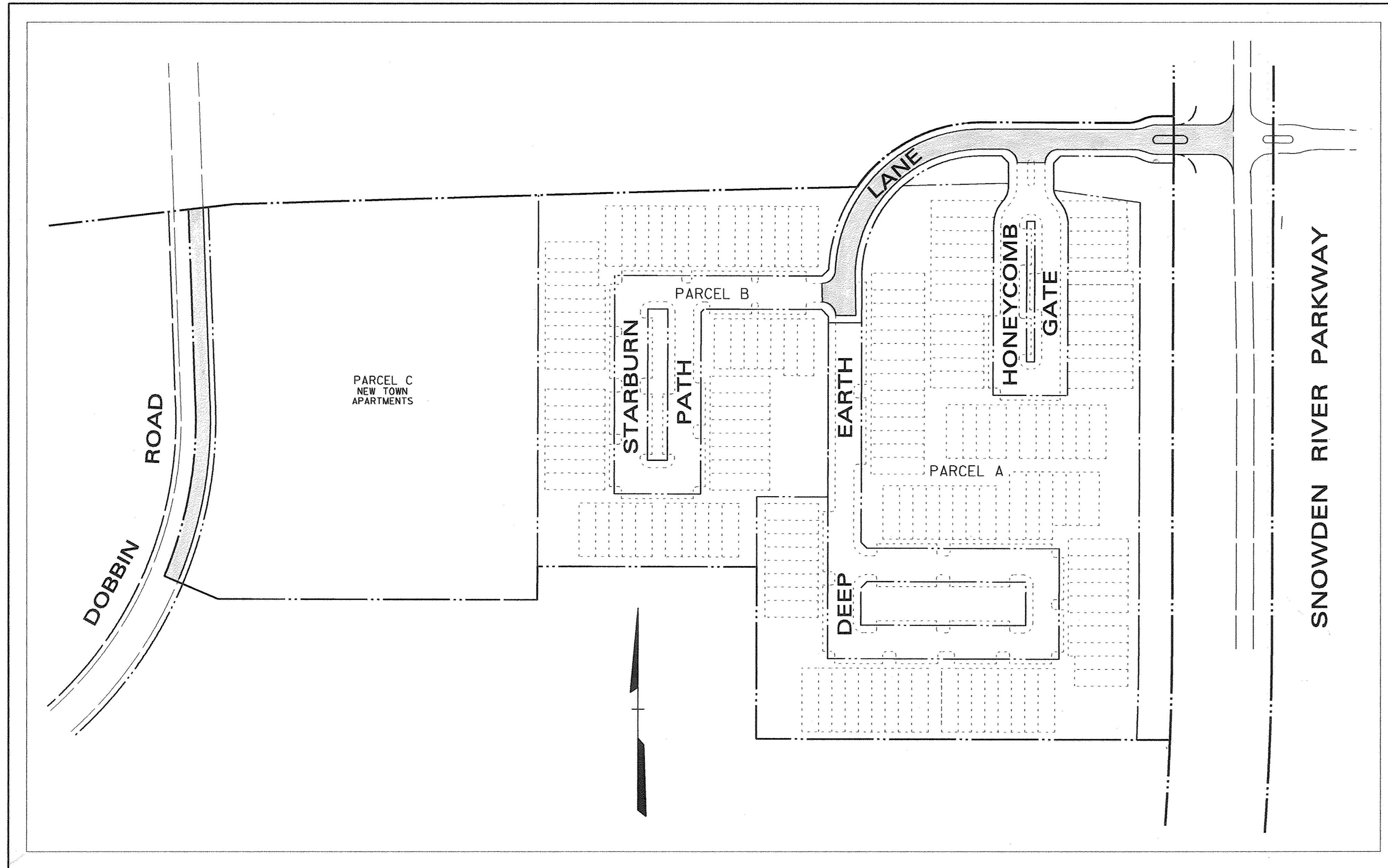


VILLAGE OF LONGREACH

SECTION 4, AREA 3, PHASE 220

HOWARD COUNTY, MARYLAND



PLAN VIEW

SCALE: 1" = 100'

NOTE: 8/8/16 - CAPITAL PROJECT D-1160 REVISED THE WATER QUALITY FACILITY AND STRUCTURES S-4 AND S-5 (PUBLICLY OWNED) TO IMPROVE WATER QUALITY TREATMENT, FUNCTIONALITY AND MAINTAINABILITY OF THE SYSTEM. THE WATER QUALITY POND WAS EXCAVATED TO INCREASE WATER QUALITY STORAGE.

BENCHMARK

DESCRIPTION
STATION 37DR (1/4" REBAR)
N169881.1794, E416566.7151 (FOR HORIZONTAL CONTROL ONLY)
STATION IS LOCATED 0.45± MILES NORTH OF RTE. 175 AND 46± EAST OF THE EAST CURB OF SNOWDEN RIVER PARKWAY

BENCHMARK

DESCRIPTION
STATION 361A (CONCRETE MONUMENT)
N169205.9263, E416313.5119 (FOR HORIZONTAL CONTROL ONLY)
STATION IS LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SNOWDEN RIVER PARKWAY AND RTE. 175 3± FROM CURB AND 5.7± FROM GUARDRAIL END

BENCHMARK

DESCRIPTION
STATION 2542001 (CONCRETE MONUMENT)
ELEV. 426.971 (FOR VERTICAL CONTROL ONLY)
STATION IS LOCATED ON BG&E TRANSMISSION LINES 1060± S.W. OF DOBBIN ROAD

BENCHMARK

DESCRIPTION
STATION 2542002 (CONCRETE MONUMENT)
ELEV. 363.638 (FOR VERTICAL CONTROL ONLY)
STATION IS LOCATED 1000± WEST OF RTE. 175 ON TRANSMISSION LINE AT G. & E. TOWER 19± NEAR HANOVERS RESTAURANT ENTRANCE

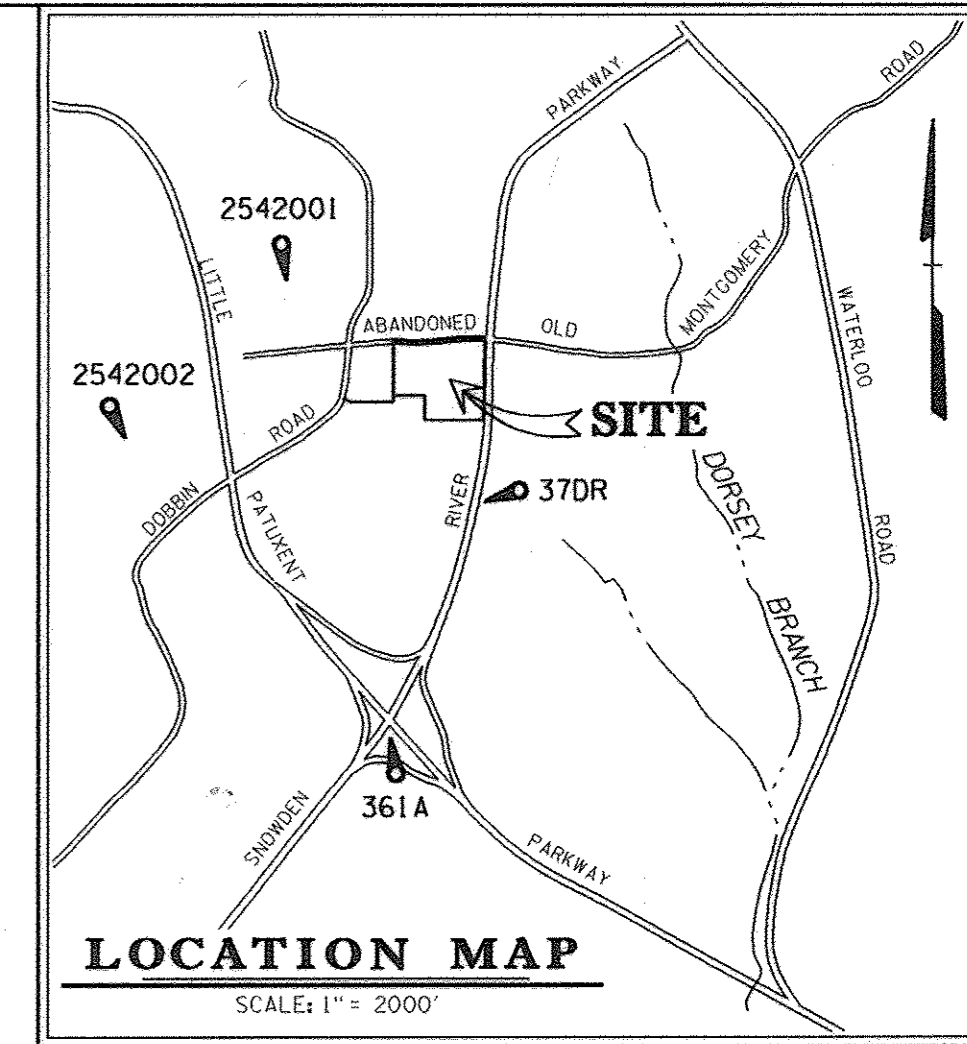
THE PURPOSE OF THIS PLAN IS TO PROVIDE CONSTRUCTION DETAILS FOR THE CONSTRUCTION OF DEEP EARTH LANE FROM STATION -0+15 TO STATION 7+43.87; MASS GRADING OF PARCELS A, B, & C; THE WIDENING OF DOBBIN ROAD; AND THE CONSTRUCTION OF THE REGIONAL STORMWATER MANAGEMENT POND.

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1 OF 20	COVER SHEET
2 OF 20	ROAD CONSTRUCTION PLAN - DEEP EARTH LANE
3 OF 20	ROAD WIDENING PLAN - DOBBIN ROAD
4 OF 20	ROAD CONSTRUCTION DETAILS & STORM DRAIN PROFILES
5 OF 20	STORM DRAIN DRAINAGE AREA MAP
6 OF 20	STORMWATER MANAGEMENT EXISTING DRAINAGE AREA MAP
7 OF 20	STORMWATER MANAGEMENT PROPOSED DRAINAGE AREA MAP
8 OF 20	STORMWATER MANAGEMENT & LANDSCAPE PLAN & PROFILES
9 OF 20	STORMWATER MANAGEMENT DETAILS
10 OF 20	STORMWATER MANAGEMENT DETAILS
11 OF 20	MASS GRADING PLAN
12 OF 20	MASS GRADING PLAN
13 OF 20	MASS GRADING PLAN
14 OF 20	SEDIMENT & EROSION CONTROL PLAN
15 OF 20	SEDIMENT & EROSION CONTROL PLAN
16 OF 20	SEDIMENT & EROSION CONTROL PLAN
17 OF 20	SEDIMENT & EROSION CONTROL PLAN
18 OF 20	SEDIMENT & EROSION CONTROL PLAN BASIN #1
19 OF 20	SEDIMENT & EROSION CONTROL PLAN NOTES & SEQUENCE
20 OF 20	SEDIMENT & EROSION CONTROL PLAN DETAILS

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF CONSTRUCTION INSPECTION AT (301) 792-7272 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- PROJECT BACKGROUND:
LOCATION: SNOWDEN RIVER PARKWAY
TAX MAP: 36
PARCEL: PART OF PARCEL 50 AND PART OF LOT 1 (RESUBDIVIDED INTO LOTS 89 & 90)
ZONING: NEW TOWN PER 8/2/85 COMPREHENSIVE ZONING
ZB/BA REF: 918-M
ELECTION DISTRICT: 6TH
SECTION/AREA: SECTION 4, AREA 3, PHASE 220
TOTAL TRACT AREA: 24.071 AC.
NUMBER OF PROPOSED LOTS: 0
COMPREHENSIVE SKETCH PLAN: SP 93-10
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- TOPOGRAPHY SHOWN HEREON IS TAKEN FROM AERIAL MAPS DATED 1963 PREPARED FOR HOWARD RESEARCH AND DEVELOPMENT BY MAPS, INC., AND AS UPDATED BY FIELD OBSERVATION PERFORMED IN 1992.
- HORIZONTAL DATUM: NAD 83, VERTICAL DATUM: NGVD 29
- LIGHT POLES AND FIXTURES FOR STREET LIGHTS SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III, ROADS AND BRIDGES.
- PUBLIC WATER AND SEWER SYSTEMS TO BE MADE AVAILABLE AND UTILIZED.
- THIS PROPERTY IS LOCATED WITHIN THE HOWARD COUNTY METROPOLITAN DISTRICT.
- WETLAND EVALUATION PREPARED BY GEOTECHNOLOGY ASSOCIATES, INC. AUGUST 31, 1992.
- TRAFFIC STUDY PREPARED BY WELLS AND ASSOCIATES OCTOBER 19, 1992 AND UPDATED APRIL 1, 1993.
- NOISE STUDY PREPARED BY WILDMAN ENVIRONMENTAL SERVICES OCTOBER 20, 1992.
- EXISTING UTILITIES LOCATED BY DMW.
- OLD MONTGOMERY ROAD WAS ABANDONED PER RESOLUTION NO. 5 DATED APRIL 1988. THE ABANDONED OLD MONTGOMERY ROAD PAVING WILL BE REMOVED DURING THE MASS GRADING PHASE BY THE GRADING CONTRACTOR (SEE STEP 7 OF THE SEQUENCE OF OPERATION).
- WP-93-43, APPROVED DECEMBER 8, 1992, TO WAIVE SECTION 16.116(C)(6) TO ALLOW GRADING AND REMOVAL OF VEGETATION IN WETLAND AND STREAM BUFFERS.



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Danek 9-20-93
 CHIEF, BUREAU OF HIGHWAYS DATE

Paul O. Sisson 9/21/93
 CHIEF, BUREAU OF ENGINEERING DATE

Charles J. Summers 9/21/93
 CHIEF, LAND DEVELOPMENT DIVISION M.K. DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Gina Surinanyi 9/21/93
 CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

Date No. Revision Description

LONGREACH
 SECTION 4, AREA 3, PHASE 220
 OWNER / DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

DMW
 Daft · McCune · Walker, Inc.
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 410 296 3333
 Fax 296 4105

AREA
 PARCELS A, B, & C AND LOTS 89, 90, 91, & 92
 TAX MAP 36.37 PART OF PARCEL 50
 6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
COVER SHEET

Des By	MAT	Scale	AS SHOWN	Proj. No.	89088D
Drn By	MAT	Date	4/12/93		
Chk By	JWR	Approved			1 OF 20

8-24-93
 Date

Professional Engr. No. 10551

STREET TREE TABLE (SEE SHEET 3 FOR ADDITIONAL TREES)

SYMBOL	TYPE	SIZE	QUANTITY	REMARKS
(Symbol: Tree with asterisk)	ACER RUBRUM 'RED SUNSET'	2 1/2" - 3" CAL.	27	B & B
(Symbol: Tree with asterisk)	RED SUNSET RED MAPLE			

1. THE CONTRACTOR SHALL VERIFY LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO PLANTING. LOCATION OF TREES MAY BE ADJUSTED SLIGHTLY TO MEET FIELD CONDITIONS.
2. THE LOCATION, TYPE AND NUMBER OF TREES SHOWN ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM. BOND RELEASE IS CONTINGENT UPON SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.
3. STREET TREES FOR INTERNAL PARKING LOT LANDSCAPING WILL BE INCLUDED ON THE SITE DEVELOPMENT PLAN.
4. SEE SHEET 3 OF 20 FOR STREET TREE PLANTING DETAIL.

STREET LIGHT LEGEND

- 100 WATT HIGH PRESSURE SODIUM (HPS) VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE FIBERGLASS POLE.
 - FUTURE 250 WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BREAKAWAY BASE STEEL POLE (BROWN).
- LOCATIONS:
- DEEP EARTH LANE @ STA. 3+25 19.0' LEFT
 - DEEP EARTH LANE @ STA. 4+75 18.5' RIGHT
 - DEEP EARTH LANE @ STA. 6+83 28.6' RIGHT
 - DEEP EARTH LANE @ STA. 0+46 52.0' RIGHT

STREET SIGN LEGEND

- 24" X 30" RECTANGLE, R2-1, SPEED LIMIT 25
- 30" X 30" OCTAGON, R1-1, STOP SIGN
- 36" X 36" DIAMOND, W3-10, STOP AHEAD SIGN
- 12" X 18" RECTANGLE, R7-1, NO PARKING ANYTIME
- 12" X 18" RECTANGLE, R7-1L, NO STOPPING ANYTIME
- 12" X 18" RECTANGLE, R7-1R, NO PARKING ANYTIME
- 12" X 18" RECTANGLE, R7-1L, NO STOPPING ANYTIME
- 12" X 18" RECTANGLE, R7-1R, NO STOPPING ANYTIME

CURB & GUTTER LEGEND

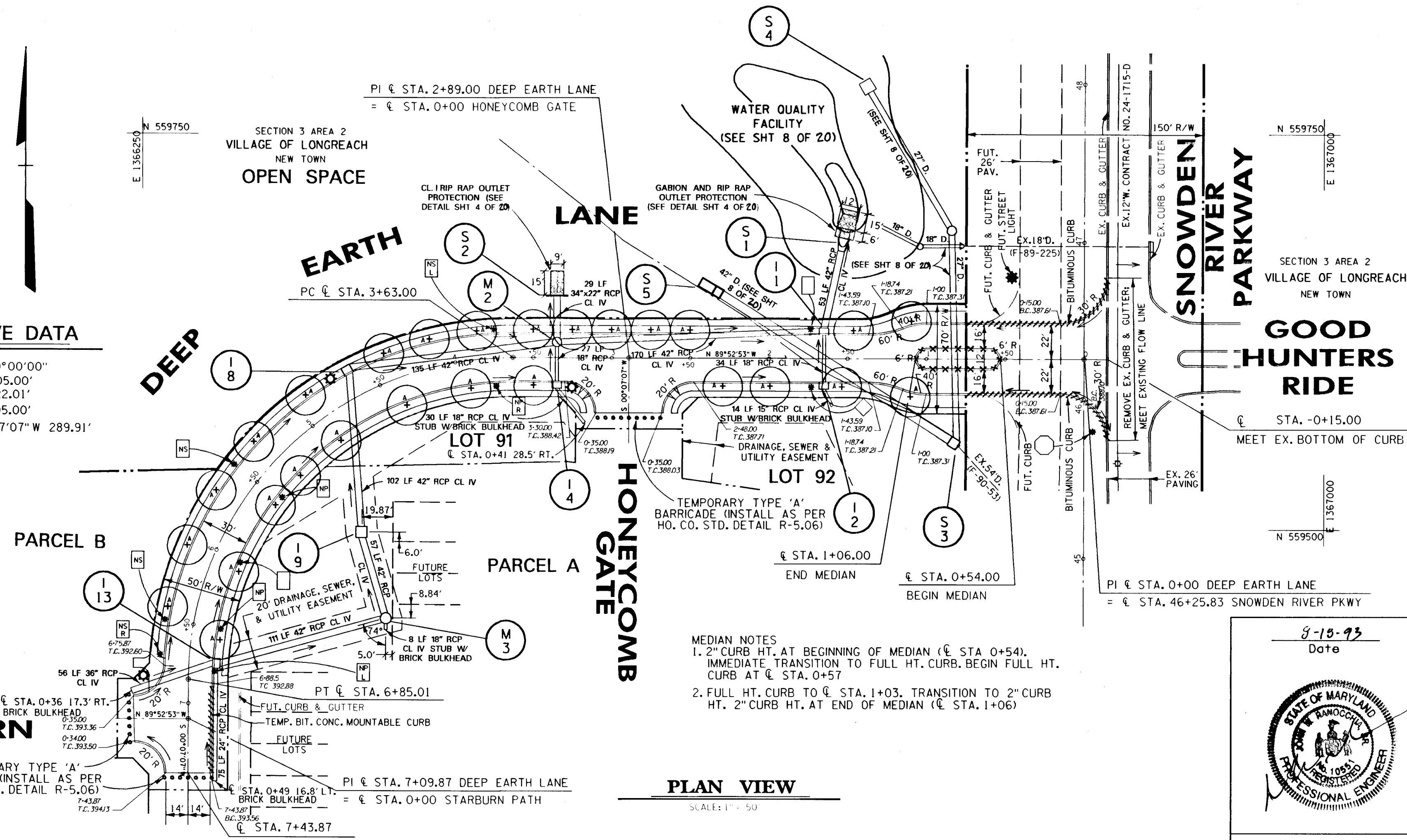
- STD. 7 3/8" C. & G.
- REV. 7 3/8" C. & G.
- BIT. CONCRETE MOUNT. CURB

CURVE DATA

Δ = 90°00'00"
 R = 205.00'
 L = 322.01'
 T = 205.00'
 CHD. = S 45°07'07" W 289.91'

STARBUK PATH

TEMPORARY TYPE 'A' BARRICADE (INSTALL AS PER HO. CO. STD. DETAIL R-5.06)
 PI @ STA. 7+09.87 DEEP EARTH LANE
 = @ STA. 0+00 STARBUK PATH
 PT @ STA. 6+85.01
 PI @ STA. 7+09.87 DEEP EARTH LANE
 = @ STA. 0+00 STARBUK PATH



PLAN VIEW

SCALE: 1" = 50'

- MEDIAN NOTES**
1. 2" CURB HT. AT BEGINNING OF MEDIAN (@ STA. 0+54). IMMEDIATE TRANSITION TO FULL HT. CURB. BEGIN FULL HT. CURB AT @ STA. 0+57
 2. FULL HT. CURB TO @ STA. 1+03. TRANSITION TO 2" CURB HT. 2" CURB HT. AT END OF MEDIAN (@ STA. 1+06)

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 9-20-93 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH
 9/24/93 DATE

Date	No.	Revision Description
11/30/93	1	CHANGED S-3 TO A BRICK MH (A 5.03)

LONGREACH
 SECTION 4, AREA 3, PHASE 220
 OWNER / DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

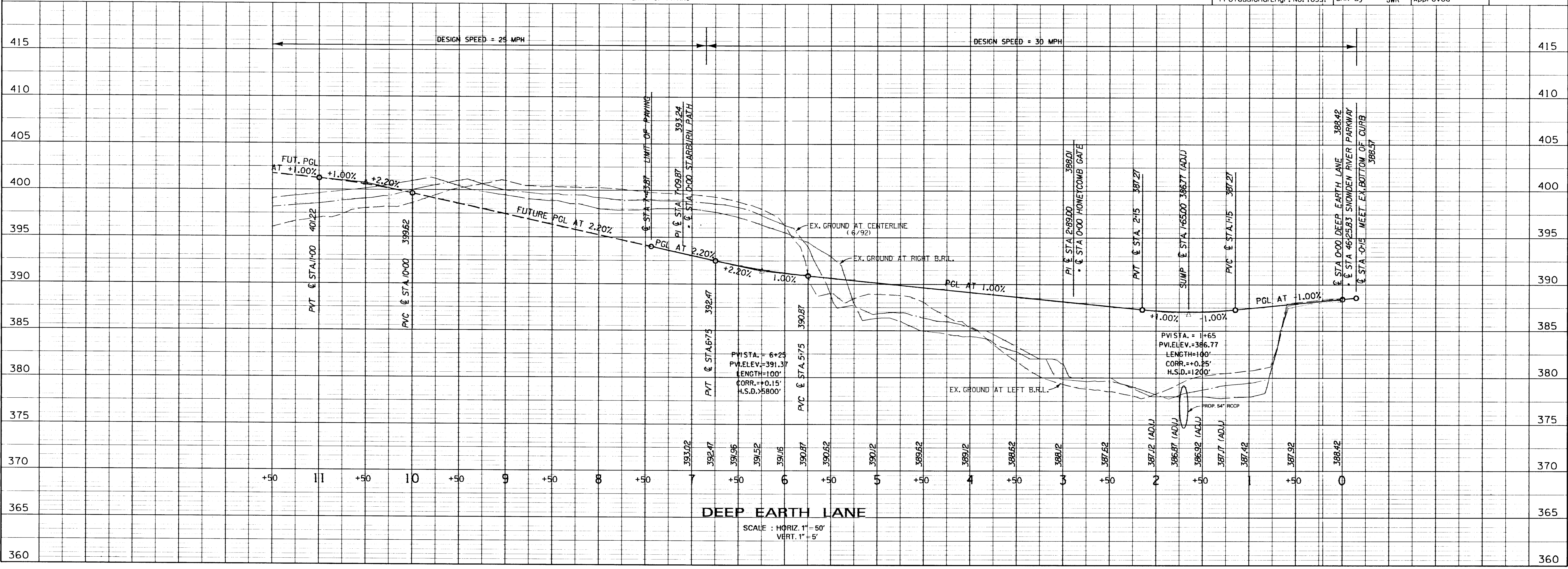
DMW
 Daft · McCune · Walker, Inc.
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 410 286 1313
 Fax: 296 4705

AREA PARCELS A, B, & C AND LOTS 89, 90, 91, & 92
 TAX MAP 36.37 PART OF PARCEL 50
 6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **ROAD CONSTRUCTION PLANS**
DEEP EARTH LANE
STA. -0+15 TO 7+43.87

Des By	FCB	Scale	AS SHOWN	Proj. No.	89088.D
Drn By	JCS	Date	4/12/93		
Chk By	JWR	Approved			2 OF 20

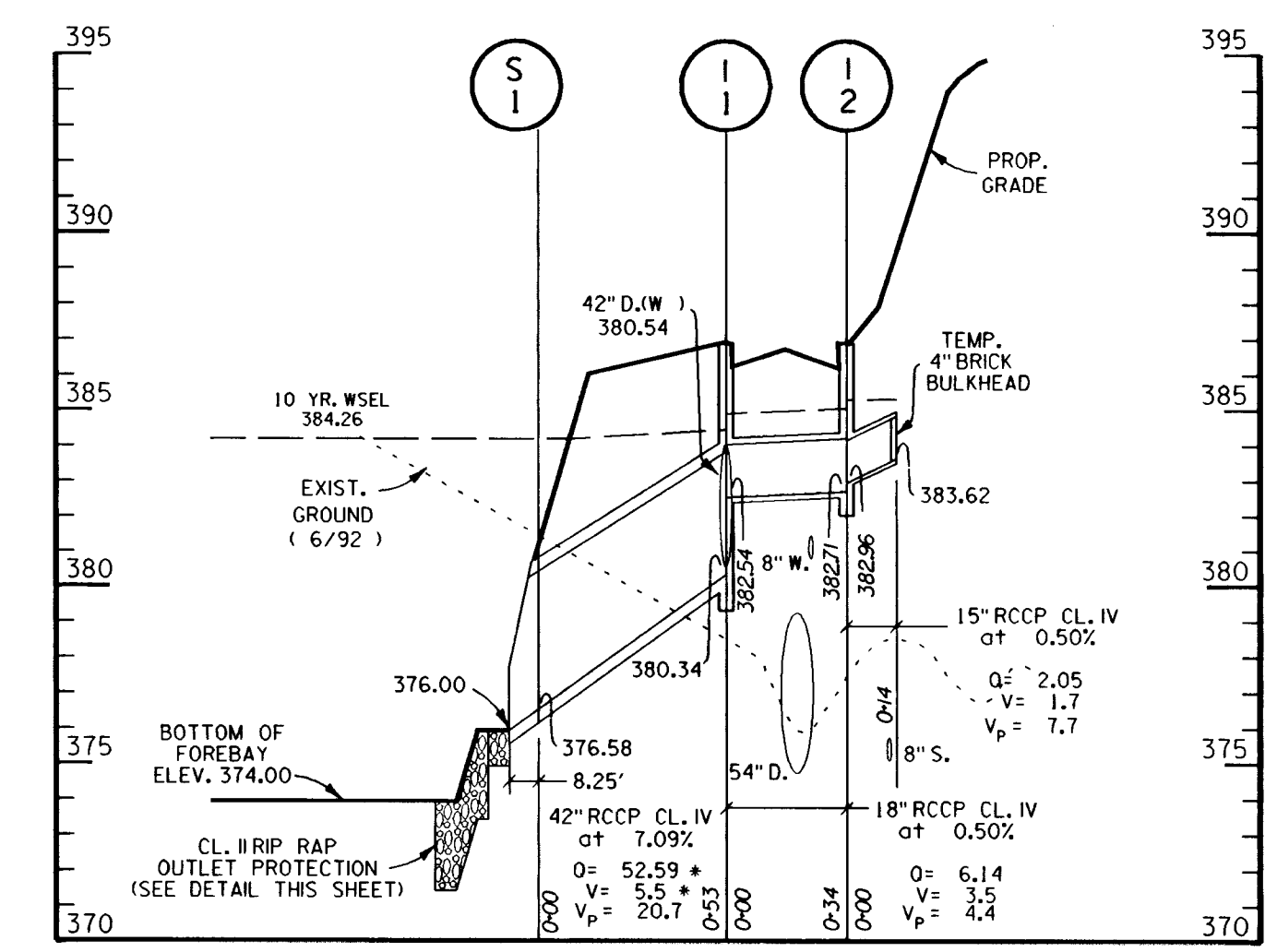
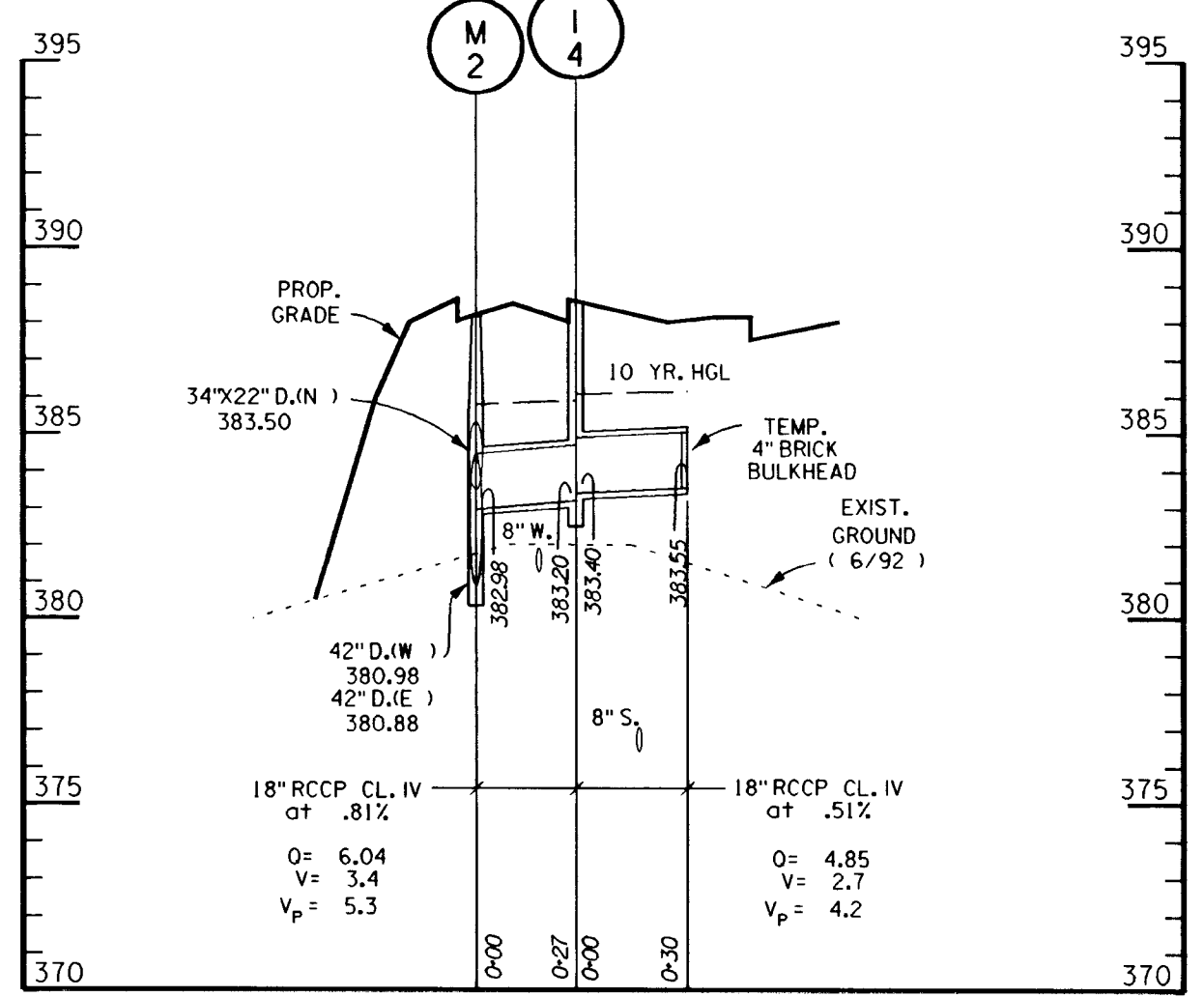
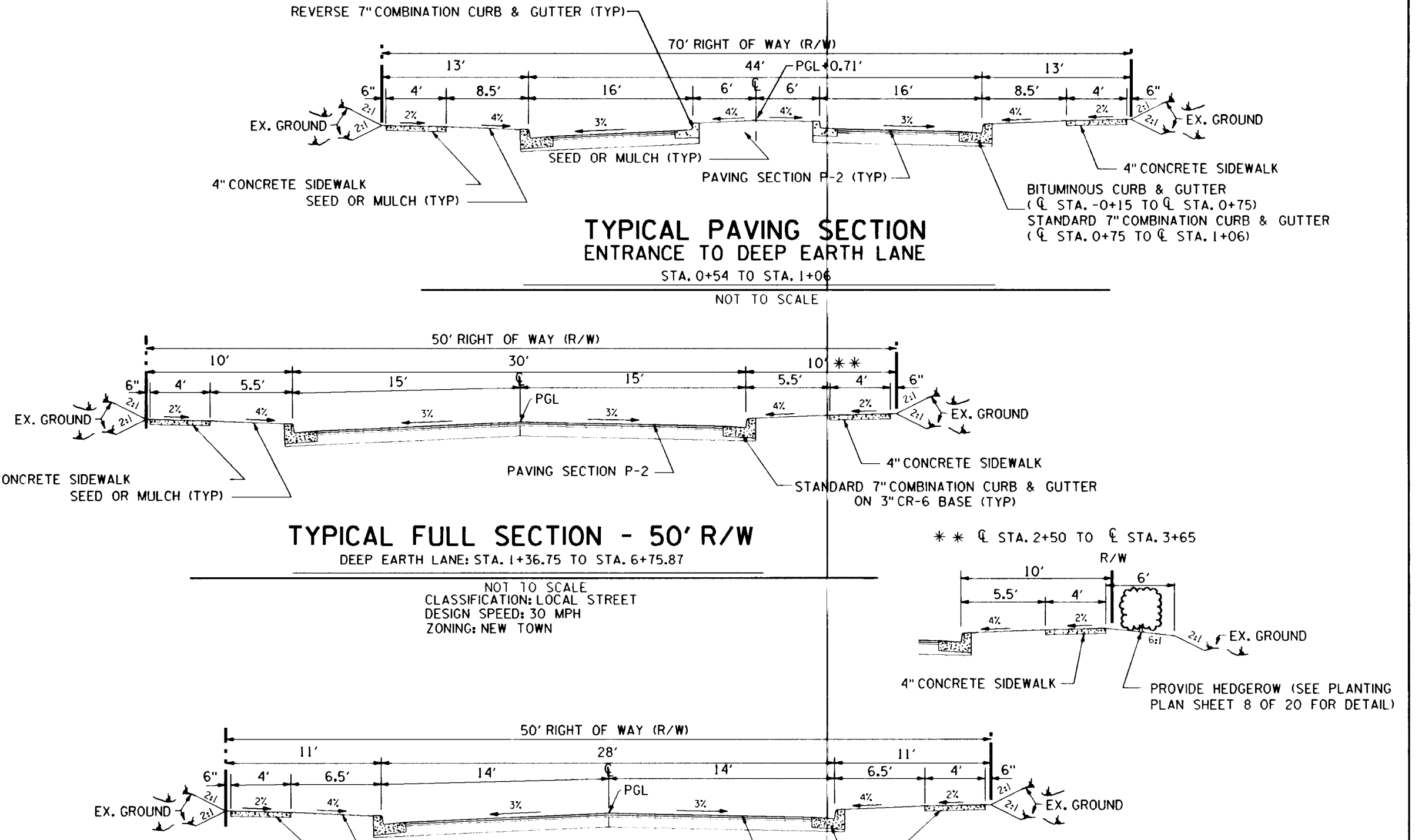
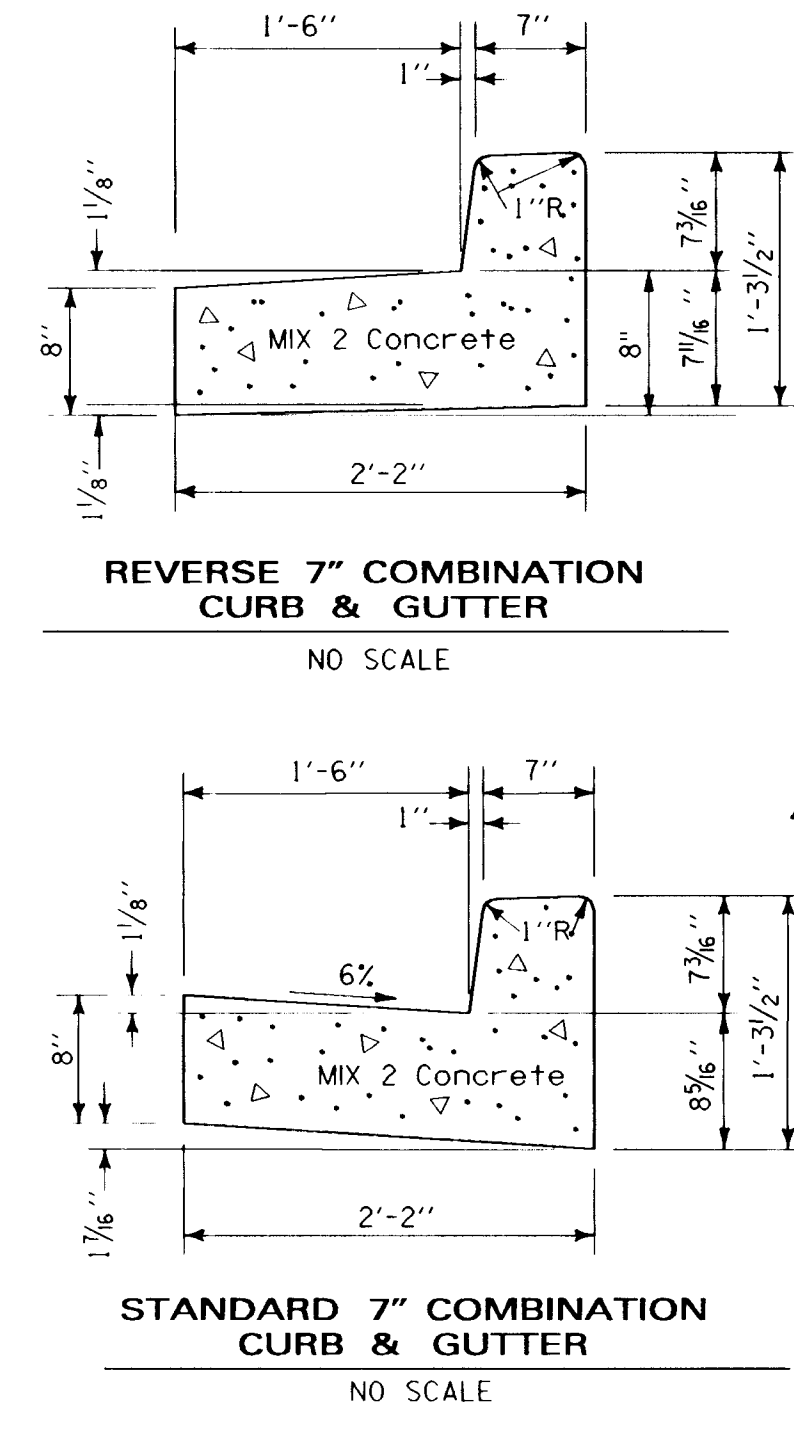
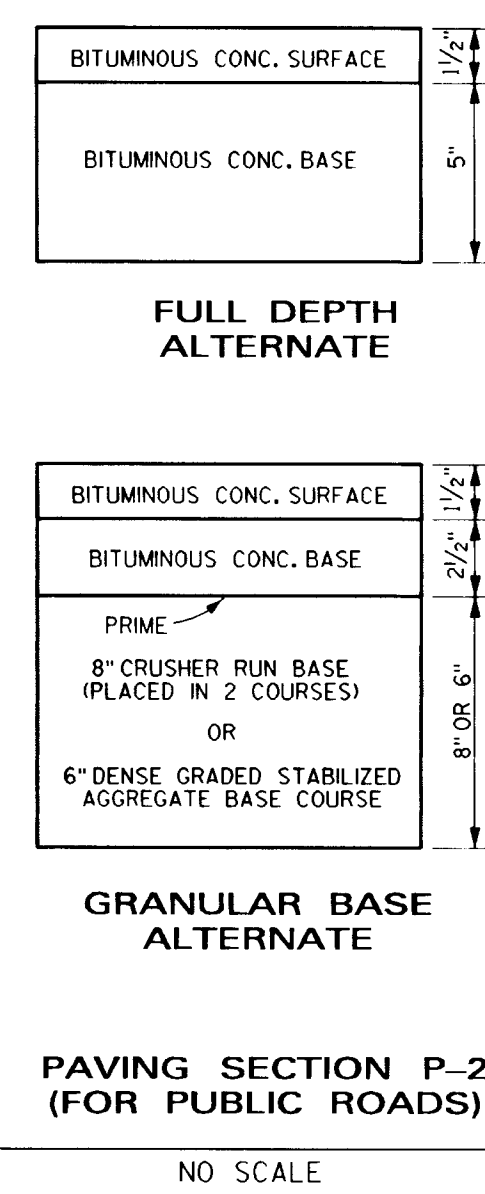
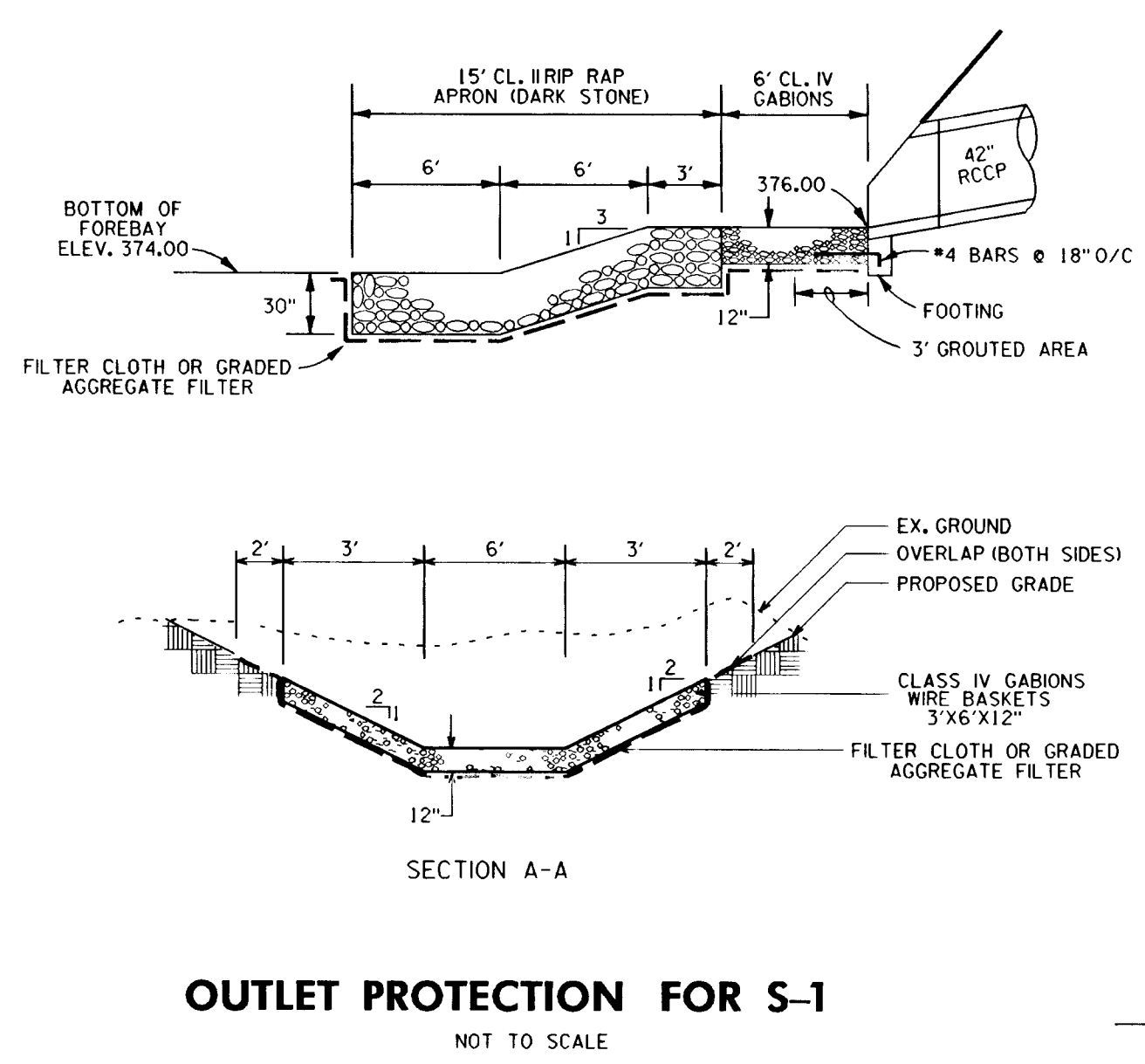
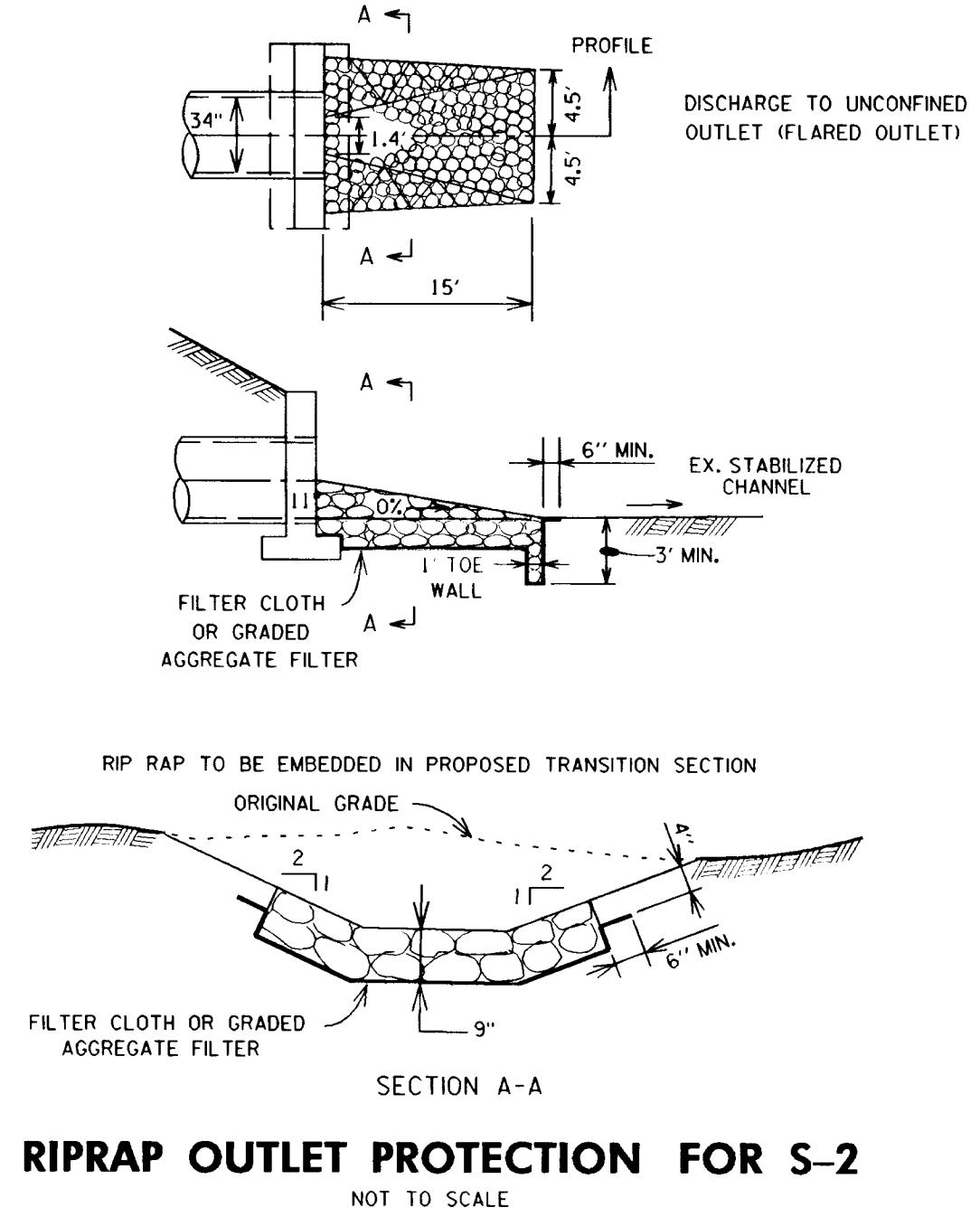
8-13-93
 Date
 PROFESSIONAL ENGINEER
 Professional Engr. No. 10551



DEEP EARTH LANE

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

100



MANHOLE SCHEDULE

NO.	TYPE	INV. OUT	TOP ELEV.	DETAIL NO.	LOCATION
2	42" X 60"	380.88	388.17	HO CO G 5.03	CL STA 3+35 10.0' R
3	42" X 60"	382.36	390.00	HO CO G 5.03	SEE PLAN

STRUCTURE SCHEDULE

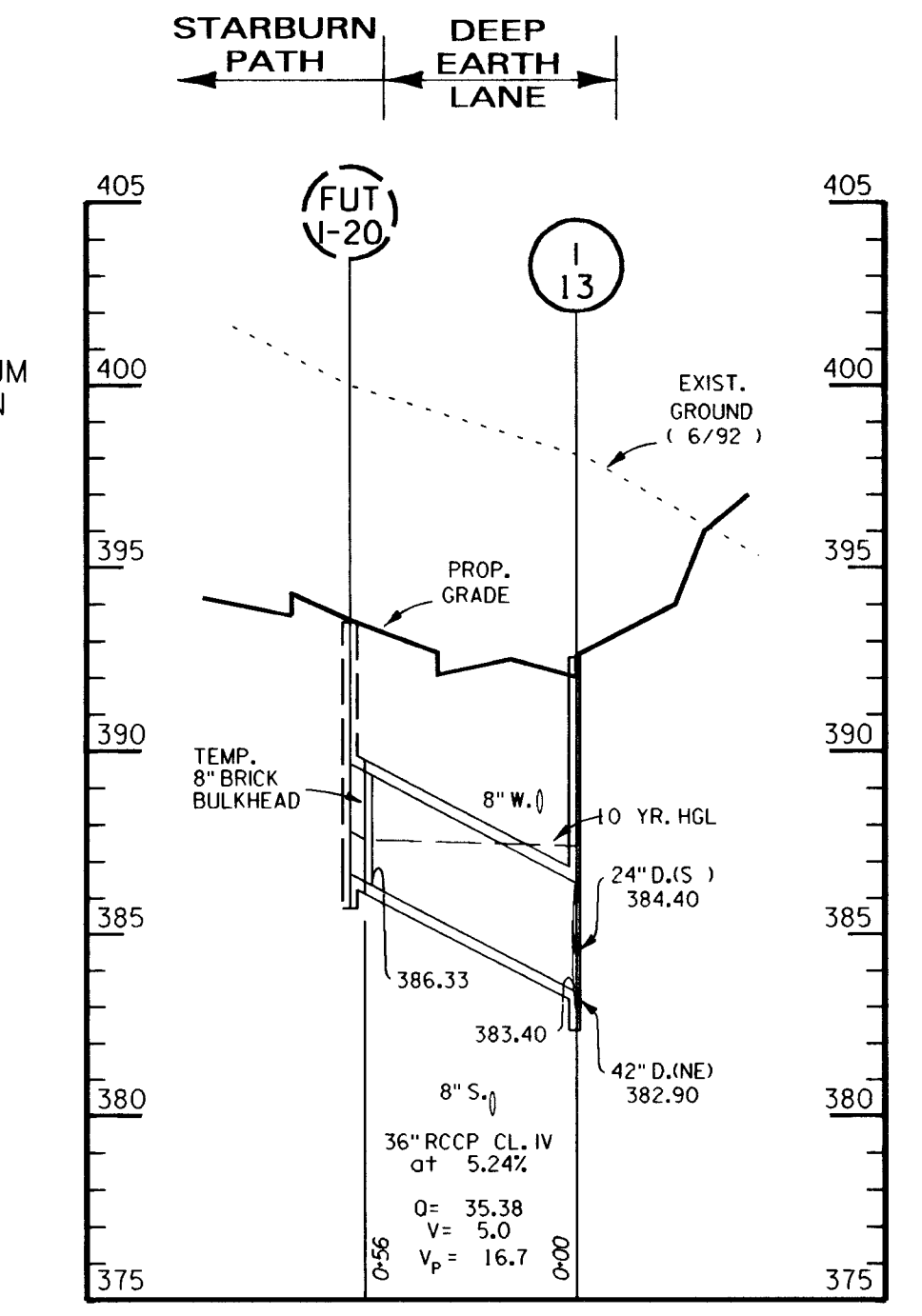
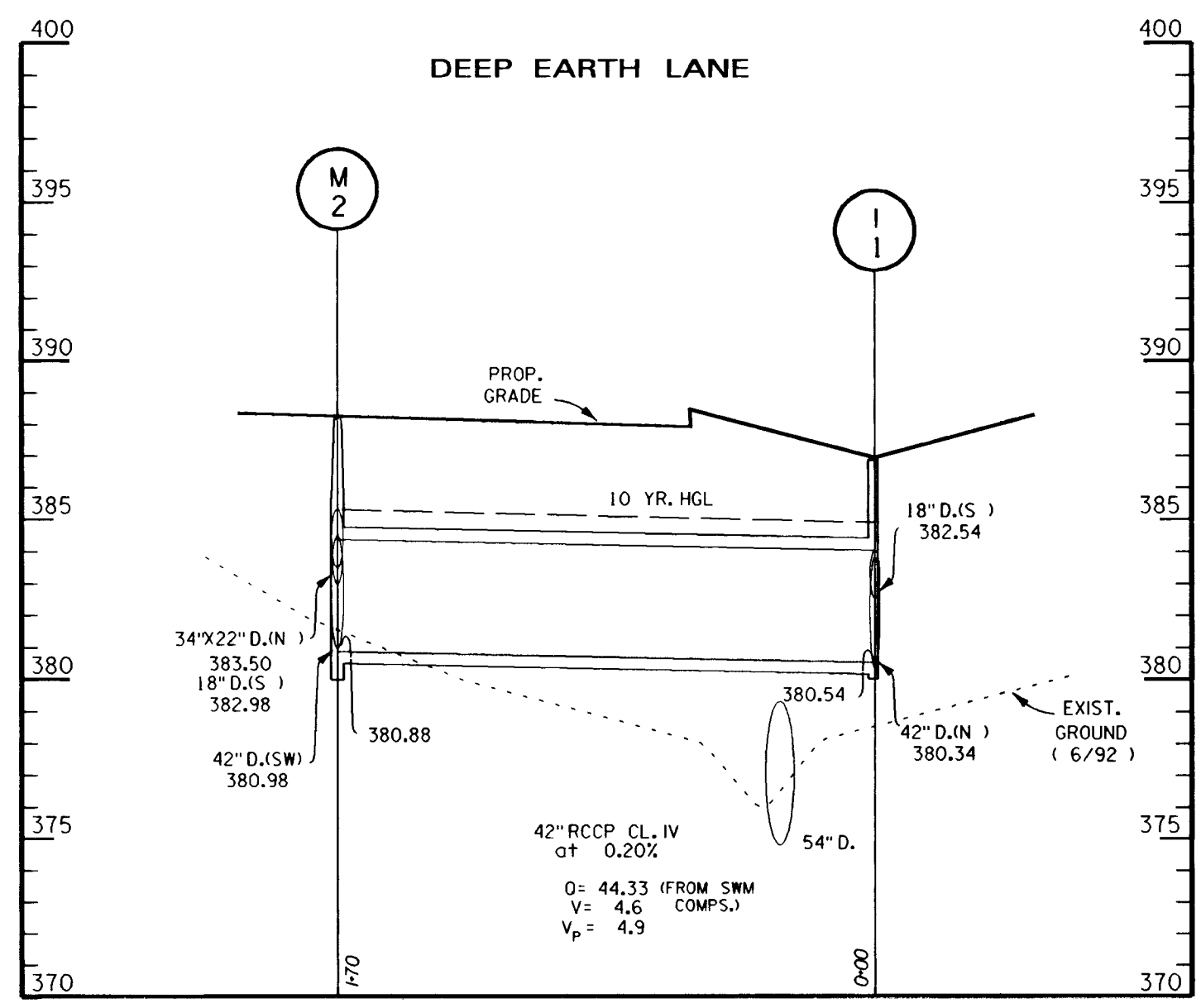
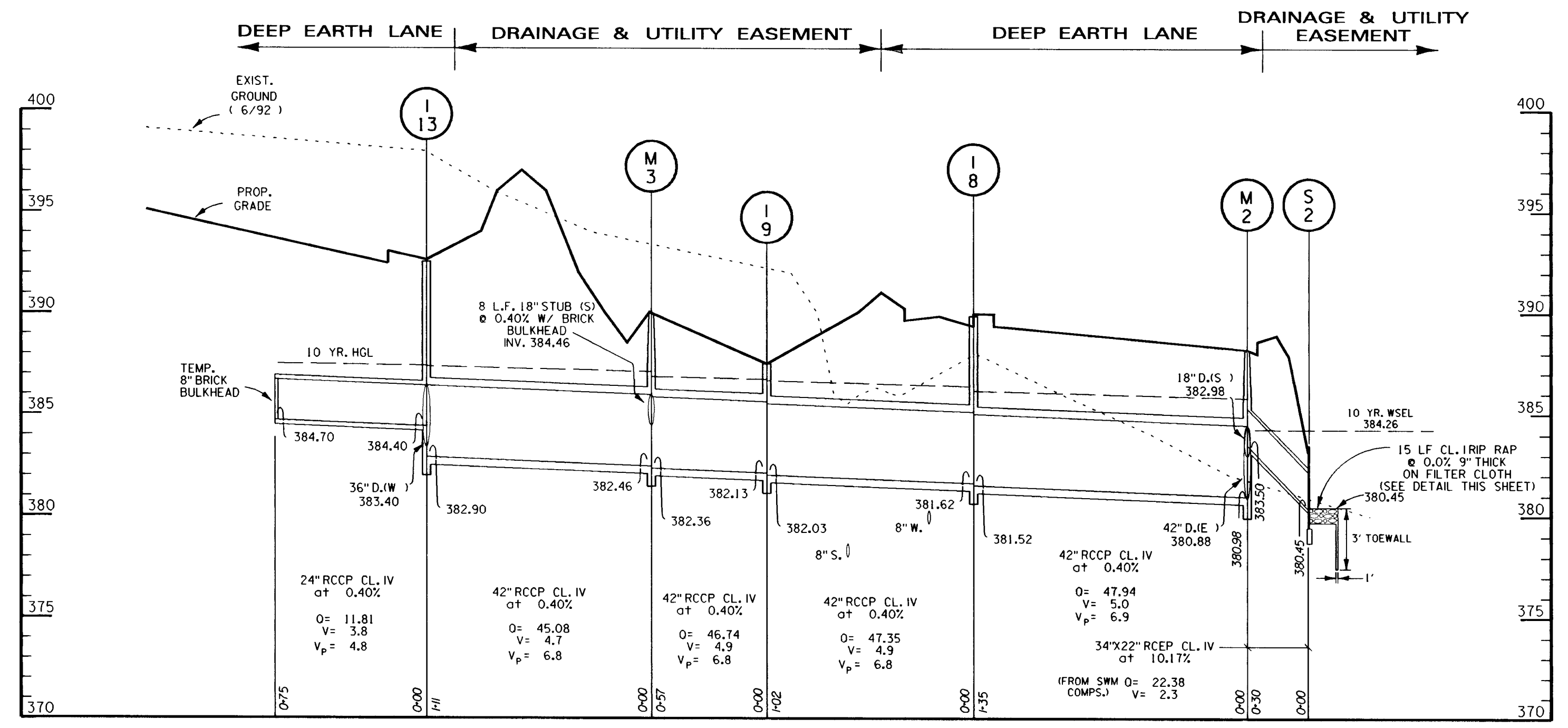
NO.	TYPE	INV. OUT	DETAIL NO.	LOCATION
1	42" CONC. END SECTION	376.00	HO CO SD 5.51	CL STA 1+54.5 68.3' R
2	TYPE 'C' ENDWALL	380.45	HO CO SD 5.21	CL STA 3+35 40.0' R

INLET SCHEDULE

NO.	TYPE	INV. OUT	TOP ELEV. *	DETAIL NO.	LOCATION **
1	A-5 W/ 4.5' WIDTH	380.34	386.88	HO CO SD 4.01	CL STA 1+65 15.0' R
2	A-5	382.71	386.88	HO CO SD 4.01	CL STA 1+65 15.0' L
4	A-5	383.20	388.58	HO CO SD 4.01	CL STA 3+35 15.0' R
8	A-5 W/ 5.0' WIDTH	381.52	389.87	HO CO SD 4.01	CL STA 4+64 15.0' R
9	'S' W/ 5.0' WIDTH	382.03	387.50	HO CO SD 4.22	SEE PLAN
13	A-5	382.90	392.56	HO CO SD 4.01	CL STA 6+74 15.0' L

* TOP ELEV. IS TOP OF CURB FOR A-5 & A-10 INLETS AND TOP OF GRATE FOR 'S' INLETS.
** LOCATION OF INLET IS FACE OF CURB FOR 'A' INLETS AND CENTER OF INLET FOR 'S' INLETS.

NOTE: MINIMUM 6" VERTICAL CLEARANCE REQUIRED BETWEEN STORM DRAIN AND SEWER. MINIMUM 1" VERTICAL CLEARANCE REQUIRED BETWEEN STORM DRAIN AND WATER.



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Andrew M. Daneker 9-20-93
CHIEF, BUREAU OF HIGHWAYS DATE

Paul D. Eason 9/21/03
CHIEF, BUREAU OF ENGINEERING DATE

Chad Dammus 9/20/93
CHIEF, LAND DEVELOPMENT DIVISION M.K. DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Gina Surinans 9/21/93
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

Date	No.	Revision	Description

LONGREACH
SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

8-25-93
Date


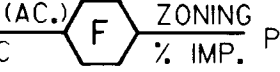

Professional Eng. No. 10551

AREA
PARCELS A, B, & C AND LOTS 89, 90, 91, & 92
TAX MAP 36.37 PART OF PARCEL 50
6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
ROAD CONSTRUCTION DETAILS & STORM DRAIN PROFILES

Des By JCS Scale AS SHOWN Proj. No. 89088D
Drn By JMJ/JCS Date 4/12/93
Chk By JWR Approved 4 OF 20

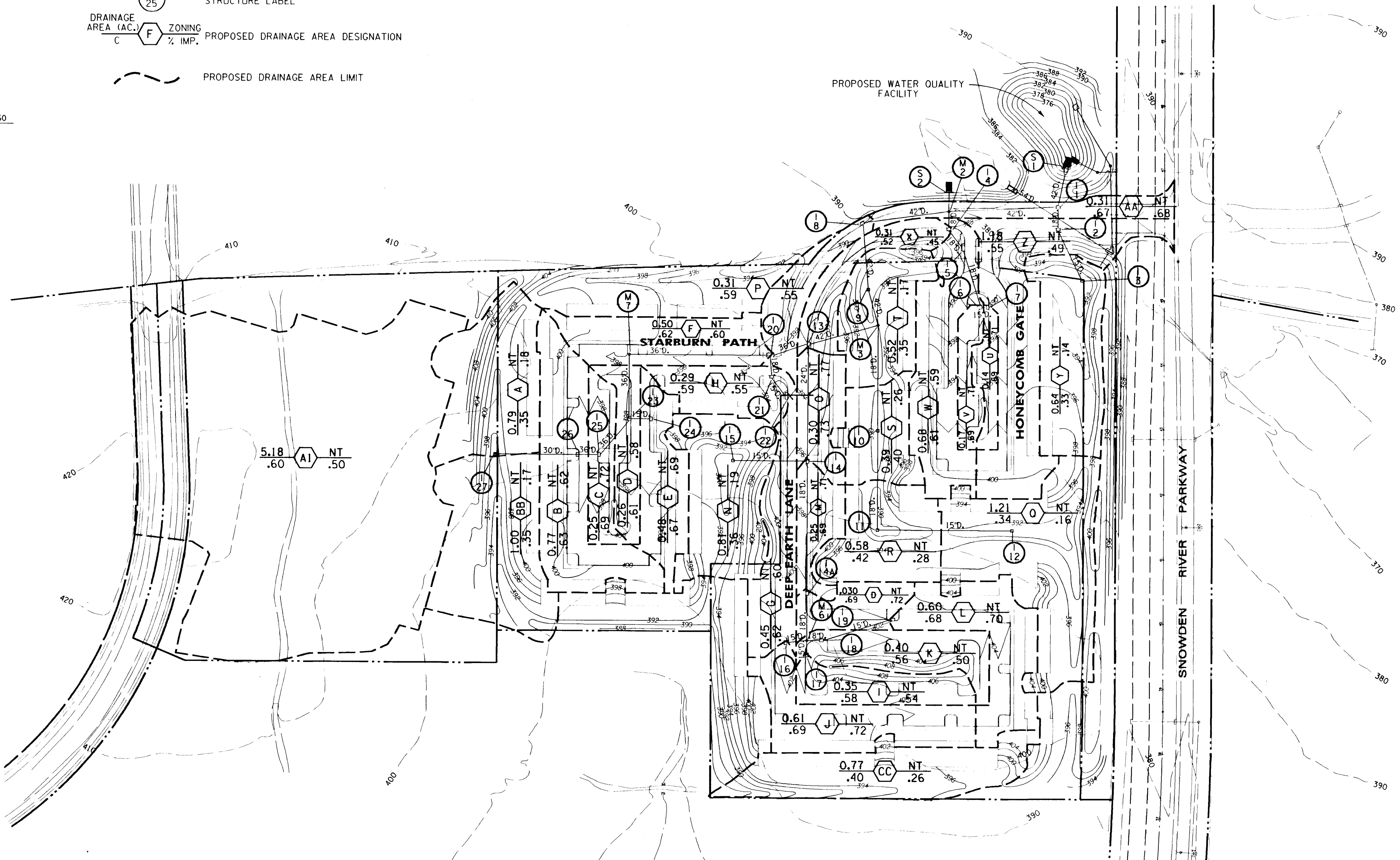
LEGEND

-  STRUCTURE LABEL
-  PROPOSED DRAINAGE AREA DESIGNATION
-  PROPOSED DRAINAGE AREA LIMIT

E 1365000
N 559750

E 1365000
N 558500

E 1367250
N 558500



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Doncker 9/20/93
 CHIEF, BUREAU OF HIGHWAYS DATE

Paul W. Johnson 9/21/93
 CHIEF, BUREAU OF ENGINEERING DATE

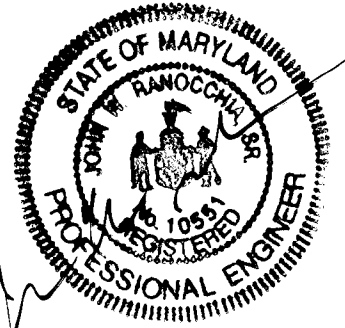
Chris Summers 9/20/93
 CHIEF, LAND DEVELOPMENT DIVISION M.K. DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Gina Drummond 9/24/93
 CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

Date	No.	Revision Description
LONGREACH		
SECTION 4, AREA 3, PHASE 220		
OWNER / DEVELOPER		
THE HOWARD RESEARCH & DEVELOPMENT CORP. THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044		

Daft · McCune · Walker, Inc.
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 410 296 3333
 410 296 4705

8-18-93
Date



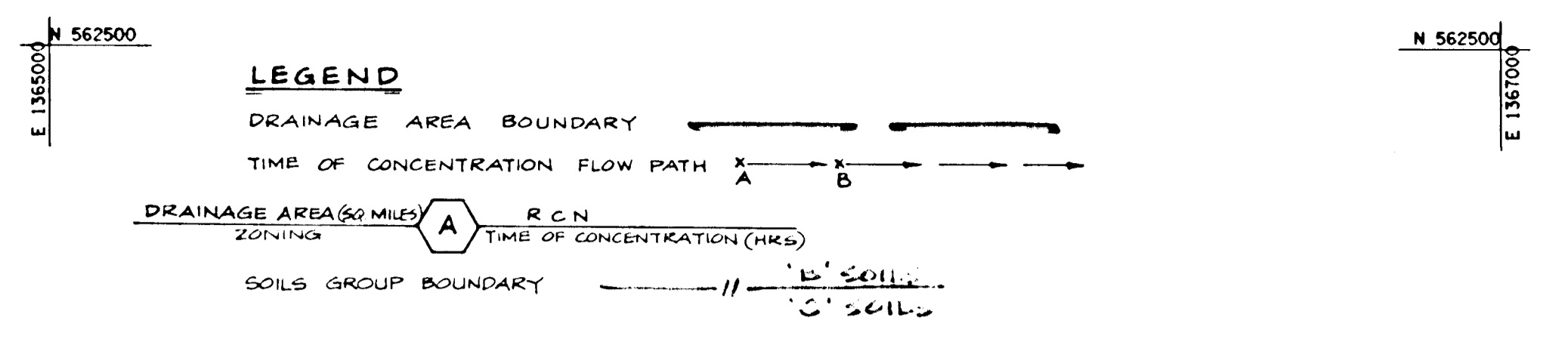
Professional Engr. No. 10551

AREA
 PARCELS A, B, & C AND LOTS 89, 90, 91, & 92
 TAX MAP 36.37 PART OF PARCEL 50
 6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

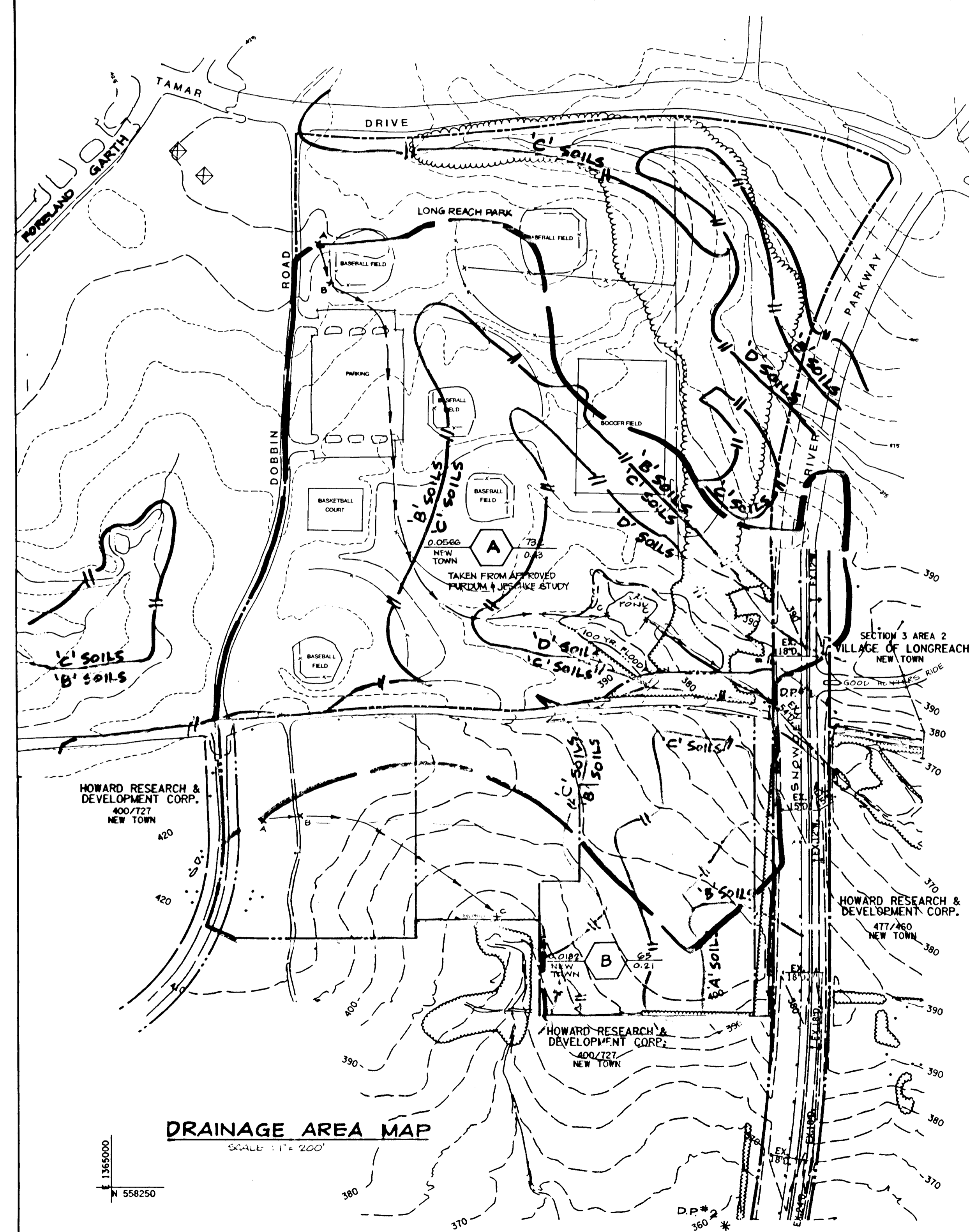
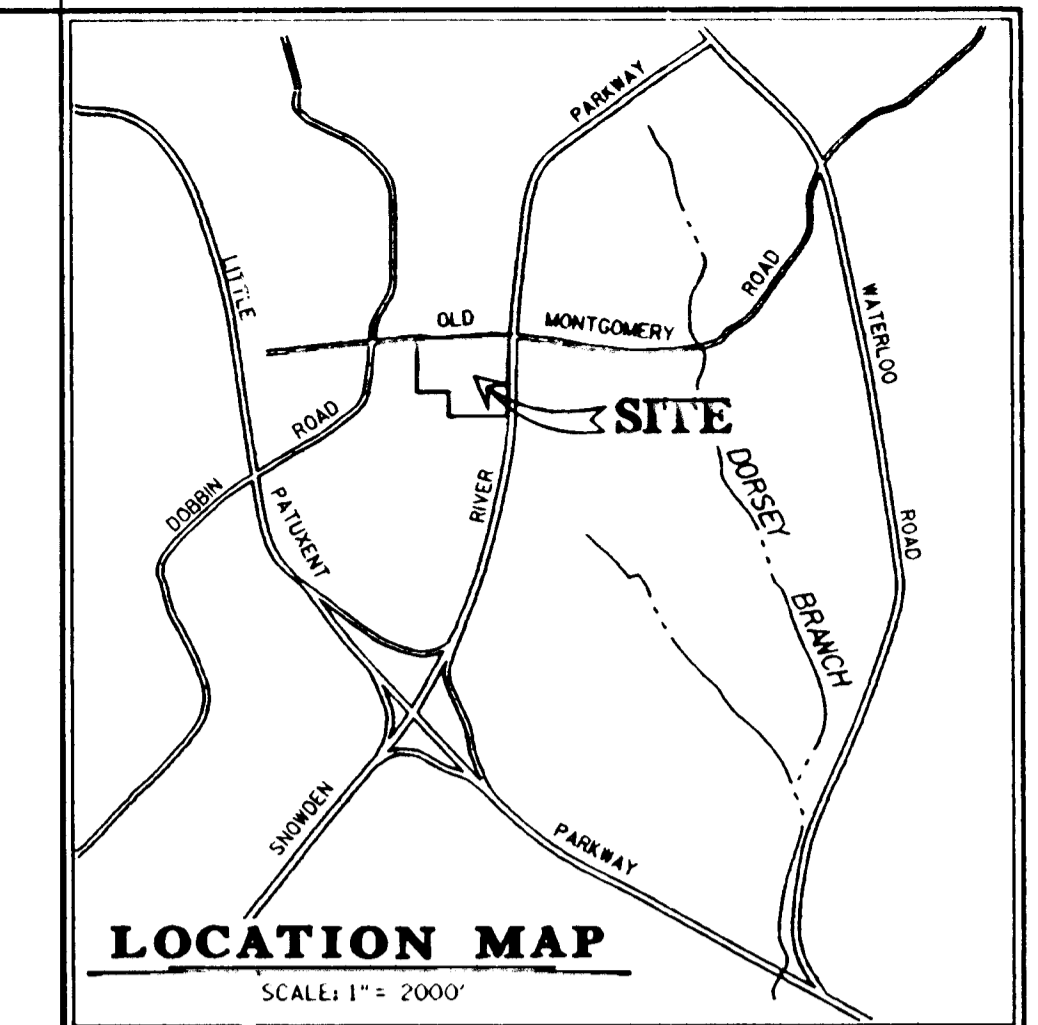
TITLE
**STORM DRAIN
 DRAINAGE AREA MAP**

Des By	CFB	Scale	1" = 100'	Proj. No.	890880
Drn By	JCS	Date	4/12/93	5 OF 20	
Chk By	JWR	Approved			

100



- Sequence of Construction
1. Obtain a grading permit.
 2. Notify the Howard County Dept. of Inspection and Permits (915-1850) a minimum of 24 hours prior to the start of any construction.
 3. After installation of sediment controls and approval of Sediment Control Inspector, install the 48 inch culvert extension to Structure S-5 and construct the brick MH Structure S-3 (1 week).
 4. Install the water quality basin concurrent with mass grading of the site (3 weeks).
 - a. Install the dam core and cutoff trench as shown on the plans.
 - b. Install the remainder of the storm drains.
 - c. Construct Structures S-4 and S-5.
 5. Conduct an initial as-built survey of the stormwater management grading and structures (1 week).
 6. Fine grade and stabilize the stormwater management areas (1 day).
 7. Upon completion of construction, with prior approval of the Sediment Control Inspector, remove Sediment Basin No. 1 and temporary outfall into Structure S-3. Brick the opening in S-3, as required. Stabilize all remaining disturbed areas (1 week).
 8. Prepare and submit final as-built (30 days).



Quantity Stormwater Management (TR-20 Structure 1)

	2-Year	10-Year	100-Year
Developed Inflow (cfs)	35.14	87.97	163.74
Developed Outflow (cfs)	18.18	34.39	98.75
Water Surface Elevation	381.07	384.26	385.52
Storage Provided (Ac. Ft.)	0.40	1.62	2.92

Structure Type: Dry Pond
 Structure Classification: A
 Structure Location: Urban
 Storage Height Product: 53.13
 Watershed Area to Facility: 33.26 Ac.
 Minimum Top Width Provided: NA (Deep Earth Lane and Snowden River Parkway)
 Maximum Height to Fill: 11 Feet

Water Quality Pond (TR-20 Structure 2)

	2-Year	10-Year	100-Year
Developed Inflow (cfs)	32.57	56.45	63.52
Developed Outflow (cfs)	5.97	38.95	41.49
Water Surface Elevation	383.21	384.46	384.84
Storage Provided (Ac. Ft.)	1.23	1.60	1.74

Structure Type: Extended Detention
 Structure Classification: A
 Structure Location: Urban
 Storage Height Product: 28.14
 Watershed Area to Facility: 32 Ac.
 Minimum Top Width Provided: 15 Feet
 Maximum Height to Fill: 7 Feet

* Based on percent of drainage area through Divert Structure (M-2).

Design Point No. 1		2-Year	10-Year
Predeveloped Peak (cfs)		30.52	77.36
(Taken from approved Purdum & Jeschke Study TR-20 Structure 09)			
Developed Peak (cfs)		23.36	64.95

Design Point No. 2		2-Year	10-Year
Predeveloped Peak (cfs)		7.58	24.52
Developed Peak (cfs)		3.98	9.62

- Notes:
1. This site lies within the Dorsey Run watershed.
 2. These facilities are public and shall be maintained by Howard County.
 3. Stormwater management is required and provided for the 2 and 10 year storms.
 4. Call "Miss Utility" at 1-800-257-7777, 48 hours prior to the start of work. The excavator must notify all public utility companies with underground facilities in the area of proposed excavation and have those facilities located by the utility companies prior to commencing excavation.

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 Erosion and Sedimentation before beginning the project. I shall employ a registered professional engineer to supervise pond construction and general stormwater management plan construction and general stormwater management plan construction."

 I also authorize periodic on-site inspections by the Howard Soil Conservation District."

 Signature: *Albert F. Edwards* Date: 8-18-93
 Title: *Owner*
 Print name: Albert F. Edwards, P.E.

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 employ a registered professional engineer to supervise pond construction and general stormwater management plan construction and general stormwater management plan construction."

 Signature: *Ernest L. Shyue* Date: 8/18/93
 Title: *Professional Engineer*
 Print name: Ernest L. Shyue, P.E.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 Signature: *Andrew M. Donohue* Date: 9-20-93
 Title: *Chief Bureau of Highways*

Signature: *Paul J. Sapan* Date: 9/21/93
 Title: *Chief Bureau of Planning*

Signature: *John R. Roberts* Date: 9/21/93
 Title: *Chief Bureau of Planning*

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 Signature: *Gina J. Johnson* Date: 9/24/93
 Title: *Chief Division of Land Development & Research*

Date	No.	Revision Description
11/30/93	1	REV. SEQ. OF CONST. TO REFLECT S-3 CHANGE TO BRICK MH

LONGREACH
 SECTION 4, AREA 3, PHASE 220
 OWNER / DEVELOPER

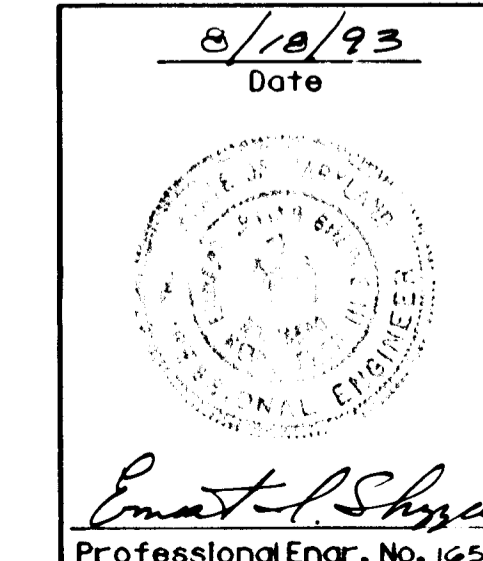
THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE RCUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

Dart M. Cune Walker, Inc.
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 410-296-3333
 Fax: 296-4705

AREA PARCELS A, B & C AND LOTS 89, 90, 91, & 92
 TAX MAP 26.97
 6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: STORMWATER MANAGEMENT EXISTING DRAINAGE AREA MAP

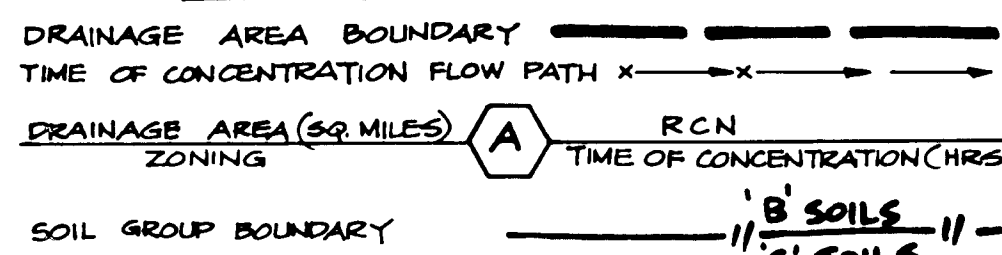
Des By: JMG Scale: 1" = 200' Proj. No.: 890880
 Drn By: DBS Date: 08/17/93
 Chk By: EIS Approved 6 OF 20



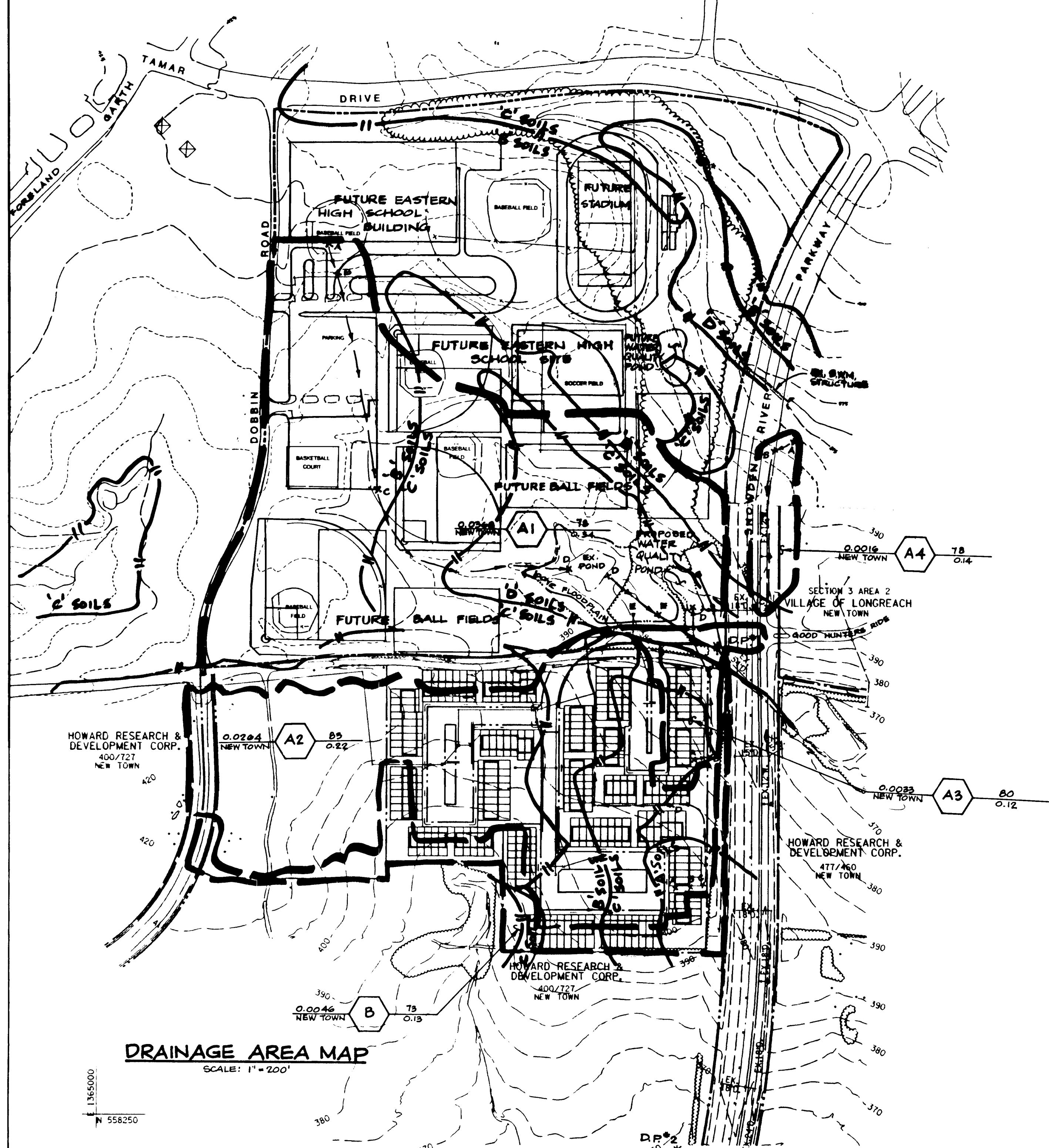
100

E 1365000
N 562500

LEGEND



N 562500
E 1367000



DRAINAGE AREA MAP
SCALE: 1" = 200'

E 1365000
N 558250

- GENERAL**
All stormwater management facilities shall be constructed in accordance with Howard County "Design Manual, Volume 1 Storm Drainage (1990)" and the S.C.S. Maryland "Standard Specifications for Ponds" (MD-378, 1992).
These specifications are appropriate to all ponds within the scope of the Standard 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 placed to no steeper than 1:1.
Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fence rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of 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 area. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" in size or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification SC, CH or CL. Consideration must be given to the use of other materials in the embankment of 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 material shall be placed in maximum 8 inch thick (before compaction) layers which are to be compacted to the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal roadway 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 track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall be compacted to a moisture content such that the required degree of compaction will be obtained so that if formed into a ball it will not crumble or not to wet that water can be squeezed out.
All compaction is to be not less than 95 percent of the maximum dry density as determined by AASHTO Specification T-99 (Standard Proctor) with a moisture content within + 2 percent of optimum. Each layer of fill shall be compacted as necessary to obtain that density, and it is to be certified by the Engineer at the time of construction.
CUT OFF TRENCH AND IMPROVED CORE - 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 4 feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The top width of the impervious core shall be 4 feet minimum. The height of the core shall be as shown on the plans. The side slopes of the core 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.
- STRUCTURAL BACKFILL**
Backfill adjacent to pipe or structure 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 4 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 any equipment be allowed to operate closer than 4 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 24 of 12 inches or greater over the structure or pipe.
- REMOVAL AND REPLACEMENT OF DEFECTIVE FILL**
Fill placed at densities lower than specified maximum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be removed to expose the requirements or removed and replaced by acceptable fill. The bottoms of such excavations shall be finished flat or gently curving and at the side of such excavations the adjacent ground fill shall be trimmed to a slope not steeper than 1 foot horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.
- PIPE CONDUITS**
All pipes shall be circular in cross section.

REINFORCED CONCRETE PIPE All of the following criteria shall apply for reinforced concrete pipe - ASTM Designation C-76 :

- Materials - Reinforced concrete pipe shall have bell and spigot joints and shall equal or exceed ASTM Designation C-76.
- 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.
- 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. The first joint must be located within 2 feet from the rear.
- Backfilling shall conform to "Structural Backfill".

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.
Contractor shall add color mix as plant in accordance with manufacturers recommendation "C-12 Mesa Beige" as manufactured by L. M. Scotell Company (210) 723-5265.
Supply mixture for approval prior to application. Contractor shall supply load and mix scales for each truck load. No partial field mixes shall be allowed.

ROCK RIP-RAP
Rock rip-rap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 906.
The rip-rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will ensure the rip-rap 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 rip-rap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

CONSTRUCTION SPECIFICATIONS

- 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 each location 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 snugly 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 Planning (M-D-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 soil 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.
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.).
- SEEDING**
Seeding, fertilizing and mulching shall be as follows:
Seed Mix:
70% Forager Tall Fescue
30% Chewink 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: 400 lbs./acre 10-10-10 fertilizer before seeding.
400 lbs./acre 30-0-0 ureaform fertilizer time 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.
- FILTER CLOTH**
All filter cloth shall conform to Minfil 140N, Dupont Typer 341 or 301, Supac 5P or approved equal.

CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS
The construction of the pond and embankment, and construction 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) inspection 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.

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."

Albert F. Edwards, P.E.
Signature of Developer
8-23-93
Date
Albert F. Edwards, P.E.
Print name

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."

Ernest J. Sheppart
Signature of Engineer
8/18/93
Date
Ernest J. Sheppart
Print name

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for permit construction, soil erosion and sediment control.
John R. Blanton
Date: 9/13/93
John R. Blanton
Date: 9/13/93
Howard Soil Conservation District

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daveler
9-20-93
DATE
CHIEF, BUREAU OF HIGHWAYS

Paul O. Sisson
9/21/93
DATE
CHIEF, BUREAU OF ENGINEERING

John D. Dammann
9/20/93
DATE
CHIEF, LAND DEVELOPMENT DIVISION M.K.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Gina Swann
9/24/93
DATE
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH

Date	No.	Revision Description

LONGREACH
SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

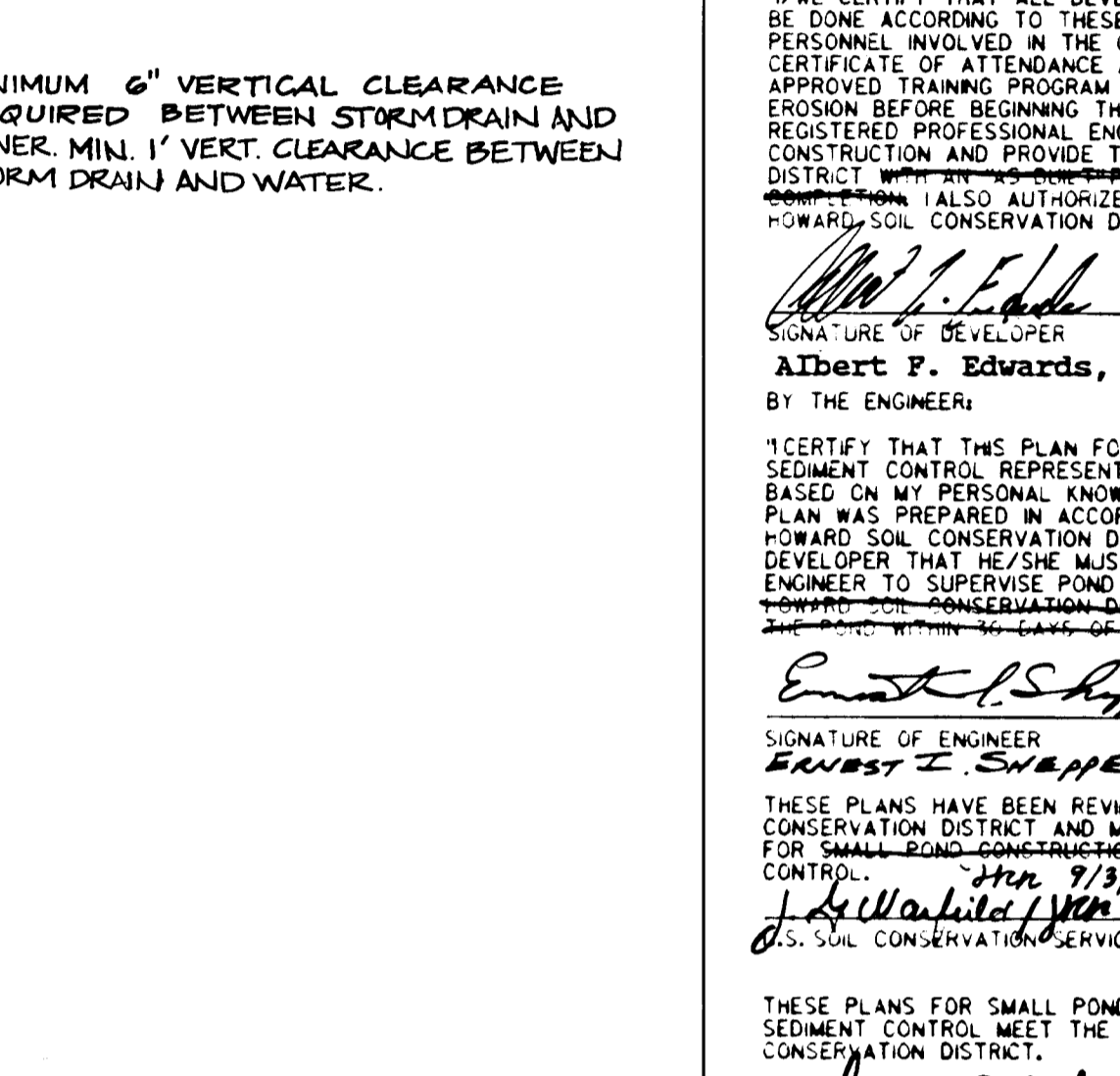
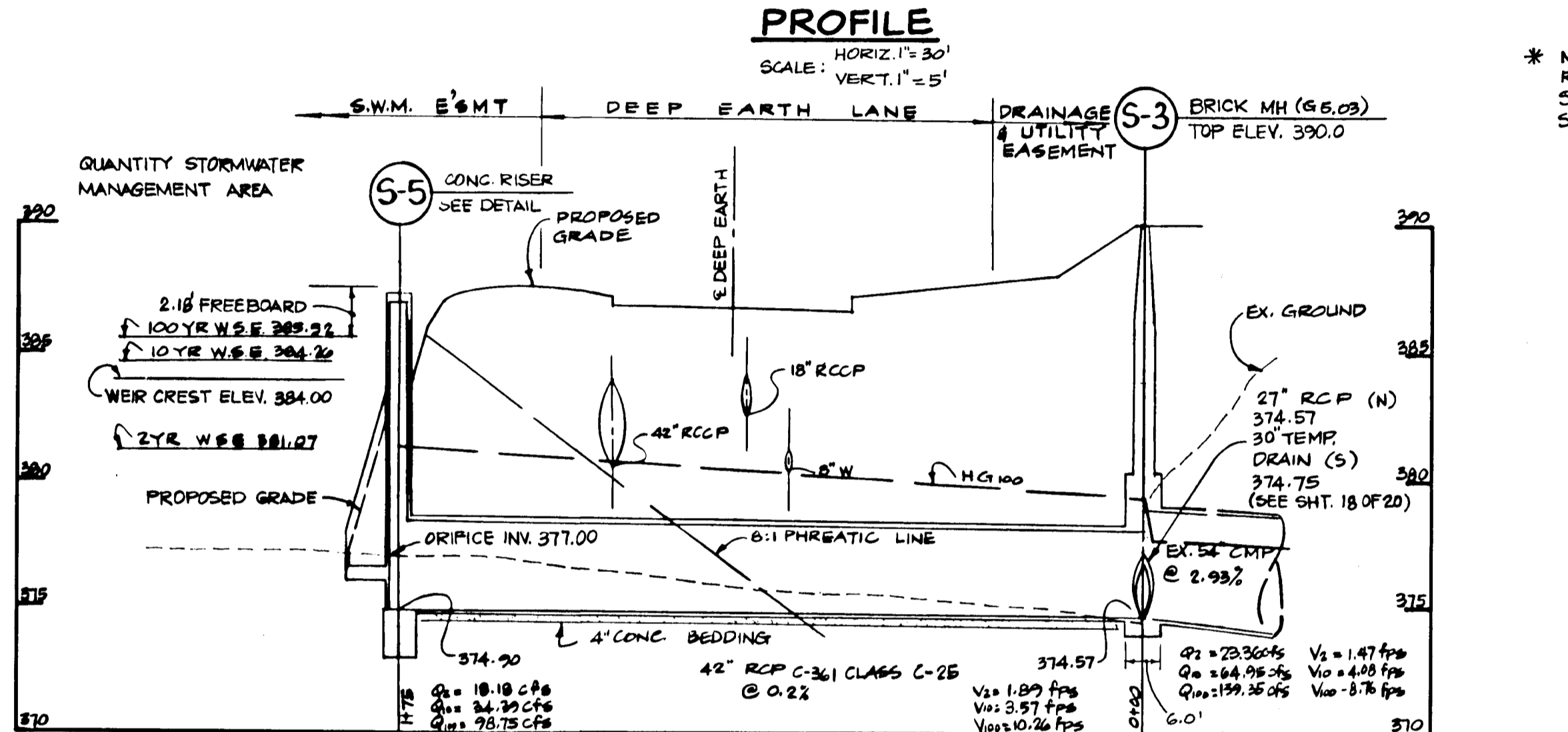
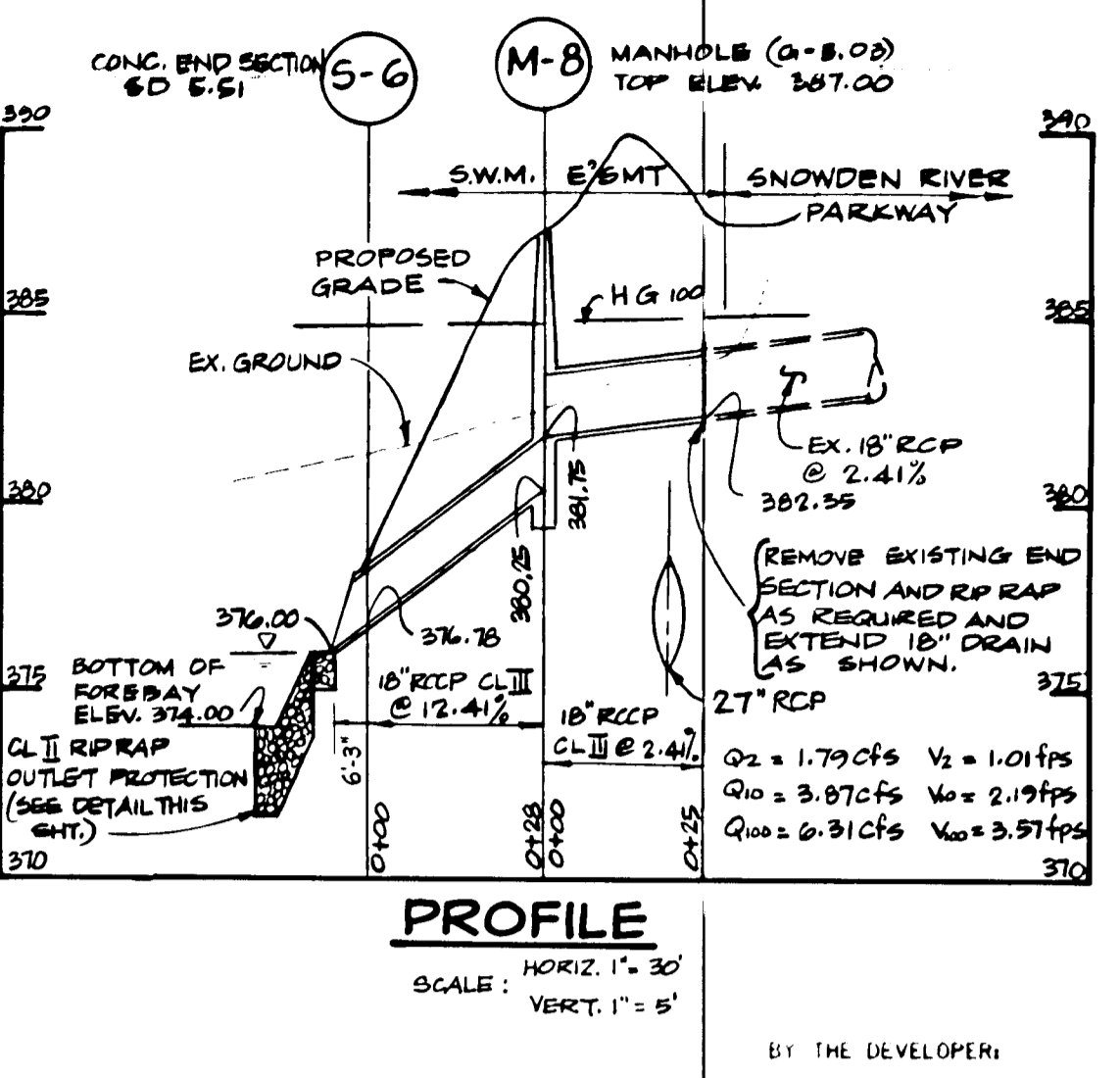
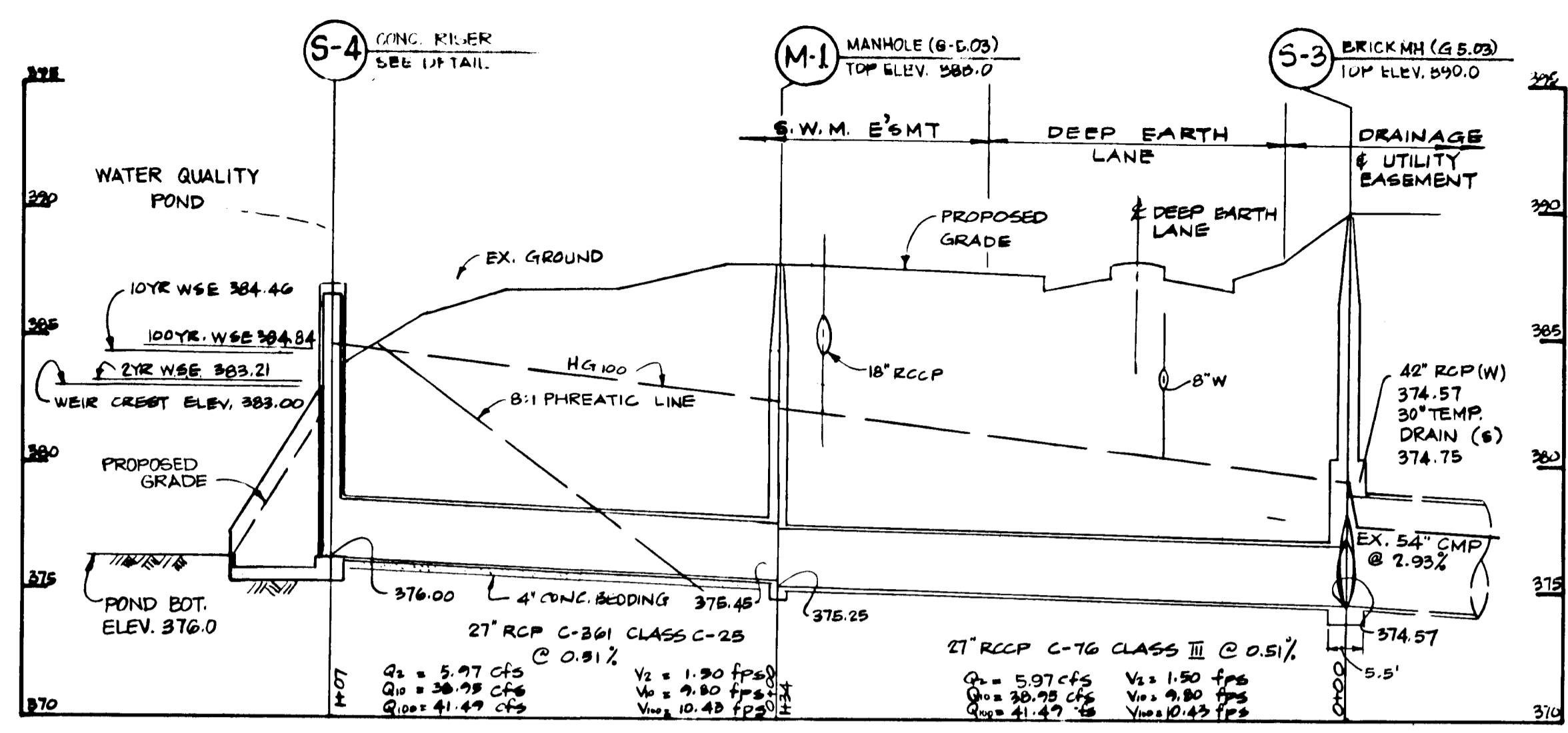
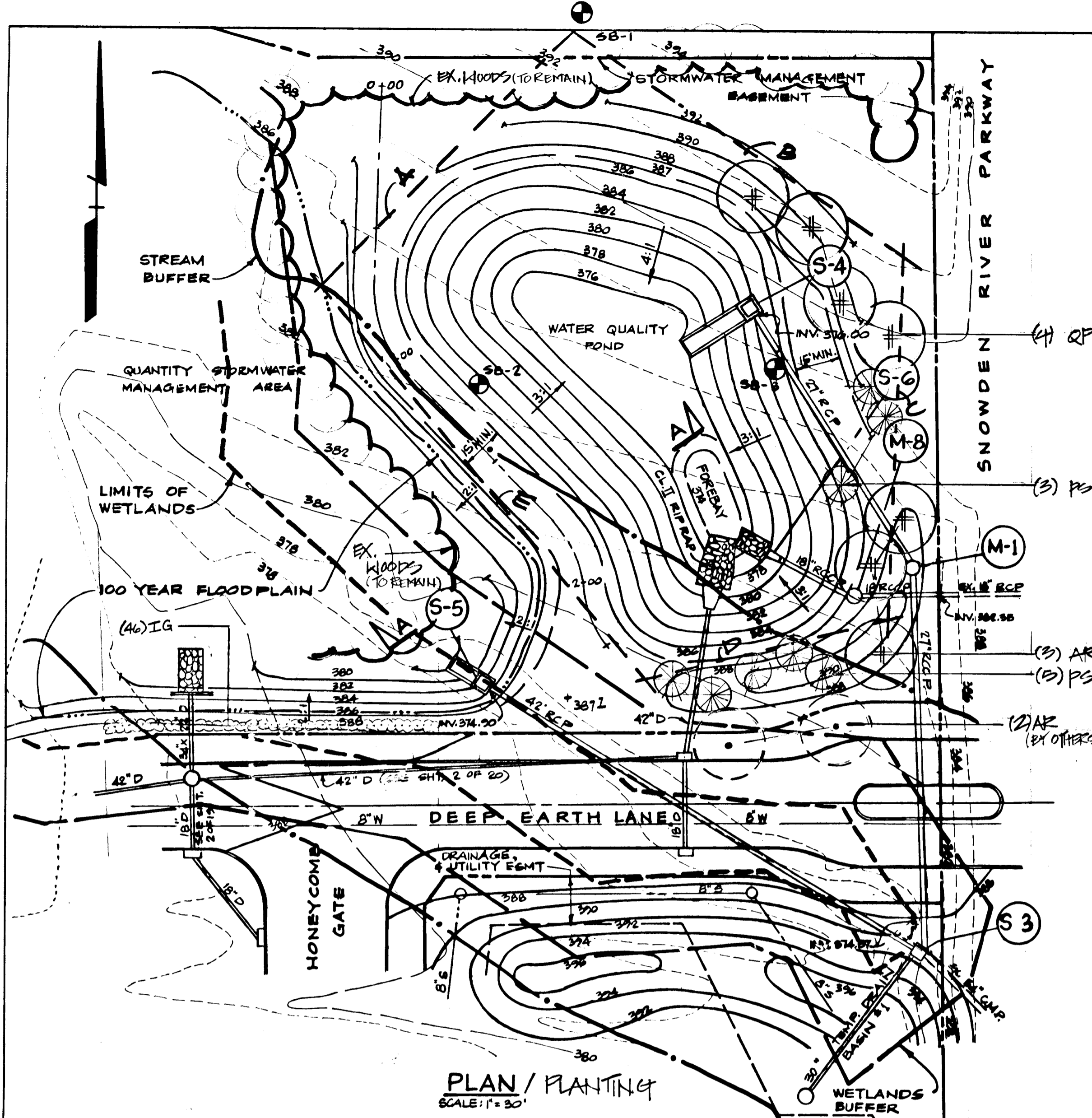
DMW
Daft • McCune • Walker, Inc.
A Team of Land Planners, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Columbia, Maryland 21046
410-246-3333
Fax: 410-246-4100

AREA A
PARCELS A, B, & C AND LOTS 89, 90, 91, & 92
TAX MAP 38.37 PART OF PARCEL 50
6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
STORMWATER MANAGEMENT
PROPOSED DRAINAGE AREA MAP

Des By	JMG	Scale	1" = 200'	Proj. No.	89068D
Drn By	DBS	Date	08/17/93		
Chk By	E.I.S.	Approved			7 OF 20

8/18/93
Date
Ernest J. Sheppart
Professional Engr. No. 16580



LANDSCAPE REQUIREMENTS

PERIMETER

- A. 125'
- B. 140'
- C. 126'
- D. 87'
- E. 177'

FEES REQUIRED

- SHADE TREE / 50 LF = 7
- EVERGREEN TREE / 40 LF = 5

PLANT LIST

QTY	CODE	BOTANICAL NAME	COMMON NAME	SIZE	COND	REMARKS
5	AR	ACER RUBRUM 'RED SUNSET'	RED SUNSET MAPLE	2-2 1/2"	B+B	14-16" FULL CROWN
4	QP	QUERCUS PALUSTRIS	PIN OAK	2-2 1/2"	"	"
8	PS	PINUS STROBUS	EASTERN WHITE PINE	6-8"	"	"
40	IG	ILEX GLABRA	INKBERRY HOLLY	2-2 1/2"	"	HEAVY NATURAL HEDGE 2 1/2' ON CENTER

NOTE

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

FINANCIAL SURETY FOR THE REQUIRED 15 LANDSCAPE TREES IN THE AMOUNT OF \$1500.00 IS PART OF THE DEVELOPERS AGREEMENT.

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/SMALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT DRAWING OF THE POND WITHIN 90 DAYS OF COMPLETION.

DATE: 8/23/93

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 DRAWING OF THE POND WITHIN 90 DAYS OF COMPLETION.

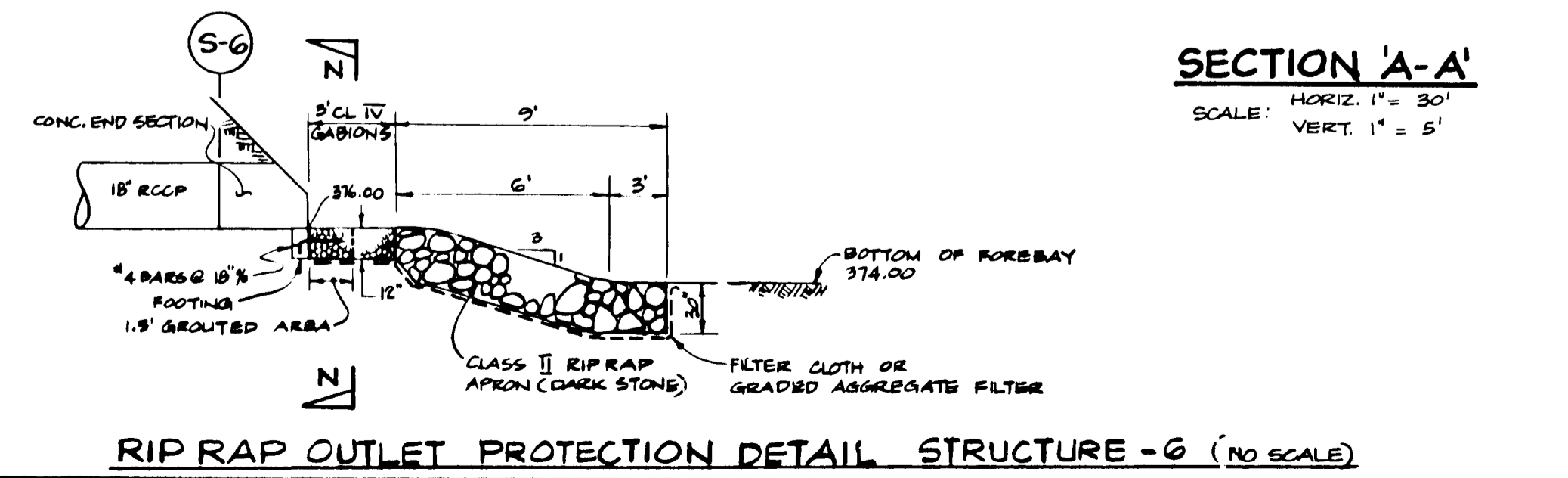
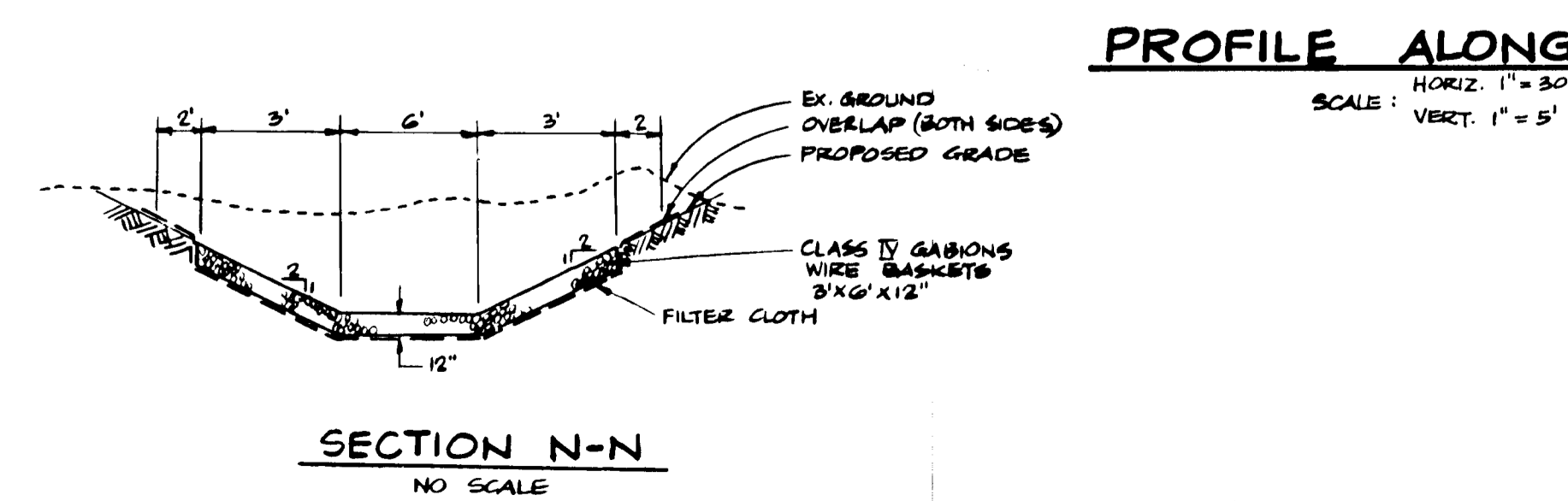
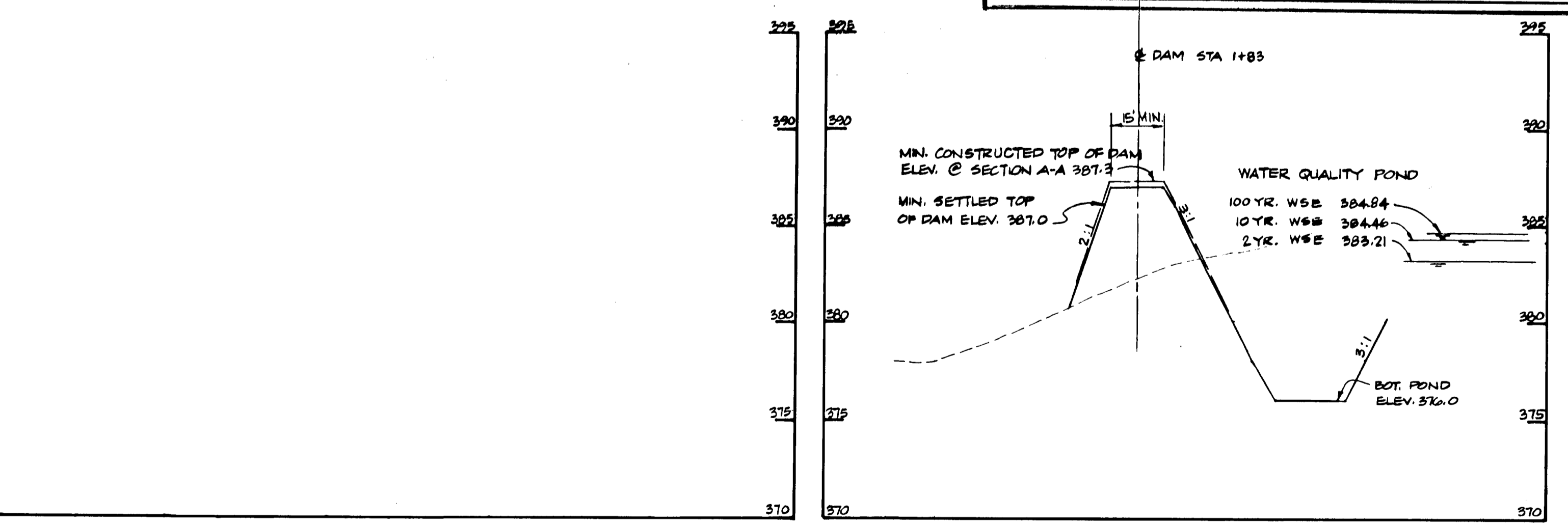
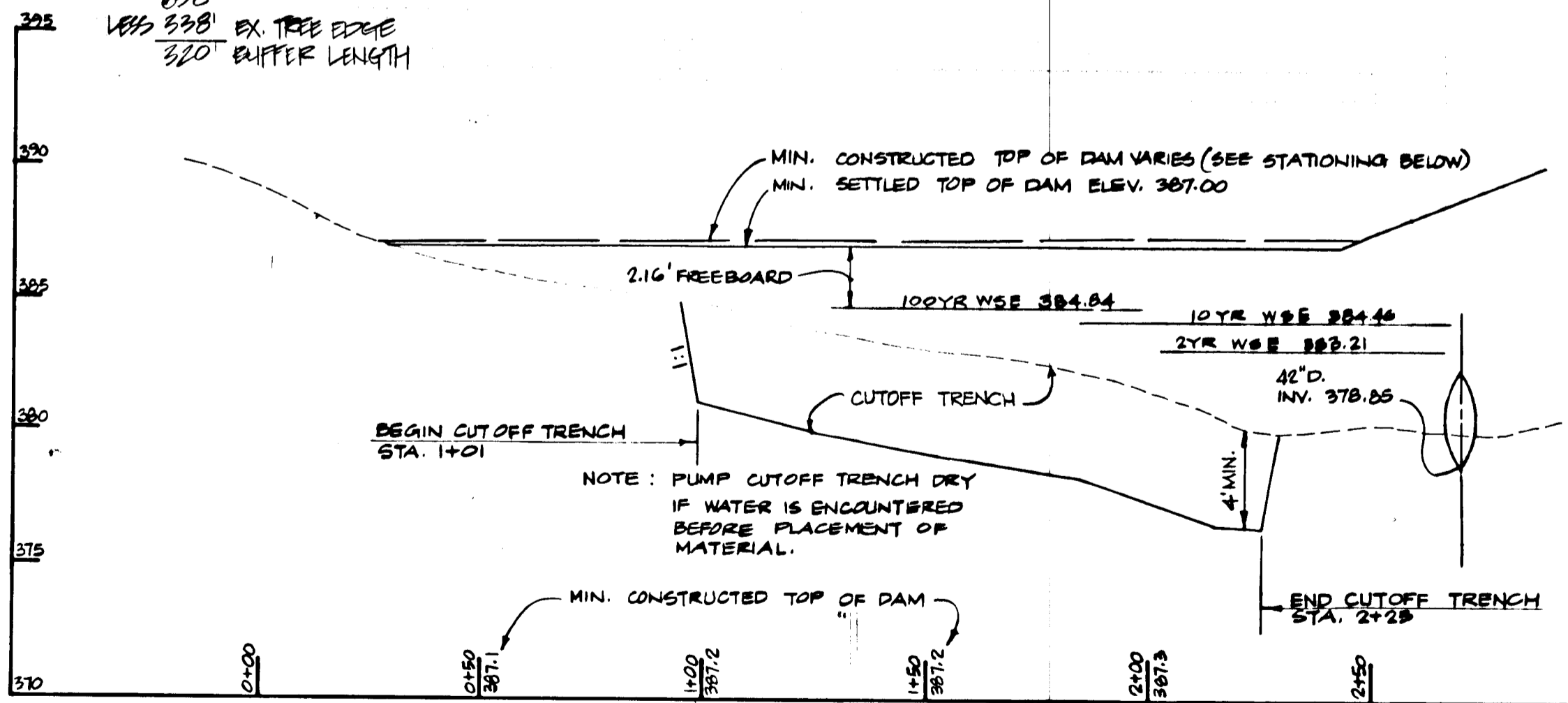
DATE: 9/3/93

DATE: 8/18/93

DATE: 9/3/93

DATE: 9/3/93

DATE: 9/3/93



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

DATE: 9/20/93

DATE: 9/21/93

DATE: 9/21/93

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

DATE: 9/24/93

11/30/93 1 CHANGED 5-3 TO A BRICK MH (6.5.03)

Revision Description

LONGREACH

SECTION 4. AREA 3. PHASE 220

OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

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Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

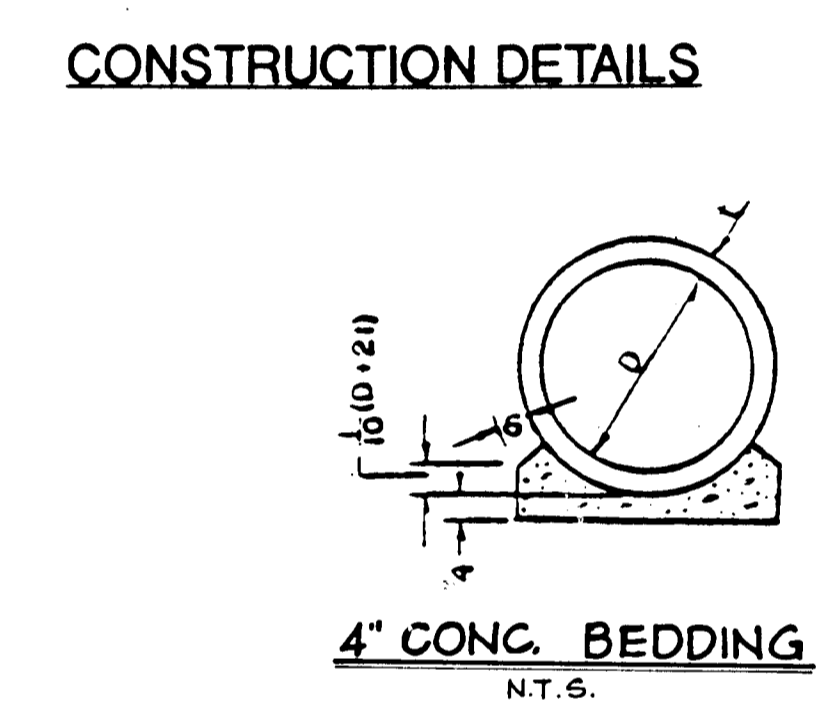
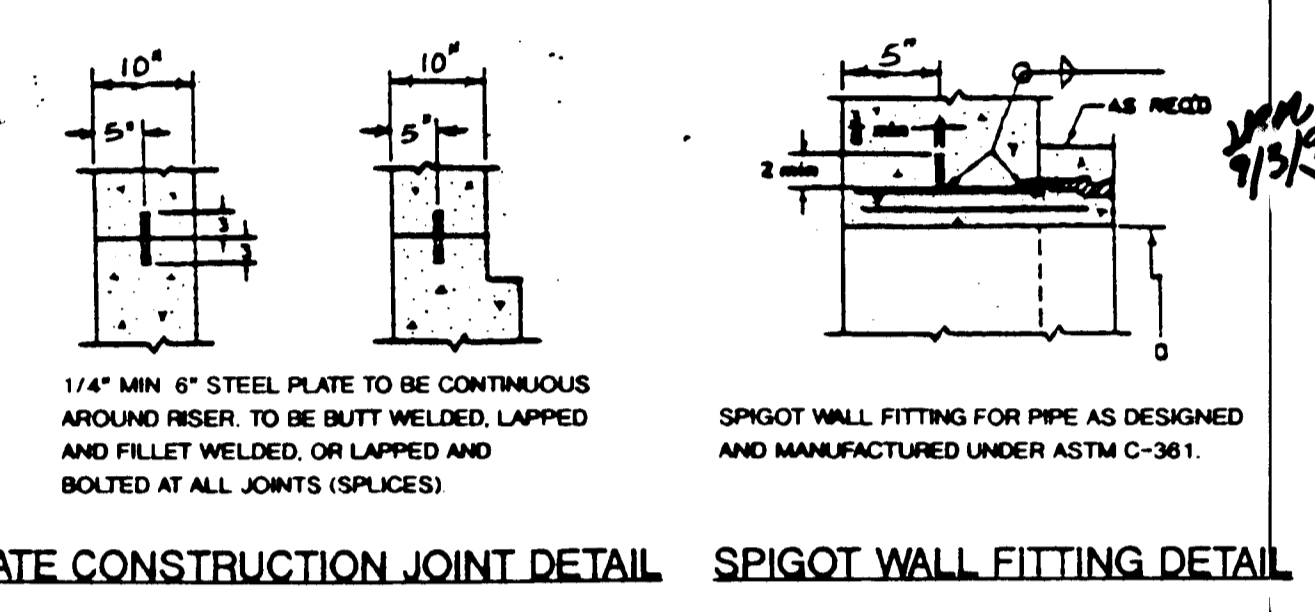
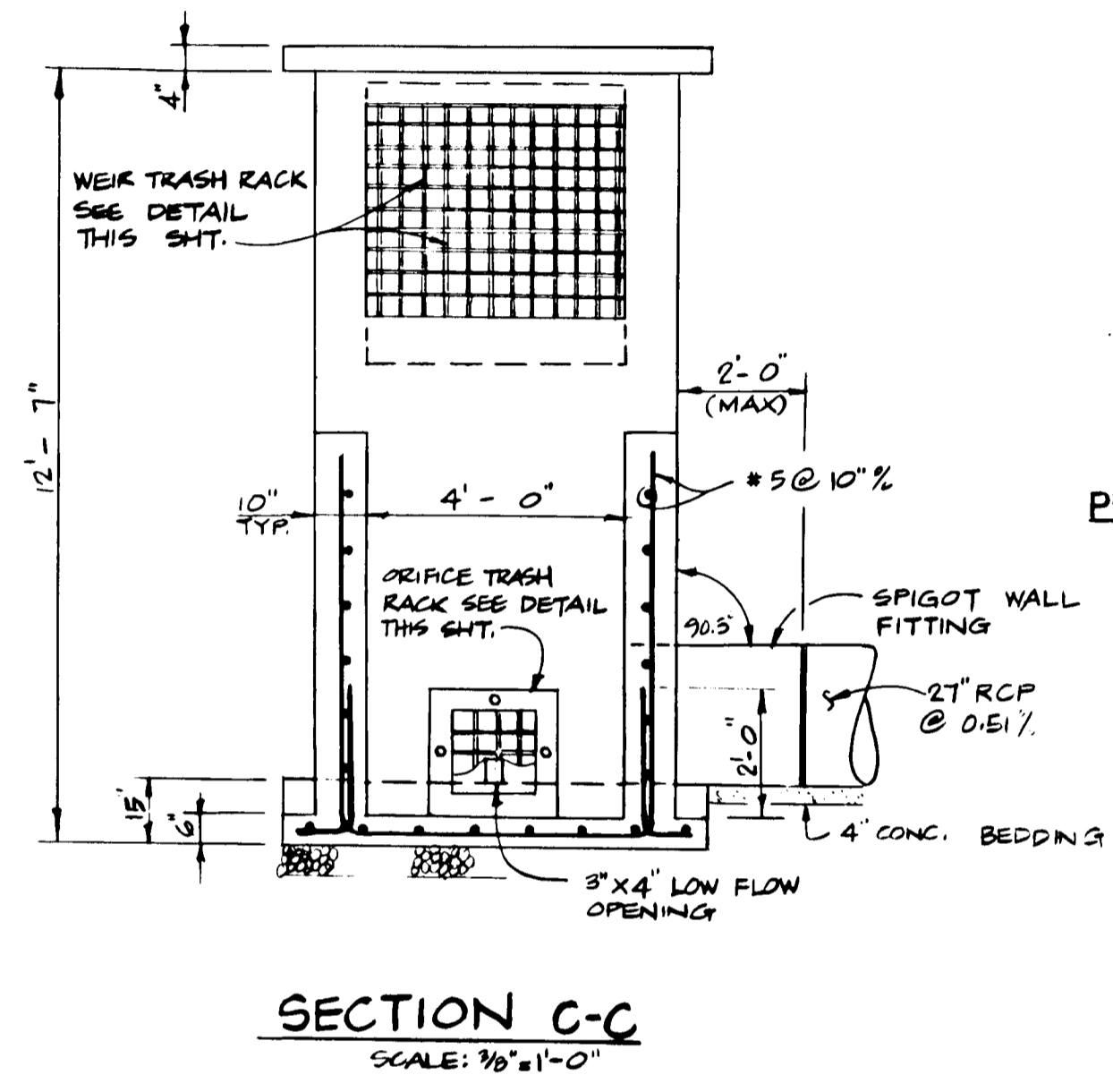
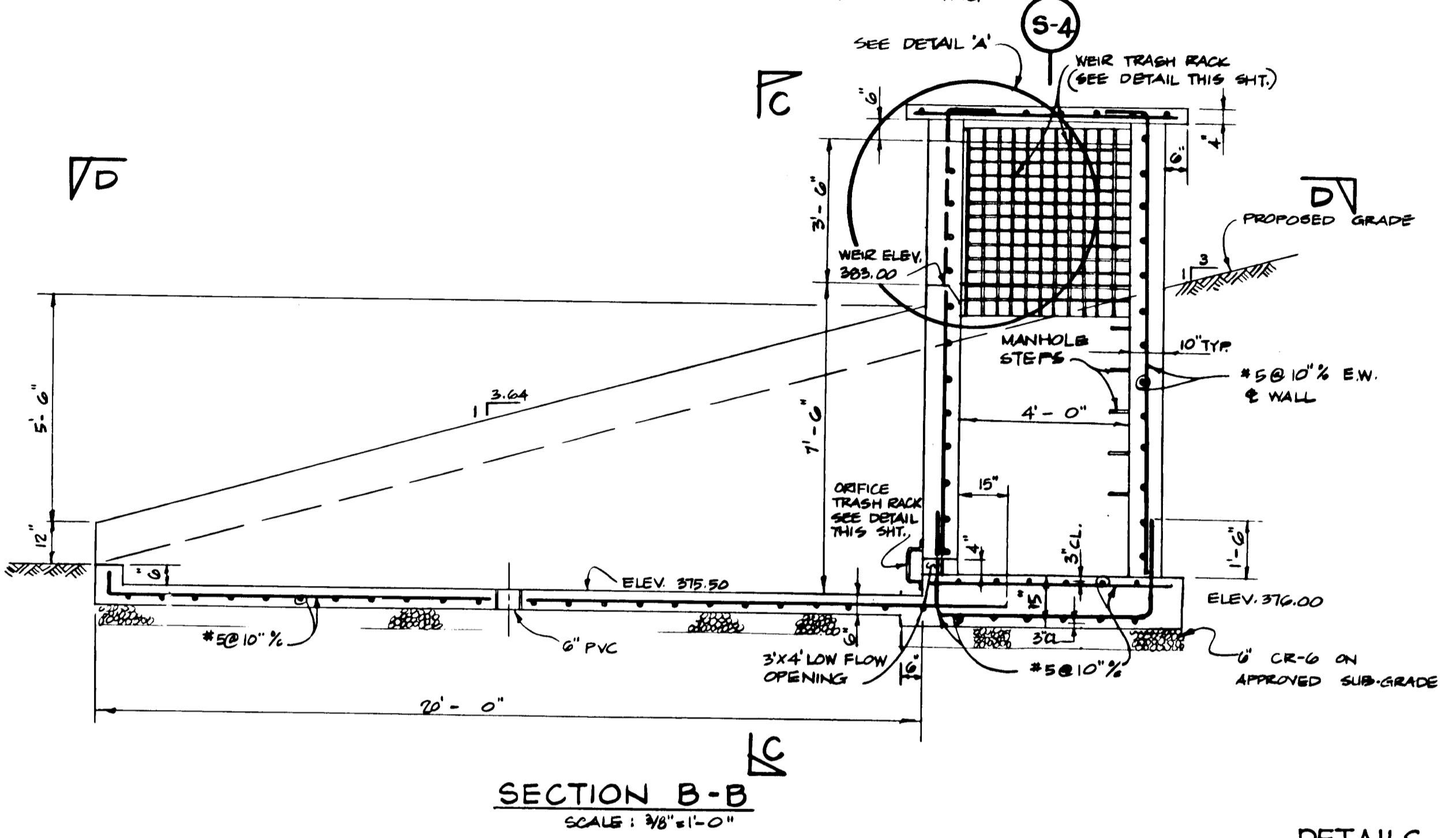
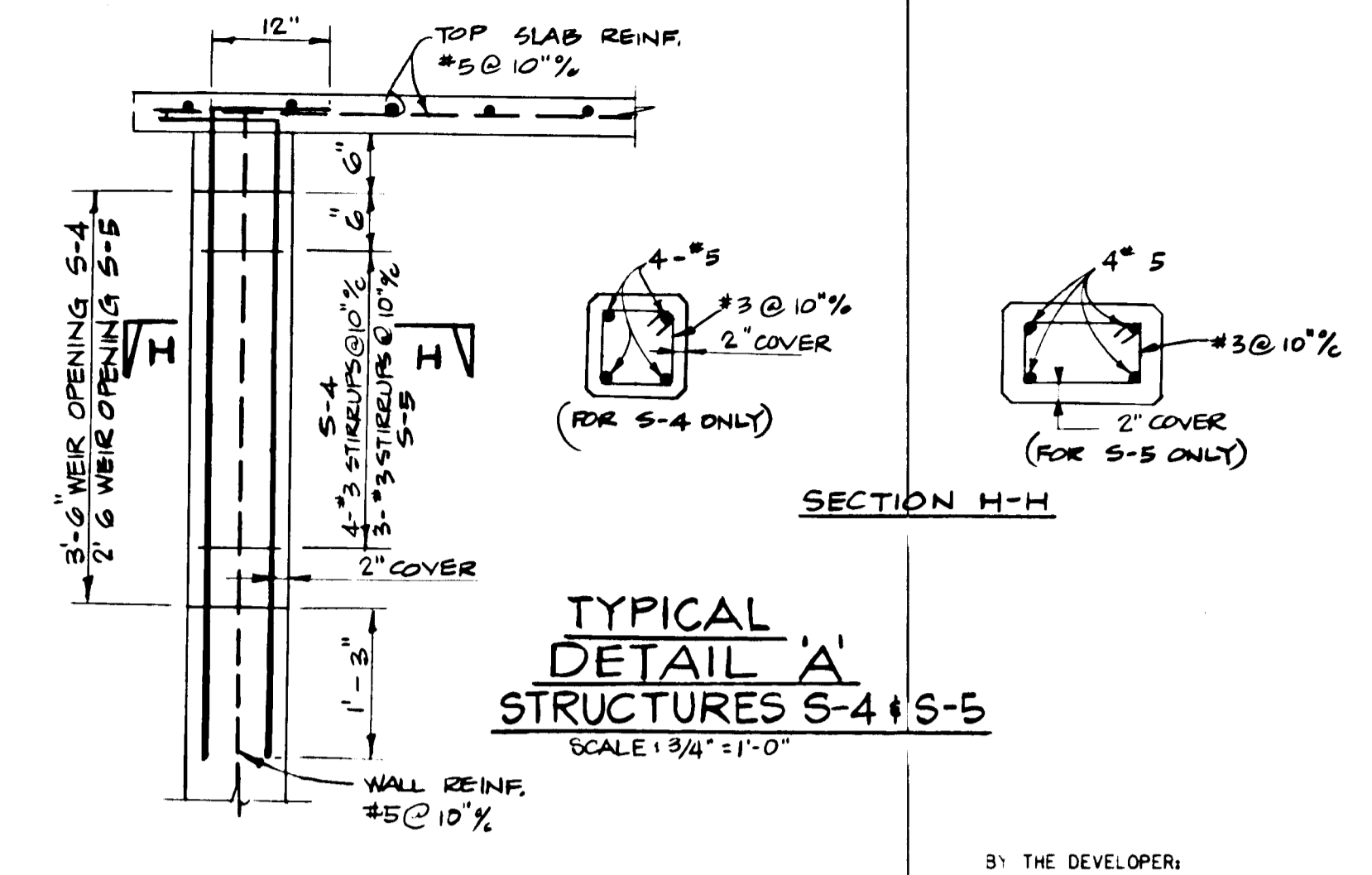
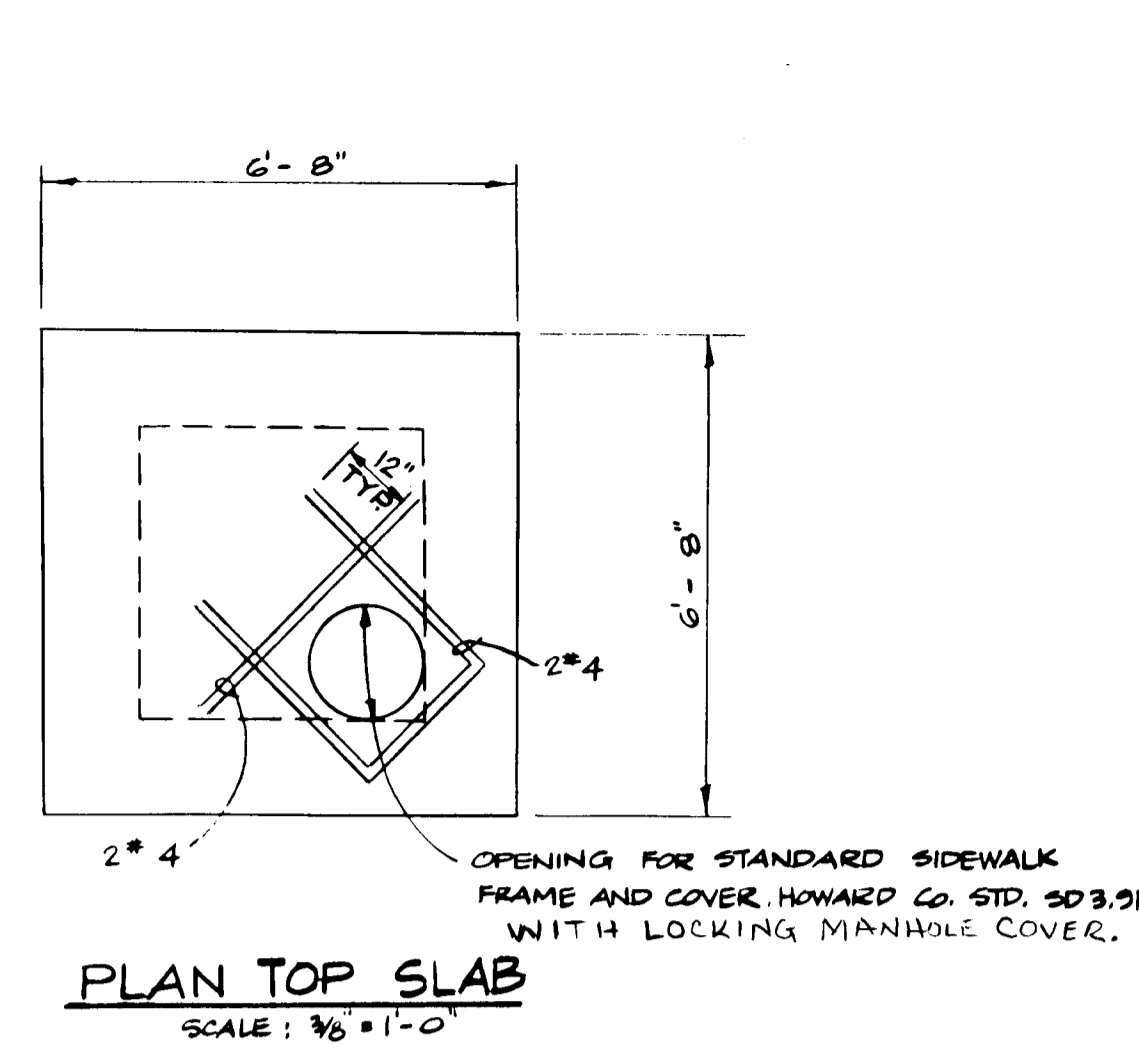
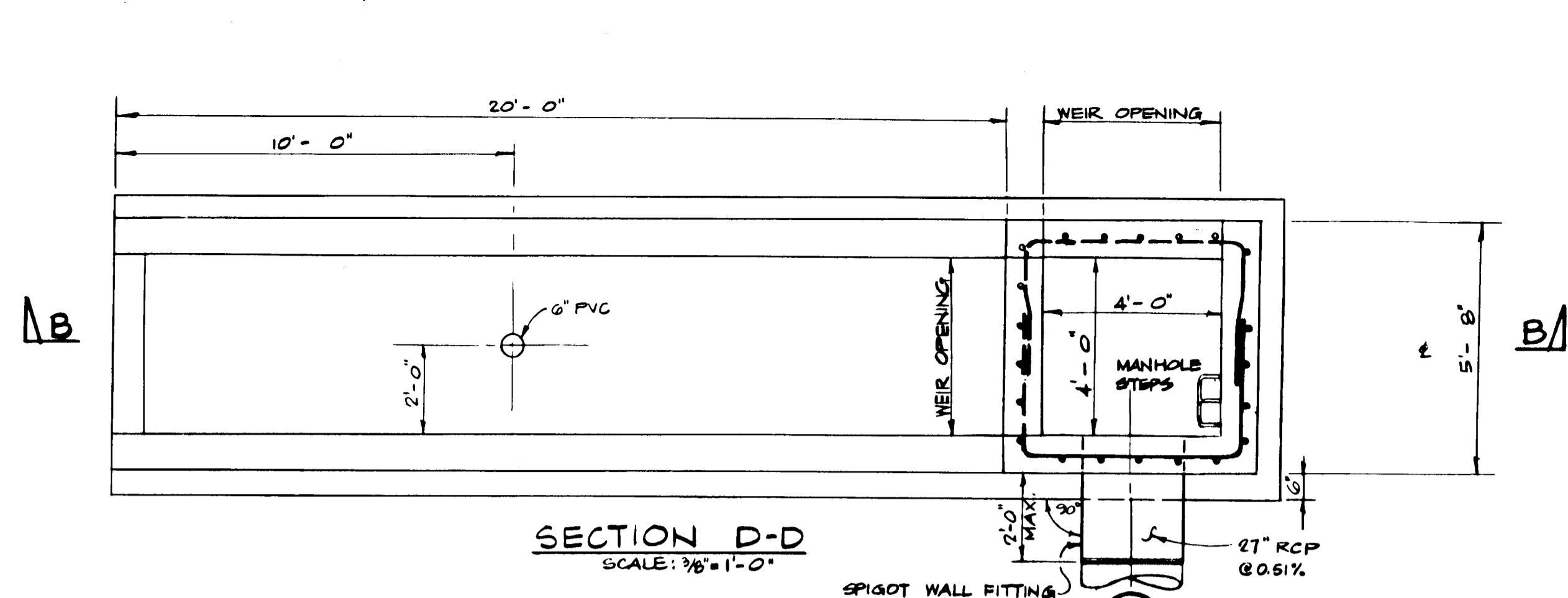
DATE: 8/18/93

AREA: PARCELS A, B & C AND LOTS 89.90, 91 & 92
TAX MAP 38.37 PART OF PARCEL 60
6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

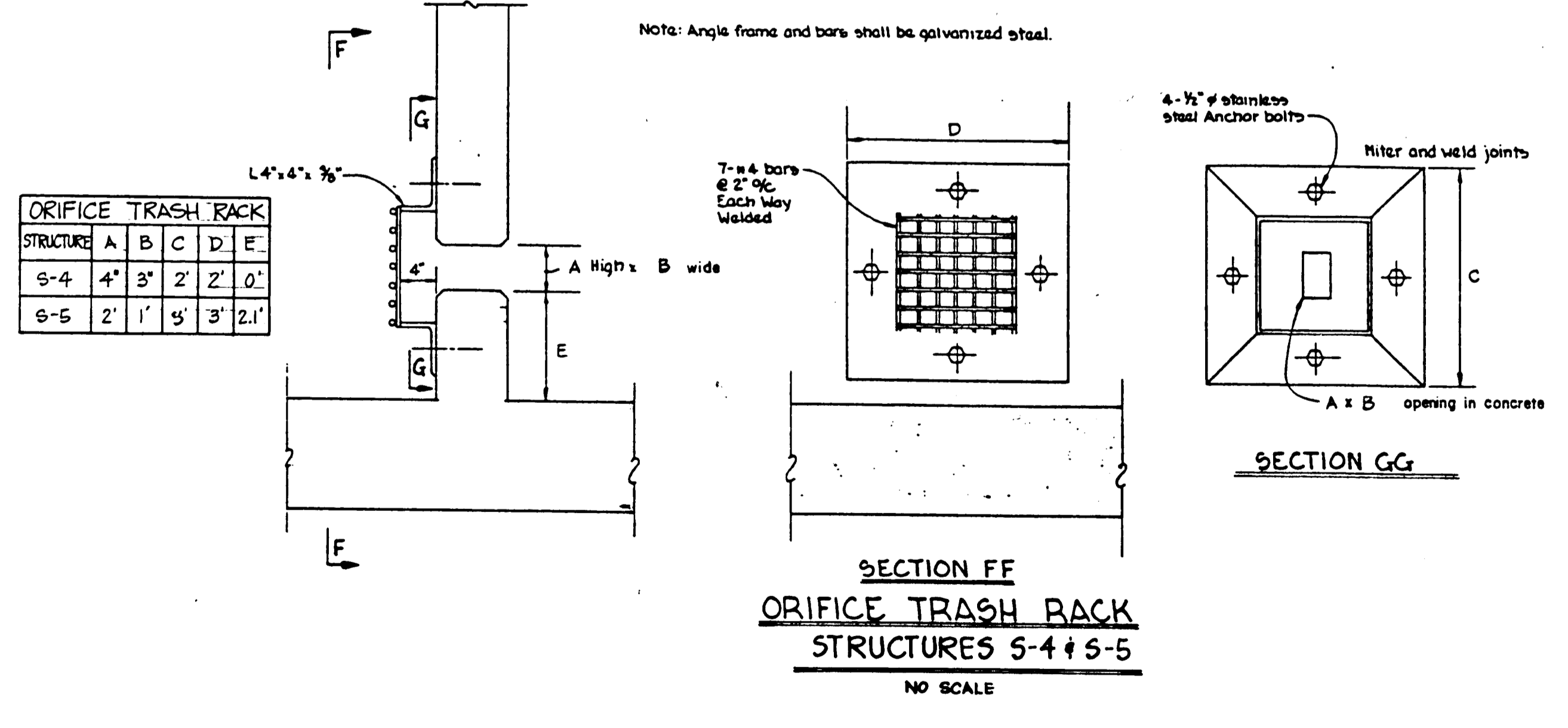
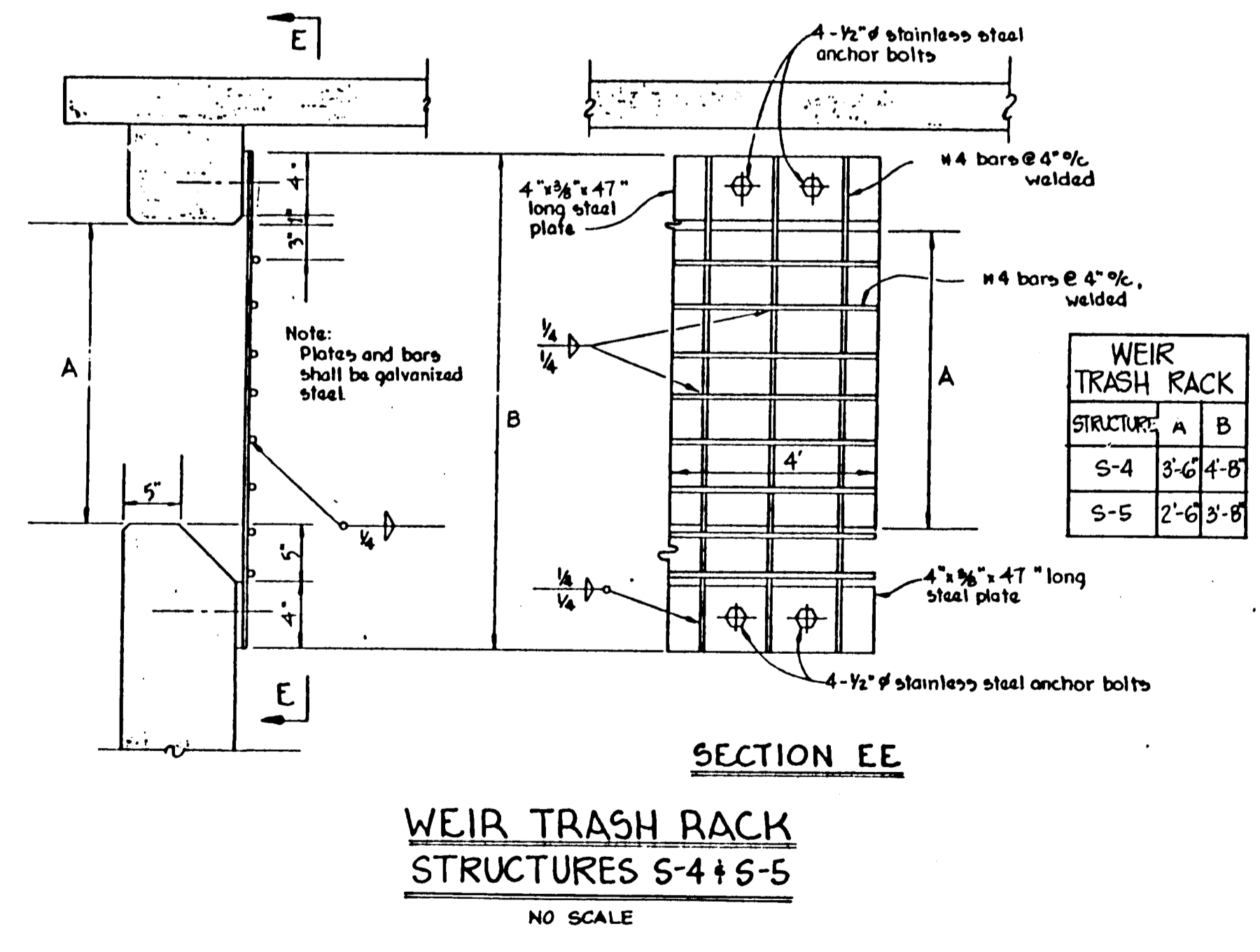
TITLE: STORMWATER MANAGEMENT AND LANDSCAPE PLAN PLAN AND PROFILE

Des By: JMG Scale: AS SHOWN Proj. No.: 890880
Dwn By: DBS Date: 08/17/93
Chk By: EIS Approved

8 OF 20



**DETAILS
STRUCTURE S-4**
SCALE: 3/8"=1'-0"



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 MAINTENANCE. I SHALL ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Albert F. Edwards 8-23-93
SIGNATURE OF DEVELOPER DATE
Albert F. Edwards, P.E.
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 MAINTENANCE. I SHALL ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT WITHIN 30 DAYS OF COMPLETION.

Emmett S. Shyres 8/18/93
SIGNATURE OF ENGINEER DATE
Emmett S. Shyres II
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SWEE POND CONSTRUCTION SOIL EROSION AND SEDIMENT CONTROL.

John A. Wanfield 9/3/93
HOWARD SOIL CONSERVATION SERVICE DATE

John R. Blanton 9/3/93
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Richard M. Dwyer 9-20-93
CHIEF, BUREAU OF HIGHWAYS DATE

Paul D. Brown 9/21/93
CHIEF, BUREAU OF ENGINEERING DATE

Richard Dwyer 9/21/93
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Gina Summery 9/24/93
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

Date	No.	Revision Description

LONGREACH
SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

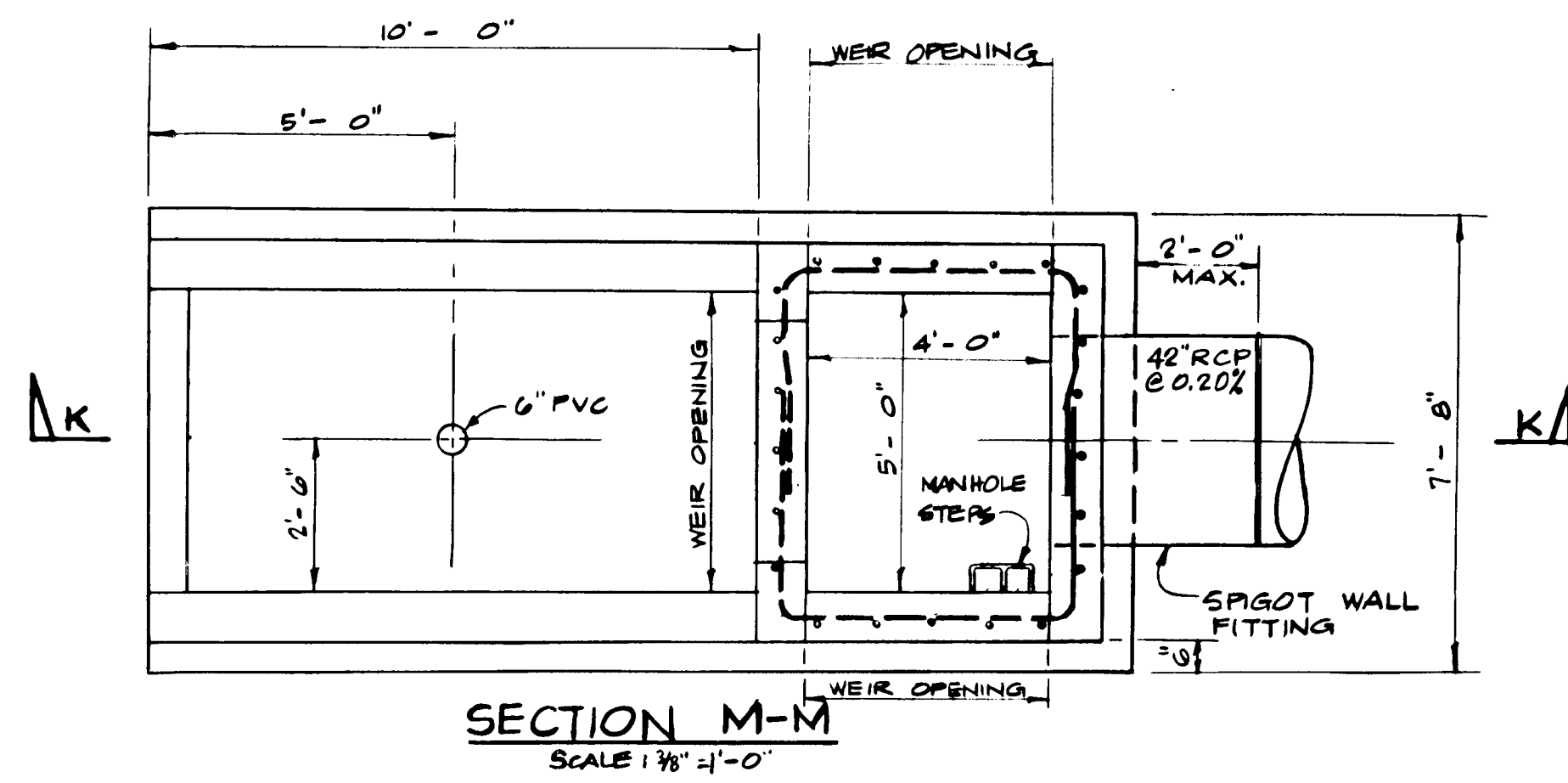
DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

ARE: PARCELS A, B & C AND LOTS 89, 90, 91 & 92
TAX MAP 38.37 PART OF PARCEL 80
6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

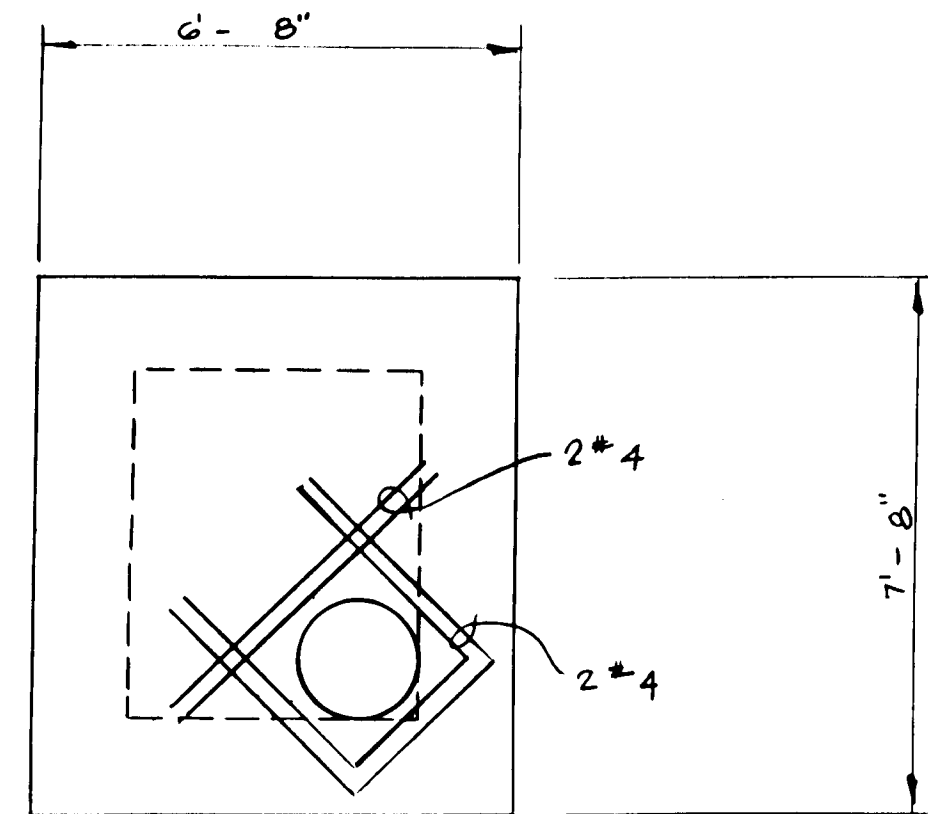
**STORMWATER MANAGEMENT
DETAILS**

Des By JMG	Scale AS SHOWN	Proj. No. 89088D
Drn By DBS	Date 08/17/93	9 OF 20
Chk By EIS	Approved	

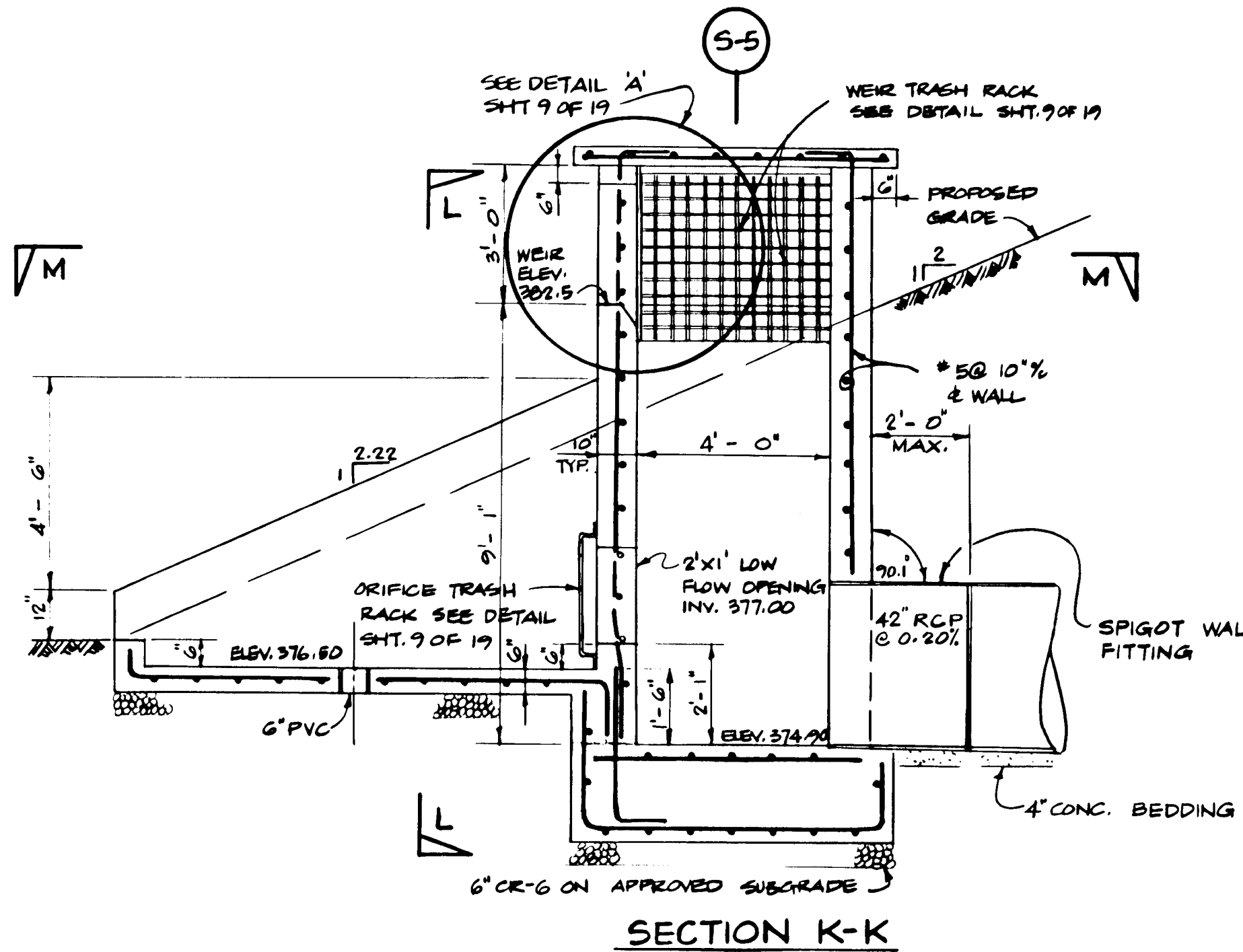
8/18/93
Date
Emmett S. Shyres
Professional Engr. No. 16580



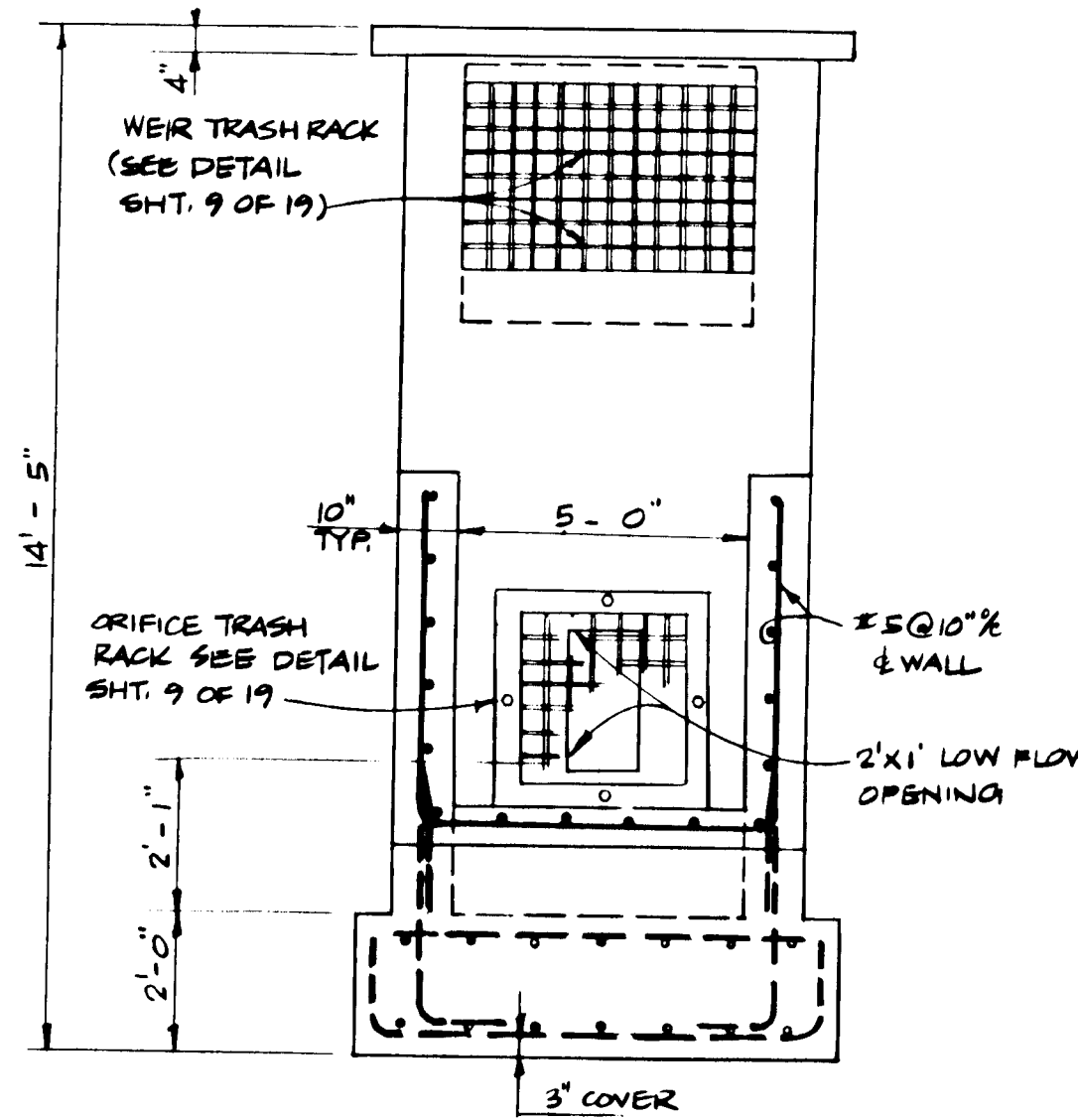
SECTION M-M
SCALE: 1/8" = 1'-0"



PLAN TOP SLAB
OPENING FOR STANDARD SIDEWALK FRAME AND COVER HOWARD CO. STANDARD SD 3.91 WITH LOCKING MANHOLE COVER.



SECTION K-K



SECTION L-L
SCALE: 3/8" = 1'-0"

DETAILS
STRUCTURE S-5
SCALE: 3/8" = 1'-0"

SB-1	SB-2	SB-3
<p>995 1E Brown moist clayey SILT, or fine sand (ML) (Silt loam)</p> <p>990 5A Brown moist clayey SILT, little of sand, little of quartz fragments (ML) (Silt loam)</p> <p>985 5B Multicolored moist of SAND, some clayey silt, or of quartz fragments (SM) (Clayey loam)</p> <p>980 5C Multicolored very moist of SAND, some silt & clay, or of quartz fragments (ML) (Loam)</p> <p>975 5D Multicolored moist of SAND, some silt, or rock fragments (decomposed rock) (SM) (Sandy loam)</p> <p>970 5E Multicolored very moist of SAND, some silt & clay, or of quartz fragments (decomposed rock) (SM) (Clayey loam)</p> <p>965 5F Multicolored very moist of SAND, some silt, little rock fragments (decomposed rock) (SM) (Clayey loam)</p> <p>960 5G At completion of boring, water at 13.0', hole caved at 17.7'</p> <p>955 5H 24 hrs after completion, water at 10.5', hole caved at 17.7'</p>	<p>995 1E Brown moist clayey SILT, or fine sand (ML) (Silt loam)</p> <p>990 5A Brown moist clayey SILT, little of sand, little of quartz fragments (ML) (Silt loam)</p> <p>985 5B Multicolored moist of SAND, some clayey silt, or of quartz fragments (SM) (Clayey loam)</p> <p>980 5C Multicolored very moist of SAND, some silt & clay, or of quartz fragments (ML) (Loam)</p> <p>975 5D Multicolored moist of SAND, some silt, or rock fragments (decomposed rock) (SM) (Sandy loam)</p> <p>970 5E Multicolored very moist of SAND, some silt & clay, or of quartz fragments (decomposed rock) (SM) (Clayey loam)</p> <p>965 5F Multicolored very moist of SAND, some silt, little rock fragments (decomposed rock) (SM) (Clayey loam)</p> <p>960 5G At completion of boring, water at 13.0', hole dry and caved at 17.0'</p> <p>955 5H 24 hrs after completion, water at 16.4', hole caved at 17.0'</p>	<p>995 1E Brown moist clayey SILT, or fine sand (ML) (Silt loam)</p> <p>990 5A Brown moist clayey SILT, little of sand, little of quartz fragments (ML) (Silt loam)</p> <p>985 5B Multicolored moist of SAND, some clayey silt, or of quartz fragments (SM) (Clayey loam)</p> <p>980 5C Multicolored very moist of SAND, some silt & clay, or of quartz fragments (ML) (Loam)</p> <p>975 5D Tan very moist clay & SILT, little of sand, or of gravel (SC) (Clay)</p> <p>970 5E Tan very moist of SAND, some of gravel, little clay & silt (ML) (Silt loam)</p> <p>965 5F Multicolored moist SILT, little of sand, or rock fragments (decomposed rock) (ML) (Silt loam)</p> <p>960 5G Bluish green moist SILT, some fine sand, little rock fragments (decomposed rock) (ML) (Silt loam)</p> <p>955 5H At completion of boring, hole dry and caved at 17.7'</p> <p>950 5I 24 hrs after completion, water at 7.3', hole caved at 16.3'</p>

SECTION A-A

INFILTRATION REPORT
LONGREACH STORMWATER MANAGEMENT FACILITY
HOWARD COUNTY, MARYLAND

BORING PROFILES
DATE: 08/17/93 PROJECT: 165-20-000 PLATE: 2

The Robert B. Baker Company geotechnical division

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION SHALL 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 SHALL ALSO PERIODIC INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

9/3/93

SIGNATURE OF DEVELOPER: *Albert P. Edwards, P.E.* DATE: 8-23-93

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.

9/3/93

SIGNATURE OF ENGINEER: *Ernest J. Shappe II* DATE: 9/10/93

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

9/3/93

SIGNATURE OF ENGINEER: *John P. Robertson* DATE: 9/3/93

HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Andrew M. Mueller 9-20-93
CHIEF, BUREAU OF HIGHWAYS DATE

Paul D. Mason 9/21/93
CHIEF, BUREAU OF ENGINEERING DATE

John D. Williams 9/21/93
CHIEF, LAND DEVELOPMENT DIVISION M.K. DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Gina Santomary 9/24/93
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

Date	No.	Revision	Description

LONGREACH
SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft - McCune - Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

200 East Pennsylvania Avenue
Towson, Maryland 21286
410-286-3333
Fax: 336-4725

AREA
PARCELS A,B,C AND LOTS 89,90,91 & 92
TAX MAP 36.37 PART OF PARCEL 50
6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
STORMWATER MANAGEMENT
DETAILS

Des By	JMG	Scale	AS SHOWN	Proj. No.	89088D
Drn By	DBS	Date	08/17/93		
Chk By	EIS	Approved			10 OF 20

08/10/93
Date

Ernest J. Shappe II
Professional Engr. No. 16580

SECTION 3 AREA 2
VILLAGE OF LONGREACH
NEW TOWN

EXISTING WETLANDS TO BE FILLED AS PER APPROVED WATER QUALITY POND
WETLAND PERMIT NUMBER 93-NT-0235 AND WATER
QUALITY CERTIFICATE NUMBER NA

SECTION 3 AREA 2
VILLAGE OF LONGREACH
NEW TOWN

By The Developer:
"I do certify that all development and/or construction will be done according to these plans, and that any 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 employ a registered professional engineer to supervise pond construction and provide the required sedimentation and erosion control measures. I also authorize periodic on-site inspections by the Howard Hill Conservation District."

Albert F. Edwards 8-23-93
Signature of Developer
Albert F. Edwards, P. E.
Print Name

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 Hill Conservation District. I have notified the developer that he/she must employ a registered professional engineer to supervise construction of the pond and erosion control measures."

Ernest I. Scheppe III 8/10/93
Signature of Engineer
Ernest I. Scheppe III
Print Name

These plans have been reviewed for the Howard Hill Conservation District and meet the technical requirements for sedimentation, soil erosion and sediment control.

J. R. Warfield 9/3/93
Signature of District Representative
These plans for pond construction, soil erosion and sediment control meet the requirements of the Howard Hill Conservation District.

John R. Robinson 9/3/93
Signature of District Representative

WETLAND PERMIT #93-NT-0235

HOWARD RESEARCH & DEVELOPMENT CORP.
477/460
NEW TOWN

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Richard M. Conner 9-20-93
CHIEF, BUREAU OF HIGHWAYS DATE

Paul D. Brown 9/21/93
CHIEF, BUREAU OF ENGINEERING DATE

Alan D. ... 9/20/93
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Gina ... 9/24/93
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

1/13/93 REVISED PER COUNTY COMMENTS
Date No. Revision Description

LONGREACH
SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
PHONE: 410-992-6000

Draft - McCune - Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Parmenter Avenue
Towson, Maryland 21286
410 286 3333
Fax 286 4705

AREA PARCELS A, B, & C AND LOTS 89.90, 91, & 92
TAX MAP 30.37 PART OF PARCEL 50
8TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE **MASS GRADING PLAN**

Des By FPI Scale 1" = 50' Proj. No. 8508PD
Dwn By CRW Date 4-12-93
Chk By JWR Approved 11 OF 20

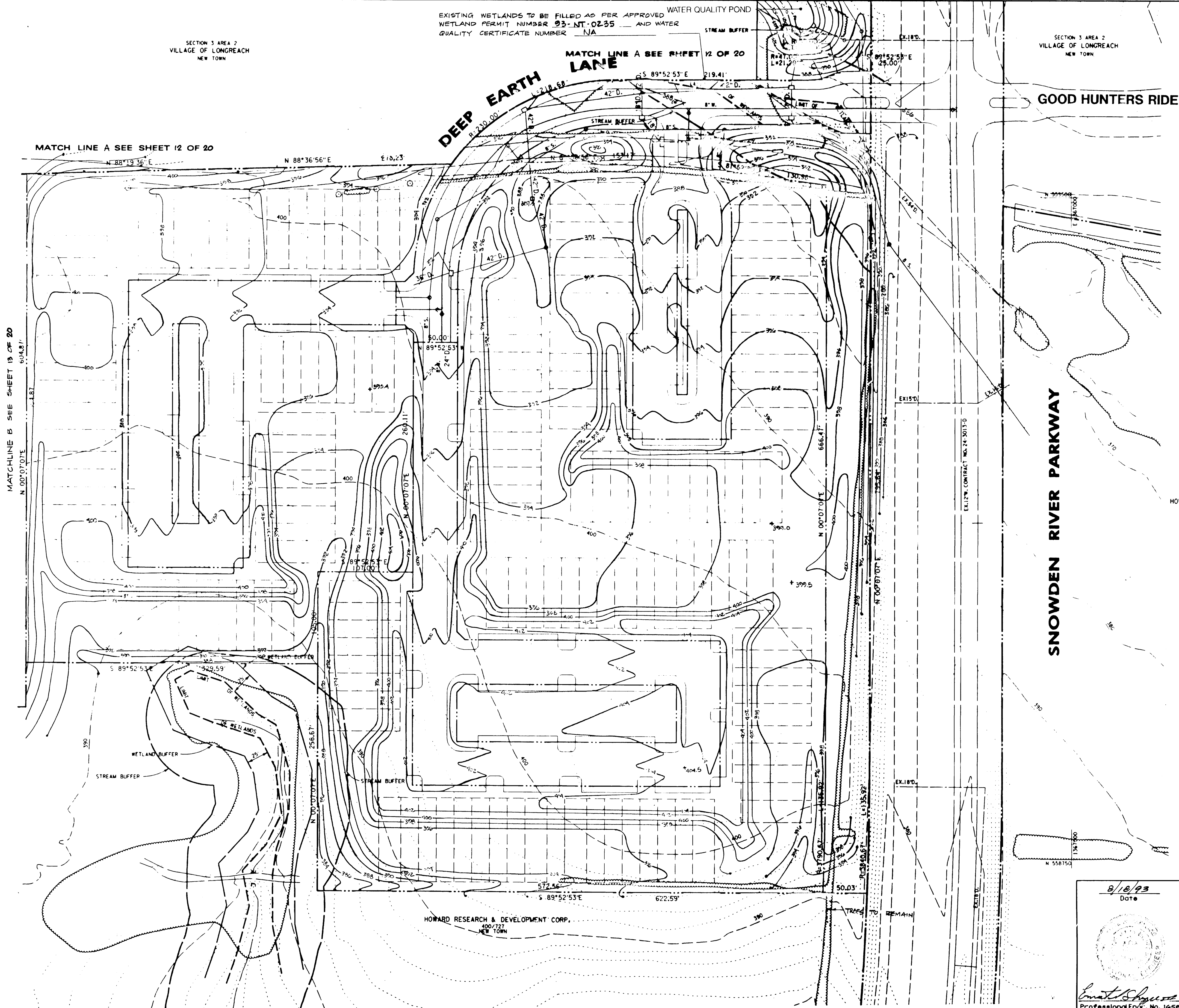
8/10/93 Date
Ernest I. Scheppe III
Professional Eng. No. 16580

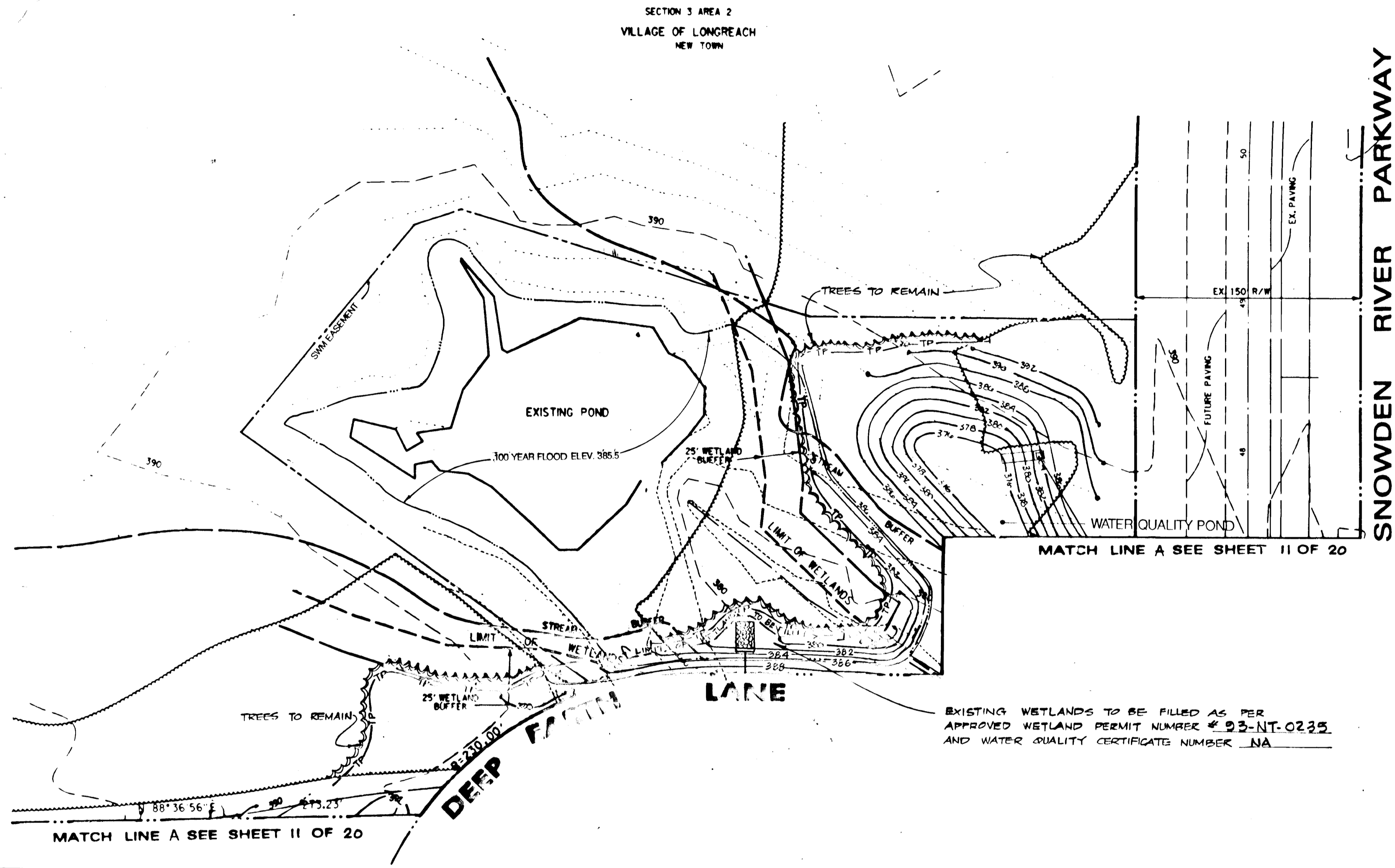
MATCHLINE B SEE SHEET 13 OF 20
N 00°07'07"E 604.81'

MATCH LINE A SEE SHEET 12 OF 20
N 88°13'36"E 219.41'

MATCH LINE A SEE SHEET 12 OF 20
LANE
S 89°52'53"E 219.41'

SNOWDEN RIVER PARKWAY





N 56000
E 136700

SECTION 3 AREA 2
VILLAGE OF LONGREACH
NEW TOWN

N 559500
E 136600

N 559500
E 136700

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 Erosion and Excision before beginning the project. I shall employ a registered professional engineer to supervise pond construction and provide periodic on-site inspections by the Howard Hill Conservation District."

Albert F. Edwards 8-23-93
Albert F. Edwards, P. E.
Print Name

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 Hill Conservation District. I have notified the developer that he/she must employ a registered professional engineer to supervise pond construction and provide periodic on-site inspections by the Howard Hill Conservation District."

Ernst L. Shapiro 9/18/93
Ernst L. Shapiro, P.E.
Print Name

These plans have been reviewed for the Howard Hill Conservation District and meet the technical requirements for erosion and sediment control.

John R. Robertson 9/13/93
John R. Robertson, P.E.
Print Name

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Charles M. Danks 9-20-93
CHIEF, BUREAU OF HIGHWAYS DATE
Paul D. Depson 9/21/93
CHIEF, BUREAU OF PUBLIC WORKS DATE
Allen Dawkins 9/20/93
CHIEF, LAND DEVELOPMENT DIVISION MLK DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Gina Summari 9/24/93
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE
JA

Date	No.	Revision Description

LONGREACH
SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
PHONE: 410-992-6000

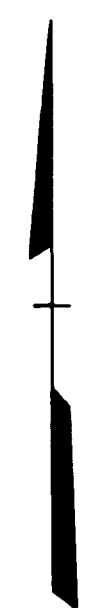
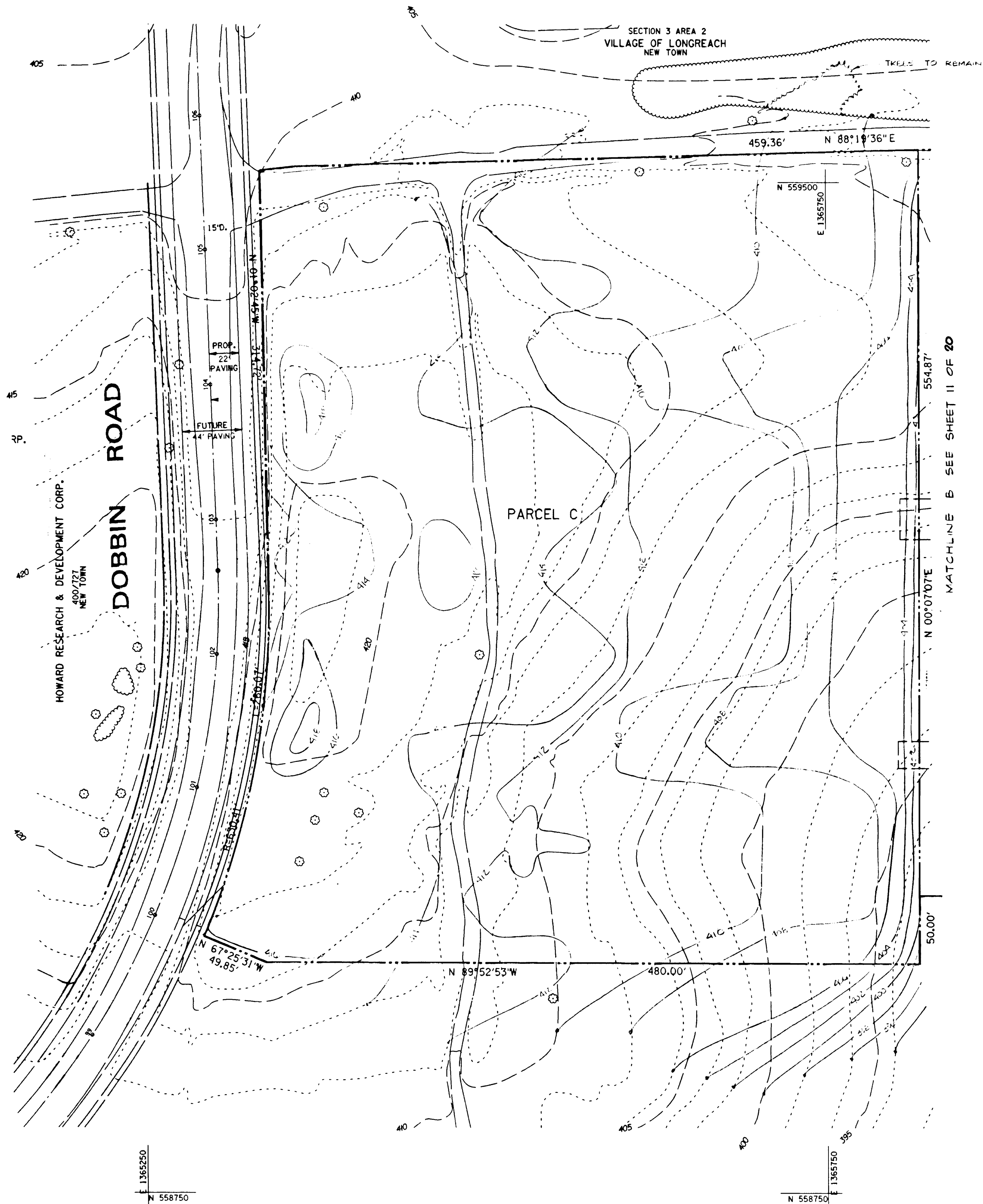
Daft · M · Cunc · Walker, Inc.
A Team of Land Planners, 200 East Patuxent Avenue
Landscape Architects, Towson, Maryland 21286
Engineers, Surveyors & Environmental Professionals 40 296 3333
Fax 296 4705

ARE PARCELS A, B & C AND LOTS 89, 90, 91 & 92
PART OF PARCEL 50
6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
MASS GRADING PLAN

Des By	CPB	Scale	1" = 50'	Proj. No.	890710
Drn By	FRW	Date	4-12-93		
Chk By	JWR	Approved			12 OF 20

9/18/93
Date
Ernst L. Shapiro
Professional Engr. No. 16580



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 employ a registered professional engineer to supervise said construction and construction operations in accordance with the Board of Soil Conservation District.
 I shall include periodic on-site inspections by the Board of Soil Conservation District.

WJR 9/13/93
 Signature of Developer: *WJR* 8-23-93
 Date: 8-23-93
 Print Name: _____

By the Engineer:
 I certify that this plan for post 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 Board of Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise said construction and construction operations in accordance with the Board of Soil Conservation District.

WJR 9/13/93
 Signature of Engineer: *Emmett S. Shyres* 9/13/93
 Date: 9/13/93
 Print Name: *EMMETT S. SHYRES III*

These plans have been reviewed for the Board of Soil Conservation District and meet the technical requirements for erosion and sediment control.

J.H. Wainwright 9/13/93
 Signature of Reviewer: *J.H. Wainwright* 9/13/93
 Date: 9/13/93

John R. K... 9/13/93
 Signature of Reviewer: *John R. K...* 9/13/93
 Date: 9/13/93

APPROVE: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Daneker 9-20-93
 CHIEF, BUREAU OF HIGHWAYS DATE
Paul D. L... 9/21/93
 CHIEF, BUREAU OF ENGINEERING DATE
Chad Damms 9/21/93
 CHIEF, LAND DEVELOPMENT DIVISION M.K. DATE

APPROVE: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Gim Summary 9/24/93
 CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

Date	No.	Revision Description

LONGREACH
 SECTION 4, AREA 3, PHASE 220
 OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

Dft • McCune • Walker, Inc.
 A Team of Land Planners, Architects, Engineers, Surveyors & Environmental Professionals
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 410 296 3333
 Fax 296 4705

AREA
 PARCELS A, B, & C AND LOTS 89, 90, 91, & 92
 PART OF PARCEL 50
 TAX MAP 36.37
 6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
MASS GRADING PLAN

Des By	CRW	Scale	AS SHOWN	Proj. No.	89088D
Drn By	CRW	Date	+ - 12 - 93		
Chk By	JWR	Approved			13 OF 20

9/13/93
 Date

Emmett S. Shyres
 Professional Engr. No. 14580

BASIN NOTES:
 1. FINAL BASIN DREDGE IS TO BE SPREAD EVENLY ON SITE NEAR BASIN.
 2. IF REQUIRED BY THE SEDIMENT CONTROL INSPECTOR, FENCING SHALL BE INSTALLED TO PREVENT ACCESS TO THE BASIN BY CHILDREN.

WATER QUALITY POND

SECTION 3 AREA 2
 VILLAGE OF LONGREACH
 NEW TOWN

MATCH LINE A SEE SHEET 15 OF 20
LANE

SECTION 3 AREA 2
 VILLAGE OF LONGREACH
 NEW TOWN

GOOD HUNTERS RIDE

SNOWDEN RIVER PARKWAY

HOWARD RESEARCH & DEVELOPMENT CORP.
 477407
 NEW TOWN

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 RETM
- SUPER FENCE DIVERSION
- SUPER SILT FENCE
- INLET BLOCKING
- TRAP STORAGE
- DIVERGING BASIN
- EXISTING T. C. PATH
- PROPOSED T. C. PATH
- TP --- TREE PROTECTION FENCE

By The Developer:

"I do 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 construction and I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Albert F. Edwards 9/23/93
 Signature of Developer Date
 Albert F. Edwards, P. E.
 Print name

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 employ a registered professional engineer to supervise pond construction and erosion and sediment control."

Ernest L. Schupp 9/8/93
 Signature of Engineer Date
 Ernest L. Schupp, II
 Print name

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for erosion and sediment control.

J. L. Wakefield 9/3/93
 Signature of District Chief Date
 J. L. Wakefield
 Print name

John P. Robertson 9/3/93
 Signature of District Chief Date
 John P. Robertson
 Print name

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Andrew M. Daneker 9/20/93
 Signature of Chief Date
 Andrew M. Daneker
 Chief, Bureau of Highways

Paul H. Sporn 9/21/93
 Signature of Chief Date
 Paul H. Sporn
 Chief, Bureau of Planning

Blaine Dammus 9/21/93
 Signature of Chief Date
 Blaine Dammus
 Chief, Land Development Division, M.A.C.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Gina Jaramony 9/24/93
 Signature of Chief Date
 Gina Jaramony
 Chief, Division of Land Development & Research

Date	No.	Revision Description
1/13/93		REVISED PER COUNTY COMMENTS

LONGREACH
SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER


THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE: 410-992-6000

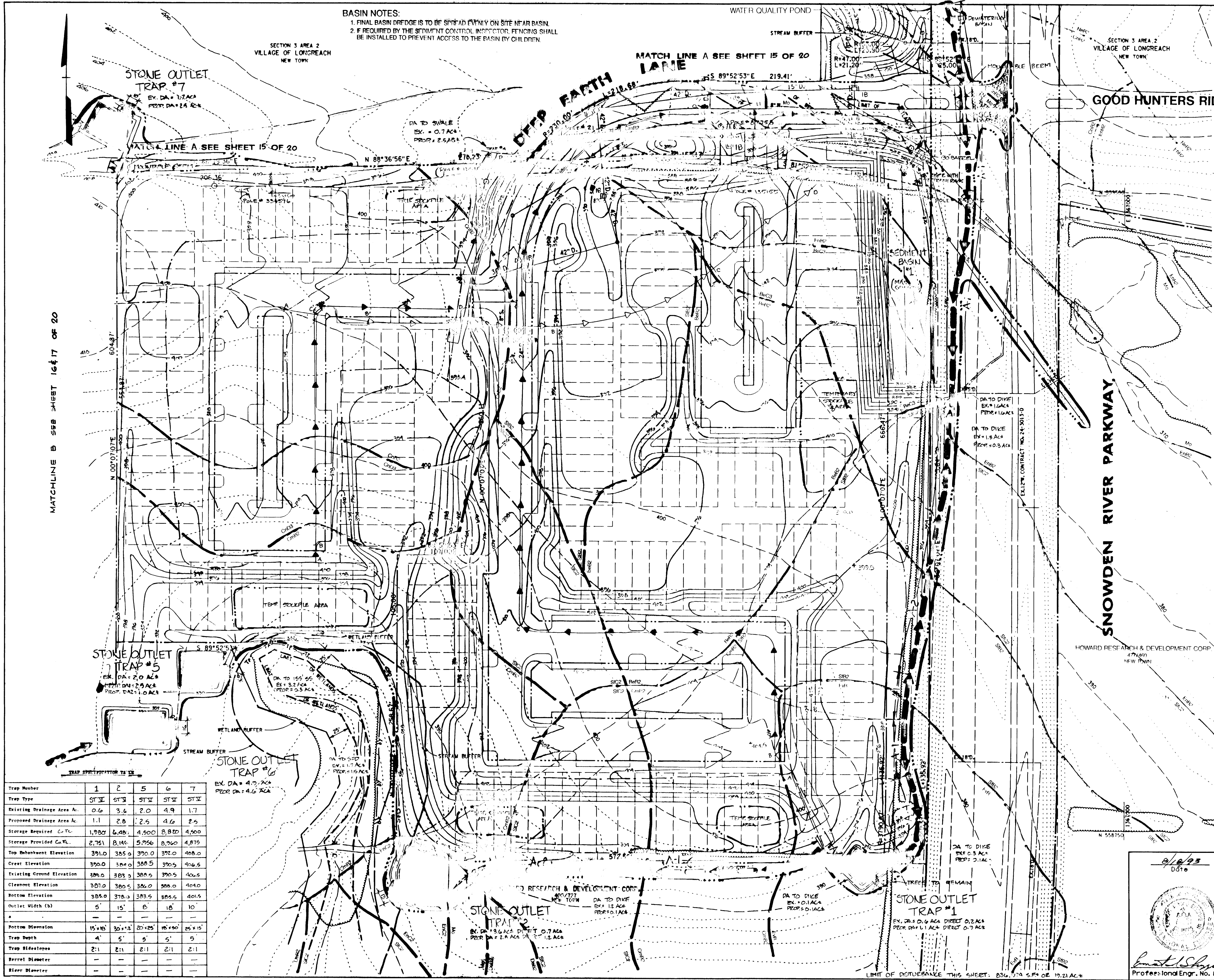
Daft · M · Cunc · Walker, Inc.
 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
 200 East Potomac Avenue
 Towson, Maryland 21286
 410 296 3333
 Fax 296 4705

AREA
 PARCELS A, B, & C AND LOTS 89, 90, 91, & 92
 TAX MAP 38.87 PART OF PARCEL 50
 6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

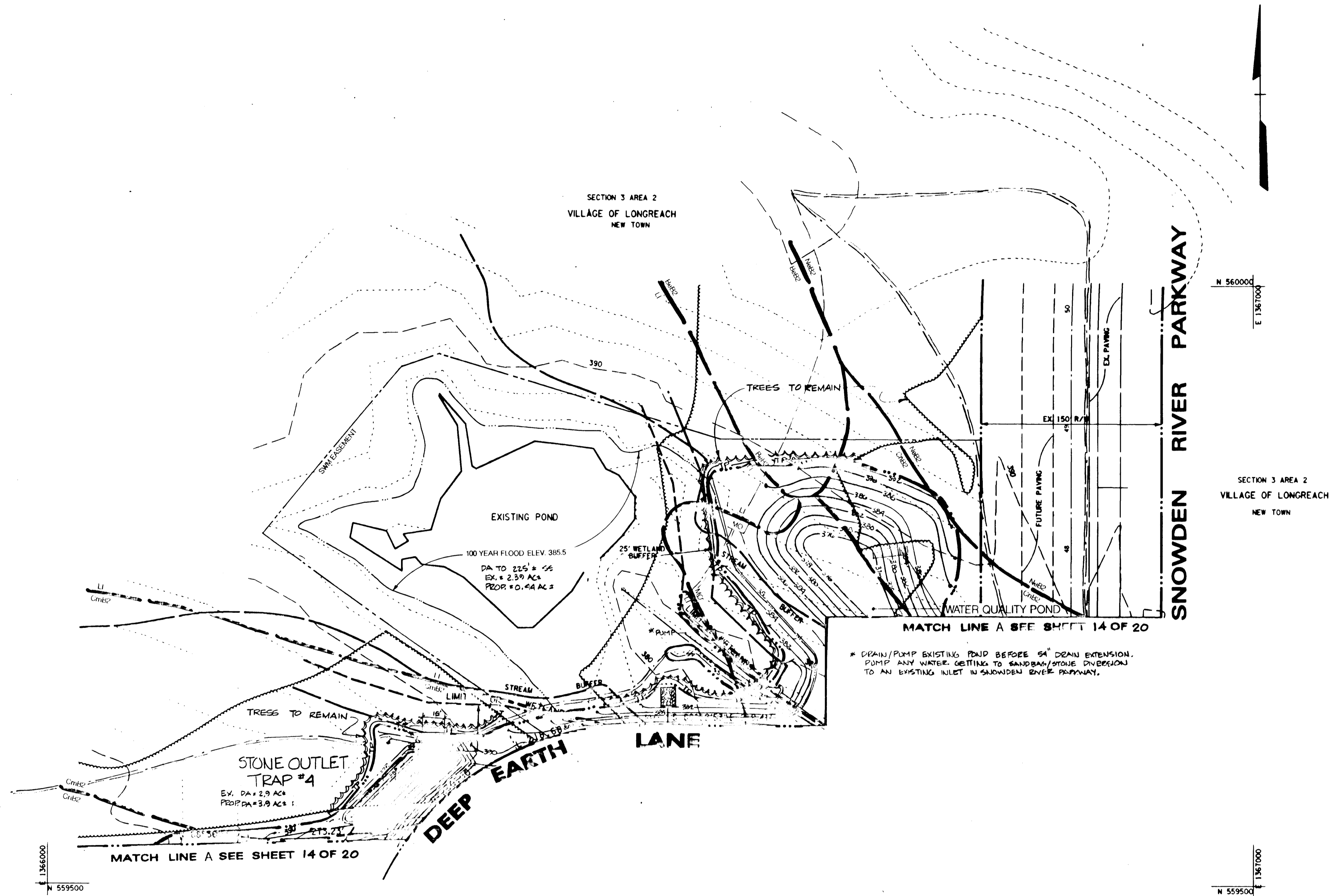
TITLE
SEDIMENT AND EROSION CONTROL PLAN

Des By	CRW	Scale	1" = 50'	Proj. No.	850030
Drn By	CRW	Date	4-12-93		
Chk By	EIS	Approved			14 OF 20

9/8/93
 Date

Ernest L. Schupp
 Professional Engr. No. 16580



Trap Number	1	2	5	6	7
Trap Type	STII	STII	STII	STII	STII
Existing Drainage Area A _c	0.6	3.4	2.0	4.9	1.7
Proposed Drainage Area A _c	1.1	2.8	2.5	4.6	2.5
Storage Required Cu _{ft}	1,980	6,480	4,500	8,820	4,500
Storage Provided Cu _{ft}	2,751	8,146	5,956	8,360	4,875
Top Inlet Elevation	391.0	385.0	390.0	392.0	408.0
Crest Elevation	390.0	384.0	388.5	390.5	406.5
Existing Ground Elevation	386.0	383.5	388.5	390.5	406.5
Cleanout Elevation	387.0	380.5	386.0	388.0	404.0
Bottom Elevation	385.0	378.5	383.5	385.5	401.5
Outlet Width (b)	5'	15'	6'	16'	10'
Bottom Dimension	15' x 15'	30' x 12'	20' x 25'	16' x 30'	25' x 15'
Trap Depth	4'	5'	5'	5'	5'
Trap Slopes	2:1	2:1	2:1	2:1	2:1
Barrel Diameter	-	-	-	-	-
Riser Diameter	-	-	-	-	-



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 employ a registered professional engineer to supervise pond construction and ~~erosion and sediment control~~ and ~~erosion and sediment control~~ of the pond within the Howard Soil Conservation District. I also authorize periodic on-site inspections by the Howard Soil Conservation District."
 YHE 9/13/93
 Signature of Developer: [Signature] 8-23-93 Date
 Albert F. Edwards, P. E. Print name

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 employ a registered professional engineer to supervise pond construction and ~~erosion and sediment control~~ and ~~erosion and sediment control~~ of the pond within the Howard Soil Conservation District."
 YHE 7/3/93
 Signature of Engineer: [Signature] 9/18/93 Date
 Ernest S. [unclear] Print name

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for ~~pond construction, soil erosion and sediment control~~ and ~~erosion and sediment control~~ of the pond within the Howard Soil Conservation District.
 J. A. Warfield/PA 9/3/93
 Signature of Reviewer: [Signature] 9/3/93 Date
 John R. Robinson 7/3/93
 Signature of Reviewer: [Signature] 7/3/93 Date

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 Andrew M. Ouekr 9-20-93
 CHIEF, BUREAU OF HIGHWAYS DATE
 Charles J. [unclear] 9/21/93
 ASST. CHIEF, BUREAU OF ENGINEERING DATE
 Chad [unclear] 9/20/93
 CHIEF, LAND DEVELOPMENT & RESEARCH DATE
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
 Gina [unclear] 9/24/93
 CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

TRAP SPECIFICATION TABLE

Trap Number	4
Trap Type	STI
Existing Drainage Area	2.9
Proposed Drainage Area	3.9
Storage Required	7,020
Storage Provided	8,412
Top Embankment Elevation	383.0
Crest Elevation	382.0
Existing Ground Elevation	391.0
Cleanout Elevation	389.0
Bottom Elevation	387.0
Outlet Width (ft)	18
Bottom Dimension	18' x 6'
Trap Depth	4'
Trap Sideslopes	2:1
Barrel Diameter	-
Riser Diameter	-

- SEDIMENT CONTROL LEGEND
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EXISTING DRAINAGE AREA
 - PROPOSED DRAINAGE AREA
 - LIMIT OF DISTURBANCE
 - SUPER SILT FENCE
 - SILT FENCE
 - TRAP STORAGE
 - SANDBAG/STONE DIVERSION

* DRAIN/PUMP EXISTING POND BEFORE 6" DRAIN EXTENSION. PUMP ANY WATER GETTING TO SANDBAG/STONE DIVERSION TO AN EXISTING INLET IN SNOWDEN RIVER PARKWAY.

LIMIT OF DISTURBANCE THIS SHEET: 42,827 S.F. OR 0.98 AC

9/18/93
 Date
 Ernest S. [unclear]
 Professional Eng. No. 16580

LONGREACH
 SECTION 4, AREA 3, PHASE 220
 OWNER / DEVELOPER

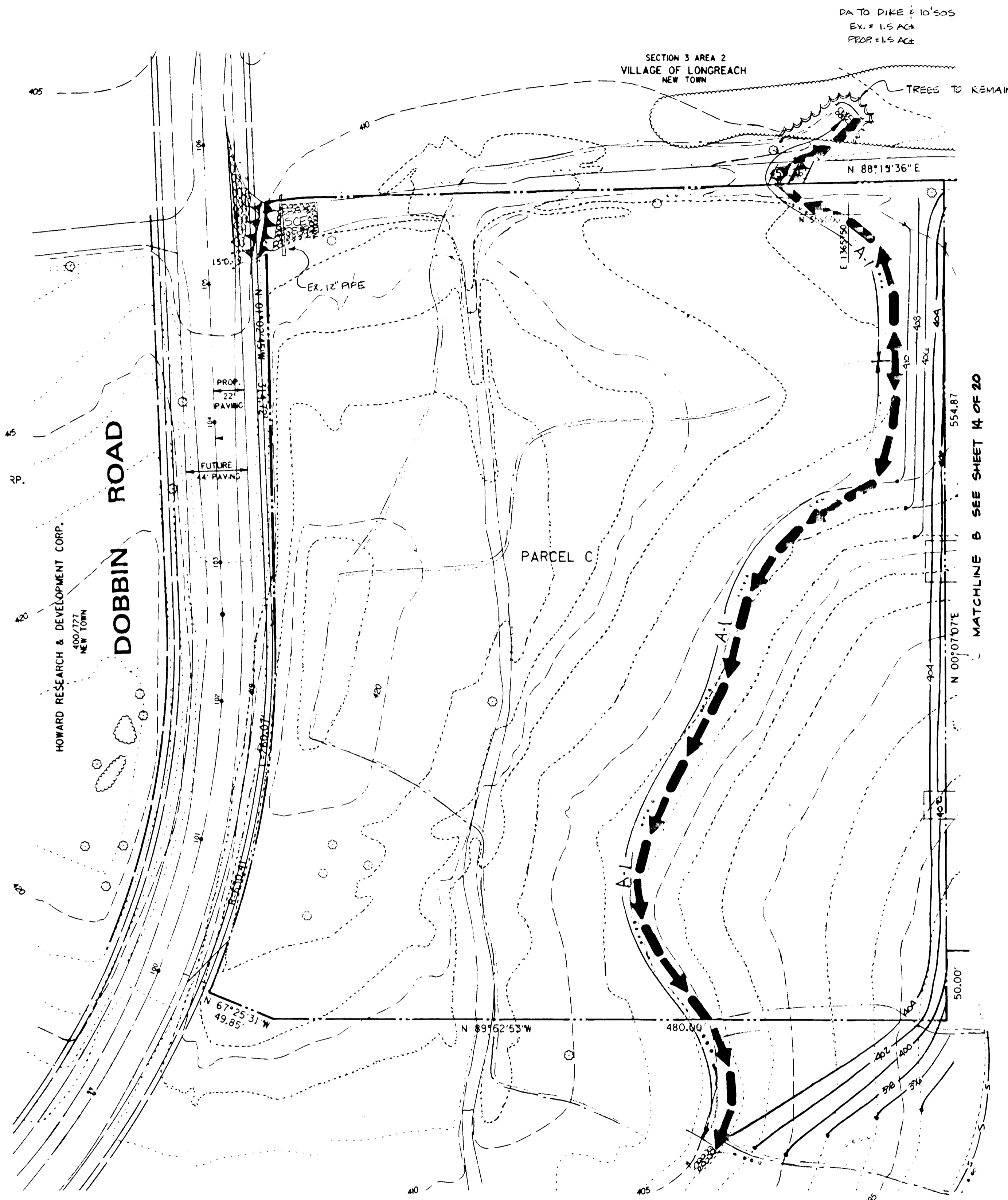
THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE: 410-992-6000

Dr. M. McCune Walker, Inc.
 A Team of Land Planners, 200 East Pennsylvania Avenue
 Landmarks Architects, Towson, Maryland 21286
 Engineer & Surveyors & 410 296 3333
 Erosion Control Professionals Fax 296 4705

AREA PARCELS A, B, & C AND LOTS 89, 90, 91 & 92
 TAX MAP 38.27 PART OF PARCEL 50
 8TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
SEDIMENT AND EROSION CONTROL PLAN

Des By	CRW	Scale	1" = 50'	Proj. No.	ES007D
Drn By	CRW	Date	4-12-93		
Chk By	EIS	Approved			15 OF 20



INITIAL SEDIMENT CONTROL INSTALLATION

- SEDIMENT CONTROL LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - EXISTING DRAINAGE AREA
 - PROPOSED DRAINAGE AREA
 - LIMIT OF DISTURBANCE
 - SILT FENCE
 - EARTH DIKE
 - STABILIZED CONSTRUCTION ENTRANCE
 - MOUNTABLE BERM
 - STONE OUTLET STRUCTURE

By The Developer:
 I do certify that all development surface construction will be done according to these plans, and that the proposed site plan complies with the zoning and subdivision regulations of the County of Howard, Maryland, and the approved zoning and subdivision regulations of the Board of Commissioners for the County of Howard, Maryland. I also certify that the proposed site plan complies with the requirements of the National Pollution Discharge Elimination Act and the National Sanitation Act, and that the proposed site plan complies with the requirements of the National Flood Insurance Act.

Albert F. Edwards, P.E. 8-23-93
 Albert F. Edwards, P.E.

By the Engineer:
 I certify that this plan for pond construction, erosion and sediment control, and grading and site work complies with the requirements of the National Pollution Discharge Elimination Act and the National Sanitation Act, and that the proposed site plan complies with the requirements of the National Flood Insurance Act. I have advised the developer that he/she must comply with the requirements of the National Pollution Discharge Elimination Act and the National Sanitation Act, and that the proposed site plan complies with the requirements of the National Flood Insurance Act.

Ernest I. Shyne, P.E. 9/13/93
 Ernest I. Shyne, P.E.

These plans have been reviewed for the Board of Commissioners of the County of Howard, Maryland, and the approved zoning and subdivision regulations of the Board of Commissioners for the County of Howard, Maryland. I have advised the developer that he/she must comply with the requirements of the National Pollution Discharge Elimination Act and the National Sanitation Act, and that the proposed site plan complies with the requirements of the National Flood Insurance Act.

John P. Blunt, P.E. 9/13/93
 John P. Blunt, P.E.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Andrew M. Danek 9-20-93
 CHIEF, BUREAU OF HIGHWAYS DATE

Paul D. Johnson 9/21/93
 CHIEF, BUREAU OF HIGHWAYS DATE

Chris Damm 9/21/93
 CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Gina Swirmani 9/24/93
 CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

Date	Revision Description

LONGREACH
 SECTION 4, AREA 3, PHASE 220
 OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

Daft - McCune - Walker, Inc.
 A Firm of Land Planners, Architects, Engineers, Surveyors & Environmental Professionals
 200 East River Road
 Towson, Maryland 21286
 410 296 3333
 Fax 296 4705

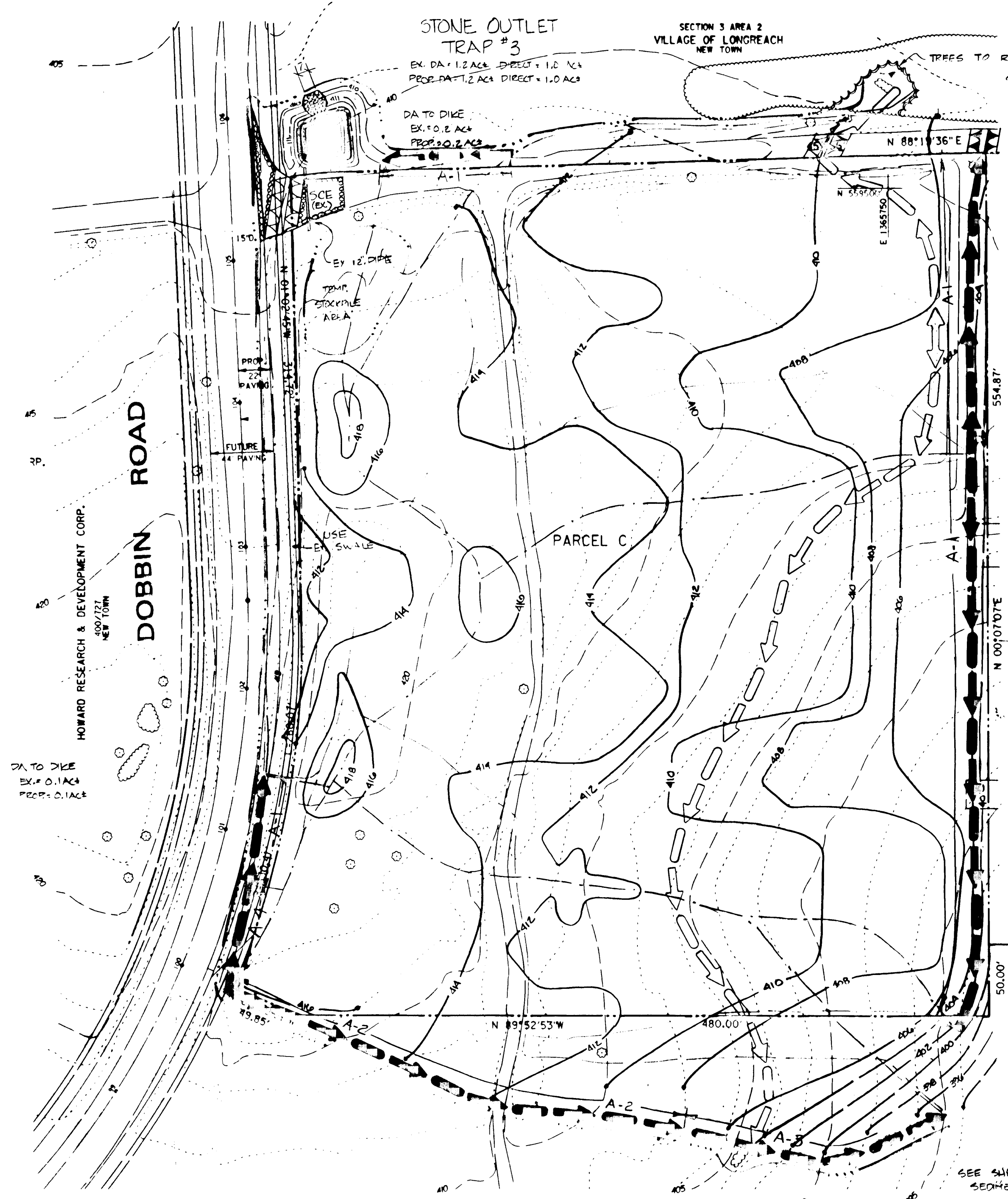
AREA PARCELS A, B, & C AND LOTS 89, 90, 91, & 92
 TAX MAP 28.37 PART OF PARCEL 80
 6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
SEDIMENT AND EROSION CONTROL PLAN

Des By	CRW	Scale	AS SHOWN	Proj. No.	890880
Drn By	CRW	Date	4-12-93		
Chk By	JWR	Approved			16 OF 20

8/18/93
 Date

Ernest I. Shyne
 Professional Engr. No.



TREES TO REMAIN
SEE SHEET 14 OF 19 FOR
SEGMENT TRAP # 7

DA TO DIKE
EX. = 1.1 AC±
PROP. = 2.7 AC±

MATCHLINE B SEE SHEET 14 OF 20

PARCEL B
SEDIMENT CONTROL
SECOND INSTALLATION
(ONCE GRADING BELOW INITIAL INSTALLATION
IS COMPLETE INSTALL TRAPS 3, 6 & 7
AND ASSOCIATED DIKES. ONCE TRAPS
AND DIKE INSTALLED REMOVE INITIAL
DIKES AND SO'S.)

DA TO DIKE
EX. = 2.3 AC±
PROP. = 12.6 AC±

SEE SHEET 14 OF 19 FOR
SEDIMENT TRAP # 6

E 136250
N 558750

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
- TRAP STORAGE
- EXISTING EARTH DIKE

TRAP SPECIFICATION TABLE

Trap Number	3
Trap Type	5' X
Existive Drainage Area Ac	1.2
Proposed Drainage Area Ac	1.2
Storage Required C.F.	2,160
Storage Provided C.F.	3,650
Top Embankment Elevation	411.0
Crest Elevation	410.0
Relating Ground Elevation	409.0
Cleanout Elevation	407.0
Bottom Elevation	405.0
Outlet Width (ft)	7'
Outlet Slope	1:1
Bottom Dimension	20' X 22'
Trap Depth	4'
Trap Slope	2:1
Trap Diameter	---
Outlet Diameter	---

By The Developer
I/We certify that all development grading construction will be done according to these plans, and that any 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 grading and construction and provide the Howard Soil Conservation District with an "Annual Sedimentation Control Report" as required. I shall continue to provide written information to the Howard Soil Conservation District.

Albert F. Edwards, P. E.
Albert F. Edwards, P. E.
Print Name

By the Engineer
I certify that this plan for post construction, grading and erosion control conforms to a general and specific 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 obtain a professional geotechnical engineer to approve post construction grading and construction and provide the Howard Soil Conservation District with an "Annual Sedimentation Control Report" as required.

Ernest S. Shyne, P. E.
Ernest S. Shyne, P. E.
Print Name

These plans have been reviewed for the Howard Soil Conservation District and meet the minimum requirements for sedimentation, soil erosion and sediment control.

J. A. Warfield, P. E.
J. A. Warfield, P. E.
These plans for post construction soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

John R. Robinson, P. E.
John R. Robinson, P. E.

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Andrew M. Daveler 9-20-93
CHIEF, BUREAU OF HIGHWAYS DATE

Paul H. Sapon 9/21/93
CHIEF, BUREAU OF HIGHWAYS DATE

Chad Deussen 9/21/93
CHIEF, LAND DEVELOPMENT DIVISION, M.L.K. DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Gina Juvonavi 9/24/93
CHIEF, DIVISION OF LAND USE, PLANNING & ZONING DATE

Date	No.	Revision Description

LONGREACH
SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

Draft - M. Cune - Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals

200 East Pennsylvania Avenue
Towson, Maryland 21286
410.286.3333
Fax: 410.286.4705

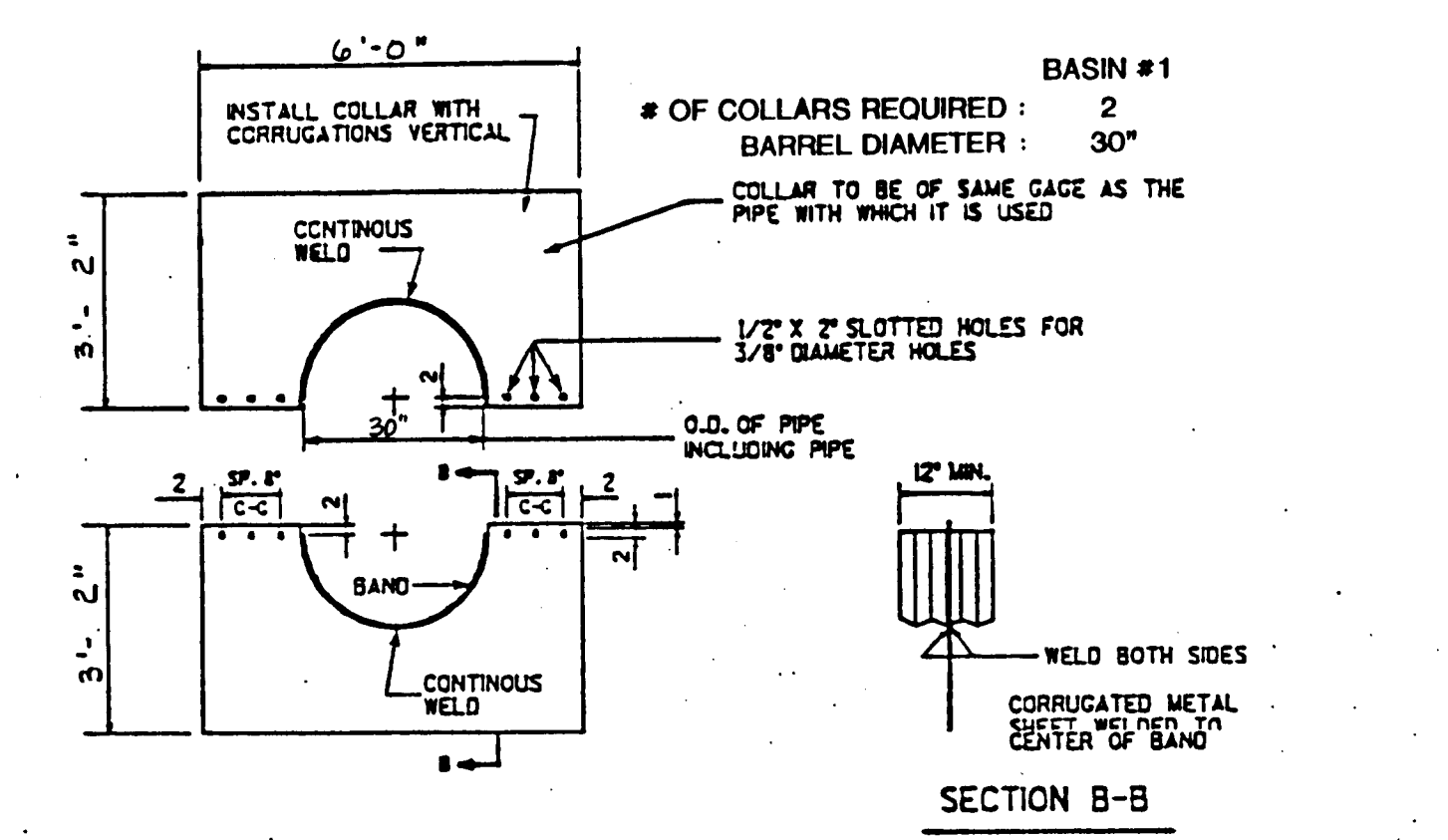
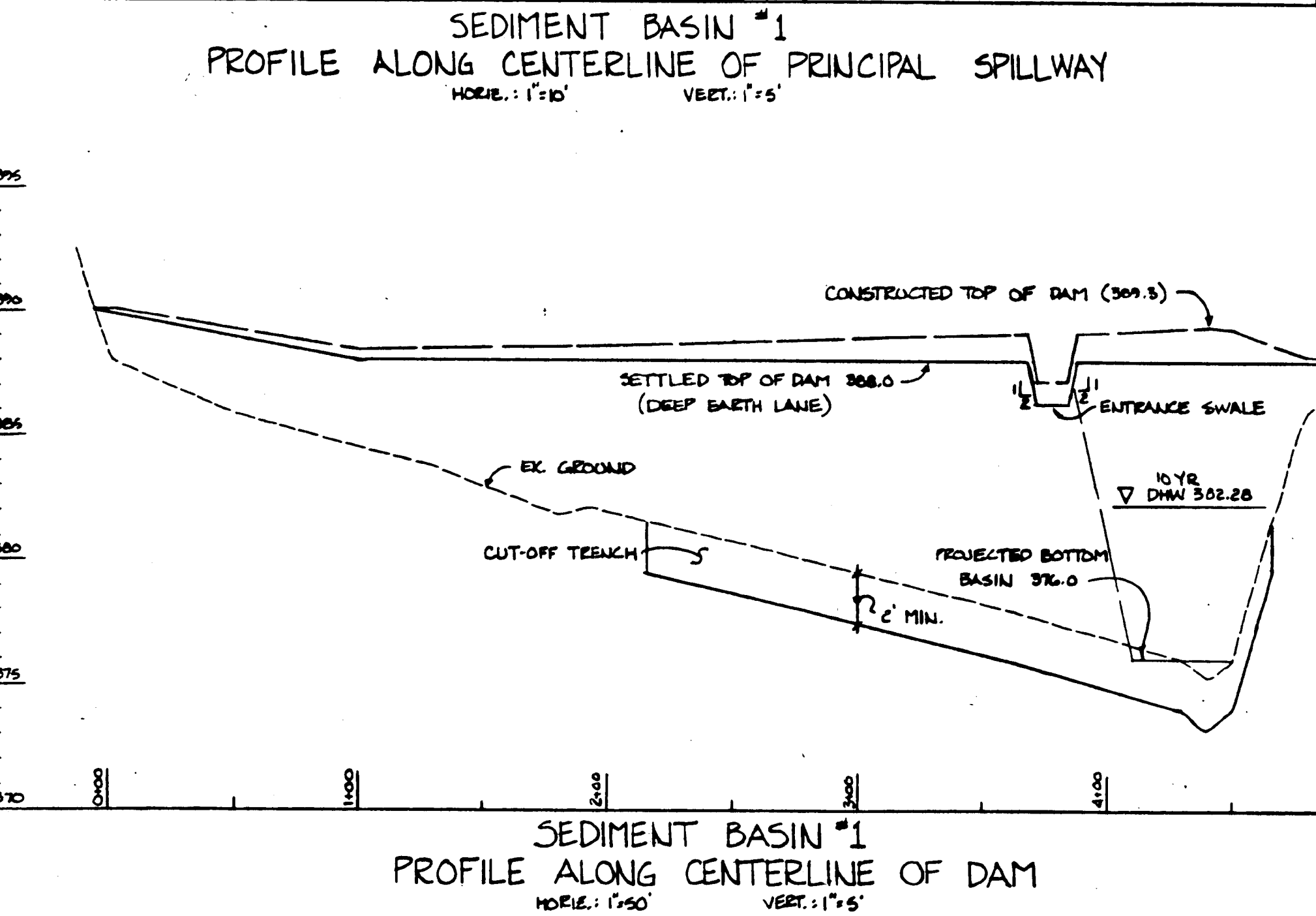
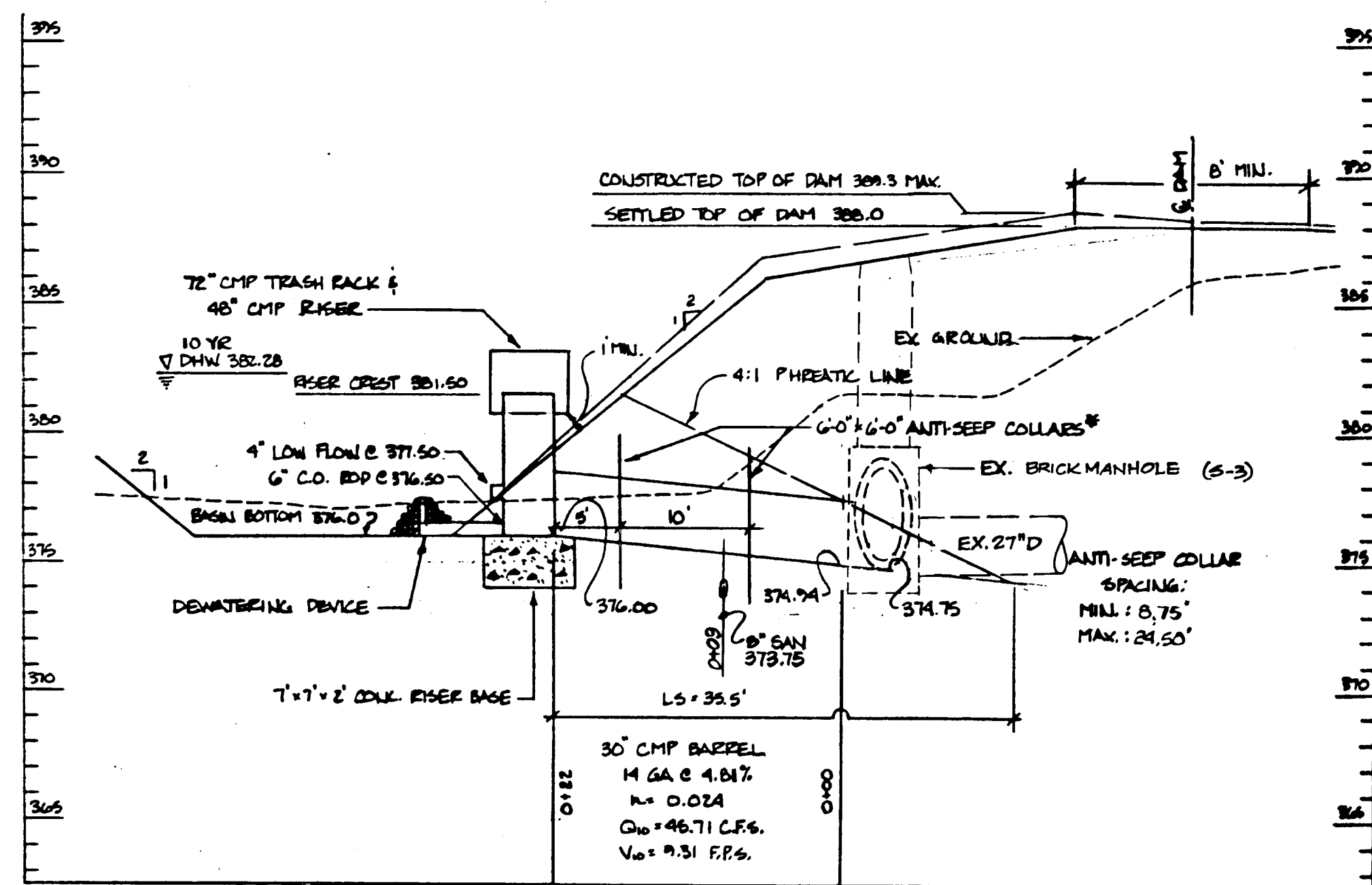
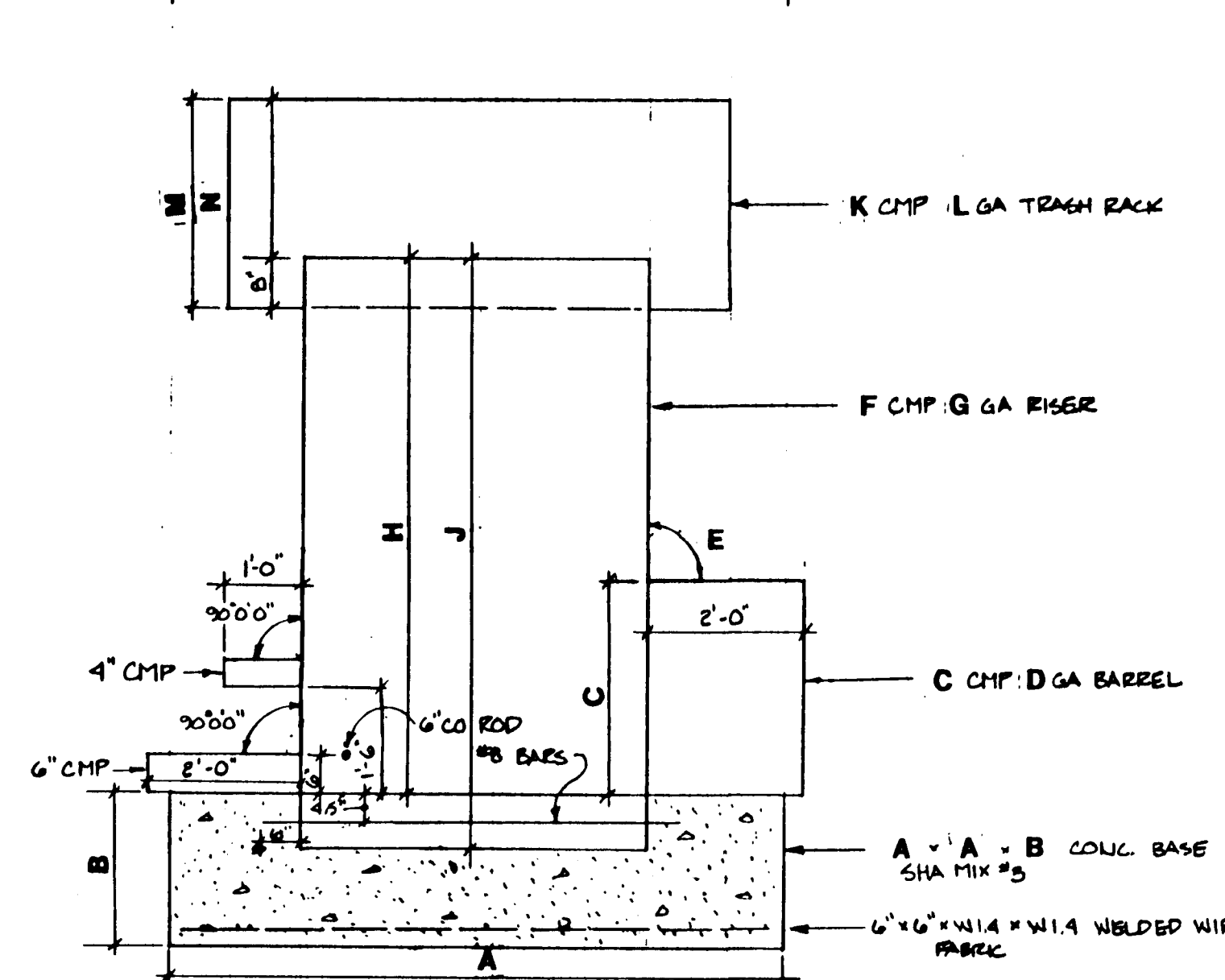
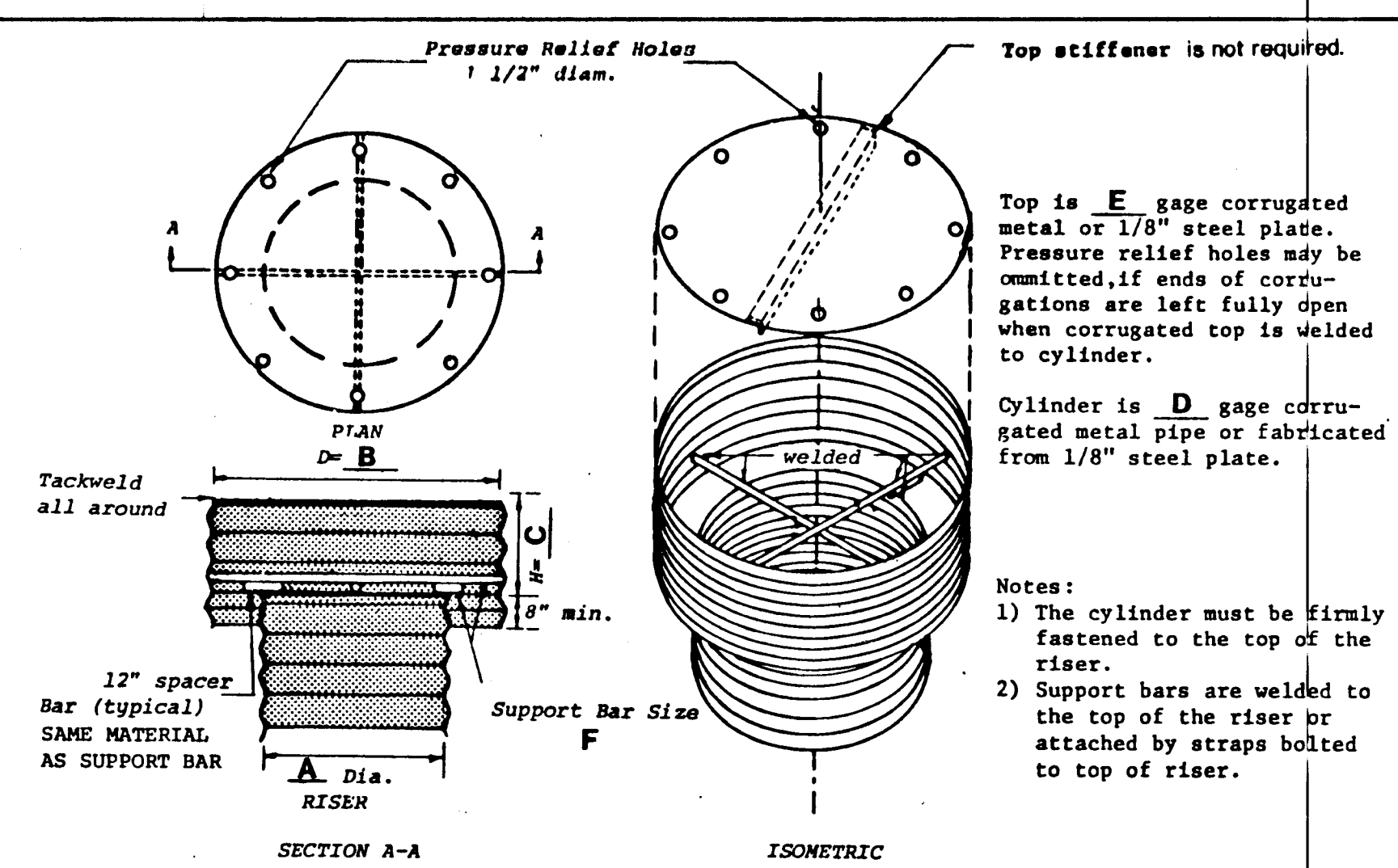
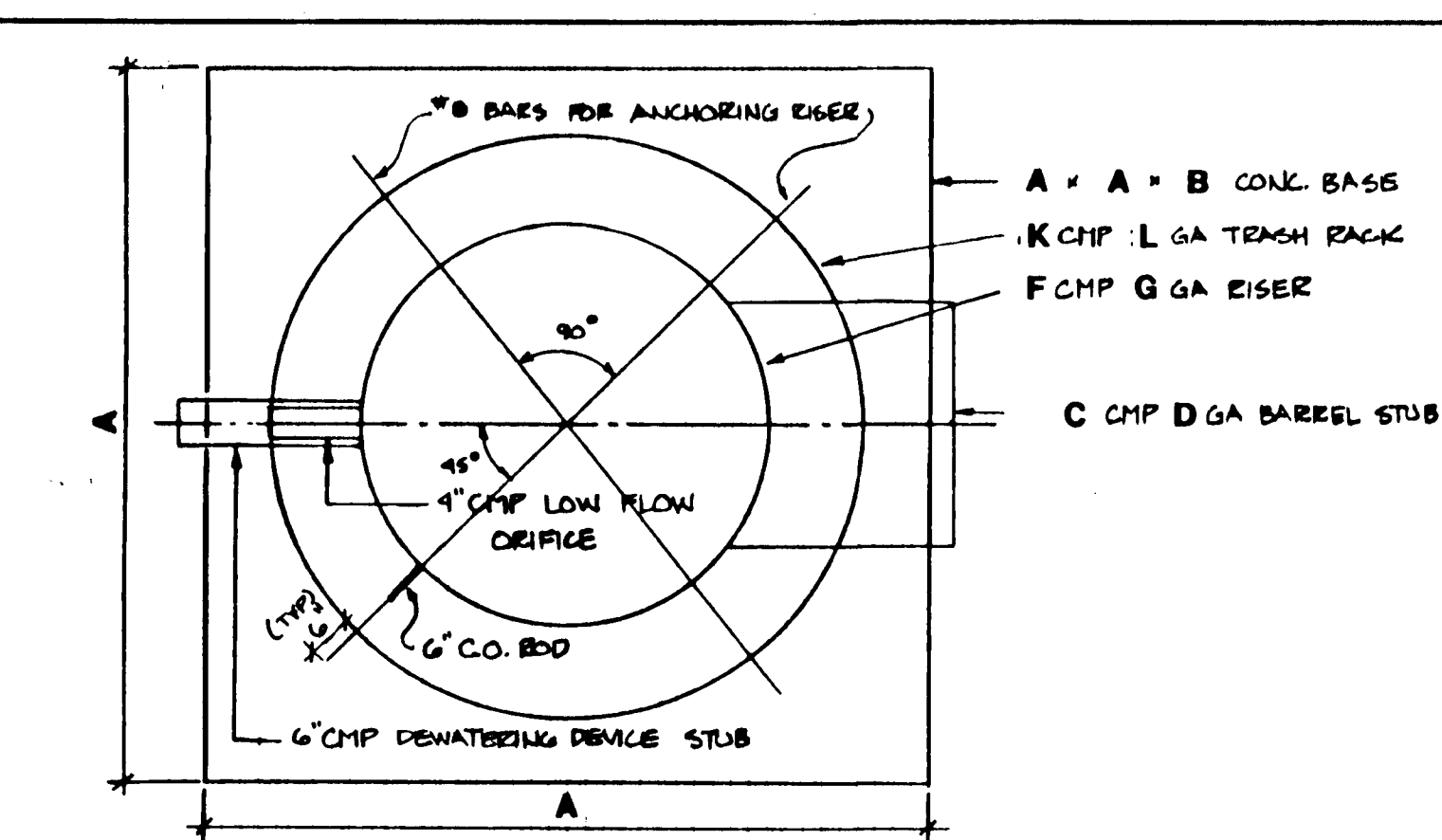
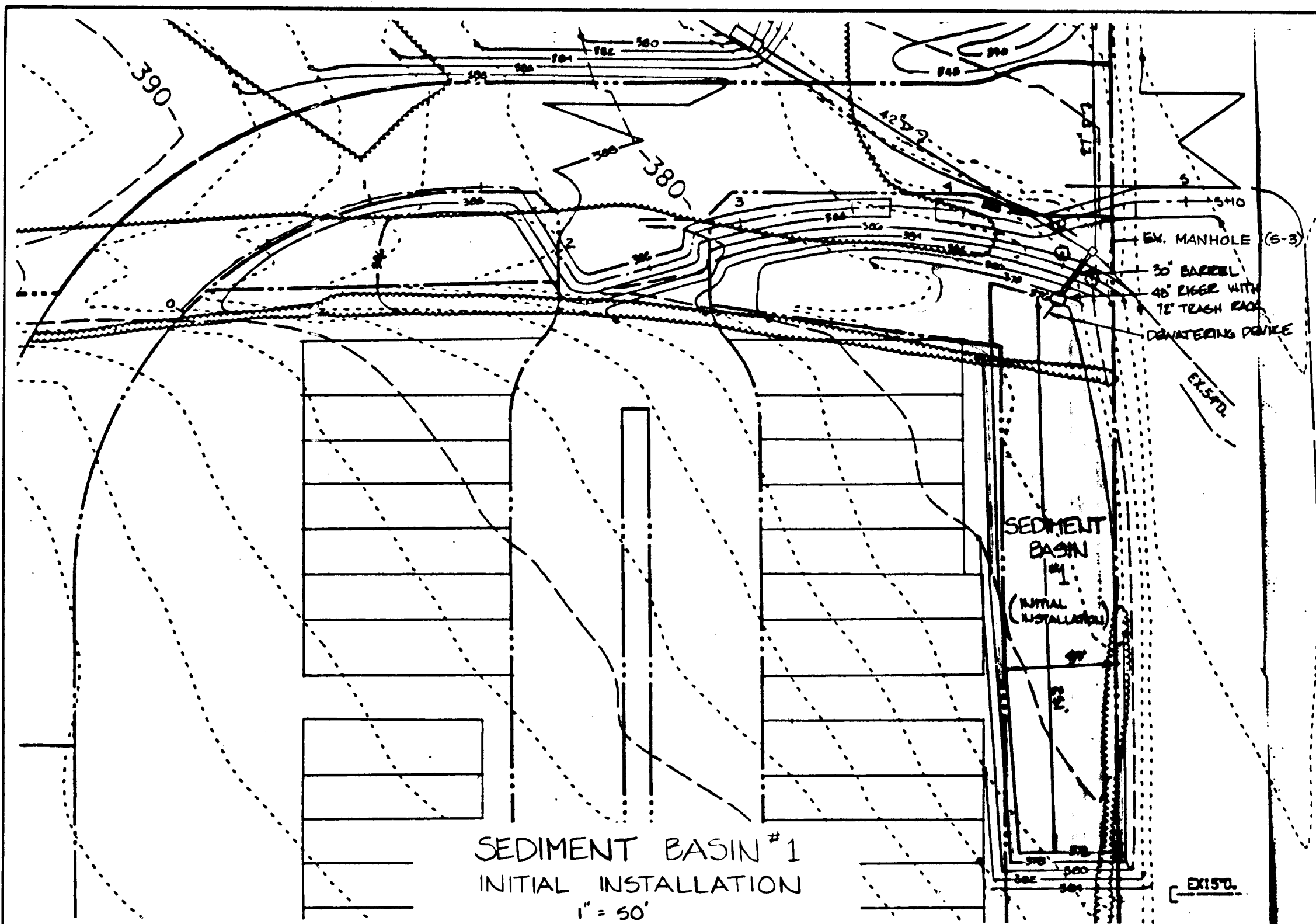
AREA
PARCELS A, B & C AND LOTS 89, 90, 91 & 92
TAX MAP 38.97 PART OF PARCEL 50
6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE
SEDIMENT AND EROSION CONTROL PLAN

Des By CRW Scale AS SHOWN Proj. No. 850080
Drn By CRW Date 4-12-93
Chk By JWR Approved

9/18/93
Date

Ernest S. Shyne, P. E.
Professional Engineer, No. 16580



- NOTES FOR COLLARS:
- ALL MATERIALS TO BE IN ACCORDANCE WITH CONSTRUCTION AND CONSTRUCTION MATERIAL SPECIFICATIONS.
 - WHEN SPECIFIED ON THE PLANS, COATING OF COLLARS SHALL BE IN ACCORDANCE WITH CONSTRUCTION AND CONSTRUCTION MATERIAL SPECIFICATIONS.
 - BITUMINOUS COAT AFTER FABRICATIONS, MAINTAIN MIN. 2'-0" BETWEEN COLLARS AND PIPE JOINTS.
 - UNASSEMBLED COLLARS SHALL BE MARKED BY PAINTING OR TAGGING TO IDENTIFY MATCHING PARTS.
 - THE LAP BETWEEN THE TWO HALF SECTIONS AND BETWEEN THE PIPE AND CONNECTING BAND SHALL CALKED WITH ASPHALT MASTIC AT TIME OF INSTALLATION.
 - EACH COLLAR SHALL BE FURNISHED WITH TWO 1/2" DIAMETER RODS WITH STANDARD TANK LUGS FOR CONNECTING COLLARS TO PIPE.

DETAILS
CORRUGATED METAL ANTI-SEEP COLLAR
NO SCALE

BY THE DEVELOPER:

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 ANTI-VORTEX DEVICE CONSTRUCTION PLAN OF THE POND. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *Albert F. Edwards, P.E.* DATE: 8-23-93

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 ANTI-VORTEX DEVICE CONSTRUCTION PLAN OF THE POND. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Signature: *Ernest I. Sheppe II* DATE: 9/18/93

Signature: *John K. Blanton* DATE: 9/3/93

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Signature: *Andrew M. Danaker* DATE: 9-20-93
CHIEF, BUREAU OF HIGHWAYS

Signature: *Paul W. Egan* DATE: 9/21/93
CHIEF, BUREAU OF ENGINEERING

Signature: *Chris Pannone* DATE: 9/21/93
CHIEF, LAND DEVELOPMENT DIVISION M.K.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Signature: *Gina Summank* DATE: 9/24/93
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH

11/30/93 | CHANGED S-3 TO A BRICK MH (S-3) |
Date No. Revision Description

LONGREACH
OWNER / DEVELOPER

THE HOWARD RESEARCH & DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

DMW
Daft · M'Cune · Walker, Inc.
200 East Montgomery Avenue
Columbia, Maryland 21046
410-996-1555
Fax: 410-996-4725

AREA PARCELS: A, B, & C AND LOTS 89, 90, 91, & 92
TAX MAP: 98-37
8TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

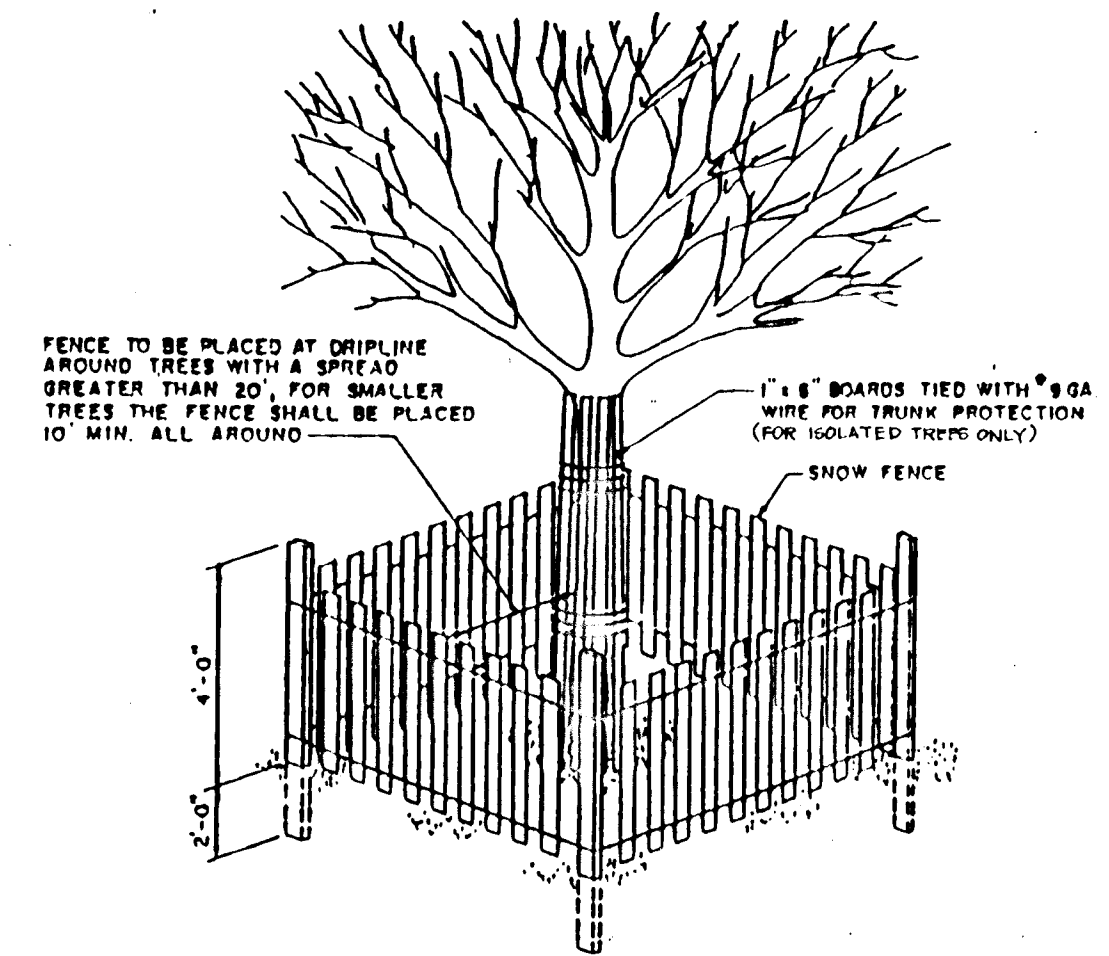
TITLE: SEDIMENT AND EROSION CONTROL PLAN BASIN #1

Des By CRW Scale AS SHOWN Proj. No. 89088D
Drn By CRW Date 4-12-93
Chk By EIS Approved

Professional Engr. No. 16560

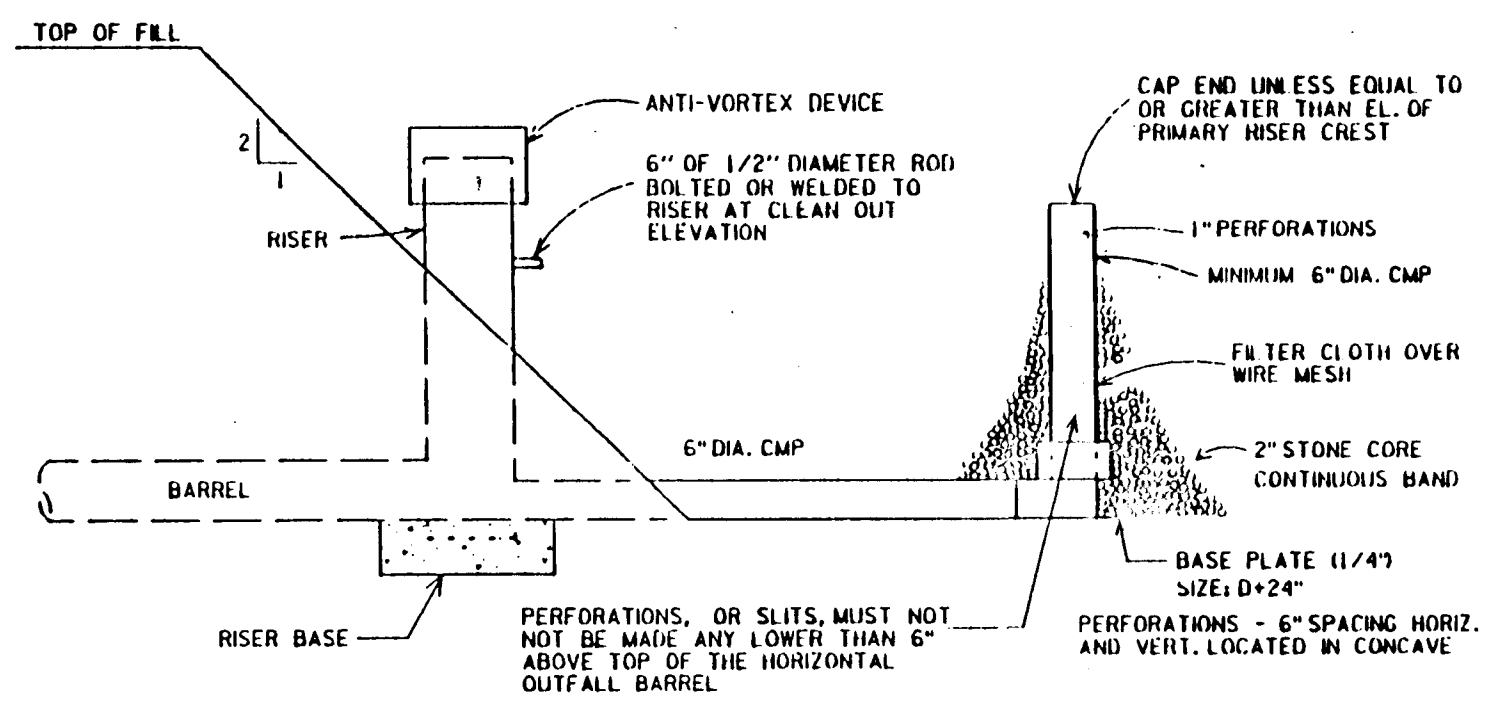
Sequence of Construction

1. Obtain a grading permit.
2. Notify the Howard County Dept. of Inspection and Permits (303-1850) a minimum of 24 hours prior to the start of any construction.
3. Drain/pump existing pond. Install tree protection fence.
4. Install sediment and erosion control measures per "Utility Construction Outside Sediment Control" note, Sheet 20 of 20, for installation of 42 inch storm drain extension. Install sediment and erosion control measures for water quality pond construction.
5. Install sandbag/stone diversion, pump, and dewatering basin. Clear and grub for and install 42 inch storm drain extension. Install water quality pond.
6. Clear and grub for and install remaining sediment and erosion control measures or devices excepting Sediment Traps No. 3, 6 and 7 and earth dikes directing runoff to them.
7. Clear, grub, and strip and rough grade site. As grading below initial installation is reached install Sediment Traps No. 3, 6 and 7 and earth dikes directing runoff to them. Remove initial dikes and soils above new dike and traps.
8. Stabilize all nonactive graded surfaces with temporary seeding.
9. Install utilities. Inlets are to be blocked upon installation.
10. Repair any sediment or erosion control devices disturbed during utility construction.
11. Fine grade all road surfaces. Install curb and gutters. Apply road subbase.
12. Fine grade areas adjoining Deep Earth Lane and permanently stabilize those areas.
13. Pave road.
14. With the prior permission of the Sediment Control Inspector and the Howard County Sediment Control Division, remove sediment controls. Fine grade and stabilize these areas.



NOTES:
 1. SPECIES, GRADE, ETC. OF LUMBER SHALL BE AT THE OPTION OF THE CONTRACTOR
 2. NO CONSTRUCTION MATERIALS, EQUIPMENT OR EXCAVATED EARTH SHALL BE ALLOWED WITHIN THE PROTECTED AREA.

TREE PROTECTION



CONSTRUCTION SPECIFICATIONS

1. DEWATERING DEVICE SHALL BE 6" MINIMUM DIAMETER METAL PIPE EXTENDING INTO BASIN AREA.
2. PIPE SHALL BE WELDED OR CEMENTED TO RISER AND HAVE A 6" MINIMUM DIAMETER PERFORATED METAL PIPE WELDED AT END PERPENDICULAR TO BARREL WITH A METAL CAP WELDED ONTO END OF PIPE UNLESS ABOVE EL. OF PRIMARY RISER CREST.
3. PIPE SHALL BE SECURELY WRAPPED WITH APPROVED FILTER CLOTH AND COVERED ON ALL SIDES WITH NO. 24 STICK TO THE CLEANOUT ELEV.
4. CLEAN OUT ELEVATION FOR BASIN WILL BE DESIGNATED BY A 6" PIECE OF 1/2" DIAMETER ROD BOLTED TO RISER AT THE PROPER ELEVATION. ROD SHOULD BE CLEARLY VISIBLE FROM TOP OF DAM. PLEASE NOTE THAT THE 4" CLEAN OUT HOLE HAS BEEN ELIMINATED.
5. SEDIMENT SHALL BE REMOVED AND BASIN RESTORED TO ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO THE CLEAN-OUT ELEVATION. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
6. THE STRUCTURE WILL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
7. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.

SEDIMENT BASIN DEWATERING DEVICE

- 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 (313-1850).
 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 most current "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
 3. Following initial soil disturbance or redistribution, 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 1993 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (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	20.7 Acres ±
Area Disturbed	15.7 Acres ±
Area to be reseeded or paved	0.0 Acres ±
Area to be vegetatively stabilized	2.0 Acres ±
Total Cut	104,100 Cu. Yds. ±
Total Fill	104,100 Cu. Yds. ±
Offsite waste/borrow area location	NA
 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 control must be provided, if deemed necessary by the Howard County 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.
 11. Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

Site Preparation

Area under the embankment shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. In order to facilitate clear-out and restoration, the pool area immediately to the top of the pipe spillway will be cleared of brush, trees, and other objectionable materials.

Cut-Off Trench

A cut-off trench shall be excavated along the centerline of earth fill embankments. The minimum depth shall be 2 feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be 4 feet, but wide enough to permit operation of excavation and compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be the same as those for embankment. The trench shall be dewatered during the backfilling/compaction operations.

Embankment

The fill material shall be taken from approved areas shown on the plans. It shall be clean mineral soil free of roots, woody vegetation, oversized stones, rocks, or other objectionable material. Relatively pervious materials such as sand or gravel-filled soil classes GW, GP, SW and SP shall not be placed in the embankment. Areas on which this to be placed shall be scarified prior to placement of fill. The fill material shall contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball it is too wet for proper compaction. Fill material shall be placed 6 inch to 8 inch thick continuous layers over the entire length of the fill. Compaction shall be obtained by routing and rolling the construction equipment over the fill so that the entire surface of each layer of the fill is covered by at least one wheel or tread track of the equipment or by the use of a compactor. The embankment shall be constructed to an elevation 10 percent higher than the design height to allow for settlement.

Pipe Spillways

The riser shall be securely attached to the barrel barrel stub by welding the flange circumference making a watertight structural connection. The barrel stub must be attached to the riser at the same percent tangent of grade as the outlet conduit. The connection between the riser and the riser base shall be watertight. All connections between barrel sections must be achieved by approved watertight band assemblies. See page 18.22 for details. The barrel and riser shall be placed on a firm, smooth foundation of impervious soil. Pervious materials such as sand, gravel or crushed stone shall not be used as backfill around the pipe or anti-seep collars. The fill material around the pipe spillway shall be placed in 4 inch layers and compacted under and around the pipe to at least the same density as the adjacent embankment.

A minimum depth of 2 feet of hand compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment. Steel base plates on risers shall have at least 2-1/2 feet of compacted earth, stone or gravel placed over it to prevent flotation.

Emergency Spillway

The emergency spillway shall be installed in undisturbed ground. The achievement of planned elevations, grades, design width, entrance and exit channel slopes are critical to the successful operation of the emergency spillway and must be constructed within a tolerance of +0.2 feet.

Vegetative Treatment

Stabilize the embankment and emergency spillway in accordance with the appropriate vegetative standard and specifications immediately following construction. In no case shall the embankment remain unstabilized for more than seven days.

Erosion and Pollution Control

Construction operations shall be carried out in such a manner that erosion and water pollution will be minimized. State and local laws shall be complied with concerning pollution abatement.

Safety

State and local requirements shall be met concerning fencing and signs, warning the public of hazards of soft sediment and floodwater.

Maintenance

1. Repair all damage caused by collision and construction equipment at or before the end of each working day.
2. Sediment shall be removed from the basin when it reaches the specified elevation below the top of the riser. This sediment shall be placed in such a manner that it will not erode from the site. The sediment shall not be deposited downstream from the embankment, adjacent to a stream or floodplain.

Final Disposal

When temporary structures have served their intended purpose and the contributing drainage areas has been properly stabilized, the embankment and retaining sediment deposits are to be leveled or otherwise disposed of in accordance with the approved sediment control plan. The proposed use of a sediment basin site without adequate final disposition of the basin and any sediment contained therein, if the site is scheduled for future construction, then the basin material and trapped sediments must be removed, safely disposed of, and backfilled with a structural fill. When the basin area is to remain open space, the pond may be planted w/ grass and back filled.

SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS

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 BEGAINING THE PROJECT. I/WE ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN ANNUAL PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Albert F. Edwards 8-23-93
 SIGNATURE OF DEVELOPER DATE
 Albert F. Edwards, P.E.
 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 NOTICED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN ANNUAL PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Ernest I. Shupe III 8/10/93
 SIGNATURE OF ENGINEER DATE
 ERNEST I. SHUPE III

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL-SCALE SOIL EROSION AND SEDIMENT CONTROL.
J. S. Workfield 9/3/93
 U.S. SOIL CONSERVATION SERVICE DATE

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

John R. Poluto 9/3/93
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
Andrew M. Pancher 9-20-93
 CHIEF, BUREAU OF HIGHWAYS DATE
Paul W. Jesson 9/21/93
 CHIEF, BUREAU OF TRAFFIC SIGNALS DATE
John P. Cummins 9/21/93
 CHIEF, LAND DEVELOPMENT DIVISION M.K. DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Gina Jaramani 9/24/93
 CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE
 JH

Date	No	Revision	Description

LONGREACH
 SECTION 4, AREA 3, PHASE 220
OWNER / DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

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 Columbia, Maryland 21046
 410.796.5555
 Fax: 796.4705

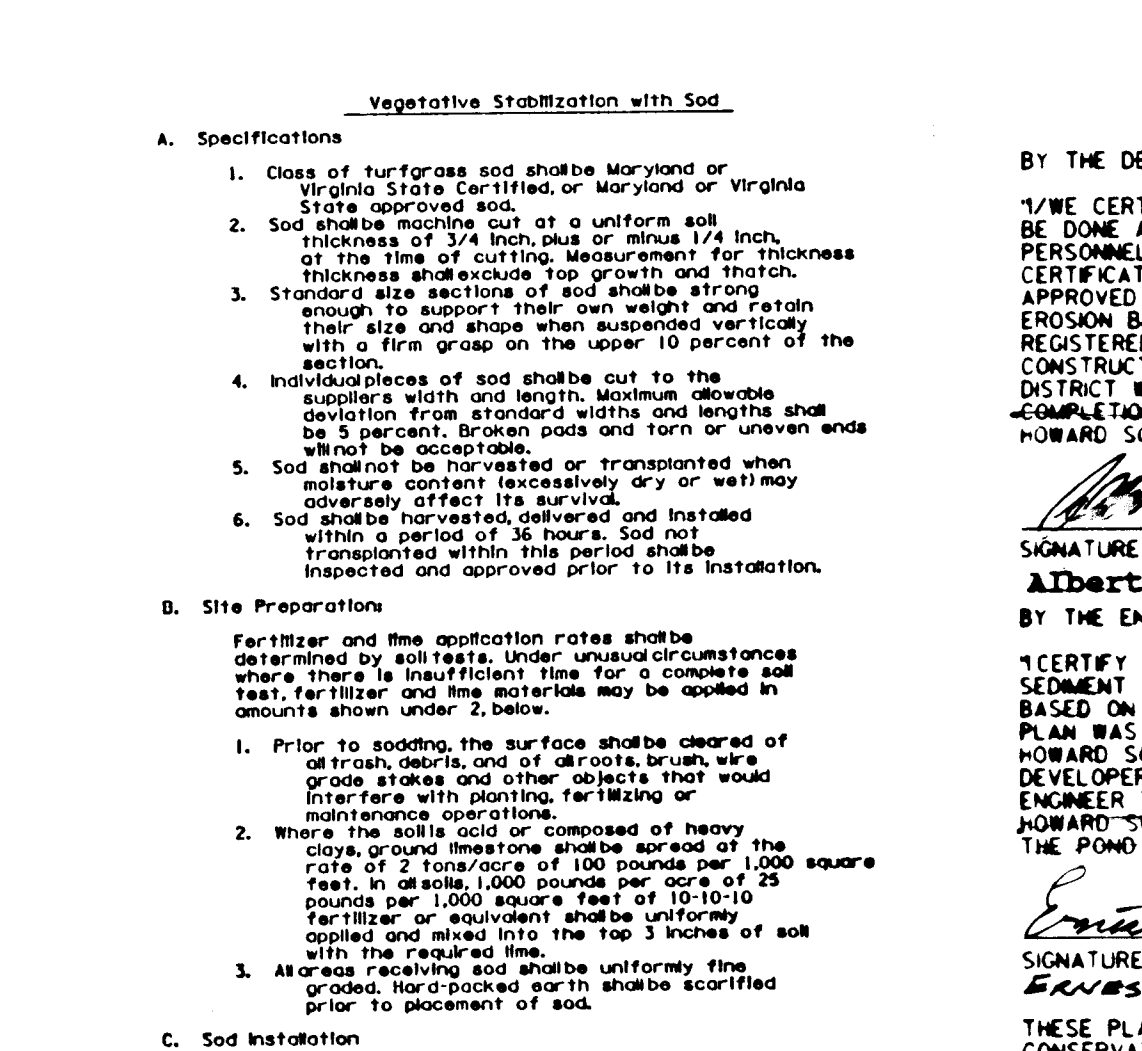
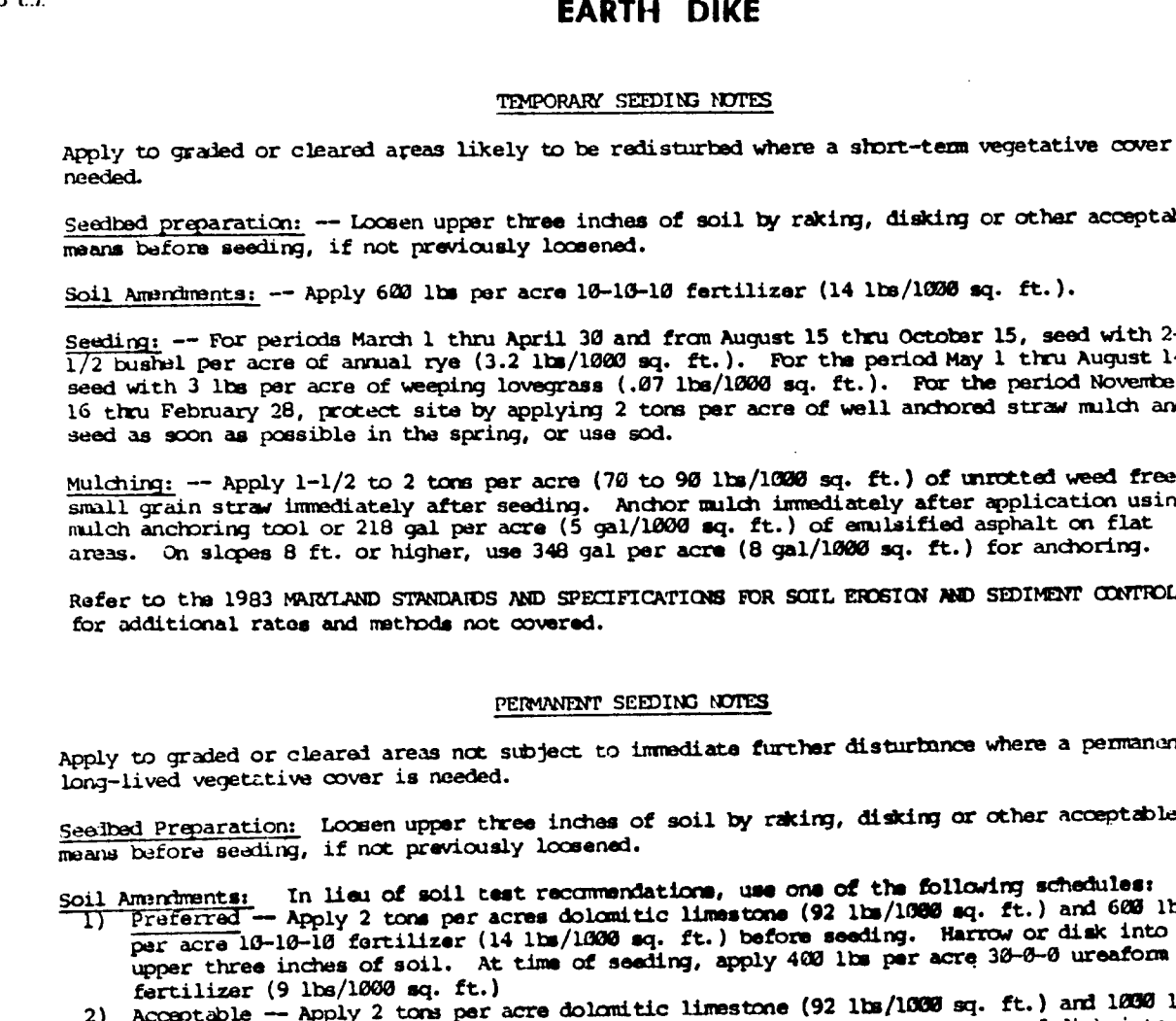
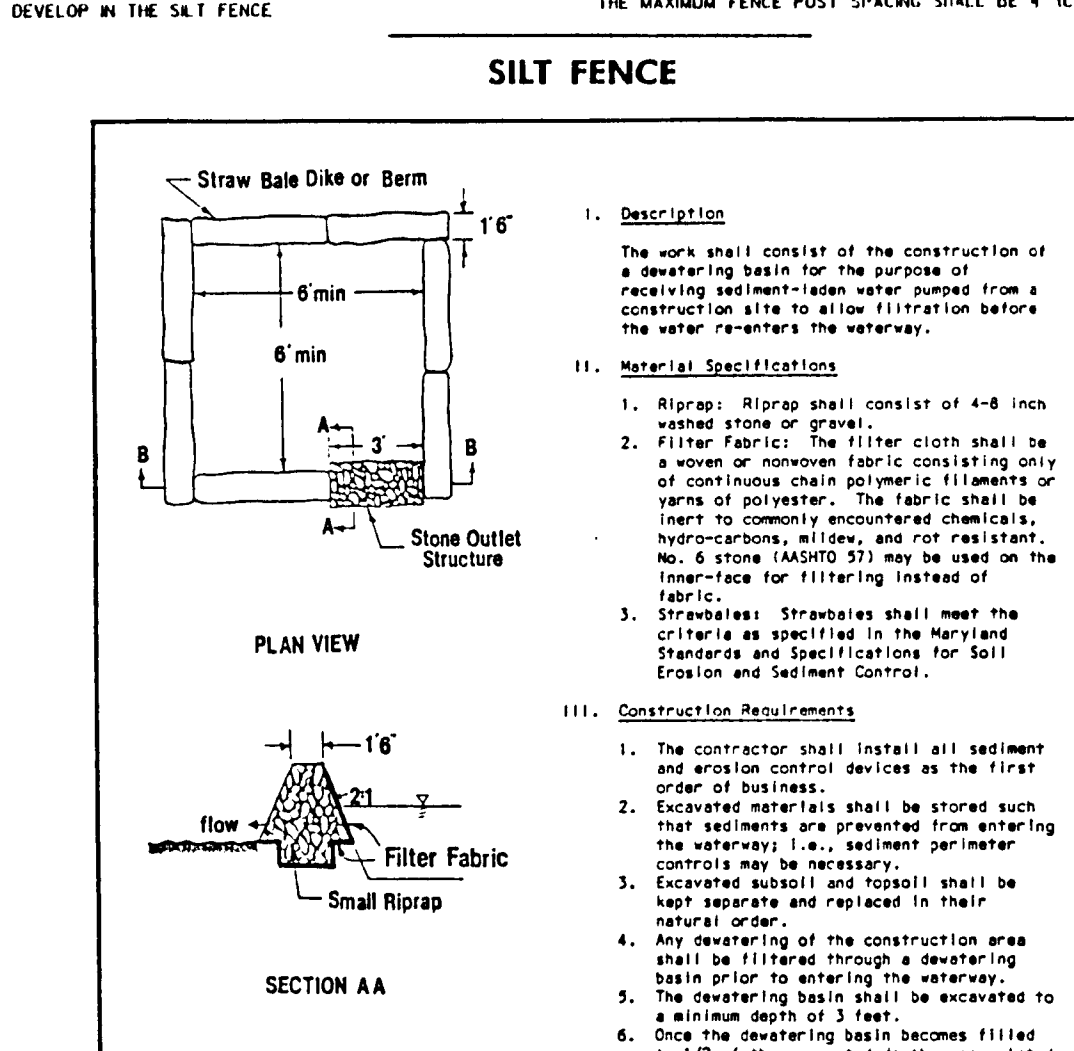
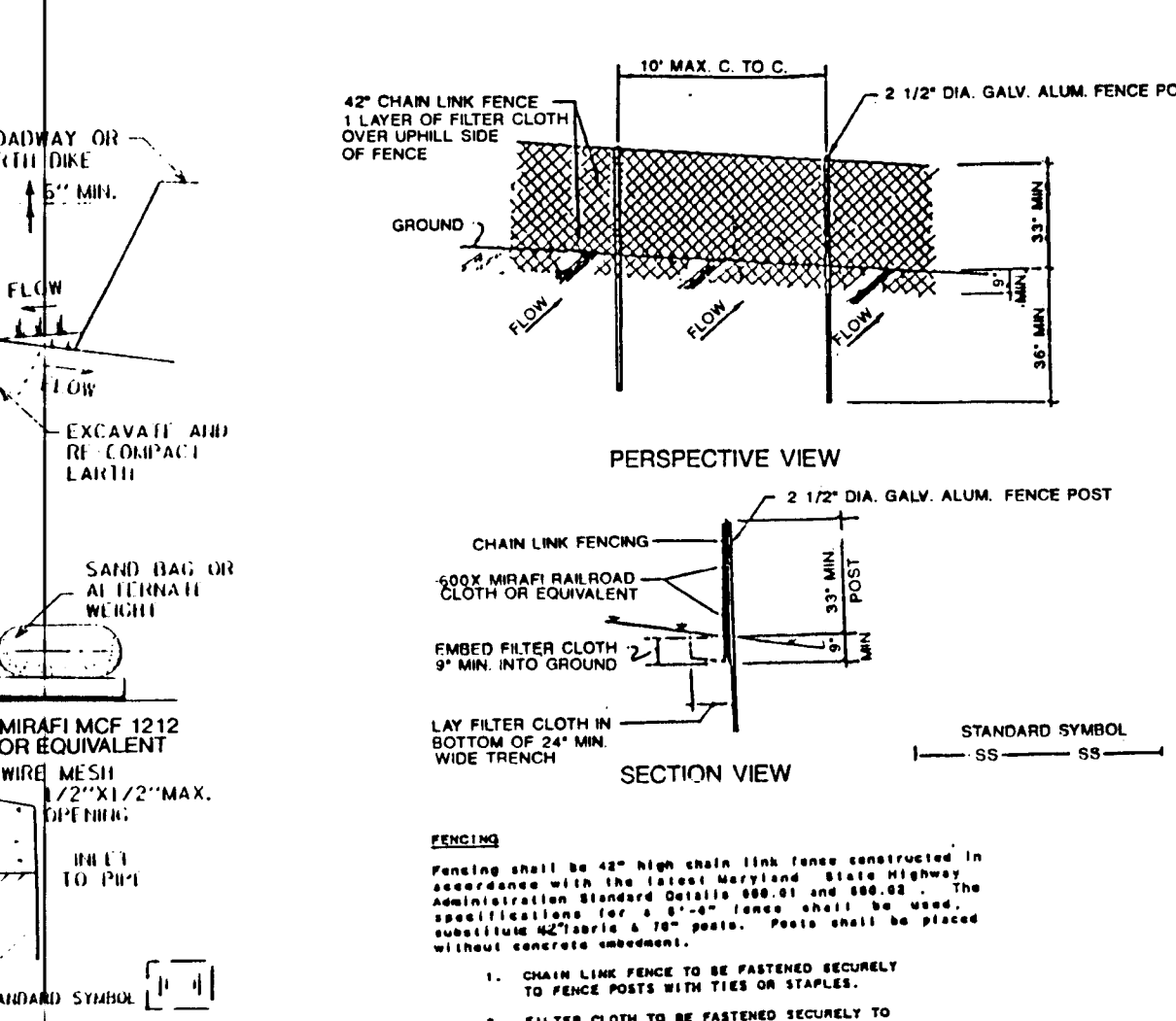
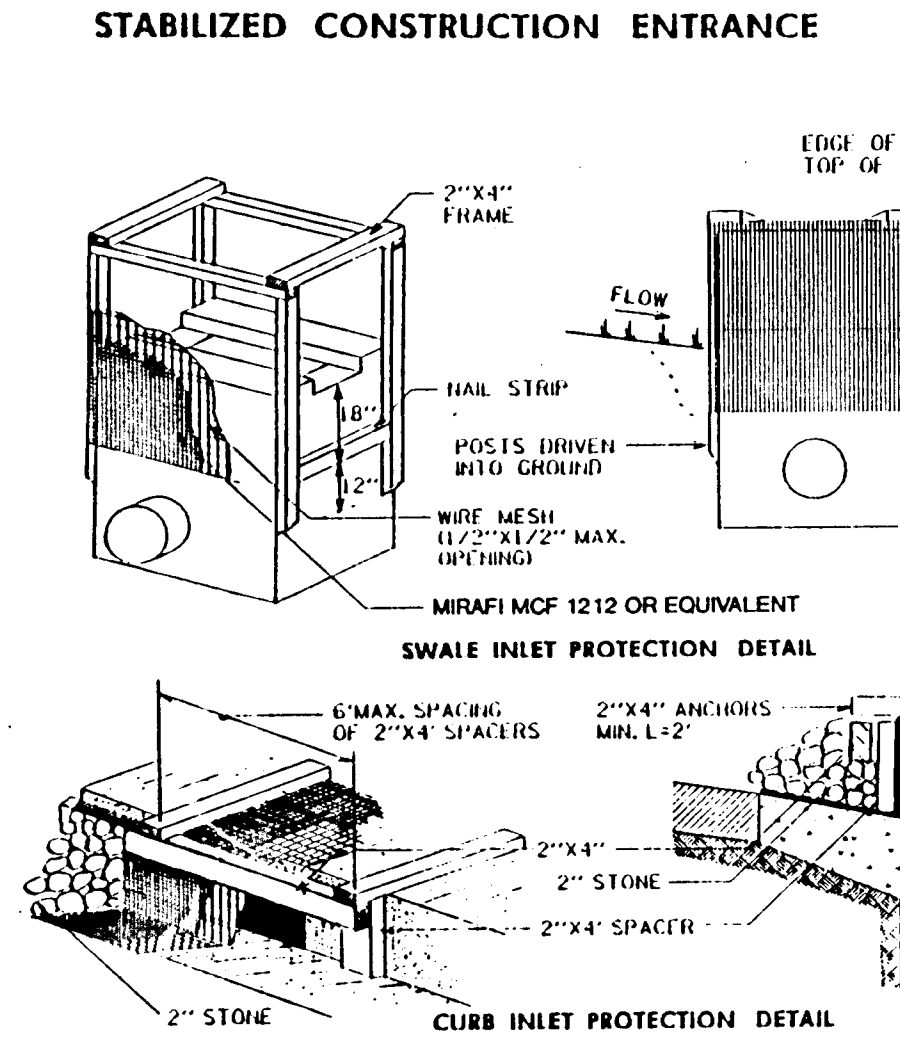
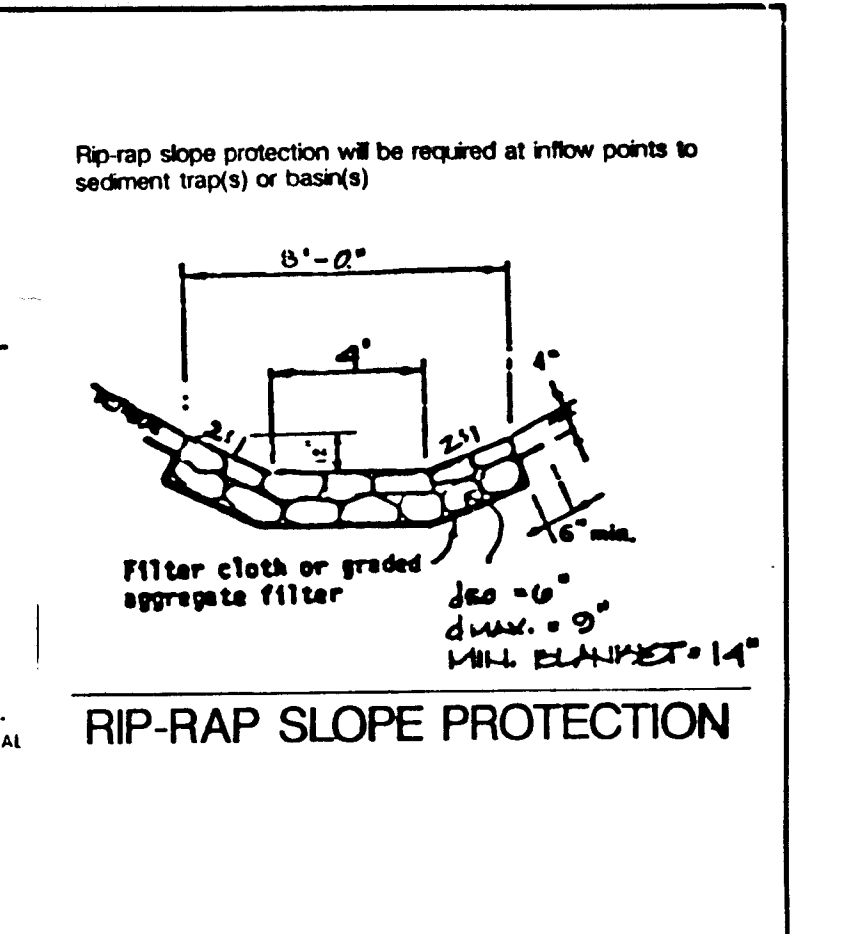
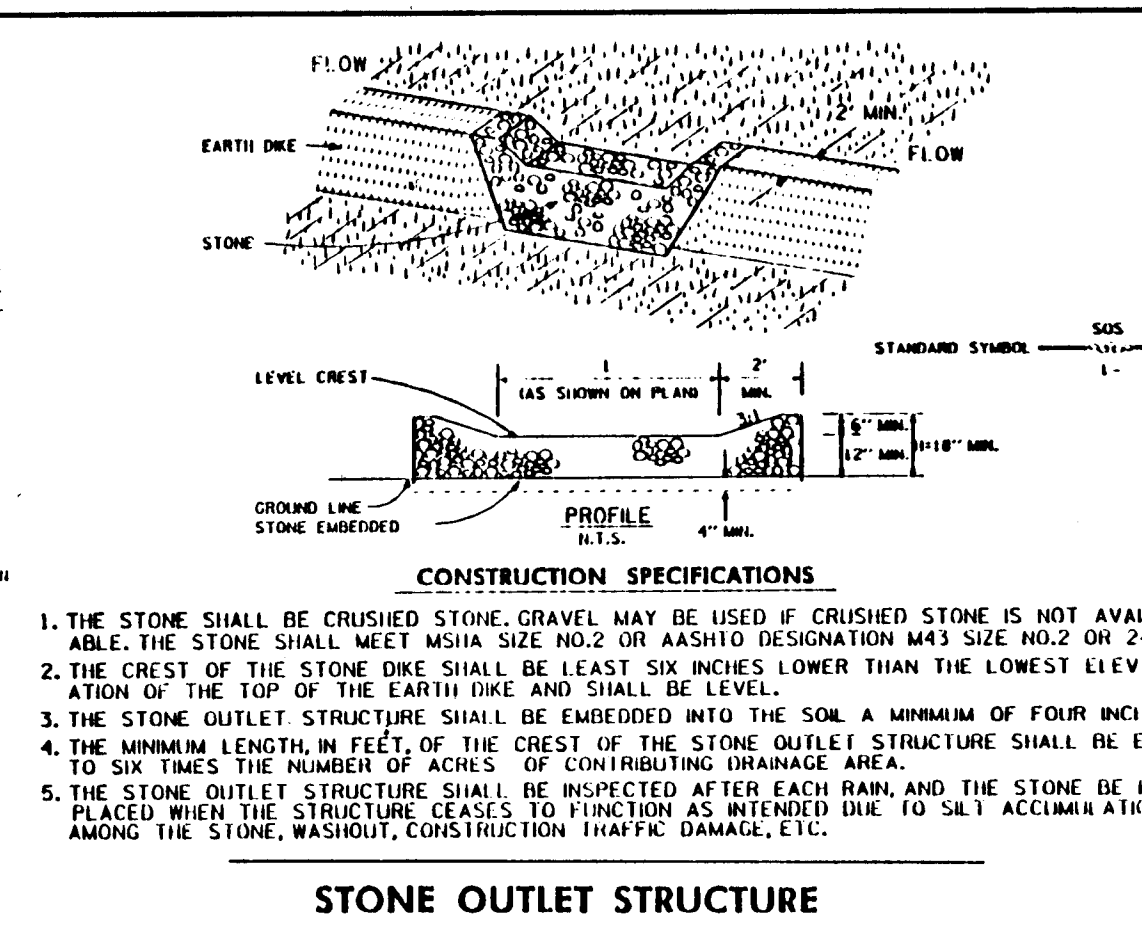
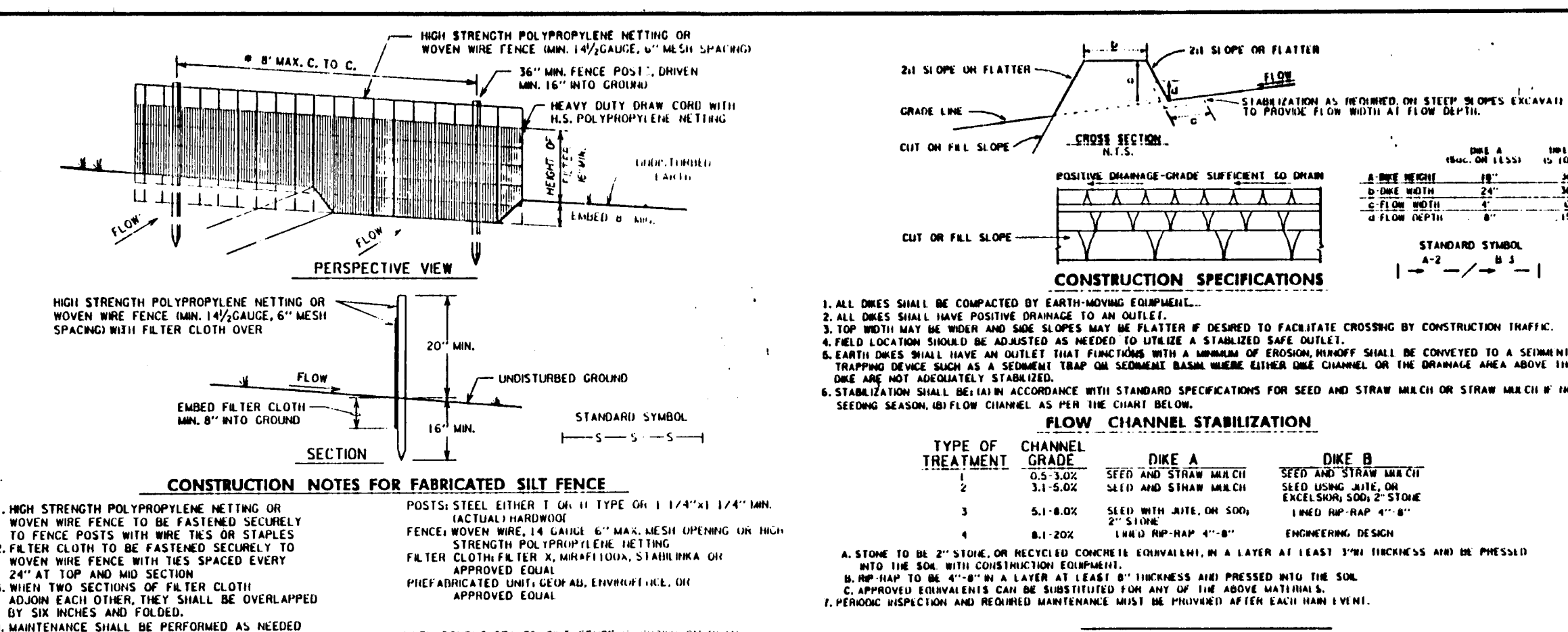
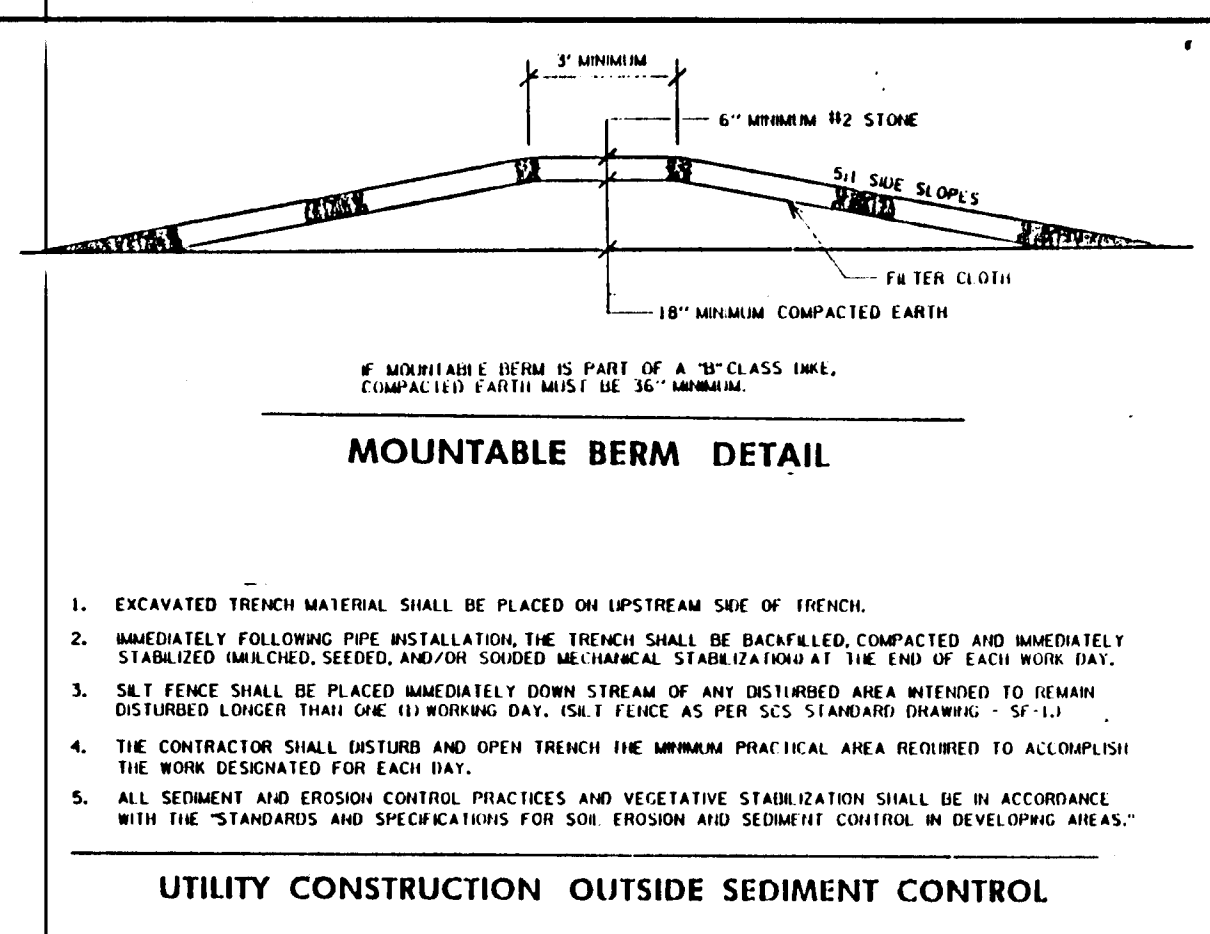
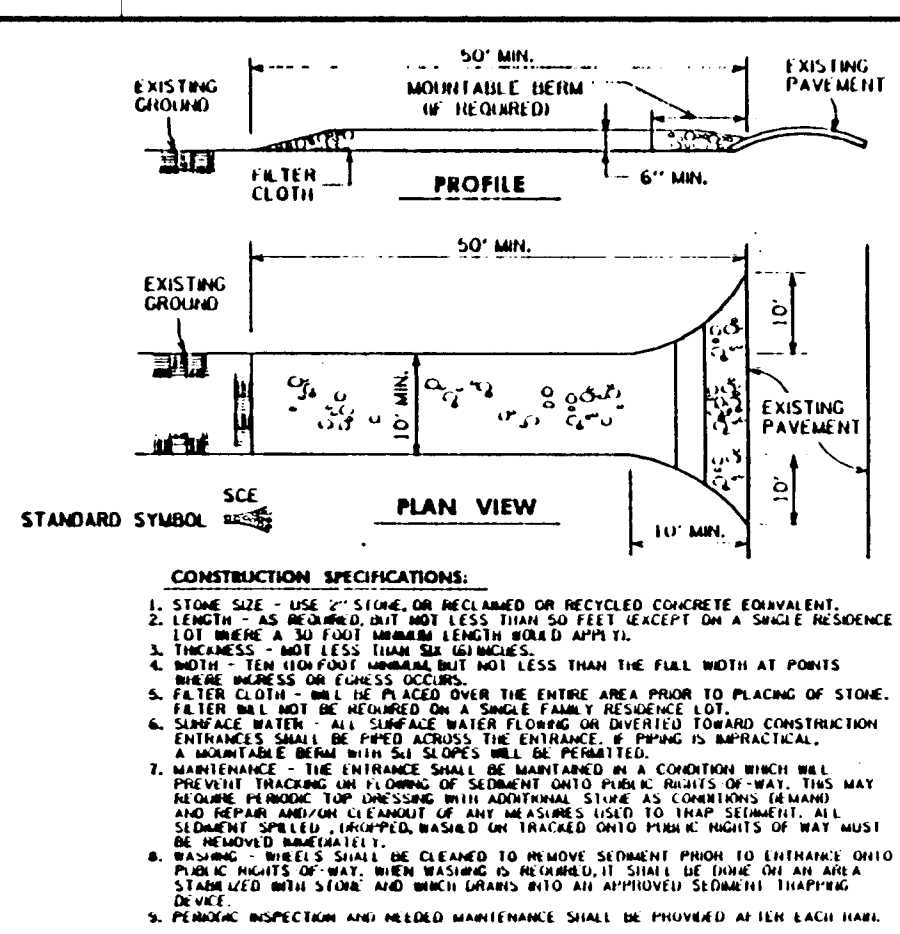
AREA PARCELS A, B, C AND LOTS 89, 90, 91 & 92
 TAX MAP 38.37
 6TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT AND EROSION CONTROL PLAN

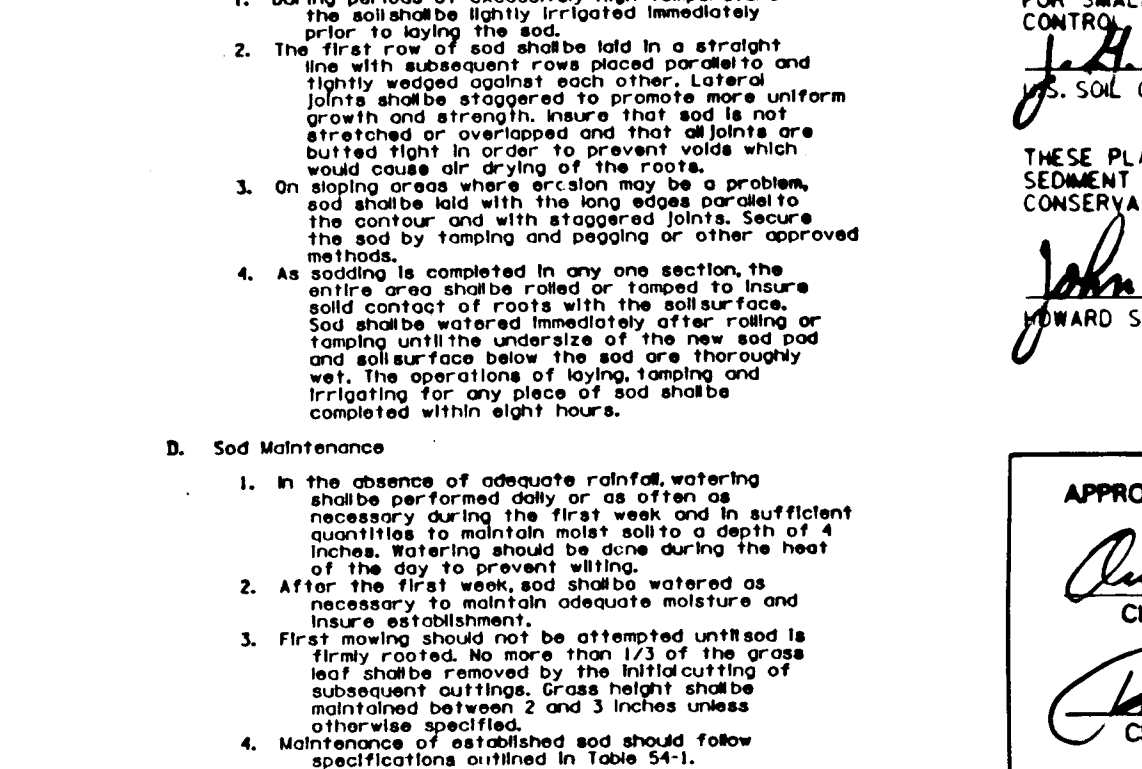
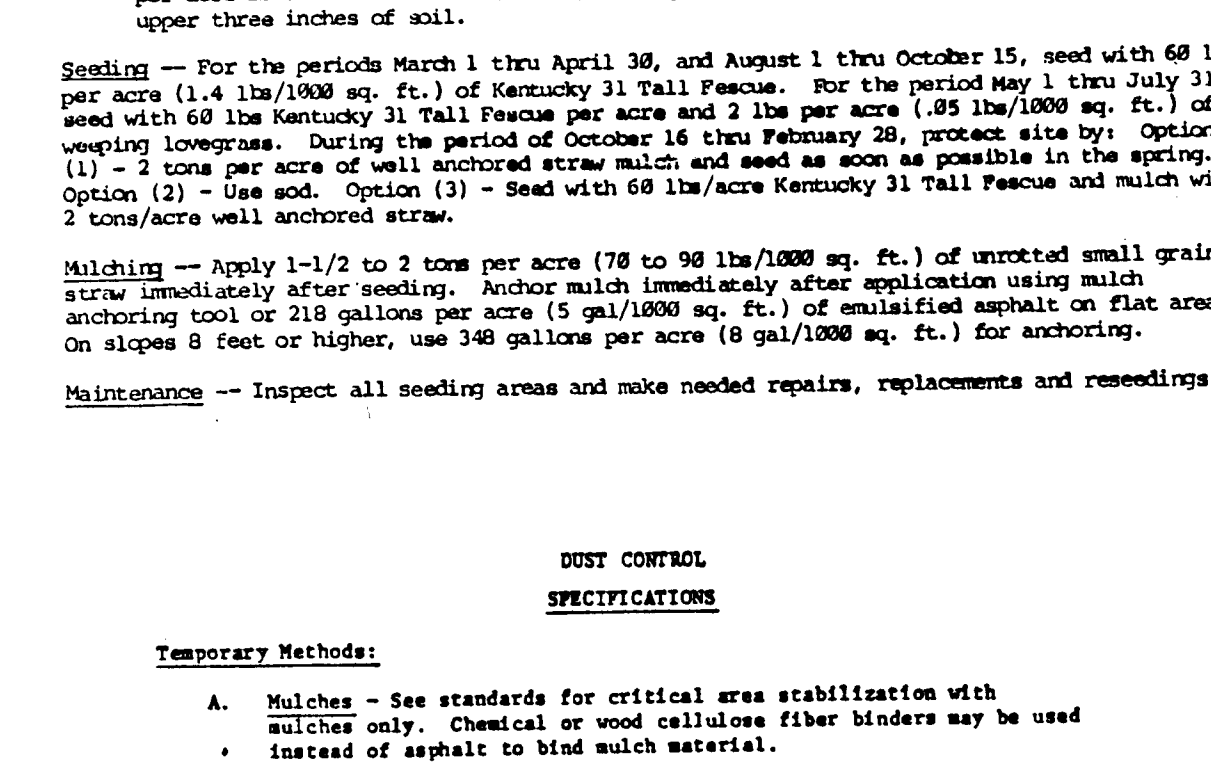
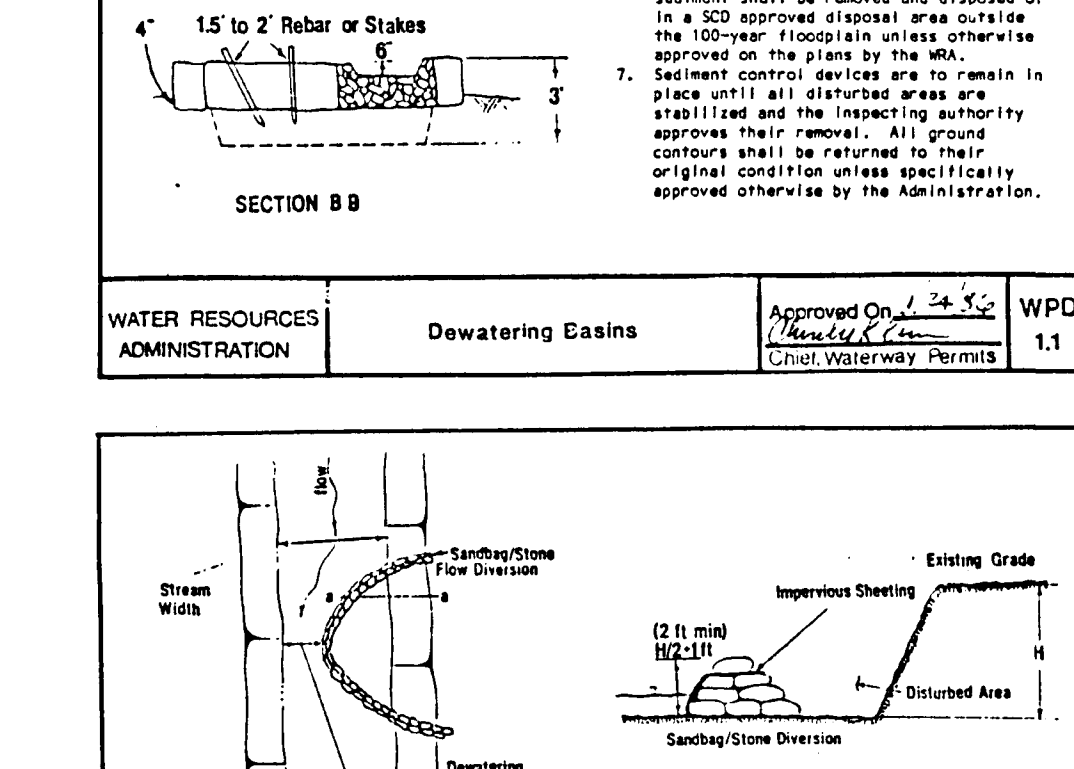
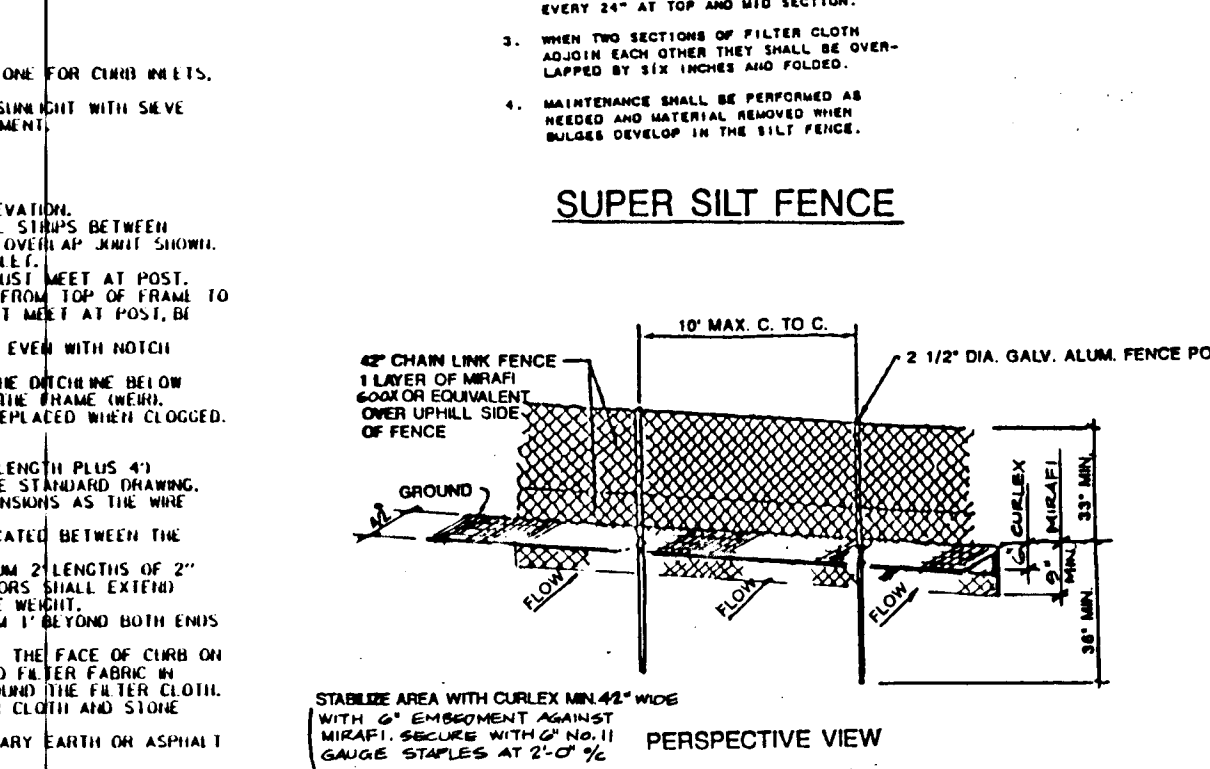
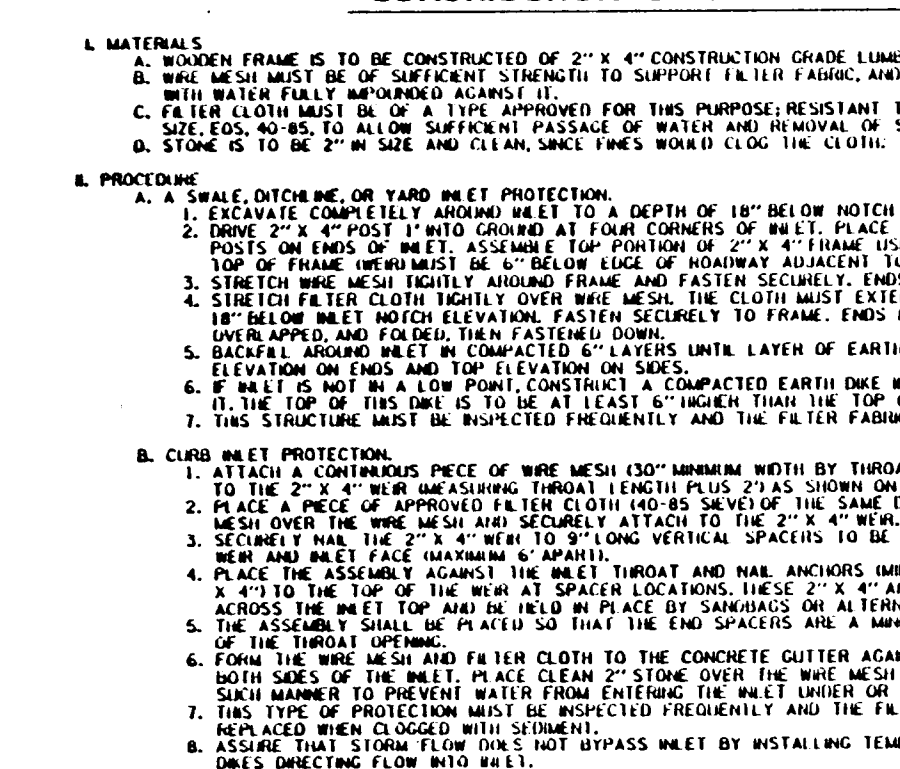
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 Drn By: RW Date: 4-12-93
 Chk By: JS Approved: 19 OF 20

9/18/93
 Date

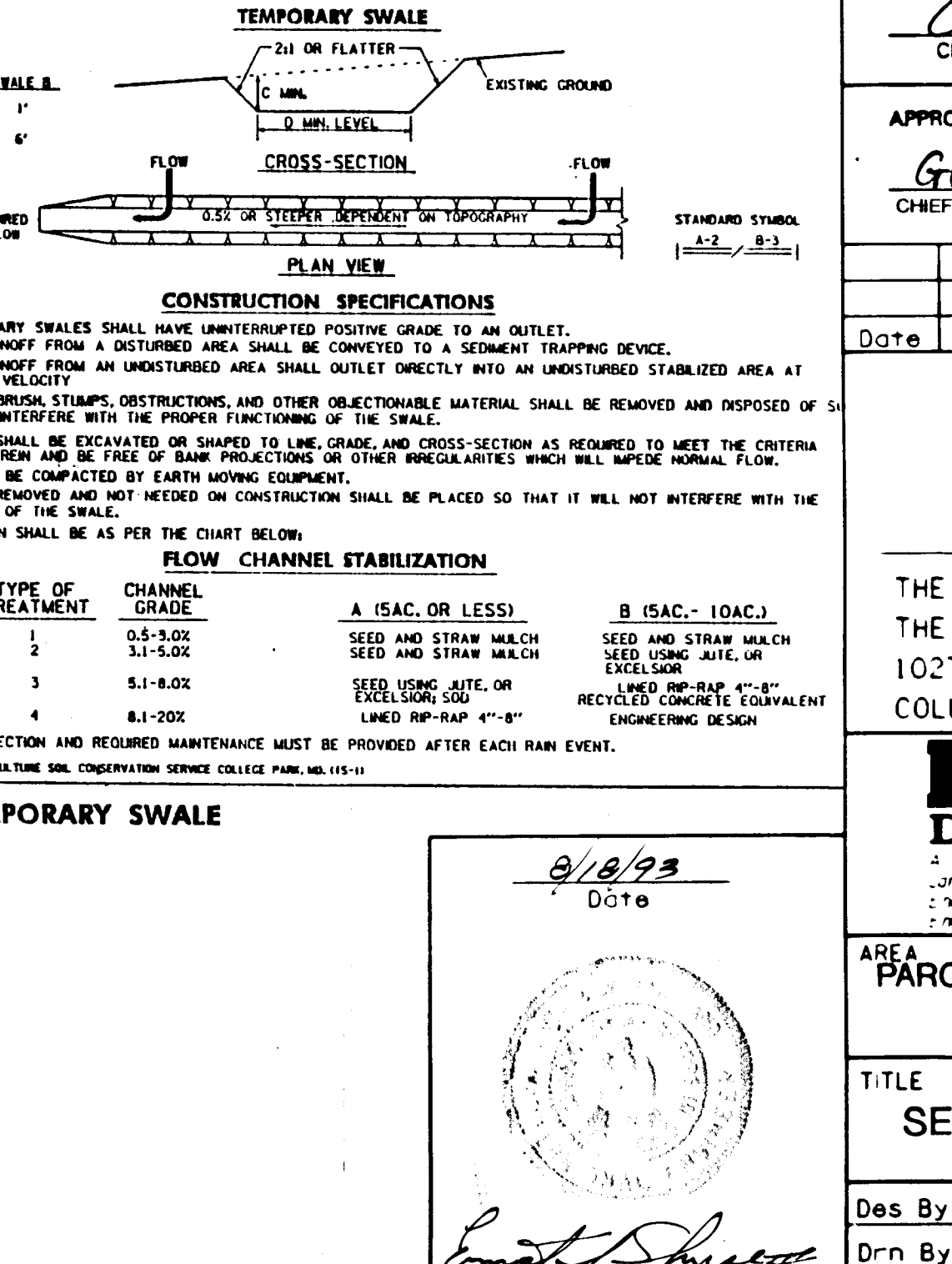
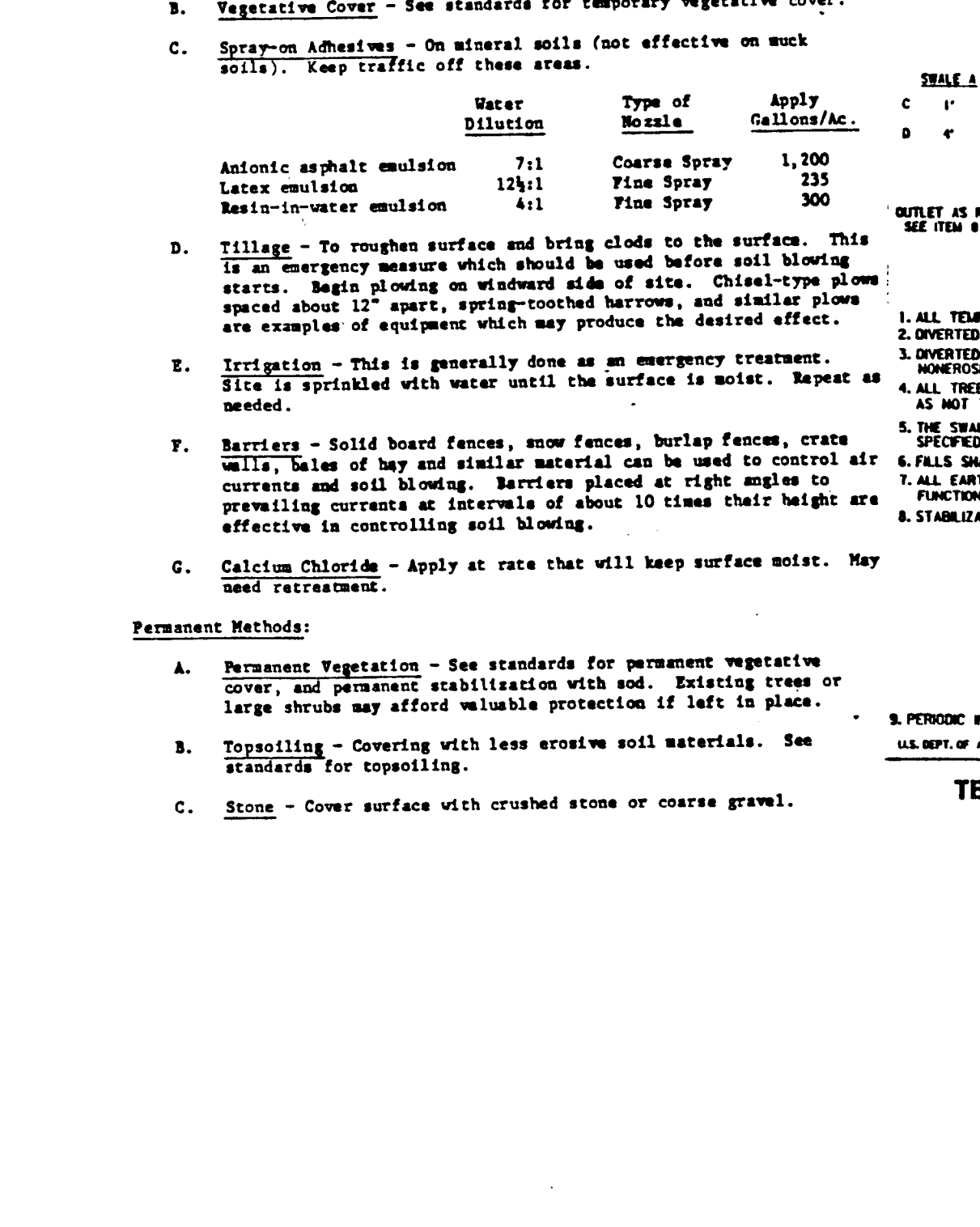
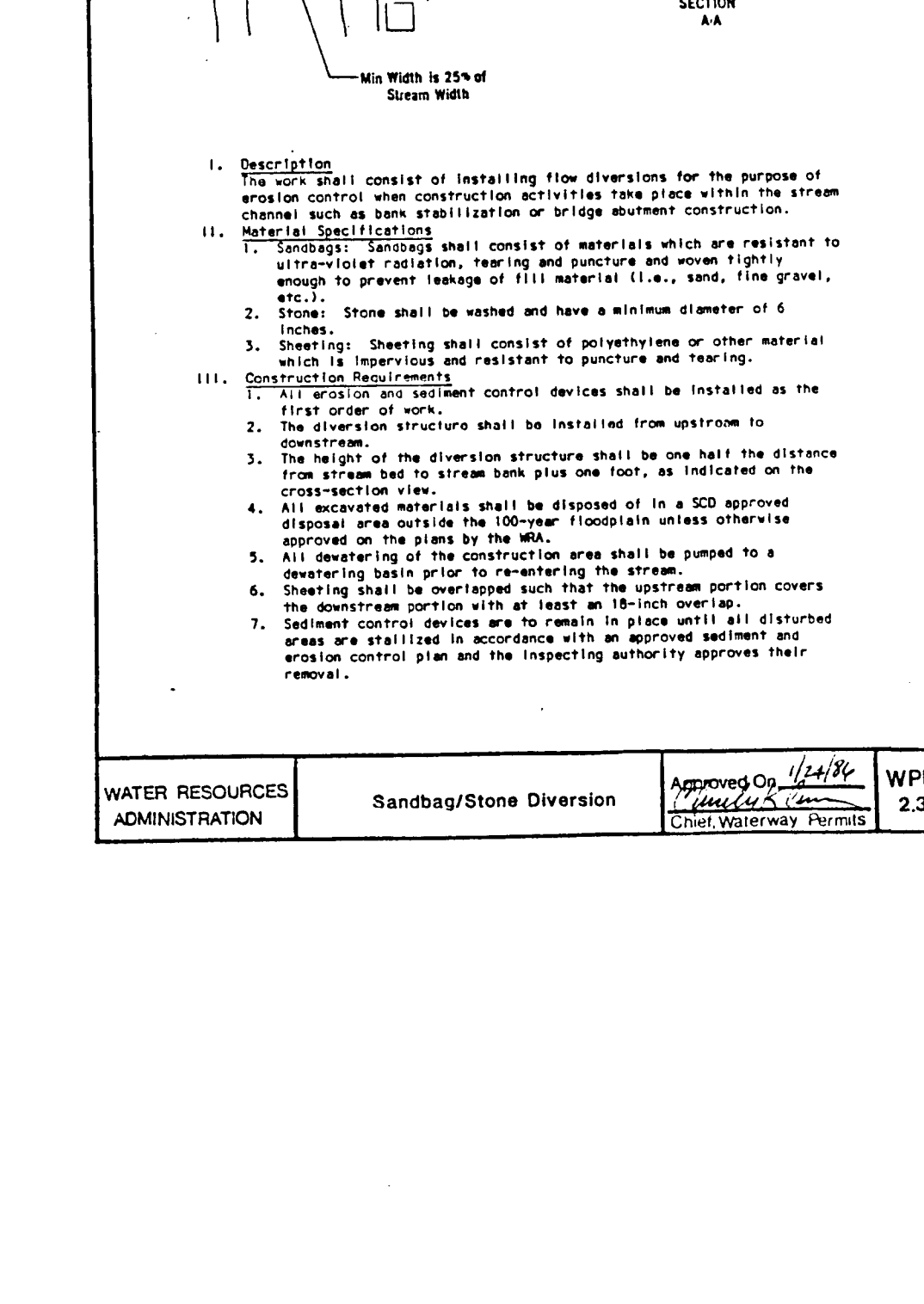
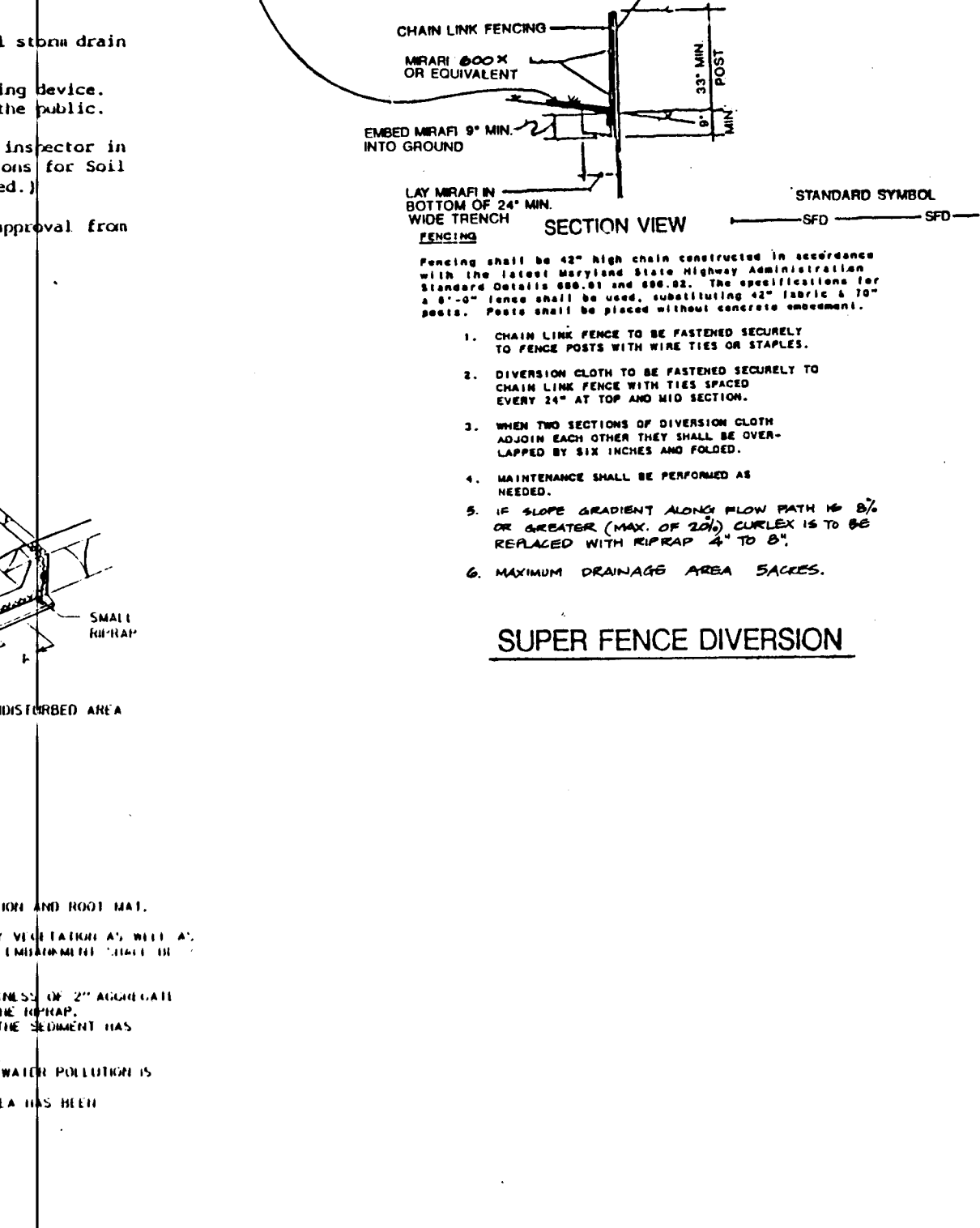
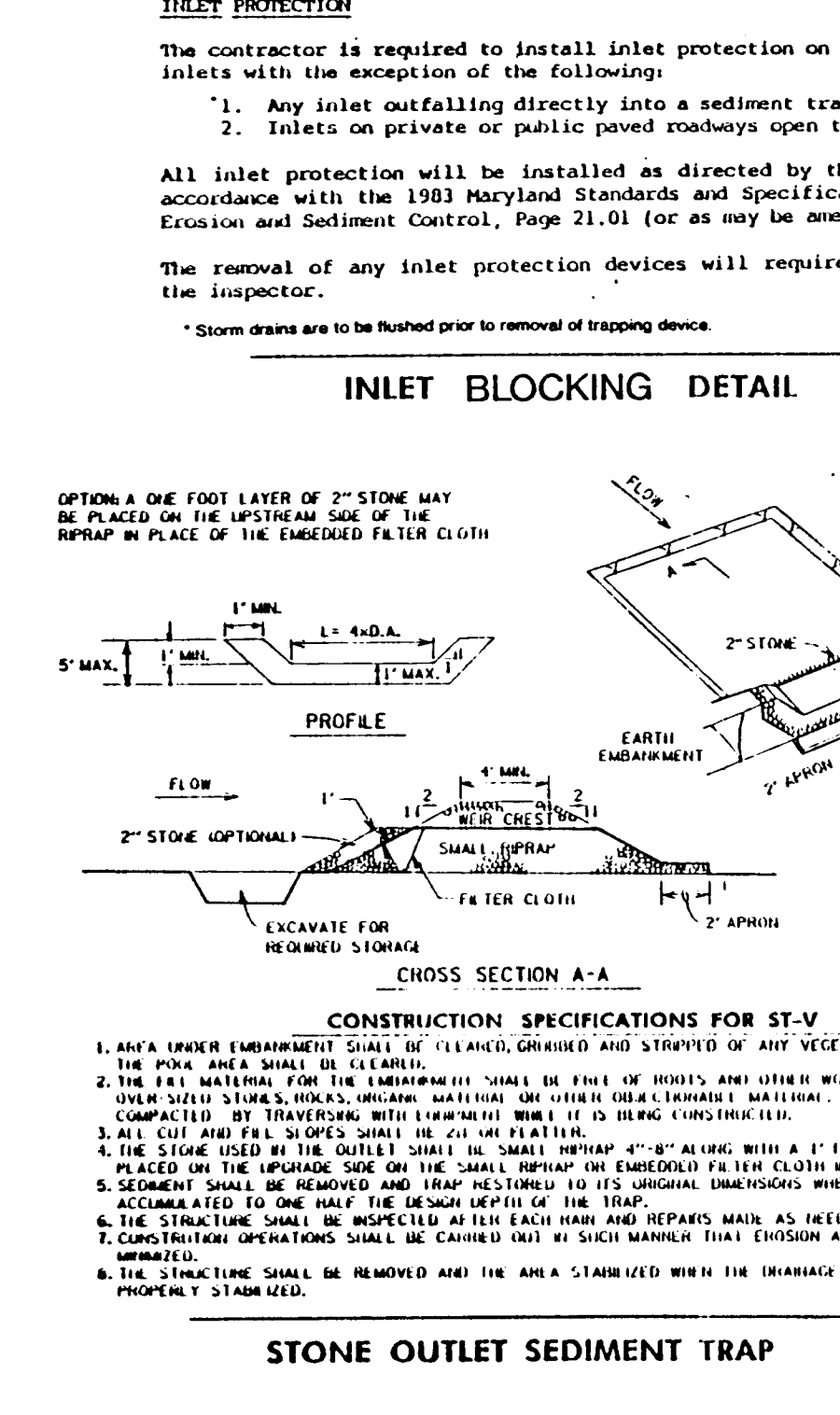
Ernest I. Shupe III
 Professional Engineer, No. 16580



BY THE DEVELOPER: I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY 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 BEGAINING THE PROJECT...



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS. Andrew M. Doncker, 9/20/93, CHIEF, BUREAU OF HIGHWAYS. Paul B. Simon, 9/21/93, CHIEF, BUREAU OF ENGINEERING. Al D. Davison, 9/20/93, CHIEF, LAND DEVELOPMENT DIVISION M.K.



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING. Gina Summons, 7/24/93, CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH. LONGREACH SECTION 4, AREA 3, PHASE 220 OWNER / DEVELOPER. THE HOWARD RESEARCH & DEVELOPMENT CORP. THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044. DAVID M. CUNNE, 8/18/93, Date.