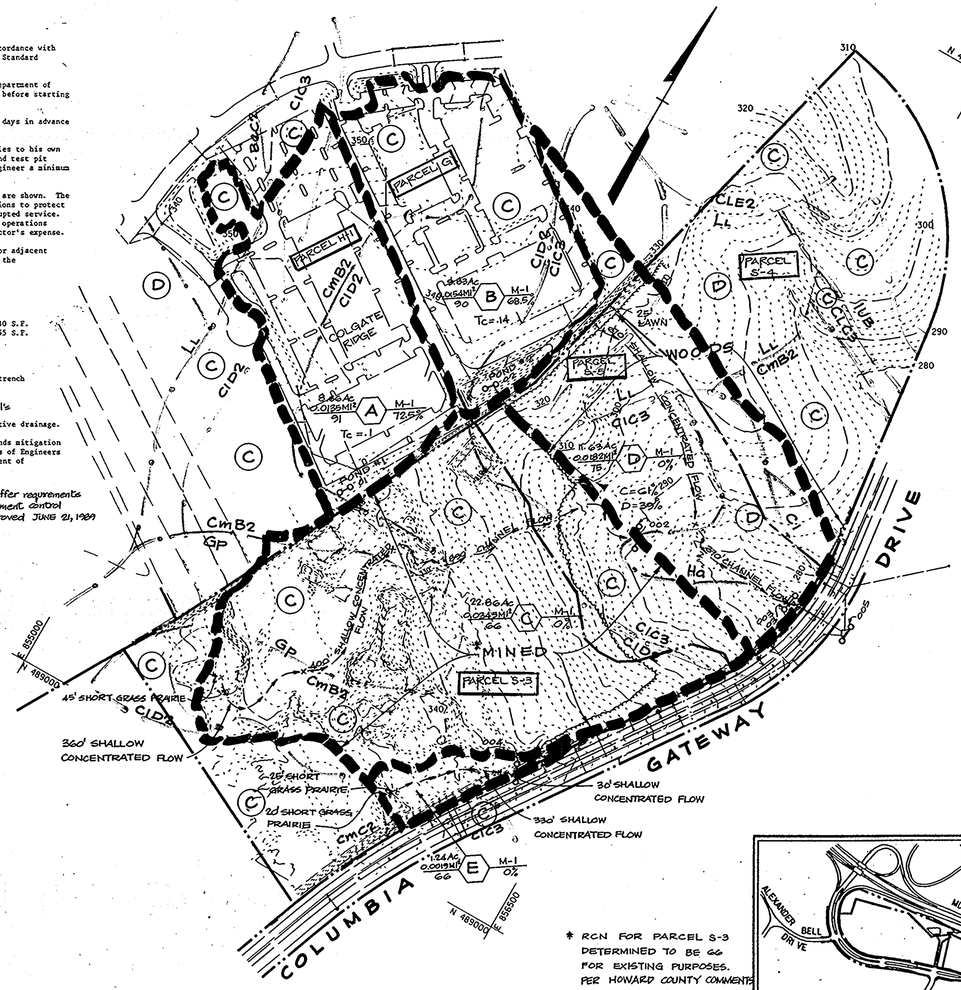
General Notes

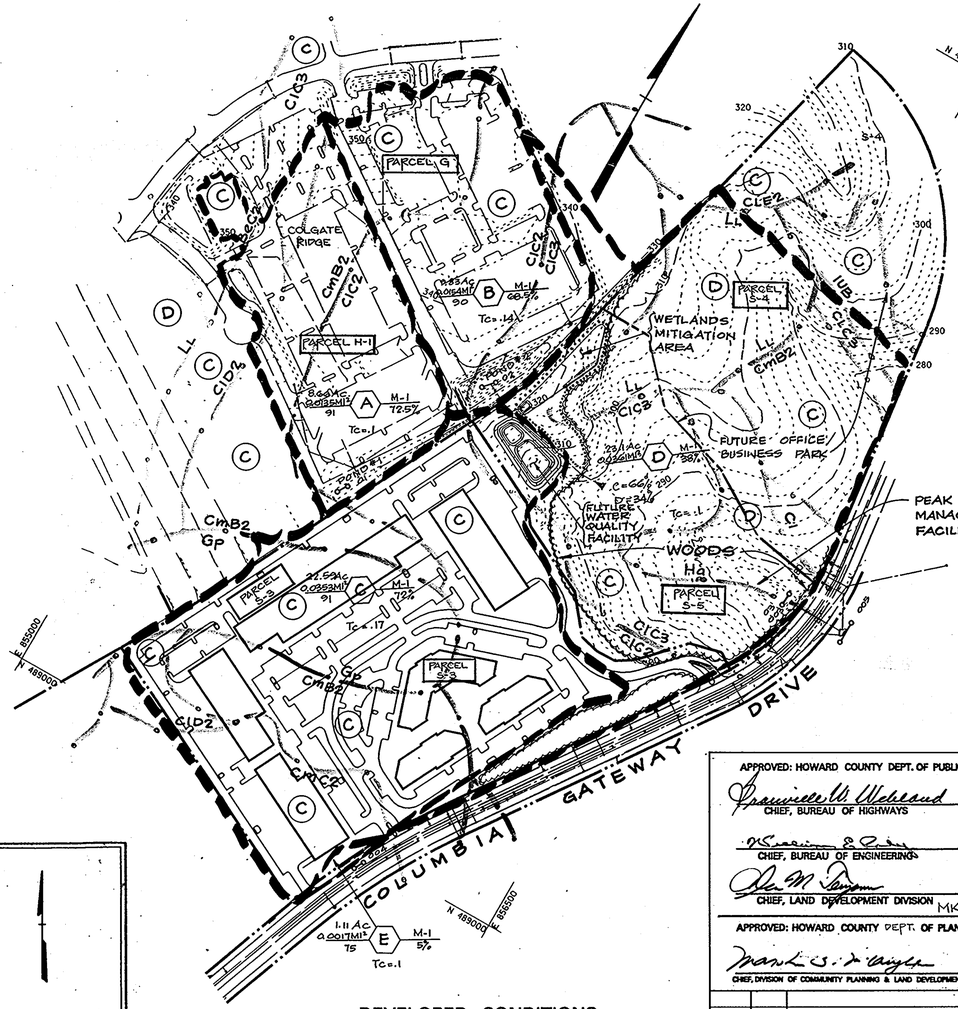
1. All site work construction to be done in accordance with the Howard County Design Manual - Vol. IV - Standard Specification and Details for construction.
2. Contractor shall notify the Howard County Deparment of Inspections and permits at least three days before starting work shown on these drawings.
3. All utility companies must be notified five days in advance of any construction.
4. Contractor shall verify all existing utilities to his own satisfaction before starting construction and test pit existing utilities where directed by the engineer a minimum of two weeks prior to construction.
5. Approximate locations of existing utilities are shown. The contractor shall take all necessary precautions to protect existing utilities and to maintain uninterrupted service. Any damage incurred due to the contractor's operations shall be repaired immediately at the contractor's expense.
6. Any damage to public right-of-way, paving, or adjacent properties shall be repaired immediately at the contractor's expense.
7. Site Data:

   CURRENT ZONING = M-1
   TOTAL SITE ACREAGE:
   PARCEL G-3 = 23.559 AC ±; 1,026,230 S.F.
   PARCEL S-5 = 10.83 AC ±; 471,755 S.F.
   ACREAGE OF DISTURBANCE:
   PARCEL G-3 = 3.06 AC ±
   PARCEL S-5 = 1.77 AC ±
8. All utilities installed shall receive full trench compaction.
9. Stormwater management is provided for parcels G-3, S-5 and a portion of S-4
10. Grades have been established to insure positive drainage.
11. The stormwater management concept and wetlands mitigation concept have been approved by the Army Corps of Engineers Permit No. NP 89 10103 and Maryland Department of Environment Permit No. 88 WQ 0481.
12. WP 89-129 to wave the wetland buffer requirements for the removal of the existing sediment control adjacent to the wetlands was approved JUNE 21, 1989

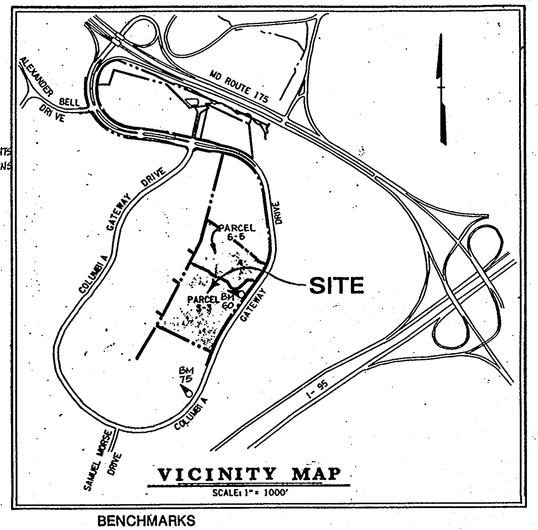


EXISTING CONDITIONS

* RCN FOR PARCEL S-3 DETERMINED TO BE 66 FOR EXISTING PURPOSES. PER HOWARD COUNTY COMMENTS ON INTERM S.W.M. COMPUTATIONS



DEVELOPED CONDITIONS



VICINITY MAP
SCALE: 1" = 1000'

LEGEND

01	STRUCTURE
001	CROSS SECTION
— — —	TC - PATH
CmB2	SOIL TYPE
(C)	SOIL GROUP
——— ———	SOIL LINE
▬ ▬ ▬	DRAINAGE AREA LIMITS
~~	PROPOSED TREE LINE
.....	WETLANDS MITIGATION AREA

BENCHMARKS

WR & A #60 — BM - TACK IN HUB 150' RIGHT OF ℄ STA. 59+82.05 COLUMBIA GATEWAY DRIVE ELEV. 343.19

WR & A #75 — BM - TACK IN HUB 150' RIGHT OF ℄ STA. 59+82.05 COLUMBIA GATEWAY DRIVE, ELEV. 320.81

*SITE DEVELOPMENT AS SHOWN IS CONCEPTUAL

*PURPOSE: TO CREATE A WETLANDS MITIGATION AREA AND INSTALL A PEAK STORMWATER MANAGEMENT FACILITY FOR THE DEVELOPMENT OF PARCEL S-3, S-5 AND A PORTION OF S-4

NOTE: ALL WORK IS IN ACCORDANCE WITH ARMY CORPS OF ENGINEERS PERMIT NO. NP 8910103 AND MARYLAND DEPARTMENT OF ENVIRONMENT PERMIT NO. 88WQ-0481.

INDEX OF PLANS

AS-BUILT

STATE OF MARYLAND — SCOTT SHANABERGER — No. 10551 — REGISTERED PROFESSIONAL LAND SURVEYOR

Scott Shanaberger 2/6/90 (FOR 9/10/91 AS-BUILT)
℄ SCOTT SHANABERGER — DATE
PROFESSIONAL LAND SURVEYOR # 10551

SHANABERGER & LANE
8126 DUNT ℄ COUNTRY BLVD.
SUITES 106 ℄ 107
ELLICOTT CITY, MD 21043

9/29/89
Date

STATE OF MARYLAND — JOHN M. RATCLIFFE — No. 10557 — REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENG. No. 10557

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Granville W. Wehrend — CHIEF, BUREAU OF HIGHWAYS — 9/5/90 DATE

CHIEF, BUREAU OF ENGINEERING — 9-13-90 DATE

CHIEF, LAND DEVELOPMENT DIVISION MK — 9/14/90 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — 10/19/90 DATE

Date	No.	Revision Description

COLUMBIA GATEWAY

PARCEL S-3, S-4, & S-5
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER/DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21043

DAFT McCUNE WALKER, INC.
LAND PLANNING CONSULTANTS
LANDSCAPE ARCHITECTS
ENGINEERS SURVEYORS
200 EAST PENNSYLVANIA AVENUE
TOWSON, MD. 21204
TELEPHONE: 301-296-3333

TITLE: FINAL CONSTRUCTION PLAN
STORMWATER MANAGEMENT
DRAINAGE AREA MAP

SUBDIVISION NAME		SECT./AREA	LOT/PARCEL #
COLUMBIA GATEWAY		NA	S-3/S-5
PLAT# OR L/F	BLOCK#	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
8802-8805		M-1	43	6	6065.02
WATER CODE		SEWER CODE			

ADDRESS CHART

LOT NUMBER	STREET ADDRESS

Des By AJD	Scale 1" = 200'	Proj. No. 88036
Drn By DBS/JMS	Date 8/29/89	
Chk By JWR/AJD	Approved	1 OF 6

F-90-92

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

U.S. SOIL CONSERVATION SERVICE — 8/21/90 DATE

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

APPROVED: Robert W. Zeichner — HOWARD SOIL CONSERVATION DISTRICT — 8/21/90 DATE

PLAN NUMBER 1158

DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE ACERTIFICATE OF ATTENDANCE AT A DEPT. OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

DEVELOPER: Jeffrey A. Klein — DATE: 8/22/90

ENGINEER'S CERTIFICATE:

"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 SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

ENGINEER — 10551 REG. NO. — 9/29/89 DATE

NOTE: WETLANDS MITIGATION AREA STABILIZATION

THIS AREA IS TO BE STABILIZED IN ACCORDANCE WITH MD. SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, JANUARY 1982, SECTIONS 701-TURF ESTABLISHMENT AND 714-WOODY SHRUB SEEDING & MULCHING TO BE APPLIED AS FOLLOWS:

MD. SHA WOODY SHRUB MIX: 50 LBS/AC.
REGION 2 COVER COMPANION SEED MIX: 35 LBS/AC.

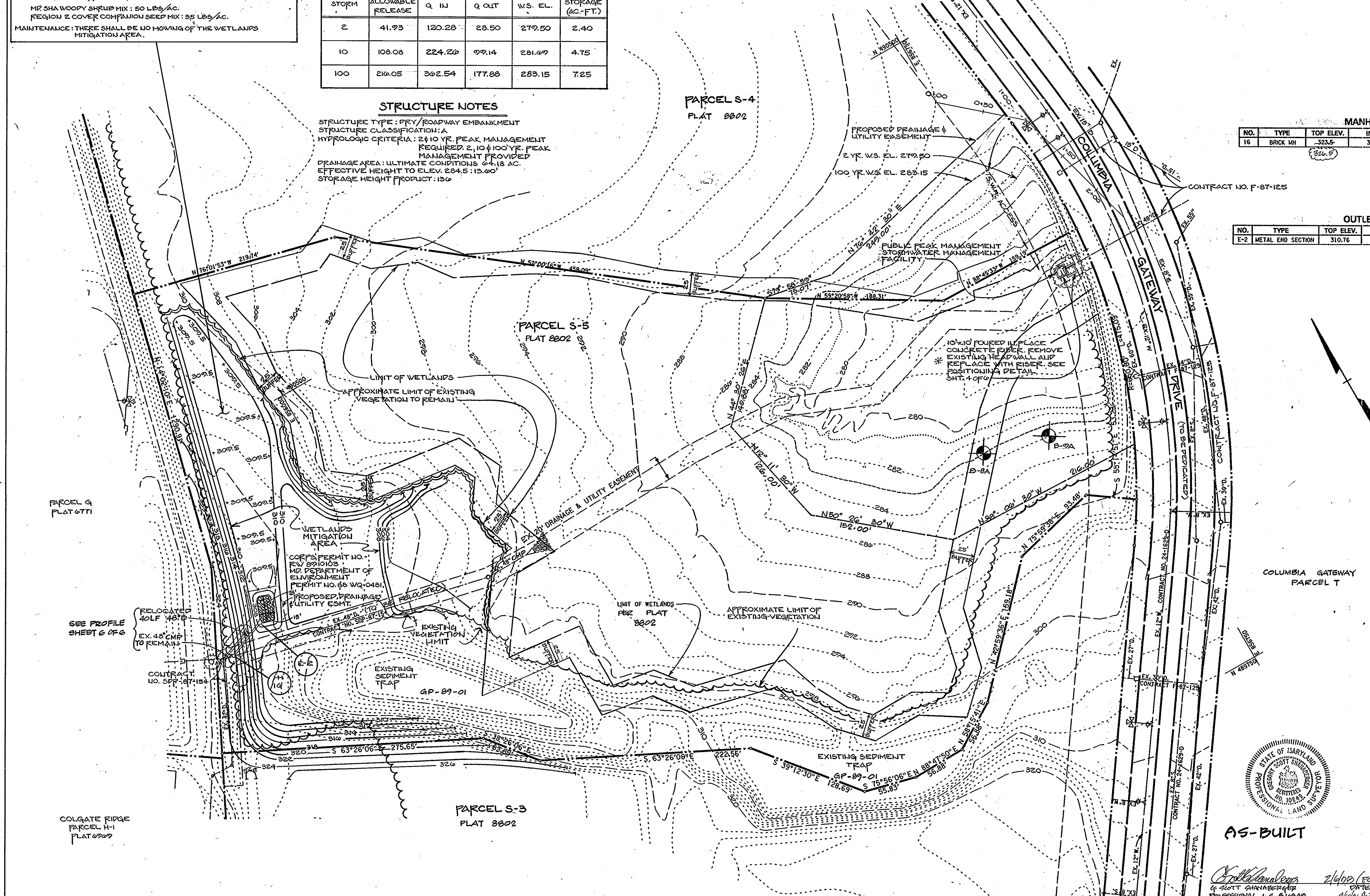
MAINTENANCE: THERE SHALL BE NO MOWING OF THE WETLANDS MITIGATION AREA.

PEAK MANAGEMENT FACILITY

STORM	ALLOWABLE RELEASE	Q IN	Q OUT	W.S. EL.	STORAGE (AC.-FT.)
2	41.93	120.28	28.50	279.50	2.40
10	108.08	224.26	99.14	281.69	4.75
100	216.05	362.54	177.88	283.15	7.25

STRUCTURE NOTES

STRUCTURE TYPE: DRY/ROADWAY EMBANKMENT
STRUCTURE CLASSIFICATION: A
HYDROLOGIC CRITERIA: 2 & 10 YR. PEAK MANAGEMENT REQUIRED. 2, 10 & 100 YR. PEAK MANAGEMENT PROVIDED
DRAINAGE AREA: ULTIMATE CONDITIONS 64.18 AC.
EFFECTIVE HEIGHT TO ELEV. 284.5: 13.60'
STORAGE HEIGHT PRODUCT: 136



MANHOLE SCHEDULE

NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	REMARKS
16	BRICK MH	~~323.5~~ 326.5	311.67	311.47	SEE HO. CO. STD. G-5.02

OUTLET SCHEDULE

NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	REMARKS
E-2	METAL END SECTION	310.76	306.76	~~306.00~~ 307.00	SEE HO. CO. STD. SD-5.61

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 9/5/90

CHIEF, BUREAU OF ENGINEERING — DATE 9-13-90

CHIEF, LAND DEVELOPMENT DIVISION MK — DATE 9/12/90

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE 10/3/9.

Date	No.	Revision Description

COLUMBIA GATEWAY

PARCEL S-3 / S-4 & S5

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY, COLUMBIA, MD 21043

DAFT McCUNE WALKER, INC.
LAND PLANNING CONSULTANTS
LANDSCAPE ARCHITECTS
ENGINEERS SURVEYORS
200 EAST PENNSYLVANIA AVENUE
TOWSON, MD. 21204
TELEPHONE: 301-296-3333

TITLE FINAL CONSTRUCTION PLAN
STORMWATER MANAGEMENT PLAN

SUBDIVISION NAME	SECT./AREA	LOT/PARCEL *
COLUMBIA GATEWAY	N/A	S-3/S-5

PLAT* OR L/F	BLOCK*	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
8802-8805		M-1	43	6	6065.02

WATER CODE — SEWER CODE

ADDRESS CHART

LOT NUMBER	STREET ADDRESS

Des By AJD	Scale 1" = 50'	Proj. No. 88036
Drn By REZ/JMS	Date 8-29-89	
Chk By JWR/AJD	Approved	2 OF 6

F-90-92

TBS

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.

US SOIL CONSERVATION SERVICE — DATE 8/21/90

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

APPROVED: HOWARD SOIL CONSERVATION DISTRICT — DATE 8/21/90

PLAN NUMBER ______

DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPT. OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

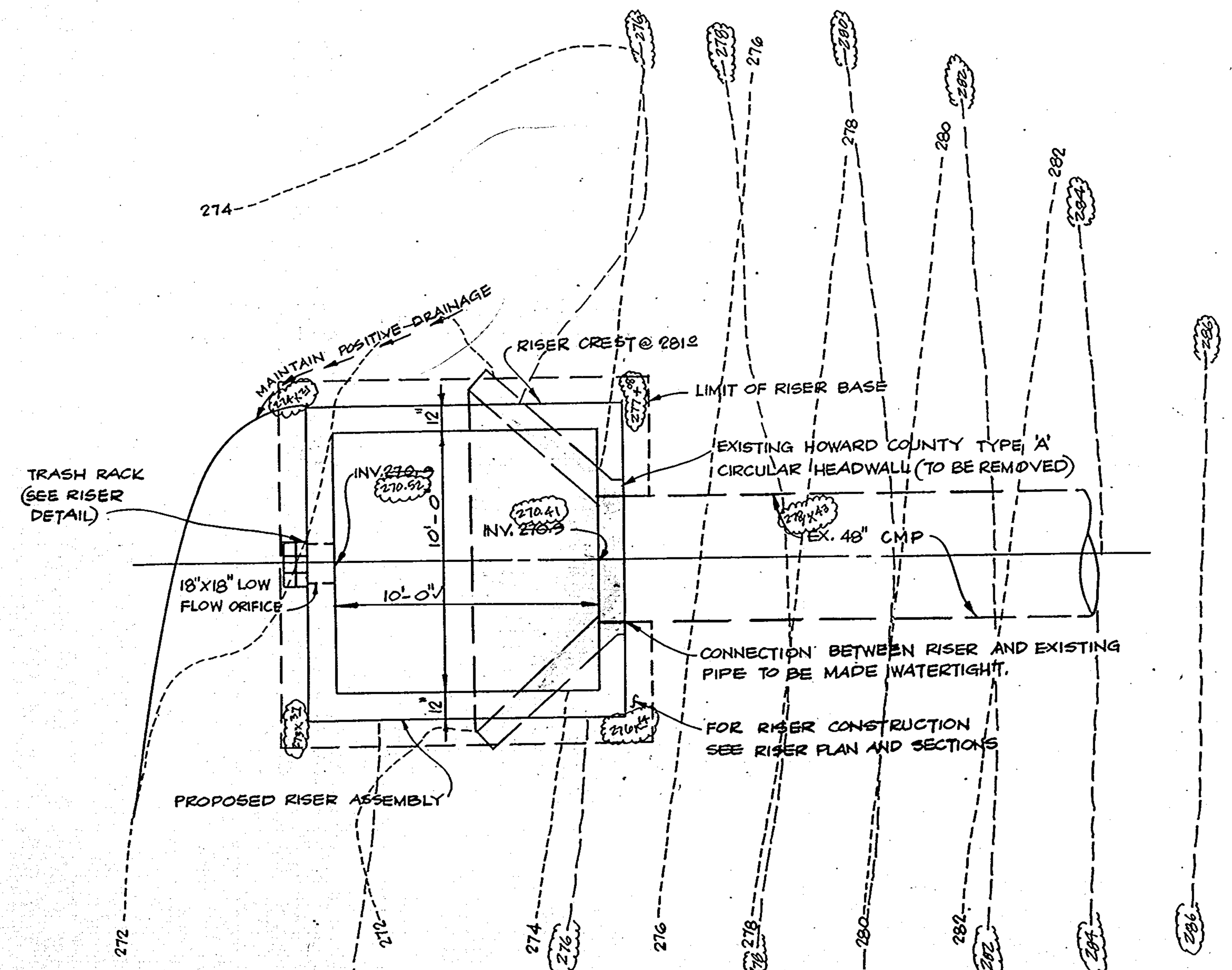
DEVELOPER: ______ DATE: 8/7/90

ENGINEER'S CERTIFICATE:

"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 SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

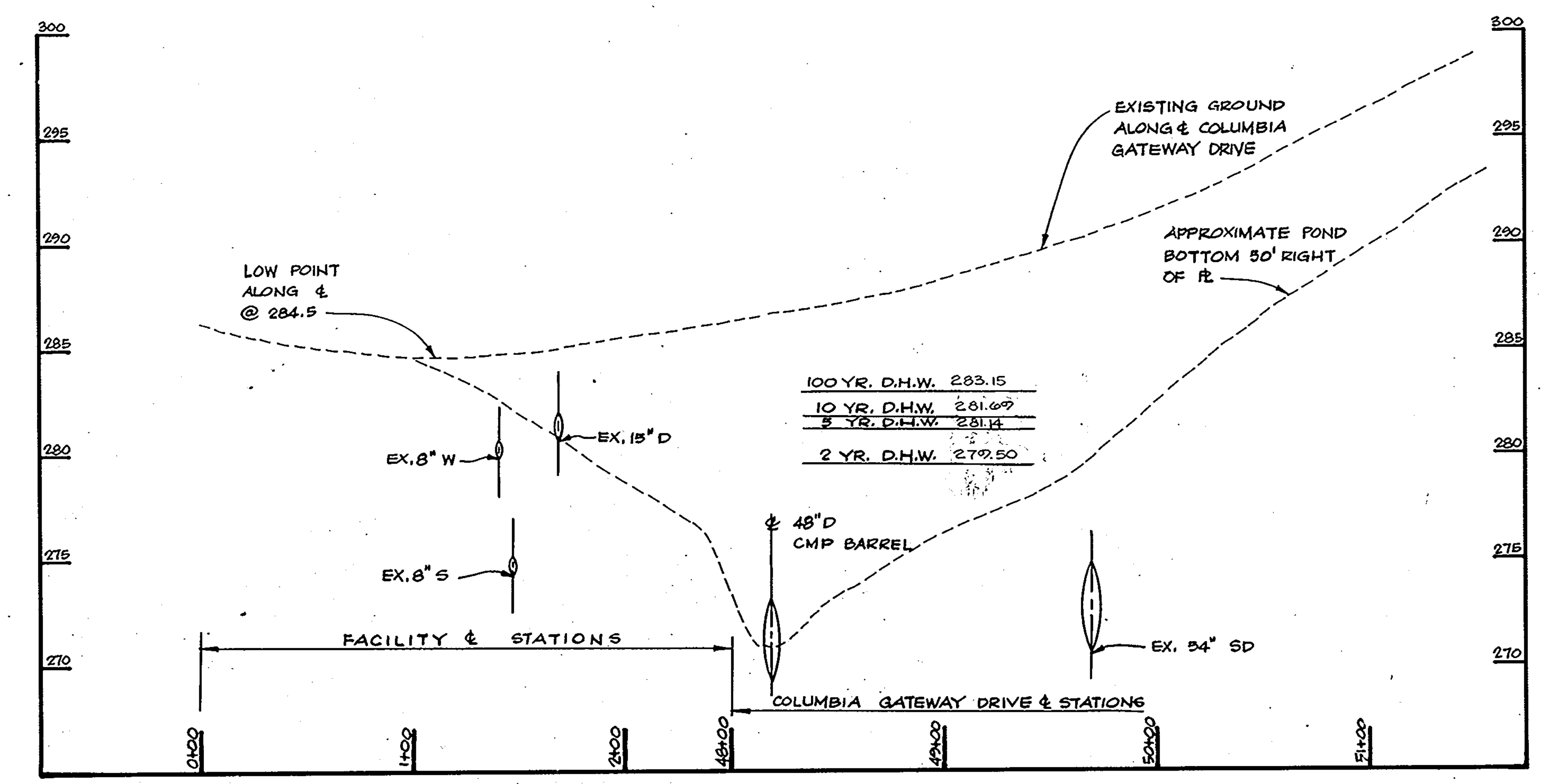
ENGINEER ______ 10551 REG. NO. — 9/29/89 DATE

1158



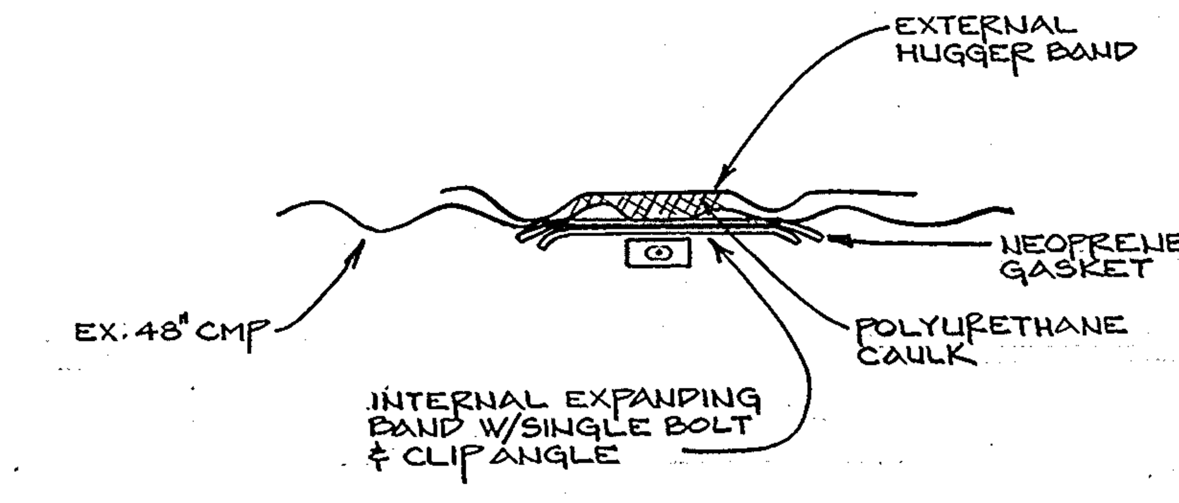
RISER POSITIONING DETAIL

SCALE: 1"= 4'



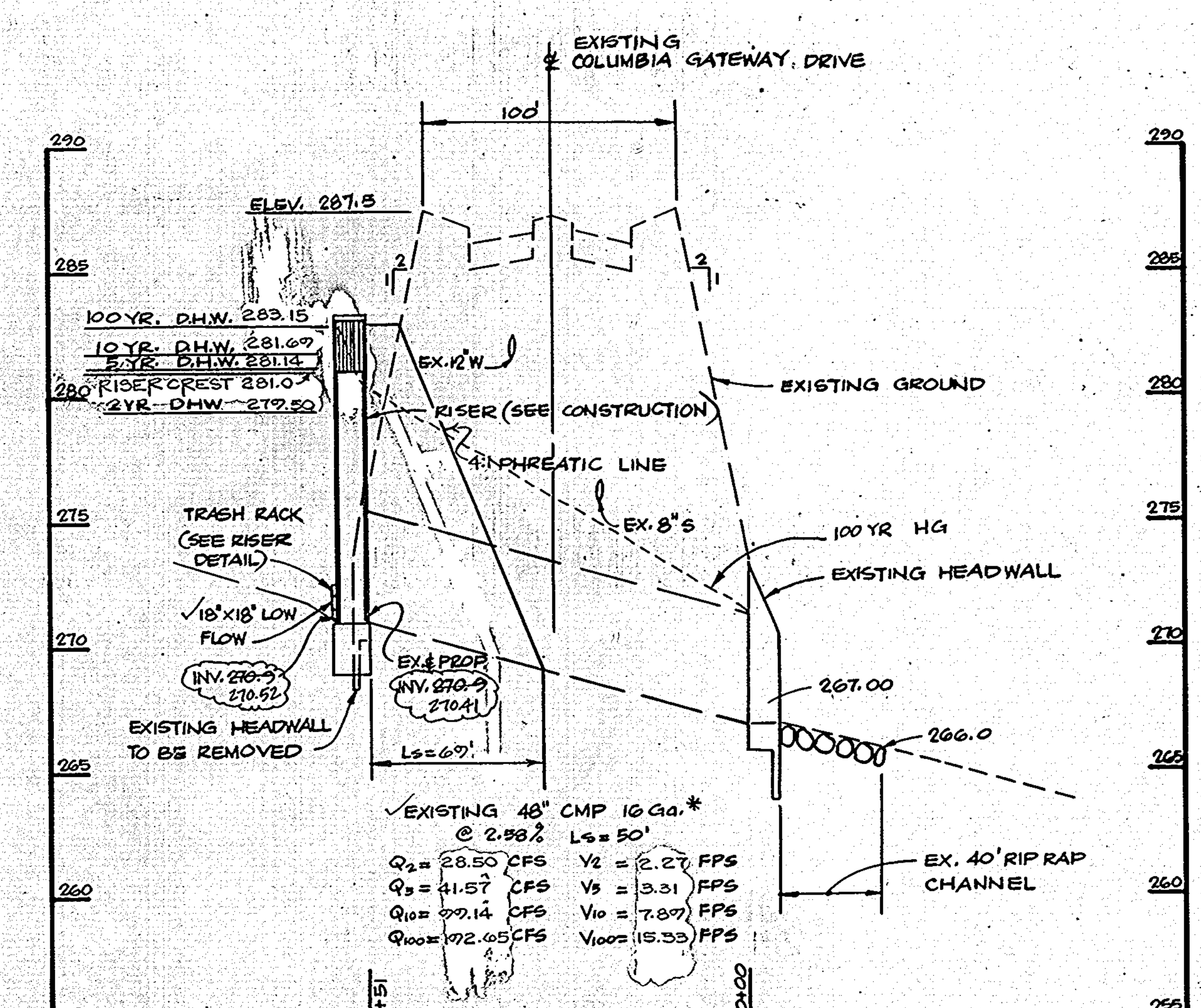
SECTION ALONG ℄ OF EMBANKMENT

SCALE: HOR. 1"= 50'
VERT. 1" = 5'



WATERPROOFING DETAIL FOR EXISTING 48" CMP

NOT TO SCALE



PROFILE PRINCIPLE SPILLWAY

SCALE: HOR. 1"= 50'
VERT. 1" = 5'

*CONTRACTOR TO CAULK ALL JOINTS WITH MOISTURE CURED POLYURETHANE CAULK. THEN APPLY 4" WIDE FLAT NEOPRENE GASKETS AND 10 GUAGE, 2¼" WIDE INTERNAL EXPANDING BANDS TO ALL PIPE JOINTS.

CONSTRUCTION SPECIFICATIONS

1. GENERAL
All stormwater management facilities shall be constructed in accordance with the Howard County Design Manual (Vol. I revised 12/1988) and the Howard County "Standard Specifications and Details for Construction (1988)" and the S.C.S. Maryland "Standard and Specifications for Ponds".

2. SITE PREPARATION
Areas under the embankment, structural works and inlet and outlet channels and spillway shall be cleared, grubbed abd topsoil stripped. All trees, debris, vegetation, roots, or other objectionable or organic material shall be removed. Areas to be covered by the pond will be cleared of all trees, brush, logs, fences, rubbish, and other objectionable material. Trees, brush, and stumps shall be cut level with the ground surface. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and outside of the 100 year flood plain limit as directed by the owner.

3. EARTH FILL
MATERIAL. The fill material shall be taken from an approved borrow area. All material shall be free from roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials. For cutoff trenches and dam cores the material used shall conform to the Unified Soil Classification SC or CL.

PLACEMENT. All areas on which fill is to be placed shall be scarified prior to placement of fill. Soils so scarified, or which have been disturbed by grubbing and stripping operation, shall be compacted to undisturbed soil. below by discing, leveling, rolling and compacting at the moisture content and to the density specified below for compacted embankments. Where fills are made on hillsides or slopes, the slope of the original ground upon which the fill is to be placed shall be plowed or scarified deeply, or where the slope ratio of the original ground is steeper than 5 horizonal on 1 vertical, the bank shall be stepped or benched, when considered necessary by the Engineer, to permit placement of the fill in horizontal layers. The final decision as to the suitability of the exposed soil shall be made by the Soils Engineer at the time of construction. Fill materials shall be placed in 8 inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill.

Each layer shall be spread uniformly and evenly and shall be thoroughly blade mixed during the spreading to insure uniformity of materials in each layer. The most porous borrow material shall be placed in the downstream portions of 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 equipment and compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. All compaction is to be 95 percent of the maximum density as determined by A.A.S.H.T.O. Specification T-99 (Standard Proctor) and is to be certified for each layer by the Soils Engineers at the time of construction. The moisture content of the fill shall be as required in order to attain the degree of compaction specified. The filling operation shall be continued as specified above until the fill has been brought to the constructed top elevation shown on the plans. The fill shall be constructed in such a manner that the surface will be sloped to drain at all times, and all fill shall be deposited to prevent excessive moisture accumulation from rainwater. When the work is interrupted by rain, filling shall not be resumed until tests indicate that the moisture content and density of the top 6 inches of fill conform to the above specification requirements. All fill placed around CMP barrels shall be compacted using hand compaction equipment when within 4 feet of the pipes. DAM CORE A dam core shall be constructed parallel to the centerline of the embankment where shown on the plans. The top of the core shall be a minimum of 4 feet in width. The side slopes shall be 1 to 1 or flatter.

CUTOFF TRENCH A cutoff trench shall be excavated parallel to the center line 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 4 feet (minimum) below the barrel pipe and or existing ground. The side slopes of the trench shall be 1 to 1 or flatter.

4. STRUCTURAL BACKFILL
Backfill material 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 compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipes. 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 or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

5. PIPE CONDUITS
MATERIALS (CORRUGATED STEEL PIPE). This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of A.A.S.H.T.O. specifications M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Coated CMP shall have a minimum coating thickness of 10 mil on both sides of pipe and shall meet requirements of A.A.S.H.T.O. M-245 and M-246.
CONNECTIONS. All connections with pipes must be completely watertight. The drain pipe or barrel connections to the riser shall be welded all around. Watertight coupling bands or flanges shall be used at all joints. 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. For a prefabricated barrel and riser structure, the angle of the barrel at the barrel and riser connection must reflect the slope of the barrel.
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 materials shall be removed and replaced with suitable earth material, compacted to provide adequate support.
LAYING PIPE. The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
BACKFILLING. Backfill shall conform to structural backfill as shown above.
OTHER DETAILS. (Anti-seep collars, valves, etc.) shall be as shown on the drawings.
MATERIALS (REINFORCED CONCRETE PIPE). Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed A.S.T.M. Specification C-361. An approved equivalent is A.W.W.A. Specification C-301.
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 diameter with a minimum thickness of 3 inches or as shown on the plans.
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 on 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.
BACKFILLING. Shall conform to structural backfill as shown above.
CONNECTIONS. All connections (to anti-seep collars, riser, etc.) shall be watertight.

OTHER DETAILS (Anti-seep collars, valves, etc.) shall be as shown on the drawings.

6. CONCRETE
Concrete shall meet minimum requirements set forth in Maryland State Highway Administration Standard Specifications for Construction and Materials Section 918 (Portland Cement Concrete Mixtures), Mix No. 3. Reinforcing steel shall be A.S.T.M. A-615, Grade 60. Rebars shall have 3" cover (minimum) and a minimum overlap of 30 bar diameters, except as noted on the plans. Steel angles and anchor bars shall be A.S.T.M. A-36.

7. STABILIZATION
All borrow and spoil areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, berms, borrow and spoil areas shall be stabilized by seeding and applying straw mulch in accordance with "Standards and Specifications for Soil Erosion and Sediment Control in Urbanizing Areas", or as shown elsewhere in these specifications, immediately after finished grading.

8. EROSION CONTROL FACILITIES
All disturbed areas shall be controlled by an Erosion and Sediment Control Plan which has been approved by the Howard County Soil Conservation District (H.C.S.C.D.).

9. SEEDING
Seeding, fertilizing and mulching shall be as follows:

Seed Mix: 90% Kentucky 31 Tall Fescue
10% Kenblue
Applied at a rate of 300 lbs. per acre.
OR
70% Kentucky 31 Tall Fescue
30% Chemung Crownvetch, Inoculated
Applied at a rate of 55 lbs. per acre.

Optimum seeding dates: March 1 to April 30.

Lime: 2 tons/acre Dolomitic Limestone.

Fertilizer: 600 lbs./acre 10-10-10 fertilizer before seeding, 400 lbs./acre 30-0-0 ureaform fertilizer at time of seeding.

Mulch: Straw at 4,000 lbs. per acre.

Anchoring: Mulching tool or emulsified asphalt binder at a rate of 8 gal. per 1,000 square feet.

10. FILTER CLOTH
All filter cloth shall conform to Mirafi 140N, Dupont TYPAR 3341 or 3401, SUPAC 5P or approved equal.

11. RIPRAP
All riprap shall conform to Howard County Specifications.

12. GABIONS
All gabions shall be P.V.C. coated Class IV, wire baskets.

13. FENCE
Fencing shall be constructed in accordance with State Highway Administration Details 690.01 and 690.02. The specifications for a 6'-0" fence shall be used, substituting 42" fabric and 6'-8" line posts. The gate shall be constructed in accordance with S.H.A. Standard Detail 692.01 with 42" fabric. The fabric used for the fence and gate shall conform to A.A.S.H.T.O. Designation M181-74.

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

15. 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 and drainage channels necessary to protect the areas to be occupied by the permanent 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 construction 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.

The removal of water from the required excavation and the foundations shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of the required excavations and will allow satisfactory performance of all construction operations.

During the placing and compacting of material in required excavations, the water level at the locations being filled shall be maintained below the bottom of the excavations at such locations, which may require draining the water to sumps from which the water shall be pumped.

16. POLYURETHANE SEALANT & INTERNAL EXPANSION BANDS
Polyurethane sealant to be either PRC Rapidseal-365 Sealant or RMB Sikaflex 221. Pipe joints are to be thoroughly cleaned of all dirt, debris, and other foreign matter. Pipe to be cleaned with stiff brush, soap and water. Soap residue to be removed. Sealant is then pumped with a caulking gun into void space between pipe and external hugger band. After caulking apply 4" wide flat neoprene gasket and 10 guage, 2 1/4" wide internal expanding band, with single bolt and clip angle.

AS-BUILT

STATE OF MARYLAND · GREGORY SCOTT SHANABERGER · REGISTERED NO. 10849 · PROFESSIONAL LAND SURVEYOR

G. SCOTT SHANABERGER DATE 2/6/98
PROFESSIONAL L.S. #10849
(FOR 9/10/91 AS-BUILT)
SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD
SUITES 106 & 107
ELLICOTT CITY, MARYLAND 21043

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

U.S. SOIL CONSERVATION SERVICE DATE 8/21/90

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

APPROVED: HOWARD SOIL CONSERVATION DISTRICT DATE

PLAN NUMBER

DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE ACERTIFICATE OF ATTENDANCE AT A DEPT. OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

DEVELOPER: DATE: 8/7/90

ENGINEER'S CERTIFICATE:

"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 SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

ENGINEER 10551 REG. NO. 7/24/89 DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS DATE 9/5/90

CHIEF, BUREAU OF ENGINEERING DATE 9.13.90

CHIEF, LAND DEVELOPMENT DIVISION DATE 9/14/90

APPROVED: HOWARD COUNTY. DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

Date	No.	Revision Description

COLUMBIA GATEWAY

PARCEL S-3, S-4, & S-5
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER/DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21043

DAFT McCUNE WALKER, INC.
LAND PLANNING CONSULTANTS
LANDSCAPE ARCHITECTS
ENGINEERS SURVEYORS
200 EAST PENNSYLVANIA AVENUE
TOWSON, MD. 21204
TELEPHONE: 301-296-3333

TITLE FINAL CONSTRUCTION PLAN
PEAK STORMWATER MANAGEMENT FACILITY DETAILS

SUBDIVISION NAME			SECT./AREA	LOT/PARCEL *	
COLUMBIA GATEWAY			N/A	S-3/S-5	
PLAT* OR L/F	BLOCK*	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
8802-8805		M-1	43	6	6065.02
WATER CODE			SEWER CODE		

ADDRESS CHART

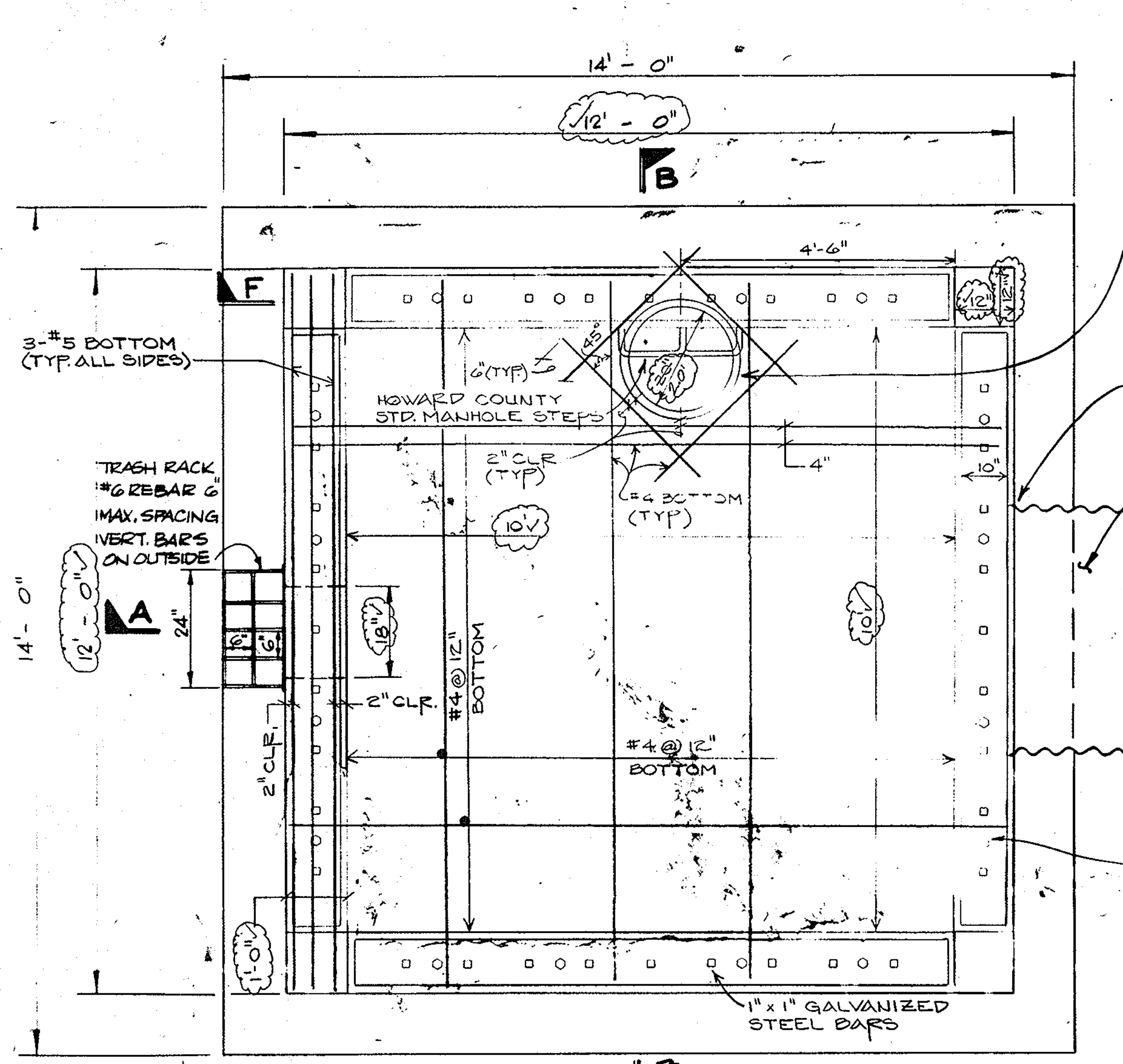
LOT NUMBER	STREET ADDRESS

STATE OF MARYLAND · REGISTERED · PROFESSIONAL ENGINEER · No. 10551

Des By AJD	Scale AS SHOWN	Proj. No. 88036
Drn By DBS/JMS	Date 8/29/89	
Chk By JWR/AJD	Approved	3 OF 6

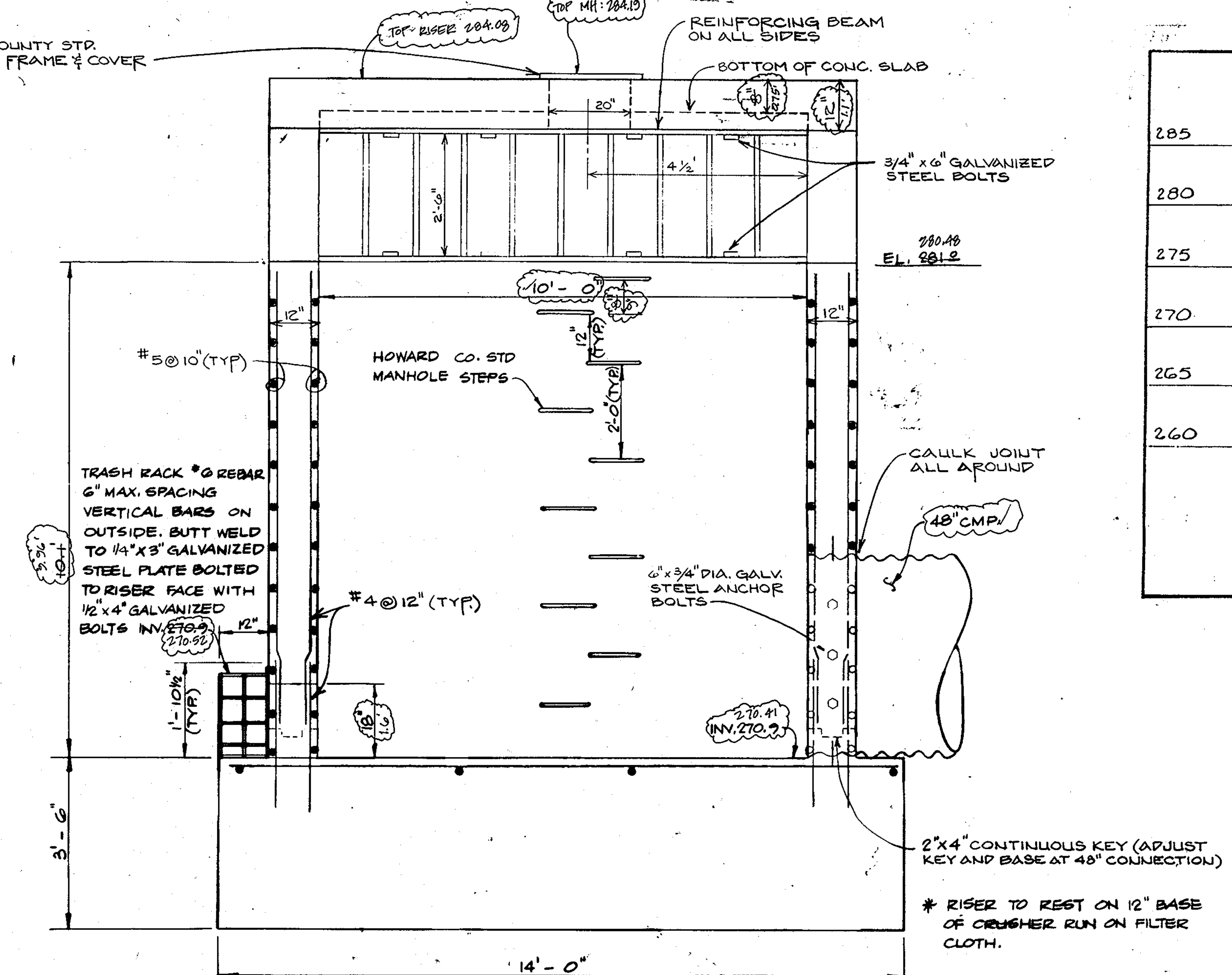
F-90-92

1158



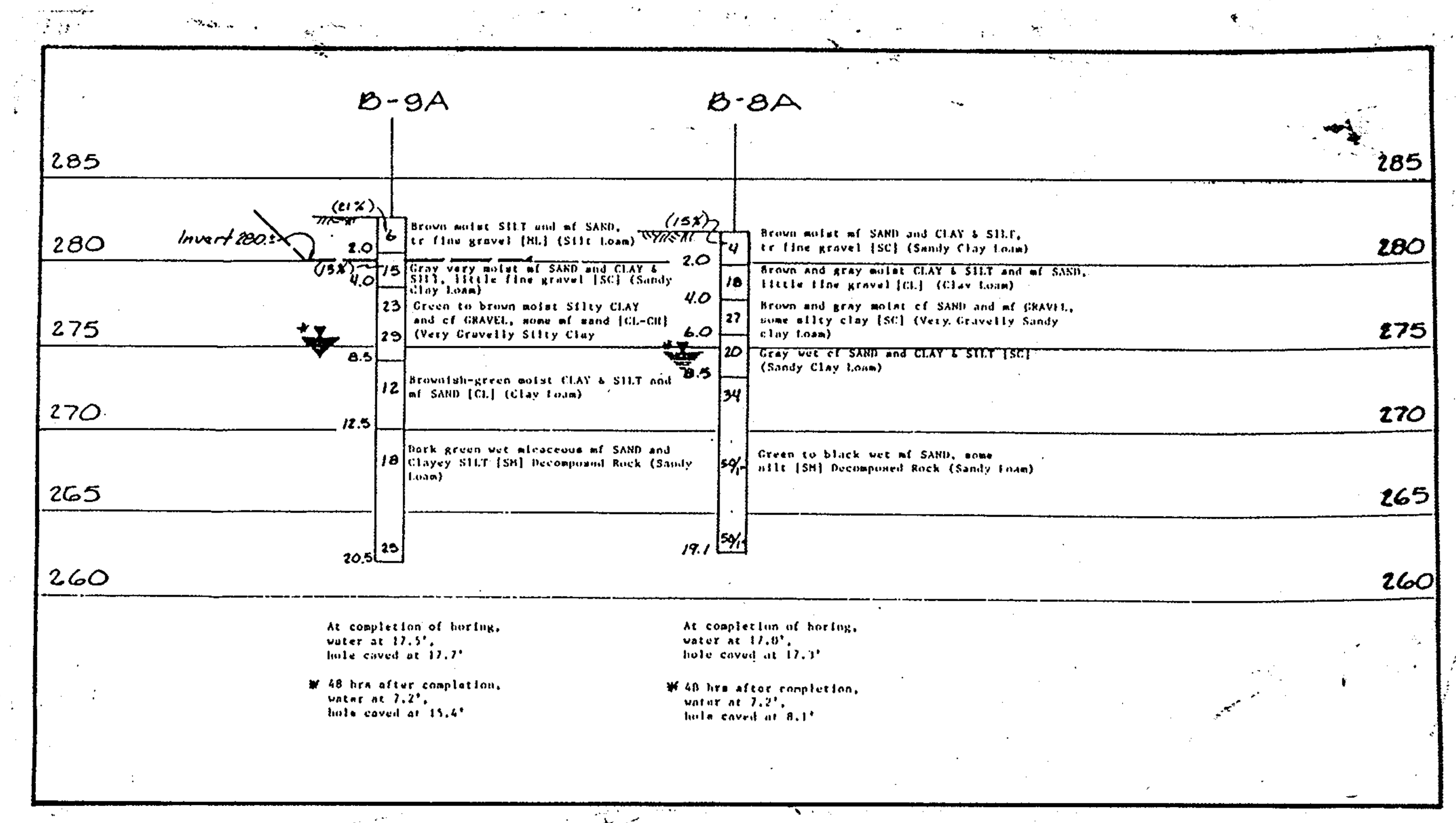
PEAK MANAGEMENT FACILITY CONTROL STRUCTURE

SCALE: 1" = 2'



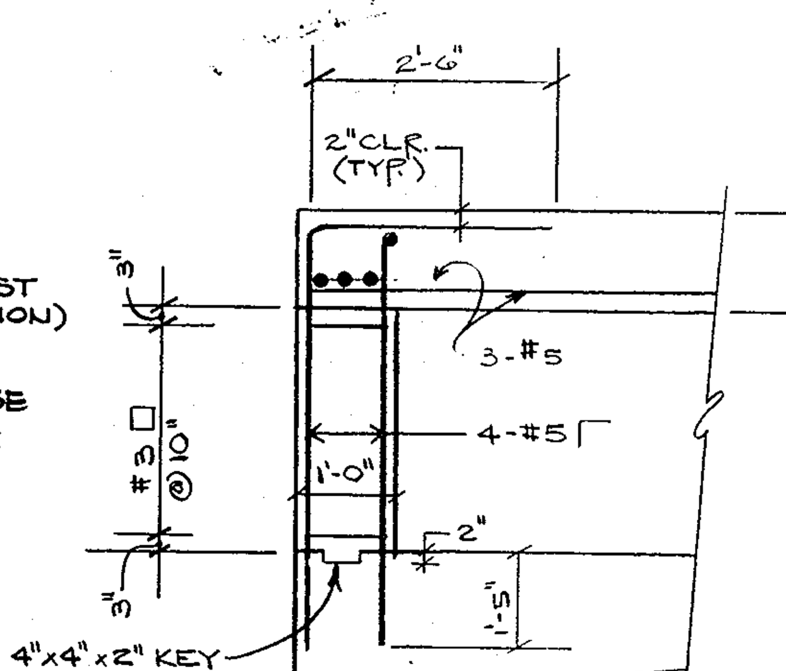
SECTION A-A

SCALE: 1" = 2'



SOIL BORING DATA

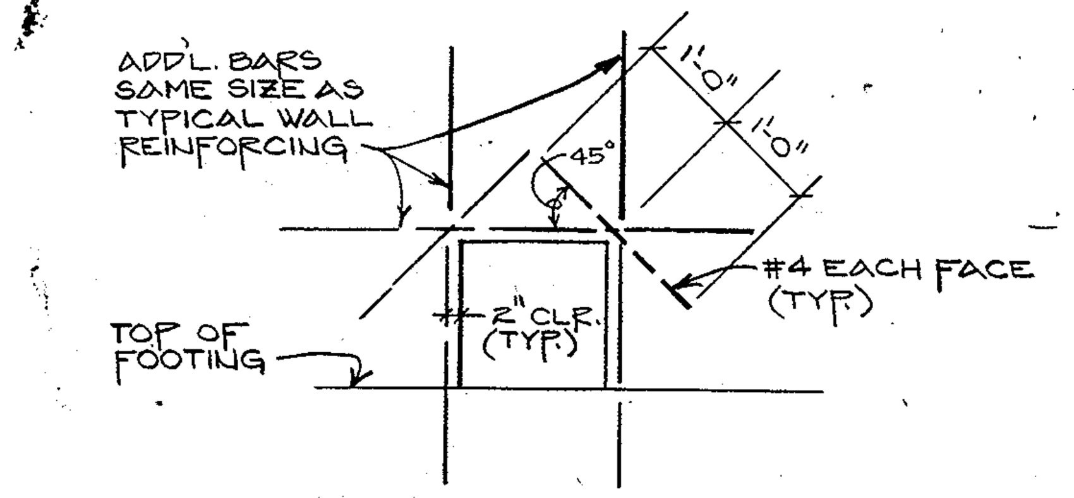
NOT TO SCALE



SECTION F

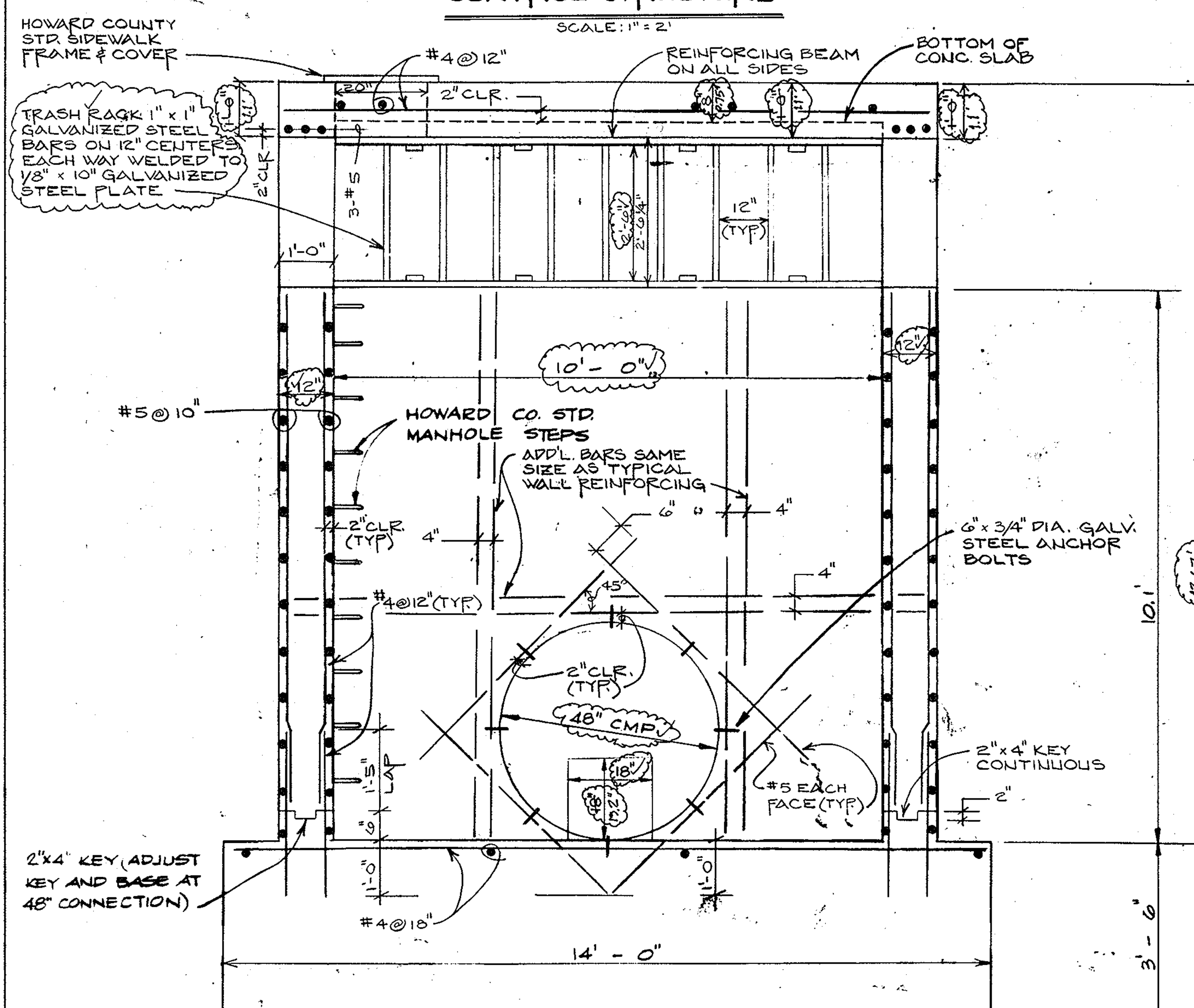
PEDESTAL REINFORCING

NO SCALE



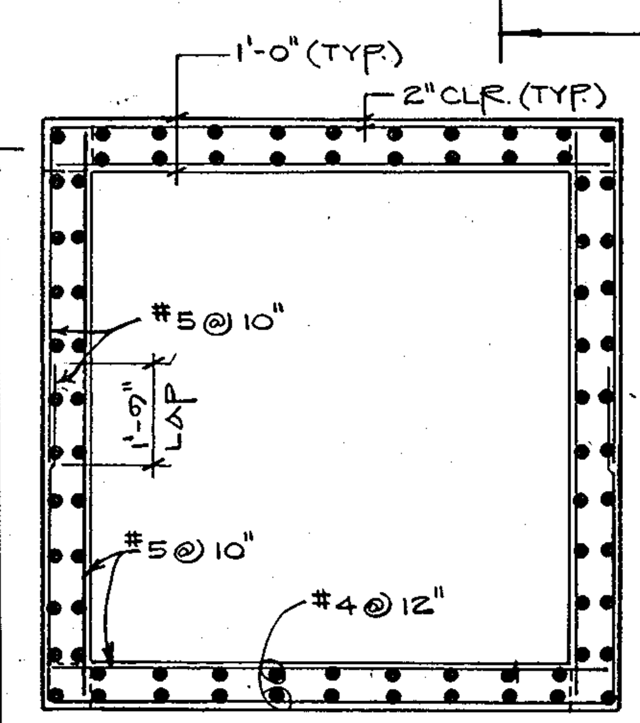
WALL ELEVATION AT LOW FLOW TRASH RACK

NO SCALE



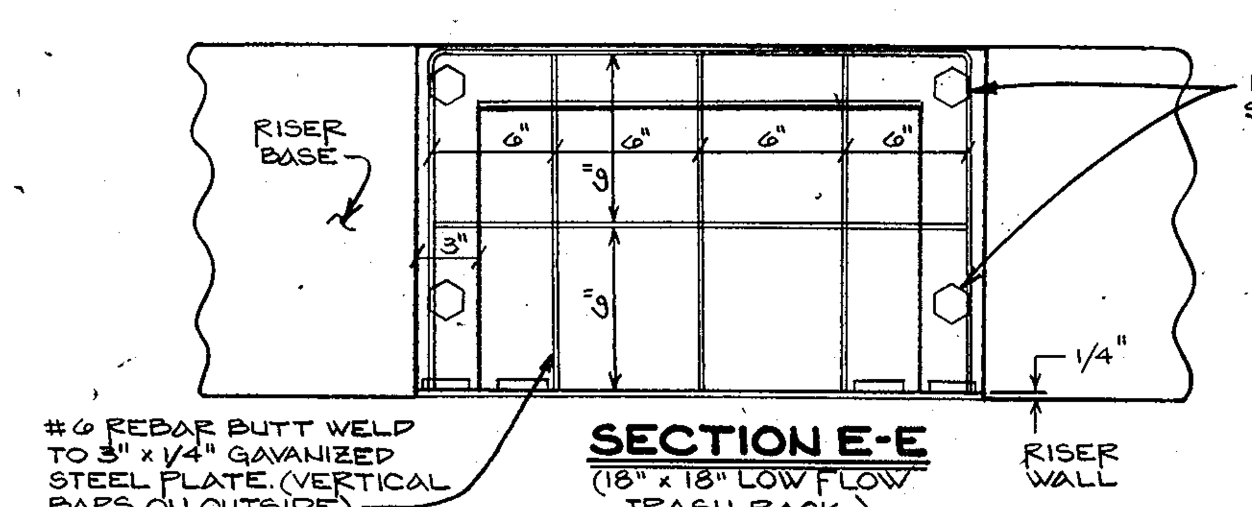
SECTION B-B

SCALE: 1" = 2'



PLAN SECTION

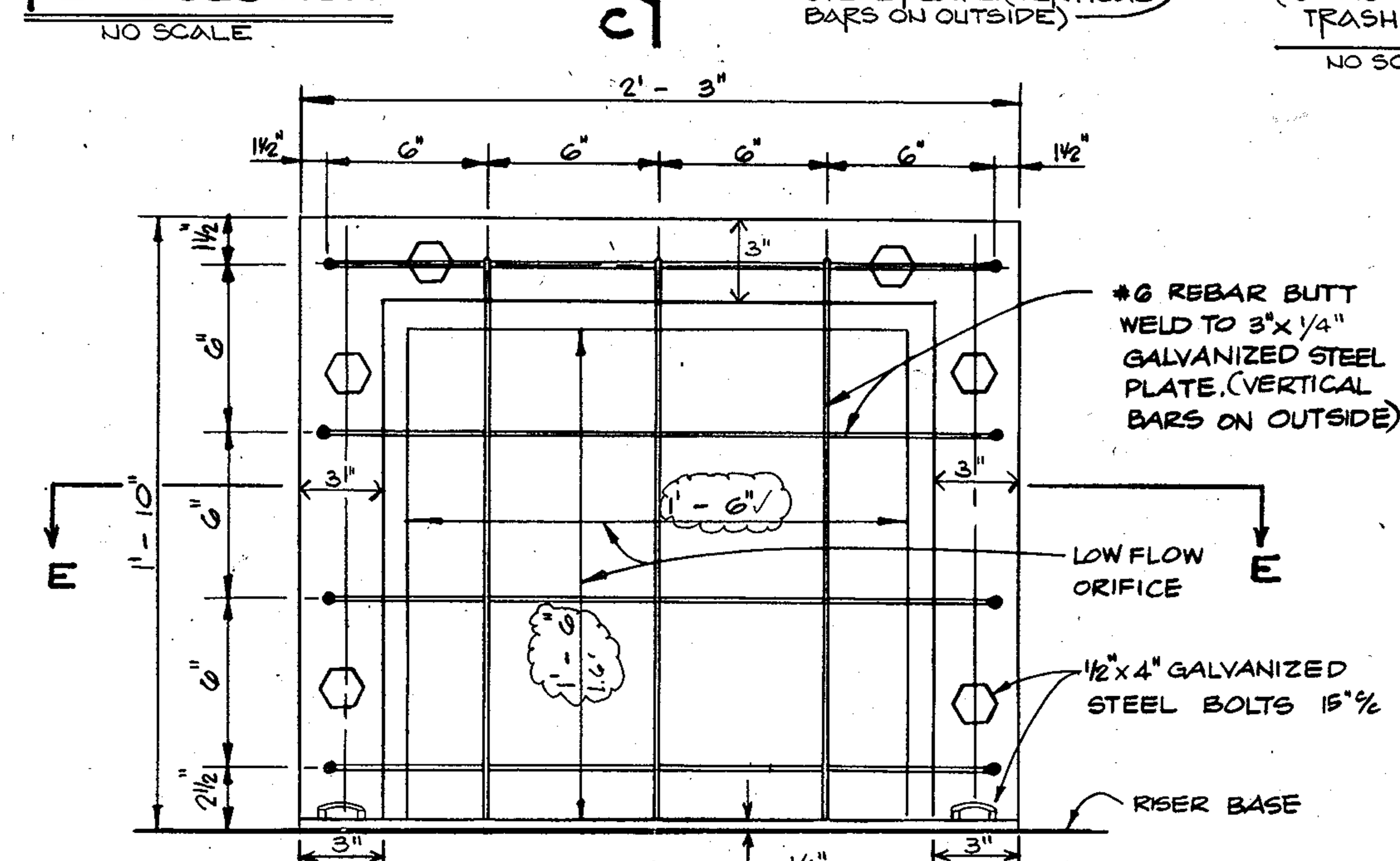
NO SCALE



SECTION E-E

(18" x 18" LOW FLOW TRASH RACK)

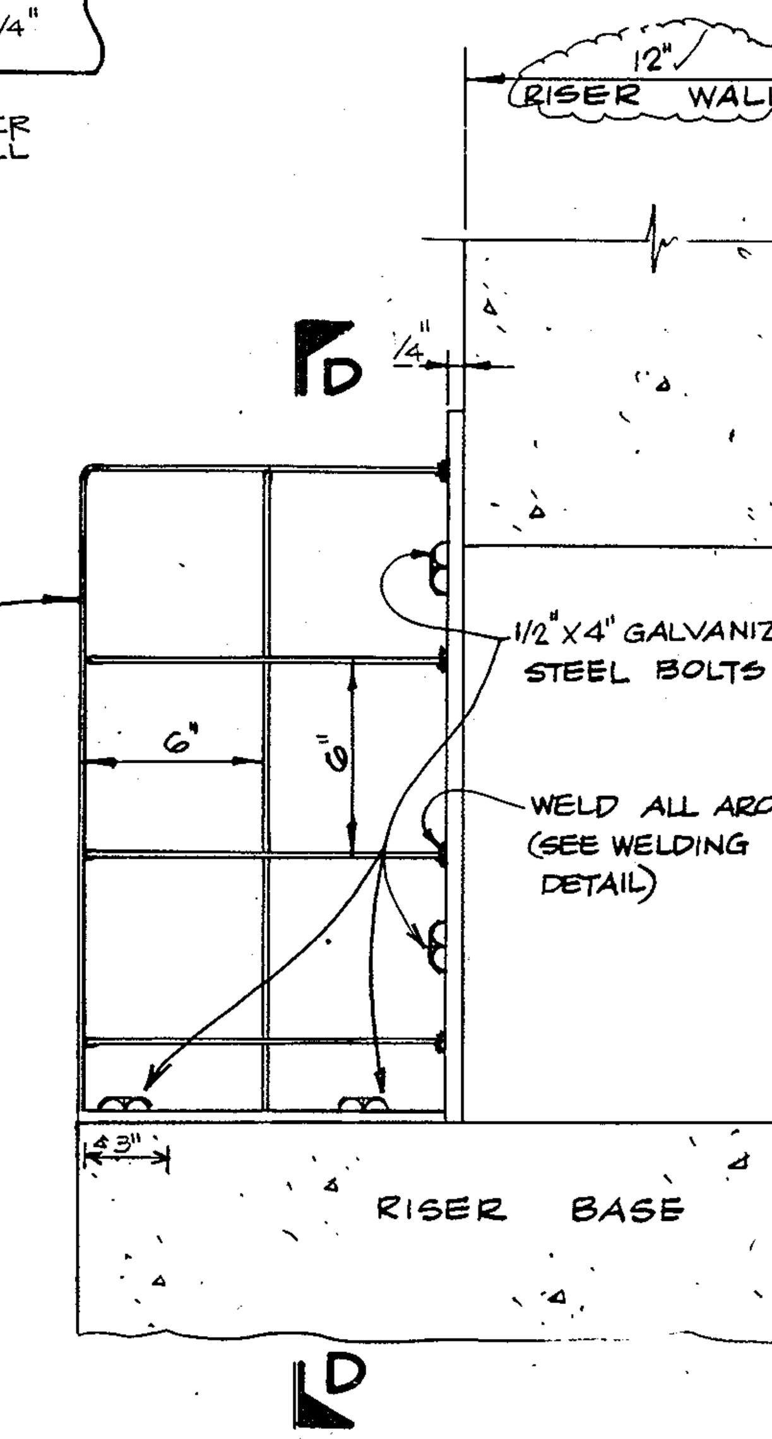
NO SCALE



SECTION D-D

(18" x 18" LOW FLOW TRASH RACK)

NO SCALE



SECTION C C

(18" x 18" LOW FLOW TRASH RACK)

NO SCALE

AS-BUILT

G. SCOTT SHANABERGER, PROFESSIONAL L.S. # 10849 — DATE 2/6/92 (Geotech As-Built)

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITES 106 & 107
ELLICOTT CITY, MD 21043

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

U.S. SOIL CONSERVATION SERVICE — DATE 8/21/90

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

APPROVED: HOWARD SOIL CONSERVATION DISTRICT — DATE 8/24/90

PLAN NUMBER ______

DEVELOPER'S CERTIFICATE:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE ACERTIFICATE OF ATTENDANCE AT A DEPT. OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

DEVELOPER: ______ DATE: 8/7/90

ENGINEER'S CERTIFICATE:

"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 SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

ENGINEER ______ REG. NO. 10551 DATE 8/8/90

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 9/5/90

CHIEF, BUREAU OF ENGINEERING — DATE

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/14/90

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE 10/19/9.

Date	No.	Revision Description

COLUMBIA GATEWAY

PARCEL S-3, S-4, & S-5
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER/DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21043

DAFT McCUNE WALKER, INC.
LAND PLANNING CONSULTANTS
LANDSCAPE ARCHITECTS
ENGINEERS SURVEYORS
200 EAST PENNSYLVANIA AVENUE
TOWSON, MD. 21204
TELEPHONE: 301-296-3333

TITLE: FINAL CONSTRUCTION PLAN
PEAK STORMWATER MANAGEMENT FACILITY DETAILS

SUBDIVISION NAME			SECT./AREA	LOT/PARCEL
COLUMBIA GATEWAY			N/A	S-3

PLAT OR L/F	BLOCK	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
8802-8805		M-1	43	6	6065.02

WATER CODE	SEWER CODE

ADDRESS CHART

LOT NUMBER	STREET ADDRESS

Des By AJD	Scale AS SHOWN	Proj. No. 88036
Drn By DBS/JMS	Date 8/23/89	
Chk By JWR/AJD	Approved	4 OF 6

F-90-92

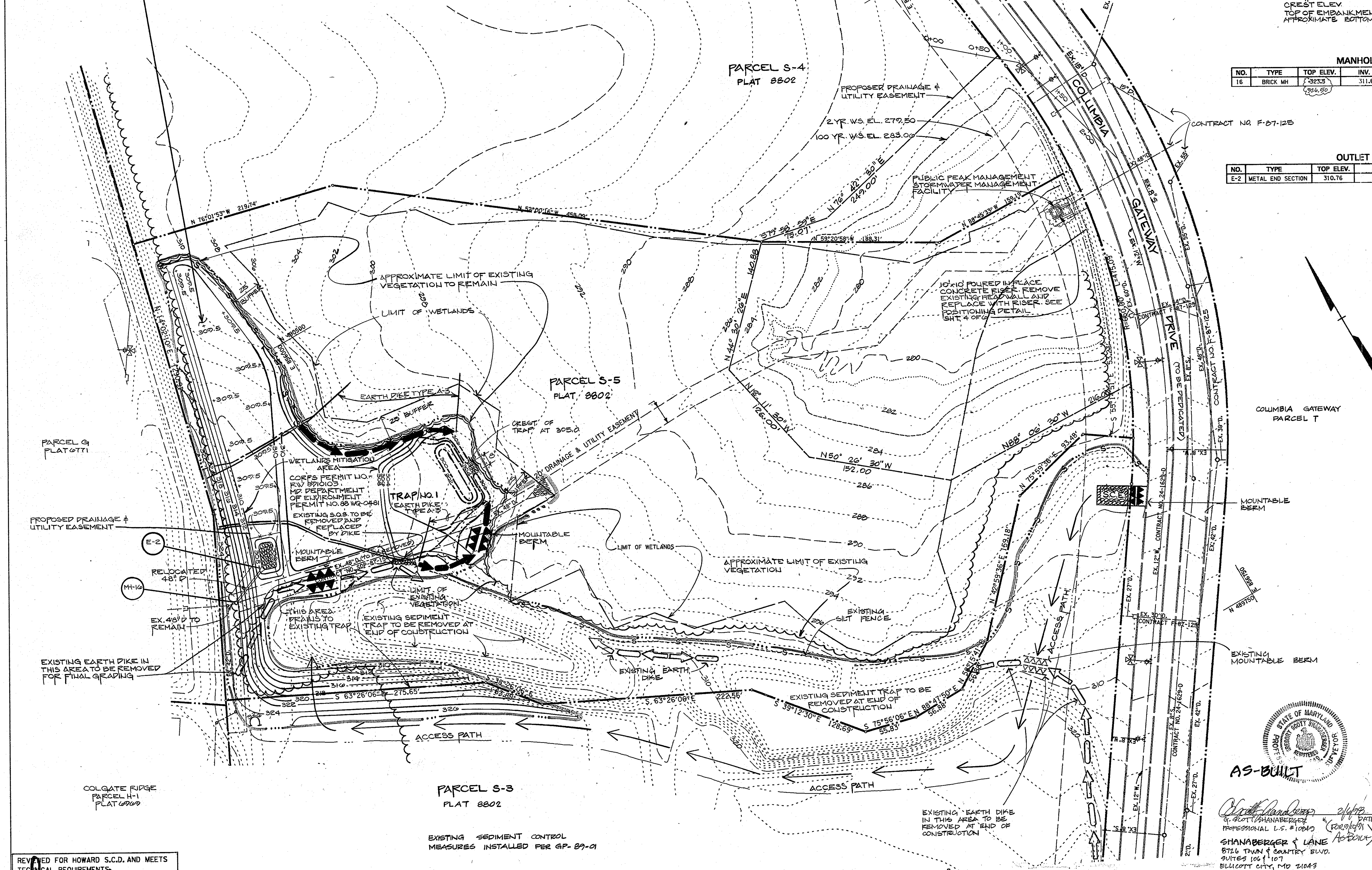
1158

NOTE: WETLANDS MITIGATION AREA STABILIZATION

THIS AREA IS TO BE STABILIZED IN ACCORDANCE WITH MD. SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, JANUARY 1982, SECTIONS 701-TURF ESTABLISHMENT AND 714-WOODY SHRUB SEEDING & MULCHING TO BE APPLIED AS FOLLOWS:

MD. SHA WOODY SHRUB MIX : 50 LBS/AC.
REGION 2 COVER COMPANION SEED MIX : 35 LBS/AC.

MAINTENANCE: THERE SHALL BE NO MOWING OF THE WETLANDS MITIGATION AREA.



EXISTING SEDIMENT CONTROL MEASURES INSTALLED PER GP-89-01

NOTE: ACCESS TO BE GAINED THROUGH PARCEL S-3

SEDIMENT TRAP SCHEDULE

TRAP NO.	1
TYPE	S.O.S.T.
DRAINAGE AREA	1.8 AC.
STORAGE REQUIRED	3240 CU. FT.
STORAGE PROVIDED	16728 CU. FT.
WEIR LENGTH	8'
BOTTOM ELEV.	300.0
C.O. ELEV.	302.5
EMBANKMENT HEIGHT	1.0'
EX. GROUND ELEV.	305.0
CREST ELEV.	305.0
TOP OF EMBANKMENT ELEV.	306.0
APPROXIMATE BOTTOM DIMENSIONS	60 X 10

MANHOLE SCHEDULE

NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	REMARKS
16	BRICK MH	~~323.5~~ 326.50	311.67	311.47	SEE HO. CO. STD. G-5.02

OUTLET SCHEDULE

NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	REMARKS
E-2	METAL END SECTION	310.76	306.76	~~306.00~~ 307.0	SEE HO. CO. STD. SD-5.61

SEDIMENT CONTROL LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING DRAINAGE AREA
- PROPOSED DRAINAGE AREA
- LIMIT OF DISTURBANCE
- LIMIT OF TEMPORARY STOCKPILE
- SILT FENCE
- EARTH DIKE
- STABILIZED CONSTRUCTION ENTRANCE
- MOUNTABLE BERM
- EXISTING SILT FENCE
- EXISTING EARTH DIKE
- INTERIM GRADING

AS-BUILT

G. Scott Shanaberger 2/6/98 DATE
PROFESSIONAL L.S. #10849 (FOR 9/10/91 AS BUILT)
SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITES 106 & 107
ELLICOTT CITY, MD 21043

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.
U.S. SOIL CONSERVATION SERVICE — DATE 8/21/90

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — DATE 8/21/90

PLAN NUMBER

CERTIFICATION BY THE ENGINEER:

"I CERTIFY THAT THAS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

#10551 — 9/29/89 DATE

CERTIFICATION BY THE DEVELOPER:

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

Gregory R. Klar — 8/7/90 DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Granville W. Wehland — CHIEF, BUREAU OF HIGHWAYS — 9/5/90 DATE
CHIEF, BUREAU OF ENGINEERING — 9-13-90 DATE
CHIEF, LAND DEVELOPMENT DIVISION — 9/12/90 DATE MK

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — 10/19/90 DATE

Date	No.	Revision Description

COLUMBIA GATEWAY

PARCEL S-3 / S-4 & S-5

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY, COLUMBIA, MD 21043

DAFT McCUNE WALKER, INC.
LAND PLANNING CONSULTANTS
LANDSCAPE ARCHITECTS
ENGINEERS SURVEYORS
200 EAST PENNSYLVANIA AVENUE
TOWSON, MD. 21204
TELEPHONE: 301-296-3333

TITLE — FINAL CONSTRUCTION PLAN
SEDIMENT CONTROL PLAN

SUBDIVISION NAME			SECT./AREA	LOT/PARCEL #	
COLUMBIA GATEWAY			N/A	S-3/S-5	
PLAT# OR L/F	BLOCK#	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
8802-8805		M-1	43	6	6065.02
WATER CODE			SEWER CODE		

ADDRESS CHART

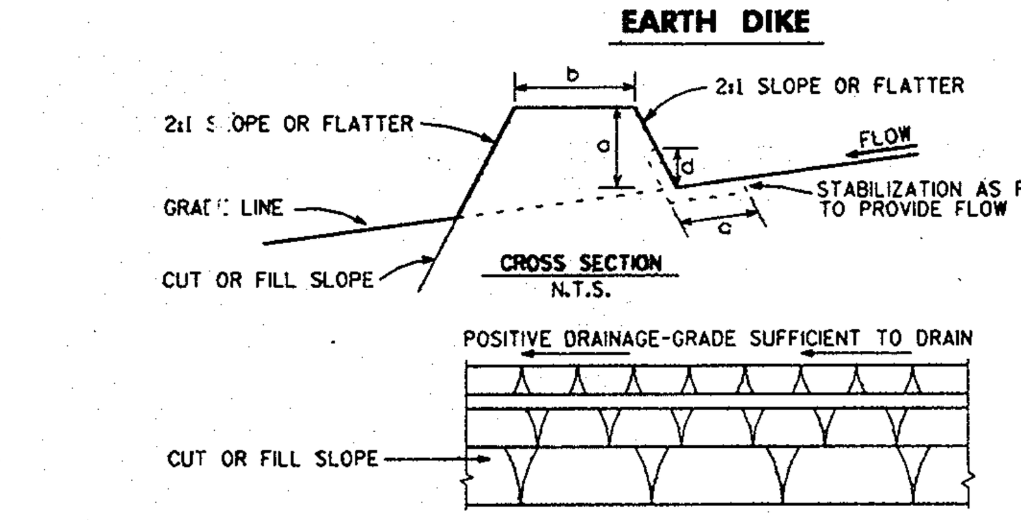
LOT NUMBER	STREET ADDRESS

Des By AJP	Scale 1" = 50'	Proj. No. 88036
Drn By REZ/JMS	Date 8-29-89	5 OF 6
Chk By JWR/AJD	Approved	

F-90-92

TBS

1158



	DIKE A (5ac. OR LESS)	DIKE B (5-10ac.)
A-DIKE HEIGHT	18"	36"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	8"	15"

STANDARD SYMBOL
A-2 / B-3

CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABLIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION, RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

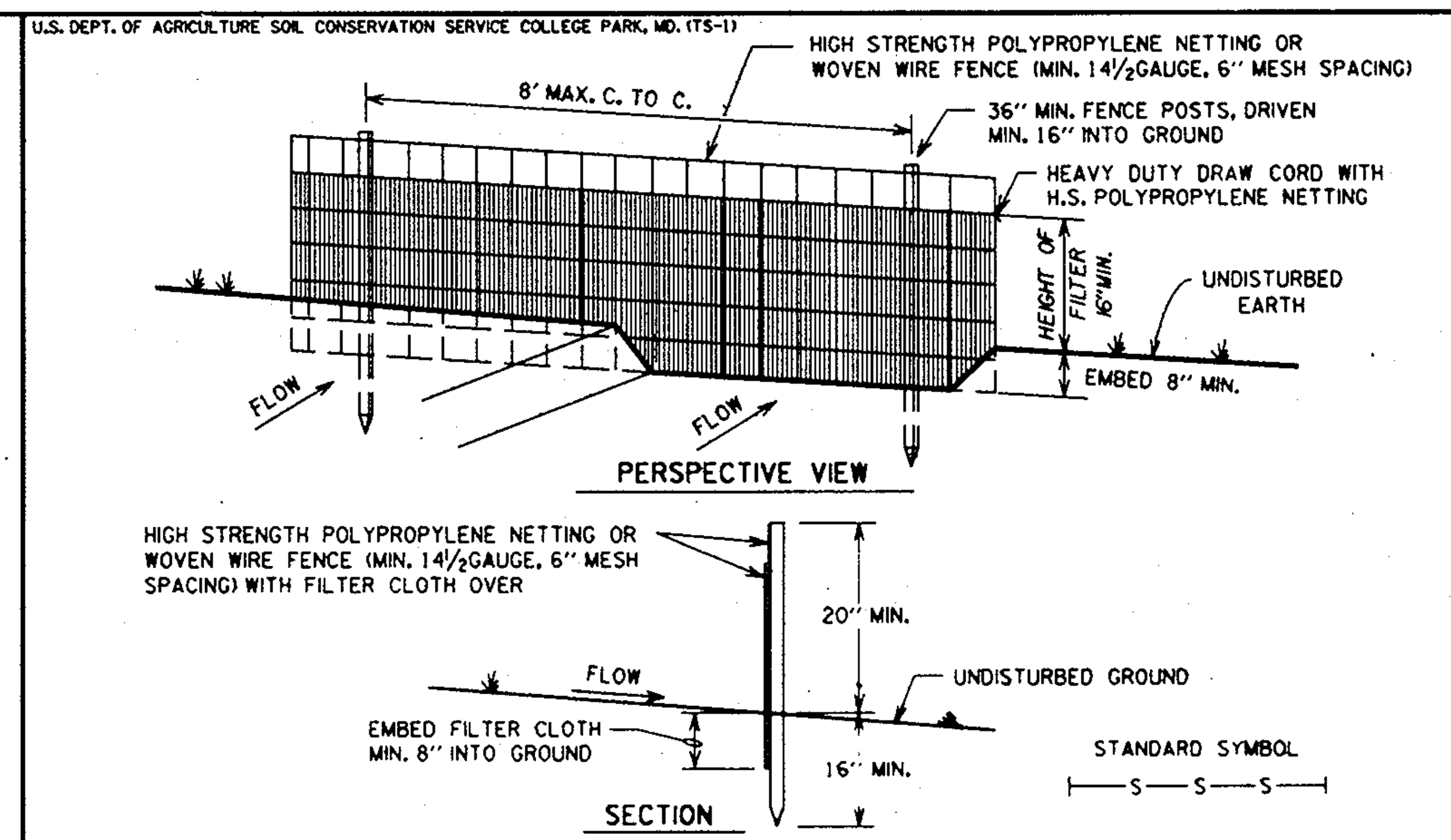
A. STONE TO BE 2" STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3" IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4"-8" IN A LAYER AT LEAST 8" THICKNESS AND PRESSED INTO THE SOIL
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (ED-1)

EARTH DIKE

U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (TS-1)



STANDARD SYMBOL
S—S—S

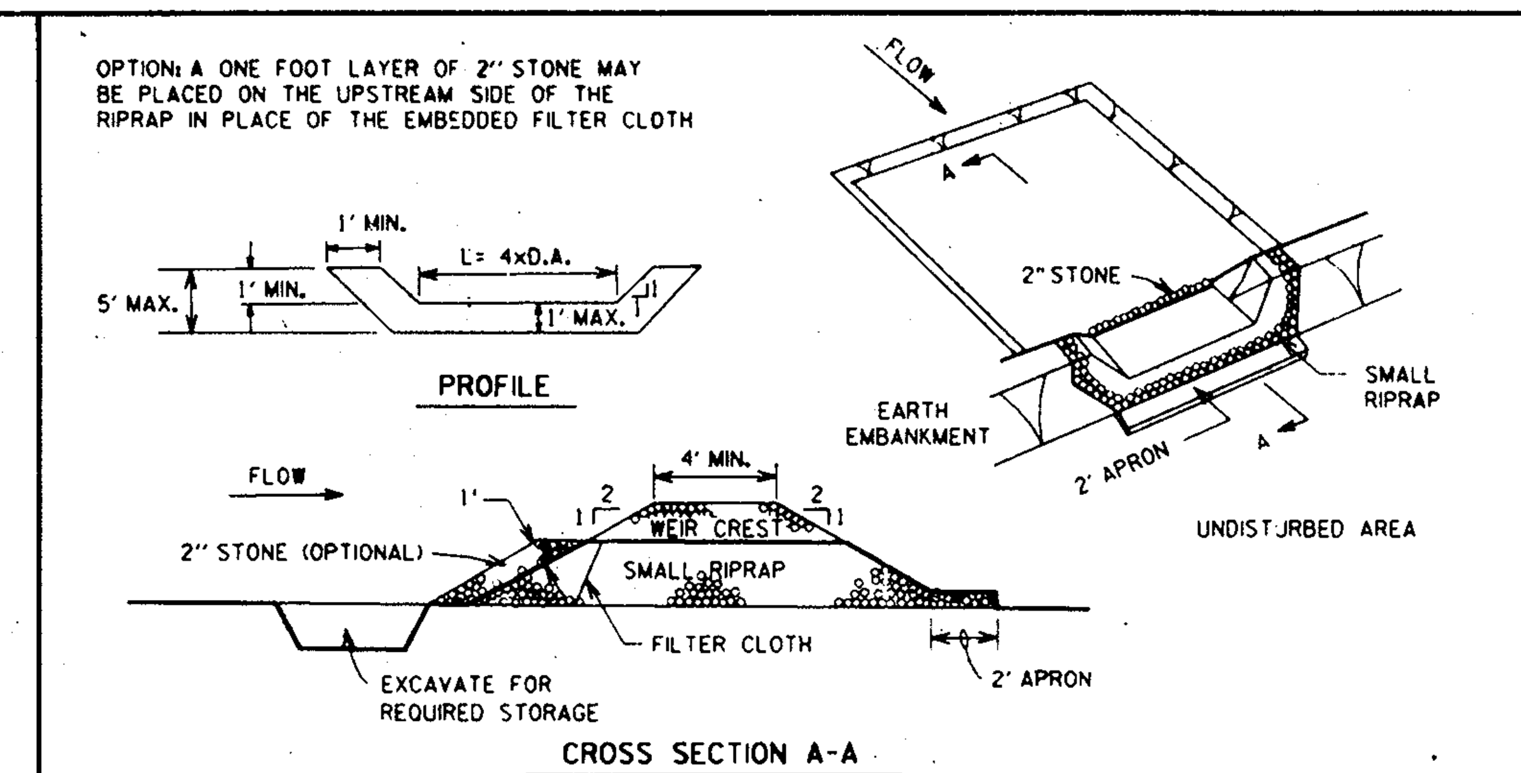
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. HIGH STRENGTH POLYPROPYLENE NETTING OR WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE

POSTS: STEEL EITHER T OR U TYPE OR 1 1/4"x1 1/4" MIN. (ACTUAL) HARDWOOD
FENCE: WOVEN WIRE, 14 GAUGE 6" MAX. MESH OPENING OR HIGH STRENGTH POLYPROPYLENE NETTING
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA OR APPROVED EQUAL
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

SILT FENCE

OPTION: A ONE FOOT LAYER OF 2" STONE MAY BE PLACED ON THE UPSTREAM SIDE OF THE RIPRAP IN PLACE OF THE EMBEDDED FILTER CLOTH

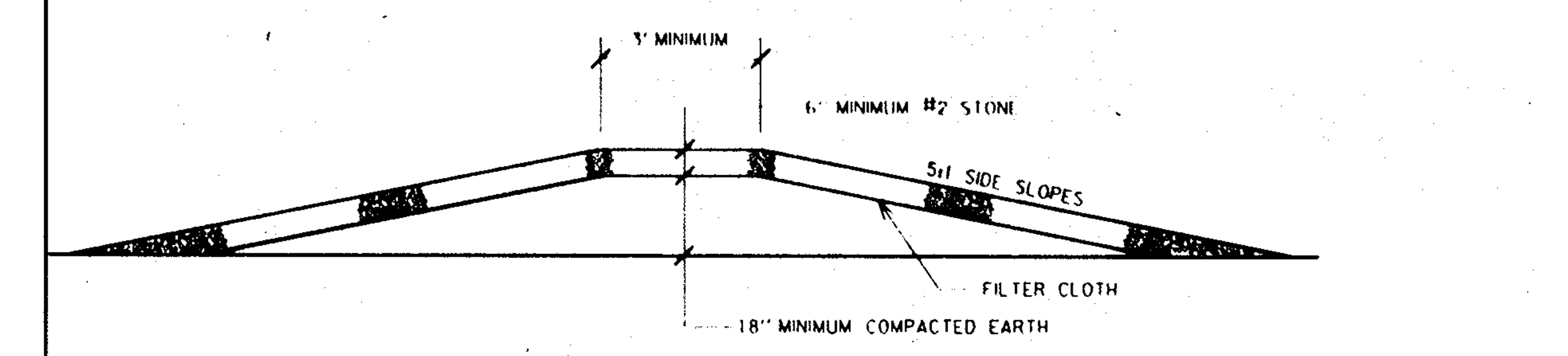


CONSTRUCTION SPECIFICATIONS FOR ST-V

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS AND OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
4. THE STONE USED IN THE OUTLET SHALL BE SMALL RIPRAP 4"-8" ALONG WITH A 1' THICKNESS OF 2" AGGREGATE PLACED ON THE UPGRADE SIDE ON THE SMALL RIPRAP OR EMBEDDED FILTER CLOTH IN THE RIPRAP.
5. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP.
6. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
7. CONSTRUTION OPERATIONS SHALL BE CARRIED OUT IN SUCH MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
8. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (TS-1)

STONE OUTLET SEDIMENT TRAP



IF MOUNTABLE BERM IS PART OF A "B" CLASS DIKE, COMPACTED EARTH MUST BE 36" MINIMUM.

U.S. DEPT. OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MD. (SP-1)

MOUNTABLE BERM DETAIL

Howard County Sediment Control Notes

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction (992-2437).
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 1983 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) seven 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 1983 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	27.69 acres
Area Disturbed	[illegible] acres
Area to be Roofed or Paved	0 acres
Area to be Vegetatively Stabilized	[illegible] acres
Total Cut	21,237 cu. yds.
Total Fill	582 cu. yds.
Offsite Waste/Borrow Area Location	N/A

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 DPW Sediment Control Inspector.

Temporary Seeding Notes

A. Seedbed preparation:
Loosen upper 3 inches by discing, raking or other acceptable means before seeding.

B. Soil Amendments:
Apply 600 lbs./acre (14 lbs/1000 sq. ft.) of 10-10-10 fertilizer.

C. Seeding:
For periods March 1 through April 30, and from August 15 through November 15 seed with 2-1/2 bu./acre of annual rye (3.2 lbs./1000 sq. ft.). For the period May 1 through August 14, seed with 3 lbs. per acre of Weeping Lovegrass (0.07 lbs./1000 sq. ft.). For the period November 16 through February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed soon as possible in the spring.

D. Mulching:
Apply 1-1/2 to 2 tons per acre (70-90 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.

TEMPORARY SEEDING NOTES

Permanent Seeding Notes *

All disturbed areas shall be stabilized as follows:

A. Seeding preparation: Loosen upper 3 inches of soil by raking, discing or other acceptable means before seeding.

B. Soil Amendments:

1. Preferred:
Apply 2 tons per acre Dolomitic Limestone (92 lbs./1000 sq. ft.) and 600 lbs. per acres 10-10-10 fertilizer (14 lbs./1000 sq. ft.). Before seeding, harrow or disc into upper 3 inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 Ureaform fertilizer (9lbs. per 1000 sq. ft.)

2. Acceptable:
Apply 2 tons per acre Dolomite Limestone (92 lbs./1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./sq. ft.(before seeding. Harrow or disc into upper 3 inches of soil.

C. Seeding:
For the periods March 1 through April 30, and August 1 through October 15, seed with 60 lbs. per acre (1.4 lbs/1000 sq ft.) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs of Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs./1000 sq. ft.) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by:

Option (1): 2 tons per acre of well anchored straw mulch and seed as soon as possible in 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.

D. 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 Ashphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal./1000 sq. ft.) for anchoring.

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

PERMANENT SEEDING NOTES

UTILITY CONSTRUCTION OUTSIDE SEDIMENT CONTROL PRACTICES

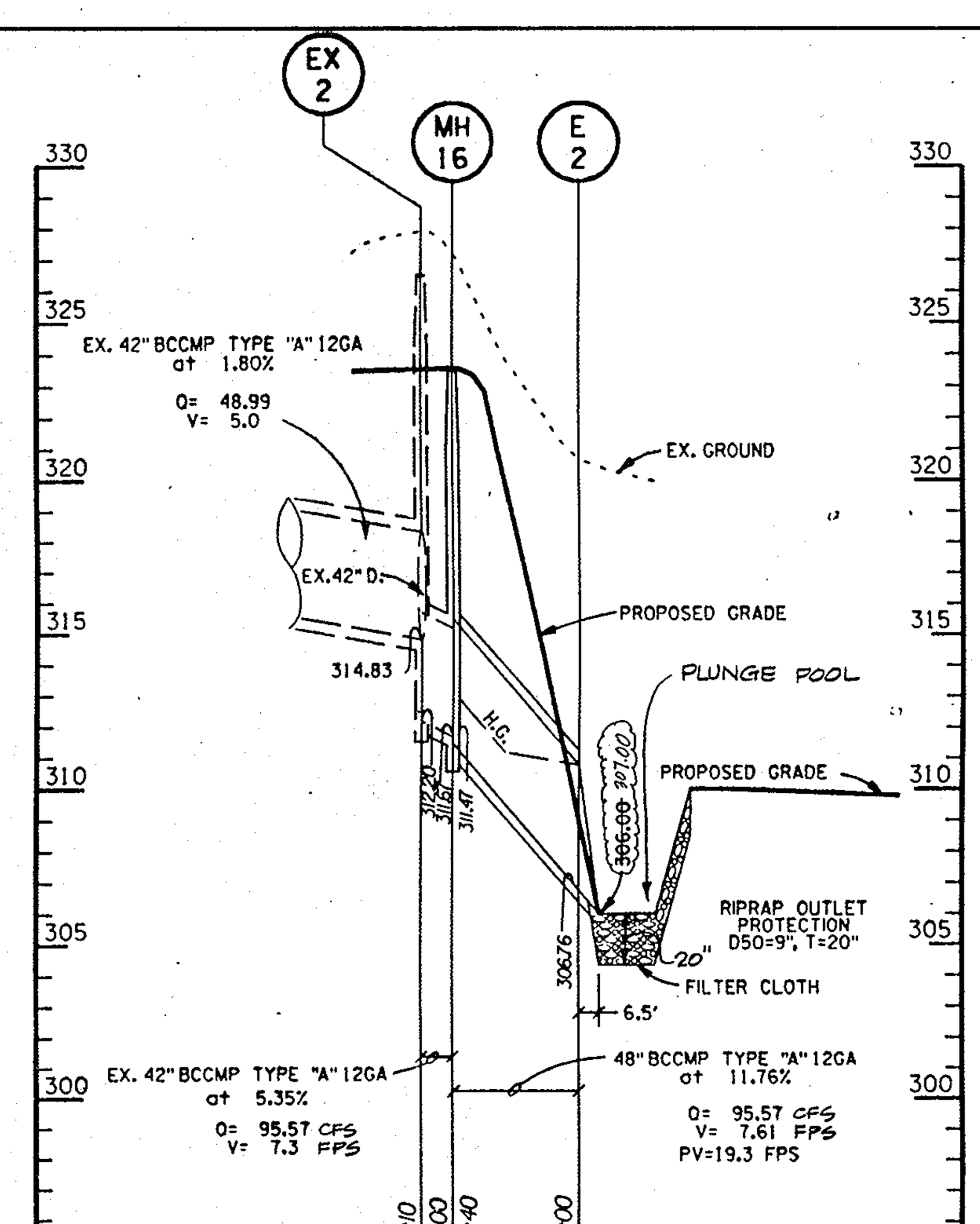
1. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON UPSTREAM SIDE OF TRENCH.
2. IMMEDIATELY FOLLOWING PIPE INSTALLATION, THE TRENCH SHALL BE BACKFILLED, COMPACTED AND IMMEDIATELY STABILIZED (MULCHED; SEEDED, AND/OR SODDED MECHANICAL STABILIZATION) AT THE END OF EACH WORK DAY.
3. SILT FENCE SHALL BE PLACED IMMEDIATELY DOWN STREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED LONGER THAN ONE (1) WORKING DAY. (SILT FENCE AS PER SCS STANDARD DRAWING - SF-1.)
4. THE CONTRACTOR SHALL D'STURB AND OPEN TRENCH THE MINIMUM PRACTICAL AREA REQUIRED TO ACCOMPLISH THE WORK DESIGNATED FOR EACH DAY.
5. ALL SEDIMENT AND EROSION CONTROL PRACTICES AND VEGETATIVE STABILIZATION SHALL BE IN ACCORDANCE WITH THE "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS."

AS-BUILT

G. SCOTT SHANABERGER 2/6/90 (FOR 9/10/91 AS-BUILT)
DATE
PROFESSIONAL L.S. # 10849
SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITES 106 & 107
ELLICOTT CITY, MD 21043

STATE OF MARYLAND · GREGORY SCOTT SHANABERGER · REGISTERED NO. 10849 · PROFESSIONAL LAND SURVEYOR

UTILITY CONSTRUCTION OUTSIDE SEDIMENT CONTROL



RELOCATED STORM DRAIN PROFILE

SCALE: HOR. 1" = 50' VERT. 1" = 5'

* NOTE : WETLANDS MITIGATION AREA STABILIZATION

THIS AREA IS TO BE STABILIZED IN ACCORDANCE WITH MD. SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION & MATERIALS, JANUARY 1982, SECTIONS 701 - TURF ESTABLISHMENT AND 714 - WOODY SHRUB SEEDING & MULCHING TO BE APPLIED AS FOLLOWS :

MD. SHA WOODY SHRUB MIX : 50 LBS/AC.
REGION 2 COVER COMPANION SEED MIX : 35 LBS/AC.

MAINTENANCE : THERE SHALL BE NO MOWING OF THE WETLANDS MITIGATION AREA.

Sequence of Construction

1. Obtain a grading permit
2. Notify the Howard County Office of Inspections and Permits (992-2437) a minimum of 24 hours prior to the start of any construction.
3. Construct peak management concrete riser. (Two weeks)
4. Construct stabilized construction entrance. (One day)
5. Clear and grub for sediment and erosion control measures or devices for sediment trap no. 1. Make any necessary repairs to existing sediment control. (One day)
6. Install and stabilize sediment and erosion control measures and devices for sediment trap no. 3 only. (Two days)
7. With prior approval of the Sediment Control Inspector, clear, grub, and grade the wetlands mitigation area. Remove existing dike as indicated. (One to two weeks)
8. Upon stabilization of the wetlands mitigation area per wetlands mitigation stabilization notes, remove and relocate the existing 48 inch BCCMP Stormdrain as shown on the plans. (Sheet 6 of 6) (One week)
9. Stabilize the area disturbed by the removal of the existing 48 inch BCCMP drain. With the prior permission of the Sediment Control Inspector and the Howard County Sediment Control Division, remove all sediment controls installed under this plan along with the existing sediment traps and earth dikes. Fine grade and stabilize these areas. (One week)

CERTIFICATION BY THE ENGINEER:

"I CERTIFY THAT THAS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

8/8/90
DATE

CERTIFICATION BY THE DEVELOPER:

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

Gregory R. Klein 8/7/90
DATE

APPROVED HOWARD COUNTY DEPT. OF PUBLIC WORKS

Granville W. Wehland 9/5/90
CHIEF, BUREAU OF HIGHWAYS — DATE

CHIEF, BUREAU OF ENGINEERING — DATE

9/12/90
CHIEF, LAND DEVELOPMENT DIVISION — DATE

MK

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

10/19/9.
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

U.S. SOIL CONSERVATION SERVICE — DATE

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

8/24/90
HOWARD S.C.D. — DATE

STATE OF MARYLAND · JOHN W. RANOCCHIA, SR. · No. 10551 REGISTERED · PROFESSIONAL ENGINEER

Date	No.	Revision Description

COLUMBIA, MD.

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER / DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY

DAFT McCUNE WALKER, INC.
LAND PLANNING CONSULTANTS
LANDSCAPE ARCHITECTS
ENGINEERS SURVEYORS
200 EAST PENNSYLVANIA AVENUE
TOWSON, MD. 21204
TELEPHONE: 301-296-3333

AREA: COLUMBIA GATEWAY
PARCELS S-3, S-4, & S-5
6TH ELECTION DISTRICT — HOWARD CO., MARYLAND

TITLE: FINAL CONSTRUCTION PLAN DETAILS

Des By AJD	Scale 1" = 50'	Proj. No. 88036
Drn By REZ/JMS	Date 8/29/89	6 OF 6
Chk By JVR/AJD	Approved	

F-90-92

ZFA1:I10.F388036.PLO

1158