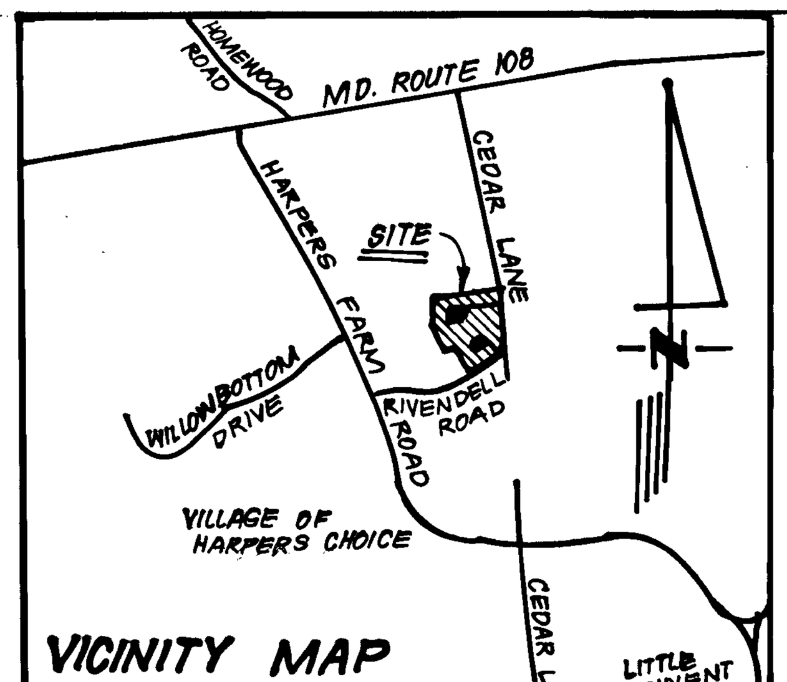


VICINITY MAP
SCALE: 1"=2000'

ROADWAY LIGHTING & SIGNING LEGEND

- ● 250 Watt Mercury Vapor or Sodium Equivalent; Lamp Pendant-mounted fixture on 25' galv. steel pole.
- ○ 175 Watt "Modern" Mercury Vapor or Sodium Equivalent lamp post top fixture on a 14' black or grey fiberglass pole.
- ⬡ R1-1 "Stop" Sign, 30"X30" Octagon.
- ▭ R2-1 "Speed Limit" Sign, 24"x30" Rectangle.

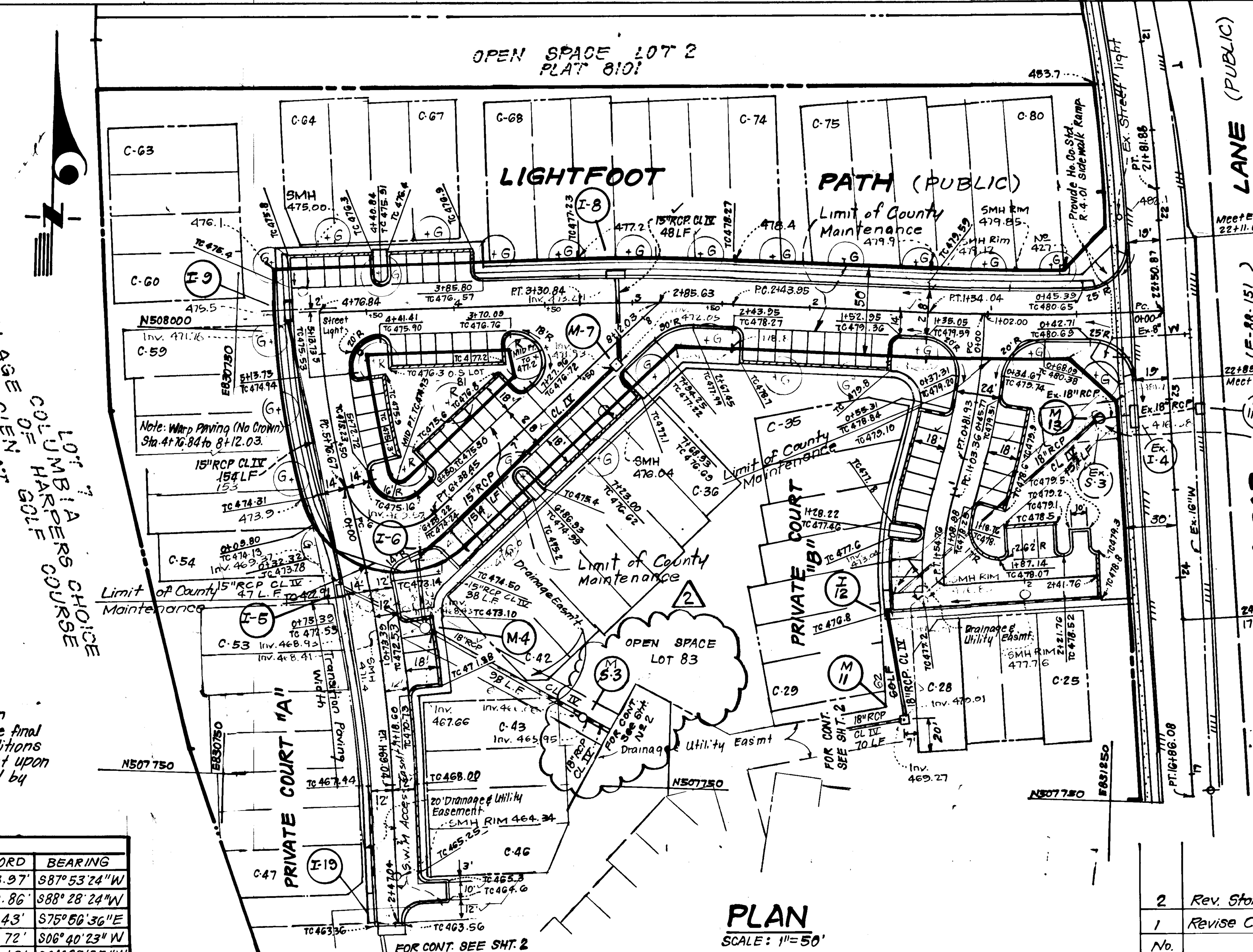
STREET TREE TABLE

SYM	TYPE	SIZE	QUANT.	REMARKS
+R	Acer Rubrum Red Sunset Red Sunset Maple	2½"-3" Cal.	20	B.B. Heavy Heads
+G	Acer Saccharum Green Mountain Sugar Maple	12-14' Ht.	31	"

1. Contractor to verify location of underground utilities prior to digging
2. Street trees: The location, type and number of trees shown on these plans are tentative and are used for bond purposes only. The final location and variety of trees may vary to accomodate field conditions and builders landscape program. Bond release is contingent upon Section 16.131 of the Ho. Co. Subdivision Regulations, as approved by the Office of Planning and Zoning.

CENTERLINE CURVE DATA

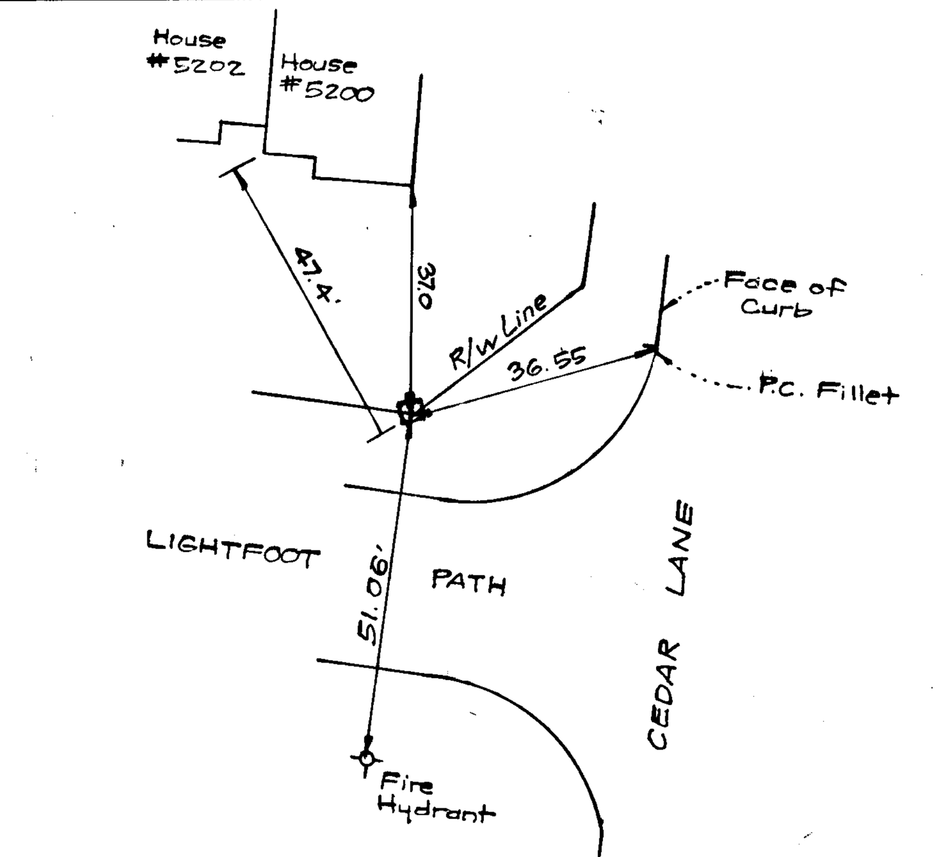
NAME: PC to PT.	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
LIGHTFOOT PATH PC.0+00 to P.T. 1+34.04	1280.00'	05°59'59"	134.04'	67.08'	133.97'	S87°53'24"W
LIGHTFOOT PATH PC. 2+43.95 to PT. 3+30.84	1030.00'	04°50'00"	86.89'	43.47'	86.86'	S88°28'24"W
LIGHTFOOT PATH PC. 5+76.67 to PT. 6+38.45	30.00'	118°00'00"	61.78'	49.93'	51.43'	S75°56'36"E
PRIV. CT. B PC. 0+00 to PT. 0+81.93	325.22'	14°26'03"	81.93'	41.18'	81.72'	S06°40'23"W
PRIV. CT. B PC. 1+03.36 to PT. 1+54.76	155.00'	19°00'00"	51.40'	25.94'	51.16'	S04°23'25"W
PRIV. CT. A PC. 0+00 to PT. 1+69.04	745.00	13°00'00"	169.04'	84.88'	168.67'	S10°26'36"E
PRIV. CT. A PC. 4+76.84 to P.T. 5+76.67	440.00'	13°00'00"	99.83'	50.13'	99.62'	S10°26'36"E



PLAN
SCALE: 1"=50'

CURB & GUTTER LEGEND

- Std. 7" C&G
- Rev. 7" C&G
- Std. 6" C&G
- Rev. 6" C&G



RECOVERY SKETCH
CONCRETE MONUMENT No 427
ELEV. 480.89

GENERAL NOTES

1. All storm drain & paving shall be constructed in accordance with the latest edition & specifications of Howard County & MDSHA.
2. Types of storm drainage refer to the standard details of Ho. Co. and M.D.S.H.A.
3. Trench compaction for storm drains within road or street right of way limits shall be in accordance with Ho. Co. Design Manual Vol IV. Std. G-2.01.
4. Information concerning underground utilities was obtained from available records, but the contractor must determine the exact location and elevation of mains by digging test pits, by hand, at all utility crossings, well in advance of construction.
5. All utility companies shall be notified 24hrs in advance of construction.
6. All traffic services, parking & signing to be done in accordance with the "Manual of Uniform Traffic Control Devices" 1984 Revised Edition.
7. Sag & Crest Vertical Curves were designed in accordance with the "Ho. Co. Design Manual", Vol. III
8. Provide Conc. Sidewalk Ramps Ho. Co. Std. Type A R-4.01 where shown on plan. See det.
9. Design Speed: see table sht. 3 zoning: R-
10. The contractor or developer shall contact the construction Inspection/Survey Division 24 hrs. in advance of commencement of work. Phone: 792-7272.
11. Street Lights to be placed 2'-10' behind curb and in accordance with Howard County Design Manual Vol. III.

For AS-BUILT by Clark, Finefrock & Sackett, Inc. [signature] 12/16/92
[Seal: STATE OF MARYLAND PROFESSIONAL ENGINEER]

Approved: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[signature] 11/17/89
Chief, Land Development Division — Date

Chief, Bureau of Highways — Date

[signature]
Chief, Bureau of Engineering — Date

Approved: HOWARD COUNTY DEPT. OF PLANNING & ZONING.

[signature] 11/22/89
Chief, Division of Community Planning & Land Development — Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH.

DESIGNED GLB/JLS	ROAD CONSTRUCTION PLANS LIGHTFOOT PATH	SCALE As Shown
DRAWN K/W	**COLUMBIA** VILLAGE OF HARPERS CHOICE SECTION 7 AREA 2 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 1 OF 7
CHECKED JLS		JOB NO. 88-042
DATE OCT, 1989	FOR: COLUMBIA BUILDERS INC. 3 Lakefront North Suite 200 Columbia Md. 21044	FILE NO. 88-042-D

[Seal: STATE OF MARYLAND G. NELSON CLARK NO. 7139 REGISTERED PROFESSIONAL ENGINEER] [signature] 5-12-89

No.	REVISION	Date
2	Rev. Storm Drain, Added M-3	11-14-91
1	Revise Curb & Gutter, Storm Drain & Road Width	9-25-90

NOTE: Horizontal and Vertical controls based on Ho. Co. Geodetic Control Station No's 2739002 & 2739003.

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

"AS-BUILT"
12-15-92

F89-219

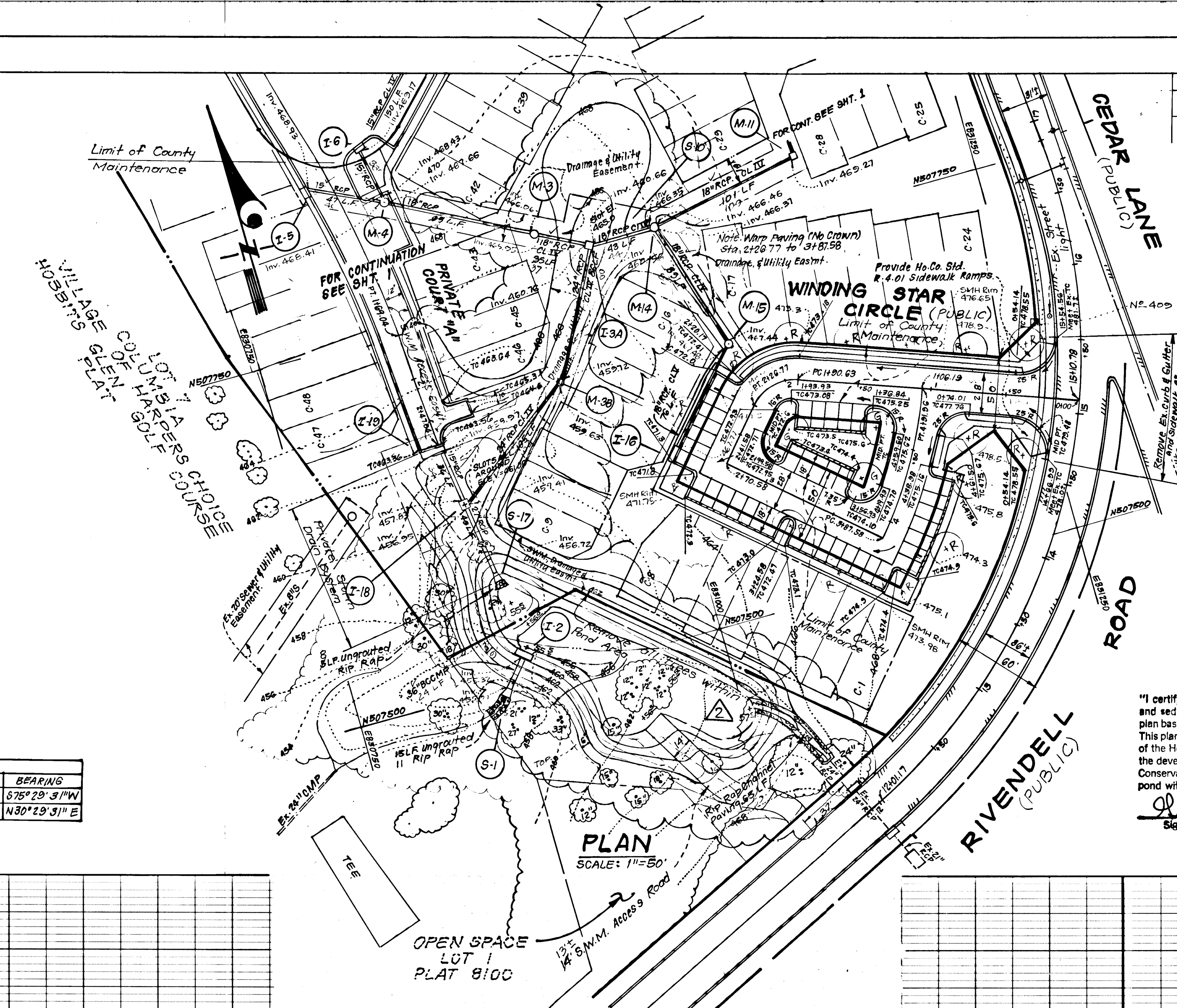
TEST PIT LOG

TEST PIT No. 1

Depth (feet)	Samples No.	Samples Depth (feet)	Description of Materials
		0.5	Topsoil
1–4	1	4	Dark brown, miocacious silty fine to silty course Sand (SM-MIs), trace clay, trace to little gravel. Loam / Sandy Loam
5–10	2		Gravel and white, miacicious silty fine to course sand (SM-MLs), trace clay and gravel.

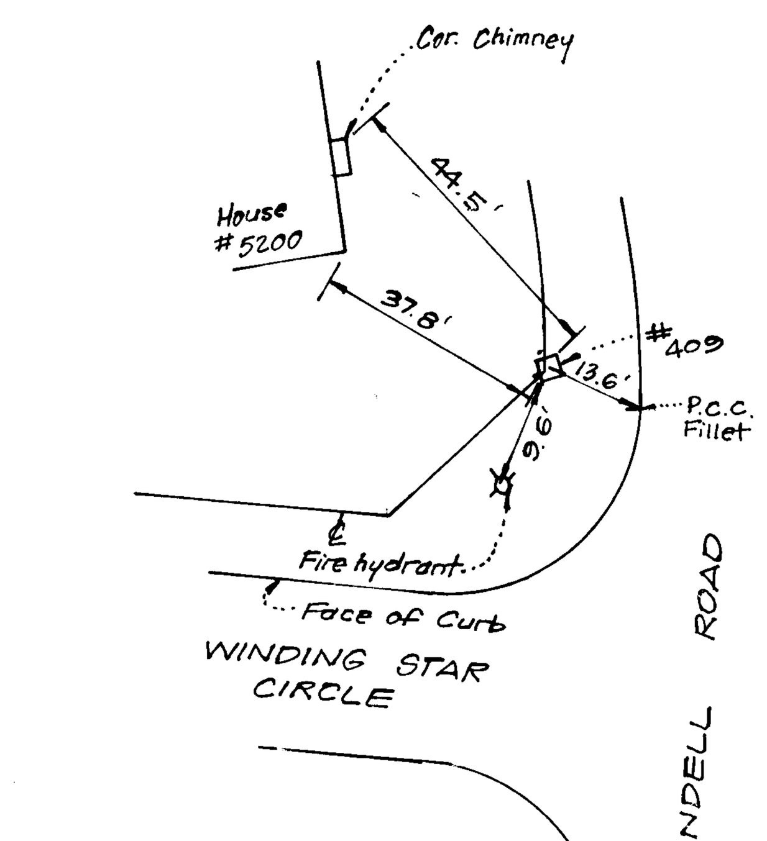
TEST PIT No. 5

Depth (feet)	Samples No.	Samples Depth (feet)	Description of Materials
		0.5	Topsoil
1–6	1	6	Grey, fine to course Sandy Silt (ML), trace mica and little clay. Loam
6–10	2	10	Tan, brown and red miacicious silty fine to course SAND (SM-MIs).



CENTERLINE CURVE DATA						
NAME: P.C. to P.T.	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
P.C. 1+90.63 to P.T. 2+26.77	30.00'	69°00'57"	36.14'	20.62'	33.99'	S75°29'31"W
P.C. 3+87.57 to P.T. 4+91.96	285.00'	20°59'03"	104.38'	52.78'	103.80'	N30°29'31"E

No.	REVISION	Date
1	Revise Curb & Gutter and Road Width of Private Court "A"	9.25.90
2	Rev. Storm drain, Added #M-3, I-3A, M-3B & Connecting Pipe, Rev. grading SWM Pond & O.S. lot 83	11.14.91



RECOVERY SKETCH
CONCRETE MONUMENT № 409
Elev. 482.40

Developer's Certification:

"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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Signature of Developer — 5.12.89 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

U.S. Soil Conservation Service — 10/19/89 Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Approved — Howard S.C.D. — 10/19/89 Date

Plan Number

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — 11/17/89 Date

Chief, Bureau of Highways — Date

Chief, Bureau of Engineering — 11.20.89 Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development — 11/22/89 Date

ENGINEER'S CERTIFICATE

"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 must provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."

Signature of Engineer — 5-12-89 Date

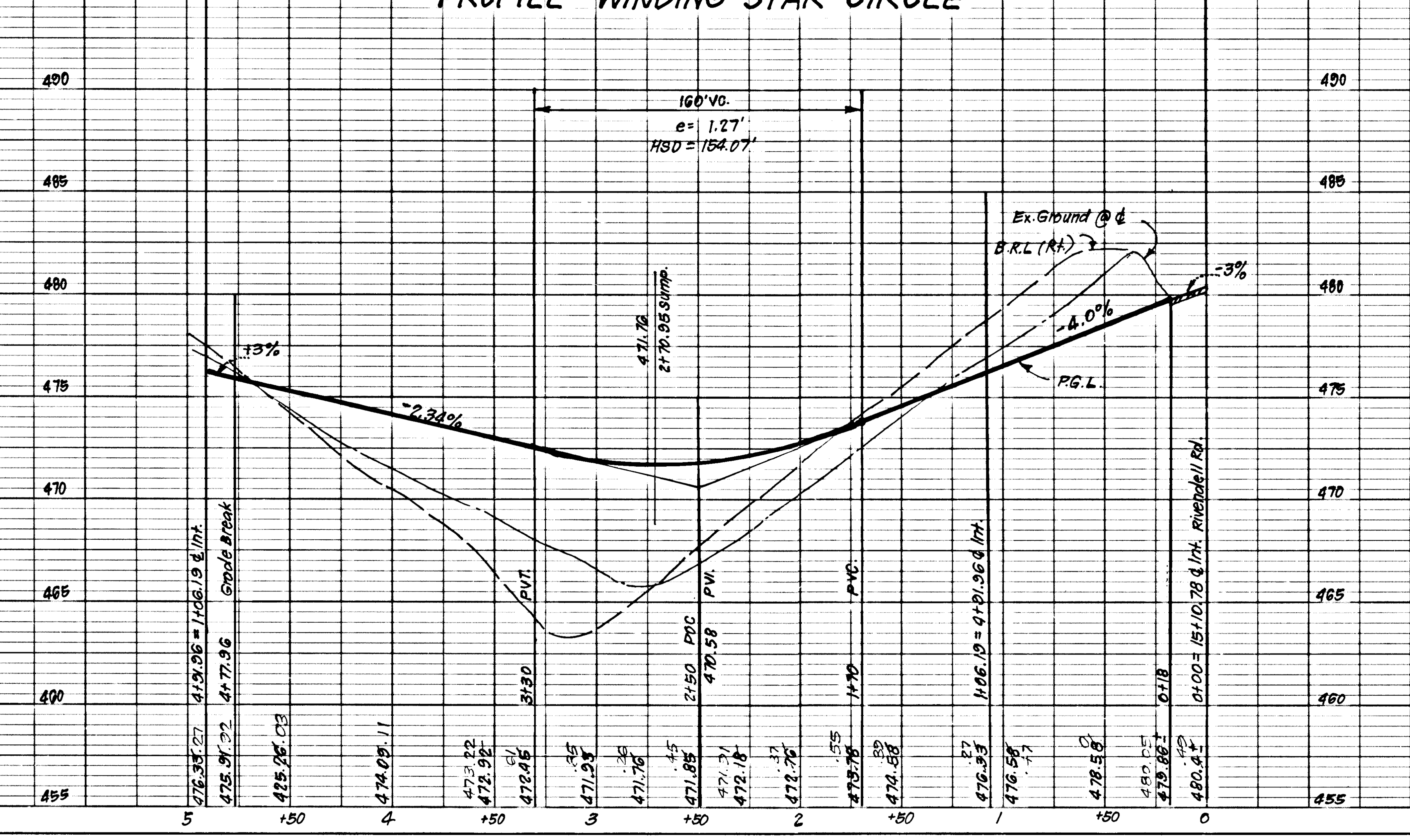
STATE OF MARYLAND — G. MELSON CLARK — NO. 7139 — REGISTERED PROFESSIONAL ENGINEER — 5-12-89

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 — BALTO. • (301) 621-8100 — WASH.

DESIGNED JLS GLB	ROAD CONSTRUCTION PLANS WINDING STAR CIRCLE	SCALE As Shown
DRAWN KIW	**COLUMBIA** VILLAGE OF HARPERS CHOICE SECTION 7 AREA 2 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 2 OF 7
CHECKED JLS		JOB NO. 88-042
DATE OCT. 1989	FOR: COLUMBIA BUILDERS INC. 3 Lake Front North Suite 200 Columbia Md. 21044	FILE NO. 88-042-D

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

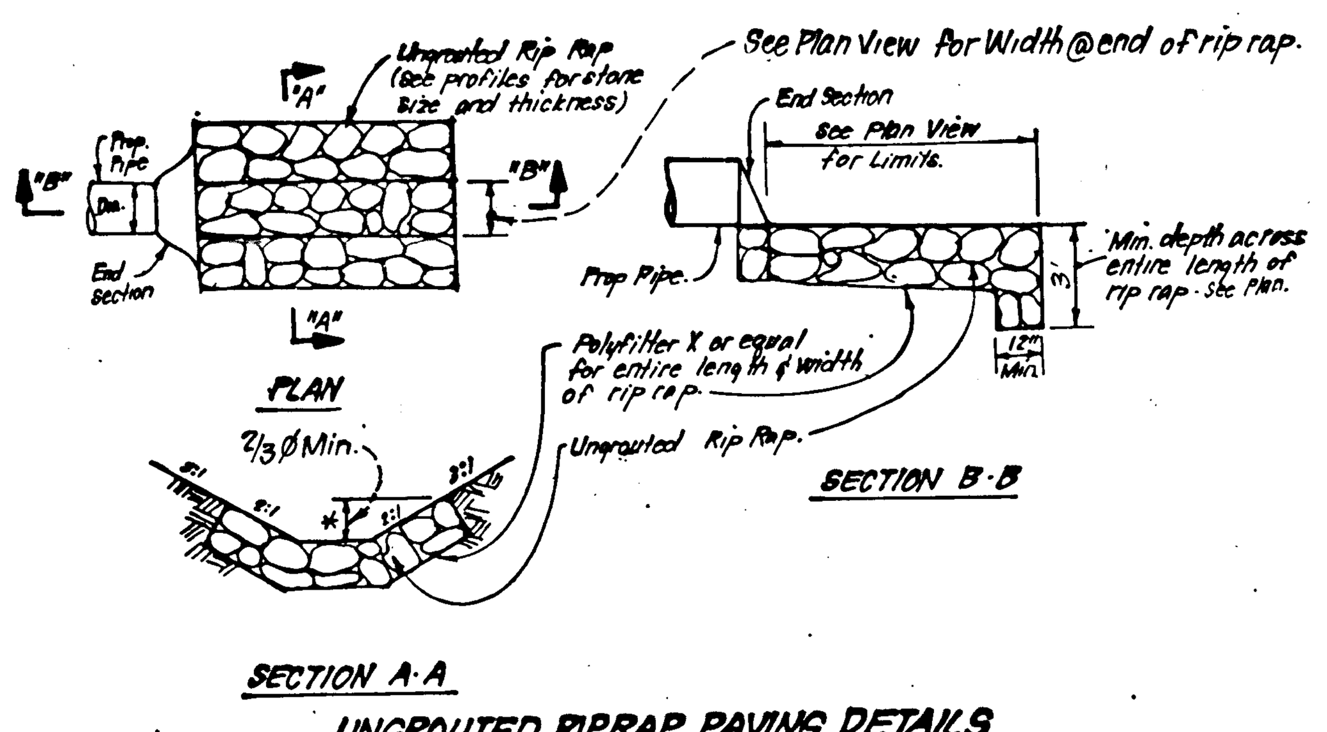
PROFILE - WINDING STAR CIRCLE



For AS-BUILT by Clark, Finefrock & Sackett, Inc.

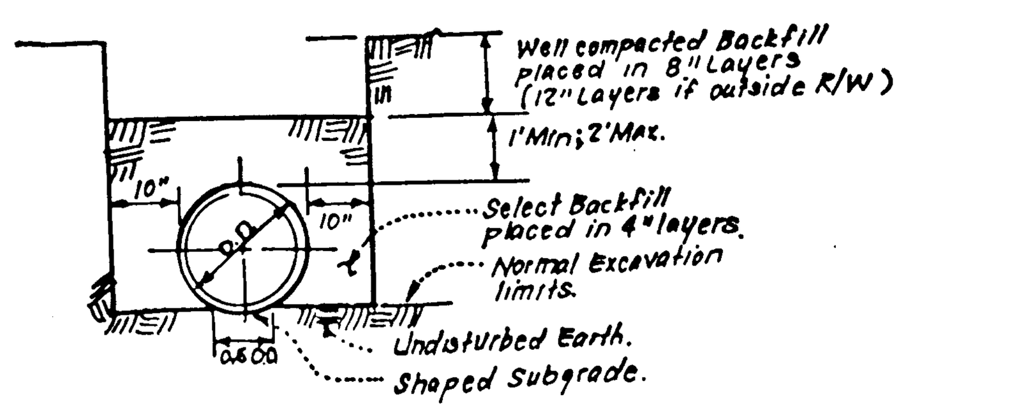
"AS-BUILT" 12.15.92

F89-219

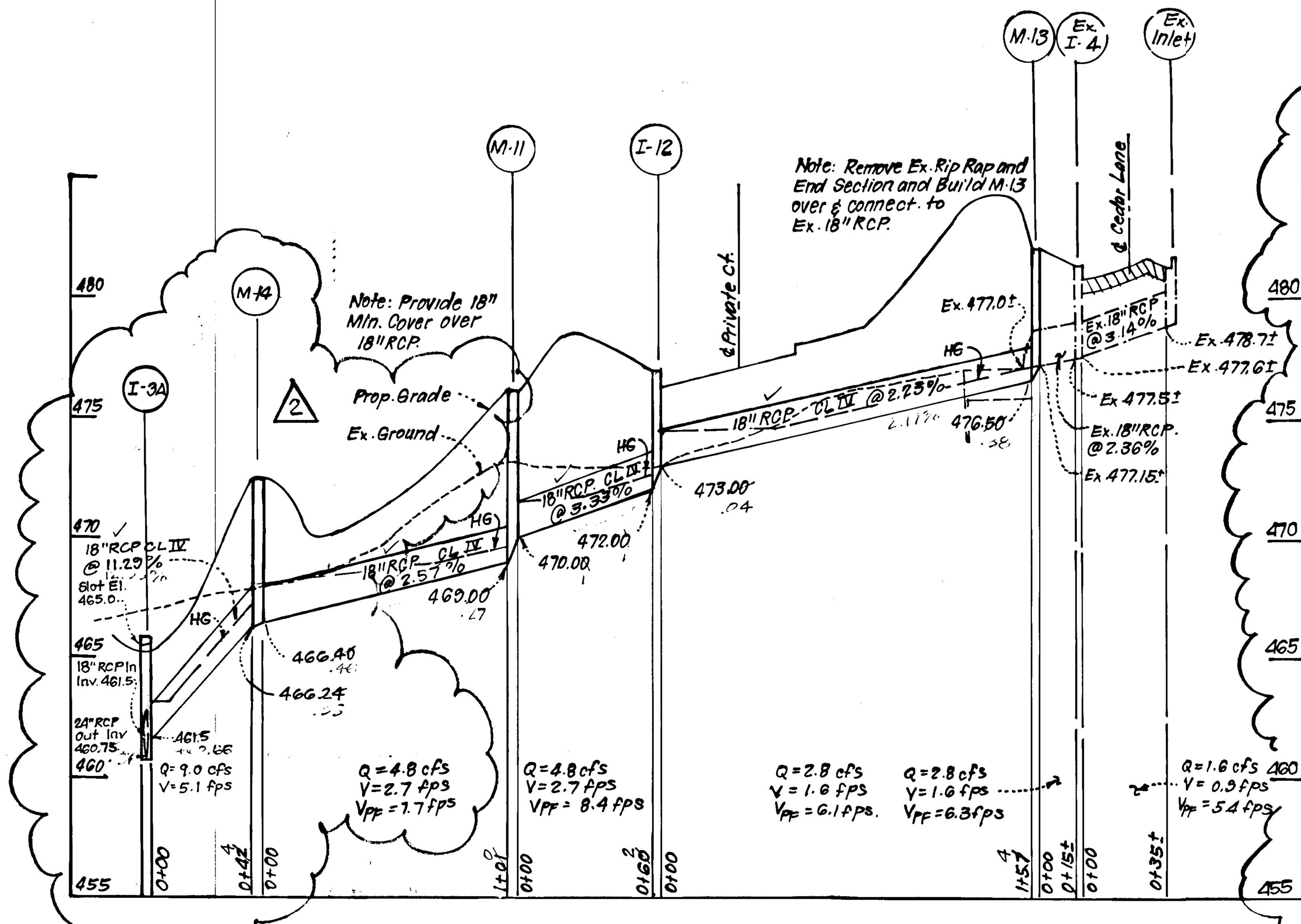


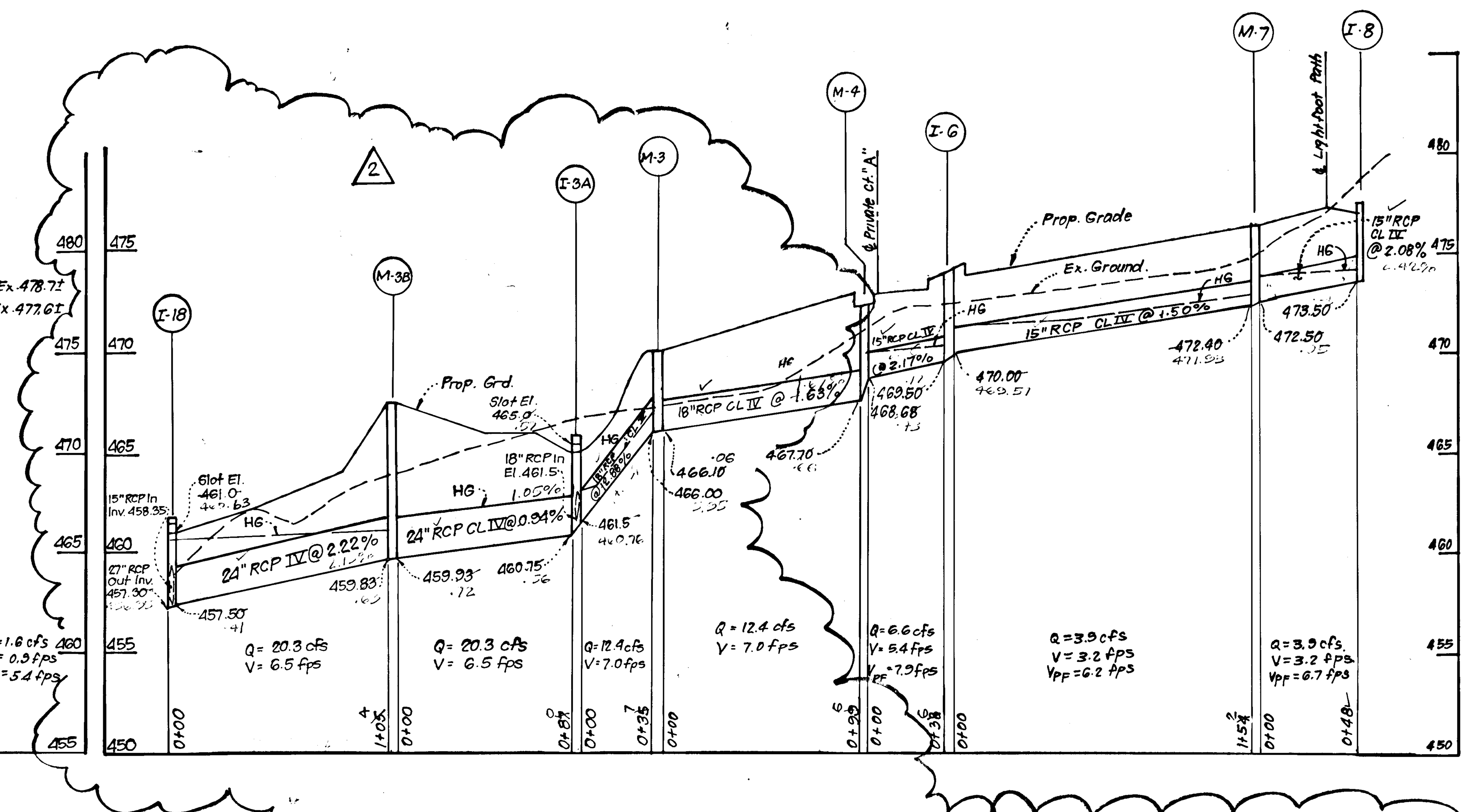
UNGROUTED RIPRAP PAVING DETAILS
NO SCALE

Notes:
1. For o.d. of pipe see manufacturers specs. or field measure circumference of pipe and divide by 3.14.
2. Within road R/W, trench compaction density shall be 95% as determined A.ASH.T.O. T-180-A.
3. For conditions requiring solid sheeting or trench shields 'A' shall not exceed 30".



TRENCH COMPACTION DETAIL
NO SCALE



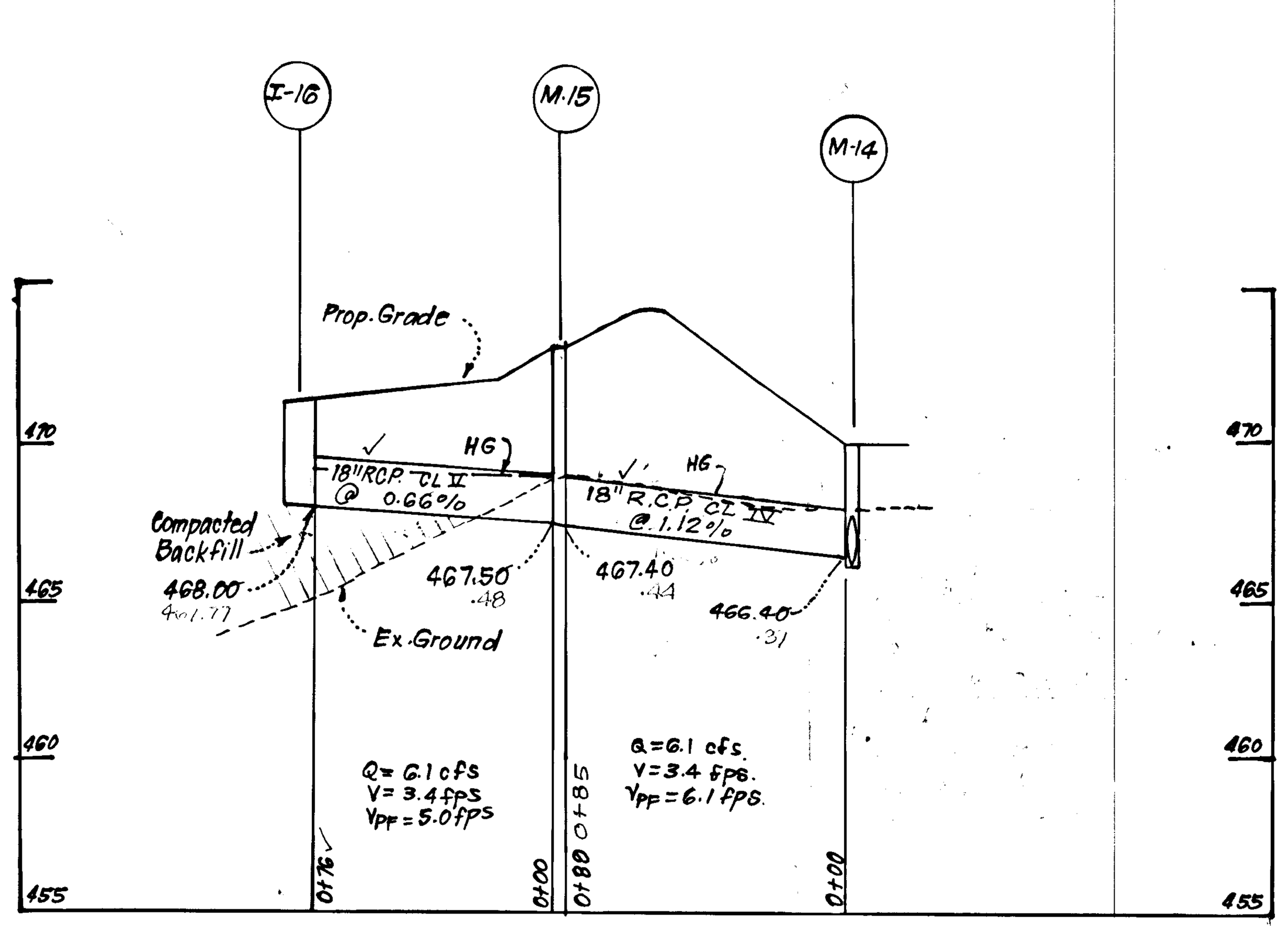


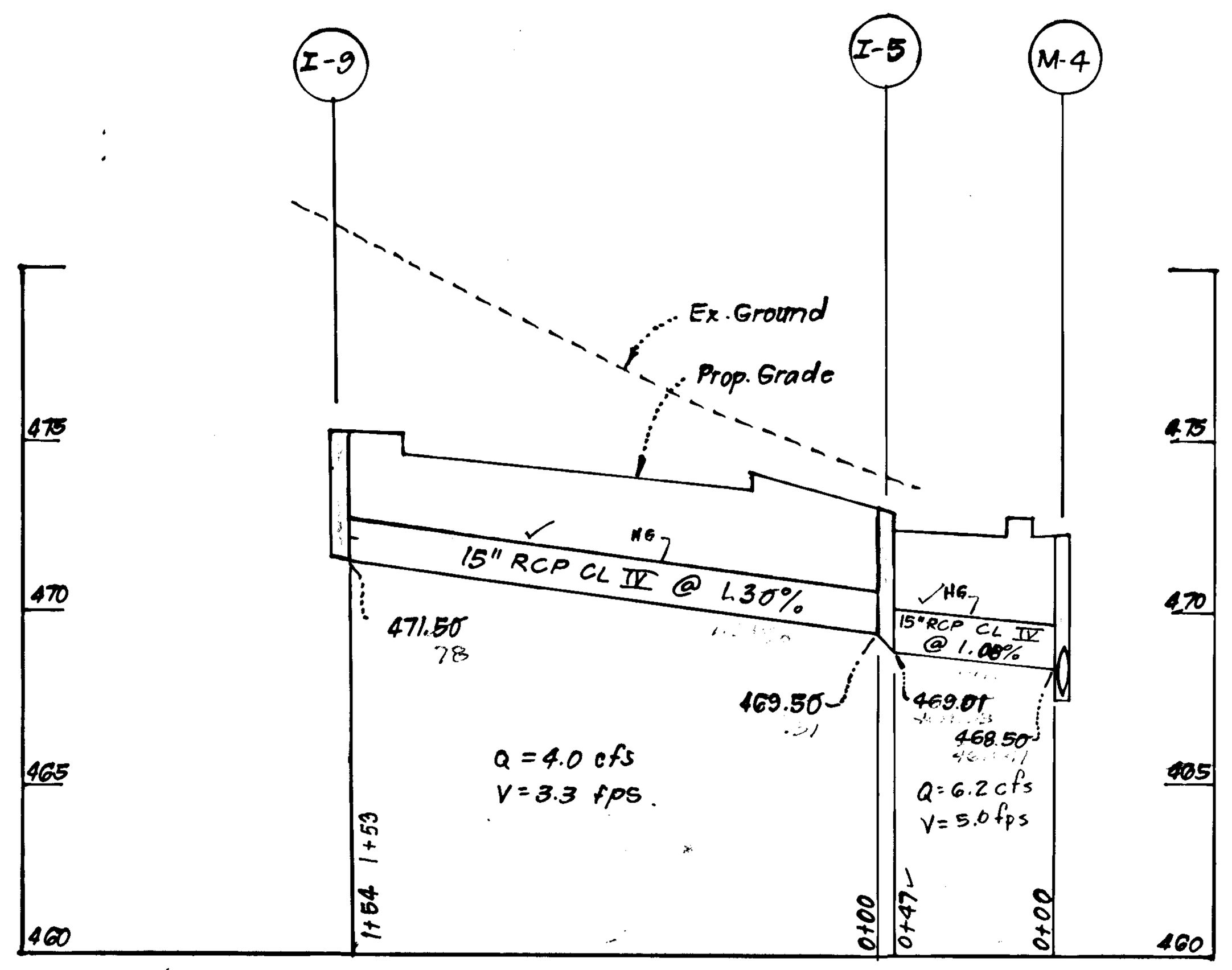
STRUCTURE SCHEDULE △

No.	TYPE	INV. IN	INV. OUT	TOP ELEVATION UPPER	TOP ELEVATION LOWER	REMARKS	LOCATION
M-3	Concrete End Section	466.10	466.0	470.20		Ho. Co. Std. G-5.05 18" Ø	See Plan
M-4	Shallow Brick Manhole	468.50/468.68	467.70	472.20		Ho. Co. Std. G 5.05 48" Sq.	℄ Str. 0+82.90 Priv. Ct. A 25' Lt.
* I-5	A-5 Inlet w/Deflectors	469.50	469.01	473.12	472.91	Ho. Co. Std. SD 4.01 W=2'-6"	℄ Str. 0+56.00 Priv. Ct. A 14' Rt.
I-6	A-5 Inlet	470.0	469.50	474.15	473.98	Ho. Co. Std. SD. 4.01 W=2'-6"	℄ Str. 6+22 Lightfoot Path 15' Rt.
M-7	Shallow Brick Manhole	472.50	472.40	476.28		Ho. Co. Std. G 5.05 48" Sq.	℄ Str. Sta. 7+68.93 Lightfoot Path 9' Rt.
I-8	A-10 Inlet	–	473.50	477.55	477.42	Ho. Co. Std SD 4.02 W=2'-6"	℄ Str. Sta. 3+09.36 Lightfoot. 14' Rt.
I-9	A-10 Inlet	–	471.50	475.30		Ho. Co. Std. SD 4.02 W=2'-6"	See Plan
□ I-3A	Shallow Brick Manhole	461.5	460.75	465.83		Ho. Co. Std SD 5.51 18" Ø	" "
M-11	Brick Manhole	470.0	469.0	476.0		Ho. Co. Std. G 5.12 48" Rd.	" "
I-12	A-10 Inlet	473.0	472.0	476.8		Ho. Co. Std SD 4.02 W=2'-6"	" "
M-13	Shallow Brick Manhole	Ex. 477.15	476.5	482.0		Ho. Co. Std G 5.05 48" Sq.	" "
M-14	" " "	468.8/468.5	467.70	472.35		Ho. Co. Std. SD. 5.05 48" Sq.	" "
M-15	Shallow Brick Manhole	467.5	467.4	473.0		Ho. Co. Std. G 5.05 48" Sq.	" "
I-16	A-10 Inlet	467.74	468.0	471.3		Ho. Co. Std. SD. 4.02 W=2'-6"	" "
○ S-17	Concrete End Section	457.04	457.00	–		Ho. Co. Std. SD 5.51 27" Ø	" "
○ □ I-18	Shallow Brick Manhole	458.35	457.30	461.83		Ho. Co. Std. G 5.05 48" Sq.	" "
○ I-19	Oil Grit Seperator	458.71	458.71	463.36	463.56	See Sht. #4	" "
S-1	Metal End Section	454.94	454.8	–		Ho. Co. Std SD 5.61 36" Ø	See Plan
I-2	Special	–	455.30	460.50		See Detail Sht #5	See Plan
M-38	Shallow Brick Manhole	459.93	459.83	467.60		Ho. Co. Std. G-5.05 48" Sq.	See Plan

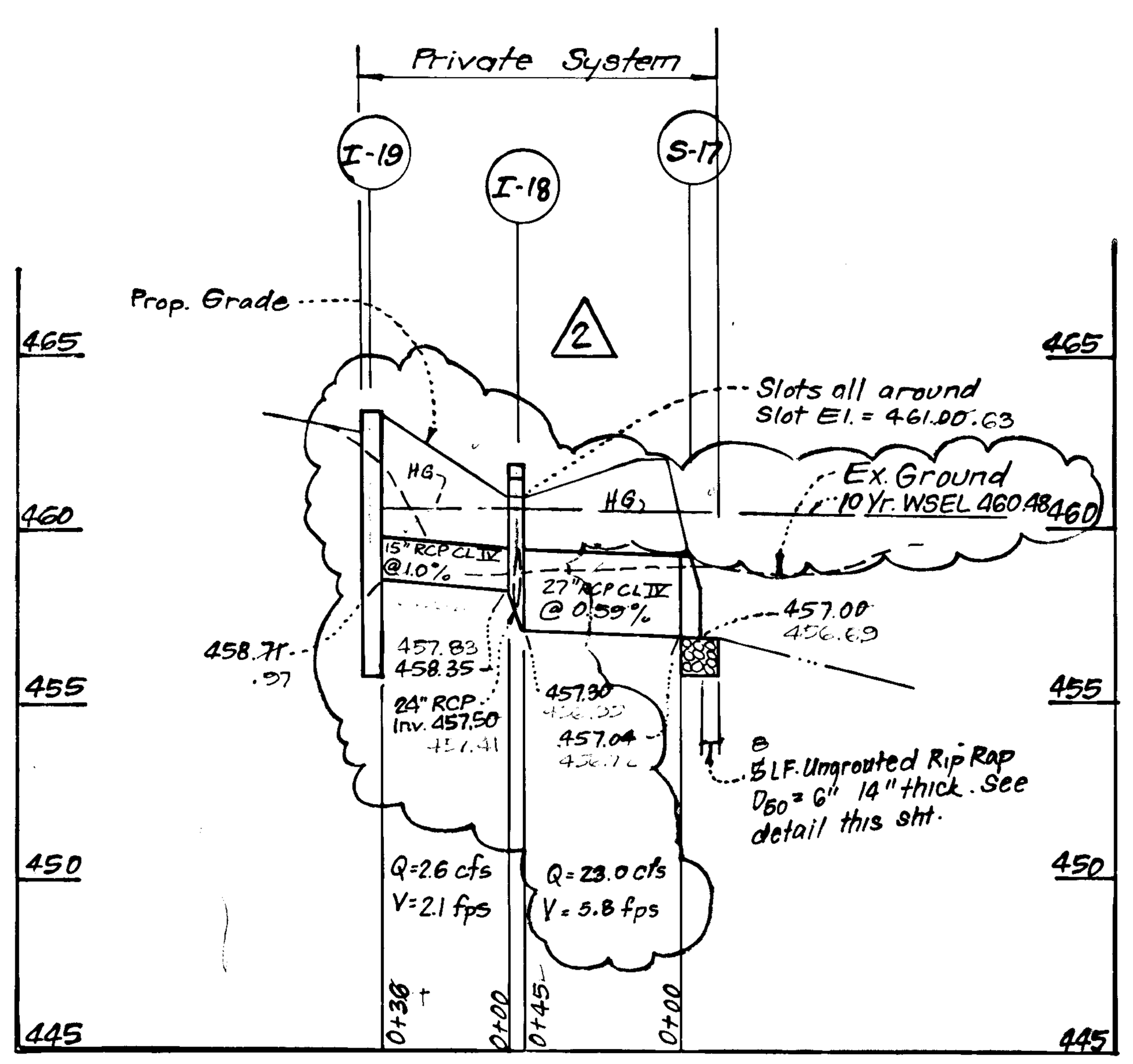
□ Provide slots in all sides. Provide 4" Top slab per Ho. Co. Std D-inlet SD 4.11
* See Ho. Co. Std. 4.83 for inlet deflector details.
○ Private System

NOTE: All structures to have fully developed inverts except Str. I-2.





Profiles Scale: Horiz. 1" = 50'
Vert. 1" = 5'



PIPE SCHEDULE

SIZE	TYPE		LENGTH
15"	RCP	CL IV	473 LF
18"	RCP	CL IV	583 LF
18"	RCP	CL V	76 LF
27"	RCP	CL IV	45 LF
24"	RCP	CL IV	192 LF

* 2 2/3" x 1/2" Corrugations

No.	REVISION	Date
△2	Rev. Profiles, Structure Schedule, Pipe Schedule	11-14-91
1	Revise Profiles	9-25-90

Reviewed for Howard S.C.D.
Name
and meets Technical Requirements
Signature 10/19/89 Date
U.S. Soil Conservation Service

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

Approved 10/19/89 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature of Developer/Builder 5-12-89 Date

STATE OF MARYLAND — G. NELSON CLARK — NO 7139 — REGISTERED PROFESSIONAL ENGINEER
5-12-89

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

G. Nelson Clark 5-12-89 Date

For AS-BUILT by Clark, Finefrock & Sackett, Inc. 12/16/92

Approved: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division 11/17/89 Date

Chief, Bureau of Highways Date

Chief, Bureau of Engineering 11-20-89 Date

Approved: HOWARD COUNTY DEPT. OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development 11/22/89 Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH.

DESIGNED JLS	ROAD CONSTRUCTION PLANS STORM DRAINAGE PROFILES	SCALE As Shown
DRAWN KIW	**COLUMBIA** VILLAGE OF HARPERS CHOICE SECTION 7 AREA 2 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 3 OF 7
CHECKED JLS		JOB NO. 88-042
DATE Oct., 1989	FOR: COLUMBIA BUILDERS INC. 3 Lakefront North Suite 200 Columbia Md. 21044	FILE NO. 88-042-D

"AS-BUILT"
12-15-92

F 89-219

WATER QUALITY STRUCTURES

DESIGN AND GENERAL NOTES

1. Use poured-in place concrete for the entire structure.
2. Refer to Maryland State Highway Administration for materials and methods of construction.
3. Wall thickness shall be as follows:

   Minimum 8 inches thick for the first 8'-0" of depth, 12 inch thick walls between 8'-0" and 12'-0" of depth and 16 inch thick walls for depth greater than 12'-0". Depth to be measured from top of top slab to crown of outgoing pipe.
4. f'c = 3,500 psi at 28 days.
5. All reinforcing steel to be ASTM A615, GR.60.
6. For details concerning throat openings, refer to MCDOT Standard No. 55.

Throat Length	No. of Pipe Supports
5'	0
10'	1
15'	2
20'	3

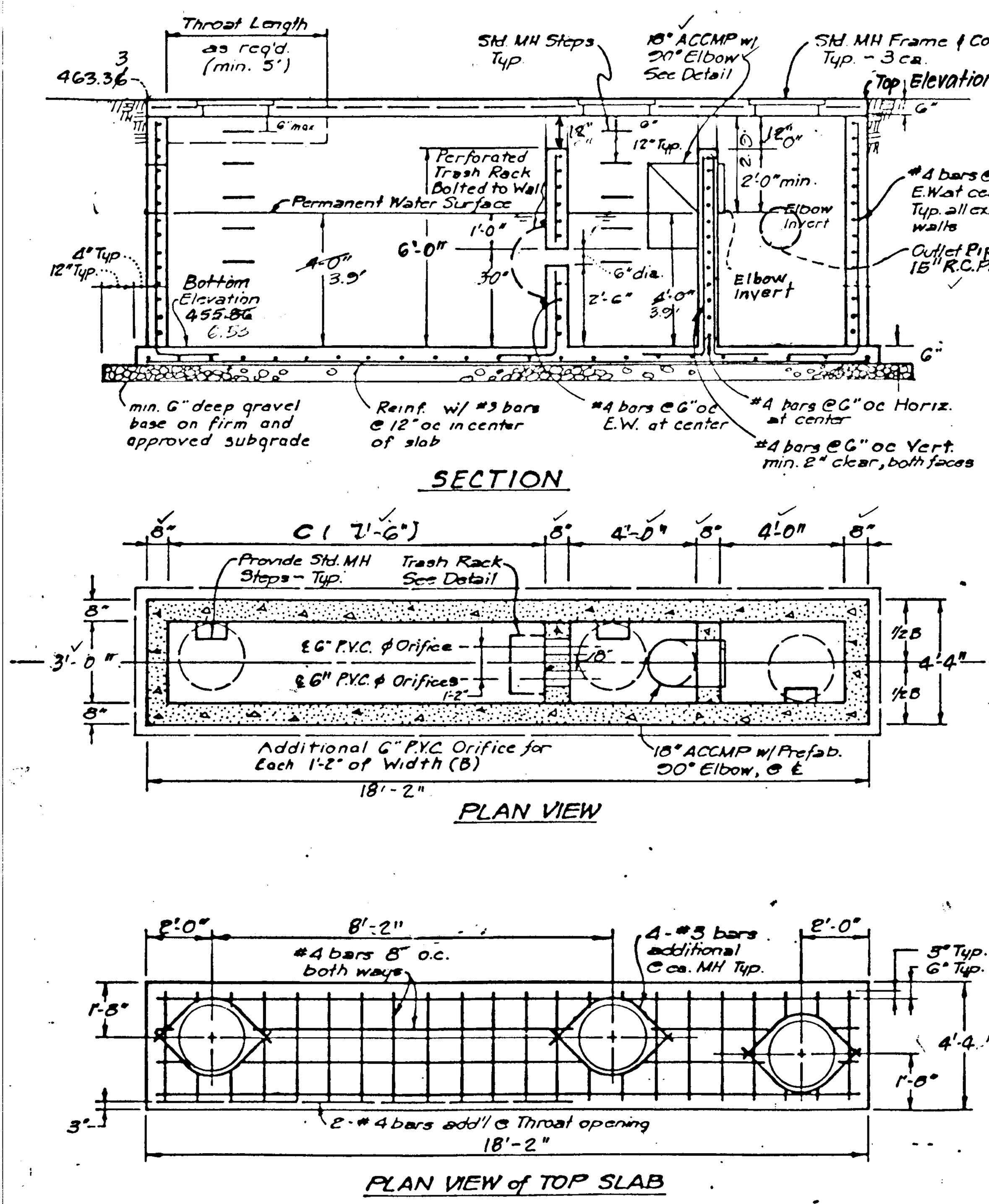
   pipe supports to be spaced at 5'-0" O.C
7. For details not noted in this standard, refer to MCDOT Standard No. 55.
8. The top 4 inches of walls may be brick masonry for leveling, if required. Brick masonry shall comply with the latest SHA Specification.
9. When grate opening is used, refer to the appropriate SHA Standard for details. Details shall be shown on the plans.
10. When inside width of structure is greater than 4'--0", reinforcing shall be revised as needed.
11. When structure is subject to traffic loading, reinforcing shall be designed for the appropriate traffic loads. Design loads shall be indicated on the plan.
12. All inlets and incoming pipes shall be checked for possible backwater or tailwater problems.

CONSTRUCTION NOTES

1. Silt and debris shall not be allowed to enter the structures until contributing drainage areas have been permanently stabilized.
2. All openings to structures shall be protected with the appropriate sediment control measures during consturction.

MAINTENANCE NOTES (WATER QUALITY STRUCTURE WASTE)

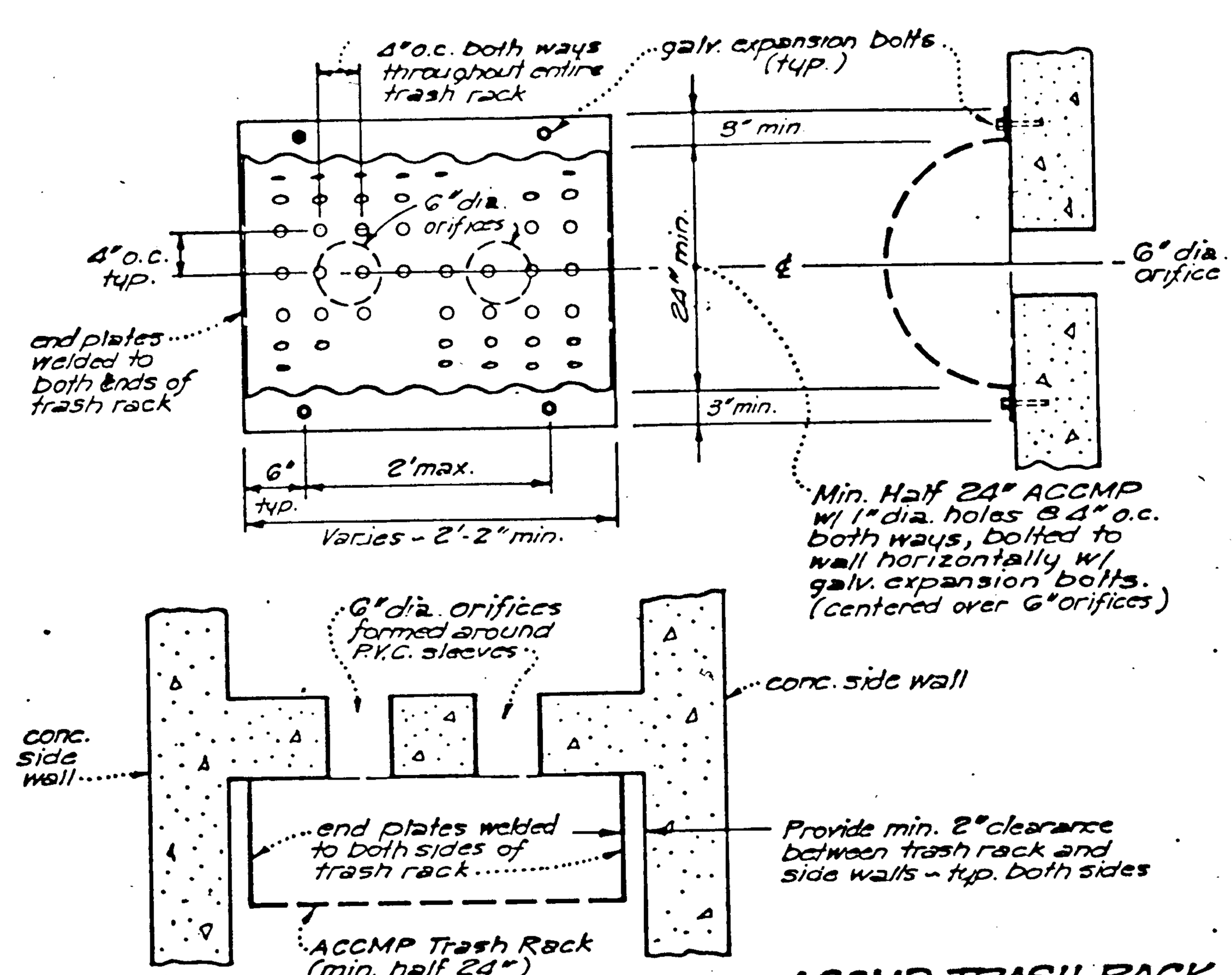
1. Water Quality Structures will require periodic cleaning. Owners of these facilities will have to clean them as needed or on a frequency that the County determines is appropriate. Owners of Water Quality Structures will be notified by the County of the frequency of maintenance.
2. Maintenance of these facilities will consist of cleaning out the Separator and disposal of the waste and the repair of the facility as needed. Periodic inspections of these facilities will be made by the County Stormwater Management group.
3. The disposal of the liquid and solid matter should be as follows:
   - A. All liquid material in the Separator inlet shall be pumped into a suitable tank truck and disposed of at an approved Sanitary District discharge manhole or be taken to an approved sewage treatment plant for discharge.
   - B. The solid material shall be landfilled in an approved Sanitary Landfill.
4. The inlet pipes, trash racks, grates, and structural parts shall be repaired as needed.



WATER QUALITY CONTROL STRUCTURE - STR. I-X 15

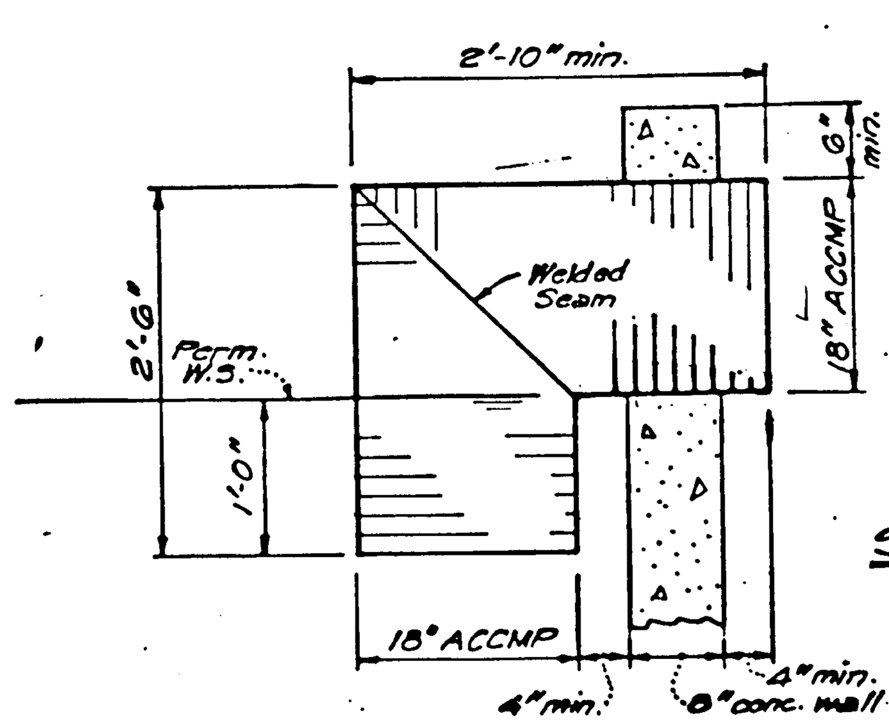
SCALE: 1/4" = 1'-0"

Note: Provide Locking Manhole Covers



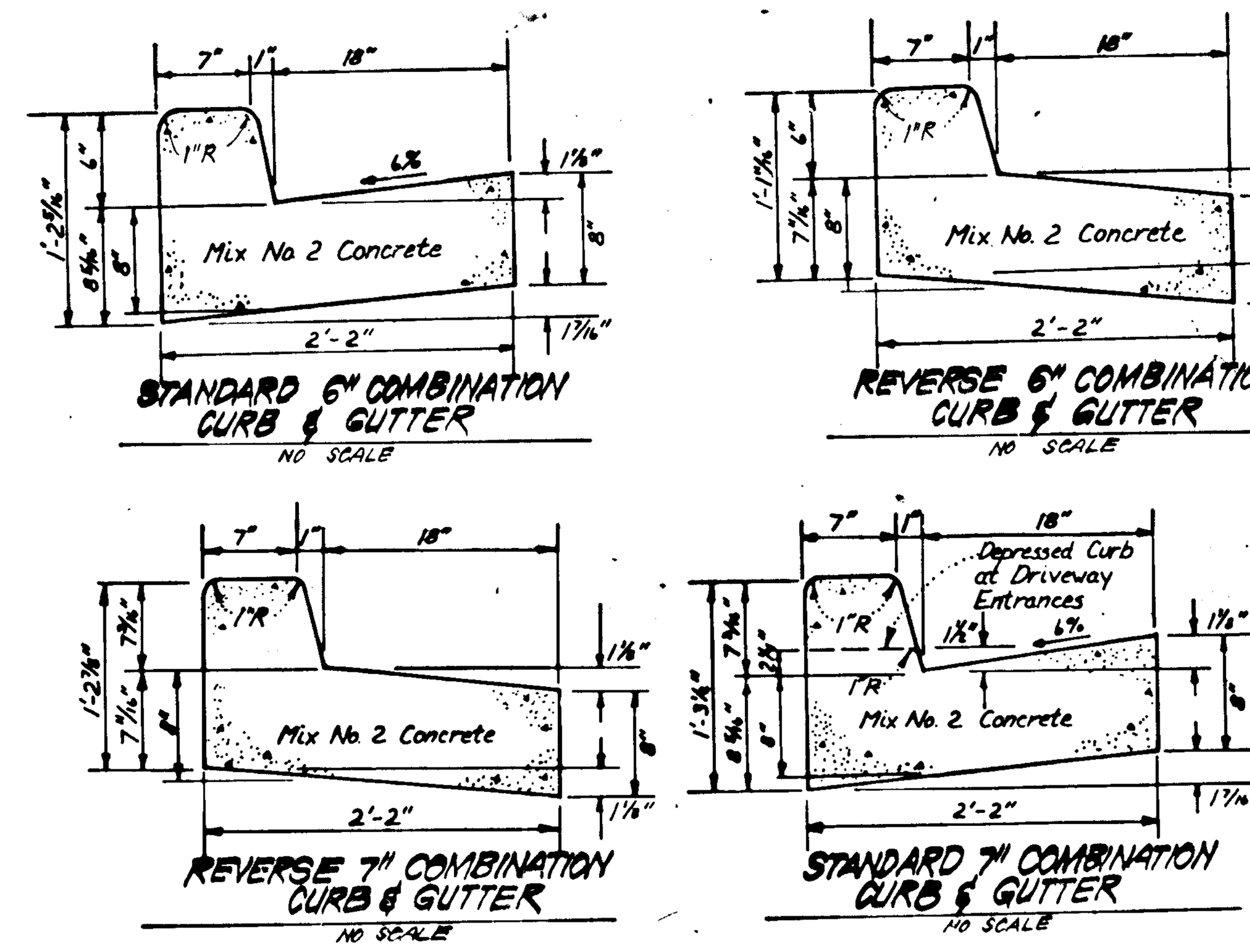
ACCMP TRASH RACK

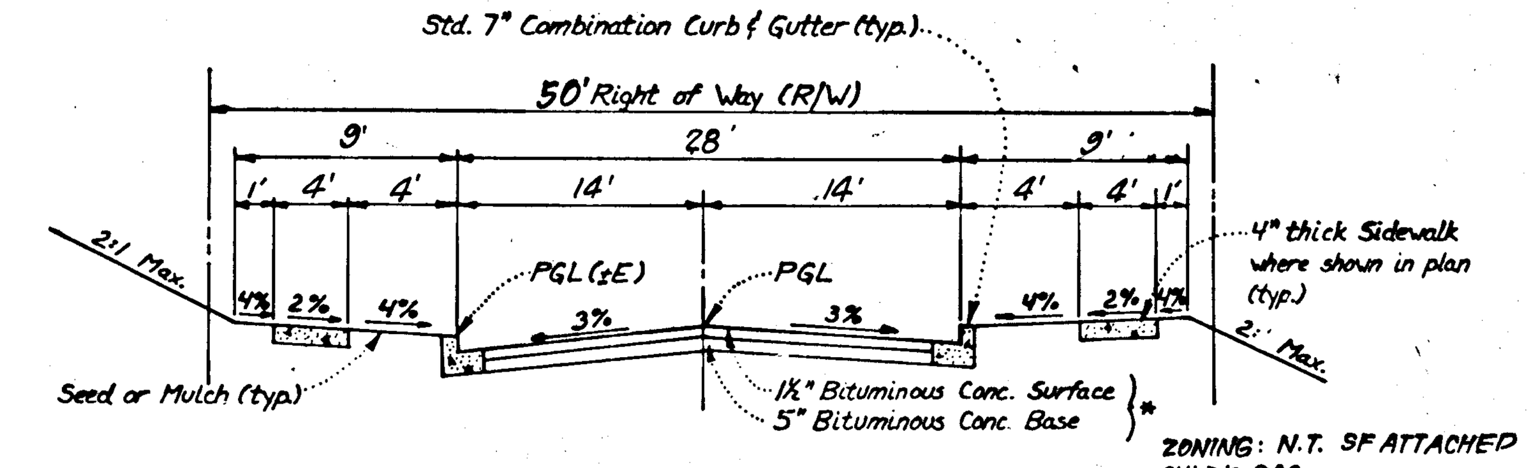
SCALE: 3/4" = 1'-0"



90° ACCMP ELBOW

SCALE: 3/4" = 1'-0"





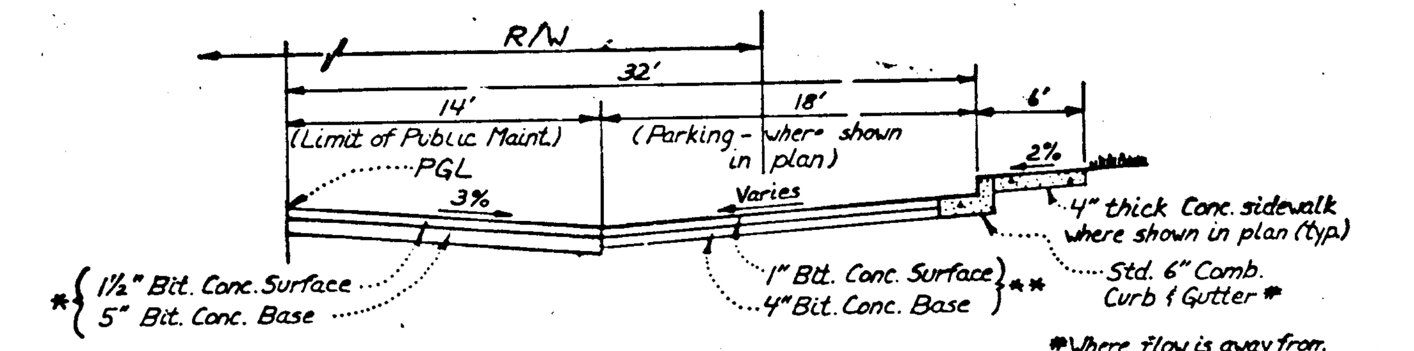
TYPICAL PAVING SECTION - PUBLIC ROADS

NO SCALE

* For Alternate Paving Section - See det. this sht.

ZONING: N.T. SF ATTACHED CUL-DE-SAC. DESIGN SPEED: 25mph.

STA. 0+00 to 1+52.95 - LIGHT FOOT PATH
STA. 2+43.95 to 3+70.09 LIGHT FOOT PATH
STA. 0+00 to 1+36.84 - WINDING STAR CIR.



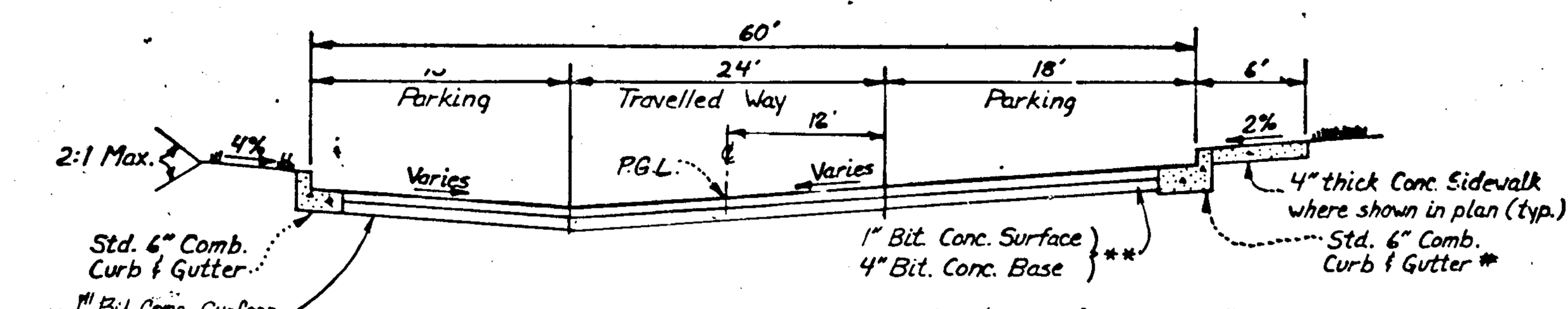
* See Alternate Paving Section for Public Roads, this sht.
** See Alternate Paving Section for Parking, this sht.

ZONE: N.T. SF ATTACHED CUL-DE-SAC. DESIGN SPEED: 25mph.

TYPICAL HALF SECTION
PARKING ADJACENT TO PUBLIC ROADS

STA. 1+52.95 to 2+43.95 - LIGHT FOOT PATH
STA. 3+70.09 to 8+12.03 - LIGHT FOOT PATH
STA. 1+36.84 to 4+31.96 - WINDING STAR CIRCLE

NO SCALE



** See Alternate Paving Section for Parking this sht.

TYPICAL SECTION
PRIVATE DRIVES "A" & "B" & PARKING

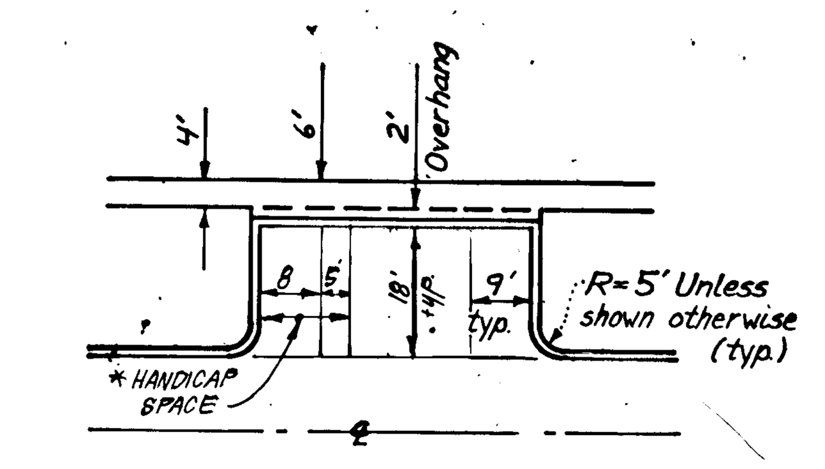
NO SCALE

Bituminous Conc. Surface	1½"
Bituminous Conc. Base	2½
Prime; 8" Crusher Run Base (Placed in 2 Courses) or 6" Dense Graded Stabilized Aggregate Base Course	8" or 6"

ALTERNATE PAVING SECTION FOR PUBLIC ROADS
NO SCALE
(SECTION P-2)

Bituminous Conc. Surface	1"
Bituminous Conc. Base	2"
Prime; 5" Crusher Run Base Course or 4" Dense Graded Stabilized Aggregate Base Course	5" or 4"

ALTERNATE PAVING SECTION FOR PARKING AREAS
NO SCALE
(SECTION P-1)



TYPICAL PARKING

NO SCALE

* Two 8' Handicap Spaces may share one 5' Aisle

For AS-BUILT by Clark, Finefrock & Sackett, Inc.

Approved: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — Date 11/17/89

Chief, Bureau of Highways — Date

Chief, Bureau of Engineering — Date 11-20-89

Approved: HOWARD COUNTY DEPT. OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development — Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH.

DESIGNED	JLS	ROAD CONSTRUCTION PLANS PAVING DETAILS & WATER QUALITY DETAILS	SCALE	As Shown
DRAWN	KIW	COLUMBIA VILLAGE OF HARPERS CHOICE SECTION 7 AREA 2 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING	4 OF 7
CHECKED	JLS.		JOB NO.	88-042
DATE	Oct, 1989	FOR: COLUMBIA BUILDERS INC. 3 Lakefront North Suite 200 Columbia Md. 21044	FILE NO.	88-042-D

"AS-BUILT" 12-15-92

F89 219

STORM WATER MANAGEMENT NOTES

I. SITE PREPARATION

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

Areas to be covered by the pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface.

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.

II. EARTH FILL

Material

The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.

Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Engineer.

Cutoff Trench

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL

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

IV. PIPE CONDUITS

All pipes shall be circular in cross section.

A. Corrugated Metal Pipe

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   Materials - (Aluminized Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274-79I with watertight coupling bands or flanges.

   Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Coupling bands, anti-seep collars, end sections, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be less than 9 and greater than 4.

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

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

4. Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.

5. Backfilling shall conform to structural backfill as shown above.

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

B. Reinforced Concrete Pipe

1. Materials - Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. An approved equivalent is AWWA Specification C-301.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3", or as shown on the drawings.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe.

4. Backfilling shall conform to structural backfill as shown above.

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

C. For pipes of other materials, specific specifications shall be shown on the drawings.

V. CONCRETE

1. **Materials**

   a. Cement - Normal Portland cement shall conform to the latest ASTM Specification C-150.

   b. Water - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.

   c. Sand - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a one-quarter inch sieve. Limestone sand shall not be used.

   d. Coarse Aggregate - The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with a maximum size of one and one-half (1-1/2) inches.

   e. Reinforcing Steel - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

2. Design Mix - The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5-1/2 to 6 U.S. Gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

3. Mixing - The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixer and of the introduction of the materials, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the addition of water to preserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.

4. Forms - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping, and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.

   The inside of forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed.

   Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

5. Reinforcing Steel - All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.

6. Consolidating - Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be suplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.

7. Finishing - Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry-patching mortar.

8. Protection and Curing - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least the first three (3) days. All concrete shall be kept continuously moist for at least ten (10) days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compunds may also be used.

9. Placing Temperature - Concrete may not be placed at temperatures below 37° F with the temperature falling, or 34° with the temperature rising.

VI. STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications or as shown on the accompanying drawings.

VII. EROSION AND SEDIMENT CONTROL

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

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

U.S. Soil Conservation Service — 10/19/89 — Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

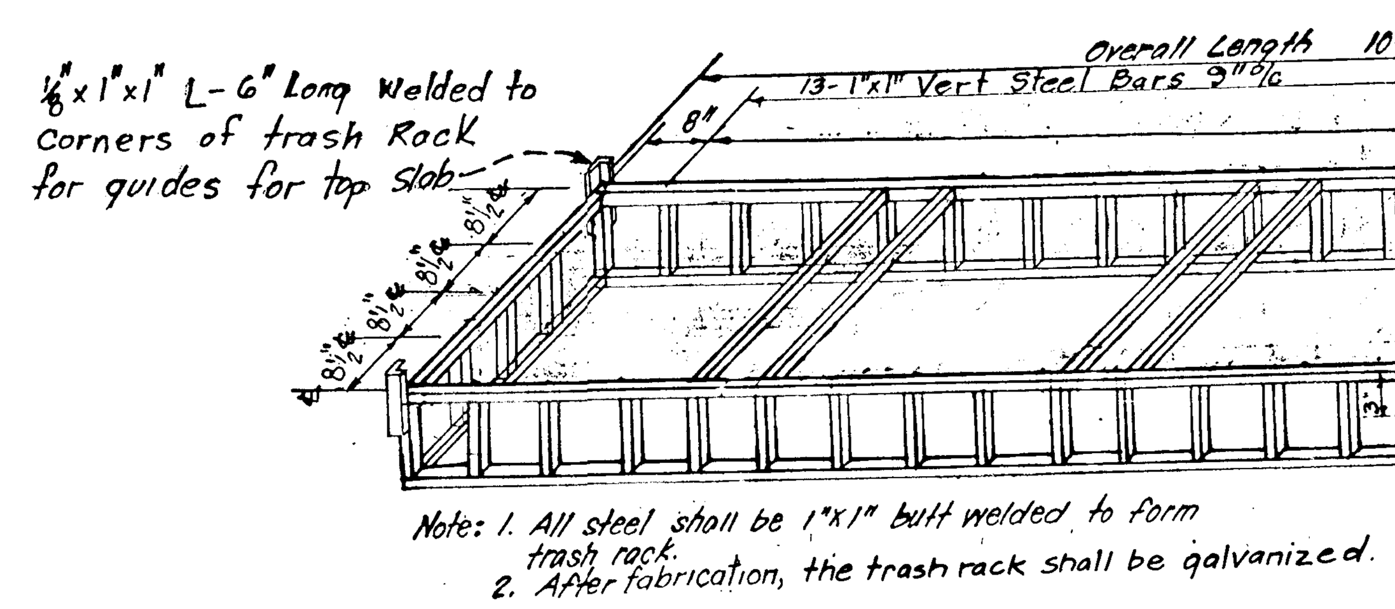
Approved — Howard S.C.D. — 10/19/89 — Date

Plan Number

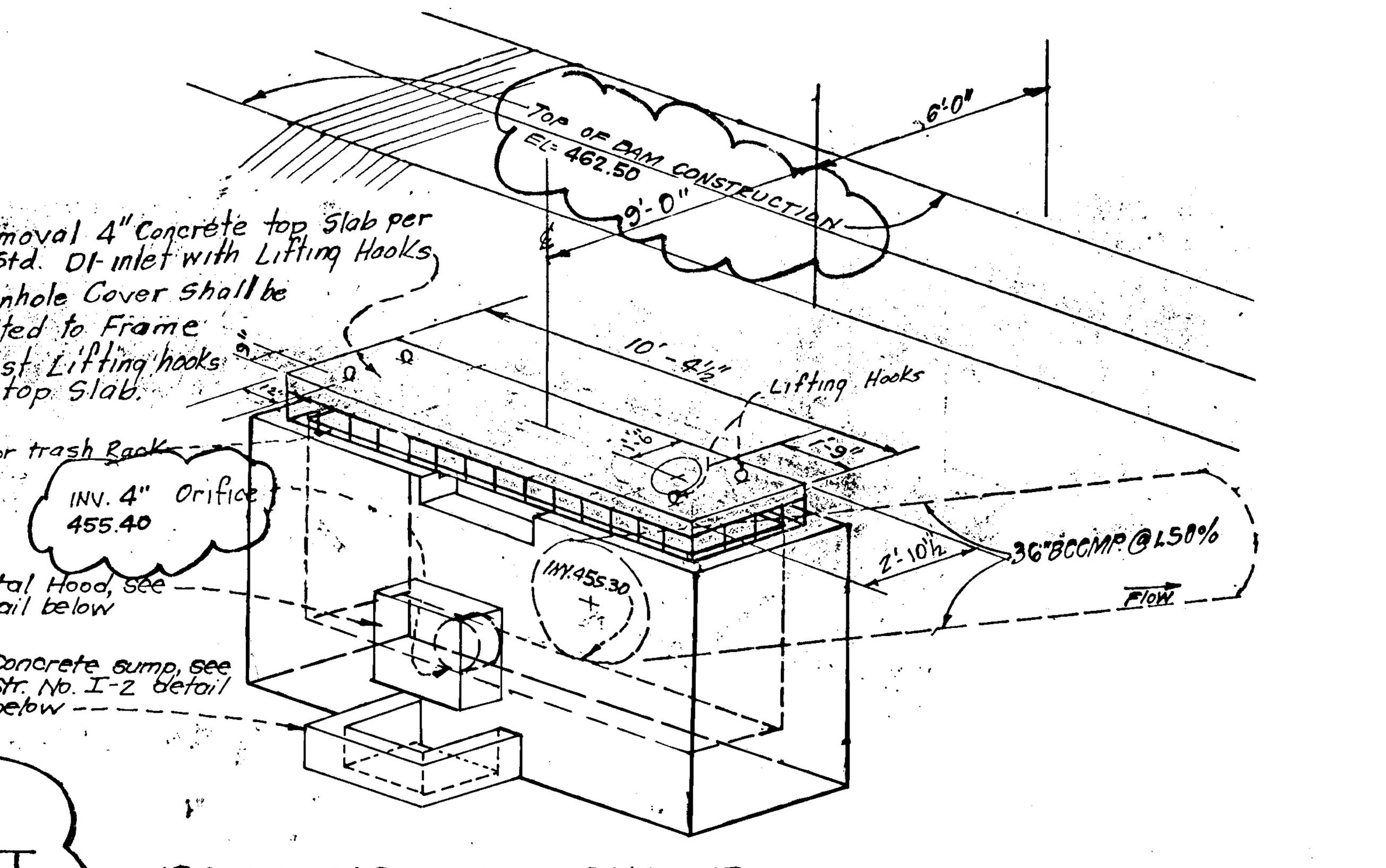
Developers Certification:

"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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

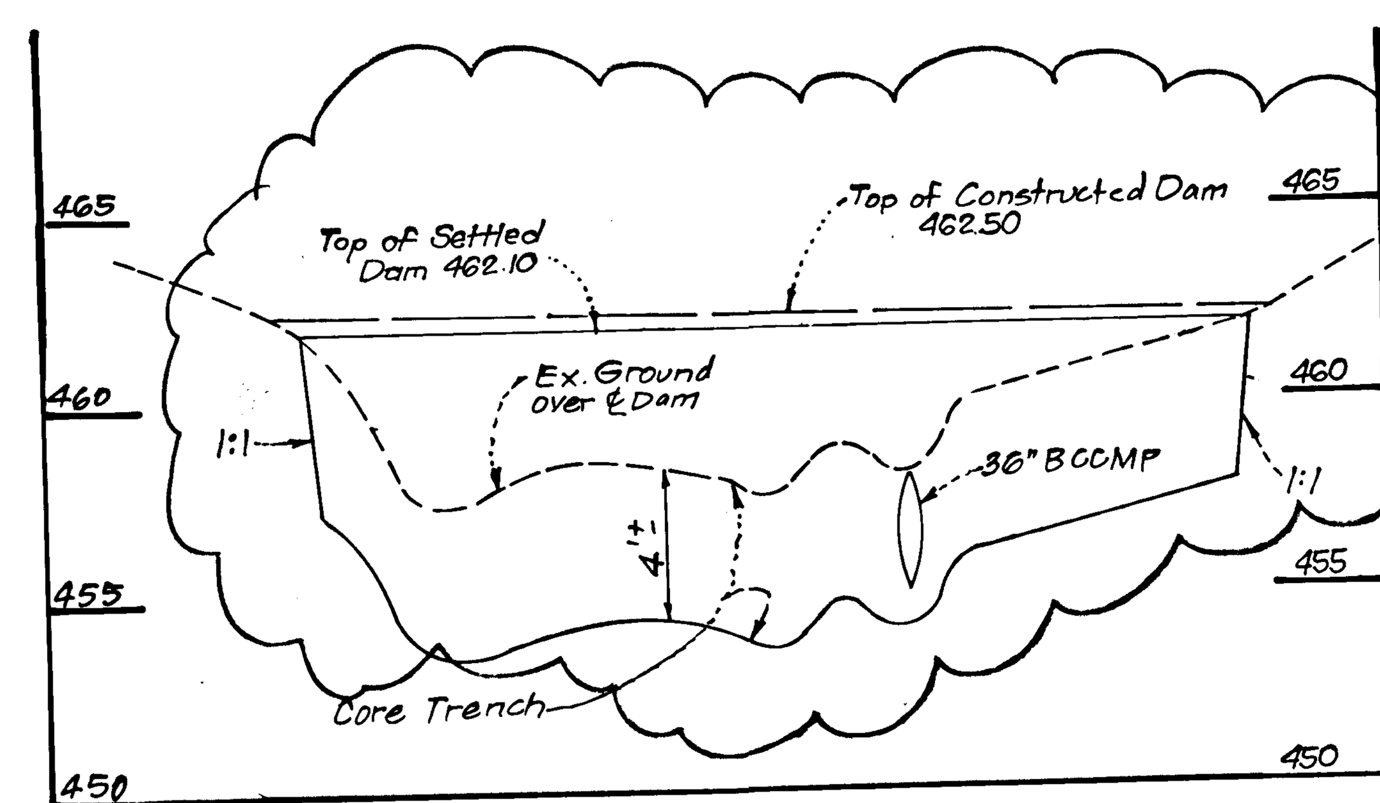
Signature of Developer — 5-12-89 — Date



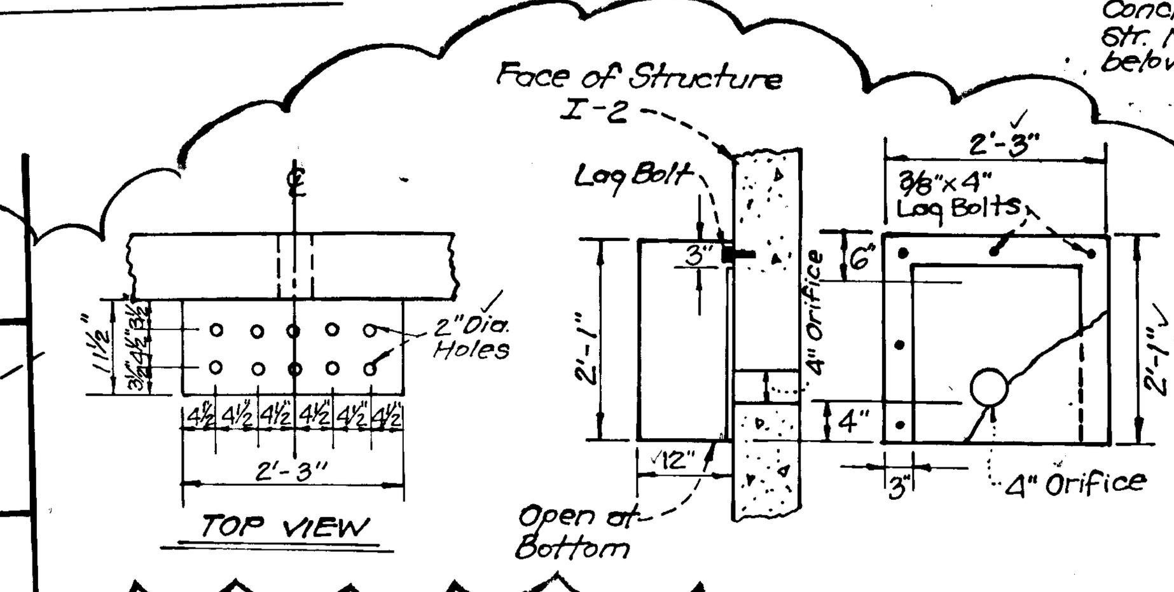
TRASH RACK DETAIL
NO SCALE



ISOMETRIC OF STRUCTURE
NO SCALE

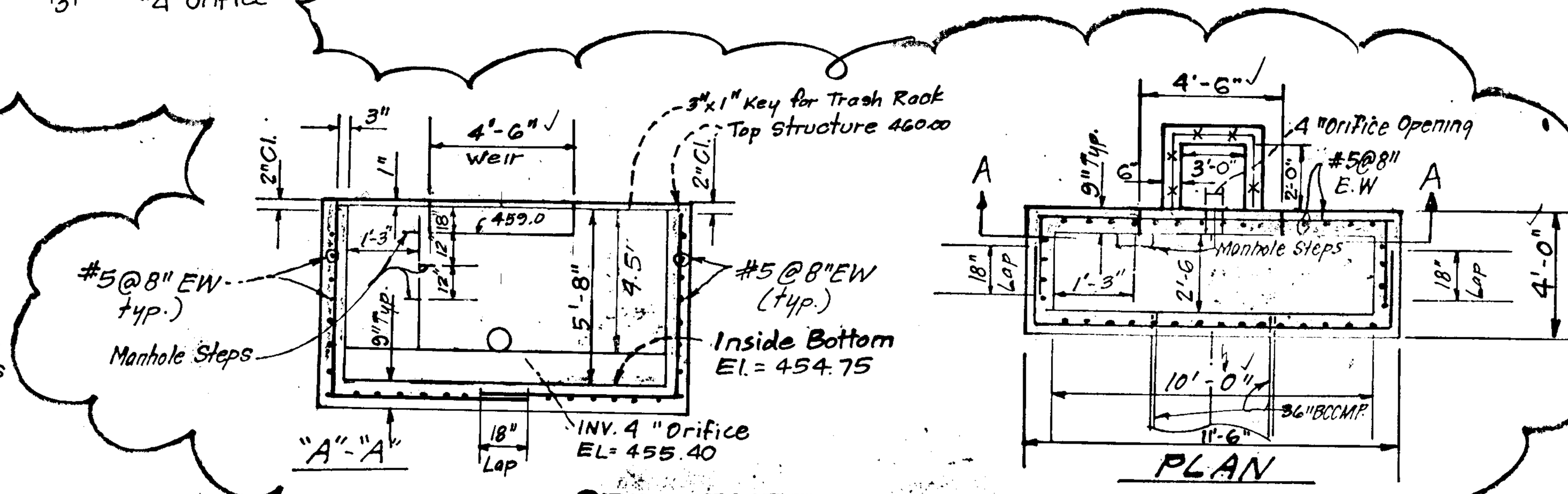


DAM PROFILE
(Looking Upstream)
SCALE: Horiz: 1" = 50' Vert: 1" = 5'

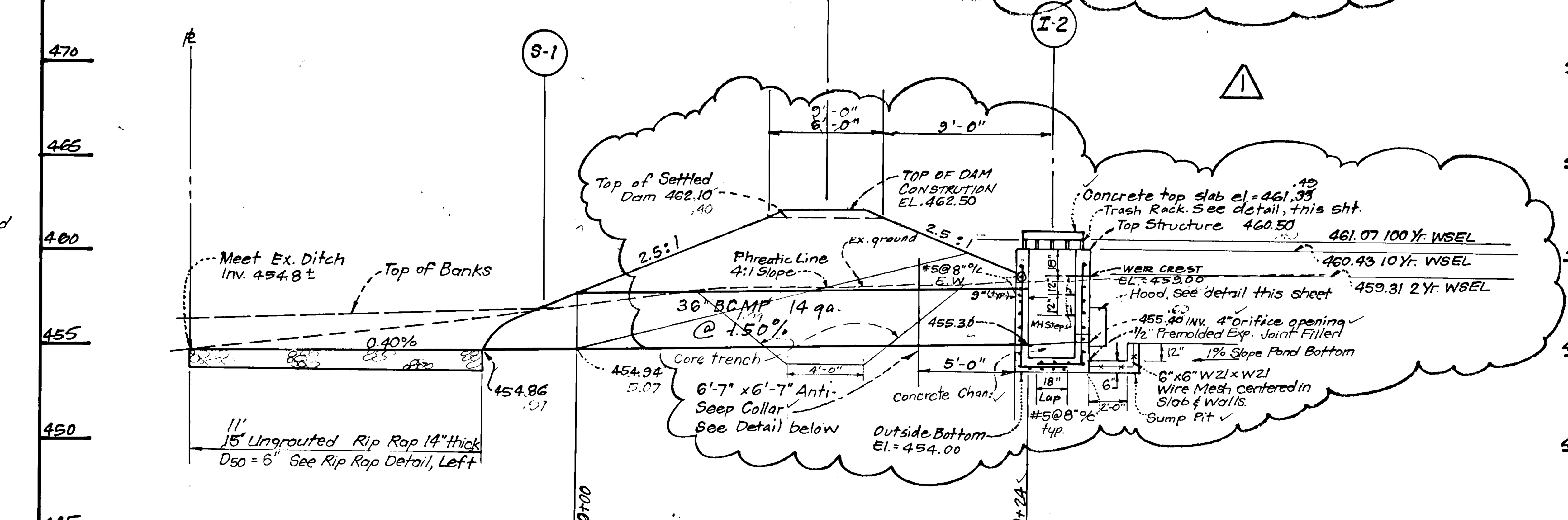


HOOD DETAIL
STR. NO. I-2
No Scale

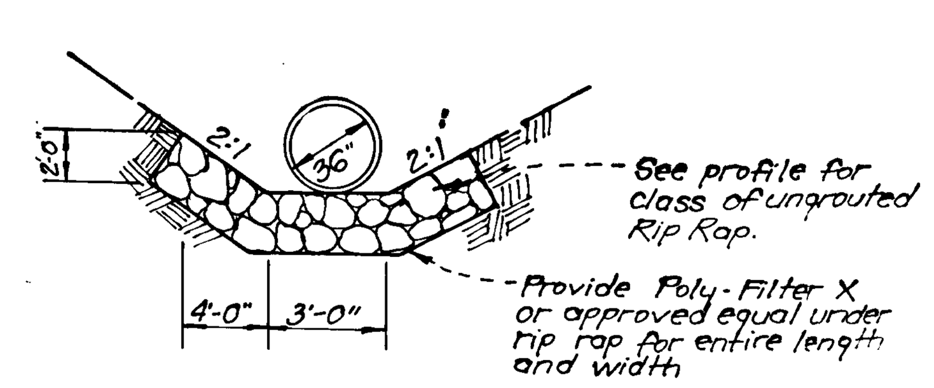
NOTES:
1. Hood shall be fabricated from 12 gage steel then hot dipped galvanized.
2. Hood shall be securely bolted to inlet structure using 3/8"x4" galv. lag bolts in pattern shown.



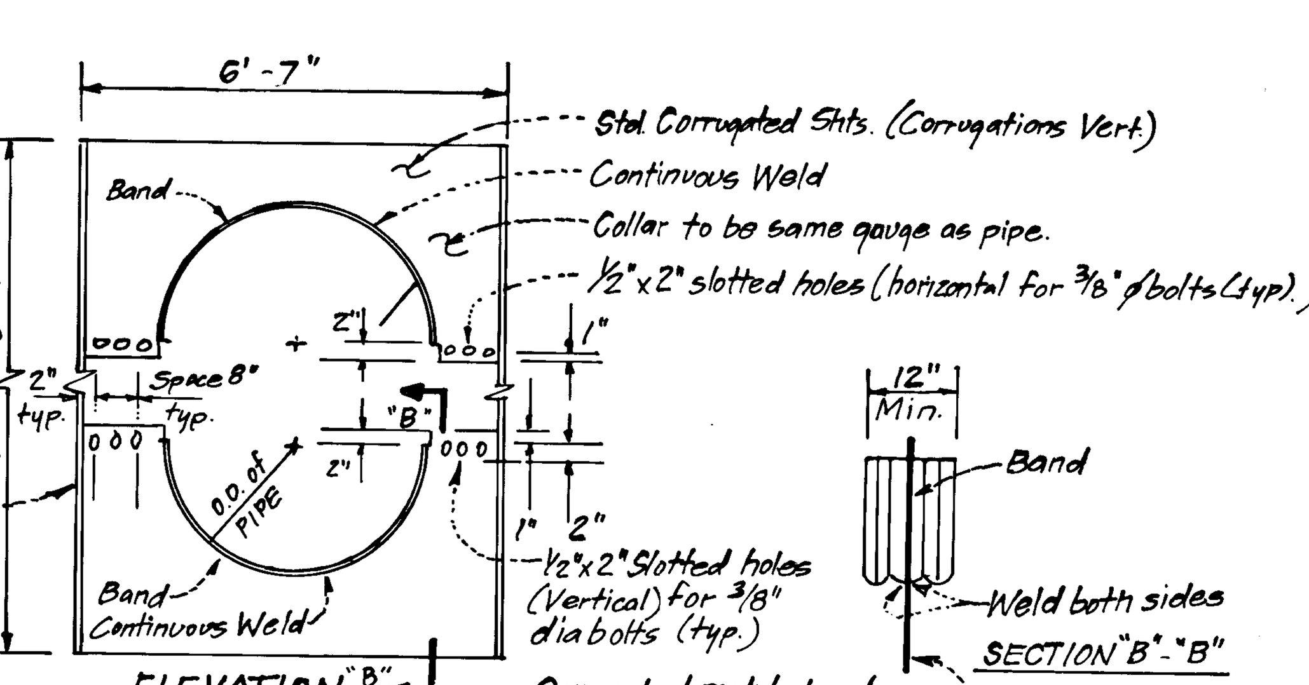
STRUCTURE No I-2 DETAILS
NO SCALE



No Scale



UNGROUTED RIP RAP
No Scale



NOTES:
1. All materials to be in accordance with construction material specifications.
2. When specified on the plans, coating of collars shall be in accordance with contr. material specs.
3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
4. The lap between the two half sections and between the pipe and connection band shall be caulked with asphalt mastic at time of installation.
5. Each collar shall be furnished with two 1/2" diameter rods w/std. tank lugs for connecting collars to pipe.

CORRUGATED METAL ANTI-SEEP COLLAR DETAILS
NO SCALE

For AS-BUILT by Clark, Finefrock & Sackett, Inc.

ENGINEER'S CERTIFICATE

"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 must provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."

Signature of Engineer — 5-12-89 — Date

Nº	REVISIONS	Date
1	Rev. Structure, Top of Dam	11-14-91

Approved: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — 11/17/89 — Date

Chief, Bureau of Highways — Date

Chief, Bureau of Engineering — Date

Approved: HOWARD COUNTY DEPT. OF PLANNING & ZONING.

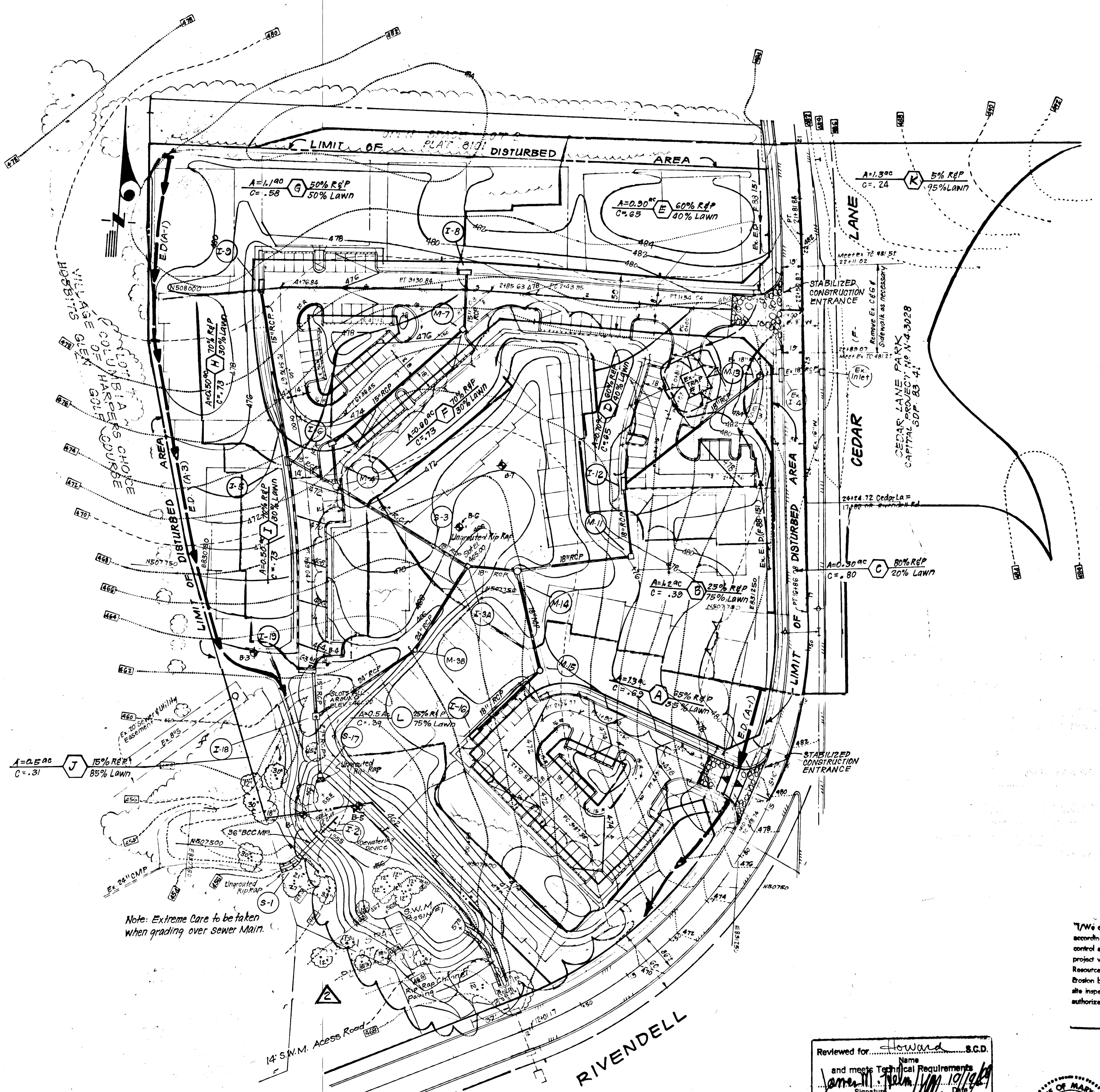
Chief, Division of Community Planning & Land Development — 11/22/89 — Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH.

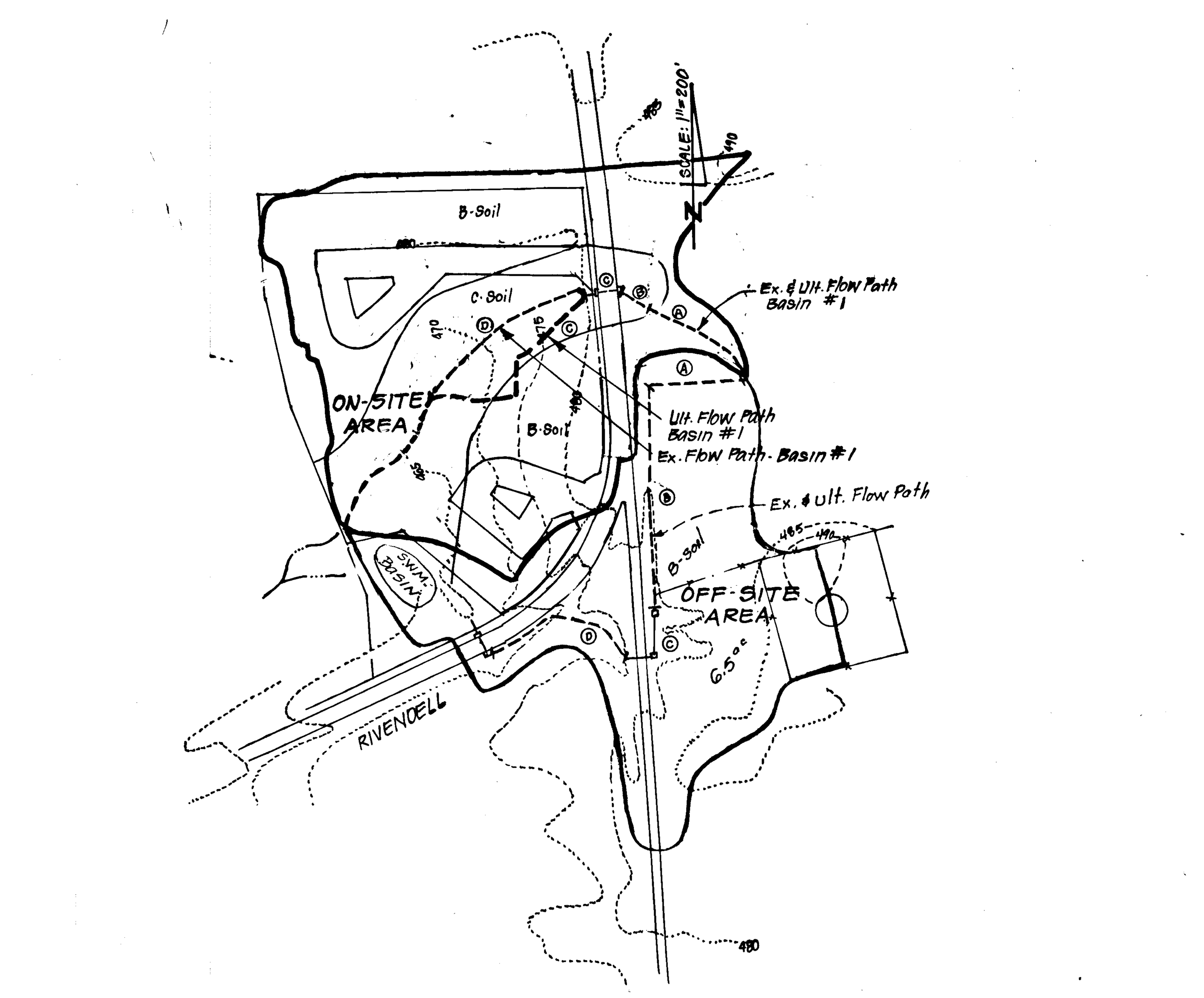
DESIGNED JLS	ROAD CONSTRUCTION PLANS STORMWATER MANAGEMENT NOTES AND DETAILS	SCALE As Shown
DRAWN KIW	COLUMBIA VILLAGE OF HARPERS CHOICE SECTION 7 AREA 2 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 5 OF 7
CHECKED JLS.		JOB NO. 88.042
DATE Oct., 1989	FOR: COLUMBIA BUILDERS INC. 3 Lakefront North Suite 200 Columbia Md. 21044	FILE NO. 88.042-D

"AS-BUILT" 12-15-92

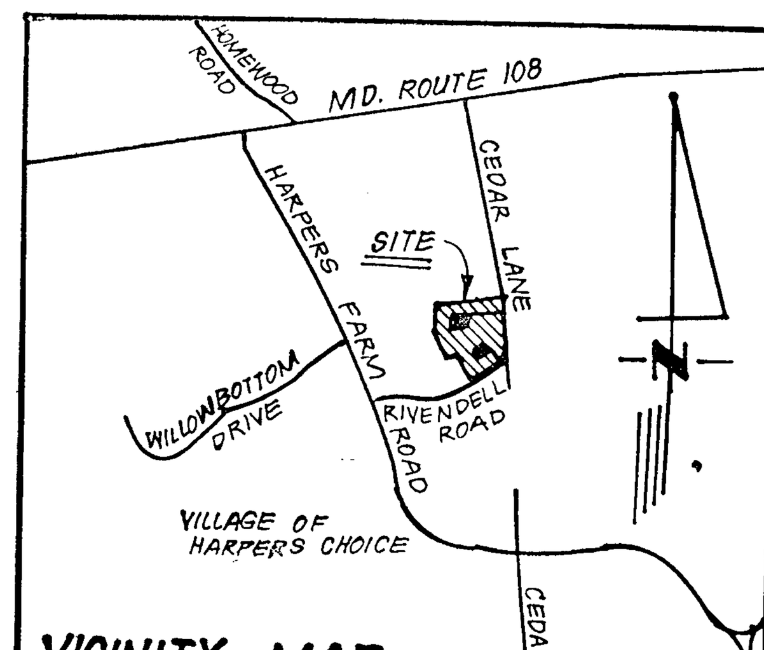
F-89-219



PLAN
SCALE: 1"=50'



SOILS MAP.
SCALE: 1"=200'



VICINITY MAP
SCALE: 1"=2000'

No.	Revisions	Date
2	Rev. Grading and Storm Drainage, Added M-3, I-3A, M-3B	11·14·91
1	Revise Curb & Gutter, Storm Drain & Road Width	9·25·90

Reviewed for Howard S.C.D.
Name
and meets Technical Requirements
James M. Nelm 10/19/89
Signature Date
U.S. Soil Conservation Service

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

Robert W. Zieh 10/19/89
Approved Date

STATE OF MARYLAND G. NELSON CLARK No. 7139 REGISTERED PROFESSIONAL ENGINEER
5-12-89

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature of Developer/Builder — 10-12-89
Date

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

G. Nelson Clark — 5-12-89
Date

Approved: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — 11/17/89 Date

Chief, Bureau of Highways — Date

Chief, Bureau of Engineering — 11-28-89 Date

Approved: HOWARD COUNTY DEPT. OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development — 11/24/89 Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 -- BALTO. • (301) 621-8100 -- WASH.

DESIGNED JLS KIW	ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL PLAN AND DRAINAGE AREA MAP COLUMBIA VILLAGE OF HARPERS CHOICE SECTION 7 AREA 2 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE As Shown
DRAWN KIW		DRAWING 6 OF 7
CHECKED JLS.		JOB NO. 88·042
DATE Oct., 1989	FOR: COLUMBIA BUILDERS INC. 3 Lakefront North Suite 200 Columbia Md. 21044	FILE NO. 88·042-D

F89219

SEDIMENT CONTROL NOTES:

1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3) Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 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, Chaper 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5) All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52.) Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector
7) Site Analysis:

Total Area of Site	7.880G	Acres
Area Disturbed	7.9	Acres
Area to be roofed or paved	1.7	Acres
Area to be vegetatively stabilized	6.2	Acres
Total Cut	10,640	Cu. yds
Total Fill	38,150	Cu. yds
Offsite waste/borrow area location	Undetermined	

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 DPW sediment control inspector.
10) On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
11) If houses are to be constructed on an "As-Sold" basis, at random, Single Lot Sediment Control as shown below shall be implemented. N/A
12) All pipes to be blocked at the end of each day (see detail below).
13) The total amount of straw bale dikes/silt fence equals 0 L.F.

PERMANENT SEEDING NOTES

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

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

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

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

Seeding - For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thre July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching - Apply 1½ to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flac areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

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

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

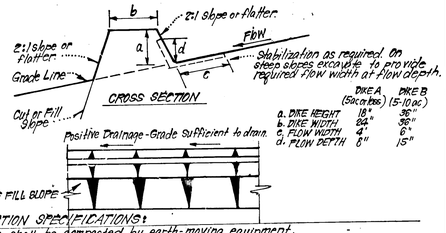
Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

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

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2½ bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1½ to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.



CONSTRUCTION SPECIFICATIONS:

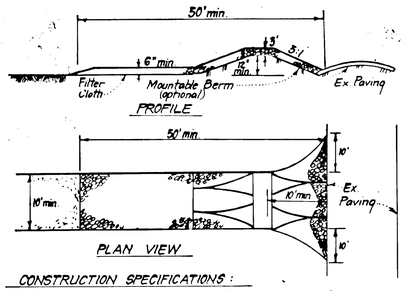
1. All dikes shall be compacted by earth-moving equipment.
2. All dikes shall have positive drainage to an outlet.
3. Top width may be wider and side slopes may be flatter if desired, to facilitate crossing by construction traffic.
4. Field location should be adjusted as needed to utilize a stabilized safe outlet.
5. Earth dikes shall have an outlet that functions with a minimum of erosion. Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin where either the dike channel or the drainage area above the dike are not adequately stabilized.
6. Stabilization shall be: (A) In accordance with standard specifications for seed and straw mulch or straw mulch if not in seeding season, (B) Flow channel as per chart below.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1.	0.5-3.0%	Seed & Straw Mulch	Seed or Straw Mulch
2.	3.1-5.0%	Seed & Straw Mulch	Seed w/Jute, or Excelsior; Sod; 2"Stone
3	5.1-8.0%	Seed w/Jute, or Sod; 2"Stone	Lined Rip Rap 4"-8"Stone
4	8.1-20.0%	Lined Rip Rap 4"-8"Stone	Engineering Design

A. Stone to be 2" Stone, or recycled concrete equivilent, in a layer at least 3" thick and be pressed into soil with construction equipment.
B. Rip Rap to be 4"-8" in a layer at least 8" thick, pressed into soil.
C. Approved equivalents can be substituted for any of the above materials.
7. Periodic Inspection and Required Maintenance must be provided after each rain.

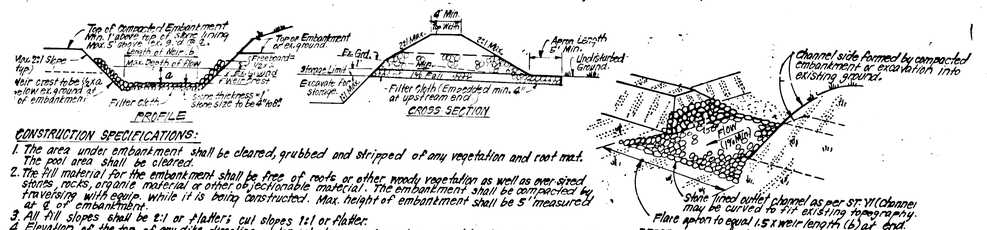
EARTH DIKE DETAIL (E.D.)
NO SCALE



CONSTRUCTION SPECIFICATIONS:

1. Stone size - Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply.
3. Thickness - Not less than six (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dragged, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

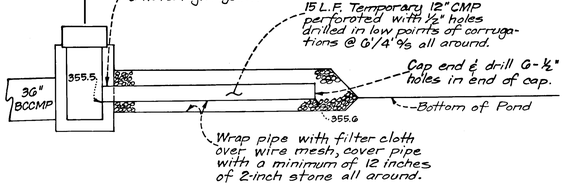
STABILIZED CONSTRUCTION ENTRANCE (SCE)
NO SCALE



CONSTRUCTION SPECIFICATIONS:

1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equip. while it is being constructed. Max. height of embankment shall be 5' measured at ℄ of embankment.
3. All fill slopes shall be 2:1 or flatters cut slopes 1:1 or flatter.
4. Elevation of the top of any dike directing water into trap must equal or exceed height of embankment.
5. Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of 1' below the lowest weir crest.
6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.
7. Stone used in the outlet channel shall be 4"-8" riprap. To provide a filtering effect, a layer of filter cloth shall be embedded 1' back into the upstream face of the outlet stone and 1" thick layer of 2" or finer aggregate shall be placed on the upstream face of the outlet.
8. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
9. The structure shall be inspected after each rain and repaired as needed.
10. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
11. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
12. Drainage area for this practice is limited to 15 acres or less.

RIPRAP OUTLET SEDIMENT TRAP - ST-VI.
NO SCALE



DEWATERING DEVICE DETAIL AT STR. # I-2
NO SCALE

CONSTRUCTION SEQUENCE:

	No. OF DAYS
1. Obtain grading permit.	2
2. Clear & grub for sediment & erosion controls.	5
3. Construct Storm Drainage from Structure S-1 to I-2.	5
4. Install Dewatering Device in structure I-2, see Detail this sheet.	1
5. Excavate for and construct Stormwater Management Basin.	15
6. Install the remainder of the sediment and erosion controls.	7
7. Clear and rough grade site and temporarily stabilize.	30
8. Install the remainder of storm drains.	60
9. Install utilities and construct paving.	120
10. Fine grade and stabilize site.	30
11. Upon approval of the sediment control inspector, remove sediment from S.W.M. Basin and stabilize. Remove Dewatering Device & Fine Grade	14

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature of Developer/Builder — 5-12-89 Date

Reviewed for Howard S.C.D. and meets Technical Requirements
Name
Signature — Date
U.S. Soil Conservation Service

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

Approved — 10/17/89 Date

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

G. Nelson Clark — 5-12-89 Date

STATE OF MARYLAND G. NELSON CLARK NO. 7199 REGISTERED PROFESSIONAL ENGINEER 5-12-89

Approved: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Chief, Land Development Division — 11/17/89 Date
Chief, Bureau of Highways — Date
Chief, Bureau of Engineering — 11-20-89 Date

Approved: HOWARD COUNTY DEPT. OF PLANNING & ZONING.
Chief, Division of Community Planning & Land Development — 11/21/89 Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH.

DESIGNED JLS KIW	ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL DETAILS	SCALE As Shown
DRAWN KIW	COLUMBIA VILLAGE OF HARPERS CHOICE SECTION 7 AREA 2 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 7 OF 7
CHECKED JLS		JOB NO. 88-042
DATE Oct., 1989	FOR: COLUMBIA BUILDERS INC. 3 Lakefront North Suite 200 Columbia Md. 21044	FILE NO. 88-042-D

F89-219