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29. All sign posts used for traffic control signs installed in the County Right of way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel perforated steel square tube sleeve (12 gauge) - 3' long. A galvanized steel pole cap shall be mounted on top of each post.

# ROAD CONSTRUCTION PLANS

## TURF VALLEY PROFESSIONAL BUILDINGS

### RESORT ROAD STA. 0+00 to 13+66.83

#### THIRD ELECTION DISTRICT

#### HOWARD COUNTY, MARYLAND

### GENERAL NOTES:

- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE HOWARD COUNTY STANDARDS UNLESS OTHERWISE SHOWN BY WAIVERS INDICATED. NOTE THAT THIS PROJECT IS SUBJECT TO THE 4TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND TO THE ZONING REGULATIONS DATED OCTOBER 1993 AS AMENDED BY COUNCIL BILL 19-1995.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:
 

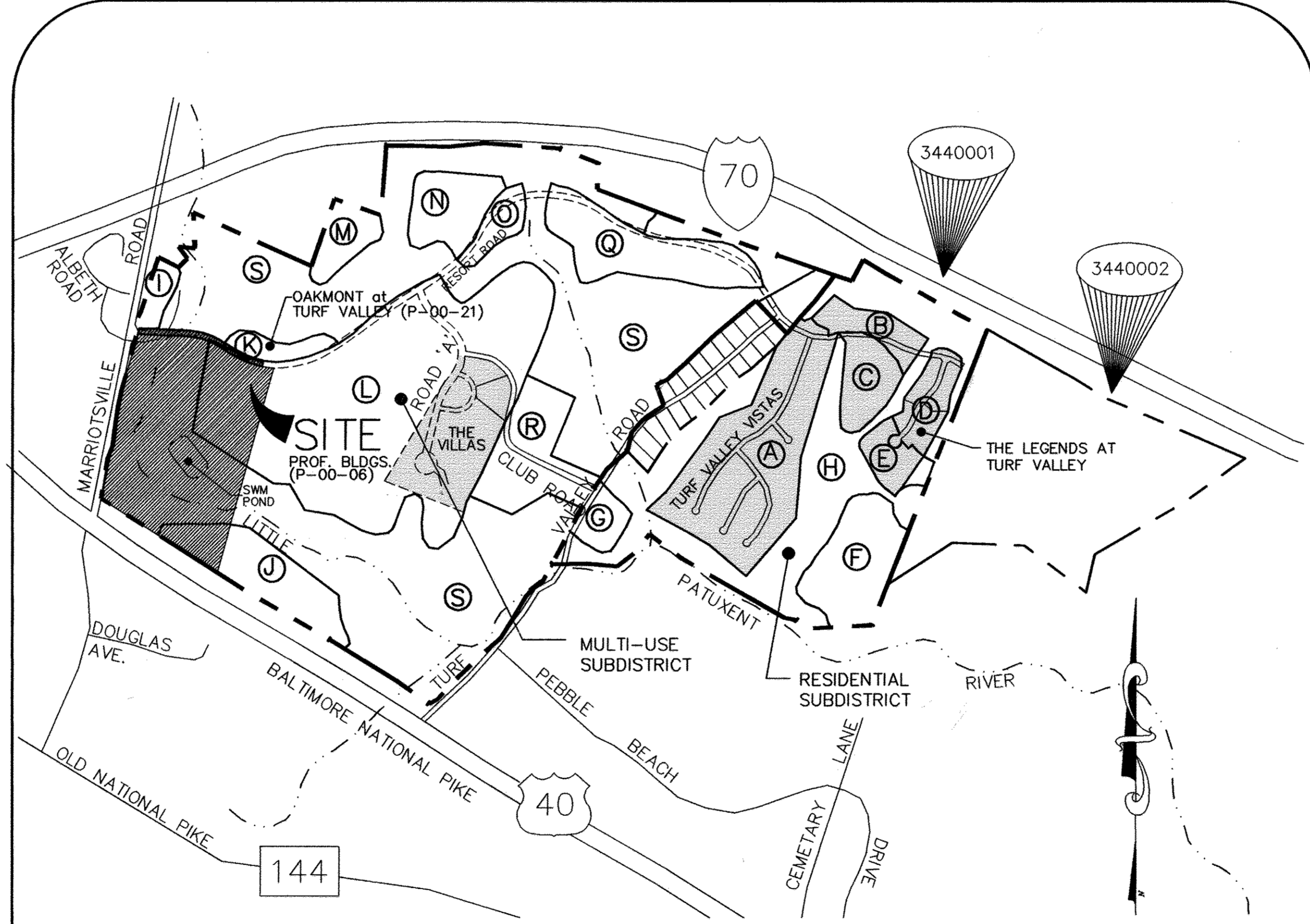
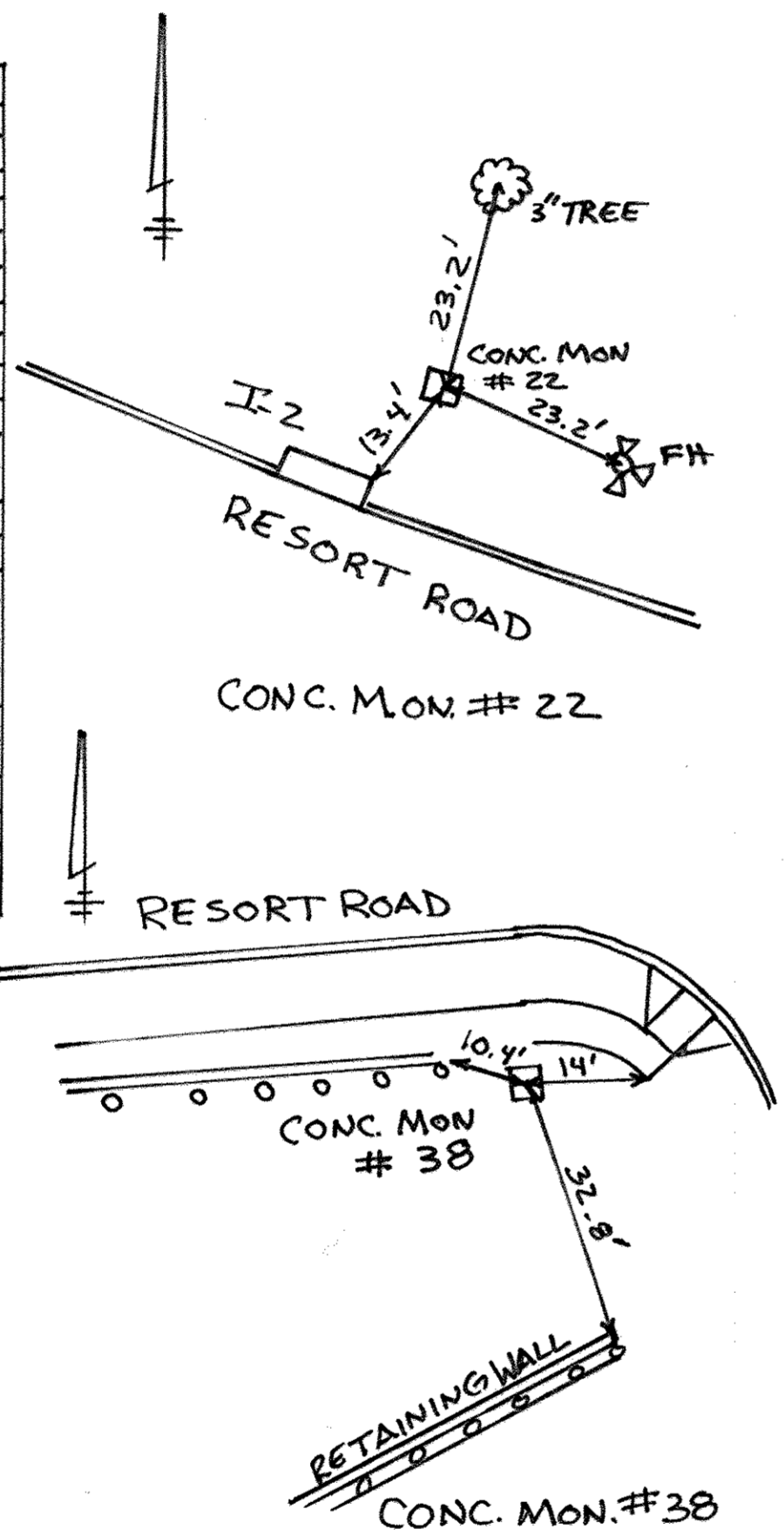
MISS UTILITY	1-800-257-7777
C&P TELEPHONE COMPANY	(410) 725-9976
HOWARD COUNTY BUREAU OF UTILITIES	(410) 313-4900
AT&T CABLE LOCATION DIVISION	(410) 393-3533
BALTIMORE GAS & ELECTRIC	(410) 685-0123
STATE HIGHWAY ADMINISTRATION	(410) 531-5533
HOWARD COUNTY DEPT. OF PUBLIC WORKS/ CONSTRUCTION INSPECTION DIVISION	(410) 313-1880
- PROJECT BACKGROUND:
  - LOCATION: TAX MAP 16 - PARCEL 8 & 50 - BLOCK 10 & 16
  - ZONING: PGCC MULTI-USE SUBDISTRICT
  - ELECTION DISTRICT: SECOND
  - DFZ REFERENCE: SP-86-13; PLAT # 3054-A-1510, S-98-19, S-99-02, S-00-18, P-00-06
  - DEED REFERENCE: WP-02-96
  - DEED REFERENCE: PARCEL 8 - LIBER 0920, FOLIO 250; PARCEL 50 - LIBER 1263, FOLIO 724
  - AREA OF SUBDIVISION: 68.27 AC
  - OPEN SPACE REQUIRED: 15% OF 68.27 AC OR 10.24 AC
  - OPEN SPACE PROVIDED: 26.32 AC (PARCELS K,L,N,O & P) - 16.08 ACRES OF WHICH IS TO BE CREDITED TOWARD FUTURE REQUIREMENTS.
- FLOODPLAIN DELINEATION FROM HEC-RAS SECTIONS 1 TO 17 BASED ON STUDY CONDUCTED BY MILDENBERG BOENDER & ASSOC. AND DATED JANUARY 2005. FLOODPLAIN DOWNSTREAM OF SECTION 1 BASED ON PREVIOUSLY APPROVED FLOODPLAIN STUDY FOR TURF VALLEY WEST GOLF COURSE (REF. SDP 93-106) PERFORMED BY MILDENBERG, MOCHI & ASSOC. AND DATED JUNE 18, 1993. FLOODPLAIN EASEMENT TO BE DEEDED TO THE HOMEOWNERS ASSOCIATION.
- WETLAND DELINEATIONS PERFORMED BY B.S. ENVIRONMENTAL, INC. DATED: JUNE 2000.
- TOPOGRAPHIC INFORMATION IS BASED ON AERIAL TOPOGRAPHIC SURVEY BY WINGS AERIAL MAPPING CO., INC. DATED FEBRUARY 1999. VERTICAL DATUM IS NAD'27. EXISTING TOPOGRAPHY HAS BEEN MODIFIED TO SHOW PROPOSED MASS GRADING FOR RESORT ROAD APPROVED UNDER WP-02-96.
- COORDINATES BASED ON NAD'27 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO : 3440001 & 3440002.
 

STA. NO. 3440001	N 534,735.478	E 836,286.297	EL. 486.341
STA. NO. 3440002	N 533,593.800	E 837,983.249	EL. 462.306
- BOUNDARY INFORMATION IS BASED ON FINAL DEVELOPMENT PLAN FOR TURF VALLEY, PGCC DISTRICT, MULTI-USE SUBDISTRICT (PLAT # 3054-A-1510).
- PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER ARE PUBLIC. CONTRACT NUMBERS ARE 20-3601-D FOR SEWER AND CAPITAL PROJECT W-8195 FOR WATER.
- STORMWATER MANAGEMENT FOR RESORT ROAD IS PROVIDED BY STORMCEPTORS #1 AND #2. THE STORMCEPTORS SHALL BE PRIVATELY OWNED AND MAINTAINED.
- NO CEMETERIES OR HISTORIC STRUCTURES EXIST ON SITE.
- THIS PROJECT IS SUBJECT TO TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP, INC. UNDER SP-86-13. RESORT ROAD IS A GENERAL PLAN ROAD SHOWN ON THE TRANSPORTATION MAP 2000-2020 AS A MAJOR COLLECTOR CONNECTION TO MARRIOTTVILLE ROAD. THE LATTER IS DESIGNED AS AN INTERMEDIATE ARTERIAL BETWEEN US RTE. 40 AND MD RTE 99. THE R/W SECTION OF RESORT ROAD IS DESIGNED TO INTERMEDIATE ARTERIAL STANDARDS BASED ON THE RESULTS OF THE TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP ON OR ABOUT JUNE 1999 AND UPDATED IN MARCH 2004.
- THIS PROJECT IS EXEMPT FROM HOWARD COUNTY FOREST CONSERVATION REQUIREMENTS UNDER SECTION 16.1202(b) OF THE COUNTY CODE BECAUSE IT IS A PLANNED UNIT DEVELOPMENT WHICH HAS PRELIMINARY DEVELOPMENT PLAN APPROVAL AND 50 % OR MORE OF THE LAND IS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECEMBER 31, 1992.
- SITE DEVELOPMENT PLAN FOR THE PROPOSED OFFICE BUILDING CONSTRUCTION WILL BE REQUIRED.
- WAIVER TO DESIGN MANUAL, VOLUME III, SECTION 2.4.1, FIGURE 2.13, TO MODIFY THE TYPICAL SECTION OF A DIVIDED INTERMEDIATE ARTERIAL ROADWAY TO REDUCE THE REQUIRED WIDTH BETWEEN FACE OF CURB AND SIDEWALK TO 11-FT ALSO A SECTION OF ROAD WHERE GUARDRAIL IS PROVIDED AND TO REDUCE THE WIDTH OF PAVING TO 24-FT APPROVED ON APRIL 1, 2002.
- ALL STORM DRAIN PIPES TO BE HDPE PIPES UNLESS OTHERWISE NOTED.
- GEOTECHNICAL REPORT PREPARED BY HILLIS-CARNES ENGINEERING ASSOCIATES, INC. IN NOVEMBER 2000.
- COMPACTION IN FILL AREAS TO BE 95% AS DETERMINED PER AASHTO T-180.
- PER SECTION 16.116(c), CLEARING, GRADING, OR CONSTRUCTION HAS BEEN DETERMINED TO BE NECESSARY AND IS PERMITTED WITHIN THE LITTLE PATUXENT RIVER FLOODPLAIN, STREAM BUFFER, AND WETLANDS BUFFER FOR THE PURPOSE OF CONSTRUCTION OF RESORT ROAD.
- USE HO. CO. STD. R-3.01 STANDARD 7" COMBINATION CURB AND GUTTER, UNLESS OTHERWISE NOTED.
- APPLICATION WAS ACCEPTED ON JANUARY 8, 2002, BY THE MDE NON-TIDAL WETLANDS & WATERWAY DIVISION FOR THE DISTURBANCE OF THE WETLANDS, STREAM, AND THEIR BUFFERS ASSOCIATED WITH CONSTRUCTION OF THE RESORT ROAD CROSSING OF THE LITTLE PATUXENT RIVER. MDE TRACKING NO. 200261454. THE MITIGATION OBLIGATION ASSOCIATED WITH THIS PERMIT HAS BEEN DETERMINED TO BE 67,125 SQFT, CALCULATED AS FOLLOWS:
 

Impact Area	Impact Area (sq ft)	Mitigation Replacement Ratio	Mitigation Obligation
Forest	26,550	2:1	53,100
Wetlands	1,000	1:1	1,000
Total	27,550		54,100
- LANDSCAPING FOR PARCELS 2 & 3 (TURF VALLEY PROFESSIONAL BUILDINGS) WILL BE PROVIDED AT THE SDP STAGE IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED SMV SHALL BE OBTAINED BY THE DEVELOPER. FINANCIAL SURETY FOR THE REQUIRED SMV SHALL BE OBTAINED BY THE DEVELOPER. FINANCIAL SURETY FOR THE REQUIRED SMV SHALL BE OBTAINED BY THE DEVELOPER.
- THE STREET LIGHT TYPES FOR THIS PROJECT ARE AS SHOWN ON SHEET 10.
- ALTERNATIVE COMPLIANCE TO THE FOREBAY REQUIREMENT OF DESIGN MANUAL, VOLUME I, SECTION 5.2.7.E.7, APPROVED APRIL 1, 2002. APPROVAL REQUIRES THE INSTALLATION OF A STORMCEPTOR OIL-GRIT SEPARATOR IN LIEU OF A FOREBAY, WHICH WILL BE CONSTRUCTED AT THE SDP STAGE OF TURF VALLEY PROFESSIONAL BUILDINGS.
- WAIVER TO DESIGN MANUAL, VOLUME I, SECTION 5.2.6.F.1, WHICH REQUIRES 4H:1V MINIMUM SIDE SLOPES FOR AN EXTENDED DETENTION FACILITY, APPROVED ON APRIL 1, 2002.
- MASS GRADING FOR RESORT ROAD IN SUPPORT OF HOWARD COUNTY CAPITAL PROJECT W-8195 (ALBETH HEIGHTS WATER MAIN EXTENSION) APPROVED UNDER WP-02-96 ON NOVEMBER 1, 2002. APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS: (1) THE PETITIONER SHALL OBTAIN ALL NECESSARY PERMITS FOR THE PROPOSED WORK, FROM THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AND (2) ON ALL APPLICABLE SUBSEQUENT PLAN SUBMISSIONS, INDICATE THE MASS GRADING AS THE EXISTING CONDITION. MASS GRADING PER WP-02-96 IS SHOWN AS EXISTING GRADE ON GRADING PLAN (SHEET 4).
- ALL SIGN POSTS USE FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY ROW SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO 2.5" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (12 GAUGE)-3'LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POLE.

### RIGHT OF WAY ELEVATION CHART NAD 27

R/W PT. NO.	DESCRIPTION	ELEVATION
18	REBAR & CAP	436.27
19	REBAR & CAP	448.07
22	CONC. MON.	444.34
23	REBAR & CAP	437.45
24	REBAR & CAP	437.55
25	REBAR & CAP	433.51
26	REBAR & CAP	445.12
27	REBAR & CAP	447.25
28	REBAR & CAP	454.54
29	REBAR & CAP	469.64
30	REBAR & CAP	473.32
31	REBAR & CAP	481.60
32	REBAR & CAP	482.12
36	REBAR & CAP	474.26
37	X-CUT IN WALK	469.84
38	CONC. MON.	454.92
39	X-CUT ON WALL	443.48
40	REBAR & CAP	446.74
41	REBAR & CAP	433.86
42	REBAR & CAP	432.11
43	REBAR & CAP	438.70
44	REBAR & CAP	439.42



### USES FOR TURF VALLEY PROFESSIONAL BUILDING SITE

AREA	PROJECTED LAND USE
POD I	ALL PERMITTED USES IN THE PGCC MULTI-USE SUBDISTRICT PER PLAT # 3054-A-1510
POD K	ALL PERMITTED RESIDENTIAL USES IN THE PGCC MULTI-USE SUBDISTRICT PER PLAT # 3054-A-1510 (S-99-02)
POD L	ALL PERMITTED USES IN THE PGCC MULTI-USE SUBDISTRICT PER PLAT # 3054-A-1510 (P-00-06)
POD S	GOLF AND/OR OPEN SPACE PER PLAT # 3054-A-1510
POD J	ALL PERMITTED USES IN THE PGCC PER PLAT # 3054-A-1510

### VICINITY MAP

SCALE: 1" = 1000'

### DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

*Donald Mason* 3/16/02  
SIGNATURE OF DEVELOPER DATE  
PRINTED NAME OF DEVELOPER

### AS-BUILT CERTIFICATION

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.

*Donald Mason, P.E.* No. 21443 Date 1-16-13  
Professional Engineer

### ENGINEER'S CERTIFICATE

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

*John M. Williams* 3/04/02  
SIGNATURE OF ENGINEER DATE  
PRINTED NAME OF ENGINEER

### Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 21443, Expiration Date: 12-21-14  
Professional Engineer

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*John M. Williams* 3/16/02  
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION SERVICE.

*John M. Williams* 3/16/02  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

*William J. White* 3-27-06  
CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Cindy Hamer* 4/25/06  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John M. Williams* 4/2/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

### Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 28567, Expiration Date: 7/22/2015  
Professional Engineer

### OWNER

MANGIONE ENTERPRISES OF TURF VALLEY, L.P.  
1205 YORK ROAD, PENTHOUSE  
LUTHERVILLE, MARYLAND 21093  
(410) 825-8400

STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
16-12-14  
FOR BENCHMARK ENG. INC.  
FOR REVISION #5 ONLY

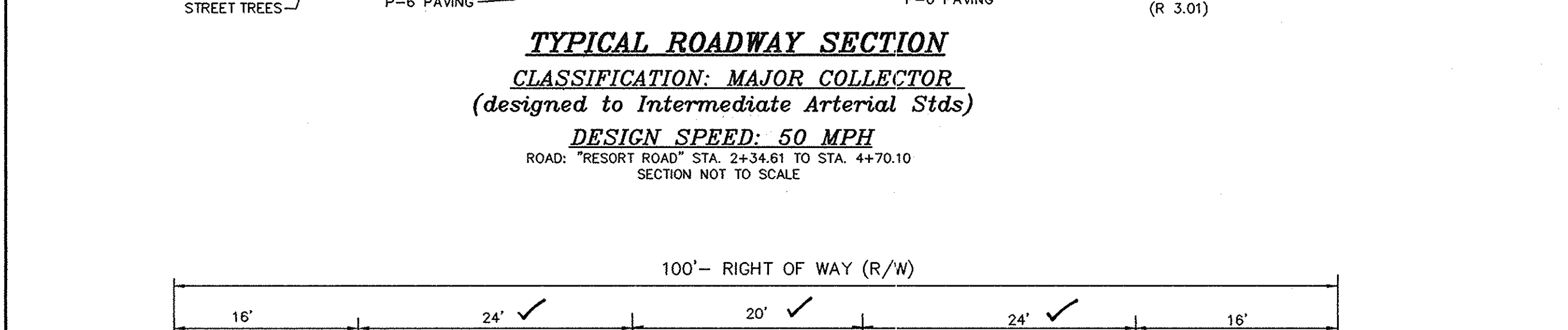
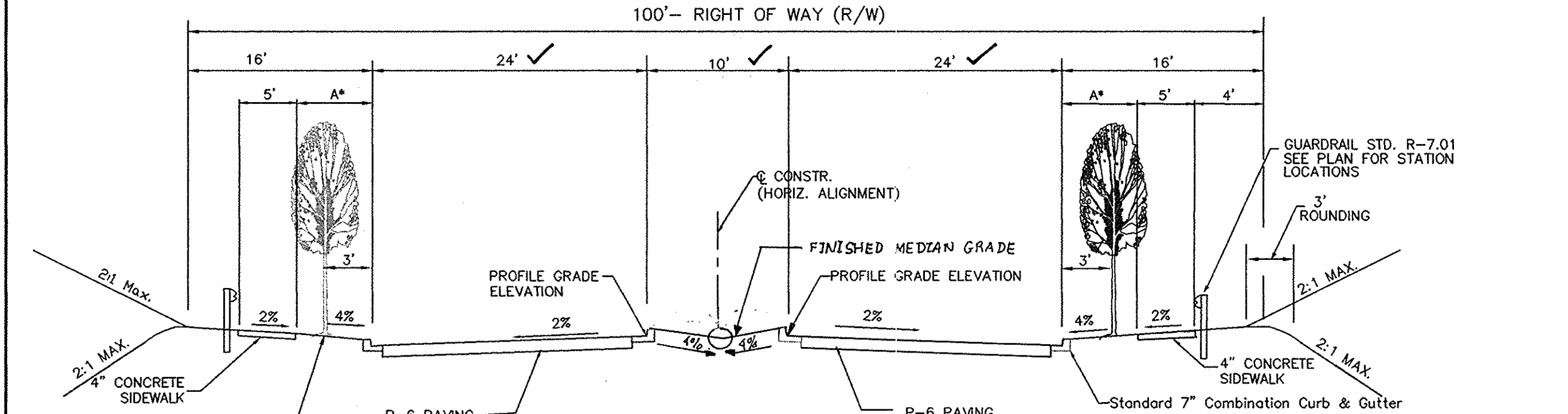
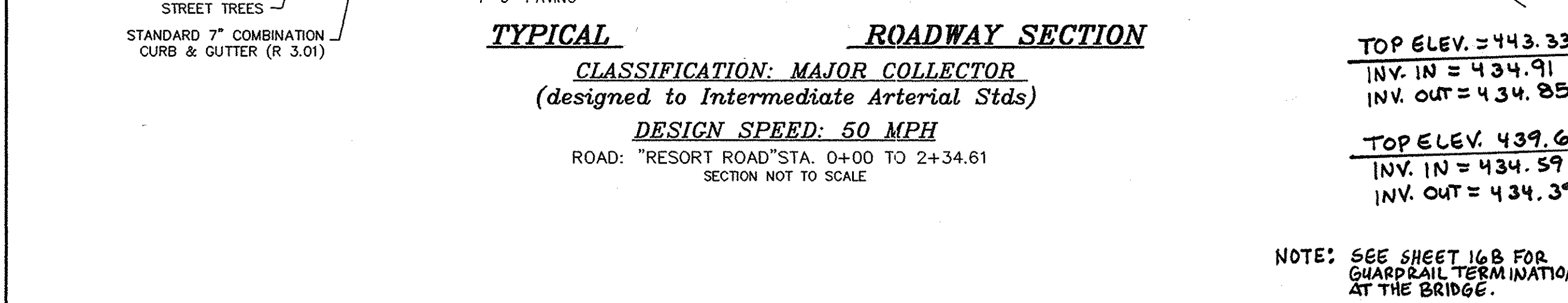
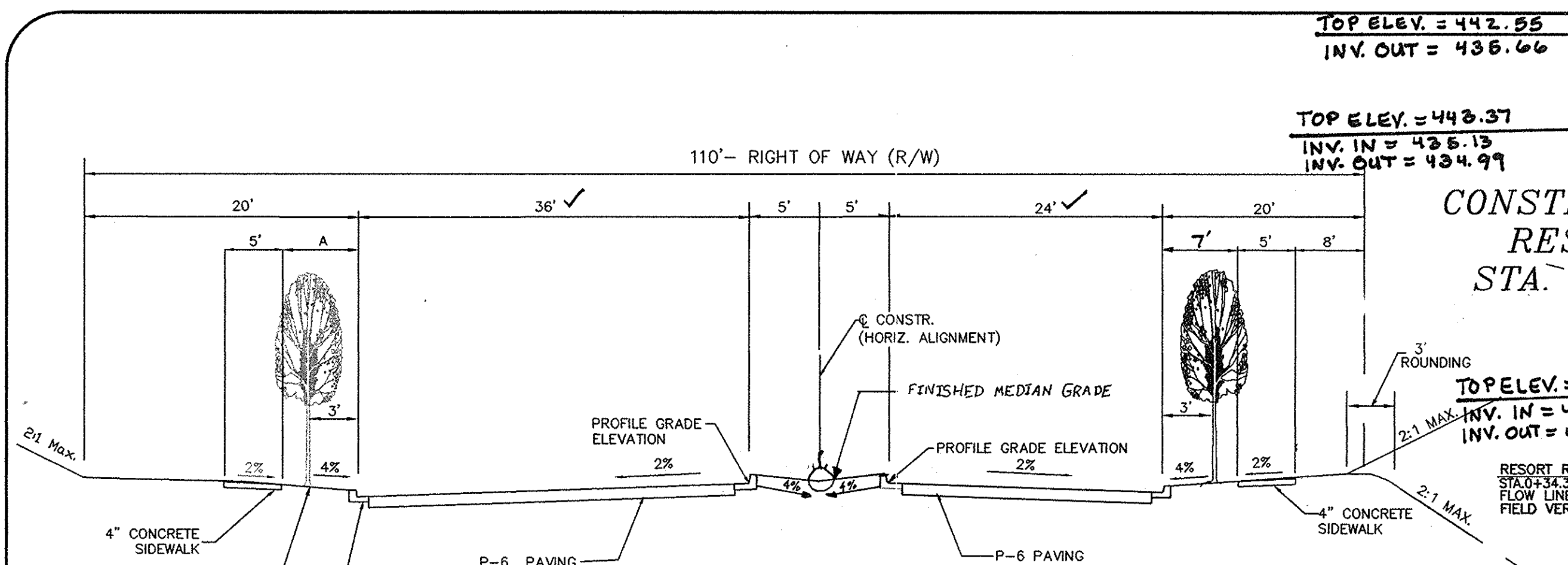
29. A SITE DEVELOPMENT PLAN WILL ALSO BE REQUIRED FOR WETLAND MITIGATION IF REQUIRED BY REGULATORY AGENCIES.

date	MARCH 06
project	03-029
illustration	engineering
MAP	MAP
scale	SCALE
NTS	NTS
approval	JBM

REVISE SHEET IS DESCRIPTION IN SHEET INDEX	BY	DATE
REVISE SHEET INDEX TO ADD SHEET 16B	BEI	6-11-2004
REVISE SHEET INDEX TO REMOVE ROAD	BEI	10-23-2003
REVISE SHEET INDEX TO REMOVE ROAD	BEI	9-4-2002
REVISE SHEET INDEX TO REMOVE ROAD	BEI	1-5-10
DESCRIPTION	BY	DATE
REVISIONS		

TURF VALLEY PROF BLDGS, RESORT RD STA. 0+00 to 13+66.83  
P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-4  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
COVER SHEET

MILDENBERG, BOENDER & ASSOC., INC.  
Engineers Planners Surveyors  
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 997-0296 Fax: (301) 621-5521 Wash. (410) 997-0298 Fax

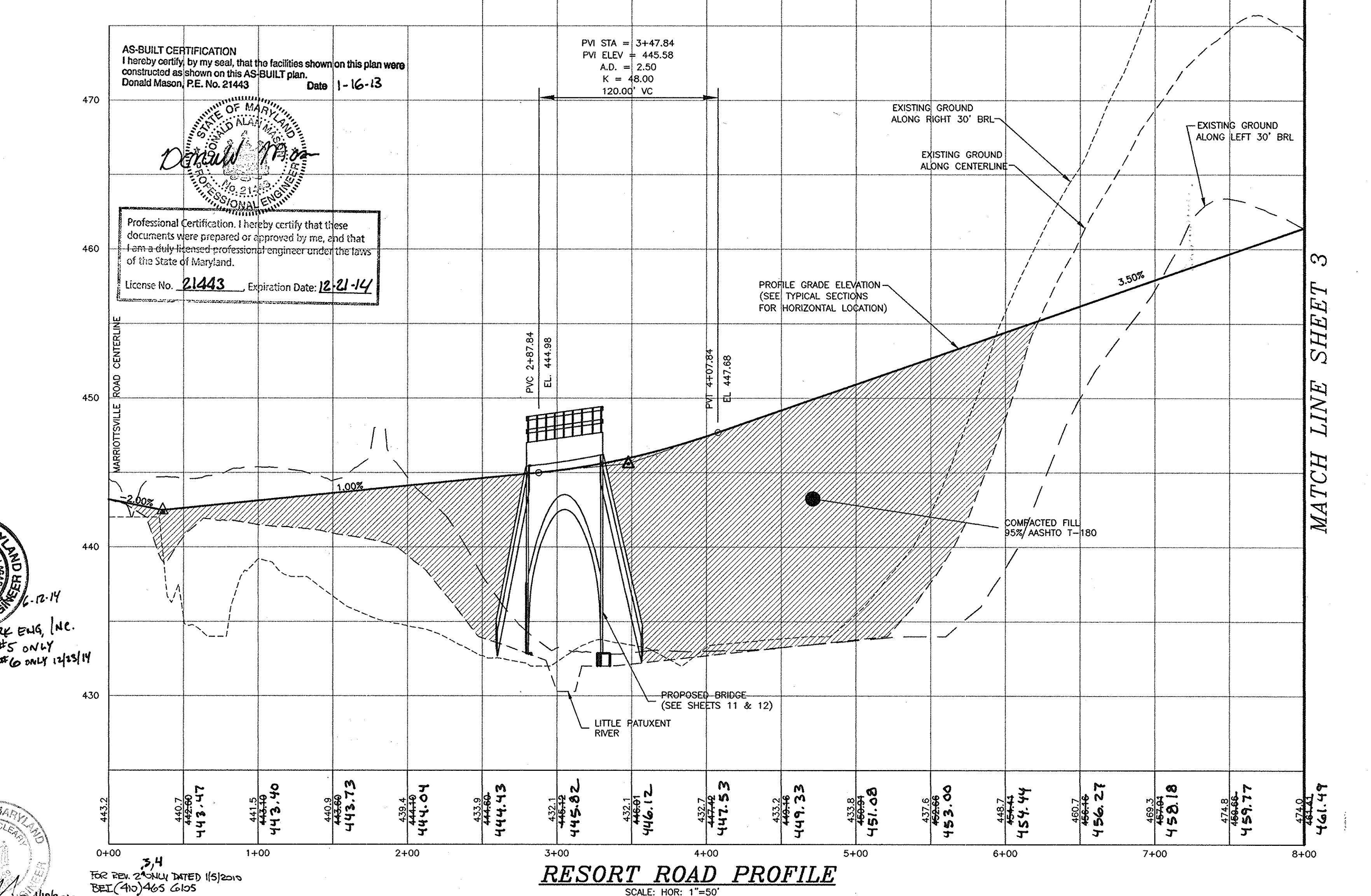
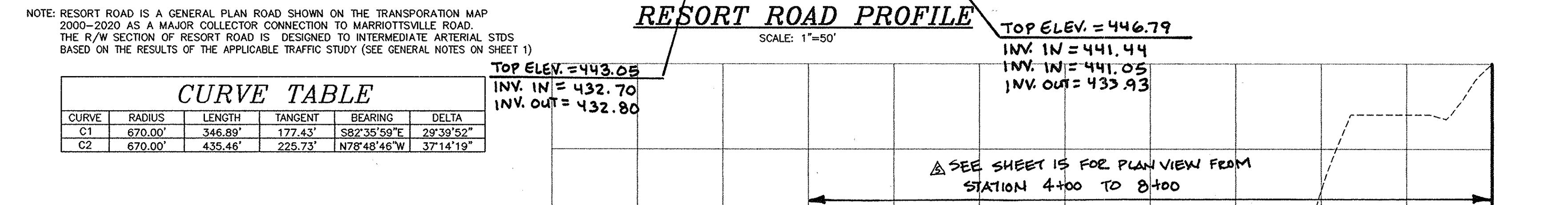
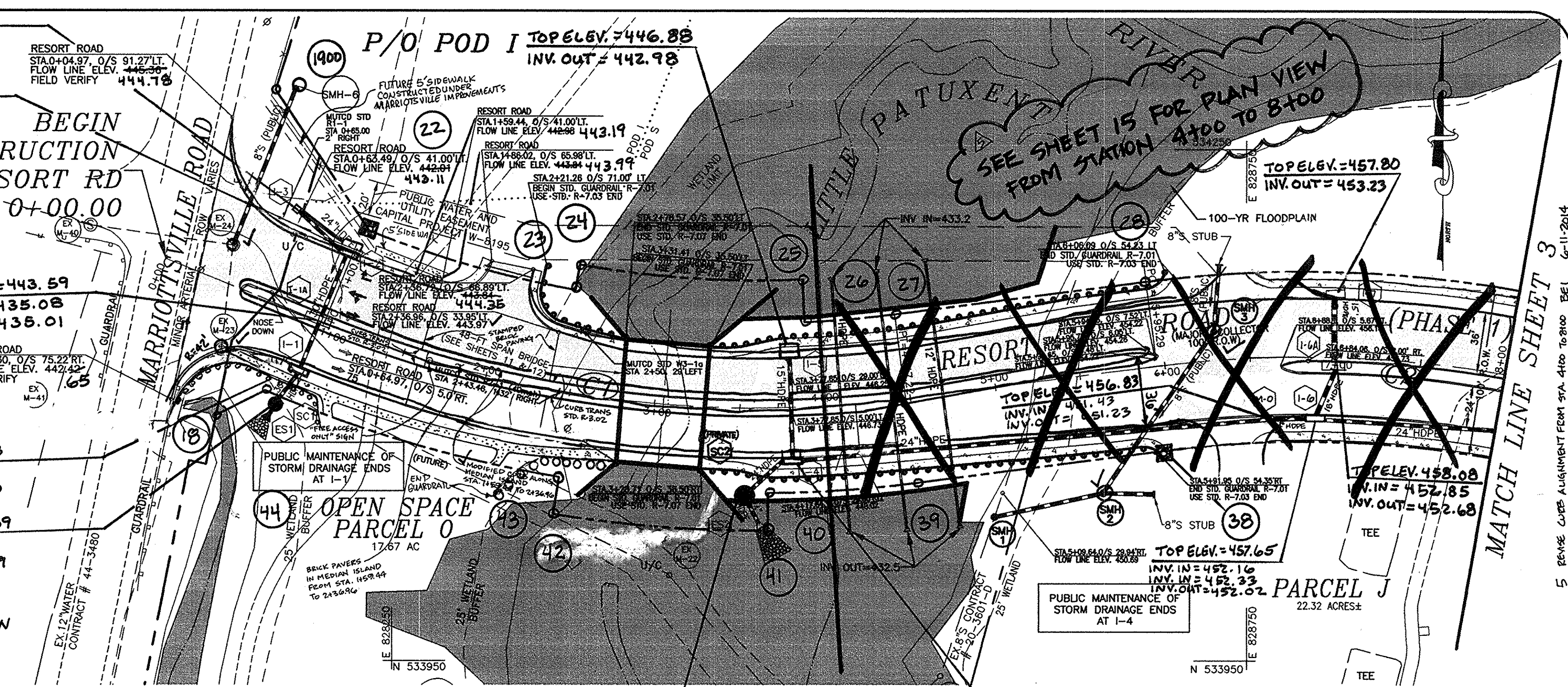


**\*A VALUES**  
 A=7 WHERE GAURDRAIL IS PRESENT  
 A=10' WHERE NO GAURDRAIL IS PRESENT

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William J. Mahan* 3-27-06  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cathy Hamer* 4/25/14  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*John J. ...* 4/25/14  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



AS-BUILT

**MILDENBERG, BOENDER & ASSOC., INC.**  
 Engineers Planners Surveyors  
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
 (410) 997-0298 Fax (301) 821-5521 Wash. (410) 997-0298 Fax

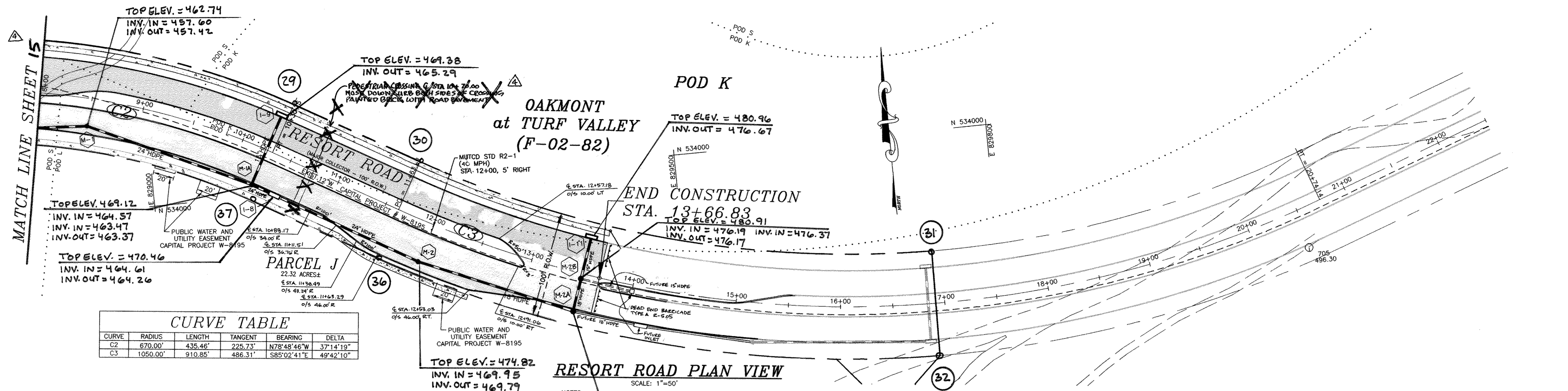
**RESORT ROAD PROFILE**  
 CLASSIFICATION: MAJOR COLLECTOR  
 DESIGN SPEED: 50 MPH

**TURF VALLEY PROF BLDGS RESORT RD STA. 0+00 TO 13+66.83**  
 P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-4  
 TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROAD PLAN & PROFILE AND TYPICAL SECTIONS

DATE: MARCH 06  
 PROJECT: 03-029  
 ILLUSTRATION: MAP  
 SCALE: 1"=50'  
 APPROVAL: JBM

12-23-2014  
 13-16-13  
 12-21-14



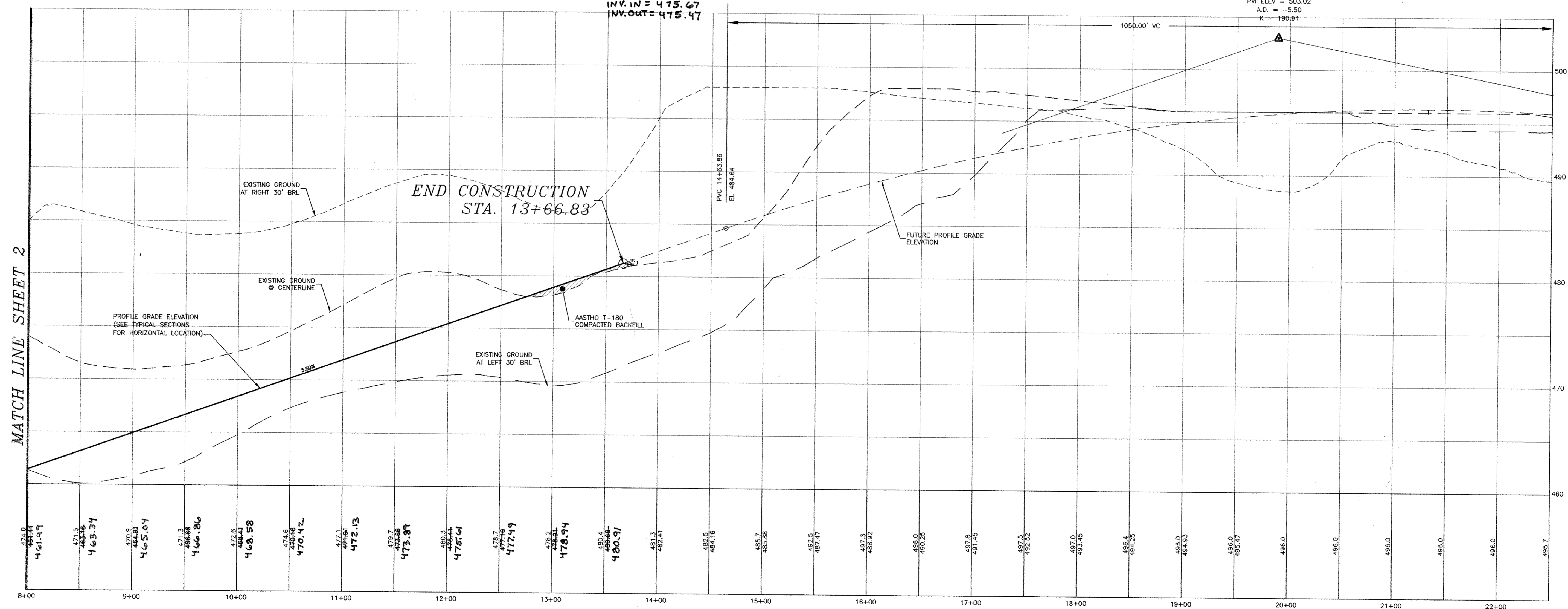
**CURVE TABLE**

CURVE	RADIUS	LENGTH	TANGENT	BEARING	DELTA
C2	670.00'	435.46'	225.73'	N78°48'46"W	37°14'19"
C3	1050.00'	910.85'	486.31'	S85°02'41"E	49°42'10"

**RESORT ROAD PLAN VIEW**  
SCALE: 1"=50'

NOTES:  
1. FOR STREET TREE LOCATIONS SEE SHEET 4.  
TOP ELEV. = 481.00  
INV. IN = 475.77  
INV. IN = 475.67  
INV. OUT = 475.47

HIGH POINT ELEV = 496.34  
HIGH POINT STA = 21+32.05  
PVI STA = 19+88.86  
PVI ELEV = 503.02  
A.D. = -5.50  
K = 190.91



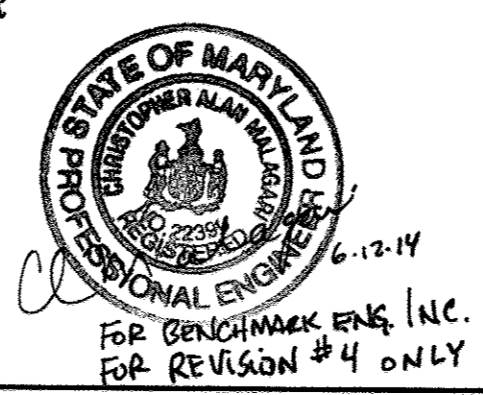
**RESORT ROAD PROFILE**  
SCALE: HOR: 1"=50'  
VER: 1"=5'  
CLASSIFICATION: MAJOR COLLECTOR  
DESIGN SPEED: 50 MPH

AS-BUILT CERTIFICATION  
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.  
Donald Mason, P.E. No. 21443 Date 1-16-13

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William J. Mahoney* 3-27-06  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Condy Hammett* 4/25/06  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Mark* 4/27/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 21443 Expiration Date: 12-21-14

Project: 01052  
Illustration: MAP  
Scale: 1"=50'  
Date: MARCH 06  
Approval: JBM

Revisions:

NO.	DESCRIPTION	DATE
4	DELIVER PEDESTRIAN CROSSING AT STA. 10+70	6-11-2014
3	DELIVER GUARD RAIL IDENTIFICATION OF RESORT RD. AND DELIVER PEDESTRIAN CROSSING	10-31-2013
2	DELIVER STREET LIGHTS, DRIVE IN ADJACENT ISLAND, AND DELINEATE. ADD DRIVE IN ADJACENT ISLAND	1-9-10
1	AS-BUILT	1-16-13

TURF VALLEY PROF BLDGS RESORT RD STA. 0+00 to 13+66.83  
P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-4  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
ROAD PLAN & PROFILE

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 997-0286 Fax: (301) 621-5521 Wash. (410) 997-0288 Fax.

NOTE: BERM ACROSS THE PROPOSED ROAD AT I-6 TO TRAP #1 IS TO BE CHANGED TO A MACADAM BERM AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

TRAP #1  
 STONE OUTLET SEDIMENT TRAP (ST-1)  
 EXISTING DRAINAGE AREA = 0.6 AC  
 PROP. DRAINAGE AREA = 4.1 AC  
 WET STORAGE VOL. = 7390 CF  
 WET STORAGE PROV. = 10,236 CF  
 DRY STORAGE VOL. = 7390 CF  
 DRY STORAGE PROV. = 7396 CF  
 CLEANOUT ELEV. = 452.2  
 BOTTOM ELEV. = 452.0  
 OUTLET ELEV. = 454.5  
 WEIR CREST ELEV. = 456.0  
 EMBANKMENT ELEV. = 457.0  
 WEIR LENGTH = 10'

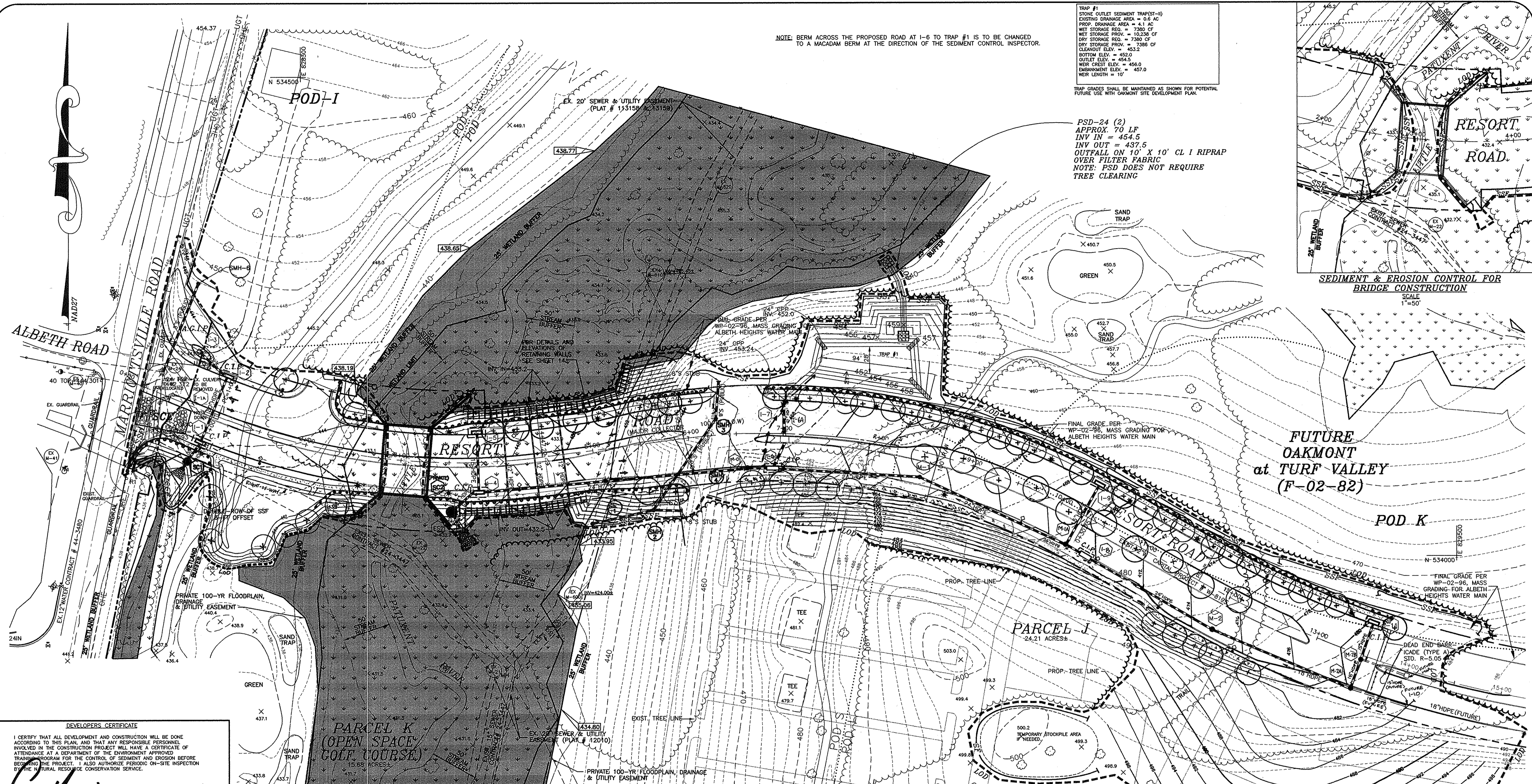
TRAP GRADES SHALL BE MAINTAINED AS SHOWN FOR POTENTIAL FUTURE USE WITH OAKMONT SITE DEVELOPMENT PLAN.

PSD-24 (2)  
 APPROX. 70 LF  
 INV IN = 454.5  
 INV OUT = 437.5  
 OUTFALL ON 10' X 10' CL I RIPRAP  
 OVER FILTER FABRIC  
 NOTE: PSD DOES NOT REQUIRE TREE CLEARING

**SEDIMENT & EROSION CONTROL FOR BRIDGE CONSTRUCTION**

SCALE 1"=50'

**FUTURE OAKMONT at TURF VALLEY (F-02-82)**



**MATCH LINE SHEET 5**

**DEVELOPERS CERTIFICATE**  
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

*John Morgan*  
 SIGNATURE OF DEVELOPER  
 DATE: 3/10/06

*John Morgan*  
 PRINTED NAME OF DEVELOPER

**ENGINEER'S CERTIFICATE**  
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

*John Mendenhall*  
 SIGNATURE OF ENGINEER  
 DATE: 4/14/06

*John Mendenhall*  
 PRINTED NAME OF ENGINEER

Professional Certification. I hereby certify that I have conducted a site visit and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
 License No. 20559 Expiration Date: 7-22-13

No As-Built information is required on this sheet



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
 License No. 21443 Expiration Date: 12-21-14

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 DATE: 3/16/06

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION SERVICE.  
 DATE: 3/16/06

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 DATE: 3-27-06

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 DATE: 4/20/06

APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 4/21/06

**OWNER**  
 MANGIONE ENTERPRISES OF TURF VALLEY, L.P.  
 1205 YORK ROAD, PENTHOUSE  
 LUTHERVILLE, MARYLAND 21093  
 (410) 825-8400

**STREET TREE CALCULATIONS**  
 RESORT ROAD (EDGE OF ROAD) - 2732 LF / 40 = 68 TREES  
 TOTAL TREES REQUIRED = 68 TREES  
 TOTAL TREES PROVIDED = 68 TREES

**SEQUENCE OF BRIDGE CONSTRUCTION**  
 NOTES: 1. SEE OVERALL PROJECT SEQUENCE OF CONSTRUCTION ON SHEET 6 OF 16.  
 2. LITTLE PATUXENT RIVER IS A USE I STREAM. NO IN-STREAM CONSTRUCTION IS ALLOWED BETWEEN MARCH 1 AND JUNE 15.

- OBTAIN GRADING PERMIT AND MDE WATERWAY CONSTRUCTION PERMIT.
- INSTALL SUPER SILT FENCE BETWEEN THE STREAM AND PROPOSED BRIDGE FOUNDATION AS SHOWN ON PLANS.
- DRIVE SHEETPILE WALL FOR BRIDGE FOUNDATION AS SHOWN ON SHEETS 11 & 12 (SHEETPILE TO SERVE AS COFFER DAM FOR REMAINDER OF CONSTRUCTION)
- EXCAVATE AND CONSTRUCT FOOTING/SHEETPILE CAP. ANY DEMATERING REQUIRED MUST BE AS SHOWN ON THESE PLANS AND MUST DISCHARGE THROUGH A FILTER BAG PRIOR TO LEAVING THE SITE.
- CONSTRUCT BRIDGE ASSEMBLING PRECAST CONCRETE ARCHES.
- FINISH REMAINING BRIDGE CONSTRUCTION.
- BACKFILL BEHIND WINGWALLS AND OVER BRIDGE. BRING ROAD TO FINAL GRADE.
- STABILIZE DISTURBED AREAS AS SHOWN ON SHEET 4.

NOTE: THE FIVE (5) STREET TREES REQUIRED BUT NOT PROVIDED UNDER THIS F.PLAN SHALL BE PLANTED ALONG RESORT ROAD WITHIN VILLAGES AT TURF VALLEY, PHASE 4, F-08-06

**STREET TREE PLANTING SCHEDULE**

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
63	(Symbol)	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" - 3" CAL.
TOTAL	(Symbol)			
63	(Symbol)	STREET TREES		

**LEGEND**

- (Symbol) SIDEWALK
- (Symbol) WETLANDS
- (Symbol) FLOODPLAIN
- (Symbol) SILT FENCE
- (Symbol) SUPER SILT FENCE
- (Symbol) LIMIT OF DISTURBANCE
- (Symbol) STABILIZED CONSTRUCTION ENTRANCE
- (Symbol) C.I.P. A.C.I.P. INLET PROTECTION
- (Symbol) EROSION CONTROL MATTING
- (Symbol) STREET LIGHTS

NOTES: 1. ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED AND EXTENDED UPHILL 2 FEET IN ELEVATION.

project	date	approval
03029	MARCH 06	IBM
illustration	engineering	
MAP	MAP	
scale	1"=50'	

no.	description	date
1	REVISED GRADING AND INLET LOCATION	12/5/04
2		10-15-2012

BEI 4. RELOCATE 10 STREET TREES TO MEDIAN ISLAND AND 5 MISSING STREET TREES.  
 TURF VALLEY PROF BLDGS RESORT RD STA. 0+00 TO 13+66.83  
 P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-3  
 TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 GRADING, SEDIMENT CONTROL & STREET TREES PLAN

**MILDENBERG, BOENDER & ASSOC., INC.**  
 Engineers Planners Surveyors  
 5072 Dorsy Hall Drive, Suite 202, Beloit City, Maryland, 21042  
 (410) 997-0298 Fax. (301) 621-5321 Wash. (410) 997-0298 Fax.

**NOTES:**

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
2. PERIMETER LANDSCAPING FOR PARCELS 2 & 3 (TURF VALLEY PROFESSIONAL BUILDINGS) WILL BE PROVIDED AT THE SDP STAGE IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

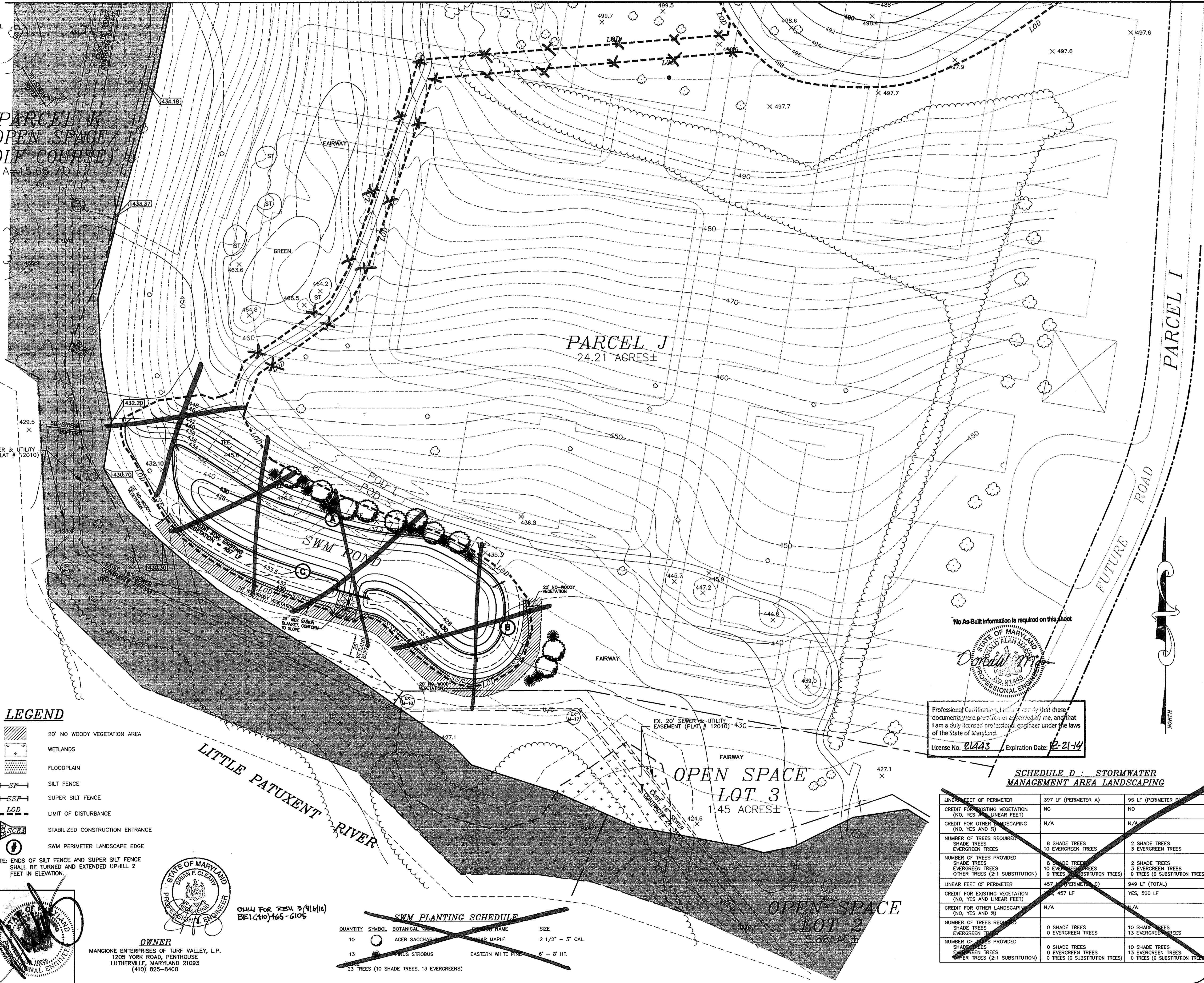
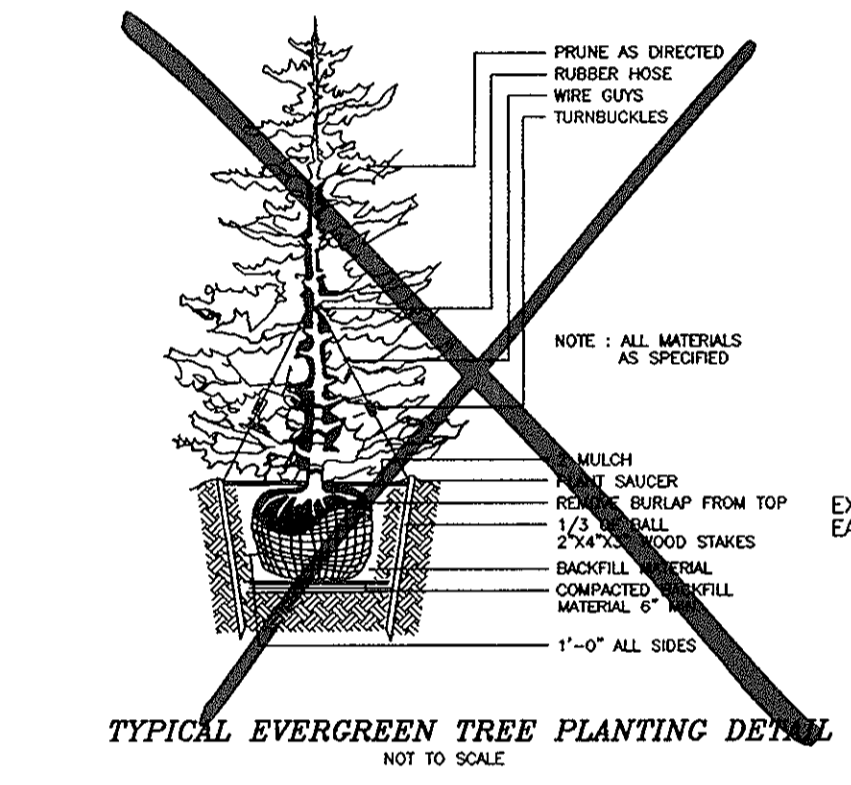
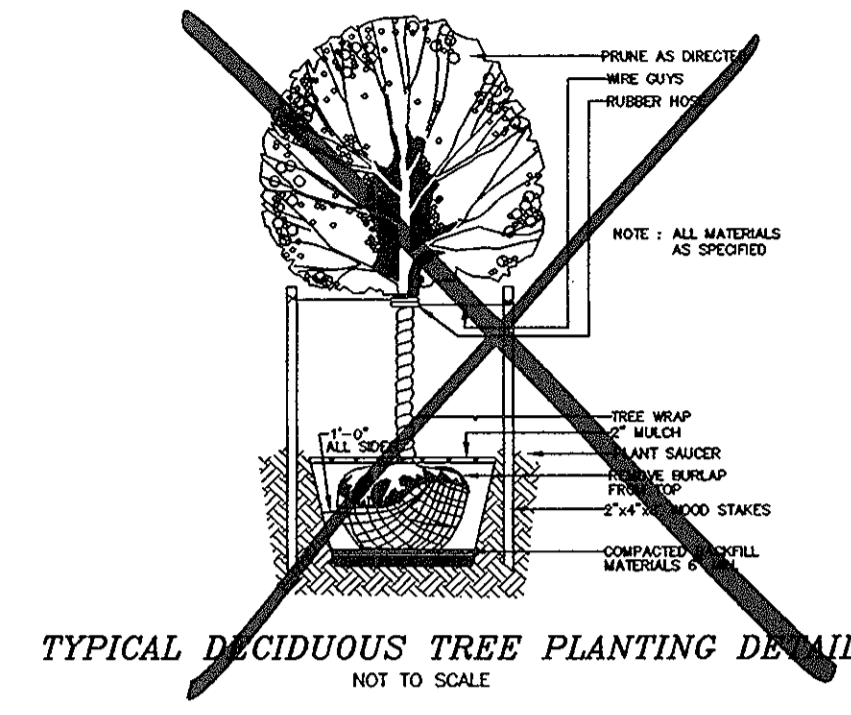
**MATCH LINE SHEET 4**

**PARCEL K  
(OPEN SPACE  
GOLF COURSE)**  
A=15.68 AC

**PARCEL J**  
24.21 ACRES±

**OPEN SPACE  
LOT 3**  
1.45 ACRES±

**OPEN SPACE  
LOT 2**  
5.88 AC±



**DEVELOPERS CERTIFICATE**

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

*John Mangione* 3/1/06  
SIGNATURE OF DEVELOPER DATE

**ENGINEER'S CERTIFICATE**

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

*John Mulvaney* 3/1/06  
SIGNATURE OF ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

*John Mulvaney* 3/1/06  
DATE

USDA - NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John Mulvaney* 3/1/06  
DATE

HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS

*William F. White* 3-27-06  
CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Cindy Hamon* 4/20/06  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John Mulvaney* 4/20/06  
CHIEF DEVELOPMENT ENGINEERING DIVISION DATE

**LEGEND**

- 20' NO WOODY VEGETATION AREA
- WETLANDS
- FLOODPLAIN
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- SWM PERIMETER LANDSCAPE EDGE

NOTE: ENDS OF SILT FENCE AND SUPER SILT FENCE SHALL BE TURNED AND EXTENDED UPHILL 2 FEET IN ELEVATION.



**OWNER**  
MANGIONE ENTERPRISES OF TURF VALLEY, LP.  
1205 YORK ROAD, PENTHOUSE  
LUTHERVILLE, MARYLAND 21093  
(410) 825-8400

CALL FOR REV. 3/9/16/16  
BE1(410)465-6105

**SWM PLANTING SCHEDULE**

QUANTITY	SYMBOL	BOTANICAL NAME	CURRENT NAME	SIZE
10		ACER SACCHARUM	SUGAR MAPLE	2 1/2" - 3" CAL.
13		PINUS STROBUS	EASTERN WHITE PINE	6" - 8" HT.

23 TREES (10 SHADE TREES, 13 EVERGREENS)

No As-Built information is required on this sheet.

*John Mulvaney*  
STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
LICENSE NO. 21443  
EXPIRES 12-21-14

Professional Certification License No. 21443, which expires on 12-21-14, certifies that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 21443 Expiration Date: 12-21-14

**SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING**

LINEAR FEET OF PERIMETER	397 LF (PERIMETER A)	95 LF (PERIMETER B)
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	N/A	N/A
NUMBER OF TREES REQUIRED	8 SHADE TREES 10 EVERGREEN TREES	2 SHADE TREES 3 EVERGREEN TREES
NUMBER OF TREES PROVIDED	8 SHADE TREES 10 EVERGREEN TREES (2.1 SUBSTITUTION)	2 SHADE TREES 3 EVERGREEN TREES (0 SUBSTITUTION TREES)
LINEAR FEET OF PERIMETER	457 LF (PERIMETER C)	949 LF (TOTAL)
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	0, 457 LF	YES, 500 LF
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	N/A	N/A
NUMBER OF TREES REQUIRED	0 SHADE TREES 10 EVERGREEN TREES	10 SHADE TREES 13 EVERGREEN TREES
NUMBER OF TREES PROVIDED	0 SHADE TREES 0 EVERGREEN TREES (2.1 SUBSTITUTION)	10 SHADE TREES 13 EVERGREEN TREES (0 SUBSTITUTION TREES)

date MARCH 06  
Project 03-029  
Illustration MAP/ASB  
scale 1"=50'

date 9-4-2012  
description BEL  
revisions BEL

TURF VALLEY PROF BLDGS RESORT RD STA 0+00 TO 13+66.88  
P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-3  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
HOWARD COUNTY, MARYLAND  
THIRD ELECTION DISTRICT

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 997-0296 Fax: (301) 621-5521 Wash. (410) 997-0898 Fax.

5 OF 16  
F-02-74

AS-BUILT



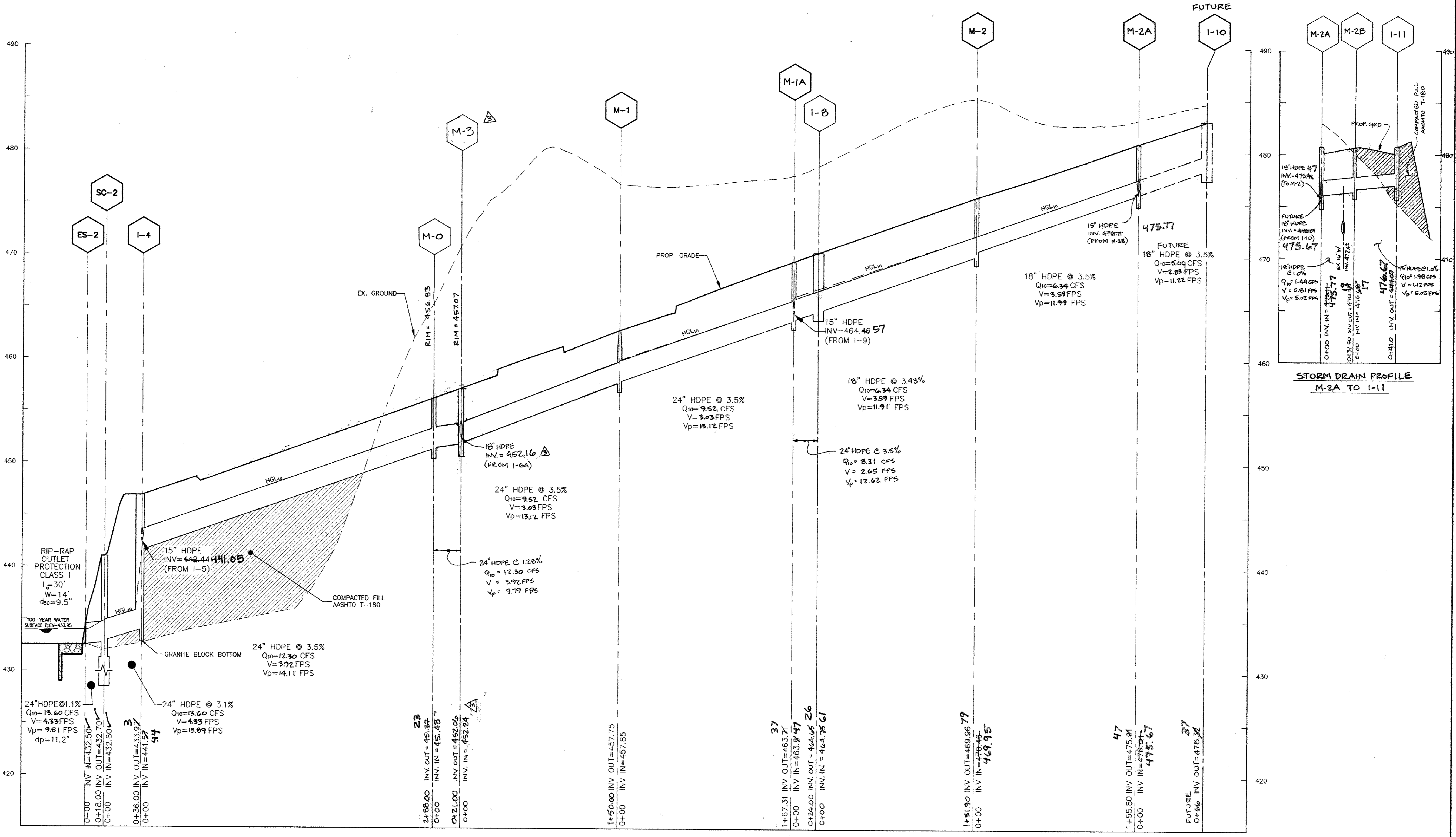
14-103-029 (LMD) F-PLANS 03-029-stormdrain-profile-rev.dwg

*[Handwritten signature]*

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William J. White, Jr.* 3-27-06  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamata* 4/25/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*[Signature]* 4/27/06  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

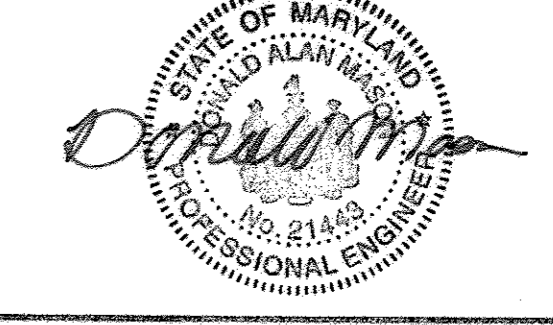


**STORM DRAIN PROFILE**  
**ES-2 TO I-10**

SCALE  
 HORIZONTAL 1"=50'  
 VERTICAL 1"=5'

NOTE: HGL IS EQUAL TO TOP OF PIPE UNLESS OTHERWISE NOTED.

AS-BUILT CERTIFICATION  
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.  
 Donald Mason, P.E. No. 21443 Date 1-16-13



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
 License No. 21443, Expiration Date: 12-31-14

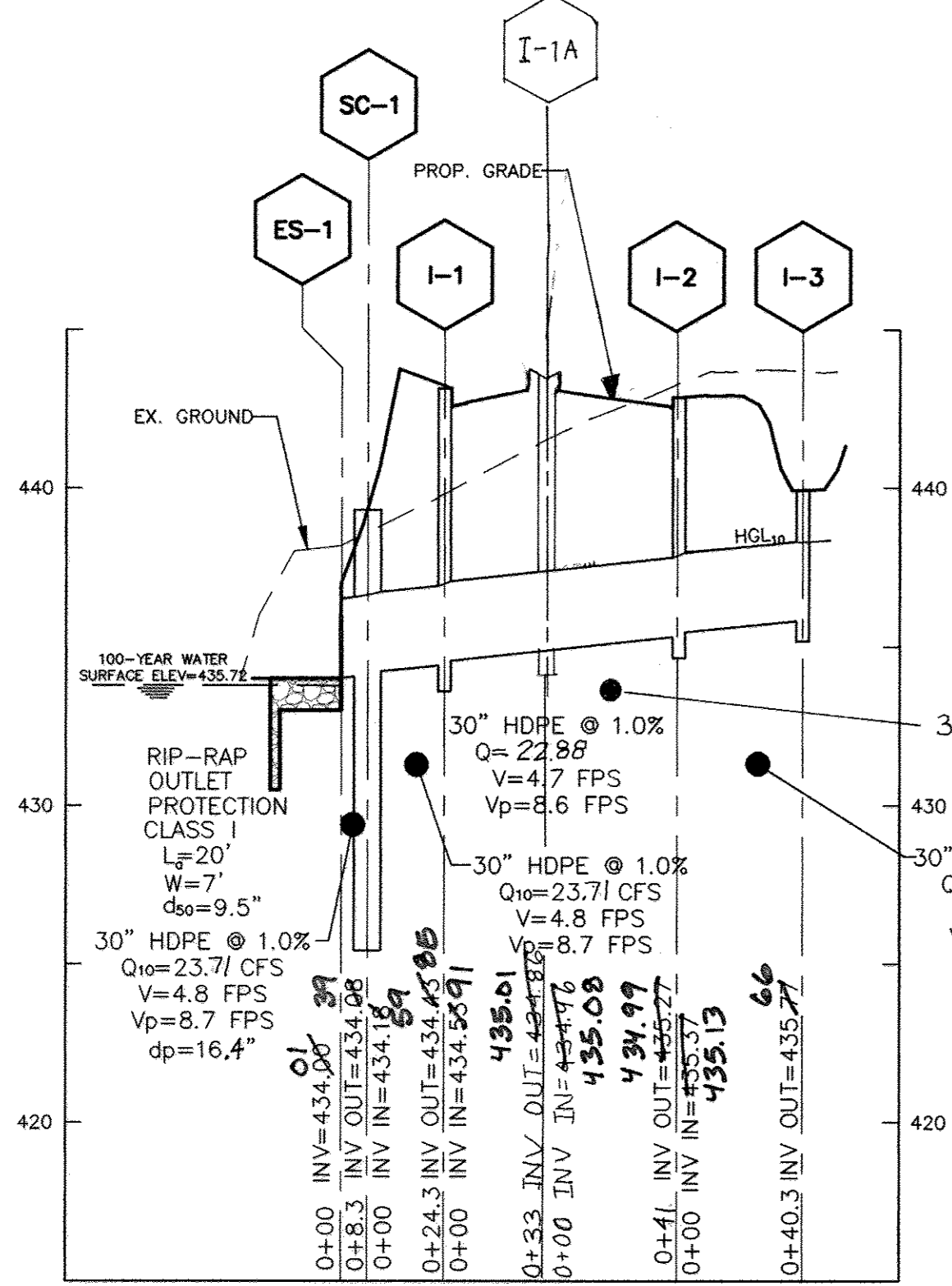
Project	03-029	date	MARCH 06
Illustration	MAP	engineering	JBM
MAP	MAP	approval	JBM
scale	1"=50'		

no.	3	description	REVISE 16 TO BECOME M-3	date	6-11-2014
no.	2	description	REVISE STORM DRAIN PROFILES TO REFLECT NEW MANHOLES INVOLVED AND ADD NEW MANHOLES TO BE CONSTRUCTED	date	1-5-10
no.		description		date	

**TURF VALLEY PROF BLDGS RESORT RD STA. 0+00 TO 13+66.83**  
 P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-4  
 TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
 THIRD ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
**STORM DRAIN PROFILES**

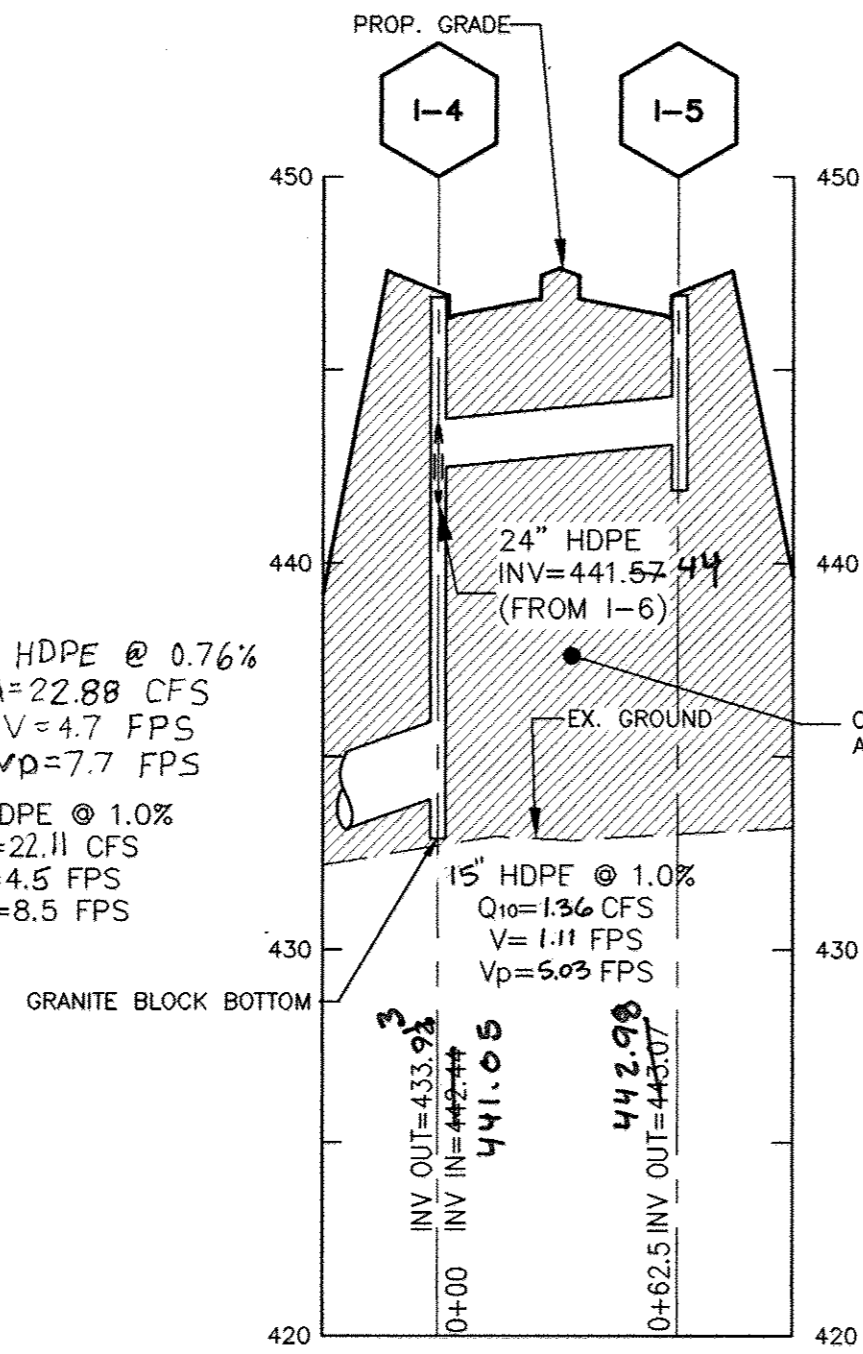
**MILDENBERG, BOENDER & ASSOC., INC.**  
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 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
 (410) 997-0296 Fax. (301) 621-5621 Wash. (410) 997-0298 Fax.

AS-BUILT



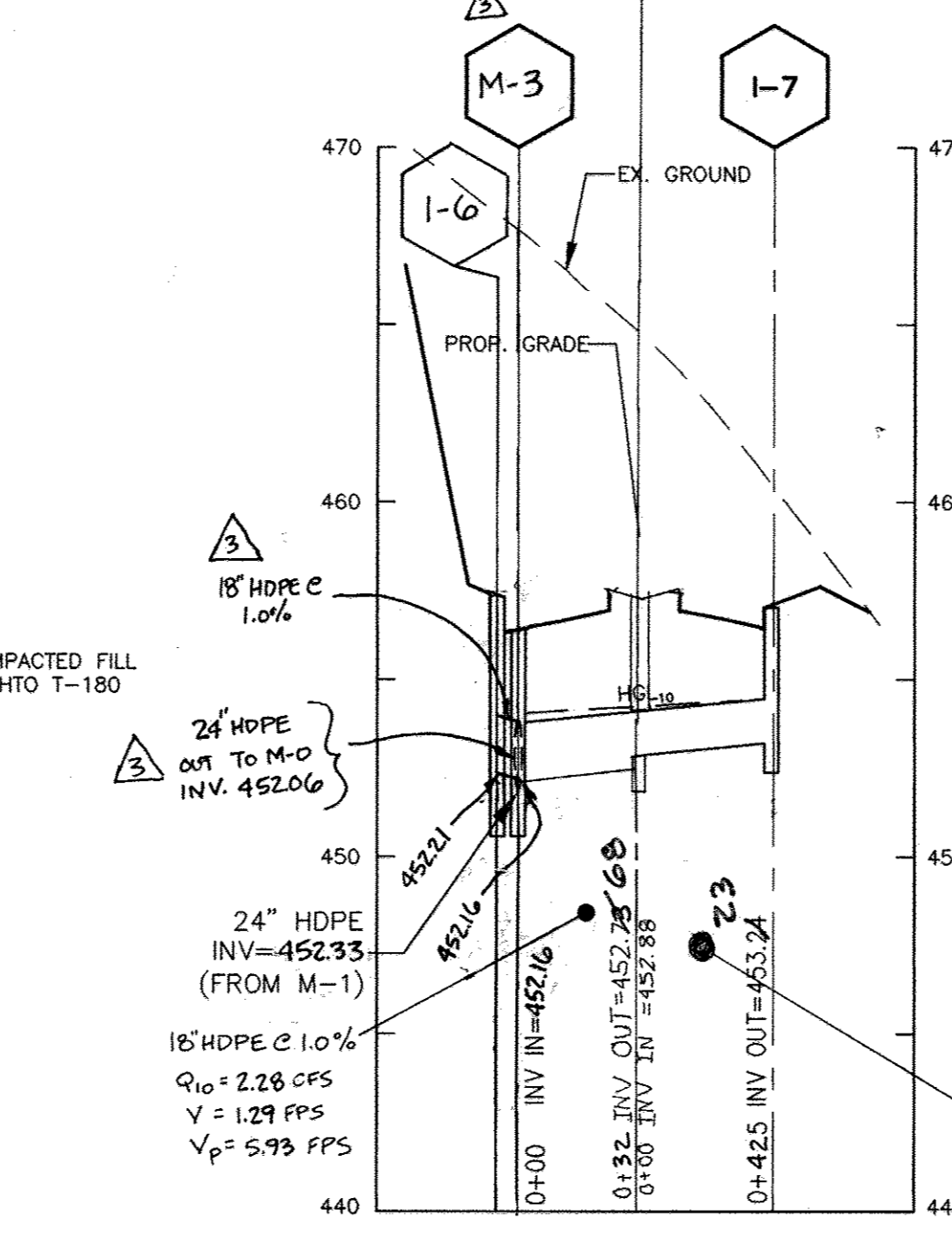
**STORM DRAIN PROFILE ES-1 TO I-3**

SCALE: HORIZONTAL 1"=50', VERTICAL 1"=5'



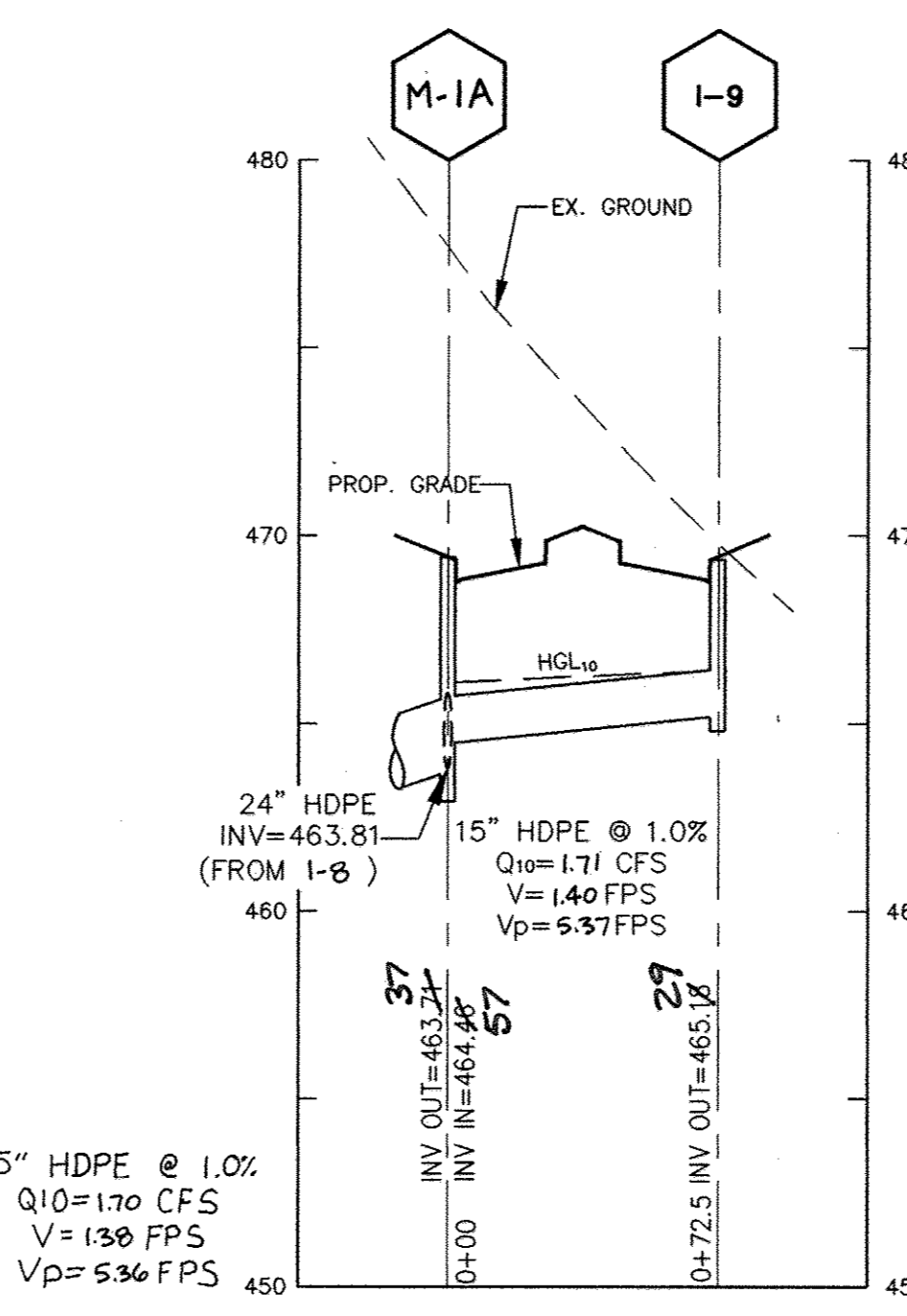
**STORM DRAIN PROFILE I-4 TO I-5**

SCALE: HORIZONTAL 1"=50', VERTICAL 1"=5'



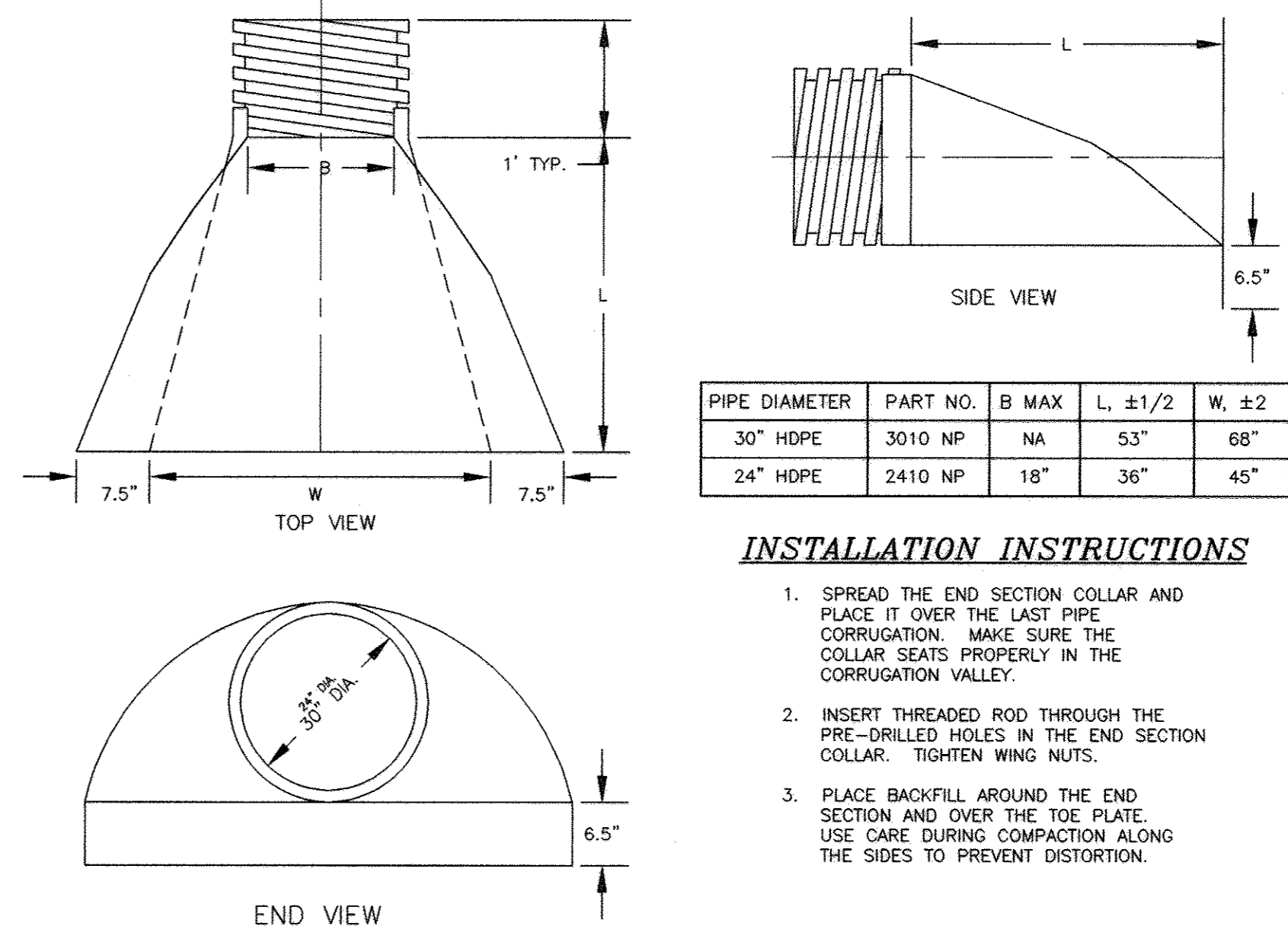
**STORM DRAIN PROFILE I-6 TO I-7**

SCALE: HORIZONTAL 1"=50', VERTICAL 1"=5'



**STORM DRAIN PROFILE M-1A TO I-9**

SCALE: HORIZONTAL 1"=50', VERTICAL 1"=5'



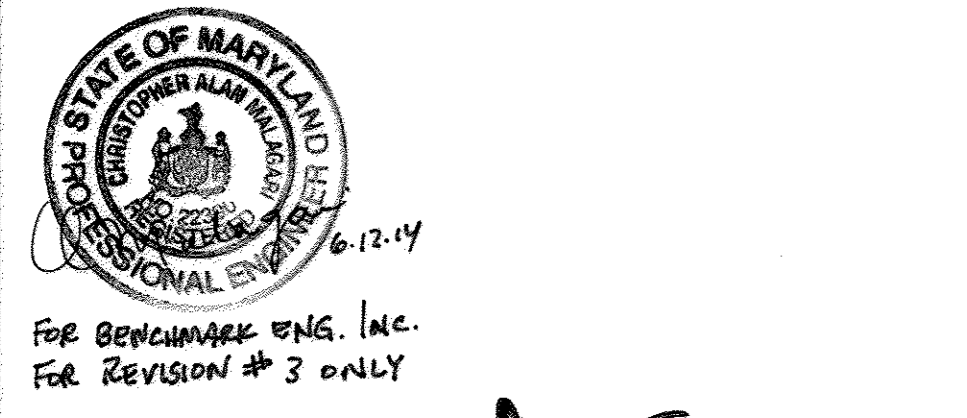
**HDPE END SECTION (PART NO. 3010 NP)**

SCALE: NOT TO SCALE

**INSTALLATION INSTRUCTIONS**

- SPREAD THE END SECTION COLLAR AND PLACE IT OVER THE LAST PIPE CORRUGATION. MAKE SURE THE COLLAR SEATS PROPERLY IN THE CORRUGATION VALLEY.
- INSERT THREADED ROD THROUGH THE PRE-DRILLED HOLES IN THE END SECTION COLLAR. TIGHTEN WING NUTS.
- PLACE BACKFILL AROUND THE END SECTION AND OVER THE TOE PLATE. USE CARE DURING COMPACTION ALONG THE SIDES TO PREVENT DISTORTION.

PIPE DIAMETER	PART NO.	B MAX	L, ±1/2	W, ±2
30" HDPE	3010 NP	NA	53"	68"
24" HDPE	2410 NP	18"	36"	45"



FOR REVIEW ONLY DATED 1/5/2010  
BEI (410) 465 6105



FOR REVIEW ONLY DATED 1/5/2010  
BEI (410) 465 6105

**Precast Concrete Stormceptor Order Request Form**

CONTRACTOR INFORMATION: Name, Address, City, State, Zip Code, Contact, Phone, Fax.

OWNER INFORMATION: Name, Address, City, State, Zip Code, Contact, Phone, Fax.

INFERIOUS DRAINAGE AREA FOR THIS UNIT: Stormceptor Model, Invert Size, Manhole Number, Top Elevation, Inlet Pipe Invert, Outlet Pipe Invert, Pipe Type, Inlet Pipe Inside Diameter, Inlet Pipe Outside Diameter, Outlet Pipe Inside Diameter, Outlet Pipe Outside Diameter.

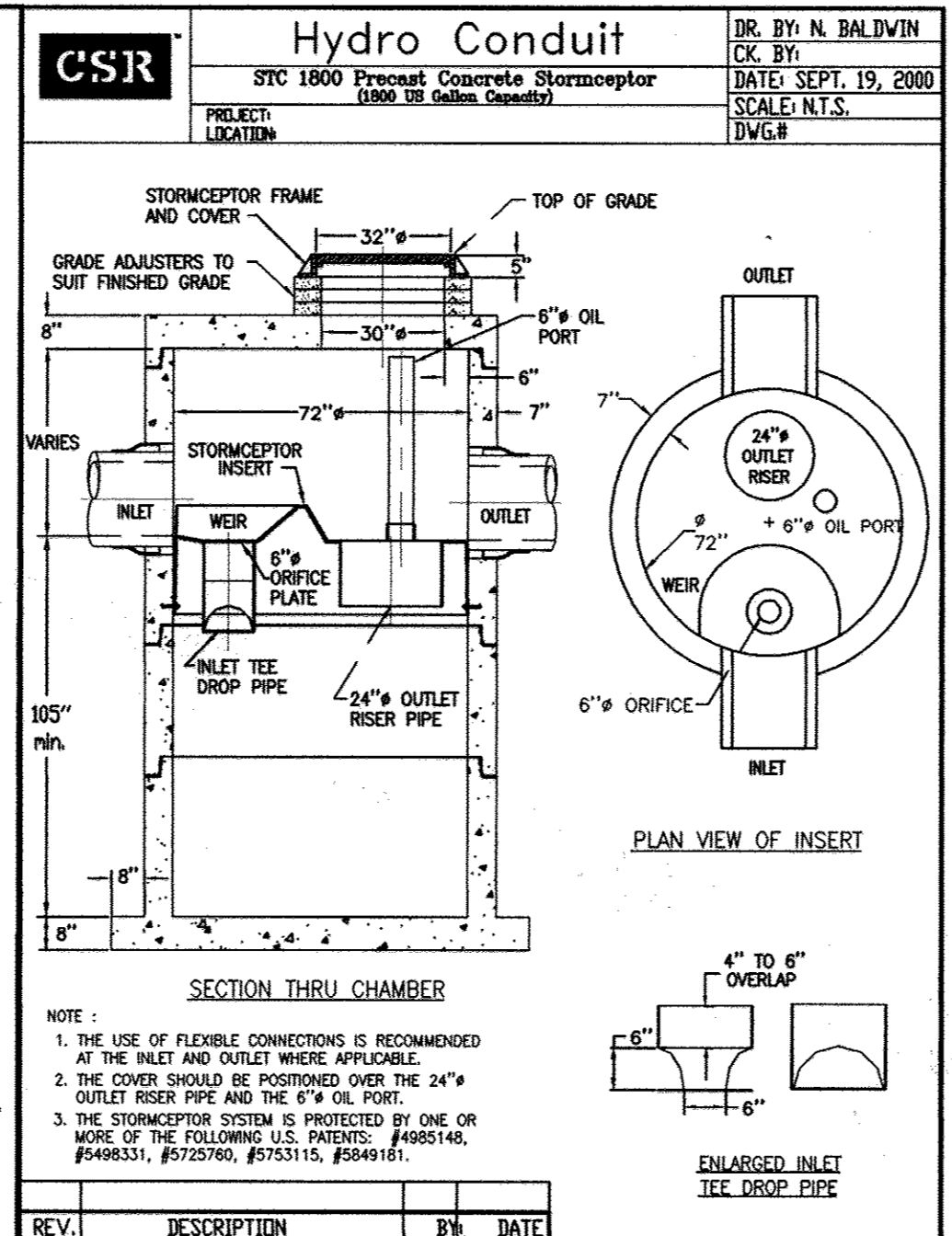
Project Name: TURF VALLEY PROFESSIONAL BUILDINGS, RESORT ROAD

Delivery Address: Street, City, State, Zip Code

Designer Company: MILDENBERG, BOENDER & ASSOC., INC.

Designer Contact: JOHN MILDENBERG Phone 410-997-0296/410-997-0298

PLEASE FILL OUT COMPLETELY AND FAX TO: ATTN: ED O'MALLEY FAX: (703)922-3659, PHONE: (703)971-9000 FOR TECHNICAL ASSISTANCE PLEASE CALL MIKE BARG, PHONE (703)971-9100



**Precast Concrete Stormceptor Order Request Form**

CONTRACTOR INFORMATION: Name, Address, City, State, Zip Code, Contact, Phone, Fax.

OWNER INFORMATION: Name, Address, City, State, Zip Code, Contact, Phone, Fax.

INFERIOUS DRAINAGE AREA FOR THIS UNIT: Stormceptor Model, Invert Size, Manhole Number, Top Elevation, Inlet Pipe Invert, Outlet Pipe Invert, Pipe Type, Inlet Pipe Inside Diameter, Inlet Pipe Outside Diameter, Outlet Pipe Inside Diameter, Outlet Pipe Outside Diameter.

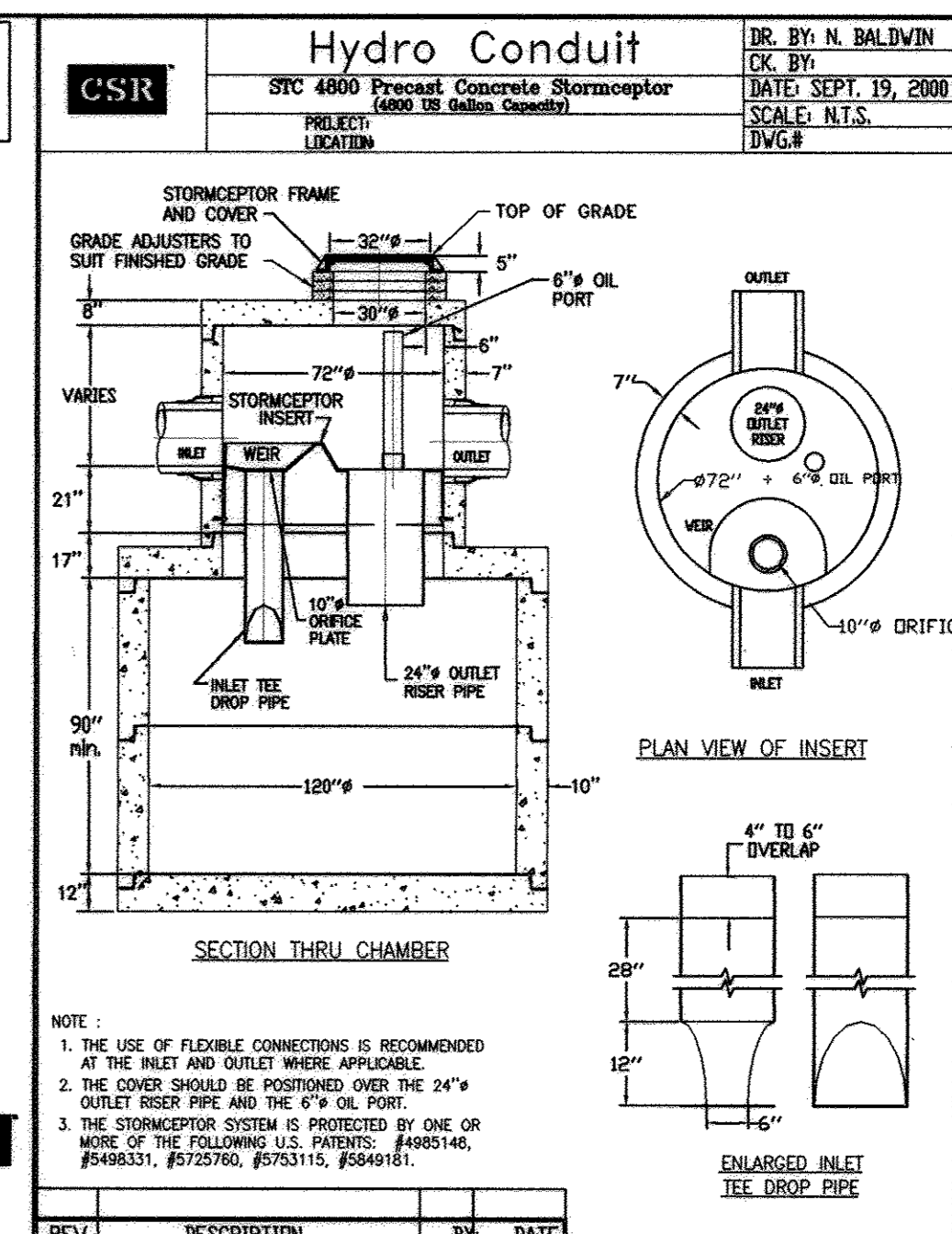
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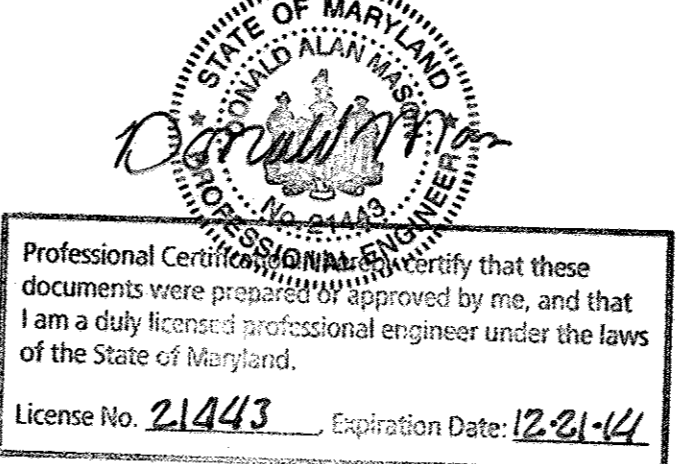
**STRUCTURE SCHEDULE**

NO.	LOCATION	TOP OF STRUCTURE	INVERT IN	INVERT OUT	COMMENTS
ES-1	N 534091.421 E 828176.031	432.50	434.00	---	HDPE END SECTION (30" DIA. PIPE)
ES-2	N 534030.385 E 828464.635	432.50	432.50	---	HDPE END SECTION (24" DIA. PIPE)
I-1	RESORT ROAD STA. 0+97.24 RT. 29.1'	443.18	434.53	434.43	TYPE "A-10" INLET STANDARD SD 4.02
I-2	RESORT ROAD STA. 0+97.24 LT. 51.1'	443.18	435.47	435.47	TYPE "A-10" INLET STANDARD SD 4.02
I-3	N 534224.136 E 828197.353	440.00	---	435.87	TYPE "A-10" INLET STANDARD SD 4.12
I-4	RESORT ROAD STA. 3+80.00 RT. 29.1'	446.89	441.57	422.44	TYPE "A-10" INLET STANDARD SD 4.02
I-5	RESORT ROAD STA. 3+80.00 LT. 29.1'	446.89	---	443.77	TYPE "A-10" INLET STANDARD SD 4.02
I-6	RESORT ROAD STA. 4+72.23 RT. 34.1'	457.04	451.80	452.51	TYPE "A-10" INLET STANDARD SD 4.02
I-7	RESORT ROAD STA. 7+00.00 LT. 34.1'	457.04	---	453.24	TYPE "A-10" INLET STANDARD SD 4.02
I-8	RESORT ROAD STA. 10+24.63 RT. 34.1'	469.37	469.37	469.37	TYPE "A-10" INLET STANDARD SD 4.02
I-9	RESORT ROAD STA. 10+24.63 LT. 34.1'	469.37	---	465.8	TYPE "A-10" INLET STANDARD SD 4.02
I-10	RESORT ROAD STA. 13+50.00 RT. 34.1'	480.76	476.6	475.31	TYPE "A-10" INLET STANDARD SD 4.02
I-11	RESORT ROAD STA. 13+50.00 LT. 34.1'	480.76	---	476.88	YARD INLET STANDARD SD 4.14
SC-1	N 534100.206 E 828181.559	439.6	434.18	434.08	STORMCEPTOR STC 1800 OR EQUIVALENT
SC-2	N 534046.757 E 828456.355	443.0	432.80	432.70	STORMCEPTOR STC 4800 OR EQUIVALENT
M-1	RESORT ROAD STA. 6+30 RT. 28.0'	463.22	457.85	457.75	BRICK MANHOLE STANDARD G 5.01
M-2	RESORT ROAD STA. 12+88 RT. 37.0'	475.49	470.46	469.96	BRICK MANHOLE STANDARD G 5.01
M-1A	RESORT ROAD STA. 0+97.24 RT. 29.1'	443.07	434.86	434.96	YARD INLET STANDARD SD 4.14
I-6A	RESORT ROAD STA. 7+00.00 RT. 7.0'	456.94	452.78	452.68	YARD INLET STANDARD SD 4.14

**PIPE SCHEDULE**

PIPE SIZE	LENGTH
15" HDPE	250 L.F.
18" HDPE	339.7 L.F.
24" HDPE	705 L.F.
30" HDPE	147 L.F.

AS-BUILT CERTIFICATION  
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.  
Donald Mason, P.E. No. 21443 Date 1-16-13



Professional Certification: I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 21443, Expiration Date: 12-31-14

**STORMCEPTOR OPERATION AND MAINTENANCE SCHEDULE**

- STORMCEPTOR WATER QUALITY STRUCTURES WILL REQUIRE PERIODIC INSPECTION AND CLEANING TO MAINTAIN OPERATION AND FUNCTION. OWNERS WILL HAVE THE STORMCEPTOR UNIT INSPECTED YEARLY OR AS REQUIRED BY HOWARD COUNTY. UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS CAN BE DONE BY USING A CLEAR FLEXIGLASS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN SEDIMENT DEPTHS EXCEED THE SPECIFIED LEVEL (TABLE 4 OF TECHNICAL MANUAL) THEN CLEANING OF THE UNIT IS REQUIRED.
- STORMCEPTOR WATER QUALITY STRUCTURES MUST BE CHECKED AND CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. CONTACT APPROPRIATE REGULATORY AGENCIES.
- MAINTENANCE OF STORMCEPTOR UNITS SHOULD BE DONE BY A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN UNIT. THE PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED.
- INLET AND OUTLET PIPES MUST BE CHECKED FOR ANY OBSTRUCTIONS AND IF ANY OBSTRUCTIONS ARE FOUND THEY MUST BE REMOVED. STRUCTURAL PARTS OF THE STORMCEPTOR WILL BE REPAIRED AS NEEDED.
- OWNER SHALL RETAIN AND MAKE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.

AS-BUILT

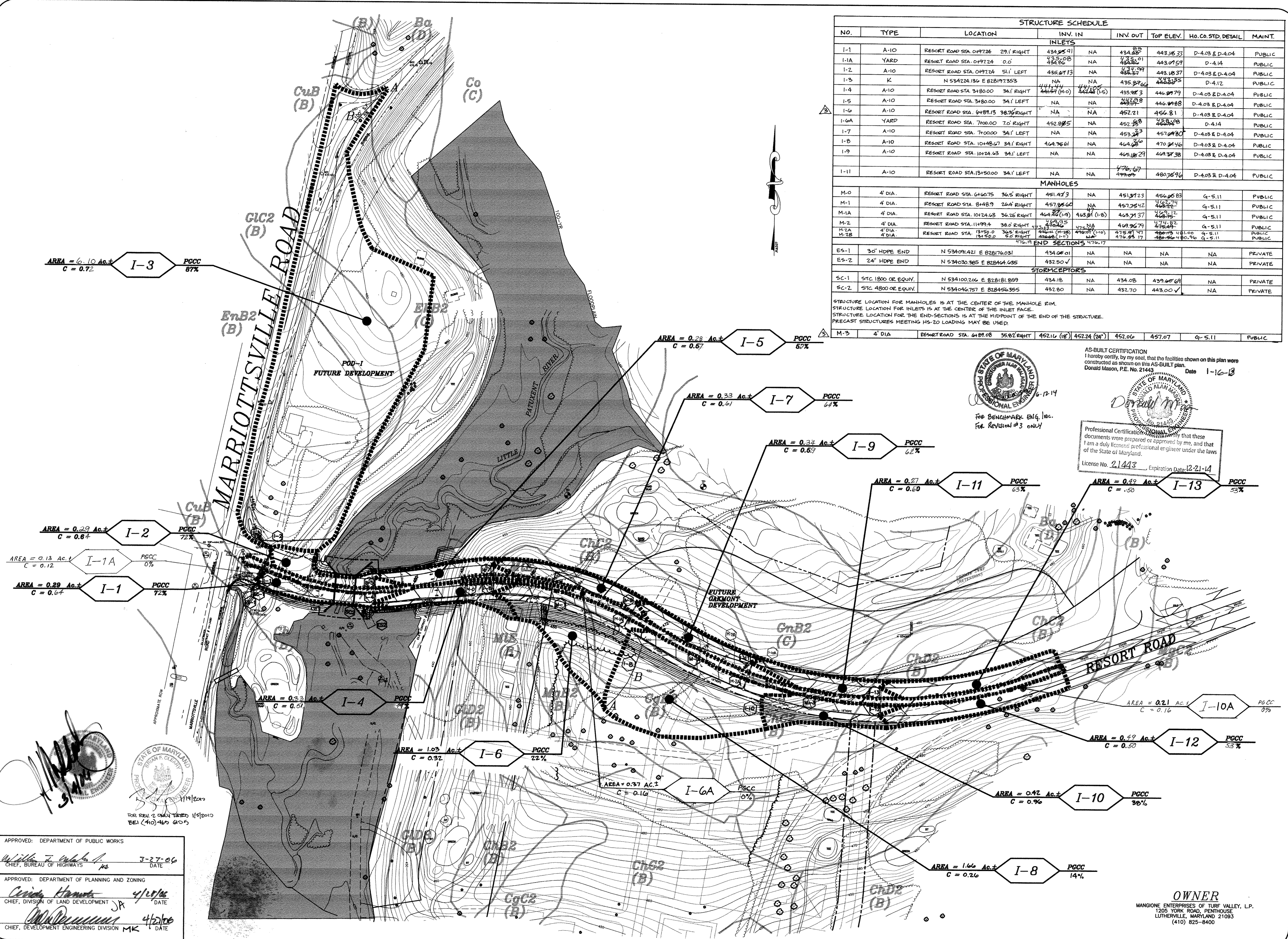
date	MARCH 08
project	01062
illustration	MAP
scale	1"=50'
no.	
description	revisions

1-5	2-0	11/5/06	
1	REVISED STRUCTURE SCHEDULE		
2	ADDED INLETS, REVISED PIPE SCHEDULE, AND PIPE DATA		

TURF VALLEY PROF BLDGS RESORT RD STA. 0+00 TO 13+66.83  
P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-4  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
THIRD ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**MILDENBERG, BOENDER & ASSOC., INC.**  
Planners Surveyors Engineers  
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 997-0296 Fax: (410) 997-0298 Fax



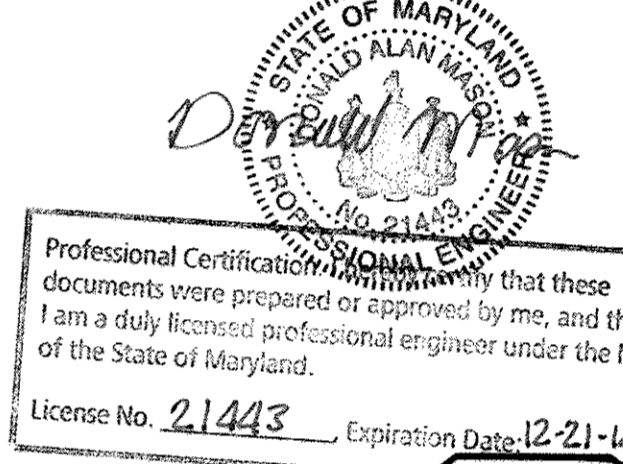


STRUCTURE SCHEDULE									
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD. DETAIL	MAINT.		
INLETS									
I-1	A-10	RESORT ROAD STA. 0497.24 29.1' RIGHT	434.85 91	NA	434.85 33	D-4.03 & D-4.04	PUBLIC		
I-1A	YARD	RESORT ROAD STA. 0497.24 0.0'	434.85 08	NA	434.85 01	D-4.14	PUBLIC		
I-2	A-10	RESORT ROAD STA. 0497.24 51.1' LEFT	435.87 13	NA	435.87 09	D-4.03 & D-4.04	PUBLIC		
I-3	K	N 534224.136 E 828197.353	NA	NA	435.87 06	D-4.12	PUBLIC		
I-4	A-10	RESORT ROAD STA. 3480.00 34.1' RIGHT	441.14 44	NA	441.14 15	D-4.03 & D-4.04	PUBLIC		
I-5	A-10	RESORT ROAD STA. 3480.00 34.1' LEFT	NA	NA	442.08 8	D-4.03 & D-4.04	PUBLIC		
I-6	A-10	RESORT ROAD STA. 6481.15 38.76' RIGHT	NA	NA	442.08 8	D-4.03 & D-4.04	PUBLIC		
I-6A	YARD	RESORT ROAD STA. 7000.00 7.0' RIGHT	452.08 5	NA	452.08 5	D-4.14	PUBLIC		
I-7	A-10	RESORT ROAD STA. 7000.00 34.1' LEFT	NA	NA	452.08 3	D-4.03 & D-4.04	PUBLIC		
I-8	A-10	RESORT ROAD STA. 10448.67 34.1' RIGHT	464.76 61	NA	464.76 61	D-4.03 & D-4.04	PUBLIC		
I-9	A-10	RESORT ROAD STA. 10424.63 34.1' LEFT	NA	NA	464.76 29	D-4.03 & D-4.04	PUBLIC		
I-11	A-10	RESORT ROAD STA. 13450.00 34.1' LEFT	NA	NA	476.67	D-4.03 & D-4.04	PUBLIC		
MANHOLES									
M-0	4' DIA.	RESORT ROAD STA. 6460.75 36.5' RIGHT	451.47 9	NA	451.47 23	G-5.11	PUBLIC		
M-1	4' DIA.	RESORT ROAD STA. 8448.9 26.4' RIGHT	457.95 60	NA	457.95 42	G-5.11	PUBLIC		
M-1A	4' DIA.	RESORT ROAD STA. 10424.63 36.25' RIGHT	464.81 (1-9)	463.81 (1-8)	463.81 37	G-5.11	PUBLIC		
M-2	4' DIA.	RESORT ROAD STA. 11499.4 38.0' RIGHT	476.35	NA	476.35	G-5.11	PUBLIC		
M-2A	4' DIA.	RESORT ROAD STA. 13450.0 36.5' RIGHT	476.35 (1-28)	476.35 (1-10)	476.35 17	G-5.11	PUBLIC		
M-2B	4' DIA.	RESORT ROAD STA. 13450.0 36.5' RIGHT	476.35 (1-11)	476.35 (1-17)	476.35 17	G-5.11	PUBLIC		
END SECTIONS									
ES-1	30" HDPE END	N 534091.421 E 828176.031	434.08 01	NA	NA	NA	PRIVATE		
ES-2	24" HDPE END	N 534030.365 E 828464.685	432.50 0	NA	NA	NA	PRIVATE		
STORMCEPTORS									
SC-1	STC 1800 OE EQUIV.	N 534100.206 E 828181.899	434.18	NA	434.08	439.60 69	NA	PRIVATE	
SC-2	STC 4800 OE EQUIV.	N 534046.757 E 828456.355	432.80	NA	432.70	443.00 0	NA	PRIVATE	
STORMCEPTORS									
M-3	4' DIA.	RESORT ROAD STA. 6481.15 35.82' RIGHT	452.14 (16)	452.24 (24)	452.06	457.07	G-5.11	PUBLIC	

STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE MANHOLE RIM.  
 STRUCTURE LOCATION FOR INLETS IS AT THE CENTER OF THE INLET FACE.  
 STRUCTURE LOCATION FOR THE END-SECTIONS IS AT THE MIDPOINT OF THE END OF THE STRUCTURE.  
 PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.



AS-BUILT CERTIFICATION  
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.  
 Donald Mason, P.E. No. 21443 Date 1-16-13



Professional Certification  
 I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
 License No. 21443, Expiration Date: 12-21-14

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William T. ...* 3-27-06  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cynthia Hamon* 4/20/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION *MK* 4/20/06

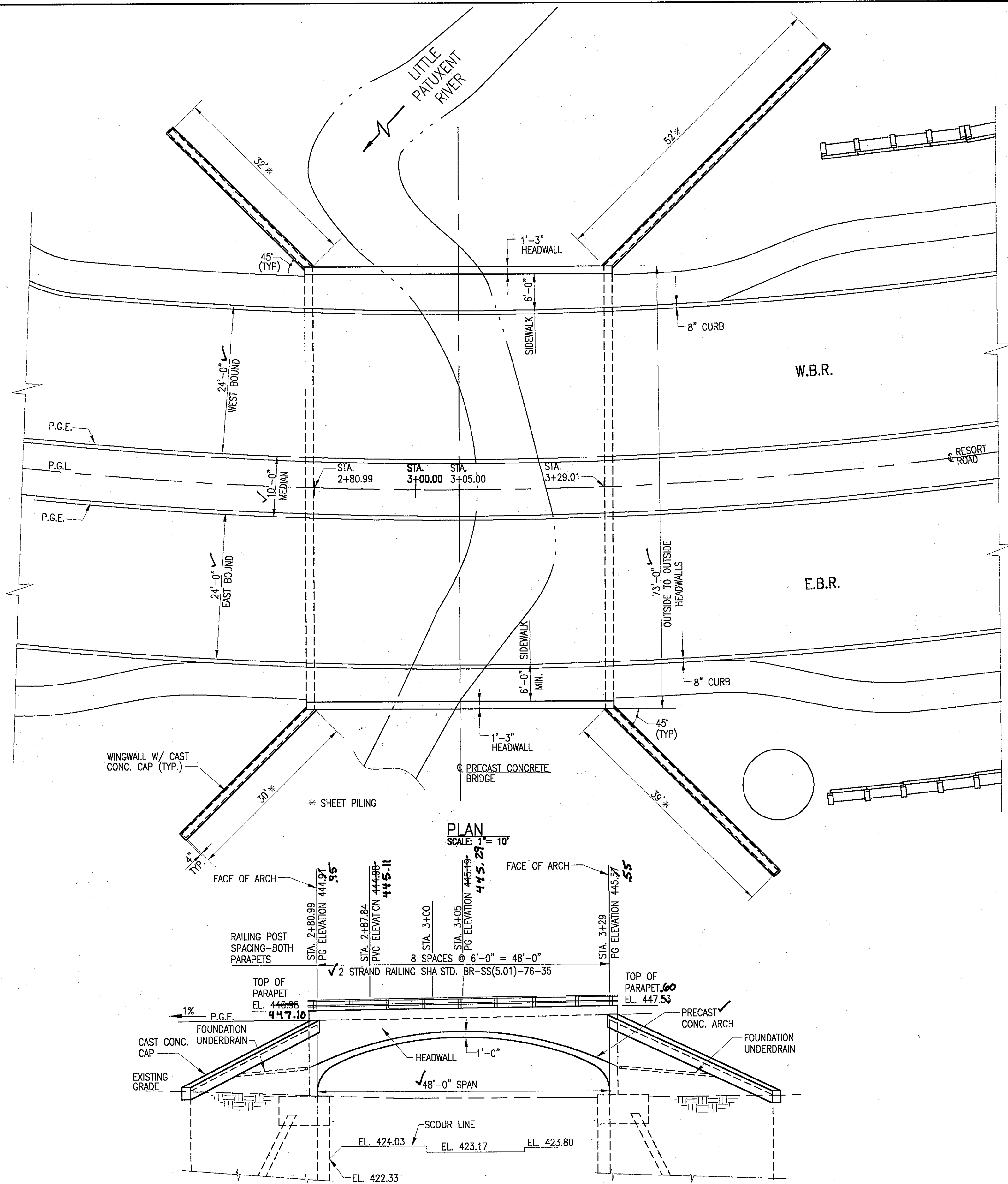
Project: 01052  
 date: MARCH 06  
 illustration: MAP  
 scale: 1" = 100'

3 UPDATE I-1, I-2, I-3, I-4, I-5, I-6, I-7, I-8, I-9, I-10, I-11, I-12, I-13, I-14, I-15, I-16, I-17, I-18, I-19, I-20, I-21, I-22, I-23, I-24, I-25, I-26, I-27, I-28, I-29, I-30, I-31, I-32, I-33, I-34, I-35, I-36, I-37, I-38, I-39, I-40, I-41, I-42, I-43, I-44, I-45, I-46, I-47, I-48, I-49, I-50, I-51, I-52, I-53, I-54, I-55, I-56, I-57, I-58, I-59, I-60, I-61, I-62, I-63, I-64, I-65, I-66, I-67, I-68, I-69, I-70, I-71, I-72, I-73, I-74, I-75, I-76, I-77, I-78, I-79, I-80, I-81, I-82, I-83, I-84, I-85, I-86, I-87, I-88, I-89, I-90, I-91, I-92, I-93, I-94, I-95, I-96, I-97, I-98, I-99, I-100, I-101, I-102, I-103, I-104, I-105, I-106, I-107, I-108, I-109, I-110, I-111, I-112, I-113, I-114, I-115, I-116, I-117, I-118, I-119, I-120, I-121, I-122, I-123, I-124, I-125, I-126, I-127, I-128, I-129, I-130, I-131, I-132, I-133, I-134, I-135, I-136, I-137, I-138, I-139, I-140, I-141, I-142, I-143, I-144, I-145, I-146, I-147, I-148, I-149, I-150, I-151, I-152, I-153, I-154, I-155, I-156, I-157, 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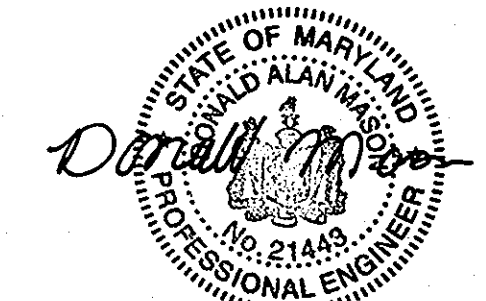


GENERAL NOTES

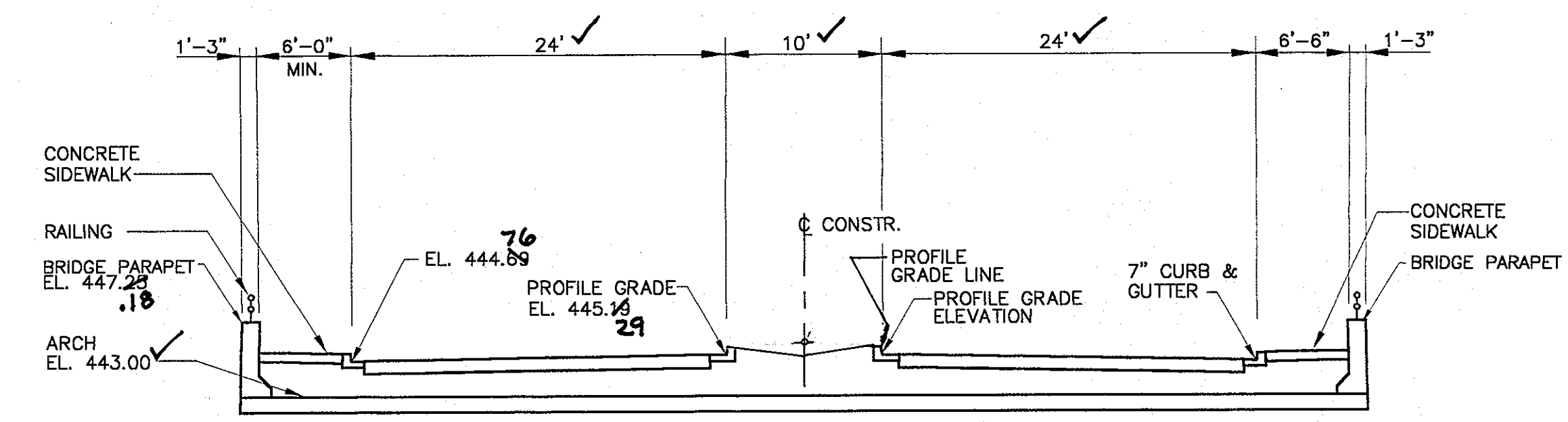
- SPECIFICATIONS: SHA SPECIFICATIONS DATED JANUARY, 2001 REVISION THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION
- AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 1996 FOR DESIGN INCLUDING ALL INTERIM SPECIFICATIONS THROUGH 1997.
- SPECIFICATIONS FOR MANUFACTURE AND INSTALLATION OF CON/SPAN BRIDGE SYSTEMS
- LOADING HS-25
- CAST CONCRETE ALL CONCRETE FOR ABUTMENT BACKWALLS AND PARAPETS AT ABUTMENTS AND CAST-IN-PLACE PORTIONS OF SUPERSTRUCTURE SHALL BE MIX NO. 6 (4500 PSI). ALL OTHER CAST-IN-PLACE STRUCTURE CONCRETE SHALL BE MIX NO. 3 (3500 PSI).
- REINFORCING STEEL REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60. ALL SPLICES, NOT SHOWN, SHALL BE LAPPED A MINIMUM OF 38 BAR DIAMETERS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM OF GRADE BEAM WHICH SHALL HAVE 3" MIN. COVER.
- ONLY GRADE 60 CAN BE USED ON THIS PROJECT
- KEYS ALL KEYS ARE NOMINAL SIZE
- PRECAST CONCRETE ARCH PRECAST CONCRETE ARCH SEGMENTS AND HEADWALLS SHALL BE A THREE-SIDED ARCH BRIDGE WITH A 48 FOOT SPAN AND A 10 FOOT RISE AS MANUFACTURED BY CON/SPAN BRIDGE SYSTEMS, DAYTON, OHIO OR EQUIVALENT.
- STRUCTURAL STEEL & SHEET PILING SHEET PILING PZ27 SHALL BE ASTM A-572 GRADE 50, STEEL TUBES SHALL BE ASTM A-500 GRADE B, BOLTS SHALL BE ASTM A-307. ALL OTHER STEEL SHALL BE ASTM A-36. ALL WELDING SHALL BE PERFORMED BY MD. STATE CERTIFIED WELDERS USING E-70 ELECTRODES.
- PILE DRIVING HP 12X53 PILES ARE TO BE DRIVEN TO PRACTICAL REFUSAL FOR 95 TON CAPACITY. SHEET PILES ARE TO BE DRIVEN TO PRACTICAL REFUSAL WITH A VIBRATORY HAMMER SIZED EQUAL TO OR GREATER THAN AN IC812 AND THEN SEATED INTO ROCK TO PRACTICAL REFUSAL WITH AN IMPACT HAMMER SIZED EQUAL TO OR GREATER THAN A DELMAG D19.



AS-BUILT CERTIFICATION  
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.  
Donald Mason, P.E. No. 21443 Date 1-16-13



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 21443, Expiration Date: 12-21-14



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William T. Vukobrat* 3-27-06  
CHIEF BUREAU OF HIGHWAYS HS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Clayton Hamstra* 4/28/06  
CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

*Michael J. Walkley* 4/27/06  
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

UPSTREAM ELEVATION  
SCALE: 1" = 10'

MICHAEL J. WALKLEY, P. A.  
Consulting Engineers  
2000 Clipper Park Road, Suite 200  
Baltimore, Maryland 21211  
Telephone (410) 889-7700  
Fax (410) 889-7756

DES: MJW  
DRN: NFJ  
CHK: PDA  
DATE: 4/6/05

REVISION  
1 REVISED TYPICAL SECTION  
DATE: 4/6/05

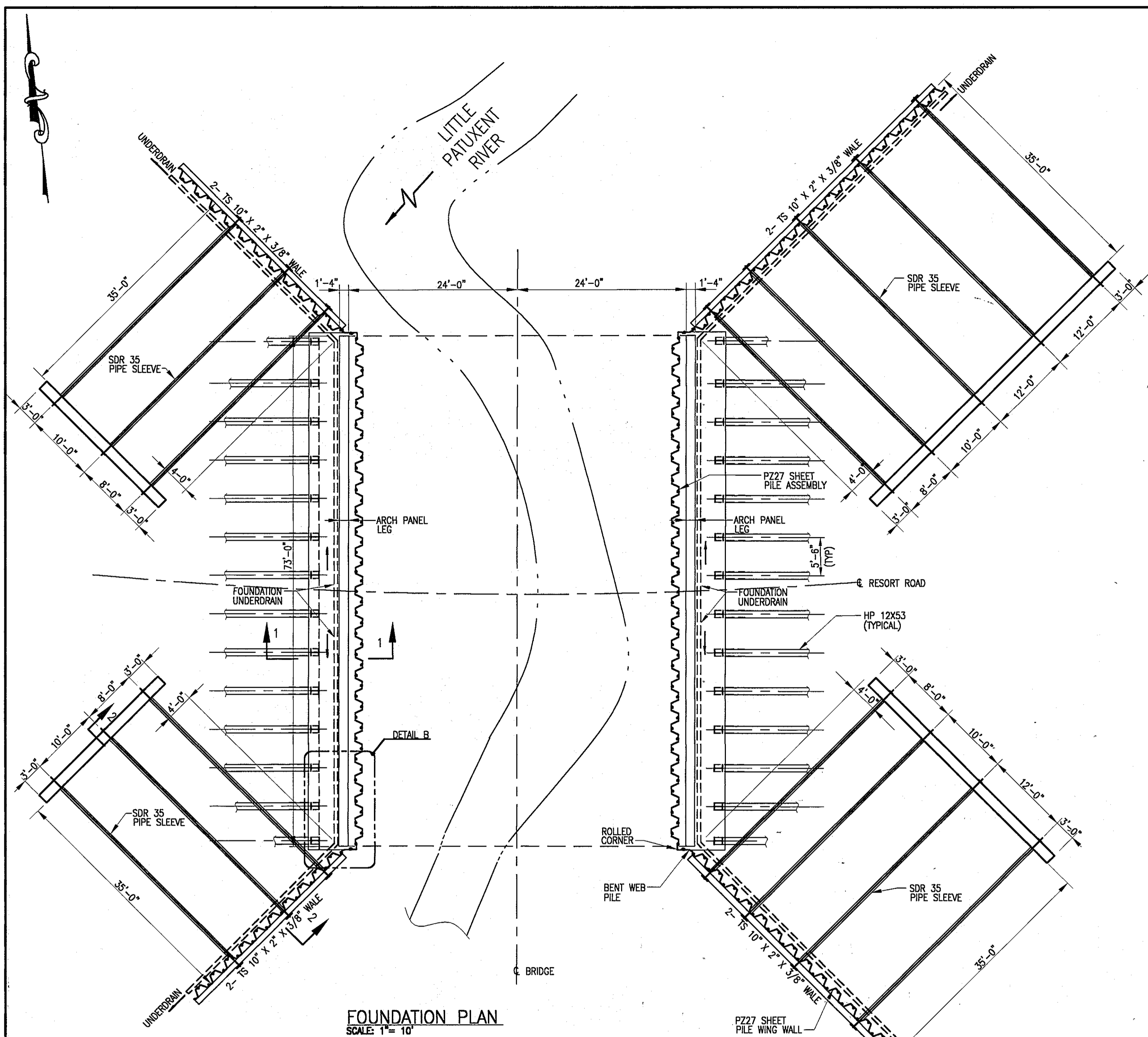
BRIDGE  
PLAN AND ELEVATION

SCALE: 1" = 10'

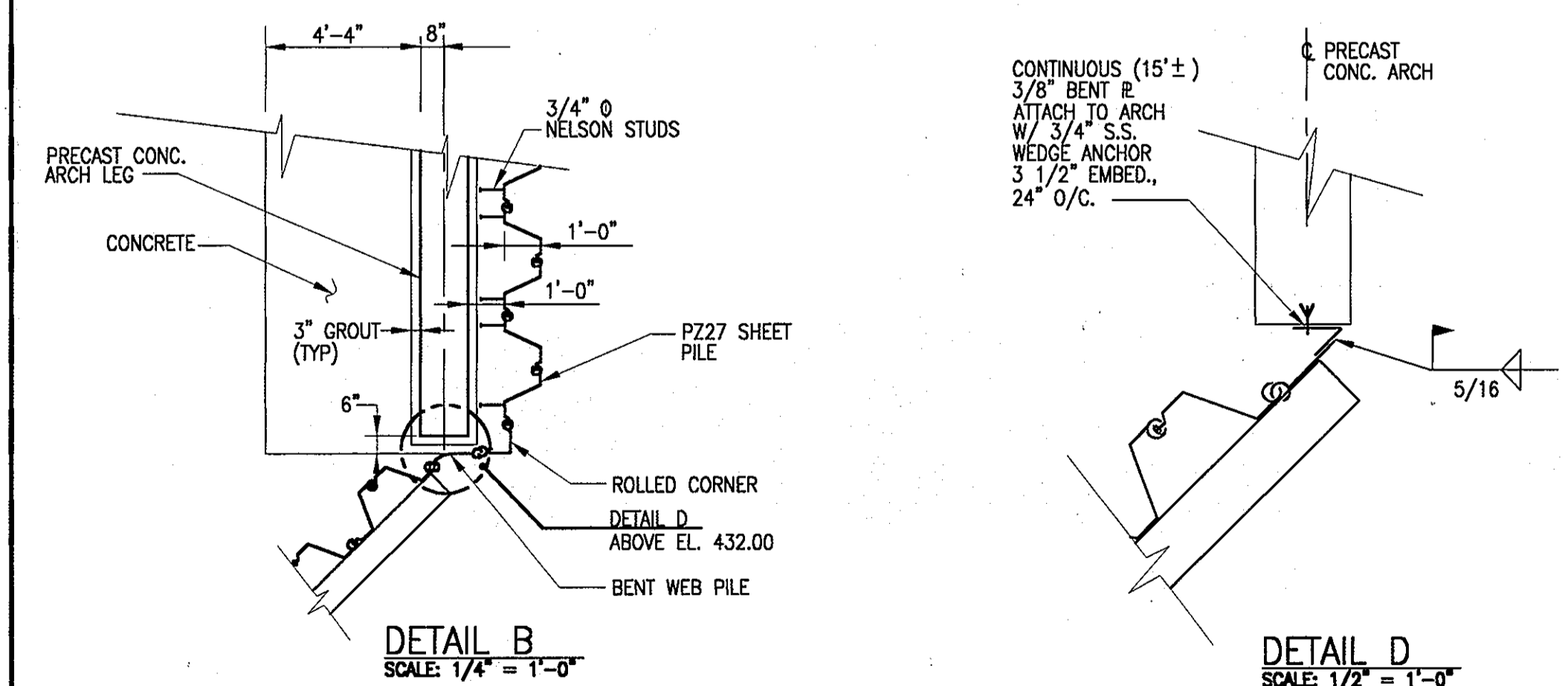
TURF VALLEY PROF. BLDGS RESORT RD STA. 0+00 TO 13+66.83  
P/O PODS I, J, K, L AND S, PARCELS I THRU P  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 11 OF 16

AS-BUILT

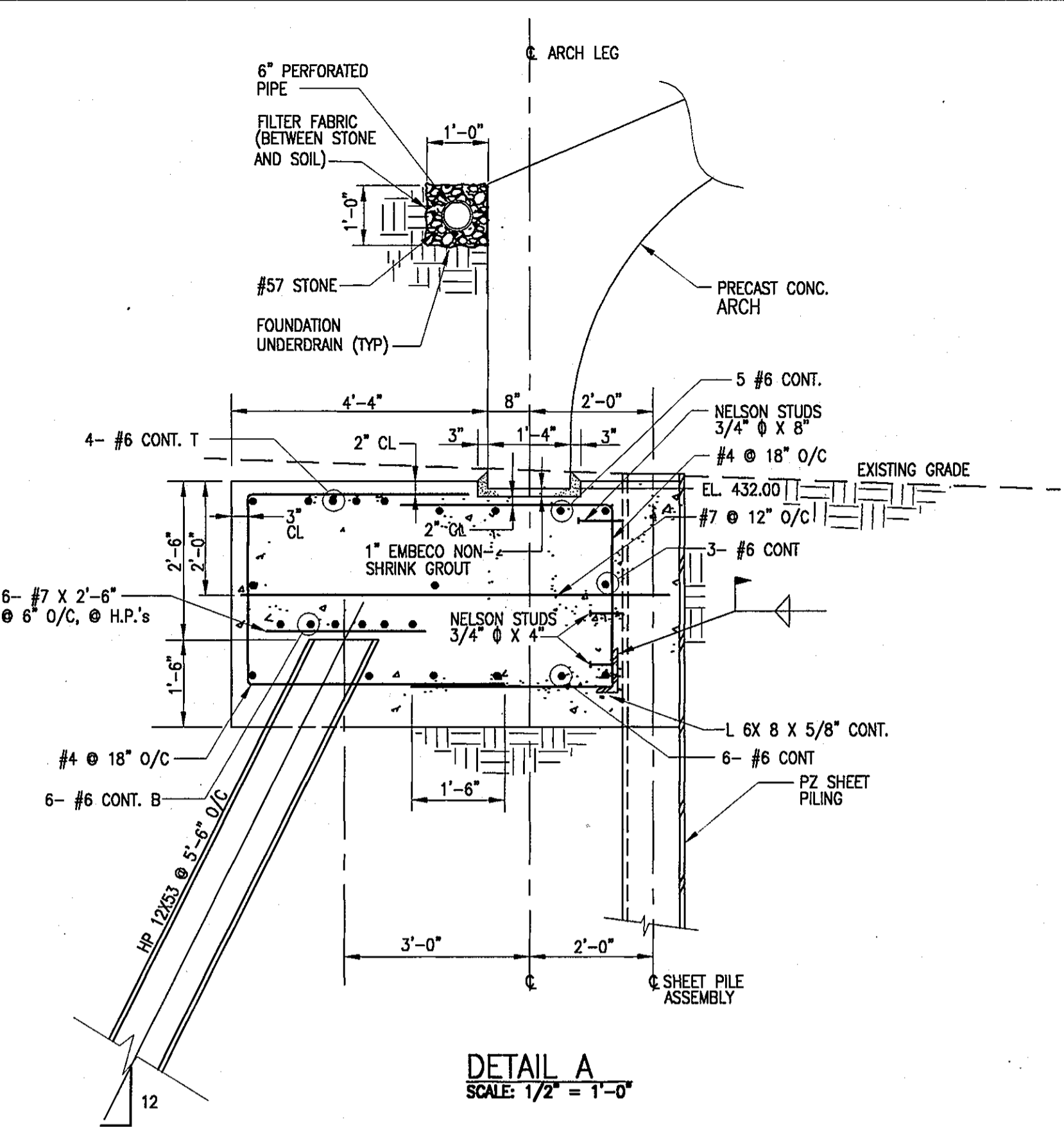


FOUNDATION PLAN  
SCALE: 1" = 10'

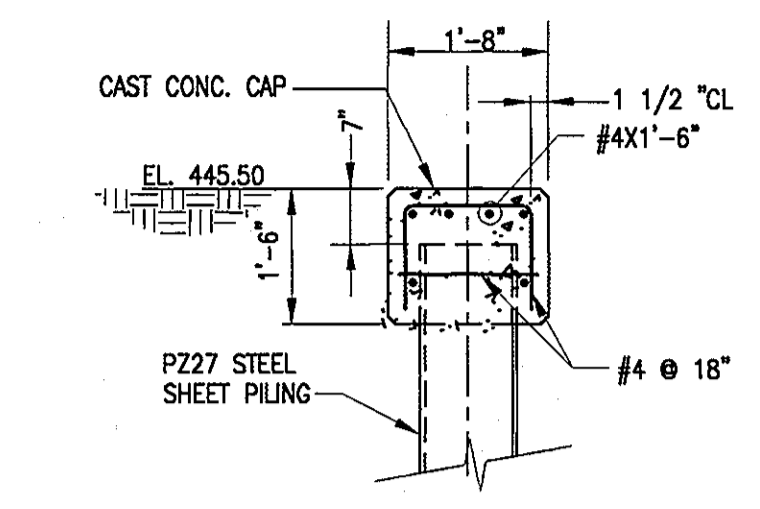


DETAIL B  
SCALE: 1/4" = 1'-0"

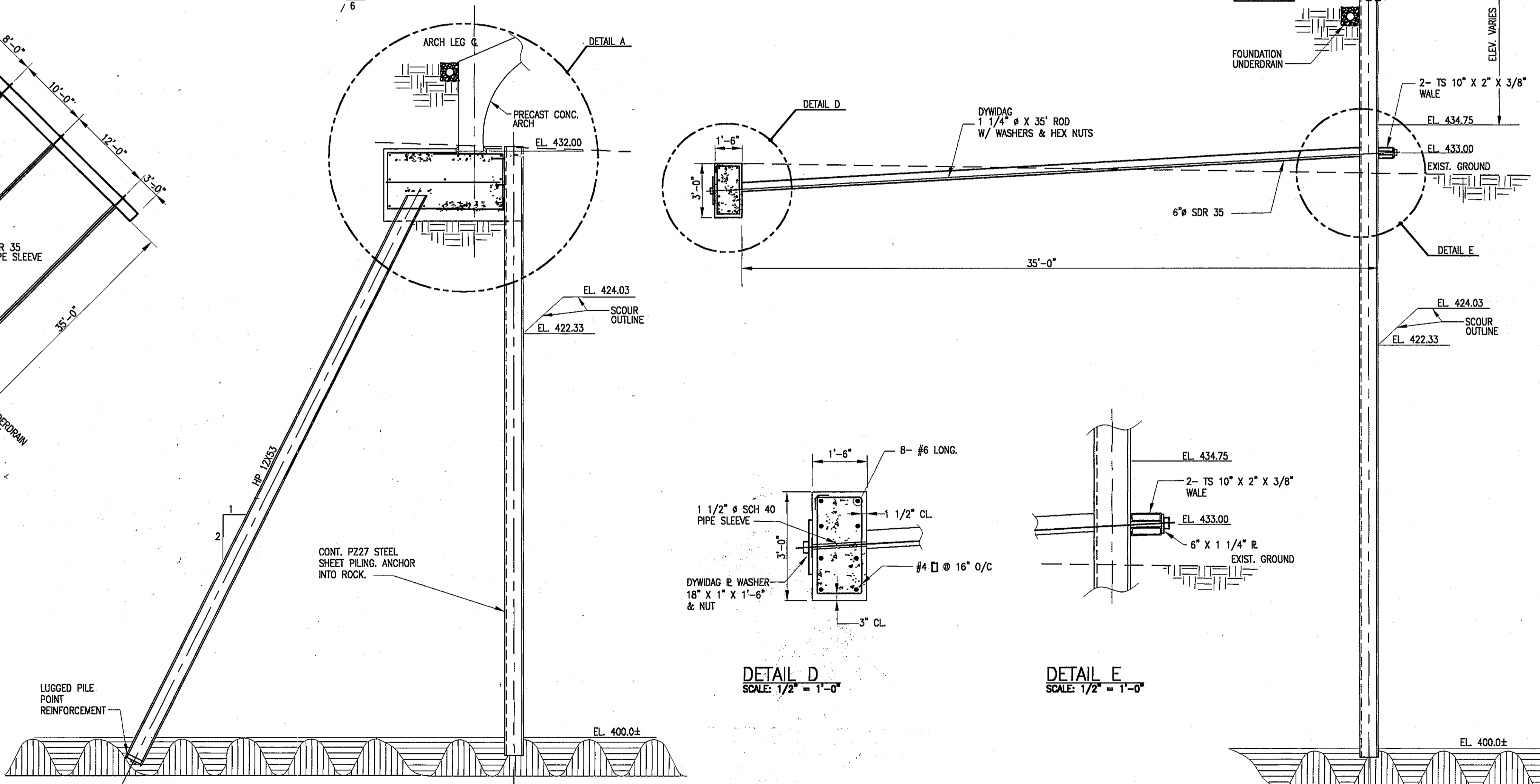
DETAIL D  
SCALE: 1/2" = 1'-0"



DETAIL A  
SCALE: 1/2" = 1'-0"



DETAIL C  
SCALE: 1/2" = 1'-0"



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

SECTION 2  
SCALE: 1/4" = 1'-0"

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter Z. ...*  
CHIEF BUREAU OF HIGHWAYS  
DATE: 3-27-06

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamer*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 4/28/06  
*Mark ...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 4/27/06

MICHAEL J. WALKLEY, P. A.  
Consulting Engineers  
2000 Clipper Park Road, Suite 200  
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Telephone (410) 889-7700  
Fax (410) 889-7756



DES: MJW	BY: NO.	REVISION	DATE
DRN: NFJ			
CHK: PDA			
DATE: 4/6/05			

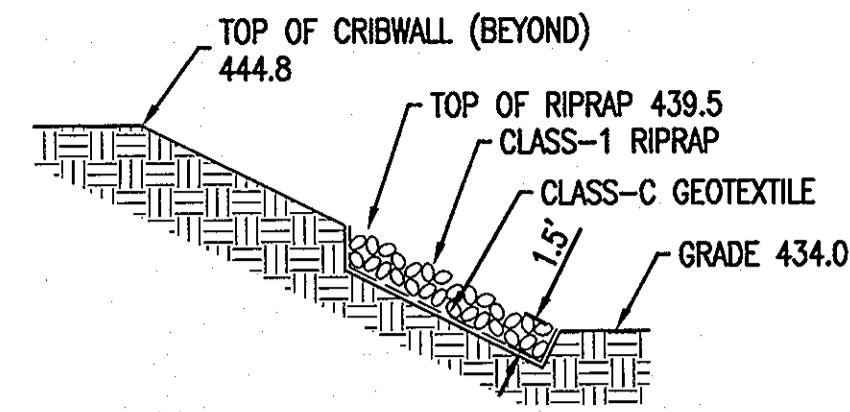
BRIDGE FOUNDATION  
PLAN, SECTIONS & DETAILS

SCALE: 1" = 10' JOB NO. W576 03-029

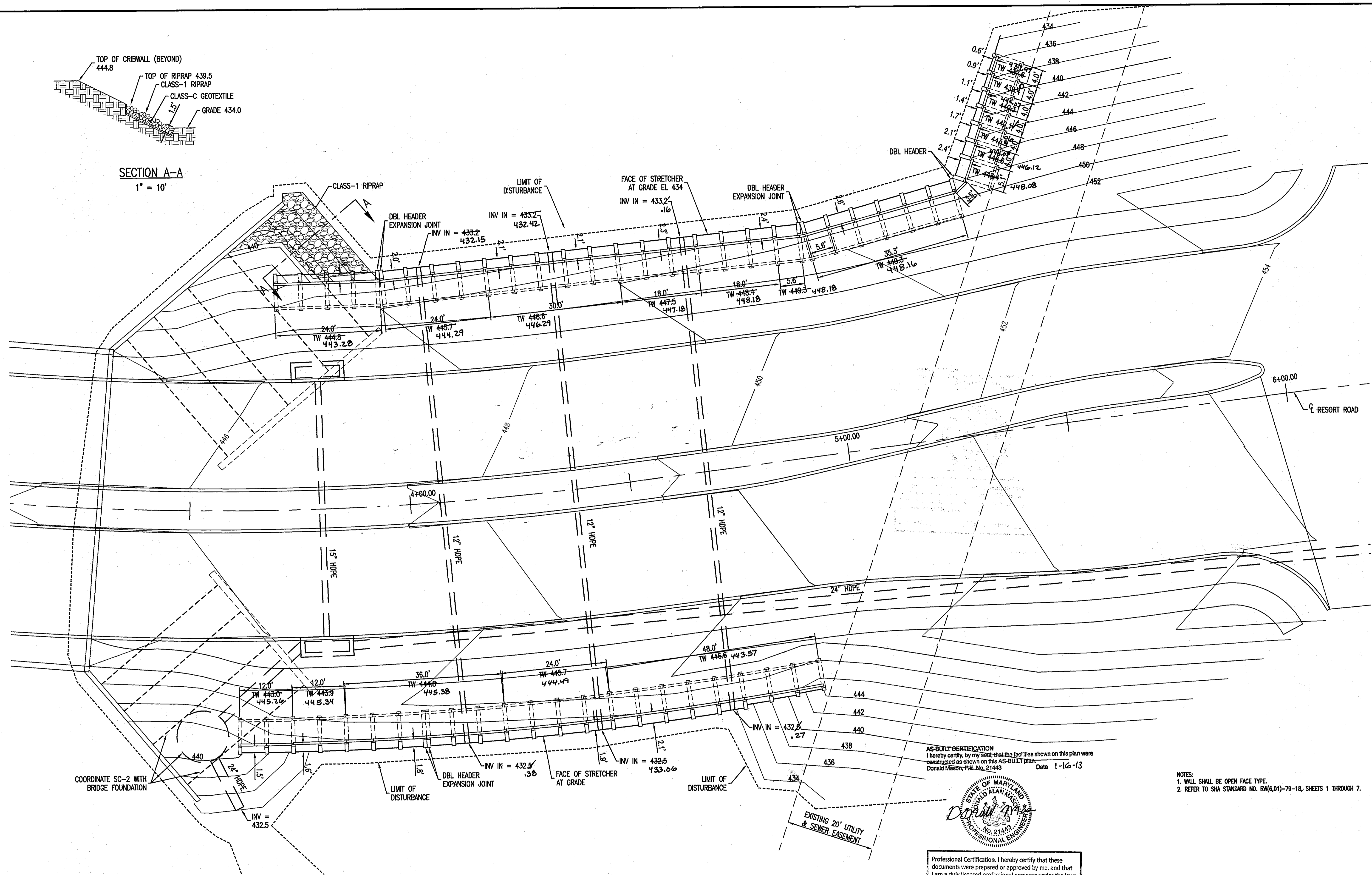
TURF VALLEY PROF. BLDGS RESORT RD STA. 0+00 TO 13+66.83  
P/O PODS I, J, K, L AND S, PARCELS I THRU P  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 12 OF 16

AS-BUILT



SECTION A-A  
1" = 10'



AS-BUILT CERTIFICATION  
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.  
Donald Mason, P.E. No. 21443 Date 1-16-13



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 21443, Expiration Date: 12-21-14

- NOTES:  
1. WALL SHALL BE OPEN FACE TYPE.  
2. REFER TO SHA STANDARD NO. RW(6,01)-79-18, SHEETS 1 THROUGH 7.

APPROVED: DEPARTMENT OF PUBLIC WORKS	
<i>William J. White, Jr.</i> CHIEF BUREAU OF HIGHWAYS	3-27-06 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Cindy Hamilton</i> CHIEF, DIVISION OF LAND DEVELOPMENT	4/25/06 DATE
<i>Michael J. Walkley</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/20/06 DATE

**MICHAEL J. WALKLEY, P. A.**  
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2000 Clipper Park Road, Suite 200  
Baltimore, Maryland 21211  
Telephone (410) 889-7700  
Fax (410) 889-7756

PLAN  
1" = 10'

DES: MJW	
DRN: HP	
CHK: PDA	
DATE: 9/20/05	BY NO. REVISION
	1. REVISED GRADING
	9/5/06

**CRIB WALL PLAN**

SCALE: 1"=10'

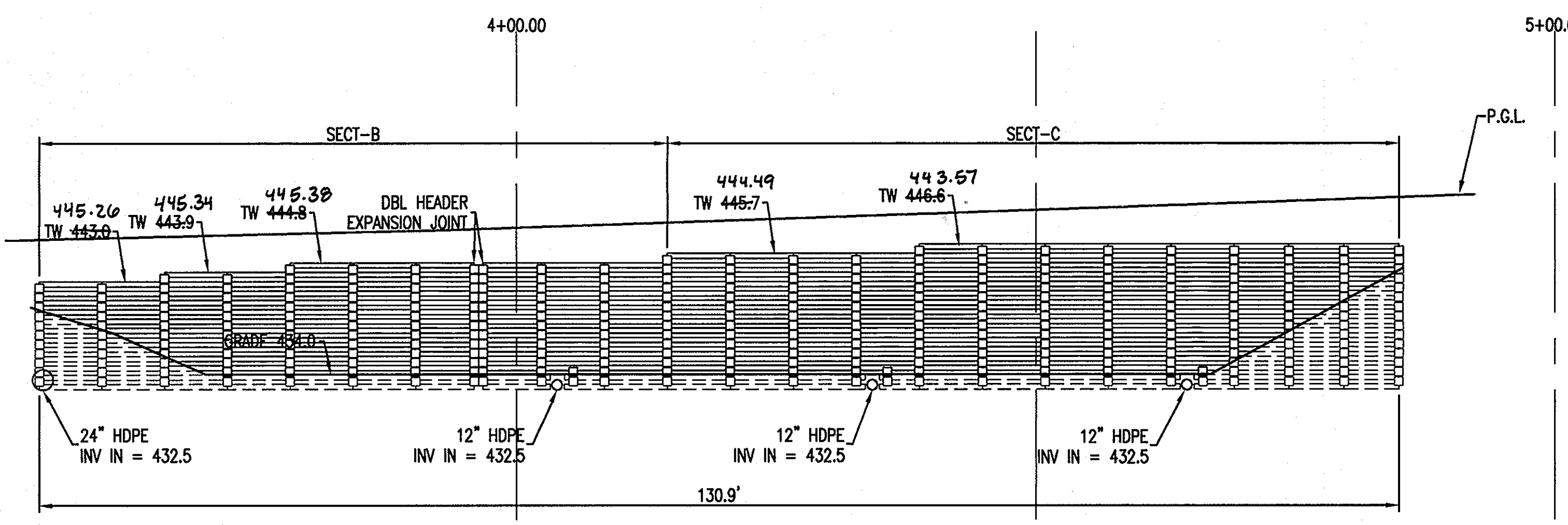
JOB NO. W576 03-029

TURF VALLEY PROF. BLDGS RESORT RD STA. 0+00 TO 13+66.83  
P/O PODS I, J, K, L AND S, PARCELS I THRU P  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16

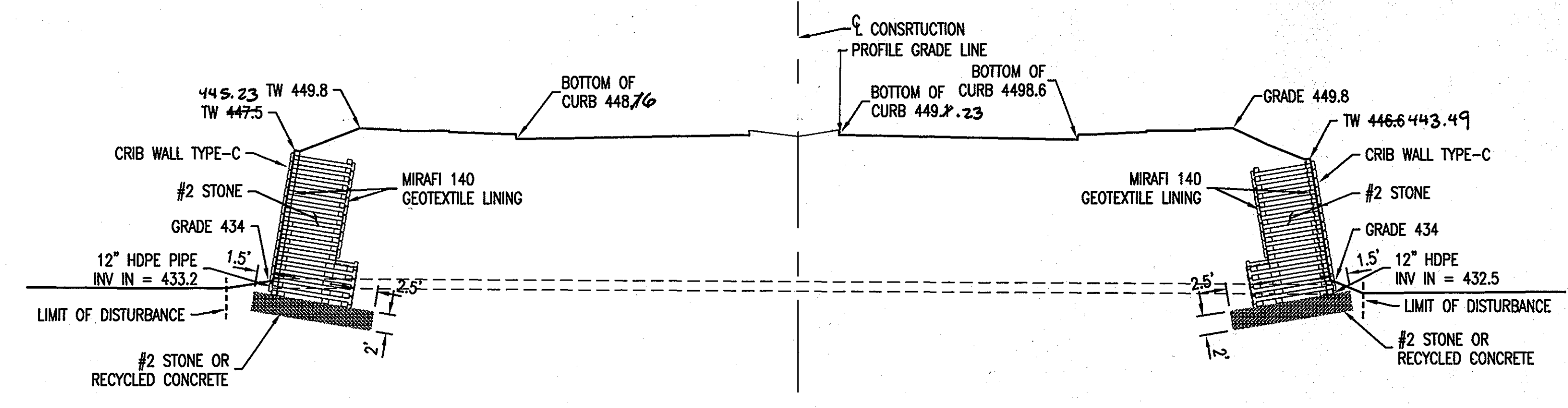
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 13 OF 16

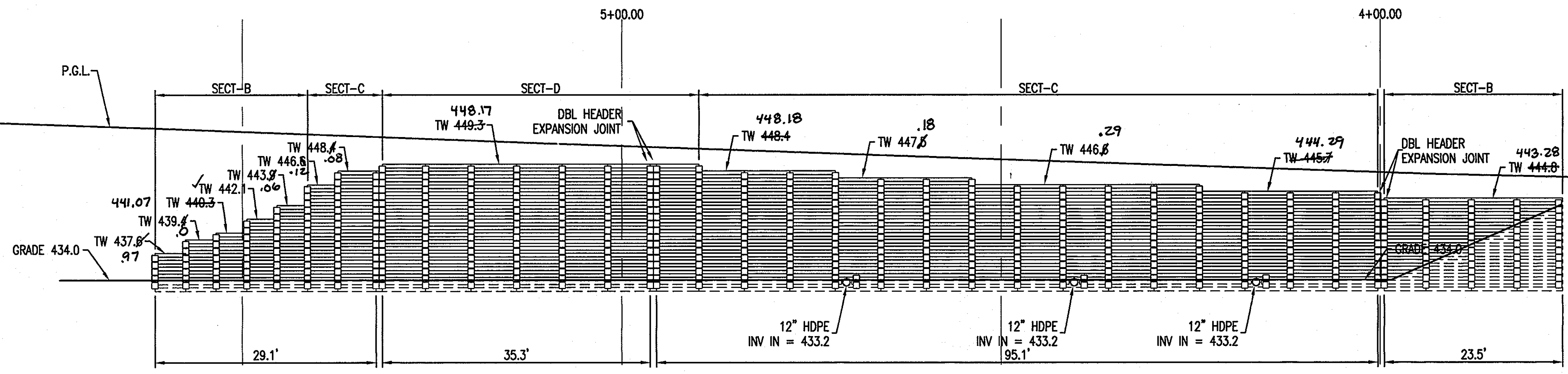
**AS-BUILT**



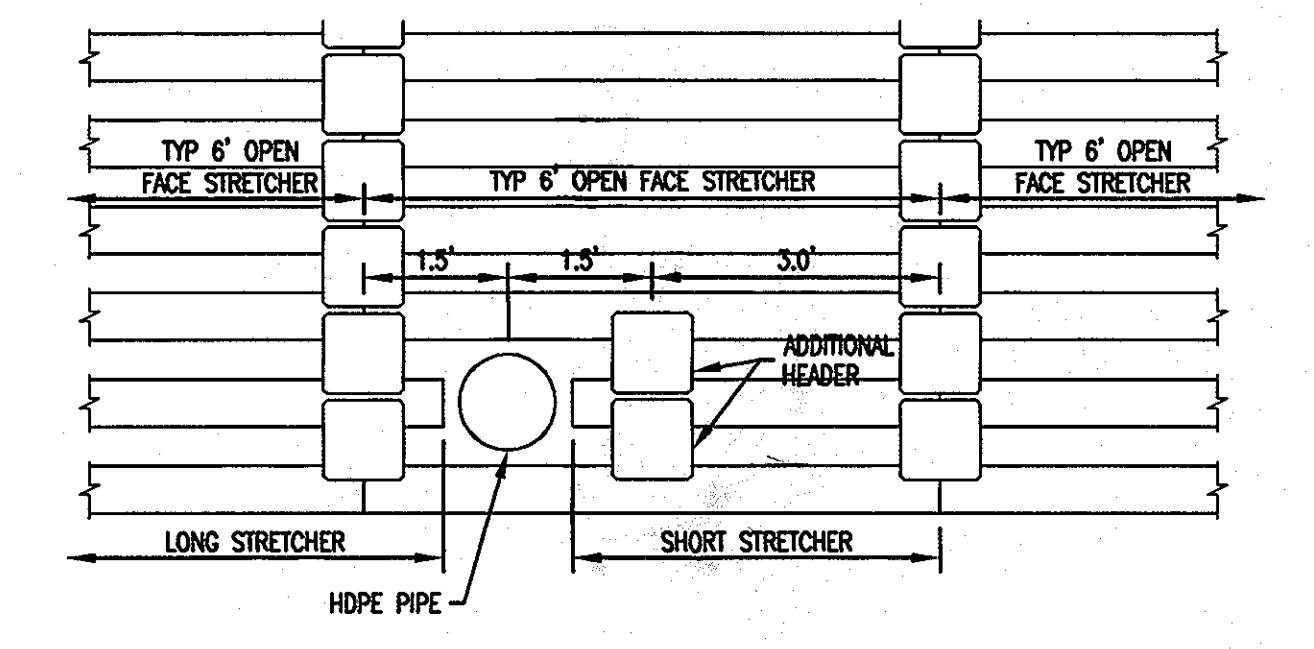
**SOUTH ELEVATION (DEVELOPED)**  
1" = 10'



**SECTION AT STATION 4+47.80 LOOKING EAST**  
1" = 10'



**NORTH ELEVATION (DEVELOPED)**  
1" = 10'



**ELEVATION DETAIL**  
1/2" = 1-0"

AS-BUILT CERTIFICATION  
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan.  
Donald Mason, P.E. No. 21443 Date 1-16-13



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 21443, Expiration Date: 12-21-14

- NOTES:  
1. WALL SHALL BE OPEN FACE TYPE.  
2. REFER TO SHA STANDARD NO. RW(6.01)-79-18, SHEETS 1 THROUGH 7.

**GENERAL NOTES**

Specifications: Latest SHA Specifications and Special Provisions for materials and construction. Latest ASHTO Standard Specification for Highway Bridges for design for reinforced concrete design, FC(20) lbs. per sq. ft.

Concrete: All concrete for crib wall shall be No. 63 (2000) psi.

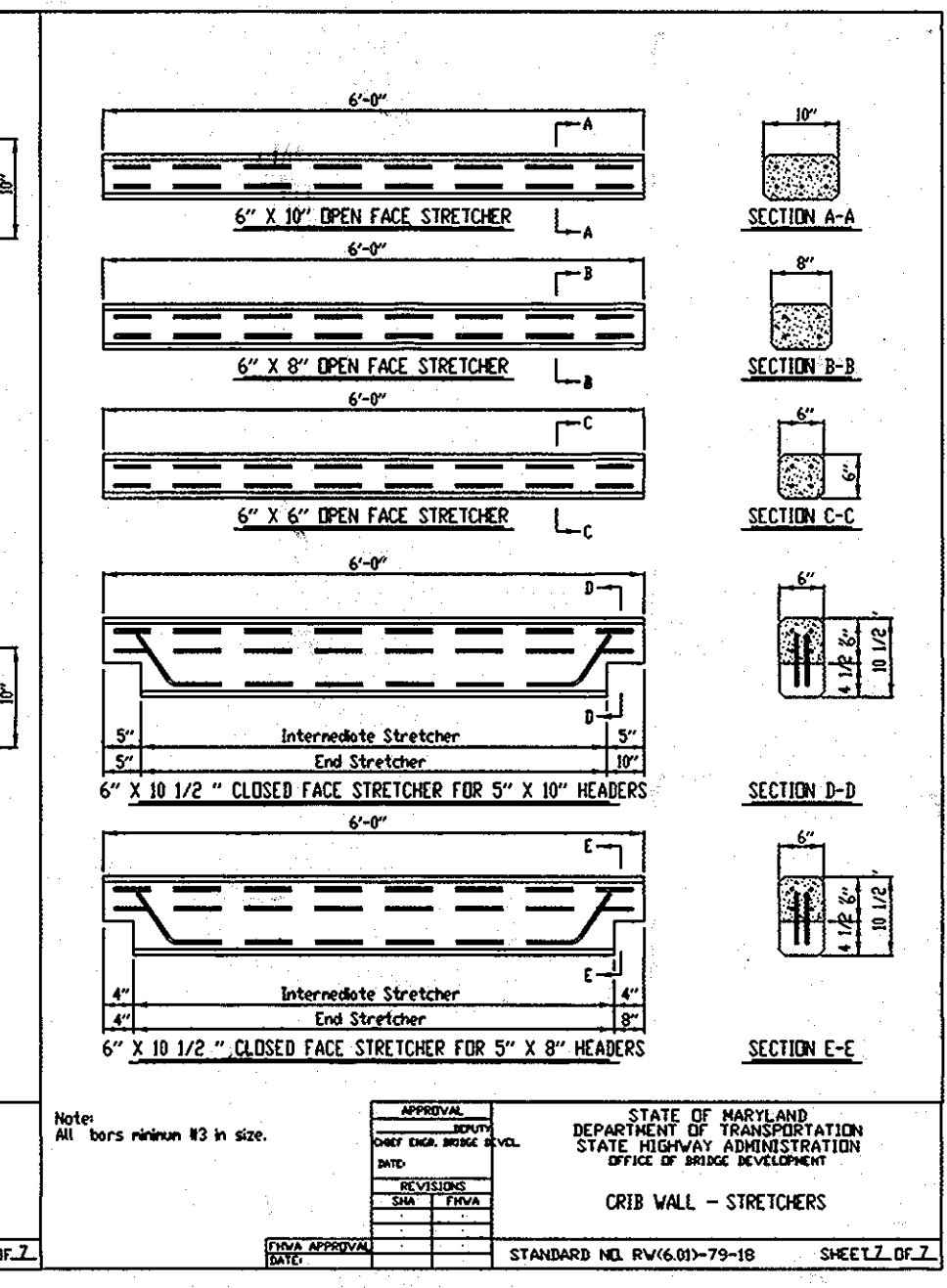
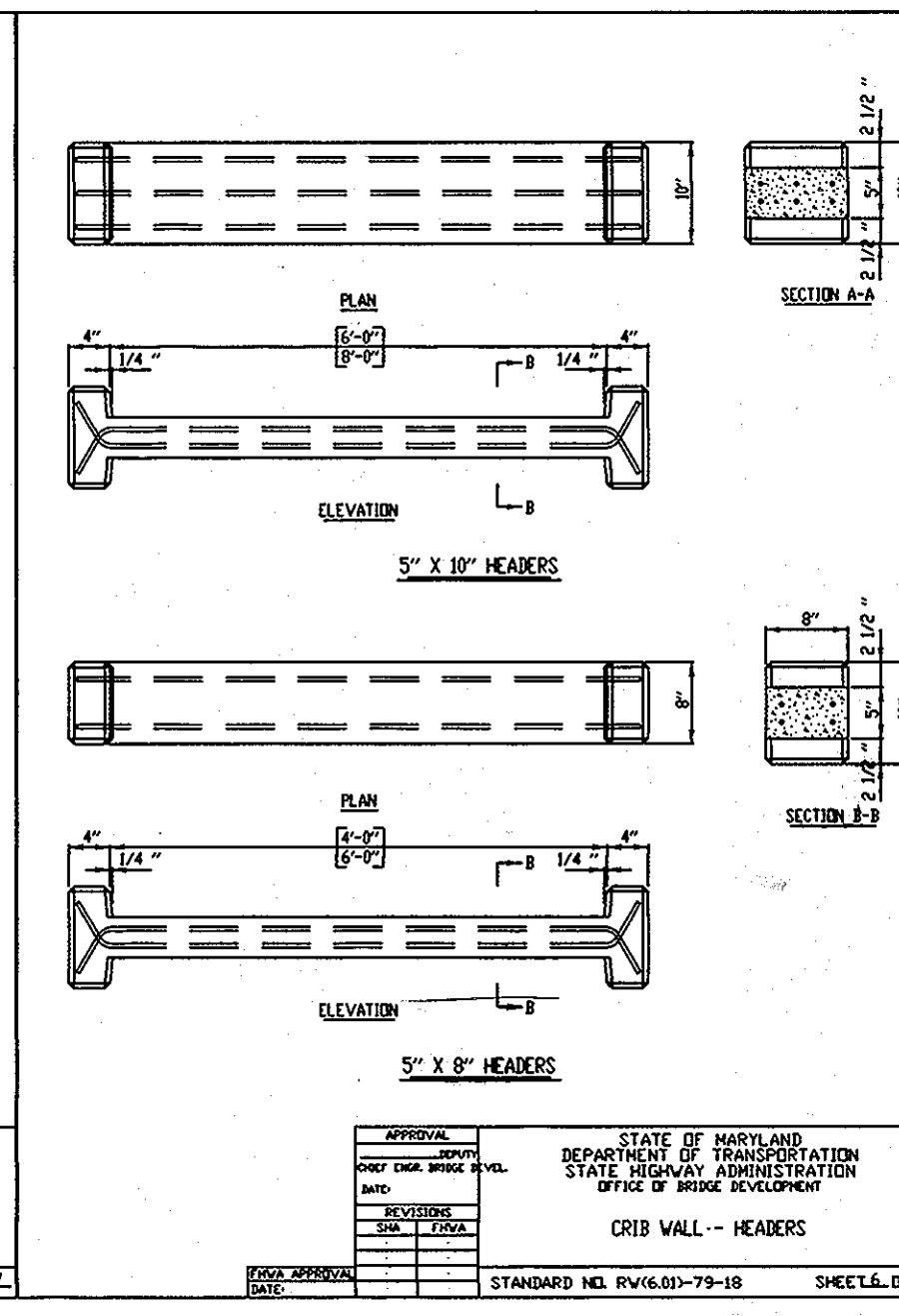
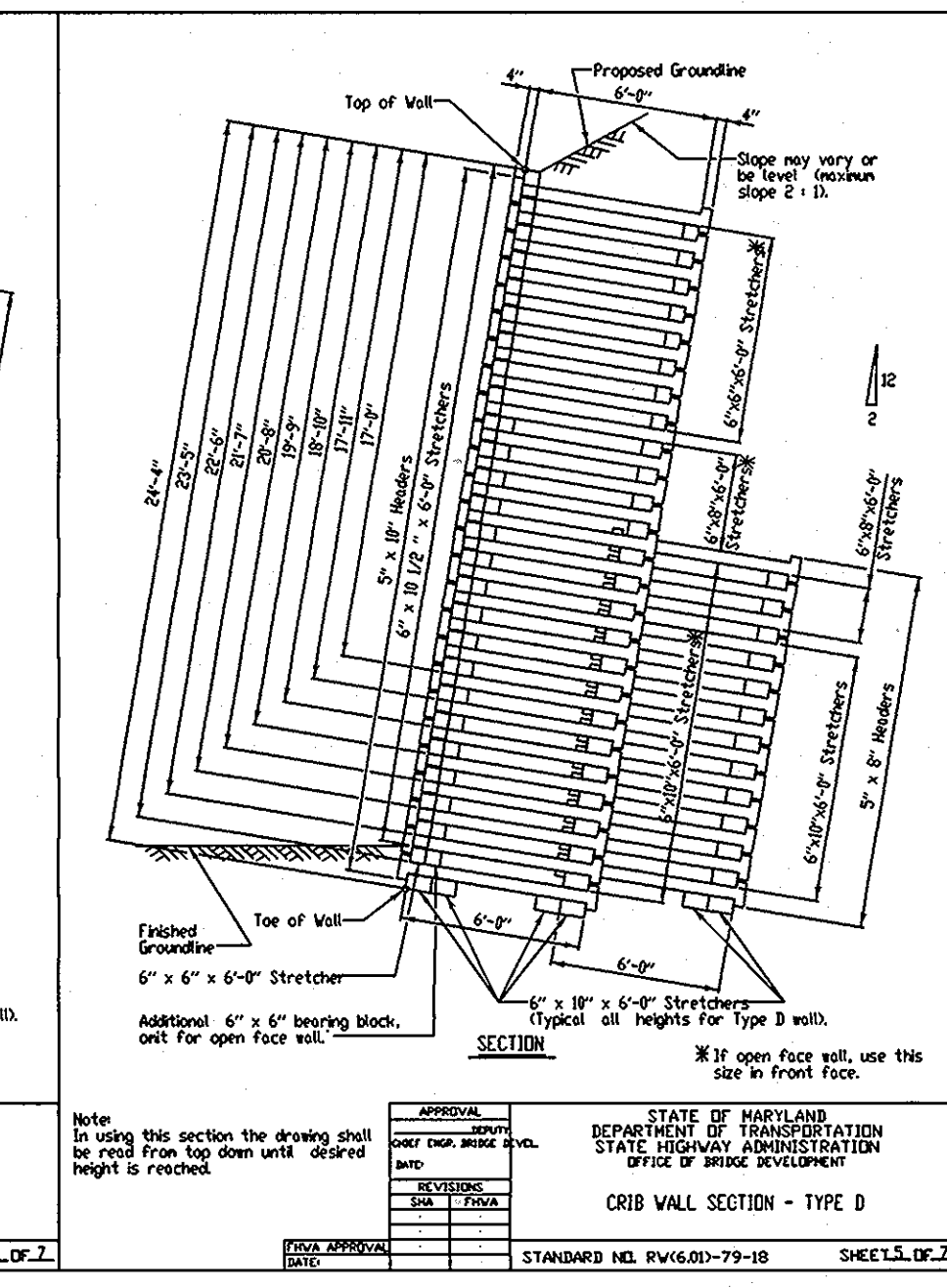
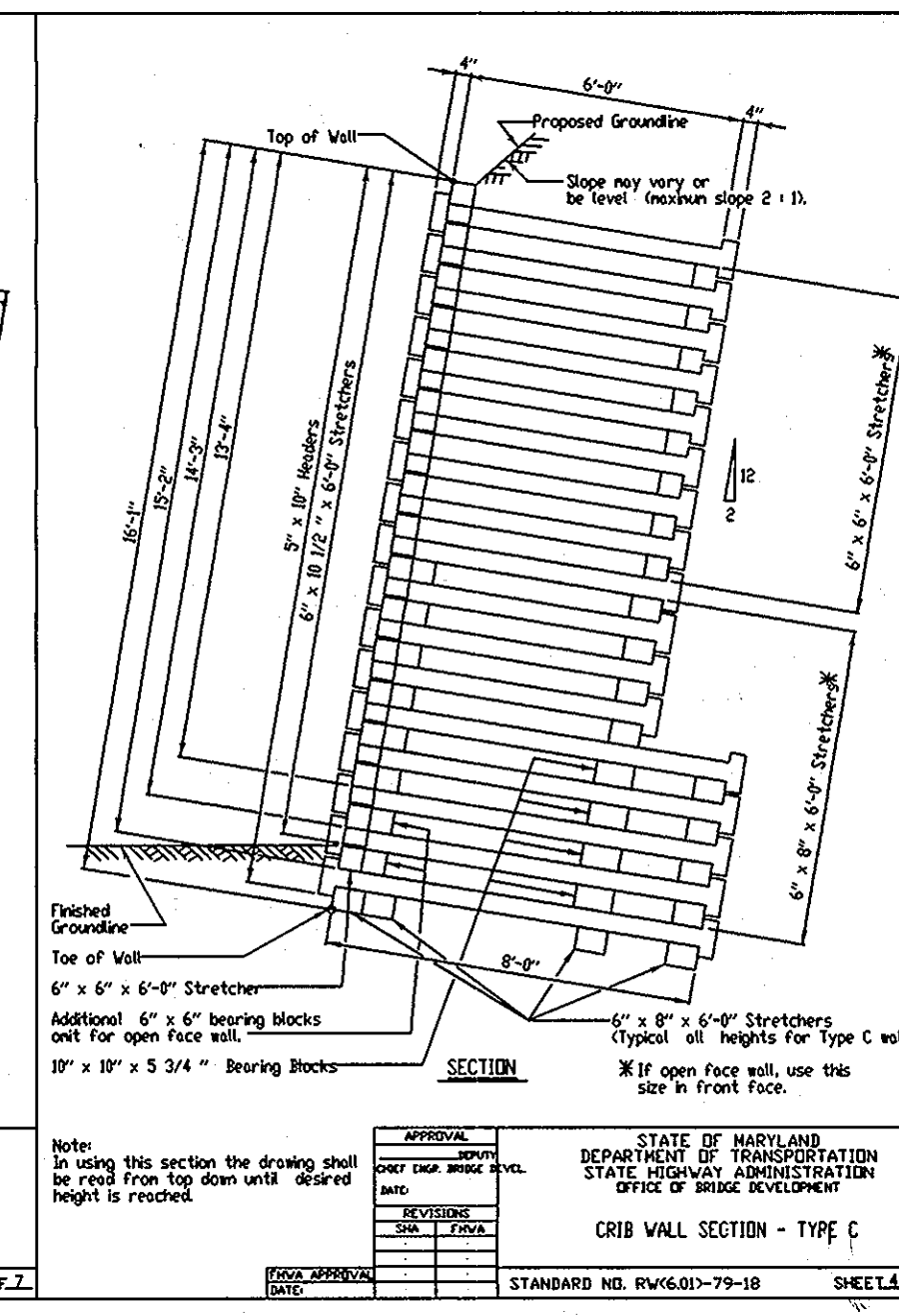
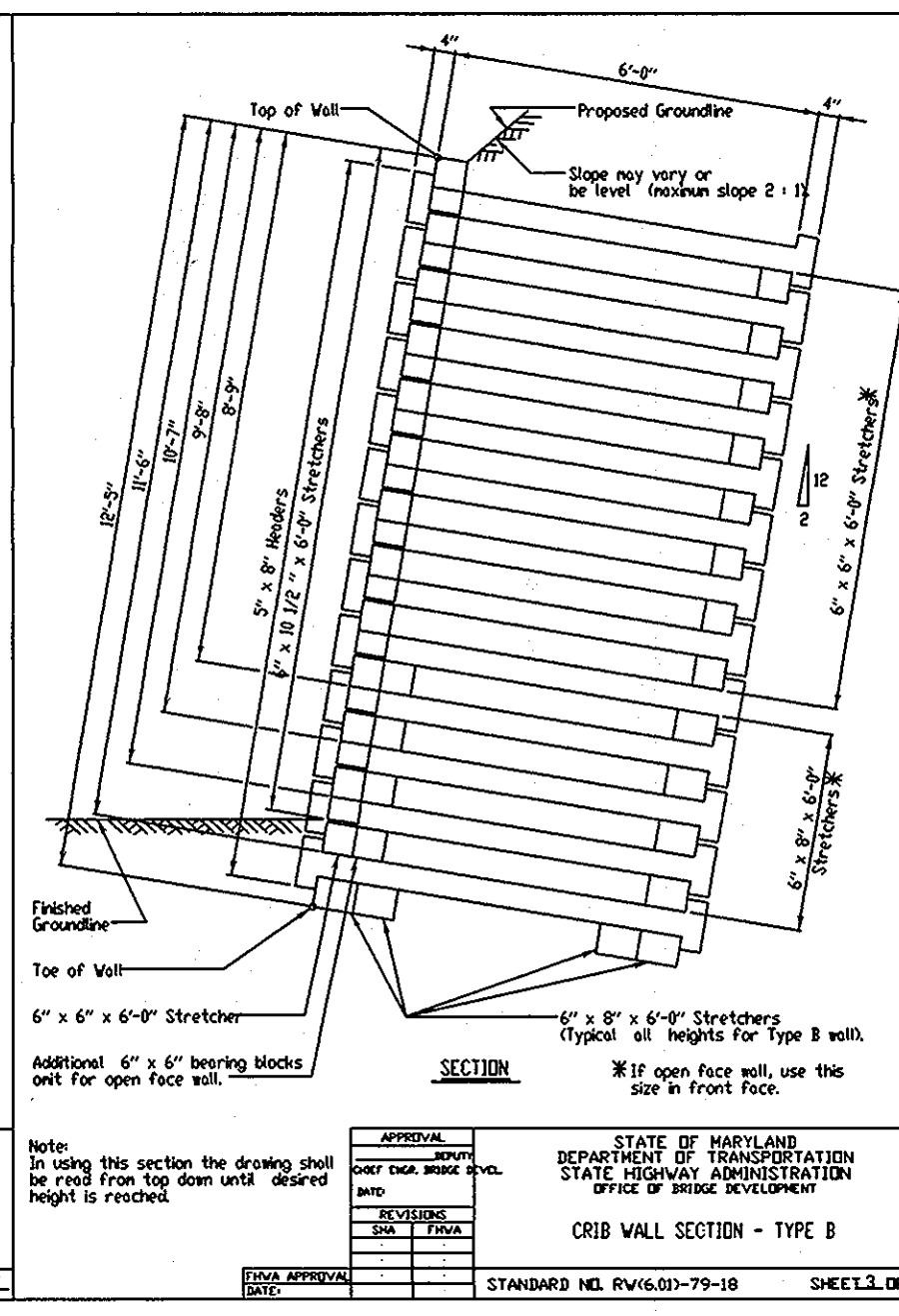
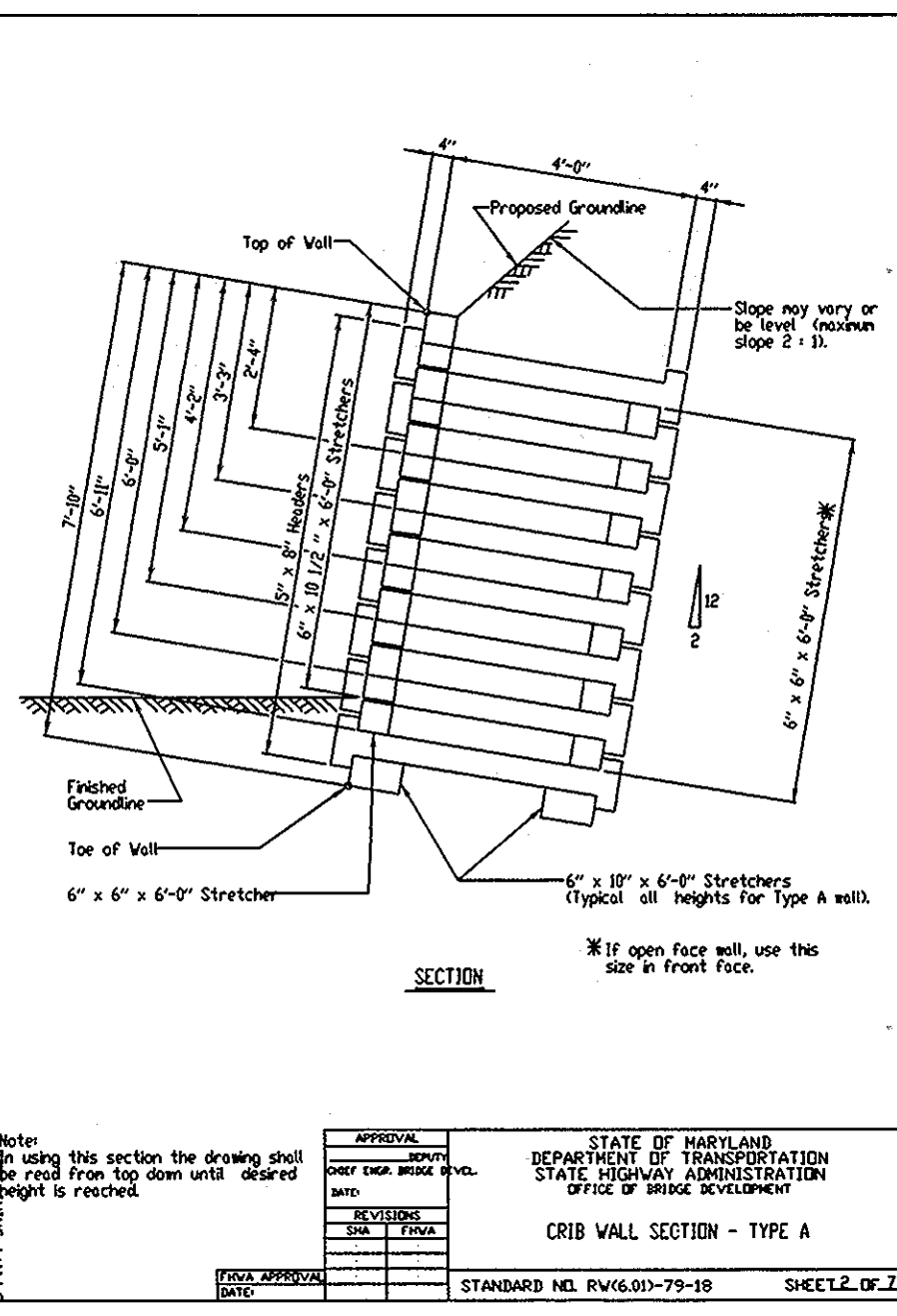
Reinforcing Steel: Reinforcing steel shall conform to ASTM A-615 Grade 60. Minimum cover for any bar in crib wall units shall be 1". Steel shall be symmetrically placed.

Excavation: See Note.

Crab Wall: These wall sections are based upon retaining satisfactory bearing with a minimum of excavation. However, should the Engineer direct that the wall start at a lower elevation than shown, then the height of the wall may cause the section to change from A to B, B to C or C to A.

Expansion Joints: Walls shall be separated into sections every 50' ft. by provision of double rows of headers.

Backfill: Shall progress contemporaneously with the erection of the cribbing. The material shall be gravel, crushed stone or other granular material approved by the Engineer. The material shall be placed in 6" layers and tamped or otherwise consolidated to the satisfaction of the Engineer. Care shall be exercised in placing the backfill so that the cribbing is not damaged.



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William J. ...* 3-27-06  
CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy ...* 4/27/06  
CHIEF, DIVISION OF LAND DEVELOPMENT

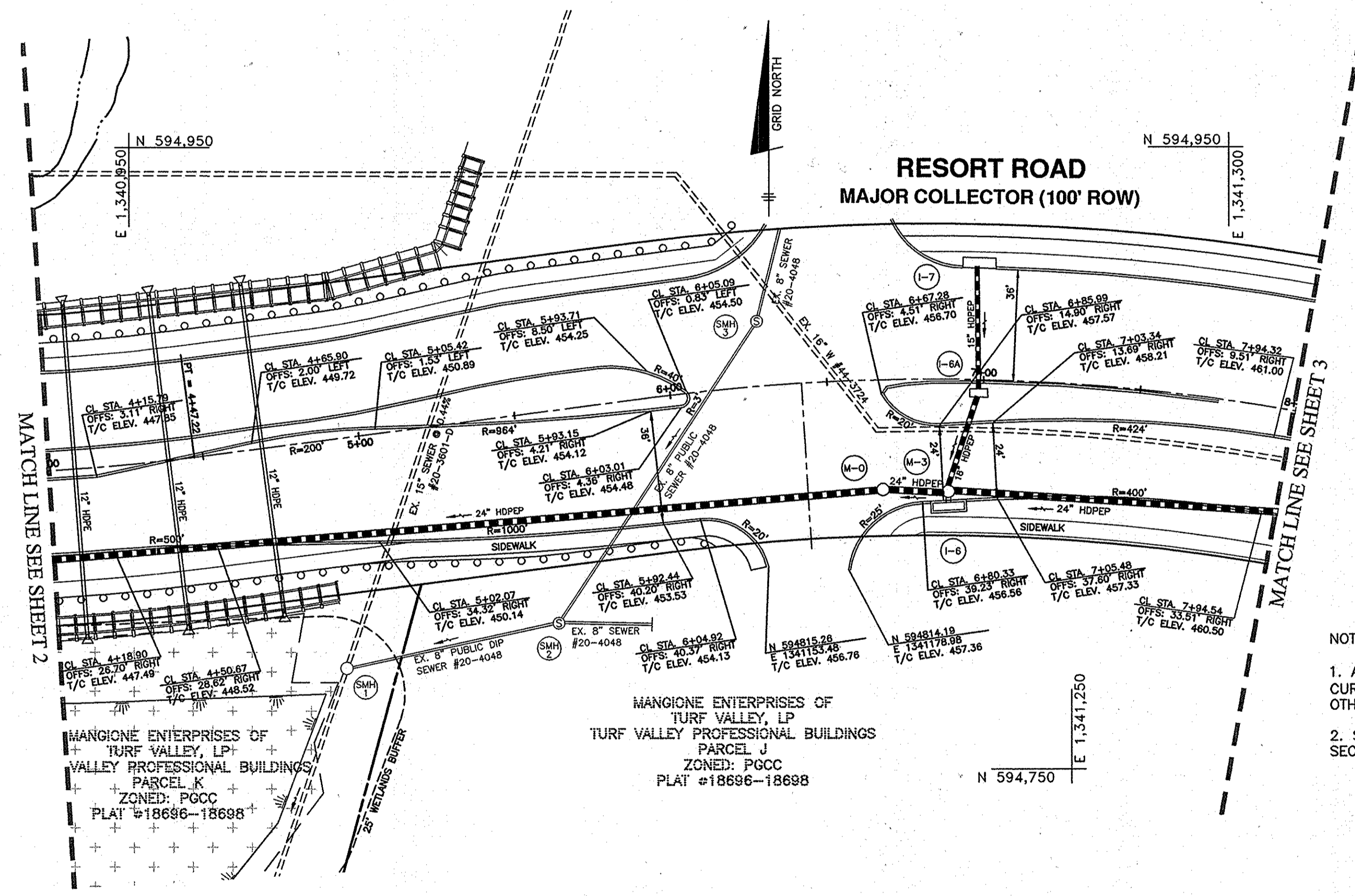
**MICHAEL J. WALKLEY, P. A.**  
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DES: MJW  
DRN: HP  
CHK: PDA  
DATE: 4/6/05

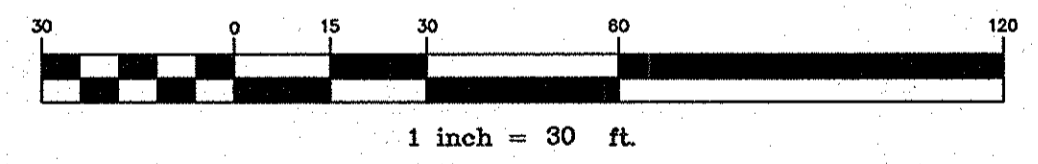
**CRIB WALL SECTION ELEVATIONS & STD DETAILS**  
REVISION  
DATE: 4/6/05

TURF VALLEY PROF. BLDGS RESORT RD STA. 0+00 TO 13+66.83  
P/O PODS I, J, K, L AND S, PARCELS I THRU P  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE AS SHOWN  
SHEET 14 OF 16

AS-BUILT



- NOTES:
1. ALL CURB TO BE STANDARD 7" COMBINATION CURB AND GUTTER (HO.CO.STD.R-3.01) UNLESS OTHERWISE STATED.
  2. SEE SHEET 2 FOR ROAD PROFILE FOR THIS SECTION OF ROAD.



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Helen Servano* 6-19-14  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*W. R. D...* 6-25-14  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE

*Chad...* 6-24-14  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE

THIS PLAN REPLACES THE PREVIOUSLY SIGNED PLAN WITH A REVISION DATE OF 9-6-2012.

NO.	DATE	REVISION
3	6-11-2014	revised sheet to show Resort Road improvements at Oakmont and Town Square intersection.
2	9-6-2012	remove pond details and notes.
1	10-6-10	revise gen notes #2 and #7

<b>BENCHMARK ENGINEERING, INC.</b> <small>ENGINEERS • LAND SURVEYORS • PLANNERS</small> 8480 BALTIMORE NATIONAL PIKE & SUITE 418 A ELIJAH CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-6944 WWW.BEI-CVLENGINEERING.COM	
DEVELOPER: MANGIONE ENTERPRISES OF TURF VALLEY, LP 1205 YORK ROAD, PENTHOUSE LUTHERVILLE, MARYLAND 21093 410-825-8400	<b>TURF VALLEY PROFESSIONAL BUILDINGS</b> RESORT ROAD STATION 0+00 TO 13+66.83 P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-4  TAX MAP: 16 - GRID: 10 - PARCEL: P/O 8 & 50 ZONED: PGCC (MULTI-USE SUBDISTRICT) ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND  <b>RESORT ROAD</b> DATE: JUNE 11, 2014 BEI PROJECT NO. 2208 SCALE: AS SHOWN SHEET 15 OF 16

**POND SPECIFICATIONS**

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE 378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT EDITION.

**SITE PREPARATION**

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED OF GRASS, BRUSH, AND STRIPPED TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHOULDER BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED TO THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR. RUBBISH OR HIS RESIDUALS WHEN SPECIFICALLY IDENTIFIED SHALL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

**EARTH FILL**

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, LOGS, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CC, SC, CH, OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

PLACEMENT - AREAS ON WHICH FILL IS TO BE SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUED OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMISSIBLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION - THE MOVEMENT OF AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY THE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TREAD OR VIBRATOR ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED BY THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FIRMED INTO A BALL IT WILL NOT CRUMBLE YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHERE A MINIMUM REQUIRED DENSITY IS SPECIFIED, IT SHALL NOT BE LESS 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ± 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NEARLY AS PRACTICABLE TO OBTAIN THE DENSITY REQUIRED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99.

CUT OFF TRENCH - THE CUFF OFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 FOR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

**STRUCTURE BACKFILL**

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN AIR FEET, MEASURED HORIZONTALLY TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

**PIPE CONDUITS**

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

- MATERIALS - (STEEL PIPE) THIS PIPE AND ITS APPURTENANCES SHALL BE GALVANIZED AND FULLY BITUMINOUS COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A WITH WATER TIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS OR AN APPROVED EQUAL MAY BE USED: NEXON, PLASTICOTE, BLAC-KLAD, AND BETH-CU-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-246.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATER TIGHT COUPLING BANDS. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATER TIGHT COUPLING BANDS OR FLANGES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 2 1/4 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATER TIGHT. THE DRAIN PIPE OR ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATER TIGHT. DIAPHRAGM BANDS ARE NOT CONSIDERED TO BE WATER TIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE ROLLED AND ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BOND WIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPE LESS THAN 24" IN DIAMETER: 1. FLANGES ON BOTH ENDS OF THE PIPE 12" WIDE STANDARD RAS TYPE SAND WITH 1/2" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND 12" WIDE HUGGER TYPE BAND WITH O-RING GASKET. HAVING MINIMUM DIAMETER OF 1/2" GREATER THAN THE CORRUGATION DEPTH. PIPES 24" IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24" ANNUULAR CORRUGATED BAND AND RINGS AND LUGS. 12" WIDE BY 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED ON THE END OF EACH PIPE FOR A TOTAL OF 24".

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK IS SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

- MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.
- BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID ON A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS CONCRETE SHALL BE HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE DRAWINGS.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED THE ENTIRE LENGTH OF THE PIPE SHALL BE CHECKED TO BE SURE THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 5 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

POLYVINYL CHLORIDE (PVC) PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR POLYVINYL CHLORIDE (PVC) PIPE:

- MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241.
- JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATER TIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK IS SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

**CONCRETE**

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 905. THE RIPRAP SHALL BE PLACED TO THE REQUIRED DEPTH IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIPRAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 919.12.

**CARE OF WATER DURING CONSTRUCTION**

ALL WORK ON THE PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DICES, LEAVES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED BY THE PRESENT CONSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURES. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF THE REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS. THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

**STABILIZATION**

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPILL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE MARYLAND SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

**EROSION AND SEDIMENT CONTROL**

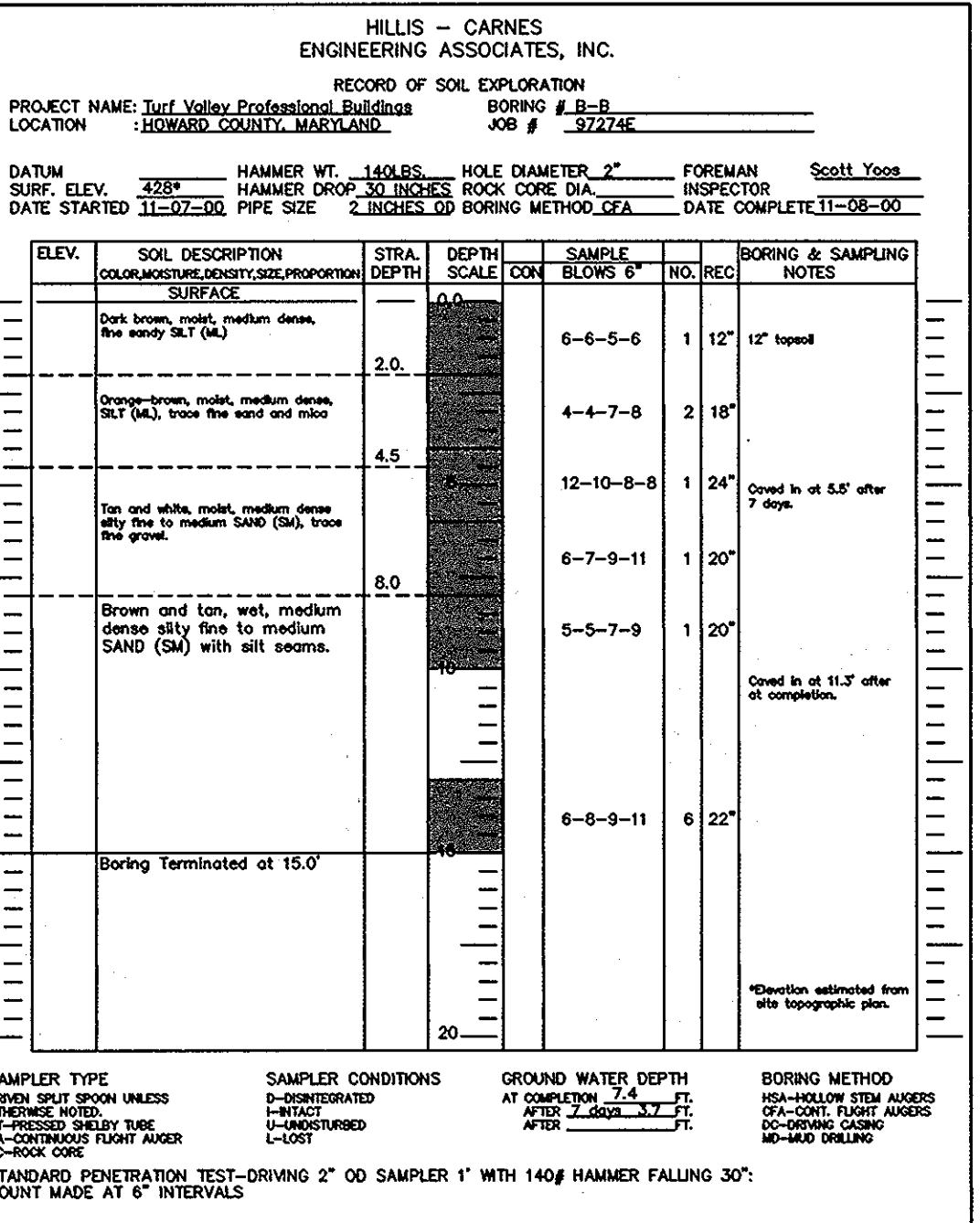
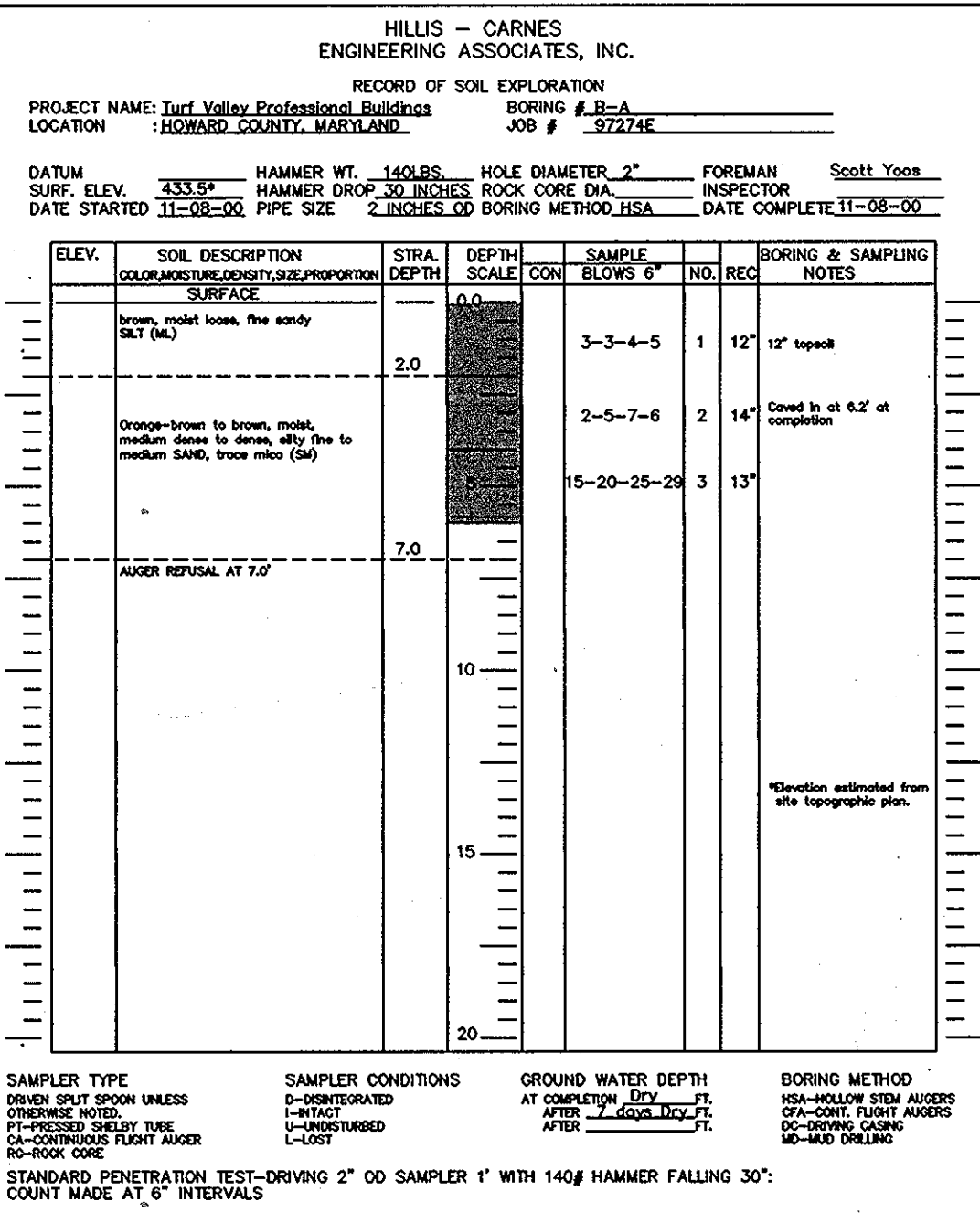
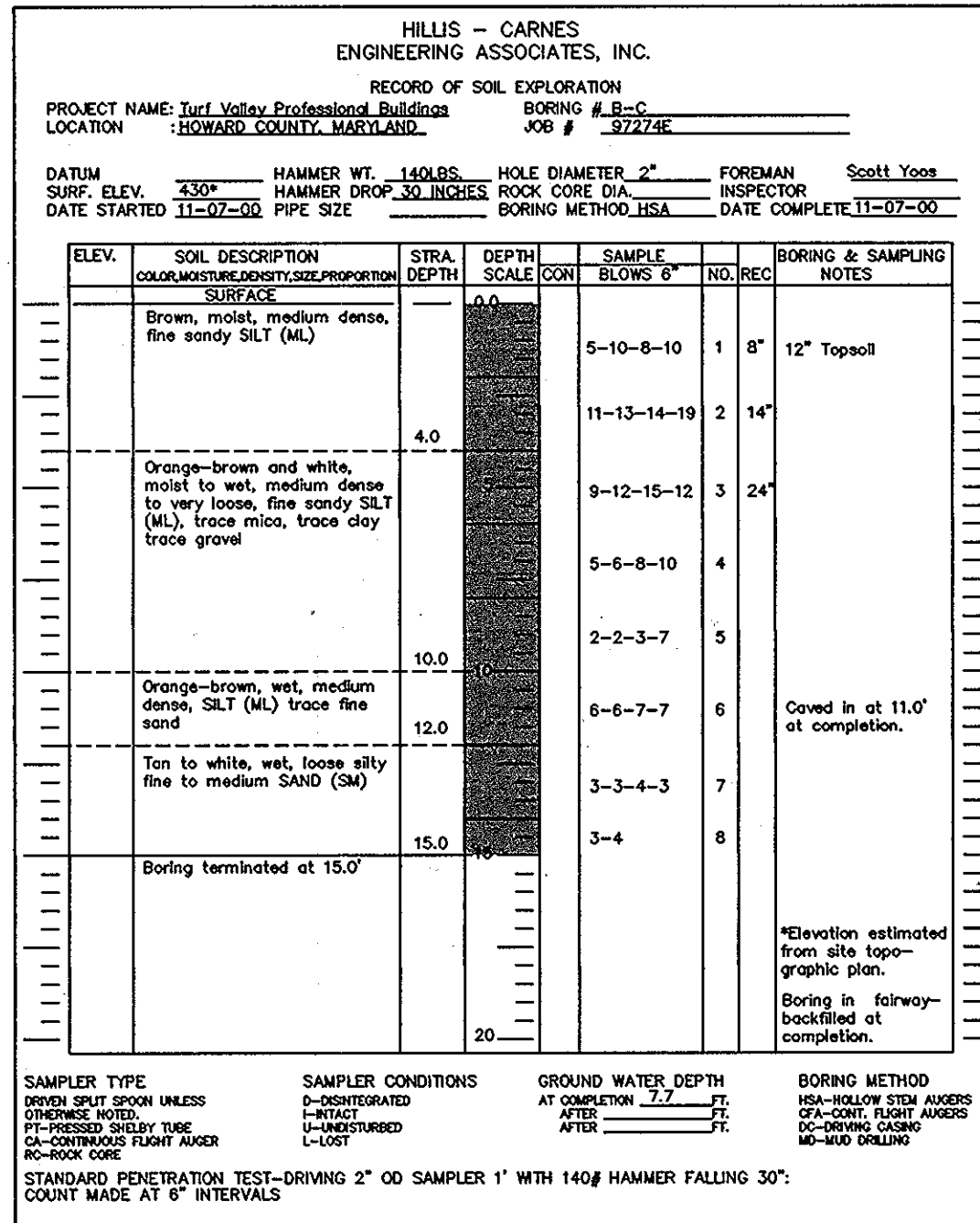
CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

**SWM POND MAINTENANCE REQUIREMENTS (PRIVATE):**

- SILT SHALL BE REMOVED WHEN ACCUMULATION EXCEEDS SIX (6) INCHES IN BASINS WITHOUT FOREBAYS. IN BASIN WITH FOREBAYS, SILT SHALL BE REMOVED WHEN THE ACCUMULATION EXCEEDS FOUR (4) INCHES IN THE FOREBAY.
- ACCUMULATED PAPER, TRASH AND DEBRIS SHALL BE REMOVED NECESSARILY.
- VEGETATION GROWING ON THE EMBANKMENT TOP AND FACES IS NOT ALLOWED TO EXCEED 18 INCHES IN HEIGHT AT ANY TIME.
- ANNUAL INSPECTION AND REPAIR, IF REQUIRED, OF THE STRUCTURE SHALL BE PERFORMED.

**OPERATION, MAINTENANCE AND INSPECTION (PRIVATE):**

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



**DEVELOPERS CERTIFICATE**  
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

Signature: *Paul M. Maguire* DATE: 3/16/08  
Signature: *Paul M. Maguire* DATE: 3/16/08

**ENGINEER'S CERTIFICATE**  
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT COMPLETES THE REQUIREMENTS OF THE NRC CONSERVATION SERVICE.

Signature: *John M. Maguire* DATE: 3/16/08  
Signature: *John M. Maguire* DATE: 3/16/08

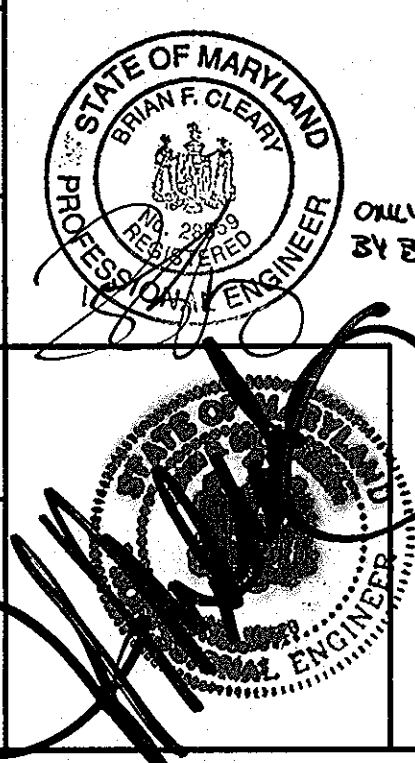
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE: 3/16/08  
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY DISTRICT.

Signature: *J.P. Robinson* DATE: 3/16/08  
Signature: *J.P. Robinson* DATE: 3/16/08

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Signature: *William F. Walsby* DATE: 3-27-08  
Signature: *William F. Walsby* DATE: 3-27-08

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Signature: *Cindy Hamrick* DATE: 4/29/08  
Signature: *Cindy Hamrick* DATE: 4/29/08

Signature: *Chris DeMunnick* DATE: 4/27/08  
Signature: *Chris DeMunnick* DATE: 4/27/08



**OWNER**  
MANGIONE ENTERPRISES OF TURF VALLEY, L.P.  
1205 YORK ROAD, PENTHOUSE  
LUTHERVILLE, MARYLAND 21093  
(410) 825-8400

No As-Built information is required on this sheet



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 21443, Expiration Date: 2-21-14

date	APR 2005	approval	JBM
project	01052	MAP	NTS
illustration	MAP	approval	JBM

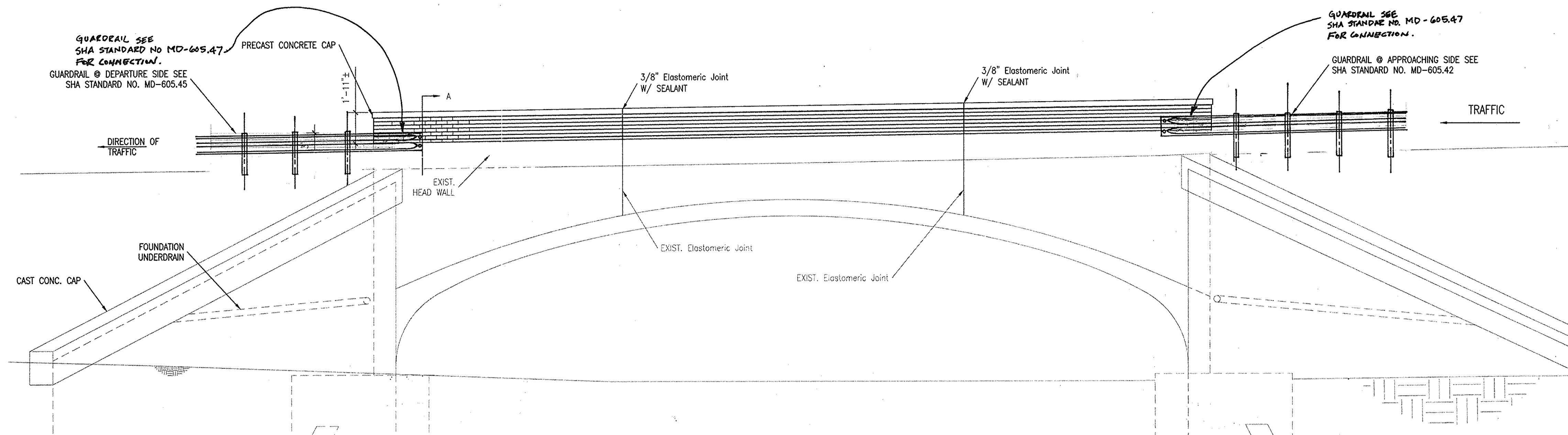
date	9-6-2012	BY	BEI
description	REMOVE ROAD SPECIFICATIONS	BY	BEI
revisions			

TURF VALLEY PROF BLDGS, RESORT RD STA 0+00 TO 13+66.88  
P/O PODS I, J, K, L AND S, PARCELS I-K & OPEN SPACE LOTS 1-4  
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKSIO & 16  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SWM SPECIFICATIONS & SOIL BORINGS

**MILDENBERG, BOENDER & ASSOC., INC.**  
Engineers Planners Surveyors  
5072 Dorsley Hall Drive, Suite 202, Ellicott City, Maryland 21042  
(410) 997-0296 Fax: (301) 827-5521 Wash. (410) 997-0296 Fax.

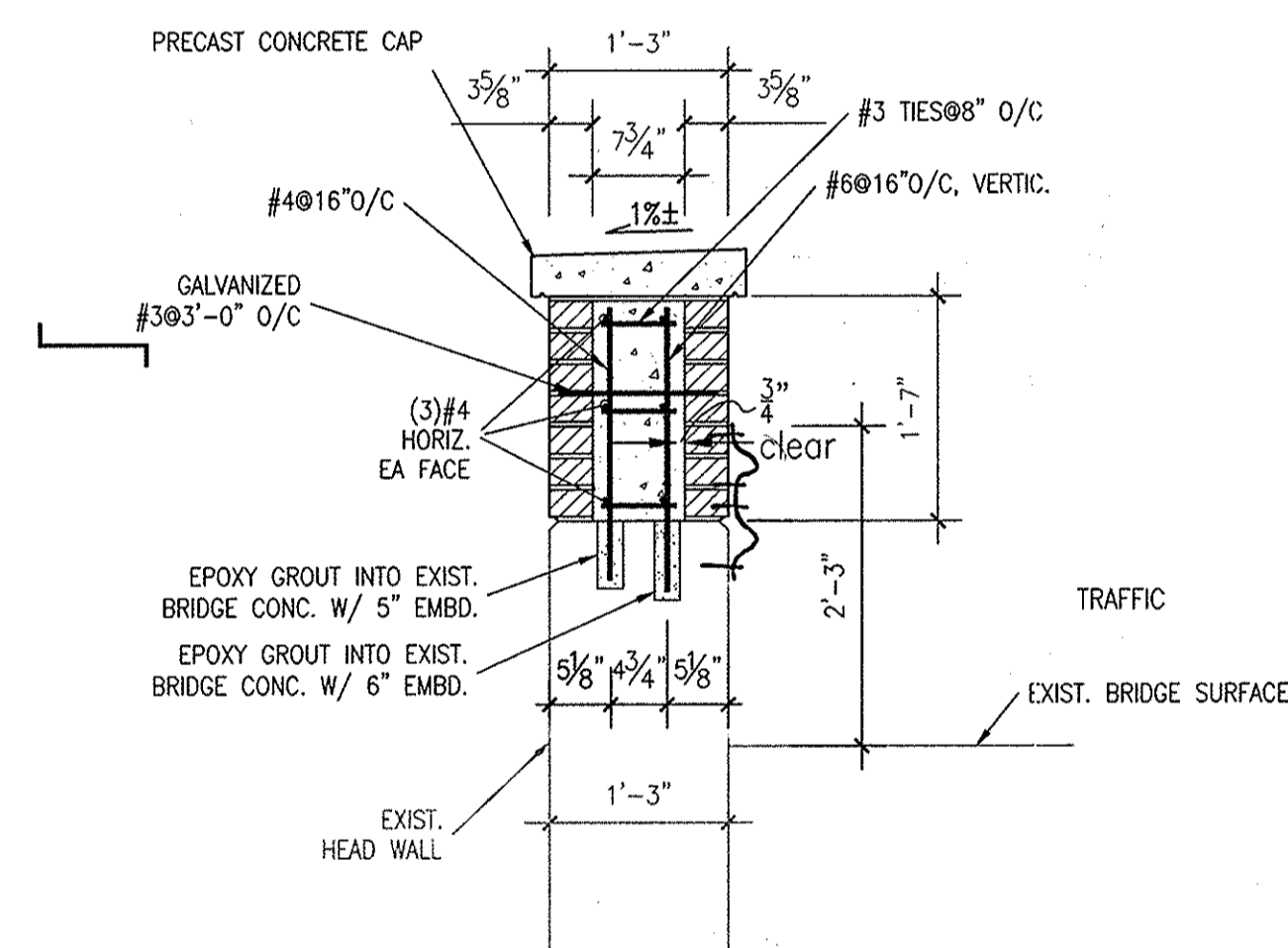
AS-BUILT





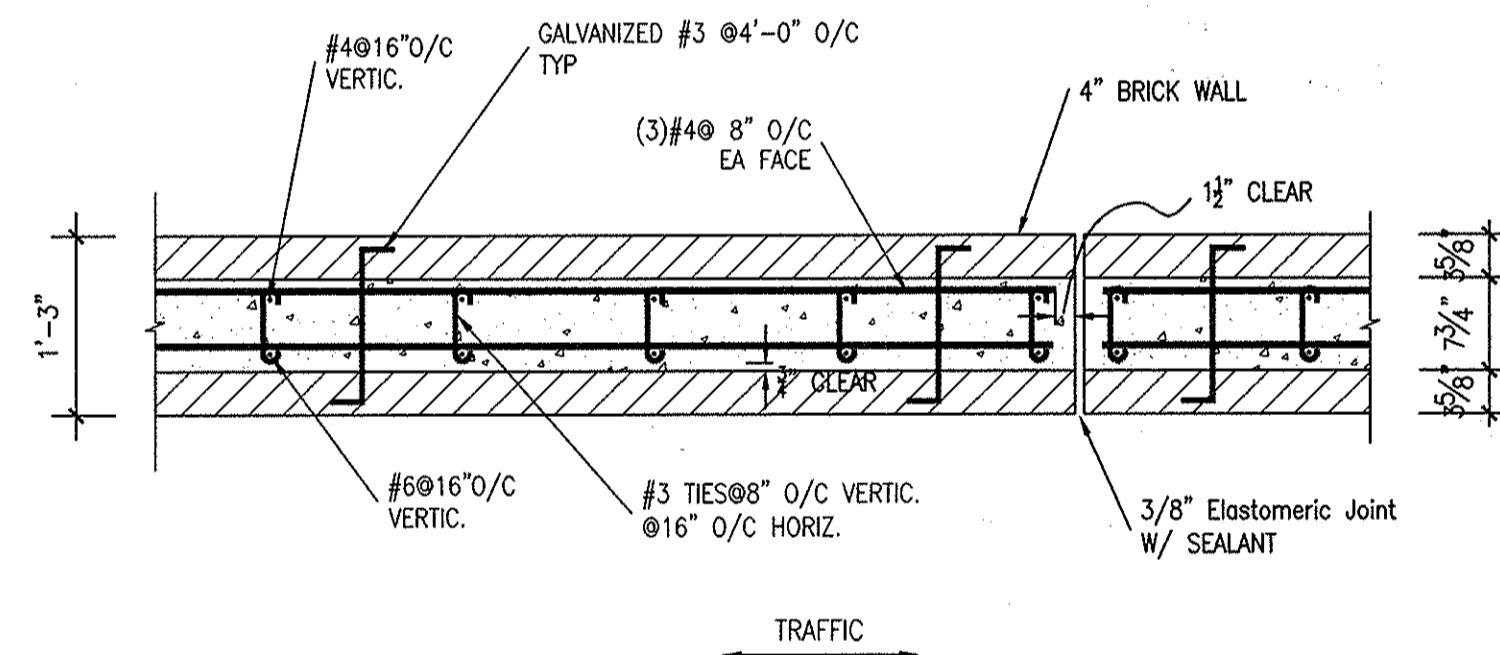
**1 ELEVATION**

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



**A SECTION**

SCALE: 3/4" = 1'-0"



**PLAN**

SCALE: 3/4" = 1'-0"

**GENERAL NOTES**

**GENERAL**

- DESIGN LIVE LOADING CRITERIA:
- ALL NOTES ON THE DRAWING SHALL BE ASSUMED TYPICAL UNLESS OTHERWISE SHOWN OR NOTED.
- THE STRUCTURE WAS DESIGNED FOR THE LOADS IN AASHTO TABLE A13.2-1 FOR TEST-LEVEL 2 (TL-2). DESIGN VEHICLE SPEED = 50MPH.
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION AND CONSTRUCTION.
- FIELD CONDITIONS THAT VARY FROM THOSE SHOWN OR DEPICTED ON THESE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO PERFORMING THE WORK.

**POURED-IN-PLACE CONCRETE**

- ALL REINFORCED CONCRETE SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH CURRENT EDITIONS OF THE "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301) AND TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318).
- ALL CONCRETE UNLESS NOTED OTHERWISE, SHALL BE STONE AGGREGATE CONCRETE HAVING A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. ALL CONCRETE PERMANENTLY EXPOSED TO WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 4% TO 6%. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED. MAXIMUM AGGREGATE SIZE FOR CONCRETE SHALL BE 1", AND MAXIMUM SLUMP SHALL BE 4", UNLESS OTHERWISE NOTED.
- ALL REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- ALL CONTINUOUS REINFORCING SHALL BE LAPPED AT ALL SPLICES, CORNERS, AND INTERSECTIONS A MINIMUM OF 38 BAR DIAMETERS, OR AS SHOWN ON DRAWINGS.
- PROVIDE SPACERS, CHAIRS, TIES AS REQUIRED AND NECESSARY FOR ASSEMBLING, PLACING, AND SUPPORTING ALL REINFORCEMENT IN PROPER POSITION.
- UNLESS NOTED OTHERWISE CONCRETE PROTECTION FOR REINFORCING SHALL BE AS GIVEN IN ACI 318.
- UNLESS NOTED OTHERWISE ON THE PLANS AND SPECIFICATIONS, ISOLATION, CONTROL AND CONSTRUCTION JOINTS IN CONCRETE WORK SHALL CONFORM TO THE LATEST RECOMMENDED PRACTICE OF THE ACI.
- CONCRETE PERMANENTLY EXPOSED TO WEATHER SHALL BE AIR ENTRAINMENT 4% TO 6%.

**MASONRY**

- ALL MASONRY CONSTRUCTION SHALL CONFORM TO THE CURRENT PROVISIONS OF THE BUILDING CODE REGULATIONS FOR MASONRY STRUCTURES - ACI 530 (ASCE 5), AND SPECIFICATIONS FOR MASONRY STRUCTURES - ACI 530.1 (ASCE 6).
- ASSUMED COMPRESSIVE STRENGTH OF MASONRY, f<sub>m</sub> = 1500 PSI @ 28 DAYS.
- ALL CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90, GRADE N-1, NORMAL WEIGHT.
- MORTAR FOR ALL WORK SHALL BE TYPE S.
- GROUT FOR FILLING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f<sub>m</sub>) OF 2000 PSI, AND SHALL CONFORM TO ASTM C476. PLACE GROUT FILL IN 4"-0"



**PROFESSIONAL CERTIFICATION**  
 I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 122314, Expiration Date: 12/11/14.

APPROVED: DEPARTMENT OF PUBLIC WORKS	11-15-13
<i>W. R. M.</i> CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	11-19-13
<i>K. S. D.</i> CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>C. P.</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	11-12-13 DATE

<b>MICHAEL J. WALKLEY, P. A.</b> Consulting Engineers 1700 UNION AVE Baltimore, Maryland 21211 Telephone (410) 889-7700 Fax (410) 889-7756		CALC: MM CHK: JMW/MJW DATE: 10-31-2013 BY: NO.	REVISION 2. REVISE GUARDRAIL PER AS-BUILT CONDITIONS 1. ADDITIONAL SHEET ADDED TO PLAN SET DATE: 12/23/14 12/14/14
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<b>BRIDGE ABUTMENT GUARDRAIL TERMINATION</b>	
SCALE: NOTED	JOB NO. A323

TURF VALLEY PROF. BLDGS RESORT RD STA. 0+00 TO 13+66.83		SCALE AS SHOWN
P/O PODS I, J, K, L AND S, PARCELS I THRU P		
TAX MAP 16 - P/O PARCEL 8 & 50 - BLOCKS 10 & 16		
THIRD ELECTION DISTRICT	HOWARD COUNTY, MARYLAND	SHEET 16 OF 16