CURVE DATA
PC=1175.70 & P.T. 1123.70
R= 1500.00'
Δ = 22°00'00"
A= 48.00'
T= 24.30'
CHD = N80°36'00"W
47.70'

CURVE DATA
PC= 2234.76 & P.T. 2162.62
R= 175.00'
Δ = 72°56'12"
A= 27.96'
T= 13.99'
CHD = N52°50'54"W
27.80'

CURVE DATA
PC= 0190.98 & P.T. 2130.61
R= 400.00'
Δ = 27°20'00"
A= 139.63'
T= 70.54'
CHD = S29°34'20"W
138.93'

CURVE DATA
PC. 4401.38 & P.T. 6471.76
R= 930.00'
Δ = 68°24'28"
A= 270.36'
T= 149.84'
CHD = S37°48'34"W
262.39'

Reviewed for HOWARD S.C.D.
Name
and meets Technical Requirements
Signature 8-16-84 Date
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED: Robert W. Zellers DATE: 8-16-84

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 Attendence 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 — 6/20/84 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 — 6-19-84 Date

VICINITY MAP
SCALE: 1" = 2000'

STATE OF MARYLAND — G. NELSON CLARK — NO. 7139 — REGISTERED PROFESSIONAL ENGINEER

AS-BUILD SURVEY CERTIFIED BY G. NELSON CLARK REG-P.E. NO. 7139 ON JUNE 19, 1984

GENERAL NOTES:

1. All storm drain and paving shall be constructed in accordance with the latest details and Specifications of Howard County & Md SHA.
2. Types of Storm Drain structures refer to the Standard Details of Howard County & Maryland State Highway Administration.
3. Trench Compaction for Storm drains within Road or Street rights of way (inlets shall be in accordance with Howard Co. Design Manual Vol. IV. Class "B" Trench bedding to be used for all Storm Drains except where shown otherwise)
4. Information concerning underground utilities was obtained from available records, but the contractor must determine the exact location and elevation of the mains by digging test pits, by hand, at all utility crossings, well in advance of Construction.
5. All utility companies shall be notified 24 hrs. in advance of construction.
6. All traffic control services, parking, and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices" 1971 Edition.
7. Sag and Crest Vertical curves were designed in accordance with "A Policy on Geometric Design of Rural Highways" 1965, by AASHO.
8. Provide Concrete Sidewalk ramps, Ho. Co. Std. Type A, R-4.01 where shown in plan.
9. Design Speed: 30 mph ; Zoning: RSC

APPROVED: DEPARTMENT OF PUBLIC WORKS:
Chief, Bureau of Engineering — 8-17-84 Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
Chief, Division of Land Development & Zoning Administration — 8-14-84 Date

CURB & GUTTER LEGEND
Std. 7" Comb. Curb & Gutter
Rev. 7" Comb. Curb & Gutter
Std. 6" Comb. Curb & Gutter
Rev. 6" Comb. Curb & Gutter

STREET TREE SCHEDULE

KEY	DESCRIPTION	SIZE	QUAN.	ROOT
OG	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY MAPLE	2½" Cal. Min.	23	B & B
GA	FRAXINUS P. LANCEOLATA 'SEEDLESS' GREEN ASH	2½" Cal. Min.	10	B & B

NOTES
- PLANTING TO COMPLY WITH L.C.A.M.W. LANDSCAPE SPECIFICATIONS
- CONTRACTOR TO VERIFY UNDERGROUND UTILITIES BEFORE DIGGING
- LOCATION OF TREES MAY VARY SLIGHTLY TO ACCOMMODATE FIELD CONDITIONS.
- STREET TREE PLANTING TO COMPLY WITH SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS.

CFS — CLARK FINEFROCK & SACKETT
ENGINEERS PLANNERS SURVEYORS
11315 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 (301) 593-3400

DESIGNED JLS	ROAD CONSTRUCTION PLANS EARLY RED COURT & LORING DRIVE
DRAWN KIW	**SEWELLS ORCHARD** SECTION 3 AREA 1 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
CHECKED JLS	FOR: ORCHARD ASSOCIATES P.O. Box 312 Columbia, Maryland 21044
DATE 6-18-84	
SCALE	As Shown
DRAWING	1 OF 4
JOB NO.	83-076
FILE NO.	83-076 D

PLAN
SCALE: 1" = 50'

PROFILE - PRIVATE COURT @ STA 5+51.40

PROFILE - EARLY RED COURT

PROFILE - LORING DRIVE

PROFILE SCALE HORIZ. 1" = 50' VERT. 1" = 5'
PROFILE LEGEND
Profile Grade Line
Existing ℄
B.R.L. (RT.)
B.R.L. (LT.)

#850

6/19/84 AS-BUILT F-84-215

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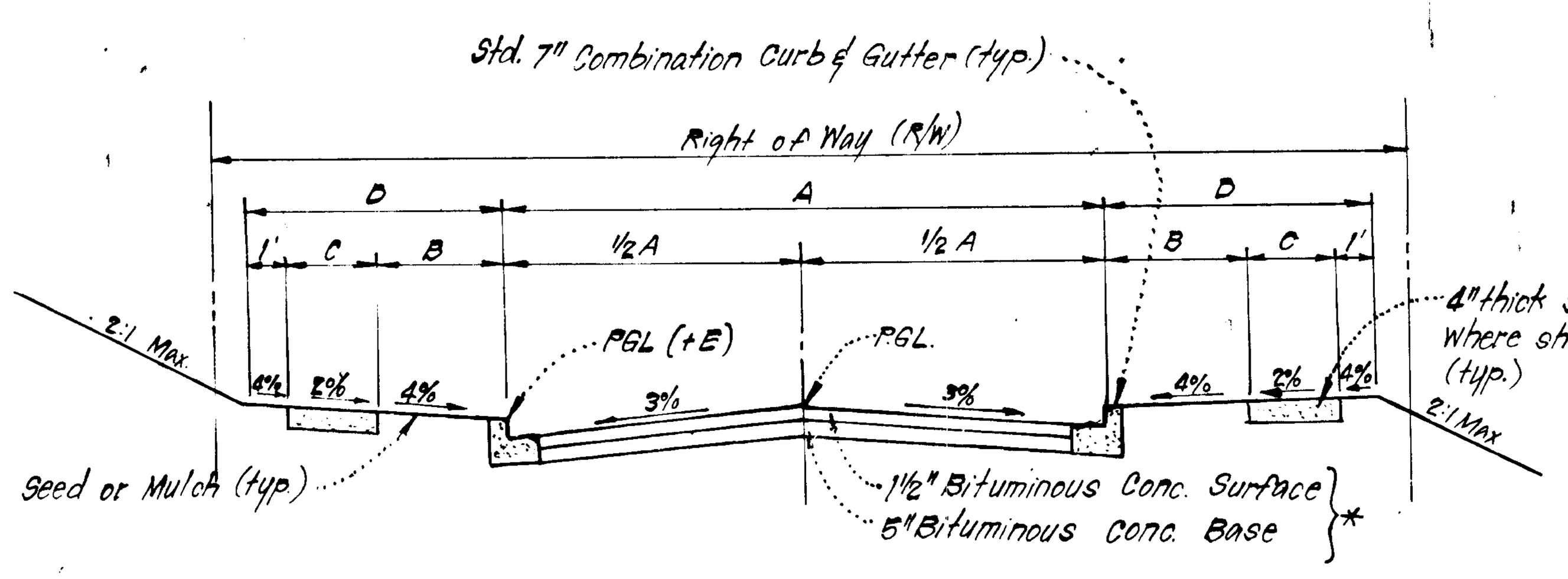
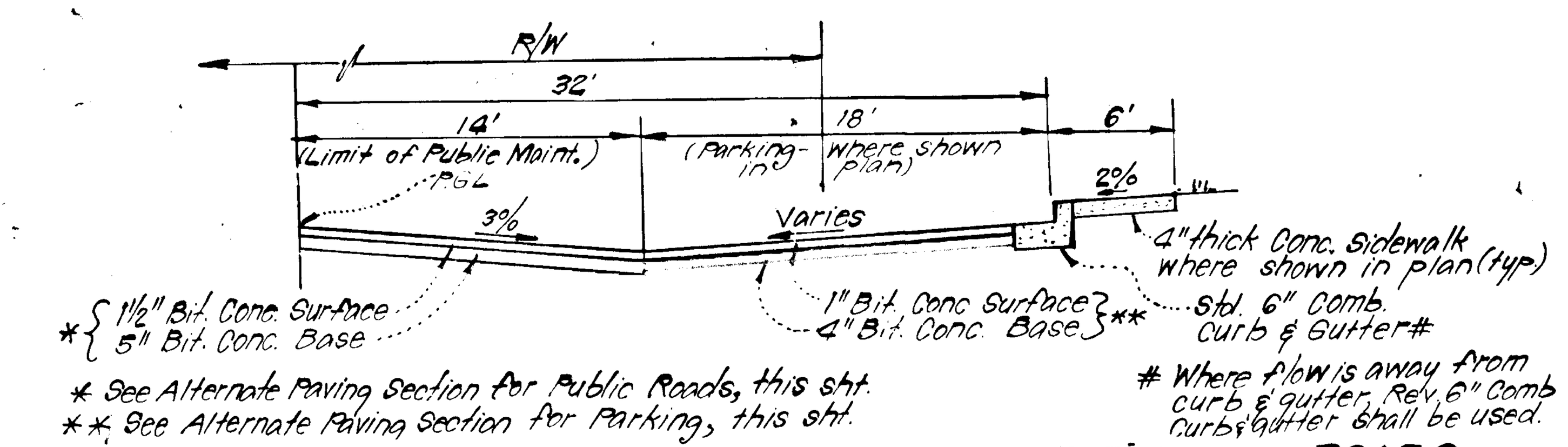


* For Alternate Paving Section - See det. this sht.

TYPICAL PAVING SECTION - PUBLIC ROADS

NO SCALE

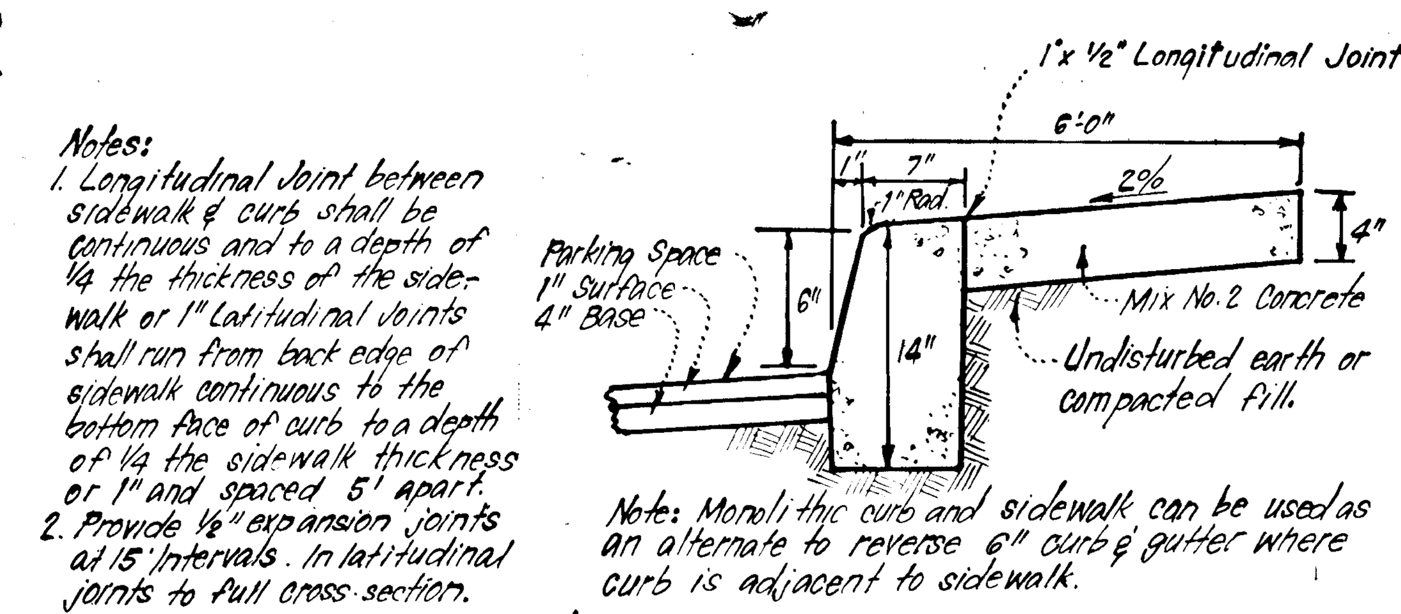
STREET NAME & STATION	TYPE OF TRAFFIC	A	B	C	D	R/W	ZONING	DESIGN SPEED	E
Loring Drive 0+00 to 6+71.74	Local	30'	4	4'	9'	50'	RSC	30	+.10
Early Red Court 0+00 to 0+75.70	Cul-de-Sac	28'	4'	4'	9'	50'	RSC	30	+.14



TYPICAL HALF SECTION-PARKING ADJACENT TO PUBLIC ROADS

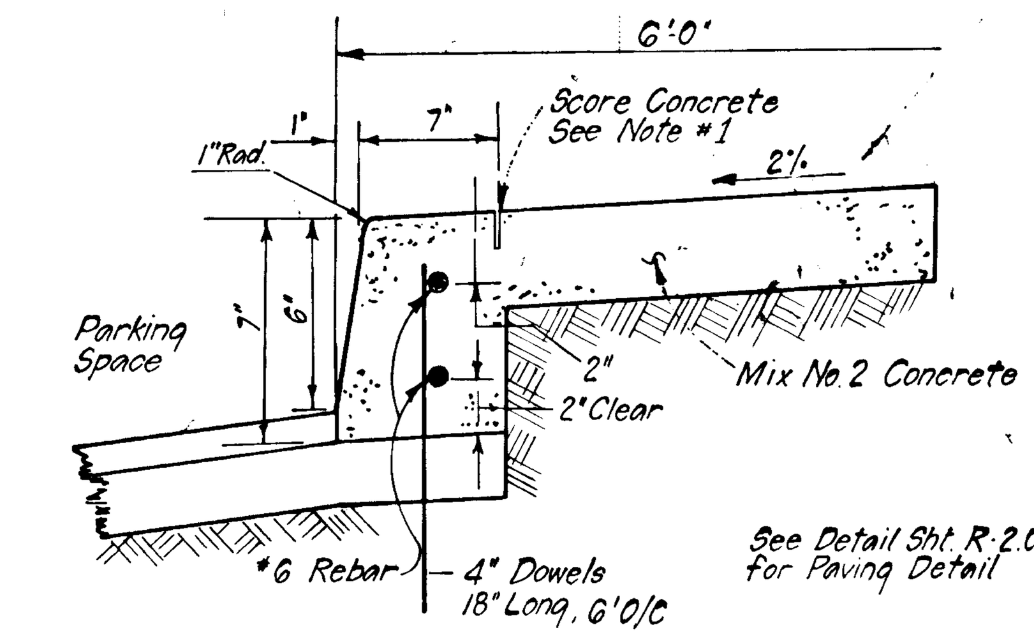
Early Red Court Sta. 0+75.70 to 2+62.62

NO SCALE



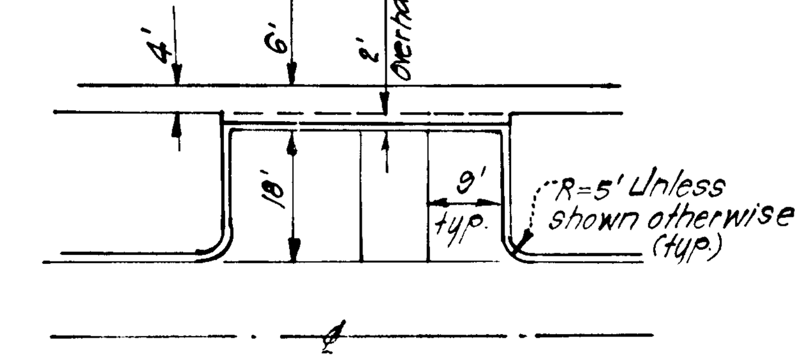
MONOLITHIC CURB & SIDEWALK - PRIVATE PARKING AREA

NO SCALE



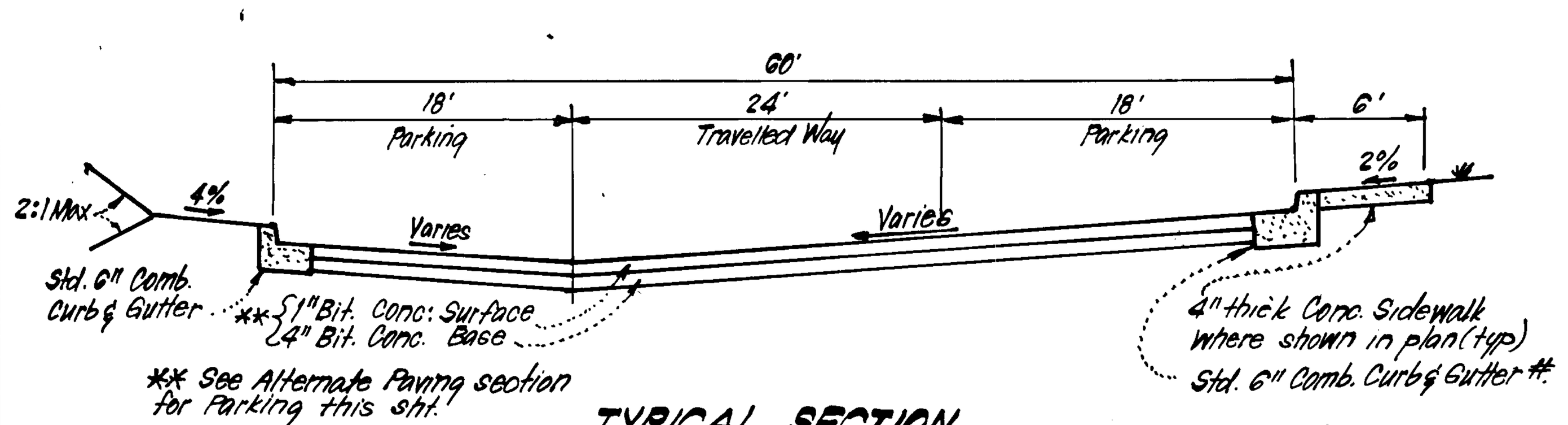
ALTERNATE SECTION

NO SCALE



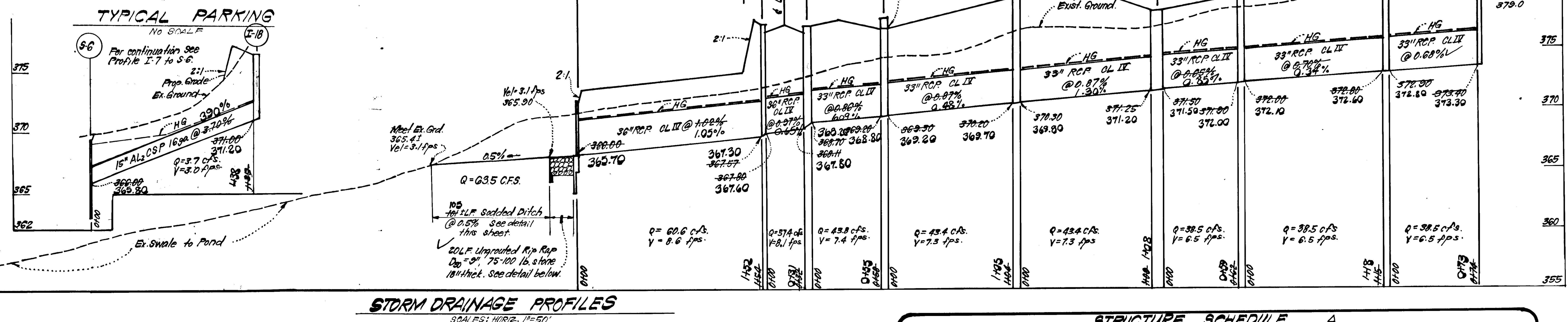
TYPICAL PARKING

NO SCALE



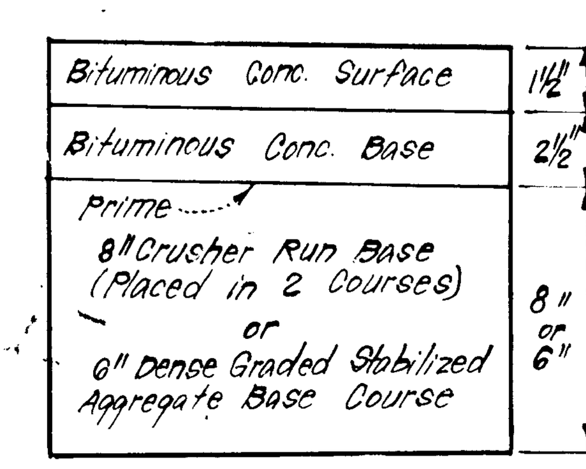
TYPICAL SECTION PRIVATE DRIVE & PARKING

NO SCALE



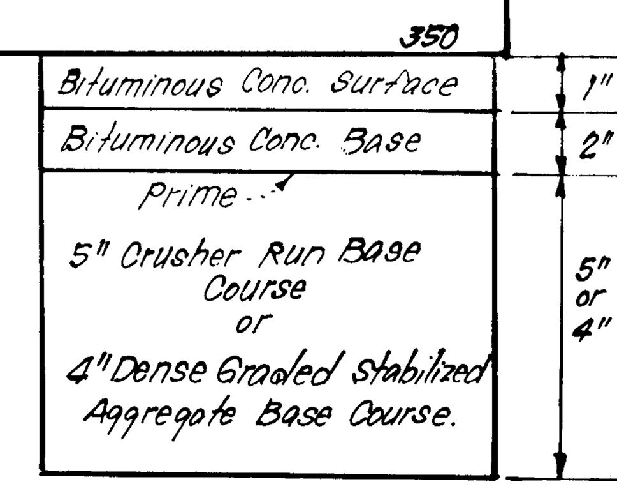
STORM DRAINAGE PROFILES

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



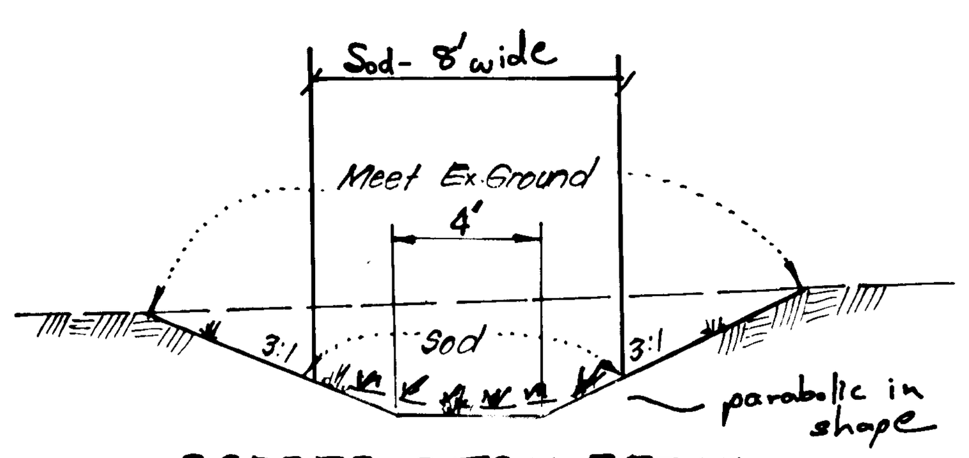
ALTERNATE PAVING SECTION FOR PUBLIC ROADS

NO SCALE



ALTERNATE PAVING SECTION FOR PARKING AREAS

NO SCALE

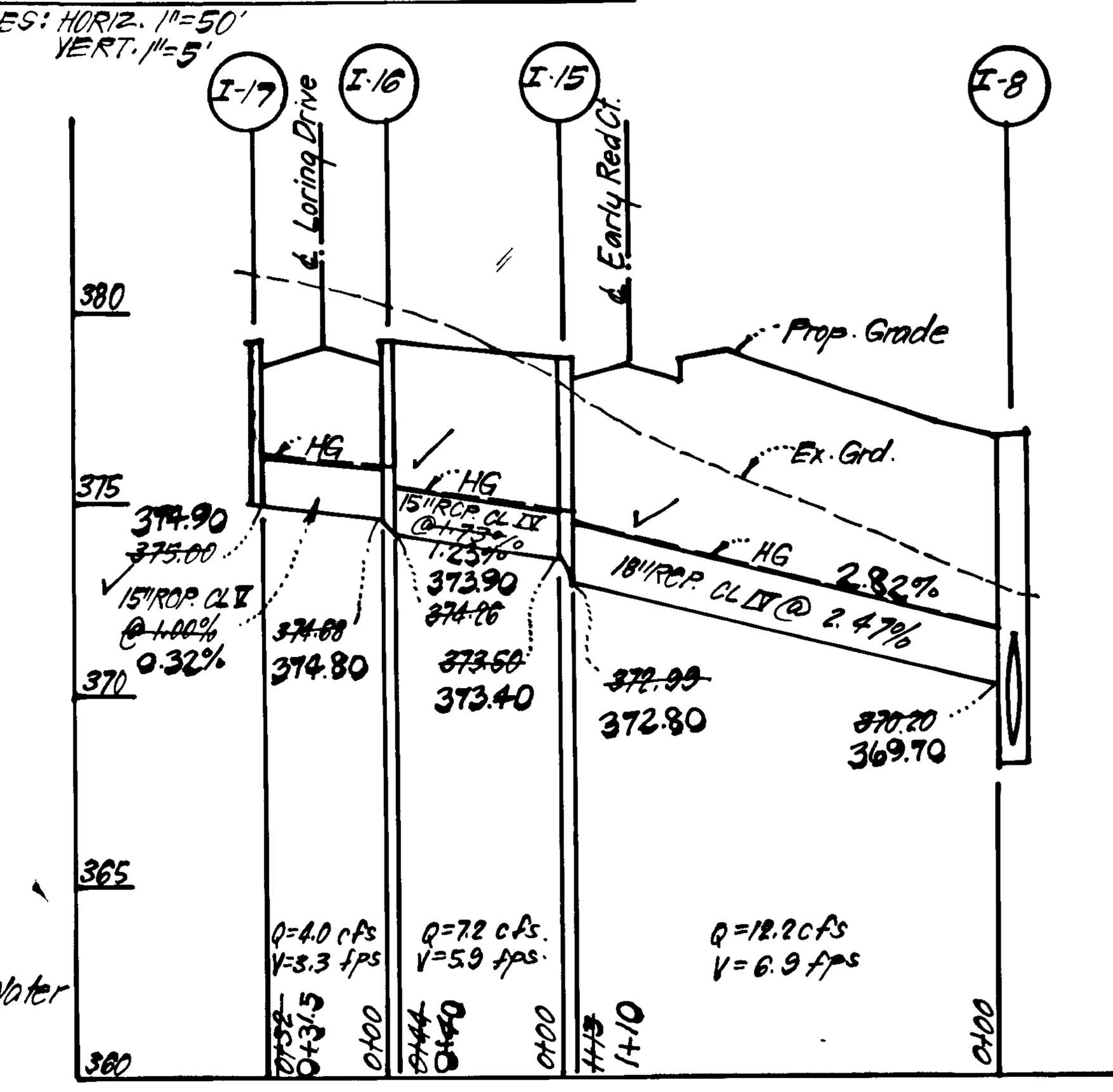


SODDED DITCH DETAIL

NO SCALE

GENERAL SODDING NOTES:

1. Apply 10-10-10 Fertilizer @ 1000#/acre (25#/1000 sf.)
2. Apply Ground Agricultural Limestone @ 2000#/acre (50#/1000 sf.)
3. Incorporate both Lime and Fertilizer into soil by discing. Firm up after Incorporation.
4. Lay sod to a tight fit. Roll to insure contact with underlying soil. Water as necessary for 1st 2 weeks, in summer, to ensure establishment.
5. All sod to be used must be certified by the state of Maryland.
6. Sod to be pegged and stapled.



STRUCTURE SCHEDULE Δ

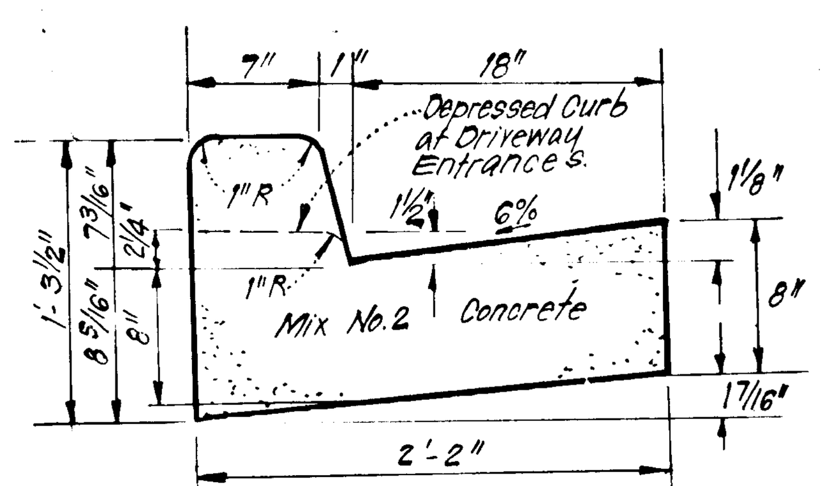
No.	TYPE	INV. IN	INV. OUT	TOP ELEVATION UPPER	TOP ELEVATION LOWER	REMARKS	LOCATION
† S-6	A-Endwall 365.70	~~366.00~~	~~366.00~~	365.70	-	Ho. Co. Std. SD/5.11 Dia=36"	See Plan
I-7	A-10 Inlet 367.60	~~367.80~~	~~367.57~~	367.30	~~376.79~~ 376.70	" " " SD/4.02 W=2'-6"	¢ Inlet Sta. 4+43.70 15' Lt.
I-8	A-10 Inlet 368.40 369.70	~~368.70~~ ~~370.20~~	~~368.11~~	367.80	~~376.79~~ 376.65	" " " SD/4.02 W=4'-6"	¢ Inlet Sta 4+43.70 15' Rt.
# I-9	D Inlet 369.20	~~369.30~~	~~369.20~~	368.80	~~377.33~~ 376.85	" " " SD/4.11 48" Sq.	See Plan
M-10	Brick Manhole 369.80	~~370.30~~	~~370.20~~	369.70	~~379.00~~ 378.77	" " " G 5.02 5'-0" Rd.	" "
I-11	A-10 Inlet ✓	371.50 ✓	371.25	371.20	~~378.00~~ 378.11	" " " SD/4.02 W=4'-0"	" "
M-12	Brick Manhole 372.10	~~372.00~~	~~371.90~~	372.00	~~379.20~~ 379.53	" " " G/5.02 5'-0" Rd.	" "
M-13	Brick Manhole 372.80	~~372.90~~	~~372.80~~	372.60	~~382.20~~ 381.97	" " " G/5.02 5'-0" Rd.	" "
# I-14	D Inlet	-	~~373.40~~	373.30	~~379.83~~ 379.65	" " " SD/4.11 48" Sq.	" "
* I-15	A-10 Inlet w/Deflectors	373.40	372.80	378.97	378.64	" " " SD/4.02 W=2'-6"	¢ Inlet Sta 0+51.23 14' Lt.
I-16	A-10 Inlet 374.80	~~374.68~~	374.90	379.37 23	379.01	" " " SD/4.02 W=2'-6"	¢ Inlet Sta 6+04.63 15' Rt.
I-17	A-10 Inlet	374.90†	~~375.00~~	379.315	379.19	" " " SD/4.02 W=2'-6"	¢ Inlet Sta. 6+04.63 15' Lt.
I-18	A-5 Inlet ✓	-	371.20		~~376.50~~ 376.33	" " " SD/4.01 W=2'-6"	See Plan
I-3	Special	-	346.55	359.00		See Detail Sht. 3	" "
S-1	Metal End Section 344.10	~~343.80~~	343.60	-		Ho. Co. Std. SD/5.61 48" Dia.	" "

Δ All inverts to be fully developed
† Connect 15" Al_2CSP into Wing Wall as shown in plan.
# Provide Slots in all sides, modify width to 48". For I-14 Slots to have minimum area of 1.75 ft.² each.
* See Howard County Std. SD 4.83 for inlet deflectors.

PIPE SCHEDULE

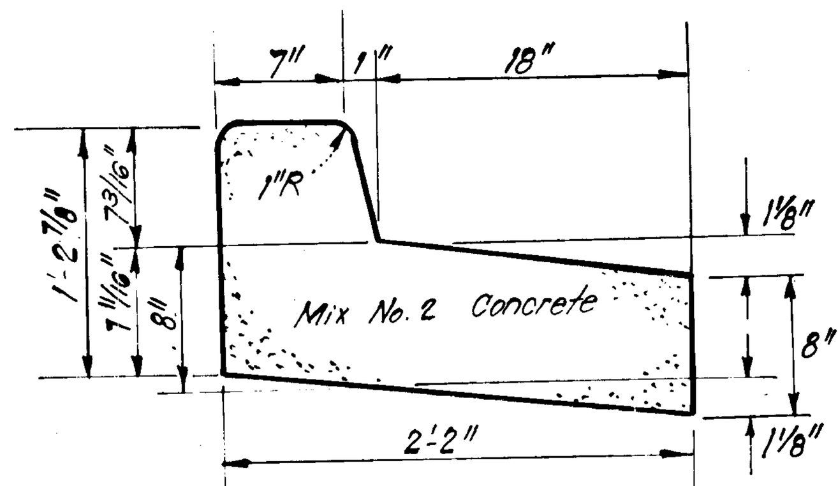
SIZE	TYPE	LENGTH
* 15"	Al_2 CSP 16gage	135 LF
15"	RCP. CL V	32 LF
15"	RCP CL IV	44 LF
18"	RCP CL IV	113 LF
33"	RCP CL IV	522 LF
36"	RCP. CL IV	186 LF
# 48"	BCCMP 16gage	75 LF

* 2⅔" x ½" Corregations # 3" x 1" Corrugations



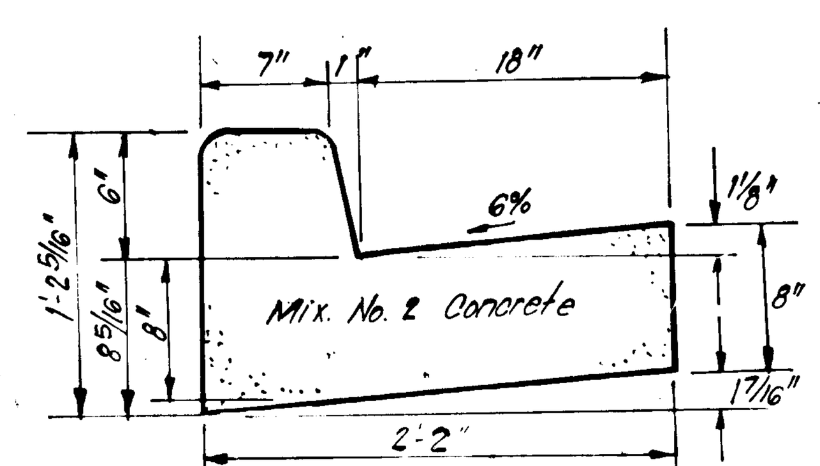
STANDARD 7" COMBINATION CURB & GUTTER

NO SCALE



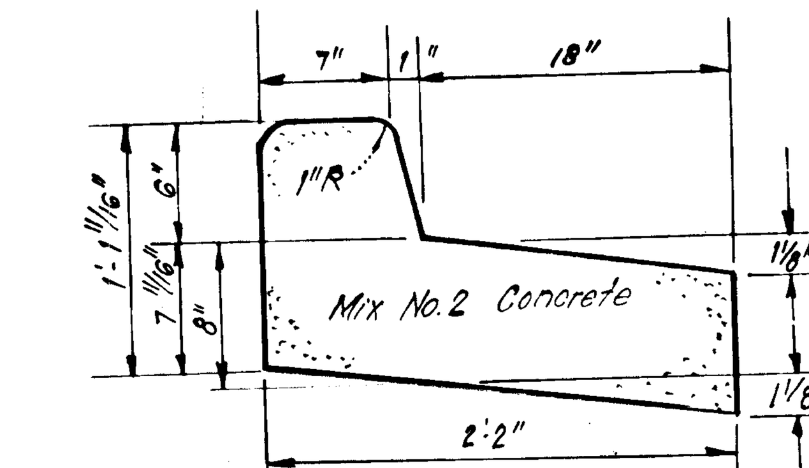
REVERSE 7" COMBINATION CURB & GUTTER

NO SCALE



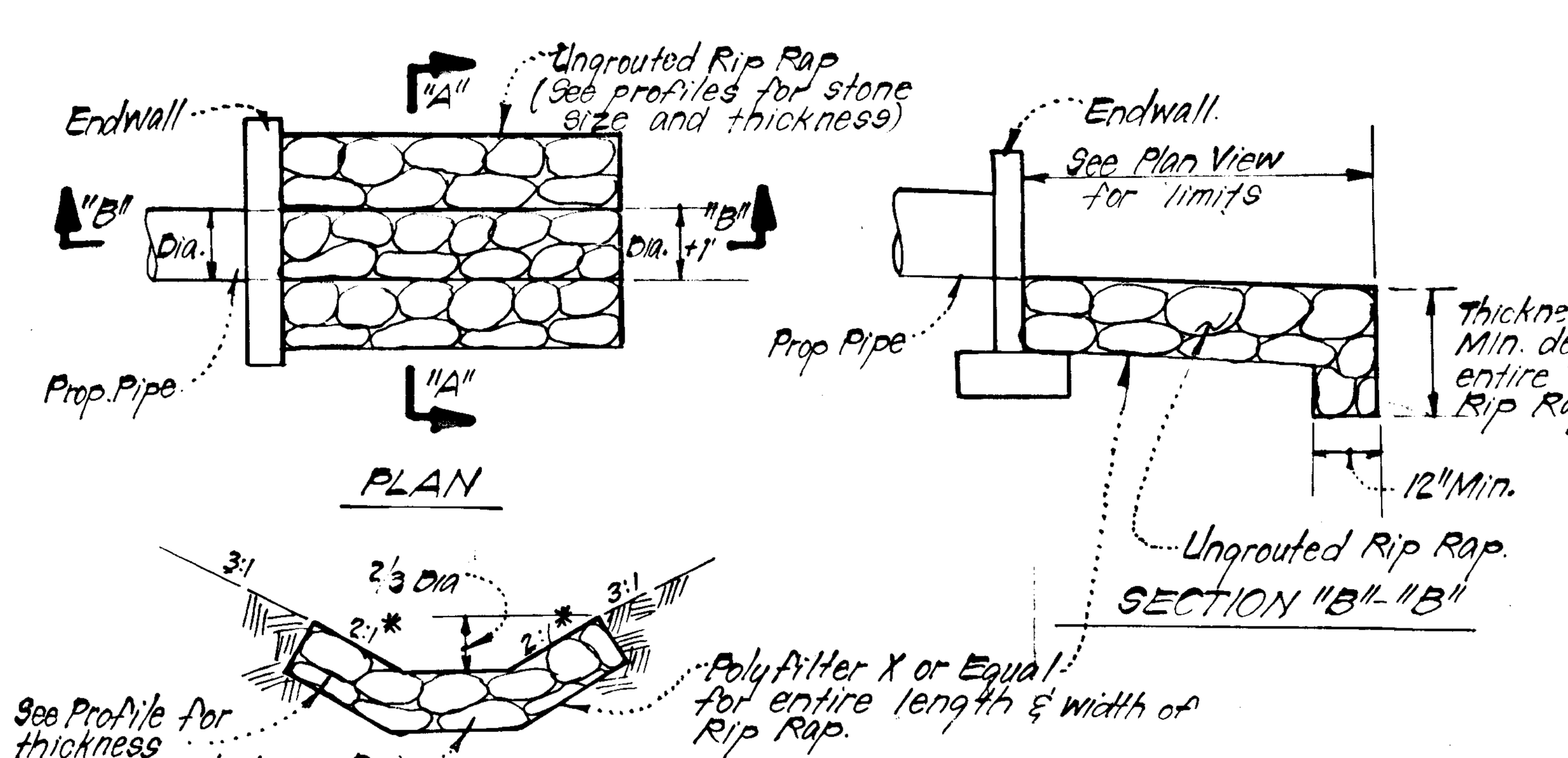
STANDARD 6" COMBINATION CURB & GUTTER

NO SCALE



REVERSE 6" COMBINATION CURB & GUTTER

NO SCALE



UNGROUTED RIP RAP PAVING DETAILS

NO SCALE

AS-BUILD SURVEY CERTIFIED BY G. NELSON CLARK REG-P.E. NO. 7139 ON JUNE 19, 1984

Reviewed for HOWARD S.C.D.
Name
and meets Technical Requirements
[signature] 8-16-84
Signature Date
U.S. Soil Conservation Service

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

[signature: Robert W. Ziehme] 8-16-84
Approved 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] 6/20/84
Signature of Developer/Builder 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.

STATE OF MARYLAND G. NELSON CLARK NO. 7139 REGISTERED PROFESSIONAL ENGINEER

[signature] 6-19-84
G. Nelson Clark Date

APPROVED: Department of Public Works

[signature] 8-17-84
Chief, Bureau of Engineering Date

APPROVED: Howard County Office of Planning and Zoning

ACTING [signature] 8-16-84
Chief, Division of Land Development & Zoning Administration Date

CLARK · FINEFROCK & SACKETT
ENGINEERS · PLANNERS · SURVEYORS
11314 LOCKWOOD DRIVE · SILVER SPRING, MARYLAND 20904 · (301) 593-3400

DESIGNED	ROAD CONSTRUCTION PLANS STORM DRAIN & PAVING DETAILS	SCALE
JLS.	**SEWELLS ORCHARDS**	AS SHOWN
DRAWN KJW	SECTION 3 AREA 1 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 2 OF 4
CHECKED JLS		JOB NO. 83-076
DATE 6-18-84	FOR: ORCHARD ASSOCIATES P.O. Box 919 Columbia, Md 21044	FILE NO. 83-076-D

#85D

D-3381

6/19/84 AS-BUILT

F-84-215

CONSTRUCTION SEQUENCE:
1. Install Stabilized Construction Entrance.
*2. Construct SWM Pond /Sediment Basin and Brick Shut 14" Dia. Orifice and immediately stabilize pond and disturbed areas on pond slopes.
#3. Clear and Rough Grade Site.
4. Construct remainder of Storm drainage.
5. Construct Utilities.
6. Fine grade and Construct Paving, Sidewalks, etc.
7. Stabilize all other disturbed areas onsite in accordance with Stds. and Specs.
8. Flush out storm drainage system.
9. Upon approval of sediment control inspector, remove sediment & erosion control measures.
* Special Notes for Modification of Existing Wet Pond.
A. Drain existing Pond.
B. Remove existing spillway and Construct prop. spillway.
C. Regrade pond as shown in plan and extend and raise top of dam as shown.
D. Immediately stabilize all regraded areas above prop. normal pool in accordance with stds. and specs and downstream embankment slope.
As per COMAR 08.05.01.06 -- "Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within : (a) seven calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and (b) Fourteen days as to all other disturbed or graded areas on the project site."
50' Min.
6" Min.
No. 2 MSHA Stone
Note: See Plan View for Limits.
Ex. or Prop. Ground.
Provide Filter Cloth (Mirafi Cloth, Poly Filter X or approved equal) under entire length.
SECTION VIEW
STABILIZED CONSTRUCTION ENTRANCE
NO SCALE
PROFILE PRIVATE CT. @ STA 1+80.78 (RIGHT SIDE)
SCALES: HORIZ: 1"=50' VERT: 1"=5'
+4.18%
+1.10%
-2.12%
-2.6%
Ex. Ground @ ℄
PROFILE: PRIVATE CT. @ STA. 1+80.78 (LEFT SIDE)
-3.6%
+4%
-5%
Ex. Grd @ ℄
PROFILE-PRIVATE CT. STA. 1+80.78 (LEFT SIDE)
SCALES: HORIZ: 1"=50', VERT 1"=5'
LEGEND:
1. Contour Interval 2 ft.
2. Existing Contour
3. Direction of Drainage
4. Proposed Storm Drain 15" RCP
5. Existing Storm Drain
15.8 Acre Total Draining to I-14. See S.D. Comps.
A=1.1ac C=.58 D 50% R&P 50% Lawn
A=0.9ac C=.58 E 50% R&P 50% Lawn
A=1.4ac C=.58 F 50% R&P 50% Lawn
A=1.3ac C=.58 G 50% R&P 50% Lawn
A=1.1ac C=.58 H 50% R&P 50% Lawn
A=0.7ac C=.35 C 20% R&P 80% Lawn
A=1.4ac C=.28 A 10% R&P 90% Lawn
A=1.9ac C=.58 B 50% R&P 50% Lawn
A=1.1ac C=.58 I 50% R&P 50% Lawn
SEWELLS ORCHARDS L.657 F.91
BALTIMORE GAS & ELECTRIC SUB STATION COLUMBIA OAKLAND MILLS ROAD P.B. 18 F.74
For Sediment & Erosion Control Brick Shut 14" Dia. Orifice
Brick Shut Has been removed
48.1 Acre Total Drain to SWM Pond See SWM Computations.
LIMIT OF DISTURBED AREA
LIMITS OF DISTURBED AREA
LIMIT OF UNDISTURBED AREA
Public S.D., SWM & Utility Easement
Ex. 20' Drainage Easement L.938 F.237
SEDIMENT BASIN & SWM POND
Ex. Normal Pool = 354.2
Prop. Normal Pool = 353.0
Design High Water = 358.38
Note: Ex. 12" CMP Riser & Barrel to be replaced. Exist. top of bank to remain where possible.
Public Storm Drain & Utility Easement
20 LF Ungrouted Rip Rap 75-100 lb stone Dia=6" 12" thick. To be placed to meet existing swale invert and side slopes
Fill as necessary to provide positive drainage.
SEWELLS ORCHARD DRIVE
Stabilized Construction Entrance
VICINITY MAP
SCALE: 1"=2000'
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
U.S. Soil Conservation Service 8-16-84 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. 8-16-84 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 6-19-84 Date
STATE OF MARYLAND G. NELSON CLARK NO. 7139 REGISTERED PROFESSIONAL ENGINEER
AS-BUILD SURVEY CERTIFIED BY G. NELSON CLARK REG-P.E. NO. 7139 ON JUNE 19, 1984
DEVELOPER'S CERTIFICATE
"I certify that all development and/or construction will be done according to these plans of development, pond construction and erosion and sediment control. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviation from this plan will not be made unless authorized by The Howard Soil Conservation District. I will provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."
Signature of Developer 6/20/84 Date
6/19/84
AS-BUILT
DEPARTMENT OF PUBLIC WORKS:
Chief, Bureau of Engineering 8-17-84 Date
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
ACTING
Chief, Division of Land Development & Zoning Administration 8-16-84 Date
CLARK FINEFROCK & SACKETT
ENGINEERS PLANNERS SURVEYORS
11315 LOCKWOOD DRIVE SILVER SPRING, MARYLAND 20904 (301) 593-3400
DESIGNED JLS
DRAWN KIW
CHECKED JLS
DATE 6-18-84
ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL PLAN & DRAINAGE AREA MAP
SEWELLS ORCHARD
SECTION 3 AREA 1
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
FOR: ORCHARD ASSOCIATES P.O. Box 913 Columbia, Maryland 21044
SCALE As Shown
DRAWING 3 of 4
JOB NO. 83-076
FILE NO. 83-076-D
F-84-215
#850

STORM WATER MANAGEMENT POND NOTES

I SITE PREPARATION:

A. 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 no steeper than 1:1.

B. Areas to be covered by 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 approximatly level with the ground surface.

C. 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

A. MATERIAL: The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversized 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.

B. 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.

C. 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 so 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.

D. 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 be driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of the 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 Specifications M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. 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 be 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 there 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 shown on the drawings.

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

AS-BUILD SURVEY CERTIFIED BY
G. NELSON CLARK REG-P.E.
NO. 7139 ON JUNE 19, 1984

STATE OF MARYLAND · G. NELSON CLARK · NO. 7139 · REGISTERED · PROFESSIONAL ENGINEER

V CONCRETE

A. MATERIALS

1. CEMENT - Normal Portland cement shall conform to latest ASTM Specification C-150.
2. WATER - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.
3. SAND - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100% passing a one quarter inch sieve. Limestone sand shall not be used.
4. COARSE AGGREGATE - The coarse aggregate shall be clean, hard, strong and durable, and free from clay and dirt. It shall be well graded with a maximum size of one-and-one-half (1½) inches.
5. REINFORCING STEEL - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

B. DESIGN MIX - The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5½ to 6 U.S Gals of water/94-pound bag of cement. The proportion of materials for the trial mix shall be 1 2 3½. The combination of the aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

C. MIXING - The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistancy. 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 mixture 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 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.

D. 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 should be mortar-tight and constructed so they can be removed without hammering or prying against the concrete. The inside of the forms will 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.

E. 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.

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

G. FINISHING - Defective concrete, honey combed areas, voids left by 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.

H. PROTECTION AND CURING - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least 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 compound may also be used.

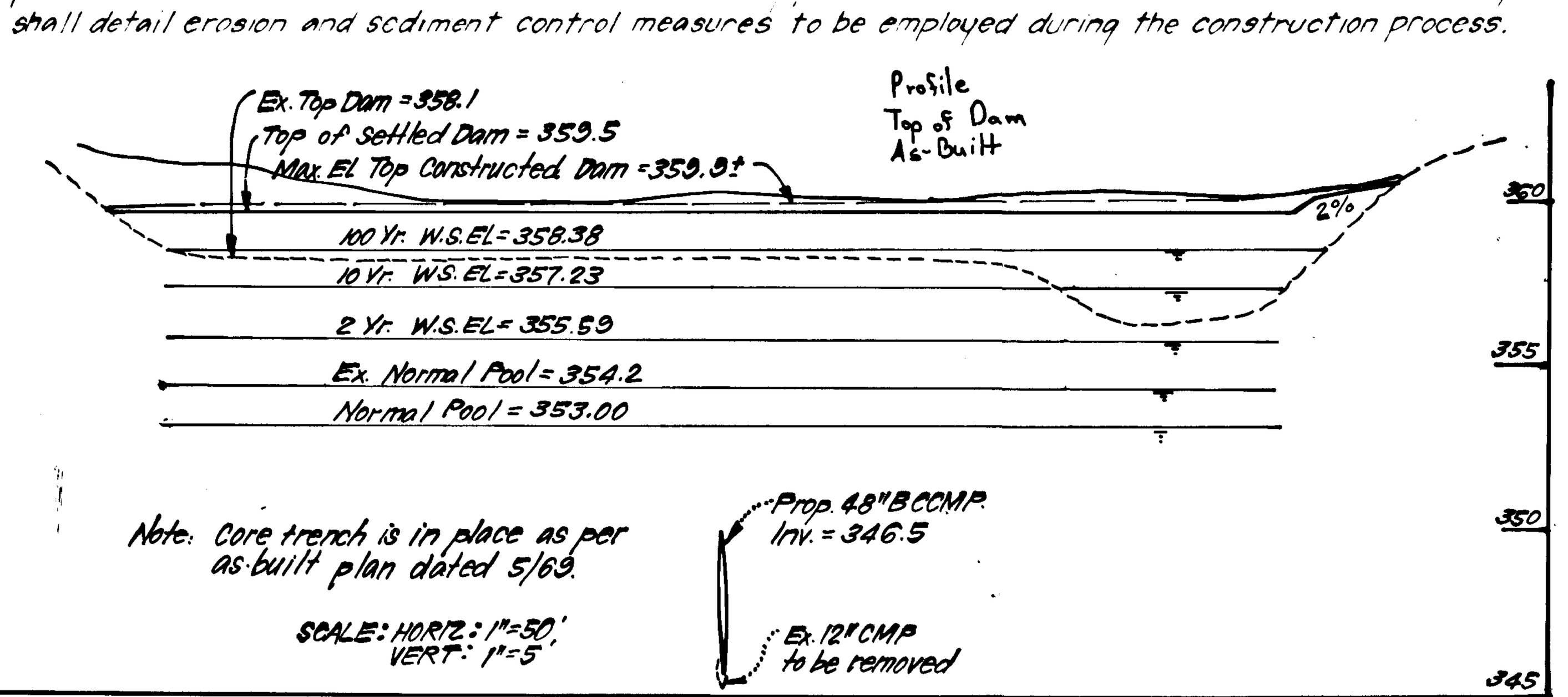
I. PLACING TEMPERATURE - Concrete may not be placed at temperature below 37°F with the temperature falling, or 34°F with the temperature rising.

VI STABILIZATION

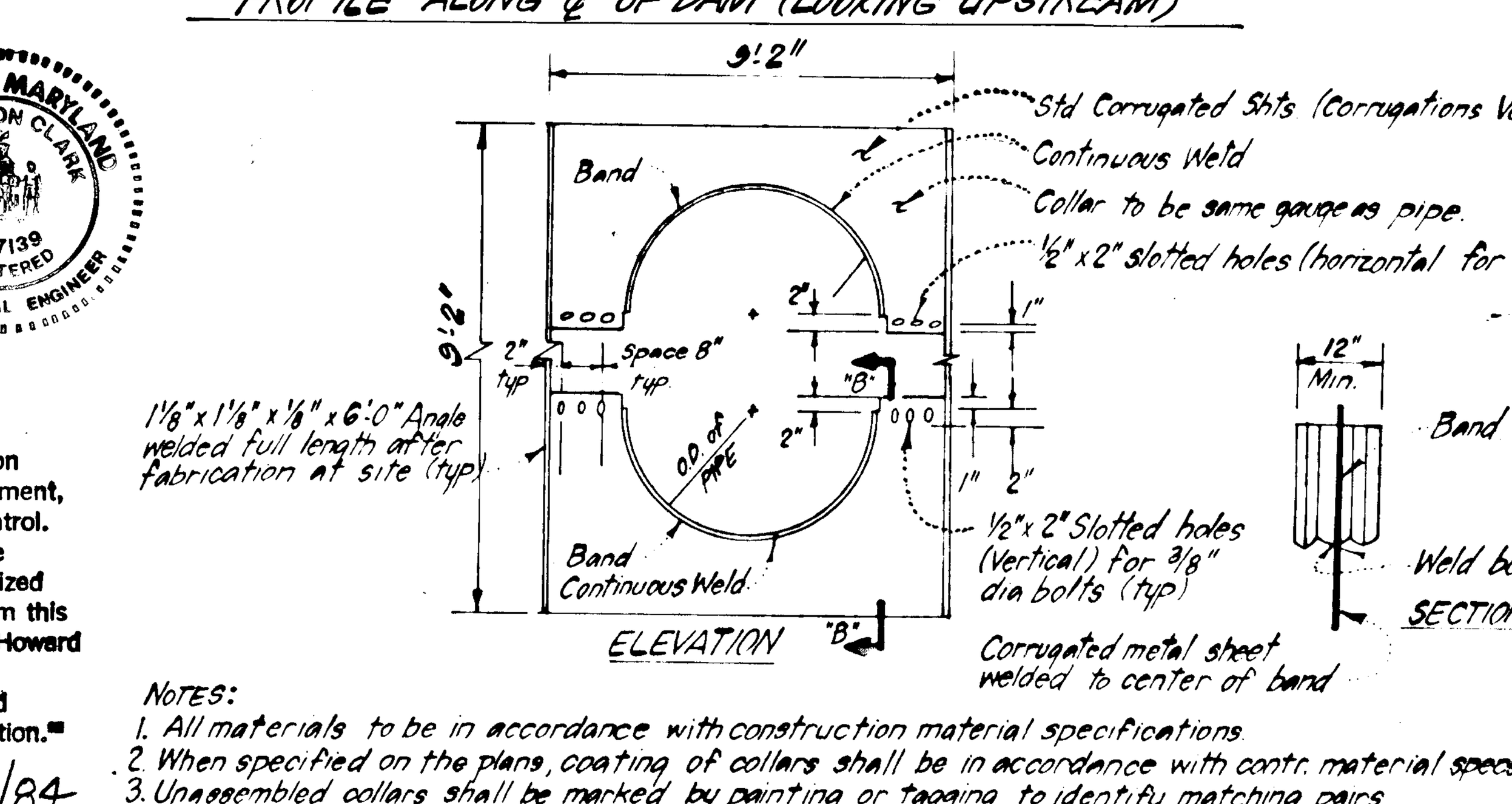
All borrow areas shall be graded to provide drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing, and mulching (if required) in accordance with the vegetative treatment specifications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



PROFILE ALONG ℄ OF DAM (LOOKING UPSTREAM)



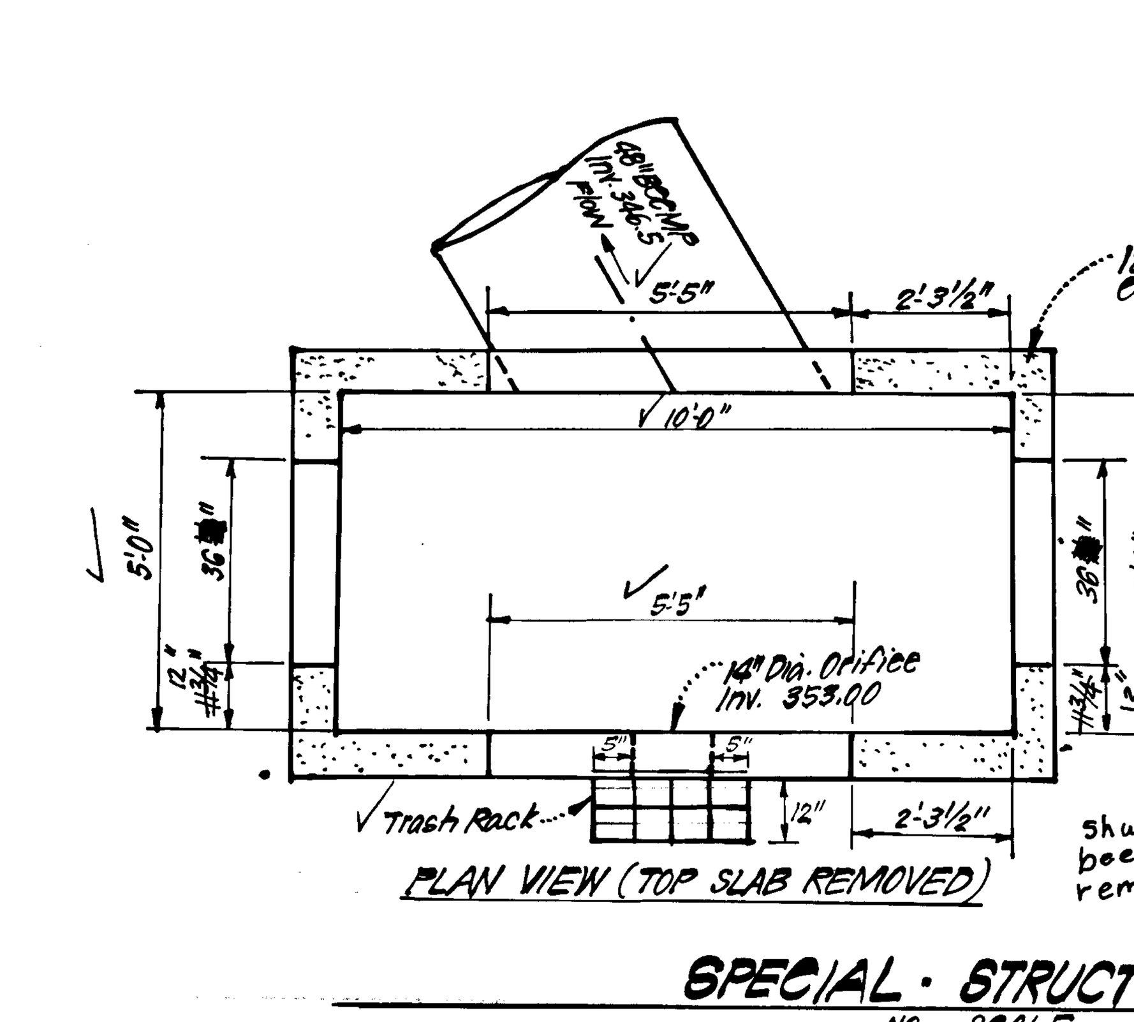
NOTES:
1. All materials to be in accordance with construction material specifications.
2. When specified on the plans, coating of collars shall be in accordance with contr. material specs.
3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
4. The lap between the 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 ½" diameter rods w/std. tank lugs for connecting collars to pipe.

CORRUGATED METAL ANTI-SEEP COLLAR DETAILS
NO SCALE

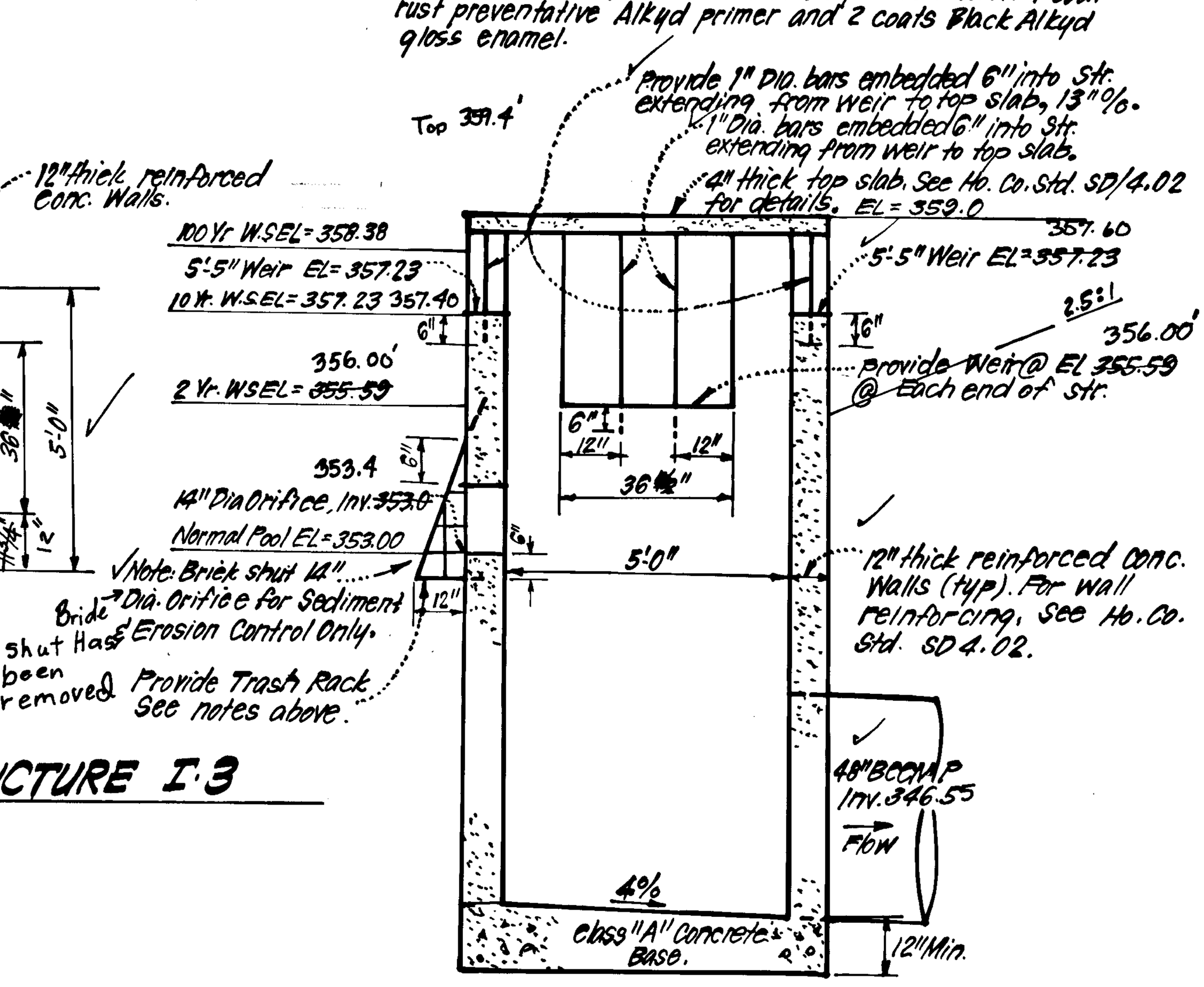
SEDIMENT & EROSION CONTROL NOTES

1. Grading Permits shall be obtained prior to installation of Sediment Control & Grading.
2. All Sediment and Erosion Control Measures will be installed and stabilized according to this plan prior to any other grading, clearing or disturbance of the existing surface of the site. See note #6 for stabilization except that the seed mixture will be annual rye applied at a rate of 1.4 lbs./1000 s.f.
3. Notify the Bureau of Inspections and Permits at least 24 hours before starting any work.
4. All Sediment Control Practices to conform to the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" and shall be adjusted to meet actual field conditions.
5. Stabilization of Disturbed ground to be done as soon after construction as possible.
6. All disturbed areas to be stabilized in accordance with the following Specifications:
   A. Seed - certified 85% germination applied at the rate of 3 lbs./1000 s.f. Mixture - 40% Kentucky Blue, 20% chewing Fescue, 20% Kentucky 31 and 20% annual rye.
   B. Fertilizer - 10-10-10 applied at a rate of 23 lbs./1000 s.f. Ground Agricultural Lime or Dolomitic Lime applied at a rate of 90 lbs./1000 s.f.
   C. Mulch - Weed free grain straw applied at a rate of 70-90 lbs./1000 s.f. Mulch shall be secured to the ground by any approved method i.e.; asphalt tacks, chemical binder etc.
   D. All Sod used shall be Maryland State Certified.
7. All structural Sediment Control Measures are to remain in place until permission for their removal has been obtained from the Bureau of Inspections and Permits.
8. On-Site Inspection and Maintenance of all Sediment Control Measures including clean out of Sediment Traps and Dikes, and proper establishment of all planned vegetative measures will be the responsibility of the developer or his representative on the site, on a continuing day to day basis.
9. It will be the developer's responsibility to provide additional Sediment & Erosion Control Devices to protect stabilized areas during construction.
10. The Contractor shall keep all public roads free of sediment deposits left from traffic leaving construction site.
11. Approval of this plan is conditional upon the approval of Sediment Control Plan for the off-site waste or borrow area prior to the import of any borrow or export of waste to or from this site.
12. All pipes to be blocked at the end of each day. See detail this sheet (N/A)
13. Total Amount of Straw Bales or Silt Fence shown = None L.F.
14. SITE ANALYSIS:
   A. Total Area: 15.062 Acres.
   B. Area to be Roofed None Acres.
   C. Area to be Paved 1.758 Acres.
   D. Area to be Seeded 5.175 Acres.
   E. Area Undisturbed 8.129 Acres.

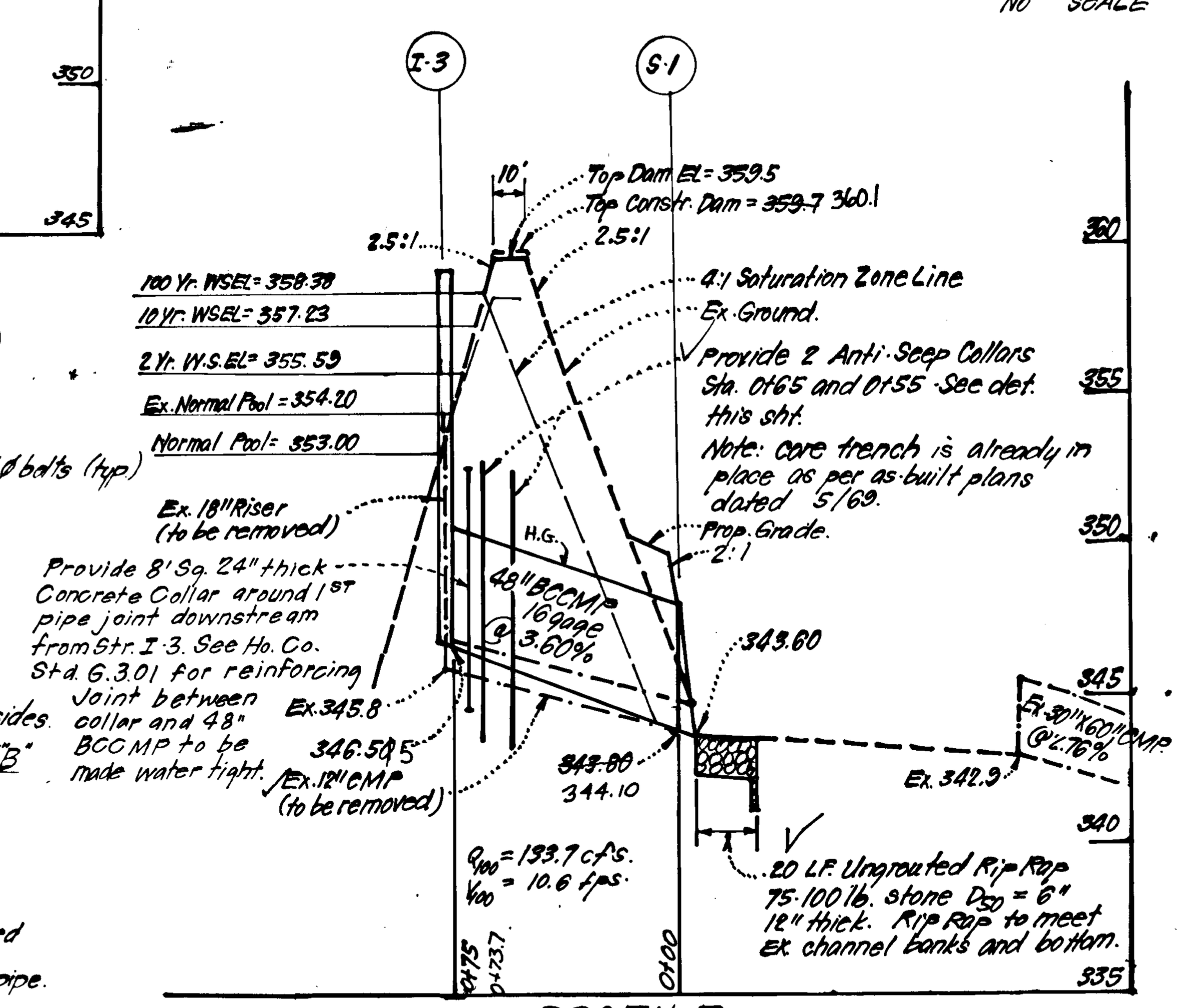
TRASH RACK NOTES:
(1) Trash rack to be made of ½" dia. bars, welded together. 6" o/c
(2) Trash rack to be connected to structure by embedding bars 6" into walls.
(3) After fabrication, trash rack to be painted with 1 coat rust preventative Alkyd primer and 2 coats Black Alkyd gloss enamel.



SPECIAL · STRUCTURE I-3
NO SCALE



SECTION



PROFILE

AS-BUILT

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.

[signature] 8-16-84
U.S. Soil Conservation Service — Date

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

Approved [signature] 8-16-84
Howard S.C.D. — Date

#85D
Plan Number

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] 6-19-84
Signature of Engineer — Date

DEVELOPER'S CERTIFICATE

"I certify that all development and/or construction will be done according to these plans of development, pond construction and erosion and sediment control. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviation from this plan will not be made unless authorized by The Howard Soil Conservation District. I will provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."

[signature] 6/20/84
Signature of Developer — Date

Nº	REVISION	DATE
1	Added concrete collar around 48" BCCMP.	10-26-84

APPROVED: DEPARTMENT OF PUBLIC WORKS
[signature] 8-17-84
Chief, Bureau of Engineering — Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
ACTING [signature] 8-16-84
Chief, Division of Land Development & Zoning Administration — Date

CLARK · FINEFROCK & SACKETT
ENGINEERS · PLANNERS · SURVEYORS
11315 LOCKWOOD DRIVE • SILVER SPRING, MARYLAND 20904 • (301) 593-3400

DESIGNED: JLS	ROAD CONSTRUCTION PLANS STORM WATER MANAGEMENT NOTES & SEDIMENT & EROSION CONTROL NOTES	SCALE: As Shown
DRAWN: K/W	SEWELLS ORCHARD SECTION 3 AREA 1 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING: 4 OF 4
CHECKED: JLS		JOB NO. 83-076
DATE: 6-18-84	FOR: ORCHARD ASSOCIATES P.O. Box 919 Columbia Md. 21044	FILE NO. 83-076-D

6/19/84

F-84-215