

DATE	
BY	
REVISION	
NO.	
PLAN	
NO.	

DATE	BY	REVISIONS
12/27/90	JHC	REVISED SIDEWALK & SIDE WALK LOCATIONS
11/21/89	KC/OP	REVISIONS PER HO. CO. COMMENTS OF 8/18/89
10/12/88	KC/OP	REVISIONS PER HA. CO. COMMENTS DATED 8/16/88

APPROVED HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Anna Holmuth 9/16/91
 CHIEF PLANNING DIVISION

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John M. Johnson 9/6/91
 CHIEF PLANNING DIVISION

Francis W. Wehner Jr. 9/9/91
 DATE

DATE	
BY	
REVISION	
NO.	
PROFILE	
NO.	

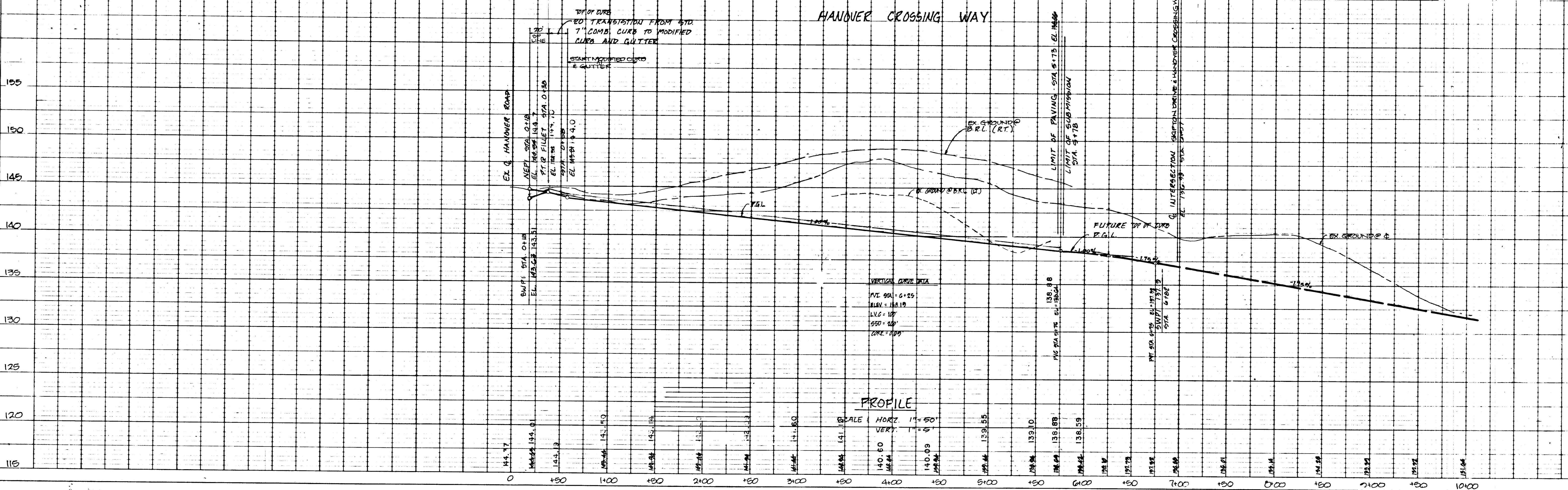
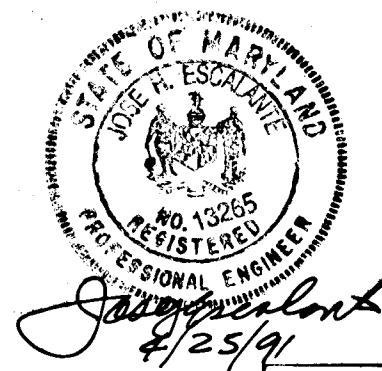


PLATE I-SINGLE PLAN AND PROFILE, FULL LINE
 PRINTED IN U.S.A.

1031

HANOVER CROSSING WAY
 CURVE DATA
 STA. 4+97.00 TO STA. 5+78.00
 R = 550.00'
 L = 81.00'
 TAN = 40.57'
 A = 87°26'17"
 CHD = S10°07'58"E
 CHD DIST. = 40.29'

- LIGHTING LEGEND**
- TYPE 'A' 250 WATT MERCURY VAPOR LAMP MOUNTED ON A 25' HIGH GALVANIZED STEEL POLE.
 - TYPE 'B' 175 WATT MERCURY VAPOR LAMP MOUNTED ON A 14' HIGH FIBERGLASS BRONZE POLE.



HANOVER CROSSING
 SECTION ONE
 LOT 1 THRU LOT 17
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

PLAN AND PROFILE
HANOVER CROSSING WAY

OWNER / DEVELOPER
 J.M.D. LIMITED PARTNER - NEWBURN DEVELOPMENT
 SHIP SUITE 201 5570 STERRETT PLACE COLUMBIA, MD. 21044
 CORP. SUITE 201 5570 STERRETT PLACE COLUMBIA, MD. 21044

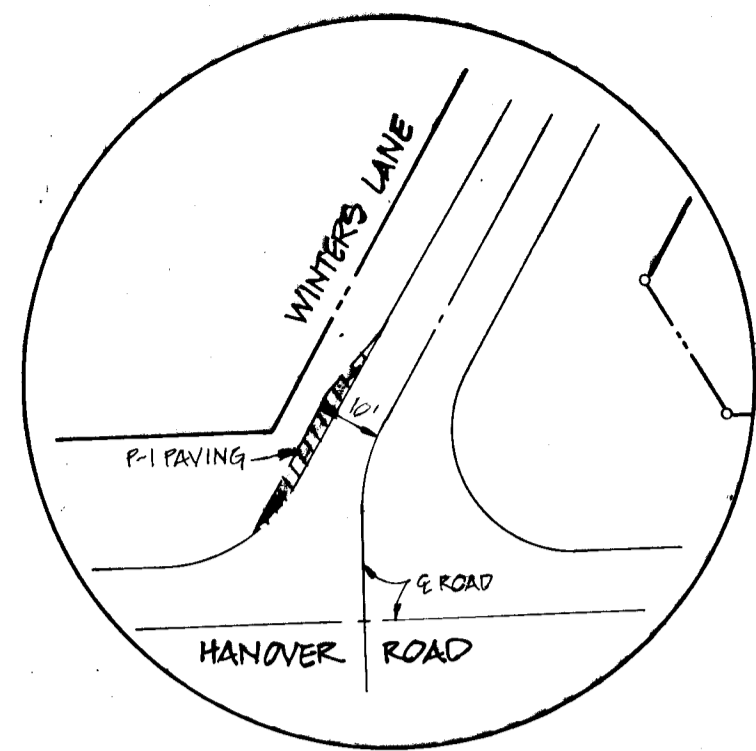
SCALE: AS SHOWN DATE: JULY 26, 1988 SHEET 2 OF 2
 DESIGNED BY: KC DRAWN BY: RP CHECKED BY: JE

ENGINEERING CONSULTANTS & ASSOCIATES
 6400 BALTIMORE NATIONAL PIKE
 SUITE 170-A-121
 BALTIMORE, MD 21228

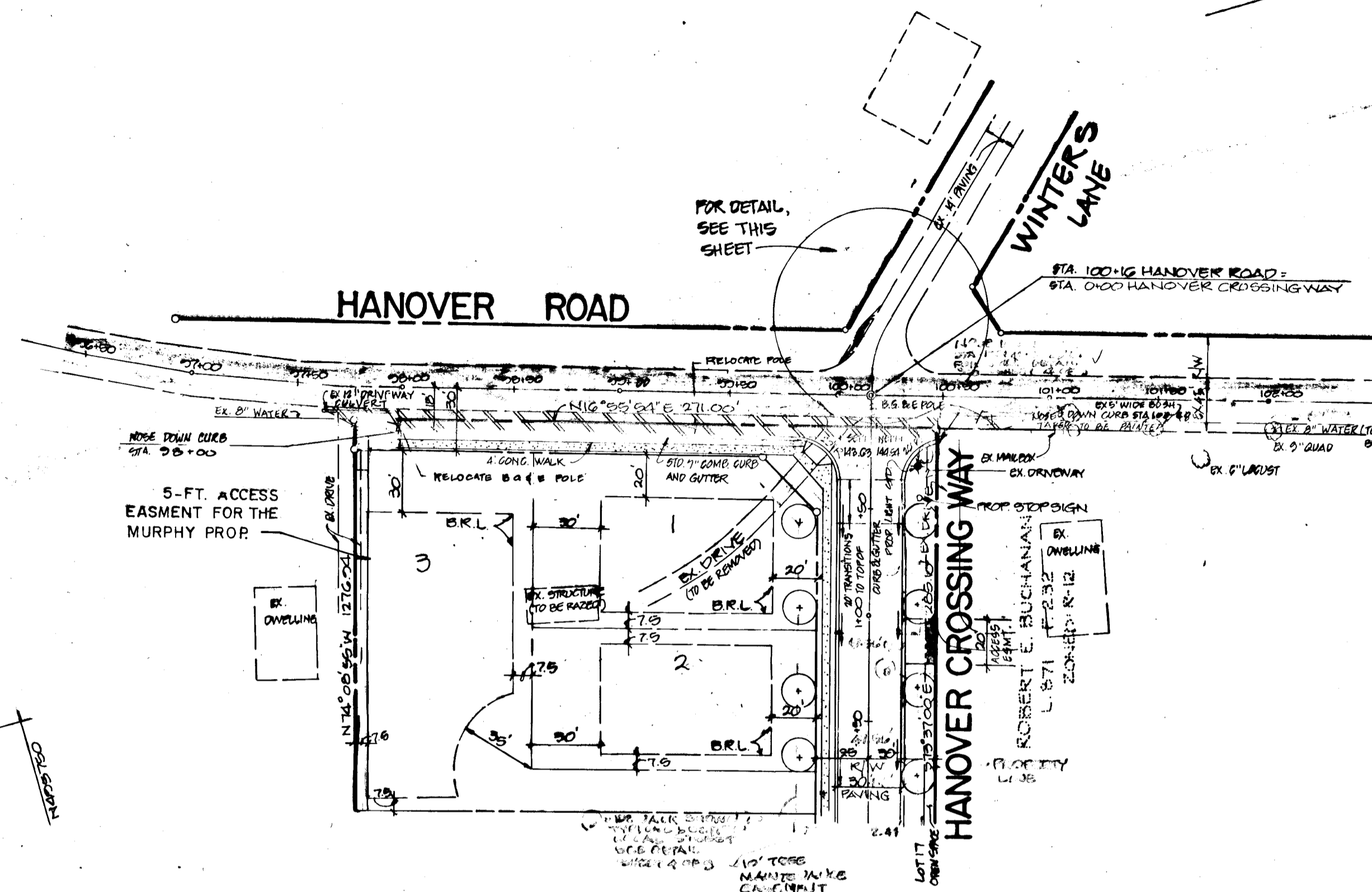
DECEMBER 20, 1996

PLAN
 SCALE: 1"=50'

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



PROPOSED ROAD IMPROVEMENTS
SCALE 1" = 50'



PLAN
1" = 50'

PAVING LEGEND

- EXISTING PAVING
- ROAD IMPROVEMENTS

LIGHTING LEGEND

- TYPE 'A' 250 WATT MERCURY VAPOR LAMP MOUNTED ON A 35' HIGH GALVANIZED STEEL POLE.

PLAN

NO.	DATE	BY	REVISIONS
1			

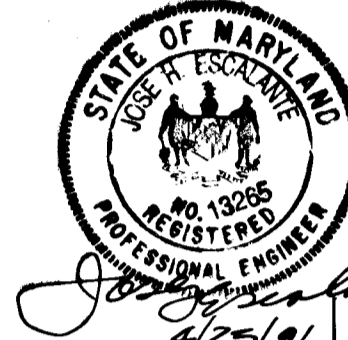
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11/21/89	KC/DP	REVISIONS PER NO. CO. COMMENTS OF 3/9/89	
10/18/90	KC/DP	REVISIONS PER NO. CO. COMMENTS DATED 8/15/90	

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Anna Hebenack 9/16/91
 CHIEF OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Olga M. Pagan 9/6/91
 CHIEF OF DEPARTMENT DIVISION

Granville W. Weiland 5/22/91
 CHIEF OF DEPARTMENT DIVISION

William S. Rely 9-9-91
 CHIEF OF DEPARTMENT DIVISION



HANOVER CROSSING
 SECTION ONE LOT 1 THRU LOT 17
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

ROAD IMPROVEMENT PLAN
HANOVER ROAD

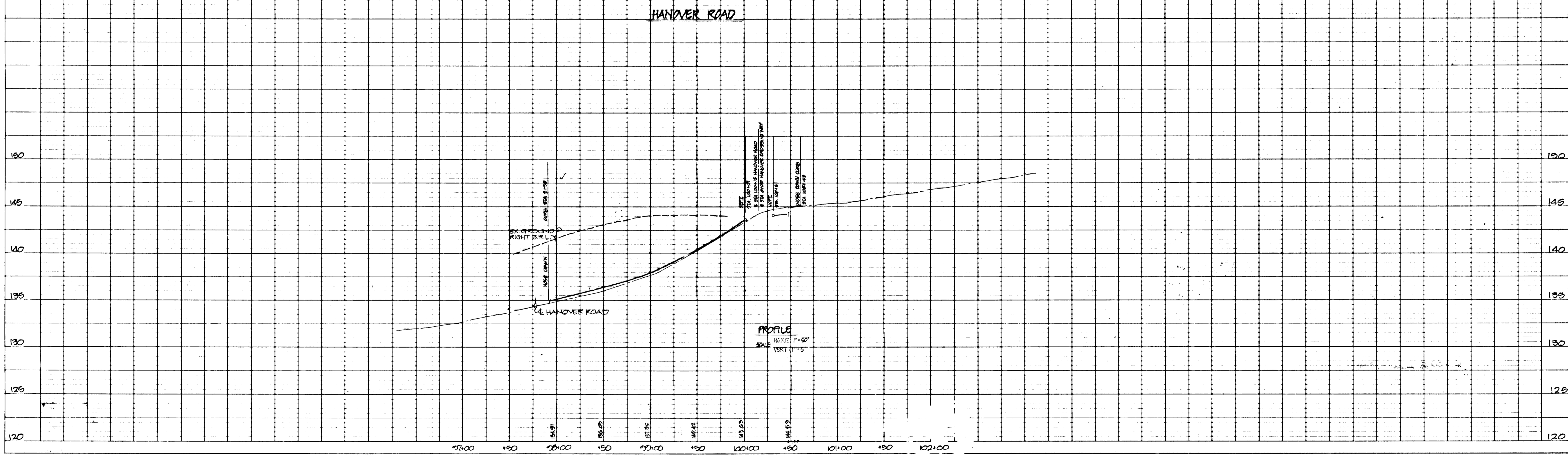
OWNER / DEVELOPER
 J.M.C. LIMITED PARTNERSHIP NEWKIRK DEVELOPMENT CORP.
 SUITE 201 SUITE 201
 8570 STERRETT PLACE 8570 STERRETT PLACE
 COLUMBIA, MD. 21044 COLUMBIA, MD. 21044

SCALE 1" = 50' DATE JULY 26, 1990 SHEET 5 OF 9
 DESIGNED BY K.G. DRAWN BY D.P. CHECKED BY J.E.

ENGINEERING CONSULTANTS & ASSOCIATES
 6400 BALTIMORE NATIONAL PIKE
 SUITE 170-A-121
 BALTIMORE, MD 21228

PROFILE

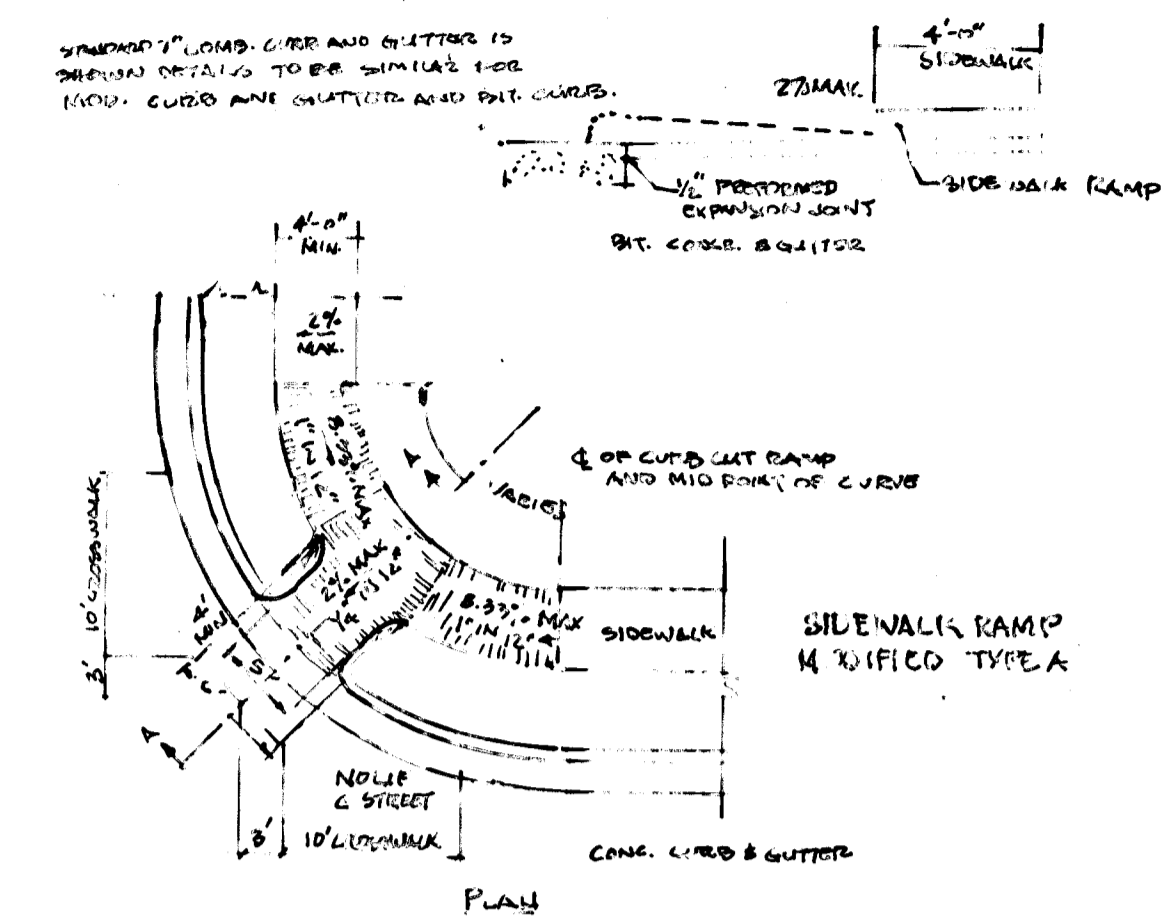
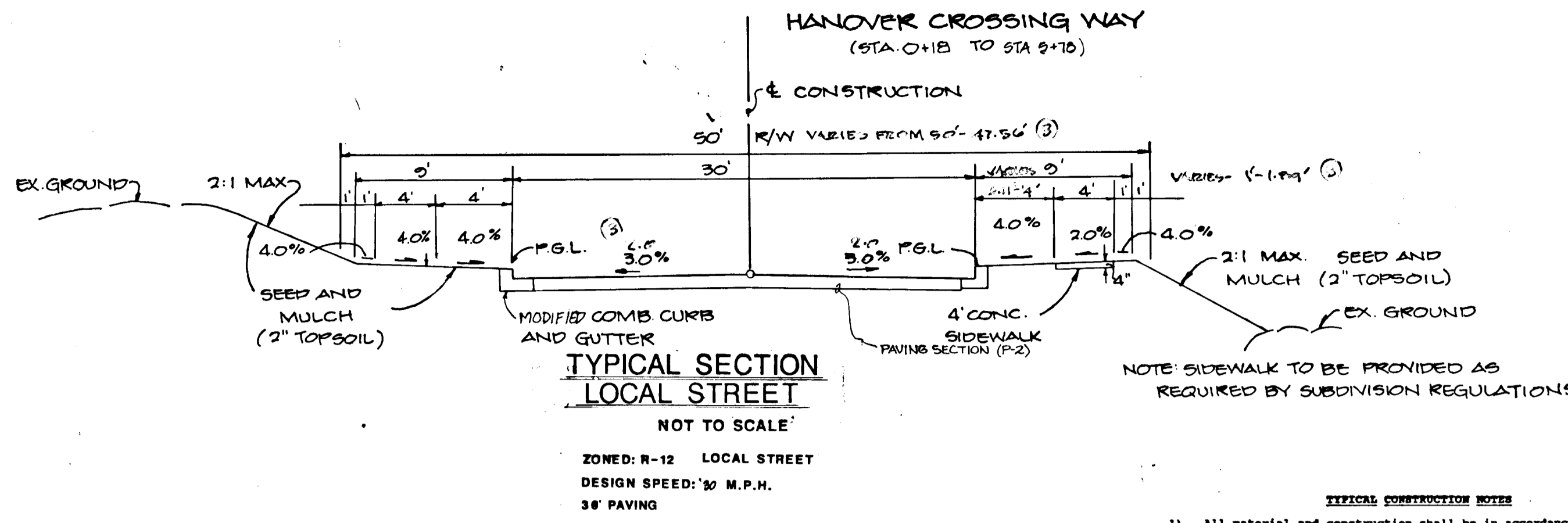
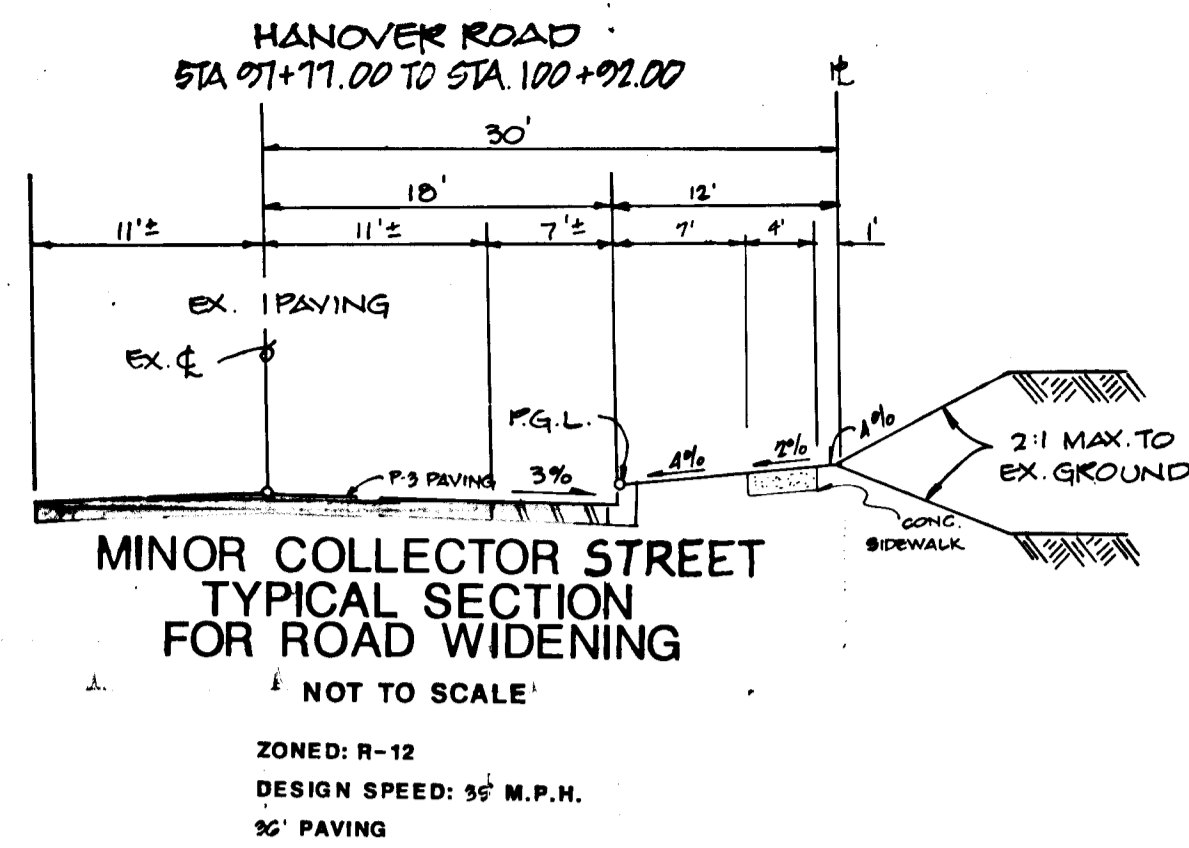
NO.	DATE	BY	REVISIONS
1			



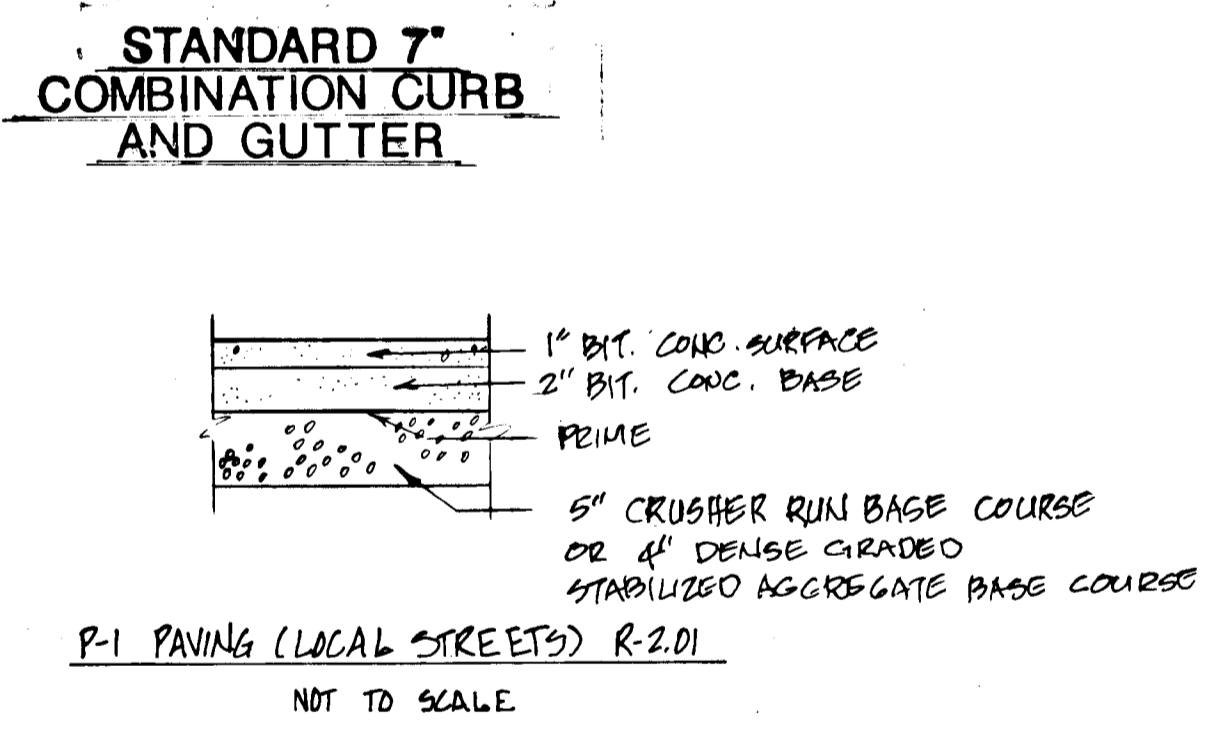
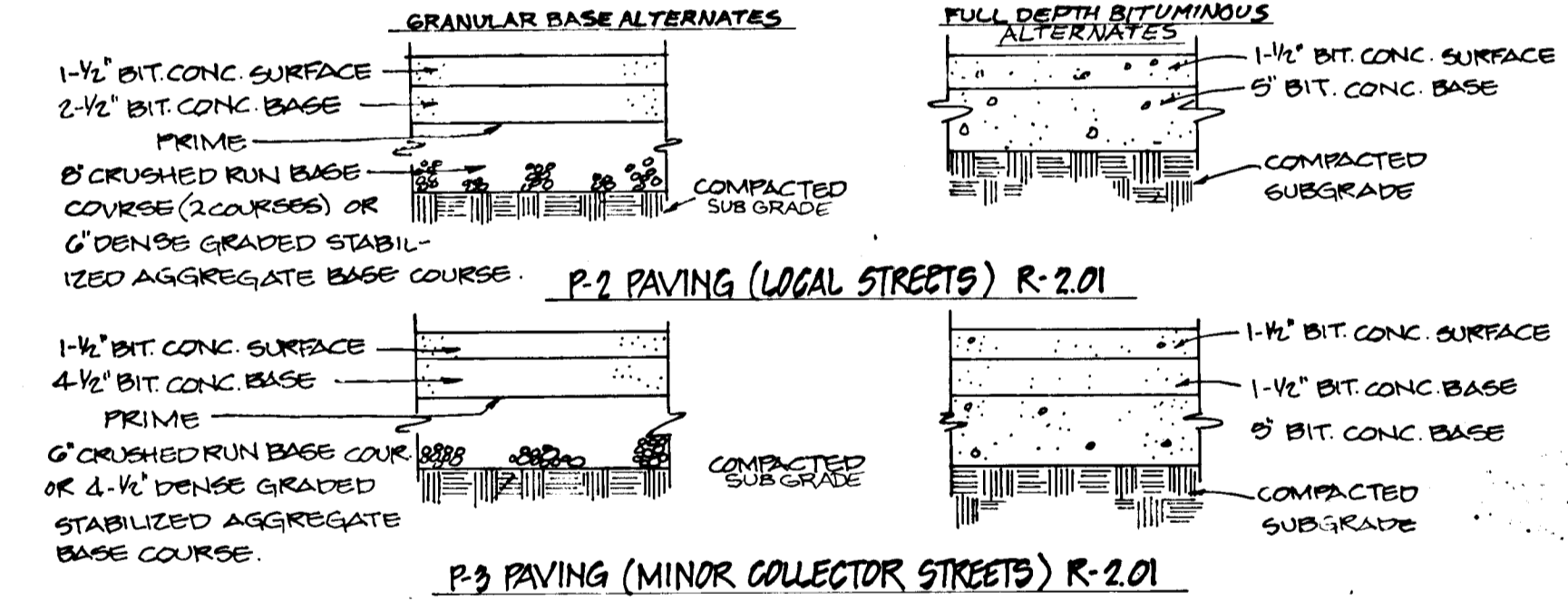
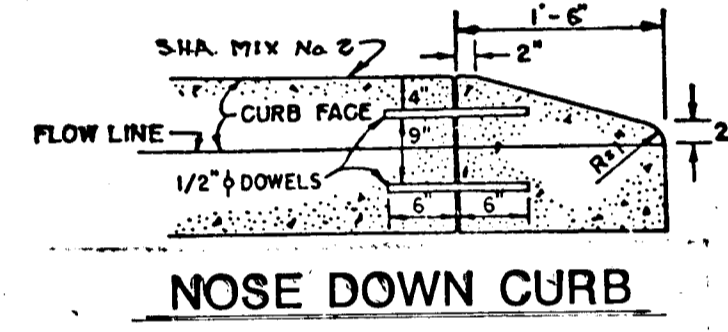
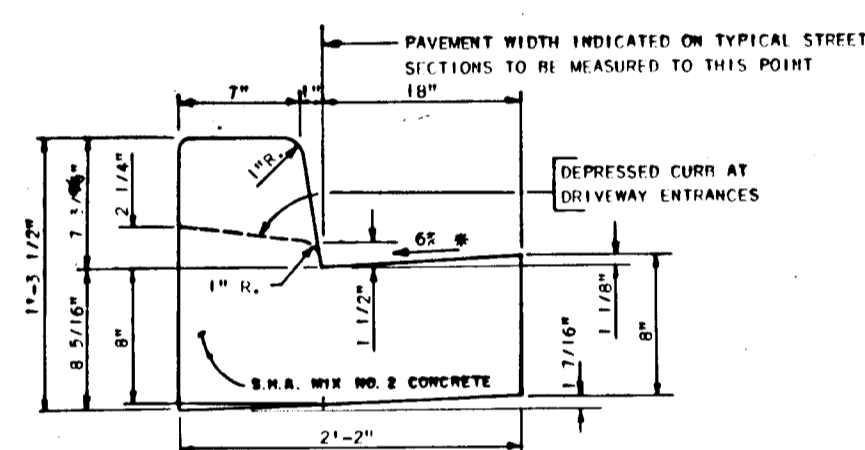
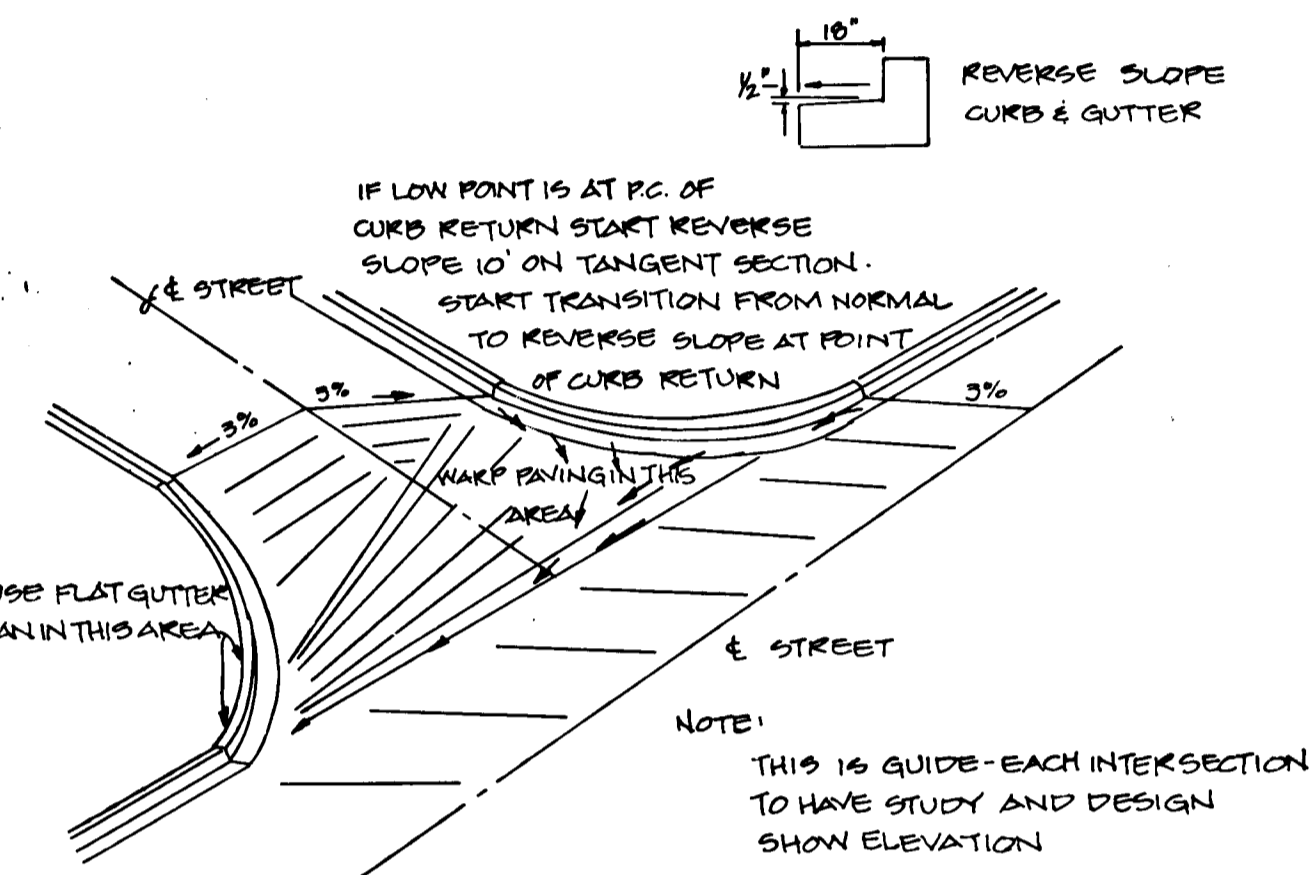
PROFILE
 SCALE 1" = 50'
 VERT. 1" = 5'

ROADWAY FEDERAL AID DISTRICT
 PLATE 1-SINGLE PLAN AND PROFILE-FULL LINE
 PRINTED IN U.S.A.

1631

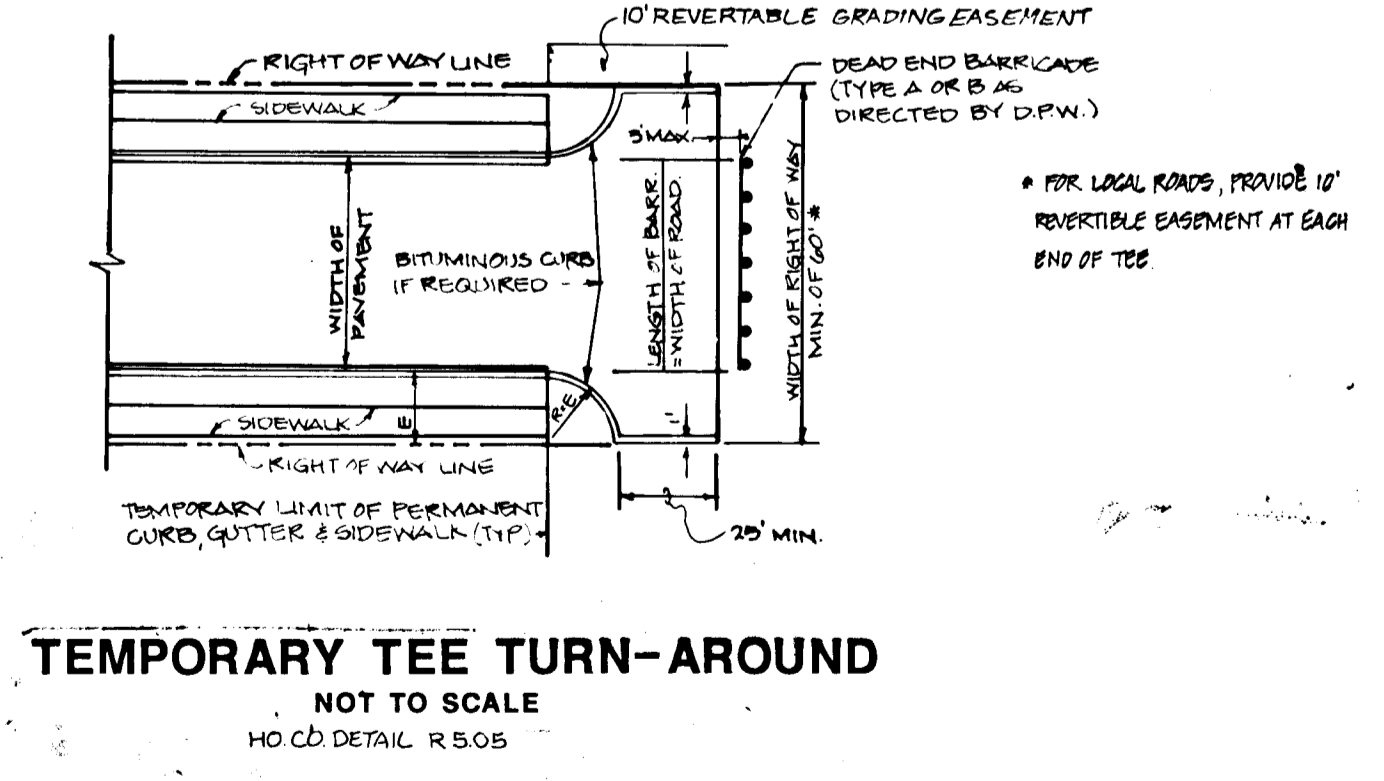
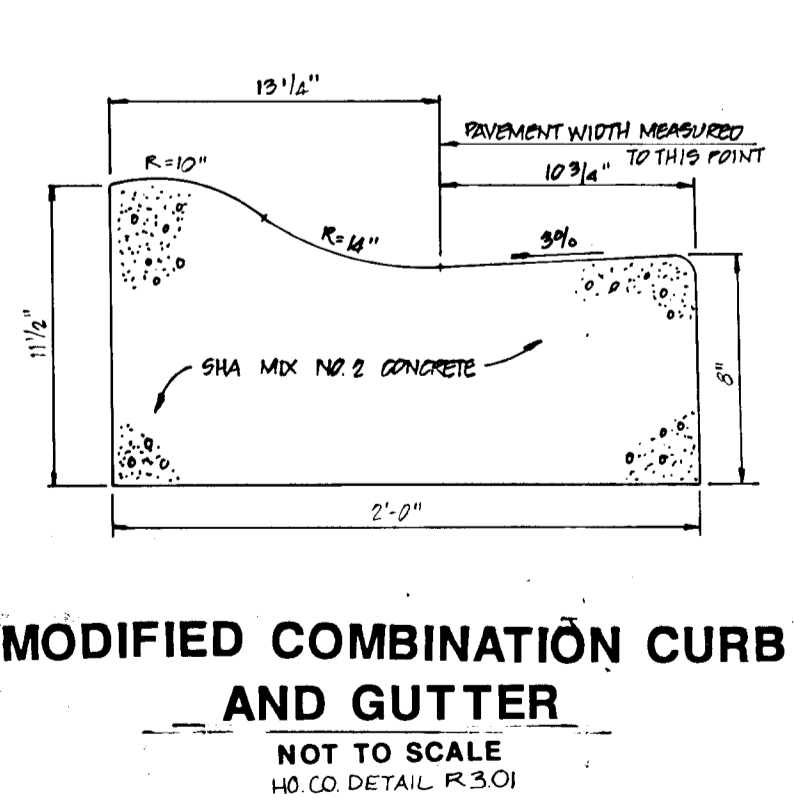


- TYPICAL CONSTRUCTION NOTES**
- All material and construction shall be in accordance with Howard County Design Manual, Volume IV, Standard Specification and details for construction.
 - All disturbed areas to be stabilized with 2\"/>



AS-BUILT

October 2, 1996



APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Alan M. Tomason 9/6/96
 CHIEF, LAND DEVELOPMENT DIVISION MLK DATE

Francis W. Wescott 5/22/91
 CHIEF, BUREAU OF HIGHWAY DATE

William B. Rely 9/9/91
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Anna Holman 9/6/91
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

REVISIONS			
DESIGNED	DATE	BY	DESCRIPTION
KC	11/89		
DATE	10/19/96	KC/DP	REVISIONS PER HP 62 COMMENTS DATED 8/18/96
DRAWN	11/89		
DATE	11/21/89	KC/DP	REVISIONS PER HO. CO. COMMENTS HP 8/9/89
CHECKED	11/89		
DATE	10/2/91	MLK	REVISED PER HO. CO. COMMENTS HP 8/9/89
APPROVED	11/89		
DATE			

ENGINEERING CONSULTANTS & ASSOCIATES

6400 BALTIMORE NATIONAL PIKE
 SUITE 170-A-121
 BALTIMORE, MD 21228



OWNER:
 J.N.D.C. LIMITED PARTNERSHIP
 SUITE 201
 5570 STERRETT PLACE
 COLUMBIA, MD. 21044
 (301) 997-3815

DEVELOPER:
 NEWBURN DEVELOPMENT CORP.
 SUITE 201
 5570 STERRETT PLACE
 COLUMBIA, MD. 21044
 (301) 997-3815

ROAD CONSTRUCTION DETAILS
HANOVER CROSSING
 SECTION ONE
 LOTS 1 THRU LOTS 17
 TAX MAP 38 PARCEL 266
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

1031

STORM WATER MANAGEMENT CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to ponds within the scope of the Standard Practice 372.

I. SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and ditches shall be cleaned to a depth of no less than 18 inches.

Areas to be covered by the pond or reservoir will be cleared of all trees, brush, logs, stumps, rubbish and other objectionable material unless otherwise directed by the owner or his representative. The fill height along the length of the embankment shall be as specified in a suitable location for use on the embankment and other designated areas.

II. FILL

The fill material shall be as free from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, concrete stones, frozen or silted material. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height along the length of the embankment shall be as specified in a suitable location for use on the embankment and other designated areas.

Areas on which fill is to be placed shall be described prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness layers (uniformly compacted) and shall be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream slope of the embankment.

The use of the hauling and spreading equipment over the fill shall be controlled so that the surface of each lift shall be traversed by not less than one track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture and shall be compacted to the required degree of compaction as 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.

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plan. The bottom width of the trench shall be as shown on the drawing, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plan. The side slope of the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to secure minimum density and minimum permeability.

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

III. PIPE

All pipes shall be circular in cross section.

A. Reinforced 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 ASTM Specification A133 Type A with water tight coating inside. Any situation contrary to the above shall be replaced with cold applied bituminous coating around.

FOR CONTINUATION OF STORM WATER MANAGEMENT POND SPECS SEE THIS SHEET

CONTINUATION OF SPECIFICATIONS

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 considered acceptable: Epoxy, Polyethylene, Polypropylene, and Butyl Rubber. Coated corrugated steel pipe shall meet the requirements of ASTM A-252 and A-262.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of ASTM Specification B-221 or anti-seep collars, and sections, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar material with non-conductive plastic insulating materials at least 24 mils in thickness. Aluminum surfaces that are to be in contact with concrete shall be coated with an anti-oxidant 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.

Connections - All connections with pipes must be completely watertight. Pipe or barrel connections to the riser shall be welded all around when the pipe and riser are metal. Watertight couplings shall be used on all joints. Anti-seep collars shall be connected to the pipe in a manner so as to completely waterproof. Details shall be not confirmed to be watertight.

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

Laying pipe - The pipe shall be placed with inside circumference laid pointing downstream and with the longitudinal joint at the side.

Backfilling shall conform to structural backfill as shown above.

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

B. Reinforced Concrete Pipe

Materials - Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-301. An approval equivalent to ASTM Specification C-301.

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

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

Backfilling shall conform to structural backfill as shown above.

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

C. CONCRETE

I. Materials

1. Cement - Normal Portland cement shall conform to the 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 free from clay or dirt. It shall be well graded with a maximum size of one and one-half (1-1/2) inches.

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

5. Reinforcing Steel - The reinforcing steel shall be deformed type and shall conform to the requirements of ASTM Specification A-615.

6. Design Mix - The concrete shall be mixed in the following proportions, based on dry weight: Cement 1 part, Sand 2 parts, Coarse Aggregate 3 parts. The water-cement ratio shall be 0.50 to 0.55. The proportion of materials for the trial mix shall be 1:2:3. The proportion of aggregate may be adjusted to produce a plastic and workable mix that will not produce honeycombs in placing or homogenizing in the structure.

7. Mixing - The concrete ingredients shall be mixed in batch sizes until the mixture is homogeneous and of uniform consistency. The mixing of all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixer and of the introduction of the concrete ingredients. The concrete shall be placed in the structure without vibration or without excessive pressure, tamping, and vibration without deflection from the prescribed lines. They shall be thoroughly compacted by the use of a vibrator. The vibrator shall be allowed provided that the use of this method shall result in a concrete of uniform quality throughout the structure.

8. Forms - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping, and vibration without deflection from the prescribed lines. They shall be thoroughly compacted by the use of a vibrator. The vibrator shall be allowed provided that the use of this method shall result in a concrete of uniform quality throughout the structure.

9. 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 lapped into position so that no movement of the steel will occur during placement of concrete.

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

11. Finishing - Before concrete, unexposed areas, wide left to the removal of the forms, shall be consolidated with internal type mechanical vibrators. Vibration shall be supplemented by rodding and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.

12. Protection and Curing - Exposed surfaces of concrete shall be protected from a direct ray of the sun for at least the first three (3) days. All concrete shall be kept continuously moist for at least ten (10) days after being placed. Moisture may be applied by spraying or providing a necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds, if any, shall be used.

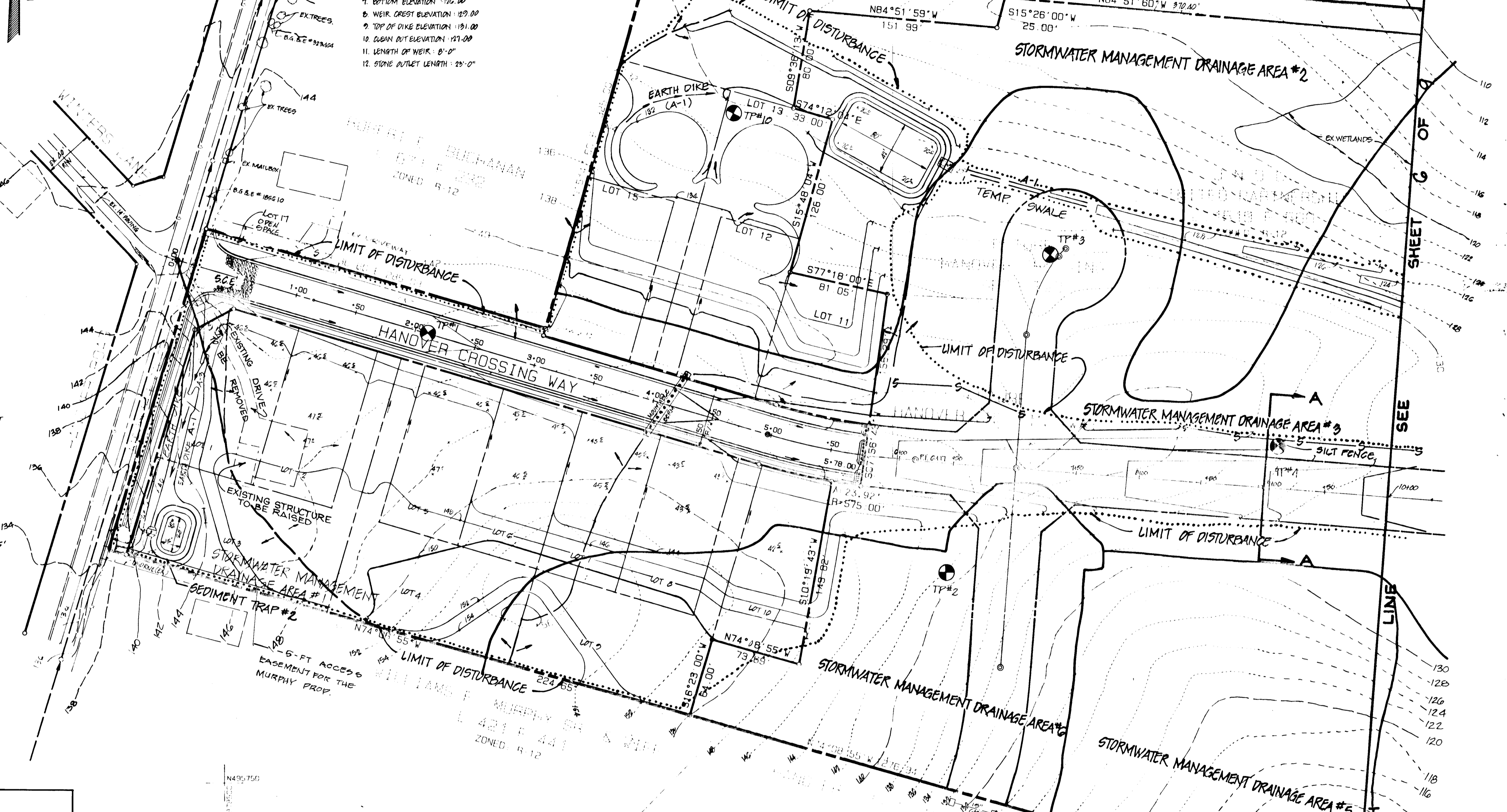
VI. STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillways, and borrow areas, and borrow shall be stabilized by seeding, mowing, fertilizing and mulching (if required) in accordance with the respective treatment specified on 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. Erosion and sediment control measures will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

MARYLAND STATE GRID SYSTEM



SEDIMENT TRAP #1

1. DRAINAGE AREA TO TRAP: 3.44 AC
2. VOLUME REQUIRED: 229 C.Y.
3. VOLUME PROVIDED: 349 C.Y.
4. BASIN SIZE (BOTTOM DIMENSIONS): 80' X 42'
5. BASIN DEPTH: 2'-0"
6. SIDE SLOPE: 2:1
7. BOTTOM ELEVATION: 136.00
8. WEIR CREST ELEVATION: 129.00
9. TOP OF DIKE ELEVATION: 131.00
10. CLEAN OUT ELEVATION: 121.00
11. LENGTH OF WEIR: 8'-0"
12. STONE OUTLET LENGTH: 25'-0"

SEDIMENT TRAP #2

1. DRAINAGE AREA TO TRAP: 1.07 AC
2. VOLUME REQUIRED: 33.50 C.Y.
3. VOLUME PROVIDED: 34.40 C.Y.
4. BASIN SIZE (BOT DIMENSIONS): 28' X 15'
5. BASIN DEPTH: 2'-0"
6. SIDE SLOPE: 2:1
7. BOTTOM ELEVATION: 136.00
8. WEIR CREST ELEVATION: 131.00
9. TOP OF DIKE ELEVATION: 140.00
10. CLEAN OUT ELEVATION: 137.00
11. LENGTH OF WEIR: 2'-0"
12. STONE OUTLET LENGTH: 18'-0"

"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 AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Joseph J. ... DATE 4/25/91

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James L. Newburn DATE 4/23/91

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.

John ... DATE 5/1/91

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

Roland ... DATE 5/1/91

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Howard ... DATE 4/6/91
Shirley W. Welles DATE 5/22/91
... DATE 9-9-91

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Anna ... DATE 4/16/91



PLAN SCALE: 1"=50'

DESIGNED		DATE		DESCRIPTION	
1/1/91	1/1/91	10/1/88	KC/OP	REVISED PER NO. 10 COMMENTS DATED 8/16/88	
1/1/91	1/1/91	11/21/89	KC/OP	REVISED PER HO. CO. COMMENTS # 2/4/89	
1/1/91	1/1/91				
1/1/91	1/1/91				

ENGINEERING CONSULTANTS & ASSOCIATES
 6400 BALTIMORE NATIONAL PIKE
 SUITE 170-A-121
 BALTIMORE, MD 21228



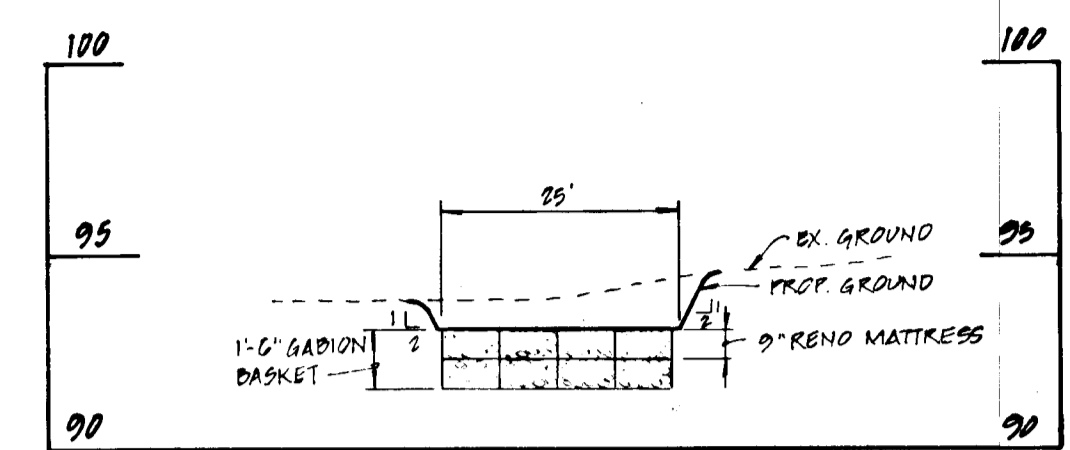
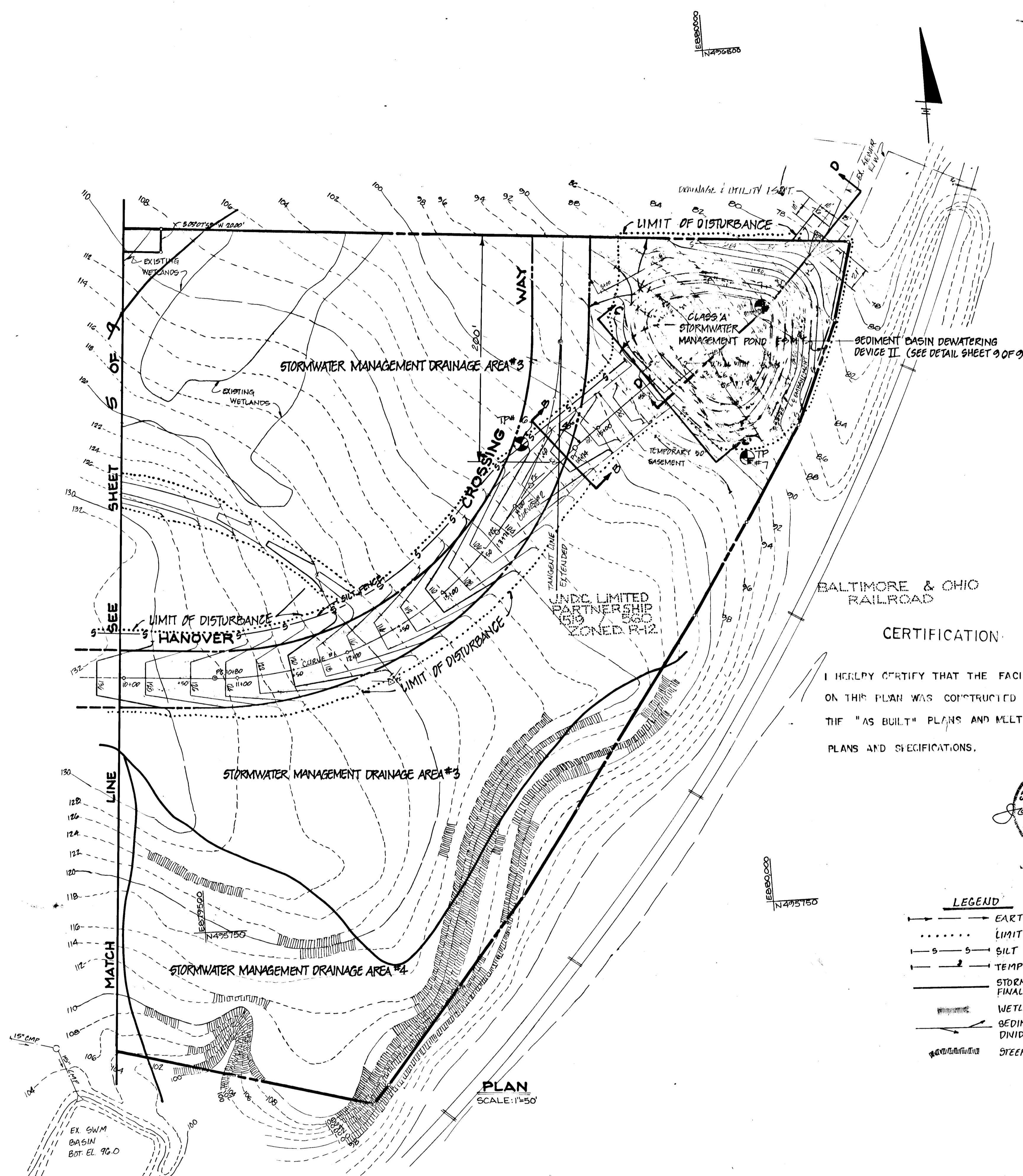
OWNER:
 J.N.C. LIMITED
 PARTNERSHIP
 SUITE 201
 5570 STERRETT PLACE
 COLUMBIA, MD. 21044
 (301) 997-3815

DEVELOPER:
 NI W/URN DEVELOPMENT
 CORP.
 SUITE 201
 5570 STERRETT PLACE
 COLUMBIA, MD. 21044
 (301) 997-3815

GRADING, SEDIMENT CONTROL, AND STORMWATER MANAGEMENT PLAN
HANOVER CROSSING
 SECTION ONE
 LOTS 1 THRU LOTS 17
 TAX MAP 38 PARCEL 266
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

1631

1031



CURVE DATA ALONG Q OF CHANNEL

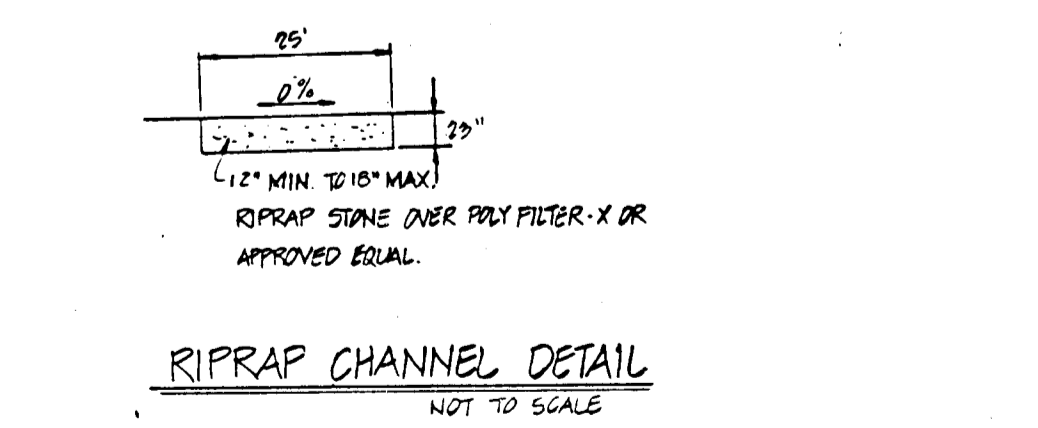
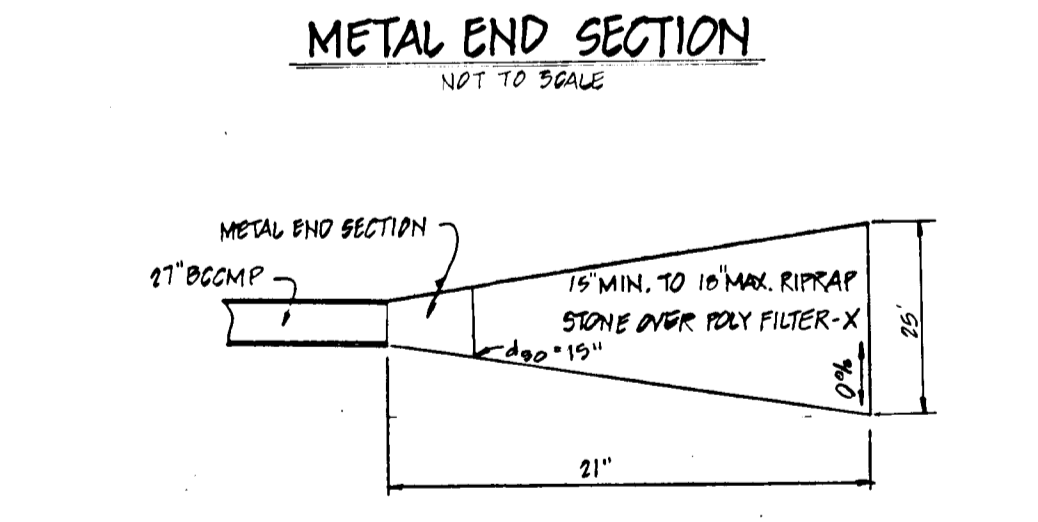
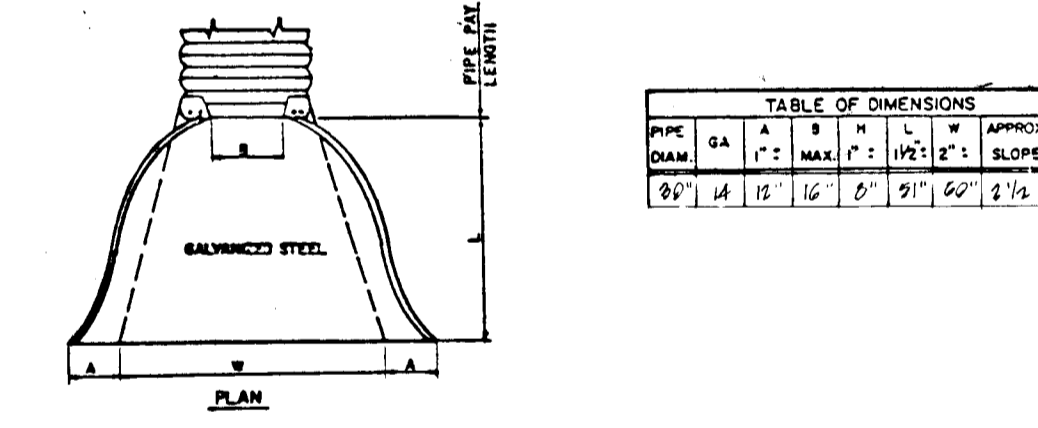
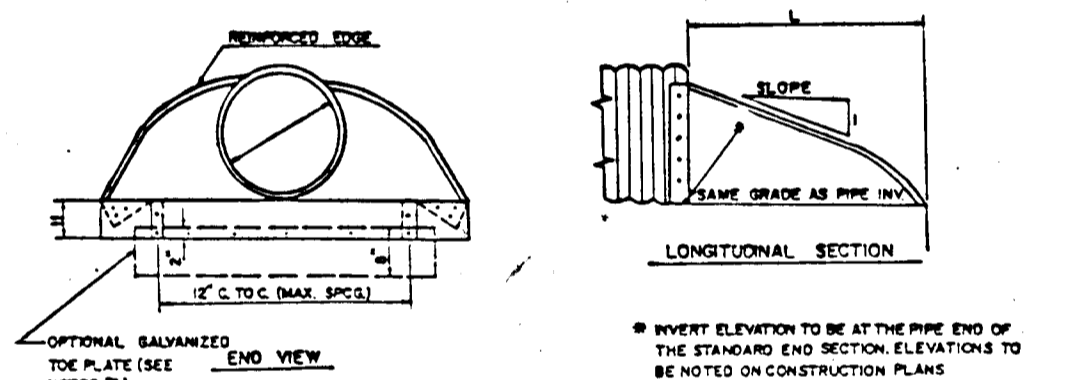
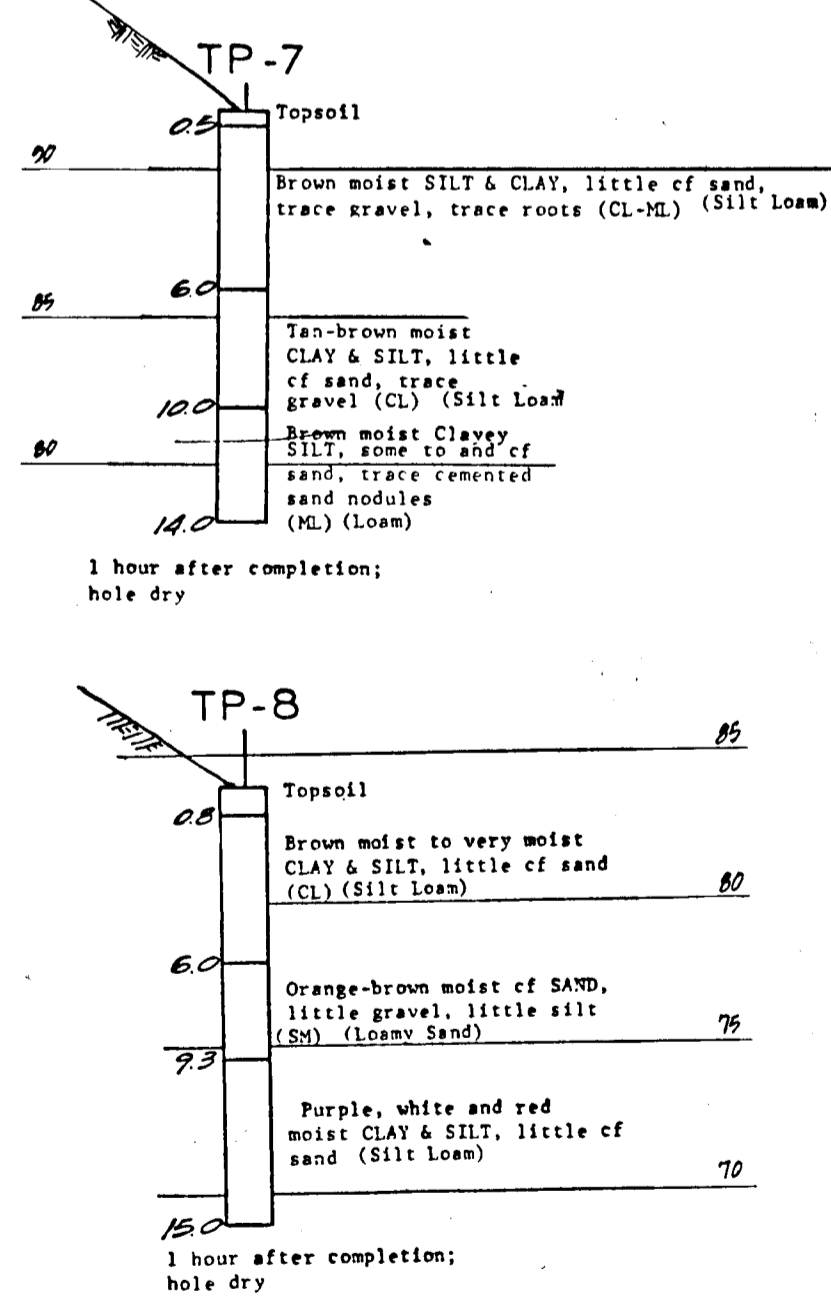
CURVE #1	CURVE #2
R = 305'	R = 407'
D = 54°12'00"	D = 14°00'00"
L = 288.62'	L = 99.45'
T = 196.08'	T = 49.97'
CH = 271.88'	CH = 99.20'

BALTIMORE & OHIO RAILROAD

CERTIFICATION:
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.



- LEGEND**
- EARTH DIKE (A-1)
 - LIMIT OF DISTURBANCE
 - - - SILT FENCE
 - - - TEMPORARY SWALE A-1
 - STORM WATER MANAGEMENT FINAL DRAINAGE DIVIDE
 - WETLANDS
 - BEDIMENT CONTROL DRAINAGE DIVIDE
 - STEEP SLOPES



DESIGNED	DATE	BY	DESCRIPTION
KC	11/89	KC/DP	REVISIONS PER MD DEPARTMENT DATED 8/15/88
DP I	11/89	EC/DP	REVISIONS PER MD CO. COMMENTS OF 8/9/89
CHECKED	11/89		
APPROVED	11/89		

ENGINEERING CONSULTANTS & ASSOCIATES
6400 BALTIMORE NATIONAL PIKE
SUITE 170-A-121
BALTIMORE, MD 21228



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DEVELOPER:
NEWBURN DEVELOPMENT
CORP.
SUITE 201
5570 STERRETT PLACE
COLUMBIA, MD. 21044
(301) 997-3815

GRADING, SEDIMENT CONTROL, AND STORMWATER MANAGEMENT PLAN
HANOVER CROSSING
SECTION ONE
LOTS 1 THRU LOTS 17
TAX MAP 38 PARCEL 266
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: 1"=50'
PREVIOUS SUBMITTALS S-88-04, P-88-42
FILE NO. SHEET 6 OF 9

"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 DISTRICT THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

James L. Newburn 9/25/91
DATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

James L. Newburn 9/23/91
DATE
JAMES L. NEWBURN PRES. NEWBURN DEV. CORP.
GEN. PARTNER, J.N.D.C. LIMITED PARTNERSHIP

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

James L. Newburn 5/1/91
DATE
HOWARD SOIL CONSERVATION DISTRICT

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

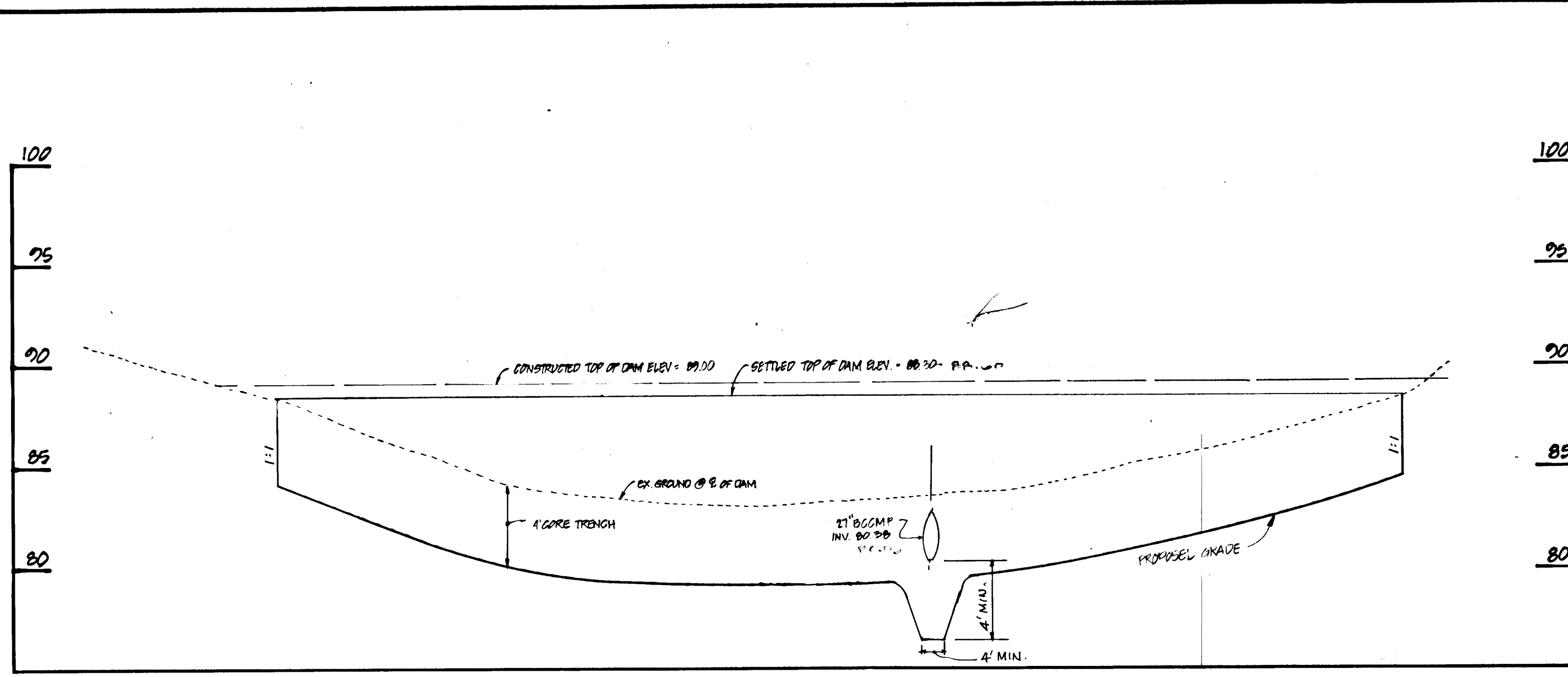
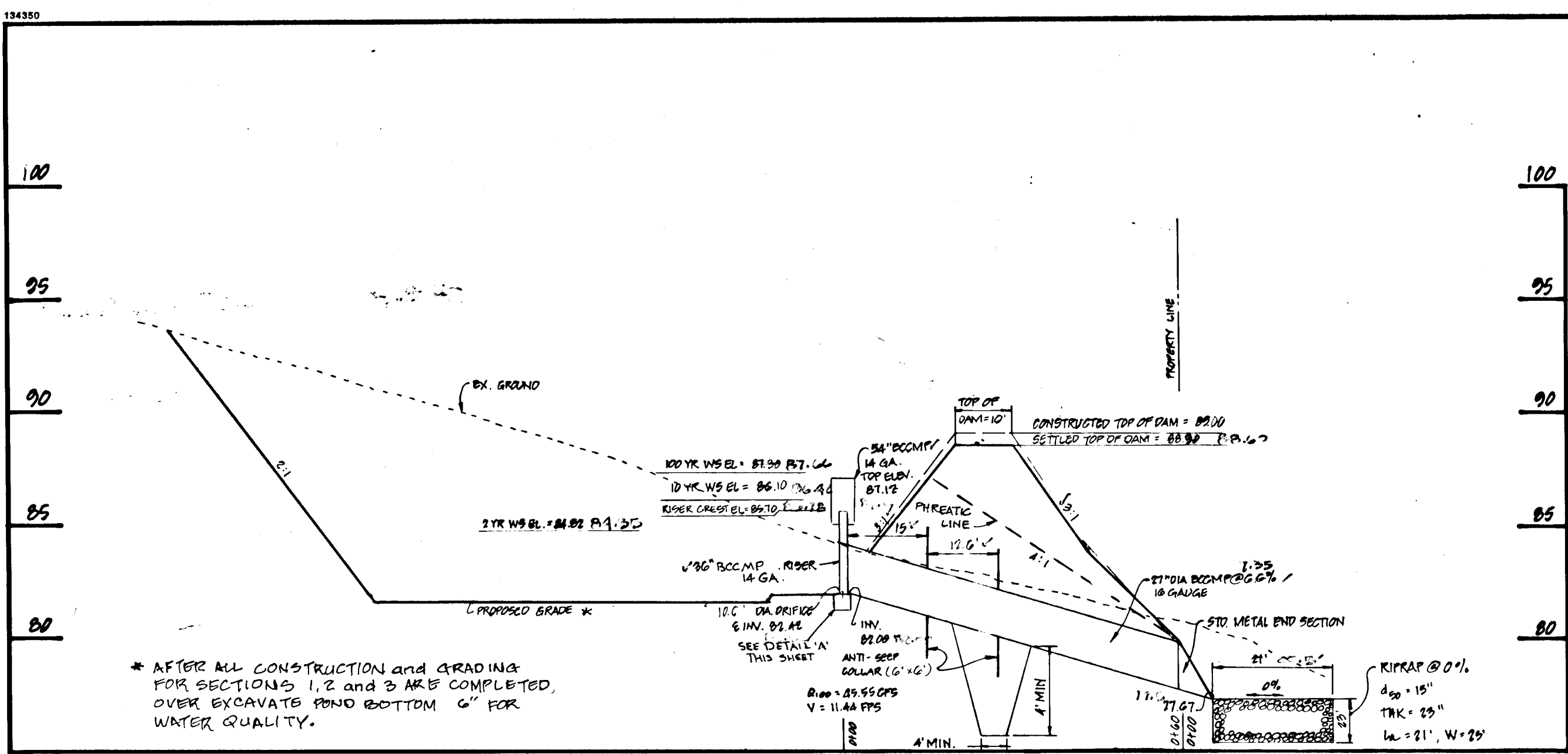
James L. Newburn 5/1/91
DATE
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John M. Tompkins 9/6/91
DATE
CHIEF, LAND DEVELOPMENT DIVISION M.K.

James W. Whelan 5/2/91
DATE
CHIEF, BUREAU OF HIGHWAY

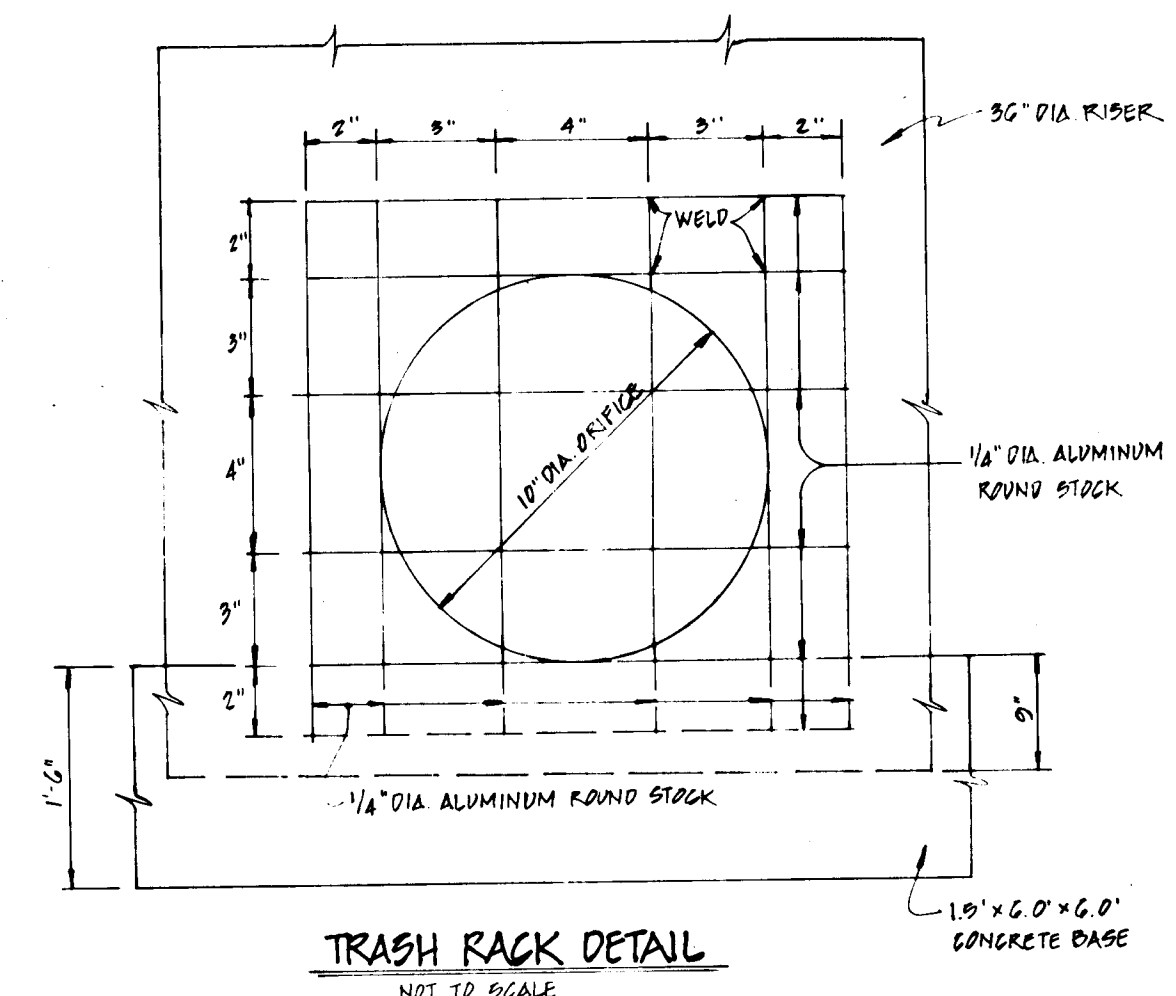
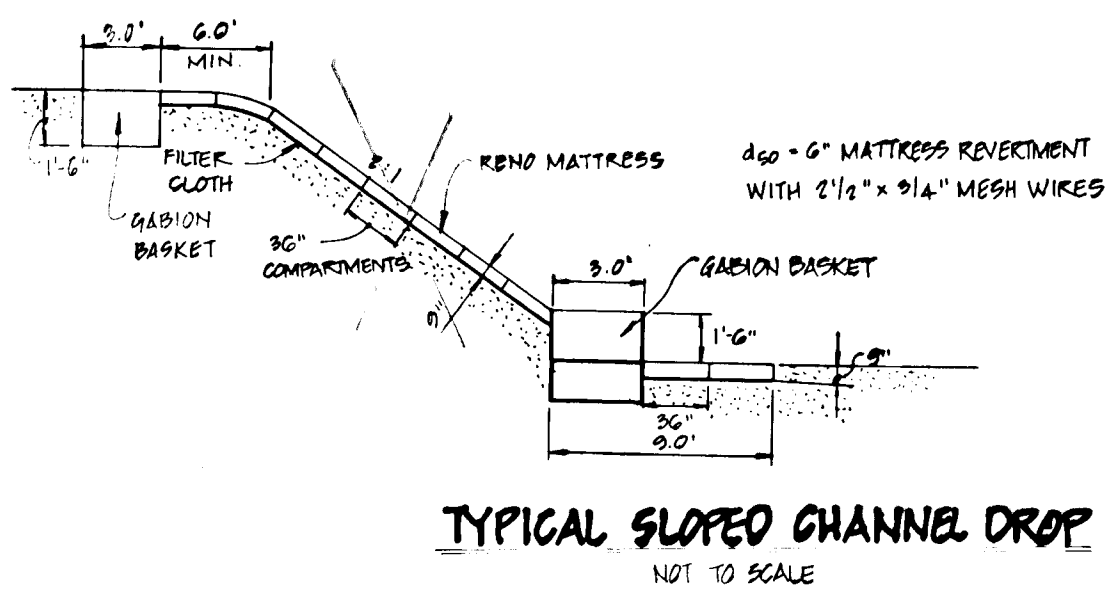
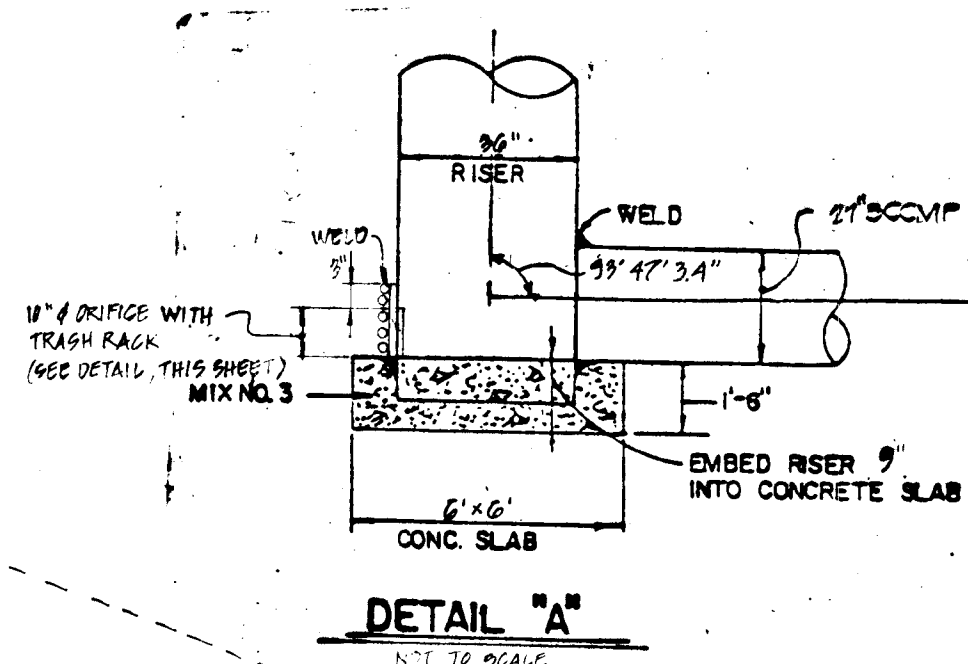
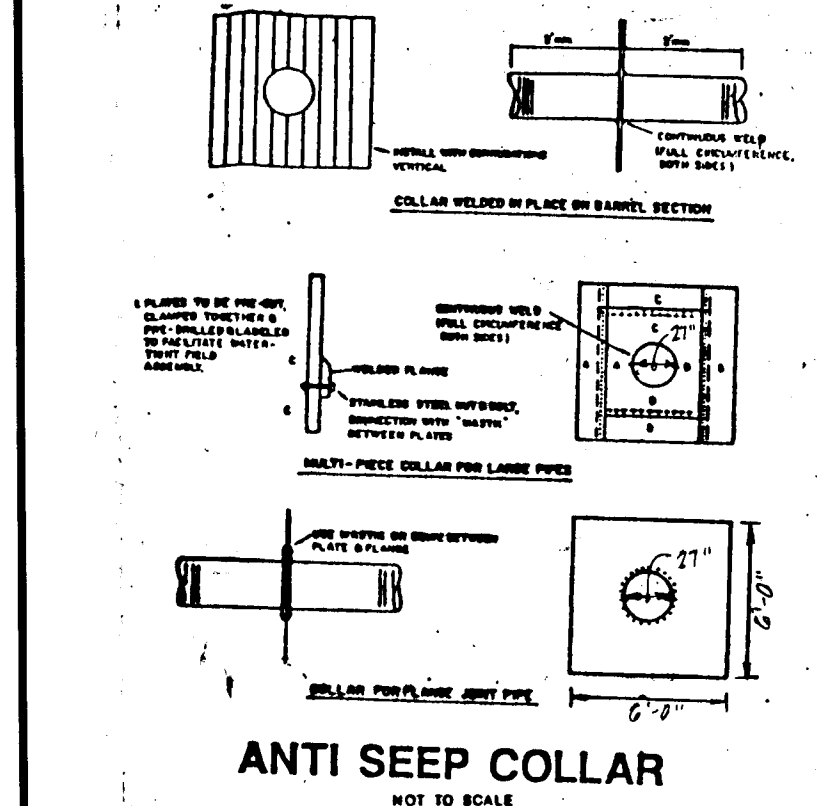
James W. Whelan 5/2/91
DATE
CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING AND LAND DEVELOPMENT
Emma Helmerath 9/16/91
DATE
CHIEF, DIVISION OF COMMUNITY PLANNING



PROFILE ALONG SECTION D-D OF SWM POND

PROFILE ALONG E OF EMBANKMENT



I HEREBY 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 AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

James L. Newburn 4/23/91 DATE
 JAMES L. NEWBURN PRES. NEWBURN DEV. CORP. GEN. PARTNER, J.N.D.C. LIMITED PARTNERSHIP

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

James L. Newburn 5/1/91 DATE
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

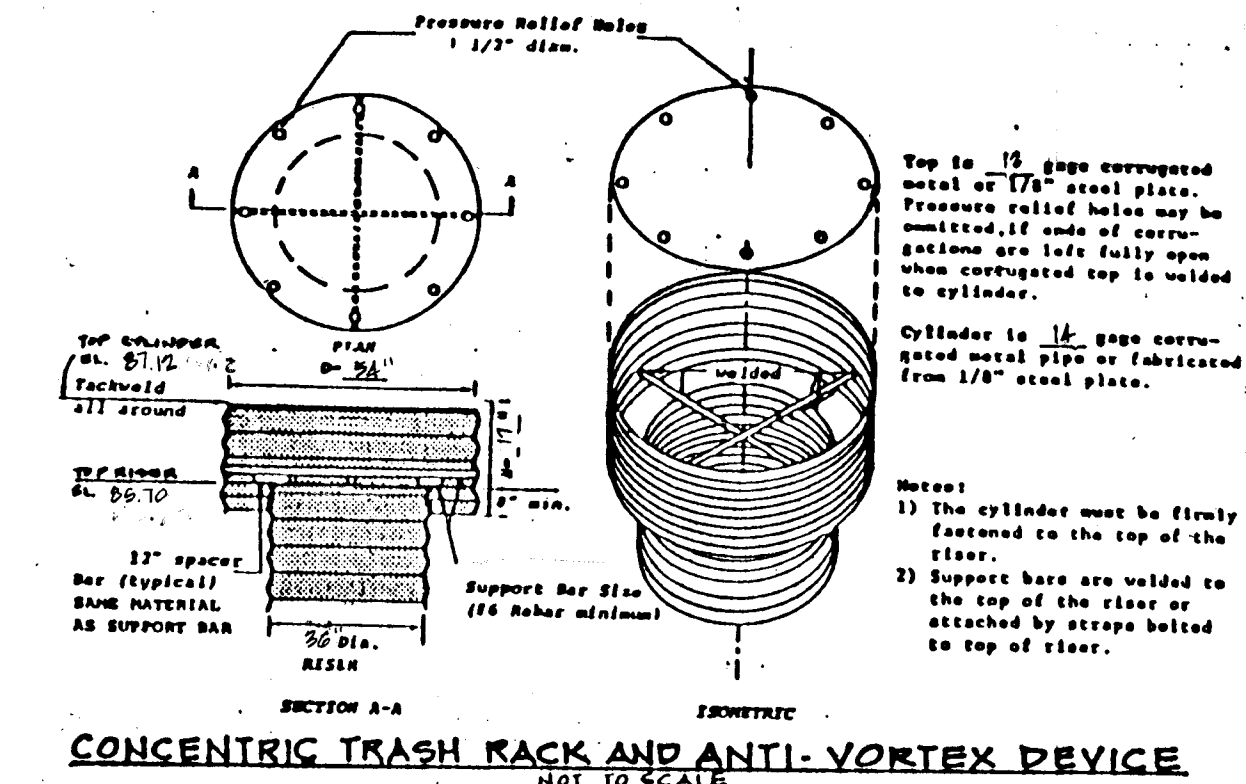
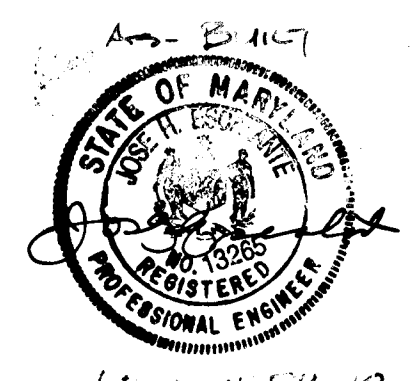
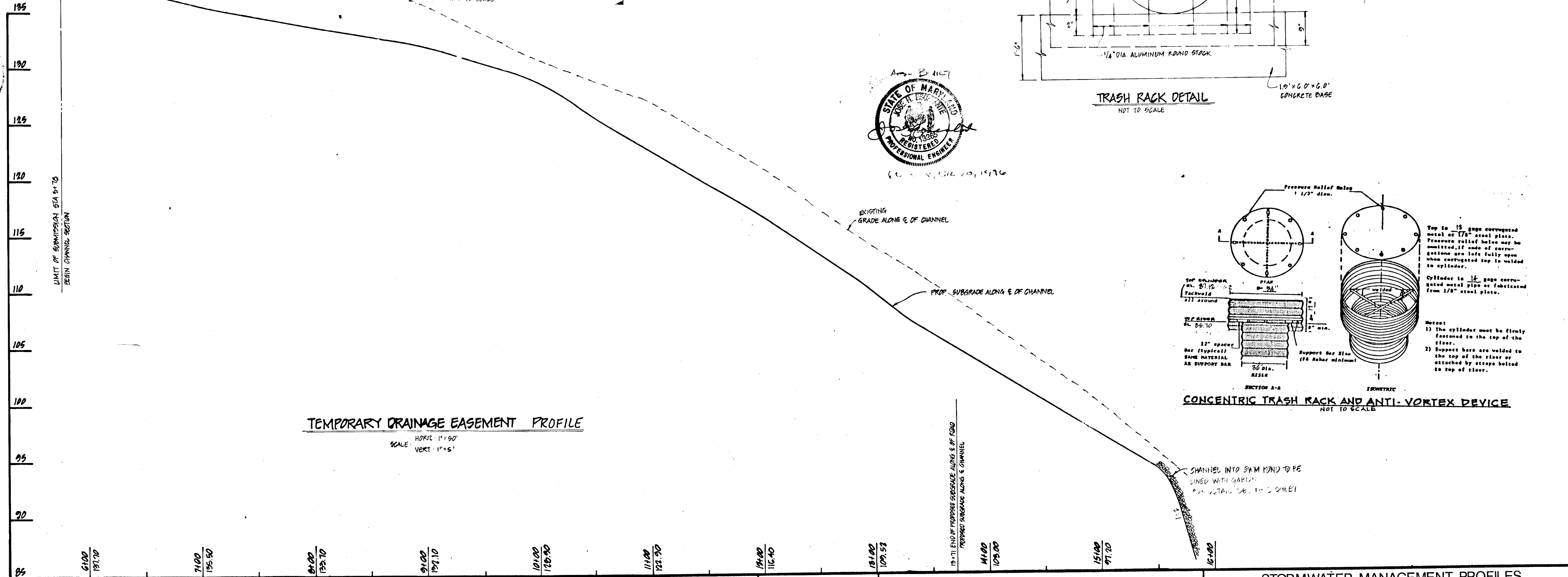
Chas. M. Tomason 9/6/91 DATE
 CHIEF, LAND DEVELOPMENT DIVISION

James W. Wasson 5/2/91 DATE
 CHIEF, BUREAU OF HIGHWAY

Michael J. Papp 9-2-91 DATE
 CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Anna J. Holmquist 9/1/91 DATE
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT



REVISIONS			
DATE	BY	DESCRIPTION	
11/02	K.E.	DESIGNED	
11/09	D.P.	DRAWN	
11/09	K.E.	CHECKED	
11/09	J.E.	APPROVED	
10/19/88	K.C./D.P.	REVISIONS PER HQ. COMMENTS DATED 8/15/88	
4/2/89	K.C./D.P.	REVISIONS PER HQ. COMMENTS OF 3/9/89	

ENGINEERING CONSULTANTS & ASSOCIATES
 6400 BALTIMORE NATIONAL PIKE
 SUITE 170-A-121
 BALTIMORE, MD 21228



OWNER:
 J.N.D.C. LIMITED PARTNERSHIP
 SUITE 201
 5570 STERRETT PLACE
 COLUMBIA, MD. 21044
 (301) 997-3815

DEVELOPER:
 NEWBURN DEVELOPMENT CORP.
 SUITE 201
 5570 STERRETT PLACE
 COLUMBIA, MD. 21044
 (301) 997-3815

STORMWATER MANAGEMENT PROFILES
 HANOVER CROSSING
 SECTION ONE
 LOTS 1 THRU LOTS 17
 TAX MAP 38 PARCEL 266
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

1691

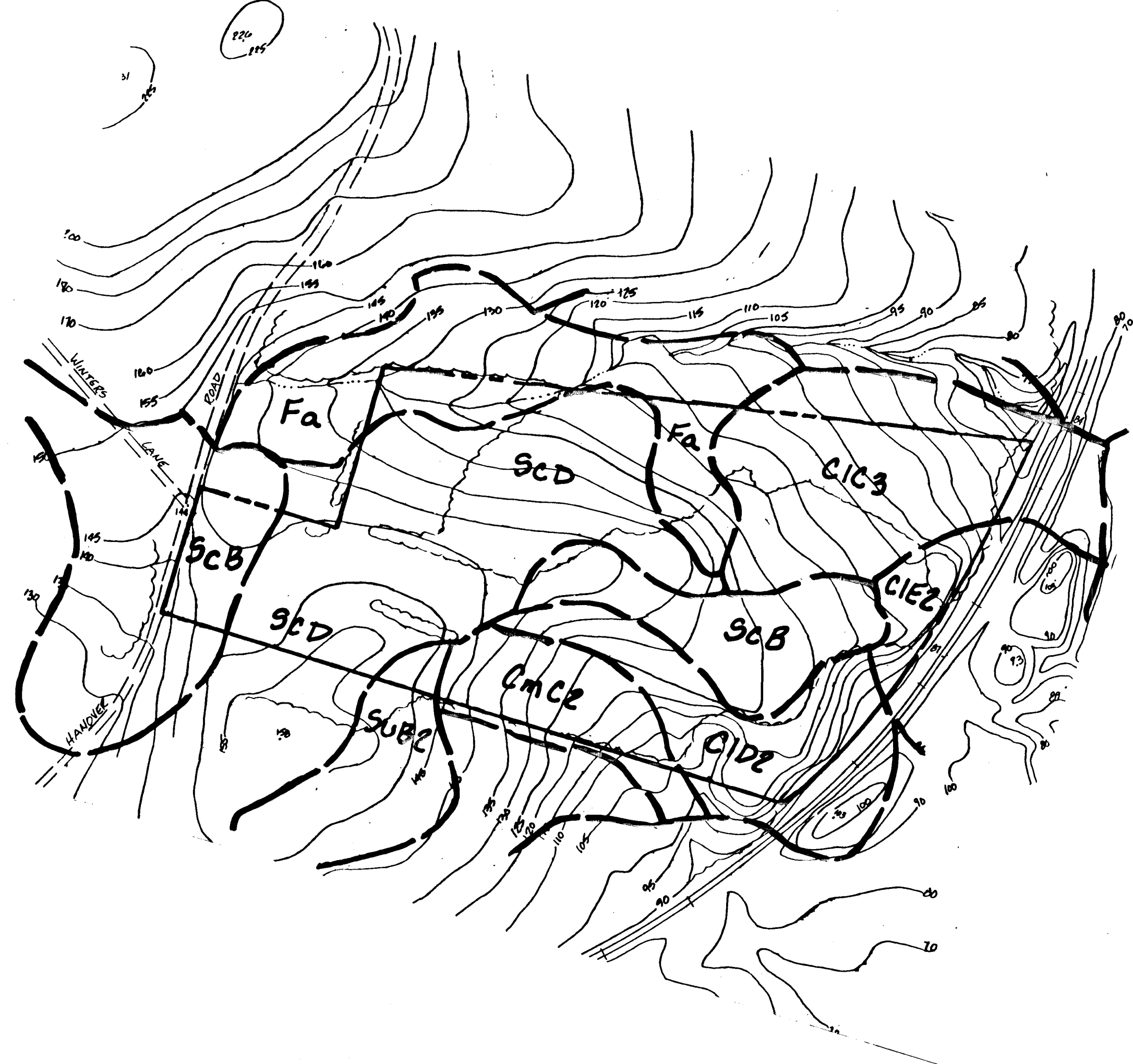
134350
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John M. Poyner 9/6/91
 CHIEF, LAND DEVELOPMENT DIVISION
Francis W. Wehland 5/22/91
 CHIEF, BUREAU OF HIGHWAY
K. S. ... & ... 9-9-91
 CHIEF, BUREAU OF ENGINEERING
 APPROVED HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Anna ... 9/16/91
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT



LAND USE AND DRAINAGE AREA MAP
 SCALE: 1" = 200'

* NOTE: DRAINAGE AREA'S #5 & 6 WILL BE MANAGED UNDER PLAN F-88-170, HANOVER WOODS.

LEGEND
 ——— EXISTING DRAINAGE DIVIDE
 - - - - - PROPOSED DRAINAGE DIVIDE
 + + + EXISTING BRUSH



SOILS MAP
 SCALE: 1" = 200'

MAP SYMBOL	MAPPING UNIT
C1C3	CHILLUM GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
C1D2	CHILLUM GRAVELLY LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
C1E2	CHILLUM GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES, MODERATELY ERODED
CmC2	CHILLUM SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
Fa	FALLSINGTON LOAM
ScB	SANDY AND CLAYEY LAND, GENTLY SLOPING
ScD	SANDY AND CLAYEY LAND, MODERATELY SLOPING
Sub2	SUNNYSIDE FINE SANDY LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED

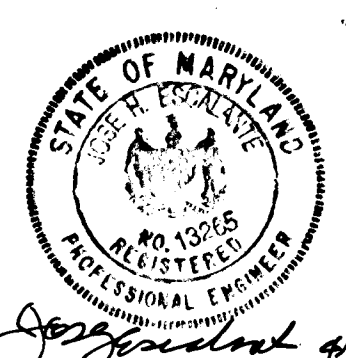


Francis W. Wehland 5/22/91

1631

REVISIONS			
DESIGNED	DATE	BY	DESCRIPTION
KC	11/22/89	KC/DIP	REVISIONS PER NO. 122 REMARKS DATED 8/19/88
DP	11/22/89	KC/DIP	REVISIONS PER NO. CO. COMMENTS OF 8/19/89
EC	11/22/89		
JE	11/22/89		

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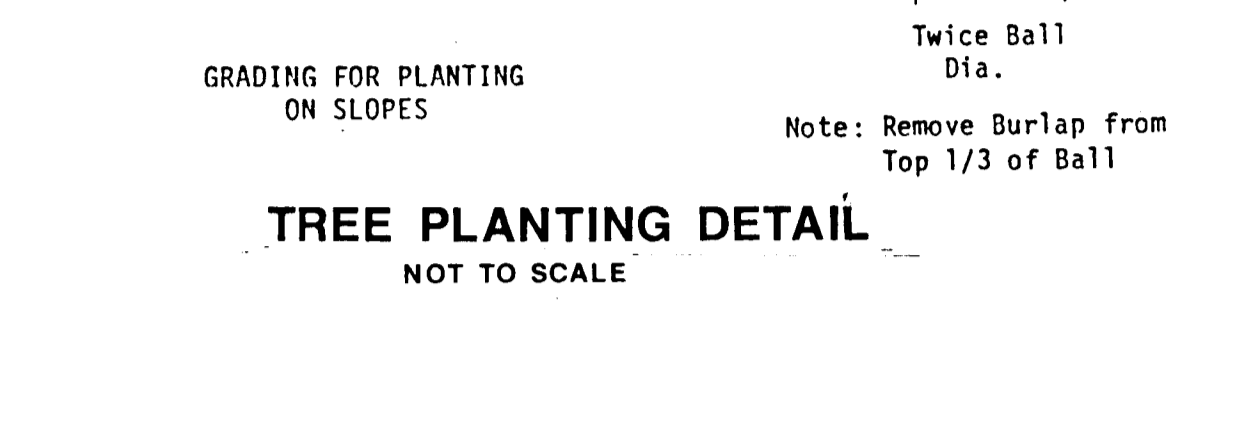
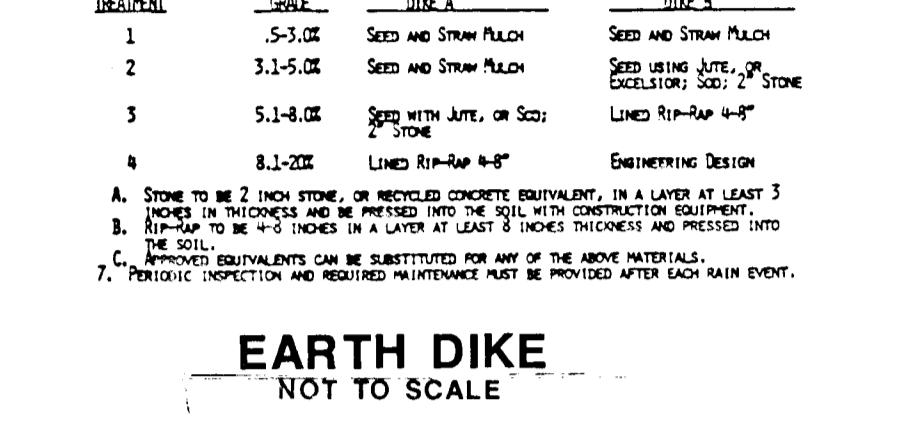
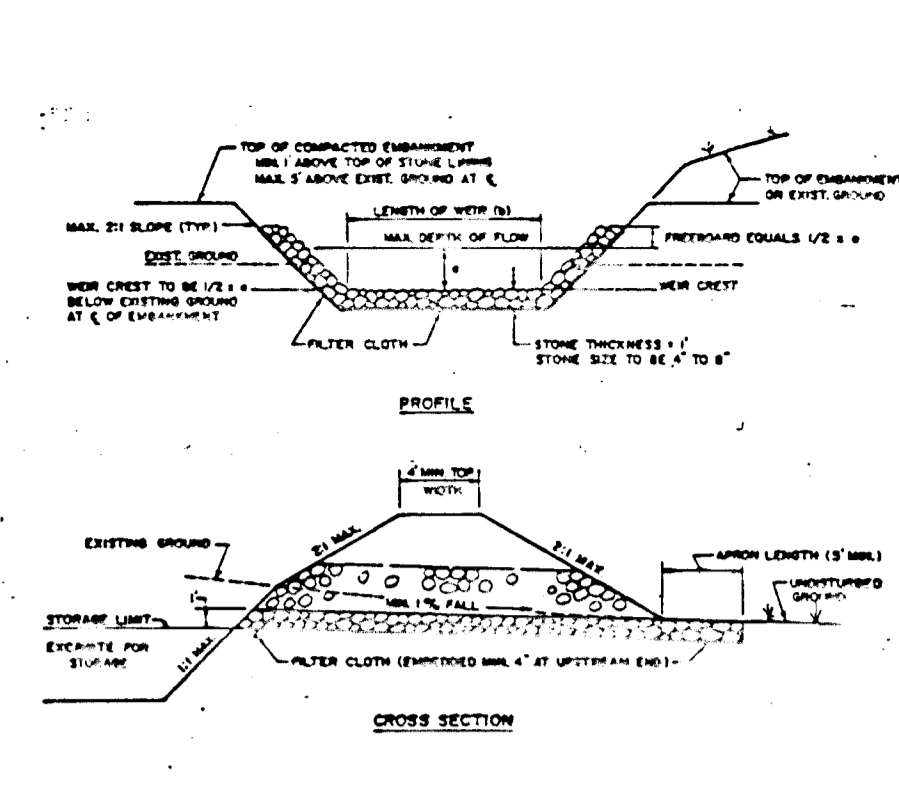
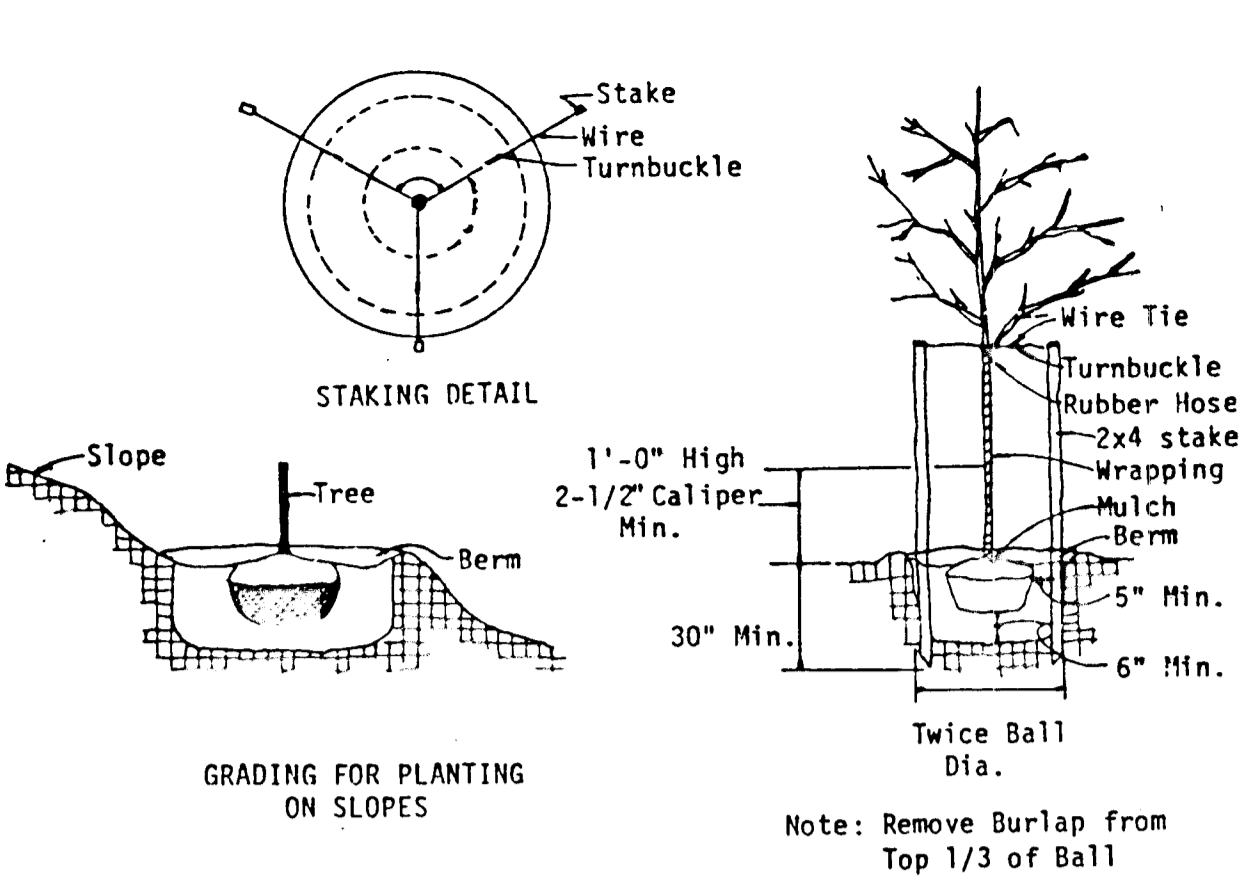
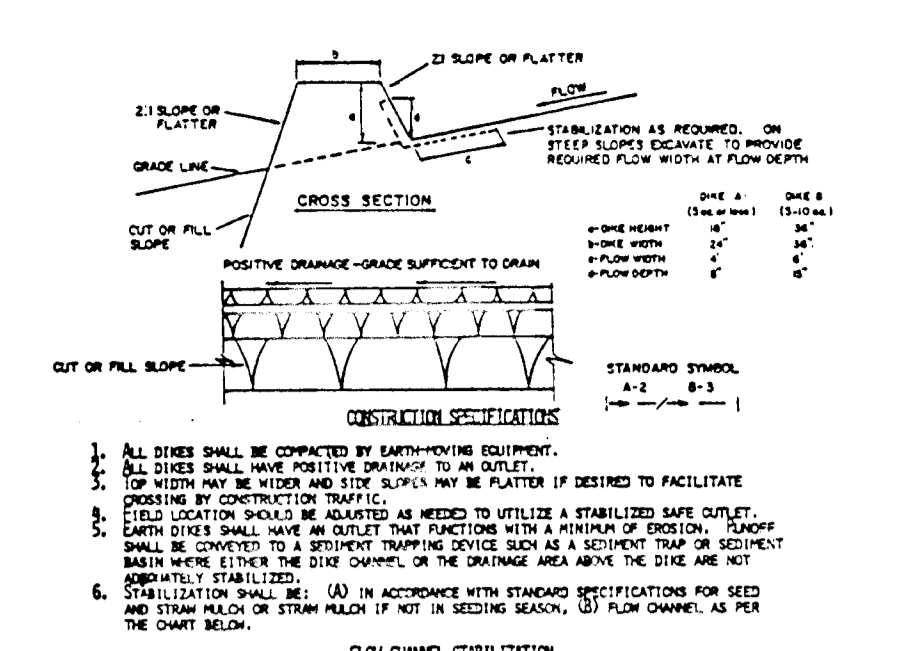
DEVELOPER:
 NEWBURN DEVELOPMENT CORP.
 SUITE 201
 5570 STERRETT PLACE
 COLUMBIA, MD. 21044
 (301) 997-3815

DRAINAGE AREA & SOILS MAPS
HANOVER CROSSING
 SECTION ONE
 LOTS 1 THRU 17
 TAX MAP 38 PARCEL 266
 1 ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

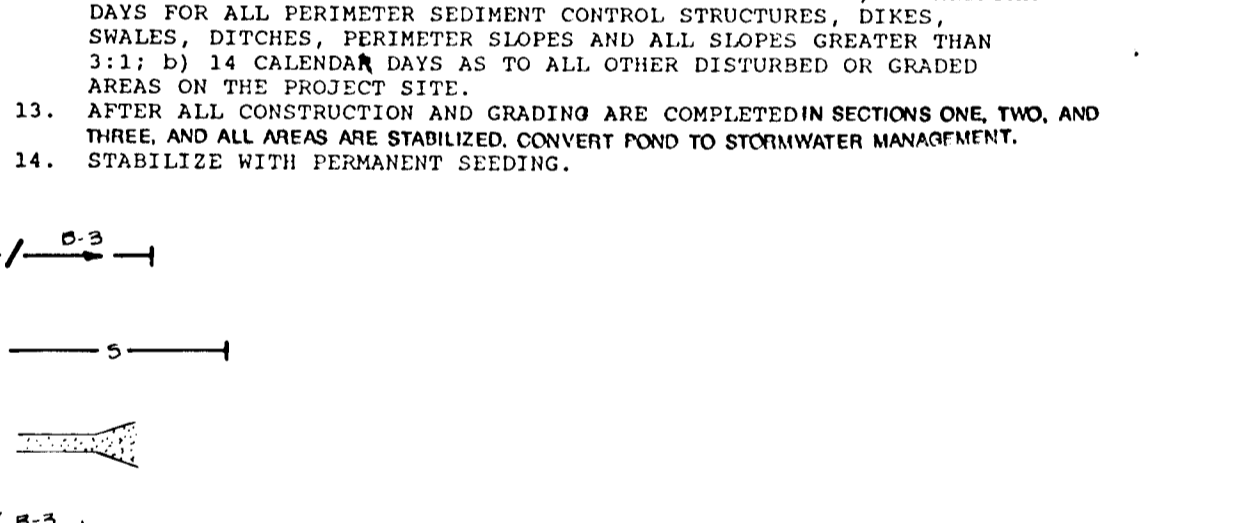
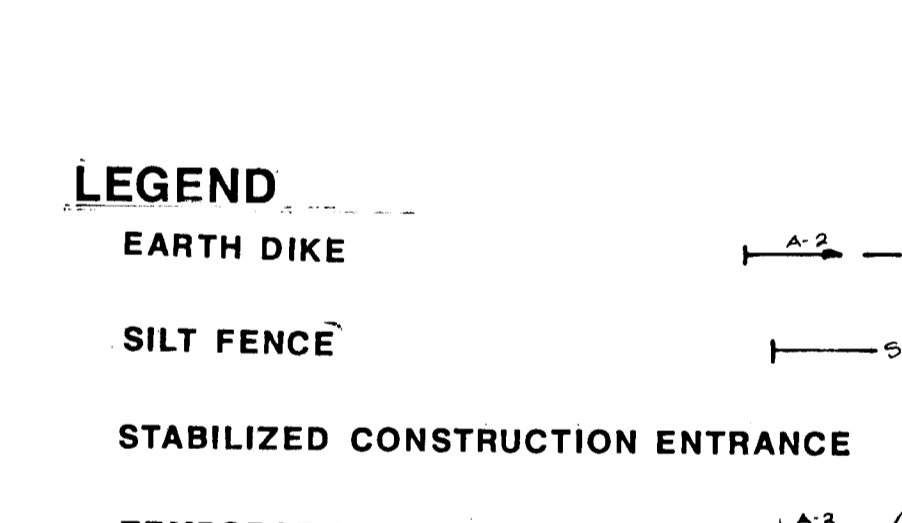
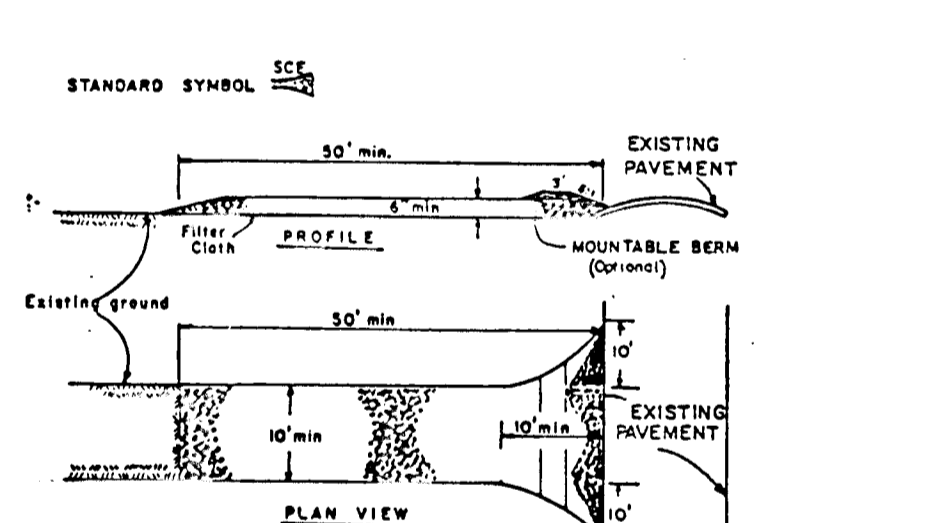
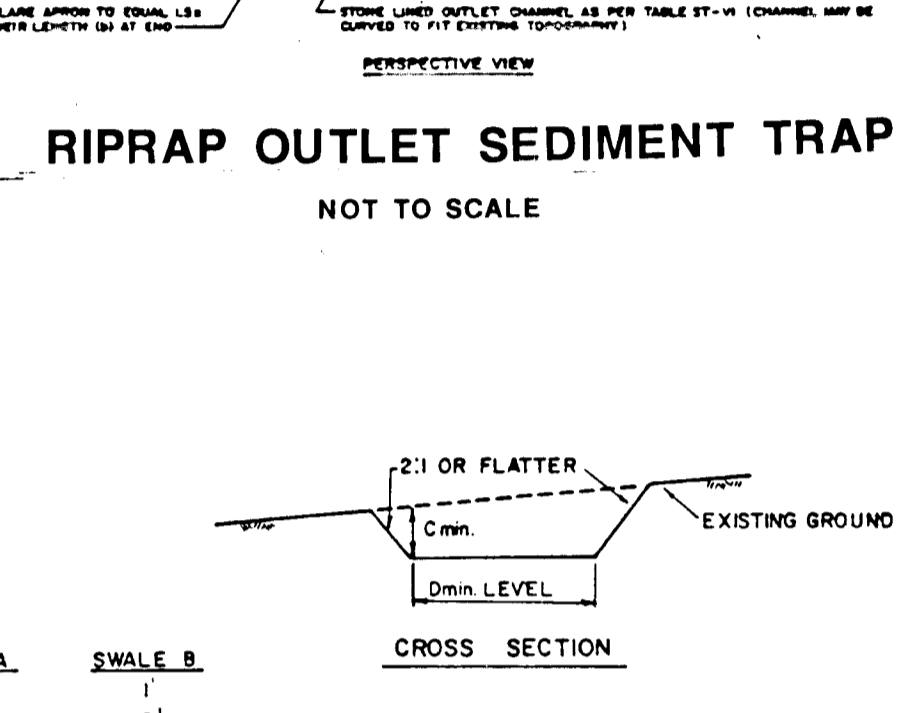
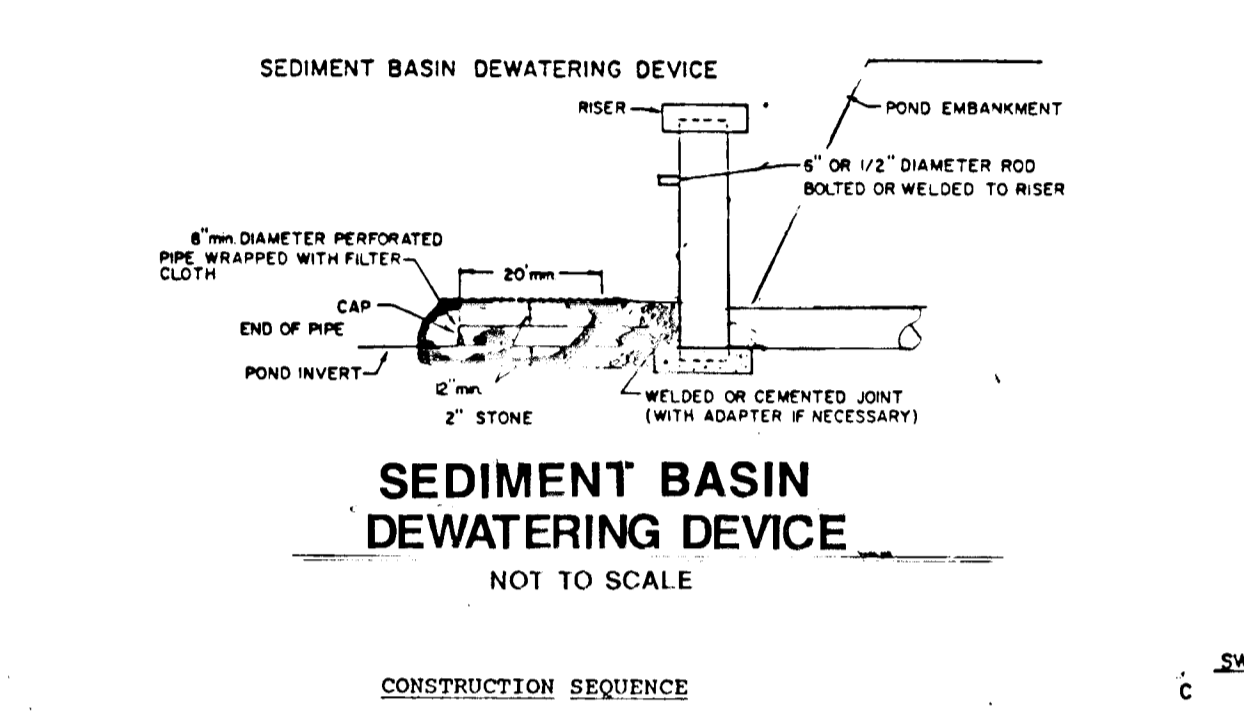
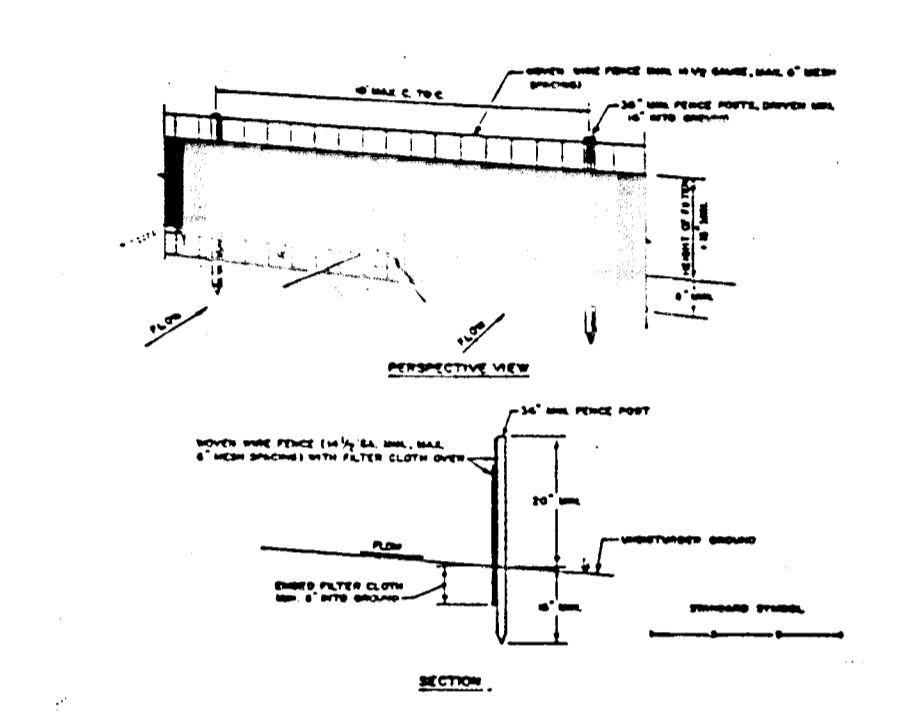
SCALE: AS SHOWN PREVIOUS SUBMITTALS: S-88-04, P-88-42 FILE NO. SHEET 8 OF 9

F-80-18

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. IF NOT PREVIOUSLY LOGGED.
 SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING:
 1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQUARE FT) AND 500 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING.
 HARBOR OR DISC INTO UPPER THREE-INCHES OF SOIL.
 2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (21 LBS/1000 SQ. FT.) BEFORE SEEDING.
 HARBOR 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 20 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 (0.14 LBS/1000 SQ. FT.) OF WHEAT LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROJECT SITE BY OPTION (1) 2 TONS PER ACRE OF WHEAT LOVEGRASS MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) SEE SOO. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WHEAT LOVEGRASS MULCH.
 MULCHING: APPLY 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNWROTTEN SMALL GRASS 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 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.
 MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.
 APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
 SEEDBED PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOGGED.
 SOIL AMENDMENTS: APPLY 500 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) SEED WITH 20 LBS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 15, SEED WITH 1 LBS PER ACRE OF WHEAT LOVEGRASS (0.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROJECT SITE BY APPLIED 2 TONS PER ACRE OF WHEAT LOVEGRASS MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.
 MULCHING: APPLY 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNWROTTEN SMALL GRASS 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.



SEDIMENT CONTROL NOTES:
 1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION. (992-2437)
 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
 4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, 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 (SEC. 51) AND (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
 6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 7. SITE ANALYSIS:
 TOTAL AREA OF SITE (SECTION ONE) 5.846 ACRES
 AREA DISTURBED 2.711 ACRES
 AREA TO BE ROOFED OR PAVED 0.074 ACRES
 AREA TO BE VEGETATIVELY STABILIZED 2.711 ACRES
 TOTAL CUT 21,632 CU. YDS.
 TOTAL FILL 11,112 CU. YDS.
 OFFSITE WASTE/BORROW AREA LOCATION N/A
 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
 * AREA INCLUDES DISTURBANCE BEYOND SECTION ONE.



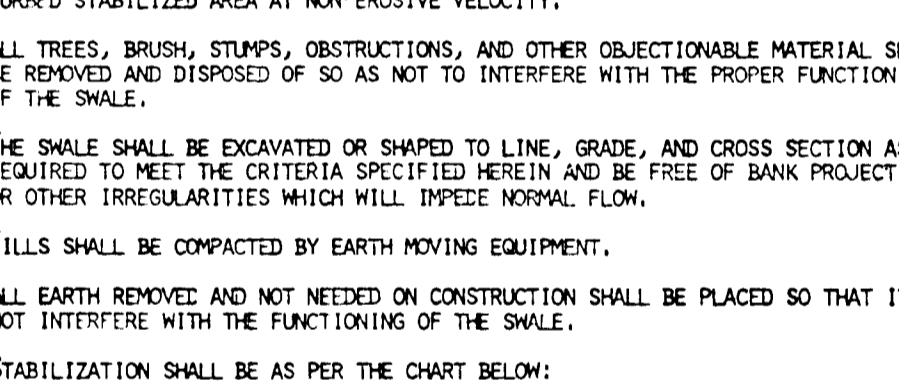
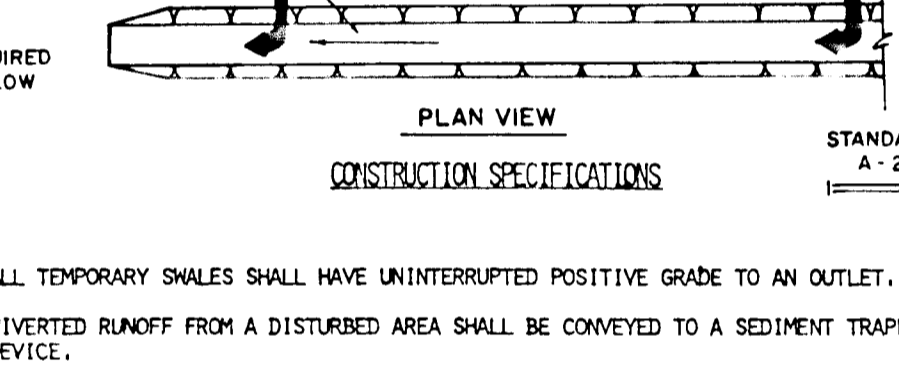
LEGEND
 EARTH DIKE
 SILT FENCE
 STABILIZED CONSTRUCTION ENTRANCE
 TEMPORARY SWALE
 RIPRAP OUTLET SEDIMENT TRAP
 LIMIT OF DISTURBED AREA
 DRAINAGE DIVIDE
 STORMWATER MANAGEMENT DRAINAGE DIVIDE
 TEMPORARY SWALE

CONSTRUCTION SEQUENCE
 1. OBTAIN GRADING PERMIT.
 2. INSTALL STABILIZED CONSTRUCTION ENTRANCE. CONSTRUCT SEDIMENT TRAP AND STABILIZE WITH TEMPORARY SEEDING AND EXCAVATE POND.
 3. INSTALL EARTH DIKE, MOUNTABLE BERM, AND SILT FENCE.
 4. INSTALL RISER PIPE AND SPILLWAY PIPE AND SEDIMENT BASIN DEWATERING DEVICE.
 5. CONSTRUCT DAM AND STABILIZE WITH PERMANENT SEEDING.
 6. GRADE SITE AND CONSTRUCT ROADS AND STORM DRAINAGE AND CHANNELS.
 7. DURING CONSTRUCTION AND AFTER EACH RAINFALL, THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON.
 8. REMOVE STABILIZED CONSTRUCTION ENTRANCE.
 9. CLEAN BASE COURSE. APPLY TACK COAT TO BASE COURSE. STABILIZE ALL SHOULDERS USING PERMANENT SEEDING.
 10. ALL DISTURBED AREAS DUE TO REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING.
 11. INSTALL RIP RAP AROUND.
 12. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; b) 14 CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THIS PROJECT SITE.
 13. AFTER ALL CONSTRUCTION AND GRADING ARE COMPLETED IN SECTIONS ONE, TWO, AND THREE, AND ALL AREAS ARE STABILIZED, CONVERT POND TO STORMWATER MANAGEMENT.
 14. STABILIZE WITH PERMANENT SEEDING.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSTOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSTOR; SOO	LINED RIP-RAP 4-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 4-8" RIP-RAP	ENGINEERED DESIGN

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



REVISIONS

DATE	BY	DESCRIPTION
11/18/89	KE/DP	REVISIONS PER HO. CO. COMMENTS DATED 8/16/89
11/21/89	KE/DP	REVISIONS PER HO. CO. COMMENTS OF 3/9/89

STABILIZED CONSTRUCTION ENTRANCE
 NOT TO SCALE

TEMPORARY SWALE
 NOT TO SCALE

DI SIGNET: KE 11/89
DRAWN: DP 11/89
CHECK: KE 11/89
APPROV: JE 11/89

REVISIONS

DATE	BY	DESCRIPTION
11/18/89	KE/DP	REVISIONS PER HO. CO. COMMENTS DATED 8/16/89
11/21/89	KE/DP	REVISIONS PER HO. CO. COMMENTS OF 3/9/89

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DEVELOPER:
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SEDIMENT CONTROL DETAILS
HANOVER CROSSING
 SECTION ONE
 LOTS 1 THRU LOTS 17
 TAX MAP 38 PARCEL 266
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
 PREVIOUS SUBMITTALS: S-88-04, P-88-42
 FILE NO. SHEET 9 OF 9

DATE: 11/89

DATE: 11/89

DATE: 11/89

DATE: 11/89

DATE: 11/89

1631

F-20-18