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 5 0 20' SHEET 3
PROFILE 0 100' HORIZ. 0 10' VERT
INDEX MAP 0 10560'
CROSS SECTIONS 0 10'

MINNESOTA DEPARTMENT OF TRANSPORTATION

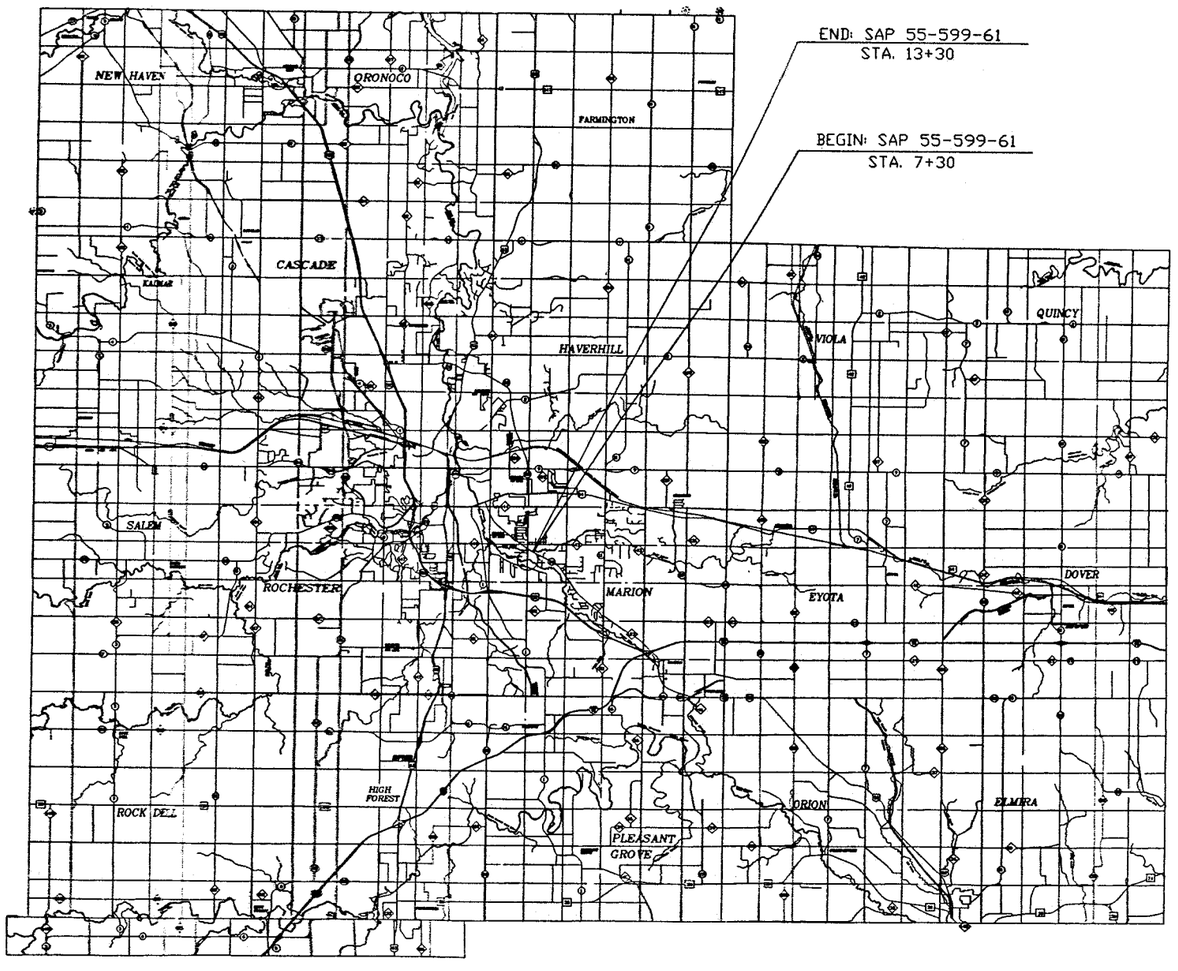
THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR BRIDGE REPLACEMENT OF L-8566 (NEW NO. 55J06)

LOCATED ON TWP. RD 391 BETWEEN JCT. CSAH 36 AND APPROX 1/2 MILE SOUTH OF JCT CSAH 36 (GEOGRAPHIC DESCRIPTION)

FROM APPROX. 290.25' NORTH OF 1/4 COR. 17-18 T106 R13W TO APPROX. 890.25' NORTH OF 1/4 COR. 17-18 T106 R13W (LEGAL DESCRIPTION)

STATE PROJ \3			S.A.P. NO. 55-599-61		
GROSS LENGTH	FEET	MILES	GROSS LENGTH 600	FEET 0.114	MILES
BRIDGE-LENGTH	FEET	MILES	BRIDGE-LENGTH	FEET	MILES
EXCEPTIONS-LENGTH	FEET	MILES	EXCEPTIONS-LENGTH	FEET	MILES
NET LENGTH	FEET	MILES	NET LENGTH 600	FEET 0.114	MILES



END: SAP 55-599-61
STA. 13+30

BEGIN: SAP 55-599-61
STA. 7+30

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	PLAN SHEET
SHEET NO. 4	PROFILE SHEET
SHEET NO. 5	BRIDGE SURVEY
SHEET NO. 6-7	CROSS-SECTIONS
SHEET NO. 8	TRAFFIC CONTROL

THIS PLAN CONTAINS 8 SHEETS.

Approved:

7/12/96 DATE — Donald L. Campbell TOWNSHIP CHAIRPERSON

DESIGN DESIGNATION

R
IN18 (20)
ADT (Current Year) = 1893(1996) Design Speed 40 MPH
ADT (Future Year) = 3218(2016) Based on STOPPING 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 = 8 FT. STA. TO STA. MPH

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 7/12/96 REG. NO. 19917 ENGR Kayle M Brenneke
COUNTY OLMSTED
Approved 7/13/96 DATE — Michael J Rardon COUNTY ENGINEER
Recommended for Approval — 7/29 1996 DISTRICT STATE AID ENGINEER
Recommended for Approval 19
Recommended for Approval 19
Approved 8/1 1996 — Julie Skallman FOR STATE AID DIVISION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

STATE AID PROJ. NO. 55-599-61 MARION TWP.
STATE PROJ. NO.

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	NON PARTICIPATING	PARTICIPATING	TOTAL ESTIMATED QUANTITIES
(1)	2101.502	CLEARING	TREE	17		17
(1)	2101.507	GRUBBING	TREE	16		16
	2104.501	REMOVE PIPE CULVERTS	LIN. FT.	46		46
	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ. YD.	587		587
	2104.513	SAWING BITUMINOUS PAVEMENT	LIN. FT.	48		48
(2)	2105.515	UNCLASSIFIED EXCAVATION	CU. YD.	(P) 1593		1593
	2105.523	COMMON BORROW (CV)	CU. YD.	397	274	671
	2211.501	AGGREGATE BASE CLASS 5	TON	671		671
	2221.501	AGGREGATE SHOULDERING CLASS 2	TON	243		243
	2221.501	AGGREGATE SHOULDERING CLASS 5	TON	164		164
	2340.508	TYPE 41 WEARING COURSE MIXTURE	TON	55		55
	2340.514	TYPE 41 BASE COURSE MIXTURE	TON	92		92
(3)	2442.501	REMOVE OLD BRIDGE	LUMP SUM	1		1
	2451.507	GRANULAR BEDDING (CV)	CU. YD.		(P) 394	394
	2501.511	15" C.S. PIPE CULVERT	LIN. FT.	28		28
	2501.511	36" C.S. PIPE CULVERT	LIN. FT.	28		28
	2501.515	15" G.S. PIPE APRON	EACH	2		2
	2501.515	36" G.S. PIPE APRON	EACH	2		2
	2501.521	169" SPAN R.C. PIPE-ARCH CULVERT CL. IIA	LIN. FT.		244	244
	2501.525	169" SPAN R.C. PIPE-ARCH APRON	EACH		6	6
(4)	2511.501	RANDOM RIPRAP CLASS III	CU. YD.		204	204
	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) 0.8		0.8
	2575.532	COMMERCIAL FERTILIZER ANALYSIS 17-17-17	POUND	200		200

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

(2) UNCLASSIFIED EXCAVATION INCLUDES SUBGRADE TREATMENT AS SHOWN ON THE CROSS SECTIONS. 310 CU. YDS. OF UNCLASSIFIED EXCAVATION TO BE USED AS SALVAGE TOPSOIL AND PLACED ON SLOPES AND DITCHES.

(3) BRIDGE NO. L8566

(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

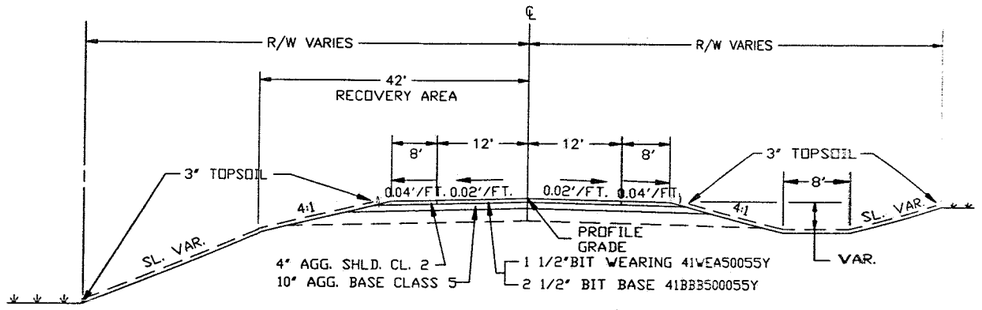
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

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
9000 B	APPROACHES AND ENTRANCES

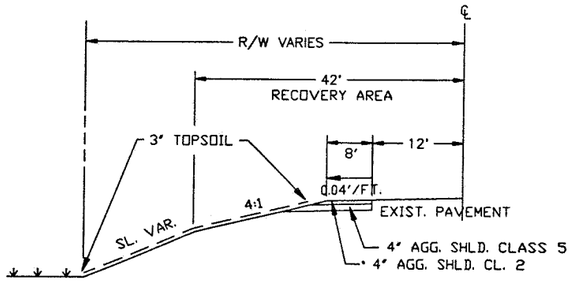
BASIS OF PLANNED QUANTITIES

AGGREGATE BASE CLASS 5 -	140 LBS. / CU. FT COMPACTED
AGGREGATE SHOULDER CLASS 2 -	140 LBS. / ACRE
BITUMINOUS MIXTURE -	110 LBS. / SQUARE YARD / 1 INCH DEPTH
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

TYPICAL SECTION



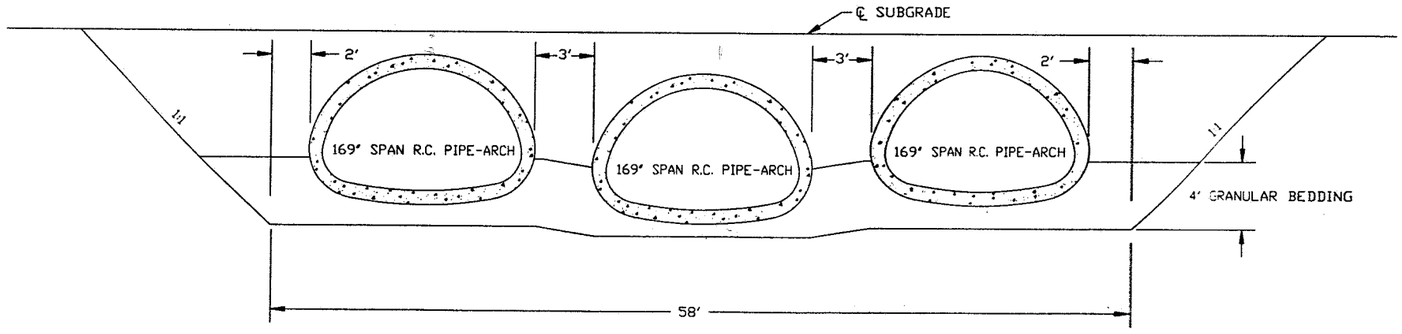
STA. 9+00 TO STA. 11+50



STA. 7+30 TO STA. 9+00
STA. 11+50 TO STA. 13+30

NOTES:
1. ALL UTILITY POLES AND UNYIELDING OBJECTS WILL BE RELOCATED OUTSIDE THE 42" RECOVERY AREA (BY OTHERS).

BEDDING DETAIL



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 COMMON BORROW - PARTICIPATING UP TO AN ELEVATION 1.0' ABOVE CULVERT.
3. ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTION ARE APPROXIMATE

CERTIFIED BY Kyle M Brunick PROFESSIONAL ENGINEER REG.NO. 19917 7/12 1996 | S.A.P. 55-599-61 | SHEET NO. 2 OF 8 SHEETS

BR. NO. L8566
INPL. STEEL BEAM SPAN
WATERWAY OPENING 196 SQ. FT.

REMOVE

CONST. ℄ CULV. STA 10+11.25 NO SKEW
169"x80' SPAN R.C. PIPE-ARCH CULV. CL. IIA
2-169" SPAN R.C PIPE-ARCH APRONS
CONST. ℄ CULV. STA 10+30 NO SKEW
169"x84' SPAN R.C. PIPE-ARCH CULV. CL. IIA
2-169" SPAN R.C. PIPE-ARCH APRONS
CONST. ℄ CULV. STA 10+48.75 NO SKEW
169"x80' SPAN R.C. PIPE-ARCH CULV. CL. IIA
2-169" SPAN R.C. PIPE-ARCH APRONS
F&I APPROVED JOINT TIES FOR ALL PIPE JOINTS
PLACE CULVERTS ON GRANULAR BEDDING 394 CU. YDS. (CV)
4' DEPTH, 80' LONG, AND 58' WIDE & 4' DEPTH, 4' LONG, AND 20' WIDE
F&I 10 CU. YDS. CL. III RANDOM RIP RAP 18" DEPTH AT INLET END
F&I 194 CU. YDS. CL. III RANDOM RIP RAP 18" DEPTH AT OUTLET END
F&I 9" DEPTH GRANULAR FILTER OR GEOTEXTILE FABRIC,
SPEC 3601 UNDER RIP RAP. THIS WORK SHALL BE INCIDENTAL TO RIP RAP

RES. DR. STA. 12+13
INPL. 15" x 28' CMP

REMOVE 28 LIN. FT.

15" x 28' C.S. PIPE
2- 15" G.S. PIPE APRONS

0' 20'
10'
SCALE:
0'

150' NEW R/W
60'
55'
125' NEW R/W
75' NEW R/W
250' NEW R/W
50' NEW R/W
66' EXISTING R/W
RES DR
GAS LINE
2'
18M
TOP 4" PIPE EL=101.52
FE
TP
OP
+30
+50
+00
8+00
9+00
10+00
11+00
12+00
13+00

BEGIN SAP 55-599-61:
STA 7+30

END SAP 55-599-61:
STA 13+30

F.E. STA. 9+40
INPL. 36" x 18' CMP

REMOVE 18 LIN. FT.

CONST. F.E. RT. STA. 9+40
36" x 28' C.S. PIPE
2- 36" G.S. PIPE APRONS

CERTIFIED BY Vaughn Prisnick REG.NO. 19217 7/12 1996
PROFESSIONAL ENGINEER

State Aid Proj. No. 55-599-61

SCALE: 0' 10' 10' 0'

B.M. ELEV. 1028.62
TOP CENTER DECK E.
SIDE (INL.) BY VERT. RAIL

FINISHED ℄ ELEV 28.50

29.00 29.45 +30 29.51 29.4 28.8 28.10

P.V.C. +80 ELEV 29.30

P.V.T. +80 ELEV 29.10

1:1 1:1

4' GRANULAR BEDDING

58'

INL. 1018.20 OUTL. 1018.00

INL. 1017.70 OUTL. 1017.50

INL. 1018.20 OUTL. 1018.00

1150 1140 1130 1120 1110 1000

PROFILE:
CENTERLINE
20' LT.
20' RT.

P.I. STA. 10+30
ELEV. 1029.80
100' V.C.

28.5 28.7 28.8 +19 28.9 28.8 28.5 28.1

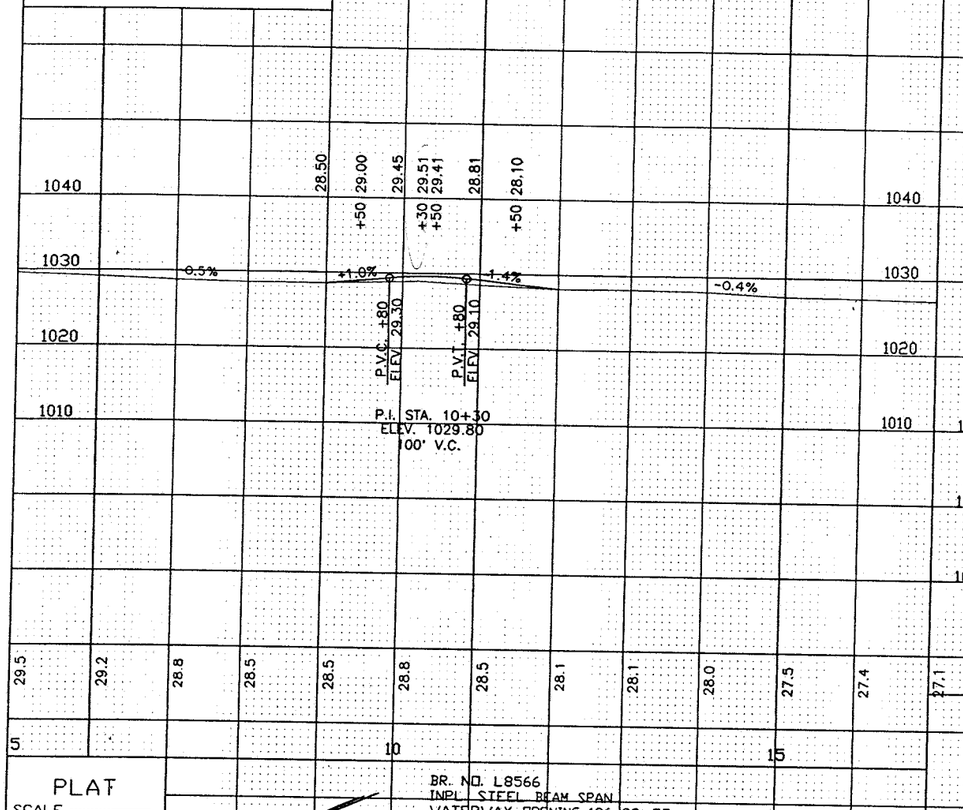
9+00 10+00 11+00

CERTIFIED BY Kay M Reinick REG.NO. 19917 3/12 1996
PROFESSIONAL ENGINEER

State Aid Proj. No. 55-599-61

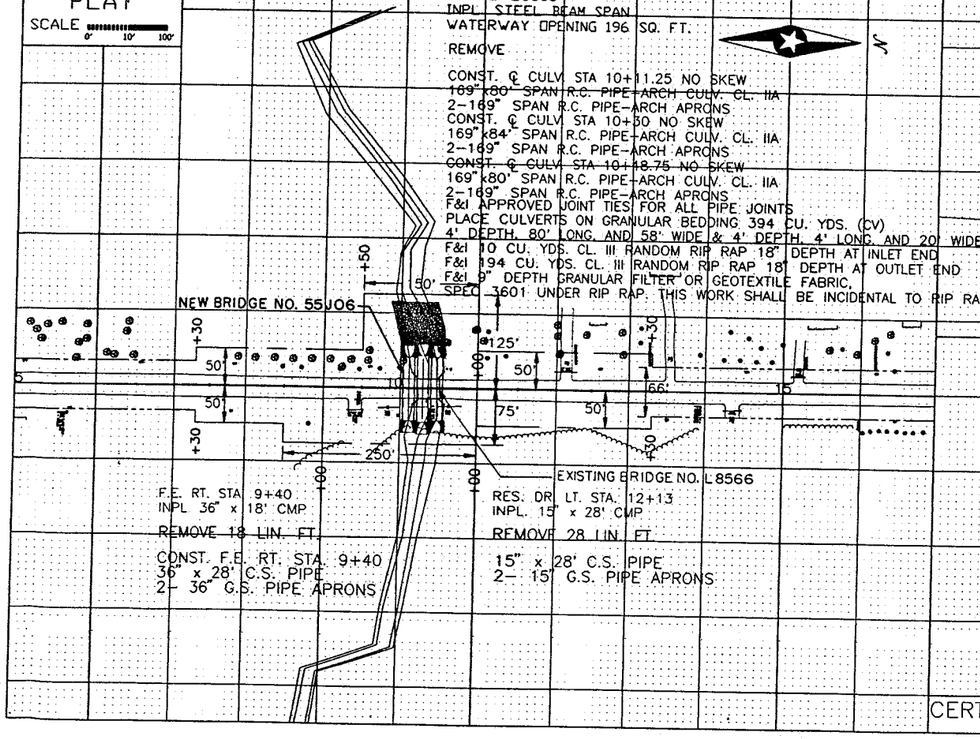
CONTRACTED PROFILE

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



PLAT

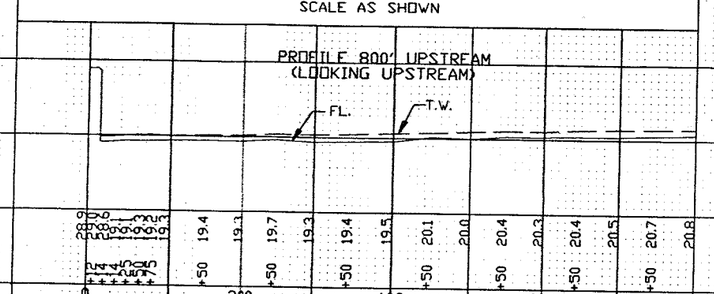
SCALE 0' 10' 100'



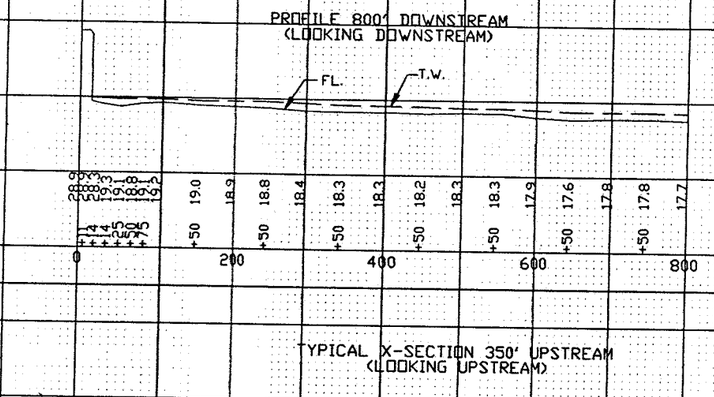
TYPICAL SECTIONS & PERTINENT DATA

SCALE AS SHOWN

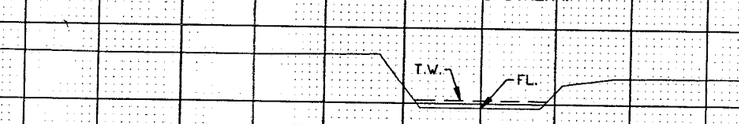
PROFILE 800' UPSTREAM
(LOOKING UPSTREAM)



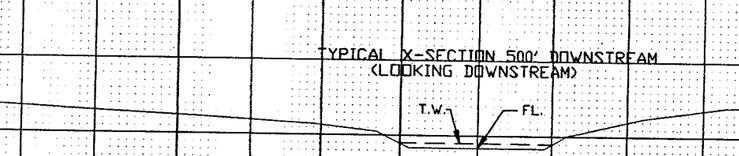
PROFILE 800' DOWNSTREAM
(LOOKING DOWNSTREAM)



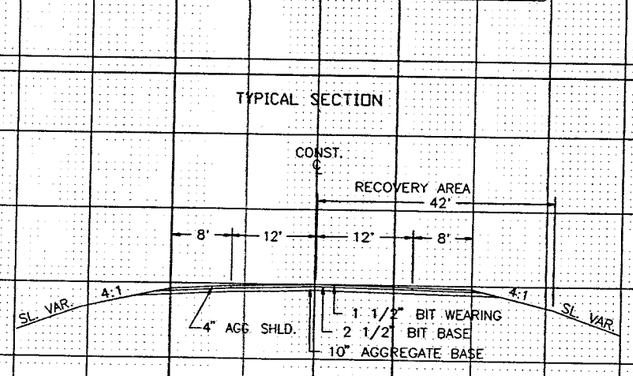
TYPICAL X-SECTION 350' UPSTREAM
(LOOKING UPSTREAM)

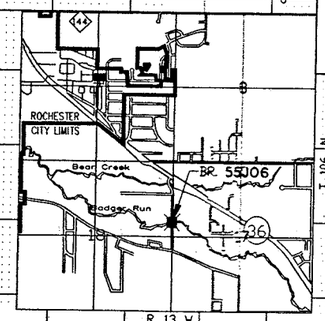


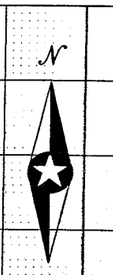
TYPICAL X-SECTION 500' DOWNSTREAM
(LOOKING DOWNSTREAM)



TYPICAL SECTION







Fed. Proj. No.

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 5/9/96

Stream or ditch designation BADGER RUN
Drainage area 15.34 SQ. MILES
Max. flood on record UNK Design flood (50 yr. freq.) 2100 C.F.S.
Max. observed highwater elevation 1028.5 Design highwater elevation
Design mean velocity through structure 7.2 F.P.S.
Low superstructure at or above elevation
Flowline 1017.7 Skew angle 0
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 2500 C.F.S. at stage 1028.2 and mean velocity of 8.3 F.P.S. with Ft. swellhead. 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 1028.62 (M.S.L. 1929 Adj.)
Location TOP CENTER DECK E. SIDE (INL.) BY VERT. RAIL

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT 9.20 ON TWP. RD. 391 (T.H. C.S.A.H. C.R. etc.)
PROPOSED BRIDGE LOCATED 0.3 MILES SOUTH OF JCT. C.S.A.H. 36
SEC. 17 TWP. 106 N R. 13 W
TOWNSHIP MARION COUNTY OLMSTED
BRIDGE NO. 55J06

CERTIFIED BY Kay M Bennish REG. NO. 19917 7/12 1996
PROFESSIONAL ENGINEER

State Aid Proj. No. 55-599-61

Sheet No. 5 of 8 Sheets

7+00 | 7+50 | 8+00 | 8+50 | 9+00 | 9+50 | 10+00

1010 | 1020 | 1030

ROW 125'

SPECIAL DITCH
EL. 1023.00

SPECIAL DITCH
EL. 1022.80

SPECIAL DITCH
EL. 1022.50

26.89 @ 24.7' S.G. | 26.81 @ 24.7' S.G. | 26.73 @ 24.7' S.G. | 26.58 @ 24.7' S.G. | 27.08 @ 24.7' S.G.

27.32 @ 12' | 27.24 @ 12' | 27.16 @ 12' | 27.09 @ 12' | 27.59 @ 12' | 28.04 @ 12'

27.33 @ 0' | 27.83 @ 0' | 28.28 @ 0'

26.89 @ 24.7' S.G. | 26.81 @ 24.7' S.G. | 26.73 @ 24.7' S.G. | 26.58 @ 24.7' S.G. | 27.08 @ 24.7' S.G.

7+00 | 7+50 | 8+00 | 8+50 | 9+00 | 9+50 | 10+00

ROW 125'

OUTLET ELEV 1017.50

169" x 84' R.C. SPAN ARCH-PIPE CL. IIA

INLET ELEV. 1017.70

28.03 @ 12'

28.27 @ 0'

OUTLET ELEV 1018.00

2-169" x 80' R.C. SPAN ARCH-PIPE CL. IIA @ STATIONS 10+11.25 & 10+48.75

INLET ELEV 1018.20

28.00 @ 12'

28.24 @ 0'

SPECIAL DITCH EL. 1024.00

26.89 @ 24.7' S.G.

27.40 @ 12'

27.64 @ 0'

SPECIAL DITCH EL. 1024.25

26.26 @ 24.7' S.G.

26.69 @ 12'

26.93 @ 0'

SPECIAL DITCH EL. 1024.50

26.25 @ 24.7' S.G.

26.69 @ 12'

SPECIAL DITCH EL. 1024.75

26.23 @ 24.7' S.G.

26.66 @ 12'

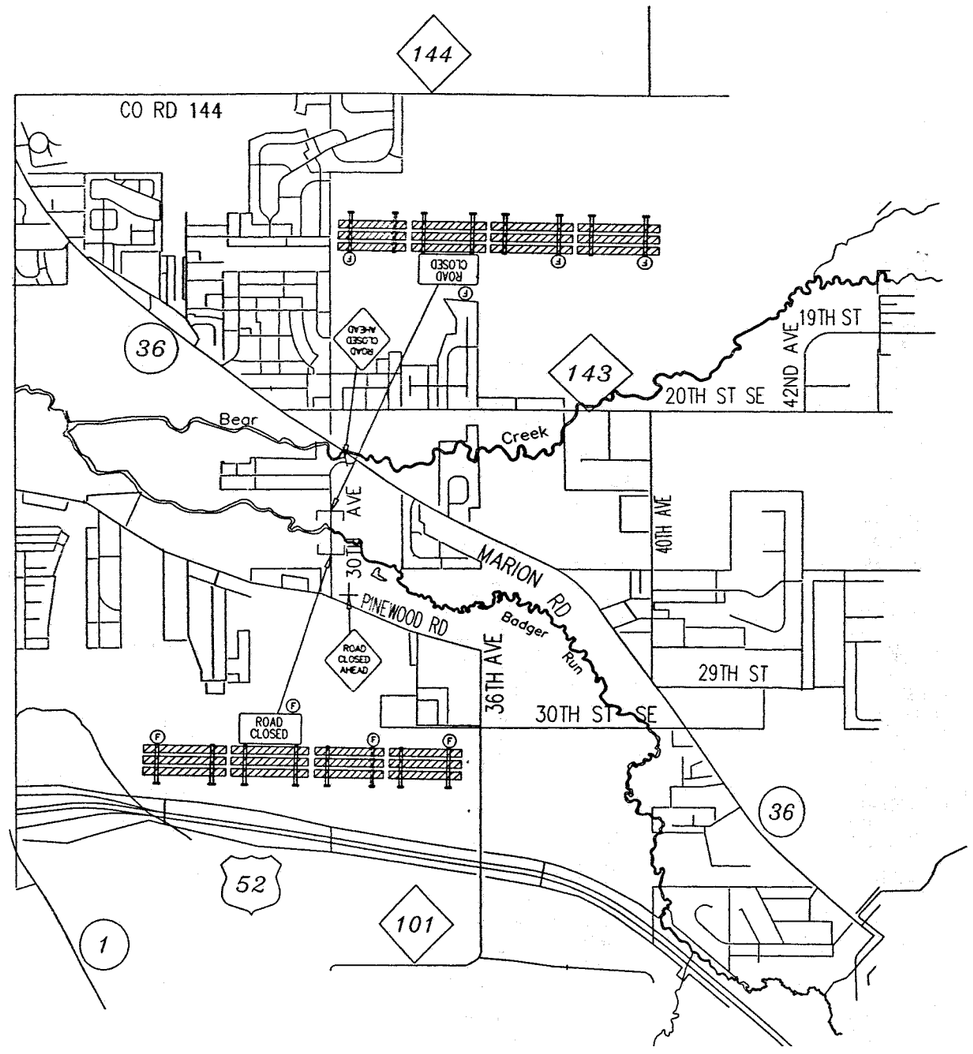
SPECIAL DITCH EL. 1025.00

26.19 @ 24.7' S.G.

26.62 @ 12'

EXC. 1593 CU.YDS. EMB. 1503 CU.YDS.
COMMON BORROW (CV) 671 CU.YDS.

S.A.P. 55-599-61 | SHEET 7 OF 8 SHEET



N

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 APRIL 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 Kurt M Riemick PROFESSIONAL ENGINEER REG. NO. 19917 7/12 1996 | S.A.P. 55-599-61 | SHEET 8 OF 8 SHEETS