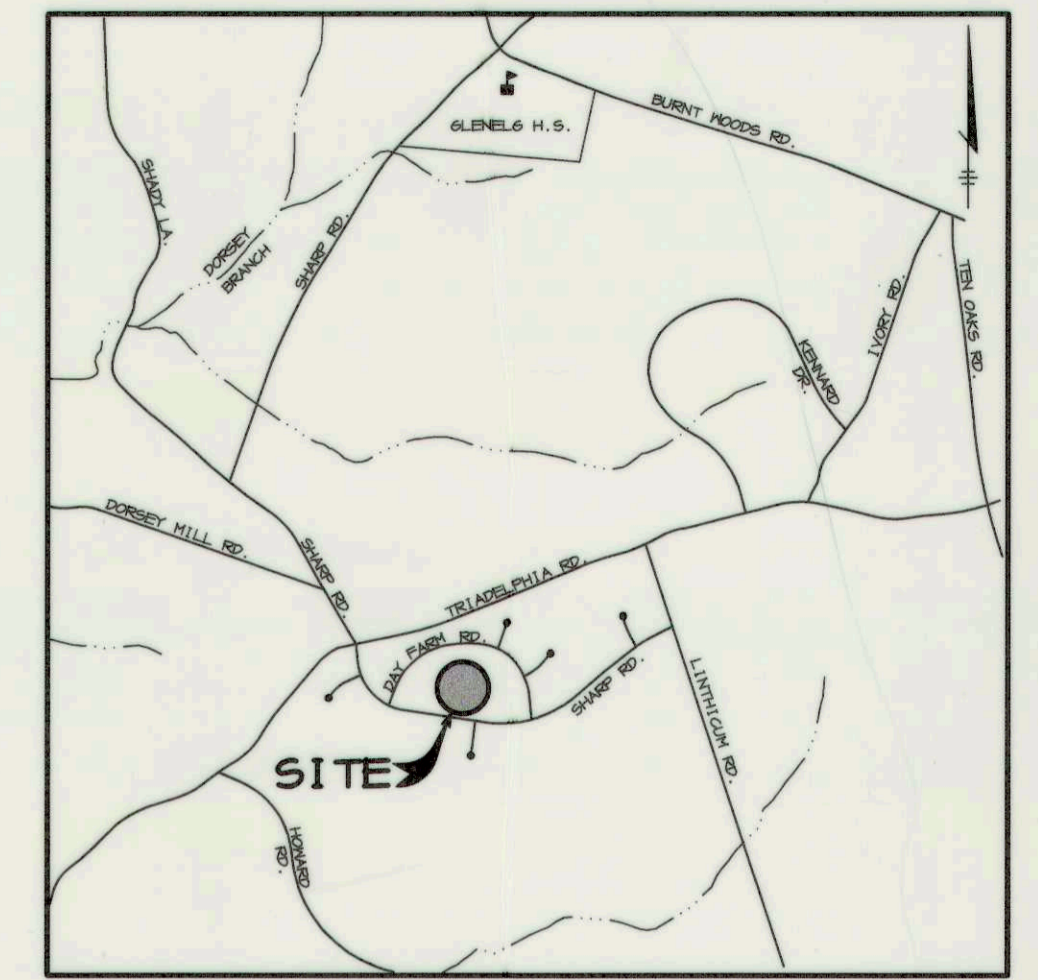
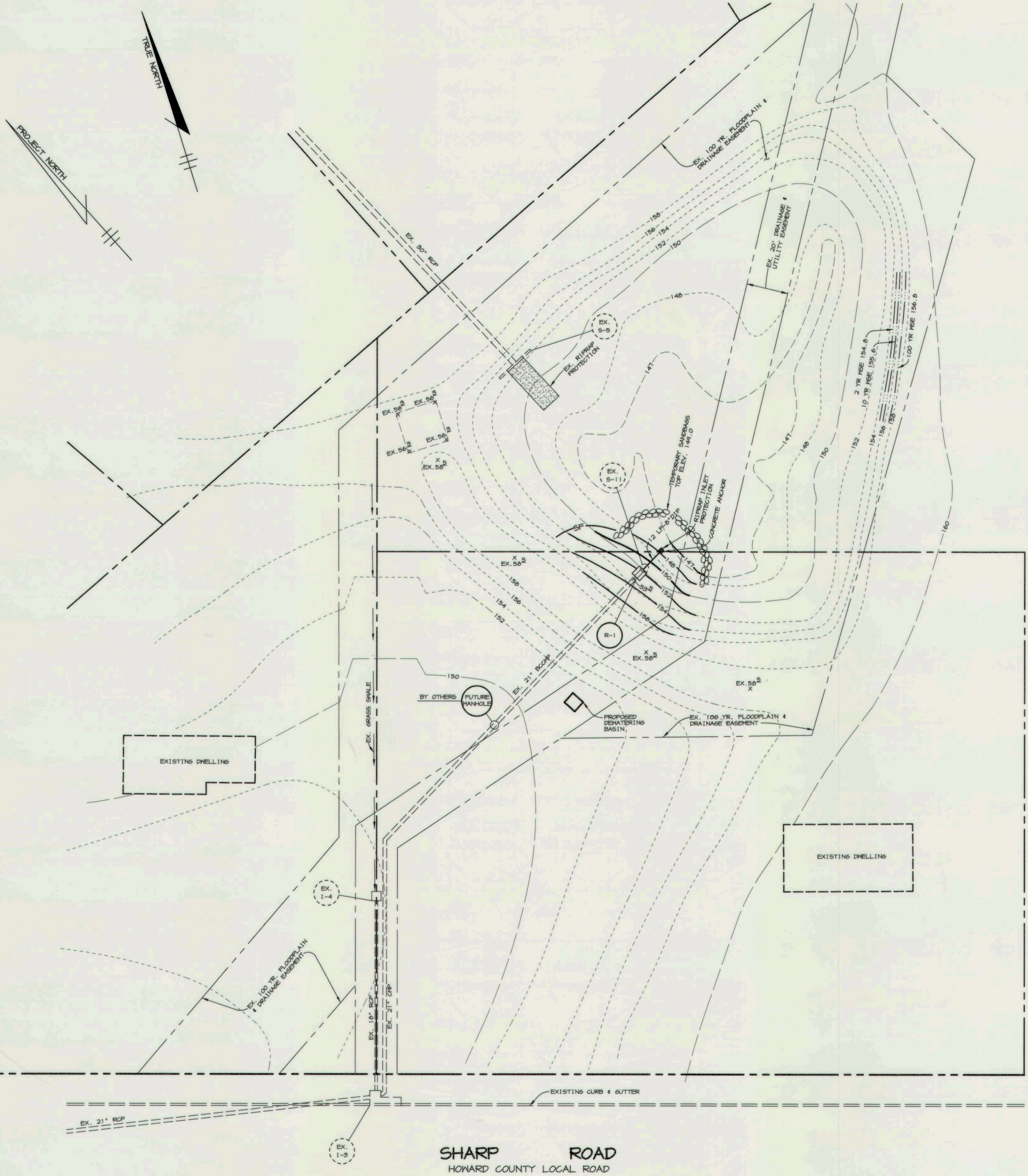


SHEET INDEX	
NO.	DESCRIPTION
1	SITE PLAN
2	STORMWATER MANAGEMENT AND SEDIMENT CONTROL NOTES
3	PROFILES AND DETAILS



VICINITY MAP
SCALE: 1"=2000'



GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-TTTT AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM AS-BUILT PLANS OF F-TT-31. THE EMERGENCY SPILLWAY LOCATION SHOWN ON THIS PLAN IS BASED ON A NON-SURVEYED FIELD OBSERVATION. THIS LOCATION IS APPROXIMATE AND CANNOT BE CONSIDERED ACCURATE.
- SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- STORMWATER MANAGEMENT IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MD-37B STANDARDS AND SPECIFICATIONS.
- SUBJECT PROPERTY IS ZONED RR-DEO PER THE 10-18-93 COMPREHENSIVE ZONING PLAN.
- ALL FILL MATERIAL AND COMPACTION SHALL MEET MD 37B STANDARDS AND SPECIFICATIONS.
- THIS FACILITY HAS A HAZARD CLASS 'A' EMBANKMENT.
- THIS WORK AUTHORIZED UNDER RLOA/91-NT-0481/199466760, GENERAL WATERWAY CONSTRUCTION PERMIT AND CORPS OF ENGINEERS MARYLAND STATE PROGRAMMATIC GENERAL PERMIT.

S.W.M. SUMMARY CHART				
DESIGN STORM	EXISTING CONDITIONS		PROPOSED CONDITIONS	
	DISCHARGE	WEEL	DISCHARGE	WEEL
2 YR.	8.5 CFS	154.8	8.5 CFS	154.8
10 YR.	23.1 CFS	155.6	23.1 CFS	155.6
100 YR.	46.1 CFS*	156.8	46.1 CFS**	156.8

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
PE NO. _____
DATE _____
CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

OPERATION AND MAINTENANCE SCHEDULE
STORMWATER MANAGEMENT FACILITY
NET DETENTION POND

ROUTINE MAINTENANCE

- Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
- Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
- Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
- Visible signs of erosion in the pond or on riprap outlet area shall be repaired as soon as it is noticed.

NON-ROUTINE MAINTENANCE

- Structural components of the pond such as the dam, the riser, and the pipes shall be inspected upon the detection of any damage. The components should be inspected during routine maintenance operations.
- Sediment should be removed when its accumulation significantly reduces the design storage, interferes with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

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

Howard E. Saltzman 11/18/99
DEVELOPER DATE

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

Arthur E. Muegge 1/16/99
ENGINEER DATE

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

Cheryl Simmons /cs 11/18/99
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Arthur E. Muegge 11/18/99
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John J. O'Hara 11/19/99
DIRECTOR OF PUBLIC WORKS DATE

Howard E. Saltzman 11/18/99
CHIEF, STORMWATER MANAGEMENT DIVISION DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282
98197 SHT1.DWG

Arthur E. Muegge #8707
ARTHUR E. MUEGGE

DES: DCD					
DRN: MAD					
CHK: AAP					
DATE: 4/15/99	BY NO.	REVISION	DATE	600' SCALE	MAP NO. 21 BLOCK NO. 18

SITE PLAN

SHARP ROAD
STORMWATER MANAGEMENT
5th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE 1"=30'
SHEET 1 OF 3

MD-378 STANDARDS AND SPECIFICATIONS

SPECIFICATIONS

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

SITE PREPARATION

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

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

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

EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment and cut-off trench shall conform to ASTM Classification SC, 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 6-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be excavated concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tire 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.

Cutoff trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter.

The back fill 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. As 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 concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

PIPE CONNECTIONS

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-140 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Plastic pipe 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: Nevon, Plast-coat, Black-lad, and Best-Gal-coat. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

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

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

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

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

- 5. Backfilling shall conform to "Structure Backfill".

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

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.

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

- 4. Backfilling shall conform to Structure "Backfill".

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

CONCRETE

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

ROCK RIPRAP

Rock riprap shall meet the requirements of Maryland Department of Transportation State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

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 419.12.

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 pumps from which the water shall be pumped.

STABILIZATION

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

EROSION AND SEDIMENT CONTROL

Construction operations shall 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.

Refer to the 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

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, discing or other acceptable means before seeding. If not previously loosened.

Soil Amendments - Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.).

Seeding - For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual ryegrass (3-2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of creeping lovegrass (0.71 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of untreated straw grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 210 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas, or slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1988 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation - Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. If not previously loosened.

Soil Amendments - In lieu of soil test recommendations use one of the following schedules:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq.ft.) and 800 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 20-0-0 ureaform fertilizer (4 lbs. per 1000 sq.ft.).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (20 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding - For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of creeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:

- 1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.
- 2) Use sod.
- 3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of untreated straw grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 210 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas, or slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance - Inspect all seeded areas and make needed repairs, replacements and reseedings.

STANDARD SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (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 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4. THE WORK AREA SHOWN MUST BE FENCED (ORANGE FENCING) AND WARNING SIGNS POSTED AROUND THE PERIMETER.
- 5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. 6.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED 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 23.9 ACRES
AREA DISTURBED 0.05 ACRES
AREA TO BE ROOFED OR PAVED 0.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED 0.05 ACRES
TOTAL CUT TT. 0.2 YARDS
TOTAL FILL 0 CU. YARDS
OFFSITE WASTE/BORROW AREA LOCATION
- 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- 9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 10. ANY SEDIMENT-LADEN WATER THAT IS PUMPED FROM THE WORK AREA MUST BE DISCHARGED INTO A FILTER BAG ON A DENATURING BASIN.
- 11. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- 12. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN THE NECESSARY PERMITS PRIOR TO CONSTRUCTION, IF REQUIRED. (1 DAY)
- 2. DRAIN POND. (3 DAYS)
- 3. INSTALL THE SANDBAG BARRIER AS SHOWN ON PLAN. (1 DAY)
- 4. REMOVE A PORTION OF THE EXISTING CMP AND INSTALL THE PROPOSED RISER. CONCURRENTLY, INSTALL THE 8" TEMPORARY POLYETHYLENE FLEXIBLE PIPE FROM THE RISER DRAIN PIPE OPENING TO UPSTREAM OF THE SANDBAG BARRIER. (1 WEEK)
- 5. COMPLETE THE PROPOSED RISER INSTALLATION & COMPLETE THE REMOVAL OF THE EXISTING RISER. RECONSTRUCT & STABILIZE THE DISTURBED AREAS AND EMBANKMENT. (1 WEEK)
- 6. REMOVE ALL SEDIMENT EROSION CONTROL DEVICES AND STABILIZE THE REMAINING AREAS WITH PERMANENT SEEDING. (1 WEEK)

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

Howard E. Soltzman 11/18/99
DEVELOPER DATE

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

Arthur E. Muegge 11-16-99
ENGINEER DATE

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

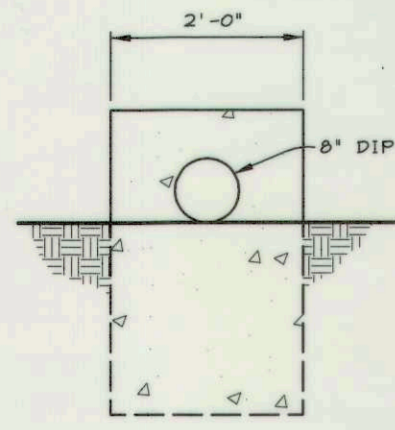
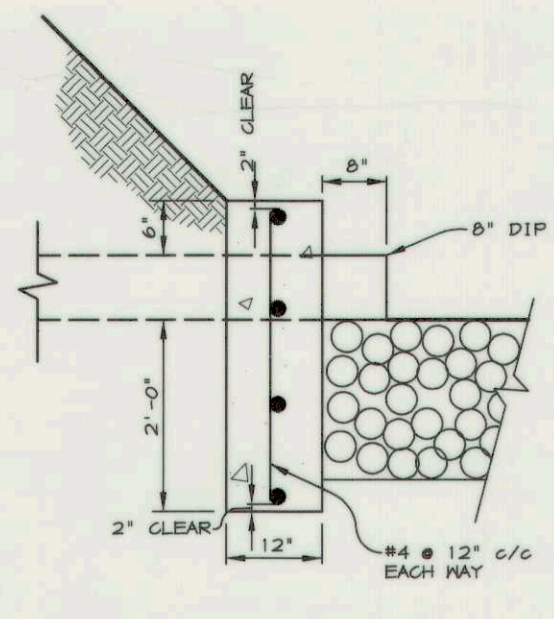
Cheryl Sumner 11/18/99
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Arthur E. Muegge 11/18/99
HOWARD SOIL CONSERVATION DISTRICT DATE

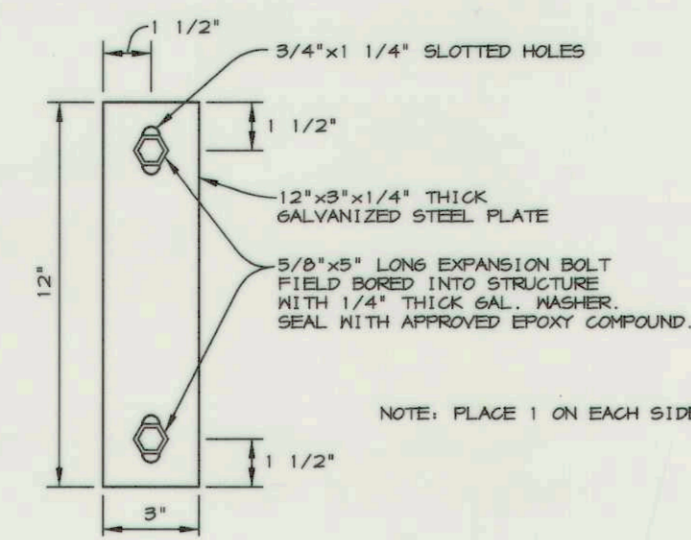
AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
PE NO. _____
DATE _____
CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND
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8818 Centre Park Drive, Columbia, Maryland 21045
410.997.8900 fax 410.997.9282 88197 SH2.DWG
Arthur E. Muegge #8707
DES: DGD
DRN: MAD
CHK: AAP
DATE: 4/15/99
BY NO. REVISION
DATE 600' SCALE MAP NO. 21 BLOCK NO. 18
SHARP ROAD STORMWATER MANAGEMENT AND SEDIMENT CONTROL NOTES
5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE AS SHOWN SHEET 2 OF 3



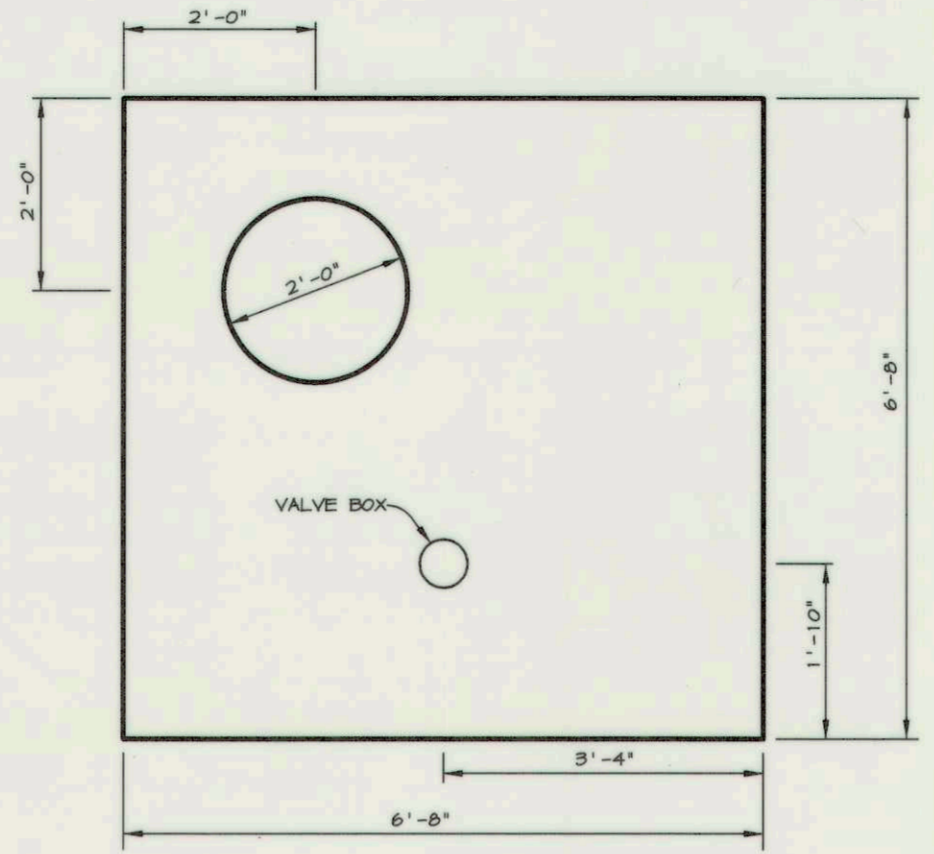
CONCRETE ANCHOR DETAIL
NO SCALE

NOTE: CONCRETE STRENGTH $f'_c = 4000$ PSI @ 28 DAYS. ALL DEFORMED BARS SHALL BE ASTM A 615 GRADE 60.

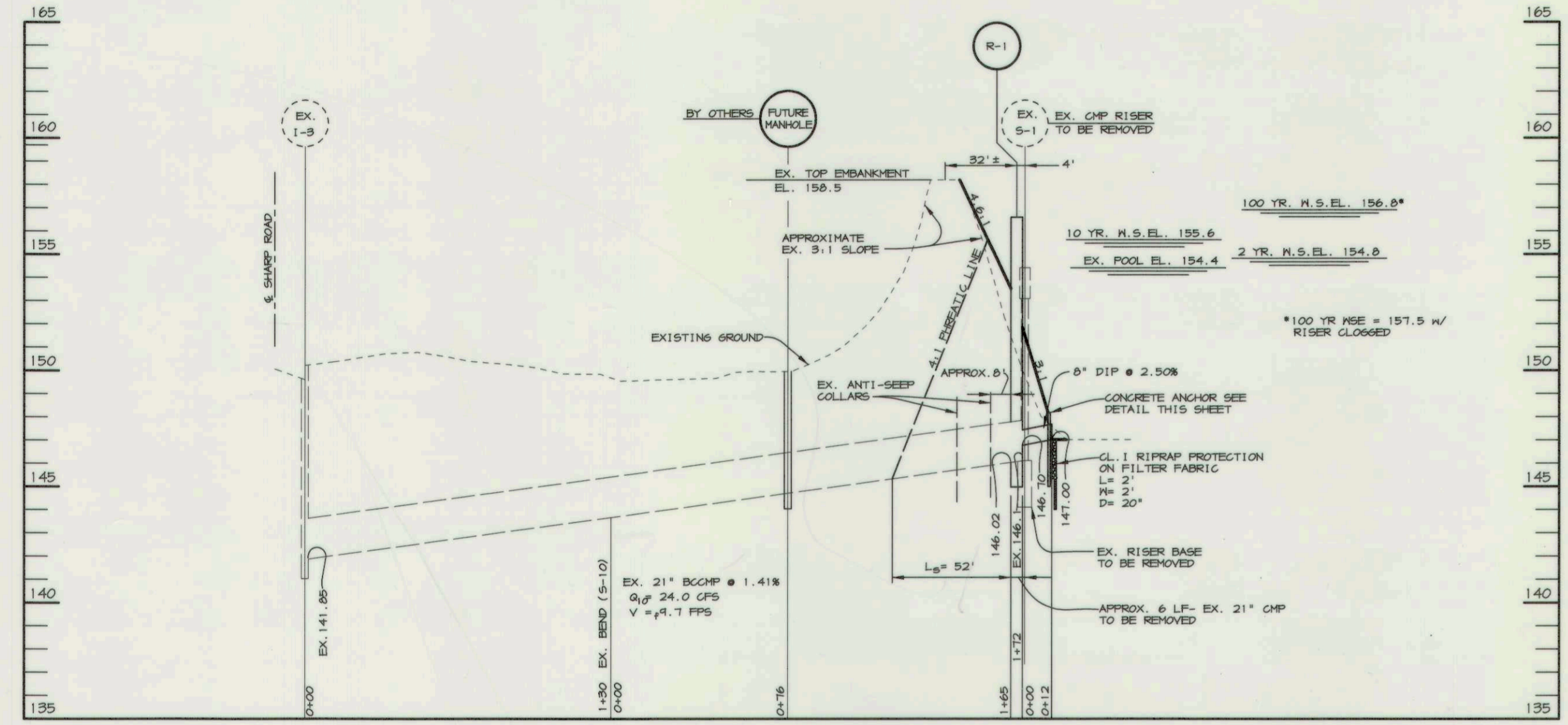


RISER JOINT FASTENER
NO SCALE

NOTE: PLACE 1 ON EACH SIDE OF RISER.



TOP SLAB



PRINCIPAL SPILLWAY PROFILE
SCALE: HOR. 1"=20' VERT. 1"=5'

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

Howard E. Saltzman 11/10/99
DEVELOPER DATE

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

Arthur E. Muegge 11-16-99
ENGINEER DATE

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

John A. Simpson 11/12/99
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John A. Simpson 11/12/99
HOWARD SOIL CONSERVATION DISTRICT DATE

AS-BUILT CERTIFICATION

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

DATE

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. Lewis 11/12/99
DIRECTOR OF PUBLIC WORKS DATE

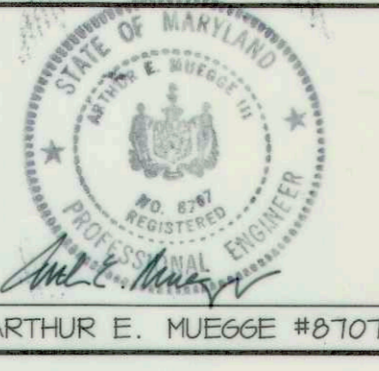
Andrew M. Quade 11/19/99
CHIEF, BUREAU OF HIGHWAYS DATE

John O'Hara 11/15/99
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

Howard E. Saltzman 11/10/99
CHIEF, STORMWATER MANAGEMENT DIVISION DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282
98197 SHTS.DWG

Arthur E. Muegge #8707
DATE: 4/15/99

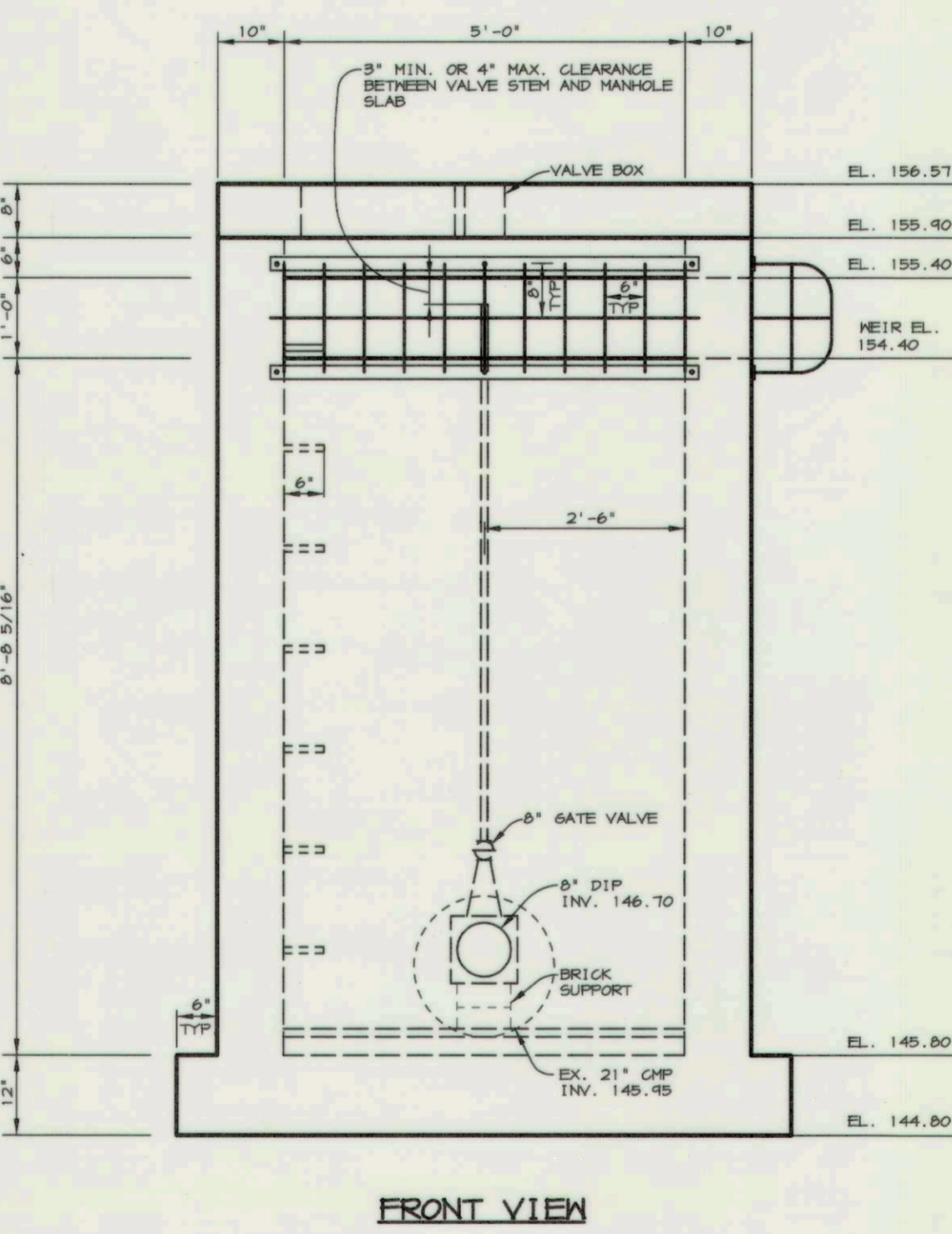


DES:	DCD				
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DATE:	4/15/99	BY:	NO.	REVISION	DATE

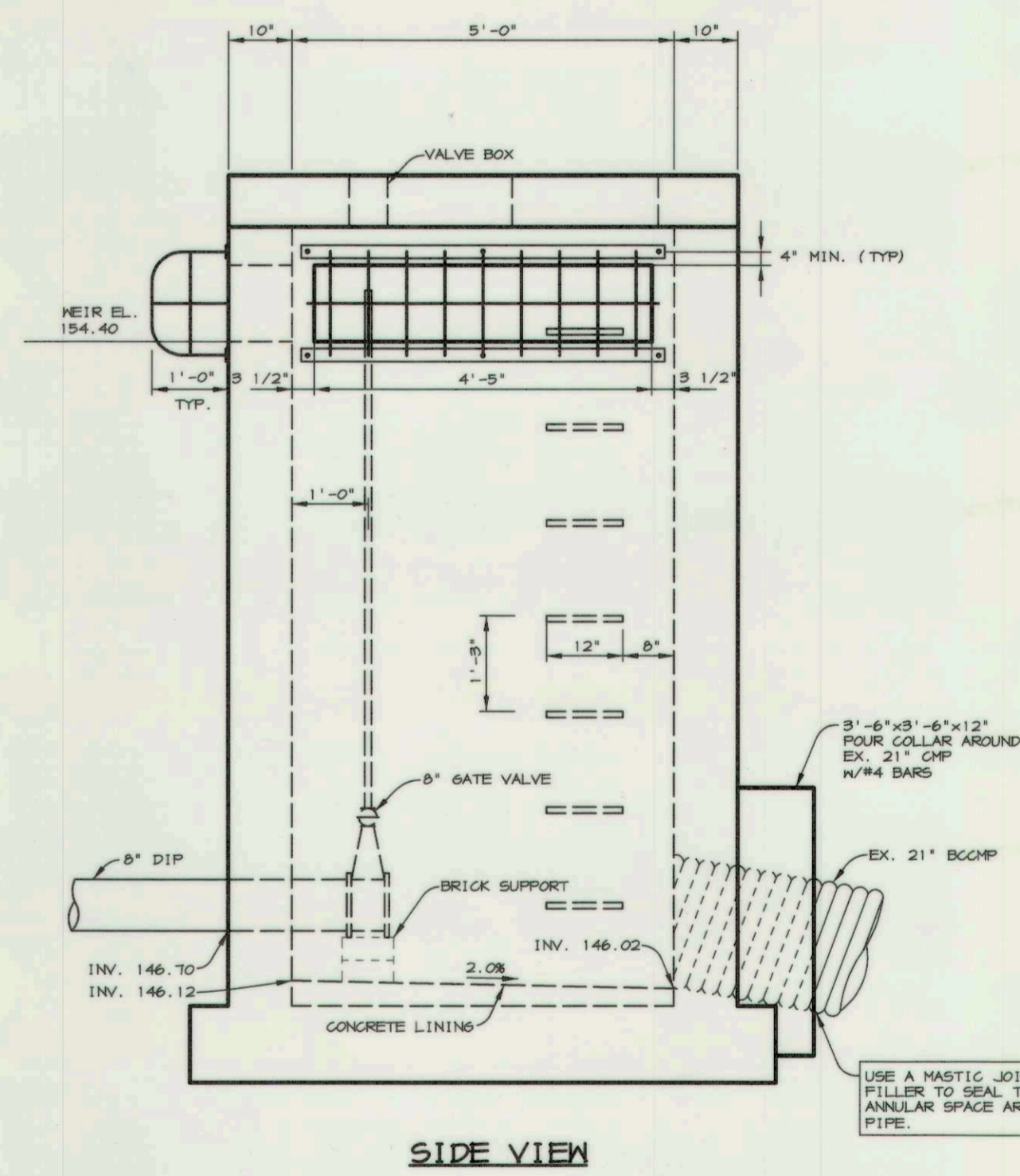
- RISER STRUCTURE NOTES:**
- RISER TO BE PRECAST. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER. THE GATE VALVE EXTENSION BRACKET SHALL BE INCLUDED IN THE SHOP DRAWING (SEE NOTE #8).
 - PROVIDE A 32" DIAMETER OPENING AT THE EXISTING 21" CMP BARREL CONNECTION.
 - CONCRETE SHALL BE MSHA MIX NO. 3 (F'c = 3,500 PSI MINIMUM).
 - REINFORCING STEEL SHALL MEET ASTM STD A615, GRADE 60.
 - HANDLE STEPS TO BE 1'-0" WIDTH. REFER TO HOWARD COUNTY STD. 9-5.21 FOR DETAILS.
 - RISER JOINT(S) TO BE FASTENED TOGETHER IF RISER IS FABRICATED IN SECTIONS. REFER TO DETAIL THIS SHEET.
 - ALL PIPE CONNECTIONS TO THE RISER SHALL BE WATERTIGHT. PROVIDE TWO (2) COATS OF ZINC CHROMATE ON THE CMP CONNECTION TO THE RISER.
 - AN 8" OPEN LEFT GATE VALVE (ANNA C-155, CL. 350) SHALL BE CONNECTED TO THE RISER WALL WITH ALL-THREADED ROD AND A FLANGE JOINT. PROVIDE A FIVE (5) FOOT STEEL EXTENSION ON THE GATE VALVE AND FIRMLY SECURE TO RISER WALL WITH BRACKET(S). PROVIDE A STANDARD VALVE BOX AND COVER IN THE TOP SLAB DIRECTLY OVERTOP THE 8" GATE VALVE.
 - RISER SHALL BE PLACED ON A FIRMLY COMPACTED SUBGRADE AND SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.

- TRASH RACK NOTES:**
- STEEL TO CONFORM TO ASTM A-36. BARS TO BE SMOOTH.
 - REBARS @ 8" o/c HORIZONTALLY AND 6" o/c VERTICALLY.
 - ALL REBAR TO BE WELDED AT ALL INTERSECTIONS.
 - ALL BENDS TO BE 2" RADIUS. 2" x 1/8" STEEL PLATE AND 1/2" DIAMETER ANCHOR BOLTS TO BE USED FOR TOP AND BOTTOM OF TRASH RACK FRAME.
 - GALVANIZE TRASH RACK AFTER FABRICATION AND PAINT BATTLESHIP GRAY.

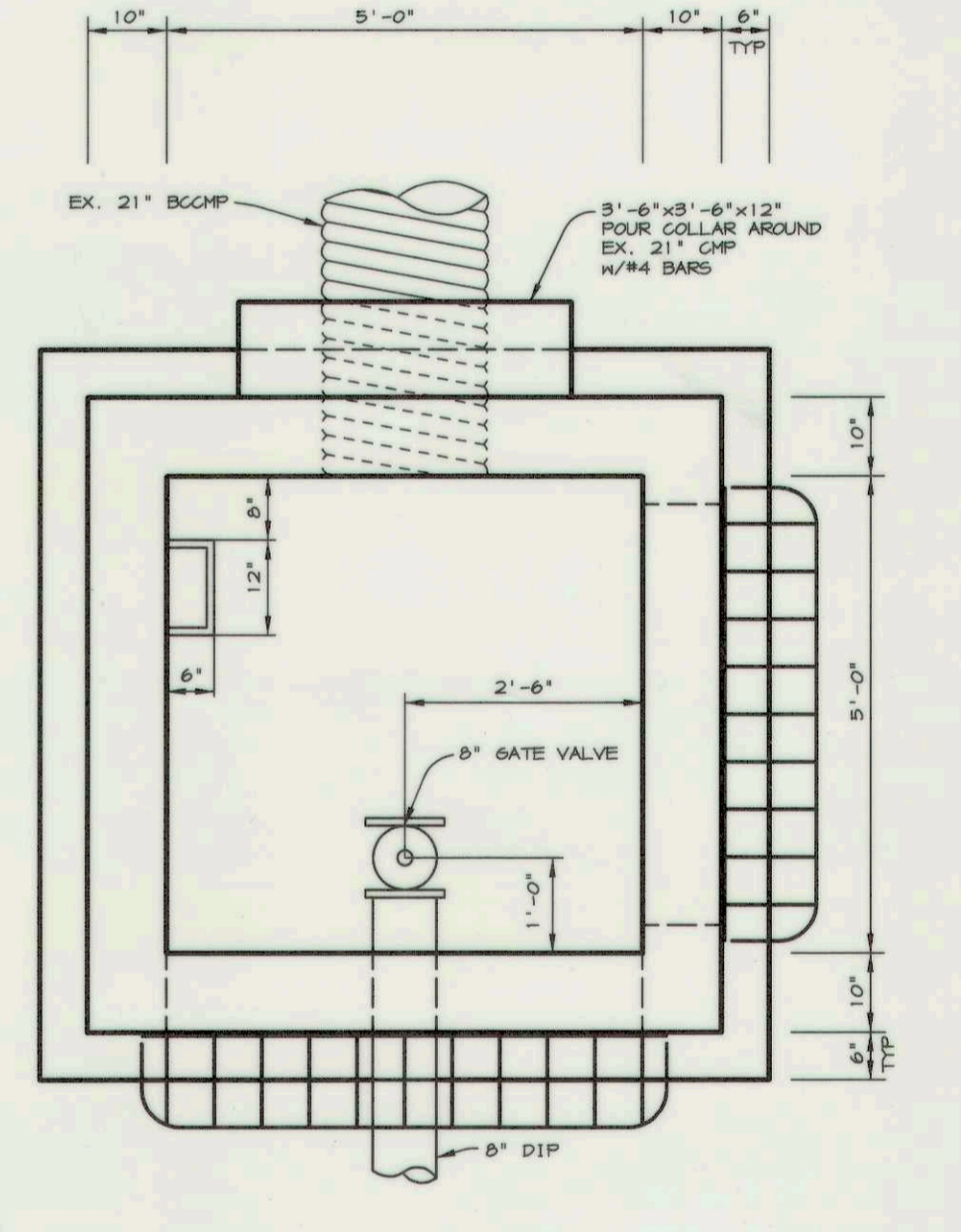
- TOP SLAB NOTES:**
- REFER TO HOWARD COUNTY STANDARD DETAIL 6-5.52 FOR HANDLE FRAME & COVER.
 - CONCRETE TO BE MIX NO. 3.
 - SLAB REINFORCING SHALL HAVE 2" MINIMUM COVER.
 - PROVIDE A STANDARD VALVE BOX AND COVER IN THE TOP SLAB.



FRONT VIEW



SIDE VIEW



PLAN VIEW W/O TOP SLAB

NOTE: WEIRS ARE LOCATED ON NORTH AND EAST FACES ONLY.

R-1 DETAIL
SCALE: 1"=2'

NOTE FOR FILL AROUND RISER:
THE CONTRACTOR SHALL USE SOILS CONFORMING TO THE UNIFIED SOIL CLASSIFICATION SC. 50, CH OR CL. THE FILL SHALL BE COMPACTED TO 95% STANDARDS.

PROFILES AND DETAILS

SHARP ROAD
STORMWATER MANAGEMENT
5th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 3