

GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standard and specifications if applicable.
- The contractor shall notify the Dept. of Public Works Bureau of Engineering, Construction Inspection Div. at (410) 315-1880 at least (5) working days prior to start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- The contractor shall notify the Howard County Department of Public Works, Bureau of Utilities at (410) 313-4900 at least five working days prior to starting any excavation work.
- Site area: 5.3441 acres.
- All plan dimensions are to face of curb unless otherwise noted.
- Existing topography reflects grading indicated on Field Topo Study, dated 6/24-7/16/87 by George William Stephens Jr. & Assoc., Inc.
- Coordinates and bearings are based upon the MD State plan system (NAD '83).
- Water and sewer shown is public. Contract No. 24-1025-D. Drainage Area: 1.84 ac.
- Stormwater Management for this site is proposed on site. See Additional Notes on this sheet.
- All existing water and sewer is per Contract 24-1025-D.
- All existing public storm drain is per F-82-28-C.
- All curb radii is 5' unless noted otherwise.
- Sidewalks adjacent to perpendicular parking shall be 6' wide. All other sidewalks shall be 4' wide except where dimensioned otherwise.
- Contractor shall utilize PVC pipe for all sewer house connections. Contractor shall utilize D.I.P. (CL 51) for 8" water house connections.
- Use trench bedding class "C" for storm drains.
- Paved areas indicated are private except as noted.
- Project background: See Dept. of Planning & Zoning File Numbers: FDP 184-A-III, SDP 88-142
- Recording reference: Plot No. 56AD
- All proposed ramps shall be in accordance with current A.D.A. standards. Maximum sidewalk cross slope shall be two percent. Provide a five-foot by five-foot level (2 percent max.) landing at the top and bottom of all ramps and building entrances and exits.
- All water meters shall be located inside buildings.
- All proposed site utilities are to terminate 5' from the building. The building plumber shall connect to and extend these utilities to the inside of the building.

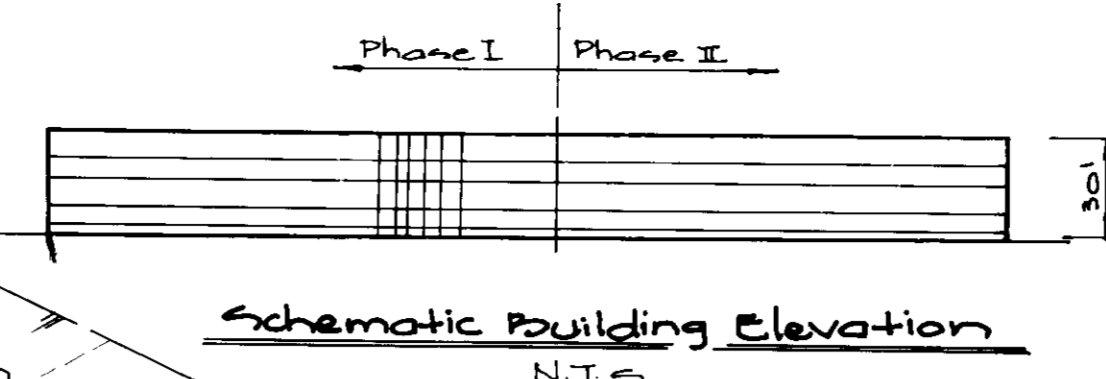
Stormwater Management Notes

- The Facility will be privately owned.
- The Facility will satisfy water quality by the use of stormceptors. Water quantity will be managed by a detention pond.
- The Facility has a hazard class of A.

Entrance Construction Limits

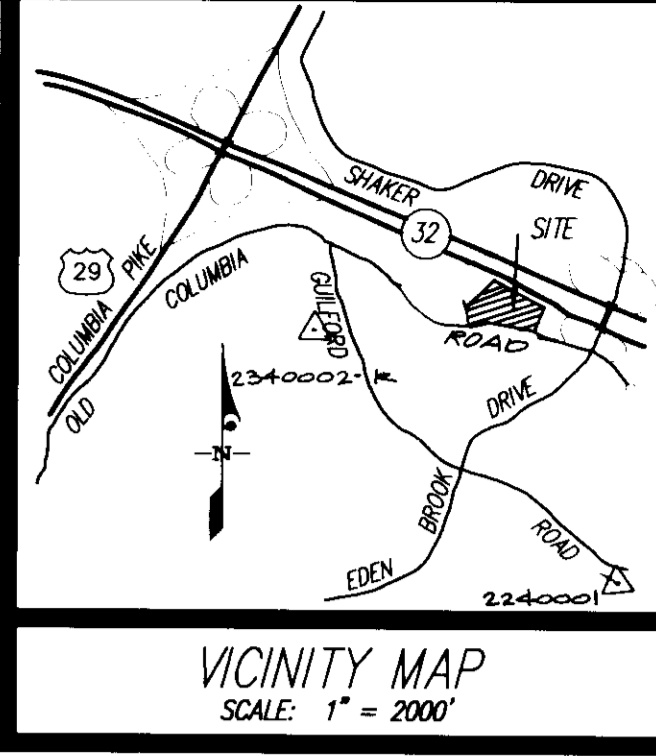
No.	Station	Off Set
1	110+2.8	22' Lt.
2	110+4.6	29' Lt.
3	110+5.2	42' Lt.
4	110+7.5	42' Lt.
5	110+8.2	29' Lt.
6	110+9.6	22' Lt.
7	1+87	15' Rt.
8	2+07	21' Rt.
9	2+19	38' Rt.
10	2+49	30' Rt.
11	2+55	22.5' Rt.
12	2+65	15' Rt.

Modular block wall by Keystone or approved equal to follow manufacturer's recommendations.



Bench Marks

- No. 2240001 Conc. Monument 16'± South of South Edge of Road; N 48° 19' 36" E 839.811. 396 Elevation: 329.697
- No. 2340002-R R. B. 15'± West of West Edge of Road 1' below surface; N 48° 08' 39" E 836.802. 852 Elevation: 362.611



Stormwater Management Summary Table

- Drainage Area to Stormceptor at Manhole M100 is 2.25 Ac.
- Drainage Area to Stormceptor at Manhole M103 is 2.02 Ac.
- Drainage Area to Dry Pond is 4.8 Ac.
- Summary Table.

	2 Yr.	10 Yr.	100 Yr.
Allowable release rate	6.4 cfs	17.0 cfs	30.7 cfs
Computed Inflow	12.6 cfs	23.9 cfs	36.4 cfs
Computed Discharge	5.8 cfs	16.2 cfs	42.8 cfs
Computed Elevation at the discharge	319.93	321.14	321.87
Storage Volume provided at above elevation	0.21 acft	0.41 acft	0.55 acft

SITE ANALYSIS: PARCEL "M-3"

- AREA OF PARCEL: 5.3441
- ZONING: NT (Newtown)
- PROPOSED USE: Office
- BUILDING AREA: 51,000 sq ft
- TOTAL PARKING REQUIRED: 114 spaces
- TOTAL PARKING PROVIDED: 208 spaces
- NO. OF HANDICAP SPACES REQUIRED: 7
- NO. OF HANDICAP SPACES PROVIDED: 17
- TOTAL NO. OF HANDICAP SPACES PROVIDED: 2
- NO. OF HANDICAP VAN SPACES PROVIDED: 2
- Max. Coverage allowed: 50%
- Coverage Provided: 19.7%

Parking Required
Office @ 2 sp/1000 (51,000) = 114 spaces
208 - 114 = 94 surplus

- Existing Utilities are based on Field Topo Study dated 6/24-7/16/87 by George William Stephens Jr. & Assoc., Inc. and approved design plans for construction.
- There is no Floodplain on this site.
- There are no Wetlands on this site.
- No traffic study is required for this site.
- All bulk requirements and setbacks are per SDP 184-A-III. Recorded Sept. 22, 1990.

Note:
 ** Transition from 7" high curbs (in Right of Way or private access drive) to 6" high curbs (site).
 * Existing river structure to be removed.
 *** Transition from 12" gutter to 12" gutter pan in no less than 10'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Director: *[Signature]* 6/11/96
 Chief Engineer: *[Signature]* 6/11/96
 Chief Development Engineer: *[Signature]* 6/11/96

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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

[Signature] 5-10-96
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

[Signature] 5/10/96
 Signature of Developer/Builder 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.

[Signature] 6/10/96
 Natural Resources Conservation Service Date

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

[Signature] 6/10/96
 Howard Soil Conservation District Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20886
 TEL: (301) 421-4024 NO. VA. (301) 989-2524 BALI: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. SAC. CHK.

REVISION	DATE	BY	APP'R.

PREPARED FOR:
RIVERS 19 PARTNERSHIP
 C/O MANEXIN CORPORATION
 7165 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 (410) 290-1400

as-built site development plan SWM
RIVERS CORPORATE PARK
 PARCEL M-3
 SECTION 1 AREA 1
 HOWARD COUNTY, MARYLAND

WATER CODE	SEWER CODE	PARCEL NUMBER	STREET ADDRESS
118	118	M-3	10700 OLD COLUMBIA ROAD

PLAT	ZONE	TAX MAP	BLOCK	ELEC. DIST.	CENSUS TRACT
5688	NEW TOWN	42	1	42	008.01

SCALE	ZONING	C. L. W. FILE No.
1" = 40'	N.T.	96034

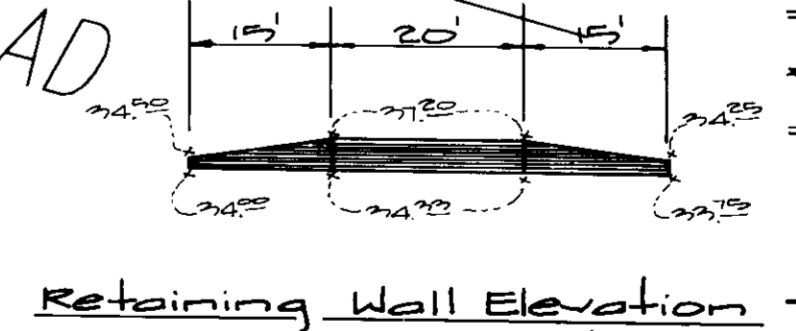
DATE	TAX MAP No.	SHEET
APRIL 1996	42	1 of 11

Sheet Index

- Site Plan.
- Site Details.
- H.C. Accessibility Details.
- Landscape Plan.
- Sediment Control Plan.
- Sediment Control & SWM Details.
- Sediment Control Notes & SWM Specifications.
- Utility Profiles.
- Utility Details.
- Drainage Area Map.
- Soil Boring Logs.

Legend

- Exist Contour.
- Proposed Contour.
- Proposed Spot Elev.
- Standard Combination Curb & Gutter.
- Reverse Combination Curb & Gutter.
- Exist Combination Curb & Gutter.
- Number of Parking Spaces.
- Patron/Hc Access to Bldg.
- Phase Line.
- 30' Light Pole, Fixture & Base.
- 150 Watt HPS Vapor pendant fixture (cut-off) mounted on a 30' galvanized steel pole. Sta. 110+28 ~ 28' Lt. Sta. 100+99 ~ 25' Lt.



Operation Maintenance & Inspection

Inspection of the pond shown hereon shall be performed at least annually in accordance with the checklist and requirements contained within USCS PCS standards and specifications for Ponds (MD-910). The pond owner and any heirs, successors, or assigns shall be responsible for the safety of the pond & continued operation, surveillance, inspection & maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observation that may be indications of distress such as excessive seepage, turbid outflow, sliding or slumping. For further information see sheet 7.

COLUMBIA ROAD

OLD

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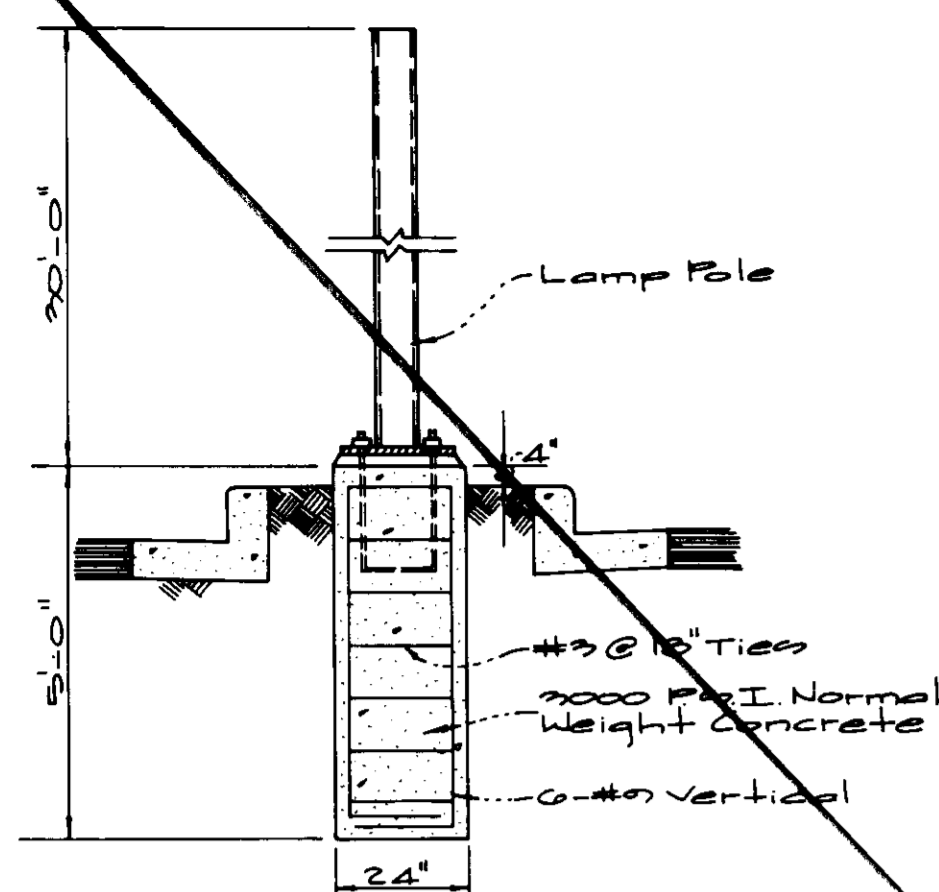
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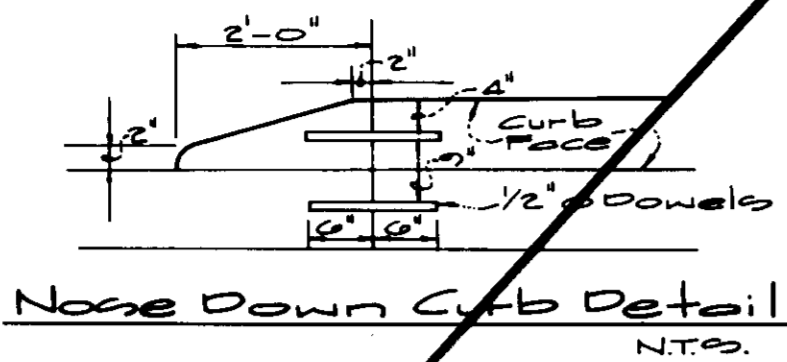
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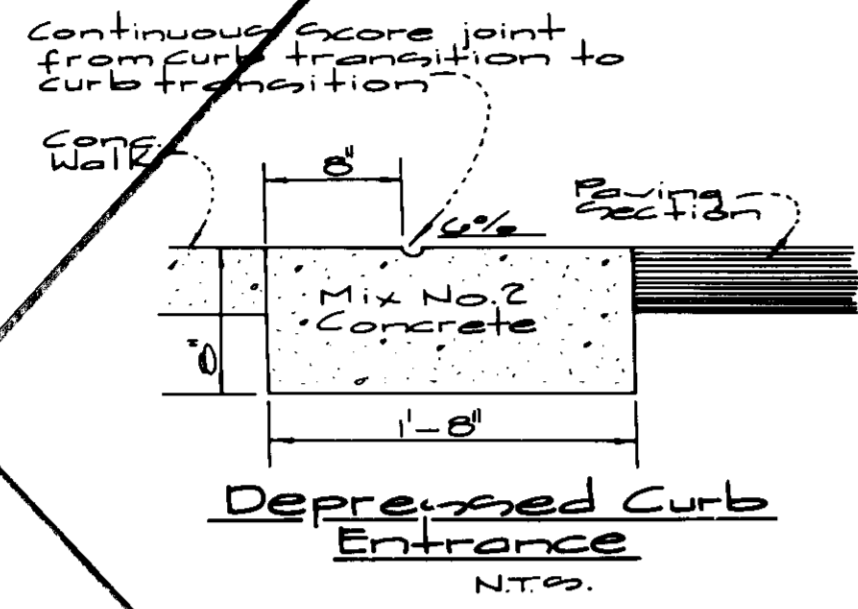
Note: Information not shown by lamp pole manufacturer



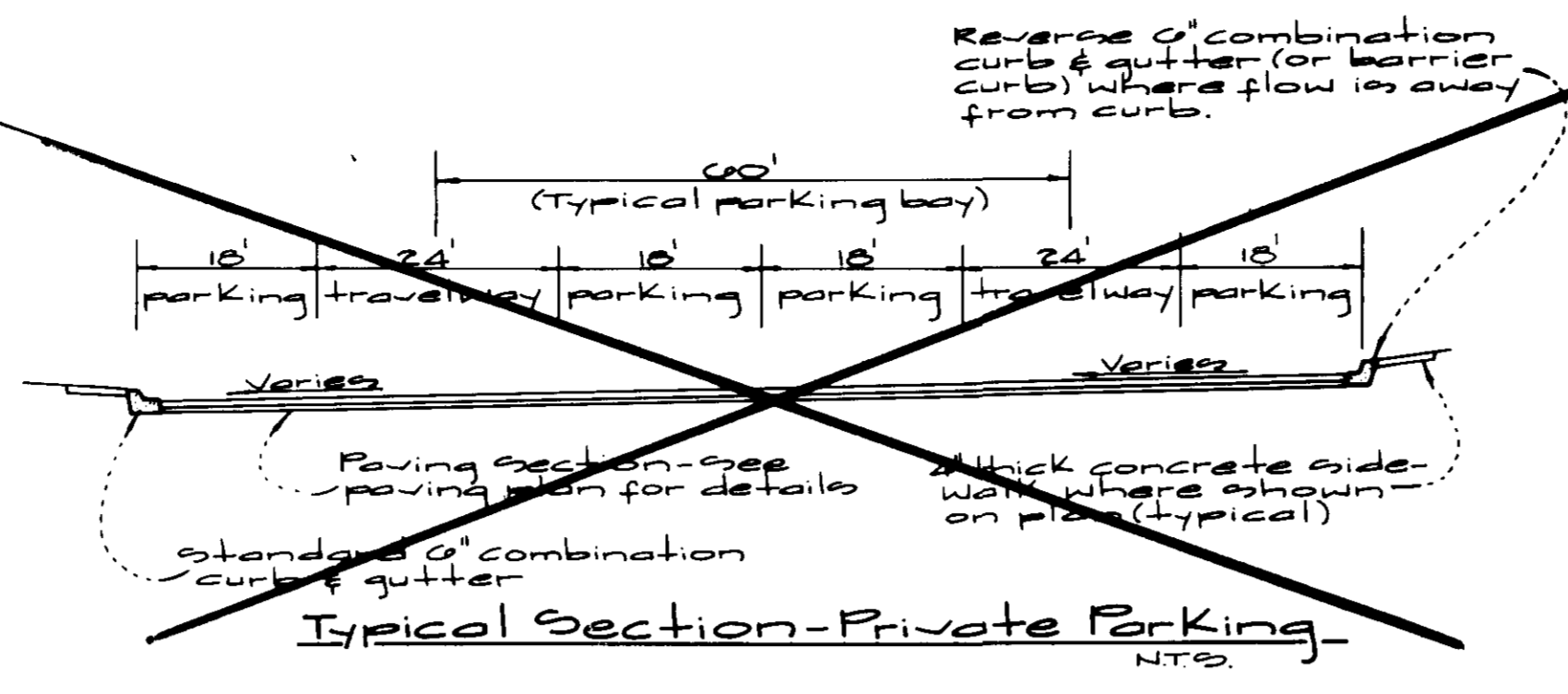
Lamp Pole Base Detail (In curb & gutter Island) N.T.S.



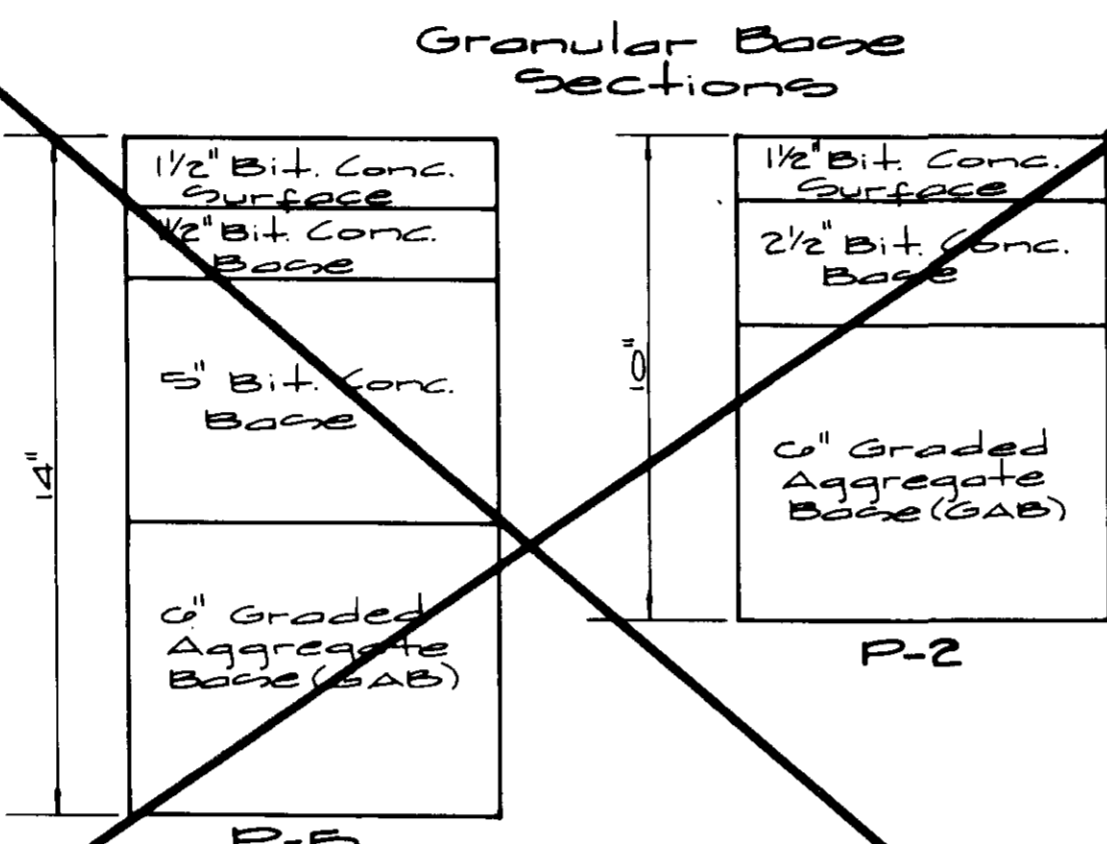
Nose Down Curb Detail N.T.S.



Depressed Curb Entrance N.T.S.

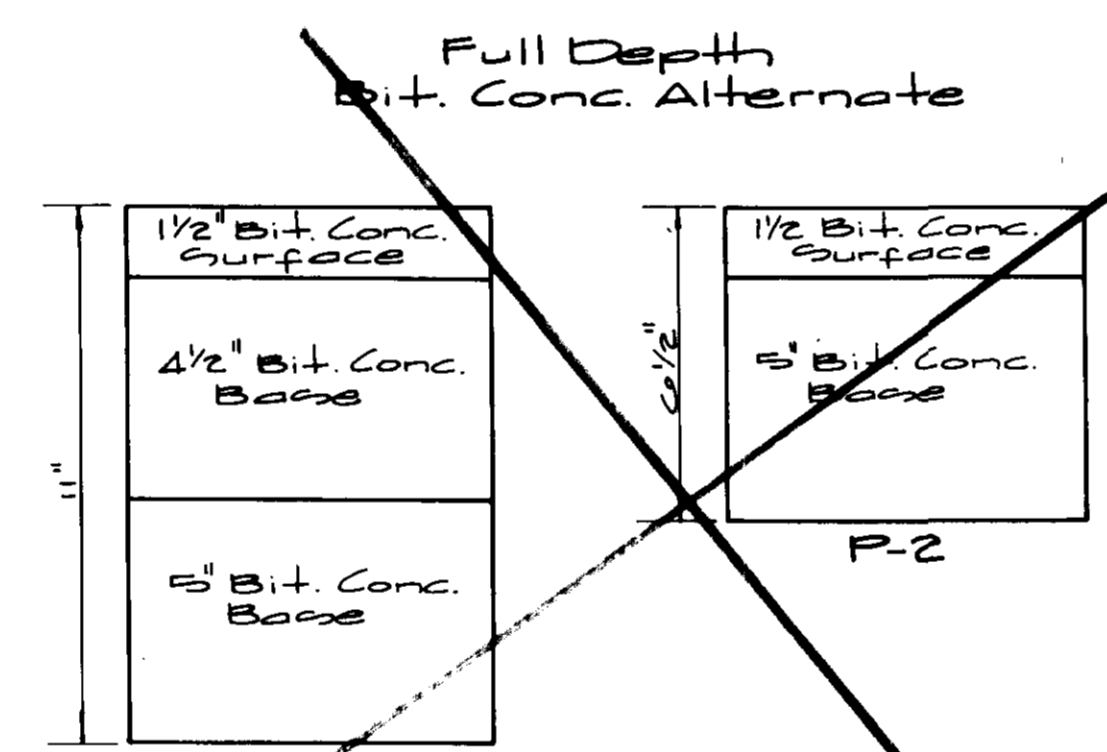


Typical Section-Private Parking N.T.S.



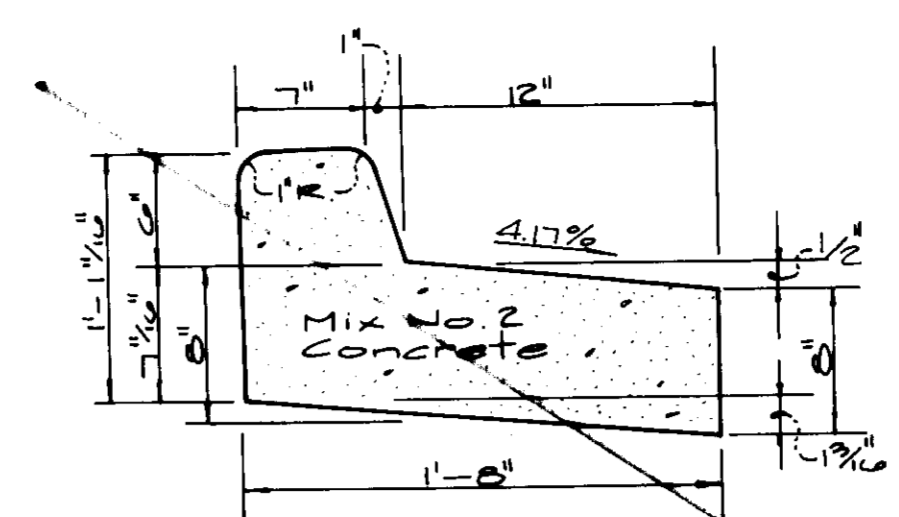
Paving Sections N.T.S.

Note: Other equivalent paving sections may be approved where approved by a professional soils engineer.

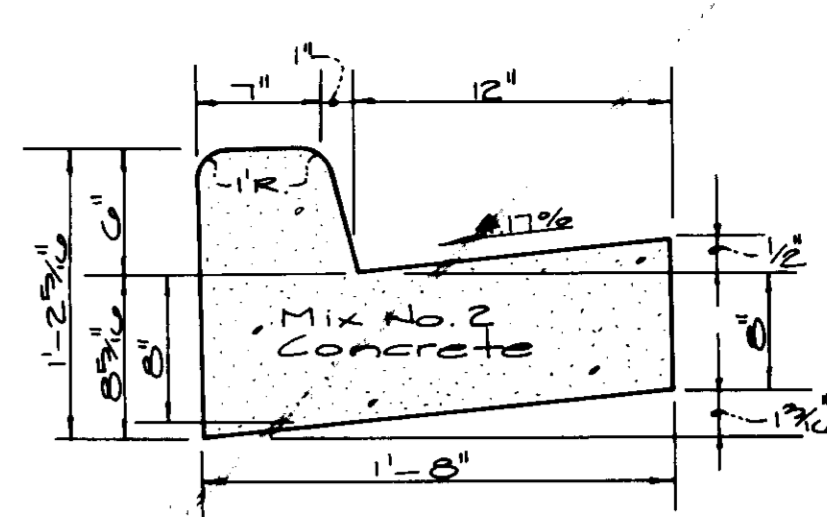


Paving Sections N.T.S.

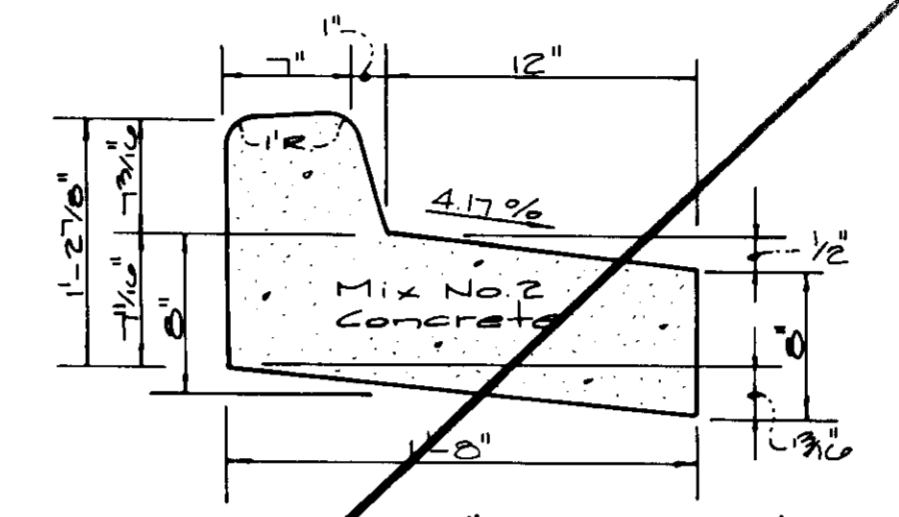
Note: Other equivalent paving sections may be approved where approved by a professional soils engineer.



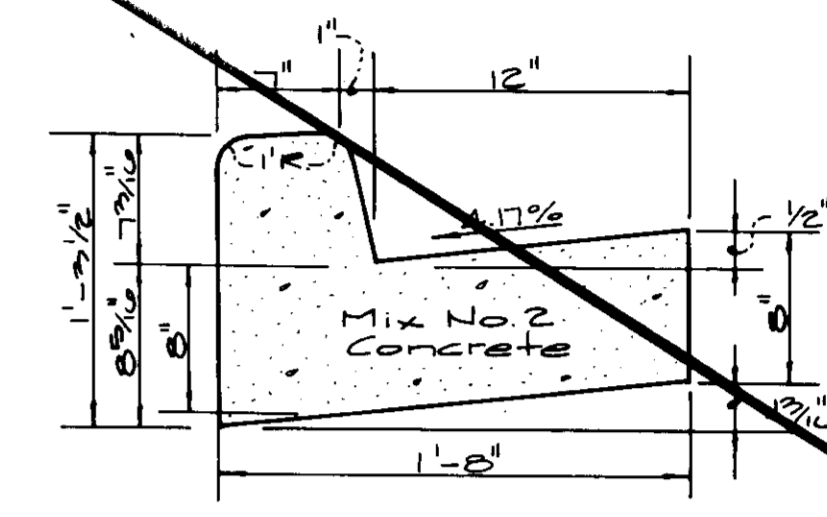
Reverse 6" Combination Curb & Gutter N.T.S.



Standard 6" Combination Curb & Gutter N.T.S.

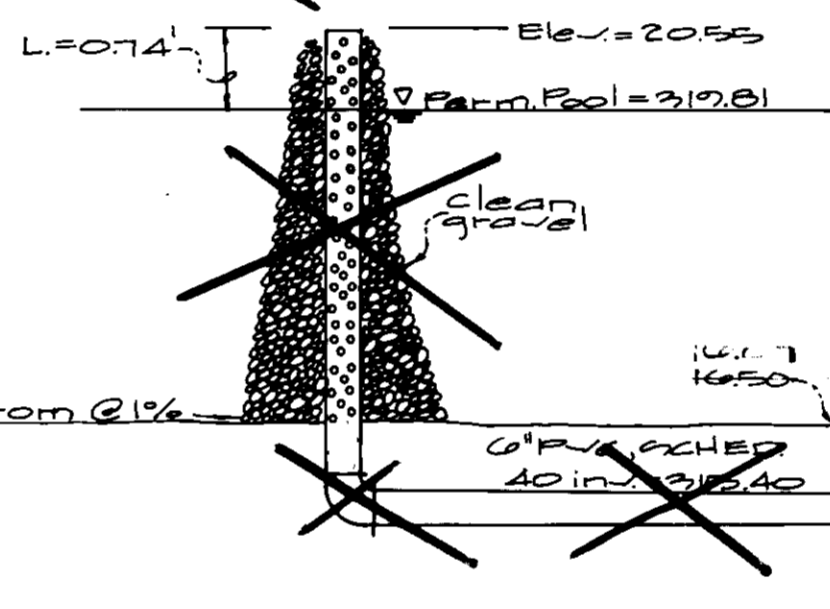


Reverse 7" Combination Curb & Gutter N.T.S.



Standard 7" Combination Curb & Gutter N.T.S.

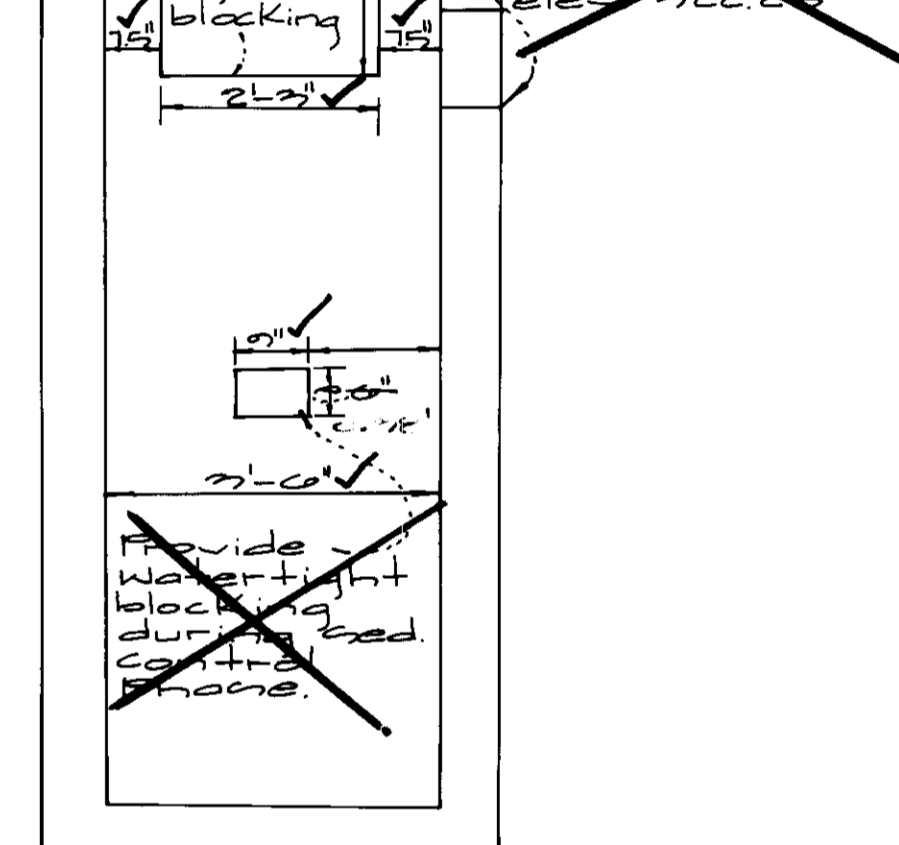
1/2" PVC drawdown device w/ watertight cap 11" Perf. @ 6" o.c. See detail A. Paving section to be wrapped with hardware cloth geotextile fabric 12" x 6'.



Note: For more information on release structure refer to SWM details on sheet C.

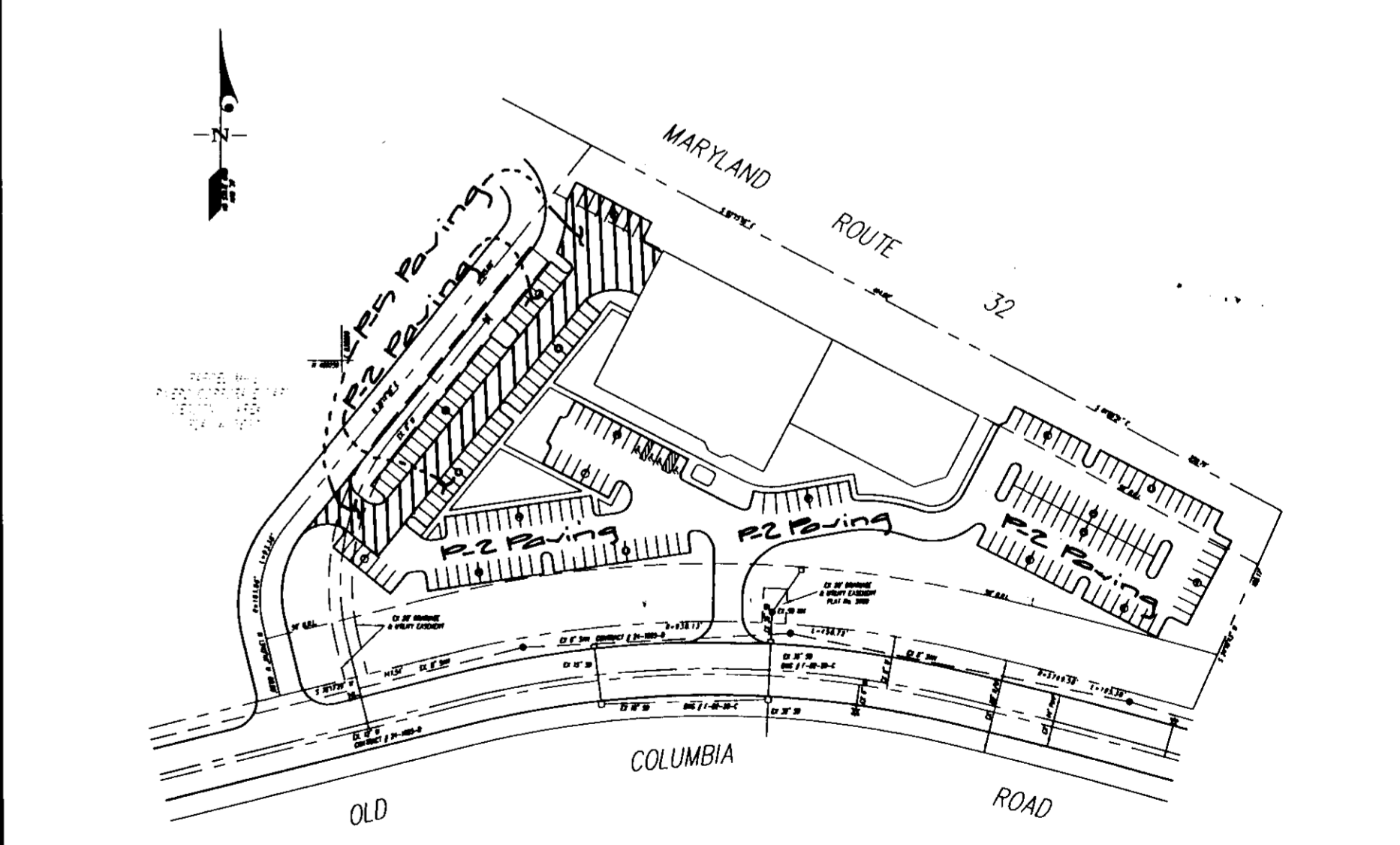
Note: Provide temp. watertight blocking of all SWM openings to top of slab or install top slab or track racks used. Control Phase.

Note: Provide 12" PVC opening for temp. SWM (12" x 12" x 12"). All openings to be blocked to elev. 322.00.

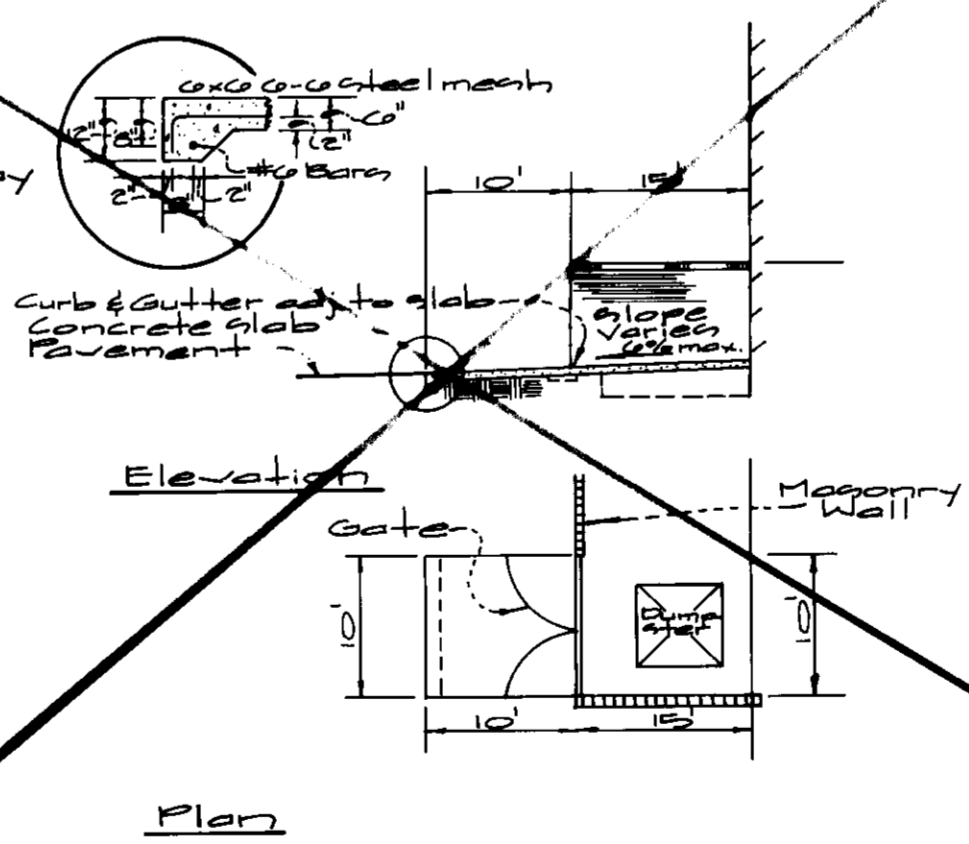


Front View From Inside

- Notes:
- Sidewalk to be scribed in 5' maximum squares.
 - Expansion joints across the sidewalk not to be more than 15' apart.
 - 1/2" preformed bituminous expansion material in expansion joints to be kept 1/2" below surface of sidewalk.
 - Concrete to be mix No. 2.
 - When sidewalk abuts curb/walk shall be 1/2" above curb with preformed bituminous expansion material between sidewalk and curb and resting on a compacted crushed stone base. See detail A this sheet.
 - On longitudinal sidewalk grades of 5% or greater, a concrete header, 6" thick and 6" deep below the normal 4" sidewalk thickness shall be constructed for the full width of the sidewalk at intervals of 40'. The headers shall be placed at expansion joint locations and shall be monolithic with the sidewalk.

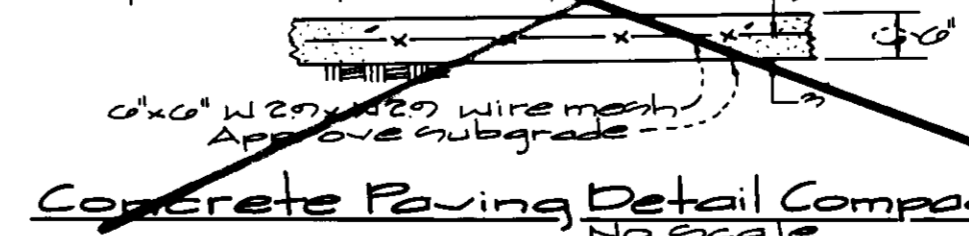


Paving Plan N.T.S.



Dumpster Pad & Enclosure No Scale

Notes: 1. Materials and construction to be in accordance with H.C. Std. 10. 2. See plan view for limits of paving shown.



Concrete Paving Detail Compactor Area No Scale

APPROVED PLANNING BOARD of HOWARD COUNTY DATE 6/6/96

Approved: Howard County Department of Planning & Zoning Director Date 6/11/96



GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 230 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
TELEPHONE: (301)421-4024 NO VA (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186

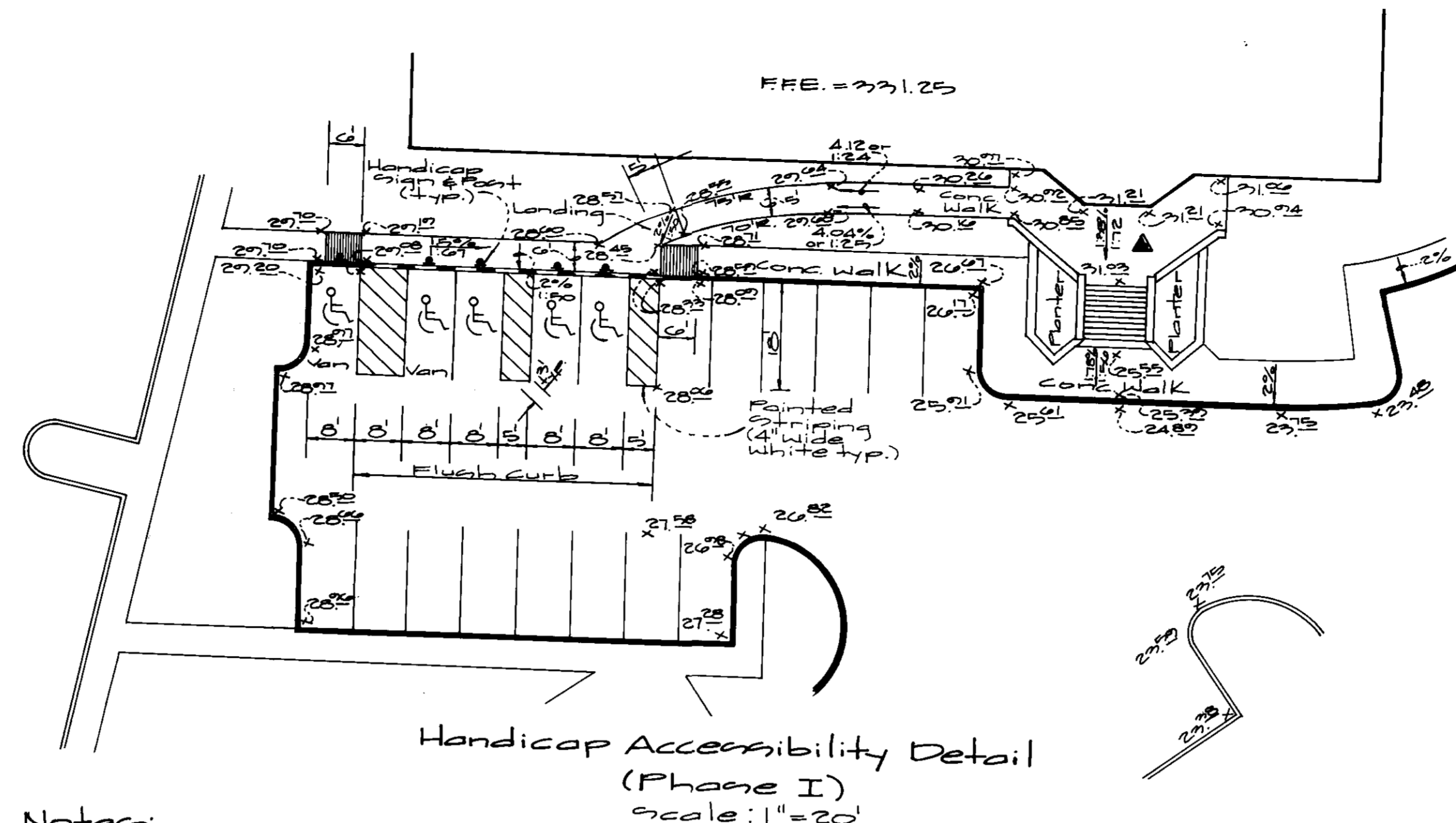
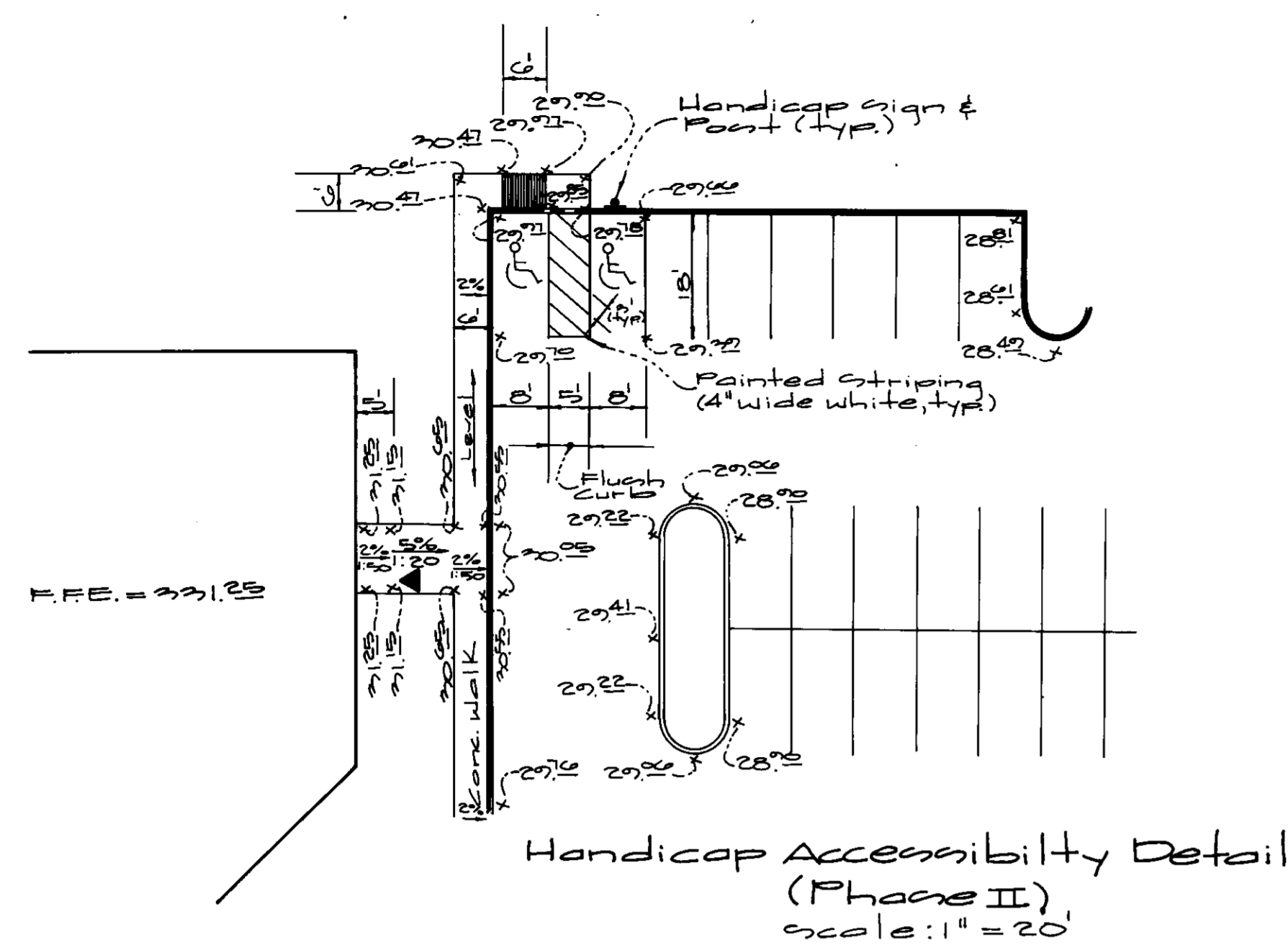
DATE	REVISION	BY	APPR.

PREPARED FOR:
Rivers 19 Partnership
c/o Manekin Corporation
7103 Columbia Gateway Drive
Columbia, MD 21046
(410)290-1400

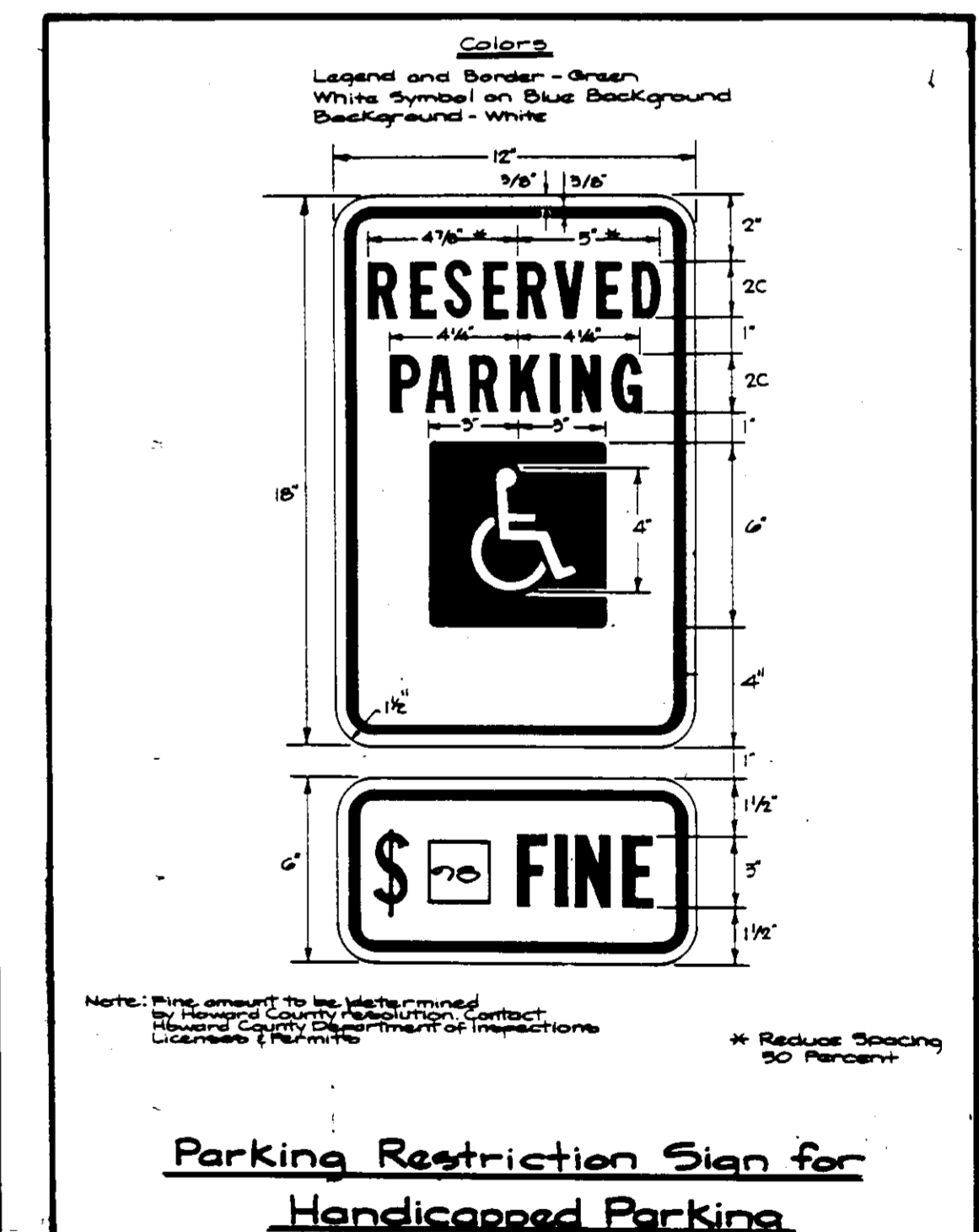
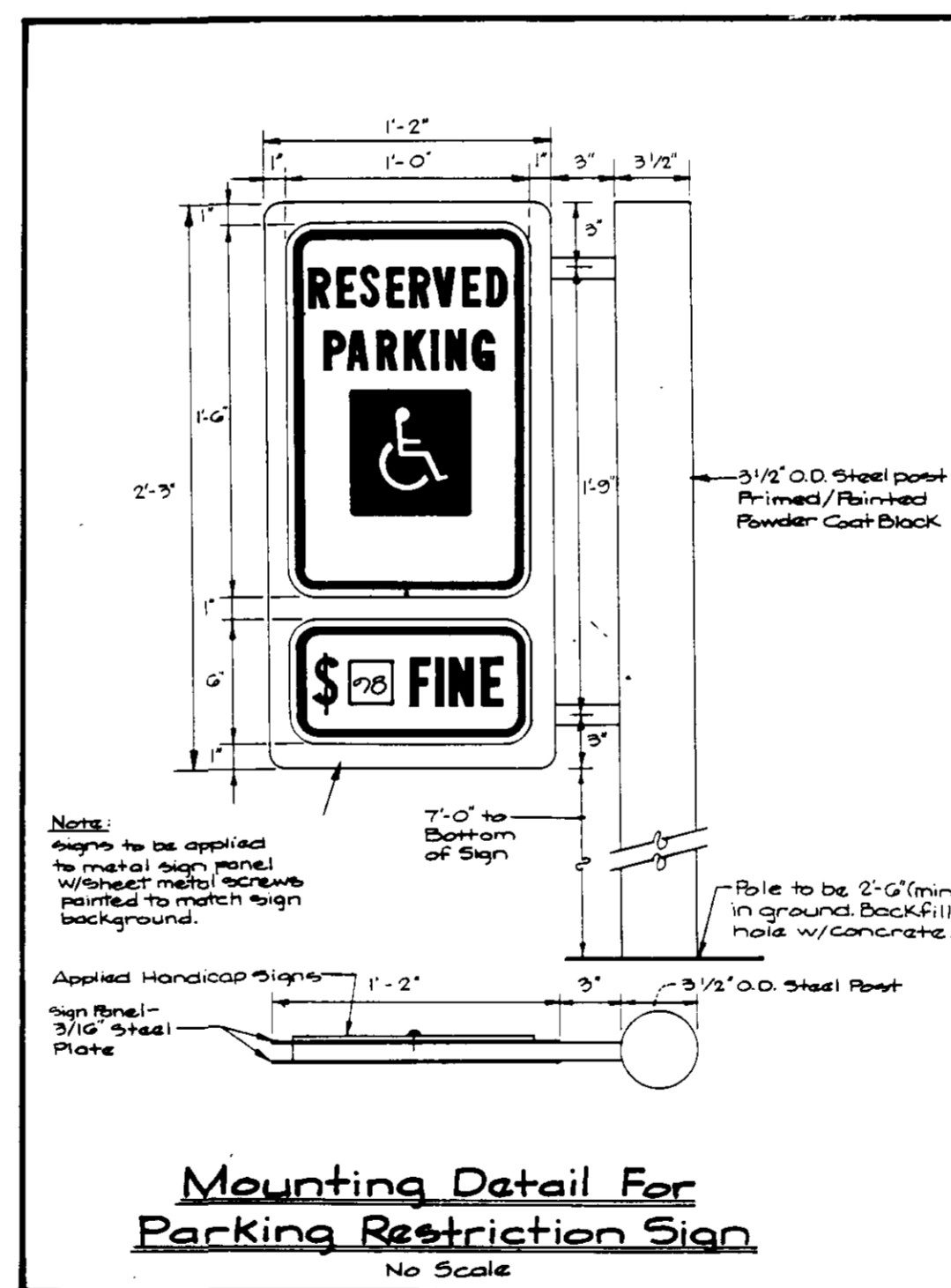
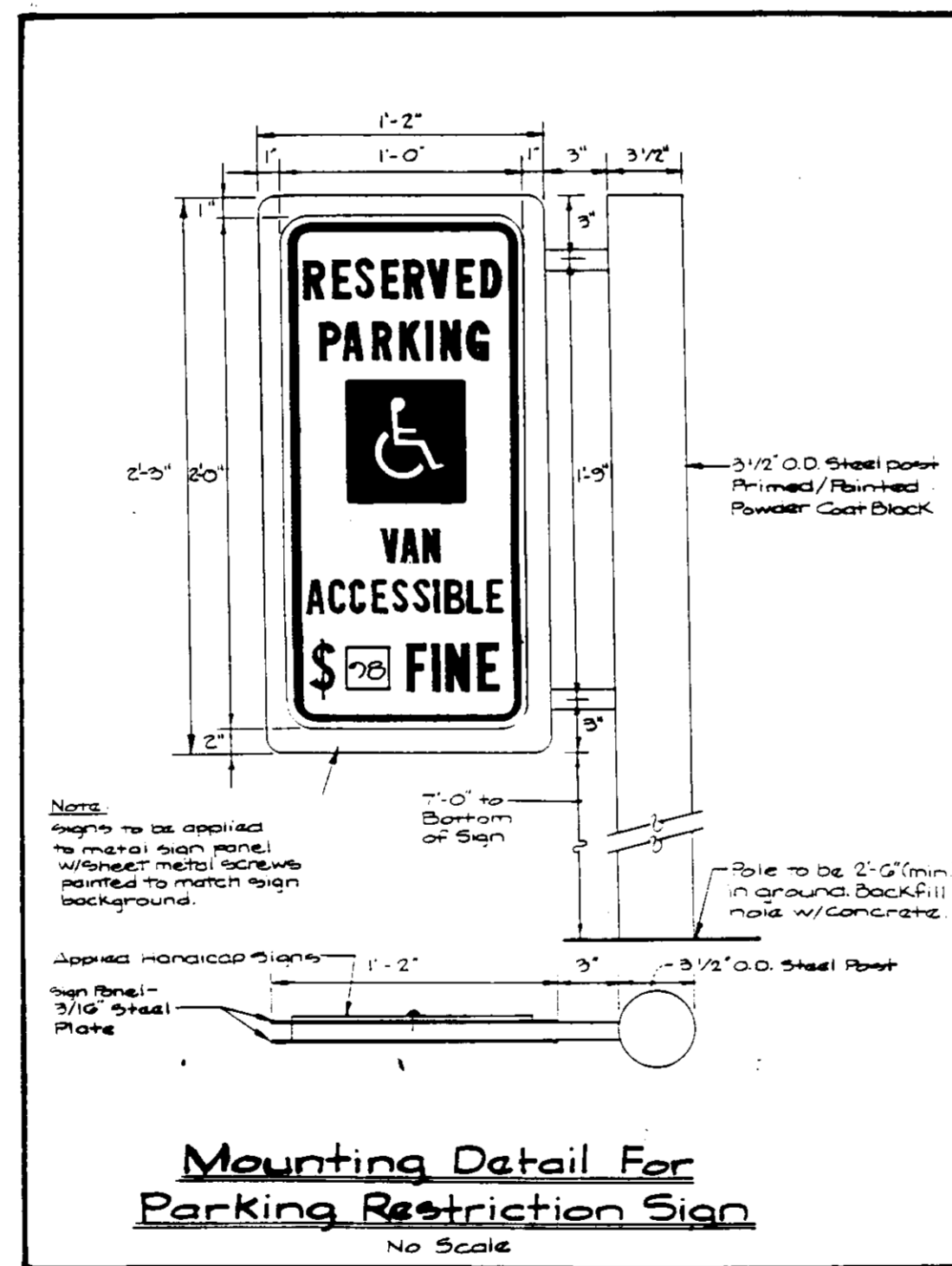
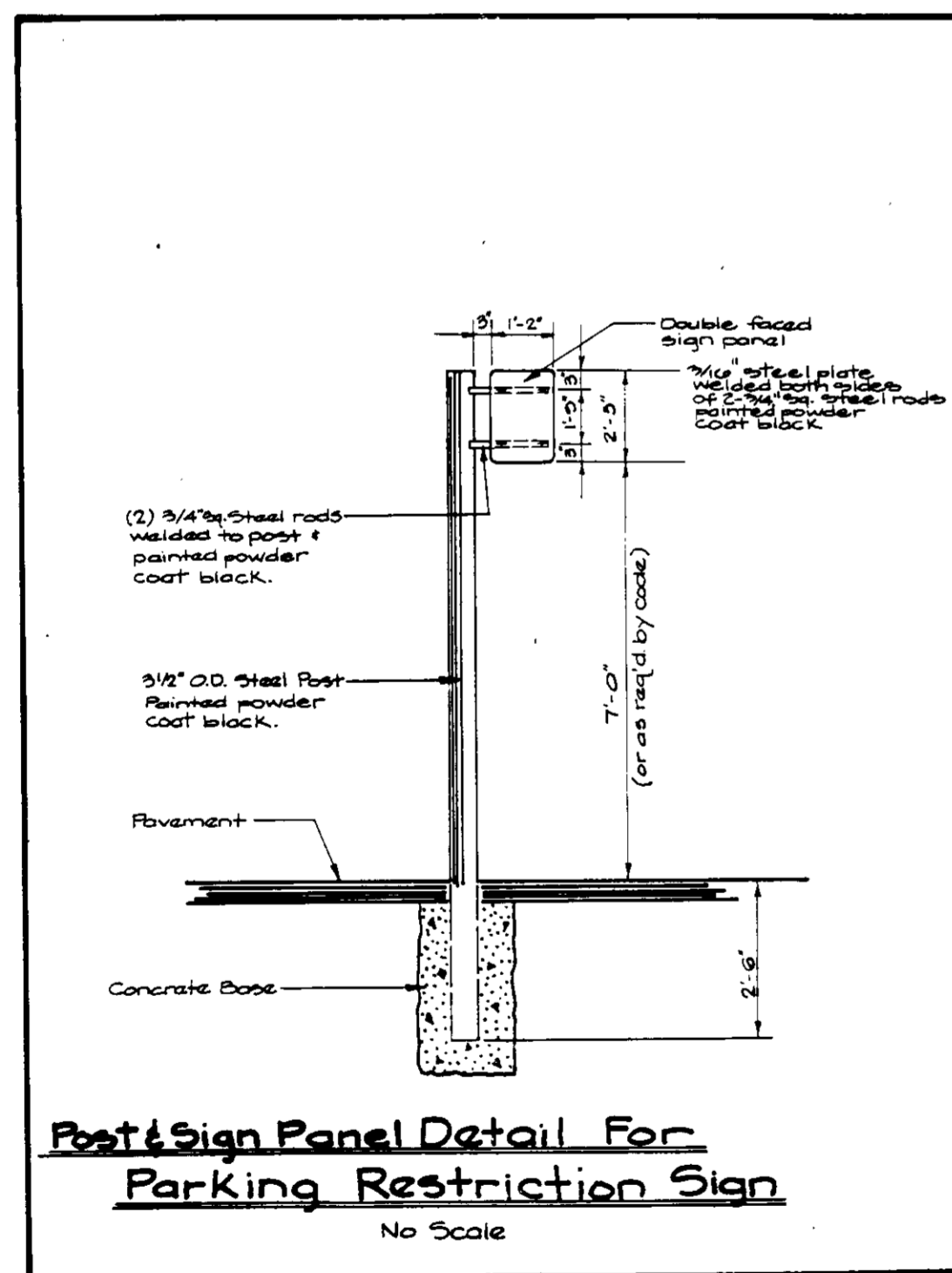
CR-BUILT site Details & Paving Plans
Rivers Corporate Park
Parcel M-3
Section I Area I
Guilford Election District No. 6
Howard County, Maryland

DES.:	SCALE	ZONING	G.L.W. FILE NO.
DRN.:	As Shown		90-034
CHK.:	DATE	TAX MAP NO.	SHEET
	1997	42	2 of 11

SDP-96-130



- Notes:**
1. Maximum sidewalk cross slope is 2% (1:50)
 2. A 3' x 3' minimum level (2%) landing is required at the top and bottom of all ramps. Ramps are slopes greater than 2%.
 3. Maximum slope in any direction of the handicap accessible parking is 2%.



Approved: Howard County Department of Planning & Zoning
 Date: 6/11/96
 Chief, Division of Land Development and Inspection
 Date: 6/11/96
 Chief, Development Engineering Division



GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS

3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866

TELEPHONE: (301)421-4024 NO VA (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

DATE	REVISION	BY	APPR.

PREPARED FOR:
 Rivers '97 Partnership
 c/o Manekin Corporation
 7115 Columbia Gateway Drive
 Columbia, MD 21046
 (410)290-1400

Handicap Accessibility Details
Rivers Corporate Park
 Parcel M-3
 Section 1 Area 1
 Guilford Election District No. 6
 Howard County, Maryland

DES.:	SCALE	ZONING	G.L.W. FILE NO.
DRN.:	As shown		90-074
W.S.I.:	DATE	TAX MAP NO.	SHEET
CHK.:	May, 1996	42	3 of 11

SCHEDULE A PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	EDGE	E B
Linear Feet of Roadway Frontage/Perimeter	1275' 345'	
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	-280' NET 995'	
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)		
Number of Plants Required	25	7 = 32
Shade Trees		
Evergreen Trees	249	9 = 258
Shrubs		
Number of Plants Provided	NEW TOWN ACT.	
Shade Trees		
Evergreen Trees		
Other Trees (2:1 substitution)		
Shrubs (10:1 substitution)		
(Describe plant substitution credits below if needed)	COMPLIANCE	

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

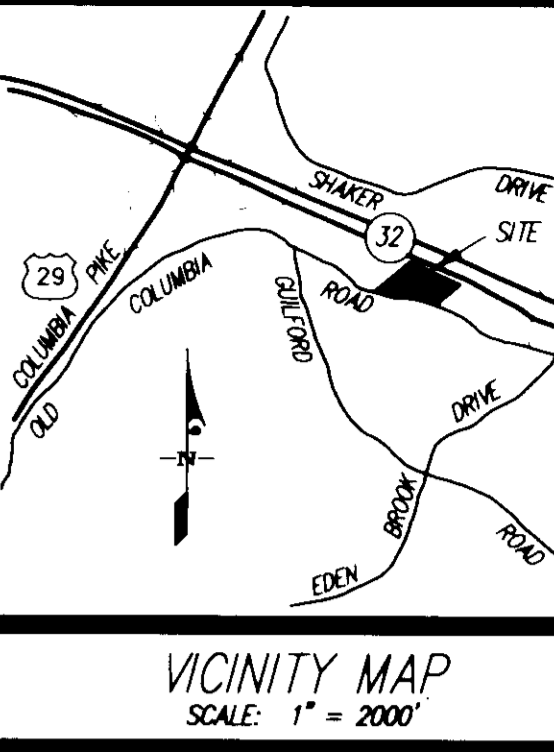
Number of Parking Spaces	210
Number of Trees Required	11
Number of Trees Provided	NEW TOWN ACT COMPLIANCE
Shade Trees	
Other Trees (2:1 substitution)	

HRD PLANTING REQUIRED: (SEMI WOODED)
 5.3 AC. X 26 TREES/AC = 138 TREES
PLANTING PROVIDED:

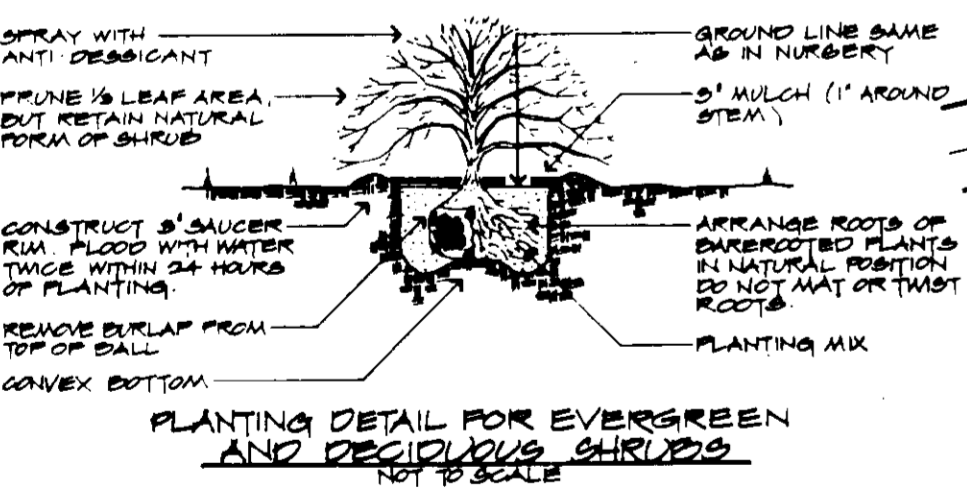
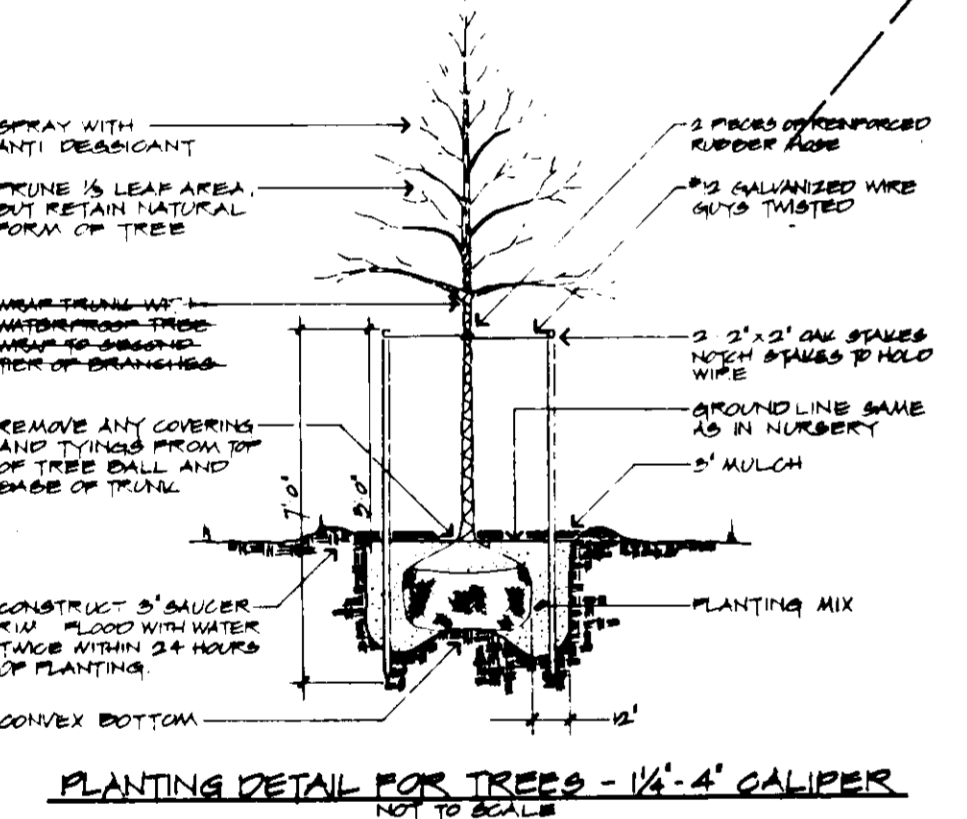
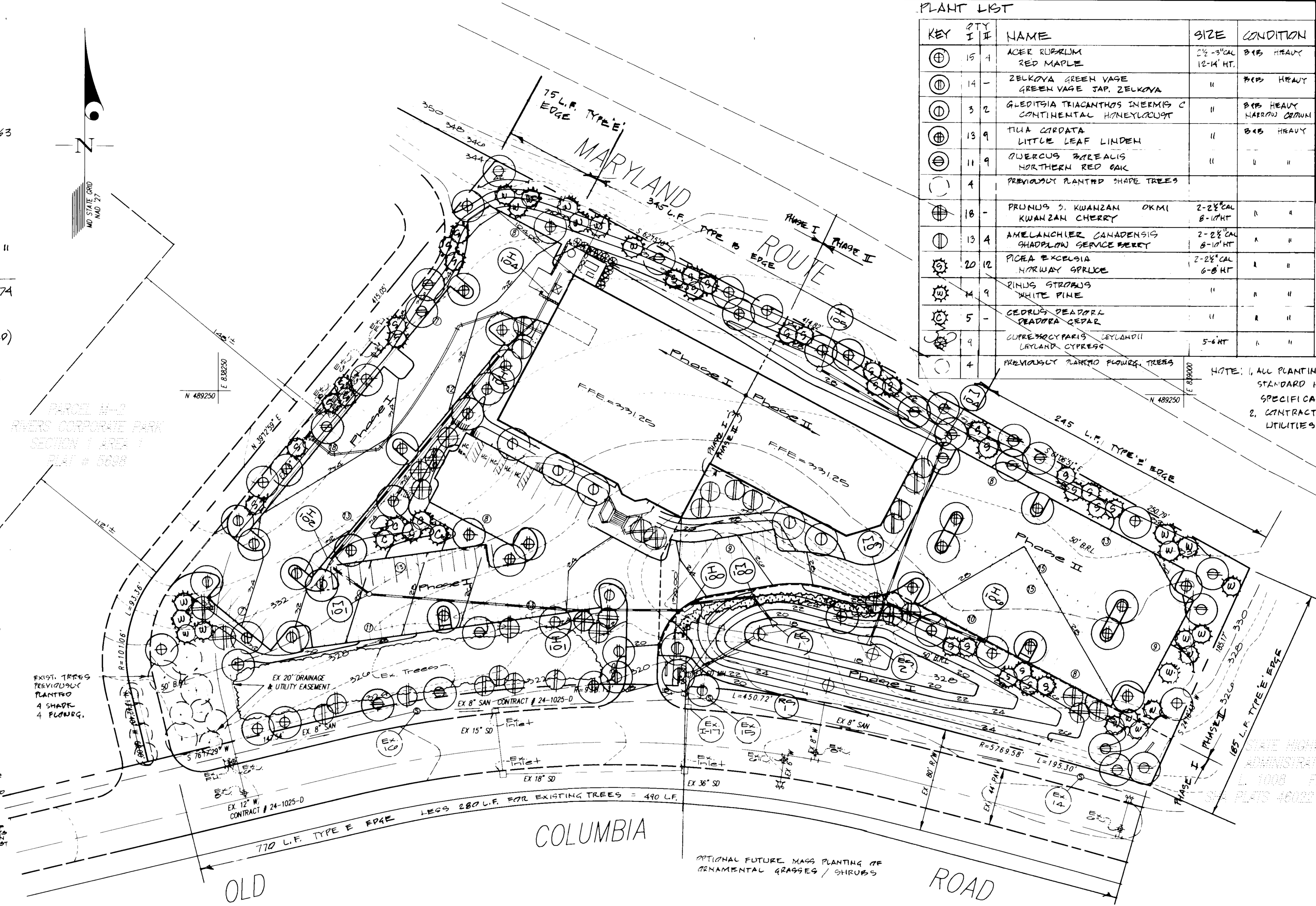
SHADE TREES	84
FLOWERING	39 ÷ 2 = 19.5
EVERGREEN	29 ÷ 2 = 14.5
TOTAL TREES PROVIDED	138

PLANT LIST

KEY	QTY	NAME	SIZE	CONDITION
⊕	15	ACER RUBRUM RED MAPLE	2 1/2 - 3" CAL 12-14' HT.	BIB HEAVY
⊕	14	ZELKOYA GREEN VASE GREEN VASE JAP. ZELKOYA	"	BIB HEAVY
⊕	3	GLECHITSIA TRIACANTHOS INERMIS C CONTINENTAL HONEYLOCUST	"	BIB HEAVY NARROW CROWN
⊕	13	TILIA CORDATA LITTLE LEAF LINDEN	"	BIB HEAVY
⊕	11	QUERCUS BUREALIS NORTHERN RED OAK	"	"
⊕	4	PREVIOUSLY PLANTED SHADE TREES		
⊕	18	PRUNUS S. KWANZAN KWANZAN CHERRY	2-2 1/2" CAL 8-10' HT	"
⊕	13	AMELANCHIER CANADENSIS SHADBLOW SERVICE BERRY	2-2 1/2" CAL 8-10' HT	"
⊕	20	PICEA EXCELSA NORWAY SPRUCE	2-2 1/2" CAL 6-8' HT	"
⊕	14	QUERCUS STROBUS WHITE PINE	"	"
⊕	5	CEDRUS DEODAR DEODORA CEDAR	"	"
⊕	9	CUPRESSOCYPARIS SETYLANDII LAYLAND CYPRESS	5-6' HT	"
⊕	4	PREVIOUSLY PLANTED FLOWERING TREES		



NOTE: 1. ALL PLANTING TO BE IN COMPLIANCE WITH STANDARD HRD - COLUMBIA PLANTING SPECIFICATIONS
 2. CONTRACTOR TO VERIFY EXISTING UTILITIES PRIOR TO DIGGING.



APPROVED
 DATE: 6/6/96

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 [Signature] 6/11/96
 [Signature] 6/11/96
 [Signature] 6/11/96

Prepared By:
 Matthew C. Anacker
 C/O NuValley Nurseries
 Attn: Pat Neubauer
 1-210-796-2195

[Signature]
 6.4.96

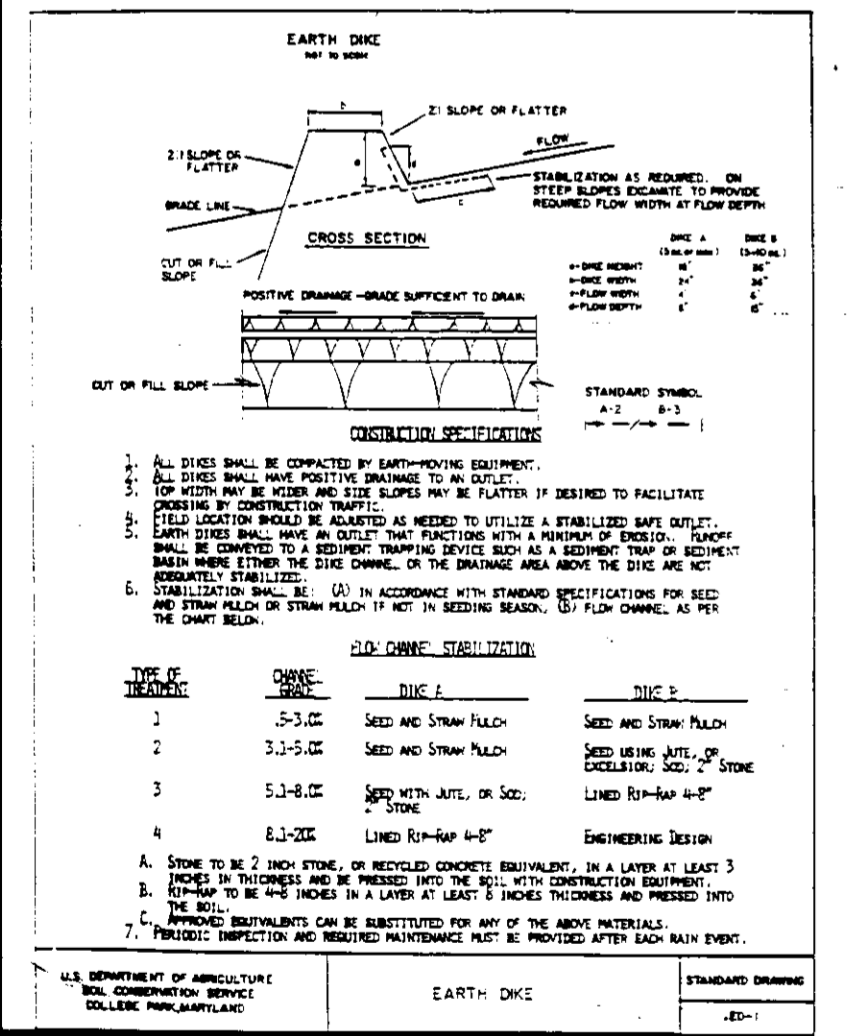
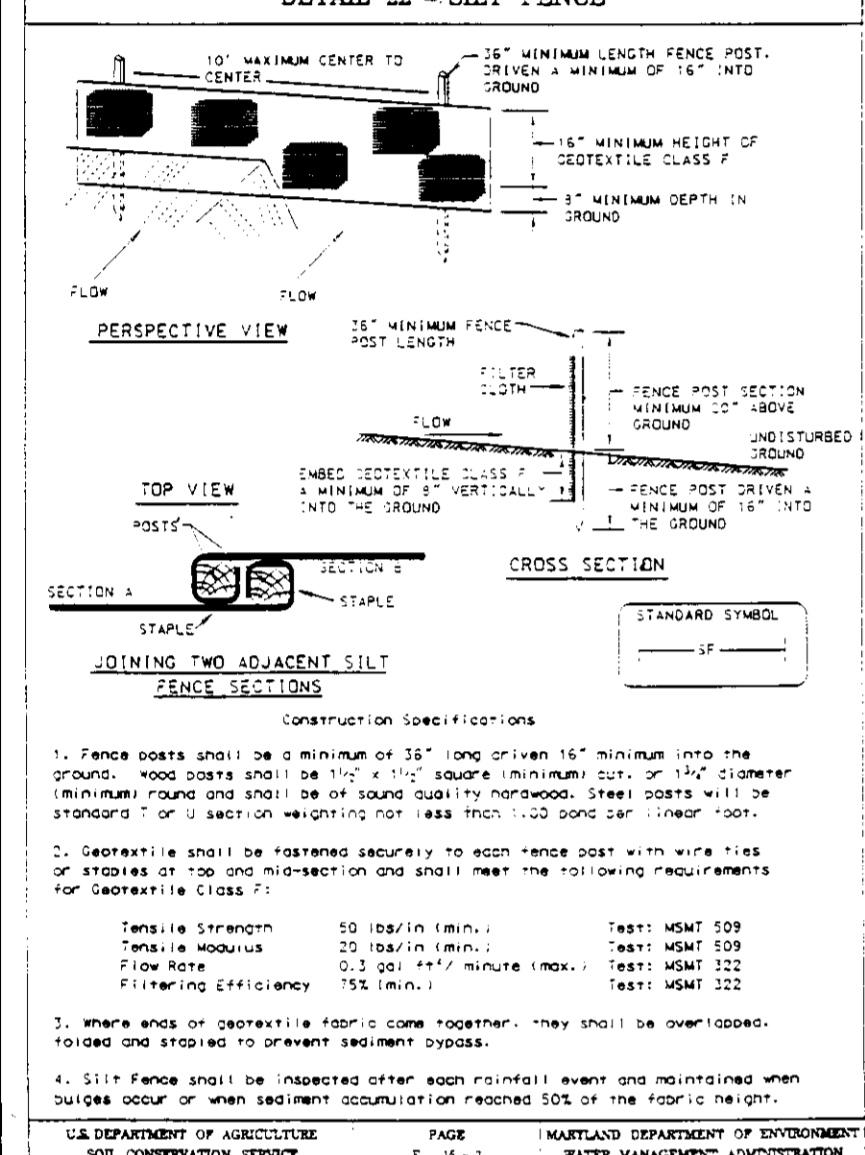
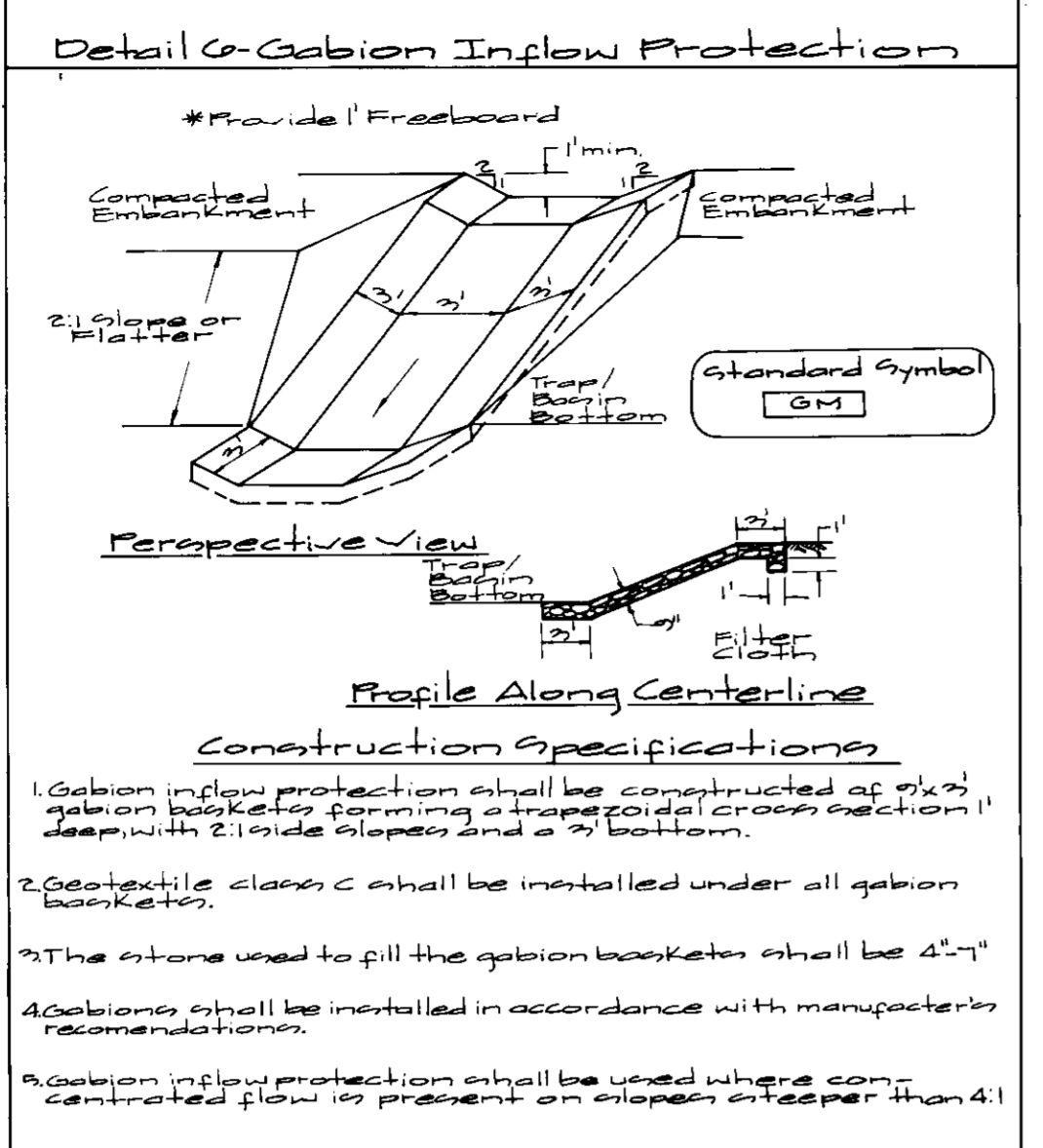
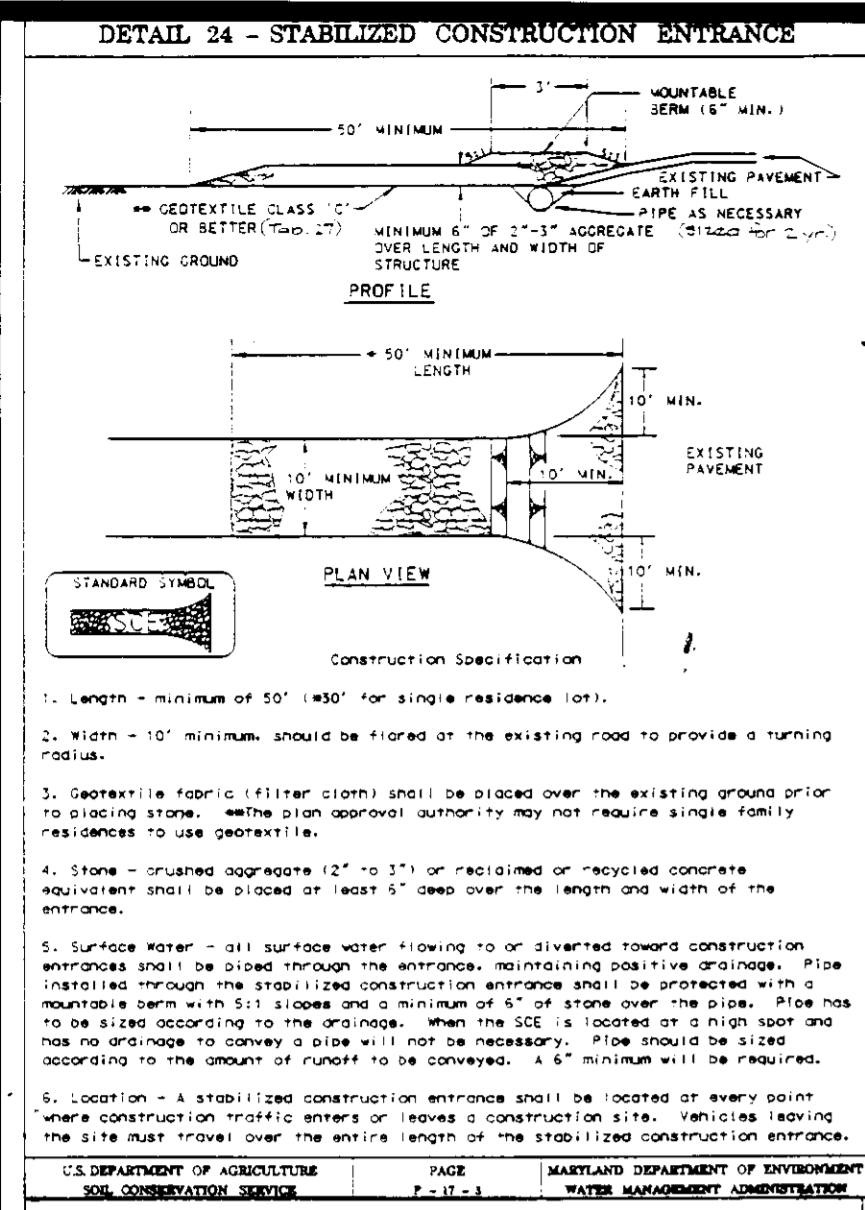
LANDSCAPE BONDING:
 THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE ALTERNATIVE COMPLIANCE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
 FINANCIAL SURETY FOR THE ALTERNATIVE COMPLIANCE LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$7,200.00

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. SAC CHK.

REVISION	DATE	BY	APP'R.

PREPARED FOR:
 RIVERS 19 PARTNERSHIP
 C/O MANEKIN CORPORATION
 7165 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 (410) 290-1400

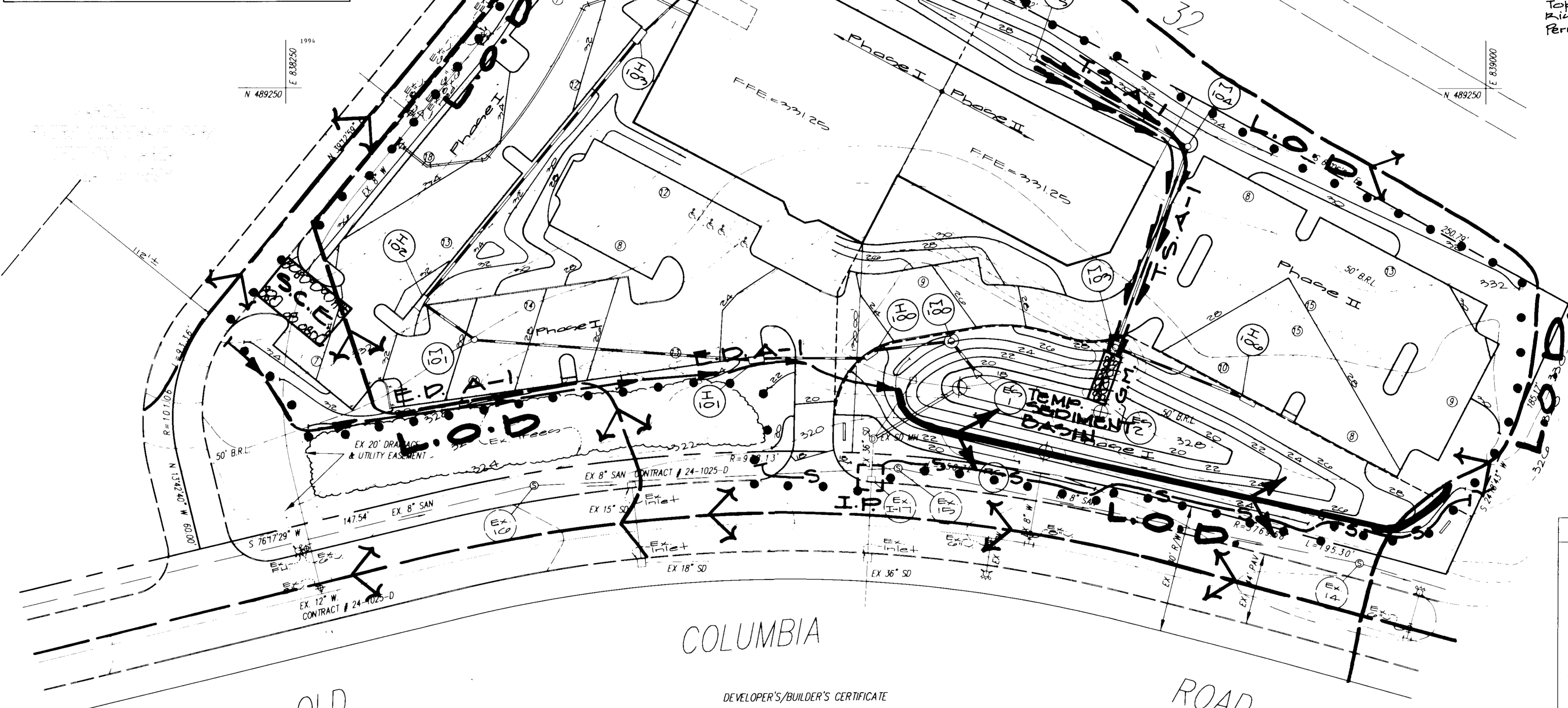
LANDSCAPE PLAN
RIVERS CORPORATE PARK
 PARCEL M-3
 SECTION 1 AREA 1
 DATE: 5-30-96
 SCALE: 1" = 40'
 ZONING: G. L. W. FILE NO. 96034
 DATE: APRIL 1996 TAX MAP No. 42 SHEET 4 of 11
 HOWARD COUNTY, MARYLAND



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

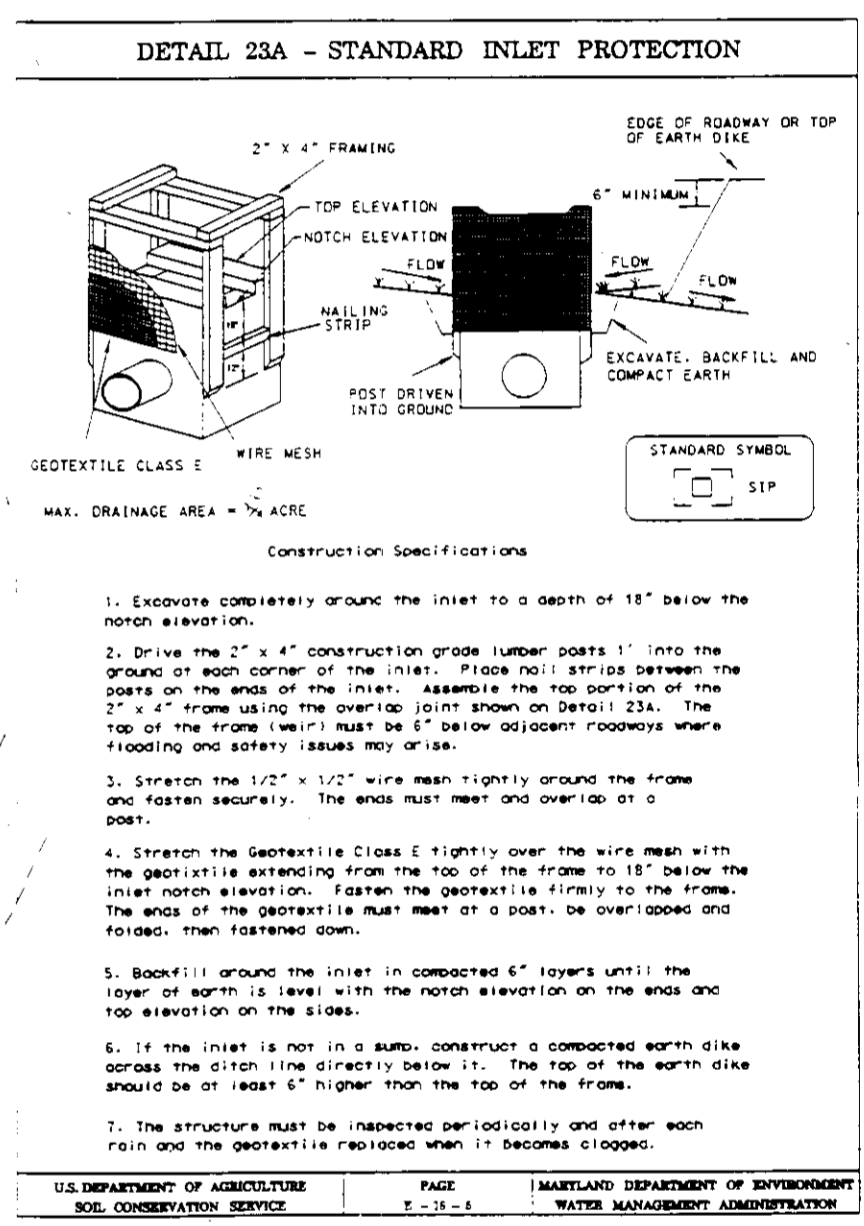
[Signature] 6/11/96
[Signature] 6/11/96
[Signature] 6/11/96

DATE: 6-9-96



Sediment Basin Data

Drainage Area : 5.0 AC.
 Storage Provided : 13,000 C.F.
 Storage Provided : 25,090 C.F.
 Clean out Elev. : 318.82
 Top of Dam Elev. : 321.00
 Base Crest Elev. : 321.15
 Perm. Pool Elev. : 319.81



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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

[Signature] 5-10-96
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

[Signature] 5/10/96
 Date

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

[Signature] 6/10/96
 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.

[Signature] 6/12/96
 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. S.G. CHK.

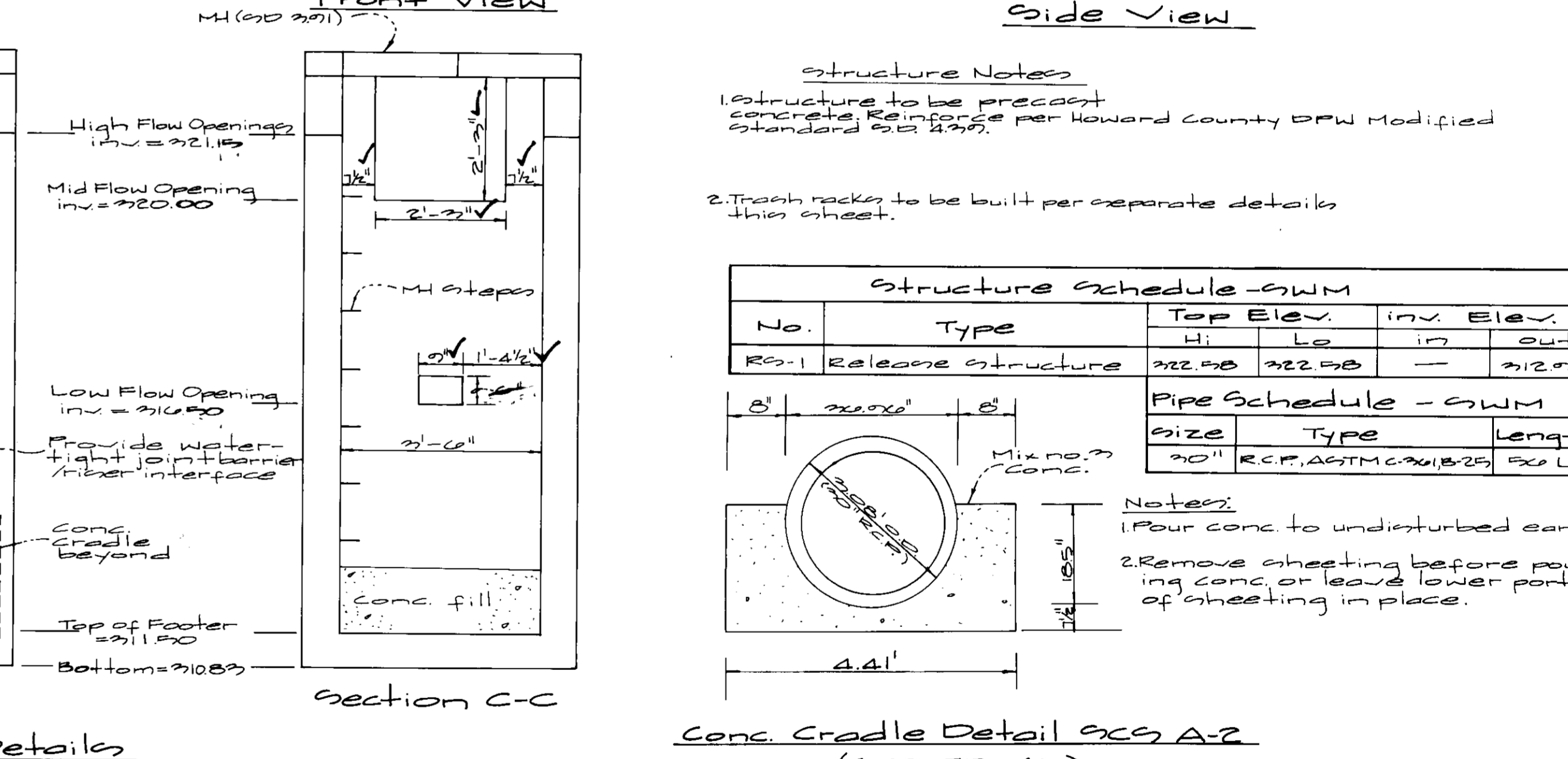
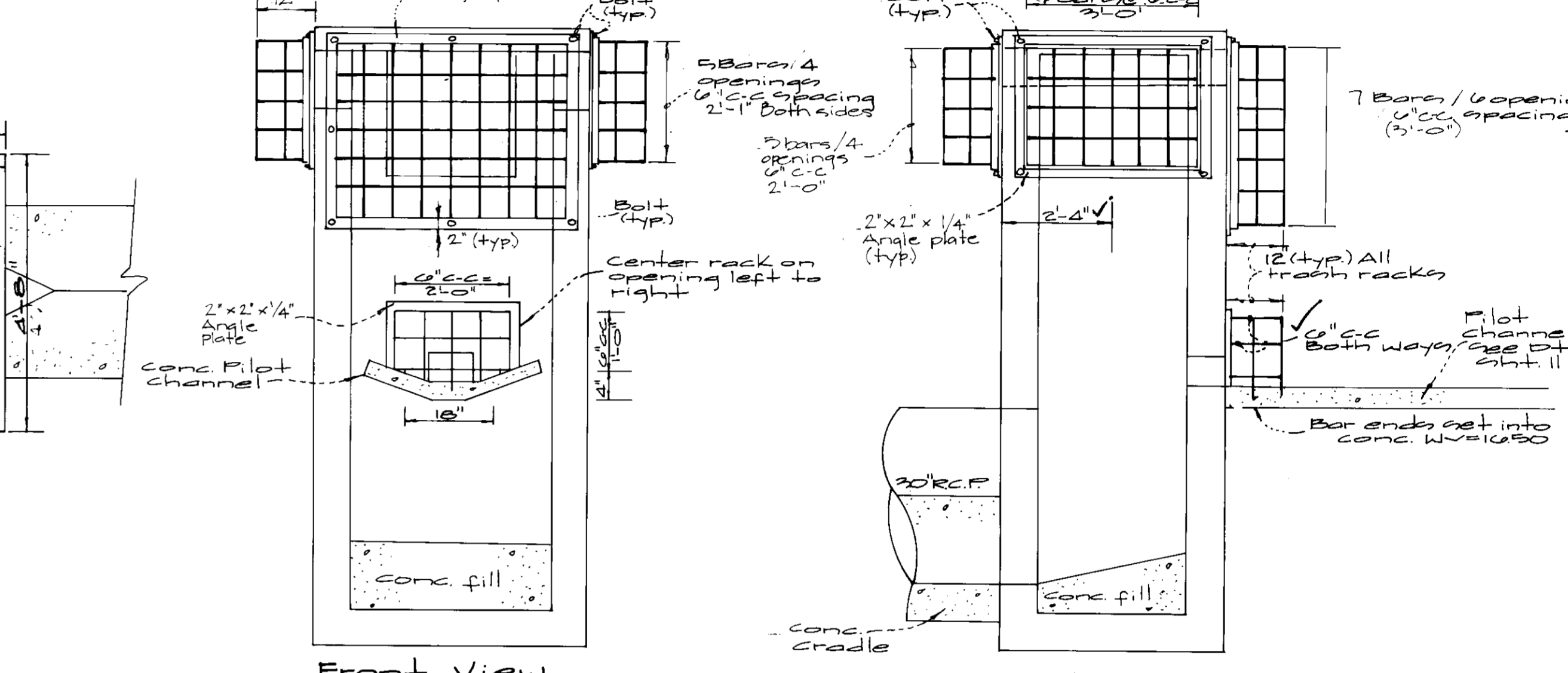
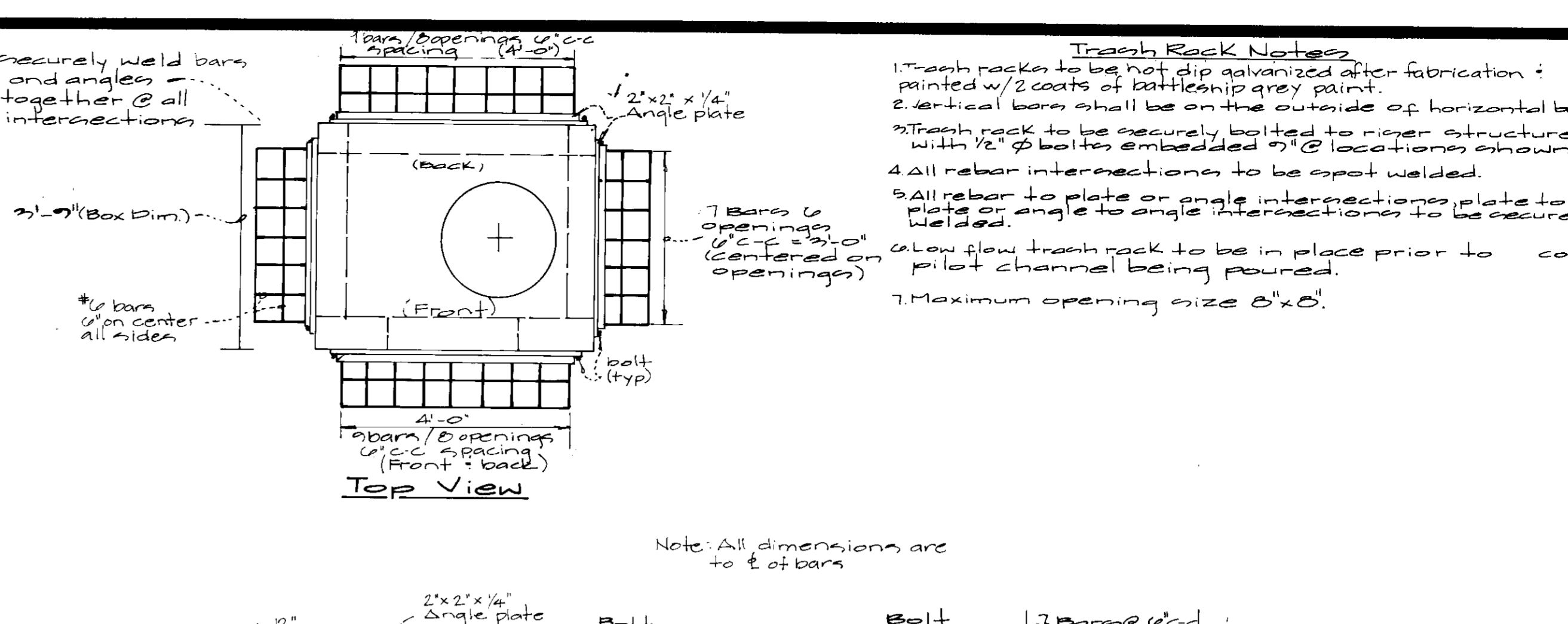
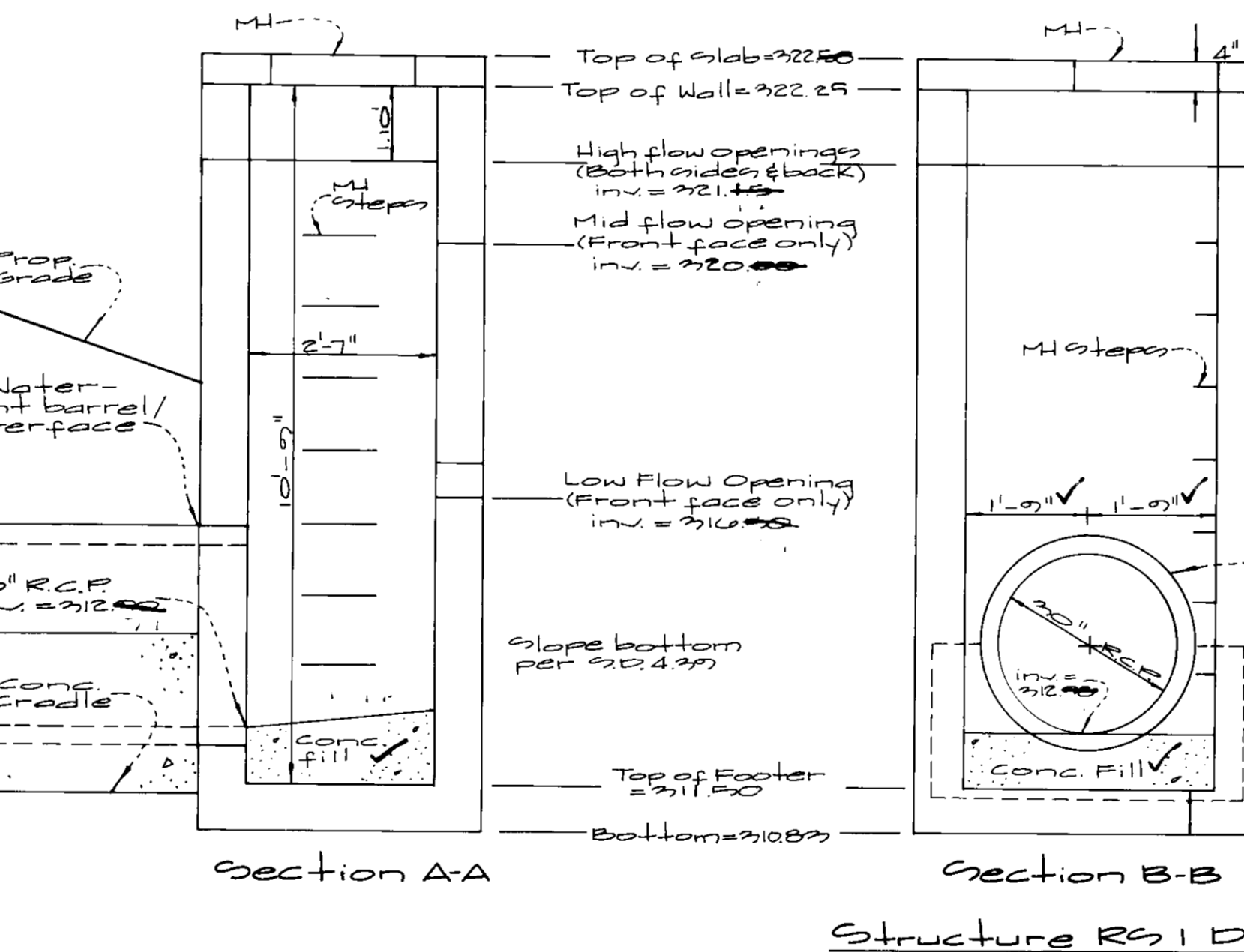
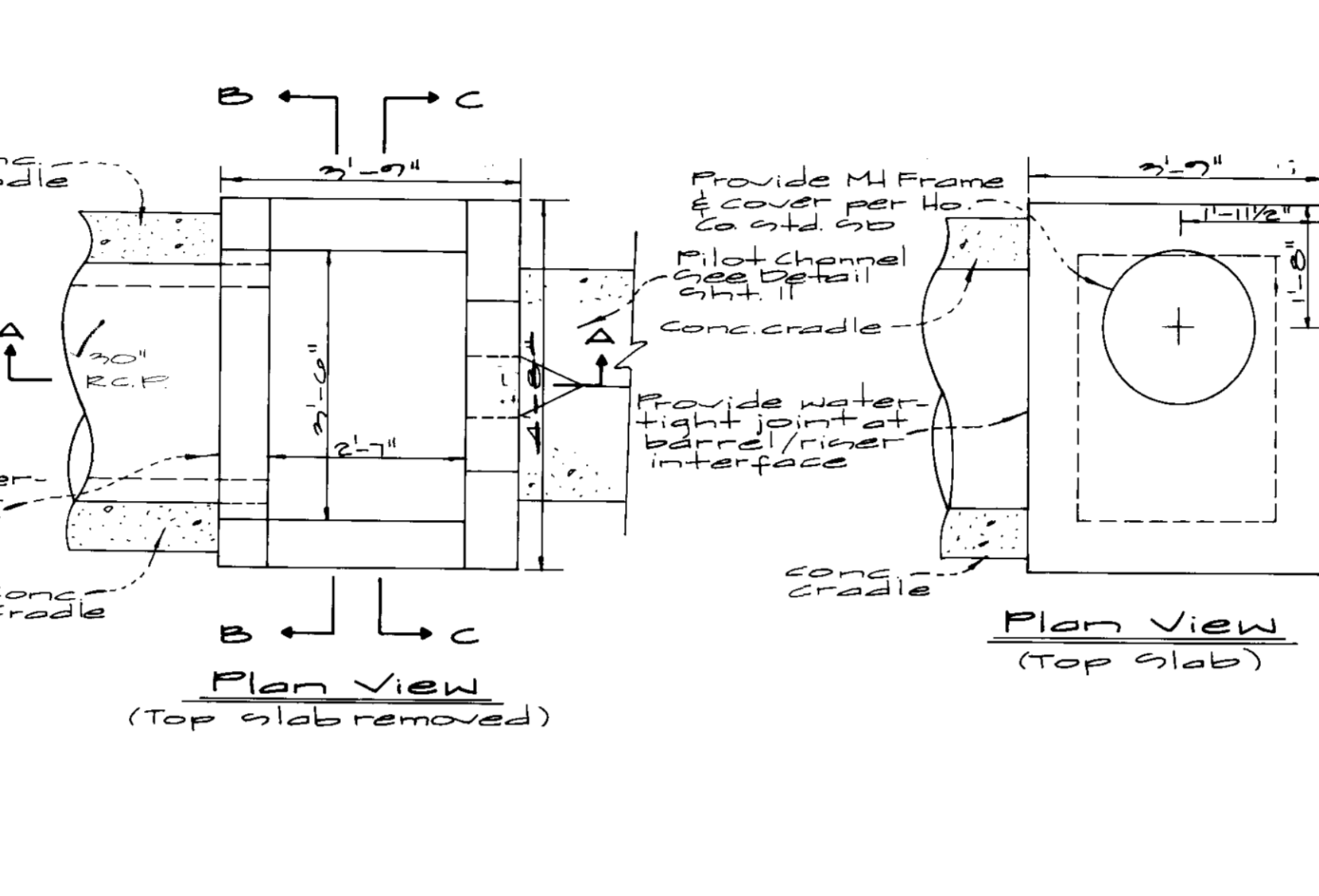
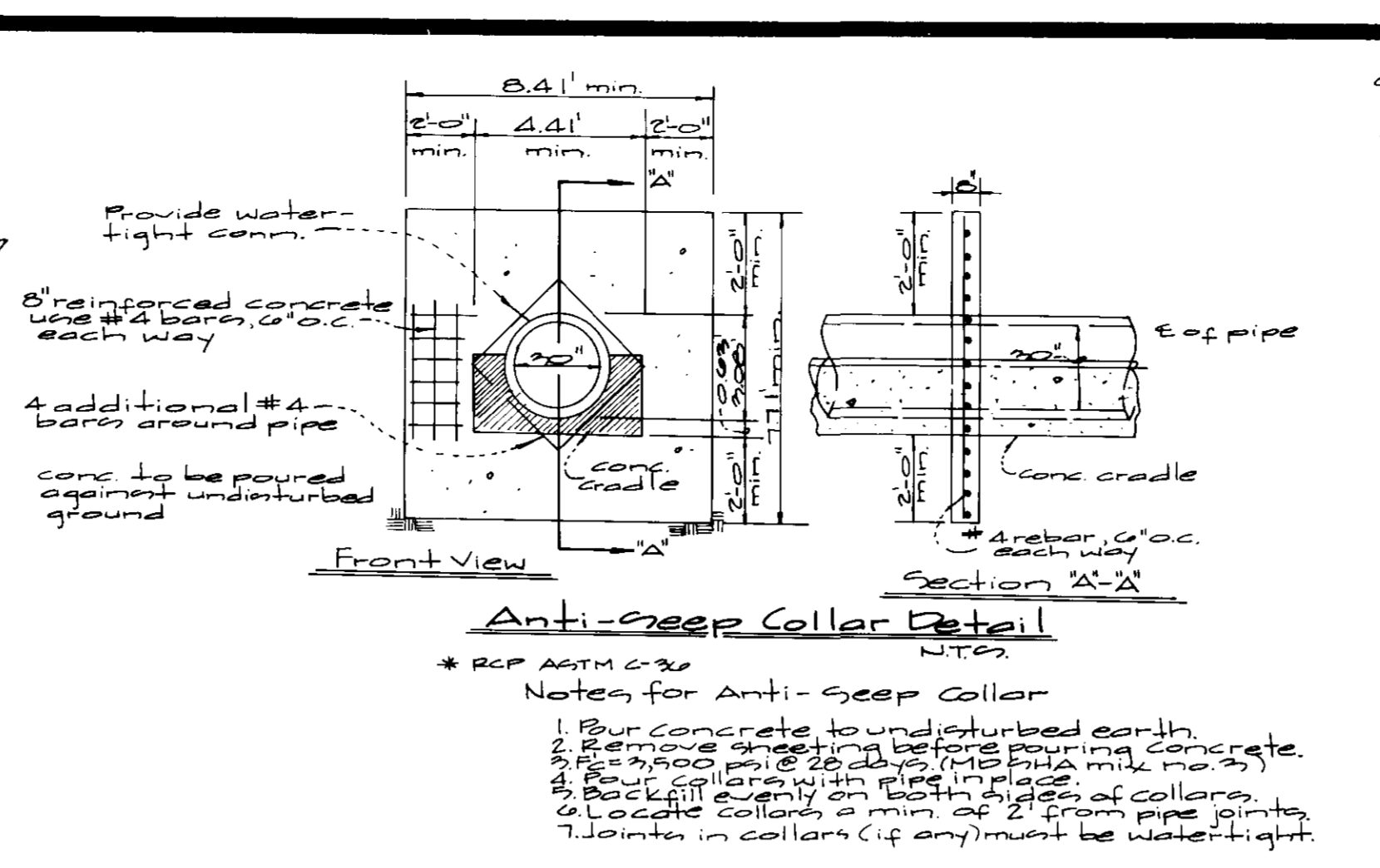
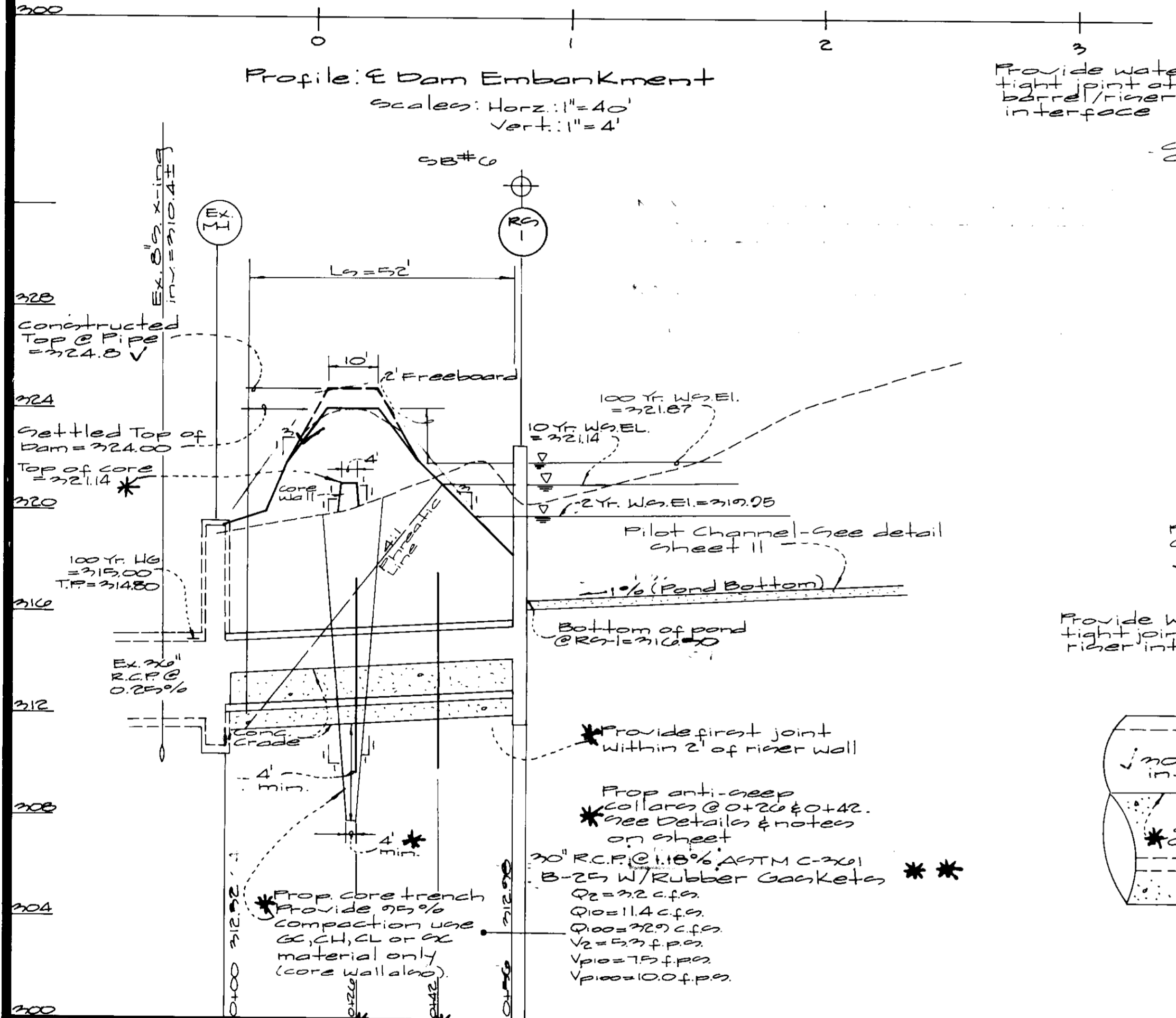
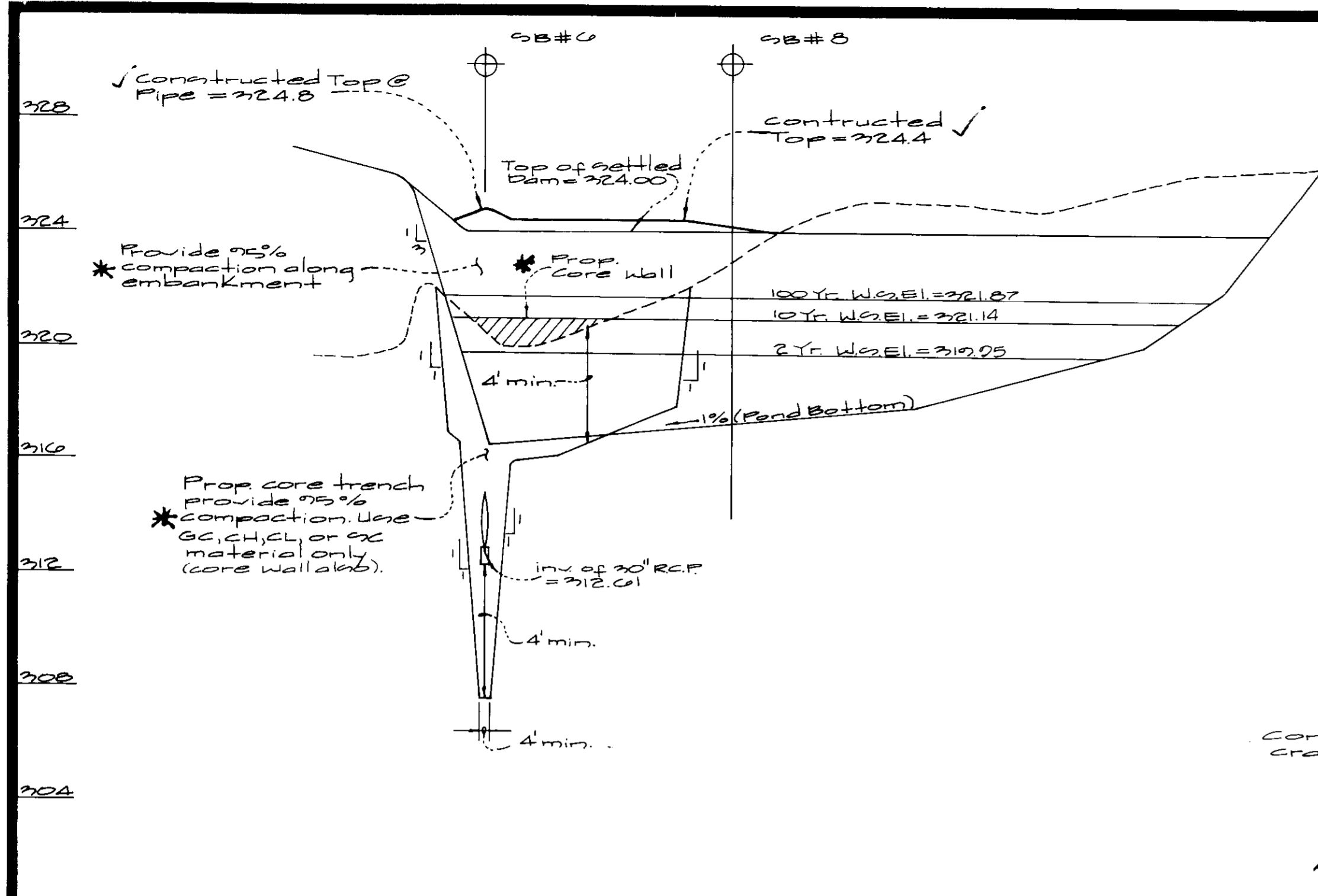
PREPARED FOR:
 RIVERS 19 PARTNERSHIP
 C/O MANEKIN CORPORATION
 7165 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 (410) 290-1400

Sediment Control Plan
RIVERS CORPORATE PARK
 PARCEL M-3
 SECTION 1 AREA 1

SCALE: 1" = 40'
 ZONING: G. L. W. FILE No. 96034
 DATE: APRIL 1996
 TAX MAP No. 42
 SHEET: 5 of 11

CULFORD ELECTION DISTRICT No. 6
 HOWARD COUNTY, MARYLAND

SOP96-130



6-9-96

Approved: Howard County Department of Planning & Zoning
Director: [Signature] 6/11/96
Date: 6/11/96
Chief Engineer of Land Development: [Signature] 6/11/96
Date: 6/11/96
Chief Development Engineer: [Signature] 6/11/96
Date: 6/11/96

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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

6-10-96 Date
[Signature] Signature of Developer/Builder
5/10/96 Date

DEVELOPER'S/BUILDER'S CERTIFICATE
I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

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] 6/10/96 Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
[Signature] 6/10/96 Date

Note: For modifications during sediment control phase refer to site detail sheet 2.

GW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
TELEPHONE (301)421-4074 NO. VA. (301)983-2504 BALTO. (410)480-9621 FAX (301)421-4396

DATE	REVISION	BY	APP'R.
6/11/96	rev. trash rack & notes	MCE	

PREPARED FOR:
Rivers 19 Partnership
c/o Manekin Corporation
7105 Columbia Gateway Drive
Columbia, MD 21046
(410)290-1400

DES.: [Signature]
SCALE: As Shown
ZONING: [Signature]
G.L.W. FILE NO.: 92-034

DRN.: WSPJ
DATE: 6/10/96
TAX MAP NO.: 42
SHEET: 60 of 11

CHK.: [Signature]
Guilder Election District No. 6
Howard County, Maryland

DES.	SCALE	ZONING	G.L.W. FILE NO.
[Signature]	As Shown	[Signature]	92-034
DRN.	DATE	TAX MAP NO.	SHEET
WSPJ	6/10/96	42	60 of 11

SDP 96/130

Pond Construction SPECIFICATIONS

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

Site Preparation

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

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

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

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Area on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated in to the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within ±2 % of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. 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 24" or greater over the structure or pipe.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. **Materials** - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-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 or an approved equal may be used: Nexon, Plasti-Cote, Bloc-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Material - (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. 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 between 4 and 9.

2. **Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe.** Metals not insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

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

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

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

5. **Backfilling** shall conform to "Structure Backfill".
6. **Other details** (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. **Materials** - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.
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 inches, 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. The first joint must be located within 2 feet from the riser.

4. **Backfilling** shall conform to "Structure Backfill".
5. **Other details** (anti-seep collars, valves, etc.) shall be shown on the drawings.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. **Materials** - PVC pipe shall be PVC - 1120 or PVC - 1220 conforming to ASTM D-1785 or ASTM D-2241.
2. **Joints and connections** to anti-seep collars shall be completely watertight.
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. **Backfilling** shall conform to "Structure Backfill".
5. **Other details** (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Concrete

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

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 905.

The rip rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

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

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and 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.

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. (301) 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 redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seedings (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	3.7	Acres	
Area Disturbed	5.0	Acres	
Area to be roofed or paved	2.0	Acres	
Area to be vegetatively stabilized	2.0	Acres	
Total Cut	14,400	Cu. Yds.	
Total Fill	4,800	Cu. Yds.	

Off-site waste/area location to be determined at time of construction (site will have an approved sediment and erosion control plan and applicable permits).

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.

PERMANENT SEEDING NOTES

Apply to graded or cleared area 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 (unless 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 feet) 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 thru 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 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseeding.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed 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 (unless 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 2-1/2 bushel per acre of annual ryegrass (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 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrattled 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.

OPERATIONS AND MAINTENANCE GUIDELINES

Operations:

1. Owner shall keep accurate records of inspections and maintenance type repairs. These records should also include a copy of the "as-built" plans and small pond summary sheet.
2. Owner shall make a visual inspection of the facility at least twice a year. Once in the summer after the facility has been mowed and during the winter when the vegetation is inactive. Additional inspections shall be made during and after extreme rainfalls.
3. During the extreme weather or rainfall events, the owner shall check for overtopping, seepage, or dam failure. In order to avoid overtopping, either place sandbags on top of the embankment or lower the water elevation by using a waterwing device.
4. If a severe problem develops, the owner shall contact a Professional Engineer to assess the problem and make a suggestion to remedy the situation. The Howard Soil Conservation District or Maryland Dam Safety Division shall be contacted before major repairs are made.

Maintenance

During the semi-annual visual inspections, the following items must be checked and documented by the owner:

- I. **Spillways and Outlet Device**
 1. Pipes - check for sagging, misalignment, gaps at joints, cracks, leaks, and wear along inside surface of pipes. Also remove any blockages.
 2. Trash Racks - inspect and replace if necessary. Actual time for removal of trash racks should be limited. Trash racks shall be painted once a year.
 3. Concrete Surfaces - check for cracks or any other signs of failure.
 4. Forebay and Spillway - check for stone deterioration or loss and spillway failure.
 5. Rip Rap Outlet - check for stone deterioration or stone loss.
 6. Dewatering Device - remove blockages.
- II. **Embankments**
 1. Vegetation - proper vegetative cover is required on all embankments. The owner shall follow proper seeding specifications for reseeding.
 2. Trees and Brush - trees and brush shall be removed from the embankment. Stumps can be removed using silvicide.
 3. Mowing - mowing is necessary to control the establishment of woody growth and to maintain the vegetative cover. The embankment, a 25-foot wide (except in wetland/stream buffers) strip adjacent to the toe, upstream and downstream of the embankment, and the area within 50 feet of the control structures need to be mowed. Mowing shall be done at least once a year (mid to late summer) but may be done more often.
 4. Seepage - the following warning signs should be looked for when inspecting for seepage problems: cracks (longitudinal and vertical), soft spots or boggy areas on downstream embankment, seepage along downstream toe of embankment.
 5. Stability - large cracks, slides, sloughing and excessive settlement are signs of embankment instability and a need for repair. Repairs must be approved by Howard Soil Conservation District.
 6. Rodents - check for burrows, which can lead to seepage, and remove rodents when encountered.

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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

[Signature] 5-10-96 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

[Signature] 5/10/96 Date
Signature of Developer/Builder

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

[Signature] 6/10/96 Date
Howard Soil Conservation District

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] 6/10/96 Date
Natural Resources Conservation Service

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20886

TEL: (301) 421-4024 MO. VA: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK.

DATE	REVISION	BY	APPR

PREPARED FOR:

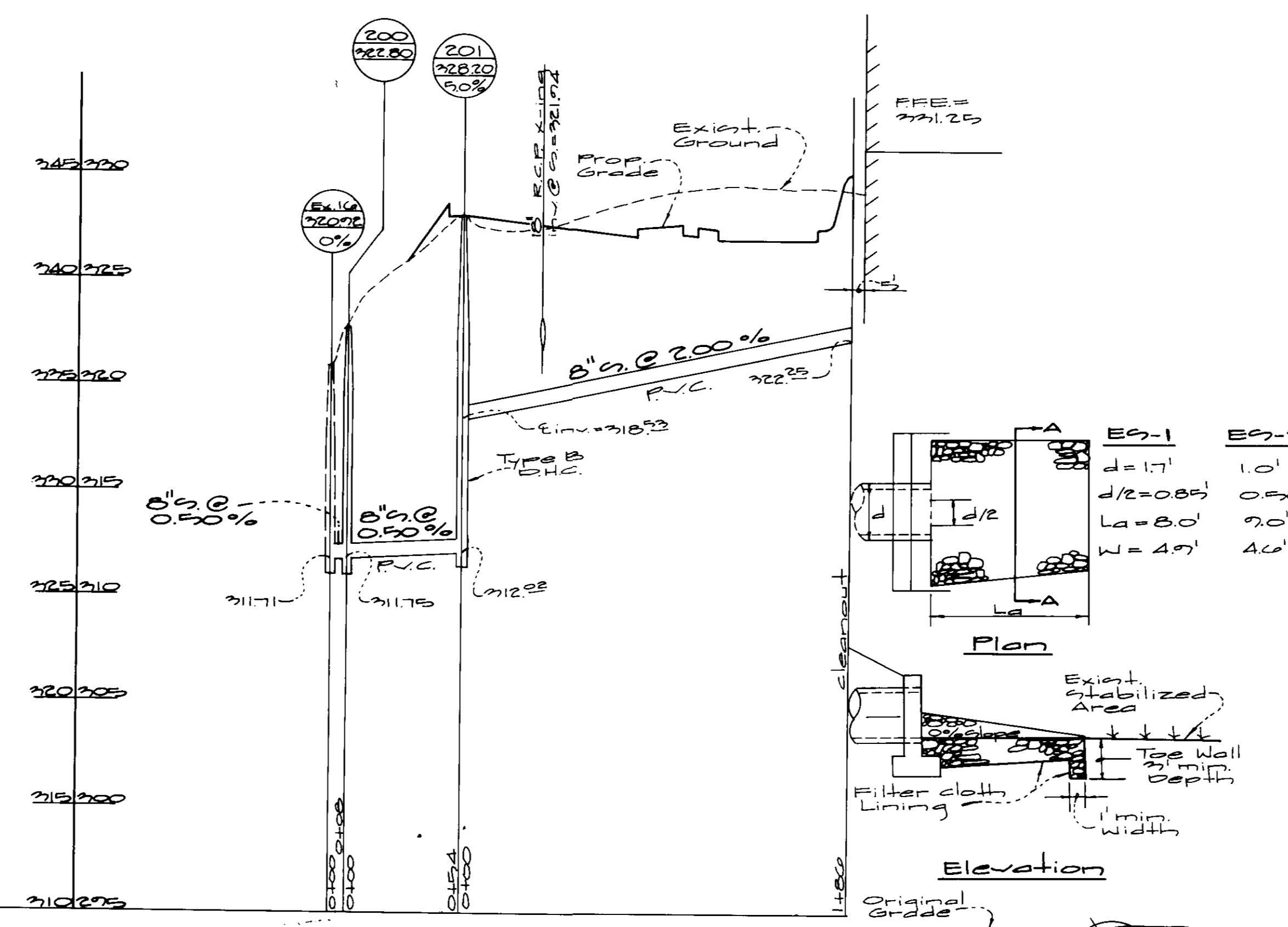
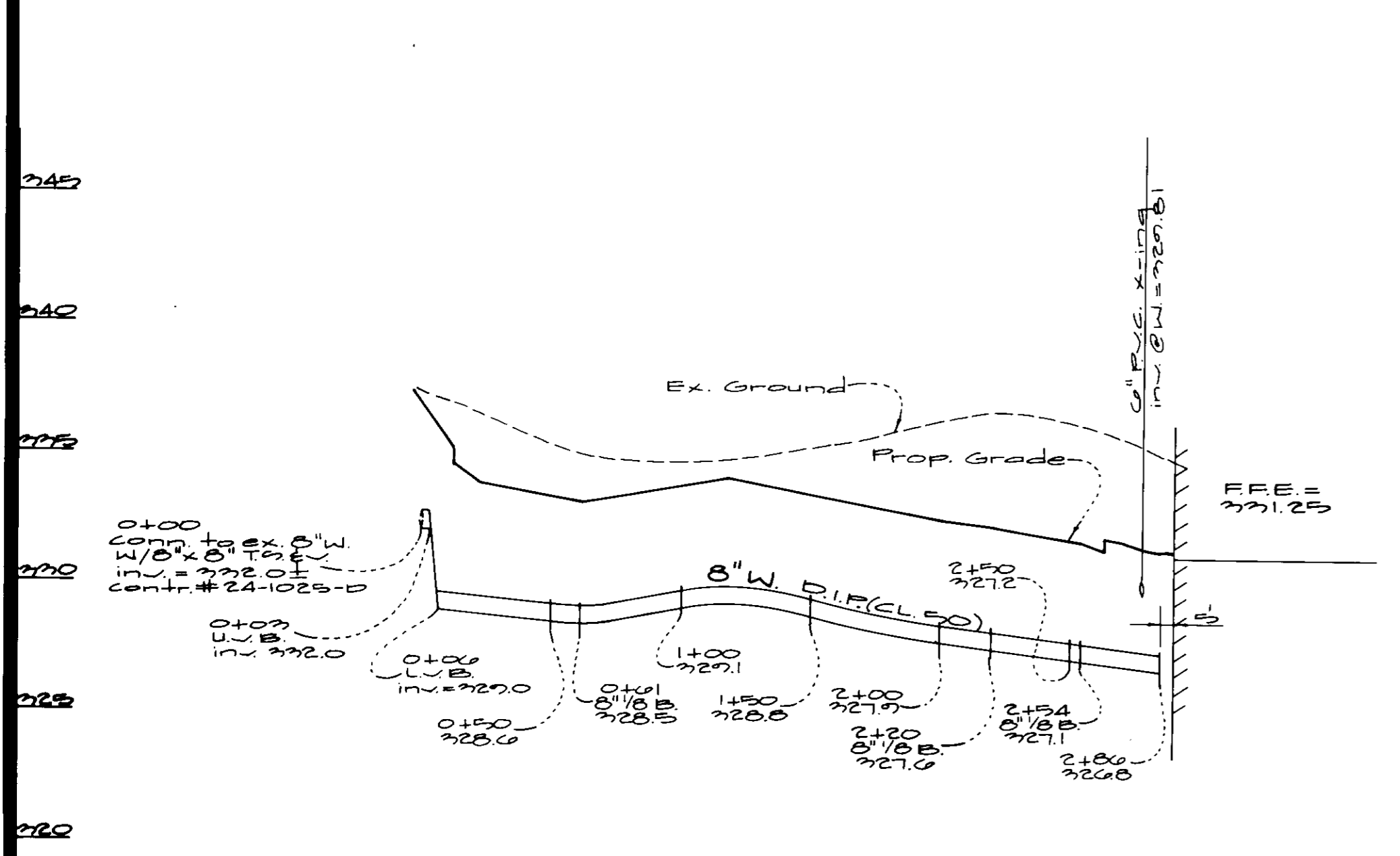
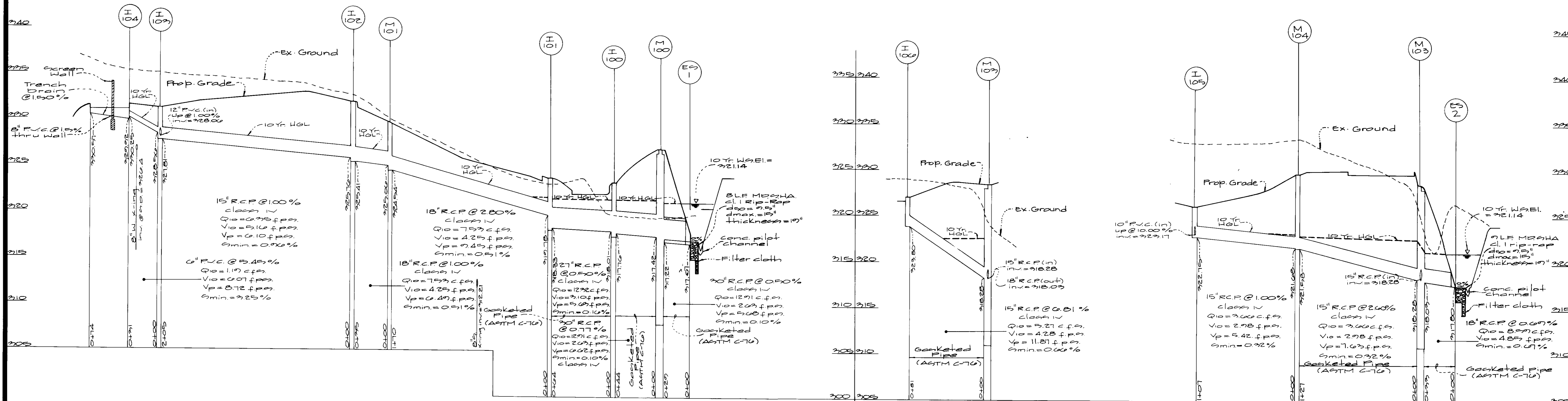
Rivers 17 Partnership
c/o Monekin Corporation
7105 Columbia Gateway Drive
Columbia, MD 21046
(410) 290-1400

Stormwater Management & Sediment Control Notes

Rivers Corporate Park
Parcel M-3
Section 1 Area 1
Guilford Election District No. 6
Howard County, Maryland

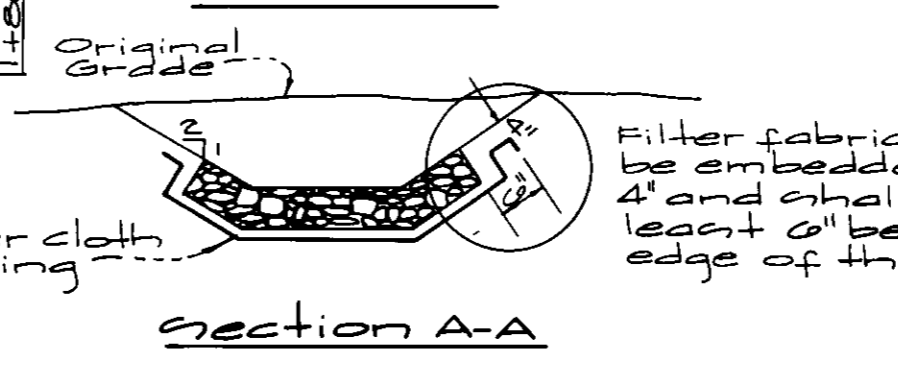
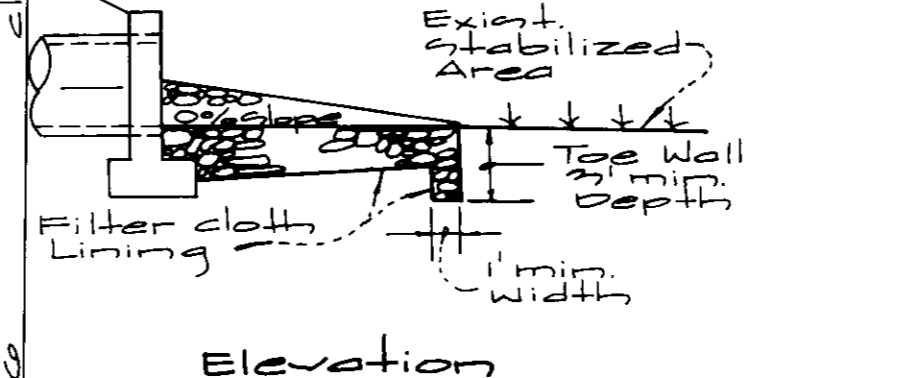
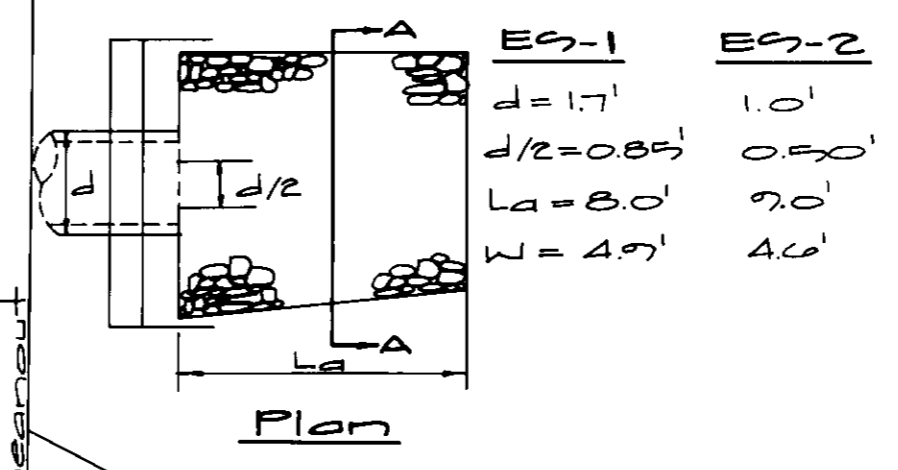
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As Shown		90-034
DATE 1996	TAX MAP No.	SHEET
	42	7 of 11

SDP96/130



Storm Drain Structure Schedule								
No	Type	Inside Width	Elevation		Invert Elevation		Std. Detail	Location
			Upper	Lower	Upper	Lower		
I 100	A-10	4'-0"	323.60	322.92	317.24	317.01	SD 4.0	See Plan
I 101	A-10	3'-0"	323.83	323.83	319.76	317.58	SD 4.0	
I 102	A-10	2'-5"	322.01	322.01	325.70	325.41	SD 4.0	
I 103	A-10	2'-5"	321.25	321.25	325.50	327.81	SD 4.0	
I 104	Trench Drain	10"	321.06	321.05	320.51	320.25	See detail sheet 9	
I 105	Single "S"	2'-7.5"	---	326.20	323.17	322.75	SD 4.22	
I 106	A-10	2'-5"	326.93	326.93	---	323.80	SD 4.0	
M 100	Concrete Stormceptor	6'-0"	327.00	---	316.67	316.47	STC 1800	
M 101	Manhole	4'-0"	329.70	---	325.04	324.54	G 5.01	
M 103	Concrete Stormceptor	6'-0"	328.50	---	319.20	318.95	STC 1800	
M 104	Manhole	4'-0"	329.70	---	321.68	321.58	G 5.01	
ES	End section	---	---	---	---	316.52	SD 5.51	
ES 2	End section	---	---	---	---	317.60	SD 5.51	

Storm Drain Pipe Schedule		
Size	Type	Length
6"	PVC	31 LF
10"	PVC	22 LF
12"	PVC	21 LF
15"	RCP cl. IV	520 LF
18"	RCP cl. IV	238 LF
27"	RCP cl. IV	64 LF
30"	RCP cl. IV	73 LF
Total		969 LF



Rock Outlet Protection III

APPROVED
DATE 6-9-96

Approved: Howard County Department of Planning & Zoning
Director
Chief Division of Land Development
Chief Development Engineering

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
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TELEPHONE: (301)421-4024 NO. VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

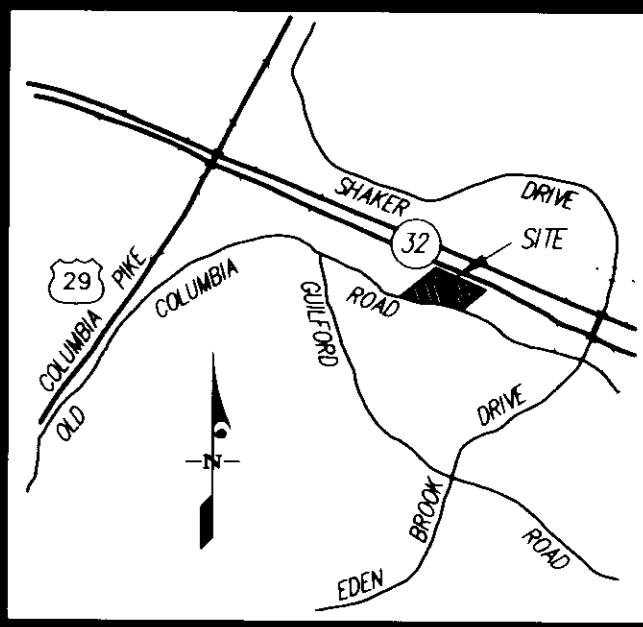
DATE	REVISION	BY	APP'R.

PREPARED FOR:
Rivers 19 Partnership
c/o Manekin Corporation
7105 Columbia Gateway Drive
Columbia, MD 21046
(410)290-1400

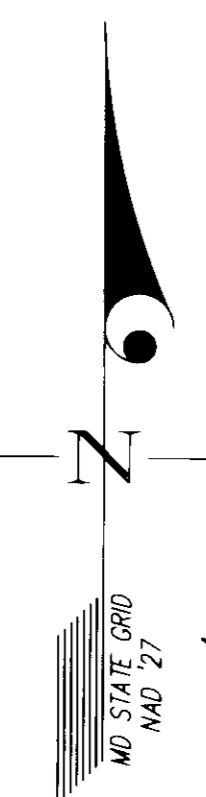
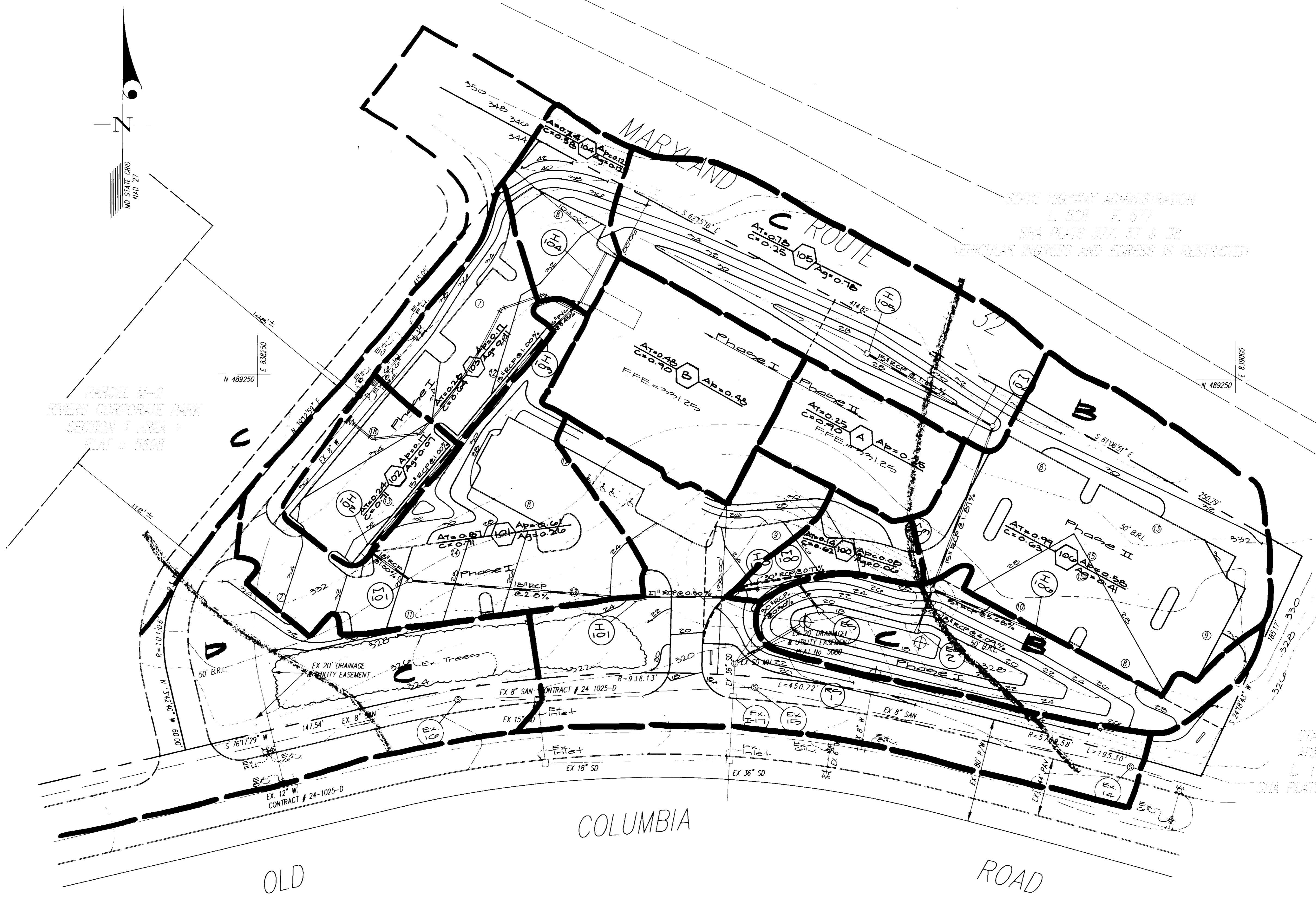
as-built Utility Profiles
Rivers Corporate Park
Parcel M-3
Section I Area 1
Guilford Election District No. 6
Howard County, Maryland

DES.	SCALE	ZONING	G.L.W. FILE NO.
DES. J.	As Shown		96-034
DRN.	DATE	TAX MAP NO.	SHEET
DRN. J.	May 1996	42	8 of 11
CHK.	DATE		
CHK. J.	Apr. 1997		

SDP 96/130



VICINITY MAP
SCALE: 1" = 2000'



PARCEL M-3
RIVERS CORPORATE PARK
SECTION 1 AREA 1
SHP PLATS 46012 & 46023

STATE HIGHWAY ADMINISTRATION
L 100B F 51
SHP PLATS 46012 & 46023

APPROVED
6-9-96

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 6/11/96
[Signature] 6/11/96
[Signature] 6/11/96

GW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186

DATE	REVISION	BY	APP'R.

PREPARED FOR:
RIVERS 19 PARTNERSHIP
 C/O MANEKIN CORPORATION
 7165 COLUMBIA GATEWAY DRIVE
 COLUMBIA, MD 21046
 (410) 290-1400

Storm Drain
Drainage Area Map
RIVERS CORPORATE PARK
 PARCEL M-3
 SECTION 1 AREA 1
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1" = 40'		96034
DATE	TAX MAP No.	SHEET
APRIL 1996	42	10 OF 11

SDP 96/130

PITTSBURGH TESTING LABORATORY
LOG OF BORING BORING #6

Job No. 429-75133
Client: Bechtel & Assoc.
Project: CR Expansion
Location of Boring: Bechtel Station, Columbia, MD
Water Level: 92.0'
Time: 11-20-97
Date: 11-20-97

Boring No. 6 Date 11-20-97 Sheet 1 of 1
Type of Boring: BA Rig: CR-55
Casing used: None Drilling mud used: None
Boring began: 11-20-97 Boring completed: 11-20-97
Ground Elevation: 92.0' referred to: None
Field Party: Sam Egan

DEPTH IN FEET	SOIL TYPE	DESCRIPTION
0-1	1.0'-2.5'	6" Tapwell Brown, moist, loose sandy silt with little clay (SM)
1-2	2.5'-3.5'	Brown, moist, medium dense silty sand with trace clay (SM)
2-3	3.5'-4.5'	Brown, moist, loose sandy silt with little clay (SM)
3-4	4.5'-6.0'	Brown, moist, very dense silty sand with trace clay (SM) (Decomposed Rock)
4-5	6.0'-7.0'	Brown and white, moist, very dense silty sand with trace clay (SM) (Decomposed Rock)
5-6	7.0'-8.0'	Brown, moist, loose silty sand with trace clay (SM)
6-7	8.0'-9.0'	Gray, moist, medium dense silty sand with trace clay (SM)
7-8	9.0'-10.0'	Gray, moist, very dense silty sand with trace clay (SM) (Decomposed Rock)

Boring terminated at 10.0'
*Quoted to at 12.5' on completion

PITTSBURGH TESTING LABORATORY
LOG OF BORING BORING #7

Job No. 429-75133
Client: Bechtel & Assoc.
Project: CR Expansion
Location of Boring: Bechtel Station, Columbia, MD
Water Level: 92.0'
Time: 11-20-97
Date: 11-20-97

Boring No. 7 Date 11-20-97 Sheet 1 of 1
Type of Boring: BA Rig: CR-55
Casing used: None Drilling mud used: None
Boring began: 11-20-97 Boring completed: 11-20-97
Ground Elevation: 92.0' referred to: None
Field Party: Sam Egan

DEPTH IN FEET	SOIL TYPE	DESCRIPTION
0-1	1.0'-2.5'	6" Tapwell Brown, moist, loose sandy silt with little clay (SM)
1-2	2.5'-3.5'	Brown, moist, medium dense silty sand with trace clay (SM)
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4-5	6.0'-7.0'	Gray, moist, medium dense silty sand with trace clay (SM)
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6-7	8.0'-9.0'	Gray, moist, very dense silty sand with trace clay (SM) (Decomposed Rock)
7-8	9.0'-10.0'	Gray, moist, very dense silty sand with trace clay (SM) (Decomposed Rock)

Boring terminated at 10.0'
*Quoted to at 12.5' on completion

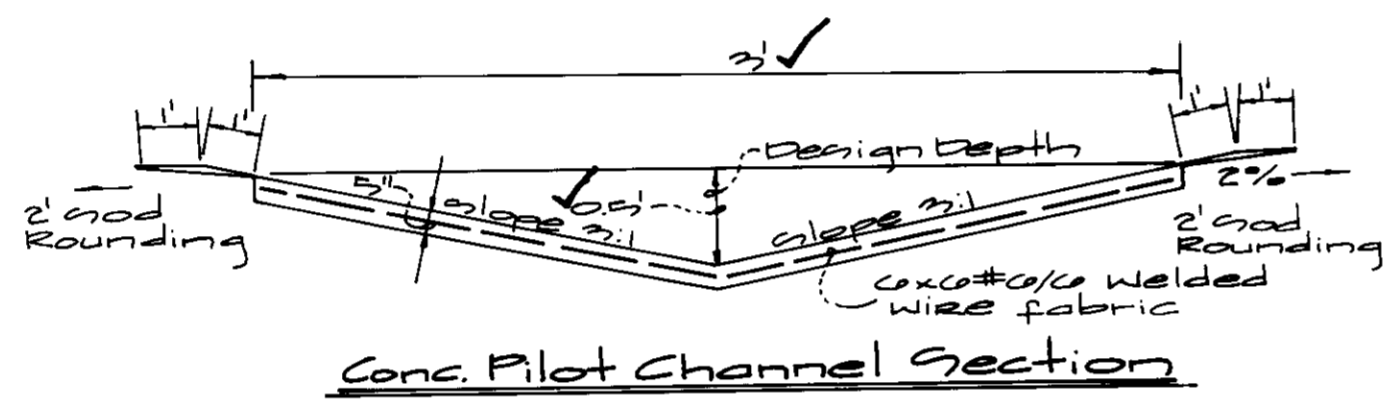
PITTSBURGH TESTING LABORATORY
LOG OF BORING BORING #8

Job No. 429-75133
Client: Bechtel & Assoc.
Project: CR Expansion
Location of Boring: Bechtel Station, Columbia, MD
Water Level: 92.0'
Time: 11-20-97
Date: 11-20-97

Boring No. 8 Date 11-20-97 Sheet 1 of 1
Type of Boring: BA Rig: CR-55
Casing used: None Drilling mud used: None
Boring began: 11-20-97 Boring completed: 11-20-97
Ground Elevation: 92.0' referred to: None
Field Party: Sam Egan

DEPTH IN FEET	SOIL TYPE	DESCRIPTION
0-1	1.0'-2.5'	6" Tapwell Brown, moist, loose sandy silt with little clay (SM)
1-2	2.5'-3.5'	Brown, moist, medium dense silty sand with trace clay (SM)
2-3	3.5'-4.5'	Brown, moist, very dense silty sand with trace clay (SM)
3-4	4.5'-6.0'	Brown, moist, very dense silty sand with trace clay (SM)
4-5	6.0'-7.0'	Gray, moist, medium dense silty sand with trace clay (SM)
5-6	7.0'-8.0'	Gray, moist, very dense silty sand with trace clay (SM)

Boring terminated at 10.0'
*Quoted to at 12.0' on completion



APPROVED
6-9-96

Approved: Howard County Department of Planning & Zoning
Director: [Signature] 6/11/96
Date: 6/11/96
Chief, Division of Land Development and Research: [Signature] 6/11/96
Date: 6/11/96
Chief, Development Engineering Division: [Signature] 6/11/96
Date: 6/11/96

GLW GUTSCHICK LITTLE & WEBER, P.A.
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3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
TELEPHONE (301)421-4024 NO VA (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186

DATE	REVISION	BY	APP'R.

PREPARED FOR:
Rivers 19 Partnership
c/o Manekin Corporation
7167 Columbia Gateway Drive
Columbia, MD 21046
(410)270-1400

as-built - Soil Boring Log for Conc. Pilot Channel

Rivers Corporate Park
Parcel M-3
Section 1 Area 1

Guilford Election District No. 6
Howard County, Maryland

DES.:	SCALE	ZONING	G.L.W. FILE NO.
W.S.J.	As shown	NT	96-034
DRN.:	DATE	TAX MAP NO.	SHEET
W.S.J.	May 1996	42	11 of 11
CHK.:			