PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (HIGHWAY OVER)
UNDERPASS (HIGHWAY UNDER)
BRIDGE
BUILDING (ONE STORY FRAME)
F - FRAME C - CONCRETE
S - STONE T - TILE
B - BRICK ST - STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY
SLOPE EASEMENT

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLE
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRICAL CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRICAL MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRICAL CABLE
AERIAL TELEPHONE CABLE
SEWER (SANITARY OR SEWER)
SEWER MANHOLE

EROSION CONTROL SYMBOLS

TEMPORARY SILT FENCE
RIP RAP DITCH CHECKS

SCALES

PLAN 0 100' SHEET 3 0 10' SHEET 4
PROFILE 0 100' HORIZ. 0 10' VERT.
INDEX MAP 0 10560'
CROSS SECTIONS 0 10'

MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR BRIDGE REPLACEMENT OF L-6325 (NEW NO. 55J08)

LOCATED ON TWP. RD. 350 BETWEEN JCT. CR 118 IN THE CITY OF ORONOCO AND APPROXIMATELY 2 MILES S.E. OF JCT CR 118 IN THE CITY OF ORONOCO (GEOGRAPHIC DESCRIPTION)

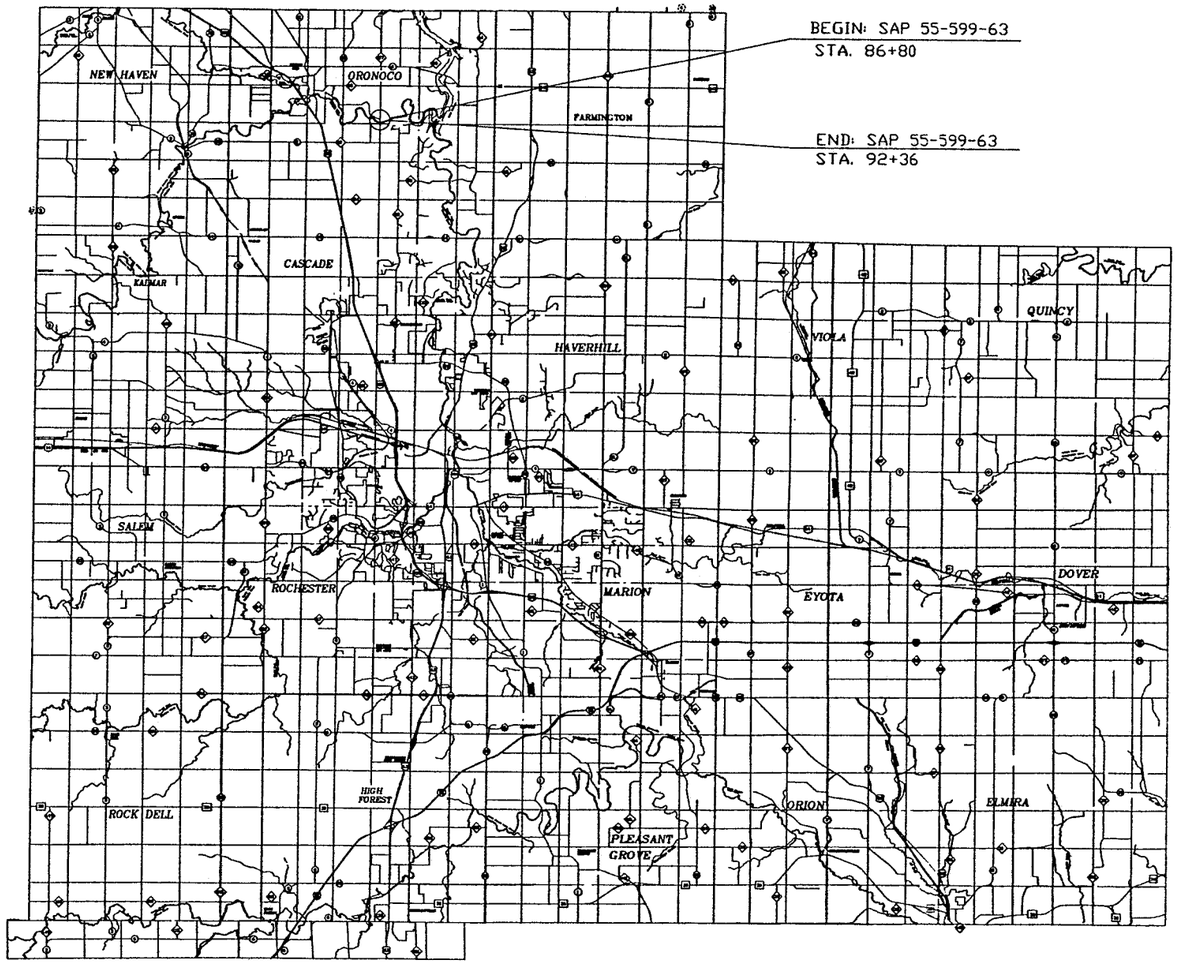
APPROX. 2,157' S.E. OF CENTER FROM SEC. 16, T108N, R14W TO APPROX. 2,713' S.E. OF CENTER SEC. 16, T108N, R14W (LEGAL DESCRIPTION)

STATE PROJ. NO.

GROSS LENGTH		FEET	MILES
BRIDGE-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH		FEET	MILES

S.A.P. NO. 55-599-63

GROSS LENGTH	556'	FEET	0.105	MILES
BRIDGE-LENGTH		FEET		MILES
EXCEPTIONS-LENGTH		FEET		MILES
NET LENGTH	556'	FEET	0.105	MILES



BEGIN: SAP 55-599-63
STA. 86+80

END: SAP 55-599-63
STA. 92+36

MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION 'STANDARD SPECIFICATIONS FOR CONSTRUCTION' AS AMENDED BY THE MAY 2, 1994, SUPPLEMENTAL SPECIFICATION SHALL GOVERN.

INDEX

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATE OF QUANTITIES TYPICAL SECTIONS & DETAIL
SHEET NO. 3 - 4	BRIDGE SURVEY, PROFILE, PLAT, AND PLAN SHEET
SHEET NO. 5 - 6	CROSS-SECTIONS
SHEET NO. 7	TRAFFIC CONTROL

THIS PLAN CONTAINS 7 SHEETS.

Approved:

7/21/96 DATE

TOWNSHIP CHAIRPERSON Vice

DESIGN DESIGNATION

R		ΣN18 (20)	
ADT (Current Year)	≤50(1996)	Design Speed	30 MPH
ADT (Future Year)	≤50(2016)	Based on	Sight Distance
DHV (Design Hr. Vol.)	=	Height of eye 3.5	Height of object 0.5
D (Directional Distr.)	=	Design Speed not achieved at:	
T (Heavy Commercial)	=	STA.	TO STA. MPH
SUBGRADE	=	STA.	TO STA. MPH
SHOULDER WIDTH	= 1 FT.		

SOIL FACTOR = 130%

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 7/22/96 REG. NO. 19917 ENGR Kay M Bieniek
COUNTY OLMSTED
Approved 7/22 1996 Michael Sheehan OLMSTED COUNTY ENGINEER
Recommended for Approval 7/29 1996 DISTRICT STATE AID ENGINEER

Recommended for Approval 19
Approved 8/1 1996 FOR STATE AID DIVISION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

STATE AID PROJ. NO. 55-599-63 ORONOCO TWP
STATE PROJ. NO. SHEET NO. 1 OF 7 SHEETS

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	NON PARTICIPATING	PARTICIPATING	TOTAL ESTIMATED QUANTITIES
①	2101.511	CLEARING AND GRUBBING	LUMP SUM	1		1
②	2105.515	UNCLASSIFIED EXCAVATION	CU. YD.	(P) 2,204		2,204
	2211.501	AGGREGATE BASE CLASS 5	TON	500		500
③	2442.501	REMOVE OLD BRIDGE	LUMP SUM	1		1
	2451.507	GRANULAR BEDDING (CV)	CU. YD.		(P) 184	184
	2501.521	122" SPAN PIPE-ARCH CULVERT CL. IIIA	LIN. FT.		136	136
	2501.525	122" SPAN PIPE-ARCH APRON	EACH		4	4
④	2511.501	RANDOM RIPRAP CLASS III	CU. YD.		103	103
	2575.501	SEEDING	ACRE	(P) 1.0		1.0
	2575.502	SEEDING MIXTURE 500	POUND	50		50
	2575.502	SEEDING MIXTURE 1100	POUND	60		60
	2575.511	MULCH MATERIAL TYPE I	TON	2		2
	2575.519	DISC ANCHORING	ACRE	(P) 0.5		0.5
	2575.532	COMMERCIAL FERTILIZER ANALYSIS 17-17-17	POUND	200		200

① TREES FOR REMOVAL WILL BE DESIGNATED BY THE ENGINEER(APPROXIMATELY 0.47 ACRES)

② UNCLASSIFIED EXCAVATION INCLUDES SUBGRADE TREATMENT AS SHOWN ON THE CROSS SECTIONS. 217 CU. YDS. OF UNCLASSIFIED EXCAVATION TO BE USED AS SALVAGE TOPSOIL AND PLACED ON SLOPES AND DITCHES.

③ BRIDGE NO. L6325

④ PLACE RIPRAP ON 9" GRANULAR FILTER OR GEOTEXTILE FILTER MATERIAL. WHICH SHALL BE CONSIDERED INCIDENTAL AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

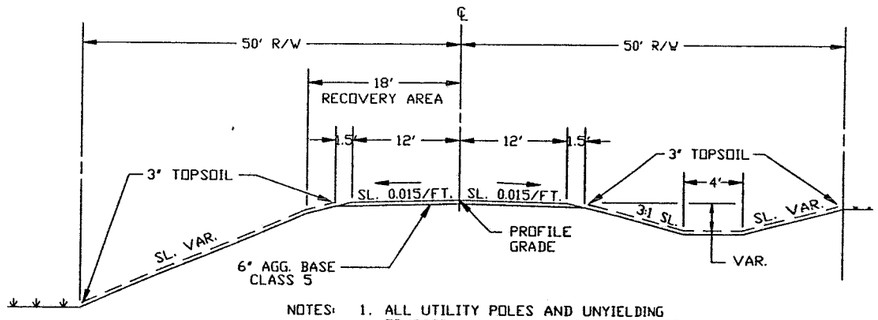
STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
	NUMERICAL INDEX OF STANDARD PLATES
3007 B	SHEAR REINFORCEMENT FOR PRECAST STRUCTURES
3014 J	REINFORCED CONCRETE PIPE-ARCH
3114 H	S.C. APRON FOR REINFORCED CONC. PIPE-ARCH
3145 E	CONCRETE PIPE TIES (EYE BOLT TIES)
8000 I	STANDARD BARRICADES

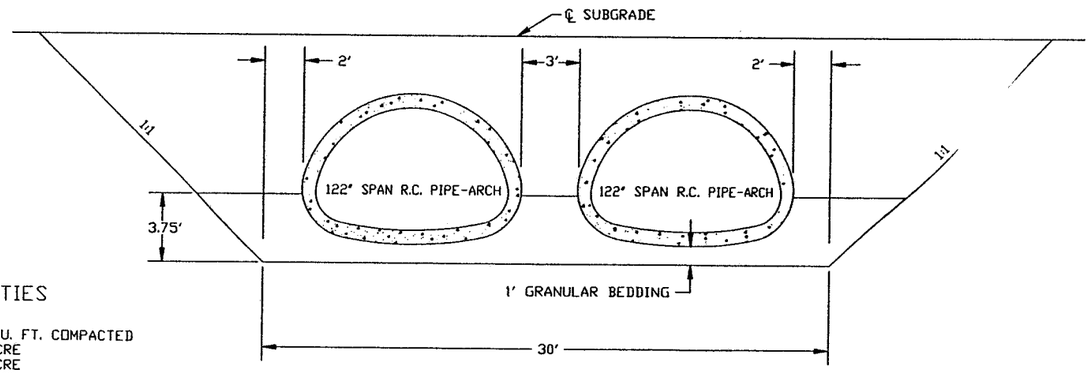
TYPICAL SECTION

STA. 86+80 TO STA. 92+36



NOTES: 1. ALL UTILITY POLES AND UNYIELDING OBJECTS WILL BE RELOCATED OUTSIDE THE 18' RECOVERY AREA (BY OTHERS).

BEDDING DETAIL



BASIS OF PLANNED QUANTITIES

AGGREGATE BASE CLASS 5 -	140 LBS. / CU. FT. COMPACTED
SEED MIXTURE 500 -	50 LBS. / ACRE
SEED MIXTURE 1100 -	60 LBS. / ACRE
MULCH MATERIAL -	2 TONS / ACRE
DISC ANCHOR -	ALL SEEDING AREA'S EXCEPT 2:1 SLOPES
COMMERCIAL FERTILIZER -	200 LBS. / ACRE

NOTES: 1. CULVERT EXCAVATION WILL BE CONSIDERED INCIDENTAL AND WILL BE INCLUDED FOR PAYMENT UNDER UNIT PRICE FOR ITEM NO. 2501.521 AND ITEM NO. 2501.525.

2. CULVERT TO BE BACKFILLED WITH EXCESS EXCAVATION AND WILL BE CONSIDERED INCIDENTAL TO UNCLASSIFIED EXCAVATION AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

3. CHANNEL CHANGE EXCAVATION REQUIRED SHALL BE CONSIDERED INCIDENTAL TO RIPRAP CL. III PLACEMENT AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

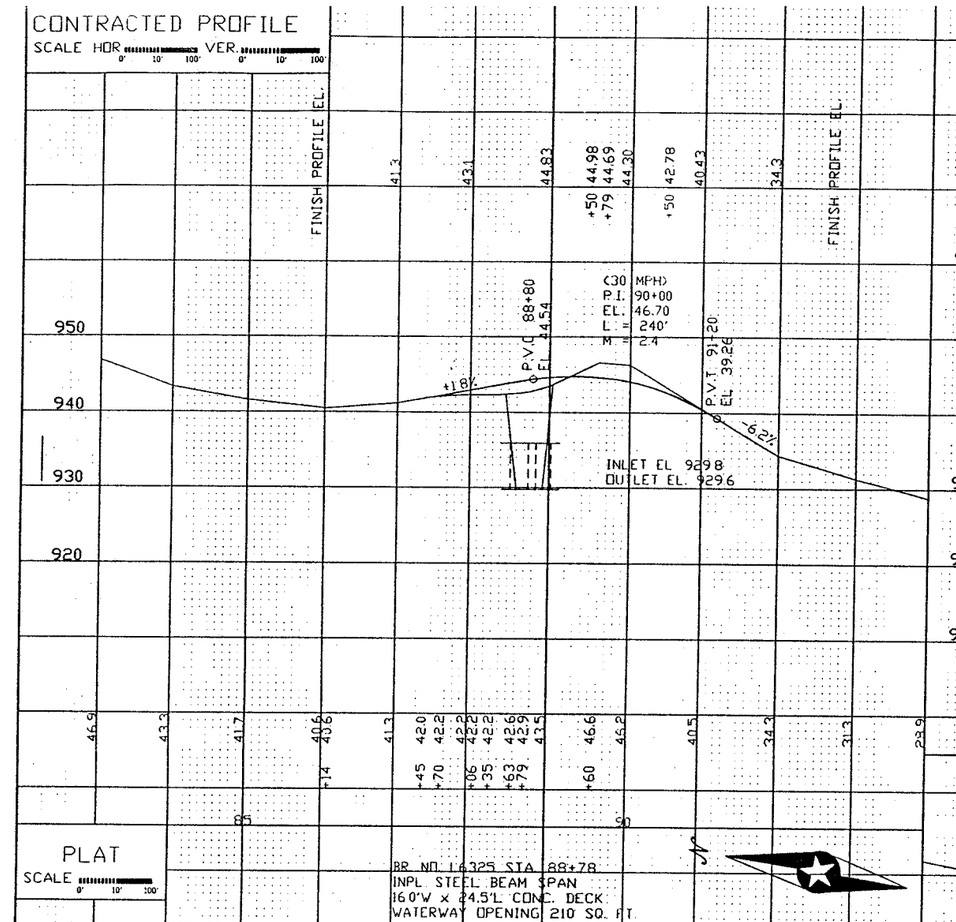
4. ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTION ARE APPROXIMATE

CERTIFIED BY Kay M Bienick PROFESSIONAL ENGINEER REG. NO. 19917 7/22 1996

Fed. Proj. No.

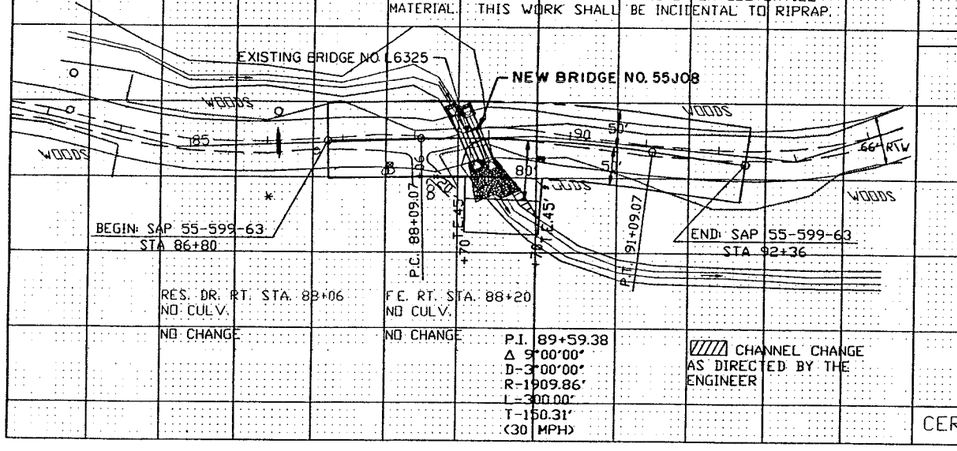
CONTRACTED PROFILE

SCALE HOR. 0' 10' 100' VER. 0' 10' 100'



PLAT

SCALE 0' 10' 100'



BR. NO. L6325 STA. 88+78
INPL STEEL BEAM SPAN
16.0'W x 24.5'L CONC. DECK
WATERWAY OPENING 210 SQ. FT.

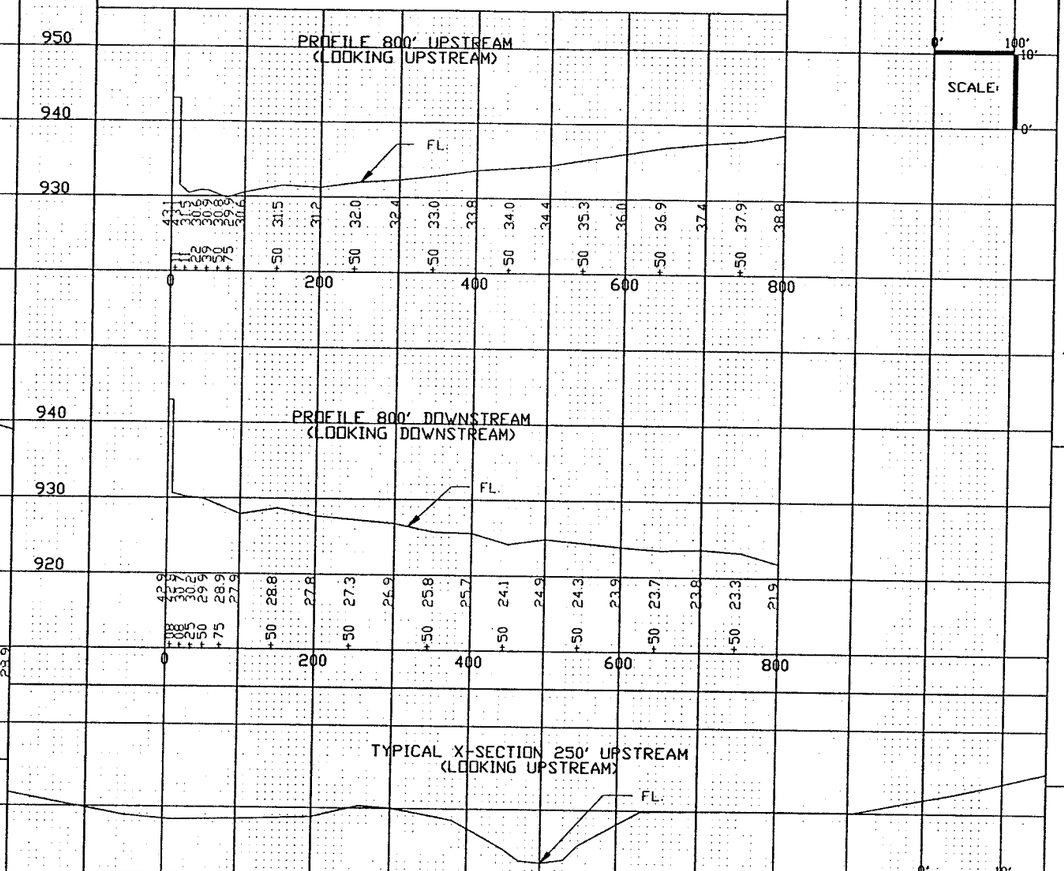
REMOVE

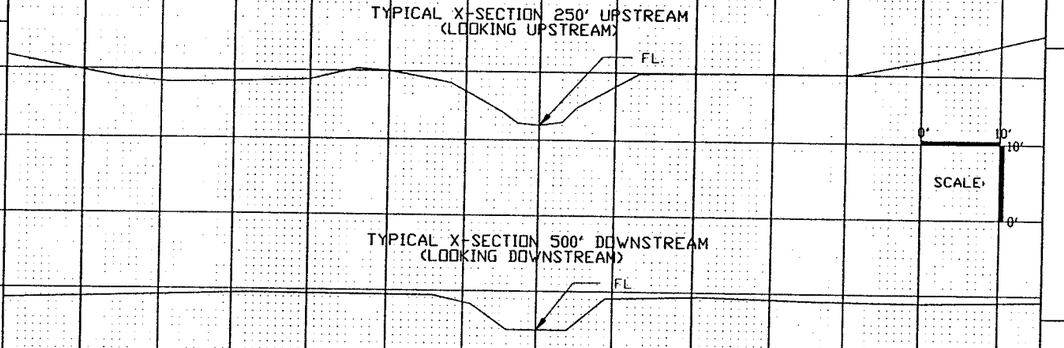
CONST. ℄ CULV. STA 88+69.89 25° SKEW
122"X68" SPAN R.C. PIPE-ARCH CULV. CL. IIIA
2-122" SPAN R.C. PIPE-ARCH APRONS
CONST. ℄ CULV. STA 88+86.11 25° SKEW
122"X68" SPAN R.C. PIPE-ARCH CULV CL. IIIA
2-122" SPAN R.C. PIPE-ARCH APRONS
F&I APPROVED JOINT TIES FOR ALL PIPE JOINTS
PLACE CULVERTS ON GRANULAR BEDDING 184 CU. YDS. (CV)
3.75' DEPTH, 68' LONG, AND 70' WIDE
F&I 7 CU. YDS. CL. III RANDOM RIP RAP 18" DEPTH AT INLET END
F&I 96 CU. YDS. CL. III RANDOM RIP RAP 18" DEPTH AT OUTLET END
PLACE RIPRAP ON 9" GRANULAR FILTER OR GEOTEXTILE MATERIAL. THIS WORK SHALL BE INCIDENTAL TO RIPRAP.

CHANNEL CHANGE AS DIRECTED BY THE ENGINEER

TYPICAL SECTIONS & PERTINENT DATA

SCALE AS SHOWN





1 Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, recreational boating

2 Other bridges or culverts over the same stream (particularly structures which carry high water without overflow of roadway) Given location, type, length, height above high water, cross sectional area etc

3. Apparent highwater elevation Obtained from

4 Other data: Approx. velocity of water at time of survey

HYDRAULIC ENGINEERS RECOMMENDATION

DATE MAY 3, 1995

Stream or ditch designation UNNAMED
Drainage area 2.3 SQ. MILES
Max. flood on record UNK. Design flood (25 yr freq.) 750 C.F.S.
Max observed highwater elevation UNK. Design highwater elevation 936.0
Design mean velocity through structure 7.5 F.P.S
Low superstructure at or above elevation
Flowline INL. 929.8 OUT. 929.6 Skew angle 25°
Waterway area req'd. below elevation = . Sq. Ft. at Rt. angles to channel

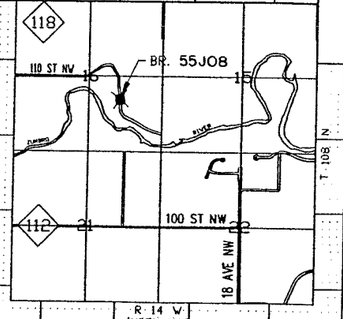
In the interest of flood plain zoning the regional flood (100 yr freq.) is 1150 C.F.S. at stage 938.25 and mean velocity of 5.1 F.P.S. with 2.3 Ft. freeboard. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of National Resources.

FOUNDATION ENGINEERS RECOMMENDATION

DATE

Bridge survey sheets made from: SURVEY CONDUCTED BY OLMSTED COUNTY

Bench mark elevation 944.37 (M.S.L. 1929 Adj.)
Location: SPK IN GUARD RAIL POST SW COR BR



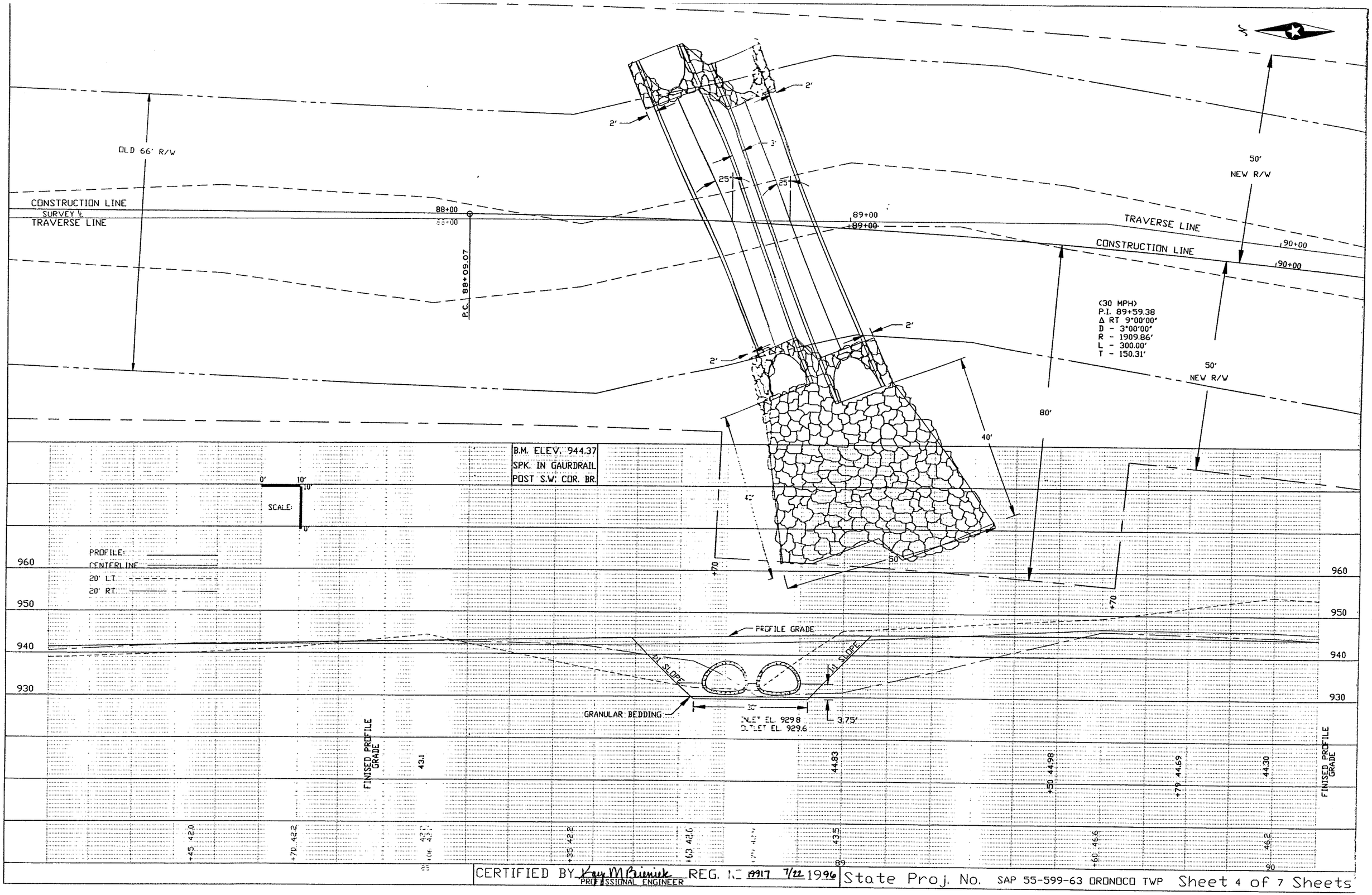
MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT 1.6 ON TWP. RD. 350 (TH, CSAH, CR etc)
PROPOSED BRIDGE LOCATED 1.6 MILES EAST OF JCT. CR 118
SEC. 16 TWP. 108 N R. 14 W
TOWNSHIP ORONOCO COUNTY OLMSTED
BRIDGE NO. 55J08

CERTIFIED BY Lowell M Pieniek PROFESSIONAL ENGINEER REG NO. 19917 7/22 1996

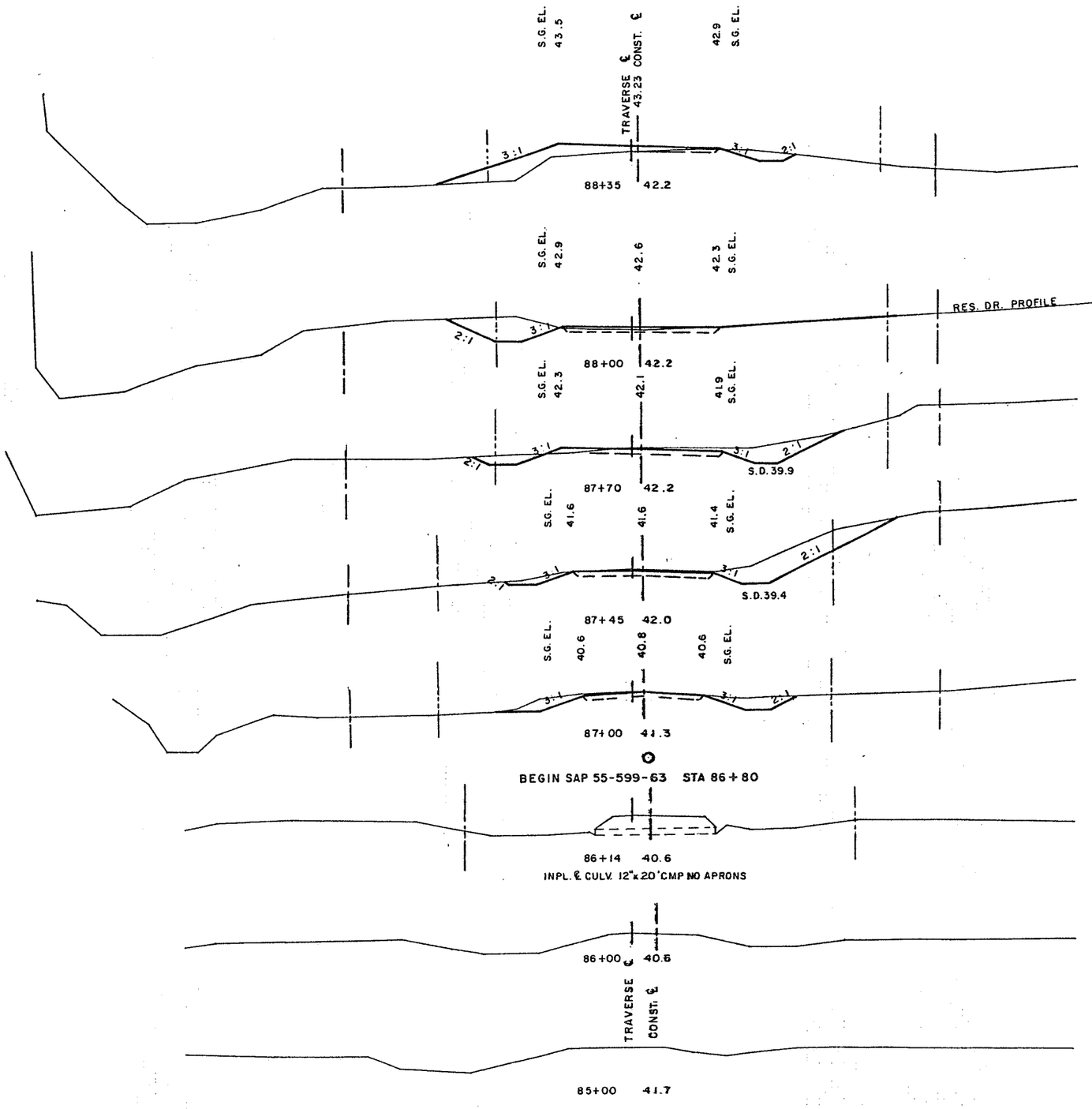
State Proj. No. SAP 55-599-63 ORONOCO TWP Sheet No. 3 of 7 Sheets



CERTIFIED BY Kay M Brinick REG. NO. 19917 7/22 1996
PROFESSIONAL ENGINEER

State Proj. No. SAP 55-599-63 ORONOCO TWP Sheet 4 of 7 Sheets

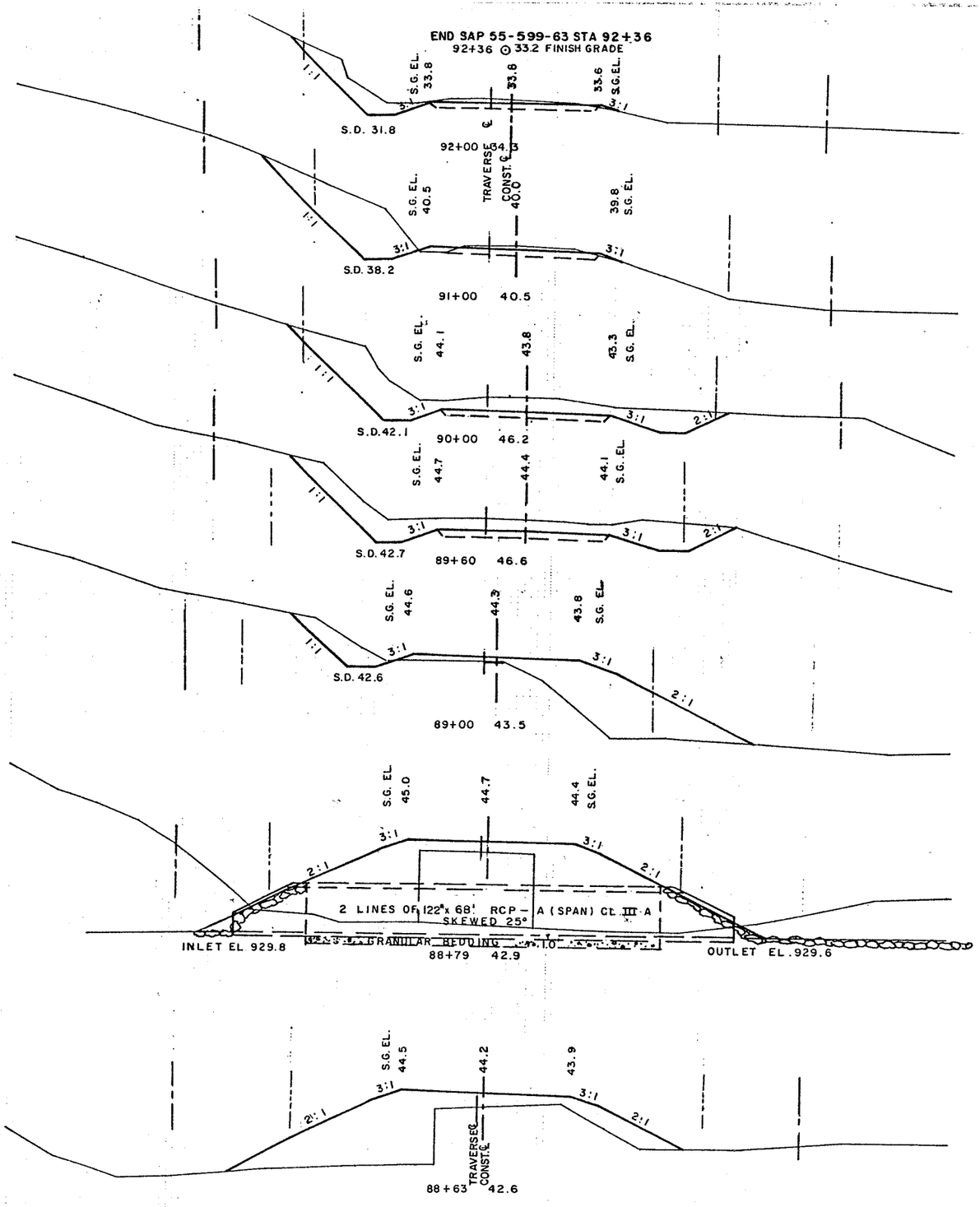
Fed. Proj. No.



EXCAVATION SUB-TOTALS CU. YD.	EMBANKMENT SUB-TOTALS CU. YD.
55	84
85	43
103	37
163	60
27	11

+80

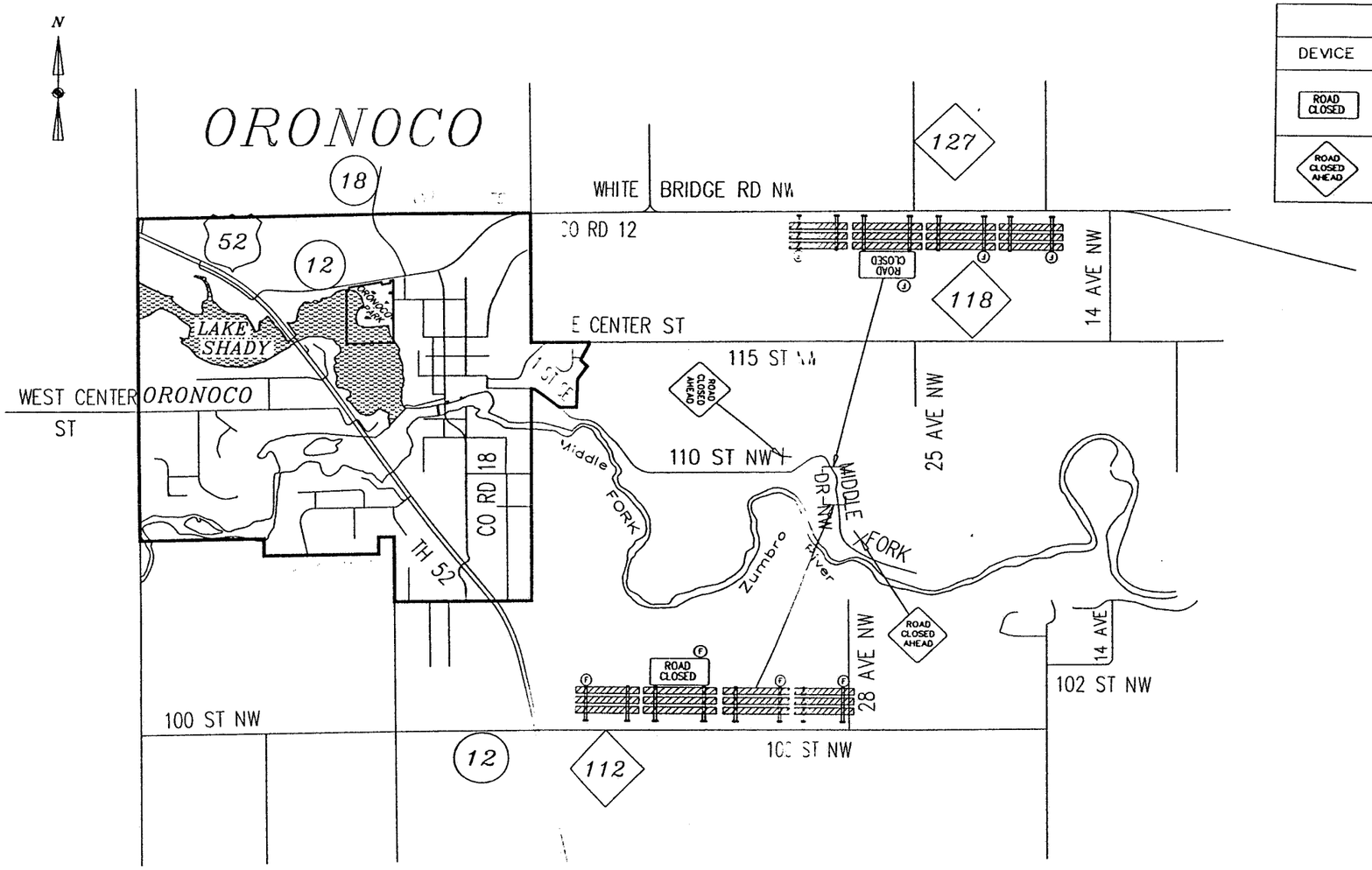
SAP 55-599-63 ORONOCO TWP. Sheet No. 5 of 7 She



EXCAVATION EMBANKMENT

SUB-TOTALS CU. YD.	SUB-TOTALS CU. YD.	
		+36
66	21	
509	128	
816	138	
378	56	
322	339	
18	212	
0	146	
11	245	

UNCLASSIFIED EXCAVATION 2,204 CU.YDS.
EMBANKMENT 1,520 CU.YDS.



ESTIMATE OF TRAFFIC CONTROL DEVICES									
DEVICE	NUMBER	SIZE	COLOR	QUANTITY	DEVICE	NUMBER	SIZE	COLOR	QUANTITY
ROAD CLOSED	R11-4	60 x 30	BLK/WH	2		TYPE III	MIN. 6'	OR & BLK	8
ROAD CLOSED AHEAD	W20-3	48 x 48	BLK/OR	2	(F)	TYPE A	FLASHING LAMPS	AMBER	8

TRAFFIC CONTROL LEGEND

⊥ POST OR STAND MOUNTED SIGN

└┘ TYPE III BARRICADE

TRAFFIC CONTROL NOTES

1. THE LOCATION OF SIGNS AND DEVICES WILL BE STAKED BY THE ENGINEER IN THE FIELD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL ON THIS PROJECT.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL DATED APRL 1995.
4. CONSTRUCTION ZONE SIGNING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL INCLUDE, BUT NOT BE LIMITED TO SIGNS FOR LANE CLOSURE, MACHINARY AHEAD, BUMP, DIP, LOOSE GRAVEL, ETC. THE NUMBER AND LOCATION WILL BE DETERMINED BY THE CONTRACTORS OPERATION.
5. ALL BARRICADES ON THIS PROJECT SHALL BE REFLECTORIZED ON BOTH SIDES.

TRAFFIC CONTROL PLAN

CERTIFIED BY Kayc M Brunick PROFESSIONAL ENGINEER REG. NO. 19917 7/22 1996

S.A.P. 55-599-63

SHEET 7 OF 7 SHEETS