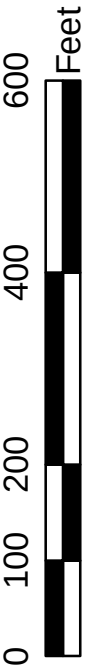


Attachment H-9: 10th Avenue South (Dike West) Information



FMMFS: Credit to Existing Levees
10th Avenue South, 4579-3 (Fargo)



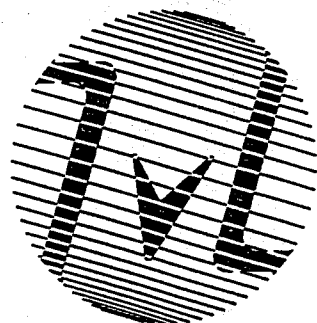
St. Paul District
GEOLOGY
GEO TECHNICAL
US Army Corps
of Engineers®

FMMFS_P2_geotech_2009-04.mxd
Printed 20 NOV 09

4TH STREET DIKE IMPROVEMENTS

IMPROVEMENT DISTRICT #4579-3

FARGO, NORTH DAKOTA 1998

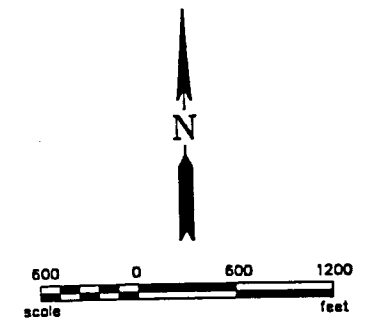
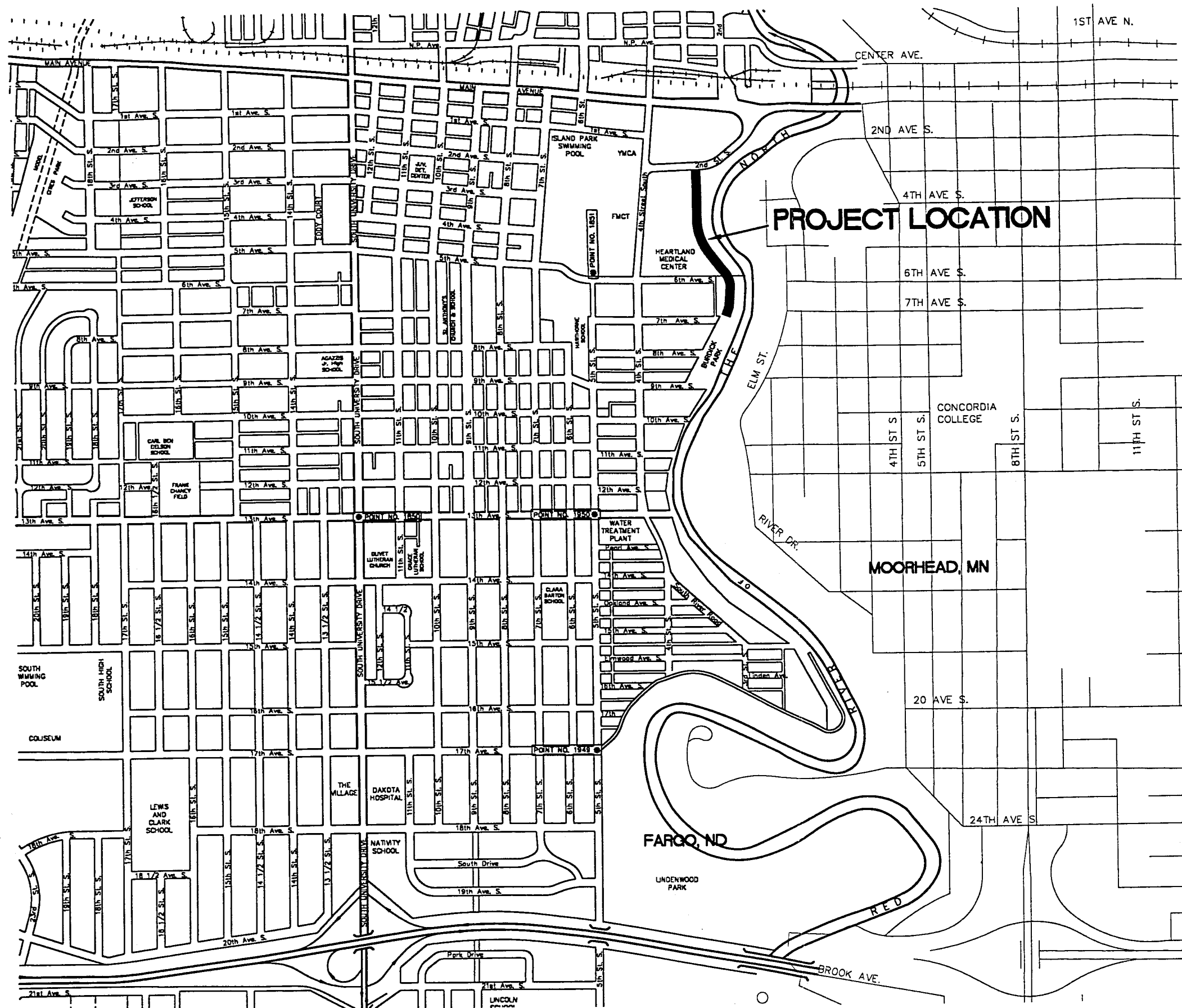


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PLAN & PROFILE	SHEET 4
CROSS SECTIONS	SHEET 5
TYPICAL DETAILS	SHEET 6



BENCHMARK			
NO.	DESCRIPTION	LOCATION	ELEV.
1	BRASS CAP - 043-74 U.S.G.S.-1929 DATUM	CORNER OF 4TH ST. S. & 10TH AVE. S.	891.59
2	BRASS CAP - 044-74 U.S.G.S.-1929 DATUM	CORNER OF 4TH ST. S. & 12TH AVE. S.	894.26

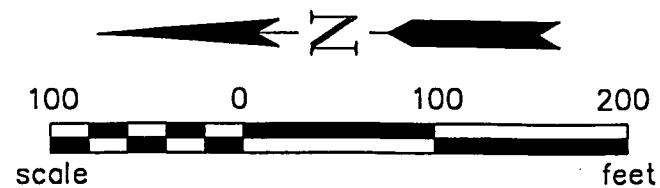
RECORD DRAWING - 12/7/98

GENERAL LAYOUT
4TH STREET DIKE IMPROVEMENTS
FARGO, NORTH DAKOTA



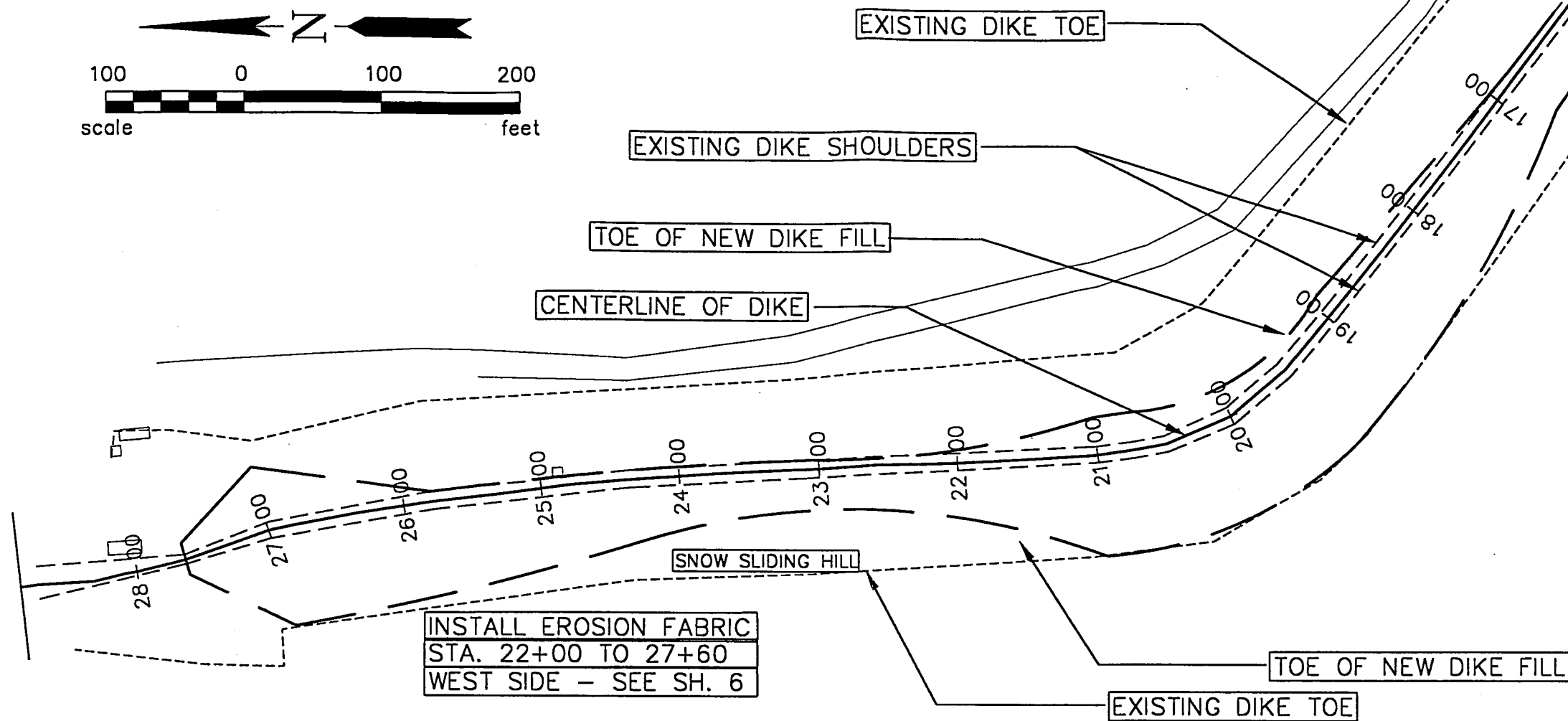
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DATE 03/12/98	REVISED
DRAWN BY SON	PROJ. NO. 8948
CH'D BY	DRAWING 2 OF 6
SCALE 1" = 600'	



2ND AVENUE

5TH AVENUE



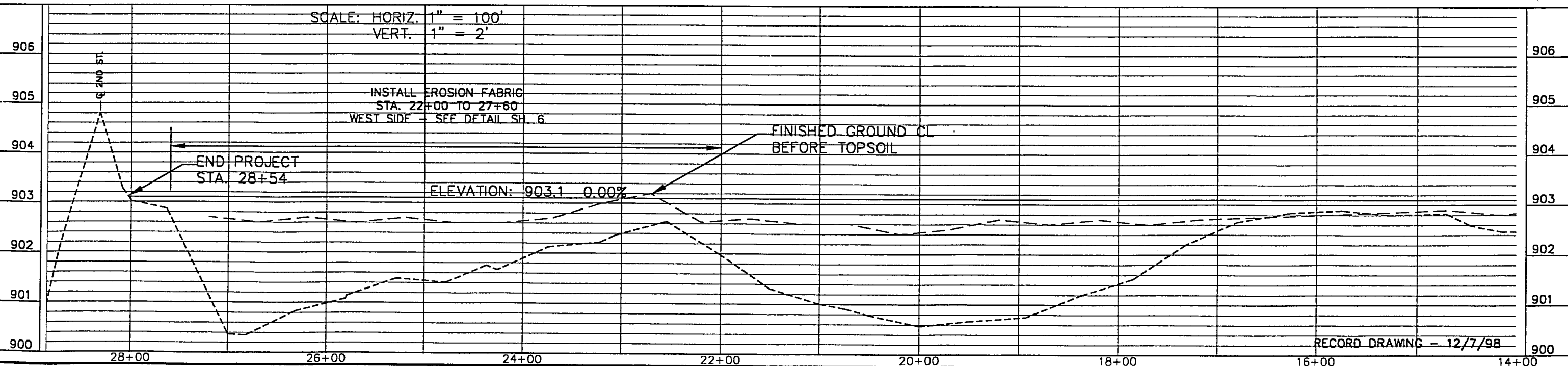
SCALE: HORIZ. 1" = 100'
VERT. 1" = 2'

INSTALL EROSION FABRIC
STA. 22+00 TO 27+60
WEST SIDE - SEE DETAIL SH. 6

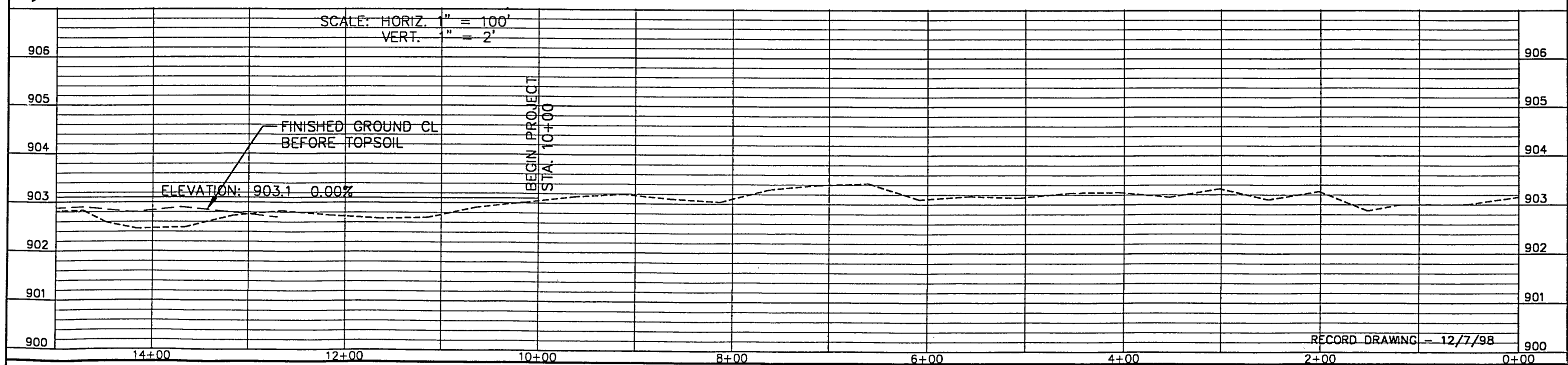
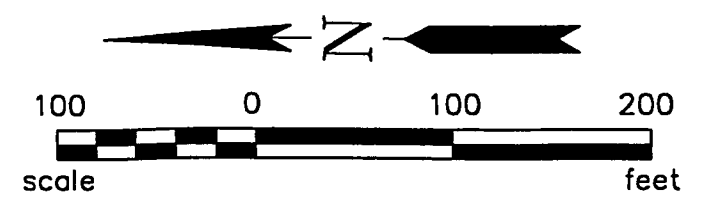
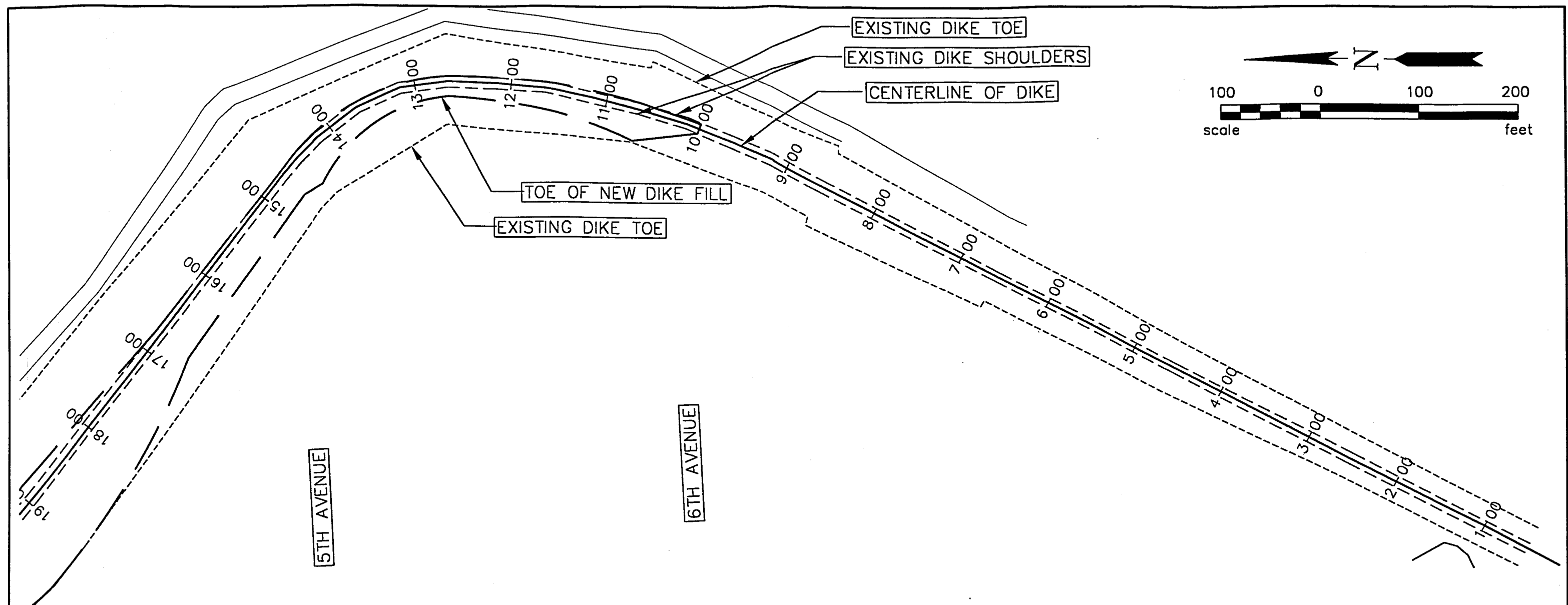
END PROJECT
STA. 28+54

ELEVATION: 903.1 0.00%

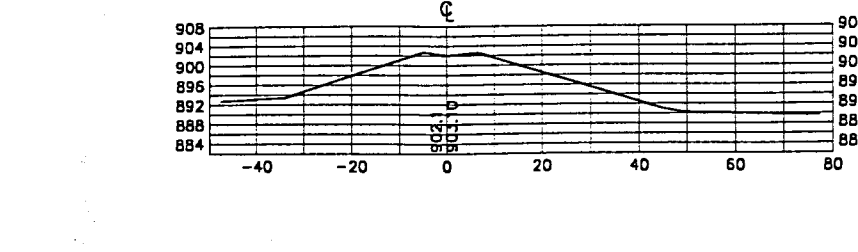
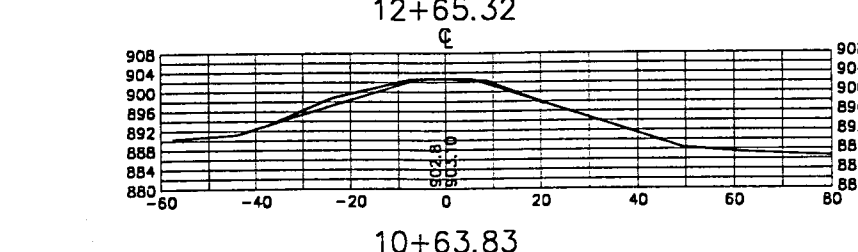
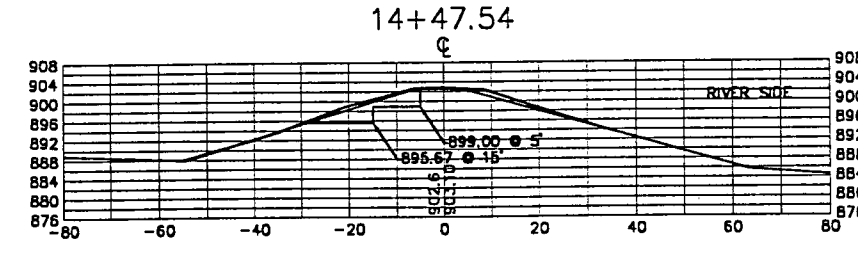
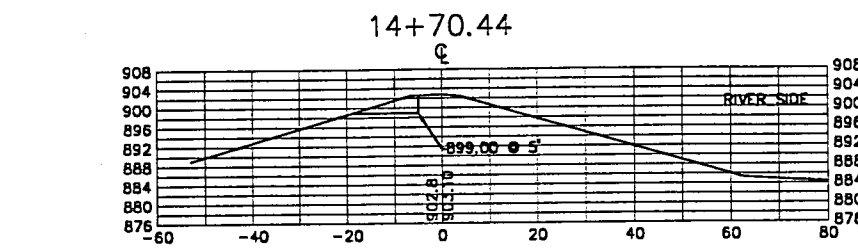
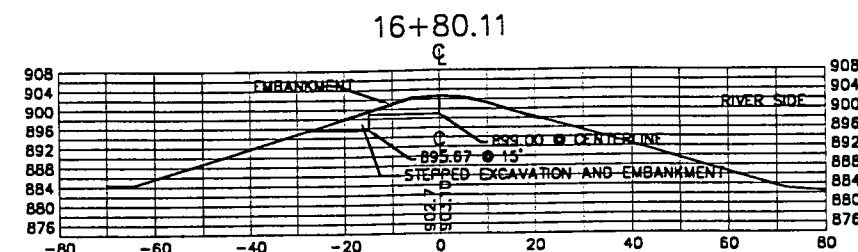
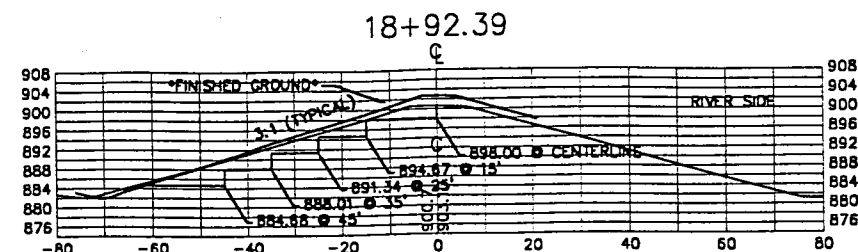
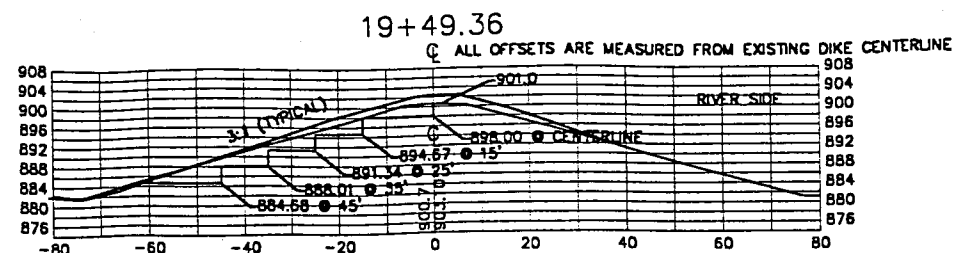
FINISHED GROUND CL
BEFORE TOPSOIL



RECORD DRAWING - 12/7/98



FINISHED DIRT GRADE IS BEFORE TOPSOIL PLACEMENT



FARGO FLOOD PROTECTION
4TH STREET DIKE
Restore Dike To Elevation 903.1

EXCAVATION & EMBANKMENT (STEPPED)

Station	Dist.	Area	Ave. Area	Cu. Ft.	Cum. Cu. Ft.
1063.83	201.06	0	0.0	0.0	0.0
1265.32	201.49	0	0.0	0.0	0.0
1447.54	182.22	53.69	26.8	4,891.7	4,891.7
1470.44	22.9	27.75	40.7	932.5	5,824.2
1680.11	209.67	61.81	44.8	9,389.0	15,213.2
1892.39	212.28	153.07	107.4	22,807.4	38,020.6
1949.36	56.97	147.85	150.5	8,571.7	46,592.3
2074.23	124.87	166.07	157.0	19,599.6	66,191.9
2100.54	26.31	156.7	161.4	4,246.0	70,437.9
2306.60	206.06	49.33	103.0	21,227.3	91,665.2
2426.15	119.55	67.94	58.6	7,009.8	98,675.0
2579.44	153.29	149.65	108.8	16,677.2	115,352.2
2699.89	120.45	262.62	206.1	24,829.0	140,181.1
2763.67	63.78	131.3	83.75	148,556.1	
2885.87	122.2	0	0.0	0.0	148,556.1

Excavation & Embankment Material

Cu. Ft.	Cu. Yds.
148,556.1	5,502.1

Stripping
10' TOP - 3:1

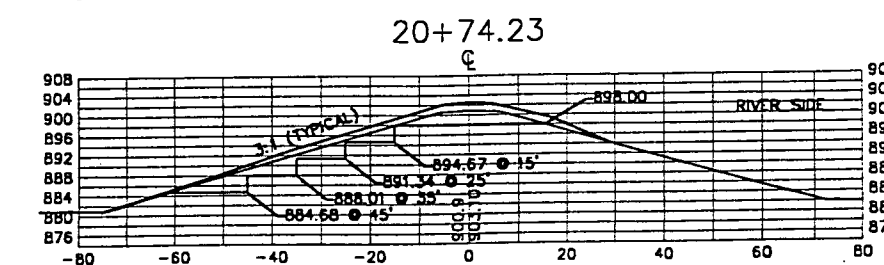
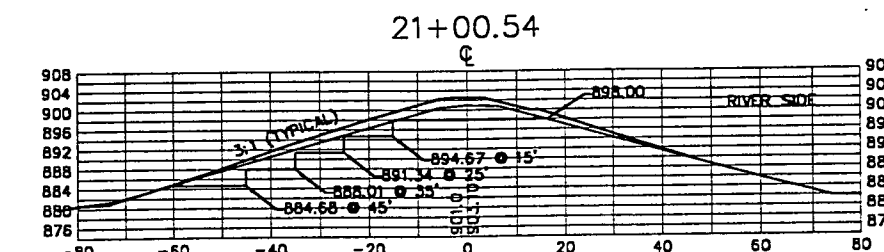
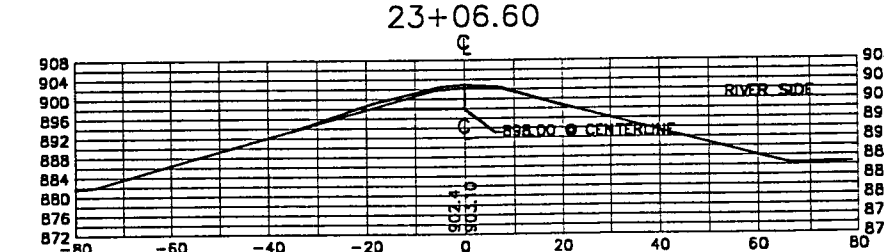
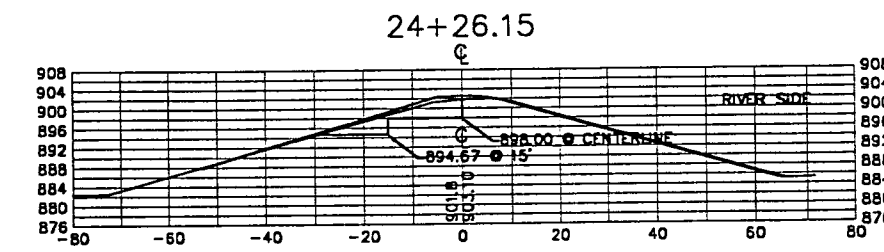
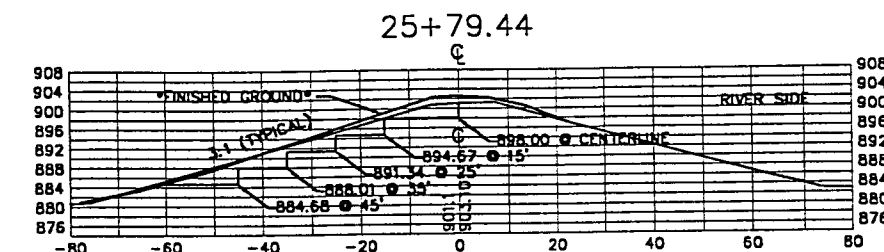
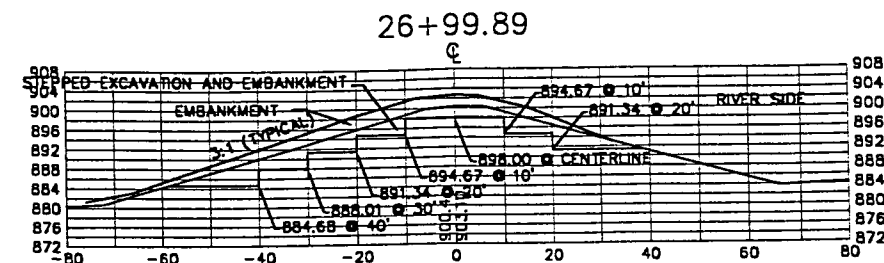
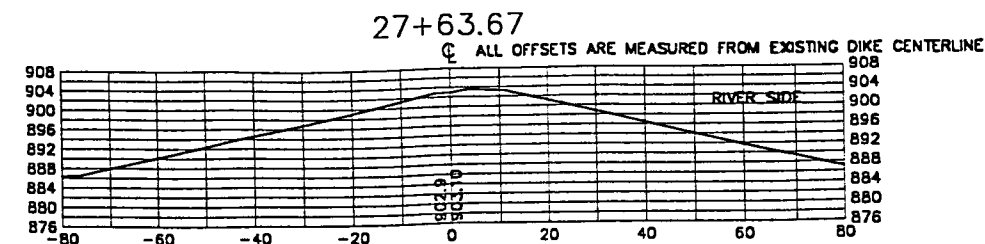
Station	Dist.	Width Ave.	Width	Sq. Ft.	Cum. Sq. Ft.
862.77	201.06	0	20.5	4,121.7	4,121.7
1063.83	201.49	41	31.0	6,246.2	10,367.9
1265.32	182.22	21	32.5	5,922.2	16,290.1
1447.54	22.9	44	39.5	904.6	17,194.6
1470.44	209.67	35	40.5	8,491.6	25,686.3
1680.11	212.28	46	64.0	13,585.9	39,272.2
1892.39	56.97	82	83.0	4,728.5	44,000.7
1949.36	124.87	84	94.5	11,800.2	55,800.9
2074.23	26.31	105	105.0	2,762.5	58,563.5
2100.54	206.06	105	71.5	14,733.3	73,296.7
2306.60	119.55	38	45.0	5,379.8	78,676.5
2426.15	153.29	52	65.0	9,963.9	88,640.3
2579.44	120.45	78	100.0	12,045.0	100,685.3
2699.89	63.78	122	71.0	4,528.4	105,213.7
2763.67	20	10.0	10.0	1,222.0	106,435.7
2885.87	0	0	0	0	106,435.7

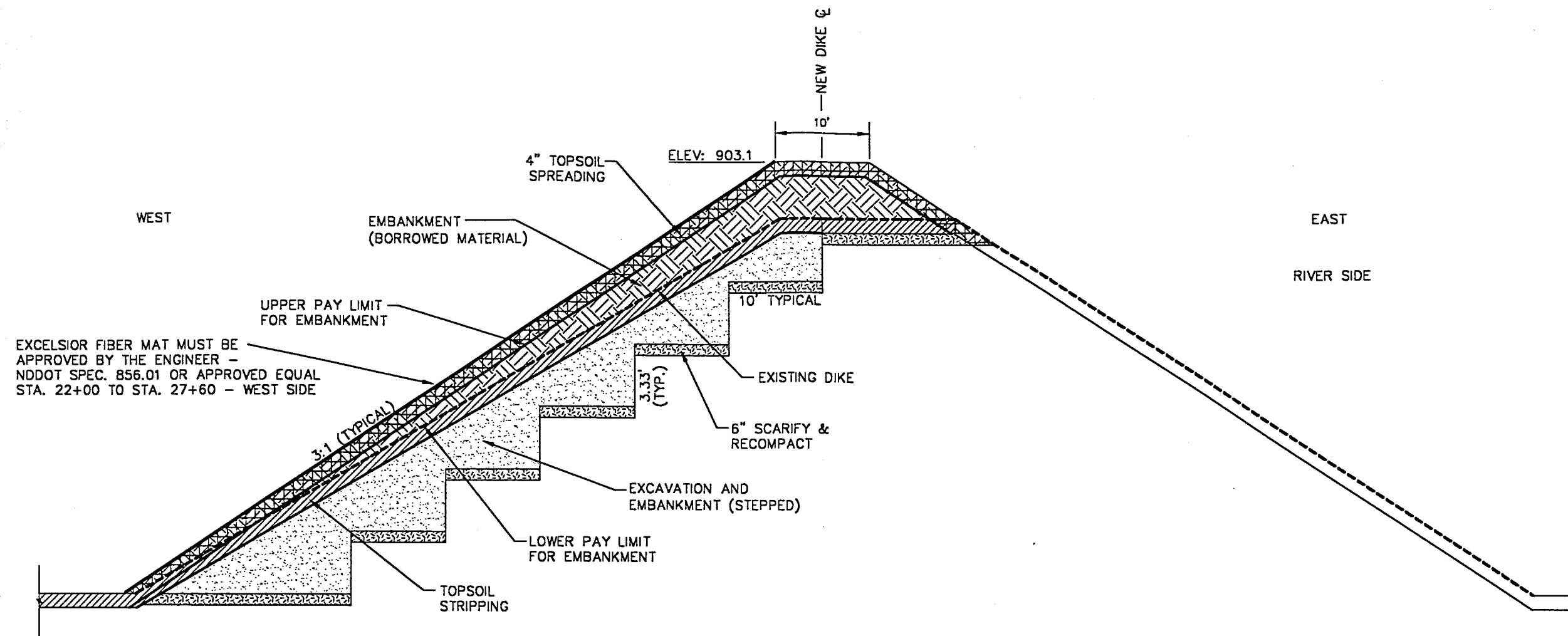
Sq. Ft. Stripping 106,435.7
Sq. Yds. Stripping 11,826.2

Embankment
10' TOP - 3:1

Station	Dist.	Area	Ave. Area	Cu. Ft.	Cum. Cu. Ft.
862.77	201.06	0	6.4	1,282.8	1,282.8
1063.83	201.49	12.76	9.3	1,868.8	3,151.6
1265.32	182.22	5.79	12.7	2,306.9	5,458.5
1447.54	22.9	19.53	17.6	403.5	5,862.0
1470.44	209.67	15.71	18.1	3,790.8	9,652.8
1680.11	212.28	20.45	87.0	18,459.9	28,112.7
1892.39	56.97	153.47	155.7	8,867.4	36,980.1
1949.36	124.87	157.83	150.8	18,830.4	55,810.5
2074.23	26.31	143.77	143.7	3,781.5	59,592.0
2100.54	206.06	145.69	84.2	17,358.5	76,950.5
2306.60	119.55	24.79	39.8	4,755.1	81,705.6
2426.15	153.29	54.76	85.9	13,180.9	94,875.5
2579.44	120.45	117.07	146.6	17,663.1	112,538.9
2699.89	63.78	176.22	89.1	5,681.8	118,220.7
2763.67	20	1.95	1.0	119.1	118,339.9
2885.87	0	0	0	0	118,339.9

Cu. Ft. Fill 118,339.9
Cu. Yds. Fill 4,383.0





**TYPICAL STEPPED EXCAVATION
AND EMBANKMENT DETAIL**
NO SCALE

RECORD DRAWING - 12/7/98

TYPICAL DETAILS 4TH STREET DIKE IMPROVEMENTS FARGO, NORTH DAKOTA		DATE 03/12/98	REVISED
		DRAWN BY SON	PROJ. NO. 8948-10
 moore engineering inc. fargo - west fargo, north dakota		CH'D BY	DRAWING 6
		SCALE NONE	OF 6