

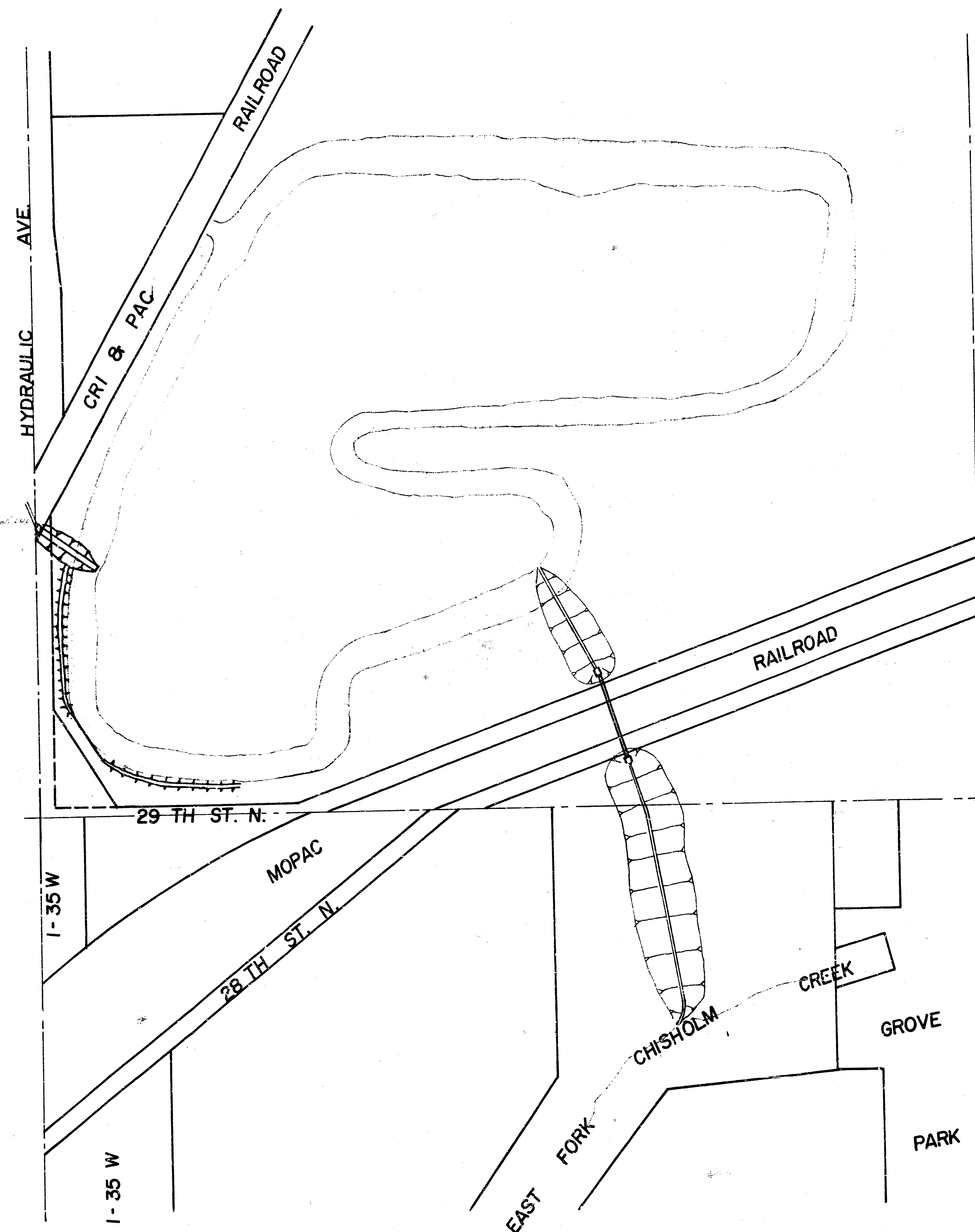
MAIN STORM WATER DRAIN NO. 50

- GENERAL NOTES**
- 1) PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING PEOPLE:
 MR. ELMER E. OATHMAN
 KAMES PIPELINE CO.
 100 N. BROADWAY, SUITE 550
 WICHITA, KS 67202
 PHONE 262-1408

 MR. C. T. OGLEBY
 GULF OIL EXPLORATION & PRODUCTION CO.
 P. O. BOX 2093
 WICHITA, KS 67201
 PHONE 263-3169

 CITY ARCHAEOLOGIST
 DEPARTMENT OF ANTHROPOLOGY
 100 N. BROADWAY, SUITE 550
 WICHITA, KANSAS 67202
 PHONE 689-5195

 MR. A. L. SMALLWOOD
 MISSOURI PACIFIC RAILROAD CO.
 OMAHA, NE 68104
 PHONE (402) 733-2133
 - 2) 8" FILTER POINT REVEALERS MAY BE SUBSTITUTED FOR TYPE A RUMPS AND CONCRETE DITCH CHECKS.
 - 3) THE SHADED AREA SHOWN ON SHEET 4 OF THE PLANS SHALL BE SEEDS AT A RATE OF 400 LBS PER ACRE. ALL OTHER AREAS SHALL BE SEEDS AT A RATE OF 250 LBS PER ACRE.
 - 4) CONTRACTOR SHALL VERIFY WATER ELEVATION IN POND PRIOR TO BIDDING PROJECT.
 - 5) BRICK COLLARS WILL NOT BE ACCEPTABLE ON THIS PROJECT.
 - 6) 8" FILTER POINT REVEALERS, IF USED, IS TO BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS.
 - 7) THE TWO GULF OIL LINES ARE TO HAVE BEEN ABANDONED PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR TO REMOVE ABANDONED LINES INCIDENTAL TO PROJECT.
 - 8) FIELD ENGINEER SHALL TAKE CROSS-SECTIONS BEFORE AND AFTER CONSTRUCTION.
 - 9) CONTRACTOR TO CONTACT GENE HATH, DEPARTMENT OF OPERATIONS AND MAINTENANCE, 268-4599, FOR POSSIBLE DISPOSAL SITES FOR EXCESS MATERIAL IN THE AREA.



Sheet No.	Index
1	Cover Sheet
2-4	Plan & Profile of Main Ditch
5	Dike & Emergency Spillway
6	Wash Checks
7	Tunnel Liner
8-9	Headwalls
10-13	X-Sections

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH STATE LAWS.

R.W. BRUGGEMAN, DIRECTOR OF ENGINEERING/
 CITY ENGINEER
 CITY OF WICHITA, KANSAS
 PROJECT NO. 468 76 245 81116 000 000 001
 DATE: _____

As Built
 12/1/83
 [Signature]

CURVE DATA

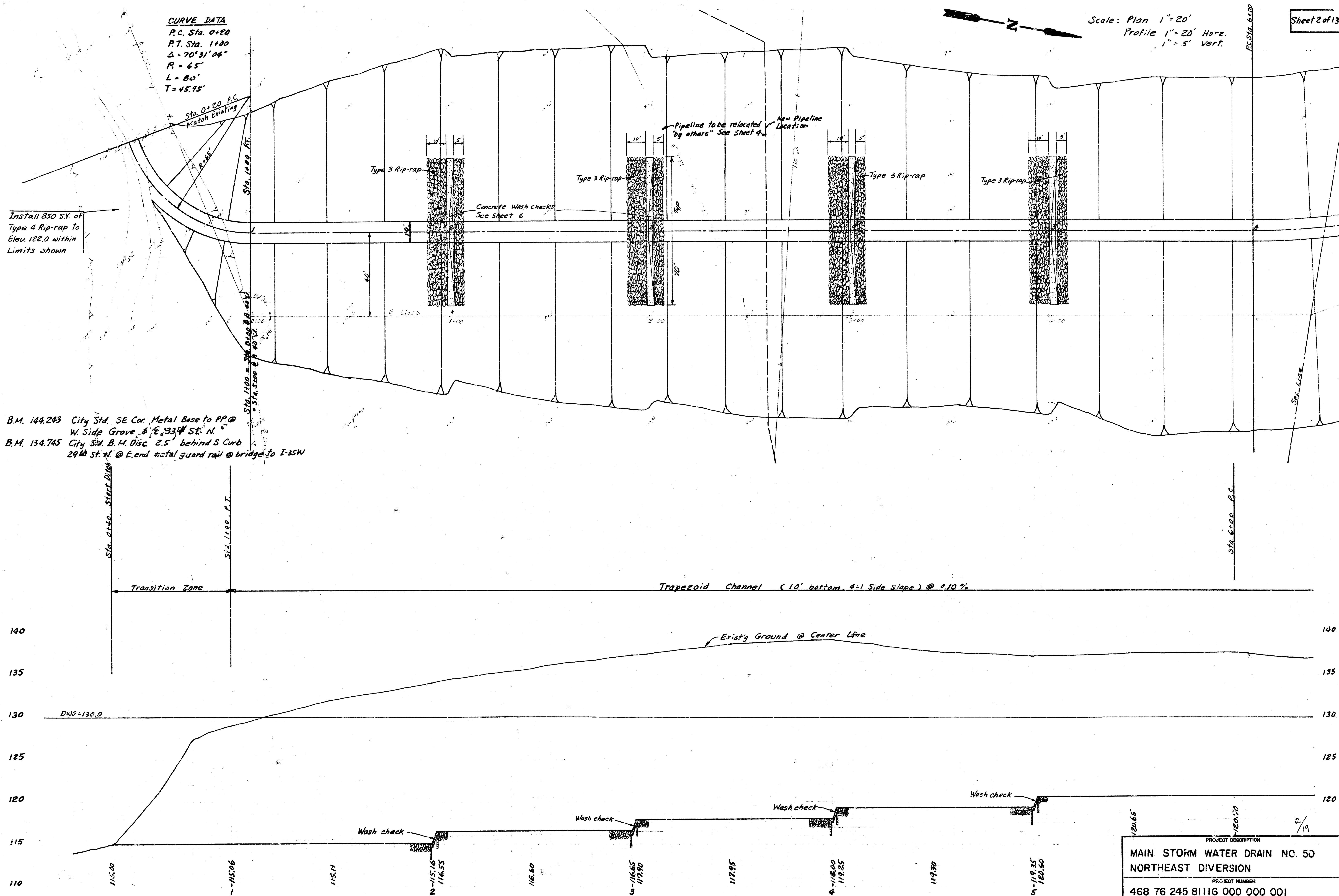
P.C. Sta. 0+20
P.T. Sta. 1+40
 $\Delta = 70^\circ 31' 04''$
 $R = 65'$
 $L = 80'$
 $T = 45.95'$

Scale: Plan 1"=20'
Profile 1"=20' Horiz.
1"=5' Vert.

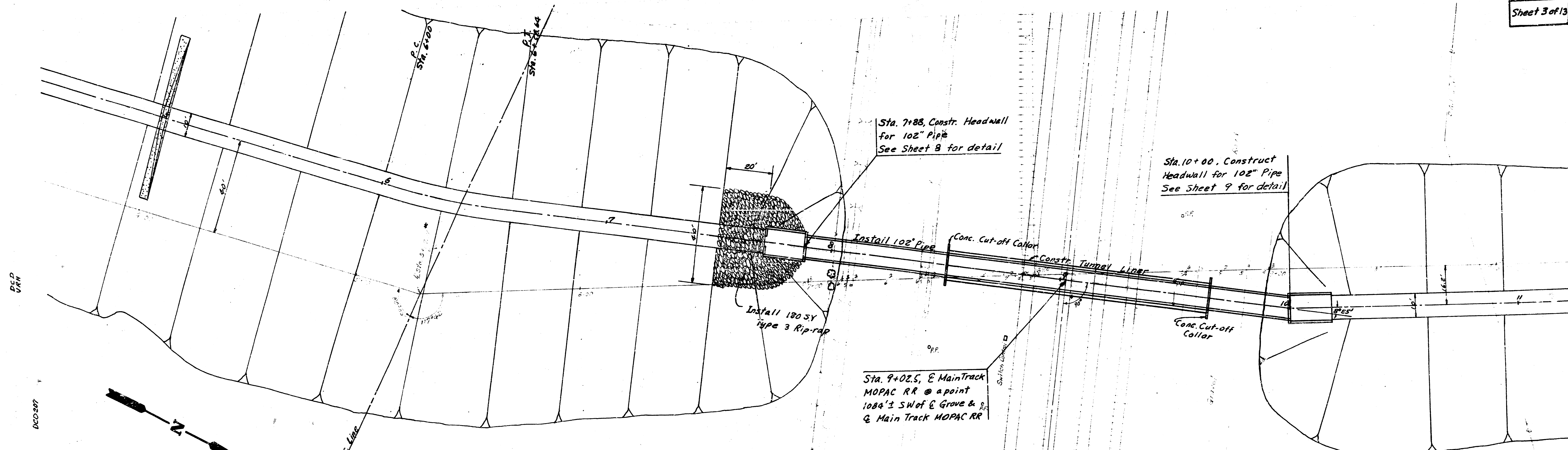
Sheet 2 of 13

Install 850 S.Y. of
Type 4 Rip-rap To
Elev. 122.0 within
Limits shown

B.M. 144.243 City Std. SE Cor. Metal Base to P.P. @
W. Side Grove & E. 33rd St. N.
B.M. 134.745 City Std. B.M. Disc. 2.5' behind S Curb
29th St. N. @ E. end metal guard rail @ bridge to E-35W



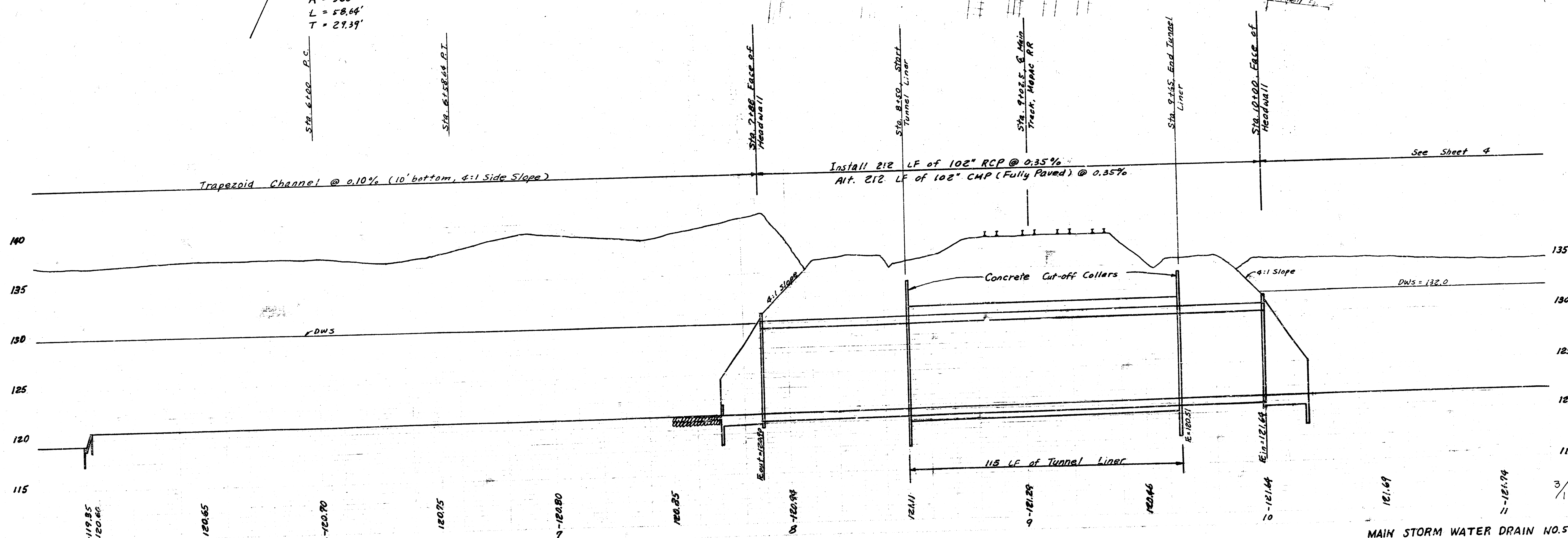
PROJECT DESCRIPTION
**MAIN STORM WATER DRAIN NO. 50
NORTHEAST DIVERSION**
PROJECT NUMBER
468 76 245 81116 000 000 001



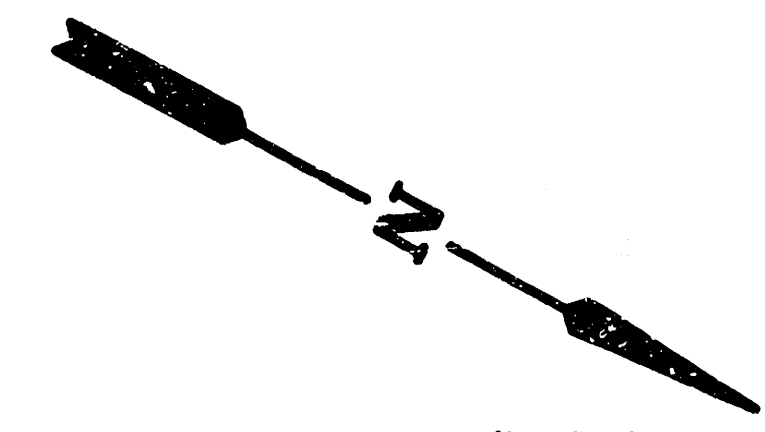
Scale: Plan 1"=20'
Profile 1"=20' Horiz.
1"=5' Vert.

CURVE DATA
P.C. Sta. 6+00
P.T. Sta. 6+58.64
 $\Delta = 90^\circ 20'$
 $R = 360'$
 $L = 58.64'$
 $T = 29.39'$

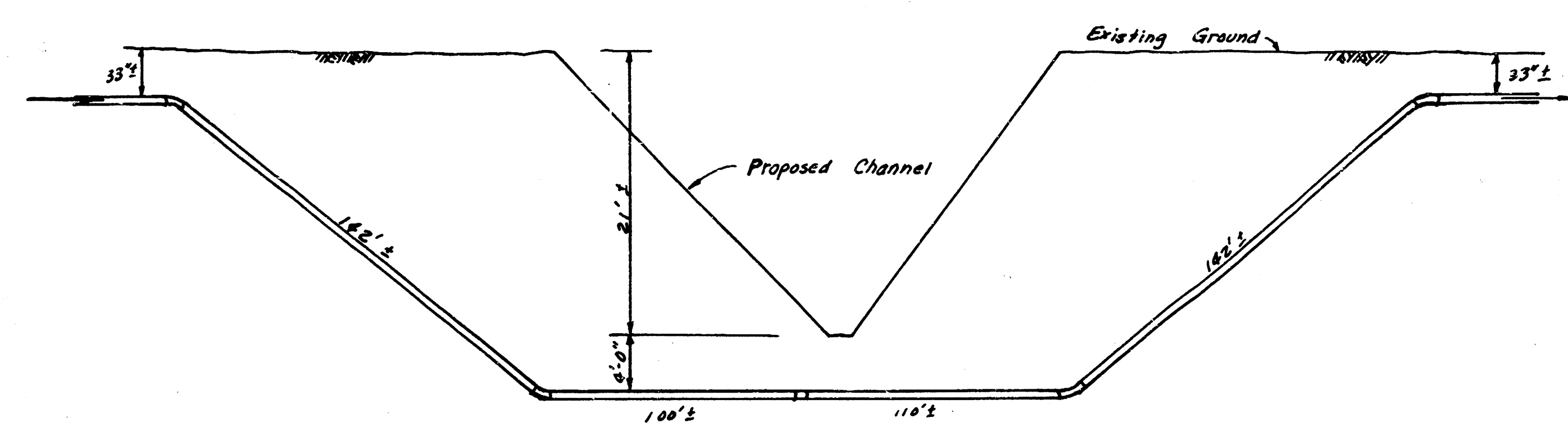
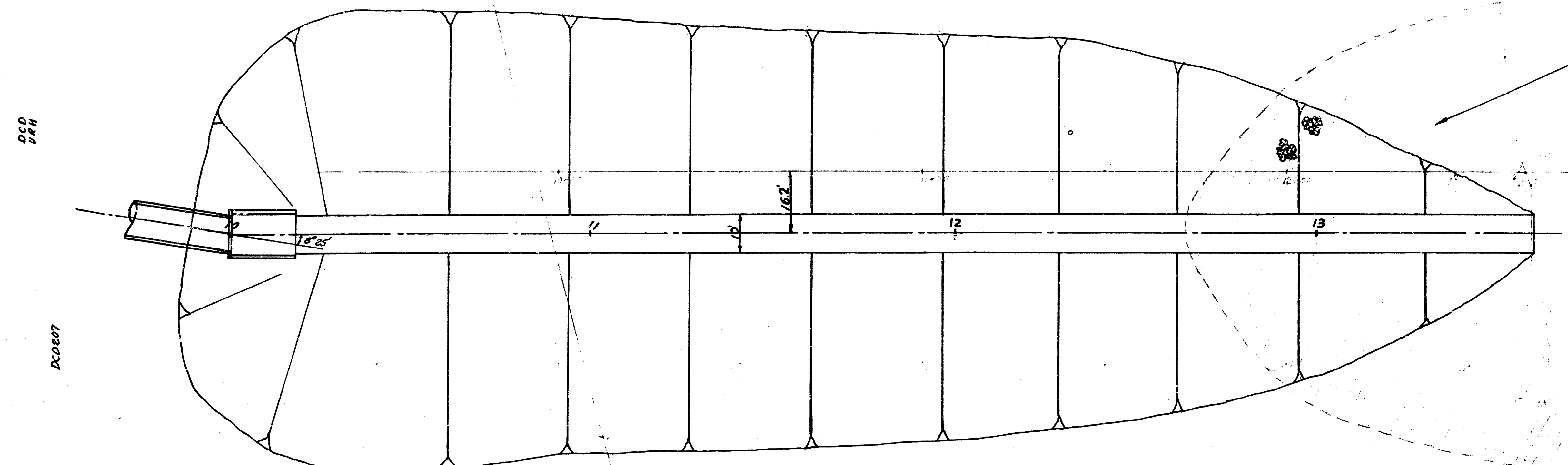
*Note: @ Sta. 5+29.22 is a point on Section Line 906th West of Stone @ E 29th St. N. & Grove



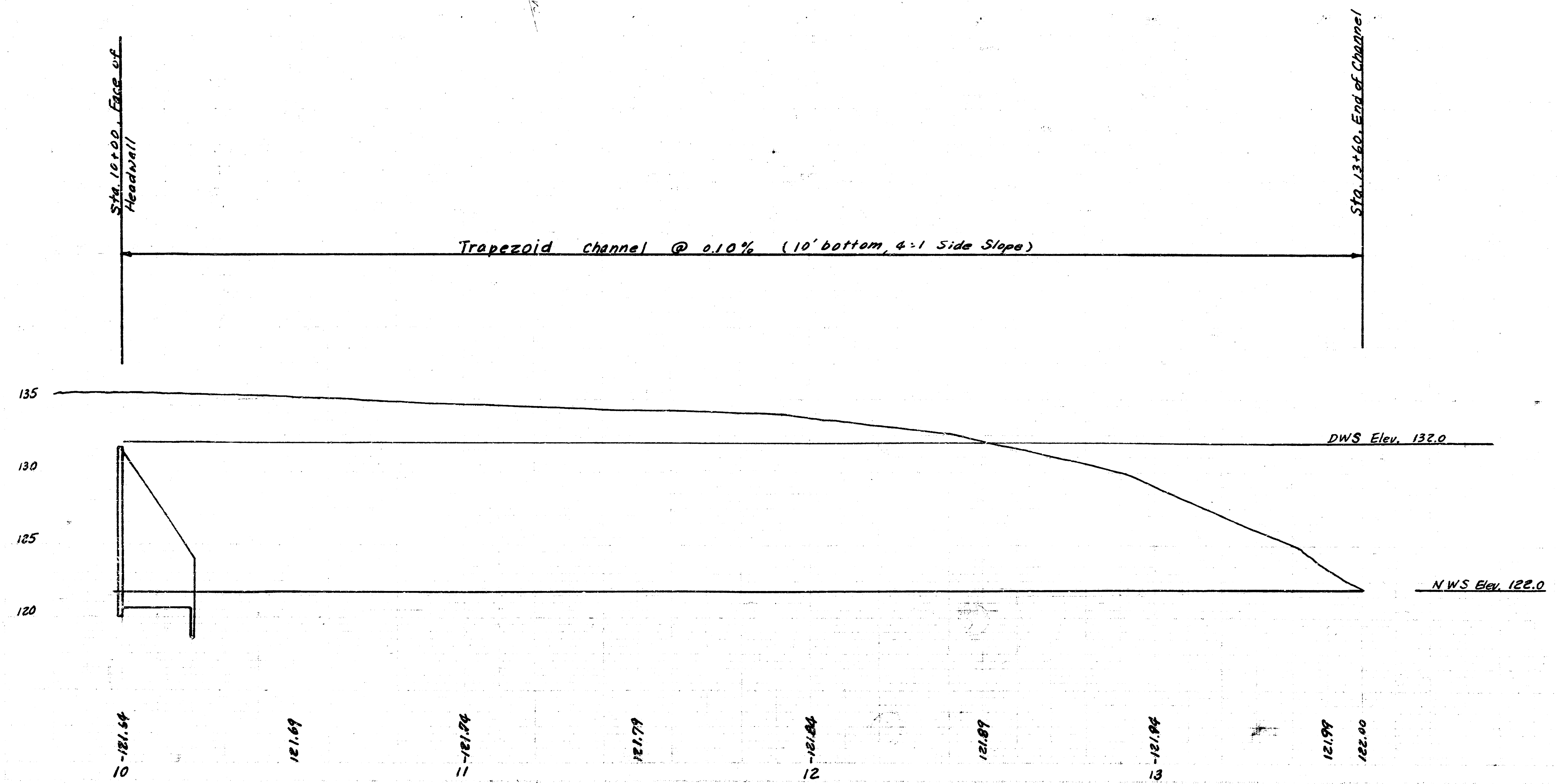
MAIN STORM WATER DRAIN NO.50

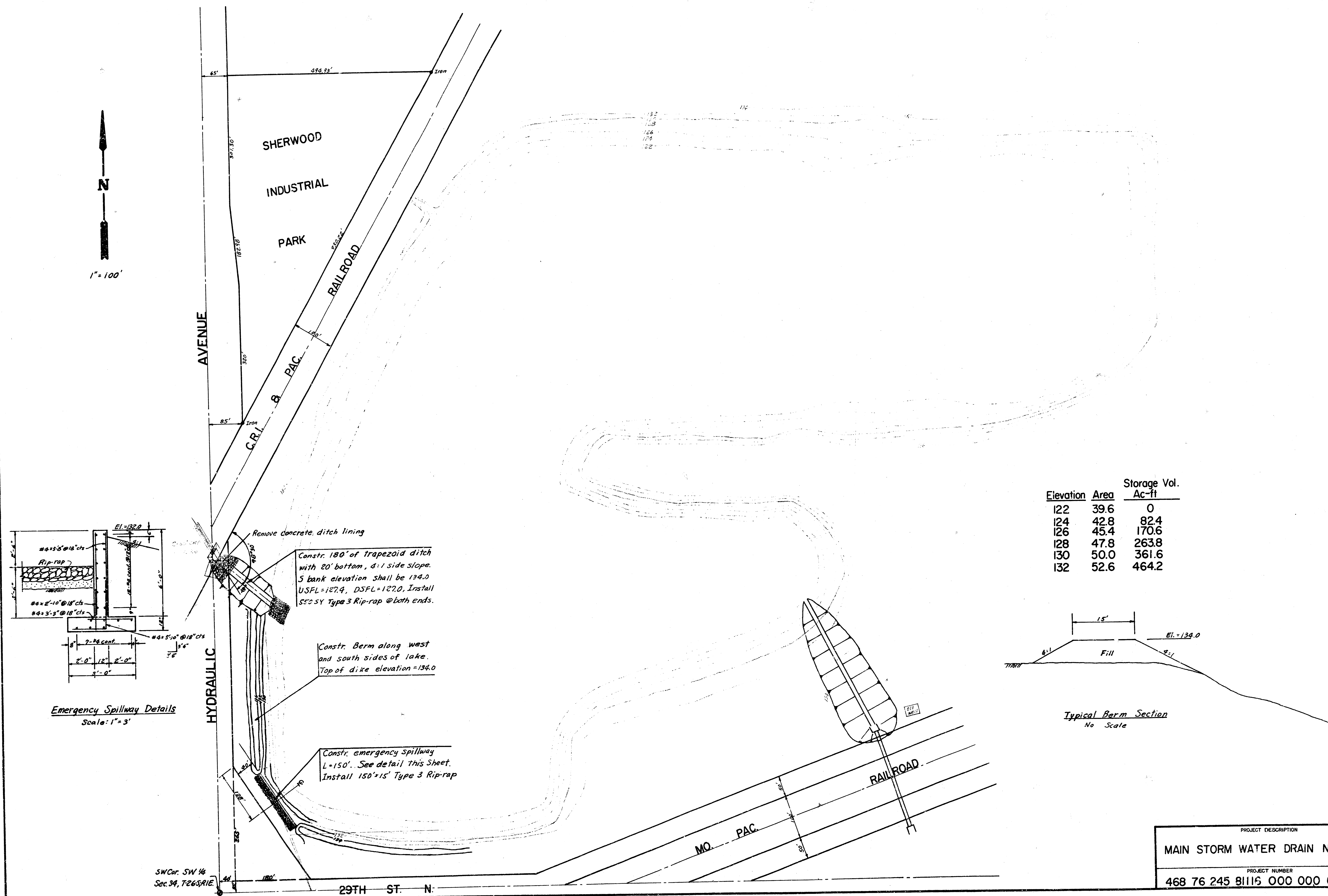


Scale: Plan 1"=20'
Profile 1"=20' Horiz.
1"=5' Vert.

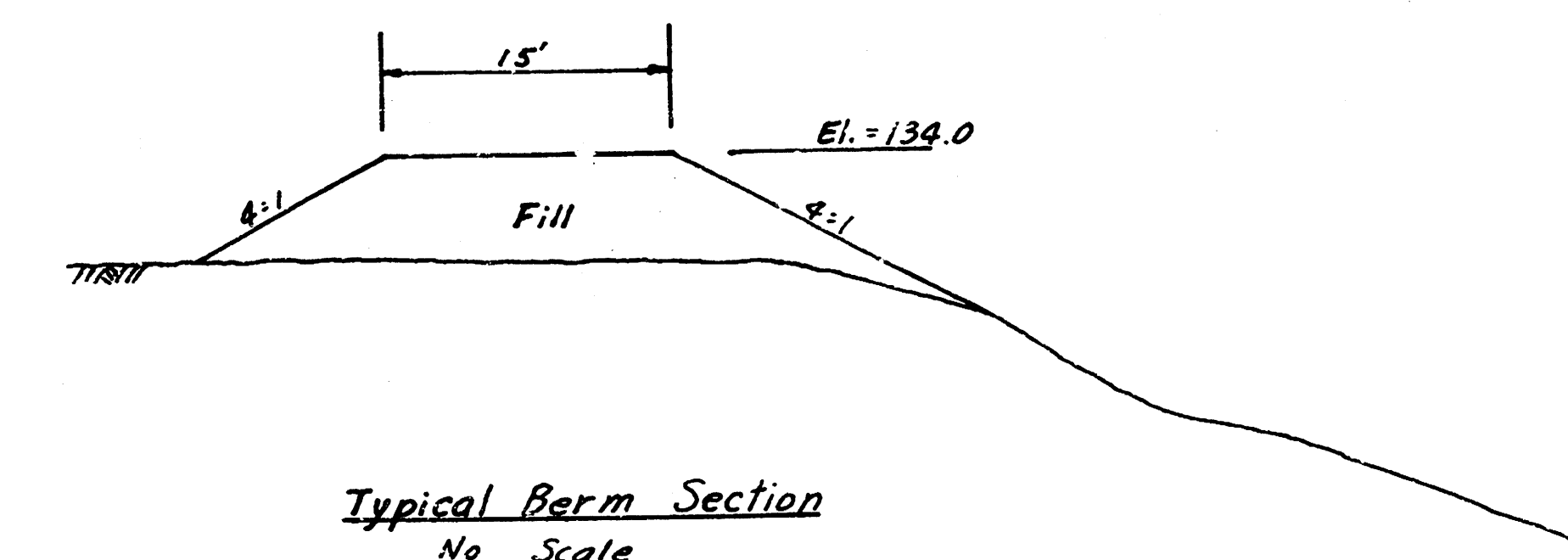


KAMEB 8" OIL PIPELINE RELOCATION
PROFILE
NO SCALE



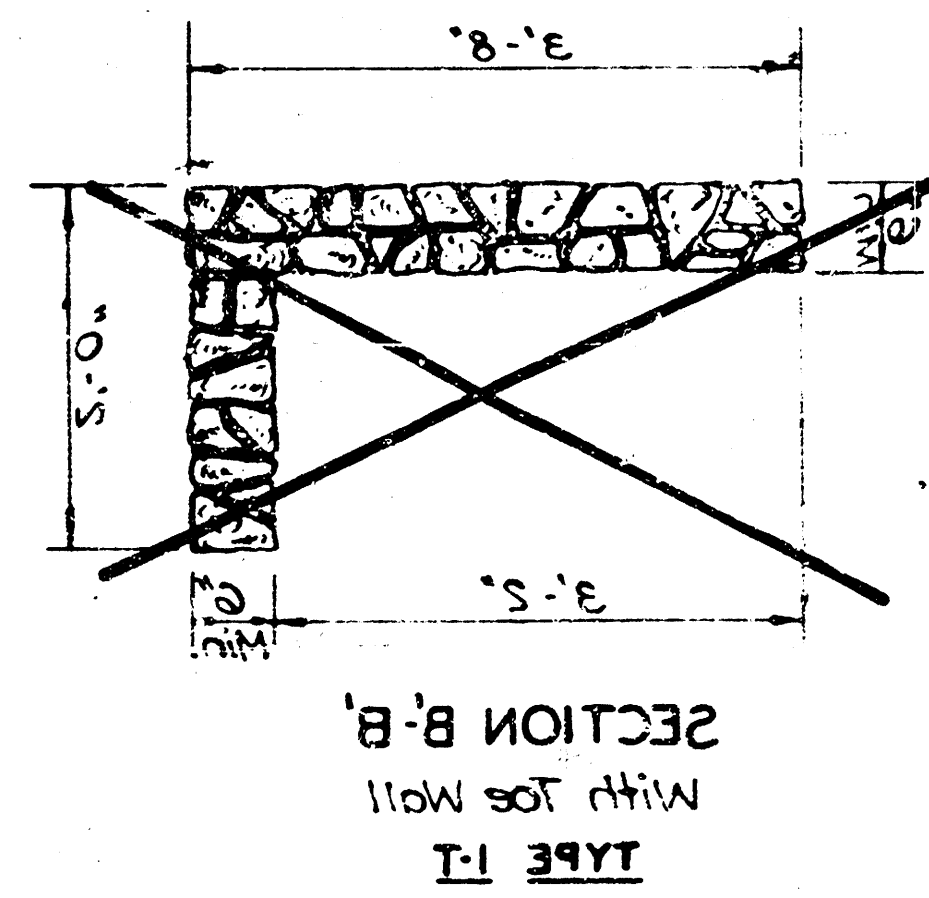
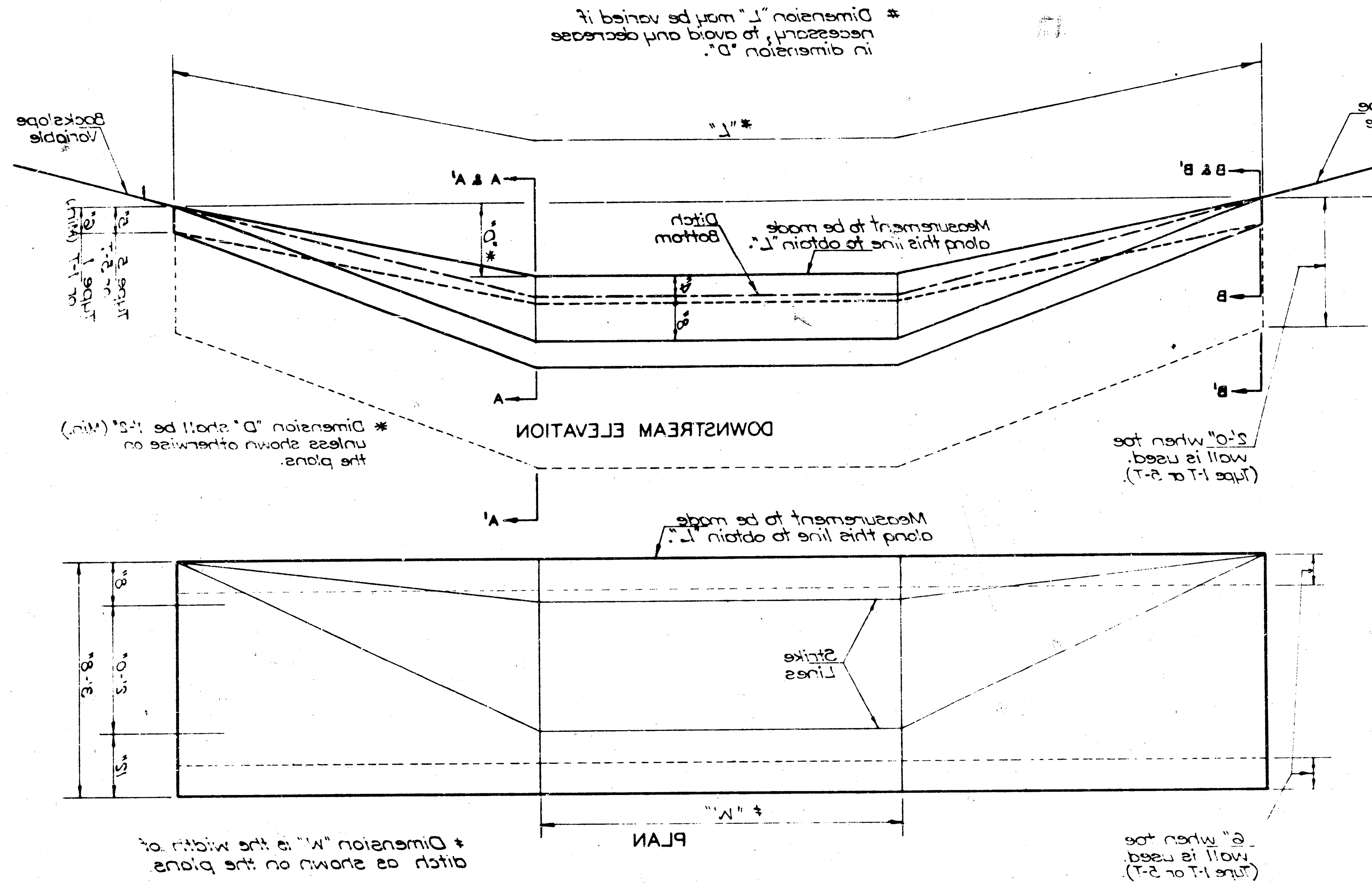


<u>Elevation</u>	<u>Area</u>	<u>Storage Vol.</u> <u>Ac-ft</u>
122	39.6	0
124	42.8	82.4
126	45.4	170.6
128	47.8	263.8
130	50.0	361.6
132	52.6	464.2

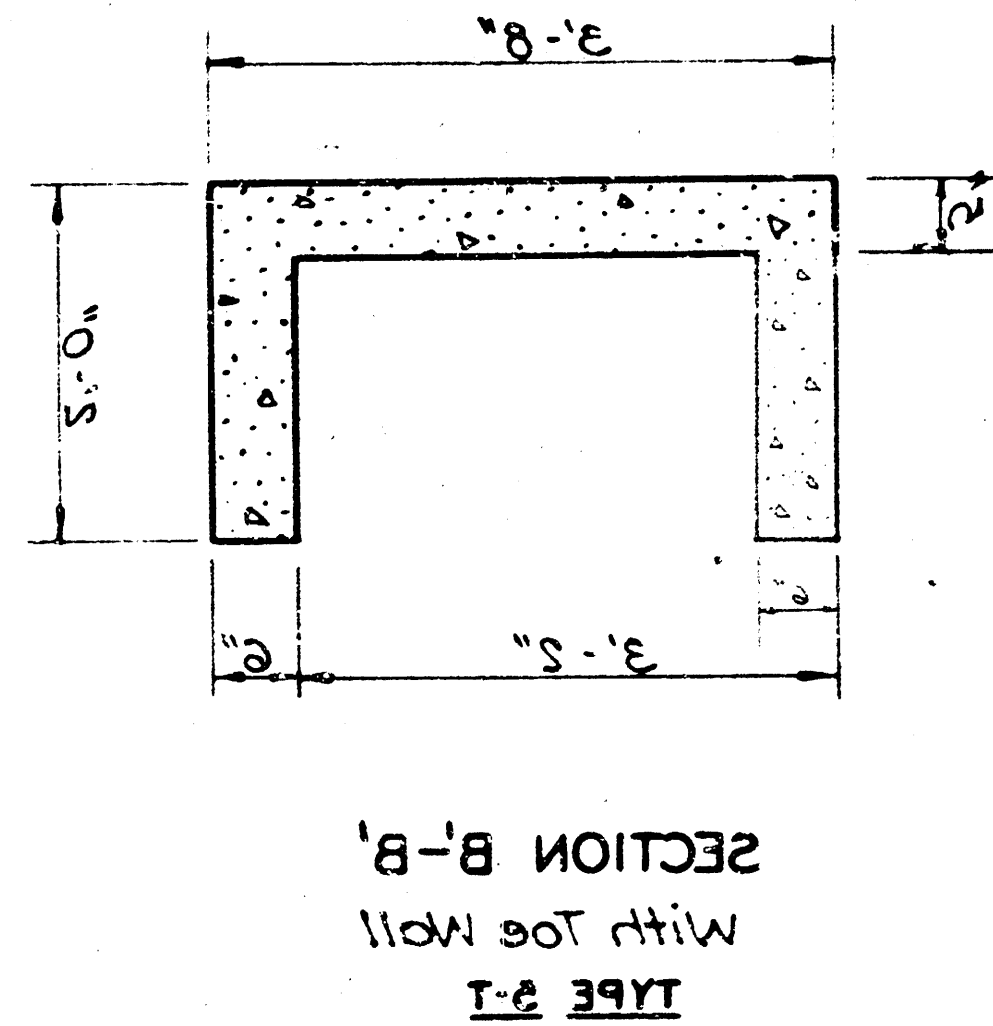


PROJECT DESCRIPTION
MAIN STORM WATER DRAIN NO. 50 ⁵ / ₁₉
PROJECT NUMBER
468 76 245 8115 000 000 001

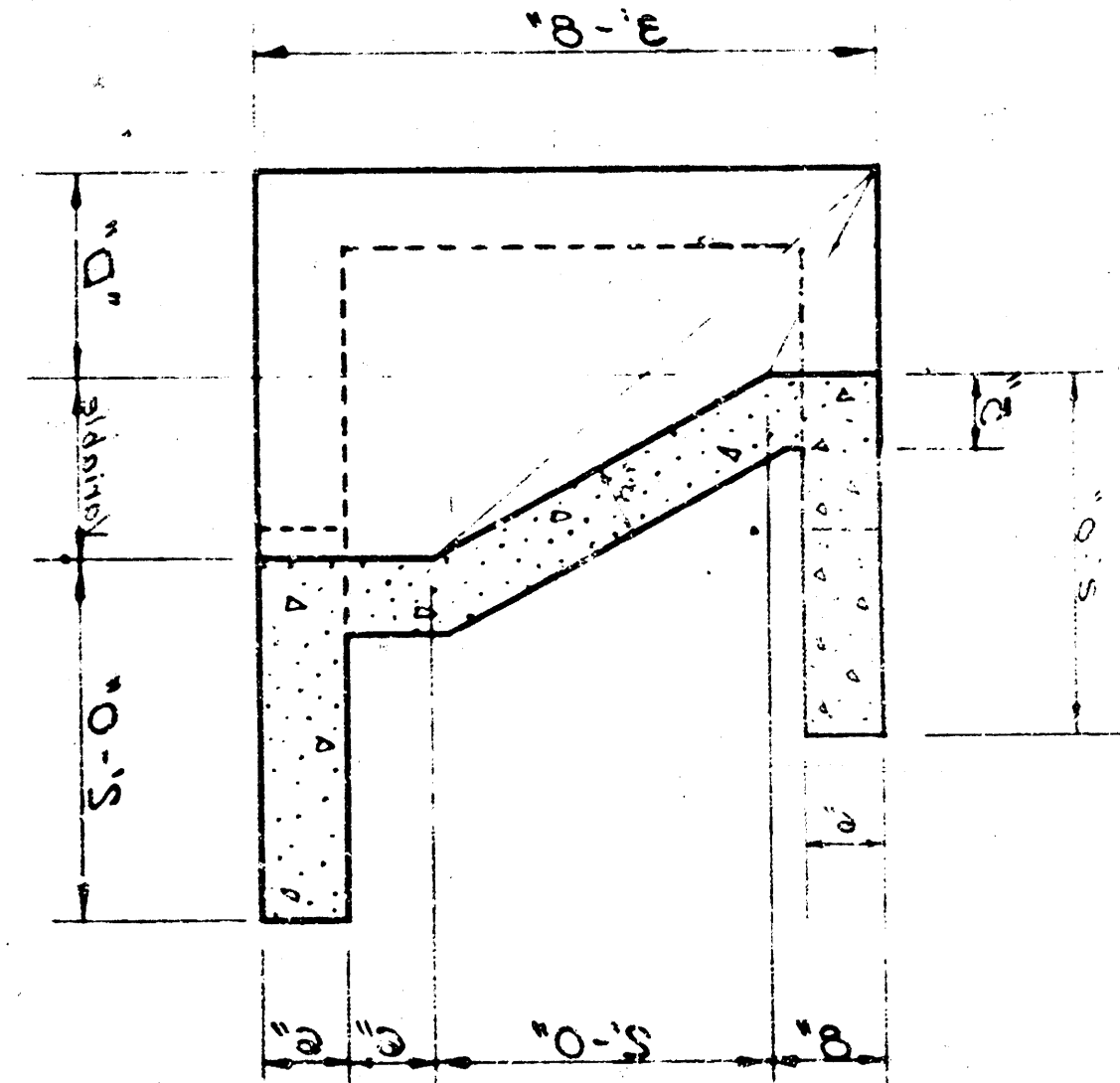
RES. NO.	STATE	PROJECT	SHEET	TOTAL
1	KANSAS		6	13



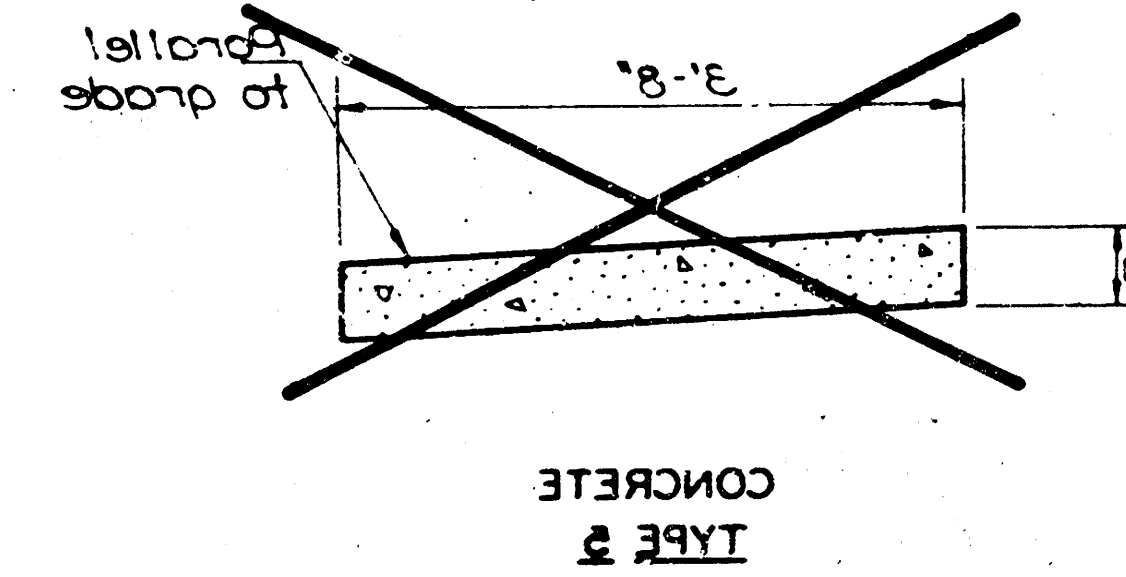
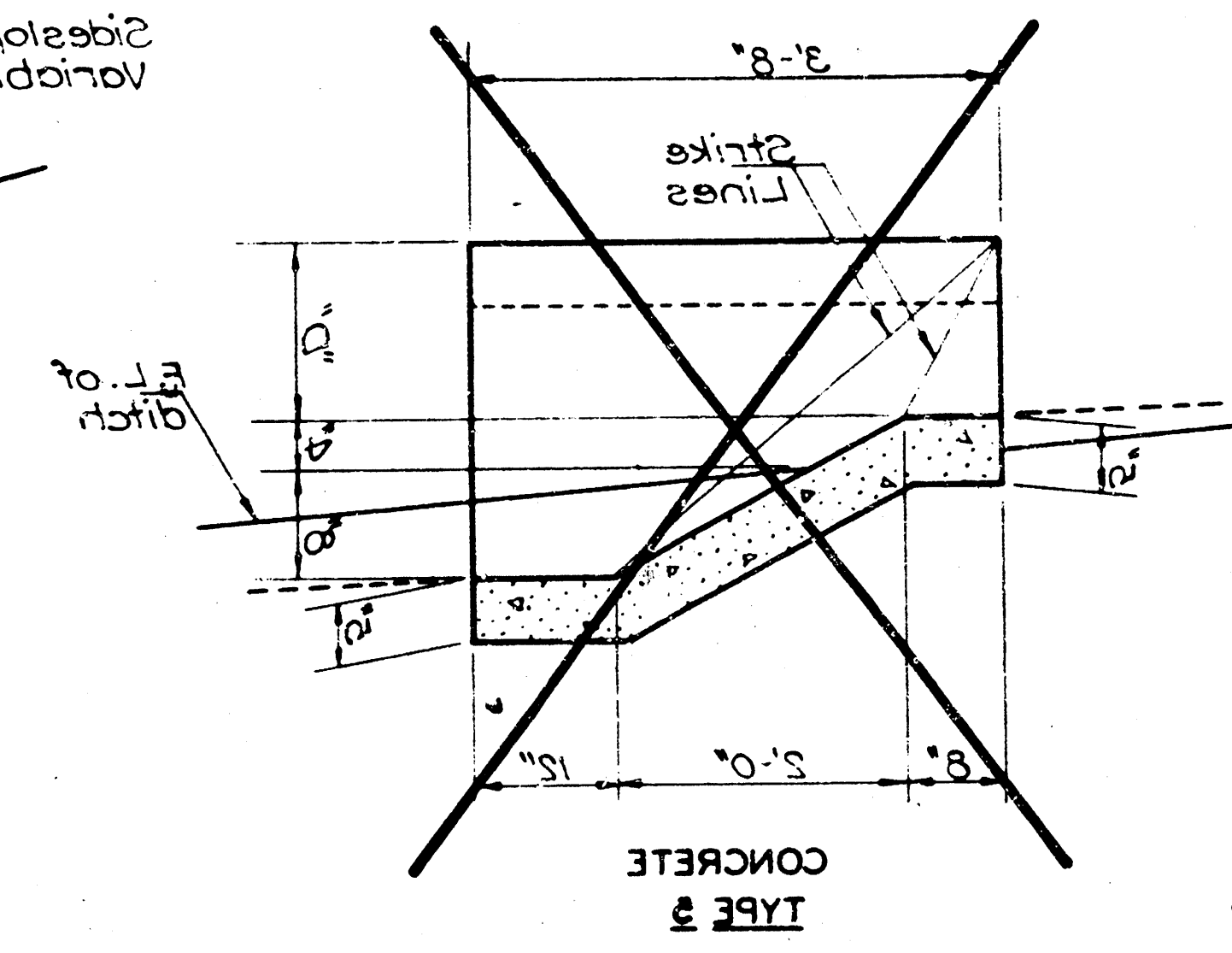
SECTION B-B,
TYPE 1-I
With Toe Wall
Note: Unless otherwise noted, either
of these types may be used.



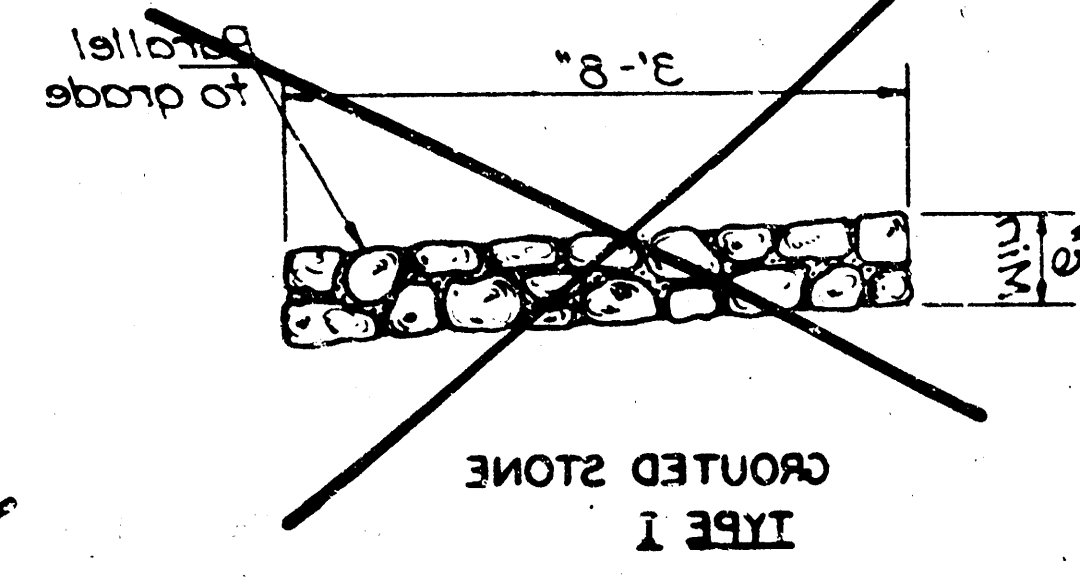
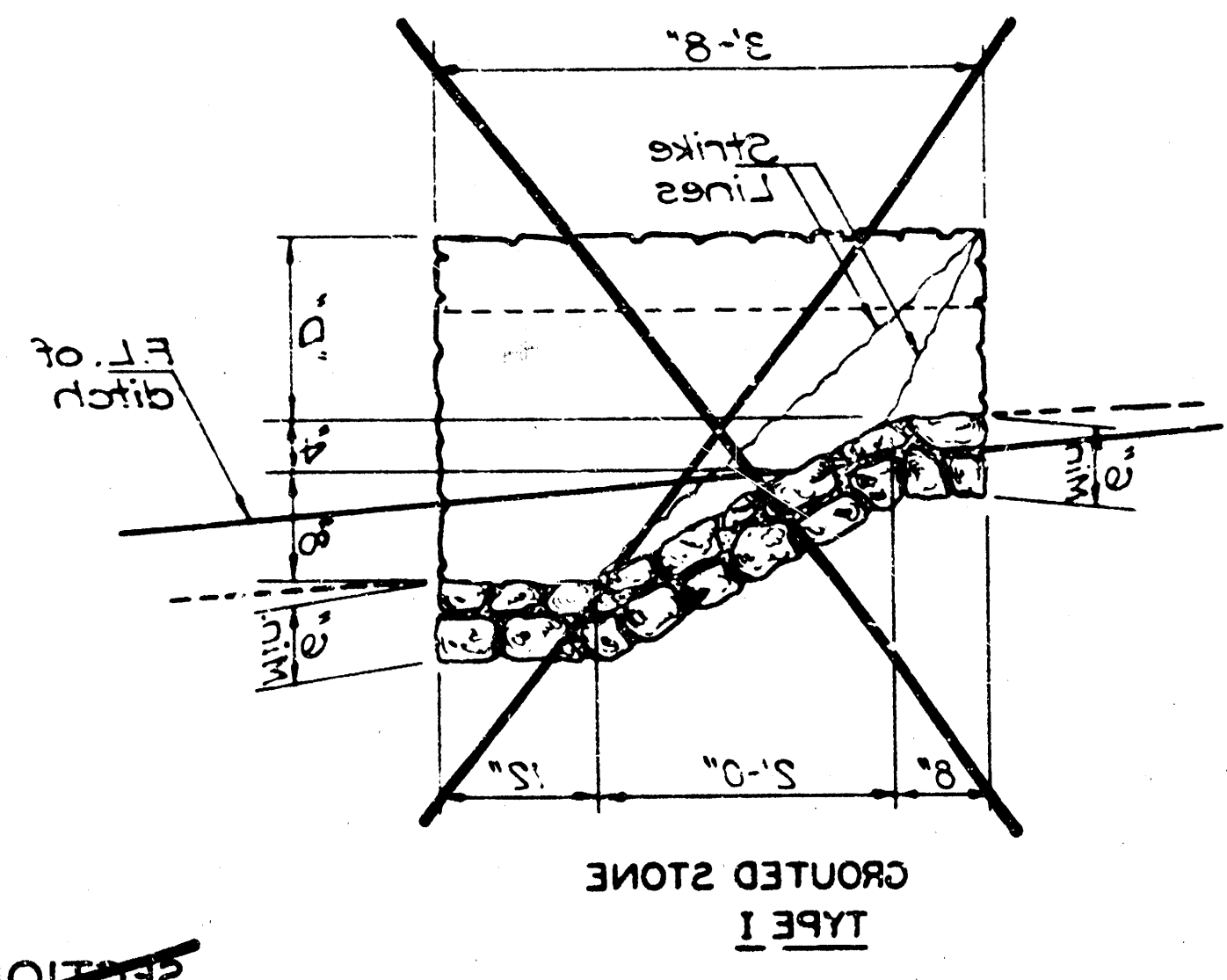
SECTION B-B,
TYPE 2-I
With Toe Wall
Note: Fabric-form may be used
in place of concrete at
the Contractor's option.



SECTION A-A,
TYPE 2-I
With Toe Wall
Note: Type 1-I or 2-I wash checks shall be used
on the lowest unit in each row. Additional
locations where these units are to be
constructed shall be designated by the
Engineer.



Note: Use Class A concrete
throughout for Types 2 & 3-T
Wash Checks.



Note: The stone in all stone
wash checks shall be laid in a
3" mortar bed and the spaces
between stones shall be filled
with mortar.

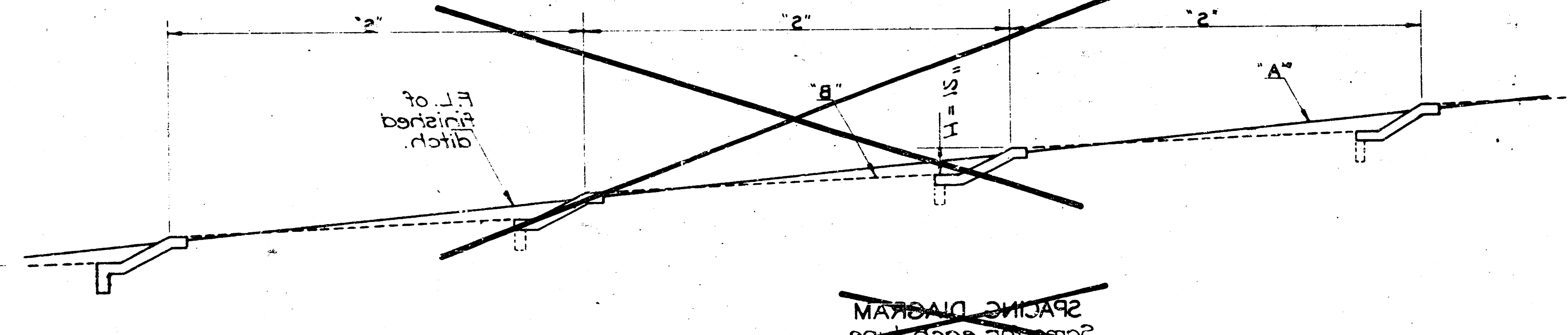
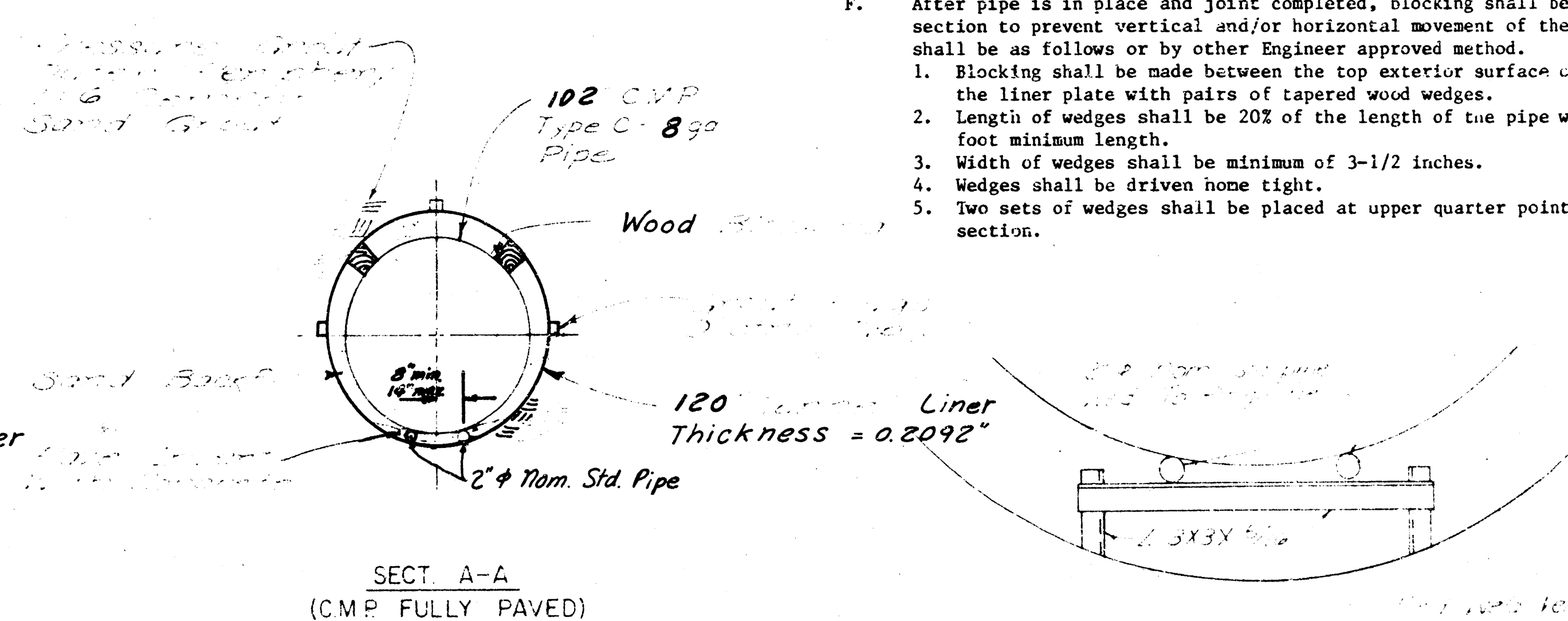
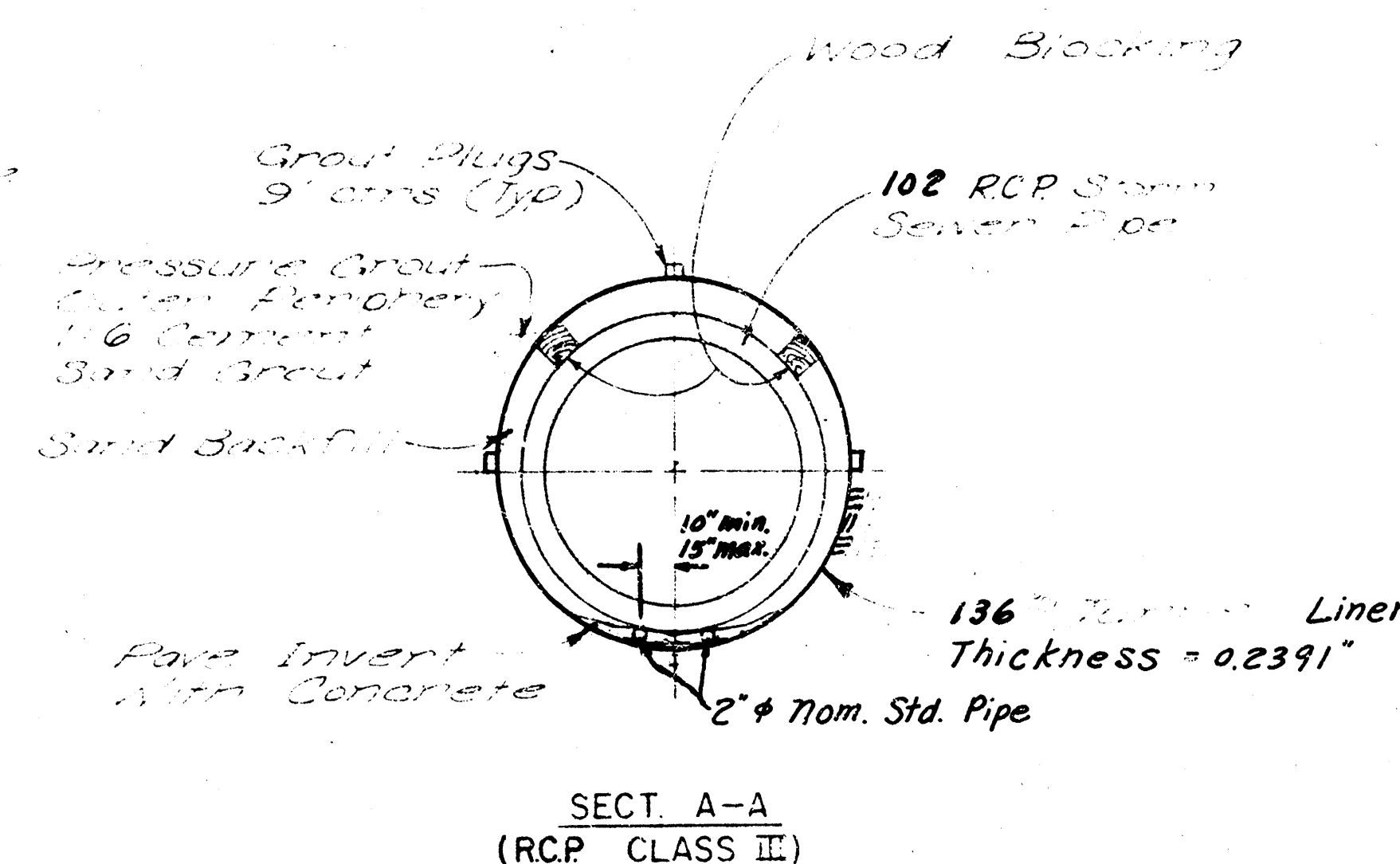
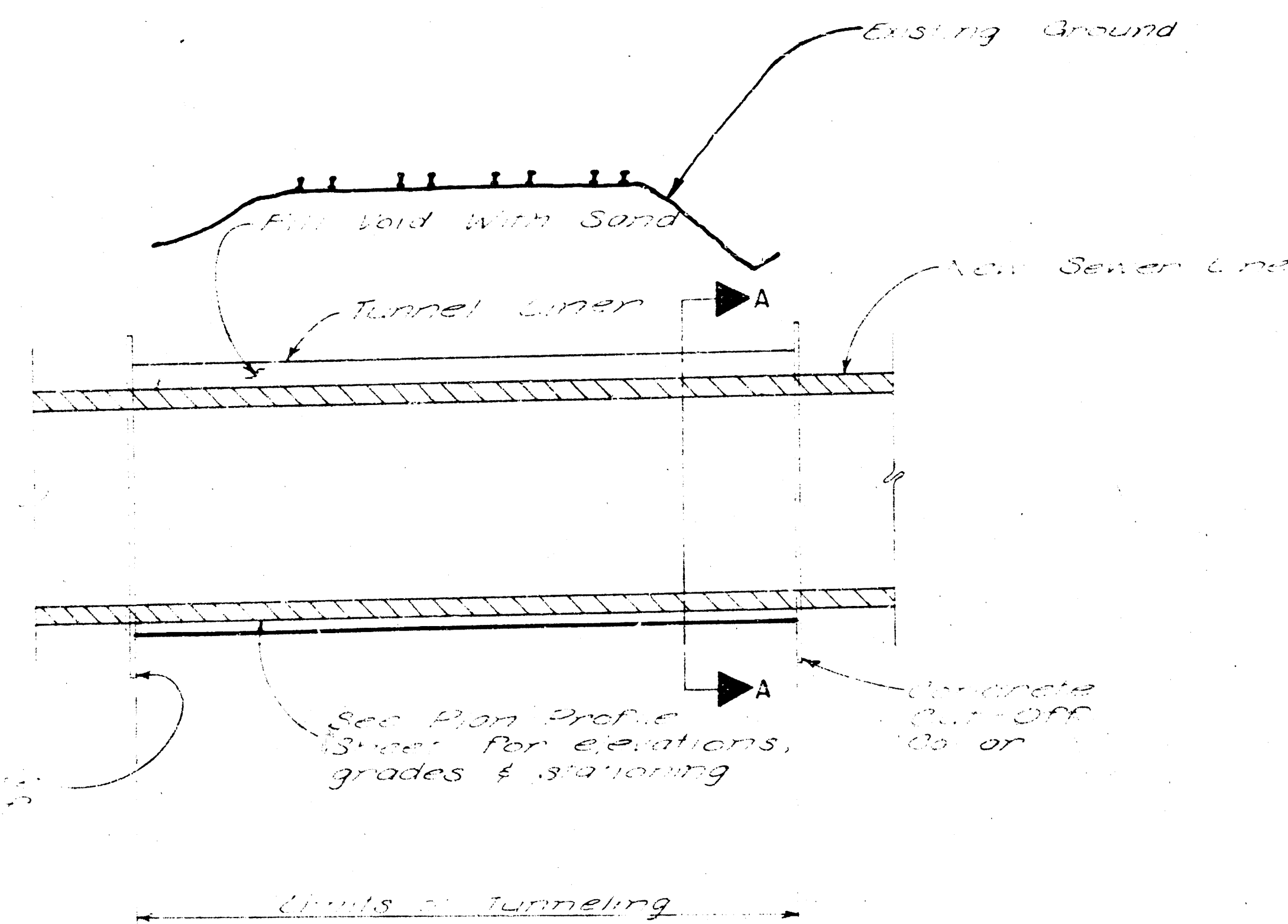


TABLE OF SPACING Some for each type			
(A-B)	Spacing (A-B)	Spacing (A-B)	Spacing (A-B)
1	1.00	6	1.00
2	1.50	7	1.50
3	2.00	8	2.00
4	2.50	9	2.50
5	3.00	10	3.00
6	3.50	11	3.50
7	4.00	12	4.00
8	4.50	13	4.50
9	5.00	14	5.00
10	5.50	15	5.50
11	6.00	16	6.00
12	6.50	17	6.50
13	7.00	18	7.00
14	7.50	19	7.50
15	8.00	20	8.00
16	8.50	21	8.50
17	9.00	22	9.00
18	9.50	23	9.50
19	10.00	24	10.00
20	10.50	25	10.50
21	11.00	26	11.00
22	11.50	27	11.50
23	12.00	28	12.00
24	12.50	29	12.50
25	13.00	30	13.00
26	13.50	31	13.50
27	14.00	32	14.00
28	14.50	33	14.50
29	15.00	34	15.00
30	15.50	35	15.50
31	16.00	36	16.00
32	16.50	37	16.50
33	17.00	38	17.00
34	17.50	39	17.50
35	18.00	40	18.00
36	18.50	41	18.50
37	19.00	42	19.00
38	19.50	43	19.50
39	20.00	44	20.00
40	20.50	45	20.50
41	21.00	46	21.00
42	21.50	47	21.50
43	22.00	48	22.00
44	22.50	49	22.50
45	23.00	50	23.00
46	23.50	51	23.50
47	24.00	52	24.00
48	24.50	53	24.50
49	25.00	54	25.00
50	25.50	55	25.50
51	26.00	56	26.00
52	26.50	57	26.50
53	27.00	58	27.00
54	27.50	59	27.50
55	28.00	60	28.00
56	28.50	61	28.50
57	29.00	62	29.00
58	29.50	63	29.50
59	30.00	64	30.00
60	30.50	65	30.50
61	31.00	66	31.00
62	31.50	67	31.50
63	32.00	68	32.00
64	32.50	69	32.50
65	33.00	70	33.00
66	33.50	71	33.50
67	34.00	72	34.00
68	34.50	73	34.50
69	35.00	74	35.00
70	35.50	75	35.50
71	36.00	76	36.00
72	36.50	77	36.50
73	37.00	78	37.00
74	37.50	79	37.50
75	38.00	80	38.00
76	38.50	81	38.50
77	39.00	82	39.00
78	39.50	83	39.50
79	40.00	84	40.00
80	40.50	85	40.50
81	41.00	86	41.00
82	41.50	87	41.50
83	42.00	88	42.00
84	42.50	89	42.50
85	43.00	90	43.00
86	43.50	91	43.50
87	44.00	92	44.00
88	44.50	93	44.50
89	45.00	94	45.00
90	45.50	95	45.50
91	46.00	96	46.00
92	46.50	97	46.50
93	47.00	98	47.00
94	47.50	99	47.50
95	48.00	100	48.00

Formula
$$S = \frac{100H}{(A-B)} \text{ (10 min.)}$$

S = Spacing of units in feet (to min.)
A = Percent grade of ditch
B = Percent of which washing is expected to drop. This will vary with the type of soil, etc.
H = Height of drop of each unit

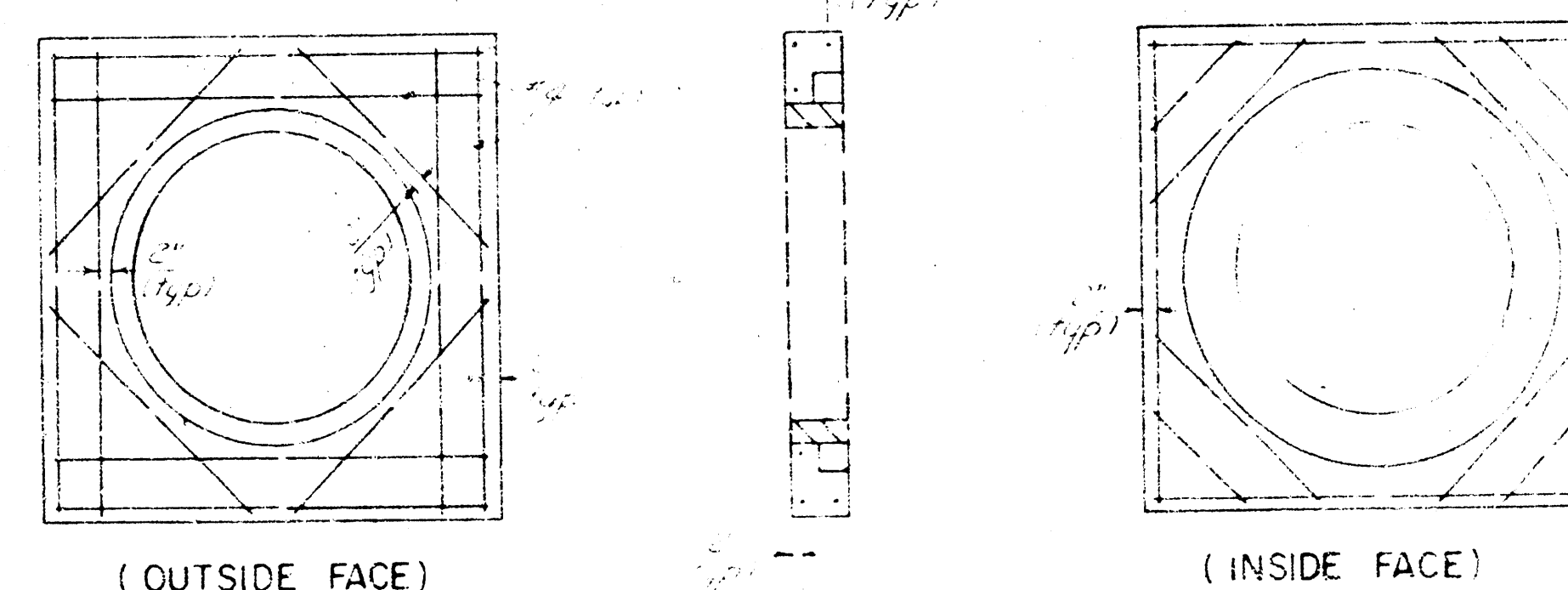
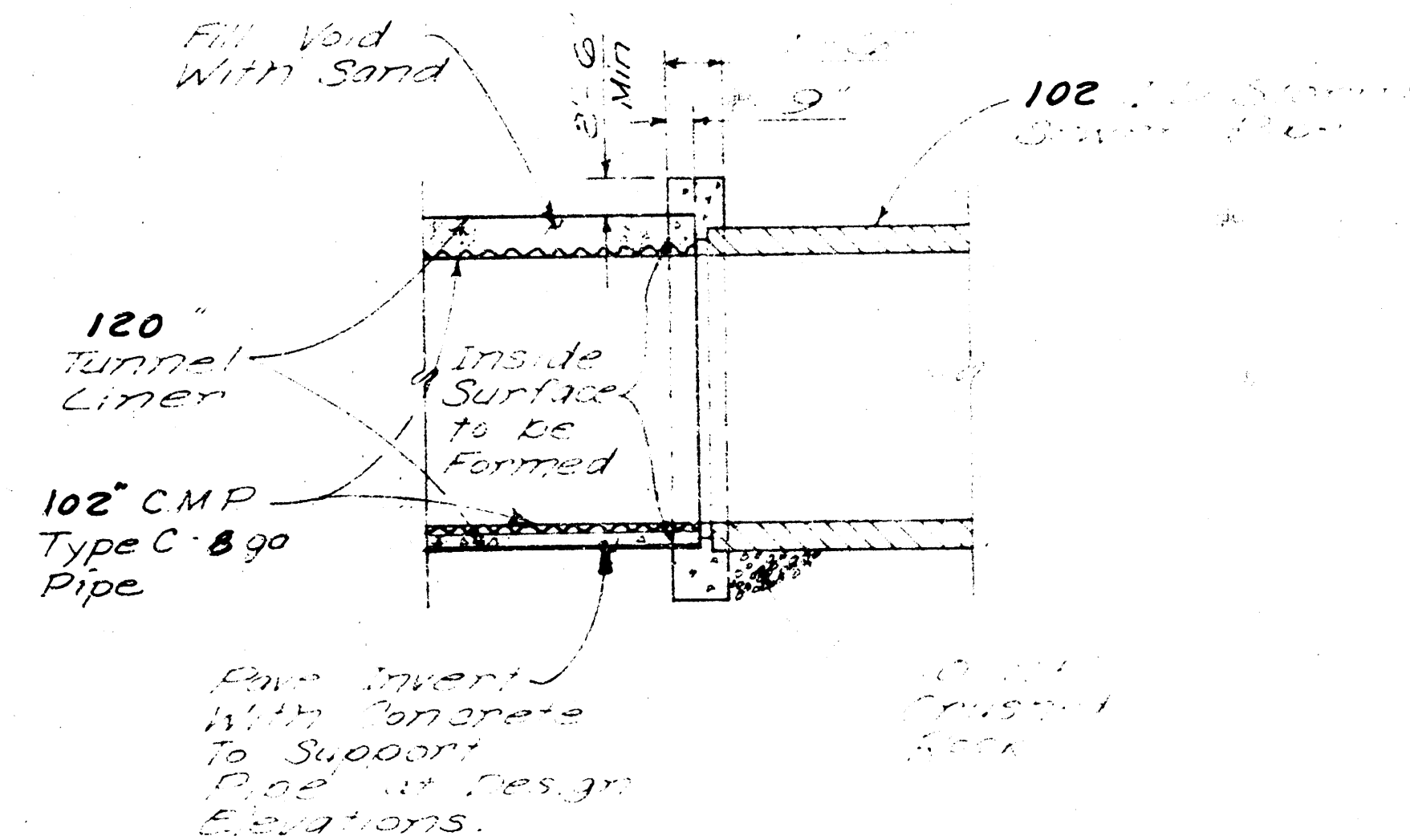
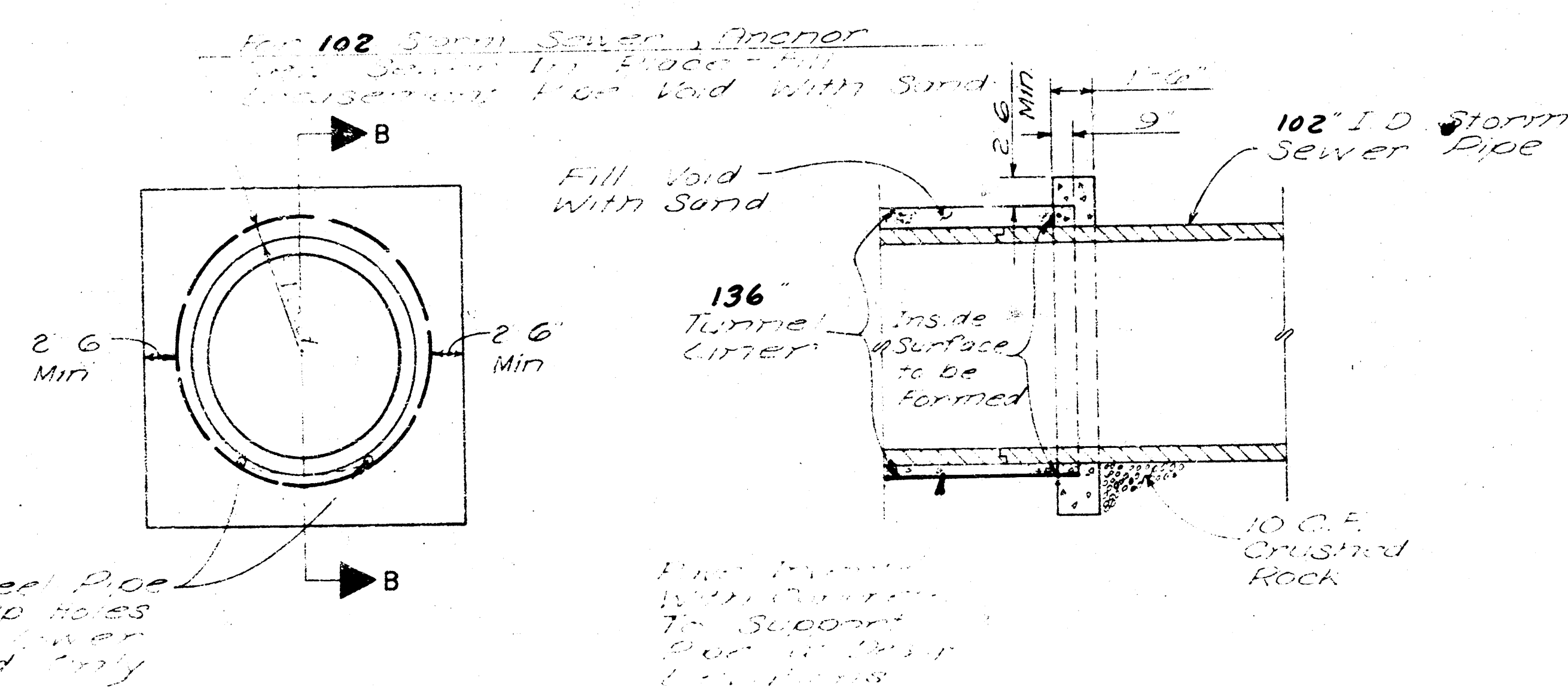
STANDARD NO. 506
WASH CHECKS
TYPE 1 & TYPE 2
KANSAS DEPARTMENT OF TRANSPORTATION
DESIGNED BY: [Signature]
CHECKED BY: [Signature]
DATE: [Date]
SHEET NO. 6 OF 13



- INSTALLATION
- Care shall be used to tunnel as neatly as possible to eliminate voids or over-break and thus obtain maximum plate-to-ground contact.
 - Liner plates shall be installed in accordance with manufacturer's instructions.
 - After liner plate rings have been installed, the area between the liner plate and earth shall be grouted to fill all voids. Grouting shall be conducted in a manner to prevent buckling or shifting of the liner ring. Grouting shall be accomplished as quickly as possible behind the tunneling operation. Grout shall be introduced through the bushings provided at a grouting pressure of not less than 5 psi.
 - Before installing sewer pipe into liner, support rails shall be installed at proper height to locate sewer pipe at design elevations. Pave invert with concrete to elevations indicated.
 - Sections of pipe shall be connected one at a time within the liner area in their final position.
 - After pipe is in place and joint completed, blocking shall be installed at each section to prevent vertical and/or horizontal movement of the pipe. Blocking shall be as follows or by other Engineer approved method.
 - Blocking shall be made between the top exterior surface of the pipe and the liner plate with pairs of tapered wood wedges.
 - Length of wedges shall be 20% of the length of the pipe with a one foot minimum length.
 - Width of wedges shall be minimum of 3-1/2 inches.
 - Wedges shall be driven home tight.
 - Two sets of wedges shall be placed at upper quarter points on each concrete section.

RAIL ASSEMBLY

ENCASEMENT PIPE DETAILS



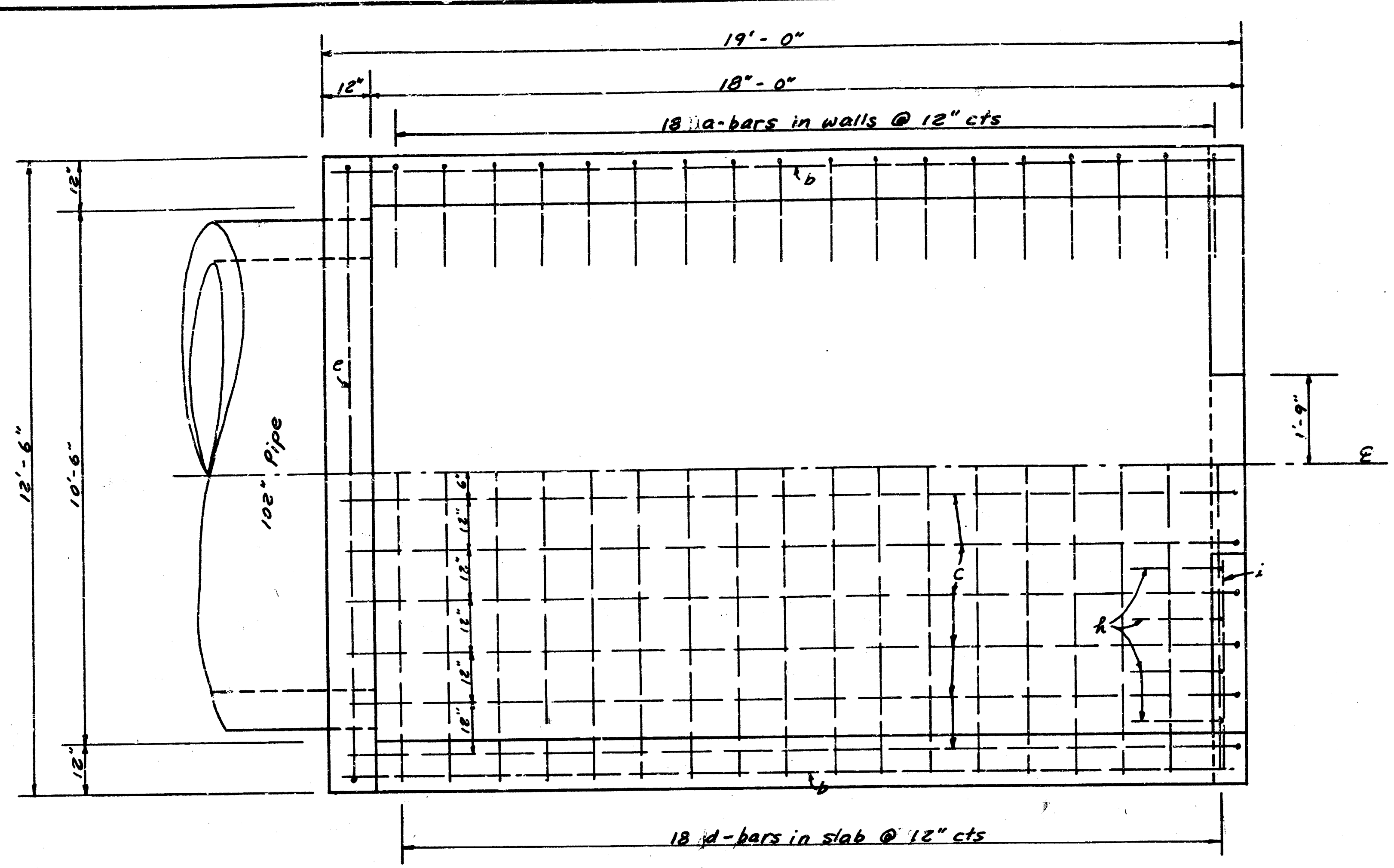
- TUNNEL LINER MATERIAL
- Liner plates shall be made from steel sheets conforming to the requirements of ASTM Designation A 569.
 - All plates shall be punched for bolting on both longitudinal and circumferential seams and shall be so fabricated as to permit complete erection from the inside of the tunnel.
 - The fabricated segments shall have flanged circumferential joints. The longitudinal joint shall be of the offset lapped type (flanged longitudinal joints will not be acceptable).
 - The material used for the construction of these plates shall be new and unused and suitable for the purpose intended. Workmanship shall be first-class in every respect. The plates shall be supplied with threaded bushings and plugs as required to permit grouting between liner and surrounding earth material.
 - Liner plates shall be provided with 2 inch standard pipe half couplings welded into a hole in the center corrugation. Couplings shall be fitted with cast iron plugs. Space 3 couplings at nine (9) foot centers. Locate couplings one at top and 2 at each side of liner.
 - Bolts shall be in conformance with ASTM A 307.

MAIN STORM WATER DRAIN NO. 50
CITY OF WICHITA

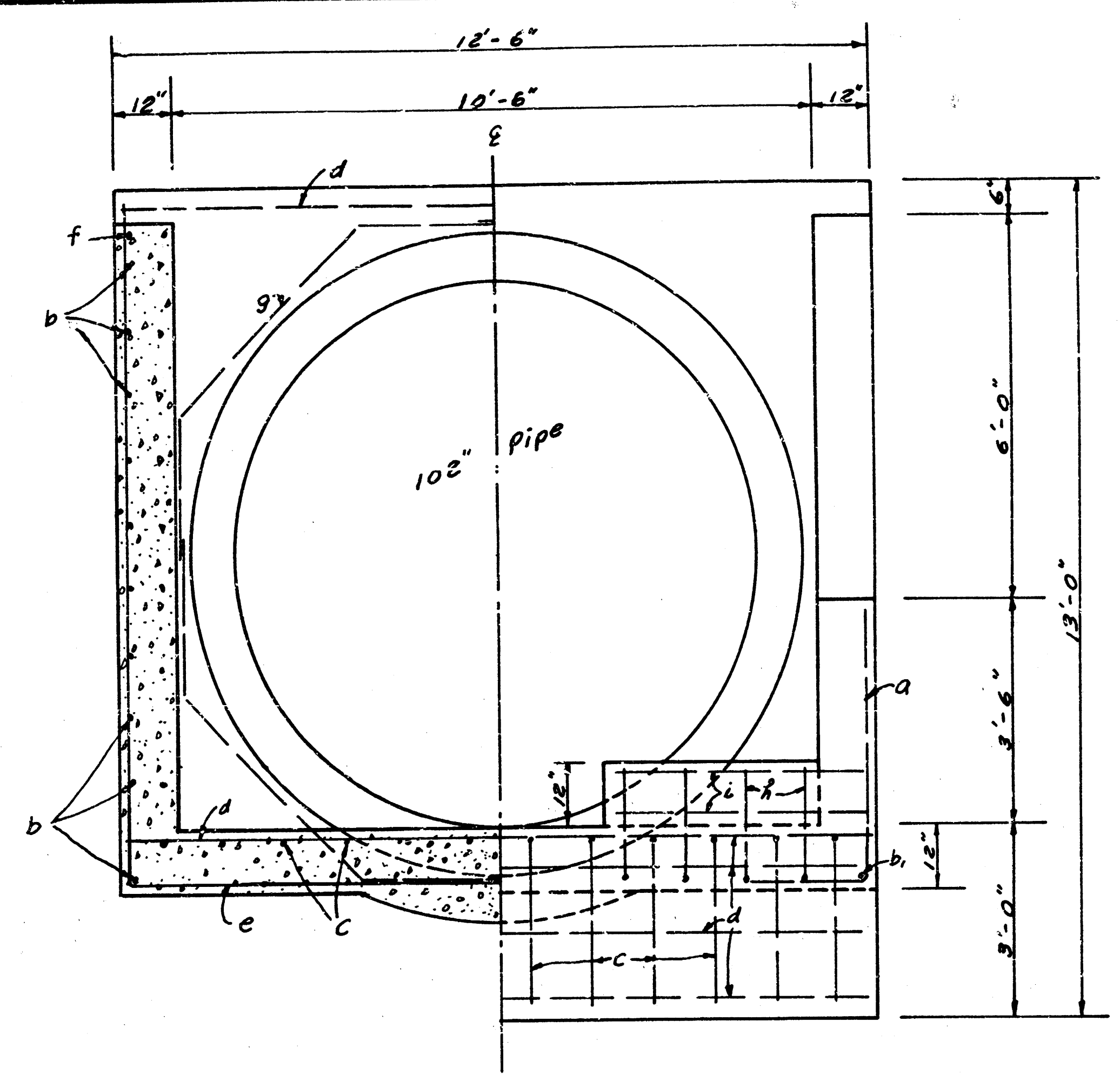
RAILROAD CROSSING DETAILS

PROJECT NO.
468 76 245 81116 000 000 001

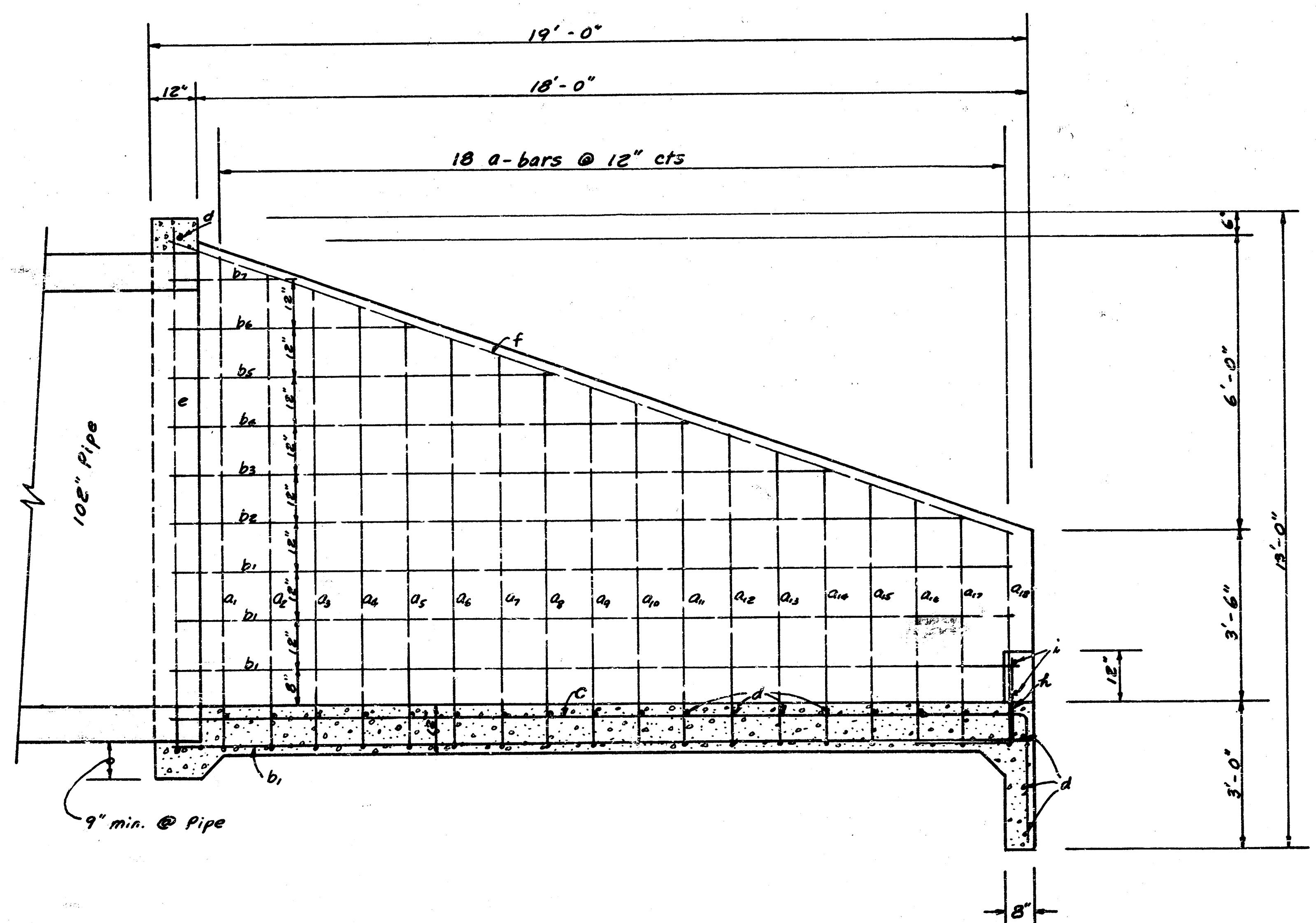
SHEET
7
OF 19



PLAN - Headwall at Sta. 7+88
Scale: 1/2" = 1'-0"



SECTION ELEVATION

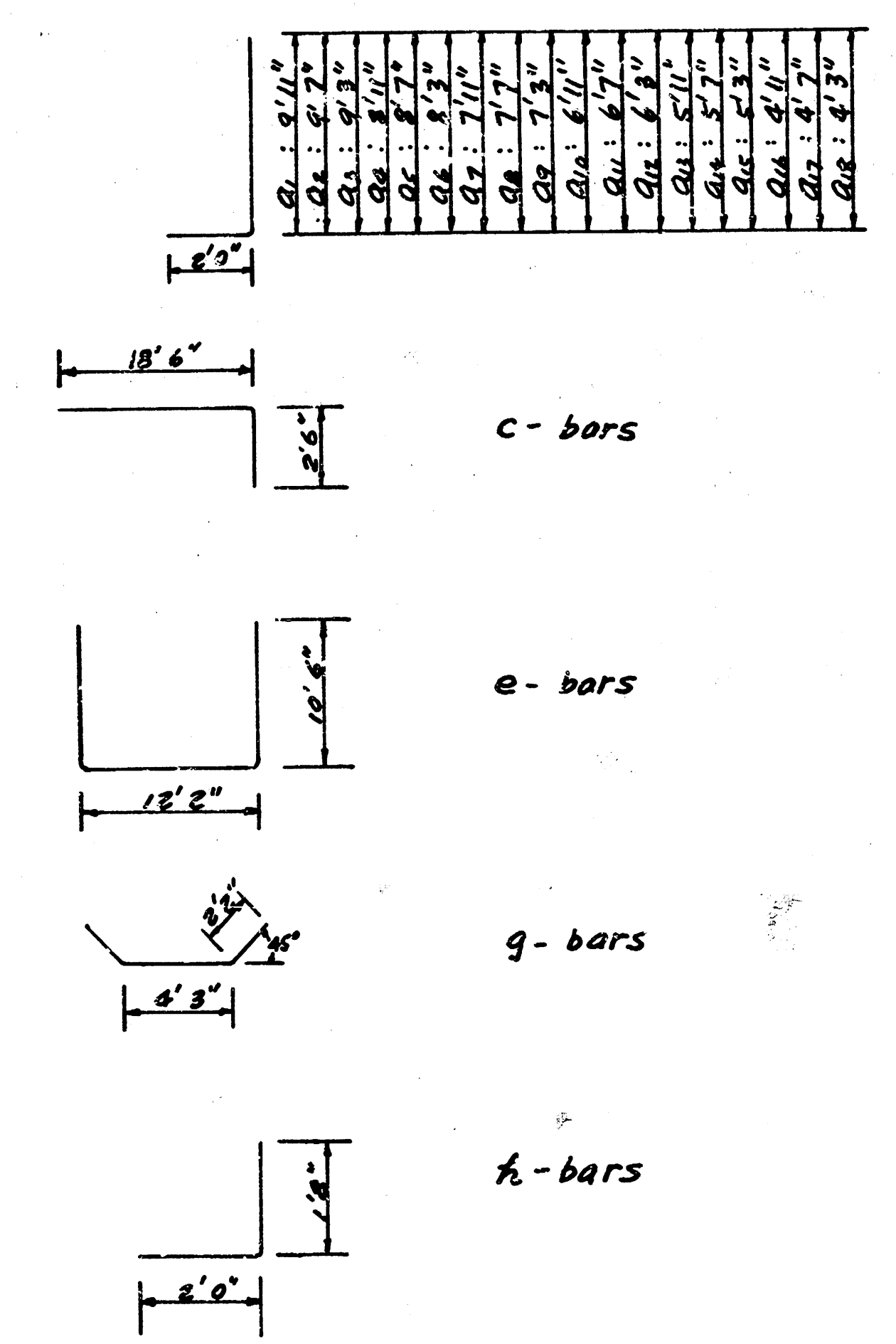


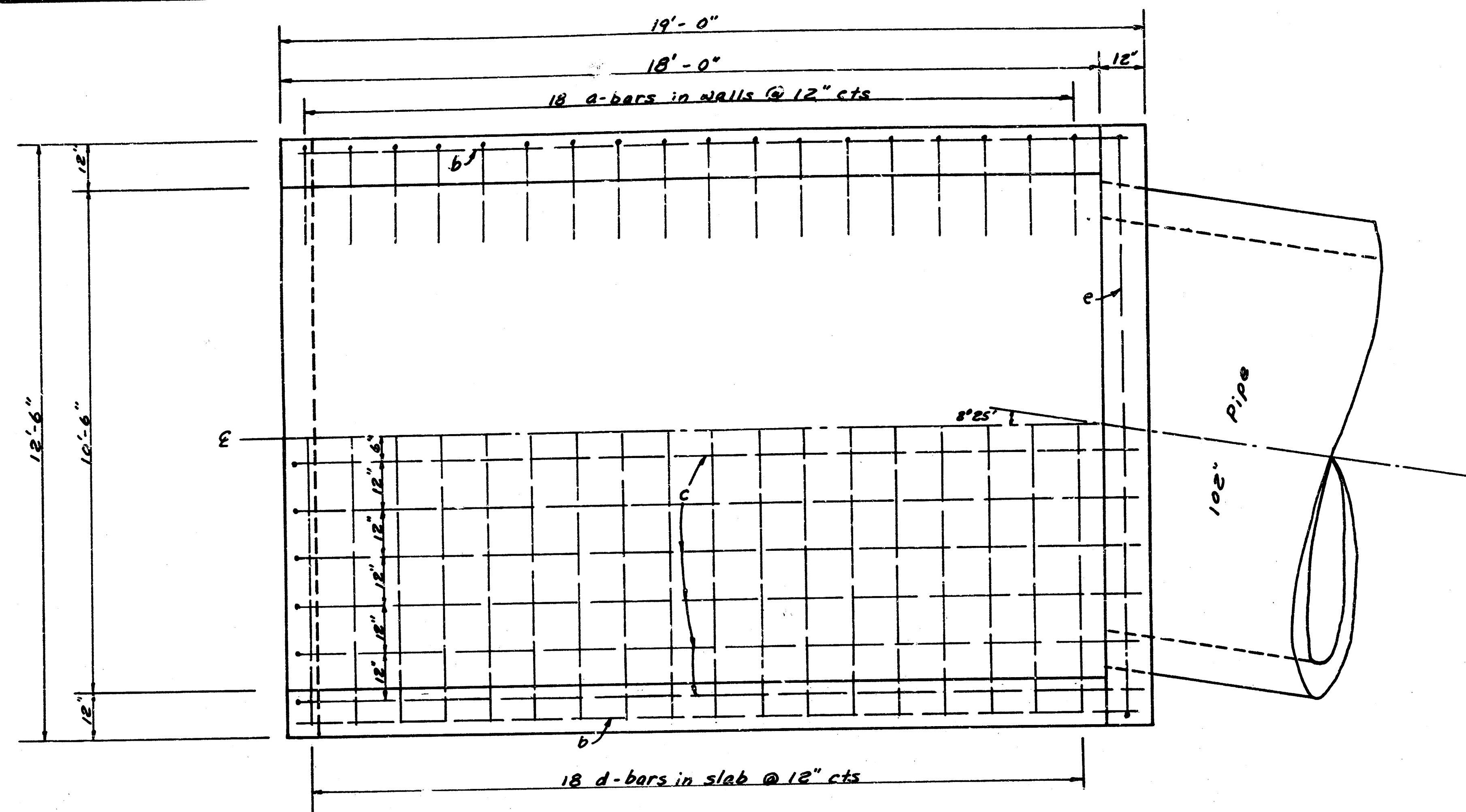
SECTION
Scale: 1/2" = 1'-0"

REBAR SCHEDULE

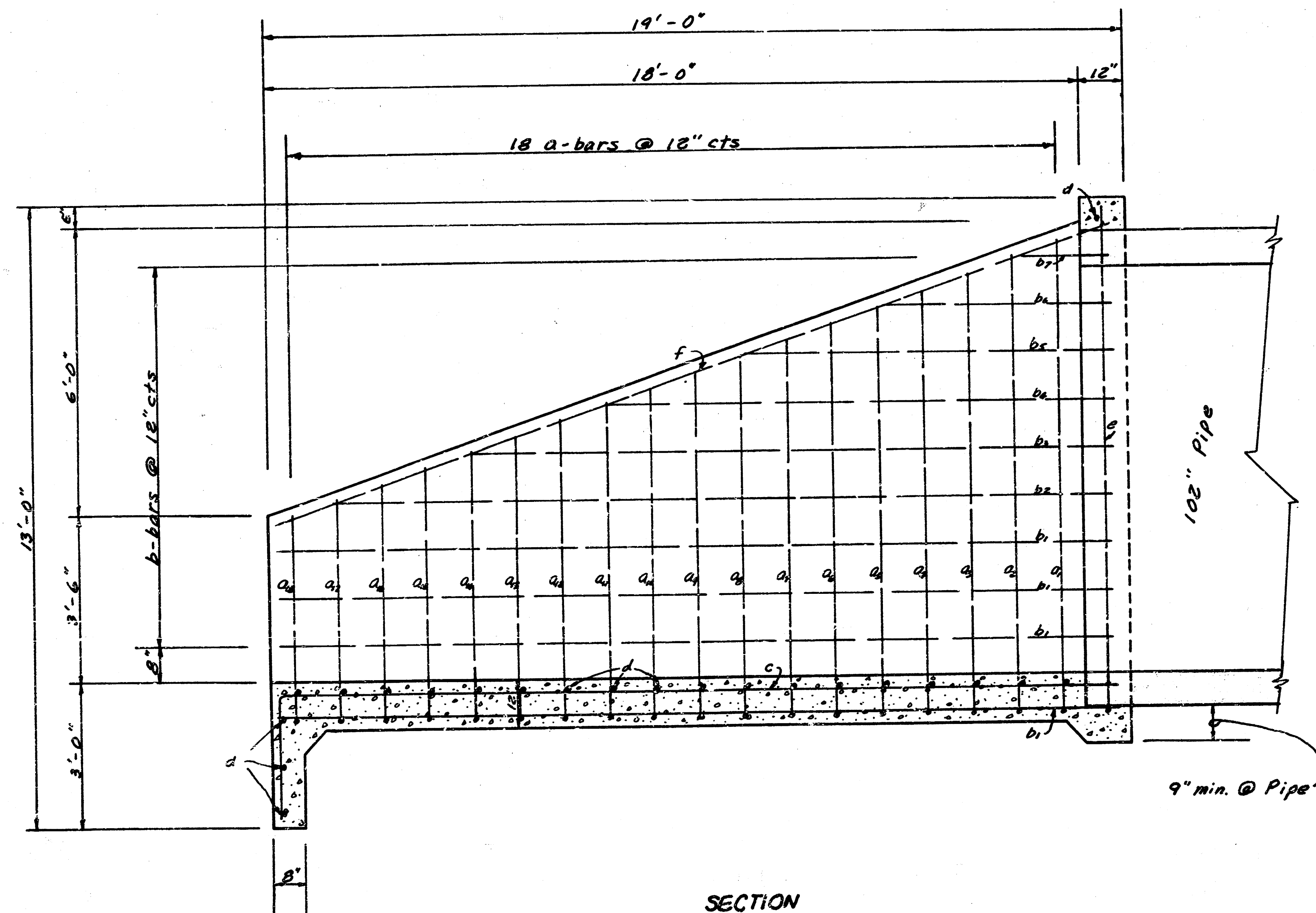
Bar	Shape	No. & Length	Weight
a1		2 @ 11' 1 1/2"	15.92
a2		2 @ 11' 7"	15.48
a3		2 @ 11' 3"	15.33
a4		2 @ 10' 1 1/2"	14.58
a5		2 @ 10' 7"	14.16
a6		2 @ 10' 3"	13.49
a7		2 @ 9' 11"	13.25
a8		2 @ 9' 7"	12.80
a9		2 @ 9' 3"	12.36
a10		2 @ 8' 11"	11.91
a11		2 @ 8' 7"	11.47
a12		2 @ 8' 3"	11.02
a13		2 @ 7' 11"	10.58
a14		2 @ 7' 7"	10.13
a15		2 @ 7' 3"	9.69
a16		2 @ 5' 11"	9.24
a17		2 @ 5' 7"	8.80
a18		2 @ 5' 3"	8.35
b1		8 @ 15' 6"	98.96
b2		2 @ 17' 2"	22.73
b3		2 @ 14' 2"	18.73
b4		2 @ 11' 2"	14.72
b5		2 @ 8' 2"	10.41
b6		2 @ 5' 2"	6.49
b7		2 @ 2' 2"	2.89
c		12 @ 21' 0"	168.34
d		22 @ 15' 2"	178.80
e		1 @ 35' 2"	22.16
f		2 @ 19' 4"	25.83
g		4 @ 8' 7"	22.73
h		8 @ 5' 8"	19.59
i		4 @ 4' 1"	10.91
Total Rebars 843 lbs			
Conc. 229 C.Y.			

All Conc. Reinforcement to be #4 bars.

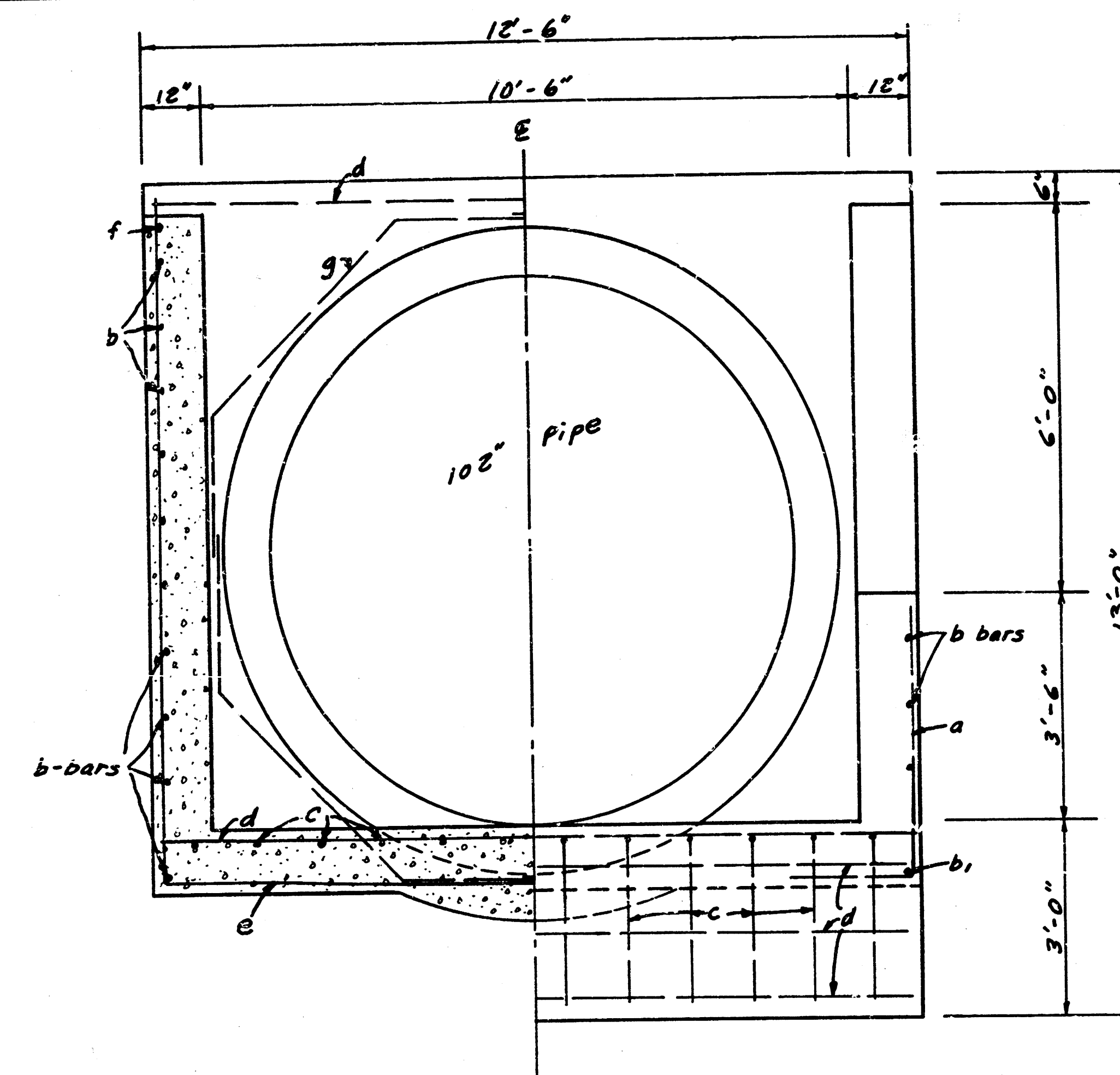




PLAN - Headwall at Sta. 10+00
Scale: 1/2" = 1'-0"



SECTION
Scale: 1/2" = 1'-0"

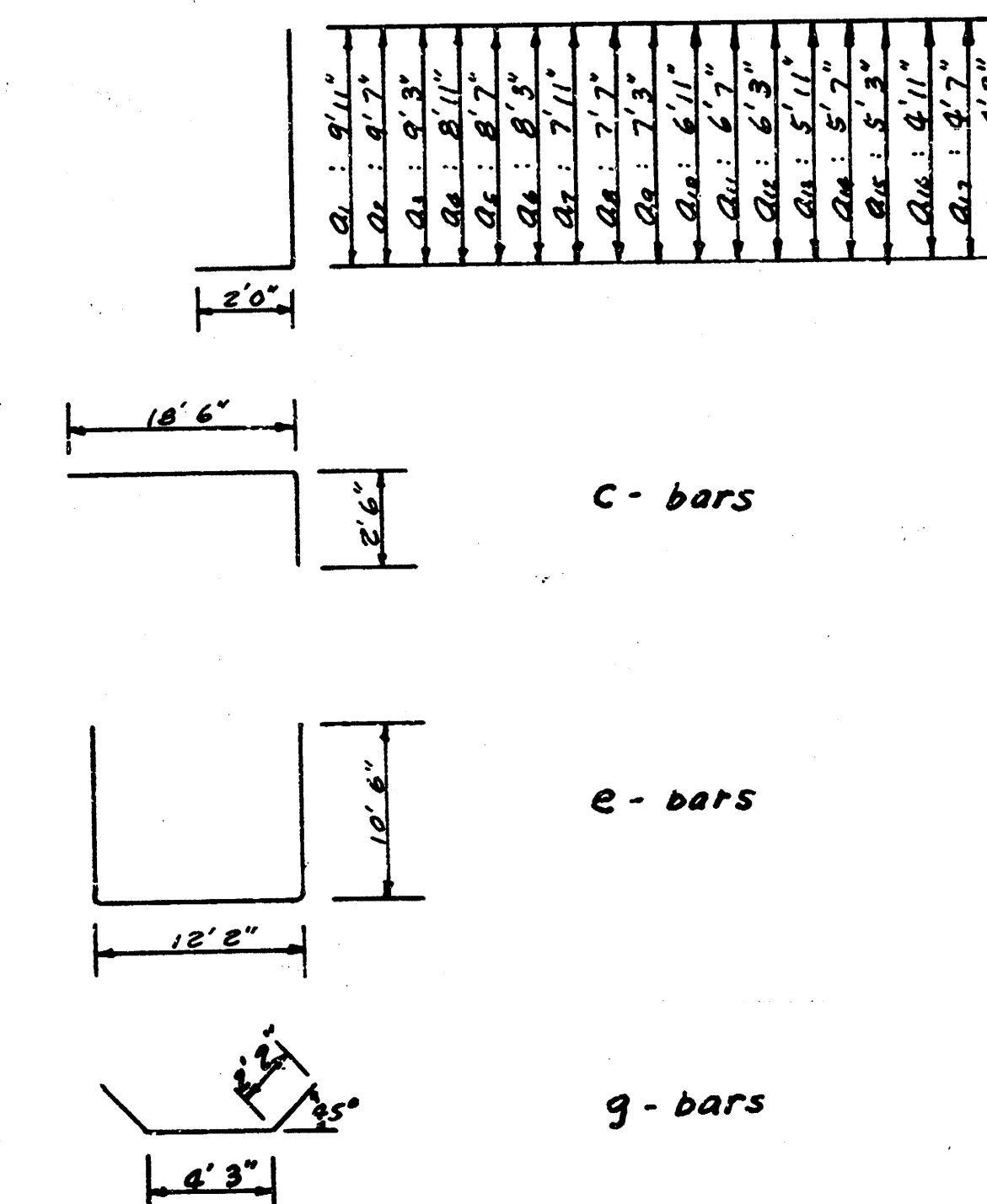


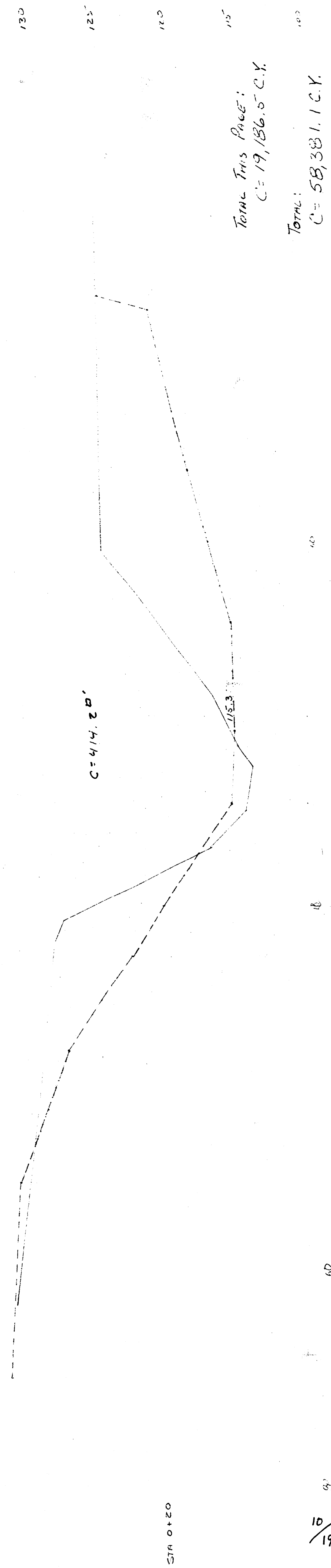
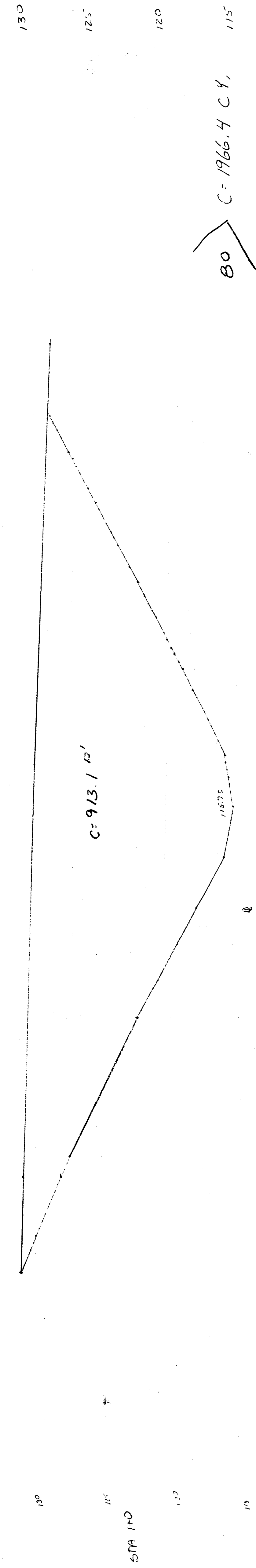
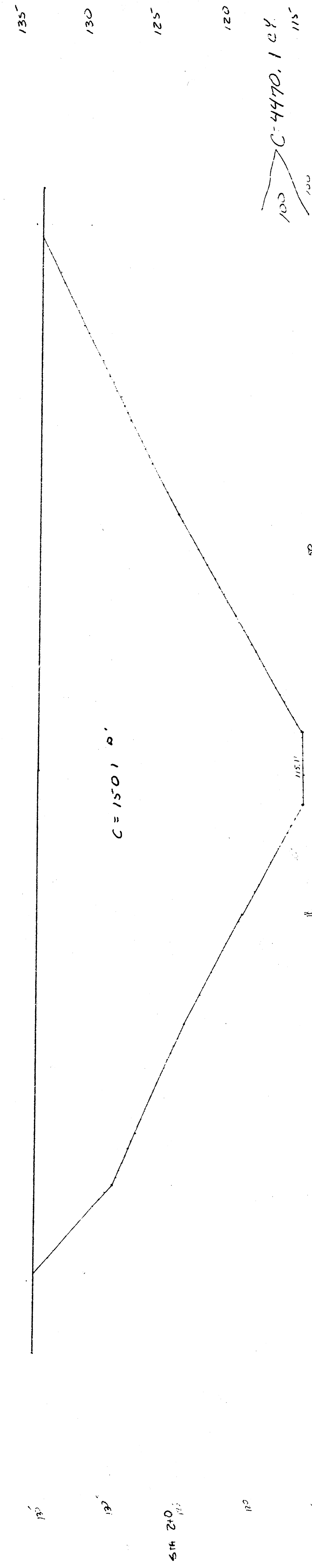
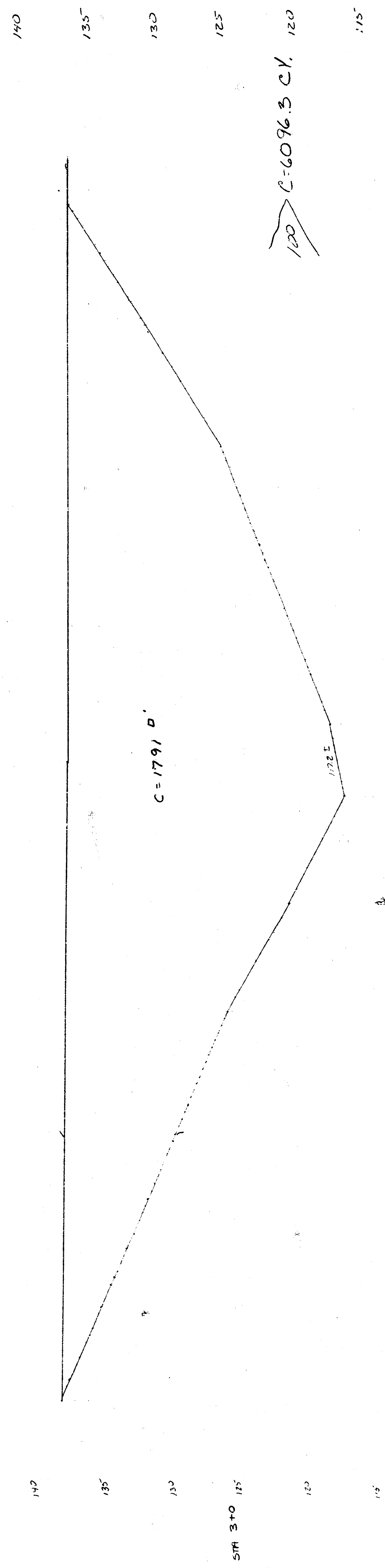
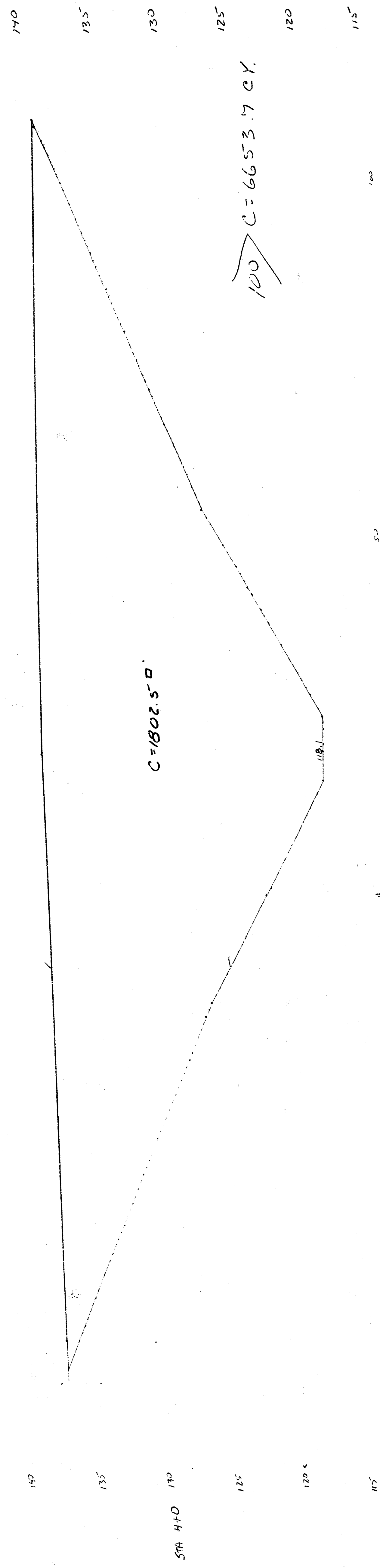
SECTION ELEVATION

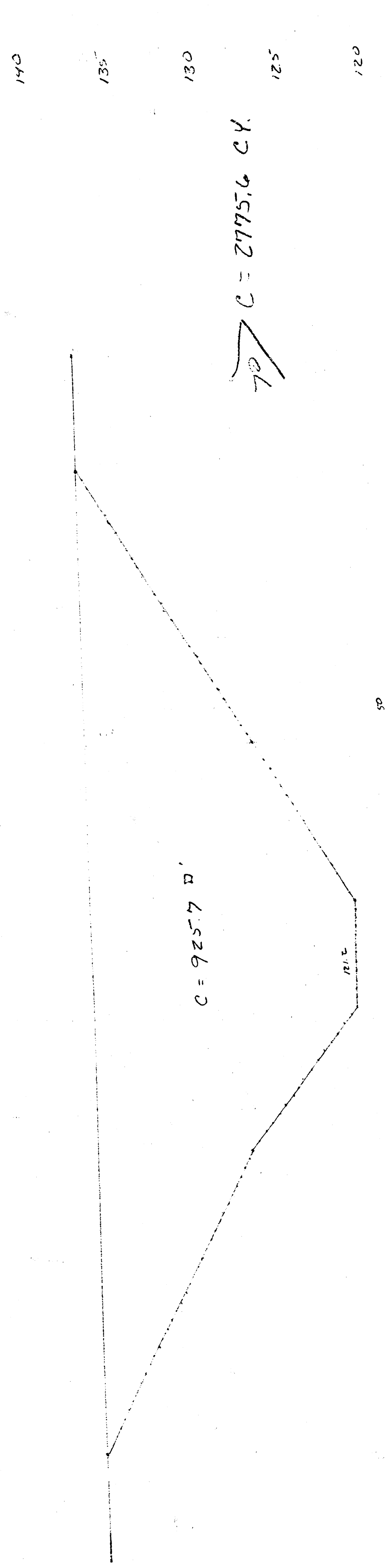
REBAR SCHEDULE

Bar	Shape	No. # Length	Weight
a1		2 @ 11'11"	15.92
a2		2 @ 11'7"	15.48
a3		2 @ 11'3"	15.03
a4		2 @ 10'11"	14.58
a5		2 @ 10'7"	14.13
a6		2 @ 10'3"	13.69
a7		2 @ 9'11"	13.25
a8		2 @ 9'7"	12.80
a9		2 @ 9'3"	12.36
a10		2 @ 8'11"	11.91
a11		2 @ 8'7"	11.47
a12		2 @ 8'3"	11.02
a13		2 @ 7'11"	10.58
a14		2 @ 7'7"	10.13
a15		2 @ 7'3"	9.69
a16		2 @ 6'11"	9.24
a17		2 @ 6'7"	8.80
a18		2 @ 6'3"	8.35
b1		8 @ 18'6"	98.86
b2		2 @ 17'8"	22.73
b3		2 @ 14'2"	18.73
b4		2 @ 11'2"	14.72
b5		2 @ 8'2"	10.91
b6		2 @ 5'2"	6.90
b7		2 @ 2'2"	2.89
c		12 @ 21'0"	168.34
d		22 @ 12'2"	178.80
e		1 @ 33'2"	22.16
f		2 @ 19'4"	25.83
g		4 @ 8'7"	22.73
Total Rebars 813 lbs.			
Conc. 227 C.Y.			

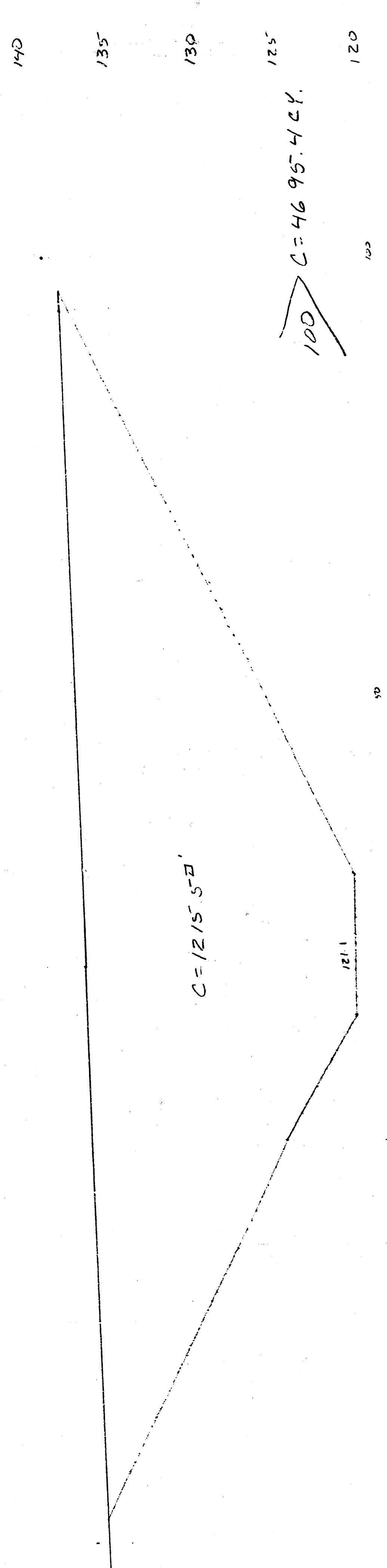
All Conc. Reinforcement to be #4 bars.



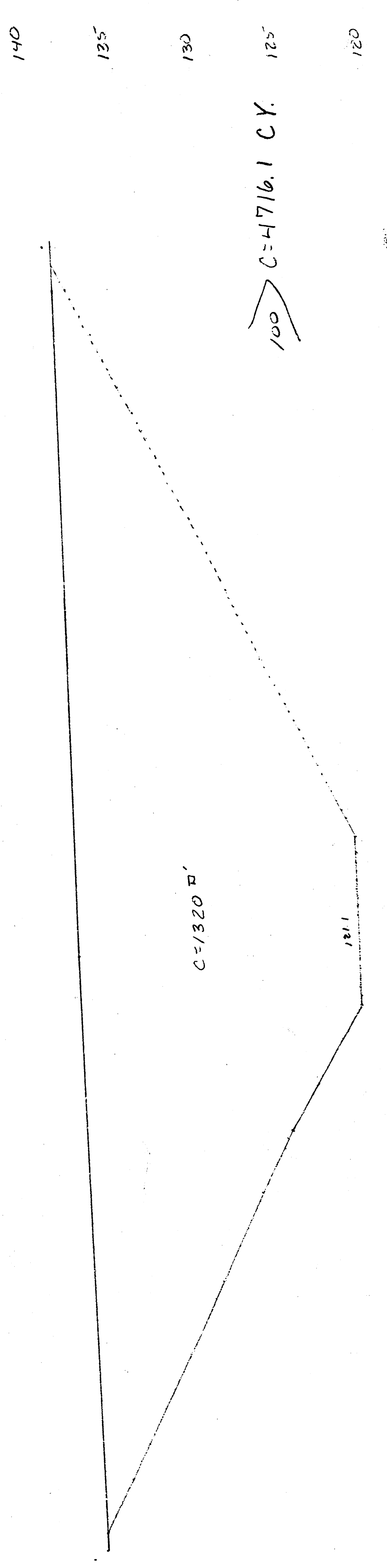




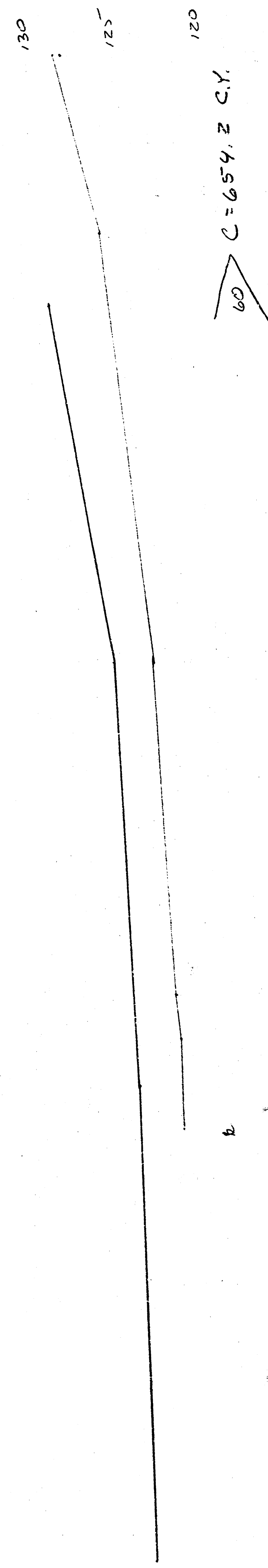
C = 2775.6 CY



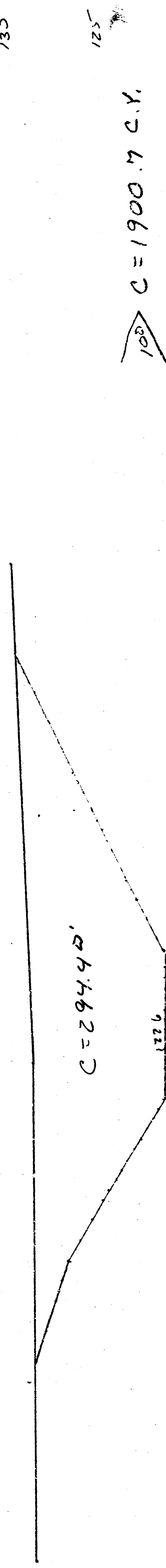
C = 4695.4 CY



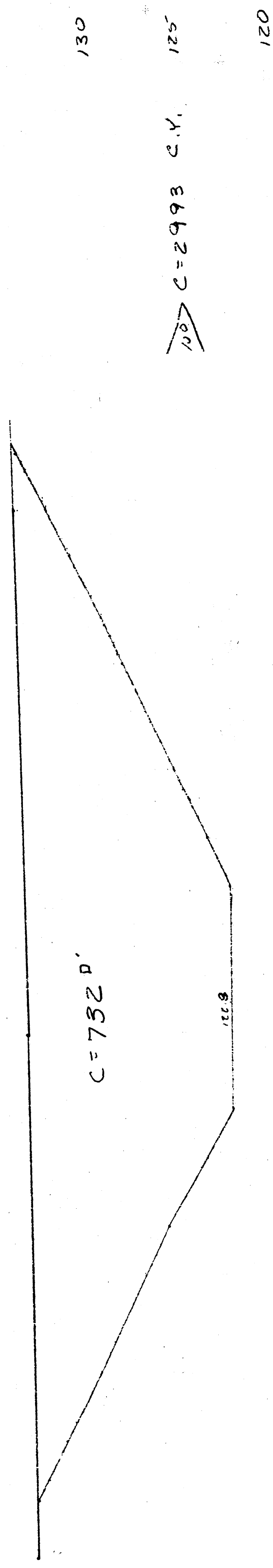
STA 13+00



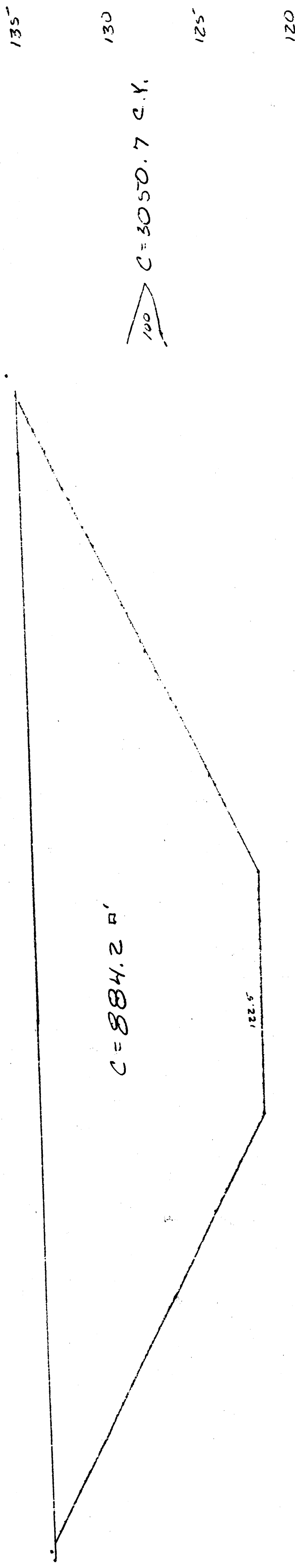
STA 13+0



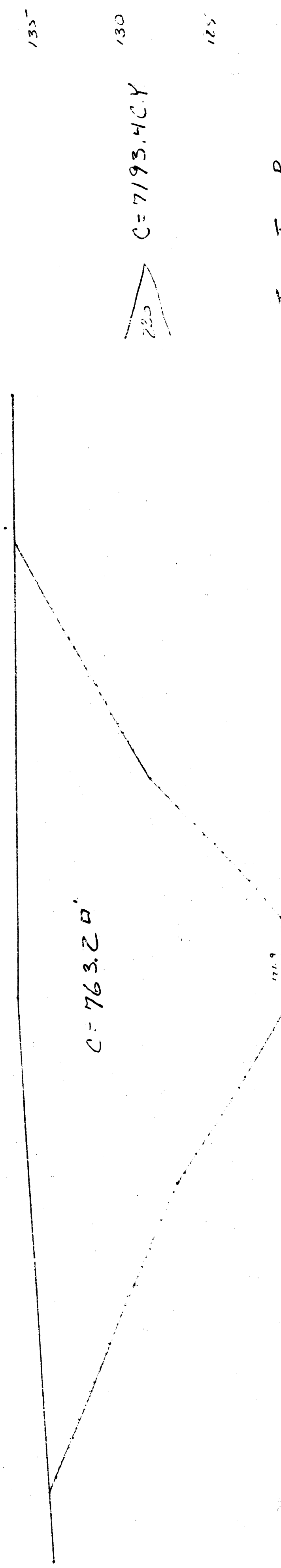
STA 12+0



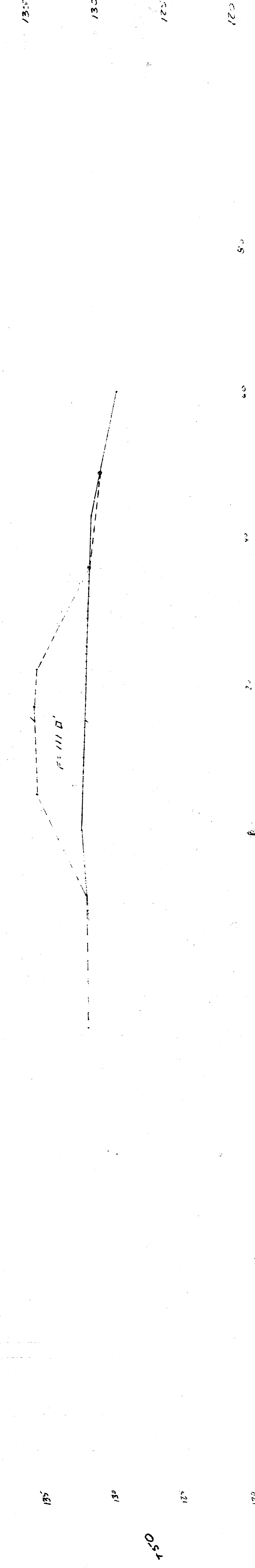
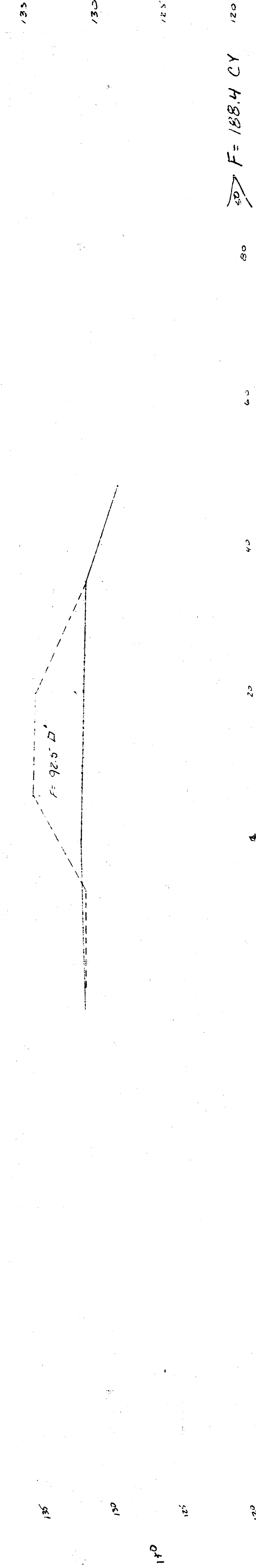
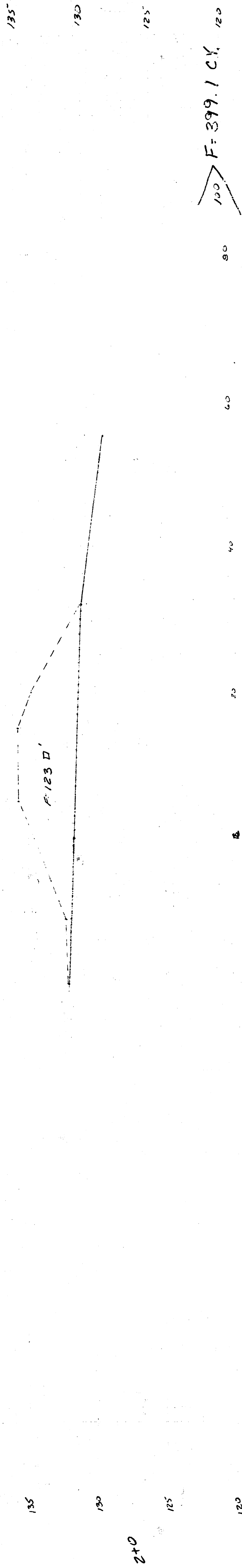
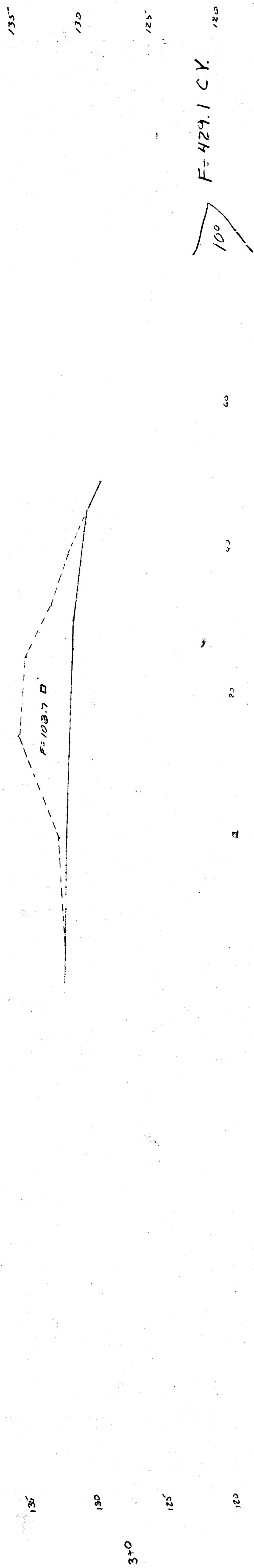
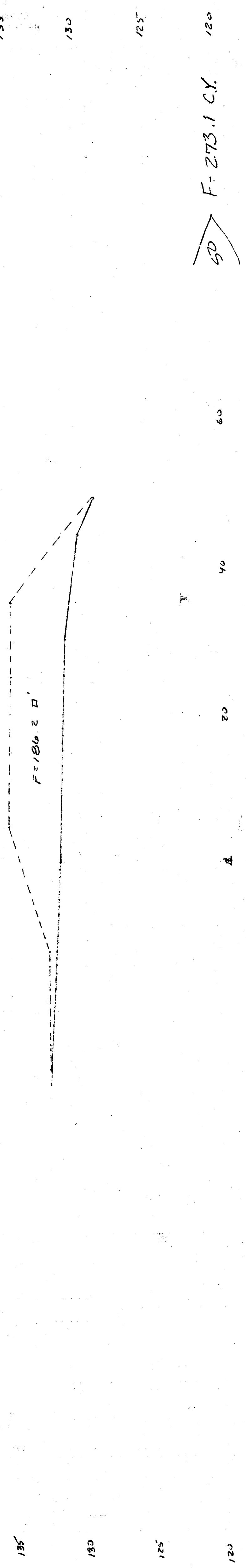
STA 11+0



STA 10+0

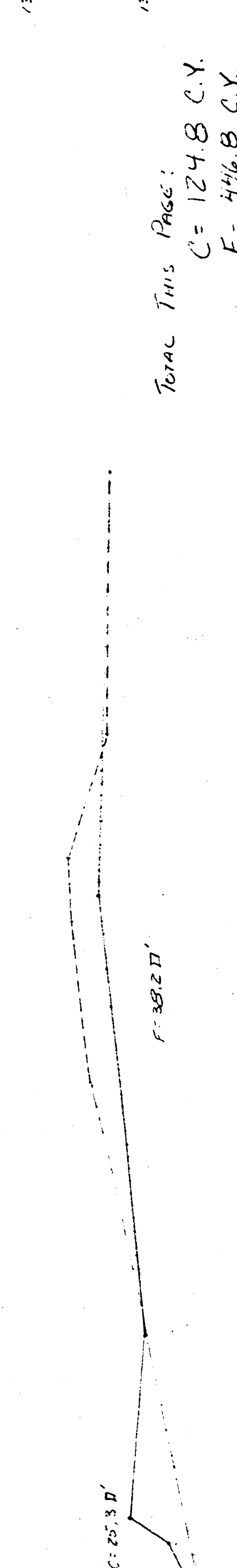
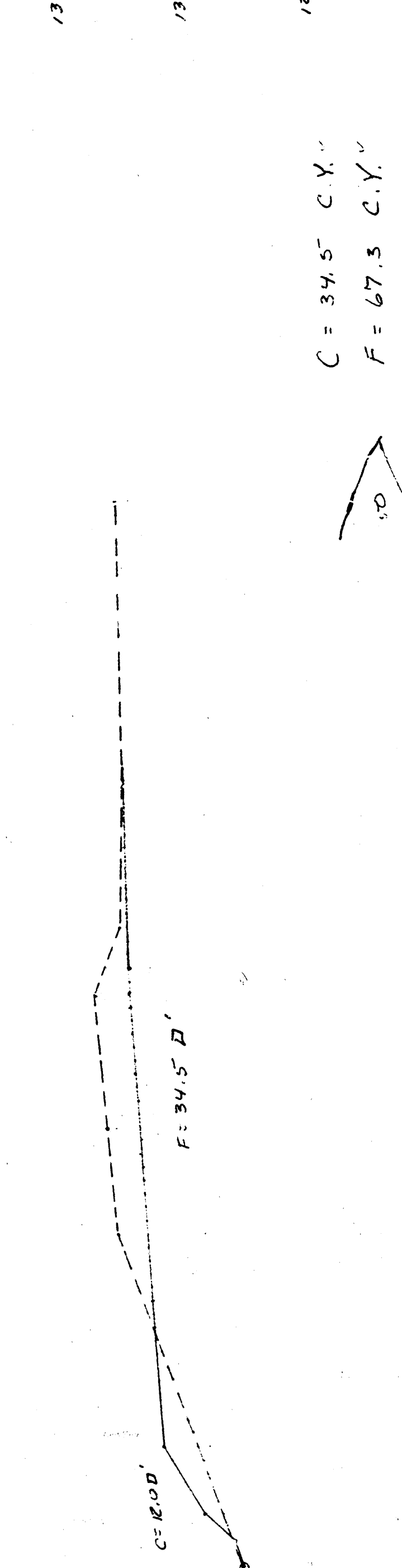
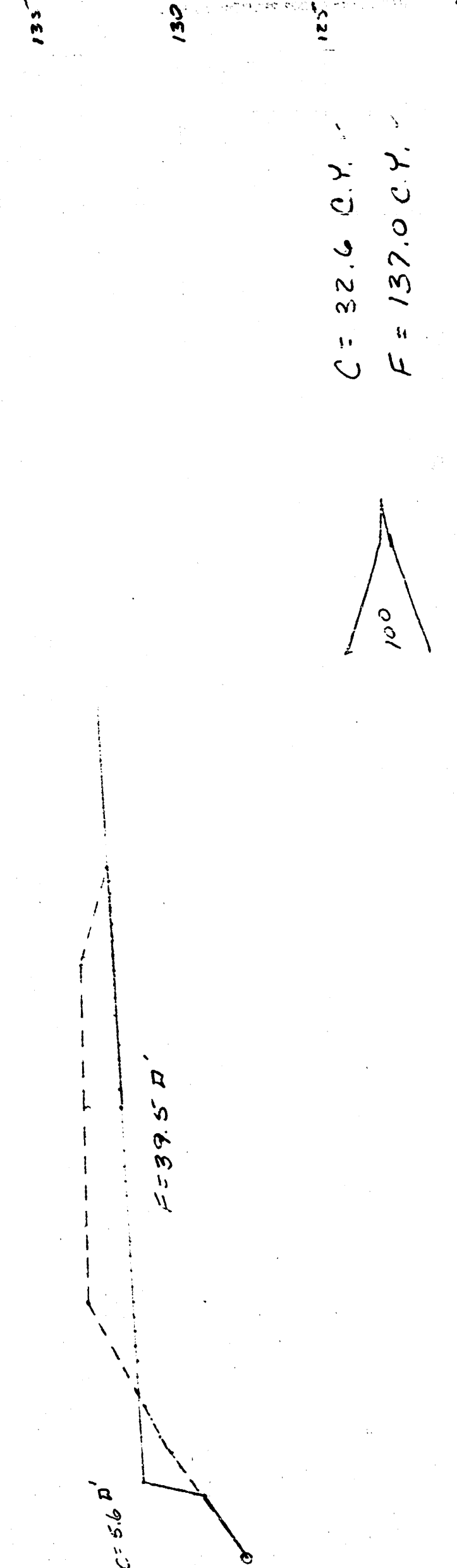
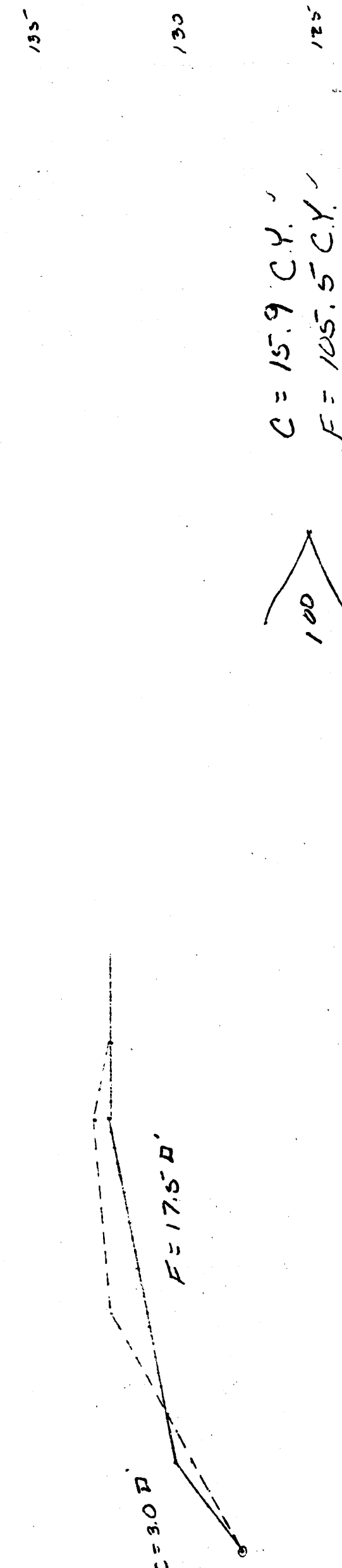
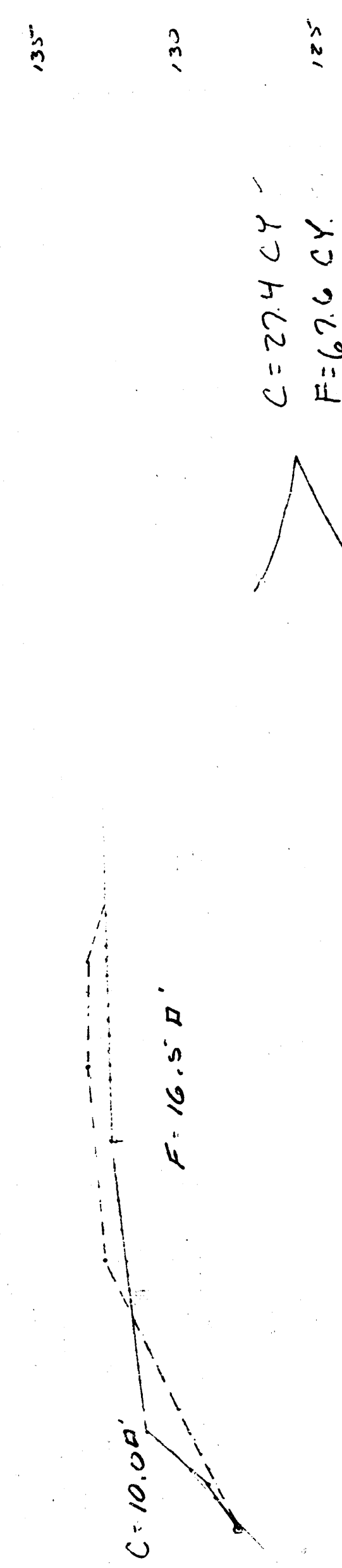


Total This Piece:
 $C = 15,792 \text{ C.Y.}$

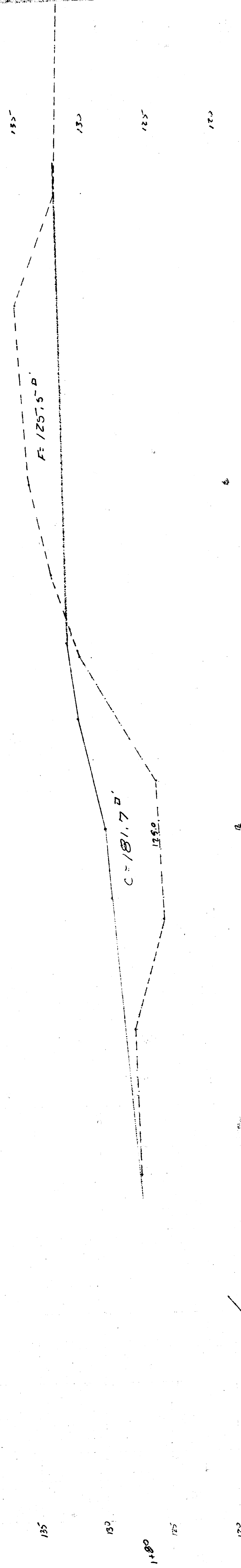


From This Page:
F-1289.7

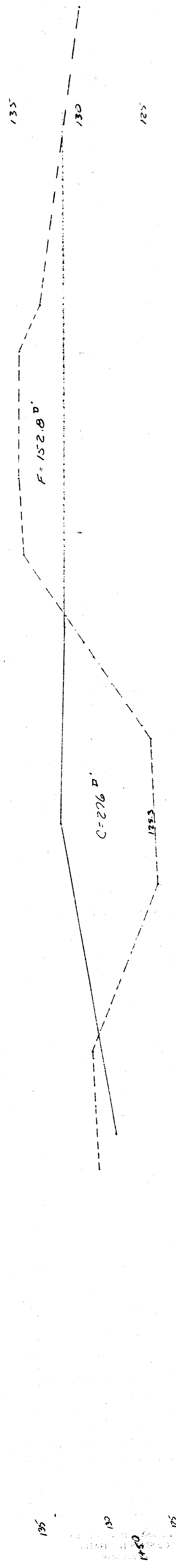
Beam X Sags West Side Lake
From Shulman North



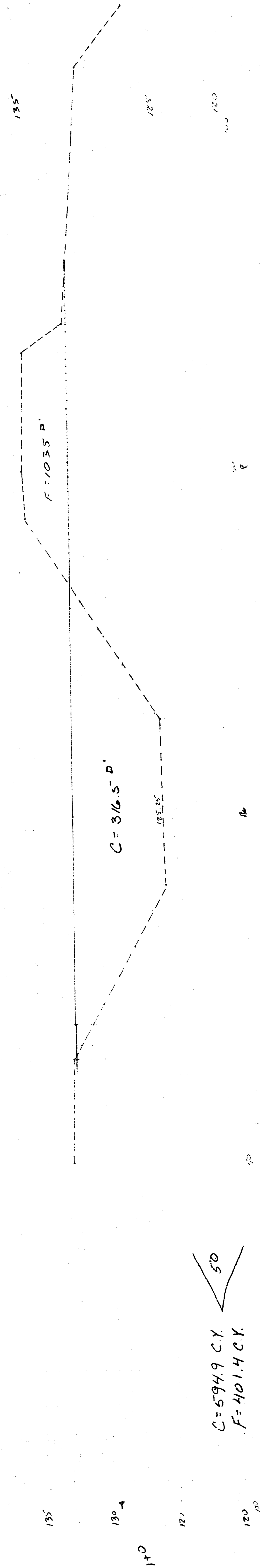
Total This Area:
C = 124.8 CY
F = 446.8 CY



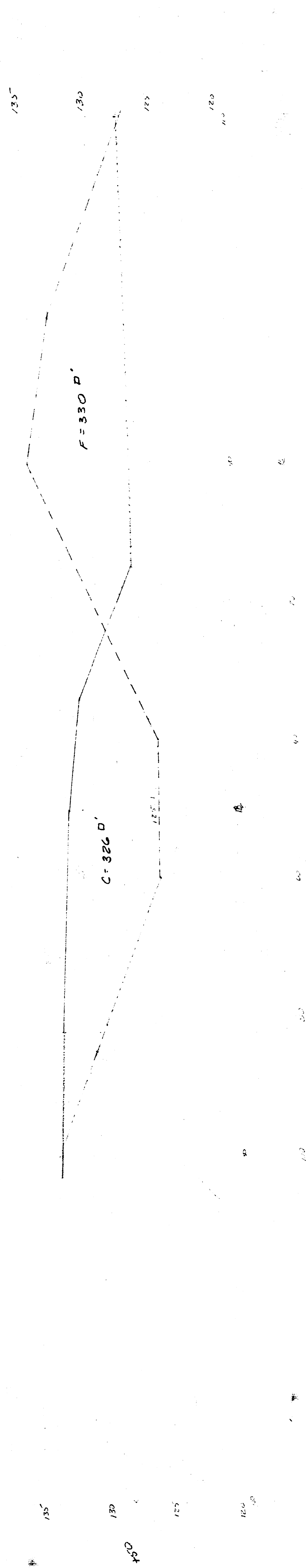
$C = 254.3 \text{ CY}$
 $F = 154.6 \text{ CY}$



$C = 548.6 \text{ CY}$
 $F = 237.3 \text{ CY}$

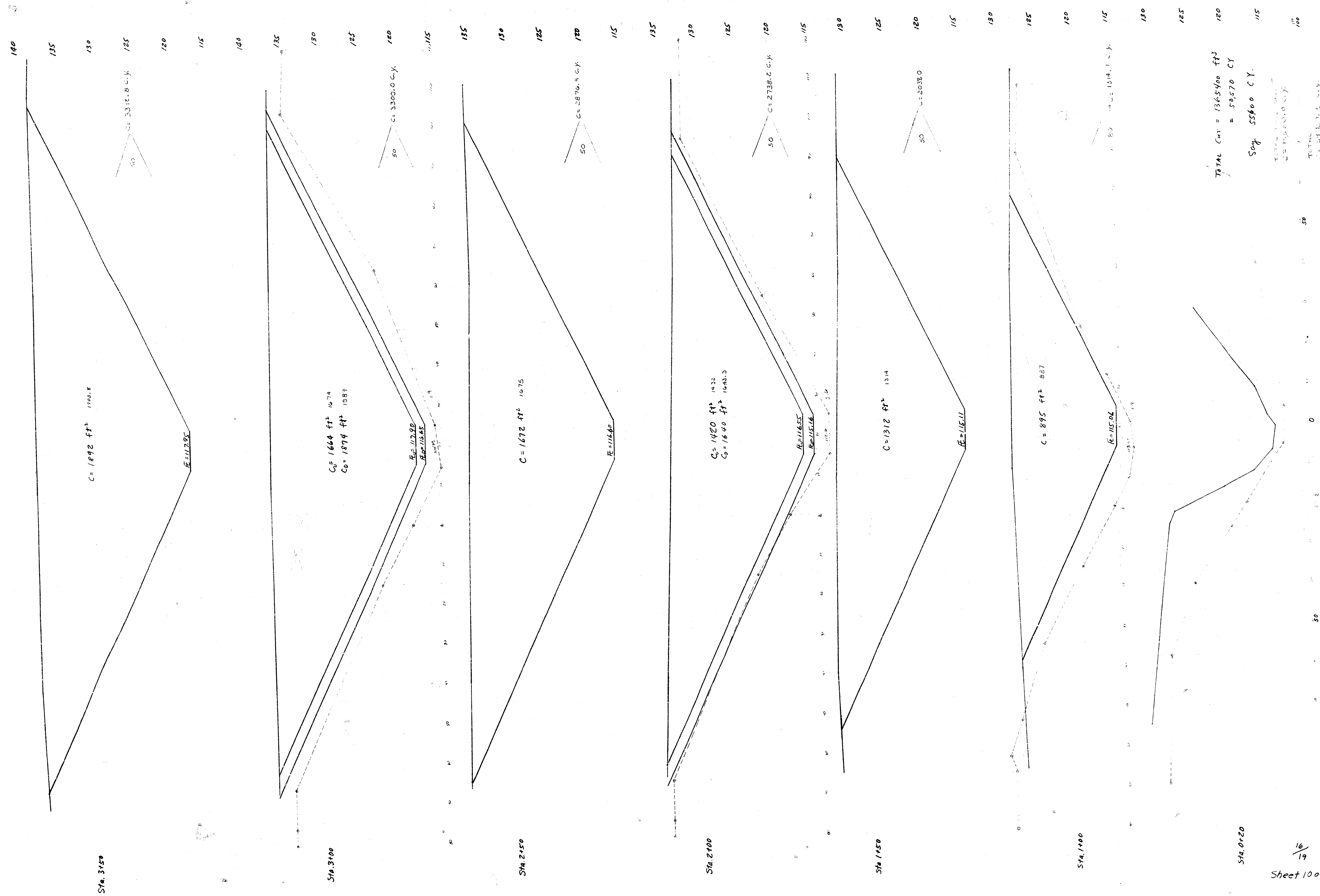


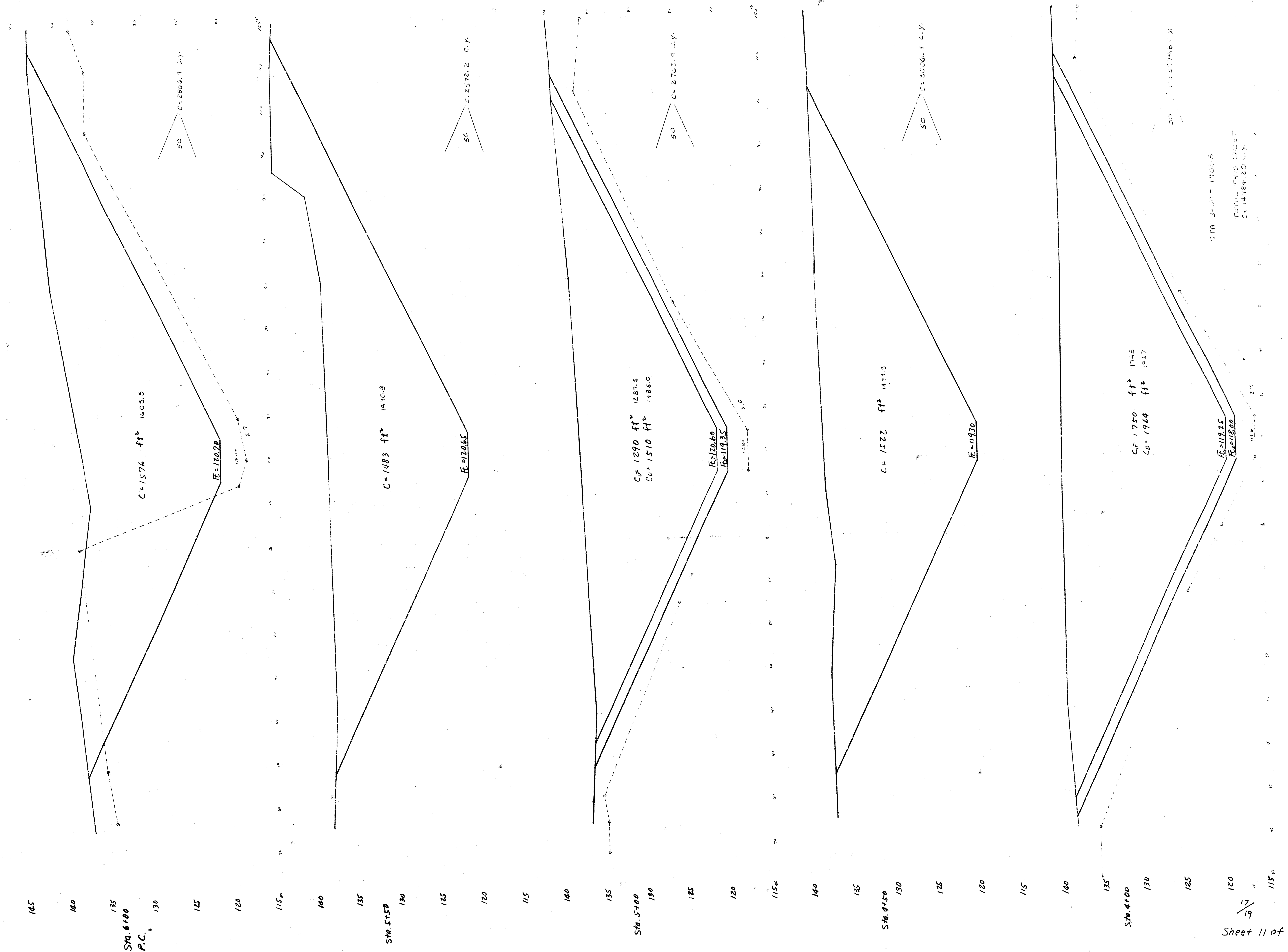
$C = 594.9 \text{ CY}$
 $F = 401.4 \text{ CY}$



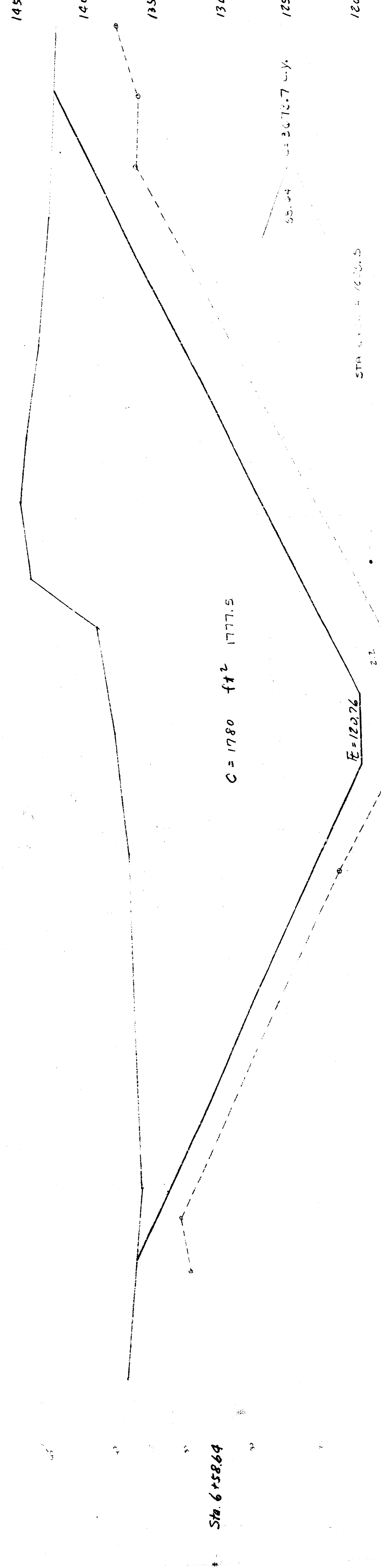
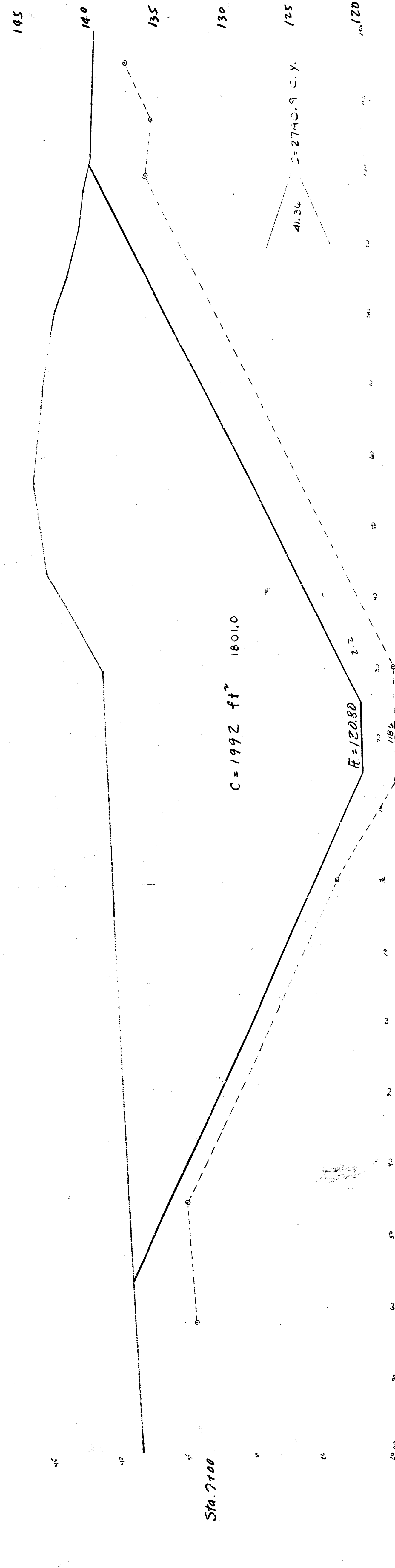
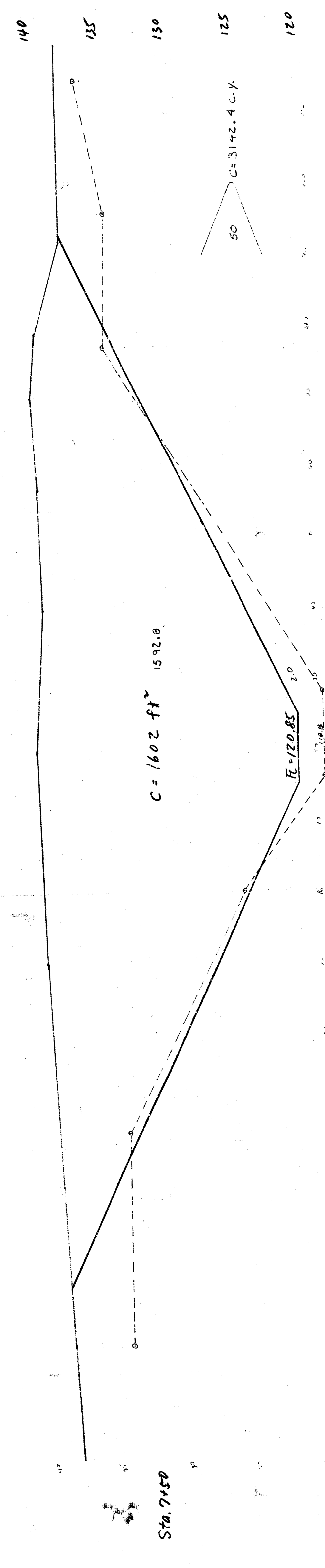
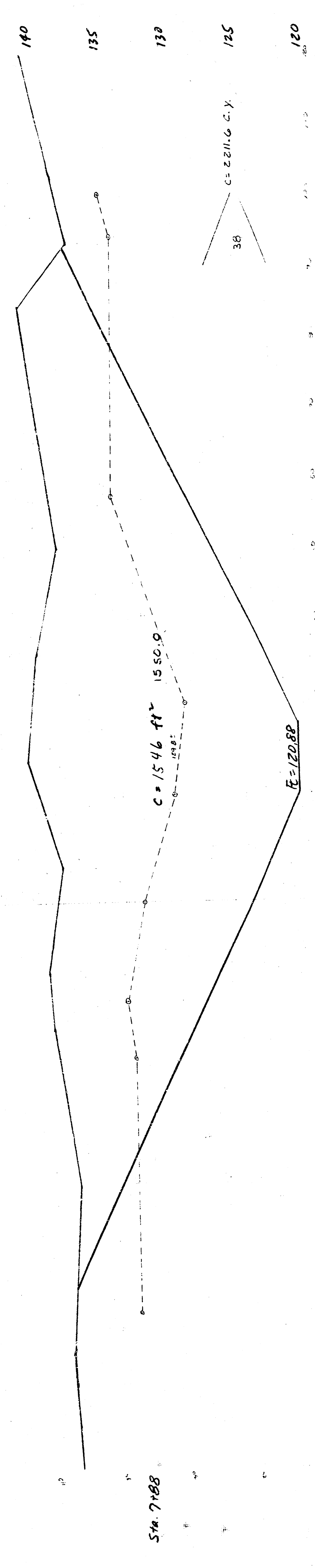
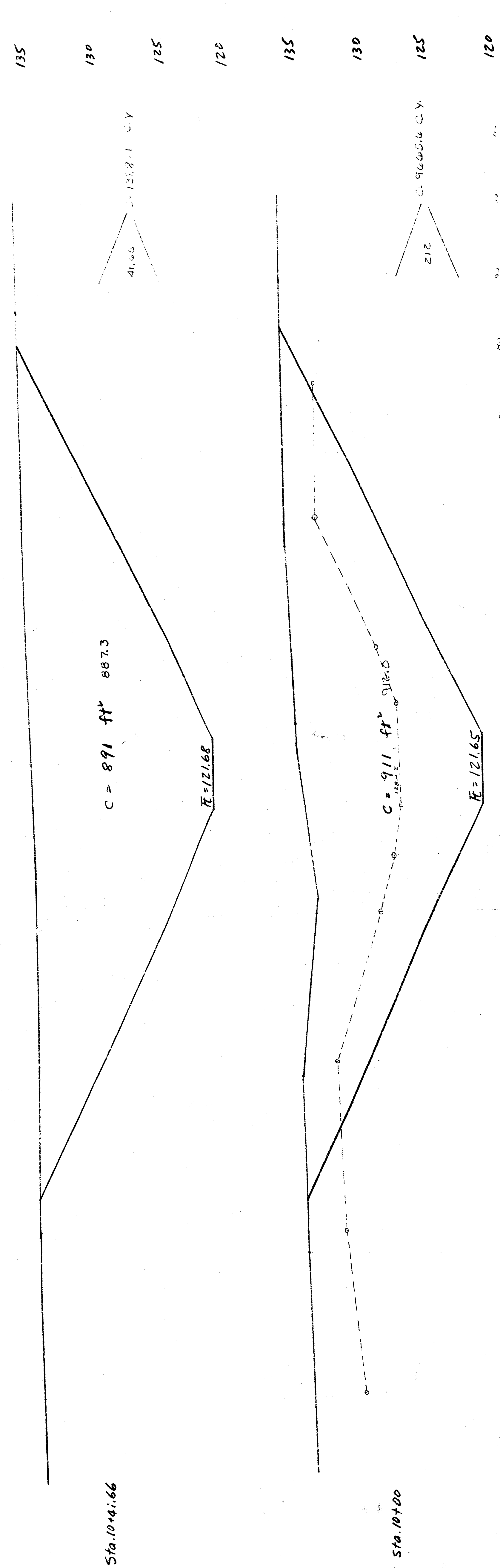
Total This Page:
 $C = 1397.8 \text{ CY}$
 $F = 713.3 \text{ CY}$

X Secs For Approx Ditch



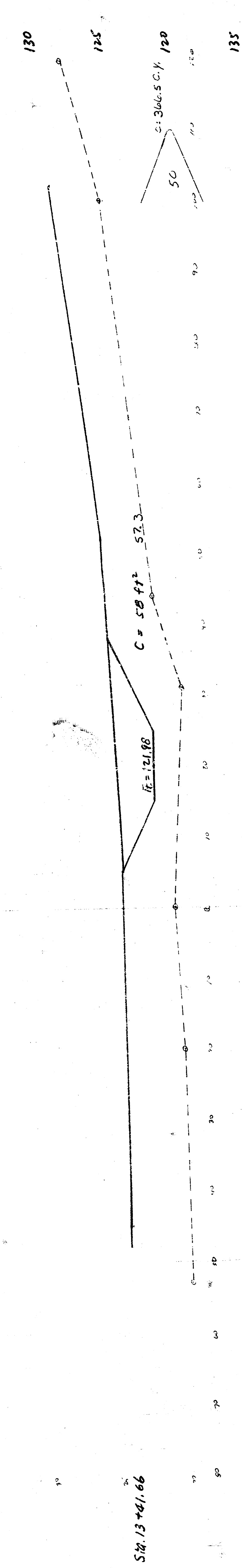


STA 3+00 = 1903.5
TOTAL THIS SHEET
C = 1484.20 C.Y.

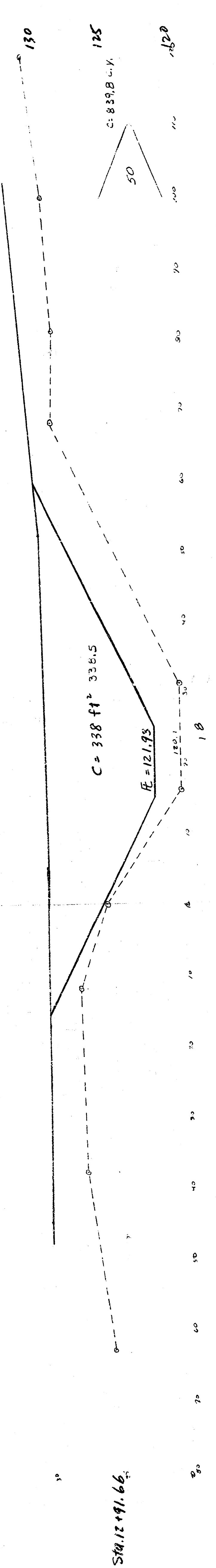


STA 6+58.6 C.Y.

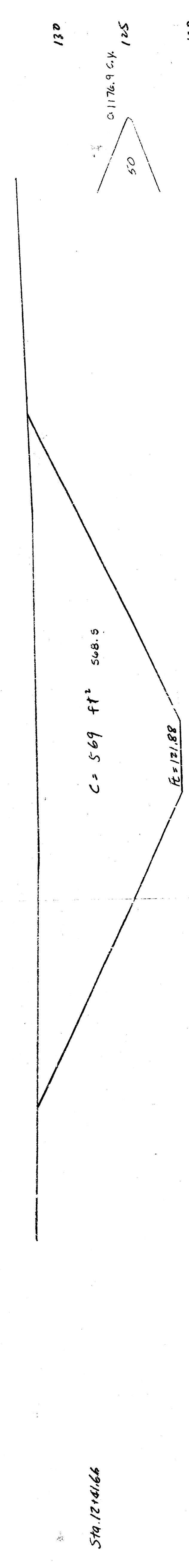
TOTAL THIS SHEET
C=25,824.3 C.Y.



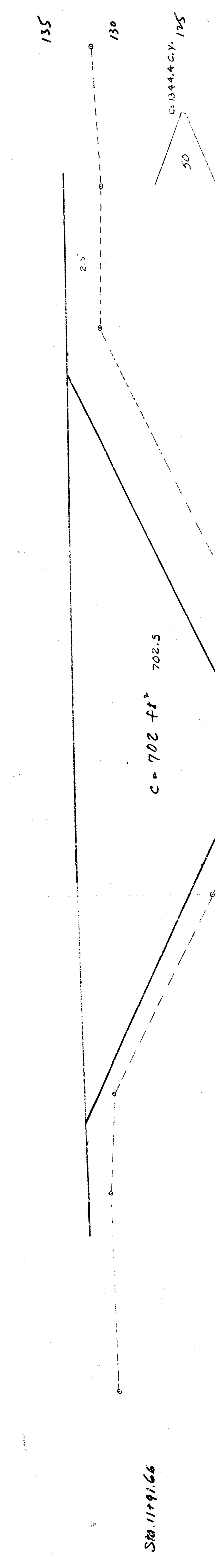
Sta. 13+41.66



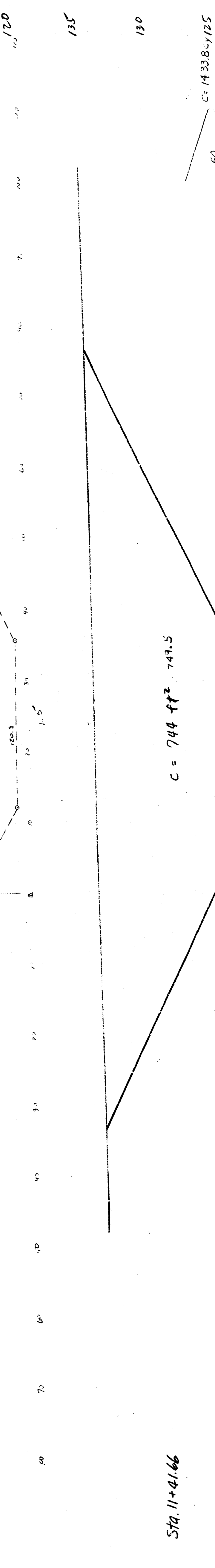
Sta. 12+91.66



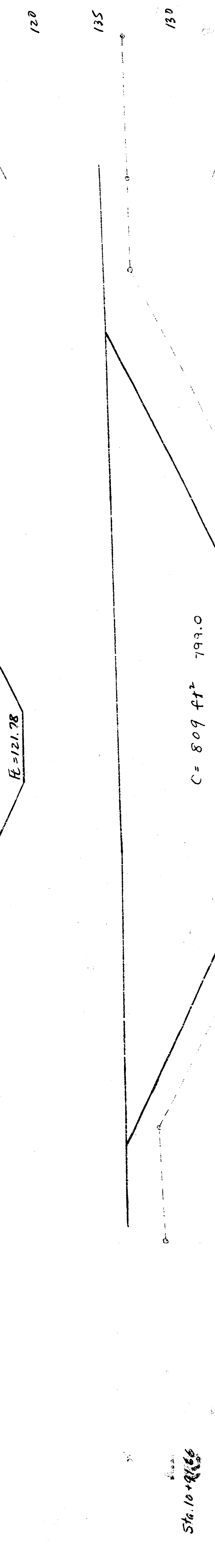
Sta. 12+41.66



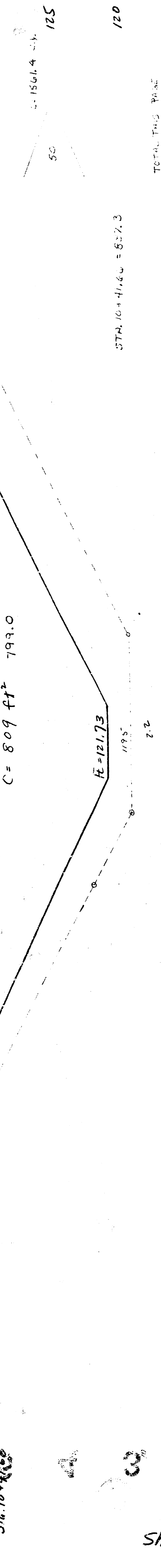
Sta. 11+91.66



Sta. 11+41.66



Sta. 10+91.66



Sta. 10+41.66 = 872.5



Sheet 13 of 13