

GENERAL NOTES

- All construction shall be in accordance with the latest Standards and Specifications of Howard County, plus MSHA Standards & Specifications as applicable.
- The Contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- The Contractor shall notify "Miss Utility" at 1-800-257-7777 at least forty-eight (48) hours prior to any excavation work.
- Project Background:  
Location: Elkridge, Maryland  
Tax Map: 37  
Election District: 1st
- Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- Any damage caused by the Contractor to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be corrected at the Contractor's expense.
- The existing utilities shown hereon are located from construction drawings of record. The approximate location of existing utilities are shown for the Contractor's information and convenience. The Contractor shall locate existing utilities to his own satisfaction and well in advance of any construction activities. Additionally, the Contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.
- Horizontal and vertical datums are related to the Maryland State Plane Coordinate System as projected from Howard County Control Station No. 2644004 and Howard County Control Station No. 2644005 (NAD 27).
- All hydraulic data is for the 10-year storm unless otherwise noted.
- All fill areas shall be compacted to a minimum of 95% of the maximum dry density as determined and verified in accordance with AASHTO T-180.
- All sediment and erosion control measures established under SDP 95-77 will remain in place for the construction of the J-4136 Capital Project. The Contractor will be responsible for the continued maintenance of existing sediment control devices and for removal of the sediment controls in place from the construction completed under SDP 95-77. The plans for SDP 95-77 are available for inspection by contacting the Division of Transportation Projects and Watershed Management at (410) 313-2014.

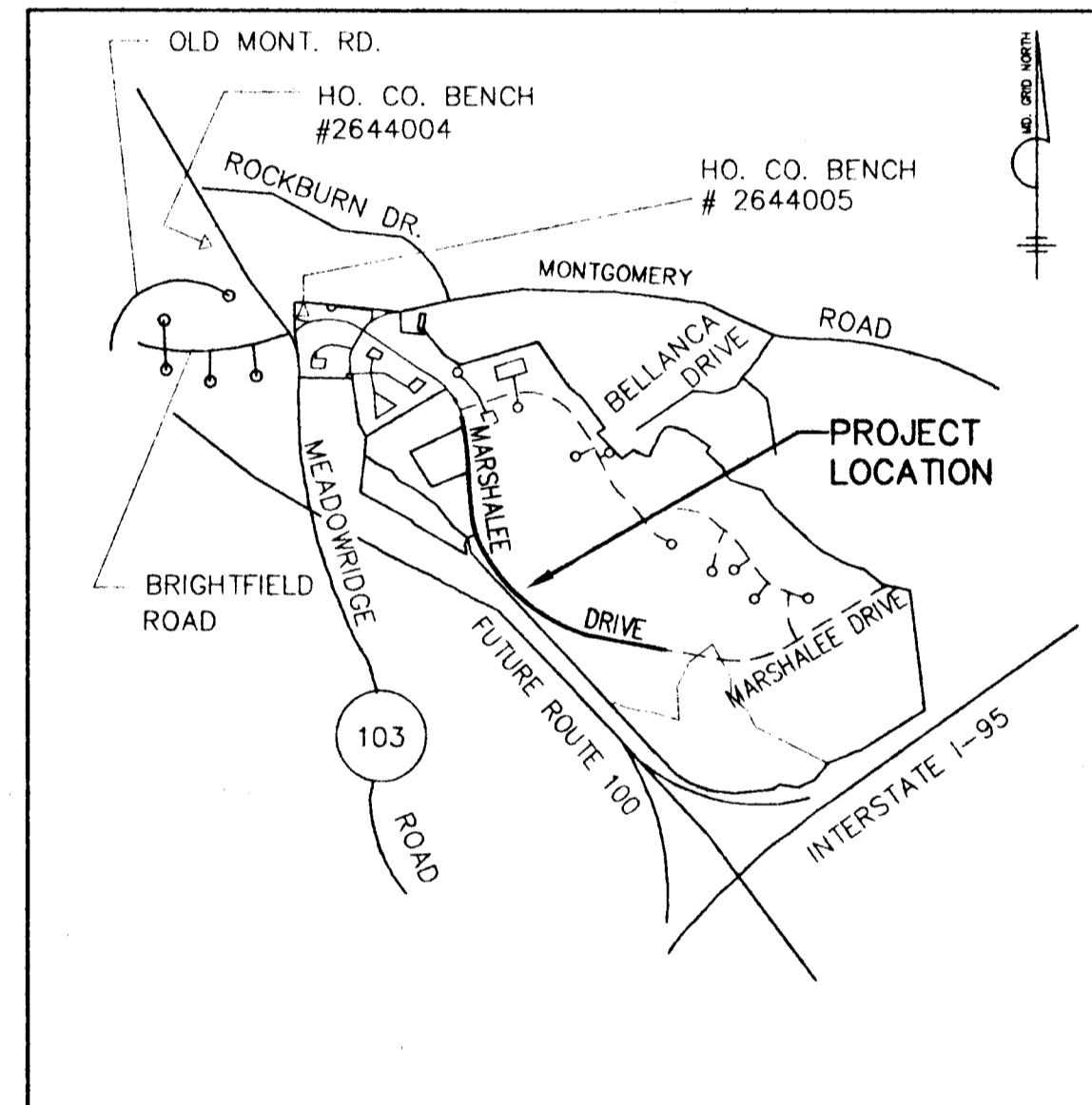
BENCHMARKS

Howard County Monument #2644005 Elevation 416.981  
Description: Concrete Monument 0.2' below surface  
South side Montgomery Road East of  
Meadow Ridge Road.

Howard County Monument #2644004 Elevation 402.135  
Description: Concrete Monument 0.1' below surface  
SW corner of intersection Rt. 103  
and Old Montgomery Road.

# HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

## MARSHALEE DRIVE CAPITAL PROJECT J-4136



LOCATION MAP  
NO SCALE

INDEX OF DRAWINGS

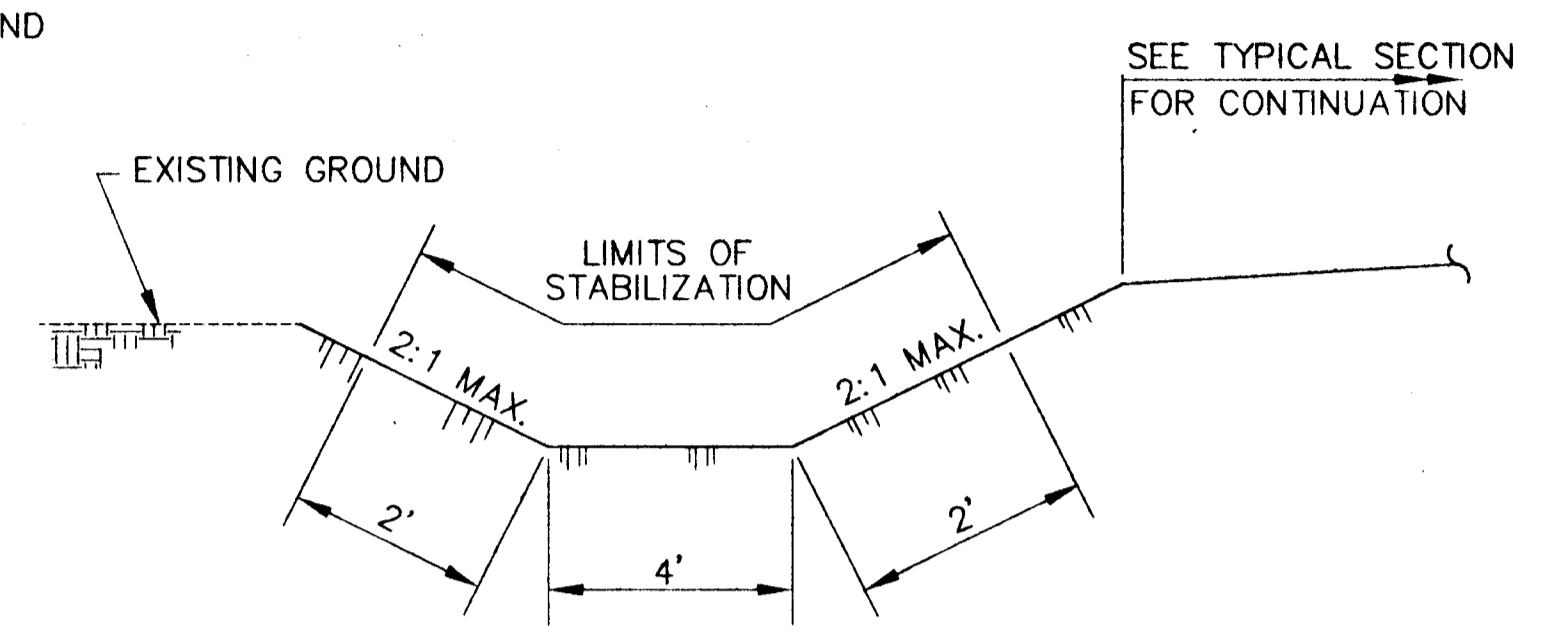
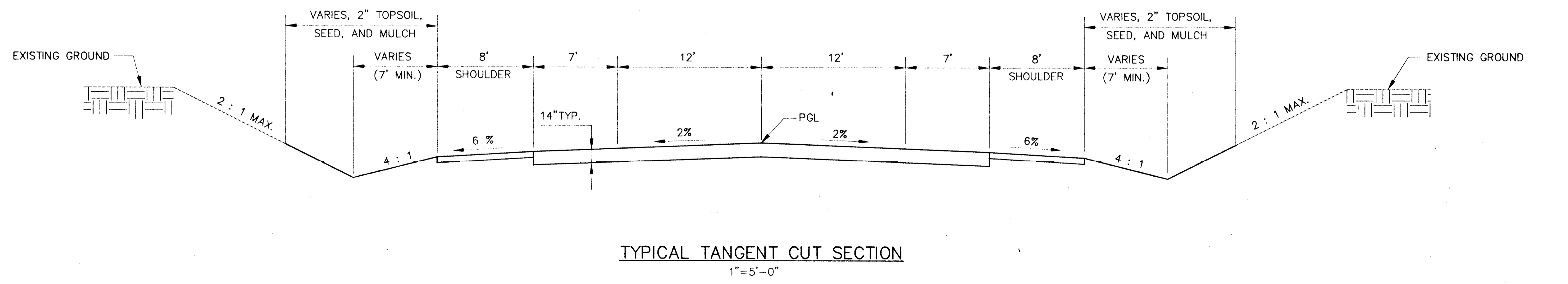
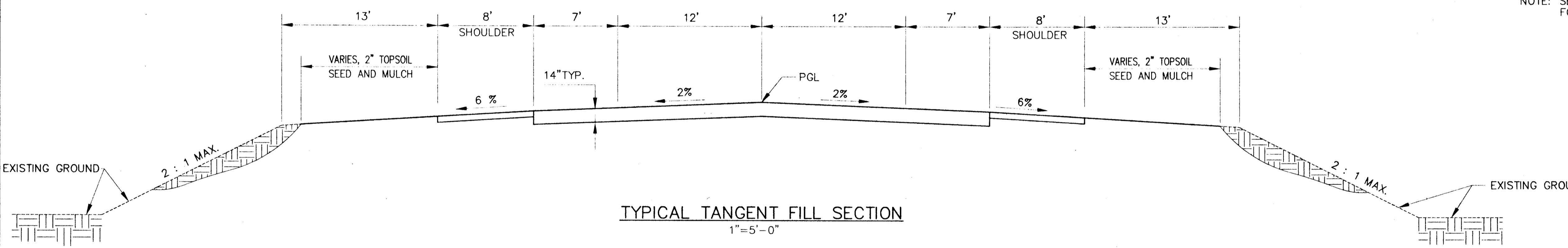
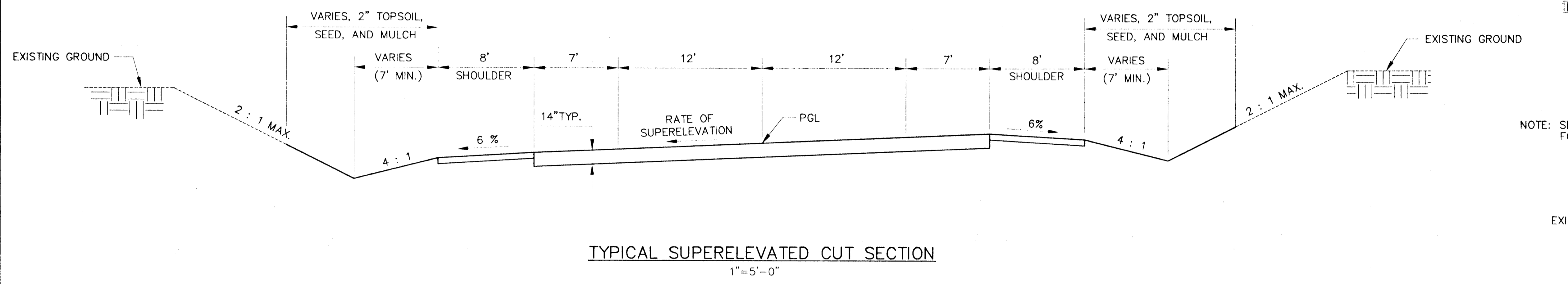
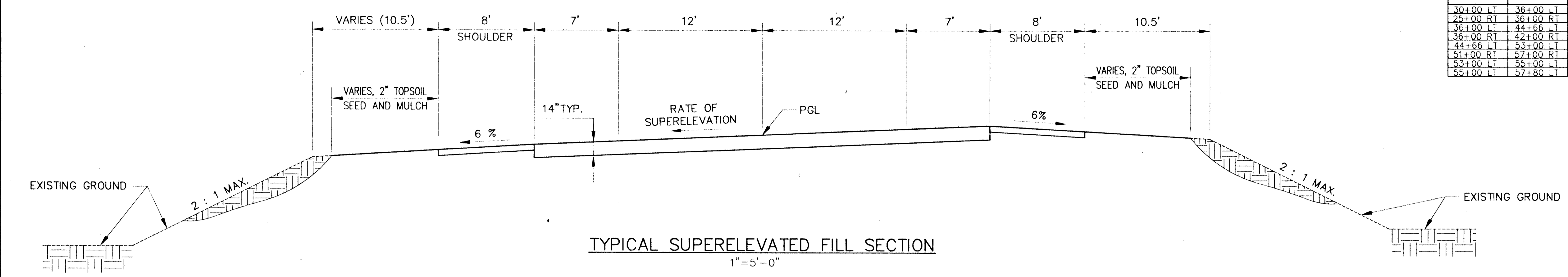
SHEET NO.	TITLE
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2	TYPICAL SECTIONS & SIDE DITCH STABILIZATION SCHEDULE
3	PLAN-STA 24+00 TO STA 32+00, SUPERELEVATION DIAGRAM & TRANSITION TABLE
4	PLAN-STA 32+00 TO STA 45+00, STRUCTURE & PIPE SCHEDULES & STORM DRAIN PROFILES
5	PLAN-STA 45+00 TO STA 57+80
6	ROADWAY PROFILE-STA 24+00 TO STA 32+00
7	ROADWAY PROFILE-STA 32+00 TO STA 45+00
8	ROADWAY PROFILE-STA 45+00 TO STA 57+80
9	CROSS SECTIONS-STA 24+00 TO STA 29+50
10	CROSS SECTIONS-STA 30+00 TO STA 34+50
11	CROSS SECTIONS-STA 35+00 TO STA 42+00
12	CROSS SECTIONS-STA 42+50 TO STA 47+50
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16	SWM POND - PLAN VIEW, SPECIFICATION'S & NOTES
16A	SOIL BORING LOGS
17	SWM POND - PROFILES
18	SWM POND - DETAILS
19	SWM POND - SEDIMENT CONTROL PLAN AND DETAILS

C2870A01

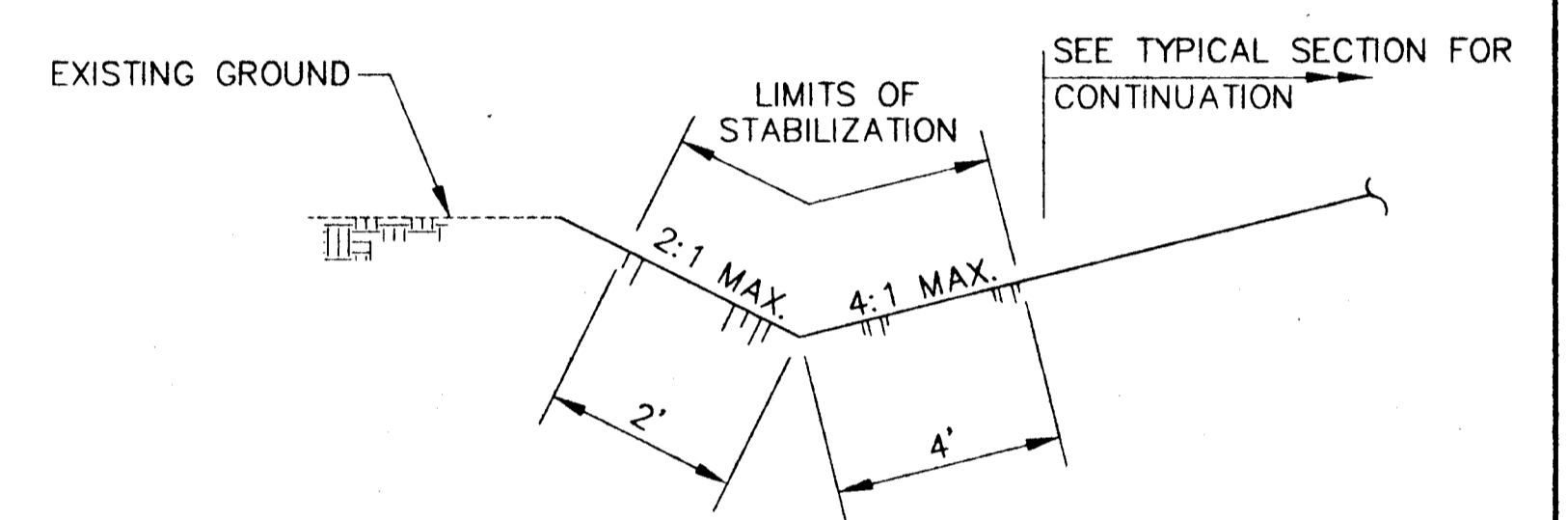
6: USEERS/CAL ANY PUBLIC WORKS/DESIGN/PROJECTS/2015/11/13/2015

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>[Signature]</i> 11/13/95 Chief, Bureau of Engineering: <i>[Signature]</i> 11/13/95		NOLAN ASSOCIATES, INC. ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS 4785 DORSEY HALL DRIVE SUITE 124 ELLICOTT CITY, MARYLAND 21042 PHONE: (410) 995-3851 FAX: (410) 995-1363		DES: J.S.N. <i>[Signature]</i> DRN: SMI/RPS CHK: C.S.N. DATE: NOV. 1995		TITLE SHEET		MARSHALEE DRIVE CAPITAL PROJECT J-4136 ELECTION DISTRICT NO. 1 ELLICOTT CITY, MARYLAND		SCALE AS SHOWN SHEET 1 OF 19
Chief, Bureau of Highway Projects and Watershed Management: <i>[Signature]</i> 11/13/95		Chief, Division of Transportation Projects and Watershed Management: <i>[Signature]</i> 11/13/95		DATE: NOV. 1995		REVISION		DATE: 600' SCALE MAP NO. BLOCK NO.		

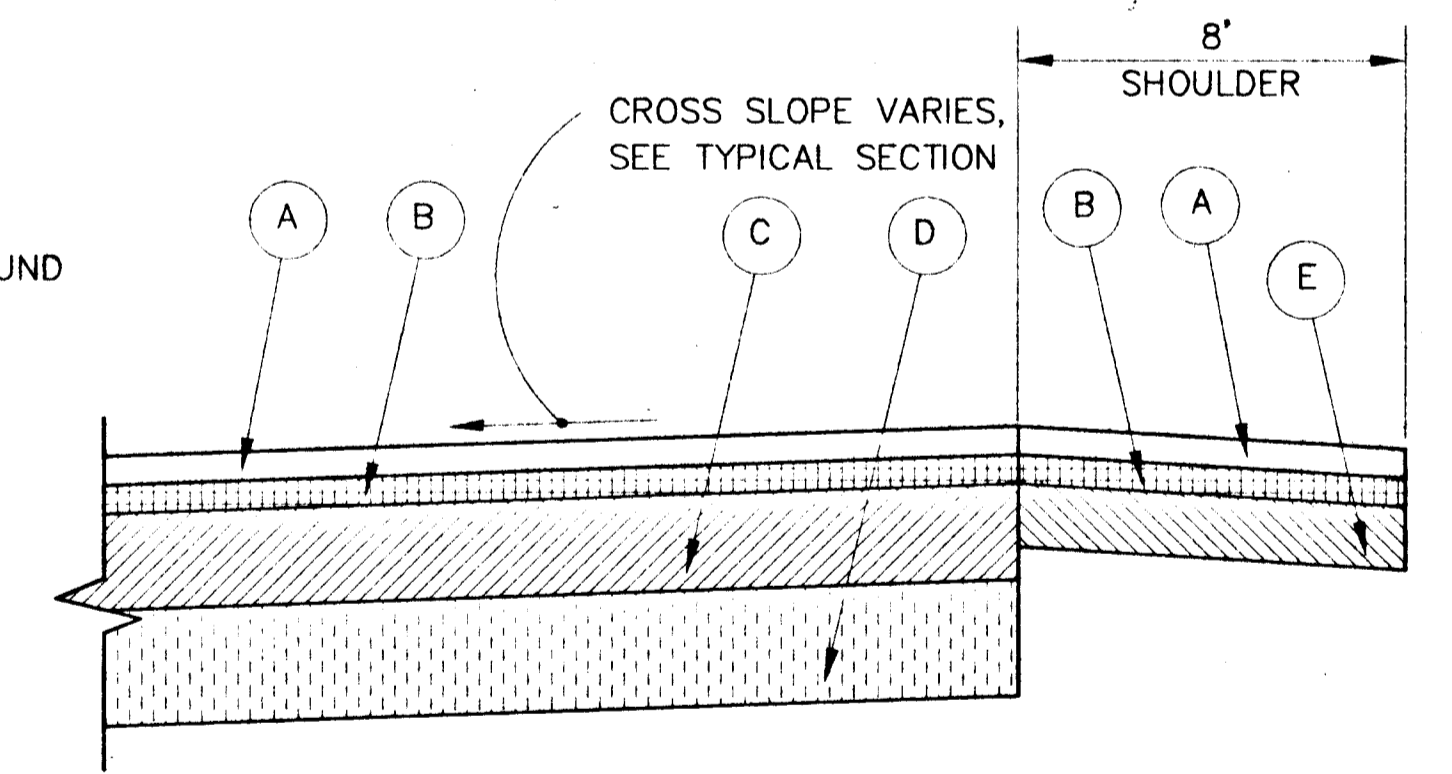
SIDE DITCH STABILIZATION SCHEDULE					
FROM	TO	SOIL STABILIZATION MATTING NO.	MATTING WIDTHS (4')	AREA	CLASS
30+00 LT	36+00 LT	2		533 S.Y.	
25+00 RT	36+00 RT	2		878 S.Y.	
36+00 LT	44+66 LT	2		866 S.Y.	
36+00 RT	42+00 RT	2		533 S.Y.	
44+66 LT	53+00 LT	2		741 S.Y.	
51+00 RT	57+00 RT	2		533 S.Y.	
53+00 LT	59+00 LT				133 S.Y.
55+00 LT	57+80 LT				250 S.Y.



NOTE: SEE SIDE DITCH STABILIZATION SCHEDULE FOR TYPE OF STABILIZATION TO BE USED.



NOTE: SEE SIDE DITCH STABILIZATION SCHEDULE FOR TYPE OF STABILIZATION TO BE USED.



- (A) 1 1/2" BITUMINOUS CONCRETE SURFACE (SF)
- (B) 1 1/2" BITUMINOUS CONCRETE SURFACE (BI)
- (C) 5" BITUMINOUS CONCRETE BASE (BI)
- (D) 6" GRADED AGGREGATE BASE (GAB)
- (E) 3" GRADED AGGREGATE BASE (GAB)

6. USE ONLY NOLAN ASSOCIATES' LOGO AND SEAL - 11/95

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Samuel J. ...* 11/13/95  
DIRECTOR OF PUBLIC WORKS DATE

*William D. ...* 11/13/95  
CHIEF, DIVISION OF TRANSPORTATION, PROJECTS AND WATERSHED MANAGEMENT DATE

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042

PHONE: (410) 995-3651 FAX: (410) 995-1363

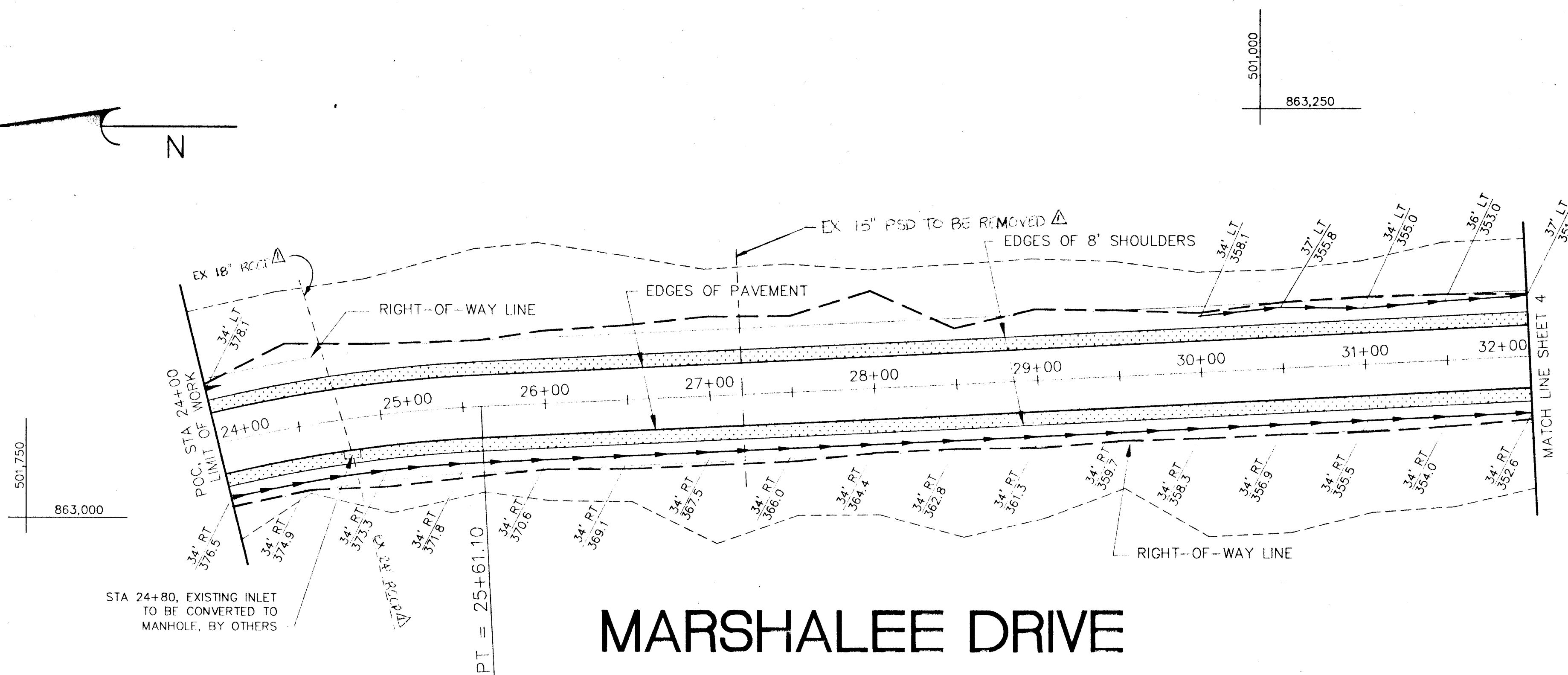
DES:	J.S.N.				
DRN:	SMI/RPS				
CHK:	C.S.N.				
DATE:	NOV. 1995				
BY:	NO	REVISION	DATE	600' SCALE MAP NO.	BLOCK NO.

TYPICAL SECTIONS  
& SIDE DITCH  
STABILIZATION SCHEDULE

MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

SCALE AS SHOWN  
SHEET 2 OF 19

COORDINATES		
STATION	NORTHING	EASTING
P.T. 25+61.11	501474.204	863068.174



# MARSHALEE DRIVE

PLAN  
SCALE: 1"=50'

STA 24+80, EXISTING INLET  
TO BE CONVERTED TO  
MANHOLE, BY OTHERS

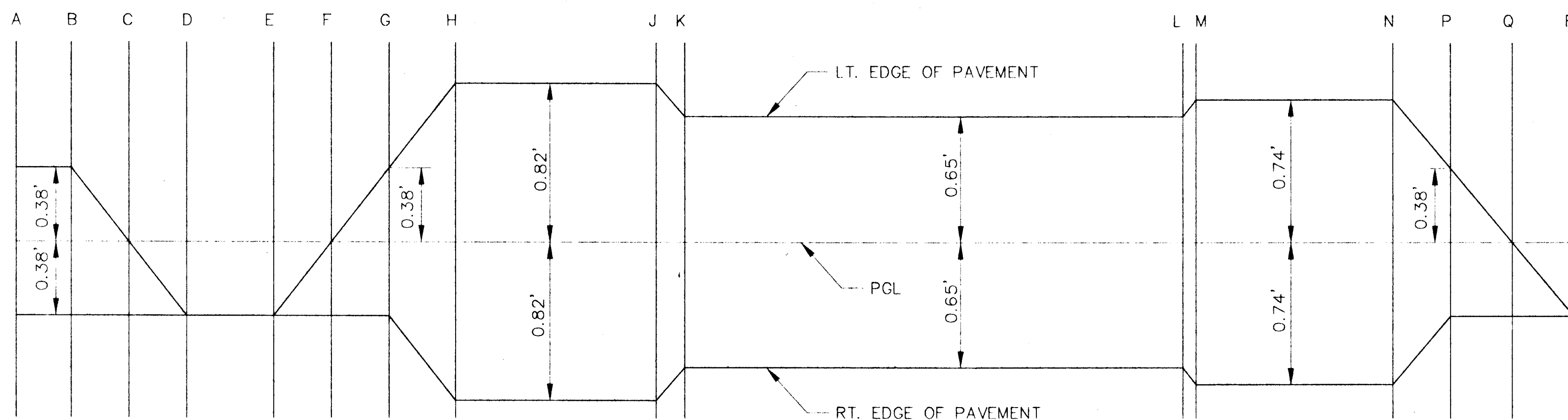
### LEGEND

- GRADING LIMITS FROM ORIGINAL GRADING CONTRACT, SDP 95-77
- GRADING LIMITS
- DITCH & FLOW DIRECTION
- DITCH OFFSET
- DITCH ELEVATION

$\Delta = 53'24'23''$   
 $D = 6'44'26.45''$   
 $R = 850.00'$   
 $T = 427.57'$   
 $L = 792.30'$   
 $E = 91.48'$   
 $S/E = 2.00\%$   
 PC STA 17+68.80

### NOTES

- FOR STRIPING PLAN, SEE SHEET 15.
- FOR DITCH STABILIZATION SCHEDULE, SEE SHEET 2.
- FOR TYPICAL SECTIONS, SEE SHEET 2.
- FOR GENERAL NOTES, SEE SHEET 1.



## SUPERELEVATION DIAGRAM

NOT TO SCALE

### SUPERELEVATION TRANSITION TABLE

STA 24+00 TO STA 57+83

Section	Station	Description
A	24+00	FULL SUPERELEVATION, 2.00%, LIMIT OF WORK
B	25+19.43	FULL SUPERELEVATION, 2.00%, BEGIN TRANSITION
C	26+44.43	HALF LEVEL SECTION
D	27+69.43	NORMAL CROWN, END TRANSITION
E	29+57.76	NORMAL CROWN, BEGIN TRANSITION
F	30+82.76	HALF LEVEL SECTION
G	32+07.76	INCLINED PLANE
H	33+51.51	FULL SUPERELEVATION 4.31%
J	37+86.01	FULL SUPERELEVATION, 4.31%, BEGIN TRANSITION
K	38+47.89	END TRANSITION, FULL SUPERELEVATION, 3.41%
L	49+32.60	FULL SUPERELEVATION, 3.41%, BEGIN TRANSITION
M	49+61.36	END TRANSITION, FULL SUPERELEVATION, 3.87%
N	53+89.25	BEGIN TRANSITION, FULL SUPERELEVATION 3.87%
P	55+14.69	INCLINED PLANE
Q	56+48.84	HALF LEVEL SECTION
R	57+83	NORMAL CROWN, END TRANSITION, STA 57+83.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Andrew M. Casella* 11/13/95  
 DIRECTOR OF PUBLIC WORKS DATE  
*William B. Wilson* 11/13/95  
 CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

NOLAN ASSOCIATES, INC.  
 ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS  
 4785 DORSEY HALL DRIVE  
 SUITE 124  
 ELLICOTT CITY, MARYLAND 21042  
 PHONE: (410) 995-3651 FAX: (410) 995-1363

DES:	J.S.N.	DATE:	NOV. 1995
DRN:	SMI/RPS	BY:	NO.
CHK:	C.S.N.	REVISION:	
DATE:	NOV. 1995	DATE:	

PLAN  
 STA 24+00 TO STA 32+00  
 SUPERELEVATION DIAGRAM  
 & TRANSITION TABLE

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

MARSHALEE DRIVE  
 CAPITAL PROJECT J-4136  
 ELECTION DISTRICT NO. 1  
 ELLICOTT CITY, MARYLAND

SCALE AS SHOWN

SHEET 3 OF 19

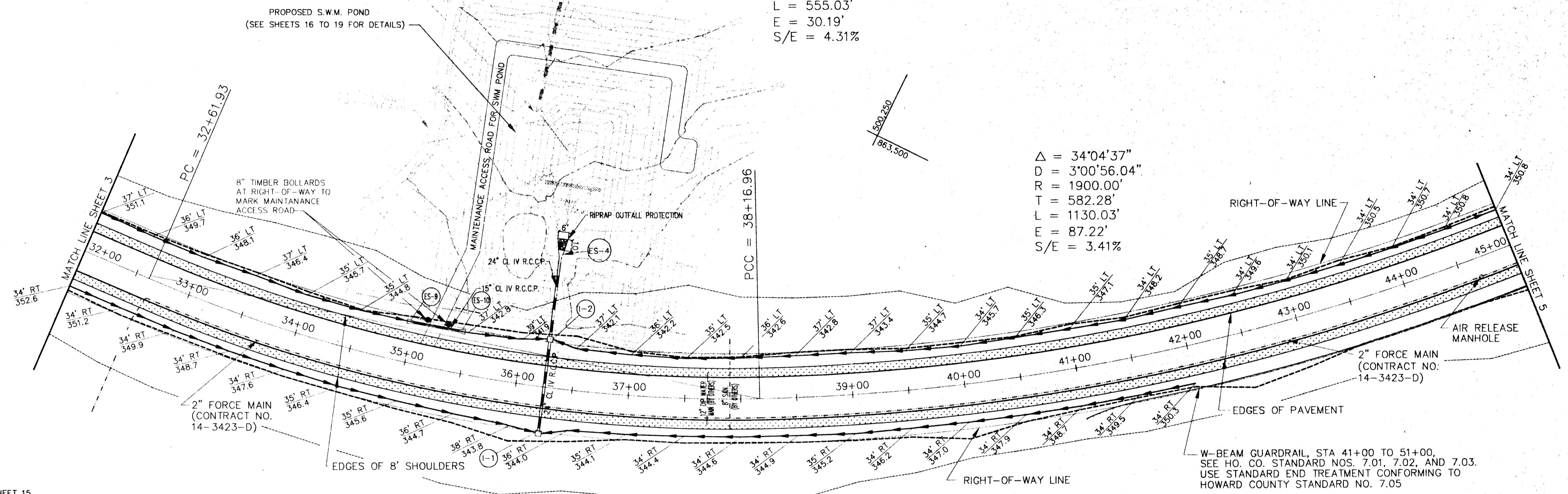
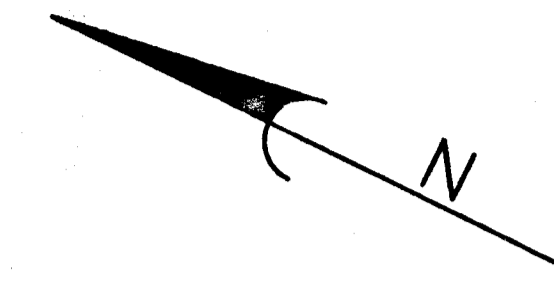
COORDINATES		
STATION	NORTHING	EASTING
P.C. 32+61.93	500774.193	863102.020
P.C.C. 38+16.96	500242.147	863244.571

STRUCTURE SCHEDULE						
NO.	TYPE	STATION	OFFSET	*TOP ELEV.	INV. OUT	REMARKS
I-1	S INLET	36+25	39' RT.	343.4	338.4	HO. CO. STD. DET. SD 4.22
I-2	S INLET	36+25	40' LT.	341.5	328.4	HO. CO. STD. DET. SD 4.12
3						NOT USED
ES-4	END SECTION	36+25	110' LT.		328.0	HO. CO. STD. DET. SD 5.51
I-SWM5					328.9	SEE SHEET NOS. 18-18
ES-SWM6	END SECTION				325.2	HO. CO. STD. DET. SD 5.51
I-7	S INLET	57+10	50' RT.	311.0	307.5	HO. CO. STD. DET. SD 4.22
ES-8	END SECTION	57+10	65' LT.		302.4	HO. CO. STD. DET. SD 5.51
ES-9	END SECTION	34+94	35.7' LT.		343.8	HO. CO. STD. DET. SD 5.51
ES-10	END SECTION	32+47.5	37.0' LT.		342.8	HO. CO. STD. DET. SD 5.51

PIPE SCHEDULE				
FROM	TO	SIZE	TYPE	LENGTH
I-1	I-2	24"	CL. IV R.C.C.P.	79'
I-2	ES-4	24"	CL. IV R.C.C.P.	71'
I-7	ES-8	18"	CL. IV R.C.C.P.	107'
I-SWM5	ES-SWM6	36"	ASTM C361, CLASS C-25	102'
ES-9	ES-10	15"	CL. IV R.C.C.P.	42'

$\Delta = 24'27.44"$   
 $D = 4'24'26.52"$   
 $R = 1300.00'$   
 $T = 281.81'$   
 $L = 555.03'$   
 $E = 30.19'$   
 $S/E = 4.31\%$

$\Delta = 34'04'37"$   
 $D = 3'00'56.04"$   
 $R = 1900.00'$   
 $T = 582.28'$   
 $L = 1130.03'$   
 $E = 87.22'$   
 $S/E = 3.41\%$



**NOTES**

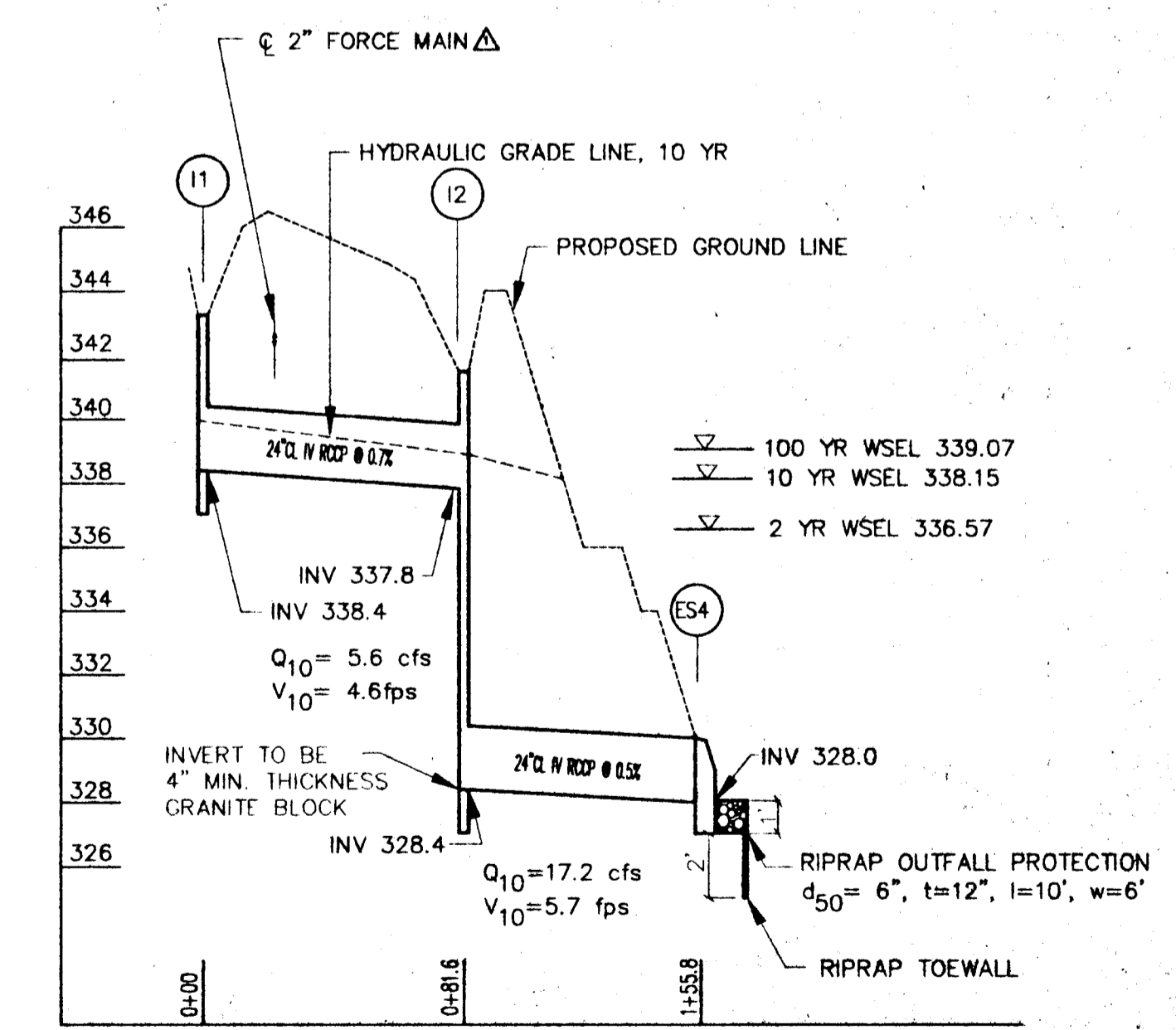
- FOR STRIPING PLAN, SEE SHEET 15.
- FOR DITCH STABILIZATION SCHEDULE, SEE SHEET 2.
- FOR TYPICAL SECTIONS, SEE SHEET 2.
- FOR SUPERELEVATION DIAGRAM, SEE SHEET 3.
- FOR GENERAL NOTES, SEE SHEET 1.

**MARSHALEE DRIVE**

**LEGEND**

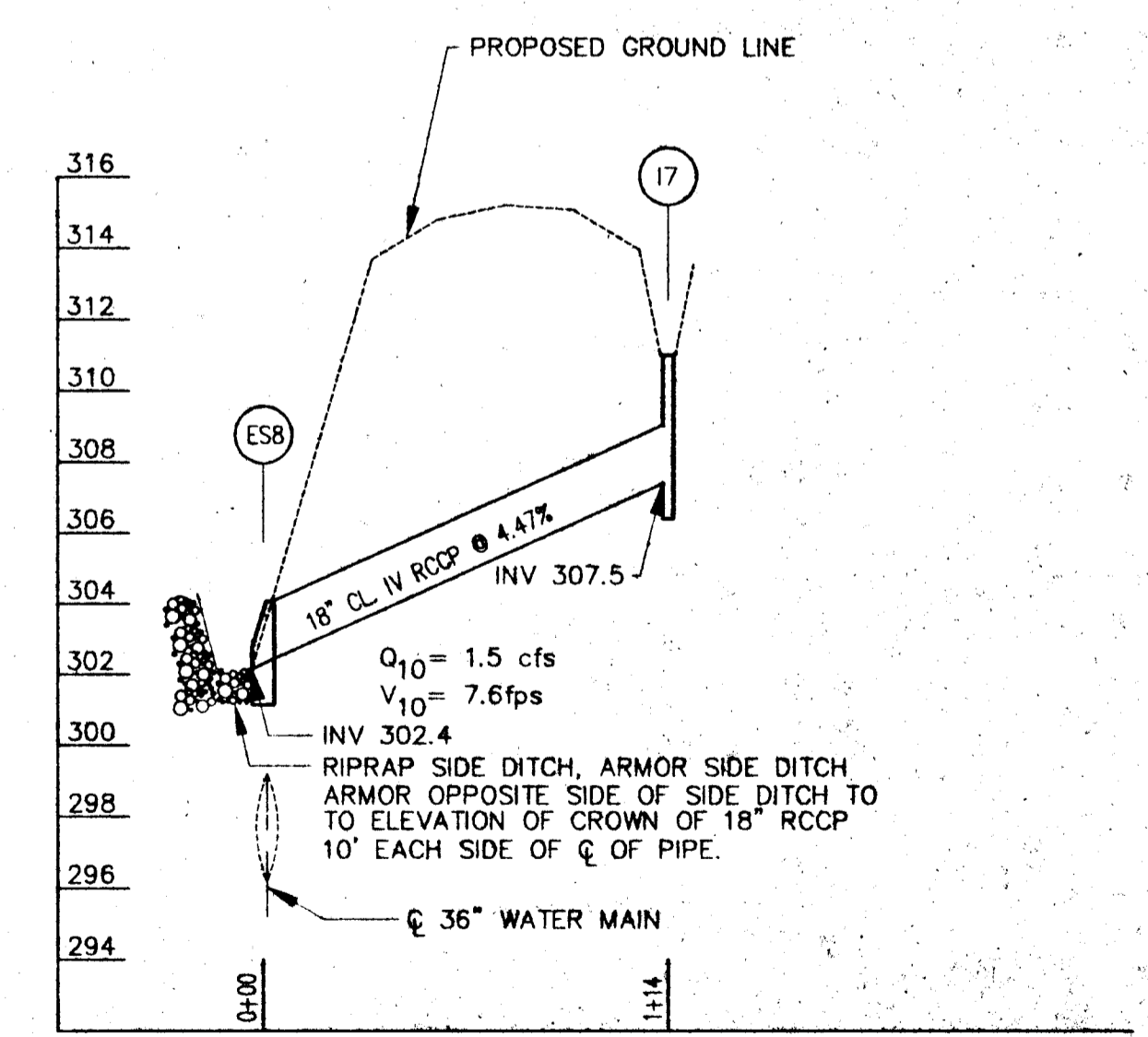
- GRADING LIMITS FROM ORIGINAL GRADING CONTRACT, SDP 95-77
- - - GRADING LIMITS
- DITCH & FLOW DIRECTION
- DITCH OFFSET
- DITCH ELEVATION

**PLAN**  
SCALE: 1"=50'



**STORM DRAIN PROFILE, STA 36+25**

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



**STORM DRAIN PROFILE, STA 57+10**

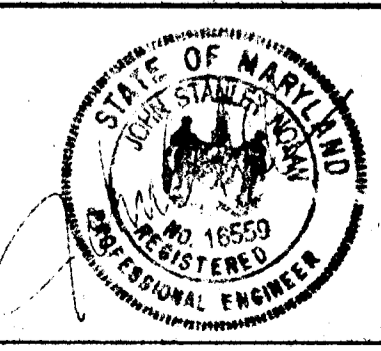
SCALE: 1"=50' HORIZ.  
SCALE: 1"=5' VERT.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 12/13/95  
 Chief, Bureau of Engineering: *[Signature]* 12/13/95  
 Chief, Bureau of Highways: *[Signature]* 12-13-95  
 Chief, Division of Transportation Projects and Watershed Management: *[Signature]* 12/13/95

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
 SUITE 124  
 ELLICOTT CITY, MARYLAND 21042  
 PHONE: (410) 995-3651 FAX: (410) 995-1383



DES:	J.S.N.	J.S.N.	△	LOCATION OF 2" FORCE MAIN OF STORM DRAIN PROFILE	11/15/95
DRN:	SMI/RPS	J.S.N.	△	SHEET REISSUED DUE TO SWM POND REVISIONS	12/12/95
CHK:	C.S.N.				
DATE:	NOV. 1995	BY:	NO.	REVISION	DATE

**PLAN**  
 STA 32+00 TO STA 45+00  
 STRUCTURE & PIPE SCHEDULES  
 & STORM DRAIN PROFILES

MARSHALEE DRIVE  
 CAPITAL PROJECT J-4136  
 ELECTION DISTRICT NO. 1  
 ELLICOTT CITY, MARYLAND

SCALE AS SHOWN  
 SHEET 4 OF 19

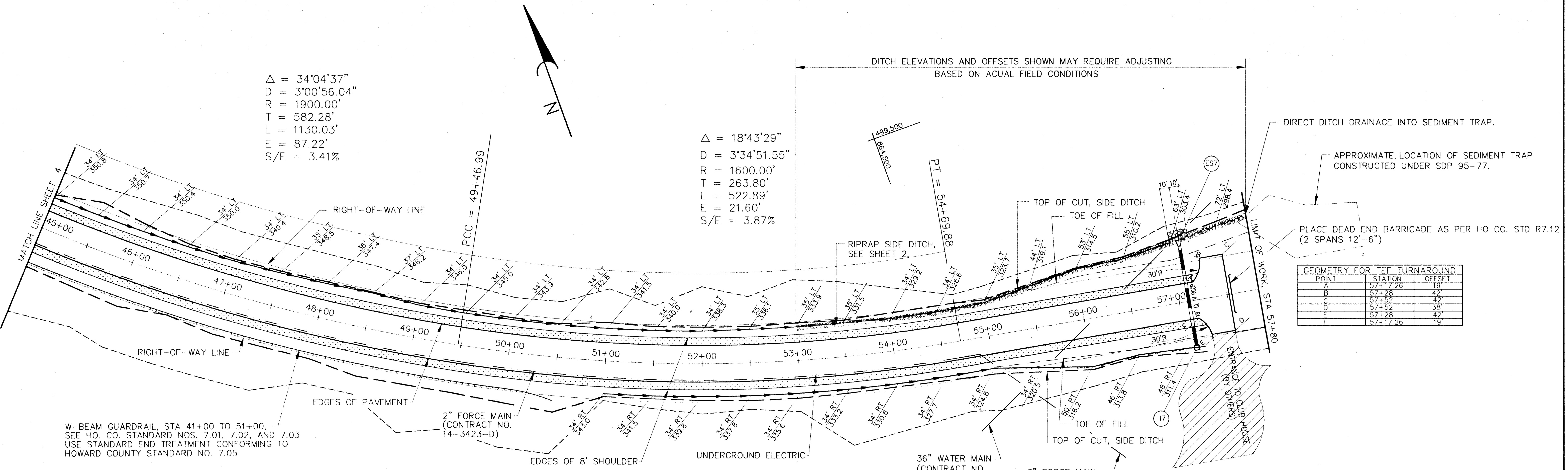
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COORDINATES		
STATION	NORTHING	EASTING
P.C.C. 49+46.99	499444.831	864021.772
P.T. 54+69.88	499272.508	864513.007

$\Delta = 34'04'37''$   
 $D = 3'00'56.04''$   
 $R = 1900.00'$   
 $T = 582.28'$   
 $L = 1130.03'$   
 $E = 87.22'$   
 $S/E = 3.41\%$

$\Delta = 18'43'29''$   
 $D = 3'34'51.55''$   
 $R = 1600.00'$   
 $T = 263.80'$   
 $L = 522.89'$   
 $E = 21.60'$   
 $S/E = 3.87\%$

DITCH ELEVATIONS AND OFFSETS SHOWN MAY REQUIRE ADJUSTING  
BASED ON ACTUAL FIELD CONDITIONS



DIRECT DITCH DRAINAGE INTO SEDIMENT TRAP.  
APPROXIMATE LOCATION OF SEDIMENT TRAP  
CONSTRUCTED UNDER SDP 95-77.

PLACE DEAD END BARRICADE AS PER HO CO. STD R7.12  
(2 SPANS 12'-6")

POINT	STATION	OFFSET
A	57+17.26	19'
B	57+28	42'
C	57+52	42'
D	57+52	38'
E	57+28	42'
F	57+17.26	19'

W-BEAM GUARDRAIL, STA 41+00 TO 51+00,  
SEE HO. CO. STANDARD NOS. 7.01, 7.02, AND 7.03  
USE STANDARD END TREATMENT CONFORMING TO  
HOWARD COUNTY STANDARD NO. 7.05

2" FORCE MAIN  
(CONTRACT NO.  
14-3423-D)

36" WATER MAIN  
(CONTRACT NO.  
44-3327)

2" FORCE MAIN  
(CONTRACT NO.  
14-3423-D)

# MARSHALEE DRIVE

PLAN  
SCALE: 1"=50'

**NOTES**

- FOR STRIPING PLAN, SEE SHEET 15
- FOR DITCH STABILIZATION SCHEDULE, SEE SHEET 2
- FOR TYPICAL SECTIONS, SEE SHEET 2
- FOR SUPERELEVATION DIAGRAM, SEE SHEET 3
- FOR GENERAL NOTES, SEE SHEET 1

**LEGEND**

- GRADING LIMITS FROM ORIGINAL GRADING CONTRACT, SDP 95-77
- GRADING LIMITS
- DITCH & FLOW DIRECTION, CUT SECTION
- DITCH & FLOW DIRECTION, FILL SECTION

6. USEERS UNIC. ANPAUB\085 95620\ACAD\RDPL\N3

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James J. Schwan* 11/3/95  
DIRECTOR OF PUBLIC WORKS DATE

*William F. Wilson, Jr.* 11/19/95  
CHIEF, BUREAU OF ENGINEERING DATE

*William F. Wilson, Jr.* 11/19/95  
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042

PHONE: (410) 995-3651 FAX: (410) 995-1363

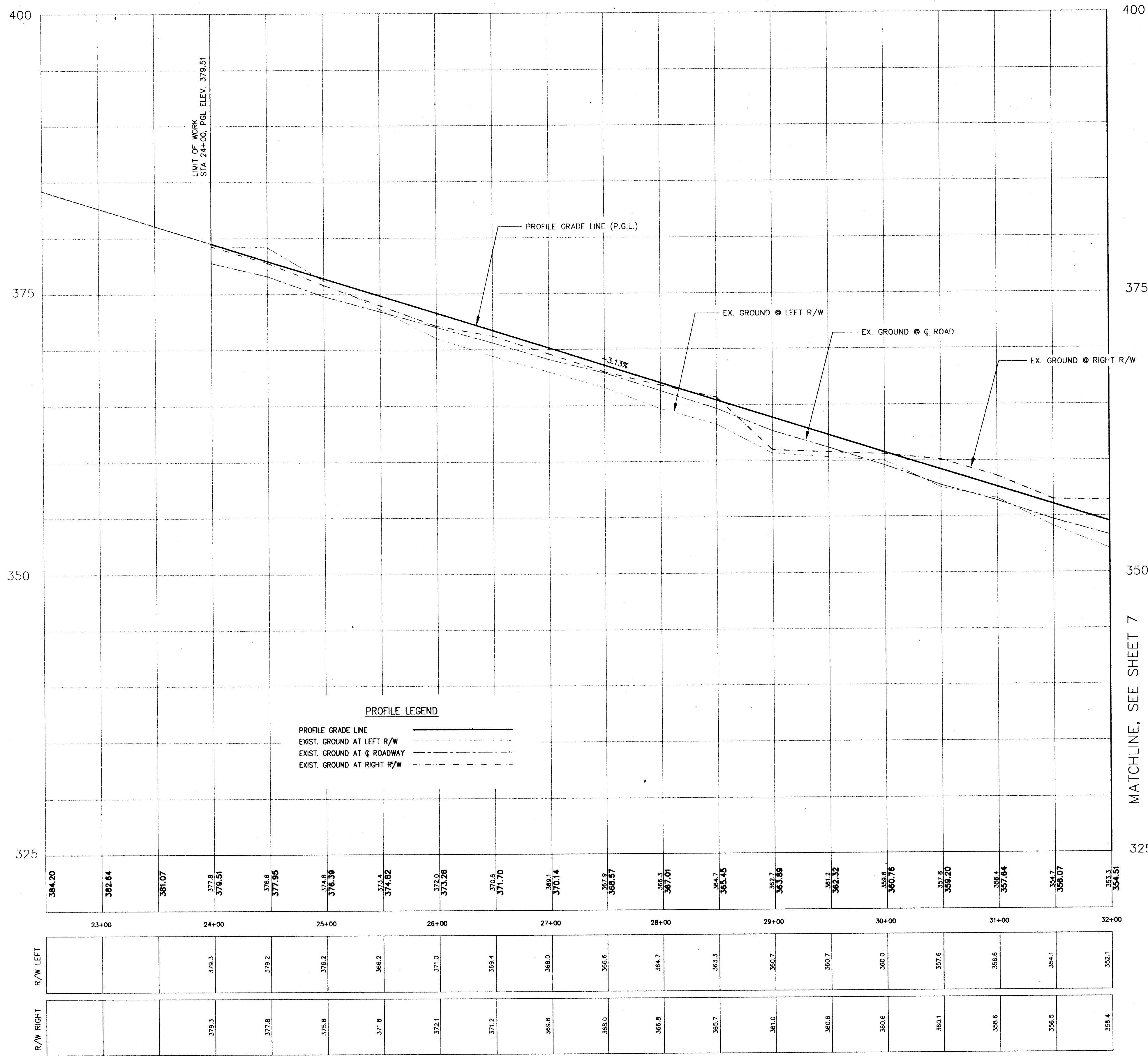
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DRN:	SMI/RPS				
CHK:	C.S.N.				
DATE:	OCT. 1995	BY	NO.	REVISION	DATE

PLAN  
STA 45+00 TO STA 57+80

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

SCALE AS SHOWN  
SHEET 5 OF 19



MATCHLINE, SEE SHEET 7

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

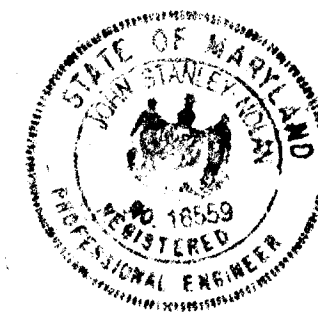
*Ramon J. Chmura*  
DIRECTOR OF PUBLIC WORKS  
DATE: 11/13/95

*William J. McManus*  
CHIEF, BUREAU OF ENGINEERING  
DATE: 11/13/95

*William J. McManus*  
CHIEF, DIVISION OF TRANSPORTATION  
PROJECTS AND WATERSHED MANAGEMENT  
DATE: 11/10/95

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042  
PHONE: (410) 995-3651 FAX: (410) 995-1363



DES: J.S.N.

DRN: SMI/RPS

CHK: C.S.N.

DATE: NOV. 1995

BY	NO.	REVISION	DATE

ROADWAY PROFILE  
STA 24+00 TO 32+00

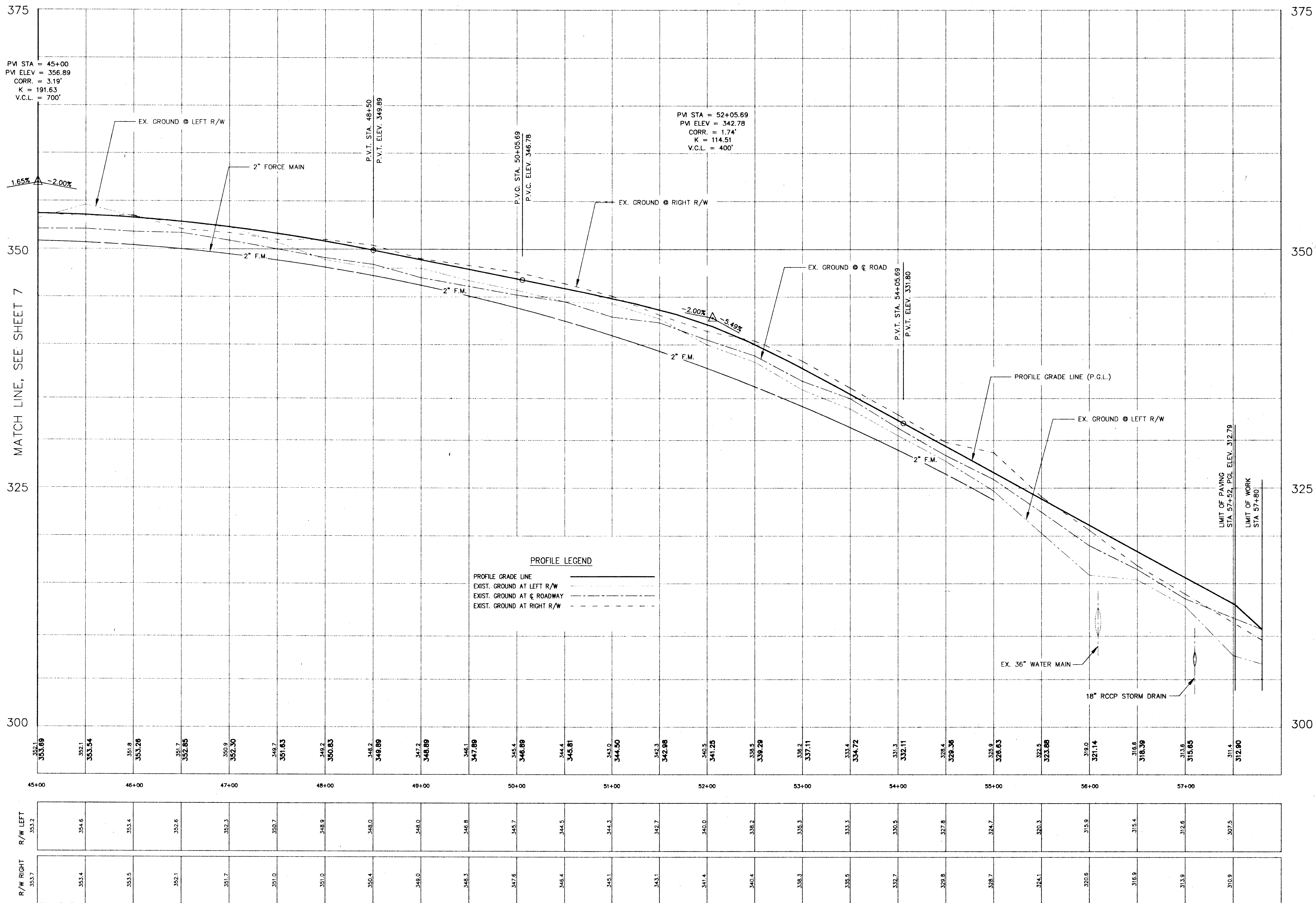
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

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

SHEET  
6 OF 19





**PROFILE LEGEND**

PROFILE GRADE LINE	—————
EXIST. GROUND AT LEFT R/W	-----
EXIST. GROUND AT ROADWAY	- - - - -
EXIST. GROUND AT RIGHT R/W	-----

	45+00	46+00	47+00	48+00	49+00	50+00	51+00	52+00	53+00	54+00	55+00	56+00	57+00																														
R/W LEFT	353.89	353.54	353.26	352.85	352.30	349.7	348.2	348.89	347.2	346.89	348.1	347.89	346.4	346.89	344.4	345.81	343.0	344.50	342.3	342.98	340.5	341.25	338.5	339.29	336.2	337.11	333.4	334.72	331.3	332.11	328.4	329.36	326.9	326.63	323.88	319.0	321.14	318.6	318.39	315.8	315.65	311.4	312.90
R/W RIGHT	353.7	353.4	353.5	352.1	351.7	351.0	351.0	348.9	348.0	348.0	348.8	348.0	347.6	346.4	344.5	344.3	342.7	340.0	338.2	336.3	335.3	333.3	330.5	327.8	324.7	320.3	320.3	319.0	315.9	315.4	315.9	312.6	310.9	307.5									

G:\USERS\CONL\AN\PA\J\085\05020\ACAD\PROF3

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James P. Lee* 11/13/95  
DIRECTOR OF PUBLIC WORKS DATE

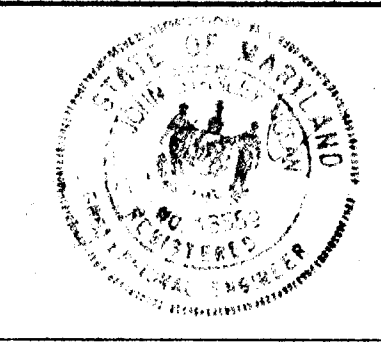
*Robert J. Ryan* 11/13/95  
CHIEF, BUREAU OF ENGINEERING DATE

*William R. Malone* 11/13/95  
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042

PHONE: (410) 995-3651 FAX: (410) 995-1363



DES:	J.S.N.
DRN:	SMI/RPS
CHK:	C.S.N.
DATE:	NOV. 1995
BY:	NO.
REVISION:	
DATE:	

**ROADWAY PROFILE**  
STA 45+00 TO 57+80

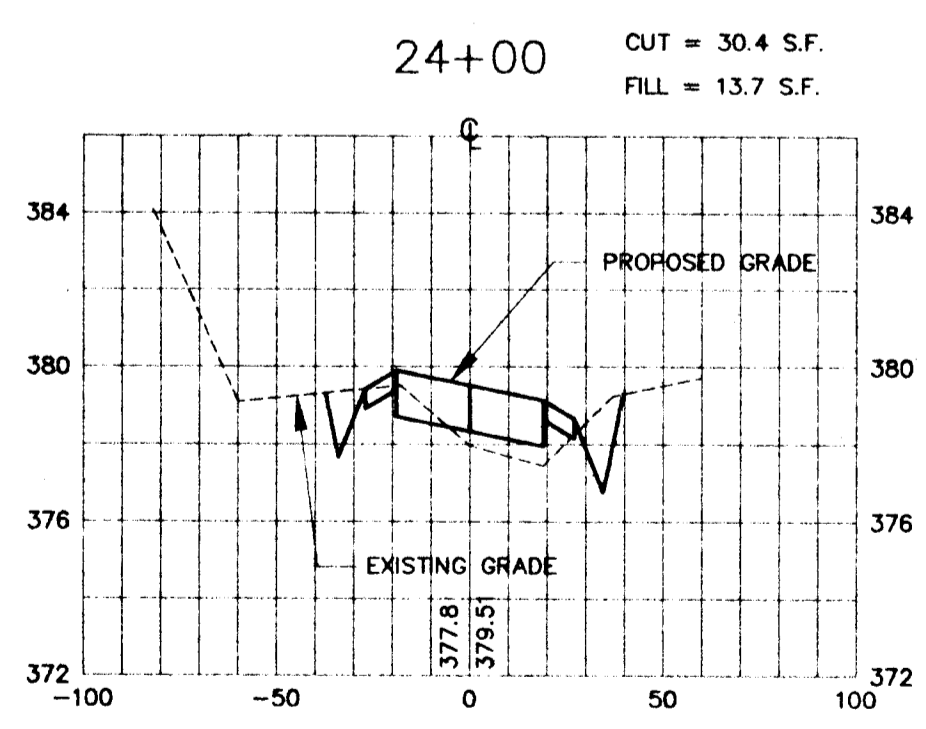
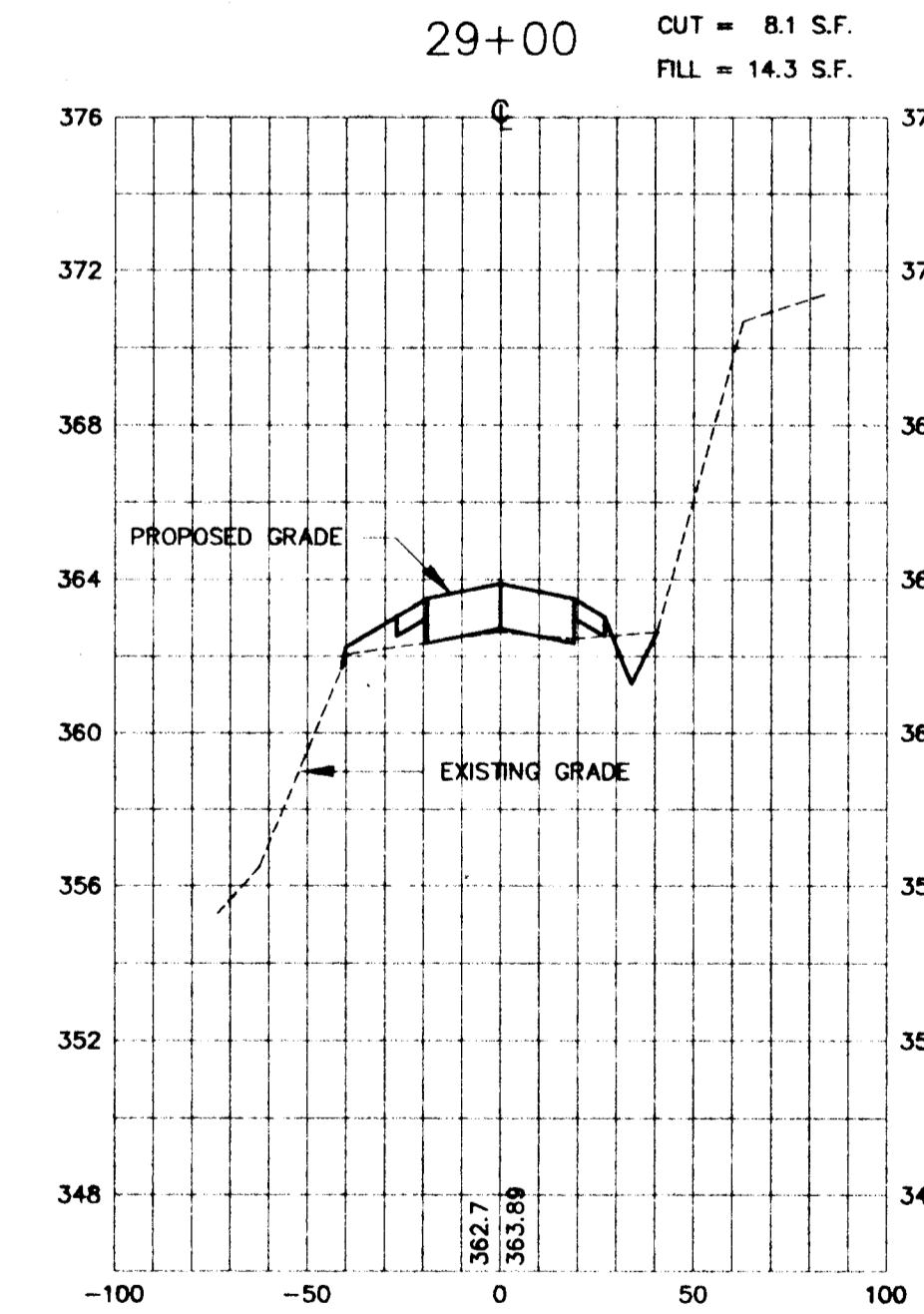
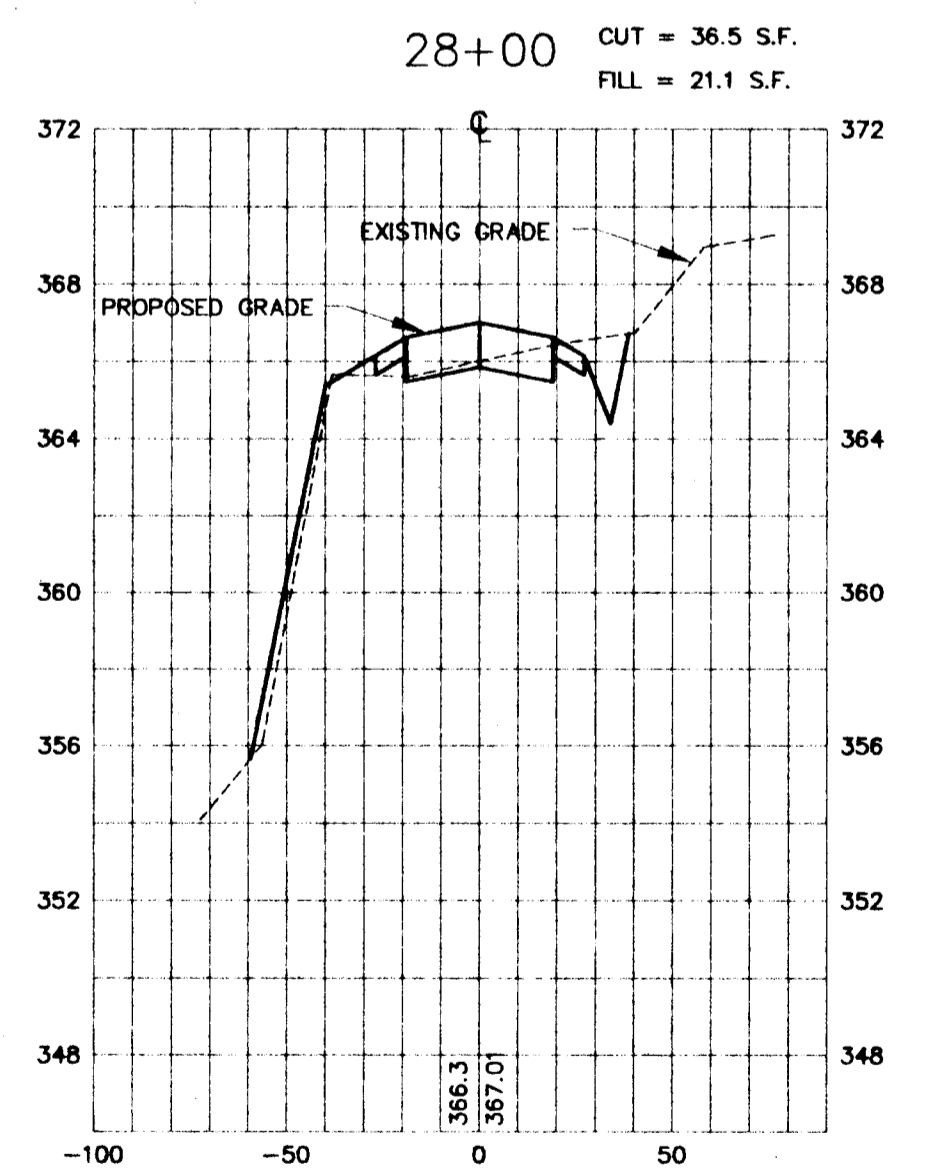
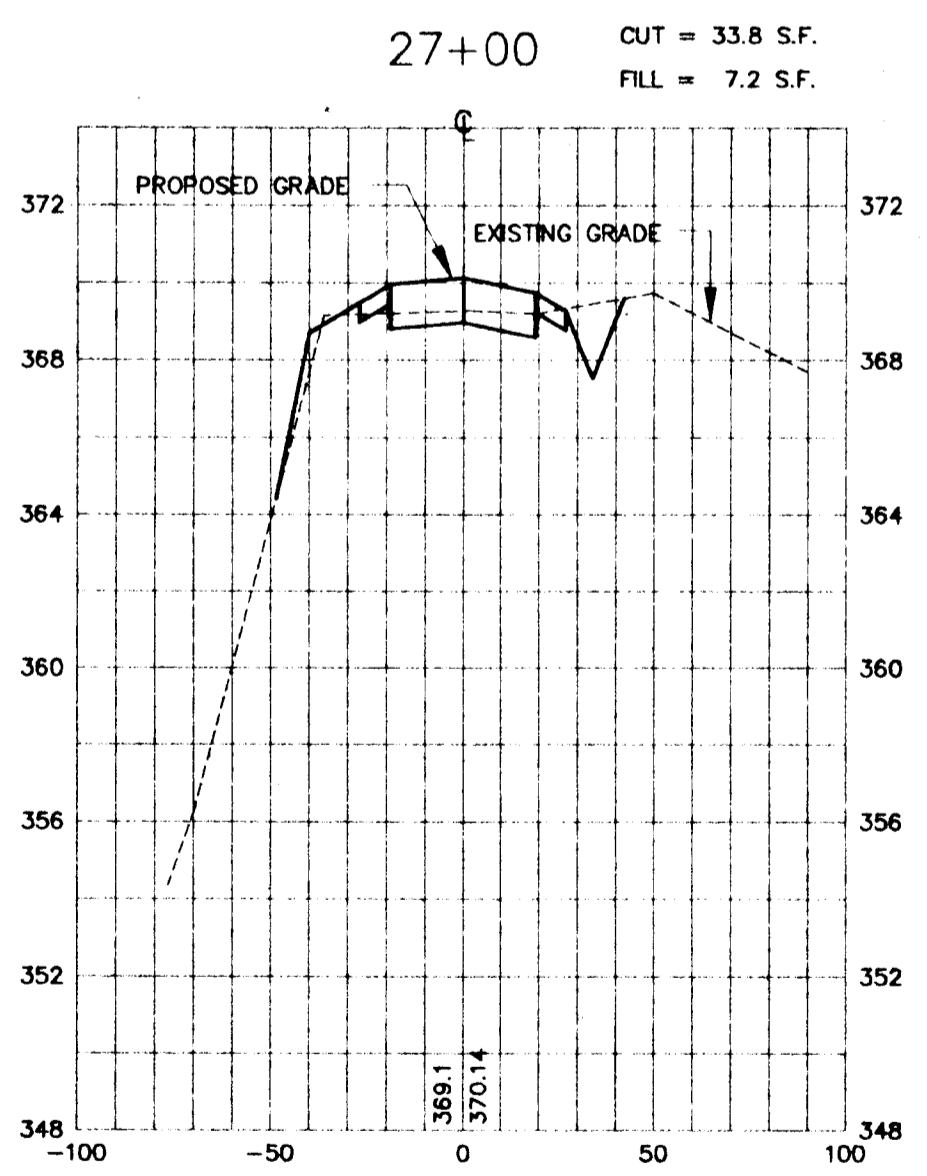
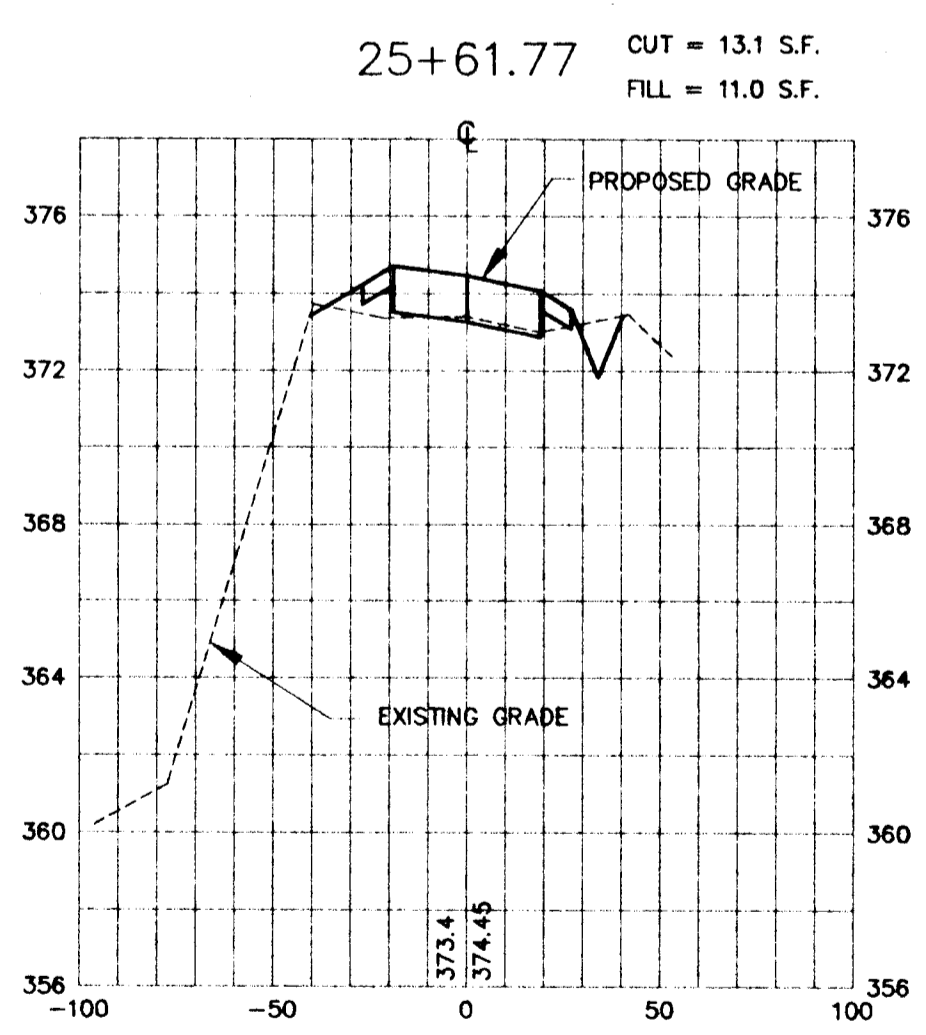
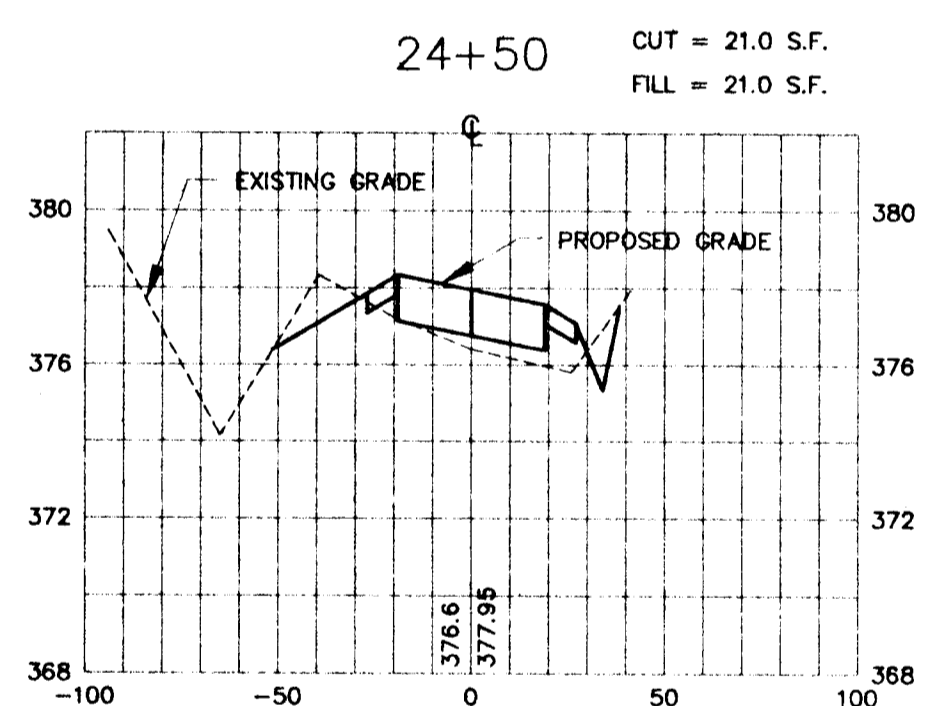
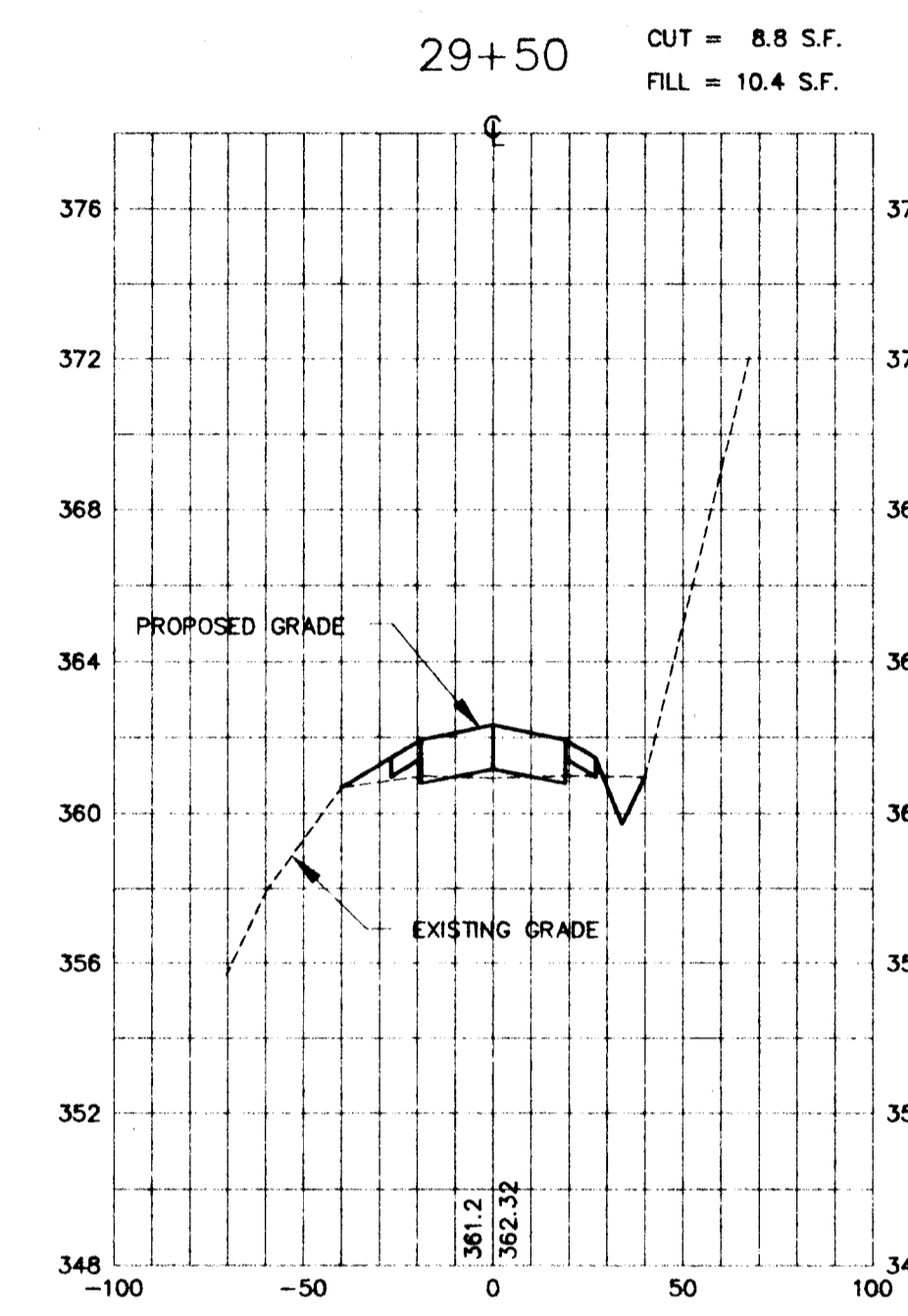
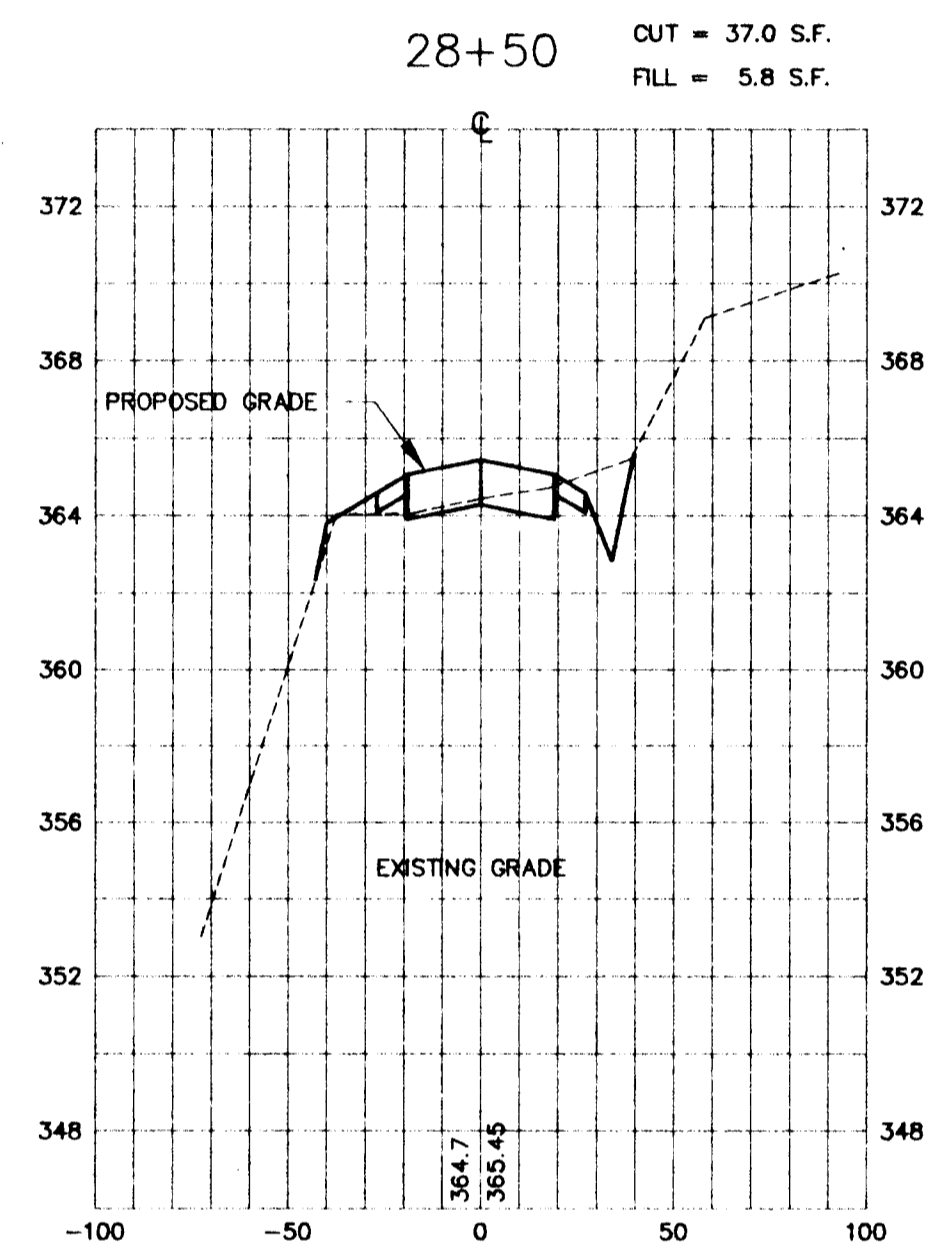
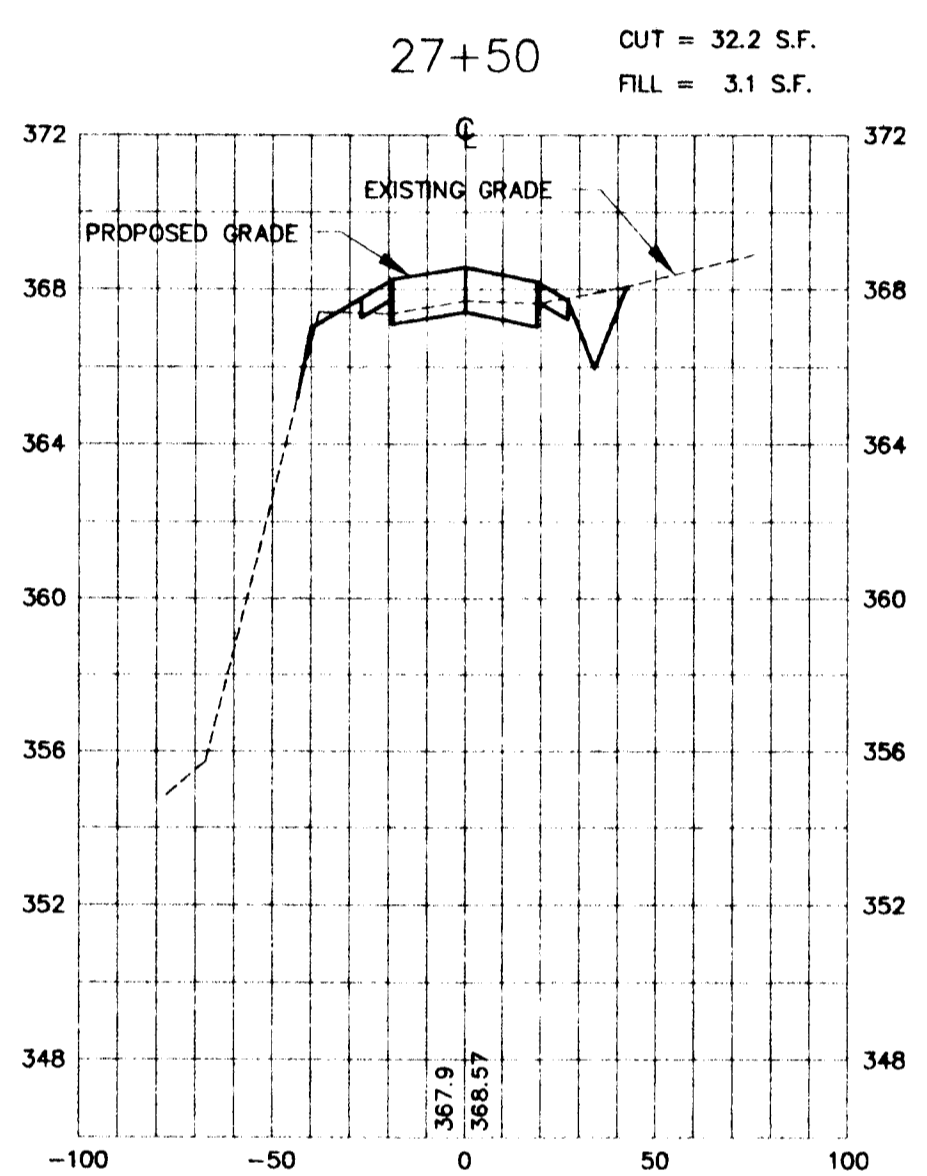
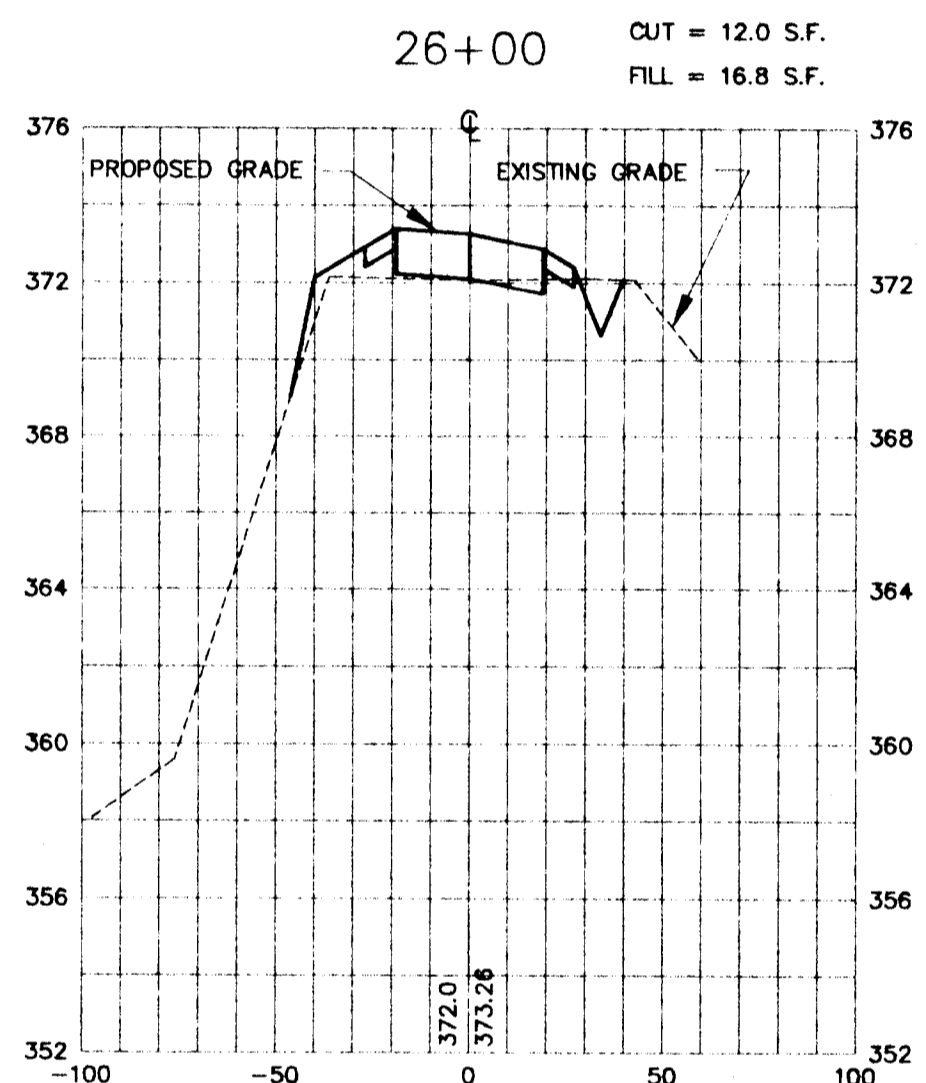
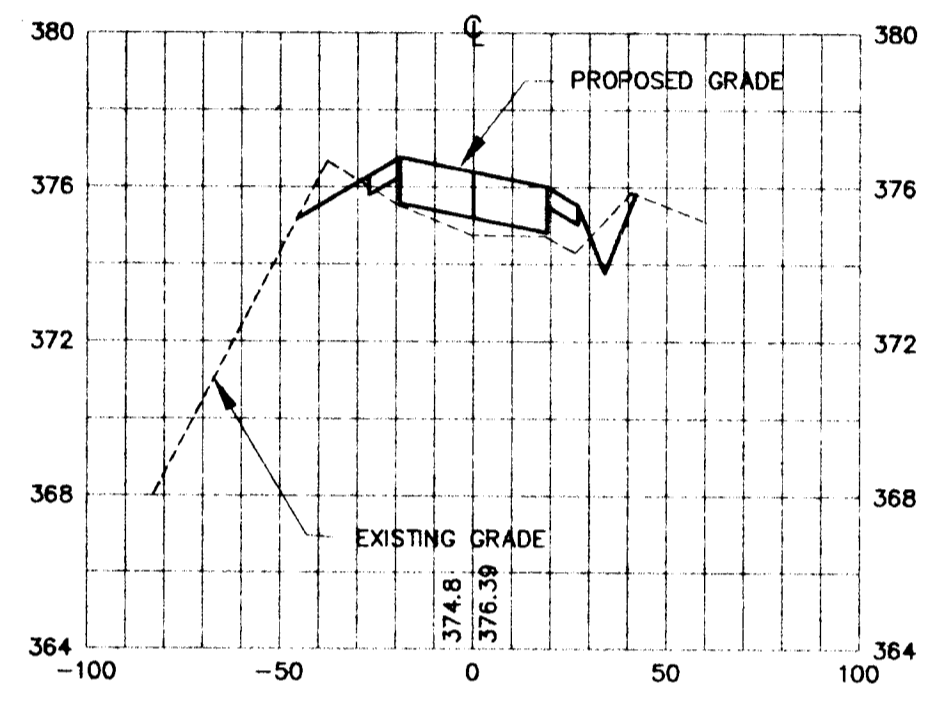
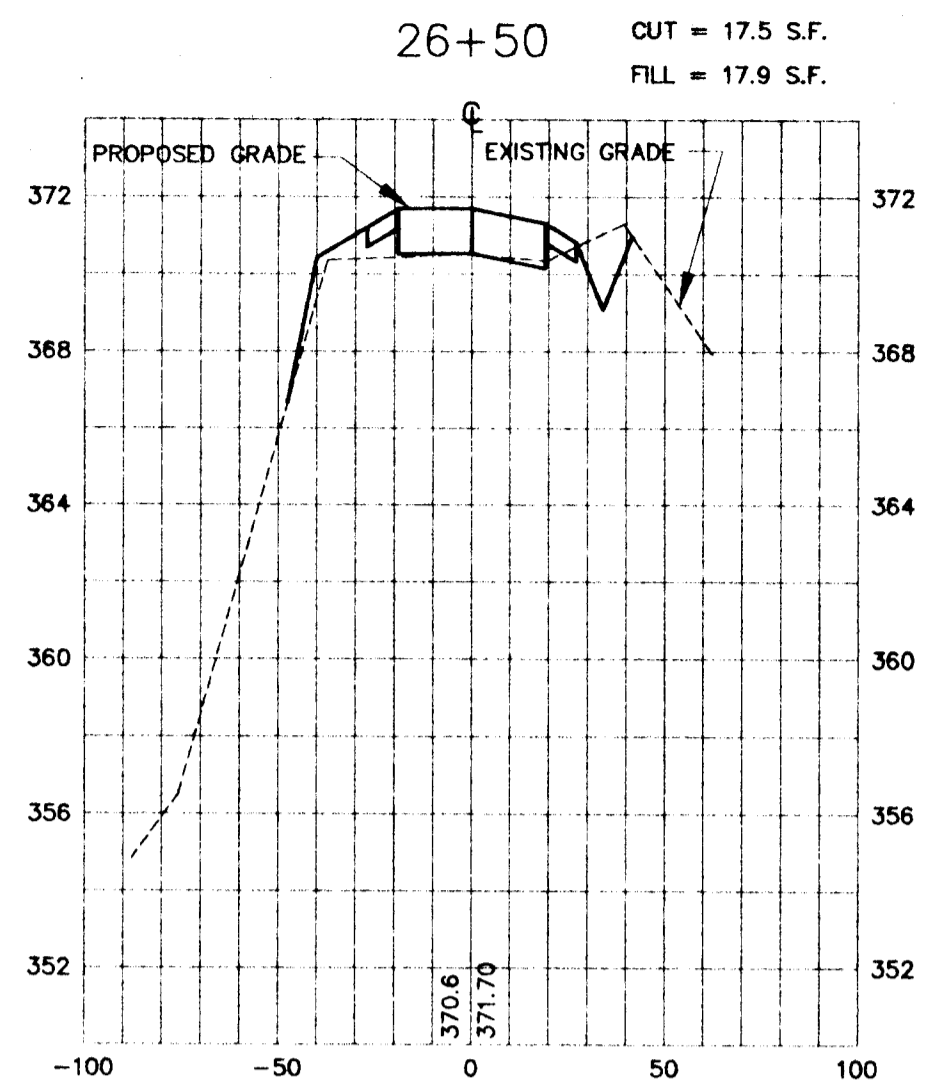
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

**MARSHALEE DRIVE**  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

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

SHEET  
8 OF 19





DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James W. Kelly* 11/13/95  
DIRECTOR OF PUBLIC WORKS DATE

*William Z. Malowicki, Jr.* 11/13/95  
CHIEF, DIVISION OF TRANSPORTATION DATE

*William Z. Malowicki, Jr.* 11/13/95  
CHIEF, BUREAU OF ENGINEERING DATE

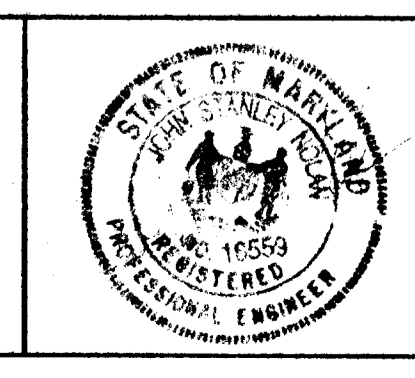
*William Z. Malowicki, Jr.* 11/13/95  
CHIEF, BUREAU OF HIGHWAYS DATE

PROJECTS AND WATERSHED MANAGEMENT

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042

PHONE: (410) 995-3651 FAX: (410) 995-1363



DES:	J.S.N.		
DRN:	SMI/RPS		
CHK:	C.S.N.		
DATE:	NOV. 1995		
BY:	NO.	REVISION	DATE

CROSS SECTIONS  
STA. 24+00 TO 29+50

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

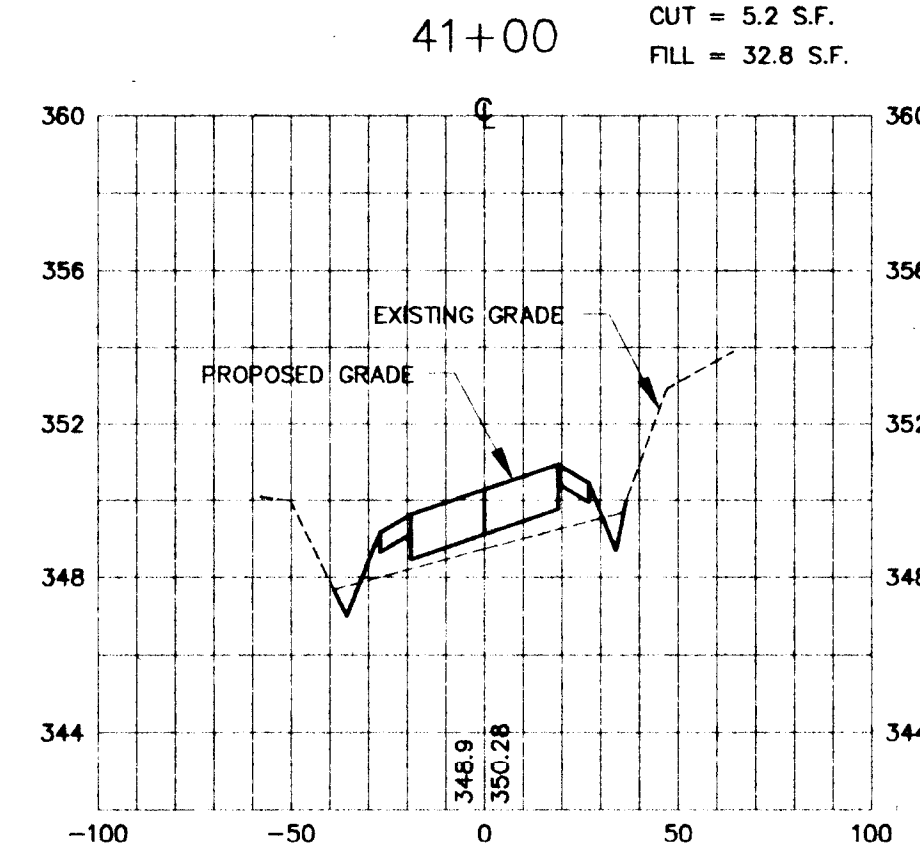
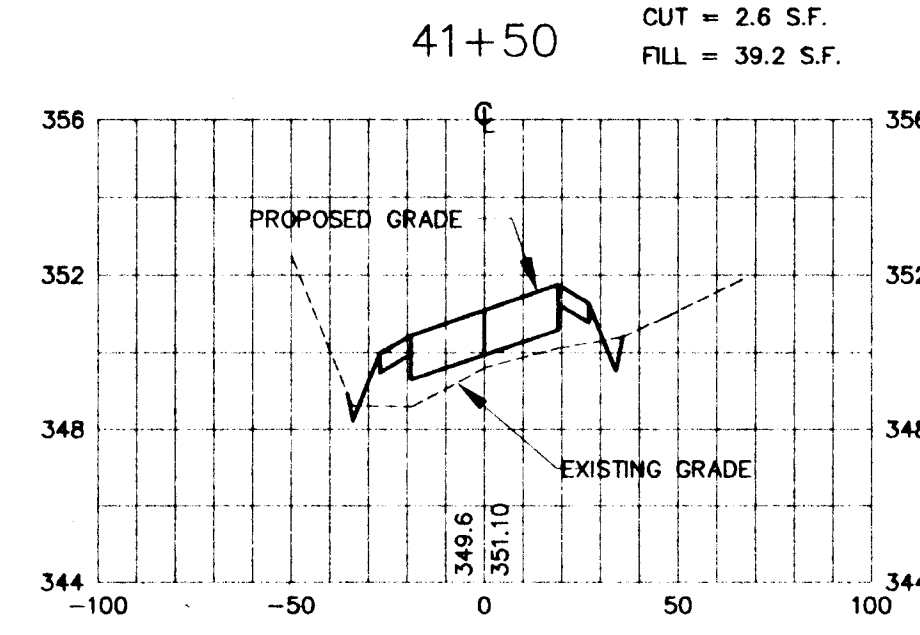
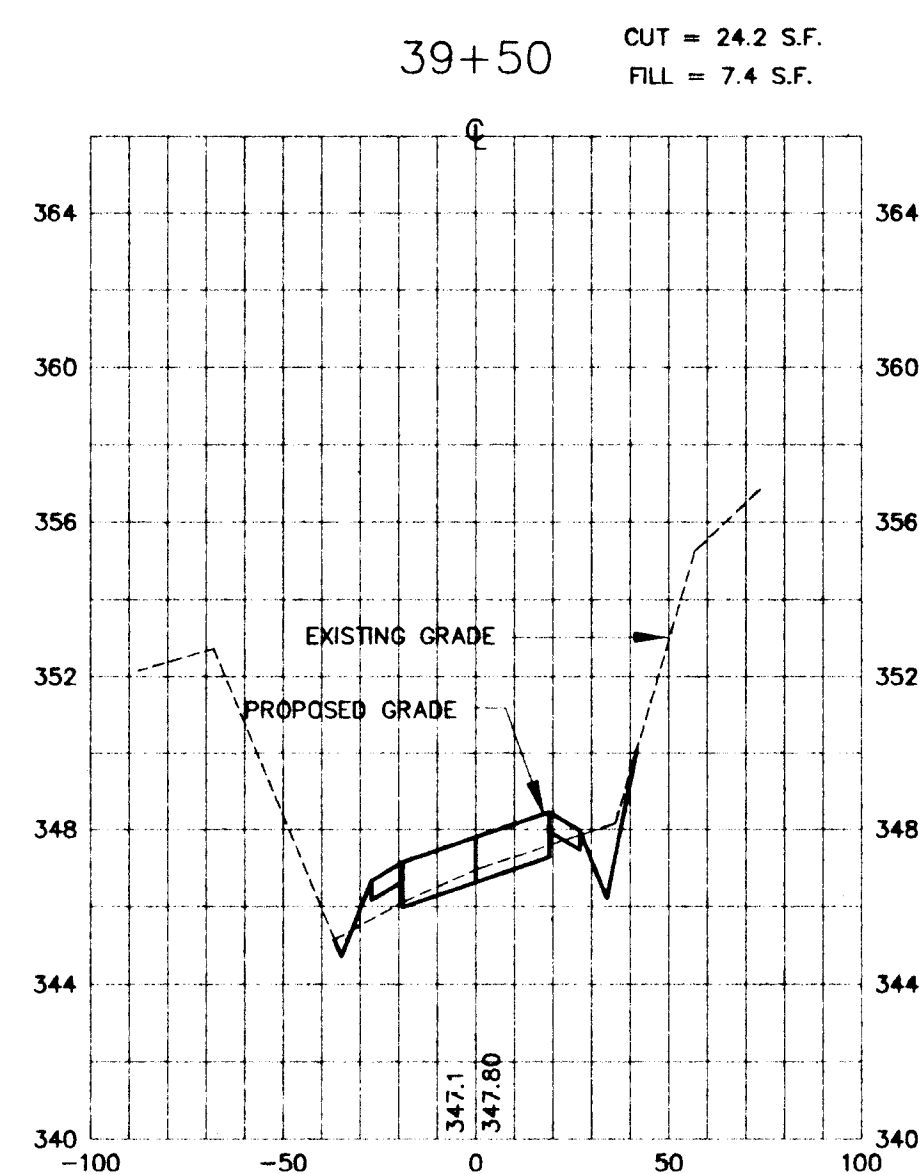
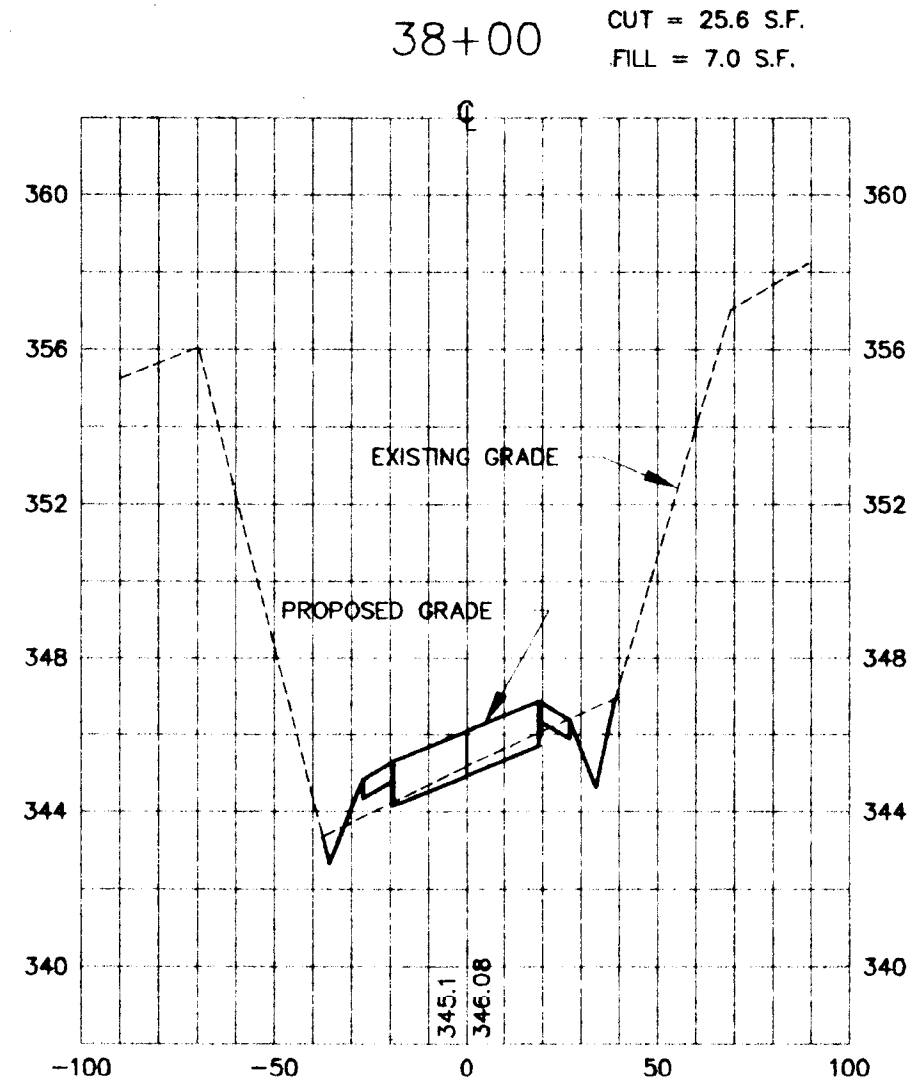
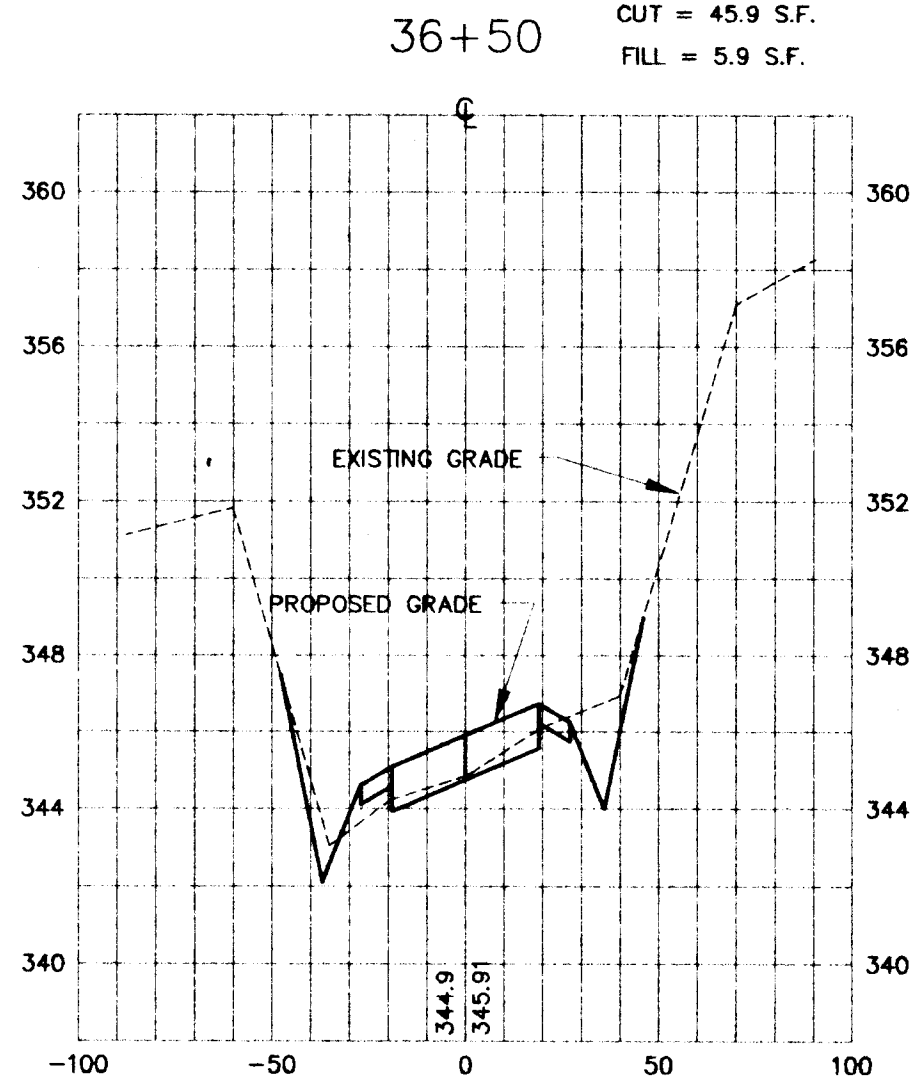
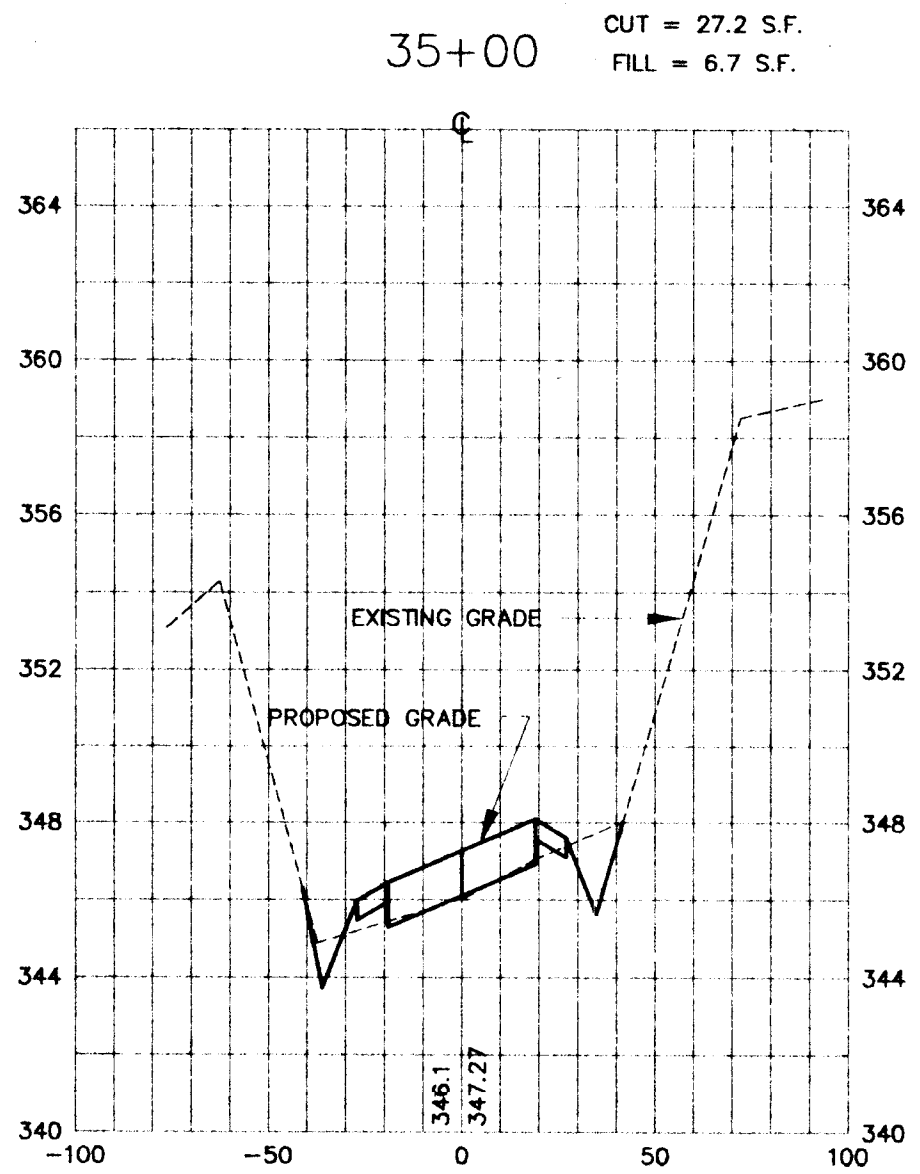
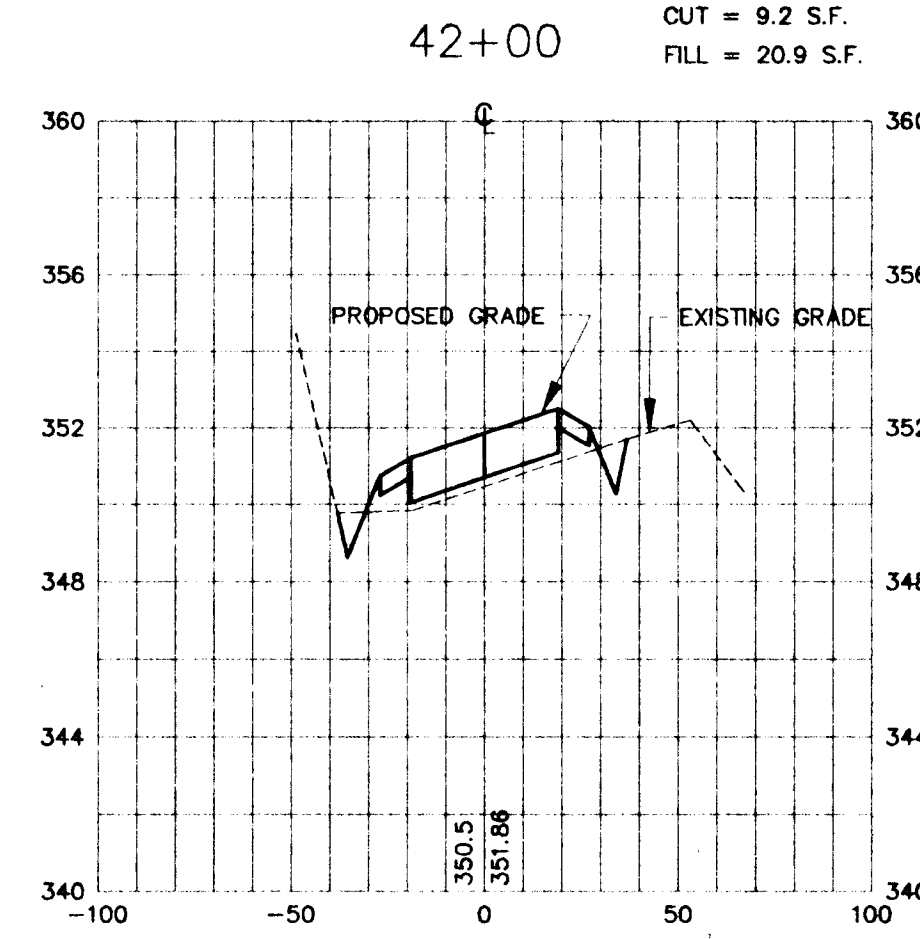
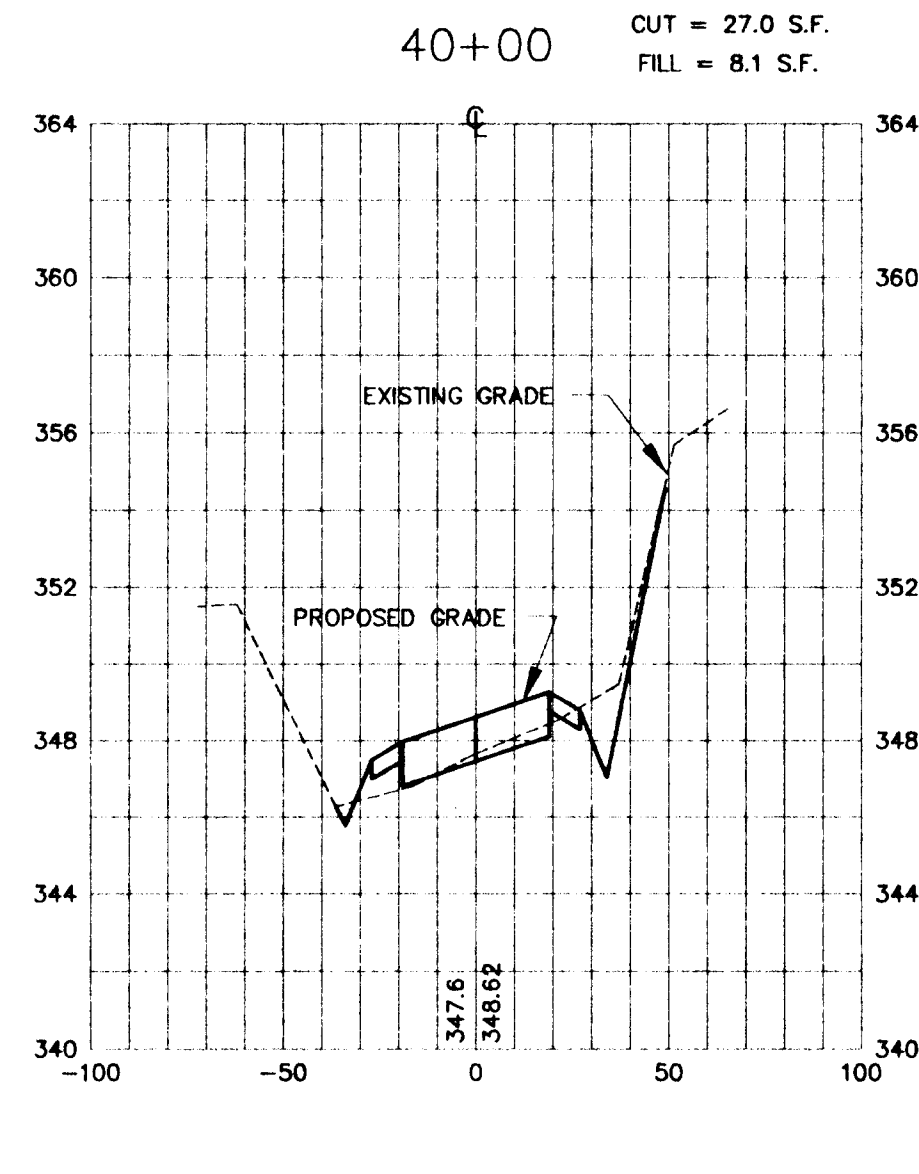
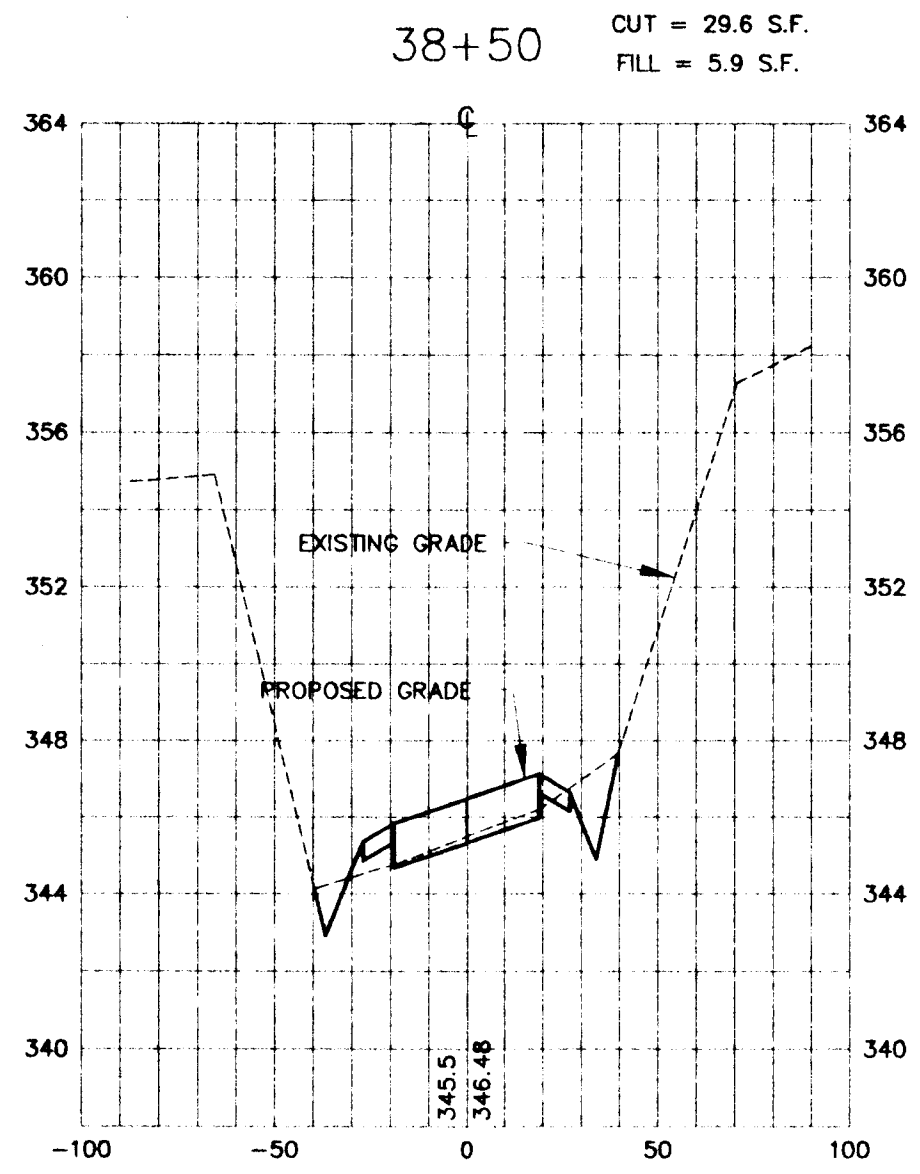
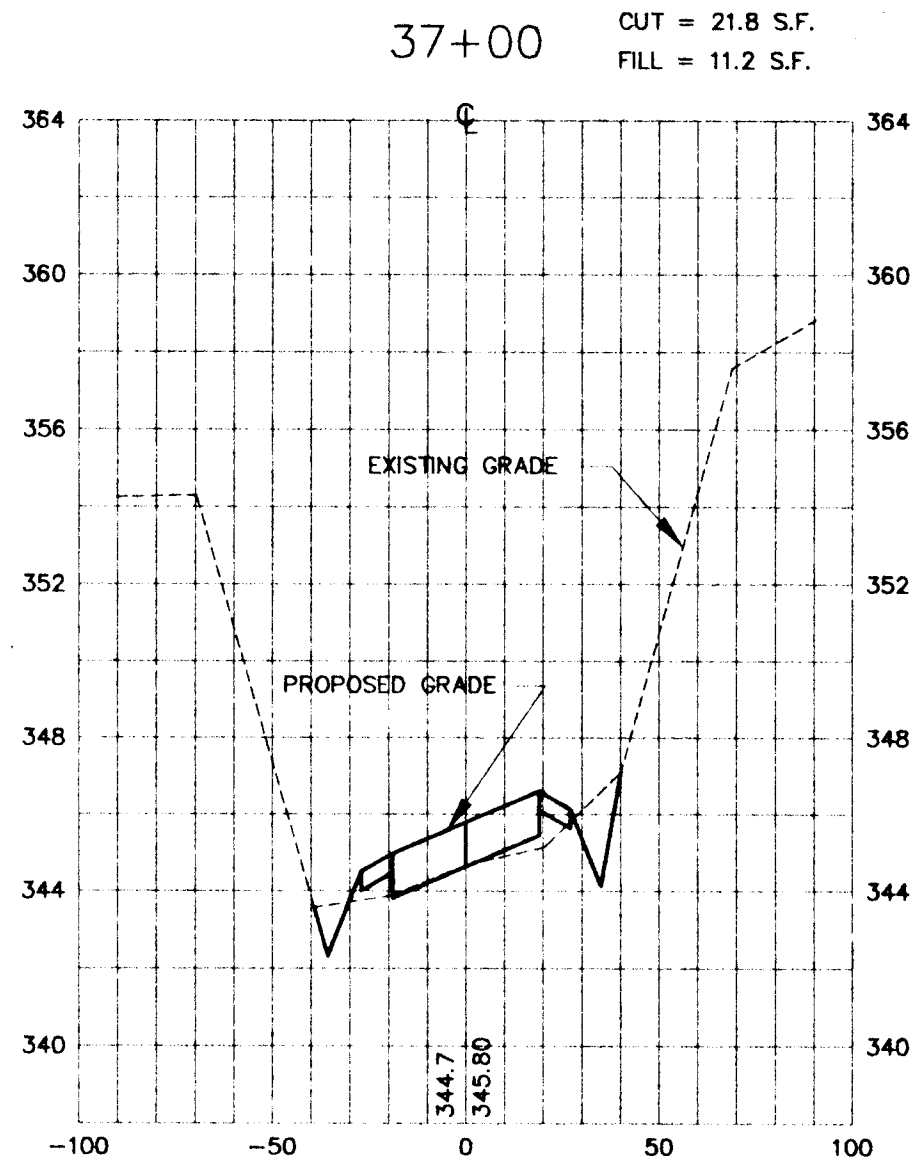
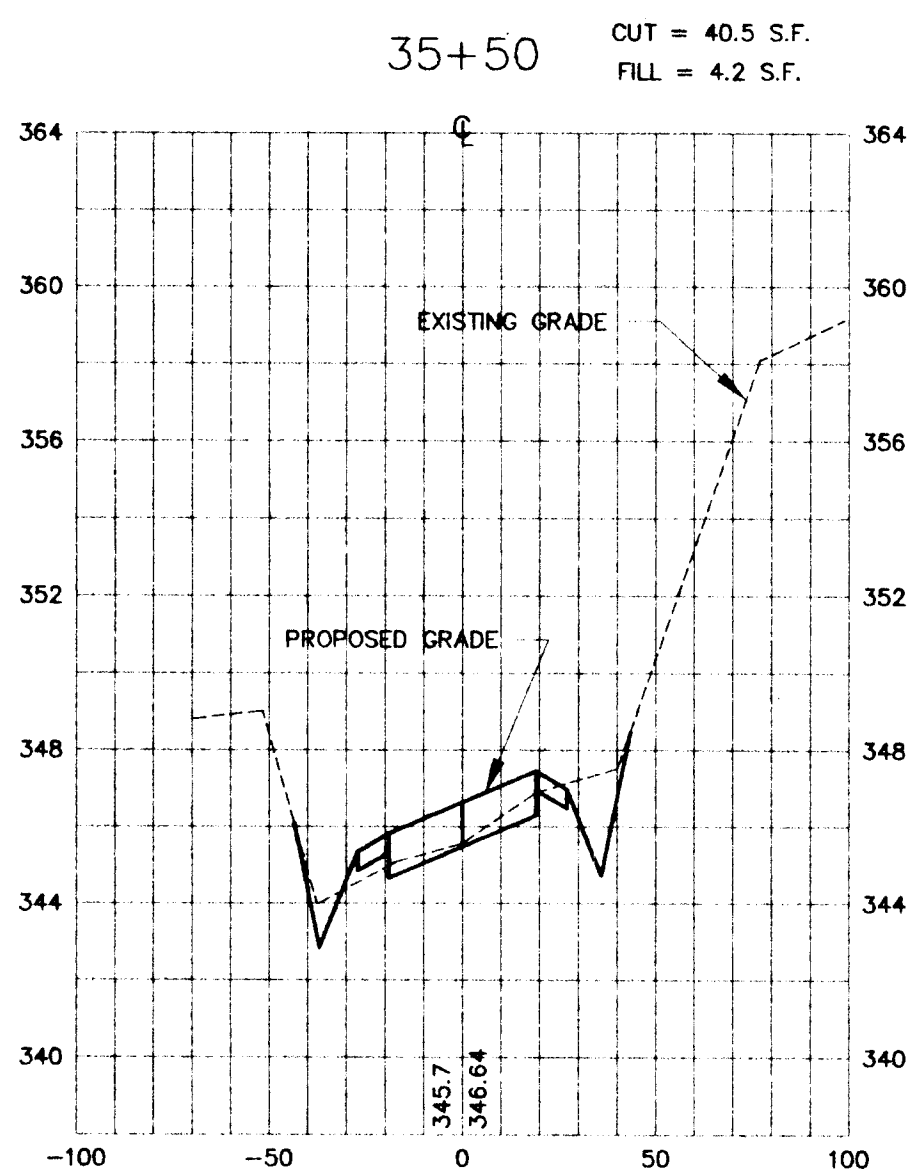
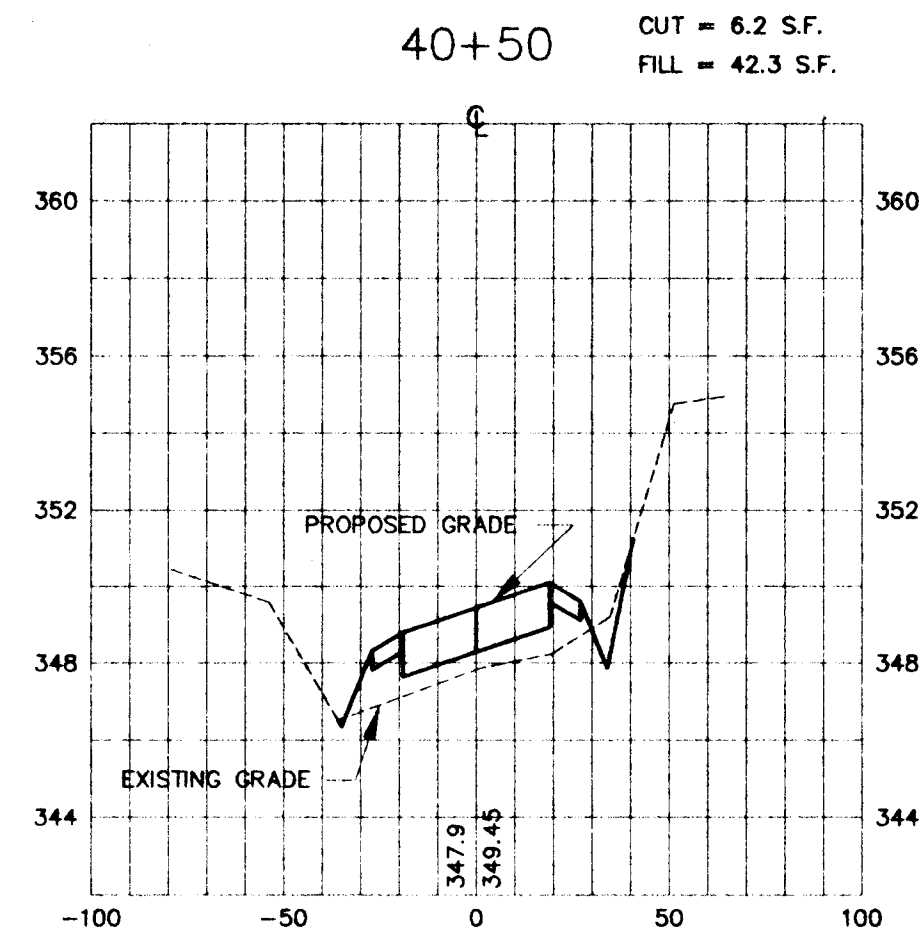
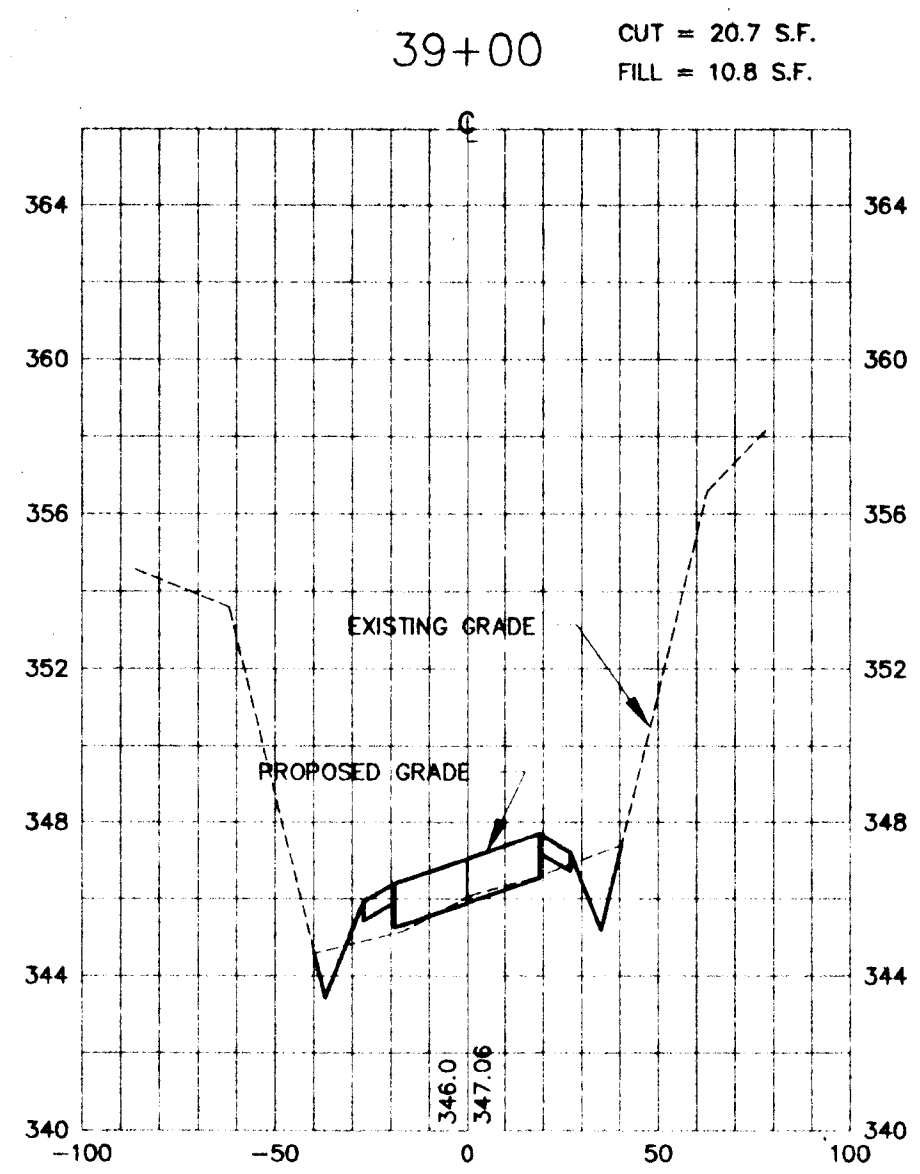
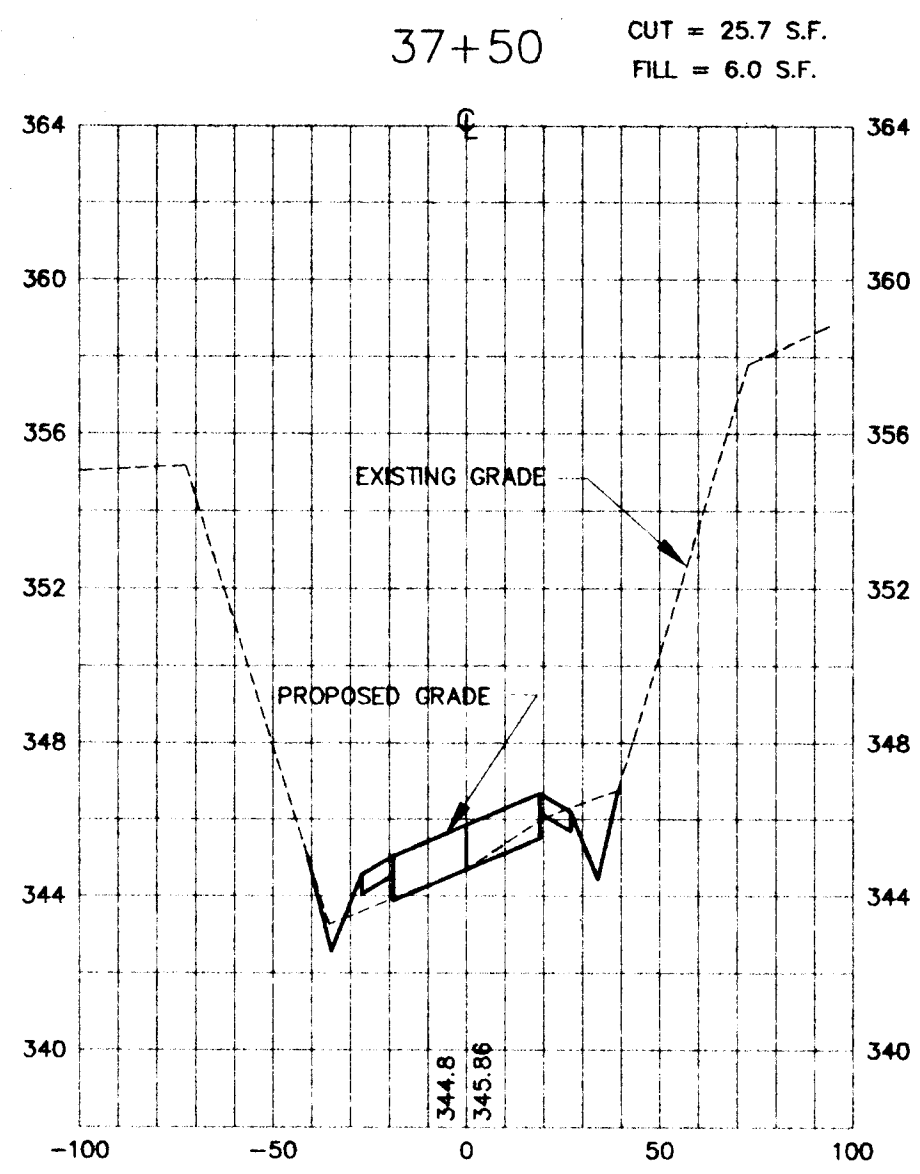
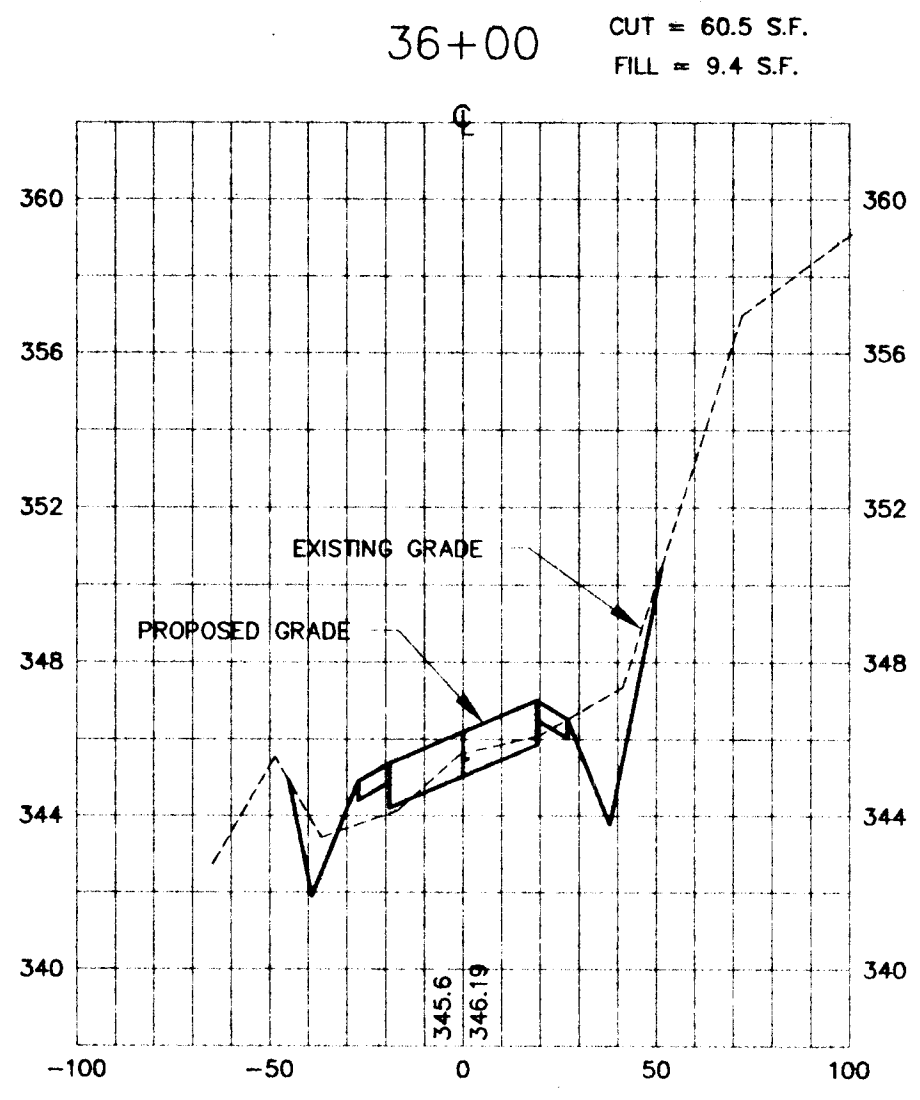
MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

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

SHEET  
9 OF 19

S:\SECS\CONV\PLAN\1995\1995\020\ACID\MEL-001





G:\USER\COMPLAN\JOB\BUREAU\ACAD\MSL-4003

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James P. Shaw* 11/13/95  
DIRECTOR OF PUBLIC WORKS DATE

*Richard S. Brown* 11/13/95  
CHIEF, BUREAU OF ENGINEERING DATE

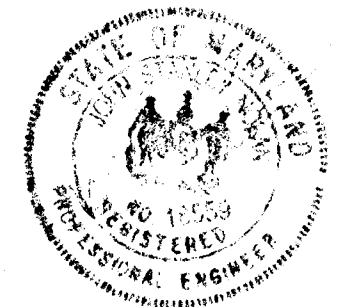
*Charles M. Haddock* 11-13-95  
CHIEF, BUREAU OF HIGHWAYS DATE

*William R. Wilbur, Jr.* 11/13/95  
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042

PHONE: (410) 995-3651 FAX: (410) 995-1363



DES:	J.S.N.			
DRN:	SMI/RPS			
CHK:	C.S.N.			
DATE:	NOV. 1995	BY:	NO.	
		REVISION:		
		DATE:		

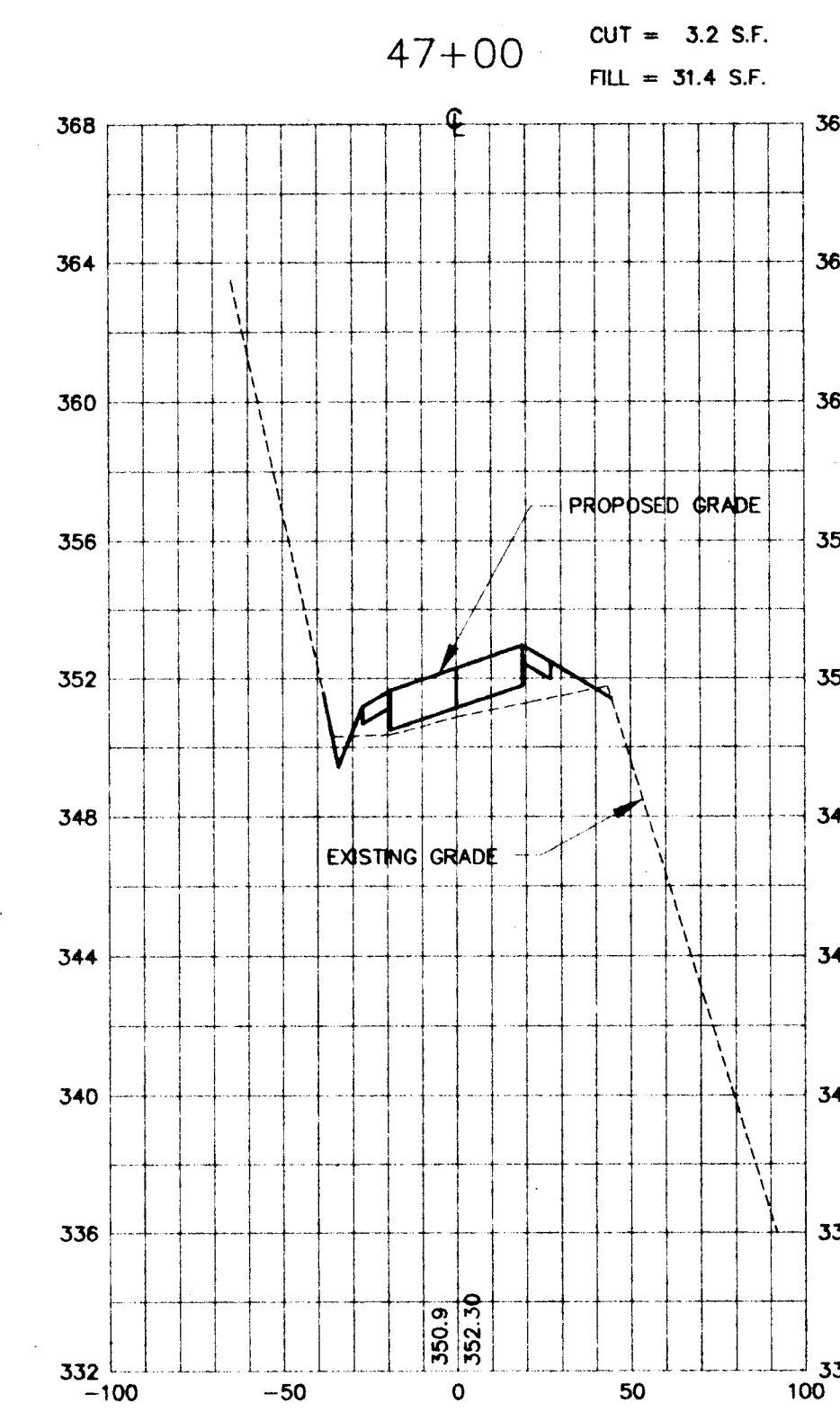
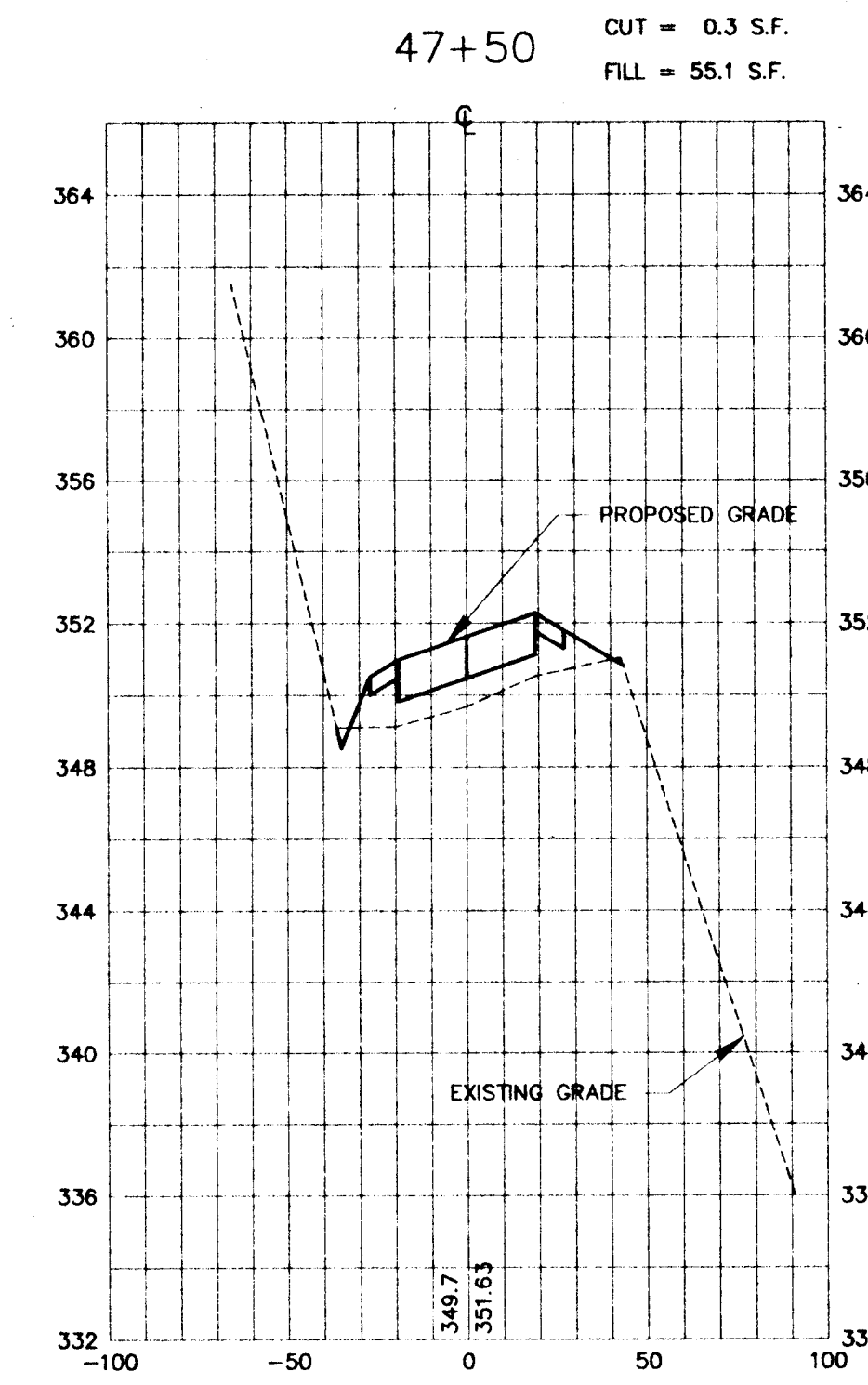
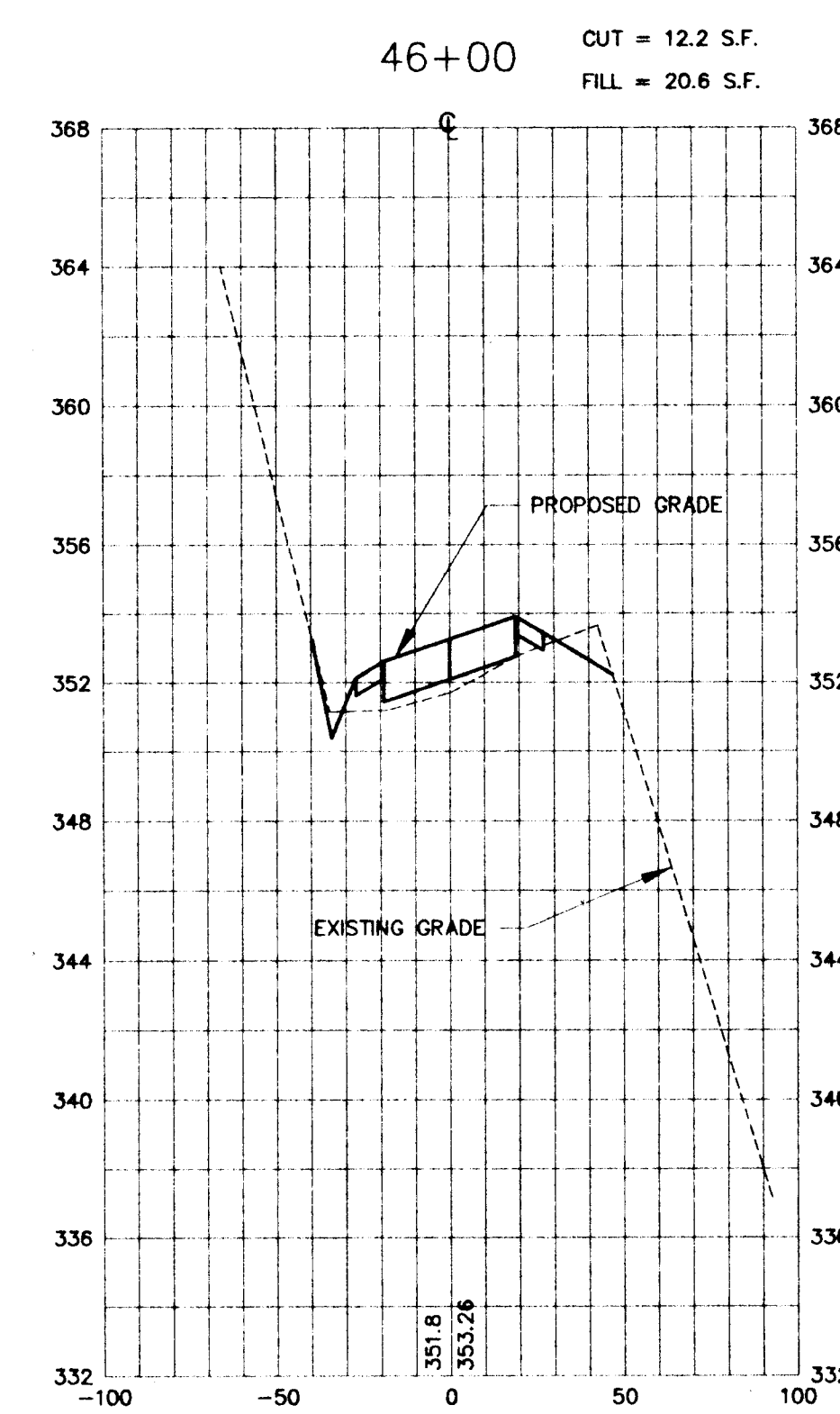
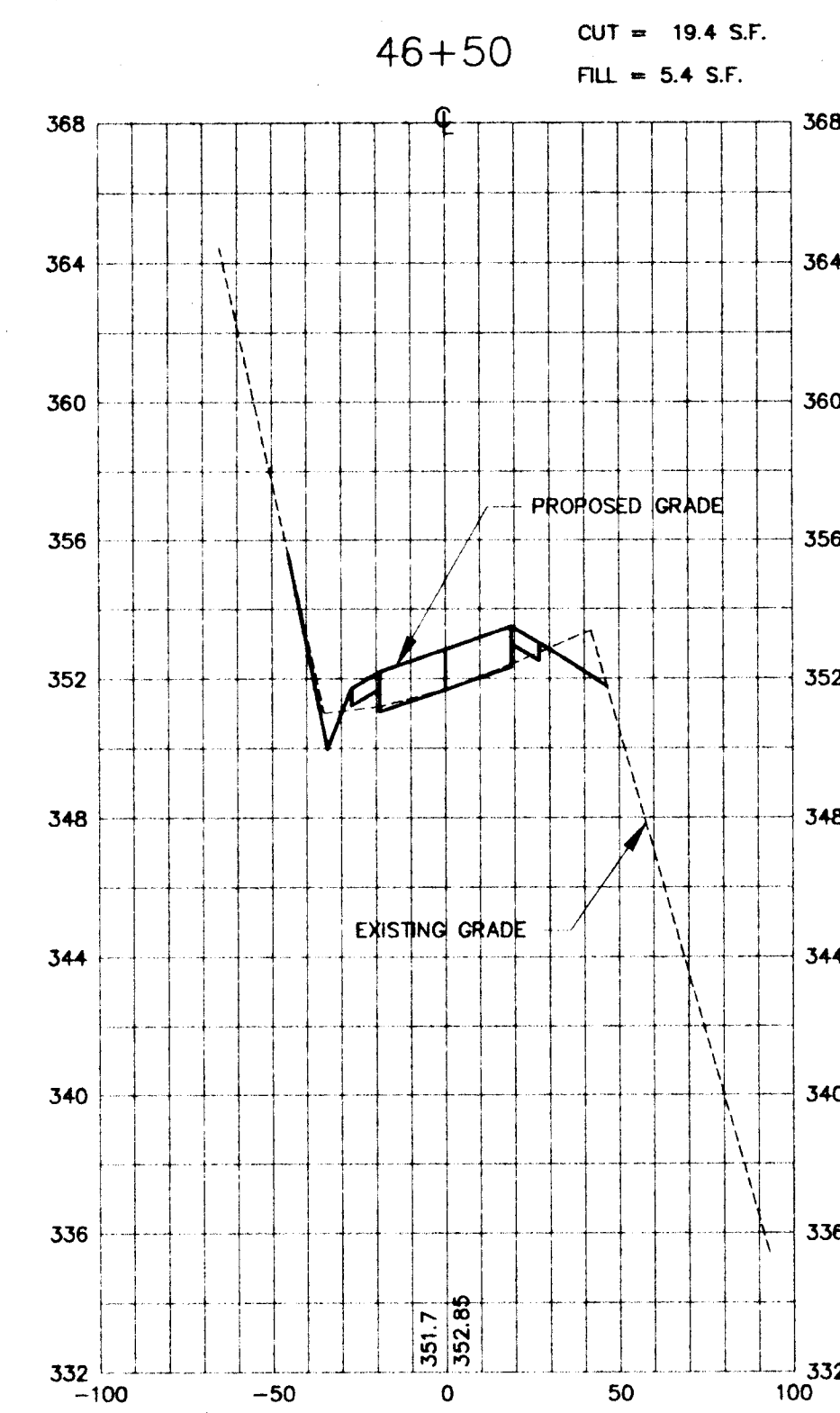
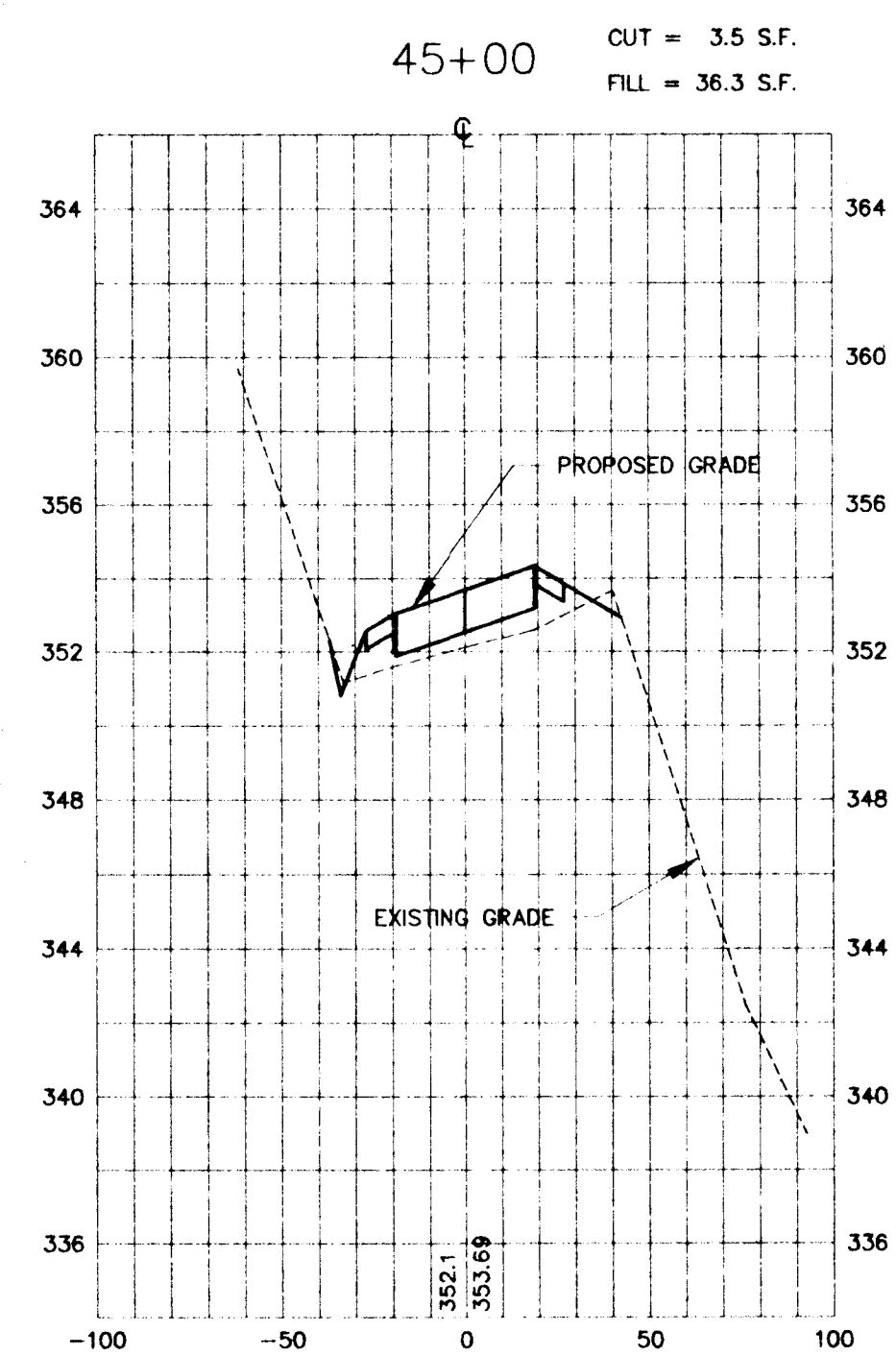
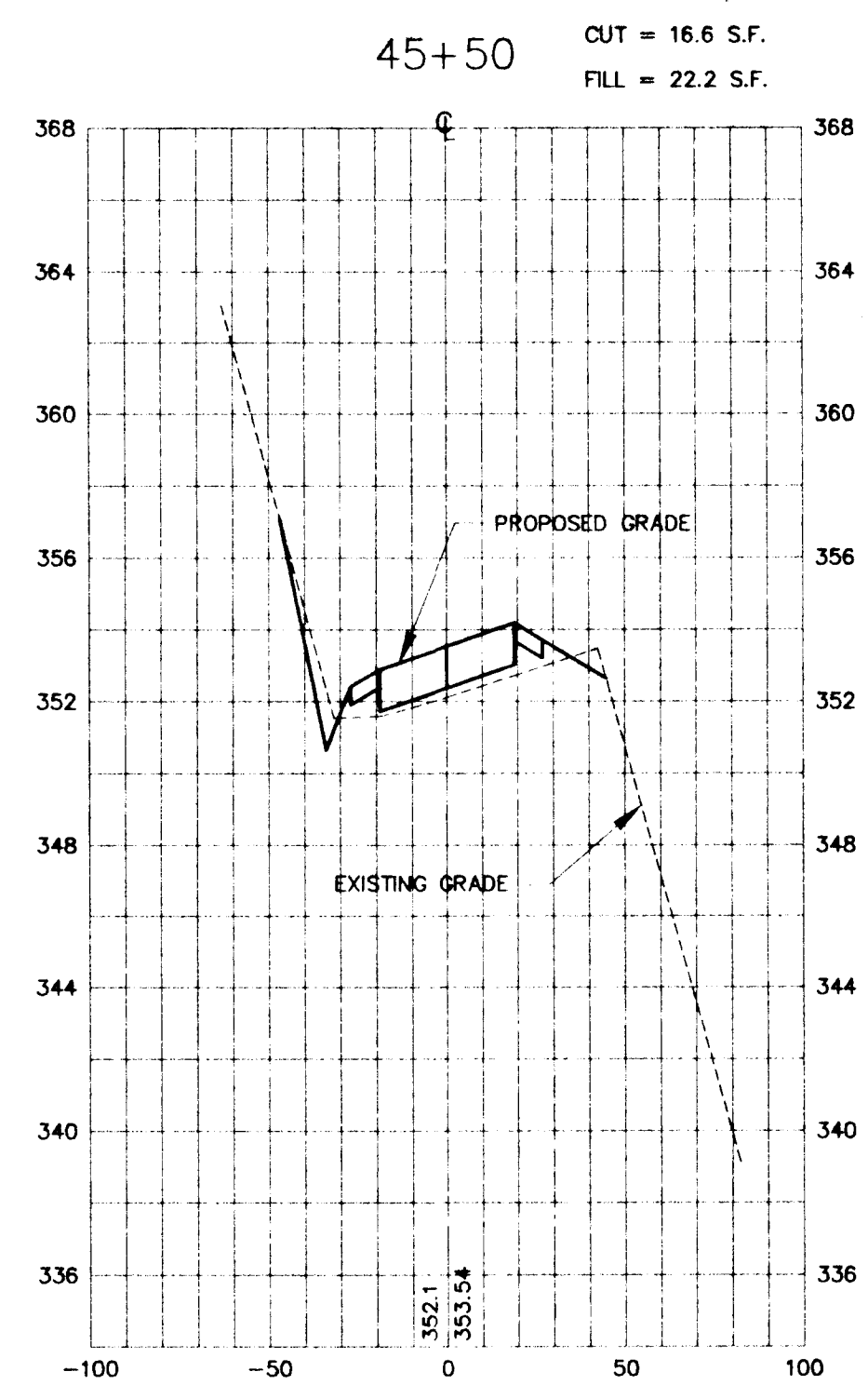
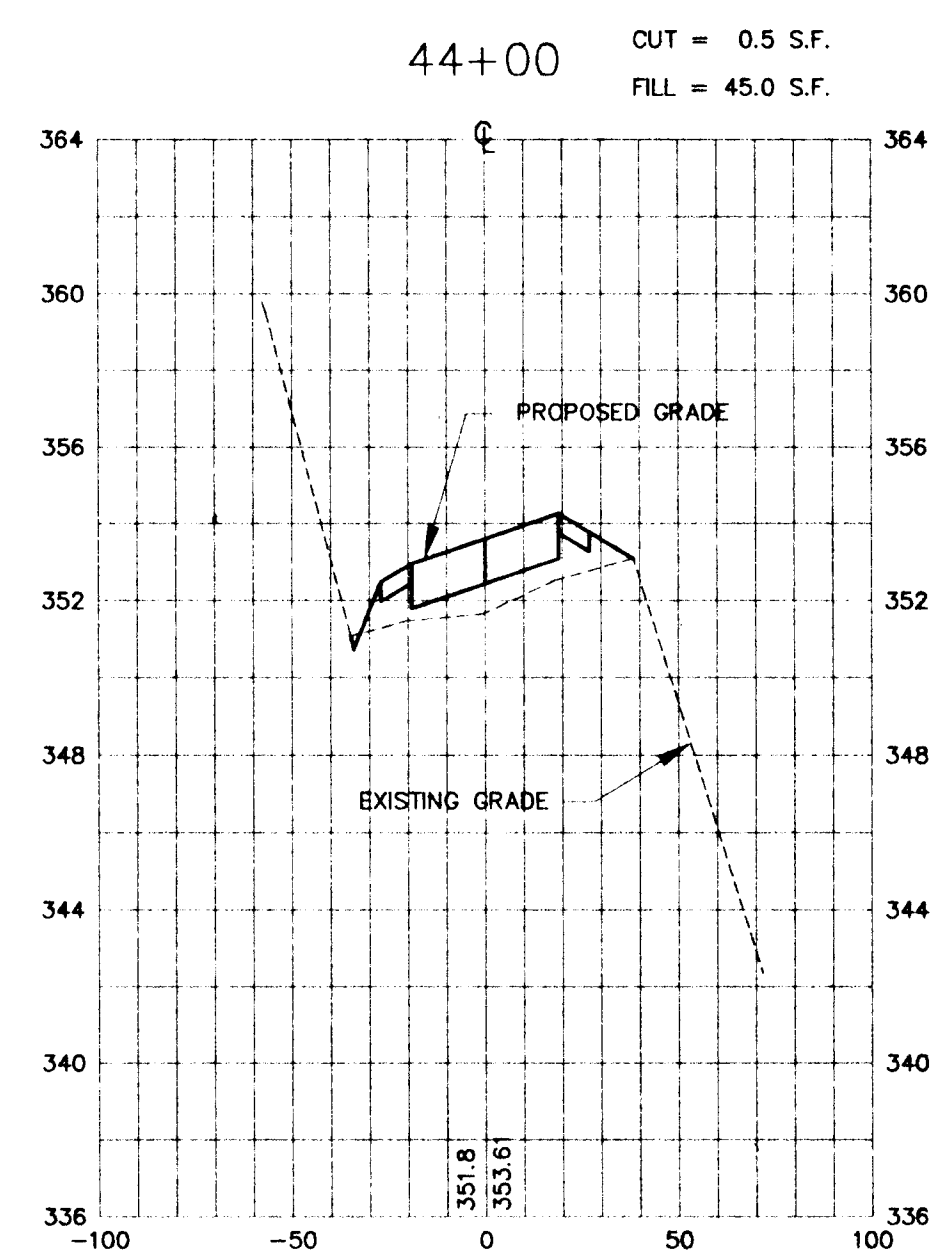
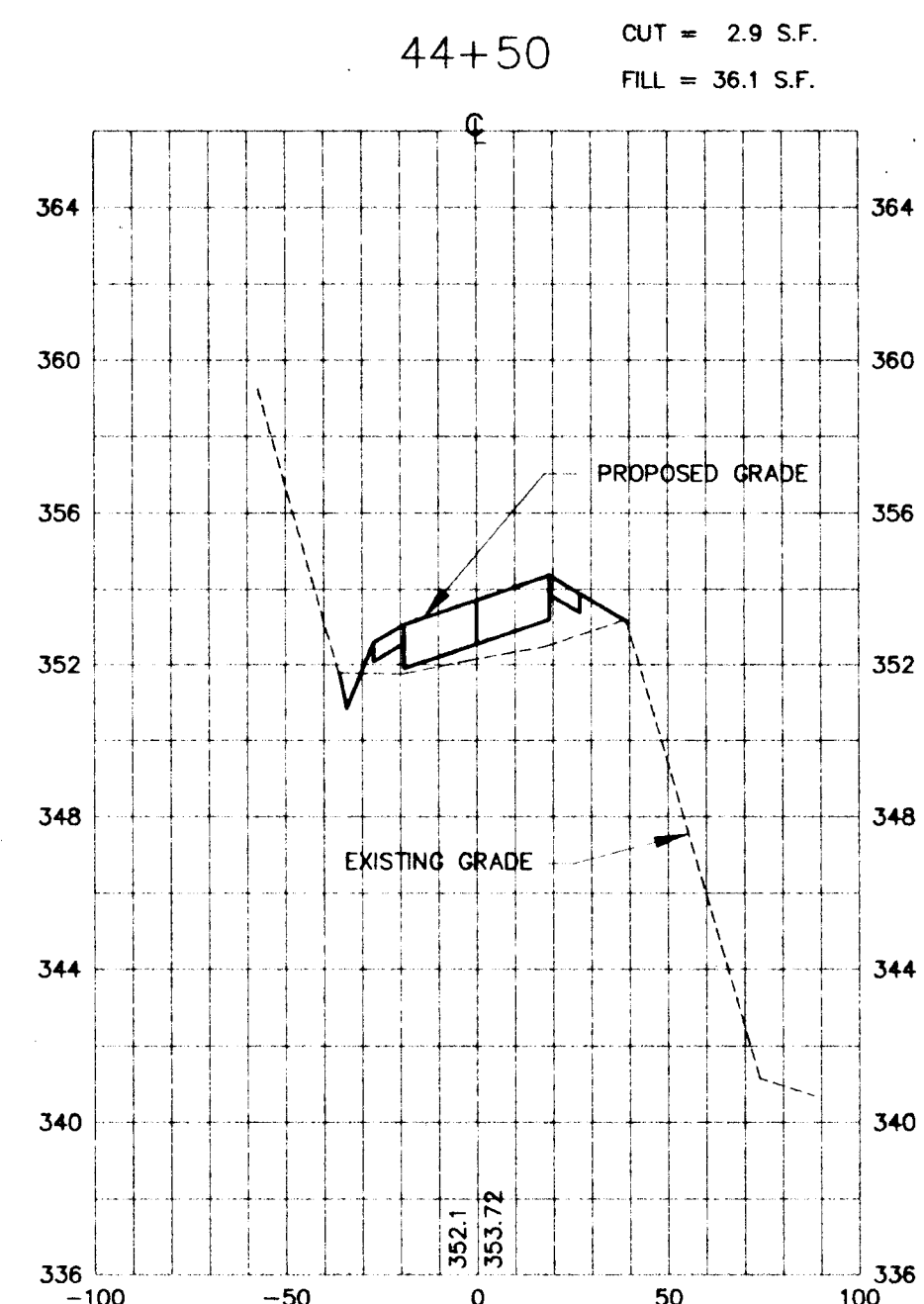
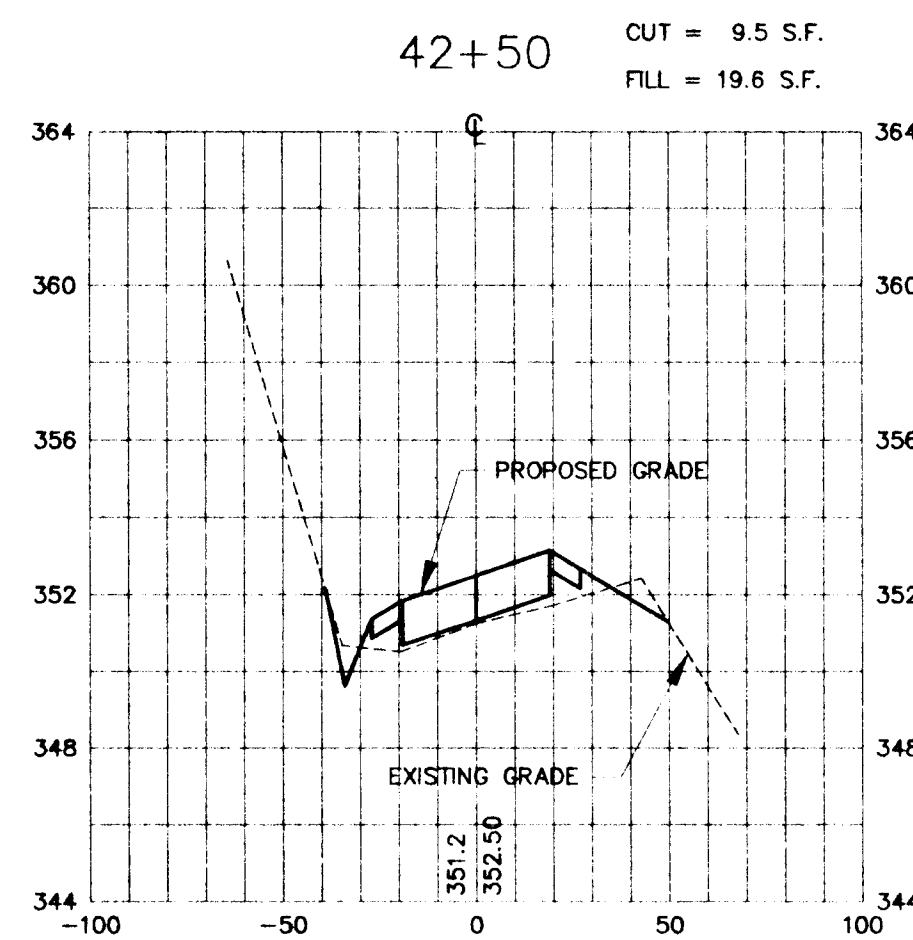
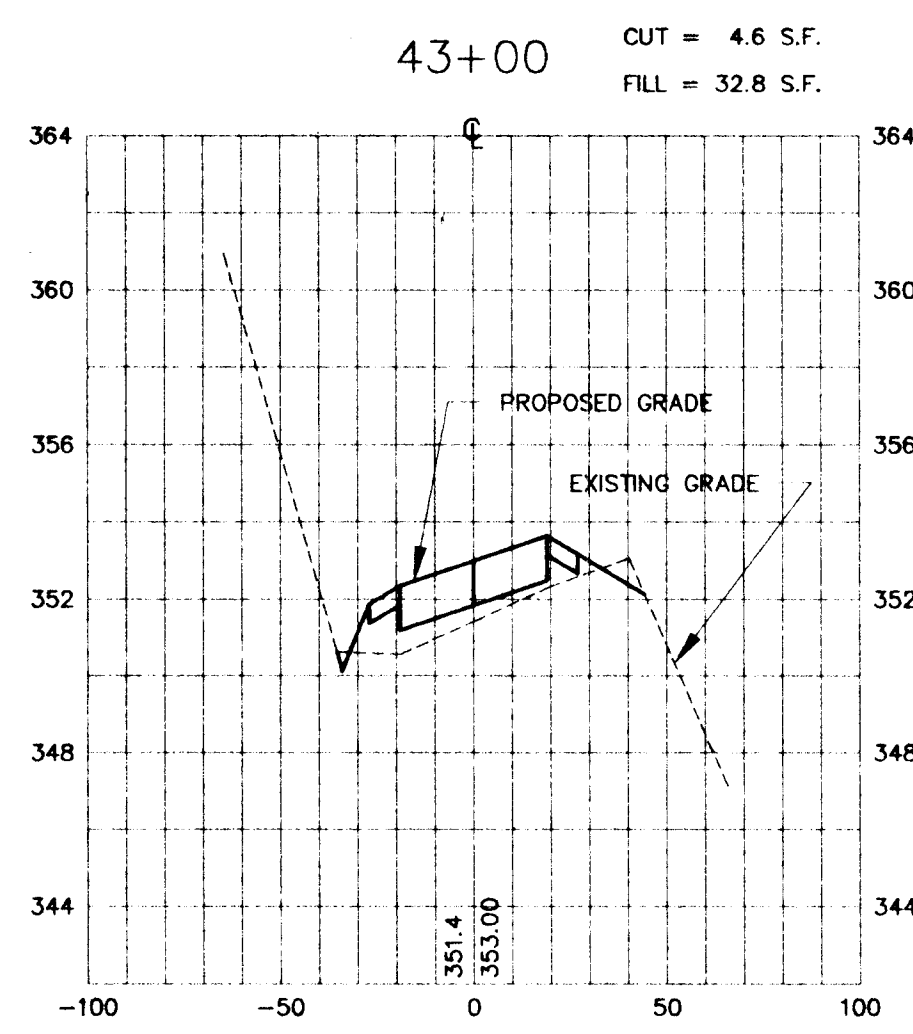
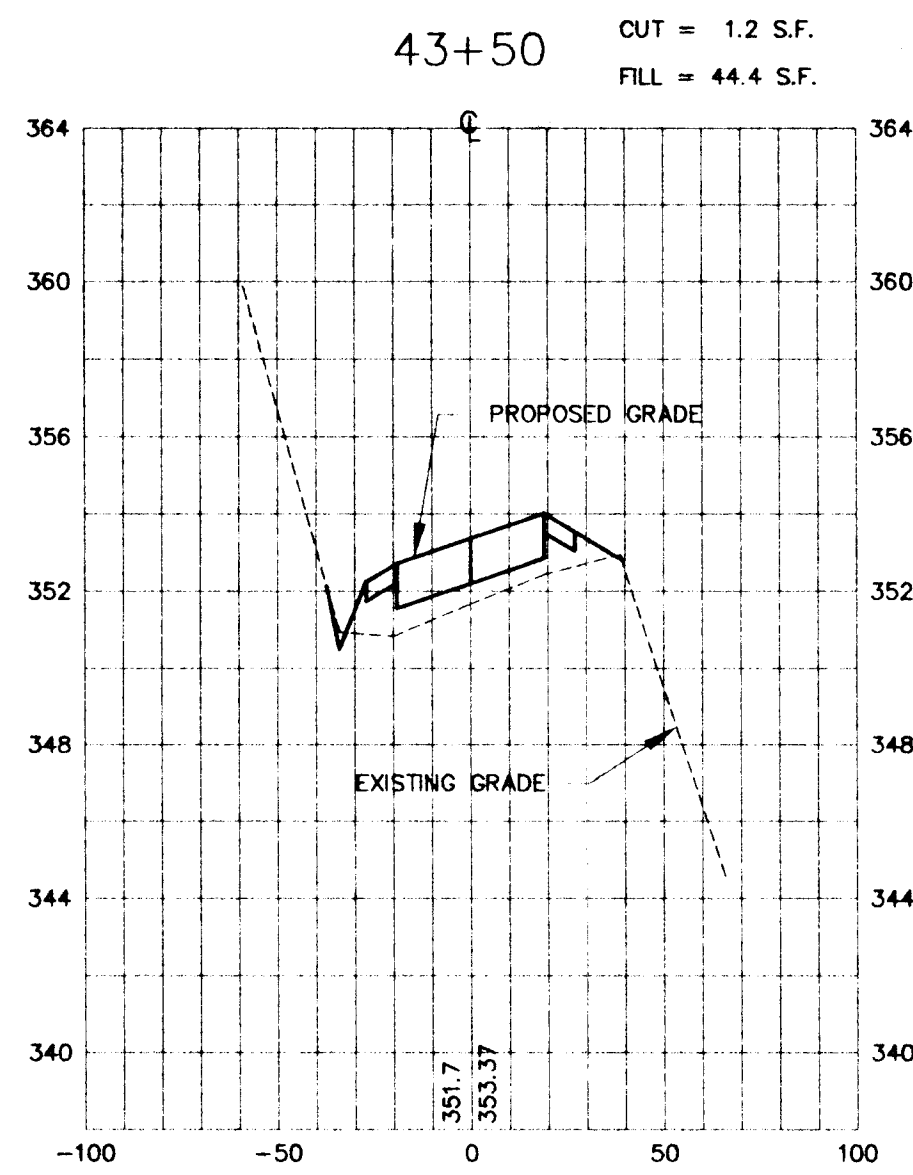
CROSS SECTIONS  
STA. 35+00 TO 42+00

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

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

SHEET  
11 OF 19.



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*William F. Mahoney* 11/13/95  
DIRECTOR OF PUBLIC WORKS  
*William F. Mahoney* 11/13/95  
CHIEF, BUREAU OF ENGINEERING  
*William F. Mahoney* 11/13/95  
CHIEF, DIVISION OF TRANSPORTATION  
PROJECTS AND WATERSHED MANAGEMENT

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS  
4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042  
PHONE: (410) 995-3651 FAX: (410) 995-1363



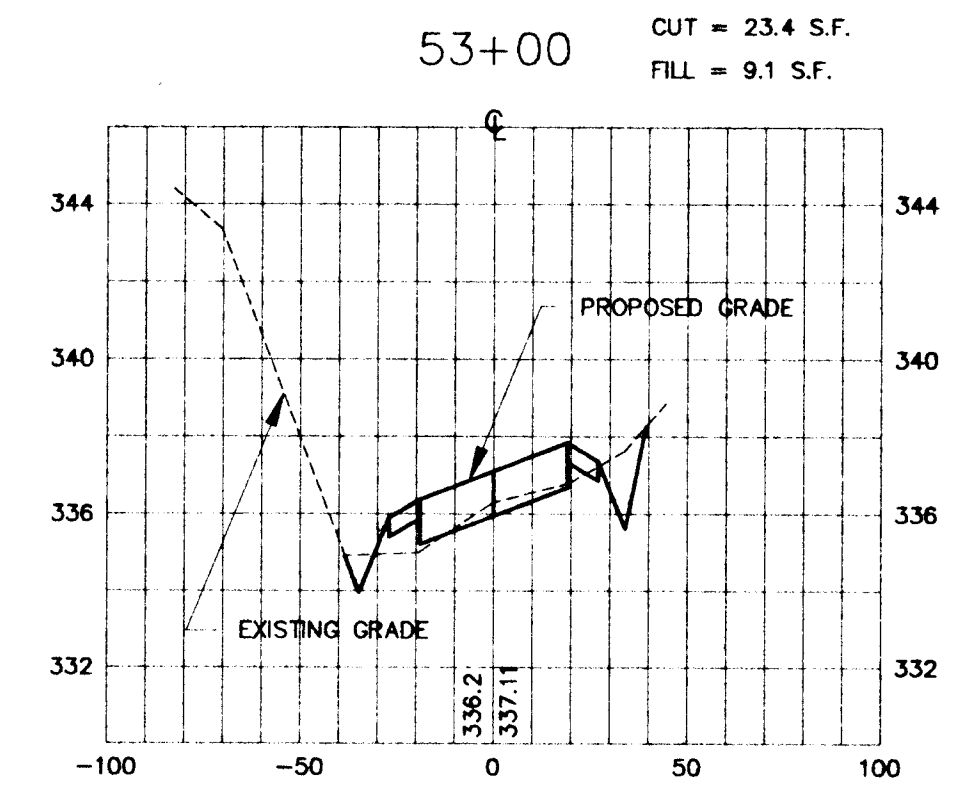
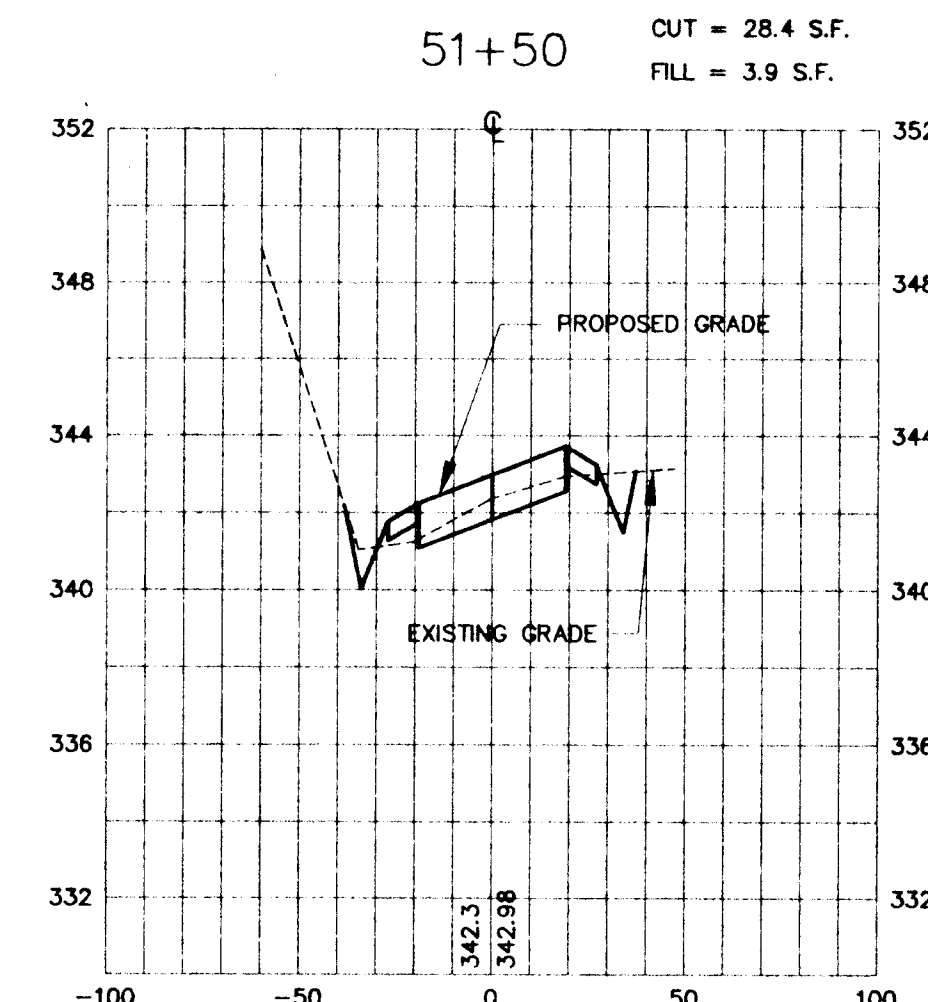
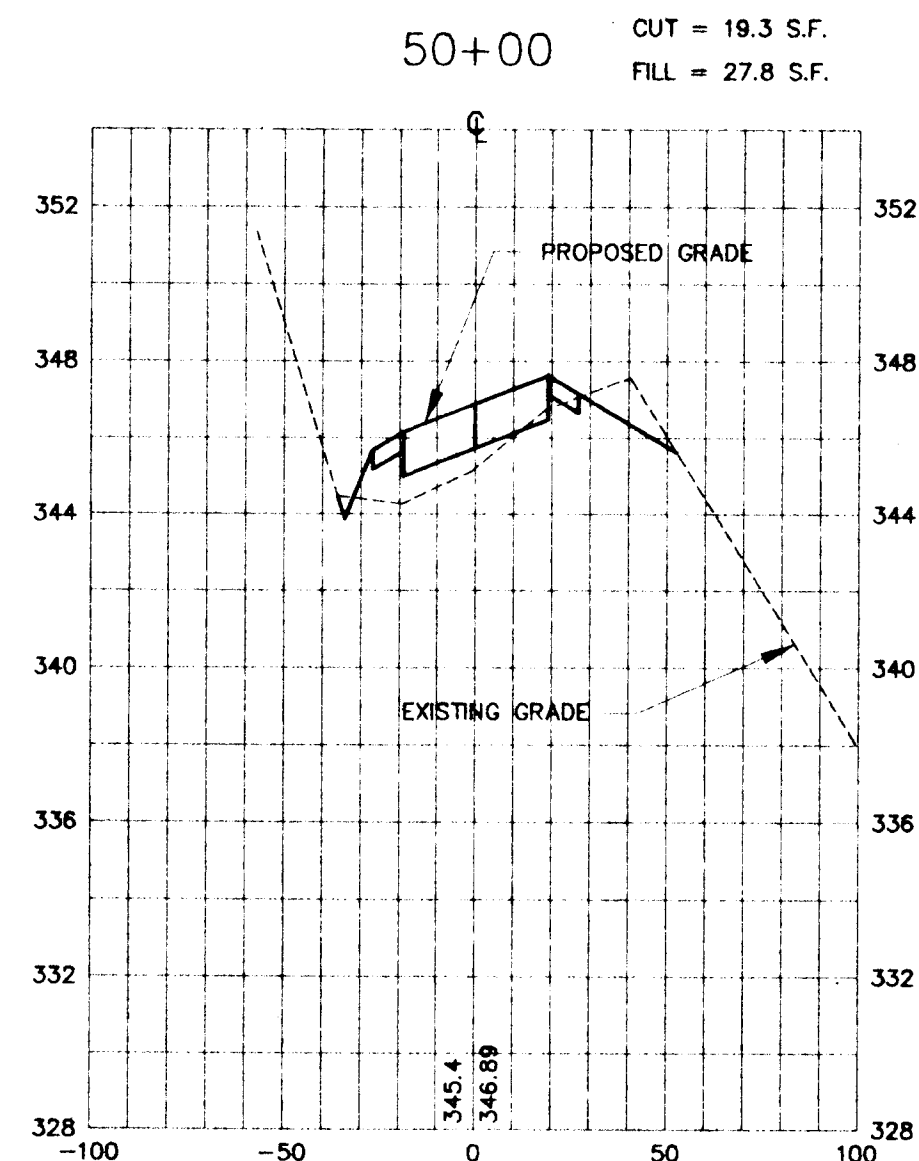
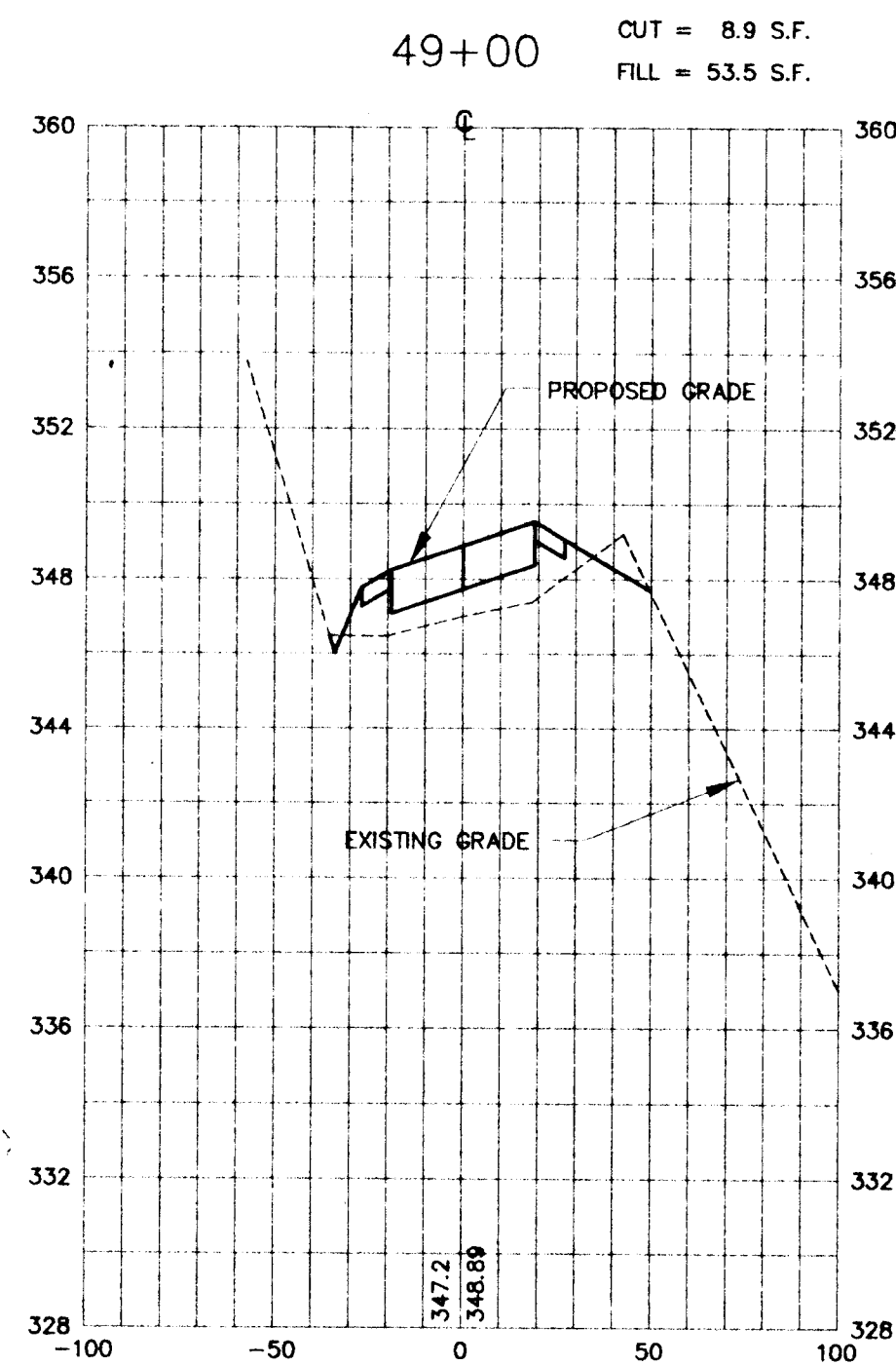
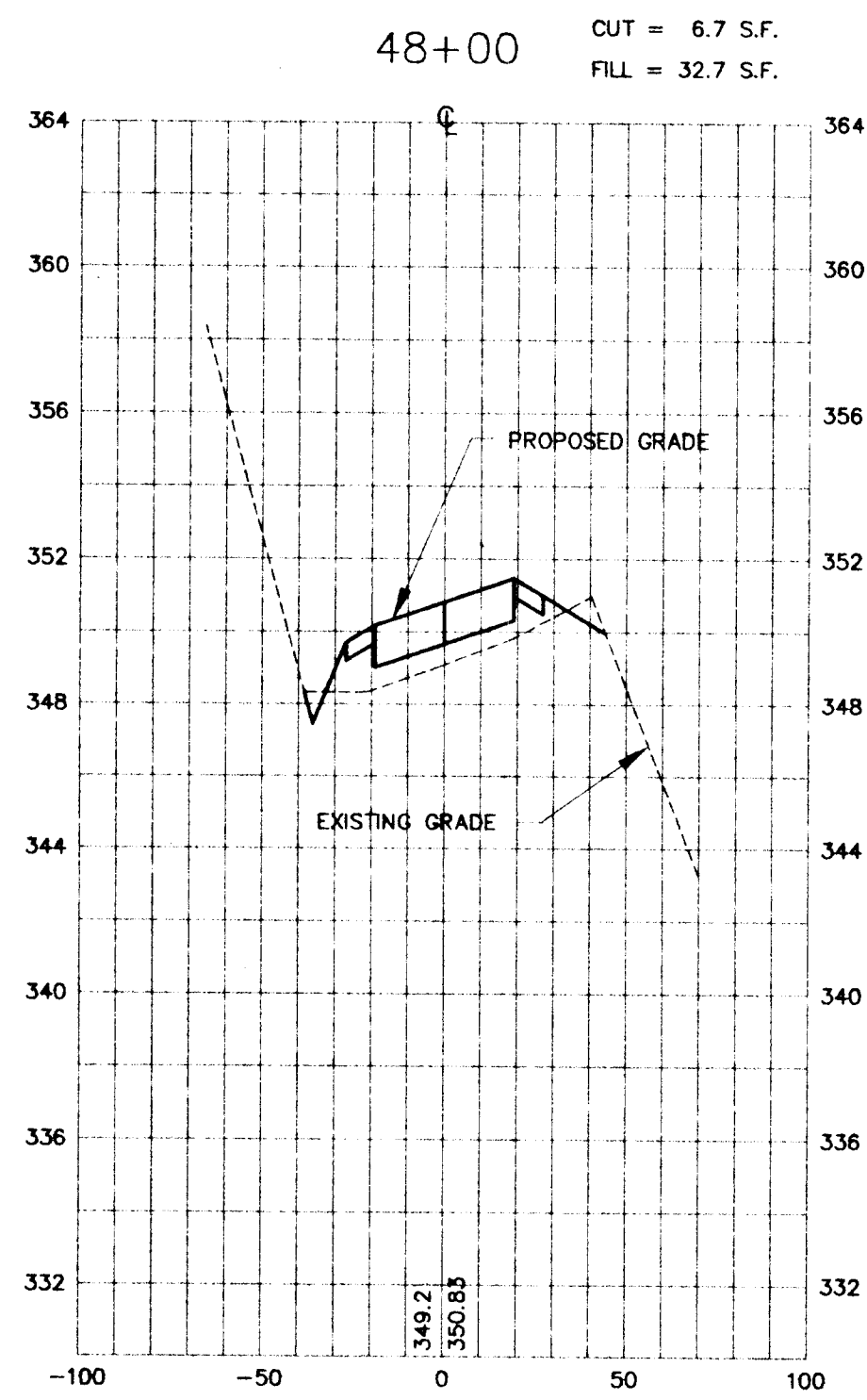
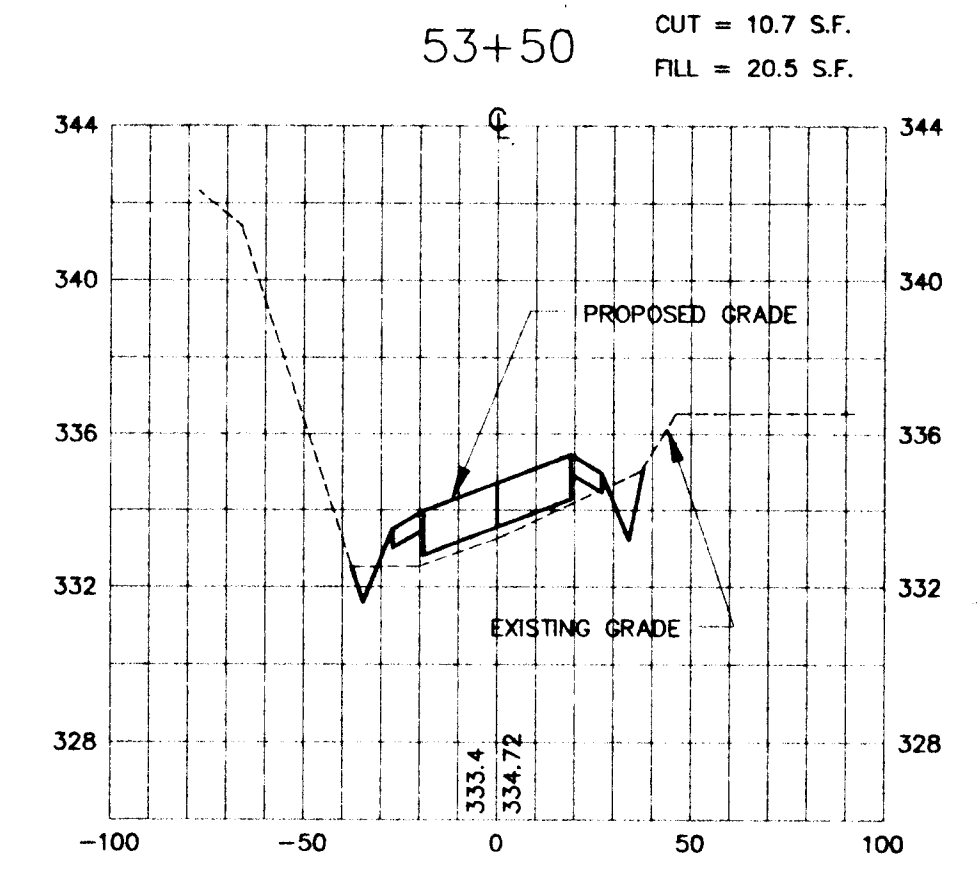
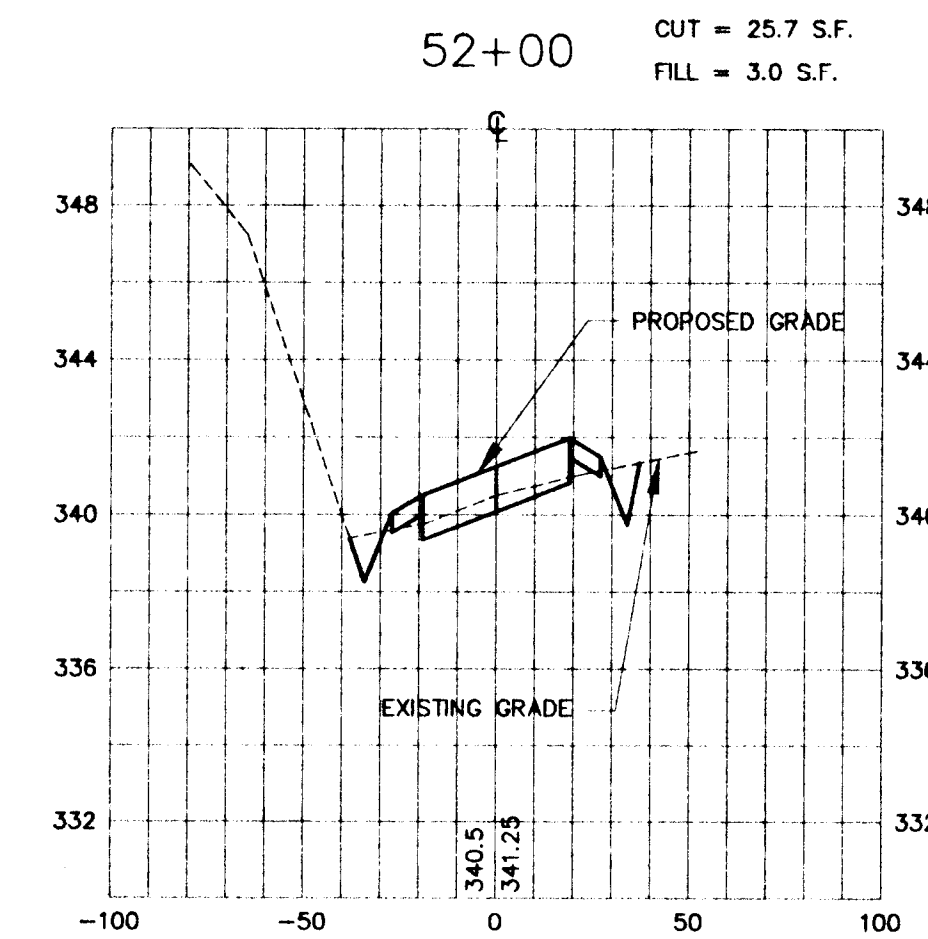
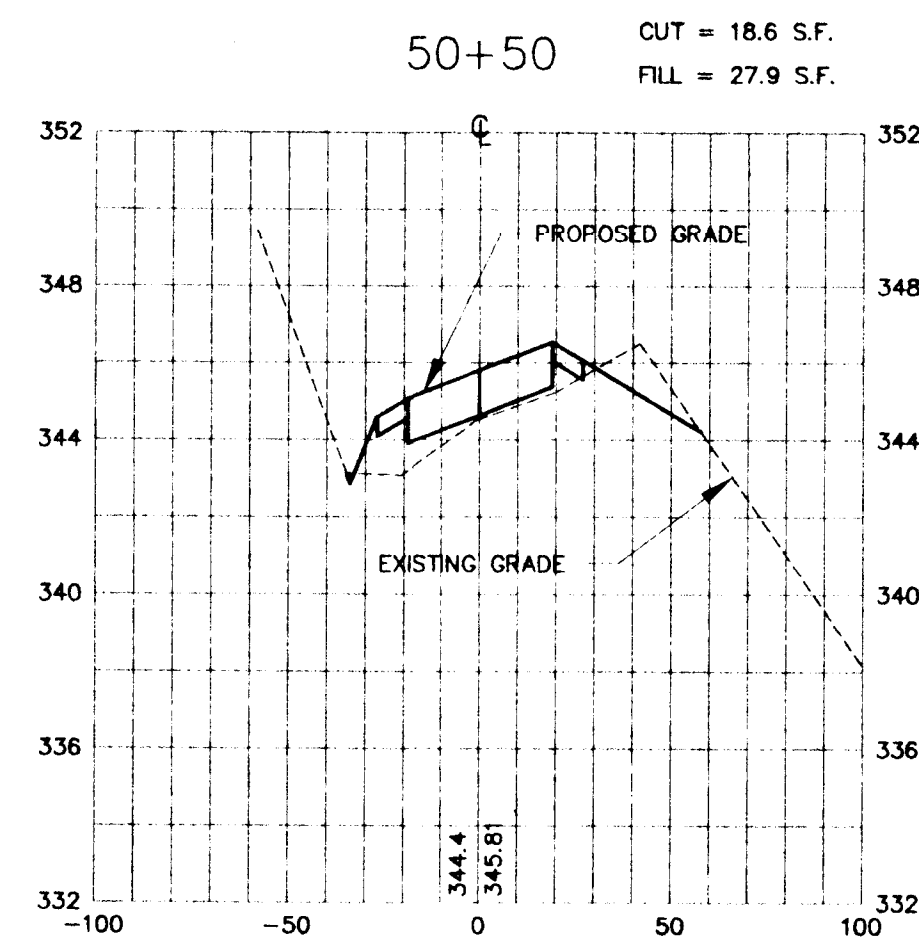
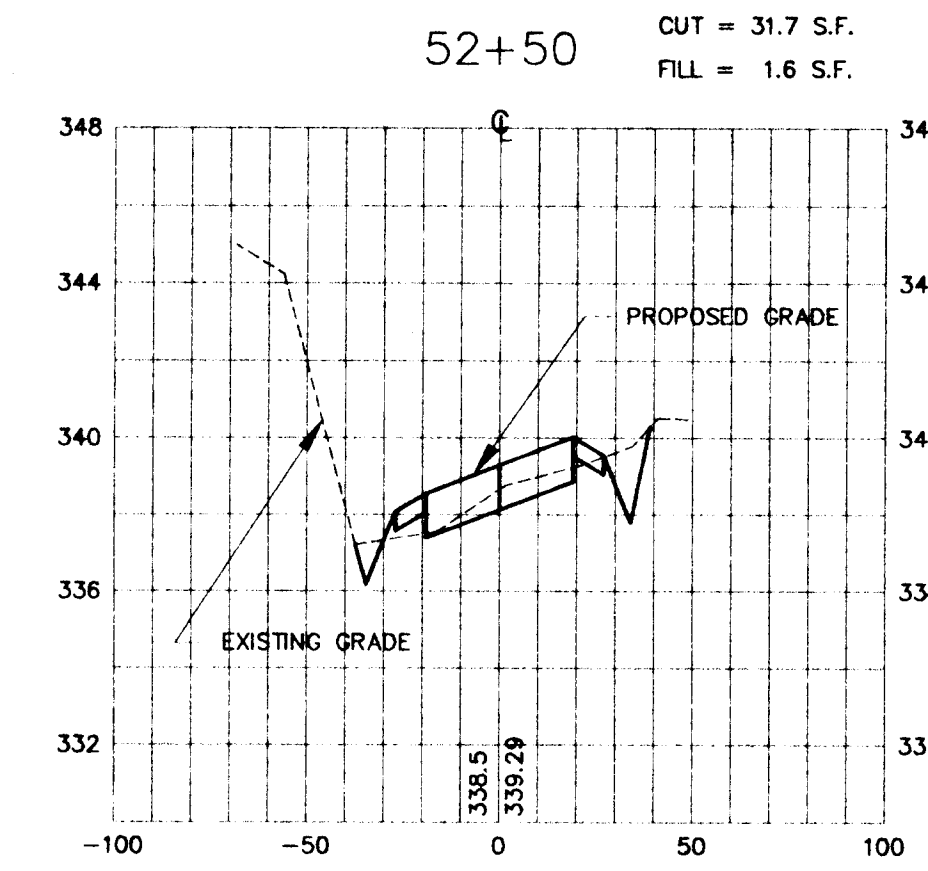
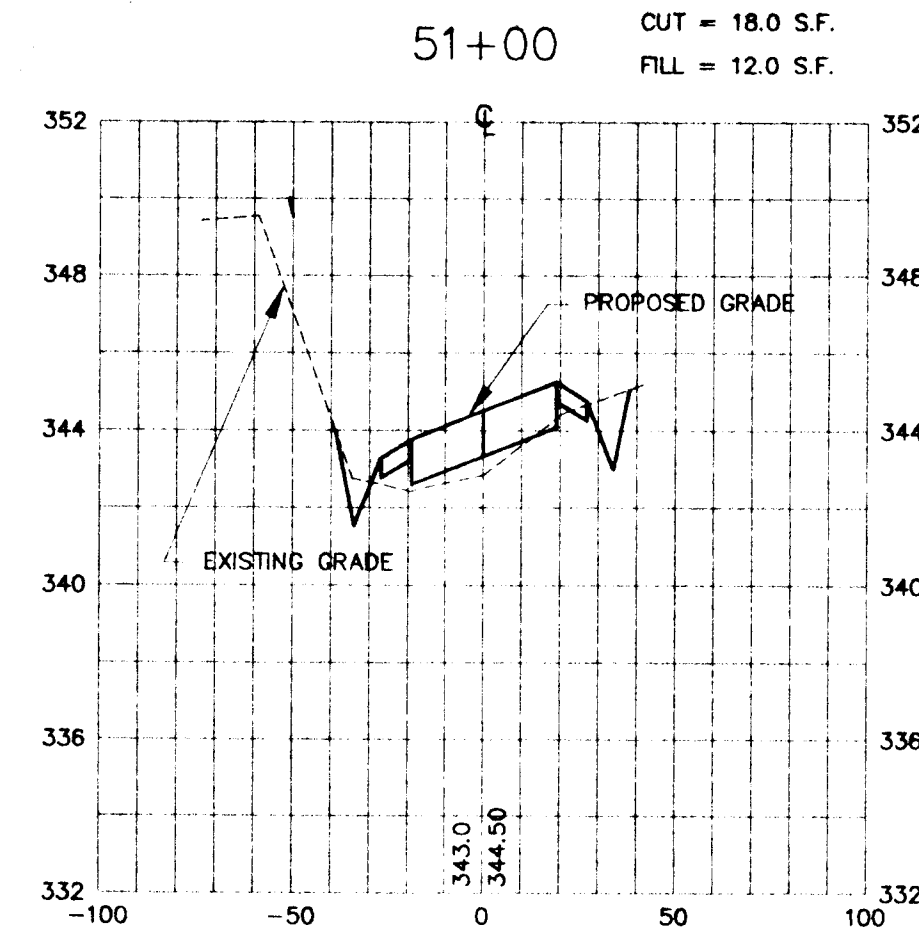
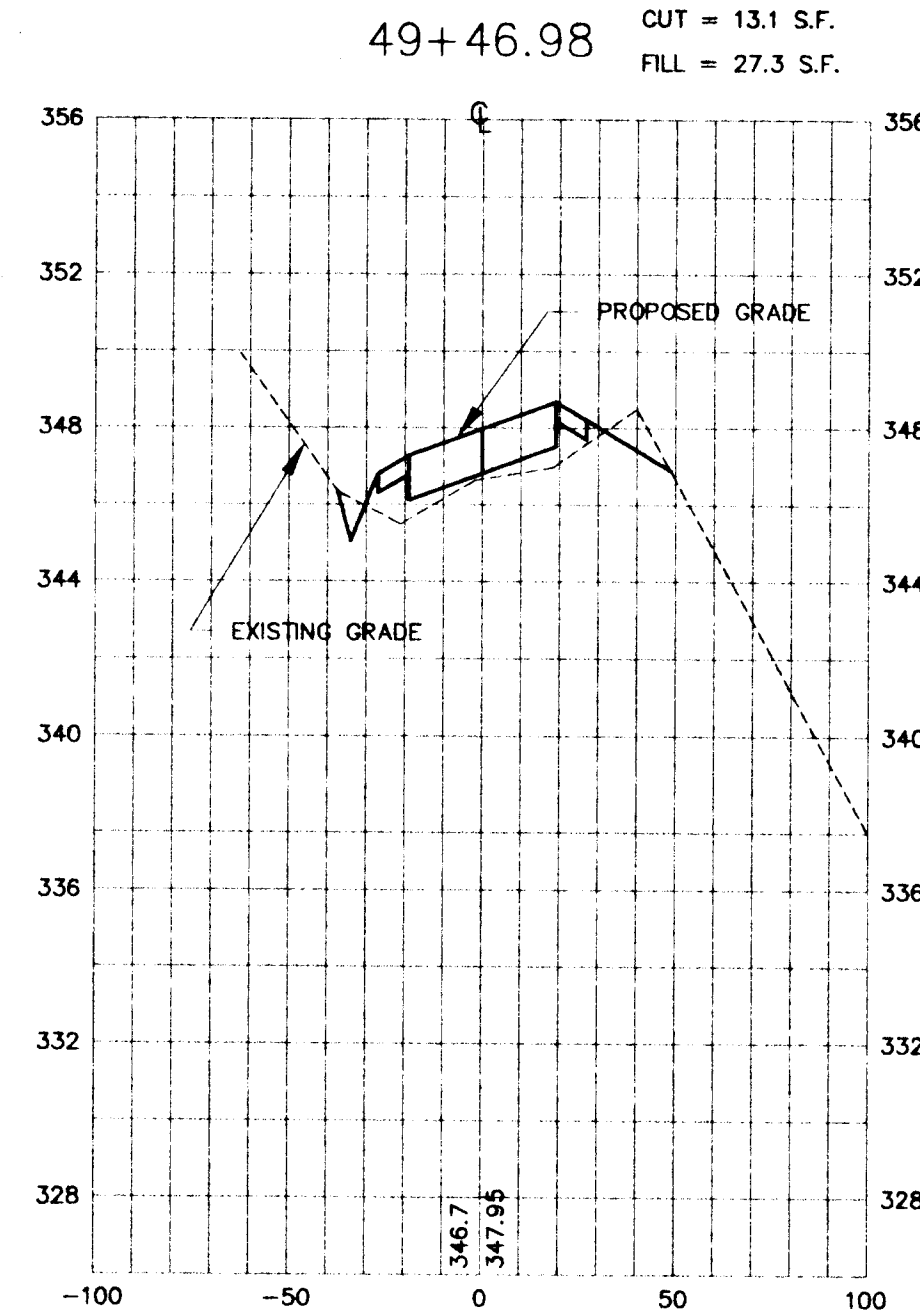
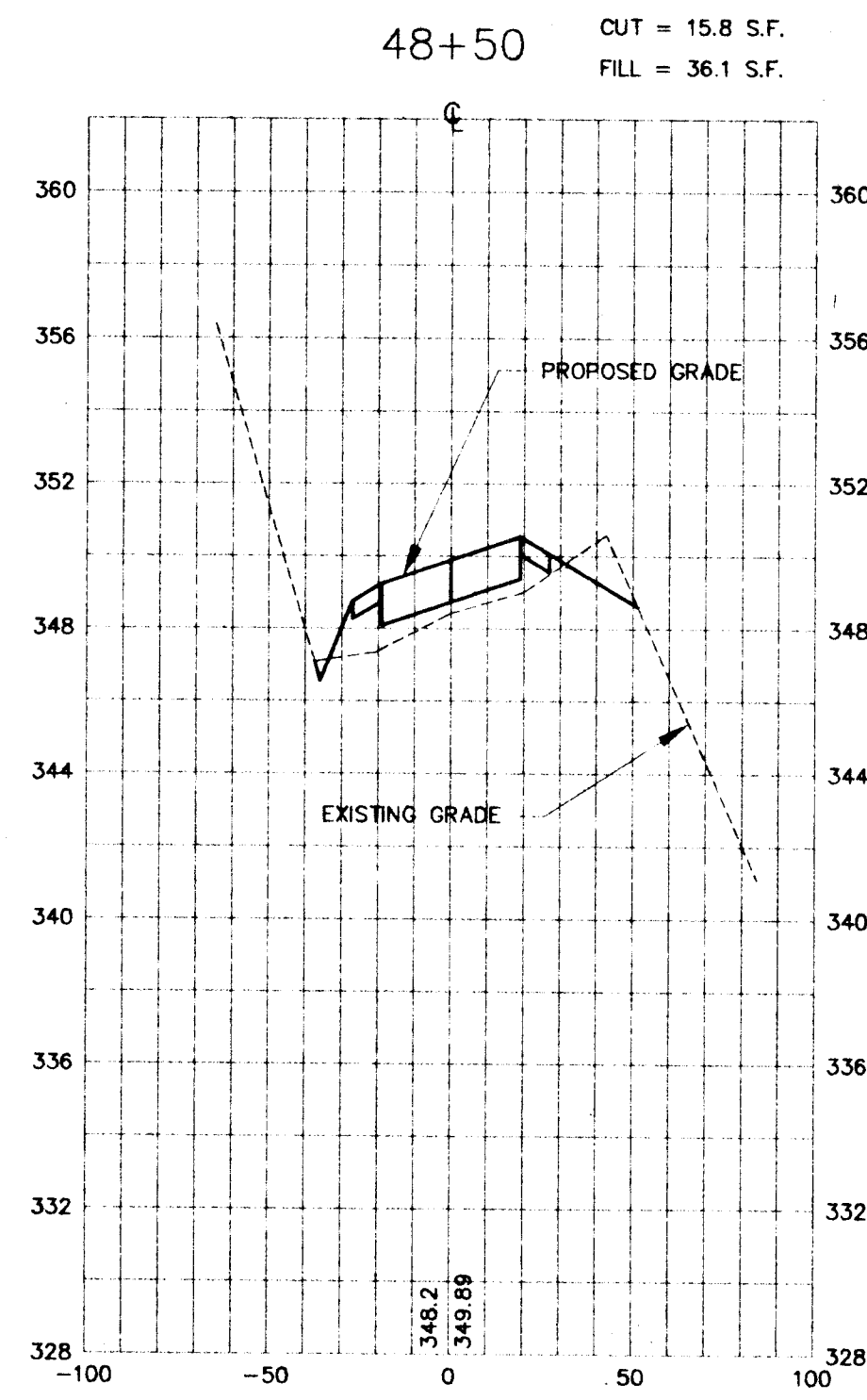
DES:	J.S.N.		
DRN:	SM/RPS		
CHK:	C.S.N.		
DATE:	NOV. 1995	BY:	NO.
		REVISION	

CROSS SECTIONS  
STA. 42+50 TO 47+50  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

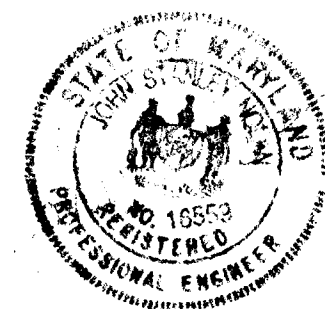
1"=50' HORIZ.  
1"=5' VERT.  
SHEET  
12 OF 19

5. USERS ONLY: ANY FILE NUMBER 95020/ACAD/MSE-2004



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS  
4785 DORSEY HALL DRIVE  
SUITE 124  
ELLICOTT CITY, MARYLAND 21042  
PHONE: (410) 995-3651 FAX: (410) 995-1363



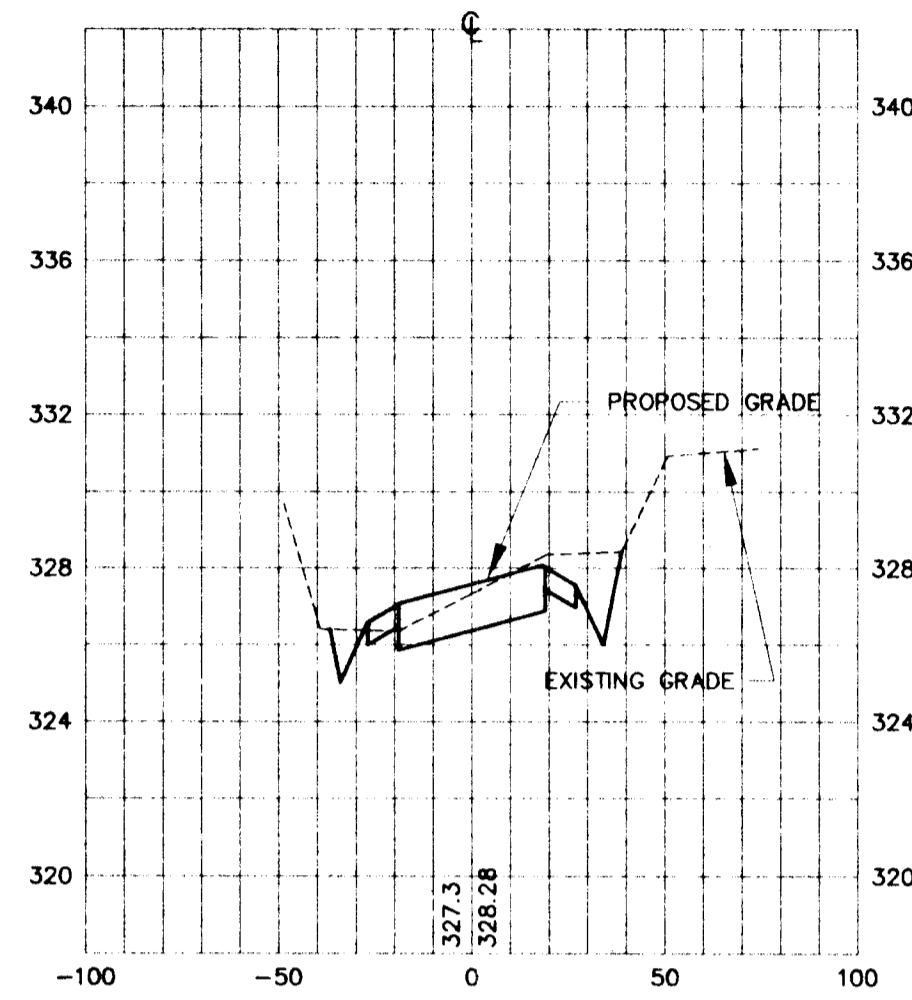
DES:	J.S.N.			
DRN:	SMI/RPS			
CHK:	C.S.N.			
DATE:	NOV. 1995	BY:	NO.	REVISION
				DATE

CROSS SECTIONS  
STA. 48+00 TO 53+50

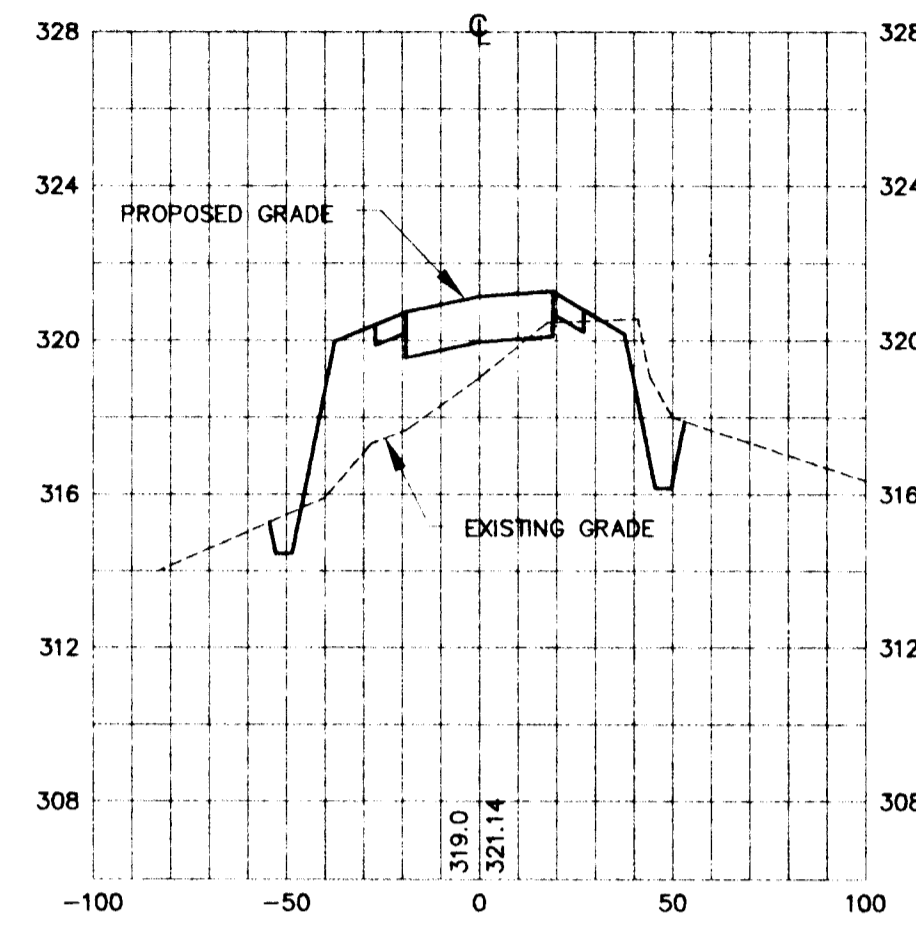
MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLICOTT CITY, MARYLAND

1"=50' HORIZ.  
1"=5' VERT.  
SHEET  
13 OF 19

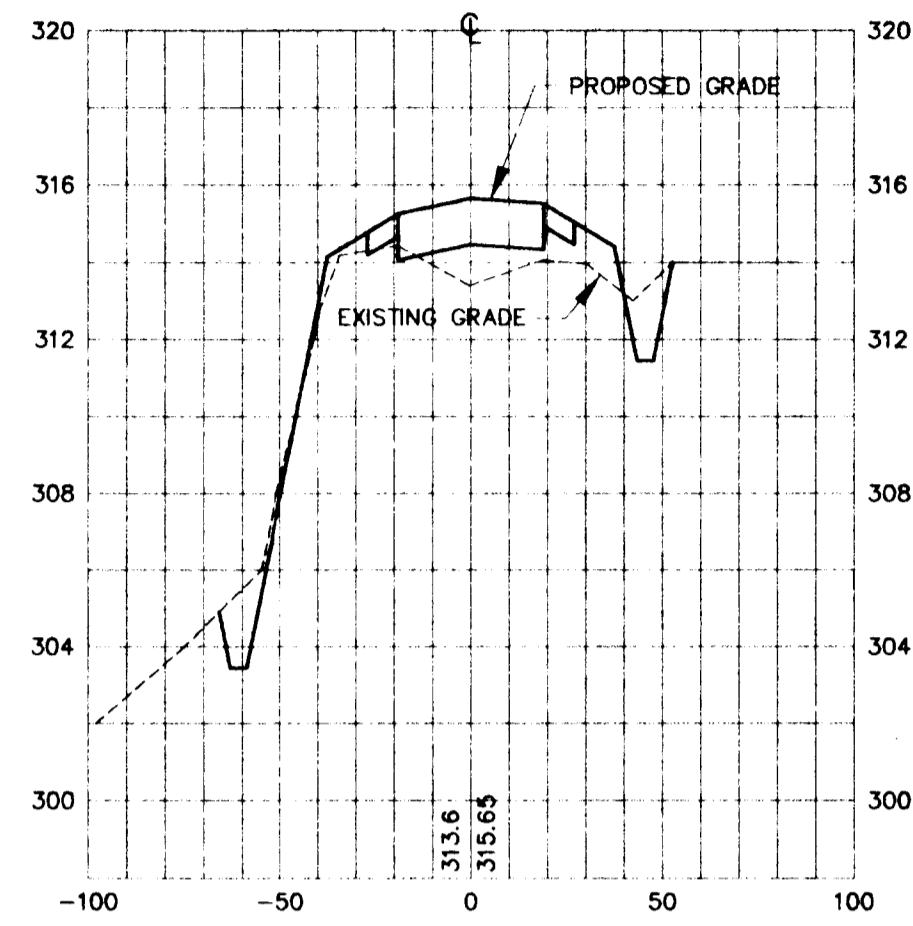
54+69.88 CUT = 75.4 S.F.  
FILL = 0.9 S.F.



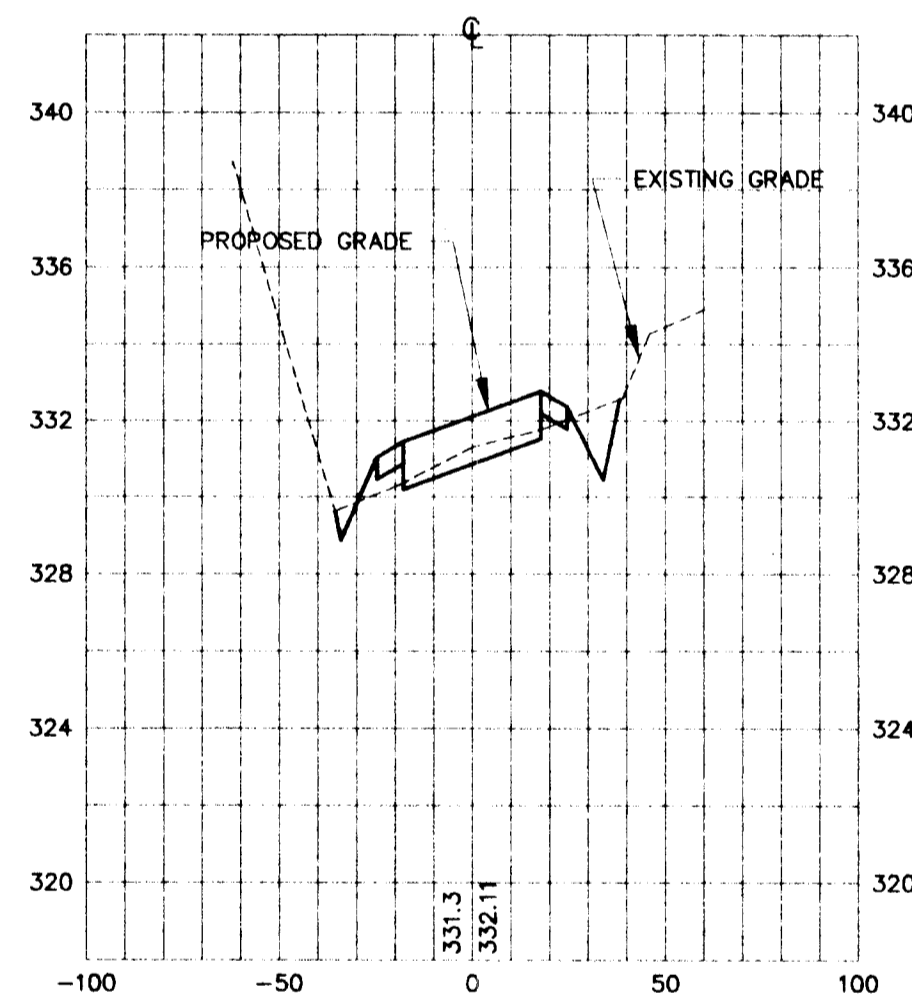
56+00 CUT = 28.0 S.F.  
FILL = 105.6 S.F.



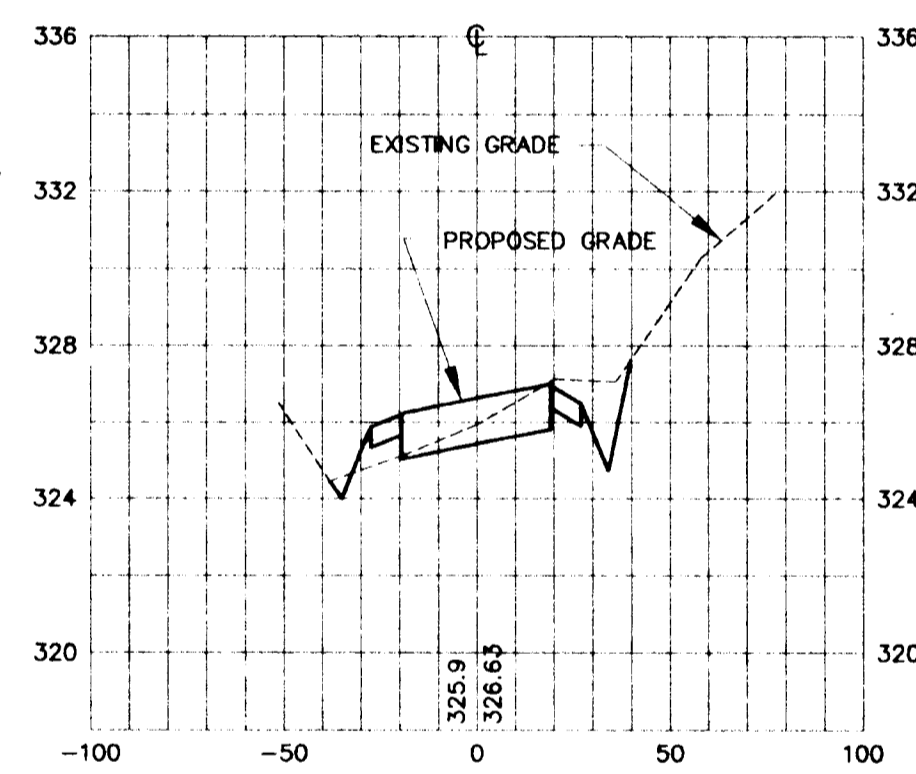
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FILL = 46.6 S.F.



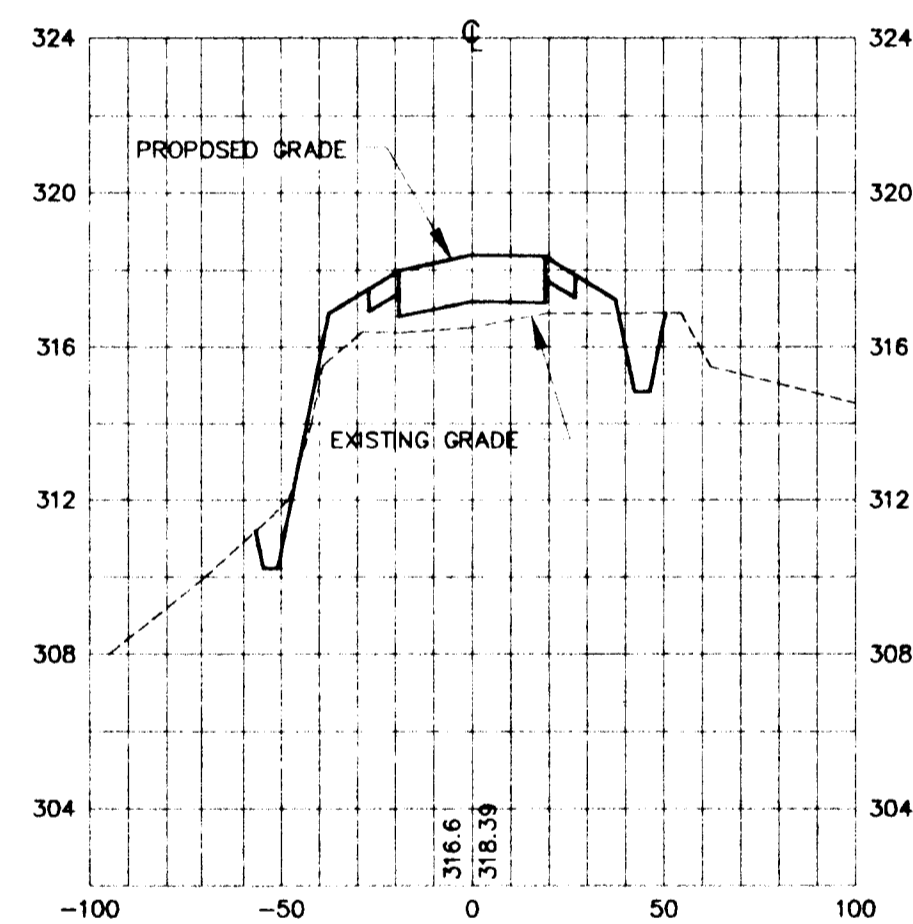
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FILL = 6.8 S.F.



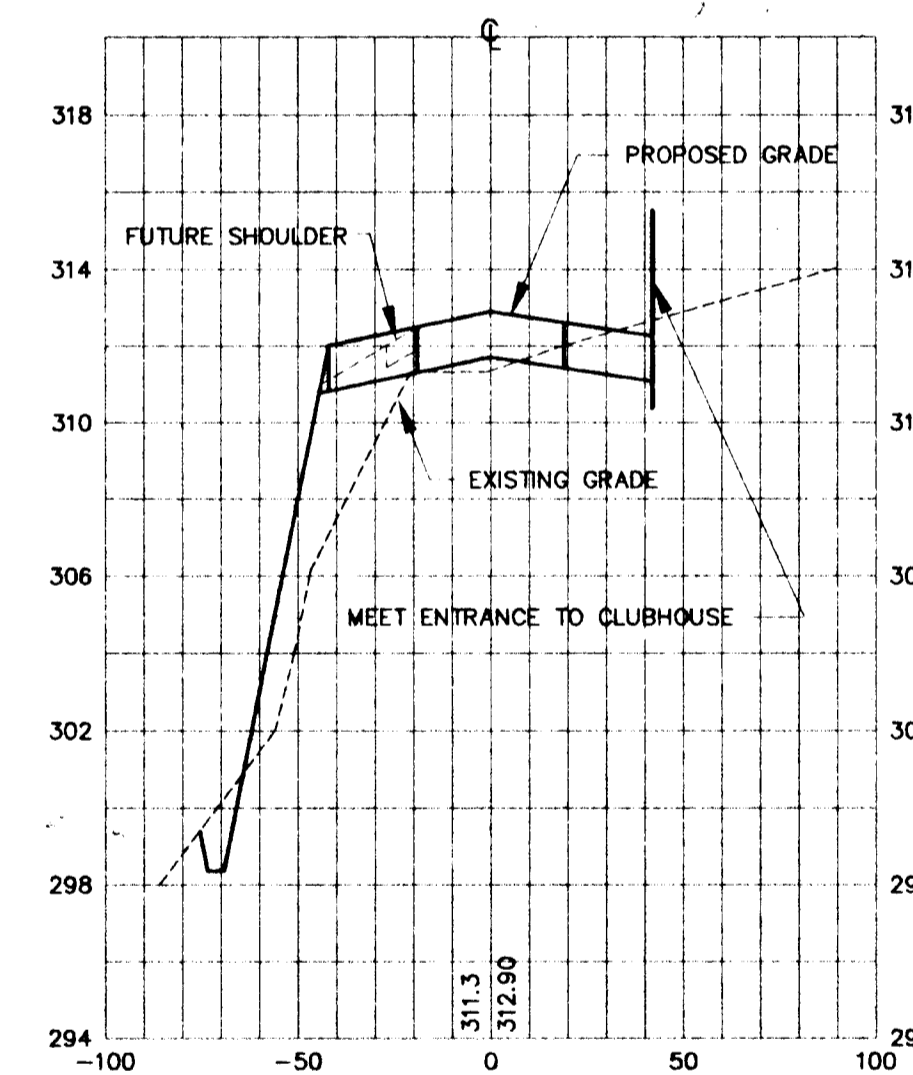
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FILL = 5.5 S.F.



56+50 CUT = 25.7 S.F.  
FILL = 36.8 S.F.



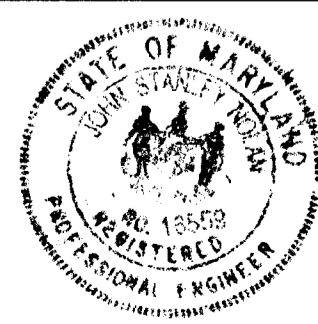
57+50 CUT = 38.4 S.F.  
FILL = 105.0 S.F.



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James P. Lee* 11/13/95  
DIRECTOR OF PUBLIC WORKS DATE  
*William R. Mahan, Jr.* 11/13/95  
CHIEF, BUREAU OF HIGHWAYS DATE  
*William R. Mahan, Jr.* 11/13/95  
CHIEF, DIVISION OF TRANSPORTATION  
PROJECTS AND WATERSHED MANAGEMENT DATE

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS  
4785 DORSEY HALL DRIVE  
SUITE 124  
ELLICOTT CITY, MARYLAND 21042  
PHONE: (410) 995-3651 FAX: (410) 995-1363

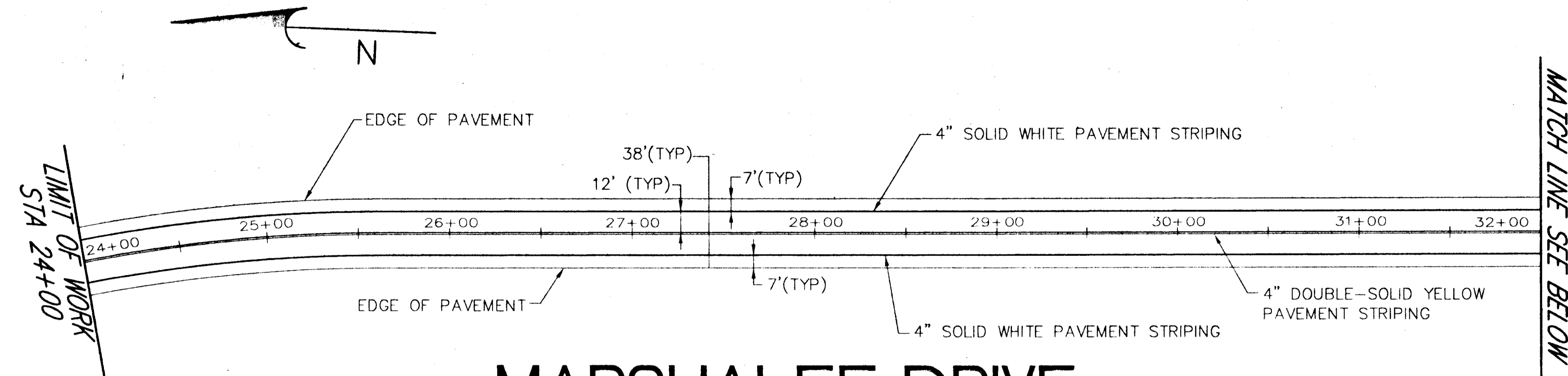


DES:	J.S.N.		
DRN:	SMI/RPS		
CHK:	C.S.N.		
DATE:	NOV. 1995		
BY:	NO.	REVISION	DATE

CROSS SECTIONS  
STA. 54+00 TO 57+50  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

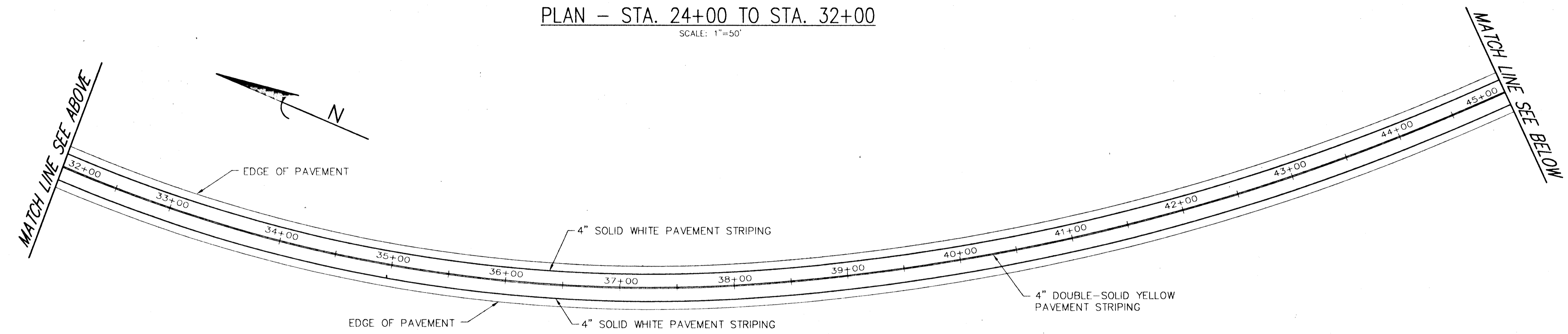
MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLICOTT CITY, MARYLAND

SCALE:  
1"=50' HORIZ  
1"=5' VERT  
SHEET  
14 OF 19



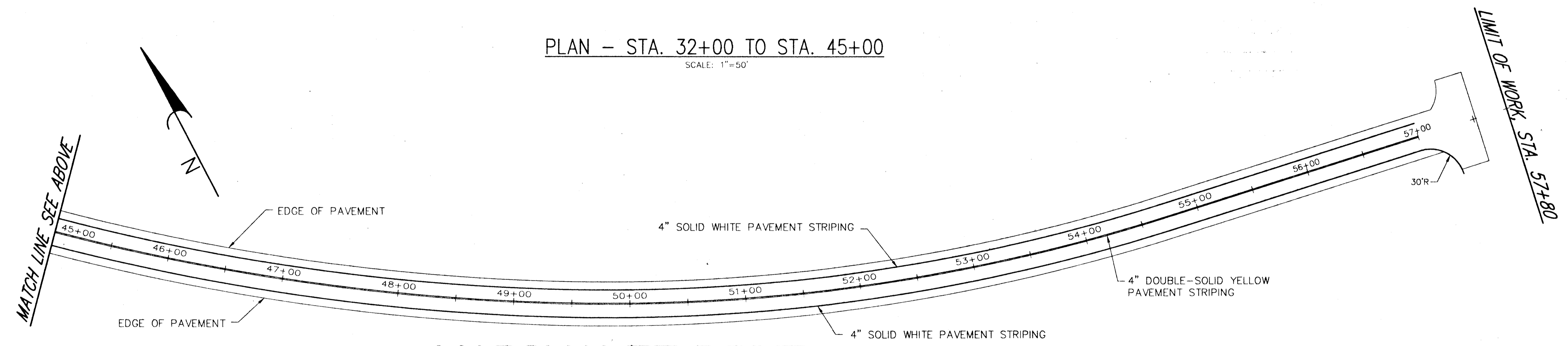
### MARSHALEE DRIVE

PLAN - STA. 24+00 TO STA. 32+00  
SCALE: 1"=50'



### MARSHALEE DRIVE

PLAN - STA. 32+00 TO STA. 45+00  
SCALE: 1"=50'



### MARSHALEE DRIVE

PLAN - STA. 45+00 TO STA. 57+80  
SCALE: 1"=50'

G:\LIBRARY\DRAWING\JOB\1995\95020\ACAD\STRIP-1

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James P. Shaw</i> 11/13/95 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>William B. Mahan, Jr.</i> 11/13/95 CHIEF, DIVISION OF HIGHWAYS DATE</p>	<p>NOLAN ASSOCIATES, INC. ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS</p> <p>4785 DORSEY HALL DRIVE SUITE 124 ELLCOTT CITY, MARYLAND 21042</p> <p>PHONE: (410) 995-3651 FAX: (410) 995-1363</p>	<p>DES: J.S.N.</p> <p>DRN: SMI/RPS</p> <p>CHK: C.S.N.</p> <p>DATE: NOV. 1995</p>	<p style="text-align: center; font-weight: bold;">PAVEMENT STRIPING PLAN</p> <p>600' SCALE MAP NO. _____ BLOCK NO. _____</p>	<p style="text-align: center;">MARSHALEE DRIVE CAPITAL PROJECT J-4136 ELECTION DISTRICT NO. 1 ELLCOTT CITY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 15 OF 19</p>
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SOIL BORING PECB-1  
NOT AVAILABLE

HANFORD DRILLING AND TESTING, INC  
Bel Air, Maryland

Project Name: CENTER 4500 HDT Job No.: 93011.D  
Date Started: 1-26-93 Date Completed: 1-26-93 Boring No. PECB-1  
Boring Location: Groundwater at 0 Hrs. Day 9.7  
Elevation: 341.1 Total Depth: 15' Groundwater at 24 Hrs. Day 9.3  
Drilled By: PAUL RICE Equipment: AN

Strata Depth	Sample Depth	SAMPLE		DESCRIPTION (Color, Moisture, Proportions)
		No.	Blows/6" Rec	
0-1.5'	1	2	7.5	BR, DRY, LOOSE, SILTY SAND, SOME SAND, NO SILT (ML)
2.5'	2	3	12.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
5.0'	3	4	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
8.5-10'	4	10	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
13.5-15'	5	14	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT

Standard Penetration Test: Driving 2-inch O.D. Sampler with 140-pound hammer freely falling 30 inches.  
Addendum No. 1 (November 15, 1995) 4-02

HANFORD DRILLING AND TESTING, INC  
Bel Air, Maryland

Project Name: CENTER 4500 HDT Job No.: 93011.D  
Date Started: 1-26-93 Date Completed: 1-26-93 Boring No. PECB-3  
Boring Location: Groundwater at 0 Hrs. Day 9.7  
Elevation: 341.1 Total Depth: 15' Groundwater at 24 Hrs. Day 9.3  
Drilled By: PAUL RICE Equipment: AN

Strata Depth	Sample Depth	SAMPLE		DESCRIPTION (Color, Moisture, Proportions)
		No.	Blows/6" Rec	
0-1.5'	1	2	7.5	BR, DRY, LOOSE, SILTY SAND, SOME SAND, NO SILT (ML)
2.5'	2	3	12.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
5.0'	3	4	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
8.5-10'	4	10	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
13.5-15'	5	14	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT

Standard Penetration Test: Driving 2-inch O.D. Sampler with 140-pound hammer freely falling 30 inches.  
Addendum No. 1 (November 15, 1995) 4-03

HANFORD DRILLING AND TESTING, INC  
Bel Air, Maryland

Project Name: CENTER 4500 HDT Job No.: 93011.D  
Date Started: 1-26-93 Date Completed: 1-26-93 Boring No. PECB-4  
Boring Location: Groundwater at 0 Hrs. Day 9.7  
Elevation: 341.1 Total Depth: 15' Groundwater at 24 Hrs. Day 9.3  
Drilled By: PAUL RICE Equipment: AN

Strata Depth	Sample Depth	SAMPLE		DESCRIPTION (Color, Moisture, Proportions)
		No.	Blows/6" Rec	
0-1.5'	1	2	7.5	BR, DRY, LOOSE, SILTY SAND, SOME SAND, NO SILT (ML)
2.5'	2	3	12.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
5.0'	3	4	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
8.5-10'	4	10	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
13.5-15'	5	14	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT

Standard Penetration Test: Driving 2-inch O.D. Sampler with 140-pound hammer freely falling 30 inches.  
Addendum No. 1 (November 15, 1995) 4-04

HANFORD DRILLING AND TESTING, INC  
Bel Air, Maryland

Project Name: CENTER 4500 HDT Job No.: 93011.D  
Date Started: 2-17-93 Date Completed: 2-14-93 Boring No. PECB-5  
Boring Location: Groundwater at 0 Hrs. Day 10.3  
Elevation: 335.6 Total Depth: 15' Groundwater at 24 Hrs. Day 9.8  
Drilled By: PAUL RICE Equipment: AN

Strata Depth	Sample Depth	SAMPLE		DESCRIPTION (Color, Moisture, Proportions)
		No.	Blows/6" Rec	
0-1.5'	1	2	8.5	BR, DRY, LOOSE, SILTY SAND, SOME SAND, NO SILT (ML)
2.5'	2	3	12.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
5.0'	3	4	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
8.5-10'	4	10	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT
13.5-15'	5	14	15.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT

Standard Penetration Test: Driving 2-inch O.D. Sampler with 140-pound hammer freely falling 30 inches.  
Addendum No. 1 (November 15, 1995) 4-05

HILLIS - CARNES  
ENGINEERING ASSOCIATES, INC.

Project Name: MARSHALEE DRIVE Boring # B-1  
Location: 9512711

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Size, Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE		BORING & SAMPLING NOTES
				CON	BLOWS 6"	
0.0	SURFACE	0.0		2-3-3	1	Asphalt OR 4" Topsoil
11.0	BR, DRY, LOOSE, SILTY SAND	5		8-10-14	2	Groundwater encountered at 18.0' Feet while drilling
9.0	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT	10		9-15-17	3	No groundwater encountered while drilling
12.0	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT	15		6-10-15	4	Bag samples: From To 4.0-9.0 - #1 9.0-12.0 - #2 12.0-20.0 - #3
20.0	Bottom of Test Hole = 20.0'	20		10-15-20	5	Caved ? = 5.5'

Standard Penetration Test: Driving 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS

HILLIS - CARNES  
ENGINEERING ASSOCIATES, INC.

Project Name: MARSHALEE DRIVE Boring # B-2  
Location: 9512711

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Size, Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE		BORING & SAMPLING NOTES
				CON	BLOWS 6"	
0.0	SURFACE	0.0		3-2-5	1	Asphalt OR 4" Topsoil
6.0	BR, DRY, LOOSE, SILTY SAND, SOME GRIT	5		1-3-3	2	Groundwater encountered at 18.0' Feet while drilling
9.5	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT	10		5-5-6	3	No groundwater encountered while drilling
16.0	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT	15		3-7-9	4	Bag samples: From To 4.0-9.0 - #1 9.0-12.0 - #2 12.0-20.0 - #3
20.0	Bottom of Test Hole = 20.0'	20		7-13-15	5	Caved ? = 7.0' offset 15' towards B-3 because of ditch

Standard Penetration Test: Driving 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS

HILLIS - CARNES  
ENGINEERING ASSOCIATES, INC.

Project Name: MARSHALEE DRIVE Boring # B-3  
Location: 9512711

ELEV.	SOIL DESCRIPTION Color, Moisture, Density, Size, Proportion	STRA. DEPTH	DEPTH SCALE	SAMPLE		BORING & SAMPLING NOTES
				CON	BLOWS 6"	
0.0	SURFACE	0.0		2-2-2	1	Asphalt OR 4" Topsoil
2.0	BR, DRY, LOOSE, SILTY SAND, SOME GRIT	5		6-7-9	2	Groundwater encountered at 8.0' Feet while drilling
5.0	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT	10		7-12-8	3	No groundwater encountered while drilling
10.0	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT	15		6-8-8	4	Bag samples: From To N/A
18.0	BR, DRY, MED. DENSE, SILTY SAND, SOME GRIT	20		2-4-10	5	Caved ? = 6.0'

Standard Penetration Test: Driving 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

2/28/96  
2/27/96

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042

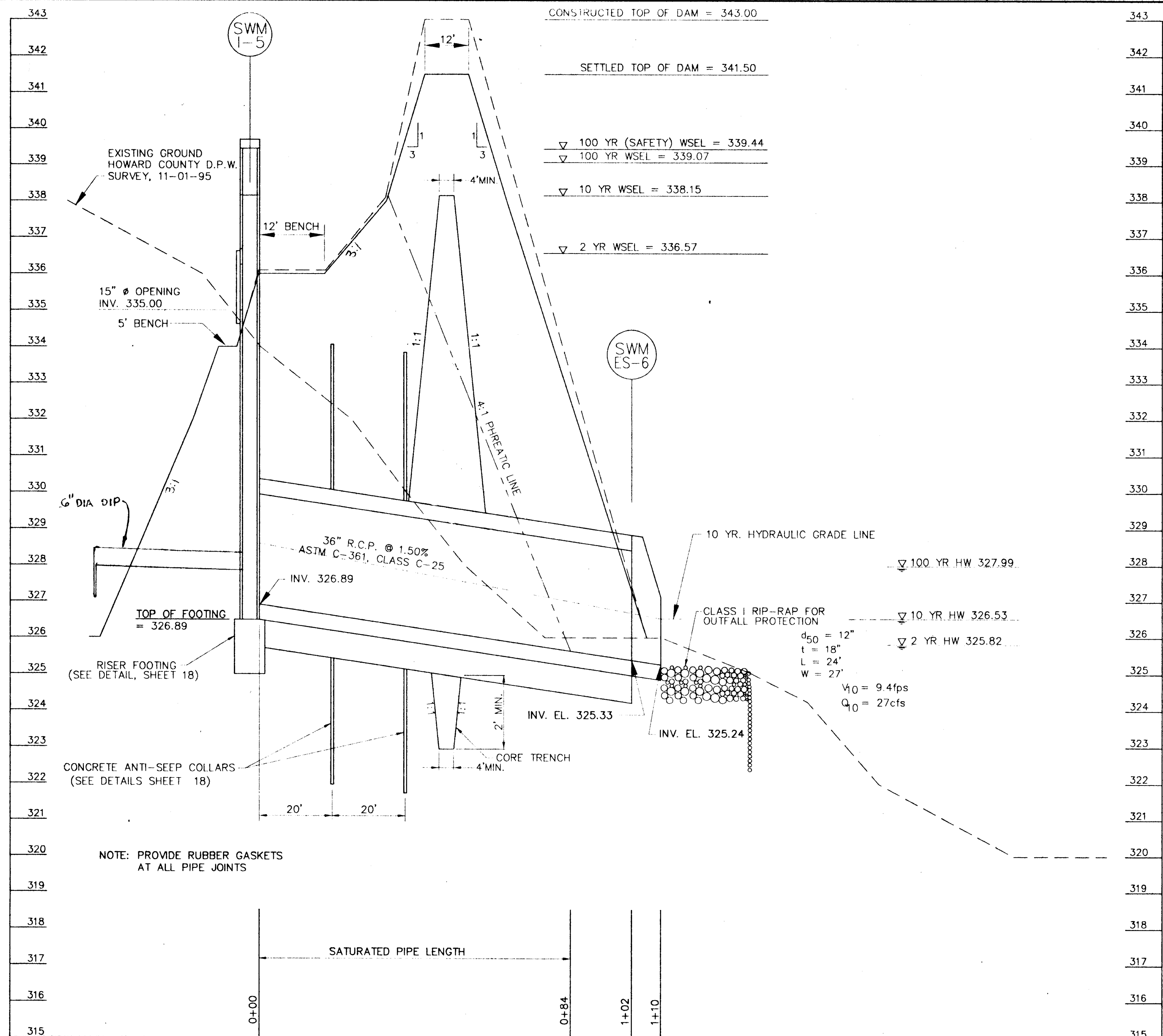
PHONE: (410) 995-3651 FAX: (410) 995-1363

DES: J.S.N. SHEET REISSUED DUE TO SWM POND REVISIONS 12/12/95  
DRN: SMI. S.M.I. ADDED SHEET FOR SOIL BORING LOGS 2/28/96  
CHK: C.S.N.  
DATE: NOV. 1995

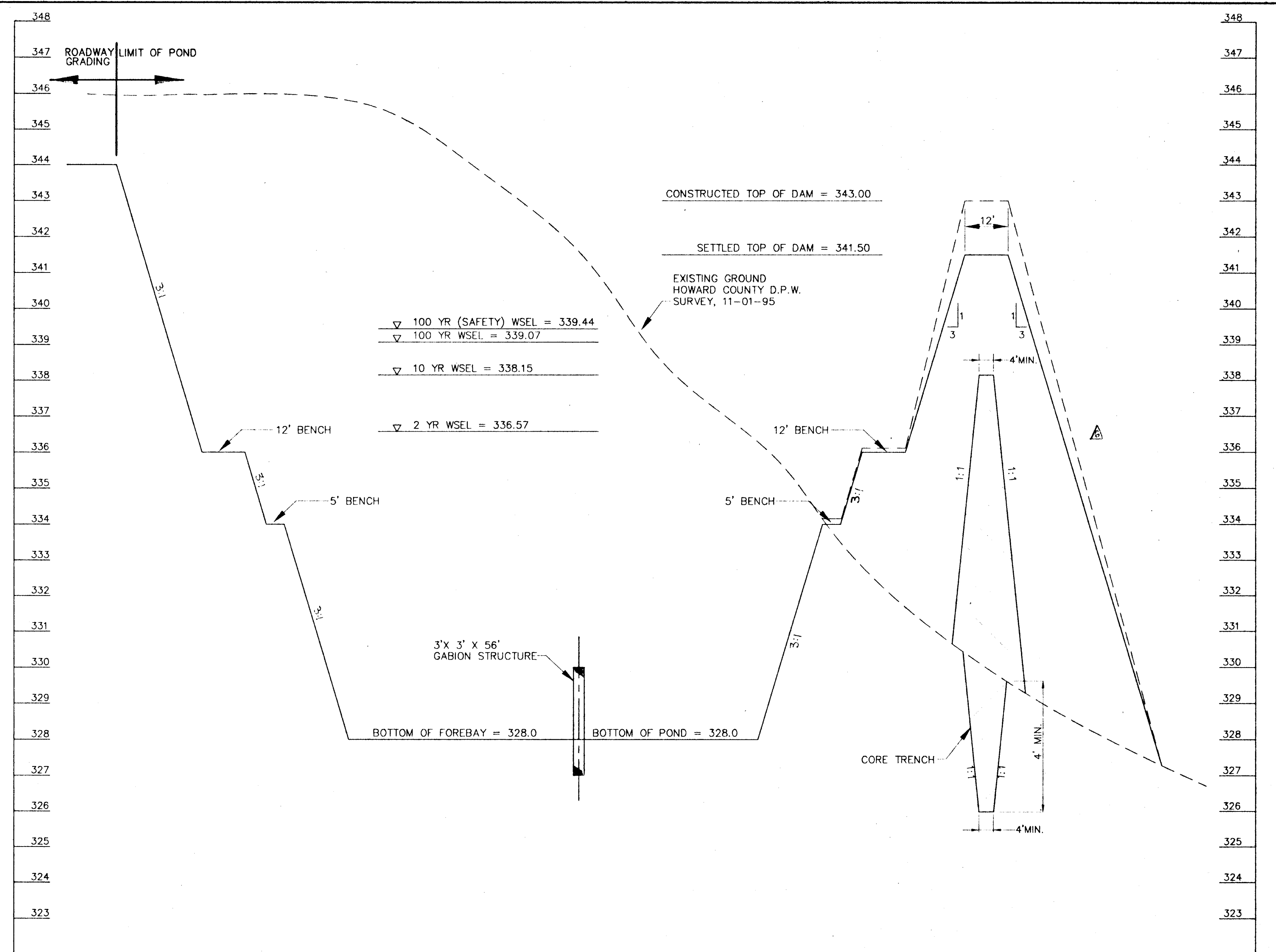
STORMWATER MANAGEMENT POND  
SOIL BORING LOGS  
600' SCALE MAP NO. BLOCK NO.

MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

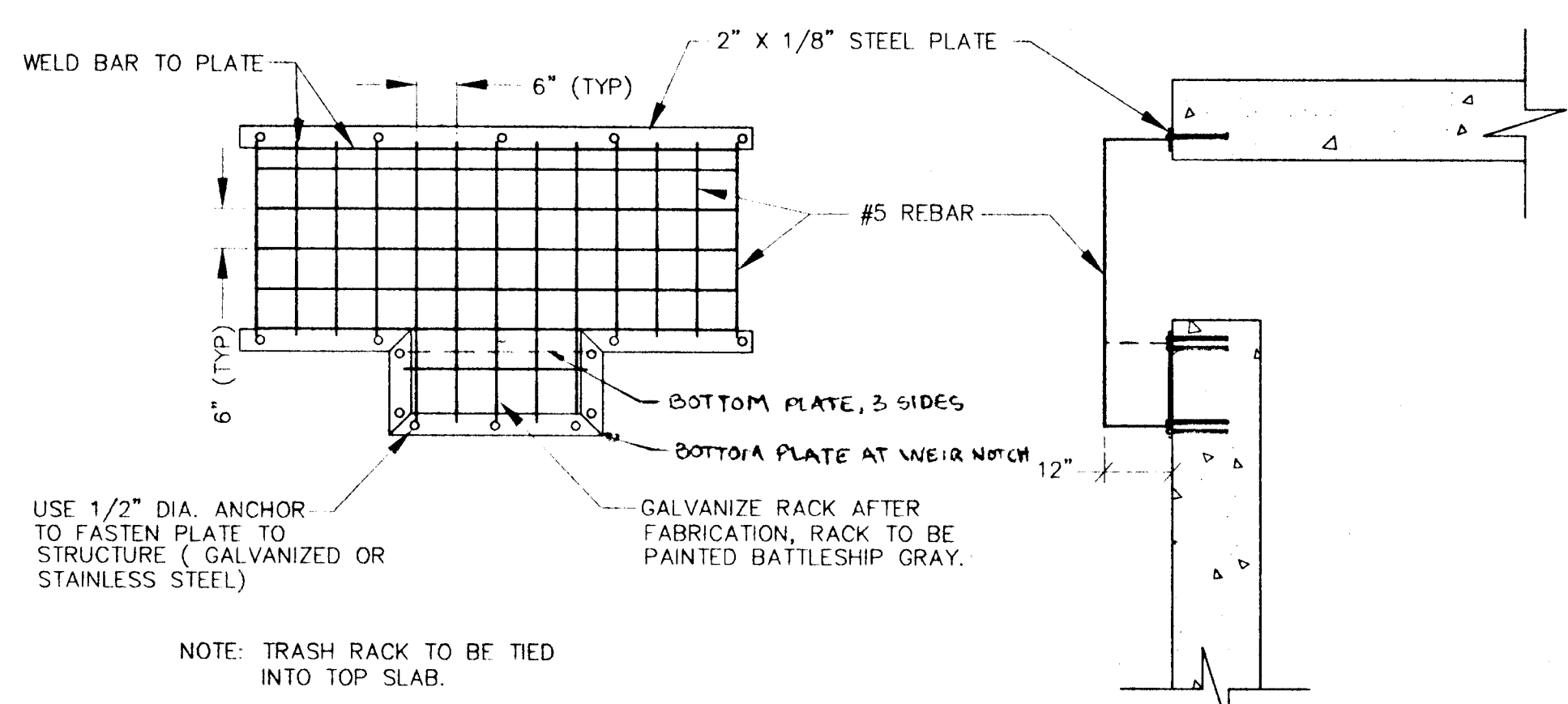
SCALE: AS SHOWN  
SHEET 16A OF 19



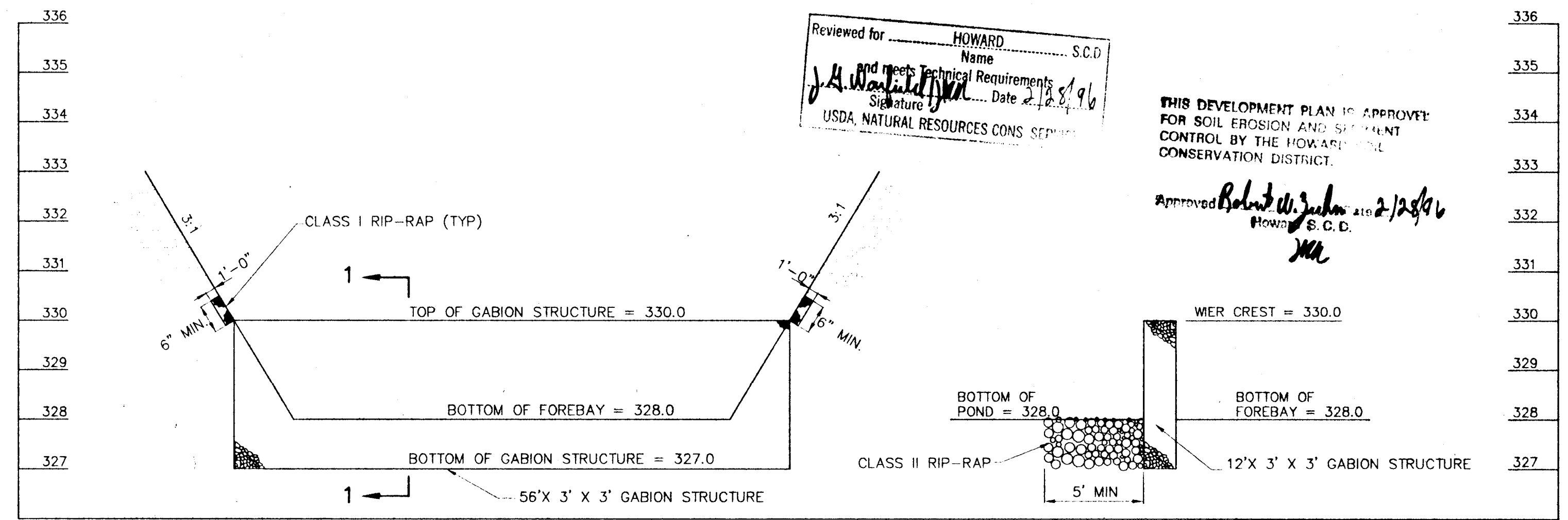
PROFILE ALONG C OF PRINCIPLE SPILLWAY A-A



PROFILE ALONG C OF POND B-B



TRASH RACK DETAILS (N.T.S.)



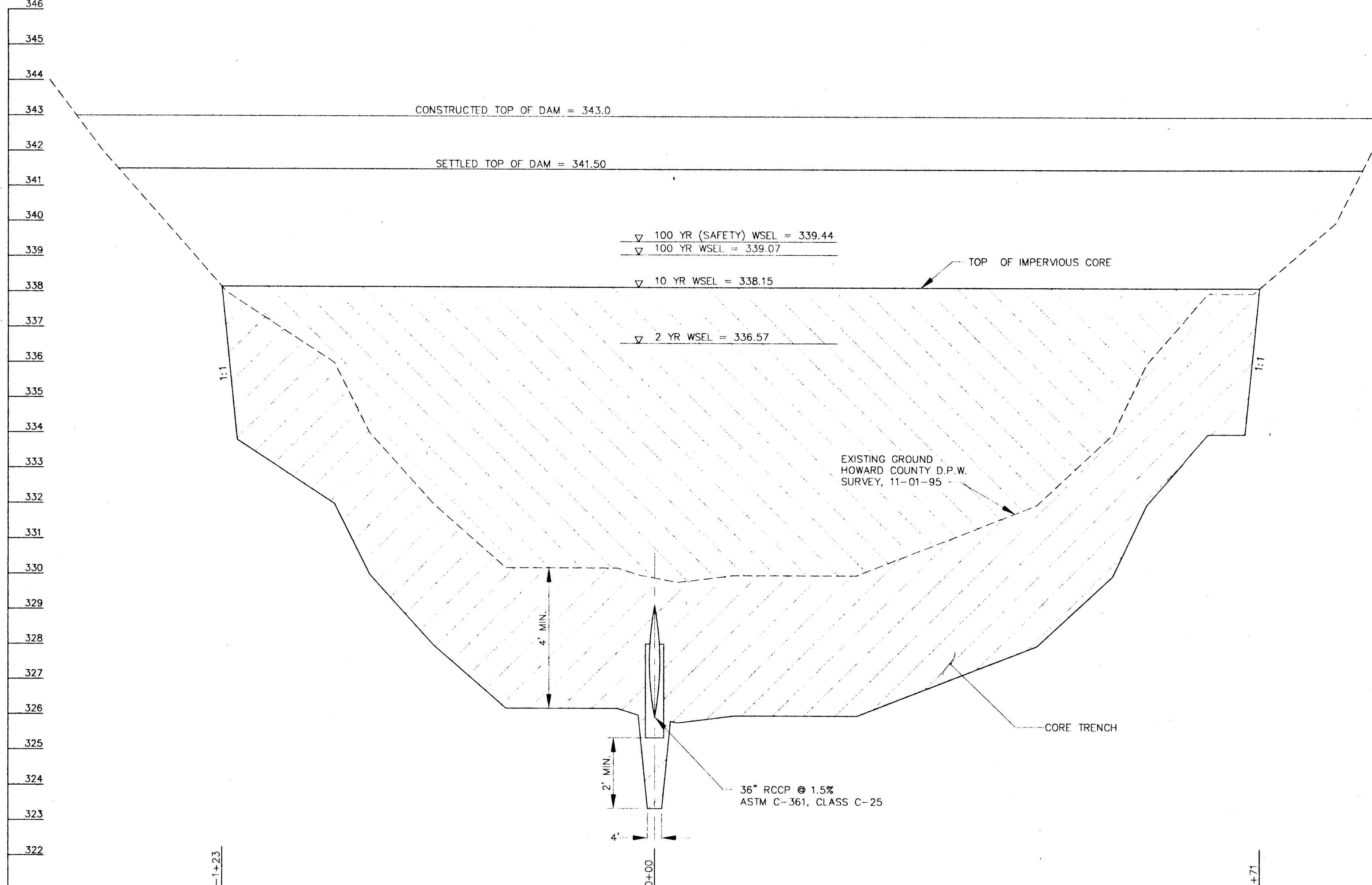
WATER QUALITY FOREBAY PROFILE C-C

SECTION 1-1

Reviewed for HOWARD S.C.D. Name and meets Technical Requirements Signature Date 2/28/96

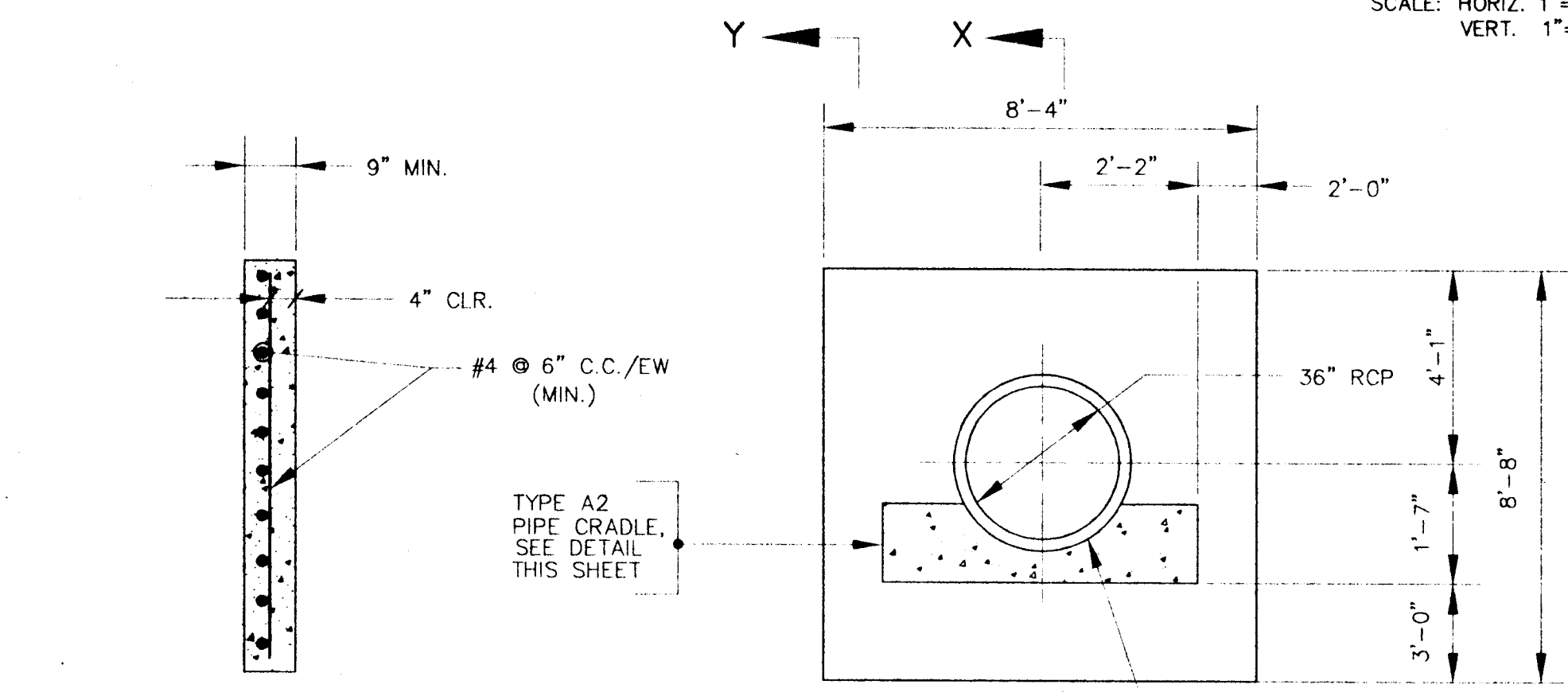
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY CONSERVATION DISTRICT. Approved Robert W. Johnson 2/28/96

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: [Signature] 12/13/95 Chief, Bureau of Highways: [Signature] 12-13-95		NOLAN ASSOCIATES, INC. ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS 4785 DORSEY HALL DRIVE SUITE 124 ELLICOTT CITY, MARYLAND 21042 PHONE: (410) 995-3651 FAX: (410) 995-1363		DES: J.S.N. DRN: SM/RPS CHK: C.S.N. DATE: NOV. 1995		STORMWATER MANAGEMENT POND PROFILES & DETAILS 600' SCALE MAP NO. _____ BLOCK NO. _____		MARSHALEE DRIVE CAPITAL PROJECT J-4136 ELECTION DISTRICT NO. 1 ELLICOTT CITY, MARYLAND		SCALE AS SHOWN SHEET 17 OF 19
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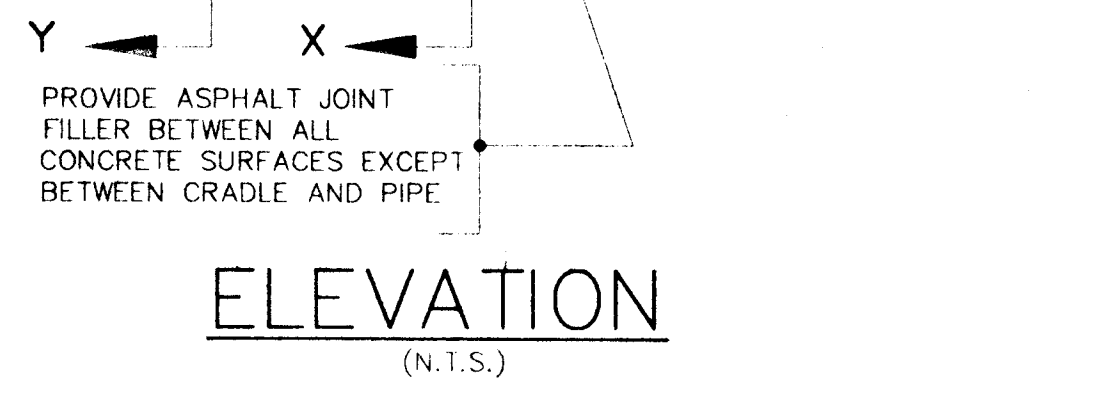


PROFILE ALONG Q-Q OF DAM D-D

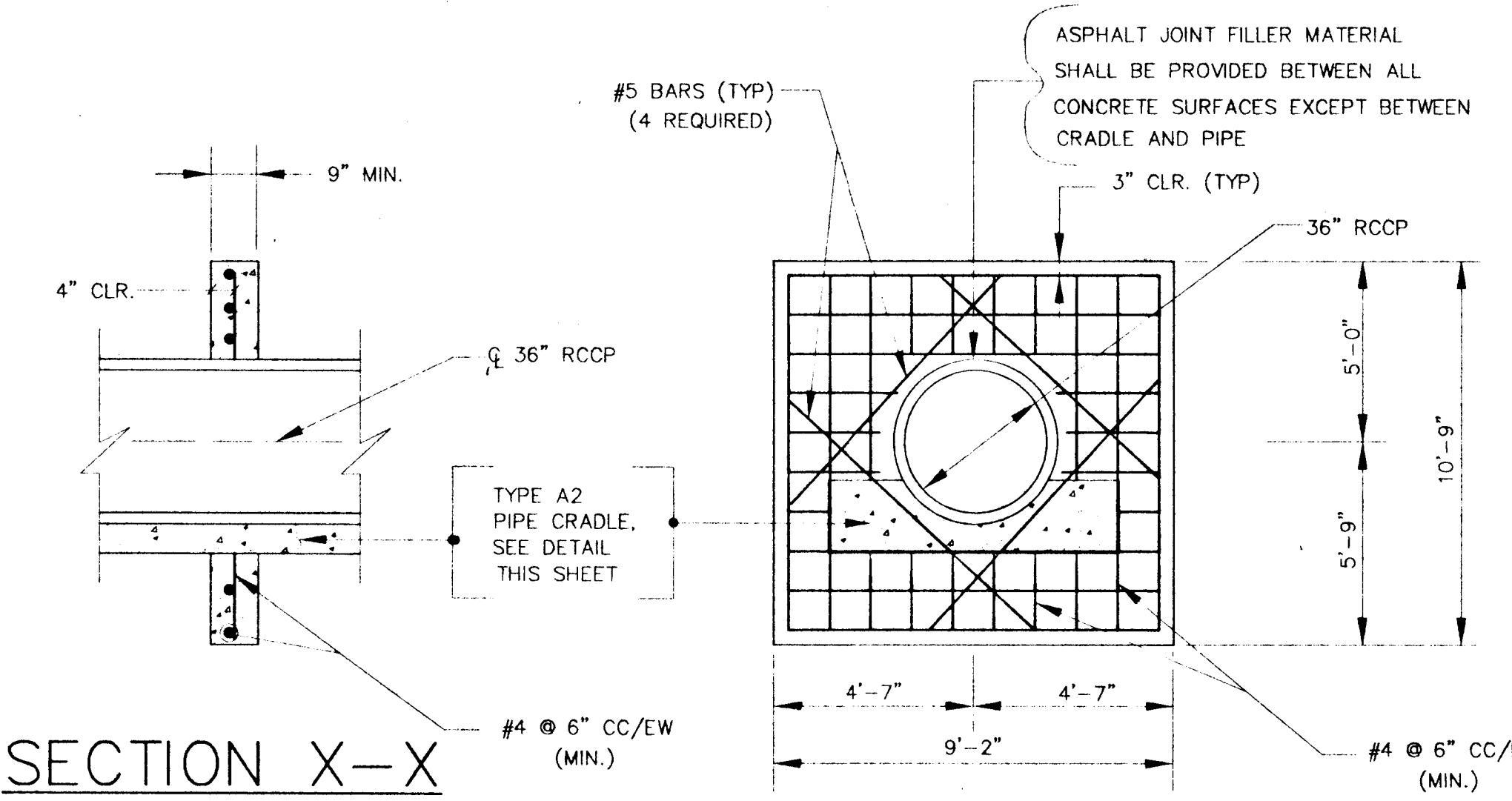
SCALE: HORIZ. 1"=20'  
VERT. 1"=2'



SECTION Y-Y (N.T.S.)



ELEVATION (N.T.S.)

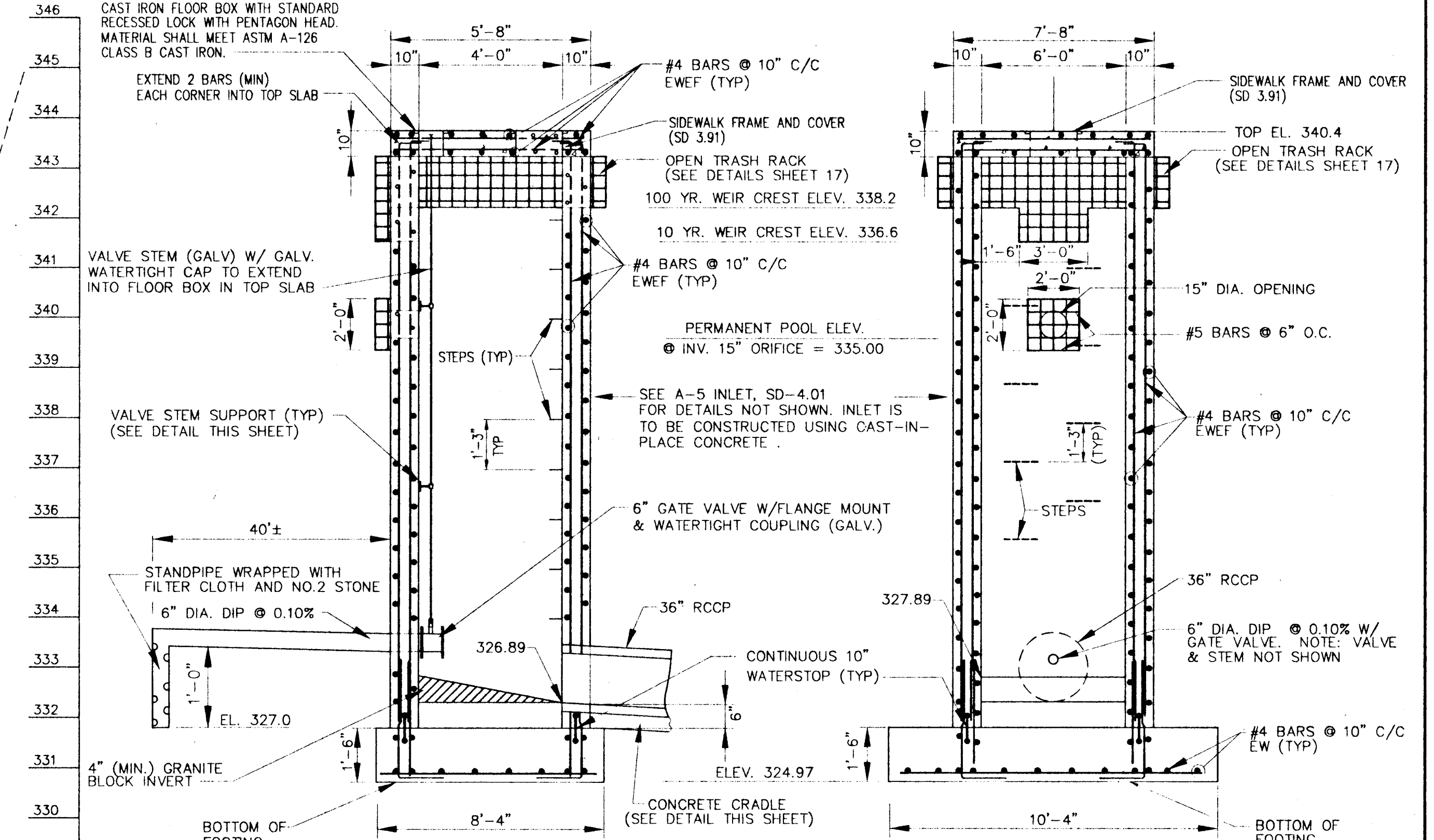


SECTION X-X (N.T.S.)

ANTI-SEEP COLLAR REINFORCEMENT DETAIL (N.T.S.)

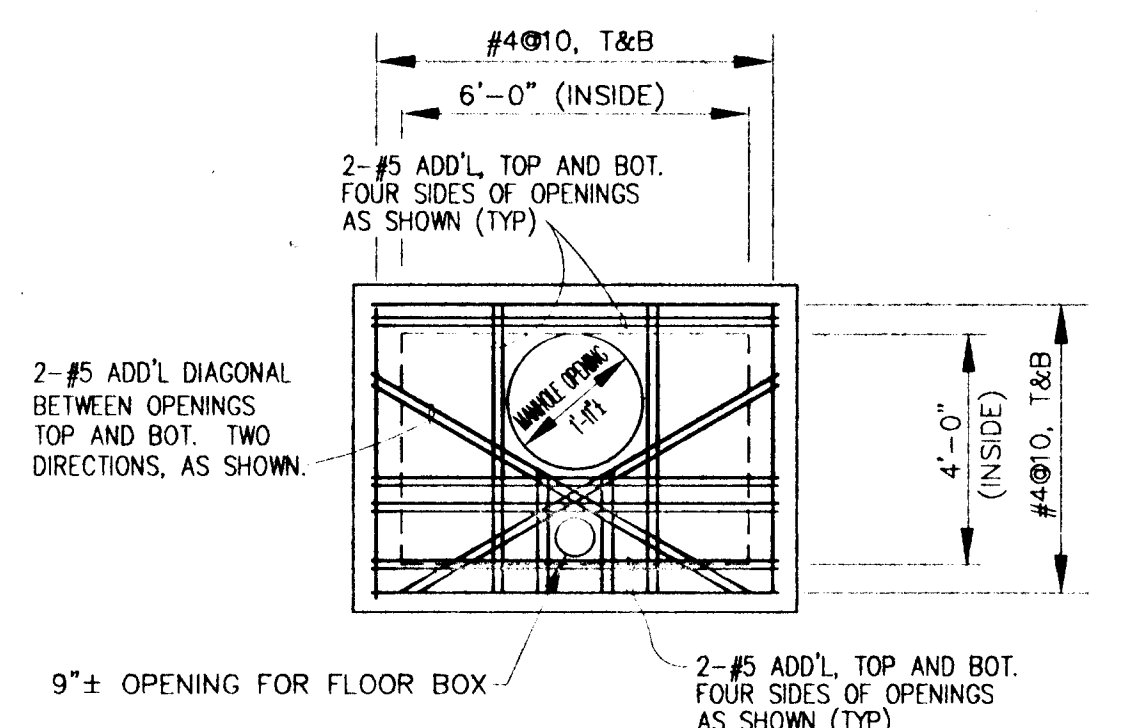
NOTE: COLLARS SHALL BE PLACED A MINIMUM OF 2'-0" FROM PIPE JOINTS.

TYPICAL DETAILS AT ANTI-SEEP COLLARS (N.T.S.)

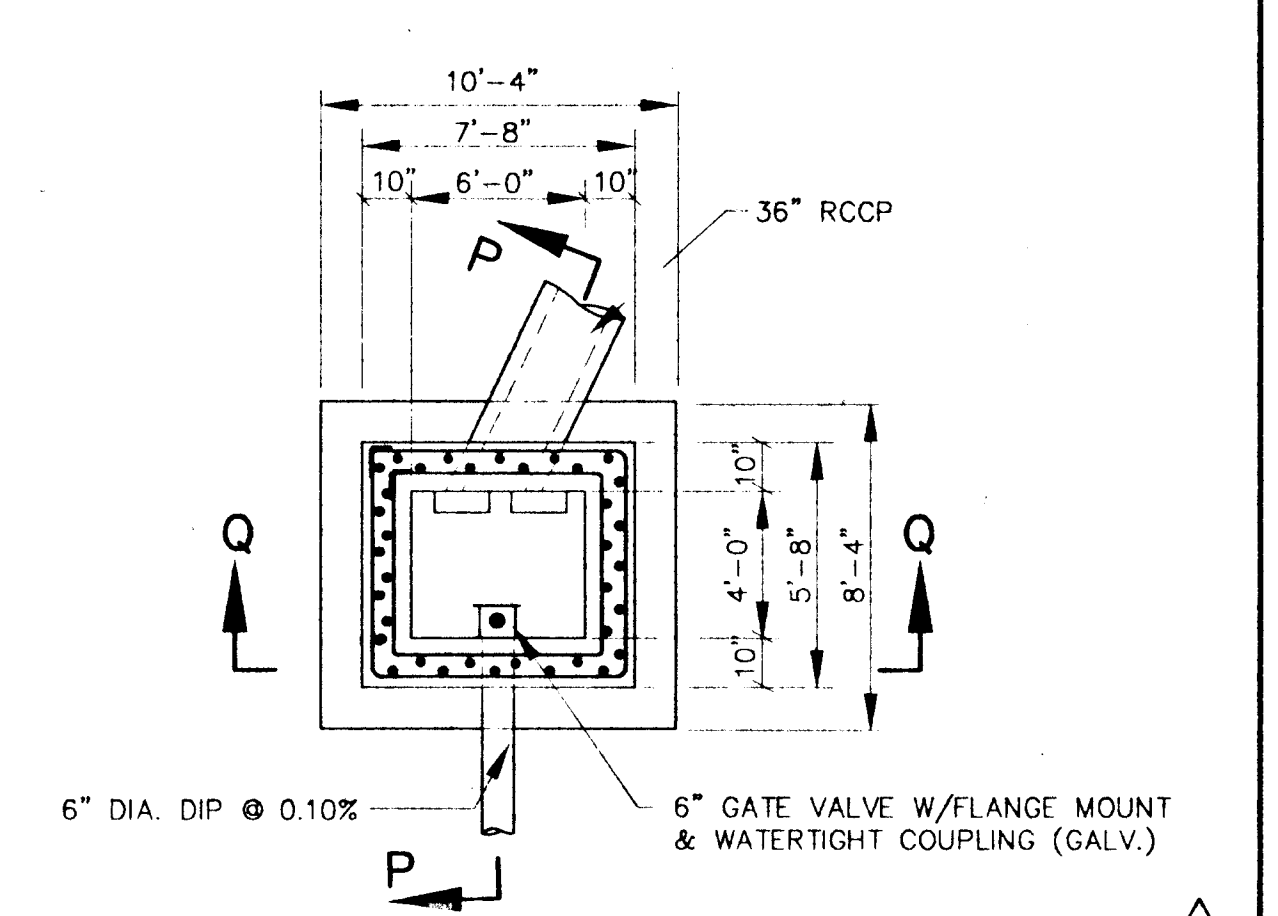


SECTION P-P (N.T.S.)

SECTION Q-Q (N.T.S.)



TOP SLAB PLAN (N.T.S.)



PLAN (BELOW TOP SLAB) (N.T.S.)

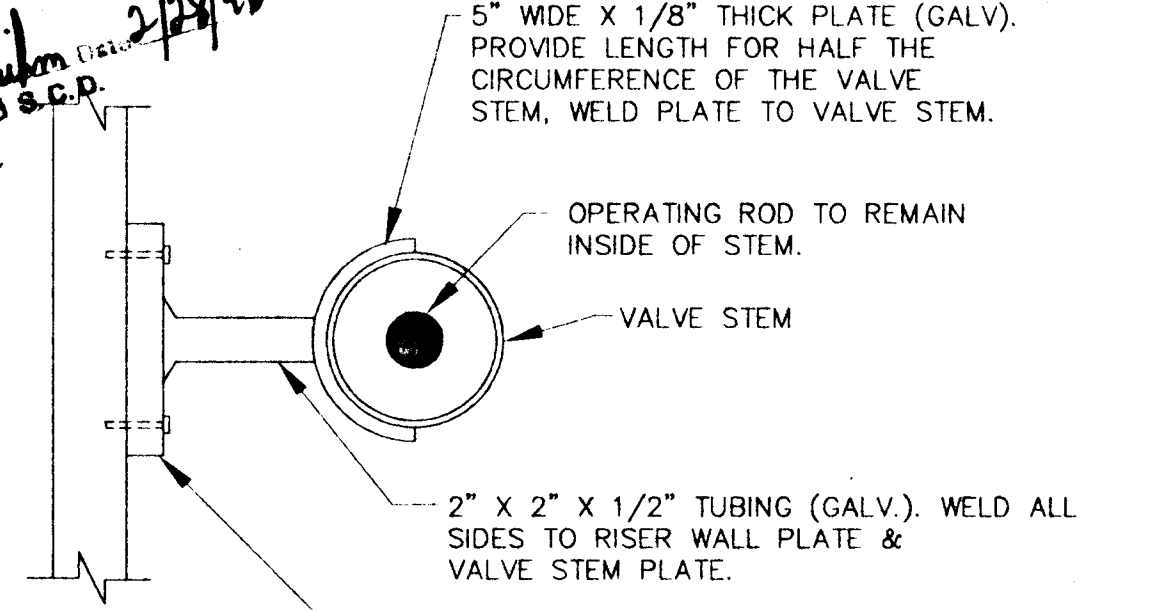
TYPE A2 PIPE CRADLE DETAIL (N.T.S.)

- NOTES
1. CONCRETE SHALL CONFORM TO MARYLAND D.O.T. S.H.A. STANDARD SPEC'S FOR CONSTRUCTION AND MATERIALS, MIX NO.6, EXCEPT THAT TYPE III CEMENT AND A.S.T.M. C33 NO.8 COARSE AGG. SHALL BE USED.
  2. ALL PIPES CONNECTING TO RISER SHALL HAVE WATERTIGHT CONNECTIONS.
  3. RISER SHALL BE CONSTRUCTED USING CAST-IN-PLACE CONCRETE.
  4. ALL REINFORCING STEEL TO HAVE A MIN. OF 2" OF COVER UNLESS NOTED OTHERWISE.

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

Approved: *Robert J. Sullivan* Date: 2/28/96  
Howard County D.P.W.

Reviewed for: HOWARD COUNTY S.C.D. Name: *Howard County S.C.D.* and meets Technical Requirements Signature: *J. H. Williams* Date: 2/28/96  
USDA, NATURAL RESOURCES CONSERVATION DISTRICT



VALVE SUPPORT SYSTEM DETAIL (N.T.S.)

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

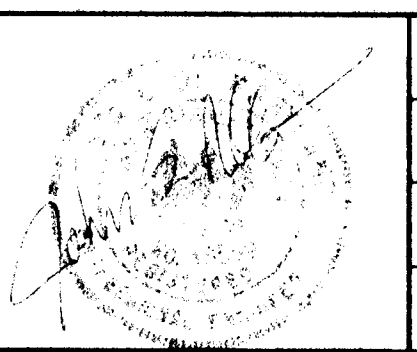
*Raymond J. Lewis* 12/16/95  
DIRECTOR, PUBLIC WORKS DATE

*Robert J. Sullivan* 1-16-96  
CHIEF, BUREAU OF HIGHWAYS DATE

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELlicott CITY, MARYLAND 21042

PHONE: (410) 995-3651 FAX: (410) 995-1363



DES:	J.S.N.		
DRN:	SMI/RPS		
CHK:	C.S.N.	J.S.N. Δ REVISIONS TO RISER STRUCTURE	12/18/95
DATE:	NOV. 1995	J.S.N. Δ SHEET REISSUED DUE TO SWM POND REVISIONS	12/12/95
	BY NO.	REVISION	DATE

STORMWATER MANAGEMENT POND  
PROFILES

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELlicott CITY, MARYLAND

SCALE AS SHOWN  
SHEET 18 OF 19

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, disking or other acceptable means before seeding, if not previously loosened.

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

1. Preferred--Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk 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 (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding--For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) - 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) - Use sod. Option (3) - Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching--Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 21B 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 seeding areas and make needed repairs, replacements and reseeds.

TEMPORARY SEEDING NOTES

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

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

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

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

Mulching--Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 21B gal per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 ft. or higher, use 348 gal per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

STANDARD SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (313-1850).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
- Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- 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 seeding (Sec.51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis
 

Total Area of Site	1.6 Acres
Area Disturbed	1.5 Acres
Area to be roofed or paved	0.0 Acres
Area to be vegetatively stabilized	1.5 Acres
Total Cut	13,000 Cu. Yds.
Total Fill	2,000 Cu. Yds.
Offsite Waste/Borrow Area Location	To Be Determined By Contractor
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County 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.
- Trenches for the construction of utilities is limited to three pipe lengths or that which can be backfilled and stabilized within one working day, whichever is shorter.

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

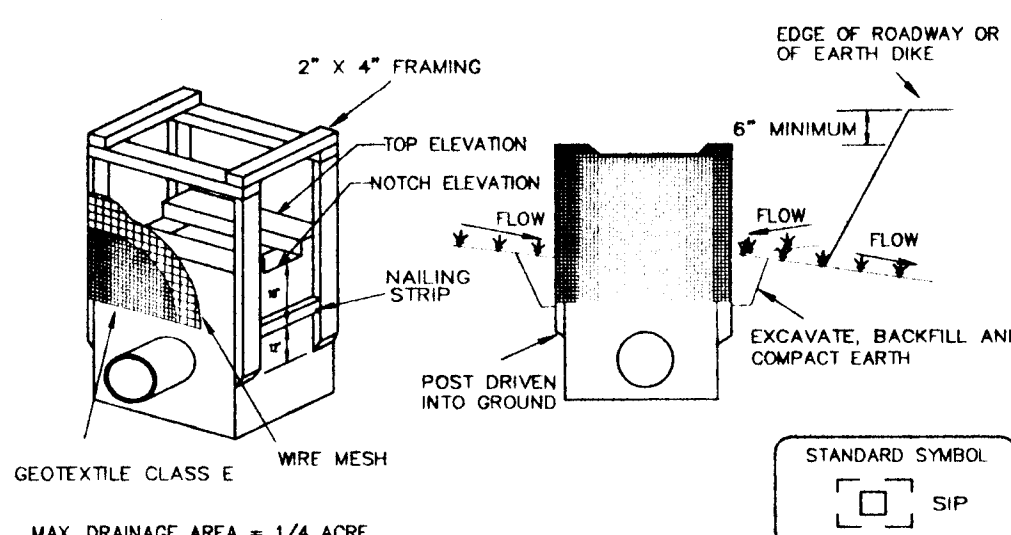
Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-18-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

- Obtain grading permit for the project. (2 Days)
- Install sediment controls installed under SDP 95-77 and correct any deficiencies found to the satisfaction of the sediment control inspector. (2 Days)
- Construct and stabilize ditches and place roadway paving. (2 Months)
- Install sediment controls as shown for pond construction. (2 Days)
- Construct stormwater management pond. (1 Month)
- After stormwater management pond is stabilized and permission is granted by the sediment control inspector, remove sediment controls placed for the stormwater management pond and stabilize any remaining disturbed areas. (2 Days)
- After permission is granted by the sediment control inspector, remove sediment controls placed for the roadway platform grading under SDP 95-77. (2 Days)

DETAIL 23A - STANDARD INLET PROTECTION

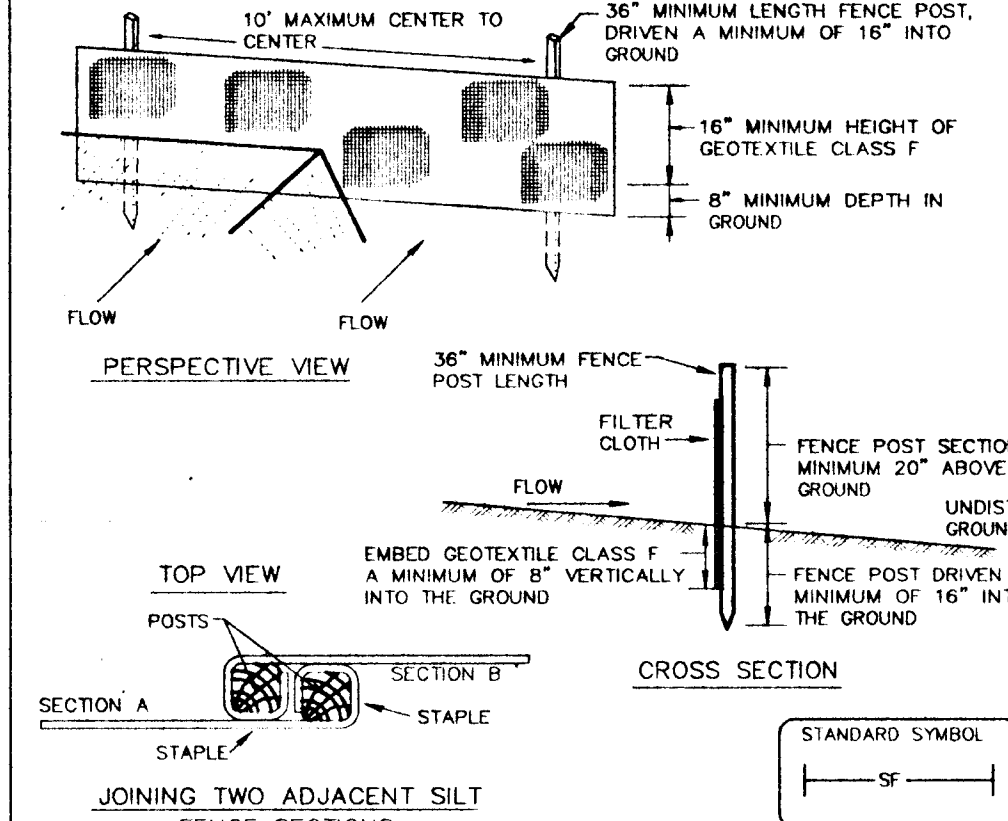


MAX. DRAINAGE AREA = 1/4 ACRE  
Construction Specifications

- Excavate completely around the inlet to a depth of 18" below the notch elevation.
- Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (wire) must be 6" below adjacent roadways where flooding and safety issues may arise.
- Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
- Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
- Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
- If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
- The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-18-5 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



Construction Specifications

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 1 or U section weighing not less than 11.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> / minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-18-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

By the Owner/Developer:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

*Paul J. Egan*  
Signature of Owner/Developer  
Print name below signature

12/13/95  
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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

*Julius S. Nolas*  
Signature of Engineer  
Print name below signature

12/13/95  
Date

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.

*J. H. Woodliff*  
Natural Resources Conservation Service

2/28/96  
Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District

*Robert W. Zichem*  
Howard S.C.D.

2/28/96  
Date

AS-BUILT CERTIFICATION

I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plans and meets the approved plans and specifications.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Certify means to state or declare a professional opinion based upon onsite inspections and material tests which are conducted during construction. The onsite inspections and material tests are those inspections and tests deemed sufficient and appropriate by commonly accepted engineering standards. Certify does not mean or imply a guarantee by the engineer nor does an engineer's certification relieve any other party from meeting requirements imposed by contract, employment, or other means, including meeting commonly accepted industry practices.

OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards and Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

**NOTE: THIS PLAN FOR SEDIMENT AND EROSION CONTROL USE ONLY.**

MARSHALEE DRIVE

STORMWATER MANAGEMENT POND PLAN VIEW

SCALE: 1"=50'

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

NOLAN ASSOCIATES, INC.  
ENGINEERS - CIVIL/STRUCTURAL/INSPECTIONS

4785 DORSEY HALL DRIVE  
SUITE 124  
ELLCOTT CITY, MARYLAND 21042  
PHONE: (410) 995-3651 FAX: (410) 995-1363



DES:	J.S.N.	J.S.N.	A	SHEET REISSUED DUE TO POND REVISIONS	12/12/95
DRN:	SMI/RPS				
CHK:	C.S.N.				
DATE:	NOV. 1995	BY	NO.	REVISION	DATE

STORMWATER MANAGEMENT POND  
SEDIMENT CONTROL  
PLAN AND DETAILS

MARSHALEE DRIVE  
CAPITAL PROJECT J-4136  
ELECTION DISTRICT NO. 1  
ELLCOTT CITY, MARYLAND

SCALE:  
AS SHOWN  
SHEET  
19 OF 19