

SHEET NO. 9

ARD-1					GROUND ELEVATION 179.5	
DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOON PER 6"	STANDARD	IDENTIFICATION	REMARKS
1		1			Topsoil	
2		2			Brown fine to medium silty SAND (SM)	
3						
4		3			Same	Rock cuttings 5-6' depth
5						
6		4			Gray fine silty SAND with mica (rock cuttings)	Dry
7					End of Boring at 6'-0"	
8						Auger Refusal at 6'

DATE, START 6/3/87 FINISH 6/3/87

SHEET NO. 9

ARD-2					GROUND ELEVATION 179.0	
DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOON PER 6"	STANDARD	IDENTIFICATION	REMARKS
1		1			Brown fine to medium silty SAND (top soil)	
2		2			Brown fine to medium silty SAND trace root fibers (SM)	Unobstructed drilling to 6'
3						
4		3			Yellowish brown, fine SAND, and clayey silt. trace mica (SM-SC)	
5						
6		4			Same	Small rock or obstruction but fairly easy drilling
7						
8		5			Yellowish brown medium to fine SAND some silt, trace mica. (SM)	
9						
10		6			Same (little gravel)	Stopped at 10' depth per instructions from Corps via TPK/JEC
11					End of Boring at 10'-0"	
12						

DATE, START 6/3/87 FINISH 6/3/87

SHEET NO. 9

ARD-3					GROUND ELEVATION 179.2	
DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOON PER 6"	STANDARD	IDENTIFICATION	REMARKS
1		1			Topsoil	
2					Brown medium to fine silty SAND (SM)	
3		2			Yellowish brown medium to fine silty SAND (SM)	
4						
5		3			Same	
6						
7		4			Very pale brown fine SILT with mica (rock fragments) (SP)	Gray fine material with mica very dry
8					End of Boring at 6'-0"	
						Auger refusal at 6'

DATE, START 6/1/87 FINISH 6/1/87

SHEET NO. 9

ARD-4					GROUND ELEVATION 180.4	
DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOON PER 6"	STANDARD	IDENTIFICATION	REMARKS
1		1			Topsoil	
2		2			Brown medium to fine silty SAND (SM)	
3						
4		3			Brown medium to fine silty SAND with gravel and rock fragments (SP)	Cobbles at 3' hit some boulders or gravel
5						
6		4			Same	
7						
8		5			Same	
9						
10		6			Same	
11						
12		7			Same	Trace of gravel
13						
14		8			Same	Net at approx. 15' during drilling
15						
16		9			Same	
17						
18					End of boring at 17'-0"	Auger refusal at 17'-0"

DATE, START 6/1/87 FINISH 6/1/87

SHEET NO. 9

ARD-5					GROUND ELEVATION 178.8	
DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOON PER 6"	STANDARD	IDENTIFICATION	REMARKS
1		1			Brown medium to fine silty SAND (SM)	
2		2			Same	Some reddish fine material at bottom possibly brick.
3						Auger refusal at 1'-6"
4					Bottom of boring at 1'-6"	

DATE, START 5/29/87 FINISH 5/29/87

SHEET NO. 9

ARD-6					GROUND ELEVATION 178.5	
DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOON PER 6"	STANDARD	IDENTIFICATION	REMARKS
1		1			Brown medium to fine SAND (SM)	
2		2			Reddish brown fine to medium SAND with rock fragments and gravel (SP)	Rock fragments on auger cuttings
3					End of Boring at 2'-0"	
4						
5						Auger refusal at 2'-0"

DATE, START 6/1/87 FINISH 6/1/87

SHEET NO. 9

ARD-6A					GROUND ELEVATION 178.5	
DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOON PER 6"	STANDARD	IDENTIFICATION	REMARKS
1					Reddish brown fine to medium silty SAND (brick fragments) (SM)	
2		*			Red brick and mortar	Augered into brick
3						
4					End of Boring 4'-0"	
5						*Two samples taken (1) red fine auger cuttings (ground brick)
6						(2) red lumps (gray inside) (mortar coated with red brick powder)
7						
8						
9						Drilled through 3' of brick in about 10 minutes
10						
11						Mortar lumps easily crushed with hammer
12						

DATE, START 6/3/87 FINISH 6/3/87

SHEET NO. 9

ARD-7					GROUND ELEVATION 179.9	
DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOON PER 6"	STANDARD	IDENTIFICATION	REMARKS
1		1			Topsoil	
2		2			Brown medium to fine silty SAND trace root fibers (SM)	
3					Brown medium to fine silty SAND (SM)	
4		3			Brown medium to fine silty clayey SAND (SM-SC)	Some gravel or boulders encountered but fairly easy drilling
5						
6		4			Brown medium to fine silty, clayey SAND (SM-SC)	
7						
8		5			Brown medium to fine silty, clayey SAND (SM-SC)	
9						
10		6			Same	
11					End of boring at 10'-6"	Auger refusal at 10'-6"
12						

DATE, START 5/29/87 FINISH 5/29/87

NOTES :

- FOR GENERAL SUBSURFACE EXPLORATION NOTES, SEE SHEET NO. 39.
- GROUND ELEVATIONS INTERPOLATED FROM EXISTING CONTOURS.

RECORD DRAWING
OF WORK-AS-BUILT

CONTRACTOR: GENERAL BORING, INC.

Revision	Description	Date	Approved
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS NEW YORK, NEW YORK			
Designed by:	SAW MILL RIVER NEW YORK ARDSLEY FLOOD CONTROL PROJECT		
Drawn by: B.B.			
Checked by: G.W.	SUB-SURFACE EXPLORATIONS		
Reviewed by:	Approval Recommended:	Sheet reference number	Date: 20 JULY 1987
Concurred:	Approved by:	CC-ARD-441	Scale: AS SHOWN
		Sheet 41 of 44	

SHEET NO. 9
DH-18A GROUND ELEVATION 166.7

DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOOD PER 6" STANDARD	IDENTIFICATION	REMARKS
1		1	2	Topsoil	
2			7	Brown medium to fine SAND with rock fragments (SP)	
3			7		Casing advanced by rotary drilling to 22' depth.
4					
5			5	Same	
6		2	8		100% drilling water loss from beginning to top of rock
7			4		
8					
9					
10			7	Brown and gray coarse to fine SAND and gravel, rock fragments (GM-GC)	
11		3	5		
12			1		
13					
14					
15			7	Same	
16		4	7		Casing to 22' depth. Began rock coring at 22'.
17			12		
18			6		
19					
20			6	Brown medium to fine silty sand, wet (SM-SC)	
21		5A	4		Top of rock at 21'6"
22		5B	100/5"	Gray mica schist, severely weathered (decomposed)	
23		Run 1		See description on 2 of 3	
24		Run 1		Gray (Manhattan Formation-Ordovician)	Run 1 core was lost on first attempt to recover. Poor quality core recovered.
25				(Muscovite mica quartz, plagioclase, biotite in abundance sporadic garnet)	REC=70% RQD=20
26					
27				Gray pelitic mica SCHIST, very slightly weathered, slightly fractured, hard, massive	
28					REC=100% RQD=88
29		Run 2			Fractures-slight water loss starting at 30' depth
30					
31					
32				Same	
33					
34		Run 3			REC=100% RQD=63
35					
36				Same	
37					
38					REC=97% RQD=82
39		Run 4			
40					
41				Same	
42					REC=93% RQD=37
43					
44		Run 5			
45					
46				Same	
47					REC=100% RQD=100
48		Run 6			
49					
50				End of Boring at 50'-0"	Water at 20.5' at completion of drilling-1:45pm

DATE, START 5/11/87 FINISH 5/12/87

SHEET NO. 9
DH-19A GROUND ELEVATION 167.1

DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOOD PER 6" STANDARD	IDENTIFICATION	REMARKS
1		1	2	Topsoil	
2			7	Brown silty SAND, trace clay (SM-SC)	
3			4		*Flush joint (FJ) casing advanced by rotary drilling to 16.6' depth.
4					Total loss of water from beginning to top of rock.
5			5	Brown silty, SAND with rock fragments (SP)	
6		2	5		
7			11		
8					
9					
10			3	Brown and gray fine silty SAND, (SM)	
11		3	3		
12			18		
13					Casing to 16.6' started rock coring at 17.0'
14					
15			14	Brown medium to fine silty SAND, rock fragments (SP)	
16		4	24		Top of rock at 16'-2"
17			100/2"	Gray pelitic mica SCHIST, very slightly weathered to fresh, massive, hard	REC=90% RQD=90
18				(Manhattan Formation-Ordovician)	Some loss of water during rock coring
19		Run 1		(Muscovite mica, quartz, plagioclase, biotite in abundance sporadic garnet.)	
20					
21					
22		Run 2			
23					
24		Run 2		Gray pelitic mica SCHIST, very slightly weathered, slightly fractured, massive hard	REC=100% RQD=93
25					
26		Run 2			
27					
28					
29		Run 3			REC=93% RQD=88
30					
31					
32					
33					
34		Run 4			REC=100% RQD=91
35					
36					
37					
38					
39		Run 5			REC=98% RQD=98
40					
41					
42					
43					
44		Run 6		Same	REC=98% RQD=98
45					
46					
47					
48		Run 7			
49					
50				End of Boring at 50'-0"	REC=100% RQD=100

DATE, START 5/12/87 FINISH 5/13/87

SHEET NO. 9
DH-20A GROUND ELEVATION 178.8

DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOOD PER 6" STANDARD	IDENTIFICATION	REMARKS
1		1	2	Topsoil	
2			1	Brown fine to medium silty SAND (SM)	
3			1		Drilled with few obstructions to 5' (boulders)
4					
5			7	Brown medium to fine silty SAND with gravel (rock fragments) (SP)	
6		2	23		
7			30		Decomposed rock about 8.5'
8			38		Refusal at 10'
9					
10					
11	min/ft	3	100/1"	Gray pelitic mica SCHIST, severely weathered fractured	Top of rock at 10' Recovery 87% RQD=18
12		Run 1			high angle and vertical fractures 100% water loss at about 16'
13					
14					
15					
16		Run 2		Gray pelitic SCHIST, severely weathered severely fractured	Recovery 100% RQD=37
17					
18					
19					
20					
21				End of Boring at 20'-0"	

DATE, START 6/3/87 FINISH 6/3/87

SHEET NO. 9
DH-22A GROUND ELEVATION 177.4

DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOOD PER 6" STANDARD	IDENTIFICATION	REMARKS
1		1	2	Dark Brown fine silty SAND (SM)	
2			2		
3			4		
4					
5			6	Brown medium to fine silty SAND (SM)	
6		2	13		
7			25		
8					
9					
10			10	Brown medium to fine silty SAND with rock fragments (SP)	wet
11		3	12		
12			14		
13			12		
14					
15			10	Brown coarse to fine silty SAND with rock fragments (SP)	
16		4	14		
17			16		
18			24		
19					Auger to 20'
20					
21		5	100/4"	Decomposed rock	Recovered about 2" of decomposed rock
22				Bottom of Boring at 20'-4"	
23					

DATE, START 5/29/87 FINISH 6/1/87

SHEET NO. 9
DH-21A GROUND ELEVATION 179.8

DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOOD PER 6" STANDARD	IDENTIFICATION	REMARKS
1		1	1	Topsoil	
2			1	Brown medium to fine silty clayey SAND (SM)	Some boulders encountered
3			4		
4					
5				Brown medium to fine silty SAND (SP)	
6			30	Rock fragments	
7		2	100/3"		
8					Auger sample to 7' Cored through boulder at 7', 1' thick. 75% core recovered
9					
10			25	Brown coarse to fine silty SAND with rock fragments (SP)	Poor recovery 8%
11	min/ft	3	13		Advanced casing to 12.5'
12			16		Recovery 90% RQD 47
13		2	18	Gray mica SCHIST, slightly weathered, slightly fractured	
14		Run 1			
15					
16					45-60° fracture angle
17		Run 2		Gray mica SCHIST, slightly fractured, slightly weathered	Recovery 93% RQD 75
18					
19					
20		3			
21				End of Boring at 20'-0"	
22					
23					

DATE, START 6/2/87 FINISH 6/2/87

SHEET NO. 9
DH-23A GROUND ELEVATION 178.8

DEPTH FT.	CASING BLOWS	SAMPLE NO.	BLOWS ON SAMPLE SPOOD PER 6" STANDARD	IDENTIFICATION	REMARKS
1				Brown medium to fine silty SAND (SM)	
2	min/ft				
3				Bricks and Mortar	57" recovered
4	Run 1				
5					
6					
7					8" recovered
8	Run 2				
9			16	Brown medium to fine silty SAND and rock fragments (SP)	
10		1	19		
11			20		
12					
13					
14					
15			14	Brown gray coarse to fine SAND and Gravel (rock fragments) (GM-GP)	Cobbles at 17'
16		2	17		
17			27		
18			28		Top of rock at 18'
19		Run 3		Gray mica schist slightly weathered, slightly fractured	Recovery 88% RQD 65"
20					
21				End of Boring at 20'-0"	
22					
23					

DATE, START 6/3/87 FINISH 6/4/87

CONTRACTOR: GENERAL BORING, INC.

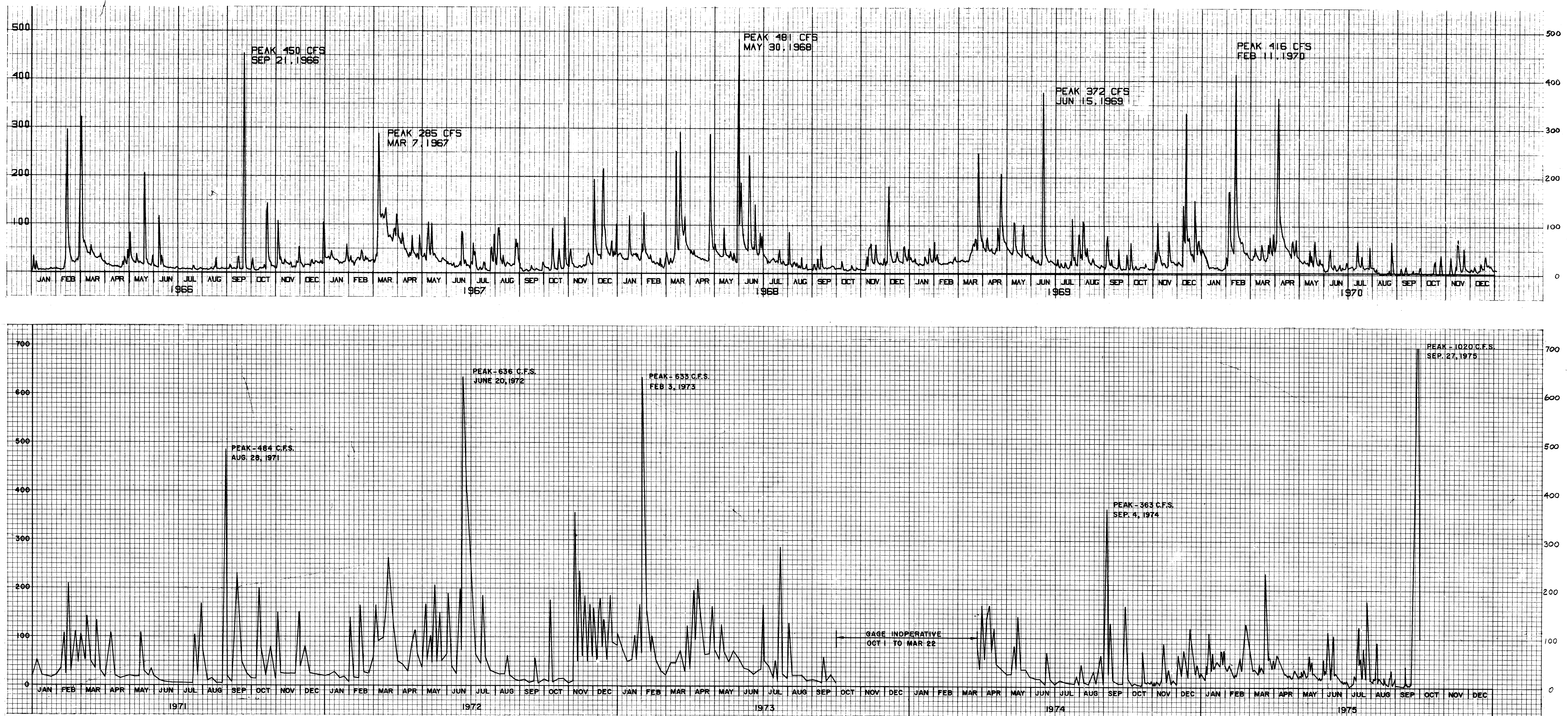
RECORD DRAWING
OF WORK AS SHOWN

NOTES:

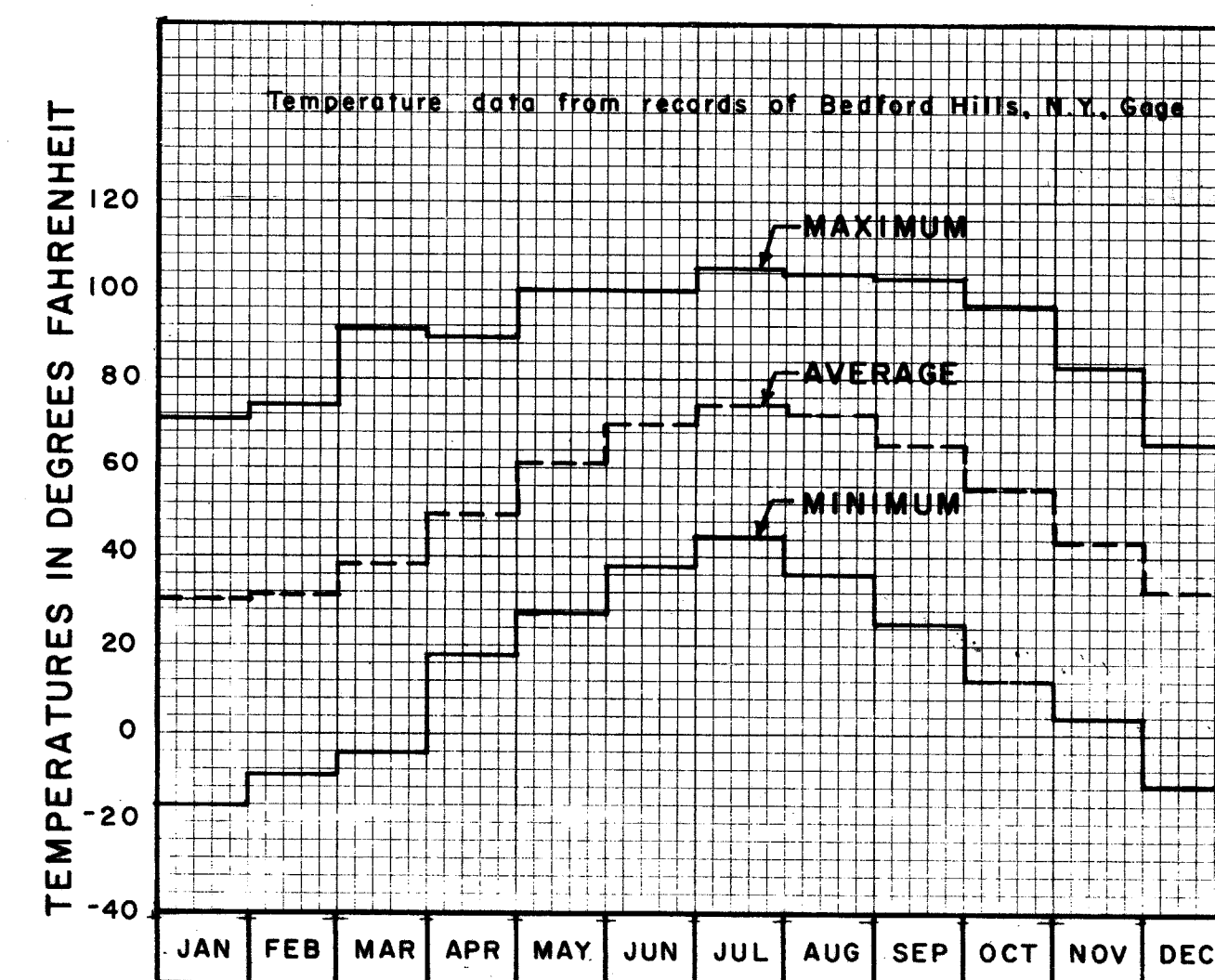
- FOR GENERAL SUBSURFACE EXPLORATION NOTES, SEE SHEET NO. 39.
- GROUND ELEVATIONS INTERPOLATED FROM EXISTING CONTOURS.

Revision	Description	Date	Approved
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS NEW YORK, NEW YORK			
Designed by:	SAW MILL RIVER NEW YORK ARDSLEY FLOOD CONTROL PROJECT		
Drawn by:	B. B.		
Checked by:	G. W.		
Reviewed by:	Approval Recommended:	Sheet reference number:	Date: 20 JULY 1987
Concurred:	Approved by:	CC-ARD-442	Scale: AS SHOWN
ACT. CHIEF DESIGN BRANCH		ACT. CHIEF DISTRICT ENGINEER	
Sheet 42 of 44			

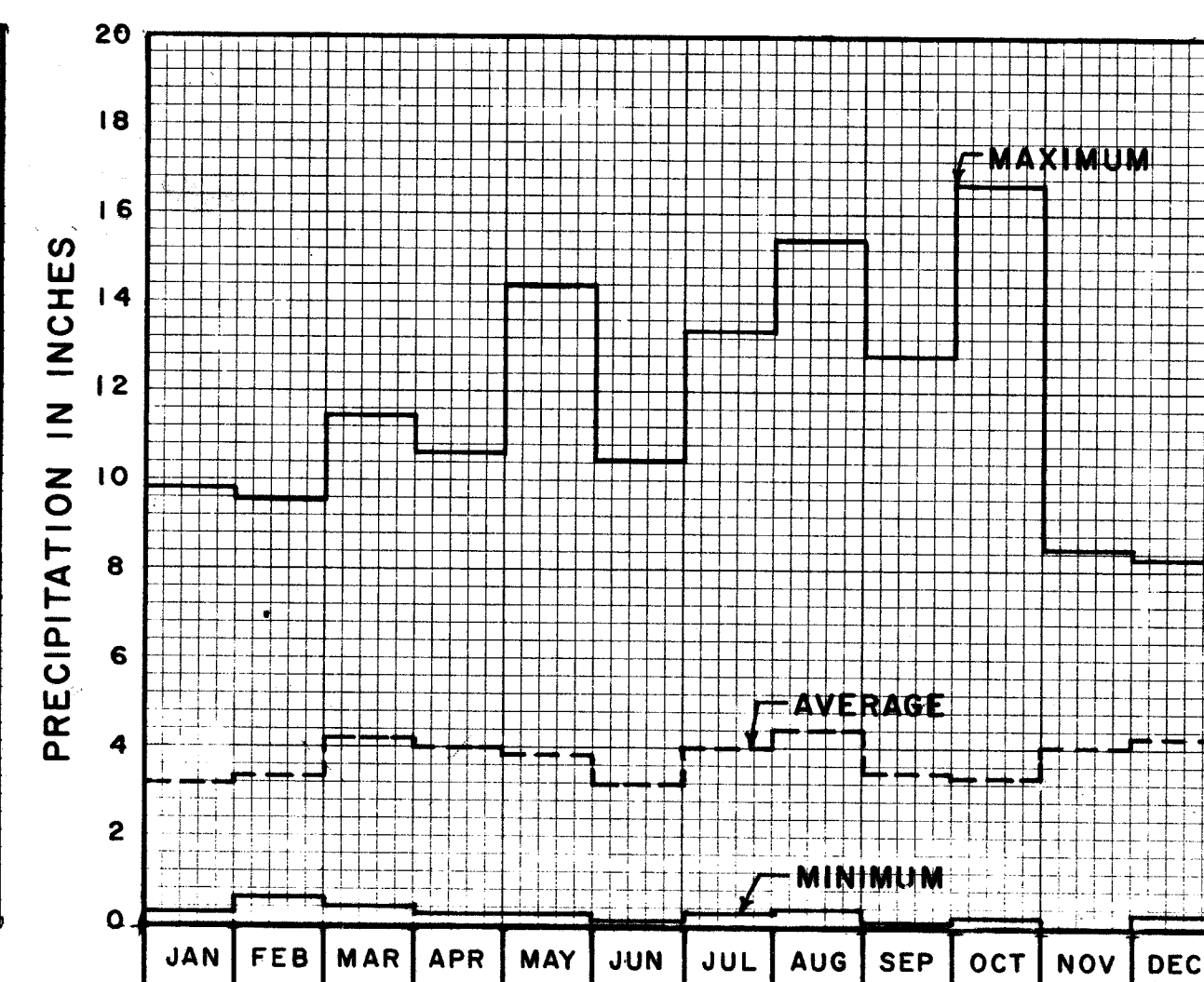
DISCHARGE IN C.F.S.



STREAM FLOW AT U.S.G.S STATION, SAWMILL RIVER AT YONKERS, NEW YORK



MONTHLY TEMPERATURES
Maximum and minimum data - Period of Record 1936-1972
Average data - Period of Record 1900-1972



MONTHLY PRECIPITATION
Period: 1944-1972

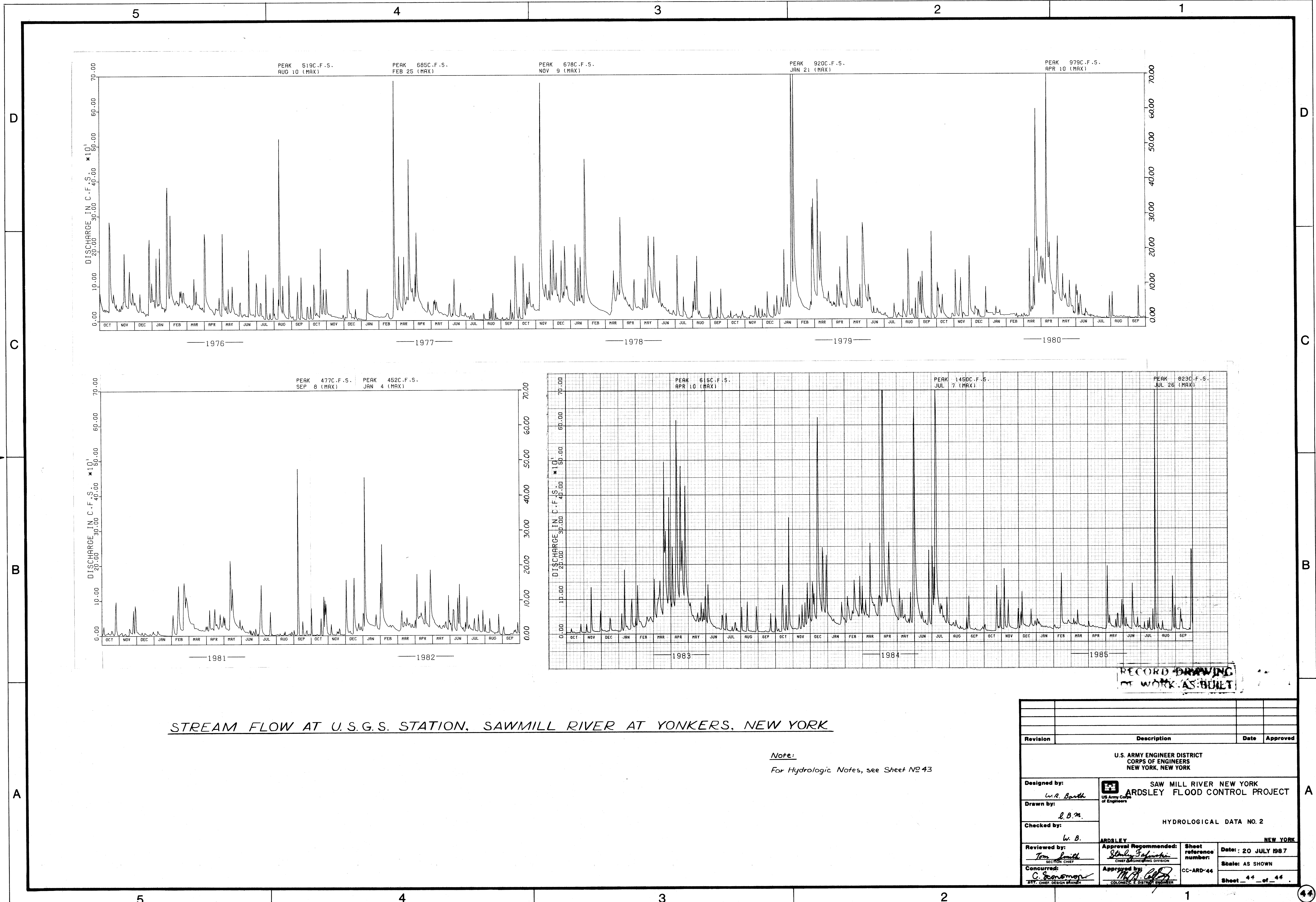
Hydrologic Notes:

Hydrologic data are only for the information of the contractor. The United States is not responsible for its accuracy or interpolation.

Discharge hydrographs are taken from the U.S. Geological Survey records for the stream gage on the Saw Mill River at Yonkers, New York, located on the left bank near the intersection of Nepperhan Avenue and Yonkers Aqueduct, 1.2 miles upstream from the mouth. Drainage area = 25.6 sq. miles.

The hydrographs show the Mean Daily Discharge except for noted peak discharges.

Revision	Description	Date	Approved
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS NEW YORK, NEW YORK			
Designed by: <i>W.R. Barth</i>			
Drawn by: <i>L.B.M.</i>			
Checked by: <i>W.B.</i>			
Reviewed by: <i>Tom Smith</i>			
Concurred by: <i>C. Deason</i>			
Approved by: <i>Stanley J. Johnson</i>			
SAW MILL RIVER NEW YORK ARDSLEY FLOOD CONTROL PROJECT			
HYDROLOGICAL DATA NO. 1			
NEW YORK			
Sheet reference number: CC-ARD-443		Date: 20 JULY 1987 Scale: AS SHOWN	
Sheet 43 of 44			

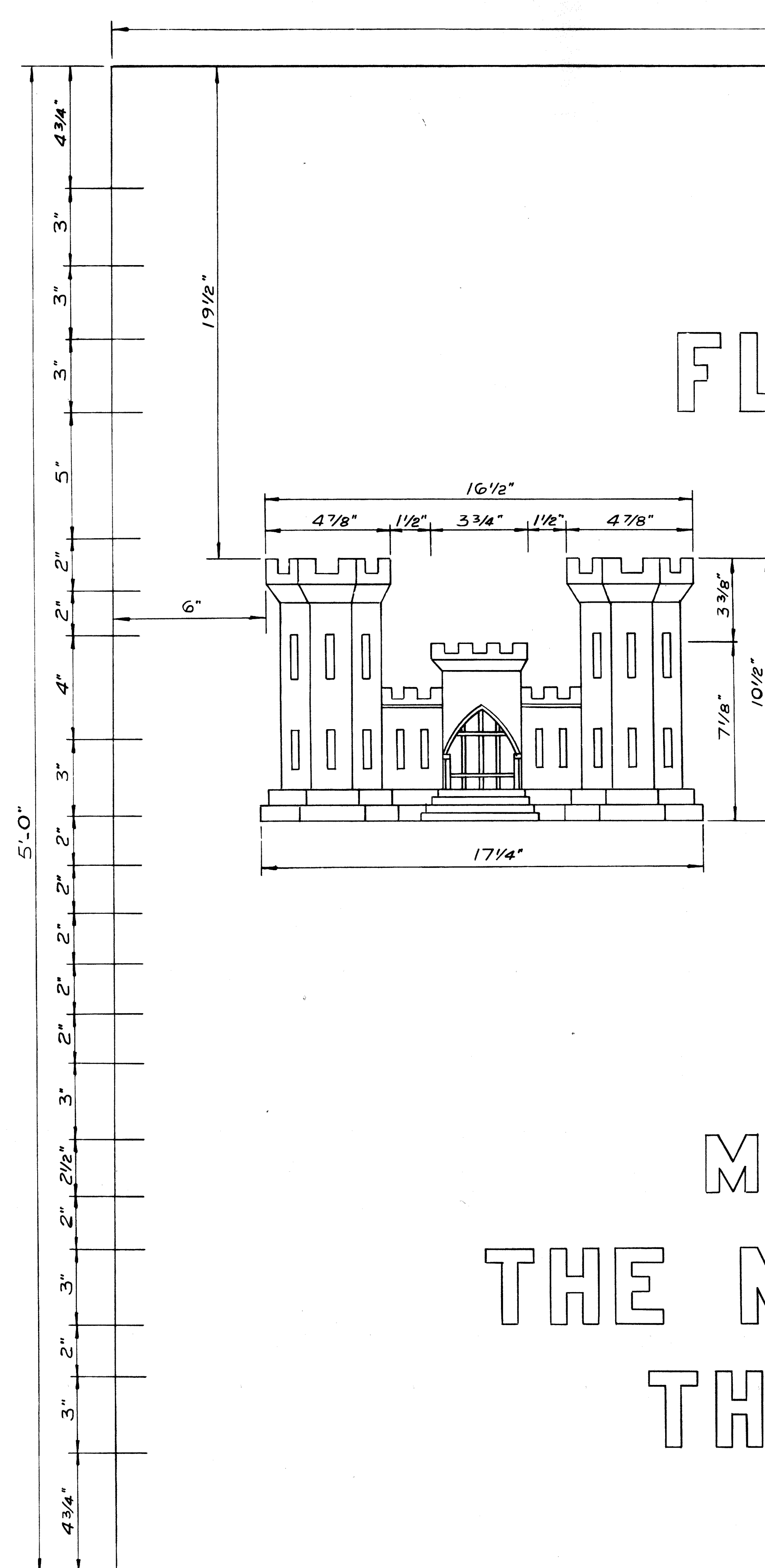


STREAM FLOW AT U.S.G.S. STATION, SAWMILL RIVER AT YONKERS, NEW YORK

Note:
For Hydrologic Notes, see Sheet No 43

RECORD DRAWING
OF WORK AS BUILT

Revision	Description	Date	Approved
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS NEW YORK, NEW YORK			
Designed by: <i>W.R. Barth</i>			
Drawn by: <i>L.B.M.</i>			
Checked by: <i>W.B.</i>			
Reviewed by: <i>Tom Smith</i>			
Concurred by: <i>C. Roman</i>			
SAW MILL RIVER NEW YORK ARDSLEY FLOOD CONTROL PROJECT			
HYDROLOGICAL DATA NO. 2			
Approval Recommended: <i>Stanley G. Gelfand</i>			
Approved by: <i>MA. C. Gelfand</i>			
Sheet reference number: CC-ARD-44			
Date: 20 JULY 1987			
Scale: AS SHOWN			
Sheet 44 of 44			



8'-0"

ARDSLEY

FLOOD CONTROL PROJECT

CONSTRUCTED BY

U.S. ARMY

CORPS OF ENGINEERS

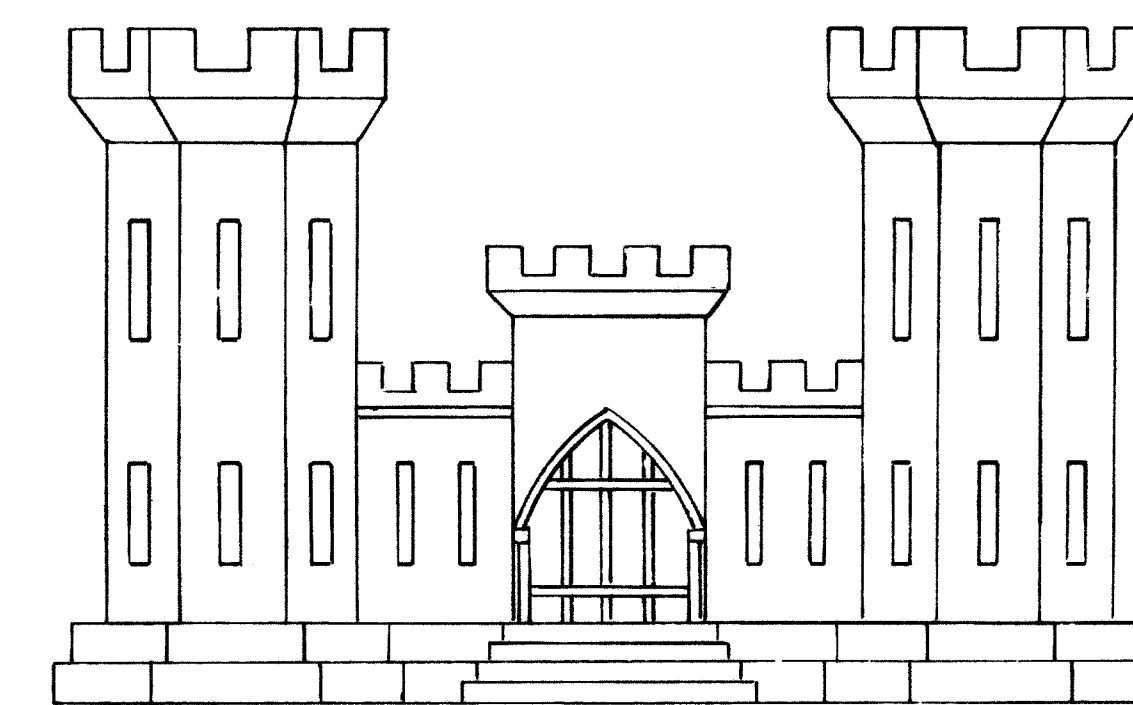
NEW YORK DISTRICT, NEW YORK

NORTH ATLANTIC DIVISION

MAINTAINED AND OPERATED BY

THE NEW YORK STATE D.E.C. AND

THE VILLAGE OF ARDSLEY

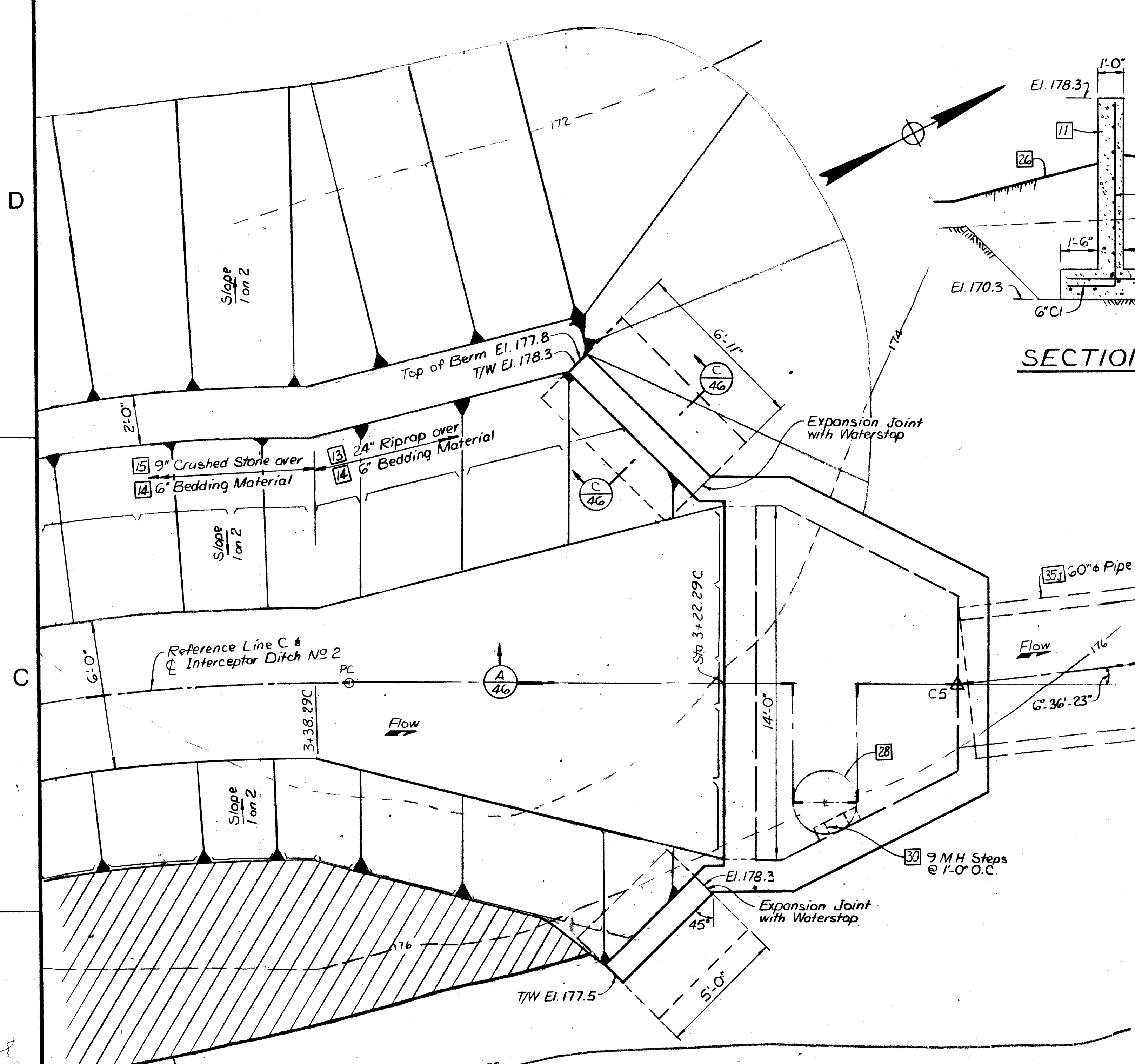


RECORD DRAWING
OF WORK AS-BUILT

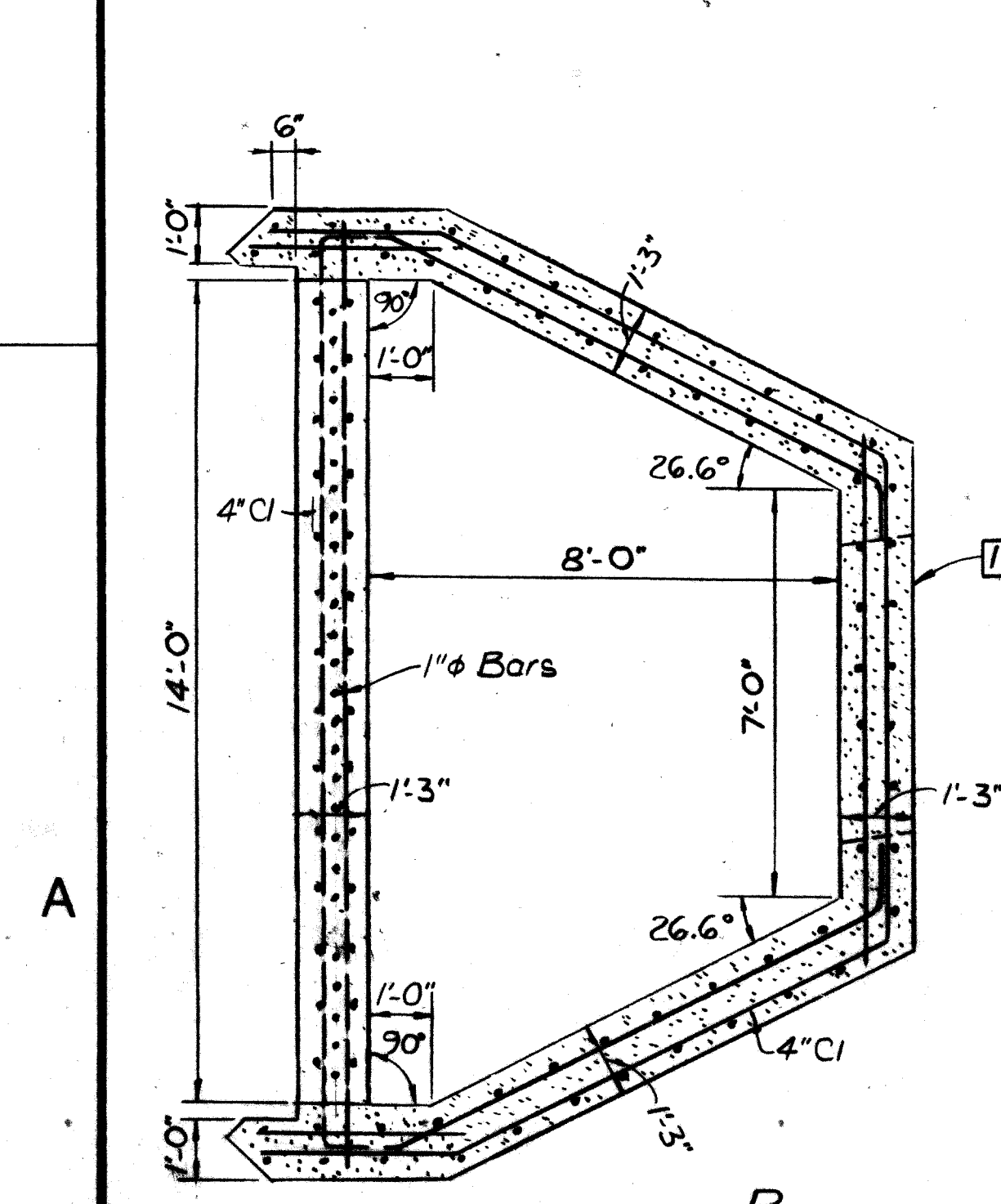
ENAMELED ALUMINUM SIGN
(Government Furnished)

Scale: 4" = 1'-0"

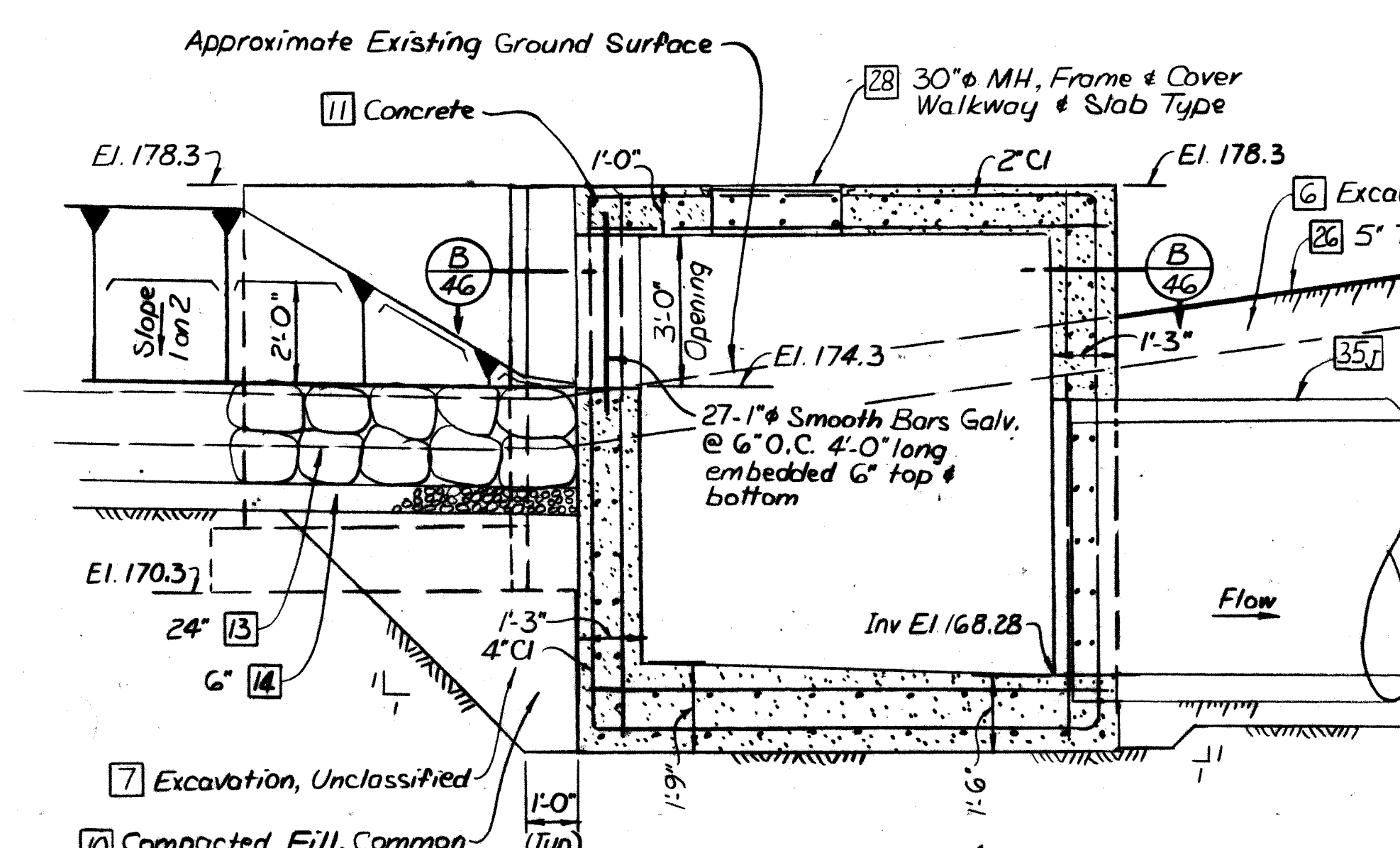
Revision	Description	Date	Approved
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS NEW YORK, NEW YORK			
SAW MILL RIVER, NEW YORK ARDSLEY FLOOD CONTROL PROJECT			
PERMANENT SIGN LETTERING - REFERENCE			
Designed by: <i>[Signature]</i>		NEW YORK	
Drawn by: <i>[Signature]</i>			
Checked by: <i>[Signature]</i>			
Reviewed by: <i>[Signature]</i>		Approval Recommended: <i>[Signature]</i>	
Consent: <i>[Signature]</i>		Approved by: <i>[Signature]</i>	
SECTION CHIEF		CHIEF, ENGINEERING DIVISION	
CHIEF, DESIGN BRANCH		CHIEF, DISTRICT ENGINEER	
Sheet reference number: CC-ARD-445		Date: 21 JUNE 1988	
Scale: AS SHOWN		Sheet 45 of 45	



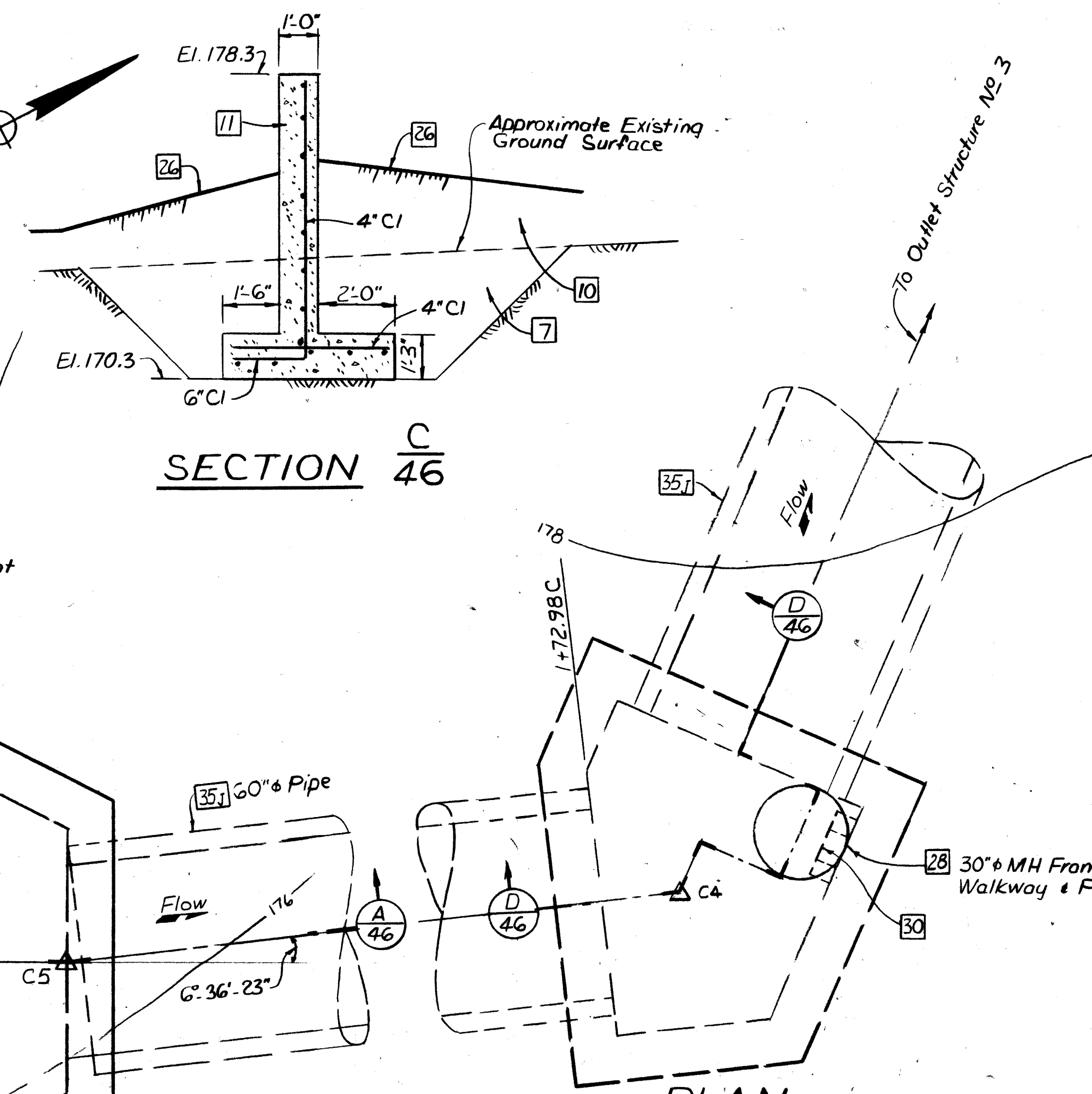
PLAN
INLET STRUCTURE NO 1



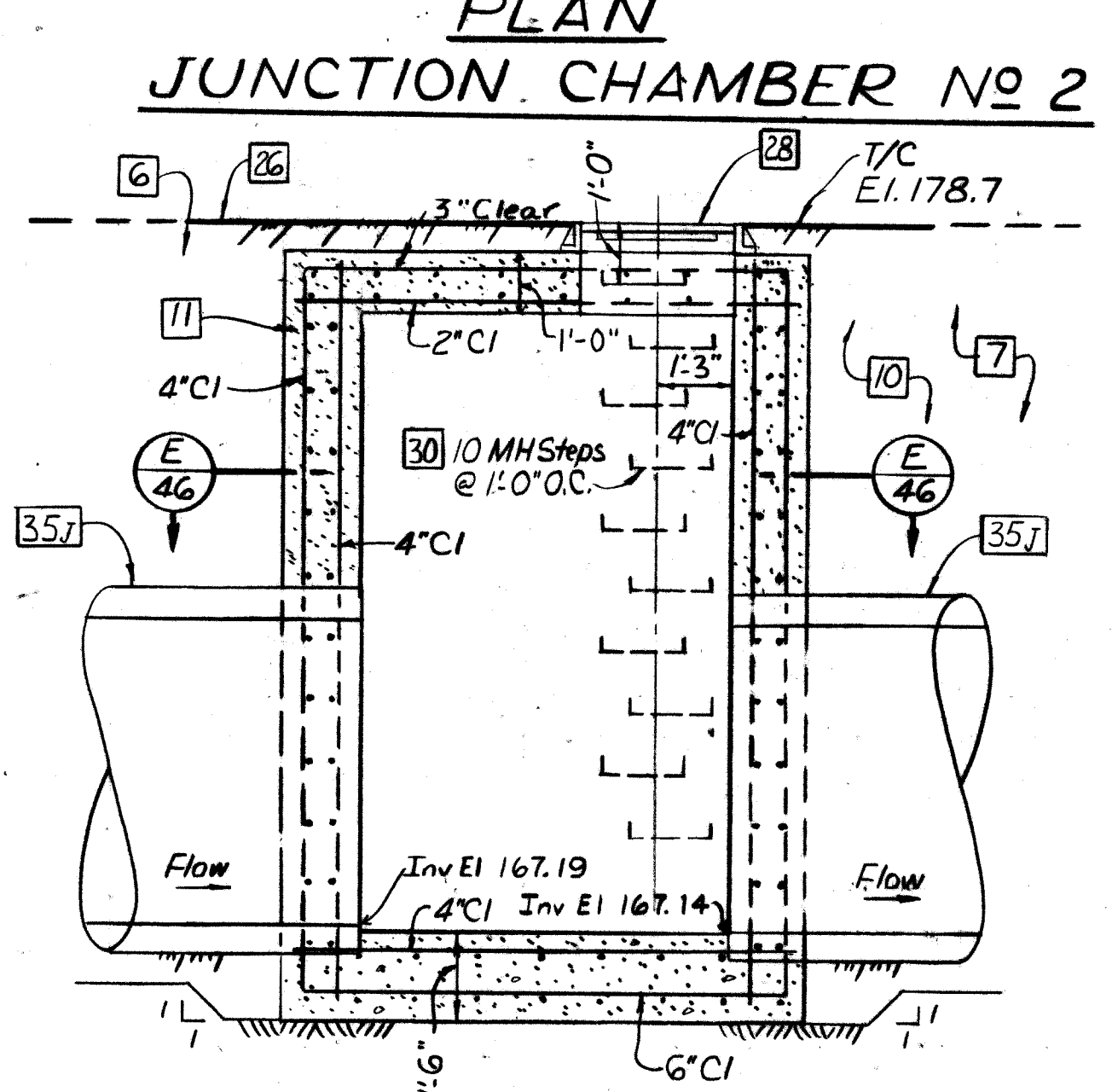
SECTION B
46



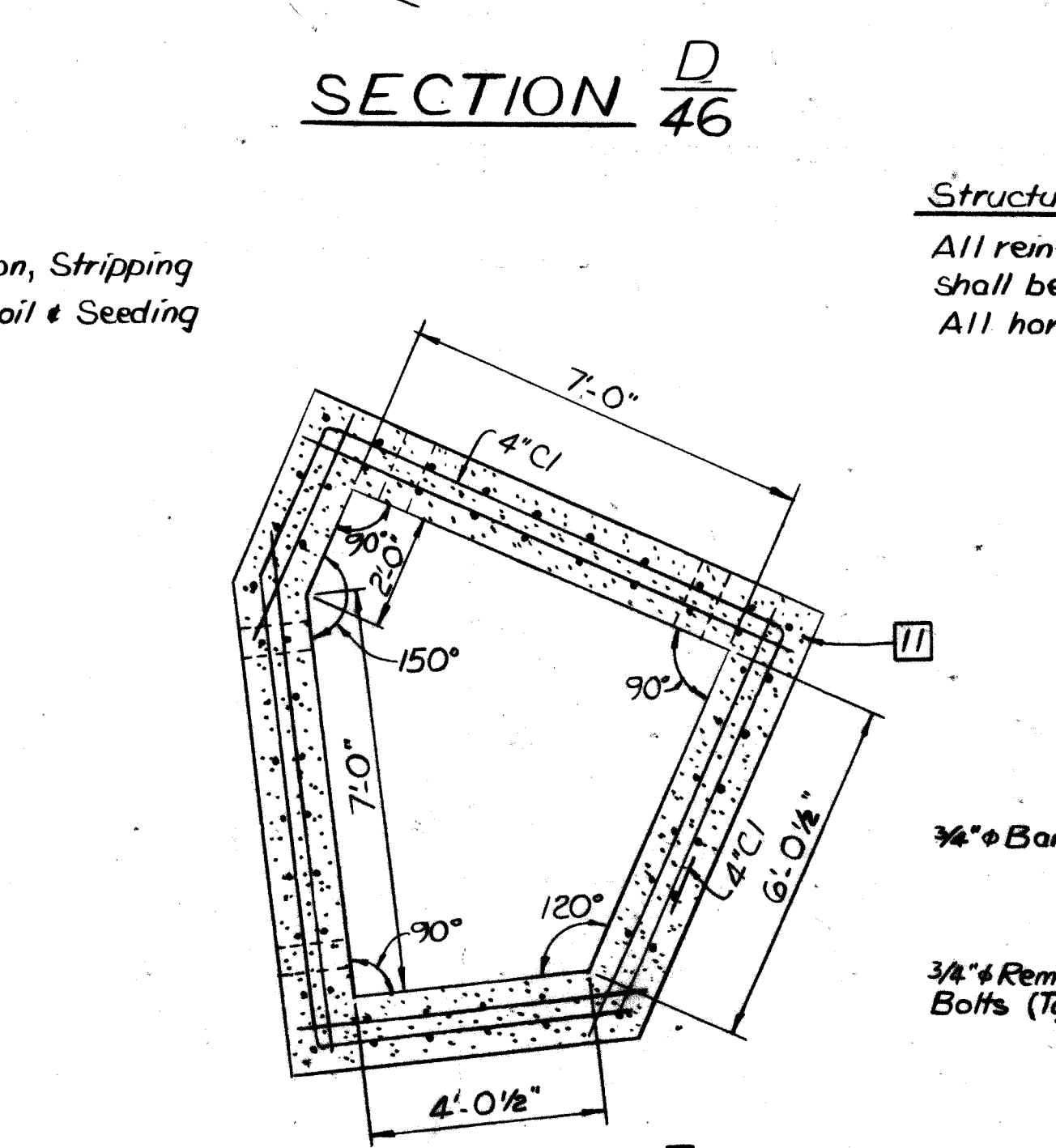
SECTION A
46



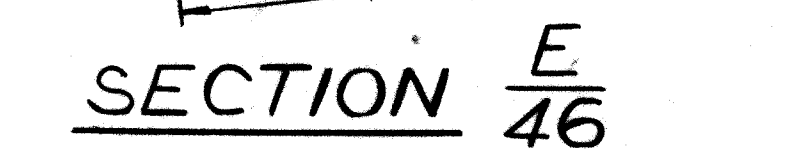
SECTION C
46



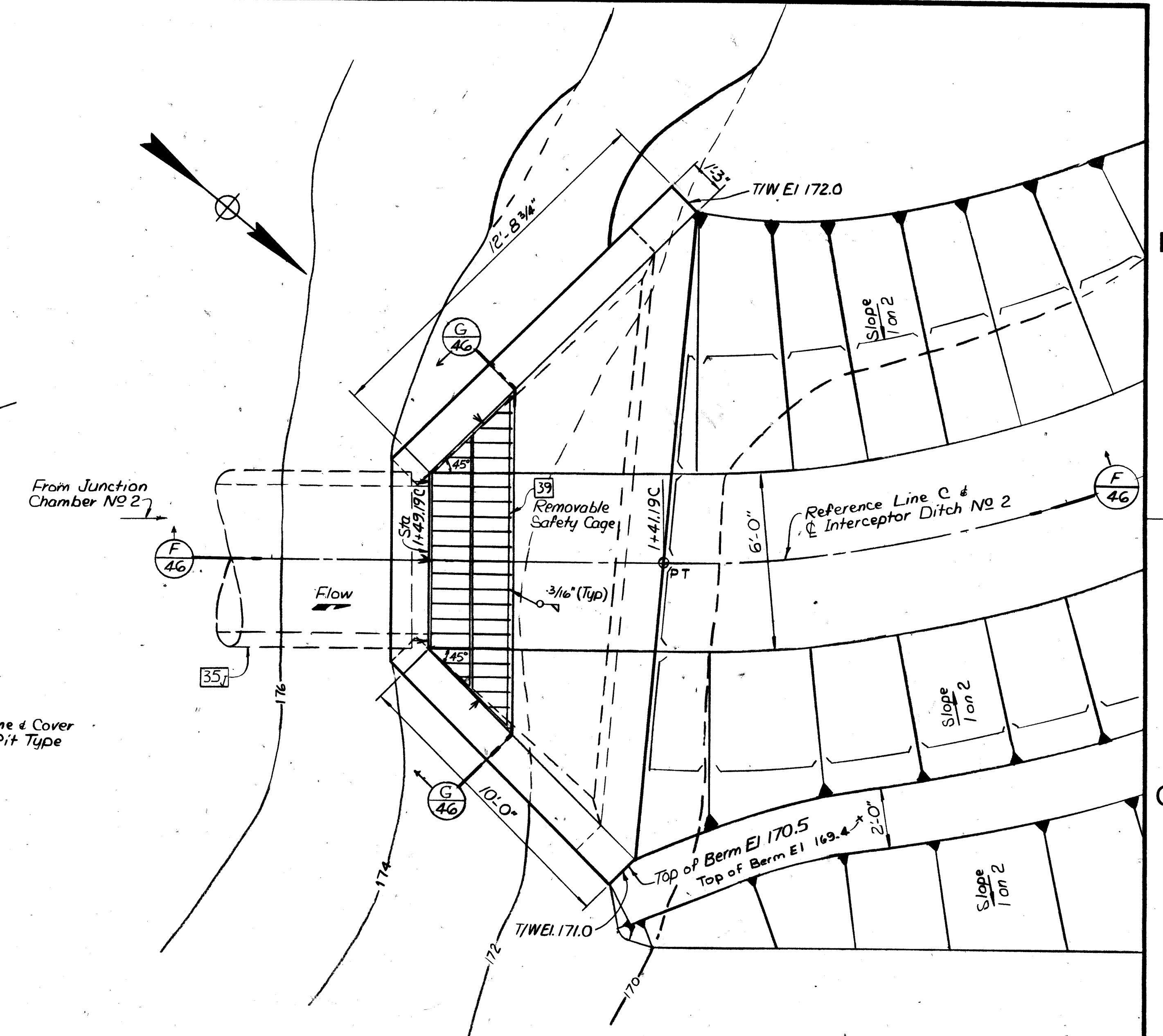
PLAN
JUNCTION CHAMBER NO 2



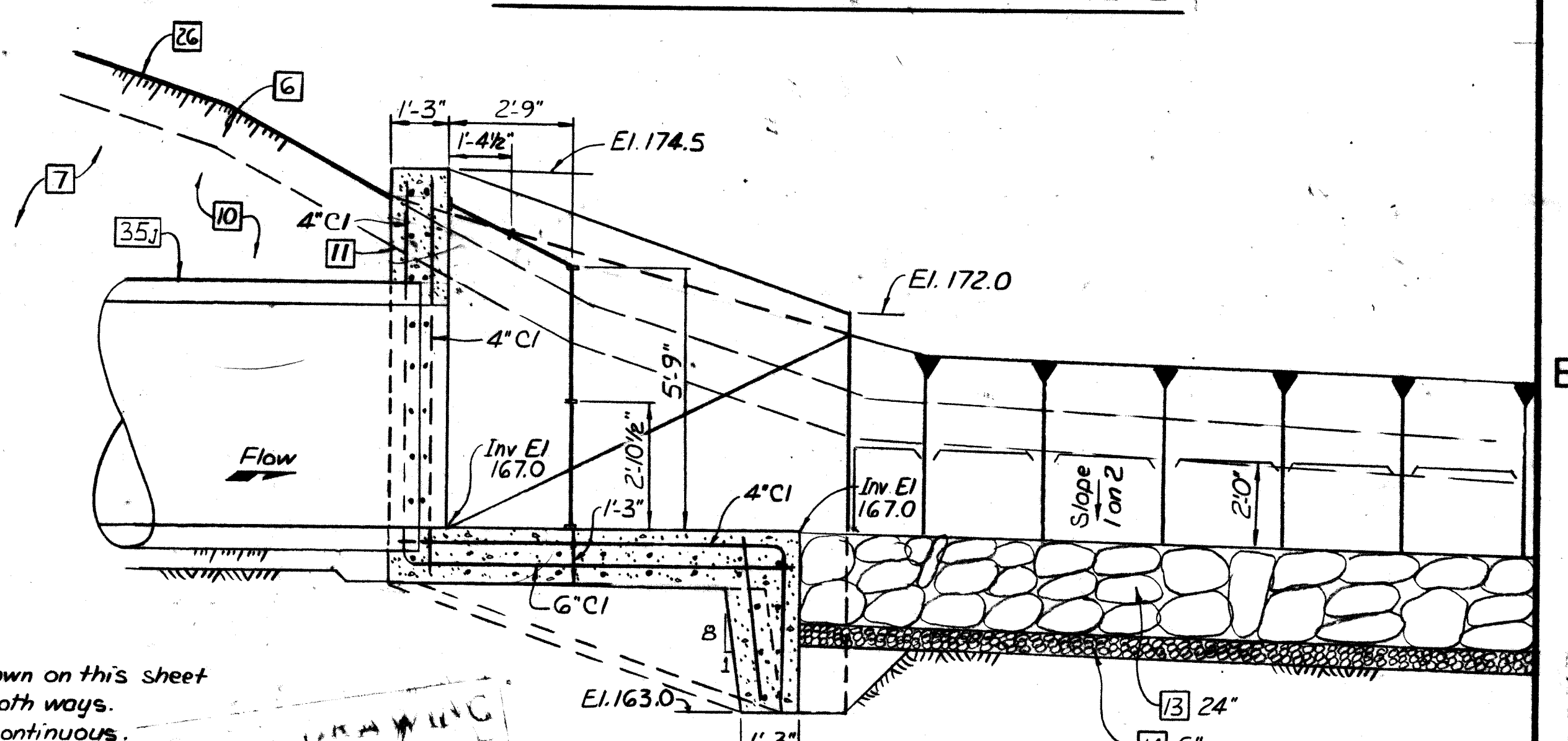
SECTION D
46



SECTION E
46

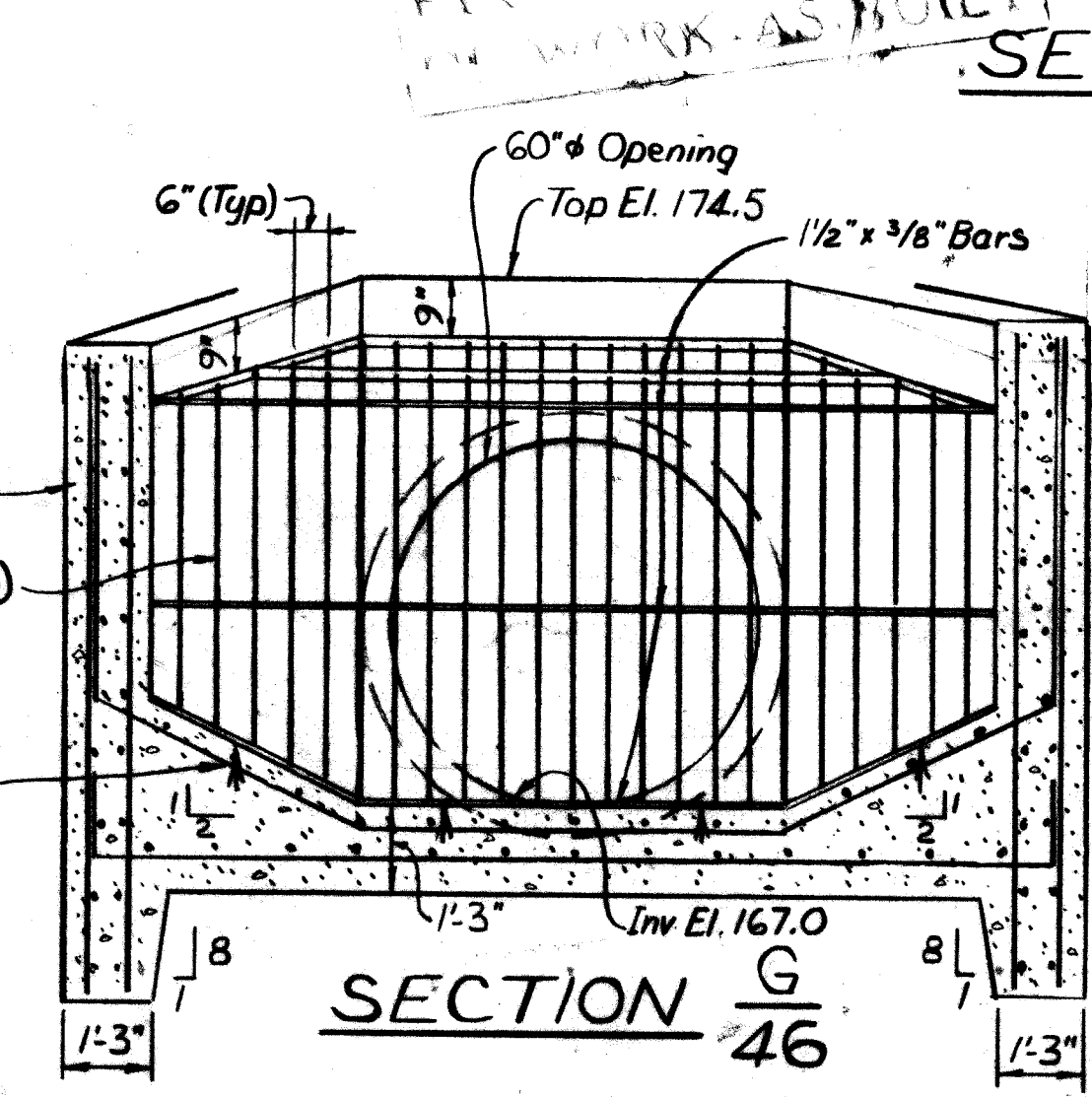


PLAN
OUTLET STRUCTURE NO 3



SECTION F
46

Structural Notes:
All reinforcing steel shown on this sheet shall be #5 @ 12" O.C. both ways.
All horizontal steel is continuous.



SECTION G
46

Notes:
For General Notes, see Sheet No. 1.
For Location of Drainage Facilities, see Sheet No. 9.
For Details of Manhole Steps, see Sheet No. 34.

Revision	Description	Date	Approved
No change - as built		3/1/90	D.S.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
NEW YORK, NEW YORK

SAW MILL RIVER, NEW YORK
ARDSLEY FLOOD CONTROL PROJECT
INLET STRUCTURE NO. 1
JUNCTION CHAMBER NO. 2
OUTLET STRUCTURE NO. 3

DESIGNED BY: *R. J. [Signature]*
DRAWN BY: *Eym*
CHECKED BY: *TJR*
REVIEWED BY: *[Signature]*
CONCURRED: *[Signature]*

APPROVAL RECOMMENDED: *[Signature]*
CHIEF ENGINEERING DIVISION

NEW YORK

DATE: 5 MAY 1989
SCALE: AS SHOWN
SHEET 46 OF 46

CC-ARD-446

FILE NO.