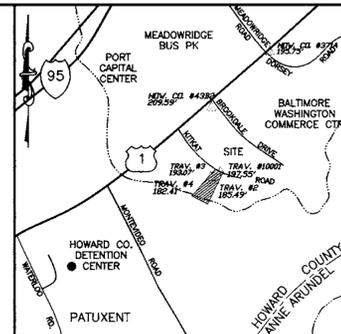


# SITE DEVELOPMENT PLAN POTOMAC ABATEMENT INDUSTRIAL PARK 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND



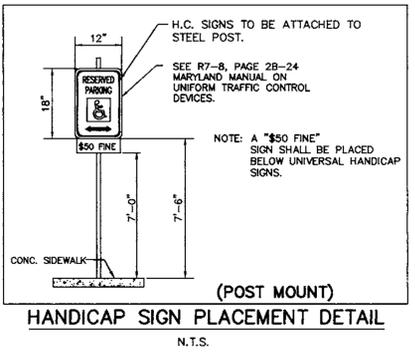
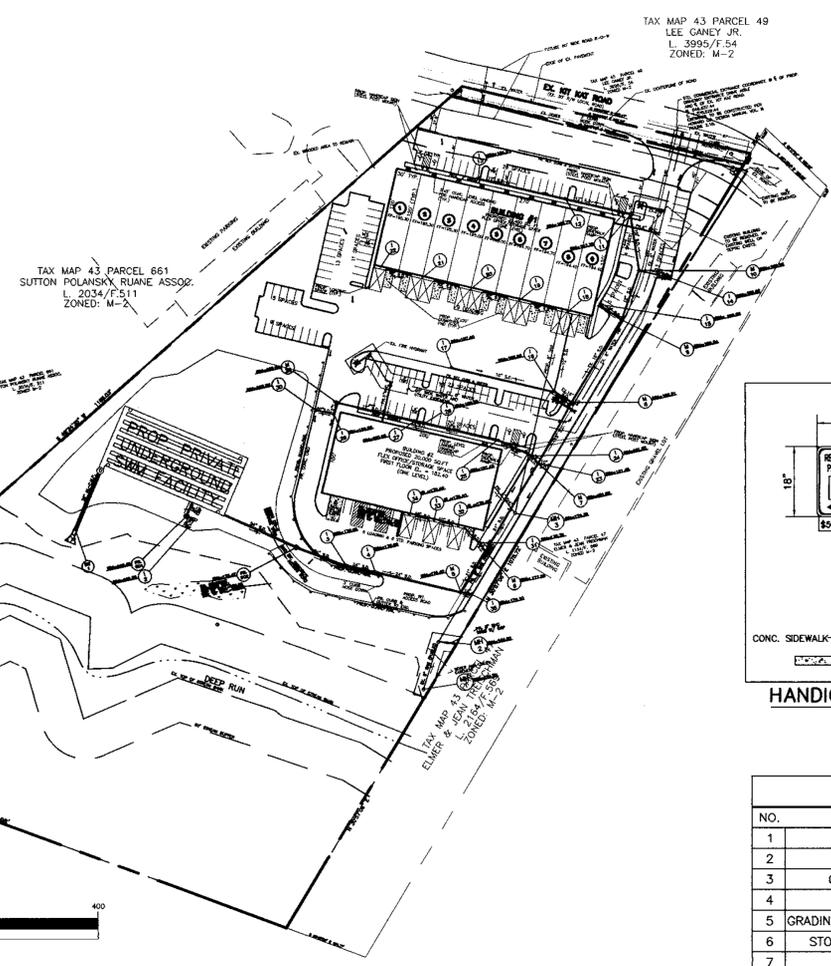
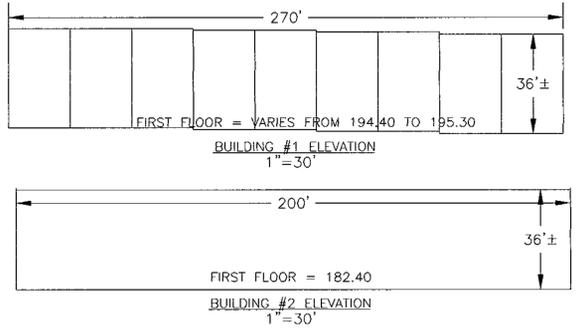
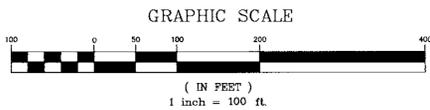
VICINITY MAP  
SCALE: 1" = 2000'

### GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
5. ALL PLAN DIMENSIONS ARE TO FACE OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTES.
6. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY DESIGN TECH DATED MARCH 1999.
7. THE COORDINATES SHOWN HEREON ARE BASED UPON MARYLAND GRID COORDINATE SYSTEM. BENCHMARKS ARE PROVIDED HEREON.
8. WATER IS PUBLIC, CONTRACT NO. 36W&S.
9. SEWER IS PUBLIC, CONTRACT NO. 292-S & 579-S.
10. STORM WATER QUANTITY AND QUALITY MANAGEMENT FOR THIS PROJECT IS TO BE PROVIDED THROUGH A PRIVATE ON SITE SYSTEM OF UNDERGROUND PIPES AND FACILITIES AND STORMCEPTORS. THE DEVICES ARE TO BE PRIVATELY OWNED AND MAINTAINED.
11. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. OWNER & ENGINEER ASSUME NO RESPONSIBILITY FOR ITS ACCURACY. CONTRACTOR SHALL TO HIS OWN SATISFACTION VERIFY THE TYPE, SIZE AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
12. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
13. A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
14. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
15. A GEO-TECHNICAL REPORT HAS BEEN PREPARED BY MARSHALL ENGINEERING, INC. DATED MARCH 1999.
16. THE BOUNDARY FOR THIS PROJECT IS BASED ON A BOUNDARY SURVEY PROVIDED BY M&H DEVELOPMENT ENGINEERS, INC. DATED DECEMBER 1998.
17. SUBJECT PROPERTY IS ZONED M-2, PER COMPREHENSIVE ZONING PLAN.
18. ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF HOWARD COUNTY'S ZONING SECTION 134.
19. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
20. PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
21. NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
22. ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C' AS SHOWN IN FIG. 11.4, VOLUME 1 OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
23. ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
24. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
25. STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
26. PROFILES STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
27. ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
28. NO PUBLIC NOTICE POSTERS ARE REQUIRED FOR THE ENTRANCE SHOWN BECAUSE THIS ENTRANCE CURRENTLY EXISTS IN THE SAME GENERAL LOCATION.
29. NO PUBLIC NOTICE POSTERS ARE REQUIRED BECAUSE NO WETLAND MITIGATION IS PROPOSED WITH THIS PROJECT.
30. NO GRADING OR DISTURBANCE IS PERMITTED WITHIN THE LIMITS OF THE FLOODPLAIN, FOREST CONSERVATION EASEMENTS, STREAM BUFFER, WETLANDS OR WETLANDS BUFFER SHOWN HEREON.
31. ALL ELEVATIONS AND COORDINATES FOR THIS PROJECT ARE BASED ON HOWARD CO. CONTROL STATION COORDINATE N. 490,906.0 E. 865,758.6 AND ELEVATION 209.59 AND #371 HAVING COORDINATE N. 492,566.2 E. 867,563.8 AND ELEVATION 195.75.
32. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
32. THE FOREST CONSERVATION OBLIGATIONS INCURRED BY THIS SITE DEVELOPMENT, 116,305 SQUARE FEET (2.67 ACRES) OF REFORESTATION/FORESTATION HAS BEEN MET BY THE PAYMENT OF \$ AS A FEE-IN-LIEU TO THE HOWARD COUNTY FOREST CONSERVATION FUND.
33. FOR FOREST CONSERVATION OBLIGATIONS, SEE SHEET 13 OF THE PLAN SET.

### LEGEND

- 42 --- EXISTING CONTOURS
- --- EXISTING CURB & GUTTER
- --- PROPERTY LINE
- --- EXISTING LIGHT POLE
- --- EXISTING POWER POLE
- --- EXISTING BUILDING
- --- EXISTING CONCRETE SIDEWALK
- --- EXISTING STORM DRAIN
- --- EXISTING SEWER
- --- EXISTING TREELINE
- --- EXISTING TREE/SHRUB
- --- EXISTING OVERHEAD POWER LINE
- --- PROPOSED BUILDING ADDITION
- --- PROPOSED CONTOUR
- --- PROPOSED SPOT SHOT
- --- PROPOSED SIDEWALK
- --- PROPOSED STORM DRAIN
- --- LIMIT OF DISTURBANCE
- --- CURB INLET PROTECTION
- --- AT GRADE INLET PROTECTION
- --- STABILIZED CONSTRUCTION ENTRANCE
- --- TRAFFIC FLOW ARROW
- --- DRAINAGE FLOW ARROW
- --- DRAINAGE AREA LINE
- --- EX. WETLAND LIMITS AND 25' BUFFER
- --- EARTH DIKE
- --- SUPER SILT FENCE
- --- TREE PROTECTION FENCE



SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	GRADING AND SEDIMENT CONTROL PLAN
4	T.S.W.M./SED. TRAP PLAN & DETAILS
5	GRADING & SEDIMENT CONTROL NOTES AND DETAILS
6	STORMWATER MANAGEMENT PLAN AND PROFILES
7	SWM DETAILS AND FORMS
8	STORM DRAIN DRAINAGE AREA MAP
9	STORM DRAIN PROFILES
10	STORM DRAIN PROFILES--WHC & SHC PROFILES
11	DETAILS AND SPECS
12	LANDSCAPE PLAN
13	FOREST CONSERVATION PLAN
14	FOREST CONSERVATION PLAN

ADDRESS CHART	
PARCEL	STREET ADDRESS
46	7140 KIT KAT ROAD

SETBACKS:  
(PER ZONING SECTION 123.D.2A)  
50' STRUCTURE AND USE SETBACK  
30' FENCE AND PARKING SETBACK  
#SETBACKS ARE FROM R/W.

SITE DATA	
AREA OF PARCEL	12.59 ACRES (548,405.9 SF)
FLOODPLAIN AREA	5.13 ACRES (223,368 SF)
DISTURBED AREA	6.72 ACRES (292,537.37 SF)
PRESENT ZONING	M-2
EXISTING USE	CONTRACTORS STORAGE YARD
BUILDING COVERAGE (EX.)	1,295 SF (0.2% OF SITE)
STORAGE BUILDING (TO BE REMOVED)	1,295 SF
PROPOSED USE	FLEX OFFICE/WAREHOUSE SPACE (2 BUILDINGS)
BLDG. #1	32,400 S.F.
BLDG. #2	20,000 S.F.
TOTAL BLDG. COVERAGE:	52,400 S.F. (9.6% OF SITE)
PARKING SPACES REQUIRED*	2.5 SP/1000 SF (HYBRID INDUSTRIAL/OFFICE)-131 SPACES (FOR 52,400 SF)
TOTAL REQUIRED	131 SPACES
PARKING SPACES PROVIDED	138 SPACES (INCL. HC)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 2/7/00 DATE  
DIRECTOR

*[Signature]* 7/19/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 9/1/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION

OWNER:  
THOMAS AND BARBARA PALACOROLLA  
12183 TRIADDELPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER:  
POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT  
POTOMAC ABATEMENT  
INDUSTRIAL PARK

AREA  
TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE  
TITLE SHEET

MESSICK & ASSOCIATES  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

DESIGNED BY: WRD
DRAWN BY: WRD
PROJECT NO:
DATE: APRIL 9, 1999
SCALE: AS SHOWN
DRAWING NO.: 1 OF 14

**Lumark**  
1000-100 Watt/HPS, MH, MV

**Appearance** The design of Lumark lighting fixtures is based on the latest technology and materials. The fixtures are designed to provide a long life span and are available in a variety of finishes to match your building's exterior.

**Flexibility** The design of Lumark lighting fixtures is flexible. The fixtures are designed to be used in a variety of applications and are available in a variety of finishes to match your building's exterior.

**Reliability** The design of Lumark lighting fixtures is reliable. The fixtures are designed to provide a long life span and are available in a variety of finishes to match your building's exterior.

**Listings** Lumark lighting fixtures are listed in the following publications:

**Applications** Lumark lighting fixtures are used in a variety of applications, including:

**Ordering Information**

Lamp Type	Quantity	Wattage	Notes
1000-100 Watt/HPS	100	100	
1000-100 Watt/MH	100	100	
1000-100 Watt/MV	100	100	

LOW INTENSITY LIGHTING TO BE PROVIDED ALONG BUILDING FRONT TO BE DESIGNED PRIOR TO PERMIT APPLICATION.

**Lumark**  
Wal-Pak  
35 Watt/LPS  
250-80 Watt/HPS, MH, MV

**Appearance** The design of Lumark lighting fixtures is based on the latest technology and materials. The fixtures are designed to provide a long life span and are available in a variety of finishes to match your building's exterior.

**Flexibility** The design of Lumark lighting fixtures is flexible. The fixtures are designed to be used in a variety of applications and are available in a variety of finishes to match your building's exterior.

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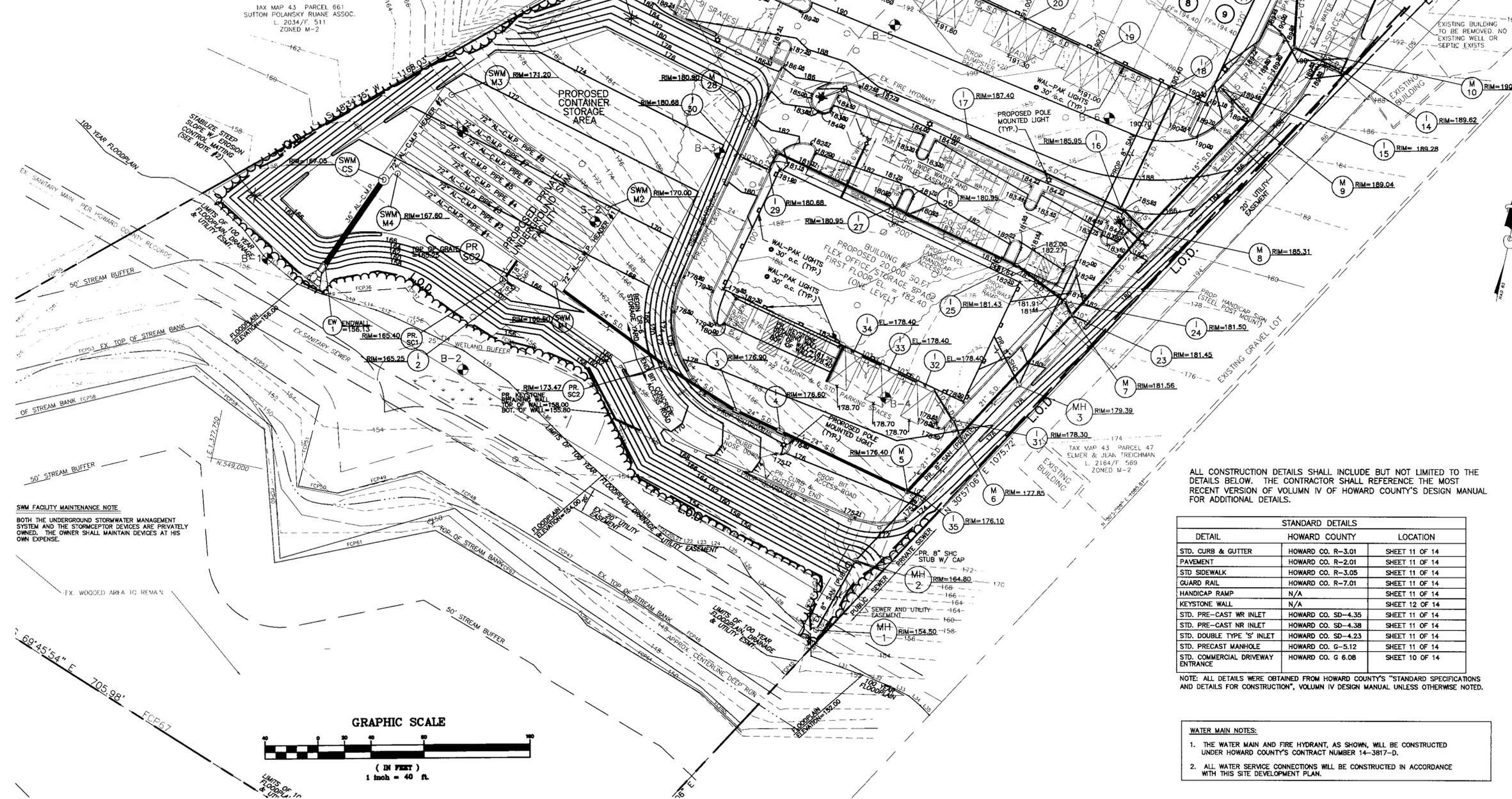
**Listings** Lumark lighting fixtures are listed in the following publications:

**Applications** Lumark lighting fixtures are used in a variety of applications, including:

**Ordering Information**

Lamp Type	Quantity	Wattage	Notes
35 Watt/LPS	100	35	
250-80 Watt/HPS	100	250	
250-80 Watt/MH	100	250	
250-80 Watt/MV	100	250	

- ★ FULL CUTOFF FREESTANDING - POLE MOUNTED PARKING LOT LIGHT. LIGHT TO BE SINGLE SETTING 100 WATT METAL HALIDE LIGHTING LUMINAIRES MODEL # MHSB-AL-400 AS MANUFACTURED BY LUMARK LIGHTING OR EQUAL. MOUNTED ON 40' HIGH MATCHING STEEL POLE. ALL FIXTURES AND POLES TO BE BRONZE FINISH.
  - LOW INTENSITY WALL MOUNTED LIGHT. LIGHT TO BE 175 WATT MOUNTED LIGHT. LIGHT TO BE 175 WATT MERCURY VAPOR LAMP MOUNTED 8' ABOVE FINISHED GRADE ON BUILDING WALL. FIXTURE TO BE MODEL #MVL-175 WAL-PAK (8600 LUMENS) AS MANUFACTURED BY LUMARK LIGHTING OR EQUAL. FIXTURE TO BE BRONZE FINISH.
- NOTE: ADDITIONAL LOW INTENSITY LIGHTING WILL BE REQUIRED ALONG THE FRONT OF BOTH BUILDINGS SHOWN HEREON. THESE LIGHTS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE HOWARD COUNTY ZONING REGULATIONS SECTION 134.



**WATER NOTES:**

- FIRE FLOW REQUIREMENTS FOR THESE BUILDINGS MUST BE ESTABLISHED PRIOR TO PERMIT APPLICATION.
- ALL ON-SITE FIRE HYDRANTS SHOWN HEREON ARE PUBLIC OWNED.
- THE EXISTING WATER MAIN WAS DESIGNED AND WILL BE CONSTRUCTED UNDER CONTRACT NUMBER 14-3817-0.
- ALL WATER SERVICE CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS SITE DEVELOPMENT PLAN.
- ALL WATER METERS SHALL BE INSIDE WATER METER SETTINGS.

**FLOODPLAIN LINE TABLE**

LINE	LENGTH	BEARING
L1	5.74	N74°19'44"W
L2	15.58	N58°33'15"W
L3	18.70	N52°13'37"W
L4	26.59	N49°33'14"W
L5	15.34	N61°44'55"W
L6	17.65	N63°02'22"W
L7	12.29	N78°45'51"W
L8	8.02	N80°41'42"W
L9	14.37	N85°36'11"W
L10	14.37	N85°36'11"W
L11	13.66	N85°02'49"W
L12	14.96	N80°25'43"W
L13	25.64	N76°40'38"W
L14	32.47	N75°56'00"W
L15	40.48	N67°18'09"W
L16	79.50	N56°28'35"W
L17	52.99	N50°02'38"W
L18	24.64	N56°51'14"W
L19	7.14	N60°53'50"W
L20	8.01	N65°38'29"W
L21	8.85	N81°50'46"W
L22	12.13	S85°06'14"W
L23	8.83	S80°07'02"W
L24	12.00	S84°16'00"W
L25	14.25	N14°10'33"W
L26	17.17	N42°23'55"W
L27	19.48	N57°30'08"W
L28	17.38	N55°45'59"W
L29	25.35	N60°30'41"W
L30	16.58	N14°10'33"W
L31	41.37	N81°59'37"W
L32	22.54	N80°10'04"W
L33	15.99	N74°44'25"W
L34	11.01	N61°44'02"W
L35	10.13	N53°34'14"W

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/7/00 DATE  
DIRECTOR

*[Signature]* 7/15/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 5/1/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION

OWNER:  
THOMAS AND BARBARA PALACOROLLA  
12183 TRIADPHILIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER:  
POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT  
POTOMAC ABATEMENT  
INDUSTRIAL PARK

AREA  
TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE  
SITE DEVELOPMENT PLAN

MESSICK & ASSOCIATES  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

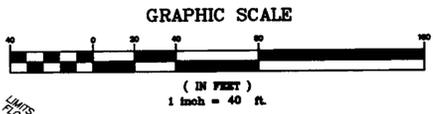
DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 2 OF 14

ALL CONSTRUCTION DETAILS SHALL INCLUDE BUT NOT LIMITED TO THE DETAILS BELOW. THE CONTRACTOR SHALL REFERENCE THE MOST RECENT VERSION OF VOLUM IV OF HOWARD COUNTY'S DESIGN MANUAL FOR ADDITIONAL DETAILS.

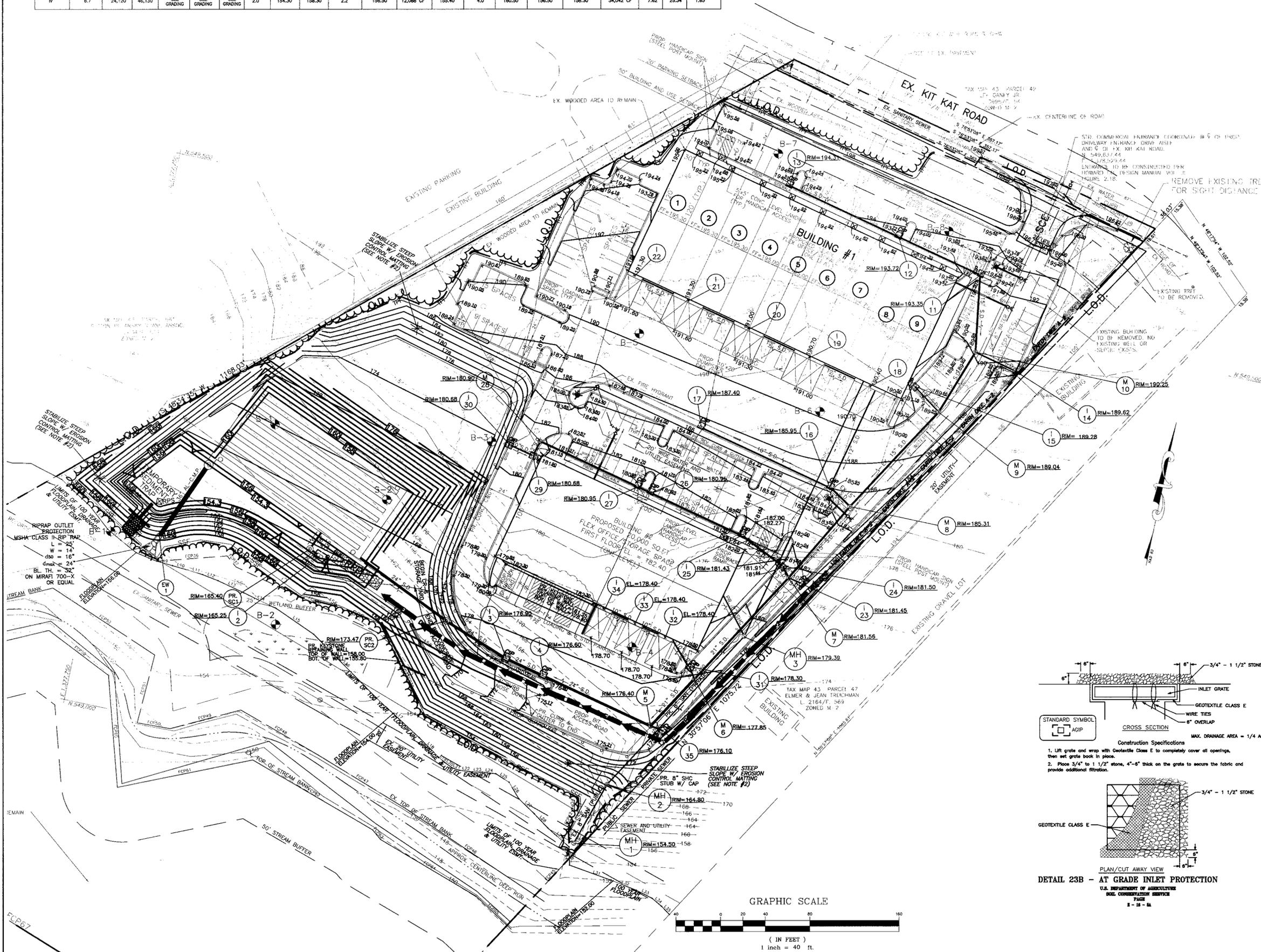
DETAIL	STANDARD DETAILS	HOWARD COUNTY	LOCATION
STD. CURB & GUTTER	HOWARD CO. R-3.01	SHEET 11 OF 14	
PAVEMENT	HOWARD CO. R-2.01	SHEET 11 OF 14	
STD. SIDEWALK	HOWARD CO. R-3.05	SHEET 11 OF 14	
GUARD RAIL	HOWARD CO. R-7.01	SHEET 11 OF 14	
HANDICAP RAMP	N/A	SHEET 11 OF 14	
KEYSTONE WALL	N/A	SHEET 12 OF 14	
STD. PRE-CAST WR INLET	HOWARD CO. SD-4.35	SHEET 11 OF 14	
STD. PRE-CAST NR INLET	HOWARD CO. SD-4.38	SHEET 11 OF 14	
STD. DOUBLE TYPE 'S' INLET	HOWARD CO. SD-4.23	SHEET 11 OF 14	
STD. PRECAST MANHOLE	HOWARD CO. G-5.12	SHEET 11 OF 14	
STD. COMMERCIAL DRIVEWAY ENTRANCE	HOWARD CO. G 6.08	SHEET 10 OF 14	

NOTE: ALL DETAILS WERE OBTAINED FROM HOWARD COUNTY'S "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION", VOLUM IV DESIGN MANUAL UNLESS OTHERWISE NOTED.

- WATER MAIN NOTES:**
- THE WATER MAIN AND FIRE HYDRANT, AS SHOWN, WILL BE CONSTRUCTED UNDER HOWARD COUNTY'S CONTRACT NUMBER 14-3817-0.
  - ALL WATER SERVICE CONNECTIONS WILL BE CONSTRUCTED IN ACCORDANCE WITH THIS SITE DEVELOPMENT PLAN.



SEDIMENT TRAP DATA																					
TRAP TYPE	DRAINAGE AREA (ACRES)	STORAGE FEET (FT)	STORAGE CUBIC FEET (CF)	WIDTH (FT)	LENGTH (FT)	DEPTH (FT)	SLOPE PER 100 FT	BOTTOM ELEVATION	WEIR CHISEL ELEV.	WET STORAGE DEPTH (FT)	WET STORAGE VOLUME	CLEANOUT ELEVATION	EMBANKMENT HEIGHT	EMBANKMENT ELEVATION	OUTLET ELEVATION	DRY STORAGE ELEVATION	DRY STORAGE VOLUME	Open	Open	Open	
N	6.7	24,120	46,130	SEE GRADING	SEE GRADING	SEE GRADING	2.0	154.30	158.30	2.2	156.50	12,088 CF	155.40	4.0	160.50	156.50	158.30	34,042 CF	7.62	25.34	1.85



- NOTE:
1. REPLACE FILL MATERIAL (AS NEEDED) FOR EARTH DIKES AND ABOVE THE PIPE SLOPE DRAINS AT THE BEGINNING OF EACH WORK DAY UNTIL CURB IS INSTALLED.
  2. STABILIZE ALL STEEP SLOPES 25% OR GREATER WITH EROSION CONTROL MATTING (I.E. CURLEX, 700X MIRAFI OR EQUAL).
  3. CONTRACTOR MAY PLACE TEMPORARY SOIL STOPIECLE AREAS WITHIN THE LIMITS OF DISTURBANCE AS NEEDED. SILT FENCE SHALL BE PLACED AT THE BASE OF THE DOWN GRADIENT SLOPE.

BY THE DEVELOPER:

I/WE 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John S.* 3/27/00  
DEVELOPER DATE

BY THE ENGINEER:

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 HOWARD SOIL CONSERVATION DISTRICT.

*Wayne A. Newton* 3/27/00  
ENGINEER DATE

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

*Cheryl Simms* 7/14/00  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Cheryl Simms* 7/14/00  
HOWARD SOIL CONSERVATION DISTRICT DATE

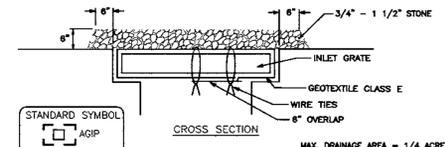
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Joseph R. Smith* 8/7/00  
DIRECTOR DATE

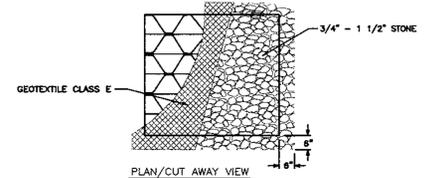
*William J. Dammann* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hamilton* 8/11/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
OWNER:		
THOMAS AND BARBARA PALACOROLLA 12183 TRIADELPHIA ROAD ELLCOTT CITY, MD. 21042		
DEVELOPER:		
POTOMAC ABATEMENT 9550 BERGER ROAD COLUMBIA, MD. 21046 ATTN: JIM HARRIS		
PROJECT		
POTOMAC ABATEMENT INDUSTRIAL PARK		
AREA		
TAX MAP 43, BLOCK 10, ZONED M-2 PARCEL 46, 1st ELECTION DISTRICT		
TITLE		
GRADING AND SEDIMENT CONTROL PLAN		



- Construction Specifications
1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
  2. Place 3/4" to 1 1/2" stone, 4"-8" thick on the grates to secure the fabric and provide additional filtration.



DETAIL 23B - AT GRADE INLET PROTECTION

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 2 - 18 - 84

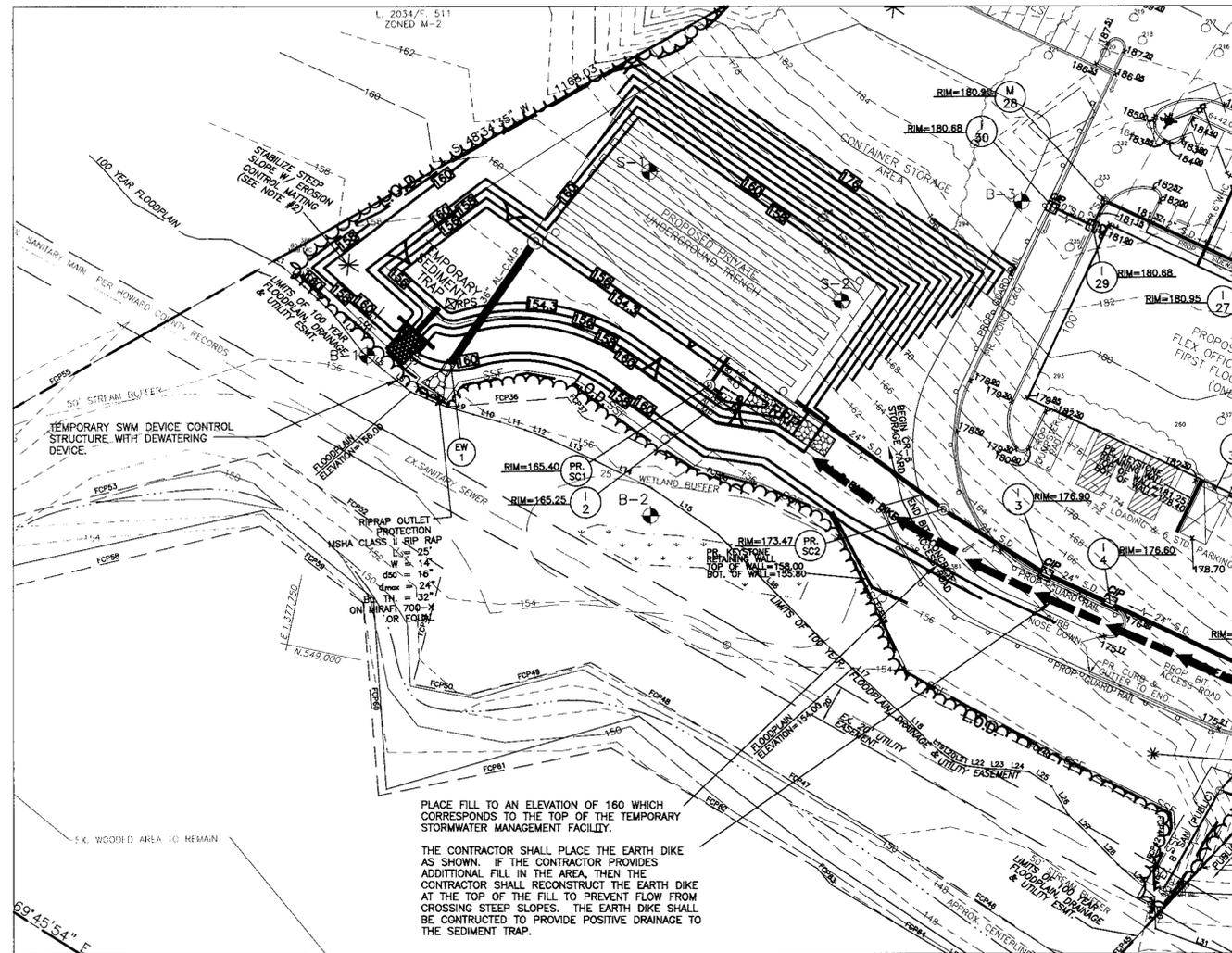
MESSICK & ASSOCIATES \*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

3/27/00  
DATE

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 3 OF 14

WAYNE A. NEWTON #2159T





PLACE FILL TO AN ELEVATION OF 160 WHICH CORRESPONDS TO THE TOP OF THE TEMPORARY STORMWATER MANAGEMENT FACILITY.

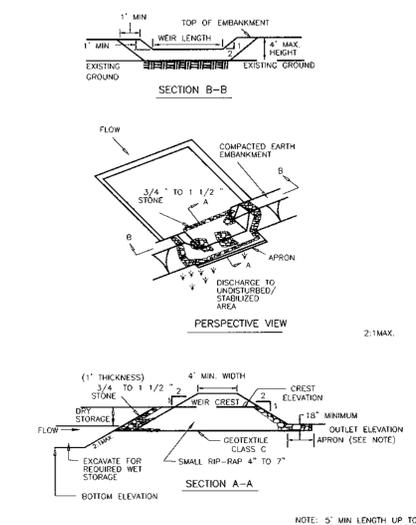
THE CONTRACTOR SHALL PLACE THE EARTH DIKE AS SHOWN. IF THE CONTRACTOR PROVIDES ADDITIONAL FILL IN THE AREA, THEN THE CONTRACTOR SHALL RECONSTRUCT THE EARTH DIKE AT THE TOP OF THE FILL TO PREVENT FLOW FROM CROSSING STEEP SLOPES. THE EARTH DIKE SHALL BE CONSTRUCTED TO PROVIDE POSITIVE DRAINAGE TO THE SEDIMENT TRAP.

NOTE: THE CONTOURS AS SHOWN ON THIS PLAN ARE FOR THE CONSTRUCTION OF THE SEDIMENT TRAP/TEMPORARY STORMWATER MANAGEMENT DEVICE ONLY.

**SEDIMENT TRAP/TEMPORARY STORMWATER GRADING PLAN**  
SCALE 1" = 40'

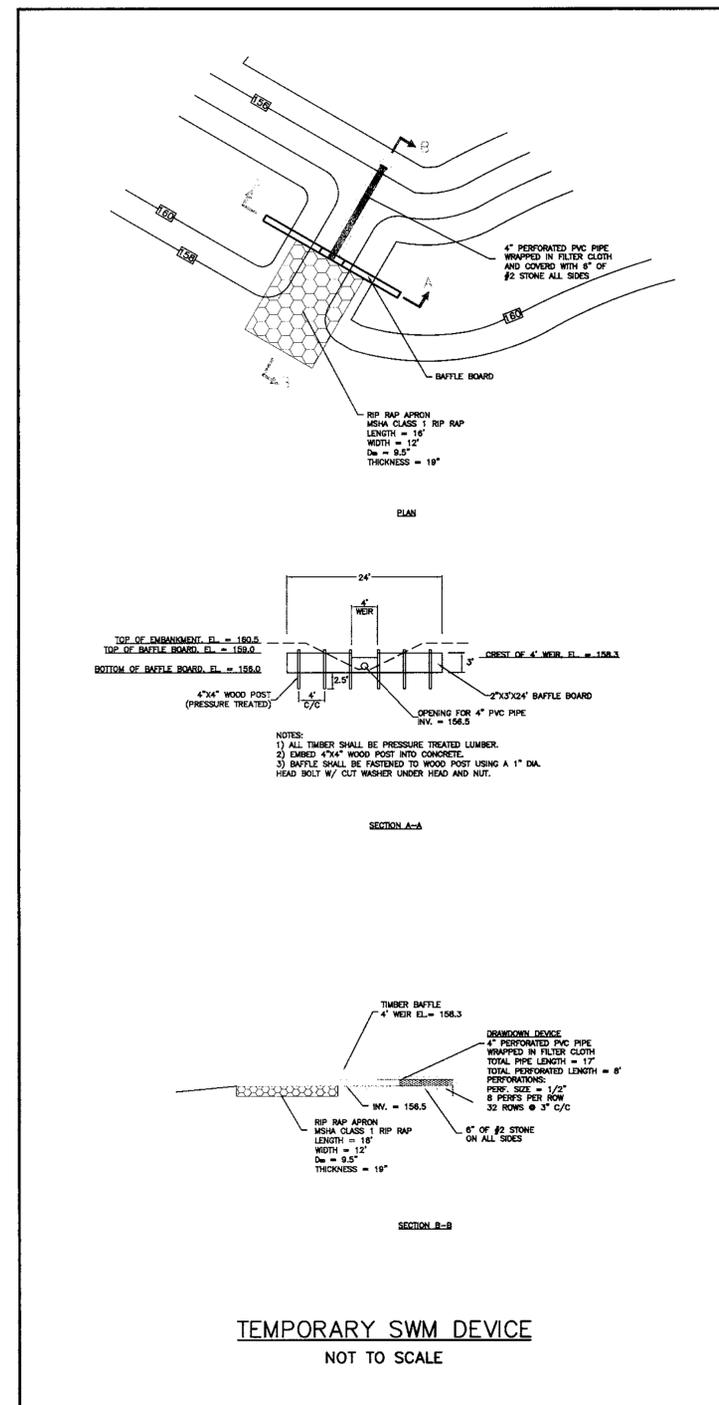
**DETAIL 10A - STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV**

(See Temporary SWM Device Detail this sheet for Outfall Structure)



**STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV**

- Construction Specifications**
- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
  - The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be 4', measured at centerline of embankment.
  - All out and fill slopes shall be 2:1 or flatter.
  - Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.
  - Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 9).
  - Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.
  - 4" - 7" stone shall be used to construct the weir and 4" - 12" or Class 1 rip-rap shall be used to construct the outlet channel.
  - Outlet - An outlet shall include a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge point shall be provided as necessary.
  - Outlet channel must have positive drainage from the trap.
  - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 of the wet storage depth of the trap (900 cu ft). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
  - The structure shall be inspected periodically after each rain and repaired as needed.
  - Construction of traps shall be carried out in such a manner that sediment pollution is avoided. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentrated inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.
  - The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.



**TEMPORARY SWM DEVICE**  
NOT TO SCALE

- NOTE:
- REPLACE FILL MATERIAL (AS NEEDED) FOR EARTH DIKES AND ABOVE THE PIPE SLOPE DRAINS AT THE BEGINNING OF EACH WORK DAY UNTIL CURB IS INSTALLED.
  - STABILIZE ALL STEEP SLOPES 25% OR GREATER WITH EROSION CONTROL MATTING (I.E. CURLEX, 700X MIRAFI OR EQUAL).
  - CONTRACTOR MAY PLACE TEMPORARY SOIL STOOPPILE AREAS WITHIN THE LIMITS OF DISTURBANCE AS NEEDED. SILT FENCE SHALL BE PLACED AT THE BASE OF THE DOWN GRADIENT SLOPE.

BY THE DEVELOPER:

I/WE 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 3/27/00  
DEVELOPER DATE

BY THE ENGINEER:

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 HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 3/27/00  
ENGINEER DATE

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

*[Signature]* 7/14/00  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*[Signature]* 7/14/00  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/7/00  
DIRECTOR DATE

*[Signature]* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 8/1/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
OWNER: THOMAS AND BARBARA PALACOROLLA 12183 TRIADDELPHIA ROAD ELLCOTT CITY, MD. 21042		
DEVELOPER: POTOMAC ABATEMENT 9550 BERGER ROAD COLUMBIA, MD. 21046 ATTN: JIM HARRIS		
PROJECT POTOMAC ABATEMENT INDUSTRIAL PARK		
AREA TAX MAP 43, BLOCK 10, ZONED M-2 PARCEL 46, 1st ELECTION DISTRICT		
TITLE T.S.W.M./SED. TRAP PLAN & DETAILS		
<b>MESSICK &amp; ASSOCIATES*</b>  CONSULTING ENGINEERS 31 OLD SOLOMONS ISLAND RD., SUITE 201 ANNAPOLIS, MARYLAND 21401 (410) 266-3212		
3/27/00 DATE  WAYNE A. NEWTON #2159T		
DESIGNED BY: WRD		
DRAWN BY: WRD		
PROJECT NO:		
DATE: APRIL 9, 1999		
SCALE: AS SHOWN		
DRAWING NO.: 4 OF 14		

**SEQUENCE OF CONSTRUCTION**

1. Obtain all necessary approvals, permits, and easements. The contractor must notify the Howard County Department of Inspection and Permits, Maryland Department of the Environment, and miss utility at least 48 hours prior to beginning work.
2. The contractor shall schedule a pre-construction meeting with the respective agencies to review the plans and permits. . . . . 1 day
3. Clear only for, grade, and install stabilized construction entrance, if required. . . . . 1 day
4. Clear only for and install perimeter sediment control measures (i.e. super silt fence, inlet protection, etc.) and tree protection fencing as shown on the approved plans. . . . . 5 days
5. Clear only the minimal area required to construct the sediment trap and temporary swm structure. . . . . 2 days
6. Clear only for and install earth dikes as shown. This will channel all on-site runoff to sediment trap. . . . . 2 days
7. Clear and grub area above underground SWM Facility. Excavate as shown on sheet 4 of the plans to provide the required temporary SWM for the site during construction. The contractor shall receive permission from the Sediment Control Inspector before proceeding. . . . . 2 weeks
8. Clear, grub and rough grade site per approved plans. . . . . 1 month
9. Excavate for footings and construct buildings (can be done concurrently with number 8). . . . . 1 year
10. Install storm drains, water, sewer, and other site utilities (can be done concurrently with number 9). . . . . 2 months
11. Fine grade site, stabilize with seed and mulch or paving (can be done concurrently with number 10). . . . . 1 month
12. With approval of the Howard County Sediment Control Inspector, flush stormdrains, construct SWM facility and stormcatchers. . . . . 3 weeks
13. Fill sediment trap and grade storage yard. Place surface course. . . . . 1 week
14. Vegetatively stabilize all remaining disturbed areas with seed and mulch. . . . . 1 day
15. Once the site is stabilized and with the approval of the Howard County Sediment Control Inspector, remove all sediment control measures. Re-stabilize areas disturbed do to the removal of the sediment control devices. . . . . 2 days

**Notes:**  
At the end of the job, the Howard County Inspector shall inspect the area below the sediment trap/stormwater management facility for erosion. If at this time the Inspector and the Soil Conservation District feel that further action is required to stabilize a eroding channel, the owner/developer shall obtain the necessary permits to provide a stabilize conveyance to the stream. The work shall proceed at the direction of the Howard County Soil Conservation District.

Small temporary stockpiles may be created within the limits of disturbance provided that the stockpiles are perimetered by silt fence. maximum height = 6", side slopes 3H:1V.

**TEMPORARY SEEDING NOTES**

- Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.
- Seedbed Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments:** Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq. ft.)
- Seeding:** For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual ryegrass (3.2 lbs. per 1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
- Mulching:** Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

**PERMANENT SEEDING NOTES**

- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seedbed Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments:** In lieu of soil test recommendations, use one of the following schedules:
- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureiform fertilizer (9 lbs. per 1000 sq.ft.).
  - 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (25 lbs. per 1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.
- Seeding:** for the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:
- 1) 2 tons per acre of well-anchored mulch straw and seed sod as possible in the spring.
  - 2) Use sod.
  - 3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.
- Mulching:** Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.
- Maintenance:** inspect all seeded areas and make needed repairs, replacements and reseedings.

**21.0 Standard and Specifications for Topsoil**

**Definition:**  
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Purpose:**  
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies:**  
I. This practice is limited to areas having 2:1 or flatter slopes where:  
a) The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.  
b) The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.  
c) The original soil to be vegetated contains material toxic to plant growth.  
d) The soil is so acidic that treatment with limestone is not feasible.

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

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

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

- I. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, concrete fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
- II. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
- III. Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

For sites having disturbed areas over 5 acres:

- I. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- II. For sites having disturbed areas over 5 acres:  
I. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:  
a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.  
b. Organic content of topsoil shall be not less than 1.5 percent by weight.  
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.  
d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals for weed control until sufficient time has elapsed (14 days minimum) to permit dissipation of phytotoxic materials.
- III. Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.
- IV. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- V. Topsoil Application  
I. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.  
II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.  
III. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.  
IV. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.  
V. Alternative for permanent seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below.  
1. Composted sludge shall be applied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.05.  
2. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.  
3. Entrance and exit sections shall be installed as shown on the detail section.  
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.  
5. Gabion Inlet Protection may be used in lieu of Rip-rap Inlet Protection.  
6. Rip-rap should blend into existing ground.  
7. Rip-rap Inlet Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1; use Earth Dike or temporary slope lining criteria.

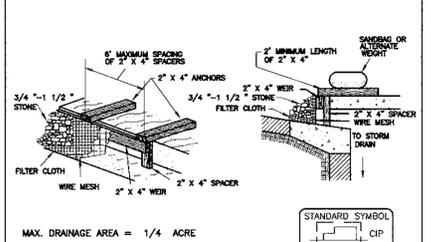
**SEEDING NOTES**

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (410) 313-1855.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL, AND ALL SUBSEQUENT REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; B) 14 DAYS AS TO OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL FOR PERMANENT SEEDINGS (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDINGS (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:  
TOTAL AREA OF SITE: 12.59 ACRES  
AREA DISTURBED: 6.72 ACRES  
AREA TO BE ROOFED OR PAVED: 4.34 ACRES  
AREA TO BE VEGETATIVELY STABILIZED: 2.38 ACRES  
TOTAL CUT: 13,800 CU. YARDS  
TOTAL FILL: 13,800 CU. YARDS  
WASTE TO BE DISPOSED OF ON A SITE WITH AN OPEN GRADING PERMIT

**SEDIMENT CONTROL NOTES**

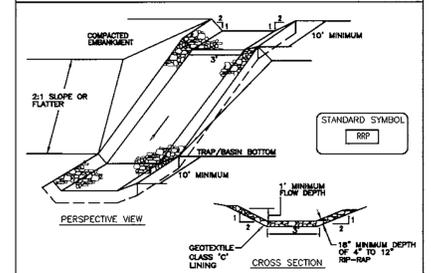
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
11. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
12. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL, OR EMBANKMENT MATERIAL. NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
13. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
14. TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
15. BORROW SITE TO BE PRE-APPROVED BY THE SEDIMENT CONTROL INSPECTOR, OR IN CASE OF EXCESS MATERIAL, AN APPROVED SEDIMENT CONTROL PLAN WILL BE NEEDED TO DEPOSIT EXCESS OFF-SITE.

**DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)**



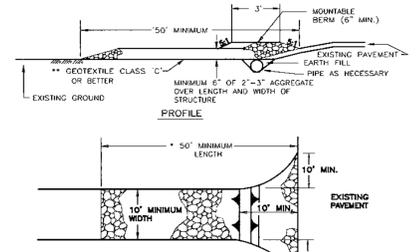
**Construction Specifications:**  
1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4") to the 2" x 4" wire (measuring throat length plus 2") as shown on the standard drawing.  
2. Place a continuous piece of Geotextile Class F of same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" wire.  
3. Securely nail the 2" x 4" wire to a 8" long vertical spacer to be located between the wire and the inlet face (max. 4" apart).  
4. Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the wire or spacer sections). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.  
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.  
6. Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete curb and against the face of the curb on both sides of the inlet. Place clean 3/4" x 1/2" aggregate over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.  
7. The type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.  
8. Assume that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

**DETAIL 5 - RIP-RAP INFLOW PROTECTION**



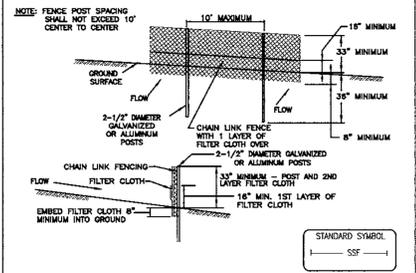
**Construction Specifications:**  
1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min.) bottom width. The channel shall be filled with 4" to 12" rip-rap to a depth of 18".  
2. Filter cloth shall be installed under all rip-rap.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

**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**



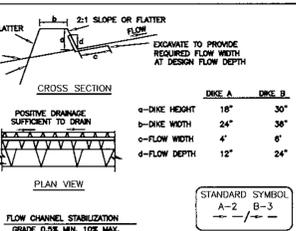
**Construction Specifications:**  
1. Length - minimum of 50' (\*30' for single residence lot).  
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.  
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stones. The plan approval authority may not require single family residences to use geotextile.  
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 8" deep over the length and width of the entrance.  
5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a malleable berm with 5:1 slope and a minimum of 8" of stone over the pipe. Pipe has to be sized according to the drainage. When the pipe is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.  
6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

**DETAIL 33 - SUPER SILT FENCE**

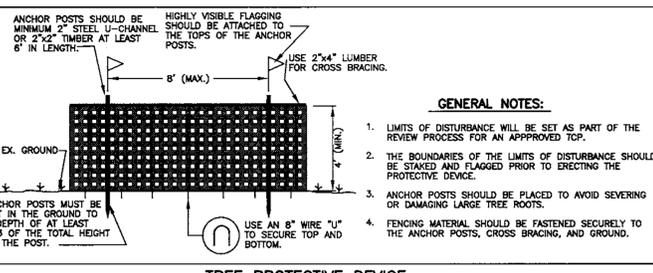


**Construction Specifications:**  
1. Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fence. The specification for a 42 inch fence shall be used, substituting 42 inch fabric and 8 foot length posts.  
2. The poles do not need to be set in concrete.  
3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.  
4. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.  
5. Filter cloth shall be embedded a minimum of 8" into the ground.  
6. When two sections of filter cloth adjoin each other, they shall be overlapped, folded and stapled to prevent sediment bypass.  
7. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or the sediment accumulation reaches 50% of the fabric height.

**DETAIL 1 - EARTH DIKE**

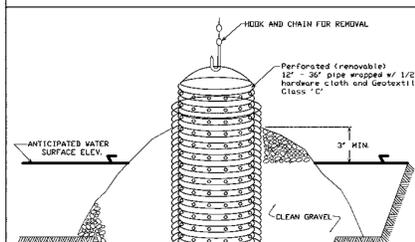


**Construction Specifications:**  
1. Seed and cover with straw mulch.  
2. Seed and cover with Erosion Control Matting or Erosion Control Blanket.  
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum.  
4. All temporary earth dikes shall have unimpaired positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.  
5. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.  
6. Runoff diverted from an undisturbed area shall collect directly into an unobstructed, stabilized area at a non-erosive velocity.  
7. All earth removed and earth needed for construction shall be placed so that it will not interfere with the functioning of the dike.  
8. Inspection and maintenance must be provided periodically and after each rain event.



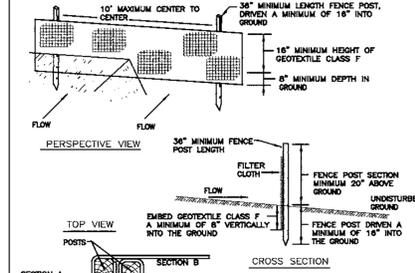
**GENERAL NOTES:**  
1. LIMITS OF DISTURBANCE WILL BE SET AS PART OF THE REVIEW PROCESS FOR AN APPROVED TOS.  
2. THE BOUNDARIES OF THE LIMITS OF DISTURBANCE SHOULD BE STAKED AND FLAGGED PRIOR TO ERECTING THE PROTECTIVE DEVICE.  
3. ANCHOR POSTS SHOULD BE PLACED TO AVOID SEVERING OR DAMAGING LARGE TREE ROOTS.  
4. FENCING MATERIAL SHOULD BE FASTENED SECURELY TO THE ANCHOR POSTS, CROSS BRACING, AND GROUND.

**DETAIL 20A - REMOVABLE PUMPING STATION**



**Construction Specifications:**  
1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.  
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.  
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" x 6" slots or 1" diameter holes. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.  
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation of river crest elevation when dewatering a basin.

**DETAIL 22 - SILT FENCE**



**Construction Specifications:**  
1. Fence posts shall be a minimum of 36" long driven 18" minimum into the ground. Wood posts shall be 1-1/2" x 1-1/2" square (minimum) cut, or 1-3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 1" or 1 1/2" section weighting not less than 1.00 pound per linear foot.  
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:  
Tenacity Strength: 50 lb/in (min.)  
Tensile Modulus: 20 lb/in (min.)  
Flow Rate: 0.3 gal ft<sup>2</sup>/minute (max.)  
Filtering Efficiency: 75% (min.)  
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.  
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or the sediment accumulation reaches 50% of the fabric height.

BY THE DEVELOPER:  
I/WE 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*James S.* 3/27/00  
DEVELOPER DATE

BY THE ENGINEER:  
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 HOWARD SOIL CONSERVATION DISTRICT.  
*Wm. J. H.* 3/27/00  
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.  
*Cheryl Simms* 7/14/00  
NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*Cheryl Simms* 7/14/00  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*David R. Smith* 8/7/00  
DIRECTOR DATE  
*W.D. Dammann* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Cindy Hanrahan* 9/1/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER: THOMAS AND BARBARA PALACOROLLA  
12183 TRIADPHILIA ROAD  
ELLICOTT CITY, MD. 21042

DEVELOPER: POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

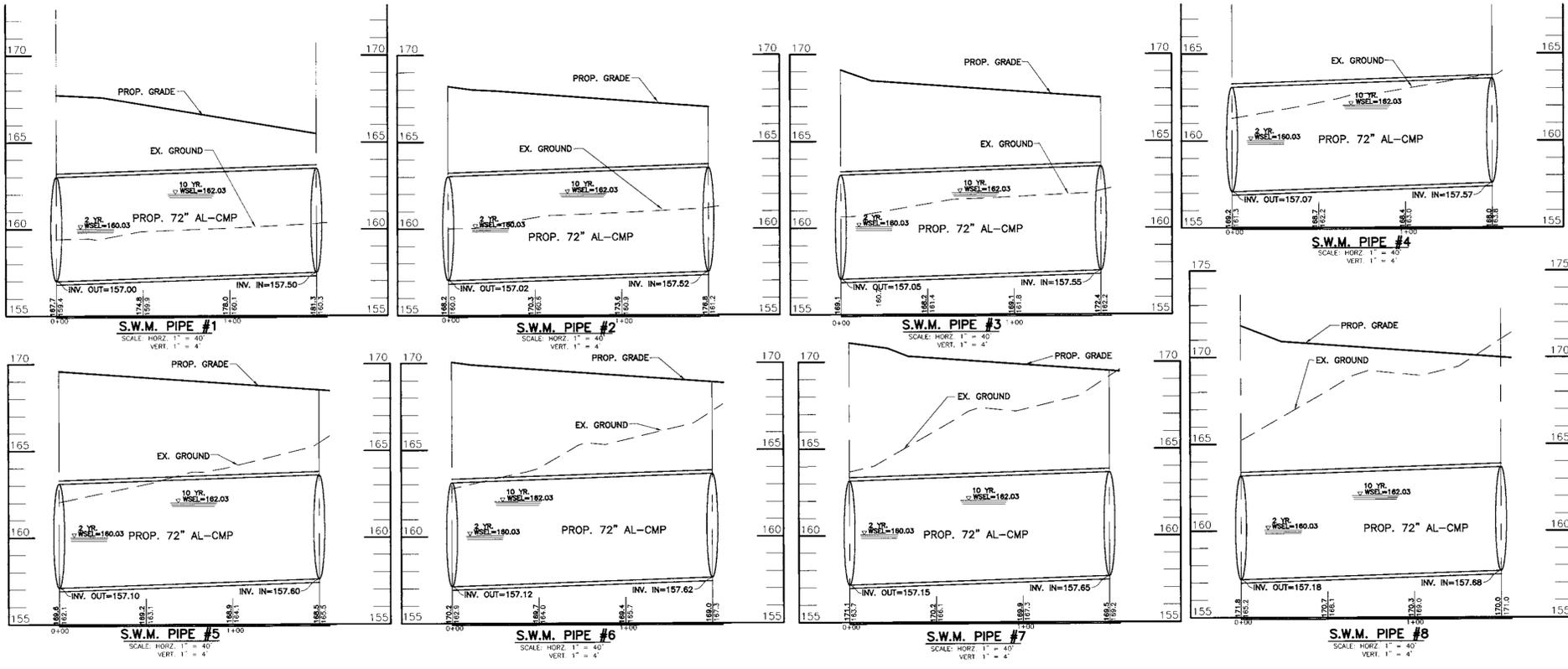
PROJECT: POTOMAC ABATEMENT INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE: GRADING AND SEDIMENT CONTROL NOTES AND DETAILS

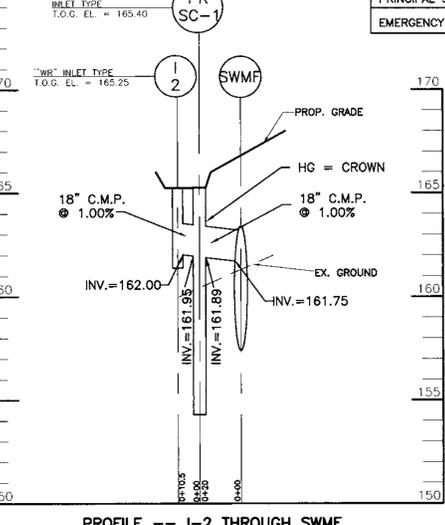
MESSICK & ASSOCIATES\*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

3/27/00  
DATE  
*Wm. J. H.*  
DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 5 OF 14  
WAYNE A. NEWTON #21591



- NOTES:
- ALL PIPES, HEADERS AND RISERS SHALL BE 12 GAUGE CORRUGATED METAL PIPE WITH 5"x1" CORRUGATIONS.
  - ALL METAL SURFACES SHALL BE GALVANIZED AND PAINTED WITH TWO COATS OF BATTLESHIP GREY PAINT OR EQUIVALENT.
  - ALL JOINTS SHALL BE WATERTIGHT. ALL JOINTS SHALL BE 90 CORRUGATED BANDS WITH FLAT GASKET, SEE DETAIL ON SHEET 6.
  - THE CONTRACTOR SHALL CONTACT CONTECH CONSTRUCTION PRODUCTS, INC. AT (410) 740-8490 FOR SYSTEM PRODUCTS, FABRICATION AND INSTALLATION.

SWM SUMMARY CHART			
STORM	2 YR.	10 YR.	100 YR.
ALLOWABLE RELEASE RATE	8.36 cfs	19.01 cfs	N/A
INFLOW	20.67 cfs	35.98 cfs	52.68 cfs
DISCHARGE	5.41 cfs	15.54 cfs	37.42 cfs
DISCHARGE ELEVATION	160.03	162.03	163.10
STORAGE	0.39 Ac-ft	0.73 Ac-ft	0.87 Ac-ft
RISER TYPE = ALUMINIZED CORRUGATED METAL (12 GAUGE)			
PRINCIPAL SPILLWAY = 36" AL-C.M.P. (12 GAUGE)			
EMERGENCY SPILLWAY = NONE			



BY THE DEVELOPER:

I/WE 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*James S.* 3/27/00  
DEVELOPER DATE

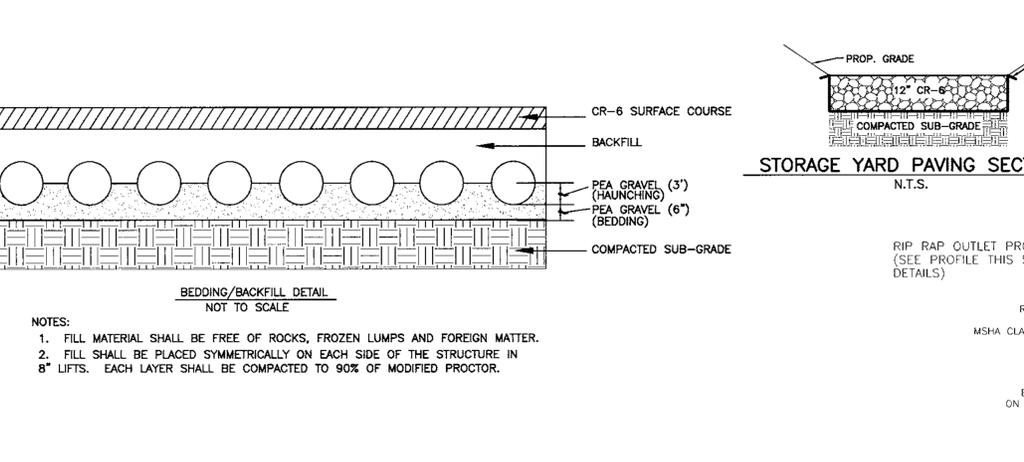
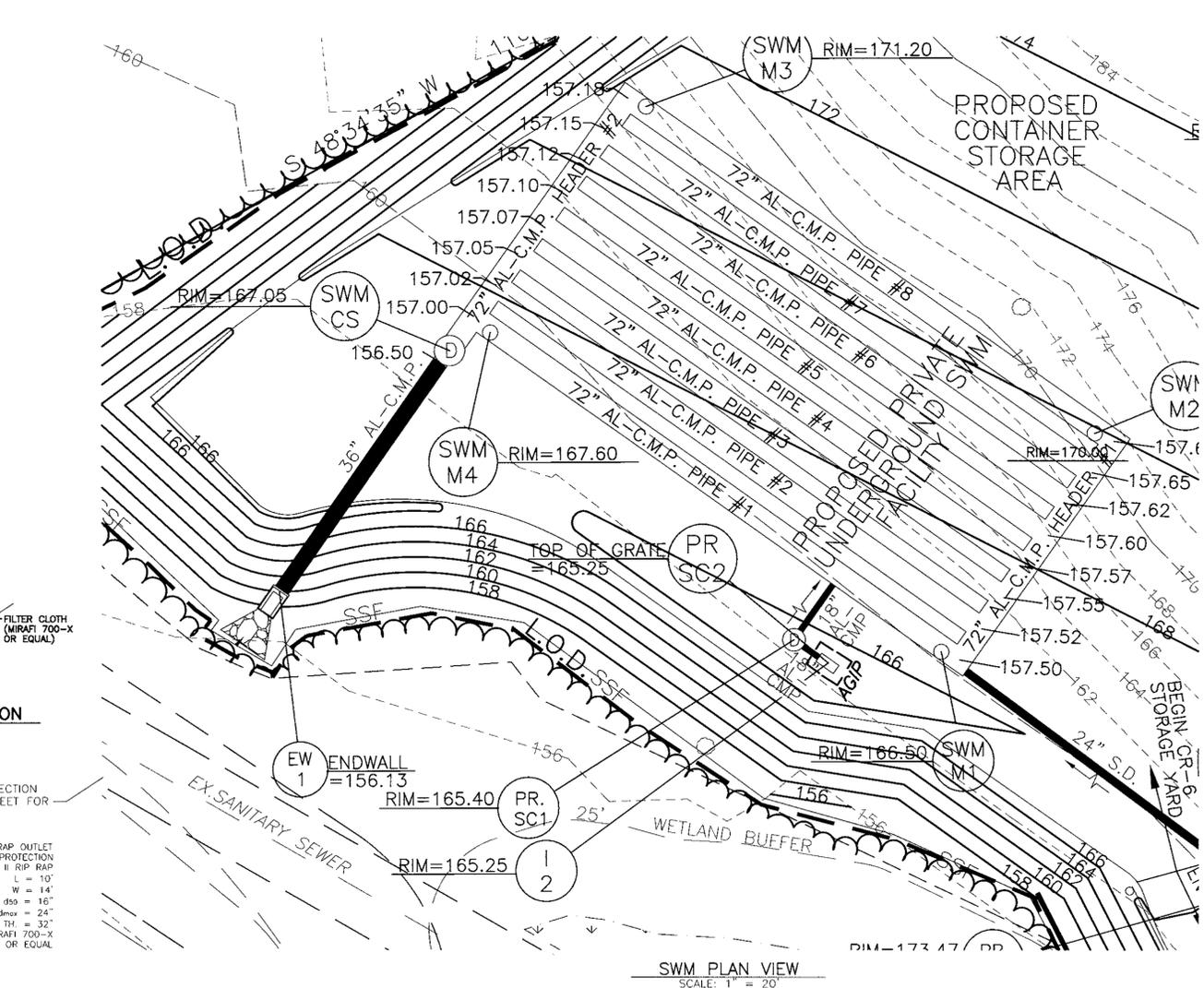
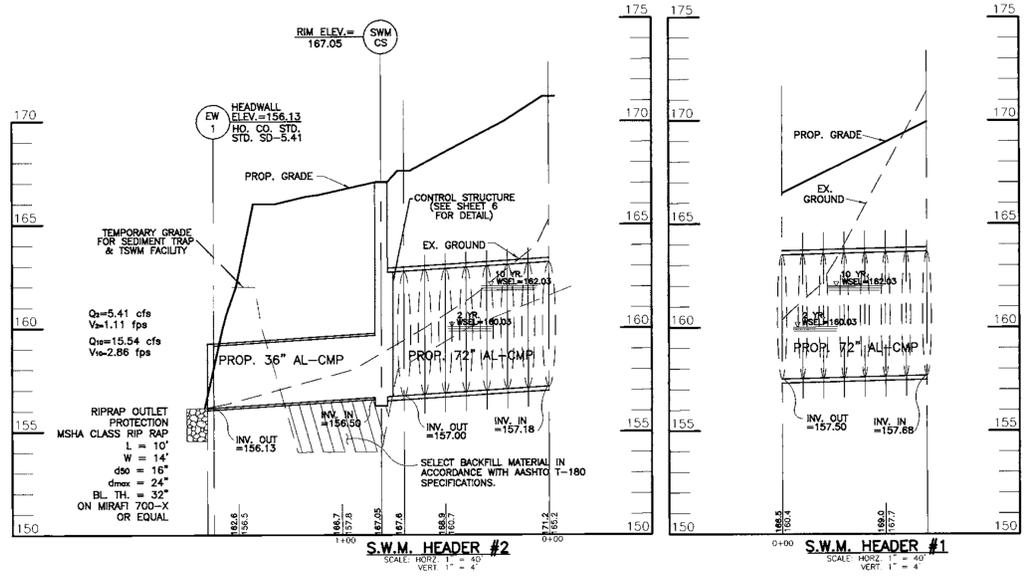
BY THE ENGINEER:

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 HOWARD SOIL CONSERVATION DISTRICT.

*Wayne A. Newton* 3/27/00  
ENGINEER DATE

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

*Chief Samy Las* 7/19/00  
NATURAL RESOURCES CONSERVATION SERVICE DATE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Paul P. Ratts* 8/7/00  
DIRECTOR DATE

*Chris Drummer* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hanrahan* 9/1/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER: THOMAS AND BARBARA PALACOROLLA  
12183 TRIADPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER: POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: POTOMAC ABATEMENT INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

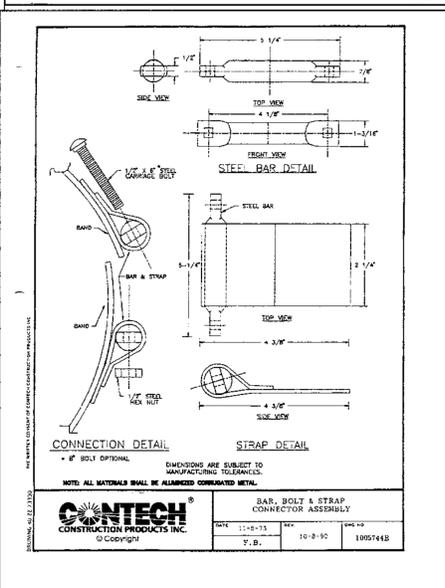
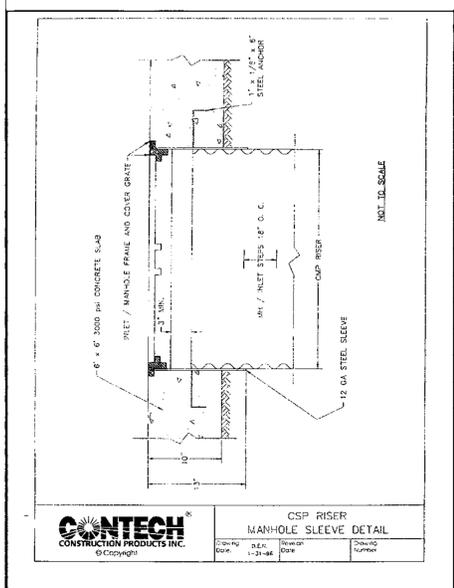
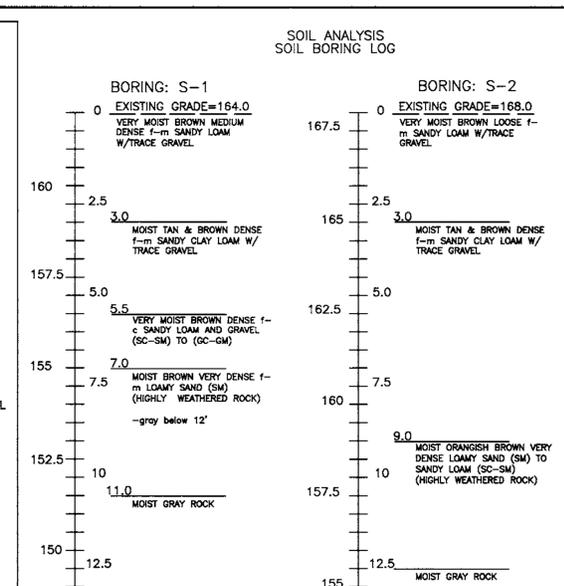
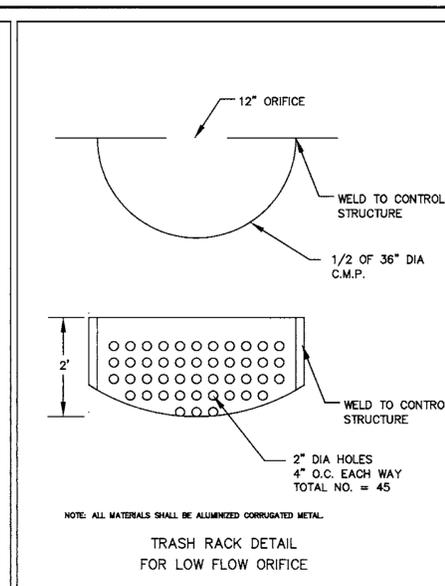
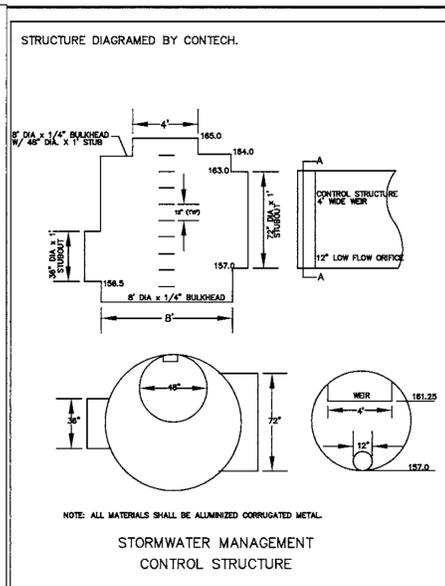
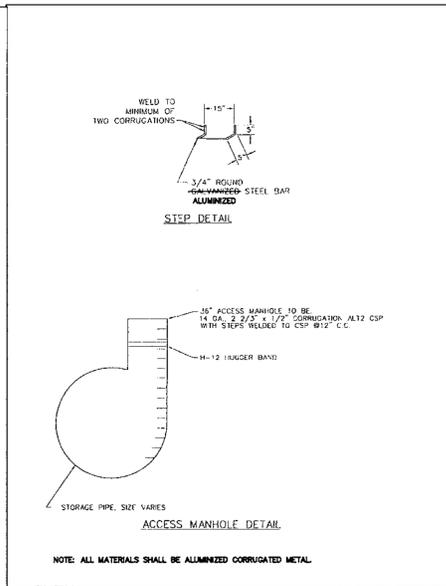
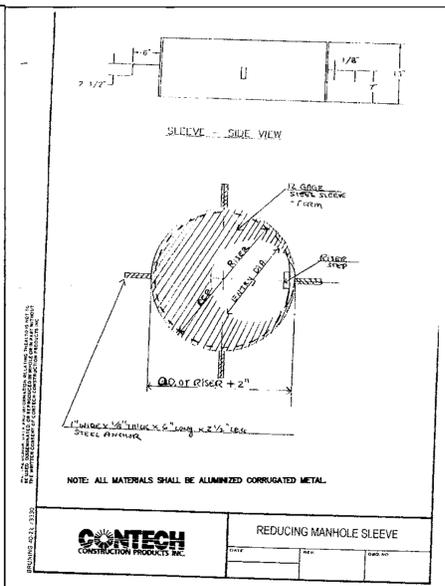
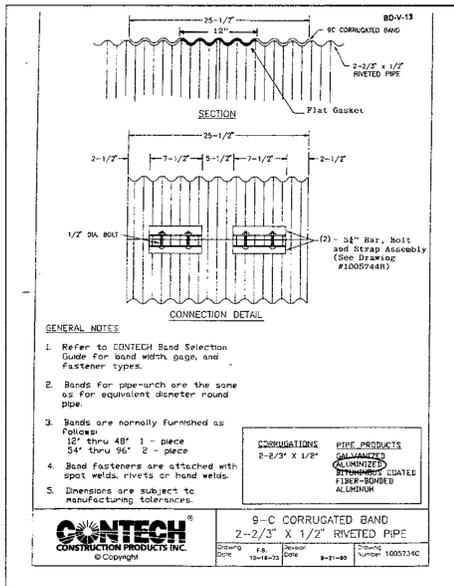
TITLE: SWM PLAN AND PROFILES

MESSICK & ASSOCIATES \*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

3/27/00  
DATE

*Wayne A. Newton*

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 6 OF 14



**OPERATION AND MAINTENANCE SCHEDULE FOR STORMCEPTOR WATER QUALITY DEVICE**

- The Stormceptor water quality structure shall be periodically inspected and cleaned to maintain operation and function. The owner shall inspect the Stormceptor unit yearly at a minimum, utilizing the Stormceptor Inspection/Monitoring Form. Inspections shall be done by using a clear Plexiglas tube ("sludge judge") to extract a water column sample. When the sediment depth exceeded the level specified in Table 6 of the Stormceptor Technical Manual, the unit must be cleaned.
- The Stormceptor water quality structure shall be checked and cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
- The maintenance of the Stormceptor unit shall be done using a vacuum truck which will remove the water, sediment, debris, floating hydrocarbons and other materials in the unit. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
- The inlet and outlet pipes shall be checked for any obstructions at least once every six months. If obstructions are found the owner shall have them removed. Structural parts of the Stormceptor unit shall be repaired as needed.
- The owner shall retain and make the Stormceptor Inspection/Monitoring Forms available the Howard County officials upon their request.

**OPERATION AND MAINTENANCE SCHEDULE FOR UNDERGROUND STORMWATER MANAGEMENT FACILITY**

The underground stormwater management facility shall be inspected, cleaned, and maintained periodically to maintain optimal operation and function.

**Inspection**

The underground SWM facility shall be inspected, at minimum, once a year or as required by Howard County. The inspection shall include but not limited to:

- Check inlet, outlet, control structure, and trash rack for obstructions. If obstructions are found, remove immediately.
- Check both pipe joints and control structure for water tightness (leaks).
- Check the structural integrity (deflections) of all pipes.
- Check sediment depth in the structure.

The inspection shall be documented in written log books. The log books shall be retained on site and be made available to Howard County officials upon request.

**Maintenance**

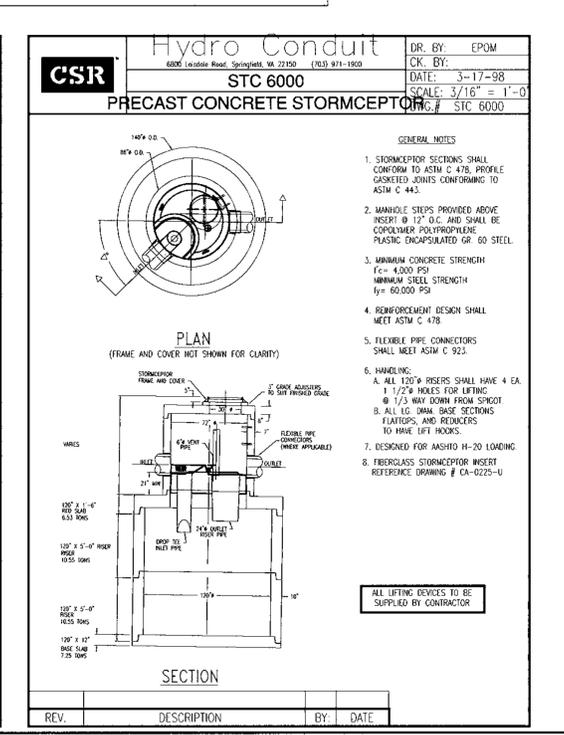
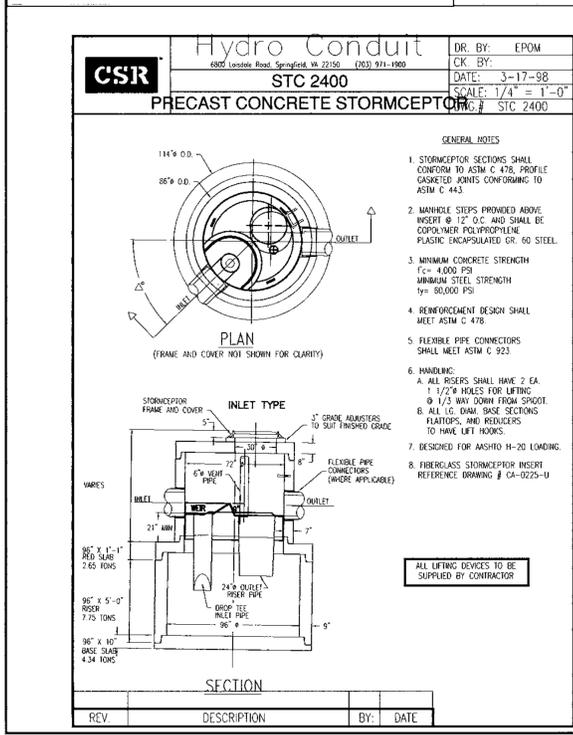
The underground SWM facility shall be maintained as needed to provide optimal operation and function.

- Obstructions - remove immediately upon inspection.
- Sediment and debris - The facility shall be cleaned if sediment exceeds 6 inches in depth, or if debris prevents the structure from functioning properly.
- Cracks/Structural Problems - Consult manufacturer for repair services and/or details.

**CONSTRUCTION SPECIFICATIONS**

ALL SITE PREPARATION, CONSTRUCTION AND INSTALLATION, AND BACKFILLING OF THE PROPOSED DEVICES SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

- UNDERGROUND STORMWATER MANAGEMENT DEVICE (MANUFACTURER - CONTECH CONSTRUCTION PRODUCTS, INC. - COLUMBIA, MD.)
- STORMCEPTOR WATER QUALITY STRUCTURES (MANUFACTURER - STORMCEPTOR CORPORATION - ROCKVILLE, MD.)



**Stormceptor Order Form**

For Office Use Only  
Order # \_\_\_\_\_ Date \_\_\_\_\_

Which plant will be manufacturing the unit:  
**ROCKVILLE, MARYLAND**

Manhole #	PR-SC1
Finish Top elevation (ft)	165.25
Top slab elevation (ft)	164.63
Inlet pipe invert (ft)	0
Outlet pipe invert (ft)	162.13
Pipe Type	AL-CMP
Inlet Pipe Inside Dia. (in) (ID)	NA
Inlet Pipe Outside Dia. (in) (OD)	NA
Outlet Pipe Inside Dia. (in) (ID)	18
Outlet Pipe Outside Dia. (in) (OD)	21

Stormceptor Model # (Circle One): 4300 500 1200 1500 2500 3000 3500 6000 7200  
Default Type (Circle One): Commercial General Residential Highway/Drift Gas Station Manhole  
Other (Specify in notes):  
Crack Open: Single Inlet Multiple Inlet Impervious Drainage Area (in acres) **1.60**  
Installation Type (Circle One): New Construction or Retrofit

Contractor Information:  
Contractor: **POTOMAC ABATEMENT** Contact Person: **JAMES HARRIS**  
Address: **410 381-2020** Phone: (410) 266-3212 Fax: (410) 266-3502

**Stormceptor Order Form**

For Office Use Only  
Order # \_\_\_\_\_ Date \_\_\_\_\_

Which plant will be manufacturing the unit:  
**ROCKVILLE, MARYLAND**

Manhole #	PR-SC2
Finish Top elevation (ft)	173.47
Top slab elevation (ft)	172.47
Inlet pipe invert (ft)	167.25
Outlet pipe invert (ft)	163.10
Pipe Type	AL-CMP
Inlet Pipe Inside Dia. (in) (ID)	24
Inlet Pipe Outside Dia. (in) (OD)	30
Outlet Pipe Inside Dia. (in) (ID)	24
Outlet Pipe Outside Dia. (in) (OD)	30

Stormceptor Model # (Circle One): 4300 500 1200 1500 2500 3000 3500 6000 7200  
Default Type (Circle One): Commercial General Residential Highway/Drift Gas Station Manhole  
Other (Specify in notes):  
Crack Open: Single Inlet Multiple Inlet Impervious Drainage Area (in acres) **5.12**  
Installation Type (Circle One): New Construction or Retrofit

Contractor Information:  
Contractor: **POTOMAC ABATEMENT** Contact Person: **JAMES HARRIS**  
Address: **410 381-2020** Phone: (410) 266-3212 Fax: (410) 266-3502

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Lois L. Butler* 8/7/00  
DIRECTOR DATE

*William J. Williams* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy H. Hunter* 9/1/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER: **THOMAS AND BARBARA PALACOROLLA**  
12183 TRIADDELPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER: **POTOMAC ABATEMENT**  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: **POTOMAC ABATEMENT INDUSTRIAL PARK**

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

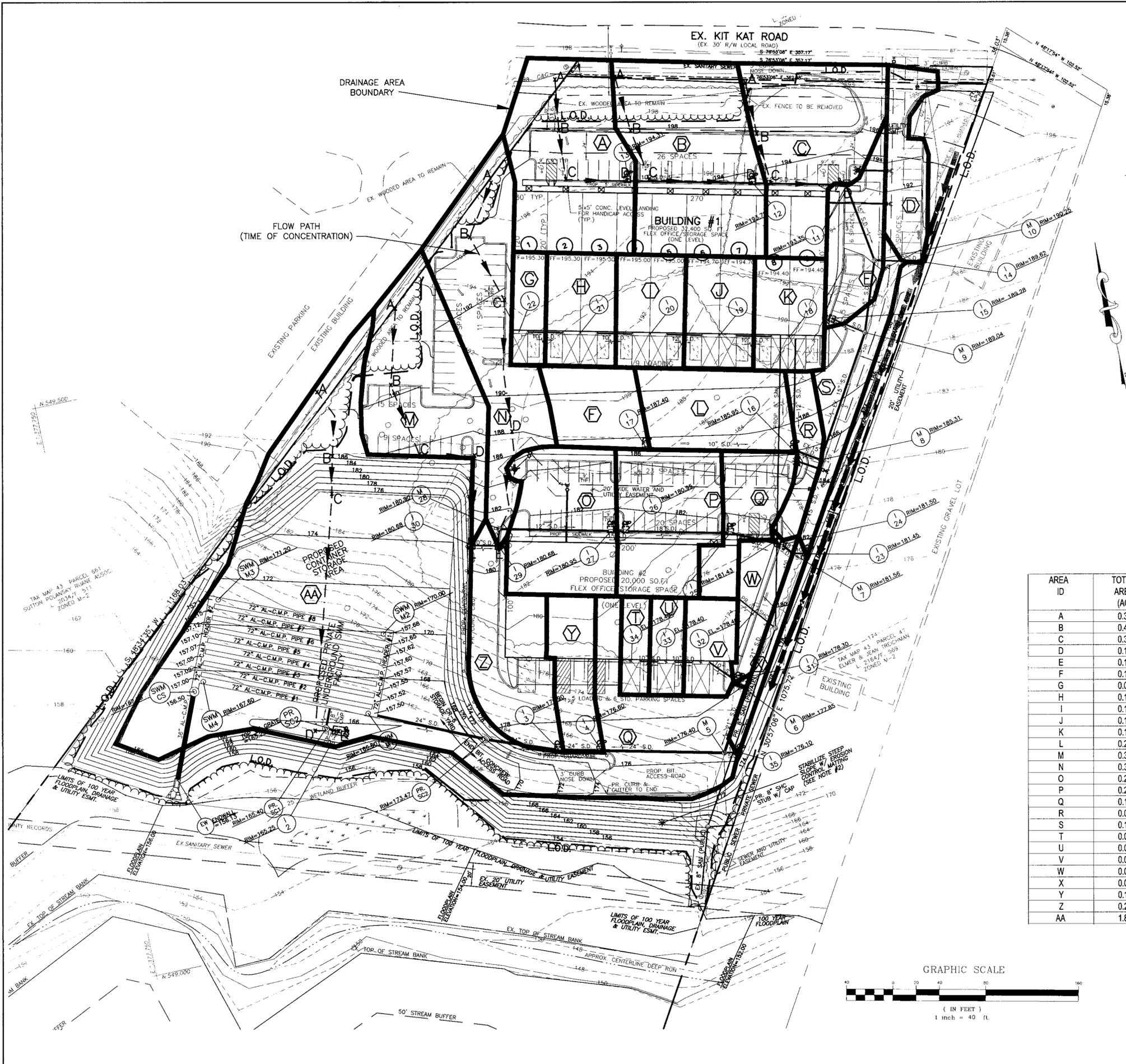
TITLE: **SWM DETAILS AND FORMS**

**MESSICK & ASSOCIATES**  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

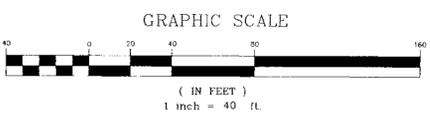
DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 7 OF 14

WAYNE A. NEWTON #21591

SDP-99-130



AREA ID	TOTAL AREA (AC)	PERCENT IMPERVIOUS %	COMPOSITE "C" FACTOR
A	0.37	63	0.58
B	0.45	77	0.69
C	0.33	70	0.66
D	0.13	100	0.86
E	0.14	86	0.76
F	0.13	100	0.86
G	0.07	100	0.86
H	0.13	100	0.86
I	0.13	100	0.86
J	0.13	100	0.86
K	0.14	100	0.86
L	0.21	100	0.86
M	0.33	67	0.62
N	0.36	72	0.67
O	0.26	85	0.76
P	0.24	92	0.80
Q	0.13	77	0.71
R	0.08	100	0.86
S	0.15	100	0.86
T	0.08	100	0.86
U	0.06	100	0.86
V	0.05	100	0.86
W	0.09	56	0.56
X	0.05	100	0.86
Y	0.12	100	0.86
Z	0.23	91	0.80
AA	1.85	77	0.70



BY THE DEVELOPER:  
 I/WE 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 3/27/00  
 DEVELOPER DATE

BY THE ENGINEER:  
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 [Signature] 3/27/00  
 ENGINEER DATE

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

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 8/7/00  
 DIRECTOR DATE  
 [Signature] 7/19/00  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
 [Signature] 8/1/00  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER:  
 THOMAS AND BARBARA PALACOROLLA  
 12183 TRIADELPHIA ROAD  
 ELLICOTT CITY, MD. 21042  
 DEVELOPER:  
 POTOMAC ABATEMENT  
 9550 BERGER ROAD  
 COLUMBIA, MD. 21046  
 ATTN: JIM HARRIS

PROJECT  
 POTOMAC ABATEMENT  
 INDUSTRIAL PARK

AREA  
 TAX MAP 43, BLOCK 10, ZONED M-2  
 PARCEL 46,  
 1st ELECTION DISTRICT

TITLE  
 STORM DRAIN DRAINAGE AREA MAP

MESSICK & ASSOCIATES \*  
 CONSULTING ENGINEERS  
 31 OLD SOLOMONS ISLAND RD., SUITE 201  
 ANNAPOLIS, MARYLAND 21401  
 (410) 266-3212

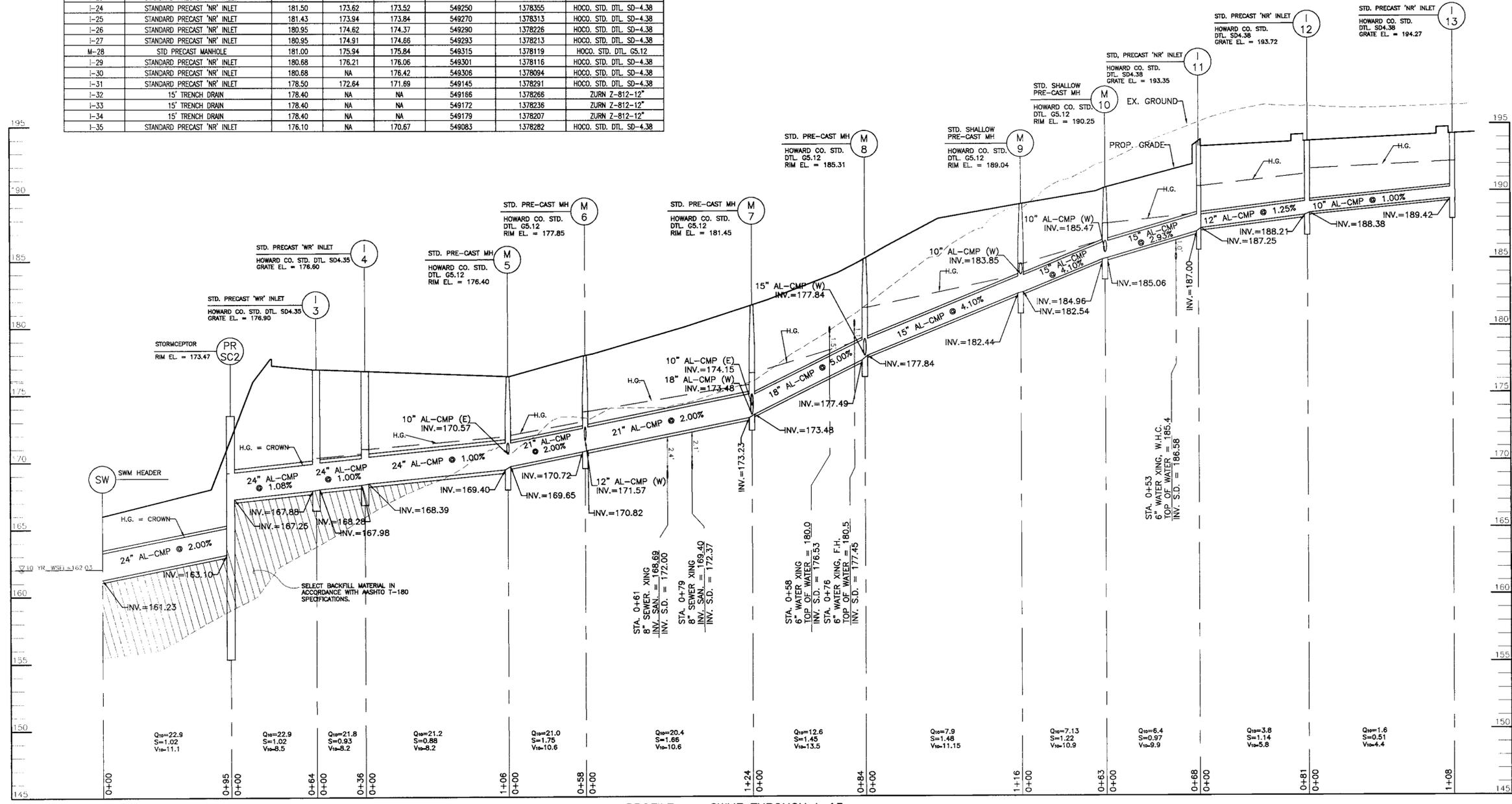
3/27/00  
 DATE  
 [Signature]  
 DESIGNED BY: WRD  
 DRAWN BY: WRD  
 PROJECT NO:  
 DATE: APRIL 9, 1999  
 SCALE: AS SHOWN  
 WAYNE A. NEWTON #2159T  
 DRAWING NO.: 8 OF 14

STORM DRAIN STRUCTURE SCHEDULE									
STRUCTURE ID	STRUCTURE TYPE	TOP ELEVATION	INVERTS		LOCATION (COORDINATES)		DETAIL REFERENCE		
			IN	OUT	NORTHING	EASTING			
EW-1	CONCRETE END WALL	156.13	NA	156.13	549180	1377803	HO. CO. SD-5.41		
SWM-CS	AL-CMP RISER	167.05	NA	NA	549232	1377833	CONTEC		
SWM-M1	AL-CMP RISER	166.50	NA	NA	549183	1377976	CONTEC		
SWM-M2	AL-CMP RISER	170.00	NA	NA	549249	1378004	CONTEC		
SWM-M3	AL-CMP RISER	171.20	NA	NA	549306	1377870	CONTEC		
SWM-M4	AL-CMP RISER	167.60	NA	NA	549238	1377842	CONTEC		
PR-SC1	STORMCEPTOR (STC 2400) - MANHOLE	165.25	161.95	161.89	549178	1377937	STORMCEPTOR		
PR-SC2	STORMCEPTOR (STC 8000) - MANHOLE	173.47	167.25	163.10	549140	1378070	STORMCEPTOR		
I-2	STANDARD PRECAST "NR" INLET	165.25	NA	162.00	549173	1377947	HOCO. STD. DTL. SD-4.23		
I-3	STANDARD PRECAST "NR" INLET	176.90	167.98	167.88	549118	1378130	HOCO. STD. DTL. SD-4.35		
I-4	STANDARD PRECAST "NR" INLET	176.60	168.39	168.28	549109	1378165	HOCO. STD. DTL. SD-4.35		
M-5	STD PRECAST MANHOLE	176.40	169.65	169.40	549085	1378269	HOCO. STD. DTL. GS.12		
M-6	STD PRECAST MANHOLE	177.85	170.82	170.72	549134	1378299	HOCO. STD. DTL. GS.12		
M-7	STD PRECAST MANHOLE	181.56	173.48	173.23	549241	1378362	HOCO. STD. DTL. GS.12		
M-8	STD PRECAST MANHOLE	185.31	177.84	177.49	549315	1378403	HOCO. STD. DTL. GS.12		
M-9	STD PRECAST MANHOLE	189.04	182.53	182.43	549414	1378463	HOCO. STD. DTL. GS.12		
M-10	STD PRECAST MANHOLE	190.25	185.06	184.96	549474	1378484	HOCO. STD. DTL. GS.12		
I-11	STANDARD PRECAST "NR" INLET	193.35	187.25	187.00	549542	1378474	HOCO. STD. DTL. SD-4.38		
I-12	STANDARD PRECAST "NR" INLET	193.72	188.38	188.21	549561	1378396	HOCO. STD. DTL. SD-4.38		
I-13	STANDARD PRECAST "NR" INLET	194.27	NA	189.42	549585	1378290	HOCO. STD. DTL. SD-4.38		
I-14	STANDARD PRECAST "NR" INLET	189.62	NA	185.99	549485	1378522	HOCO. STD. DTL. SD-4.38		
I-15	STANDARD PRECAST "NR" INLET	188.26	NA	184.93	549433	1378438	HOCO. STD. DTL. SD-4.38		
I-16	STANDARD PRECAST "NR" INLET	185.95	178.61	178.19	549328	1378382	HOCO. STD. DTL. SD-4.38		
I-17	STANDARD PRECAST "NR" INLET	187.40	NA	179.77	549357	1378258	HOCO. STD. DTL. SD-4.38		
I-18	30' TRENCH DRAIN	190.40	NA	NA	549424	1378398	ZURN Z-812-12"		
I-19	30' TRENCH DRAIN	190.70	NA	NA	549438	1378340	ZURN Z-812-12"		
I-20	30' TRENCH DRAIN	191.00	NA	NA	549451	1378281	ZURN Z-812-12"		
I-21	30' TRENCH DRAIN	191.30	NA	NA	549465	1378223	ZURN Z-812-12"		
I-22	15' TRENCH DRAIN	191.30	NA	NA	549477	1378171	ZURN Z-812-12"		
I-23	STANDARD PRECAST "NR" INLET	181.50	NA	174.25	549238	1378375	HOCO. STD. DTL. SD-4.38		
I-24	STANDARD PRECAST "NR" INLET	181.50	173.62	173.52	549250	1378355	HOCO. STD. DTL. SD-4.38		
I-25	STANDARD PRECAST "NR" INLET	181.43	173.94	173.84	549270	1378313	HOCO. STD. DTL. SD-4.38		
I-26	STANDARD PRECAST "NR" INLET	180.95	174.62	174.37	549290	1378226	HOCO. STD. DTL. SD-4.38		
I-27	STANDARD PRECAST "NR" INLET	180.95	174.91	174.66	549293	1378213	HOCO. STD. DTL. SD-4.38		
M-28	STD PRECAST MANHOLE	181.00	175.94	175.84	549315	1378119	HOCO. STD. DTL. GS.12		
I-29	STANDARD PRECAST "NR" INLET	180.68	176.21	176.06	549301	1378116	HOCO. STD. DTL. SD-4.38		
I-30	STANDARD PRECAST "NR" INLET	180.68	NA	176.42	549308	1378094	HOCO. STD. DTL. SD-4.38		
I-31	STANDARD PRECAST "NR" INLET	178.50	172.64	171.69	549145	1378291	HOCO. STD. DTL. SD-4.38		
I-32	15' TRENCH DRAIN	178.40	NA	NA	549166	1378266	ZURN Z-812-12"		
I-33	15' TRENCH DRAIN	178.40	NA	NA	549172	1378236	ZURN Z-812-12"		
I-34	15' TRENCH DRAIN	178.40	NA	NA	549179	1378207	ZURN Z-812-12"		
I-35	STANDARD PRECAST "NR" INLET	176.10	NA	170.67	549083	1378282	HOCO. STD. DTL. SD-4.38		

STORM DRAIN PIPE SCHEDULE												
STRUCTURE FROM	STRUCTURE TO	PIPE SIZE (INCHES)	PIPE TYPE	PIPE CLASSIFICATION	TOTAL LENGTH	STRUCTURE		PIPE SIZE (INCHES)	PIPE TYPE	PIPE CLASSIFICATION	TOTAL LENGTH	
						FROM	TO					
SWMF	PR-SC1	18	AL-CMP	12 GAUGE	10							
PR-SC1	I-2	18	AL-CMP	12 GAUGE	10	I-16	I-17	10	AL-CMP	12 GAUGE	123	
SWMF	PR-SC2	24	AL-CMP	12 GAUGE	92	I-16	I-18	12	AL-CMP	12 GAUGE	95	
PR-SC2	I-3	24	AL-CMP	12 GAUGE	58	I-18	I-19	12	AL-CMP	12 GAUGE	66	
I-3	I-4	24	AL-CMP	12 GAUGE	31	I-19	I-20	12	AL-CMP	12 GAUGE	60	
I-4	M-5	24	AL-CMP	12 GAUGE	102	I-20	I-21	10	AL-CMP	12 GAUGE	60	
M-5	M-6	21	AL-CMP	12 GAUGE	54	I-21	I-22	10	AL-CMP	12 GAUGE	46	
M-6	M-7	21	AL-CMP	12 GAUGE	120	M-7	I-23	10	AL-CMP	12 GAUGE	10	
M-7	M-8	18	AL-CMP	12 GAUGE	80	M-7	I-24	18	AL-CMP	12 GAUGE	9	
M-8	M-9	15	AL-CMP	12 GAUGE	112	I-24	I-25	18	AL-CMP	12 GAUGE	42	
M-9	M-10	15	AL-CMP	12 GAUGE	61	I-25	I-26	18	AL-CMP	12 GAUGE	86	
M-10	I-11	15	AL-CMP	12 GAUGE	66	I-26	I-27	15	AL-CMP	12 GAUGE	9	
I-11	I-12	12	AL-CMP	12 GAUGE	77	I-27	I-28	12	AL-CMP	12 GAUGE	93	
I-12	I-13	10	AL-CMP	12 GAUGE	104	I-28	I-29	12	AL-CMP	12 GAUGE	11	
M-10	I-14	10	AL-CMP	12 GAUGE	36	I-29	I-30	10	AL-CMP	12 GAUGE	20	
M-9	I-15	10	AL-CMP	12 GAUGE	29	M-6	I-31	12	AL-CMP	12 GAUGE	10	
M-8	I-16	15	AL-CMP	12 GAUGE	23	I-31	I-32	10	AL-CMP	12 GAUGE	33	
I-16	I-17	10	AL-CMP	12 GAUGE	123	I-32	I-33	10	AL-CMP	12 GAUGE	30	
						I-33	I-34	10	AL-CMP	12 GAUGE	30	
						I-34	I-35	10	AL-CMP	12 GAUGE	10	

NOTES: 1) THE CONTRACTOR SHALL CROSS-REFERENCE ALL INFORMATION IN BOTH THE PIPE AND STRUCTURE SCHEDULES WITH THE INFORMATION CONTAINED IN THE PROFILES. IF THERE ARE ANY DISCREPANCIES BETWEEN SAID INFORMATION, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR VERIFICATION. PRIOR TO CASTING OR ORDERING MATERIALS, ANY INCORRECT CASTINGS OR PURCHASES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

2) ALL STORM DRAIN PIPE SHALL BE "ULTRAFLO" ALUMINIZED CORRUGATED METAL PIPE WITH A N=0.013 BY CONTECH CONSTRUCTION PRODUCTS, INC. OR APPROVED EQUAL.



PROFILE -- SWMF THROUGH I-13  
SCALE: HORZ. 1" = 40'  
VERT. 1" = 4'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*James S. Balle* 8/7/00  
DIRECTOR DATE

*Walter D. ...* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cecily ...* 8/1/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER: THOMAS AND BARBARA PALACOROLLA  
12183 TRIADLPHIA ROAD  
ELLICOTT CITY, MD. 21042

DEVELOPER: POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: POTOMAC ABATEMENT INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE: STORM DRAIN PROFILES

MESSICK & ASSOCIATES\*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

3/27/00  
DATE

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 9 OF 14

WAYNE A. NEWTON #21591

SDP-99-130



**SPECIFICATIONS**

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

**Site Preparation**

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

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

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

**Earth Fill**

**Materials** - The fill material shall be taken from approved, designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stone greater than 6", frozen or other objectionable materials. Fill material for the embankment shall conform to Unified Soil Classification GC, SC, CH or CL.

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

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

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within +2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

**Cut Off Trench** - The cutoff trench shall be excavated into 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.

**Structure Backfill**

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

**Pipe Conduits**

All pipes shall be circular in cross section.

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

**1. Materials**

**Steel Pipe** - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating conforming with the minimum width being four feet. The following coatings or an approved equal may be used; Nexon, Plast-Coat, Bloc-Klad, and Best-Co-Lay. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

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

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

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

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

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

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

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

**Backfilling** - Backfilling shall conform to "Structural Backfill"

**Other Details** - Other details such as 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 in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and on 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.

**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 spaced for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

**Backfilling** - Backfilling shall conform to "Structural Backfill"

**Other Details** - Other details such as 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** - Joints and connections to anti-seep collars shall be completely watertight.

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

**Backfilling** - Backfilling shall conform to "Structural Backfill"

**Other details** - Other details such as 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 414, Mix No. 3.

**Rock Riprap**

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311 & 901.2.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09.

**Care of Water During Construction**

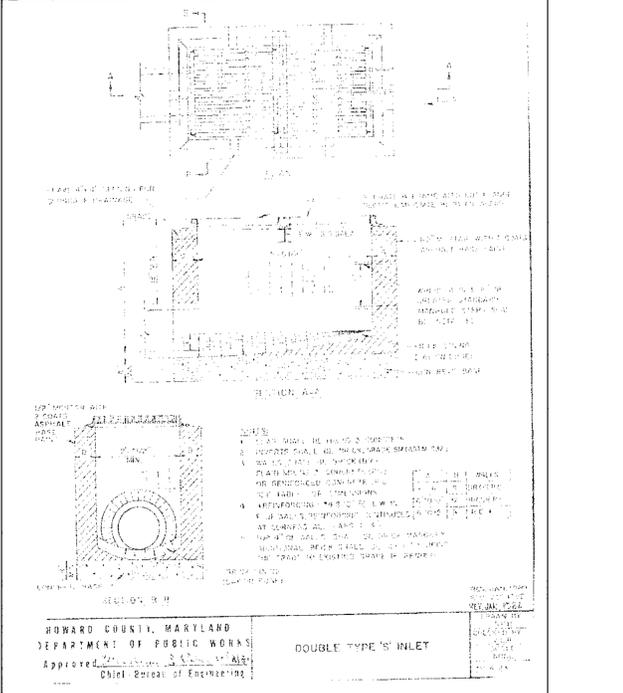
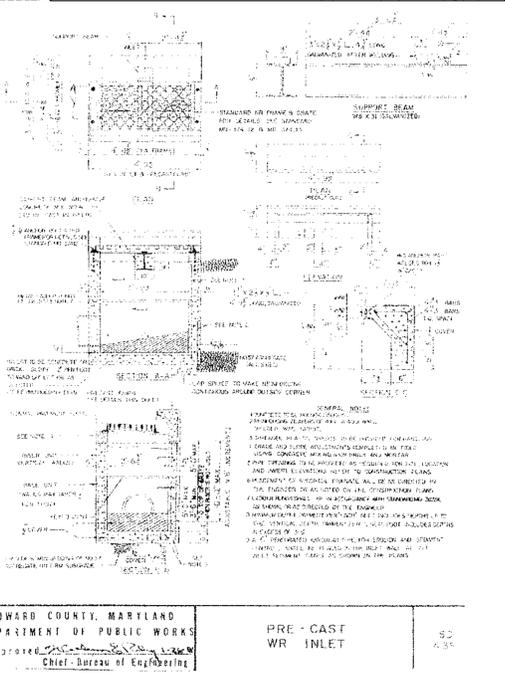
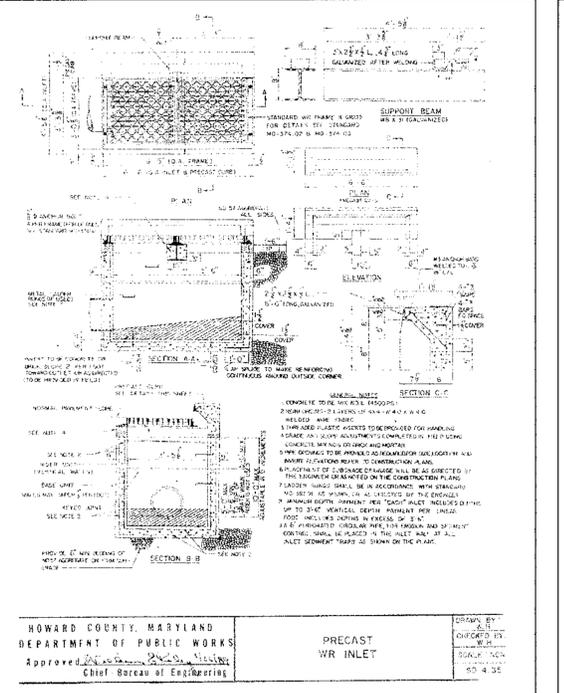
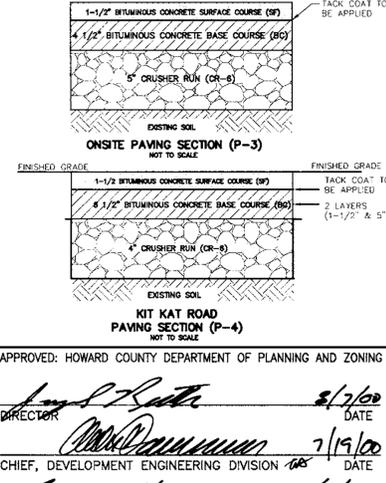
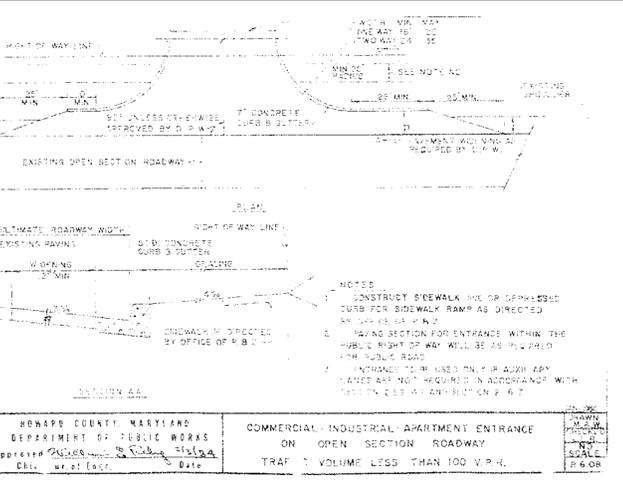
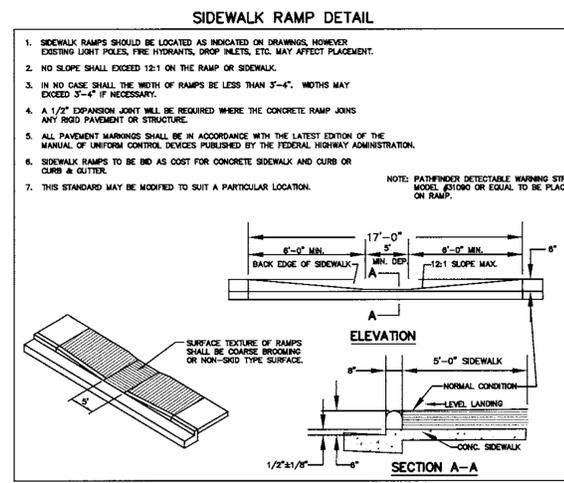
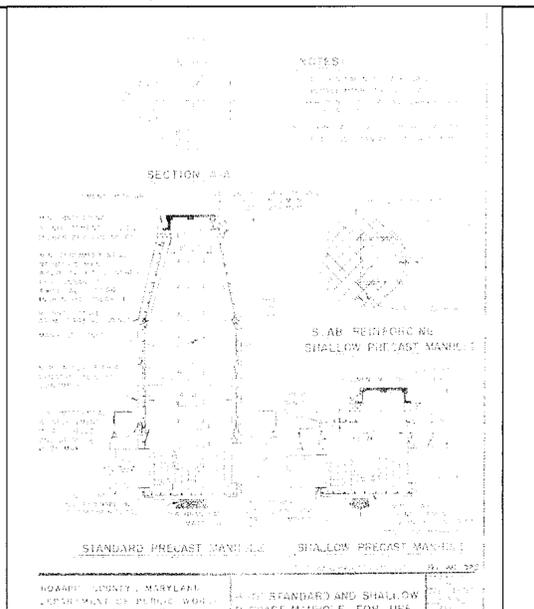
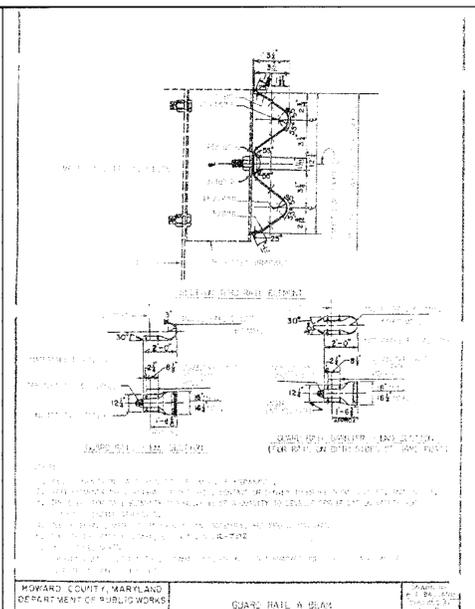
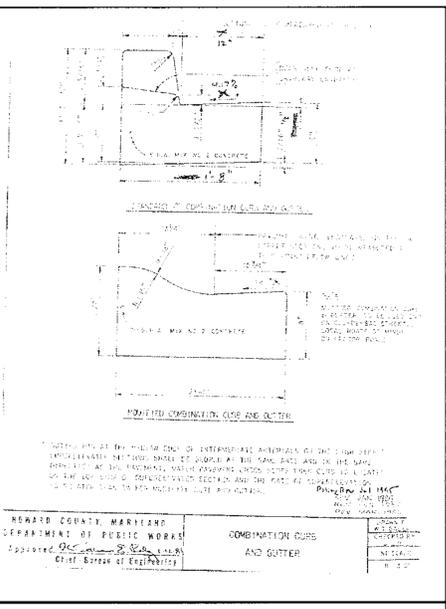
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also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

**Stabilization**

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

**Erosion and Sediment Control**

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



DATE NO. REVISION

OWNER: THOMAS AND BARBARA PALACOROLLA  
12183 TRIADPHIA ROAD  
ELLICOTT CITY, MD. 21042

DEVELOPER: POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: POTOMAC ABATEMENT  
INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE: DETAILS AND SPECS

MESSICK & ASSOCIATES\*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

3/23/00 DATE

DESIGNED BY: WRD

DRAWN BY: WRD

PROJECT NO:

DATE: APRIL 9, 1999

SCALE: AS SHOWN

WAYNE A. NEWTON #21591 DRAWING NO.: 11 OF 14

SDP-99-130

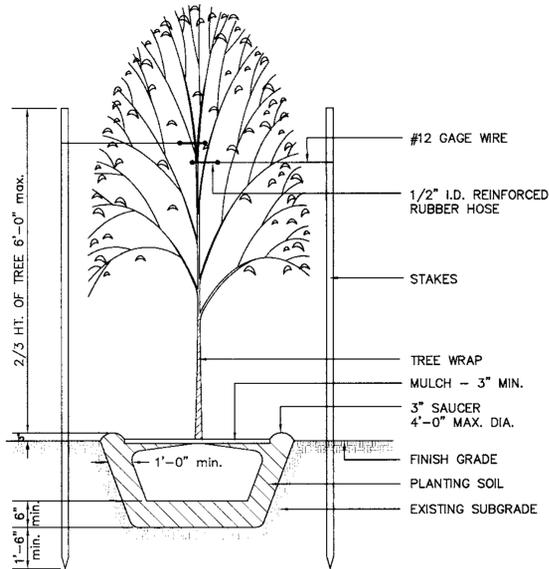
**PLANTING NOTES:**

- All plants shall be nursery grown.
  - All plants shall conform to the standards of AAN. They shall be typical of their species or variety and shall have a normal habit of growth. They shall be sound, healthy and vigorous, well-branched and densely foliated when in leaf. They shall be free of disease and insect pests, eggs, or larvae. They shall have healthy, well-developed root systems.
  - No substitutions shall be made without the approval of the landscape architect.
  - Balled and burlapped plants shall be dug with firm natural balls of earth, of diameter and depth to include most of the fibrous roots. Container grown stock shall have been grown in a container long enough for the root system to be developed sufficiently to hold its soil together firm and whole. No plants shall be loose in the container.
  - Root balls of all plants shall be adequately protected at all times from sun and drying winds or frost.
  - Owner or his representative shall be notified prior to beginning planting operations.
  - All trees shall be wrapped immediately after they are planted.
- Approved tree wrap shall be installed according to accepted industry practice.
- Each tree and shrub shall be pruned in accordance with the American Association of Nurserymen Standards to preserve the natural character of the plant. All dead wood or suckers and all broken or badly bruised branches shall be removed. Cuts over 1" in diameter shall be painted with an approved tree paint.
  - Mulch: Immediately after planting operations are completed all trees and shrub planting pits shall be covered with a 2" layer of Shredded Hardwood Bark Mulch or other material approved by the owner or his representative. The limit of this mulch for trees shall be the area of the pit and for shrubs in beds, the entire area of the shrub bed.
  - Trees in leaf when planted shall be treated with anti-desiccant such as Wilt-proof.
  - Conditions detrimental to plants: the contractor shall notify the project representative in writing of all soil or drainage conditions which the contractor considers detrimental to the growth of plants. He shall state the conditions and submit a proposal for correcting the conditions, including any change in cost for review and acceptance by the project representative.
  - Minor adjustments to tree location may be necessary due to field conditions and final grading. The contractor shall notify the owner if major adjustments are required.

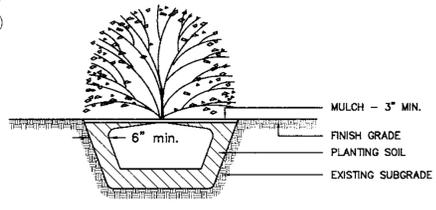
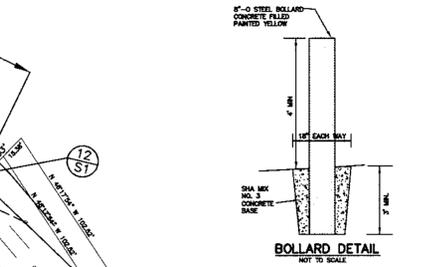
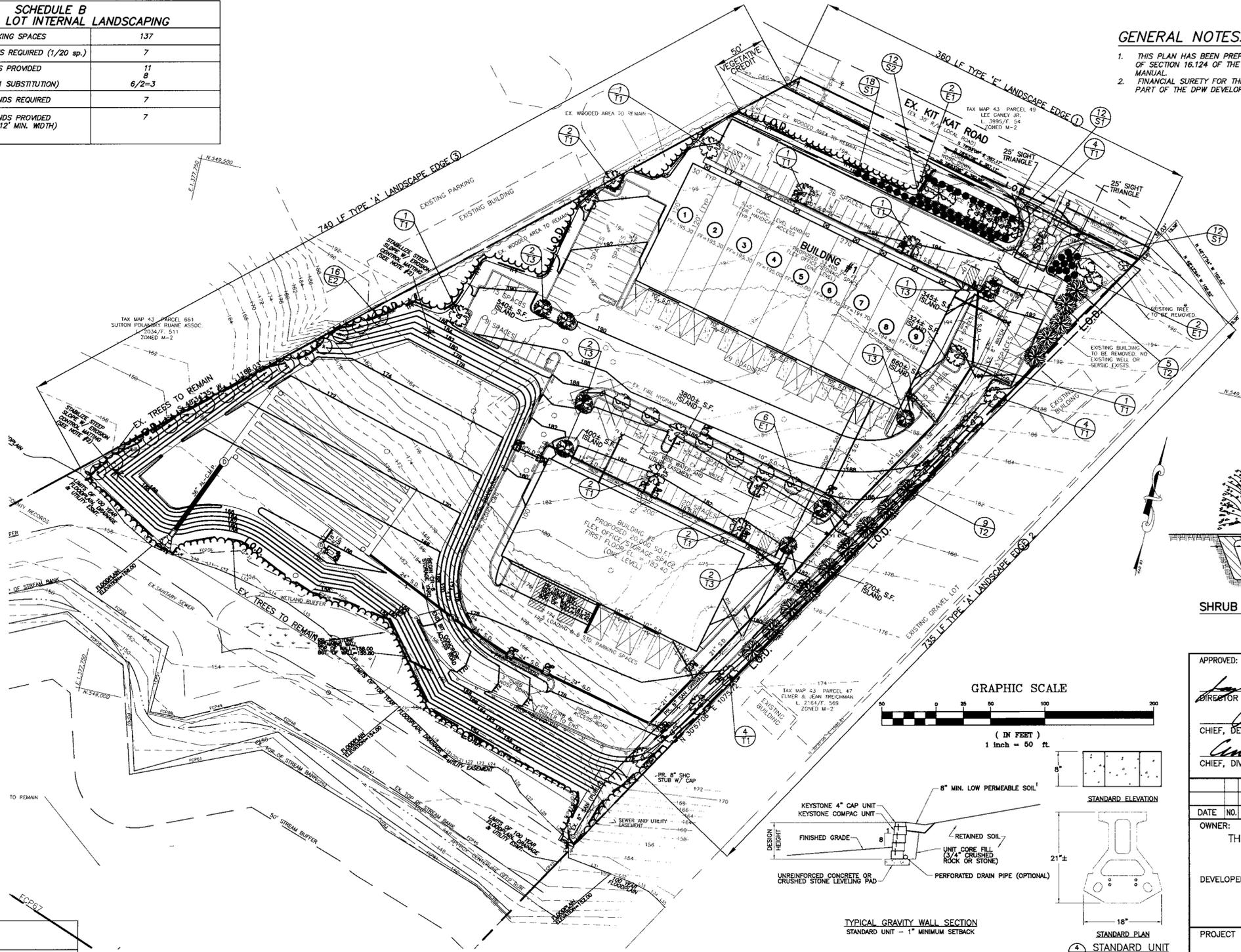
SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	137
NUMBER OF TREES REQUIRED (1/20 sp.)	7
NUMBER OF TREES PROVIDED	11
SHADE TREES	8
OTHER TREES (2:1 SUBSTITUTION)	6/2=3
NUMBER OF ISLANDS REQUIRED	7
NUMBER OF ISLANDS PROVIDED (200 sf/ISLAND, 12' MIN. WIDTH)	7

**GENERAL NOTES:**

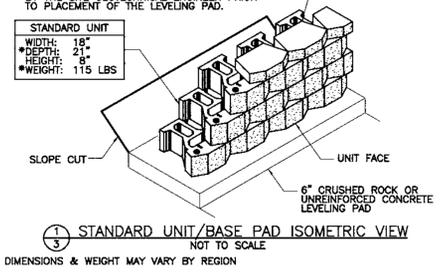
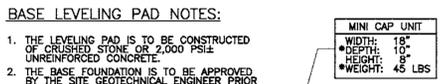
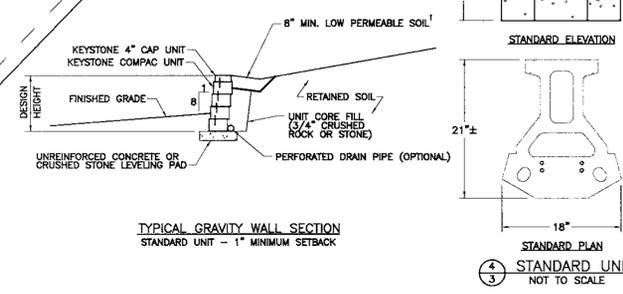
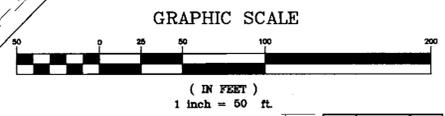
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$12,960.00.



TREE PLANTING DETAIL - LESS THAN 4" CAL.



SHRUB PLANTING DETAIL



PLANT LIST				
Symbol	Key	Botanical Name Common Name	Size	Quantity
T1		Acer Rubrum "October Glory" October Glory Red Maple	2 1/2" - 3" Cal. B&B	23
T2		Platanus Acerfolia Bloodgood Bloodgood London Plane Tree	2' - 2 1/2' HT. B&B	14
T3		Zelkova Serrata "Village Green" Village Green Zelkova	2 1/2" - 3" Cal. B&B	8
S1		Euonymus Alatus Compacta Dwarf Winged Euonymus	2' - 2 1/2' HT. B&B	42
S2		Forsythia Intermedia Spectabilis Forsythia	2' - 2 1/2' HT. B&B	12
E1		Ilex Opaca American Holly	5-6' Hgt. B&B	12
E2		Cupressocyparis Leylandii Leyland Cypress	5-6' Hgt. B&B	16

SCHEDULE A PERIMETER LANDSCAPE EDGE			
CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES	
	①	②	③
LANDSCAPE EDGE	360'	735'	740'
LANDSCAPE TYPE	"E"	"A"	"A"
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	360'	735'	740'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES/155'	* NO/0'	* YES/50'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO/0'	* NO/0'	* NO/0'
RESULTANT PERIMETER LENGTH	205'	735'	690'
NUMBER OF PLANTS REQUIRED			
SHADE TREES	205/40=6	735/60=13	690/60=12
EVERGREEN TREES	0	0=0	0=0
SHRUBS	205/4=52	0=0	0=0
NUMBER OF PLANTS PROVIDED			
SHADE TREES	4	22	4
EVERGREEN TREES	4	0	0
OTHER TREES (2:1 SUBSTITUTION)	0	0	0
SHRUBS (2:1 SUBSTITUTION)	54 (SHRUBS)	0	**16 EVERGREEN=8 SHADE

\* -FROM KIT KAT ROAD TO LIMIT OF DISTURBANCE (FLOODPLAIN)  
EX. WOODS TO REMAIN AND NO DISTURBANCE PROPOSED BEYOND THIS DISTANCE.  
\*\* =16 EVERGREENS WILL BE SUBSTITUTED FOR 8 SHADE TREES ALONG THE WESTERN EDGE OF THE STORAGE YARD TO PROVIDE A BETTER SCREENING FROM THE ADJACENT PROPERTY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/7/00 DATE  
DIRECTOR

*[Signature]* 7/19/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 8/1/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

---

DATE NO. REVISION

OWNER:  
THOMAS AND BARBARA PALACOROLLA  
12183 TRIADDELPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER:  
POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT  
POTOMAC ABATEMENT  
INDUSTRIAL PARK

AREA  
TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE  
LANDSCAPING PLAN

MESSICK & ASSOCIATES \*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 286-3212

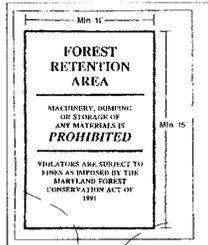
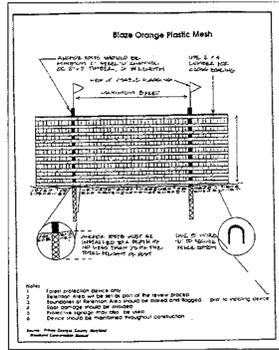
3/21/00 DATE

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 12 OF 14

WAYNE A. NEWTON #2159T

**EXISTING WETLANDS  
METES & BOUNDS  
1859.17 SQ. FT.**

W1	N 60°15'59" E	12.49'
W2	N 85°04'49" E	9.67'
W3	N 86°50'06" E	14.01'
W4	N 80°55'41" E	18.90'
W5	N 87°04'44" E	31.37'
W6	N 76°31'41" E	41.24'
W7	S 10°25'53" W	11.76'
W8	S 87°10'51" W	29.58'
W9	N 72°34'30" W	24.45'
W10	S 80°55'36" W	37.27'
W11	N 72°27'33" W	34.35'



LINE	LENGTH	BEARING
L1	5.74	N74°19'44"W
L2	15.58	N58°33'15"W
L3	18.70	N59°14'53"W
L4	26.59	N49°33'14"W
L5	15.34	N61°44'55"W
L6	17.65	N83°02'22"W
L7	12.28	N78°45'51"W
L8	8.02	N80°41'42"W
FCP36	63.01	N73°46'02"E
FCP37	12.44	S50°18'14"E
FCP38	153.57	S76°59'23"E
FCP39	88.45	S36°42'35"E
FCP40	146.45	S76°27'37"E
FCP41	11.42	S10°53'15"E
FCP42	14.62	S11°54'54"W

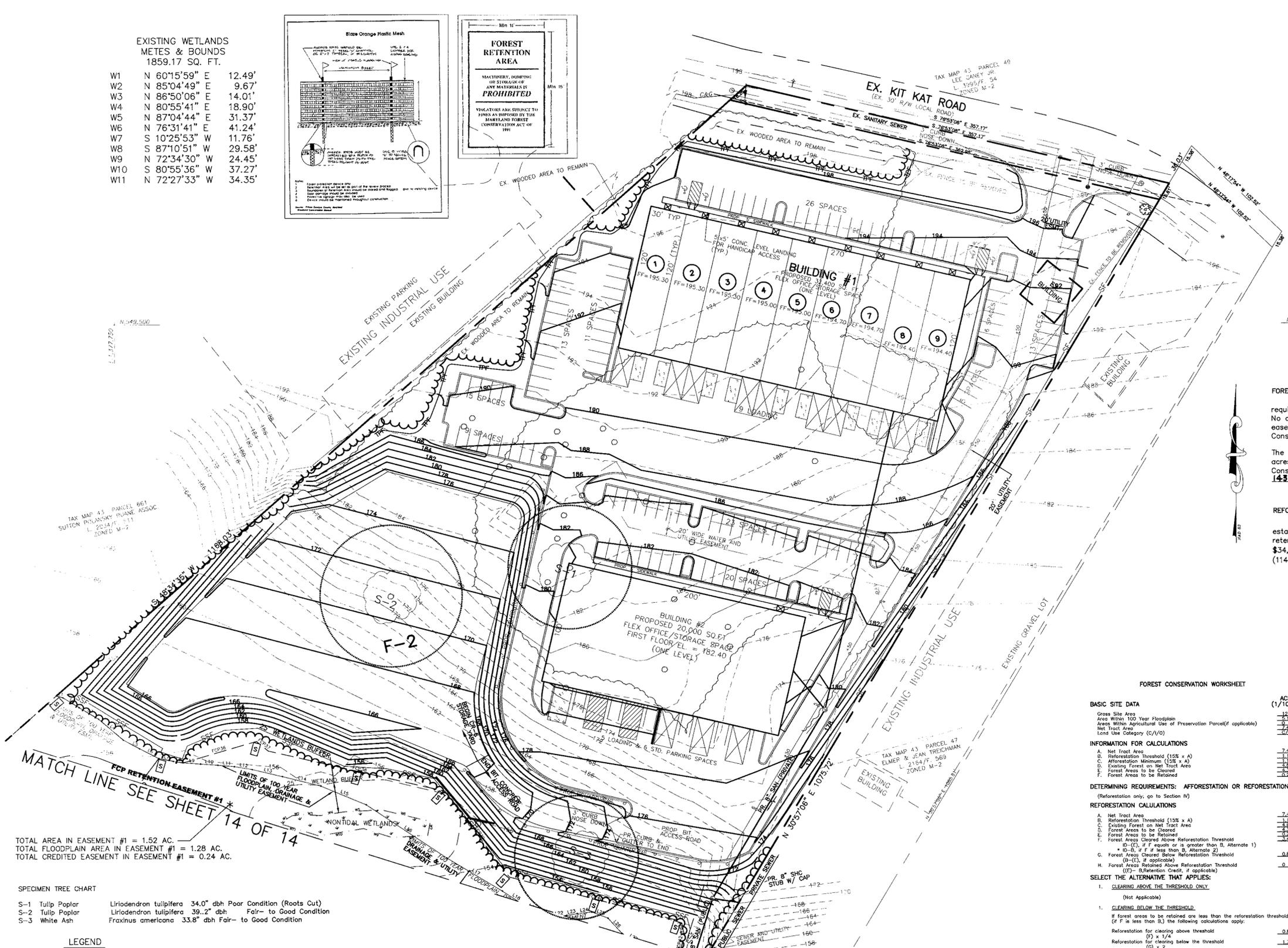
LINE	LENGTH	BEARING
L1	5.74	N74°19'44"W
L2	15.58	N58°33'15"W
L3	18.70	N59°14'53"W
L4	26.59	N49°33'14"W
L5	15.34	N61°44'55"W
L6	17.65	N83°02'22"W
L7	12.28	N78°45'51"W
L8	8.02	N80°41'42"W
L9	14.37	N85°56'11"W
L10	14.37	N85°56'11"W
L11	13.66	N85°02'49"W
L12	14.86	N80°25'43"W
L13	25.64	N76°40'38"W
L14	32.47	N75°58'00"W
L15	40.49	N67°18'09"W
L16	79.60	N56°29'35"W
L17	52.69	N59°02'38"W
L18	24.64	N56°51'14"W
L19	7.14	N60°53'50"W
L20	8.01	N65°38'29"W
L21	6.85	N81°58'48"W
L22	12.13	S85°06'14"W
L23	8.83	S80°07'02"W
L24	12.00	S84°16'00"W
L25	14.25	N89°13'33"W
L26	17.17	N82°23'55"W
L27	19.48	N57°30'08"W
L28	17.38	N55°45'59"W
L29	25.35	N60°30'41"W
L30	18.58	N14°10'08"W
L31	41.37	N81°59'37"W
L32	22.54	N80°10'04"W
L33	15.99	N74°44'25"W
L34	11.01	N61°44'02"W
L35	10.13	N59°32'14"W

FOREST CONSERVATION EASEMENT #1 (THIS SHEET)  
23,197.88 S.F. / 0.53 AC.±  
FLOODPLAIN AREA WITHIN EASEMENT #1 (THIS SHEET)  
13,443.25 S.F. / 0.31 AC.±  
CREDITED EASEMENT (THIS SHEET)  
9754.63 S.F. / 0.22 AC.±

**FOREST CONSERVATION NOTE:**  
The Forest Conservation easements have been established to fulfill the requirements of section 16.1200 of the Howard County Code, Forest Conservation Act. No clearing, grading or construction is permitted within the forest conservation easement; however, forest management practices as defined in the Deed of Forest Conservation Easement are allowed.

The two FCP retention easements, which are known as #1 and #2, contain 1.52 acres and 3.19 acres, respectively and are described in the "Plat of Forest Conservation" recorded in the Howard County Land record office under Plat Number(s) **14-337/14338**.

**REFORESTATION NOTE:**  
The forest conservation obligations for this plan have been met by the establishment of the two on-site retention easements with a total credited retention area outside of the floodplain of 0.24 acre, and a fee-in-lieu payment of \$34,368.84 to the Howard County Forest Conservation Fund for the 2.63 acres (114,462.80 square feet) of reforestation obligation.

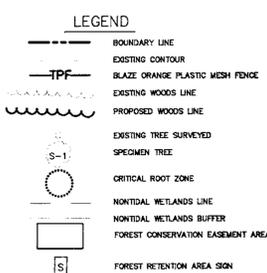


	ACRES (1/10 acres)
<b>BASIC SITE DATA</b>	
Gross Site Area	12.59
Area Within 100 Year Floodplain	0.31
Area Within Agricultural Use of Preservation Parcel (if applicable)	0.26
Net Tract Area	12.28
Land Use Category (C/V/O)	0/0/0
<b>INFORMATION FOR CALCULATIONS</b>	
A. Net Tract Area	7.46
B. Reforestation Threshold (10% x A)	1.12
C. Afforestation Minimum (10% x A)	1.12
D. Existing Forest on the Tract Area	0.26
E. Forest Areas to be Cleared	2.30
F. Forest Areas to be Retained	0.79
<b>DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION</b>	
(Reforestation only; go to Section IV)	
<b>REFORESTATION CALCULATIONS</b>	
A. Net Tract Area	7.46
B. Reforestation Threshold (10% x A)	1.12
C. Existing Forest on Net Tract Area	0.26
D. Forest Areas to be Cleared	0.26
E. Forest Areas Cleared Above Reforestation Threshold (D-C), if F equals or is greater than B, Alternate 1) + (D-C), if F is less than B, Alternate 2)	0.88
F. Forest Areas Cleared Below Reforestation Threshold (B-E), if applicable	0
H. Forest Areas Retained Above Reforestation Threshold ((F) - B) Retention Credit, if applicable	0
<b>SELECT THE ALTERNATIVE THAT APPLIES:</b>	
1. CLEARING ABOVE THE THRESHOLD ONLY	
(Not Applicable)	
2. CLEARING BELOW THE THRESHOLD	
If forest areas to be retained are less than the reforestation threshold (if F is less than B) the following calculations apply:	
Reforestation for clearing above threshold	0.87
Reforestation for clearing below the threshold	1.78
Total Reforestation required	2.63
Total Reforestation required ((F) x 1/4) + ((D) x 2)	
Since clearing occurs below the threshold, no forest retention credit is possible.	
<b>AFFORESTATION CALCULATIONS</b>	
<b>NOTES:</b>	
FOREST CONSERVATION EASEMENT (TOTAL)=205,493.93 S.F./4.72 AC.	
100-YEAR FLOODPLAIN IN FCP EASEMENTS=195,244.73 S.F./4.48 AC. (EXCLUDES AREA WITHIN THE LIMITS OF THE STREAM, SINCE THIS AREA IS NOT INCLUDED IN THE FOREST RETENTION EASEMENTS)	
TOTAL 100-YEAR FLOODPLAIN AREA = 223,368.02 S.F./5.13 AC.	
CREDITED EASEMENT=10,249.20 S.F./0.24 AC.	

TOTAL AREA IN EASEMENT #1 = 1.52 AC.  
TOTAL FLOODPLAIN AREA IN EASEMENT #1 = 1.28 AC.  
TOTAL CREDITED EASEMENT IN EASEMENT #1 = 0.24 AC.

**SPECIMEN TREE CHART**

S-1	Tulip Poplar	Liriodendron tulipifera	34.0" dbh	Poor Condition (Roots Cut)
S-2	Tulip Poplar	Liriodendron tulipifera	39.2" dbh	Fair- to Good Condition
S-3	White Ash	Fraxinus americana	33.8" dbh	Fair- to Good Condition



FOREST CONSERVATION PLAN PREPARED BY:  
*Eric E. See* 7/28/00  
ERIC E. SEE QUALIFIED PROFESSIONAL DATE  
SEE ENVIRONMENTAL SERVICES, INC.  
THE WOODBRIDGE CENTER  
2444 SOLOMONS ISLAND RD.  
SUITE 217  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3828

SCALE: 1"=40'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/7/00 DATE  
DIRECTOR

*[Signature]* 7/19/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 8/1/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION

OWNER: THOMAS AND BARBARA PALACOROLLA  
12183 TRIADELPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER: POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: POTOMAC ABATEMENT  
INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE: FOREST CONSERVATION PLAN

MESSICK & ASSOCIATES \*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

3/27/00 DATE

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 13 OF 14  
SDP-99-130

FOREST CONSERVATION EASEMENT #1		
LINE	LENGTH	BEARING
FCP43	17.76	S15°32'47"E
FCP44	10.41	S14°10'08"E
FCP45	45.30	S30°57'06"W
FCP46	141.82	N68°08'34"W
FCP47	89.74	N70°20'54"W
FCP48	80.25	N71°45'23"W
FCP49	65.56	S63°18'41"W
FCP50	29.93	S88°08'13"W
FCP51	62.73	N02°34'09"E
FCP52	109.32	N68°33'36"W
FCP53	172.56	S64°08'15"W
FCP54	52.22	N82°30'32"W
FCP55	252.17	N48°34'35"E

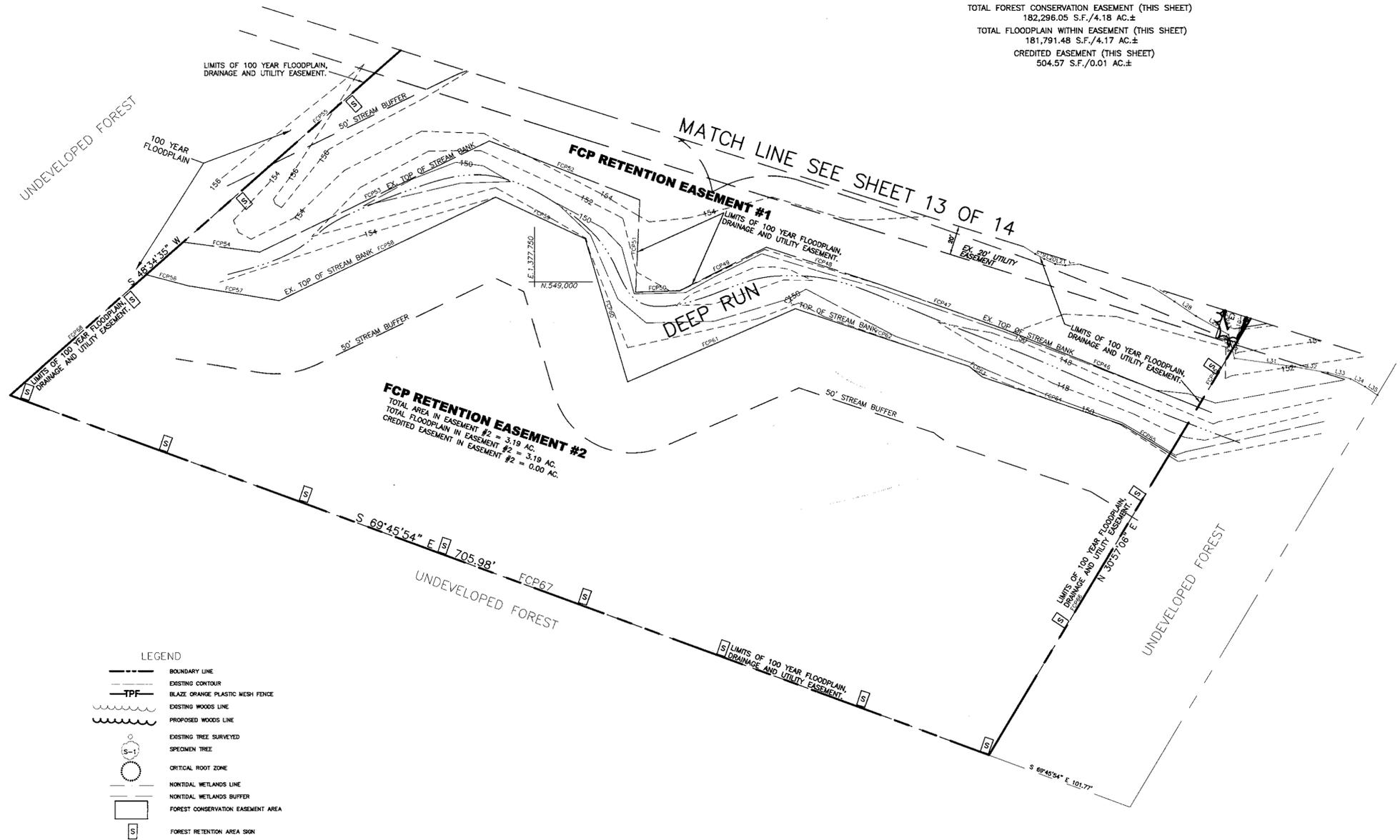
FOREST CONSERVATION EASEMENT #1 (THIS SHEET)  
43,362.47 S.F./0.99 AC.±  
FLOODPLAIN WITHIN EASEMENT #1 (THIS SHEET)  
42,857.90 S.F./0.98 AC.±

FOREST CONSERVATION EASEMENT #2		
LINE	LENGTH	BEARING
FCP56	29.36	S75°15'34"E
FCP57	62.33	S80°42'38"E
FCP58	162.40	N64°27'04"E
FCP59	66.85	S64°54'50"E
FCP60	100.82	S16°28'52"E
FCP61	123.85	N66°34'18"E
FCP62	124.18	S71°38'19"E
FCP63	11.21	S51°38'36"E
FCP64	100.04	S71°13'50"E
FCP65	37.68	S58°31'08"E
FCP66	238.16	S30°57'06"W
FCP67	705.98	N69°45'54"W
FCP68	122.94	N48°34'35"E

FOREST CONSERVATION EASEMENT #2 (THIS SHEET)  
138,933.58 S.F./3.19 AC.±  
FLOODPLAIN WITHIN EASEMENT #2 (THIS SHEET)  
138,933.58 S.F./3.19 AC.±

100 YR. FLOODPLAIN METES AND BOUNDS		
LINE	LENGTH	BEARING
L1	5.74	N74°19'44"W
L2	15.58	N58°33'15"W
L3	18.70	N59°14'53"W
L4	25.59	N49°33'14"W
L5	15.34	N61°44'55"W
L6	17.65	N63°02'22"W
L7	12.28	N78°45'51"W
L8	8.02	N80°41'42"W
L9	14.37	N85°56'11"W
L10	14.37	N85°56'11"W
L11	13.66	N85°02'49"W
L12	14.86	N80°25'43"W
L13	25.64	N76°40'38"W
L14	32.47	N75°56'00"W
L15	40.49	N67°18'09"W
L16	79.60	N56°29'38"W
L17	52.99	N59°02'38"W
L18	24.64	N56°51'14"W
L19	7.14	N60°53'50"W
L20	8.01	N65°38'29"W
L21	6.85	N81°56'46"W
L22	12.13	S85°06'14"W
L23	8.83	S80°07'02"W
L24	12.00	S84°16'00"W
L25	14.25	N69°13'33"W
L26	17.17	N42°23'55"W
L27	19.48	N57°30'08"W
L28	17.38	N55°45'59"W
L29	25.35	N60°30'41"W
L30	16.58	N14°10'08"W
L31	41.37	N81°59'37"W
L32	22.54	N80°10'04"W
L33	15.99	N74°44'25"W
L34	11.01	N61°44'02"W
L35	10.13	N55°32'14"W

TOTAL FOREST CONSERVATION EASEMENT (THIS SHEET)  
182,296.05 S.F./4.18 AC.±  
TOTAL FLOODPLAIN WITHIN EASEMENT (THIS SHEET)  
181,791.48 S.F./4.17 AC.±  
CREDITED EASEMENT (THIS SHEET)  
504.57 S.F./0.01 AC.±



- LEGEND**
- BOUNDARY LINE
  - EXISTING CONTOUR
  - TPF BLAZE ORANGE PLASTIC MESH FENCE
  - EXISTING WOODS LINE
  - PROPOSED WOODS LINE
  - EXISTING TREE SURVEYED
  - SPECIMEN TREE
  - CRITICAL ROOT ZONE
  - NONTIDAL WETLANDS LINE
  - NONTIDAL WETLANDS BUFFER
  - FOREST CONSERVATION EASEMENT AREA
  - FOREST RETENTION AREA SIGN

FOREST CONSERVATION PLAN PREPARED BY:  
Eric E. See 7/28/00  
ERIC E. SEE QUALIFIED PROFESSIONAL DATE  
SEE ENVIRONMENTAL SERVICES, INC.  
THE WOODBRIDGE CENTER  
2444 SOLOMONS ISLAND RD.  
SUITE 217  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3828

SCALE = 1" = 40'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/7/00  
DIRECTOR DATE

*[Signature]* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 8/1/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER:  
THOMAS AND BARBARA PALACOROLLA  
12183 TRIADELPHIA ROAD  
ELLCOTT CITY, MD. 21046

DEVELOPER:  
POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT POTOMAC ABATEMENT INDUSTRIAL PARK

AREA TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE FOREST CONSERVATION PLAN

MESSICK & ASSOCIATES  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 101  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

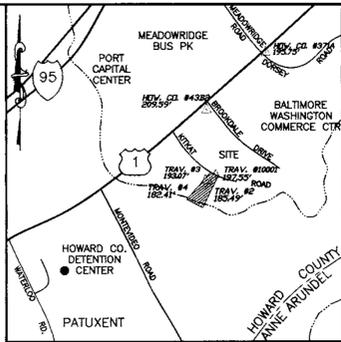
3/27/00  
DATE

*[Signature]*

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 14 OF 14

WAYNE A. NEWTON #21591

# SITE DEVELOPMENT PLAN POTOMAC ABATEMENT INDUSTRIAL PARK 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND



**VICINITY MAP**  
SCALE: 1" = 2000'

**PARKING SPACE REQUIREMENTS**  
 BLDG #1: 32,400 SF (HYBRID INDUSTRIAL/OFFICE) @ 2.5 SF/1000 SF = 81  
 BLDG #2: 19,600 SF (WATERHOUSE/DISTRIBUTION) @ 0.5 SF/1000 SF = 10  
**TOTAL SPACES REQUIRED = 91**  
**TOTAL SPACES PROVIDED = 104 (INCLUDING H.C.)**

**SETBACKS:**  
 M-2 (PER ZONING SECTION 123.D.2A)  
 50' STRUCTURE AND USE SETBACK  
 30' FENCE AND PARKING SETBACK  
 #SETBACKS ARE FROM R/W.

**SW OVERLAY (PER ZONING SECTION 124.E.2.)**  
 STRUCTURE AND USE SETBACKS  
 100' FROM PUBLIC R-O-W  
 100' FROM EX. STREAMS & WETLANDS  
 50' FROM LOT LINES

**SITE DATA**

AREA OF PARCEL	12.99 ACRES (548,405.9 SF)
FLOODPLAIN AREA	5.13 ACRES (223,368 SF)
DISTURBED AREA	6.72 ACRES (292,537.37 SF)
PRESENT ZONING	M-2 / SW OVERLAY
EXISTING USE	CONTRACTORS STORAGE YARD
BUILDING COVERAGE (EX.)	1,295 SF (0.2% OF SITE)
STORAGE BUILDING (TO BE REMOVED)	1,295 SF
PROPOSED USE	BLDG #1 - FLEX OFFICE/WAREHOUSE SPACE BLDG #2 - 20-BAY SW TRAFFIC
BLDG. #1	32,400 S.F.
BLDG. #2	19,600 S.F.
TOTAL BLDG. COVERAGE	52,000 S.F. (9.7% OF SITE)
PARKING SPACES REQUIRED* (SEE ABOVE)	91 SPACES (FOR 52,000 SF)
*25'-50' WIDE (HYBRID INDUSTRIAL/OFFICE)	131 SPACES
*TOTAL REQUIRED	131 SPACES
*PARKING SPACES PROVIDED	104 SPACES (INCL. 10)

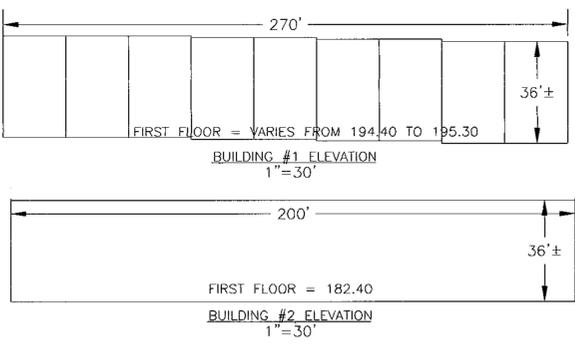
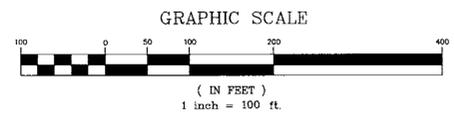
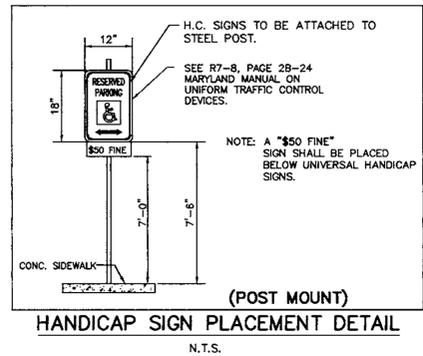
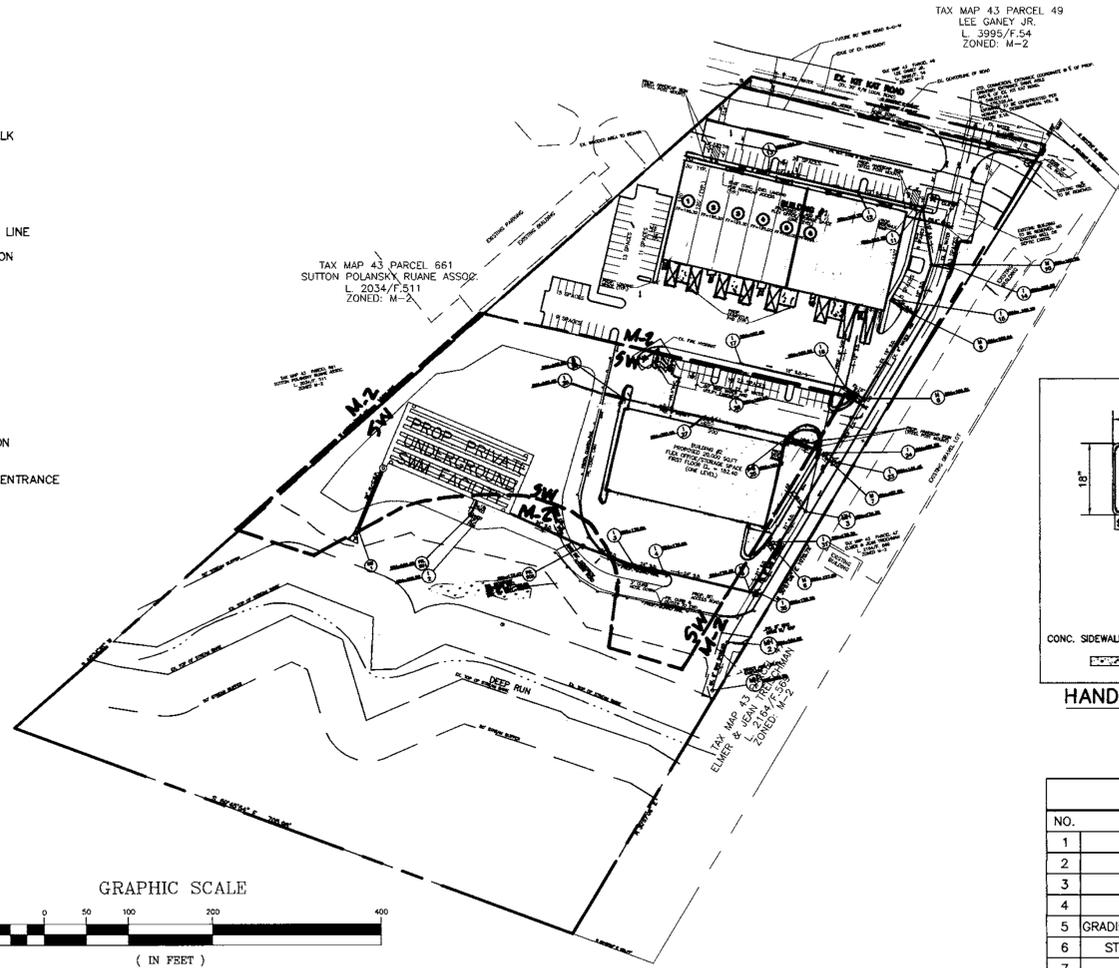
\*PER HOWARD COUNTY ZONING REGULATIONS SECT. 133.D.5.b FOR ENTIRE PARCEL

**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 ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY DESIGN TECH DATED MARCH 1999.
- THE COORDINATES SHOWN HEREON ARE BASED UPON MARYLAND GRID COORDINATE SYSTEM. BENCHMARKS ARE PROVIDED HEREON.
- WATER IS PUBLIC, CONTRACT NO. 36W&S.
- SEWER IS PUBLIC, CONTRACT NO. 292-S & 579-S.
- STORM WATER QUANTITY AND QUALITY MANAGEMENT FOR THIS PROJECT IS TO BE PROVIDED THROUGH A PRIVATE ON SITE SYSTEM OF UNDERGROUND PIPES AND FACILITIES AND STORMCEPTORS. THE DEVICES ARE TO BE PRIVATELY OWNED AND MAINTAINED.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. OWNER & ENGINEER ASSUME NO RESPONSIBILITY FOR ITS ACCURACY. CONTRACTOR SHALL TO HIS OWN SATISFACTION VERIFY THE TYPE, SIZE AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- A GEO-TECHNICAL REPORT HAS BEEN PREPARED BY MARSHALL ENGINEERING, INC. DATED MARCH 1999.
- THE BOUNDARY FOR THIS PROJECT IS BASED ON A BOUNDARY SURVEY PROVIDED BY M&H DEVELOPMENT ENGINEERS, INC. DATED DECEMBER 1998.
- SUBJECT PROPERTY IS ZONED M-2, PER COMPREHENSIVE ZONING PLAN.
- ALL OUTDOOR LIGHTING SHALL COMPLY WITH THE REQUIREMENTS OF HOWARD COUNTY'S ZONING SECTION 134.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C' AS SHOWN IN FIG. 11.4, VOLUME 1 OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
- PROFILES STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
- NO PUBLIC NOTICE POSTERS ARE REQUIRED FOR THE ENTRANCE SHOWN BECAUSE THIS ENTRANCE CURRENTLY EXISTS IN THE SAME GENERAL LOCATION.
- NO PUBLIC NOTICE POSTERS ARE REQUIRED BECAUSE NO WETLAND MITIGATION IS PROPOSED WITH THIS PROJECT.
- NO GRADING OR DISTURBANCE IS PERMITTED WITHIN THE LIMITS OF THE FLOODPLAIN, FOREST CONSERVATION EASEMENTS, STREAM BUFFER, WETLANDS OR WETLANDS BUFFER SHOWN HEREON.
- ALL ELEVATIONS AND COORDINATES FOR THIS PROJECT ARE BASED ON HOWARD CO. CONTROL STATION COORDINATE N. 490,906.0 E. 865,758.6 AND ELEVATION 209.59 AND #371 HAVING COORDINATE N. 492,566.2 E. 867,563.8 AND ELEVATION 195.75.
- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- THE FOREST CONSERVATION OBLIGATIONS INCURRED BY THIS SITE DEVELOPMENT, 116,305 SQUARE FEET (2.67 ACRES) OF REDEVELOPMENT FORESTATION HAS BEEN MET BY THE PAYMENT OF \$ AS A FEE-IN-LIEU TO THE HOWARD COUNTY FOREST CONSERVATION FUND.
- FOR FOREST CONSERVATION OBLIGATIONS, SEE SHEET 13 OF THE PLAN SET.
- COUNTY COUNCIL RESOLUTION No. 172-2000 APPROVES AND UPDATES THE COUNTY'S SOLID WASTE MANAGEMENT PLAN.
- ZONING BOARD CASE No. 1014M WAS APPROVED ON JULY 16, 2001. THIS CASE APPROVED THE DEVELOPMENT AND OPERATIONS PLAN FOR THE CONSTRUCTION AND OPERATION OF A SOLID WASTE PROCESSING FACILITY AND FURTHER GRANTS THE SOLID WASTE OVERLAY DISTRICT COVERING THE M-2 ZONED LAND AS REQUESTED IN THE PETITION.

**LEGEND**

- 42 --- EXISTING CONTOURS
- EXISTING CURB & GUTTER
- PROPERTY LINE
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING BUILDING
- EXISTING CONCRETE SIDEWALK
- EXISTING STORM DRAIN
- EXISTING SEWER
- EXISTING TREELINE
- EXISTING TREE/SHRUB
- EXISTING OVERHEAD POWER LINE
- PROPOSED BUILDING ADDITION
- PROPOSED CONTOUR
- PROPOSED SPOT SHOT
- PROPOSED SIDEWALK
- PROPOSED STORM DRAIN
- LOD --- LIMIT OF DISTURBANCE
- CIP --- CURB INLET PROTECTION
- ACIP --- AT GRADE INLET PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- TRAFFIC FLOW ARROW
- DRAINAGE FLOW ARROW
- DRAINAGE AREA LINE
- EX. WETLAND LIMITS AND 25' BUFFER
- EARTH DIKE
- SSF --- SUPER SILT FENCE
- TP --- TREE PROTECTION FENCE



**SHEET INDEX**

NO.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	GRADING AND SEDIMENT CONTROL PLAN
4	T.S.W.M./SED. TRAP PLAN & DETAILS
5	GRADING & SEDIMENT CONTROL NOTES AND DETAILS
6	STORMWATER MANAGEMENT PLAN AND PROFILES
7	SWM DETAILS AND FORMS
8	STORM DRAIN DRAINAGE AREA MAP
9	STORM DRAIN PROFILES
10	STORM DRAIN PROFILES--WHC & SHC PROFILES
11	DETAILS AND SPECS
12	LANDSCAPE PLAN
13	FOREST CONSERVATION PLAN
14	FOREST CONSERVATION PLAN

**ADDRESS CHART**

PARCEL	STREET ADDRESS
46	7140 KIT KAT ROAD

SUBDIVISION NAME -	N/A	SECT./AREA -		PARCEL -	46
BLDG #	4636/681	ZONING -	M2	TAX MAP NO. -	43
WATER CODE -	B01	ELECT. DIST. -	1st	GEN. TRACT -	6012
		OWNER CODE -			2370000

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*John S. Burt* 2/7/00 DATE  
DIRECTOR

*Chris Hanania* 7/19/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Chris Hanania* 8/1/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

7-51-01 REVISED TO IMPLEMENT SW DISTRICT CHANGES & MISCELLANEOUS SITE MODIFICATIONS

DATE	NO.	REVISION

OWNER:  
THOMAS AND BARBARA PALACOROLLA  
12183 TRIADELPHIA ROAD  
ELLICOTT CITY, MD. 21042

DEVELOPER:  
POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT  
POTOMAC ABATEMENT  
INDUSTRIAL PARK

AREA TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE  
TITLE SHEET

MESSICK & ASSOCIATES\*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

DATE: 3/27/00

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 1 OF 14

WAYNE A. NEWTON #21591

**Lumark**  
1000-100 Watt/HPS, MH, MV

**Appearance** The most durable and reliable luminaire is built in a series of the latest and greatest lighting products. The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light.

**Flexibility** The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light.

**Reliability** The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light.

**Ordering information**

Lamp Type	Ordering Number	Wattage
1000 High Pressure Sodium	1000-HPS	100
1000 Medium Pressure Sodium	1000-MPS	100
1000 Low Pressure Sodium	1000-LPS	100
1000 Metal Halide	1000-MH	100
1000 Mercury Vapor	1000-MV	100

LOW INTENSITY LIGHTING TO BE PROVIDED ALONG BUILDING FRONT TO BE DESIGNED PRIOR TO PERMIT APPLICATION.

**Lumark**  
250-50 Watt/HPS, MH, MV

**Appearance** The most durable and reliable luminaire is built in a series of the latest and greatest lighting products. The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light.

**Flexibility** The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light.

**Reliability** The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light. The luminaire is designed to provide a long, uniform, steady beam of light.

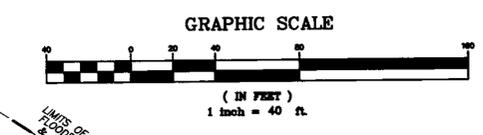
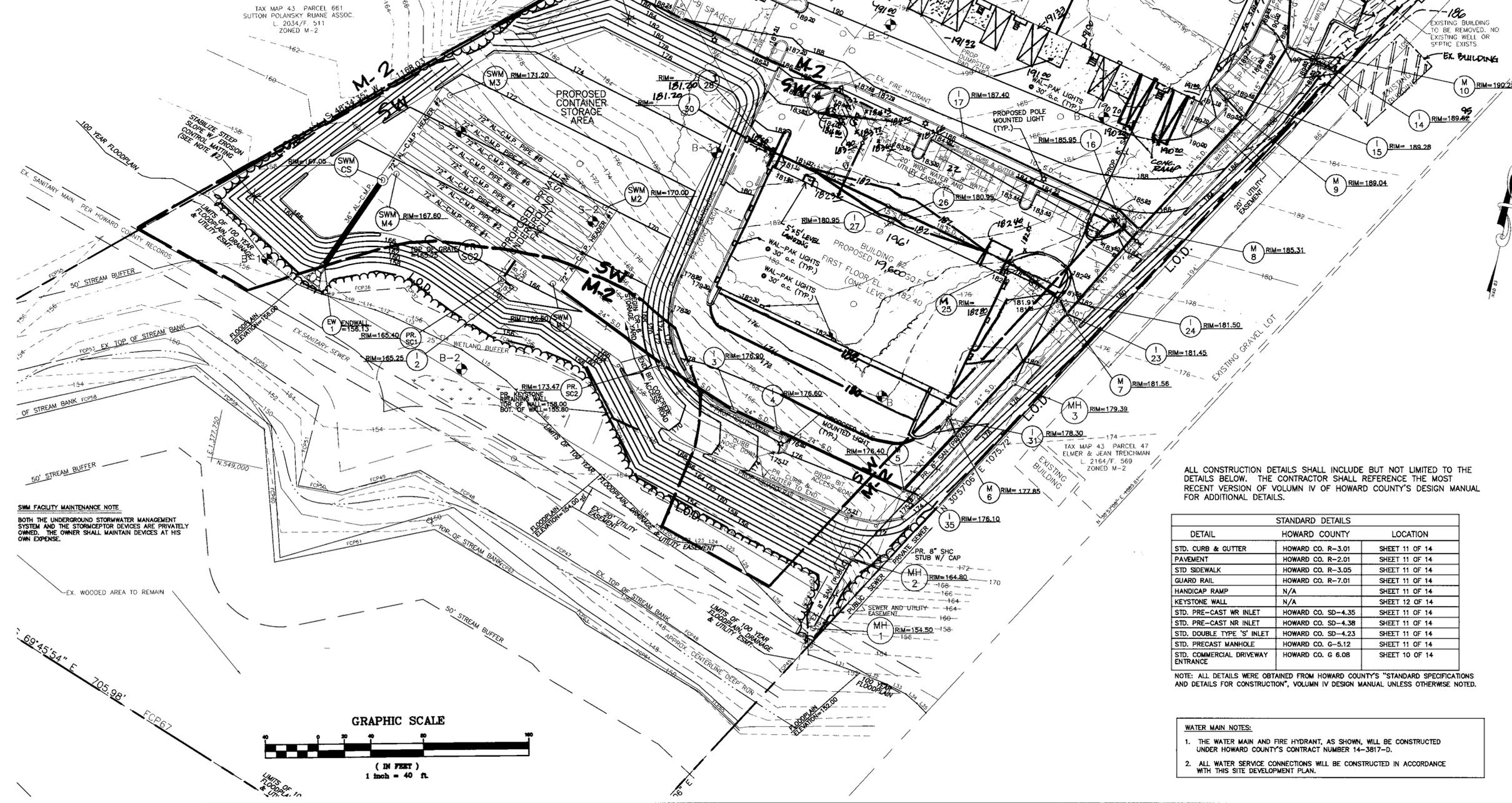
**Ordering information**

Lamp Type	Ordering Number	Wattage
250 High Pressure Sodium	250-HPS	250
250 Medium Pressure Sodium	250-MPS	250
250 Low Pressure Sodium	250-LPS	250
250 Metal Halide	250-MH	250
250 Mercury Vapor	250-MV	250

★ FULL CUTOFF FREESTANDING - POLE MOUNTED PARKING LOT LIGHT, LIGHT TO BE SINGLE SETTING 100 WATT METAL HALIDE LIGHTING LUMINAIRE MODEL # MHSB-AL-400 AS MANUFACTURED BY LUMARK LIGHTING OR EQUAL. MOUNTED ON 40' HIGH MATCHING STEEL POLE. ALL FIXTURES AND POLES TO BE BRONZE FINISH.

□ LOW INTENSITY WALL MOUNTED LIGHT, LIGHT TO BE 175 WATT MOUNTED LIGHT. LIGHT TO BE 175 WATT MERCURY VAPOR LAMP MOUNTED 8' ABOVE FINISHED GRADE ON BUILDING WALL. FIXTURE TO BE MODEL # MVM-175 WAL-PAK (8600 LUMENS) AS MANUFACTURED BY LUMARK LIGHTING OR EQUAL. FIXTURE TO BE BRONZE FINISH.

NOTE: ADDITIONAL LOW INTENSITY LIGHTING WILL BE REQUIRED ALONG THE FRONT OF BOTH BUILDINGS SHOWN HEREON. THESE LIGHTS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE HOWARD COUNTY ZONING REGULATIONS SECTION 134.



**WATER MAIN NOTES:**

- FIRE FLOW REQUIREMENTS FOR THESE BUILDINGS MUST BE ESTABLISHED PRIOR TO PERMIT APPLICATION.
- ALL ON-SITE FIRE HYDRANTS SHOWN HEREON ARE PRIVATELY OWNED.
- THE EXISTING WATER MAIN WAS DESIGNED AND WILL BE CONSTRUCTED UNDER CONTRACT NUMBER 14-387-D.
- ALL WATER SERVICE CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS SITE DEVELOPMENT PLAN.
- ALL WATER METERS SHALL BE INSIDE WATER MAIN SETTINGS.

**FLOODPLAIN LINE TABLE**

LINE	LENGTH	BEARING
L1	5.74	N74°19'44"W
L2	15.58	N58°33'15"W
L3	18.70	N59°14'53"W
L4	26.59	N49°33'14"W
L5	15.34	N61°44'55"W
L6	17.65	N63°02'22"W
L7	12.28	N78°45'51"W
L8	8.02	N80°41'42"W
L9	14.37	N85°56'11"W
L10	14.37	N85°56'11"W
L11	13.66	N85°02'49"W
L12	14.86	N80°25'43"W
L13	25.64	N78°40'38"W
L14	32.47	N75°56'00"W
L15	40.49	N67°19'09"W
L16	79.60	N56°29'35"W
L17	52.99	N59°02'38"W
L18	24.64	N56°51'14"W
L19	7.14	N60°33'50"W
L20	8.01	N65°38'29"W
L21	6.85	N81°56'46"W
L22	12.13	S85°06'14"W
L23	8.83	S80°07'02"W
L24	12.00	S84°16'00"W
L25	14.25	S89°13'33"W
L26	17.17	N42°23'55"W
L27	19.48	N57°30'08"W
L28	17.38	N55°45'59"W
L29	25.35	N60°30'41"W
L30	16.58	N14°10'08"W
L31	41.37	N81°59'37"W
L32	22.54	N80°10'04"W
L34	11.01	N61°44'02"W
L35	10.13	N55°32'14"W

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/7/99  
DIRECTOR DATE

*[Signature]* 7/15/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 8/1/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

7-91.01 REVISED TO IMPROVE BY DISTRICT CHANGES AND MIS-CORRECTIONS AND SITE MODIFICATIONS

DATE NO. REVISION

OWNER: THOMAS AND BARBARA PALACOROLLA  
12183 TRIADPHILIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER: POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: POTOMAC ABATEMENT INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE: SITE DEVELOPMENT PLAN

MESSICK & ASSOCIATES\*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

**STANDARD DETAILS**

DETAIL	HOWARD COUNTY	LOCATION
STD. CURB & GUTTER	HOWARD CO. R-3.01	SHEET 11 OF 14
PAVEMENT	HOWARD CO. R-2.01	SHEET 11 OF 14
STD. SIDEWALK	HOWARD CO. R-3.05	SHEET 11 OF 14
GUARD RAIL	HOWARD CO. R-7.01	SHEET 11 OF 14
HANDICAP RAMP	N/A	SHEET 11 OF 14
KEYSTONE WALL	N/A	SHEET 12 OF 14
STD. PRE-CAST NR INLET	HOWARD CO. SD-4.35	SHEET 11 OF 14
STD. PRE-CAST NR INLET	HOWARD CO. SD-4.38	SHEET 11 OF 14
STD. DOUBLE TYPE 'S' INLET	HOWARD CO. SD-4.23	SHEET 11 OF 14
STD. PRECAST MANHOLE	HOWARD CO. G-5.12	SHEET 11 OF 14
STD. COMMERCIAL DRIVEWAY ENTRANCE	HOWARD CO. G 6.08	SHEET 10 OF 14

NOTE: ALL DETAILS WERE OBTAINED FROM HOWARD COUNTY'S "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION", VOLUME IV DESIGN MANUAL UNLESS OTHERWISE NOTED.

**WATER MAIN NOTES:**

- THE WATER MAIN AND FIRE HYDRANT, AS SHOWN, WILL BE CONSTRUCTED UNDER HOWARD COUNTY'S CONTRACT NUMBER 14-3817-D.
- ALL WATER SERVICE CONNECTIONS WILL BE CONSTRUCTED IN ACCORDANCE WITH THIS SITE DEVELOPMENT PLAN.

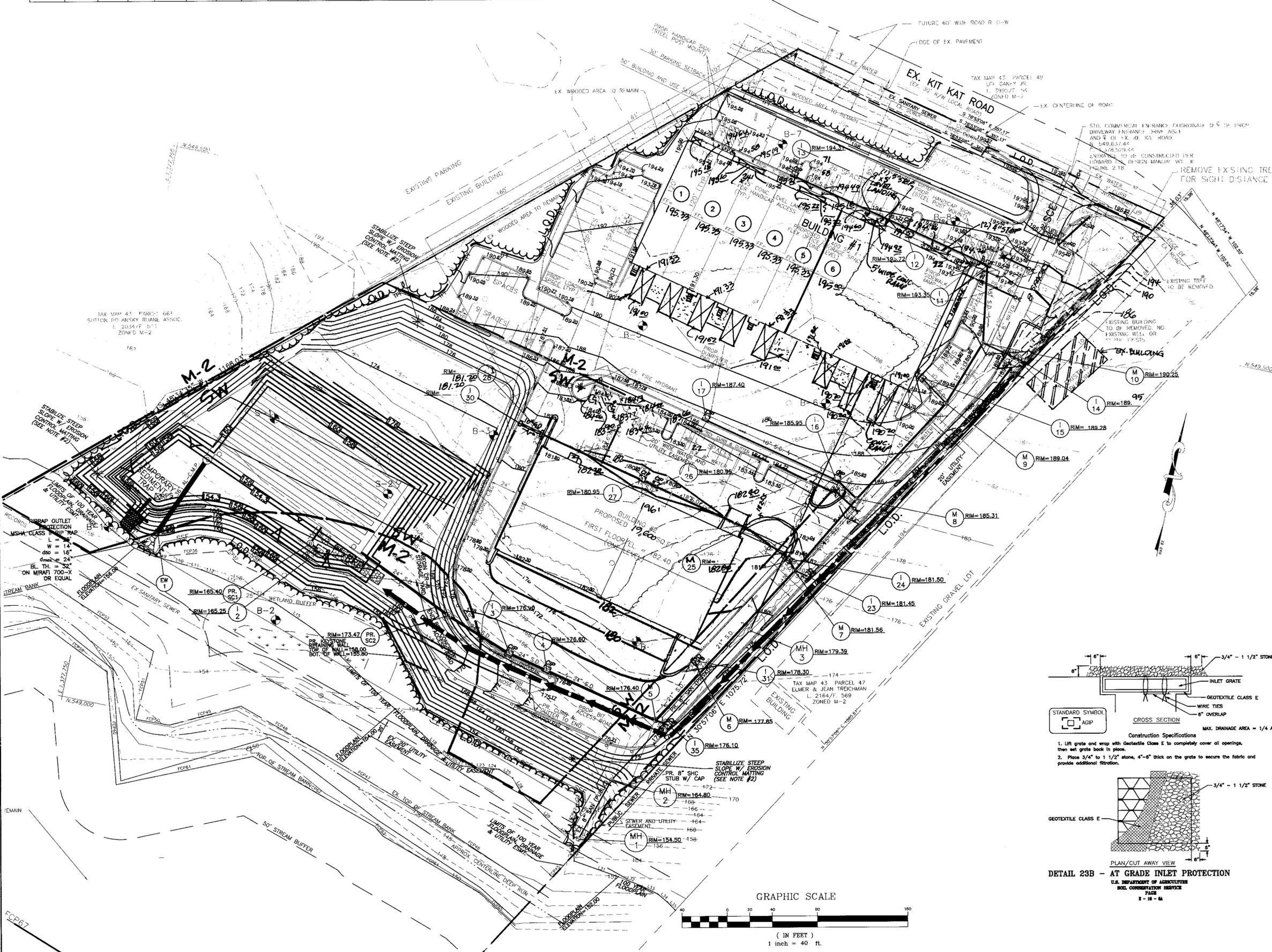
3/27/99 DATE

*[Signature]*

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 2 OF 14

WAYNE A. NEWTON #2159T

SEDIMENT TRAP DATA																					
TRAP TYPE	DRAINAGE AREA (ACRES)	STORAGE (CF)	STORAGE (CF)	WIDTH (FT)	LENGTH (FT)	DEPTH (FT)	SLOPE (%)	BOTTOM ELEVATION	WET STORAGE DEPTH (FT)	WET STORAGE ELEVATION	WET STORAGE VOLUME	CLEANOUT ELEVATION	EMBANKMENT HEIGHT	EMBANKMENT ELEVATION	OUTLET ELEVATION	DRY STORAGE VOLUME	Opse	Opote	Omanged		
N	8.7	24,120	46,130	SEE GRADING	SEE GRADING	SEE GRADING	2.0	154.30	158.30	2.2	158.50	12,088 CF	155.40	4.0	180.50	196.50	158.30	34,042 CF	7.62	25.34	1.65



- NOTE:
1. REPLACE FILL MATERIAL (AS NEEDED) FOR EARTH DIKES AND ABOVE THE PIPE SLOPE DRAINS AT THE BEGINNING OF EACH WORK DAY UNTIL CURB IS INSTALLED.
  2. STABILIZE ALL STEEP SLOPES 25% OR GREATER WITH EROSION CONTROL MATTING (I.E. CURLEX, 700X MIRAFI OR EQUAL).
  3. CONTRACTOR MAY PLACE TEMPORARY SOIL STOPIELE AREAS WITHIN THE LIMITS OF DISTURBANCE AS NEEDED. SILT FENCE SHALL BE PLACED AT THE BASE OF THE DOWN GRADIENT SLOPE.

BY THE DEVELOPER:

I/WE 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Peter E* 3/27/00  
DEVELOPER DATE

BY THE ENGINEER:

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 HOWARD SOIL CONSERVATION DISTRICT.

*Wm G* 3/27/00  
ENGINEER DATE

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

*Chf. Simon Cas* 7/14/00  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Wm G* 7/14/00  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Paul B* 8/7/00  
DIRECTOR DATE

*Wm G* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chf. Thornton* 8/11/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
7-21-01		REVISED TO IMPLEMENT 60% DRAINAGE CHANGES AND MISCELLANEOUS SITE MODIFICATIONS

OWNER:  
THOMAS AND BARBARA PALACOROLLA  
12183 TRIADDELPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER:  
POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: POTOMAC ABATEMENT INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

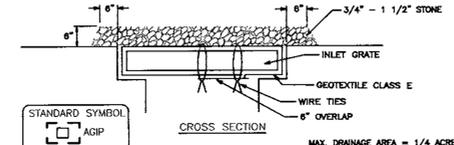
TITLE: GRADING AND SEDIMENT CONTROL PLAN

MESSICK & ASSOCIATES  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

3/27/00  
DATE

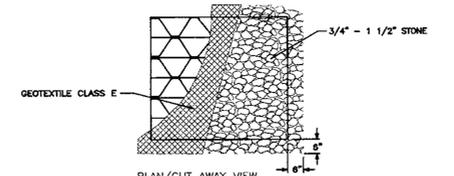
DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 3 OF 14

WAYNE A. NEWTON #2159T SDP-99-130

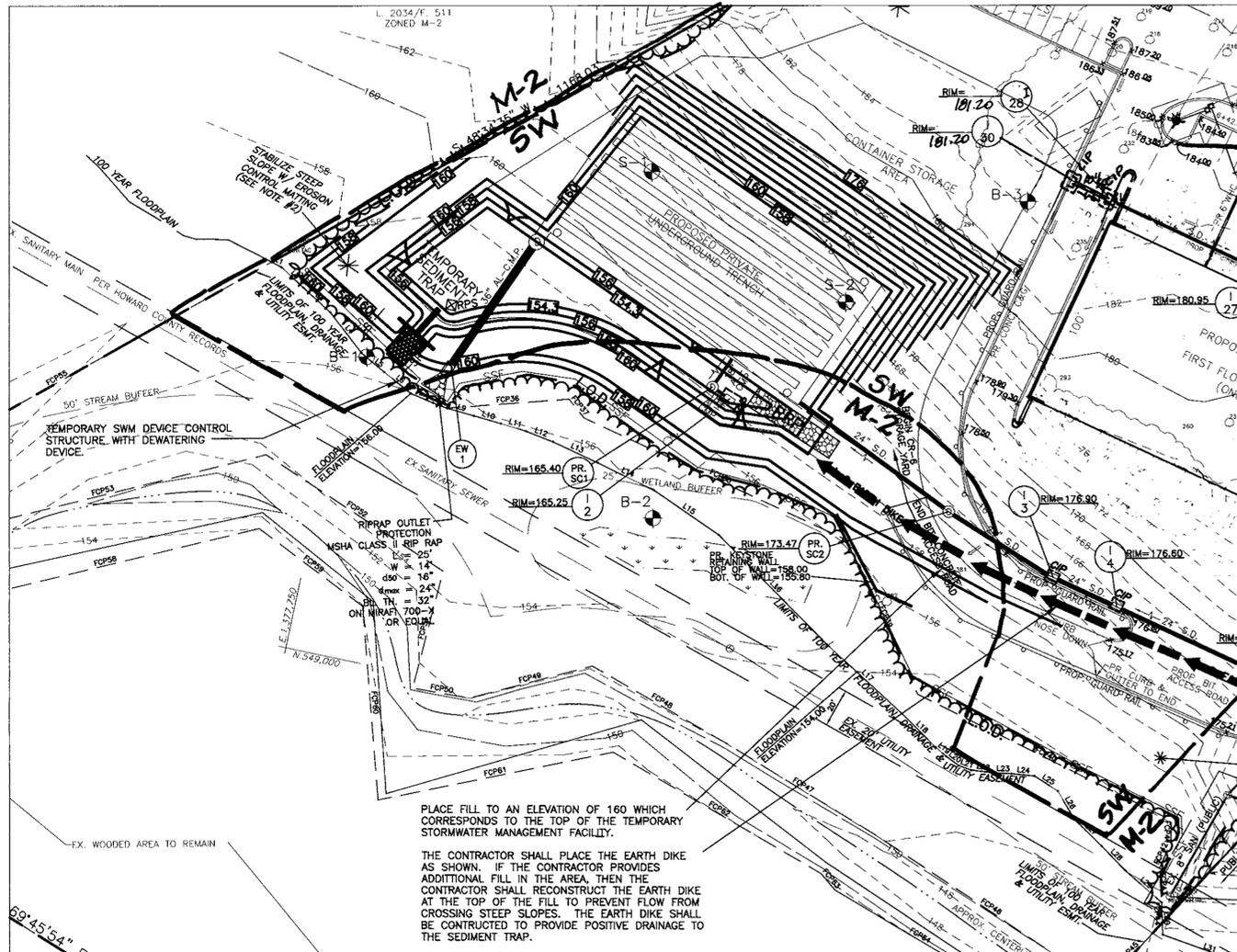


Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
2. Place 3/4" to 1 1/2" stone, 4"-8" thick on the grate to secure the fabric and provide additional filtration.



DETAIL 23B - AT GRADE INLET PROTECTION  
U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 1 - 18 - 84



NOTE: THE CONTOURS AS SHOWN ON THIS PLAN ARE FOR THE CONSTRUCTION OF THE SEDIMENT TRAP/TEMPORARY STORMWATER MANAGEMENT DEVICE ONLY.

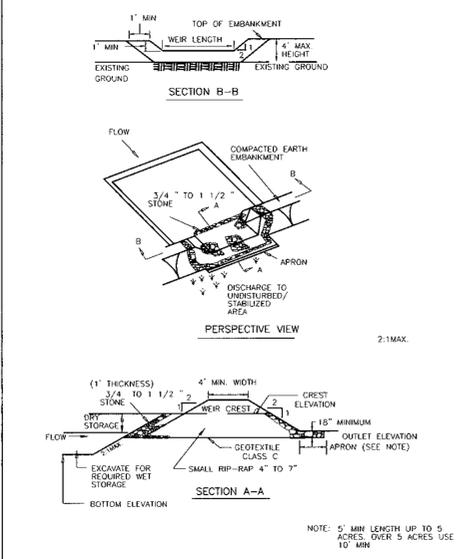
**SEDIMENT TRAP/TEMPORARY STORMWATER MANAGEMENT GRADING PLAN**  
SCALE 1"=40'

PLACE FILL TO AN ELEVATION OF 160 WHICH CORRESPONDS TO THE TOP OF THE TEMPORARY STORMWATER MANAGEMENT FACILITY.

THE CONTRACTOR SHALL PLACE THE EARTH DIKE AS SHOWN. IF THE CONTRACTOR PROVIDES ADDITIONAL FILL IN THE AREA, THEN THE CONTRACTOR SHALL RECONSTRUCT THE EARTH DIKE AT THE TOP OF THE FILL TO PREVENT FLOW FROM CROSSING STEEP SLOPES. THE EARTH DIKE SHALL BE CONSTRUCTED TO PROVIDE POSITIVE DRAINAGE TO THE SEDIMENT TRAP.

**DETAIL 10A - STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV**

(See Temporary SWM Device Detail this sheet for Outfall Structure)

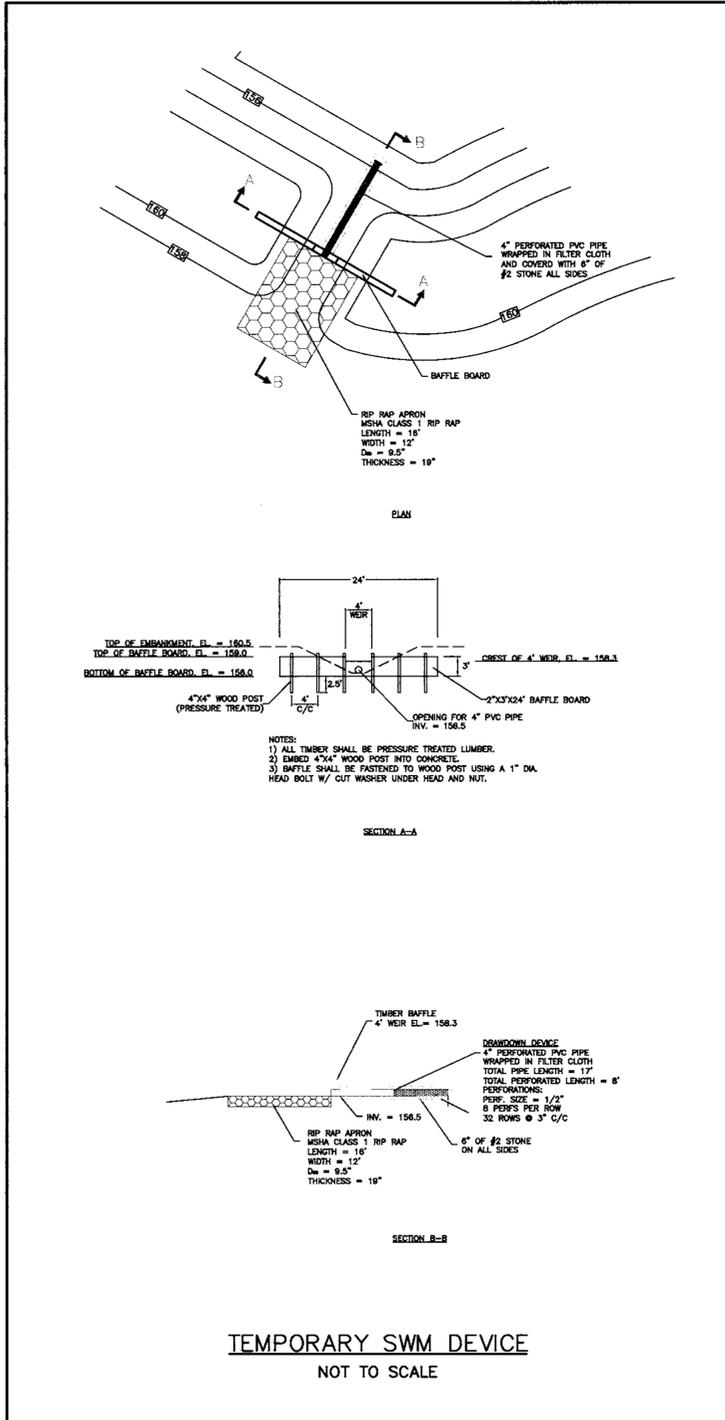


NOTE: 5' MIN LENGTH UP TO 5 ACRES, OVER 5 ACRES USE 10' MIN

**STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV**

- Construction Specifications**
- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
  - The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be 4', measured at centerline of embankment.
  - All cut and fill slopes shall be 2:1 or flatter.
  - Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.
  - Storage area provided shall be figured by computing the volume measured from top of embankment. (For storage requirements see Table 9).
  - Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.
  - 4" - 7" stone shall be used to construct the weir and 4" - 12" or Class I rip-rap shall be used to construct the outlet channel.
  - Outlet - An outlet shall include a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge point shall be provided as necessary.
  - Outlet channel must have positive drainage from the trap.
  - Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 of the wet storage depth of the trap (500 cu/yd). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
  - The structure shall be inspected periodically after each rain and repaired as needed.
  - Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentrated inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.
  - The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C - 9 - 18A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**TEMPORARY SWM DEVICE**  
NOT TO SCALE

- NOTE:
- REPLACE FILL MATERIAL (AS NEEDED) FOR EARTH DIKES AND ABOVE THE PIPE SLOPE DRAINS AT THE BEGINNING OF EACH WORK DAY UNTIL CURB IS INSTALLED.
  - STABILIZE ALL STEEP SLOPES 25% OR GREATER WITH EROSION CONTROL MATTING (I.E. CURLEX, 700X MIRAFI OR EQUAL).
  - CONTRACTOR MAY PLACE TEMPORARY SOIL STOICIPLE AREAS WITHIN THE LIMITS OF DISTURBANCE AS NEEDED. SILT FENCE SHALL BE PLACED AT THE BASE OF THE DOWN GRADIENT SLOPE.

BY THE DEVELOPER:

I/WE 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*James G.* 3/23/00  
DEVELOPER DATE

BY THE ENGINEER:

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 HOWARD SOIL CONSERVATION DISTRICT.

*Wayne A. Newton* 3/27/00  
ENGINEER DATE

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

*Chief Jimmy GS* 7/14/00  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John S.* 7/14/00  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*James T. Rutter* 8/7/00  
DIRECTOR DATE

*Chris D.* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chris D.* 9/1/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

231-01 12013520 TO IMPLEMENT SW DISTRICT CHANGES AND RECOMMENDS SITE MODIFICATIONS

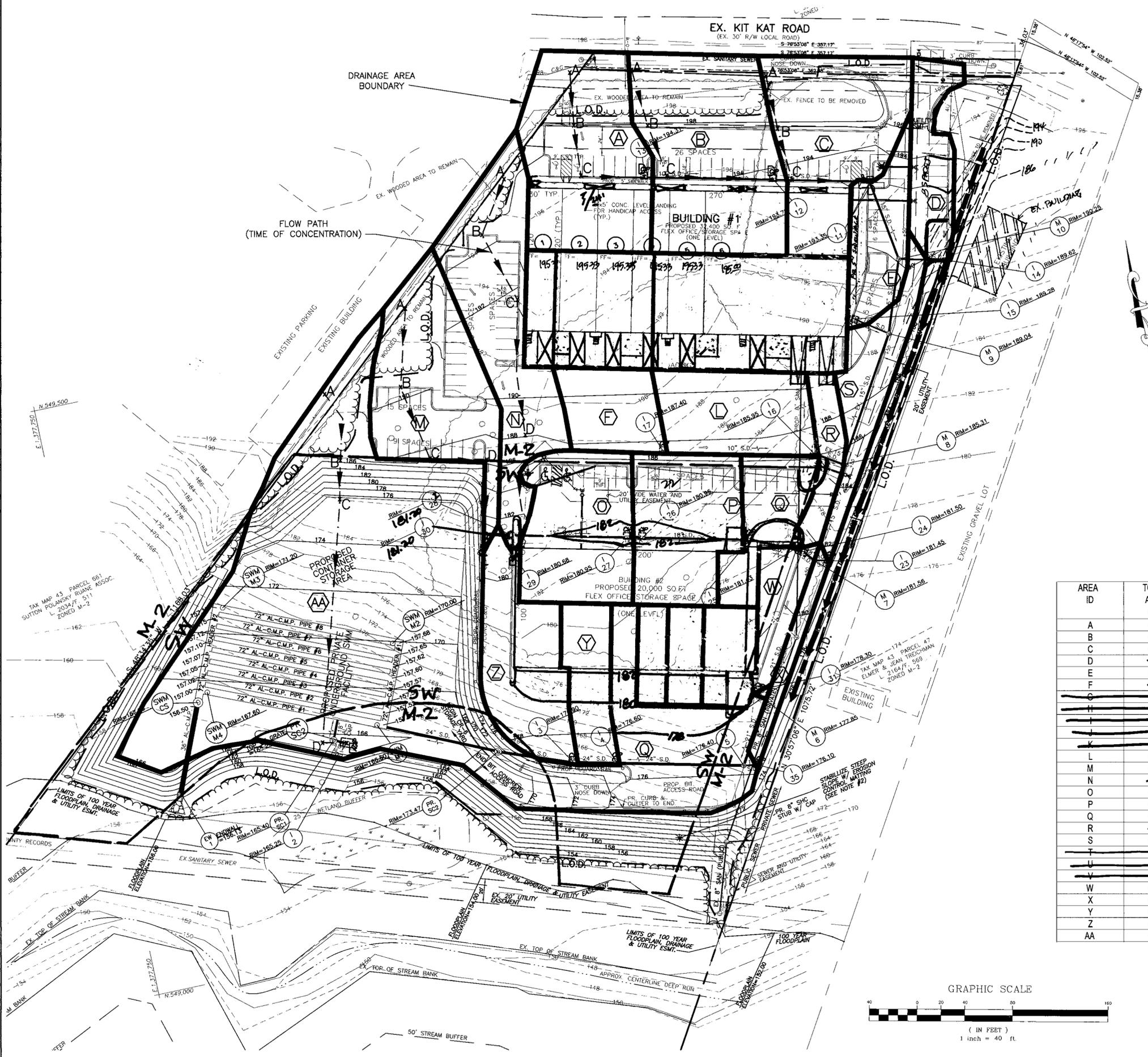
DATE NO.	REVISION
OWNER: THOMAS AND BARBARA PALACOROLLA 12183 TRIADDELPHIA ROAD ELLCOTT CITY, MD. 21042	
DEVELOPER: POTOMAC ABATEMENT 9550 BERGER ROAD COLUMBIA, MD. 21046 ATTN: JIM HARRIS	
PROJECT POTOMAC ABATEMENT INDUSTRIAL PARK	
AREA TAX MAP 43, BLOCK 10, ZONED M-2 PARCEL 46, 1st ELECTION DISTRICT	
TITLE T.S.W.M./SED. TRAP PLAN & DETAILS	

MESSICK & ASSOCIATES  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

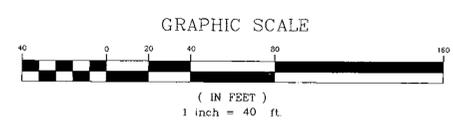
3/27/00  
DATE

*Wayne A. Newton*

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 4 OF 14



AREA ID	TOTAL AREA (AC)	PERCENT IMPERVIOUS %	COMPOSITE "C" FACTOR
A	0.37	63	0.58
B	0.45	77	0.69
C	0.33	70	0.66
D	0.13	100	0.86
E	0.14	86	0.76
F	0.15	100	0.86
G	0.07	100	0.86
H	0.16	100	0.86
I	0.13	100	0.86
J	0.13	100	0.86
K	0.11	100	0.86
L	0.21	100	0.86
M	0.33	67	0.62
N	0.38	72	0.67
O	0.26	85	0.76
P	0.24	92	0.80
Q	0.13	77	0.71
R	0.08	100	0.86
S	0.15	100	0.86
T	0.08	100	0.86
U	0.06	100	0.86
V	0.05	100	0.86
W	0.09	56	0.56
X	0.05	100	0.86
Y	0.12	100	0.86
Z	0.23	91	0.80
AA	4.85	77	0.72



BY THE DEVELOPER:  
 I/WE 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 3/27/00  
 DEVELOPER DATE

BY THE ENGINEER:  
 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 HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 3/27/00  
 ENGINEER DATE

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

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/7/00  
 DIRECTOR DATE

*[Signature]* 7/19/00  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 8/1/00  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

7/31/01 REVISED TO IMPROVE SW DISTRICT LAYOUT AND MISCELLANEOUS SITE MODIFICATIONS

DATE NO. REVISION

OWNER:  
 THOMAS AND BARBARA PALACOROLLA  
 12183 TRIADAPHIA ROAD  
 ELLICOTT CITY, MD. 21042

DEVELOPER:  
 POTOMAC ABATEMENT  
 9550 BERGER ROAD  
 COLUMBIA, MD. 21046  
 ATTN: JIM HARRIS

PROJECT  
 POTOMAC ABATEMENT  
 INDUSTRIAL PARK

AREA TAX MAP 43, BLOCK 10, ZONED M-2  
 PARCEL 46,  
 1st ELECTION DISTRICT

TITLE  
 STORM DRAIN DRAINAGE AREA MAP

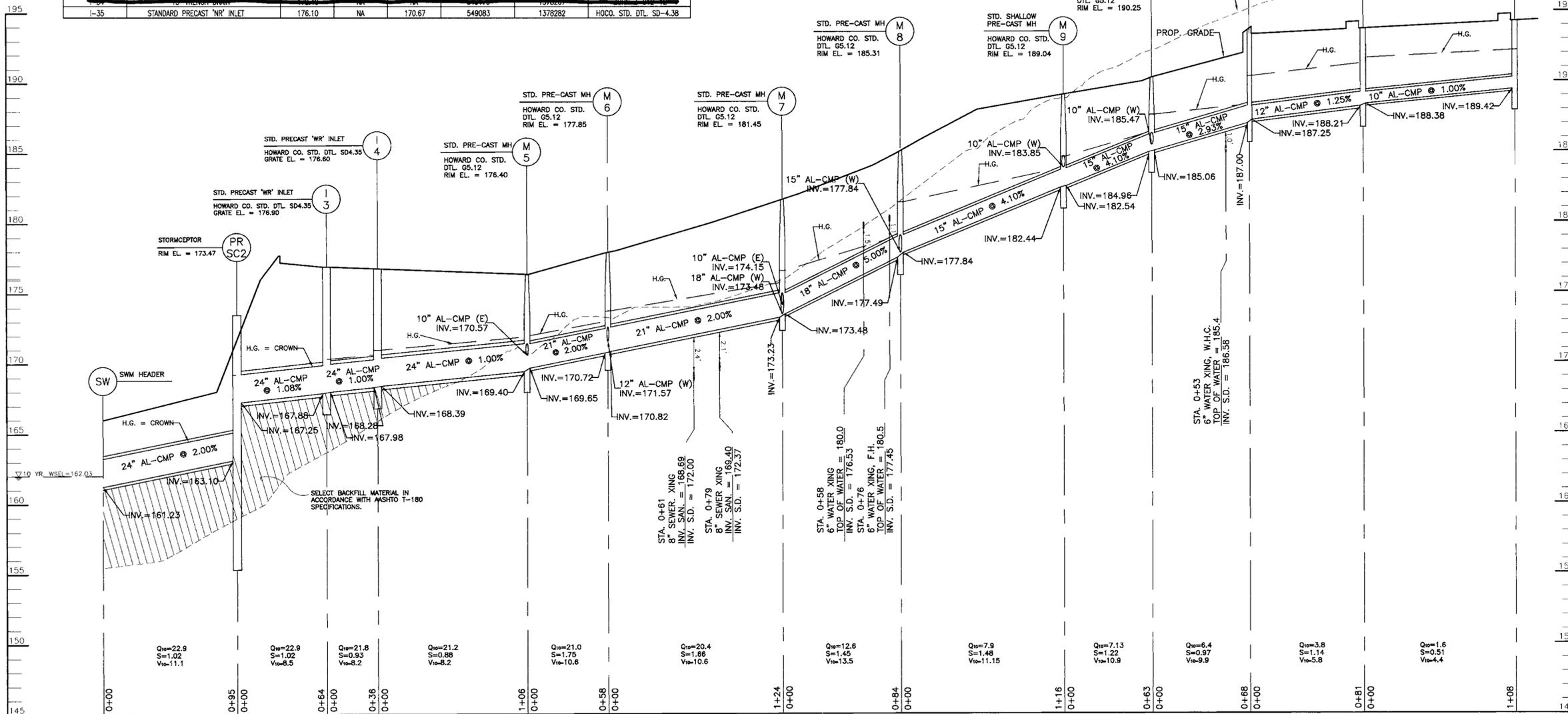
MESSICK & ASSOCIATES \*  
 CONSULTING ENGINEERS  
 31 OLD SOLOMONS ISLAND RD., SUITE 201  
 ANNAPOLIS, MARYLAND 21401  
 (410) 266-3212

3/27/00  
 DATE  
 DESIGNED BY: WRD  
 DRAWN BY: WRD  
 PROJECT NO:  
 DATE: APRIL 9, 1999  
 SCALE: AS SHOWN  
 WAYNE A. NEWTON #2159T  
 DRAWING NO.: 8 OF 14

STORM DRAIN STRUCTURE SCHEDULE									
STRUCTURE ID	STRUCTURE TYPE	TOP ELEVATION	INVERTS		LOCATION (COORDINATES)		DETAIL REFERENCE		
			IN	OUT	NORTHING	EASTING			
SW-1	CONCRETE END WALL	156.13	NA	156.13	549160	1377803	HO. CO. SD-5.41		
SWM-CS	AL-CMP RISER	167.05	NA	NA	549232	1377833	CONTEC		
SWM-M1	AL-CMP RISER	166.50	NA	NA	549183	1377976	CONTEC		
SWM-M2	AL-CMP RISER	170.00	NA	NA	549249	1378004	CONTEC		
SWM-M3	AL-CMP RISER	171.20	NA	NA	549306	1377870	CONTEC		
SWM-M4	AL-CMP RISER	167.60	NA	NA	549239	1377842	CONTEC		
PR-SC1	STORMCEPTOR (STC 2400) - MANHOLE	165.25	161.95	161.89	549178	1377937	STORMCEPTOR		
PR-SC2	STORMCEPTOR (STC 6000) - MANHOLE	173.47	167.25	163.10	549140	1378070	STORMCEPTOR		
I-2	STANDARD DOUBLE TYPE "S" INLET	165.25	NA	162.00	549173	1377947	HOCO. STD. DTL. SD-4.23		
I-3	STANDARD PRECAST "NR" INLET	176.90	167.98	167.88	549118	1378130	HOCO. STD. DTL. SD-4.35		
I-4	STANDARD PRECAST "NR" INLET	176.60	168.39	168.28	549109	1378165	HOCO. STD. DTL. SD-4.35		
M-5	STD PRECAST MANHOLE	176.40	169.65	169.40	549085	1378269	HOCO. STD. DTL. GS.12		
M-6	STD PRECAST MANHOLE	177.85	170.82	170.72	549134	1378299	HOCO. STD. DTL. GS.12		
M-7	STD PRECAST MANHOLE	181.56	173.48	173.23	549241	1378362	HOCO. STD. DTL. GS.12		
M-8	STD PRECAST MANHOLE	185.31	177.84	177.49	549315	1378463	HOCO. STD. DTL. GS.12		
M-9	STD PRECAST MANHOLE	189.04	182.53	182.43	549414	1378463	HOCO. STD. DTL. GS.12		
M-10	STD PRECAST MANHOLE	190.25	185.06	184.96	549474	1378484	HOCO. STD. DTL. GS.12		
I-11	STANDARD PRECAST "NR" INLET	193.35	187.25	187.00	549542	1378474	HOCO. STD. DTL. SD-4.38		
I-12	STANDARD PRECAST "NR" INLET	193.72	188.38	188.21	549561	1378396	HOCO. STD. DTL. SD-4.38		
I-13	STANDARD PRECAST "NR" INLET	194.27	NA	189.42	549585	1378290	HOCO. STD. DTL. SD-4.38		
I-14	STANDARD PRECAST "NR" INLET	189.42	NA	189.42	549465	1378562	HOCO. STD. DTL. SD-4.38		
I-15	STANDARD PRECAST "NR" INLET	189.26	NA	184.93	549433	1378438	HOCO. STD. DTL. SD-4.38		
I-16	STANDARD PRECAST "NR" INLET	185.95	178.61	178.19	549328	1378382	HOCO. STD. DTL. SD-4.38		
I-17	STANDARD PRECAST "NR" INLET	187.40	NA	179.77	549357	1378258	HOCO. STD. DTL. SD-4.38		
I-18	30" TRENCH DRAIN	188.10	NA	NA	549397	1378340	HOCO. STD. DTL. SD-4.38		
I-19	30" TRENCH DRAIN	188.20	NA	NA	549428	1378340	HOCO. STD. DTL. SD-4.38		
I-20	30" TRENCH DRAIN	188.40	NA	NA	549459	1378340	HOCO. STD. DTL. SD-4.38		
I-21	30" TRENCH DRAIN	188.60	NA	NA	549490	1378340	HOCO. STD. DTL. SD-4.38		
I-22	30" TRENCH DRAIN	188.80	NA	NA	549521	1378340	HOCO. STD. DTL. SD-4.38		
I-23	STANDARD PRECAST "NR" INLET	181.50	NA	174.25	549238	1378375	HOCO. STD. DTL. SD-4.38		
I-24	STANDARD PRECAST "NR" INLET	181.50	173.62	173.52	549250	1378355	HOCO. STD. DTL. SD-4.38		
I-25	STANDARD PRECAST "NR" INLET	181.43	173.94	173.84	549270	1378313	HOCO. STD. DTL. SD-4.38		
I-26	STANDARD PRECAST "NR" INLET	180.95	174.62	174.37	549290	1378226	HOCO. STD. DTL. SD-4.38		
I-27	STANDARD PRECAST "NR" INLET	180.95	174.91	174.66	549293	1378213	HOCO. STD. DTL. SD-4.38		
I-28	STD PRECAST MANHOLE NR INLET	181.00	175.00	175.00	549315	1378119	HOCO. STD. DTL. SD-4.38		
I-29	STANDARD PRECAST "NR" INLET	180.00	170.21	170.06	549301	1378110	HOCO. STD. DTL. SD-4.38		
I-30	STANDARD PRECAST "NR" INLET	180.00	170.20	NA	549301	1378110	HOCO. STD. DTL. SD-4.38		
I-31	STANDARD PRECAST "NR" INLET	178.50	172.64	171.69	549145	1378291	HOCO. STD. DTL. SD-4.38		
I-32	30" TRENCH DRAIN	178.70	NA	NA	549166	1378266	HOCO. STD. DTL. SD-4.38		
I-33	30" TRENCH DRAIN	178.90	NA	NA	549187	1378236	HOCO. STD. DTL. SD-4.38		
I-34	30" TRENCH DRAIN	179.10	NA	NA	549208	1378206	HOCO. STD. DTL. SD-4.38		
I-35	STANDARD PRECAST "NR" INLET	176.10	NA	170.67	549083	1378282	HOCO. STD. DTL. SD-4.38		

STORM DRAIN PIPE SCHEDULE											
STRUCTURE FROM	STRUCTURE TO	PIPE SIZE (INCHES)	PIPE TYPE	PIPE CLASSIFICATION	TOTAL LENGTH	STRUCTURE		PIPE SIZE (INCHES)	PIPE TYPE	PIPE CLASSIFICATION	TOTAL LENGTH
						FROM	TO				
SWMF	PR-SC1	18	AL-CMP	12 GAUGE	10	I-16	I-17	10	AL-CMP	12 GAUGE	123
PR-SC1	I-2	18	AL-CMP	12 GAUGE	10	I-16	I-17	10	AL-CMP	12 GAUGE	96
SWMF	PR-SC2	24	AL-CMP	12 GAUGE	92	I-16	I-18	12	AL-CMP	12 GAUGE	96
PR-SC2	I-3	24	AL-CMP	12 GAUGE	58	I-18	I-19	12	AL-CMP	12 GAUGE	86
I-3	I-4	24	AL-CMP	12 GAUGE	31	I-19	I-20	12	AL-CMP	12 GAUGE	60
I-4	M-5	24	AL-CMP	12 GAUGE	102	I-20	I-21	10	AL-CMP	12 GAUGE	60
M-5	M-6	21	AL-CMP	12 GAUGE	54	I-21	I-22	10	AL-CMP	12 GAUGE	40
M-6	M-7	21	AL-CMP	12 GAUGE	120	M-7	I-23	10	AL-CMP	12 GAUGE	10
M-7	M-8	18	AL-CMP	12 GAUGE	80	M-7	I-24	18	AL-CMP	12 GAUGE	9
M-8	M-9	15	AL-CMP	12 GAUGE	112	I-24	I-25	18	AL-CMP	12 GAUGE	42
M-9	M-10	15	AL-CMP	12 GAUGE	61	I-25	I-26	18	AL-CMP	12 GAUGE	86
M-10	I-11	15	AL-CMP	12 GAUGE	66	I-26	I-27	15	AL-CMP	12 GAUGE	9
I-11	I-12	12	AL-CMP	12 GAUGE	77	I-27	I-28	12	AL-CMP	12 GAUGE	93
I-12	I-13	10	AL-CMP	12 GAUGE	104	I-28	I-29	12	AL-CMP	12 GAUGE	11
M-10	I-14	10	AL-CMP	12 GAUGE	36	I-29	I-30	10	AL-CMP	12 GAUGE	20
M-9	I-15	10	AL-CMP	12 GAUGE	29	M-6	I-31	12	AL-CMP	12 GAUGE	10
M-8	I-16	15	AL-CMP	12 GAUGE	23	I-31	I-32	10	AL-CMP	12 GAUGE	30
I-16	I-17	10	AL-CMP	12 GAUGE	123	I-32	I-33	10	AL-CMP	12 GAUGE	30
						I-33	I-34	10	AL-CMP	12 GAUGE	30
						I-34	I-35	10	AL-CMP	12 GAUGE	10

- NOTES:
- 1) THE CONTRACTOR SHALL CROSS-REFERENCE ALL INFORMATION IN BOTH THE PIPE AND STRUCTURE SCHEDULES WITH THE INFORMATION CONTAINED IN THE PROFILES. IF THERE ARE ANY DISCREPANCIES BETWEEN SAID INFORMATION, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR VERIFICATION. PRIOR TO CASTING OR ORDERING MATERIALS, ANY INCORRECT CASTINGS OR PURCHASES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
  - 2) ALL STORM DRAIN PIPE SHALL BE "ULTRAFLO" ALUMINIZED CORRUGATED METAL PIPE WITH A N=0.013 BY CONTECH CONSTRUCTION PRODUCTS, INC. OR APPROVED EQUAL.



PROFILE -- SWMF THROUGH I-13

SCALE: HORIZ. 1" = 40'  
VERT. 1" = 4'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*James B. Ralls* 2/1/00  
DIRECTOR DATE

*Walter D. Williams* 7/19/00  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Conity H. Harman* 8/1/00  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

1-31-01 REVISION TO IMPLEMENT SW DISTRICT CHANGE AND MISCELLANEOUS SITE MODIFICATIONS

DATE NO. REVISION

OWNER: THOMAS AND BARBARA PALACOROLLA  
12183 TRIADELPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER: POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: POTOMAC ABATEMENT INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE: STORM DRAIN PROFILES

MESSICK & ASSOCIATES \*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

DATE: 3/27/00

DESIGNED BY: WRD

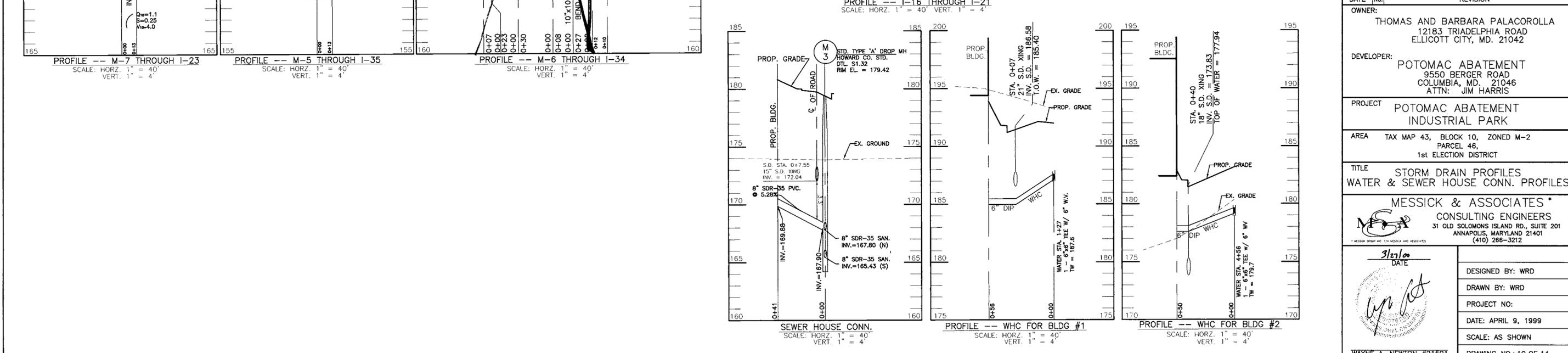
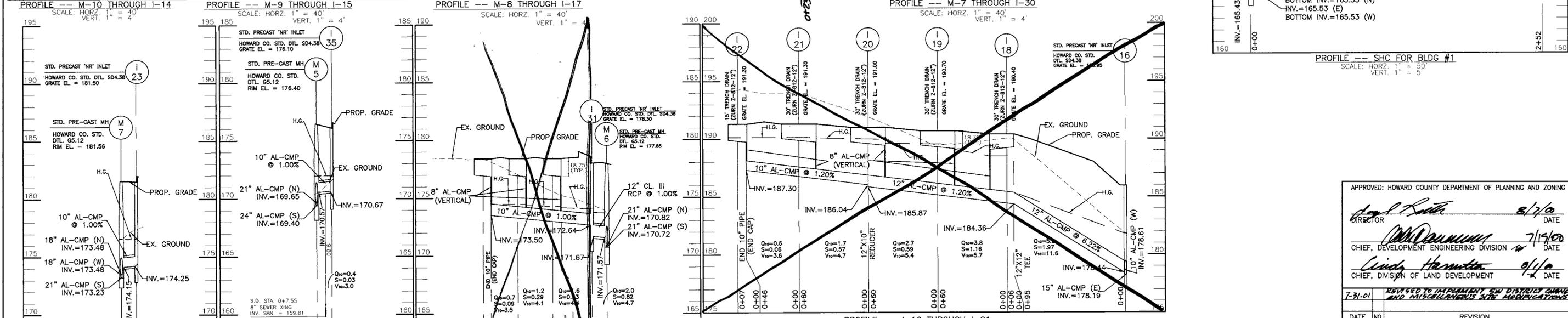
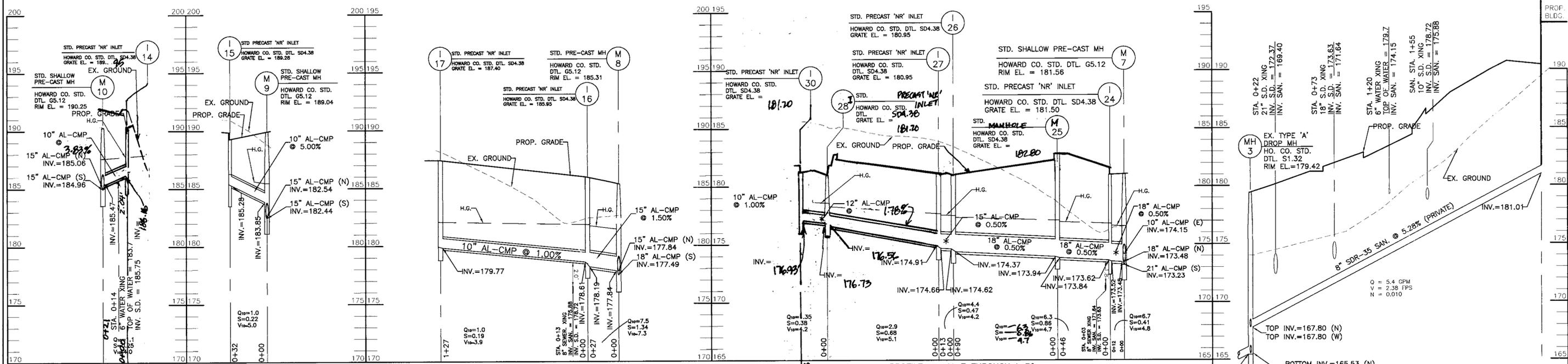
DRAWN BY: WRD

PROJECT NO:

DATE: APRIL 9, 1999

SCALE: AS SHOWN

DRAWING NO.: 9 OF 14



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Paul Smith* 2/7/00 DATE  
DIRECTOR

*John Danvers* 7/19/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Cindy Hamilton* 9/1/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

7-31-01 REVISED TO IMPLEMENT SW DISTRICT CHANGE AND MISCELLANEOUS SITE MODIFICATIONS

DATE NO. REVISION

OWNER:  
THOMAS AND BARBARA PALACOROLLA  
12183 TRIADELPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER:  
POTOMAC ABATEMENT  
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ATTN: JIM HARRIS

PROJECT  
POTOMAC ABATEMENT  
INDUSTRIAL PARK

AREA TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE  
STORM DRAIN PROFILES  
& SEWER HOUSE CONN. PROFILES

MESSICK & ASSOCIATES\*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

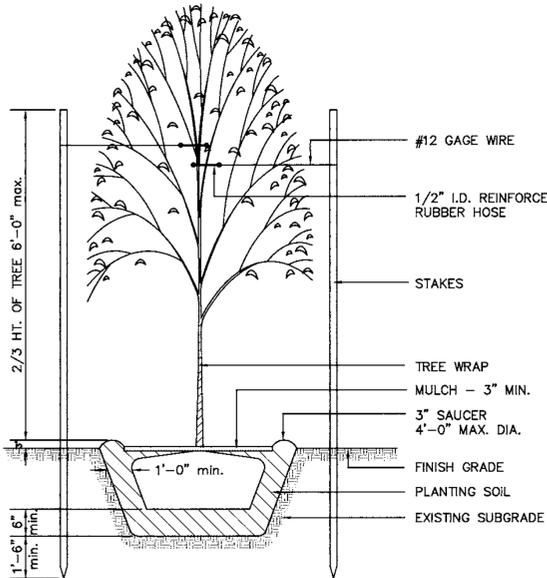
DATE 3/27/00

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN

WAYNE A. NEWTON #21591  
DRAWING NO.: 10 OF 14  
SDP-99-130

**PLANTING NOTES:**

- All plants shall be nursery grown.
  - All plants shall conform to the standards of AAN. They shall be typical of their species or variety and shall have a normal habit of growth. They shall be sound, healthy and vigorous, well-branched and densely foliated when in leaf. They shall be free of disease and insect pests, eggs, or larvae. They shall have healthy, well-developed root systems.
  - No substitutions shall be made without the approval of the landscape architect.
  - Balled and burlapped plants shall be dug with firm natural balls of earth, of diameter and depth to include most of the fibrous roots. Container grown stock shall have been grown in a container long enough for the root system to be have developed sufficiently to hold its soil together firm and whole. No plants shall be loose in the container.
  - Root balls of all plants shall be adequately protected at all times from sun and drying winds or frost.
  - Owner or his representative shall be notified prior to beginning planting operations.
  - All trees shall be wrapped immediately after they are planted.
- Approved tree wrap shall be installed according to accepted industry practice.
- Each tree and shrub shall be pruned in accordance with the American Association of Nurserymen Standards to preserve the natural character of the plant. All dead wood or suckers and all broken or badly bruised branches shall be removed. Cuts over 1" in diameter shall be painted with an approved tree paint.
  - Mulch: Immediately after planting operations are completed all trees and shrub planting pits shall be covered with a 2" layer of Shredded Hardwood Bark Mulch or other material approved by the owner or his representative. The limit of this mulch for trees shall be the area of the pit and for shrubs in beds, the entire area of the shrub bed.
  - Trees in leaf when planted shall be treated with anti-desiccant such as Wilt-Proof.
  - Conditions detrimental to plants: the contractor shall notify the project representative in writing of all soil or drainage conditions which the contractor considers detrimental to the growth of plants. He shall state the conditions and submit a proposal for correcting the conditions, including any change in cost for review and acceptance by the project representative.
  - Minor adjustments to tree location may be necessary due to field conditions and final grading. The contractor shall notify the owner if major adjustments are required.

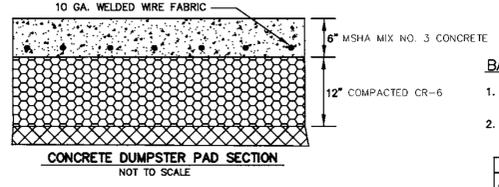
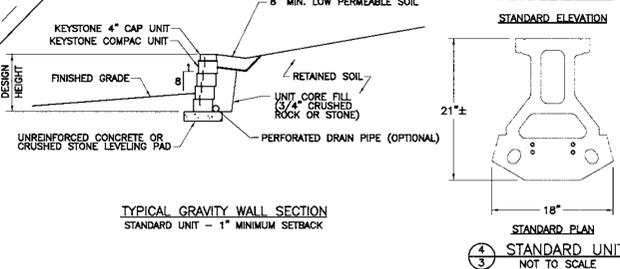
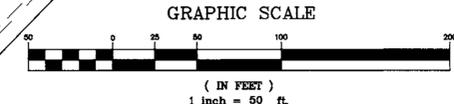
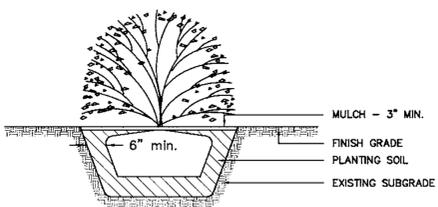
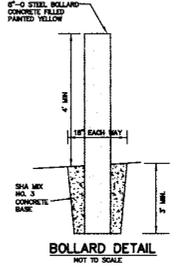
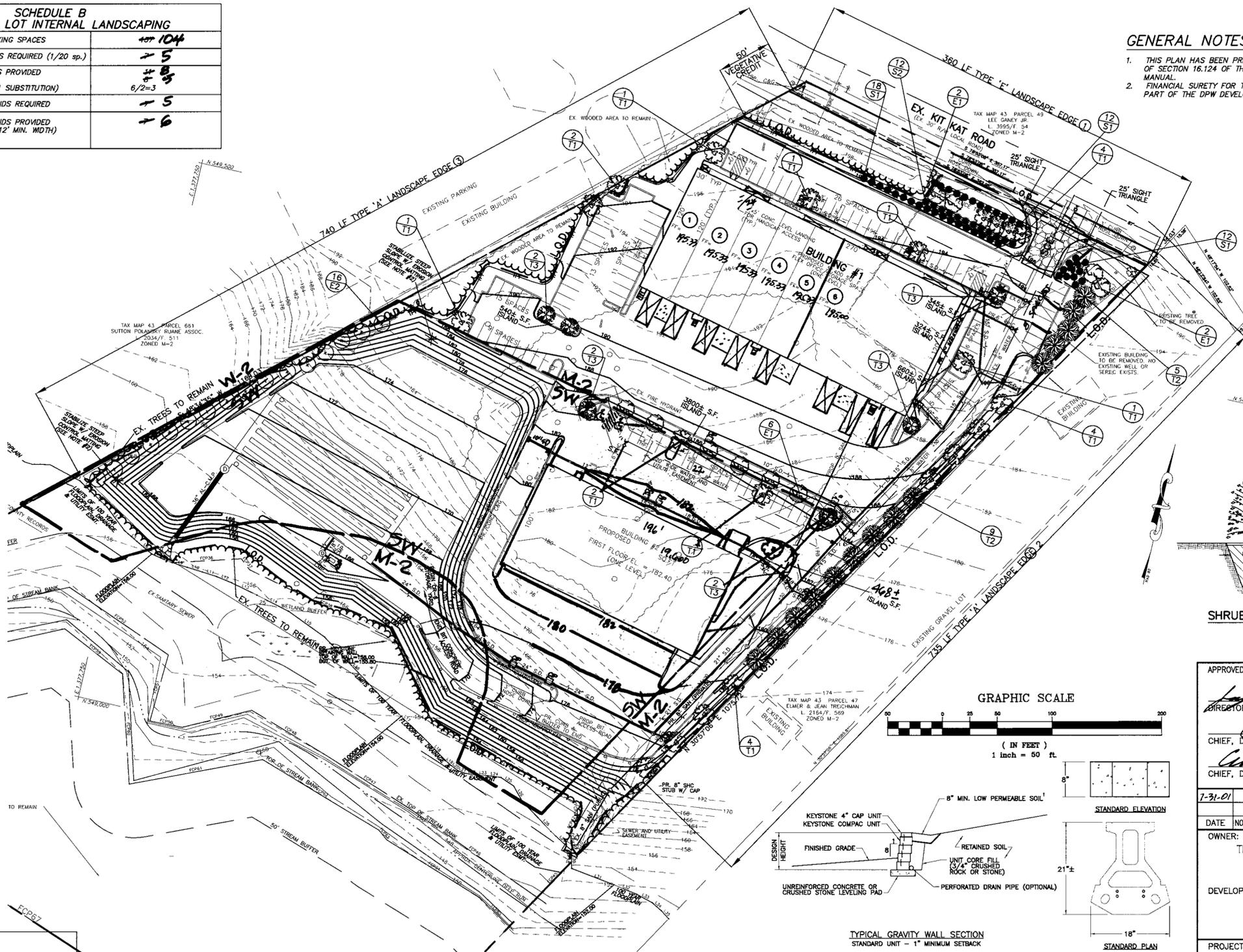


TREE PLANTING DETAIL - LESS THAN 4" CAL.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	107 104
NUMBER OF TREES REQUIRED (1/20 sp.)	5
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	4 6/2=3
NUMBER OF ISLANDS REQUIRED	5
NUMBER OF ISLANDS PROVIDED (200 sq ft/ISLAND, 12' MIN. WIDTH)	6

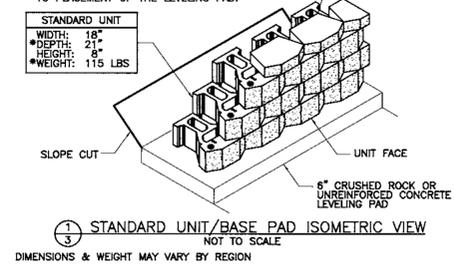
**GENERAL NOTES:**

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$12,960.00.



**BASE LEVELING PAD NOTES:**

- THE LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED STONE OR 2000 PSIG UNREINFORCED CONCRETE.
- THE BASE FOUNDATION IS TO BE APPROVED BY THE SITE, GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE LEVELING PAD.



SCHEDULE A PERIMETER LANDSCAPE EDGE			
CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES
	①	②	③
LANDSCAPE EDGE	①	②	③
LANDSCAPE TYPE	"E"	"A"	"A"
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	360'	* 735'	* 740'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES/155'	* NO/0'	* YES/50'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO/0'	* NO/0'	* NO/0'
RESULTANT PERIMETER LENGTH	205'	735'	690'
NUMBER OF PLANTS PROVIDED			
SHADE TREES	4	22	4
EVERGREEN TREES	4	0	0
OTHER TREES (2:1 SUBSTITUTION)	0	0	0
SHRUBS (2:1 SUBSTITUTION)	54 (SHRUBS)	0	**16 EVERGREEN=8 SHADE

**PLANT LIST**

Symbol	Key	Botanical Name Common Name	Size	Quantity
T1	T1	Acer Rubrum "October Glory" October Glory Red Maple	2 1/2" - 3" Cal. B&B	21
T2	T2	Platanus Acerfolia Bloodgood Bloodgood London Plane Tree	2' - 2 1/2' HT. B&B	14
T3	T3	Zelkova Serrata "Village Green" Village Green Zelkova	2 1/2" - 3" Cal. B&B	7
S1	S1	Euonymus Alatus Compacta Dwarf Winged Euonymus	2' - 2 1/2' HT. B&B	42
S2	S2	Forsythia Intermedia Spectabilis Forsythia	2' - 2 1/2' HT. B&B	12
E1	E1	Ilex Opaca American Holly	5-6' Hgt. B&B	12
E2	E2	Cupressocyparis Leylandii Leyland Cypress	5-6' Hgt. B&B	16

\* -FROM KIT KAT ROAD TO LIMIT OF DISTURBANCE (FLOODPLAIN)  
EX. WOODS TO REMAIN AND NO DISTURBANCE PROPOSED BEYOND THIS DISTANCE.  
\*\* -16 EVERGREENS WILL BE SUBSTITUTED FOR 8 SHADE TREES ALONG THE WESTERN EDGE OF THE STORAGE YARD TO PROVIDE A BETTER SCREENING FROM THE ADJACENT PROPERTY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/7/00 DATE  
DIRECTOR

*[Signature]* 7/19/00 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 8/1/00 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

7-31-01 REVISED TO IMPLEMENT NEW DISTRICT CHANGES AND MISCELLANEOUS SITE MODIFICATIONS

DATE	NO.	REVISION

OWNER:  
THOMAS AND BARBARA PALACOROLLA  
12183 TRIADLEPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER:  
POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT  
POTOMAC ABATEMENT  
INDUSTRIAL PARK

AREA  
TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 48,  
1st ELECTION DISTRICT

TITLE  
LANDSCAPING PLAN

MESSICK & ASSOCIATES \*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

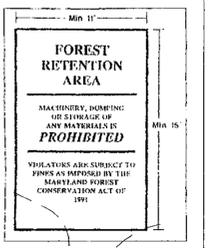
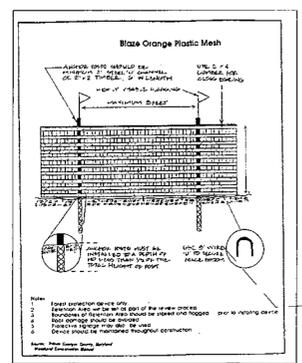
DATE: 3/21/00

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 12 OF 14

WAYNE A. NEWTON #21591

EXISTING WETLANDS  
METES & BOUNDS  
1859.17 SQ. FT.

W1	N 60°15'59" E	12.49'
W2	N 85°04'49" E	9.67'
W3	N 86°50'06" E	14.01'
W4	N 80°55'41" E	18.90'
W5	N 87°04'44" E	31.37'
W6	N 76°31'41" E	41.24'
W7	S 10°25'53" W	11.76'
W8	S 87°10'51" W	29.58'
W9	N 72°34'30" W	24.45'
W10	S 80°55'36" W	37.27'
W11	N 72°27'33" W	34.35'



LINE	LENGTH	BEARING
L1	5.74	N74°19'44"W
L2	15.58	N58°33'15"W
L3	18.70	N59°14'53"W
L4	26.59	N49°33'14"W
L5	15.34	N61°44'55"W
L6	16.75	N63°02'22"W
L7	12.28	N78°45'51"W
L8	8.02	N80°41'42"W
FCP36	63.01	N73°46'02"E
FCP37	12.44	S50°18'14"E
FCP38	153.57	S76°59'23"E
FCP39	88.45	S36°42'35"E
FCP40	146.45	S75°27'37"E
FCP41	11.42	S10°53'16"E
FCP42	14.62	S11°54'54"W

LINE	LENGTH	BEARING
L1	5.74	N74°19'44"W
L2	15.58	N58°33'15"W
L3	18.70	N59°14'53"W
L4	26.59	N49°33'14"W
L5	15.34	N61°44'55"W
L6	16.75	N63°02'22"W
L7	12.28	N78°45'51"W
L8	8.02	N80°41'42"W
L9	14.37	N85°56'11"W
L10	14.37	N85°56'11"W
L11	13.86	N85°02'49"W
L12	14.86	N80°25'43"W
L13	25.64	N76°40'38"W
L14	32.47	N75°56'00"W
L15	40.48	N67°18'09"W
L16	79.60	N58°28'35"W
L17	52.99	N59°02'38"W
L18	24.84	N58°51'14"W
L19	7.14	N60°53'50"W
L20	8.01	N65°38'29"W
L21	6.85	N81°58'46"W
L22	12.33	S85°05'17"W
L23	8.83	S80°07'02"W
L24	12.00	S84°16'00"W
L25	14.25	N89°13'33"W
L26	17.17	N42°23'55"W
L27	19.48	N57°30'08"W
L28	17.38	N55°45'59"W
L29	26.35	N60°30'41"W
L30	16.58	N14°10'08"W
L31	41.37	N81°58'37"W
L32	22.54	N80°10'04"W
L33	15.99	N74°44'25"W
L34	11.01	N61°44'02"W
L35	10.13	N55°32'14"W

FOREST CONSERVATION EASEMENT #1 (THIS SHEET)  
23,197.88 S.F./ 0.53 AC.±

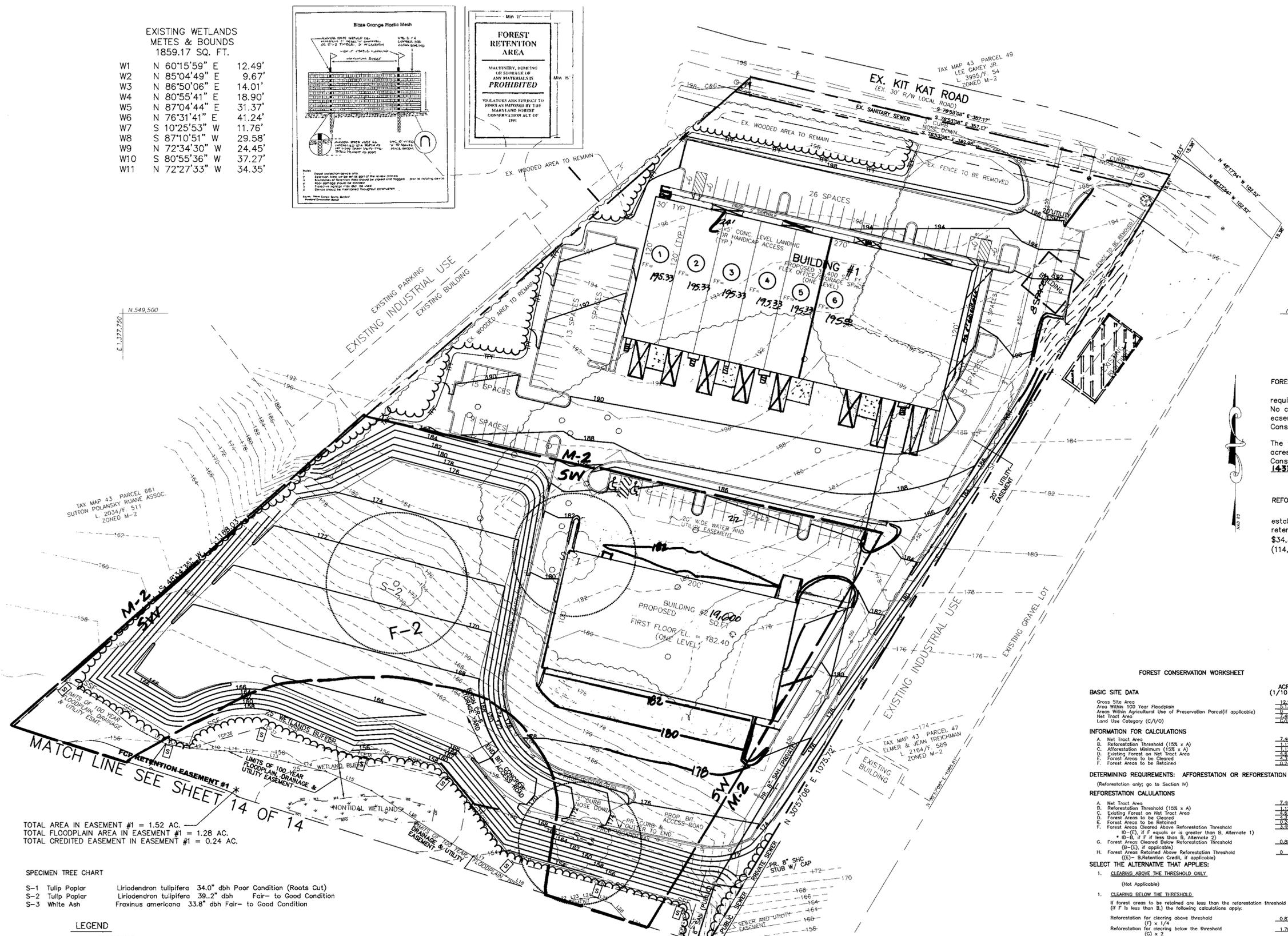
FLOODPLAIN AREA WITHIN EASEMENT #1 (THIS SHEET)  
13,443.25 S.F./0.31 AC.±

CREDITED EASEMENT (THIS SHEET)  
9754.63 S.F./0.22 AC.±

FOREST CONSERVATION NOTE:  
The Forest Conservation easements have been established to fulfill the requirements of section 16.1200 of the Howard County Code, Forest Conservation Act. No clearing, grading or construction is permitted within the forest conservation easement; however, forest management practices as defined in the Deed of Forest Conservation Easement are allowed.

The two FCP retention easements, which are known as #1 and #2, contain 1.52 acres and 3.19 acres, respectively and are described in the "Plot of Forest Conservation" recorded in the Howard County Land record office under Plat Number(s) **14337/14338**.

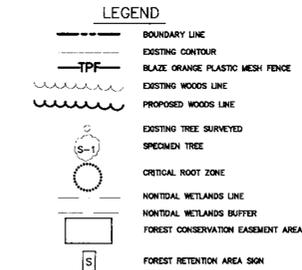
REFORESTATION NOTE:  
The forest conservation obligations for this plan have been met by the establishment of the two on-site retention easements with a total credited forest retention area outside of the floodplain of 0.24 acre, and a fee-in-lieu payment of \$34,368.84 to the Howard County Forest Conservation Fund for the 2.63 acres (114,462.80 square feet) of reforestation obligation.



TOTAL AREA IN EASEMENT #1 = 1.52 AC.  
TOTAL FLOODPLAIN AREA IN EASEMENT #1 = 1.28 AC.  
TOTAL CREDITED EASEMENT IN EASEMENT #1 = 0.24 AC.

SPECIMEN TREE CHART

S-1	Tulip Poplar	Liriodendron tulipifera	34.0" dbh	Poor Condition (Roots Cut)
S-2	Tulip Poplar	Liriodendron tulipifera	39.2" dbh	Fair- to Good Condition
S-3	White Ash	Fraxinus americana	33.8" dbh	Fair- to Good Condition



FOREST CONSERVATION PLAN PREPARED BY:  
*Eric E. See* 7/28/00  
ERIC E. SEE QUALIFIED PROFESSIONAL DATE  
SEE ENVIRONMENTAL SERVICES, INC.  
THE WOODBRIDGE CENTER  
2444 SOLOMONS ISLAND RD.  
SUITE 217  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3828

SCALE: 1"=40'

FOREST CONSERVATION WORKSHEET

BASIC SITE DATA	ACRES (1/10 acres)
Gross Site Area	14.99
Area Within 100 Year Floodplain	2.13
Area Within Agricultural Use of Preservation Parcel (if applicable)	0
Net Tract Area	12.86
Land Use Category (C/I/O)	0.70

INFORMATION FOR CALCULATIONS

A. Net Tract Area	7.46
B. Reforestation Threshold (15% x A)	1.12
C. Afforestation Minimum (15% x A)	1.12
D. Existing Forest on Net Tract Area	2.92
E. Forest Areas to be Cleared	0.24
F. Forest Areas to be Retained	2.68
G. Forest Areas Cleared Above Reforestation Threshold (D-E), if F equals or is greater than B, Alternate 1) (D-E), if F is less than B, Alternate 2)	0.88
H. Forest Areas Retained Above Reforestation Threshold (E-L), if applicable	0
I. Forest Areas Retained Below Reforestation Credit, if applicable (E)-B Retention Credit, if applicable	0

SELECT THE ALTERNATIVE THAT APPLIES:

- CLEARING ABOVE THE THRESHOLD ONLY (Not Applicable)
- CLEARING BELOW THE THRESHOLD (If F is less than B) the following calculations apply:  
 Reforestation for clearing above threshold: (F) x 1/4 = 0.87  
 Reforestation for clearing below the threshold: (G) x 2 = 1.76  
 Total Reforestation required: ((F) x 1/4) + ((G) x 2) = 2.63  
 Since clearing occurs below the threshold, no forest retention credit is possible.

AFFORESTATION CALCULATIONS

NOTES:  
FOREST CONSERVATION EASEMENT (TOTAL)=205,483.93 S.F./4.72 AC.  
100-YEAR FLOODPLAIN IN FCP EASEMENTS=185,244.73 S.F./4.48 AC. (EXCLUDES AREA WITHIN THE LIMITS OF THE STREAM, SINCE THIS AREA IS NOT INCLUDED IN THE FOREST RETENTION EASEMENTS)  
TOTAL 100-YEAR FLOODPLAIN AREA = 223,388.02 S.F./5.13 AC.  
CREDITED EASEMENT=10,249.20 S.F./0.24 AC.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DIRECTOR: *[Signature]* 8/1/00 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 7/19/00 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 8/1/00 DATE

7-71-01 REVISED TO IMPLEMENT SW DISTRICT CANNING AND MISCELLANEOUS SITE MODIFICATIONS

DATE: NO. REVISION

OWNER: THOMAS AND BARBARA PALACOROLLA  
12183 TRIADELPHIA ROAD  
ELLCOTT CITY, MD. 21042

DEVELOPER: POTOMAC ABATEMENT  
9550 BERGER ROAD  
COLUMBIA, MD. 21046  
ATTN: JIM HARRIS

PROJECT: POTOMAC ABATEMENT INDUSTRIAL PARK

AREA: TAX MAP 43, BLOCK 10, ZONED M-2  
PARCEL 46,  
1st ELECTION DISTRICT

TITLE: FOREST CONSERVATION PLAN

MESSICK & ASSOCIATES \*  
CONSULTING ENGINEERS  
31 OLD SOLOMONS ISLAND RD., SUITE 201  
ANNAPOLIS, MARYLAND 21401  
(410) 266-3212

DATE: 3/27/00

DESIGNED BY: WRD  
DRAWN BY: WRD  
PROJECT NO:  
DATE: APRIL 9, 1999  
SCALE: AS SHOWN  
DRAWING NO.: 13 OF 14

WAYNE A. NEWTON #2159T