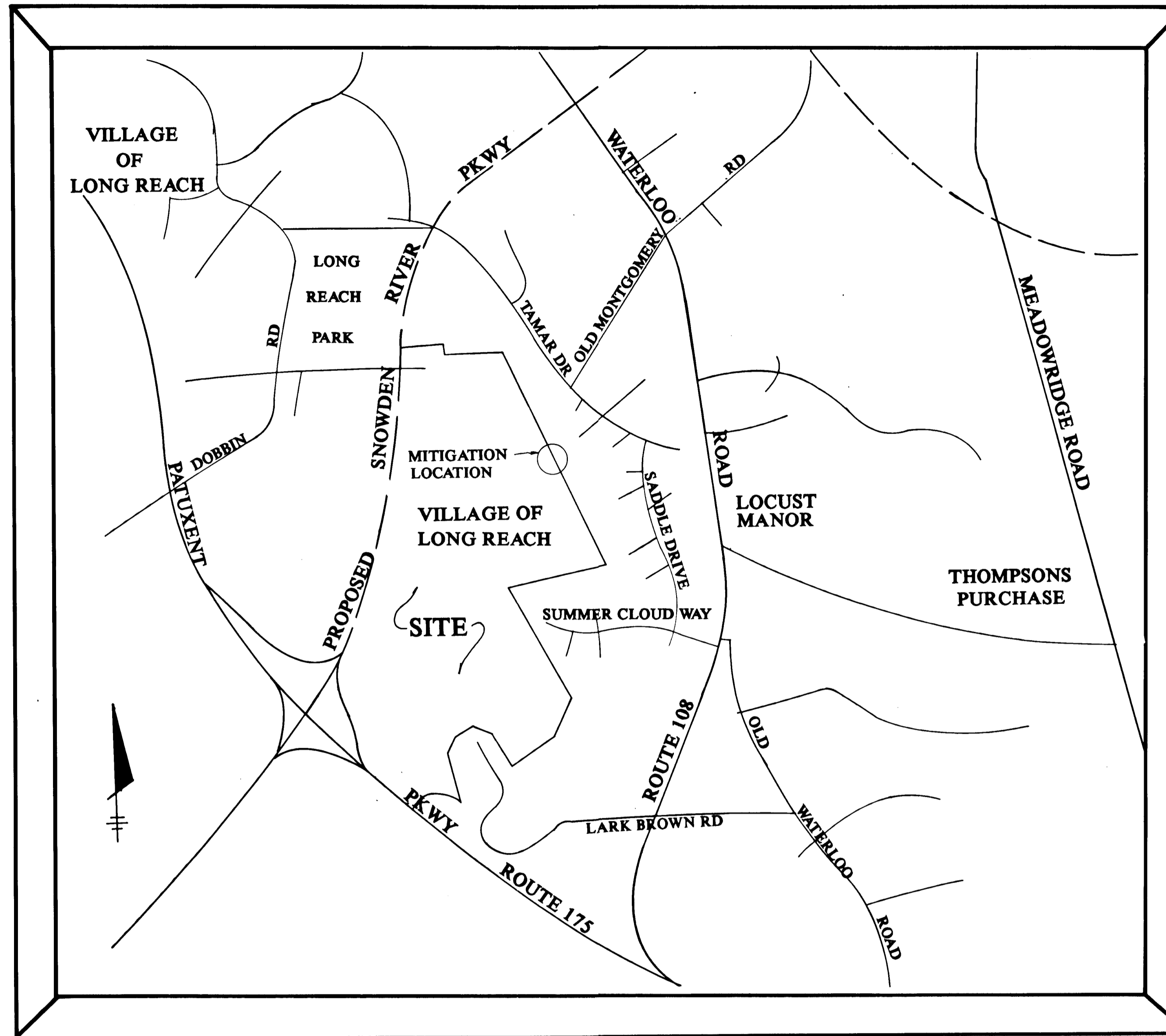


**BALTIMORE DISTRICT CORPS OF ENGINEERS
MITIGATION REQUIREMENTS**

The mitigation plan is acceptable provided the following condition(s) are met:

1. The permittee shall successfully create a minimum of 2.0 acres of wetland creation plus stream enhancement - in accordance with the mitigation conditions required by the Maryland Department of the Environment (MDE), Water Quality Certification 88-WQ-0056.
 2. The permit shall be automatically suspended if any one of the following is not met:
 - a) A final mitigation plan shall be submitted to MDE and the Corps and shall be approved by both agencies prior to starting work.
 - b) The mitigation shall be implemented in accordance with the approved plan by March 31, 1992.
 - c) Woody species vegetation proposed in the mitigation area shall have an 85% survival rate three (3) years after planting. If this rate is not achieved, additional planting(s) shall be required until this rate is achieved.
 3. The permittee shall obtain Corps approval for any changes of plant species or planting schedule from that specified in the mitigation plan. The permittee shall keep this office informed of the status of each stage of the project and the mitigation work.
 4. The permittee shall employ an environmental consultant who is knowledgeable and experienced in establishing wetlands. The consultant will supervise and monitor the work performed in the mitigation areas including establishment of elevations.
- Any required State and Local authorizations must be secured prior to initiating the work.



VICINITY MAP
SCALE: 1" = 1000'

SNOWDEN RIVER PKWY

WQC# 90-WQ-0010

CENAB-OP-RW

(H.R.D./ SNOWDEN RIVER PKWY)

89-0096-3

PROJECT DATA

1. All information contained on this map is current as of May 1, 1991.
2. Wetland areas were identified and delineated using a multi-parameter approach. This approach requires positive identification of WETLAND PLANTS, HYDRIC SOILS, and WETLAND HYDROLOGY for a determination that the area is a wetland.
 - A) WETLAND PLANTS: A variety of hydrophytic plants were identified within the wetland limits and adjacent land areas.
 - B) HYDRIC SOILS: Color and mottle characteristics of the undisturbed "B" horizon were used to roughly approximate the limits of the hydric soil.
 - C) WETLAND HYDROLOGY: The topography of the area is characteristic of a swale with a distinct stream channel.
3. WETLAND CLASSIFICATIONS
 - A) EXISTING CONDITIONS:

System.....	Palustrine
Class.....	Forested
Subclass.....	Broadleaf/deciduous
Modifiers.....	- - -
Water regime.....	Temporarily flooded
Salinity.....	Fresh
 - B) PROPOSED CONDITIONS:

System.....	Palustrine
Class.....	Forested
Subclass.....	Broadleaf/deciduous
Modifiers.....	- - -
Water regime.....	Temporarily flooded
Salinity.....	Fresh
4. WATERBODY: Dorsey Run
5. ANTICIPATED RESTORATION CONSTRUCTION DATE: Spring, 1991
6. OWNER: Howard Research & Development Corporation
10275 Little Patuxent Parkway
Columbia, Maryland 21044

EXPLORATION RESEARCH, INC.
ENVIRONMENTAL CONSULTANTS
8318 FORREST AVENUE
SUITE 101
HISTORIC ELLICOTT CITY,
MARYLAND, 21043
(301) 750-1150
FAX#: (301) 750-7350



SUPPLEMENTAL INFORMATION

APPROVED: DEPARTMENT OF PLANNING & ZONING <i>Thomas Howard</i> 12/1/92 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE	MARYLAND DEPARTMENT OF THE ENVIRONMENT STANDARDS & CERTIFICATION DIVISION APPROVAL OF PLANS AND SPECIFICATIONS FOR COMPLIANCE WITH PERMIT <i>Andrew T. De...</i> 1-31-92 SIGNATURE OF STANDARDS & CERTIFICATION DIVISION DATE
APPROVED: DEPARTMENT OF PUBLIC WORKS CHIEF, BUREAU OF ENGINEERING DATE	U.S. ARMY CORPS OF ENGINEERS APPROVAL OF PLANS AND SPECIFICATIONS FOR COMPLIANCE WITH PERMIT NUMBER CENAB-OP-RW <i>...</i> 30 Dec 92 SIGNATURE OF U.S. ARMY CORPS OF ENGINEERS DATE 1 of 3 BALTIMORE, MD.
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS CHIEF, LAND DEVELOPMENT DIVISION DATE	
APPROVED: BUREAU OF HIGHWAYS CHIEF, BUREAU OF HIGHWAYS DATE	

PERMANANT SEEDING NOTES

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

Seeded preparation: In lieu of soil test recommendations, use one of the following schedule.

1. Preferred - apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) and 500 lbs per acre 10-10-10 fertilizer (14 three-inches of soil. At time of seeding, apply 400 lbs. Per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. Ft.).
2. Acceptable - apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. Ft.). 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 (14 lbs/1000 sq. Ft.) Of Kentucky 31 tall fescue. N for the period May 1 thru July 31, seed with 60 lbs Kentucky 31 tall fescue per acre and 2 lbs per acre (0.5 lbs/1000 sq. Ft.) Of weeping lovegrass. During the period of October 16 thru February 28, protect site by: option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) use sod. Option (3) seed with 60 lbs/acre Kentucky 31 tall fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. Ft.) Of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using small anchoring tool or 218 gal per acre (8 gal/1000 sq. Ft.) Of emulsified asphalt on flat areas. On slopes, 8ft. Or higher, use 348 gal per acre (8 gal/1000 sq. Ft.) For anchoring.

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

STABILIZATION

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

EROSION AND SEDIMENT CONTROL

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

TEMPORARY SEEDING NOTES

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

Seeded preparation: Loosen upper three-inches of soil by raking, disking or other acceptable means before seeding. If not previously loosened.

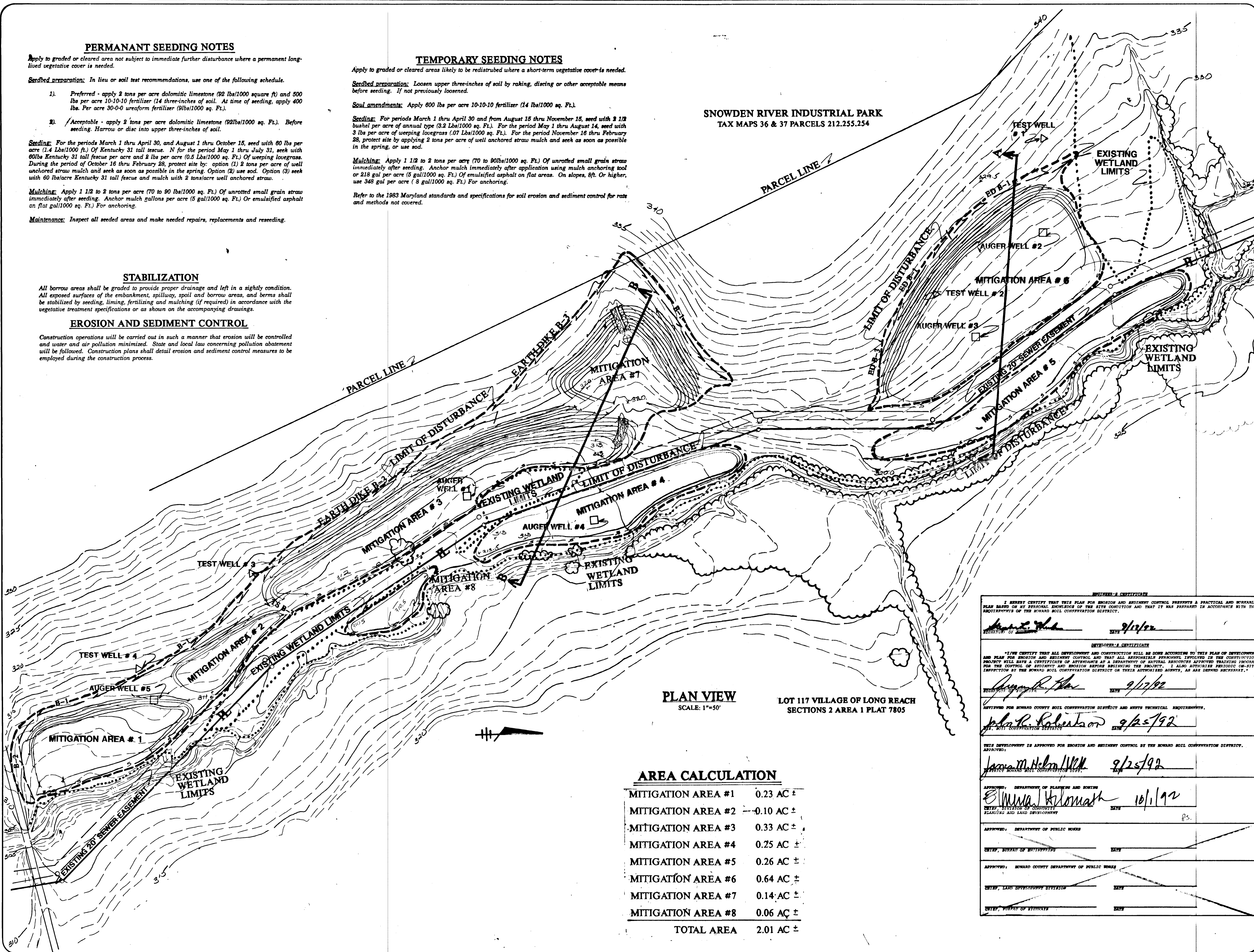
Soil amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. Ft.).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 3 1/2 bushel per acre of annual type (3.2 lbs/1000 sq. Ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (0.7 lbs/1000 sq. Ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. Ft.) Of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using small anchoring tool or 218 gal per acre (8 gal/1000 sq. Ft.) Of emulsified asphalt on flat areas. On slopes, 8ft. 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.

**SNOWDEN RIVER INDUSTRIAL PARK
TAX MAPS 36 & 37 PARCELS 212.255.254**



PLAN VIEW
SCALE: 1"=50'

LOT 117 VILLAGE OF LONG REACH
SECTIONS 2 AREA 1 PLAT 7805

AREA CALCULATION

MITIGATION AREA #1	0.23 AC ±
MITIGATION AREA #2	0.10 AC ±
MITIGATION AREA #3	0.33 AC ±
MITIGATION AREA #4	0.25 AC ±
MITIGATION AREA #5	0.26 AC ±
MITIGATION AREA #6	0.64 AC ±
MITIGATION AREA #7	0.14 AC ±
MITIGATION AREA #8	0.06 AC ±
TOTAL AREA	2.01 AC ±

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL PRESENTS 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: *[Signature]* DATE: 9/12/92

DEVELOPER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF APPROVAL AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS AND WHEN NECESSARY.

Signature: *[Signature]* DATE: 9/12/92

APPROVED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Signature: *[Signature]* DATE: 9/25/92

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

Signature: *[Signature]* DATE: 9/25/92

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: *[Signature]* DATE: 10/1/92

APPROVED: DEPARTMENT OF PUBLIC WORKS

Signature: _____ DATE: _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature: _____ DATE: _____

Signature: _____ DATE: _____

Signature: _____ DATE: _____

EXPLORATION RESEARCH, INC.
Environmental Consultants
8318 Forrest Avenue, Suite 101
Historic Ellicott City, Maryland 21043
Tel: (301) 750-1150, FAX # (301) 750-7350

DEVELOPER
HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PKWY
COLUMBIA, MD. 21044

MITIGATION PLAN
FOR
SNOWDEN RIVER PARKWAY
CENAB-OP-RW (H.R.D.) / SNOWDEN RIVER (PKWY) 89-0096-3
WQC# 90-WQ-0010

U.S. Army Corps Of Engineers
Approval Of Plans And Specifications
For Compliance With Permit Number
CENAB-OP-RW 89-0096-3

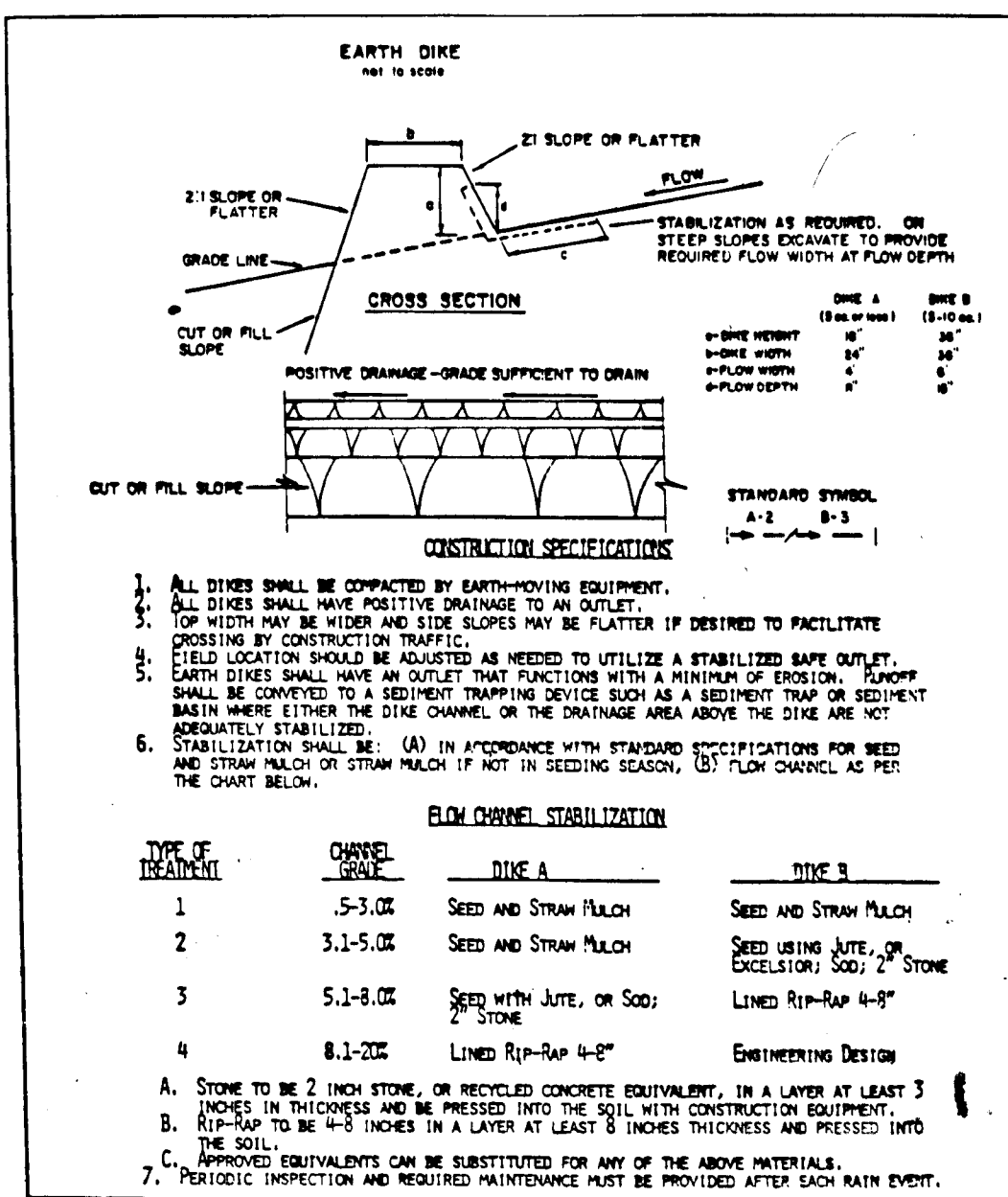
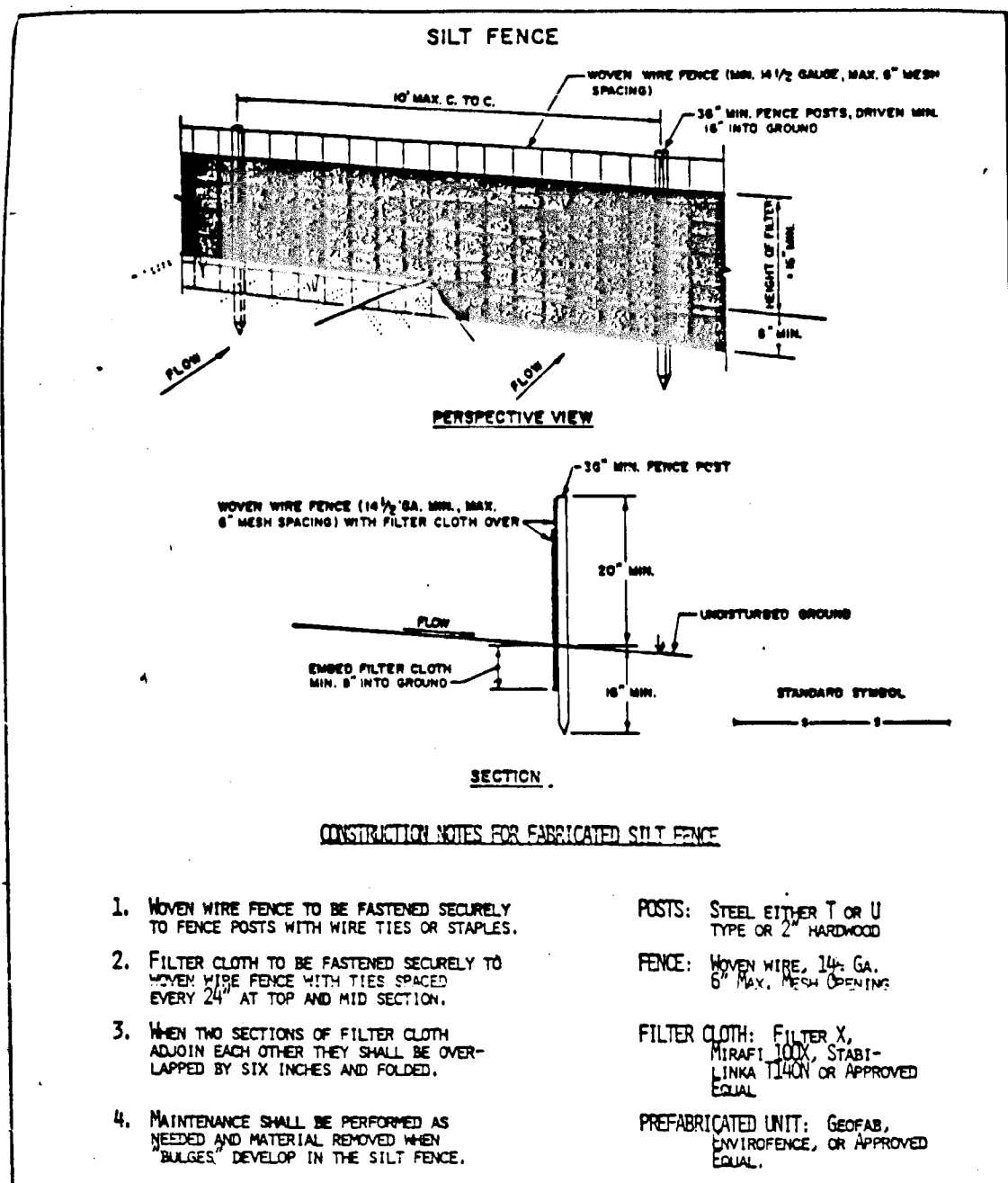
Signature: *[Signature]* DATE: 30 Jan 92
Signature Of U.S. Army Corps Of Engineers, Baltimore, MD

Maryland Department Of The Environment
Standards & Certification Division
Approval Of Plans And Specifications
For Compliance With Permit Number WQC# 89-0096-3

Signature: *[Signature]* DATE: 1-31-92
Signature Of Standards/ Certification Division

GRADING PLAN

Drawn By: J.L.B. Scale: 1"=50'
Designed By: M.A.M. Date: 4/17/91
Checked By: D.E.R. Sheet: 20 of 3



EARTH DIKE
NTS

CONSTRUCTION RESTRICTIONS

All work in flood plain must be done in strict accordance with applicable State permit requirements.

Work in streams is prohibited during certain times of the year as follows:

Class I Streams	March 1 thru June 15
Class II Streams	June 1 thru September 30 or December 16 thru March 14
Class III Streams	October 1 thru April 30
Class IV Streams	March 1 thru May 31

TEMPORARY SEEDING NOTES

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

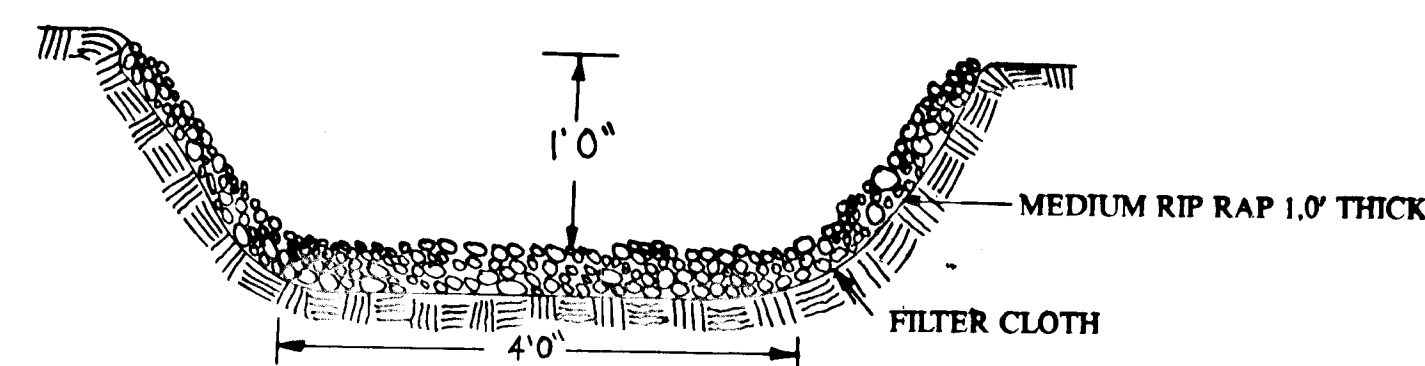
Seedbed Preparation: Loosen upper three-inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

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

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

Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unwrotted 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.



RIP RAP SLOPE PROTECTION
NTS

APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature] 10/1/95
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE 35

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, LAND DEVELOPMENT DIVISION DATE

CHIEF, BUREAU OF HIGHWAYS DATE

CLEARING AND GRUBBING

1. All vegetation, trash, and debris not marked in the field or on the plans, within the limits of disturbance, are to be disposed of off-site in an approved landfill site.

GRADING

1. All topsoil and excess cut is to be removed and disposed of off-site.
2. Grade tolerance shall be within 0.15 feet.
3. Specific field elevations for the basin bottom may be adjusted slightly during construction to allow for unanticipated field conditions.
4. Side slopes shall be excavated six inches (6") below finished grade and six inches (6") of topsoil shall be uniformly spread to finished elevation. Topsoil shall be free of stones, lumps, plants, roots, and other debris including toxic substances. Topsoil shall have a pH range of 5.0 - 7.0.
5. The basin bottom shall be excavated six inches (6") below finished grade and six inches (6") of topsoil shall be uniformly spread to finished elevation.
6. All final elevations shall be field checked by Exploration Research, Inc. prior to the contractor removing equipment from the site. Should additional hydrology be required, dewatering installation may be recommended.

CONSTRUCTION REQUIREMENTS

The site to be restored as forested Wetland shall be graded, planted, and fertilized as shown on the plans and in accordance with these special provisions:

- A. Planting schedule shall conform to the following conditions:**
Planting shall commence after final grading, adjacent construction has been completed, and all sediment control measures have been removed.
- B. Plant Materials:**
 - 1) Root-stock of the plant material shall be kept moist during transport from the source to the job site and until planted.
 - 2) Plant material shall be planted in the soil with each planting pit excavated to size sufficient to contain the entire root-stock or the entire root-mass without cramping.
- C. Clean-up:**
Final clean up shall be the responsibility of the contractor and consist of removing all trash and materials incidental to the project, and disposing of them off-site. In addition, the construction procedure shall not damage any areas of existing plants which are to remain.
- D. The planting grids area approximate and may be varied upon the approval of Exploration Research, Inc., provided the relative ratios and areas are maintained.**
- E. Plant material selections are based upon availability at time of design. If specific plants are unavailable at time of planting, substitute plants conforming to above specifications will be made. All substitute plant materials are subject to the approval of Exploration Research, Inc. and the U.S. Army Corps of Engineers.**

CONSTRUCTION SEQUENCE

1. Obtain grading permit.
2. Install silt fence and earth dikes.
3. Remove topsoil and stockpile on designated area.
4. Excavate mitigation area to grades shown, apply topsoil, and install rip rap.
5. Haul excess material to approved on-site location.
6. After grading is completed, all disturbed shall be stabilized with ryegrass.
7. Remove earth dikes and stabilize.
8. Observe hydrology within graded areas - adjust grades as needed during 6 month period.
9. Plant mitigation area in accordance with planting plan.
10. Remove silt fence, earthdikes, and stabilize.

WETLAND PLANT MATERIAL

DESCRIPTION:

This work shall consist of furnishing and planting trees and shrubs as shown on the plans and/or as directed by Exploration Research, Inc. and all planting operations and care and replacement as necessary to complete the work specified.

Prior to the start of the work on this project, Exploration Research, Inc. shall submit to the Army Corps of Engineers for review, the proposed planting schedule for the wetland vegetation.

MATERIALS:

- A. Fertilizer - As required.
- B. Substitute plants shall conform to the above specifications and approval of Exploration Research, Inc. and the Army Corps of Engineers.

WETLAND MANAGEMENT NOTES

In order to establish a productive, functioning wetland ecosystem, an effective wetland management plan has been developed. The objectives of the management plan include:

1. Re-establish a healthy, self-sustaining vegetative cover.
2. Re-establish self-sustaining hydrological conditions.
3. Enhance and promote maximum wildlife habitat.

In order to establish an effective, workable, and practical wetland management plan, the following strategy is recommended:

1. During and immediately preceding construction of the wetland areas, potential or existing problems will be identified and corrective management techniques will be implemented.

NATURAL CYCLE

Natural cycles must be maintained to prevent "succession" from wetland to upland. Although this is a long term goal exceeding the limits of this management program, several techniques can be implemented over the two year period to enhance stability.

IMMEDIATE MANAGEMENT TECHNIQUES

No management strategies planned.

SHORT TERM MANAGEMENT TECHNIQUES

Wetland area will be periodically monitored for altered hydrologic conditions, invasive plant species, transition of wetland species to upland plants, and cultural impacts such as human disturbance, filling, non-point, and point source pollution. Management techniques will be recommended to stabilize unnatural ecological successions including:

- 1) Altering the hydrological regime.
- 2) Removing undesirable plant species.
- 3) Restricting or discouraging destructive human interaction.

LONG TERM MANAGEMENT TECHNIQUES

Overall ecology and stability of the restored wetland areas will be assessed in comparison to similar adjacent areas. Recommendations and strategies will be planned to enhance and protect the overall ecology of the site.

HYDROLOGIC REGIME

The duration, timing, and source of surface inundation determines and regulates wetland functions and their characteristics.

IMMEDIATE MANAGEMENT TECHNIQUES

Vegetation demonstrating immediate stress or dieback will be replaced. In addition, soil and climatic factors will be analyzed in relation to plant-growth. The following management techniques will be utilized:

- 1) Replace plant species with similar vegetation.
- 2) Add soil amendments to enhance survivability.
- 3) Replace plant species with specified alternative.
- 4) Prune plant species to establish desired growth characteristics and enhance survivability.

SHORT TERM MANAGEMENT TECHNIQUES

Survey vegetation after major storm events or droughts to determine appropriate management techniques as specified in Immediate Management Techniques.

LONG TERM MANAGEMENT TECHNIQUES

Re-assess vegetation for its functional value in relation to wetland cycles and habitat enhancement. Recommend and implement corrective and preventive action.

VEGETATION

Vegetation sustains wildlife species, filters and reduces flood velocity. A goal of 85% survival rate will be achieved in three (3) years.

IMMEDIATE MANAGEMENT TECHNIQUES

Vegetation demonstrating immediate stress or dieback will be replaced. In addition, soil and climatic factors will be analyzed in relation to plant growth. The following management techniques will be utilized.

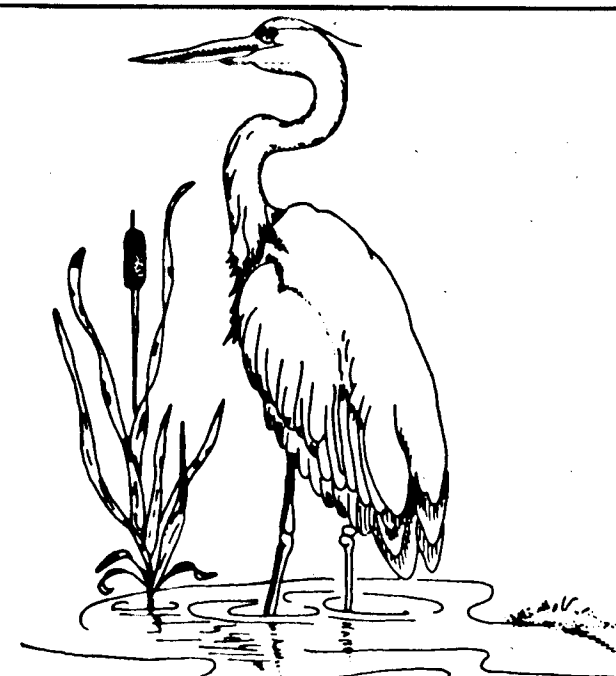
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DEVELOPER

HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PKWY
COLUMBIA, MD. 21044

MITIGATION PLAN FOR
SNOWDEN RIVER PARKWAY
CEN-OP-RW (H.R.D./ SNOWDEN RIVER PKWY) 89-0096-3
WQC# 90-WQ-0010

U.S. Army Corps Of Engineers
Approval Of Plans And Specifications
For Compliance With Permit Number
CENAB-OP-RW 89-0096-3
[Signature] 30 Jan 92
Signature Of U.S. Army Corps Of Engineers, Baltimore, MD Date

Maryland Department Of The Environment
Standards & Certification Division
Approval Of Plans And Specifications
For Compliance With Permit Number WQC# 89-0096-3
[Signature] 1-31-92
Signature Of Standards/ Certification Division Date

NOTE SHEET

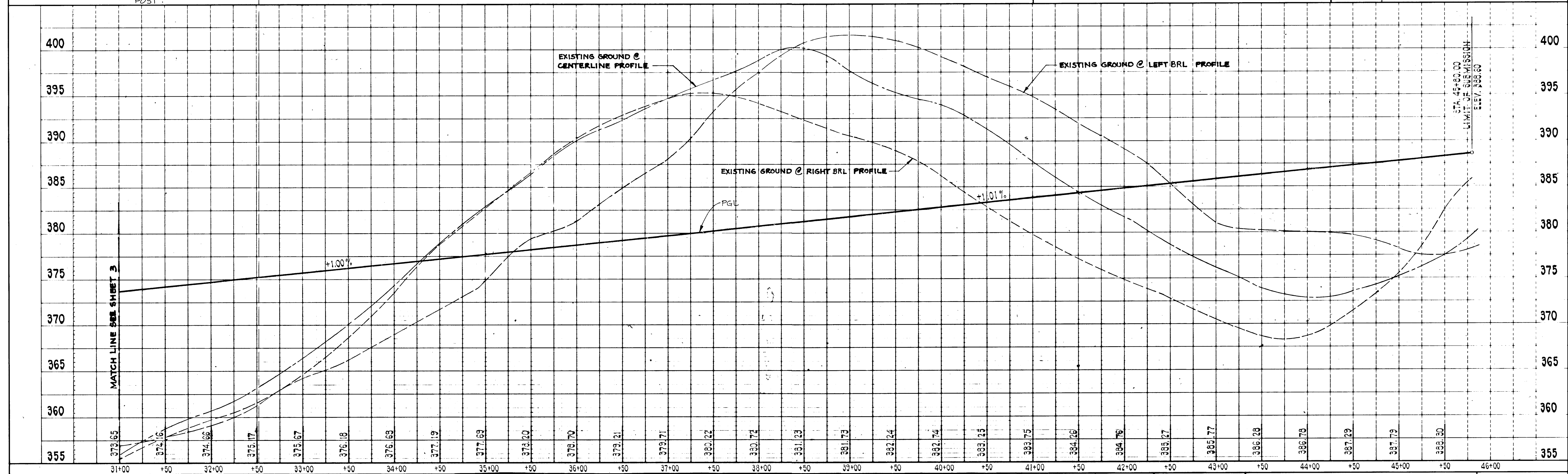
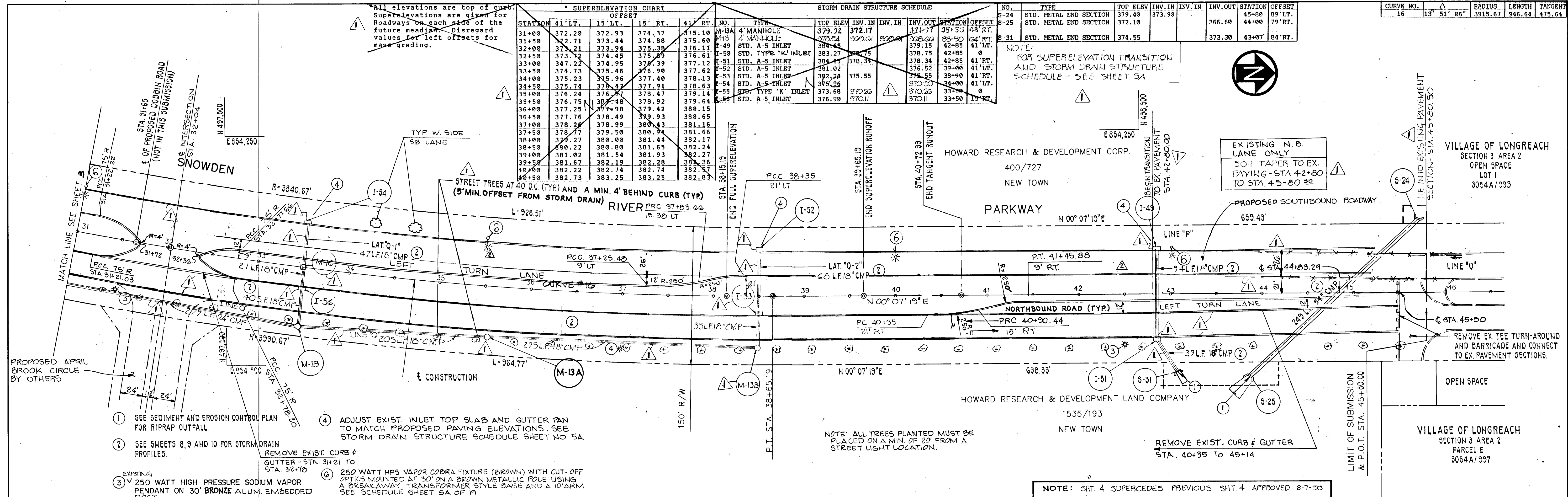
Drawn By: J.L.B. Scale: AS NOTED
Designed By: S.L.H. Date: 4/17/91
Checked By: D.E.P. Sheet: 3 of 3

*All elevations are top of curb. Super-elevations are given for Roadways on each side of the future median. Disregard values for left offsets for mass grading.

STATION	SUPERELEVATION CHART			
	41' LT.	15' LT.	15' RT.	41' RT.
31+00	372.20	372.93	374.37	375.10
31+50	372.71	373.44	374.88	375.60
32+00	373.21	373.94	375.38	376.11
32+50	373.72	374.45	375.89	376.61
33+00	374.22	374.95	376.39	377.12
33+50	374.73	375.46	376.90	377.62
34+00	375.23	375.96	377.40	378.13
34+50	375.74	376.47	377.91	378.63
35+00	376.24	376.97	378.42	379.14
35+50	376.75	377.48	378.92	379.64
36+00	377.25	377.98	379.42	380.15
36+50	377.76	378.49	379.93	380.65
37+00	378.26	378.99	380.43	381.16
37+50	378.77	379.50	380.94	381.66
38+00	379.27	380.00	381.44	382.17
38+50	380.22	380.00	381.65	382.24
39+00	381.02	381.54	381.93	382.27
39+50	381.67	382.19	382.28	382.36
40+00	382.22	382.74	382.74	382.57
40+50	382.73	383.25	383.25	382.83

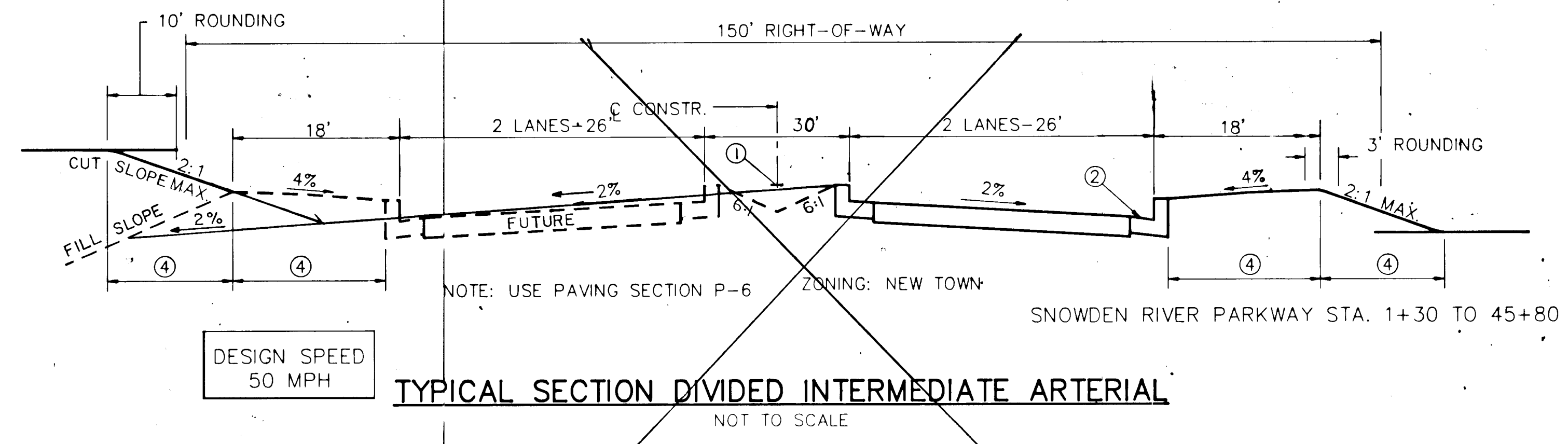
NO.	TYPE	TOP ELEV.		INV. IN		INV. OUT		STATION	OFFSET
		STD. METAL END SECTION	STD. METAL END SECTION	STD. METAL END SECTION	STD. METAL END SECTION	STD. METAL END SECTION	STD. METAL END SECTION		
S-24		379.40	372.10	373.90				45+80	89' LT.
S-25		372.10			366.60			44+00	79' RT.
S-31		374.55			373.30			43+07	84' RT.

CURVE NO.	Δ	RADIUS	LENGTH	TANGENT
16	13° 51' 06"	3915.67	946.64	475.64



<p>PURDUM & JESCHKE CONSULTING ENGINEERS AND LAND SURVEYORS 1029 North Calvert Street Baltimore, Maryland 21202 (301) 837-0194</p>	<p>OWNER/DEVELOPER THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21044</p>	<p>DEPARTMENT OF PLANNING AND ZONING <i>Stanna Holmard</i> CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT</p>	<p>APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>John J. ...</i> CHIEF, BUREAU OF ENGINEERING</p>	<p>REVISION 4-16-92 ROADWAY TYPICAL STORM DRAINS & LANDSCAPING REVISION 6-30-94 ADDED SOUTHBOUND LANE TO SNOWDEN RIVER PARKWAY</p>		<p>VILLAGE OF LONGREACH - SECTION 3 ROADWAY PLAN & PROFILE SIXTH ELECTION DISTRICT HOWARD COUNTY, MD. DATE: 8-22-89</p>	<p>SHEET 4 OF 14</p>
							<p>DES: GDT DRAWN: LCC, JMJ CHK: RHB</p>

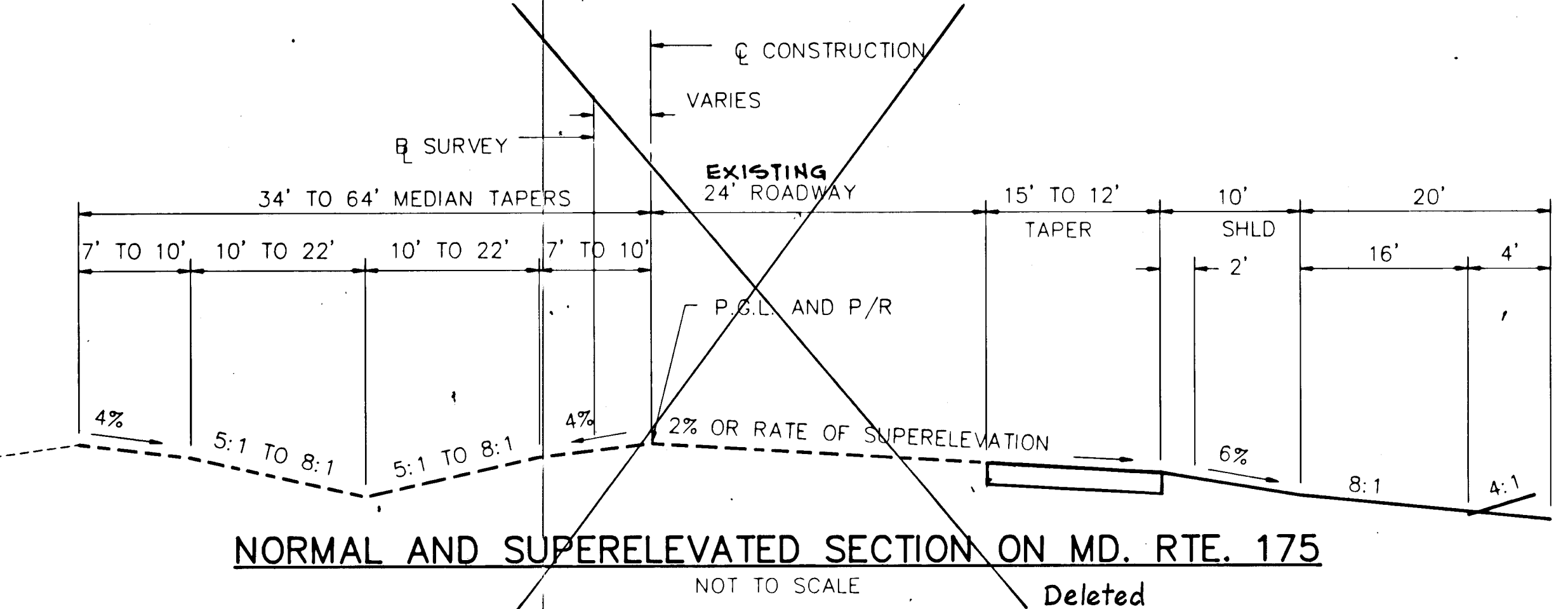
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TYPICAL SECTION DIVIDED INTERMEDIATE ARTERIAL
NOT TO SCALE

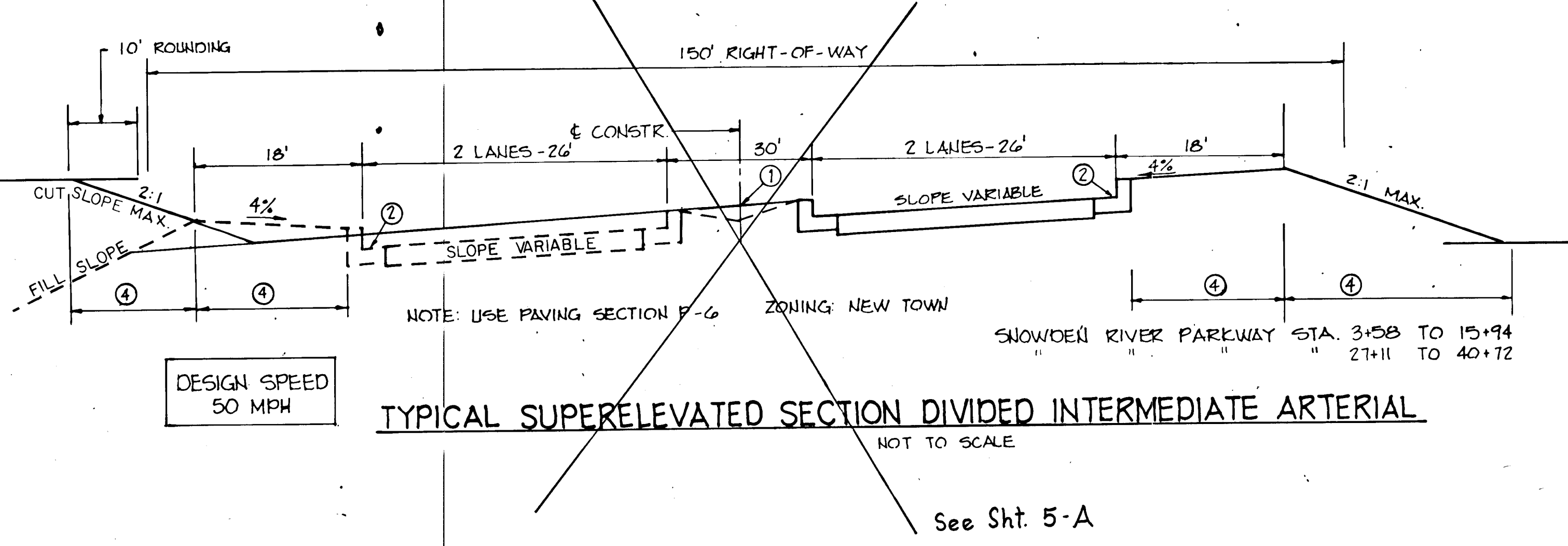
See Sht. 5-A

NUMBER	FULL DEPTH BIT. CONC. ALTERNATE	GRANULAR BASE ALTERNATE
P-6	<ul style="list-style-type: none"> 1 1/2" BIT. CONC. SURFACE (2 COURSES) 2" BIT. CONC. BASE 4" BIT. CONC. BASE 5" BIT. CONC. BASE 	<ul style="list-style-type: none"> 1 1/2" BIT. CONC. SURFACE 2 1/2" BIT. CONC. BASE 5" BIT. CONC. BASE 6" CRUSHER RUN BASE COURSE OR 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE



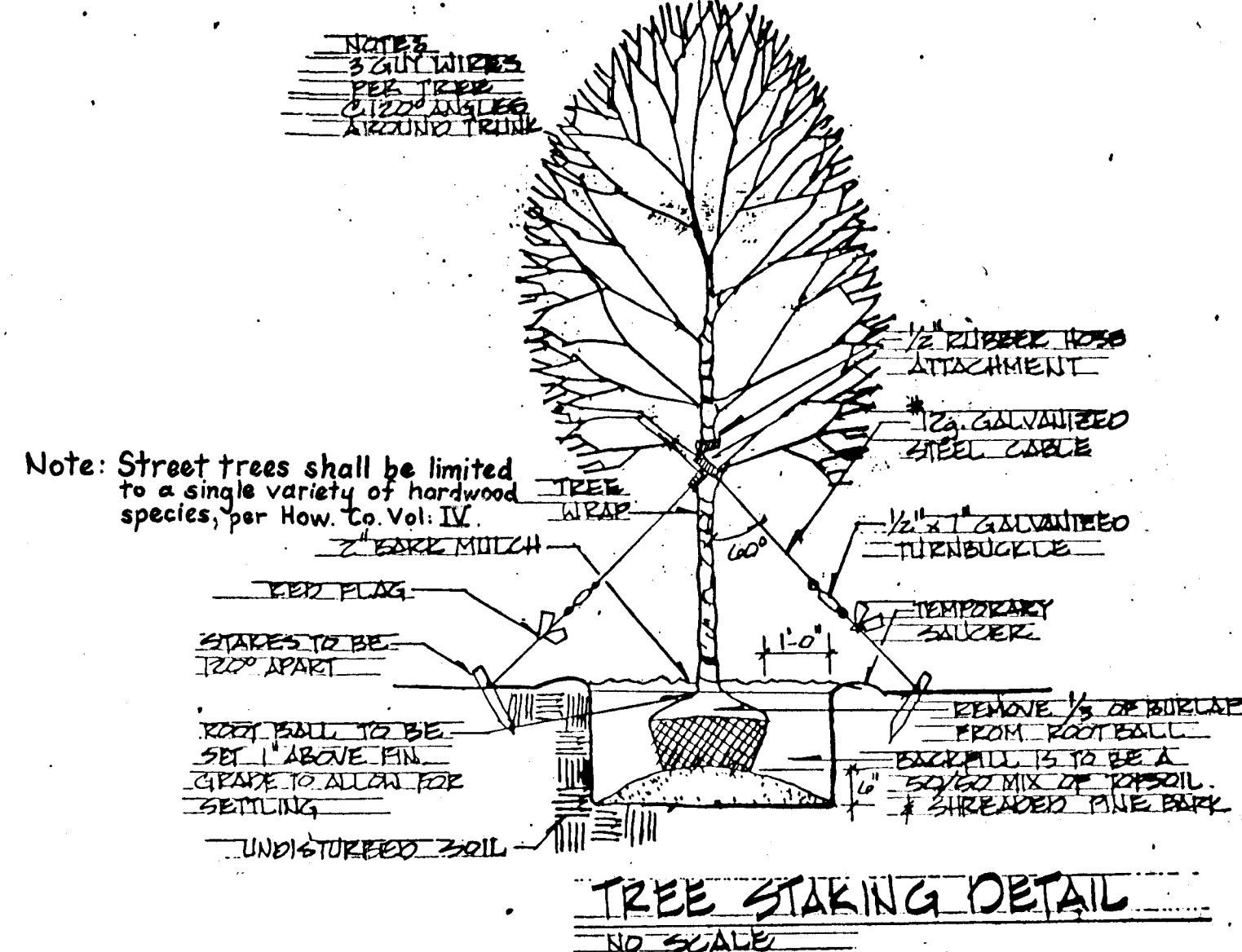
NORMAL AND SUPERELEVATED SECTION ON MD. RTE. 175
NOT TO SCALE

Deleted



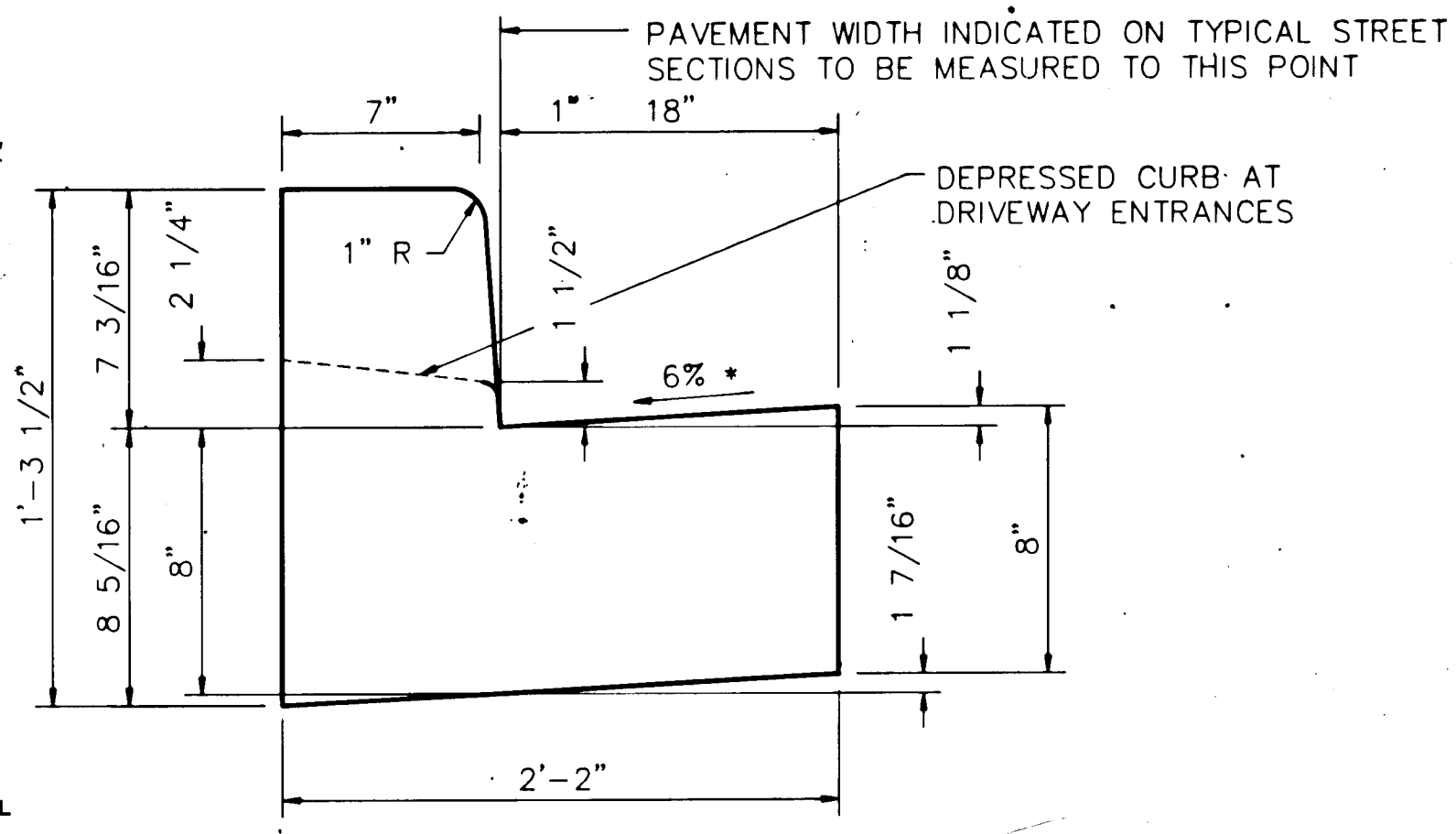
TYPICAL SUPERELEVATED SECTION DIVIDED INTERMEDIATE ARTERIAL
NOT TO SCALE

See Sht. 5-A

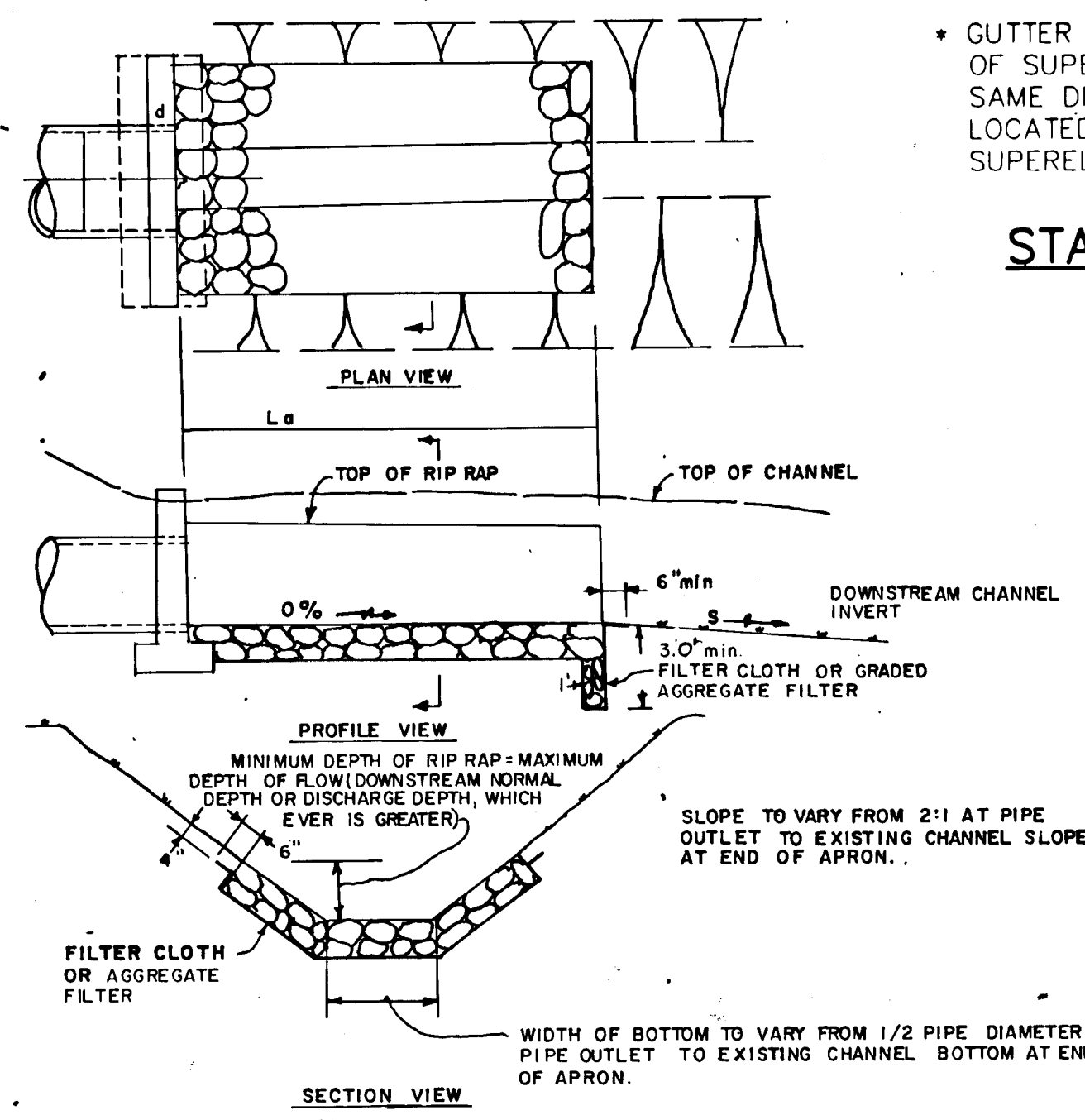


Note: Street trees shall be limited to a single variety of hardwood species, per How. Co. Vol. IV.

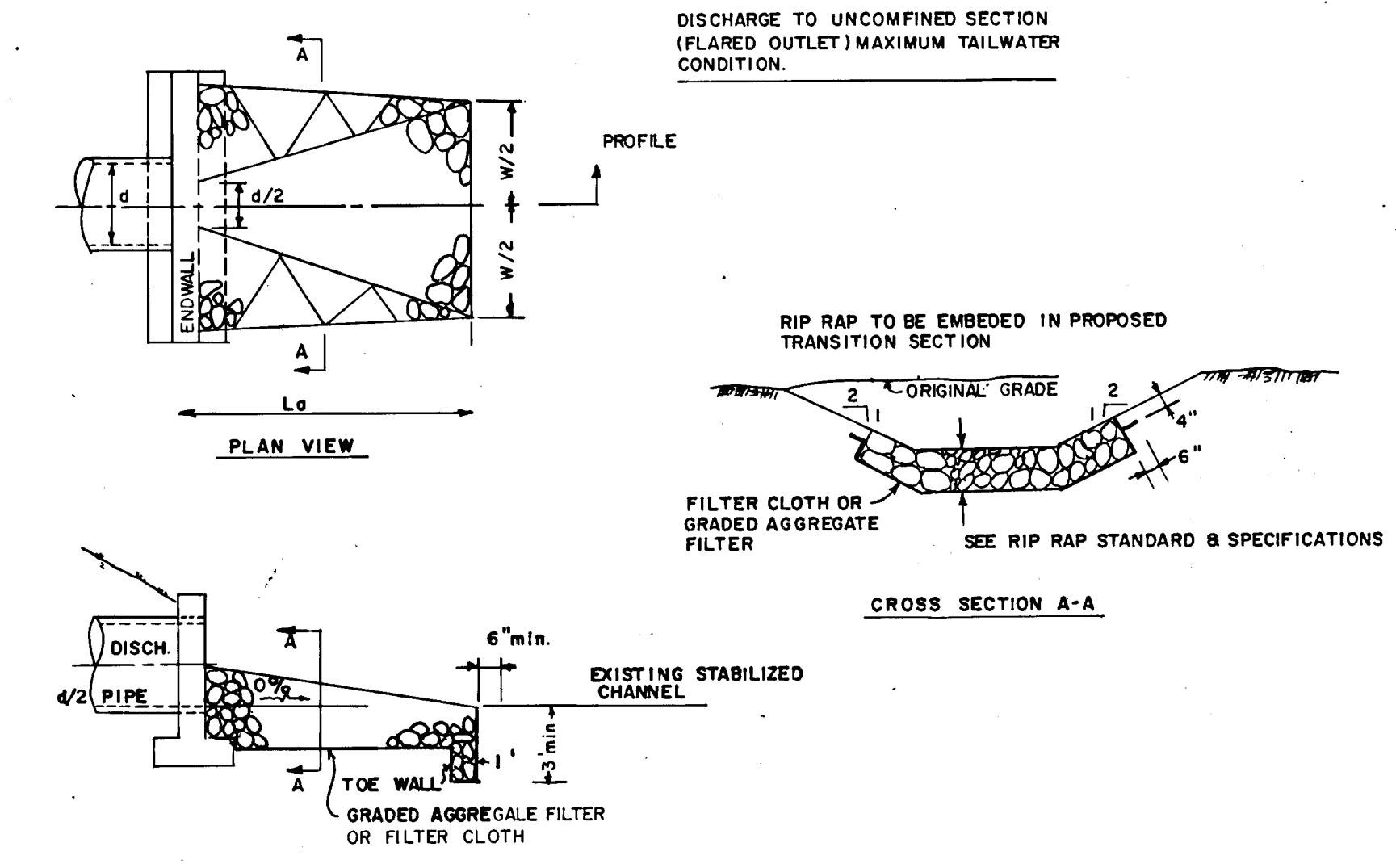
- LEGEND**
- ① PROFILE GRADE LINE (PGL)
 - ② ST'D. COMB. CURB & GUTTER
 - ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUB-DIVISION REGULATIONS
 - ④ 2" TOPSOIL, SEED AND MULCH



STANDARD 7" COMBINATION CURB AND GUTTER
NOT TO SCALE



STANDARD RIP RAP OUTLET PROTECTION TO CONFINED SECTION



STANDARD RIP RAP OUTLET PROTECTION TO UNCONFINED SECTION

NOTE: SHT. 5 SUPERCEDES PREVIOUS SHT. 5 APPROVED 8-7-90

PURDUM & JESCHKE
CONSULTING ENGINEERS AND LAND SURVEYORS
1029 North Calvert Street
Baltimore, Maryland 21202 (301) 837-0194

OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD. 21044

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
4/30/92
DATE
5/4/92
DATE
5-1-92
DATE

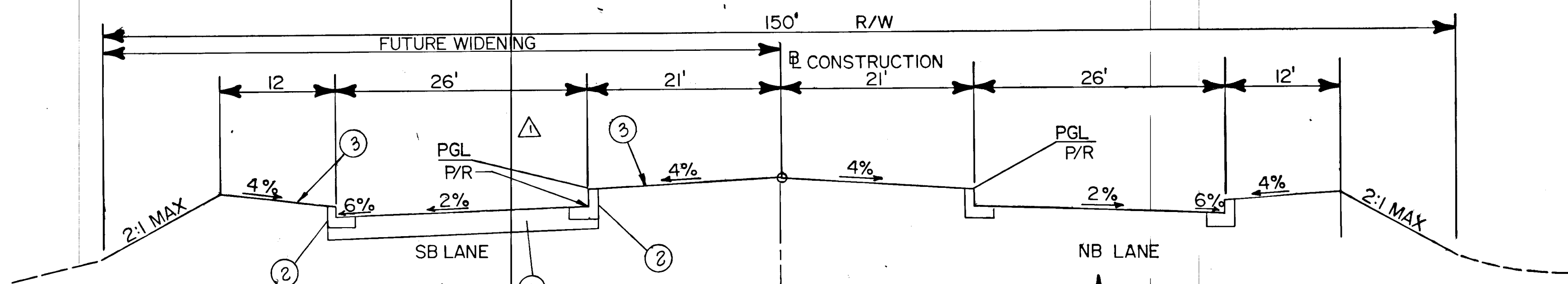
DEPARTMENT OF PLANNING AND ZONING
5/1/92
DATE



VILLAGE OF LONGREACH
SECTION 3
TYPICAL SECTIONS & DETAILS
PARCELS 27, 50, 229, 254, 255, 492, 498
TAX MAP 36 & 37 REFERENCE: S87-46
SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.
DATE: 8-22-89 SCALE: NOTED

SHEET 6 OF 14
DES:
DRAWN:
CHK:

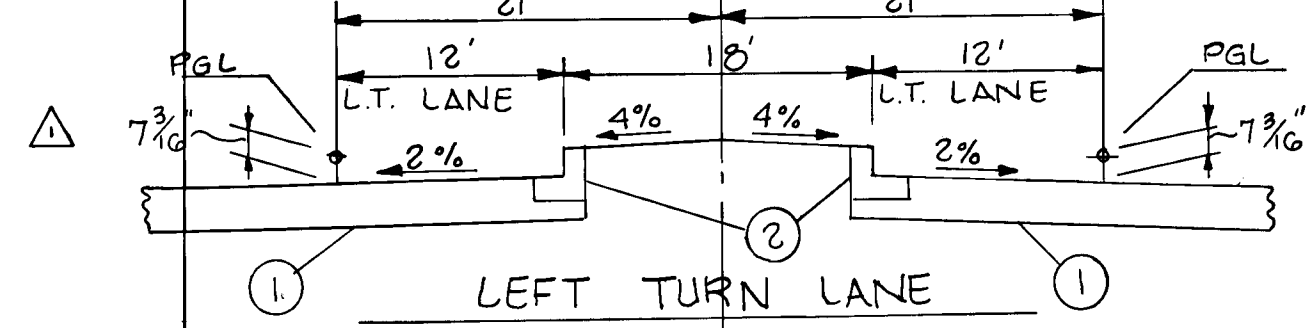
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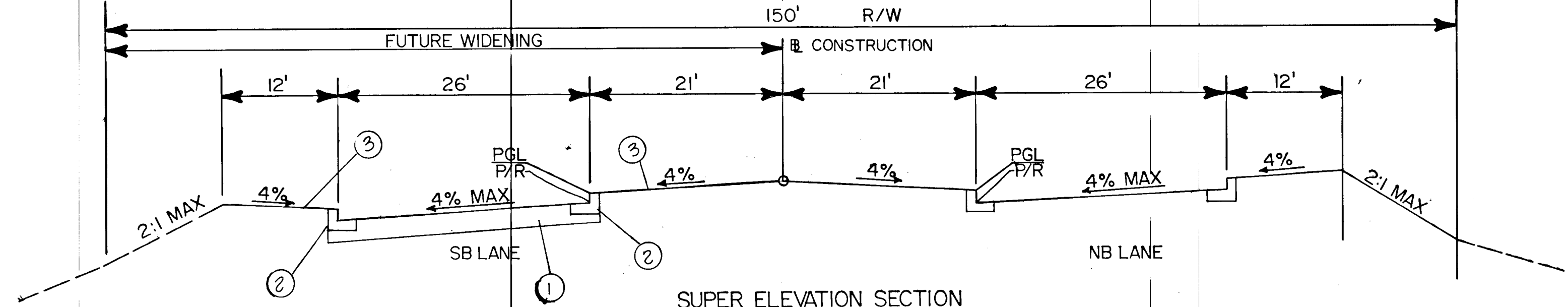
NORMAL SECTION:
SNOWDEN PRKWAY

STA 15+57.55 TO STA 27+11.41
STA 40+72.33 TO STA 45+80.00

NOTE: "NB" PERTAINS TO FUTURE ONE WAY NORTHBOUND OPERATION,
INITIAL OPERATION WILL FUNCTION AS TWO WAY ROAD.



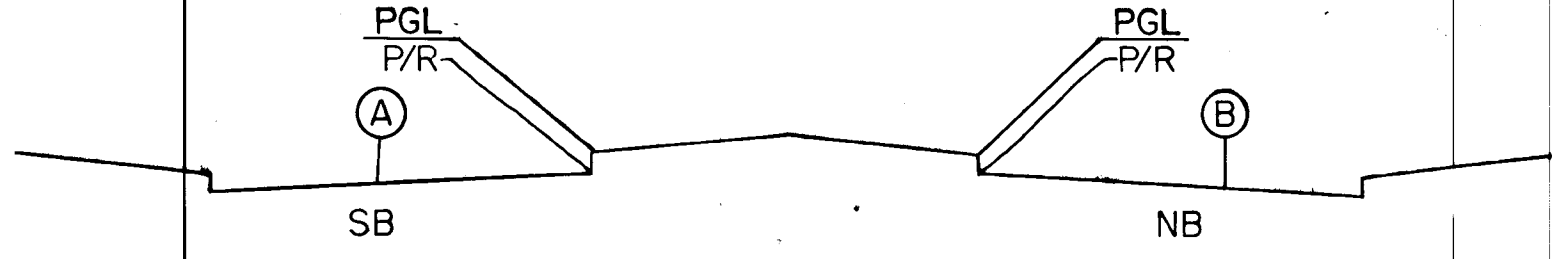
LEFT TURN LANE



SUPER ELEVATION SECTION
SNOWDEN PRKWAY

STA 11+00.00 TO STA 15+57.55
STA 27+11.41 TO STA 40+72.33

- LEGEND
- ① PAVING SECTION P-6-SEE DETAIL SHEET NO. 5
 - ② STD. 7" COMBINATION CURB & GUTTER-SEE DETAIL SHEET NO. 5
 - ③ 2" TOPSOIL, SEED AND MULCH



SUPER ELEVATION TRANSITION

CURVE NO.17 DS=50mph DC=2°-04'-29"				
REMARKS	A	STATION	B	REMARKS
BEGIN FULL SUPER	-0.04	6+44.24	+0.04	BEGIN FULL SUPER
END FULL SUPER	-0.04	13+21.84	+0.04	END FULL SUPER
FIRST NORMAL SECT.	-0.02	13+71.84	+0.02	PLANE INCLINED
NORMAL SECTION	-0.02	14+71.84	0.00	LEVEL SECTION
NORMAL SECTION	-0.02	15+57.55	-0.02	FIRST NORMAL SECT.

CURVE NO.16 DS=50mph DC=1°-27'-47"				
REMARKS	A	STATION	B	REMARKS
NORMAL SECTION	-0.02	27+11.41	-0.02	LAST NORMAL
NORMAL SECTION	-0.02	28+18.55	0.00	LEVEL SECTION
LAST NORMAL SECT.	-0.02	29+18.55	+0.02	PLANE INCLINED
BEGIN FULL SUPER	-0.028	29+68.55	+0.028	BEGIN FULL SUPER
END FULL SUPER	-0.028	38+15.19	+0.028	END FULL SUPER
FIRST NORMAL SECT.	-0.02	38+65.19	+0.02	PLANE INCLINED
NORMAL SECTION	-0.02	39+65.19	0.00	LEVEL SECTION
NORMAL SECTION	-0.02	40+72.22	-0.02	FIRST NORMAL

NOTE: ALL PGL ELEVATIONS ARE TOP OF CURB ELEVATIONS AS SHOWN ON TYPICAL SECTIONS.

STORMDRAIN STRUCTURE SCHEDULE								
NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	STATION	OFFSET	REMARKS	TOP ELEV.
I-67	STD A-5	377.87		374.11	13+00	47' LT	TOP OF CURB	378.37
I-69	STD A-5	378.91	373.11	372.61	13+00	21' RT	TOP OF CURB	
M-14	4' MANHOLE	380.31	369.89	369.64	13+00	56' RT		
I-72	STD A-5	395.67		391.35	5+94	42' LT	TOP OF CURB	
I-69A	STD A-5	373.39		369.39	14+50	21' RT	TOP OF CURB	
M-14A	4' MANHOLE	373.81	367.99 364.81	364.61	14+50	56' RT		
I-70	STD A-5	365.18		360.74	17+00	47' LT	TOP OF CURB	365.92
I-71	STD A-5	365.18	360.24	356.76	17+00	47' RT	TOP OF CURB	
I-64	STD A-10	362.33		358.50	19+50	47' LT	TOP OF CURB	362.60
I-66	STD A-10	362.33	356.91	356.66	19+50	47' RT	TOP OF CURB	
I-62	STD A-5	364.49		359.92	22+50	47' LT	TOP OF CURB	364.71
I-63	STD A-5	364.49	359.37	359.37	22+50	47' RT	TOP OF CURB	
I-60	STD A-5	368.02		363.10	26+00	47' LT	TOP OF CURB	368.21
I-61	STD A-5	368.02	362.73	362.73	26+00	47' RT	TOP OF CURB	
I-57	STD A-5	371.05		366.00	29+00	47' LT	TOP OF CURB	371.21
I-59	STD A-5	371.63	364.90	364.90	29+00	21' RT	TOP OF CURB	

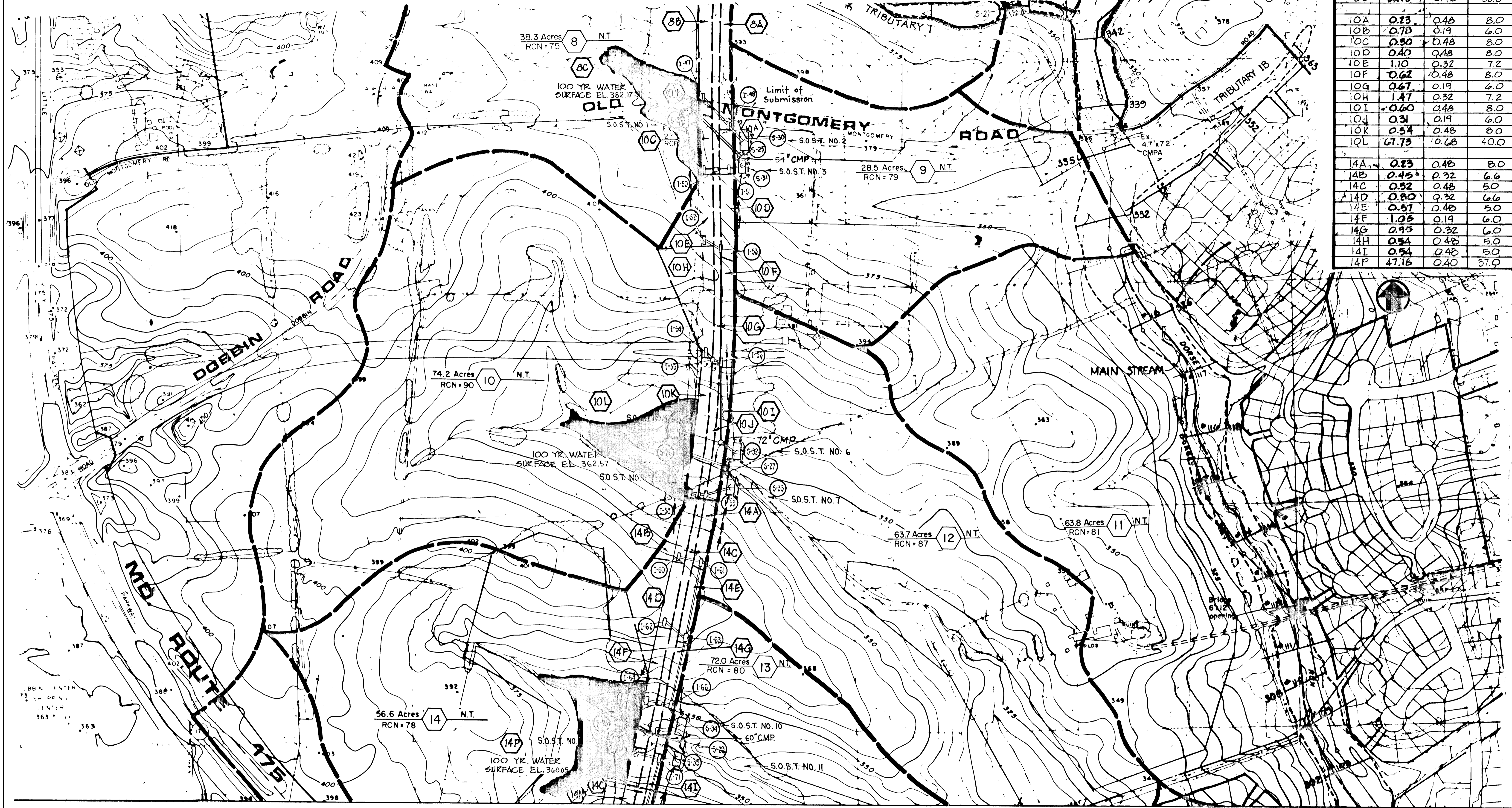
STORMDRAIN STRUCTURE SCHEDULE								
NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	STATION	OFFSET	REMARKS	TOP ELEV.
I-49	STD A-5	385.04		379.15	42+85	47' LT	TOP OF CURB	385.50
I-51	STD A-5	385.04	378.21	378.01	42+85	47' RT	TOP OF CURB	
I-52	STD A-5	380.60		376.52	38+50	47' LT	TOP OF CURB	380.97
M-13B	4' MANHOLE	382.24	375.65	375.55	38+50	56' RT		
M-13A	4' MANHOLE	379.21	372.17	371.97	35+50	54' RT		
I-54	STD A-5	375.45		370.90	33+50	47' LT	TOP OF CURB	375.51
M-16	4' MANHOLE	377.02	370.26	370.26	33+50	0'		
I-56	STD A-5	376.18	370.11	370.11	33+50	21' RT	TOP OF CURB	
M-13	4' MANHOLE	377.63	369.61	368.66	33+50	65' RT		
M-12	4' MANHOLE	374.29	365.84	365.84	30+75	51' RT		
I-53	STD A-5	381.23	375.95	375.85	38+50	21' RT	TOP OF CURB	

LIGHT POLE SCHEDULE					
DWG. NO.	STREET NAME	STATION	OFFSET	FIXTURE / POLE TYPE	COMMENTS
2 OF 14 (F-90-53)	SNOWDEN RIVER PARKWAY	14+50L	55'	250 WATT HPS VAPOR CORE FIXTURE (BROWN) WITH CUT OFF OPTICS MOUNTED AT 30' ON A BROWN METALLIC POLE USING A BREAKAWAY TRANSFORMER STYLE BASE AND A 10' ARM	TO BE INSTALLED BY HOWARD COUNTY; (G) HE WILL RUN CABLE TO EACH LOCATION AND CONNECT POWER AT BASE OF POLE.
3 OF 14 (F-90-53)	"	19+00L	55'	"	"
"	"	23+50L	55'	"	"
"	"	28+00L	55'	"	"
"	"	31+00L	55'	"	"
4 OF 14 (F-90-53)	"	35+50L	55'	"	"
"	"	40+00L	55'	"	"
"	"	45+00L	55'	"	"
6 OF 14 (F-90-111)	"	45+75L	52'	"	"
"	"	50+05L	51'	"	"
"	"	54+35L	51'	"	"
"	"	57+35L	51'	"	"

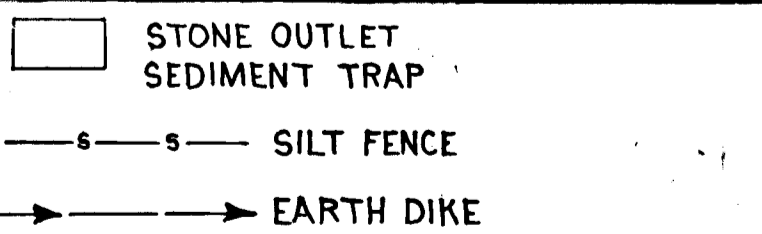
NOTE: SHT 5A ADDED

<p>PURDUM AND JESCHKE CONSULTING ENGINEERS AND LAND SURVEYORS 1029 NORTH CALVERT STREET BALTIMORE, MARYLAND 21202 (410) 837-0194</p>	<p>OWNER / DEVELOPER</p> <p>THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD 21044</p>	<p>HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS</p> <p><i>[Signature]</i> 4/30/94 CHIEF, LAND DEVELOPMENT DIVISION DATE</p> <p><i>[Signature]</i> 5/14/94 CHIEF, BUREAU OF HIGHWAYS DATE</p> <p><i>[Signature]</i> 5/19/94 CHIEF, BUREAU OF ENGINEERING DATE</p>	<p>DES:</p>	<p>DEPARTMENT OF PLANNING AND ZONING</p> <p><i>[Signature]</i> CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE</p>	<p>REVISED TYP SECTION SNOWDEN RIVER PKWAY 6-30-94</p>	<p>VILLAGE OF LONGREACH SECTION 3 TYPICAL SECTIONS & DETAILS PARCELS 27, 50, 229, 254, 255, 492, 498 TAX MAP 36 & 37 REFERENCE S87-46 SIXTH ELECTION DISTRICT HOWARD COUNTY, MD</p>	<p>SCALE AS SHOWN</p>
			<p>DATE:</p>				<p>SHEET 5A OF 14</p>

DRAINAGE AREA	AREA (AC)	RUNOFF COEFF.	T _c (MIN.)
8A	1.01	0.48	8.0
8B	1.01	0.48	8.0
8C	35.73	0.40	33.0
10A	0.23	0.48	8.0
10B	0.78	0.19	6.0
10C	0.90	0.48	8.0
10D	0.40	0.48	8.0
10E	1.10	0.32	7.2
10F	0.62	0.48	8.0
10G	0.67	0.19	6.0
10H	1.47	0.32	7.2
10I	0.60	0.48	8.0
10J	0.31	0.19	6.0
10K	0.54	0.48	8.0
10L	67.73	0.68	40.0
14A	0.23	0.48	8.0
14B	0.45	0.32	6.6
14C	0.52	0.48	5.0
14D	0.80	0.32	6.6
14E	0.57	0.48	5.0
14F	1.05	0.19	6.0
14G	0.95	0.32	6.0
14H	0.54	0.48	5.0
14I	0.54	0.48	5.0
14P	47.16	0.40	37.0

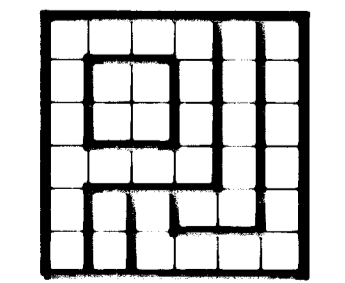


MATCH LINE SHEET 7



NOTE: SHT. 6 SUPERCEDES PREVIOUS SHT. 6 APPROVED 8-7-80

100

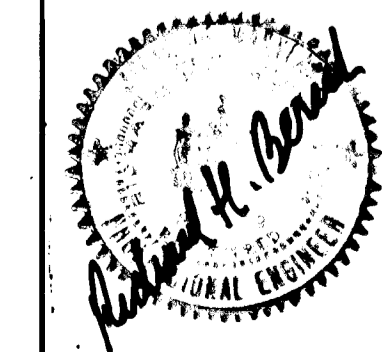


PURDUM & JESCHKE
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OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD. 21044

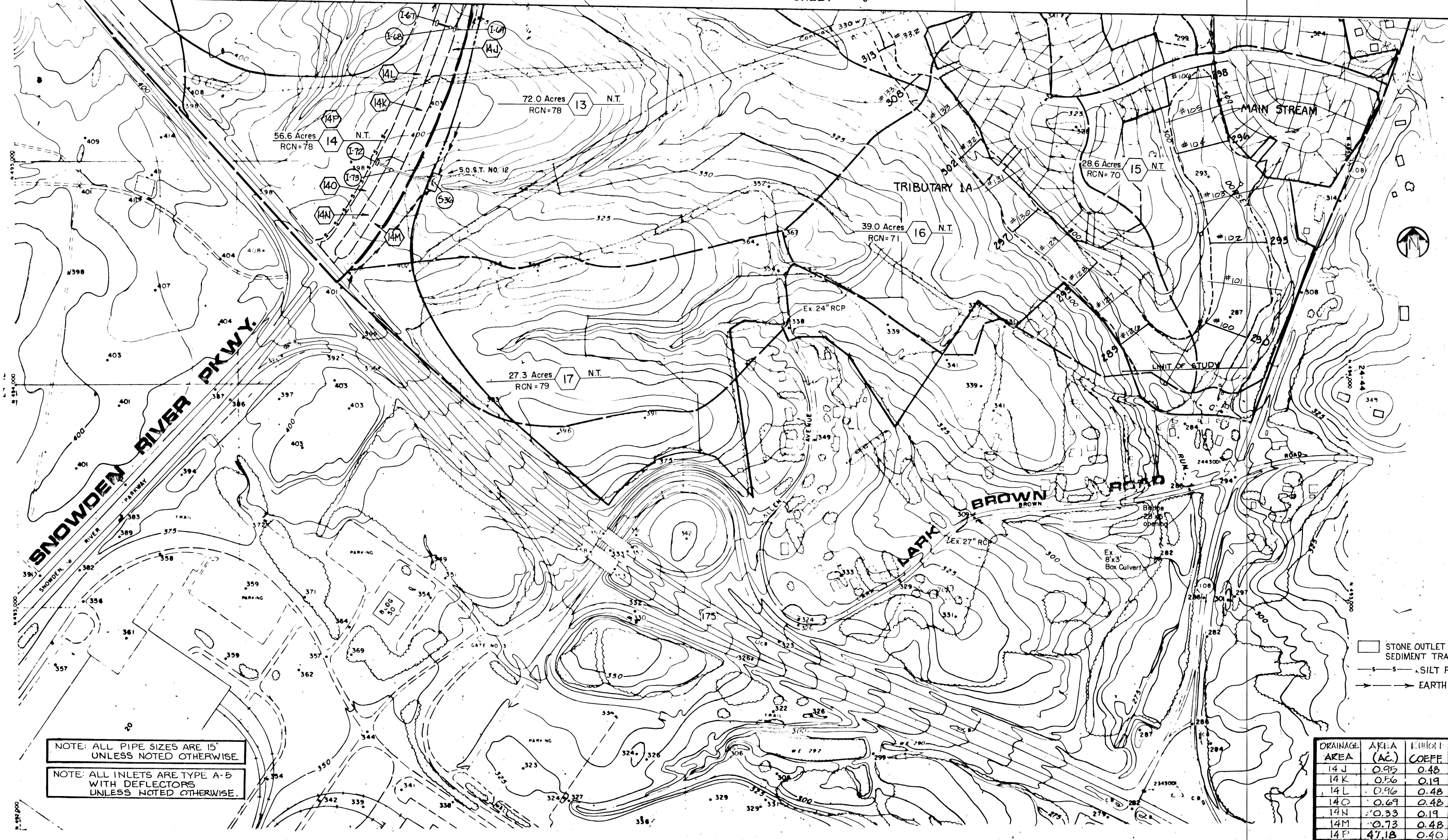
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING
[Signature]
DATE: 8-1-89

DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
[Signature]
DATE: 8-1-89



VILLAGE OF LONGREACH - SECTION 3
DRAINAGE AREA MAP
TAX MAP 36 & 37
SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.
DATE: 8-22-89 REVISED 11-28-89 SCALE: 1" = 200'

SHEET 6 OF 14
DES: GDT
DRAWN: GDT
CHK: KHB



NOTE: ALL PIPE SIZES ARE 15" UNLESS NOTED OTHERWISE.
 NOTE: ALL INLETS ARE TYPE A-5 WITH DEFLECTORS UNLESS NOTED OTHERWISE.

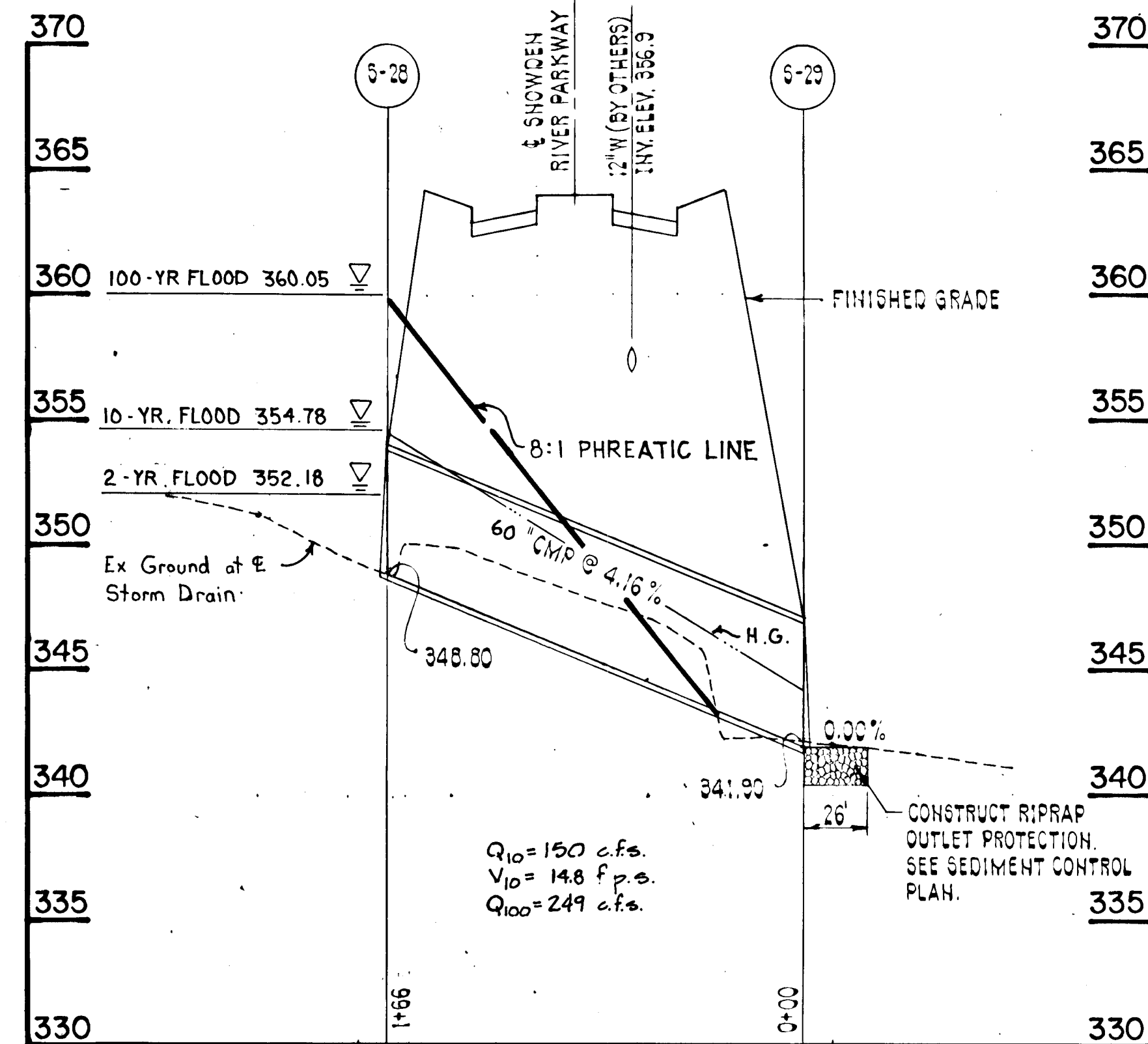
DRAINAGE AREA	AREA (AC.)	EQUIV. COEFF.	T.C. (MIN.)
14 J	0.95	0.48	5.0
14 K	0.56	0.19	5.2
14 L	0.96	0.48	5.0
14 O	0.67	0.48	6.0
14 N	0.33	0.19	5.0
14 M	0.73	0.48	6.0
14 P	47.18	0.40	37.0

NOTE: SHT. 7 SUPERCEDES PREVIOUS SHT. 7 APPROVED 8-7-90

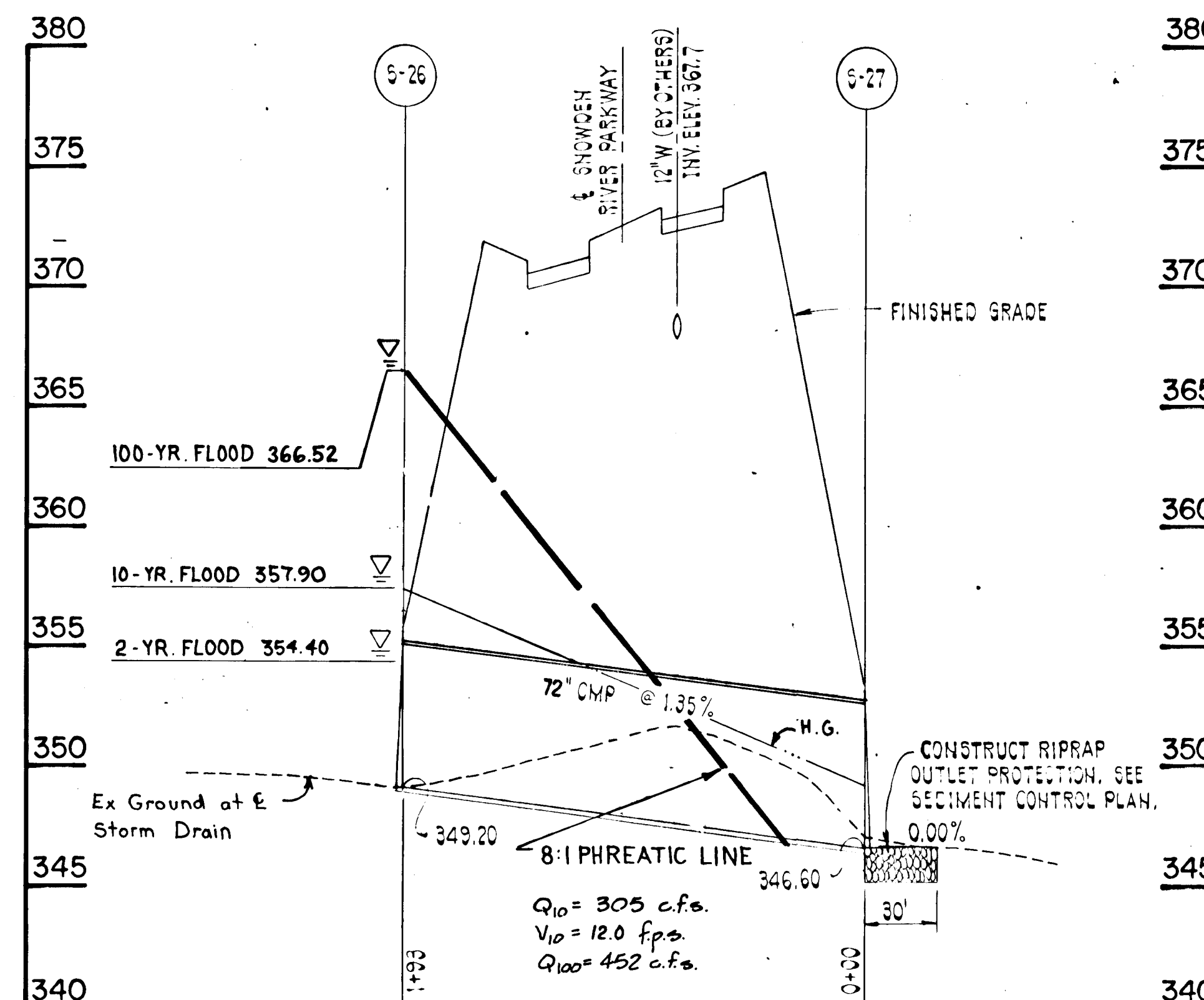
<p>PURDUM & JESCHKE CONSULTING ENGINEERS AND LAND SURVEYORS 1029 North Calvert Street Baltimore, Maryland 21202 (301)837-0184</p>	<p>OWNER/DEVELOPER THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21044</p>	<p>HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS Chief, Bureau of Engineering DATE: 5-1-92</p>	<p>DEPARTMENT OF PLANNING AND ZONING Chief, Division of Community Planning and Land Development DATE: 5/4/92</p>	<p>VILLAGE OF LONGREACH - SECTION 3 DRAINAGE AREA MAP TAX MAP 36 & 37 SIXTH ELECTION DISTRICT HOWARD COUNTY, MD. DATE: 8-22-89 REVISED 11-28-89 SCALE: 1" = 200'</p>	<p>SHEET 1 OF 14 DES: GDT DRAWN: GDT CHK: RHB</p>
	<p>100</p>				

SNOWDEN RIVER PARKWAY

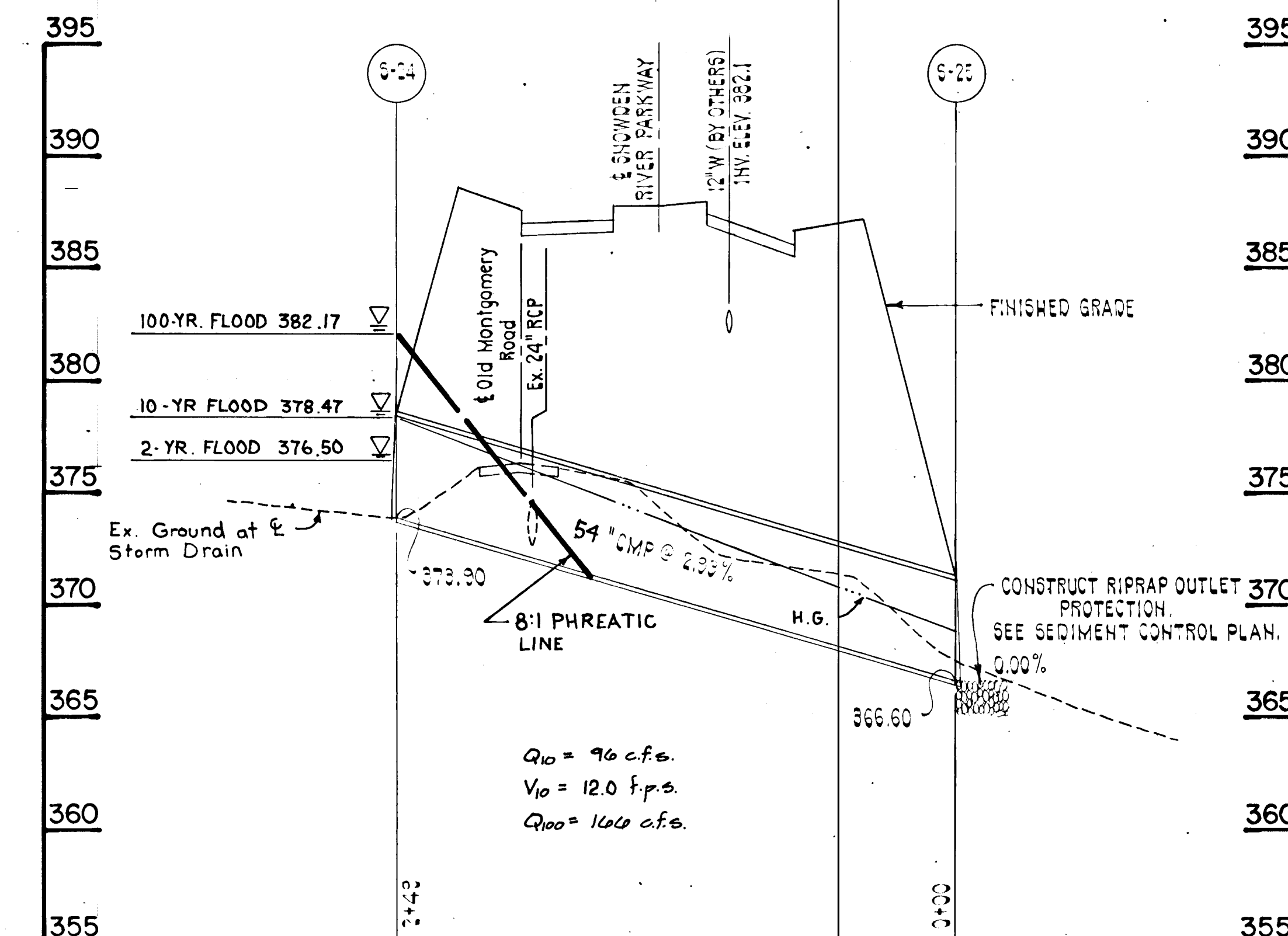
STA. 17+97



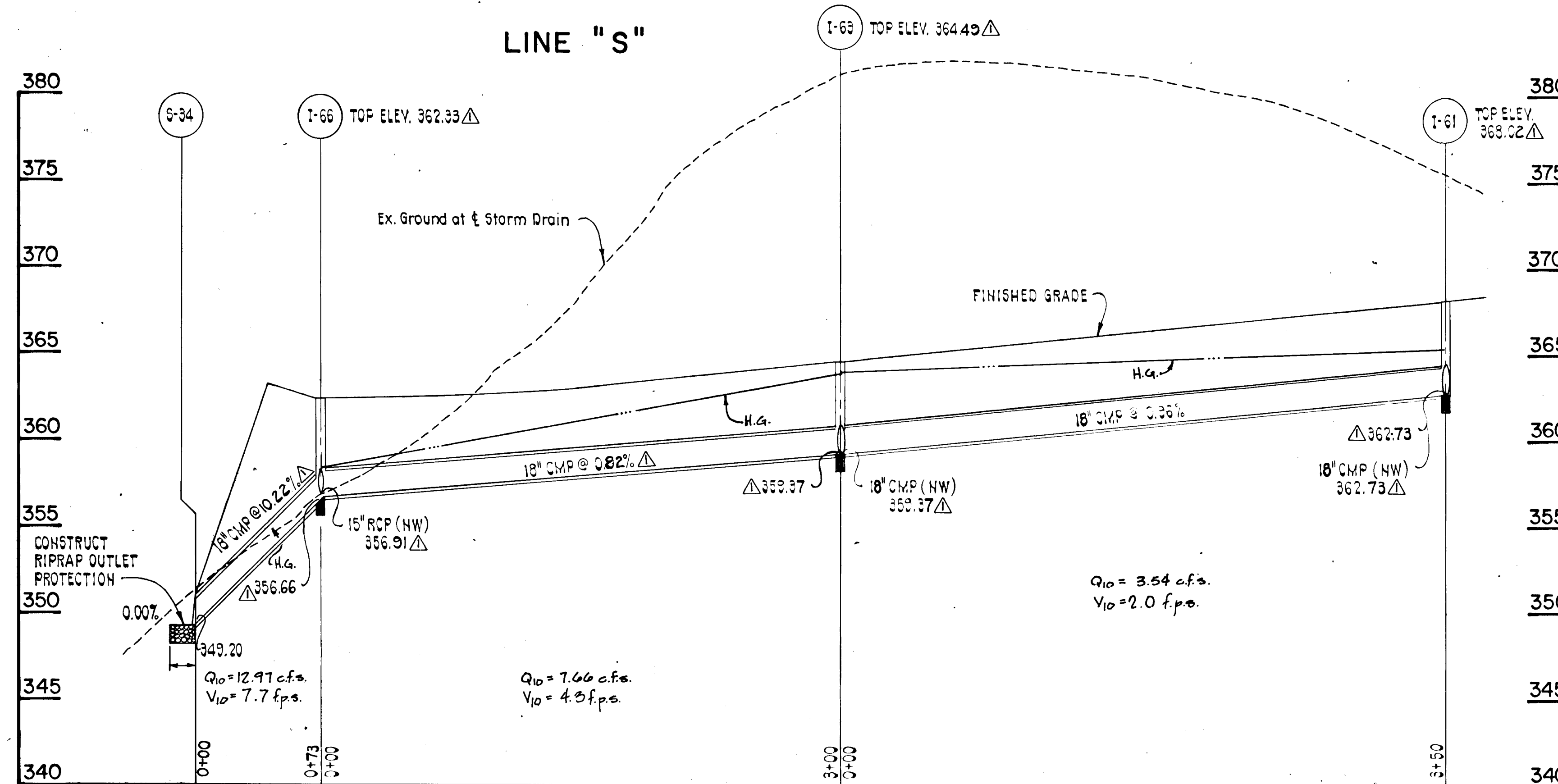
STA. 30+07



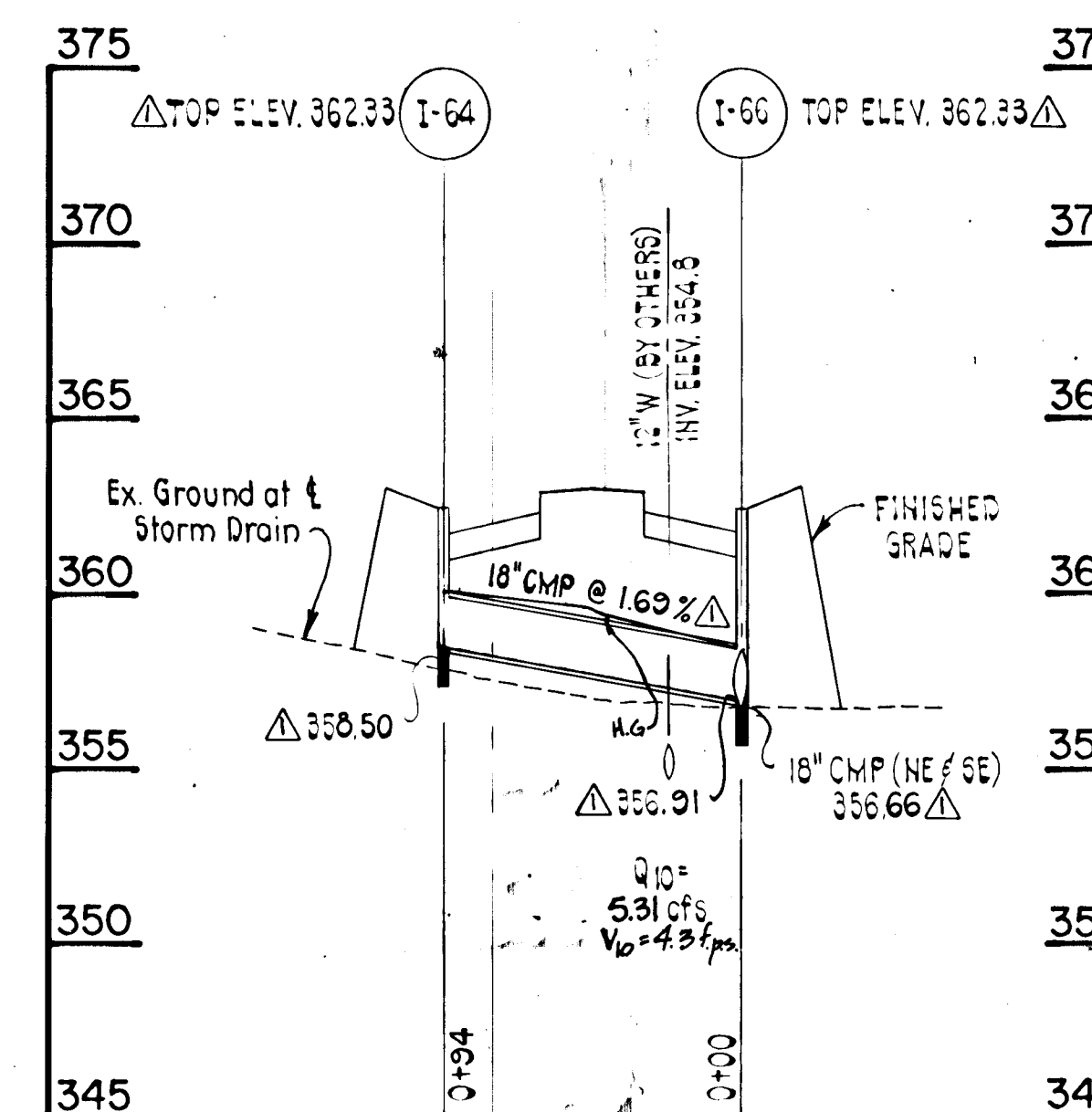
STA. 44+85



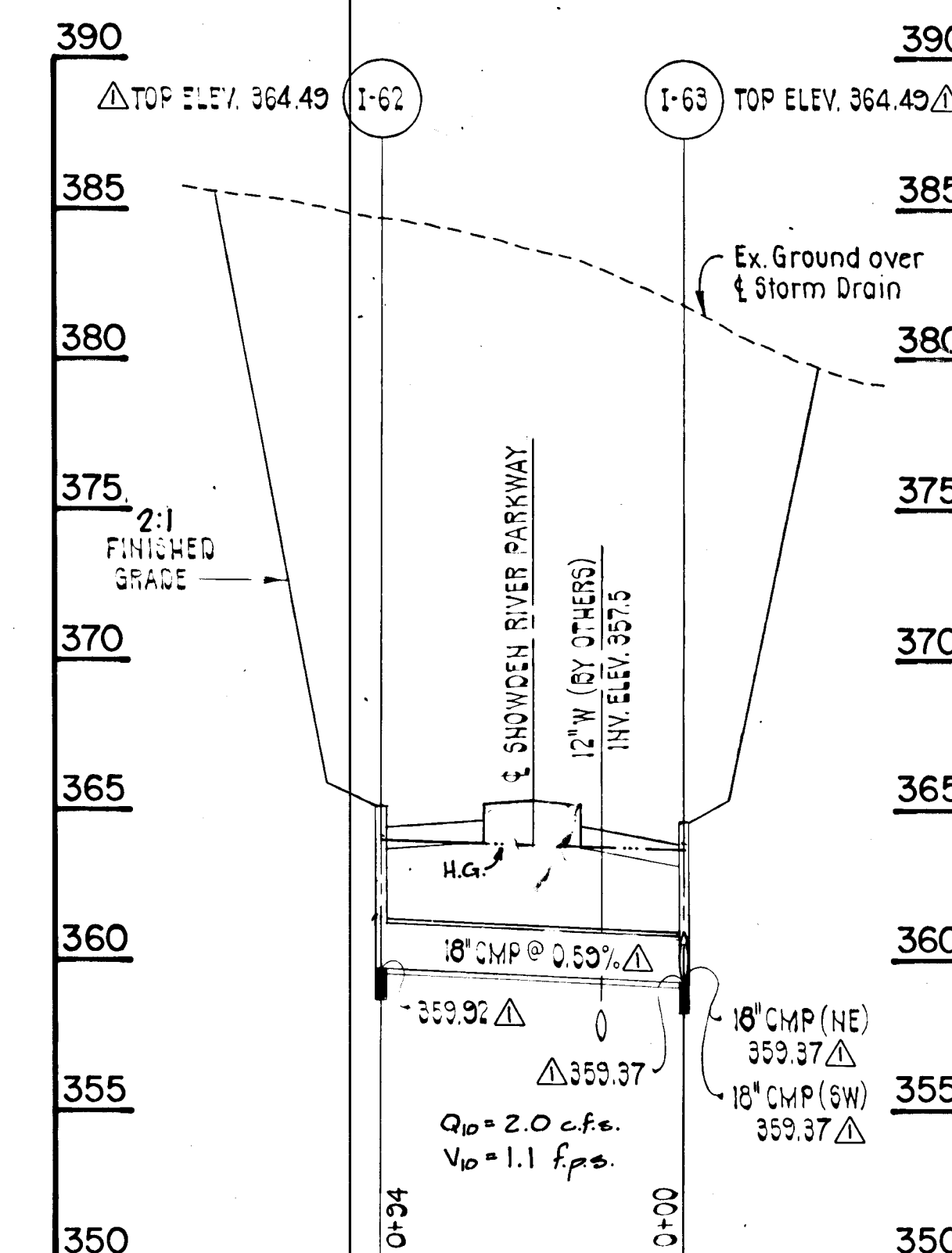
LINE "S"



LAT. "S-1"

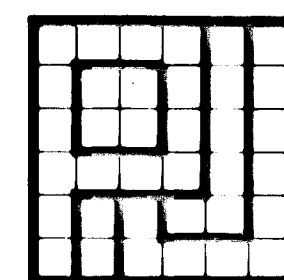


LAT. "S-2"



H: 1" = 50'
V: 1" = 5'

NOTE: SHT. 8 SUPERCEDES PREVIOUS SHT. 8 APPROVED 8-7-90



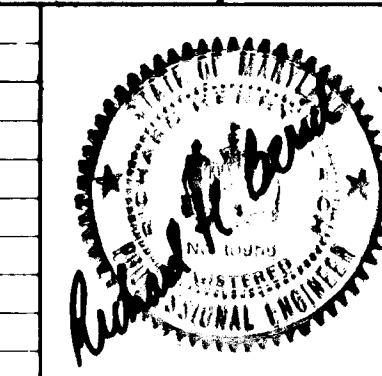
PURDUM & JESCHKE
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LAND SURVEYORS
1029 North Calvert Street
Baltimore, Maryland 21202 (301)837-0194

OWNER/DEVELOPER
THE HOWARD RESEARCH &
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COLUMBIA, MD. 21044

DEPARTMENT OF PLANNING & ZONING
Emma Helms
CHIEF, DIVISION OF COMMUNITY
PLANNING AND LAND DEVELOPMENT

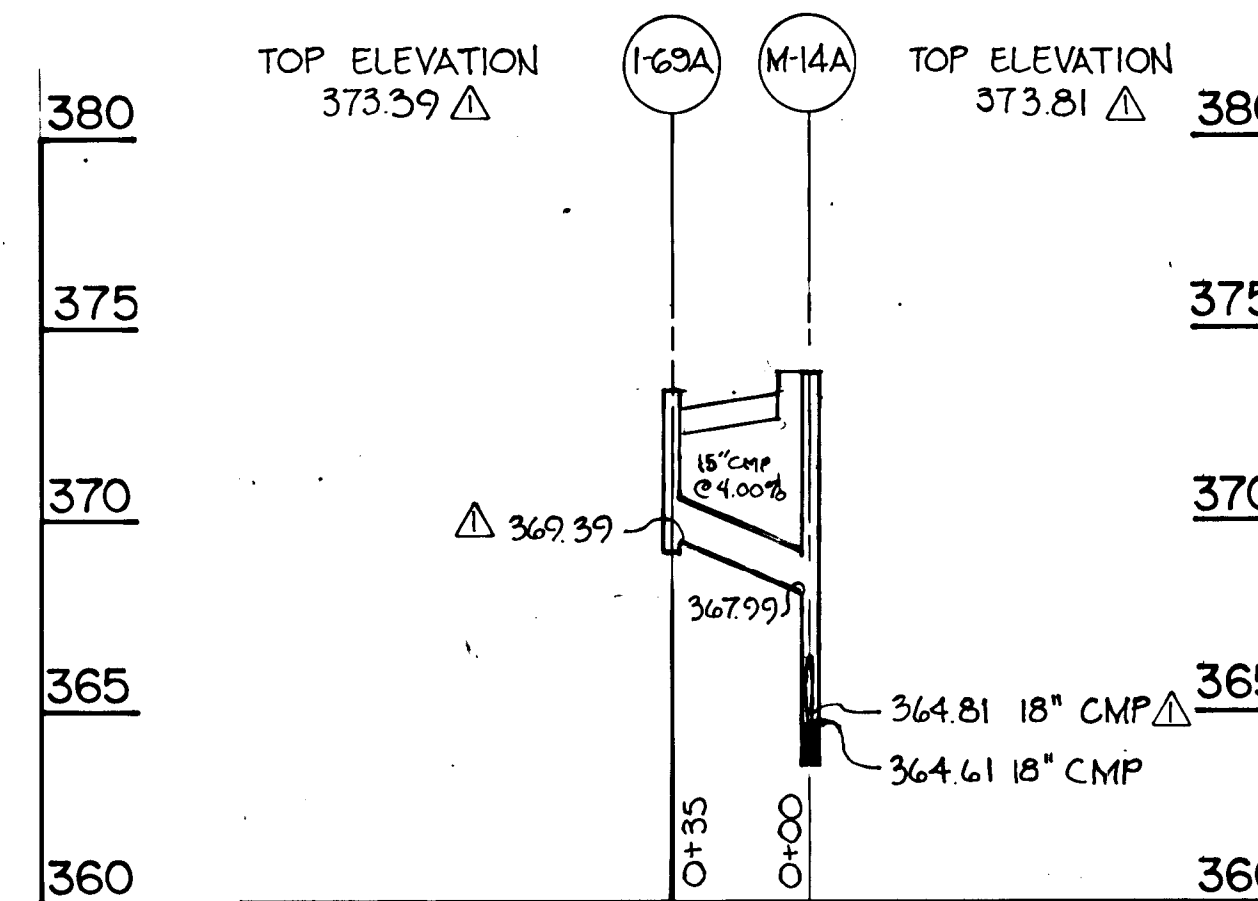
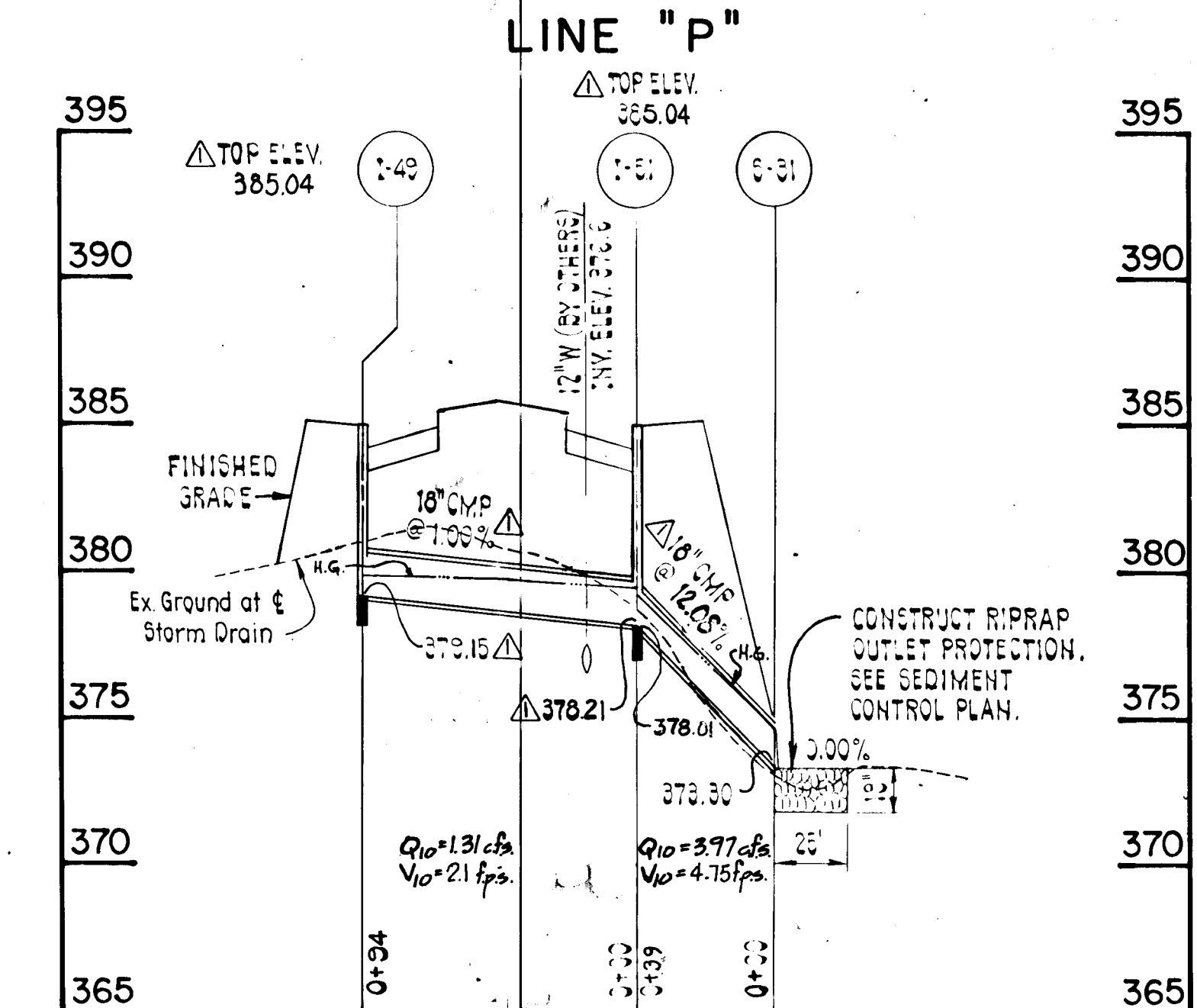
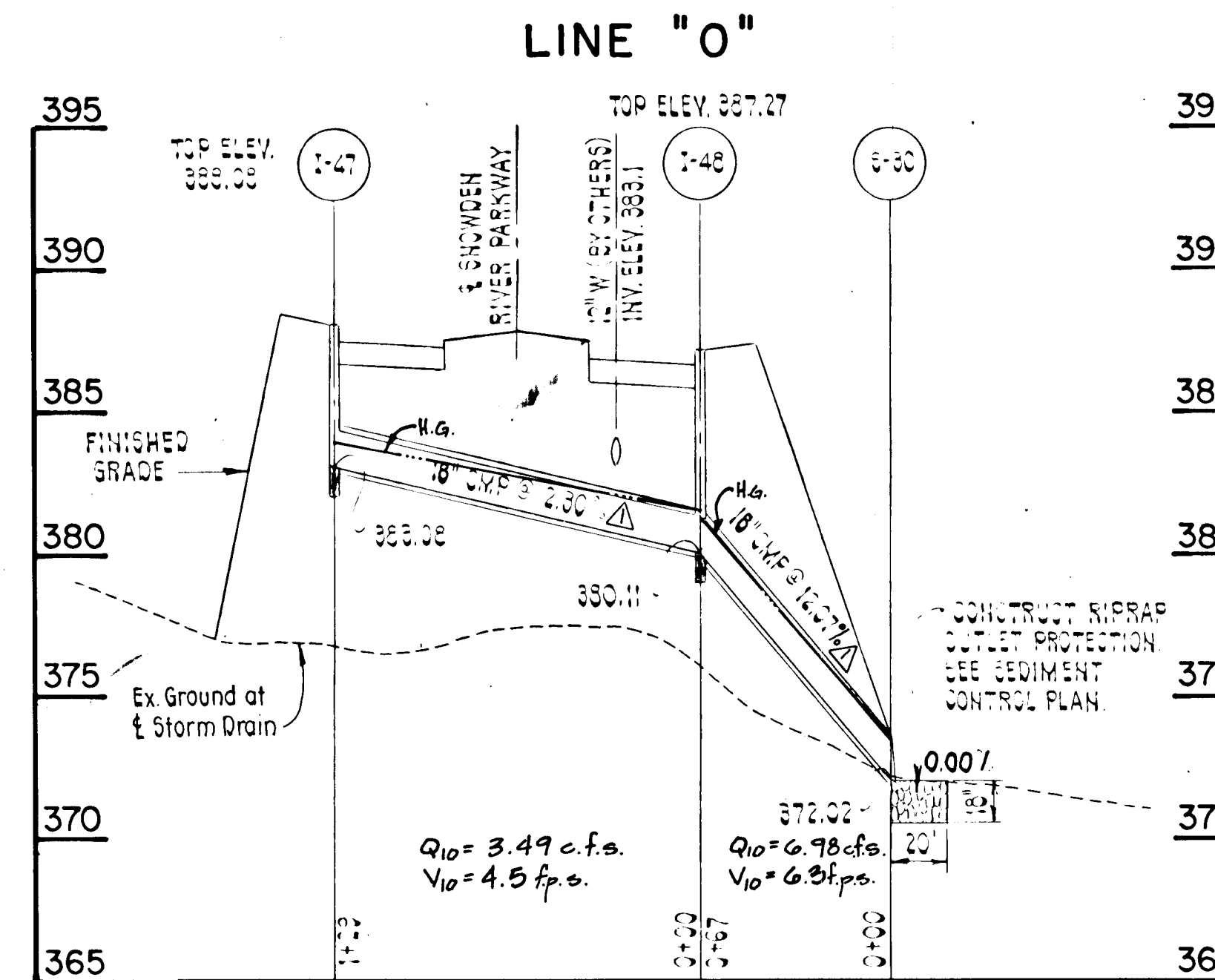
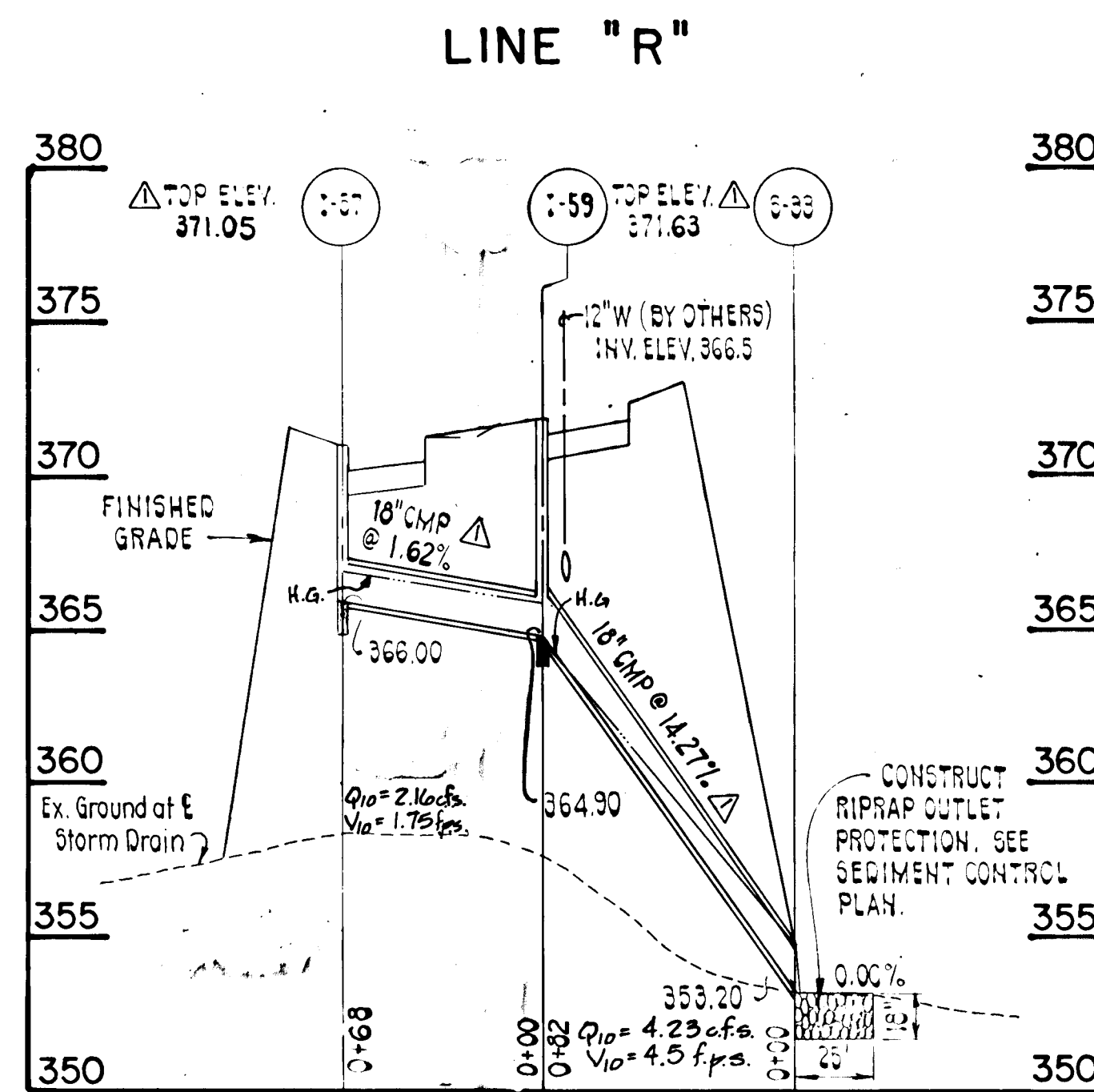
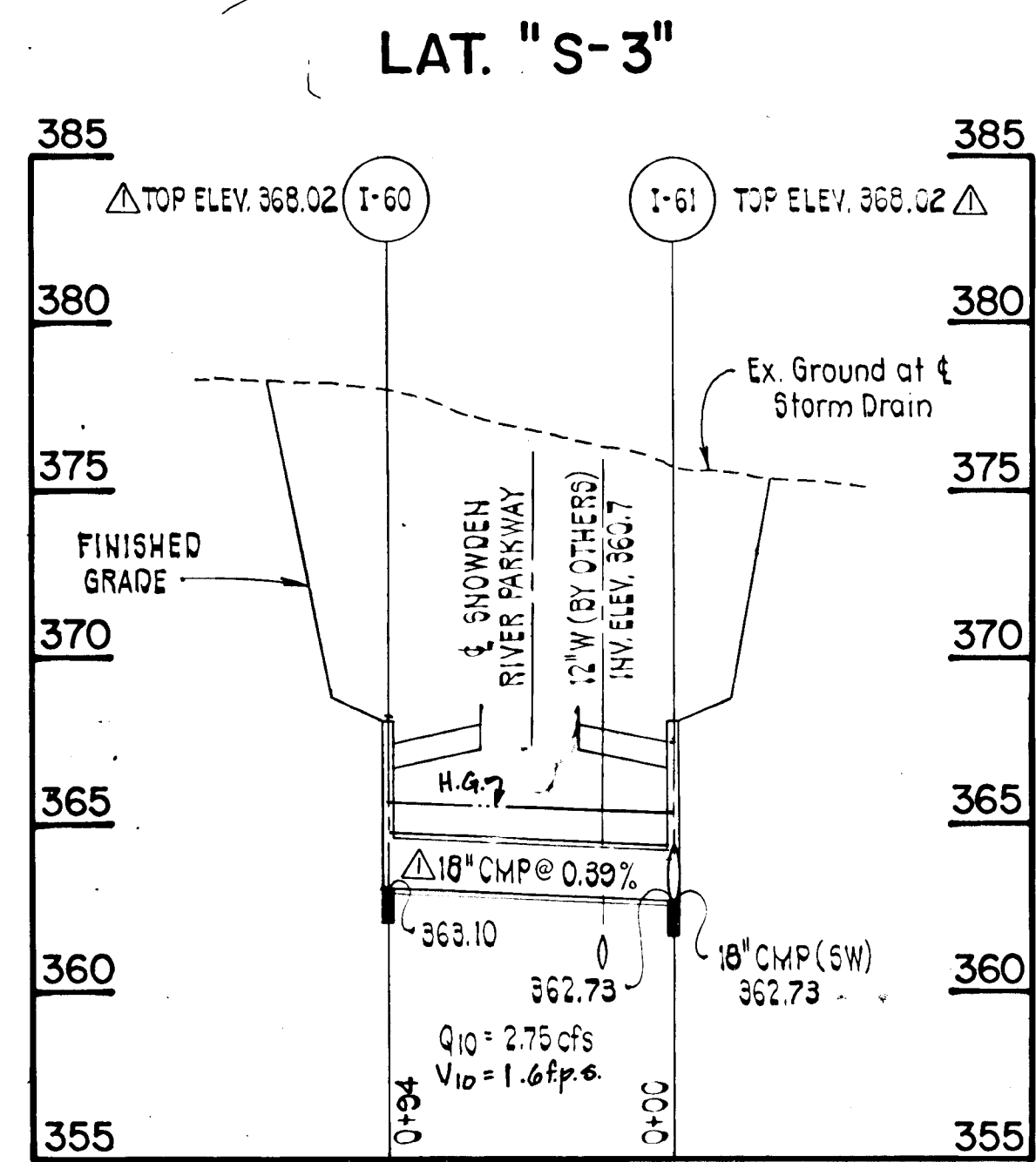
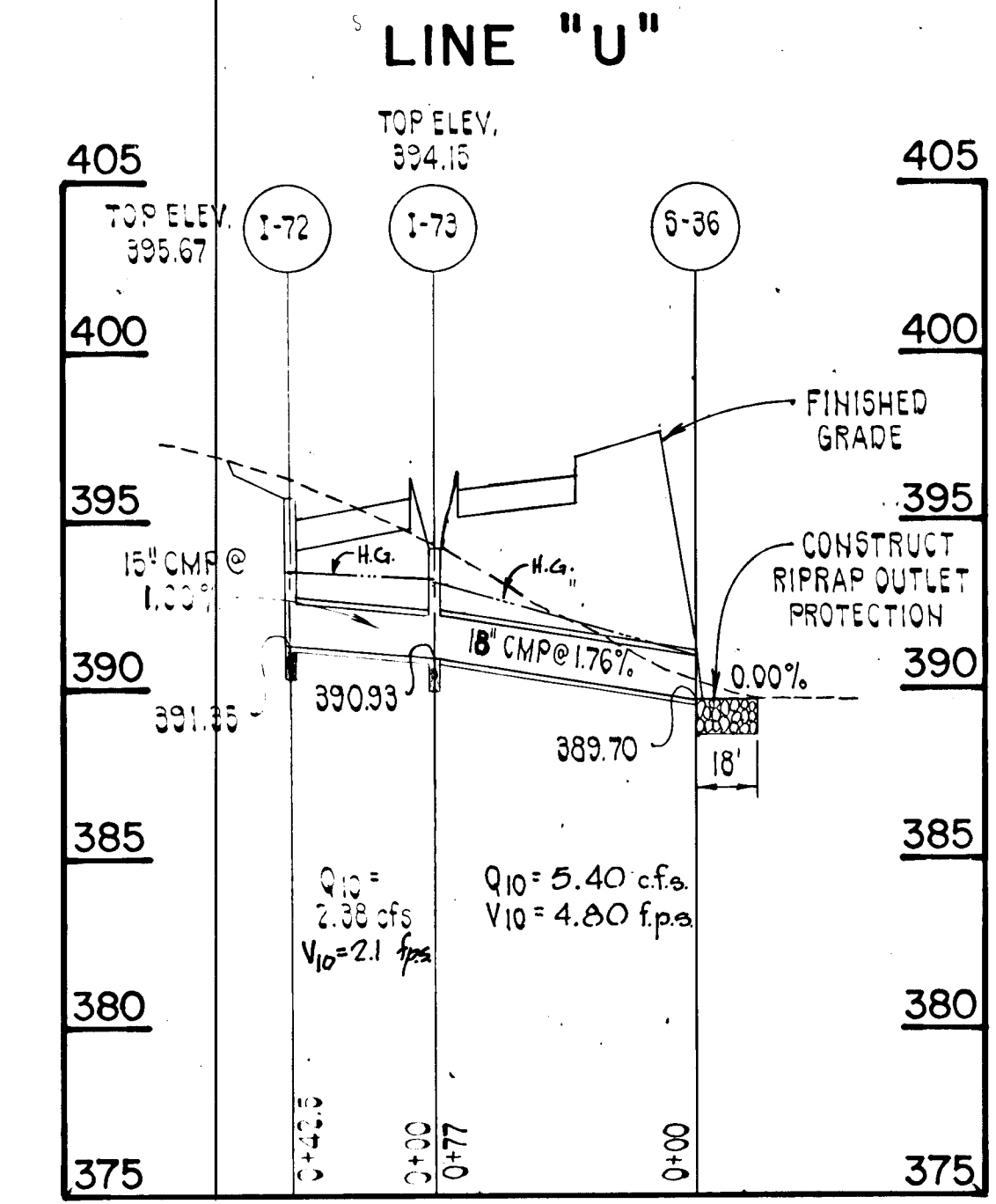
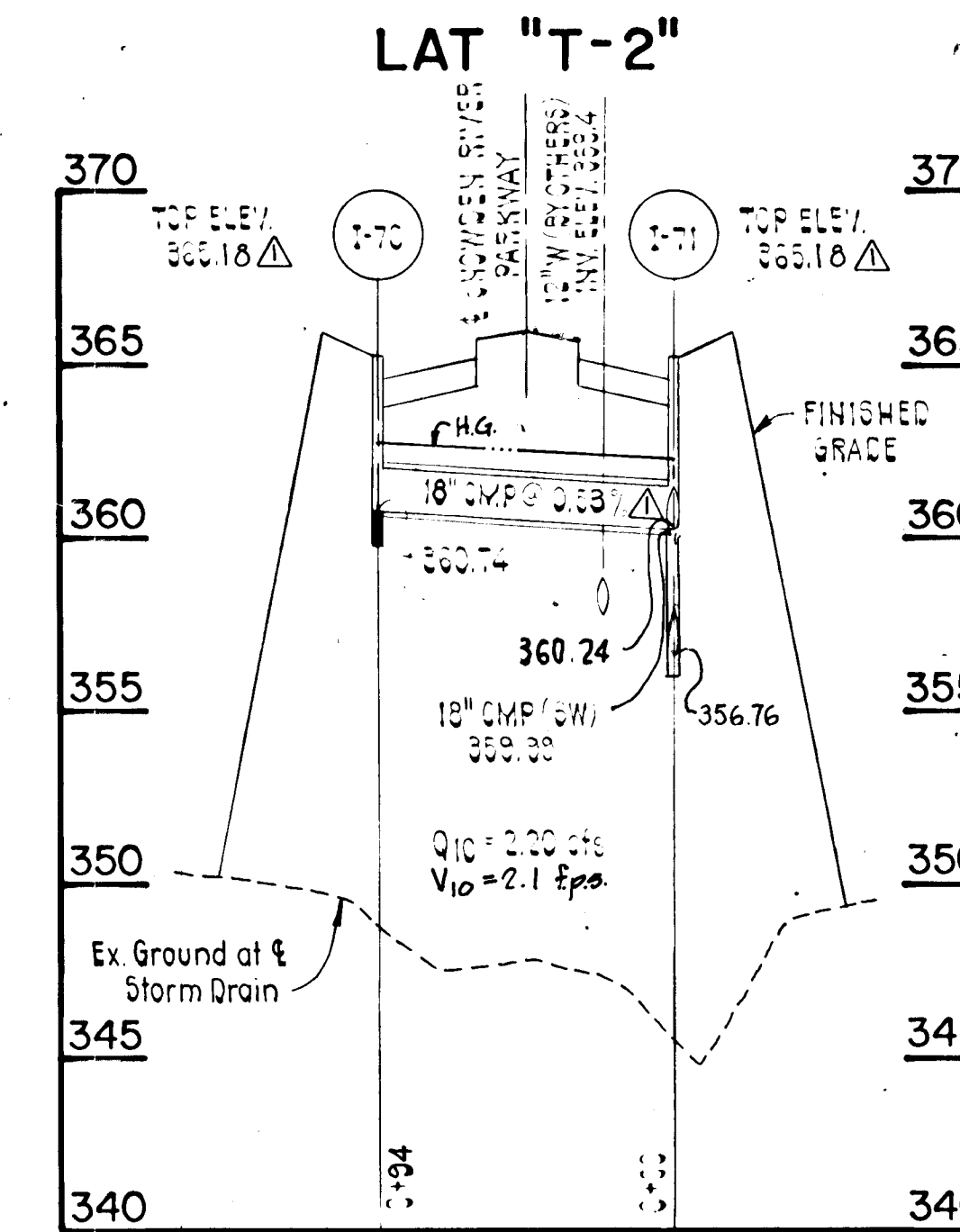
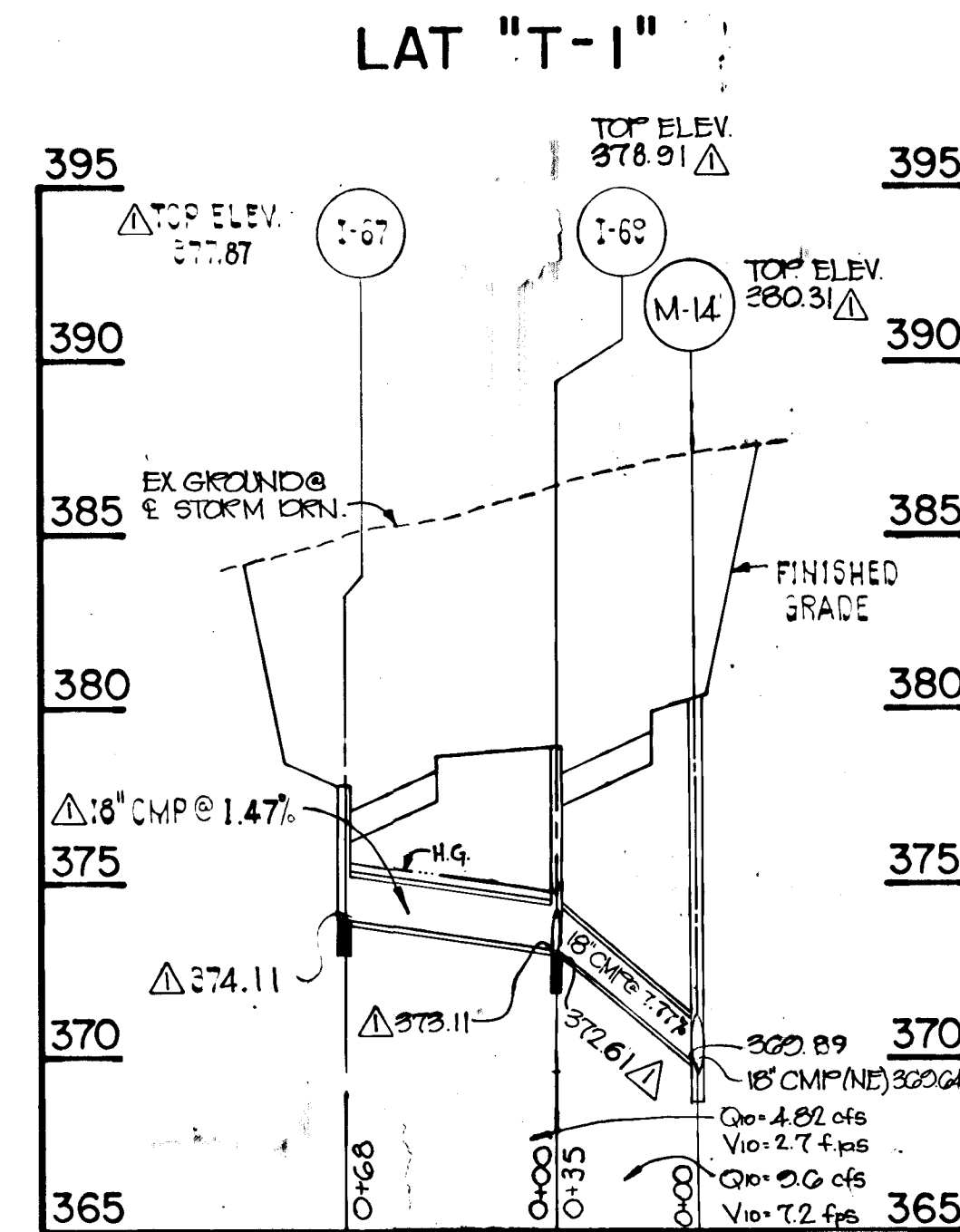
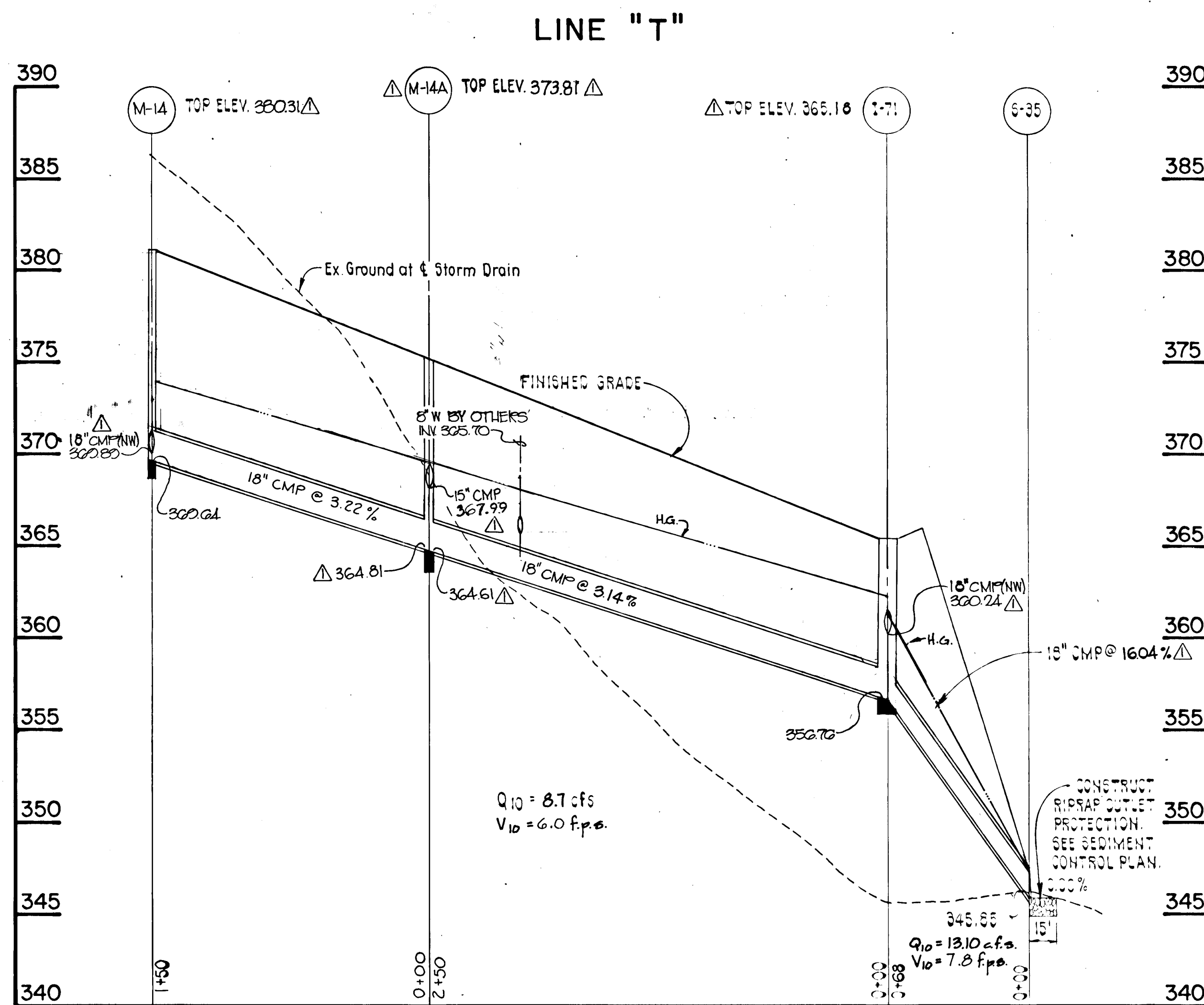
**HOWARD COUNTY DEPARTMENT OF
PUBLIC WORKS**
John M. Longman
CHIEF, BUREAU OF HIGHWAYS
W. J. ...
CHIEF, BUREAU OF ENGINEERING

NO.	DATE	DESCRIPTION
1	4-16-92	STORM DRAIN PROFILES
REVISIONS		

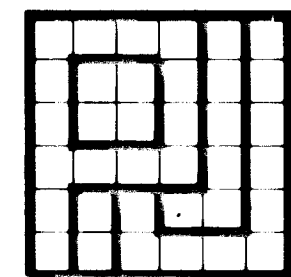


VILLAGE OF LONGREACH
SECTION 3 AREA 4 - ROAD CONSTRUCTION PLANS
STORM DRAINAGE PLANS
PARCELS: 27, 50, 229, 242, 254, 255 & 448
REFERENCE: SB7-46
SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.
DATE: 8-22-89 SCALE: NOTED

SHEET 8 OF 14
DES: GDT
DRAWN:
CHK: RHB



NOTE: SHT 9 SUPERCEDES PREVIOUS SHT. 9 APPROVED 8-7-90



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COLUMBIA, MD. 21044

DEPARTMENT OF PLANNING & ZONING
Emma K. Howard
CHIEF, DIVISION OF COMMUNITY
PLANNING AND LAND DEVELOPMENT

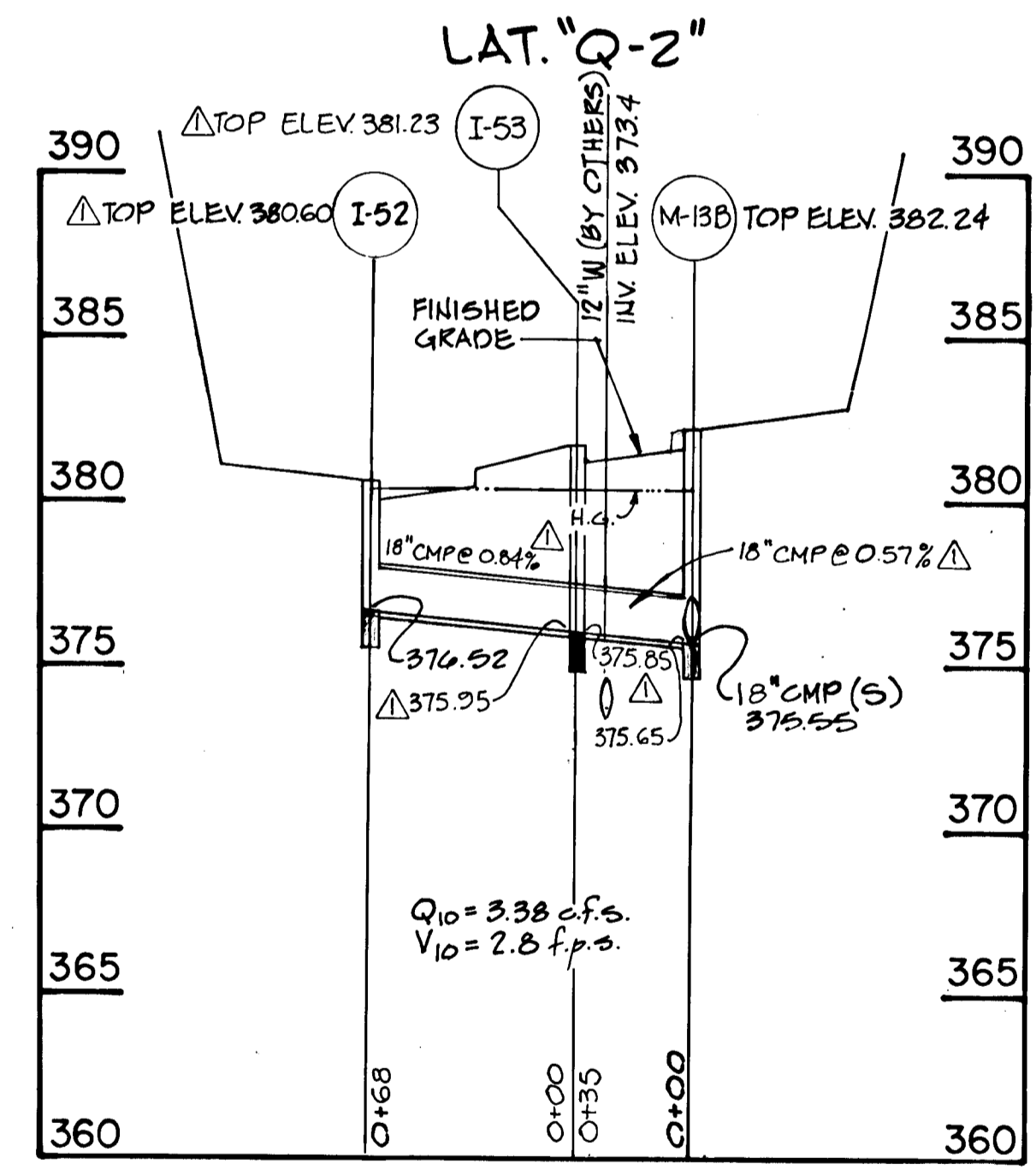
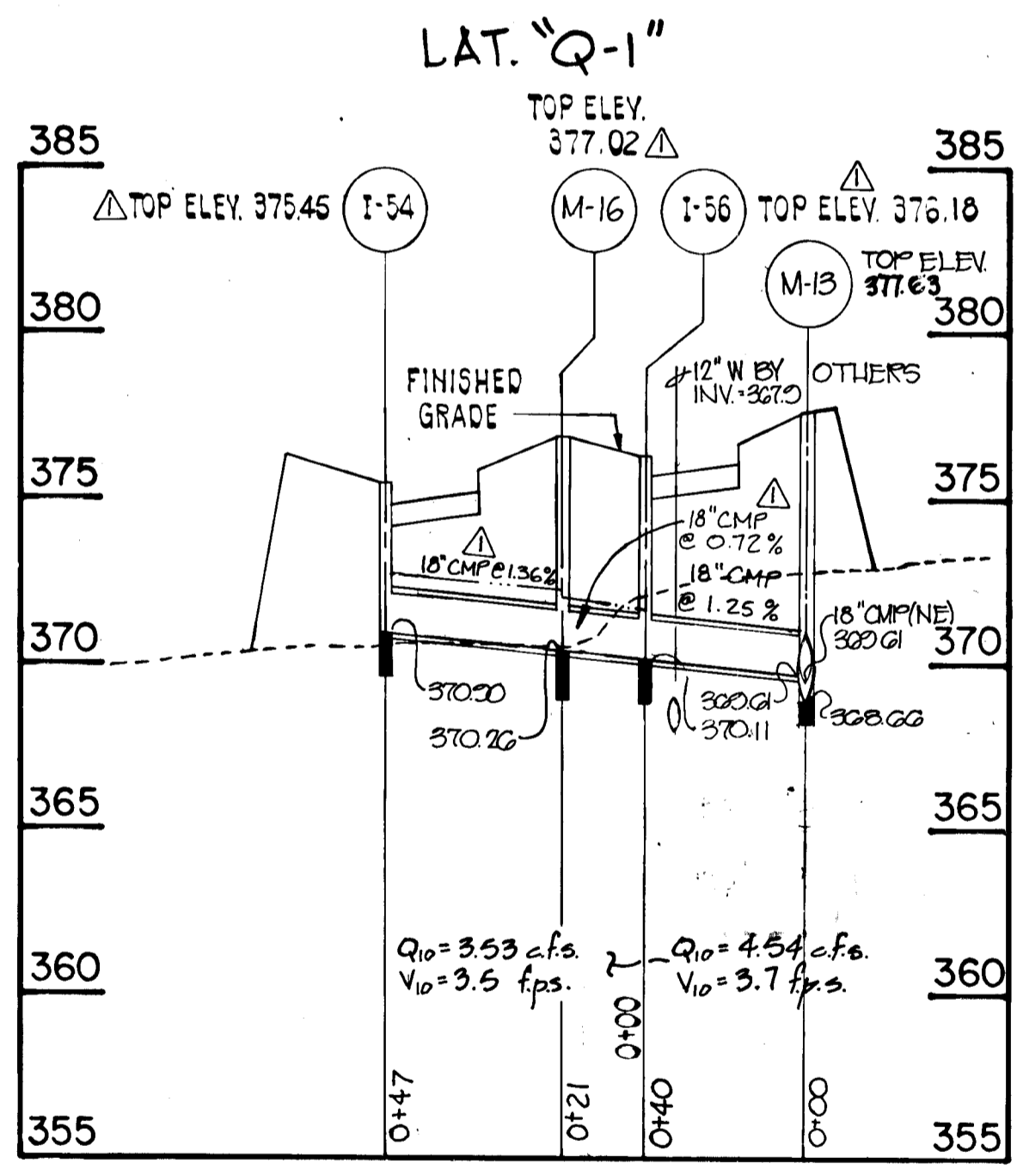
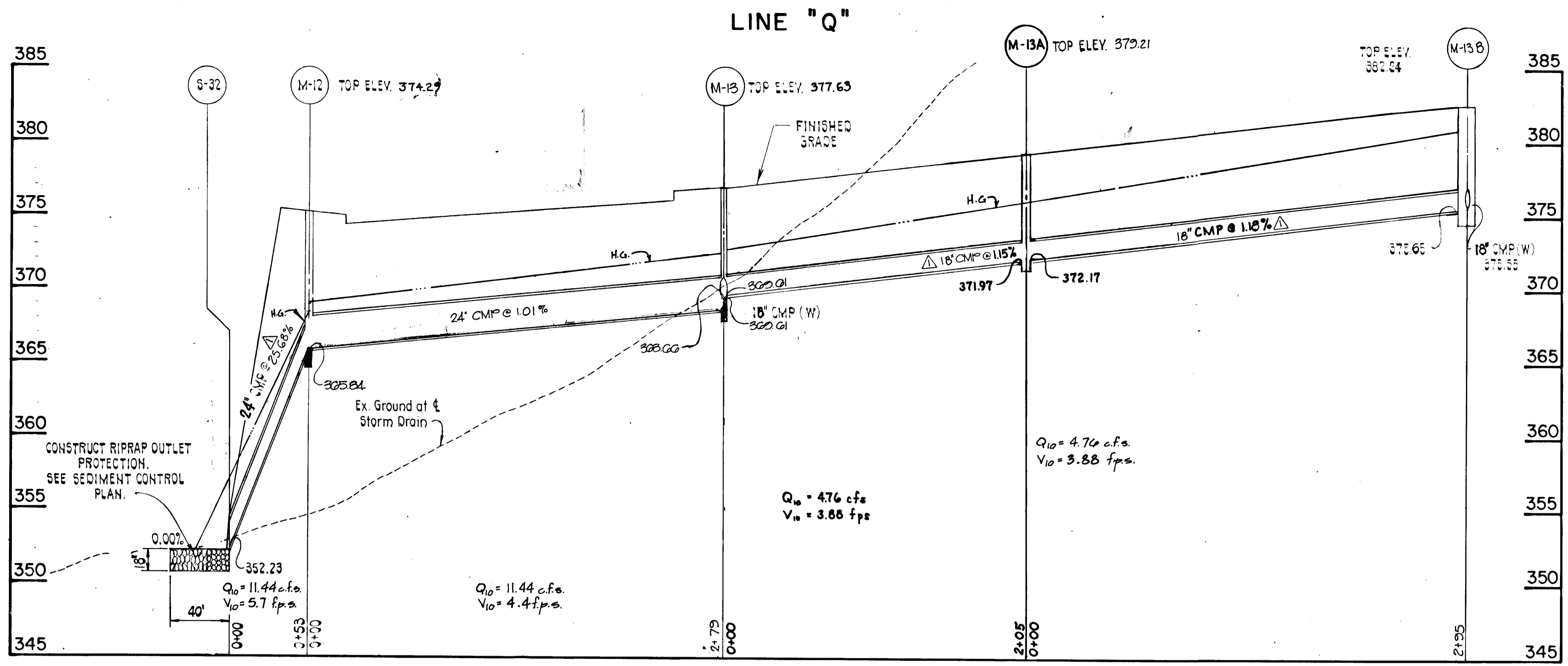
**HOWARD COUNTY DEPARTMENT OF
PUBLIC WORKS**
Chad D. ...
CHIEF, BUREAU OF HIGHWAYS
...
CHIEF, BUREAU OF ENGINEERING

4-16-92, STORM DRAIN PROFILES
DATE: 8-22-89
DESCRIPTION: STORM DRAIN PROFILES
REVISIONS:



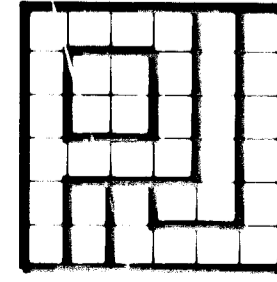

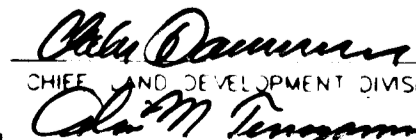
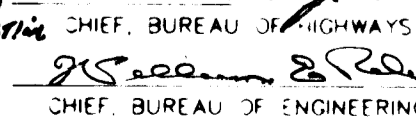

VILLAGE OF LONGREACH
SECTION 3 AREA 4 - ROAD CONSTRUCTION PLANS
STORM DRAINAGE PLANS
PARCELS: 27, 50, 229, 242, 254, 255 & 448
REFERENCE: 587-46
SIXTH ELECT. DISTRICT HOWARD COUNTY, MD.
DATE: 8-22-89 SCALE: NOTED

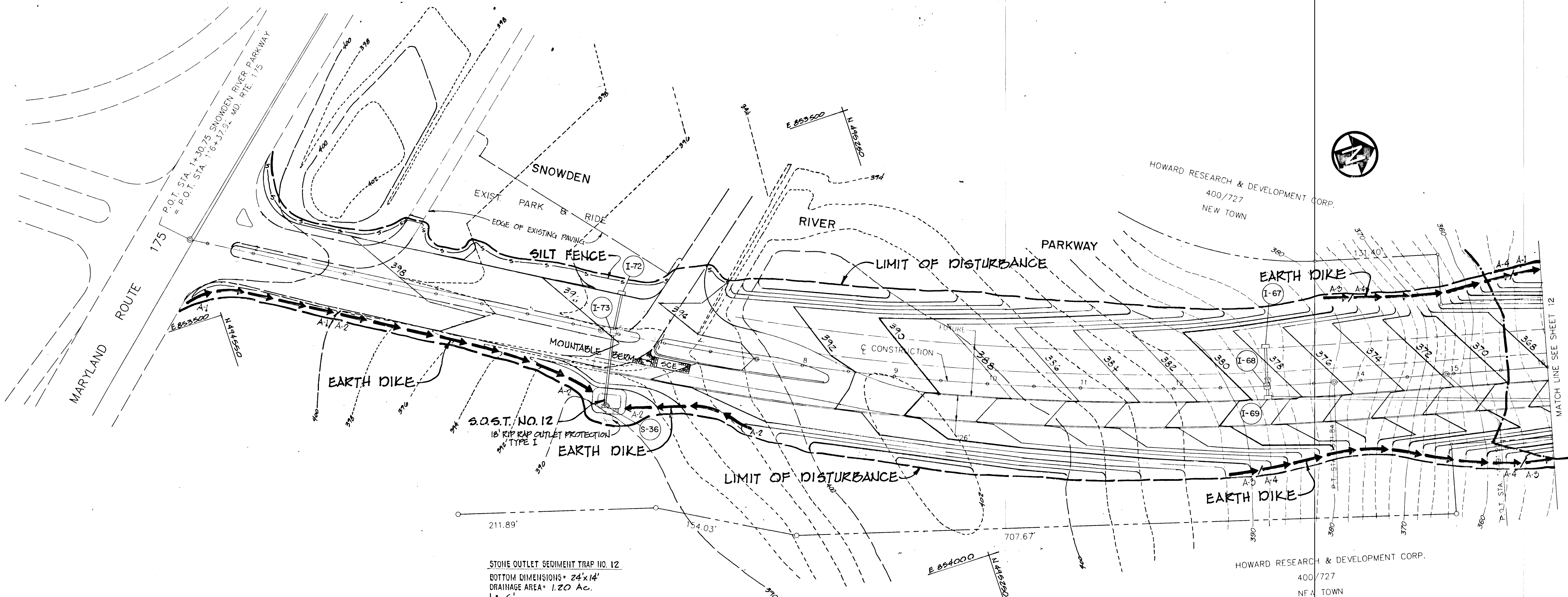
SHEET 9 OF 14
DES: GDT
DRAWN: RHB
CHK: RHB



H: 1" = 50'
V: 1" = 5'

NOTE: SHT. 10 SUPERCEDES PREVIOUS SHT. 10 APPROVED 8-7-90

 PURDUM & JESCHKE CONSULTING ENGINEERS AND LAND SURVEYORS 1029 North Calvert Street Baltimore, Maryland 21202 (301)837-0194	OWNER/DEVELOPER THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21044	DEPARTMENT OF PLANNING & ZONING  CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  CHIEF, BUREAU OF HIGHWAYS  CHIEF, BUREAU OF ENGINEERING	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 5%;">NO.</th> <th style="width: 10%;">DATE</th> <th style="width: 85%;">DESCRIPTION</th> </tr> <tr> <td>1</td> <td>4-16-92</td> <td>STORM DRAIN PROFILES</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	DESCRIPTION	1	4-16-92	STORM DRAIN PROFILES							 VILLAGE OF LONGREACH SECTION 3 AREA 4 - ROAD CONSTRUCTION PLANS STORM DRAINAGE PLANS PARCELS: 27, 50, 229, 242, 254, 255 & 448 REFERENCE: 587-46 SIXTH ELECTION DISTRICT HOWARD COUNTY, MD. DATE: 8-22-89 SCALE: NOTED	SHEET 10 OF 14 DES: GDT DRAWN: RHB CHK: RHB
NO.	DATE	DESCRIPTION																
1	4-16-92	STORM DRAIN PROFILES																



STONE OUTLET SEDIMENT TRAP NO. 12
 BOTTOM DIMENSIONS = 24'x14'
 DRAINAGE AREA = 1.20 AC.
 L = 6'
 VOLUME REQ'D = 2160 CF
 VOLUME PROVIDED = 30'x20'x4' = 2400 CF
 DEPTH = 4'
 BOTTOM ELEVATION = 384
 TOP OF EMBANKMENT = 390
 OUTLET WEIR CREST ELEV. = 389
 CLEAROUT ELEV. = 388
 TRAP DEPTH = 6'

→ EARTH DIKE
 - - - WETLAND LIMIT
 - - - SILT FENCE

Reviewed for Howard Soil Conservation District and meets technical requirements.
Jana M. Helm
 U.S. Soil Conservation Service
 Date _____
 As Development Plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
John L. Robinson 2/12/90
 Howard Soil Conservation District
 Date

PURDUM & JESCHKE
 CONSULTING ENGINEERS AND
 LAND SURVEYORS
 1029 North Calvert Street
 Baltimore, Maryland 21202 (301)837-0194

OWNER/DEVELOPER
 THE HOWARD RESEARCH &
 DEVELOPMENT LAND COMPANY
 THE ROUSE BUILDINGS
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD. 21044

HOWARD COUNTY DEPARTMENT OF
 PUBLIC WORKS
John M. Degan 7/16/90
 CHIEF, LAND DEVELOPMENT DIVISION
Francis W. Weiland 7/13/90
 CHIEF, BUREAU OF HIGHWAYS
 CHIEF, BUREAU OF ENGINEERING

DEPARTMENT OF
 PLANNING AND ZONING
John J. Langley 8/3/89
 CHIEF, DIVISION OF COMMUNITY
 PLANNING AND LAND DEVELOPMENT

DEVELOPER'S CERTIFICATION
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF ANY SEDIMENT EROSION BEFORE BEGINNING THE PROJECT. ALSO, I WILL PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
Gregory R. Allen 8-22-89
 DATE

ENGINEER'S CERTIFICATION
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Richard H. Beriel 8/22/89
 DATE



VILLAGE OF LONGREACH-SECT.3, AREA 4
SEDIMENT & EROSION CONTROL PLAN
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.
 DATE: 8-22-89 REVISED 11-28-89

SHEET 11 OF 14
 DES: GDT
 DRAWN: REC
 CHK: RHB
 SCALE: 1" = 50'

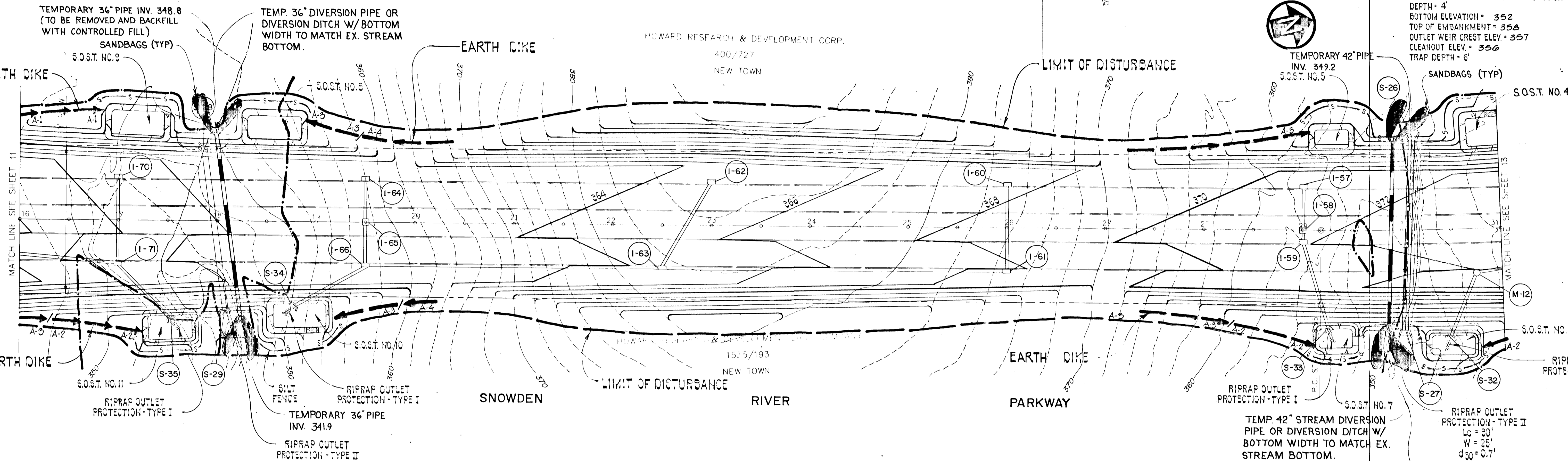
1001

STONE OUTLET SEDIMENT TRAP NO. 9
 BOTTOM DIMENSIONS = 54' x 24'
 DRAINAGE AREA = 3.44 Ac.
 L = 12'
 VOLUME REQ'D = 6198 C.F.
 VOLUME PROVIDED = 60' x 30' x 4' = 7200 C.F.
 DEPTH = 4'
 BOTTOM ELEVATION = 346
 TOP OF EMBANKMENT = 352
 OUTLET WEIR CREST ELEV. = 351
 CLEANOUT ELEV. = 350
 TRAP DEPTH = 6'

STONE OUTLET SEDIMENT TRAP NO. 8
 BOTTOM DIMENSIONS = 56' x 26'
 DRAINAGE AREA = 2.30 Ac.
 L = 12'
 VOLUME REQ'D = 4132 C.F.
 VOLUME PROVIDED = 60' x 30' x 4' = 7200 C.F.
 DEPTH = 4'
 BOTTOM ELEVATION = 348
 TOP OF EMBANKMENT = 354
 OUTLET WEIR CREST ELEV. = 353
 CLEANOUT ELEV. = 352
 TRAP DEPTH = 6'

STONE OUTLET SEDIMENT TRAP NO. 5
 BOTTOM DIMENSIONS = 35' x 20'
 DRAINAGE AREA = 0.83 Ac.
 L = 6'
 VOLUME REQ'D = 1490 C.F.
 VOLUME PROVIDED = 40' x 25' x 3' = 3000 C.F.
 DEPTH = 3'
 BOTTOM ELEVATION = 351
 TOP OF EMBANKMENT = 356
 OUTLET WEIR CREST ELEV. = 355
 CLEANOUT ELEV. = 354
 TRAP DEPTH = 5'

STONE OUTLET SEDIMENT TRAP NO. 4
 BOTTOM DIMENSIONS = 54' x 29'
 DRAINAGE AREA = 3.10 Ac.
 L = 12'
 VOLUME REQ'D = 5578 C.F.
 VOLUME PROVIDED = 60' x 35' x 4' = 8400 C.F.
 DEPTH = 4'
 BOTTOM ELEVATION = 352
 TOP OF EMBANKMENT = 358
 OUTLET WEIR CREST ELEV. = 357
 CLEANOUT ELEV. = 356
 TRAP DEPTH = 6'



STONE OUTLET SEDIMENT TRAP NO. 11
 BOTTOM DIMENSIONS = 44' x 24'
 DRAINAGE AREA = 2.41 Ac.
 L = 12'
 VOLUME REQ'D = 4338 C.F.
 VOLUME PROVIDED = 50' x 30' x 4' = 6000 C.F.
 DEPTH = 4'
 BOTTOM ELEVATION = 339
 TOP OF EMBANKMENT = 345
 OUTLET WEIR CREST ELEV. = 344
 CLEANOUT ELEV. = 343
 TRAP DEPTH = 6'

TEMPORARY 36" PIPE
 INV. 341.9
 RIPRAP OUTLET
 PROTECTION - TYPE II
 L₀ = 28' @ 0.0%
 W = 18.5'
 d₅₀ = 0.6'
 L₀ EXTENSION = 10' @ 15%
 W = 20'
 d₅₀ = 0.8'

STONE OUTLET SEDIMENT TRAP NO. 10
 BOTTOM DIMENSIONS = 54' x 24'
 DRAINAGE AREA = 2.27 Ac.
 L = 12'
 VOLUME REQ'D = 4091 C.F.
 VOLUME PROVIDED = 60' x 30' x 4' = 7200 C.F.
 DEPTH = 4'
 BOTTOM ELEVATION = 348
 TOP OF EMBANKMENT = 354
 OUTLET WEIR CREST ELEV. = 353
 CLEANOUT ELEV. = 352
 TRAP DEPTH = 6'

STONE OUTLET SEDIMENT TRAP NO. 7
 BOTTOM DIMENSIONS = 34' x 19'
 DRAINAGE AREA = 0.83 Ac.
 L = 6'
 VOLUME REQ'D = 1490 C.F.
 VOLUME PROVIDED = 40' x 25' x 3' = 3000 C.F.
 DEPTH = 3'
 BOTTOM ELEVATION = 349
 TOP OF EMBANKMENT = 354
 OUTLET WEIR CREST ELEV. = 353
 CLEANOUT ELEV. = 352
 TRAP DEPTH = 5'

STONE OUTLET SEDIMENT TRAP NO. 6
 BOTTOM DIMENSIONS = 44' x 19'
 DRAINAGE AREA = 1.65 Ac.
 L = 12'
 VOLUME REQ'D = 2975 C.F.
 VOLUME PROVIDED = 50' x 25' x 4' = 5000 C.F.
 DEPTH = 4'
 BOTTOM ELEVATION = 346
 TOP OF EMBANKMENT = 352
 OUTLET WEIR CREST ELEV. = 351
 CLEANOUT ELEV. = 350
 TRAP DEPTH = 6'

→ EARTH DIKE
 - - - - - WETLAND LIMIT
 - - - - - SILT FENCE

Reviewed for Howard Soil Conservation District and meets technical requirements.
John L. Robertson 2/12/90
 J. L. Robertson, Chief, Conservation Service
 This Development Plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
John L. Robertson 2/12/90
 John L. Robertson, Chief, Howard Soil Conservation District

PURDUM & JESCHKE
 CONSULTING ENGINEERS AND
 LAND SURVEYORS
 1029 North Calvert Street
 Baltimore, Maryland 21202 (301)837-0194

OWNER, DEVELOPER
 THE HOWARD RESEARCH &
 DEVELOPMENT LAND COMPANY
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD. 21044

HOWARD COUNTY DEPARTMENT OF
 PUBLIC WORKS
William W. Wehland 7/13/90
 William W. Wehland, Chief, Bureau of Highway
John L. Robertson 2/12/90
 John L. Robertson, Chief, Bureau of Engineering

DEPARTMENT OF
 PLANNING AND ZONING
Frankie D. Langley 8/1/89
 Frankie D. Langley, Chief, Bureau of Community Planning and Land Development

DEVELOPER'S CERTIFICATION
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF ANY SEDIMENT EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
John L. Robertson 2-22-89

ENGINEER'S CERTIFICATION
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Richard H. Berick 8/2/89
 Richard H. Berick, Professional Engineer



VILLAGE OF LONGREACH-SECT.3, AREA 4
 SEDIMENT & EROSION CONTROL
 PLAN
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.
 DATE: 8-22-89 REVISED 11-28-89

SHEET 12 OF 14
 DES: GDT
 DRAWN: REC
 CHK: RHB
 SCALE: 1" = 50'

100

STONE OUTLET SEDIMENT TRAP NO. 1
 BOTTOM DIMENSIONS = 34'x14'
 DRAINAGE AREA = 0.63 AC.
 L = 6'
 VOLUME REQ'D = 1136 C.F.
 VOLUME PROVIDED = 40'x20'x3' = 2400 C.F.
 DEPTH = 3'
 BOTTOM ELEVATION = 368
 TOP OF EMBANKMENT = 373
 OUTLET WEIR CREST ELEV. = 372
 CLEANOUT ELEV. = 371
 TRAP DEPTH = 5'

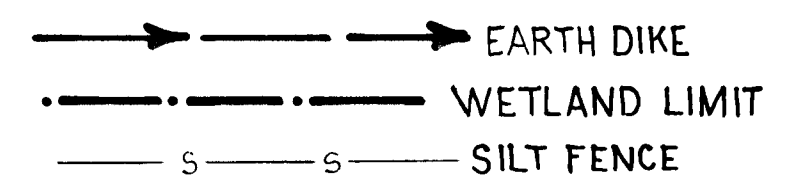
TEMPORARY 36" PIPE
 INV. 373.9
 SANDBAGS (TYP.)
 TEMP. 36" STREAM DIV.
 PIPE OR DIV. DITCH W/
 BOTTOM WIDTH TO MATCH
 EX. STREAM BOTTOM.

RIPRAP OUTLET
 PROTECTION - TYPE I
 TEMPORARY 36" PIPE INV. 366.6
 (TO BE REMOVED AND BACKFILLED
 WITH CONTROLLED FILL).

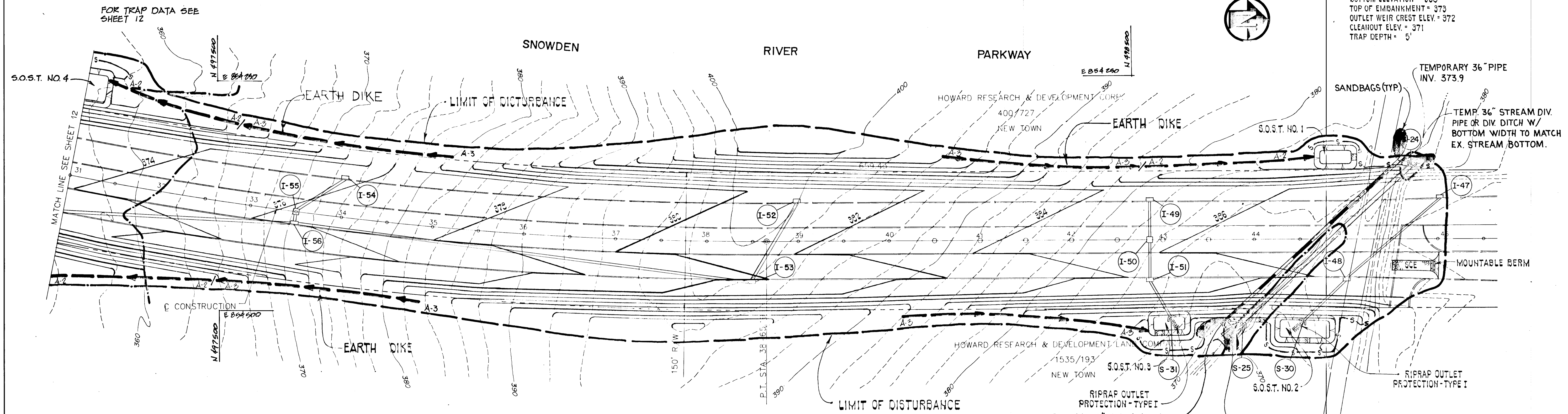
RIPRAP OUTLET
 PROTECTION - TYPE II
 L = 26'
 W = 16.5'
 d₅₀ = 0.8'

STONE OUTLET SEDIMENT TRAP NO. 3
 BOTTOM DIMENSIONS = 34'x14'
 DRAINAGE AREA = 0.78 AC.
 L = 12'
 VOLUME REQ'D = 1400 C.F.
 VOLUME PROVIDED = 40'x20'x3' = 2400 C.F.
 DEPTH = 3'
 BOTTOM ELEVATION = 369
 TOP OF EMBANKMENT = 374
 OUTLET WEIR CREST ELEV. = 373
 CLEANOUT ELEV. = 372
 TRAP DEPTH = 5'

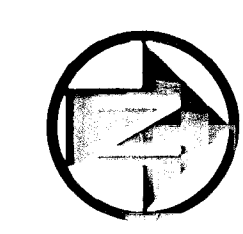
STONE OUTLET SEDIMENT TRAP NO. 2
 BOTTOM DIMENSIONS = 54'x19'
 DRAINAGE AREA = 1.67 AC.
 L = 12'
 VOLUME REQ'D = 3000 C.F.
 VOLUME PROVIDED = 60'x25'x3' = 4500 C.F.
 DEPTH = 3'
 BOTTOM ELEVATION = 369
 TOP OF EMBANKMENT = 374
 OUTLET WEIR CREST ELEV. = 373
 CLEANOUT ELEV. = 372
 TRAP DEPTH = 5'



Reviewed by Howard Soil Conservation District and meets technical requirements.
John M. Hester 2/12/90
 Chief, Soil Conservation Service
 Development Plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
John R. Robertson 2/12/90
 Chief, Howard Soil Conservation District



FOR TRAP DATA SEE SHEET 12



PURDUM & JESCHKE
 CONSULTING ENGINEERS AND
 LAND SURVEYORS
 1029 North Calvert Street
 Baltimore, Maryland 21202 (301)837-0194

OWNER/DEVELOPER
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 DEVELOPMENT LAND COMPANY
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 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD. 21044

HOWARD COUNTY DEPARTMENT OF
 PUBLIC WORKS
John M. Hester 7/12/90
 CHIEF, LAND DEVELOPMENT DIVISION
Dr. W. W. Weiland 7/13/90
 CHIEF, BUREAU OF HIGHWAYS
John R. Robertson 8/22/89
 CHIEF, BUREAU OF ENGINEERING

DEPARTMENT OF
 PLANNING AND ZONING
Richard H. Berid 8/22/89
 CHIEF, DIVISION OF COMMUNITY
 PLANNING AND LAND DEVELOPMENT

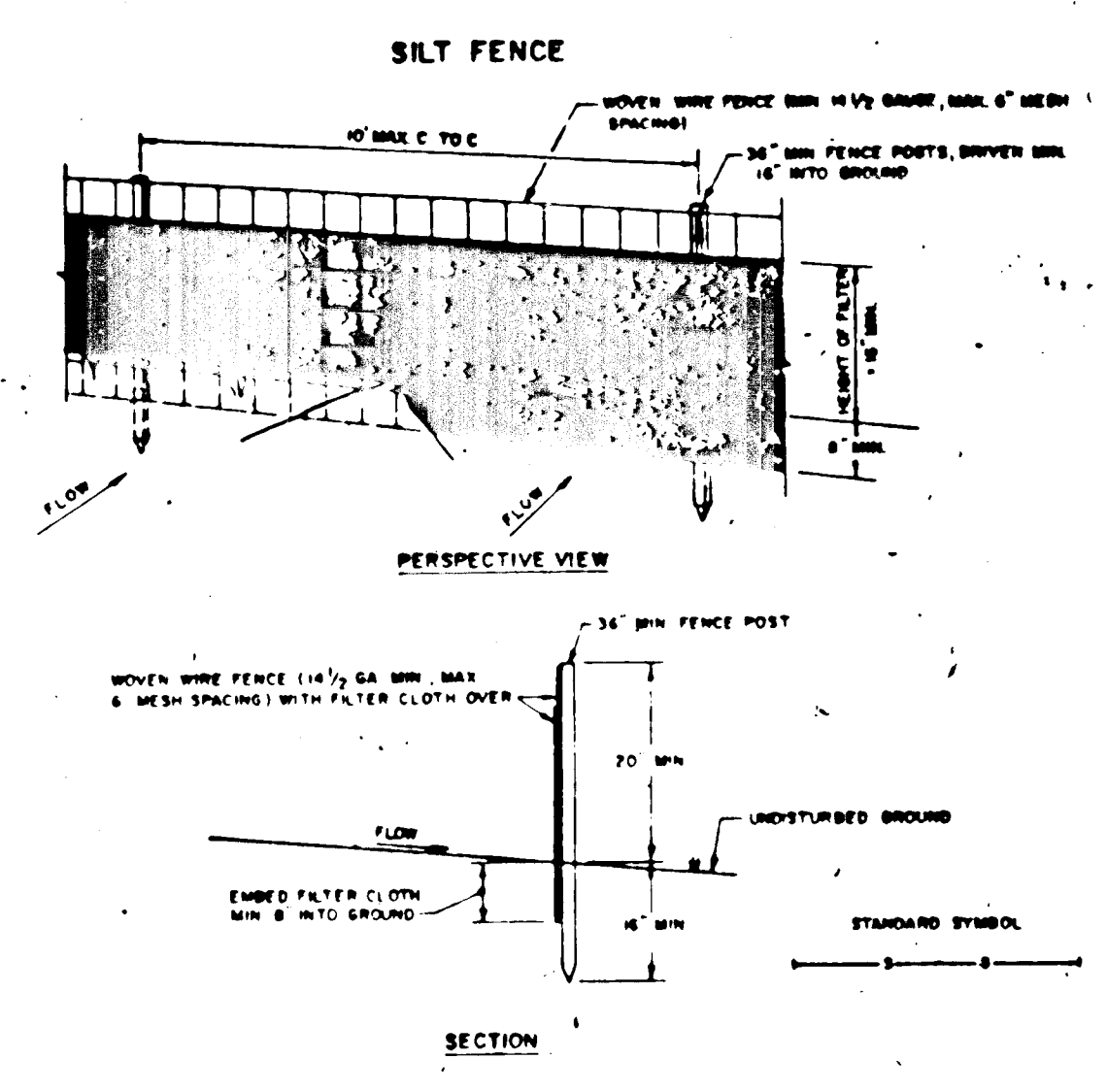
DEVELOPER'S CERTIFICATION
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John M. Hester 8-22-89

ENGINEER'S CERTIFICATION
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Richard H. Berid 8/22/89

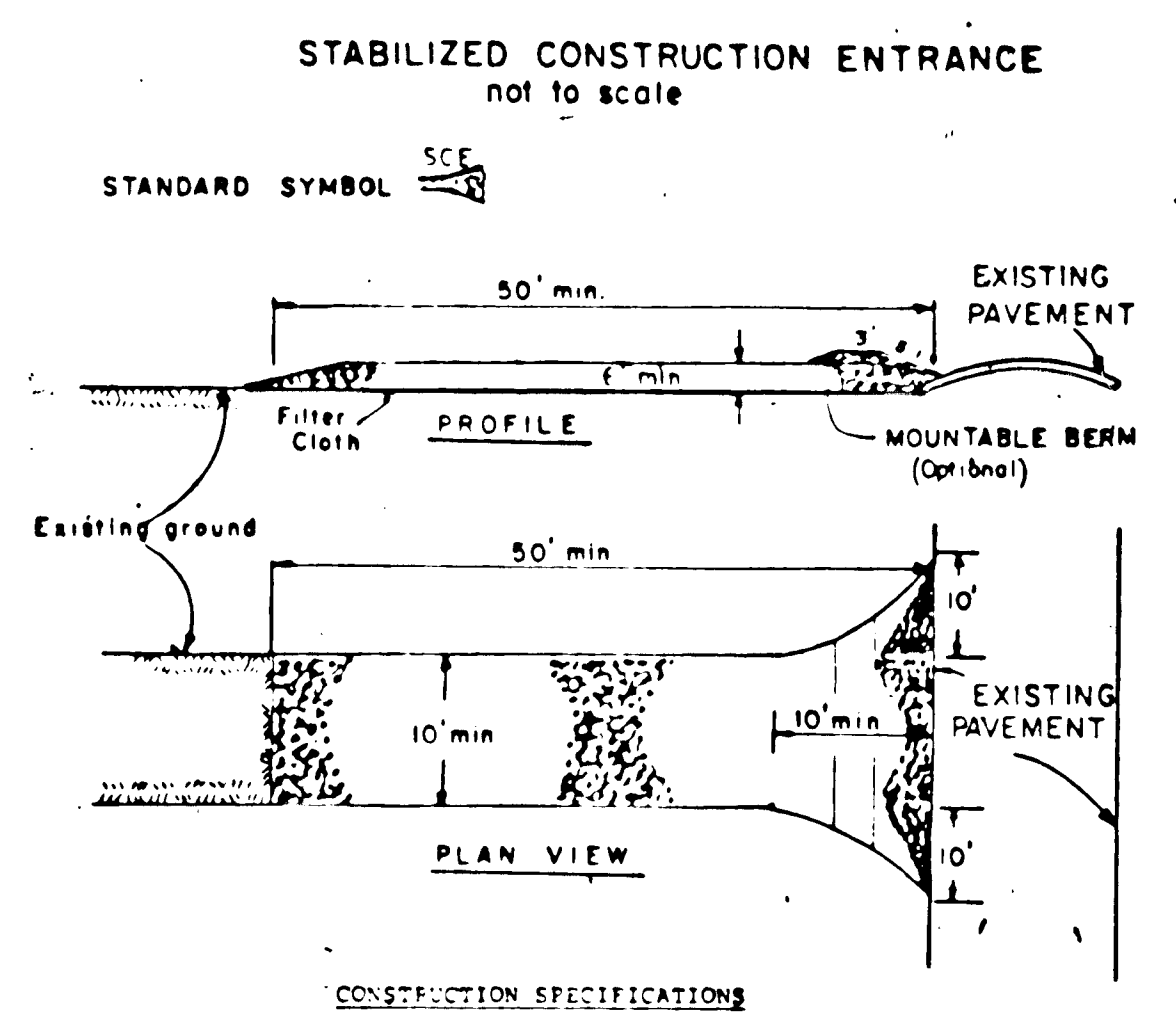


VILLAGE OF LONGREACH-SECT.3, AREA 4
SEDIMENT & EROSION CONTROL PLAN
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.
 DATE: 8-22-89 REVISED 11-28-89

SHEET 13 OF 14
 DES: GDT
 DRAWN: REC
 CHK: RHB
 SCALE: 1" = 50'



- 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, 1/4" GA. 6" MAX. MESH OPENING
- FILTER CLOTH:** FILTER X, 100% MINIMUM EFFICIENCY, APPROVED LINER OR APPROVED EQUAL
- PREFABRICATED UNIT:** GEOTEX, UNWELDED, OR APPROVED EQUAL



- 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.

- DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT**
- SITE PREPARATION**
1. Temporary perimeter dikes and silt traps, etc., are to be provided as per this plan prior to grading operations with location adjustments to be made in the field as necessary and to be maintained at the end of the working day. The minimum area practical shall be disturbed for the minimum amount of time possible.
 2. Permanent seedings:
 - a. Seedbed preparation: Area to be seeded shall be loose and friable to a depth of at least 3 inches. The top layer shall be loosened by raking, disking, or other acceptable means before seeding occurs. In lieu of soil test results, apply 50 lbs. of dolomitic limestone and 25 lbs. of 10-10-10 fertilizer per 1,000 square feet. Harrow or disk lime and fertilizer into the soil to a depth of at least 3 inches on slopes flatter than 3:1. No attempt should be made to drag any disks area to make the soil surface smooth after disking.
 - b. Seeding: Apply 5-6 lbs. per 1,000 square feet of Kentucky 31 Tall Fescue between February 1 and April 30 or between August 15 and October 31. Apply seed uniformly with a cyclone seeded drill, cultipacker seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only) on a moist, firm seedbed. Maximum seed depth should be 1/4 inch in clayey soils and 1/2 inch in sandy soils when using other than the hydroseeder method. Irrigate if soil moisture is deficient to support adequate growth, until vegetation is firmly established.
 - c. Mulching: Mulch shall be unchopped, unrotted, small grain straw applied at a rate of 70 to 90 lbs. per 1,000 square feet. Mulch materials shall be relatively free of all kinds of weeds and shall be free of prohibited noxious weeds which are: Canada Thistle, Johnsongrass, and Quackgrass. Spread mulch mechanically or uniformly by hand; mulch anchoring shall be accomplished immediately after mulch placement to minimize loss by wind or water. This may be done by peg and twine method, which anchoring tool, netting, or liquid mulch binders.
 3. Temporary seedings:

Lime: 50 lbs. of dolomitic limestone per 1,000 square feet

Fertilizer: 15 lbs. of 10-10-10 or 1,000 square feet

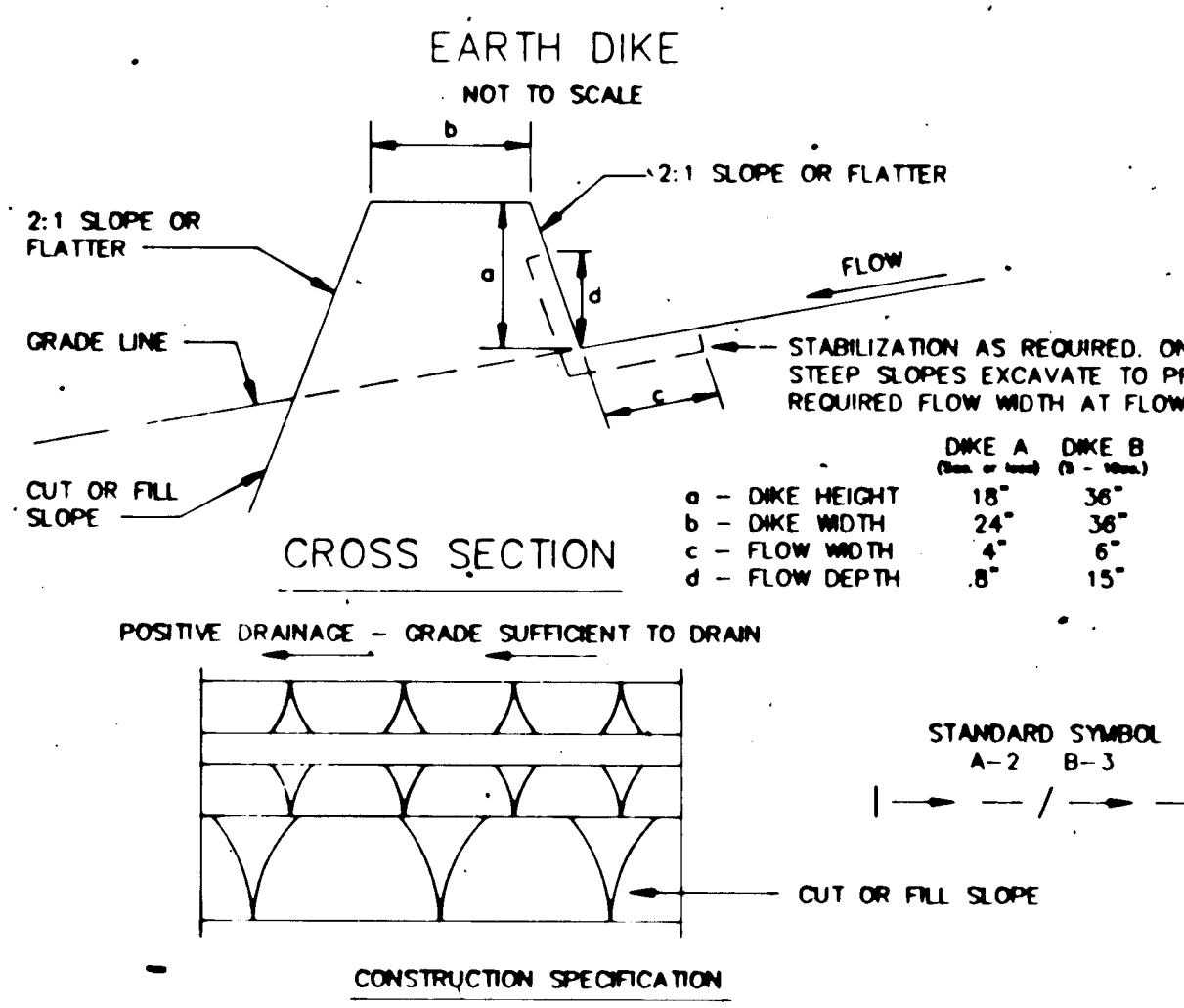
Seeds: Perennial Rye, Italian Rye - 0.92 lbs. per 1,000 square feet (Feb. 1 through April 30 or Aug. 31 through Nov. 31)

Millet - 0.92 lbs. per 1,000 square feet (May 1 - Aug. 15)

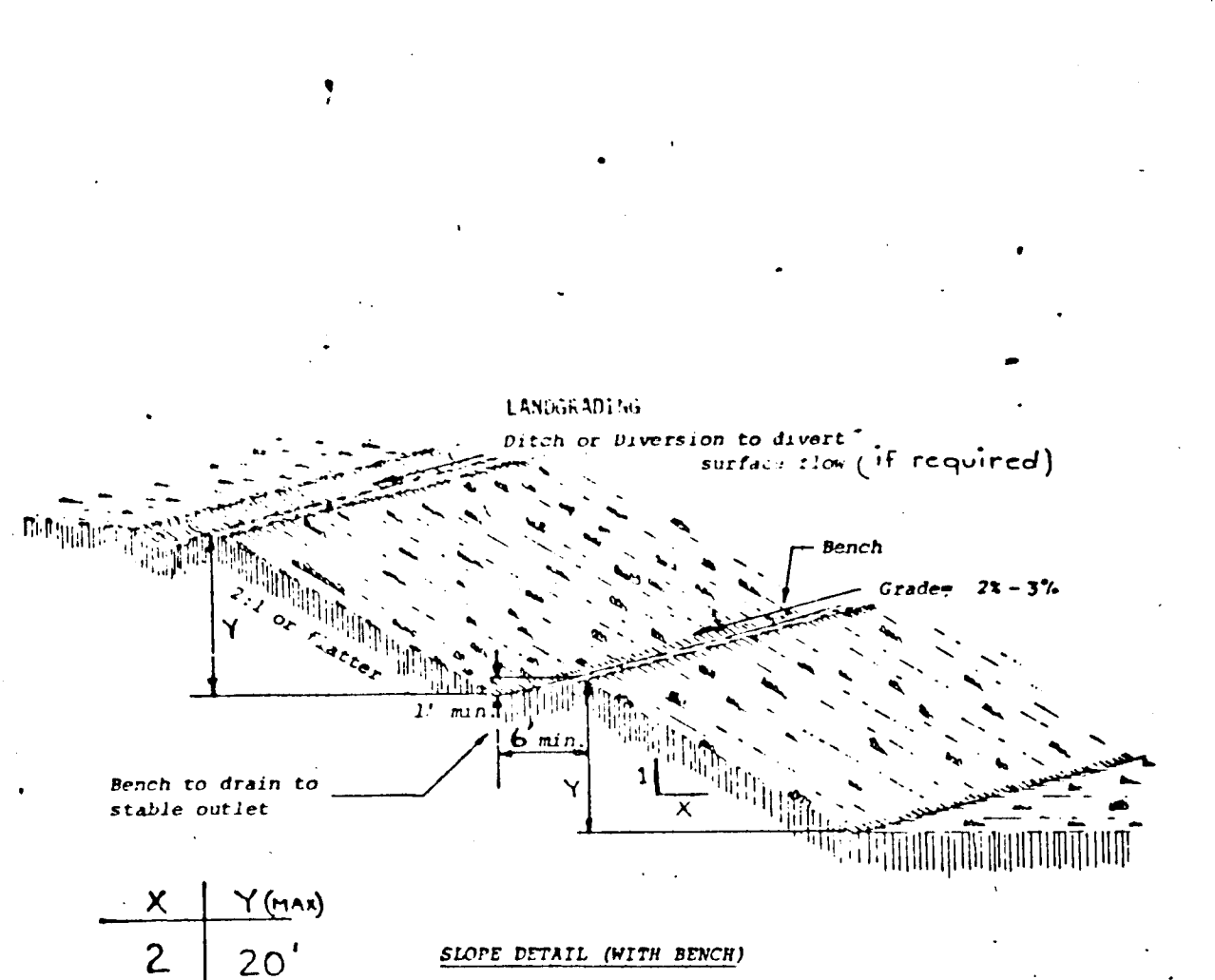
Mulch: Same as above. (Nov. 2 through Jan. 31, use mulch only)
 4. No fills may be placed on frozen ground. All fill to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All fill in roadways and parking areas is to be classified Type 2 and compacted to 90 percent density; compaction to be determined by ASTM D-1557 (Modified Proctor). Any fill within building area to be compacted to a minimum of 95% as determined by methods previously mentioned. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

- 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 redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for a) 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 for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52.) Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
 - 6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
 - 7) Site Analysis:

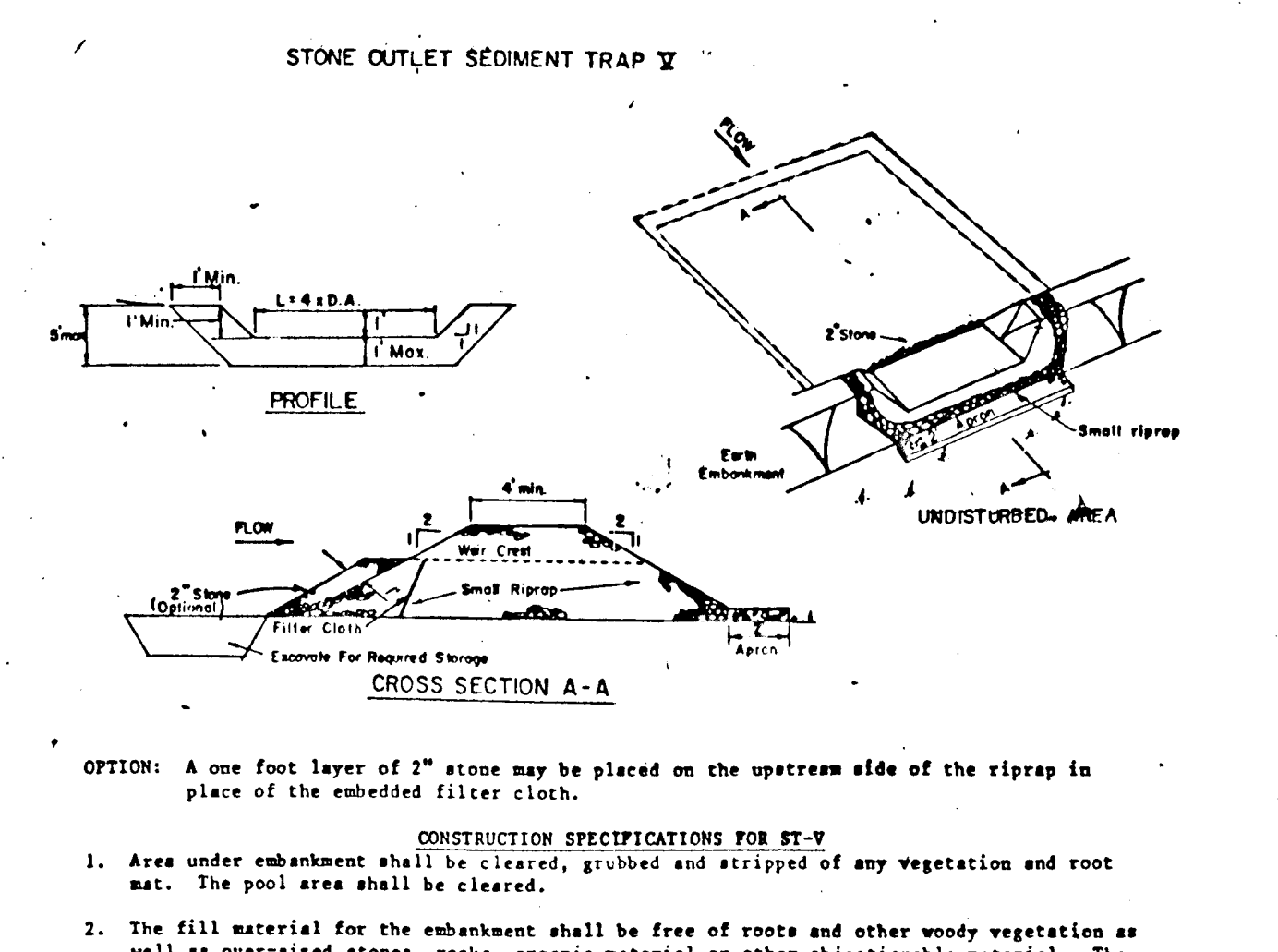
Total Area of Site	2323 Acres
Area Disturbed	23.00 Acres
Area to be roofed or paved	5.46 Acres
Area to be vegetatively stabilized	17.54 Acres
Total Cut	100772 Cu. Yds.
Total Fill	108004 Cu. Yds.
Offsite waste/borrow area location	NA
 - 8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
 - 9) Additional sediment controls must be provided, if deemed necessary by the Howard County DPM 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.



- CONSTRUCTION SPECIFICATION**
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 SPECIFICATION FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.
 7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.
- | TYPE OF TREATMENT | CHANNEL GRADE | FLOW CHANNEL STABILIZATION | |
|-------------------|---------------|----------------------------------|--|
| | | 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; SOO; 2" STONE |
| 3 | 5.1 - 8.0% | SEED WITH JUTE, OR SOO; 2" STONE | LINED RIPRAP 4 - 8" |
| 4 | 8.1 - 20% | LINED RIPRAP 4 - 8" | ENGINEERING DESIGN |



- CONSTRUCTION SPECIFICATIONS**
1. All graded or disturbed areas including slopes shall be protected during clearing and construction in accordance with the approved sediment control plan until they are permanently stabilized.
 2. All sediment control practices and measures shall be constructed, applied and maintained in accordance with the approved sediment control plan and the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas".
 3. Topsoil required for the establishment of vegetation shall be stockpiled in amount necessary to complete finished grading of all exposed areas.
 4. Areas to be filled shall be cleared, grubbed and stripped of topsoil to remove trees, vegetation, roots or other objectionable material.
 5. Areas which are to be topsoiled shall be scarified to a minimum depth of three inches prior to placement of topsoil.
 6. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with local requirements or codes.
 7. All fill to be placed and compacted in layers not to exceed 8 inches in thickness.
 8. Except for approved landfill, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory fill.
 9. Frozen materials or soft, sticky or highly compressible materials shall not be incorporated into fills.
 10. Fill shall not be placed on a frozen foundation.
 11. All benches shall be kept free of sediment during all phases of development.
 12. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specifications for Subsurface Drain or other approved method.
 13. All graded areas shall be permanently stabilized immediately following finished grading.
 14. Stockpiles, borrow areas and spoil areas shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.



- CONSTRUCTION SPECIFICATIONS FOR ST-V**
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 and 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.
 3. All cut and fill slopes shall be 2:1 or flatter.
 4. The stone used in the outlet shall be small riprap 4"-8" along with a 1" thickness of 2" aggregate placed on the upgrade side on the small riprap or embedded filter cloth in the riprap.
 5. 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.
 6. The structure shall be inspected after each rain and repairs made as needed.
 7. Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
 8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
- OPTION:** A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.
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- SEQUENCE OF CONSTRUCTION**
1. Obtain grading permit.
 2. Notify the Howard County Soil Conservation District and the Howard County Bureau of Licenses, Inspections and Permits at least 48 hours before any work begins.
 3. Place stone construction entrance as shown on plan.
 4. Install silt fence and temporary CMP's as shown on plans.
 5. Construct sediment traps and earth diversions dikes as shown on plans, stabilize with temporary seeding.
 6. Begin earthwork operations beginning with topsoil removal and stockpiling.
 7. Start major grading, maintain positive drainage to sediment control structures.
 8. Stabilize rough graded areas per permanent seeding notes.
 9. Place temporary stream diversion pipe with sandbags at both upstream and downstream limits of pipe.
 10. Install CMP's.
 11. Install riprap channel protection at the downstream end of CMP's.
 12. Redirect flow through CMP's.
 13. Grade roads to subgrade and construct storm drain system.
 14. Construct curb and gutter and install base course.
 15. Sediment shall be removed from the sediment traps when the clean-out elevation has been reached.
 16. The contractor shall inspect and provide necessary maintenance on the sediment and erosion control structures shown hereon, after each rainfall on daily basis.
 17. The sediment traps shall be dewatered by pumping. The sediment from the traps shall be placed up grade from the sediment traps in such a manner as not to interfere with construction operations or cause erosion down grade from the sediment trap.
 18. Upon approval of Sediment Control Inspection, remove all sediment control devices and stabilize per permanent seeding notes.
 19. After removal of stone outlet sediment traps, construct riprap outlet protection at outfall of CMP pipes.
 20. Remove inlet protection devices and flush storm drain system.

DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Community Planning and Land Development
 Date: 4/15/91

DEVELOPER'S CERTIFICATION
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF ANY SEDIMENT BEFORE BEGINNING THE PROJECT.
 Date: 8-22-89

ENGINEER'S CERTIFICATION
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE CONDITIONS AND REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Date: 8/22/89

Reviewed for Howard Soil Conservation District and meets technical requirements
 Date: 2/12/90
 This Development Plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
 Date: 2/12/91

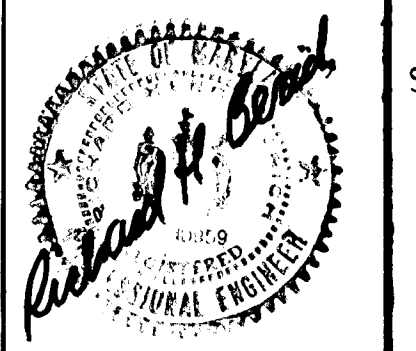
PURDUM & JESCHKE
 CONSULTING ENGINEERS AND LAND SURVEYORS
 1029 North Calvert Street
 Baltimore, Maryland 21202 (301)837-0194

OWNER/DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT LAND COMPANY
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD. 21044

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 Date: 7/18/90
 Chief, Bureau of Highways
 Date: 7/13/90
 Chief, Bureau of Engineering
 Date:

DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Community Planning and Land Development
 Date: 4/15/91

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 Date: 8/22/89



VILLAGE OF LONGREACH
 SECTION 3 AREA 4 - ROAD CONSTRUCTION PLANS
 STORM DRAINAGE PLANS
 PARCELS: 27, 50, 229, 242, 254, 255 & 448
 REFERENCE: SB7-46
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.
 DATE: 8-22-89
 SCALE: NOTED
 SHEET 14 OF 14
 DES: GDT
 DRAWN: RHB
 CHK: RHB

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