

ENGINEER'S CERTIFICATE
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: 2/12/87

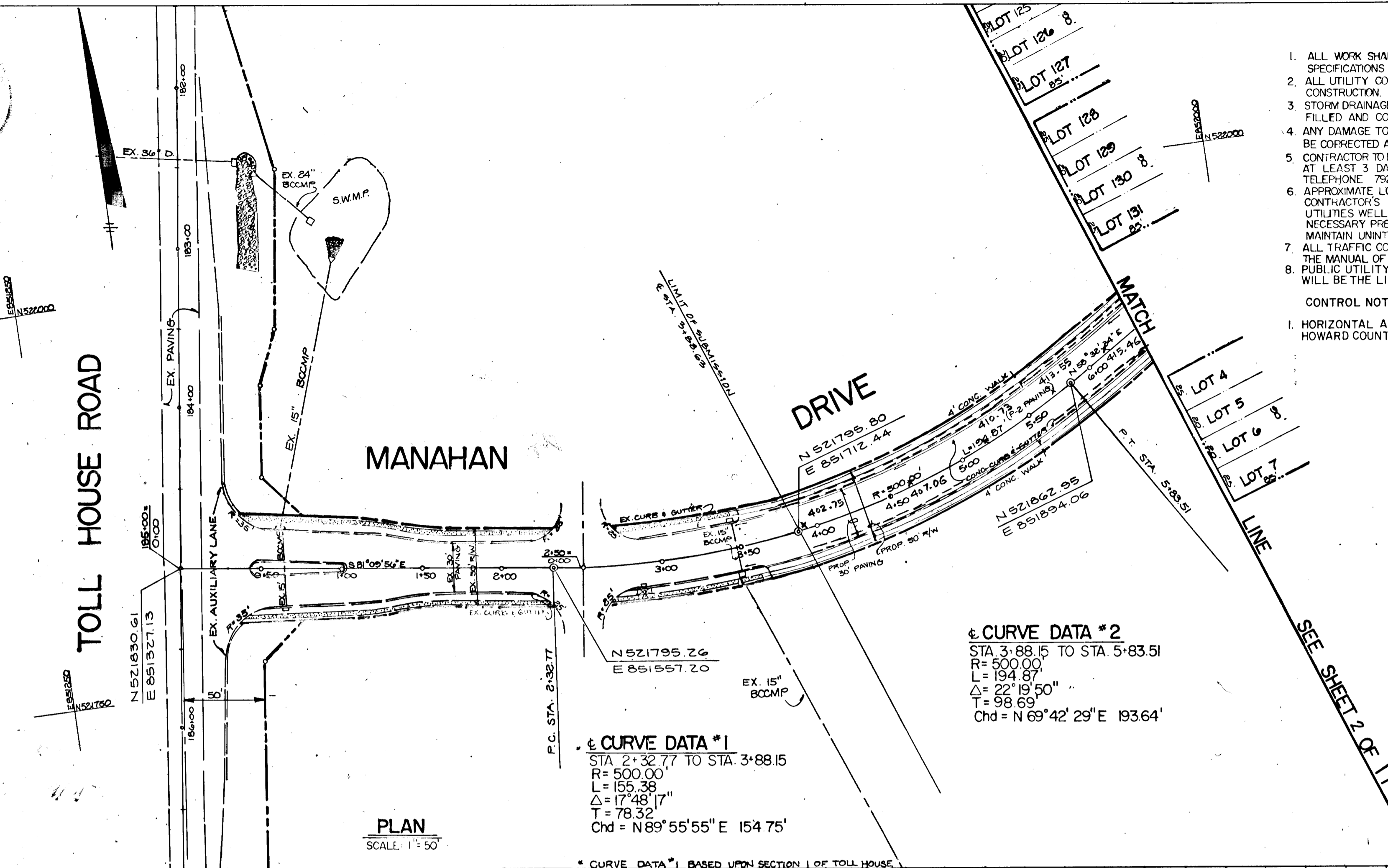
DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ONSITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY.

OWNER/DEVELOPER: James M. Nelson DATE: 2/25/87
US SOIL CONSERVATION SERVICE DATE: 2/25/87
HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE: 2/25/87

PLAN
DATE: _____ BY: _____
REVISIONS: _____
NOTED: _____
NOTED: _____
NOTE BOOK NO. _____

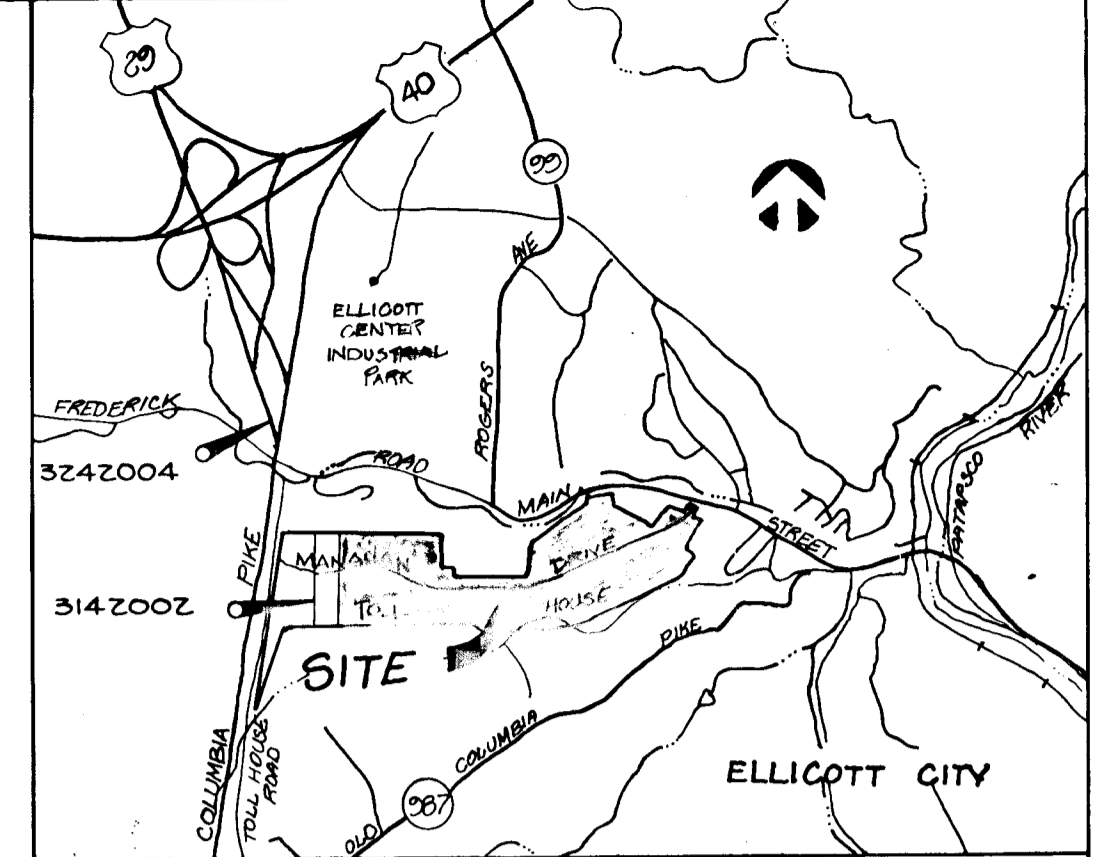
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION DATE: 2/18/87
CHIEF, BUREAU OF HIGHWAYS DATE: 2/2-87
CHIEF, BUREAU OF ENGINEERING DATE: 2/2-87

PROFILE
DATE: _____ BY: _____
REVISIONS: _____
NOTED: _____
NOTED: _____
NOTE BOOK NO. _____



GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
 - ALL UTILITY COMPANIES MUST BE NOTIFIED 24 HOURS IN ADVANCE OF ANY CONSTRUCTION.
 - STORM DRAINAGE TRENCHES WITHIN ROAD RIGHT-OF-WAYS SHALL BE BACK-FILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
 - ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 - CONTRACTOR TO NOTIFY THE HOWARD COUNTY INSPECTION AND SURVEY DIVISION AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS. TELEPHONE 752-7272.
 - APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE.
 - ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 1978 EDITION.
 - PUBLIC UTILITY EASEMENTS WILL BE USED AS ACCESS FOR MAINTENANCE & WILL BE THE LIMITS OF HOWARD COUNTY MAINTENANCE RESPONSIBILITY.
- CONTROL NOTE:
1. HORIZONTAL AND VERTICAL CONTROL SHOWN HEREON IS BASED UPON HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 3142002 & NO. 3242004.



VICINITY MAP
SCALE: 1" = 2000'
BENCH MARKS

BM #1 ELEV. = 417.64
TOP OF ANCHOR BOLT SET IN NORTH CORNER OF HIGH TENSION TOWER.
BM #2 ELEV. = 397.67
PK NAIL SET IN TOP OF CURB AT P.C.; 12' FROM FIRE HYDRANT.

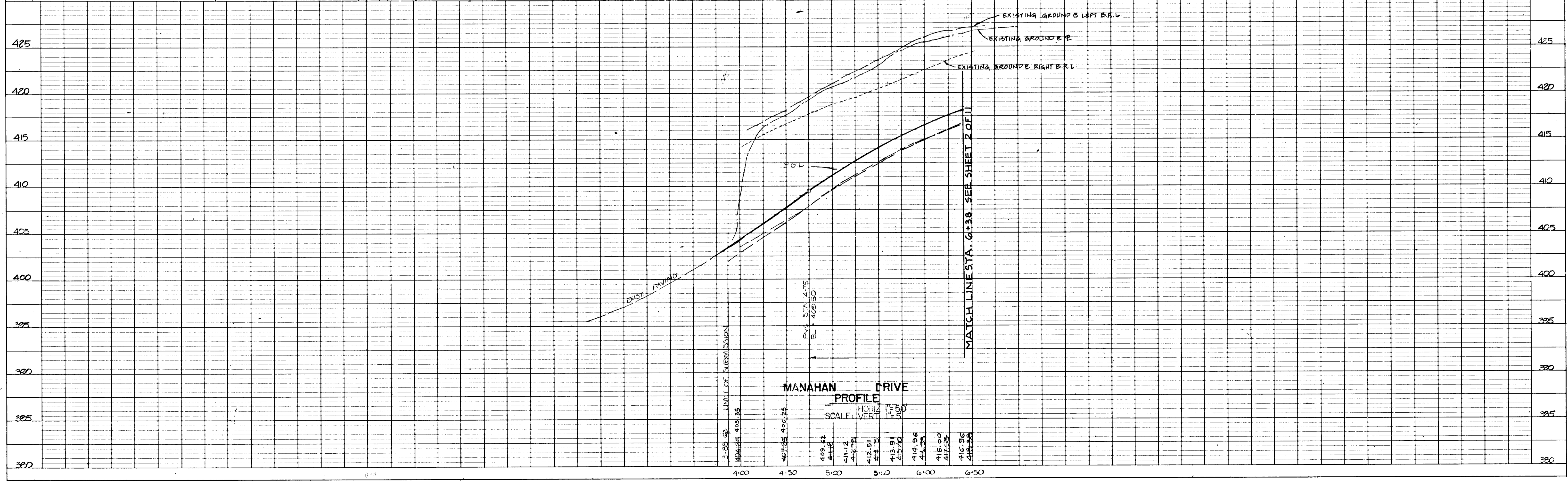
TOLL HOUSE SECTION 2
TAX MAP 24 & 25 PARCEL 254 B 210
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

MANAHAN DRIVE PLAN AND PROFILE

OWNER AND DEVELOPER
COMMERCIAL CONTRACTOR
1205 YORK ROAD
LUTHERVILLE, MD 21043

SCALE: AS SHOWN DATE: FEBRUARY 6, 1987 DRWG. NO. 1 OF 11
DES. J. HANNA DRWN. K. FRITZ CHK. B. BURTON

DEWBERRY B. DAVIS
3300 N RIDGE ROAD
SUITE 100
ELICOTT CITY, MD 21043



ENGINEER'S CERTIFICATE
 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] 2/19/87
 SIGNATURE OF ENGINEER DATE

LEVEL OFFICER'S CERTIFICATE
 I HAVE CERTIFIED 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 ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEFINED NECESSARY.

[Signature] 4/9/87
 DATE

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

[Signature] 8/25/87
 U.S. SOIL CONSERVATION SERVICE DATE

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

[Signature] 8/25/87
 HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

DATE	BY	REVISION
		1. SURVEYED
		2. NOTED
		3. PLAN CHECKED
		4. AS BUILT CHECKED
		5. NO. OF WAY CHECKED
		6. NO.

STREET LIGHTS
 175 WATT MERCURY VAPOR LAMP MOUNTED ON A 14-FOOT GRAY FIBER GLASS POLE TO BE LOCATED AT THE FOLLOWING STATIONS ON MANAHAN DRIVE:

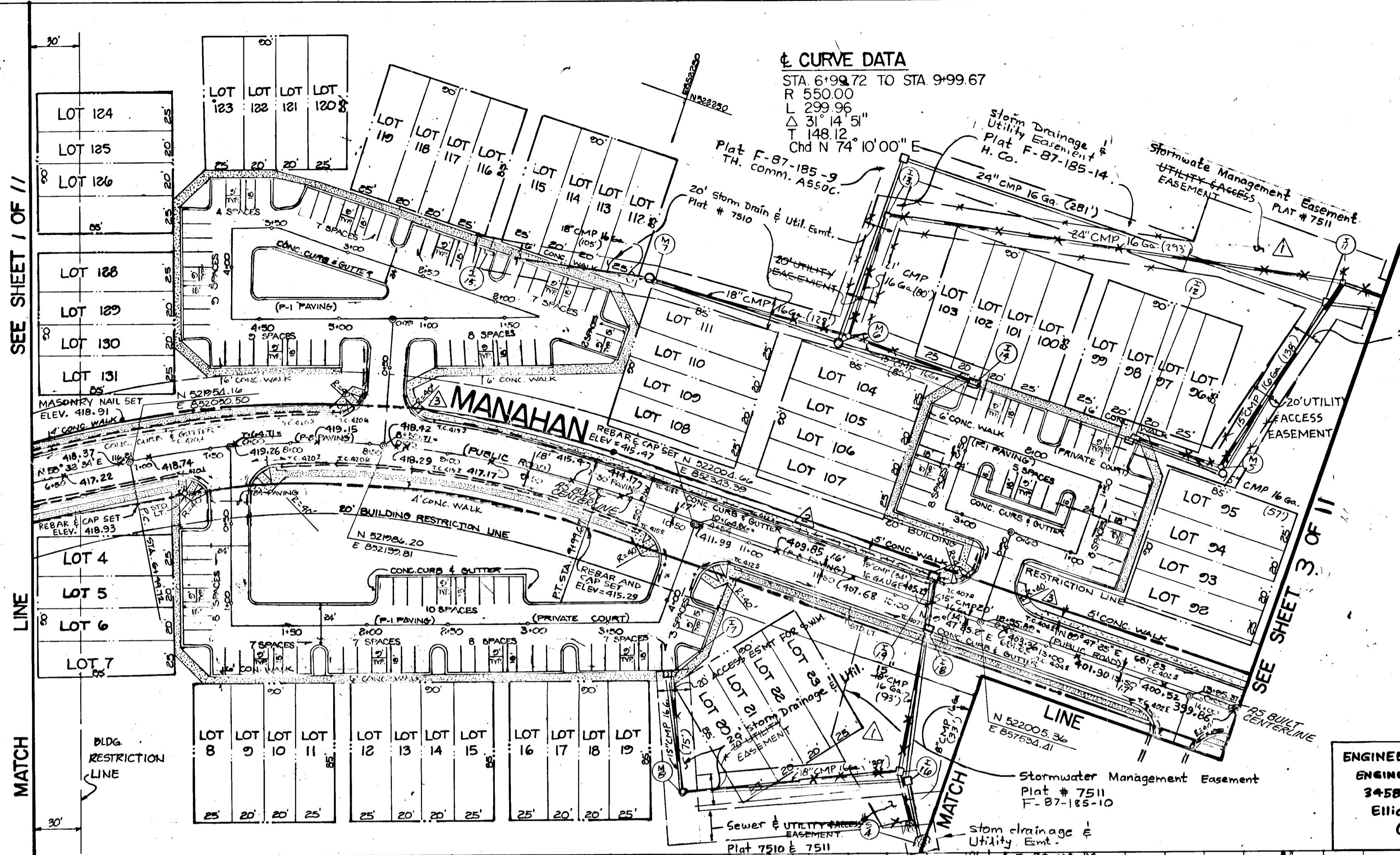
- 1) STA. 7+50 EAST
- 2) STA. 11+75 EAST
- 3) STA. 16+25 EAST
- 4) STA. 20+75 EAST

[Signature] 8/25/87
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 1-29-87
 CHIEF LAND DEVELOPMENT DIVISION DATE

[Signature] 4/9/87
 CHIEF BUREAU OF HIGHWAYS DATE

[Signature] 9-2-87
 CHIEF BUREAU OF ENGINEERING DATE



REVISION	BY	DATE	DESCRIPTION
1	MDR	8/13/87	ELIMINATED 5 MM TRENCHES 1 & 6
2	MDR	8/13/87	MOVED CENTERLINE & SIDEWALK PER AS BUILT
3	MLH	11/17/87	REVISED H.C. RUMPS

TOLL HOUSE
 SECTION 2
 TAX MAP 24 B 25 PARCEL 254 B 210
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

MANAHAN DRIVE
 PLAN AND PROFILE

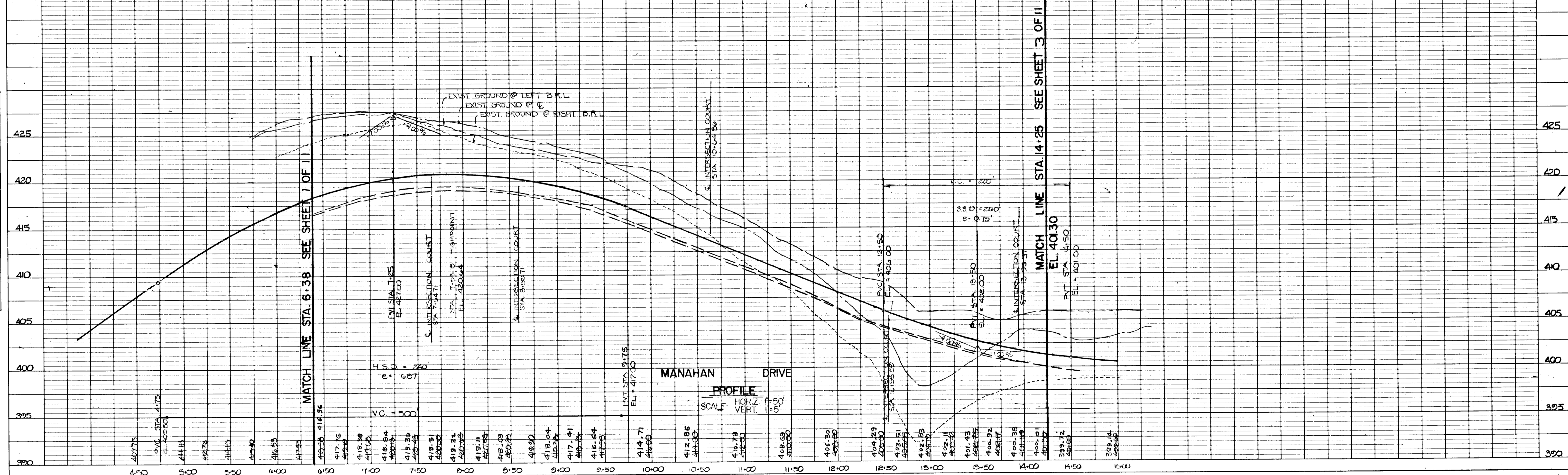
OWNER AND DEVELOPER
 COMMERCIAL CONTRACTORS
 1205 YORK ROAD
 LUTHERVILLE, MD 21093

SCALE: AS SHOWN DATE: FEBRUARY 6, 1987 DRWG NO. 2 OF 11
 DES: J. HANNA DRAWN: K. FRITZ CHK: B. BURTON

DEWBERRY & DAVIS
 3300 N. RIDGE ROAD
 SUITE 100
 ELLICOTT CITY, MD 21043
 (410) 461-8920

ENGINEERING TECHNOLOGIES ASSOC. INC.
 ENGINEERS - PLANNERS - SURVEYORS
 3458 ELLICOTT CENTER DR., SUITE 101
 ELLICOTT CITY, MD. 21043
 (410) 461-8920

DATE	BY	REVISION
		1. SURVEYED
		2. NOTED
		3. PROFILE CHECKED
		4. STRUCTURE LOCATIONS CHECKED
		5. NO.



1102

DATE	
BY	
PLANNING	
NOTED	
NOTE BOOK	
NO. OF WAY CHECKED	
No.	

ENGINEER'S CERTIFICATE

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.

8/19/87
DATE

James M. Helman
SIGNATURE OF ENGINEER

DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL CONSTRUCTION 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 ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY."

James M. Helman
DATE

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

James M. Helman
DATE

U.S. SOIL CONSERVATION SERVICE

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

Howard County
DATE

DATE	
BY	
PROFILE	
NOTED	
NOTE BOOK	
NO. OF NOTED	
STRUCTURE NOTATIONS CHECKED	
No.	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DATE

CHIEF, LAND DEVELOPMENT DIVISION

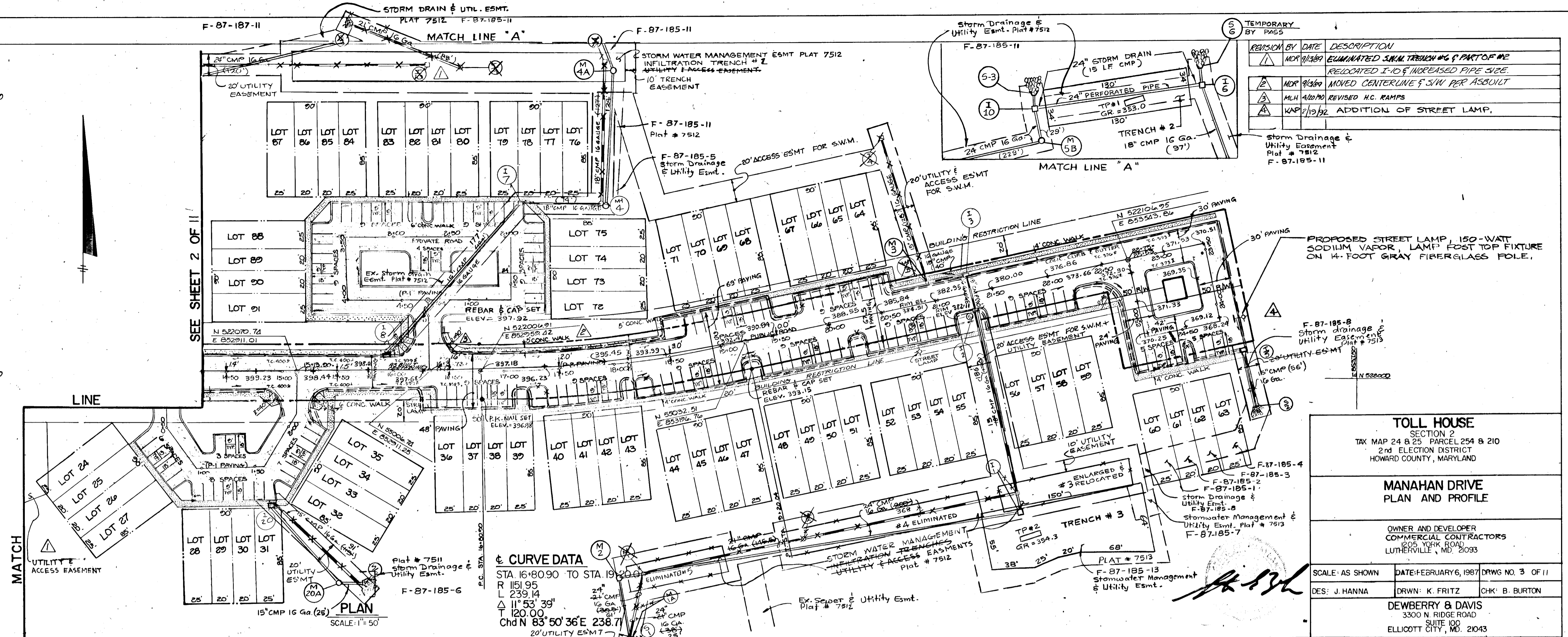
DATE

CHIEF, BUREAU OF HIGHWAYS

DATE

CHIEF, BUREAU OF ENGINEERING

DATE



CURVE DATA

STA 16+80.90 TO STA 19+00.00

R 151.95

L 239.14

Δ 11° 53' 39"

T 120.00

Chd N 83° 50' 36" E 238.71

20' UTILITY ESMT

TOLL HOUSE

SECTION 2

TAX MAP 24 & 25 PARCEL 254 & 210

2nd ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

MANAHAN DRIVE

PLAN AND PROFILE

OWNER AND DEVELOPER
COMMERCIAL CONTRACTORS
305 YORK ROAD
LUTHERVILLE, MD. 21033

SCALE: AS SHOWN DATE: FEBRUARY 6, 1987 DRWG NO. 3 OF 11

DES: J. HANNA DRWN: K. FRITZ CHK: B. BURTON

DEWBERRY & DAVIS
3300 N. RIDGE ROAD
SUITE 100
ELLIOTT CITY, MD. 21043

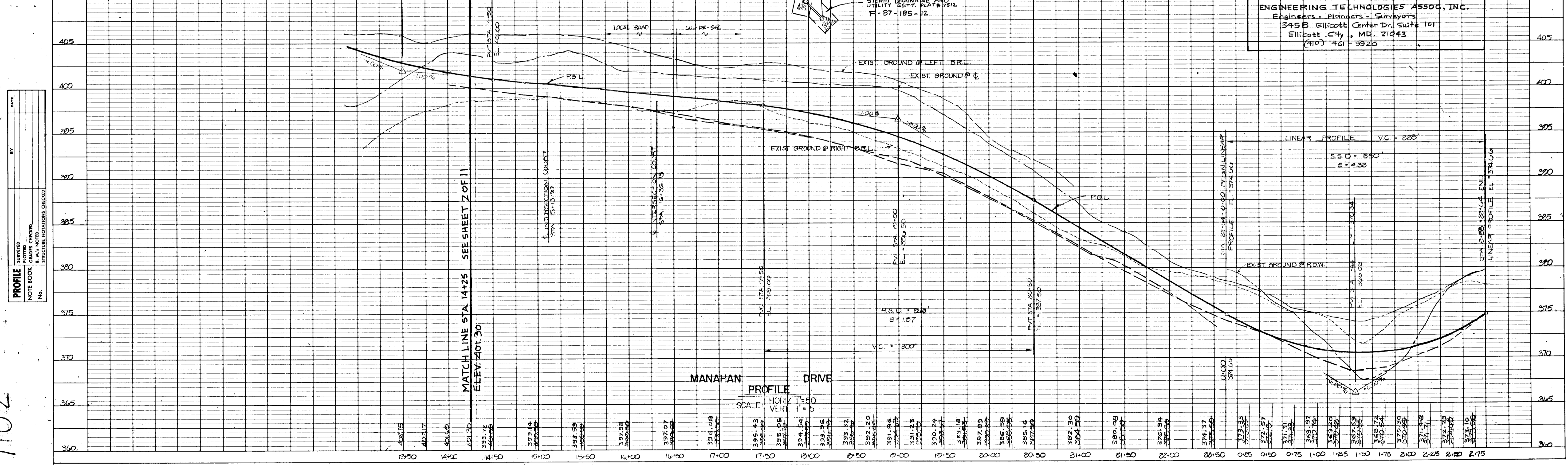
ENGINEERING TECHNOLOGIES ASSOC., INC.

Engineers - Planners - Surveyors

345 B Elliott Center Dr, Suite 101

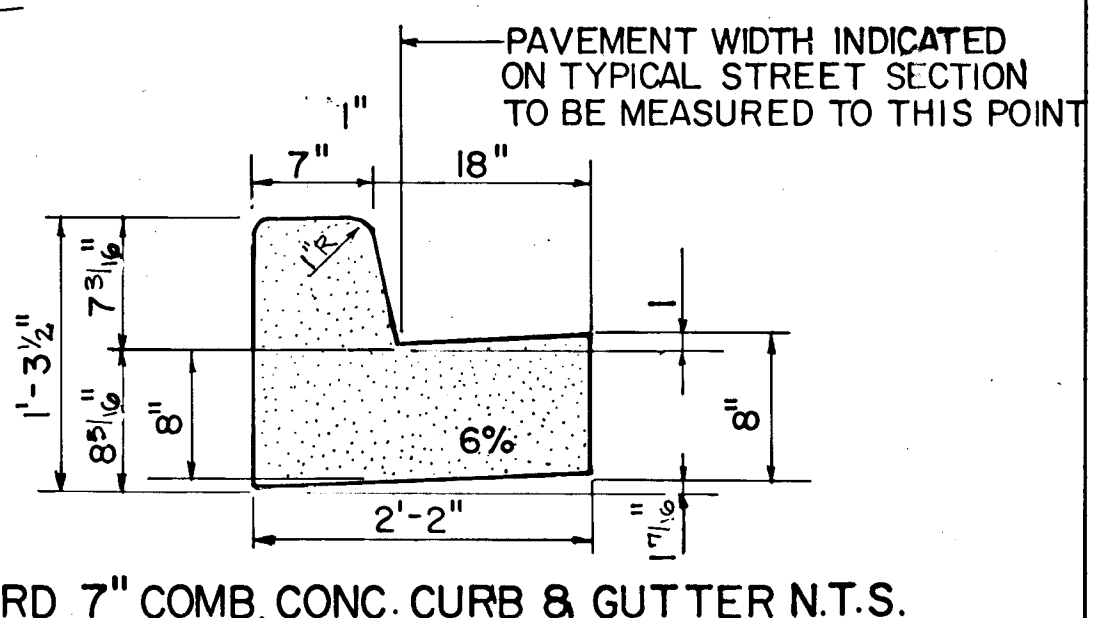
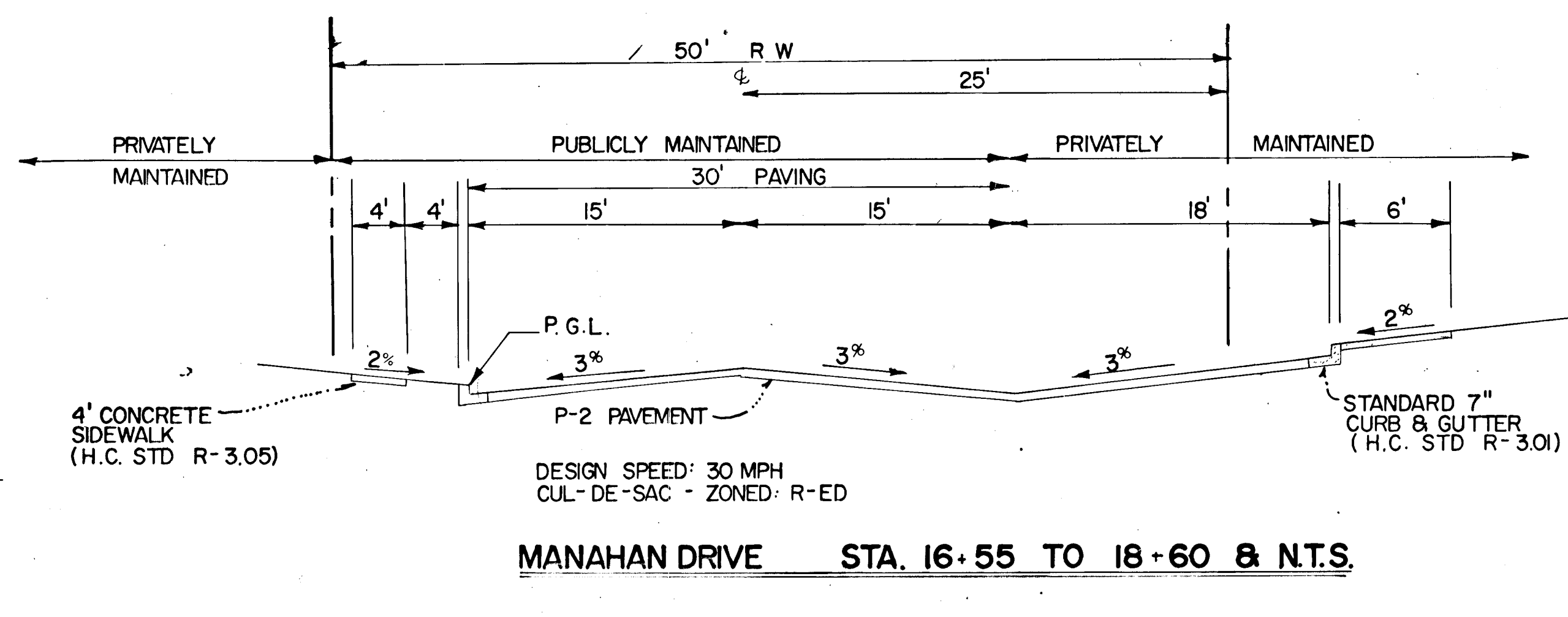
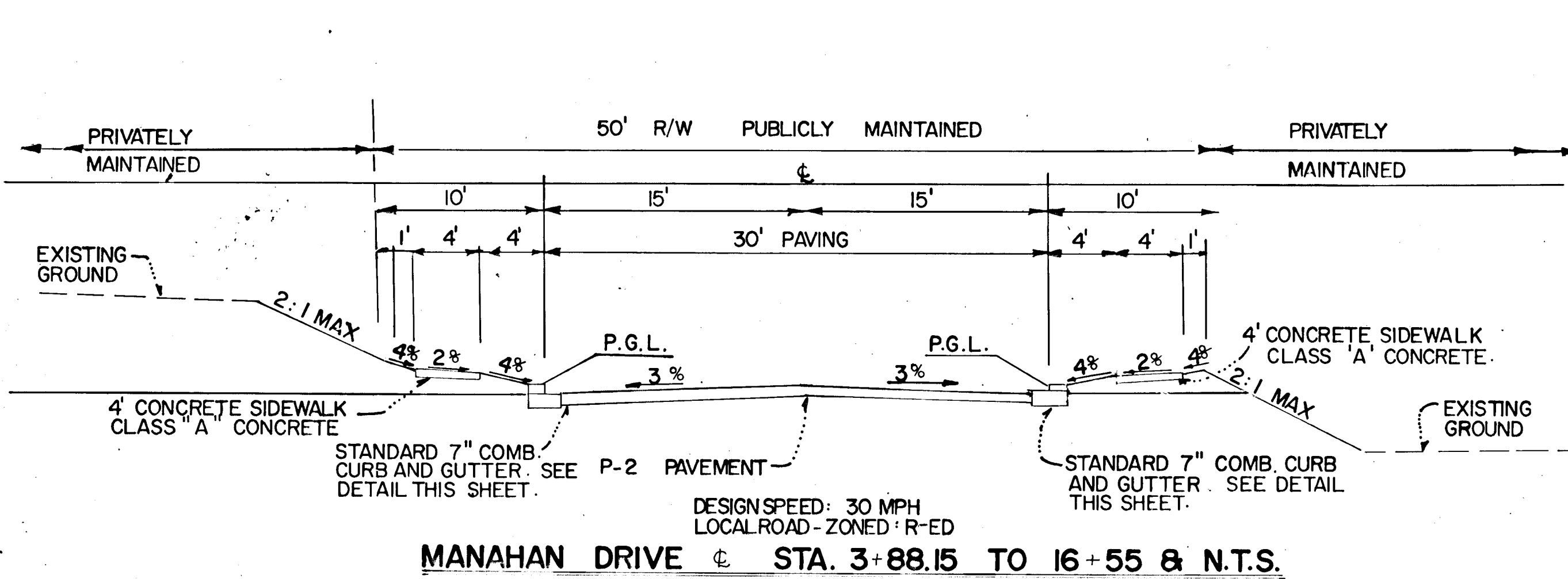
Elliott City, MD. 21043

(410) 761-3326



1102

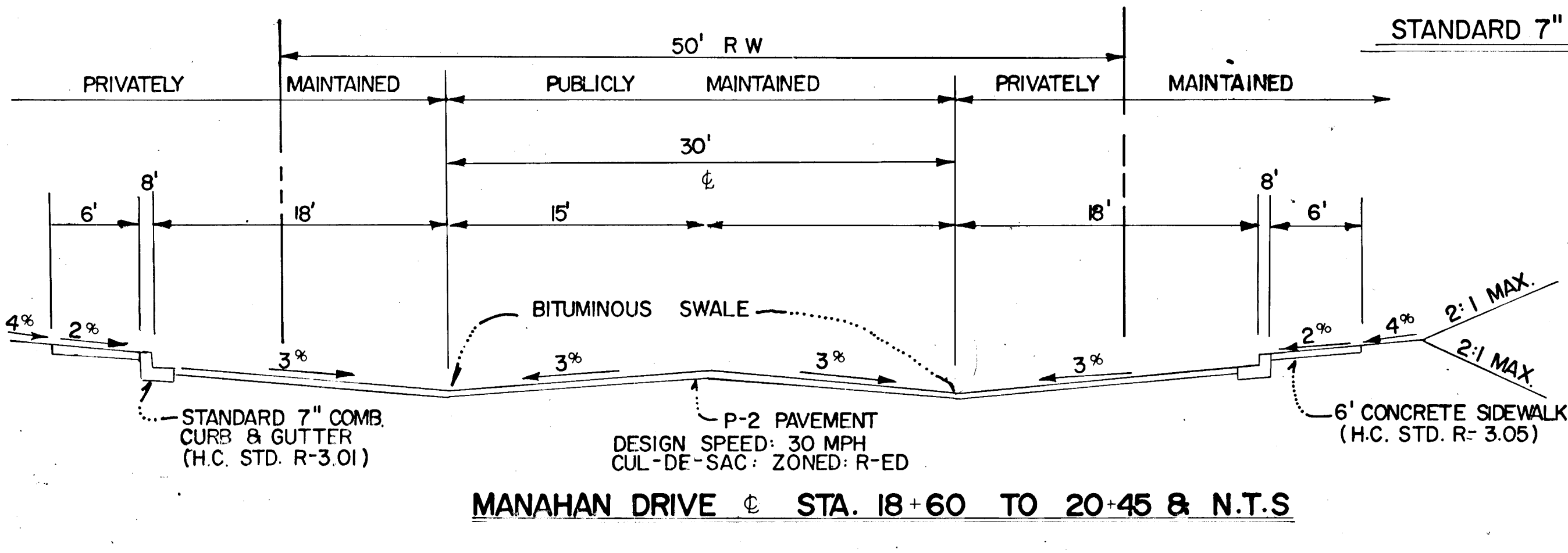
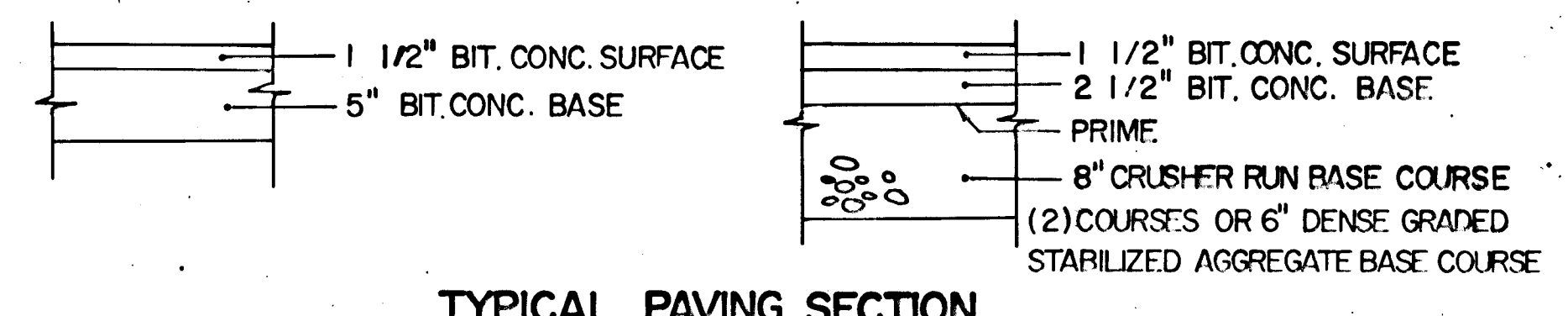
DATE: _____ BY: _____
 SURVEYED: _____ PLOTTED: _____
 NOTE BOOK: _____ CHECKED: _____
 NO. OF WAY CHECKED: _____



NOTE: ALL MATERIALS AND CONSTRUCTION OF TYPICAL ROAD SECTIONS SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

REVISION	BY	DATE	DESCRIPTION
1	MLW	4/20/87	ADDED H.C. RAMP DETAIL

[Signature]



TOLL HOUSE
 TAX MAP 24 B 25 PARCEL 254 B 210
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

ROAD SECTIONS, DETAILS AND STORM DRAIN PROFILES

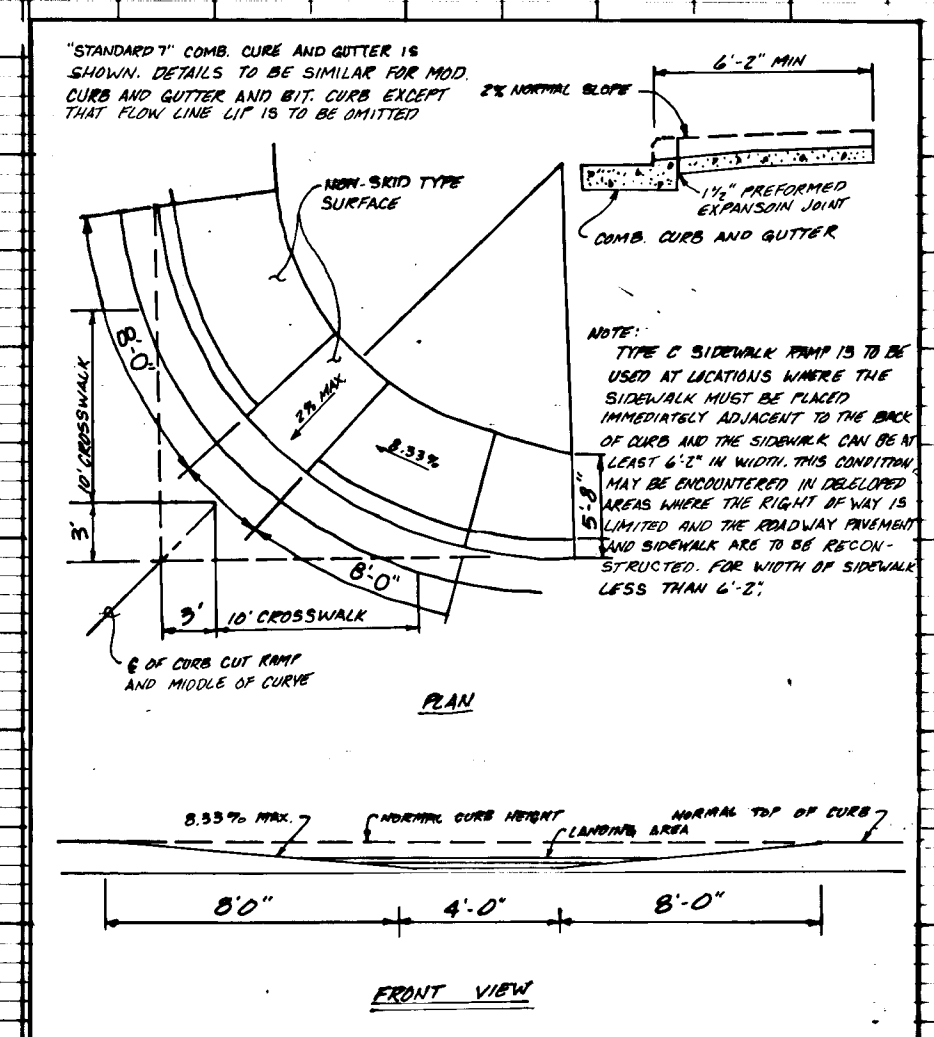
OWNER AND DEVELOPER
 COMMERCIAL CONTRACTORS
 1205 YORK ROAD
 LUTHERVILLE, MD. 21093

SCALE: AS SHOWN DATE: FEBRUARY 6, 1987 DRWG. NO. 4 OF 11
 DES: J. HANNA DRWN: K. FRITZ CHK: B. BURTON

DEWBERRY & DAVIS
 3300 N. RIDGE ROAD
 SUITE 100
 ELLICOTT CITY, MD. 21043

Engineering Technologies Assoc., Inc.
 3455 Ellicott Center Dr., Suite 101
 Ellicott City, MD 21043
 (410) 461-8920

DATE: _____ BY: _____
 SURVEYED: _____ PLOTTED: _____
 NOTE BOOK: _____ CHECKED: _____
 NO. OF WAY CHECKED: _____



STRUCTURE NUMBER	TYPE	INVERT IN ELEV.	INVERT OUT ELEV.	GROUND ELEV.	REMARKS	STRUCTURE NUMBER	TYPE	INVERT IN ELEV.	INVERT OUT ELEV.	GROUND ELEV.	REMARKS
1	MANHOLE	356.96	356.96	360.37		1	MANHOLE	356.96	356.96	360.37	
2	MANHOLE	370.61	370.61	370.44		2	MANHOLE	370.61	370.61	370.44	
3	MANHOLE	377.9	377.9	377.9		3	MANHOLE	377.9	377.9	377.9	
4	MANHOLE	387.57	387.57	387.57		4	MANHOLE	387.57	387.57	387.57	
5	MANHOLE	388.99	388.99	388.99		5	MANHOLE	388.99	388.99	388.99	
6	MANHOLE	380.0	380.0	380.0		6	MANHOLE	380.0	380.0	380.0	
7	MANHOLE	345.41	345.41	345.41		7	MANHOLE	345.41	345.41	345.41	
8	MANHOLE	342.73	342.73	342.73		8	MANHOLE	342.73	342.73	342.73	
9	MANHOLE	345.13	345.13	345.13		9	MANHOLE	345.13	345.13	345.13	
10	MANHOLE	346.79	346.79	346.79		10	MANHOLE	346.79	346.79	346.79	
11	MANHOLE	348.96	348.96	348.96		11	MANHOLE	348.96	348.96	348.96	
12	MANHOLE	342.94	342.94	342.94		12	MANHOLE	342.94	342.94	342.94	
13	MANHOLE	333.71	333.71	333.71		13	MANHOLE	333.71	333.71	333.71	
14	MANHOLE	340.42	340.42	340.42		14	MANHOLE	340.42	340.42	340.42	
15	MANHOLE	341.60	341.60	341.60		15	MANHOLE	341.60	341.60	341.60	
16	MANHOLE	338.12	338.12	338.12		16	MANHOLE	338.12	338.12	338.12	
17	MANHOLE	337.92	337.92	337.92		17	MANHOLE	337.92	337.92	337.92	
18	MANHOLE	339.20	339.20	339.20		18	MANHOLE	339.20	339.20	339.20	
19	MANHOLE	340.68	340.68	340.68		19	MANHOLE	340.68	340.68	340.68	
20	MANHOLE	339.71	339.71	339.71		20	MANHOLE	339.71	339.71	339.71	
21	MANHOLE	352.0	352.0	352.0		21	MANHOLE	352.0	352.0	352.0	
22	MANHOLE	352.14	352.14	352.14		22	MANHOLE	352.14	352.14	352.14	
23	MANHOLE	378.02	378.02	378.02		23	MANHOLE	378.02	378.02	378.02	
24	MANHOLE	384.51	384.51	384.51		24	MANHOLE	384.51	384.51	384.51	
25	MANHOLE	384.7	384.7	384.7		25	MANHOLE	384.7	384.7	384.7	
26	MANHOLE	382.12	382.12	382.12		26	MANHOLE	382.12	382.12	382.12	
27	MANHOLE	382.14	382.14	382.14		27	MANHOLE	382.14	382.14	382.14	
28	MANHOLE	400.34	400.34	400.34		28	MANHOLE	400.34	400.34	400.34	
29	MANHOLE	397.44	397.44	397.44		29	MANHOLE	397.44	397.44	397.44	
30	MANHOLE	384.5	384.5	384.5		30	MANHOLE	384.5	384.5	384.5	
31	MANHOLE	331.55	331.55	331.55		31	MANHOLE	331.55	331.55	331.55	
32	MANHOLE	357.03	357.03	357.03		32	MANHOLE	357.03	357.03	357.03	
33	MANHOLE	381.98	381.98	381.98		33	MANHOLE	381.98	381.98	381.98	
34	MANHOLE	364.16	364.16	364.16		34	MANHOLE	364.16	364.16	364.16	
35	MANHOLE	361.61	361.61	361.61		35	MANHOLE	361.61	361.61	361.61	
36	MANHOLE	357.58	357.58	357.58		36	MANHOLE	357.58	357.58	357.58	

ENGINEER'S CERTIFICATE
 I HEREBY 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] DATE: 3/19/87

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

[Signature] DATE: 3/23/87

U.S. SOIL CONSERVATION SERVICE

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

[Signature] DATE: 3/23/87

DISTRICT CHIEF, HOWARD SOIL CONSERVATION DISTRICT

DEVELOPER'S CERTIFICATE
 "I/WE 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 ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

[Signature] DATE: 4/1/87

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] DATE: 4-2-87

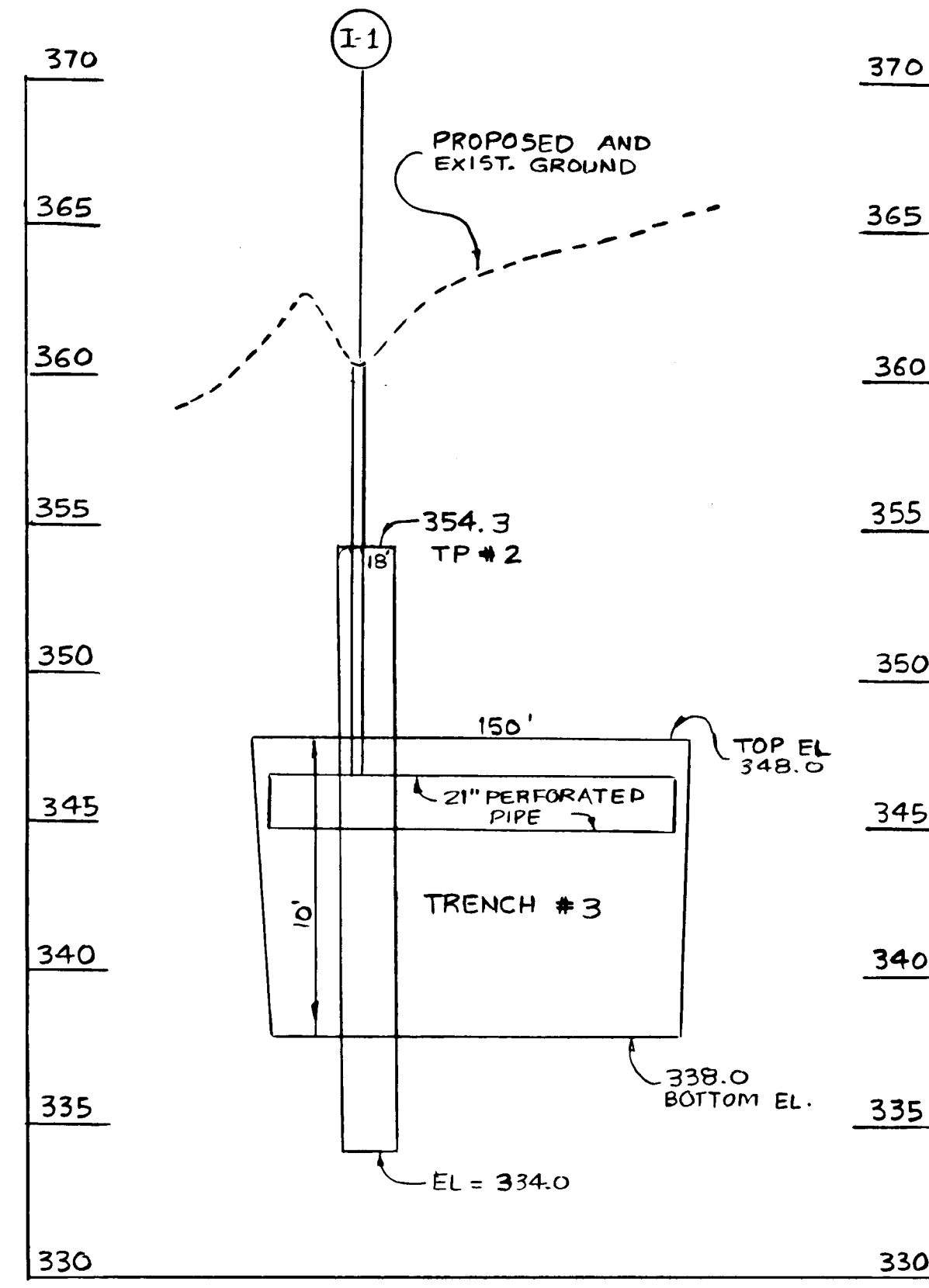
CHIEF, LAND DEVELOPMENT DIVISION

[Signature] DATE: 4/2/87

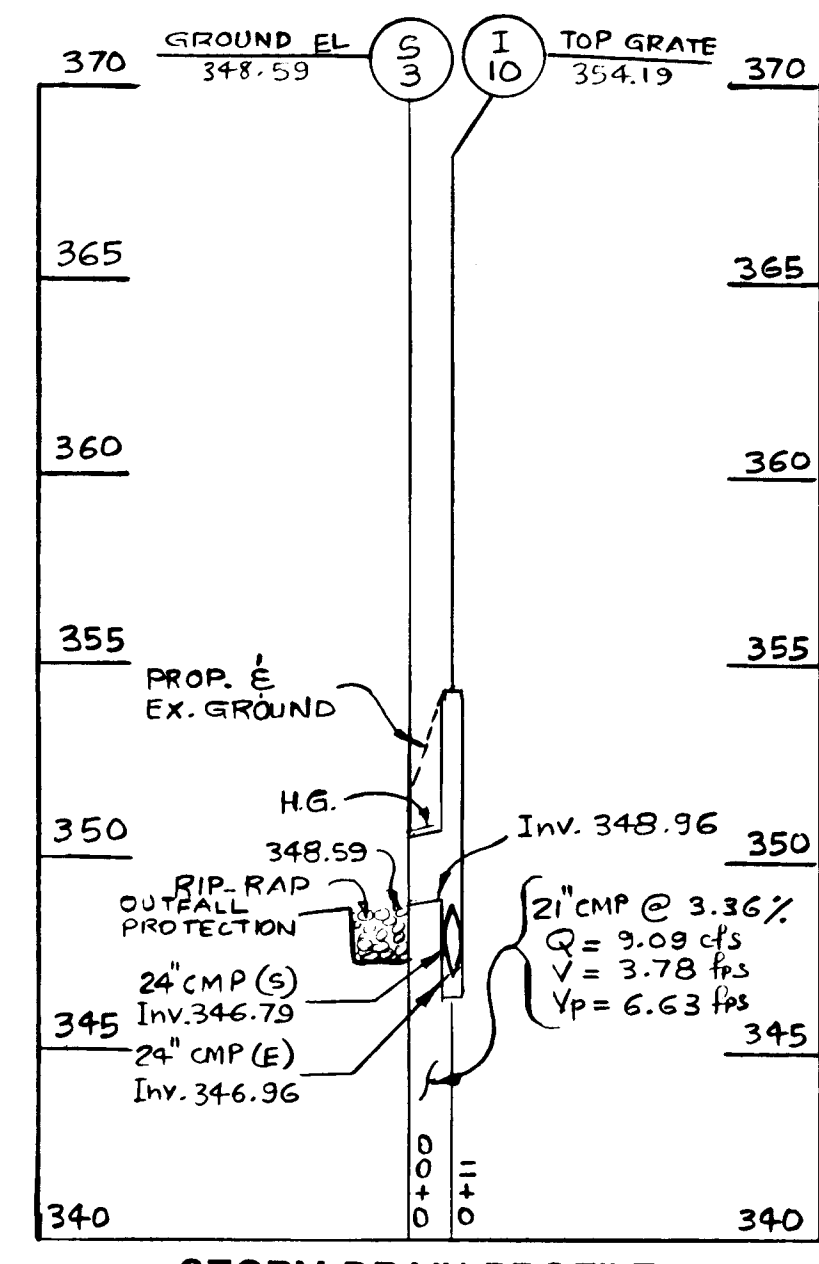
CHIEF, BUREAU OF HIGHWAYS

[Signature] DATE: 4-2-87

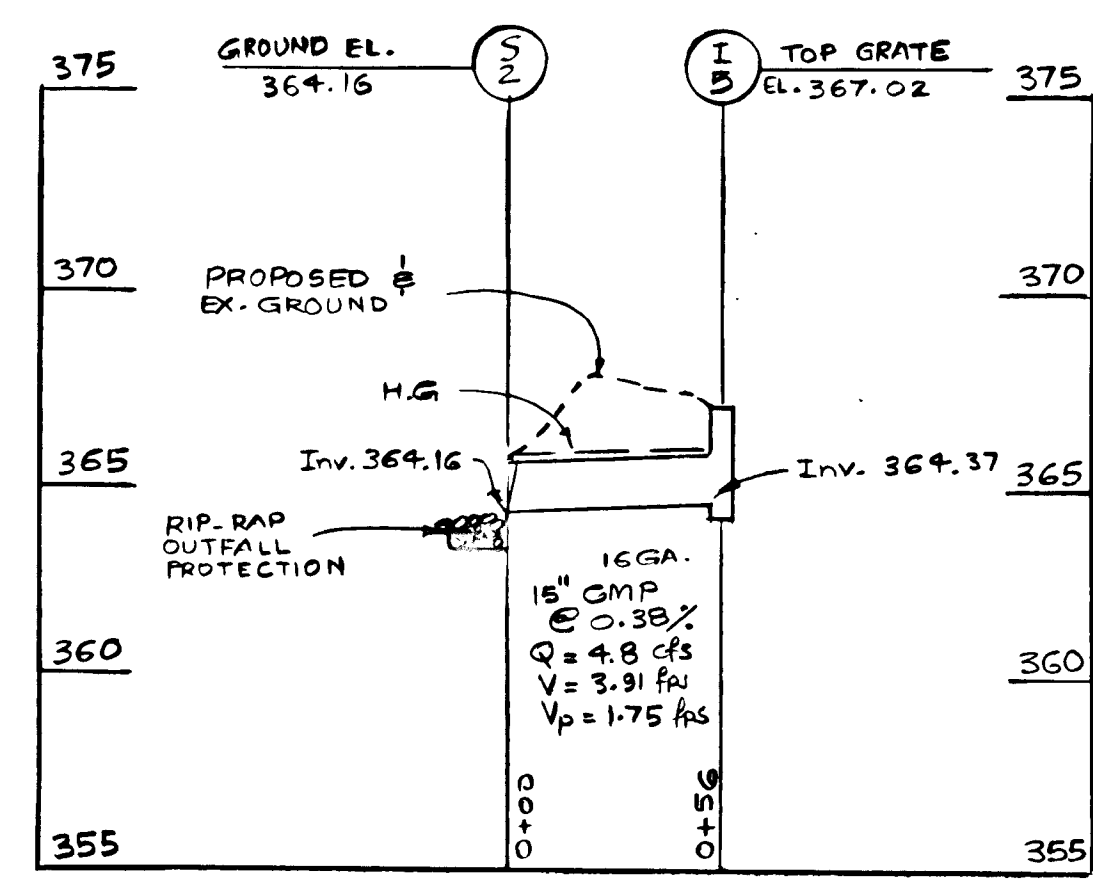
CHIEF, BUREAU OF ENGINEERING



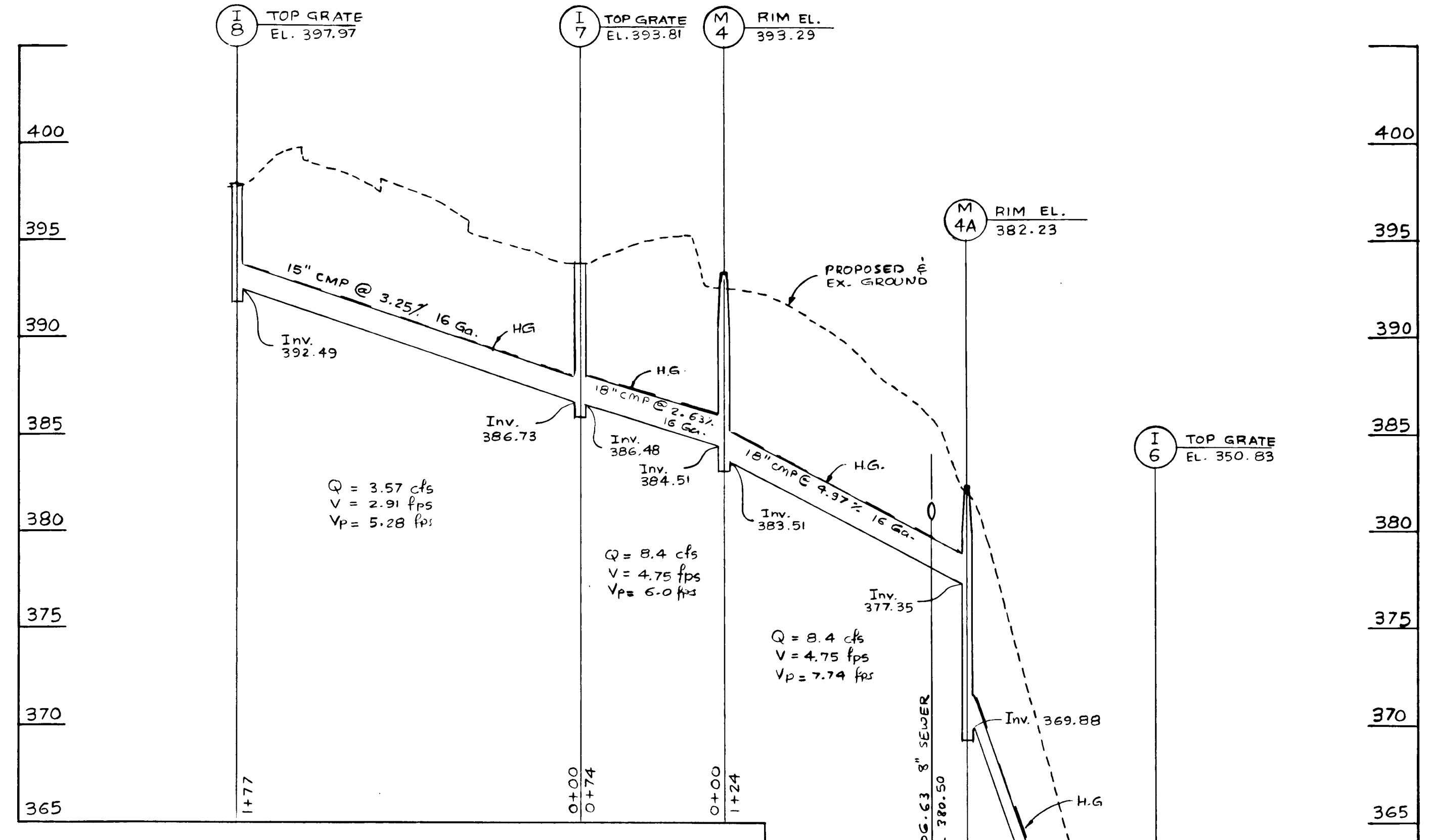
CROSS SECTION INFILTRATION TRENCH # 3



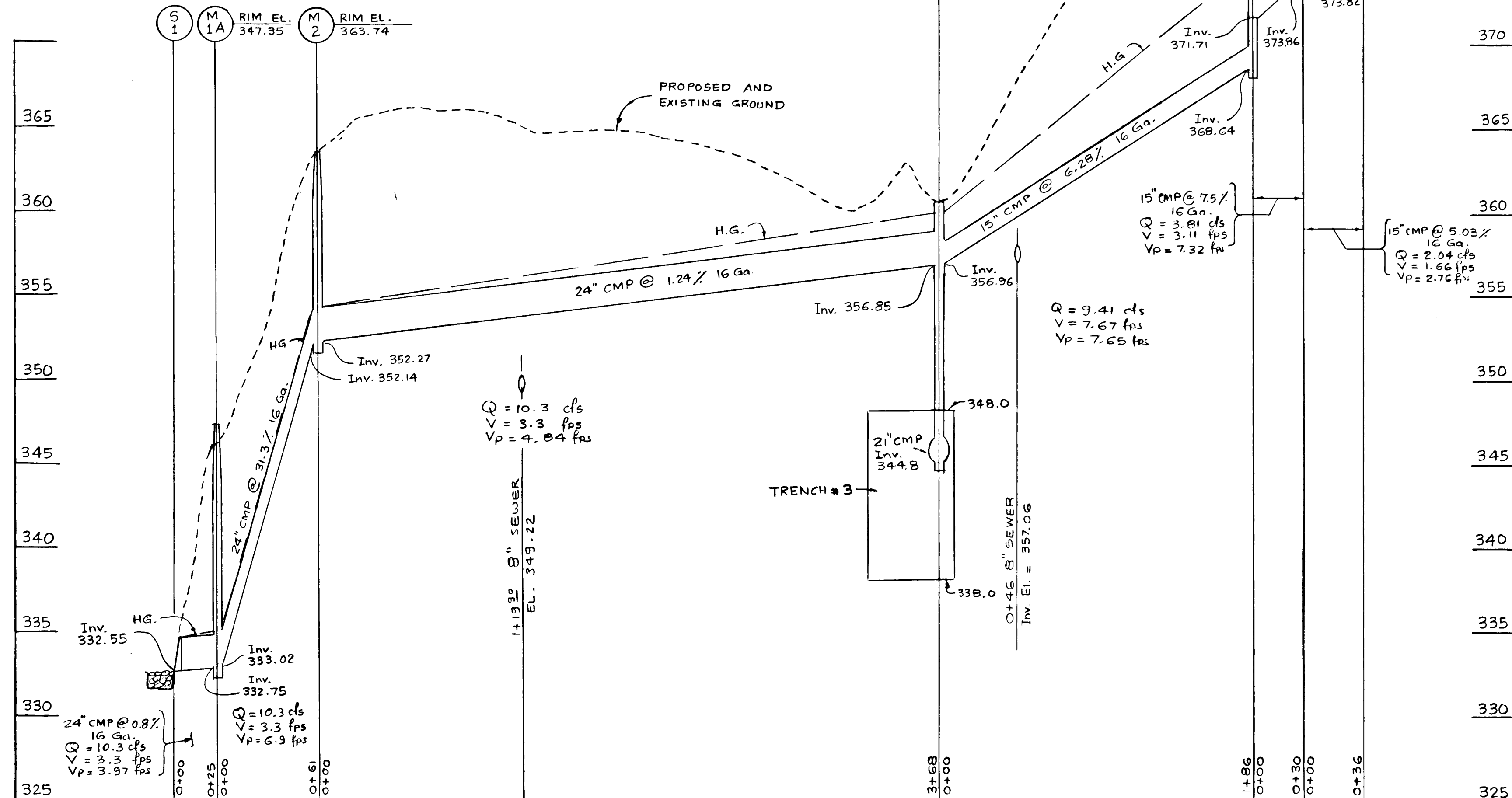
STORM DRAIN PROFILE



STORM DRAIN PROFILE



STORM DRAIN PROFILE AND INFILTRATION TRENCH



STORM DRAIN PROFILE AND INFILTRATION TRENCH

NOTES:
 1-Materials shall be as shown on typical section.
 2-Strict adherence to OSHA's Trench Safety Code and local regulations. All shoring to acceptable construction practices shall be observed.
 3-Once the trench is excavated (wholly or in part) hand rock the walls & notify Engineer for inspection. Prior to placement of filter cloth and stone slip forms may be used to hold the trench excavation. During construction filter cloth shall be placed on bottom & sides of trench (not inside of slip form) and across top of trench 6\"/>

ENGINEERING TECHNOLOGIES ASSOCIATES, INC.
 ENGINEERS • PLANNERS • SURVEYORS
 3418 ELlicOTT CENTER DRIVE, SUITE 401
 ELlicOTT CITY, MD 21043
 (301) 481-1100

Dewberry & Davis
 ARCHITECTS ENGINEERS PLANNERS SURVEYORS
 3300 N. Ridge Road
 Suite 100
 Ellicott City, Maryland
 21043
 (301) 461-7478 BALTIMORE
 (301) 621-4970 WASHINGTON

ENGINEER'S CERTIFICATE
 I HEREBY 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.
 (THIS DRAWING IS RE-DRAFTED BY ENGINEERING TECHNOLOGIES ASSOC., INC.)

 Louis Langmeier
 5/23/94
 SIGNATURE OF ENGINEER DATE

DEVELOPER'S CERTIFICATE
 I/WE 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 ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 Louis Langmeier
 5.23.94
 SIGNATURE OF DEVELOPER DATE

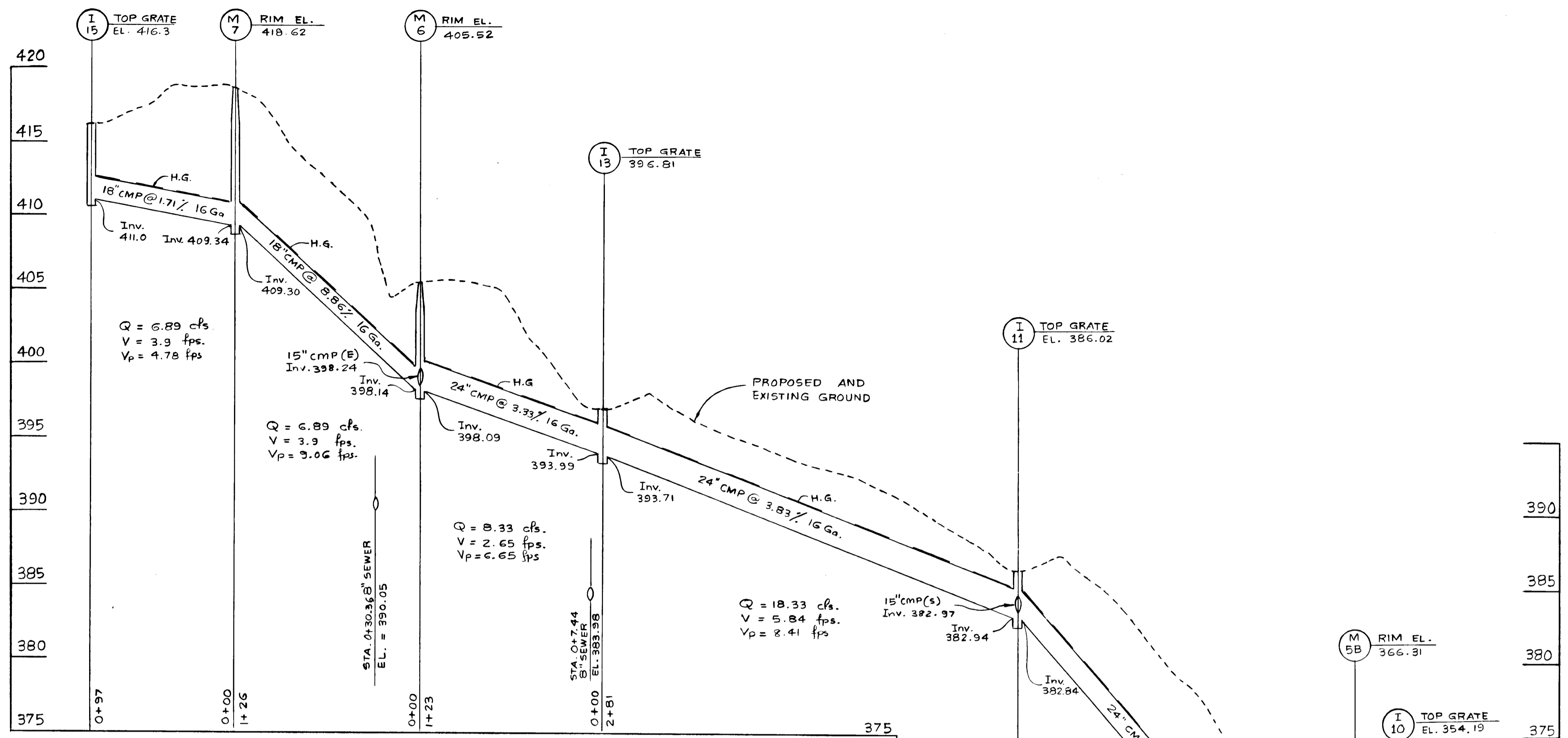
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 U.S. Soil Conservation Service
 DATE
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
 HOWARD SOIL CONSERVATION DISTRICT
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 City of Howard County
 DIVISION OF LAND DEVELOPMENT AND RESEARCH
 Date 10/7/94
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 Date 10/16/94
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Engineering
 Date 10/18/94

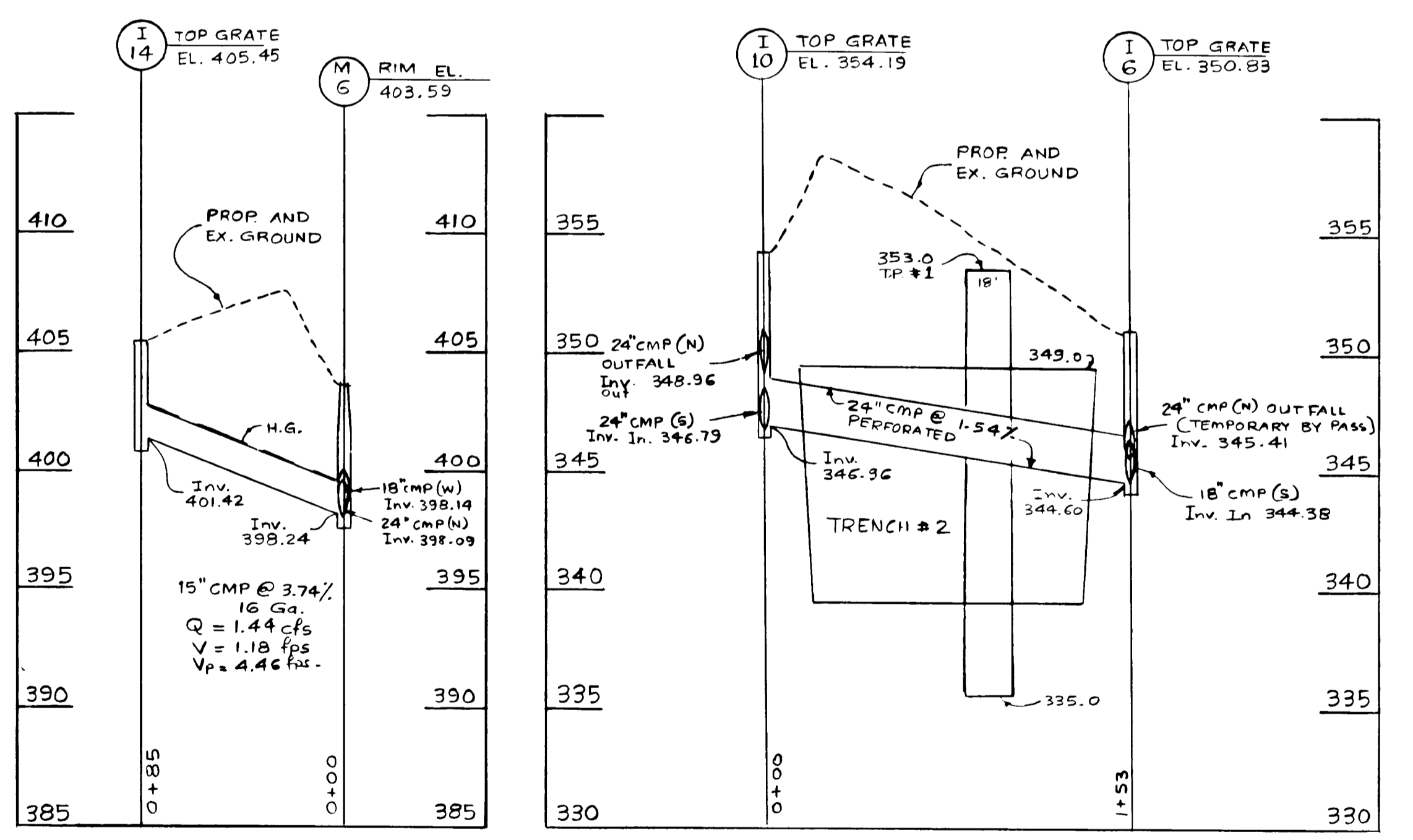
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS.
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER
 DATE
 SUBDIVISION NAME
 SECT./AREA LOT/PARCEL #
 PLAT # OR L/T BLOCK # EASE TAX/ZONE TRAP ELEC. DIST. CENSUS TR.
 WATER CODE
 SEWER CODE

TOLLHOUSE
 STORM DRAIN PROFILES AND CROSS SECTIONS
 2ND ELECTION DISTRICT HOWARD CO. MD.
 SCALE: HORZ. 1" = 50'
 VERT. 1" = 5'
 SHEET 5 OF 11 JUNE 1987

1102

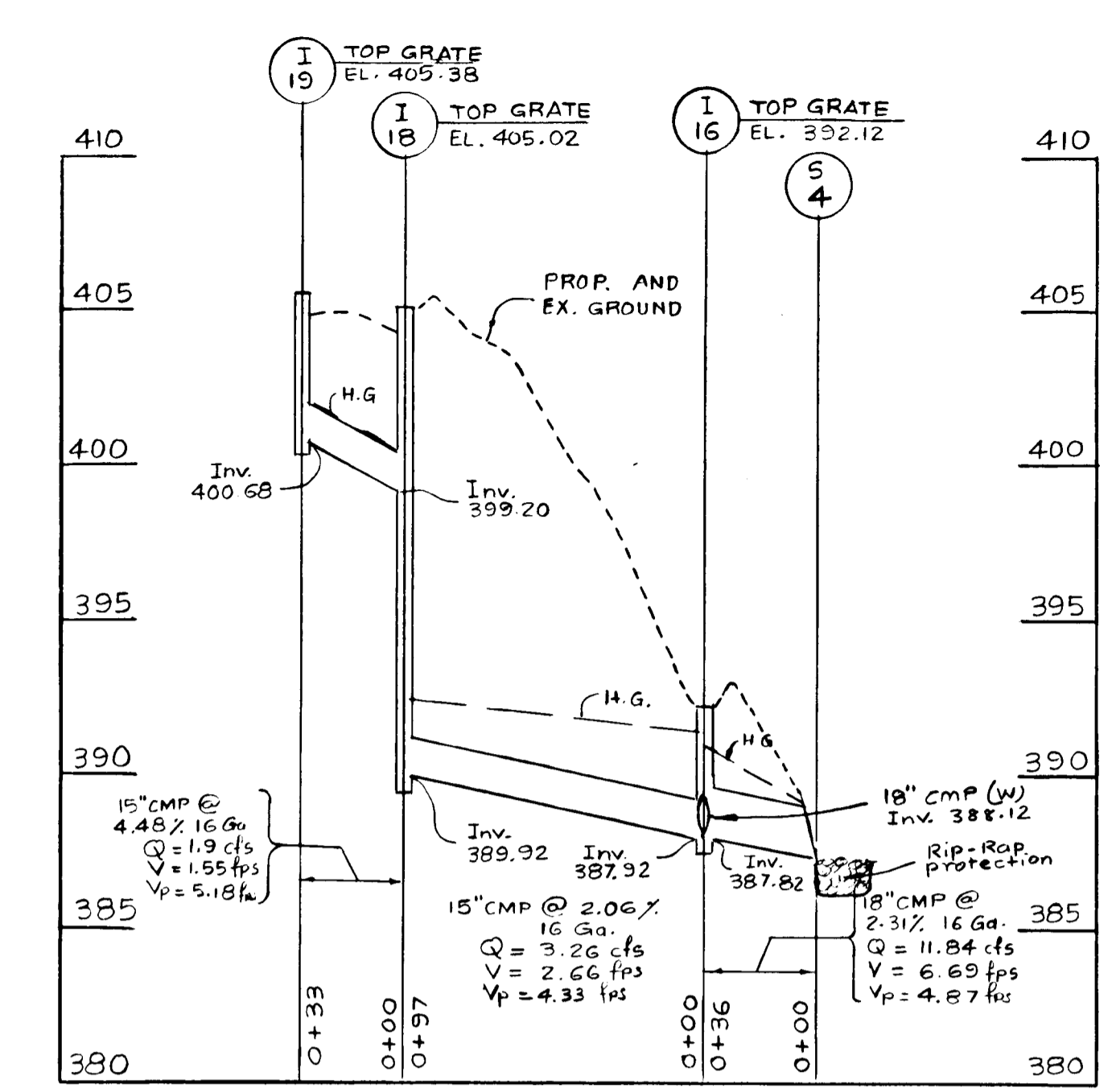


STORM DRAIN PROFILE AND INFILTRATION TRENCH

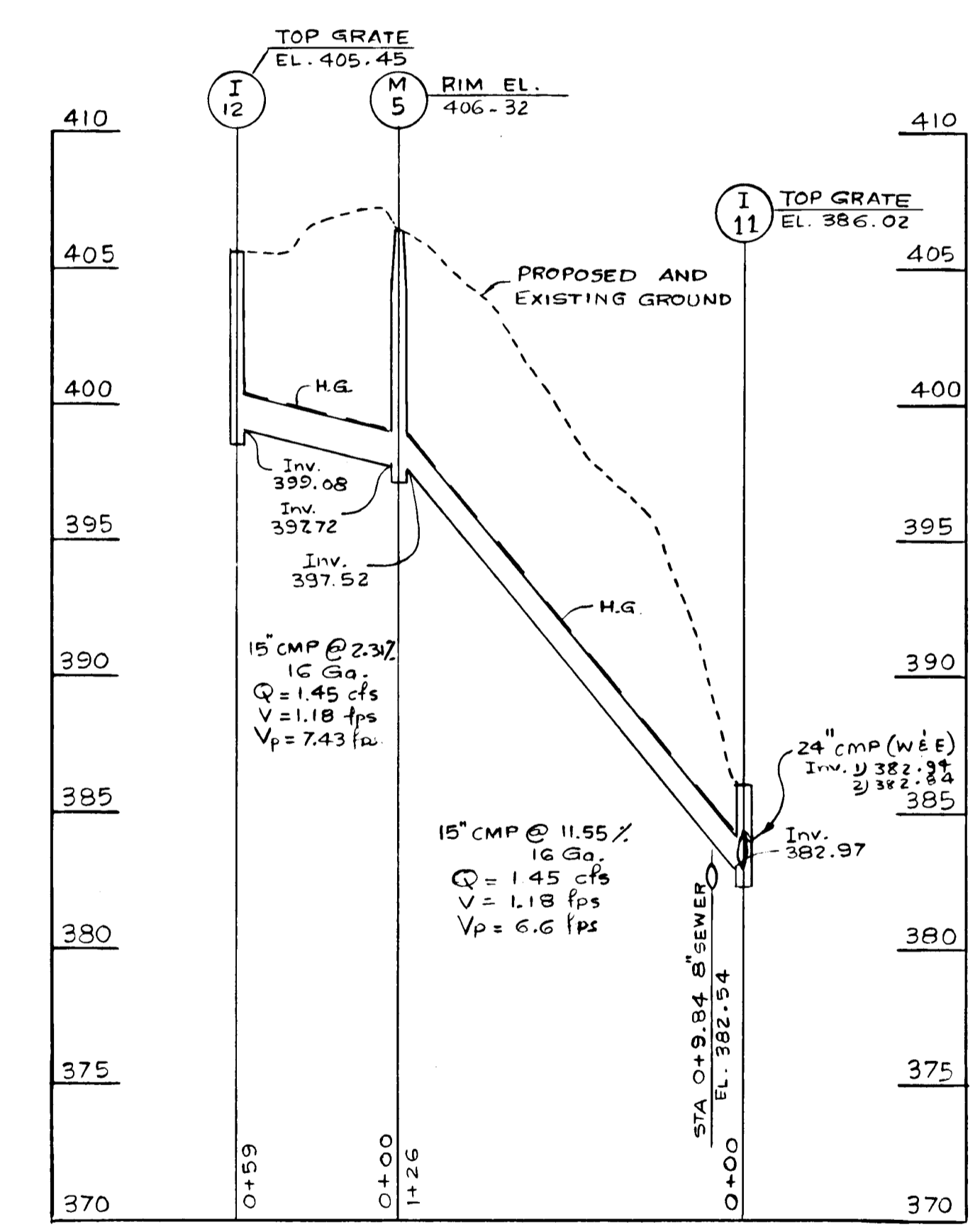


STORM DRAIN PROFILE

STORM DRAIN PROFILE AND INFILTRATION TRENCH



STORM DRAIN PROFILE AND INFILTRATION TRENCH



STORM DRAIN PROFILE

Diagram showing rip-rap outlet protection geometry with labels: DIA, L_a, W, APRON, and the formula W = DIA + L_a (MIN.).

	DIA.	L _a	W
S ₁	21"	15'	16.75'
S ₂	15"	15'	16.25'
S ₃	21"	15'	16.75'
S ₄	18"	15'	16.50'
S ₅	15"	15'	16.25'

SIZES OF RIP-RAP OUTLET PROTECTION
S₁ - S₅

ENGINEERING TECHNOLOGIES ASSOCIATES, INC.
ENGINEERS - PLANNERS - SURVEYORS
3454 ELLICOTT CENTER DRIVE, SUITE 101
ELLICOTT CITY, MD 21113
301 481 8322

Dewberry & Davis
ARCHITECTS ENGINEERS PLANNERS SURVEYORS
3300 N. Ridge Road
Suite 100
Ellicott City, Maryland
21043
(301) 461-7478 BALTIMORE
(301) 621-4970 WASHINGTON

ENGINEER'S CERTIFICATE
I HEREBY 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.
(THIS DRAWING IS RE-DRAFTED BY ENGINEERING TECHNOLOGIES ASSOC., INC.)
SIGNATURE OF ENGINEER: [Signature]
DATE: 5/23/94

DEVELOPER'S CERTIFICATE
I/WE 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 ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
SIGNATURE OF DEVELOPER: [Signature]
DATE: 5-23-94

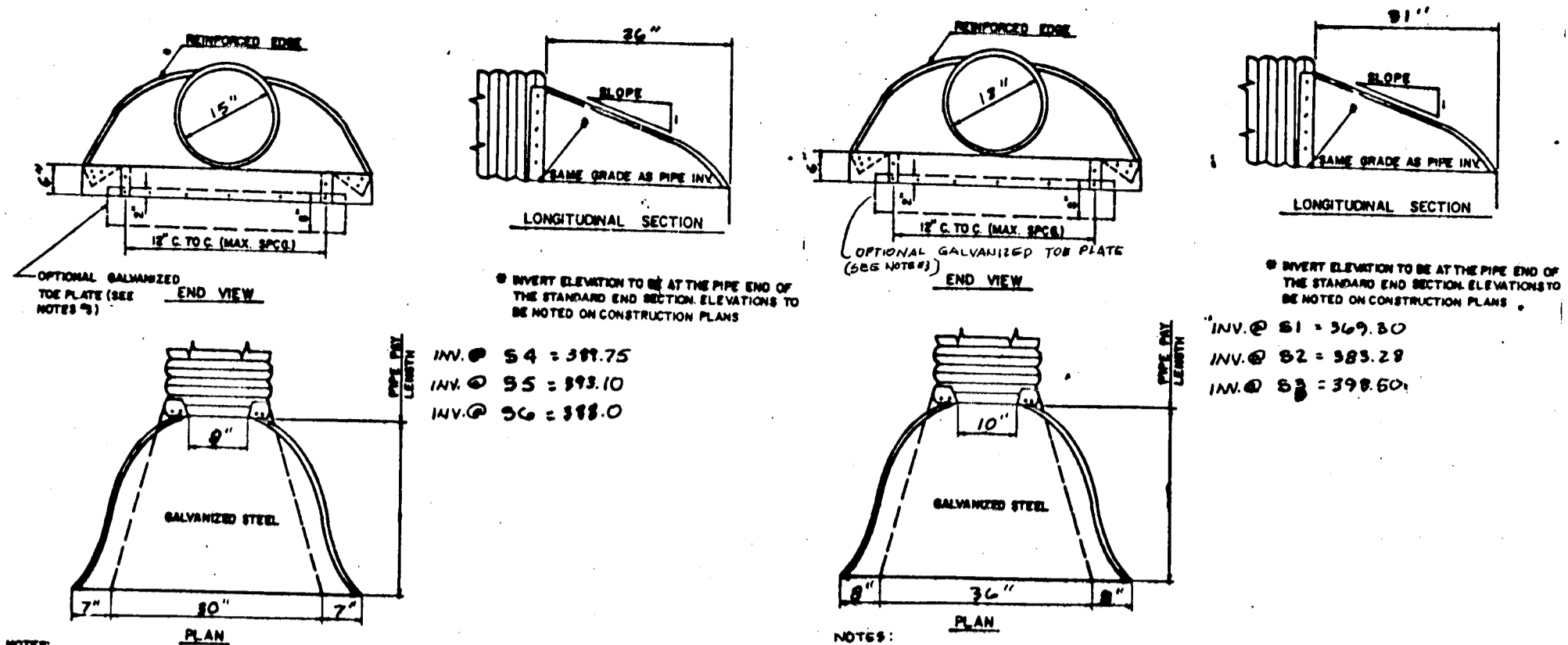
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND METS TECHNICAL REQUIREMENTS.
U.S. Soil Conservation Service _____ Date _____
THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Howard Soil Conservation District _____ Date _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING.
[Signature] 10/7/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 10/18/94 AG
CHIEF, BUREAU OF HIGHWAYS
[Signature] 10/17/94
CHIEF, BUREAU OF HIGHWAYS

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT
COUNTY HEALTH OFFICER _____ DATE _____
SUBDIVISION NAME _____
PLAT # OR LOT BLOCK # ZONE TAX/USE TRAP EJEZ, DIST CENSUS TR.
WATER CODE _____ SEWER CODE _____

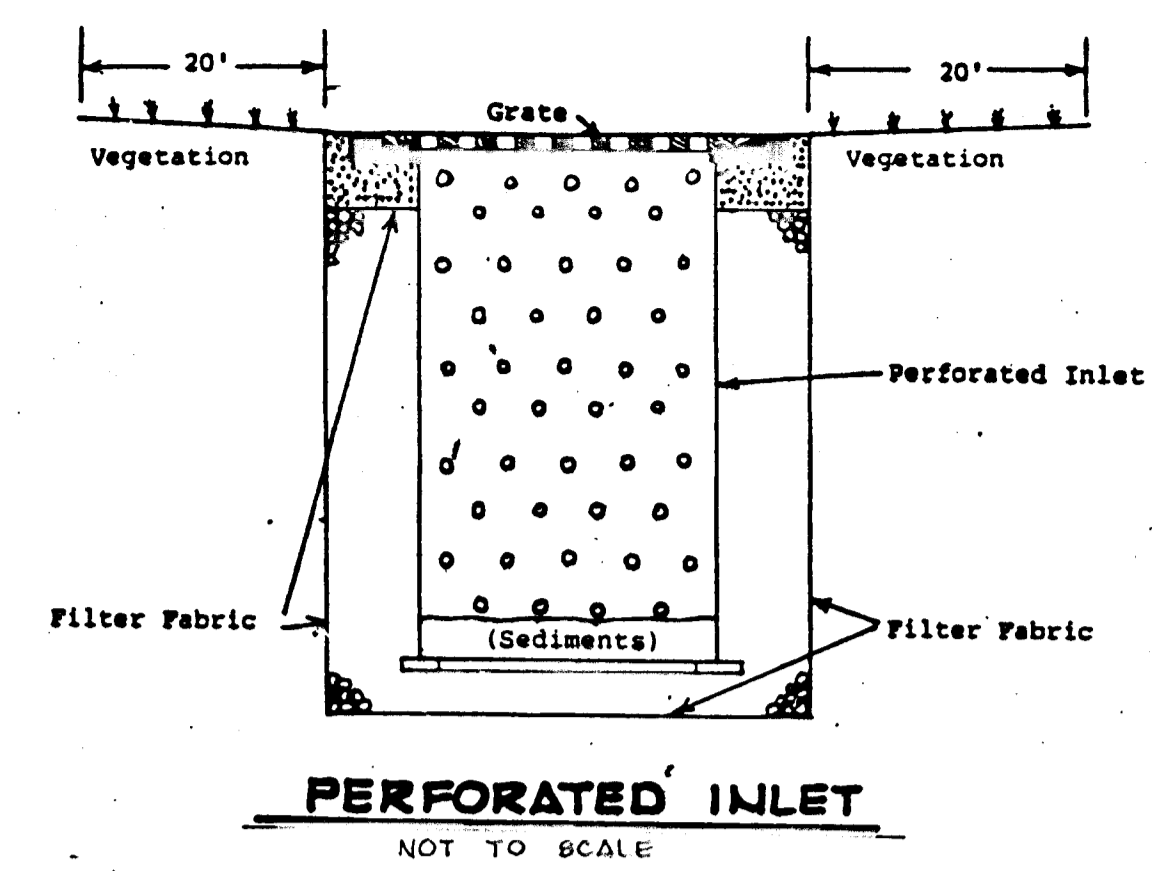
TOLLHOUSE
STORM DRAIN PROFILES AND CROSS SECTIONS
2 ELECTION DISTRICT HOWARD CO. MD.
SCALE: HORZ. 1" = 50'
VERT. 1" = 5'
SHEET 6 OF 11 JUNE 1987

1102

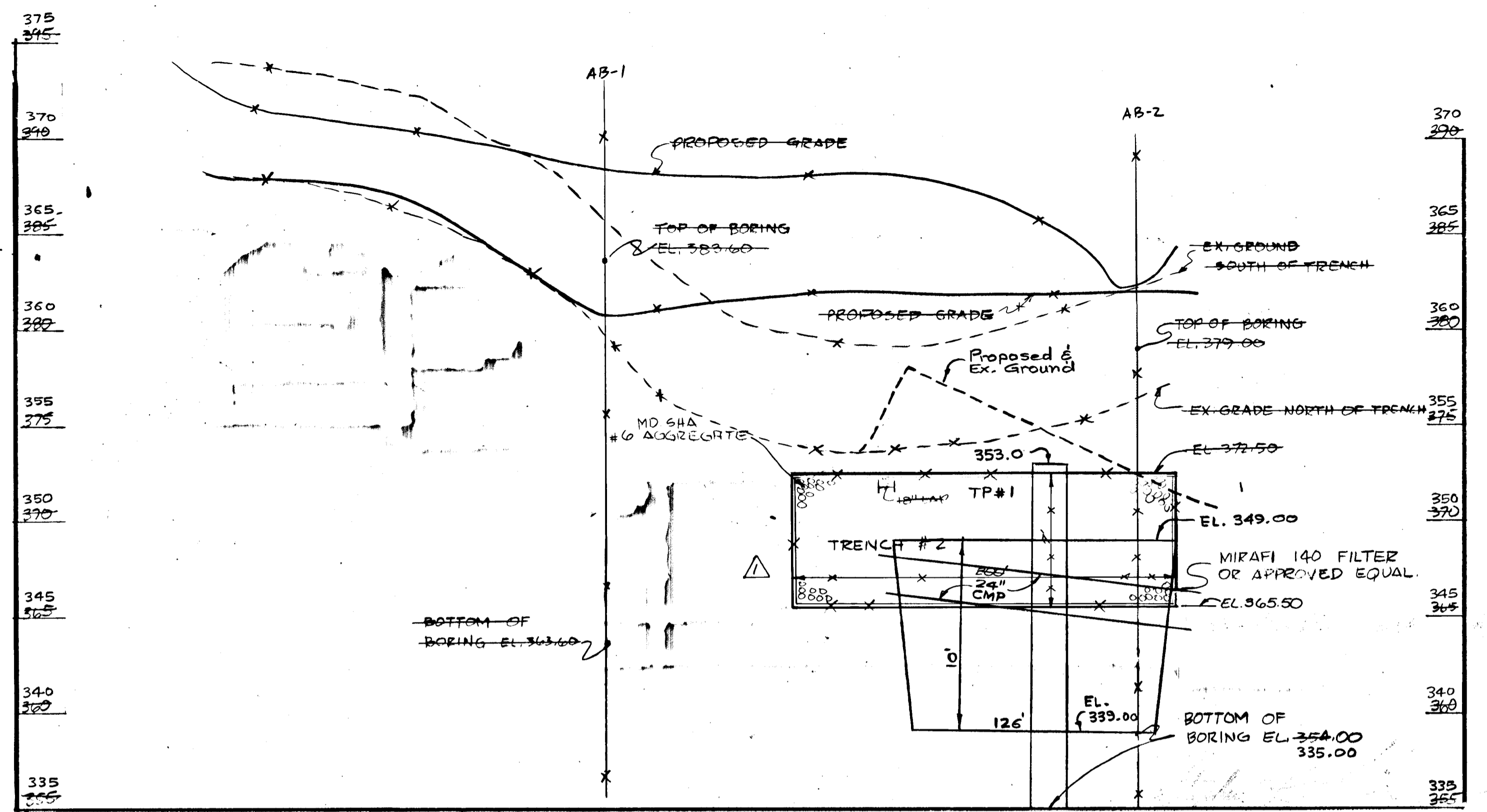


NOTES:
 1. ALL 3 PICE BODIES TO HAVE 1/8" RIBS AND 10" H. CENTER PANELS WITH CENTER PANELS TO BE GREATER THAN 50% OF THE PIPE PERIPHERY. MULTIPLE PANEL BODIES TO HAVE LAP BEAMS WHICH ARE TO BE THINLY JOINED BY 3/8" GALVANIZED RIVETS OR BOLTS.
 2. FOR 40" THRU 60" SIZES, REINFORCED EDGES TO BE SUPPLEMENTED WITH GALVANIZED STIFFENER ANGLES. THE ANGLES WILL BE 4" X 1/2" FOR 40" THRU 48" DIAMETER AND 4" X 3/4" FOR 48" TO 60" DIAMETER. THE ANGLES TO BE ATTACHED BY 3/8" GALVANIZED RIVETS AND BOLTS.
 3. THE PLATE SHALL BE USED WHEN SPICED ON THE PLANE. COST OF THE PLATE TO BE INCLUDED IN BID PRICE FOR EACH OF METAL END SECTION.

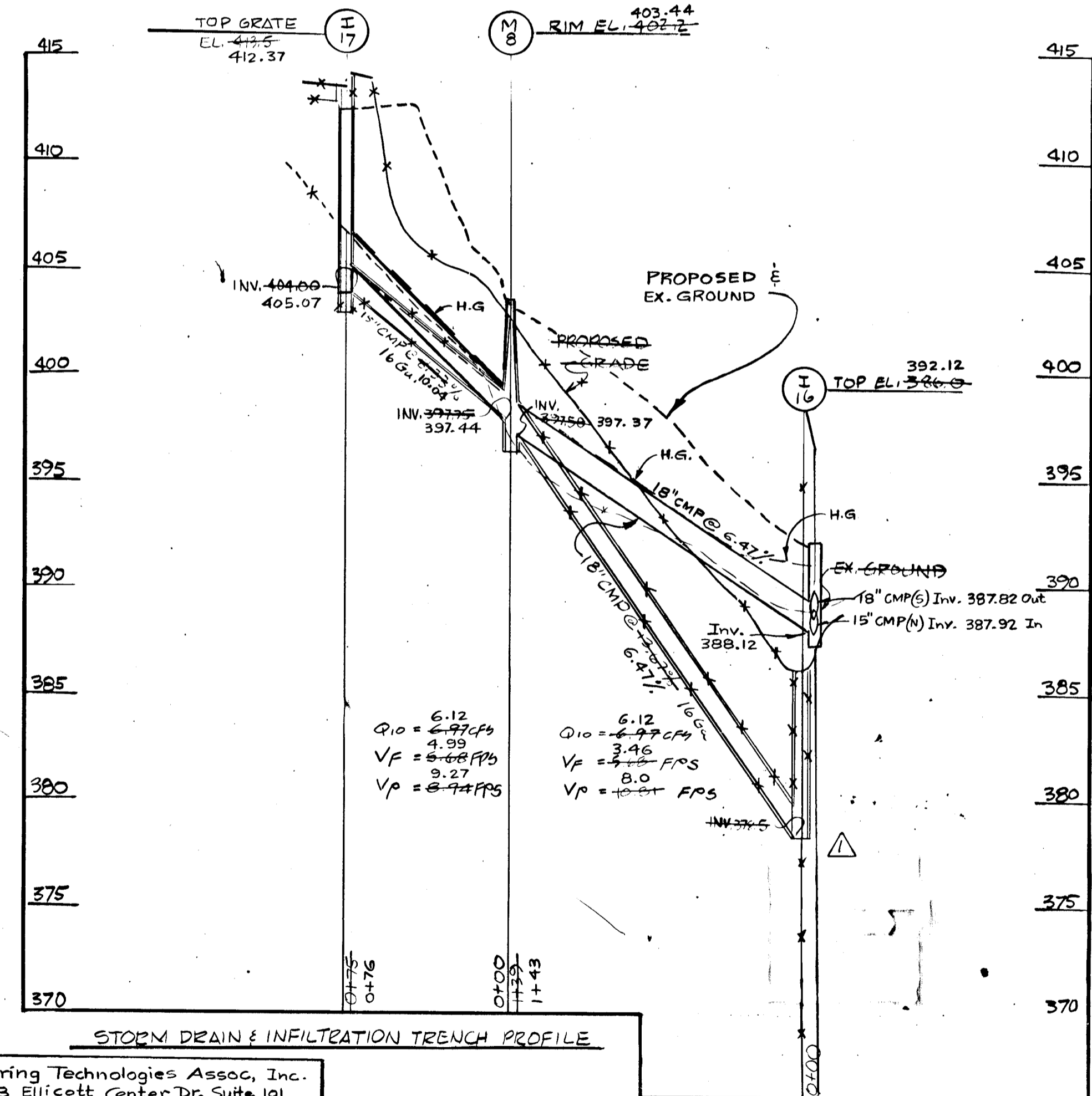
METAL END SECTION
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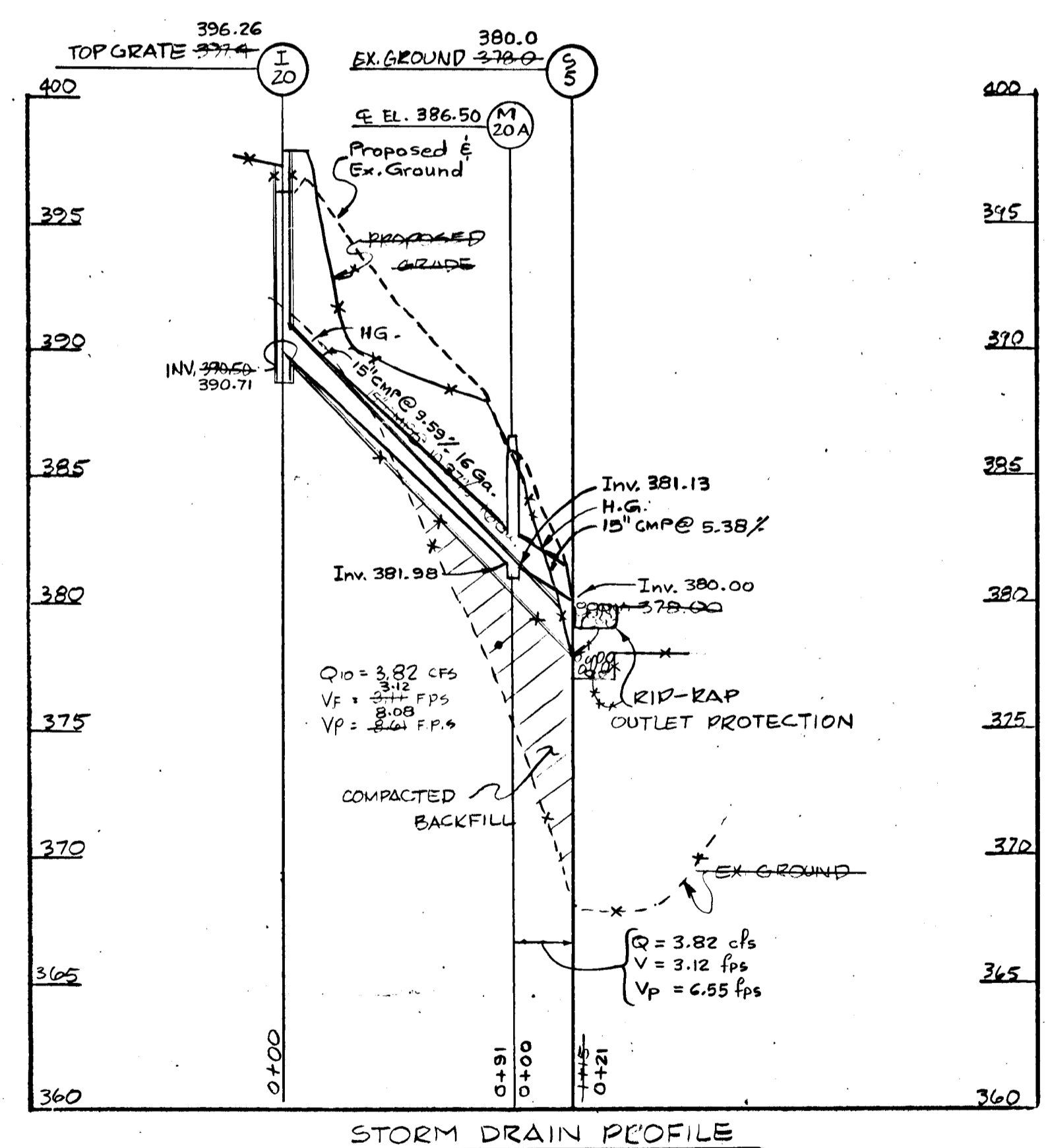
PERFORATED INLET
 NOT TO SCALE



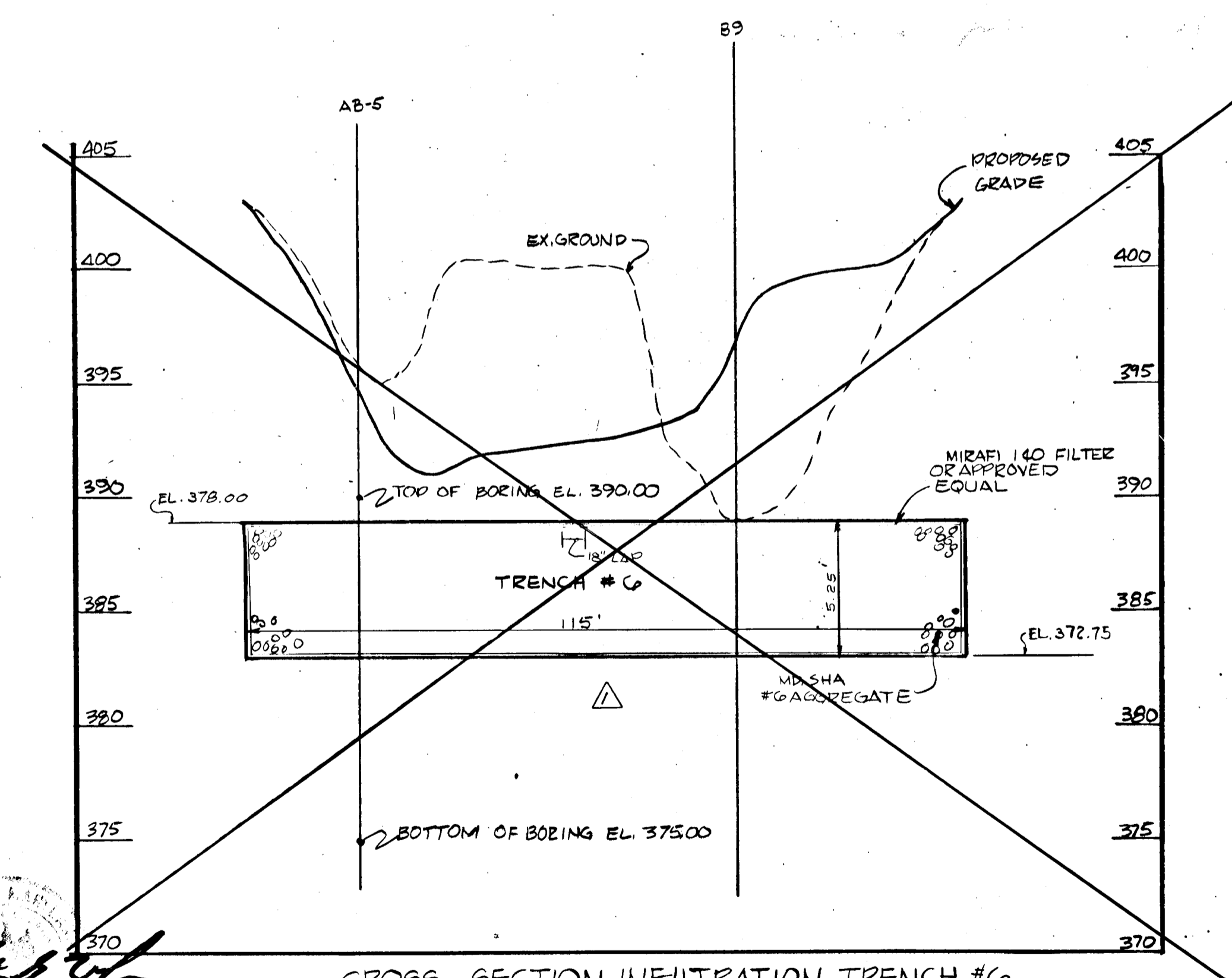
CROSS SECTION INFILTRATION TRENCH 2



STORM DRAIN & INFILTRATION TRENCH PROFILE



STORM DRAIN PROFILE



CROSS SECTION INFILTRATION TRENCH #6

Engineering Technologies Assoc., Inc.
 3458 Ellicott Center Dr, Suite 101
 Ellicott City, MD 21043
 (410) 461-9920

ENGINEER'S CERTIFICATE
 I HEREBY 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE OF ENGINEER: [Signature] DATE: 8/19/87

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 ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEMAND NECESSARY.
 SIGNATURE OF DEVELOPER: [Signature] DATE: 4/9/87

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 U.S. SOIL CONSERVATION DISTRICT DATE: 8/25/87
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 U.S. SOIL CONSERVATION DISTRICT DATE: 8/25/87

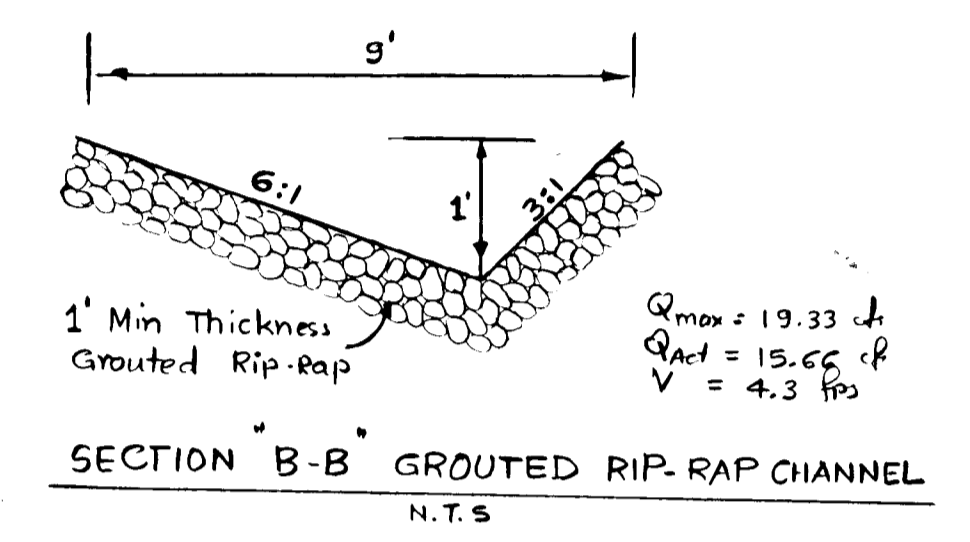
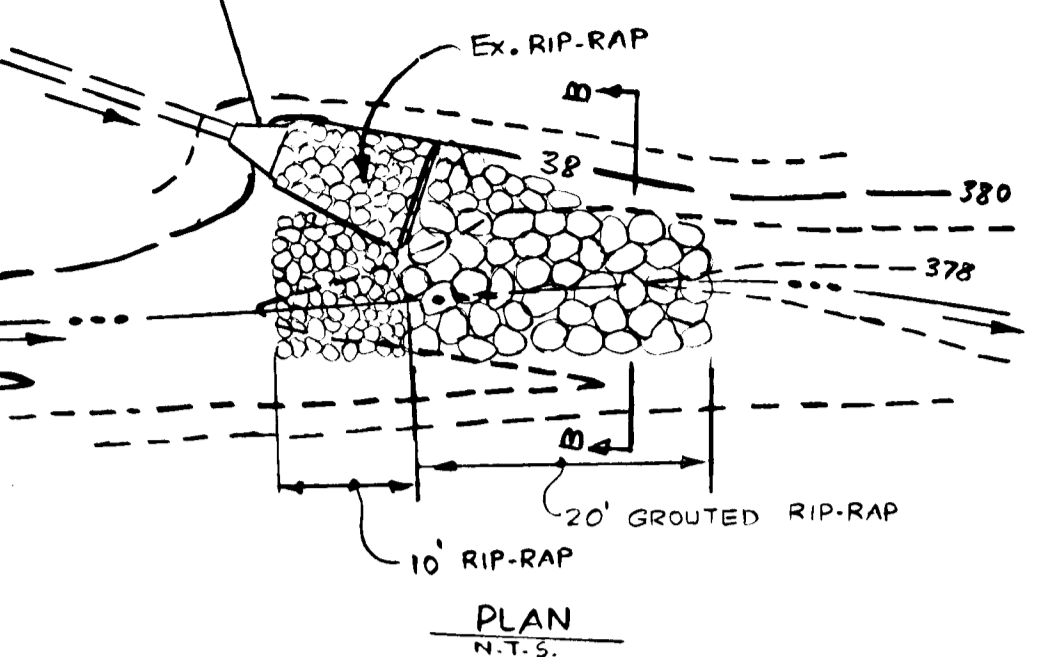
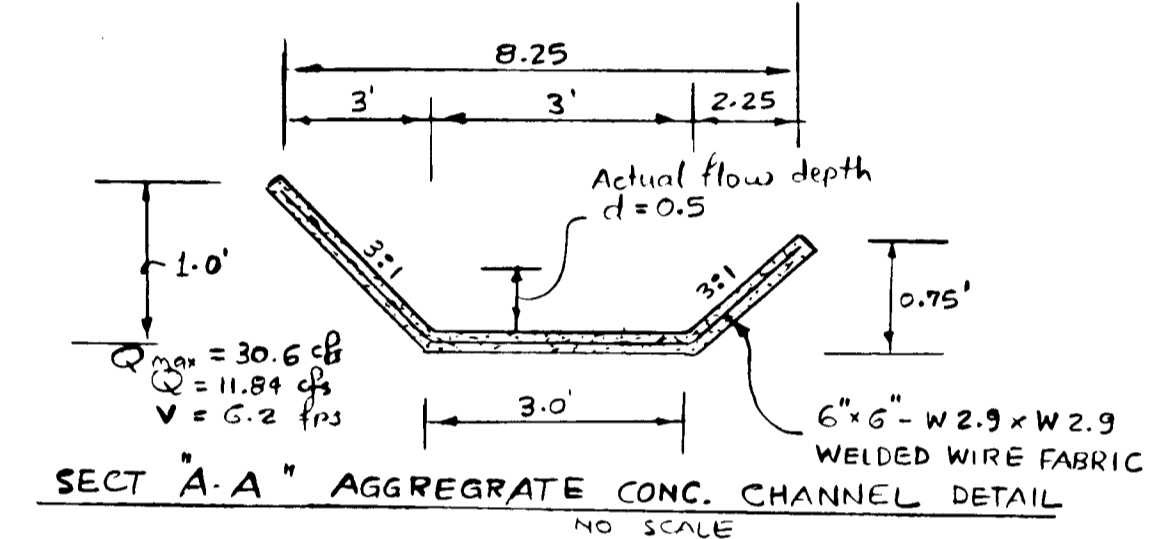
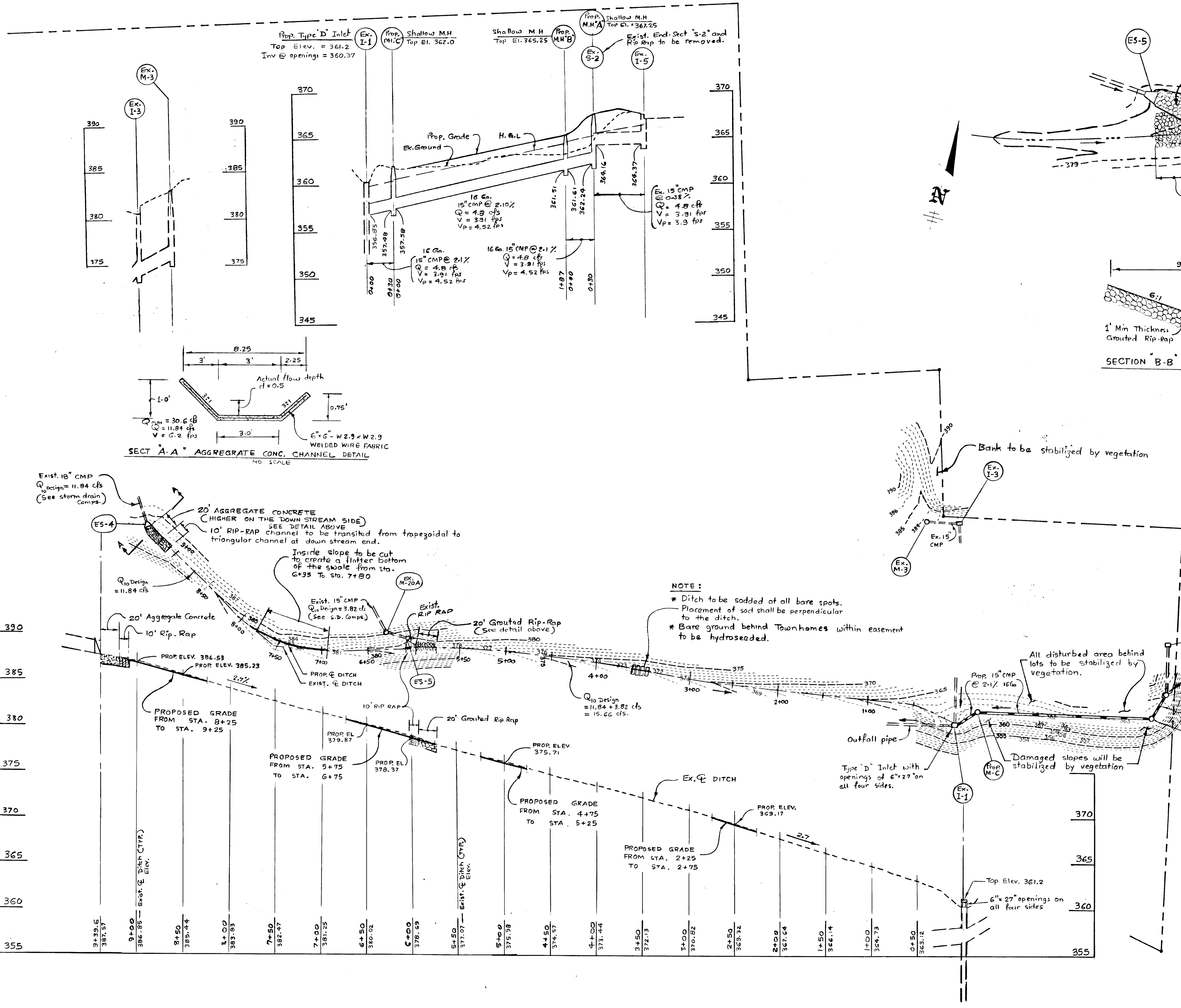
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE: 8/25/87
 CHIEF, LAND DEVELOPMENT DIVISION DATE: 9/2/87
 CHIEF, BUREAU OF HIGHWAYS DATE: 9-2-87

APPROVED: HOWARD COUNTY HEALTH DEPARTMENT FOR PUBLIC WATER AND SEWERAGE SYSTEMS.
 HEALTH OFFICER DATE: _____
 SUBDIVISION NAME SECTION/AREA PARCEL NUMBER
 PLAT NO. BLOCK NO. ZONE TAX/ZONE ELEC. DIST. CENSUS TR.
 WATER CODE SEWER CODE

TOLLHOUSE
 STORM DRAIN PROFILES
 CROSS SECTIONS
 2ND ELECTION DISTRICT HOWARD CO MD
 SCALE: 1" = 50' SHEET 7 OF 11 JUNE 1987

1102

2011



NOTE:
 * Ditch to be sodded at all bare spots. Placement of sod shall be perpendicular to the ditch.
 * Bare ground behind Townhomes within easement to be hydroseeded.

ENGINEER'S CERTIFICATE
 I HEREBY 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.
Orwells 12/2/94
 SIGNATURE OF ENGINEER DATE

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Louis/Rogers 9.9.94
 SIGNATURE OF DEVELOPER DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 U.S. Soil Conservation Service _____ Date _____
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
 Howard Soil Conservation District _____ Date _____

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

COUNTY HEALTH OFFICER DATE

SUBDIVISION NAME	SECT./AREA	LOT/PARCEL #
FLAT # OR L.V. BLOCK #	ZONE	SAV./IDE MAP
WATER CODE	SEWER CODE	ELIC. DIST. CENSUS TR.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Jim Ammon 10/7/94
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chris P. ... 10/1/94
 Chief, Land Development Division Date

Howard Shick 10-28-94
 Chief, Bureau of Highways Date
Paul Rogers 10/17/94
 Chief, Bureau of Engineering Date



SURVEY WORKSHEET
TOLLHOUSE DITCH TOPO FOR CAPACITY CHECK
 JOB #7324.10
 SCALE 1" = 50'
 COMPUTED BY: K. BAILEY
 DATE: 2/1/93 REVISED 4/10/93
 SURVEYED BY: P. SEE
 FIELD DATE: 1/23/93
 COORDINATE FILE: TOLLHOUSE
 PLOT FILE: DITCH.PLM
ENGINEERING TECHNOLOGIES ASSOCIATES, Inc.
 3458 ELLICOTT CENTER DRIVE SUITE 101
 ELLICOTT CITY, MARYLAND 21043
 BALT: (410) 461-9920
 WASH: (301) 621-4690
 FAX: (301) 750-8565

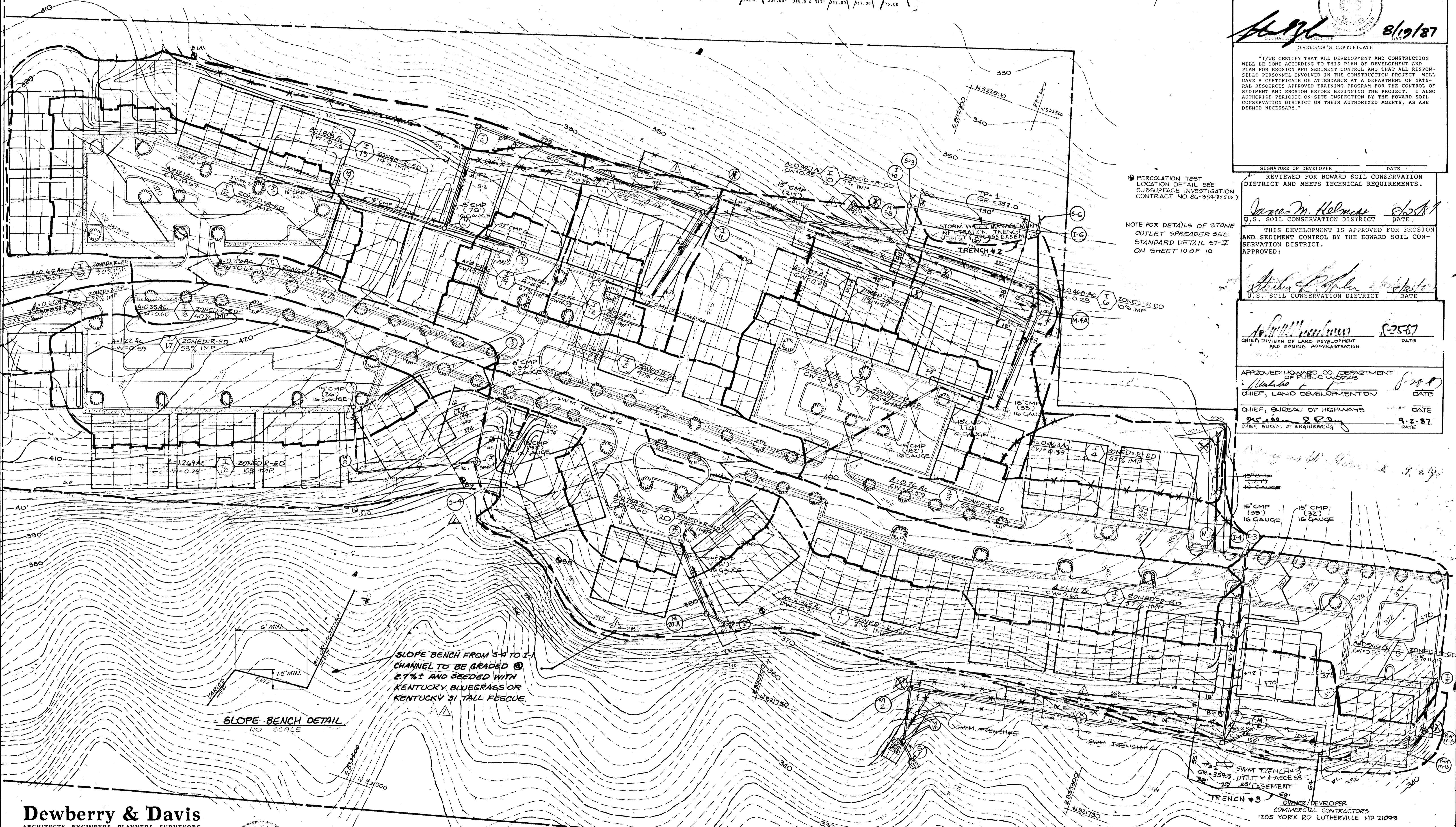
Owner and Developer
 Commercial Contractors
 1205 York Road
 Lutherville, MD - 21093

PLAN AND PROFILE FOR STORM DRAIN AND DITCH

SHEET NO. 7A OF 11
 F-87-185

REVISION	BY	DATE	DESCRIPTION
1	MDR	4/14/87	REMOVED TRENCHES 14 & 15; RELOCATED TRENCH 2 & 1-10; ADDED SLOPE BENCH; REVISED TRENCH DATA TABLE.

SWM INFILTRATION TRENCH	#1	#2	#3	#4	#5	#6
Top Elev:	385.0	349.00	348.00	353	351.75	388
Bottom & Top Size:	24" x 100"	130" x 34"	150" x 60"	250" x 180"	250" x 100"	665" x 60"
Bottom Elev:	375.25	338.00	338.00	351.180	344.25	665.00
Depth:	9.75'	10.99'	10.00'	8.52'	7.50'	9.91'
Infiltration Rate:	2.41 IN/HR	1.9 IN/HR	6.1 IN/HR	6.1 IN/HR	1.9 IN/HR	0.2 IN/HR
Storage:	10180 CF	54,700 CF	50,000 CF	24480 CF	7844 CF	17,000 CF
Soil Boring No:	AB-1	AB-2	AB-3&6	AB-4	AB-5	AB-6
Bottom Boring Elev:	63.60	354.00	348.5 & 347'	647.00	647.00	375.00



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I HEREBY 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 8/19/87
DATE

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SIGNATURE OF DEVELOPER _____ DATE _____
REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
[Signature] 8/28/87
U.S. SOIL CONSERVATION DISTRICT DATE

PERCOLATION TEST LOCATION DETAIL SEE SUBSURFACE INVESTIGATION CONTRACT NO. HG-354 (BY 2/87)

NOTE FOR DETAILS OF STONE OUTLET SPREADER SEE STANDARD DETAIL ST-II ON SHEET 10 OF 10

APPROVED FOR HOWARD CO. DEPARTMENT OF PUBLIC WORKS
[Signature] 8/28/87
CHIEF, LAND DEVELOPMENT DATE

CHIEF, BUREAU OF HIGHWAYS
[Signature] 9-2-87
DATE

CHIEF, BUREAU OF ENGINEERING
[Signature] 8-25-87
DATE

Dewberry & Davis
ARCHITECTS - ENGINEERS - PLANNERS - SURVEYORS

3300 N. Ridge Road
Suite 100
Ellicott City, Maryland
21043

(301) 461-7478 BALTIMORE
(301) 621-4970 WASHINGTON

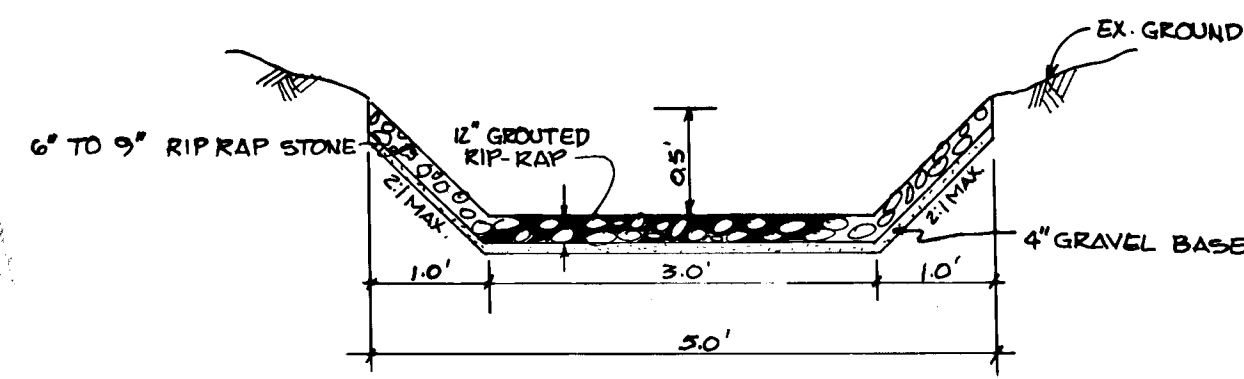
Engineering Technologies Assoc., Inc.
Engineers - Planners - Surveyors
345B Ellicott Center Dr, Suite 101
Ellicott City, MD. 21043
(410) 461-9920

PLAN
1" = 20'

OWNER/DEVELOPER
COMMERCIAL CONTRACTORS
1205 YORK RD. LUTHERVILLE MD 21093

TOLLHOUSE
DRAINAGE AREA MAP

2ND ELECTION DISTRICT HOWARD COUNTY MARYLAND
SCALE AS SHOWN APRIL, 1987
SHEET 2 OF 11

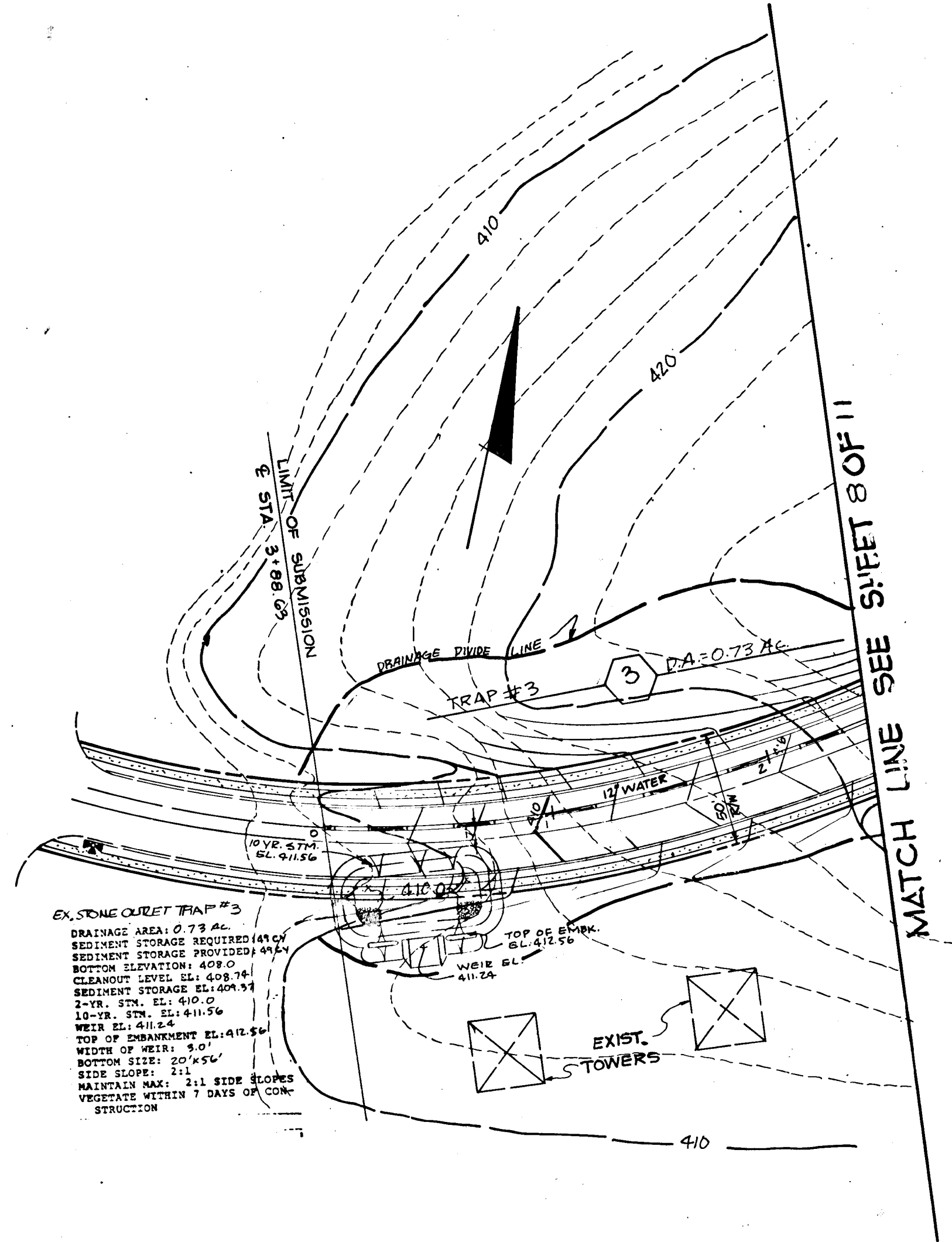


GRouted RIP-RAP CHANNEL PROTECTION

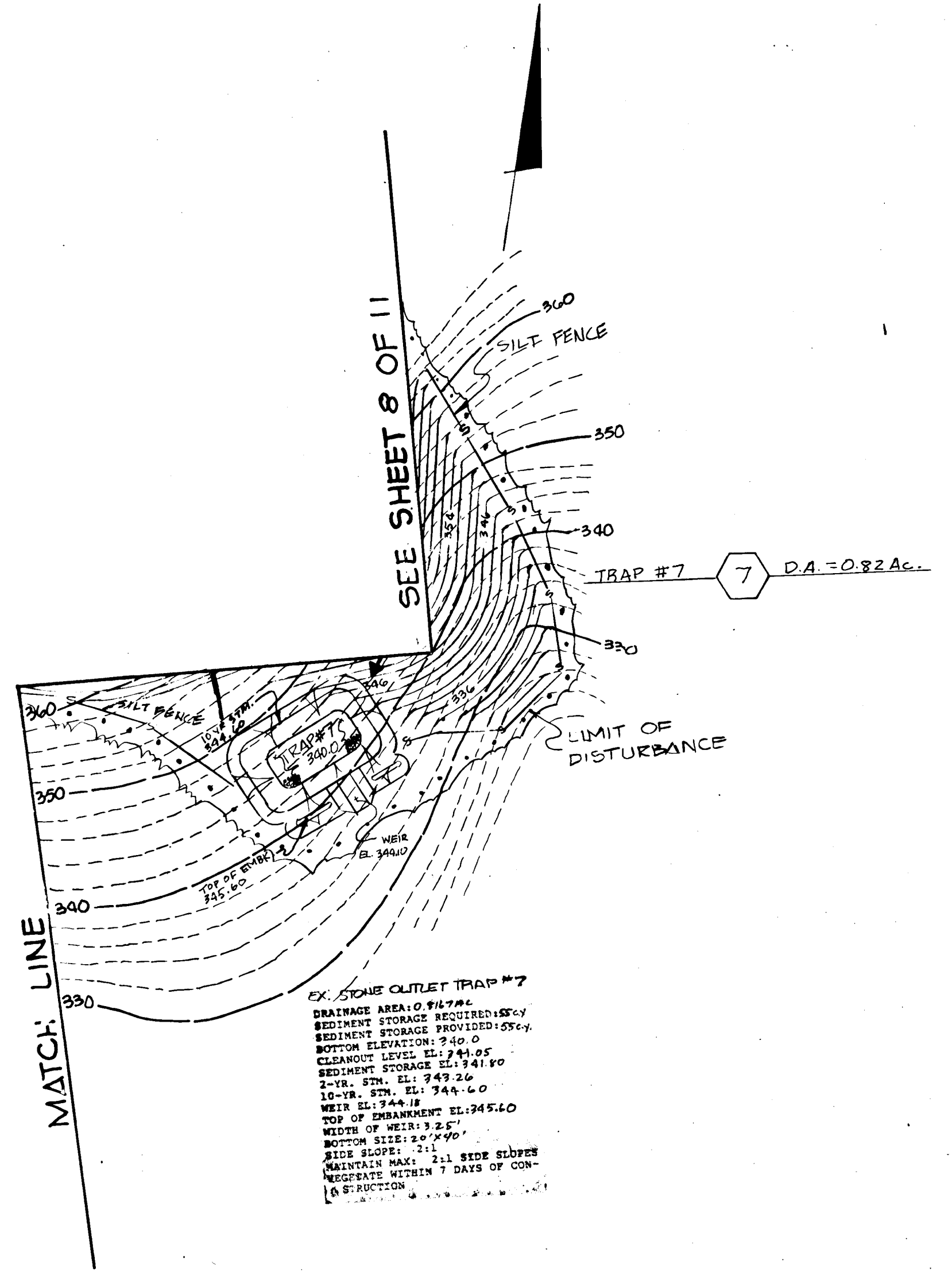
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR GRAVEL OR RIPRAP SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. RIPRAP TO BE EMBEDDED INTO GROUT.
3. STONE FOR THE RIPRAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT, BOTH SHALL EACH BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIPRAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THAT IT IS REASONABLY HOMOGENEOUS WITH SMALLER STONES AND SPALLS FILLING VOIDS BETWEEN LARGER STONES.



EX. STONE OUTLET TRAP #3
 DRAINAGE AREA: 0.73 AC.
 SEDIMENT STORAGE REQUIRED: 156.4
 SEDIMENT STORAGE PROVIDED: 156.4
 BOTTOM ELEVATION: 409.0
 CLEANOUT LEVEL: EL. 409.14
 SEDIMENT STORAGE: EL. 409.14
 2-VR. STN. EL. 410.0
 10-VR. STN. EL. 411.50
 WEIR EL. 411.50
 TOP OF DRAINAGE: EL. 411.50
 WIDTH OF WEIR: 9.0'
 BOTTOM SIZE: 20"x24"
 SIDE SLOPE: 2:1
 MAINTAIN MAX. 211 SIDE SLOPES
 VEGETATE WITHIN 7 DAYS OF CONSTRUCTION



EX. STONE OUTLET TRAP #7
 DRAINAGE AREA: 0.82 AC.
 SEDIMENT STORAGE REQUIRED: 156.4
 SEDIMENT STORAGE PROVIDED: 156.4
 BOTTOM ELEVATION: 340.0
 CLEANOUT LEVEL: EL. 341.95
 SEDIMENT STORAGE: EL. 341.95
 2-VR. STN. EL. 349.26
 10-VR. STN. EL. 344.10
 WEIR EL. 344.10
 TOP OF DRAINAGE: EL. 344.10
 WIDTH OF WEIR: 9.25'
 BOTTOM SIZE: 20"x24"
 SIDE SLOPE: 2:1
 MAINTAIN MAX. 211 SIDE SLOPES
 VEGETATE WITHIN 7 DAYS OF CONSTRUCTION

Engineering Technologies Assoc, Inc.
 Engineers - Planners - Surveyors
 3950 Ellicott Center Dr Suite 101
 Ellicott City, MD. 21043
 (410) 461-9920

Dewberry & Davis
 ARCHITECTS ENGINEERS PLANNERS SURVEYORS

3300 N. Ridge Road
 Suite 100
 Ellicott City, Maryland
 21043

(301) 461-7478 BALTIMORE
 (301) 621-4970 WASHINGTON

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[Signature]
 SIGNATURE OF ENGINEER

01/2/87
 DATE

DEVELOPER'S CERTIFICATE

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[Signature]
 SIGNATURE OF DEVELOPER

4/9/87
 DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[Signature] 8/25/87
 U.S. SOIL CONSERVATION DISTRICT DATE

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

APPROVED:
[Signature] 8/25/87
 U.S. SOIL CONSERVATION DISTRICT DATE

[Signature] 8-25-87
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED: HOWARD CO. DEPARTMENT OF PUBLIC WORKS

[Signature] 8/25/87
 CHIEF, LAND DEVELOPMENT DIVISION DATE

[Signature] 8/25/87
 CHIEF, BUREAU OF HIGHWAYS DATE

[Signature] 8/25/87
 CHIEF, BUREAU OF ENGINEERING DATE

OWNER/DEVELOPER
 COMMERCIAL CONTRACTORS
 1205 YORK ROAD LUTHERVILLE MD 21095

TOLL HOUSE

STREET TREE AND SEDIMENT CONTROL PLAN

2ND ELECTION DISTRICT HOWARD COUNTY MARYLAND

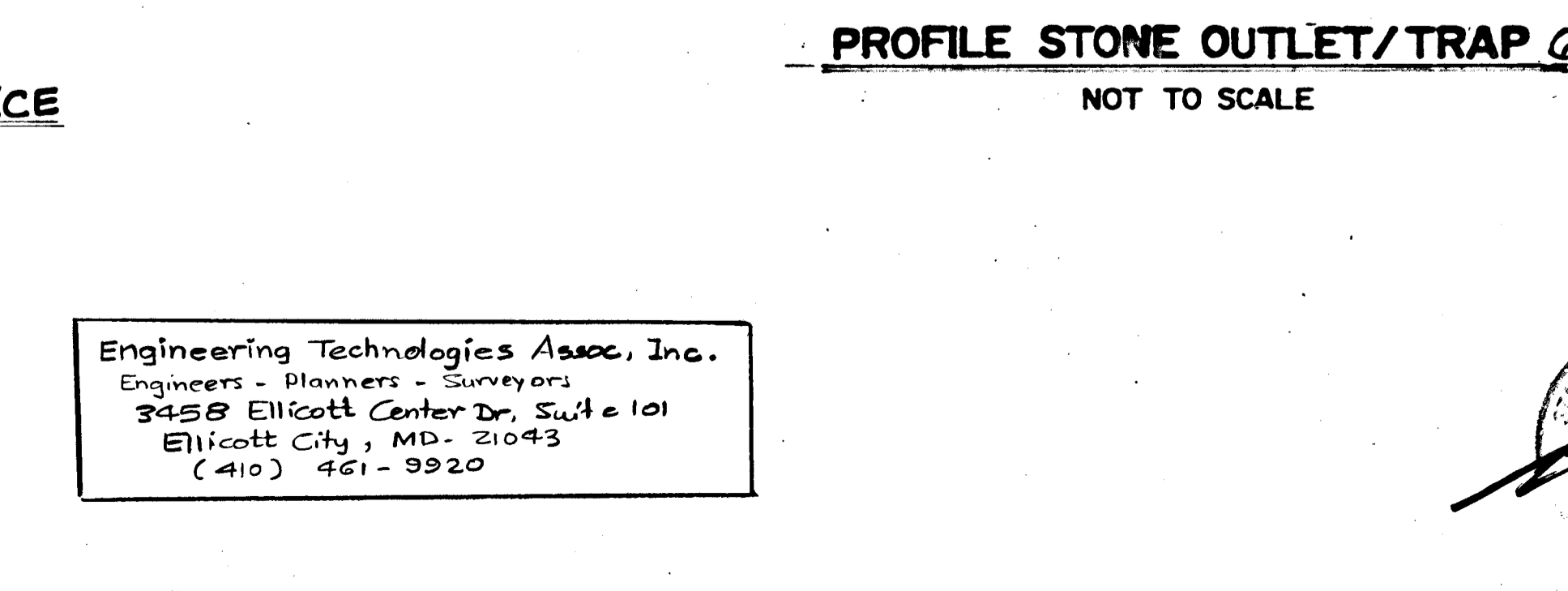
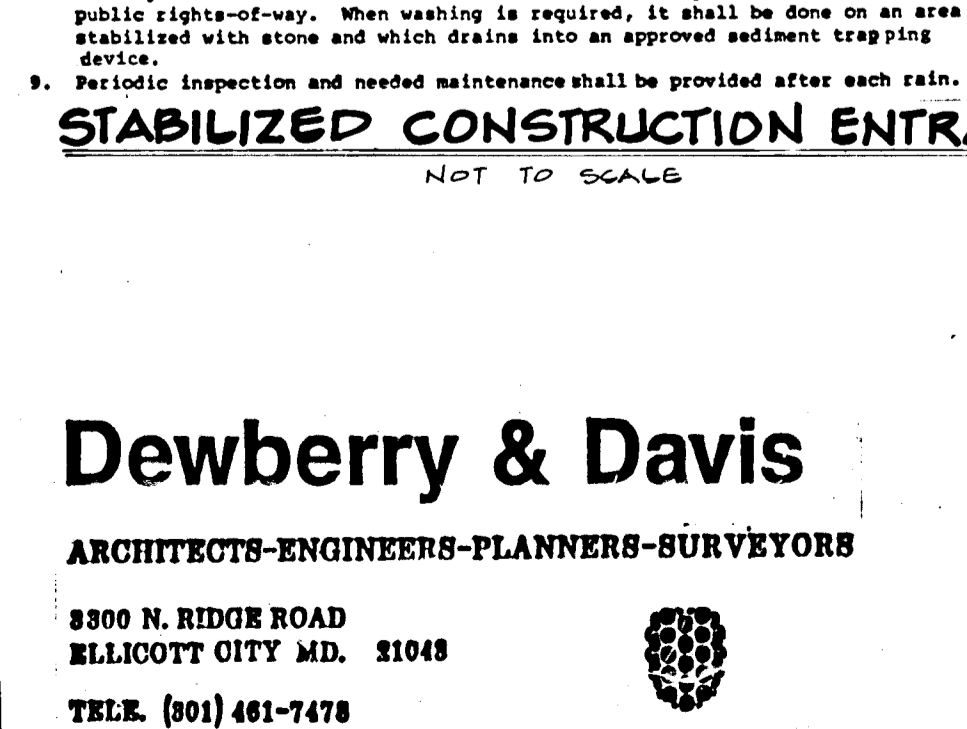
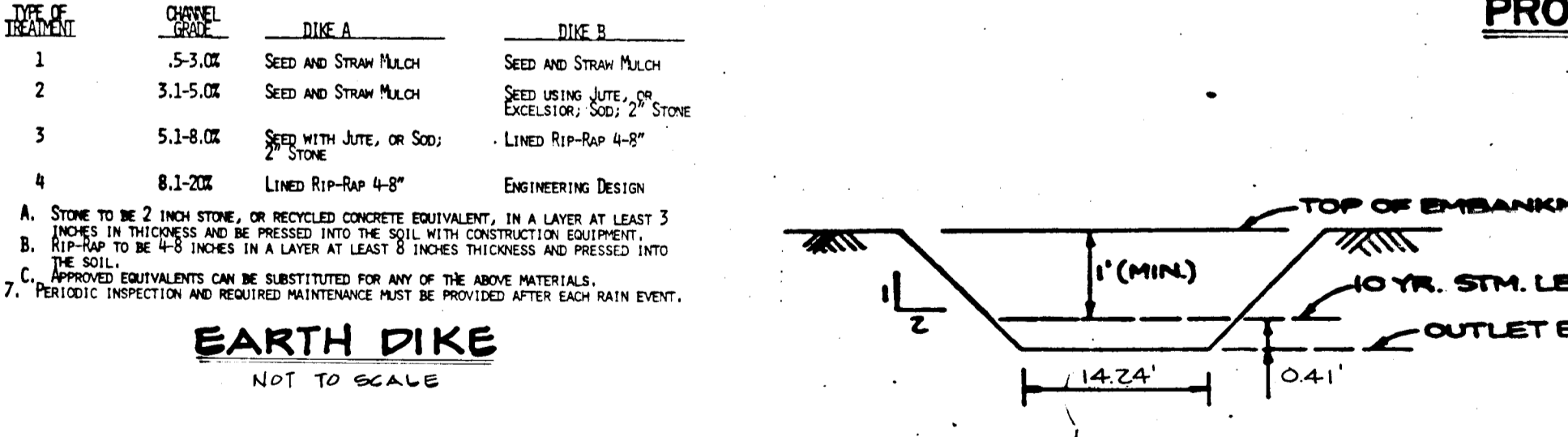
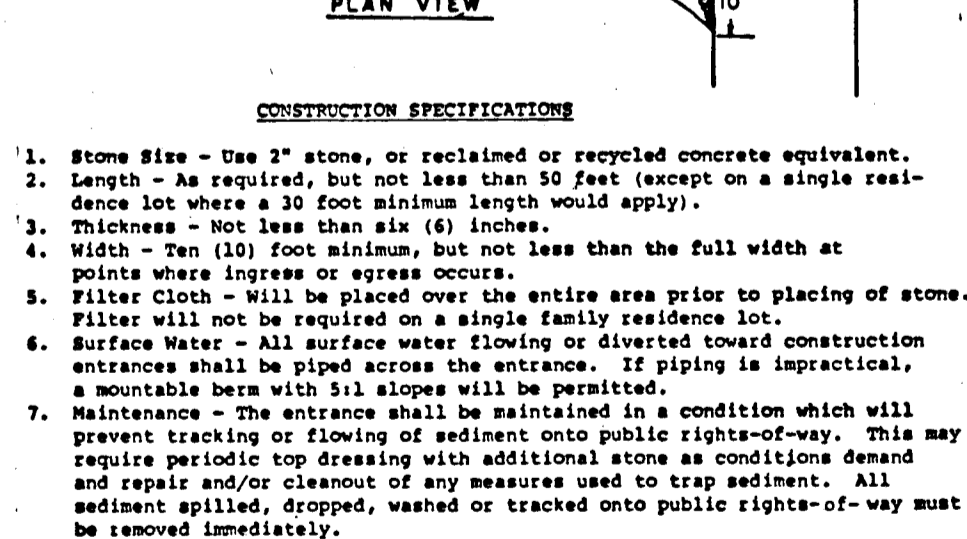
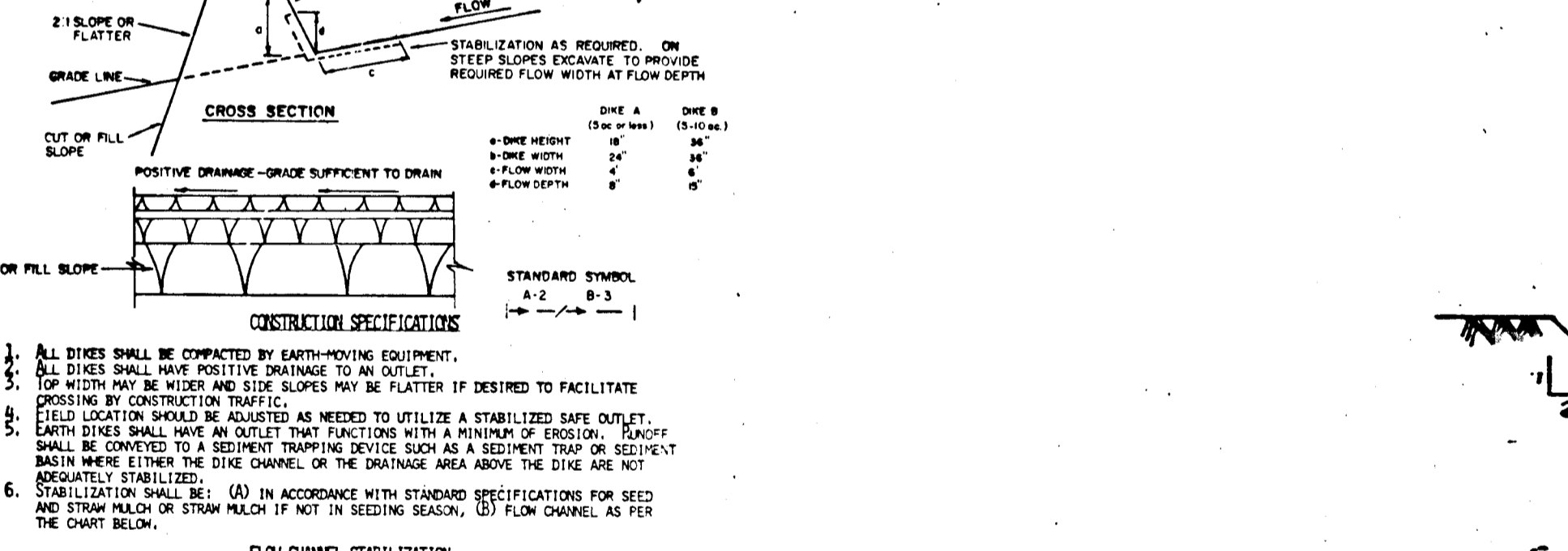
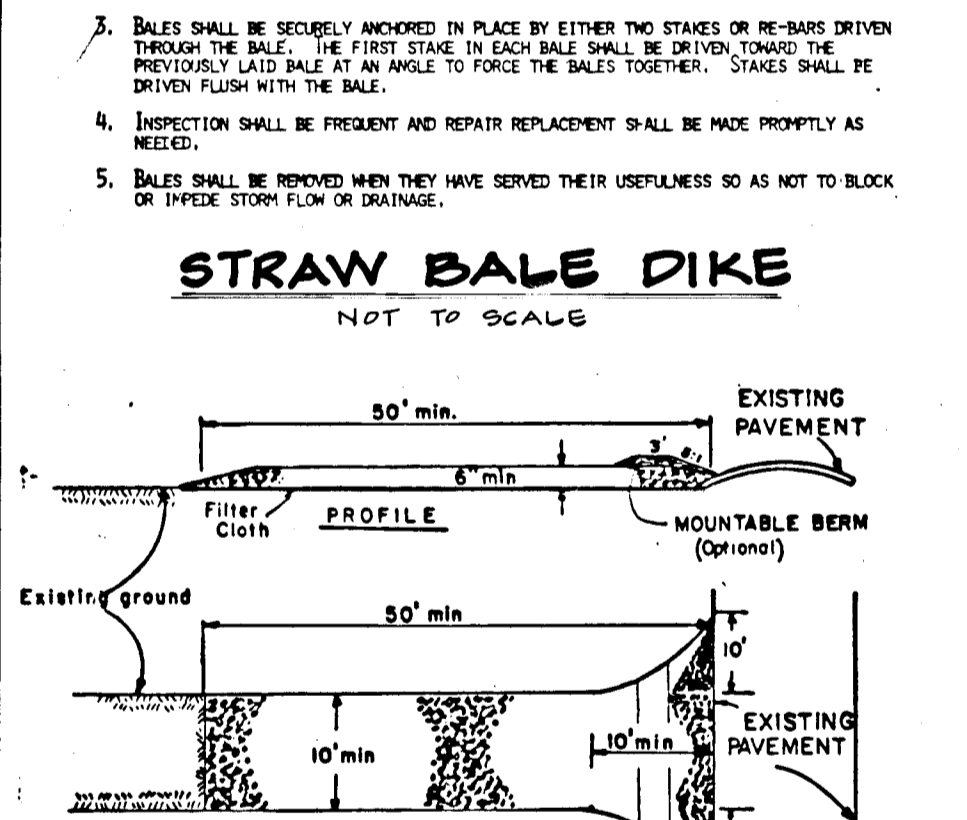
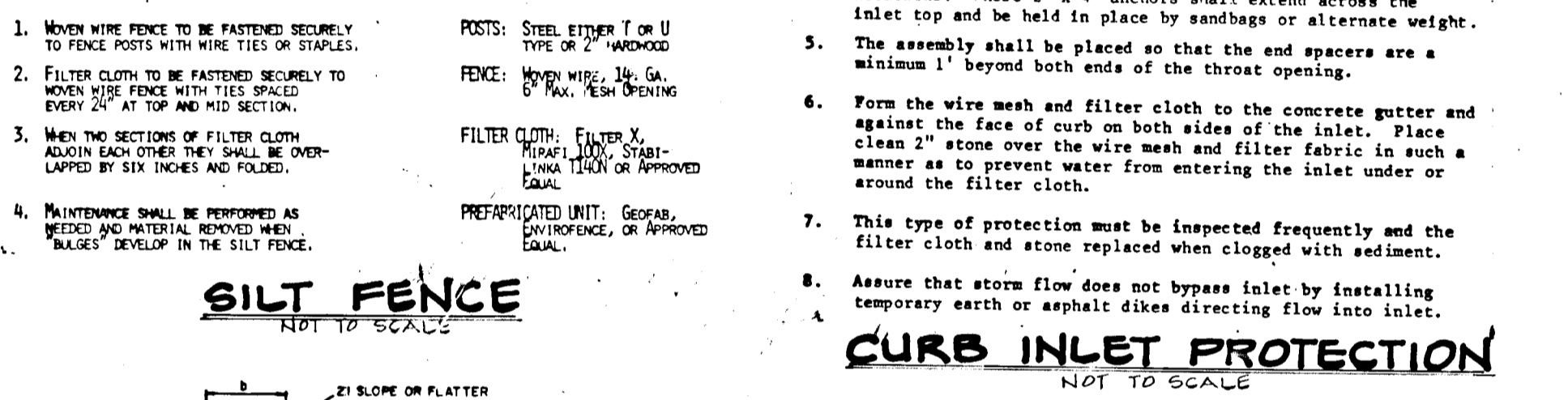
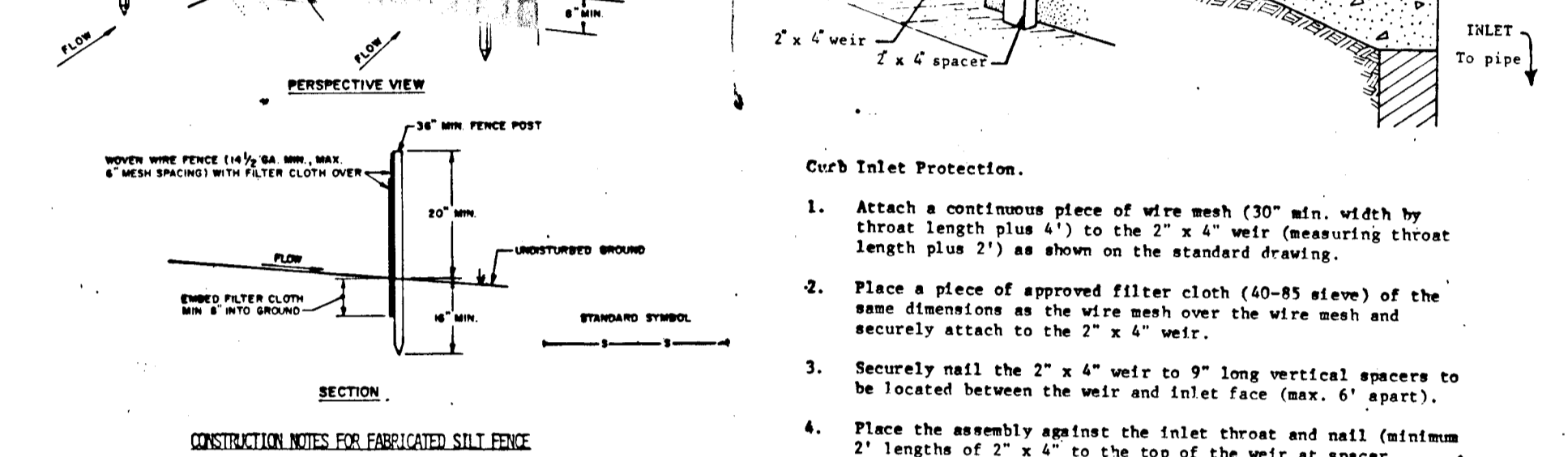
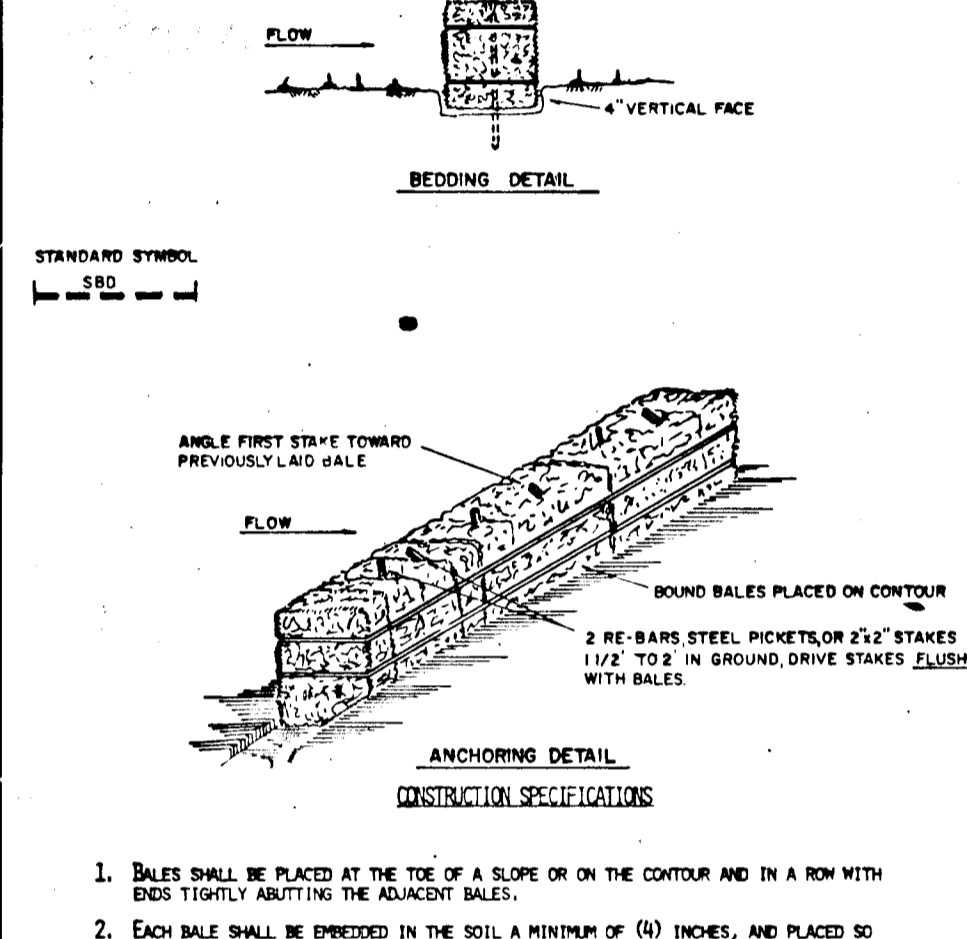
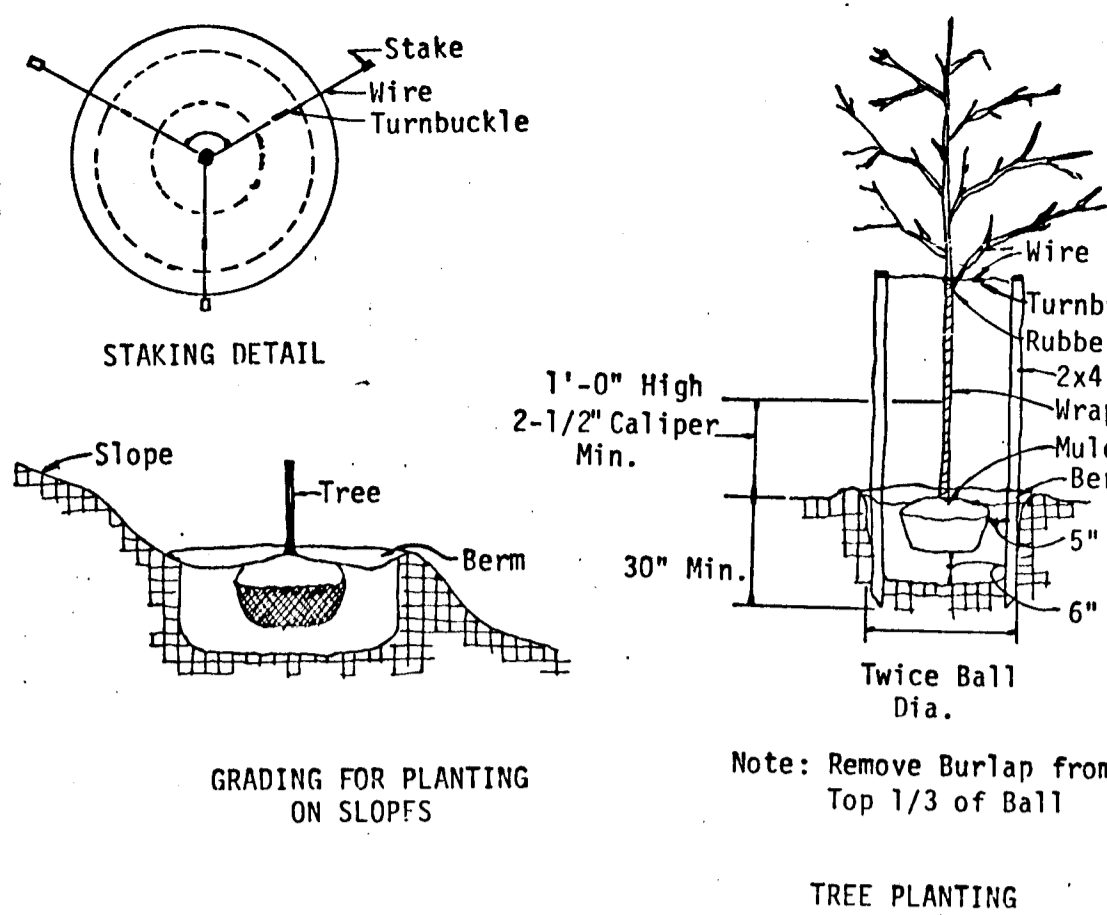
SCALE: 1" = 50'

SHEET 10 OF 11

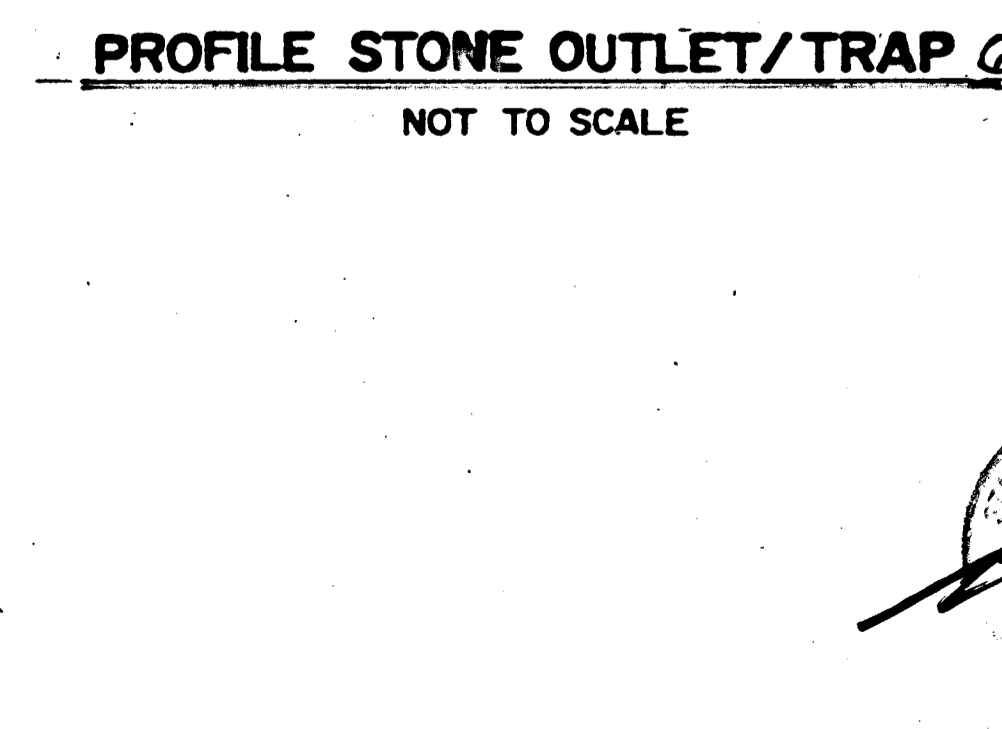
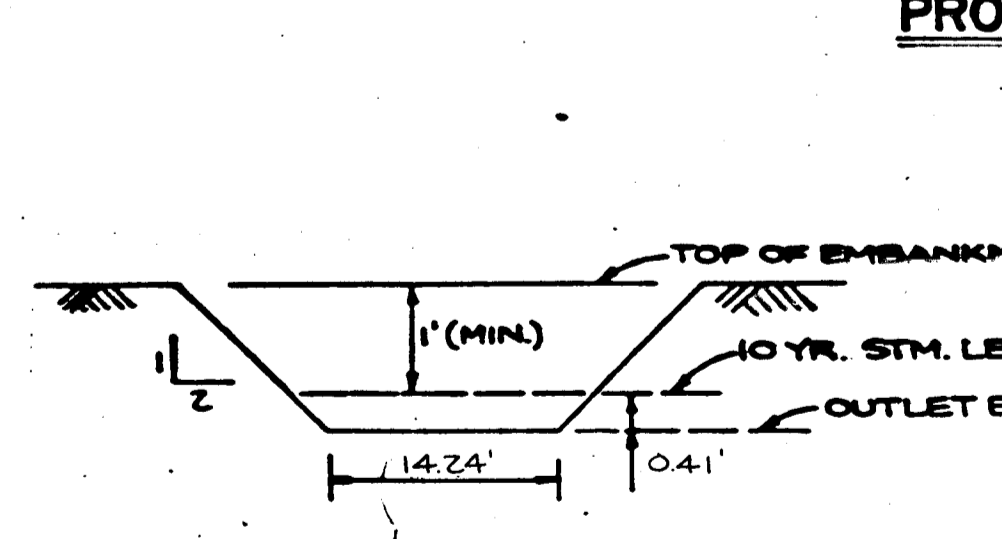
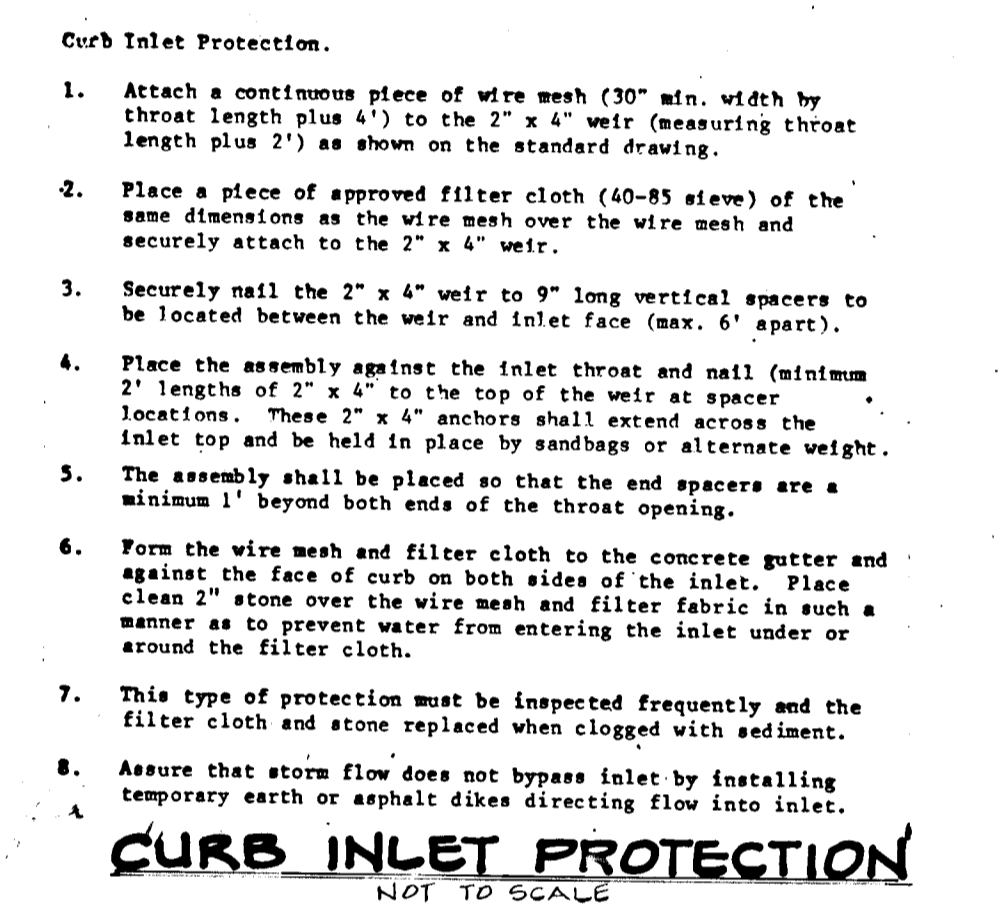
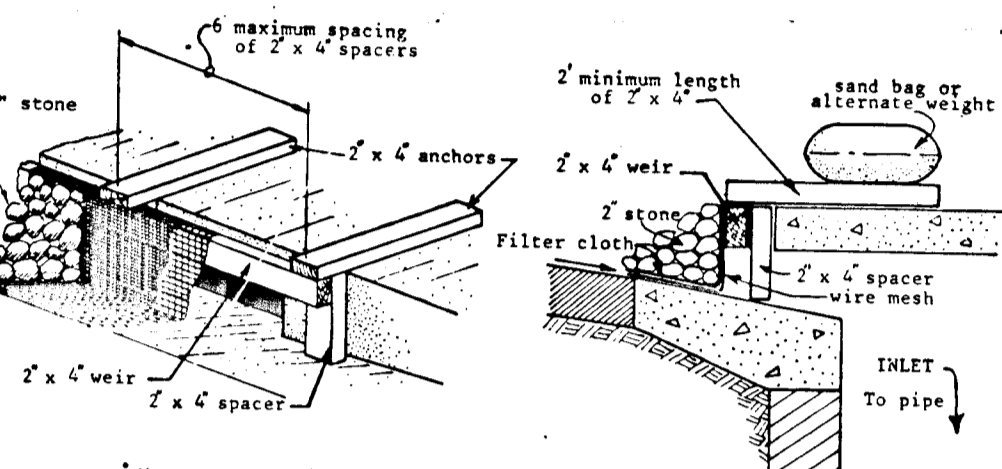
APRIL 28, 1987

PERMANENT SEEDING NOTES:
 APPLY TO GRADED OR CLEARED AREA NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
SEEDING 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 SPECIFIC RECOMMENDATIONS:
 (1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 500 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL AT TIME OF SEEDING. APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.)
 (2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (22 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL.
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (LSL/1000 SQ. FT.) OF KEEPING LONGWEEDS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROJECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELLS ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE 500 GAL 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.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL BRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT. OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.
MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDING.
TEMPORARY SEEDING NOTES:
 APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
SEEDING PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.)
SEEDING: FOR PERIODS 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 KEEPING LONGWEEDS (3.0 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROJECT SITE BY APPLYING 2 TONS PER ACRE OF WELLS ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL BRAIN 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 1993 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

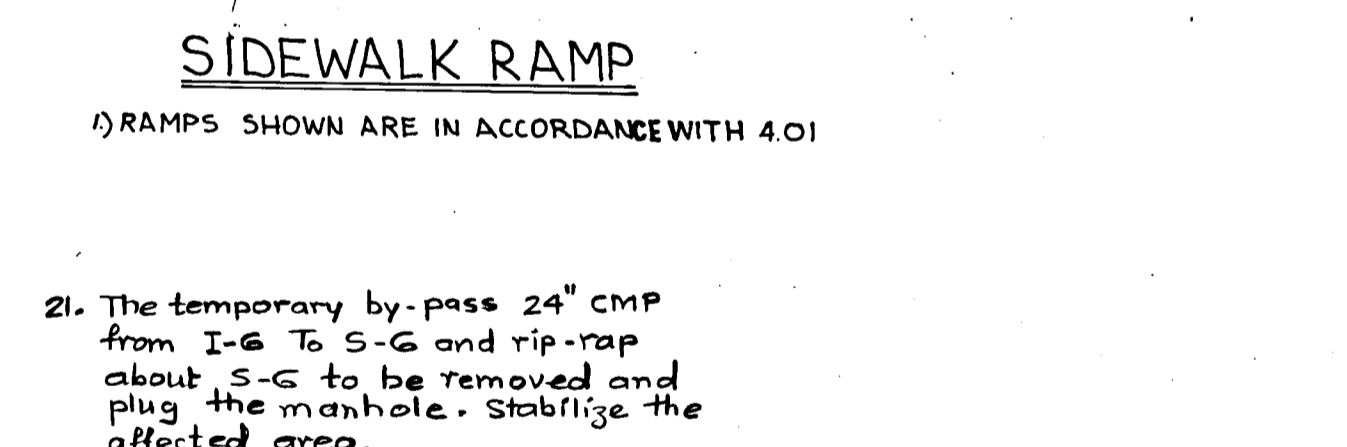
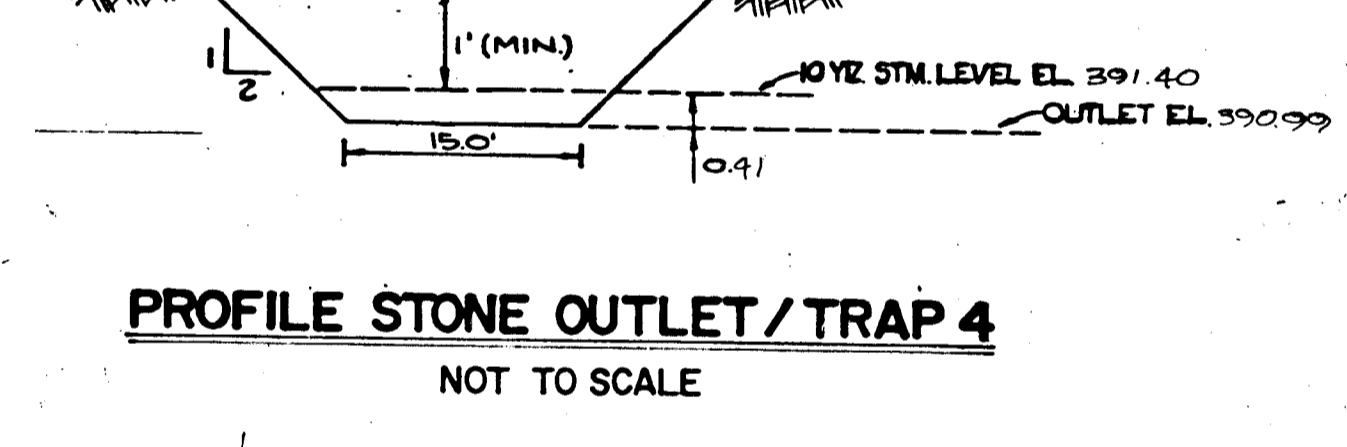
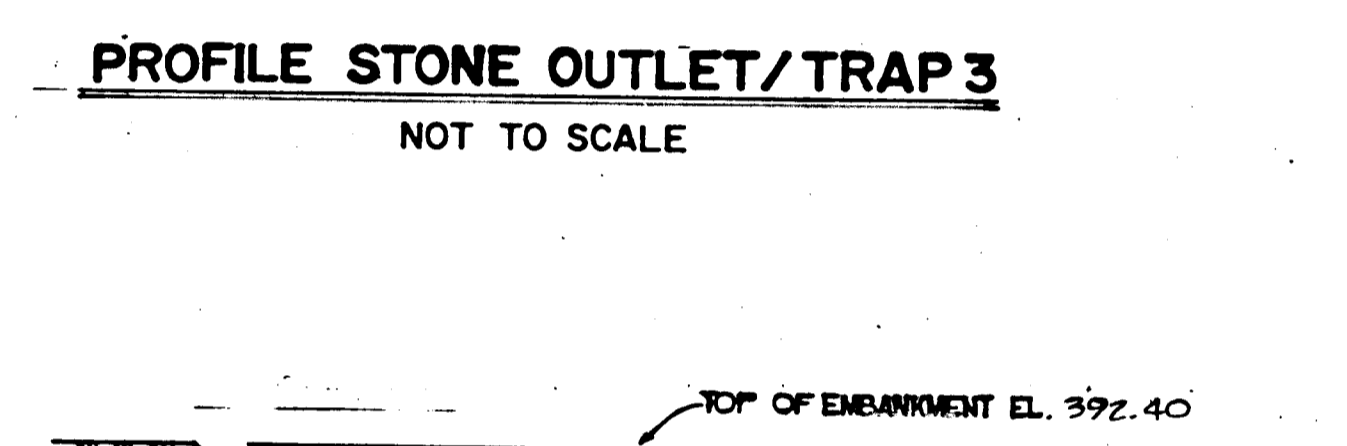
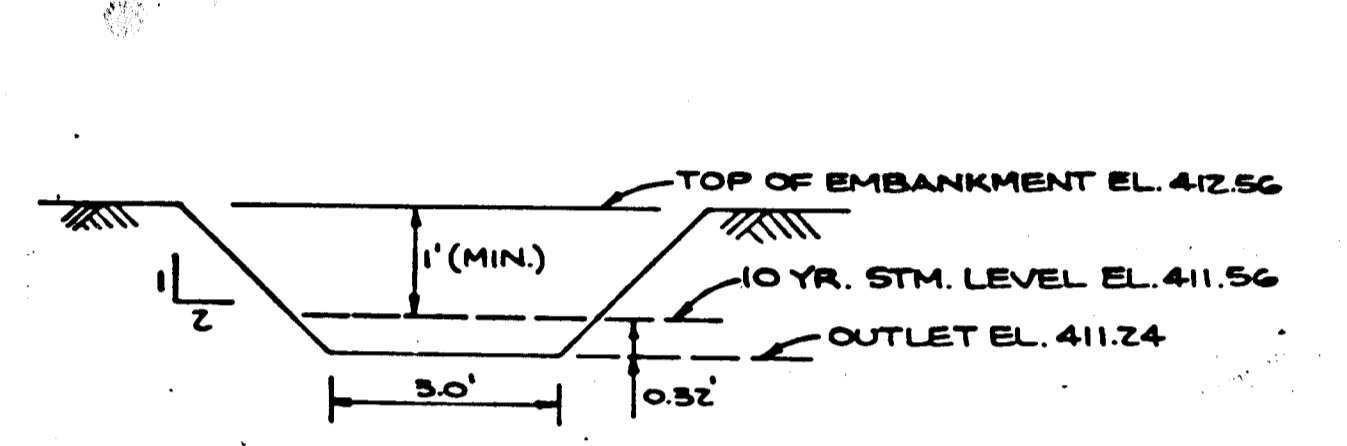
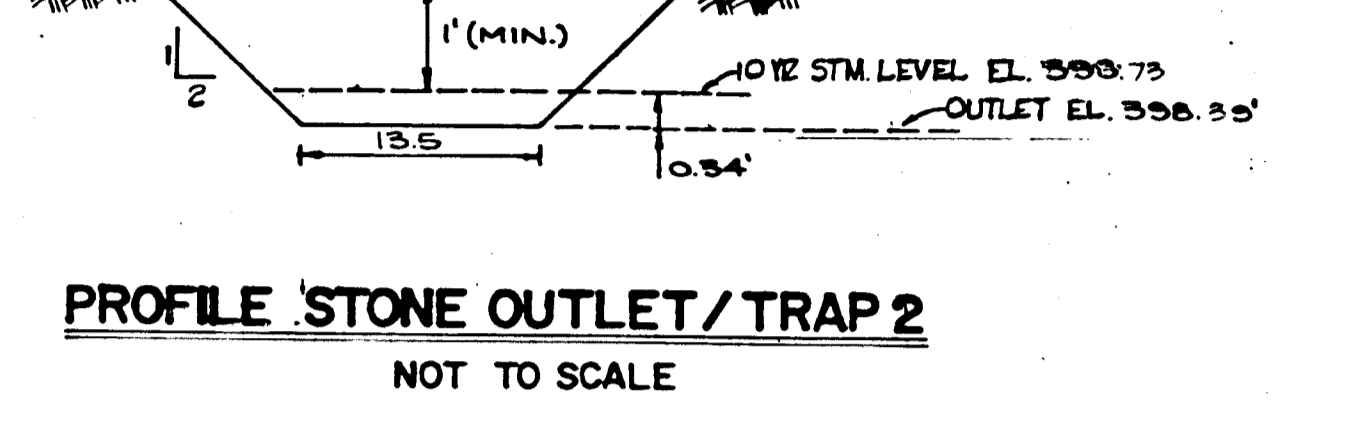
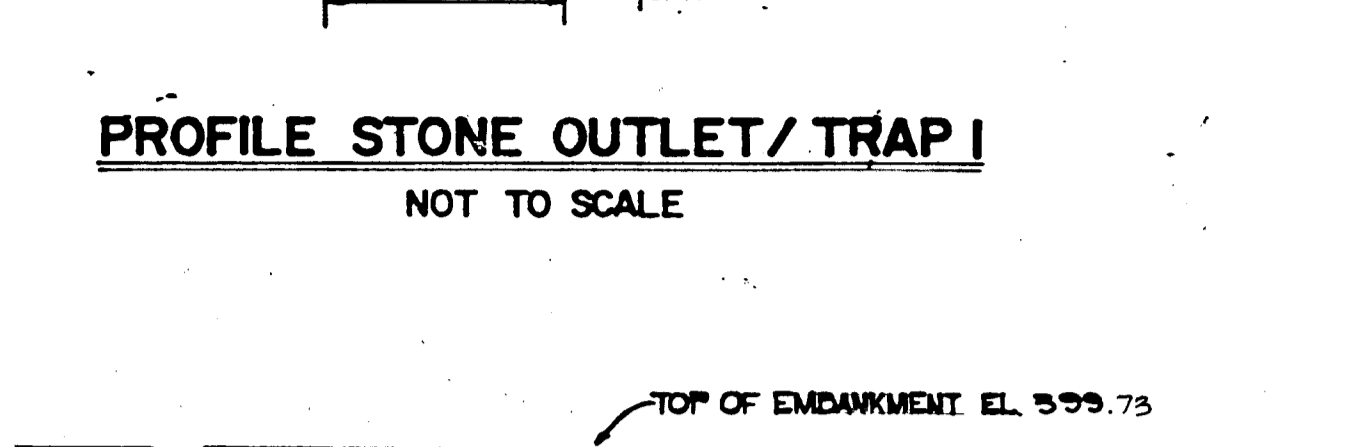
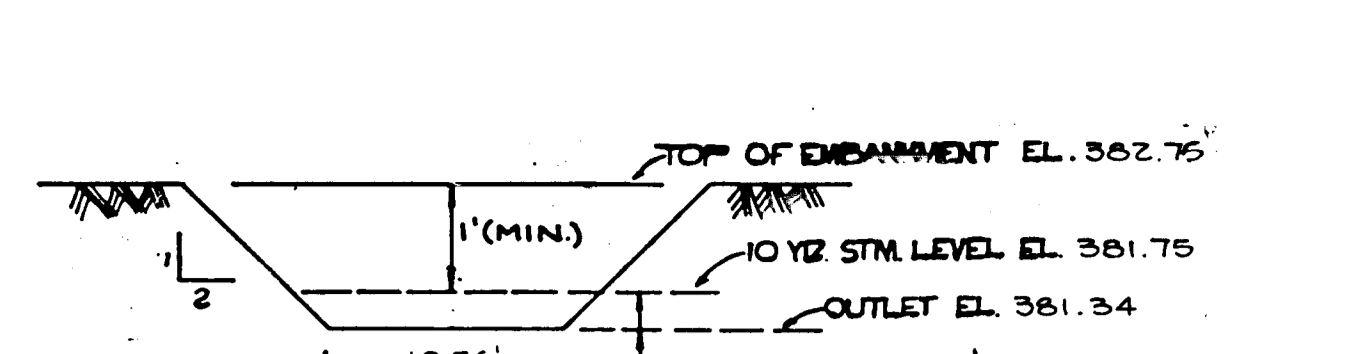
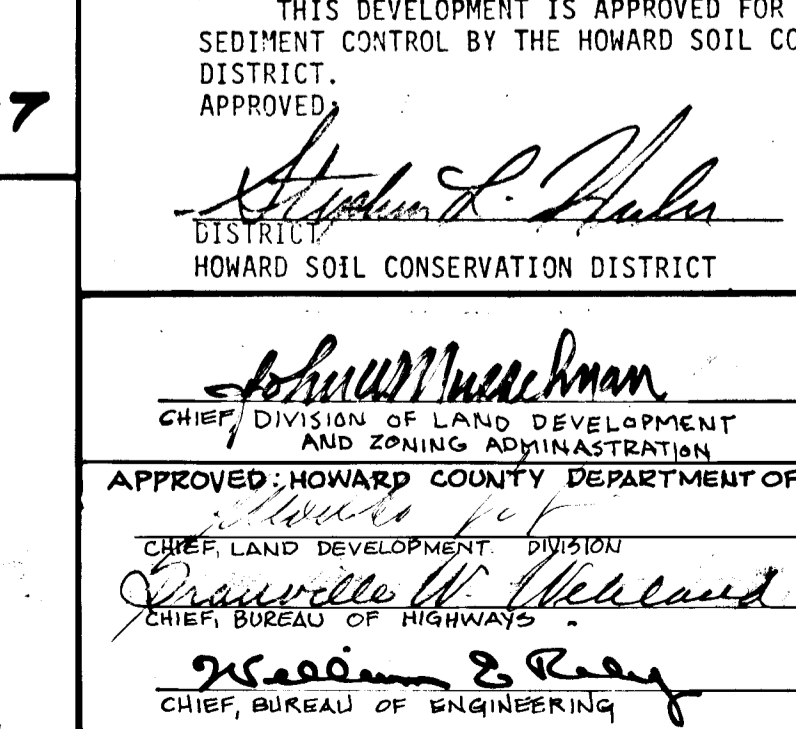
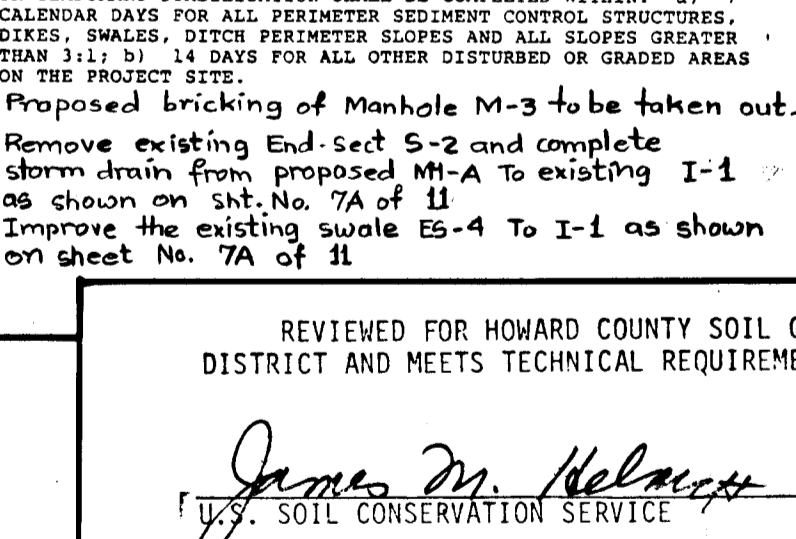
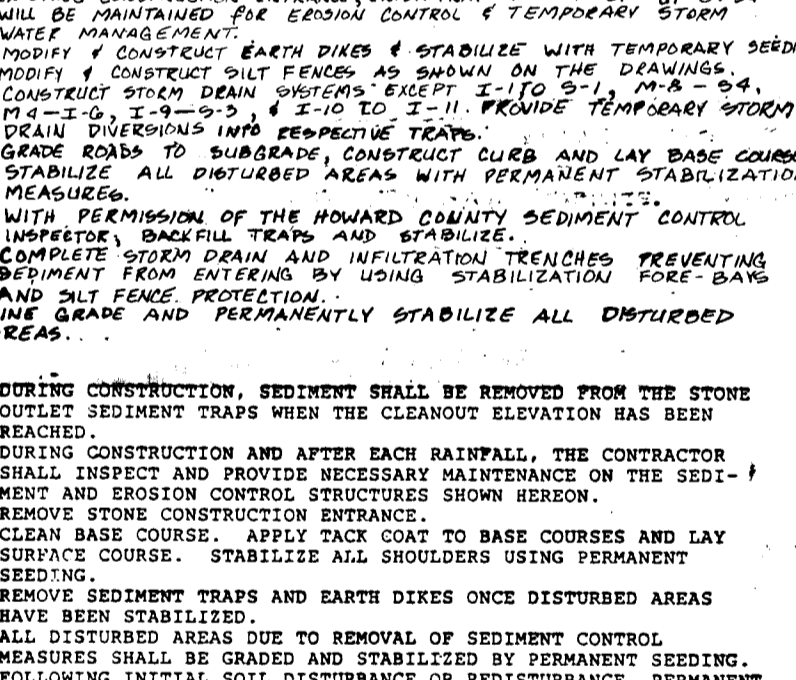
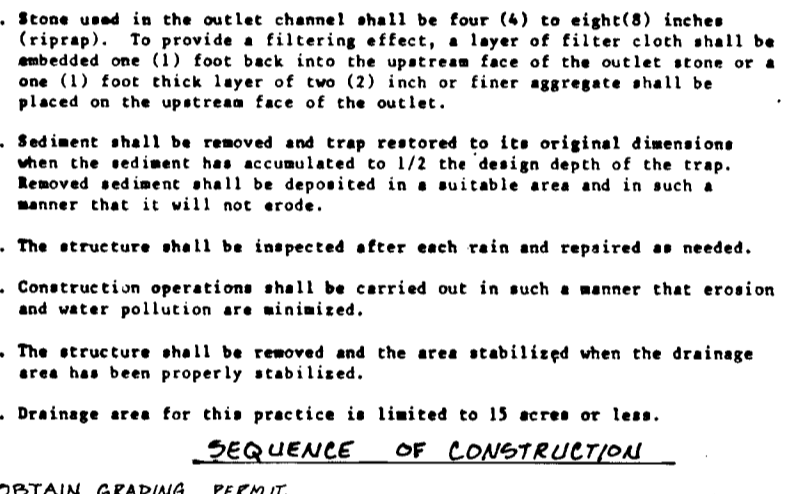
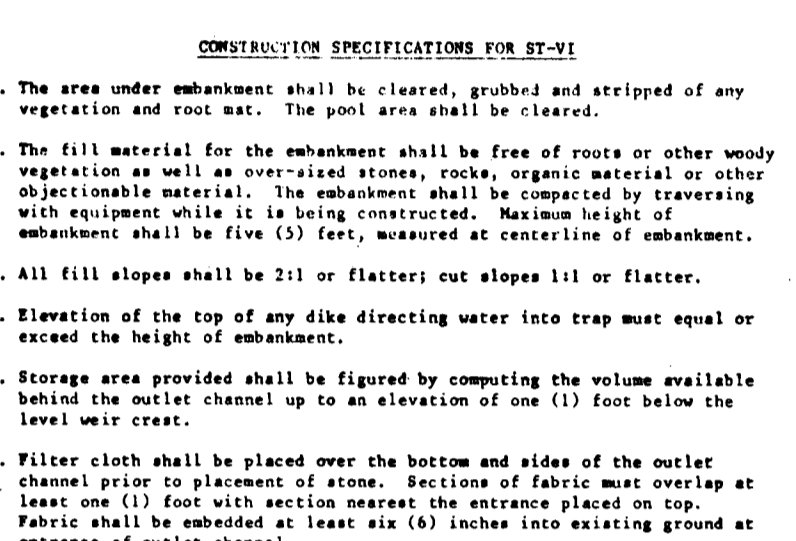
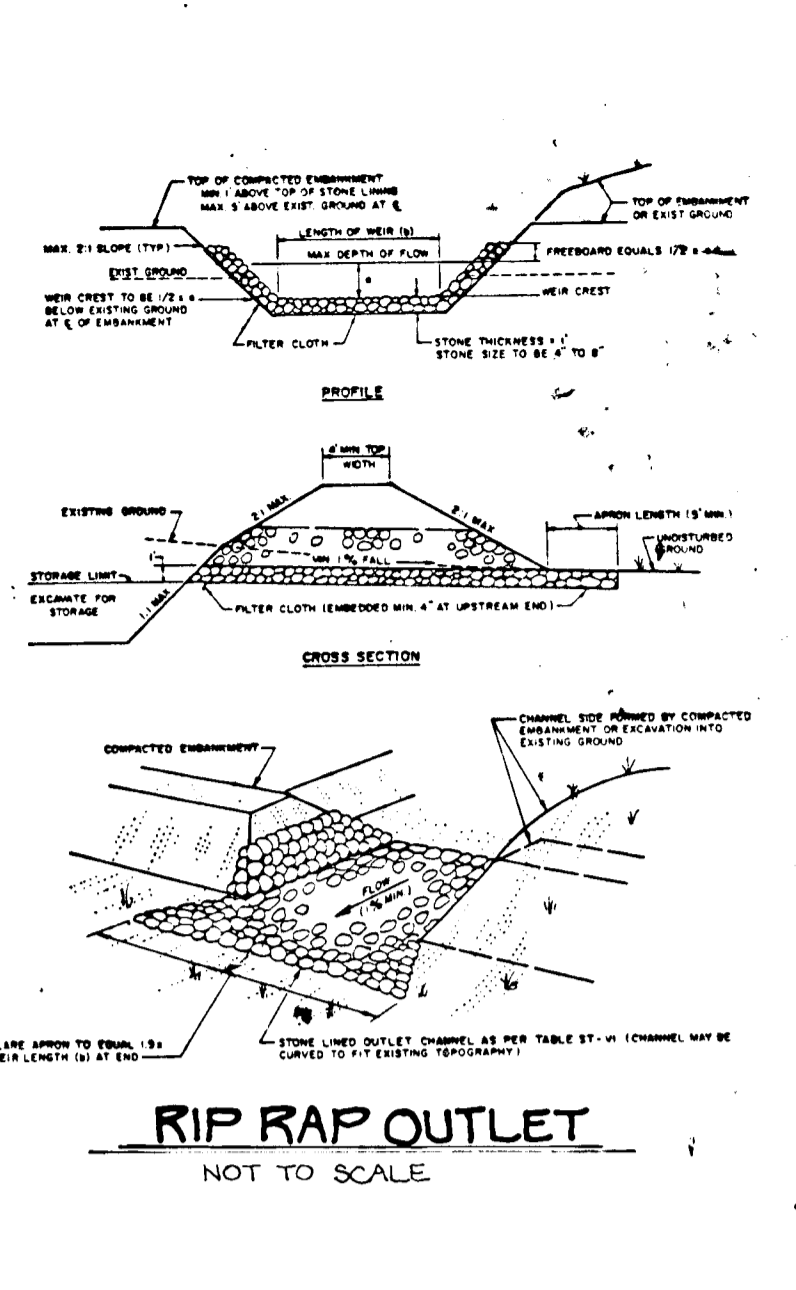
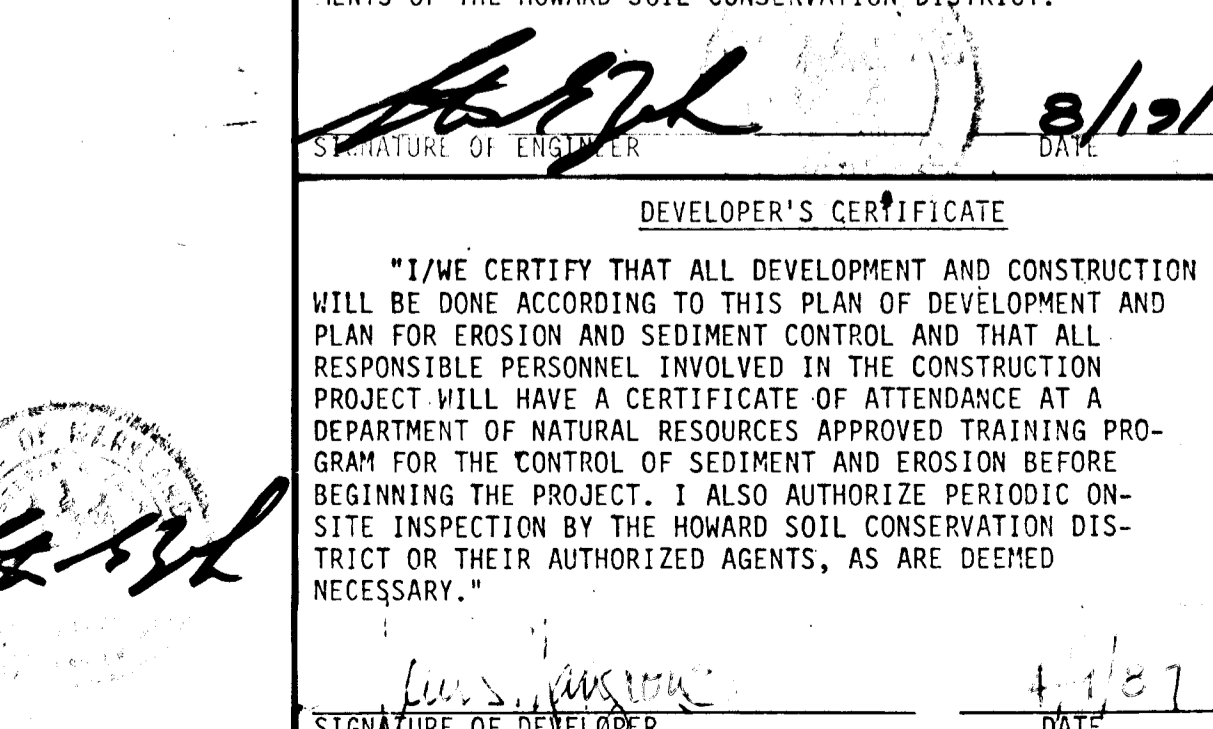
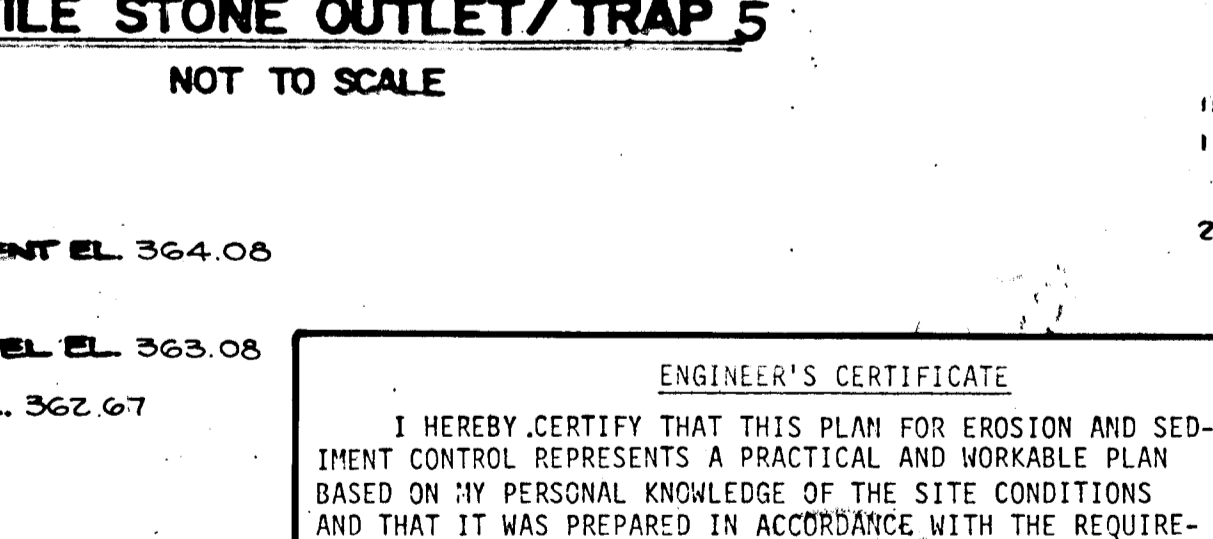
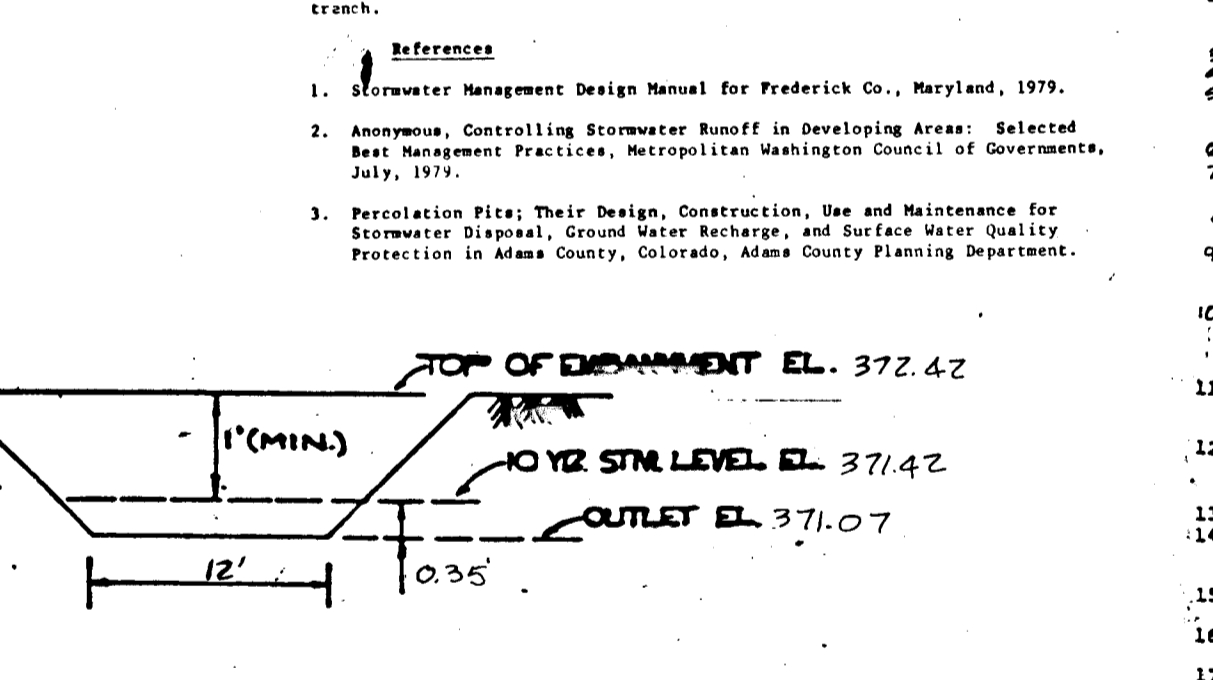
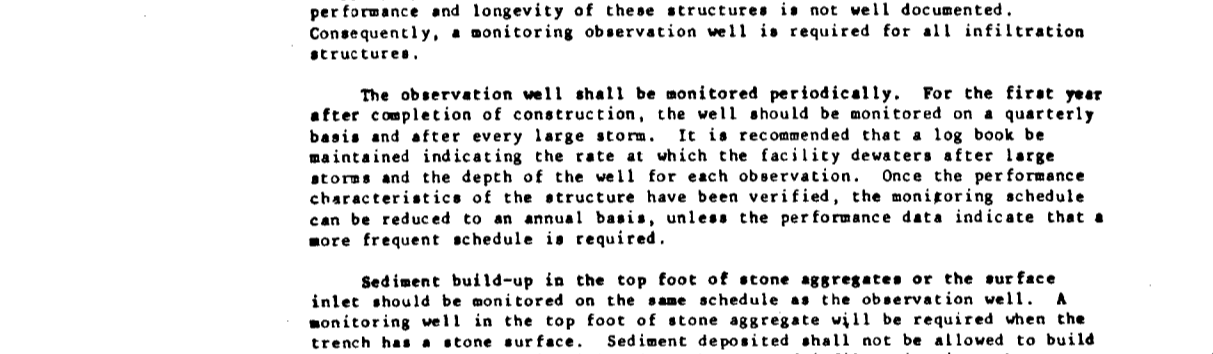
SEDIMENT CONTROL NOTES:
 1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION. (992-2437)
 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DICES, 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 TRAPPING STRUCTURES MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 4, 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) AND (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
 6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
 7. SITE ANALYSIS:
 TOTAL AREA OF SITE 34.78 ACRES
 AREA DISTURBED 17.82 ACRES
 AREA TO BE ROOFED OR PAVED 2.94 ACRES
 AREA TO BE VEGETATIVELY STABILIZED 13.92 ACRES
 TOTAL CUT 128,683 CU. YDS.
 TOTAL FILL 128,683 CU. YDS.
 OFFSETS, WASTE/BORROW AREA LOCATION:
 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.



Dewberry & Davis
 ARCHITECTS-ENGINEERS-PLANNERS-SURVEYORS
 8300 N. RIDGE ROAD
 ELICOTT CITY, MD. 21043
 TEL: (301) 461-7478



CONSTRUCTION SPECIFICATION/INFILTRATION TRENCH
Trench
 An infiltration trench shall not be constructed or placed in service until all of the contributing drainage area has been stabilized and approved by the responsible inspector.
Trench Preparation
 Excavate the trench to the design dimensions. Excavated materials shall be placed away from the trench sides to enhance trench wall stability. Large tree roots must be removed from the trench area in order to prevent fabric puncturing or tearing during subsequent installation procedures. The sides of the trench shall be roughened where sheared and sealed by heavy equipment.
Fabric Layout
 The filter fabric roll must be cut to the proper width prior to installation. The cut width must include sufficient material to conform to trench walls and provide a 6" minimum longitudinal lap. Place the fabric roll over the trench and unroll a sufficient length to allow placement of the fabric down into the trench. Stones or other anchoring objects should be placed on the fabric at the edge of the trench to keep the lined trench open during windy periods. Man overlaps are required between trench man overlaps to ensure the fabric conforms to the excavation surface during aggregate placement and compaction.
Stone Aggregate Placement and Compaction
 The stone aggregate should be placed in lifts and compacted using plate compactors. As a rule of thumb, a maximum loose lift thickness of 12 inches is recommended. The compacting shall be done in the direction of the excavation side, thereby reducing the potential for soil piping, fabric clogging, and settlement problems.
Overlapping and Covering
 Following the stone aggregate placement, the filter fabric shall be folded over the aggregate and for a 6" minimum longitudinal lap. The desired fill soil or stone aggregate shall be placed over the lap at sufficient intervals to maintain the lap during subsequent backfilling.
Containment
 Care shall be exercised to prevent natural or fill soils from intermingling with the stone aggregate. The stone aggregate shall be rounded and replaced with uncontaminated stone aggregate.
Void and Fabric
 Voids can be created between the fabric and excavation sides and shall be avoided. Removing bolsters or other obstacles from the trench walls in one source of such voids. Materials shall be placed in these voids using the most convenient time during construction to assure fabric conformity to the excavation side. Soil piping, fabric clogging, and possible surface subsidence will be avoided by this remedial process.
Stable Excavation Sides
 Vertically excavated walls may be difficult to maintain in areas where the soil moisture is high or where soft cohesive or cohesionless soils predominate. These conditions may require laying back of the side slopes to maintain stability; temporarily, rather than rectangular cross sections may result.
Vegetative Buffer
 A vegetative buffer of at least 20 feet (wider, if possible) shall be used to intercept surface runoff from all impervious areas.
Traffic Control
 Heavy equipment and traffic shall be restricted from travelling over the infiltration areas to minimize compaction of the soil.
Observation Well
 An observation well, as described in subsection 3.3.4.8 and Figure 3-5 shall be provided. The depth of the well at the time of installation will be clearly marked on the well cap.
Maintenance
 Infiltration trenches shall be designed to minimize maintenance. However, it is recognized that all infiltration facilities are subject to clogging by sediment, soil, grass, etc. and other debris. In addition, the performance and longevity of these structures is not well documented. Consequently, a monitoring observation well is required for all infiltration structures.
 The observation well shall be monitored periodically. For the first year after completion of construction, the well should be monitored on a quarterly basis and after every large storm. It is recommended that a log book be maintained indicating the rate at which the facility drains after large storms and the depth of the well for each observation. Once the performance characteristics of the structure have been verified, the monitoring schedule can be reduced to an annual basis, unless the performance data indicate that a more frequent schedule is required.
Reference
 1. Infiltration Management Design Manual for Frederick Co., Maryland, 1979.
 2. Anonymous, Controlling Storm Runoff in Developing Areas: Selected Best Management Practices; Metropolitan Washington Council of Governments, July, 1979.
 3. Percolation Pits: Their Design, Construction, Use and Maintenance for Stormwater Discharge; Groundwater Recharge, and Surface Water Quality Protection in Mesa County, Colorado; Adams County Planning Department.



ENGINEER'S CERTIFICATE
 I HEREBY 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.
 DATE: 8/12/87
 SIGNATURE OF ENGINEER: [Signature]

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 ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 DATE: 8/12/87
 SIGNATURE OF DEVELOPER: [Signature]

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 DATE: 8/25/87
 SIGNATURE OF OWNER/DEVELOPER: [Signature]

APPROVED FOR HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE: 8/25/87
 SIGNATURE OF CHIEF DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION: [Signature]

APPROVED FOR HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE: 8/25/87
 SIGNATURE OF CHIEF BUREAU OF HIGHWAYS: [Signature]

APPROVED FOR HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE: 8/25/87
 SIGNATURE OF CHIEF BUREAU OF ENGINEERING: [Signature]

NOTES & DETAILS
TOLLHOUSE
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN APRIL 28, 1987
 SHEET 11 OF 11