SHEET INDEX

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6	STORMCEPTOR NOTES AND DETAILS

SWM SUMMARY TABLE

DRAINAGE AREA 4.03 Acres

	2	10	100
Allowable Release Rate	8	16	26
Inflow to Facility (cfs)	13	22	32
Discharge from Facility	5	11	27
Elevation	169.70	171.29	171.78
Storage (Ac-ft)	0.11	0.30	0.36

BENCH MARKS

BM. 38D5 ELEV. 173.75
STANDARD HOWARD COUNTY SURVEY DISC SET ON CONCRETE MONUMENT 5.6' BEHIND CURB AND 38.0' WEST OF FIRE HYDRANT NORTH OF HOWARD LANE.

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STANDARD HOWARD COUNTY SURVEY DISC ON CONCRETE MONUMENT SET FLUSH WITH GROUND 5.6' FROM CHAIN LINK FENCE OF ATLANTIC SUPPLY COMPANY AND 44.0' WEST OF LIGHT POLE SOUTH OF HOWARD LANE.

* 18. TRAFFIC CONTROL DEVICES, MARKING AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
19. PROPOSED WATER MAINS WILL BE PRIVATELY MAINTAINED.
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21. EXISTING UTILITIES ARE BASED ON A FIELD RUN SURVEY, SDP 84-95, SDP 84-150, 387 W & S (PATAPSCO DRAINAGE AREA).
22. THERE ARE NO WETLANDS OR FLOODPLAINS ON THIS SITE.
23. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV IE; STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. THE LOCATION OF THE UTILITIES SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION AND DEPTH OF ANY UTILITIES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS PRIOR TO BEGINNING WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE ENGINEERING OFFICE, PHOENIX ENGINEERING, INC. AT (410) 247-9833 IN THE EVENT OF ANY DISCREPANCIES IN THE PLANS OR IN THE RELATIONSHIP OF FINISHED GRADES TO EXISTING GRADES, PRIOR TO BEGINNING ANY WORK.
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   MISS UTILITY..... 1-800-257-7777

   BELL ATLANTIC..... 1-800-252-1133

   HOWARD COUNTY BUREAU OF UTILITIES.....410-313-4900

   BELL ATLANTIC CABLE LOCATION DIVISION410-461-4635

   BALTIMORE GAS & ELECTRIC CO. 410-685-0123

   HOWARD COUNTY CONSTRUCTION / INSPECTION SURVEY DIVISION (24 HOURS PRIOR TO COMMENCEMENT OF WORK).....410-313-1880
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10. ALSO SEE PREVIOUS FILE # SDP 86-09 AND F 79-165
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12. HANDICAP RAMPS SHALL MEET ADA REQUIREMENTS.
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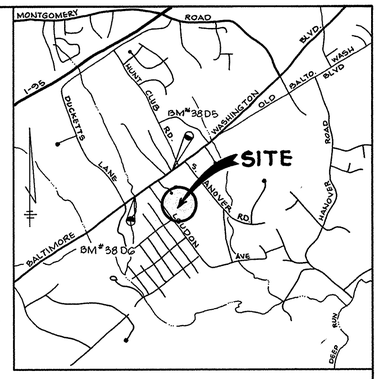
16. CONTRACTOR SHALL USE DIMENSIONS SHOWN, SCALING OF THESE PLANS IS DISCOURAGED.
17. ANY DAMAGE TO COUNTY RIGHT-OF-WAY AND PAVING OF PUBLIC ROADS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE IN ACCORDANCE WITH THE HOWARD COUNTY SPECIFICATIONS AND STANDARDS.

* CONTINUED ABOVE



VICINITY MAP

SCALE: 1" = 2000'

SITE ANALYSIS

TOTAL AREA OF PARCEL J-1 = 3.350 AC. OR 145,926 SQ. FT.
TOTAL AREA OF THIS SUBMISSION = 3.350 AC. OR 145,926 SQ. FT.

ZONING: M-1 = AS PER COMPREHENSIVE ZONING PLAN DATED 10/16/93

PROPOSED USE: WAREHOUSE/OFFICE

THERE ARE NO EXISTING OR PROPOSED SLOPES 15% OR GREATER EXCEPT AS SHOWN.

THE SOILS TYPES SHOWN ON THESE PLANS ARE AS SHOWN IN THE "HOWARD COUNTY SOILS SURVEY." THE SOILS ARE OF THE BELTSVILLE SOILS GROUP TYPE - C AND IUKA SOILS GROUP TYPE - C.

WETLANDS AND FLOODPLAINS ARE AS SHOWN ON THE DRAWINGS.

ALL EXISTING VEGETATION ON SITE IS IN THE FORM OF LAWN.

OPEN SPACE (GREEN AREA) TO REMAIN ON SITE = 2.57 AC.

BUILDING COVERAGE OF SITE = 12,535 SF OR 8.5%

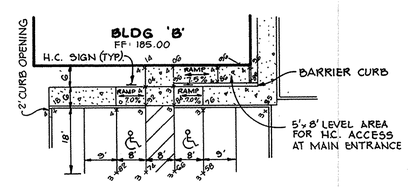
TOTAL AREA TO BE DISTURBED = 1.52 AC.

BUILDING INFORMATION
BLDG. A (1 STORY) WAREHOUSE (EXISTING) = 2,635 SF

BLDG. B (1 STORY) WAREHOUSE = 7,200 SF
BLDG. B (1 STORY) OFFICE = 2,700 SF
TOTAL = 2,700 SF = 9,835 SF

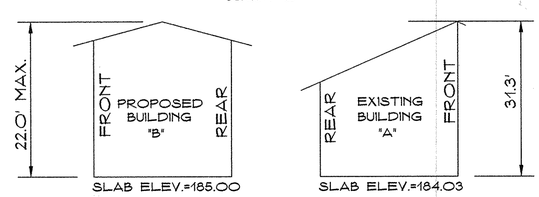
PARKING REQUIRED
WAREHOUSE @ 2.5 SPACES/1000 SF (9,835 SF) = 24.59 SPACES
OFFICE @ 3.3 SPACES/1000 SF (2,700 SF) = 8.97 SPACES
TOTAL PARKING REQUIRED = 33.5 SPACES

PARKING PROVIDED (INCLUDING HANDICAP SPACES) = 34 SPACES
REGULAR HANDICAP SPACES PROVIDED 8'X18' = 0 SPACES
VAN ACCESSIBLE SPACES PROVIDED 8'X18' = 2 SPACES



HANDICAP ACCESS PLAN

SCALE: 1"=20'



BUILDING SCHEMATICS

NOT TO SCALE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10/6/97
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/7/97
DIRECTOR	DATE 10/7/97

Date	No	Revision Description

OWNER/DEVELOPER
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
803 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-9833 FAX 247-9397

AREA — ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 888
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ELKRIDGE INDUSTRIAL PARK
SITE DEVELOPMENT PLAN
FORMERLY SDP 86-09

Des By	R.J.W.	Scale	1" = 30'	Proj. No. 97-006 SDP.DWG	
Drn By	A.J.R.	Date	JUNE 1997	SHEET NO.	1 OF 6
Chk By	J.R.H.		SDP-98-04		

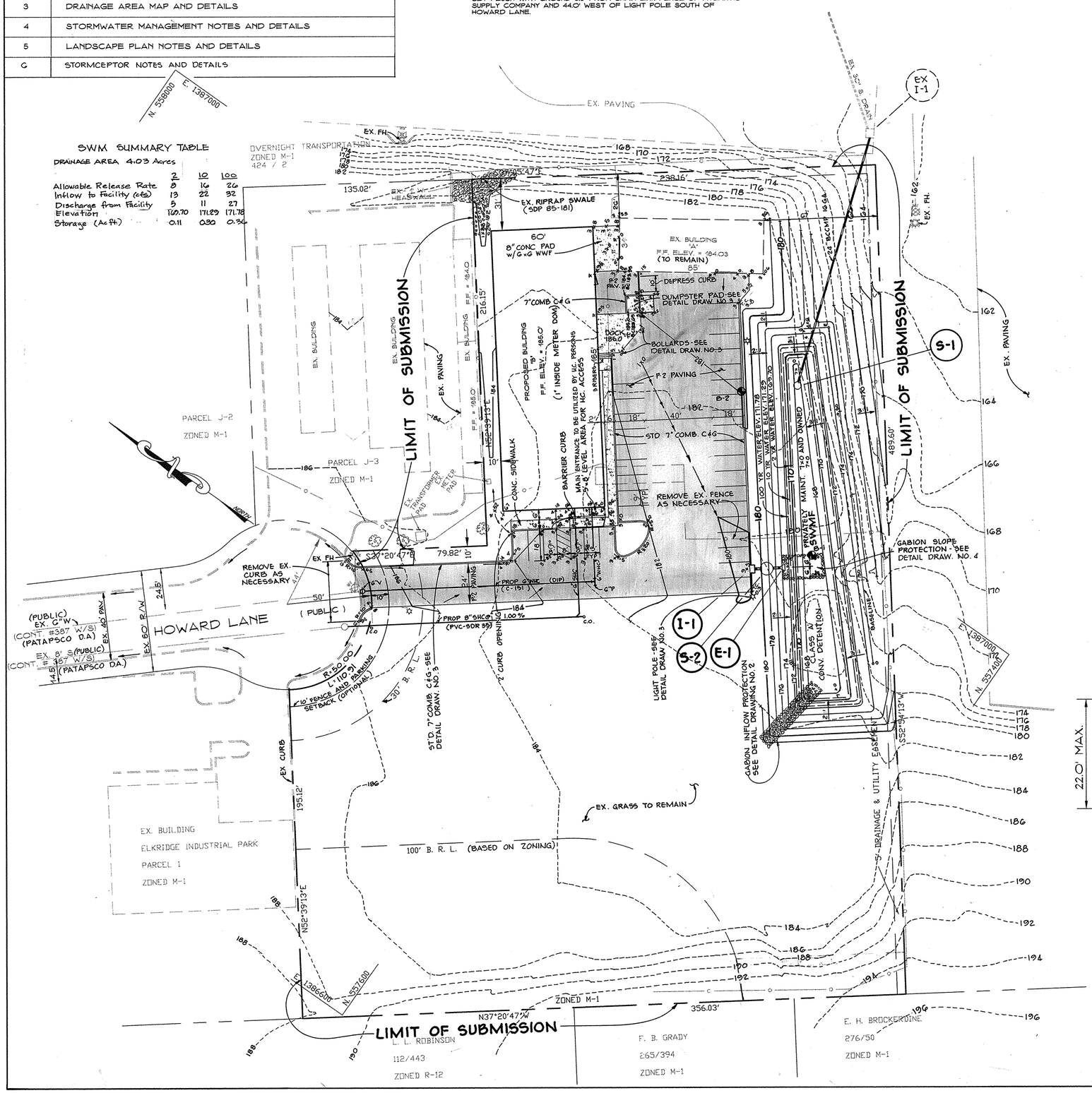
ADDRESS CHART	
LOT No.	STREET ADDRESS
LOT J-1	6365 HOWARD LANE

SUBDIVISION NAME			SECT/AREA	PARCEL P/O P293
ELKRIDGE INDUSTRIAL PARK			3	LOT J-1
PLAT 4353	BLOCK 13	ZONE M-1	TAX/ZONE MAP 38	ELEC. DIST. 1ST / CENSUS TR. 6012.00
WATER CODE 2A01			SEWER CODE 2152208	

7-2-97
Date

STATE OF MARYLAND — JOHN RAY HEINRICHS — No. 14920 — REGISTERED PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920



SDP-98-04

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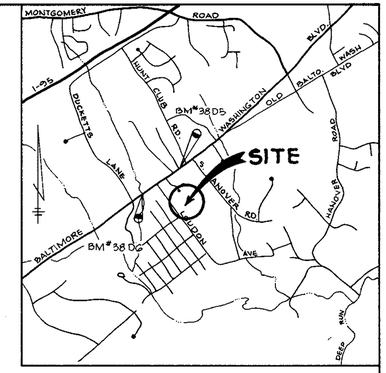

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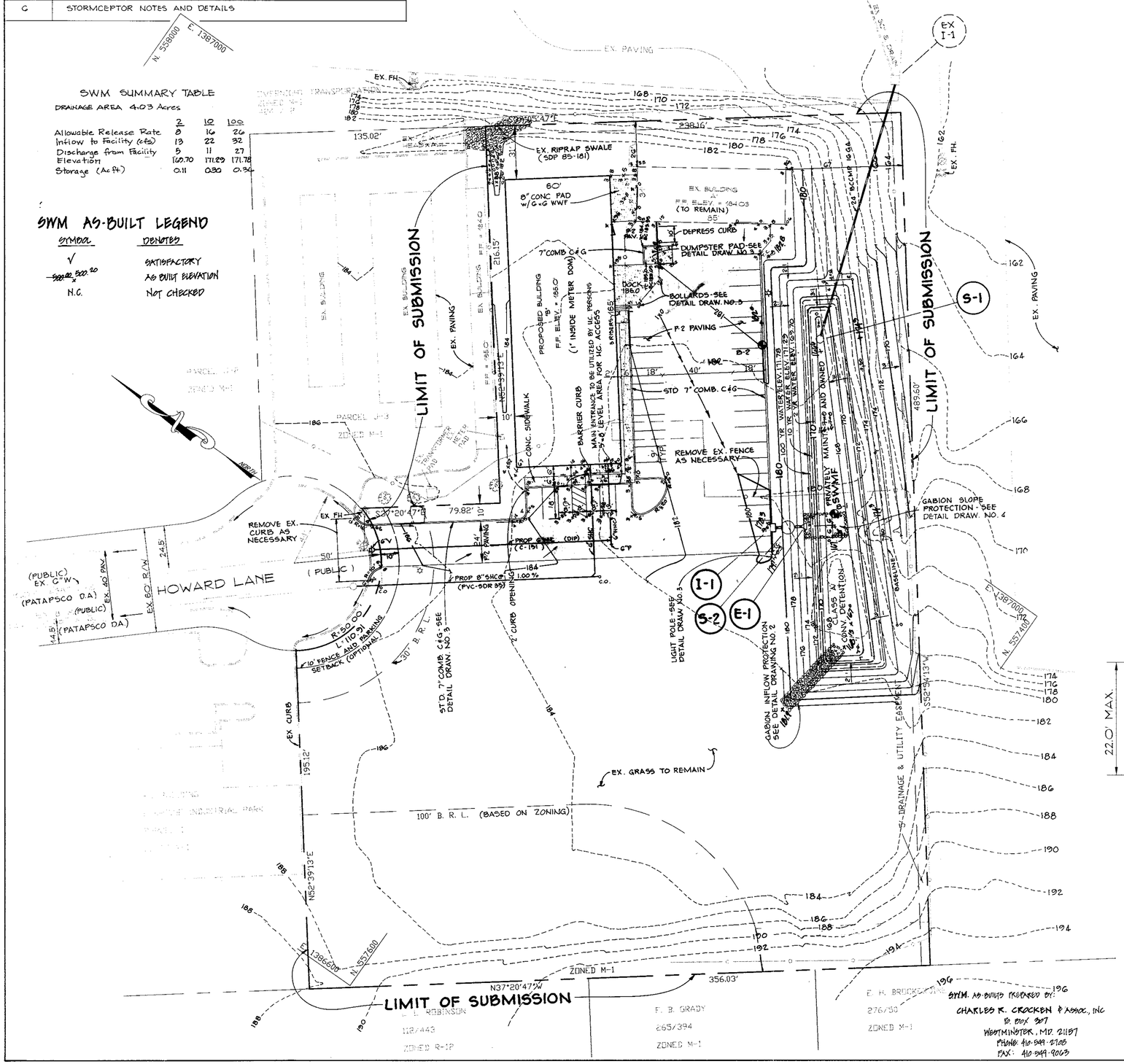
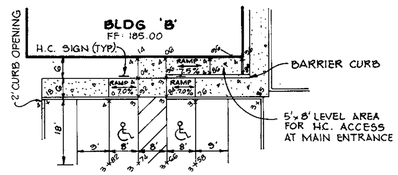
SWM AS-BUILT LEGEND

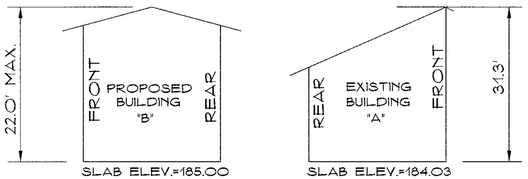
SYMBOL	DENOTES
√	SATISFACTORY
~~500.00~~ x 500.20	AS BUILT ELEVATION
N.C.	NOT CHECKED





HANDICAP ACCESS PLAN

SCALE: 1"=20'



BUILDING SCHEMATICS

NOT TO SCALE

ADDRESS CHART

LOT No.	STREET ADDRESS
LOT J-1	6365 HOWARD LANE

SUBDIVISION NAME			SECT/AREA	PARCEL P/O P293
ELKRIDGE INDUSTRIAL PARK			3	LOT J-1
PLAT	BLOCK	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
4353	13	M-1	MAP 38	1ST	6012.00
WATER CODE			SEWER CODE	
2A01			2152208	

7-2-97
Date

STATE OF MARYLAND JOHN RAY HEINRICHS No. 14920 REGISTERED PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/6/97

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/2/97

DIRECTOR — DATE 10/7/97

Date	No	Revision Description
6/9/2000	1.	SWM AS-BUILT

OWNER/DEVELOPER
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
813 MARTIN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21220
(410) 247-8833 FAX: 247-9397

AREA: ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 888
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

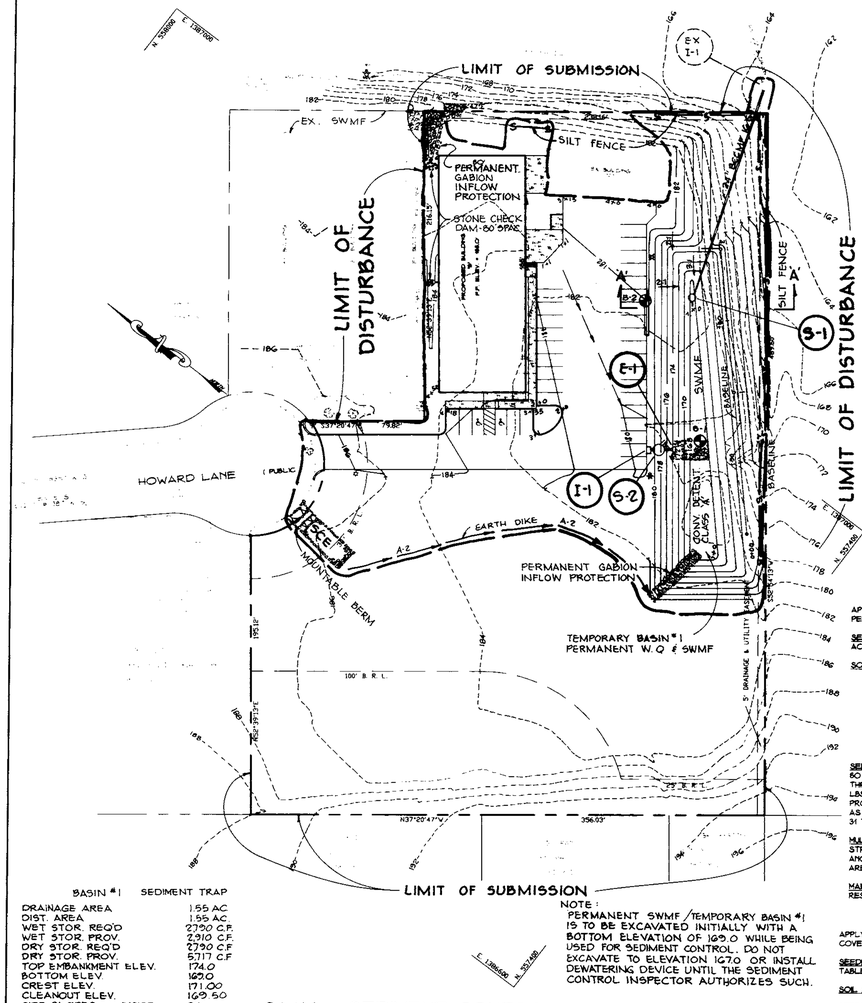
ELKRIDGE INDUSTRIAL PARK SITE DEVELOPMENT PLAN

FORMERLY SDP 86-09

Des By	R.J.W.	Scale 1" = 30'	Proj. No. 97-005 SDP.DWG
Drn By	A.J.R.	Date JUNE 1997	SHEET NO.
Chk By	J.R.H.	SDP-98-04	1 OF 6

SDP-98-04

Wed, Jul 19, 2000 11:08:31 AM



BASIN #1	SEDIMENT TRAP
DRAINAGE AREA	1.55 AC
DIST. AREA	1.55 AC
WET STOR. REQ'D	2700 C.F.
WET STOR. PROV.	2,910 C.F.
DRY STOR. REQ'D	2700 C.F.
DRY STOR. PROV.	5,717 C.F.
TOP EMBANKMENT ELEV.	174.0
BOTTOM ELEV.	169.0
CREST ELEV	171.00
CLEANOUT ELEV.	169.50
SIDE SLOPES INSIDE	3:1
SIDE SLOPES OUTSIDE	3:1
BOTTOM DIMENSIONS (AVG)	200' x 16'-2.0'

NOTE:
PERMANENT SWMF/TEMPORARY BASIN #1 IS TO BE EXCAVATED INITIALLY WITH A BOTTOM ELEVATION OF 169.0 WHILE BEING USED FOR SEDIMENT CONTROL. DO NOT EXCAVATE TO ELEVATION 167.0 OR INSTALL DEWATERING DEVICE UNTIL THE SEDIMENT CONTROL INSPECTOR AUTHORIZES SUCH.

S.W.M. - SEDIMENT CONTROL PLAN

SCALE: 1" = 50'

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTION 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL.1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

7) SITE ANALYSIS:

TOTAL AREA OF SITE	5.360	ACRES
AREA DISTURBED	1.82	ACRES
AREA TO BE ROOFED OR PAVED	0.76	ACRES + 33,850 SF
AREA TO BE VEGETATIVELY STABILIZED	0.72	ACRES
TOTAL CUT	3240	CU YDS.
TOTAL FILL	2916	CU YDS.
OFFSITE WASTE/BORROW AREA LOCATION		ON SITE

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 DPW SEDIMENT CONTROL INSPECTOR.

10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

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, DISKING 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/1000 SQUARE FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ FT.)

2) ACCEPTABLE -- APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

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

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

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

TEMPORARY SEEDING NOTES

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

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

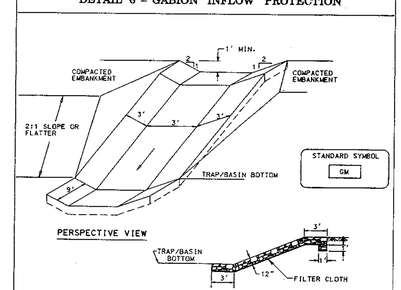
SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/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/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/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

DETAIL 6 - GABION INFLOW PROTECTION

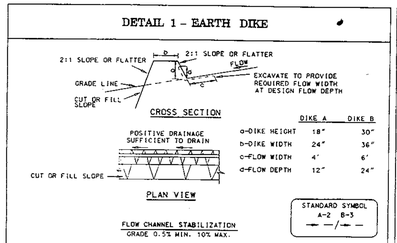


Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" - 7".
4. Gabions shall be installed in accordance with manufacturers recommendations.
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE J - 7 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 - EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

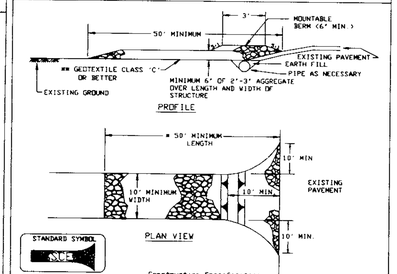
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 1" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 1 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

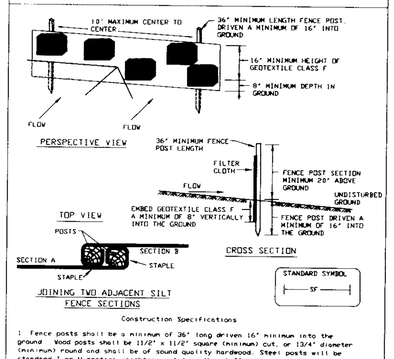


Construction Specification

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE J - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



Construction Specifications

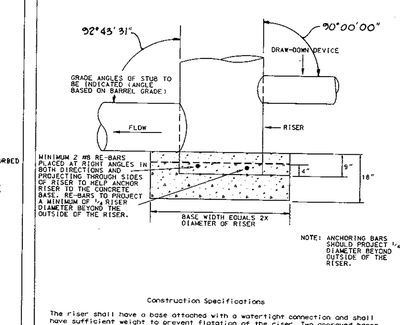
1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear 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:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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 when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 15 - RISER BASE DETAIL



NOTE: ANCHORING BARS SHOULD PROJECT 1/4 DIAMETER BEYOND OUTSIDE OF THE RISER.

Construction Specifications

The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 18" or less in height are:

1. A concrete base 18" thick with the riser embedded 9" in the base.
2. A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2' of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 19 - 38	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

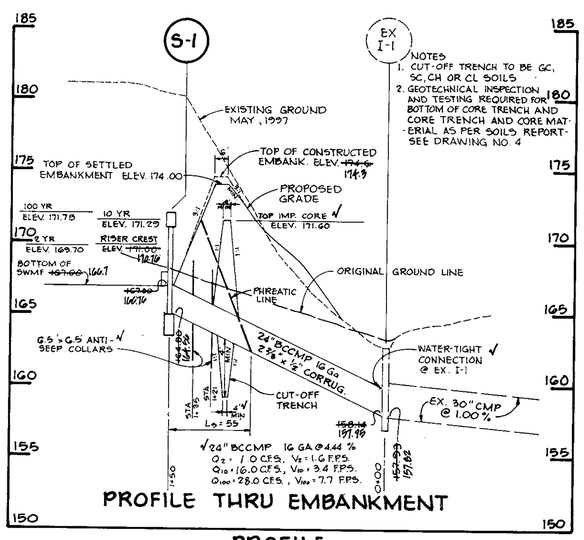
DAY 1 OBTAIN A GRADING PERMIT
DAY 2-3 INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE)
DAY 4-10 INSTALL SWMF/TEMPORARY SEDIMENT TRAP #1 (BASIN #1. GEOTECHNICAL INSPECTION AND TESTING REQUIRED FOR BOTTOM OF CORE TRENCH AND CORE MATERIAL AS PER SOILS REPORT. EXCAVATE (BASIN #1) TO ELEV. 169.0 AND INSTALL TEMPORARY 12" RISER. INSTALL ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREAS.
DAY 11-14
DAY 15-20 ROUGH GRADE SITE AND STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDING NOTES.
DAY 21-30 INSTALL ALL UTLITIES IE. WATER, SEWER, STORM DRAINS, ETC.
DAY 31-60 CONSTRUCT BUILDING AND PROPOSED PAVING.
DAY 60-65 FINISH GRADING, INSTALL LANDSCAPING AND STABILIZE ALL DISTURBED AREAS AS PER PERMANENT SEEDING NOTES.
DAY 66-68 WHEN SITE HAS BEEN STABILIZED AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR CONVERT TEMPORARY SEDIMENT TRAP (BASIN #1) TO A PERMANENT SWMF BY INSTALLING DEWATERING DEVICE THEN REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREAS AS PER PERMANENT SEEDING NOTES. EXCAVATE TO ELEV. 167.0 AS DIRECTED BY INSPECTOR.

SWM AS BUILT PREPARED BY:
CHARLES R. CROCKEN & ASSOC., INC.
P. BOX 207
WESTMINSTER, MD. 21157
PHONE: 410-848-2705
FAX: 410-848-9043

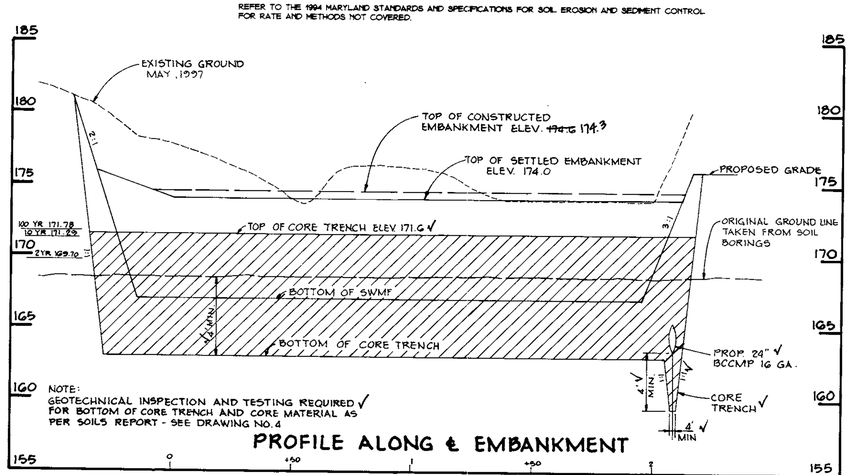
7-2-97
Date

STATE OF MARYLAND
JOHN R. HEINRICHS
No. 14920
REGISTERED PROFESSIONAL ENGINEER

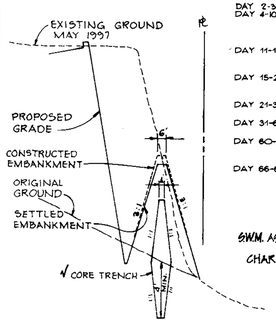
JOHN R. HEINRICHS
Professional Engr. No.14920



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



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



SECTION 'A-A'
SCALE: H:1"=50' V:1"=5'

OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards And Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 10/1/97

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

DEVELOPER: JOHN COOK, PRESIDENT
BALDWIN LINE CONSTRUCTION OF MARYLAND INC. — DATE 6-21-97

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

ENGINEER: JOHN R. HEINRICHS, P.E.
PHOENIX ENGINEERING, INC. — DATE 7-2-97

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/1/97

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/6/97

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/7/97

DIRECTOR — DATE 10/7/97

Date	No	Revision Description
6-2-2000	1	SWM AS BUILT

OWNER/DEVELOPER
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
813 MAIDEN CHOICE LANE SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8533 FAX 247-3397

AREA — ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 888
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

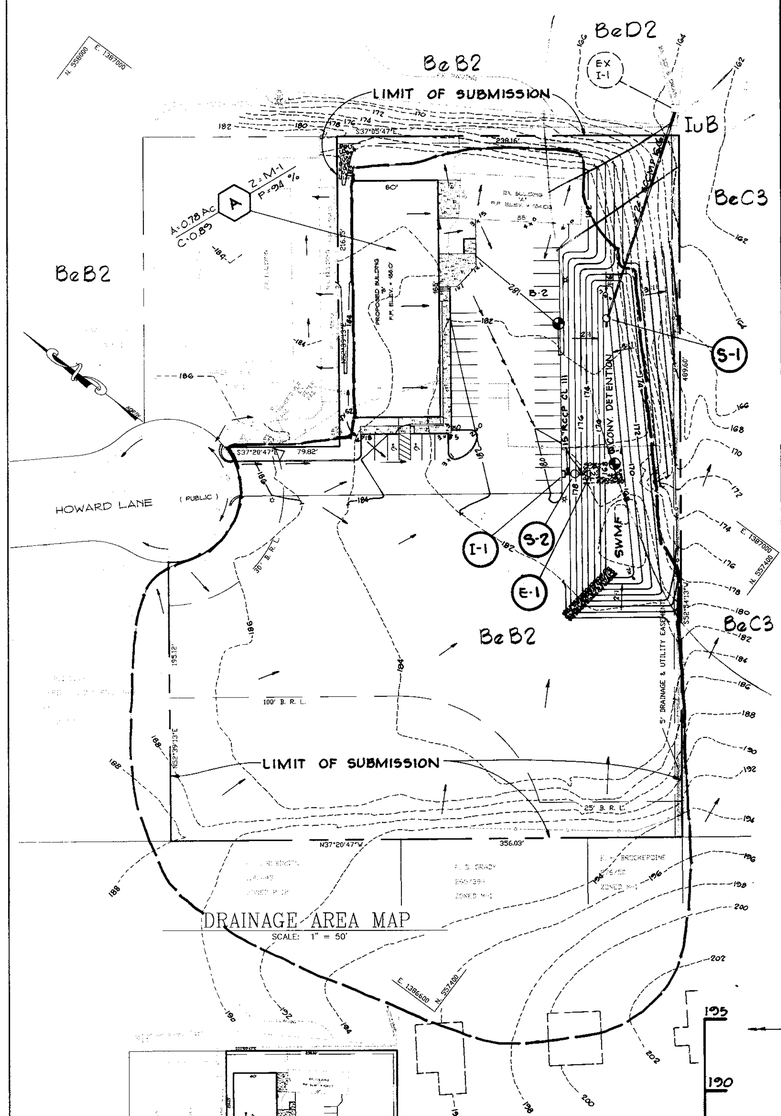
ELKRIDGE INDUSTRIAL PARK
SWM/SEDIMENT CONTROL
PLAN NOTES AND DETAILS
FORMERLY SDP 86-09

Des By	R.J.W.	Scale AS SHOWN	Proj. No. 97-008 SHEET2.DWG
Drn By	R.H.D.	Date JUNE 1997	SHEET NO 2 OF 6
Chk By	J.R.H.	SDP-98-04	

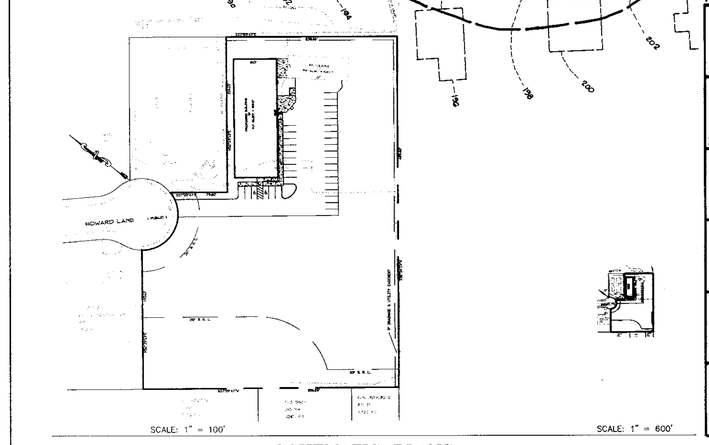
SDP-98-04

SOILS CLASSIFICATION

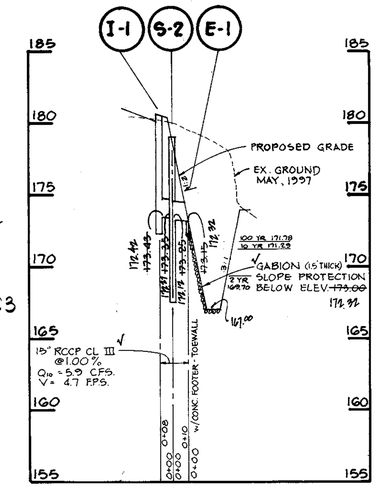
SYMBOL	TYPE	DESCRIPTION
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
BeD2	C	BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
IuB	C	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES

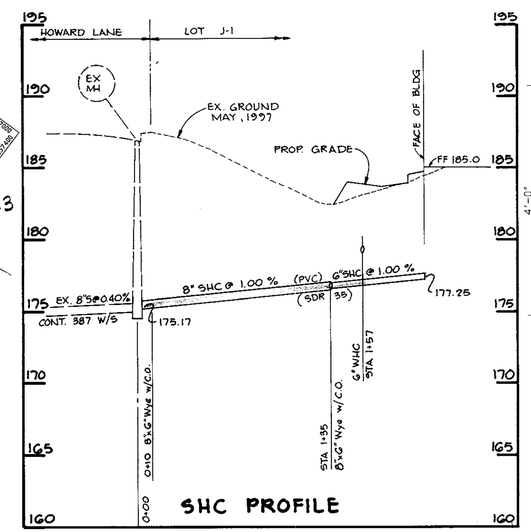


DRAINAGE AREA MAP
SCALE: 1" = 50'

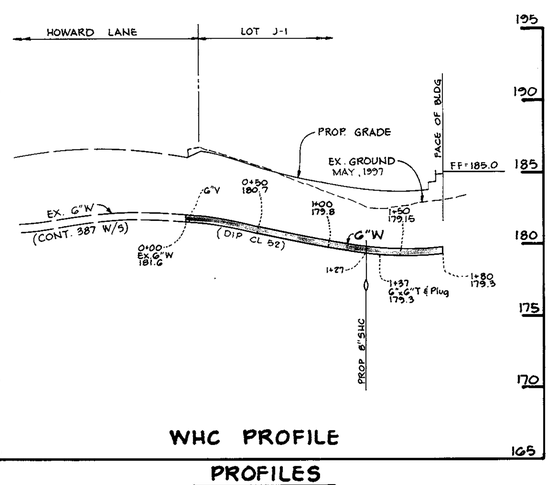


SCHEMATIC PLANS



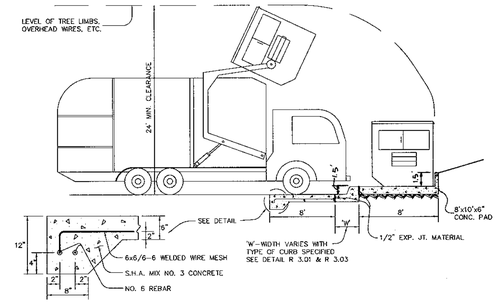


SHC PROFILE

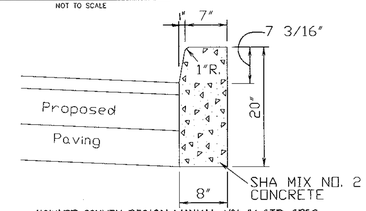


WHC PROFILE

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

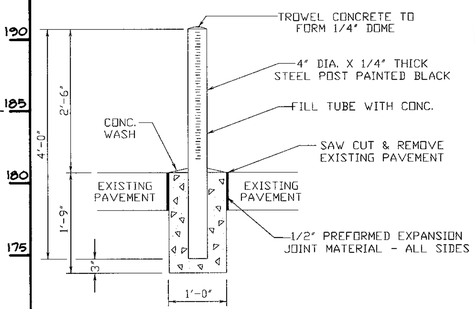


SOLID WASTE SERVICE PAD
NOT TO SCALE



HOWARD COUNTY DESIGN MANUAL VOL. IV STD. SPEC AND DETAILS FOR CONSTRUCTION (DRAW. R-3.03)

BARRIER CURB
No Scale



BOLLARD DETAIL
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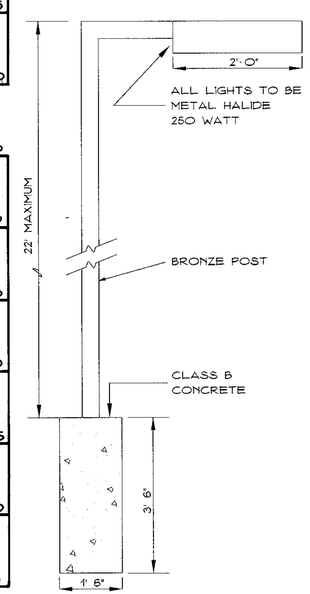
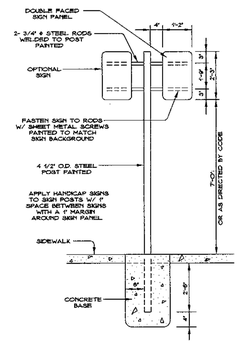


LIGHT POLE DETAIL
NO SCALE



COLORS
LEGEND AND BORDER - GREEN
WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND - WHITE

$98 FINE SIGN

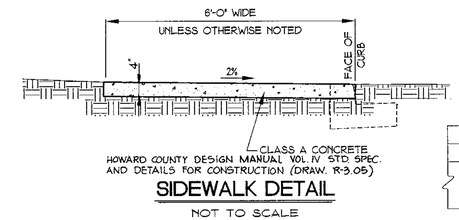
SIGN TO UTILIZE AN ALUMINUM BLANK 0'X12'X0.080 INCH THICK WITH TWO SINGLE POST MOUNTING HOLES.

THE TEXT AND BORDER SHALL BE STANDARD GREEN TO MATCH THAT ON R7-8 OVER THE BACKGROUND SHALL BE REFLECTIVE WHITE. TEXT SHALL BE 1" 3" CHARACTERS.

SIGN SHALL BE MOUNTED DIRECTLY BELOW THE STANDARD R7-8 RESERVED PARKING FOR HANDICAPPED SIGN. ITS BOTTOM EDGE SHALL BE NO LESS THAN 7 FEET ABOVE GROUND. IF THE SIGN IS PLACED AGAINST A BUILDING, STRUCTURE, OR OTHER LOCATION WHERE VEHICLE OR PEDESTRIAN TRAFFIC IS NOT OBSTRUCTED THE BOTTOM EDGE OF SIGN SHALL BE AT LEAST 6 FEET BUT NOT MORE THAN 10 FEET ABOVE GROUND.

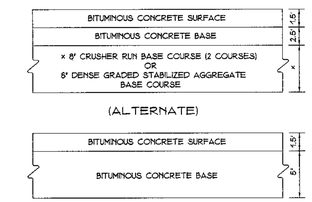
1. FREESTANDING SIGN 7'-0" ABOVE FINISHED GRADE MOUNTED ON WALL OR STRUCTURE 6'-0" ABOVE GROUND.
2. TWO SEPARATE SIGNS TO BE APPLIED TO METAL SIGN BOARD MOUNTED TO METAL POST.

HANDICAP SIGN DETAIL
NOT TO SCALE



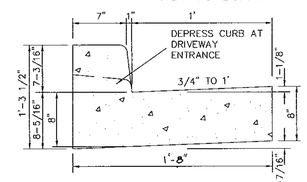
HOWARD COUNTY DESIGN MANUAL VOL. IV STD. SPEC. AND DETAILS FOR CONSTRUCTION (DRAW. R-3.05)

SIDEWALK DETAIL
NOT TO SCALE

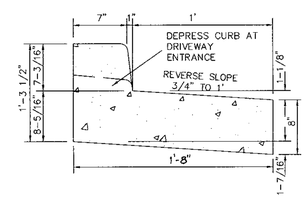


HOWARD COUNTY DESIGN MANUAL VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

6 1/2" PAVING, P-2
NOT TO SCALE



REVERSE



HOWARD COUNTY DESIGN MANUAL VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01)

GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

STANDARD 7" COMBINATION CURB AND GUTTER
NOT TO SCALE

7-2-97
Date

STATE OF MARYLAND — JOHN R. HEINRICHS — No. 14920 — REGISTERED PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920

SWM. AS-BUILTS PREPARED BY:
CHARLES R. CROCKEN & ASSOC., INC.
P.O. BOX 207
WESTMINSTER, MD. 21157
PHONE: 410-848-2708
FAX: 410-848-9043

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/6/97

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/7/97

DIRECTOR — DATE 10/7/97

Date	No	Revision Description
6-2-2000	1	SWM. AS-BUILTS

OWNER/DEVELOPER
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
813 MADISON CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8833 FAX: 247-2397

AREA
ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 888
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

DRAINAGE AREA MAP
ELKRIDGE INDUSTRIAL PARK

Des By	R.J.W.	Scale	AS SHOWN	Proj. No. 97-006 SHEET3.DWG	
Drn By	A.J.R.	Date	JUNE 1997	SHEET NO.	
Chk By	J.R.H.		SDP-98-04	3 OF 6	

SDP-98-04

Wed, Jun 11, 2025 3:13:25 PM E:\2020\20-006\Sheet3.dwg

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 OBJECTIONAL MATERIALS 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 OBJECTIONAL MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORM WATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

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

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

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

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

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

STRUCTURE BACKFILL

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

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

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

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

   MATERIALS - (ALUMINUM COATED 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.

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

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

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

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

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

5. BACK FILLING SHALL CONFORM TO ' STRUCTURE BACKFILL.'

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

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

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.

2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE DRAWINGS.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.

4. BACK FILLING SHALL CONFORM TO 'STRUCTURE BACKFILL.'

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

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

1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

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

4. BACK FILLING SHALL CONFORM TO 'STRUCTURE BACKFILL.'

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

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 606, 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 905.

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

CARE OF WATER DURING CONSTRUCTION

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

STABILIZATION

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

EROSION AND SEDIMENT CONTROL

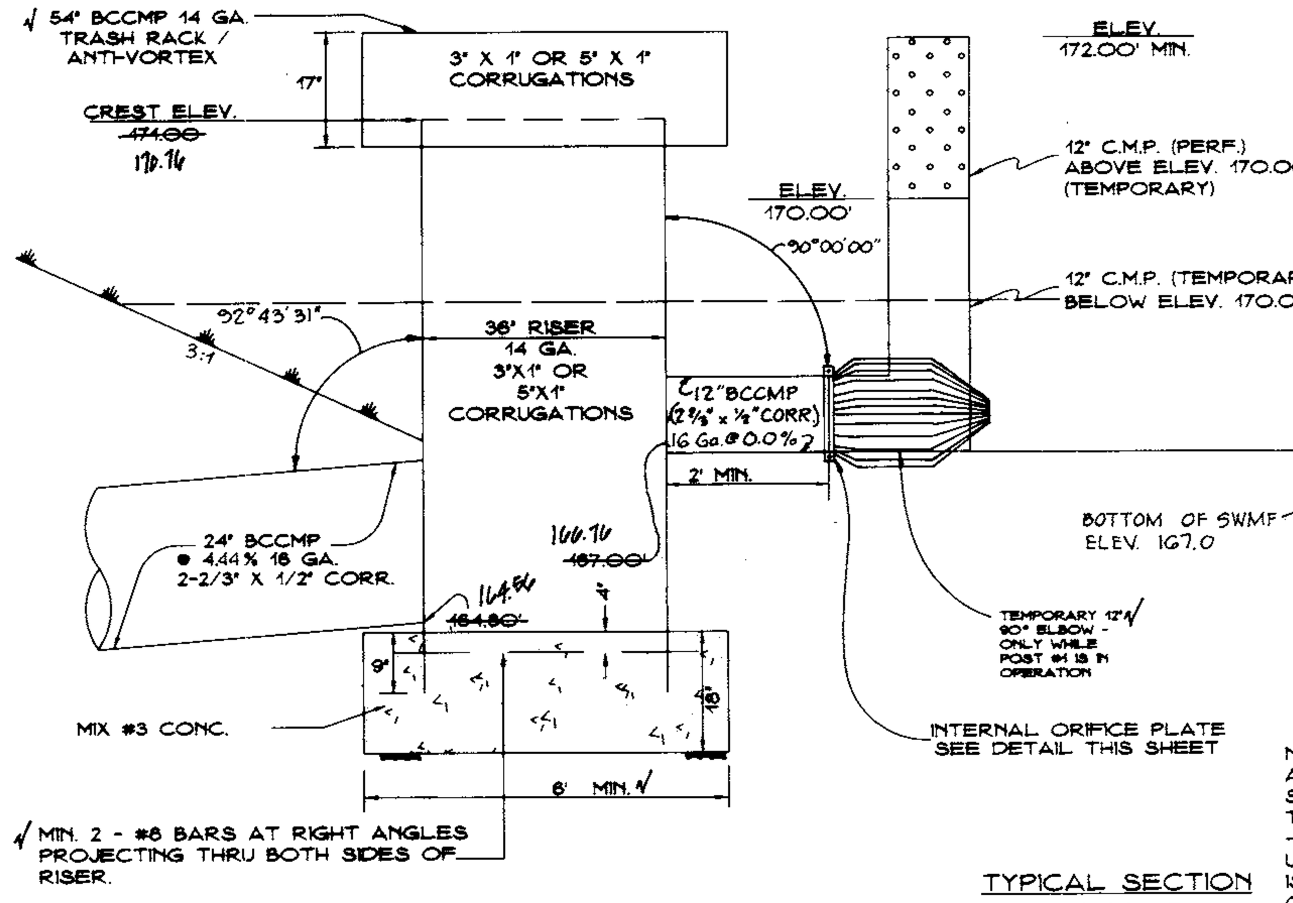
CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION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

* **CLAY CORE**

Based upon the visual classification and laboratory testing, there may not be a sufficient amount of clay available at the boring locations to construct a clay core for the pond. Silty CLAY was encountered in Boring B-2 to a depth of one to six feet and in Boring B-1 from 12.5 to 15.0 feet. Additionally, the silty CLAY from B-2 was fill that contained organics and wood that will need to be separated from the soil to construct the core. Therefore, importation of clay will probably be required to construct the dam. The imported clay should have at least 50 percent passing the No. 200 sieve, have a liquid limit of at least 30 and a plasticity index of at least 10.

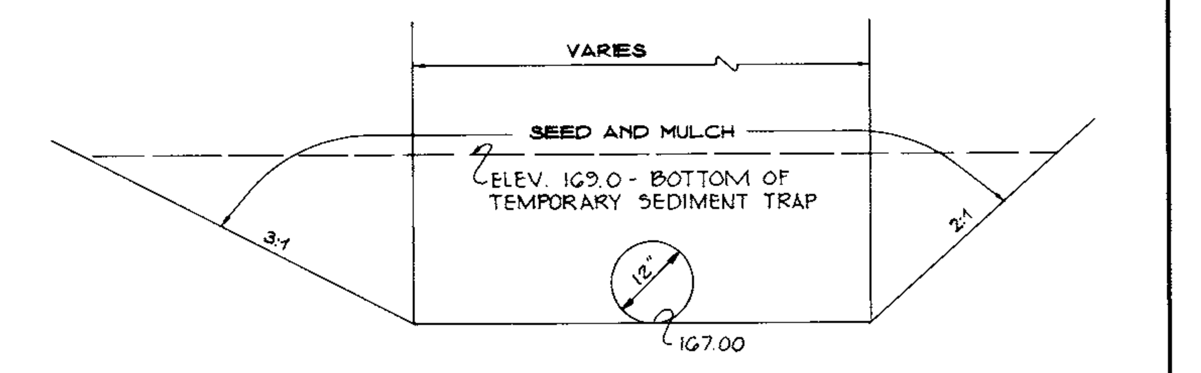
FILL PLACEMENT

The existing soils that will be exposed in the stormwater pond consist of fill that contains organics and trace amounts of wood. Based on the requirements of MD 378, the embankment wall will require removal and replacement with compacted fill. Since the water table at the site is about five feet below the ground surface and some soft soil exist at the proposed bottom of the pond, it may be necessary to dewater the site prior to recompacting the embankments. As noted previously, there are trace amounts of wood in the soil at the site. If the existing material is to be reused, then removal of some unacceptable material should be anticipated. Additionally, any fill placed at the site should be compacted to at least 95% of the maximum dry density as determined by ASTM D-698, standard Proctor method.

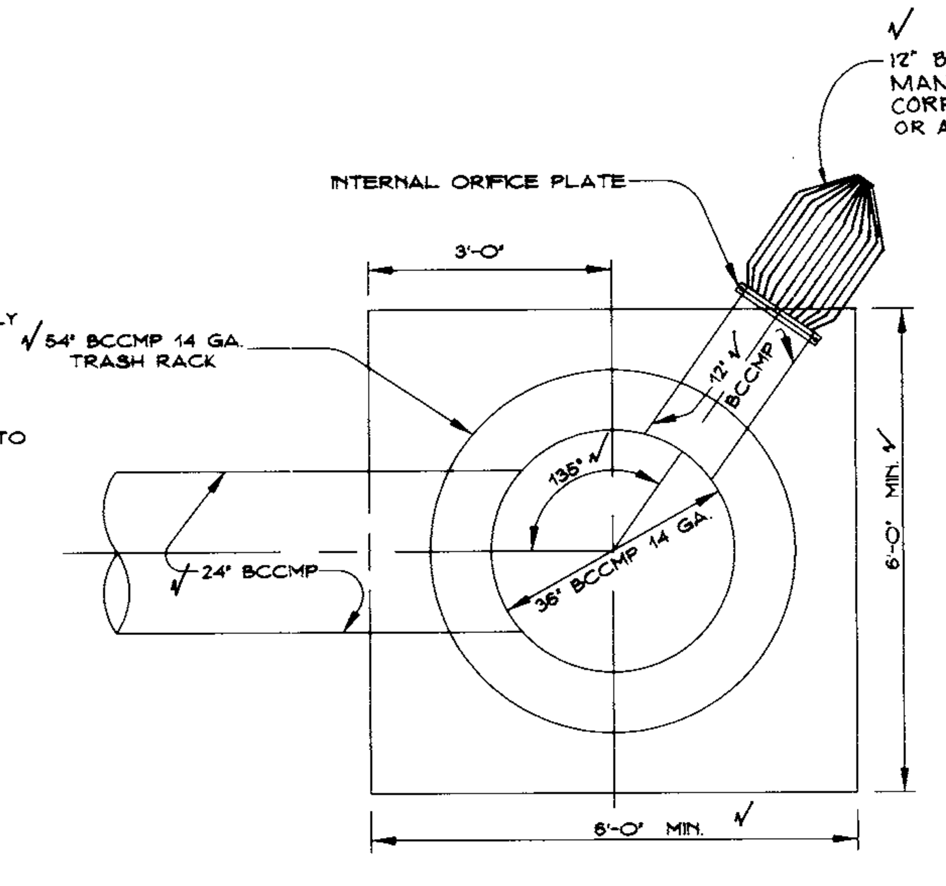


TYPICAL SECTION
NO SCALE

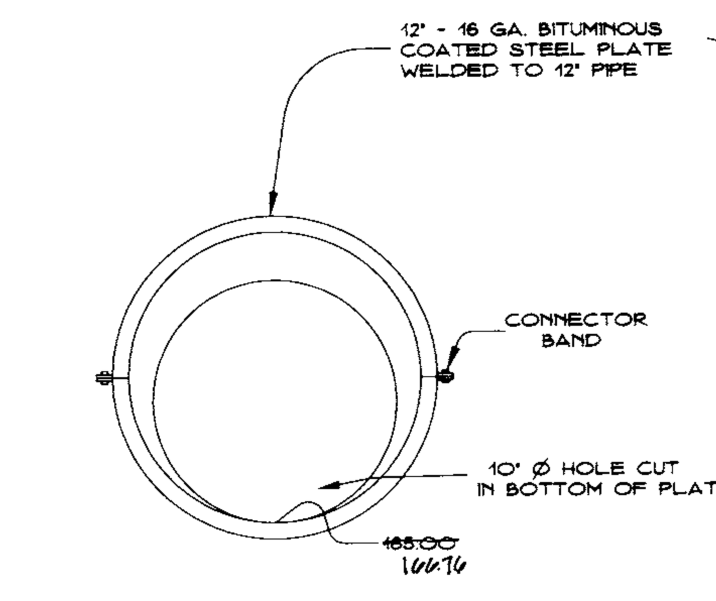
NOTE: THE 12"-90° ELBOW AND 12" RISER ARE A TEMPORARY CONDITION WHILE THE SWM POND IS BEING USED AS A SEDIMENT TRAP (POST #1). THIS 12" RISER AND 12" - 90° ELBOW ARE NOT TO BE REMOVED UNTIL THE TEMPORARY SEDIMENT TRAP IS CONVERTED TO A PERMANENT SWMF. CONVERSION TO A PERMANENT SWMF WILL REQUIRE THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.



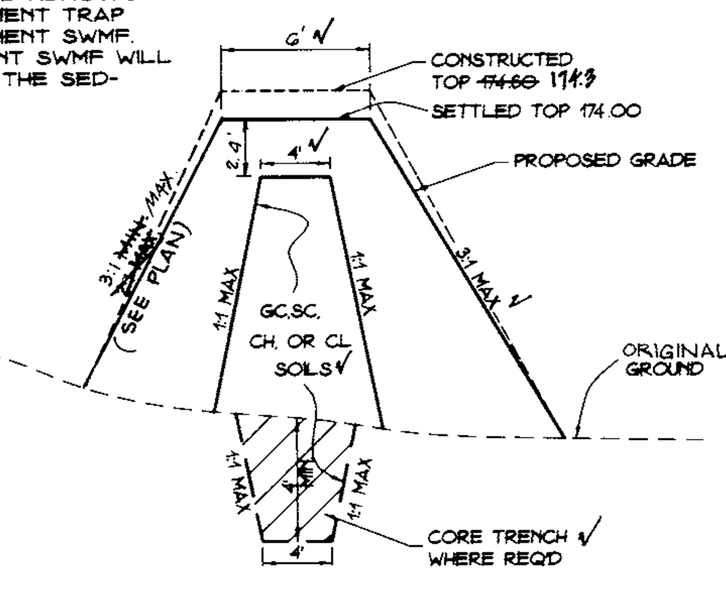
TYPICAL SECTION
NO SCALE



PLAN



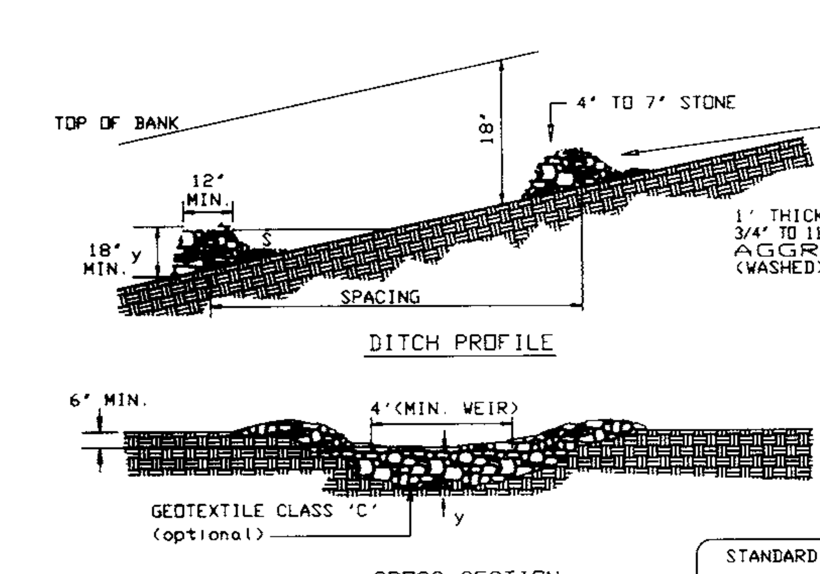
DETAIL OF INTERNAL ORIFICE



CORE TRENCH DETAIL
NO SCALE

STORMWATER MANAGEMENT DETAILS
NO SCALE

DETAIL 7 - STONE CHECK DAM



STANDARD STONE CHECK DAM DESIGN

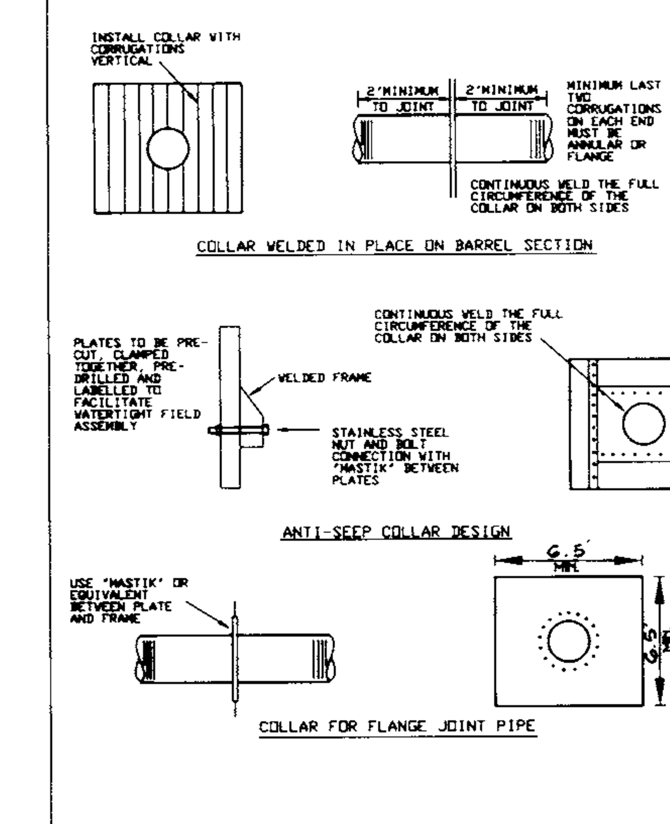
SLOPE	SPACING
2% or less	80'
2.1% to 4%	40'
4.1% to 7%	25'
7.1% to 10%	15'
over 10%	use lined waterway design

Construction Specifications

1. Swales and ditches shall be prepared in accordance with the construction specifications described in Section A-2, Standards and Specifications for Temporary Swale.
2. The check dam shall be constructed of 4"-7" stone. The stone shall be placed so that it completely covers the width of the channel and is keyed into the channel banks.
3. The top of the check dam shall be constructed so the the center is approximately 6" lower than the outer edges, forming a weir that water can flow across.
4. The maximum height of the check dam at the center shall not exceed 2'.
5. The upstream side of the check dam shall be lined with approximately 1' of 3/4" to 1-1/2" crushed aggregate.
6. Accumulated sediment shall be removed when it has built up to 1/2 of the original height of the weir crest.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 8 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

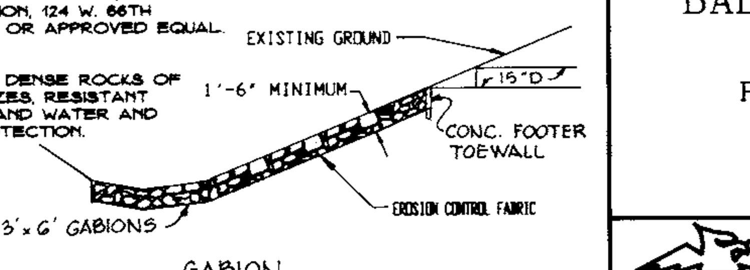
DETAIL 14 - TYPICAL ANTI-SEEP COLLARS



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 24	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE:
EROSION CONTROL FABRIC SHALL BE AS MANUFACTURED BY CARTHAGE MILLS, INC. EROSION CONTROL DIVISION, 124 W. 66TH STREET CINCINNATI, OHIO OR APPROVED EQUAL.

RIP RAP TO CONSIST OF DENSE ROCKS OF RANDOM SHAPES AND SIZES, RESISTANT TO THE ACTION OF AIR AND WATER AND SUITABLE FOR BANK PROTECTION.



GABION
SLOPE PROTECTION
NO SCALE

SWM AS-BUILTS PREPARED BY:
CHARLES R. CROCKEN & ASSOC., INC.
P.O. BOX 307
WESTMINSTER, MD 21157
PHONE 410-549-2708
FAX: 410-549-9063

7.2.97
Date
STATE OF MARYLAND — JOHNNIE RAY HEINRICHS — No. 14920 REGISTERED — PROFESSIONAL ENGINEER
JOHN R. HEINRICHS
Professional Engr. No.14920

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

Cheryl Simmons — 10/1/97
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

BY THE DEVELOPER:

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

John Cook — 6.27.97
DEVELOPER: JOHN COOK, PRESIDENT BALDWIN LINE CONSTRUCTION OF MARYLAND INC. — DATE

BY THE ENGINEER:

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

7.2.97
ENGINEER: JOHN R. HEINRICHS, P.E. PHOENIX ENGINEERING, INC. — DATE

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

Robert W. Ziehm — 10/1/97
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 10/6/97 — DATE
Cindy Hamilton
CHIEF, DIVISION OF LAND DEVELOPMENT — 10/7/97 — DATE
DIRECTOR — 10/7/97 — DATE

Date	No	Revision Description
6.2.2000	1	SWM AS BUILT

OWNER/DEVELOPER

BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

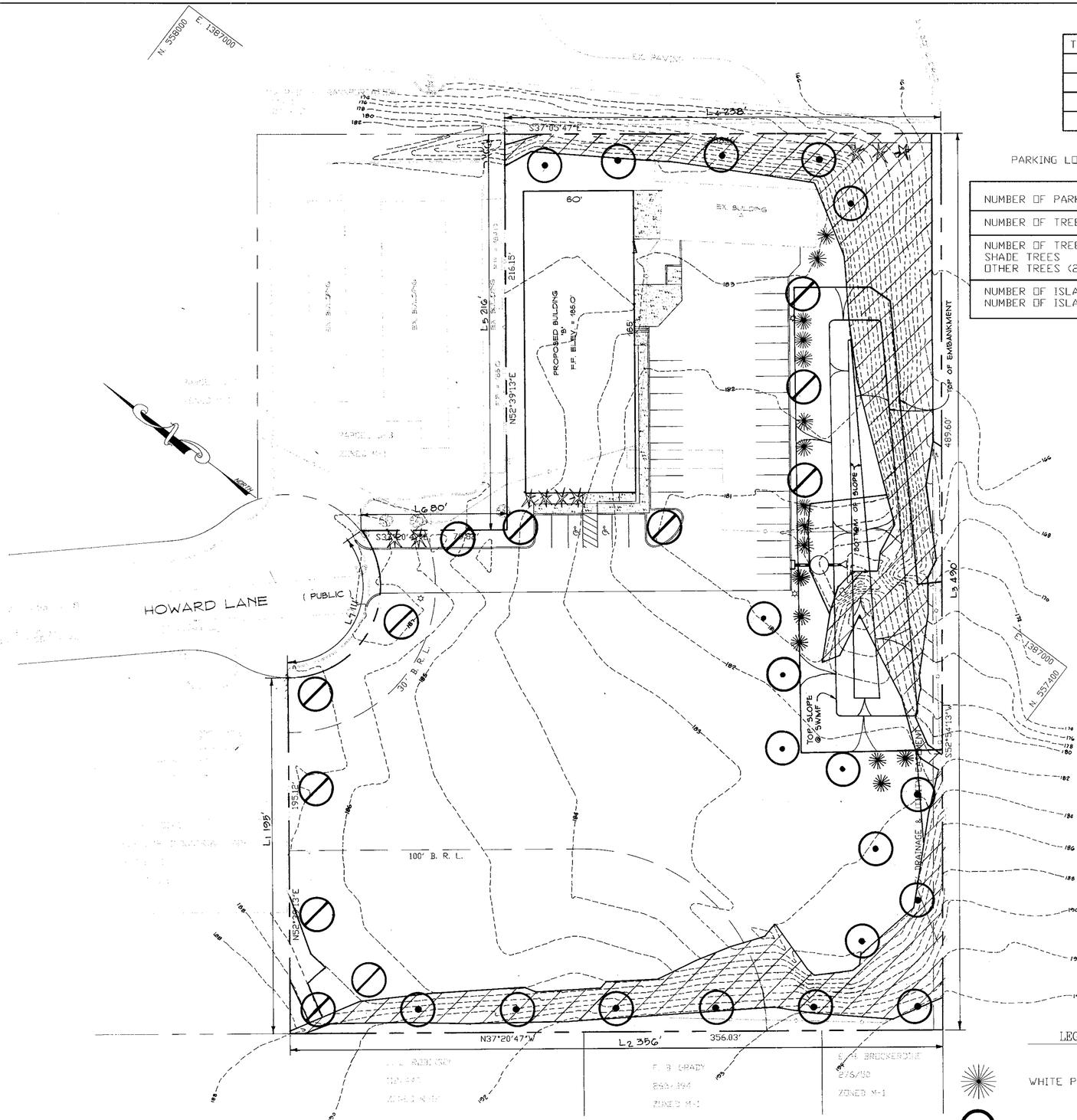
PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
813 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8833 FAX 247-9397

AREA
ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 888
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ELKRIDGE INDUSTRIAL PARK
STORMWATER MANAGEMENT
NOTES AND DETAILS
FORMERLY SDP 86-09

Des By	R.J.W.	Scale	AS SHOWN	Proj. No. 97-006 SHEET4.DWG
Drn By	A.J.R.	Date	JUNE 1997	SHEET NO.
Chk By	J.R.H.		SDP-98-04	4 OF 6

SDP-98-04



LANDSCAPING PLAN

SCALE: 1" = 30'

PLANT SCHEDULE

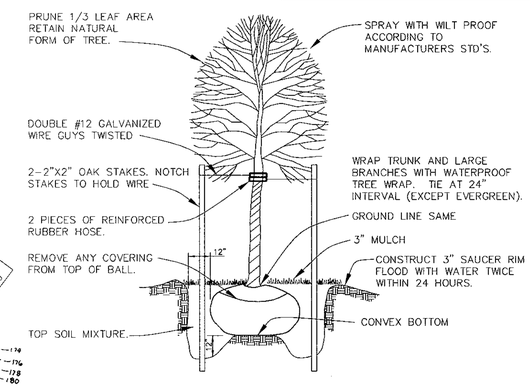
TOTAL	ADDT	REQ	TREES				
12	-	12	RM	ACER RUBRUM	COMMON RED MAPLE	2 1/2-3" CAL., 12-14' HGT.	B&B
19	-	19	HL	GLEDITSIA TRIACANTHOS INERMIS	HONEY LOCUST	2 1/2-3" CAL., 12-14' HGT.	B&B
16	5	11	WP	PINUS STROBUS	WHITE PINE	6-8' HGT.	B&B
9	-	9	NS	PICEA ABIES	NORWAY SPRUCE	6-8' HGT.	B&B

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	34
NUMBER OF TREES REQUIRED	2
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	2 -
NUMBER OF ISLANDS REQUIRED NUMBER OF ISLANDS PROVIDED	2 2

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS				ADJACENT TO PERIMETER : PROPERTIES			
LANDSCAPE NUMBER	L1	L2	L3	L4	L5	L6	L7	TOTAL
LANDSCAPE TYPE	A	C	A	A	A	A	B	
LINEAR FEET OF ROADWAY/ FRONTAGE / PERIMETER	195	357	490	238	216	80	111	—
CREDIT FOR EXISTING VEGETATION YES, NO, LINEAR FEET)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	3	9 18	8	4	4	1	2 3	31 21
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUITION)								31 21



TREE PLANTING DETAIL
NO SCALE

25% OR GREATER SLOPES

15% TO 25% SLOPES

NOTES:

1.) THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

2.) FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE D. P. W. DEVELOPERS AGREEMENT IN THE AMOUNT OF $ 5200.00

LEGEND:

- WHITE PINE
- HONEY LOCUST
- RED MAPLE
- NORWAY SPRUCE

S.W.M. AS-BUILTS PREPARED BY:
CHARLES R. CROCKEN & ASSOC., INC.
P.O. BOX 307
WESTMINSTER, MD. 21157
PHONE: 410-849-2706
FAX: 410-849-9063

7-2-97
Date

STATE OF MARYLAND
JOHN RAY HEINRICHS
No. 14920
REGISTERED
PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/6/97

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/7/97

DIRECTOR — DATE 10/7/97

Date	No	Revision Description
6-4-2000	1	SWM AS-BUILTS

OWNER/DEVELOPER
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
815 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8855 FAX 247-9397

AREA: ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 888
PLAT NO. 4363 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ELKRIDGE INDUSTRIAL PARK LANDSCAPE PLAN NOTES AND DETAILS
FORMERLY SDP 86-09

Des By	R.J.W.	Scale	AS SHOWN	Proj. No. 87-006 SHEETS.DWG
Drn By	R.H.D.	Date	JUNE 1997	SHEET NO. 5 OF 6
Chk By	J.R.H.		SDP-98-04	

SDP-98-04

Precast Concrete Stormceptor® Order Request Form

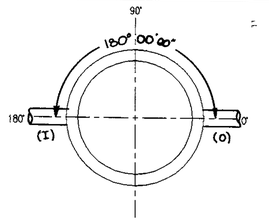
* TO BE INCLUDED ON SWM PLAN BY DESIGNER

CONTRACTOR INFORMATION

Name: Baldwin Line Construction
Address: P.O. Box 417, 376 Marley Neck Rd
City: Glen Burnie
State: Maryland
Zip Code: 21061
Contact: Mr. John Cook
Phone: (410) 766-9443
Fax: (410) 766-0762

OWNER INFORMATION

Name: John Cook
Phone: (410) 766-9443
Fax: (410) 766-0762



Please draw orientation of inlet and outlet pipes on diagram along with the pipe inside diameter (in). and invert elevation (ft). Clearly mark inlet pipes with an "I" and outlet pipes with an "O". Please provide the inlet/outlet pipe angle in degrees.

IMPERVIOUS DRAINAGE AREA FOR THIS UNIT _____

Stormceptor® Model			
STC			
900	☐	3600	☐
1200	☐	4800	☐
1800	☐	6000	☐
2400	☒	7200	☐

Insert Size	
DISC	☒
22"	☐
32"	☐
44"	☐
CUSTOM ____	

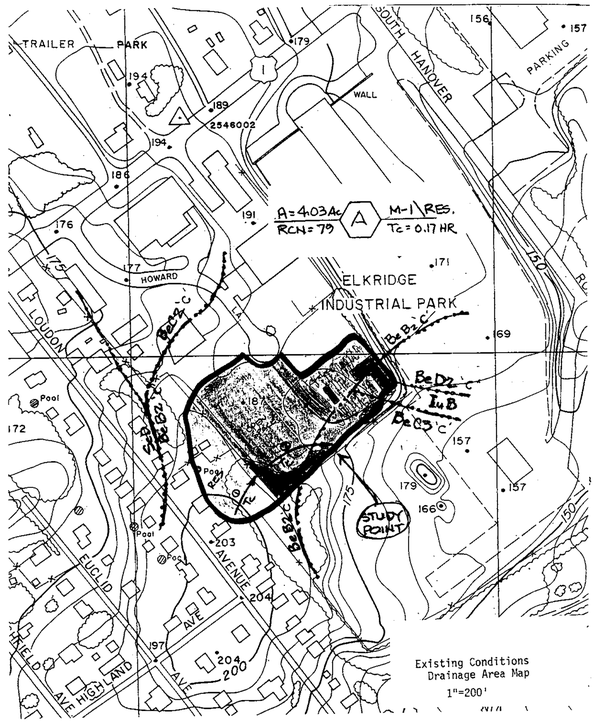
Manhole Number	S-2
Top Elevation (ft)	177.87 ~~179.00~~
Inlet Pipe Invert (ft)	172.97 ~~173.35~~
Outlet Pipe Invert (ft)	172.15 ~~173.20~~
Pipe Type	15" RCCP CL III
Inlet Pipe Inside Diameter (ID)	√15"
Inlet Pipe Outside Diameter (OD)	1.65'
Outlet Pipe Inside Diameter (ID)	√15"
Outlet Pipe Outside Diameter (OD)	1.65'

Project Name: Elkridge Industrial Park
Approximate time frame of delivery (weeks): 6 weeks
Delivery Address: Street: 6365 Howard Lane
City: Elkridge State: Maryland Zip Code: 21227
Designer Company: Phoenix Engineering, Inc.
Designer Contact: John Heinrichs Phone: (410) 247-8833 Fax: (410) 247-9387

PLEASE FILL OUT COMPLETELY AND FAX TO: CSR Hydro Conduit

ATTN: ED O'MALLEY FAX: (703)922-3659, PHONE: (703)971-1900

FOR TECHNICAL ASSISTANCE PLEASE CALL MIKE BARG, PHONE (703)971-1900

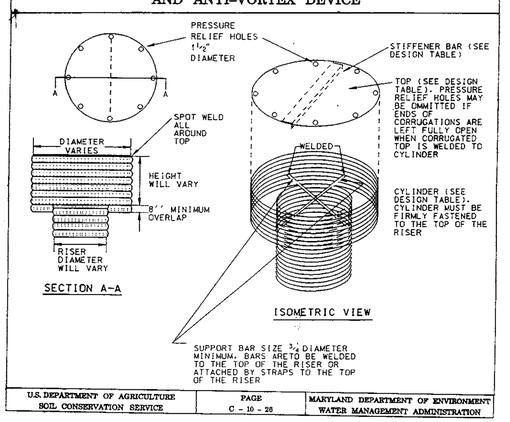


Existing Conditions Drainage Area Map
1"=200'

STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEV.	REMARKS
I-1	A-5	-	173.43	~~180.40~~ 178.94	H.C. STD. DETAIL NO. SD 4.01
S-2	MODEL STC-L 2400	~~173.35~~ 172.97	~~173.35~~ 172.72	~~179.00~~ 177.87	STORMCEPTOR CORPORATION STD.
E-1	15" CONC. END SECTION w/CONC FOOTER TOEWALL	173.15 No.	~~173.00~~ 172.92	-	H.C. STD DETAIL SD 5.52

DETAIL 16 – CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 26	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STORMCEPTOR MAINTENANCE SCHEDULE

MAINTENANCE NOTES (WATER QUALITY STRUCTURE WASTE)

STORMCEPTOR

1. STORMCEPTOR WATER QUALITY STRUCTURES WILL REQUIRE PERIODIC INSPECTION AND CLEANING TO MAINTAIN OPERATION AND FUNCTION. OWNERS WILL HAVE THE STORMCEPTOR UNIT VISUALLY INSPECTED TWICE A YEAR OR AS REQUIRED BY HOWARD COUNTY. UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS CAN BE DONE BY USING A CLEAR PLEXIGLAS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN SEDIMENT DEPTHS EXCEED THE SPECIFIED LEVEL (TABLE 6 OF TECHNICAL MANUAL) THEN CLEANING OF THE UNIT IS REQUIRED.
2. THE STORMCEPTOR MUST AND WILL BE CLEANED IMMEDIATELY AFTER A PETROLEUM SPILL OCCURS. ALL APPROPRIATE REGULATORY AGENCIES WILL BE NOTIFIED IMMEDIATELY IN THE EVENT OF A SPILL.
3. CLEANING OF STORMCEPTOR UNITS SHOULD BE DONE BY A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN UNIT.
4. THE DISPOSAL OF THE LIQUID AND SOLID MATTER SHALL BE AS FOLLOWS:
   A. ALL LIQUID MATERIAL SHALL BE PUMPED BY A LICENSED WASTE MANAGEMENT COMPANY INTO A SUITABLE TANK TRUCK AND DISPOSED OF AT AN APPROVED SEWAGE TREATMENT PLANT.
   B. ALL SOLID MATERIAL SHALL BE INCINERATED BY A LICENSED FACILITY OR TAKEN TO AN APPROVED SANITARY LANDFILL AND DISCHARGED IN AN APPROVED MATTER.
5. STORMCEPTOR INLET AND OUTLET PIPES SHALL BE PERIODICALLY INSPECTED FOR BLOCKAGES. BLOCKAGES SHALL BE REMOVED AND DISPOSED OF AS REQUIRED IN 4B ABOVE. STRUCTURAL PARTS SHALL BE INSPECTED AND REPAIRED AS NEEDED.

DRY DETENTION BASIN

6. THE OWNER SHALL RETAIN AND MAKE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO HOWARD COUNTY UPON THEIR REQUEST.
7. REMOVAL OF SILT WHEN ACCUMULATION EXCEEDS SIX (6) INCHES IN BASINS WITHOUT FOREBAYS.
8. REMOVAL OF ACCUMULATED PAPER, TRASH AND DEBRIS AS NECESSARY.
9. VEGETATION GROWING ON THE EMBANKMENT TOP OR FACES IS NOT ALLOWED TO EXCEED 18 INCHES IN HEIGHT AT ANY TIME.
10. ANNUAL INSPECTION AND REPAIR OF THE STRUCTURE.

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

Cheryl Simmons 10/1/97
USDA – NATURAL RESOURCES CONSERVATION SERVICE DATE

BY THE DEVELOPER:

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

John Cook 6-21-97
DEVELOPER: JOHN COOK, PRESIDENT DATE
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.

BY THE ENGINEER:

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

7-2-97
ENGINEER: JOHN R. HEINRICHS, P.E. DATE
PHOENIX ENGINEERING, INC.

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

10/1/97
HOWARD S.C.D. DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

10/6/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

10/7/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

10/7/97
DIRECTOR DATE

Date	No	Revision Description
11-6-2000	1	SWM AS-BUILTS

OWNER/DEVELOPER

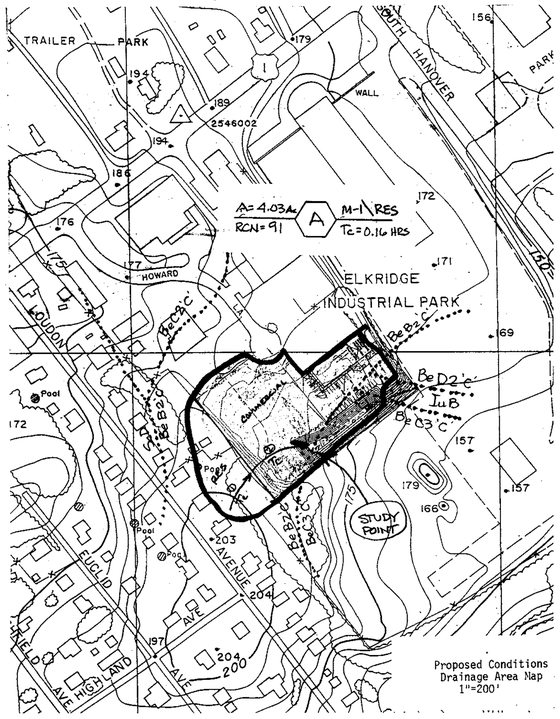
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

CONSULTANT'S HAZARD CLASS CERTIFICATION

"I CERTIFY THAT THIS POND MEETS ALL REQUIREMENTS FOR HAZARD CLASS A (A, B, OR C) [REQUIREMENTS AS STATED IN THE **SOIL CONSERVATION SERVICE - MARYLAND STANDARDS AND SPECIFICATIONS FOR POND, CODE 378, JANUARY 1991.**] ALL NECESSARY INVESTIGATIONS AND COMPUTATIONS HAVE BEEN PERFORMED TO VERIFY THIS FINDING.

SIGNATURE: ..... MD LICENSE NO. 14920 DATE: .....

PRINT NAME: JOHN R. HEINRICHS, P.E.



Proposed Conditions Drainage Area Map
1"=200'

SWM AS-BUILTS PREPARED BY:
CHARLES R. CROCKEN & ASSOC., INC.
P.O. BOX 907
WESTMINSTER, MD. 21157
PHONE: 410-848-2308
FAX: 410-848-9063

7-2-97
Date

STATE OF MARYLAND — JOHN R. HEINRICHS — NO. 14920 — REGISTERED PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No. 14920

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
613 MAGNOLIA CHURCH LANE, SUITE 300
BALTIMORE, MARYLAND 21220
(410) 247-8833 FAX 247-9387

AREA: ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 888
PLAT NO. 4363 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ELKRIDGE INDUSTRIAL PARK
STORMCEPTOR
NOTES AND DETAILS
FORMERLY SDP 86-09

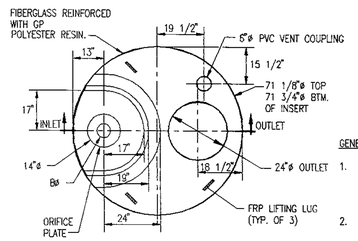
Des By	R.J.W.	Scale	AS SHOWN	Proj. No. 97-006 STORMDET.DWG	
Drn By	A.J.R.	Date	JUNE 1997	SHEET NO.	
Chk By	J.R.H.		SDP-98-04	6 OF 6	

SDP-98-04

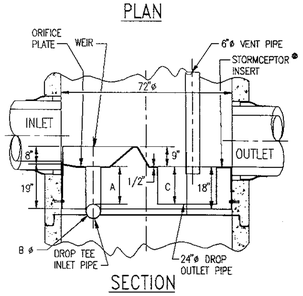
CSR Hydro Conduit — STORMCEPTOR DISK TYPE — FIBERGLASS INSERT DETAIL

6800 Loisdale Road, Springfield, VA 22150 (703) 971-1900

DR. BY:	EPOM
CK. BY:	RCH
DATE:	1-16-97
SCALE:	3/8" = 1'-0"
DWG.#	CA-0225-01



PLAN



SECTION

GENERAL NOTES:

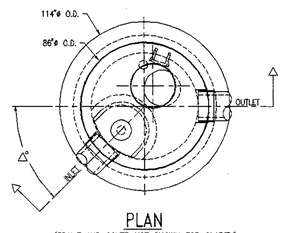
1. CSR HYDRO CONDUIT RECOMMENDS THE USE OF FLEXIBLE PIPE CONNECTORS AT THE INLET PIPE AND OUTLET PIPE WHERE APPLICABLE.
2. STORMCEPTOR FRAME AND COVER TO BE POSITIONED OVER OUTLET DROP PIPE.
3. INSERT TO BE INSTALLED WITH SIX 1/2" DROP-IN ANCHORS AND BOLTS.
4. INSERT TO BE SEALED AROUND CIRCUMFERENCE WITH CHEMREX 948.

UNIT	A (in.)	Bø (in.)	C (in.)
STC 900	16	6	15
STC 1200	16	6	15
STC 1800	16	6	16
STC 2400	44	8	44
STC 3600	44	8	44
STC 4800	44	10	44
STC 6000	44	10	44
STC 7200	44	12	44

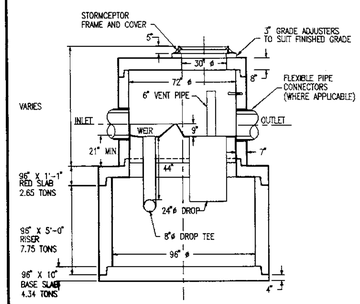
CSR Hydro Conduit — STC 2400 — PRECAST CONCRETE STORMCEPTOR

6800 Loisdale Road, Springfield, VA 22150 (703) 971-1900

DR. BY:	EPOM
CK. BY:	RCH
DATE:	12-17-96
SCALE:	1/4" = 1'-0"
DWG.#	CA-0225-05



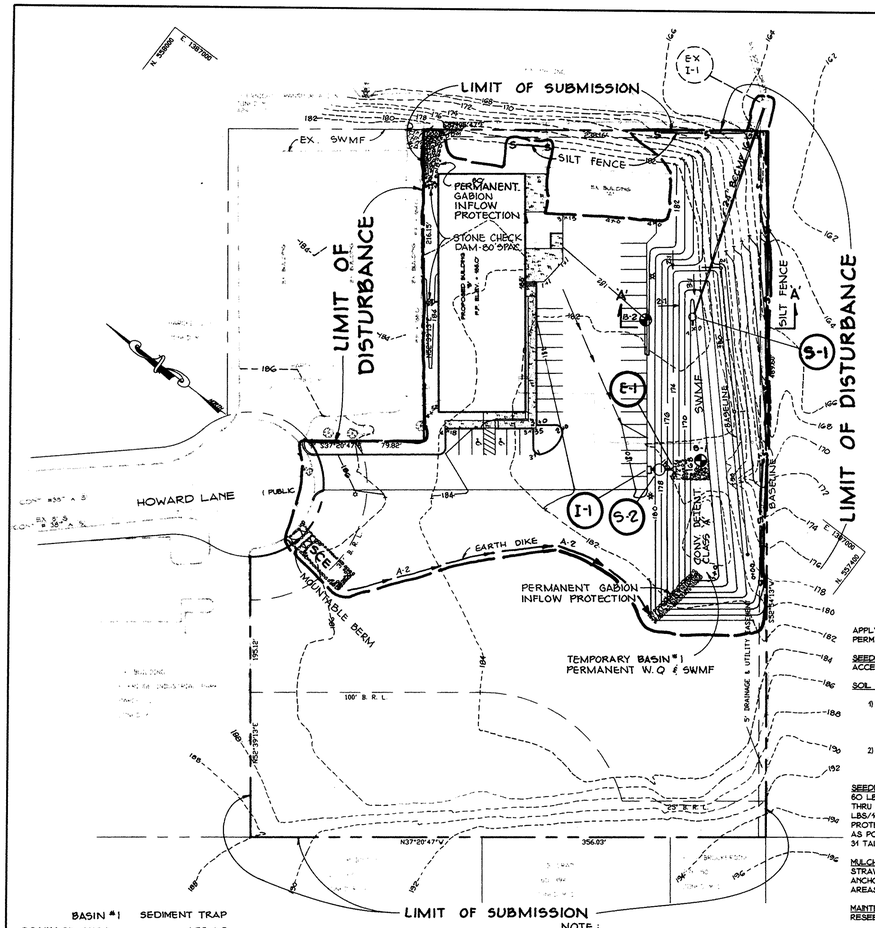
PLAN
(FRAME AND COVER NOT SHOWN FOR CLARITY)



SECTION

GENERAL NOTES

1. STORMCEPTOR SECTIONS SHALL CONFORM TO ASTM C 478, PROFILE GASKETED JOINTS CONFORMING TO ASTM C 443.
2. MANHOLE STEPS PROVIDED ABOVE INSERT @ 16" O.C. AND SHALL BE COPOLYMER POLYPROPYLENE PLASTIC ENCAPSULATED GR. 60 STEEL.
3. MINIMUM CONCRETE STRENGTH f'c= 4,000 PSI MINIMUM STEEL STRENGTH fy= 60,000 PSI
4. REINFORCEMENT DESIGN SHALL MEET ASTM C 478.
5. FLEXIBLE PIPE CONNECTORS SHALL MEET ASTM C 923.
6. HANDLING:
   A. ALL RISERS SHALL HAVE 2 EA. 1 1/2"ø HOLES FOR LIFTING @ 1/3 WAY DOWN FROM SPIGOT.
   B. ALL LG. DIAM. BASE SECTIONS FLATTOPS, AND REDUCERS TO HAVE LIFT HOOKS.
7. DESIGNED FOR AASHTO H-20 LOADING.
8. FIBERGLASS STORMCEPTOR INSERT REFERENCE DRAWING # CA-0225-01



BASIN #1	SEDIMENT TRAP	
DRAINAGE AREA		1.55 AC
DIST. AREA		1.55 AC.
WET STOR. REQ'D		2790 C.F.
WET STOR. PROV.		2,910 C.F.
DRY STOR. REQ'D		2790 C.F
DRY STOR. PROV.		6,717 C.F
TOP EMBANKMENT ELEV.		174.0
BOTTOM ELEV.		169.0
CREST ELEV.		171.00
CLEANOUT ELEV.		169.50
SIDE SLOPES	INSIDE	3:1
	OUTSIDE	3:1
BOTTOM DIMENSIONS (AVG)		200' x 16'x2.0'

NOTE:
PERMANENT SWMF/TEMPORARY BASIN #1 IS TO BE EXCAVATED INITIALLY WITH A BOTTOM ELEVATION OF 169.0 WHILE BEING USED FOR SEDIMENT CONTROL. DO NOT EXCAVATE TO ELEVATION 167.0 OR INSTALL DEWATERING DEVICE UNTIL THE SEDIMENT CONTROL INSPECTOR AUTHORIZES SUCH.

S.W.M. - SEDIMENT CONTROL PLAN

SCALE: 1" = 50'

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTION 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL.1 CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	3.360	ACRES
AREA DISTURBED	1.82	ACRES
AREA TO BE ROOFED OR PAVED	0.78	ACRES + 33,960 SF
AREA TO BE VEGETATIVELY STABILIZED	0.72	ACRES
TOTAL CUT	3240	CU. YDS.
TOTAL FILL	295	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	ON SITE	

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 DPW SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

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

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

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

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

TEMPORARY SEEDING NOTES

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

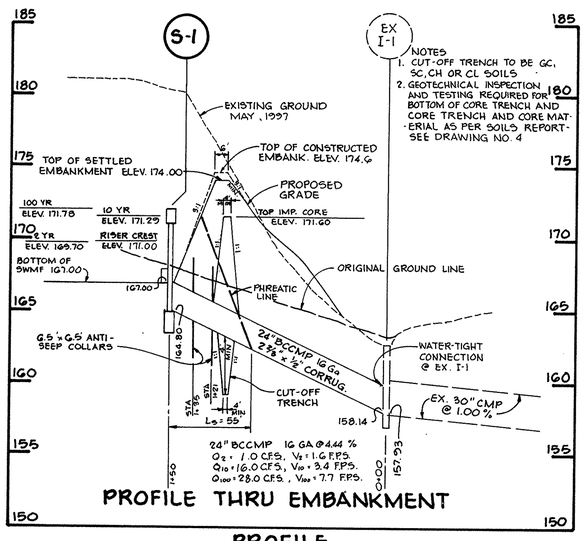
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

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

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/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.

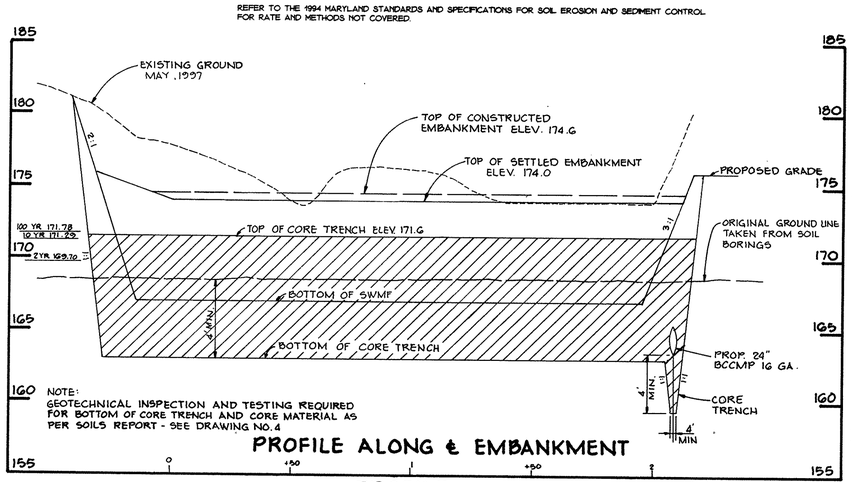
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL./1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE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

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.



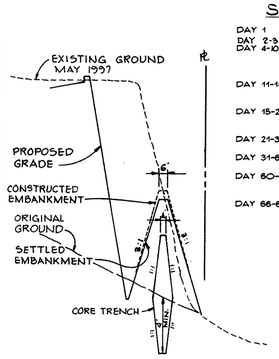
PROFILE THRU EMBANKMENT

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



PROFILE

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



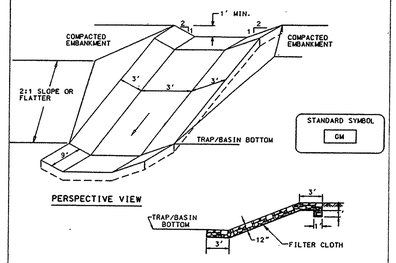
SECTION 'A-A'

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

OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards And Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

DETAIL 6 - GABION INFLOW PROTECTION

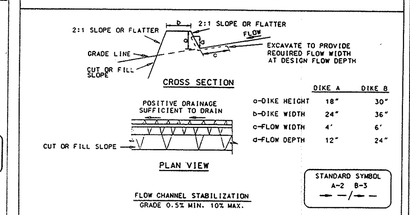


Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 9' gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" - 7".
4. Gabions shall be installed in accordance with manufacturers recommendations.
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 7 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 - EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

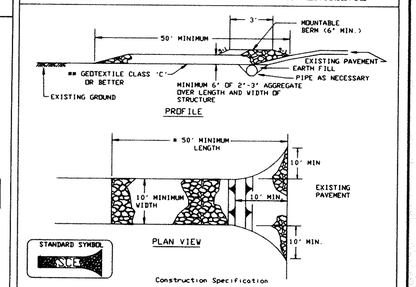
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 1 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

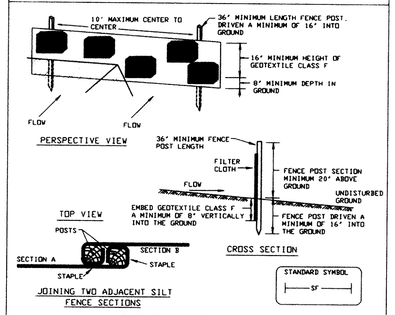


Construction Specification

1. Length - minimum of 50' (*30' for single residence lot)
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius
3. Geotextile Fabric (Filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval 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 6" deep over the length and width of the entrance
5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



Construction Specifications

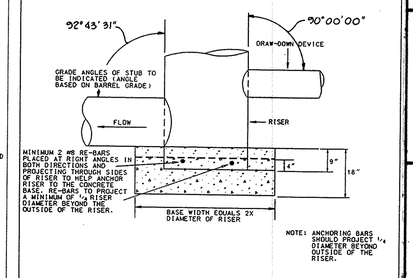
1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear 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:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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 when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 15 - RISER BASE DETAIL



Construction Specifications

The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10" or less in height are:

1. A concrete base 18" thick with the riser embedded 9" in the base.
2. A ½" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2" of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 19 - 25	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

DAY 1	OBTAIN A GRADING PERMIT
DAY 2-3	INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE)
DAY 4-10	INSTALL SWMF/TEMPORARY SEDIMENT TRAP #1 (BASIN #1). GEOTECHNICAL INSPECTION AND TESTING REQUIRED FOR BOTTOM OF CORE TRENCH AND CORE MATERIAL AS PER SOILS REPORT. EXCAVATE (BASIN #1) TO ELEV. 169.0 AND INSTALL TEMPORARY 12" RISER. INSTALL ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREAS.
DAY 11-14	
DAY 15-20	ROUGH GRADE SITE AND STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDING NOTES.
DAY 21-30	INSTALL ALL UTILITIES IE. WATER, SEWER, STORM DRAINS, ETC.
DAY 31-60	CONSTRUCT BUILDING AND PROPOSED PAVING.
DAY 60-65	FINISH GRADING, INSTALL LANDSCAPING AND STABILIZE ALL DISTURBED AREAS AS PER PERMANENT SEEDING NOTES.
DAY 66-68	WHEN SITE HAS BEEN STABILIZED AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR CONVERT TEMPORARY SEDIMENT TRAP (BASIN #1) TO A PERMANENT SWMF BY INSTALLING DEWATERING DEVICE THEN REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREAS AS PER PERMANENT SEEDING NOTES. EXCAVATE TO ELEV. 167.0 AS DIRECTED BY INSPECTOR.

7-2-97
Date

STATE OF MARYLAND — JOHN R. HEINRICHS — No. 14920 — PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE 10/1/97

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

DEVELOPER: JOHN COOK, PRESIDENT, BALDWIN LINE CONSTRUCTION OF MARYLAND INC. — DATE 6-21-97

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

ENGINEER: JOHN R. HEINRICHS, P.E., PHOENIX ENGINEERING, INC. — DATE 7-2-97

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 10/1/97

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/6/97

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/7/97

DIRECTOR — DATE 10/7/97

Date	No	Revision Description

OWNER/DEVELOPER
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
815 MALDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21220
(410) 247-8833 FAX 247-9397

AREA: ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT I-1
TAX MAP 38 PARCEL 868
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ELKRIDGE INDUSTRIAL PARK SWM/SEDIMENT CONTROL PLAN NOTES AND DETAILS

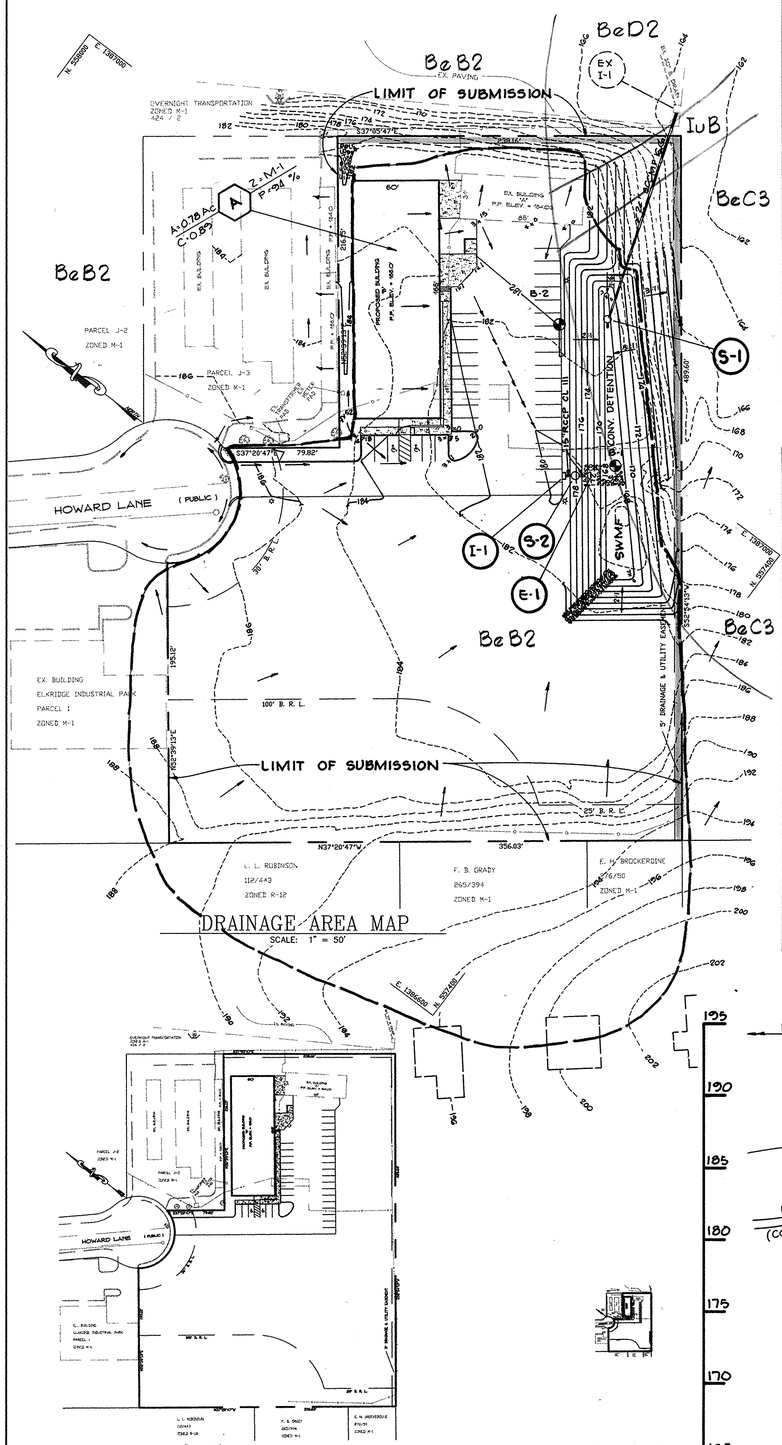
FORMERLY SDP 86-09

Des By	R.J.W.	Scale AS SHOWN	Proj. No. 97-006 SHEET2.DWG
Drn By	R.H.D.	Date JUNE 1997	SHEET NO. 2 OF 6
Chk By	J.R.H.	SDP-98-04	

SDP-98-04

SOILS CLASSIFICATION

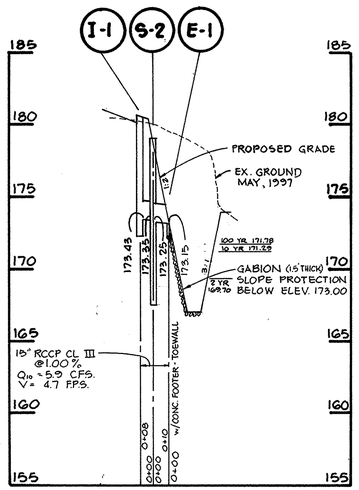
SYMBOL	TYPE	DESCRIPTION
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC3	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
BeD2	C	BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
IuB	C	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES

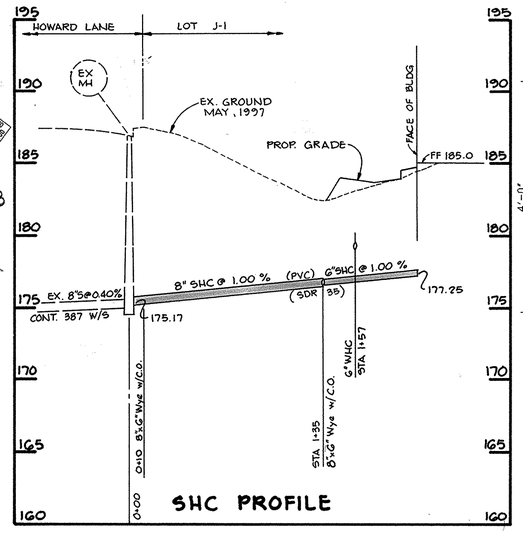


DRAINAGE AREA MAP
SCALE: 1" = 50'

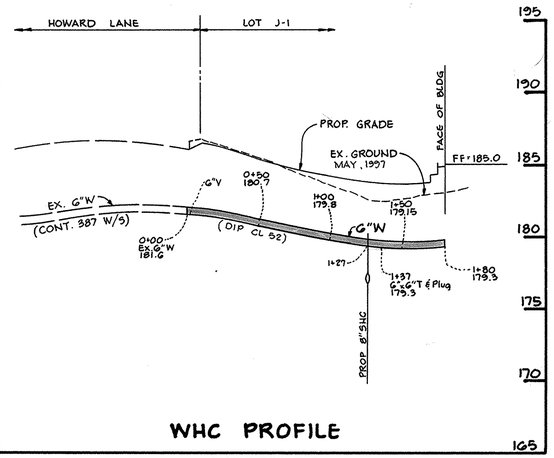
SCALE: 1" = 100' SCALE: 1" = 600'

SCHEMATIC PLANS



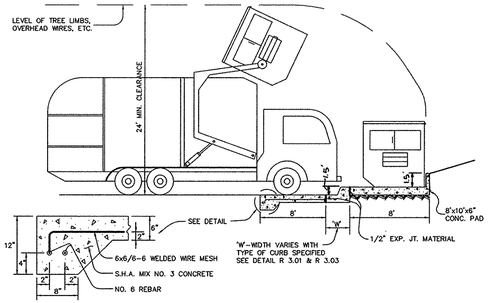


SHC PROFILE

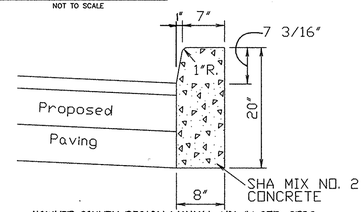


WHC PROFILE

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

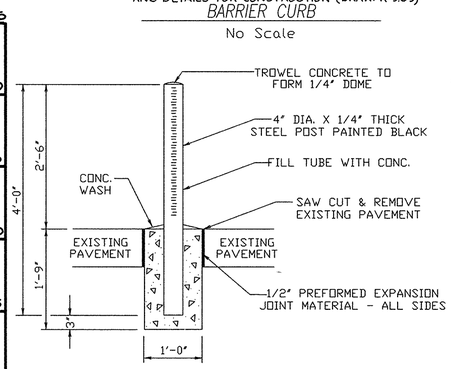


SOLID WASTE SERVICE PAD
NOT TO SCALE



HOWARD COUNTY DESIGN MANUAL VOL.IV STD. SPEC. AND DETAILS FOR CONSTRUCTION (DRAW. R-3.03)

BARRIER CURB
No Scale



BOLLARD DETAIL
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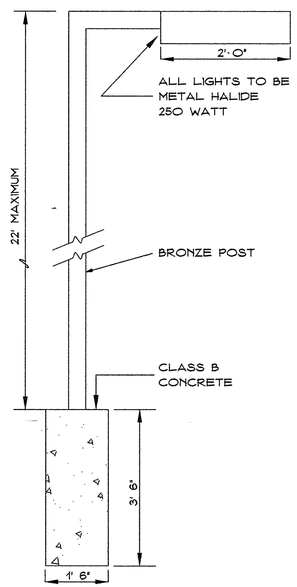
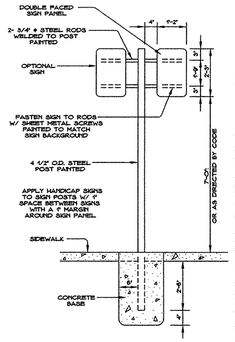


LIGHT POLE DETAIL
NO SCALE



COLORS
LEGEND AND BORDER - GREEN
WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND - WHITE

$98 FINE SIGN

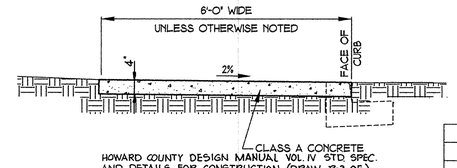
SIGN TO UTILIZE AN ALUMINUM BLANK 9"X12"X0.080 INCH THICK WITH TWO SINGLE POST MOUNTING HOLES.

THE TEXT AND BORDER SHALL BE STANDARD GREEN TO MATCH THAT ON R7-8 AND THE BACKGROUND SHALL BE REFLECTIVE WHITE. TEXT SHALL BE IN 3" CHARACTERS.

SIGN SHALL BE MOUNTED DIRECTLY BELOW THE STANDARD R7-8 RESERVED PARKING FOR HANDICAPPED SIGN ITS BOTTOM EDGE SHALL BE NO LESS THAN 7 FEET ABOVE GROUND. IF THE SIGN IS PLACED AGAINST A BUILDING, RETAINING WALL OR OTHER STRUCTURE NOT VISIBLE FOR VEHICLE OR PEDESTRIAN TRAFFIC IS PLACED ON THE SIDE OF THE STRUCTURE, THE BOTTOM EDGE OF SIGN SHALL BE AT LEAST 6 FEET BUT NOT MORE THAN 10 FEET ABOVE GROUND.

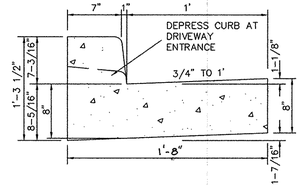
1. FREESTANDING SIGN 7'-0" ABOVE FINISHED GRADE MOUNTED ON WALL OR STRUCTURE 6'-0" ABOVE GROUND.
2. TWO SEPARATE SIGNS TO BE APPLIED TO METAL SIGN BOARD MOUNTED TO METAL POST.

HANDICAP SIGN DETAIL
NOT TO SCALE

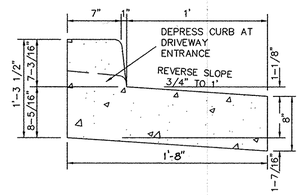


HOWARD COUNTY DESIGN MANUAL VOL.IV STD SPEC. AND DETAILS FOR CONSTRUCTION (DRAW. R-3.05)

SIDEWALK DETAIL
NOT TO SCALE



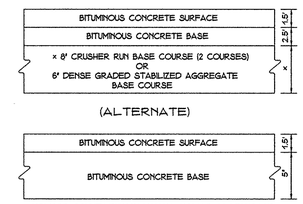
REVERSE



HOWARD COUNTY DESIGN MANUAL VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01)

GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

STANDARD 7" COMBINATION CURB AND GUTTER
NOT TO SCALE



(ALTERNATE)

HOWARD COUNTY DESIGN MANUAL VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-204)

6 1/2" PAVING, P-2
NOT TO SCALE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/6/97

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/7/97

DIRECTOR — DATE 10/7/97

Date	No	Revision Description

OWNER/DEVELOPER
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
813 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8833 FAX 247-8397

AREA
ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 688
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

DRAINAGE AREA MAP
ELKRIDGE INDUSTRIAL PARK

2-2-97
Date

STATE OF MARYLAND — JOHN R. HEINRICHS — No. 14920 — REGISTERED PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920

Des By	R.J.W.	Scale	AS SHOWN	Proj. No. 97-006 SHEET3.DWG	
Drn By	A.J.R.	Date	JUNE 1997	SHEET NO.	
Chk By	J.R.H.		SDP-98-04	3 OF 6	

SDP-98-04

C:\ZB\01-006\SHEET3 WED NOV 03 11:54:24 1993

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 OBJECTIONAL MATERIALS 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 OBJECTIONAL MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORM WATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

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

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

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

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

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

STRUCTURE BACKFILL

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

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

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

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

   MATERIALS - (ALUMINUM COATED 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.

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

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

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

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

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.
5. BACK FILLING SHALL CONFORM TO " STRUCTURE BACKFILL."
6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES,ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

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

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.
2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3 INCHES, OR AS SHOWN ON THE DRAWINGS.
3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.
4. BACK FILLING SHALL CONFORM TO "STRUCTURE BACKFILL."
5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

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

1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241.
2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.
3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.
4. BACK FILLING SHALL CONFORM TO "STRUCTURE BACKFILL."
5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 608, MIX NO.3.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 905.

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

CARE OF WATER DURING CONSTRUCTION

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

STABILIZATION

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

EROSION AND SEDIMENT CONTROL

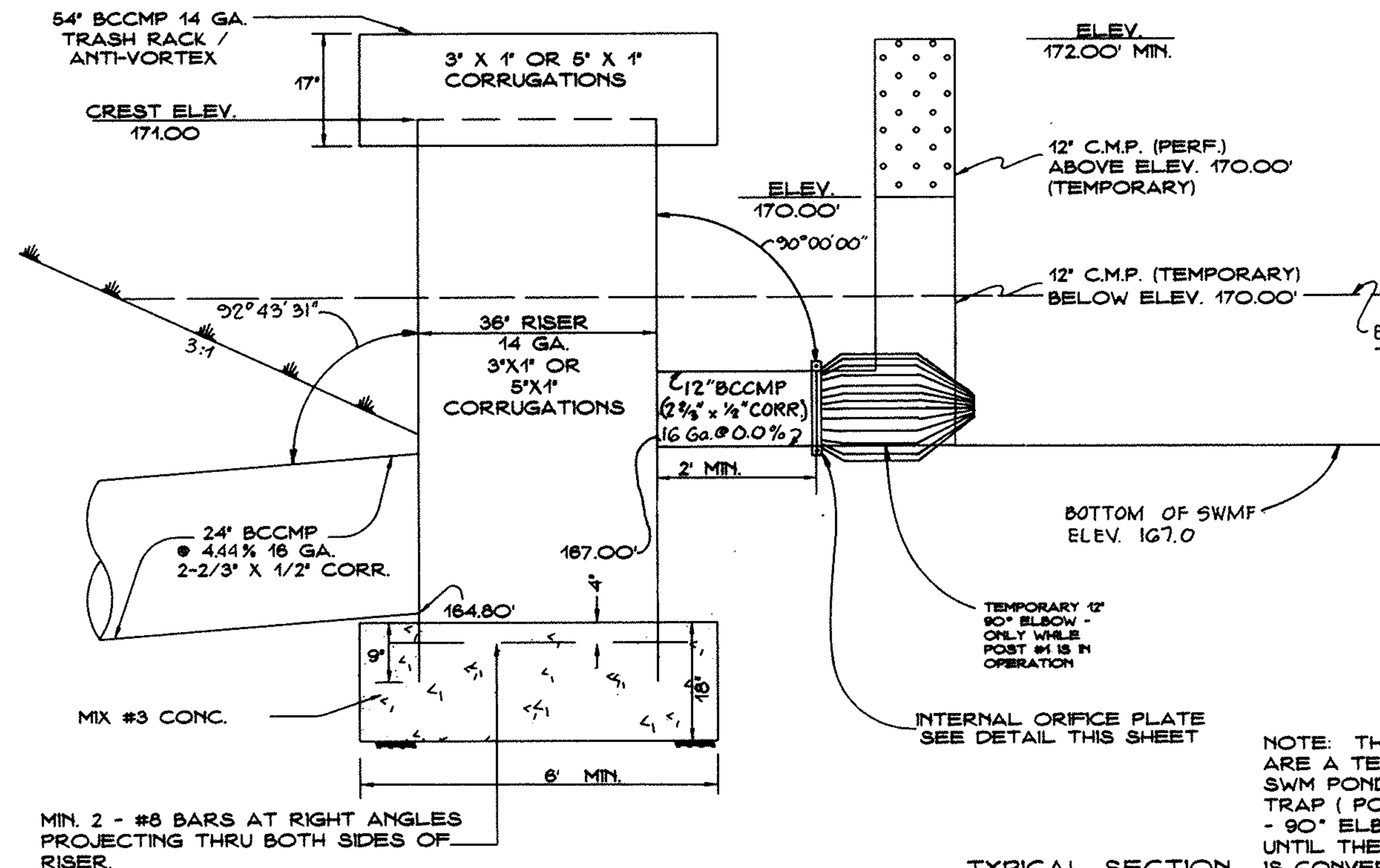
CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION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

*** CLAY CORE**

Based upon the visual classification and laboratory testing, there may not be a sufficient amount of clay available at the boring locations to construct a clay core for the pond. Silty CLAY was encountered in Boring B-2 to a depth of one to six feet and in Boring B-1 from 12.5 to 15.0 feet. Additionally, the silty CLAY from B-2 was fill that contained organics and wood that will need to be separated from the soil to construct the core. Therefore, importation of clay will probably be required to construct the dam. The imported clay should have at least 50 percent passing the No. 200 sieve, have a liquid limit of at least 30 and a plasticity index of at least 10.

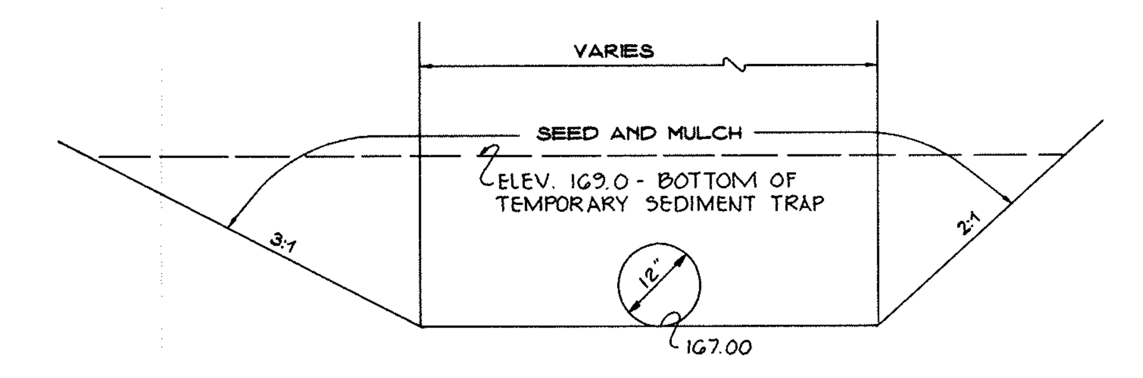
FILL PLACEMENT

The existing soils that will be exposed in the stormwater pond consist of fill that contains organics and trace amounts of wood. Based on the requirements of MD 378, the embankment wall will require removal and replacement with compacted fill. Since the water table at the site is about five feet below the ground surface and some soft soil exist at the proposed bottom of the pond, it may be necessary to dewater the site prior to recompacting the embankments. As noted previously, there are trace amounts of wood in the soil at the site. If the existing material is to be reused, then removal of some unacceptable material should be anticipated. Additionally, any fill placed at the site should be compacted to at least 95% of the maximum dry density as determined by ASTM D-698, standard Proctor method.

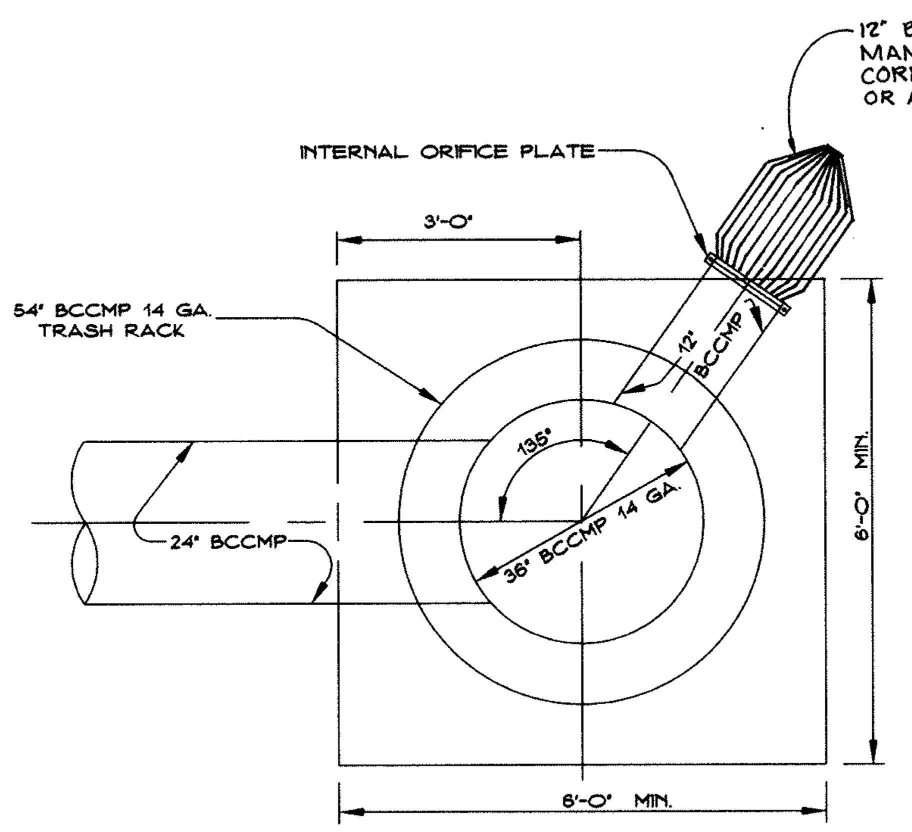


TYPICAL SECTION
NO SCALE

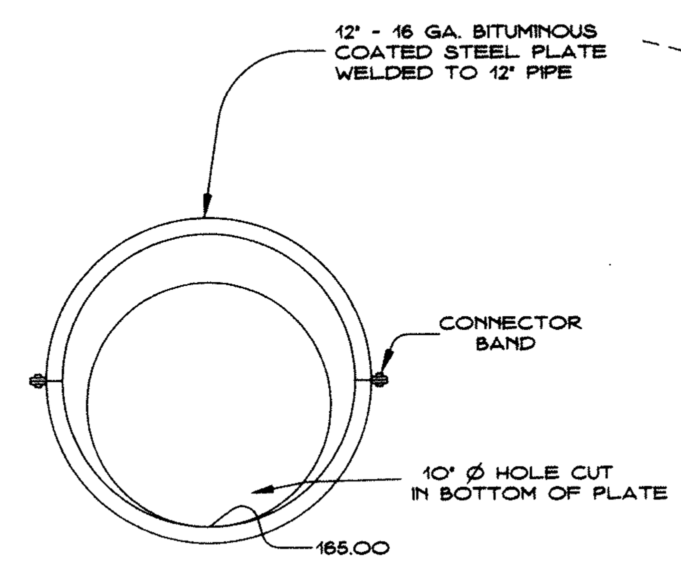
NOTE: THE 12"-90° ELBOW AND 12" RISER ARE A TEMPORARY CONDITION WHILE THE SWM POND IS BEING USED AS A SEDIMENT TRAP (POST #1). THIS 12" RISER AND 12" - 90° ELBOW ARE NOT TO BE REMOVED UNTIL THE TEMPORARY SEDIMENT TRAP IS CONVERTED TO A PERMANENT SWMF. CONVERSION TO A PERMANENT SWMF WILL REQUIRE THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.



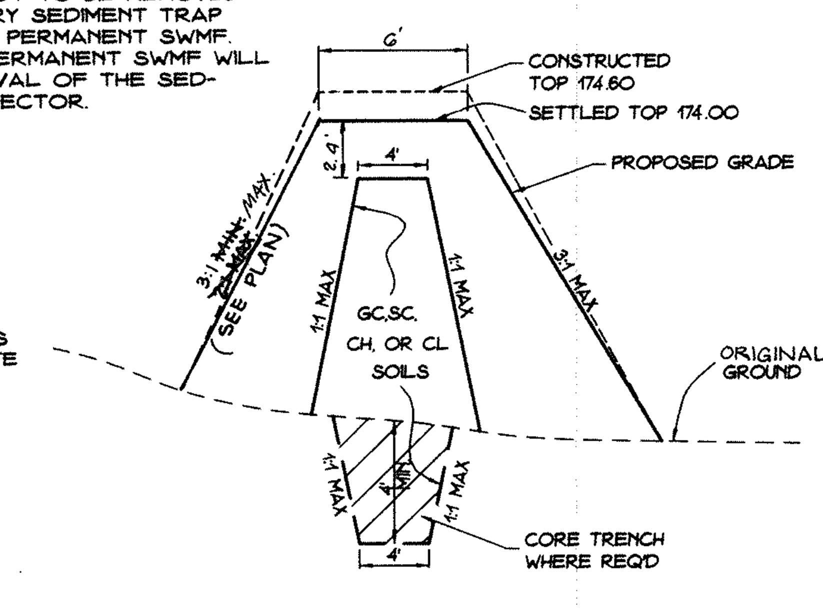
TYPICAL SECTION
NO SCALE



PLAN



DETAIL OF INTERNAL ORIFICE

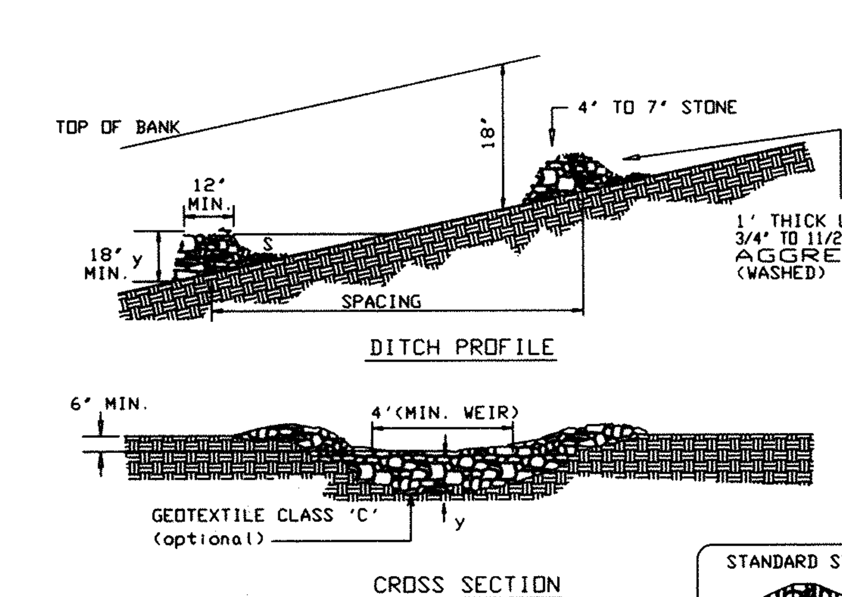


CORE TRENCH DETAIL
NO SCALE

STORMWATER MANAGEMENT DETAILS

NO SCALE

DETAIL 7 - STONE CHECK DAM



STANDARD STONE CHECK DAM DESIGN

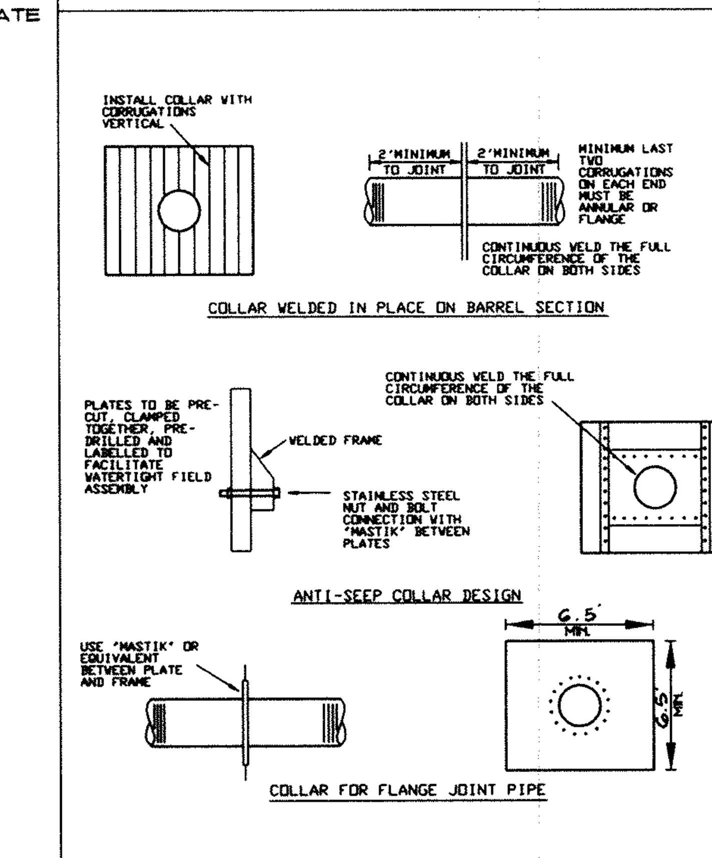
SLOPE	SPACING
2% or less	80'
2.1% to 4%	40'
4.1% to 7%	25'
7.1% to 10%	15'
over 10%	use lined waterway design

Construction Specifications

1. Swales and ditches shall be prepared in accordance with the construction specifications described in Section A-2, Standards and Specifications for Temporary Swale.
2. The check dam shall be constructed of 4'-7' stone. The stone shall be placed so that it completely covers the width of the channel and is keyed into the channel banks.
3. The top of the check dam shall be constructed so the the center is approximately 6' lower than the outer edges, forming a weir that water can flow across.
4. The maximum height of the check dam at the center shall not exceed 2'.
5. The upstream side of the check dam shall be lined with approximately 1' of 3/4' to 1-1/2' crushed aggregate.
6. Accumulated sediment shall be removed when it has built up to 1/2 of the original height of the weir crest.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 8 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

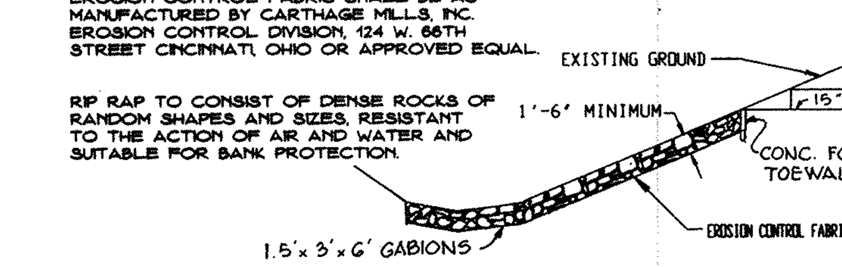
DETAIL 14 - TYPICAL ANTI-SEEP COLLARS



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 24	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

NOTE:
EROSION CONTROL FABRIC SHALL BE AS MANUFACTURED BY CARTHAGE MILLS, INC. EROSION CONTROL DIVISION, 124 W. 66TH STREET CINCINNATI, OHIO OR APPROVED EQUAL.

RIP RAP TO CONSIST OF DENSE ROCKS OF RANDOM SHAPES AND SIZES, RESISTANT TO THE ACTION OF AIR AND WATER AND SUITABLE FOR BANK PROTECTION.



GABION
SLOPE PROTECTION
NO SCALE

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

Cheryl Simmons 10/1/97
USDA - NATURAL RESOURCES CONSERVATION SERVICE — DATE

BY THE DEVELOPER:

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

John Cook 6-27-97
DEVELOPER: JOHN COOK, PRESIDENT, BALDWIN LINE CONSTRUCTION OF MARYLAND INC. — DATE

BY THE ENGINEER:

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

7-2-97
ENGINEER: JOHN R. HEINRICHS, P.E., PHOENIX ENGINEERING, INC. — DATE

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

Robert W. Ziehm 10/1/97
HOWARD SOIL CONSERVATION DISTRICT — DATE

~~APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT~~

~~COUNTY HEALTH OFFICER — DATE~~

APPROVED: DEPARTMENT OF PLANNING AND ZONING

10/6/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamilton 10/7/97
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

10/7/97
DIRECTOR — DATE

Date	No	Revision Description

OWNER/DEVELOPER

BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
813 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8833 FAX: 247-9397

AREA: ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 888
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ELKRIDGE INDUSTRIAL PARK STORMWATER MANAGEMENT NOTES AND DETAILS

FORMERLY SDP 86-09

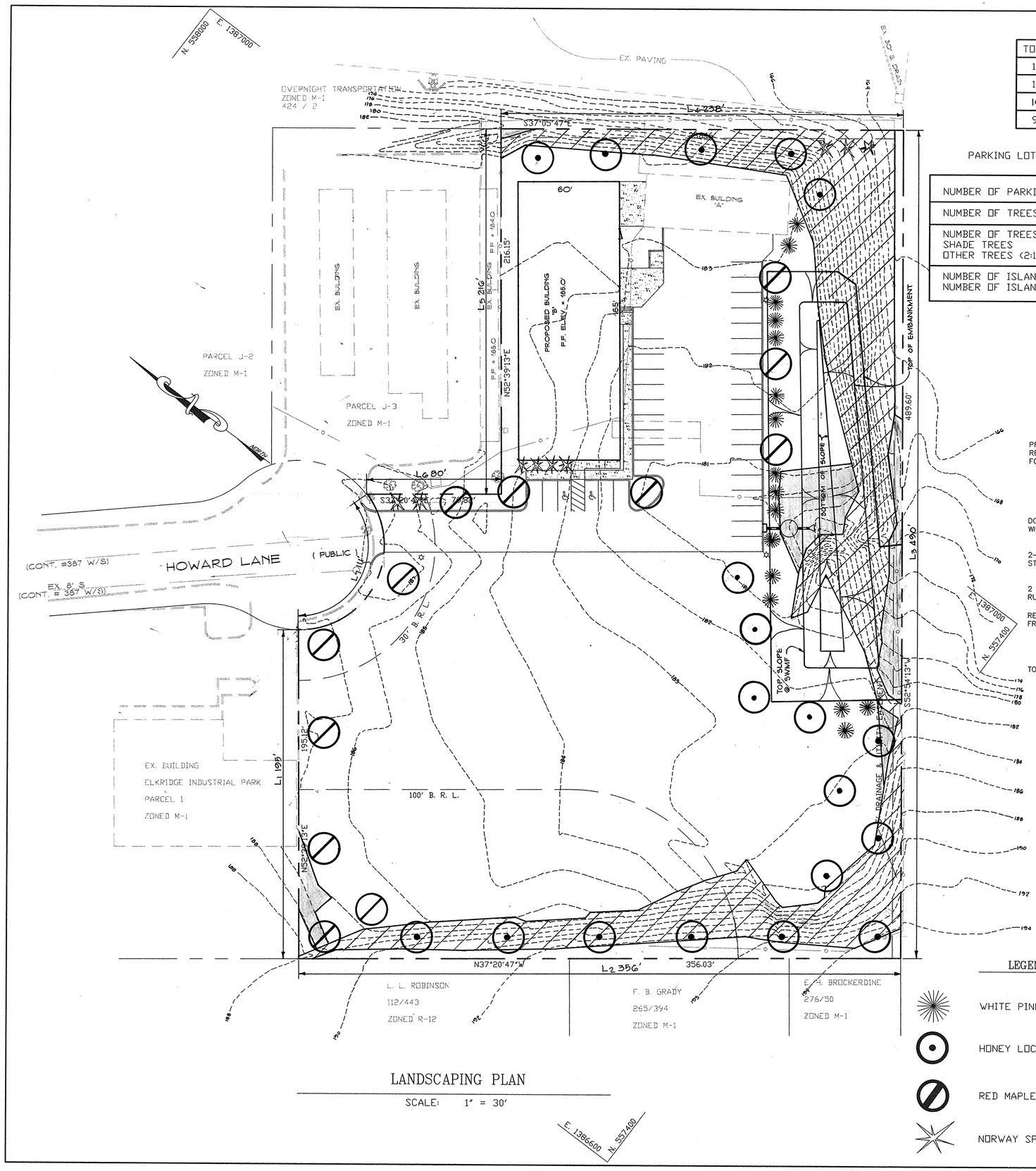
7-2-97
Date

STATE OF MARYLAND — JOHNNIE RAY HEINRICHS — NO. 14920 REGISTERED — PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920

Des By	R.J.W.	Scale	AS SHOWN	Proj. No. 97-006 SHEET4.DWG
Drn By	A.J.R.	Date	JUNE 1997	SHEET NO.
Chk By	J.R.H.		SDP-98-04	4 OF 6

SDP-98-04



LANDSCAPING PLAN

SCALE: 1" = 30'

PLANT SCHEDULE

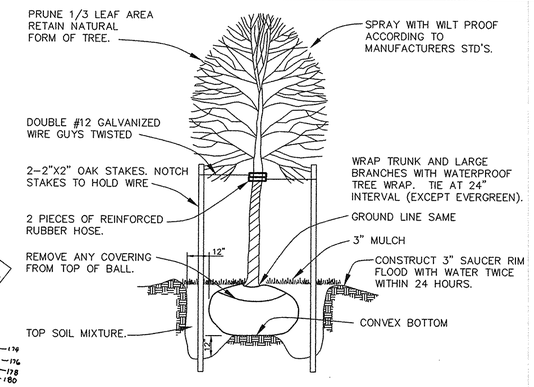
TOTAL	ADDT	REQ	TREES				
12	–	12	RM	ACER RUBRUM	COMMON RED MAPLE	2 1/2-3" CAL., 12-14' HGT.	B&B
19	–	19	HL	GLEDITSIA TRIACANTHOS INERMIS	HONEY LOCUST	2 1/2-3" CAL., 12-14' HGT.	B&B
16	5	11	WP	PINUS STROBUS	WHITE PINE	6-8' HGT.	B&B
9	–	9	NS	PICEA ABIES	NORWAY SPRUCE	6-8' HGT.	B&B

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	34
NUMBER OF TREES REQUIRED	2
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	 2 –
NUMBER OF ISLANDS REQUIRED NUMBER OF ISLANDS PROVIDED	2 2

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS				ADJACENT TO PERIMETER : PROPERTIES			
LANDSCAPE NUMBER	L1	L2	L3	L4	L5	L6	L7	TOTAL
LANDSCAPE TYPE	A	C	A	A	A	A	B	
LINEAR FEET OF ROADWAY/ FRONTAGE / PERIMETER	195	357	490	238	216	80	111	—
CREDIT FOR EXISTING VEGETATION YES, NO, LINEAR FEET)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	3	9 18	8	4	4	1	2 3	31 21
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUITION)								 31 21



TREE PLANTING DETAIL

NO SCALE

25% OR GREATER SLOPES

15% TO 25% SLOPES

NOTES:

1.) THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

2.) FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE D. P. W. DEVELOPERS AGREEMENT IN THE AMOUNT OF $ 5200.00

LEGEND:

- WHITE PINE
- HONEY LOCUST
- RED MAPLE
- NORWAY SPRUCE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/6/97

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/7/97

DIRECTOR — DATE 10/7/97

Date	No	Revision Description

OWNER/DEVELOPER

BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
813 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8833 FAX 247-9397

7-2-97
Date

STATE OF MARYLAND — JOHN R. HEINRICHS — No. 14920 — REGISTERED PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920

AREA: ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT J-1
TAX MAP 38 PARCEL 886
PLAT NO. 4353 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ELKRIDGE INDUSTRIAL PARK LANDSCAPE PLAN NOTES AND DETAILS

FORMERLY SDP 86-09

Des By	R.J.W.	Scale	AS SHOWN	Proj. No. 97-006 SHEET5.DWG
Drn By	R.H.D.	Date	JUNE 1997	SHEET NO.
Chk By	J.R.H.		SDP-98-04	5 OF 6

SDP-98-04

G:\97\97-006\SHEET5 Fri Jun 20 14:42:36 1997

Precast Concrete Stormceptor® Order Request Form

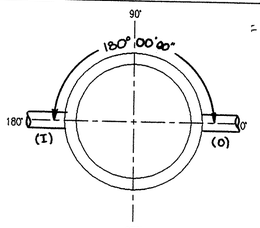
* TO BE INCLUDED ON SWM PLAN BY DESIGNER

CONTRACTOR INFORMATION

Name: Baldwin Line Construction
Address: P.O. Box 417, 376 Marley Neck Rd
City: Glen Burnie
State: Maryland
Zip Code: 21061
Contact: Mr. John Cook
Phone: (410) 766-9443
Fax: (410) 766-0762

OWNER INFORMATION

Name: John Cook
Phone: (410) 766-9443
Fax: (410) 766-0762



Please draw orientation of inlet and outlet pipes on diagram along with the pipe inside diameter (in), and invert elevation (ft). Clearly mark inlet pipes with an "I" and oulet pipes with an "O". Please provide the inlet/outlet pipe angle in degrees.

IMPERVIOUS DRAINAGE AREA FOR THIS UNIT _____

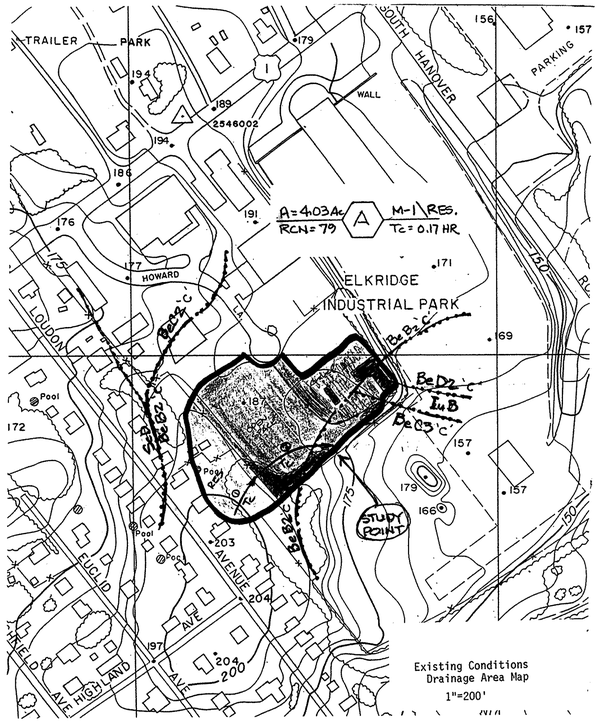
Stormceptor® Model			
STC			
900	☐	3600	☐
1200	☐	4800	☐
1800	☐	6000	☐
2400	☒	7200	☐

Insert Size	
DISC	☒
22"	☐
32"	☐
44"	☐
CUSTOM	

Manhole Number	S-2
Top Elevation (ft)	179.00
Inlet Pipe Invert (ft)	173.35
Outlet Pipe Invert (ft)	173.25
Pipe Type	15" RCCP CL III
Inlet Pipe Inside Diameter (ID)	15"
Inlet Pipe Outside Diameter (OD)	1.65'
Outlet Pipe Inside Diameter (ID)	15"
Outlet Pipe Outside Diameter (OD)	1.65'

Project Name: Elkridge Industrial Park
Approximate time frame of delivery (weeks): 6 weeks
Delivery Address: Street: 6365 Howard Lane
City: Elkridge State: Maryland Zip Code: 21227
Designer Company: Phoenix Engineering, Inc.
Designer Contact: John Heinrichs Phone (410) 247-8833 Fax (410) 247-9387

PLEASE FILL OUT COMPLETELY AND FAX TO: CSR Hydro Conduit
ATTN: ED O'MALLEY FAX: (703)922-3659, PHONE: (703)971-1900
FOR TECHNICAL ASSISTANCE PLEASE CALL MIKE BARG, PHONE (703)971-1900

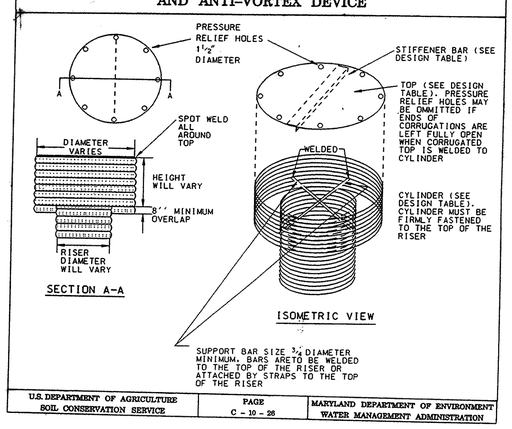


Existing Conditions
Drainage Area Map
1"=200'

STRUCTURE SCHEDULE

NO.	TYPE	INV. IN	INV. OUT	TOP ELEV.	REMARKS
I-1	A-5	-	173.43	180.10	H.C. STD. DETAIL NO. SD 4.01
S-2	MODEL STC-L 2400	173.35	173.25	179.00	STORMCEPTOR CORPORATION STD.
E-1	18" CONC END SECTION w/CONC FOOTER TOE WALL	173.15	173.05	-	H.C. STD DETAIL SD 5.62

DETAIL 16 – CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 26	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STORMCEPTOR MAINTENANCE SCHEDULE

MAINTENANCE NOTES (WATER QUALITY STRUCTURE WASTE)

STORMCEPTOR

1. STORMCEPTOR WATER QUALITY STRUCTURES WILL REQURE PERIODIC INSPECTION AND CLEANING TO MAINTAIN OPERATION AND FUNCTION. OWNERS WILL HAVE THE STORMCEPTOR UNIT VISUALLY INSPECTED TWICE A YEAR OR AS REQURED BY HOWARD COUNTY. UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM, INSPECTIONS CAN BE DONE BY USING A CLEAR PLEXIGLAS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN SEDIMENT DEPTHS EXCEED THE SPECIFIED LEVEL (TABLE 6 OF TECHNICAL MANUAL) THEN CLEANING OF THE UNIT IS REQURED.
2. THE STORMCEPTOR MUST AND WILL BE CLEANED IMMEDIATELY AFTER A PETROLEUM SPILL OCCURS. ALL APPROPRIATE REGULATORY AGENCIES WILL BE NOTIFIED IMMEDIATELY IN THE EVENT OF A SPILL.
3. CLEANING OF STORMCEPTOR UNITS SHOULD BE DONE BY A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN UNIT.
4. THE DISPOSAL OF THE LIQUID AND SOLID MATTER SHALL BE AS FOLLOWS:
   A. ALL LIQUID MATERIAL SHALL BE PUMPED BY A LICENSED WASTE MANAGEMENT COMPANY INTO A SUITABLE TANK TRUCK AND DISPOSED OF AT AN APPROVED SEWAGE TREATMENT PLANT.
   B. ALL SOLID MATERIAL SHALL BE INCINERATED BY A LICENSED FACILITY OR TAKEN TO AN APPROVED SANITARY LANDFILL AND DISCHARGED IN AN APPROVED MATTER.

DRY DETENTION BASIN

5. STORMCEPTOR INLET AND OUTLET PIPES SHALL BE PERIODICALLY INSPECTED FOR BLOCKAGES. BLOCKAGES SHALL BE REMOVED AND DISPOSED OF AS REQURED IN 4B ABOVE. STRUCTURAL PARTS SHALL BE INSPECTED AND REPAIRED AS NEEDED.
6. THE OWNER SHALL RETAIN AND MAKE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO HOWARD COUNTY UPON THEIR REQUEST.
7. REMOVAL OF SILT WHEN ACCUMULATION EXCEEDS SIX (6) INCHES IN BASINS WITHOUT FOREBAYS.
8. REMOVAL OF ACCUMULATED PAPER, TRASH AND DEBRIS AS NECESSARY.
9. VEGETATION GROWING ON THE EMBANKMENT TOP OR FACES IS NOT ALLOWED TO EXCEED 18 INCHES IN HEIGHT AT ANY TIME.
10. ANNUAL INSPECTION AND REPAIR OF THE STRUCTURE.

CONSULTANT'S HAZARD CLASS CERTIFICATION

"I CERTIFY THAT THIS POND MEETS ALL REQUIREMENTS FOR HAZARD CLASS A (A, B, OR C) [REQUIREMENTS AS STATED IN THE **SOIL CONSERVATION SERVICE - MARYLAND STANDARDS AND SPECIFICATIONS FOR POND, CODE 378, JANUARY 1991.**] ALL NECESSARY INVESTIGATIONS AND COMPUTATIONS HAVE BEEN PERFORMED TO VERIFY THIS FINDING.

SIGNATURE: ..... MD LICENSE NO. 14920 DATE: .....

PRINT NAME: JOHN R. HEINRICHS, P.E.

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

Cheryl Simmons 10/1/97
USDA – NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John Cook 6-21-97
DEVELOPER: JOHN COOK, PRESIDENT DATE
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.

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

7-2-97
ENGINEER: JOHN R. HEINRICHS, P.E. DATE
PHOENIX ENGINEERING, INC.

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

Robert W. Fiedler 10/1/97
HOWARD S.C.D. DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

10/6/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy Hamilton 10/7/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

10/7/97
DIRECTOR DATE

Date	No	Revision Description

OWNER/DEVELOPER
BALDWIN LINE CONSTRUCTION OF MARYLAND INC.
P.O. BOX 417, 376 MARLEY NECK ROAD
GLEN BURNIE, MARYLAND 21061
(410) 766-9443

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
613 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8833 FAX 247-9387

AREA
ELKRIDGE INDUSTRIAL PARK SECTION 3 LOT 1-1
TAX MAP 38 PARCEL 888
PLAT NO. 4363 CENSUS TRACT 6012
1st ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

ELKRIDGE INDUSTRIAL PARK
STORMCEPTOR
NOTES AND DETAILS
FORMERLY SDP 86-09

Des By R.J.W.	Scale AS SHOWN		Proj. No. 97-006 STORMDET.DWG
Drn By A.J.R.	Date JUNE 1997		SHEET NO. 6 OF 6
Chk By J.R.H.	SDP-98-04		

7-2-97
Date

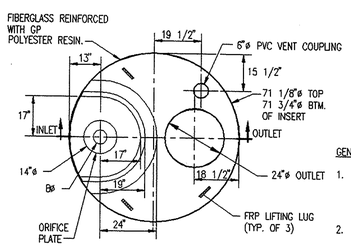
STATE OF MARYLAND JOHN R. HEINRICHS No. 14920 REGISTERED PROFESSIONAL ENGINEER

JOHN R. HEINRICHS
Professional Engr. No.14920

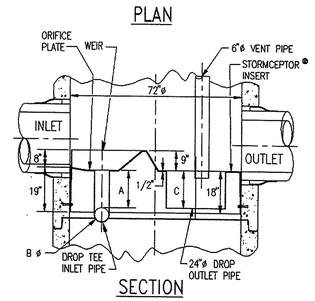
CSR Hydro Conduit
6800 Loisdale Road, Springfield, VA 22150 (703) 971-1900

STORMCEPTOR DISK TYPE
FIBERGLASS INSERT DETAIL

DR. BY: EPOM
CK. BY: RCH
DATE: 1-16-97
SCALE: 3/8" = 1'-0"
DWG.# CA-0225-01



PLAN



SECTION

GENERAL NOTES:

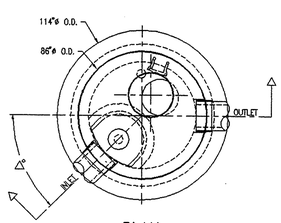
1. CSR HYDRO CONDUIT RECOMMENDS THE USE OF FLEXIBLE PIPE CONNECTORS AT THE INLET PIPE AND OUTLET PIPE WHERE APPLICABLE.
2. STORMCEPTOR FRAME AND COVER TO BE POSITIONED OVER OUTLET DROP PIPE.
3. INSERT TO BE INSTALLED WITH SIX 1/2" DROP-IN ANCHORS AND BOLTS.
4. INSERT TO BE SEALED AROUND CIRCUMFERENCE WITH CHEMREX 948.

UNIT	A (in.)	Bø (in.)	C (in.)
STC 900	16	6	16
STC 1200	16	6	16
STC 1800	16	6	16
STC 2400	44	8	44
STC 3600	44	8	44
STC 4800	44	10	44
STC 6000	44	10	44
STC 7200	44	12	44

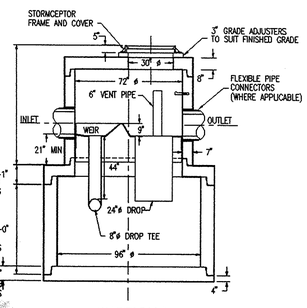
CSR Hydro Conduit
6800 Loisdale Road, Springfield, VA 22150 (703) 971-1900

STC 2400
PRECAST CONCRETE STORMCEPTOR

DR. BY: EPOM
CK. BY: RCH
DATE: 12-17-96
SCALE: 1/4" = 1'-0"
DWG.# CA-0225-05



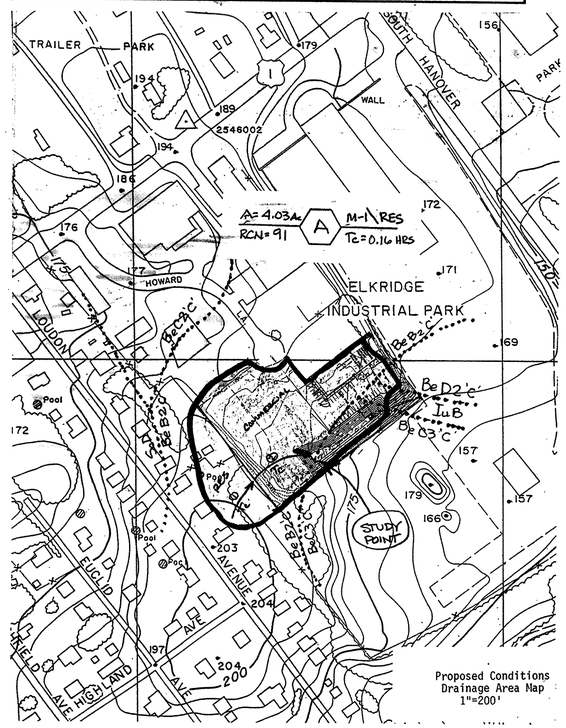
PLAN
(FRAME AND COVER NOT SHOWN FOR CLARITY)



SECTION

GENERAL NOTES

1. STORMCEPTOR SECTIONS SHALL CONFORM TO ASTM C 478, PROFILE GASKETED JOINTS CONFORMING TO ASTM C 443.
2. MANHOLE STEPS PROVIDED ABOVE INSERT @ 16" O.C. AND SHALL BE COPOLYMER POLYPROPYLENE PLASTIC ENCAPSULATED GR. 60 STEEL.
3. MINIMUM CONCRETE STRENGTH f'c= 4,000 PSI MINIMUM STEEL STRENGTH fy= 60,000 PSI
4. REINFORCEMENT DESIGN SHALL MEET ASTM C 478.
5. FLEXIBLE PIPE CONNECTORS SHALL MEET ASTM C 923.
6. HANDLING:
   A. ALL RISERS SHALL HAVE 2 EA. 1 1/2"ø HOLES FOR LIFTING @ 1/3 WAY DOWN FROM SPIGOT.
   B. ALL LG. DIAM. BASE SECTIONS FLATTOPS, AND REDUCERS TO HAVE LIFT HOOKS.
7. DESIGNED FOR AASHTO H-20 LOADING.
8. FIBERGLASS STORMCEPTOR INSERT REFERENCE DRAWING # CA-0225-01



Proposed Conditions
Drainage Area Map
1"=200'

SDP-98-04