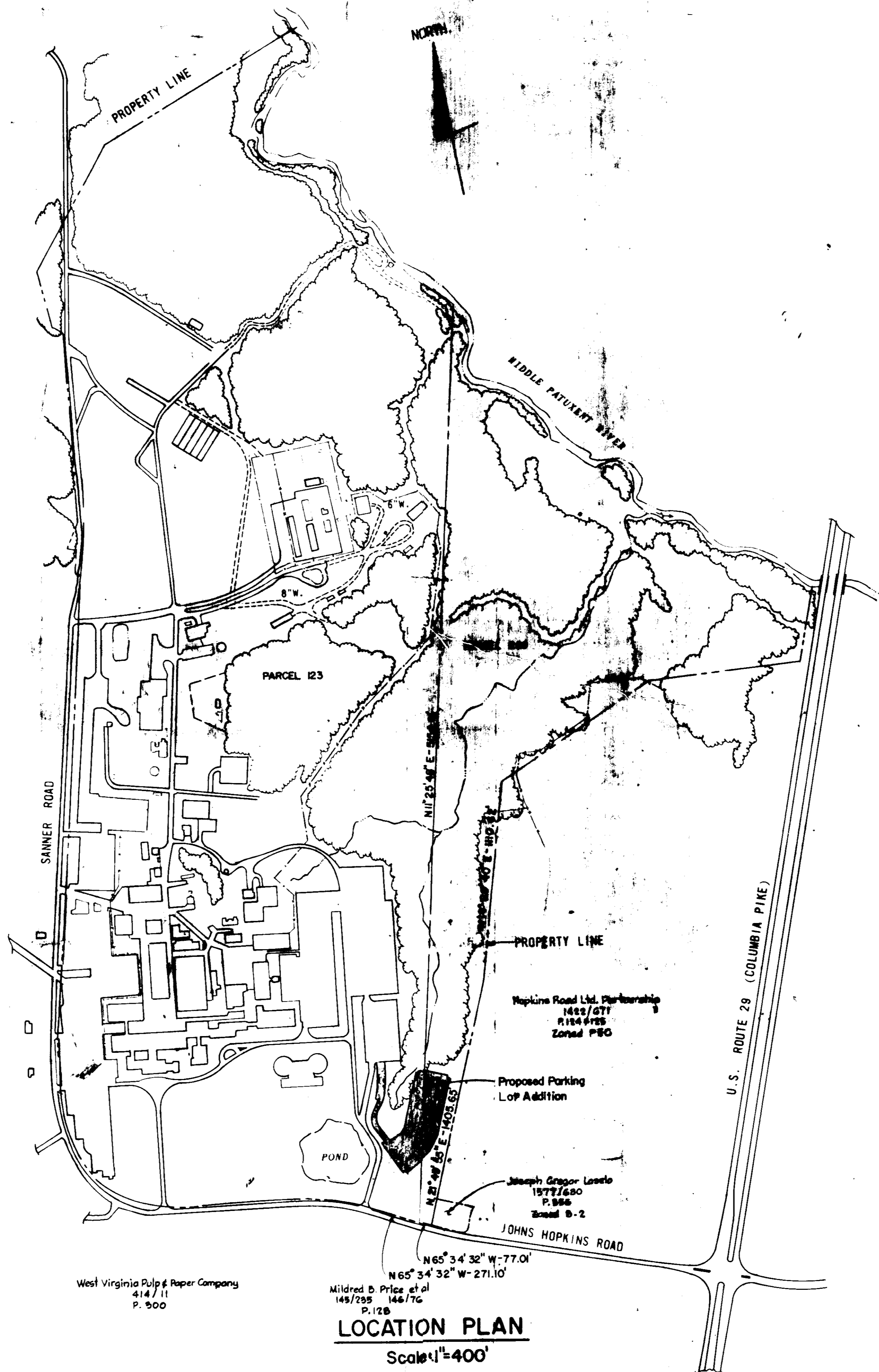


GENERAL NOTES

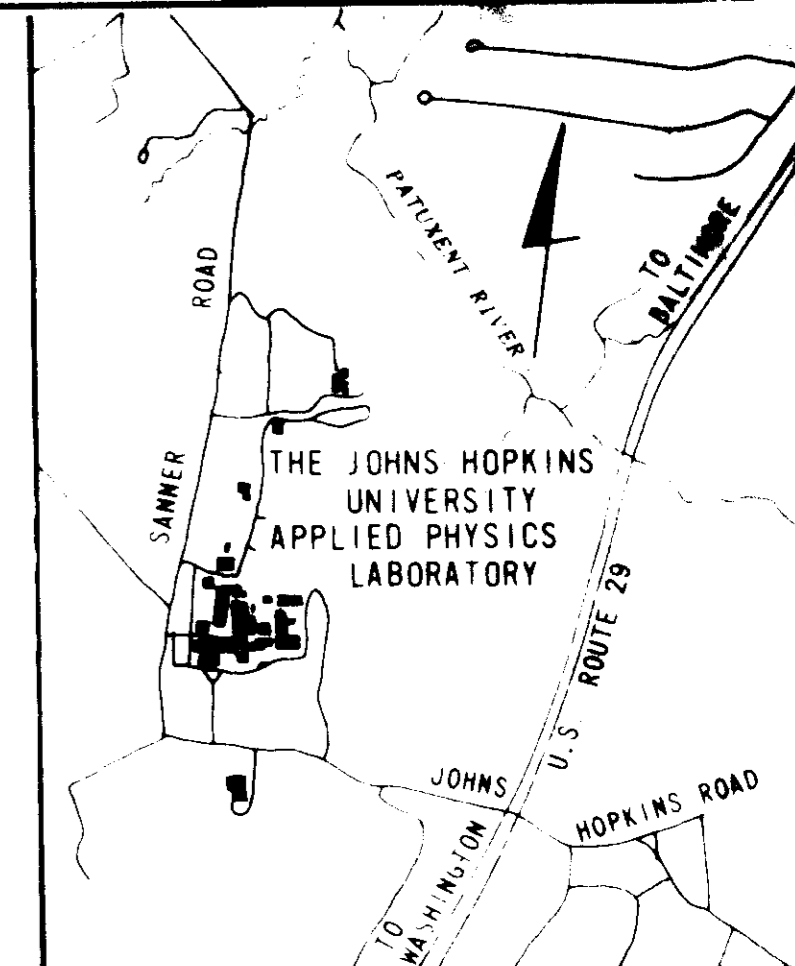
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ELEVATIONS SHOWN ARE BASED ON THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY DATUM. JHU-APL-DATUM - 0.94' = HOWARD COUNTY DATUM.
- THE CONTRACTOR SHALL CALL MISS UTILITY (301) 559-0100, FIVE DAYS PRIOR TO THE START OF CONSTRUCTION.
- POLY FILTER X FILTER CLOTH BLANKET OR EQUAL SHALL BE PLACED UNDER ALL STONE RIP RAP.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL CONTACT MR. ARTHUR STUCKI, PLANT ENGINEER, (301) 792-5133 AT LEAST 5 WORKING DAYS PRIOR TO COMMENCING ANY WORK.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT \circ ELEVATIONS.
- THE CONTRACTOR SHALL CONTACT THE CONSTRUCTION INSPECTION / SURVEY DIVISION, 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK 792-2630.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED.
- THE CONTRACTOR SHALL PROVIDE A JOINT WITHIN 2'-0" EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PERMANENTLY SEED AND STABILIZE ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.

SITE DATA

1. ZONING	RURAL, R
2. SITE AREA	4.1 AC.
3. ACREAGE OF ENTIRE PROPERTY	366 AC.
4. EXISTING BUILDING COVERAGE	14.3 AC. = 3.96%
5. TOTAL NUMBER OF EXISTING EMPLOYEES/ PERSONNEL ON THE ENTIRE SITE	3100
6. TOTAL NUMBER OF PARKING SPACES REQUIRED	2258
7. TOTAL NUMBER PARKING SPACES PROVIDED	3160
EXISTING SPACES	2809
PROPOSED SPACES	371
8. EXISTING GREEN AREA	307.5 AC. = 84.0%
9. PROPOSED GREEN AREA	304.8 AC. = 83.3%



LOCATION PLAN
Scale 1" = 400'



VICINITY MAP
Scale 1" = 2000'

SHEET INDEX

- COVER SHEET
- SITE PLAN
- PROFILES, DETAILS
- PROFILES, DETAILS
- ROAD PROFILES
- SEDIMENT CONTROL PLAN
- SEDIMENT CONTROL DETAILS AND NOTES

ADDRESS CHART	
PARCEL NUMBER	STREET ADDRESS
P123, 289	11100 JOHNS HOPKINS ROAD
SUBDIVISION NAME	SECT./AREA LOT/PARCEL
J.H.U. APPLIED PHYSICS LAB	N/A P123, 289
PLAT # OR L/BLOCK #	ZONE TAX/ZONE MAP ELEC. DIST. CENSUS TR.
234/304 400/625	16 R 41 5 th 6051
WATER CODE	SEWER CODE
E-21	6480000
APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
JAMES H. CLINE, ENGINEER DATE 11/28/88	
APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT	
JOSEPH BYLES, ENGINEER DATE 7/1/88	
APPROVED FOR PLANNING AND ZONING HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
[Signature], ENGINEER DATE 2-10-88	
APPROVED FOR PLANNING AND LAND DEVELOPMENT HOWARD COUNTY DEPARTMENT OF PLANNING AND LAND DEVELOPMENT	
[Signature], ENGINEER DATE 2/2/88	

APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 1-14-88

T.M.A. R. BLARDT AND ASSOCIATES
100 EAST PAUL STREET
BALTIMORE, MARYLAND 21202



APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
JOHNS HOPKINS ROAD HOWARD COUNTY, MARYLAND
APPROVED FOR THE UNIVERSITY BY
DATE 1/8/88

PARKING LOT ADDITION
TO SDP-87-168
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

COVER SHEET
FIFTH ELECTION DISTRICT
TAX MAP 41

1	1-10-87	As per DPW Comments
2	12-4-87	Added Plunge Pool
3	4-16-88	Added 3'-5"

SCALE AS SHOWN
DRAWING NO. 1
SHEET NO. 1
OF 7
DATE 6-29-87
SDP-88-06

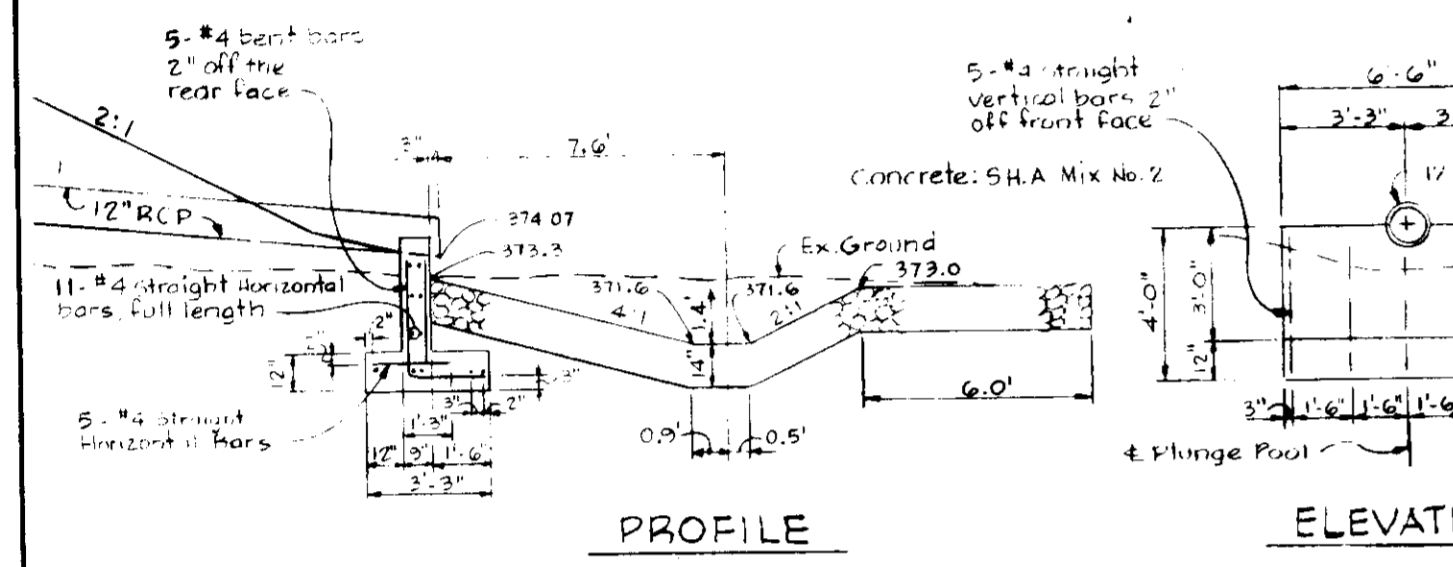
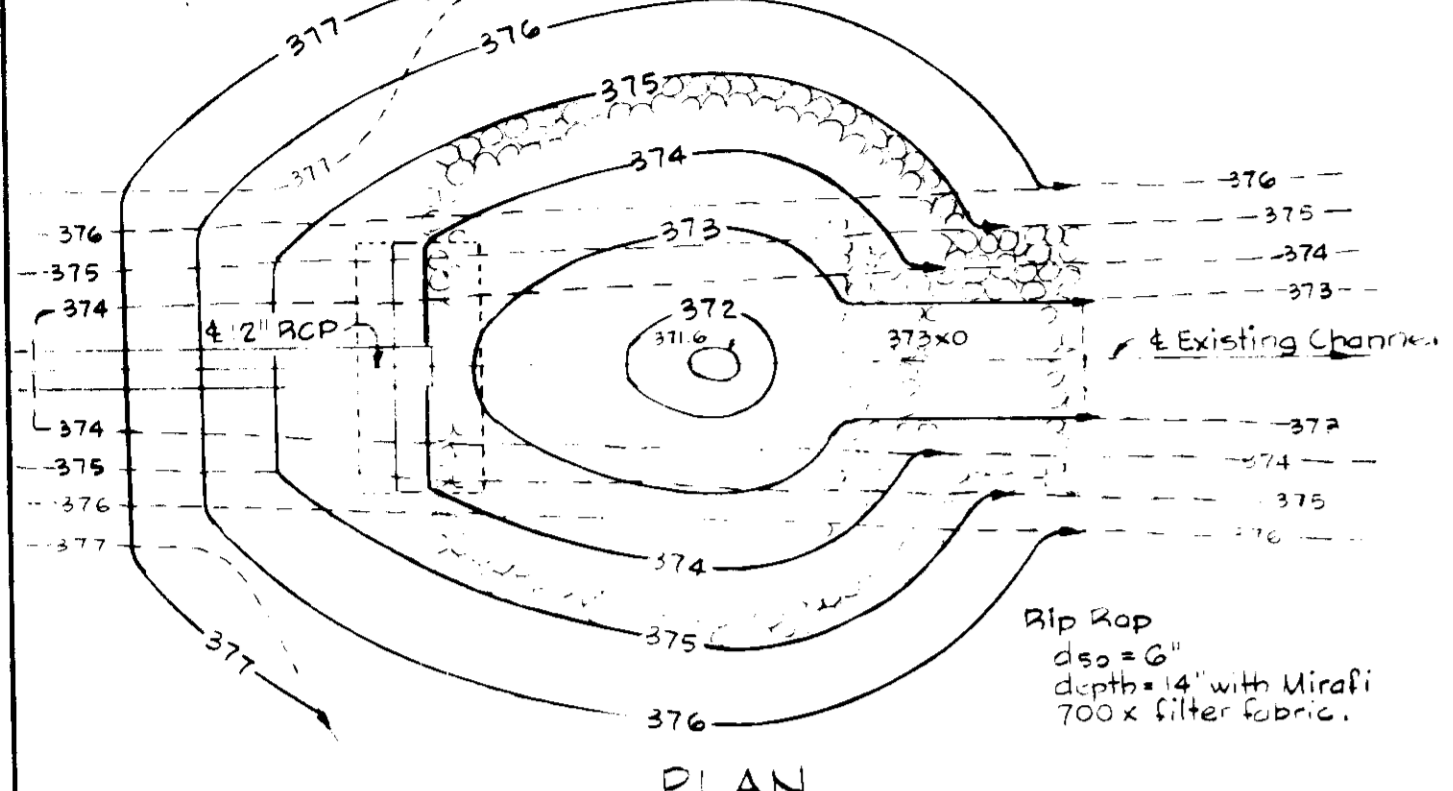
DRAIN STRUCTURE SCHEDULE						
No.	Type	Top Elev.	Inv. In.	Inv. Out.	Location	Remarks
I-1	A-5	370.76	383.07	382.87	14 25' Lt. & Sta. 3+80.00	
I-2	A-5	370.76	383.03	383.30	14 25' Lt. & Sta. 3+80.00	W/Deflectors
I-3	A-5	373.02	388.23	387.78	31 92' Lt. & Sta. 6+15.65	
I-4	A-5	374.00	392.30	392.30	31 92' Lt. & Sta. 6+15.65	W/Deflectors
I-5	A-5	374.03	392.08	391.88	31 92' Lt. & Sta. 6+15.65	W/Deflectors
I-6	A-5	387.02	388.87	388.66	See Plan	
I-7	A-5	390.37	388.57	388.37	31 92' Lt. & Sta. 4+54.65	W/Deflectors
I-8	A-5	391.72	388.56	388.36	31 92' Lt. & Sta. 11+01.00	W/Deflectors
I-5A	D	372.23	372.02	372.02	42' Pt. & Sta. 8+14.00	@ E. of Swale
M-1	Std	372.00	384.16	382.41	32' Pt. & Sta. 15+00.65	G.S.I.C.
S-1	18" Prec.		382.71		See Plan	SD 3.51
S-2	21" Prec.		382.03		See Plan	SD 3.31

INLET SUMMARY			
No.	AREA (Ac)	C	Tc (min.)
I-1	0.05	0.95	5.0
I-2	1.60	0.27	15.4
I-3	0.24	0.87	6.0
I-4	0.30	0.86	6.9
I-5	0.40	0.74	6.4
I-6	0.78	0.82	6.9
I-7	0.40	0.84	6.9
I-8	0.61	0.58	10.6
Ex.I	2.04	0.58	10.6
I-5A	2.04	0.24	13.0

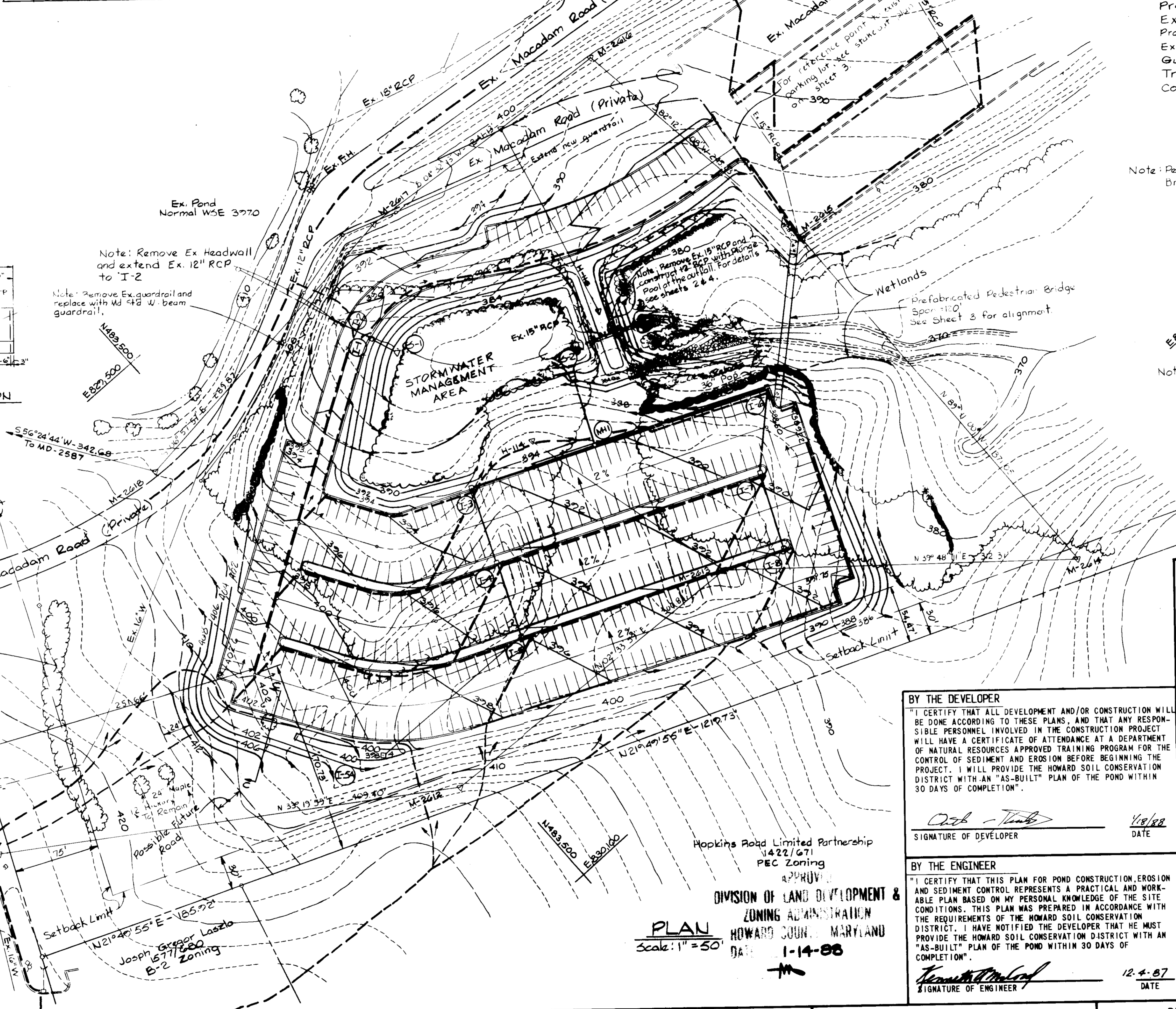
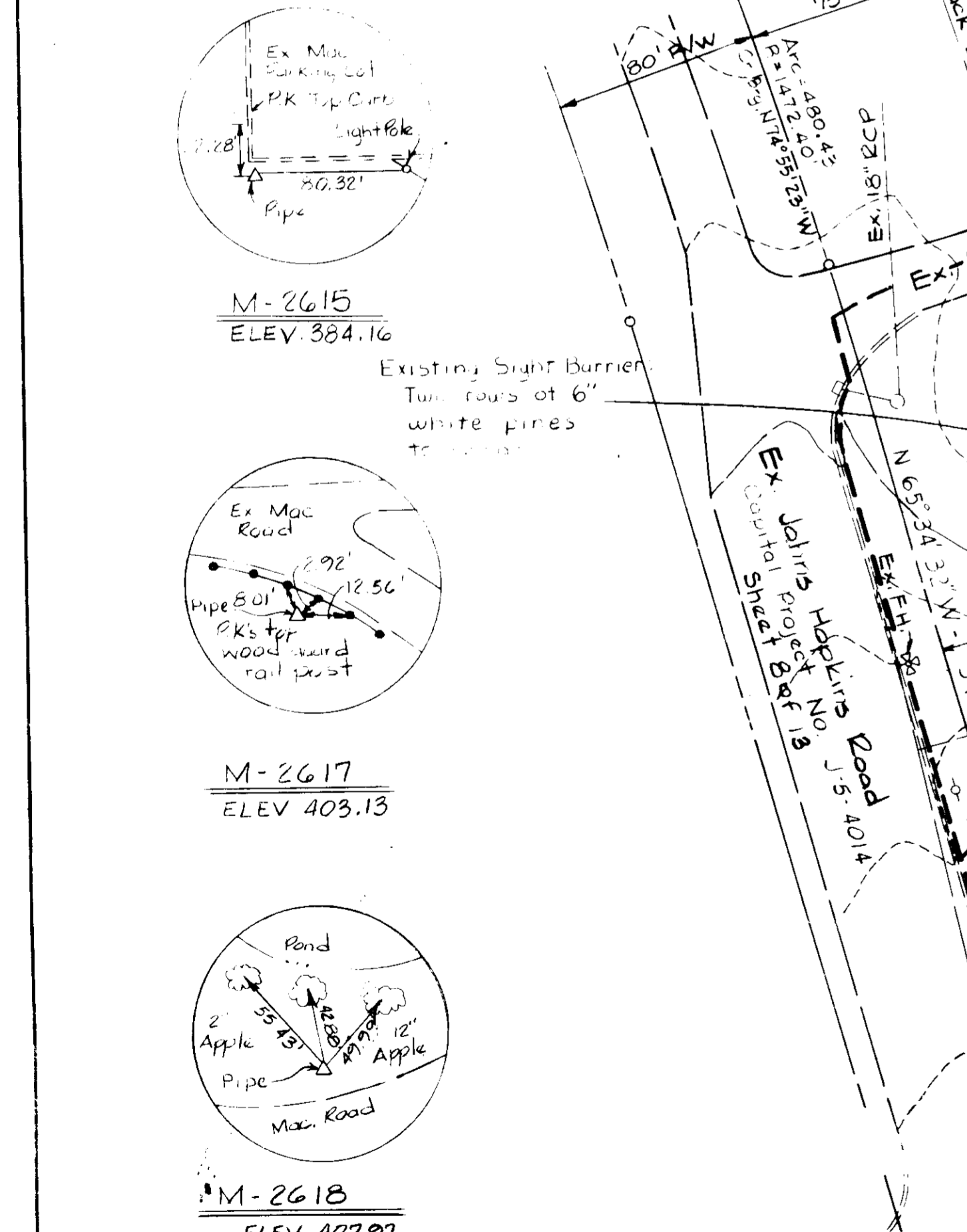
Stormwater Management Data at Dam				
Storm (year)	Peak Inflow (cfs)	Peak Outflow (cfs)	Storage (Ac.Ft)	Peak Elev (ft.)
2	11.6	5.4	0.18	381.86
10	27.7	7.9	0.66	383.93
100	46.8	23.5	1.00	384.82

LEGEND

- Existing Contour ----- 389 -----
- Proposed Contour ----- 372 -----
- Proposed Spot Elevation 388.50 -x-
- Property Line -----
- Wetlands Boundary -----
- Stream or Edge of Water -----
- Inlet Drainage Area Boundary -----
- Existing Tree Line -----
- Proposed Tree Line -----
- Existing Curb -----
- Proposed Curb -----
- Existing Storm Drains -----
- Proposed Storm Drains -----
- Existing Water Mains -----
- Guard Rail -----
- Traverse -----
- Concrete Walk -----



END WALL AND PLUNGE POOL DETAILS
Scale: 1"=5'



Note: Pedestrian Bridge to be a Continental Custom Bridge Company Low Profile Design, 6' wide.

Note: Except where labelled, the woods are pioneer growth species. All wooded areas outside the shaded tree line will be completely cleared. The John Hopkins University Applied Physics Lab will plant landscape trees in the island barriers and around the perimeter of the completed parking lot addition.

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

James M. Helmer 1-21-88
U.S. SOIL CONSERVATION SERVICE DATE

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

Robert W. Zichner 1-21-88
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *James M. Helmer* DATE: 1/21/88
CHIEF BUREAU OF ENGINEERING: *James M. Helmer* DATE: 1-27-88

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER: *James M. Helmer* DATE: 3/4/88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR: *William A. Helmer* DATE: 2-10-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *William A. Helmer* DATE: 2/10/88

BY THE DEVELOPER

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

Robert W. Zichner 1/8/88
SIGNATURE OF DEVELOPER DATE

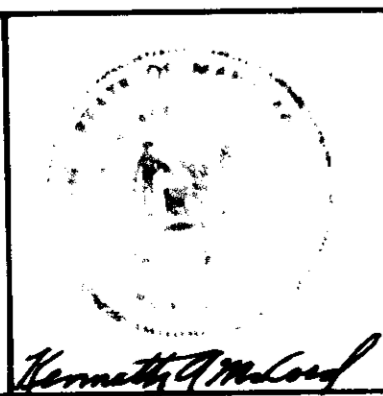
BY THE ENGINEER

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION".

James M. Helmer 12-4-87
SIGNATURE OF ENGINEER DATE

APPROVED: **PLANNING AND ZONING ADMINISTRATION**
HOWARD COUNTY, MARYLAND
DATE: 1-14-88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2715 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218



APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
JOHNS HOPKINS ROAD HOWARD COUNTY, MARYLAND
APPROVED FOR THE UNIVERSITY BY: *William A. Helmer*
DATE: 1/8/88 TITLE: *Plant Engineer*

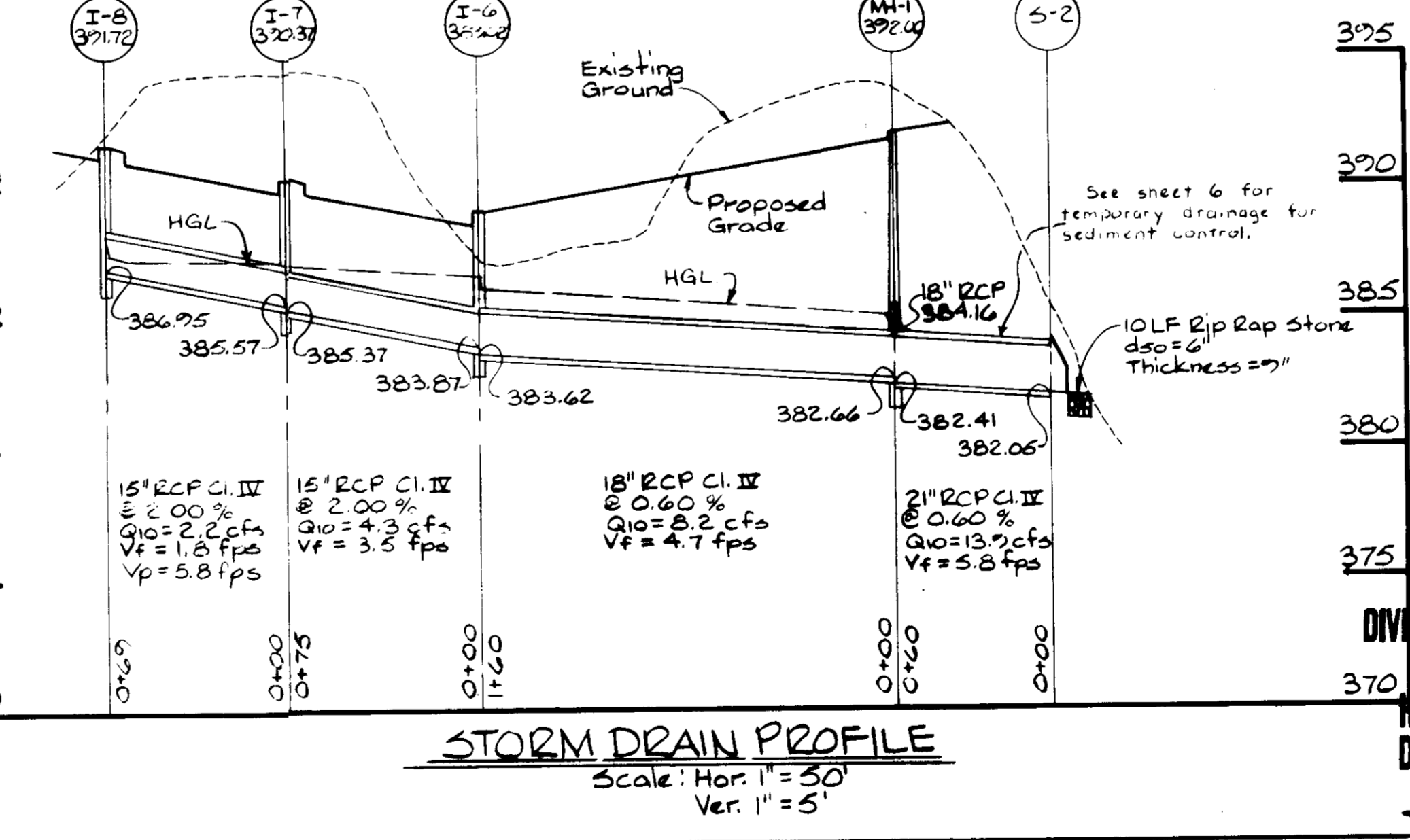
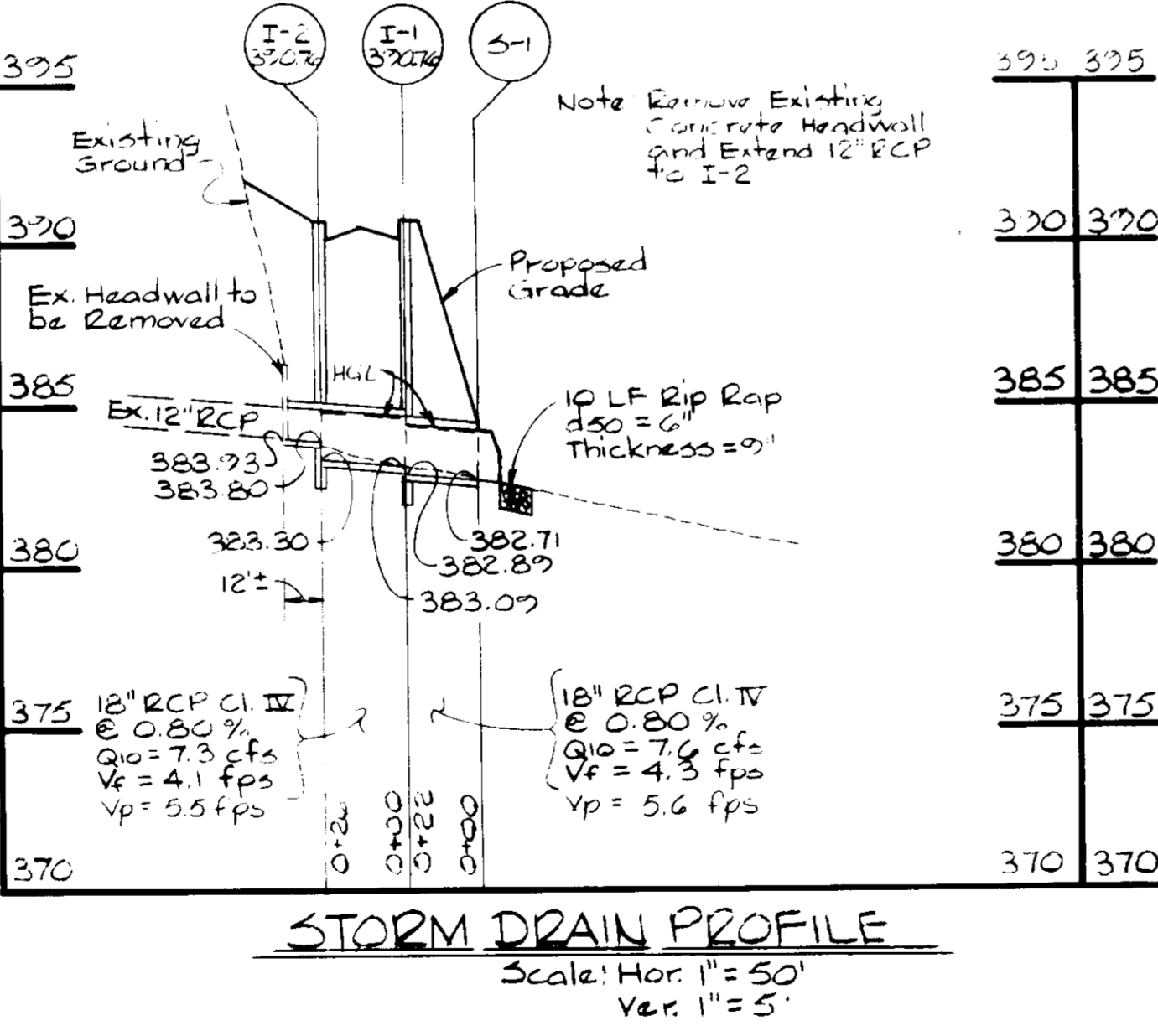
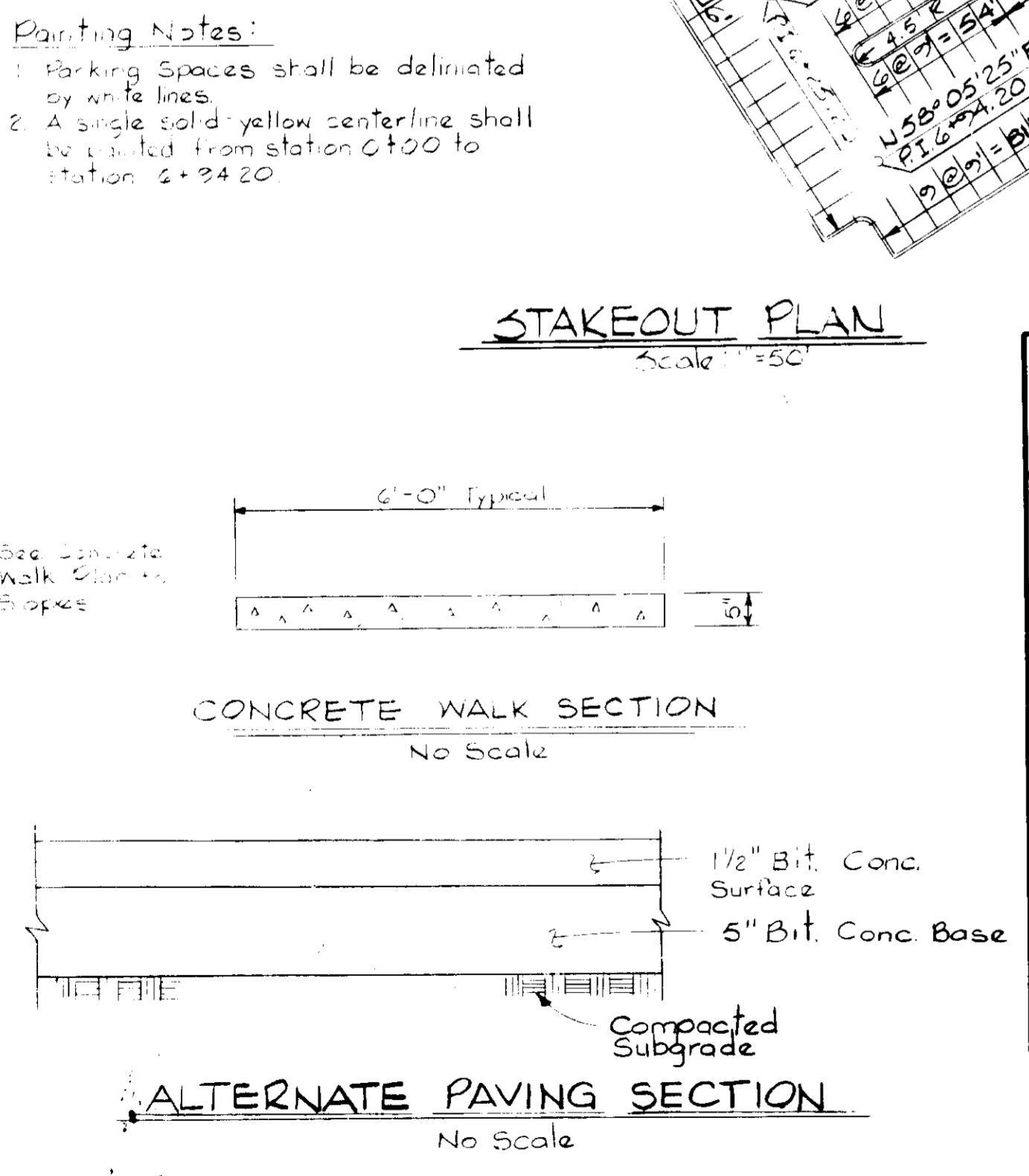
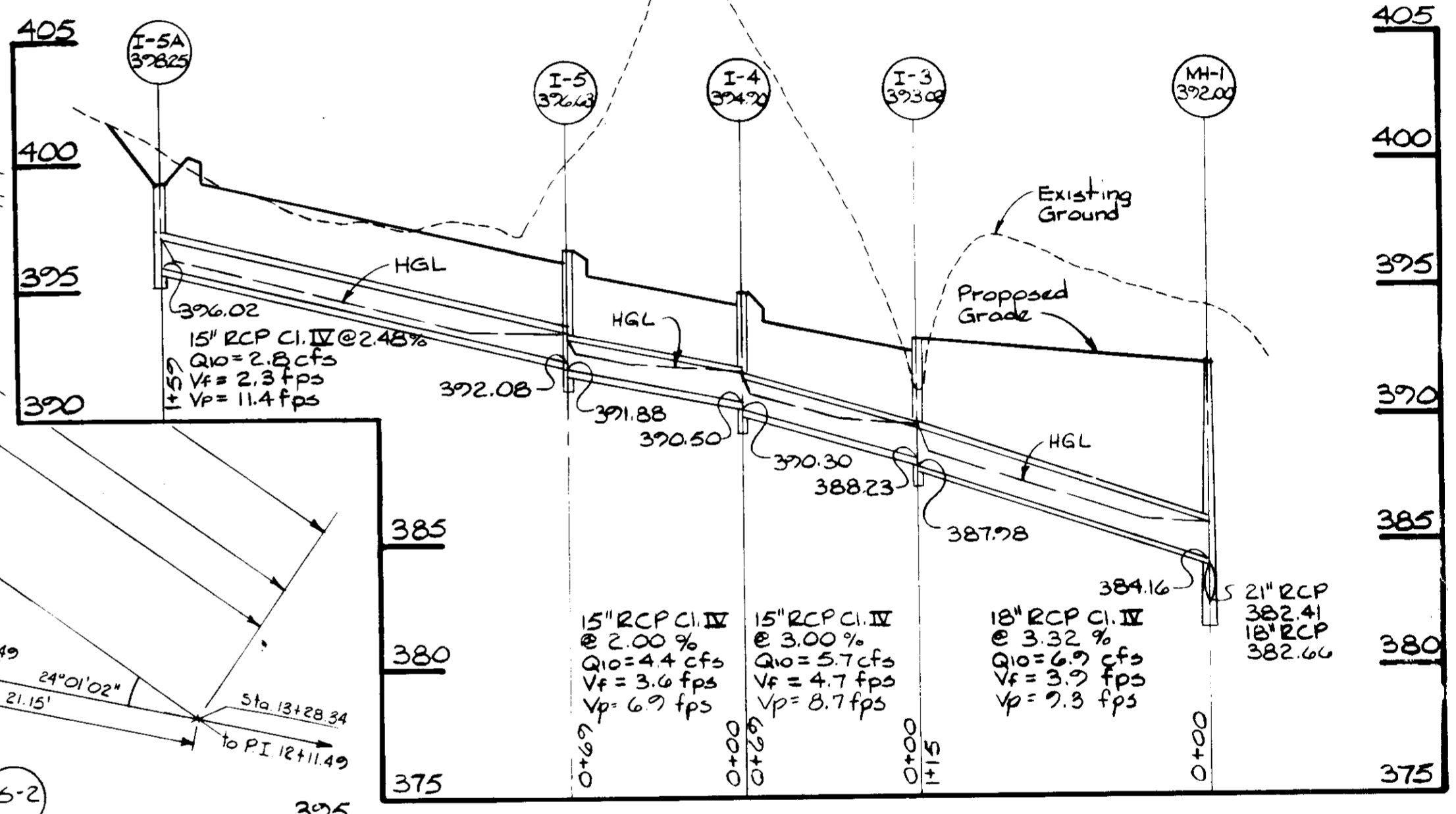
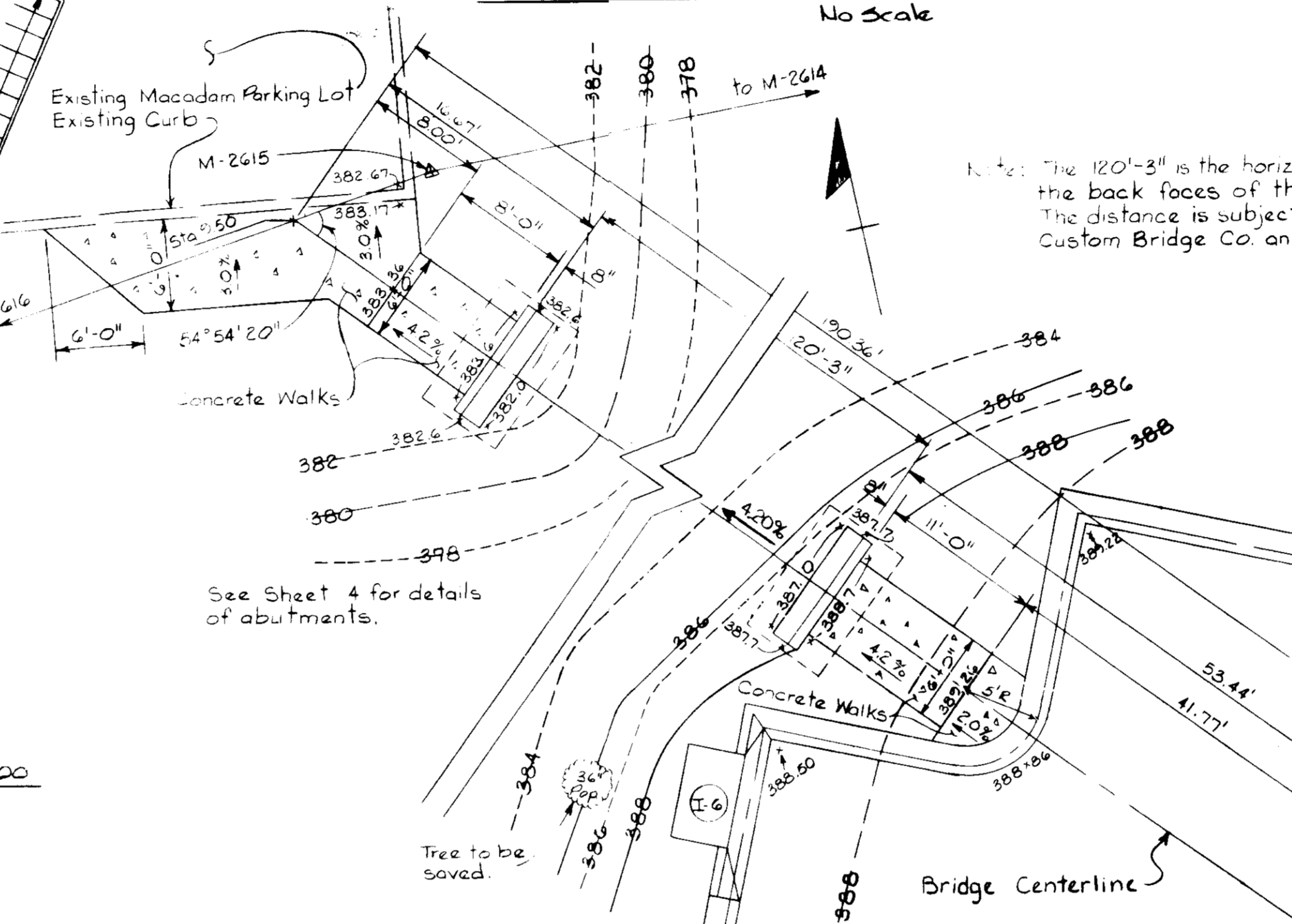
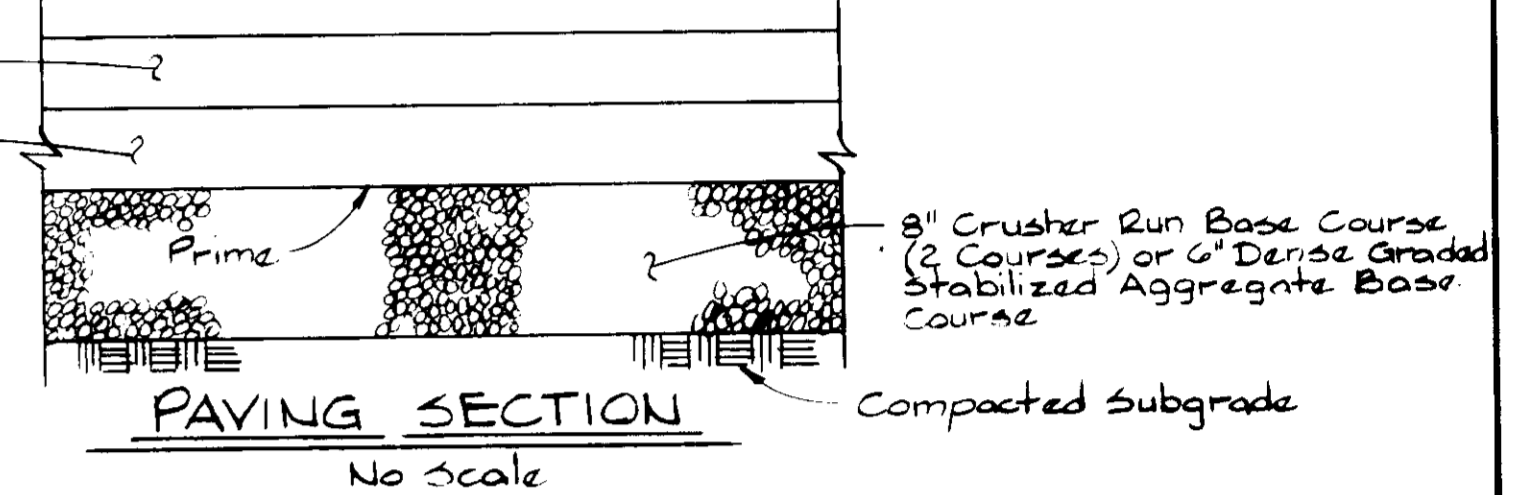
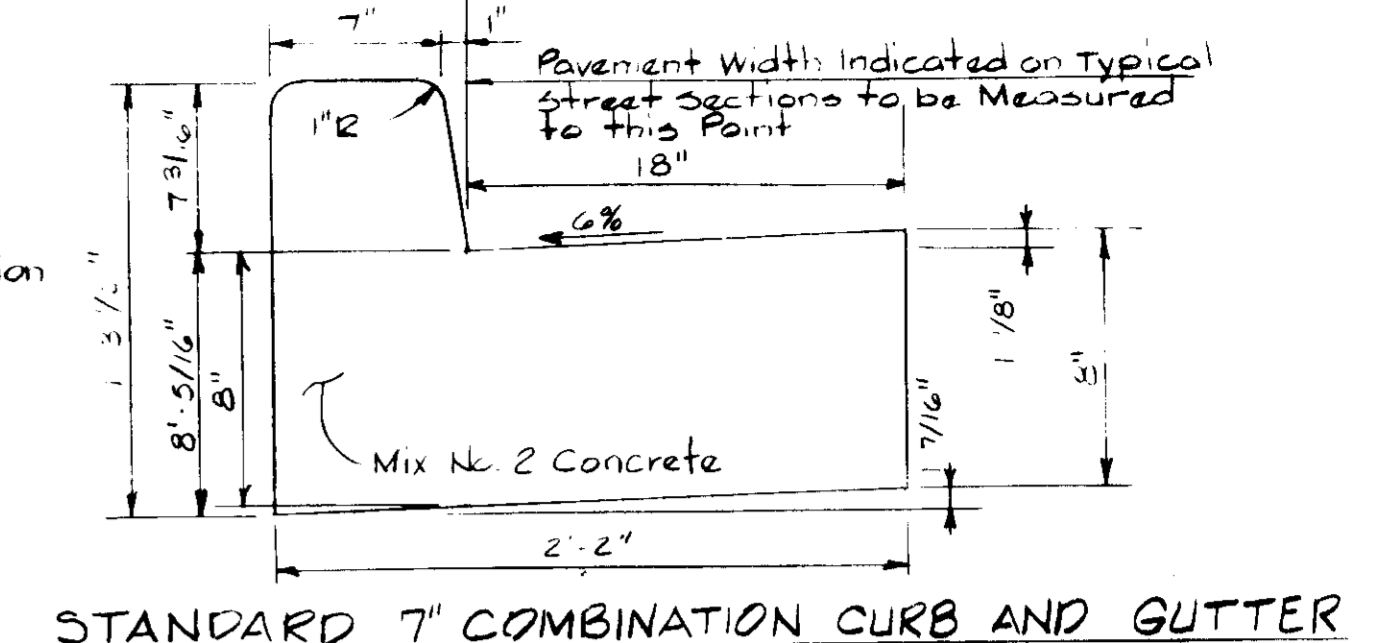
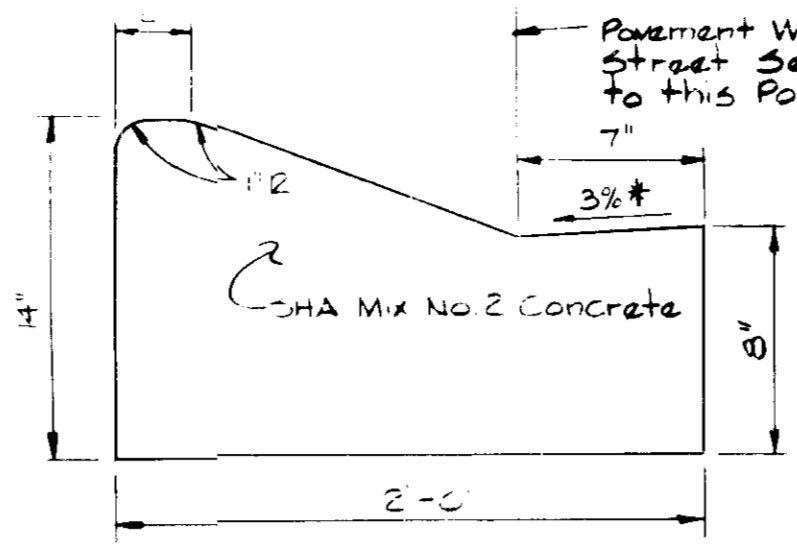
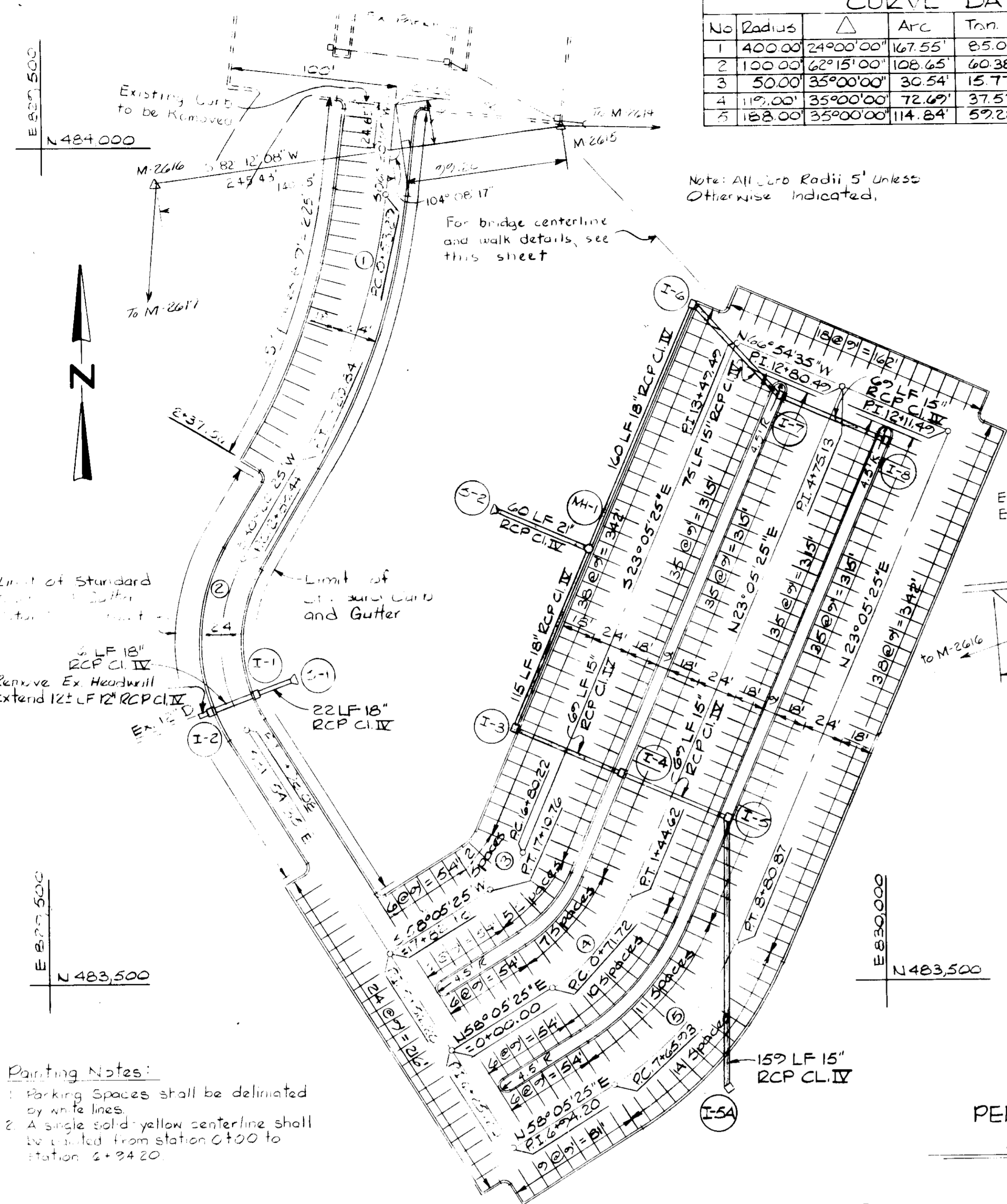
PARKING LOT ADDITION
TO SDP-87-168
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

SITE PLAN
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TAX MAP 41 PARCEL 123 AND 289

REVISIONS	
1	7-10-87 As per DPW Comments
2	12-4-87 Added Plunge Pool
3	4-18-88 Added I-5A

SCALE: 1"=50'
DRAWING SHEET NO. 2 OF 7
DATE: 6-29-87

CURVE DATA						
No	Radius	Δ	Arc	Tan	Chord	Chd Bearing
1	400.00	24°00'00"	167.55'	85.02'	166.33'	S18°20'25"W
2	100.00	62°15'00"	108.65'	60.38'	103.38'	S00°47'05"E
3	50.00	35°00'00"	30.54'	15.77'	30.07'	S40°35'25"W
4	110.00	35°00'00"	72.69'	37.52'	71.57'	N40°35'25"E
5	118.00	35°00'00"	114.84'	59.28'	113.07'	N40°35'25"E



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *Ramsey* DATE: 1/21/88

CHIEF BUREAU OF ENGINEERING: *[Signature]* DATE: 1-27-88

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER: *[Signature]* DATE: 2/1/88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR: *[Signature]* DATE: 2-10-88

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *[Signature]* DATE: 2/2/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
JOHNS HOPKINS ROAD HOWARD COUNTY, MARYLAND

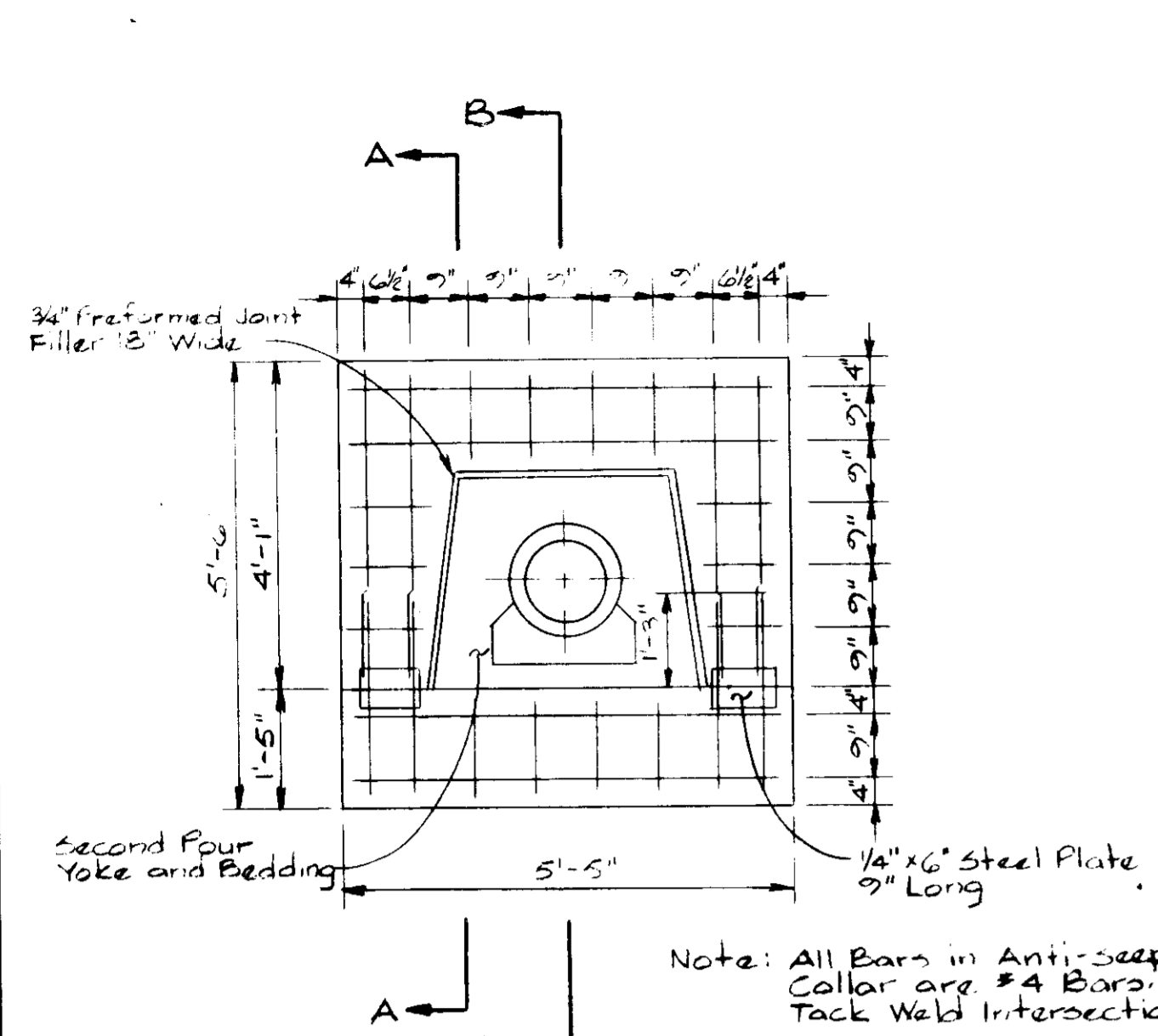
APPROVED FOR THE UNIVERSITY BY: *[Signature]*
DATE: 1/18/88 TITLE: *Cloud Engineer*

PARKING LOT ADDITION
TO SDP-87-168
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

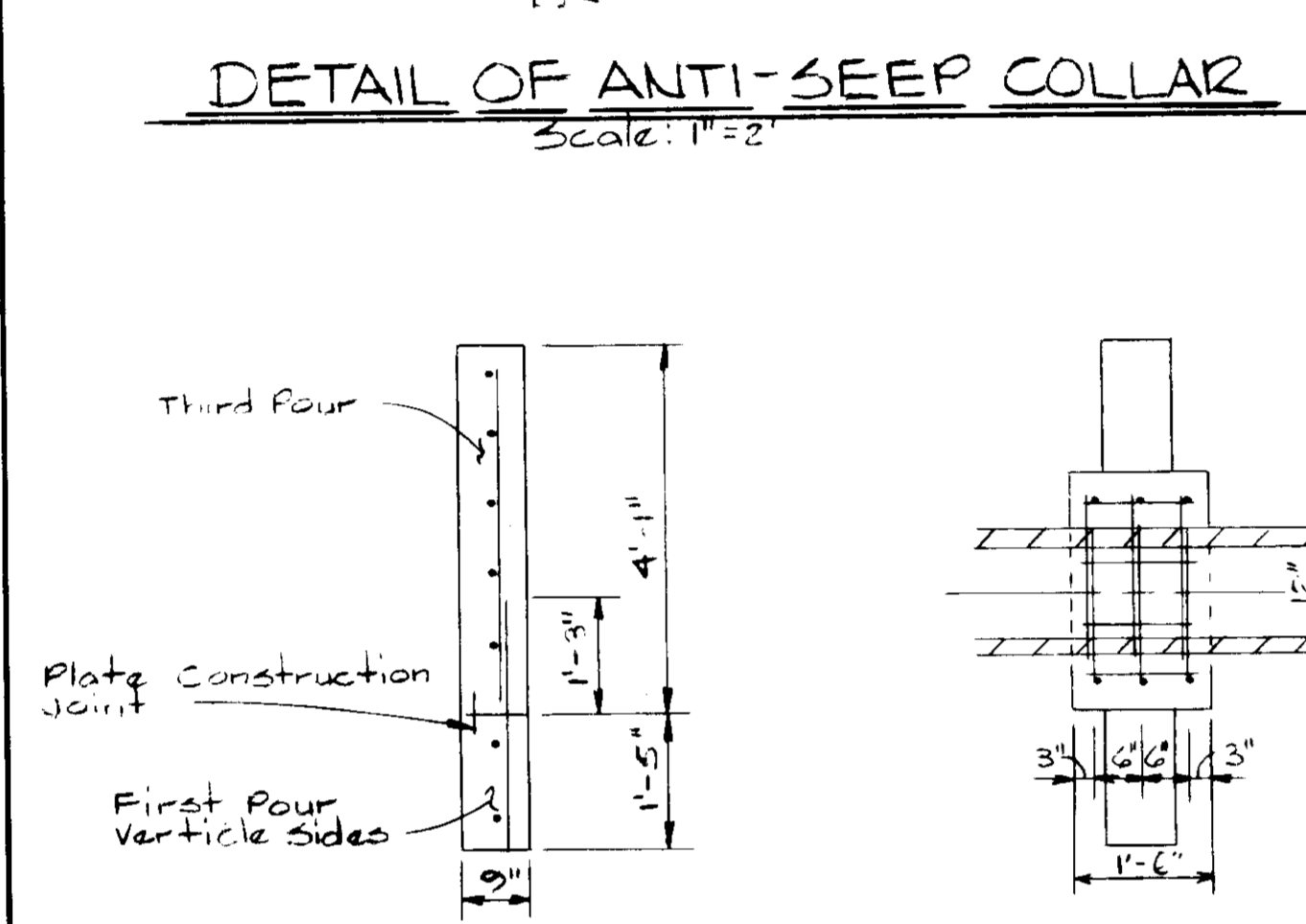
PROFILES, DETAILS
FIFTH ELECTION DISTRICT
TAX MAP 41
HOWARD COUNTY, MARYLAND
PARCEL 123 AND 289

REVISIONS		SCALE: AS SHOWN	DRAWING
1	1-10-87 As per DPW Comment	SHEET NO. 3 OF 7 DATE: 6-29-86	3
2	1-18-88 Added I-5A		

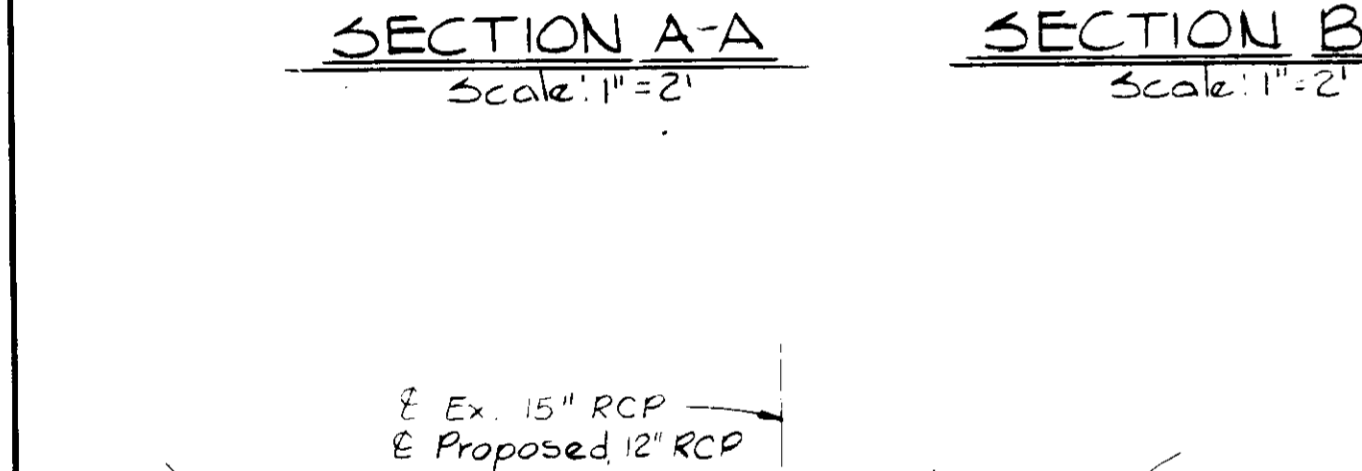
SDP-88-06



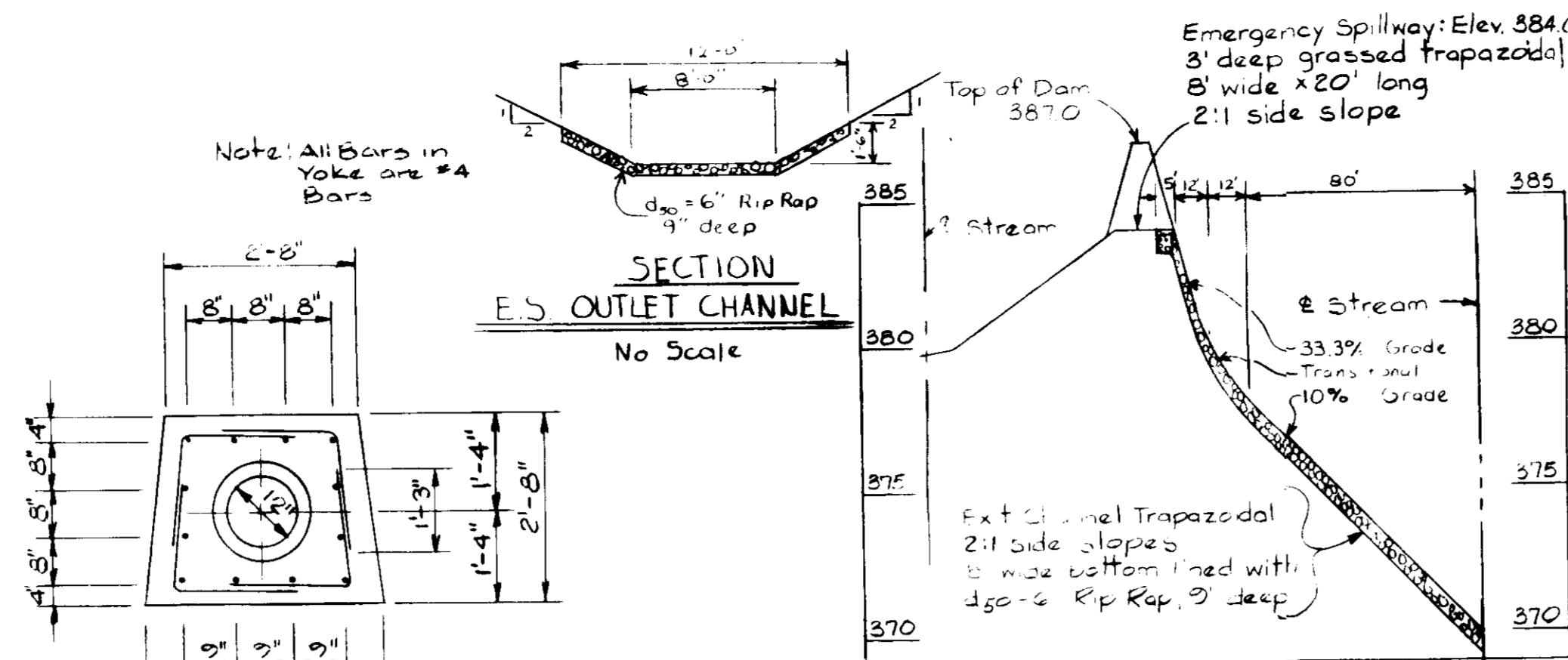
DETAIL OF ANTI-SEEP COLLAR Yoke
Scale: 1"=2'



DETAIL OF ANTI-SEEP COLLAR
Scale: 1"=2'

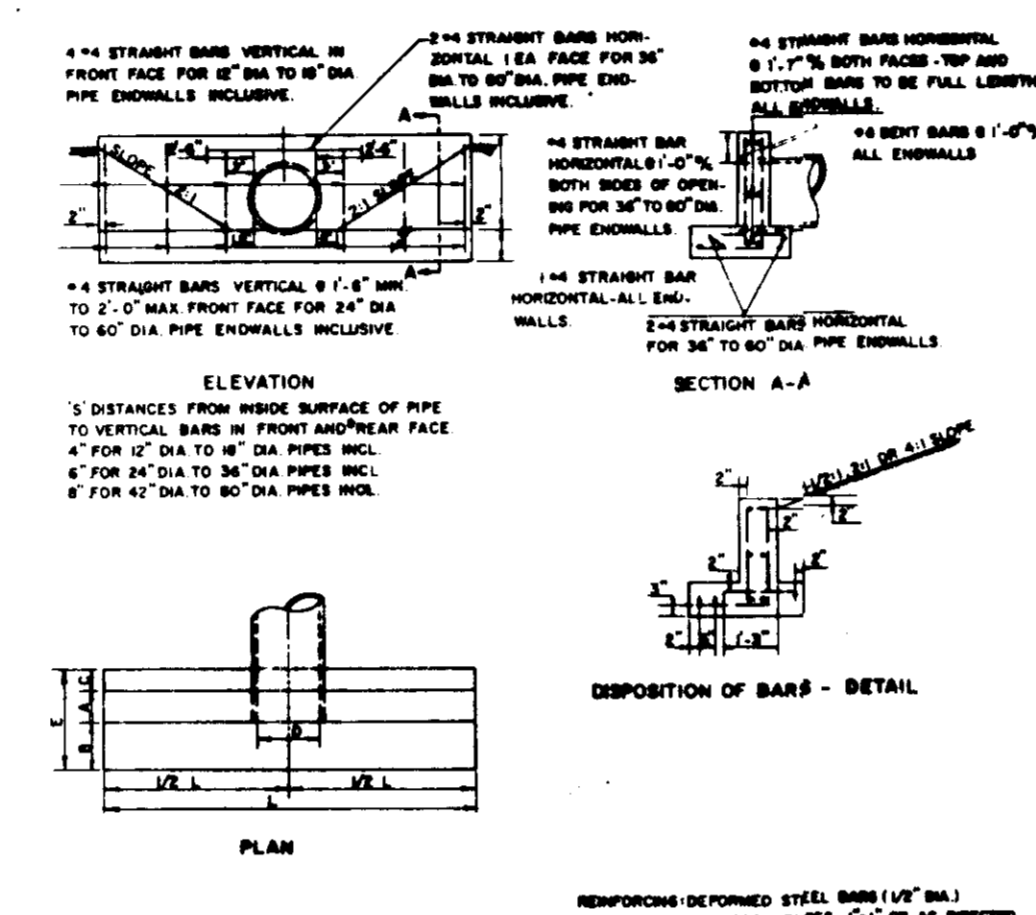
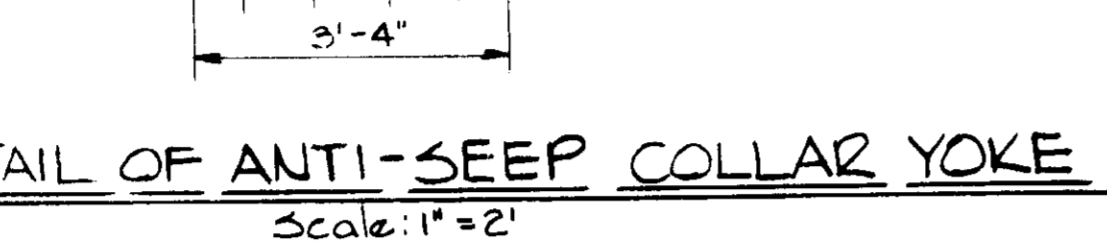


SECTION A-A Scale: 1"=2'
SECTION B-B Scale: 1"=2'

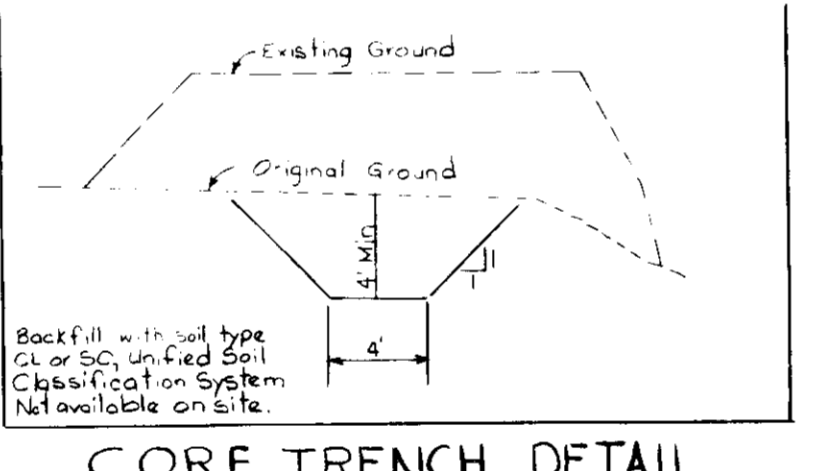


SECTION E.S. OUTLET CHANNEL
No Scale

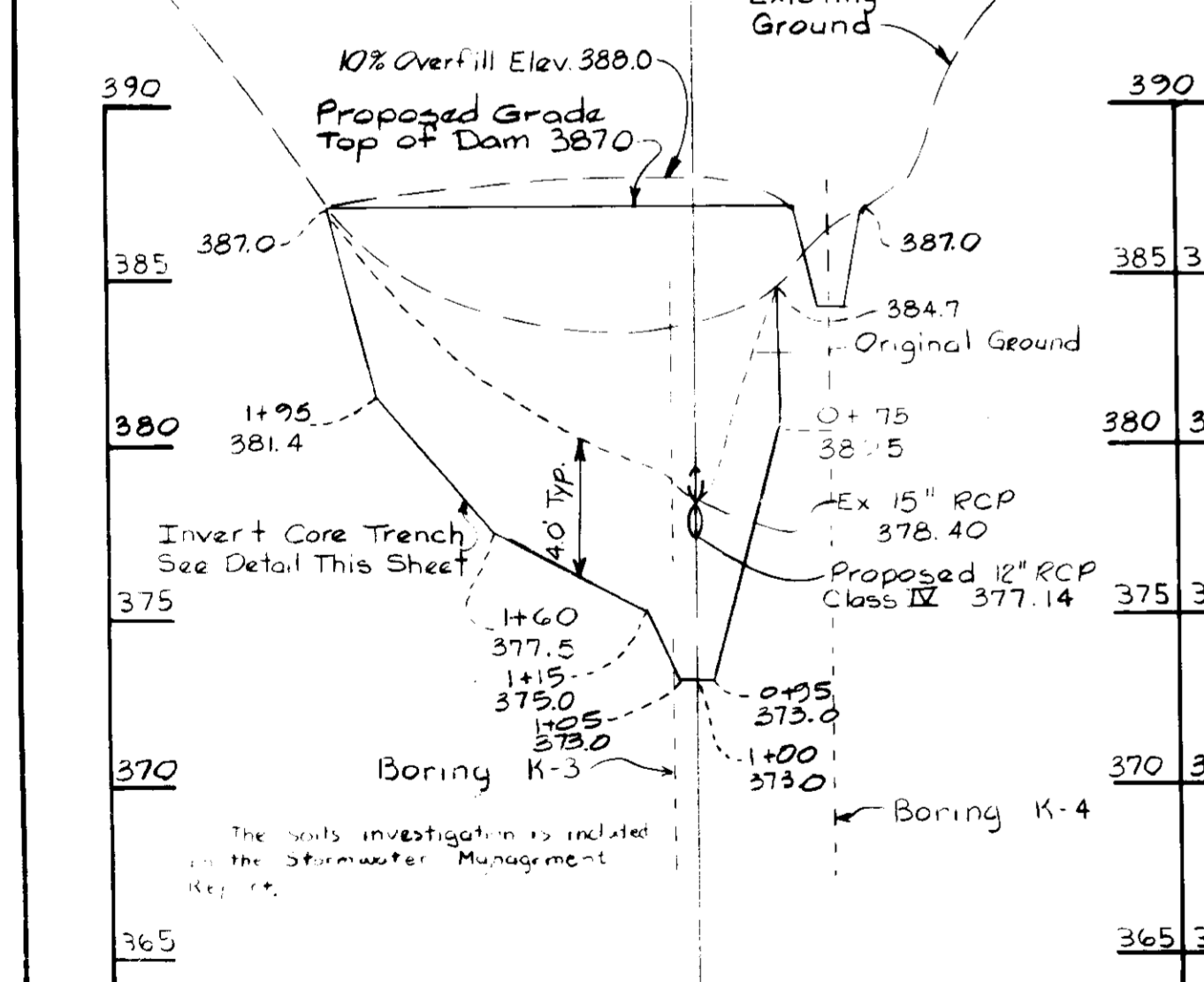
PROFILE EMERGENCY SPILLWAY
Scale: Horz: 1"=50' Vert: 1"=5'



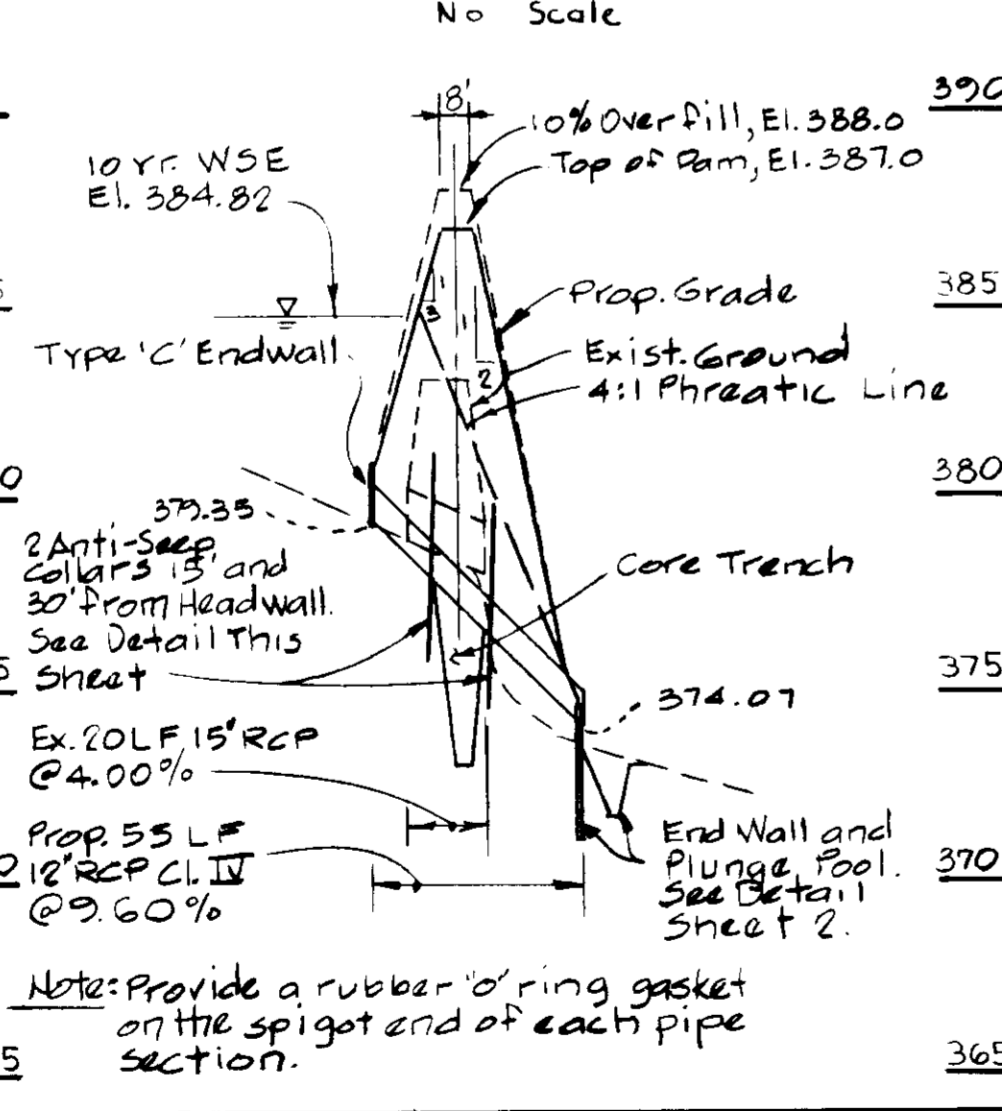
NO.	DESCRIPTION	QUANTITY	UNIT	DATE
1	4" STRAIGHT BARS VERTICAL IN FRONT FACE FOR 36" DIA TO 60" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
2	4" STRAIGHT BARS HORIZONTAL IN FRONT FACE FOR 36" DIA TO 60" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
3	4" STRAIGHT BARS VERTICAL IN REAR FACE FOR 36" DIA TO 60" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
4	4" STRAIGHT BARS HORIZONTAL IN REAR FACE FOR 36" DIA TO 60" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
5	4" STRAIGHT BARS VERTICAL IN BOTH SIDES OF OPENING FOR 36" DIA TO 60" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
6	4" STRAIGHT BARS HORIZONTAL IN BOTH SIDES OF OPENING FOR 36" DIA TO 60" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
7	4" STRAIGHT BARS VERTICAL IN BOTH SIDES OF OPENING FOR 60" DIA TO 84" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
8	4" STRAIGHT BARS HORIZONTAL IN BOTH SIDES OF OPENING FOR 60" DIA TO 84" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
9	4" STRAIGHT BARS VERTICAL IN BOTH SIDES OF OPENING FOR 84" DIA TO 108" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
10	4" STRAIGHT BARS HORIZONTAL IN BOTH SIDES OF OPENING FOR 84" DIA TO 108" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
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12	4" STRAIGHT BARS HORIZONTAL IN BOTH SIDES OF OPENING FOR 108" DIA TO 132" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
13	4" STRAIGHT BARS VERTICAL IN BOTH SIDES OF OPENING FOR 132" DIA TO 156" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
14	4" STRAIGHT BARS HORIZONTAL IN BOTH SIDES OF OPENING FOR 132" DIA TO 156" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
15	4" STRAIGHT BARS VERTICAL IN BOTH SIDES OF OPENING FOR 156" DIA TO 180" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88
16	4" STRAIGHT BARS HORIZONTAL IN BOTH SIDES OF OPENING FOR 156" DIA TO 180" DIA PIPE ENDS ONLY INCLUDE	1	EA	12-88



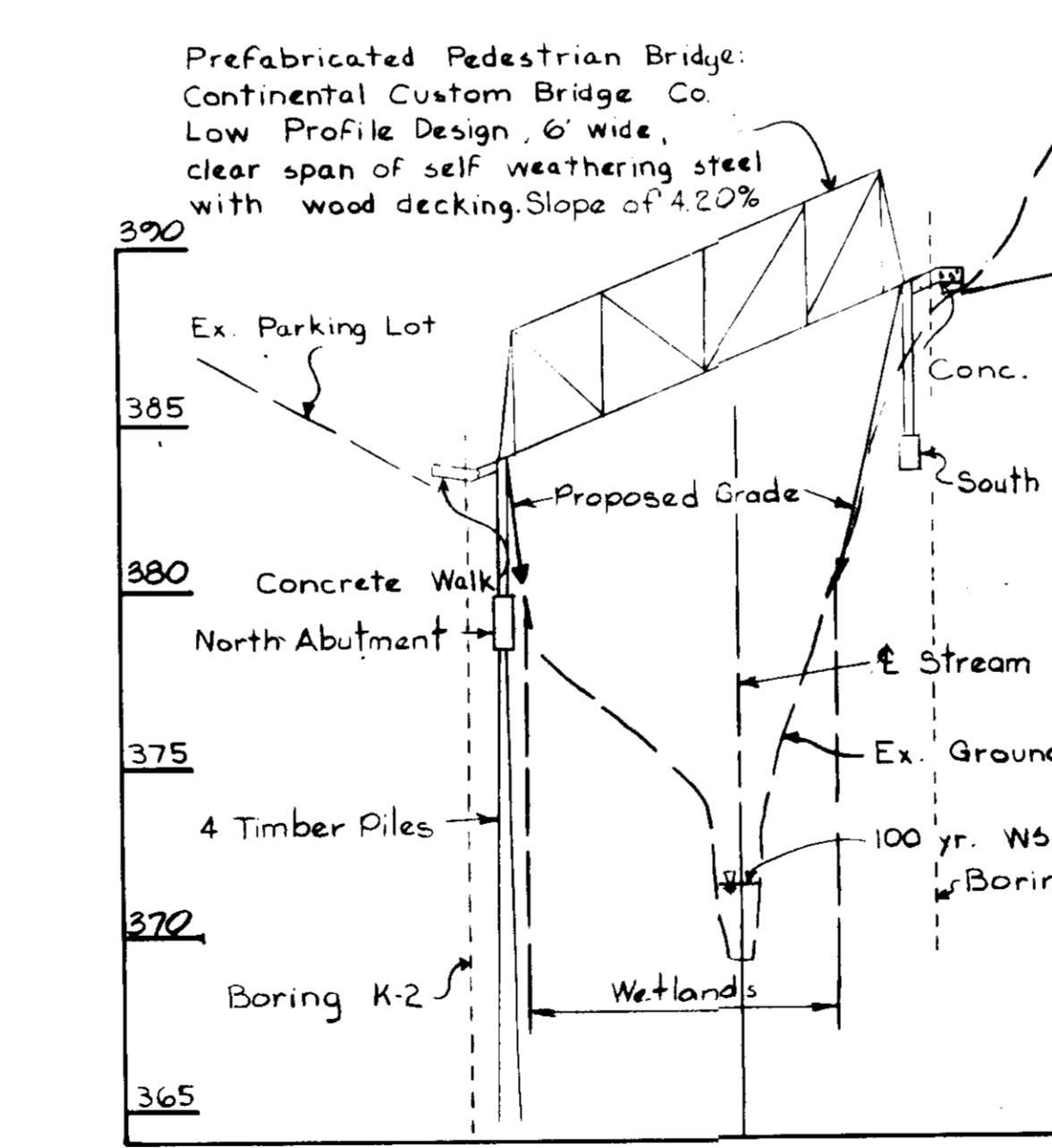
CORE TRENCH DETAIL
No Scale



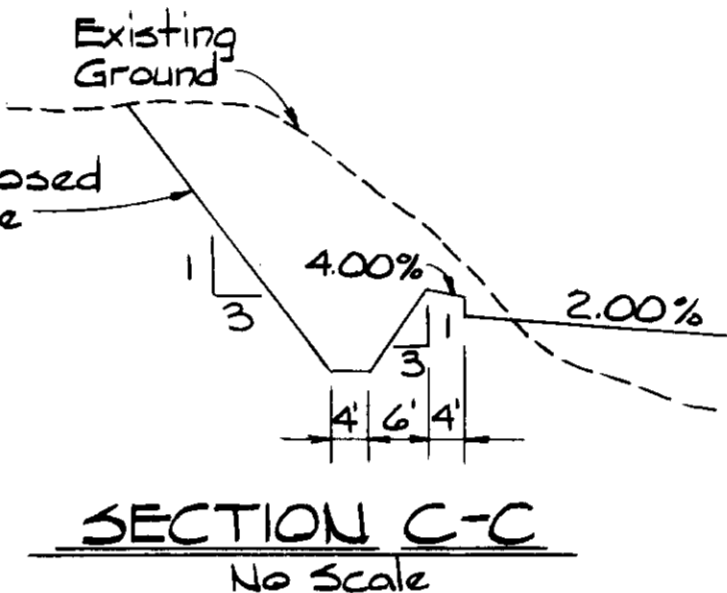
PROFILE ALONG DAM &
Scale: Hor: 1"=50' Vert: 1"=5'



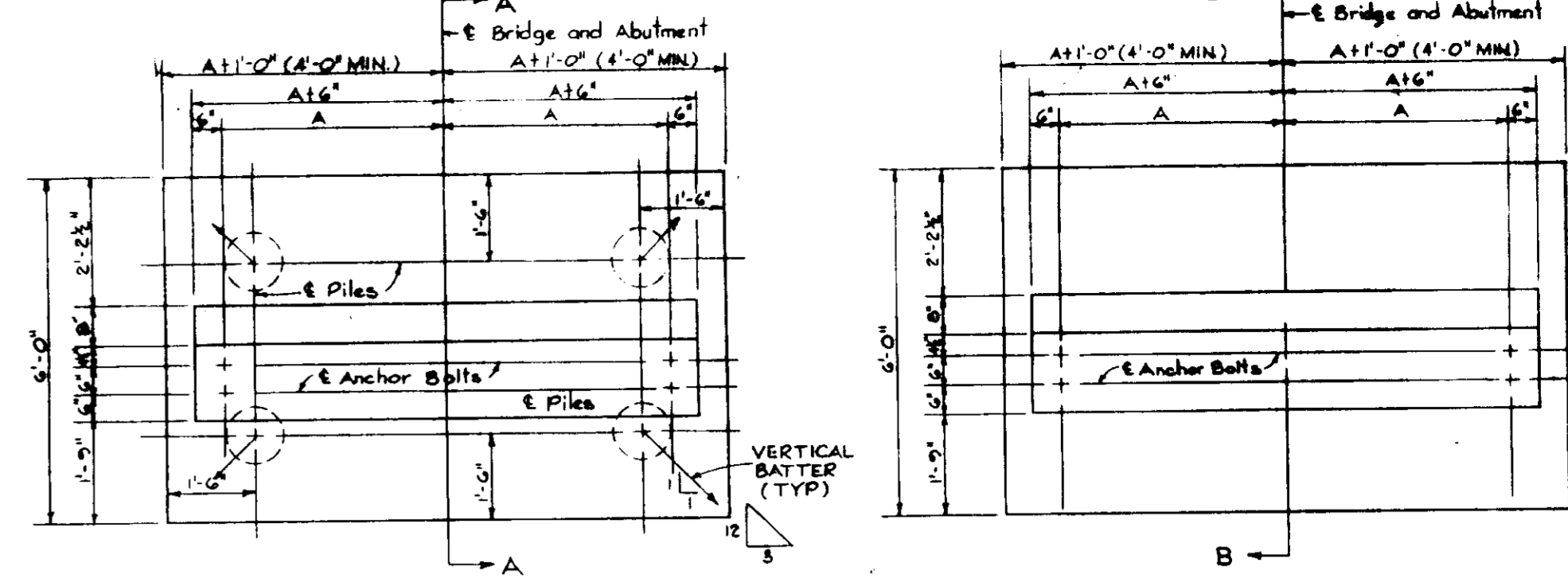
PROFILE PRINCIPAL SPILLWAY
Scale: Horz: 1"=50' Vert: 1"=5'



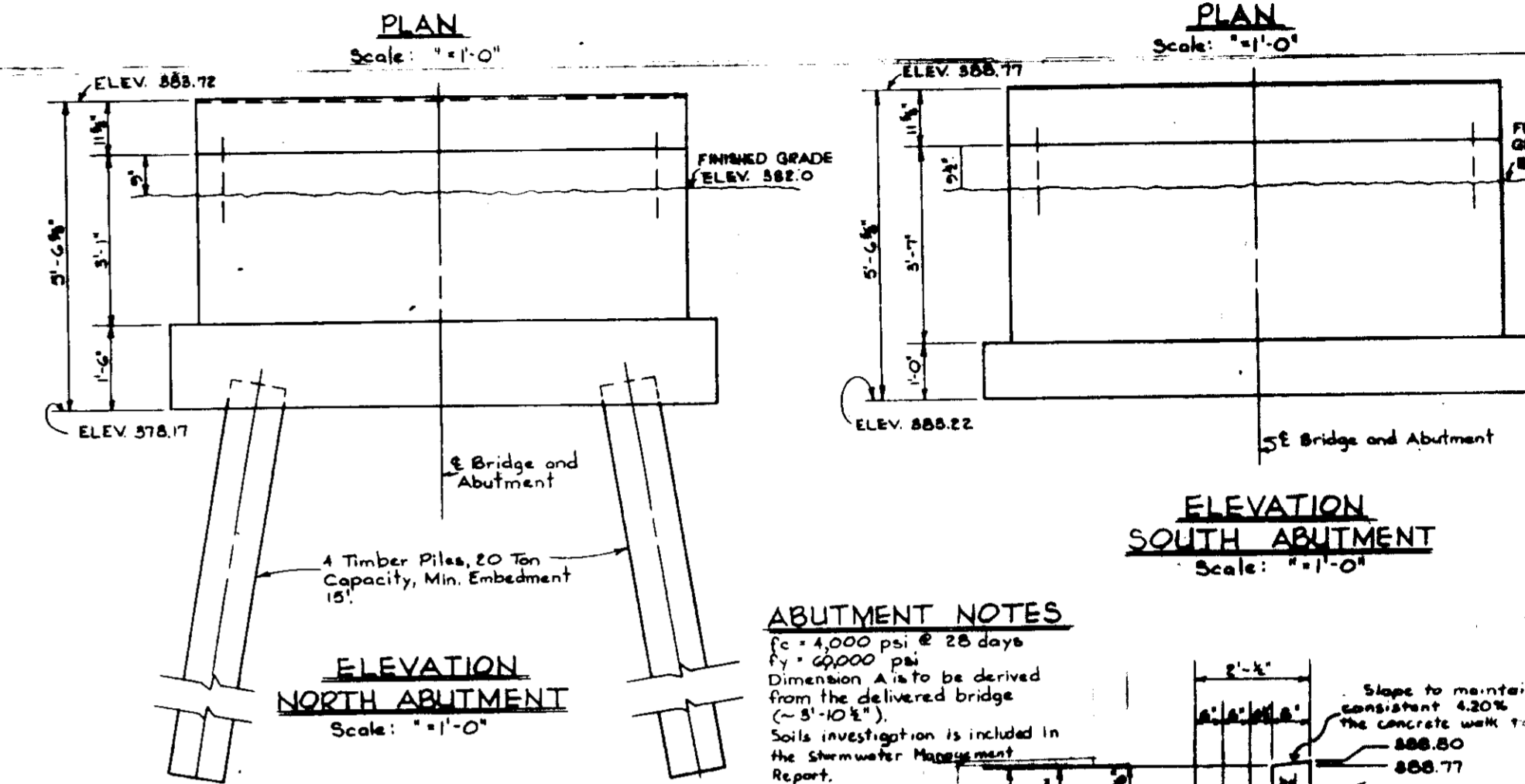
PROFILE PEDESTRIAN BRIDGE
Scale: Hor: 1"=50' Vert: 1"=5'



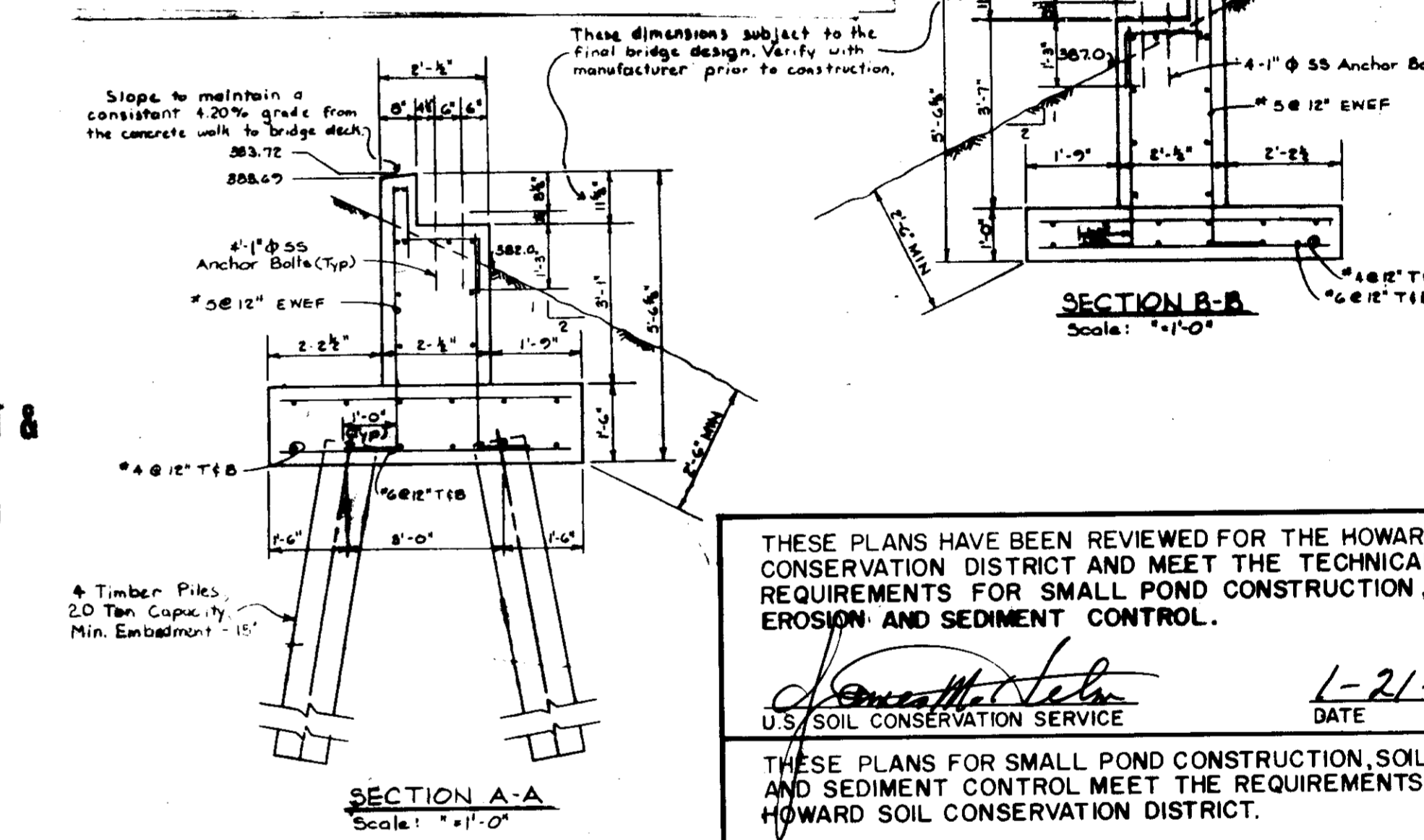
SECTION C-C
No Scale



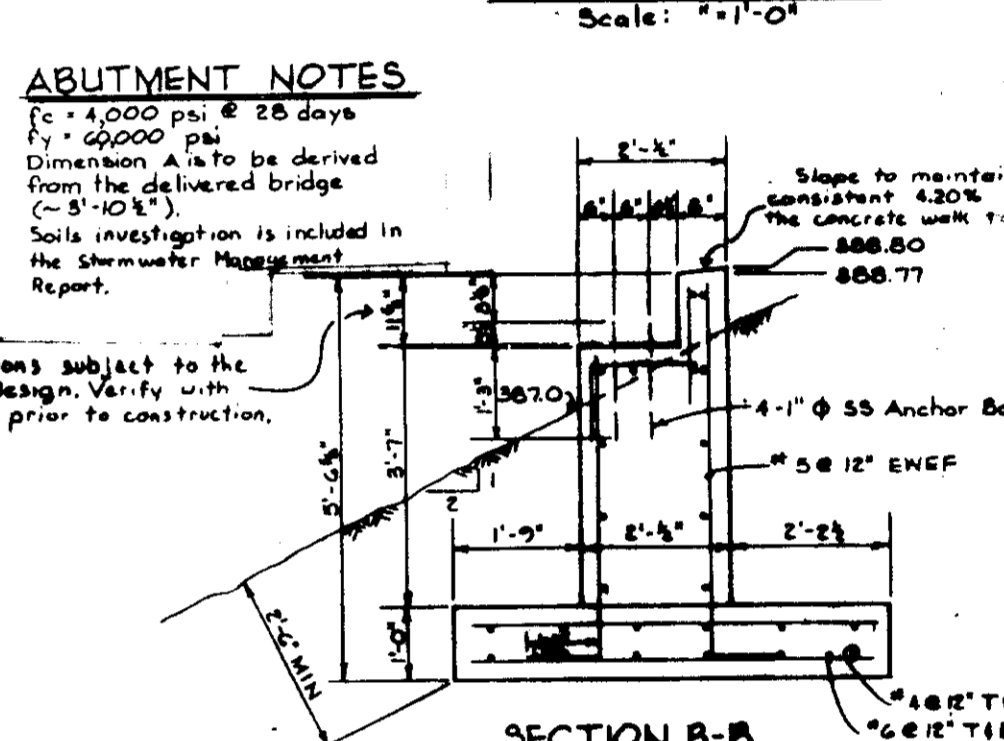
PLAN
Scale: 1"=1'-0"



ELEVATION NORTH ABUTMENT
Scale: 1"=1'-0"



SECTION A-A
Scale: 1"=1'-0"



ELEVATION SOUTH ABUTMENT
Scale: 1"=1'-0"

APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 1-14-88

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

James J. Selva
U.S. SOIL CONSERVATION SERVICE
DATE 1-21-88

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

Robert J. Zichew
HOWARD SOIL CONSERVATION DISTRICT
DATE 1-21-88

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

Robert J. Zichew
SIGNATURE OF DEVELOPER
DATE 1/18/88

BY THE ENGINEER
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION"

Robert J. Zichew
SIGNATURE OF ENGINEER
DATE 12-4-87

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR: *James J. Selva*
CHIEF, BUREAU OF ENGINEERING
DATE 1/20/88

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER: *Robert J. Zichew*
DATE 2/1/88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR: *Robert J. Zichew*
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
DATE 2/2/88

WHITMAN, BEQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
JOHNS HOPKINS ROAD HOWARD COUNTY MARYLAND
APPROVED FOR THE UNIVERSITY BY: *Arthur C. Stucki*
DATE 1/18/88 TITLE: *Plant Engineer*

PARKING LOT ADDITION
TO SDP-87-168
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

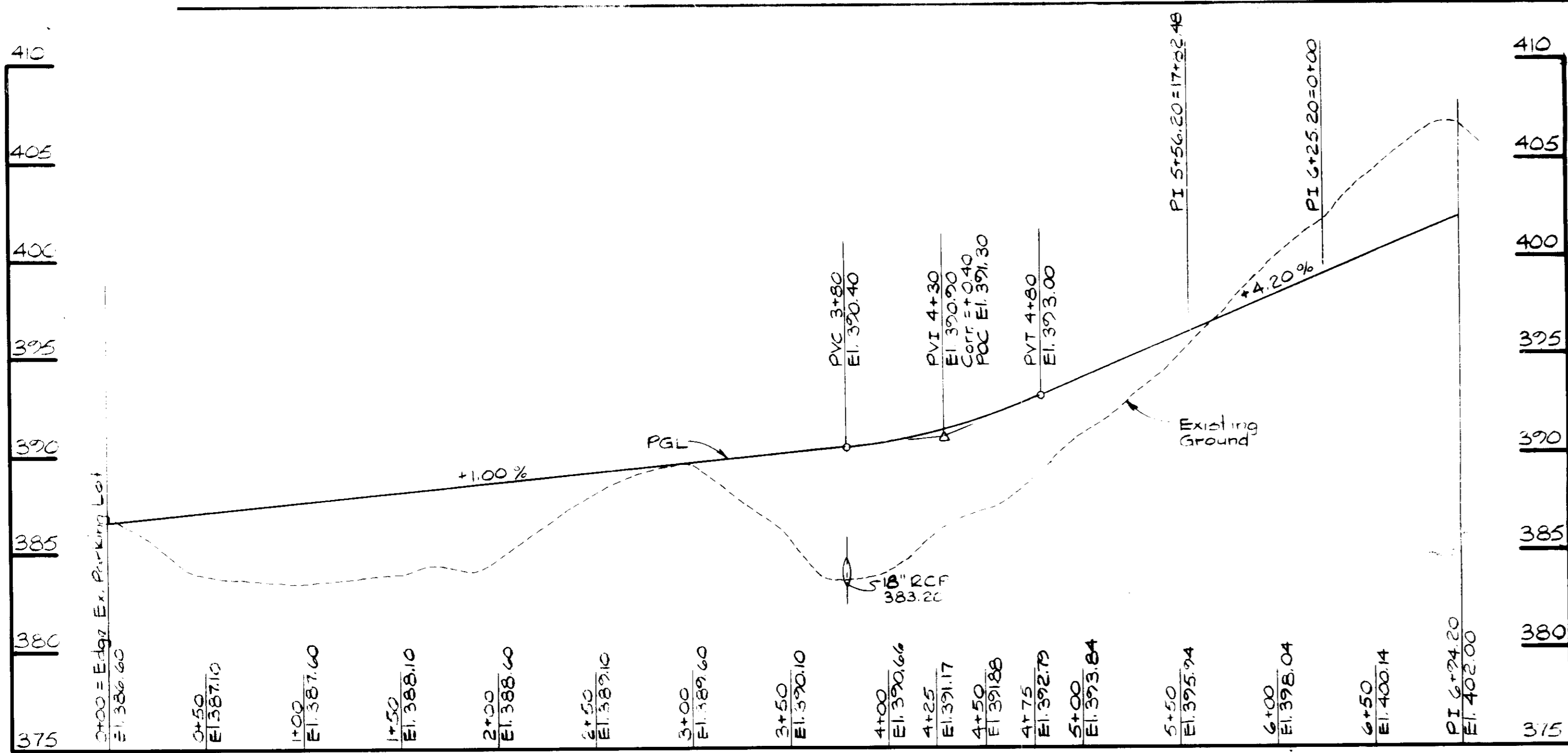
PROFILES & DETAILS
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TAX MAP 41 PARCEL 123 AND 289

REVISIONS
1 1-10-87 As per DPW Comments
2 12-4-87 Added Plunge Pool
3 1-18-88 Added I-S-A

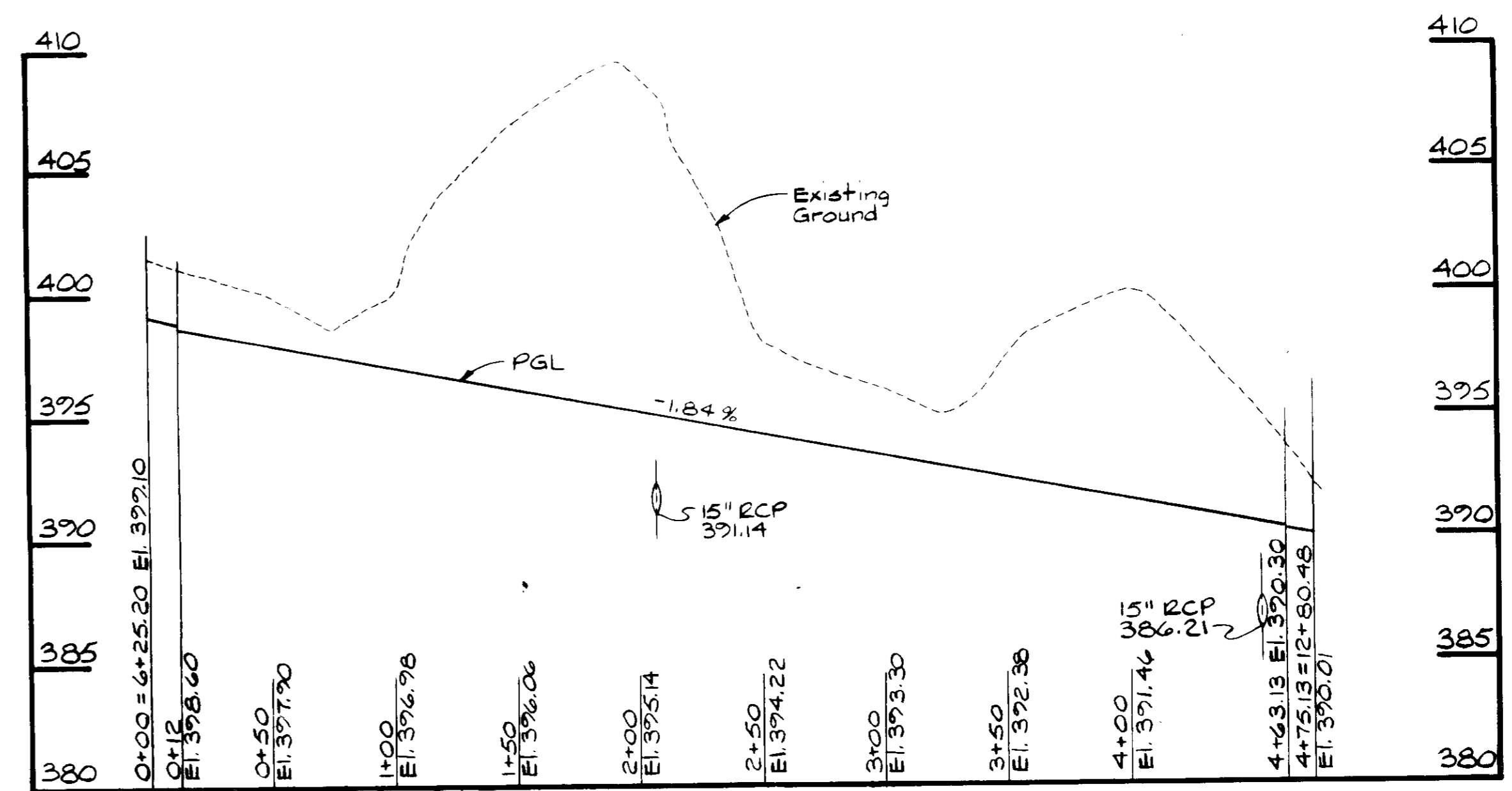
SCALE: AS SHOWN
SHEET NO. 4
OF 7
DATE: 6-27-87

DRAWING
4

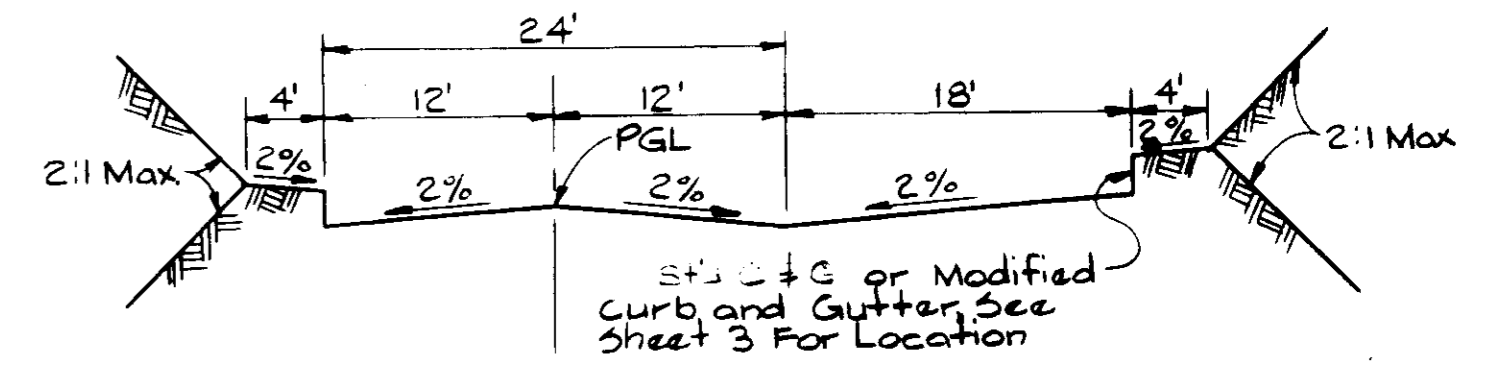
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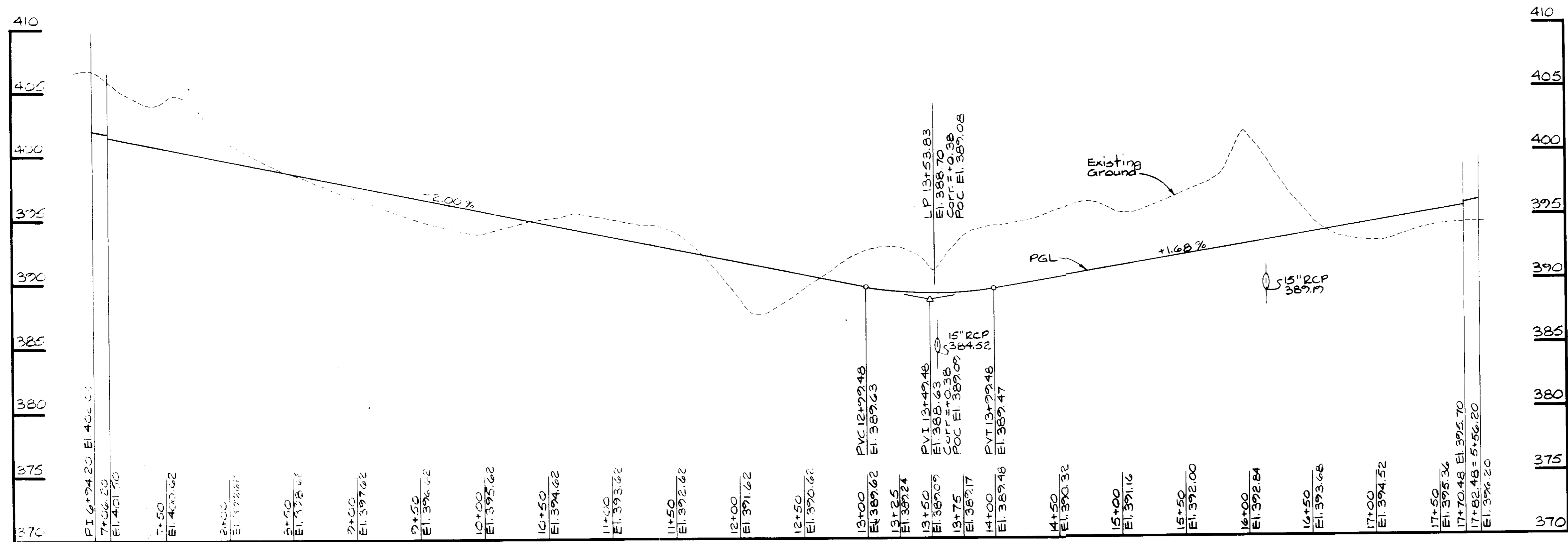
PROFILE
Scale: Hor 1"=50'
Ver 1"=5'



PROFILE
Scale: Hor 1"=50'
Ver 1"=5'



TYPICAL ROAD SECTION
STA. 0+00 TO 6+24.20
No Scale



PROFILE
Scale: Hor 1"=50'
Ver 1"=5'

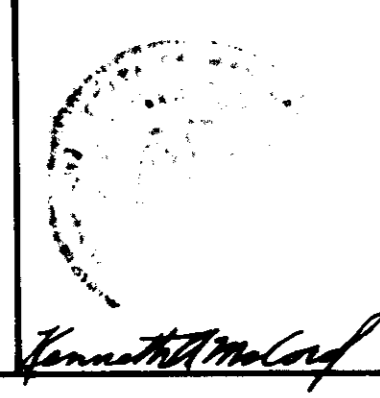
APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 1-14-88

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
DIRECTOR: *James J. ...* DATE: 1/28/88
CHIEF, BUREAU OF ENGINEERING: *...* DATE: 1-22-88

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
COUNTY HEALTH OFFICER: *James ...* DATE: 2/4/88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
PLANNING DIRECTOR: *...* DATE: 2-10-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT: *...* DATE: 2/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218



APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
JOHNS HOPKINS ROAD HOWARD COUNTY, MARYLAND
APPROVED FOR THE UNIVERSITY BY: *...*
DATE: 1/18/88 TITLE: Plant Engineer

PARKING LOT ADDITION
TO SDP-87-168
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

ROAD PROFILES
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TAX MAP 41 PARCEL 123 AND 289

REVISIONS	SCALE: AS SHOWN	DRAWING
1 10-15-81 As per DPW Comments	SHEET NO. 5	5
	OF 7	
	DATE: 6-29-87	

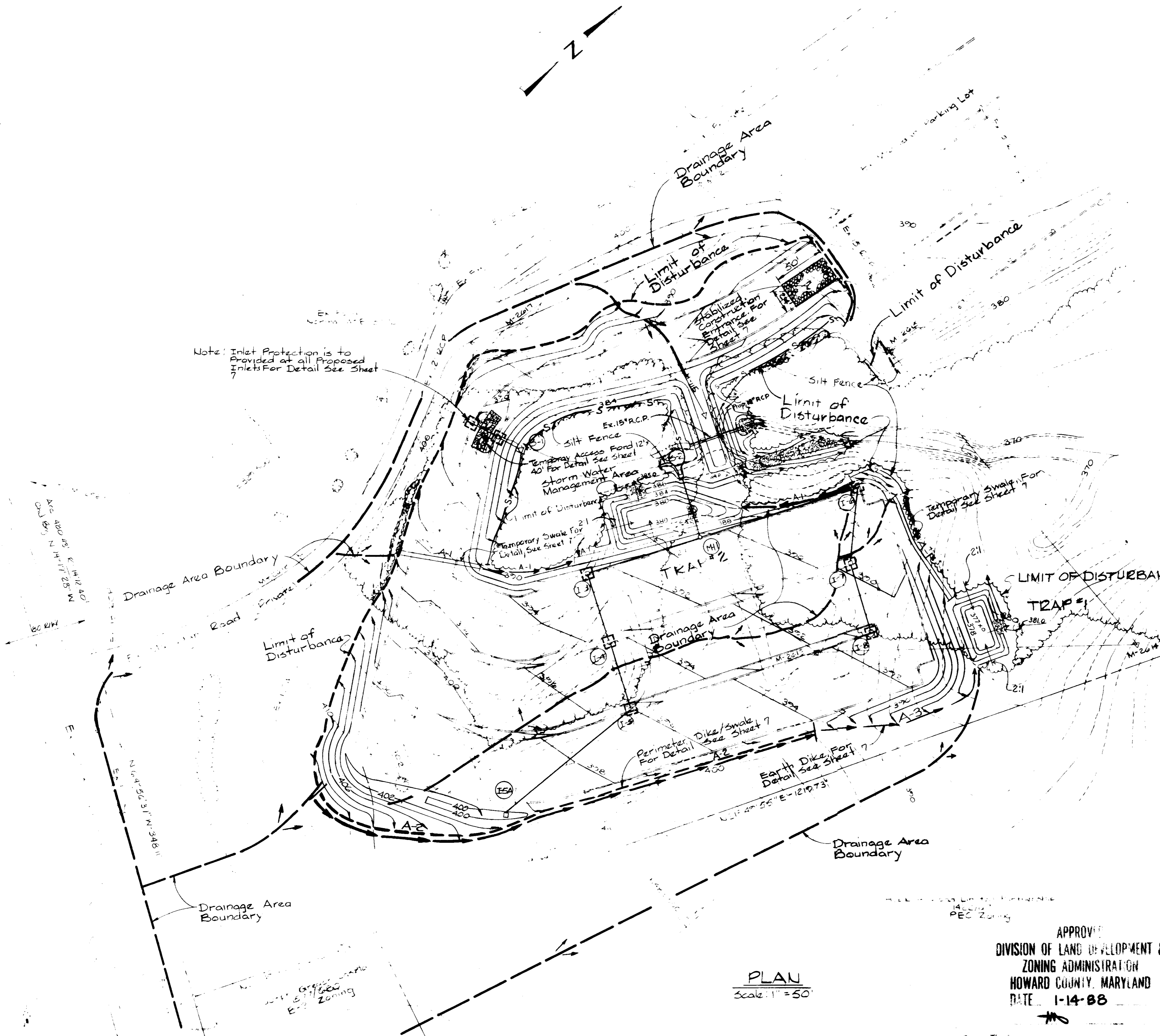
SEDIMENT TRAP #2 (ST-V)

Drainage Area	40Ac
Disturbed Area	30Ac
Volume Required	7200 Ft ³
Volume Available	7600 Ft ³
Top of Berm Elev.	386.0
Wier Crest Elev.	385.0
Length of Wier	14'
Storage Elev.	384.7
Bottom Trap Elev.	380.0
Bottom Trap Dim	18' x 36' x 6'

SEDIMENT TRAP #1 (ST-V)

Drainage Area	14 Ac
Disturbed Area	14 Ac
Volume Required	5600 Ft ³
Volume Available	2,100 Ft ³
Top of Berm Elev.	382.0
Wier Crest Elev.	381.0
Length of Wier	10'
Storage Elev.	380.0
Bottom Trap Elev.	377.0
Bottom Trap Dimension	14' x 36' x 5'

Note: Until all areas draining to Sediment Trap #2 have been stabilized, the storm drain from MH-1 to S2 shall discharge into the Sediment Trap. Construct 20' LF from MH1 and discharge onto a 5' x 8' apron of rip rap (d₅₀=6"). When all areas have been stabilized, the storm drain can be completed to outlet S-2.



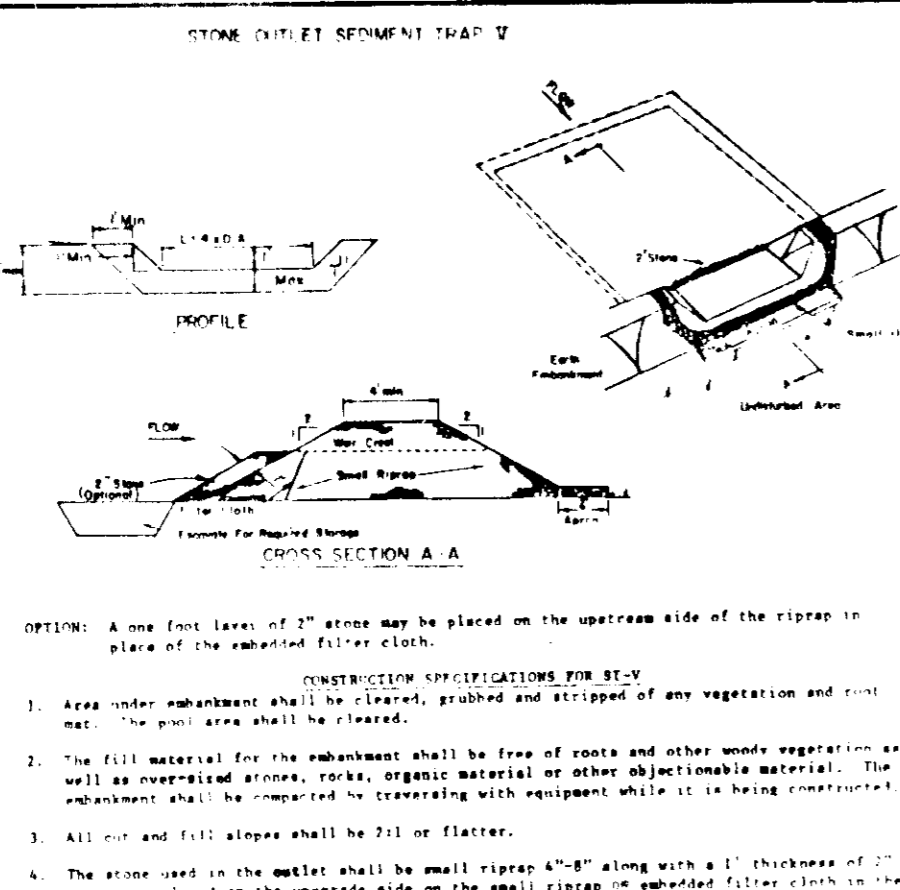
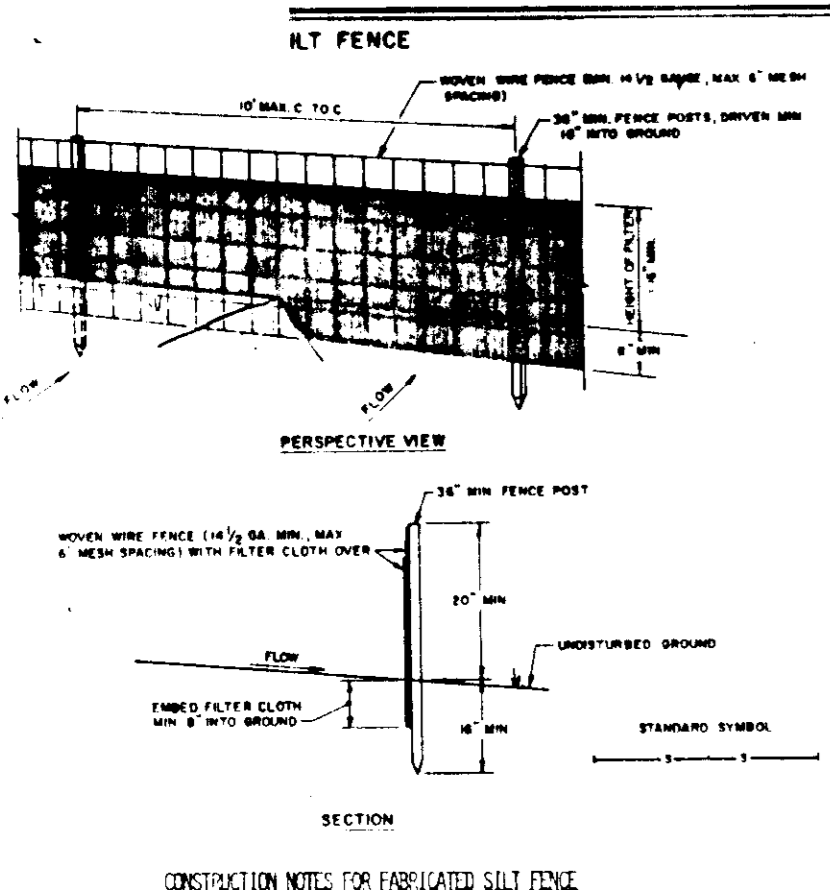
Note: Inlet Protection is to be provided at all Proposed Inlets For Detail See Sheet

<p>RESPONSIBLE PERSONNEL CERTIFICATION</p> <p>I HEREBY CERTIFY THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.</p> <p><i>[Signature]</i> 4/8/88 SIGNATURE OF DEVELOPER DATE</p>	<p>THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.</p> <p>APPROVED <i>[Signature]</i> 1-21-88 HOWARD S.C.D. DATE</p>
<p>CERTIFICATION BY THE ENGINEER</p> <p>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 I AS ENGINEER AM A LICENSED AND REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND.</p> <p><i>[Signature]</i> 10-3-87 SIGNATURE OF ENGINEER DATE</p>	<p>REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS</p> <p>SIGNATURE <i>[Signature]</i> 1-21-88 HOWARD S.C.D. DATE</p>
<p>CERTIFICATION BY THE DEVELOPER</p> <p>I CERTIFY THAT ALL DEVELOPMENT AND DRILLING CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY.</p> <p><i>[Signature]</i> 4/8/88 SIGNATURE OF DEVELOPER DATE</p>	<p>APPROVED <i>[Signature]</i> 2/1/88 HOWARD COUNTY OFFICE OF PLANNING AND ZONING DATE</p>

APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 1-14-88

PLAN
Scale 1" = 50'

<p>WHITMAN, REQUART AND ASSOCIATES</p> <p><i>[Signature]</i></p>	<p>APPLIED PHYSICS LABORATORY THE JOHNS HOPKINS UNIVERSITY</p> <p><i>[Signature]</i> 4/8/88 Professional Engineer</p>	<p>PARKING LOT ADDITION TO SDP-87-168 THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY</p>	<p>SEDIMENT CONTROL PLAN</p> <p>AND 289</p>	<p>REVISIONS</p> <table border="1"> <tr><td>1</td><td>2-14-87</td><td>As per DPW Comments</td></tr> <tr><td>2</td><td>2-4-87</td><td>Added Plunge Pool</td></tr> <tr><td>3</td><td>4-8-88</td><td>Added I-5A</td></tr> </table>	1	2-14-87	As per DPW Comments	2	2-4-87	Added Plunge Pool	3	4-8-88	Added I-5A	<p>SCALE 1" = 50'</p> <p>SHEET NO 6 OF 7</p> <p>DATE 6-27-87</p>	<p>DRAWING 6</p>
1	2-14-87	As per DPW Comments													
2	2-4-87	Added Plunge Pool													
3	4-8-88	Added I-5A													



STANDARD AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION

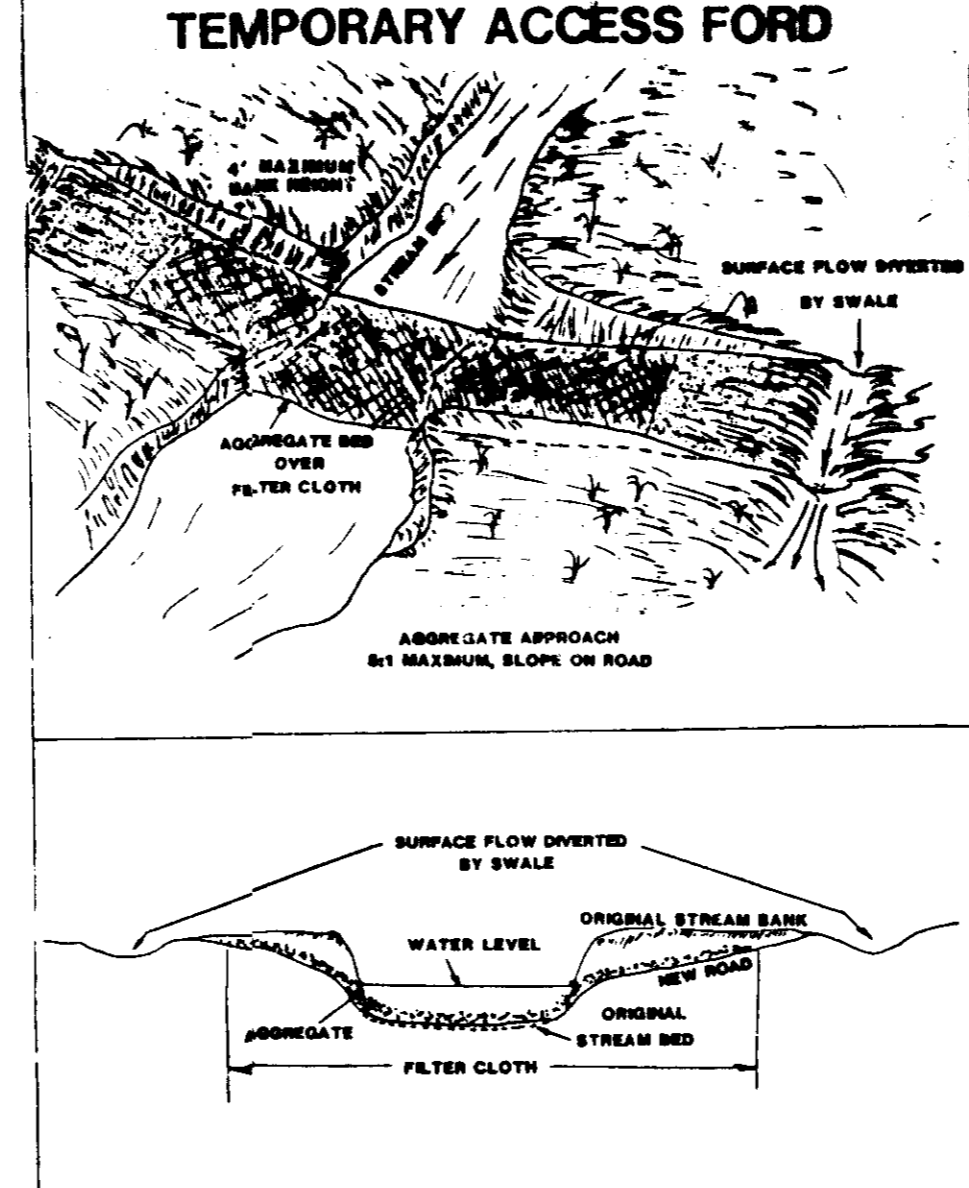
Definition
Filter cloth installed around inlets in the form of a fence or across an opening, thereby reducing sediment content of sediment laden water.

Purpose
To prevent sediment laden water from entering a storm drain system through inlets.

Conditions Where Practice Applies
This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a sediment trapping device and water-tight blocking of inlets is not advisable. It is not to be used in place of sediment trapping devices. This practice may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with a low slope angle.

Construction Specifications

- Materials**
 - Wooden frame is to be constructed of 2" x 4" construction grade lumber.
 - Wire mesh must be of sufficient strength to support filter fabric, and stone for curb inlets, with water fully impounded against it.
 - Filter cloth must be of a type approved for this purpose; resistant to sunlight with sieve size, 80S, 40-80, to allow sufficient passage of water and removal of sediment.
 - Stone is to be 2" in size and clean, since fines would clog the cloth.



Construction Specifications

- Restrictions - Use or removal of a temporary access ford shall be permitted between October 1 and April 30 for all Class III and Class IV Waters. For other streams, use or removal of a temporary ford will be prohibited from March 15 through June 15 of each year because fish are spawning during this period.
- The approaches to the structure shall consist of stone pads constructed to comply with the aggregate requirements of Section I.M. 1.
 - The entire ford approach (where banks were cut) shall be covered with filter cloth and protected with aggregate to a depth of 4 inches.
 - Fords shall be prohibited when the stream banks are 4 feet or more in height above the invert of the stream.
 - The approach roads at the cut banks shall be no steeper than 5:1. Spoil material from the banks shall be stored out of the flood plain and stabilized.
 - One layer of filter cloth shall be placed on the streambed, streambanks and road approaches prior to placing the bedding material on the stream channel or approaches. The filter cloth shall extend a minimum of 6 inches and a maximum one foot beyond bedding material.
 - The bedding material shall be coarse aggregate or gabion mattresses filled with coarse aggregate.
- All fords shall be constructed to minimize the blockage of a new flow and shall allow free flow over the ford. The placement of any material in the waterway bed will cause some upstream ponding. The depth of this ponding will be equivalent to the depth of the material placed within the stream and therefore should be kept to a minimum height. However, in no case will the bedding material be placed deeper than 12 inches or one-half (1/2) the height of the existing bank whichever is smaller.
- Stabilization** - All areas disturbed during ford installation shall be stabilized within 14 calendar days of their disturbance in accordance with the Standards for "Critical Area Stabilization With Permanent Seeding."

SEEDING CONTROL PLAN

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permitting prior to the start of any construction. (992-2437)
- 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.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within a 7 calendar day period for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1. Within 14 days for all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Title 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- 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) and (Sec. 54). Temporary seedings (Sec. 50 and Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seedings do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until verification for their removal has been obtained from the Howard County Sediment Control Inspector.

Site Analysis

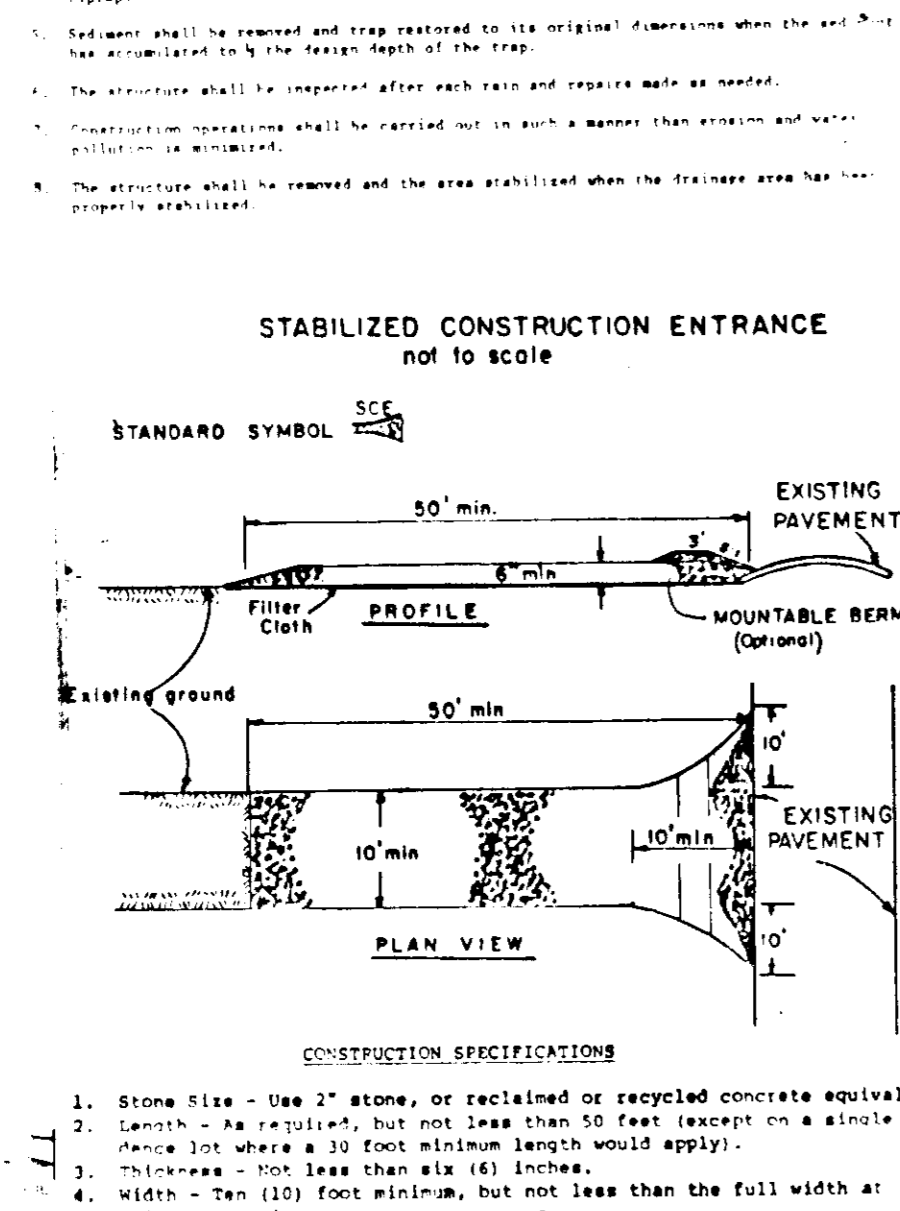
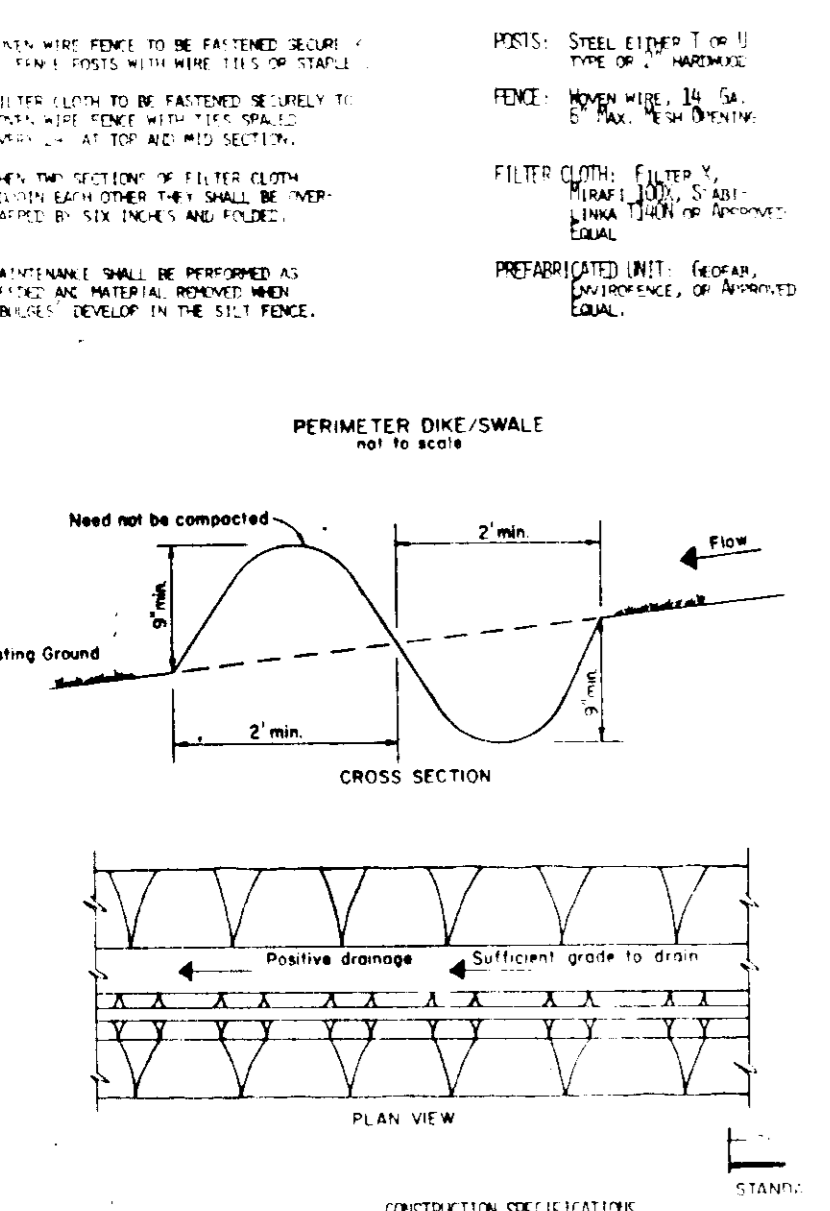
Total Area of Site	3.66 Acres
Area Disturbed	2.77 Acres
Area to be reseeded or paved	2.77 Acres
Area to be vegetatively stabilized	0.89 Acres
Total Fill	15,000 Cu. Yds
Off-site waste/borrow area location	N/A

Additional sediment control practices which is disturbed by grading activity for placement of seedings must be repaired on the same day of disturbance.

Additional sediment controls must be provided, if deemed necessary by the Howard County DPW sediment control inspector.

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.

- SEQUENCE OF CONSTRUCTION**
- NOTIFY THE HOWARD SOIL CONSERVATION DISTRICT AND THE HOWARD COUNTY BUREAU OF LICENSES, INSPECTIONS, AND PERMITS 48 HOURS BEFORE ANY WORK BEGINS.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE AND CONSTRUCT TEMPORARY ACCESS FORD, DIVERSION DIKES, AND SEDIMENT TRAP.
 - CLEAR AND GRUB AREA FOR ACCESS DRIVE AND PARKING LOT ADDITIONS.
 - ROUGH GRADE THE SITE.
 - REMOVE EXISTING 15" RCP IN EXISTING EMBANKMENT. CONSTRUCT CORE TRENCH, INSTALL 12" RCP AND BUILD UP EMBANKMENT TO STORM WATER MANAGEMENT REQUIREMENTS.
 - INSTALL STORM DRAINS, CURB AND GUTTER, AND OTHER SITE IMPROVEMENTS.
 - PAVE PROPOSED PARKING AREAS AND ACCESS ROAD.
 - PERMANENTLY SEED AND STABILIZE ANY PROPOSED GRASSED AREAS.
 - DISPOSE OF THE SEDIMENT FROM THE SEDIMENT TRAP IN A MANNER APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.
 - REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES ONLY AFTER ALL THE CONTRIBUTING AREAS HAVE BEEN STABILIZED.



STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE

- Excavate completely around inlet to a depth of 18" below notch elevation.
- Drive 2 x 4 post 1' into ground at four corners of inlet. Place nail strips between posts on ends of inlet. Assemble top portion of 2 x 4 frame using overlap joint shown. Top of frame (weir) must be 4" below edge of roadway adjacent to inlet.
- Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.
- Stretch filter cloth tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet notch elev. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.
- Backfill around inlet in compacted 6" layers until layer of earth is even with notch elevation on ends and top elevation on sides.
- If the inlet is not in a low point, construct a compacted earth dike to the ditchline below it. The top of the dike is to be at least 6" higher than the top of frame (weir).
- This structure must be inspected frequently and the filter fabric replaced when clogged.

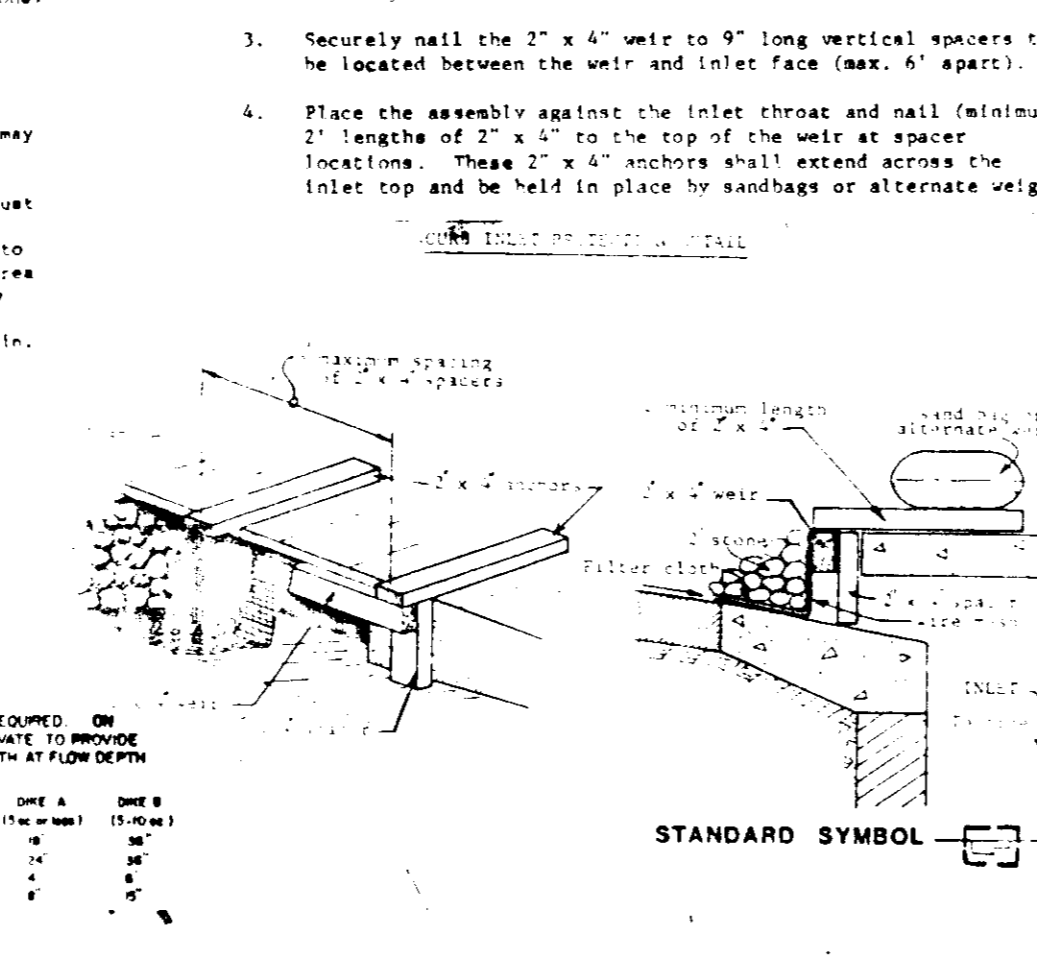
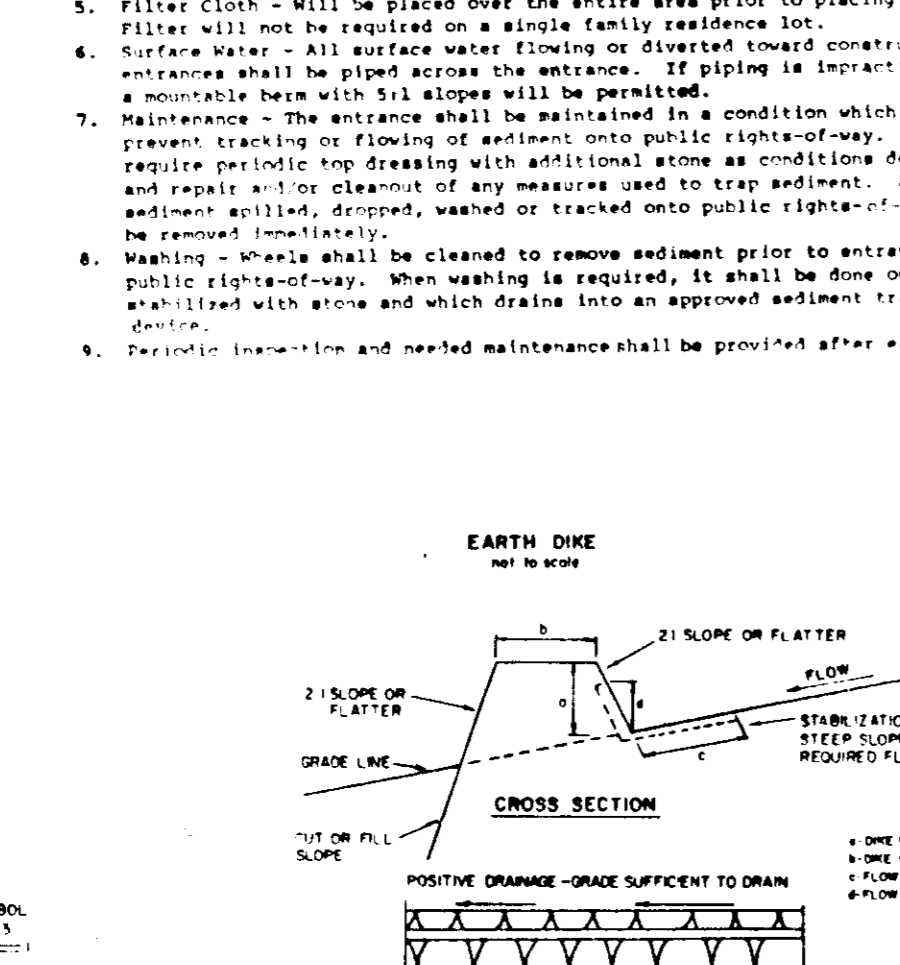
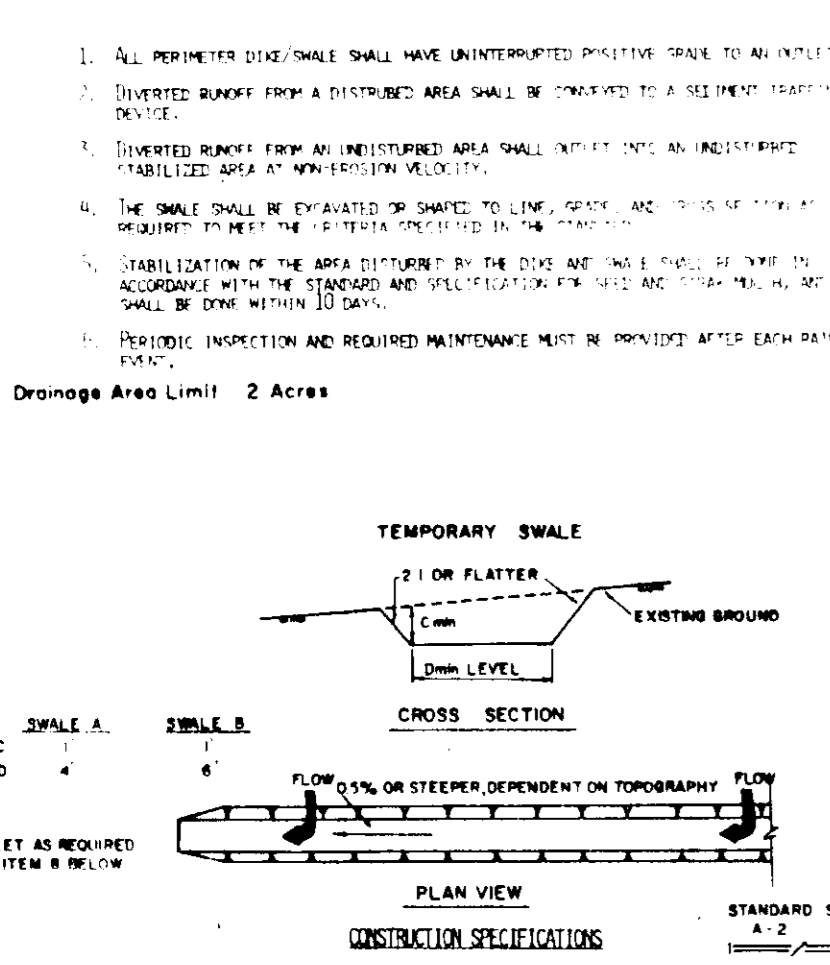
Curb Inlet Protection

- 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.
- Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the weir mesh and securely attach to the 2" x 4" weir.
- Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 4" apart).
- Place the assembly against the inlet throat and nail (minimum 2" length 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.

Ford Removal and Clean-Up Requirements

- Removal** - When the temporary structure has served its purpose, excess material used for this structure must not be removed. Care should be taken so that any aggregate left does not create an impediment or restrict fish passage.
- Final Clean-Up** - Final clean-up shall consist of removal of excess temporary ford materials from the waterway. All materials shall be stored outside the waterway flood plain.
- Method** - Clean up shall be accomplished without construction equipment working in the stream channel.
- Approach Disposition** - The approach slopes of the cut banks shall not be backfilled.
- Final Stabilization** - All areas disturbed during ford removal shall be stabilized within 14 calendar days of their disturbance in accordance with the Standard for "Critical Area Stabilization With Permanent Seeding."

Any temporary access crossing shall conform to the technical requirements of this Standard and Specifications as well as any specific requirements imposed by the Water Resources Administration's Watershed Permitting Division (289-2265) Annapolis, Maryland.



PERMANENT SEEDING NOTES

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

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- 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. Narrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 urea-formosa fertilizer (9 lbs/1000 sq ft).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Narrow 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 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 1 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 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.

SEEDING CONTROL PLAN

When a stream is disturbed, a seedling shall be established along or adjacent to the stream within 14 calendar days of their disturbance in accordance with the Standards for "Critical Area Stabilization With Permanent Seeding."

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FLUM CHANNEL STABILIZATION

TYPE OF CHANNEL	CHANNEL	DISE A	DISE B
1	3-15-00	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3-15-00	SEED AND STRAW MULCH	SEED AND STRAW MULCH
3	5-1-00	SEED WITH MULCH OR SOIL	LINED RCP 4-8"
4	8-1-00	LINED RCP 4-8"	ENGINEERING DESIGN

FLUM CHANNEL STABILIZATION

TYPE OF CHANNEL	CHANNEL	DISE A	DISE B
1	3-15-00	SEED AND STRAW MULCH	SEED AND STRAW MULCH
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RESPONSIBLE PERSONNEL CERTIFICATION

"I HEREBY CERTIFY THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

SIGNATURE OF DEVELOPER: *[Signature]* DATE: 1/18/88

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: *[Signature]* DATE: 10-3-87

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY."

SIGNATURE OF DEVELOPER: *[Signature]* DATE: 1/18/88

DIVISION OF ZONING AND PLANNING

HOWARD COUNTY

DATE: 1-14-88

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

APPROVED: *[Signature]* DATE: 1-21-88

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

SIGNATURE: *[Signature]* DATE: 1-21-88

APPROVED FOR PUBLIC WATER AND PUBLIC UTILITY SERVICE

DIRECTOR: *[Signature]* DATE: 1/28/88

CHIEF BUREAU OF ENGINEERING

APPROVED: *[Signature]* DATE: 2/1/88

APPROVED: *[Signature]* DATE: 2-12-88

PLANNING AND LAND DEVELOPMENT

SIGNATURE: *[Signature]* DATE: 2/4/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
14 SAINT PAUL STREET
BALTIMORE, MARYLAND 21202

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
3700 HOPKINS ROAD HOWARD COUNTY MARYLAND
21044

[Signature] 1/18/88
[Signature] Plant Engineer

PARKING LOT ADDITION
TO SDP-87-168
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
1100 HOPKINS HOPKINS ROAD
LAUREL, MARYLAND 20707

SEDIMENT CONTROL DETAILS & NOTES

1 7-10-87 As per DPW Comments

2 12-4-87 Added Plunge Pool and Specs.

DATE: 6-27-87

SEE AS SHOWN

DATE: 6-27-87

SDP-88-06