SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTIONS AND DETAILS
3	PLAN & PROFILE – BROKENLAND PARKWAY
4	PLAN & PROFILE – MALL CONNECTOR ROAD
5	STORM DRAIN PROFILES
6&7	GRADING AND SEDIMENT CONTROL PLAN
8	SEDIMENT AND EROSION CONTROL NOTES & DETAILS
9	DRAINAGE AREA MAP

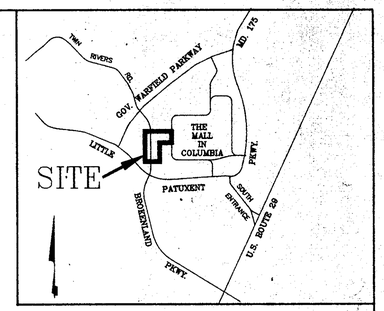
ROADWAY & STORM DRAINS

BROKEN LAND PARKWAY AND MALL CONNECTOR ROAD

SECTION 2, AREA 7

5TH ELECTION DISTRICT

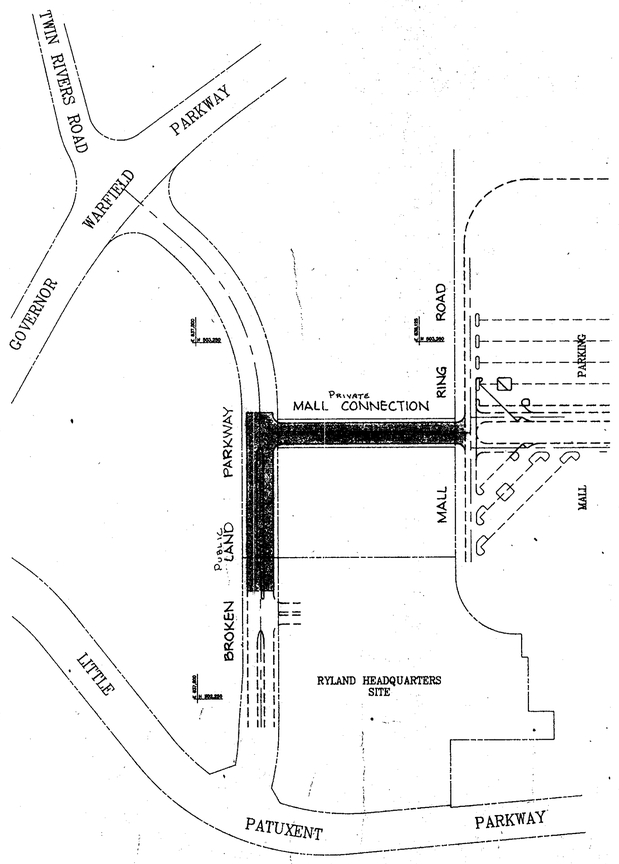
HOWARD COUNTY, MARYLAND



VICINITY MAP
1" = 2,000'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF CONSTRUCTION INSPECTION AT (301) 792-7272 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES, WHERE DIRECTED BY THE ENGINEER, A MINIMUM TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS.
5. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS-SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
6. STORM DRAIN TRENCHES WITHIN ROAD RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE. THE TYPE OF BEDDING USED FOR STORM DRAIN PIPE SHALL BE CLASS C, SHAPED SUBGRADE. IF ROCK IS ENCOUNTERED, THE TRENCH INVERT SHOULD BE OVER EXCAVATED 6" AND THE OVER EXCAVATION REFILLED WITH GRANULAR MATERIAL.
7. THE LOCATION AND LENGTHS OF ALL PROPOSED STORM DRAINS SHALL BE VERIFIED BY THE CONTRACTOR.
8. STUBS FOR P.V.C. UNDERDRAIN PIPE TO BE INSTALLED AT CENTER OF EACH WALL OF EVERY INLET.
9. LAMP POST – 150 WATT HIGH PRESURE SODIUM VAPOR PENDANTS MOUNTED AT 30' HIGH ON STEEL POLES NO LESS THAN 6' FROM PAVEMENT EDGE.
10. CONTRACTOR TO RESTORE ALL EXISTING PAVING, SIDEWALKS OR LAWNS AFFECTED BY THE CONTRUCTION SHOWN HEREON TO A CONDITION COMPARABLE TO THAT EXISTING PRIOR TO CONSTRUCTION.
11. STORMWATER MANAGEMENT FOR THIS PROJECT PROVIDED BY FACILITY CONSTRUCTED WITH (F-85-131)
12. ALL ELEVATIONS SHOWN ARE BASED ON U.S.C.G.S. MEAN SEA LEVEL DATUM 1929. ALL COORDINATES BASED ON MARYLAND STATE GRID SYSTEM.



LOCATION PLAN

SCALE: 1" = 200'

BENCH MARK DESCRPTION

B.M.# 13 ELEV. 343.930
CUT IN CONCRETE HEADWALL WEST B.L.P.
STA. 151+70

OTHER BENCH MARKS IN THE CONSTRUCTION AREA ARE SHOWN ON THE PLANS.

⚠ Note:
A Portion of this plan has been updated as a part of the revitalization of Downtown Columbia-Warfield Neighborhood, Blocks N-1 and W-2. These blocks are adjent to Town Center Avenue (Mall Connector Road) and the required infrastructure improvements overlap with the roadbed.
For details of these improvements, see F 93-015.

AS-BUILT

G. SCOTT SHANABERGER
PROFESSIONAL LS. #10847

3/26/93
DATE

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELLICOTT CITY, MARYLAND 21043

NOTE:
WATER QUALITY STRUCTURE TO BE PRIVATELY MAINTAINED

7/6/92
DATE

Robert R Blott
PROFESSIONAL ENGINEER No. 5407

1/7/2013 ⚠ add note to reference F 93-015 (1/6/13)
Date Revision Description

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

for Bobby Gorman — 9/4/92
CHIEF, LAND DEVELOPMENT DIVISION — DATE

Calvin M. Sampson — 9/3/92
CHIEF, BUREAU OF HIGHWAYS — DATE

Elizabeth Anderson Calvin — 9/4/92
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Emma Hollenstein — 9/8/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
PHONE (410) 247-8855 FAX (410) 247-8397

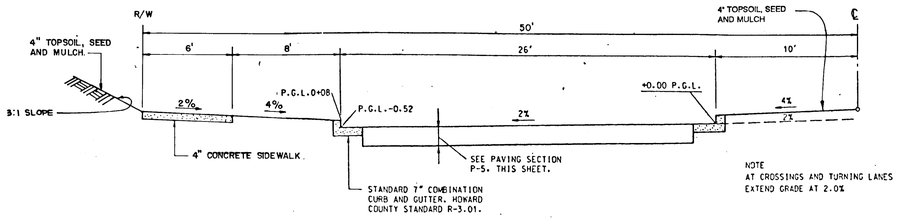
AREA:
BROKEN LAND PARKWAY

AREA:
TITLE SHEET

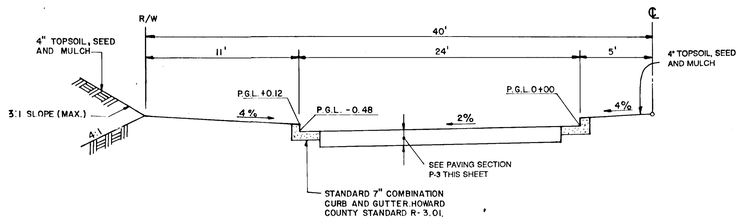
DES. BY HRP	SCALE: AS SHOWN	PROJ. No.
DRN. BY AJR	DATE: JUNE 1992	DRAWING No. 1 OF 9
CHK. BY HRP	APPROVED:	

65

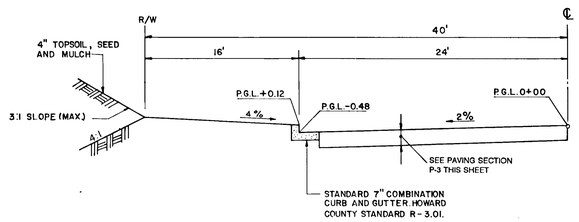
F-93-03



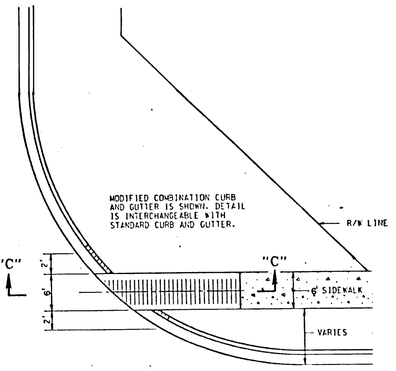
TYPICAL HALF SECTION (100' R/W)
BROKEN LAND PARKWAY
NO SCALE



TYPICAL HALF SECTION WITH MEDIAN (80' R/W)
MALL ROAD CONNECTOR
NO SCALE

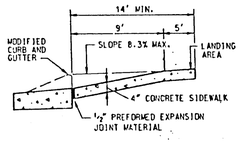


TYPICAL HALF SECTION (80' R/W)
MALL ROAD CONNECTOR
NO SCALE



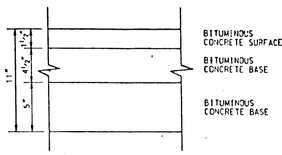
PLAN

NOTE:
HOWARD COUNTY STANDARD TYPE "A" SIDEWALK RAMP DRAWING R4.01.

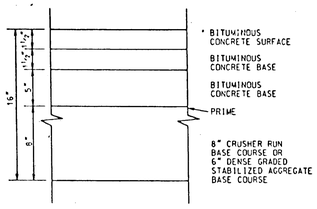


SECTION "C"-"C"

HANDICAP RAMP DETAIL
NO SCALE

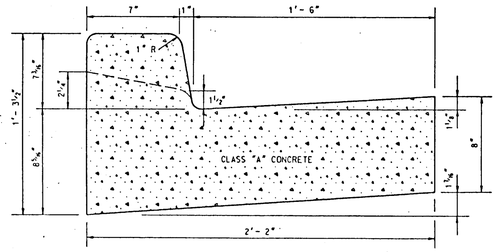


P-5 FULL DEPTH
BITUMINOUS CONCRETE

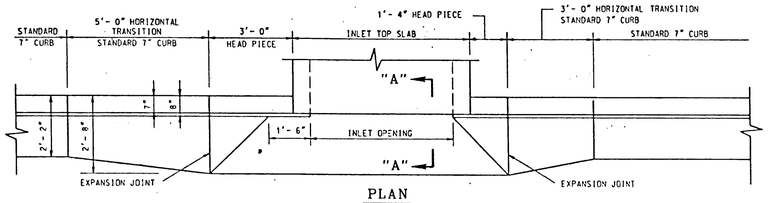


P-5 GRANULAR BASE (ALTERNATE)

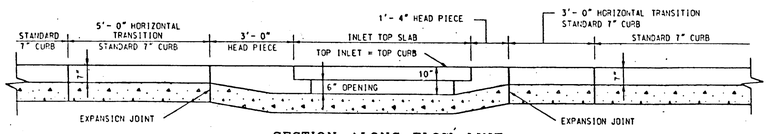
TYPICAL PAVING SECTION
NO SCALE



STANDARD 7" COMBINATION CURB & GUTTER
NO SCALE

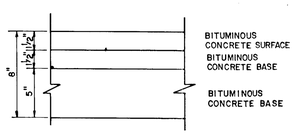


PLAN

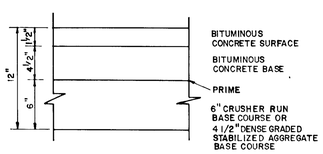


SECTION ALONG FLOW LINE

"A" INLETS - STANDARD CURB
NO SCALE

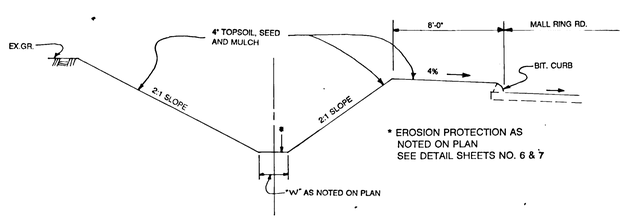


P-3 FULL DEPTH
BITUMINOUS CONCRETE



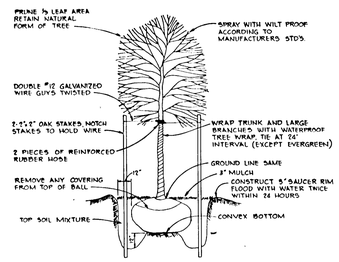
P-3 GRANULAR BASE (ALTERNATE)

TYPICAL PAVING SECTION
NO SCALE



GRADING SECTION
CHANNEL ALONG MALL RING RD.

QUANTITY OF TREES	COMMON NAME	BOTANICAL NAME	HEIGHT
24	PIN OAK	QUERCUS PALUSTRIS	10'



TREE PLANTING DETAIL
NO SCALE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/1/92

CHIEF, BUREAU OF HIGHWAYS — DATE 9/1/92

CHIEF, BUREAU OF ENGINEERING — DATE 9/4/92

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9/9/92

7/6/92
DATE

PROFESSIONAL ENGINEER No. 5407

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
PHONE (410) 247-8855 *FAX (410) 247-8897*

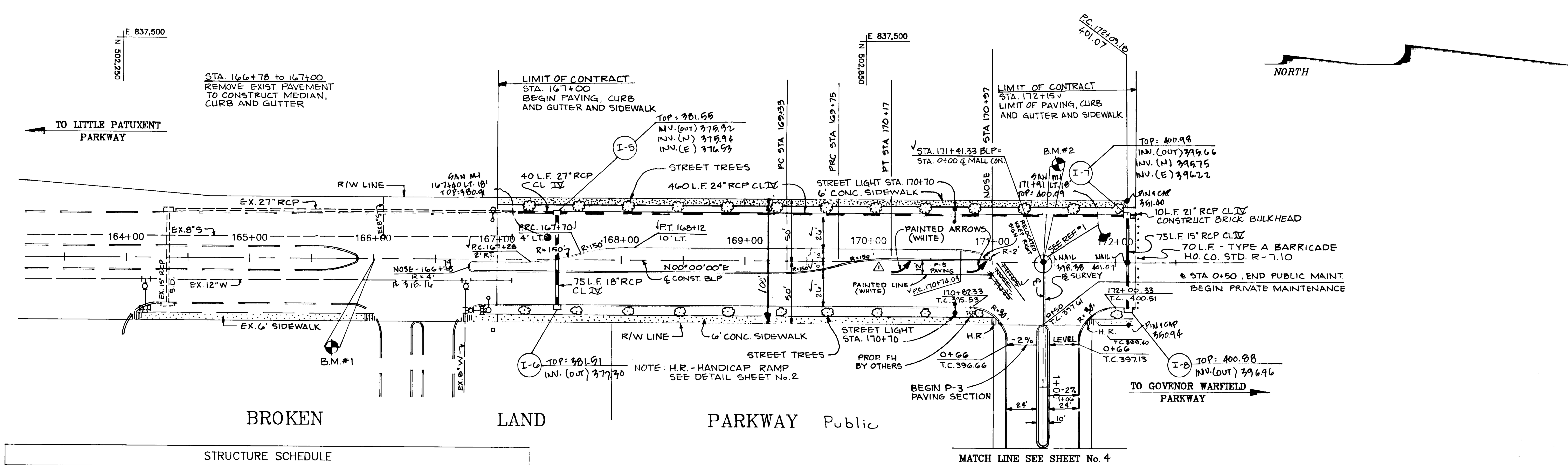
AREA: BROKEN LAND PARKWAY

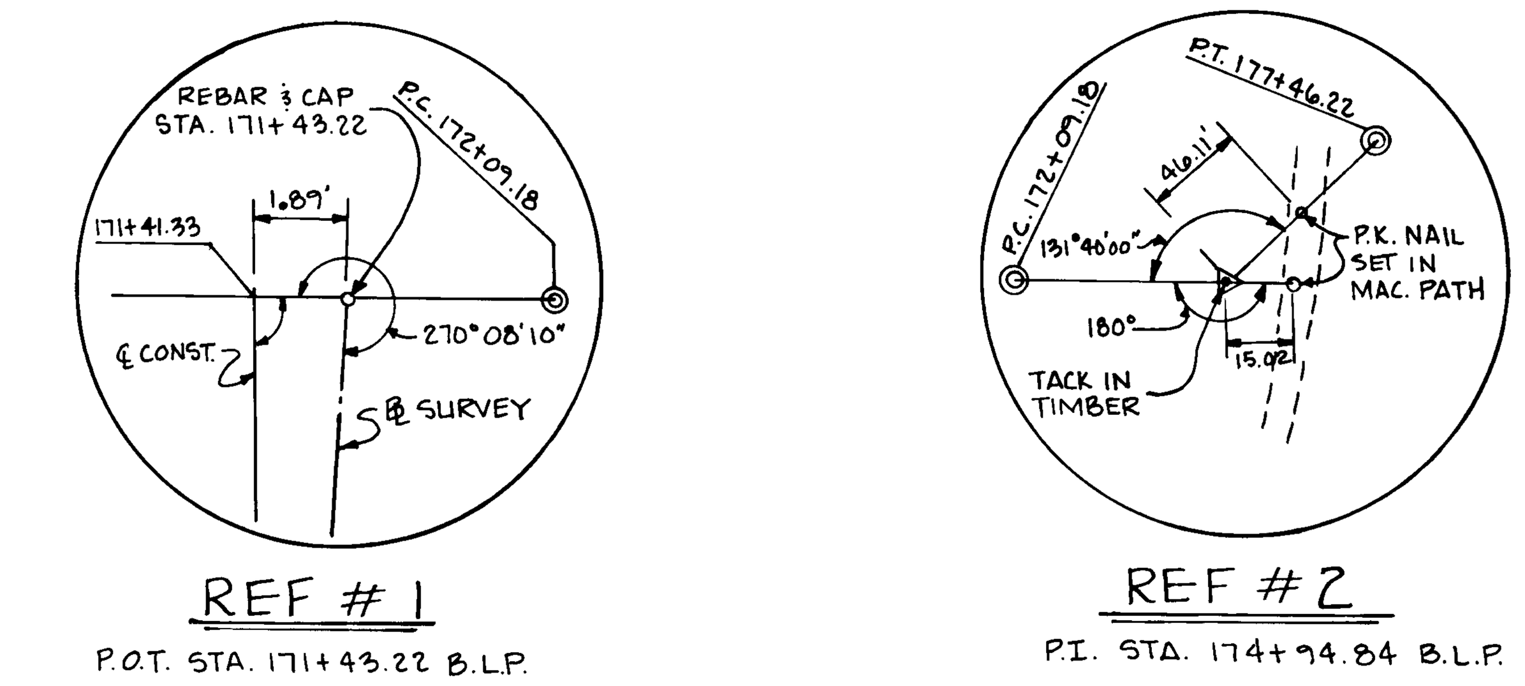
AREA:
ROADWAY DETAILS

DES. BY HRP	SCALE: 1" = 50'	PROJ. No.
DRN BY AJR	DATE: JUNE 1992	DRAWING No. 2 OF 5
CHK. BY HRP	APPROVED:	

F-93-03

B.M. #1 ELEV. 375.295	B.M. #2 ELEV. 405.53
P.K. NAIL IN PVMT. AT BLP ℄ STA. 166+00	REBAR AND CAP AT BLP ℄ STA. 171+43.22





STRUCTURE SCHEDULE						
No.	TYPE	LOCATION	INV. IN	INV. OUT	TOP EL.	REMARKS
I-5	A-5 INLET W/DEFL.	STA. 167+50 – 36' LT.	N 375.~~86~~ 94 E 376.~~30~~ 93	375.~~68~~ 92	381.~~51~~ 55	HO.CO. STD. SD-4.01
I-6	A-5 INLET W/DEFL.	STA. 167+50 – 36' RT.	---	377.~~05~~ 30	381.51	HO.CO. STD. SD-4.01
I-7	A-5 INLET W/DEFL.	STA. 172+~~10~~ 9 – 36' LT.	N 395.~~91~~ 75 E 396.~~16~~ 22	395.~~41~~ 66	400.~~92~~ 98	HO.CO. STD. SD-4.01
I-8	A-5 INLET W/DEFL.	STA. 172+~~10~~ 9 – 36'RT.	---	396.~~92~~ 96	400.~~92~~ 88	HO.CO. STD. SD-4.01

2-3-98	⚠	ADDED LEFT TURN LANE @ STA 171+00±
DATE	NO.	DESCRIPTION

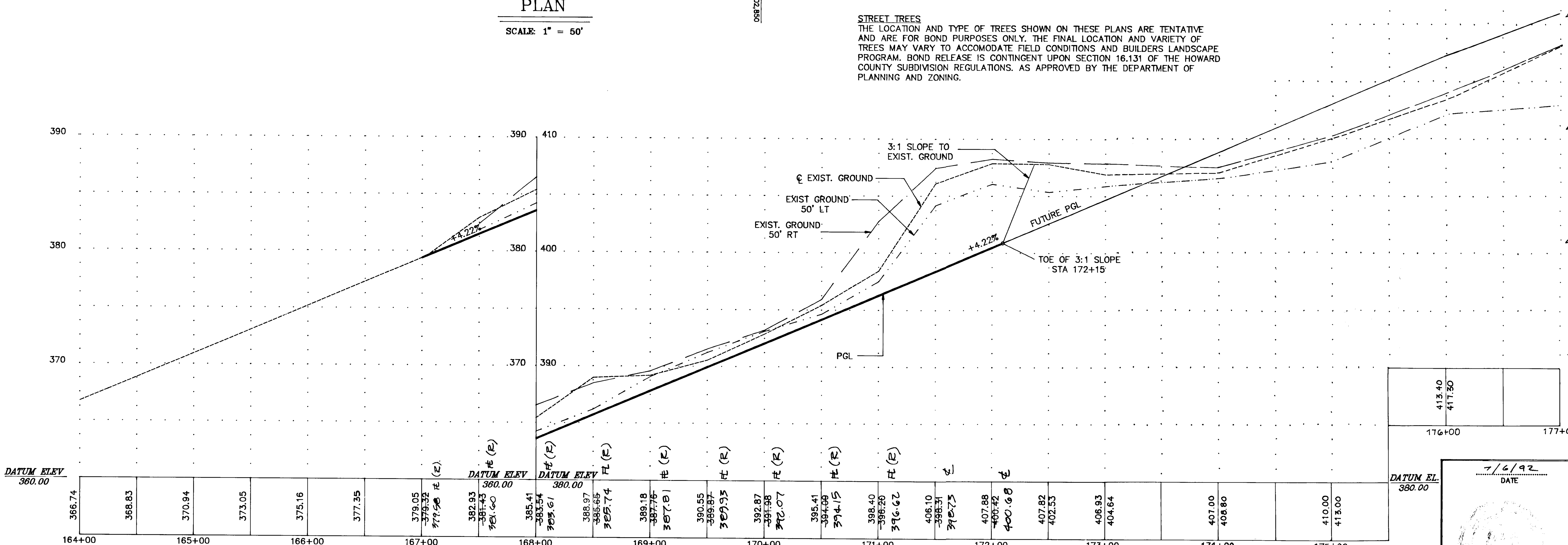
PLAN

SCALE: 1" = 50'

STREET TREES
THE LOCATION AND TYPE OF TREES SHOWN ON THESE PLANS ARE TENTATIVE AND ARE FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM. BOND RELEASE IS CONTINGENT UPON SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS. AS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.

AS-BUILT

G. SCOTT SHANABERGER PROFESSIONAL L.S. #10849 — 3/26/93 DATE



PROFILE

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

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELLICOTT CITY, MARYLAND 21043

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 9/4/92 DATE

CHIEF, BUREAU OF HIGHWAYS — 9/3/92 DATE

act CHIEF, BUREAU OF ENGINEERING — 9/4/92 DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 9/8/92 DATE

7/6/92 DATE

PROFESSIONAL ENGINEER No. 5407

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
PHONE (410) 247-8855 FAX (410) 247-8397

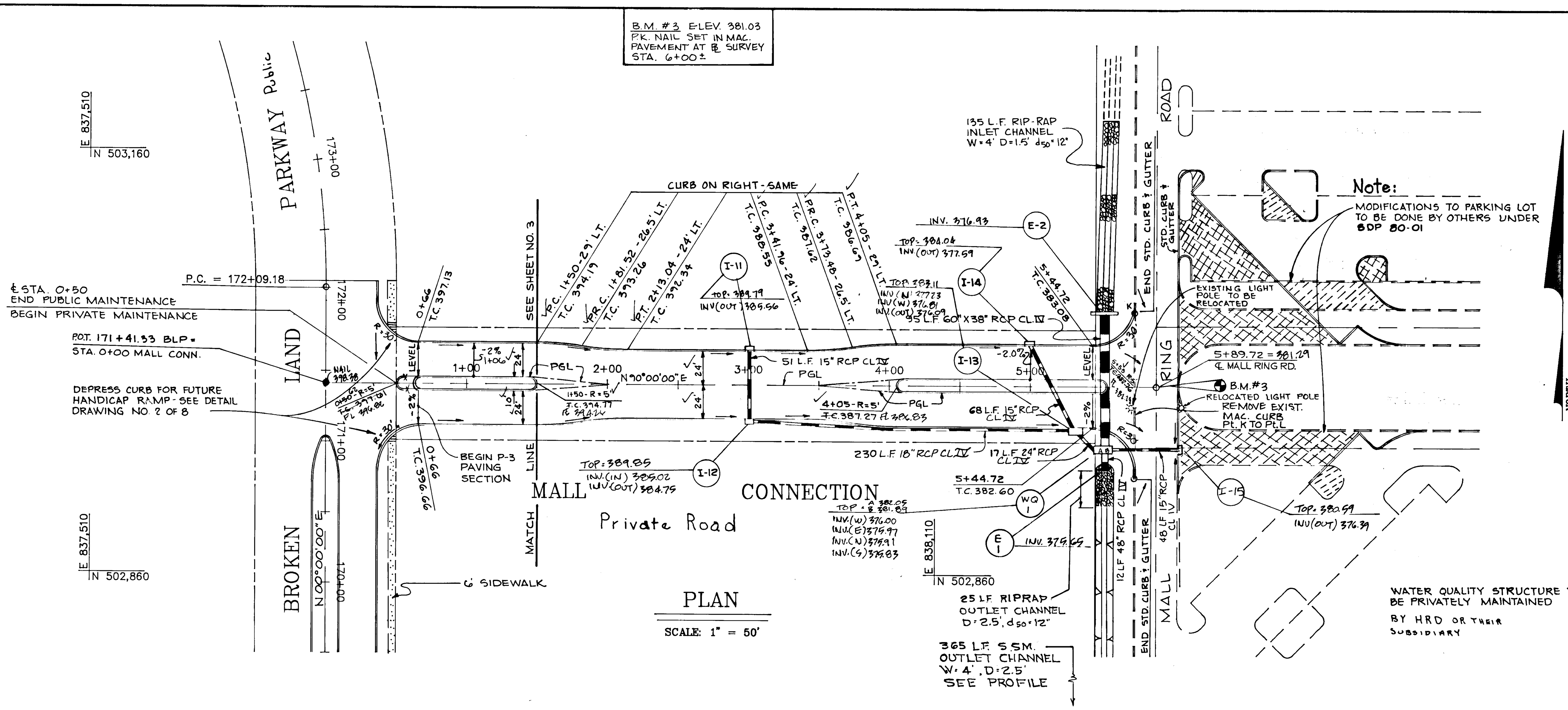
AREA: BROKEN LAND PARKWAY

AREA: ROADWAY PLAN AND PROFILE

DES. BY HRP	SCALE: AS SHOWN	PROJ. No.
DRN BY AJR	DATE: JUNE 1992	DRAWING No.
CHK. BY HRP	APPROVED:	3 OF 9

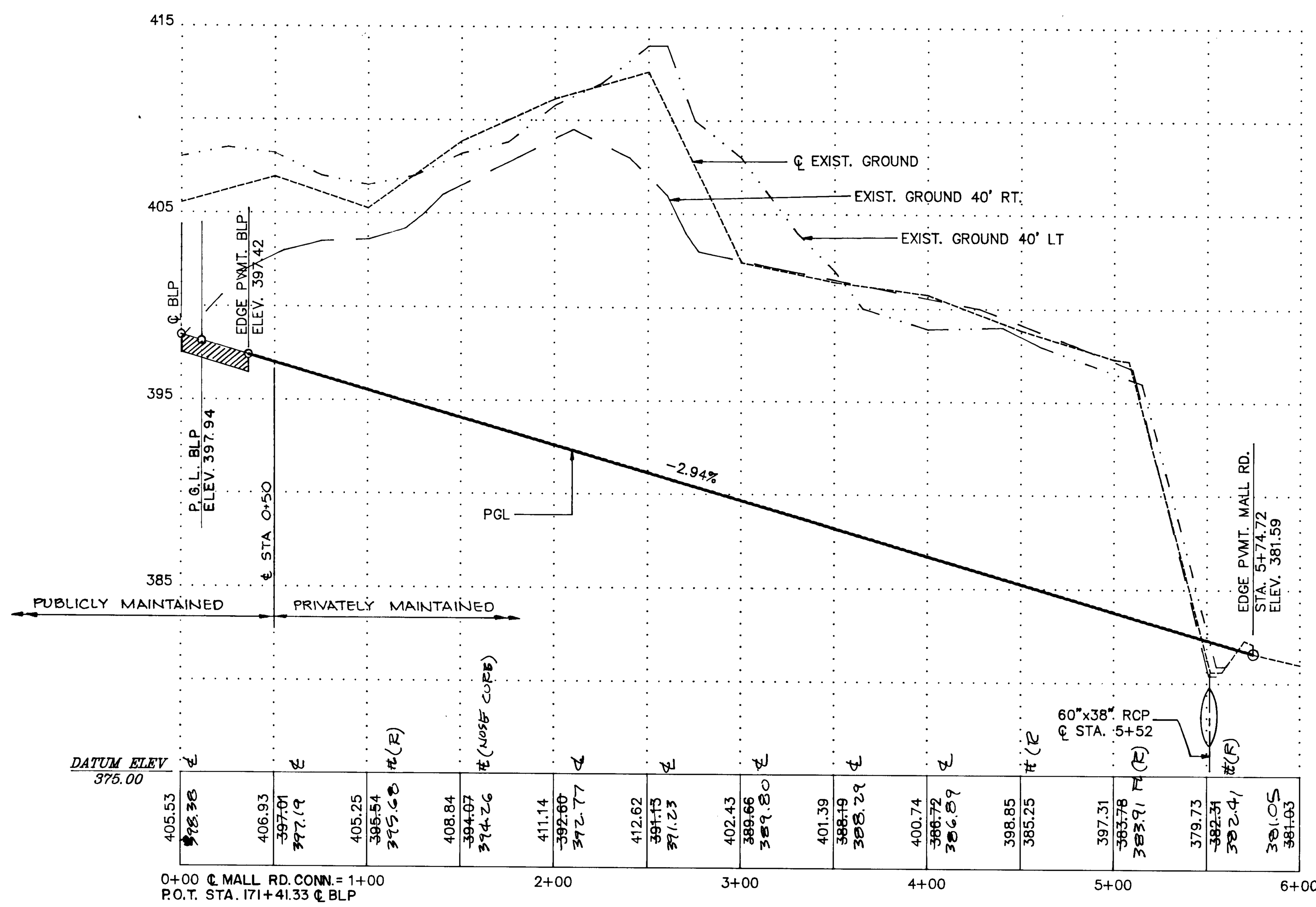
F-93-03

65



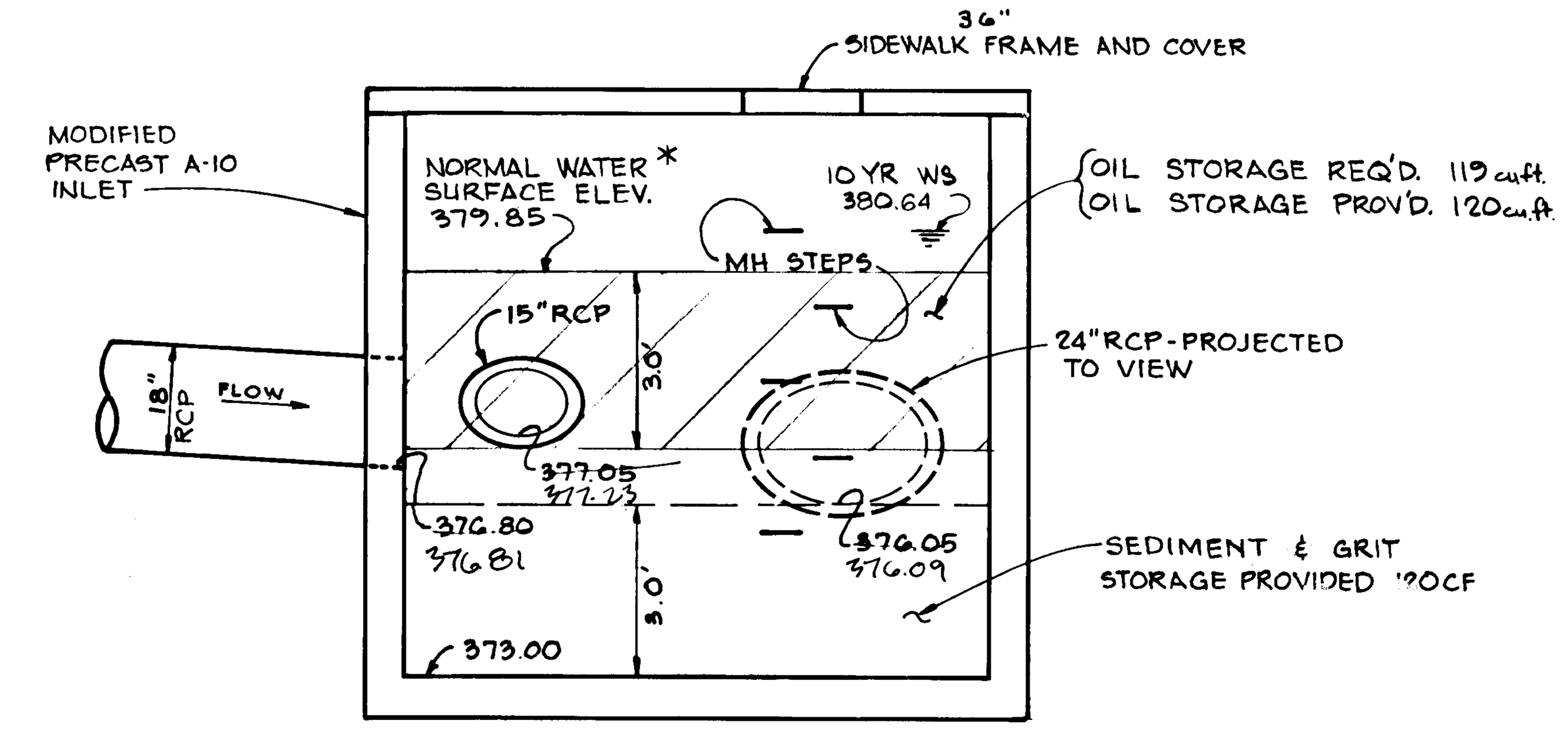
STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP EL.	REMARKS
I-11	A-5 INLET W/DEFL.	STA. 3+00 - 24' LT.	–	385.50 (96)	389.78 (19)	HO.CO. STD. SD-4.01
I-12	A-5 INLET W/DEFL.	STA. 3+00 - 24' RT.	385.00 (02)	384.70 (75)	389.78 (84)	HO.CO. STD. SD-4.01
I-13	MODIFIED A-10 INLET w/DEFL.	STA. 5+30 - 29' RT.	N 377.05 W 376.80	376.05 (09)	383.02 (11)	SEE DETAIL THIS SHEET
I-14	A-5 INLET W/DEFL.	STA. 5+00 - 29 LT.	–	377.73 (59)	383.90 (384.04)	HO.CO. STD. SD-4.01
E-1	SPIGOT END PIPE	STA. 5+52 - 58' RT.	–	375.75 (65)	–	FOR FUTURE CONN.
E-2	MOD. TYPE 'C' ENDWALL	STA. 5+52 - 56' LT.	–	377.00 (376.93)	–	HO.CO. STD. SD-5.21
WQ-1	MODIFIED A-10 INLET	STA. 5+52 - 46' RT.	376.05 (W) 376.05 377.12 (N)	375.85 (83)	382.00	SEE DETAIL SHT. NO. 8
I-15	A-5 INLET	STA. 6+05± - 43' RT.	–	377.60 (376.39)	380.72 (59)	HO.CO. STD. SD-4.01



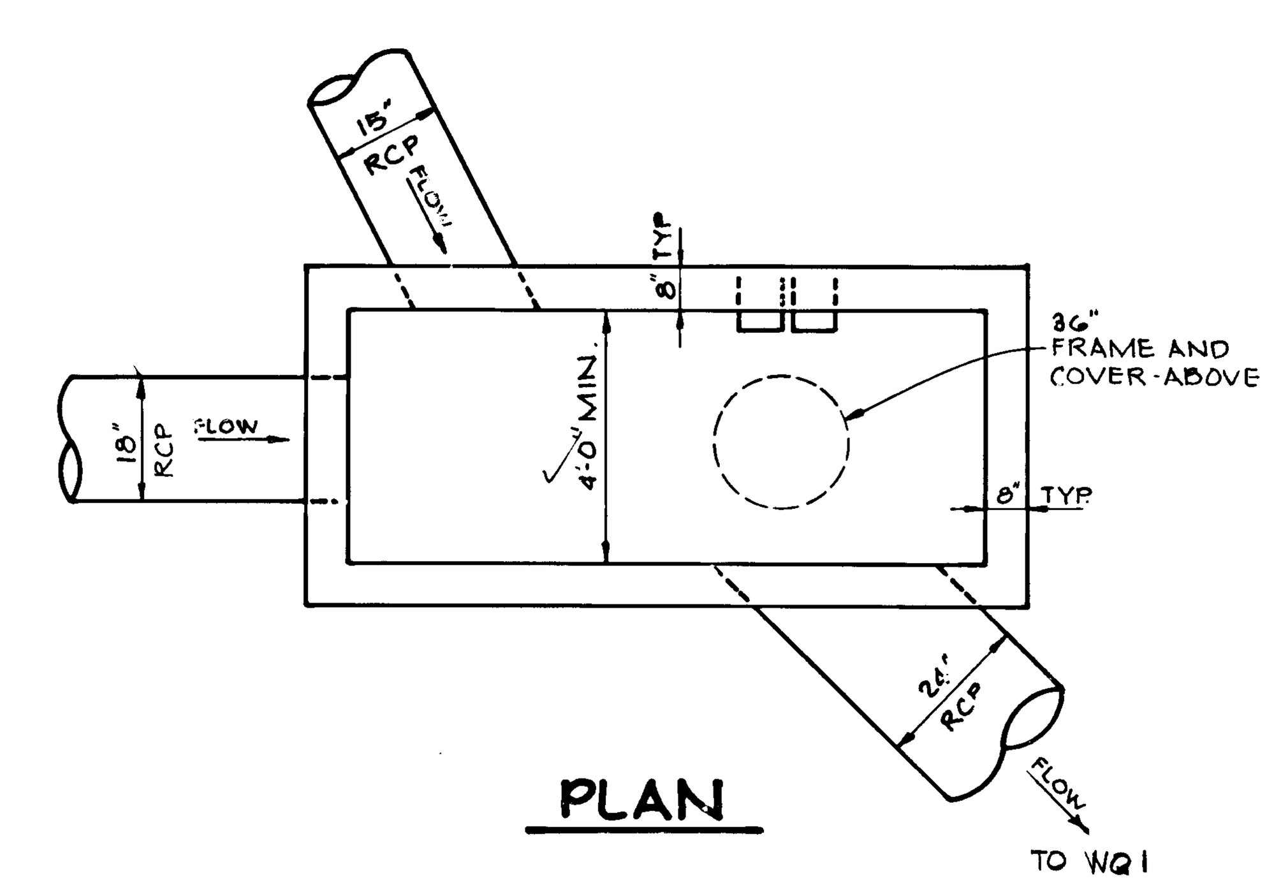
PROFILE

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



ELEVATION

*WATER SURFACE SET BY TOP OF WIER IN WQ1. SEE DETAIL SHEET 8 of 8.



PLAN

DETAIL - INLET I-13

NO SCALE

AS-BUILT

G. SCOTT SHANABERGER PROFESSIONAL L.S. #10849 3/26/93 DATE

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELLICOTT CITY, MARYLAND 21043

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION 9/4/92 DATE

CHIEF, BUREAU OF HIGHWAYS 9/3/92 DATE

CHIEF, BUREAU OF ENGINEERING 2/4/92 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT 9/8/92 DATE

7/6/92 DATE

PROFESSIONAL ENGINEER No. 5407

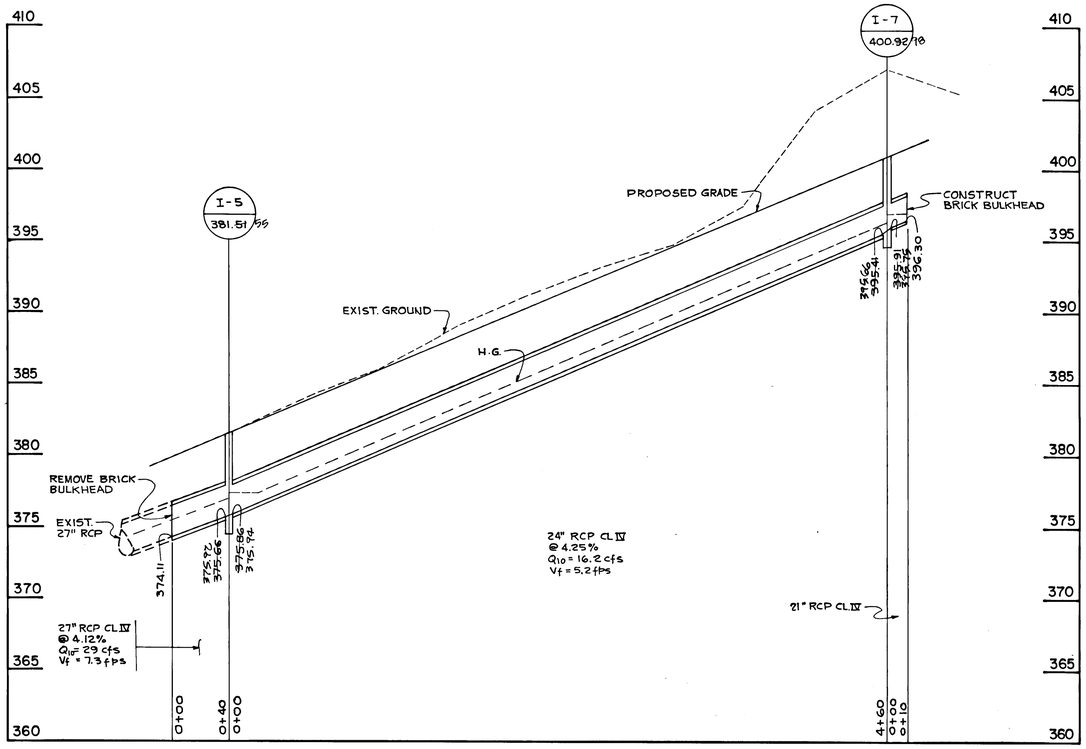
PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
PHONE (410) 247-8855 FAX (410) 247-8597

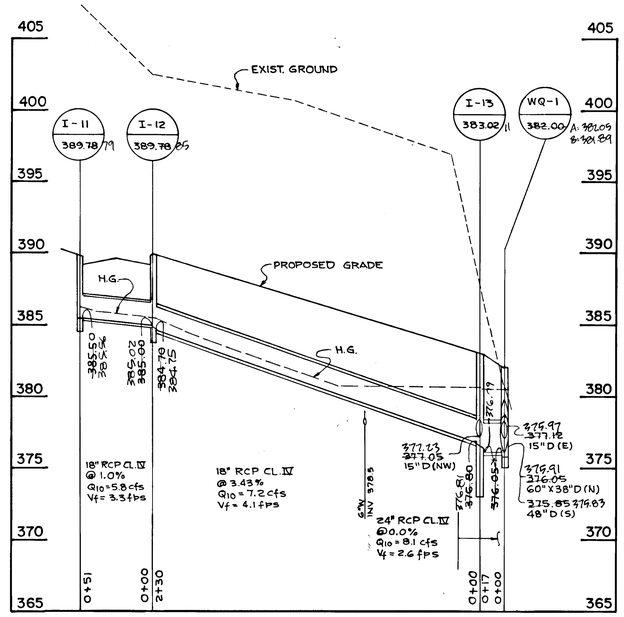
AREA: BROKEN LAND PARKWAY

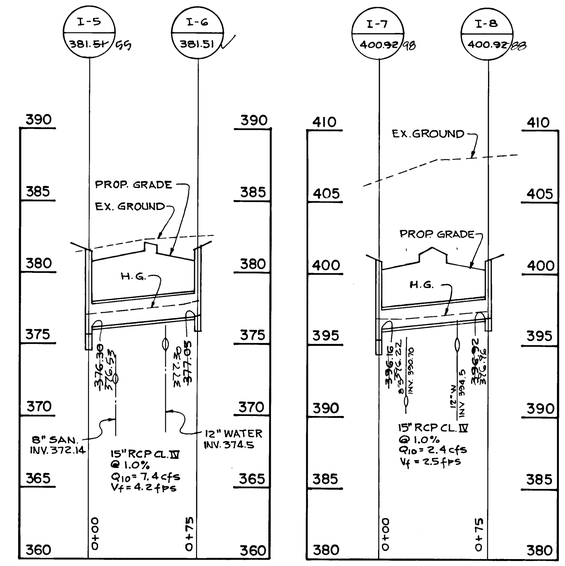
AREA: ROADWAY PLAN AND PROFILE

DES. BY HRP	SCALE: AS SHOWN	PROJ. No.	
DRN BY AJR	DATE: JUNE 1992	DRAWING No.	
CHK. BY HRP	APPROVED:	4 OF 9	

F-93-03





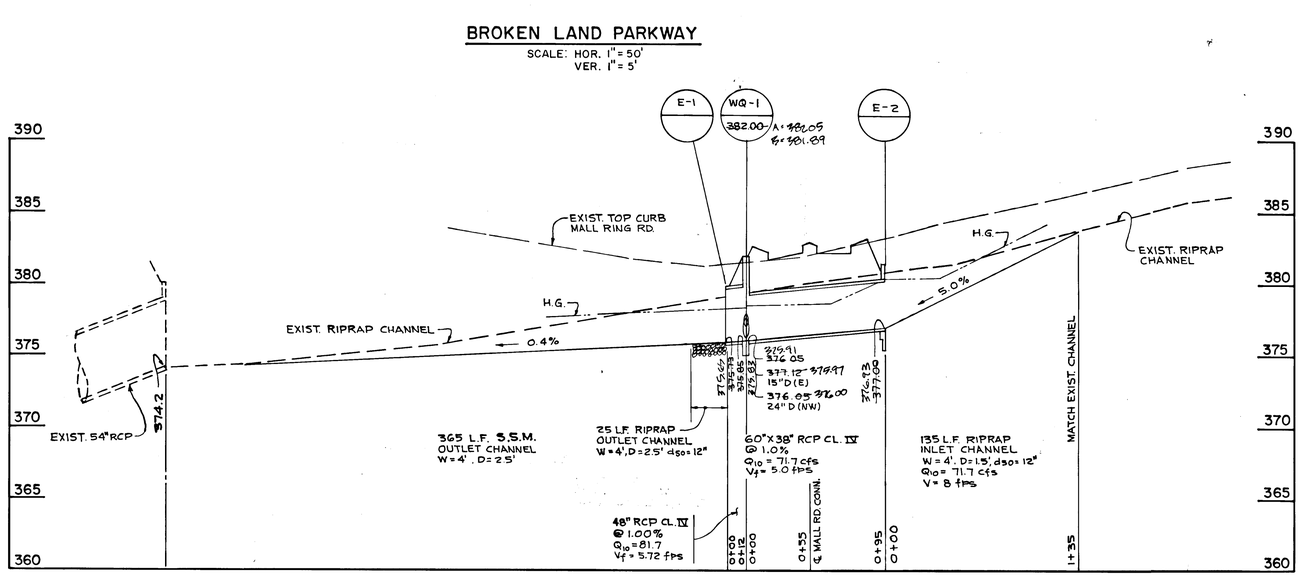


MALL ROAD CONNECTOR
SCALE: HOR. 1" = 50'
VER. 1" = 5'

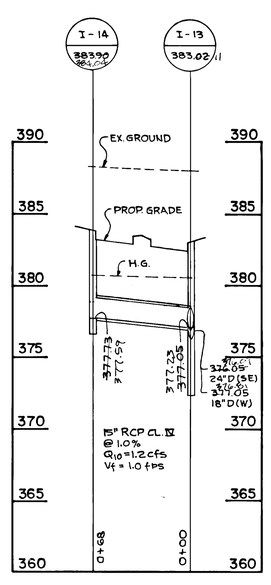
BROKEN LAND PARKWAY
SCALE: HOR. 1" = 50'
VER. 1" = 5'

AS-BUILT

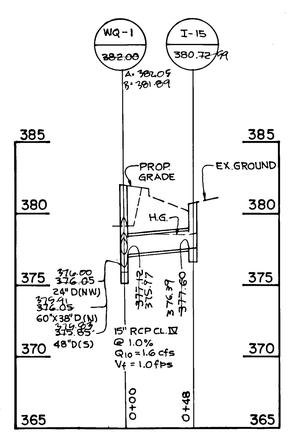
G. SCOTT SHANABERGER
PROFESSIONAL L.S. # 10849
3/26/93
DATE



MALL RING ROAD
SCALE: HOR. 1" = 50'
VER. 1" = 5'



MALL ROAD CONNECTOR
SCALE: HOR. 1" = 50'
VER. 1" = 5'



MALL RING ROAD
SCALE: HOR. 1" = 50'
VER. 1" = 5'

WATER QUALITY STRUCTURE TO BE PRIVATELY MAINTAINED

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELLICOTT CITY, MARYLAND 21043

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 9/14/92 DATE

CHIEF, BUREAU OF HIGHWAYS — 9/14/92 DATE

CHIEF, BUREAU OF ENGINEERING — 9/14/92 DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 9/16/92 DATE

7/6/92
DATE

PROFESSIONAL ENGINEER No. 5407

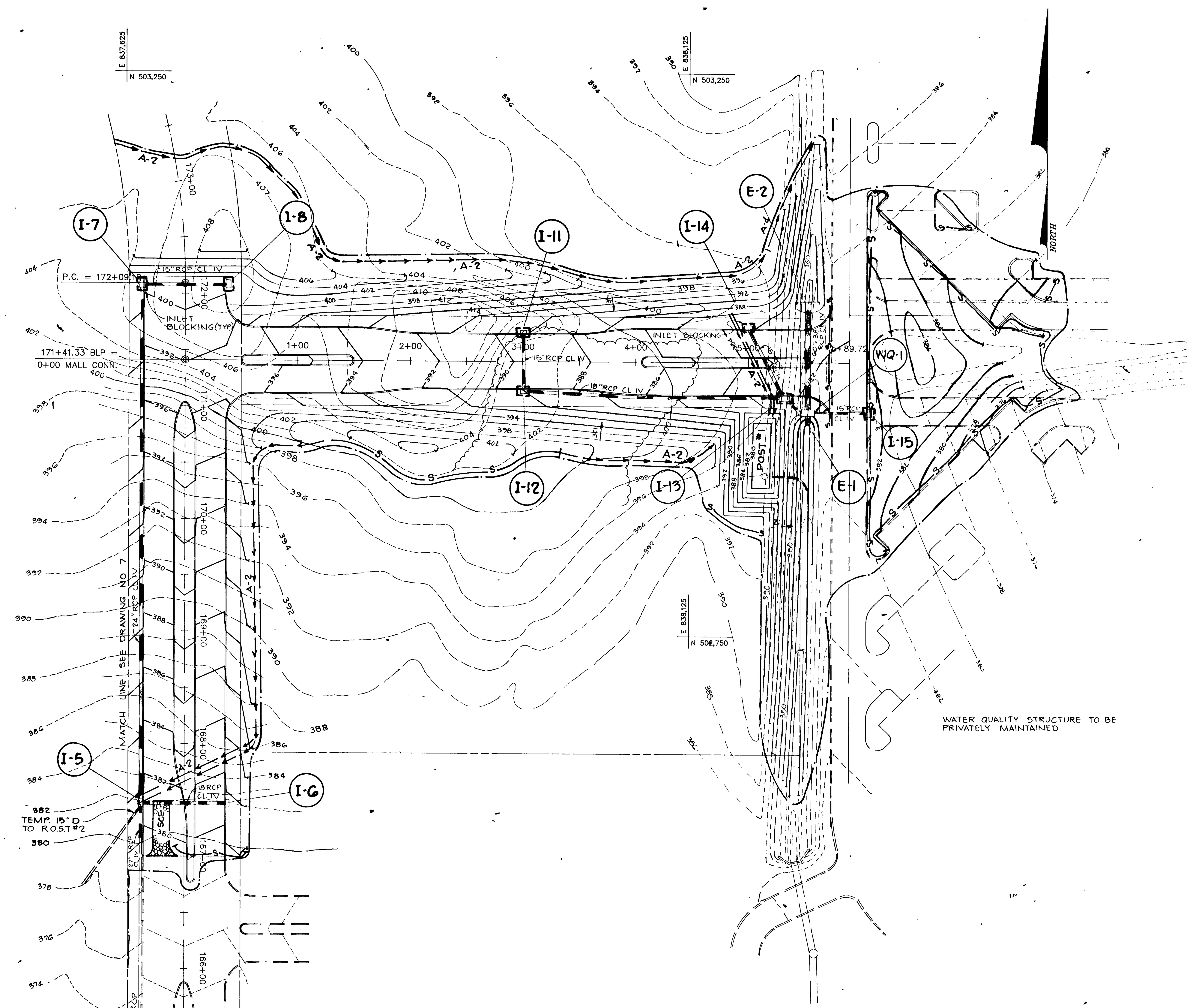
PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
PHONE (410) 247-8833 FAX (410) 247-8397

AREA: BROKEN LAND PARKWAY

AREA: STORM DRAIN PROFILES

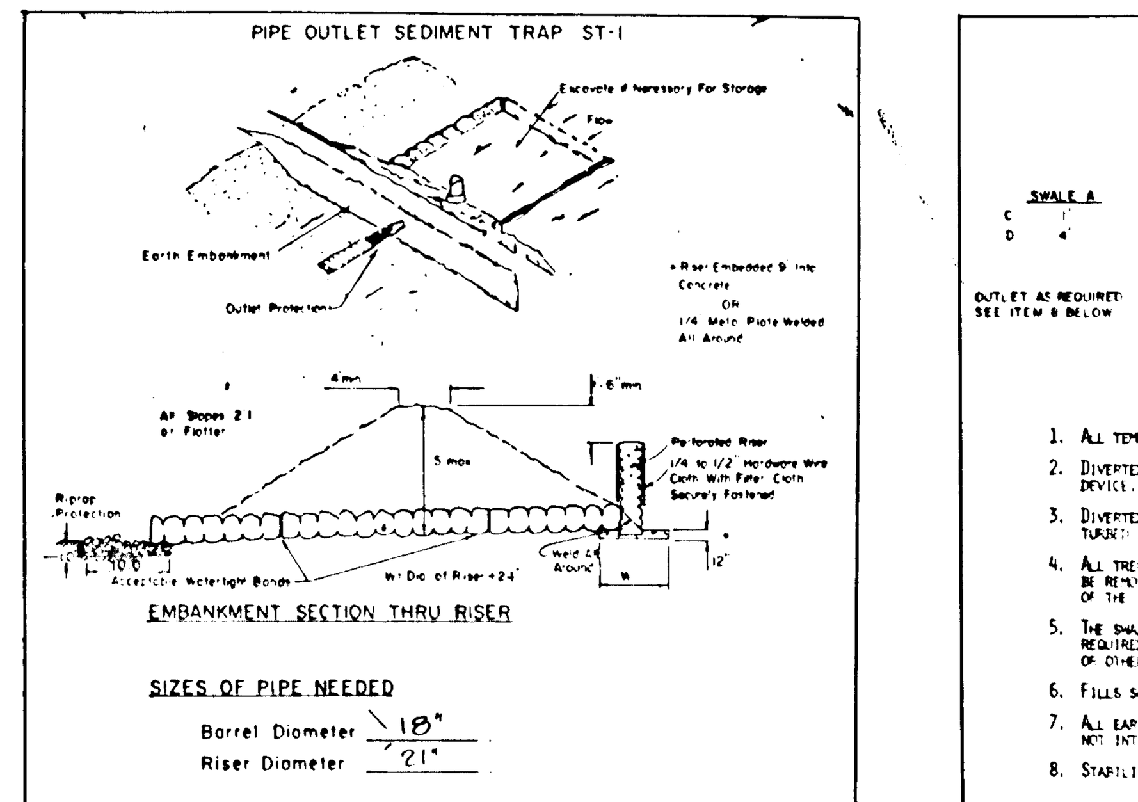
DES. BY HRP	SCALE: AS SHOWN	PROJ. No.
DRN BY AJR	DATE: JUNE 1992	DRAWING No. 5 OF 9
CHK. BY HRP	APPROVED:	

F-93-03



TRAP #	DRAINAGE AREA	DISTURBED AREA	STORAGE REQ'D	STORAGE PROV'D	CREST ELEV	CLEAN OUT EL.	BOTTOM ELEV	BOTTOM DIMENSIONS	STONE OUTLET LENGTH
POST # 1	2.02 Ac.	1.97 Ac.	3545 cu.ft	3780 cu.ft	382.5	381.0	379.5	54'×15'×3'	N/A
ROST # 2	9.16 Ac	8.70 Ac	16488 CF	16,569 CF	377.0	374.50	373.0	50'×88.5×3.0	12' (WEIR)

PIPE OUTLET SEDIMENT TRAP ST-1



SIZES OF PIPE NEEDED

Barrel Diameter 18"

Riser Diameter 21"

Note:

For Construction Specification see sheet 16.08

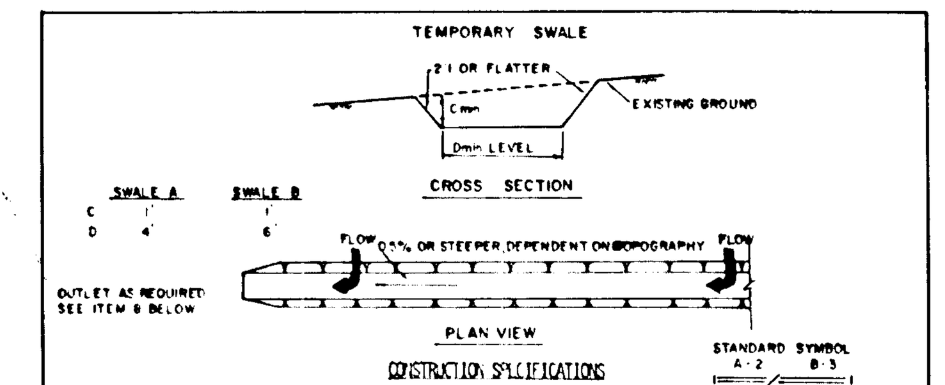
Max Drainage Area: 5 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	PIPE OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-1

Pipe Outlet Trap
CONSTRUCTION SPECIFICATION FOR ST-I

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. Volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage.
4. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
5. The structure shall be inspected after each rain and repairs made as needed.
6. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
7. The structure shall be removed and area stabilized when the drainage area has been properly stabilized.
8. All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
9. All pipe connections shall be watertight.
10. The top 2/3 of the riser shall be perforated with one (1) inch diameter holes or slits spaced six(6) inches vertically and horizontally and placed in the concave portion of pipe. No holes will be allowed within six(6) inches of the horizontal barrel.
11. The riser shall be wrapped with 1/4 to 1/2 inch hardware cloth wire then wrapped with filter cloth (having an equivalent sieve size of 40 - 80). The filter cloth shall extend six (6) inches above the highest hole and six (6) inches below the lowest hole. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent bypass.
12. Straps or connecting bands shall be used to hold the filter cloth and wire fabric in place. They shall be placed at the top and bottom of the cloth.
13. Fill material around the pipe spillway shall be hand compacted in four(4)-inch layers. A minimum of two (2) feet of hand-compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment.
14. The riser shall be anchored with either a concrete base or steel plate base to prevent flotation. For concrete bases the depth shall be 12 inches with the riser embedded nine (9) inches. A 1/4 inch minimum thickness steel plate shall be attached to the riser by a continuous weld around the bottom to form a watertight connection and then place two (2) feet of stone, gravel, or tamped earth on the plate.

TEMPORARY SWALE



CONSTRUCTION SPECIFICATIONS

1. All temporary swales shall have uninterrupted positive grade to an outlet.
2. Diverted runoff from a disturbed area shall be conveyed to a sediment trapping device.
3. Diverted runoff from an undisturbed area shall outlet directly into an undisturbed stabilized area at non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the swale.
5. The swale shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fills shall be compacted by earth moving equipment.
7. All earth removed and not needed on construction shall be placed so that it will not interfere with the functioning of the swale.
8. Stabilization shall be as per the chart below:

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 Excelsior
3	5.1-8.0%	Seed with Jute or Excelsior; Sod	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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	TEMPORARY SWALE	STANDARD DRAWING TS-1

CERTIFICATION BY THE DEVELOPER:

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT AND PLANS FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MD. DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

[signature] 7/9/92
SIGNATURE OF DEVELOPER — DATE

CERTIFICATION BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORADANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

[signature] 7/9/92
SIGNATURE OF ENGINEER — DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQIREMENTS FOR SOIL, EROSION AND SEDIMENT CONTROL

[signature] 8/31/92
U.S. SOIL CONSERVATION SERVICE — DATE

THESE PLANS FOR SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

[signature] 8/31/92
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

for [signature] 9/4/92
CHIEF, LAND DEVELOPMENT DIVISION — DATE

[signature] 9/3/92
CHIEF, BUREAU OF HIGHWAYS — DATE

[signature] 9/4/92
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 9/8/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

SEQUENCE OF CONSTRUCTION

Day 1	1.	Obtain Grading Permit.
Day 2	2.	Clear and grub for, and install, stabilized construction entrance, (SCE).
Day 2–3	3.	Clear and grub area for the sediment traps and construct sediment traps.
Day 3–4	4.	Install remainder of sediment control devices.
Day 4–11	5.	Grade channel below E–1 and stabilize with jute or excelsior matting.
Day 11–15	6.	Construct storm drain from E–1 to E–2 and channel upstream of E–2.
Day 15–17	7.	Clear and grub remaining area to be disturbed and begin grading. Grade roadbeds to subgrade.
Day 17–40	8.	Install water, sewer, and storm drains; Install temp. 15" pipe at inlet I–5 and block 27" rccp while R.O.S.T. is in use.
Day 40–42	9.	Install inlet blocking as shown.
Day 42–47	10.	Stabilize roadbeds by constructing base course and all other disturbed areas in accordance with the seeding notes.
Day 47–48	11.	Remove Sediment traps with the approval and under direction of the Sediment Control Inspector.
Day 48-59	12.	Install curb and gutter, pave roads, and complete fine grading.
Day 59-62	13.	Remove remaining sediment control devices with the approval of the sediment control inspector and stabilize any remaining disturbed areas.

7/7/92
DATE

[seal]

[signature]
PROFESSIONAL ENGINEER No.5407

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BALTIMORE, MARYLAND 21228
PHONE (410) 247-8833 *FAX (410) 247-9397*

AREA: BROKEN LAND PARKWAY

AREA: SEDIMENT AND EROSION CONTROL PLAN

DES. BY HRP	SCALE: 1" = 50'	PROJ. No.
DRN BY AJR	DATE: JUNE 1992	DRAWING No.
CHK. BY HRP	APPROVED:	6 OF 9

F-93-03

F-93-03

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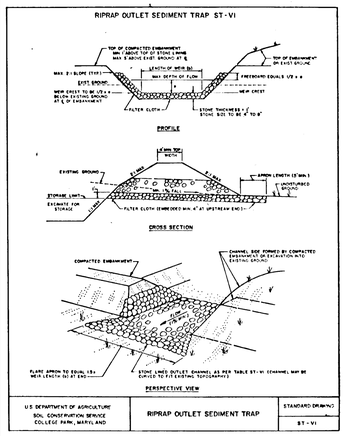
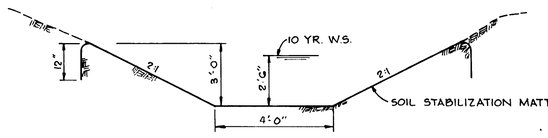


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	RIPRAP OUTLET SEDIMENT TRAP	STANDARD DRAWING ST - VI

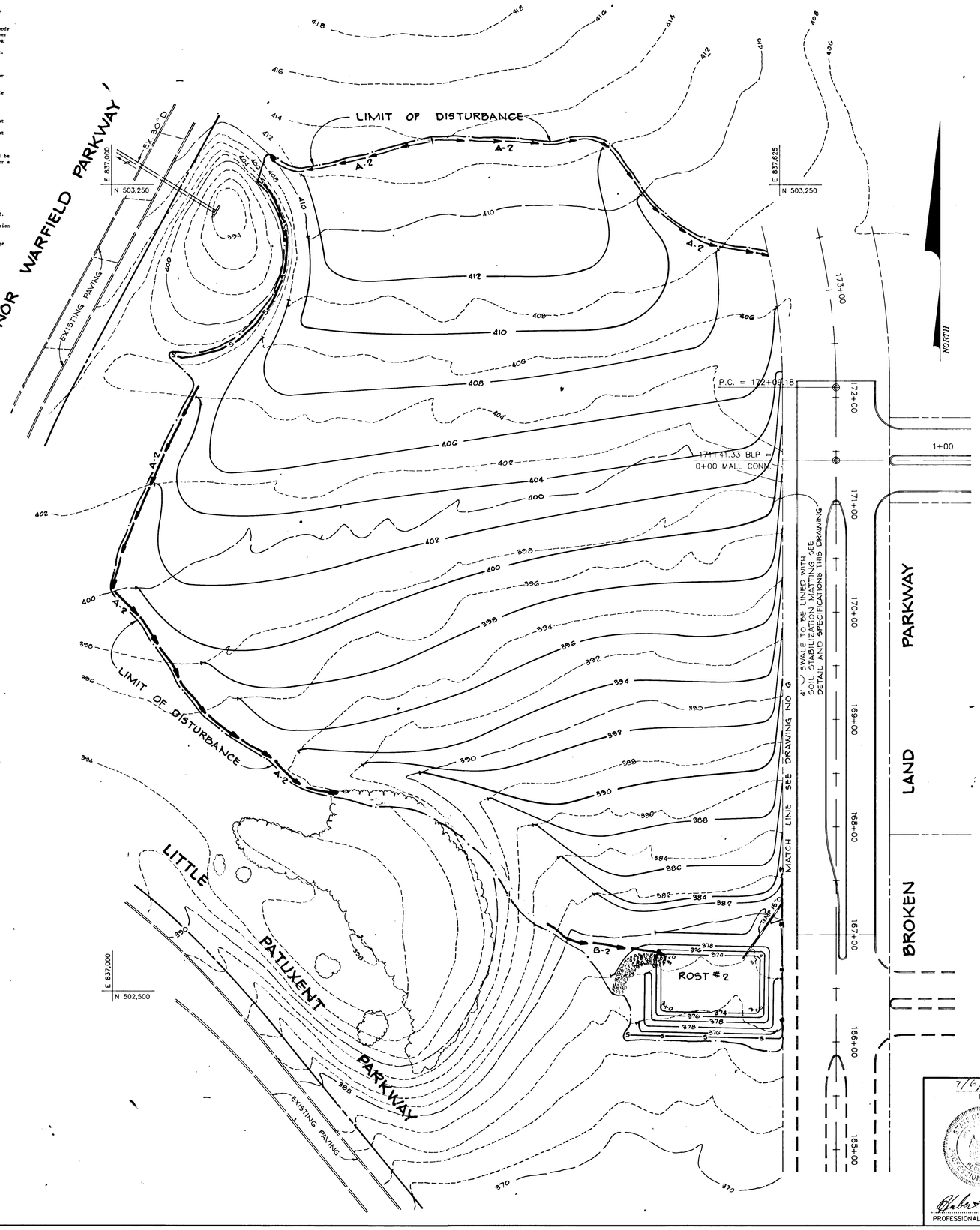
CONSTRUCTION SPECIFICATIONS FOR ST-VI

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



CHANNEL DETAIL @ E-1

NO SCALE



STANDARD AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION OF
CHANNELS AND STEEP SLOPES

Definition

Installing jute or excelsior matting on a prepared seed - or planting - bed of a channel or steep slope to be stabilized with vegetation.

Purpose

To aid in controlling erosion on critical sites during establishment period of protective vegetation.

Conditions Where Practice Applies

In channels where designed flow exceeds 3.5 feet per second; on short, steep slopes where erosion hazard is high and planting is likely to be slow to establish adequate protective cover; on tidal or stream banks where moving water is likely to wash out new vegetative plantings.

MATERIALS

A. Jute mat shall be cloth of a uniform plain weave of undyed and unbleached single jute yarn, 48 inches in width plus or minus 1 inch and weighing an average of 1.2 pounds per linear yard of cloth with a tolerance of plus or minus 5 percent, with approximately 78 warp ends per width of cloth and 41 weft ends per linear yard of cloth. The yarn shall be of a loosely twisted construction having an average twist or not less than 1.4 turns per inch and shall not vary in thickness by more than one-half its normal diameter.

B. Excelsior mat shall be wood excelsior, 48 inches in width plus or minus 1 inch and weighing 0.8 pounds per square yard plus or minus 10 percent. The excelsior material shall be covered with a netting to facilitate handling and to increase strength.

C. Glass fiber matting of bonded textile glass fibers with an average fiber diameter of 8 to 12 microns, 2 to 4 inch strands of fiber bonded with phenol formaldehyde resin. Mat shall be roll type, water permeable, minimum thickness ¼ inch, maximum thickness ½ inch, density not less than 3 pounds per cubic foot.

D. Staples - staples for anchoring soil stabilizing materials shall be No. 11 gauge wire or heavier. Their length shall be 6 to 10 inches. Use the longer staples on loose, unstable soils.

INSTALLATION REQUIREMENTS

Site Preparation: After site has been shaped and graded to approved design, prepare a friable seedbed relatively free from clods and rocks more than 1½ inches in diameter, and any foreign material that will prevent contact of the protective mat with the soil surface.

Planting: Lime, fertilize, and seed in accordance with seeding or other type of planting plan, except when using jute matting on a seeded area, apply approximately one-half the seed after laying the mat. The protective matting can be laid over sprigged areas where small grass plants have been planted. Where ground covers are to be planted, lay the protective matting first and then plant through the matting according to design of planting.

Erosion Stops: (For use on steep, highly erodible watercourses) Erosion stops are made of glass fiber strips, excelsior matting strips or tightly folded jute matting blanket or strips. They are placed in narrow trenches 6 to 12 inches deep across the channel and left flush with the soil surface. They are to cover the full cross-section of designed flow.

How Used: Under jute or excelsior matting.

Location:

1. Approximately 3 feet down channel from point of entry of a concentrated flow such as from culverts, tributary channels or diversions.
2. At points where change in gradient or course of channel occurs.
3. Spacing of erosion stops on long slopes will vary from 20 to 100 feet depending upon the erodibility of the soil and velocity and volume of flow.

Installation:

Erosion stops should extend beyond the channel liner to full design cross-section of the channel to check any rills that might form outside the channel lining.

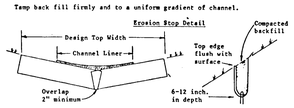
The trench may be dug with a spade or a mechanical trencher making sure that the down slope face of the trench is flat; it should be uniform and perpendicular to line of flow to permit proper placement and stapling of the glass figer matting.

The erosion stop should be deep enough to penetrate solid material or below level of rilling in sandy soils. In general, erosion stops will vary from 6 to 12 inches in depth.

The erosion stop mats should be wide enough to allow a minimum of 2 inch turnover at bottom of trench for stapling while maintaining the top edge flush with channel surface.

Temp back fill firmly and to a uniform gradient of channel.

Erosion Stop Detail



If seeding has been done prior to installation of erosion stops, reseed disturbed areas prior to placement of channel liner.

Laying Jute Matting: (If instructions have been followed, all needed erosion stops will have been installed, and the jute matting will be laid on a friable seedbed free from clods, rocks, roots, etc., that might cause bridging.)

Most channels will require multiple widths of jute matting, two widths being the most commonly used. Unroll matting starting at the upper end of the channel allowing a 4 inch overlap of mattings along center of channel.

Securing Jute Mattings: Bury the top ends of jute matting in a narrow trench, minimum of 6 inch depth, similar to that used for erosion stops. Backfill trench and tamp firmly to conform to channel cross-section. Secure with a row of staples about 4 inches down slope from the trench. Spacing between staples is 4 inches.

Next, staple the 4 inch overlap in channel center using an 18 inch spacing between staples. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil. Staples shall be placed 2 feet apart along the outer edge of matting.

Where one roll of jute matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4 inches, shiplap fashion.

Where matting crosses erosion stops, reinforce with a double row of staples spaced six (6) inches apart in a staggered pattern on either side of erosion stop. Likewise, overlaps joining the length of matting together and the discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Laying and Securing Excelsior Mattings: Same seedbed preparation as for jute matting with the exception that all seeding must be completed before laying excelsior matting.

Bury top ends of excelsior matting in a trench as described for jute matting. As the blankets are unrolled down slope, the matting must be on top with the wood fibers in contact with the soil. Butt snugly at the ends and sides before stapling.

Using two (2) foot spacing between staples, excelsior matting shall be secured with four rows for each strip, with one row along each edge and alternating parallel rows down the center. The stapling over erosion stops, entrance and discharge ends of matting and butted end joints shall be the same as described for jute matting.

Final Check

1. Make sure matting is uniformly in contact with the soil.
2. All lap joints are secure.
3. All staples are flush with the ground.
4. All disturbed areas seeded.

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CERTIFICATION BY THE DEVELOPER:

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SIGNATURE OF DEVELOPER — DATE 7/6/92

CERTIFICATION BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORADANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

SIGNATURE OF ENGINEER — DATE 7-6-92

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQIREMENTS FOR SOIL, EROSION AND SEDIMENT CONTROL

U.S. SOIL CONSERVATION SERVICE — DATE 8/31/92

THESE PLANS FOR SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/31/92

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/4/92

CHIEF, BUREAU OF HIGHWAYS — DATE 9/3/92

CHIEF, BUREAU OF ENGINEERING — DATE 9/4/92

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9/8/92

7/6/92
DATE

PROFESSIONAL ENGINEER No. 5407

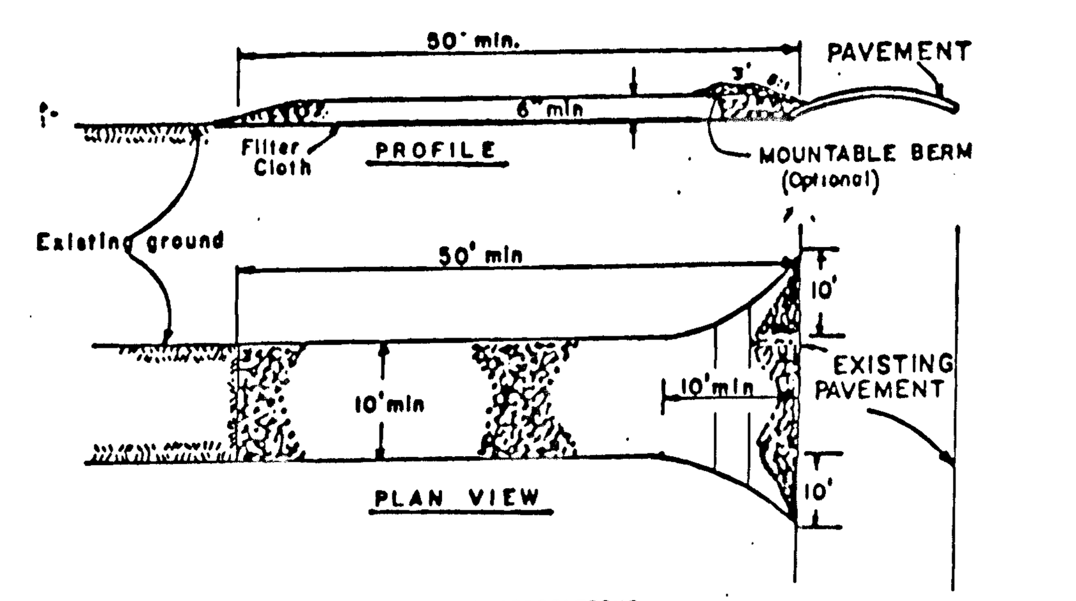
PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CHOICE LANE SUITE 300
BALTIMORE, MARYLAND 21228
PHONE (410) 247-8833 FAX (410) 247-8997

AREA: BROKEN LAND PARKWAY EXTENSION

AREA: SEDIMENT AND EROSION CONTROL PLAN

DES. BY HRP	SCALE: 1" = 50'	PROJ. No.
DRN BY AJR	DATE: JUNE 1992	DRAWING No. 7 OF 9
CHK. BY HRP	APPROVED:	

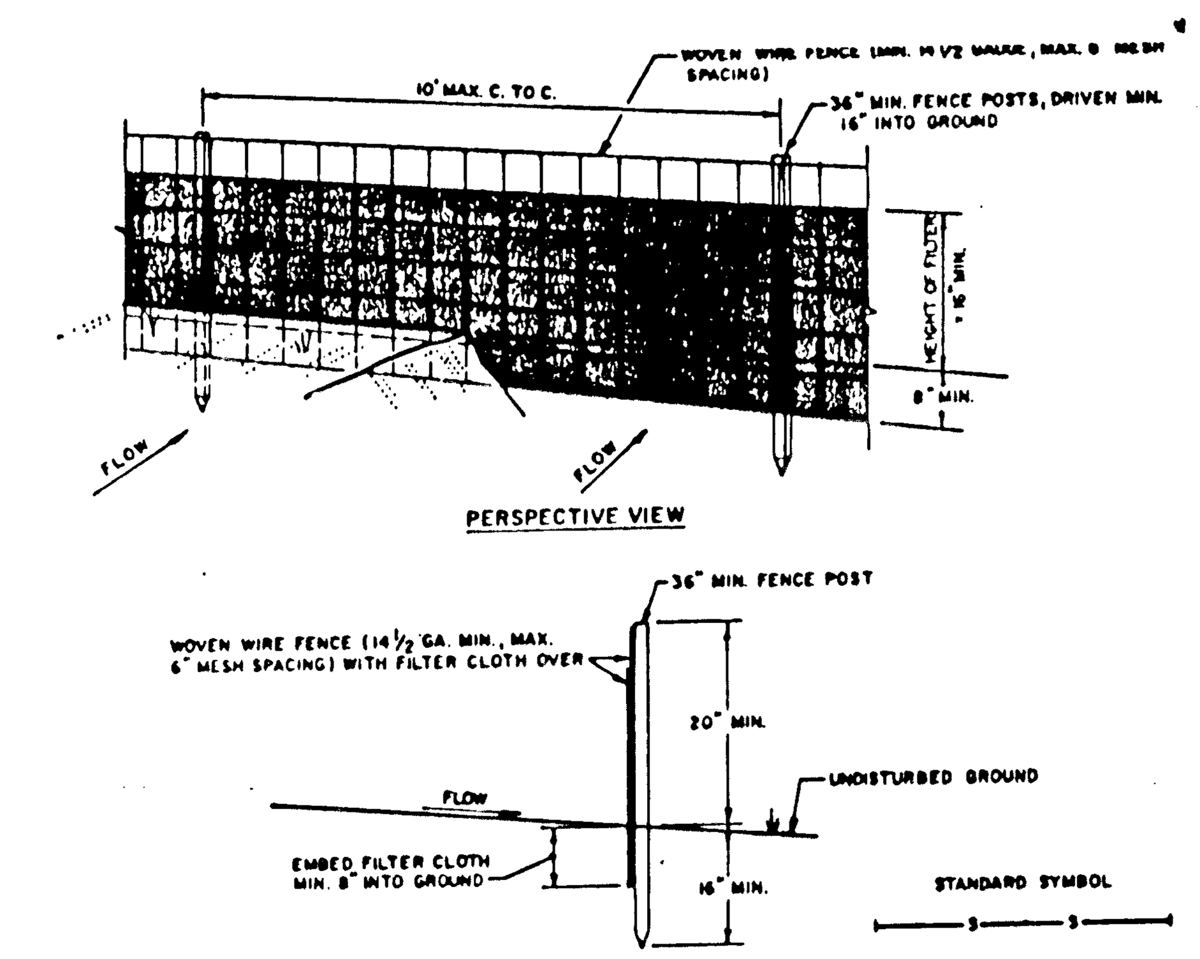
F-93-03



CONSTRUCTION SPECIFICATIONS

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

STABILIZED CONSTRUCTION ENTRANCE



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

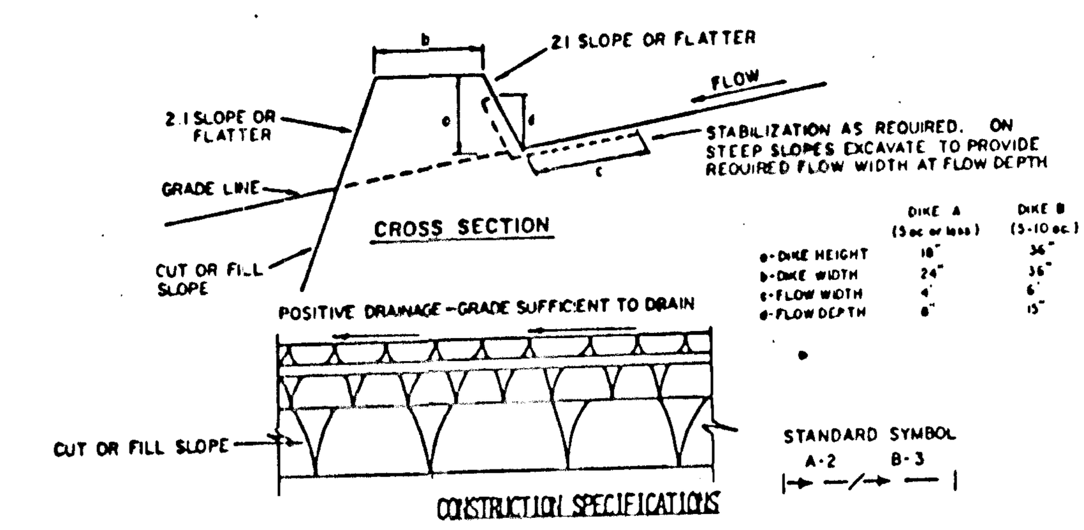
POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

SILT FENCE



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE

CERTIFICATION BY THE DEVELOPER:

I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT AND PLANS FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MD. DEPT. OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

Signature of Developer — 7/9/92 — Date

CERTIFICATION BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT".

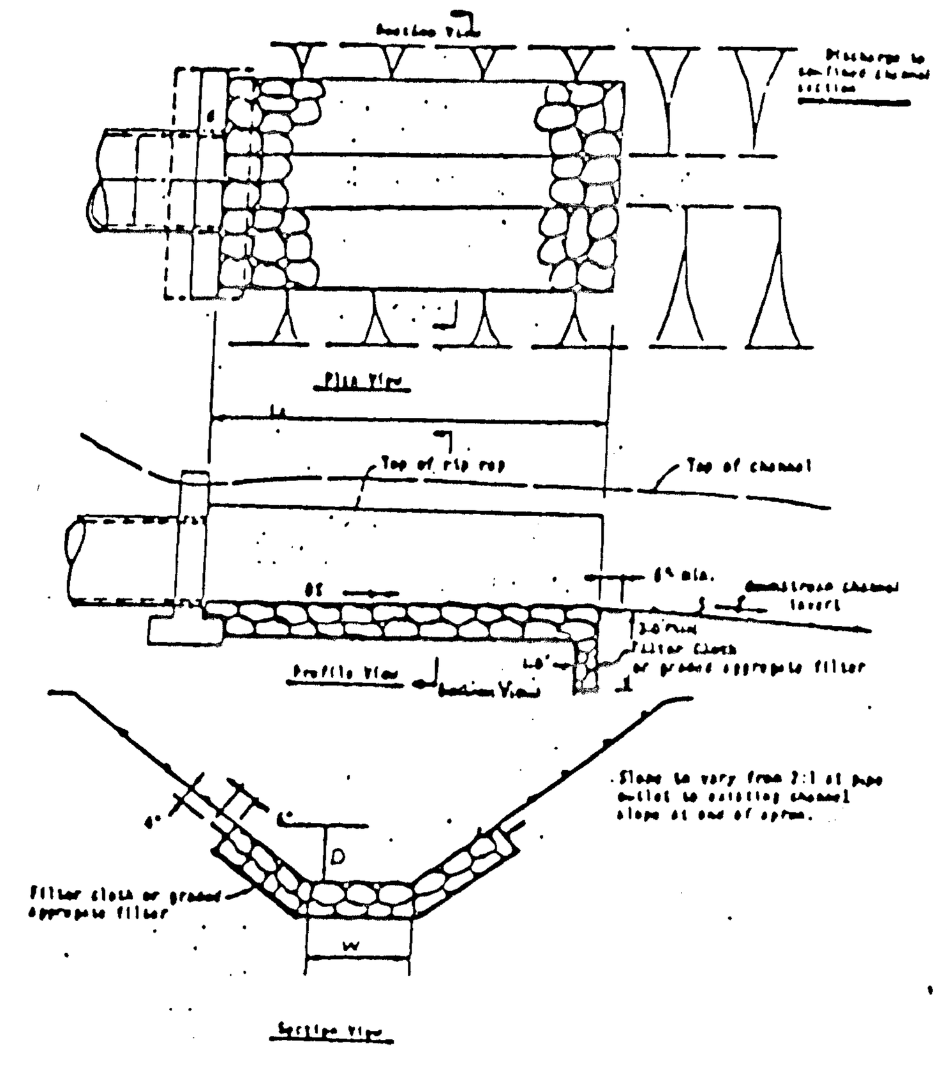
Signature of Engineer — 7/6/92 — Date

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

U.S. Soil Conservation Service — 8/31/92 — Date

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

Howard Soil Conservation District — 8/31/92 — Date



ROCK RIPRAP SIZES AND THICKNESS

d_{50} (inches)	d_{max} (inches)	Min Blanket Thickness (inches)
4	6	9
6	9	14
9	14	20
12	18	27
15	22	32
18	27	32
21	32	38
24	36	43

Stone Quality. Stone for riprap shall consist of field stone or rough unhewn quarry stone. The stone shall be hard and angular and of a quality that will not disintegrate on exposure to water or weathering. The specific gravity of the individual stones shall be at least 2.5.

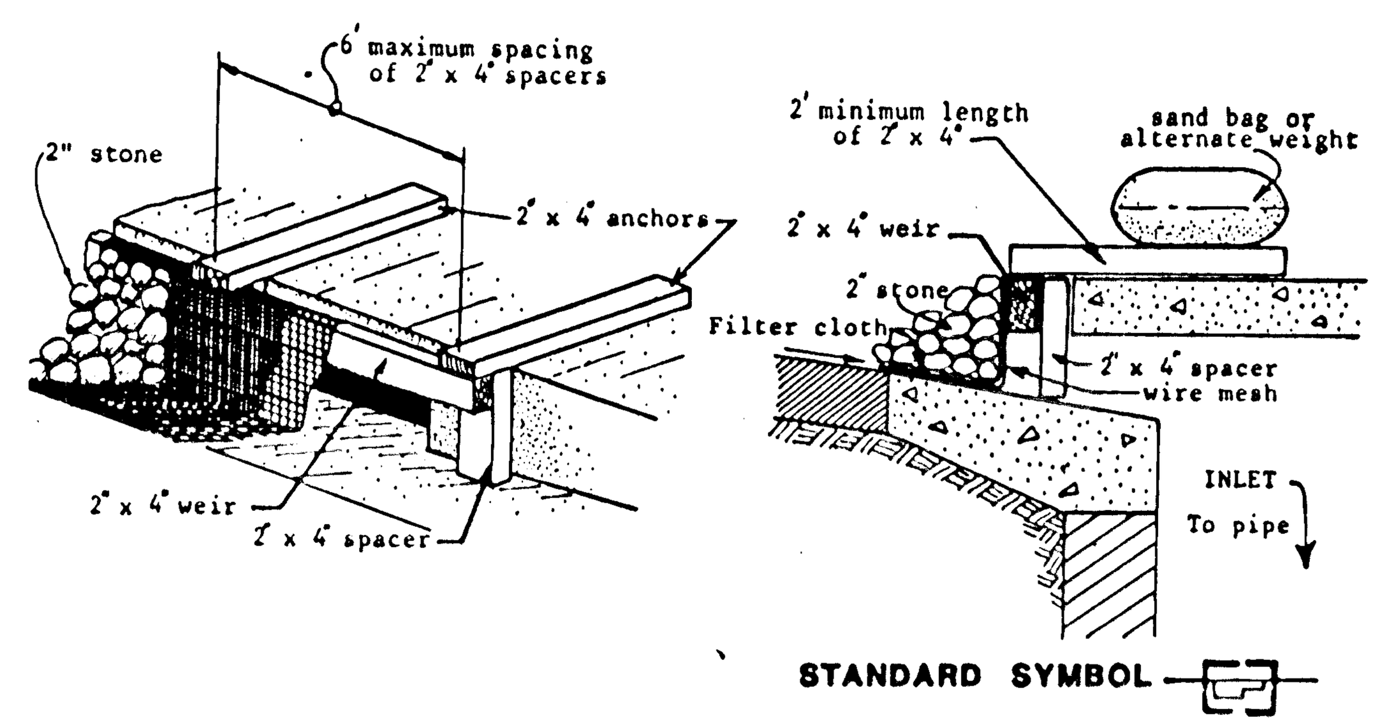
Filter. A filter is a layer of material placed between the riprap and the underlying soil surface to prevent soil movement into and through the riprap. Riprap shall have a filter placed under it in all cases.

A filter can be of two general forms: A gravel layer or a plastic filter cloth. The plastic filter cloth can be woven or non-woven monofilament yarns, and shall meet these base requirements: thickness 20-60 mils, grab strength 90-120 lbs; and shall conform to ASTM D-1777 and ASTM D-1682.

Gravel filter blanket when used shall be designed by comparing particle sizes of the overlying material and the base material. Design criteria is available in any soils or civil engineering reference or from the Soil Conservation Service.

PLAN SYMBOL

RIP-RAP PROTECTION



STANDARD SYMBOL

Construction Specifications

I. Materials

A. Wooden frame is to be constructed of 2" x 4" construction grade lumber.

B. Wire mesh must be of sufficient strength to support filter fabric, and stone for curb inlets, with water fully impounded against it.

C. Filter cloth must be of a type approved for this purpose; resistant to sunlight with sieve size, EOS, 40-85, to allow sufficient passage of water and removal of sediment.

4. Stone is to be 2" in size and clean, since fines would clog the cloth.

II. Procedure

Curb Inlet Protection.

1. Attach a continuous piece of wire mesh (30" min. width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.

3. Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

INLET PROTECTION

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) SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GRATER 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 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 INOPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

7) SITE ANALYSIS:

TOTAL AREA OF SITE	14.75	ACRES
AREA DISTURBED	14.75	ACRES
AREA TO BE ROOFED OR PAVED	1.80	ACRES
AREA TO BE VEGETATIVELY STABILIZED	12.95	ACRES
TOTAL CUT	34,200	CU. YDS.
TOTAL FILL	34,200	CU. YDS.

8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9) ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.

10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

PERMANENT SEEDING NOTE

SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS: USE ONE OF THE FOLLOWING SCHEDULES.

1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS 1000 SQUARE FT) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. 1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS. PER 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. ACRES KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS ACRES OF WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL. /1000 SQ. FT.) OF EMULSIFIED ASPHALT ON 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 RESEEDINGS.

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.).

SEEDING: FOR PERIODS MACH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2-1/2 BU. PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.)(. FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLY 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 UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL./1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL./1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

7/6/92
DATE

PROFESSIONAL ENGINEER No. 5407

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 9/4/92 — DATE

CHIEF, BUREAU OF HIGHWAYS — 9/3/92 — DATE

CHIEF, BUREAU OF ENGINEERING — 9/4/92 — DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 9/8/92 — DATE

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
PHONE (410) 247-8833 FAX (410) 247-9397

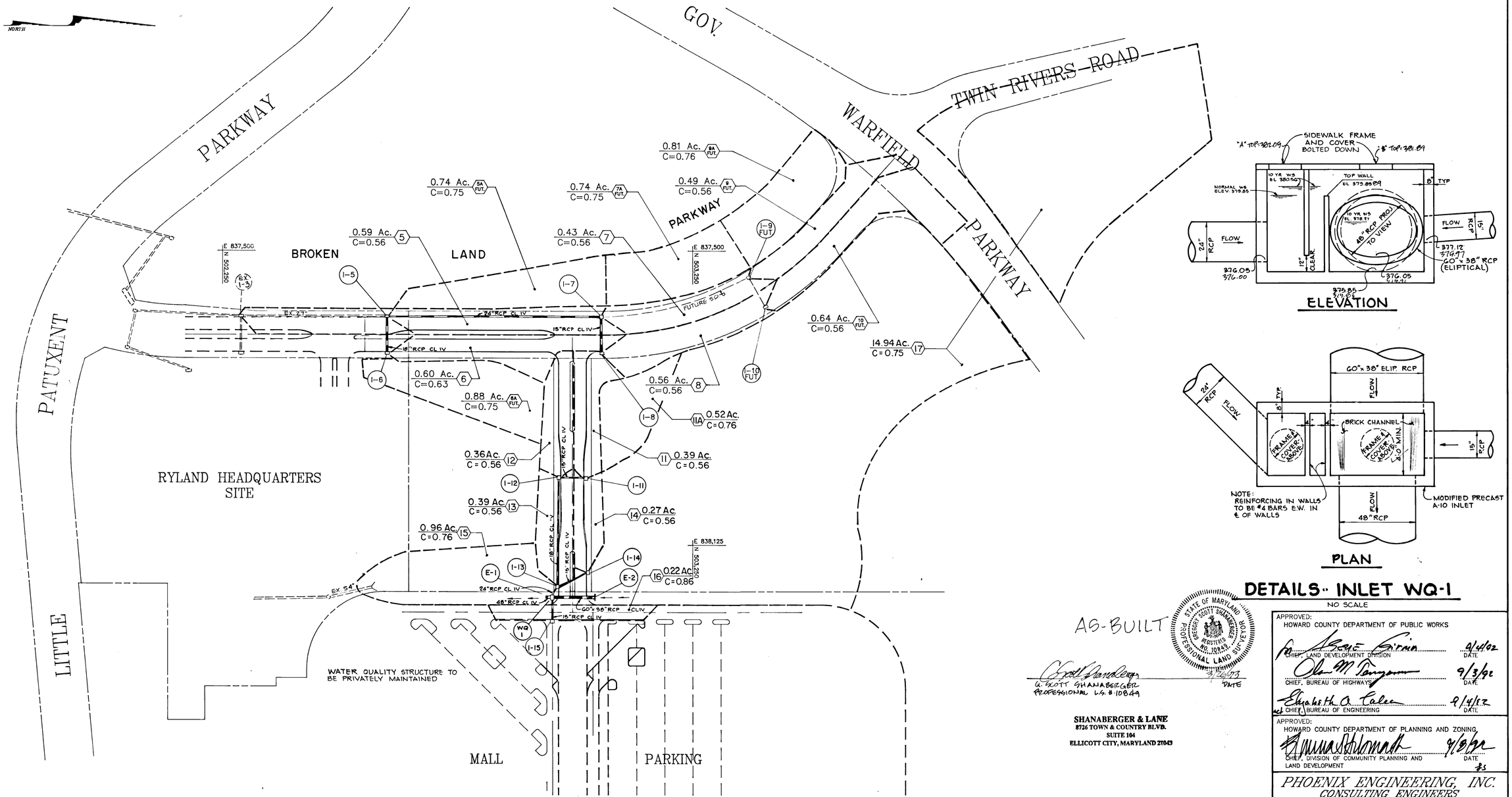
AREA: BROKEN LAND PARKWAY EXTENSION

AREA: SEDIMENT AND EROSION CONTROL NOTES & DETAILS

DES. BY HRP	SCALE: AS SHOWN	PROJ. No.
DRN BY AJR	DATE: JUNE 1992	DRAWING No.
CHK. BY HRP	APPROVED:	8 OF 9

F-93-03

65



DETAILS - INLET WQ-1

NO SCALE

AS-BUILT

STATE OF MARYLAND — G. SCOTT SHANABERGER — REGISTERED PROFESSIONAL LAND SURVEYOR — NO. 10849

G. Scott Shanaberger
G. SCOTT SHANABERGER
PROFESSIONAL L.S. # 10849

9/14/93
DATE

SHANABERGER & LANE
8726 TOWN & COUNTRY BLVD.
SUITE 104
ELLICOTT CITY, MARYLAND 21043

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/4/92
CHIEF, BUREAU OF HIGHWAYS — DATE 9/3/92
CHIEF, BUREAU OF ENGINEERING — DATE 9/4/92

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9/8/92

7/6/92
DATE

Richard R. Platt
PROFESSIONAL ENGINEER No. 5407

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21228
PHONE (410) 247-8833 FAX (410) 247-9397

AREA: BROKEN LAND PARKWAY

AREA: DRAINAGE AREA MAP

DES. BY HRP	SCALE: 1" = 100'	PROJ. No.
DRN BY AJR	DATE: JUNE 1992	DRAWING No. 9 OF 9
CHK. BY HRP	APPROVED:	

F-93-03