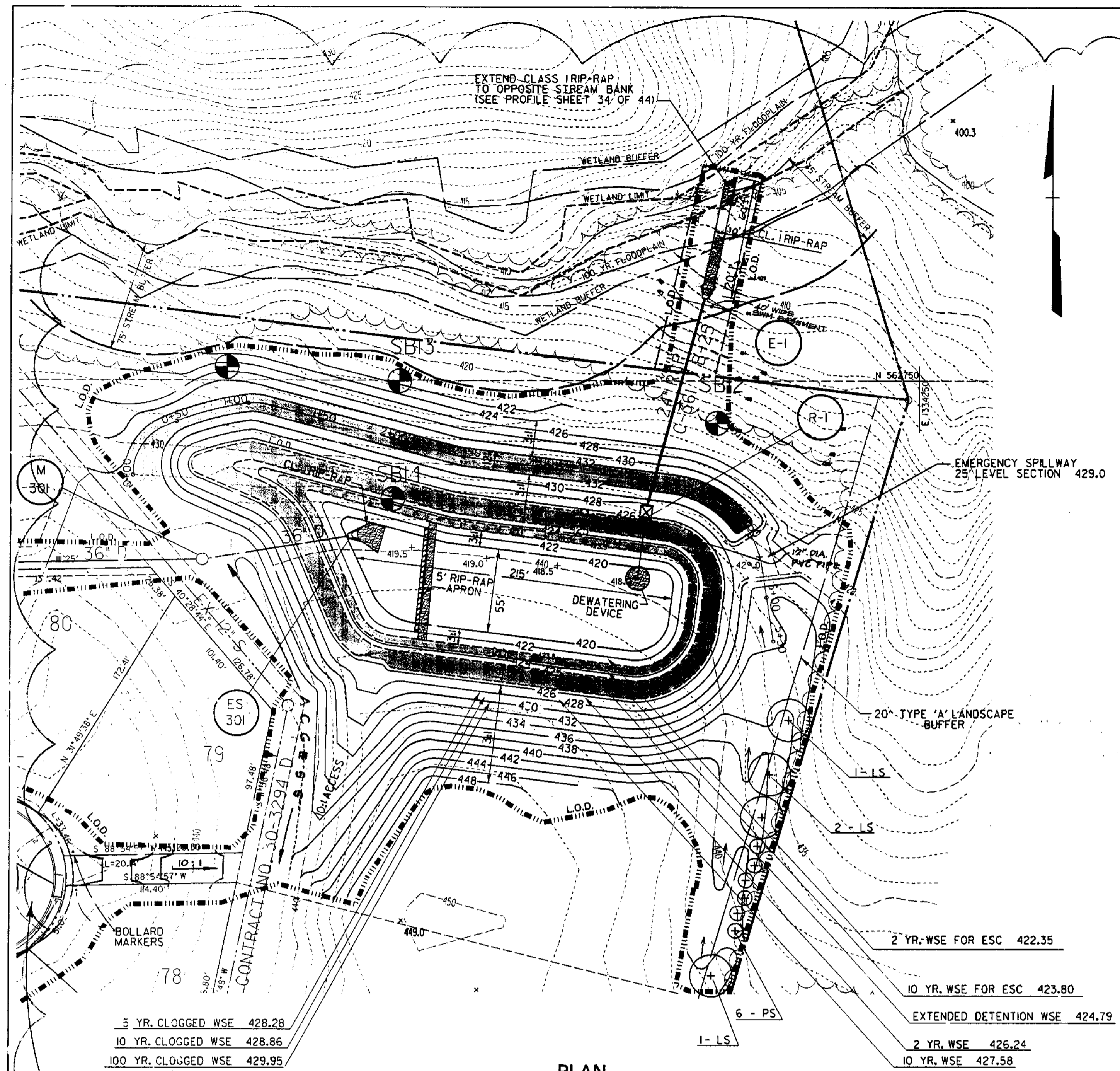
All pipes shall be circular in cross section. All perforated pipe shall have a minimum of 3.25 square inches of opening per square foot of pipe surface (e.g. 3/8" OD 1/2" hole pipe per square foot). Perforations are to be uniformly spaced around the full periphery of the pipe. Any hole blocked or partially blocked by hummocky coating shall be opened prior to installation.

All of the following criteria shall apply for reinforced concrete pipe:

All of the following criteria shall apply for PVC pipe:

Specifications: Maryland Department of Transportation, State Highway Administration (SHA) "Standard Specifications for Construction and Materials", October, 1993 edition, for materials and construction, including all interim specifications.

Formed and bearing capacity = 2500 PSF. The engineer must approve all foundations prior to concrete placement. If unsuitable material is encountered, the material shall be undercut and backfilled with structural backfill.



PLAN
STORMWATER MANAGEMENT FACILITY No.4 & SEDIMENT BASIN
SCALE: 1" = 50'

DISTANT THUNDER PATH

GEOTECH RECOMMENDATIONS

1. The earthwork operations should be accomplished during the drier seasons, preferably during the summer months, when rainfall is less.
2. Construct earth berms or other appropriate features along the top of any newly created or existing slope, where possible, to control surface runoff and minimize the formation of gullies down the face of the slope until slope stabilization is achieved.
3. Immediately after final grading, the slopes should be seeded, fertilized and covered with an appropriate mulch and binder.
4. Periodic examination of the slope areas during and after construction to locate and regrade any slope areas subjected to scouring from excessive surface runoff.
5. The substrate soils should be profiled with light weight equipment to form a relatively unyielding surface. Any excessively soft or yielding areas should be undercut and replaced with suitable on-site materials, placed in accordance with project specifications.
6. Due to the presence of fine-grained or cohesive and weak surficial soils, as indicated by relatively low SPT results at some boring locations, some subgrade yielding under heavy earthwork equipment must be expected. Consideration should be given to the utilization of light-weight, wide-track earthwork equipment and provisions for temporary dewatering during the initial phases of earthwork operations to minimize disturbance to the shallow, weak soils.
7. Due to the relatively high moisture contents of the natural soils, manipulation and erosion of the soils may be necessary to achieve efficient and satisfactory compaction during placement as controlled fill. The moisture descriptions shown on the SOIL BORING PROFILES were of air-dried during visual classifications of the soil samples, and such descriptions (e.g., moist) are related to dry-weight conditions and do not reflect moisture relative to optimum. Because of the natural variations of the on-site soils, variations in moisture-density relationships must be anticipated during construction. Such changes must be determined in the field by the soils technician during earthwork operations, and be treated appropriately.

8. Any control structure which will be constructed in connection with the discharge of water may encounter groundwater, as indicated by the subsurface. Dewatering by means of pumps or shallow dewatering wells may be necessary during pond construction. Based on the weak/soft surficial soils displayed at some of the borings, the volume control structure should be founded at least three feet below ground surface in natural materials exhibiting SPT results of at least 9 blows per foot of penetration, and be proportioned for a maximum allowable bearing capacity of 2.5 KSF. Because of the moisture sensitive nature of the founding materials, disturbance must be minimized to prevent significant loss of the in-situ bearing qualities.

EXTENDED DETENTION POND #4 MAINTENANCE SCHEDULE

- Routine Maintenance (Private)
1. The facilities shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the ponds are functioning properly. The facilities shall be inspected in accordance with the checklist and requirements contained within USDA, NRCS "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 ponds and the continued operation.
 2. The top and side slopes of the embankments shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed or when the height of vegetation exceeds 18" on the embankment top, or faces.
 3. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
 4. Visible signs of erosion in the pond as well as rip rap outlet areas shall be repaired as soon as it is noticed.

INSPECTION SCHEDULE - POND #4

- Prior notification shall be given to the engineer so that inspections may be made at the following stages:
1. Upon completion of excavation to subfoundation and where required, installation of structural supports or reinforcement for structures, including but not limited to:
 - a. Core trenches for structural embankments
 - b. Inlet-outlet structures and anti-seep structures, watertight connectors on pipes; and
 - c. Trenches for enclosed storm drainage facilities
 2. During placement of structural fill, concrete, and installation of piping and catch basins.
 3. During backfill of foundations and trenches;
 4. During embankment construction; and
 5. Upon completion of final grading and establishment of permanent stabilization.

No work shall proceed until engineer inspects and approves the work previously completed.

OPERATION & MAINTENANCE:

INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, NRCS "STANDARDS & 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 ENGINEER'S OBLIGATION IS LIMITED TO THE DESIGN OF THE POND AND THE CONSTRUCTION THEREOF. THE ENGINEER DOES NOT GUARANTEE THE SAFETY OF THE POND OR THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF.

DESIGN FLOW SUMMARY

PROPOSED INFLOW (CFS)	2 YEAR	10 YEAR	100 YEAR
36.61	91.48	152.19	
ALLOWABLE RELEASE (CFS)	0.30	12.87	94.35
WATER SURFACE ELEV. (FT.)	75.24	42.758	42.935
STORAGE PROVIDED (AC. - FT.)	2.77	4.36	6.73

STRUCTURE TYPE	DRY, EXTENDED DETENTION, EMBANKMENT
STRUCTURE TYPE	URBAN
WATERSHED AREA TO FACILITY (AC)	33.91
MAX. HEIGHT OF FILL (FT.)	7.0
STORAGE HEIGHT PRODUCT (AC. - FT.)	40.50
MIN. TOP OF DAM WIDTH (FT.)	12
FREBOARD PROVIDED (FT.)	2.05

DESIGN POINT	EXISTING PEAK (CFS)	190.10
PROP. PEAK (CFS)	27.40	155.95

"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.

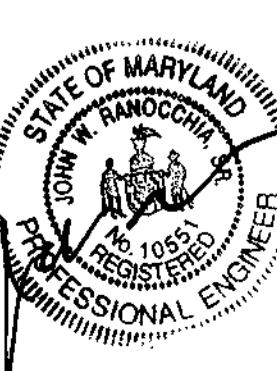
SIGNED _____ P.E. _____ DATE _____

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. "CERTIFY" DOES NOT MEAN NOR IMPLY A GUARANTEE BY THE ENGINEER WHO 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.

PLANT LIST

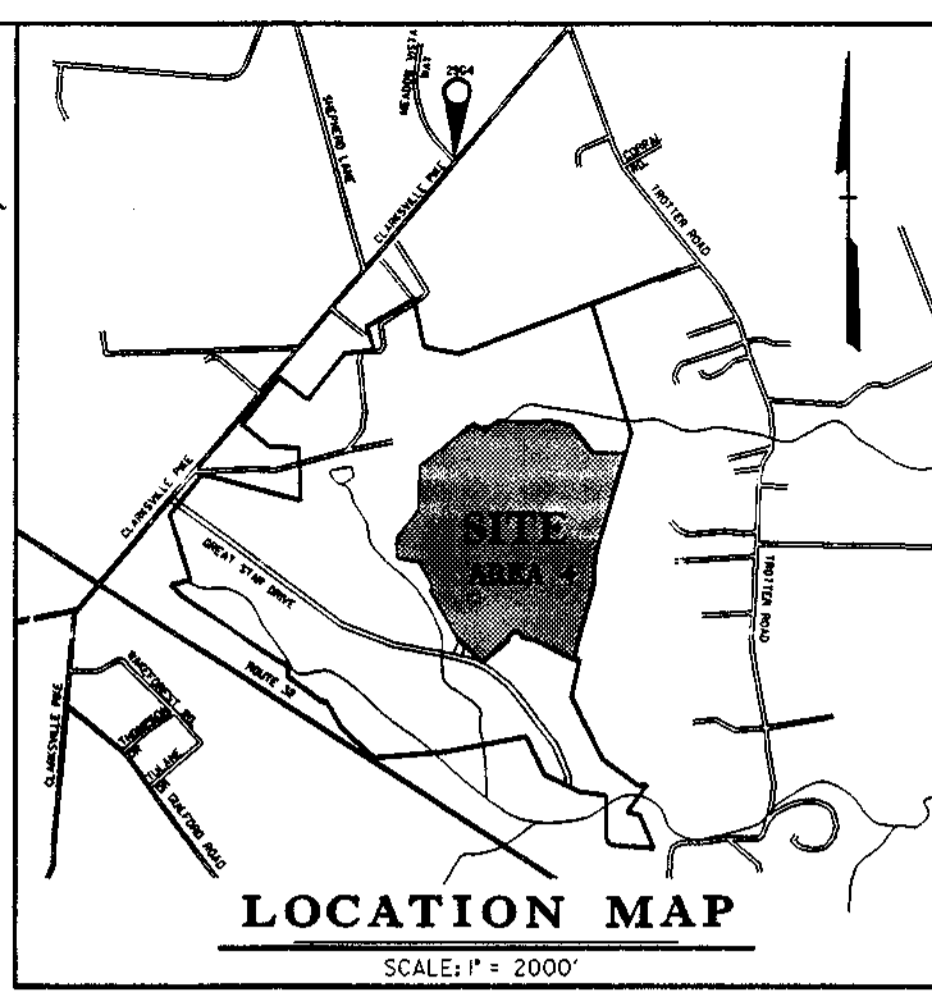
SYMBOL	QUANTITY	NAME	REMARKS
LS	4	LOUISIANA STYRACIFLUA Sweet Gum	13'-15' HT. 2-1/2" TO 3" CAL. 8-8'
PS	6	PINUS STROBUS Eastern White Pine	6'-8' HT. UNSHEARED

7/16/98
Date



THE PURPOSE OF THIS PLAN REVISION IS TO ADJUST THE POND SHAPES AND ELEVATIONS TO REDUCE THE AMOUNT OF EXCAVATION.

NOTE: TREES, SHRUBS AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN FIFTY (50) FEET OF INLET STRUCTURE AND NOT ALLOWED WITHIN TWENTY (20) FEET OF ANY PORTION OF EMBANKMENT.



DESCRIPTION

HOWARD COUNTY SURVEY CONTROL STATION: 2964 N 56866.5020 E 133306.169
NOTE: HOWARD COUNTY SURVEY CONTROLS ARE STAMPED BRASS OR ALUMINUM DISCS SET ON TOP OF CONCRETE BASE AT INTERSECTION OF RT. 108 & MEADOW VISTA WAY.

GENERAL NOTES:
1. THESE FACILITIES ARE PUBLICLY OWNED.
2. THESE FACILITIES LIE WITHIN THE MIDDLE PATUXENT RIVER WATERSHED.
3. THESE FACILITIES ARE HAZARD CLASS A.

SEDIMENT TRAP DATA

Basin Number	Existing Drainage Area Ac.	Proposed Drainage Area Ac.	Storage Required C.F.	Storage Provided C.F.
1	3	4.32	Wet 7776 Dry 1552	Wet 15070.05 Dry 17000.0
2	4	5.28	Wet 8640 Dry 1728	Wet 17280.0 Dry 19200.0
3	5	6.24	Wet 9504 Dry 1900	Wet 19008.0 Dry 21000.0
4	6	7.20	Wet 10368 Dry 2112	Wet 21120.0 Dry 23000.0
5	7	8.16	Wet 11232 Dry 2224	Wet 22240.0 Dry 24000.0
6	8	9.12	Wet 12096 Dry 2336	Wet 23360.0 Dry 25000.0
7	9	10.08	Wet 12960 Dry 2448	Wet 24480.0 Dry 26000.0
8	10	11.04	Wet 13824 Dry 2560	Wet 25600.0 Dry 27000.0
9	11	12.00	Wet 14688 Dry 2672	Wet 26720.0 Dry 28000.0
10	12	12.96	Wet 15552 Dry 2784	Wet 27840.0 Dry 29000.0
11	13	13.92	Wet 16416 Dry 2896	Wet 28960.0 Dry 30000.0
12	14	14.88	Wet 17280 Dry 3008	Wet 30080.0 Dry 31000.0
13	15	15.84	Wet 18144 Dry 3120	Wet 31200.0 Dry 32000.0
14	16	16.80	Wet 19008 Dry 3232	Wet 32320.0 Dry 33000.0
15	17	17.76	Wet 19872 Dry 3344	Wet 33440.0 Dry 34000.0
16	18	18.72	Wet 20736 Dry 3456	Wet 34560.0 Dry 35000.0
17	19	19.68	Wet 21600 Dry 3568	Wet 35680.0 Dry 36000.0
18	20	20.64	Wet 22464 Dry 3680	Wet 36800.0 Dry 37000.0
19	21	21.60	Wet 23328 Dry 3792	Wet 37920.0 Dry 38000.0
20	22	22.56	Wet 24192 Dry 3904	Wet 39040.0 Dry 39000.0
21	23	23.52	Wet 25056 Dry 4016	Wet 40160.0 Dry 40000.0
22	24	24.48	Wet 25920 Dry 4128	Wet 41280.0 Dry 41000.0
23	25	25.44	Wet 26784 Dry 4240	Wet 42400.0 Dry 42000.0
24	26	26.40	Wet 27648 Dry 4352	Wet 43520.0 Dry 43000.0
25	27	27.36	Wet 28512 Dry 4464	Wet 44640.0 Dry 44000.0
26	28	28.32	Wet 29376 Dry 4576	Wet 45760.0 Dry 45000.0
27	29	29.28	Wet 30240 Dry 4688	Wet 46880.0 Dry 46000.0
28	30	30.24	Wet 31104 Dry 4800	Wet 48000.0 Dry 47000.0
29	31	31.20	Wet 31968 Dry 4912	Wet 49120.0 Dry 48000.0
30	32	32.16	Wet 32832 Dry 5024	Wet 50240.0 Dry 49000.0
31	33	33.12	Wet 33696 Dry 5136	Wet 51360.0 Dry 50000.0
32	34	34.08	Wet 34560 Dry 5248	Wet 52480.0 Dry 51000.0
33	35	35.04	Wet 35424 Dry 5360	Wet 53600.0 Dry 52000.0
34	36	36.00	Wet 36288 Dry 5472	Wet 54720.0 Dry 53000.0
35	37	36.96	Wet 37152 Dry 5584	Wet 55840.0 Dry 54000.0
36	38	37.92	Wet 38016 Dry 5696	Wet 56960.0 Dry 55000.0
37	39	38.88	Wet 38880 Dry 5808	Wet 58080.0 Dry 56000.0
38	40	39.84	Wet 39744 Dry 5920	Wet 59200.0 Dry 57000.0
39	41	40.80	Wet 40608 Dry 6032	Wet 60320.0 Dry 58000.0
40	42	41.76	Wet 41472 Dry 6144	Wet 61440.0 Dry 59000.0
41	43			

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL CONSERVATION DISTRICT SOIL EROSION AND SEDIMENT DEVELOPERS CERTIFICATE:

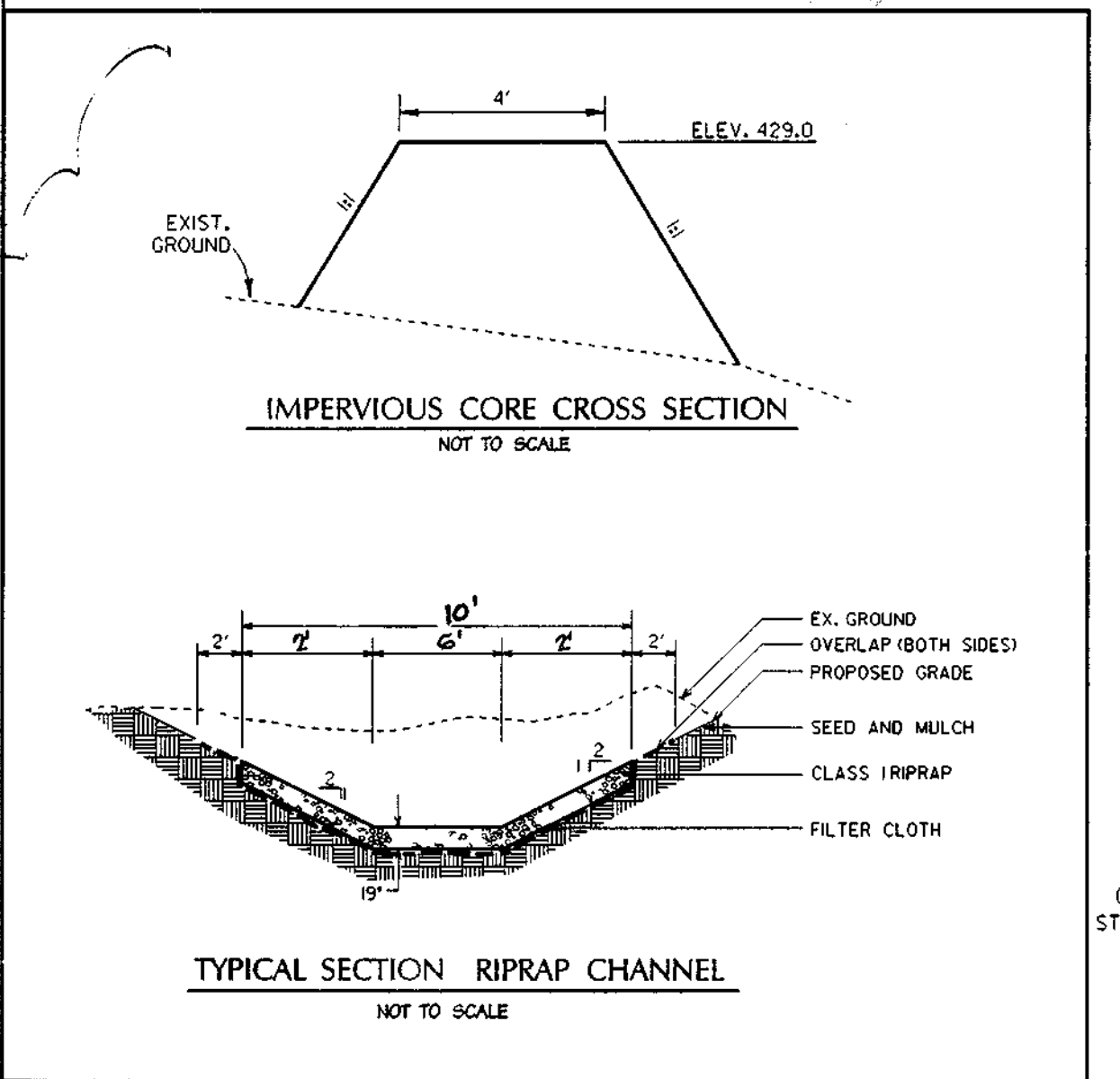
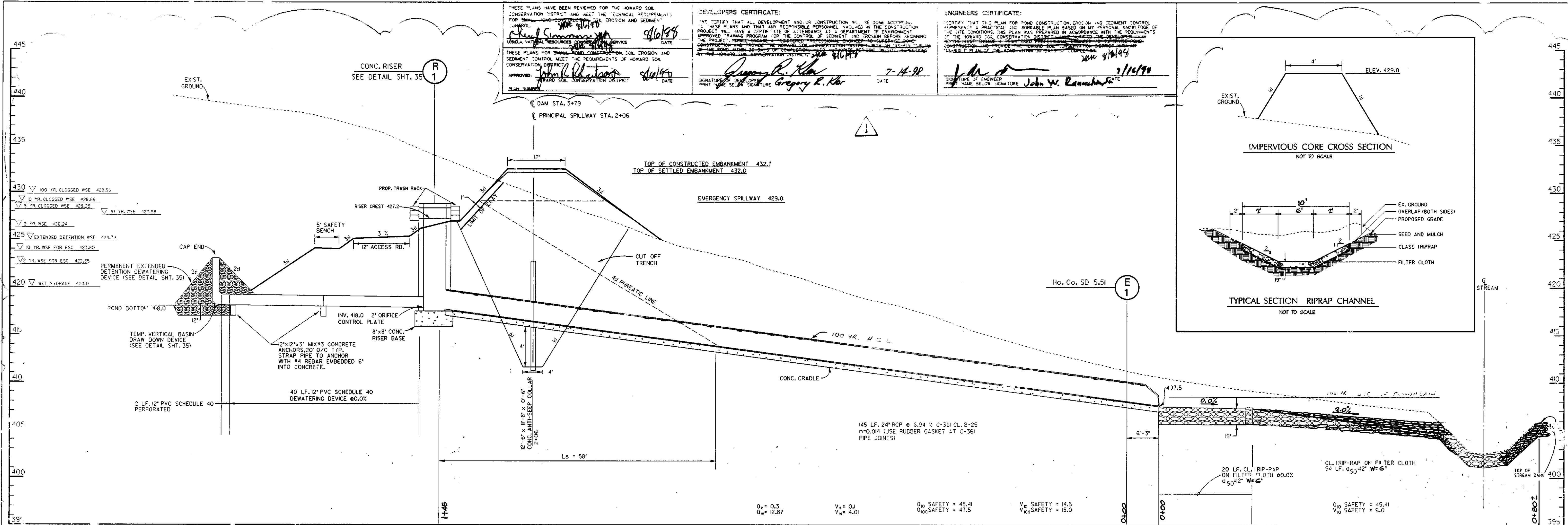
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE COMPLETED THE 16 HOUR TRAINING PROGRAM APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT AND THE PROJECT SUPERVISOR HAS BEEN TRAINED IN THE PROPER CONSTRUCTION AND MAINTENANCE OF THE HOWARD SOIL CONSERVATION DISTRICT EROSION AND SEDIMENT CONTROL MEASURES.

APPROVED: *Gregory R. Kler* DATE: 7-14-98

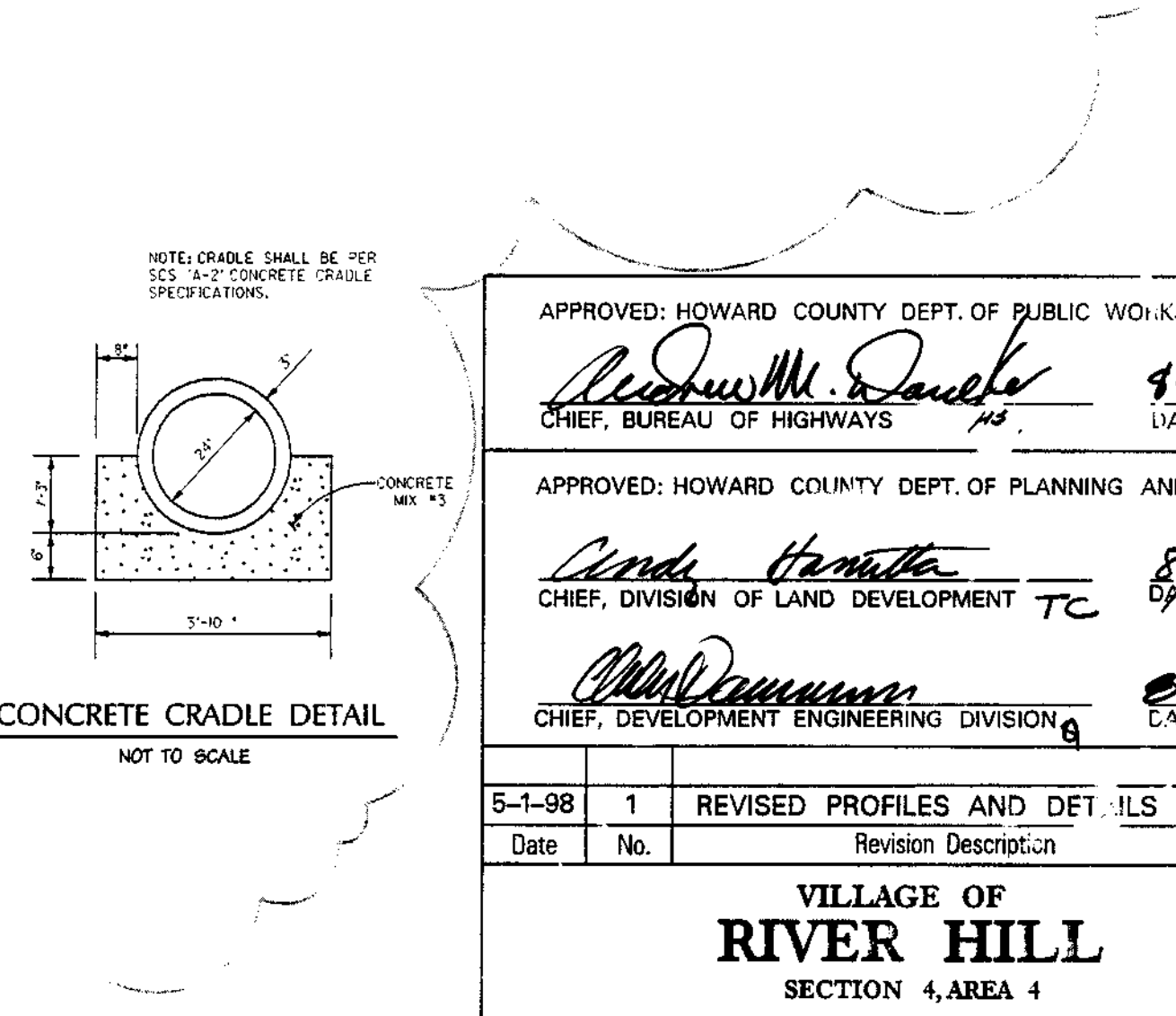
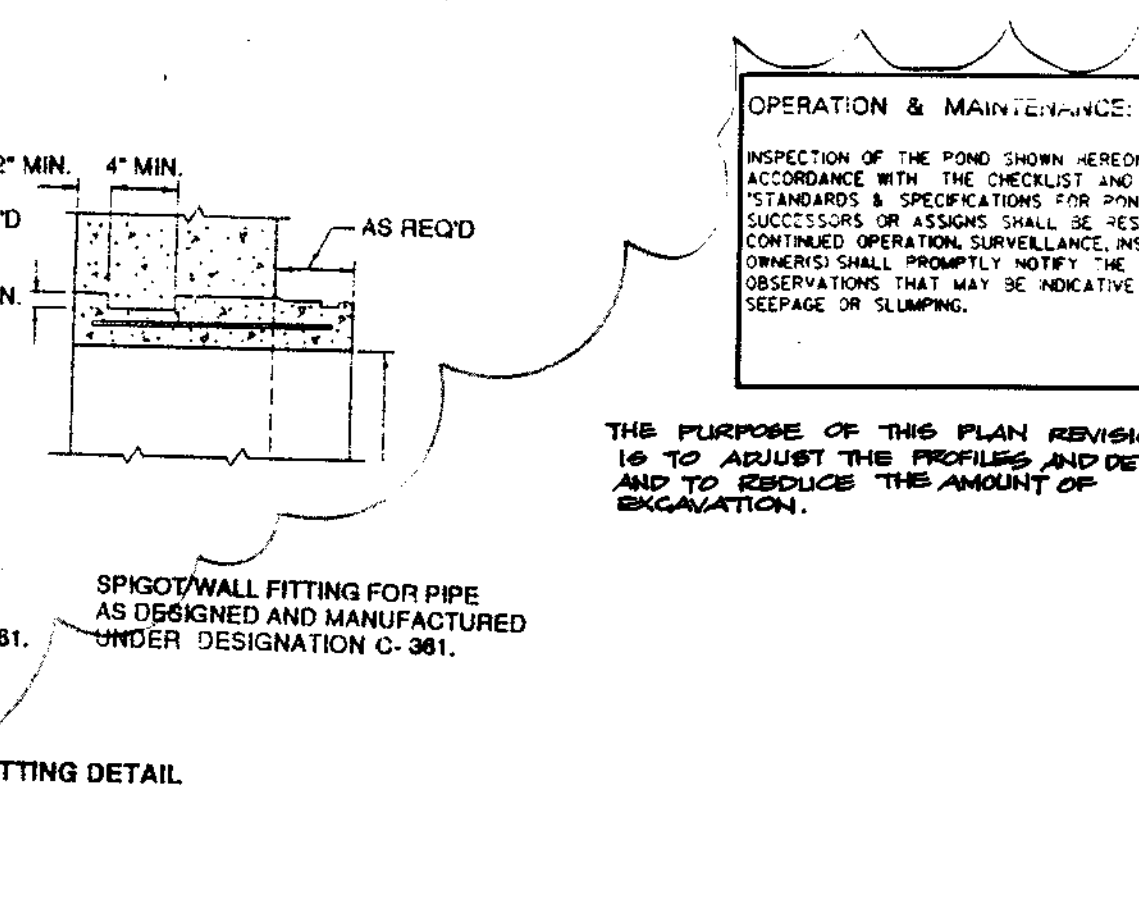
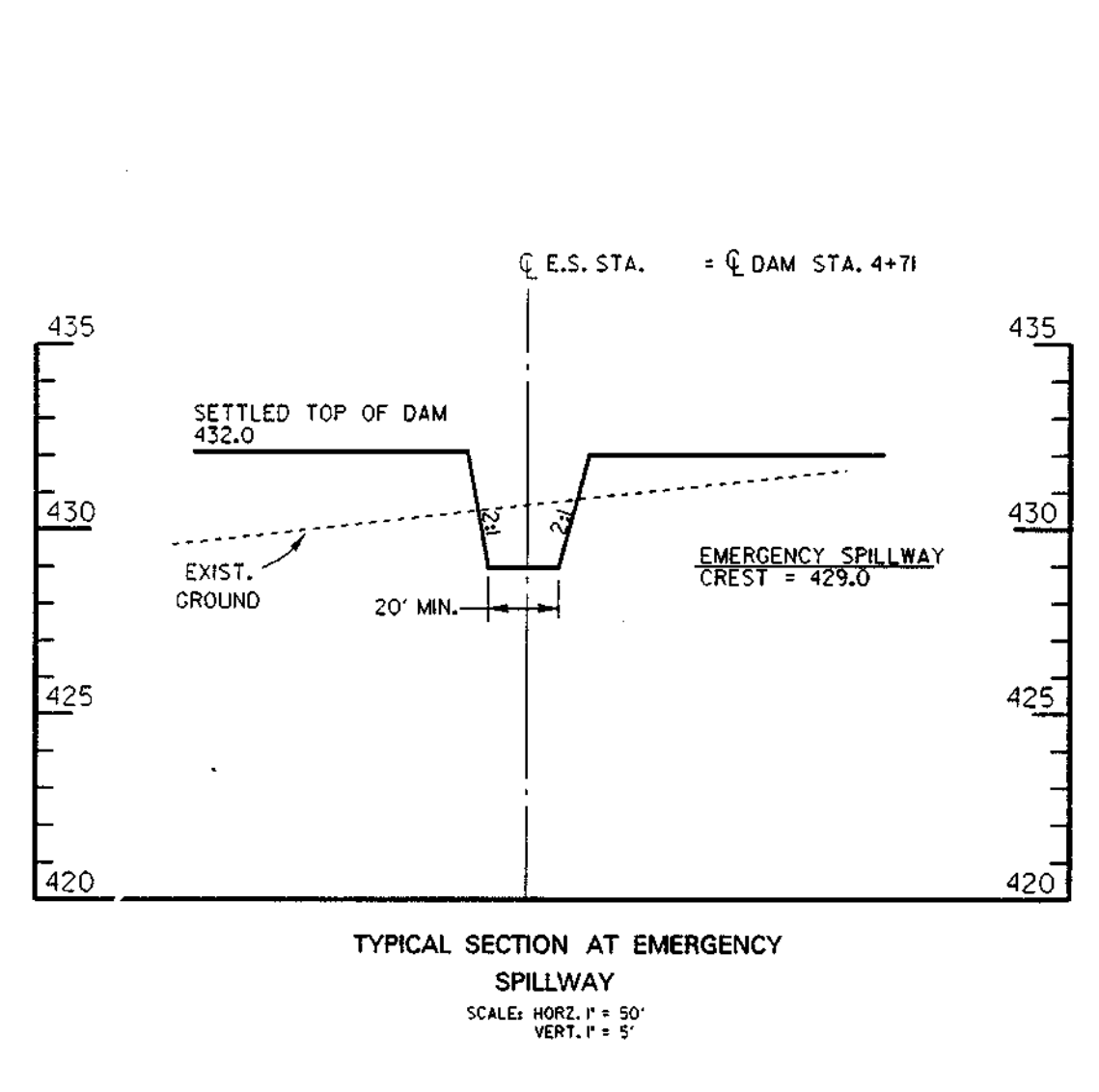
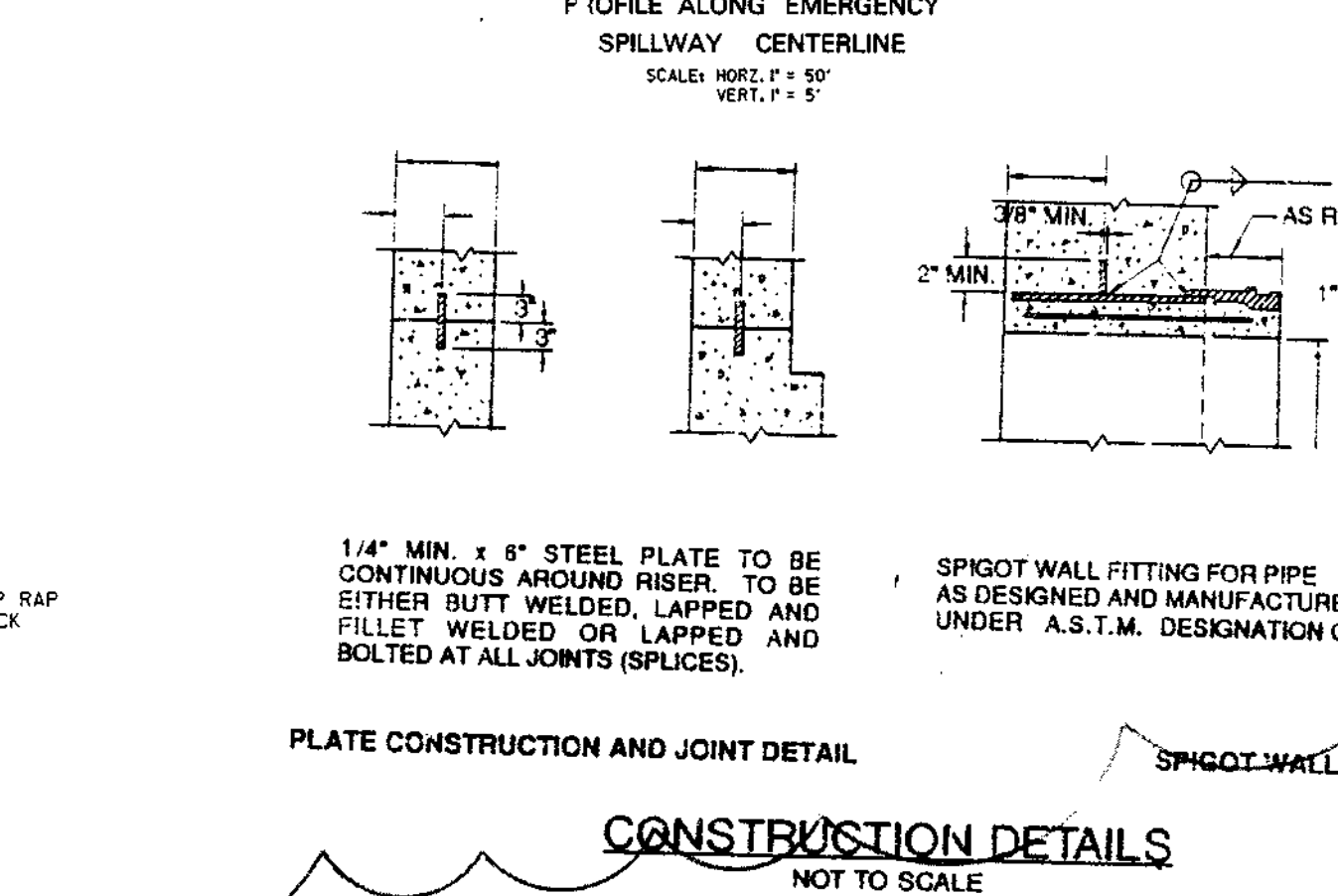
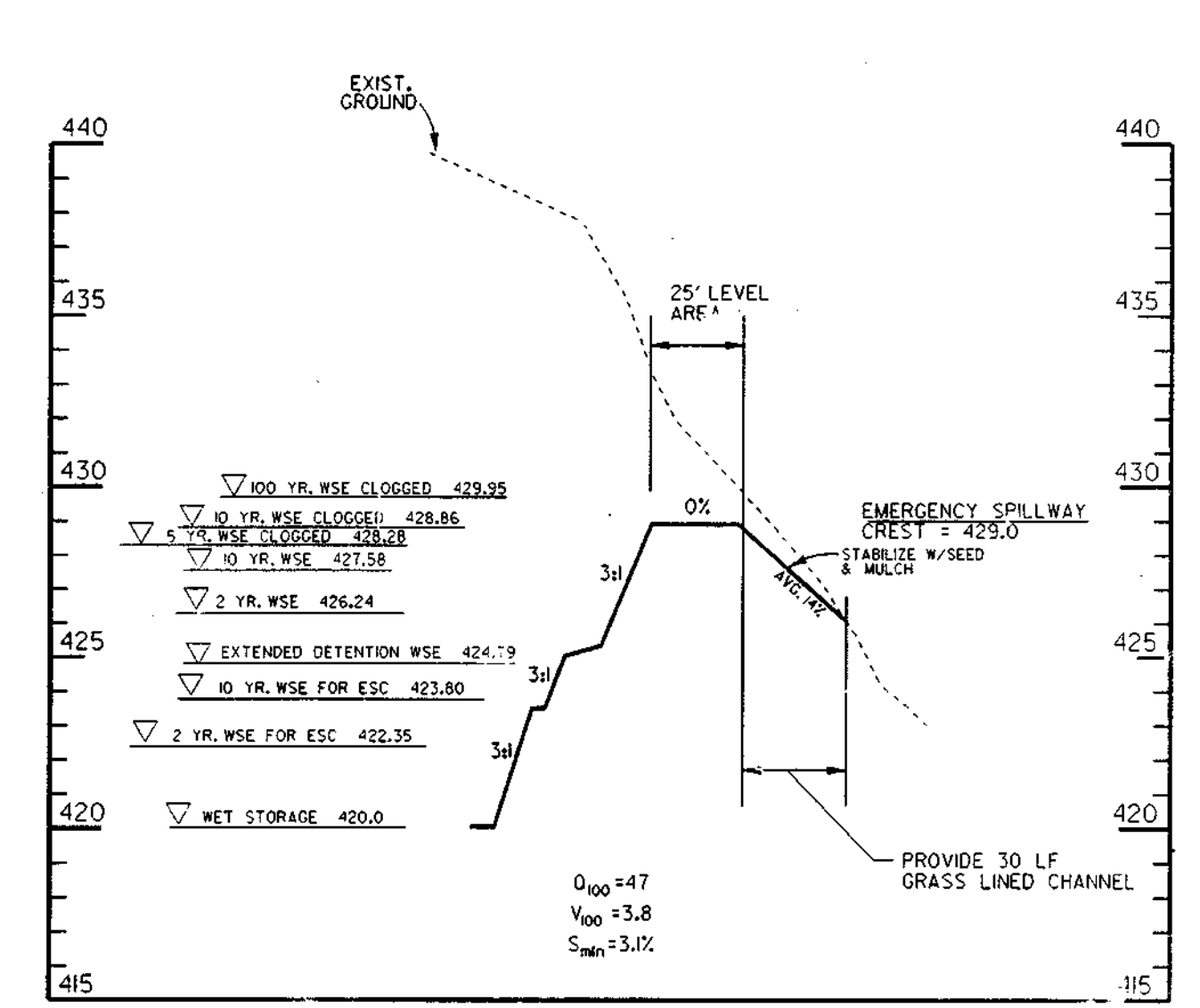
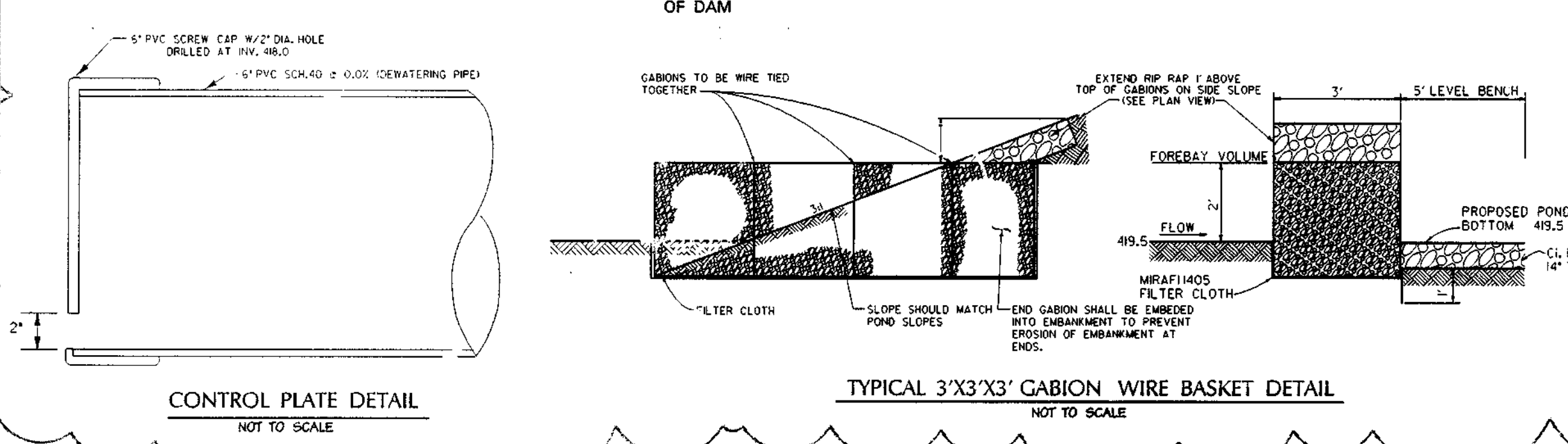
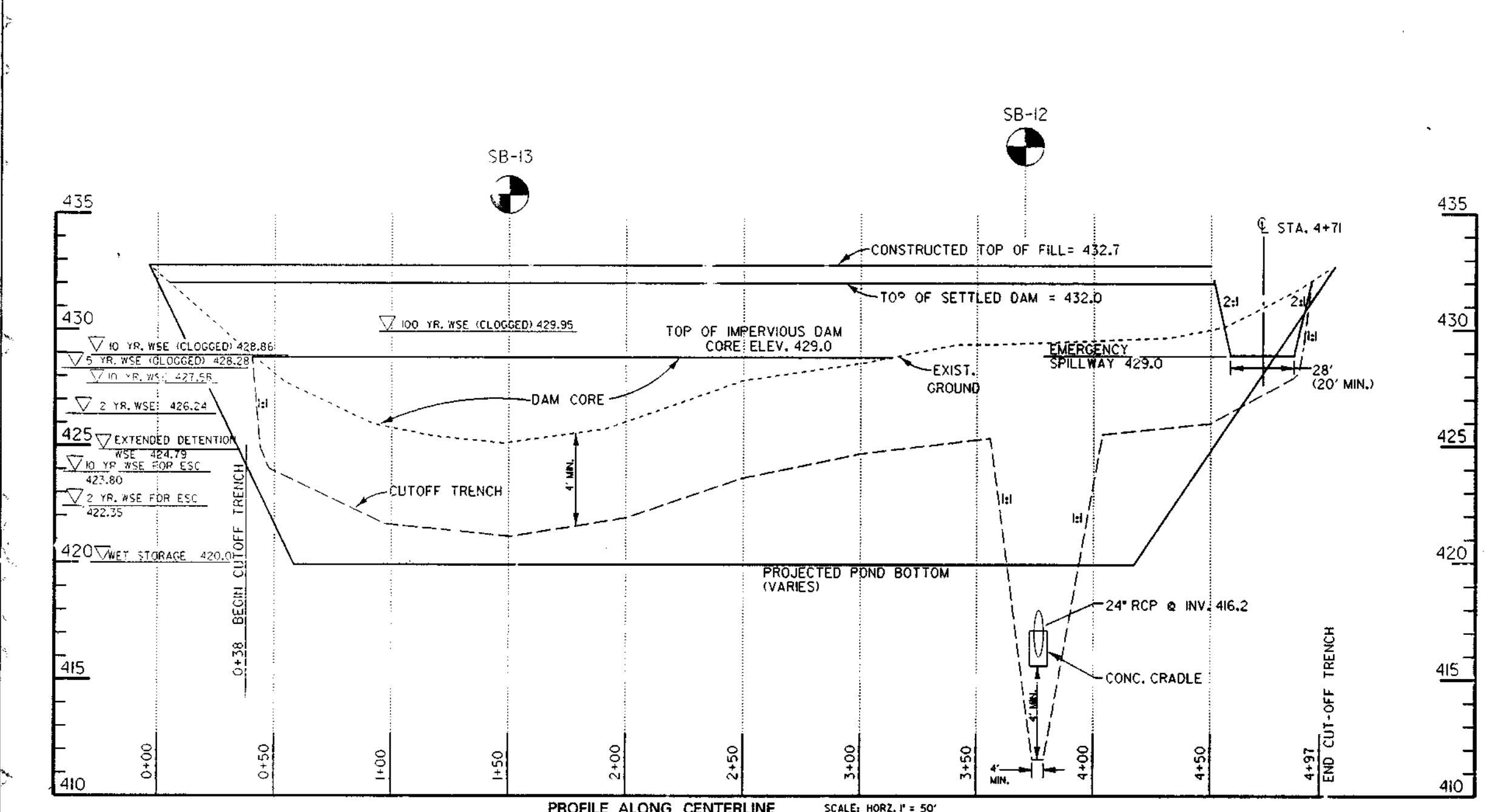
ENGINEERS CERTIFICATE:

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT AND THE PROJECT SUPERVISOR HAS BEEN TRAINED IN THE PROPER CONSTRUCTION AND MAINTENANCE OF THE HOWARD SOIL CONSERVATION DISTRICT EROSION AND SEDIMENT CONTROL MEASURES.

APPROVED: *John W. Rasmussen* DATE: 7/16/98



PROFILE ALONG PRINCIPAL SPILLWAY SCALE: HORIZ. 1" = 10' VERT. 1" = 5'



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Danks 9-17-98
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Cande Hamilton 8/19/98
 CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

APPROVED: *Gregory R. Kler* 8/17/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION g DATE

5-1-98 1 REVISED PROFILES AND DETAILS NEW MYLARS
 Date No. Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Lutz-McCune-Walker, Inc.
 203 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4708

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

TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

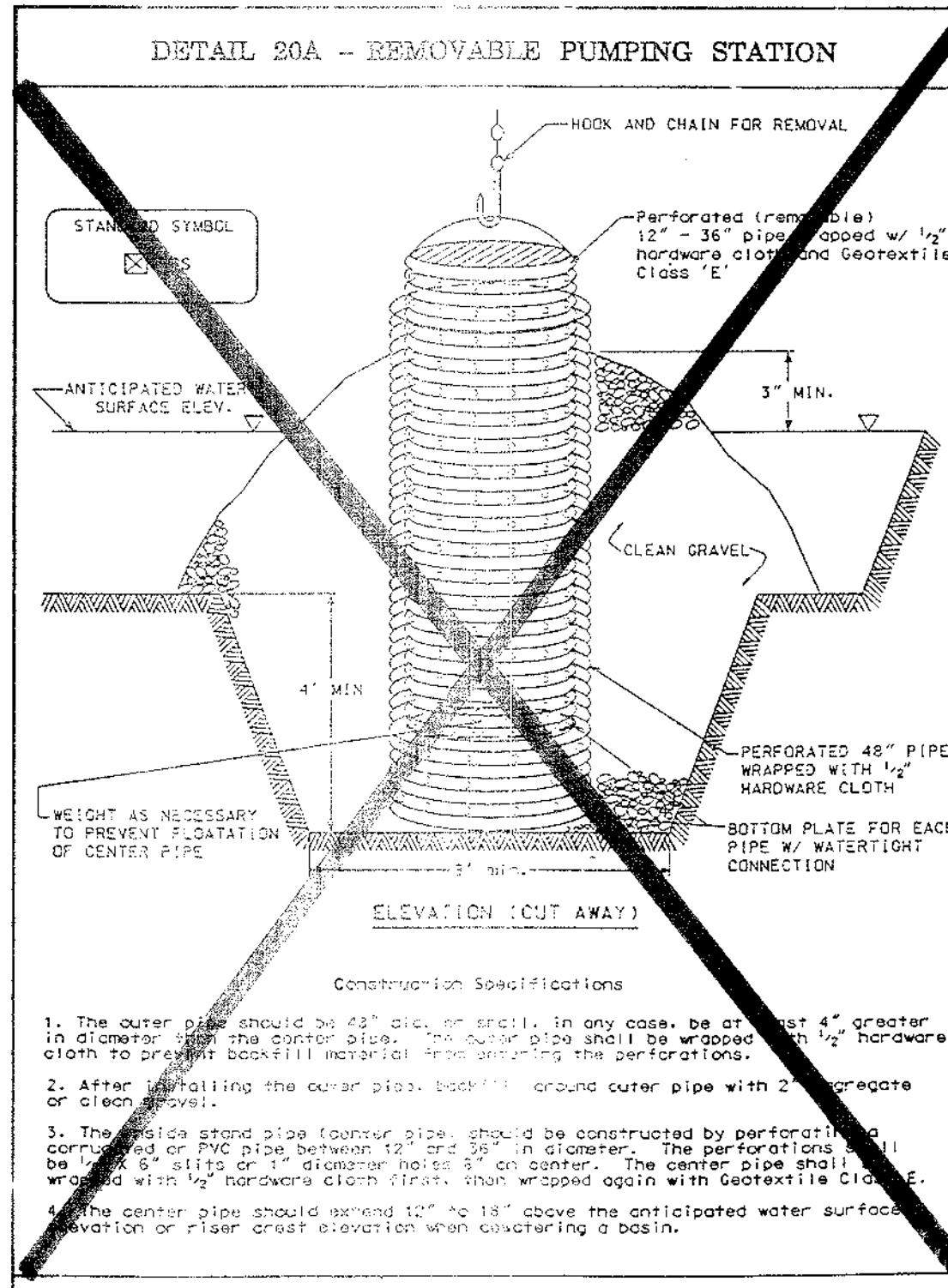
TITLE: REVISED ROAD CONSTRUCTION DRAWINGS
 STORMWATER MANAGEMENT
 PROFILES

Prep By: RLH Scale: AS SHOWN Proj. No.: 94064
 Dwn By: KDE Date: MAR 96
 Chk By: JWR Approved: 34 OF 44

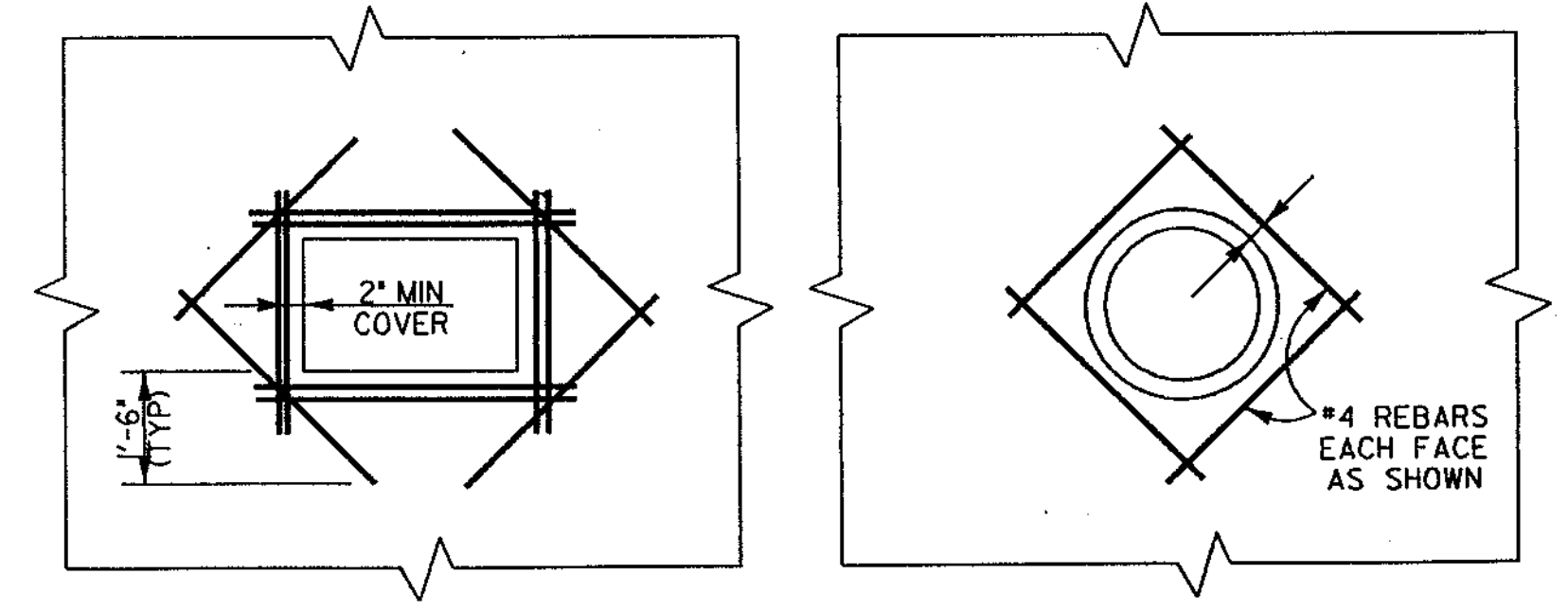
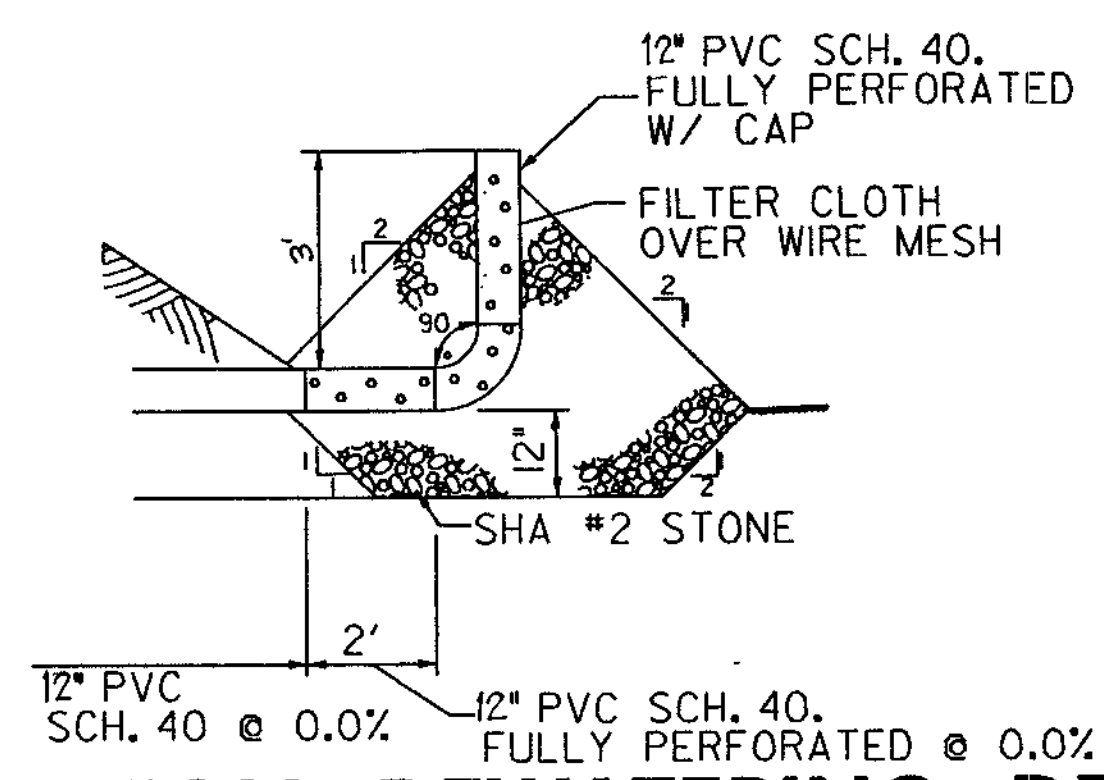
Professional Eng. No. 10551
 Date: 7/16/98

Professional Engineer Seal: STATE OF MARYLAND PROFESSIONAL ENGINEER

AutoCAD 2000
 11/10/98
 11/10/98
 11/10/98



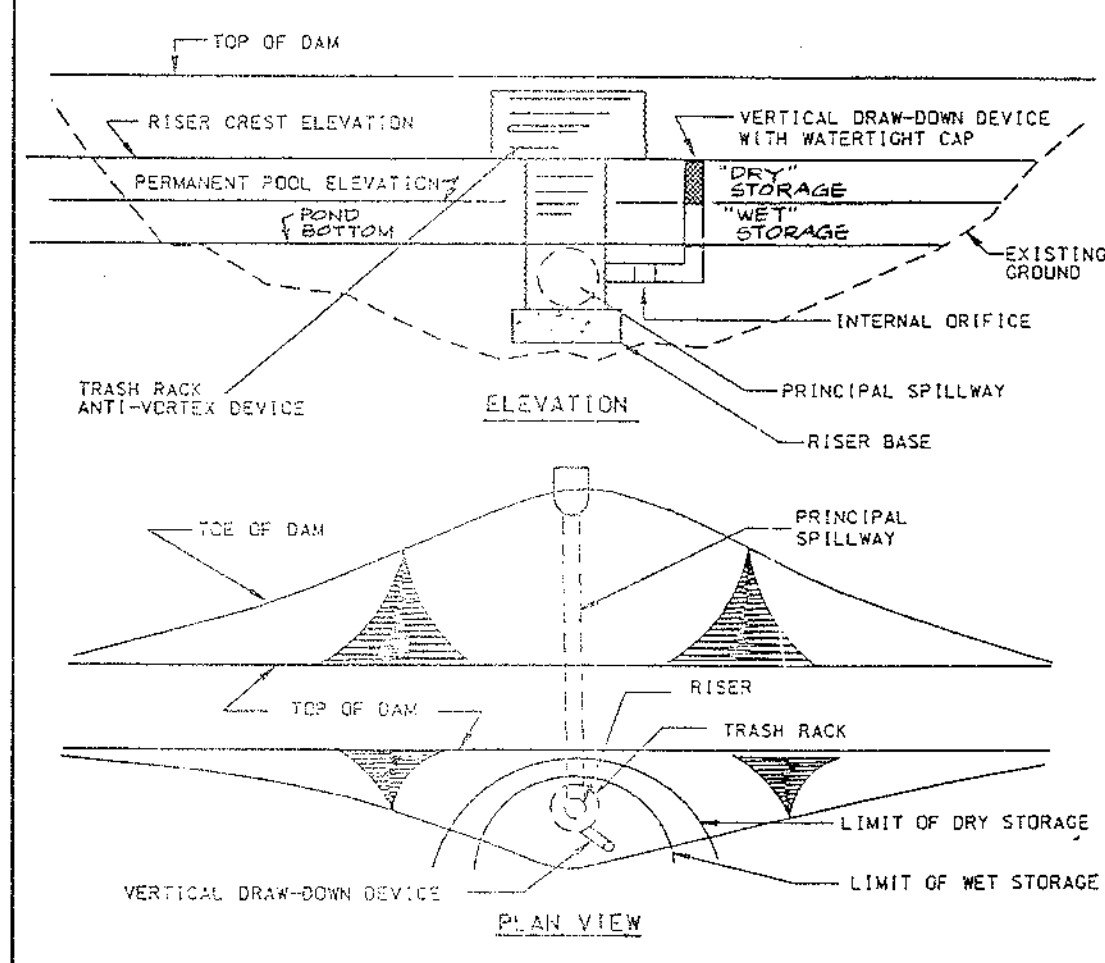
EXTENDED DETENTION DEWATERING DEVICE



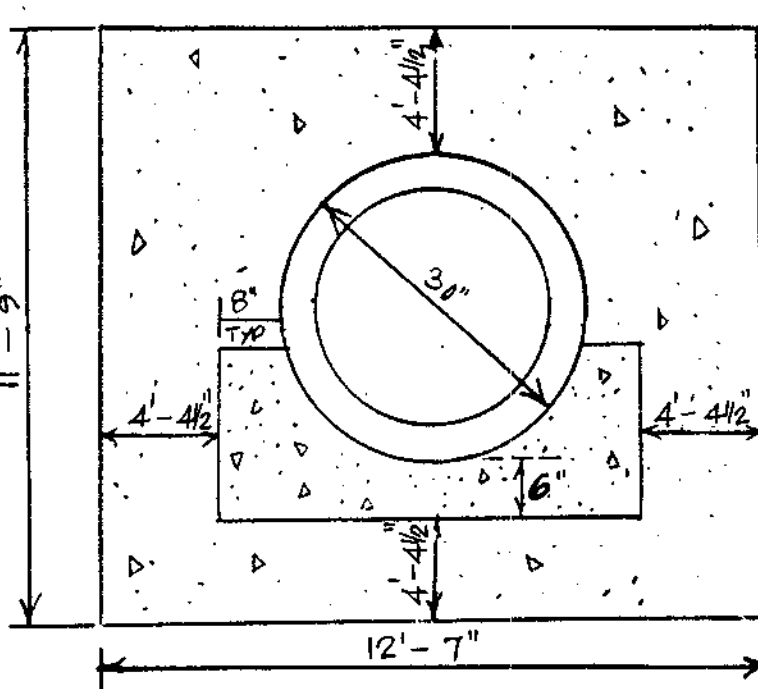
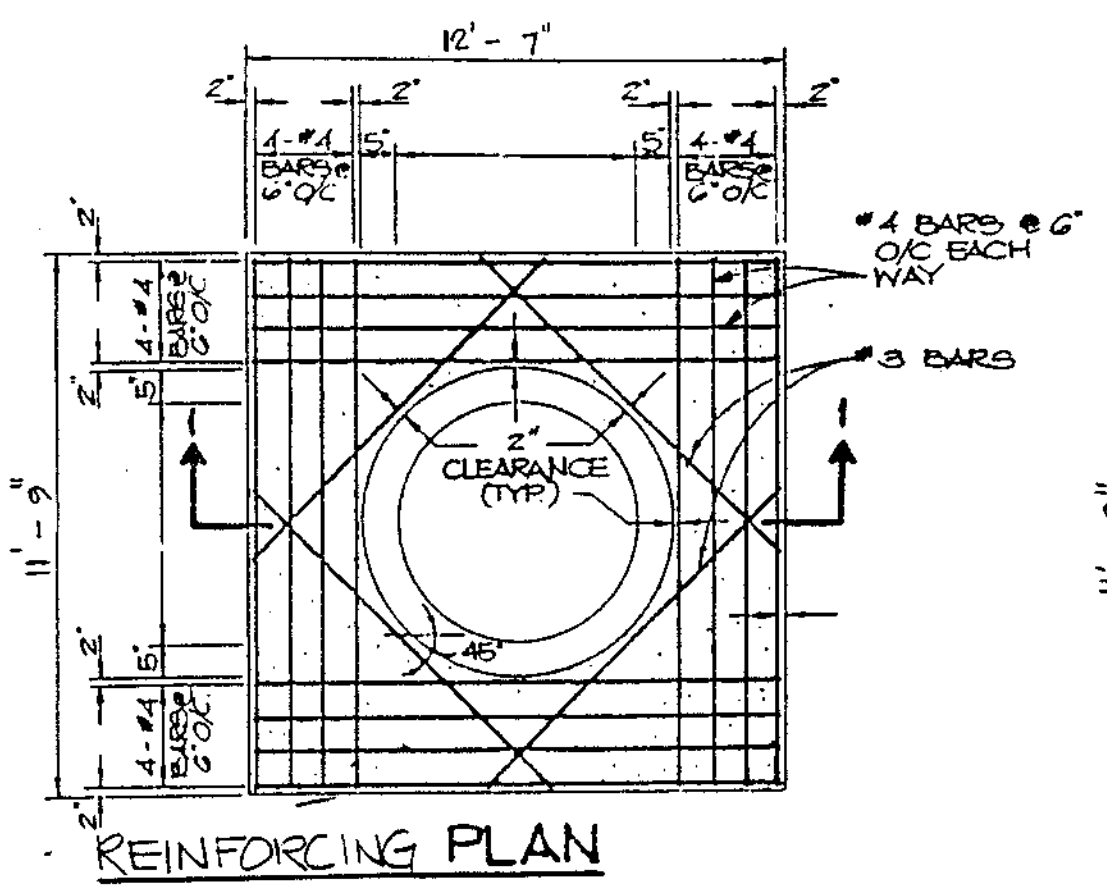
TYPICAL REINFORCING FOR RISER OPENINGS

Not To Scale

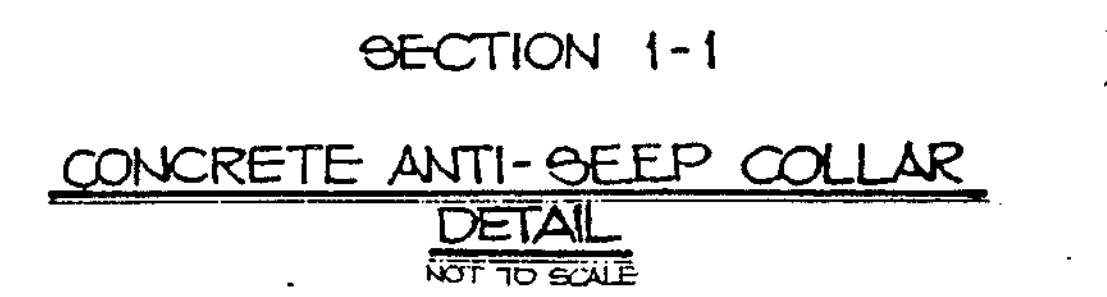
BASIN DRAWDOWN SCHEMATIC VERTICAL DRAW-DOWN DEVICE



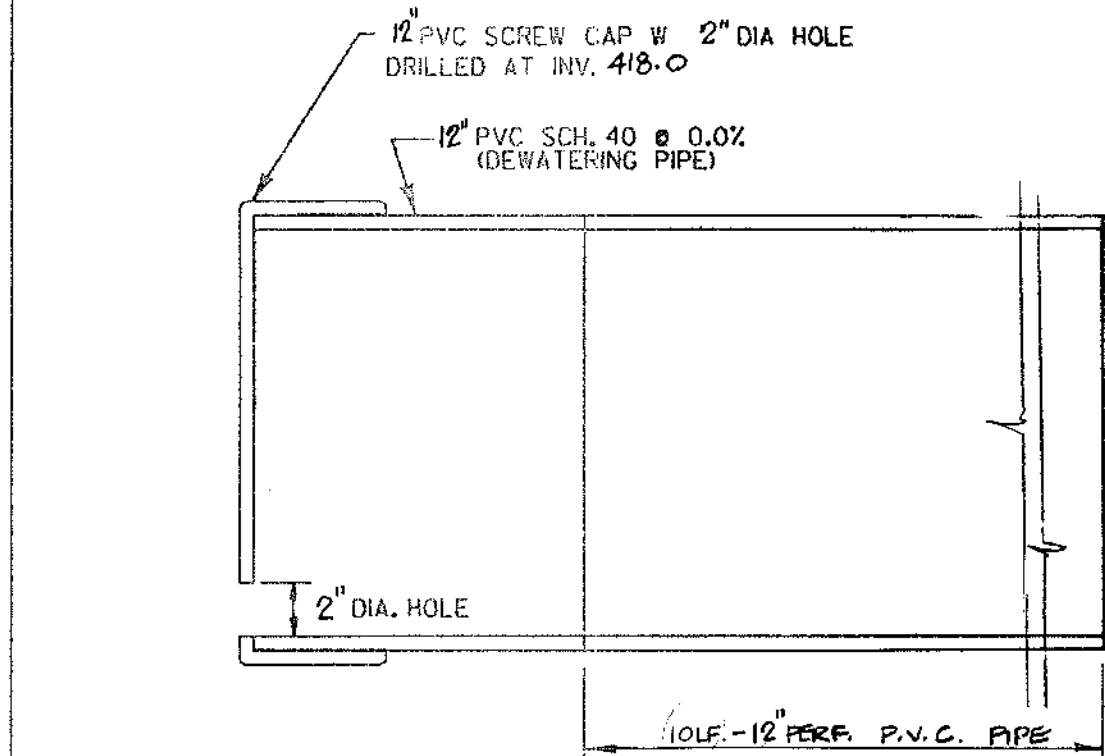
- Construction Specifications
1. Perforations in the draw-down device may not extend into the wet storage.
 2. The total area of the perforations must be greater than 2 times the area of the internal orifice.
 3. The perforated portion of the draw-down device shall be wrapped with 1/2\"/>
 - 4. Provide support of draw-down device to prevent sagging and flotation. An acceptable alternative measure is to stake both sides of draw-down device with 1\"/>



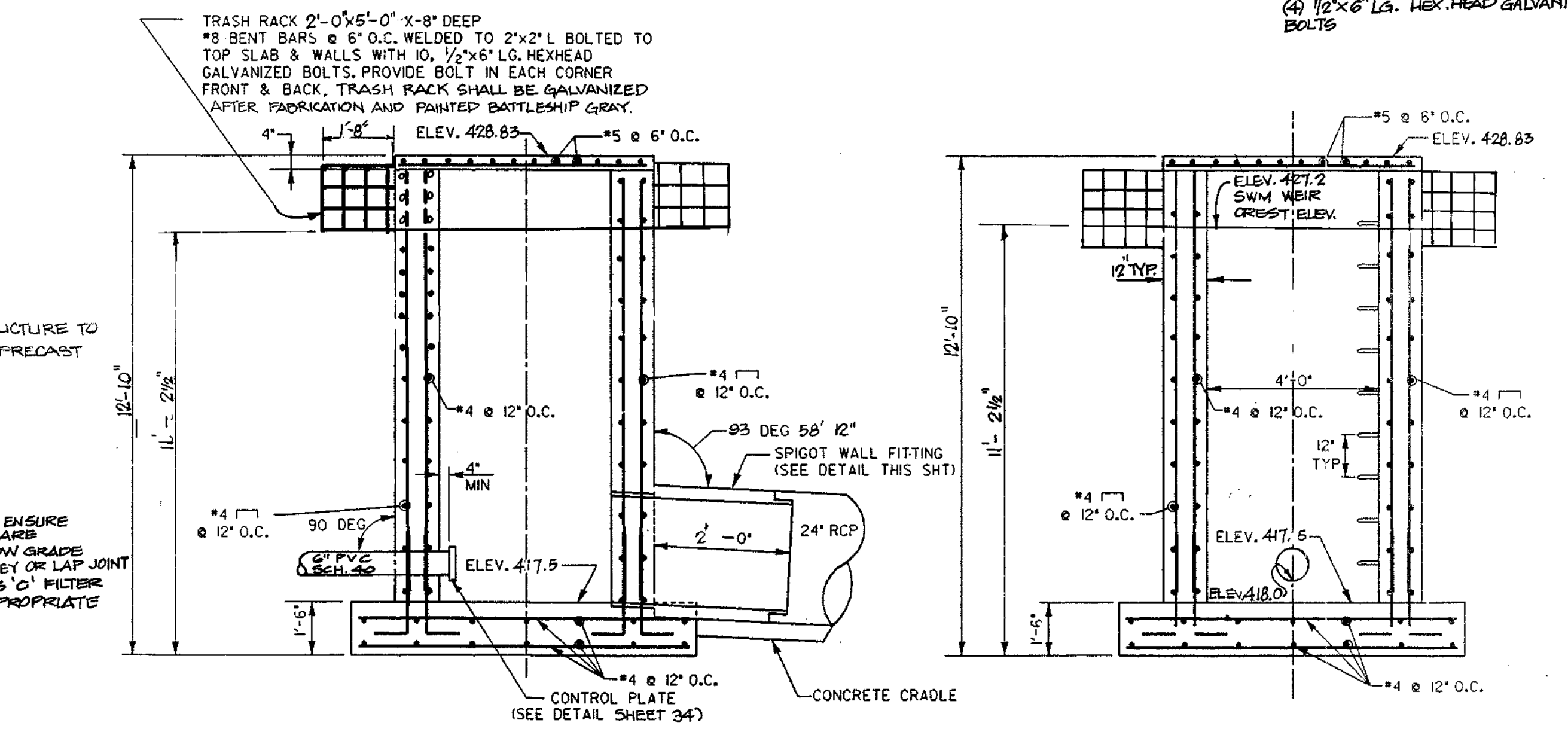
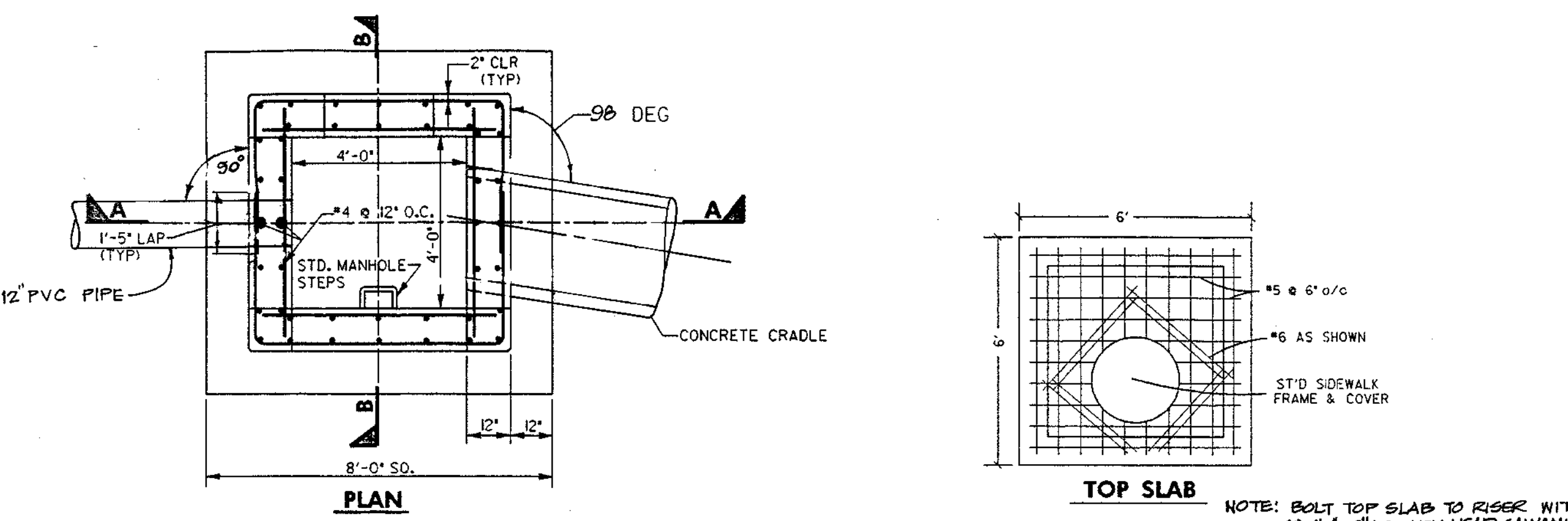
NOTE: ASPHALT JOINT FILLER MATERIAL TO BE PLACED BETWEEN ALL CONCRETE SURFACES EXCEPT BETWEEN PIPE AND CRADLE.



NOT TO SCALE



TEMP. CONTROL PLATE DETAIL
N.T.S. (FOR E.S.C.)

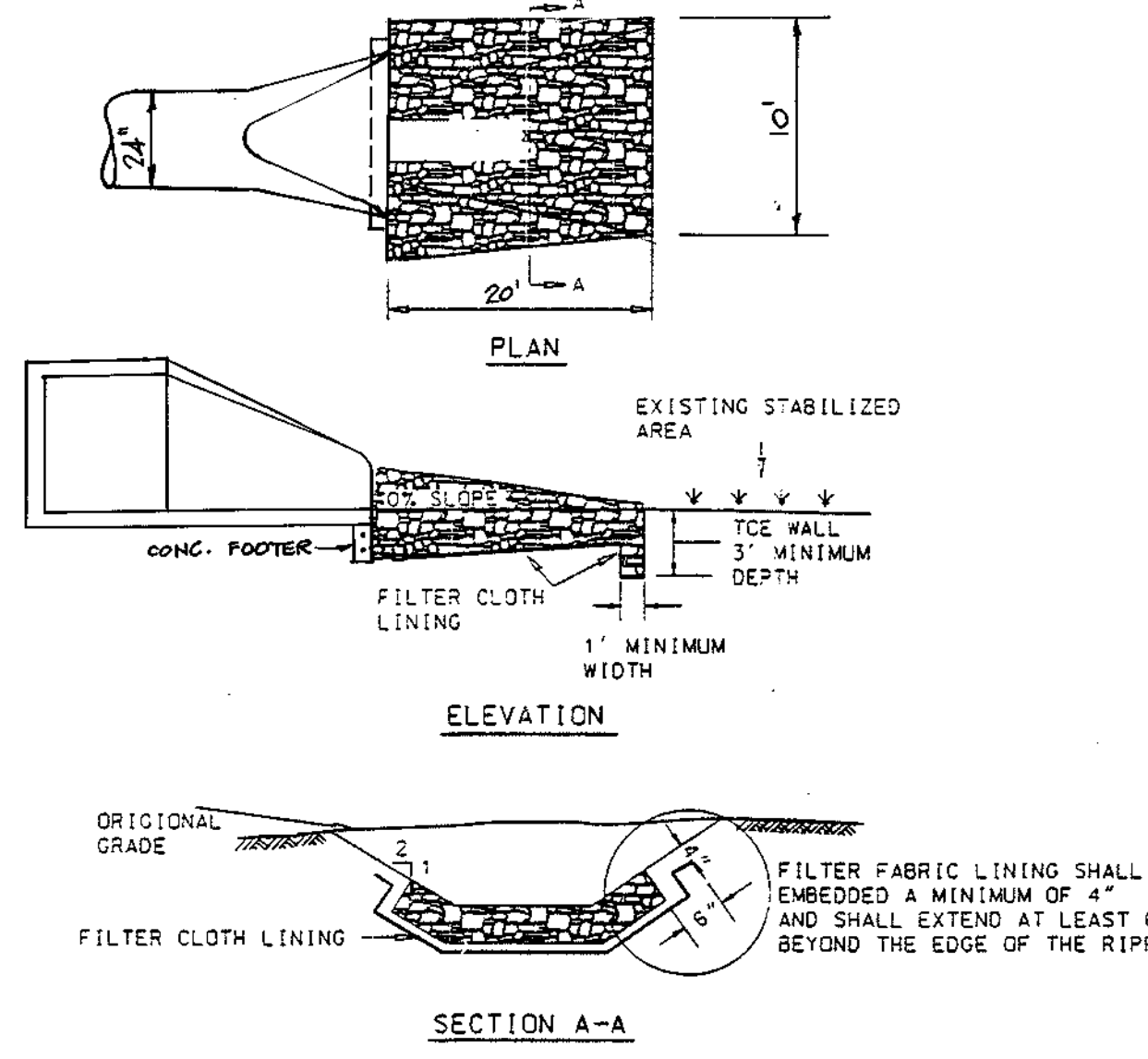


RISER DETAILS R1

Not To Scale

NOTE: ALL TRASH RACKS TO BE PAINTED BATTLESHIP GREY

- Construction Specifications
1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
 2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
 3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
 4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
 5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.



ROCK OUTLET PROTECTION III

N.T.S.

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.D.A. NATURAL RESOURCES CONSERVATION SERVICE
DATE: 04-24-97

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

APPROVED: HOWARD SOIL CONSERVATION DISTRICT
DATE: 4-16-97

PLAN NUMBERS

DEVELOPERS CERTIFICATE:

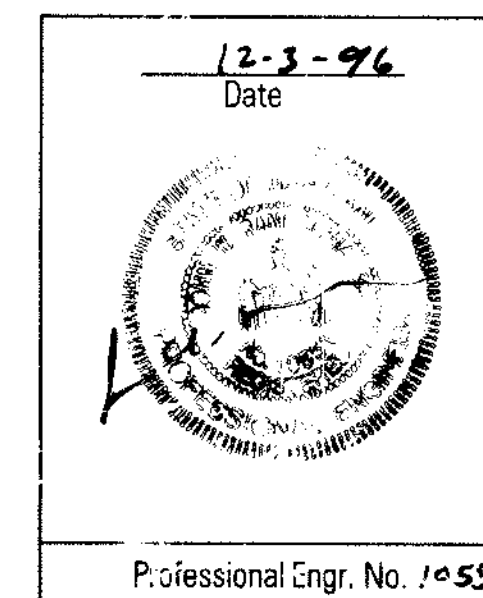
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE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

SIGNATURE OF DEVELOPER: [Signature]
DATE: 4/21/97

ENGINEERS CERTIFICATE:

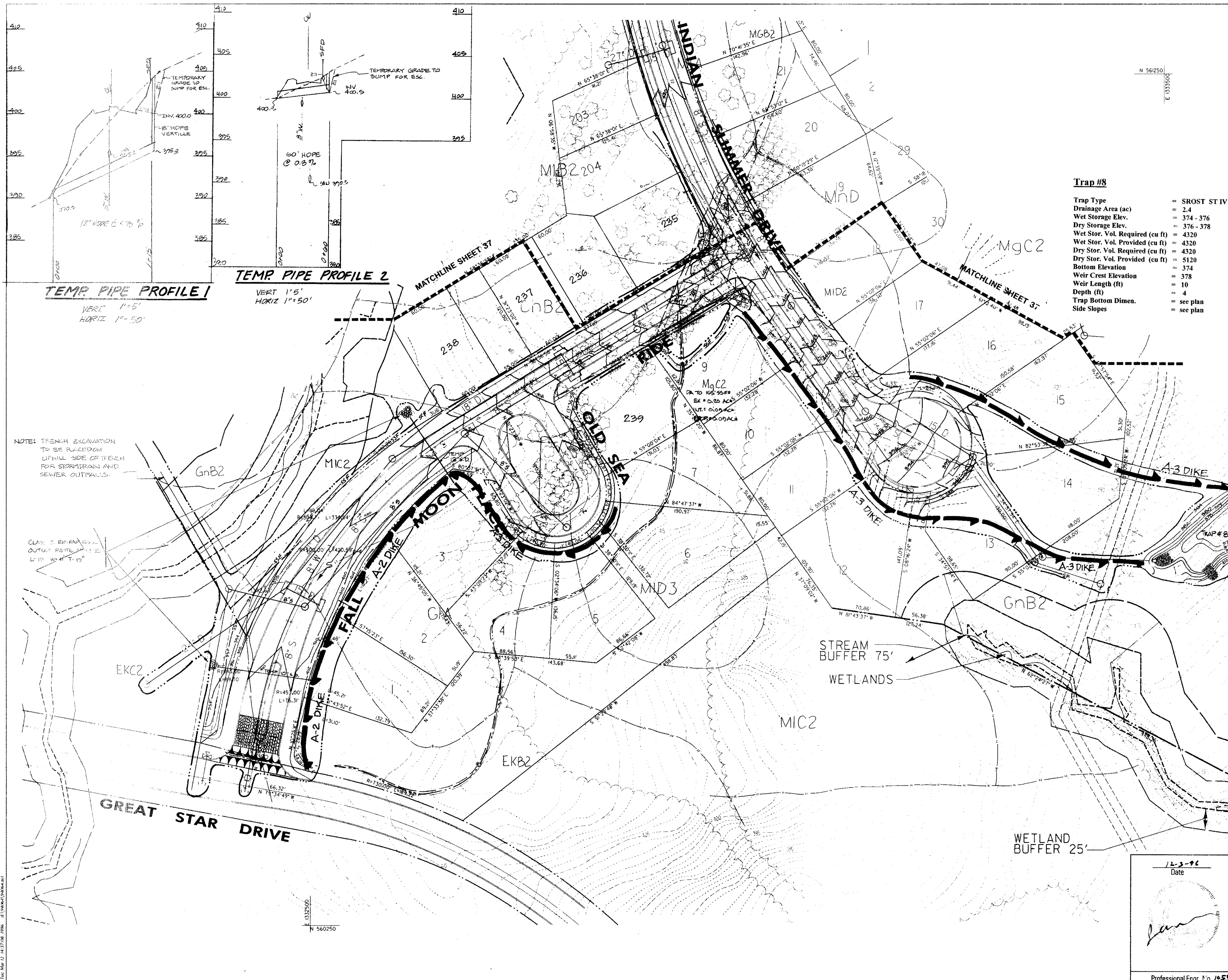
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER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

SIGNATURE OF ENGINEER: [Signature]
PRINT NAME BELOW SIGNATURE: John W. Ranocchia, Sr.
DATE: 12-3-96



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
[Signature]	5-22-97
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
[Signature]	2/14/97
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
[Signature]	5/20/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
REVISED DETAILS	
Date	Revision Description
VILLAGE OF RIVER HILL	
SECTION 4, AREA 4	
OWNER / DEVELOPER:	
THE HOWARD RESEARCH & DEVELOPMENT CORP.	
10275 LITTLE PATUXENT PARKWAY	
COLUMBIA, MARYLAND 21044	

DMW	
Darr McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 410-286-8823 Fax 286-4736	
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals	
AREA	TAX MAP PARCEL
	ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND
TITLE: S.W.M. EROSION AND SEDIMENT CONTROL DETAILS	
Des By: R.H./G.W.	Scale: AS NOTED
Proj. No.	
Drn By: D.B.S.	Date: MAR. 96
Chk By: J.W.R.	Approved
Professional Engr. No. 10557	



SEDIMENT CONTROL LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING DRAINAGE AREA
- INTERIM DRAINAGE AREA
- PROPOSED DRAINAGE AREA
- LIMIT OF DISTURBANCE
- SUPER FENCE DIVERSION
- SUPER SILT FENCE
- RIP-RAP OUTLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- MOUNTABLE BEAM

Trap #8

Trap Type	=	SROST ST IV
Drainage Area (ac)	=	2.4
Wet Storage Elev.	=	374 - 376
Wet Stor. Vol. Required (cu ft)	=	376 - 378
Dry Storage Elev.	=	4320
Wet Stor. Vol. Provided (cu ft)	=	4320
Dry Stor. Vol. Provided (cu ft)	=	4320
Bottom Elevation	=	5120
Weir Crest Elevation	=	374
Weir Length (ft)	=	378
Depth (ft)	=	10
Trap Bottom Dimen.	=	see plan
Side Slopes	=	see plan

DEVELOPERS CERTIFICATE:

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 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. ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *[Signature]* DATE: 1/21/97

ENGINEERS CERTIFICATE:

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

Signature: *[Signature]* DATE: 12-3-96

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

Signature: *[Signature]* DATE: 12-21-96

U.S.D.A. NATIONAL RESOURCES CONSERVATION SERVICE

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

Signature: *[Signature]* DATE: 1-21-97

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

PLAN NUMBER

NOTE: TRENCH EXCAVATION TO BE PLACED ON UPHILL SIDE OF TRENCH FOR STORMDRAIN AND SEWER OUTFALLS.

Note: Contractor to repair ED where Prop Sewer Crosses ED at the end of each working day.

LIMIT OF DISTURBANCE THIS SHEET: 187,808 S.F. OR 4.30 AC.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Signature: *[Signature]* DATE: 5-22-97

CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Signature: *[Signature]* DATE: 7/19/97

CHIEF, DIVISION OF LAND DEVELOPMENT

Signature: *[Signature]* DATE: 5/21/97

CHIEF, DEVELOPMENT ENGINEERING DIVISION

06/05/98 1/1 LOTS ADJUSTED

Date No. Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Dawn McCune Walters, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
410/286-3835
Fax 296-4708

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

AREA

TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

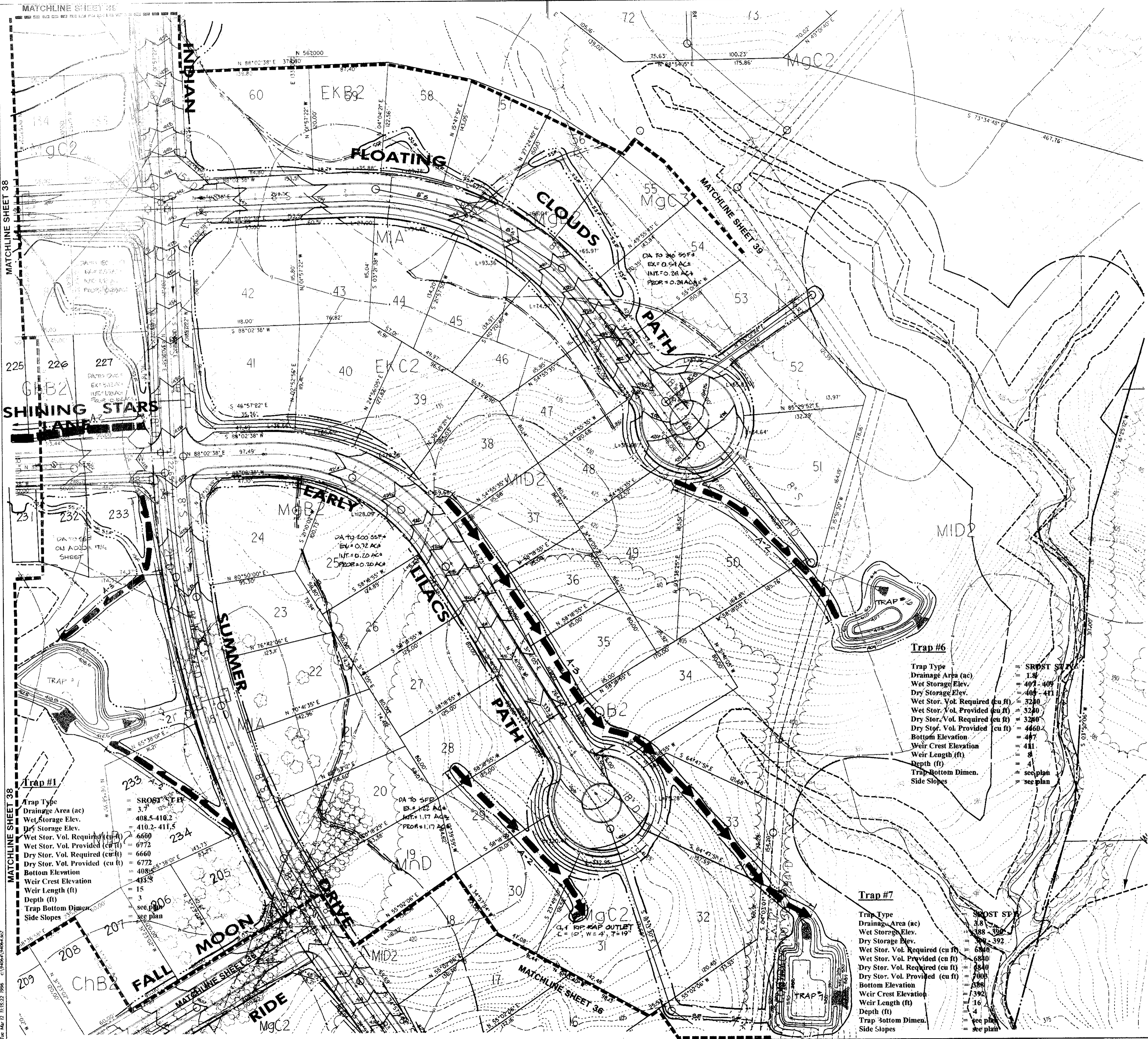
TITLE
EROSION AND SEDIMENT CONTROL PLAN

Des By: CRW Scale: 1" = 50' Proj. No. 94064
 Dwn By: CRW Date: MAR 96
 Chk By: JWR Approved

12-3-96
Date

Professional Engr. No. 10557

Date: Mar 17, 1998 11:37:08 1998. 05/18/98/10/04/04/04



- SEDIMENT CONTROL LEGEND**
- EXISTING CONTOURS
 - - - - - PROPOSED CONTOURS
 - - - - - EXISTING DRAINAGE AREA
 - - - - - INTERIM DRAINAGE AREA
 - - - - - PROPOSED DRAINAGE AREA
 - - - - - LIMIT OF DISTURBANCE
 - - - - - SUPER FENCE DIVERSION
 - - - - - SUPER SILT FENCE
 - - - - - SILT FENCE
 - - - - - EARTH DIKE
 - - - - - RP-RAP OUTLET PROTECTION

DEVELOPERS CERTIFICATE:
 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: [Signature] DATE: 12/1/97
 PRINT NAME BELOW SIGNATURE

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

Signature: [Signature] DATE: 12-3-96
 PRINT NAME BELOW SIGNATURE John W. Ramonchio, Jr.

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

Signature: [Signature] DATE: 12-24-97
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

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

APPROVED: [Signature] DATE: 4-26-97
 HOWARD SOIL CONSERVATION DISTRICT

PLAN NUMBER

LIMIT OF DISTURBANCE THIS SHEET = 201,637 S.F. ± OR 6.9 AC ±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 Signature: [Signature] DATE: 5-22-97
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 Signature: [Signature] DATE: 7/1/97
 CHIEF, DIVISION OF LAND DEVELOPMENT

Signature: [Signature] DATE: 5/10/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 06/05/98 LOTS ADJUSTED

Date No. Revision Description

VILLAGE OF RIVER HILL SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dan McCune-Walker, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 286-3265 Fax 286-4705

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

AREA TAX MAP PARCEL ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **EROSION AND SEDIMENT CONTROL PLAN**

Des By CRW Scale 1" = 50' Proj. No. 94064
 Dwn By CRW Date MAR 96
 Chk By JWR Approved

Professional Engr. No. 10551

37 OF 44

12-3-96
 Date

[Signature]

Trap #6

Trap Type = SROST STY
 Drainage Area (ac) = 1.84
 Wet Storage Elev. = 407 - 409
 Dry Storage Elev. = 409 - 411
 Wet Stor. Vol. Required (cu ft) = 3240
 Wet Stor. Vol. Provided (cu ft) = 3240
 Dry Stor. Vol. Required (cu ft) = 3240
 Dry Stor. Vol. Provided (cu ft) = 4460
 Bottom Elevation = 407
 Weir Crest Elevation = 411
 Weir Length (ft) = 8
 Depth (ft) = 4
 Trap Bottom Dimen. = see plan
 Side Slopes = see plan

Trap #7

Trap Type = SROST STY
 Drainage Area (ac) = 3.8
 Wet Storage Elev. = 388 - 390
 Dry Storage Elev. = 390 - 392
 Wet Stor. Vol. Required (cu ft) = 6840
 Wet Stor. Vol. Provided (cu ft) = 6840
 Dry Stor. Vol. Required (cu ft) = 6840
 Dry Stor. Vol. Provided (cu ft) = 7005
 Bottom Elevation = 388
 Weir Crest Elevation = 392
 Weir Length (ft) = 16
 Depth (ft) = 4
 Trap Bottom Dimen. = see plan
 Side Slopes = see plan

Trap #1

Trap Type = SROST STY
 Drainage Area (ac) = 3.7
 Wet Storage Elev. = 408.5 - 410.2
 Dry Storage Elev. = 410.2 - 411.5
 Wet Stor. Vol. Required (cu ft) = 6690
 Wet Stor. Vol. Provided (cu ft) = 6772
 Dry Stor. Vol. Required (cu ft) = 6660
 Dry Stor. Vol. Provided (cu ft) = 6772
 Bottom Elevation = 408
 Weir Crest Elevation = 413.5
 Weir Length (ft) = 15
 Depth (ft) = 3
 Trap Bottom Dimen. = see plan
 Side Slopes = see plan

Trap #2

Trap Type = SROST STY
 Drainage Area (ac) = 3.7
 Wet Storage Elev. = 408.5 - 410.2
 Dry Storage Elev. = 410.2 - 411.5
 Wet Stor. Vol. Required (cu ft) = 6690
 Wet Stor. Vol. Provided (cu ft) = 6772
 Dry Stor. Vol. Required (cu ft) = 6660
 Dry Stor. Vol. Provided (cu ft) = 6772
 Bottom Elevation = 408
 Weir Crest Elevation = 413.5
 Weir Length (ft) = 15
 Depth (ft) = 3
 Trap Bottom Dimen. = see plan
 Side Slopes = see plan

- SEDIMENT CONTROL LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EXISTING DRAINAGE AREA
 - INTERM DRAINAGE AREA
 - PROPOSED DRAINAGE AREA
 - LIMIT OF DISTURBANCE
 - SUPER FENCE DIVERSION
 - SUPER SILT FENCE
 - SF SILT FENCE
 - EARTH DIKE
 - RIP-RAP OUTLET PROTECTION

DEVELOPERS CERTIFICATE:

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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE 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/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer: *[Signature]* DATE: 12/97

ENGINEERS CERTIFICATE:

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

Signature of Engineer: *[Signature]* DATE: 12-3-97
 Name: John W. Ramech, Sr.

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

Signature: *[Signature]* DATE: 04-21-97
 U.S.D.A. WATERSHED REGULATIONS CONSERVATION SERVICE

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

APPROVED: *[Signature]* DATE: 4-27-97
 HOWARD SOIL CONSERVATION DISTRICT
 PLAN NUMBER: 11

LIMIT OF DISTURBANCE THIS SHEET: 243,501 S.F. OR 5.59 AC±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
[Signature] DATE: 5-22-97
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
[Signature] DATE: 7/6/97
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] DATE: 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

06/08/98 / 1 / LOTS ADJUSTED

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dan S. Cunniff, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3833
 Fax: 296-4705

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

AREA: TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: **EROSION AND SEDIMENT CONTROL PLAN**

Des By: CRW Scale: 1" = 50' Proj. No: 94064
 Dwn By: CRW Date: MAR 96
 Chk By: JWR Approved: 38 OF 44

Professional Engr. No. 10551

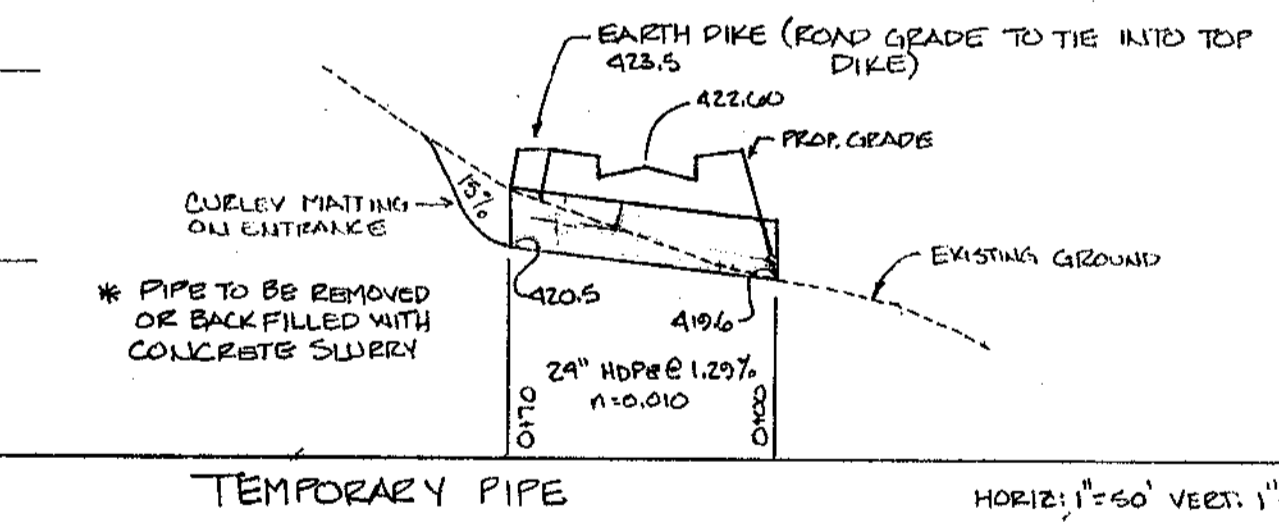
Date: 12-3-97

[Signature]

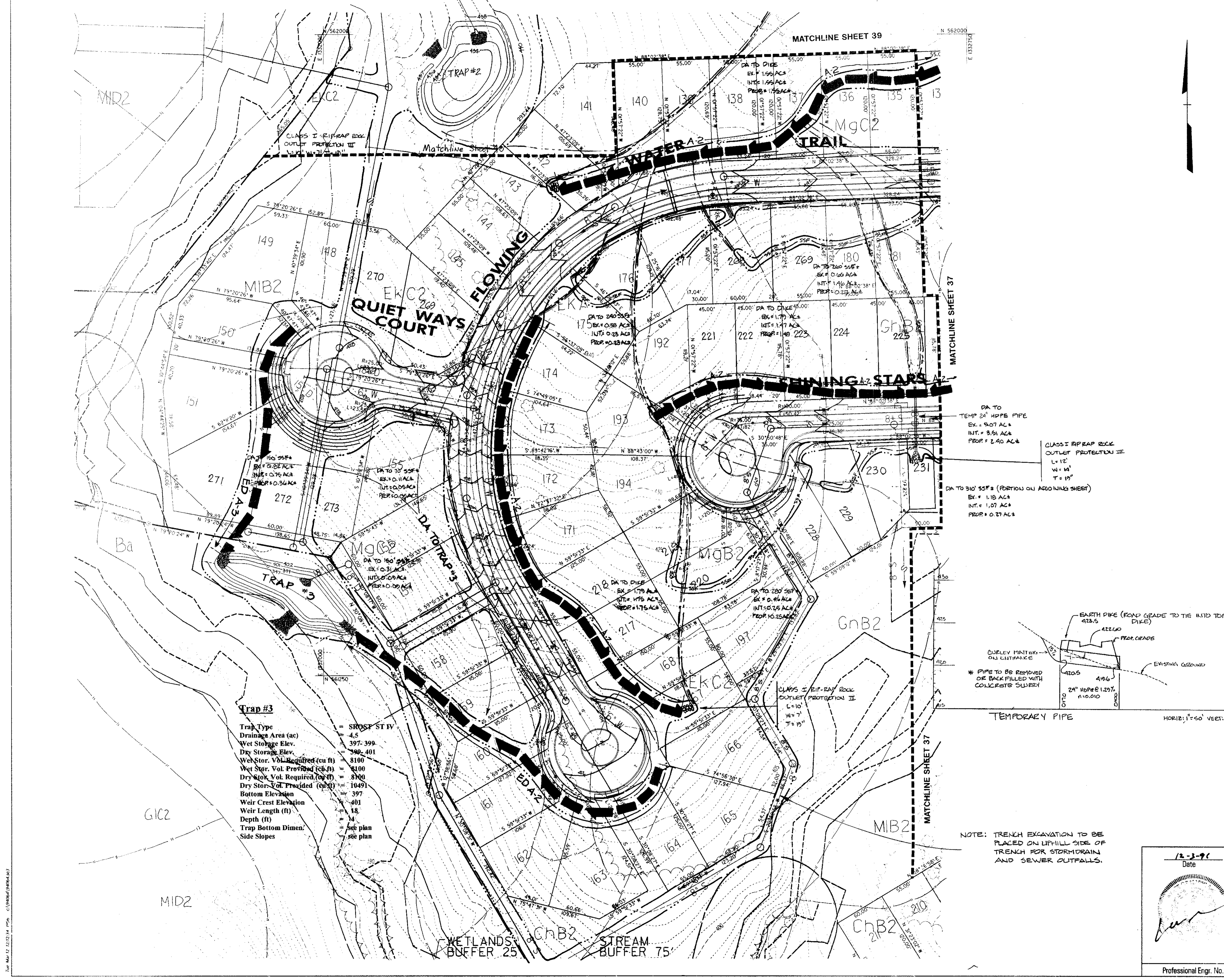
DA TO TEMP 24" HDPE PIPE
 EX. = 9.07 AC±
 INT. = 3.51 AC±
 PROP. = 2.40 AC±

CLASS I RIP-RAP ROCK OUTLET PROTECTION III
 L=12'
 W=4'
 T=19"

DA TO 310' SSF (PORTION ON ADJOINING SHEET)
 EX. = 1.18 AC±
 INT. = 1.07 AC±
 PROP. = 0.27 AC±



NOTE: TRENCH EXCAVATION TO BE PLACED ON UPHILL SIDE OF TRENCH FOR STORMDRAIN AND SEWER OUTFALLS.

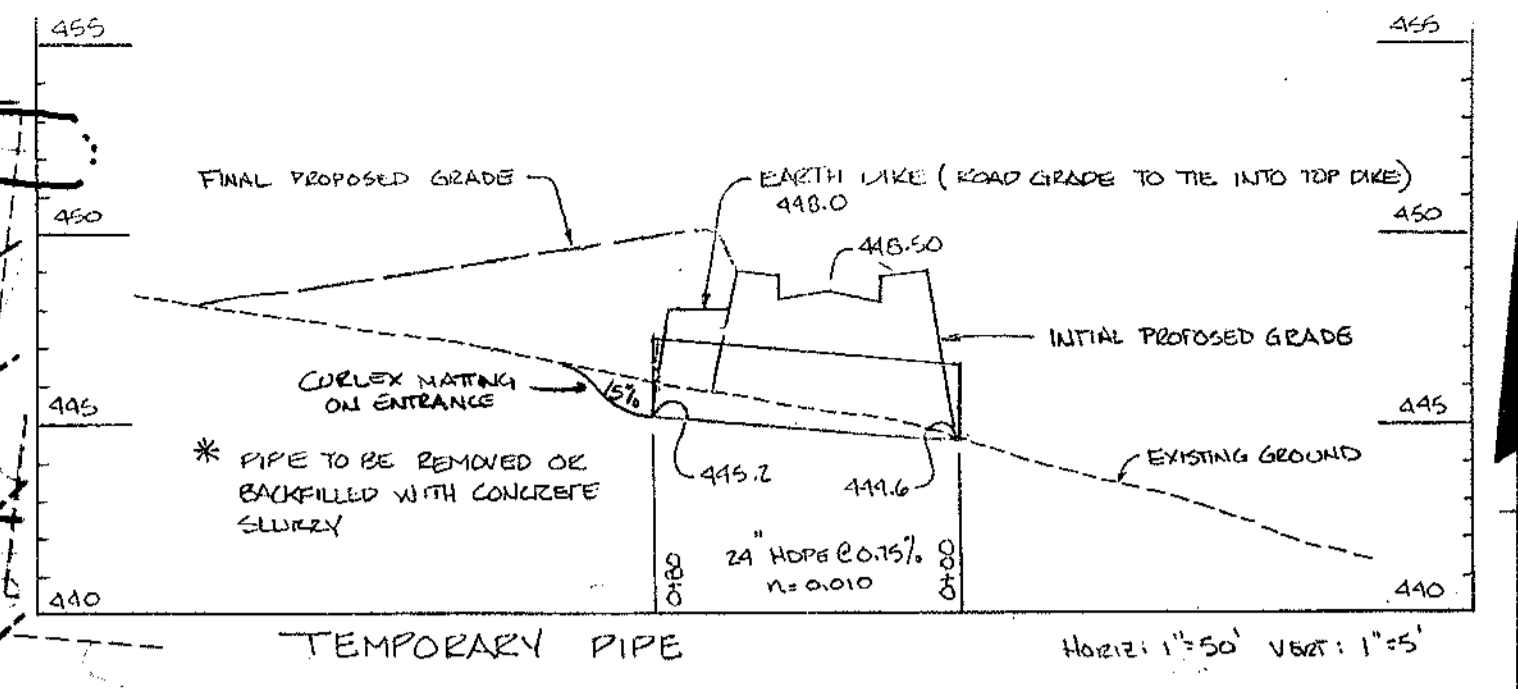


Trap #3

Trap Type	= SROSS ST IV
Drainage Area (ac)	= 4.5
Wet Storage Elev.	= 397.399
Dry Storage Elev.	= 398.401
Wet Stor. Vol. Required (cu ft)	= 8100
Wet Stor. Vol. Provided (cu ft)	= 8100
Dry Stor. Vol. Required (cu ft)	= 8100
Dry Stor. Vol. Provided (cu ft)	= 10491
Bottom Elevation	= 397
Weir Crest Elevation	= 401
Weir Length (ft)	= 18
Depth (ft)	= 4
Trap Bottom Dimen.	= see plan
Side Slopes	= see plan

Date: Mar 12, 2022 11:45 AM
 User: C:\Users\jwram\OneDrive\Documents

DISTURBED AREA JUST DOWNSTREAM OF ENGINEERED DIKE IS NOT TO BE GRADED UNTIL INLET IS INSTALLED. ALL DISTURBED AREAS TO BE SOILED DAILY SO THAT NO BARE EARTH REMAINS EXPOSED AT THE END OF EACH WORKING DAY.



DEVELOPERS CERTIFICATE:
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF PARTICIPATION FROM THE DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE EMPLOY 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 AND AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

John W. Ranocchia 12/1/97
SIGNATURE OF DEVELOPER DATE

ENGINEERS CERTIFICATE:
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL MEETS ALL FEDERAL AND STATE REQUIREMENTS BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/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 W. Ranocchia 12-3-96
SIGNATURE OF ENGINEER DATE

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

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE
DATE: 12-24-97

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

APPROVED: HOWARD SOIL CONSERVATION DISTRICT DATE: 11-24-97

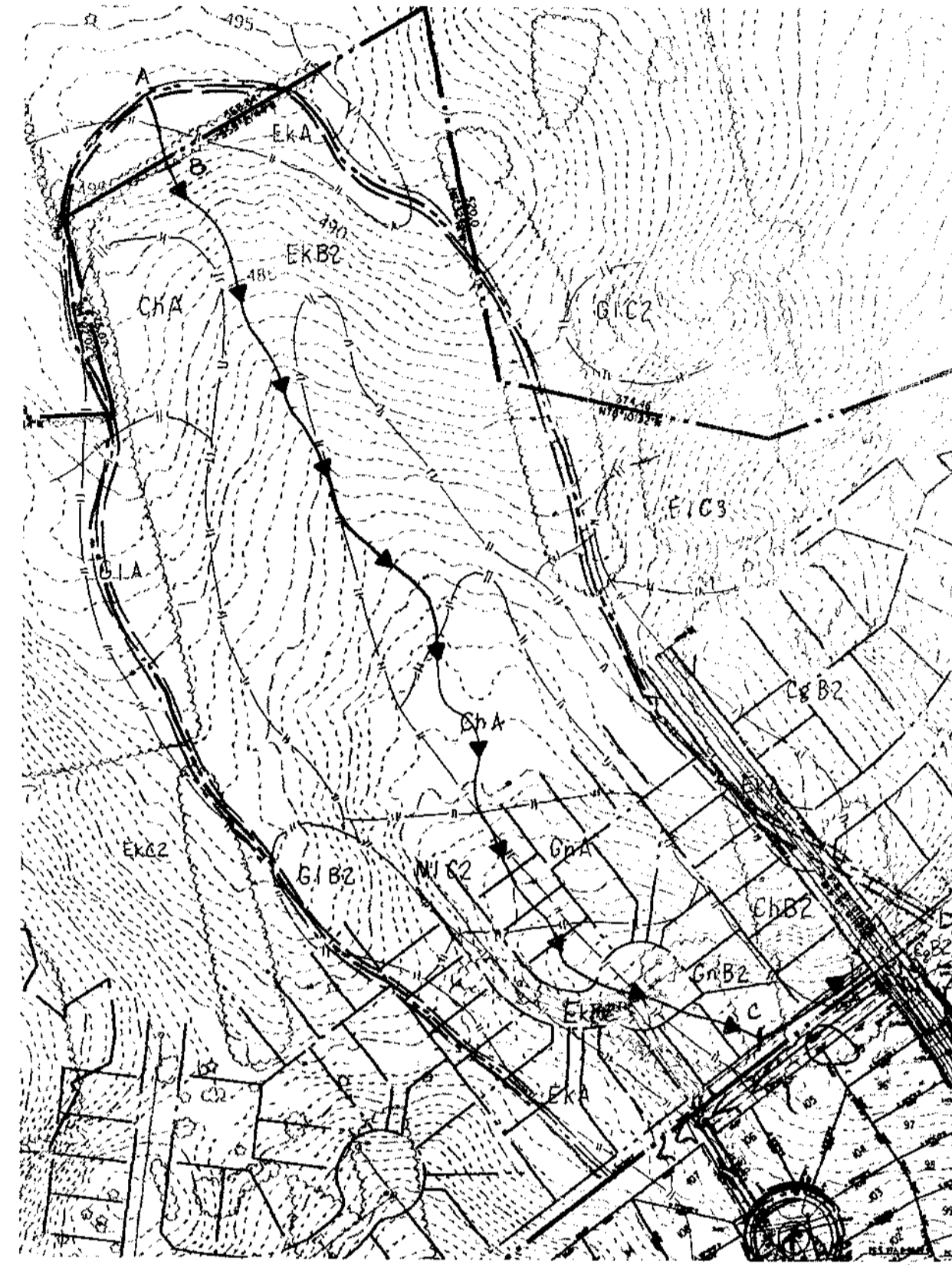
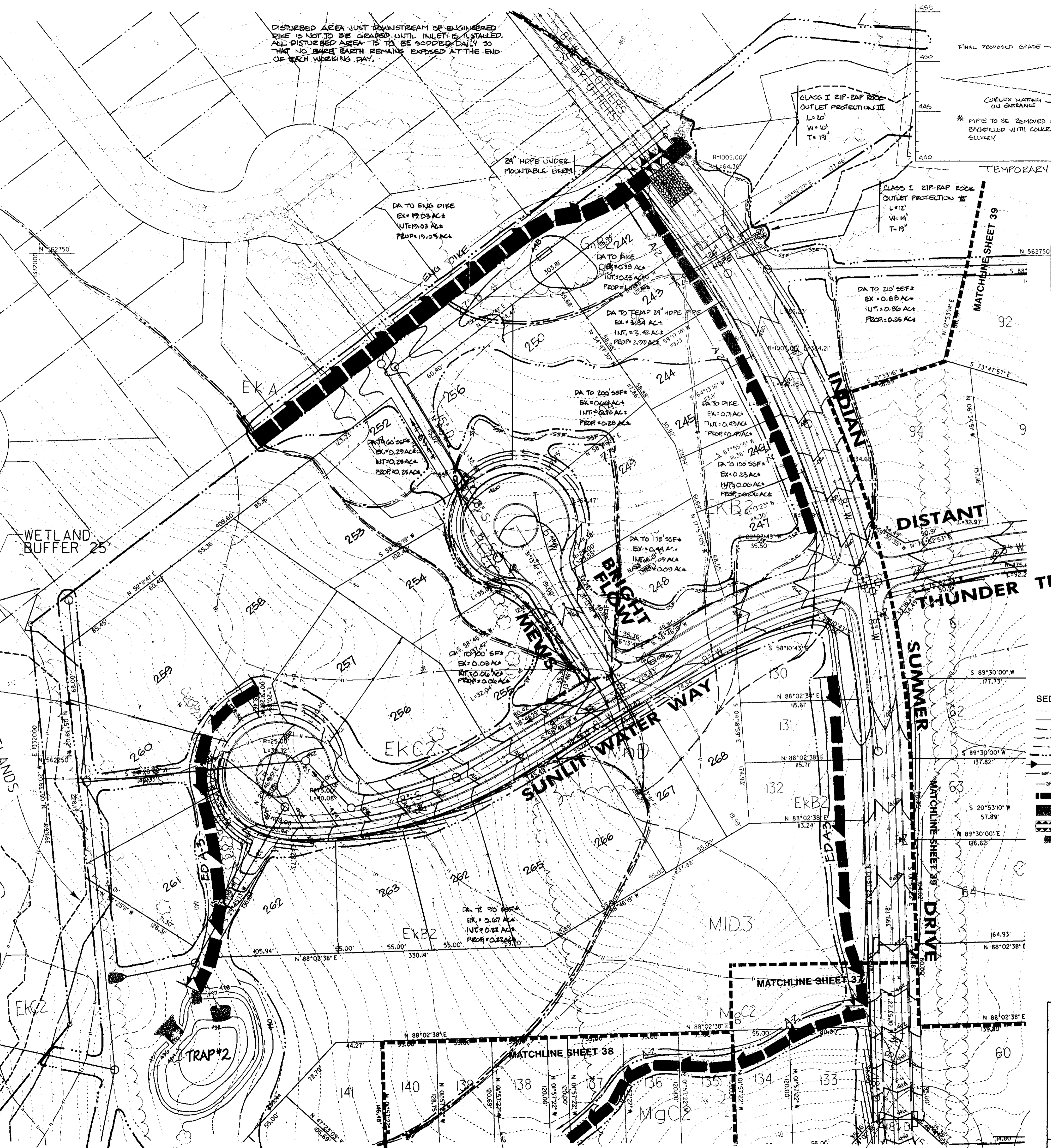
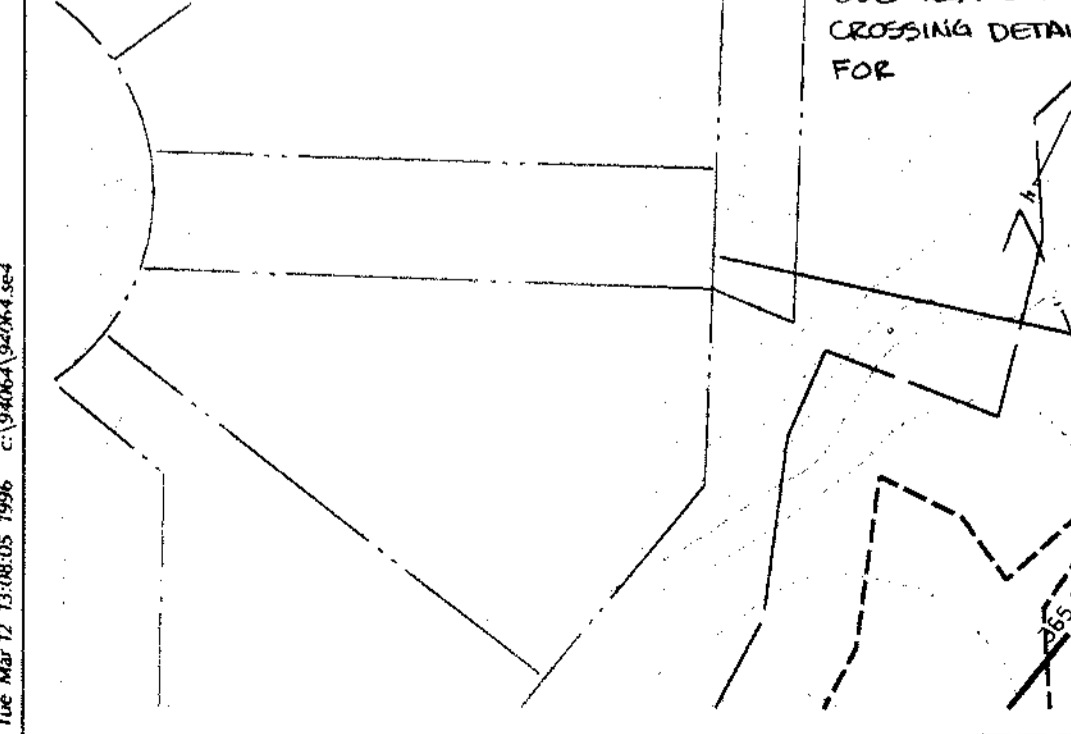
PLAN NUMBER

NOTE: TRENCH EXCAVATION TO BE PLACED ON UPHILL SIDE OF TRENCH FOR STORMDRAIN AND SEWER OUTFALLS.

Trap #2

Trap Type	=	SROST STV
Drainage Area (ac)	=	3.9
Wet Storage Elev.	=	432-434
Dry Storage Elev.	=	434-436
Wet Stor. Vol. Required (cu ft)	=	6840
Wet Stor. Vol. Provided (cu ft)	=	7237
Dry Stor. Vol. Required (cu ft)	=	6840
Dry Stor. Vol. Provided (cu ft)	=	13105
Bottom Elevation	=	432
Weir Crest Elevation	=	436
Weir Length (ft)	=	16
Depth (ft)	=	4
Trap Bottom Dimen.	=	see plan
Side Slopes	=	see plan

USE WEA UTILITY CROSSING DETAIL FOR



- SEDIMENT CONTROL LEGEND**
- EXISTING CONTOURS
 - - - EXISTING DRAINAGE AREA
 - - - EXISTING DRAINAGE AREA
 - - - PROPOSED DRAINAGE AREA
 - - - LIMIT OF DISTURBANCE
 - - - T. C. PATH
 - - - SUPER SILT FENCE
 - - - SILT FENCE
 - - - EARTH DIKE
 - - - STABILIZED CONSTRUCTION ENTRANCE
 - - - MOUNTABLE BERM
 - - - RIP-RAP OUTLET PROTECTION

LIMIT OF DISTURBANCE THIS SHEET = 275,735 SF OR 6.33 AC ±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Colleen Miller 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

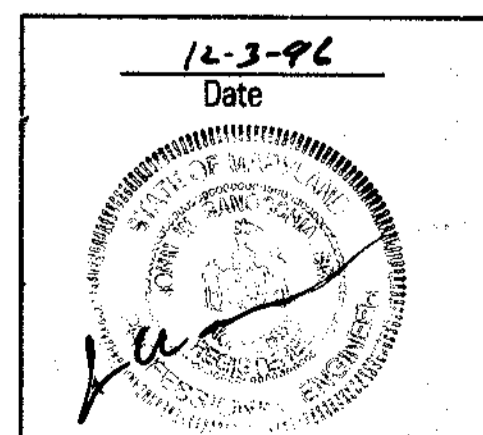
John W. Ranocchia 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

06/05/98 A LOTS ADJUSTED

Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

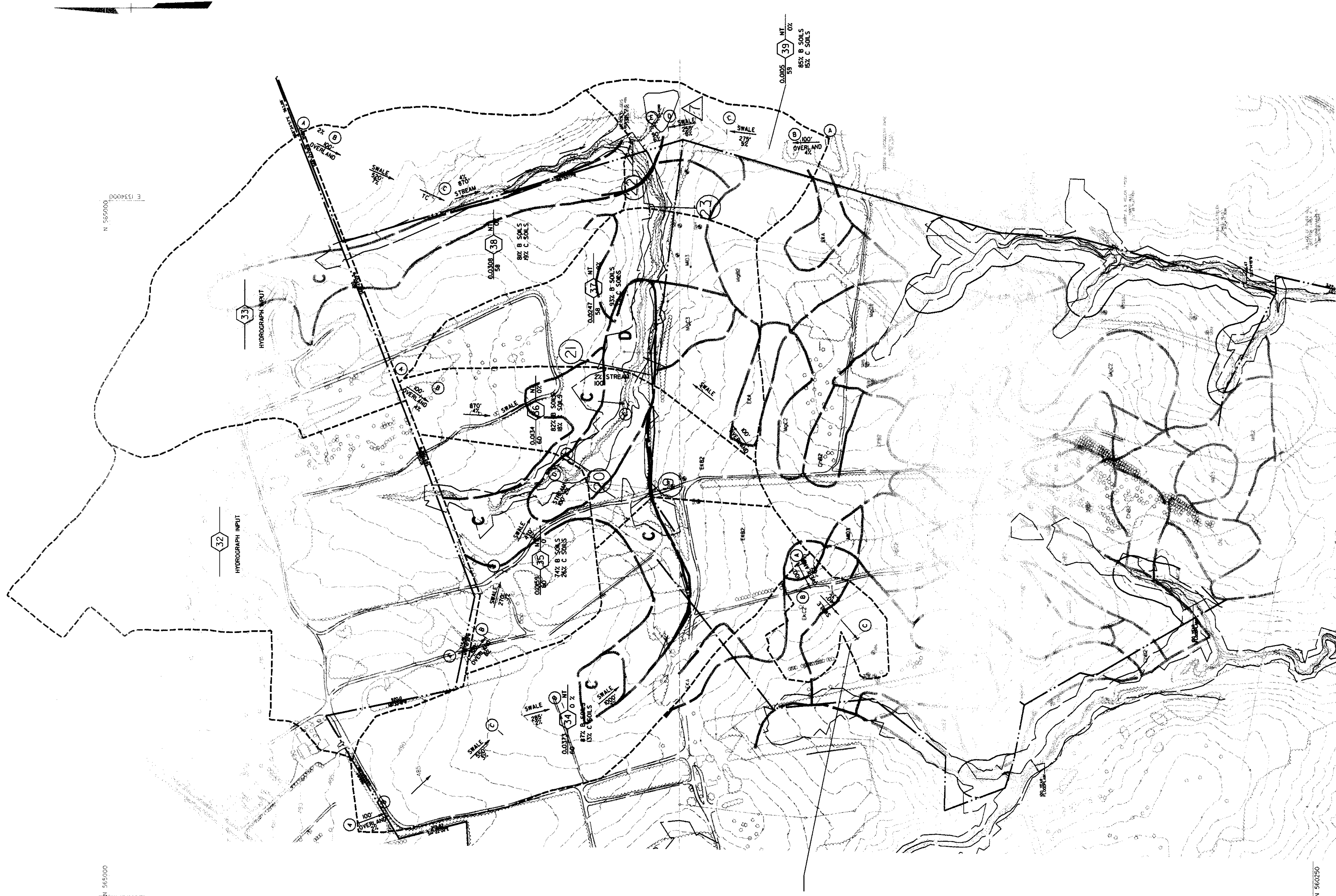
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044



DMW
Duff-McCune-Walkers, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4708

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

AREA	TAX MAP	PARCEL
	ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	
TITLE	EROSION AND SEDIMENT CONTROL PLAN	
Des By	CRW	Scale 1" = 50'
Dwn By	CRW	Date MAR 96
Chk By	JWR	Approved
Professional Engr. No.	10551	40 OF 44



Slope Descrⁿ

GROUP	Type	Description
D	Bc	Bank all loam
B	Cs	Clay all loam
B	Cs	Clay all loam, 1 to 2 percent slope, moderately eroded
B	Cs2	Clay all loam, 2 to 5 percent slope, moderately eroded
B	Cs3	Clay all loam, 5 to 15 percent slope, moderately eroded
B	Cs4	Clay all loam, 15 to 25 percent slope, moderately eroded
B	Cs5	Clay all loam, 25 to 35 percent slope, moderately eroded
B	Cs6	Clay all loam, 35 to 45 percent slope, moderately eroded
B	Cs7	Clay all loam, 45 to 55 percent slope, moderately eroded
B	Cs8	Clay all loam, 55 to 65 percent slope, moderately eroded
B	Cs9	Clay all loam, 65 to 75 percent slope, moderately eroded
B	Cs10	Clay all loam, 75 to 85 percent slope, moderately eroded
B	Cs11	Clay all loam, 85 to 95 percent slope, moderately eroded
B	Cs12	Clay all loam, 95 to 100 percent slope, moderately eroded
B	Cs13	Clay all loam, 100 percent slope, moderately eroded
B	Cs14	Clay all loam, 100 percent slope, severely eroded
B	Cs15	Clay all loam, 100 percent slope, severely eroded
B	Cs16	Clay all loam, 100 percent slope, severely eroded
B	Cs17	Clay all loam, 100 percent slope, severely eroded
B	Cs18	Clay all loam, 100 percent slope, severely eroded
B	Cs19	Clay all loam, 100 percent slope, severely eroded
B	Cs20	Clay all loam, 100 percent slope, severely eroded
B	Cs21	Clay all loam, 100 percent slope, severely eroded
B	Cs22	Clay all loam, 100 percent slope, severely eroded
B	Cs23	Clay all loam, 100 percent slope, severely eroded
B	Cs24	Clay all loam, 100 percent slope, severely eroded
B	Cs25	Clay all loam, 100 percent slope, severely eroded
B	Cs26	Clay all loam, 100 percent slope, severely eroded
B	Cs27	Clay all loam, 100 percent slope, severely eroded
B	Cs28	Clay all loam, 100 percent slope, severely eroded
B	Cs29	Clay all loam, 100 percent slope, severely eroded
B	Cs30	Clay all loam, 100 percent slope, severely eroded
B	Cs31	Clay all loam, 100 percent slope, severely eroded
B	Cs32	Clay all loam, 100 percent slope, severely eroded
B	Cs33	Clay all loam, 100 percent slope, severely eroded
B	Cs34	Clay all loam, 100 percent slope, severely eroded
B	Cs35	Clay all loam, 100 percent slope, severely eroded
B	Cs36	Clay all loam, 100 percent slope, severely eroded
B	Cs37	Clay all loam, 100 percent slope, severely eroded
B	Cs38	Clay all loam, 100 percent slope, severely eroded
B	Cs39	Clay all loam, 100 percent slope, severely eroded
B	Cs40	Clay all loam, 100 percent slope, severely eroded
B	Cs41	Clay all loam, 100 percent slope, severely eroded
B	Cs42	Clay all loam, 100 percent slope, severely eroded
B	Cs43	Clay all loam, 100 percent slope, severely eroded
B	Cs44	Clay all loam, 100 percent slope, severely eroded
B	Cs45	Clay all loam, 100 percent slope, severely eroded
B	Cs46	Clay all loam, 100 percent slope, severely eroded
B	Cs47	Clay all loam, 100 percent slope, severely eroded
B	Cs48	Clay all loam, 100 percent slope, severely eroded
B	Cs49	Clay all loam, 100 percent slope, severely eroded
B	Cs50	Clay all loam, 100 percent slope, severely eroded
B	Cs51	Clay all loam, 100 percent slope, severely eroded
B	Cs52	Clay all loam, 100 percent slope, severely eroded
B	Cs53	Clay all loam, 100 percent slope, severely eroded
B	Cs54	Clay all loam, 100 percent slope, severely eroded
B	Cs55	Clay all loam, 100 percent slope, severely eroded
B	Cs56	Clay all loam, 100 percent slope, severely eroded
B	Cs57	Clay all loam, 100 percent slope, severely eroded
B	Cs58	Clay all loam, 100 percent slope, severely eroded
B	Cs59	Clay all loam, 100 percent slope, severely eroded
B	Cs60	Clay all loam, 100 percent slope, severely eroded
B	Cs61	Clay all loam, 100 percent slope, severely eroded
B	Cs62	Clay all loam, 100 percent slope, severely eroded
B	Cs63	Clay all loam, 100 percent slope, severely eroded
B	Cs64	Clay all loam, 100 percent slope, severely eroded
B	Cs65	Clay all loam, 100 percent slope, severely eroded
B	Cs66	Clay all loam, 100 percent slope, severely eroded
B	Cs67	Clay all loam, 100 percent slope, severely eroded
B	Cs68	Clay all loam, 100 percent slope, severely eroded
B	Cs69	Clay all loam, 100 percent slope, severely eroded
B	Cs70	Clay all loam, 100 percent slope, severely eroded
B	Cs71	Clay all loam, 100 percent slope, severely eroded
B	Cs72	Clay all loam, 100 percent slope, severely eroded
B	Cs73	Clay all loam, 100 percent slope, severely eroded
B	Cs74	Clay all loam, 100 percent slope, severely eroded
B	Cs75	Clay all loam, 100 percent slope, severely eroded
B	Cs76	Clay all loam, 100 percent slope, severely eroded
B	Cs77	Clay all loam, 100 percent slope, severely eroded
B	Cs78	Clay all loam, 100 percent slope, severely eroded
B	Cs79	Clay all loam, 100 percent slope, severely eroded
B	Cs80	Clay all loam, 100 percent slope, severely eroded
B	Cs81	Clay all loam, 100 percent slope, severely eroded
B	Cs82	Clay all loam, 100 percent slope, severely eroded
B	Cs83	Clay all loam, 100 percent slope, severely eroded
B	Cs84	Clay all loam, 100 percent slope, severely eroded
B	Cs85	Clay all loam, 100 percent slope, severely eroded
B	Cs86	Clay all loam, 100 percent slope, severely eroded
B	Cs87	Clay all loam, 100 percent slope, severely eroded
B	Cs88	Clay all loam, 100 percent slope, severely eroded
B	Cs89	Clay all loam, 100 percent slope, severely eroded
B	Cs90	Clay all loam, 100 percent slope, severely eroded
B	Cs91	Clay all loam, 100 percent slope, severely eroded
B	Cs92	Clay all loam, 100 percent slope, severely eroded
B	Cs93	Clay all loam, 100 percent slope, severely eroded
B	Cs94	Clay all loam, 100 percent slope, severely eroded
B	Cs95	Clay all loam, 100 percent slope, severely eroded
B	Cs96	Clay all loam, 100 percent slope, severely eroded
B	Cs97	Clay all loam, 100 percent slope, severely eroded
B	Cs98	Clay all loam, 100 percent slope, severely eroded
B	Cs99	Clay all loam, 100 percent slope, severely eroded
B	Cs100	Clay all loam, 100 percent slope, severely eroded

LEGEND

- D.A. LIMIT
- SOIL LIMIT
- SOIL TYPE
- TC LINE
- DRAINAGE AREA
- STANDARD CONTROL SECTION
- STRUCTURE

EXISTING DRAINAGE AREA MAP

SCALE 1" = 200'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS		
<i>Richard M. Danek</i>	CHIEF, BUREAU OF HIGHWAYS	5-22-97 DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING		
<i>John A. Kattner</i>	CHIEF, DIVISION OF LAND DEVELOPMENT	7/10/97 DATE
<i>John D. Williams</i>	CHIEF, DEVELOPMENT ENGINEERING DIVISION	5/20/97 DATE
Date	No.	Revision Description

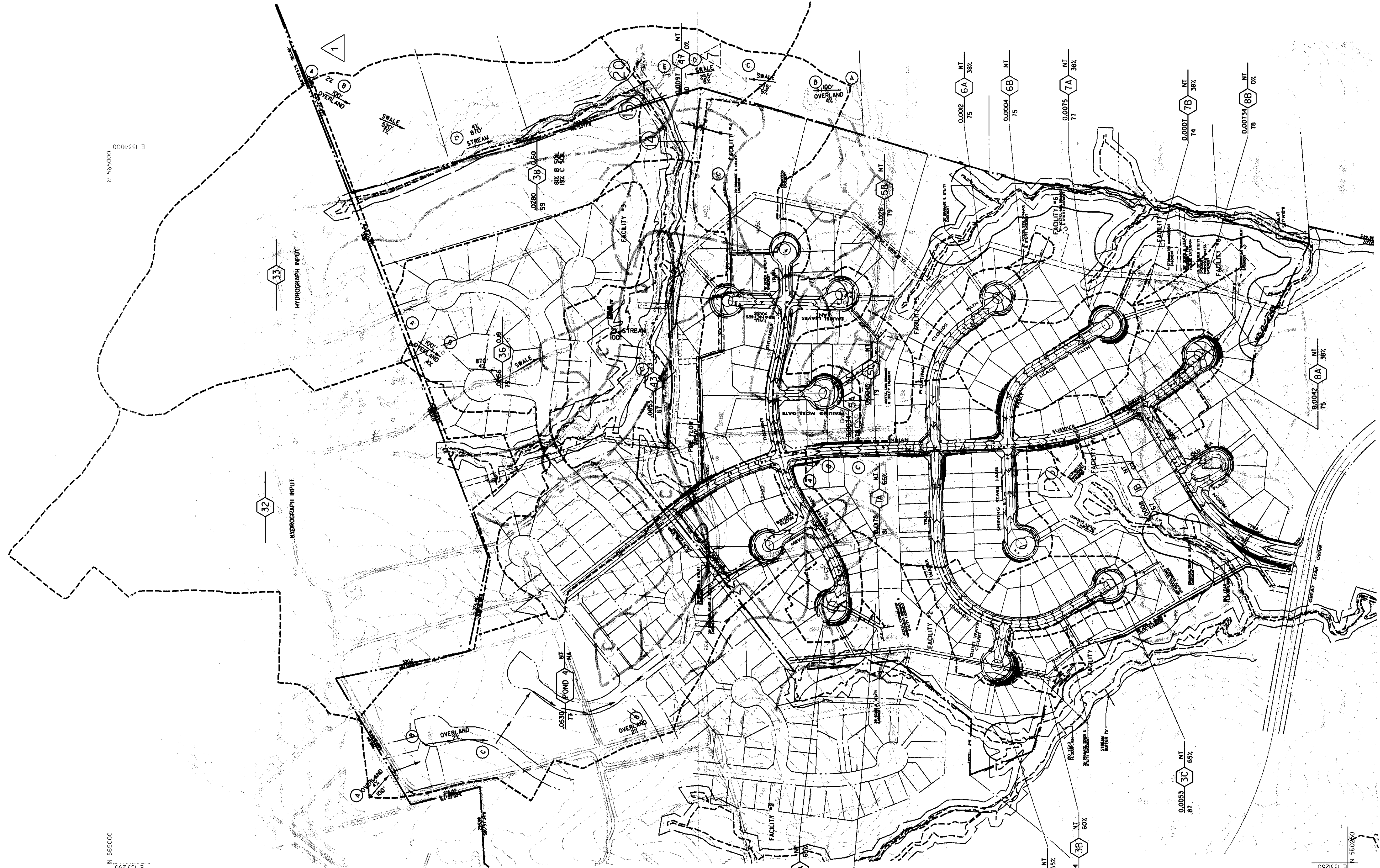
VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

12-3-96
Date

Professional Engr. No. 10551

DMW Dan McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 410-296-5339 Fax 296-4705		A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals	
AREA	TAX MAP	PARCEL	ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND
TITLE EXISTING STORMWATER MANAGEMENT DRAINAGE AREA MAP			
Des By	RLH	Scale	1" = 200
Des By	KDE	Date	MAR 96
Des By	JWR	Approved	
Proj. No.	94064	43 OF 44	



N 389000
E 1334000

N 565000
E 133250

Soils Chart

GROUP	Type	Description
D	Bo	Best silt loam
B	Cs	Coarse silt loam
B	Cg	Clayey coarse silt loam, 3 to 8 percent slopes, moderately eroded
B	Cg2	Clayey coarse silt loam, 8 to 15 percent slopes, moderately eroded
B	Cg3	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg4	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg5	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg6	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg7	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg8	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg9	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg10	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg11	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg12	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg13	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg14	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg15	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg16	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg17	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg18	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg19	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg20	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg21	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg22	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg23	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg24	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg25	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg26	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg27	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg28	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg29	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg30	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg31	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg32	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg33	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg34	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg35	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg36	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg37	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg38	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg39	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg40	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg41	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg42	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg43	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg44	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg45	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg46	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg47	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg48	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg49	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg50	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg51	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg52	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg53	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg54	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg55	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg56	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg57	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg58	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg59	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg60	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg61	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg62	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg63	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg64	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg65	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg66	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg67	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg68	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg69	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg70	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg71	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg72	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg73	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg74	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg75	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg76	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg77	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg78	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg79	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg80	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg81	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg82	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg83	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg84	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg85	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg86	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg87	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg88	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg89	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg90	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg91	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg92	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg93	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg94	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg95	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg96	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg97	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg98	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg99	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded
B	Cg100	Clayey coarse silt loam, 0 to 3 percent slopes, moderately eroded

THE PURPOSE OF THIS PLAN REVISION IS TO ADJUST THE DRAINAGE AREAS TO 10, 30 & POND #5 & #4

6/5/98
Date

Professional Engr. No. /10551

PROPOSED DRAINAGE AREA MAP
SCALE 1" = 200'

- LEGEND**
- D.A. LIMIT
 - SOIL LIMIT
 - SOIL TYPE
 - TC LINE
 - DRAINAGE AREA
 - DRAINAGE AREA
 - STANDARD CONTROL SECTION
 - STRUCTURE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Duncanson 8-17-98
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
TC 8/19/98
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Robt. Duncanson 8/17/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

5-1-98	1	REVISE DRAINAGE AREAS 43,38, PONDS #3,4	#3,4
Date	No.	Revision Description	NEW HYDRA

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Duff McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3335
Fax 296-4705

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

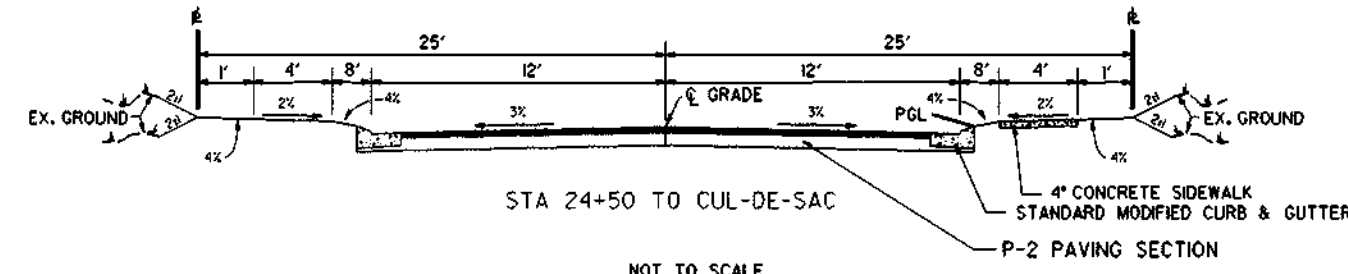
AREA TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **PROPOSED ROAD CONSTRUCTION DRAWINGS**
PROPOSED STORM WATER MANAGEMENT DRAINAGE AREA MAP

Des By	RLH	Scale	1" = 200	Proj. No.	94064
Drn By	KDE	Date	MAR 96		
Chk By	JWR	Approved			44 OF 44

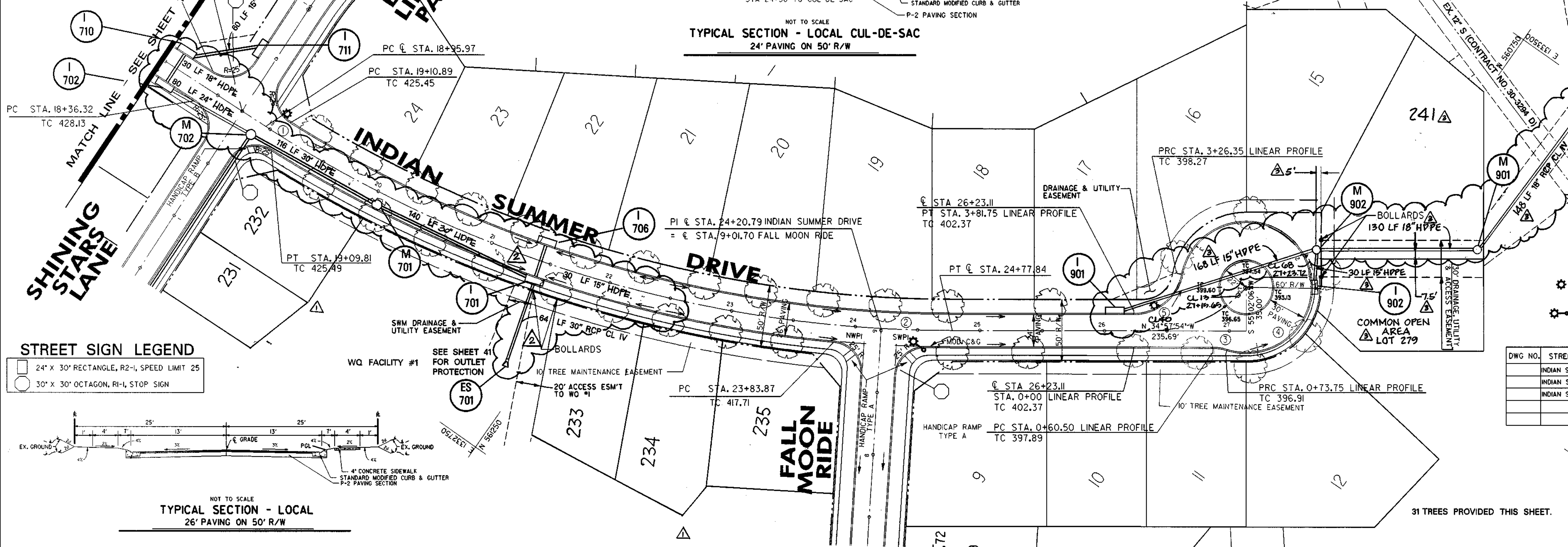
F-96-130

PI @ STA. 18+73.33 INDIAN SUMMER DRIVE
 = @ STA. 0+00.00 EARLY LILACS PATH
 PT STA. 18+36.32
 TC 428.13



PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

SEE SHEET 29 OF 44 FOR DETAIL OF OUTLET PROTECTION @ STR. ES901.



STREET SIGN LEGEND
 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
 30" X 30" OCTAGON, R1-1, STOP SIGN

STREET LIGHT LEGEND
 100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14' BRONZE FIBERGLASS EMBEDDED POLE.
 150 WATT HIGH PRESSURE SODIUM (HPS) VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 30' BRONZE ALUMINUM POLE.

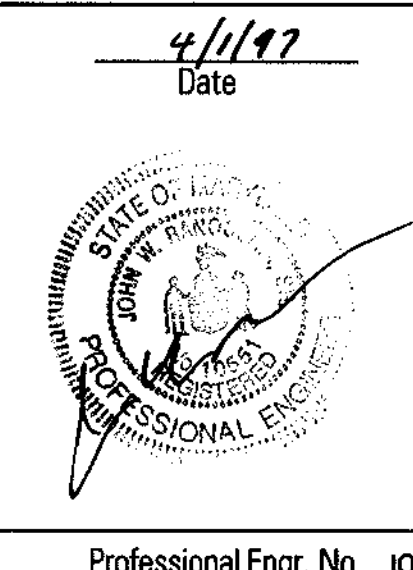
STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION/OFFSET	FIXTURE/POLE TYPE	COMMENTS
	INDIAN SUMMER DR	19+02	ITL	
	INDIAN SUMMER DR	26+38	20'L	
	INDIAN SUMMER DR	24+52	17'R	ANGLE ARM TO CENTER OF INTERSECTION

NOT TO SCALE
TYPICAL SECTION - LOCAL
 26' PAVING ON 50' R/W

CURVE DATA

LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	29°46'04"	100.00	524.734	268.437	516°50'24"E 518.816
②	03°14'27"	100.00	57.151	28.573	S33°20'40"E 57.123
③	18°58'35"	40.00	13.248	6.685	S25°28'36"E 13.888
④	278°19'41"	52.00	252.602		N24°50'56"E 68.005
⑤	73°21'06"	40.00	55.398	33.180	N74°39'26"W 51.075
⑥	48°00'00"	100.00	70.540	41.421	S57°21'59.6"E 16.921



1/11/00 REV. INLET'S DRAIN LOCATION - LOTS 241, 279 AND CUL-DE-SAC ADJUSTED SUMP LOCATION
 APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 6/15/98 LOTS ADJUSTED
 10/97 REVISED REF. CL. IN 50' TO HOPE SD.
 Revision Description

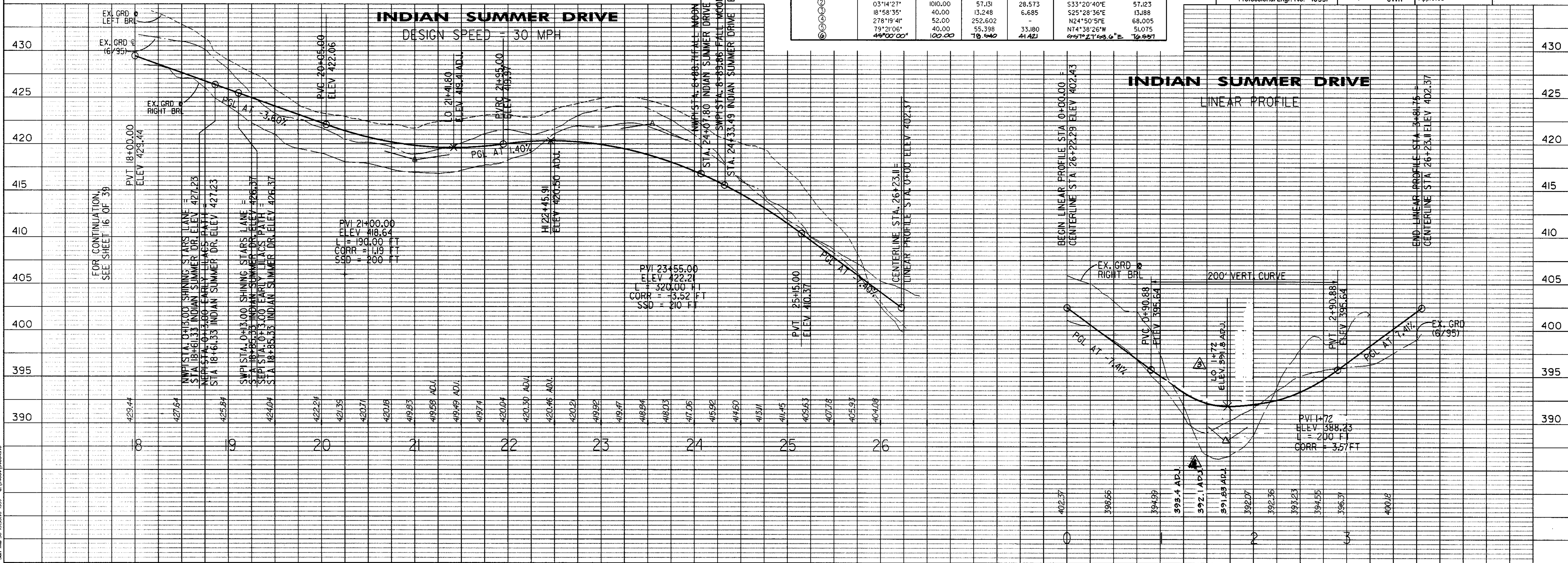
VILLAGE OF RIVER HILL
 SECTION 4, AREA 4
 OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dan McCune-Walker, Inc.
 200 East Patuxent Avenue
 Towson, Maryland 21286
 (410) 286-3338
 Fax 296-4705
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

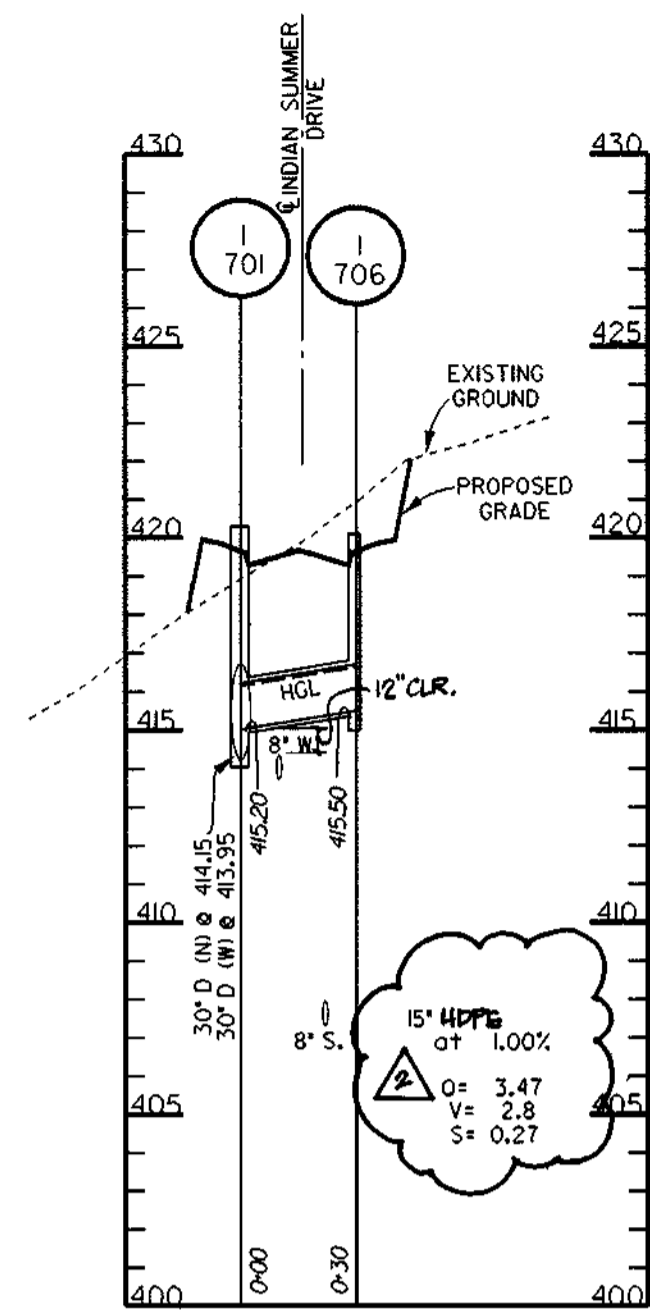
AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **ROAD CONSTRUCTION PLANS**
INDIAN SUMMER DRIVE
STA 18+00 - 27+00

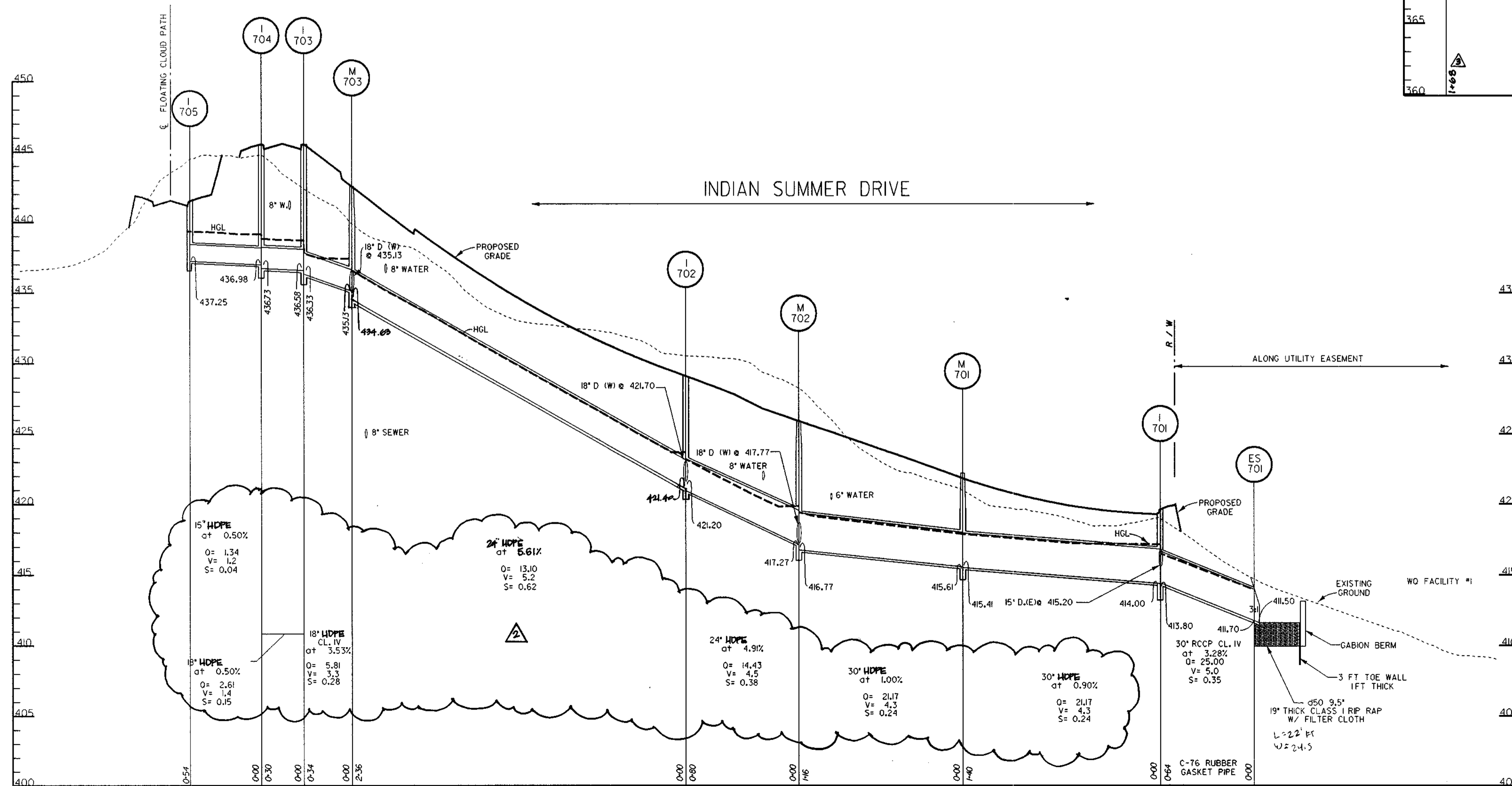
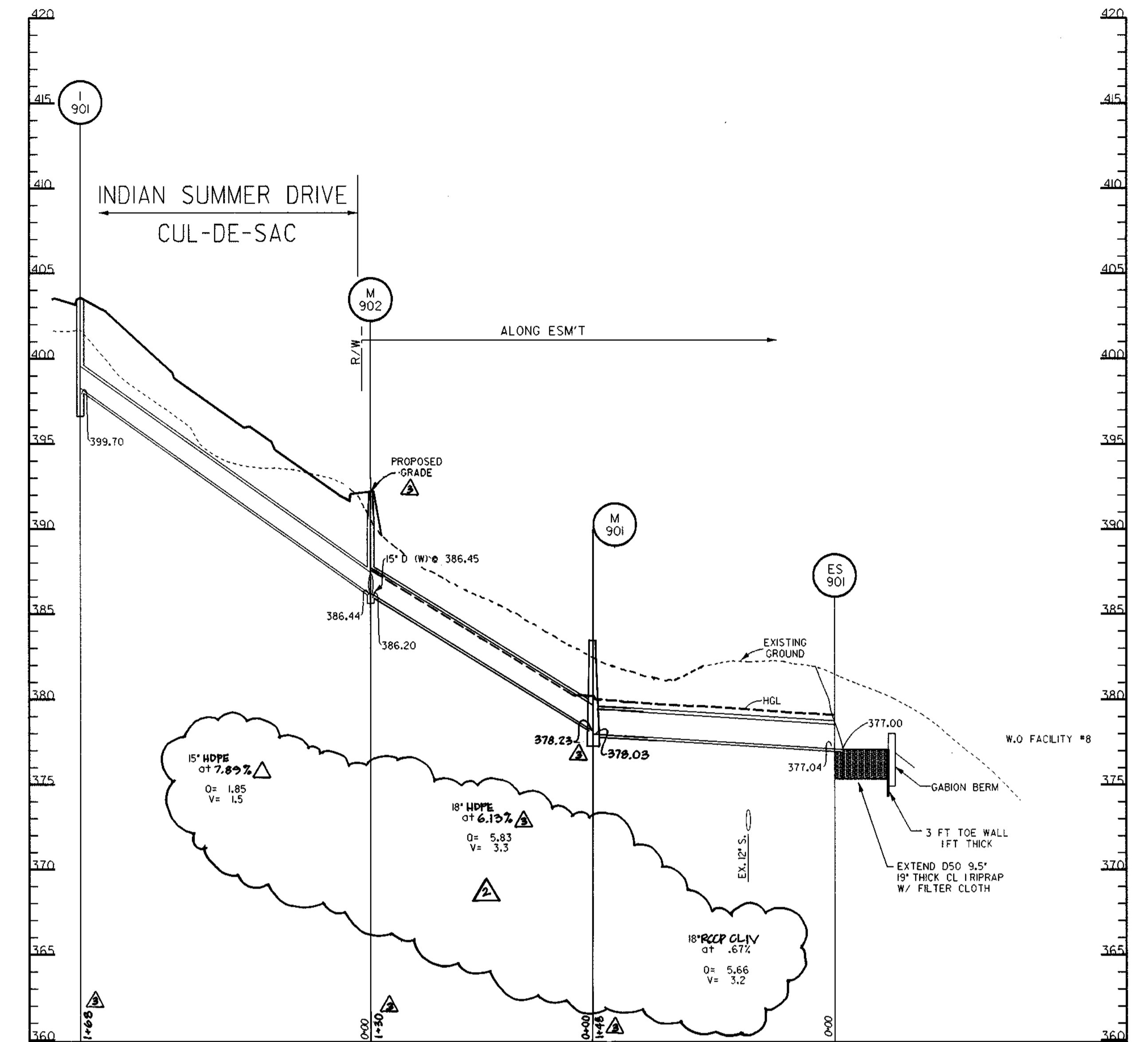
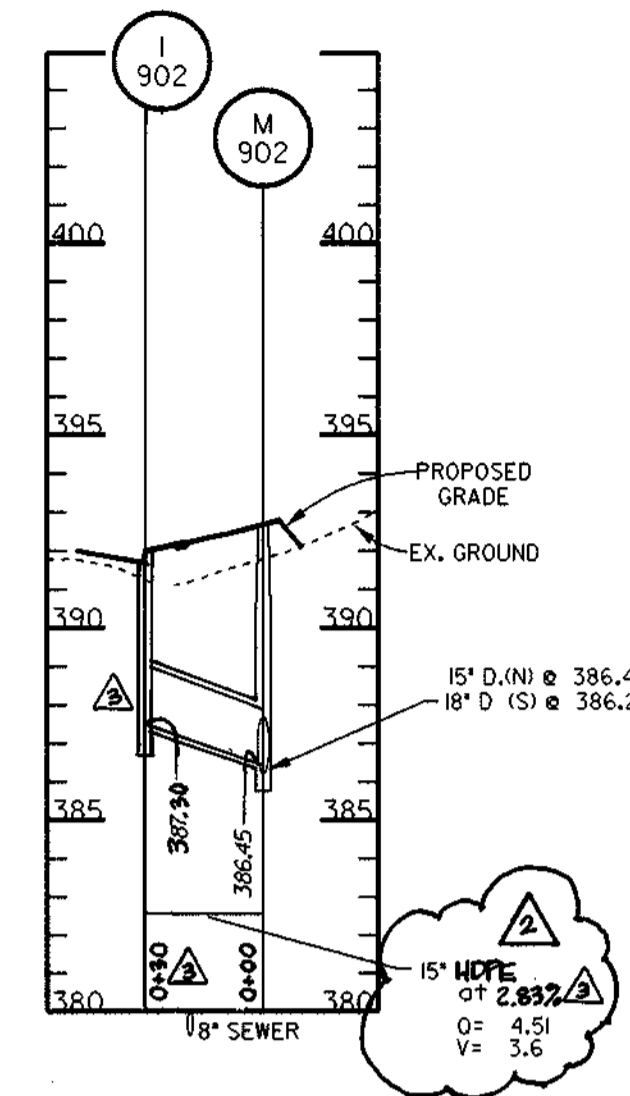
Des By JWS Scale 1" = 50' Proj. No. 94064
 Dwn By JEF Date JAN 97
 Chk By JWR Approved 17 OF 44



Sta. Mar 20 20:52:09 1997 c:\dwg\94064.rtg



INDIAN SUMMER DRIVE



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John M. ... 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

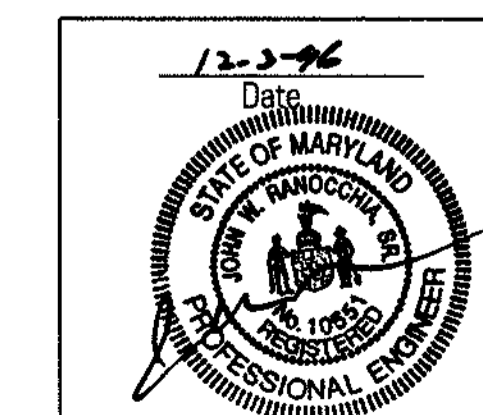
0-10-97	△	REVISED RCP CL IV SD. BY HPPE QR
1/11/00	△	REV LOCATIONS OF I-902, M-702, M-701 AND PIPE SLOPES
Date	No.	Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER /DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
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 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3238
 Fax 296-4708

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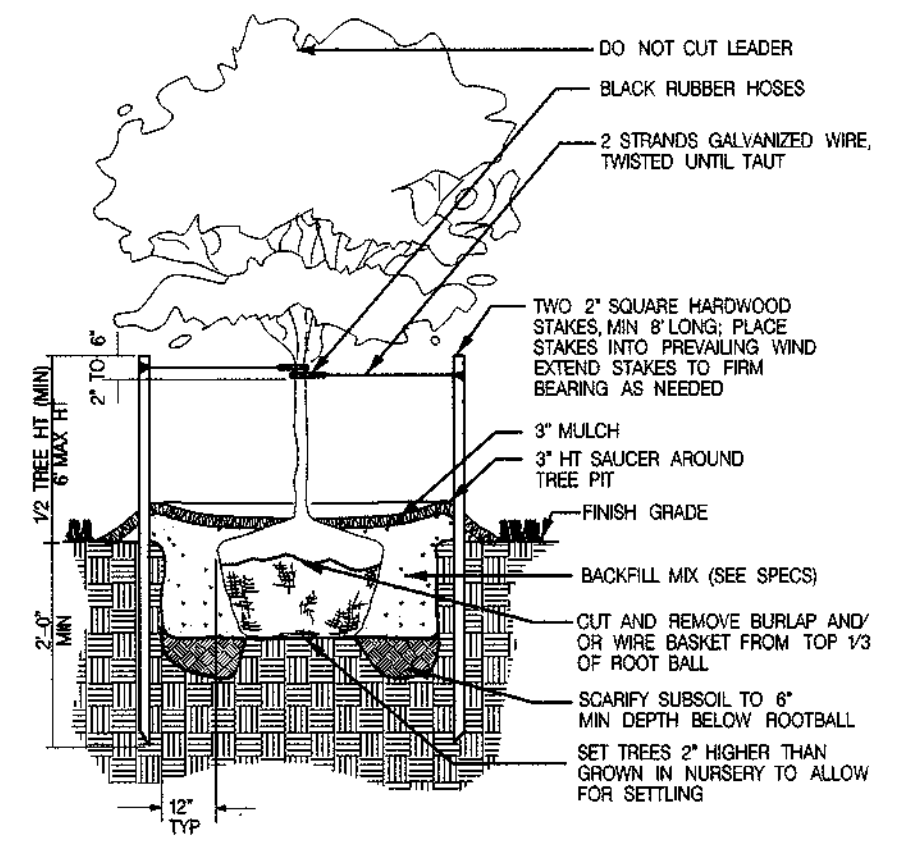
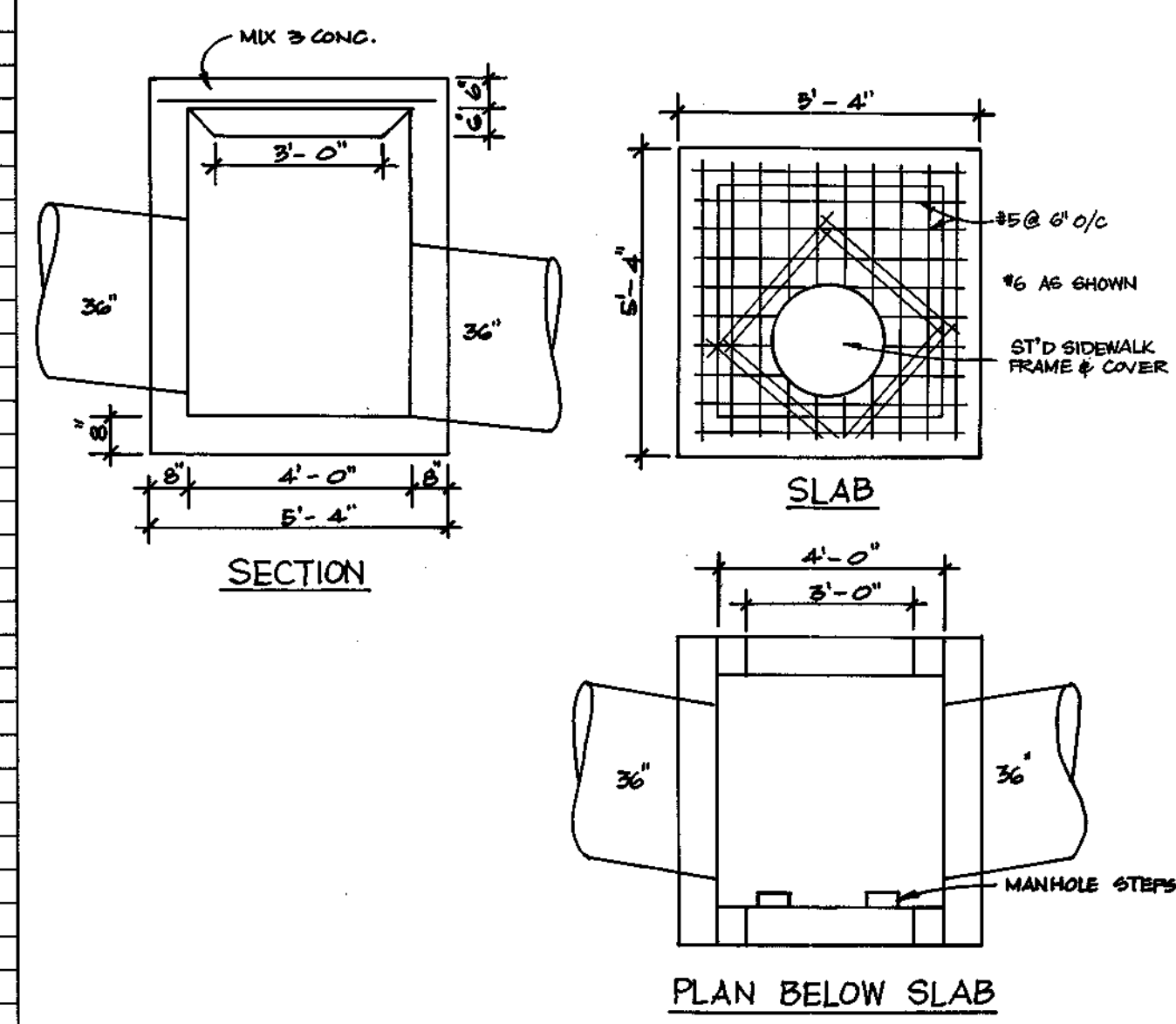
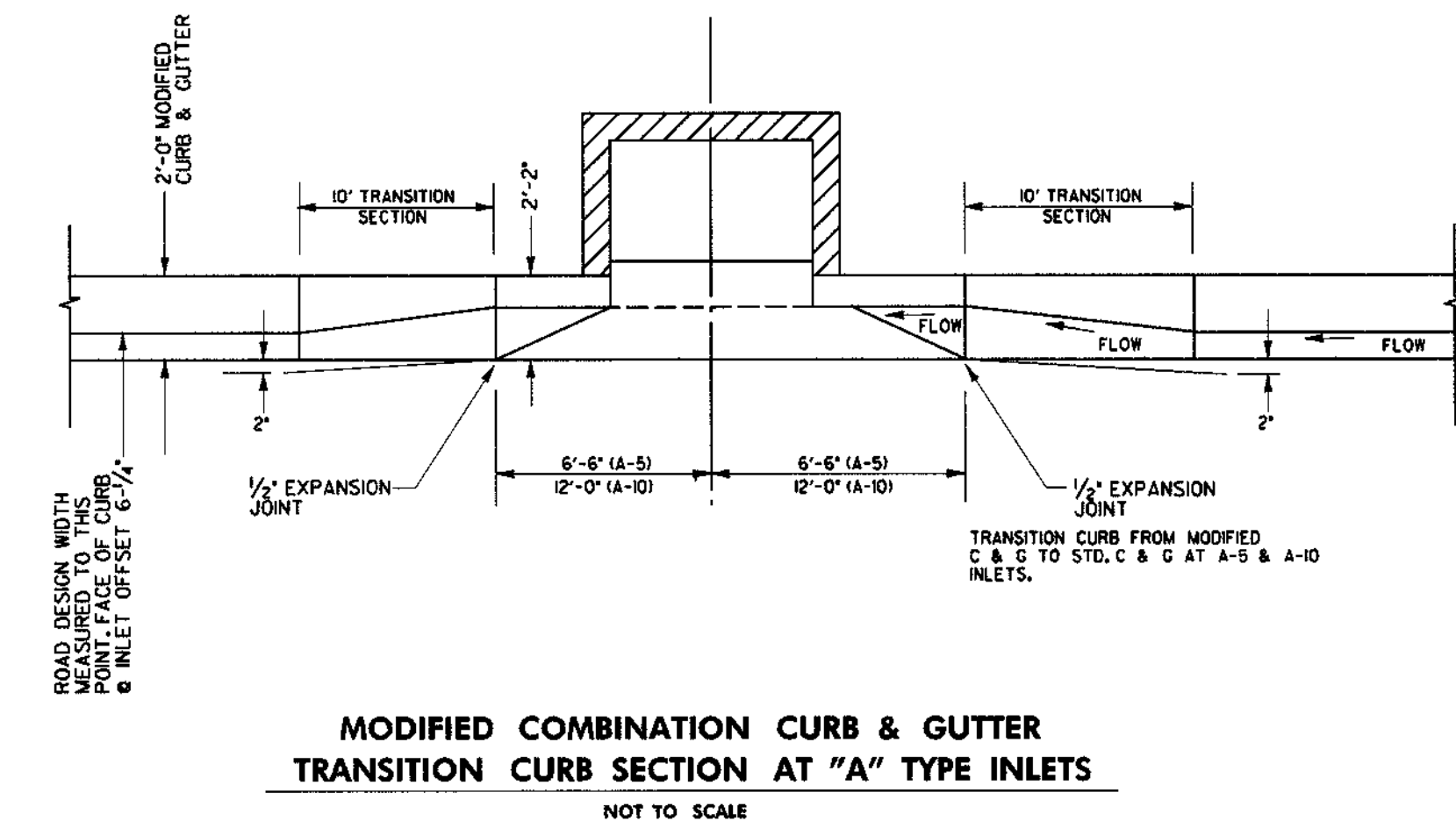
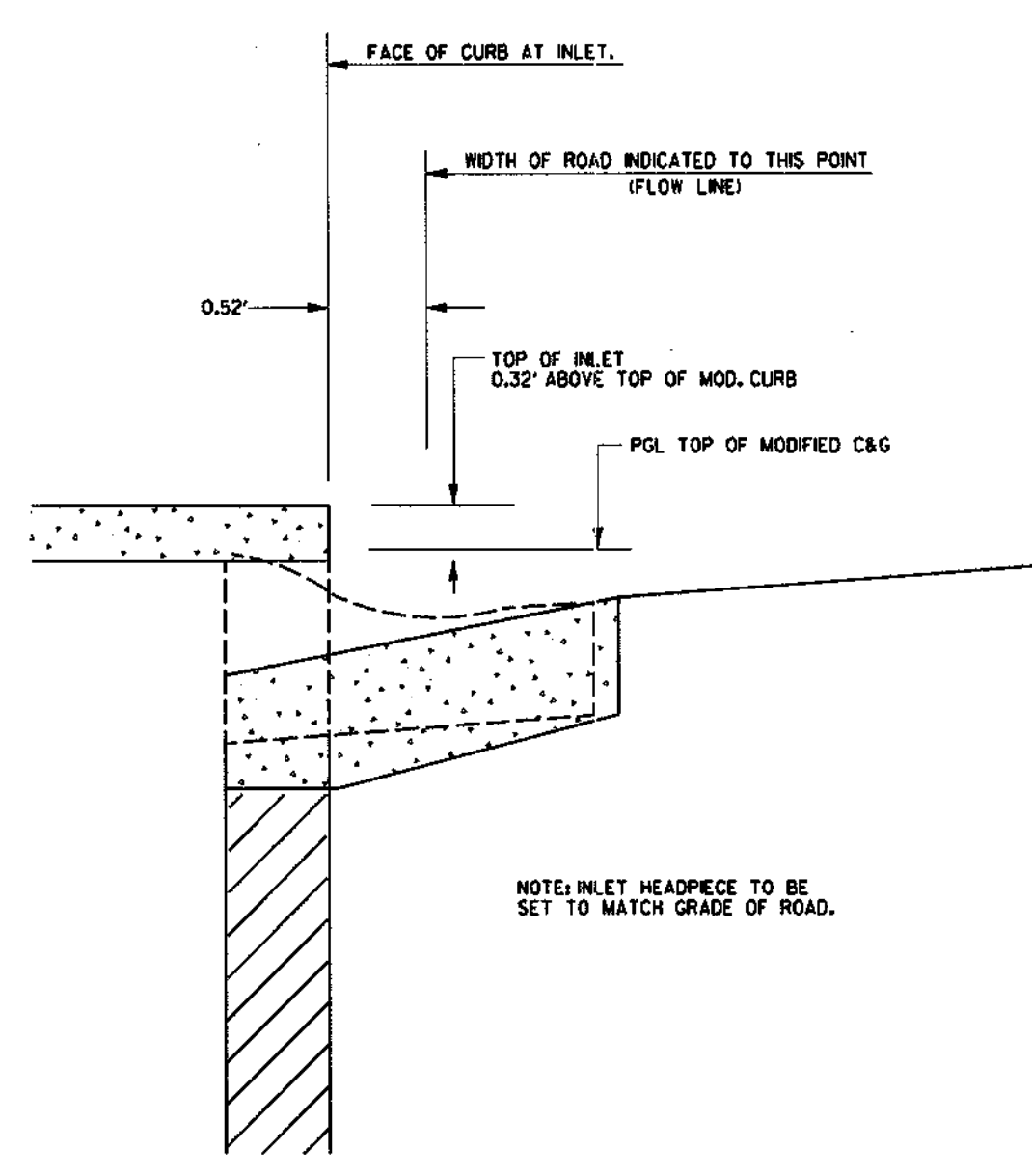
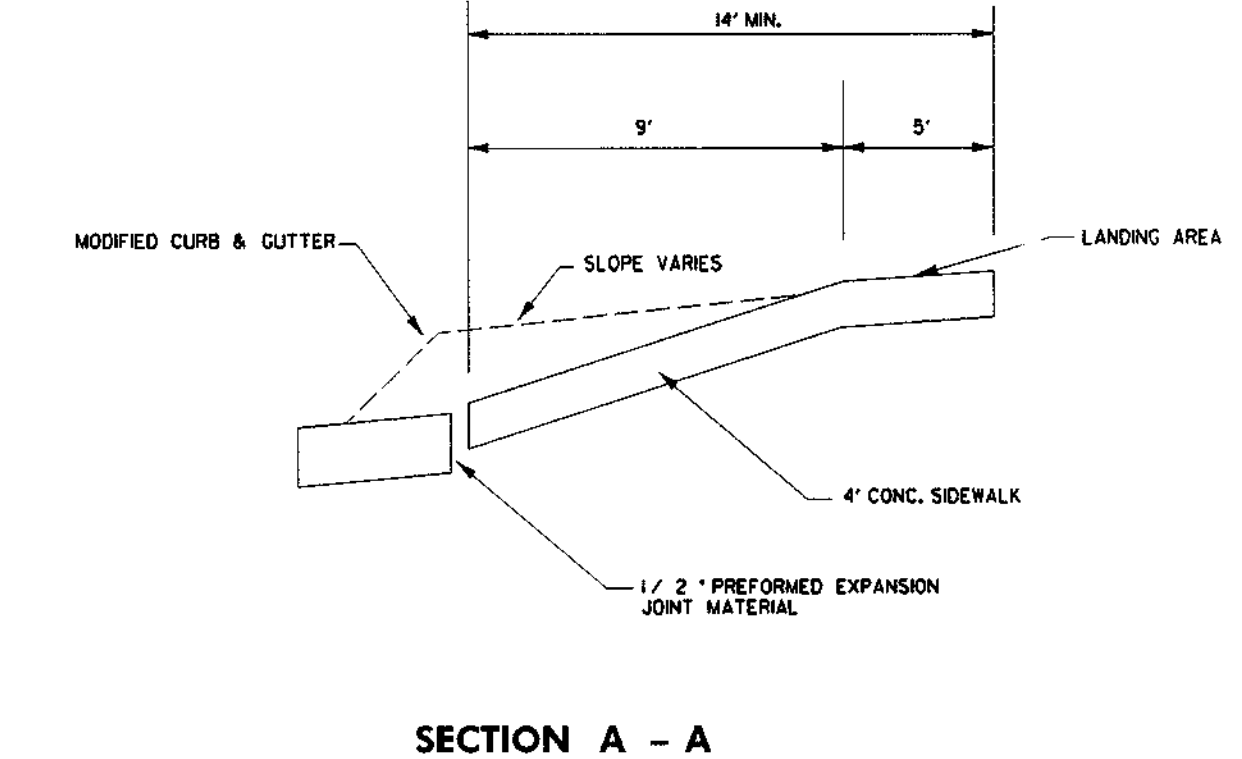
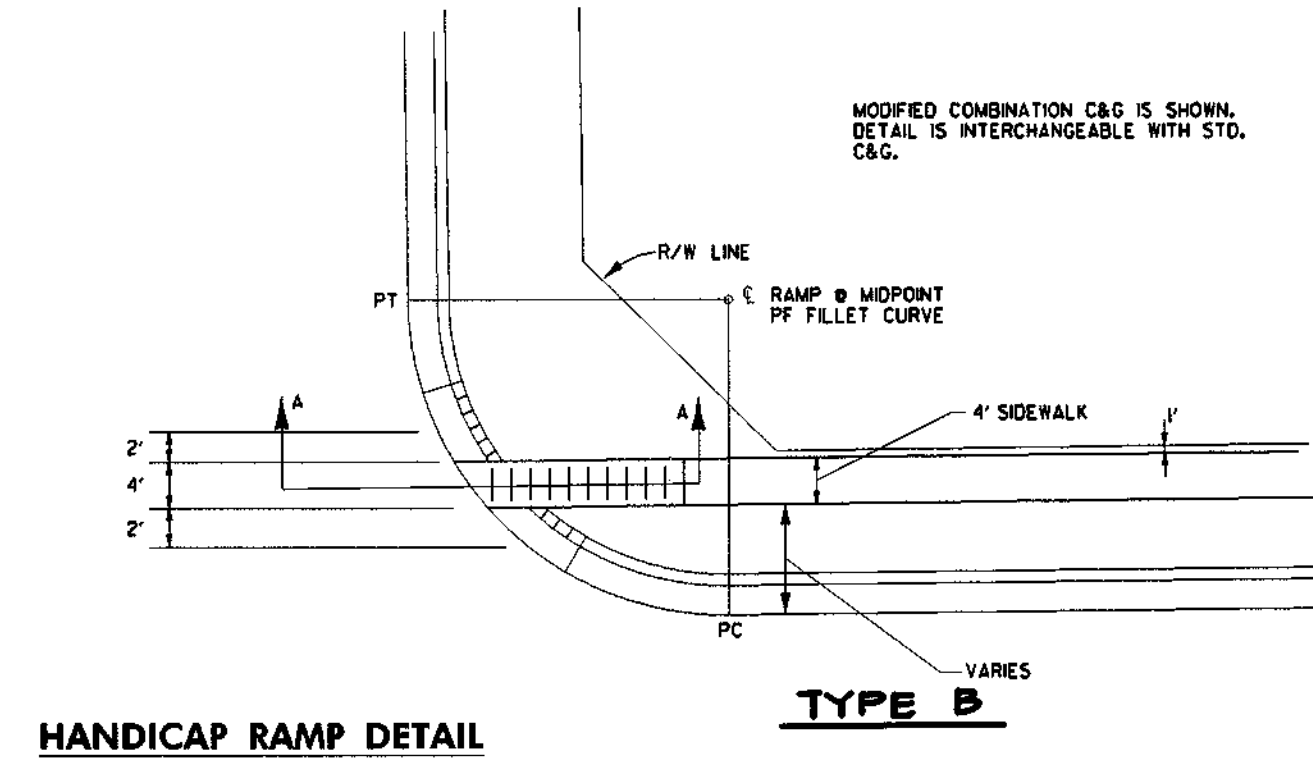
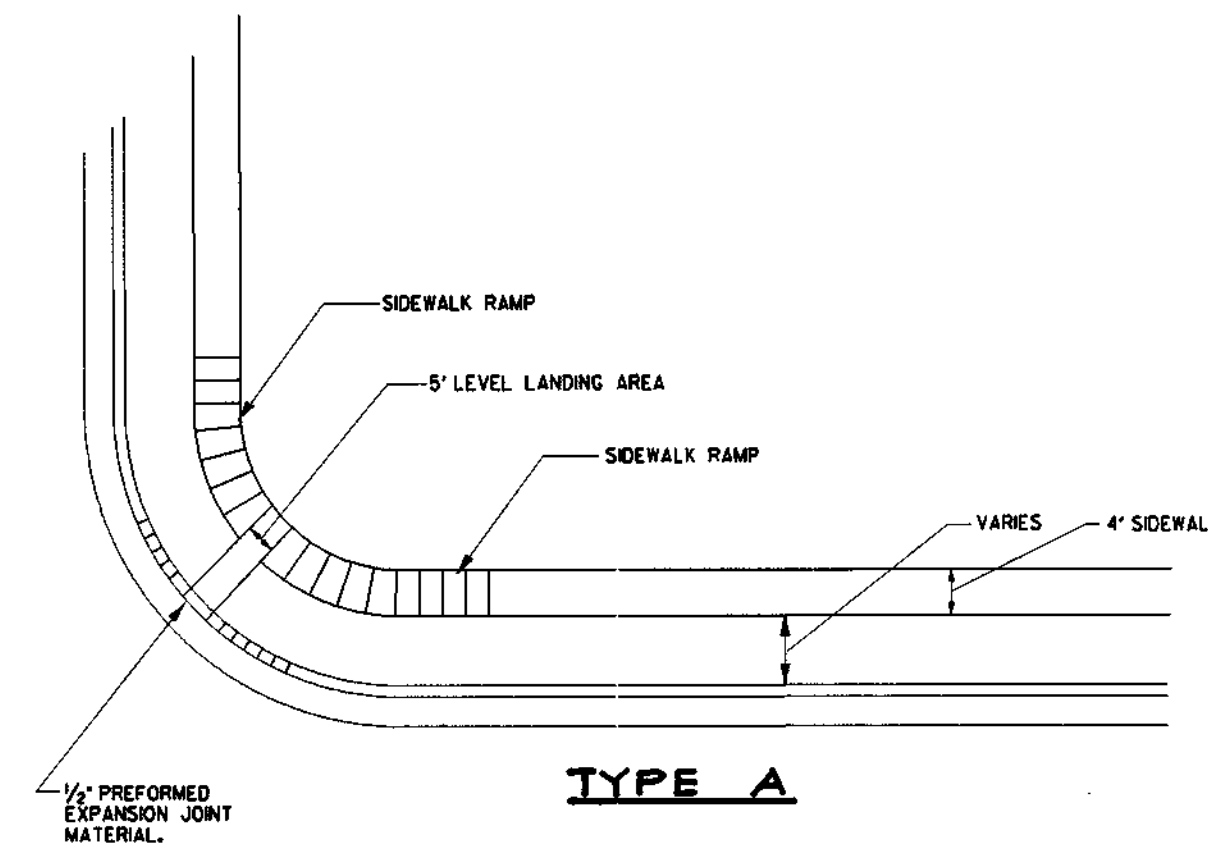


AREA	SECTION 4 AREA 4
TITLE	STORM DRAIN PROFILES
Des By	JEF
Dm By	JEF
Chk By	JWR
Scale	1" = 50'
Date	MAR 96
Proj. No.	94064
Page	22 OF 44

Professional Engr. No. 10551

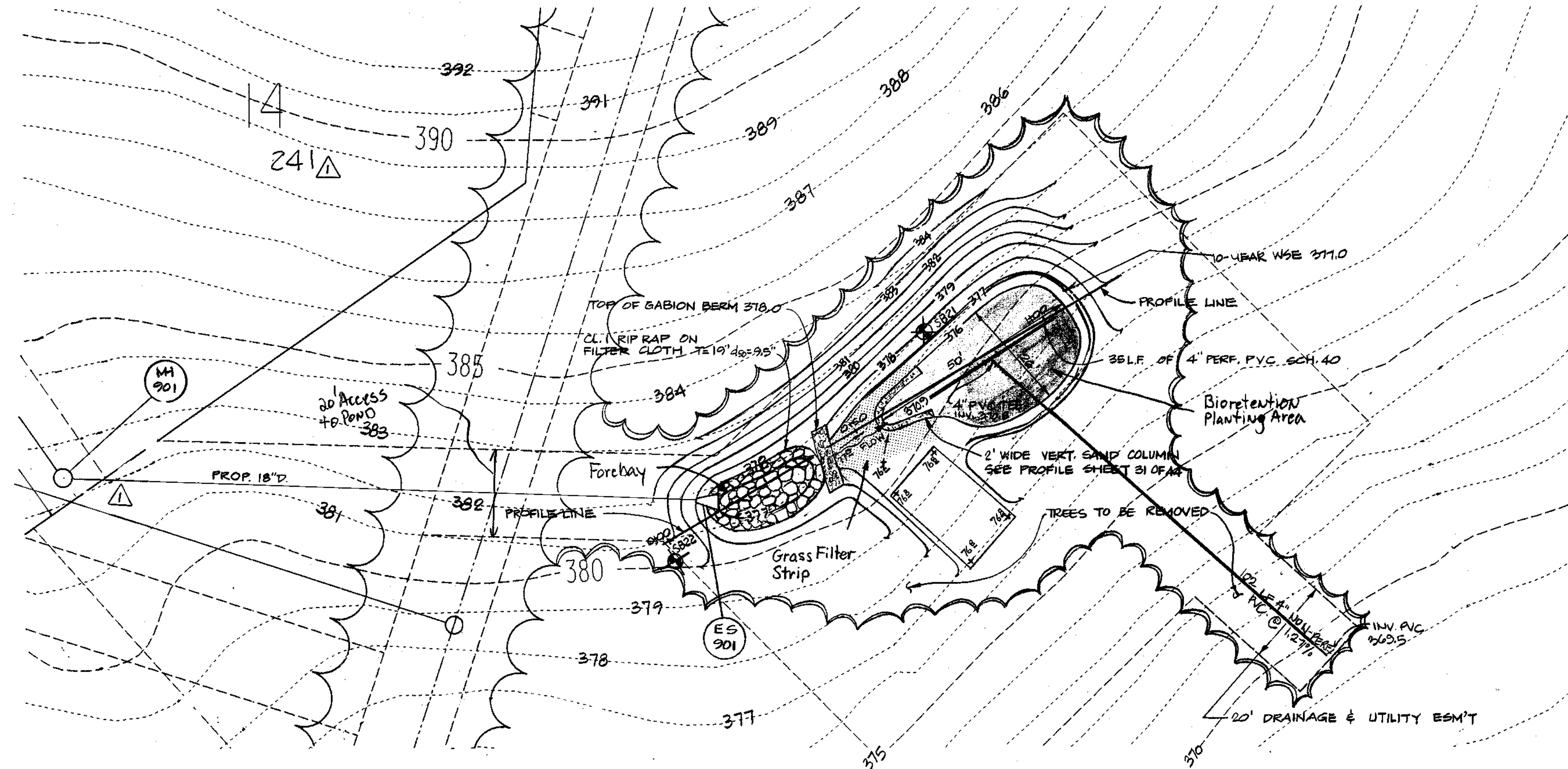
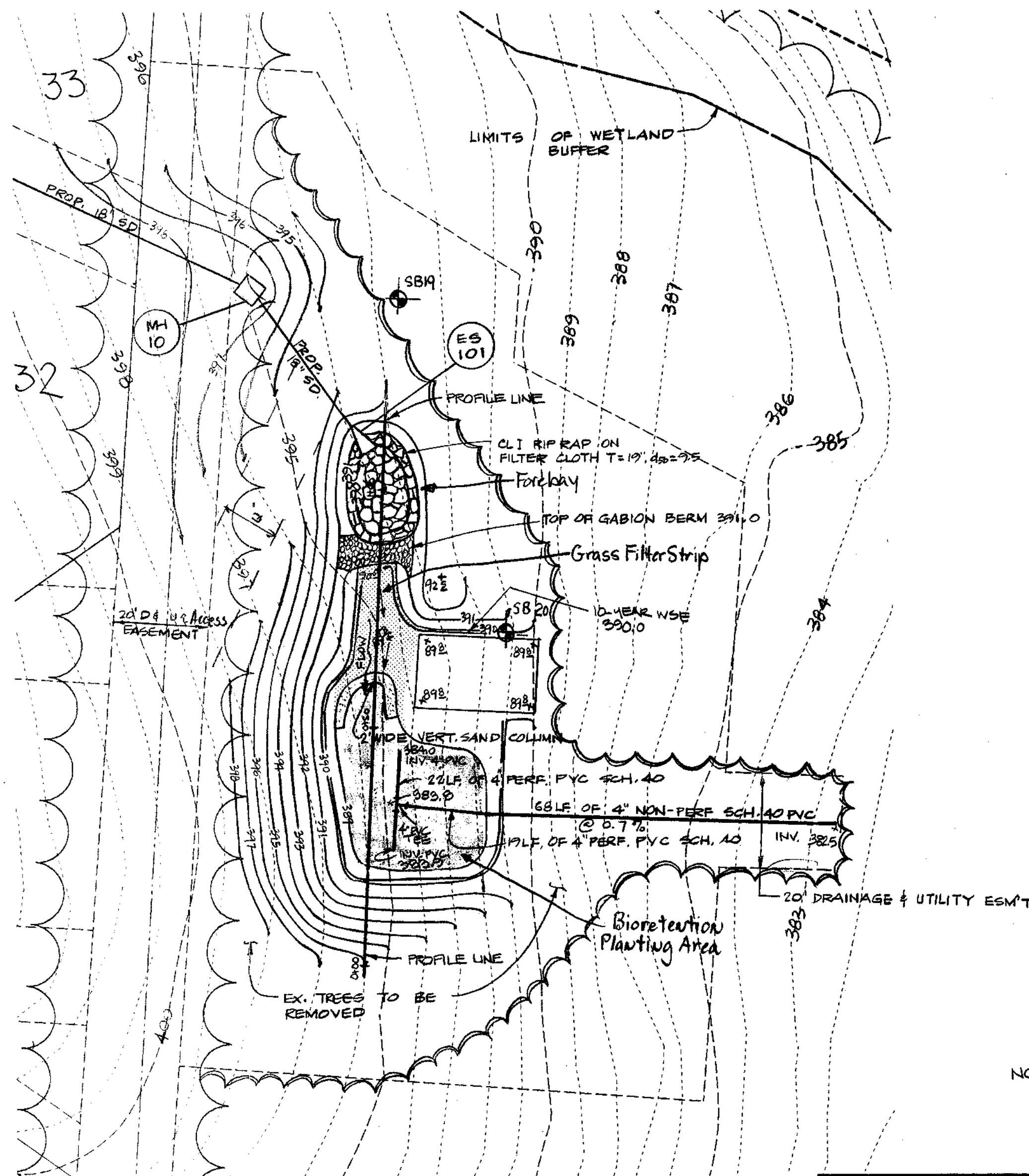
STRUCTURE SCHEDULE

NO.	TYPE	WIDTH	TOP ELEV.	INV. OUT.	STD. DETAIL	LOCATION
1602	A-5	3.0	432.84	425.20	SD4.40	FLOWING WATER TRAIL STA 7+60.2
1601	A-5	3.0	422.32	416.8	SD4.40	QUIET WAYS COURT LINEAR PROF. 2+41.6
M601	STD MH	4.0	SET IN FIELD	400.41	G5.01	SEE PLAN (BEHIND LOT 153)
M602	STD MH	4.0	422.90	416.66	G5.01	QUIET WAYS COURT
1803	A-10	3.0	411.78	407.50	SD4.41	FLOWING WATER TRAIL LINEAR PROF 1+56.60
1804	A-10	3.0	415.94	418.80	SD4.41	FLOWING WATER TRAIL STA 1+51.0
1802	A-5	3.0	415.94	406.51	SD4.40	FLOWING WATER TRAIL STA 1+51.0
1801	A-5	3.0	419.63	405.65	SD4.40	FLOWING WATER TRAIL STA 10+28.0
M 802	STD MH	4.0	SET IN FIELD	401.25	G5.01	SEE PLAN
M 801	STD MH	4.0	SET IN FIELD	400.19	G5.01	SEE PLAN
ES801	CONC END SECTION	18"	N/A	399.4	SD5.51	SEE PLAN
ES802	CONC END SECTION	18"	N/A	399.4	SD5.51	SEE PLAN
1713	A-5	3.0	440.20	436.22	SD4.40	FLOWING WATER TRAIL STA 1+57.0
1712	A-10	3.0	440.20	435.85	SD4.41	FLOWING WATER TRAIL STA 1+57.0
1709	A-10	3.0	424.44	419.40	SD4.41	SHINING STARS LANE STA 2+59.7
1708	A-10	3.0	423.64	418.80	SD4.40	SHINING STARS LANE STA 1+90.0
1707	A-5	3.0	423.64	418.80	SD4.40	SHINING STARS LANE STA 1+90.0
1305	A-5	3.0	460.90	454.70	SD4.40	BRIGHT FLOW MEWS LINEAR PROF STA 1+92.00
M 309	STD MH	4.0	SET IN FIELD	447.45	G5.01	SEE PLAN (BEHIND LOTS 106 & 107)
M 304	MOD. Y-1 INLET	5.0	450.06	441.83	SD4.41	SEE PLAN (BEHIND LOTS 105 & 95)
1303	A-10	5.0	440.95	440.95	SD4.41	INDIAN SUMMER DRIVE STA 5+40.0
1302	A-10	5.0	448.69	440.25	SD4.41	INDIAN SUMMER DRIVE STA 6+32.8
1301	A-10	5.0	448.69	439.87	SD4.41	INDIAN SUMMER DRIVE STA 6+32.8
M 308	STD MH	5.0	SET IN FIELD	439.35	G5.13	INDIAN SUMMER DR. STA 6+93.5 29.8' LT.
M 307	STD MH	5.0	SET IN FIELD	430.96	G5.13	SEE PLAN (BEHIND LOTS 98 & 92)
M 301	MODIFIED Y-1 INLET	5.0	436.65	430.65	G5.13	SEE PLAN (BEHIND LOT 91)
M 300	MODIFIED Y-1 INLET	5.0	431.31	429.95	G5.13	SEE PLAN (BEHIND LOTS 91, 87, 86) SET WBR AT EX. GR.
M 304	STD MH	5.0	441.67	428.64	G5.13	TALL BRANCHES PASS LINEAR PROF STA 1+42.8 23.6' LT
M 303	STD MH	5.0	443.09	428.10	G5.13	TALL BRANCHES PASS LINEAR PROF STA 0+70.6 16.2' LT
M 302	MODIFIED Y-1 INLET	5.0	434.41	427.17	G5.13	SEE PLAN (LOT 83) SET WBR AT EX. GROUND
M 301	STD MH	5.0	SET IN FIELD	429.30	G5.13	SEE PLAN
ES301	CONC END SECTION	36"	N/A	420.25	G5.51	SEE PLAN
M 302	MODIFIED Y-1 INLET	5.0	444.11	438.05	SD4.41	SEE PLAN (BEHIND LOT 716)
1307	A-10	3.0	449.97	446.20	SD4.41	DISTANT THUNDER TRAIL STA 5+57.2
M 311	STD MH	4.0	448.00	443.70	G5.01	TALL BRANCHES PASS STA 0+62.7 30.0 RT
1306	A-10	3.0	445.45	441.25	SD4.41	DISTANT THUNDER TRAIL LINEAR PROF STA 1+65.0
M 310	STD MH	4.0	446.54	440.28	G5.01	DISTANT THUNDER TRAIL LINEAR PROF 2+68.0 19' LT
1308	A-10	3.0	441.86	436.60	SD4.41	TALL BRANCHES PASS LINEAR PROF STA 1+58.0
1501	A-5	3.0	448.64	443.75	SD4.40	SUNLIT WATER WAY LINEAR PROF STA 2+00.4
M 502	STD MH	4.0	451.51	441.15	G5.01	SUNLIT WATER WAY LINEAR PROF STA 3+03.0 20.6' RT
M 501	STD MH	4.0	SET IN FIELD	436.0/434.0	G5.01	SEE PLAN (BEHIND LOTS 120 & 121)
ES 501	CONC END SECTION	18"	N/A	434.0	SD5.51	SEE PLAN
ES502	CONC END SECTION	18"	N/A	433.0	SD5.51	SEE PLAN
13	A-5	3.0	408.12	404.20	SD4.40	OLD SEA PLACE STA 3+00.0
12	A-10	3.0	409.14	403.24	SD4.41	FALL MOON RIDE STA 6+15.8
M 1	STD MH	4.0	401.05	396.09	G5.01	FALL MOON RIDE STA 4+21.9 19.6' LT.
1.4	A-10	3.0	398.94	394.25	SD4.41	FALL MOON RIDE STA 2+32.6
1.1	A-5	3.0	398.94	392.75	SD4.40	FALL MOON RIDE STA 2+32.6
1705	A-5	3.0	441.75	437.25	SD4.40	FLOATING CLOUDS PATH STA 0+50.0
1704	A-5	3.0	445.84	436.73	SD4.40	INDIAN SUMMER DRIVE STA 15+40.0
1703	A-10	3.0	445.84	436.33	SD4.41	INDIAN SUMMER DRIVE STA 15+40.0
M 703	STD MH	5.0	434.69	434.88	G5.13	INDIAN SUMMER DRIVE STA 15+74 10' RT.
1702	A-5	3.0	429.40	421.20	SD4.40	INDIAN SUMMER DRIVE STA 18+10.00
M 702	STD MH	4.0	425.93	416.77	G5.01	INDIAN SUMMER DRIVE STA 18+89 12' RT
1701	A-5	3.0	419.73	413.95	SD4.40	INDIAN SUMMER DRIVE STA 21+41
M 701	STD MH	5.0	421.86	415.41	G5.13	INDIAN SUMMER DRIVE STA 20+04 10' RT
ES 701	CONC END SECTION	30"	N/A	411.5	SD5.51	SEE PLAN
1711	A-5	3.0	427.06	422.40	SD4.40	EARLY LILACS PATH STA 0+50.00
1710	A-10	4.0	429.40	421.85	SD4.41	INDIAN SUMMER DRIVE STA 18+10.0
1706	A-10	3.0	419.73	415.50	SD4.41	INDIAN SUMMER DRIVE STA 21+41
1901	A-10	3.0	403.80	399.70	SD4.41	INDIAN SUMMER DRIVE STA 26+08
M 902	STD MH	4.0	392.20	386.20	G5.01	SEE PLAN
M 901	STD MH	4.0	SET IN FIELD	378.03	G5.01	SEE PLAN
ES 901	CONC END SECTION	18"	N/A	377.00	SD5.51	SEE PLAN
1902	A-10	5.0	392.12	387.30	SD4.41	INDIAN SUMMER DRIVE LINEAR PROF STA 1+72
1401	A-5	3.0	447.70	438.00	SD4.40	TRAILING MOSS GATE LINEAR PROF STA 1+92.0
M 402	STD MH	4.0	SET IN FIELD	433.40	G5.01	SEE PLAN (BEHIND LOT 65)
M 401	STD MH	5.0	SET IN FIELD	432.50	G5.13	SEE PLAN
ES402	CONC END SECTION	18"	N/A	430.00	SD5.51	SEE PLAN
1402	A-5	3.0	441.95	437.60	SD4.40	LAUREL LEAVES LANE LINEAR PROF STA 2+09.0
M 403	STD MH	4.0	SET IN FIELD	435.20	G5.01	LAUREL LEAVES LANE LINEAR PROF STA 1+22.4 25' RT
ES401	CONC END SECTION	18"	N/A	424.70	SD5.51	SEE PLAN
1203	A-10	3.0	434.73	431.00	SD4.41	FLOATING CLOUDS PATH STA 5+34.50
1202	A-10	3.0	433.19	429.30	SD4.41	FLOATING CLOUDS PATH STA 5+60.2
1201	A-10	3.0	423.64	418.00	SD4.41	FLOATING CLOUDS PATH LINEAR PROF STA 1+84.0
M 201	STD MH	4.0	SET IN FIELD	418.00	G5.01	SEE PLAN
ES201	CONC END SECTION	18"	N/A	408.5	SD5.51	SEE PLAN
1103	A-10	3.0	416.20	411.70	SD4.41	EARLY LILACS PATH STA 3+93.6
1102	A-10	3.0	409.54	405.50	SD4.41	EARLY LILACS PATH STA 5+53.6
1104	A-10	3.0	409.54	405.98	SD4.41	EARLY LILACS PATH STA 5+53.6
1101	A-10	3.0	406.07	401.80	SD4.41	EARLY LILACS PATH LINEAR PROF STA 1+94.0
M 101	STD MH	4.0	397.50	392.50	G5.12	SEE PLAN
ES 101	CONC END SECTION	18"	N/A	390.0	SD5.51	SEE PLAN
EI	CONC END SECTION	24"	N/A	409.0	SD5.51	SEE PLAN



6-10-90	REVISION	REVISED INLET TO M-309 & M-703
1/11/00	REVISION	REV. STRUCTURE SCHEDULE: M-902, M-901 & I-902
DATE	1/11/00	REVISION DESCRIPTION
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS		
<i>Richard M. Pauley</i>	CHIEF, BUREAU OF HIGHWAYS	5-22-97
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING		
<i>C. Haniffa</i>	CHIEF, DIVISION OF LAND DEVELOPMENT	7/10/97
<i>Mike Roman</i>	CHIEF, DEVELOPMENT ENGINEERING DIVISION	5/20/97
4/28/98	REVISION	REPLACED MH'S M-302, M-305 & M-309 WITH INLETS
Date	No.	Revision Description
VILLAGE OF RIVER HILL		
SECTION 4, AREA 4		
OWNER / DEVELOPER: THE HOWARD RESEARCH & DEVELOPMENT CORP. 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044		
DMW Dan McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296-3355 Fax 296-4705		
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals		
AREA	SECTION 4 AREA 4	PARCEL
TITLE	STRUCTURE SCHEDULE & DETAILS	
Des By	JWS	Scale SEE PLAN
Drn By	RTP	Date MAR 1996
Chk By	JWR	Approved
Professional Engr. No. 10551	Proj. No. 94064	23 OF 44

For New 26 20-40-50 1996 05 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



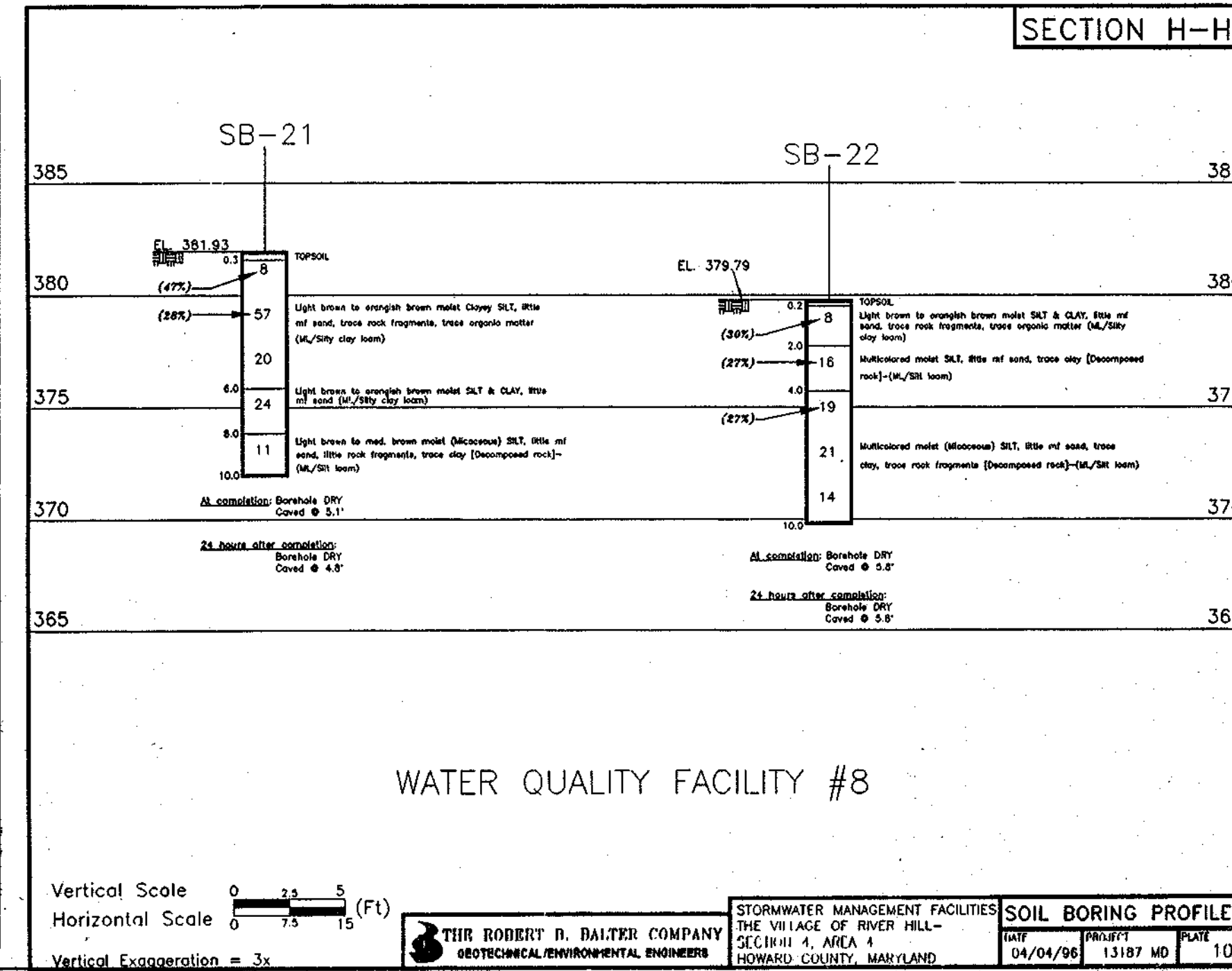
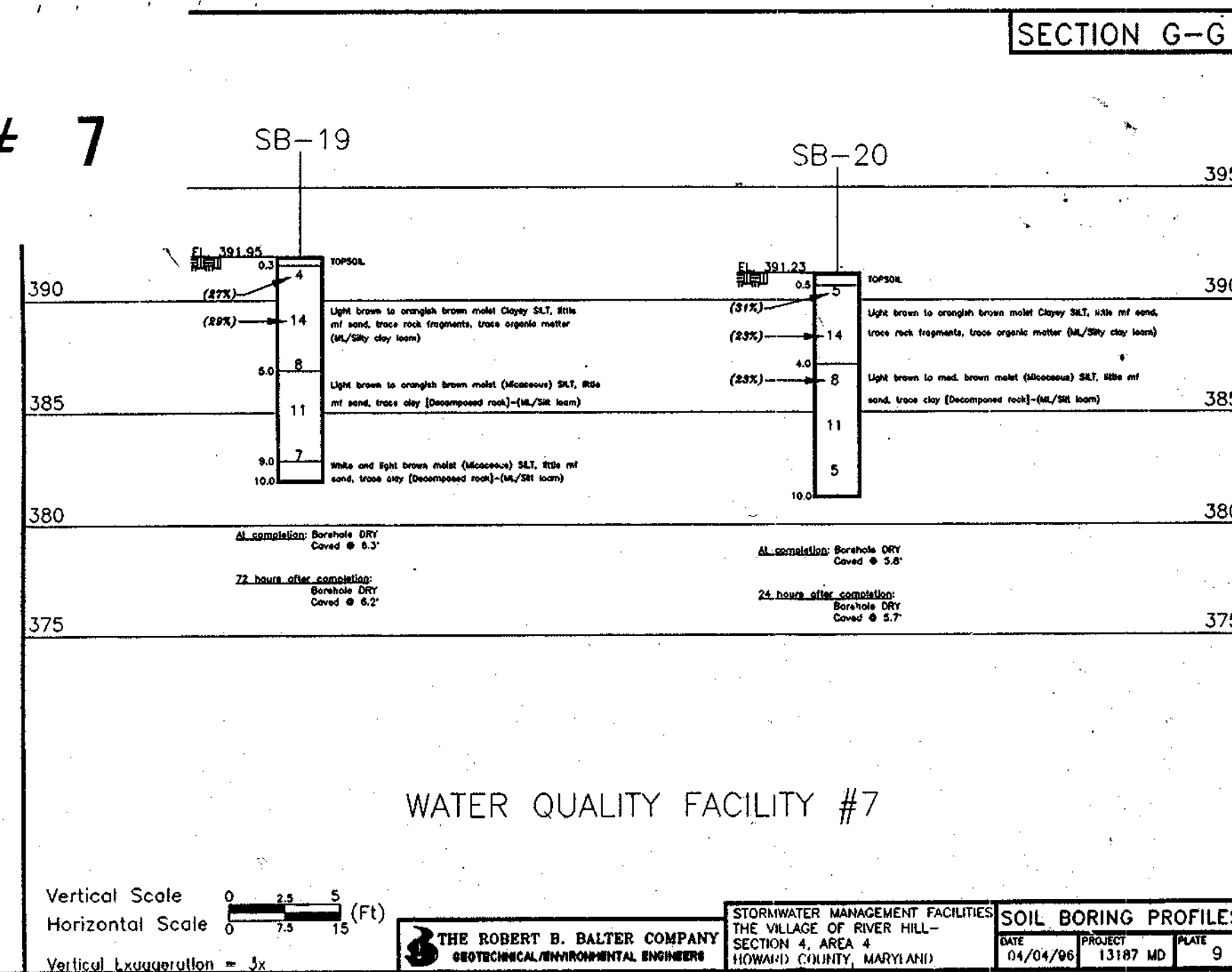
BIO-RETENTION WATER QUALITY FACILITY # 8

SCALE: 1" = 20'
HAZARD CLASS "A"

NOTE: FACILITIES #7 AND #8 SHALL BE JOINTLY MAINTAINED BY HOWARD COUNTY AND COLUMBIA ASSOCIATION

BIO-RETENTION WATER QUALITY FACILITY # 7

SCALE: 1" = 20'
HAZARD CLASS "A"

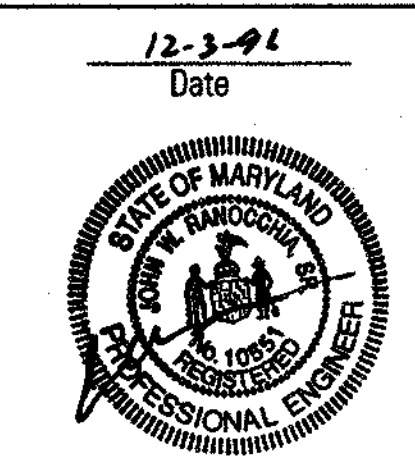


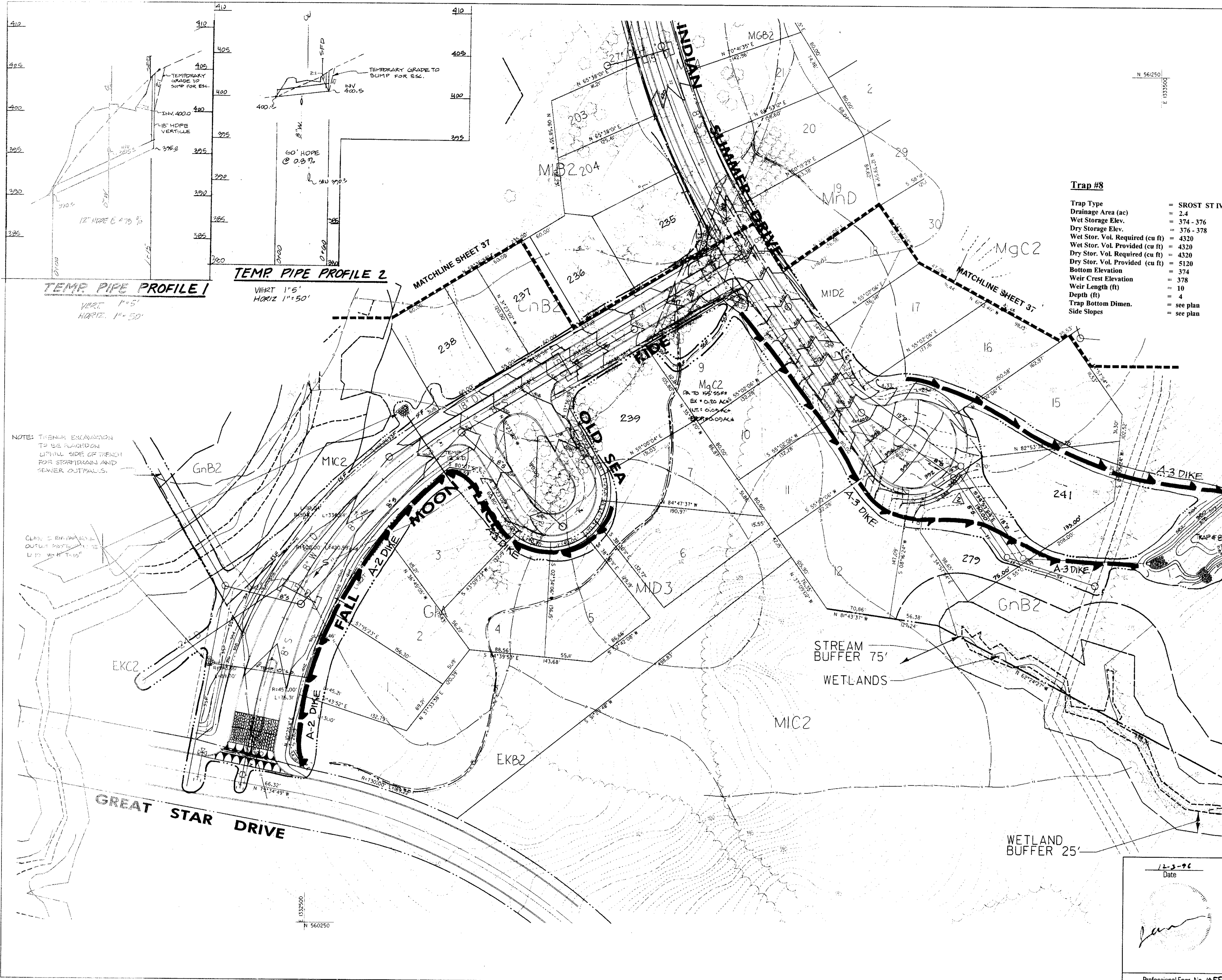
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>Rudolph M. Dancy</i> CHIEF, BUREAU OF HIGHWAYS	5-22-97 DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
<i>C. H. ...</i> CHIEF, DIVISION OF LAND DEVELOPMENT	7/10/97 DATE
APPROVED: DEVELOPMENT ENGINEERING DIVISION	
<i>...</i>	5/21/97 DATE
1/11/00	REV. SEWER & DRAIN LOCATIONS - LOT 241
Date	No. Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4
OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Duff-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 286-3313
Fax 286-4706
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA	SECTION 4 AREA 4
TAX MAP	PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	
TITLE	WATER QUALITY FACILITIES #7 & 8
Des By	Scale 1" = 20' Proj. No. 94064
Dm By	Date MAR 96
Chk By	JWR Approved 29 OF 44





SEDIMENT CONTROL LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING DRAINAGE AREA
- INTERIM DRAINAGE AREA
- PROPOSED DRAINAGE AREA
- LIMIT OF DISTURBANCE
- SUPER FENCE DIVERSION
- SUPER SILT FENCE
- RIP-RAP OUTLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- MOUNTABLE BERM

Trap #8

Trap Type	=	SROST ST IV
Drainage Area (ac)	=	2.4
Wet Storage Elev.	=	374 - 376
Dry Storage Elev.	=	376 - 378
Wet Stor. Vol. Required (cu ft)	=	4320
Wet Stor. Vol. Provided (cu ft)	=	4320
Dry Stor. Vol. Required (cu ft)	=	4320
Dry Stor. Vol. Provided (cu ft)	=	5120
Bottom Elevation	=	378
Weir Crest Elevation	=	374
Weir Length (ft)	=	10
Depth (ft)	=	4
Trap Bottom Dimen.	=	see plan
Side Slopes	=	see plan

DEVELOPERS CERTIFICATE:

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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE 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/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *[Signature]* Date: 12/1/97

ENGINEERS CERTIFICATE:

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

Signature: *[Signature]* Date: 12-3-96

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.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE: 12-21-97

APPROVED: *[Signature]* DATE: 4-21-98

HOWARD SOIL CONSERVATION DISTRICT

NOTE: TRENCH EXCAVATION TO BE RAMPED ON UPHILL SIDE OF TRENCH FOR STORMDRAIN AND SEWER OUTFALLS.

Note: Contractor to repair EO where Prop Sewer Crosses EO at the end of each working day.

LIMIT OF DISTURBANCE THIS SHEET: 187,908 SF OR 4.30 AC±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	5-22-97
<i>[Signature]</i> CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	7/19/97
<i>[Signature]</i> CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	5/21/97
DATE	DATE
1/11/00	REV. SEWER & RAIN LOC. LOTS 241, 279 & COL-DE-SAC
Date	Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Dan McCaskey & Associates, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

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

AREA	TAX MAP	PARCEL	
	ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND		
TITLE	EROSION AND SEDIMENT CONTROL PLAN		
Des By	CRW	Scale 1" = 50'	Prj. No. 94064
Dm By	CRW	Date MAR 96	
Chk By	JWR	Approved	36 OF 44

12-3-96
Date

[Signature]

Professional Engr. No. 10557

DATE: MAR 17 11:27 AM 1996

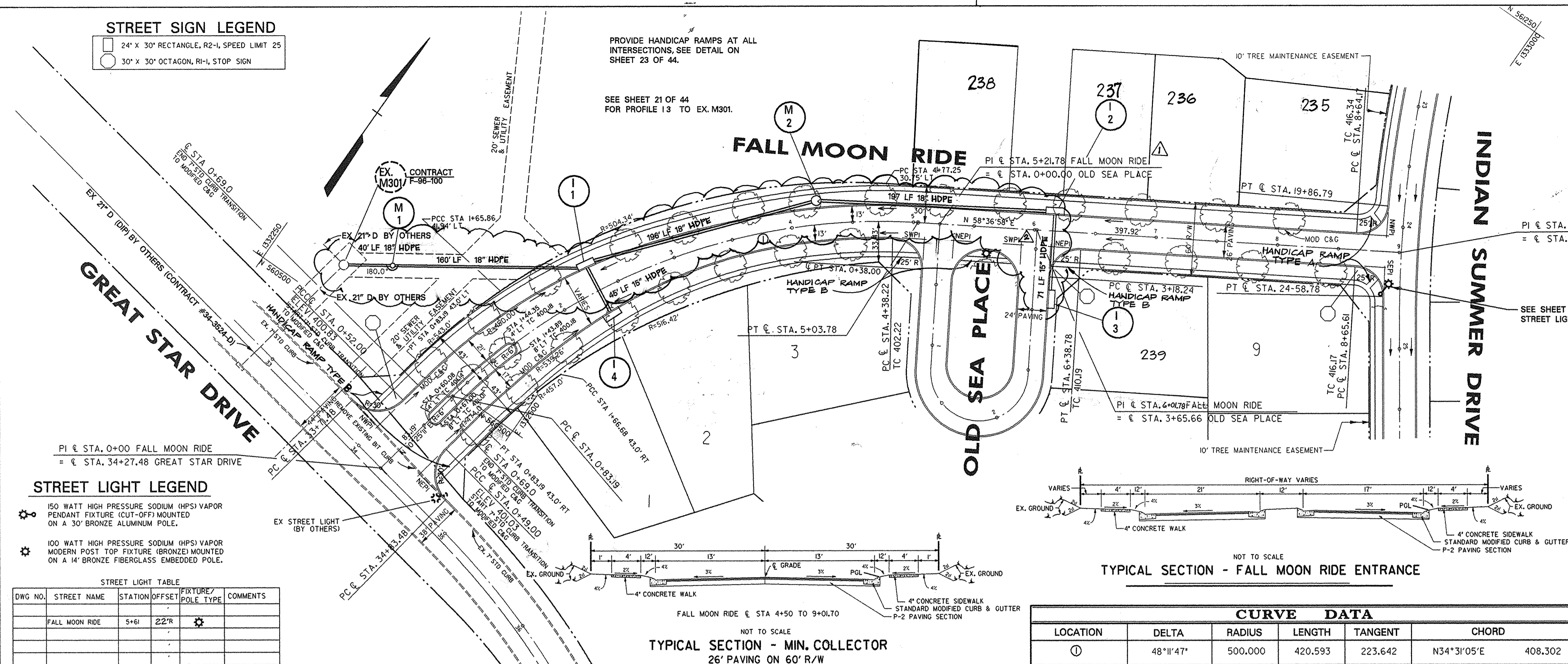
STREET SIGN LEGEND

- 24" x 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" x 30" OCTAGON, R1-1, STOP SIGN

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

SEE SHEET 21 OF 44 FOR PROFILE 13 TO EX. M301.

29 TREES PROVIDED THIS SHEET.

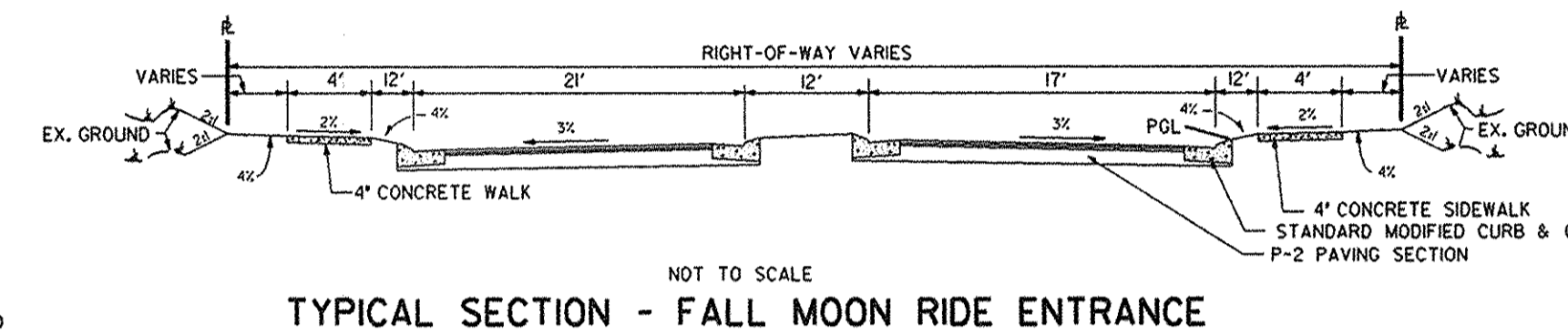


STREET LIGHT LEGEND

- 150 WATT HIGH PRESSURE SODIUM (HPS) VAPOR PENDANT FIXTURE (CUT-OFF) MOUNTED ON A 30' BRONZE ALUMINUM POLE.
- 100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14' BRONZE FIBERGLASS EMBEDDED POLE.

STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE	COMMENTS
	FALL MOON RIDE	5+61	22'R	☼	



TYPICAL SECTION - MIN. COLLECTOR
26' PAVING ON 60' R/W

CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	48°11'47"	500.000	420.593	223.642	N34°31'05"E 408.302

1-19-97
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
William H. ... 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *William H. ...* 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

6/5/98 LOTS ADJUSTED
8/10/98 REVISED RCP ALIVE CD. TO HOPESD.

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

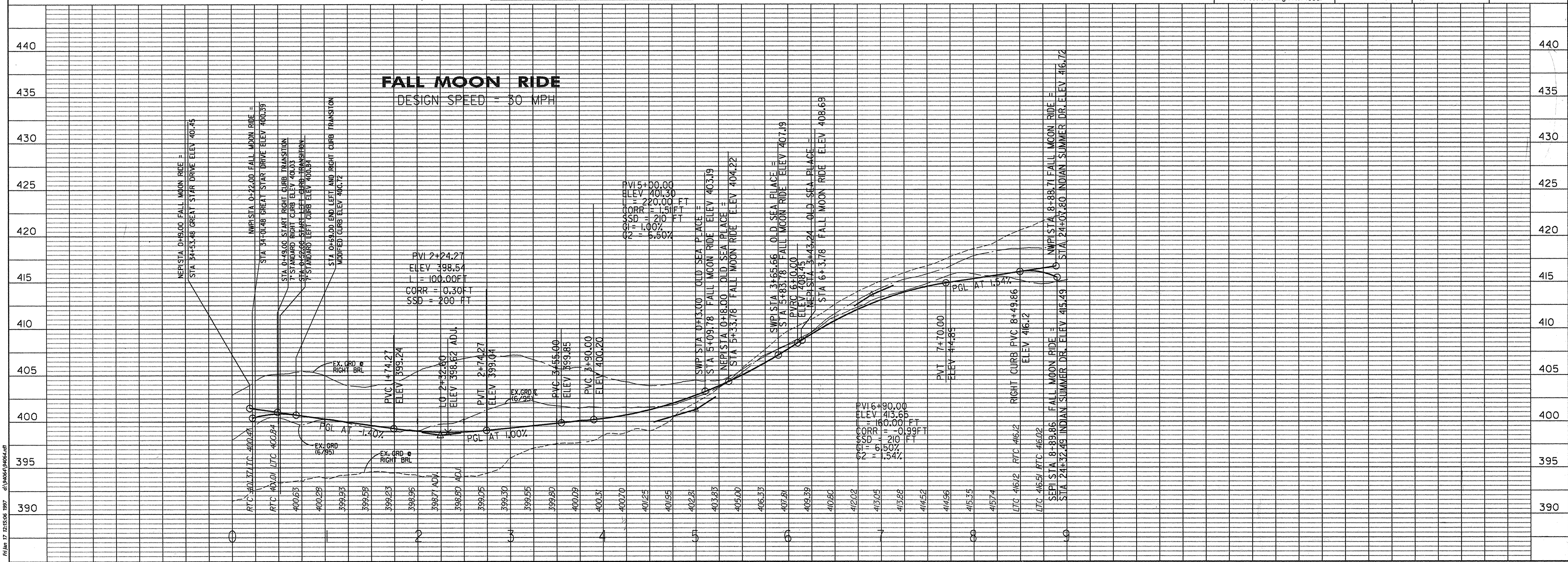
DMW
Datt-McCune-Walker, Inc.
200 East Pennsylvania Avenue
Pousson, Maryland 21286
(410) 296-8833
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
FALL MOON RIDE

Des By JWS Scale 1" = 50' Proj. No. 94064
Dwn By JEF Date JAN 97
Chk By JWR Approved

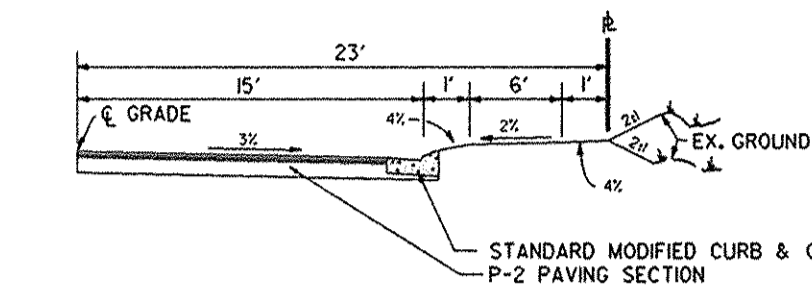
2 OF 44



P/Jan 17 22:05:06 1997 2104064/94064

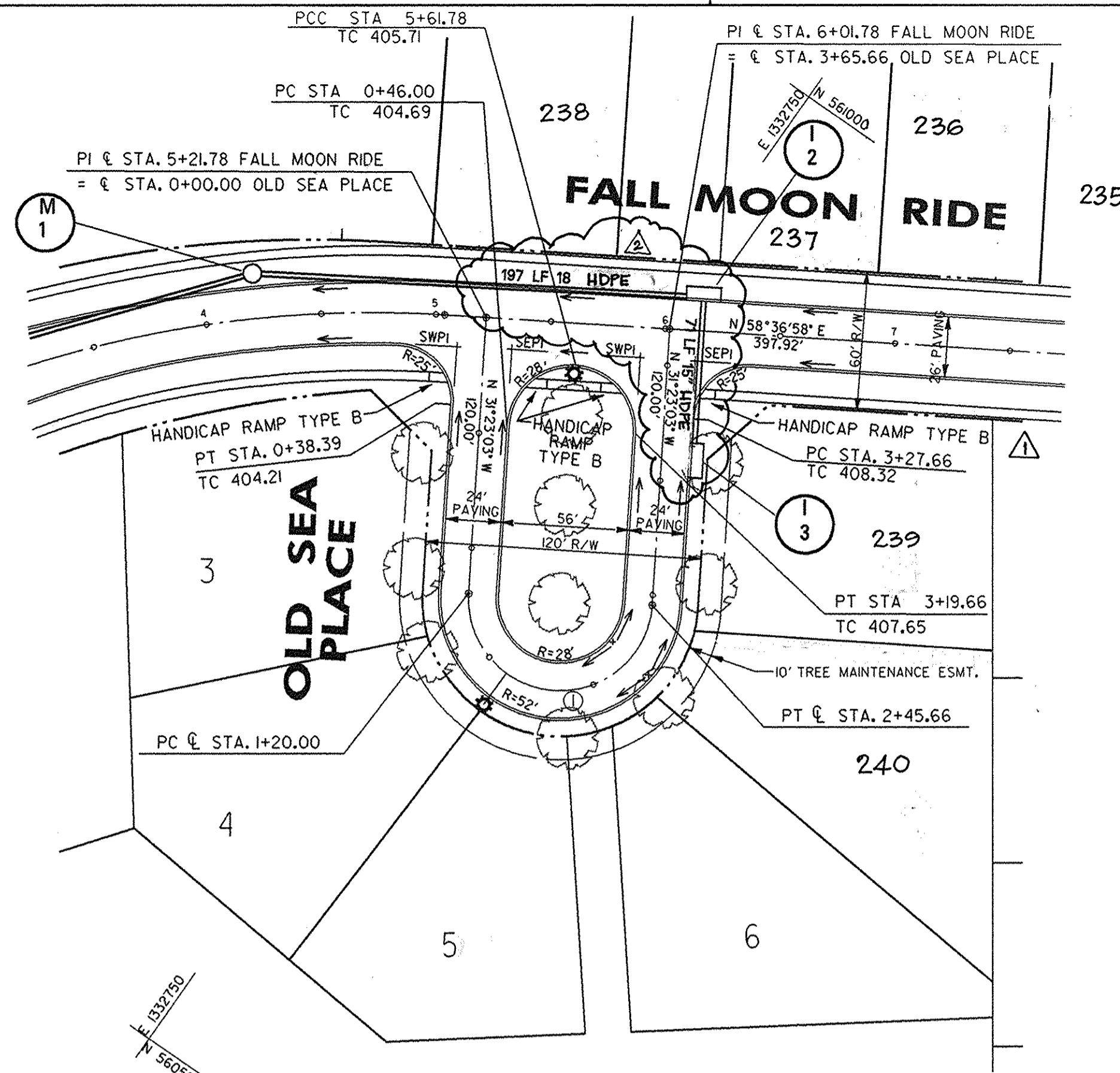
STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-1, STOP SIGN



TYPICAL HALF SECTION
30' PAVING ON 120' R/W
NOT TO SCALE

STREET LIGHT TABLE					
DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE / POLE TYPE	COMMENTS
	FALL MOON RIDE	5+61	22'R	☼	SHOWN ON SHT 2 OF 44
	OLD SEA PLACE	1+57	20'R	☼	



10 TREES PROVIDED THIS SHEET.

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS. SEE DETAIL ON SHEET 23 OF 44.

CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	180°0'0"	40.000	125.66	0.000	N58°36'58"E 80.000

2-4-97
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. Hamilton 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John P. ... 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/15/98 LOT 5 ADJUSTED
8/18/98 REVISED ROP CL IV 9D, 10 HDPE 9D

Date No. Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

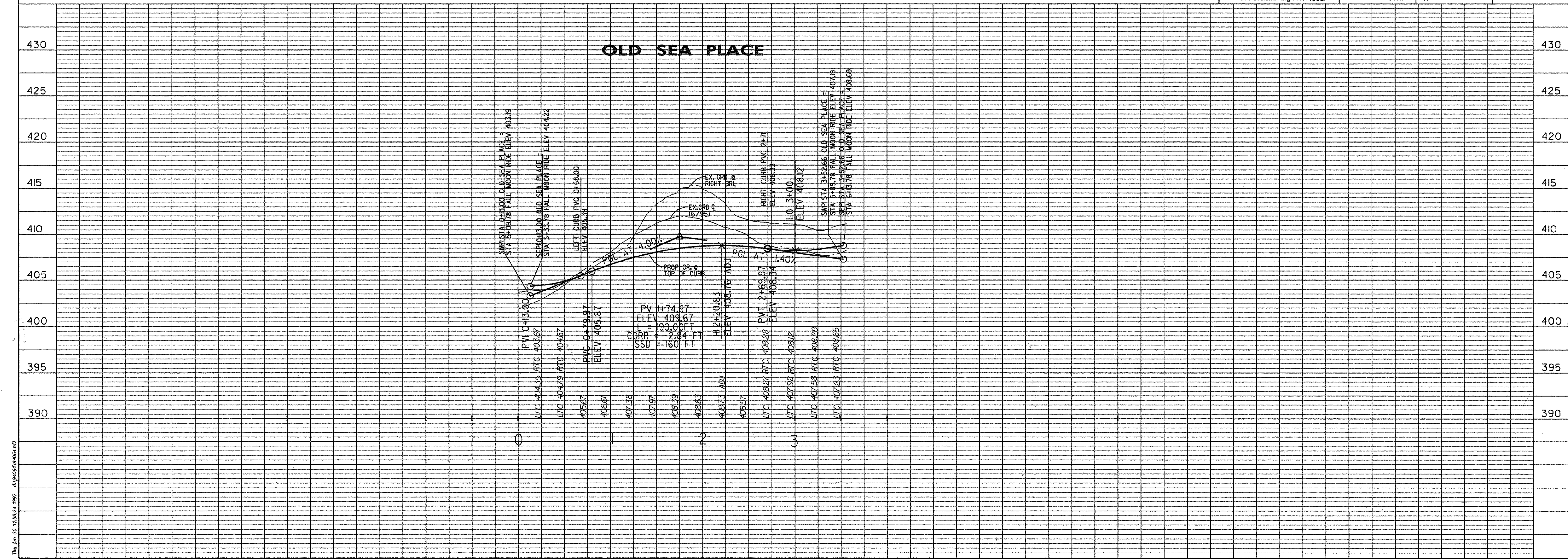
DMW
Daft McCune-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4705

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

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
OLD SEA PLACE

Des By JWS Scale 1" = 50' Proj. No. 94064
Dm By JEF Date JAN 97
Chk By JWR Approved 3 OF 44



Thu Jun 30 14:52:28 1997 c:\pwork\94064.dwg

STREET SIGN LEGEND

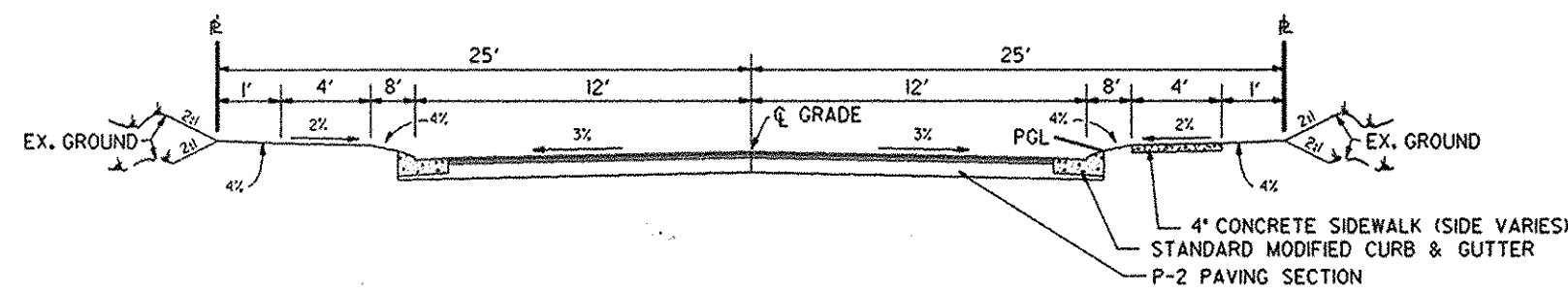
- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-1, STOP SIGN

N 561750
E 1332500

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

N 561750
E 1333000

14 TREES PROVIDED THIS SHEET.



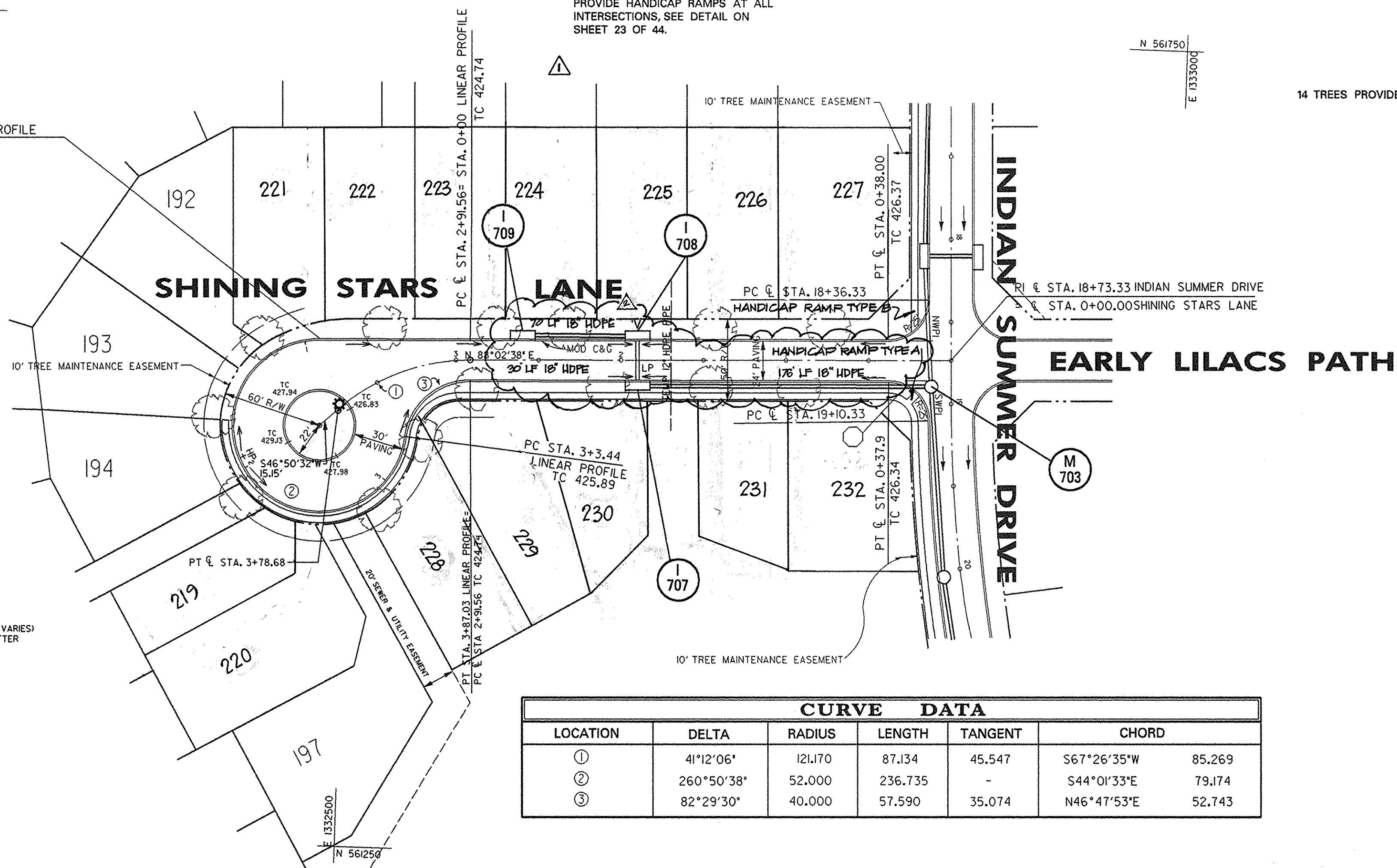
NOT TO SCALE
TYPICAL SECTION - LOCAL CUL-DE-SAC
24' PAVING ON 50' R/W

STREET LIGHT LEGEND

- ⊙ 100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 1/4" BRONZE FIBERGLASS EMBEDDED POLE.

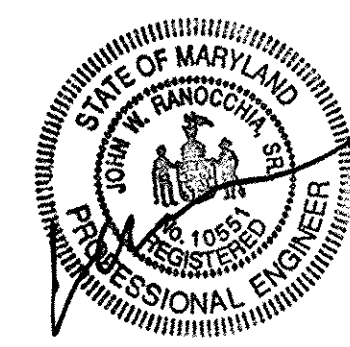
STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION/OFFSET	FIXTURE/POLE TYPE	COMMENTS
SHINING STAR LANE	3+13	25' L.	⊙	LOCATE 3' BEHIND FACE OF CURB



CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	41°12'06"	121.170	87.134	45.547	S67°26'35"W 85.269
②	260°50'38"	52.000	236.735	-	S44°01'33"E 79.174
③	82°29'30"	40.000	57.590	35.074	N46°47'53"E 52.743

1-12-97
Date



Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Howard M. Daulton 5-22-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
William C. Hamilton 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William C. Hamilton 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/98 LOTS ADJUSTED
8/18/98 REVISED ROP CLASSED TO HDPE GR.
Date No. Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

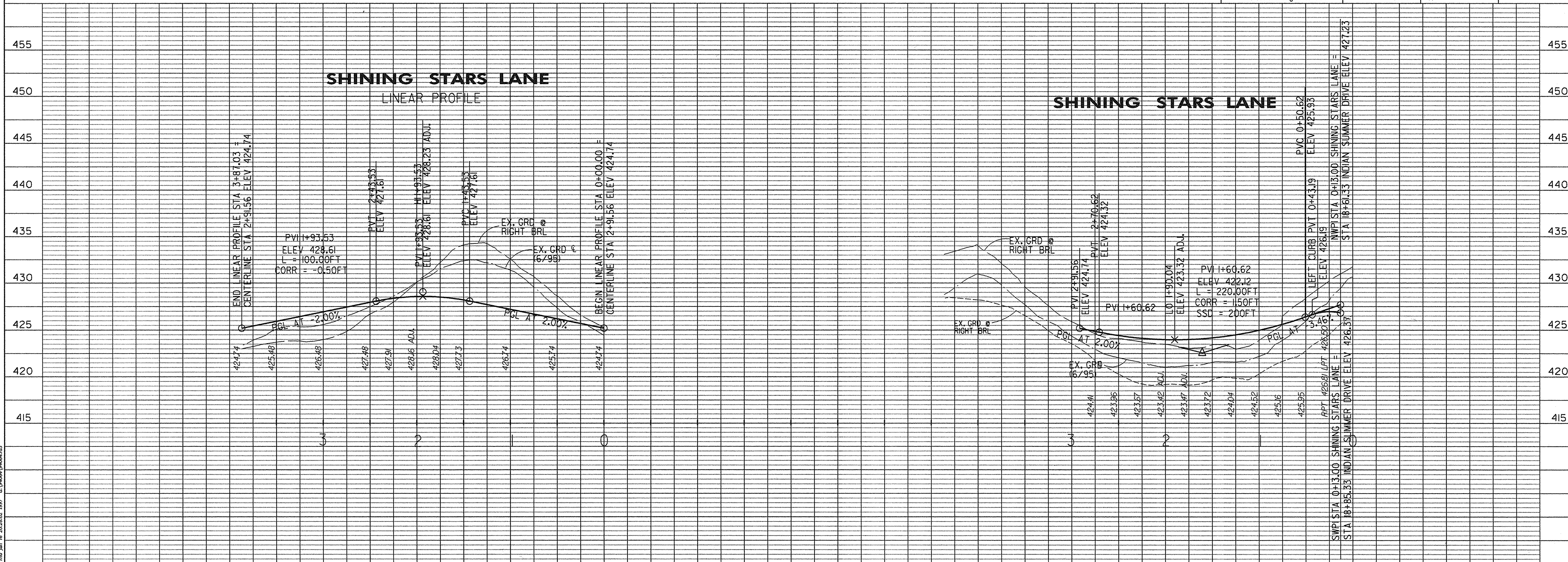
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
D&M-CUNEO-WALKER, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-5333
Fax 296-4706
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ROAD CONSTRUCTION PLANS
SHINING STARS LANE

Des By JWS Scale 1" = 50' Proj. No. 940964
Dm By JEF Date JAN 97
Chk By JWR Approved 4 OF 44

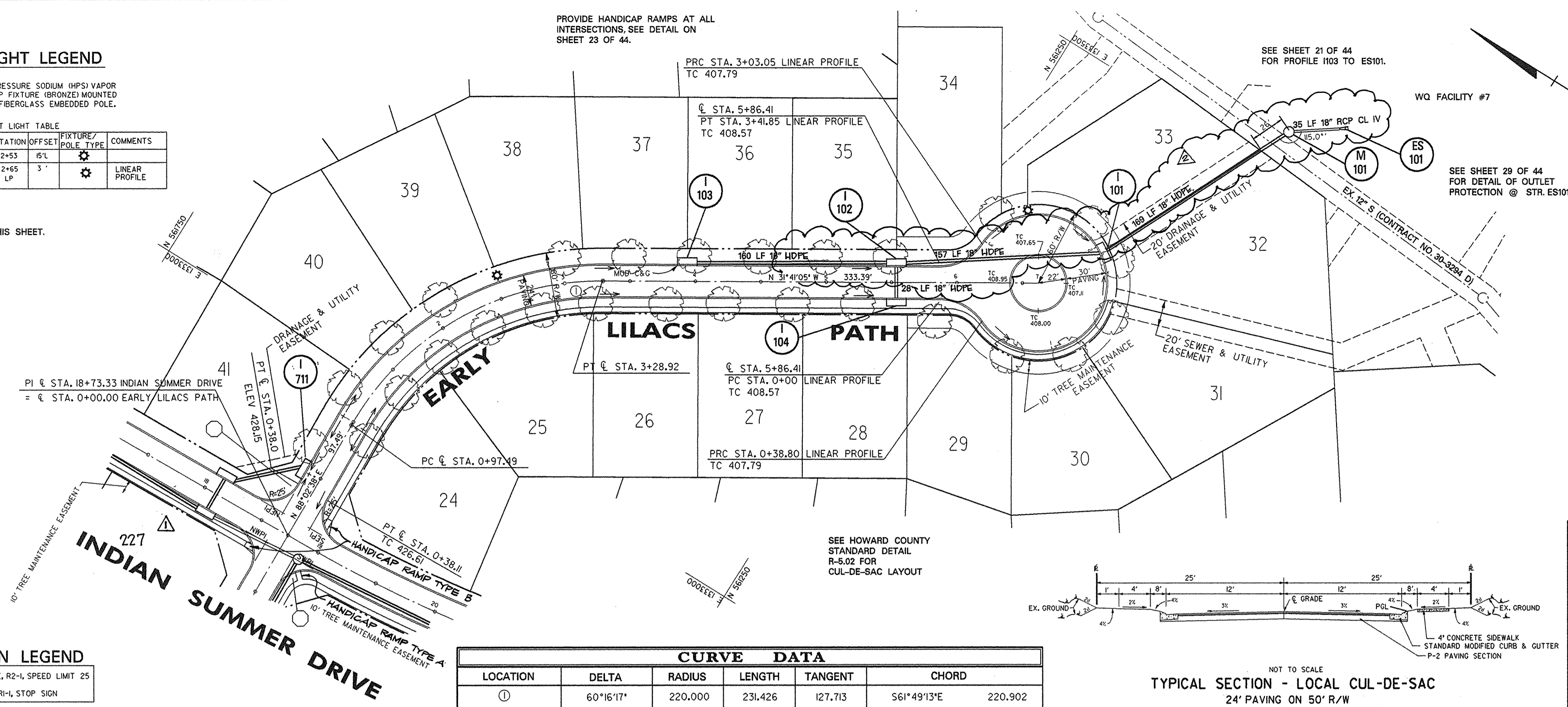


STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14' BRONZE FIBERGLASS EMBEDDED POLE.

DWG NO.	STREET NAME	STATION/OFFSET	FIXTURE/POLE TYPE	COMMENTS
EARLY LILACS PATH	2+53	15'L	☼	LINEAR PROFILE
EARLY LILACS PATH	2+65 LP	3'	☼	LINEAR PROFILE

27 TREES PROVIDED THIS SHEET.



PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

SEE SHEET 21 OF 44 FOR PROFILE 103 TO ES101.

SEE SHEET 29 OF 44 FOR DETAIL OF OUTLET PROTECTION @ STR. ES101.

STREET SIGN LEGEND

- 24' X 30' RECTANGLE, R2-1, SPEED LIMIT 25
- 30' X 30' OCTAGON, R1-1, STOP SIGN

CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	60°16'17"	220.000	231.426	127.713	S61°49'13"E 220.902

NOT TO SCALE
TYPICAL SECTION - LOCAL CUL-DE-SAC
24' PAVING ON 50' R/W

1-12-97
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS HS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Col Hamilton 7/16/97
CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

APPROVED: *Mr. Damm* 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION B DATE

6/5/98 LOT 227 ADJUSTED
6/10/98 REVISED FOR CL. TO HDPE 9D
Date No. Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

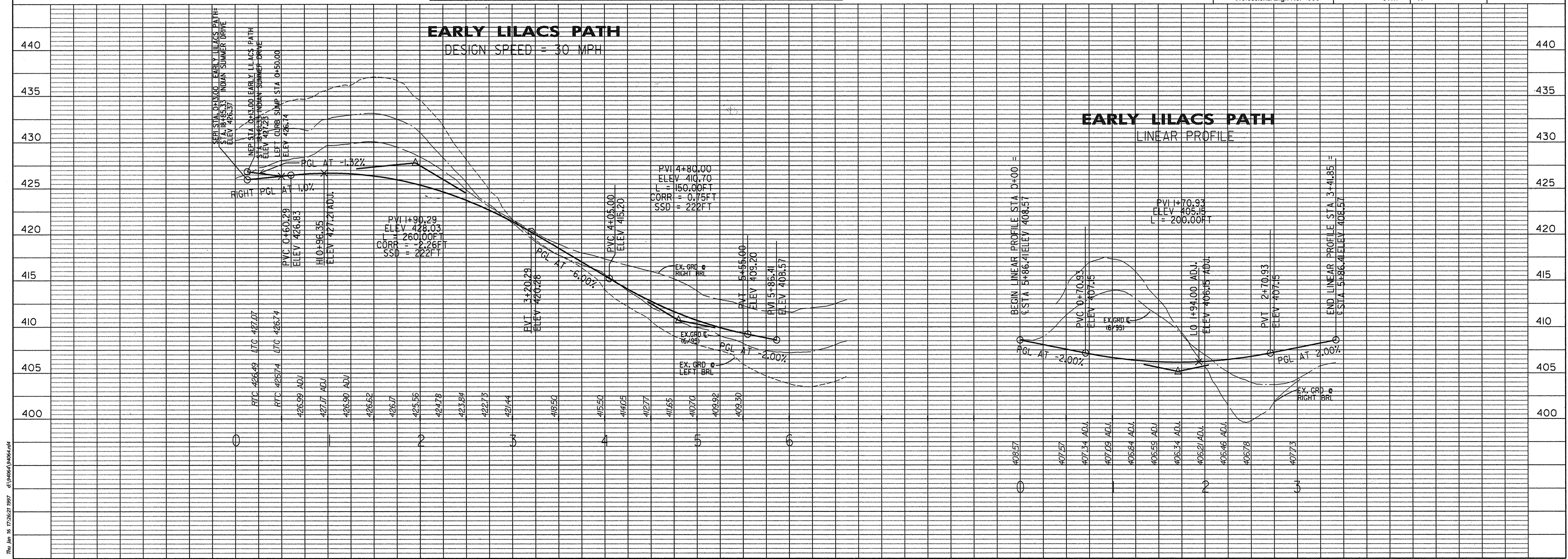
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

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

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
EARLY LILACS PATH

Des By JWS Scale 1" = 50' Proj. No. 94064
Dm By JEF Date JAN 97
Chk By JWR Approved 5 OF 44



Thu Jun 16 17:26:27 1997 d:\94064\94064.dwg

STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-1, STOP SIGN

STREET LIGHT TABLE					
DWG NO.	STREET NAME	STA	OFFSET	FIXTURE / POLE TYPE	COMMENTS
	FLOATING CLOUDS PATH	1+40 LP	2'		OFF CURB
	FLOATING CLOUDS PATH	4+30	15'		

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE FIBERGLASS EMBEDDED POLE.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Howard M. Denehy 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. Hoffman 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mr. Damm 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

8/10/98 REVISED RCP CL IV TO HDPE STD.

VILLAGE OF RIVER HILL SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

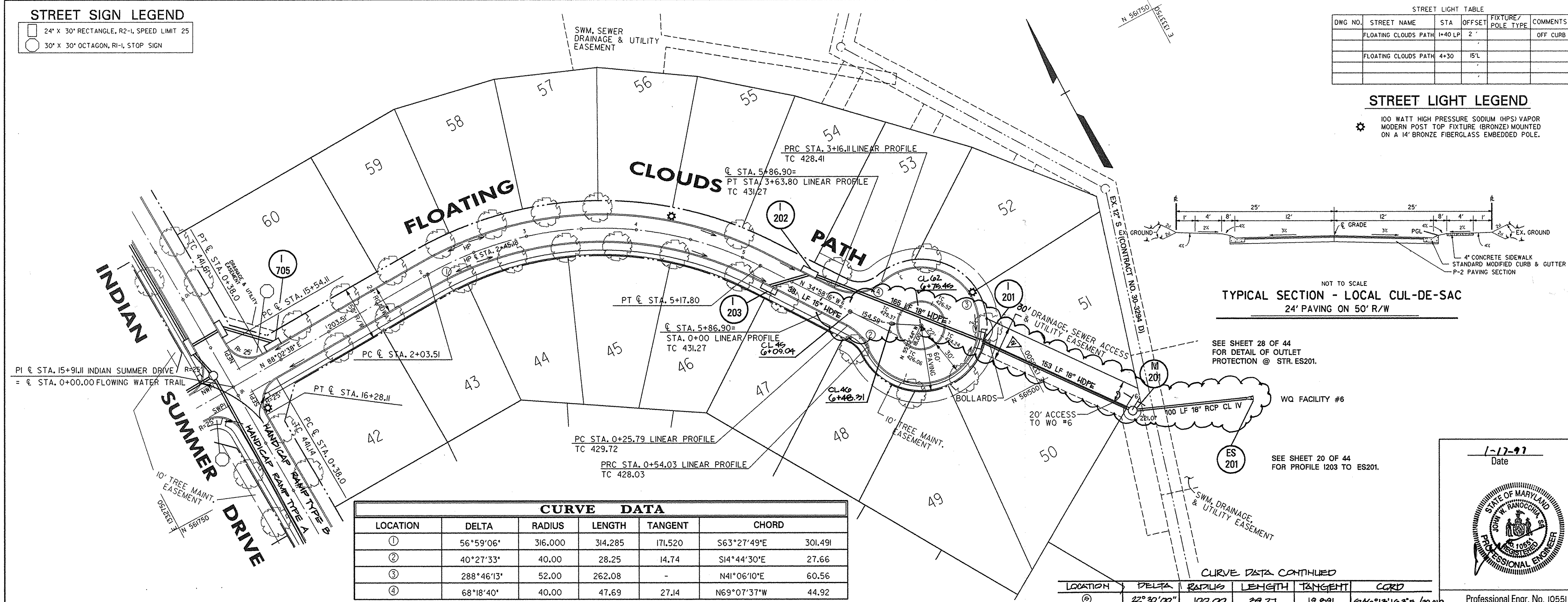
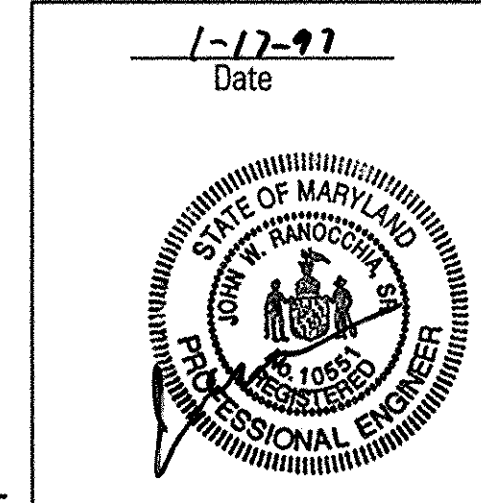
DMW
 Deft-McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4705

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

AREA SECTION 4 AREA 4
 TAX MAP PARCEL ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
 FLOATING CLOUDS PATH

Des By JWS Scale 1" = 50' Proj. No. 94064
 Dm By JEF Date JAN 97
 Chk By JWR Approved 6 OF 44



CURVE DATA						
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD	
①	56°59'06"	316.000	314.285	171.520	S63°27'49"E	301.491
②	40°27'33"	40.00	28.25	14.74	S14°44'30"E	27.66
③	288°46'13"	52.00	262.08	-	N41°06'10"E	60.56
④	68°18'40"	40.00	47.69	27.14	N69°07'37"W	44.92

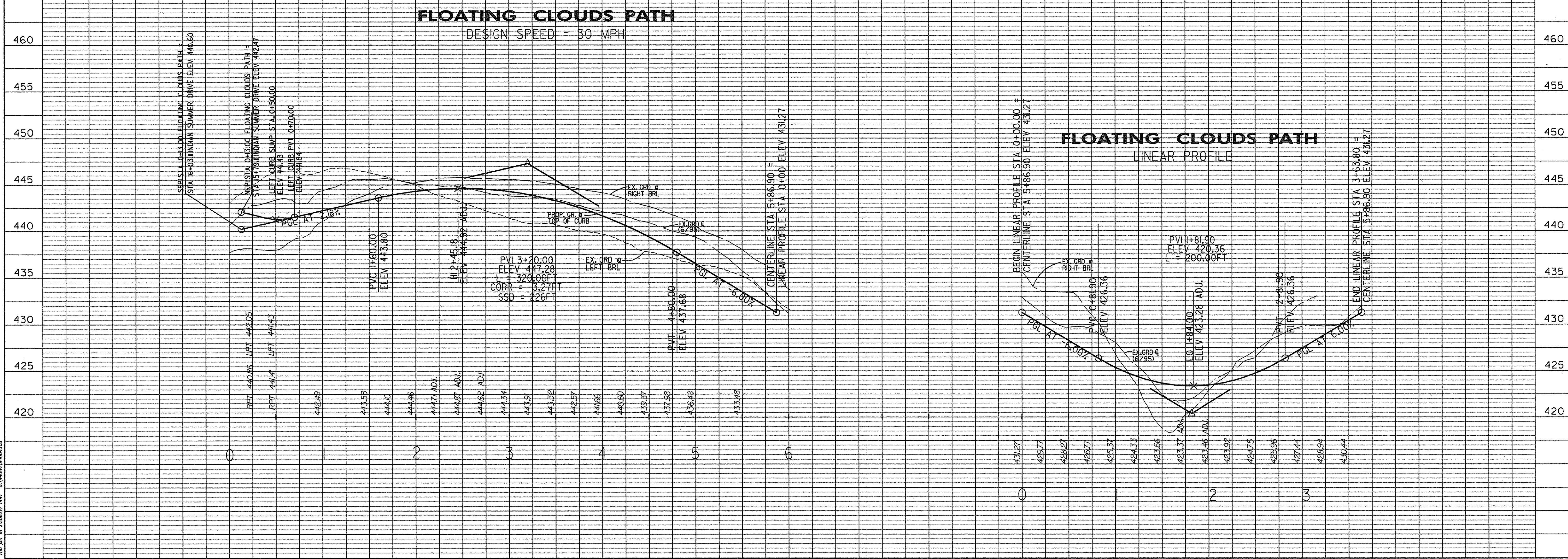
CURVE DATA CONTINUED

LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
⑤	22°30'00"	100.00	29.21	19.891	S46°12'16.3"E / 29.018

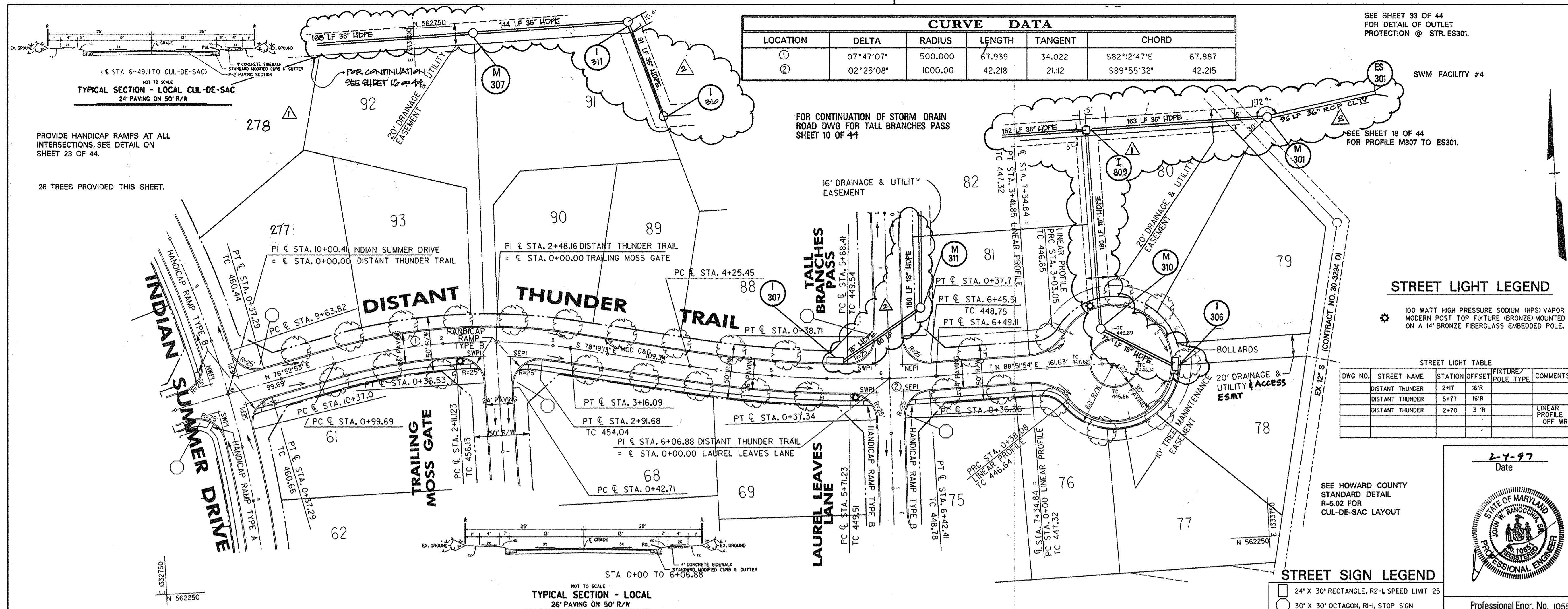
TYPICAL SECTION - LOCAL CUL-DE-SAC
 24' PAVING ON 50' R/W

SEE SHEET 28 OF 44 FOR DETAIL OF OUTLET PROTECTION @ STR. ES201.

SEE SHEET 20 OF 44 FOR PROFILE 1203 TO ES201.



Thu Jan 16 2008 09:19:57 -d:\94064\94064.dwg



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Danke 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. Hamilton 7/19/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

M. J. D... 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/98 LOT 277 ADJUSTED LOT 278 ADJUSTED
 8/18/98 REVISED RCP CL-V TO 10' HOPPE 9D.

Date No. Revision Description

VILLAGE OF RIVER HILL SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dan McCune-Walker, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-8833
 Fax 296-4706

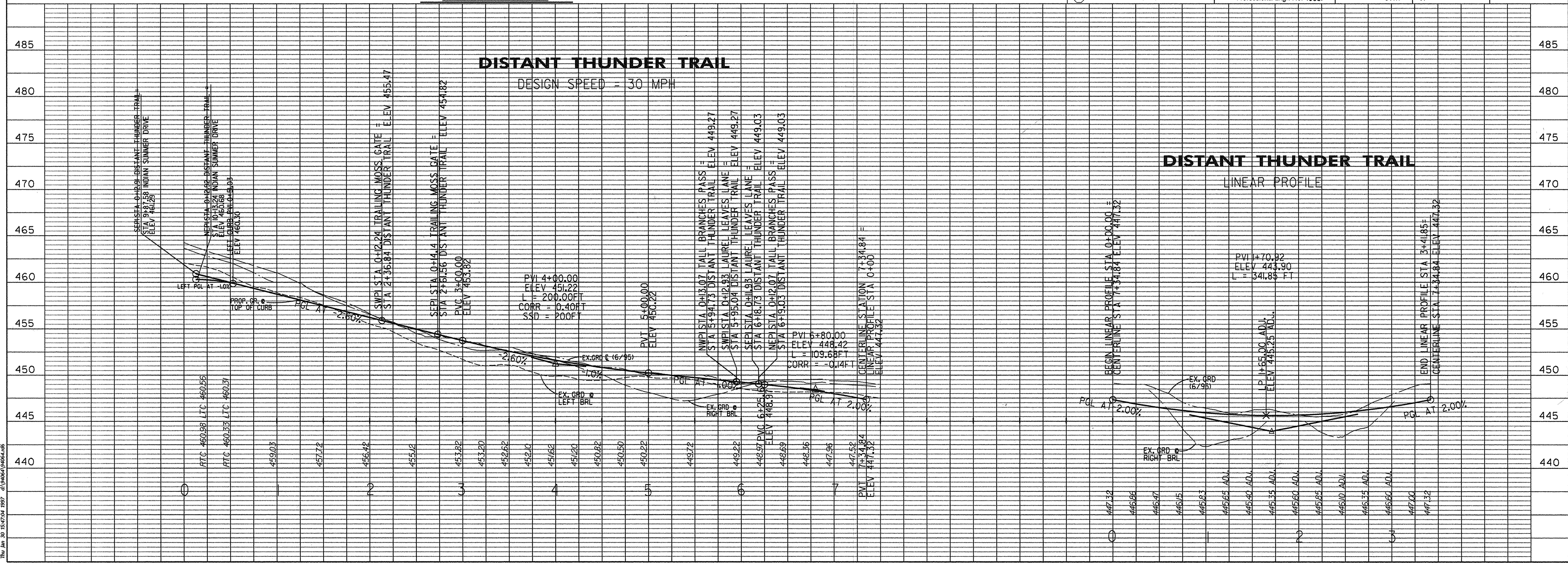
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
 DISTANT THUNDER TRAIL

Des By JWS Scale 1" = 50' Proj. No. 94064
 Dm By JEF Date JAN 97
 Chk By JWR Approved 7 OF 44

Professional Engr. No. 10551



Thu Jun 30 15:57:04 1997 c:\p0464\94064.dwg

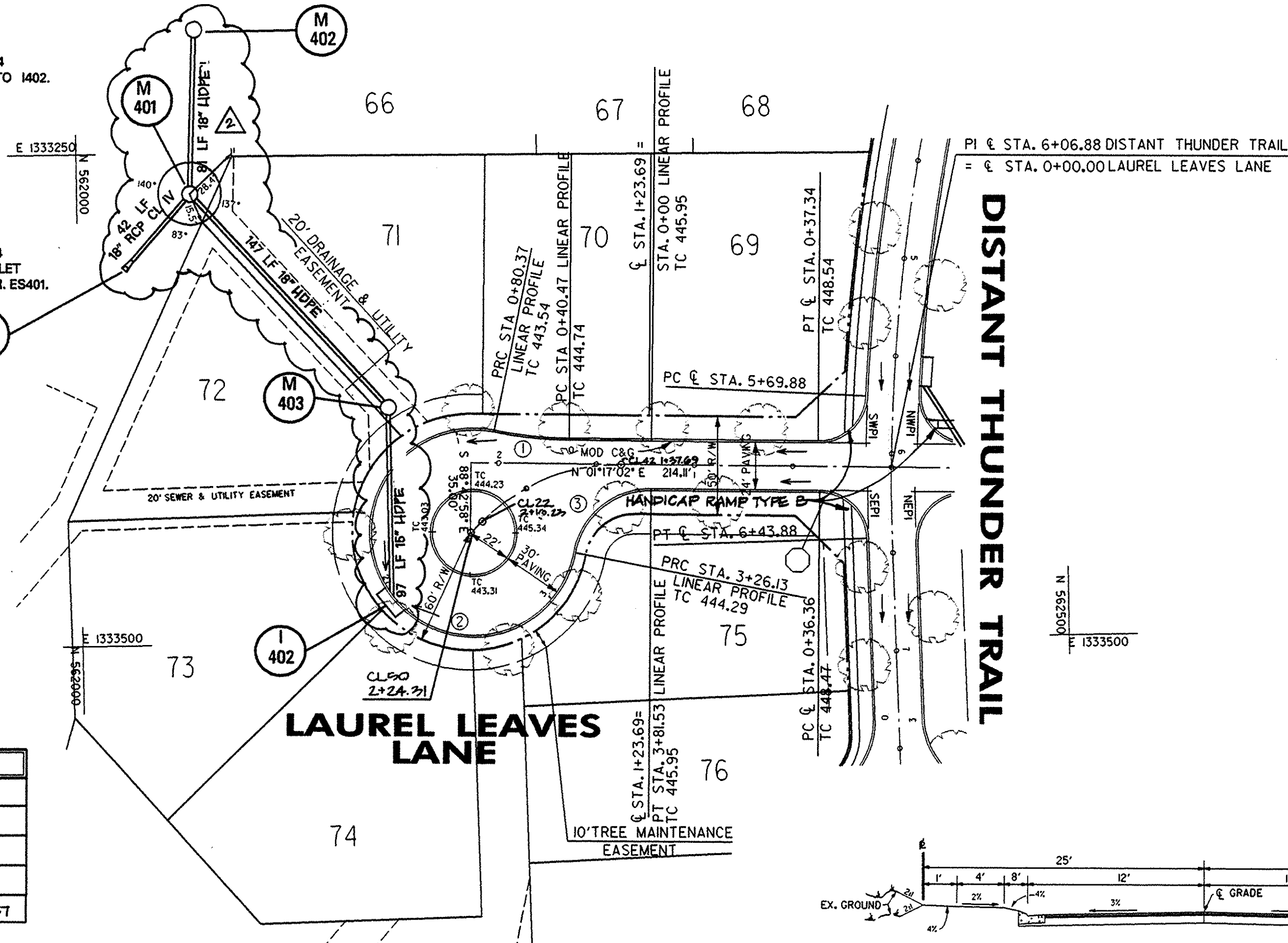
STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, RH-1, STOP SIGN

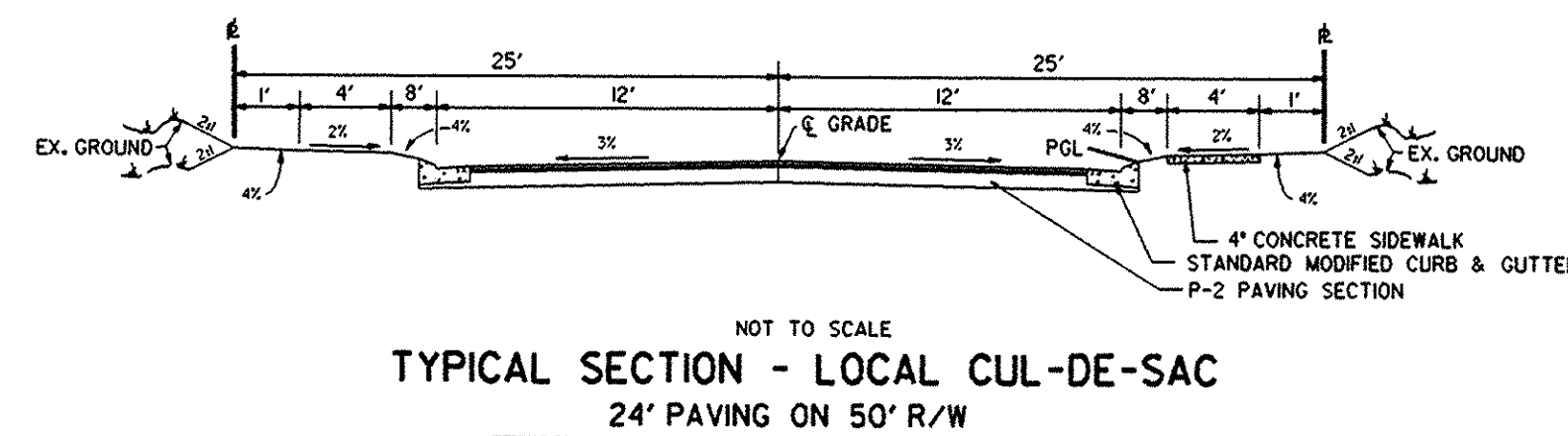
SEE SHEET 19 OF 44 FOR PROFILE M401 TO M402.

WQ FACILITY #6

SEE SHEET 28 OF 44 FOR DETAIL OF OUTLET PROTECTION @ STR. ES401.



CURVE DATA					
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	11°25'57"	200.00	39.91	20.20	S7°00'00"W 39.84
②	270°47'03"	-	245.76	-	N57°19'28"E 73.03
③	79°21'06"	42.00	55.40	33.18	N38°23'31"W 51.08
④	46°00'00"	100.00	78.540	41.421	S21°12'58.1E 76.597



NOT TO SCALE
TYPICAL SECTION - LOCAL CUL-DE-SAC
24' PAVING ON 50' R/W

1-17-97
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Miller 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *Michael J. ...* 5/21/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION

8/10/97 A REVISION RCP 2.1V TO HDPE SD.

Date	No.	Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

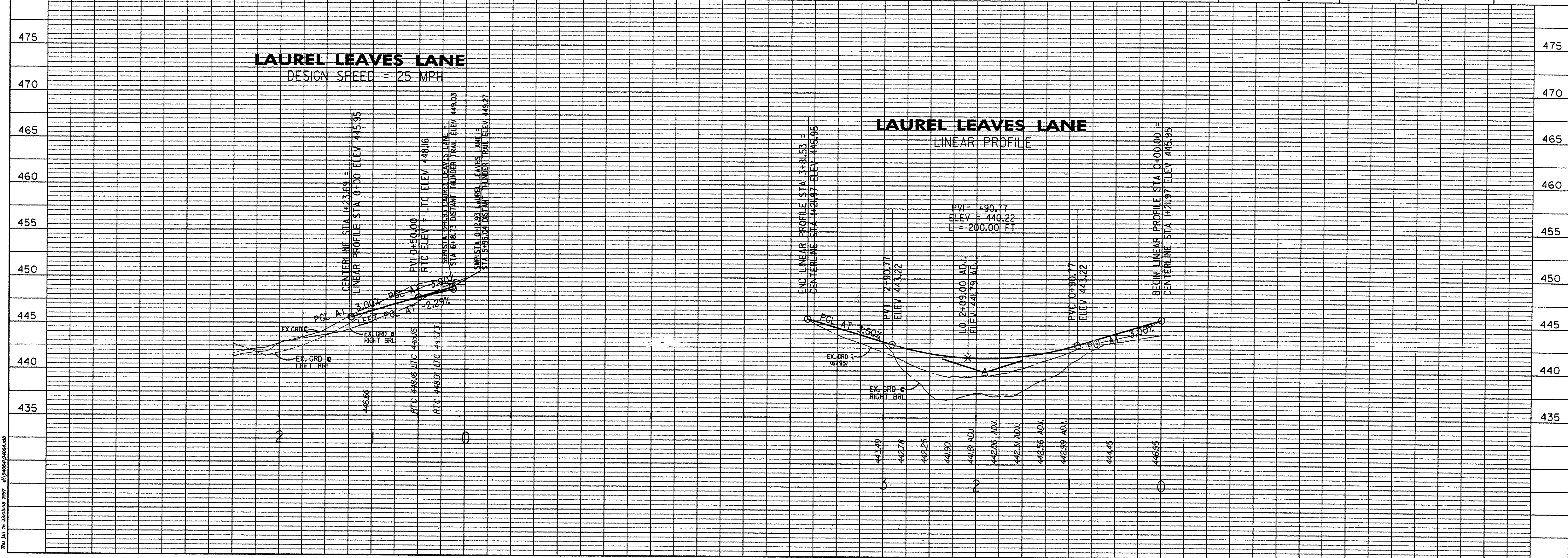
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Darr McCreary-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3853
Fax: 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
LAUREL LEAVES LANE

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Dwn By	JEF	Date	JAN 97		
Chk By	JWR	Approved			9 OF 44



Thu Jan 16 23:05:38 1997 d:\94064\94064.dwg

STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-I, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-I, STOP SIGN

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS. SEE DETAIL ON SHEET 23 OF 44.

PI @ STA. 6+06.88 DISTANT THUNDER TRAIL
= @ STA. 0+00.00 TALL BRANCHES PASS

PC @ STA. 4+25.45

E 1333250
52295

E 1333500
05295

DISTANT THUNDER TRAIL

FOR CONTINUATION, SEE SHEET 7 OF 39

THUNDER TRAIL

HANDICAP RAMP TYPE B

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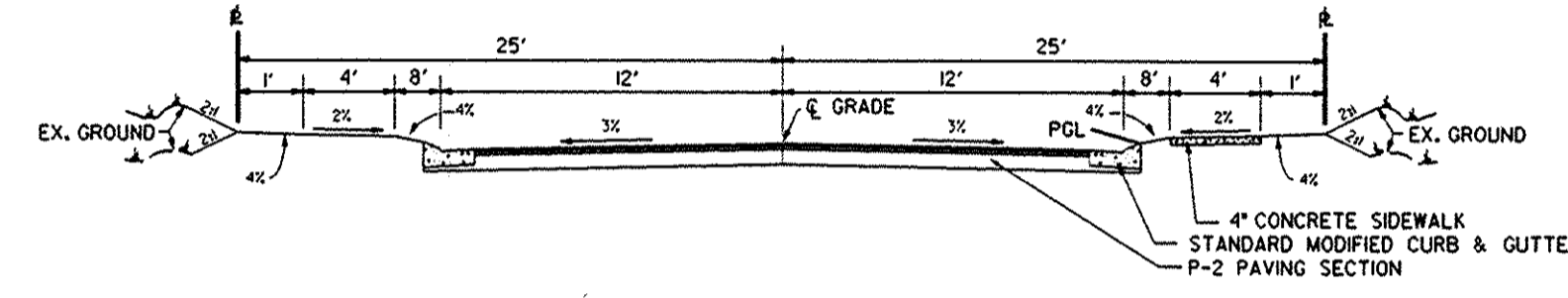
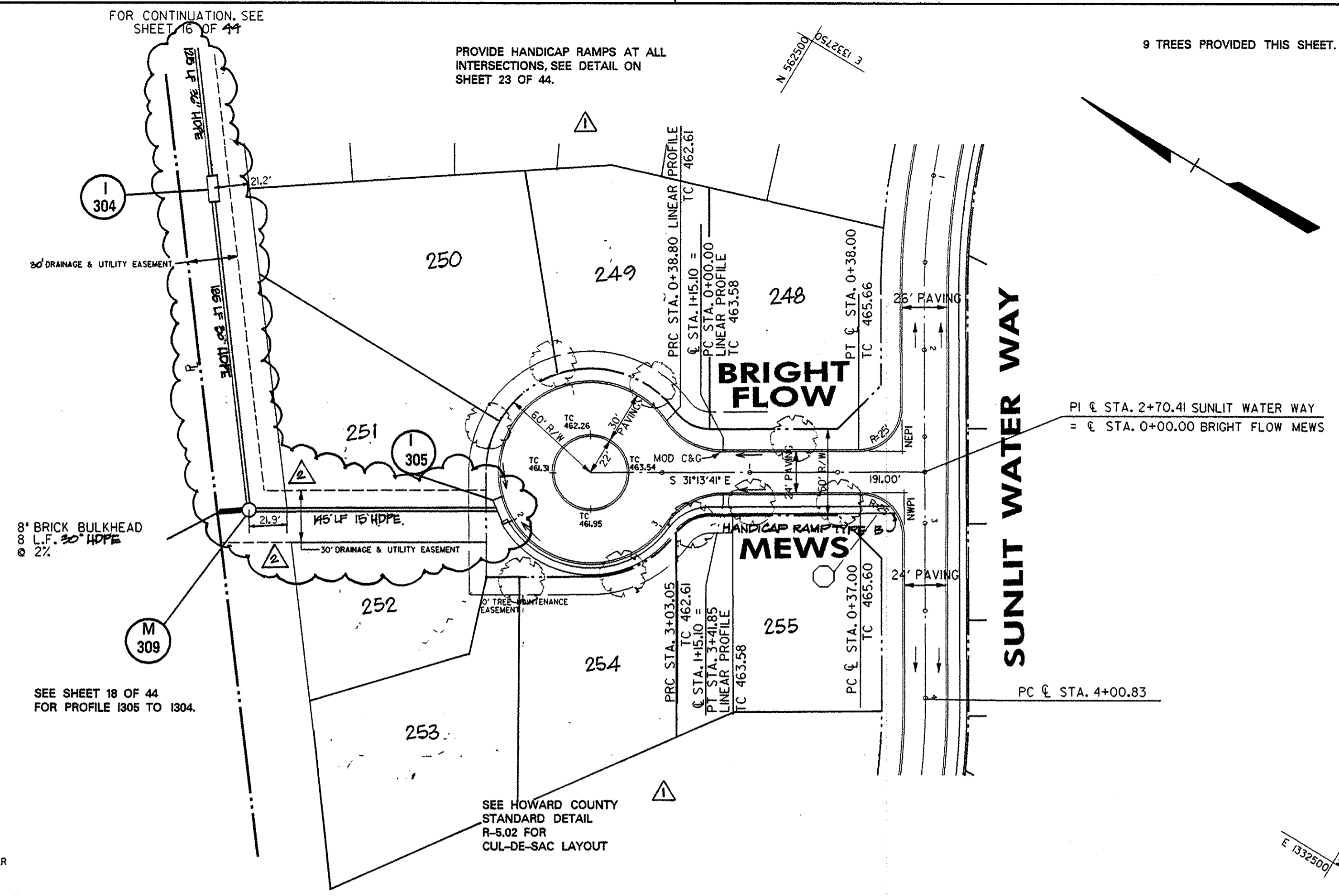
STREET SIGN LEGEND

- 24' X 30' RECTANGLE, R2-1, SPEED LIMIT 25
- 30' X 30' OCTAGON, R1-1, STOP SIGN

FOR CONTINUATION, SEE SHEET 16 OF 44

PROVIDE HANDICAP RAMPS AT ALL INTERSECTIONS, SEE DETAIL ON SHEET 23 OF 44.

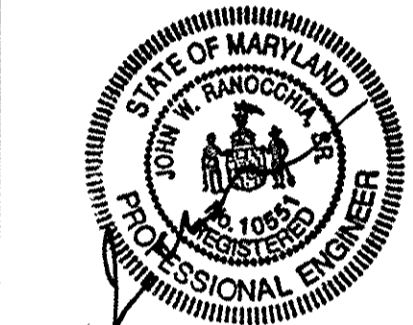
9 TREES PROVIDED THIS SHEET.



SEE SHEET 18 OF 44 FOR PROFILE 1305 TO 1304.

SEE HOWARD COUNTY STANDARD DETAIL R-5.02 FOR CUL-DE-SAC LAYOUT

DATE 1-17-97



Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS		5-22-97
CHIEF, BUREAU OF HIGHWAYS		DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING		7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE
APPROVED: DEVELOPMENT ENGINEERING DIVISION		5/20/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION		DATE
6/5/98	LOTS ADJUSTED	
8/18/98	REMOVED REF. CL. IN 90 TO HDPE 90.	
Date	No.	Revision Description

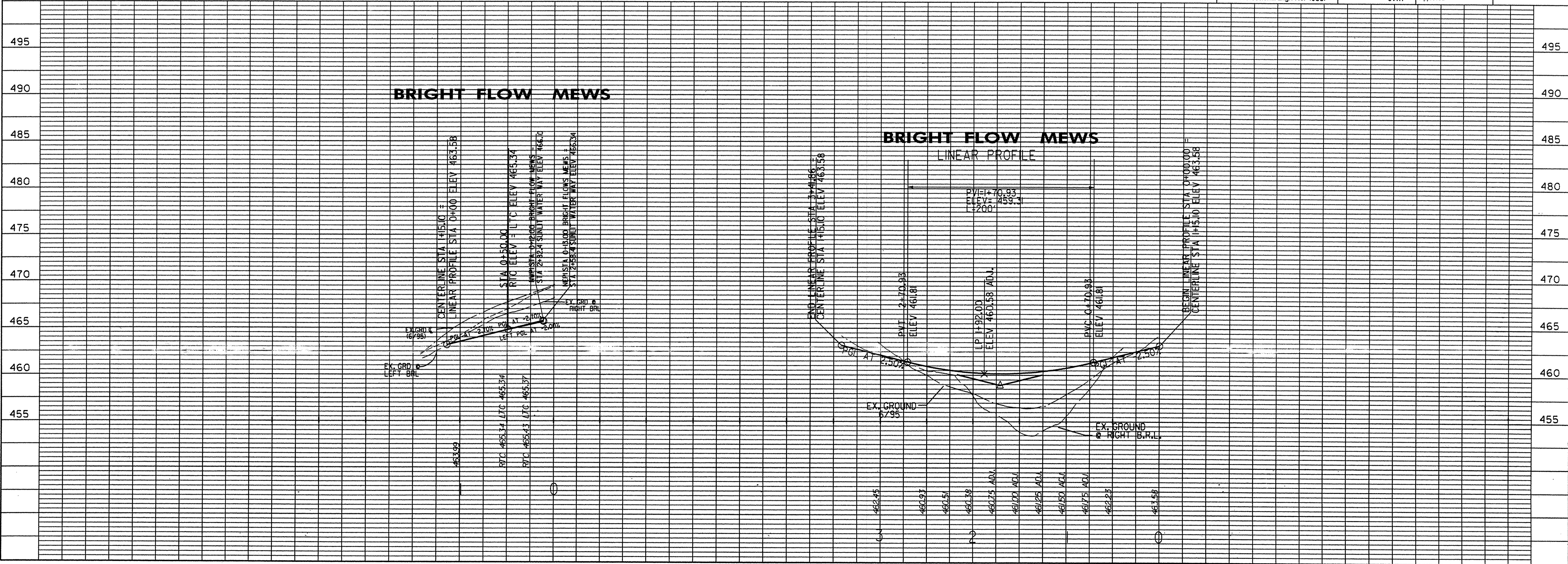
DMW
Darr McQuinn-Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3333
Fax 296-4706

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

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
BRIGHT FLOW MEWS

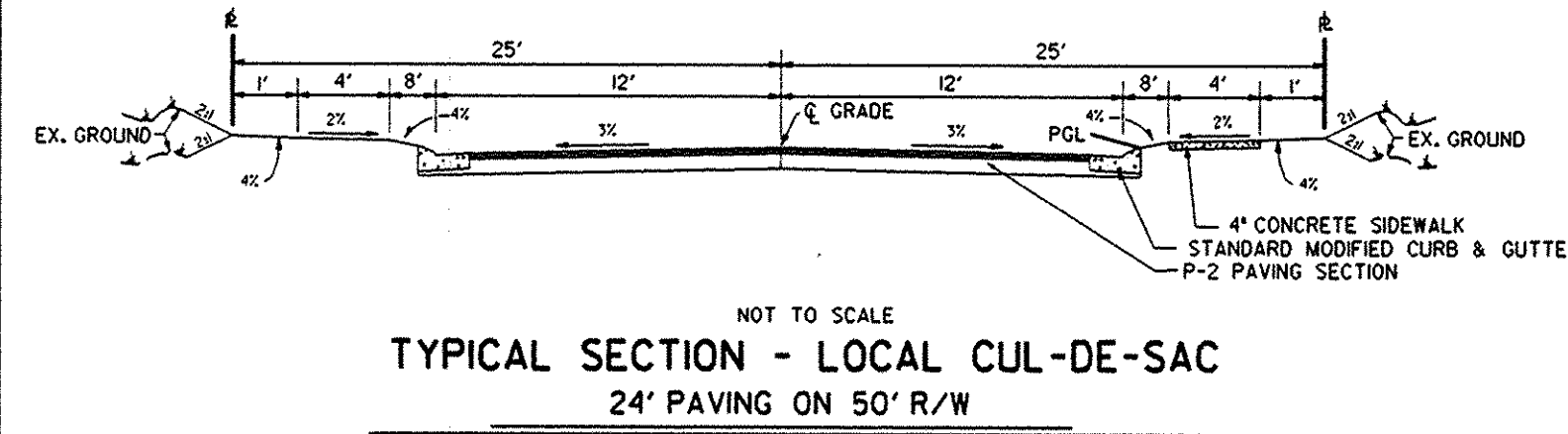
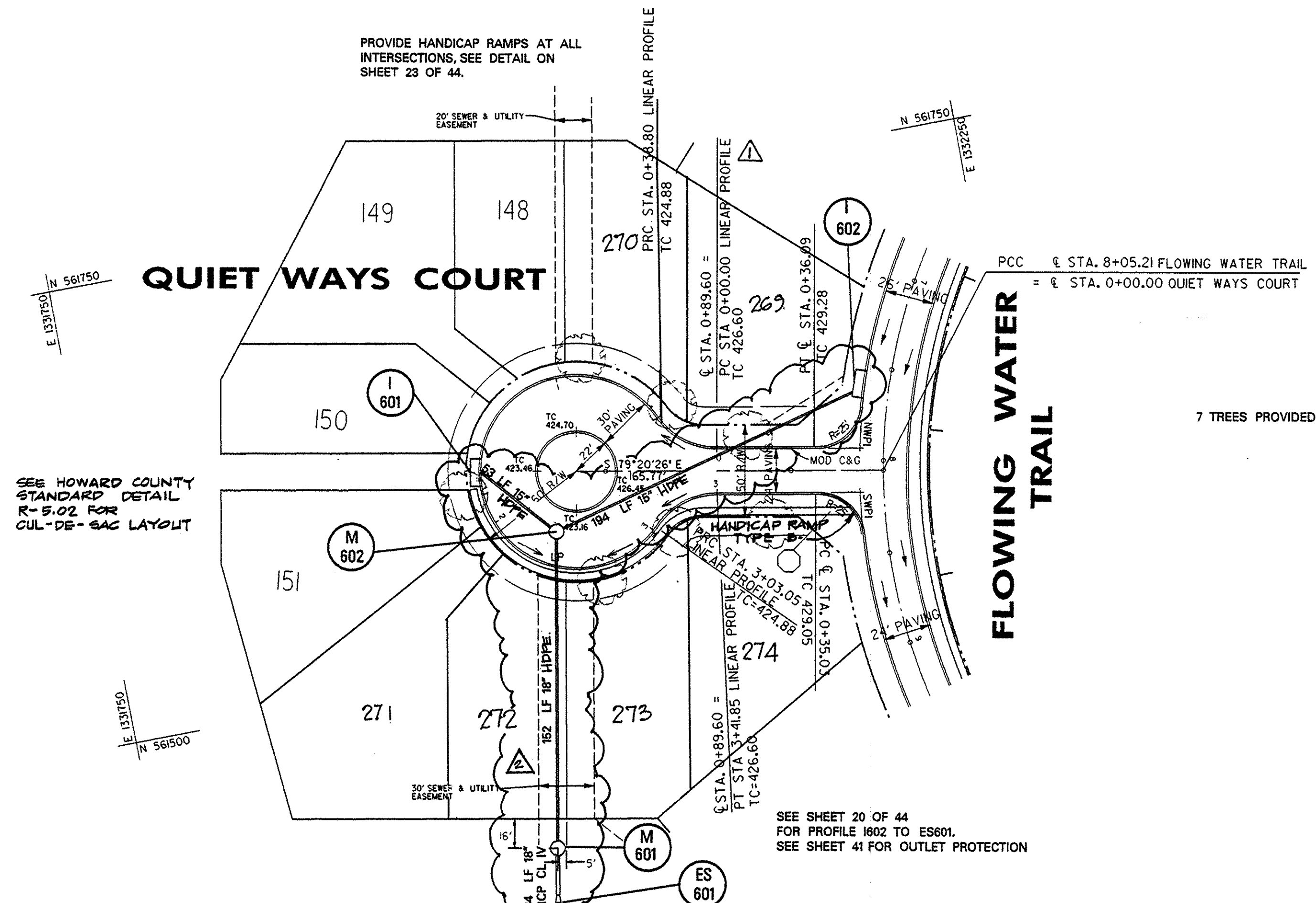
Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Dm By	JEF	Date	JAN 97		
Chk By	JWR	Approved			12 OF 44



The Jan 15 17:24:49 1997 d:\94064\94064.dwg

STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-L, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-L, STOP SIGN



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Rausch 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Miller 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

Mike Deumer 5/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/98 Δ LOTS ADJUSTED
 8-12-98 Δ REVISED RCP CLV 90 TO HDPE SD.

Date	No.	Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER /DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Darrin C. Williams, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3353 Fax 296-4705

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

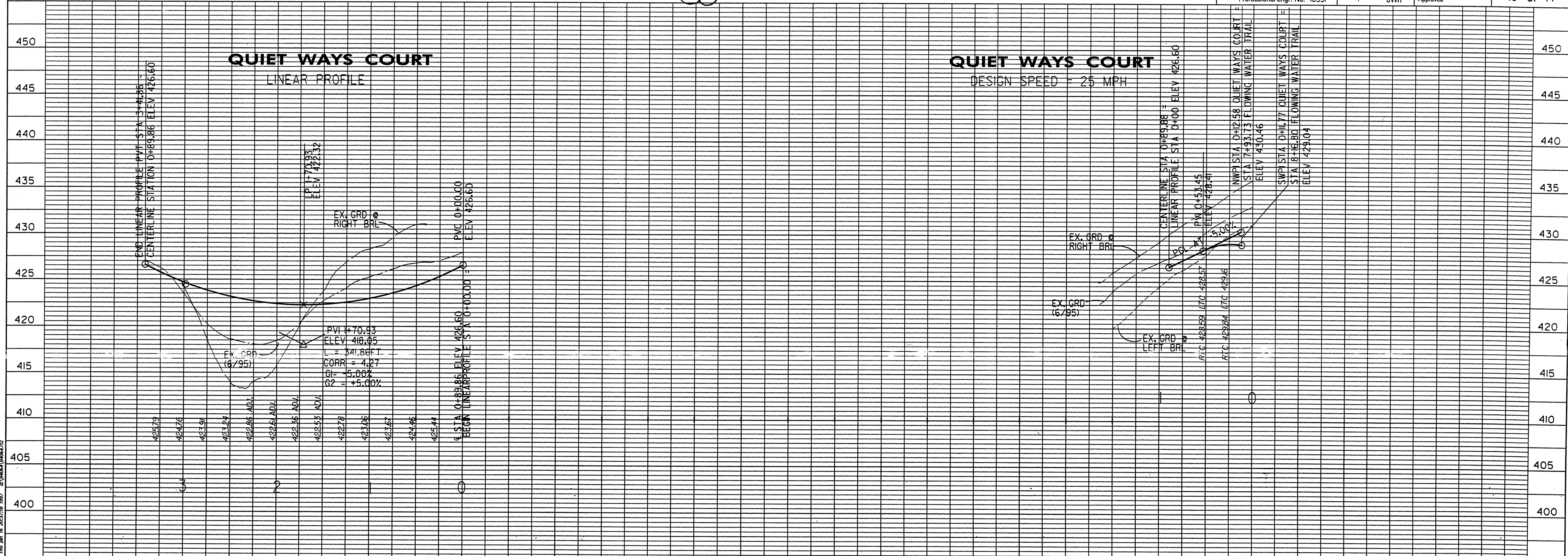
1-17-97
 Date

Professional Engr. No. 10551

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
 QUIET WAYS COURT

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Dm By	JEF	Date	JAN 97		
Chk By	JWR	Approved			13 OF 44



Thu Jan 16 20:37:18 1997 d:\94064\94064.dwg

STREET SIGN LEGEND

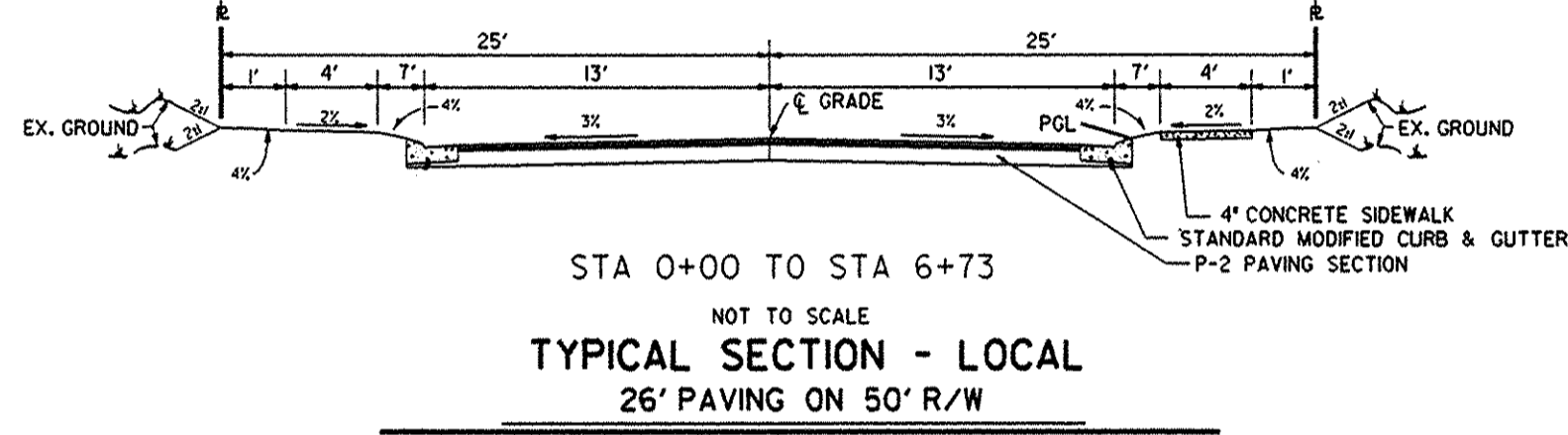
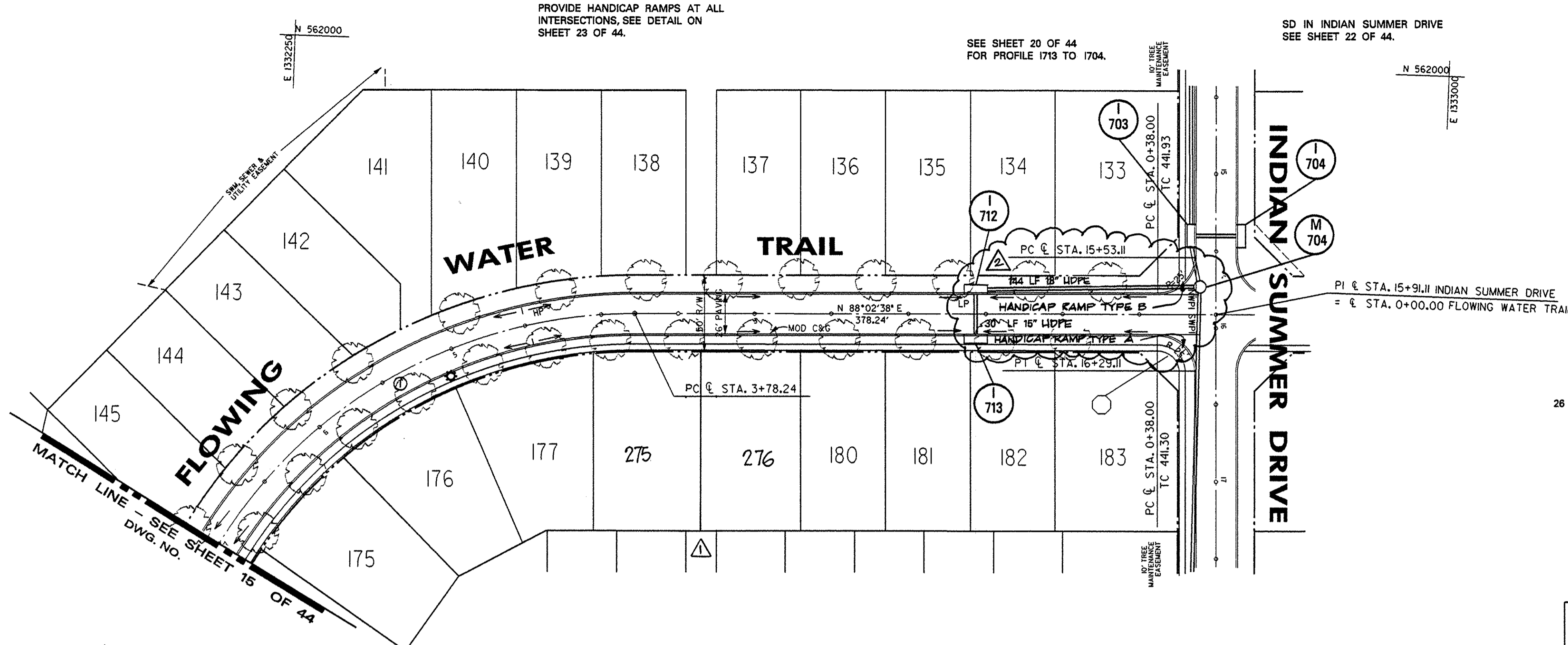
- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-1, STOP SIGN

STREET LIGHT LEGEND

- 100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE FIBERGLASS EMBEDDED POLE.

STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE / POLE TYPE	COMMENTS
	FLOWING WATER	5+00	16R		
	TRAIL				
	FLOWING WATER	7+80	19R		
	TRAIL				



CURVE DATA						
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD	
①	77°25'38"	316.000	427.029	253.286	549°19'49"W	395.270

12-3-96
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Daniels
 CHIEF, BUREAU OF HIGHWAYS 5-22-97 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Miller
 CHIEF, DIVISION OF LAND DEVELOPMENT 7/10/97 DATE

John Miller
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 5/27/97 DATE

05/98 Δ LOTS ADJUSTED
 09/98 Δ REVISED PCP CL V. SO. TO HDPE GD.

Date	No.	Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

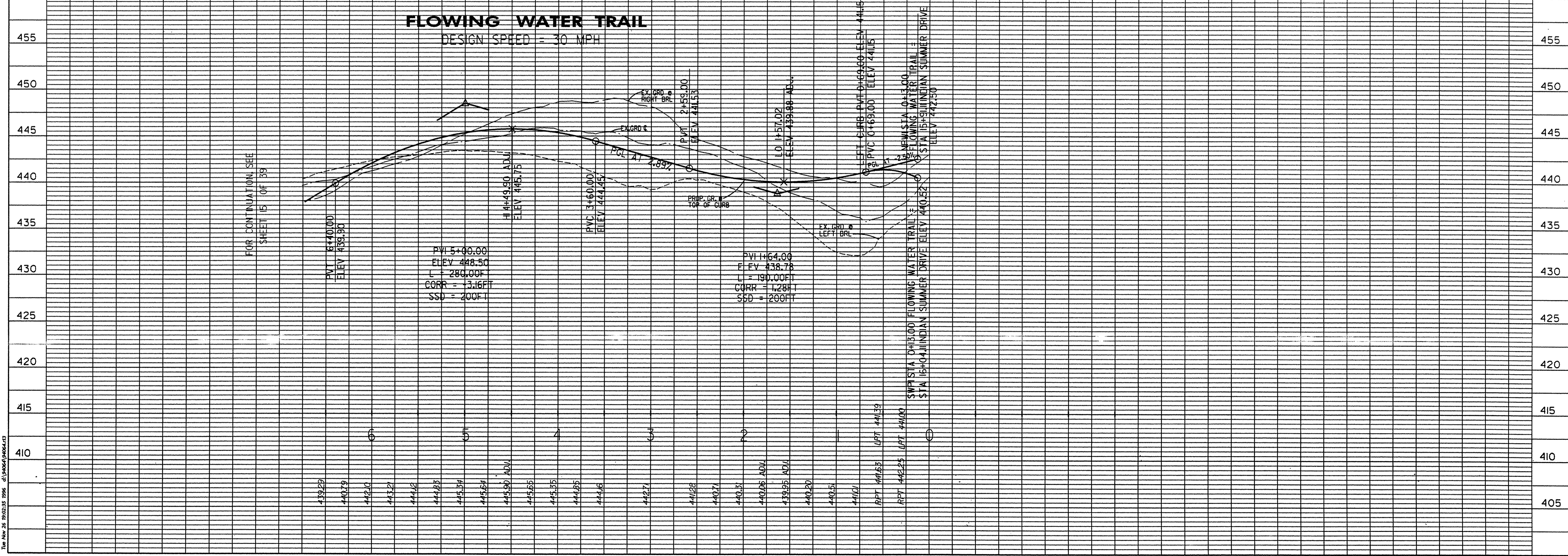
DMW
 Daft-McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4705

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

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ROAD CONSTRUCTION PLANS
 FLOWING WATER TRAIL
 STA 0+00 TO 7+00

Des By	JWS	Scale	1" = 50'	Proj. No.	94064
Dm By	JEF	Date	MAR 96		
Chk By	JWR	Approved			14 OF 44



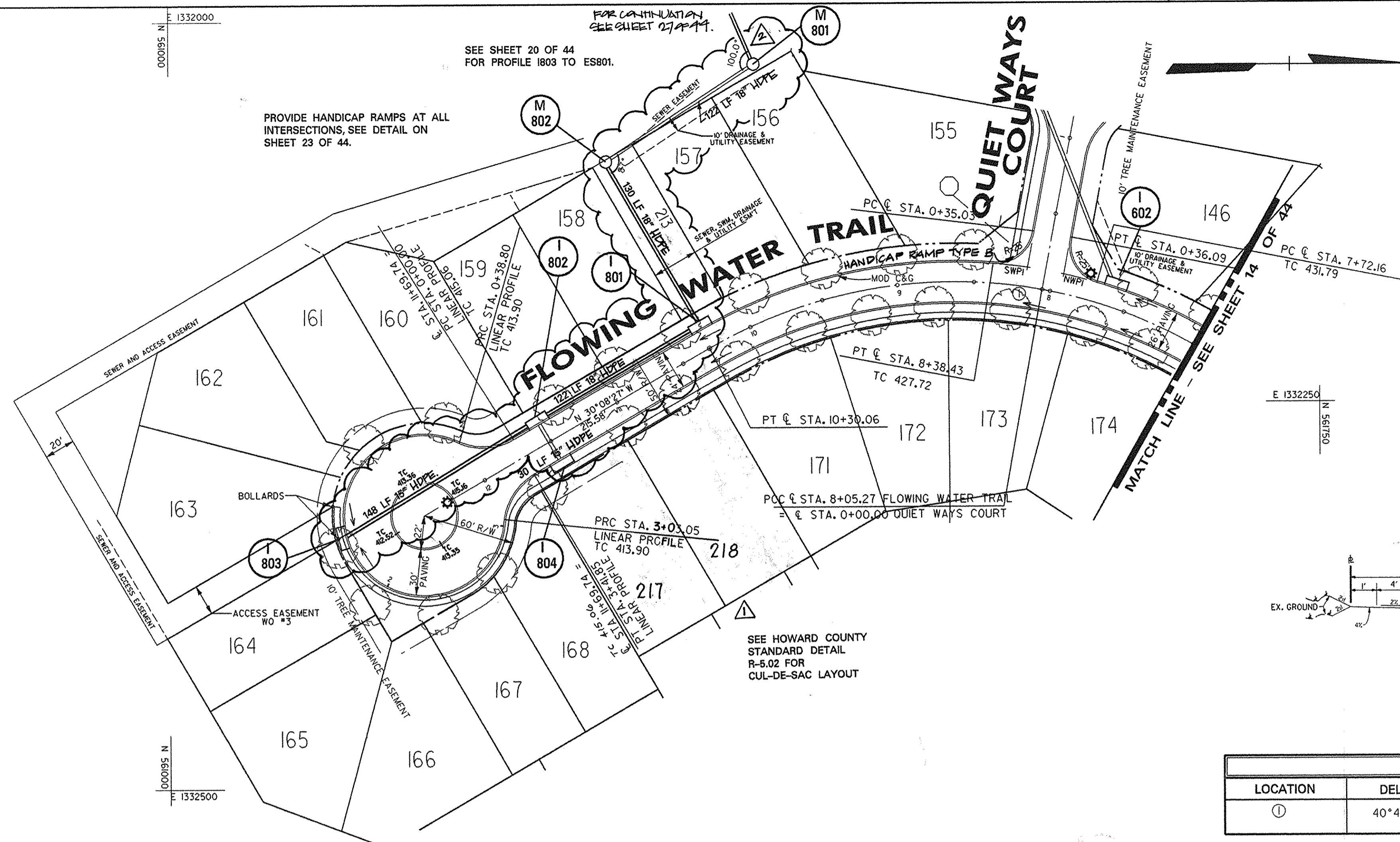
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1332000
 000095 N
 1332500

FOR CONTINUATION
 SEE SHEET 07 OF 11

SEE SHEET 20 OF 44
 FOR PROFILE 1803 TO ES801.

PROVIDE HANDICAP RAMPS AT ALL
 INTERSECTIONS. SEE DETAIL ON
 SHEET 23 OF 44.



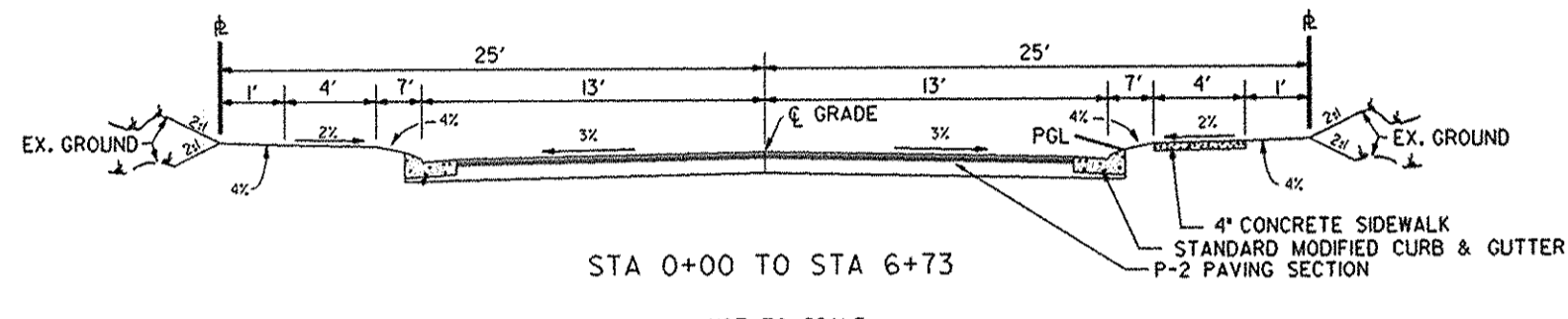
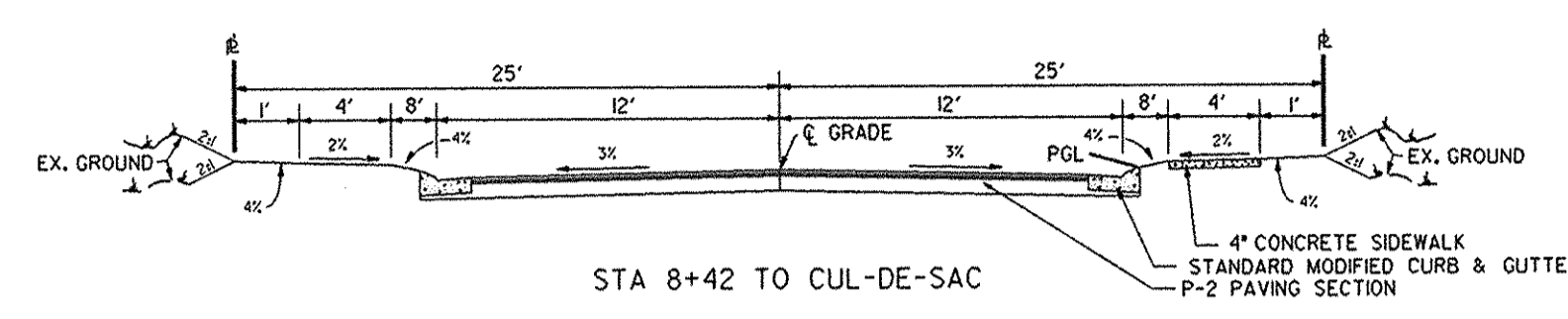
STREET SIGN LEGEND

□	24" X 30" RECTANGLE, R2-L, SPEED LIMIT 25
○	30" X 30" OCTAGON, R-I, STOP SIGN

STREET LIGHT LEGEND

⊛	100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE FIBERGLASS EMBEDDED POLE.
---	--

24 TREES PROVIDED THIS SHEET.



CURVE DATA

LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	40°45'28"	316.000	224.788	117.386	S09°45'43"E

1-12-97
 Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. D... 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Hamilton 7/6/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John Hamilton 8/21/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/98 Δ LOTS ADJUSTED
 8-18-98 Δ REVISED RCP CL IV 9D TO HDPE 3D
 Date No. Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

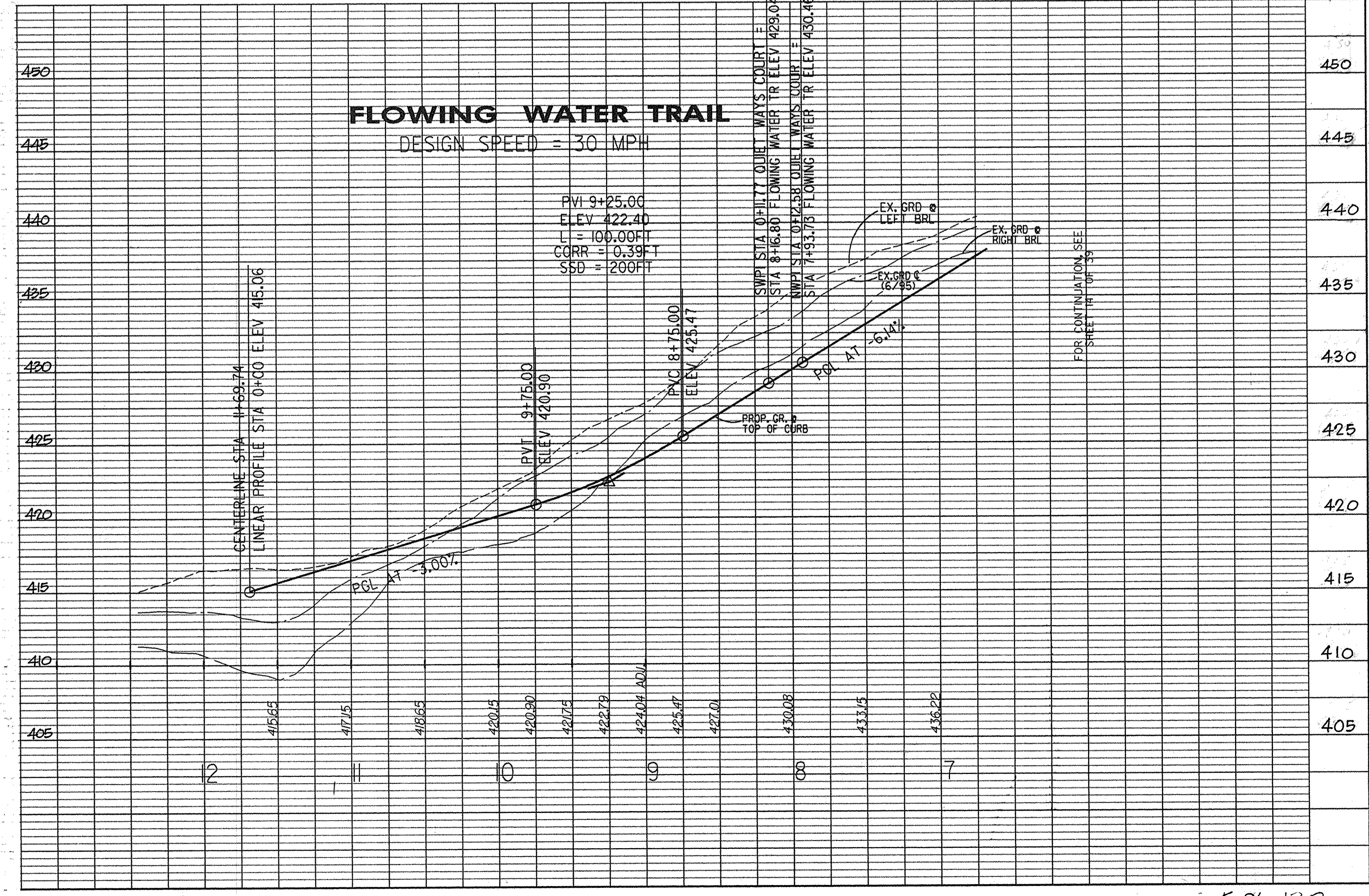
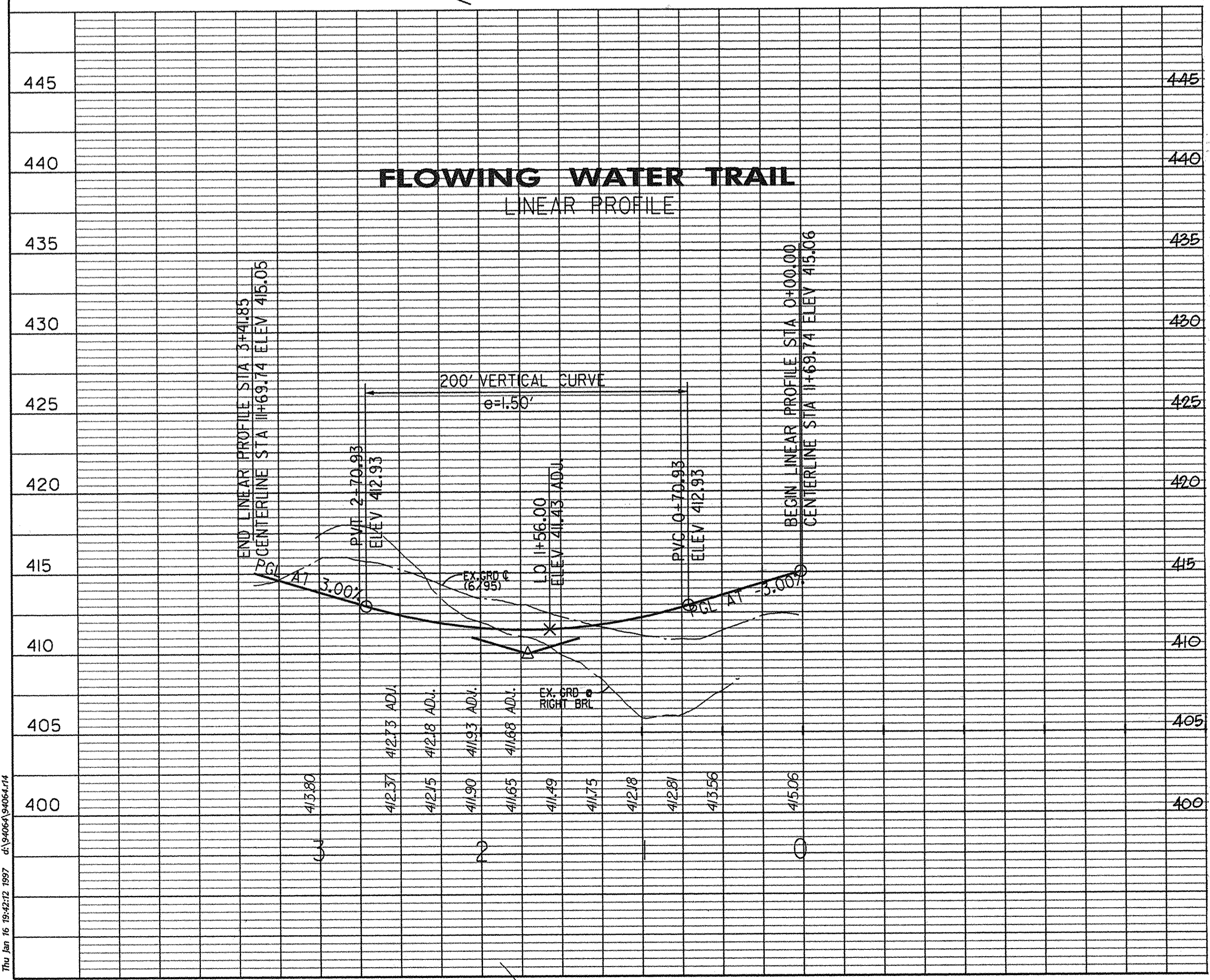
DMW
 Datt-McCune-Walker, Inc.
 300 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3383
 Fax 296-4708

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

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **ROAD CONSTRUCTION PLANS**
 FLOWING WATER TRAIL
 STA 7+00 TO 11+70

Des By JWS Scale 1" = 50' Proj. No. 94064
 Dwn By JEF Date JAN 97
 Chk By JWR Approved 15 OF 44



Thu Jan 16 10:42:12 1997 c:\94064\94064.dwg

F-96-130

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14' BRONZE FIBERGLASS EMBEDDED POLE.

DWG NO.	STREET NAME	STATION OFFSET	FIXTURE / POLE TYPE	COMMENTS
	INDIAN SUMMER DR	10+30	17'L	
		16+22	18'L	

43 TREES PROVIDED THIS SHEET.

FUTURE CONSTRUCTION SECTION 4 AREA 5

SEE SHEET 18 OF 44 FOR PROFILE 1304 TO M307.

FOR CONTINUATION, SEE SHEET 12 OF 33

STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-L, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-L, STOP SIGN

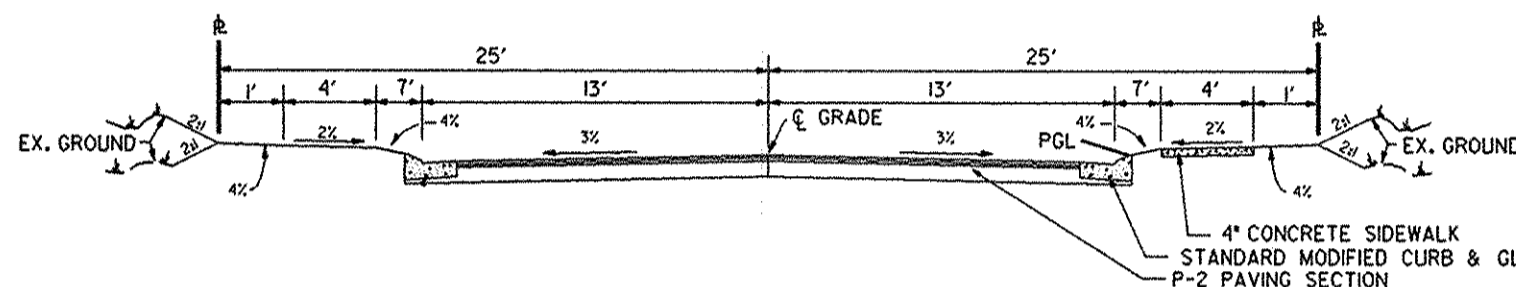
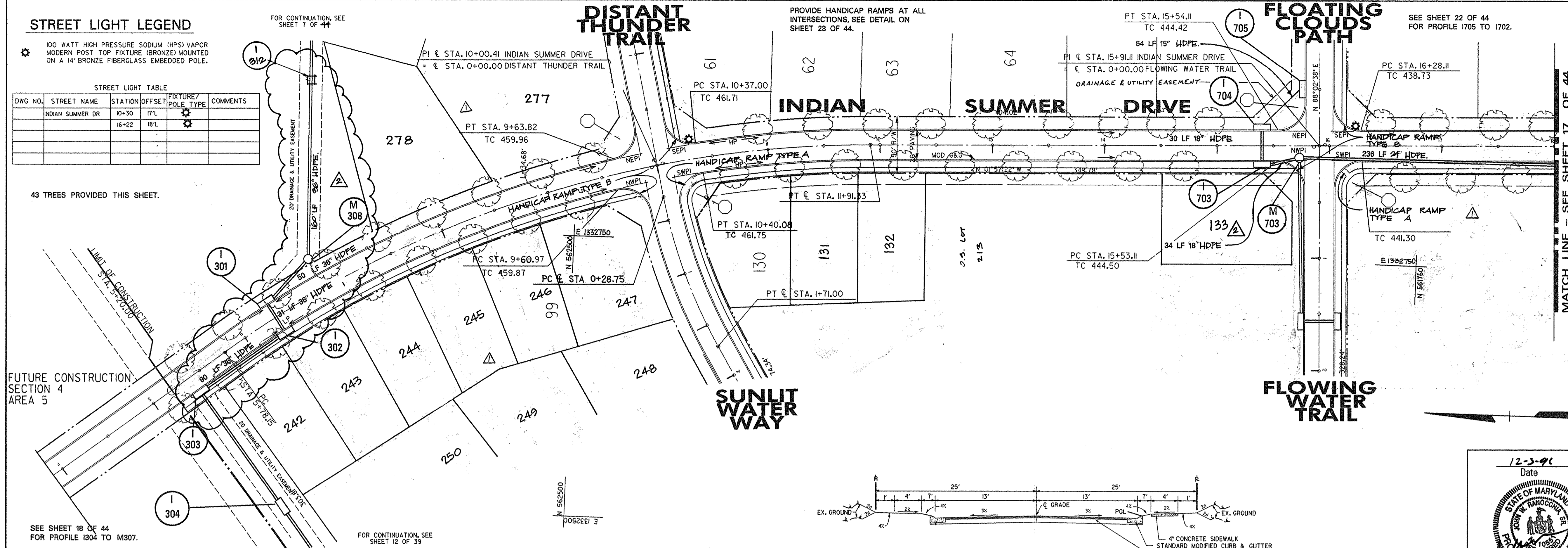
LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	35°50'57"	980.000	613.173	316.996	519°52'51"E 603.219

DISTANT THUNDER TRAIL

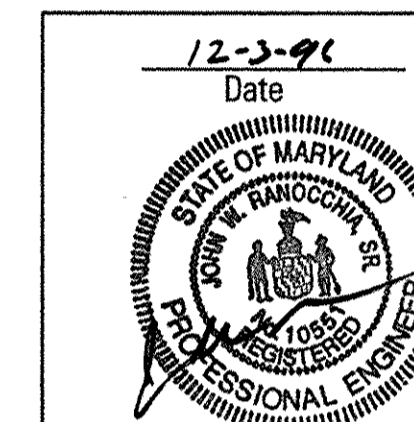
PROVIDE HANDCAP RAMPS AT ALL INTERSECTIONS. SEE DETAIL ON SHEET 23 OF 44.

FLOATING CLOUDS PATH

SEE SHEET 22 OF 44 FOR PROFILE 1705 TO 1702.



NOT TO SCALE
TYPICAL SECTION - LOCAL
26' PAVING ON 50' R/W



Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Duck 5-22-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Hamilton 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Bob Damman 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/96
REVISOR RCL IV 02 12' HDPE GD.

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

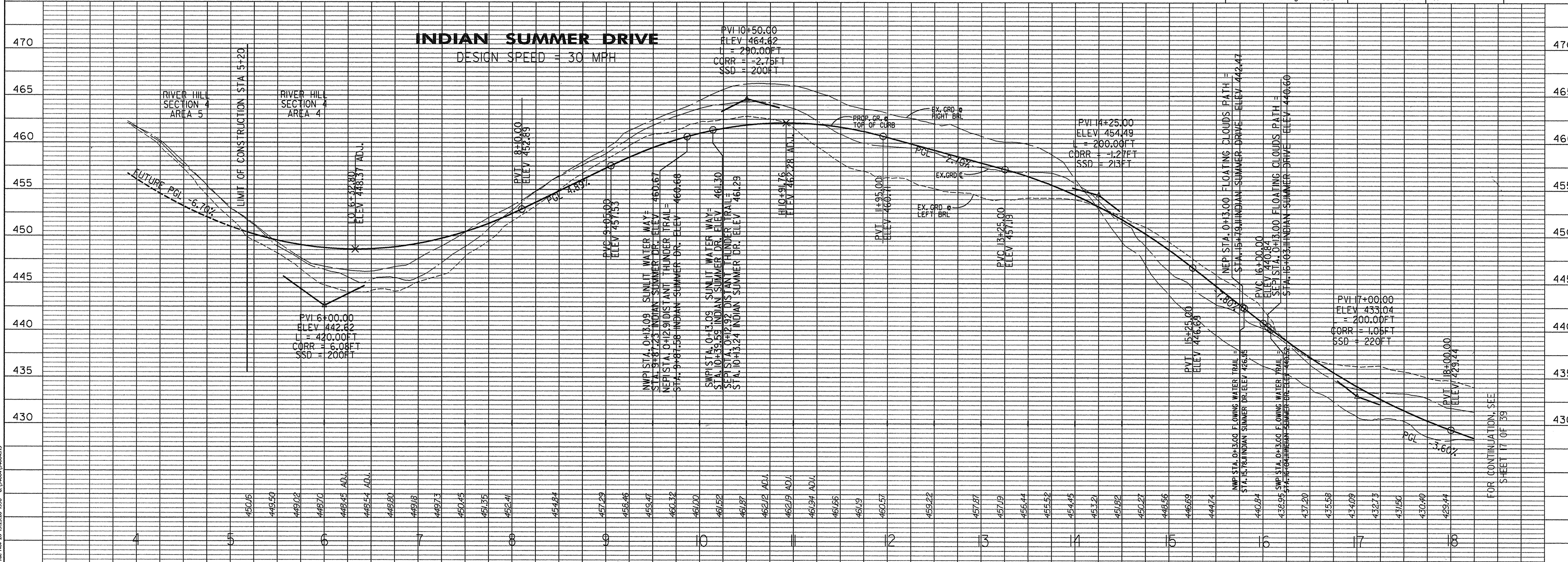
OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Dan McConno-Walken, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 296-3338
Fax 296-4705
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

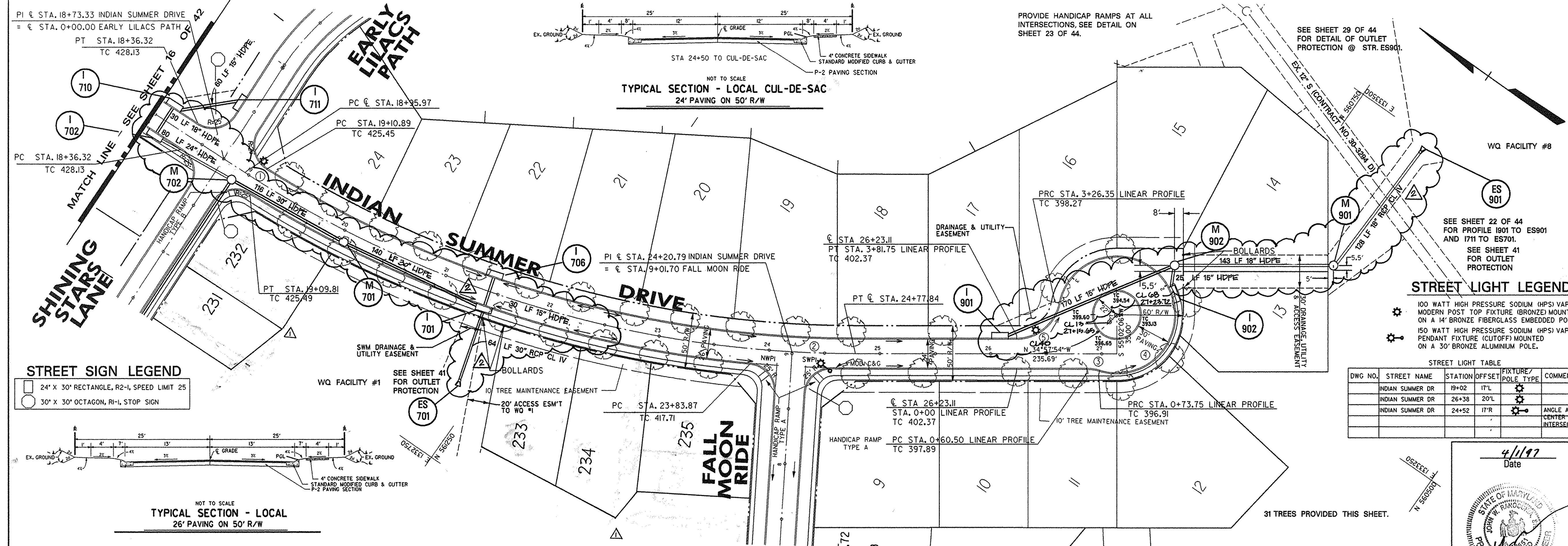
AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **ROAD CONSTRUCTION PLANS**
INDIAN SUMMER DRIVE
STA 3+90 - 18+00

Des By JWS Scale 1" = 50' Proj. No. 94064
Dwn By JEF Date MAR 96
Chk By JWR Approved 16 OF 44



FOR CONTINUATION, SEE SHEET 17 OF 33



STREET SIGN LEGEND

24" x 30" RECTANGLE, R-2, SPEED LIMIT 25

30" x 30" OCTAGON, R-1, STOP SIGN

STREET LIGHT LEGEND

100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 1 1/2" BRONZE FIBERGLASS EMBEDDED POLE.

150 WATT HIGH PRESSURE SODIUM (HPS) VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON A 30" BRONZE ALUMINUM POLE.

STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE	COMMENTS
	INDIAN SUMMER DR	19+02	17'L		
	INDIAN SUMMER DR	26+38	20'L		
	INDIAN SUMMER DR	24+52	17'R		ANGLE ARM TO CENTER OF INTERSECTION

CURVE DATA

LOCATION	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	29°46'04"	100.00	524.734	268.437	S16°50'24"E 518.816
②	03°14'27"	100.00	57.131	28.573	S33°20'40"E 57.123
③	18°58'35"	40.00	13.248	6.685	S25°28'36"E 13.188
④	27°19'41"	52.00	252.602	40.000	N24°50'51"E 68.005
⑤	79°21'06"	40.00	55.398	33.180	N74°38'26"W 51.075
⑥	49°02'00"	100.00	10.940	41.421	S95°21'29.6"E 16.997

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
William H. Hamilton 7/19/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: *Mark Cummings* 5/21/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/5/98 LOTS ADJUSTED
 6/10/98 REVISED R/C CL VY 90 TO HDPE GD.
 Date No. Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dan McCune-Walker, Inc.
 200 East Pennsylvania Avenue
 Poolesville, Maryland 21088
 (410) 296-3853
 Fax 296-4705

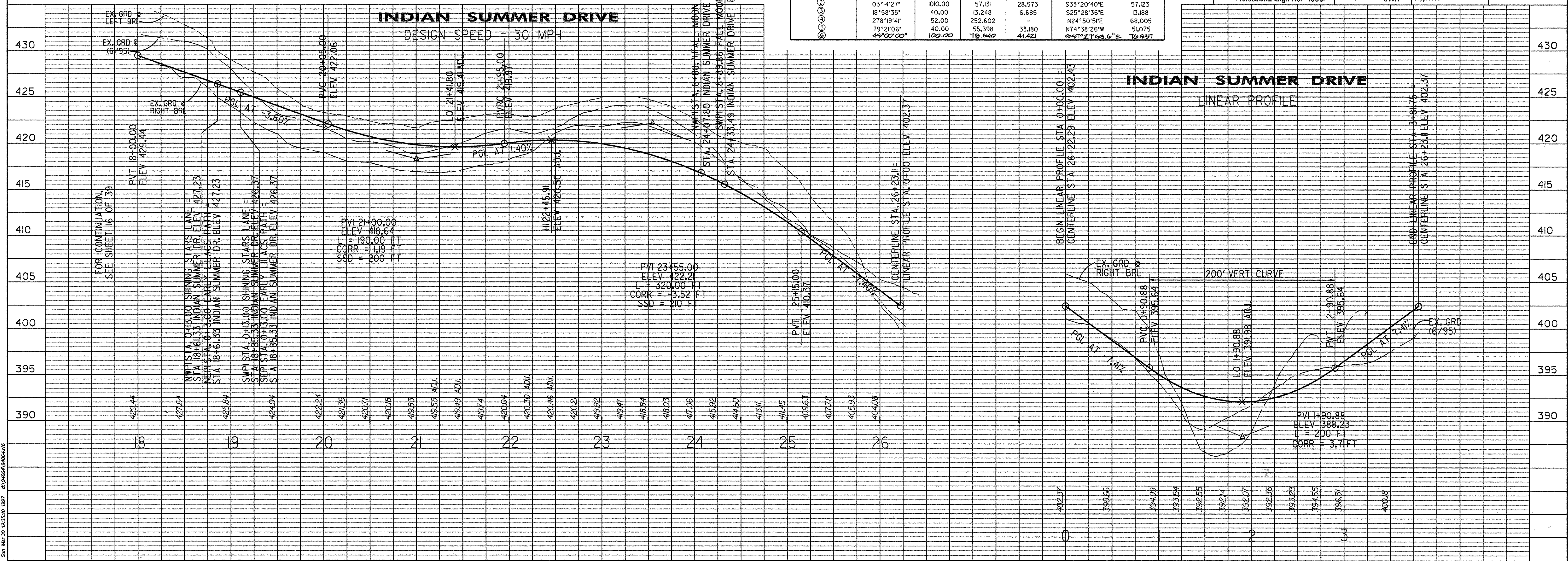
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

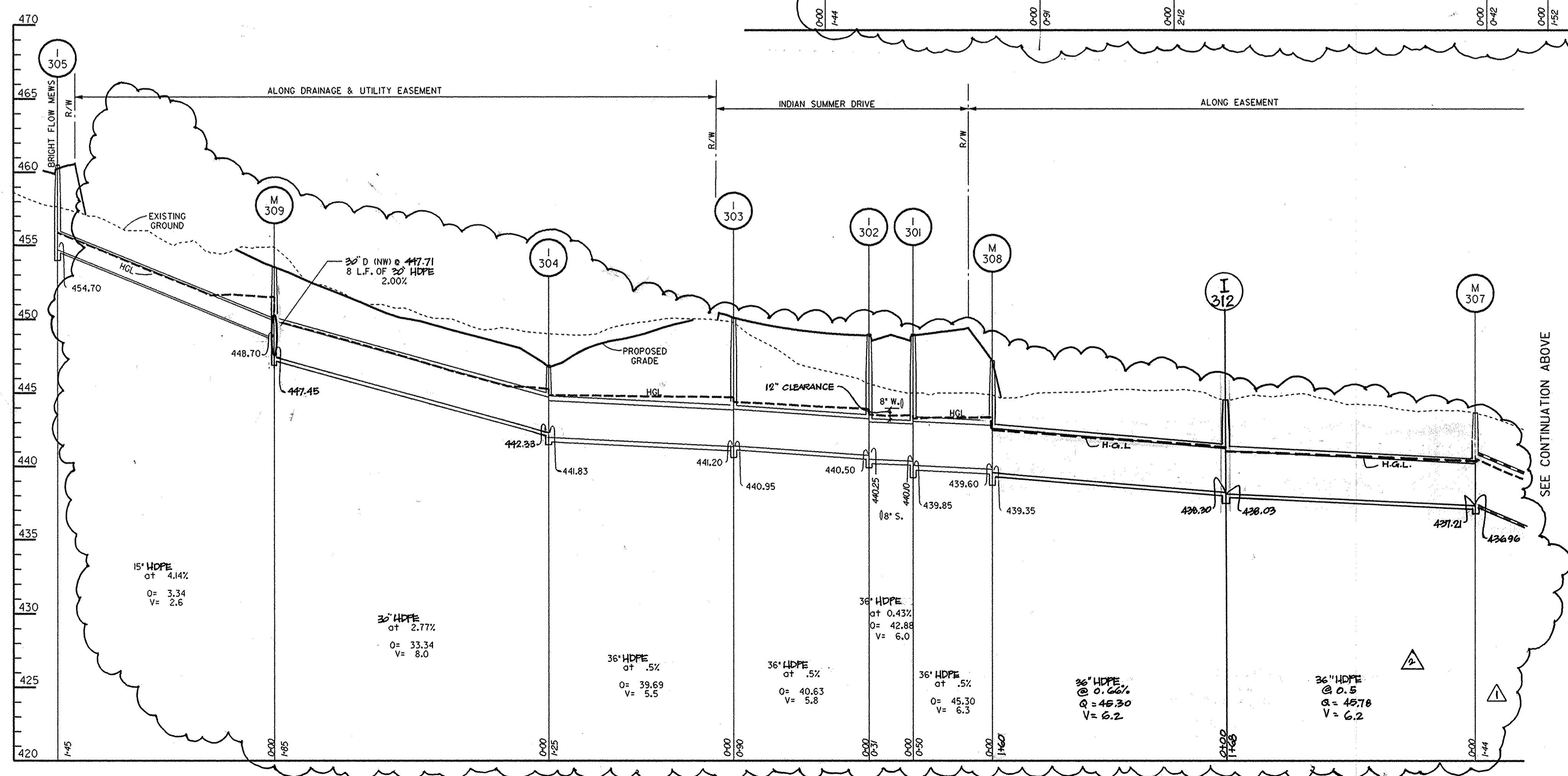
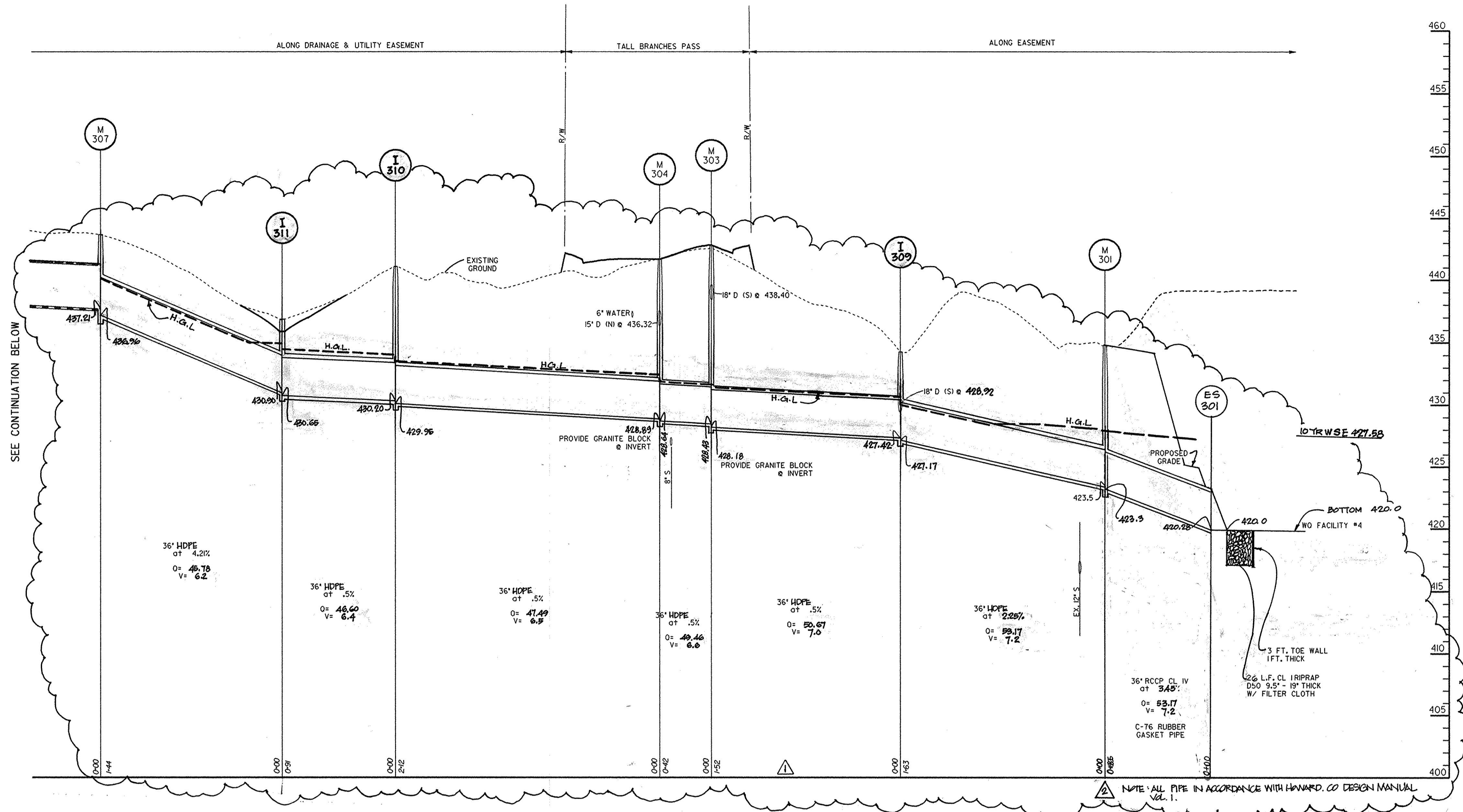
TITLE **ROAD CONSTRUCTION PLANS**
INDIAN SUMMER DRIVE
STA 18+00 - 27+00

Des By JWS Scale 1" = 50' Proj. No. 94064
 Dm By JEF Date JAN 97
 Chk By JWR Approved 17 OF 44

Professional Engr. No. 10551



Sta. Mar 30 10:35:10 1997 d:\94064\94064.dwg



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Robert M. Swack
 CHIEF, BUREAU OF HIGHWAYS *RS* DATE 5-22-97

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
J. Coltrane
 CHIEF, DIVISION OF LAND DEVELOPMENT *RL* DATE 7/10/97

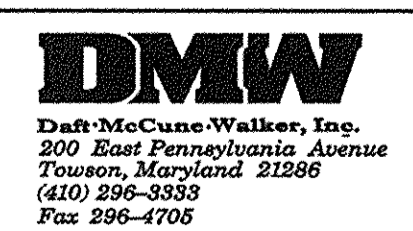
Michael J. ...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *MB* DATE 5/20/97

8/18/96 Δ REVERSE INVERT FROM 85.80 TO 85.01, ADDED INLET I 312
 8/18/96 Δ REPLACED MH M-307, M-308, M-309 WITH INLET
 8/18/96 Δ REMOVED RCP ON N 90 TO HDPE

Date No. Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

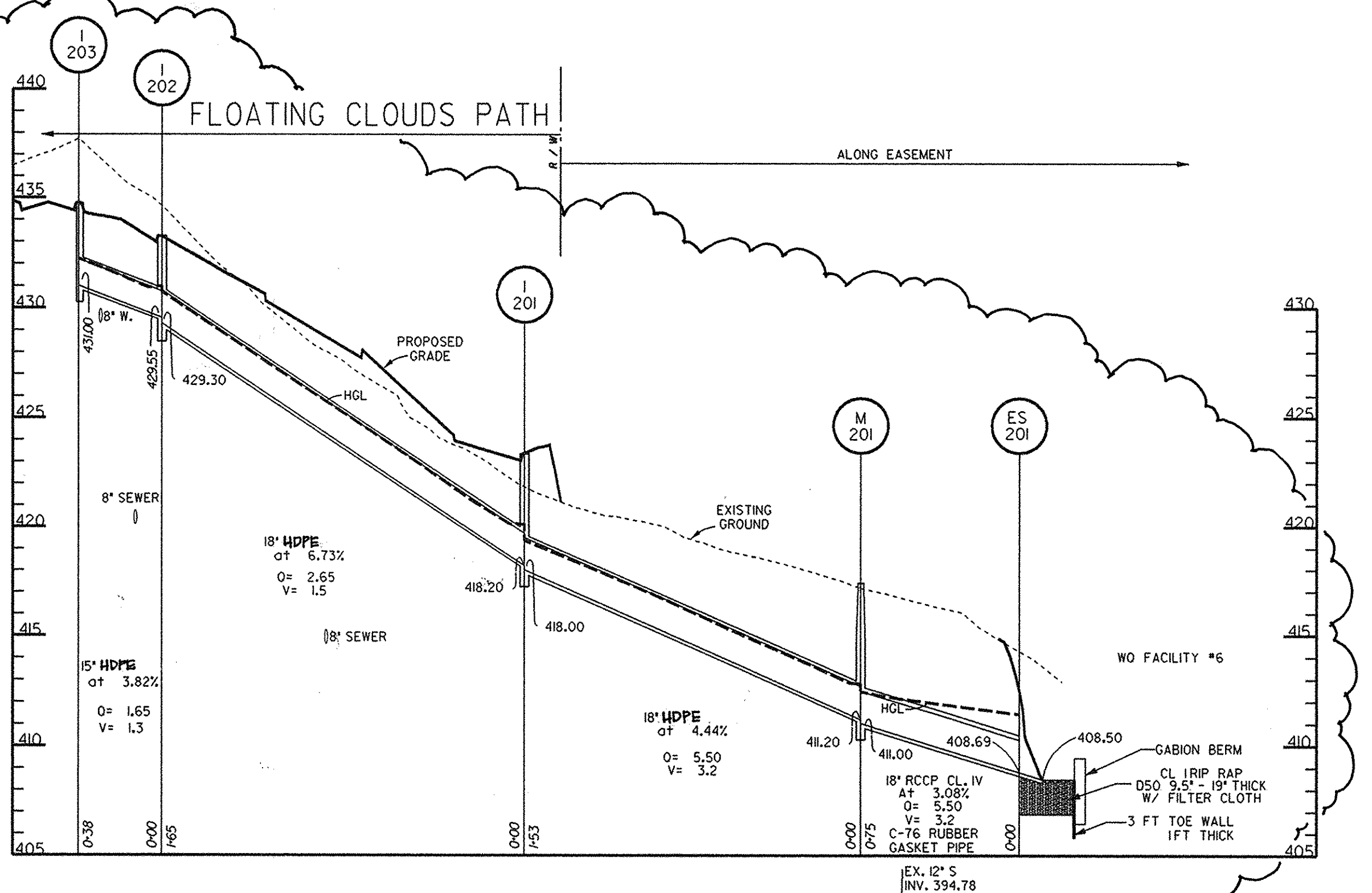
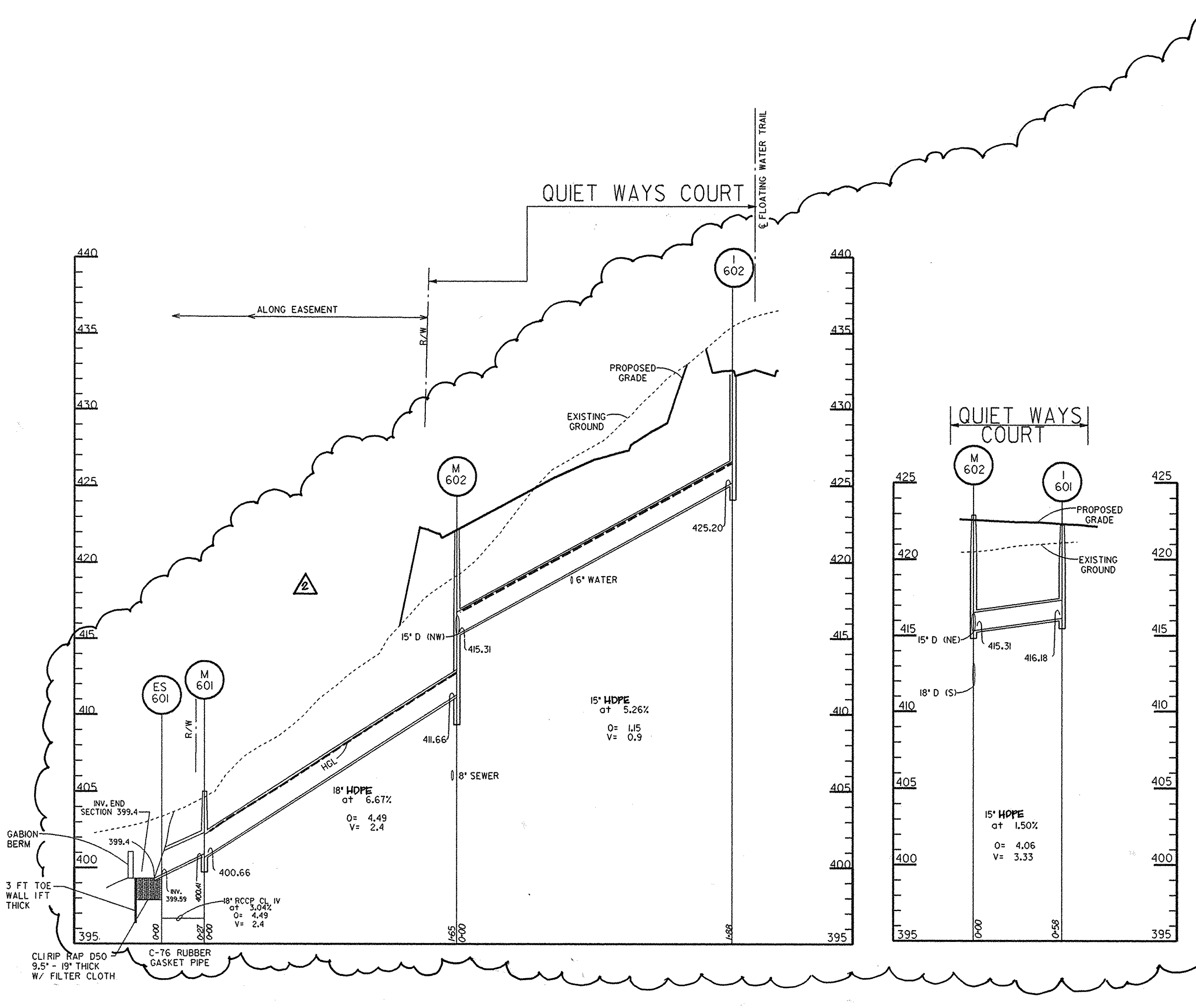
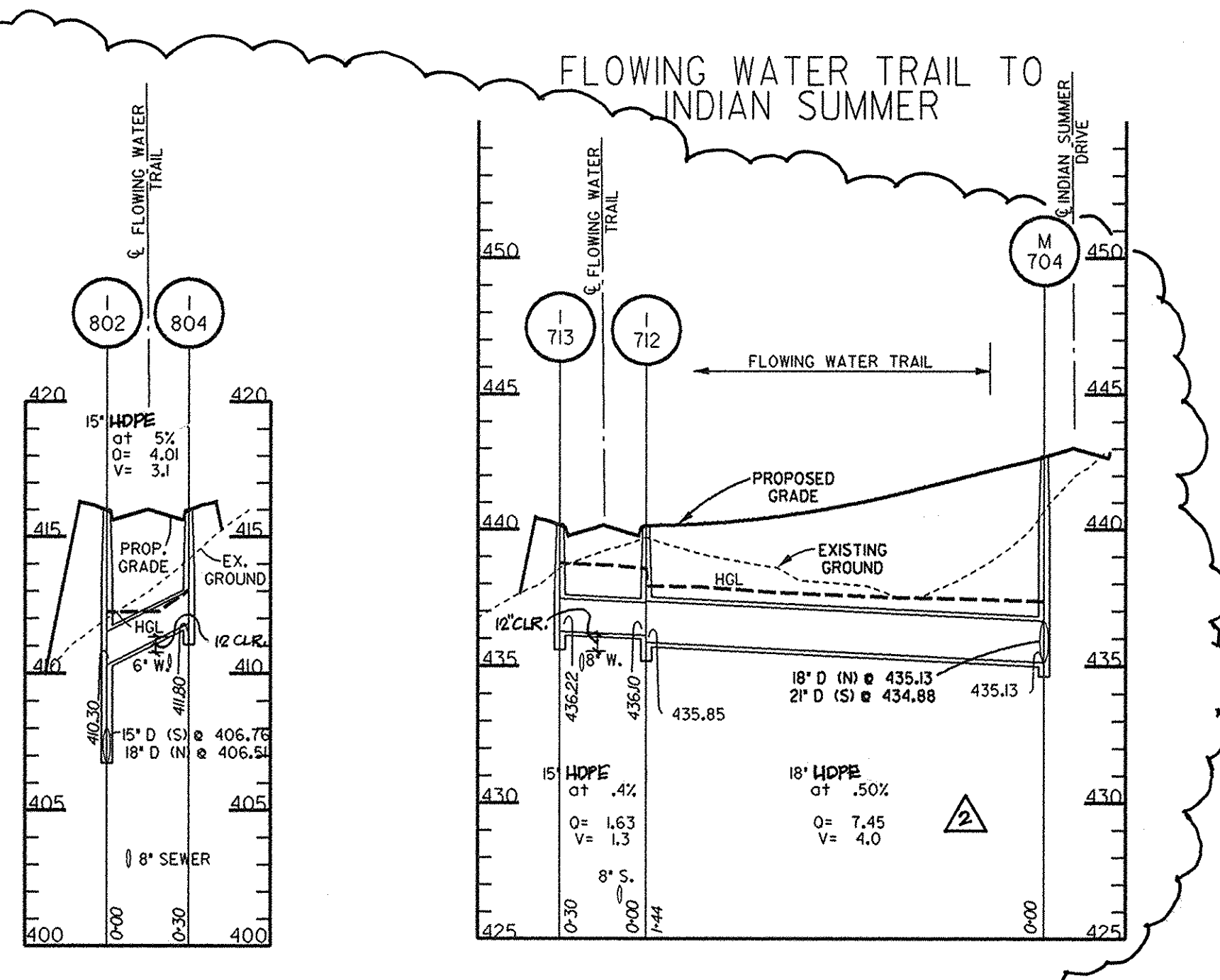
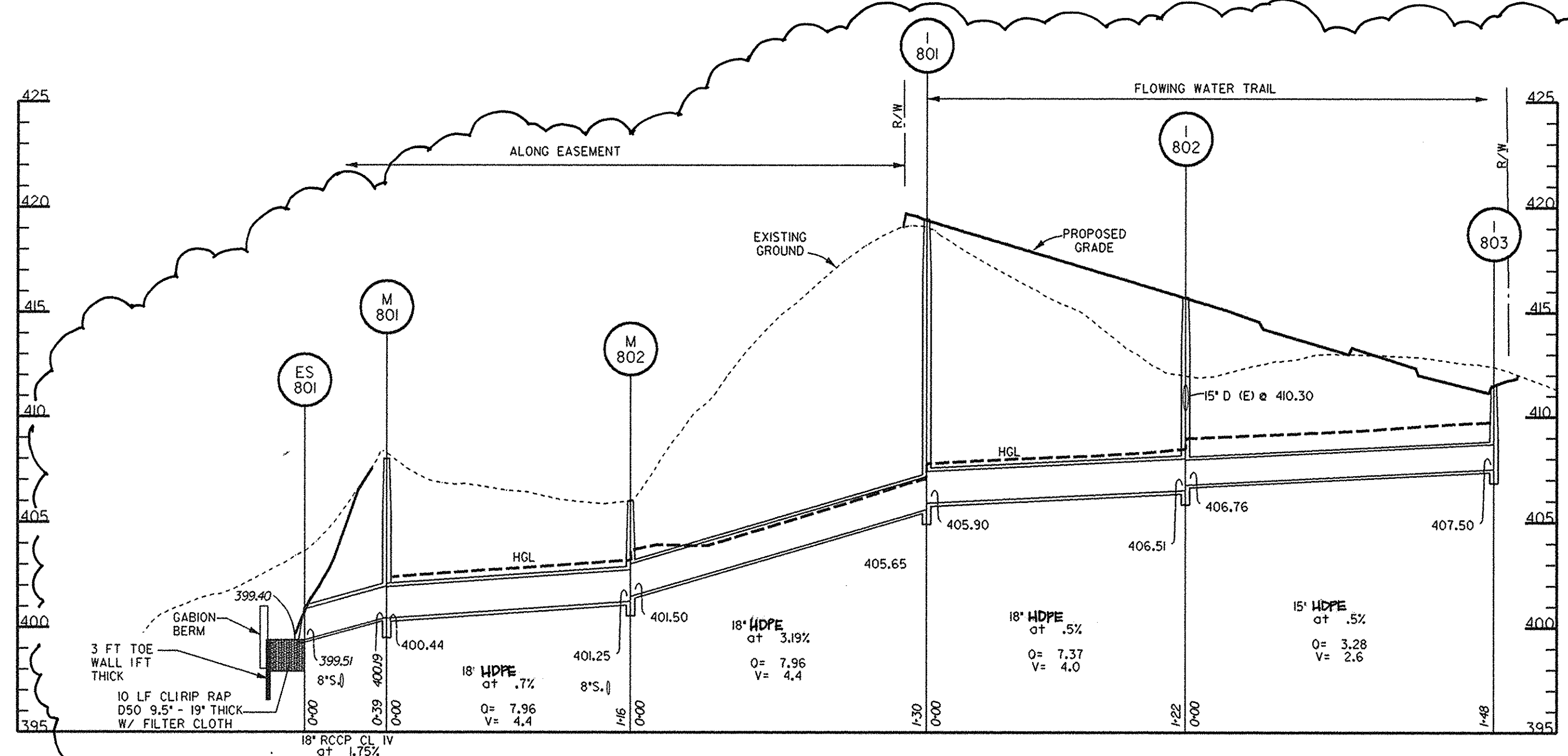


12-3-96
 Date

Professional Engr. No. 10551

AREA	SECTION 4 AREA 4		PARCEL
TITLE	ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND		
Des By	RS	Scale 1" = 50'	Proj. No. 94064
Dwn By	JEF	Date MAR 96	18 OF 44
Chk By	JWR	Approved	

Wed Nov 27 11:05:21 1996 6154064/34064.plt



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Demele 5-22-97
 CHIEF, BUREAU OF HIGHWAYS ns DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John Hamilton 7/1/97
 CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

John Hamilton 5/2/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

8/16/98 Δ REVERSED RCP CL IV 90 TO HDPE 90.

Date No. Revision Description

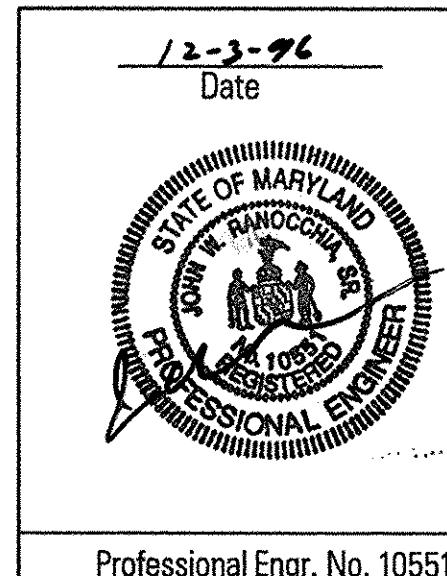
VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER /DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

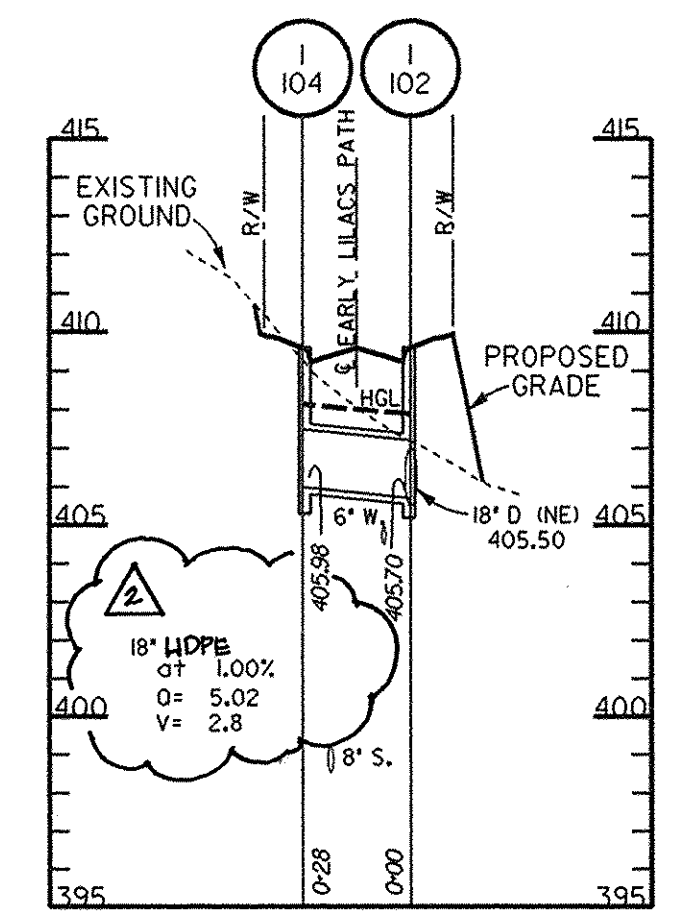
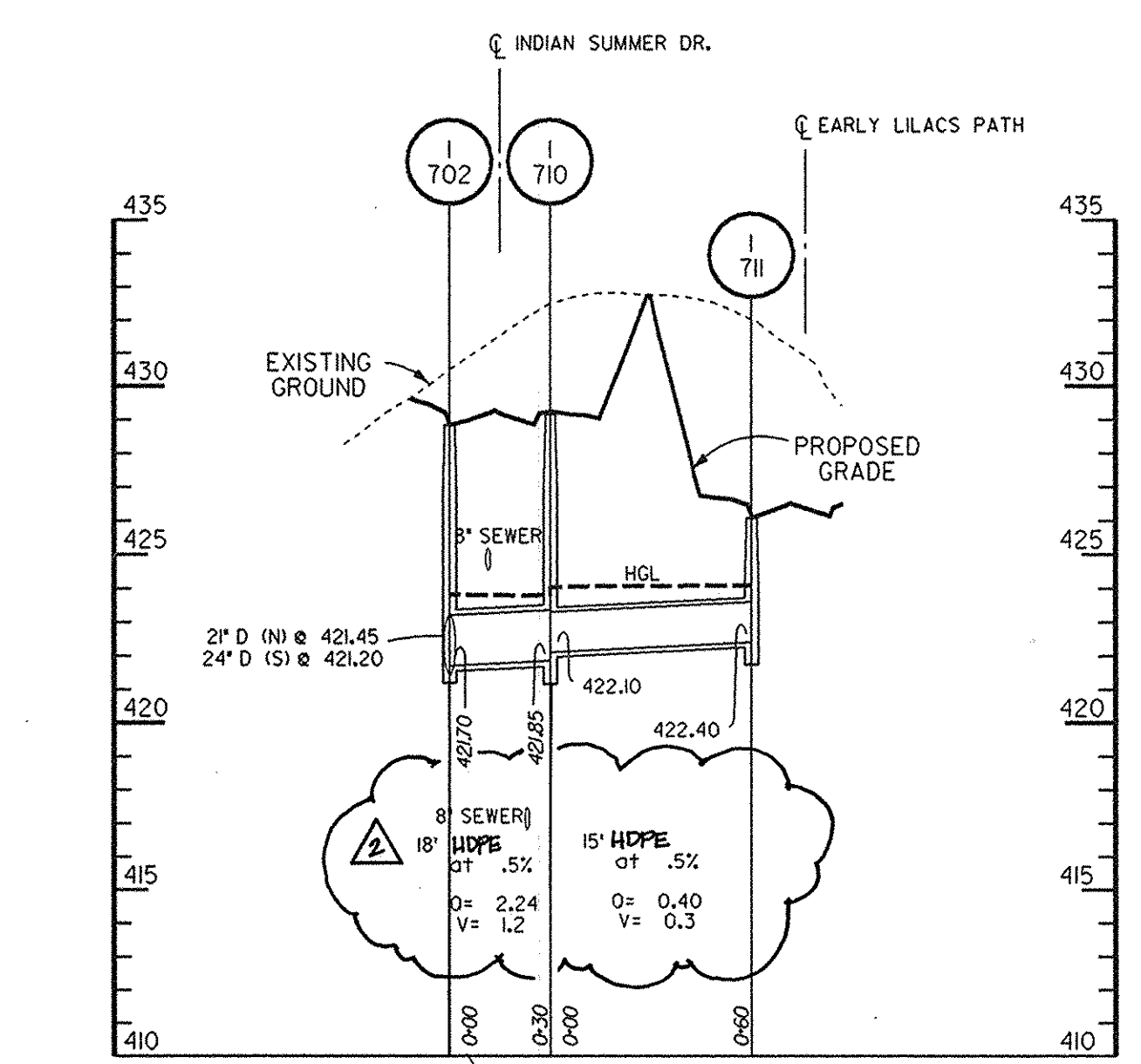
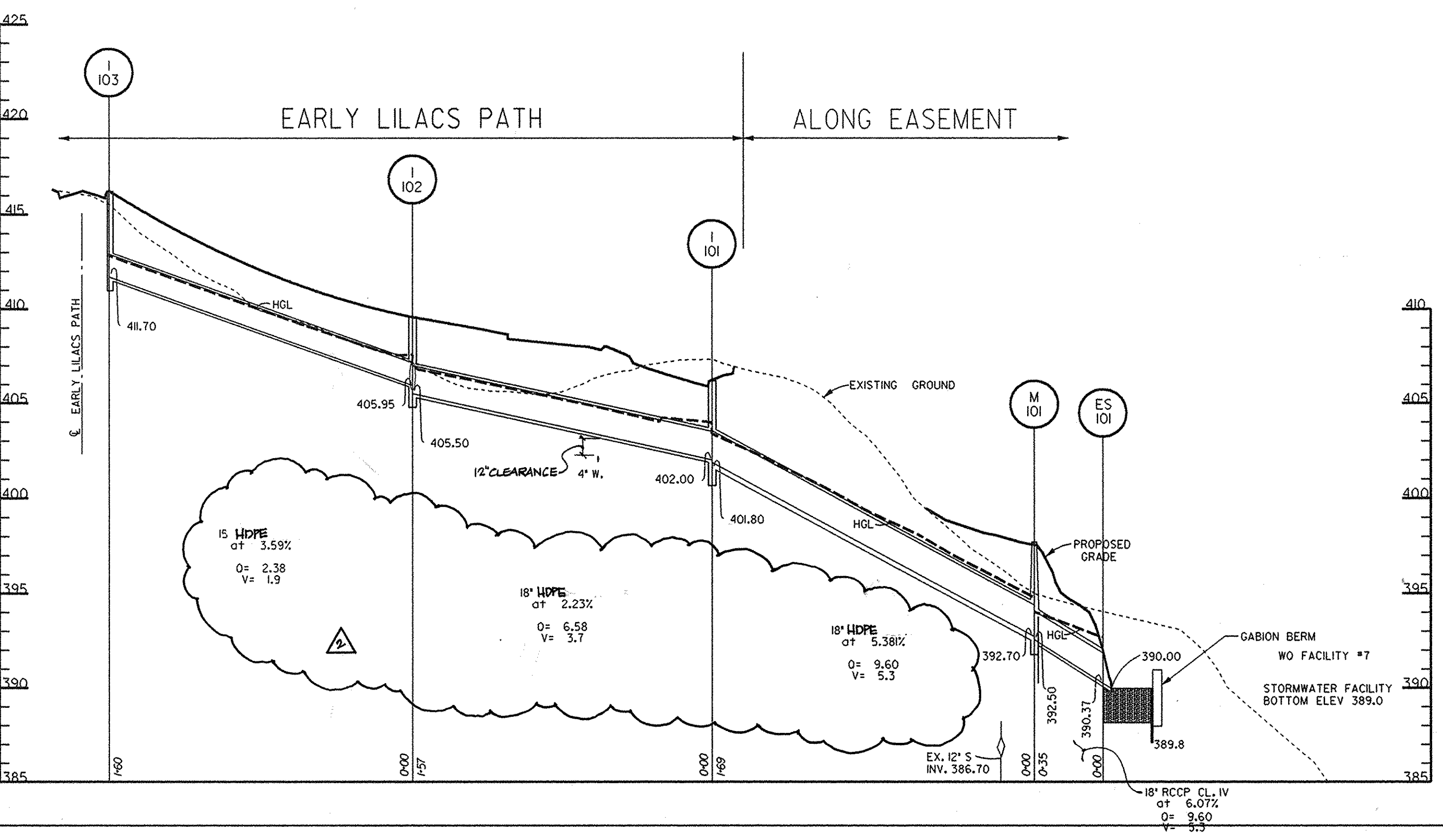
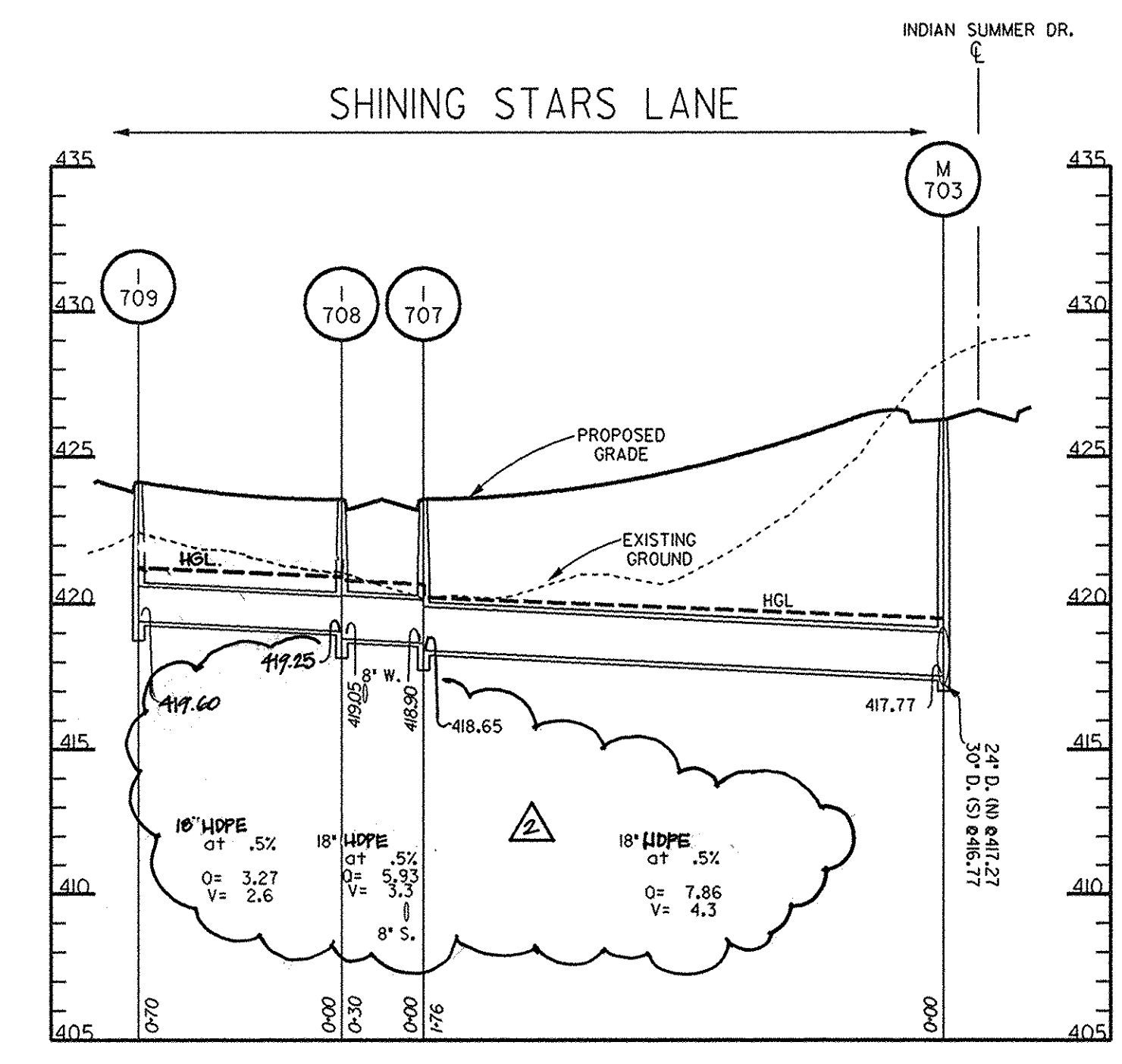
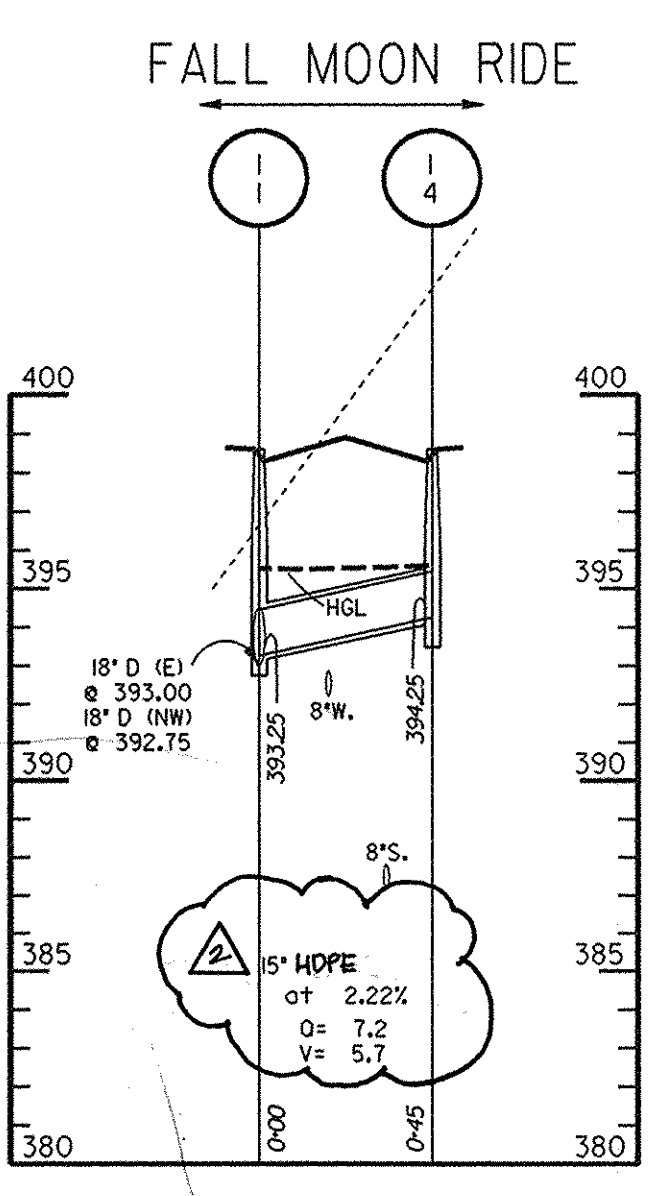
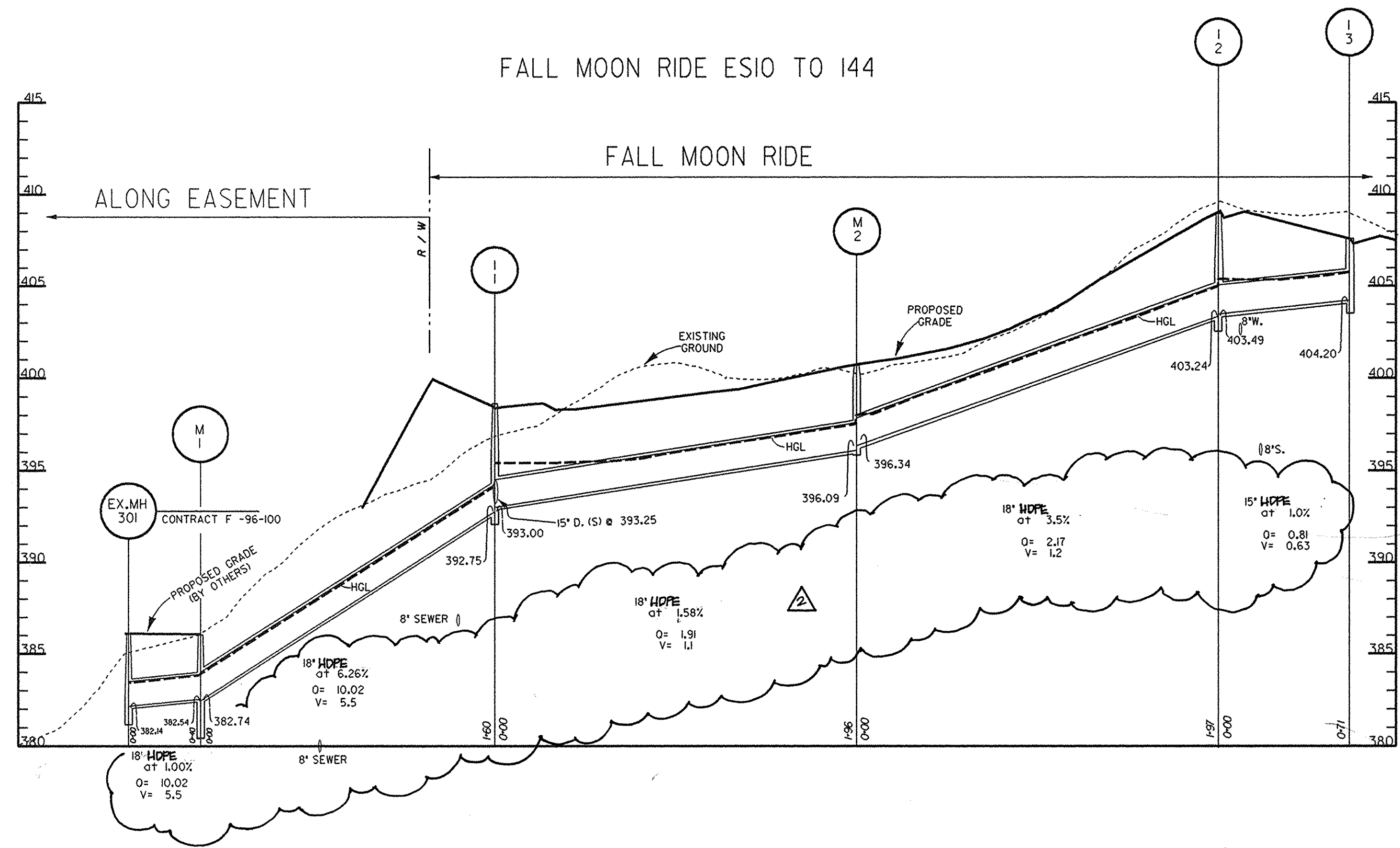
DMW
 Dawn McCusker-Walkers, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 286-3339
 Fax 286-4705

A Team of Land Planners,
 Landscape Architects,
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 Environmental Professionals

AREA	SECTION 4 AREA 4		PARCEL
TITLE	STORM DRAIN PROFILES		
Des By	RS	Scale 1" = 50'	Proj. No. 94064
Dm By	JEF	Date MAR 96	20 OF 44
Chk By	JWR	Approved	



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APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Daniels 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Costantino 7/8/97
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William J. Damann 5/22/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

8-10-70 REVISED RCP CL IV GD. TO HDPE GD.

Date	No.	Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Duff McCune-Walkes, Inc.
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 296-3333
 Fax 296-4706

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 Environmental Professionals

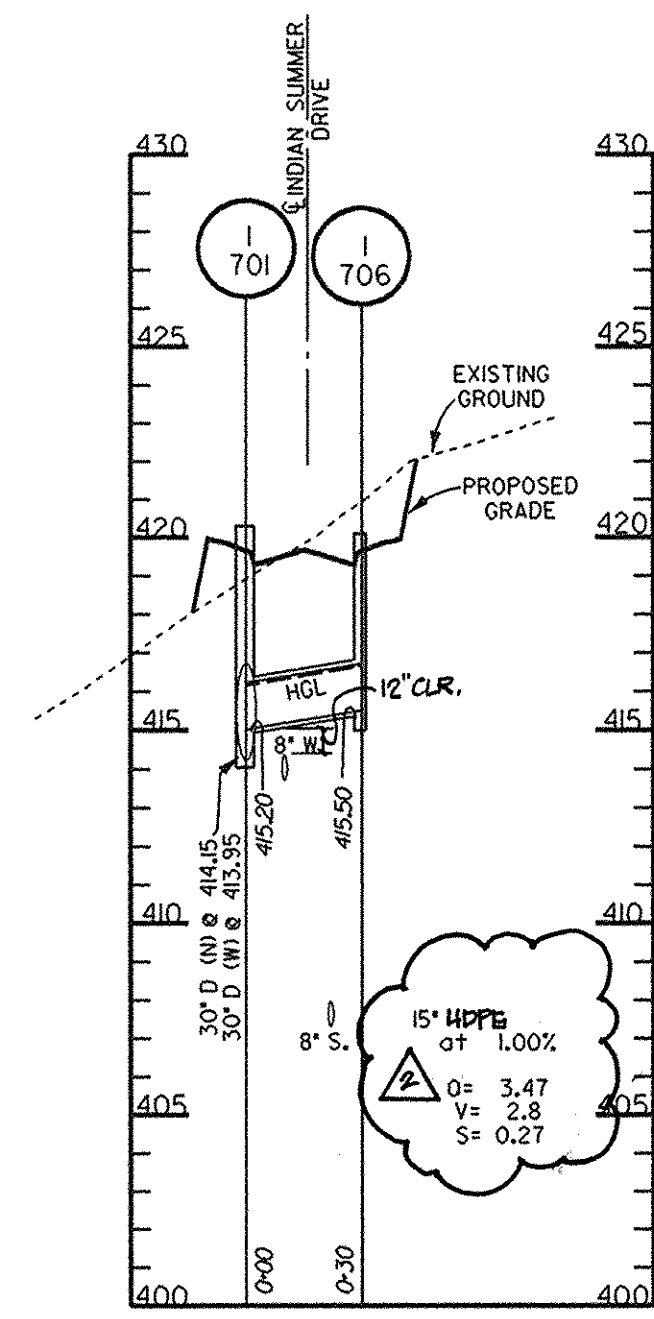
AREA SECTION 4 AREA 4
 TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **STORM DRAIN PROFILES**

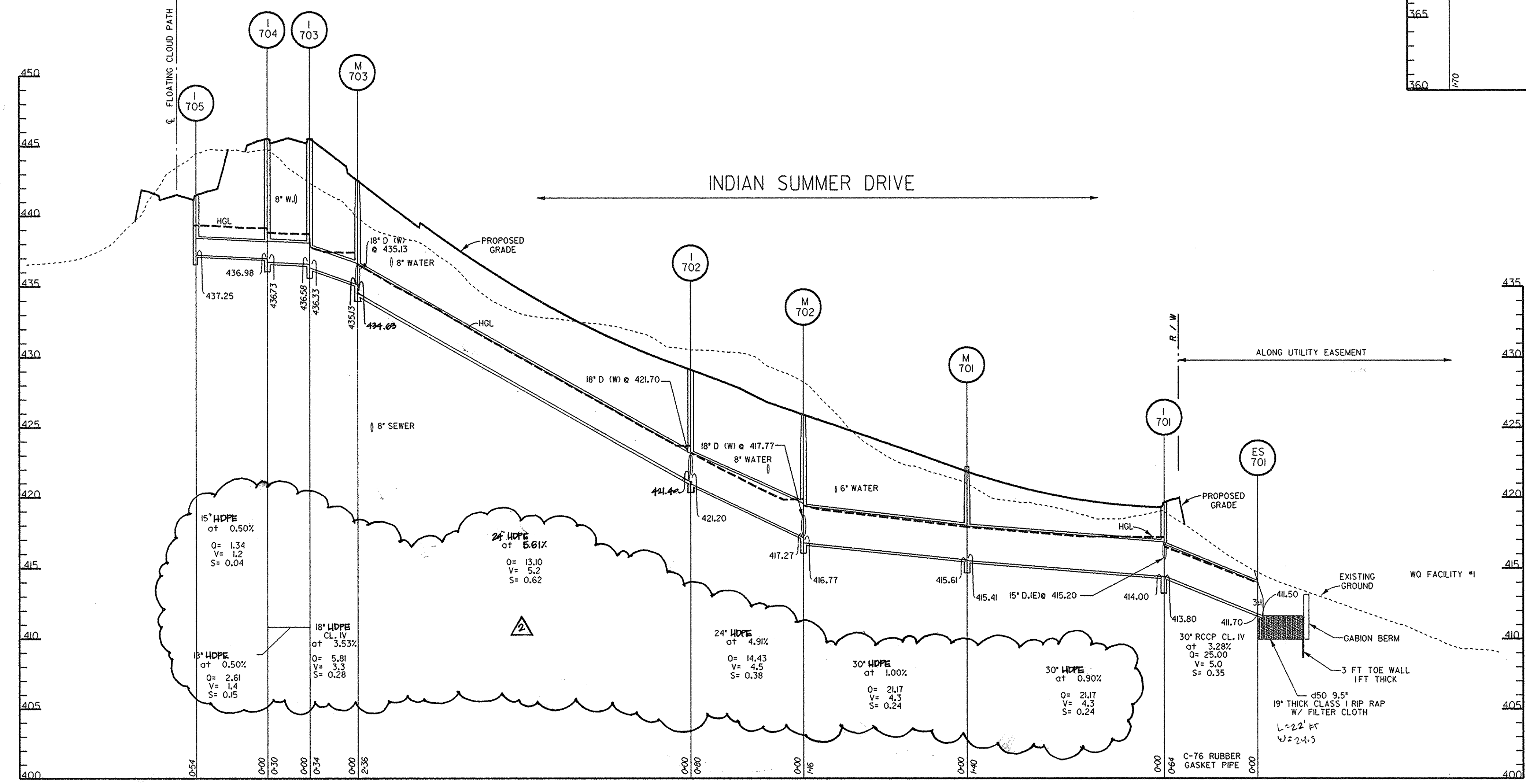
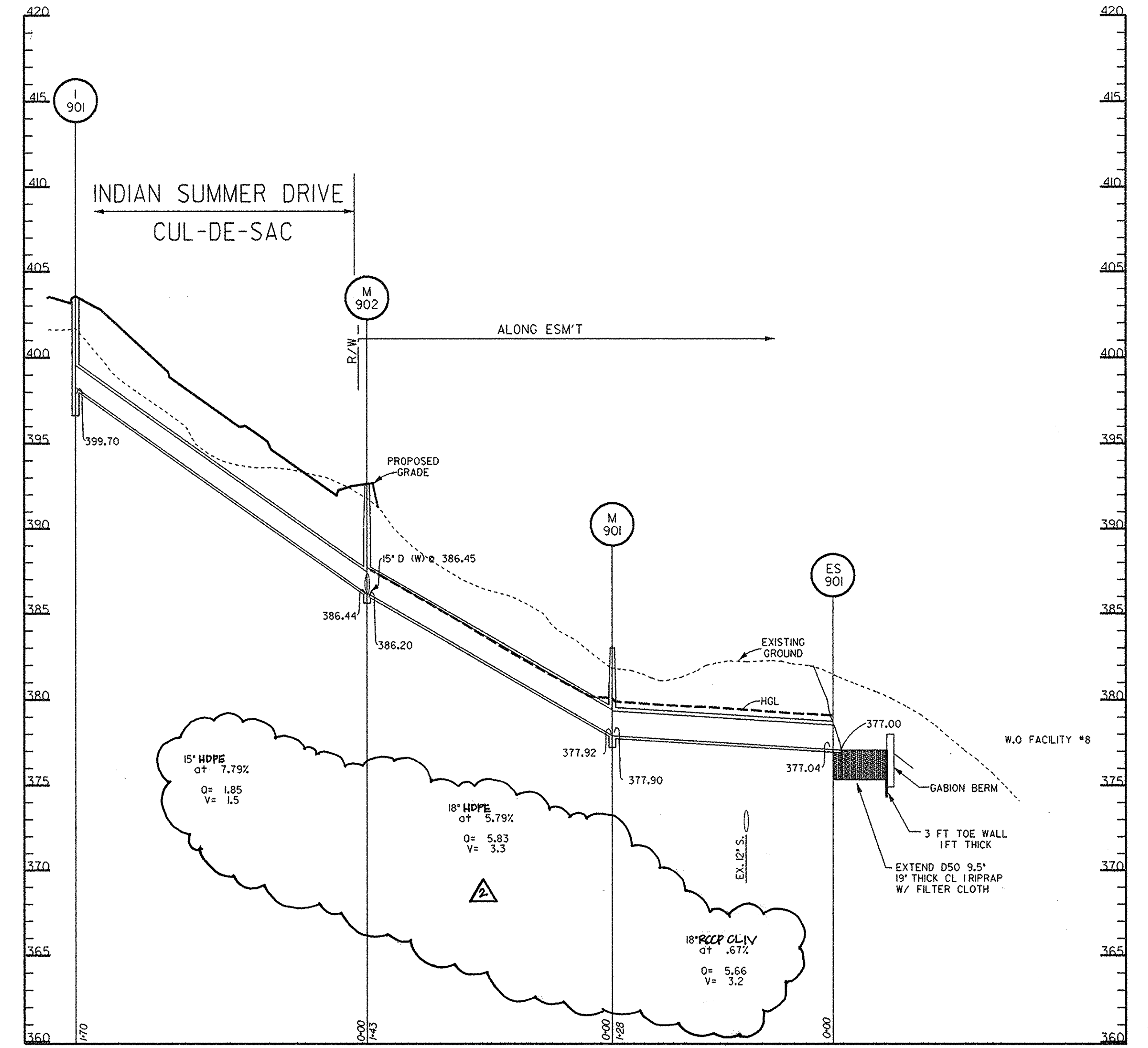
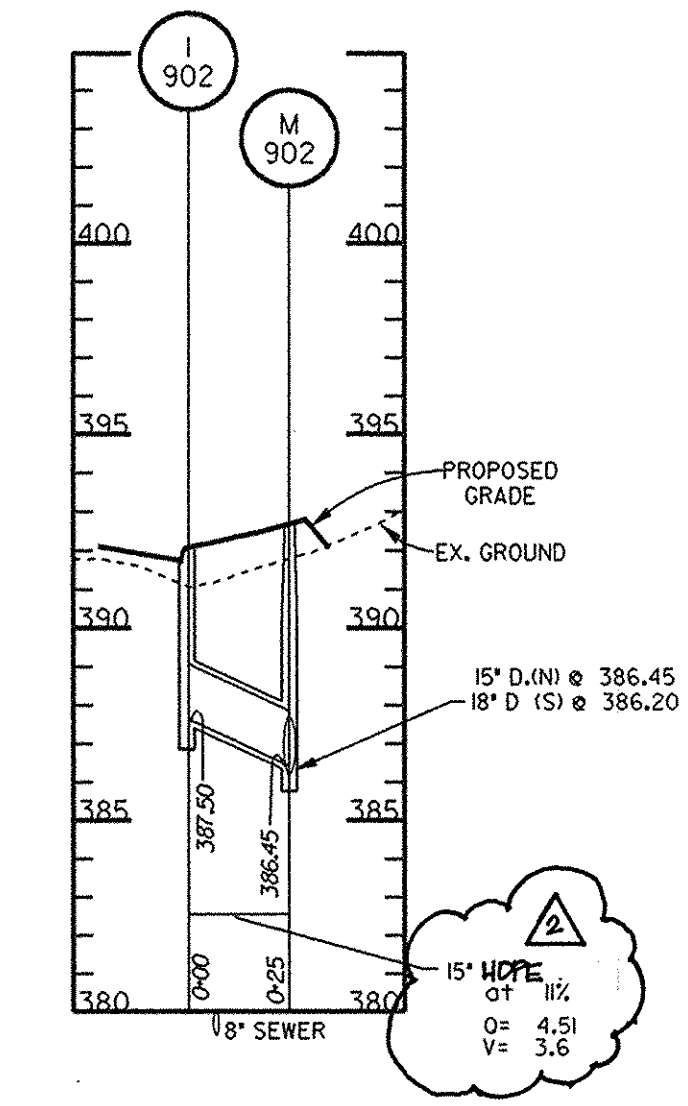
Des By	RS	Scale	1" = 50'	Proj. No.	94064
Dwn By	JEF	Date	MAR 96		
Chk By	JWR	Approved			21 OF 44

Professional Engr. No. 10551

Tue Nov 24 19:48:29 1996 AT 106064.DWG



INDIAN SUMMER DRIVE



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
John C. Hamilton 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John D. Dawson 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

0-18-97 REVISED RCP CL IV SD. 18" HDPE GR

Date	No.	Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER /DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Darrin C. Walker, Inc.
200 East Pennsylvania Avenue
Towson, Maryland 21286
(410) 286-3333
Fax 298-4705

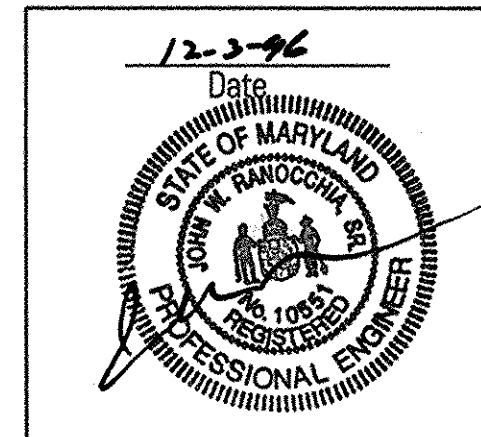
A Team of Land Planners,
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Environmental Professionals

AREA SECTION 4 AREA 4
TAX MAP PARCEL
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE STORM DRAIN PROFILES

Des By	Scale 1" = 50'	Proj. No. 94064
Dm By JEF	Date MAR 96	22 OF 44
Chk By JWR	Approved	

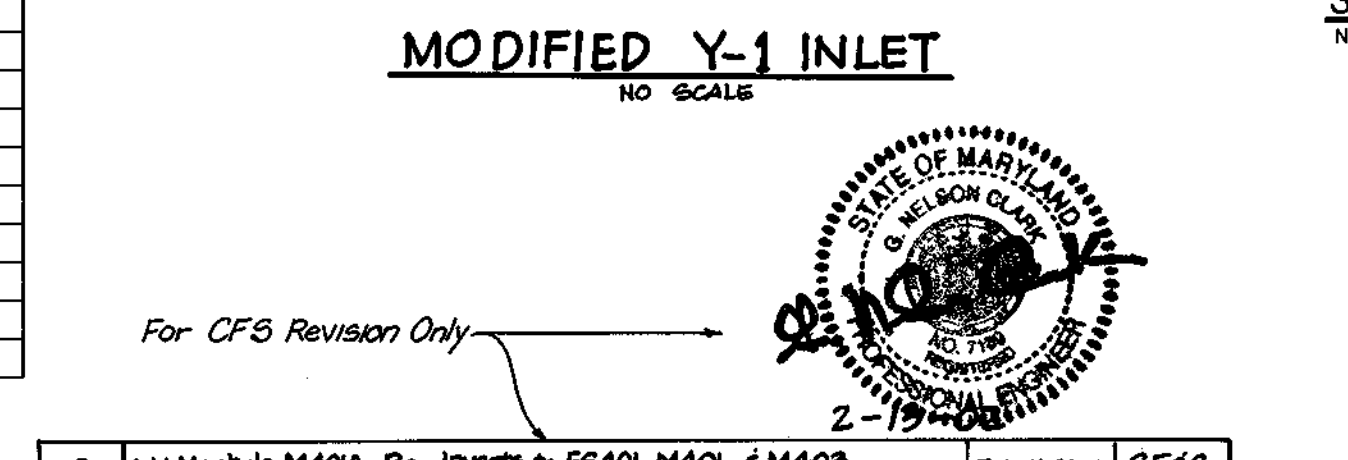
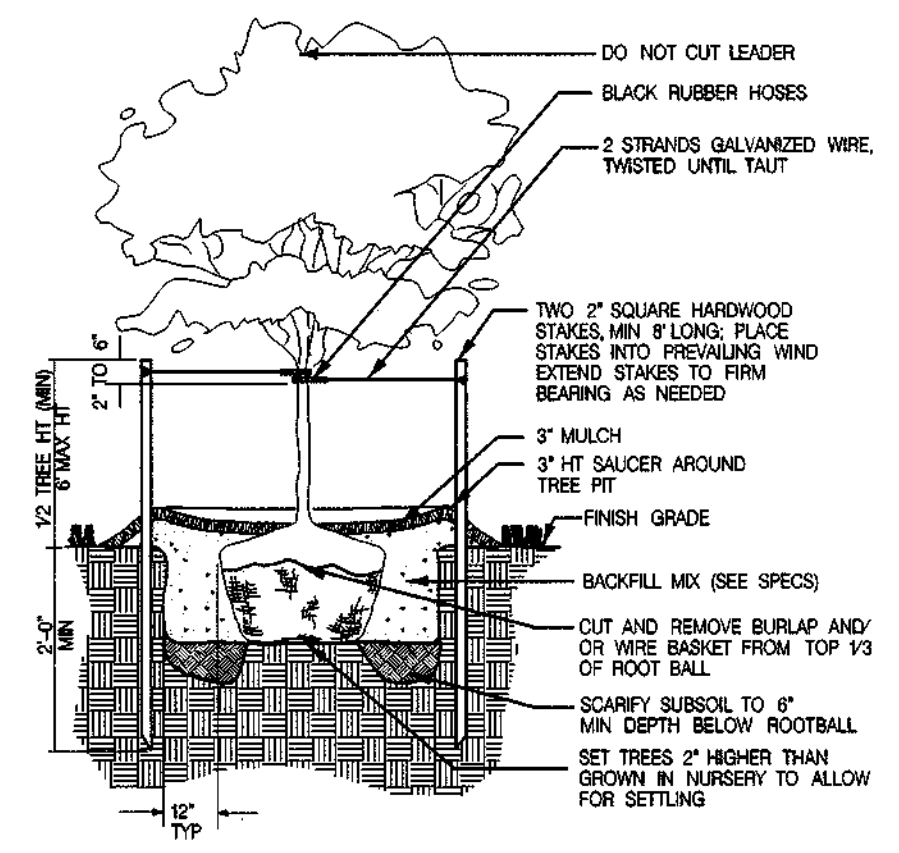
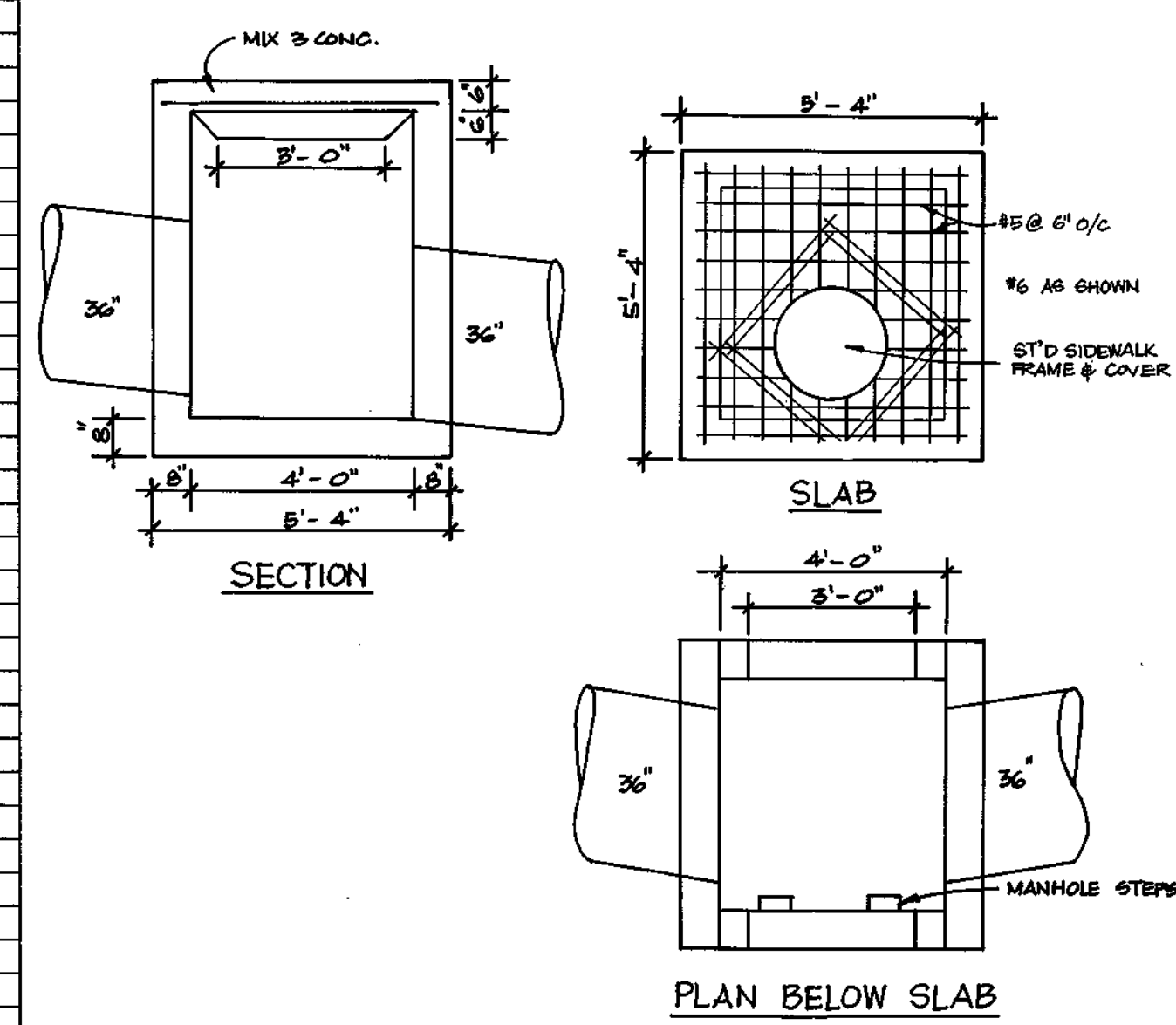
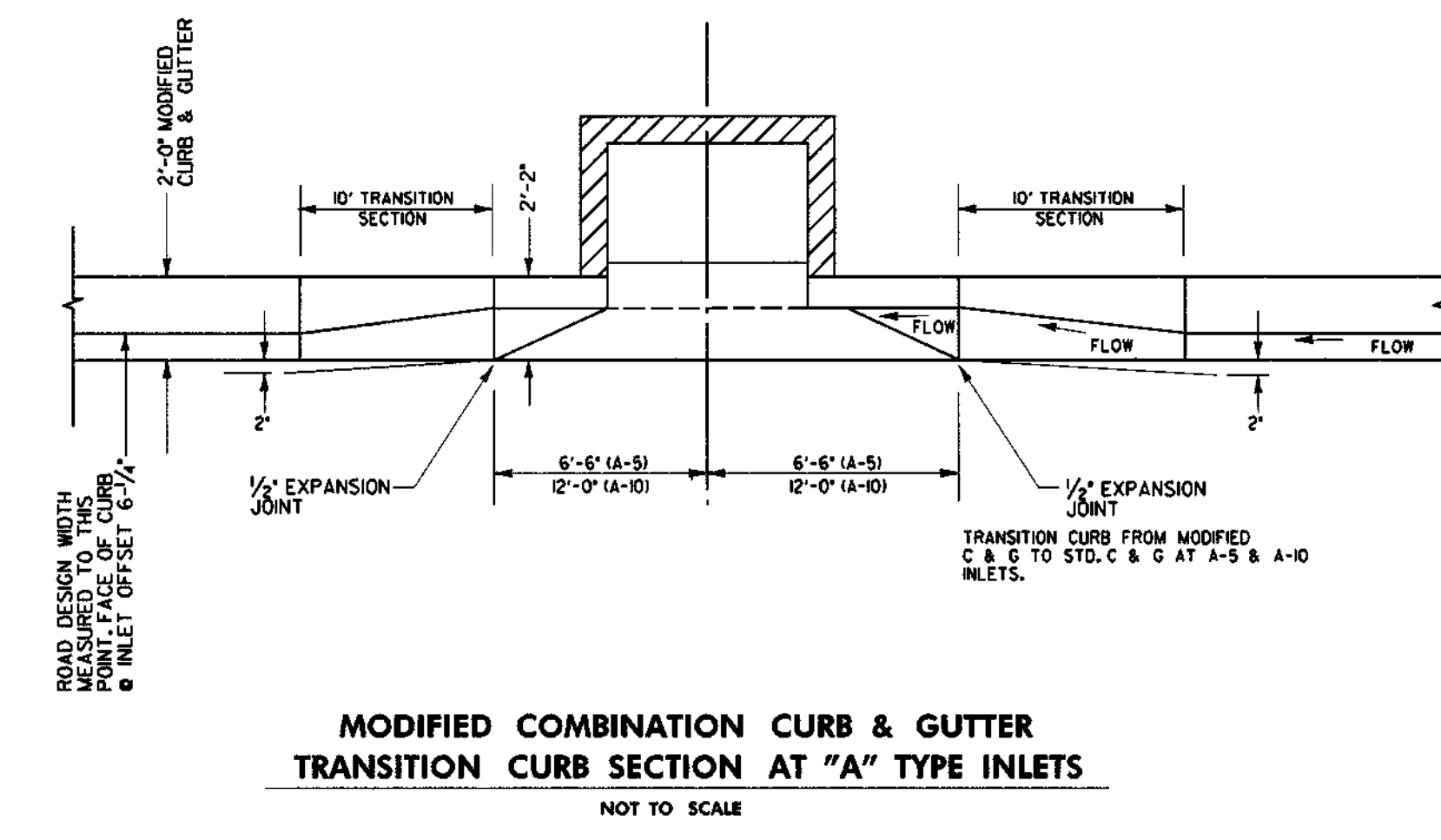
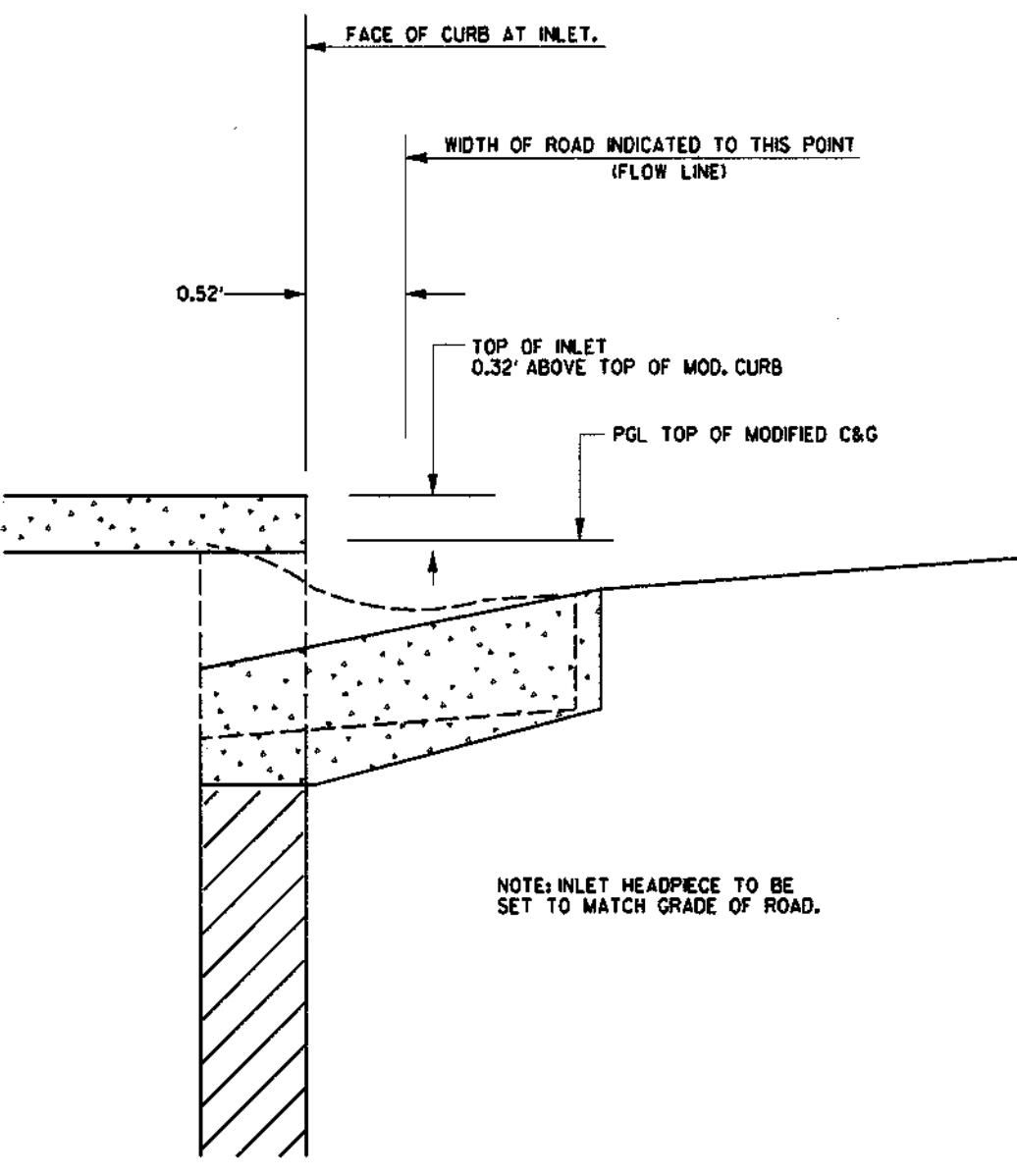
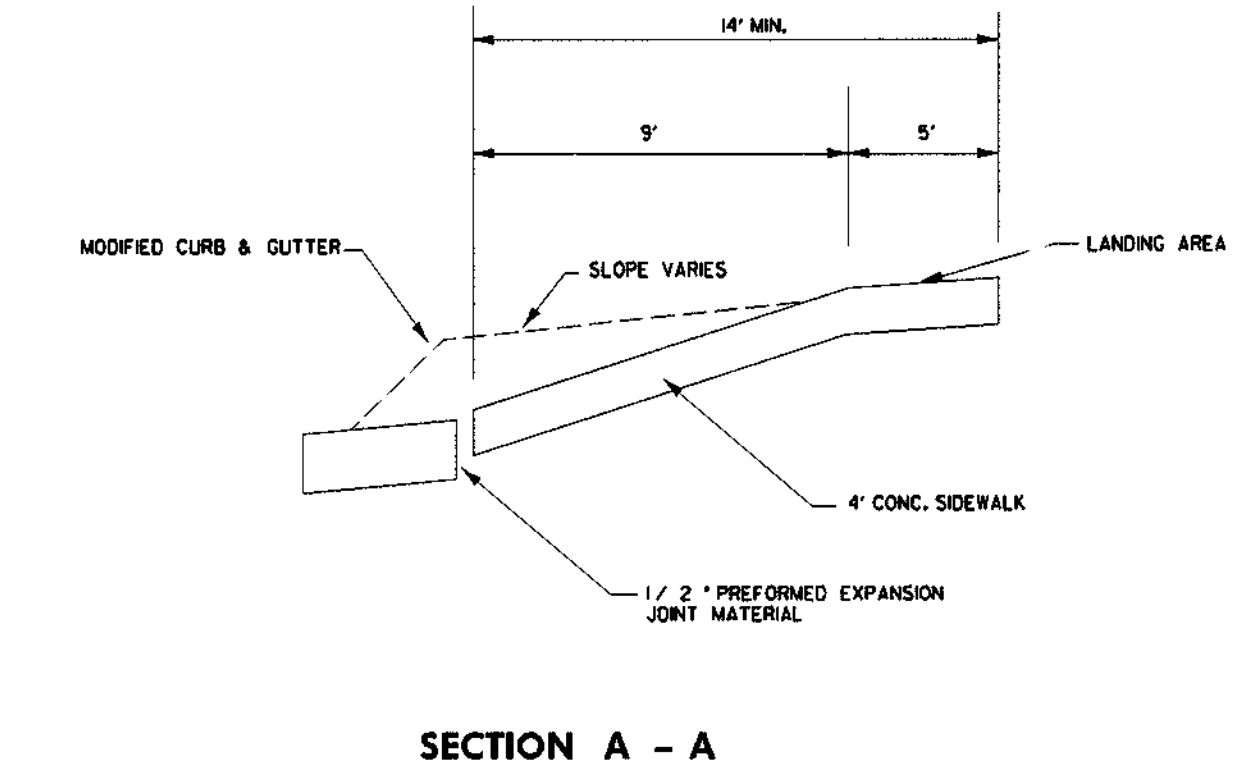
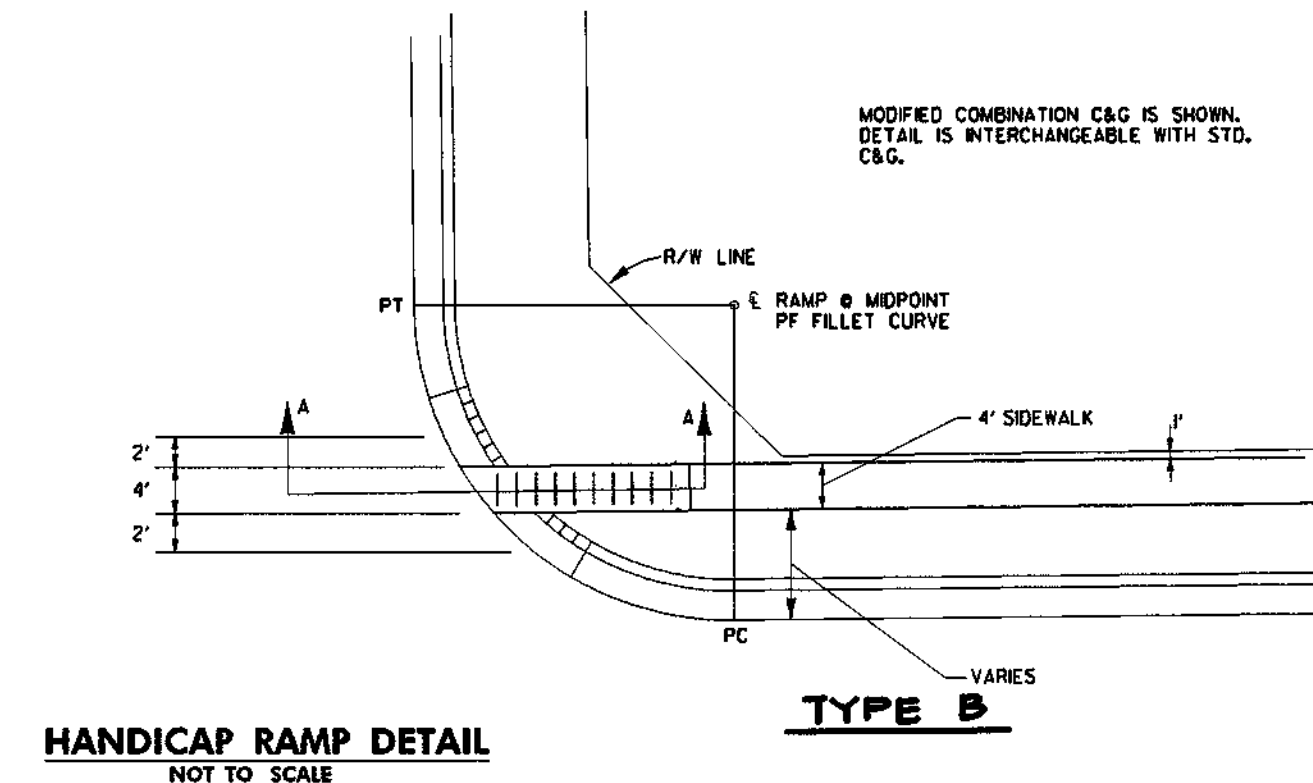
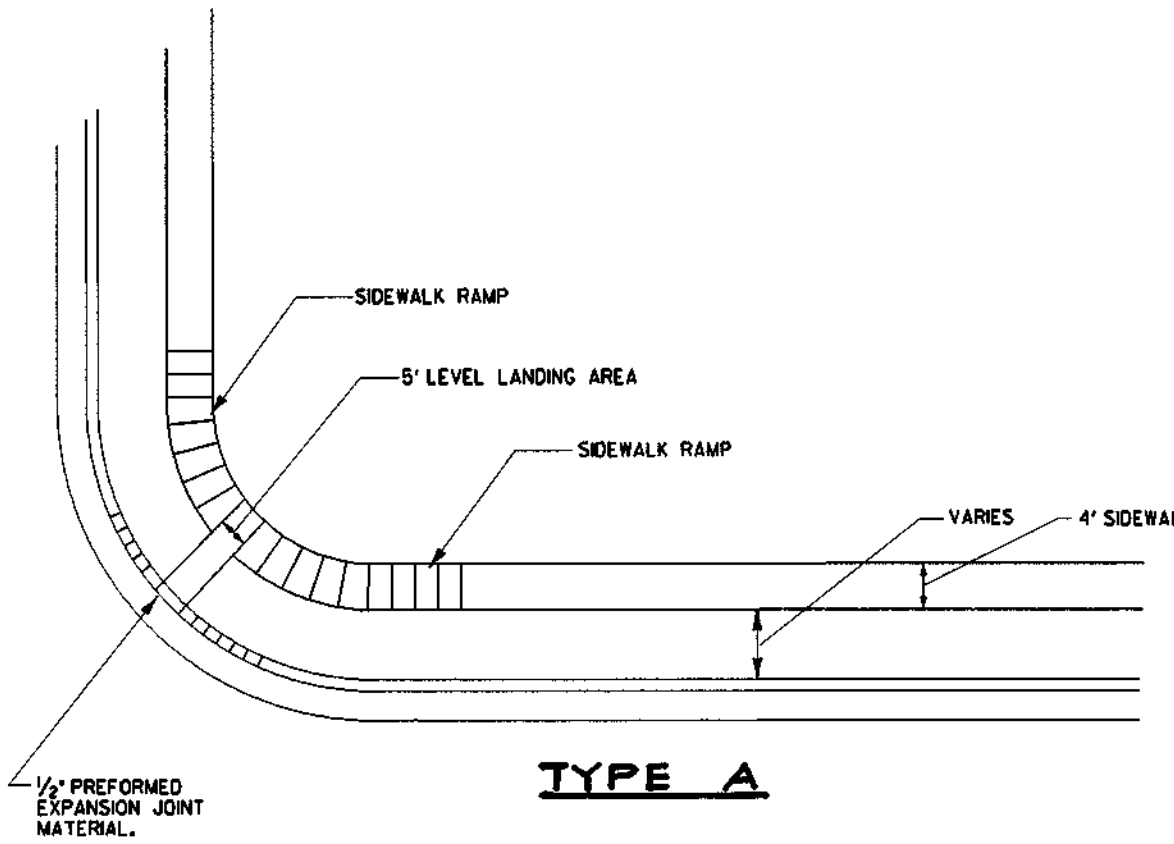
Professional Engr. No. 10551



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STRUCTURE SCHEDULE

NO.	TYPE	WIDTH	TOP ELEV.	INV. OUT	STD DETAIL	LOCATION
1602	A-5	3.0	432.84	425.20	SD4.40	FLOWING WATER TRAIL STA 7+60.2
1601	A-5	3.0	422.32	416.18	SD4.40	QUIET WAYS COURT LINEAR PROF. 2+41.6
M601	STD MH	4.0	SET IN FIELD	400.41	G5.01	SEE PLAN (BEHIND LOT 153)
M602	STD MH	4.0	422.90	411.66	G5.01	QUIET WAYS COURT
1803	A-10	3.0	411.78	407.50	SD4.41	FLOWING WATER TRAIL LINEAR PROF 1+56.60
1804	A-10	3.0	415.94	411.80	SD4.41	FLOWING WATER TRAIL STA 11+50.0
1802	A-5	3.0	415.94	406.51	SD4.40	FLOWING WATER TRAIL STA 11+50.0
1801	A-5	3.0	419.63	405.65	SD4.40	FLOWING WATER TRAIL STA 10+28.0
M 802	STD MH	4.0	SET IN FIELD	401.25	G5.01	SEE PLAN
M 801	STD MH	4.0	SET IN FIELD	400.19	G5.01	SEE PLAN
ES801	CONC END SECTION	18"	N/A	399.4	SD5.51	SEE PLAN
ES601	CONC END SECTION	18"	N/A	399.4	SD5.51	SEE PLAN
1713	A-5	3.0	440.20	436.22	SD4.40	FLOWING WATER TRAIL STA 1+57.0
1712	A-10	3.0	440.20	435.85	SD4.41	FLOWING WATER TRAIL STA 1+57.0
1709	A-10	3.0	424.44	419.40	SD4.41	SHINING STARS LANE STA 2+59.7
1708	A-10	3.0	423.64	418.80	SD4.40	SHINING STARS LANE STA 1+90.0
1707	A-5	3.0	423.64	418.80	SD4.40	SHINING STARS LANE STA 1+90.0
1305	A-5	3.0	460.90	454.70	SD4.40	BRIGHT FLOW MEWS LINEAR PROF STA 1+92.00
M 305	STD MH	4.0	SET IN FIELD	447.45	G5.01	SEE PLAN (BEHIND LOTS 106 & 107)
M 304	MOD. Y-1 INLET			441.83		SEE PLAN (BEHIND LOTS 105 & 95)
1303	A-10	5.0	450.06	440.95	SD4.41	INDIAN SUMMER DRIVE STA 5+40.0
1302	A-10	5.0	448.69	440.25	SD4.41	INDIAN SUMMER DRIVE STA 6+32.8
1301	A-10	5.0	448.69	439.87	SD4.41	INDIAN SUMMER DRIVE STA 6+32.8
M 308	STD MH	5.0	SET IN FIELD	439.35	G5.13	INDIAN SUMMER DR. STA 6+83.5 29.8' LT.
M 307	STD MH	5.0	SET IN FIELD	430.96	G5.13	SEE PLAN (BEHIND LOTS 91 & 92)
I-301	MODIFIED Y-1 INLET		WEIR=436.2	430.65	G5.13	SEE PLAN (BEHIND LOT 91)
I-310	MODIFIED Y-1 INLET		WEIR=431.2	429.75	G5.13	SEE PLAN (BEHIND LOTS 91, 87, 86) SET WEIR AT EX. GR.
M 304	STD MH	5.0	441.67	428.64	G5.13	TALL BRANCHES PASS LINEAR PROF STA 1+42.8 23.6' LT
M 303	STD MH	5.0	443.09	428.10	G5.13	TALL BRANCHES PASS LINEAR PROF STA 0+70.6 16.2' LT
I-309	MODIFIED Y-1 INLET		WEIR=424.1	427.17	G5.13	SEE PLAN (LOT 83) SET WEIR AT EX. GROUND
M 301	STD MH	5.0	SET IN FIELD	423.90	G5.13	SEE PLAN
ES301	CONC END SECTION	36"	N/A	422.25	G5.51	SEE PLAN
I-302	MODIFIED Y-1 INLET		WEIR=444.2	438.05	G5.13	SEE PLAN (BEHIND LOT 216)
1307	A-10	3.0	449.97	446.20	SD4.41	DISTANT THUNDER TRAIL STA 5+57.2
M 31	STD MH	4.0	448.00	443.70	G5.01	TALL BRANCHES PASS STA 0+42.7 30' RT
1306	A-10	3.0	445.45	441.25	SD4.41	DISTANT THUNDER TRAIL LINEAR PROF STA 1+65.0
M 310	STD MH	4.0	446.54	440.28	G5.01	DISTANT THUNDER TRAIL LINEAR PROF 2+68.0 19' LT
1308	A-10	3.0	441.86	436.60	SD4.41	TALL BRANCHES PASS LINEAR PROF STA 1+58.0
1501	A-5	3.0	448.64	443.75	SD4.40	SUNLIT WATER WAY LINEAR PROF STA 2+00.4
M 502	STD MH	4.0	451.51	441.65	G5.01	SUNLIT WATER WAY LINEAR PROF STA 3+03.0 20.6' RT
M 501	STD MH	4.0	SET IN FIELD	436.0/434.0	G5.01	SEE PLAN (BEHIND LOTS 120 & 121)
ES 501	CONC END SECTION	18"	N/A	434.0	SD5.51	SEE PLAN
ES502	CONC END SECTION	18"	N/A	433.0	SD5.51	SEE PLAN
13	A-5	3.0	408.12	404.20	SD4.40	OLD SEA PLACE STA 3+00.0
12	A-10	3.0	409.14	403.24	SD4.41	FALL MOON RIDE STA 6+15.8
M 1	STD MH	4.0	401.05	396.09	G5.01	FALL MOON RIDE STA 4+21.9 19.6' LT.
14	A-10	3.0	398.94	394.25	SD4.41	FALL MOON RIDE STA 2+32.6
11	A-5	3.0	398.94	392.75	SD4.40	FALL MOON RIDE STA 2+32.6
1705	A-5	3.0	441.75	437.25	SD4.40	FLOATING CLOUDS PATH STA 0+50.0
1704	A-5	3.0	445.84	436.73	SD4.40	INDIAN SUMMER DRIVE STA 15+40.0
1703	A-10	3.0	445.84	436.33	SD4.41	INDIAN SUMMER DRIVE STA 15+40.0
M 703	STD MH	5.0	434.69	434.88	G5.13	INDIAN SUMMER DRIVE STA 15+74 10' RT.
1702	A-5	3.0	429.40	421.20	SD4.40	INDIAN SUMMER DRIVE STA 18+00.0
M 702	STD MH	4.0	425.93	416.77	G5.01	INDIAN SUMMER DRIVE STA 18+89 12' RT
1701	A-5	4.0	419.73	413.95	SD4.40	INDIAN SUMMER DRIVE STA 21+41
M 701	STD MH	5.0	421.86	415.41	G5.13	INDIAN SUMMER DRIVE STA 20+04 10' RT
ES 701	CONC END SECTION	30"	N/A	411.5	SD5.51	SEE PLAN
1711	A-5	3.0	427.06	422.40	SD4.40	EARLY LILACS PATH STA 0+50.00
1710	A-10	4.0	429.40	421.85	SD4.41	INDIAN SUMMER DRIVE STA 18+10.0
1706	A-10	3.0	419.73	415.50	SD4.41	INDIAN SUMMER DRIVE STA 21+41
1901	A-10	3.0	403.80	399.70	SD4.41	INDIAN SUMMER DRIVE STA 26+08
M 902	STD MH	4.0	392.20	386.20	G5.01	SEE PLAN
M 901	STD MH	4.0	SET IN FIELD	378.03	G5.01	SEE PLAN
ES 901	CONC END SECTION	18"	N/A	377.00	SD5.51	SEE PLAN
1902	A-10	5.0	392.12	387.50	SD4.41	INDIAN SUMMER DRIVE LINEAR PROF STA 1+72
1401	A-5	3.0	447.70	438.00	SD4.40	TRAILING MOSS GATE LINEAR PROF STA 1+92.0
M 402	STD MH	4.0	SET IN FIELD	433.10	G5.01	SEE PLAN (BEHIND LOT 65)
M 401	STD MH	5.0	SET IN FIELD	429.25	G5.13	SEE PLAN
ES402	CONC END SECTION	18"	N/A	430.00	SD5.51	SEE PLAN
M401A	STD MH	4.0	SET IN FIELD	429.60	G5.01	SEE PLAN
1402	A-5	3.0	441.95	437.60	SD4.40	LAUREL LEAVES LANE LINEAR PROF STA 2+09.0
M 403	STD MH	4.0	SET IN FIELD	434.50	G5.01	LAUREL LEAVES LANE LINEAR PROF STA 1+22.4 25' RT
ES401	CONC END SECTION	18"	N/A	429.00	SD5.51	SEE PLAN
1203	A-10	3.0	434.73	431.00	SD4.41	FLOATING CLOUDS PATH STA 5+34.50
1202	A-10	3.0	433.19	429.30	SD4.41	FLOATING CLOUDS PATH STA 5+60.2
1201	A-10	3.0	423.64	418.00	SD4.41	FLOATING CLOUDS PATH LINEAR PROF STA 1+84.0
M 201	STD MH	4.0	SET IN FIELD	411.00	G5.01	SEE PLAN
ES201	CONC END SECTION	18"	N/A	408.5	SD5.51	SEE PLAN
1103	A-10	3.0	416.20	411.70	SD4.41	EARLY LILACS PATH STA 3+93.6
1102	A-10	3.0	409.54	405.50	SD4.41	EARLY LILACS PATH STA 5+53.6
1104	A-10	3.0	409.54	405.98	SD4.41	EARLY LILACS PATH STA 5+53.6
1101	A-10	3.0	406.07	401.80	SD4.41	EARLY LILACS PATH LINEAR PROF STA 1+94.0
M 101	STD MH	4.0	397.50	392.50	G5.12	SEE PLAN
ES 101	CONC END SECTION	18"	N/A	390.0	SD5.51	SEE PLAN
EJ	CONC END SECTION	24"	N/A	409.0	SD5.51	SEE PLAN



STREET TREE PLANTING - 2 1/2" TO 3" CALIPER
NOT TO SCALE

TOTAL QUANTITY OF TREES = 348

4 TREE SPECIES PROPOSED:
ACER SACCHARUM "LEGACY"
ACER RUBRUM
OCTOBER GLORY
FRAXINUS P. "PATMORE"

EACH ROAD WILL HAVE ONE SPECIES OF THE ABOVE TREES. THE SPECIES ON EACH ROAD WILL BE DETERMINED BY THE DEVELOPER / LANDSCAPER

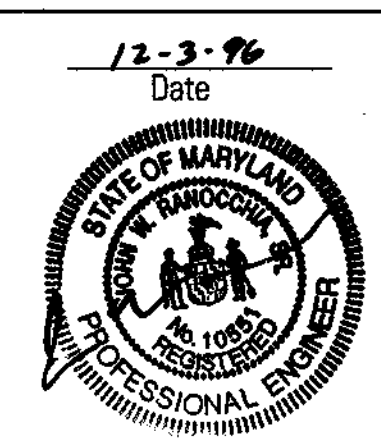
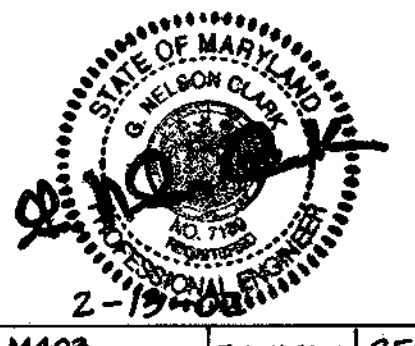
6/19/97	REVISED INVERT TO M-301 & M-703
1/11/00	REV. STRUCTURE SCHEDULE: M-902, M-901 & I-902
DATE	REVISION DESCRIPTION
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS	
<i>Richard M. Daniels</i>	5-22-97
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
<i>C. Hanilton</i>	7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>M. R. ...</i>	5/10/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
4/28/98	REVISED INVERTS FROM ES 301 TO M301, APPEARED INLET 1-301 REPLACED MH'S M-302, M-303 & M-304 WITH INLET'S
Date	No.

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW	200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296-3333 Fax 296-4705	A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
AREA	SECTION 4 AREA 4	PARCEL
TITLE	STRUCTURE SCHEDULE & DETAILS	
Des By	JWS	Scale SEE PLAN
Drn By	RTP	Date MAR 1996
Chk By	JWR	Approved
Professional Engr. No.	10551	Proj. No. 94064
		23 OF 44

2	Add Manhole M401A, Rev. Inverts to ES401, M401, & M403	Feb 11, 2002	CFS
NR:	Revisions	Date:	By:

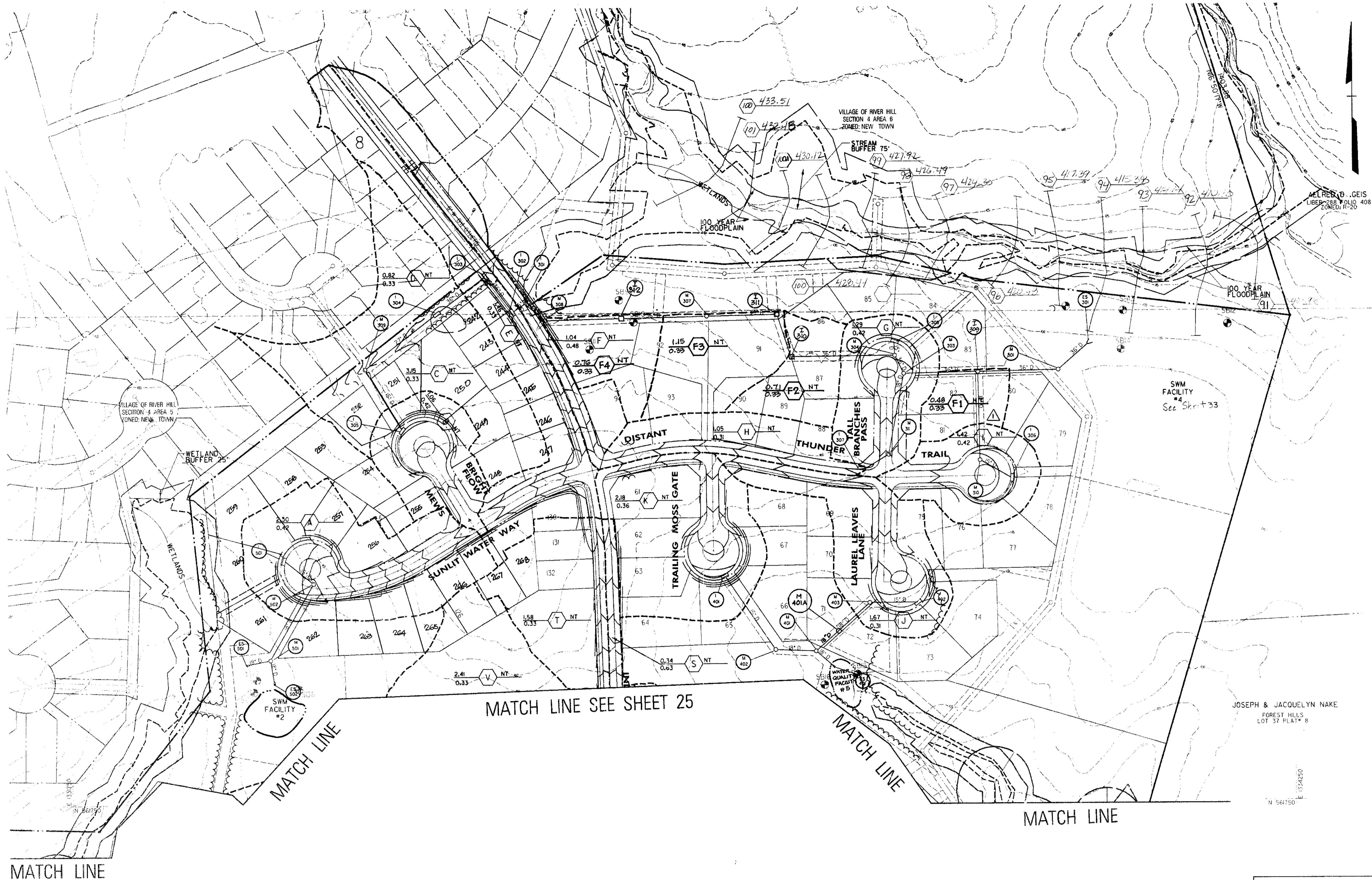


N 563500
E 1334250

- LEGEND**
- PROPOSED TREE LINE
 - EXISTING TREE LINE
 - 25% AND GREATER SLOPE
 - 15% - 24.99% SLOPE
 - LIMIT OF WETLANDS
 - 25' WETLANDS BUFFER
 - 100 YEAR FLOODPLAIN
 - 75' STREAM BUFFER

ACRES $\frac{S}{C}$ ZONING

Note: Flooded from Previous Approved Study by Whiting, Hepler and Assoc.



MATCH LINE SEE SHEET 25

MATCH LINE

MATCH LINE

MATCH LINE

MATCH LINE

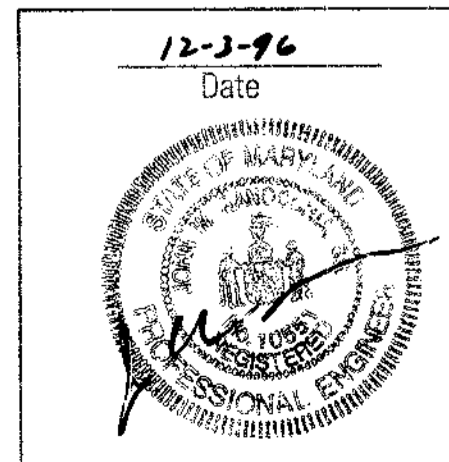
APPROVED: HOWARD COUNTY DEPT OF PUBLIC WORKS		
<i>Andrew M. Danaher</i>	NS	5-22-97
CHIEF, BUREAU OF HIGHWAYS		DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING		
<i>Catherine</i>	TC	2/6/97
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE
<i>Michael</i>		5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION		DATE
4/28/98	REVISION	DATE
1	RAISED VIA NORTH DISTANT THUNDER TRAIL	
	EAST INDIAN SUMMER DRIVE	
Date	No.	Revision Description

VILLAGE OF RIVER HILL
SECT. 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft McCune-Walker, Inc.
300 East Pennsylvania Avenue
Pawnee, Maryland 21086
(410) 296-3833
Fax 296-4708

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



Professional Eng. No. 10551

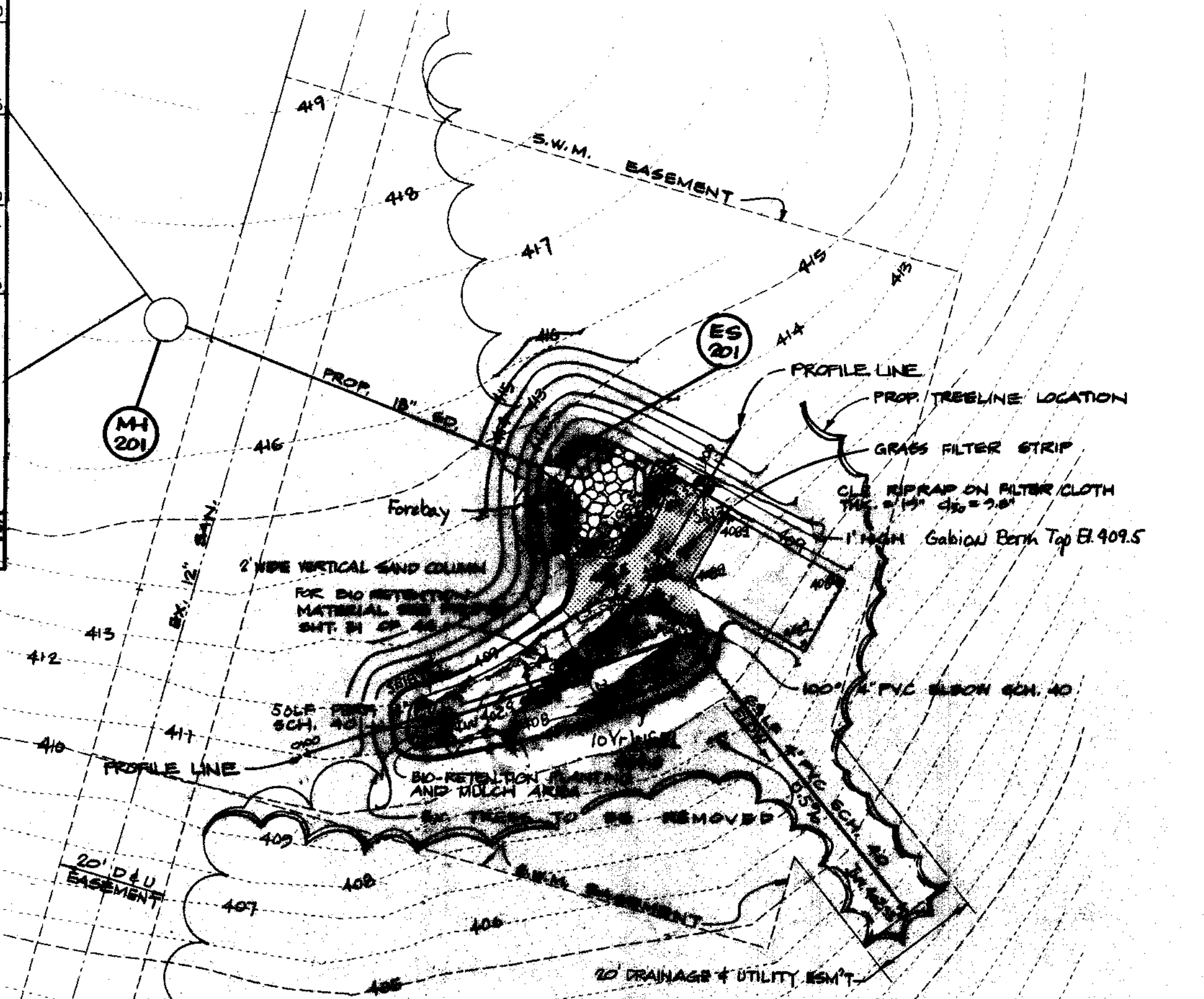
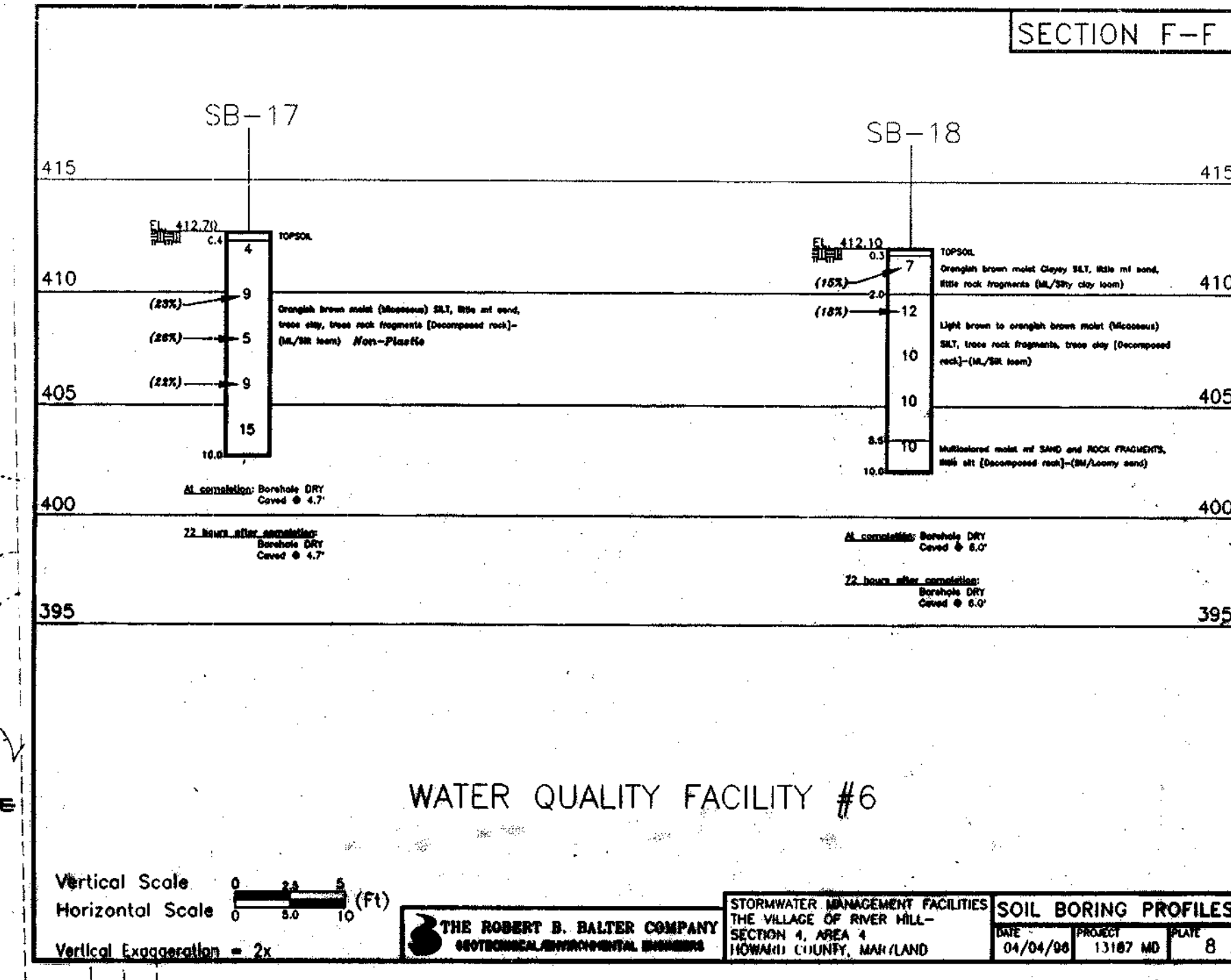
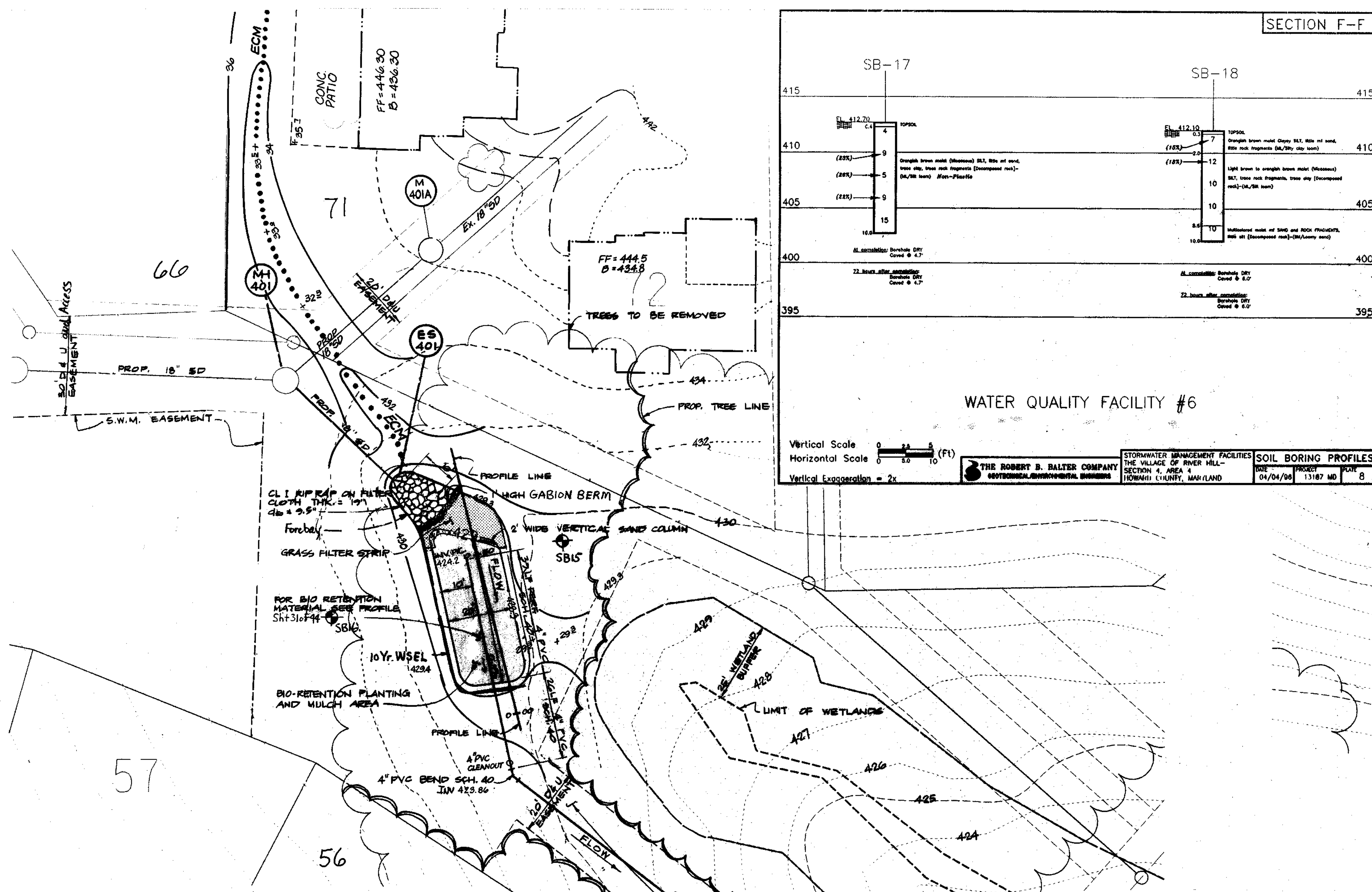
AREA	SECTION 4 AREA 4	
TAX MAP	34835	PARCEL 3,2738
ELECTION DISTRICT	OF HOWARD COUNTY, MARYLAND	
TITLE	DRAINAGE AREA PLAN & GRADING PLAN	
Des By	JWS	Scale 1"=100'
Dwn By	CEV	Date MAR 96
Chg By	JWR	Approved
Proj No.	94064	24 OF 44

2	Add Manhole A01A to Plan View, Correct Location of WQ. Facility #5	Feb. 11, 2002	CF 95
No:	Revisions	Date:	By:

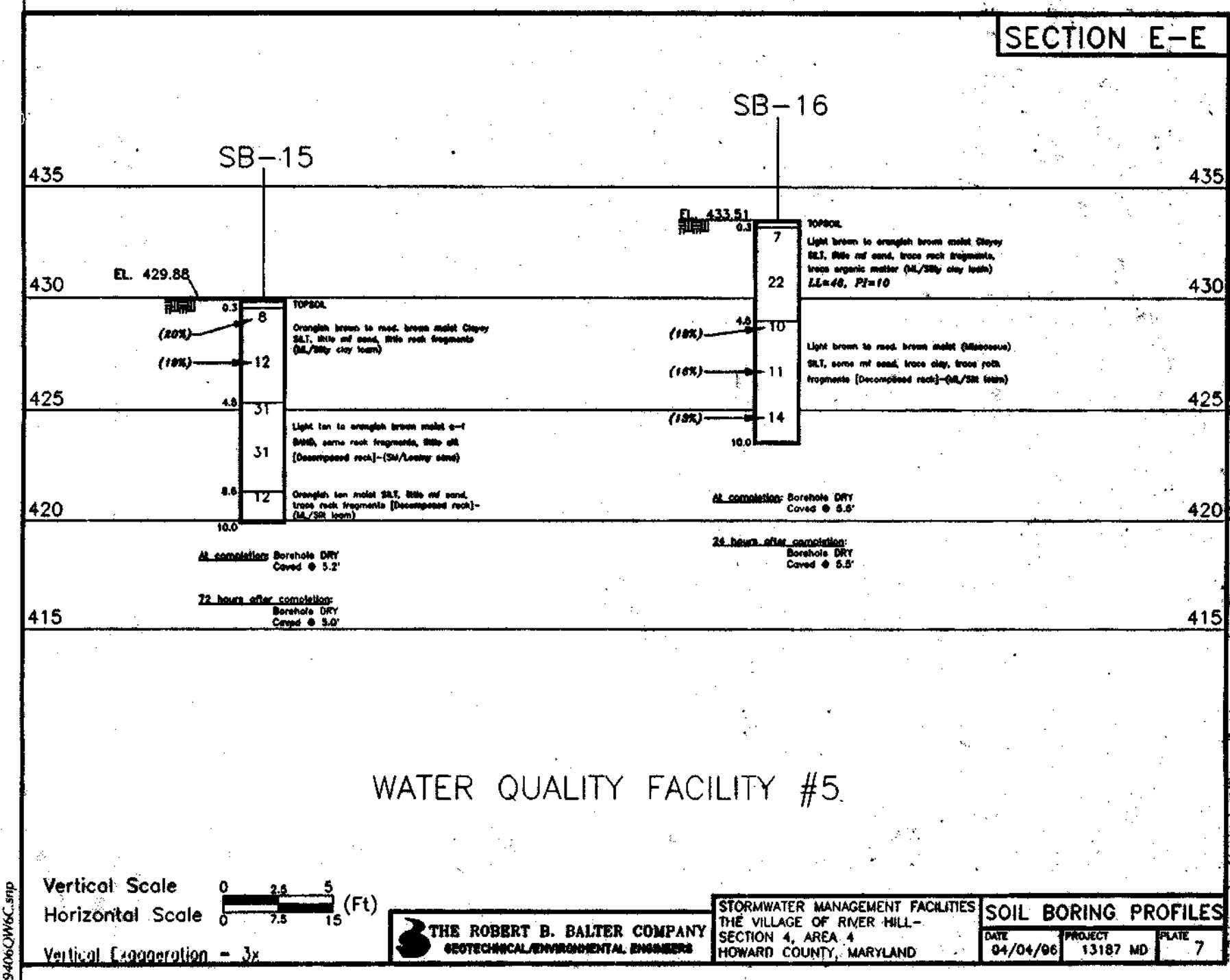


2-13-02

For CFS Revision Only

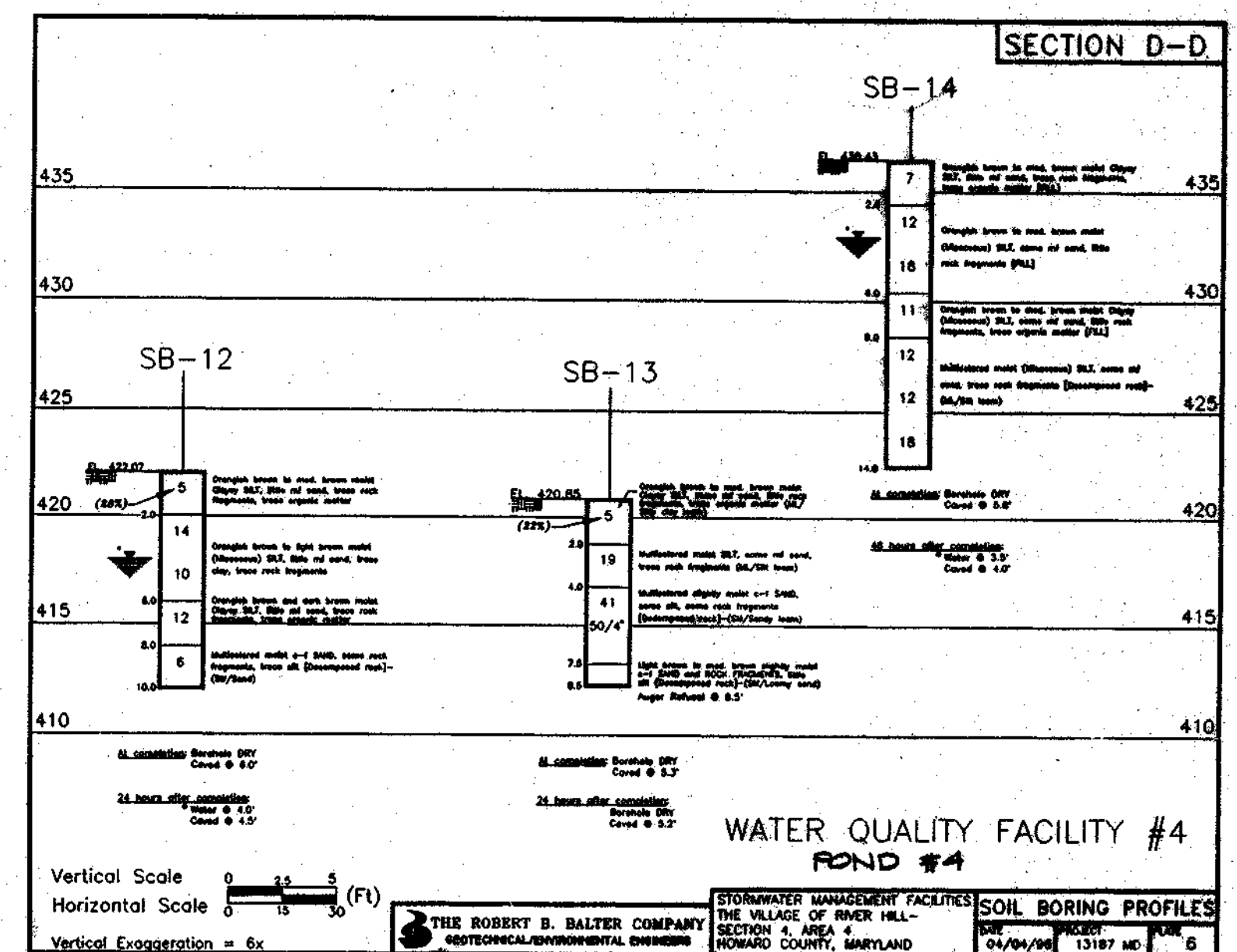


**BIO-RETENTION
WATER QUALITY FACILITY # 6**
SCALE: 1" = 20'
HAZARD CLASS "A"

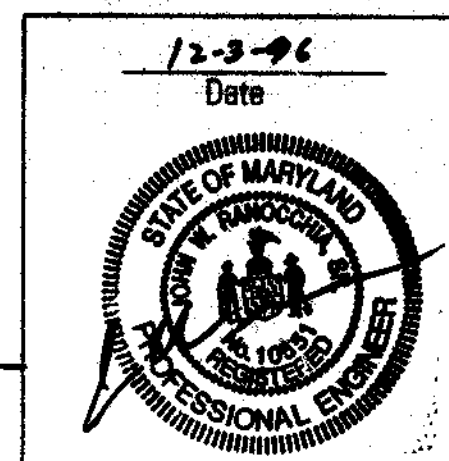
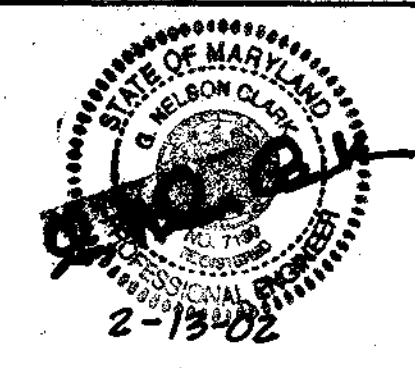


BIO-RETENTION WATER QUALITY FACILITY # 5
SCALE: 1" = 20'
HAZARD CLASS "A"

NOTE: FACILITIES #5 AND #6 SHALL BE JOINTLY MAINTAINED BY HOWARD COUNTY AND COLUMBIA ASSOCIATION



**WATER QUALITY FACILITY #4
POND #4**



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Danks 5-27-97
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
A. Calanitta 7/10/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John J. ... 5/27/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

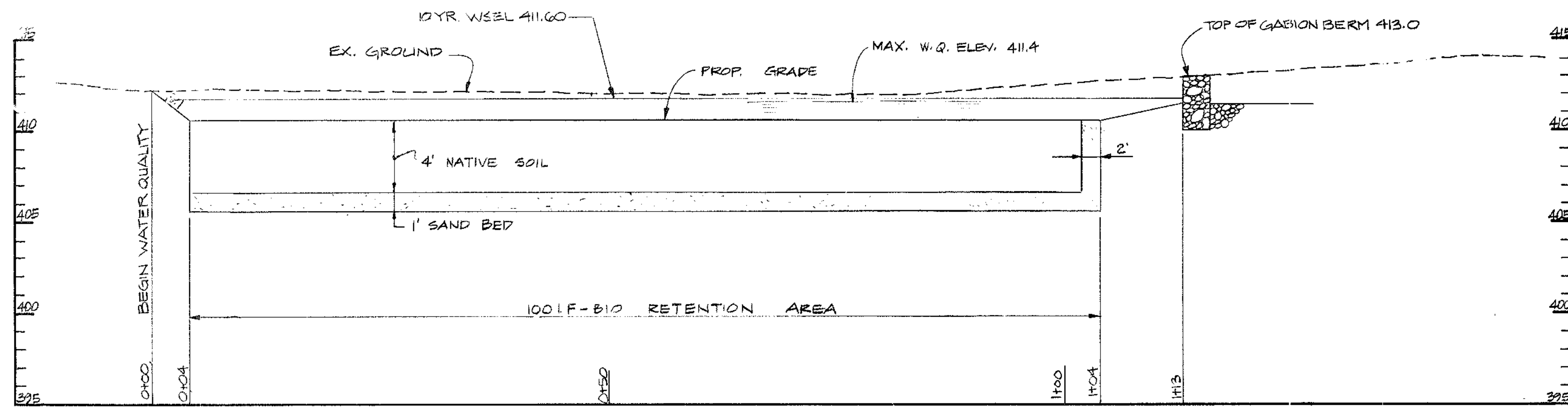
VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER / DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

AREA SECTION 4 AREA 4		
TAX MAP PARCEL		
ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND		
TITLE		
Des By	Scale 1" = 20'	Proj. No. 94064
Drn By	Date MAR 96	
Chk By JVR	Approved	28 OF 44

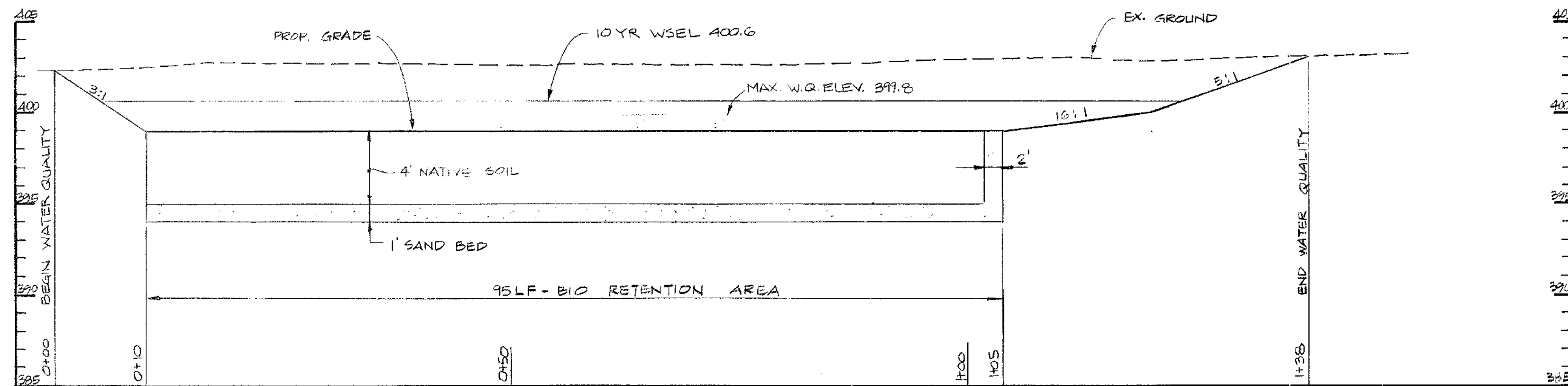
Add Existing Home & Grading to Lot 72		Feb 13, 2002 CF 13
Add Existing Home & Proposed Grading to Lot 71		
Add Nonhole 401 A to Plan View		
Review Grad For Water Quality Facility #5		
No.:	Revisions	Date: By:

NOTE: P.V.C. PIPES NOT SHOWN FOR CLARITY, SEE PLAN VIEW FOR LOCATIONS.



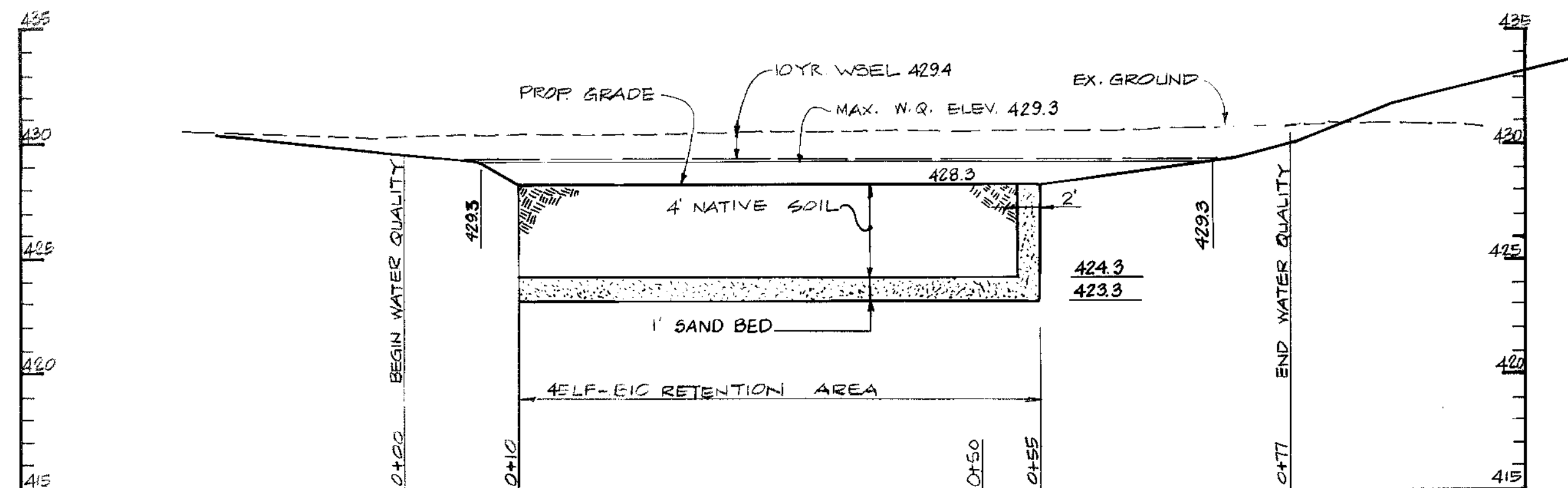
PROFILE WATER QUALITY #1

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



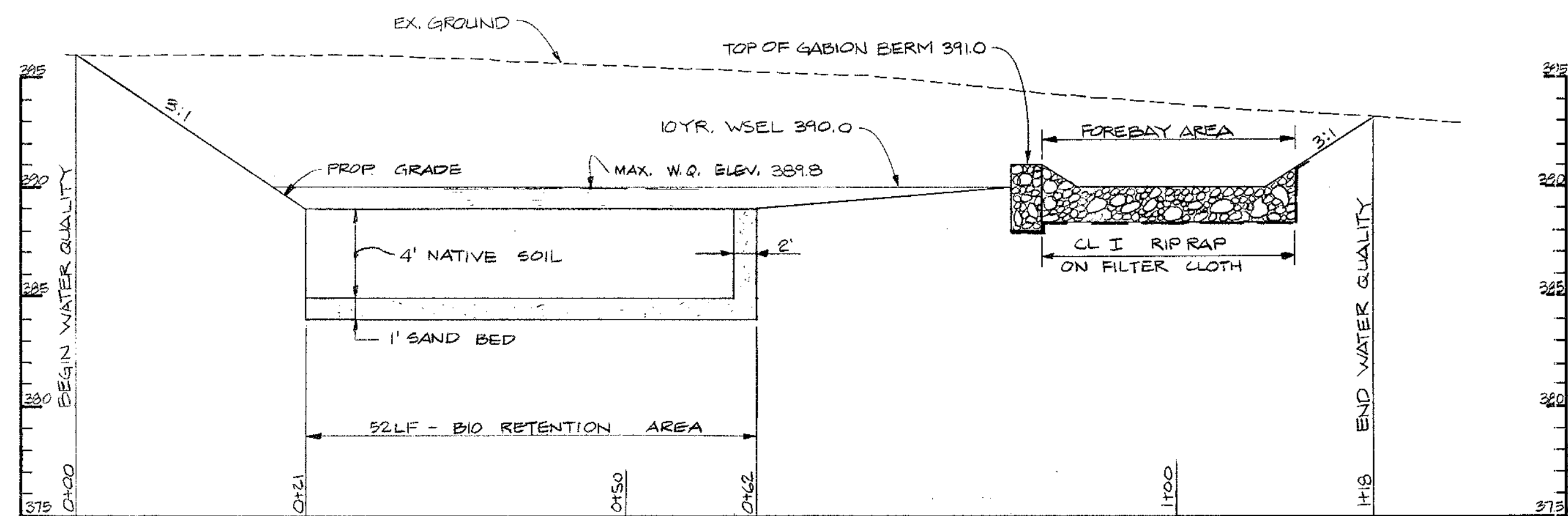
PROFILE WATER QUALITY #3

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



PROFILE WATER QUALITY #5

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'



PROFILE WATER QUALITY #7

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daniels 5-22-97
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
C. H. Smith 7/19/97
 CHIEF, DIVISION OF LAND DEVELOPMENT TC DATE

Mike Dammann 5/22/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

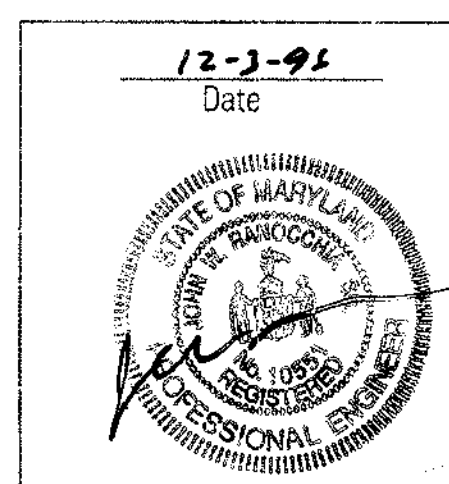
Date No. Revision Description

VILLAGE OF RIVER HILL
SECTION 4, AREA 4

OWNER /DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Draft McGuire Walker, Inc.
 209 East Pennsylvania Avenue
 Towson, Maryland 21286
 410-296-3433
 Fax: 296-4708

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



For CFS Revision Only
2-15-02

1	Revise Water Quality Facility #5 Profile	Feb. 11, 2002	CF#5
NS:	Revisors	Date:	By:

AREA	SECTION 4 AREA 4	Proj. No.	94064
TAX MAP	PARCEL	Date	
TITLE	ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	Scale	1" = 10' HORIZ 1" = 5' VERT.
	WATER QUALITY PROFILES	30 OF 44	
Dss By	Scale	Proj. No.	94064
Drn By	Date		
Chk By	Approved		

March 1997 17: 11:02:27 1996 C:\Users\315684848\

- SEDIMENT CONTROL LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EXISTING DRAINAGE AREA
 - INTERIM DRAINAGE AREA
 - PROPOSED DRAINAGE AREA
 - LIMIT OF DISTURBANCE
 - SUPER SILT FENCE
 - SILT FENCE
 - EARTH DIKE
 - RIP-RAP OUTLET PROTECTION
 - EROSION CONTROL MATTING (Refer to Sheet 19 of 44 For Detail)

NOTE: TRENCH EXCAVATION TO BE PLACED ON UPHILL SIDE OF TRENCH FOR STORMDRAIN AND SEWER OUTFALLS.

DEVELOPERS CERTIFICATE:
 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/WE 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/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: [Signature] DATE: 1/21/97

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

Signature: [Signature] DATE: 12-3-96

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

Signature: [Signature] DATE: 04-24-97

Signature: [Signature] DATE: 4-24-97

LIMIT OF DISTURBANCE THIS SHEET = 265,716 S.F. OR 6.10 AC±

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 Signature: [Signature] DATE: 5-22-97
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 Signature: [Signature] DATE: 7/10/97
 CHIEF, DIVISION OF LAND DEVELOPMENT

Signature: [Signature] DATE: 6/27/97
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

06/05/98 GRADED SWALE

Date	No.	Revision Description

VILLAGE OF RIVER HILL
 SECTION 4, AREA 4

OWNER / DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Dan M. Wilson, Inc.
 300 West Pennsylvania Avenue
 Towson, Maryland 21286
 (410) 280-3255
 Fax: 280-4705

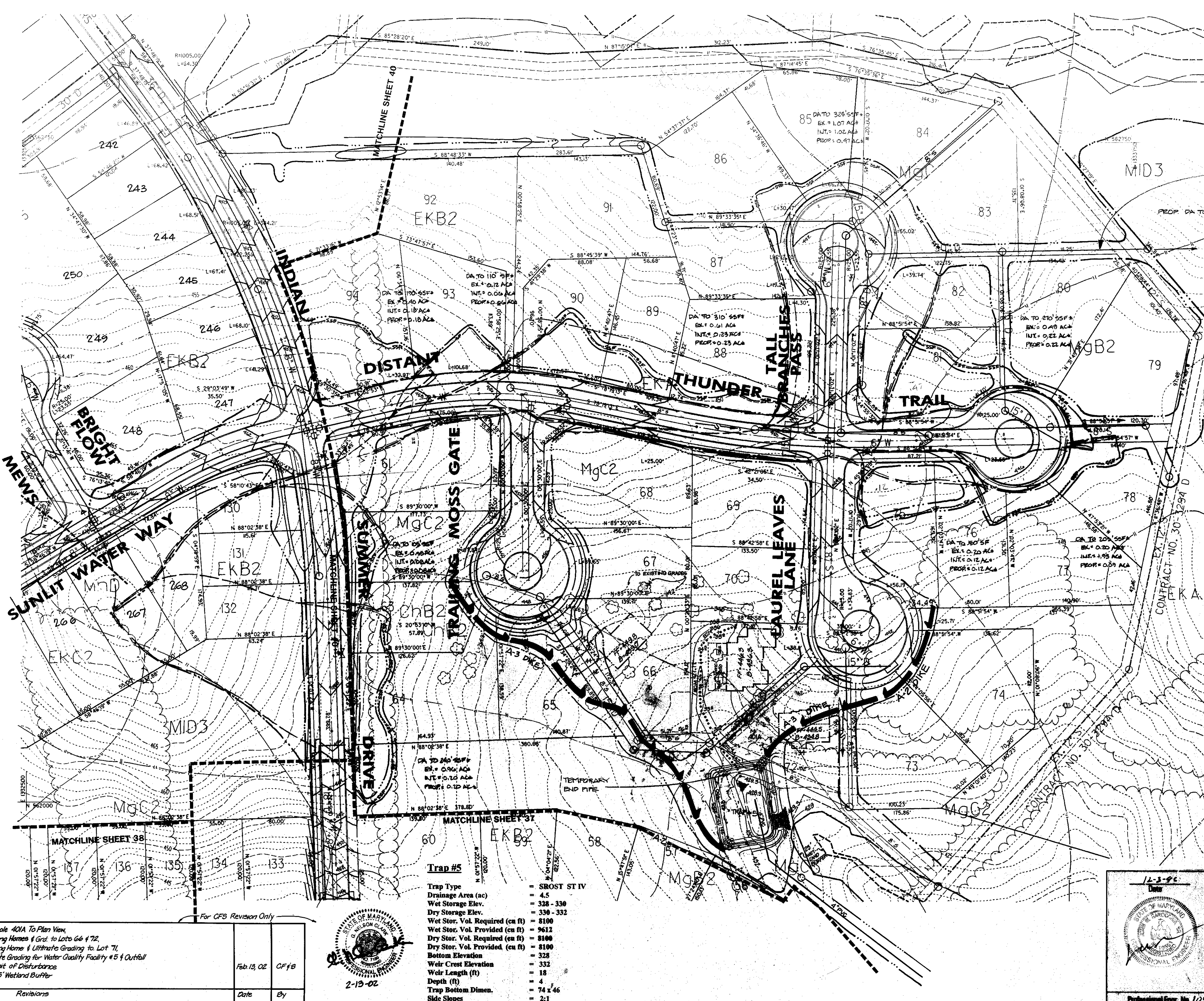
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

AREA: TAX MAP PARCEL
 ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: **EROSION AND SEDIMENT CONTROL PLAN**

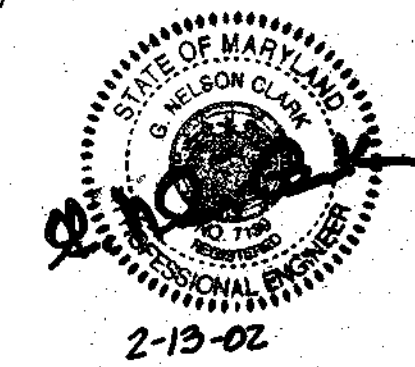
Des By	CRW	Scale	1" = 50'	Proj. No.	94064
Des By	CRW	Date	MAR 96		
Chk By	JNR	Approved			39 OF 44

Professional Eng. No. 10551



Trap #5

Trap Type	= SROST ST IV
Drainage Area (ac)	= 4.5
Wet Storage Elev.	= 328 - 330
Dry Storage Elev.	= 330 - 332
Wet Stor. Vol. Required (cu ft)	= 8100
Wet Stor. Vol. Provided (cu ft)	= 9612
Dry Stor. Vol. Required (cu ft)	= 8100
Dry Stor. Vol. Provided (cu ft)	= 8100
Bottom Elevation	= 328
Wet Crest Elevation	= 332
Wet Length (ft)	= 18
Depth (ft)	= 4
Trap Bottom Dimen.	= 74 x 46
Side Slopes	= 2:1



For CFS Revision Only

NR	Revisions	Date	By
2	Add Manhole 401A To Plan View Add Existing Homes & Grd. to Lots 66 & 72 Add Existing Home & Ultimate Grading to Lot 71 Add Ultimate Grading for Water Quality Facility #5 & Outfall Correct Limit of Disturbance Correct 25' Wetland Buffer	Feb 13, 02	CFB

Title Block 12-13-02 10551