MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR BRIDGE NO. L4916 REPLACEMENT

LOCATED ON CR. 138 **BETWEEN** TH. 30 **AND** 3.5 MILES S.E. . 2.5 MILES WEST CHATFIELD.

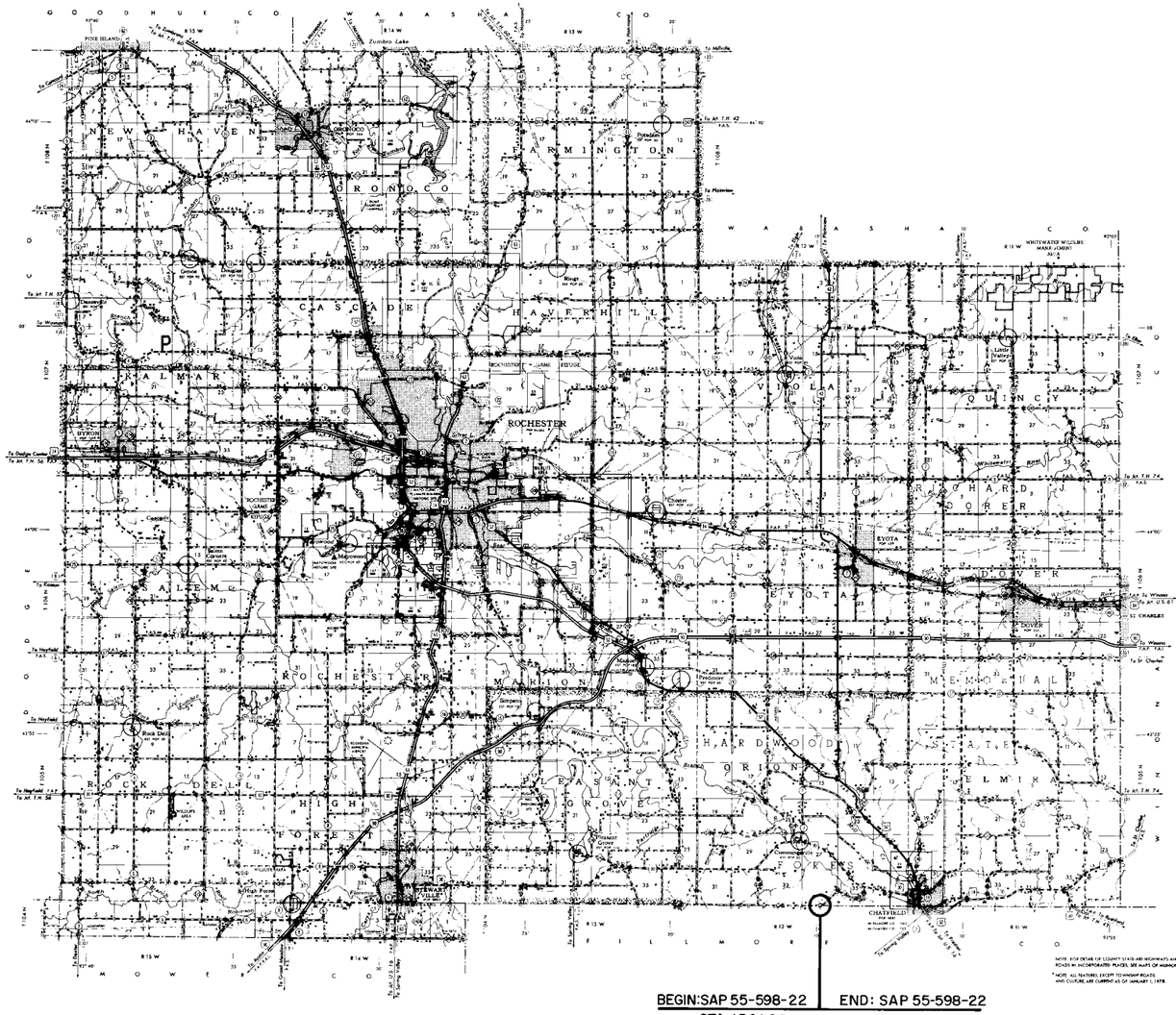
FROM 538' E. & 50' N. OF S.1/4 COR. SEC. 34 T.105N. R.12W. **TO** 930' E. & 365' N. OF S.1/4 COR. SEC. 34 T.105N. R.12 W. **(LEGAL DESCRIPTION)**

STATE PROJ. NO. .....

GROSS LENGTH	FEET		MILES
BRIDGES-LENGTH	FEET		MILES
EXCEPTIONS-LENGTH	FEET		MILES
NET LENGTH	FEET		MILES

STATE PROJ. NO. SAP 55-598-22

GROSS LENGTH	600.0	FEET 0.114	MILES
BRIDGES-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH	600.0	FEET 0.114	MILES



BEGIN: SAP 55-598-22 STA. 156+00 — END: SAP 55-598-22 STA. 162+00

PLANS 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 LINE
RIVER OR CREEK (NAME)
DRY RUN
DRAINAGE DITCH (SIZE)
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE (C-L)
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
(TIMBER)
CATCH BASIN C.B.
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 (G)
SAND PIT (S)
BORROW PIT (B)
ROCK QUARRY (Q)
SLOPE EASEMENT SE

UTILITIES SYMBOLS

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

SCALES

PLAN 0 100'
PROFILE 0 100' HOR. & 0 10' VER.
INDEX MAP 0 2 MILES
CROSS SECTIONS 0 10'

STATE AID TITLE SHEET 8/77 ALBINSON MPLS 612405

MINN. PROJ. NO. .....

SPECIFICATIONS REFERENCE

The 1978 Edition of the Minnesota Department of Transportation "Standard Specifications For Highway Construction" Shall Govern.

INDEX

SHEET NO. 1 TITLE SHEET.
SHEET NO. 2 TYPICAL SECTION AND ESTIMATE OF QUANTITIES.
SHEET NO. 3 & 4 CROSS SECTIONS.
SHEET NO. 5 & 6 BRIDGE SHEETS.

DESIGN DESIGNATION

R .....
ADT (Current Year) = 39
ADT (Future Year) = 62
DHV (Design Hr. Vol.) = ...
D (Directional Distr.) = ... %
T (Heavy Commercial) = ... %
SOIL FACTOR .....

ΣN18 (20) .....
Design Speed 30 MPH
Based on STOPPING Sight Distance
Height of eye 3.75' Height of object 0.5'
Design Speed not achieved at:
STA. ..... TO STA. ..... MPH
STA. ..... TO STA. ..... MPH
STA. ..... TO STA. ..... MPH

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 5/22/80 REG. NO. 10219 ENGR. J. L. Adam

COUNTY Olmsted

Recommended for Approval J. Waidell 5-27 1980
DISTRICT STATE AID ENGINEER

Recommended for Approval Dilbert D. Olson 8-13-1980
STATE AID PLANS AND SPECS ENGINEER

Approved 8-18 1980 for Lowell Johnson
STATE AID ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

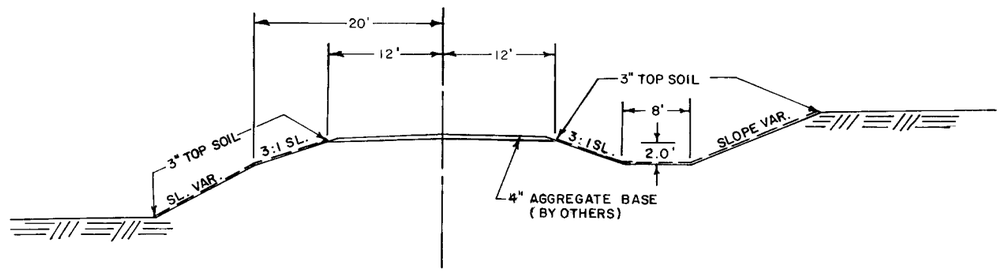
STATE AID PROJ. NO. 55-598-22 OLMSTED COUNTY CR. 138
STATE PROJ. NO. ..... **SHEET NO.** 1 **OF** 6 **SHEETS**

ESTIMATED QUANTITIES

SPECIFICATION NO.	ITEM	UNIT	NON PARTICIPATING	PARTICIPATING	TOTAL ESTIMATED QUANTITIES	
2021.501	MOBILIZATION	LUMP SUM		1	1	
2101.501	CLEARING	ACRE	0.6		0.6	
2101.502	CLEARING	TREE	6		6	
2101.506	GRUBBING	ACRE	0.6		0.6	
2101.507	GRUBBING	TREE	9		9	
2104.501	REMOVE PIPE CULVERTS	LIN. FT.	70		70	
2105.501	COMMON EXCAVATION	CU. YD.	889		889	
2105.503	ROCK EXCAVATION	CU. YD.	1167		1167	
2442.501	REMOVE OLD BRIDGE	LUMP SUM	1		1	
2451.509	AGGREGATE BEDDING (CV)	CU. YD.		148	148	(P)
2501.511	18" C.S. PIPE CULVERT	LIN. FT.	72		72	
2501.511	24" C.S. PIPE CULVERT	LIN. FT.	28		28	
2501.515	18" G.S. PIPE APRONS	EACH	4		4	
2501.515	24" G.S. PIPE APRONS	EACH	2		2	
2501.521	169" SPAN RCP-A CULVERT, CLASS II A	LIN. FT.		46	46	
2501.525	169" SPAN R.C.P. PIPE-ARCH APRONS(OUTLET APRON 20' LENGTH	EACH		1	1	
2501.525	169" SPAN R.C.PIPE-ARCH APRONS (INLET APRON 14' LENGTH)	EACH		1	1	
2511.501	RANDOM RIP RAP CLASS B	CU.YD.		100	100	
2511.504	FILTER BLANKET, TYPE I	CU.YD.		35	35	

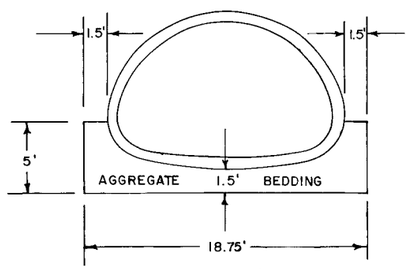
(P) PLAN QUANTITY.

TYPICAL SECTION



STA. 156+00 TO STA. 162+00

DETAIL BEDDING MATERIAL
℄ CULVERT STA. 157+25.



STANDARD PLATES

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

PLATE NO		DESCRIPTION
0003	A	SPECIFICATION REFERENCE TO STANDARD PLATES.
3007	A	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES.
3014	H	REINFORCED CONCRETE PIPE ARCH DETAIL.
3040	F	CORRUGATED METAL PIPE CULVERT.
3114	G	SECTIONAL CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3123	H	METAL APRON FOR C.M. PIPE.
3124	A	METAL APRON CONNECTION.
3133	A	RIPRAP AT RCP OUTLETS.
3145	A	CONCRTE PIPE JOINT TIES. EYE BOLT TIE.
3221	A	CORRUGATED STEEL PIPE COUPLING BAND.
8000	G	STANDARD BARRICADES.
9000	B	APPROACHES AND ENTRANCES.

NOTE: MATERIAL FROM THE UPPER 1.0' OF THE NATURAL TOPSOIL SHALL NOT BE USED IN THE UPPER 1.0' OF THE ROADBED. PART OF THIS MATERIAL SHALL BE UNIFORMLY SPREAD ON SLOPES AND DITCH BOTTOMS TO A DEPTH OF 3". NO PAYMENT IN ADDITION TO THE CONTRACT PRICE FOR COMMON EXCAVATION WILL BE MADE FOR SPREADING THE TOPSOIL AS ABOVE PROVIDED, NOR WILL ANY UNDERCUTTING MADE IN EXCAVATION PRIOR TO PLACING THE TOPSOIL BE MEASURED FOR PAYMENT.

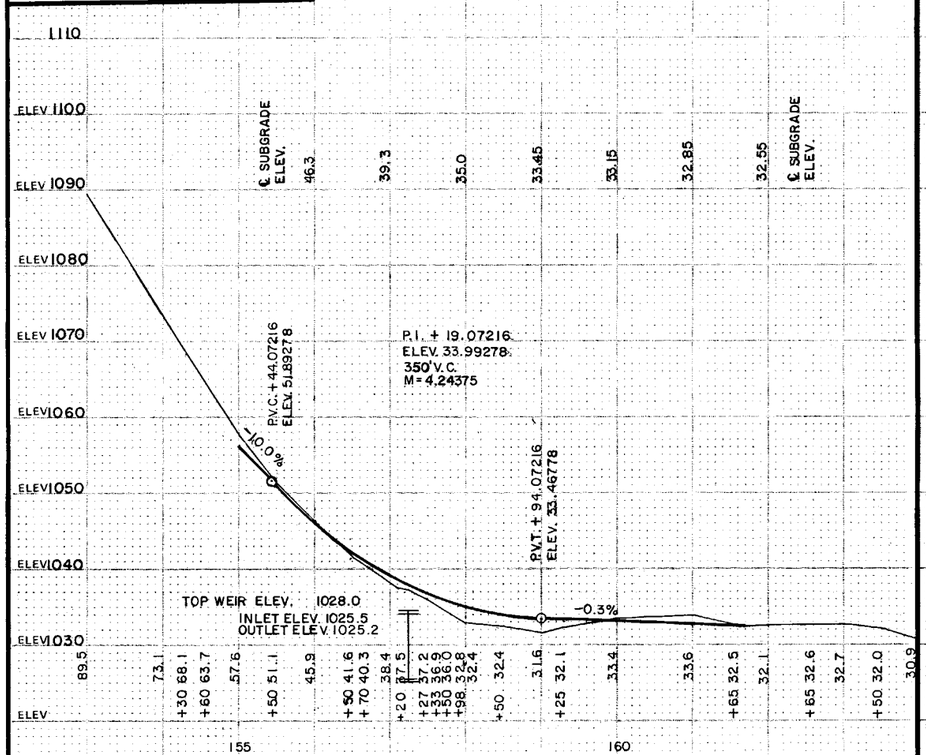
NOTE: CORRUGATED STEEL AND REINFORCED CONCRETE PIPE CULVERT EXCAVATION WILL BE CONSIDERED INCIDENTAL, AND WILL BE INCLUDED FOR PAYMENT UNDER UNIT PRICE FOR ITEMS NO. 2501.511 & 2501.521.

NOTE: ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTIONS ARE APPROXIMATE.

ALBINSON, INC. MINNEAPOLIS 55420

CONTRACTED PROFILE

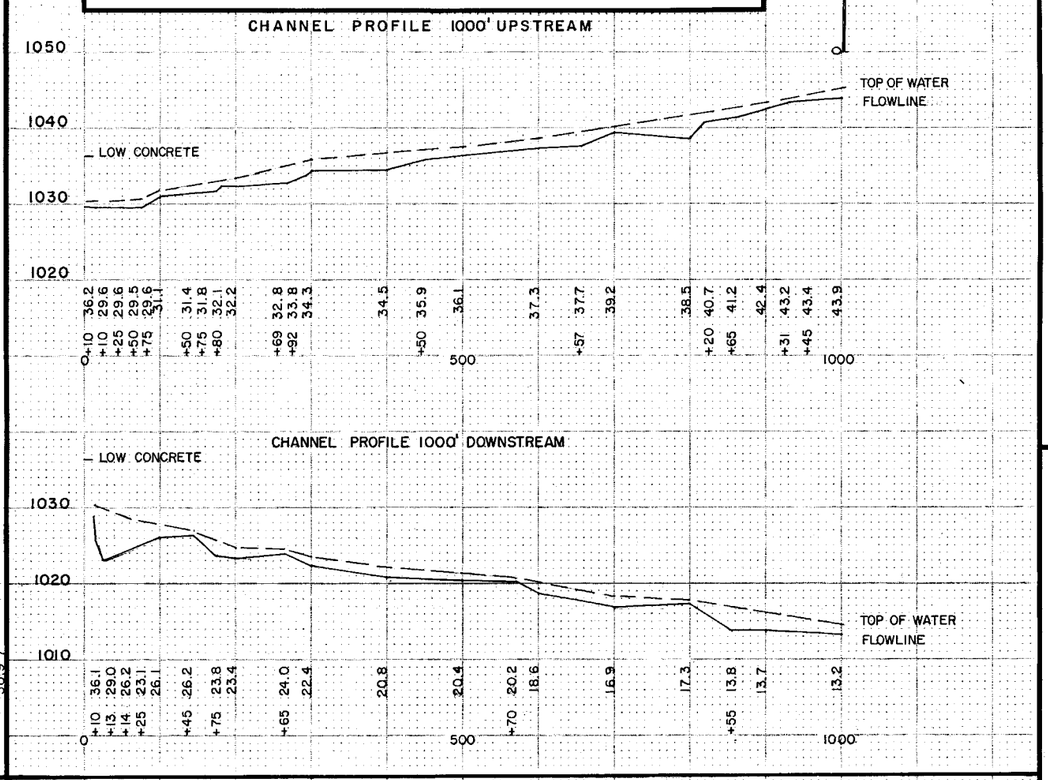
SCALE: HOR. 0' 50' 100' VER. 0' 5' 10'



TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN

SCALE 0 100'



Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

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 2-15-80

Stream or ditch designation ....UNKNOW....

Drainage area .....1.80 SQUARE MILES.....

Max. flood on record UNKNOWN Design flood (...50... yr. freq.) ..940...C.F.S.

Max. observed highwater elevation UNKNOWN Design highwater elevation 1034.4

Design mean velocity through structure .....14.....F.P.S.....

Low superstructure at or above elevation .....

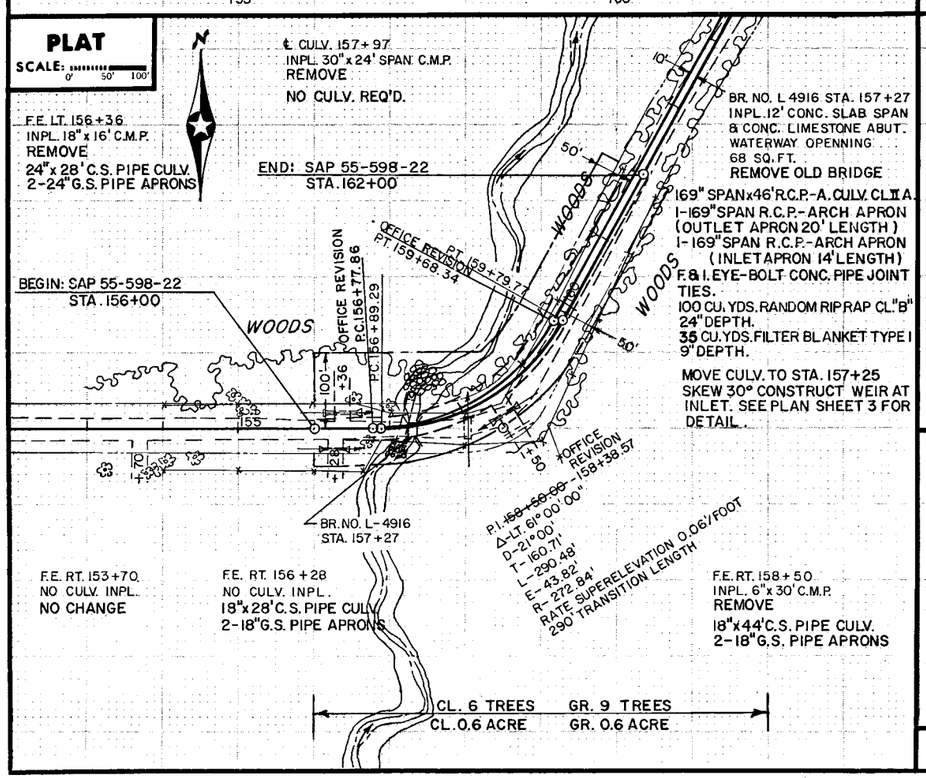
Flowline elevation .....Skew angle.....

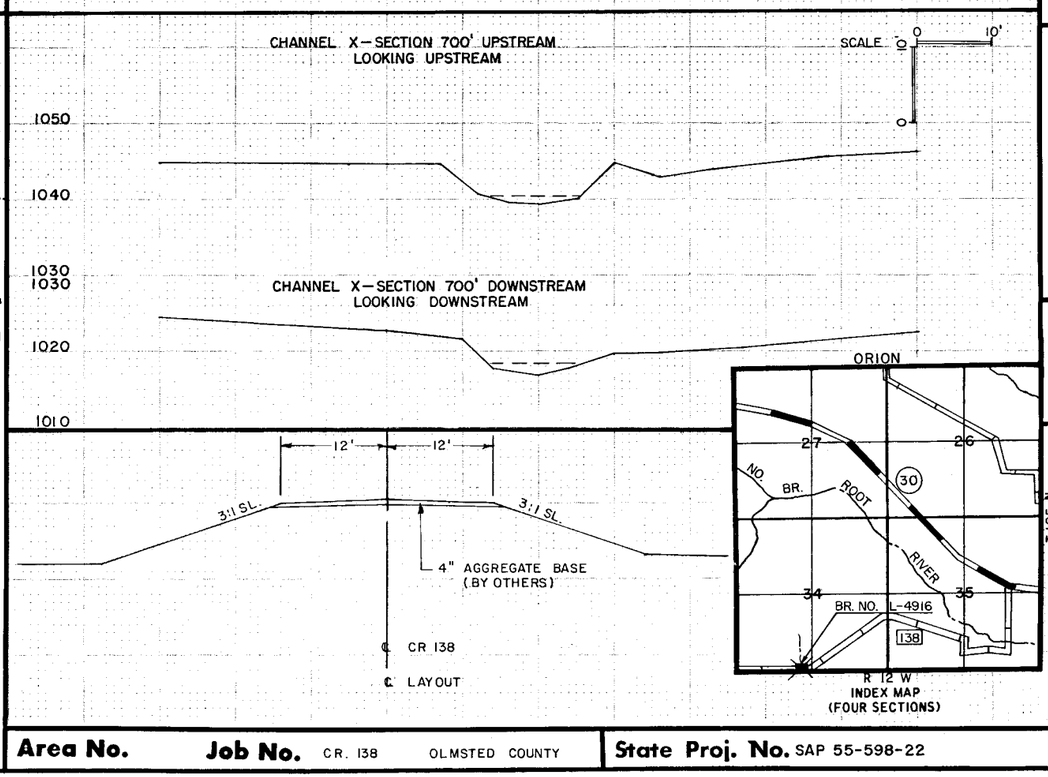
Waterway area req'd. below elevation ..... = ...Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 1130 C.F.S. at stage 1036.3 and mean velocity of 15 F.P.S. with 4.7 Ft. swellhead. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

PLAT

SCALE: 0' 50' 100'





FOUNDATION ENGINEERS RECOMMENDATION

DATE .....

Bridge survey sheets made from: SURVEY CONDUCTED BY OLMSTED COUNTY HIGHWAY DEPARTMENT.

ELEV. TIED TO B.M. NO. TT 6 WM ELEV. 982.00

Bench mark elevation. 1038.65 (M.S.L. 1929 Adj.)

Location: 0 ON S.E. HDWL. BRIDGE NO. L 4916.

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT 3.0 ON CR. 138 (T.H., C.S.A.H., C.R. etc)

PROPOSED BRIDGE LOCATED 2.5 MILES WEST OF CHATFIELD

SEC. 34 TWP. 105 N R. 12 W.

TOWNSHIP ORION COUNTY OLMSTED

BRIDGE NO. L 4916

Area No. **Job No.** CR. 138 OLMSTED COUNTY

State Proj. No. SAP 55-598-22

Sheet No. 5 of 6 Sheets

Fed. Proj. No.

RANDOM RIP RAP CLASS "B" 24" DEPTH.
FILTER BLANKET TYPE "I" 9" DEPTH.

SCALE : 0 10'

F. ENT. +36

P.C. 156+77.86 OFFICE REVISION

P.C. 156+89.29

33'

156+00

157+00

158+00 OFFICE REVISION CONSTRUCTION CENTERLINE

158+00 SURVEY CENTERLINE

12'

12'

50'

OFFICE REVISION CONSTRUCTION ALIGN.

10'

SURVEY ALIGNMENT

1143'

CONSTRUCTION ALIGNMENT OFFICE REVISION 158+38.57

SURVEY ALIGNMENT
P.I. ~~158+50.00~~
∠LT = 61°00'
D = 21°00'
T = 160.71'
L = 290.48'
E = 43.82'

33'

F. ENT. +28

NOTE: CONTRACTOR TO CONSTRUCT WEIR AT INLET APRON. WEIR TO BE CONSTRUCTED OF 4" THICK TREATED TIMBER OR 8" THICK CONCRETE. THIS WORK TO BE CONSIDERED INCIDENTAL.

RANDOM RIP RAP CLASS "B" 18" DEPTH

PLAN

SCALE : 0 10'

1050
1040
1030
1020

PROFILE : 20' LT. - - - - -
20' RT. — — —
℄ ———

TOP WEIR ELEV. 1028.0
INLET ELEV. 1025.5
OUTLET ELEV. 1025.2

+98 32.8
32.4
158+00

+50 32.3

ELEVATION

45.9
156+00

+50 41.6

+70 40.3

38.4
157+00

+20 37.5

+27 37.2

+33 36.9

+50 36.0

CR 138 OLMSTED COUNTY

BRIDGE SURVEY PLAN AND PROFILE

State Proj. No. SAP 55-598-22

Sheet No. 6 of 6 Sheets

Bridge No. L 4916