MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE & BRIDGE NO. 55547

LOCATED ON NEW HAVEN TWP RD T-366 OVER MIDDLE BRANCH ZUMBRO R. AT THE SO CITY LIMITS OF PINE ISLAND (GEOGRAPHIC DESCRIPTION)

FROM 707' WEST OF N. SEC. COR. 4-5 NEW HAVEN TWP TO 350' E. & 800' SOUTH OF N. SEC. COR. 4-5 NEW HAVEN TWP (LEGAL DESCRIPTION)

STATE PROJ. NO. _____

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

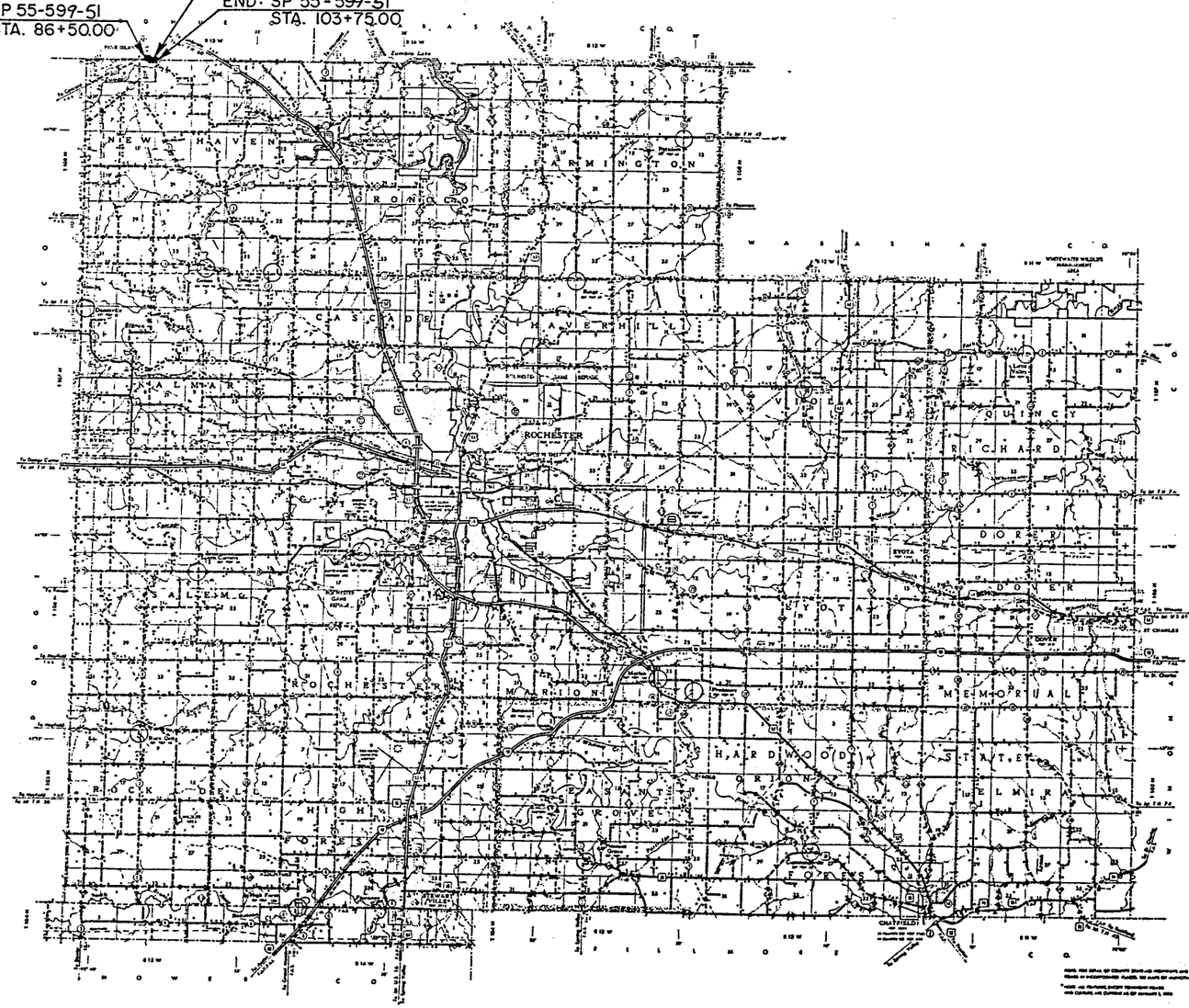
STATE PROJ. NO. 55-599-51

GROSS LENGTH	1725.00	FEET	0.327 MILES
BRIDGES-LENGTH	172.54	FEET	0.033 MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH	1725.00	FEET	0.327 MILES

BRIDGE NO. 55547
STA. 95+29.75 TO STA. 97+02.29

BEGIN: SP 55-599-51
STA. 86+50.00

END: SP 55-599-51
STA. 103+75.00



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
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 POLES
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
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRICAL CABLE
AERIAL TELEPHONE CABLE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE

SCALES

PLAN ..... 0' 50'
PROFILE ..... 0' 50' HORIZONAL
INDEX MAP ..... 0' 10560'
CROSS SECTIONS ..... 0' 10'

ALBINSON' MPLS 55409
72805

MINN. PROJ. NO. BROS 9155 (008)
MINN. PROJ. NO. CRP 0091 (008)

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET NO. 1 TITLE SHEET
SHEET NO. 1A-21 BRIDGE SHEETS
SHEET NO. 22 ESTIMATE OF QUANTITIES AND TYPICAL SECTIONS
SHEET NO. 23-24 PLAN AND PROFILE
SHEET NO. 25-27 CROSS SECTIONS

APPROVED:

12-6-89 DATE — Gerald R. Gostlin TWP. CHAIRPERSON

12/6/89 DATE — Vern B. Klutz MAYOR

DESIGN DESIGNATION

R _____ ΣN18 (20) _____
ADT (Current Year) = 158 (1990) Design Speed 55 MPH
ADT (Future Year) = _____ Based on _____ Sight Distance
DHV (Design Hr. Vol.) = _____ Height of eye 3.5 Height of object .05
D (Directional Distr.) = _____ % Design Speed not achieved at: _____
T (Heavy Commercial) = _____ % STA. 92+43.73 TO STA. 102+55.91 MPH 40
SOIL FACTOR 130 STA. _____ TO STA. _____ MPH _____
NO. OF TRAFFIC LANES 2 STA. _____ TO STA. _____ MPH _____
SHOULDER WIDTH 4'
_____ TON DESIGN

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 2/16/90 REG. NO. 10573 ENGR. [signature]

COUNTY Goodhue

DATE 2/16/90 REG. NO. 10387 ENGR. Michael A. Heider COUNTY Olmsted
Recommended for Approval _____ 3-5 1990
DISTRICT STATE AID ENGINEER

Recommended for Approval: [signature] 4/26 1991
STATE AID PLANS AND SPECS ENGINEER

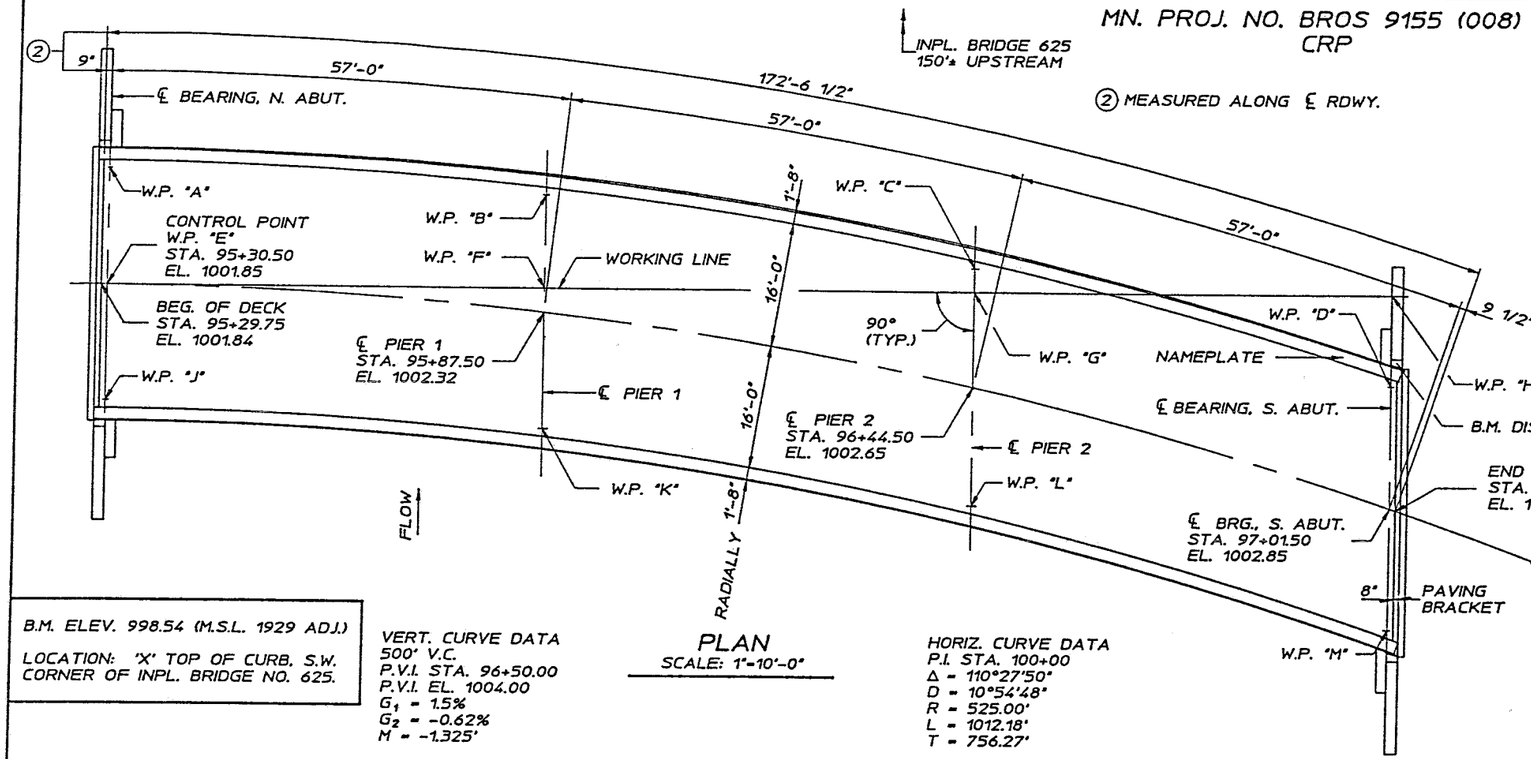
Approved 2-26 1991 [signature]
STATE AID ENGINEER

RECOMMENDED FOR APPROVAL [signature] 2-19-91
BRIDGE ENGINEER DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
_____ DIVISION ADMINISTRATOR _____ DATE

STATE AID PROJ. NO. _____
STATE PROJ. NO. 55-599-51 **SHEET NO.** 1 **OF** 27 **SHEETS**

MN. PROJ. NO. BROS 9155 (008) CRP



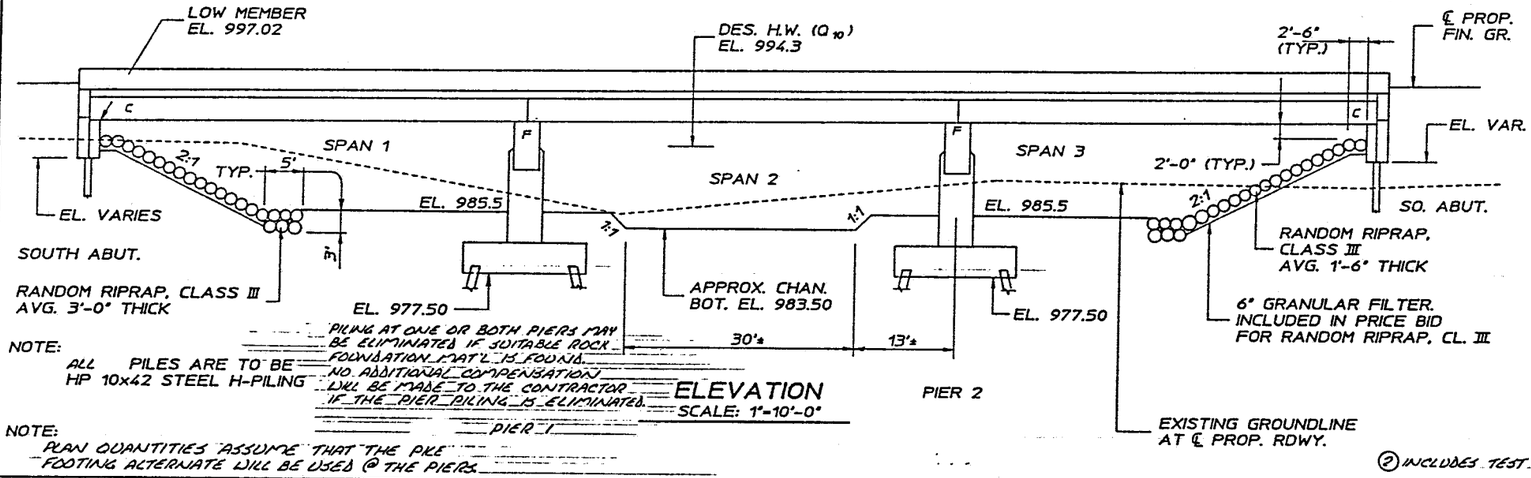
PLAN
SCALE: 1"=10'-0"

B.M. ELEV. 998.54 (M.S.L. 1929 ADJ.)

LOCATION: "X" TOP OF CURB, S.W. CORNER OF INPL. BRIDGE NO. 625.

VERT. CURVE DATA
500' V.C.
P.V.I. STA. 96+50.00
P.V.I. EL. 1004.00
G_1 = 1.5%
G_2 = -0.62%
M = -1.325'

HORIZ. CURVE DATA
P.I. STA. 100+00
Δ = 110°27'50"
D = 10°54'48"
R = 525.00'
L = 1012.18'
T = 756.27'

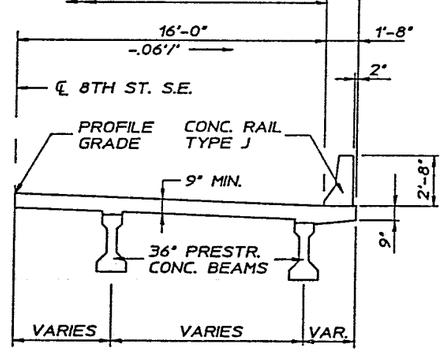


NOTE:
ALL PILES ARE TO BE HP 10x42 STEEL H-PILING

PILING AT ONE OR BOTH PIERS MAY BE ELIMINATED IF SUITABLE ROCK FOUNDATION MAT'L IS FOUND. NO ADDITIONAL COMPENSATION WILL BE MADE TO THE CONTRACTOR IF THE PIER PILING IS ELIMINATED.

ELEVATION
SCALE: 1"=10'-0"

NOTE:
PLAN QUANTITIES ASSUME THAT THE PILE FOOTING ALTERNATE WILL BE USED @ THE PIERS.



TRANSVERSE SECTION
THRU DECK
SCALE: 1/4" = 1'-0"

② INCLUDES TEST PILES

CONSTRUCTION NOTES

THE 1988 EDITION OF THE MINNESOTA DEP'T. OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

THE FIRST DIGIT OR THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE. ALL BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.

BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR RODS. THE SUPERSTRUCTURE BEAMS SHALL BE PLACED IN THEIR FINAL POSITION PRIOR TO DRILLING HOLES FOR ANCHOR RODS.

CONSTRUCTION OF EACH ABUTMENT SHALL NOT BE STARTED UNTIL THE APPROACH FILL AT THAT ABUTMENT HAS BEEN CONSTRUCTED TO THE FULL HEIGHT AND CROSS-SECTION.

DESIGN DATA

1989 A.A.S.H.T.O. DESIGN SPECS. LOAD FACTOR DESIGN METHOD ~ HS20 LOADING INCLUDES 17 PSF DEAD LOAD ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS.

MAXIMUM ALLOWABLE DESIGN STRESSES:
REINFORCED CONCRETE:
f'c = 4000 PSI n = 8
fy = 60000 PSI REINFORCEMENT
PRESTRESSED CONCRETE:
f'c = 6000 PSI n = 6
f's = 270000 PSI STRANDS
STRUCTURAL STEEL:
fy = 36000 PSI SPEC. 3306
OPERATING RATING = HS. 39.7
DECK AREA = 6107 S.F. A.D.T. = 146 (1989)

LIST OF SHEETS

NO.	TITLE
1A	GENERAL PLAN & ELEVATION
2	BRIDGE LAYOUT
3	NORTH ABUT. DETAILS
4	SOUTH ABUT. DETAILS
5	WINGWALL REINF. & ABUT. QUANTITIES
6-7	PIER DETAILS
8-9	PIER REINFORCEMENT
10	36" PRESTR. CONC. BEAM DETAILS
11-12	SUPERSTRUCTURE DETAILS
13	FRAMING PLAN
14	CONCRETE RAIL TYPE J
15-19	DETAILS
20	BRIDGE SURVEY
21	BRIDGE SURVEY - PLAN & PROFILE
22-27	GRADING PLAN

APPROVED:

COUNTY ENGINEER GOODHUE COUNTY — COUNTY ENGINEER OLMSTED COUNTY

DATE: 2/16/90

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.

REG. NO. 13896

DATE: 11/21/90

PLANS PREPARED BY:
ERICKSON ENGINEERING
3340 REPUBLIC AVENUE
ST. LOUIS PARK, MN 55426

8TH ST. S.E. OLMSTED COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55547

LOCATED ON 8TH ST. S.E. 0.45 MILES EAST OF THE JCT. OF CO. MAIN ST. OVER MIDDLE FORK ZUMBRO RIVER IN PINE ISLAND.

3 - 57 FT. PRESTRESSED CONCRETE BEAM SPANS ~ 32 FT. RDWY. ~ 10°54'48" CURVE
SPAN IDENTIFICATION NO. 501

GENERAL PLAN & ELEVATION

SEC. 4 TWP. 108N R 15W

TOWNSHIP: NEW HAVEN
COUNTY: OLMSTED

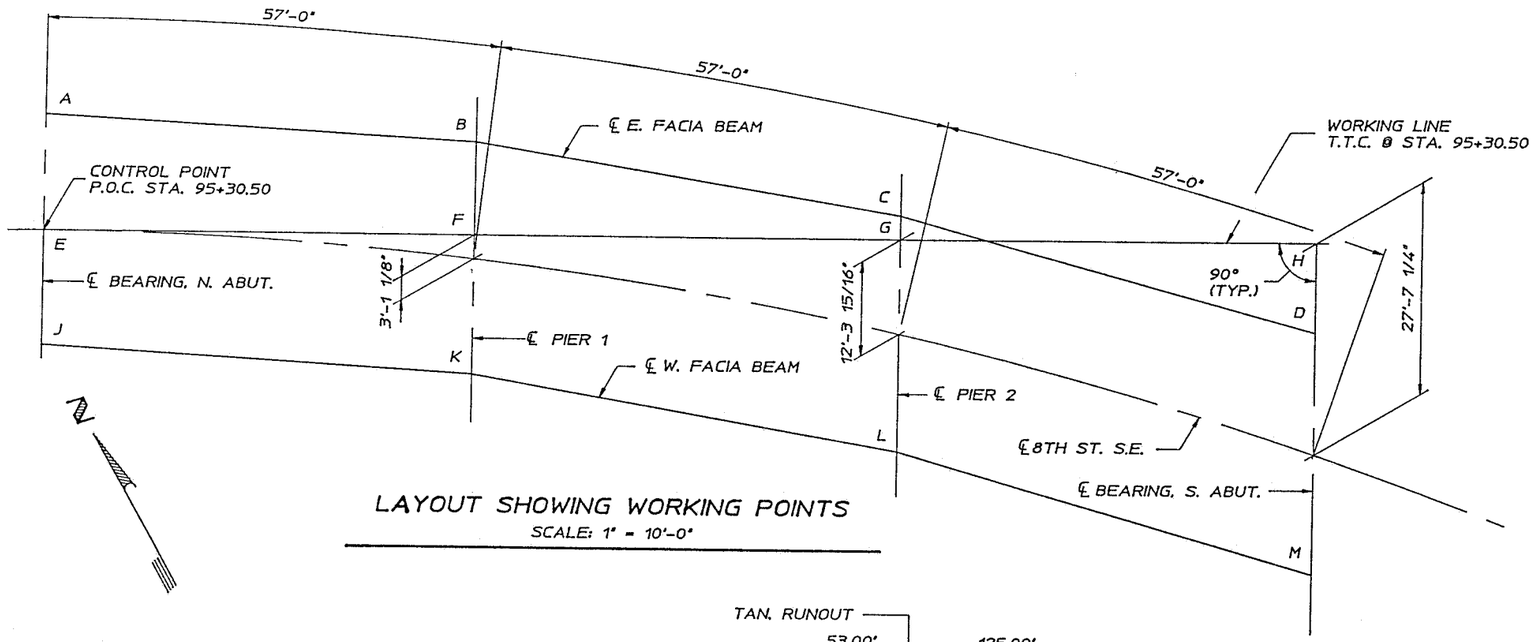
APPROVED: BRIDGE ENGINEER
2-19-91

S.P. 55-599-51 | 55547 | DM
SHEET 1A OF 27 SHEETS | RRT

SCHEDULE OF QUANTITIES FOR THE ENTIRE BRIDGE

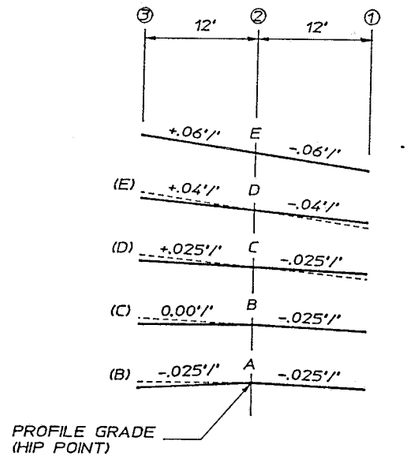
ITEM NO.	2401.501	2401.501	2401.512	2401.513	2401.541	2401.541	2401.543	2402.521	2405.502	2405.511	2402.595	0401.601	0401.601	2511.501	2402.546
ITEM	STRUCTURE CONCRETE (3Y43)	STRUCTURE CONCRETE (1A43)	BRIDGE SLAB CONCRETE (3X33)	TYPE J RAILING CONCRETE (3X46A)	REIN-FORCEMENT BARS	REIN-FORCEMENT BARS (EPOXY COATED)	SPIRAL REIN-FORCEMENT (EPOXY COATED)	STRUCTURAL STEEL (3306)	PRESTR. CONCRETE BEAMS 36	DIAPHRAGMS FOR TYPE 36 PRESTR. BEAMS	BEARING ASSEMBLY	FOUNDATION PREP. (PIER 1)	FOUNDATION PREP. (PIER 2)	RANDOM RIPRAP, CLASS III	FLOOR DRAIN, TYPE 1
QUANTITY	159 (P)	76 (P)	6107 (P)	348 (P)	5150 (P)	72320 (P)	190 (P)	430 (P)	699	214 (P)	24	1	1	290	4
UNIT	CU.YD.	CU.YD.	SQ.FT.	LIN.FT.	POUND	POUND	POUND	POUND	LIN. FT.	LIN. FT.	EACH	LUMP SUM	LUMP SUM	CU.YD.	EACH

ITEM NO.	2452.511	2452.510	2452.520	2452.520	2452.520	2021.501	2031.501	0401.601	0401.601	0452.602					
ITEM	STEEL H-PILING DELIVERED 10"	STEEL H-PILING DRIVEN 10"	STEEL H-TEST PILES, 25 FT. LONG 10"	STEEL H-TEST PILES, 20 FT. LONG 10"	STEEL H-TEST PILES, 15 FT. LONG 10"	MOBILIZATION	FIELD OFFICE TYPE B	SLOPE PREP.	STRUCTURE EXCAVATION	PILE TIP PROTECTION 10" ②					
QUANTITY	400	400	1	1	2	1	1	1	1	38					
UNIT	LIN. FT.	LIN. FT.	EACH	EACH	EACH	LUMP SUM	EACH	LUMP SUM	LUMP SUM	EACH					

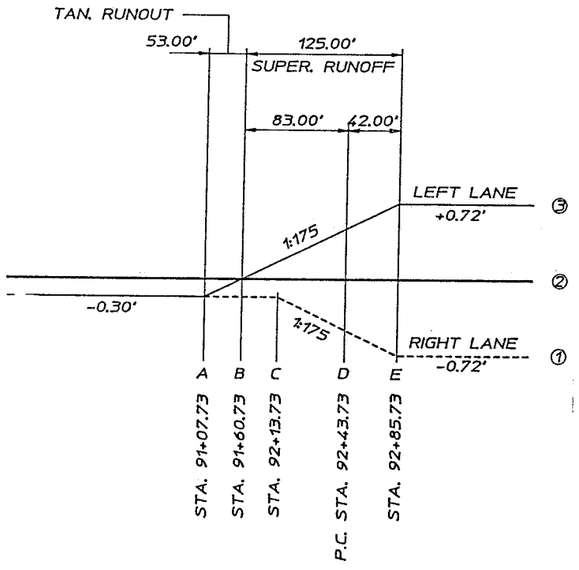


LAYOUT SHOWING WORKING POINTS

SCALE: 1" = 10'-0"

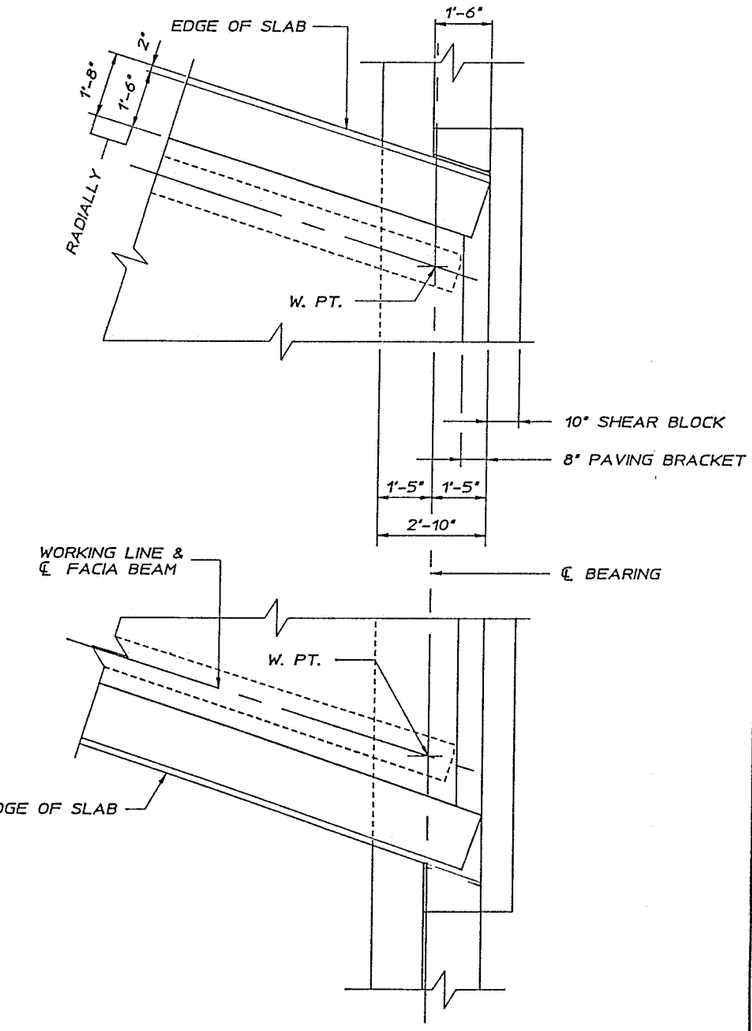


SUPERELEVATION CHART



TOP OF SLAB TO BRIDGE SEAT

	N. ABUT.	PIER 1	PIER 2	S. ABUT.
SLAB THICKNESS	9"	9"	9"	9"
STOOL HEIGHT —	2"	2"	2"	2"
BEAM	36"	36"	36"	36"
BEARING HEIGHT	5 5/8"	3 3/4"	3 3/4"	5 5/8"
TOTAL	4'-4 5/8"	4'-2 3/4"	4'-2 3/4"	4'-4 5/8"



SOUTH ABUT. CORNER DETAILS

(NORTH ABUT. SIMILAR)

SCALE: 1/2"=1'-0"

SUPERELEVATION CHART

DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M
A	95+30.50		56.97			15.00	58.83	114.10		30.00	65.86		
B	95+85.91			56.93		58.14	12.00	57.48	111.75	62.97	30.18	68.82	
C	96+41.28				56.85	113.15	56.30	3.02	54.97		60.08		71.92
D	96+96.58						111.73	56.14	11.80		111.27	57.14	31.67
E	95+30.50						56.89			15.00	59.72	116.45	
F	95+87.17							56.22		58.83	18.18	62.67	119.30
G	96+41.90								54.89	114.10	59.08	27.70	70.01
H	96+93.09										112.58	61.48	
J	95+30.50										56.98		
K	95+89.18											57.02	
L	96+47.91												57.10
M	97+06.72												

ELEVATIONS

TOP OF SLAB	SLAB TO BRIDGE SEAT	BRIDGE SEAT	POINT
1002.75	4.39	998.36	A
1003.21	4.23	998.98	B
1003.54	4.23	999.31	C
1003.73	4.39	999.34	D
			E
			F
			G
			H
1000.95	4.39	996.56	J
1001.43	4.23	997.20	K
1001.77	4.23	997.54	L
1001.96	4.39	997.57	M

MINNESOTA DEPARTMENT OF TRANSPORTATION

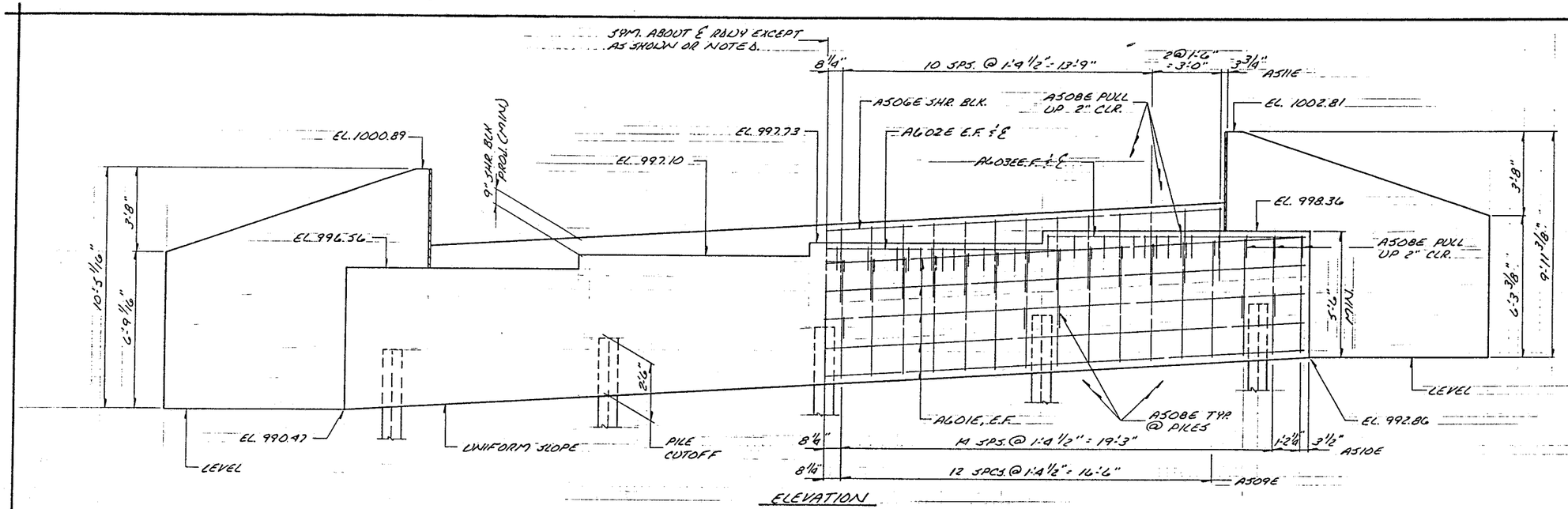
BRIDGE NO. 55547

BRIDGE LAYOUT

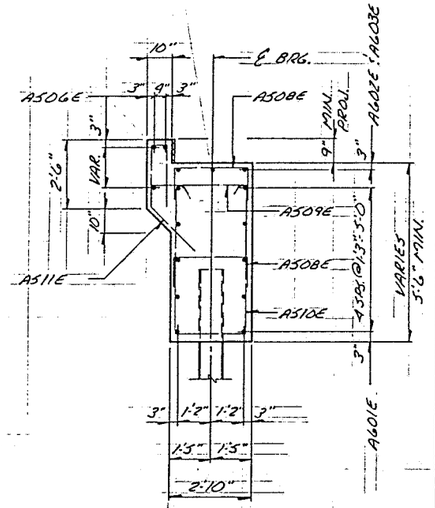
APPROVED: 2-19-91

S.P. 55-599-31 | 55547 | DM

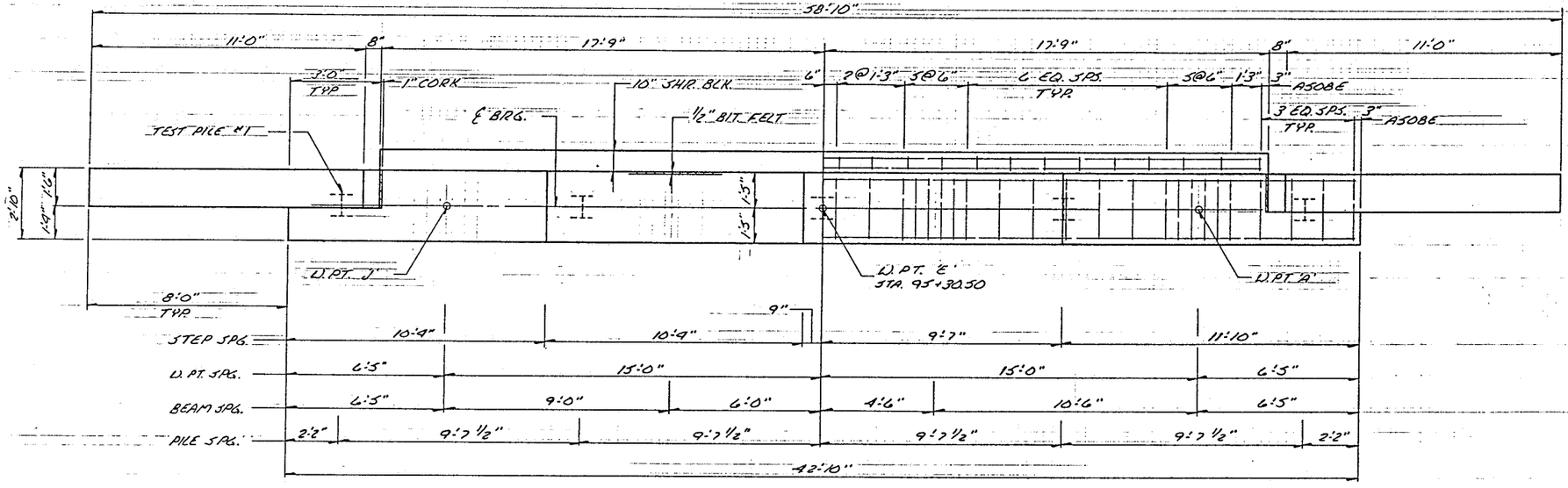
SHEET 2 OF 22 SHEETS | | RRT



ELEVATION



SECTION THRU ABUTMENT



PLAN

SCALE 3/16" = 1'-0"

FOR WINGWALL REINF. SEE SHT. 5

PILE NOTES

1 - STEEL H: TEST PILE 25' LONG
4 - STEEL H: PILES EST LENGTH 20'
3 - STEEL H: PILES REQ'D FOR THE NORTH ABUT.

ALL PILES ARE TO BE HP 10×42 STEEL H-PILES.
SEE DETAIL B202 FOR SPLICES.
ALL PILES TO HAVE PILE TIP PROTECTION.

COMPUTED PILE LOADS — TONS PER PILE, NORTH ABUT.		
DEAD LOAD		40.4
LIVE LOAD		16.2
	TOTAL	56.6

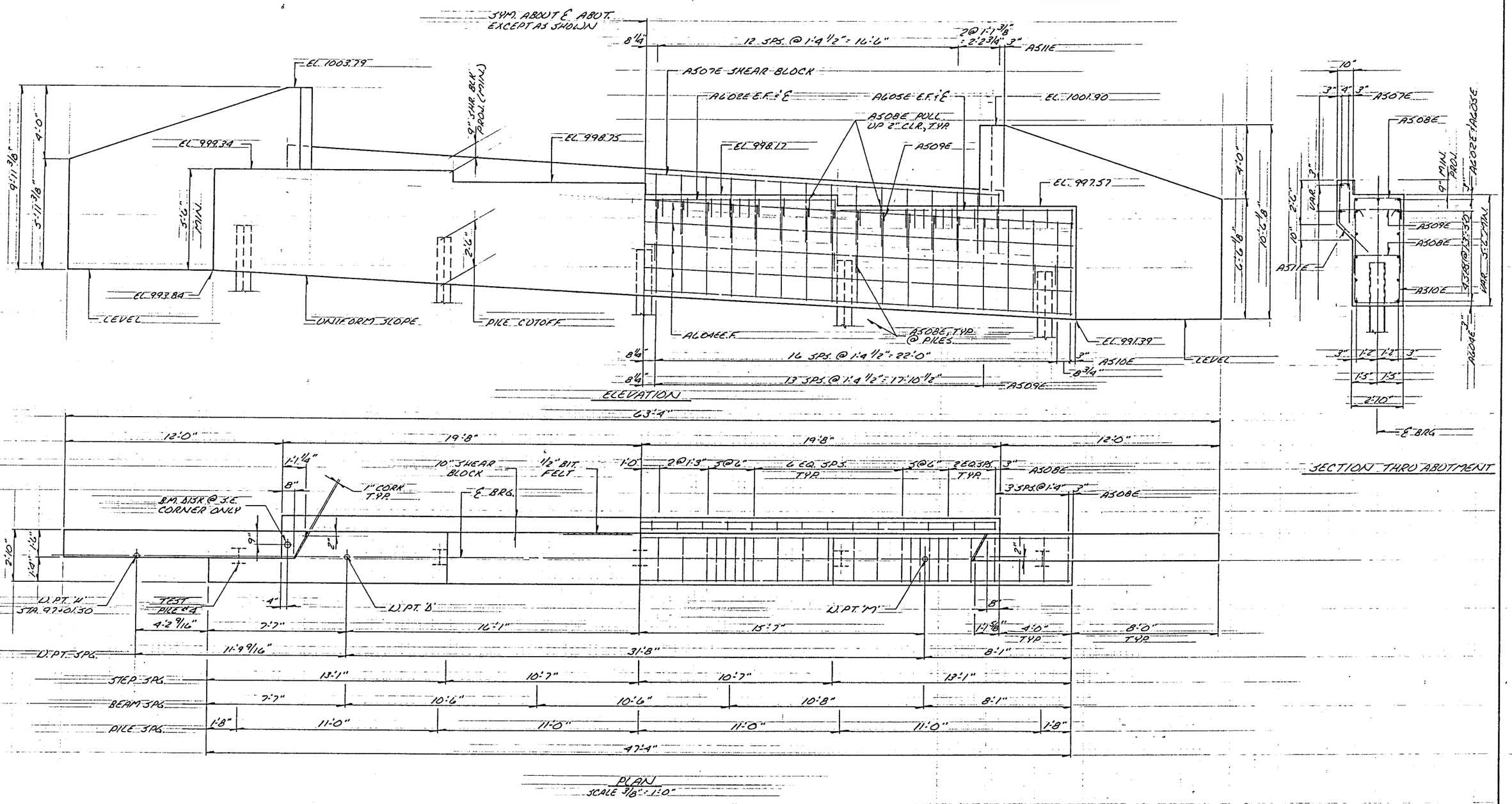
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55547

NORTH ABUTMENT DETAILS & REINF.

APPROVED 2-19-91

S.P. 55-599-31	55547	AM
SHEET 3 OF 27 SHEETS		ART.



FOR WINGWALL REINF. SEE SHT. 5

PILE NOTES

1- STEEL 'H' TEST PILE 20' LONG
4- STEEL H-PILES EST. LENGTH = 15'
5- STEEL H-PILES REQ'D. FOR THE SOUTH ABUT.

ALL PILES TO BE HP 10x42 STEEL H-PILES.
SEE DETAIL B802 FOR SPLICES.
ALL PILES TO HAVE PILE TIP PROTECTION.

COMPUTED PILE LOADS — TONS PER PILE, SOUTH ABUT.	
DEAD LOAD	40.4
LIVE LOAD	16.2
TOTAL	56.6

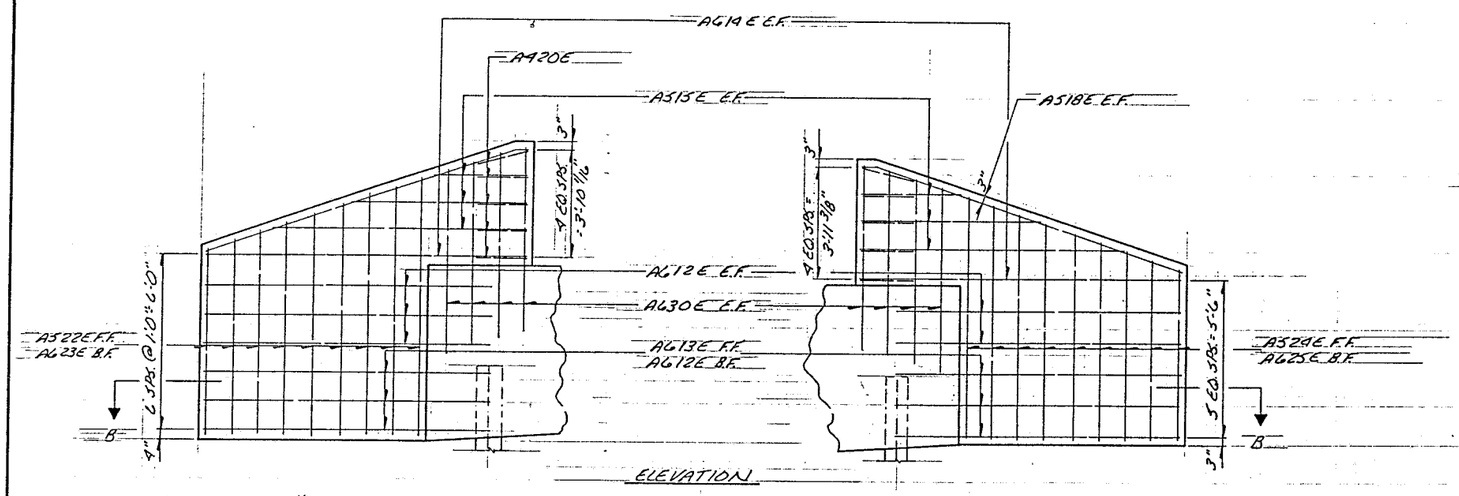
MINNESOTA DEPARTMENT OF TRANSPORTATION

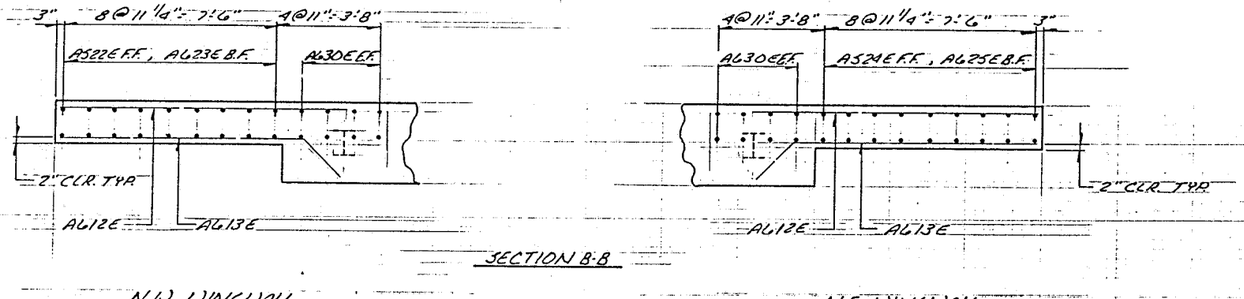
BRIDGE NO. 55547

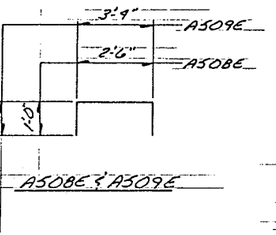
SOUTH ABUTMENT DETAILS & REINF.

APPROVED 2-19-91

S.P. 55-599-51	55547	DM
SHEET 4 OF 27 SHEETS		RRT

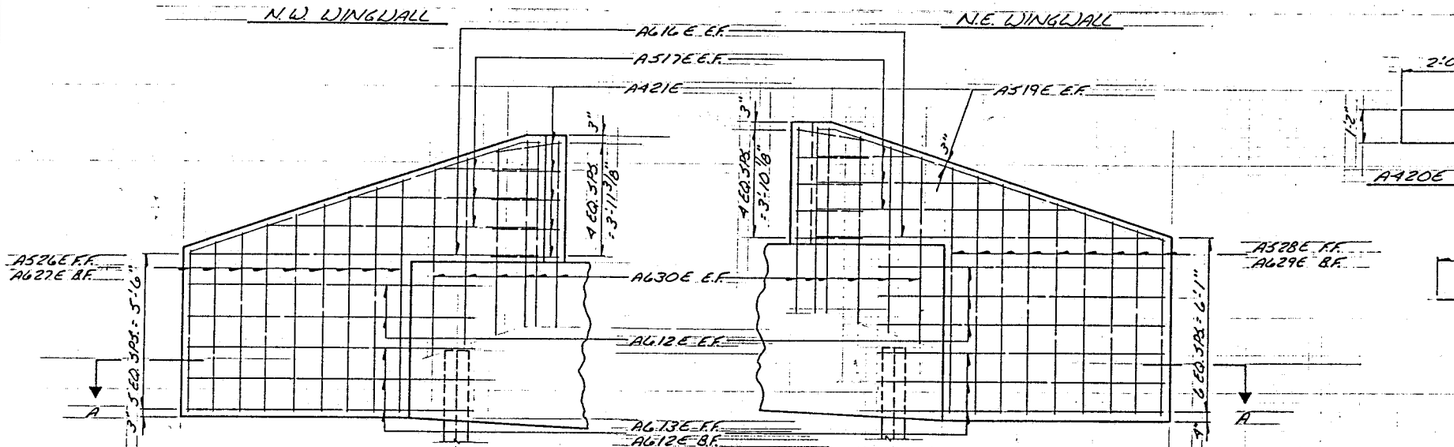


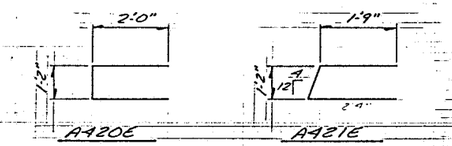


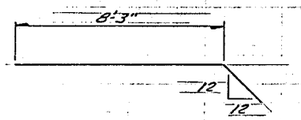


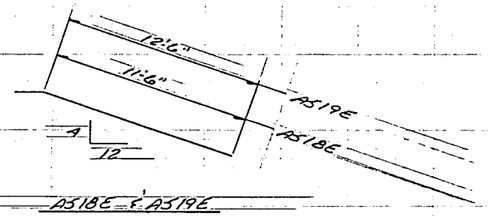
BILL OF REINFORCEMENT – BOTH ABUTS.					
BAR	N. ABUT.	S. ABUT.	LENGTH	SHAPE	LOCATION
AG01E	10		42'-6"	ST.RT.	CAP – LONGITUDINAL
AG02E	9	6	10'-8"	"	" "
AG03E	3		11'-6"	"	" "
AG04E		10	47'-0"	"	" "
AG05E		6	12'-9"	"	" "
A506E	3		35'-2"	"	SHEAR BLOCK – HOR.
A507E		3	39'-0"	"	" "
A508E	57	59	4'-6"	BENT	CAP – TIE
A509E	26	28	4'-4"	"	" "
A510E	32	36	14'-7"	"	" – STIRRUP
A511E	26	30	6'-10"	"	SHEAR BLOCK-TIE
AG12E	16	16	10'-3"	ST.RT.	WINGWALL – HORIZ.
AG13E	6	6	10'-0"	BENT	" "
AG14E	4		11'-9"	ST.RT.	" "
(1) A515E	6		12'-8"	"	" "
AG16E		4	12'-4"	"	" "
(1) A517E		6	13'-0"	"	" "
A518E	4		12'-0"	BENT	" "
A519E		4	13'-0"	"	" "
A420E	10		5'-2"	"	" – TIE
A421E		10	5'-3"	"	" "
A522E	1 SER. OF 9		6'-5" TO 8'-11"	ST.RT.	" – VERTICAL
A623E	1 SER. OF 9		6'-5" TO 8'-11"	"	" "
A524E	1 SER. OF 9		5'-11" TO 8'-5"	"	" "
A625E	1 SER. OF 9		5'-11" TO 8'-5"	"	" "
A526E		1 SER. OF 9	5'-7" TO 8'-1"	"	" "
A627E		1 SER. OF 9	5'-7" TO 8'-1"	"	" "
A528E		1 SER. OF 9	6'-2" TO 8'-8"	"	" "
A629E		1 SER. OF 9	6'-2" TO 8'-8"	"	" "
AG30E	16	20	6'-6"	"	" "

(1) QTY. 2 FROM 1









SUMMARY OF QUANTITIES – BOTH ABUTS.		
STRUCTURE CONCRETE (3Y43)	79	CU. YDS.
REINFORCEMENT BARS EPOXY COATED	6380	POUNDS
(4) STRUCTURE EXCAVATION	1	L. SUM
(2) B.M. DISK STD. PLATE NO. 9300		
STEEL H-TEST PILES 25' LG. 10"	1	EACH
STEEL H-TEST PILE 20' LG. 10"	1	EACH
(3) STEEL H-PILING DRIVEN 10"	140	LIN. FT.
(3) STEEL H-PILING DELIVERED 10"	140	LIN. FT.
PILE TIP PROTECTION 10"	10	EACH

(2) COUNTY SHALL FURNISH DISK PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STD. PLATE NO. 9301 FOR PLACING.
(3) DOES NOT INCLUDE TEST PILES.
(4) SEE SPECIAL PROVISIONS.

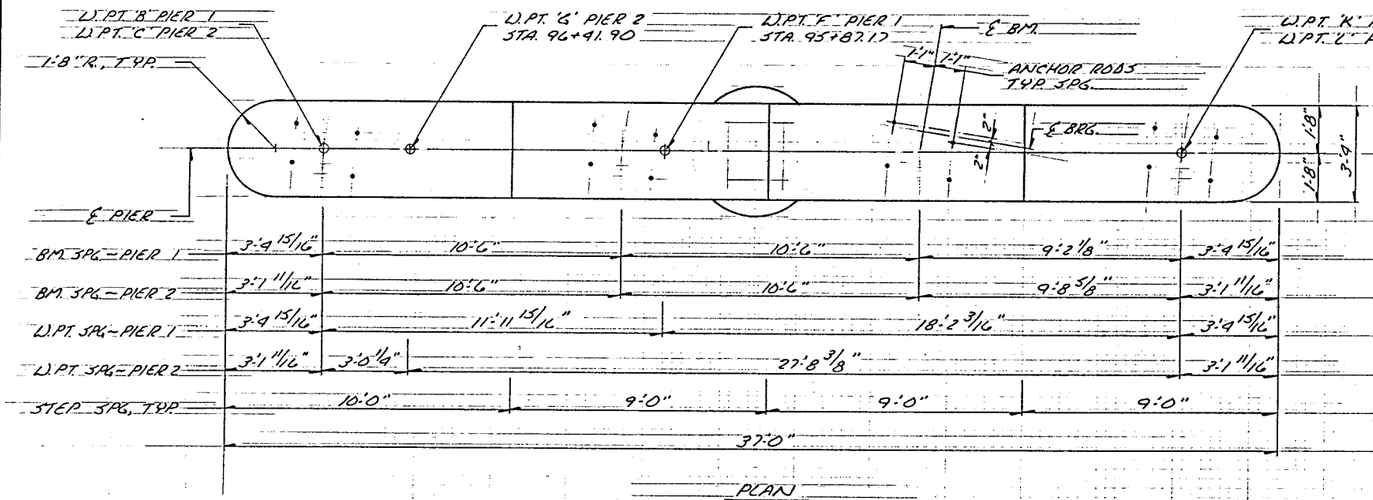
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55547

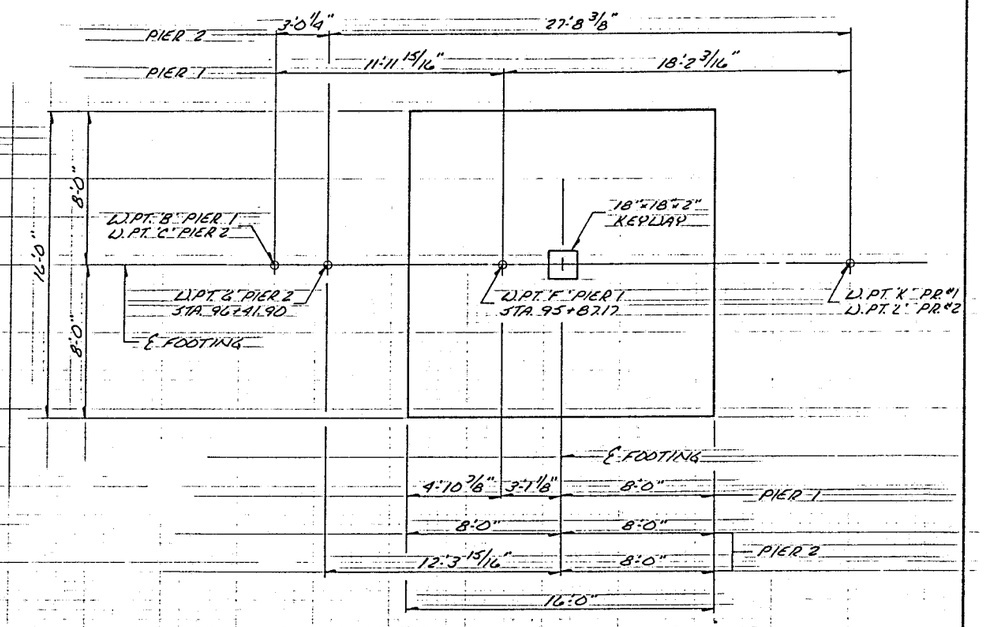
WINGWALL REINFORCEMENT & ABUTMENT QUANTITIES

APPROVED 2-19-91

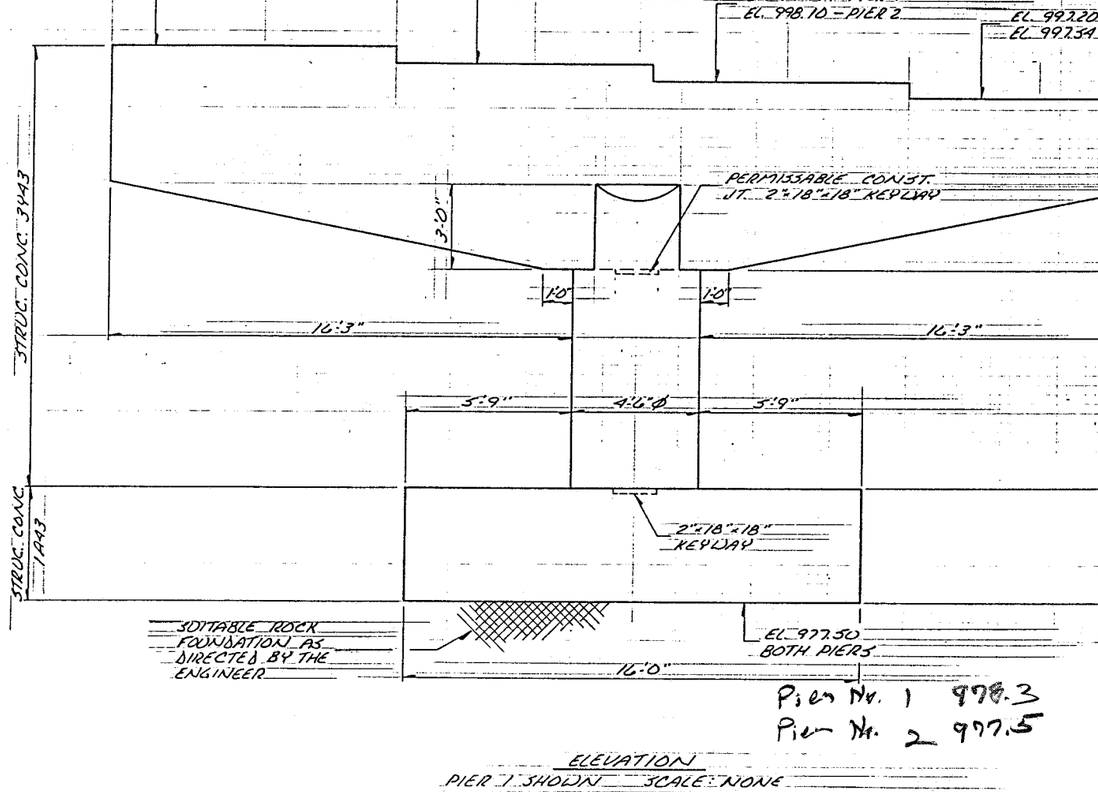
S.P. 55-599-51	55547	DM
SHEET 5 OF 27 SHEETS		ART



PLAN
PIER 1 SHOWN. SCALE: 3/16"=1'-0"

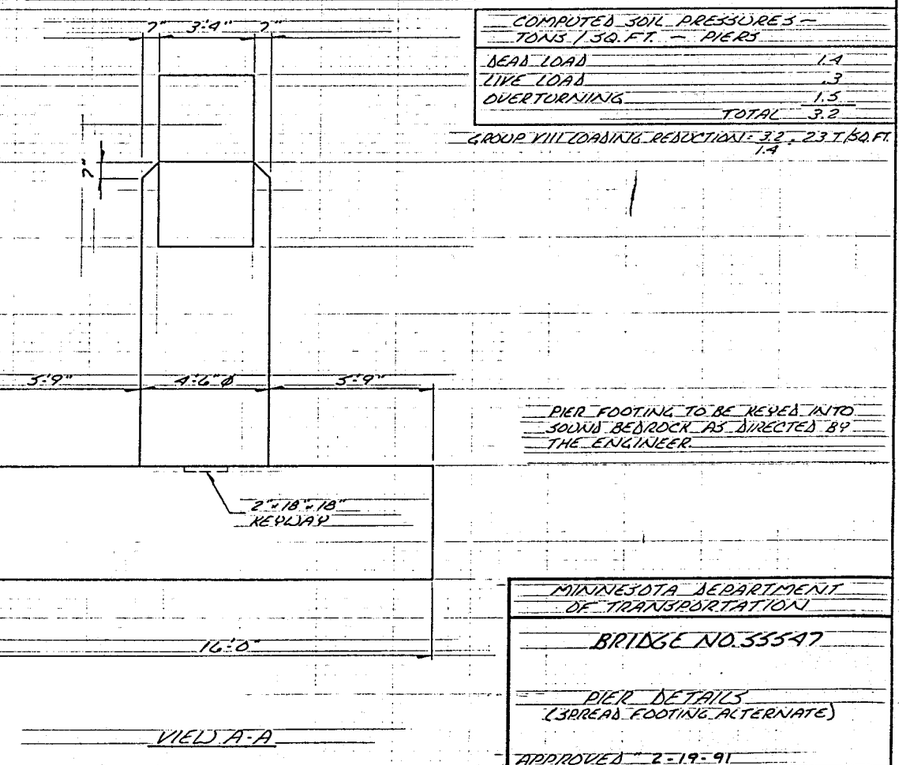


FOOTING PLAN
SCALE 1/4"=1'-0"



Pier No. 1 998.3
Pier No. 2 997.5

ELEVATION
PIER 1 SHOWN SCALE: NONE



VIEW A-A

COMPUTED SOIL PRESSURES — TONS / SQ. FT. — PIERS	
DEAD LOAD	1.4
LIVE LOAD	.3
OVERTURNING	1.5
TOTAL	3.2

GROUP VIII LOADING REDUCTION: 3.2 = 2.3 T/SQ. FT.
1.4

PIER FOOTING TO BE KEYED INTO SOUND BEDROCK AS DIRECTED BY THE ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 35547

PIER DETAILS
(SPREAD FOOTING ALTERNATE)

APPROVED 2-19-91

S.A. 55-599-31

SHEET 6 OF 27 SHEETS	35547	NO. ART

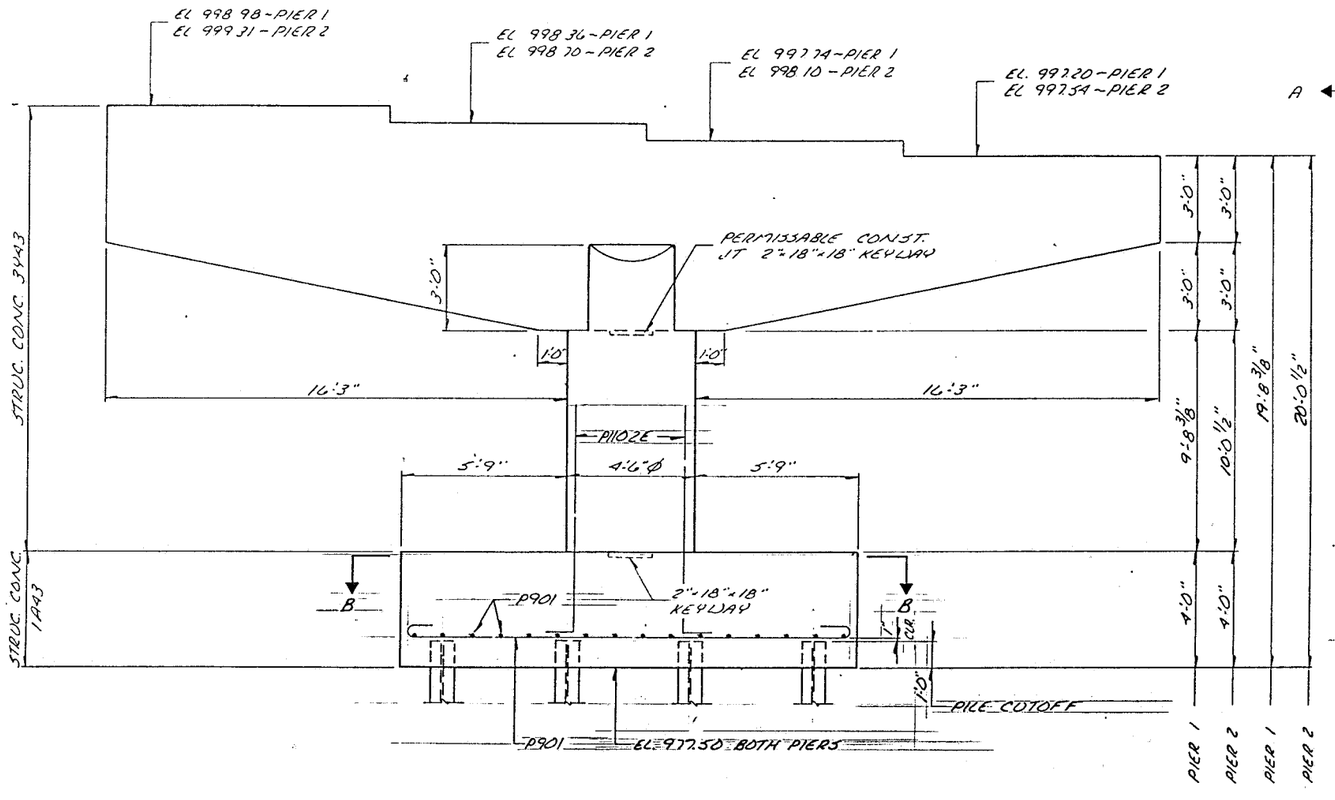
PILE NOTES

2- STEEL H-TEST PILES 15 FT LG.
26- STEEL H-PILING - EST. LENGTH 10 FT LG.
28 STEEL H-PILES REQ'D FOR 2 PIERS

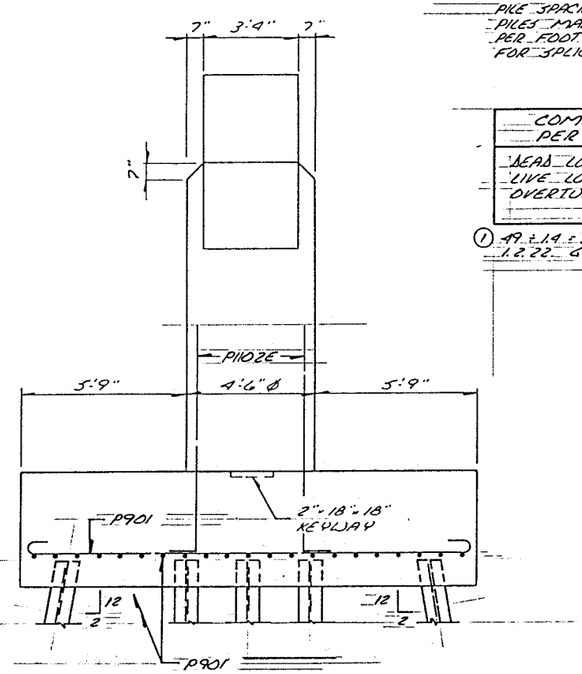
ALL PILES TO BE HP 10×42
PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
PILES MARKED THUS ↦ TO BE BATTERED 2" PER FOOT IN THE DIRECTION SHOWN.
FOR SPLICES SEE DETAIL B 202.

COMPUTED PILE LOADS - TONS PER PILE - PIERS	
DEAD LOAD	23
LIVE LOAD	5
OVERTURNING	21
TOTAL	49 (1)

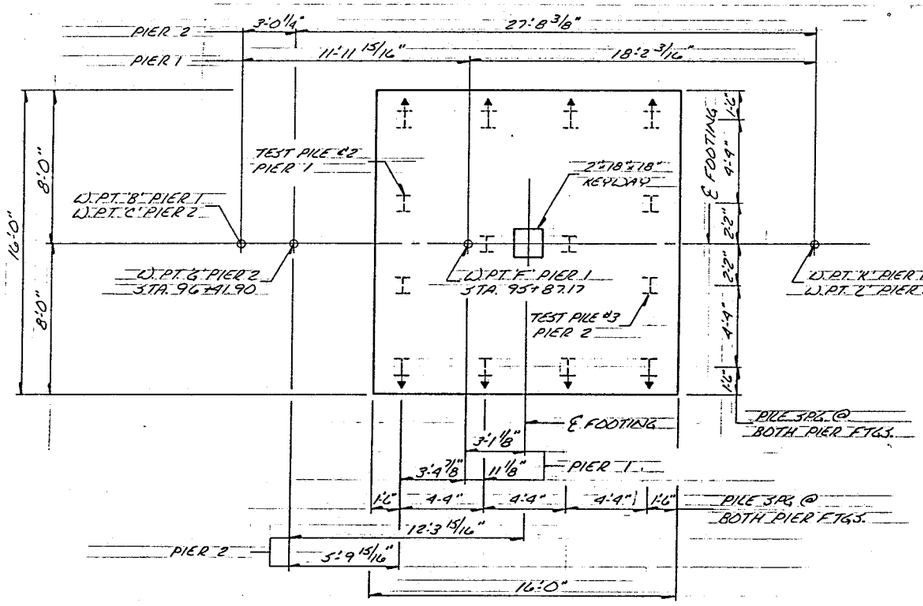
(1) 49 ÷ 1.4 = 35 REDUCTION PER A.A.S.H.T.O. 1.2.22 GROUP VIII



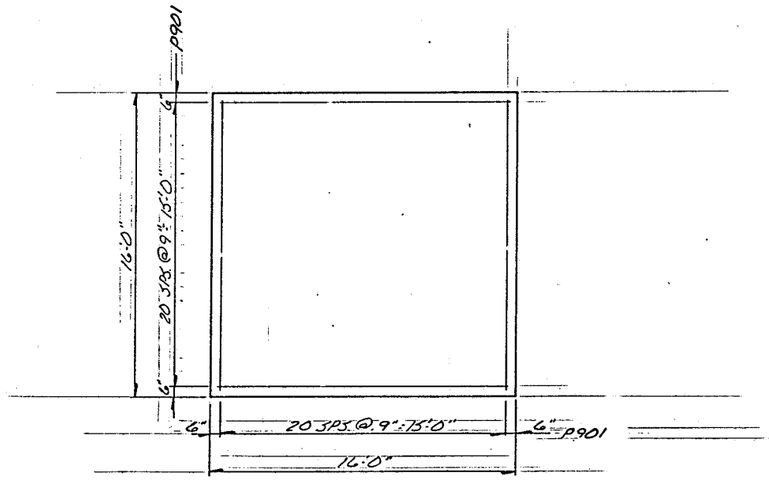
ELEVATION



VIEW A-A



SECTION B-B
SHOWING PILES SCALE 1/4" = 1'-0"



SECTION B-B
SHOWING REINF. SCALE 1/4" = 1'-0"

SEE SHT. 8 FOR COLUMN & CAP REINFORCEMENT DETAILS.

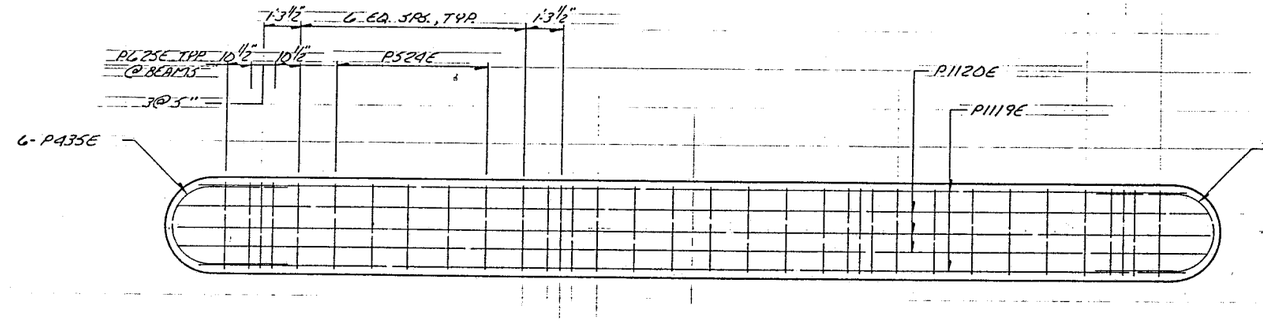
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55547

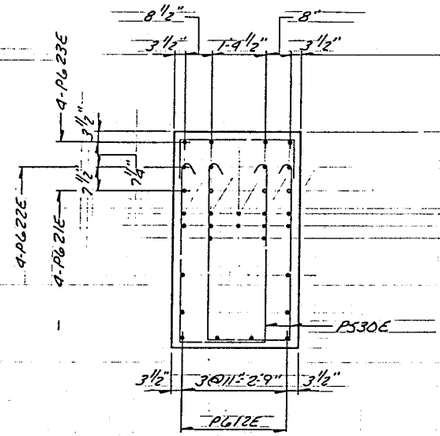
PIER DETAILS (PILE FTG. ALTERNATE)

APPROVED - 2-19-91

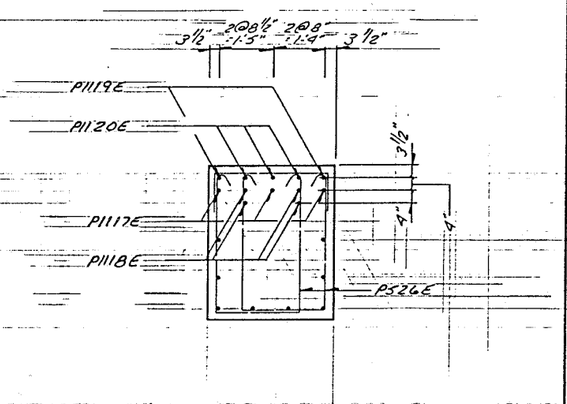
J.A. 55-599-51	55547	DM
SHEET 7 OF 27 SHEETS		RRT



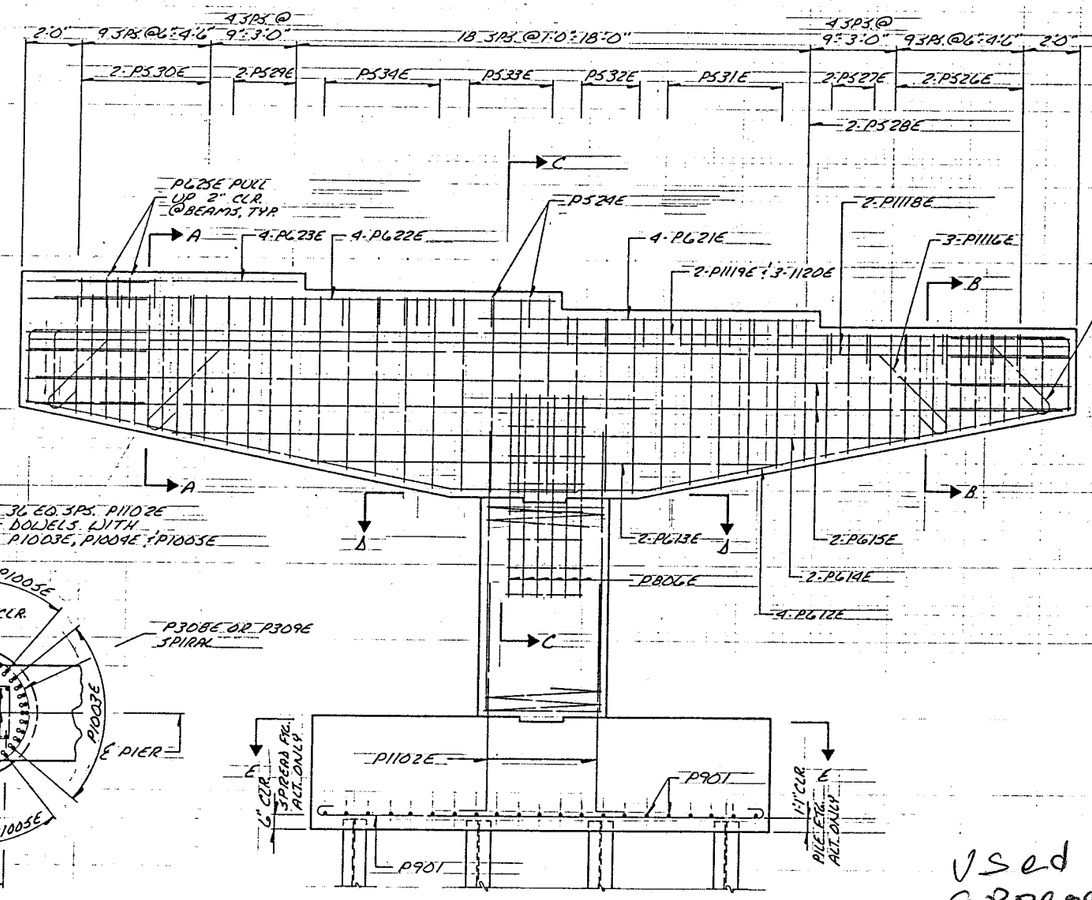
PLAN
SCALE 3/8"=1'-0"



SECTION A-A
SCALE ½"=1'-0"



SECTION B-B
SCALE ½"=1'0"

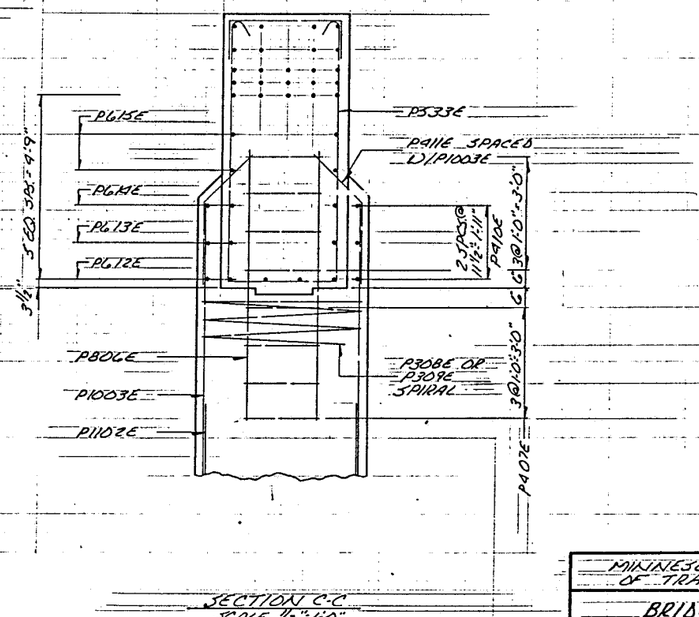


SECTION A-A
SCALE 3/8"=1'-0"

ELEVATION
SCALE 3/8"=1'-0"

SEE SHT. 9 FOR SECTION E-E

Used Spread footing option



SECTION C-C
SCALE ½"=1'-0"

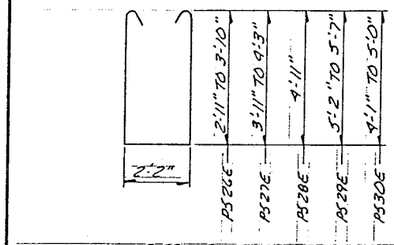
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 33547

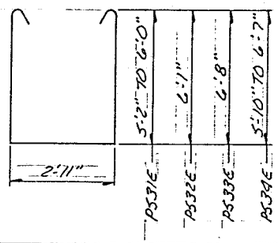
PIER REINFORCEMENT

APPROVED 2-19-91

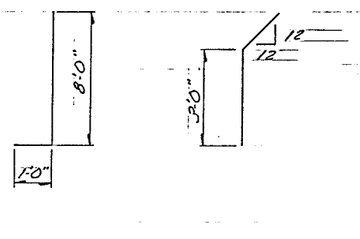
S.A. 55-599-51	33547	NM
SHEET 8 OF 27 SHEETS		DRT



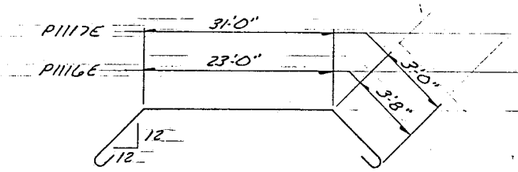
P526E THRU P530E



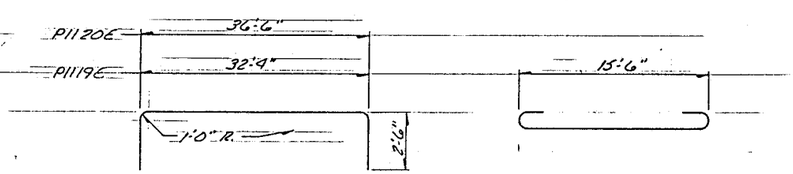
P531E THRU P534E



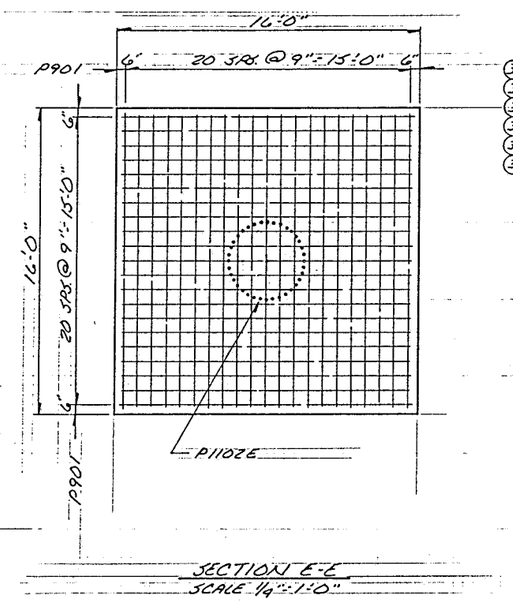
P1102E P411E



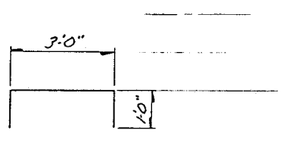
P1116E & P1117E

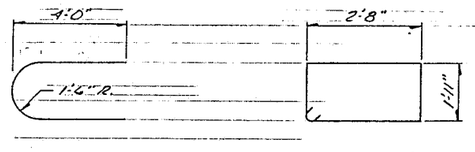


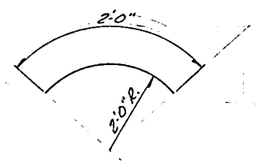
P1119E & P1120E P901



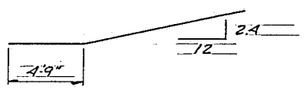
SECTION E-E
SCALE 1/4"=1'-0"







P526E & P625E P435E P407E P410E



P612E

BILL OF REINFORCEMENT-2 PIERS

BAR	NO.	LENGTH	SHAPE	LOCATION
P901	84	18'-0"	STRT.	FOOTING
P1102E	72	9'-0"	BENT	COLUMN ~ DOWEL
P1003E	36	12'-9"	STRT.	" VERTICAL
P1004E	18	9'-9"	"	" "
P1005E	18	9'-8"	"	" "
P806E	24	7'-0"	"	" "
P407E	16	9'-11"	BENT	" ~ TIE
P308E	1	SEE BELOW	SPIRAL	" ~ SPIRAL
P309E	1	SEE BELOW	"	" "
P410E	12	2'-0"	BENT	"
P411E	36	5'-10"	"	"
P612E	16	18'-9"	"	CAP ~ LONGITUDINAL
P613E	4	16'-6"	STRT.	" "
P614E	4	26'-0"	"	" "
P615E	8	36'-6"	"	" "
P1116E	6	33'-6"	BENT	" "
P1117E	6	40'-2"	"	" "
P1118E	8	36'-4"	STRT.	" "
P1119E	4	32'-9"	BENT	" "
P1120E	6	41'-6"	"	" "
P621E	8	11'-9"	STRT.	" "
P622E	8	17'-6"	"	" "
P623E	8	9'-8"	"	" "
P524E	30	5'-0"	BENT	" ~ TIES
P625E	40	5'-0"	"	" "
P526E	4 SER. OF 10	8'-11" TO 10'-9"	"	" ~ STIRRUPS
P527E	4 SER. OF 3	10'-11" TO 11'-7"	"	" "
P528E	4	12'-11"	"	" "
P529E	4 SER. OF 4	13'-5" TO 14'-3"	"	" "
P530E	4 SER. OF 10	11'-3" TO 13'-1"	"	" "
P531E	2 SER. OF 5	14'-2" TO 15'-10"	"	" "
P532E	6	16'-10"	"	" "
P533E	8	17'-2"	"	" "
P534E	2 SER. OF 5	15'-6" TO 17'-0"	"	" "
P435E	20	9'-9"	"	" @ ENDS

(1) PIER 1 ONLY.
(2) PIER 2 ONLY.
(3) DO NOT ORDER UNTIL FOOTING ELEVATIONS HAVE BEEN DETERMINED BY THE ENGINEER IN THE FIELD.

SUMMARY OF QUANTITIES ~ 2 PIERS

ITEM	PIER 1	PIER 2	TOTAL	UNIT
STRUCTURE CONCRETE (1143)	38	38	76	CU. YDS.
STRUCTURE CONCRETE (3443)	32	32	64	CU. YDS.
REINFORCEMENT BARS	2575	2575	5150	POUND
REINF. BARS (EPOXY COATED)	8820	8840	17660	POUND
SPIRAL REINF. (EPOXY COATED)	90	100	190	POUND
(4) FOUNDATION PREPARATION	1		1	L. SUM
(4) FOUNDATION PREPARATION		1	1	L. SUM
STEEL H. TEST PILES 15'LG., 10"	1	1	2	EACH
(5) STEEL H. PILING DEL'D., 10"	130	130	260	LIN. FT.
(5) STEEL H. PILING DRIVEN, 10"	130	130	260	LIN. FT.
(4) PILE TIP PROTECTION, 10"	14	14	28	EACH

(4) SEE SPECIAL PROVISIONS.
(5) DOES NOT INCLUDE TEST PILES.

NOTE:
PIER QUANTITIES ASSUME THAT THE PILE FOOTING DILL BE USED.

(3)

SPIRAL DATA	P308E	P309E
OUTSIDE DIAMETER	4'-3"	4'-3"
SPIRAL ROD SIZE ~ 3/8" PLAIN ROUND		
PITCH	6"	6"
HEIGHT	9'-4"	9'-8"
ESTIMATED WEIGHT EACH	90	100

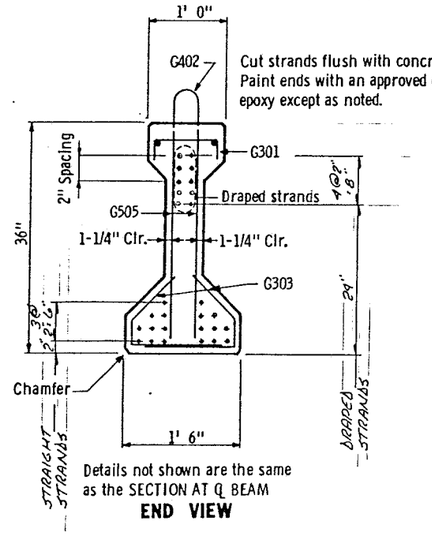
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55547

PIER REINFORCEMENT

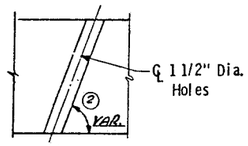
APPROVED: 2-19-91

S.A. 55-599-31	55547	ΔM
SHEET 9 OF 27 SHEETS		R.O.T.



Details not shown are the same as the SECTION AT ℄ BEAM

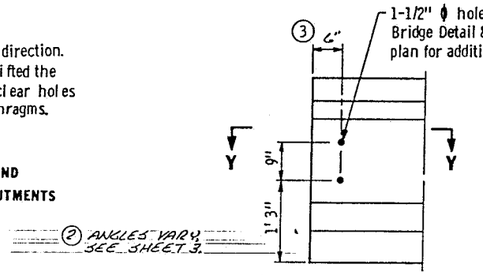
END VIEW



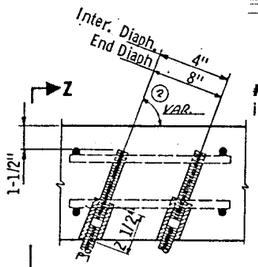
See FRAMING PLAN for skew direction. Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

SECTION Y-Y

FOR USE WITH CONCRETE END DIAPHRAGMS WITH PILE BENT ABUTMENTS

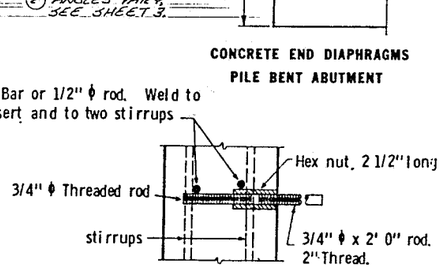


CONCRETE END DIAPHRAGMS PILE BENT ABUTMENT



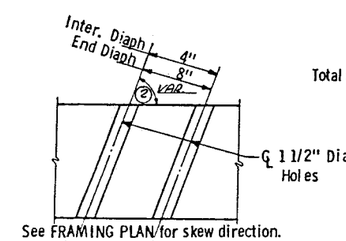
SECTION X-X

USE AT FASCIA BEAM AND INTERIOR BEAM WITH STAGGERED DIAPHRAGMS



Nuts and rods per Spec. 3306. No paint

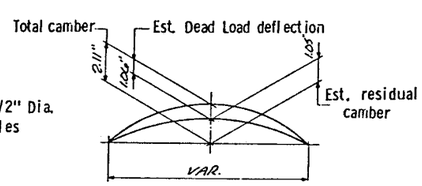
SECTION Z-Z



See FRAMING PLAN for skew direction. Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

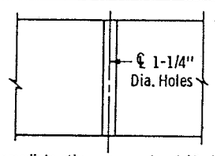
SECTION X-X

USE AT INTERIOR BEAM WITH CONTINUOUS CONCRETE DIAPHRAGM



Deflections shown are for weight of slab, wearing course, railing, sidewalk, median and diaphragms only. Engineer will take elevations at top of beams after erection and will allow for deflections shown to enable contractor to build forms to correct grade and specified slab thickness.

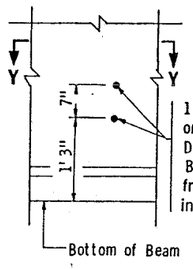
CAMBER DIAGRAM



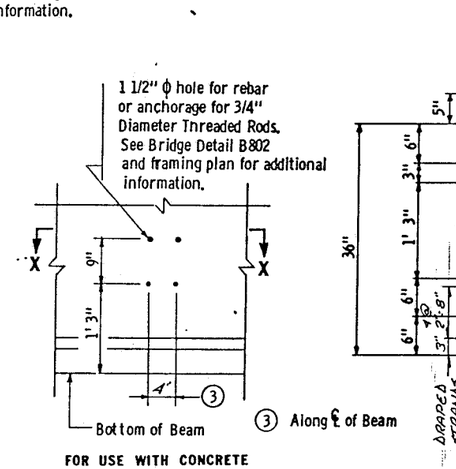
Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

SECTION Y-Y

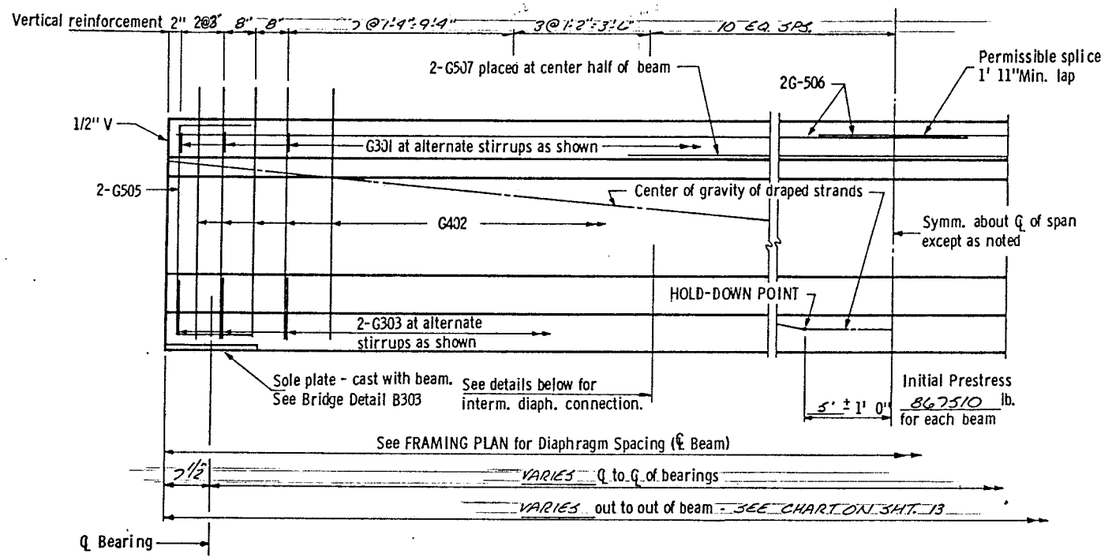
USE AT INTERIOR BEAM WITH STEEL DIAPHRAGM



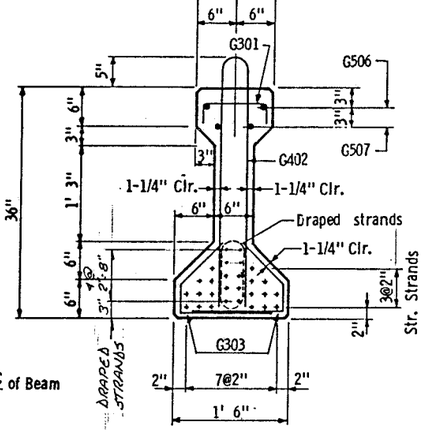
FOR USE WITH STEEL INTERMEDIATE DIAPHRAGM



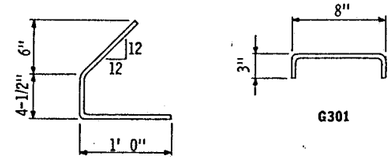
FOR USE WITH CONCRETE INTERMEDIATE DIAPHRAGM



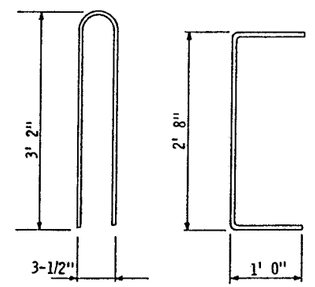
HALF ELEVATION



SECTION AT ℄ BEAM



G303 **G301**



G402 **G505**

First digit of bar mark indicates bar size. All bar dimensions are out-to-out.

Bar	Wt.
G 301	.44 lb.
G 402	3.56 lb.
G 303	.78 lb.
G 505	4.87 lb.
G 506	
G 507	

Girder Section Data
Wt./Ft. = 385 lbs.
Cross sec. area at ℄ of span = 369 in.²
C. G. (from bottom) = 15.83 in.
I = 50,980 in.⁴
S_B = 3,221 in.³
1/2" ϕ 270k strand wt./ft. = .525 lb.
1/2" ϕ 270k strand area = .1531 sq. in.

GENERAL NOTES:

Tops of beams shall be rough floated and broomed transversely for bond.

Provide handling hooks or devices as required by Contractor. Hooks or devices provided will be subject to approval of Engineer and shall be installed within 4' 0" of the end of beam.

A modified strand pattern or a bundled strand pattern which does not change center of gravity of strands may be submitted to the Engineer for approval.

A post-tensioned beam may be used as an alternate for the pretensioned design shown. Mn/DOT will provide plans for the post-tensioned alternate on request.

Each beam shall be marked, showing bridge number, casting date, and individual identification letters and numbers. Markings shall be made on the face of the beam, near the end, so located that they will be exposed after the end diaphragms have been cast. Fascia beams shall be marked on an inside face. All markings shall be stencilled and be clearly legible. For location of beams, see framing plan.

All material and work shown or noted on this sheet shall be included in unit price bid for prestressed concrete beams. See Spec. 2405.

See framing plan for beam ends marked "X".

Approximate weight of beam 11.7 tons.

As an alternate to the diaphragm anchorages shown, the contractor may submit details of a cast-in-place anchorage to the engineer for approval. Anchorage must provide an ultimate pull out strength of 15 kips per anchorage.

ALL BARS TO BE EPOXY COATED.

Y DISTANCES (IN INCHES)	NO.	℄ SPAN	END
Straight strands	18	4.22	
Draped strands	10	7.00	28.00 °
Total strands	28	5.21	

Y = distance of Center of Gravity of strands from bottom of beam. All strands spaced 2" c-c, horizontally and vertically except as noted.

All strands 1/2" ϕ 270 kip, ultimate strength.

° A tolerance of ± 2" will be permitted in this dimension.

MINIMUM CONCRETE STRENGTH - P.S.I.	① f'ci	② f'c
Required min. Concrete Strength	6900	7000

① Minimum concrete strength at time of prestress transfer.

② Minimum concrete strength when curing can be discontinued and beam transported and installed.

Fig. 5-397.502

S.P. 55-599-51 Revised: SEPT. 11, 1981 Approved: May 18, 1977

TITLE: 36" PRESTRESSED CONCRETE BEAM (PRETENSIONED) TYPE 36-52	DES:	DR:	APPROVED: 2-19-91	Bridge No.
	CHK:	CHK:		
	Sheet No. 10 of 27 Sheets			55547

BEAMS 1-12

BEG. OF RAIL @ B.F. OF ABUT.

RAIL DEFL. JTS., SPACED RADIALLY ALONG E. COPING

3SOTE

4 SPCS. @ 14:7 3/8" = 58:5 1/2"

4 SPS. @ 14:3" = 57:0"

173:8 11/16"

412 SPS. @ 5" = 171:8" — SPACED RADIALLY ALONG EAST COPING 3SOIE T:8

4 EQ. SPS. = 58:3 3/16"

END OF RAIL @ B.F. OF ABUT.

WORKING LINE

R40BE

W.P.T. 'B'

R40ME

W.P.T. 'A'

& BRS.

8" PAVING BRACKET

W.P.T. 'C'

W.P.T. 'D'

W.P.T. 'F'

W.P.T. 'E' CONTROL POINT STA. 95+30.50

W.P.T. 'G'

1'-11" MIN. LAP

W.P.T. 'H'

W.P.T. 'J'

℄ PIER #1

3505E, BOT. LONG. BARS

W.P.T. 'K'

℄ PIER #2

W.P.T. 'L'

1'-6" MIN. LAP

3502E, T:8.

3404E, TOP LONG. BARS.

℄ RDWY.

℄ BRS.

W.P.T. 'M'

R40BE

R40ME

R40E

31'-0"

4'-0"

FLOOR DRAINS SEE DET. B702

3'-0"

30'-0"

4 3/4"

11

5@ 3 PS. @ 4 3/16"

14:11 1/2"

3503E, T:8 RADIALLY ALONG WEST COPING.

℄ PIER

RAIL DEFL. JTS., SPACED RADIALLY ALONG W. COPING

4 SPS. @ 14:7 7/16" = 58:5 3/4"

4 SPS. @ 14:3" = 57:0"

174:1 1/2"

3 SPS @ 14:6 3/4" = 43:8 1/2"

BEG. OF RAIL @ B.F. OF ABUT.

N. ABUT.

END OF RAIL @ B.F. OF ABUT.

S. ABUT.

PLAN
SCALE: 1" = 10'

35'-4"

32'-0"

16'-0"

16'-0"

1'-8"

1'-8"

N

SEE PLAN ABOVE FOR SPS. OF TRANSVERSE BARS

SEE DETAIL B331 FOR DETAILS OF 3"×3"×5/16" PROTECTION ANGLE

PERMISSIBLE CONSTR. JT. 2"×4" KEYWAY

SEE DETAIL B809 FOR DETAILS OF CONCRETE END DIAPHRAGM.

3 PLY JOINT WATERPROOFING

11"

3'-0"

4'-4 5/8"

5 5/8"

BOTH ABUTS. TYP.

℄ BRG.

ABUTMENTS

MAKE SAWCUT IN STRUCTURE SLAB OVER ℄ PIERS AS SOON AS THE CUTTING CAN BE DONE W/OUT RAVELING CONCRETE. SEAL WITH CONC. JOINT SEALER PER SPEC. 3723.

3/4" V

SEE DET. B802 FOR DETAILS OF CONC. INTERM. DIAPH.

11"

3'-0"

4'-2 3/4"

3/4"

BOTH PIERS, TYP.

℄ BRG.

PIERS

PART. LONGIT. SECTION THRU DECK
SCALE 3/4" = 1'-0"

5'-0"

10'-0"

7'-6"

7'-6"

1'-6"

6"

6"

6"

3606E

3404E

7'-6"

7'-6"

10'-0"

5'-0"

3606E OVER PIERS

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55597

SUPERSTRUCTURE DETAILS

APPROVED " 2-19-91

S.P. 55-599-31	55597	DM
SHEET 11 OF 27 SHEETS		RRT

LIST OF PREFORMED JOINT FILLER:

TYPE	NO.	SIZE	LOCATION
CORK	22	1"x11"x1'-7"	RAIL DEFL. JTS.
"	2	1"x1'-6"x5'-0"	N. ABUT. WINGS
"	2	1"x1'-7"x5'-0"	S. ABUT. WINGS
BIT. FELT	2	½"x1'-0"x39'-9"	SHEAR BLOCK
POLYSTYRENE	2	1"x1'-10"x39'-9"	ABUT. BR. SEAT
"	12	1"x6"x1'-2"	ABUT. BRGS.
"	4	1"x6"x10"	" "
"	8	1"x6"x1'-7"	" "

(5) SUMMARY OF QUANTITIES - SUPERSTRUCTURE

(4)	BRIDGE SLAB CONCRETE (3Y33)	6107 SQ.FT.
(5)	STRUCTURE CONCRETE (3Y43)	16 CU YDS.
(6)	TYPE J RAILING CONCRETE (3Y96A)	348 LIN.FT.
	REINFORCEMENT BARS (EPOXY COATED)	53,280 POUND
(7)	PRESTRESSED CONC. BEAMS TYPE 36:57	12 EACH
	PRESTRESSED CONC. BEAMS 36	699 LIN.FT.
(8)	FIXED CURVED PLATE BEARING ASSEMBLY, TYPE 1	16 EACH
(8)	EXP. CURVED PLATE BEARING ASSEMBLY, TYPE 1	8 EACH
	BEARING ASSEMBLY	24 EACH
(10)(9)	PREFORMED JOINT FILLER (SEE LIST @ LEFT)	
(9)	NAMEPLATE (SEE DET. B201)	
(12)	PROTECTION ANGLE (SEE DET. B351)	
	STRUCTURAL STEEL (3306)	430 POUNDS
(10)(9)	3 PLY JOINT WATERPROOFING	75 LIN.FT.
	FLOOR DRAINS - TYPE 701	4 EACH
(13)	DIAPH. FOR TYPE 36 PRESTRESSED CONC. BEAMS	214 LIN.FT.

(3) INCLUDES RAIL QUANTITIES.

(4) APPROX. VOLUME IS 179 CU YDS., BASED ON AN AVG. STOOL HEIGHT OF 2".

(5) END DIAPHRAGM CONCRETE.

(6) APPROX. VOLUME IS 35 CU YDS.

(7) PAYMENT FOR BEAMS INCLUDED IN ITEM PRESTR. CONC. BEAMS 36 PER LINEAL FOOT.

(8) PAYMENT FOR BEARINGS INCLUDED IN ITEM BEARING ASSEMBLY PER EACH.

(9) INCLUDED IN PRICE BID FOR OTHER ITEMS.

(10) SEE SPECIAL PROVISIONS.

(12) INCLUDED IN STRUCTURAL STEEL (3306)

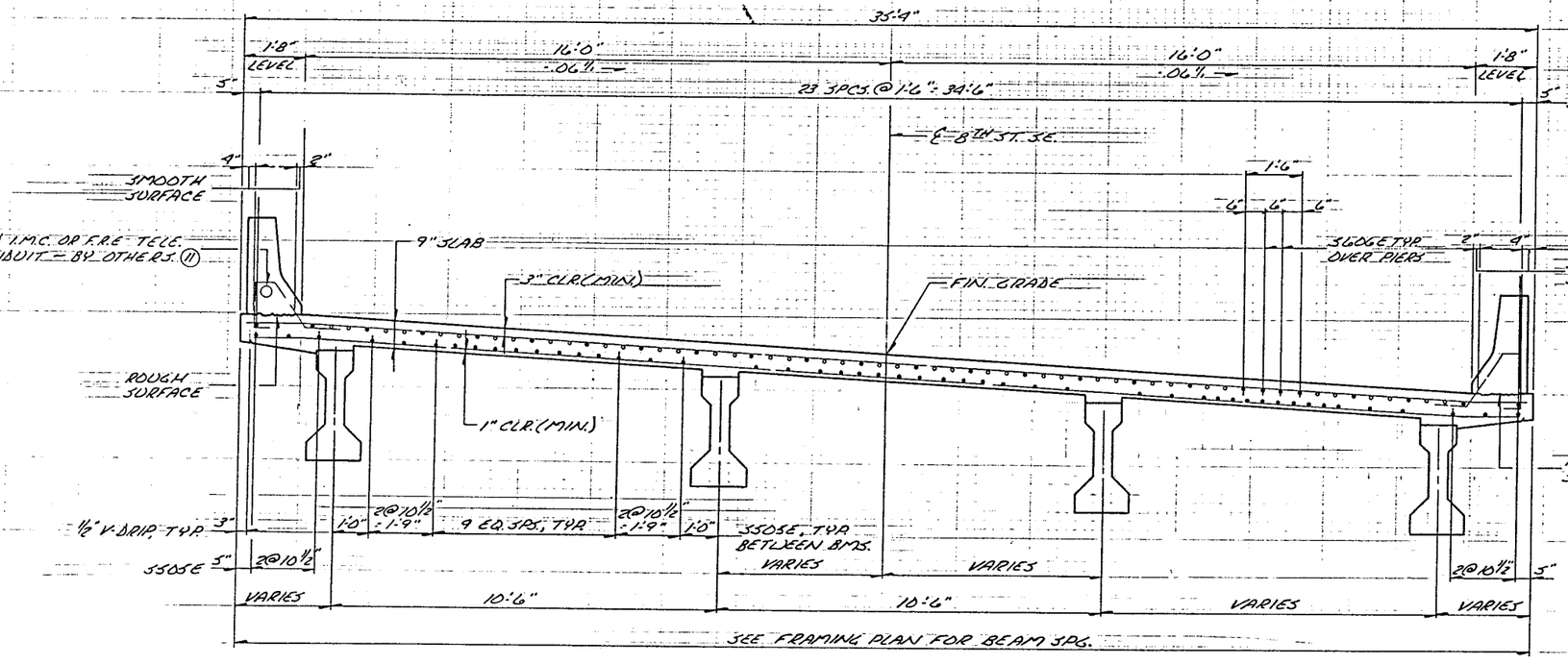
(13) APPROX. VOLUME IS 10 CU YDS.

BILL OF REINFORCEMENT - SUPERSTR.

BAR	NO.	LENGTH	SHAPE	LOCATION
3501E	828	35'-0"	STRT.	SLAB - TRANSVERSE
3502E	2	36'-11"	"	" - TRANS. S. ABUT.
3503E	2 SER. OF 27	1'-8" TO 33'-1"	"	" - TRANSVERSE
(1) 3504E	120	35'-10"	"	" - TOP, LONGIT.
(2) 3505E	192	94'-9"	"	" - BOT. "
3506E	84	15'-0"	"	" @ PIERS
3507E	8	8'-2"	"	END DIAPH. - LONGIT.
3508E	40	9'-8"	"	" " "
3509E	16	5'-0"	"	" " "
3510E	8	7'-2"	"	" " "
3511E	40	8'-8"	"	" " "
3512E	1	35'-9"	"	" " - N. ABUT.
3513E	1	37'-3"	"	" " - S. ABUT.
3514E	4	1'-9"	"	" " - N. ABUT.
3515E	4	1'-2"	"	" " - S. ABUT.
3516E	8	9'-5"	BENT	" "
3517E	37	9'-9"	"	" "
3518E	37	6'-4"	"	" "

(1) 5 LINES 1'-6" MIN. LAP

(2) 4 LINES 1'-11" MIN. LAP



TRANSVERSE SECTION THRU DECK

SCALE ½" = 1'-0"

(11) CONTRACTOR SHALL CONTACT PINE ISLAND TELEPHONE CO. (507) 356-8302 BEFORE CONSTRUCTING NORTH RAIL. TELEPHONE CO. SHALL SUPPLY AND INSTALL 3" Ø CONDUIT THAT MEETS MNDOT SPECIFICATIONS.

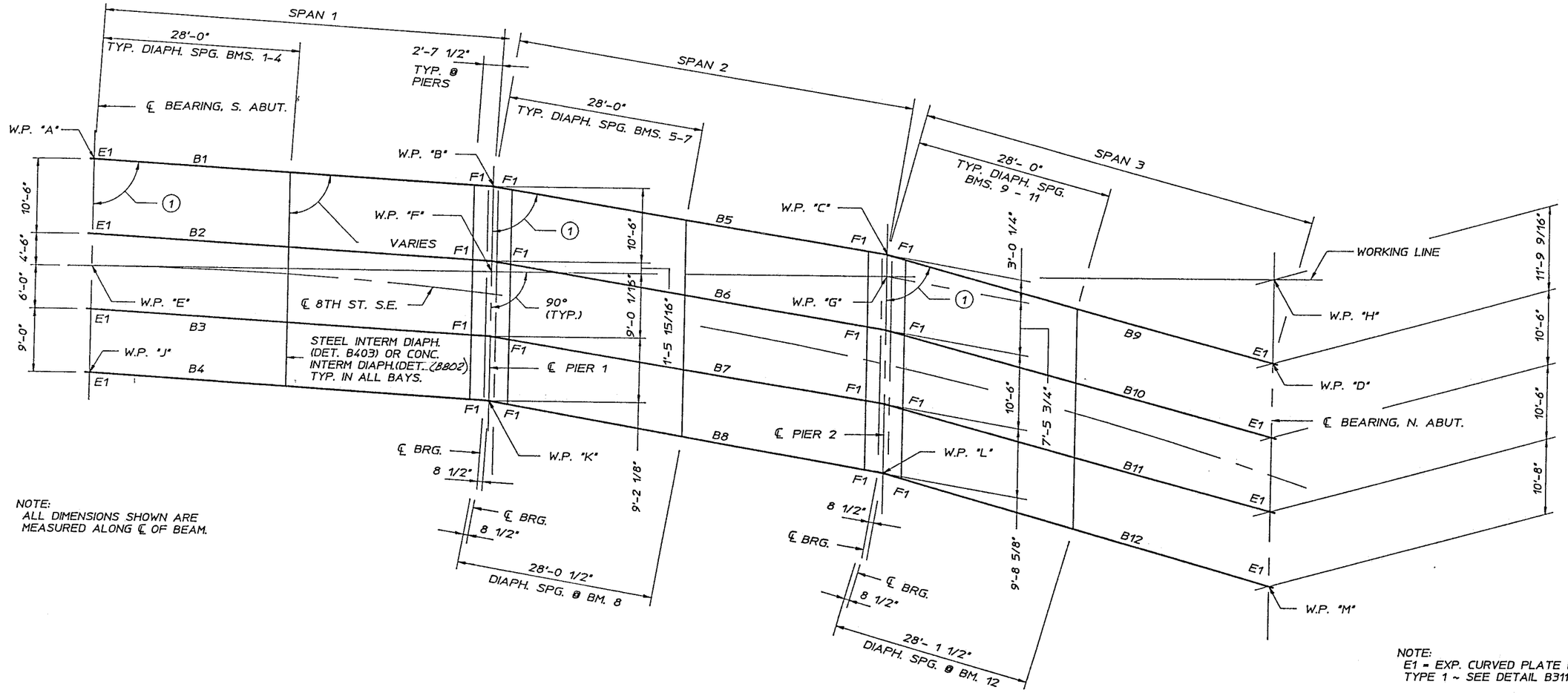
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55547

SUPERSTRUCTURE DETAILS

APPROVED: 2-19-91

S.P. 55-599-51	55547	DM
SHEET 12 OF 273 SHEETS		RRT



NOTE:
ALL DIMENSIONS SHOWN ARE MEASURED ALONG ℄ OF BEAM.

NOTE:
E1 = EXP. CURVED PLATE BRG. ASSEMBLY TYPE 1 ~ SEE DETAIL B311, SHEET 16.

F1 = FIXED CURVED PLATE BRG. ASSEMBLY TYPE 1 ~ SEE DETAIL B310, SHEET 16.

SEE SHEET 18 FOR CONCRETE END DIAPHRAGM DETAILS.

FRAMING PLAN
SCALE: 1/8" = 1'- 0"

BEAM LENGTHS ~ ℄ BRG. TO ℄ BRG.				ANGLE ~ ℄ BM. TO ℄ BRG.
BEAM	SPAN 1	SPAN 2	SPAN 3	①
B1	56'-3 1/8"			86°-58'-35"
B2	56'-3 1/8"			86°-58'-35"
B3	56'-3 1/8"			86°-58'-35"
B4	56'-3 1/8"			86°-47'-52"
B5		55'-6 1/8"		80°-55'-53"
B6		55'-6 1/8"		80°-55'-53"
B7		55'-6 1/8"		80°-55'-53"
B8		55'-7 3/16"		80°-23'-28"
B9			56'-1 11/16"	74°-53'-32"
B10			56'-1 11/16"	74°-53'-32"
B11			56'-1 11/16"	74°-53'-32"
B12			56'-4 3/4"	73°-58'-39"

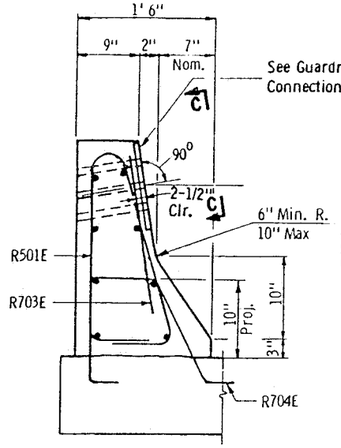
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55547

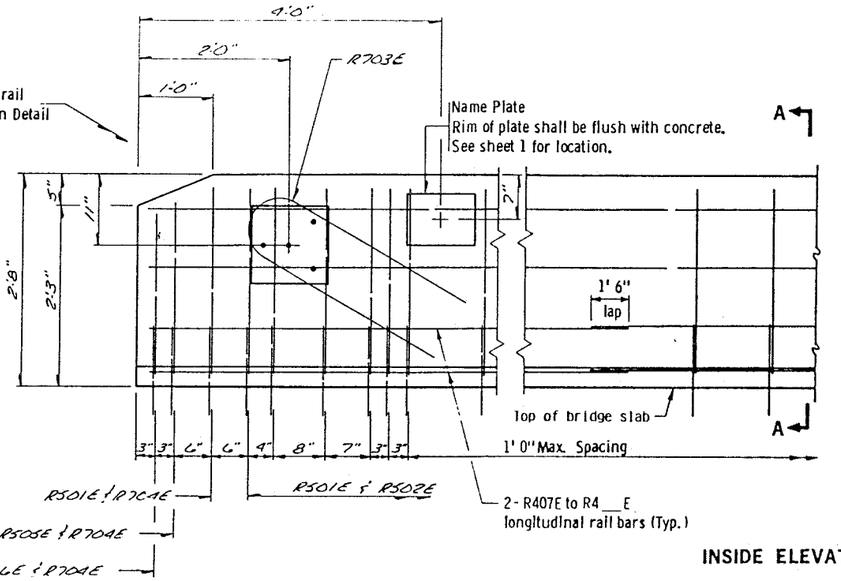
FRAMING PLAN

APPROVED: 2-19-91

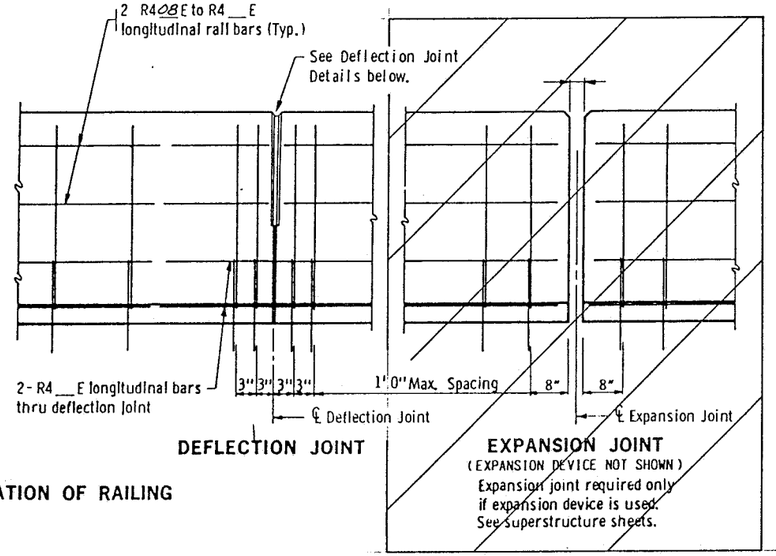
S.P. 55-599-51	55547	DM
SHEET 13 OF 22 SHEETS		BRT



END VIEW

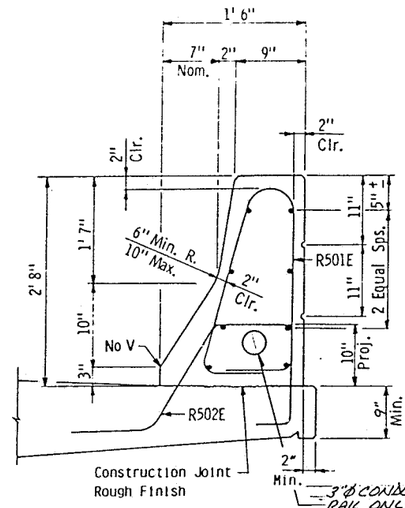


INSIDE ELEVATION OF RAILING



DEFLECTION JOINT

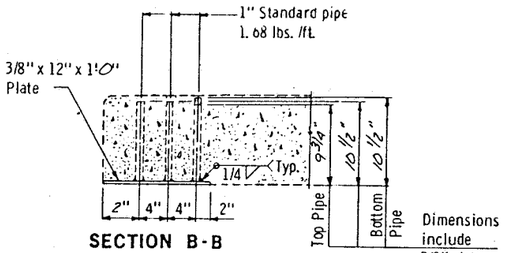
EXPANSION JOINT
(EXPANSION DEVICE NOT SHOWN)
Expansion joint required only if expansion device is used.
See Superstructure sheets.



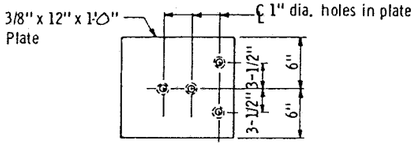
SECTION A-A

BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R501E	4/6	6'1"	Bent	Rail Vertical
R502E	4/2	5'6"	Bent	Rail Vertical
R703E	4	6'6"	Bent	End Post
R704E	12	3'6"	BENT	END POST
R505E	1	3'7"	Bent	RAIL VERT.
R506E	1	3'5"	BENT	RAIL VERT.
R407E	40	36'0"	STRT.	RAIL LONG.
R408E	60	14'3"	STRT.	RAIL LONG.
R409E	32	13'11"	STRT.	RAIL LONG.
R410E	4	14'2"	STRT.	RAIL LONG.

① 3 LINES, MIN. 1'6" LAP

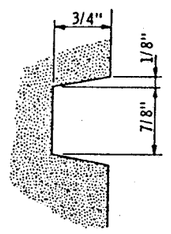


SECTION B-B
(Reinforcement not shown)

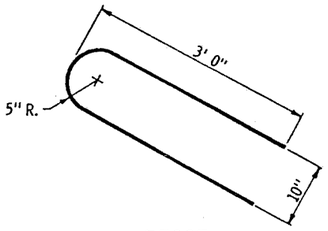


VIEW C-C

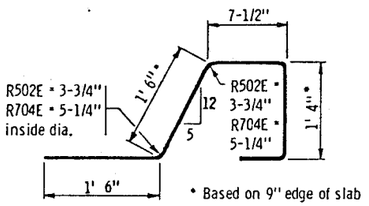
GUARDRAIL CONNECTION DETAIL
Galvanize after fabrication per Spec. 3394
Estimated Weight = 21 lbs.



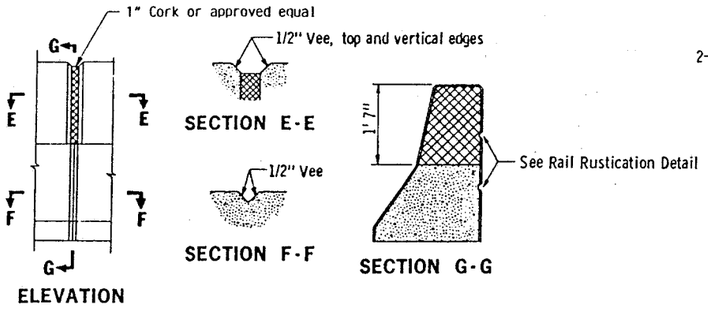
RAIL RUSTICATION



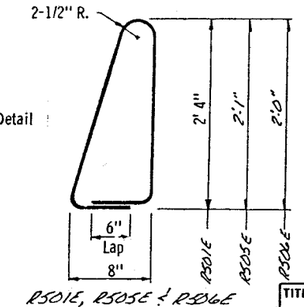
R703E



R502E & R704E



DEFLECTION JOINT DETAILS



GENERAL NOTES:

Bars marked with the suffix "E" shall be epoxy coated in accordance with Spec. 3301

Concrete Railing = 405 lbs. /ft.
Concrete Railing = .100 cu. yds. /ft.

Rail to be Concrete Mix No. 3X46A

Guardrail connection to be Structural Steel, Spec. 3306

Finish all edges of rail with 1/2" vee except where otherwise noted.

See superstructure sheet for joint spacing.

Maximum spacing of concrete deflection joints shall be 20' 0"

Guardrail connection to be included in price bid for other items.

Rail quantities are included in summary of quantities for superstructure.

Length of railing concrete to be measured for payment between outside faces of railing.

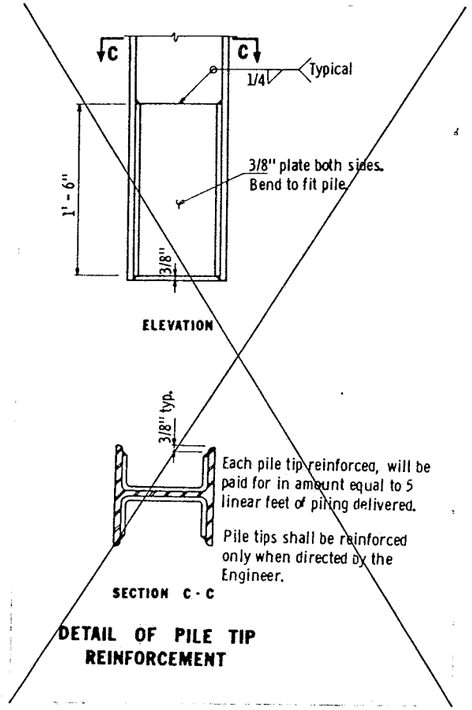
S.P. 55-599-51

REVISED:	APPROVED: Nov. 26, 1985	FIG. 5-397.115

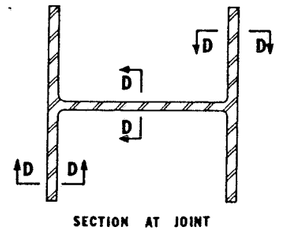
TITLE: **CONCRETE RAILING (TYPE J)**
WITH INTEGRAL END POST
(Without Wearing Course)

DES:	DR:	APPROVED: 2-19-91	Bridge No.
CHK:	CHK:		

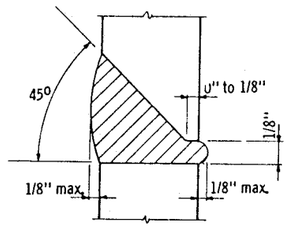
Sheet No. 14 of 27 Sheets — 55547



DETAIL OF PILE TIP REINFORCEMENT



SECTION AT JOINT



SECTION D-D

100% BUTT WELDED PILE SPLICE

NOTES:

A. W. S. Type E7010 or E7018 (low-hydrogen) electrodes shall be used for 100% butt welded splices.

A. W. S. Type E6010, E6011 electrodes, or E7016 or E7018 (low-hydrogen) electrodes, shall be used for the alternate plate type pile splice.

Low-hydrogen electrodes shall be supplied in hermetically (air-tight) sealed containers.

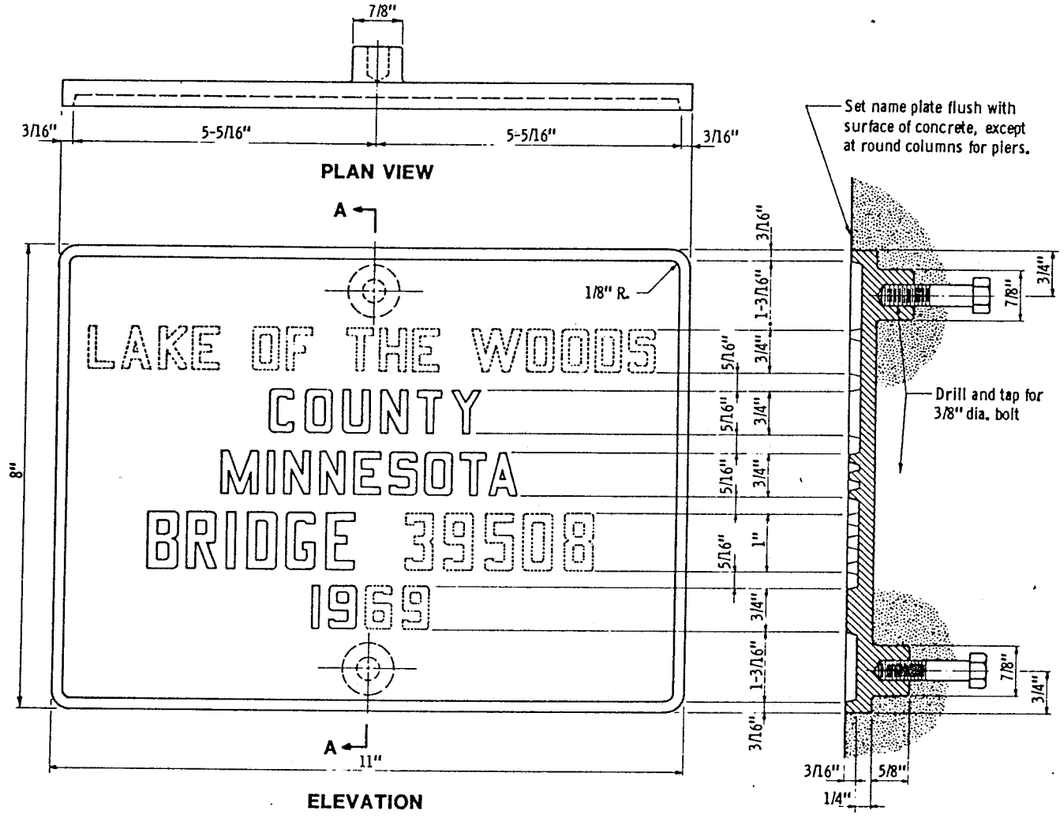
Low-hydrogen electrodes shall be stored in holding ovens at a temperature of not less than 250° F.

Low-hydrogen electrodes shall be placed in a holding oven for at least 8 hours, after having been exposed to the atmosphere for more than 2 hours.

Any type electrode which has become wet, soiled, or damaged shall not be used.

Welding shall not be done when the ambient temperature is lower than 0° F. or when the pile is wet or exposed to falling rain or snow. When the pile metal temperature is below 32° F., the pile metal in the area of the weld shall be heated to a minimum temperature of 70° F. and maintained at this temperature during welding.

APPROVED: November 5, 1979 Developed by: BRIDGE STANDARDS & BRIDGE AND STRUCTURES SECTION Issued by: ENGINEERING STANDARDS SECTION	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **PILE SPLICE and TIP REINFORCEMENT** **STEEL H BEARING PILES 10" TO 14"**		DETAIL NO. **B202**



ELEVATION

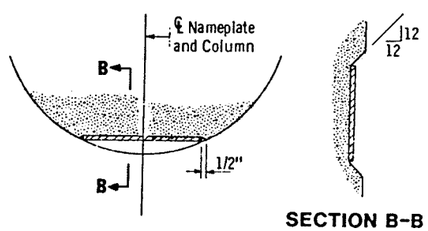
SECTION A-A

The dotted letters & numbers shown above are for illustration.
Data to be shown on name plate is as follows:

COUNTY OLMSTED
BRIDGE 55597
YEAR 1981



LETTERS & NUMBERS FOR NAMEPLATES



SECTION B-B

NAMEPLATE PLACEMENT
(Round Concrete Pier Columns)

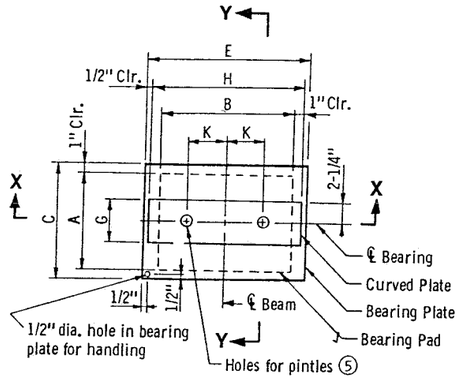
NOTES:

No shop drawing required.
Material shall comply with Spec. 3327
Letters and numbers shall conform to those shown.
Draft on letters and numbers shall not be more than 3" in 12".
Horizontal spacing of letters and numbers shall produce a balanced layout in proportion to spacing shown.
Top surface of letters, numbers and frames shall be burnished.
Furnish 2 steel bolts 3/8" dia. x 3" long with each plate.
All dimensions for 3/4" high letters and numbers shall be in direct proportion to those shown for the 1" high letters and numbers.

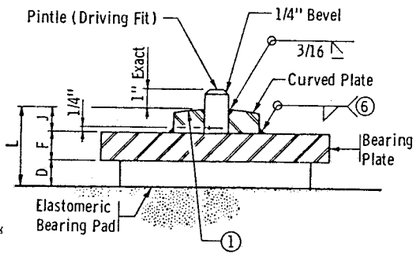
APPROVED: May 1, 1985 Developed by: ENGINEERING STANDARDS & BRIDGES AND STRUCTURES OFFICES Issued by: OFFICE OF ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE NAMEPLATE** **COUNTY BRIDGES**	REVISION	DETAIL NO. **B103**

2-19-91

S.P. 55-599-51 SHEET 15 OF 27 SHEETS	DETAILS	55597



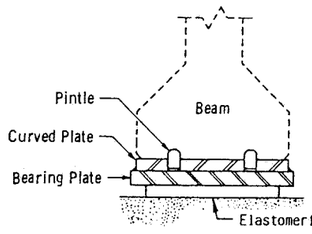
PLAN



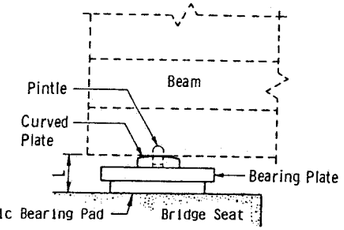
SECTION Y-Y
(ENLARGED BEARING ASSEMBLY)

PINTLE SPACING TABLE

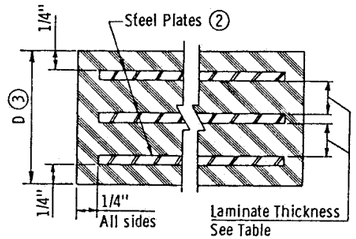
BEAM SIZE	K
28"	4"
36"	6"
40", 45M 54M, 63" 72" & 81"	8"
Bulb Tee	9"



SECTION X-X



END ELEVATION



SECTION THRU BEARING PAD

TABLE ④

Beam Size	Bearing Pad Size A	B	D	Steel Plates No.	Thick.	Laminates No.	Thick.	Shape Factor	Bearing Plate Size C	E	F	Curved Plate Size G	H	J	Pintle Dia.	Pintle Spacing K	Assy. Height L	Assembly Type
36"	12"	16"	3 1/8"	5	1/8"	4	1/2"	6.9	14"	19"	1 1/4"	4 1/2"	18"	1 1/4"	1 1/4"	6"	5 3/8"	1

NOTES:

For elastomeric materials & pad construction, see Spec. 3741 and special provisions, except as noted.

All steel plates shall comply with Spec. 3306, except as noted.

All plates shall be flat after fabrication and galvanizing. Welding distortion of bearing plates shall be straightened to within 1/16" of flatness by mechanical means without damage to the zinc coating.

Pintles shall comply with Spec. 3314, Type II

Galvanize structural steel bearing assembly after fabrication per Spec. 3394, except as noted.

Payment for bearing assembly shall include all material on this detail.

① The radius of the curved plate shall be 1' 0" min. & 1' 6" max. Finish to 250 Micro. The finished thickness of the plate may be 1/16" less than shown.

② Do not galvanize these plates.

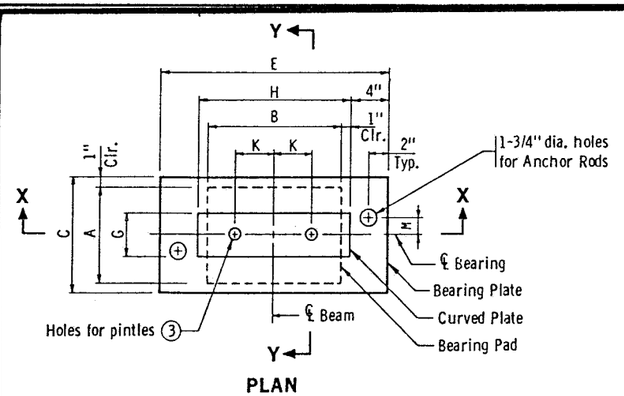
③ The total thickness shown includes the steel plates.

④ See Bridge Design Manual for design requirements.

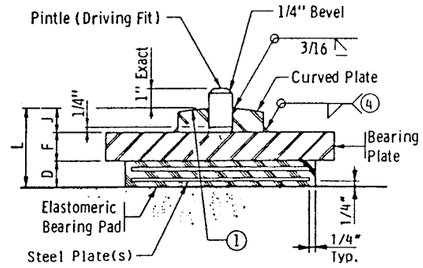
⑤ 1-1/4" dia. pintle for total loads to 200 Kips. 1-1/2" dia. pintle for total loads over 200 Kips.

⑥ For sole plate or bearing plate thicknesses up to 1-1/2", use 5/16" fillet welds; for thicknesses over 1-1/2" to 2-1/4", use 3/8" fillet welds; for thicknesses over 2-1/4", use 1/2" fillet welds with minimum preheat of 300°.

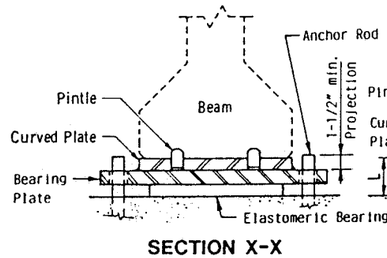
APPROVED: Aug 4, 1987	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Developed by: ENGINEERING STANDARDS & BRIDGES AND STRUCTURES OFFICES	**CURVED PLATE BEARING ASSEMBLY** PRESTRESSED CONCRETE BEAMS (EXPANSION)		**B311**
Issued by: OFFICE OF ENGINEERING STANDARDS			



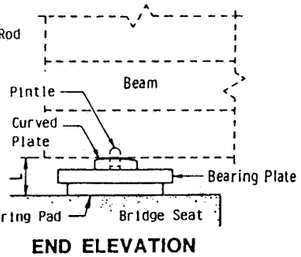
PLAN



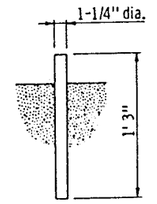
SECTION Y-Y
(ENLARGED BEARING ASSEMBLY)



SECTION X-X



END ELEVATION
(Anchor Rods Not Shown)



ANCHOR ROD DETAIL

PINTLE SPACING TABLE

BEAM SIZE	K
28"	4"
36"	6"
40", 45M 54M, 63", 72" & 81"	8"
Bulb Tee	9"

TABLE ②

Beam Size	Bearing Pad Size A	B	D	Steel Plates No.	Thick.	Laminates No.	Thick.	Shape Factor	Bearing Plate Size C	E	F	Curved Plate Size G	H	J	Pintle Dia.	Pintle Spacing K	Anchor Rod Offset M	Assy. Height L	Assembly Type
36"	12"	16"	1 1/4"	2	1/8"	1	1/2"	6.9	14"	26"	1 1/4"	4 1/2"	18"	1 1/4"	1 1/4"	6"	2"	3 3/4"	1

NOTES:

For elastomeric materials & pad construction, see Spec. 3741 and special provisions, except as noted.

All steel plates & anchor rods shall comply with Spec. 3306, except as noted.

All plates shall be flat after fabrication and galvanizing. Welding distortion of bearing plates shall be straightened to within 1/16" of flatness by mechanical means without damage to the zinc coating.

Pintles shall comply with Spec. 3314, Type II

Galvanize anchor rods and structural steel bearing assembly after fabrication per Spec. 3394, except as noted.

Payment for bearing assembly shall include all material on this detail.

① The radius of the curved plate shall be 1' 0" min. & 1' 6" max. Finish to 250 Micro. The finished thickness of the plate may be 1/16" less than shown.

② See Bridge Design Manual for design requirements.

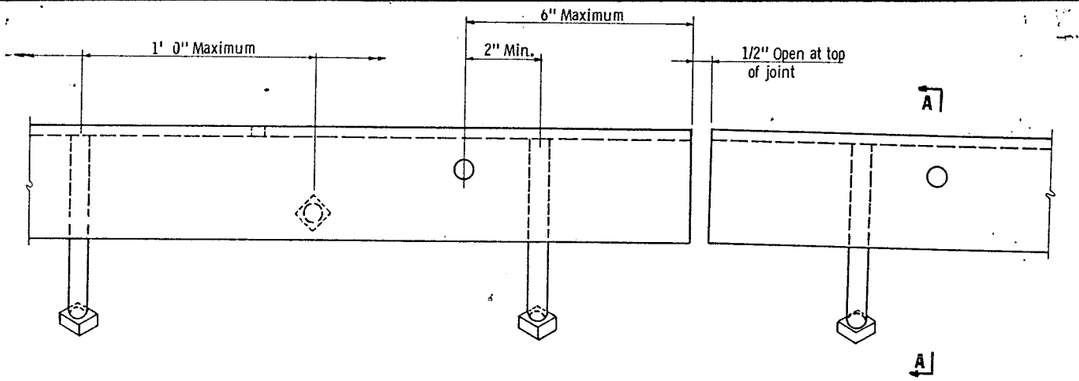
③ 1-1/4" dia. pintle for total loads to 200 Kips. 1-1/2" dia. pintle for total loads over 200 Kips.

④ For bearing plate thicknesses up to 1-1/2" use 5/16" fillet welds; for thicknesses over 1-1/2" to 2-1/4" use 3/8" fillet welds; for thicknesses over 2-1/4" use 1/2" fillet welds with minimum preheat of 300°.

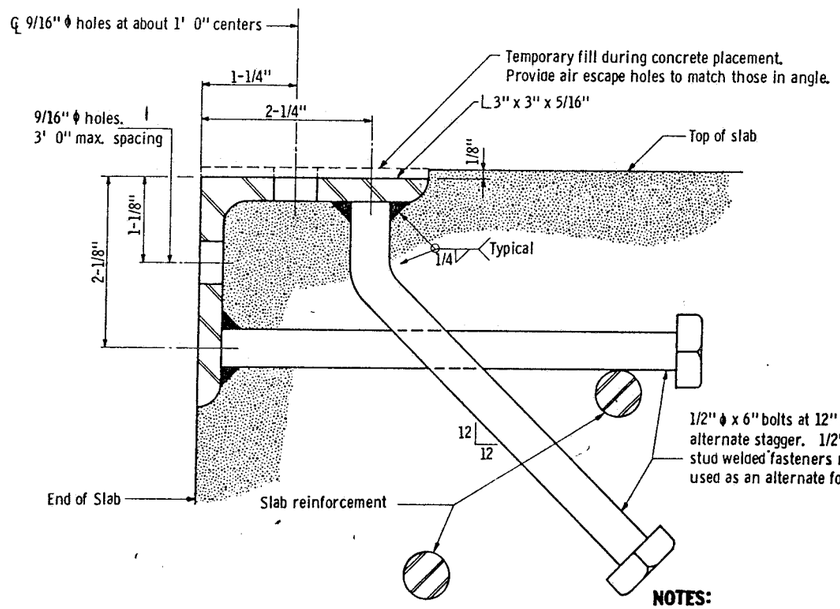
APPROVED: Aug 4, 1987	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Developed by: ENGINEERING STANDARDS and BRIDGES & STRUCTURES	**CURVED PLATE BEARING ASSEMBLY** PRESTRESSED CONCRETE BEAMS (FIXED)		**B310**
Issued by: ENGINEERING STANDARDS			

2-19-91

S.P. 55-599-5:1	DETAILS	55547
SHEET 16 OF 27 SHEETS		



ELEVATION
(Concrete not shown)



SECTION A - A

NOTES:

Angles shall extend full width of roadway between curbs with a 1/2" open joint at each break in crown profile. Maximum length 22 feet.

Angles shall be straightened to a tolerance of 1/16" in 10 feet after galvanizing.

Material: Structural steel per *Spec.* 3306. Galvanize after fabrication per *Spec.* 3394.

Set angle to proper grade and crown.

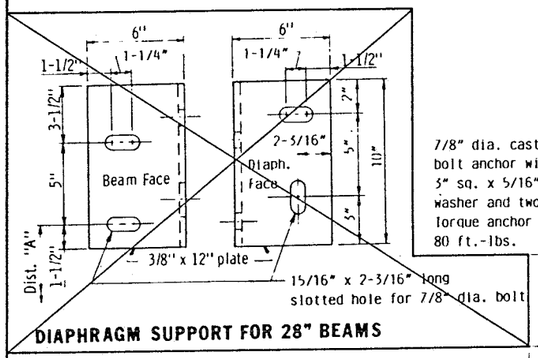
All material will be paid for as structural steel *Spec.* 3306.

APPROVED May 26, 1972	MINNESOTA DEPARTMENT OF TRANSPORTATION	DETAIL NO.
Douglas Differt Engineering Standards Engineer RESEARCH AND STANDARDS DIVISION	**PROTECTION ANGLE FOR END OF SLAB**	**B551**

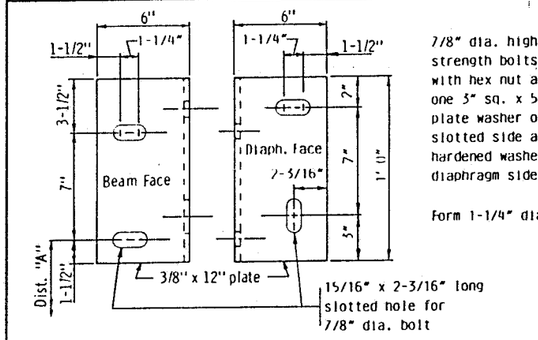
TABLE

Beam Ht.	Distance "A"
28"	1' 0"
30"	1' 2"
36"	1' 3"
40"	1' 5½"
45M	1' 3-3/4"

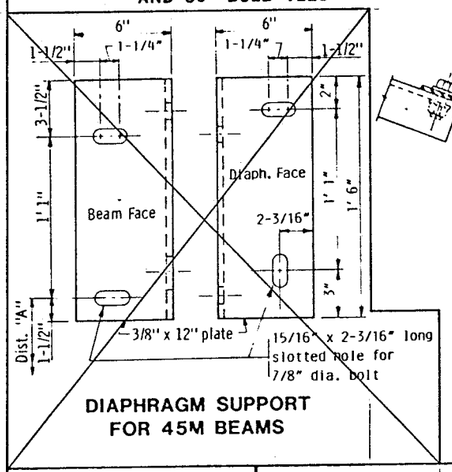
Bulb Tee ➔



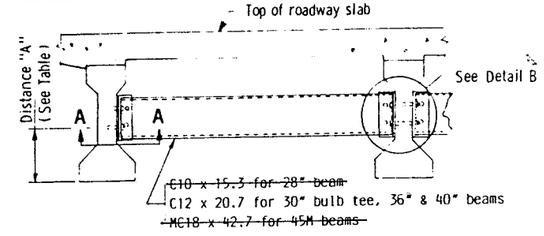
DIAPHRAGM SUPPORT FOR 28" BEAMS



DIAPHRAGM SUPPORT FOR 36" & 40" BEAMS AND 30" BULB TEES

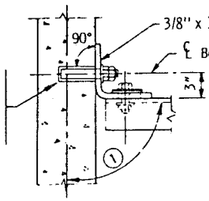


DIAPHRAGM SUPPORT FOR 45M BEAMS



PART TRANSVERSE SECTION AT DIAPHRAGM

7/8" dia. cast-in-place bolt anchor with one 5" sq. x 5/16" plate washer and two hex nuts. Torque anchor bolts to 80 ft.-lbs.

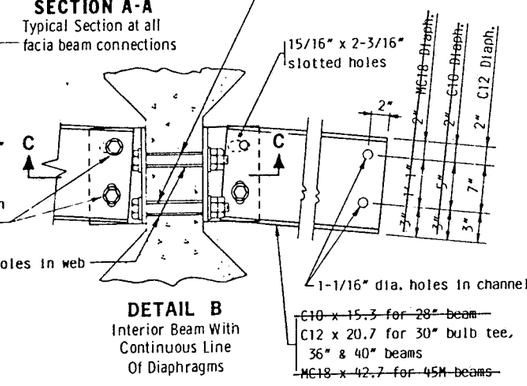


SECTION A-A
Typical Section at all facia beam connections

7/8" dia. high strength bolts with 2 hex nuts or equal & 2 hardened 3" sq. x 5/16" plate washers each, at all interior beam diaph. connections (2)

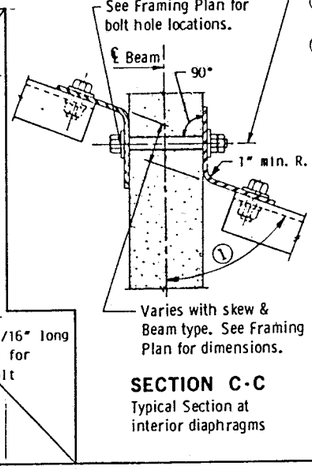
7/8" dia. high strength bolts with hex nut and one 5" sq. x 5/16" plate washer on slotted side and hardened washer on diaphragm side

Form 1-1/4" dia. holes in web



DETAIL B
Interior Beam With Continuous Line Of Diaphragms

C10 x 15.3 for 28" beam
C12 x 20.7 for 30" bulb tee, 36" & 40" beams
MC18 x 42.7 for 45M beams



SECTION C-C
Typical Section at interior diaphragms

(1) For skew angles under 20°, use 90° less the skew angle. For skew angles over 20°, use 90°.

(2) As an alternative to the 7/8" bolt connection, the contractor may submit details of a cast-in-place anchorage to the engineer for approval.

GENERAL NOTES:

See Spec. 2405.3M for installation.

The leg of the 12" plate shall be shop bent to conform to the diaphragm. A 3/8" x 6" x6" angle may be used for diaphragms perpendicular to beams

For bolt lengths greater than 9", use high strength bolts per Spec. SAE Grade 5 or better.

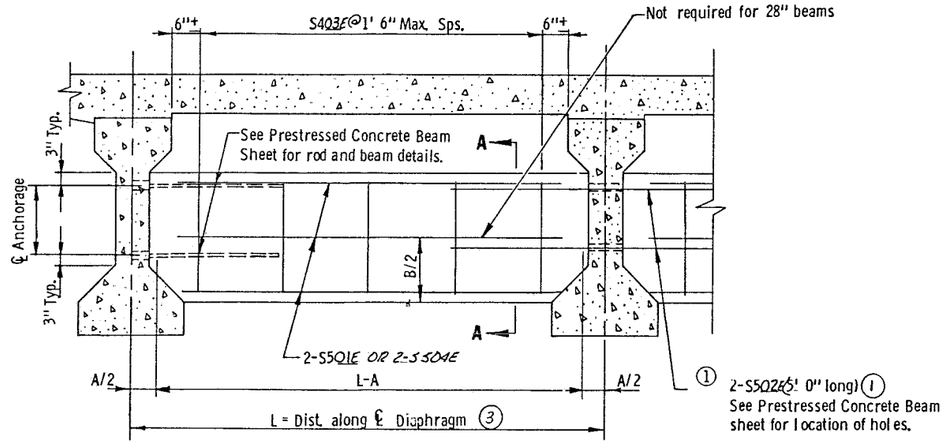
All structural steel shown on this detail, including bolts and washers, shall be included in the payment for diaphragms for prestressed beams.

Diaphragms over the piers are considered to be intermediate if the slab is continuous.

APPROVED September 24, 1987 Developed by ENGINEERING STANDARDS & BRIDGES AND STRUCTURES OFFICES Issued by OFFICE OF ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **STEEL INTERMEDIATE DIAPHRAGM** **(FOR 28"- 45M PRESTRESSED CONC. BEAM SPANS AND 30" BULB TEE BEAMS)**	REVISION	DETAIL NO.
			B403

2-19-91

S.P. 55-599-51 SHEET 17 OF 273 SHEETS	DETAILS	55547

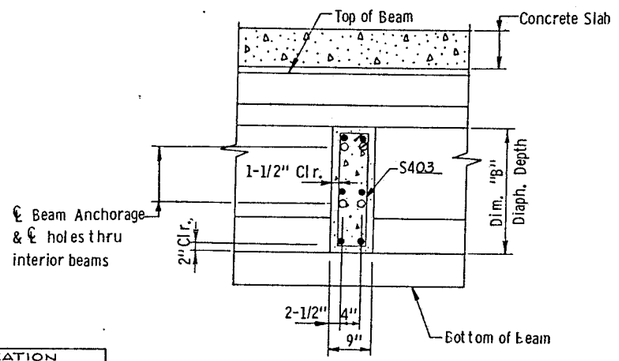


PART TRANSVERSE SECTION

Bm. Ht.	Dim. "A" For comp. volume	Diaph. Dim. "B"	S403 Length
28"	7-1/2"	1'-4"	3'-9"
36"	7-3/4"	1'-9"	4'-7"
40"	8-3/4"	1'-11"	4'-11"
45"	9"	2'-2 1/2"	5'-6"
54"	10-1/2"	2'-8"	6'-5"

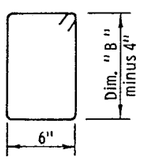
Concrete volume per diaphragm

$$\frac{(L - A) \times B \times .75}{27} = \text{(Cu. yd.)}$$



SECTION A-A

BAR	NO	LENGTH	SHAPE	LOCATION
D501E	30	2'-6"	STR.	DIAPH. HORIZ.
D502E	16	5'-0"	STR.	DIAPH. HORIZ
D403E	35	9'-7"	BENT	DIAPH. VERT.
D404E	6	6'-0"	STRT.	DIAPH. HORIZ.



S403

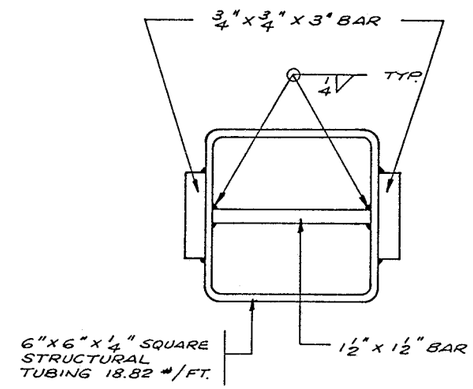
GENERAL NOTES

(1) For Diaphragms 20⁰ and over, use threaded rods as shown on standard prestressed concrete beam sheet.

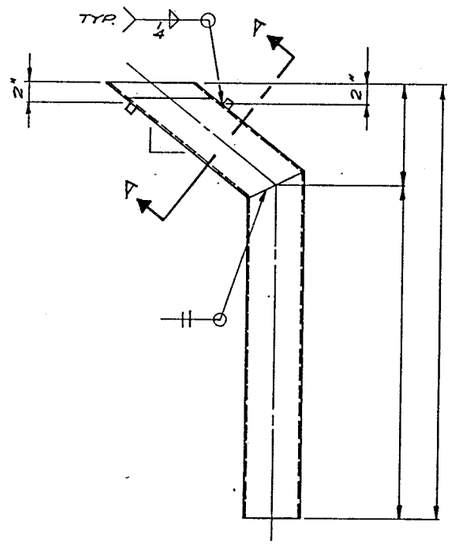
(2) All diaphragm concrete and reinforcement bars shown on this detail to be included in payment for diaphragms for prestressed beams. Threaded rods are included in payment for prestressed concrete beams.

(3) PAYMENT LENGTH FOR DIAPHRAGMS.

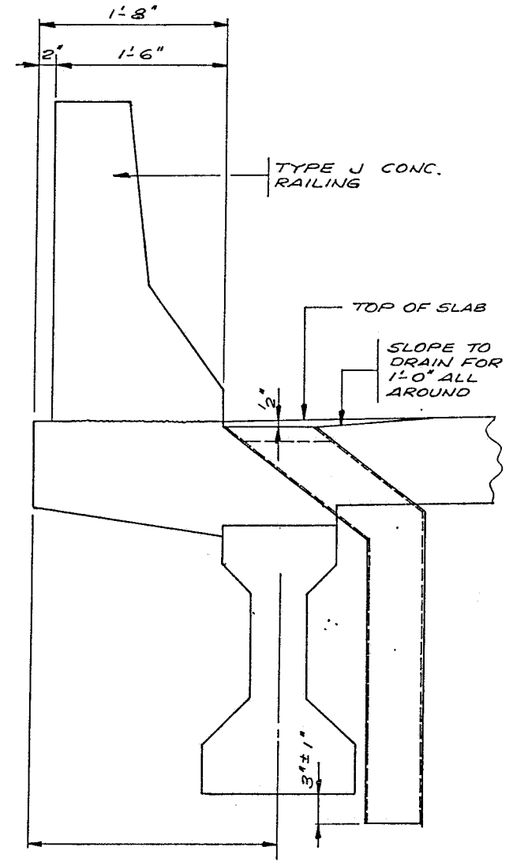
APPROVED: MARCH 27, 1979 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **CONCRETE INTERMEDIATE DIAPHRAGM** **(FOR 28"-54" PRESTRESSED CONCRETE BEAM SPANS)**	DETAIL NO. **B802**



SECTION A-A



ELEVATION



PLACEMENT DIAGRAM

NOTE:
SEE SHEET 11 FOR DRAIN SPACING

NOTE:
MATERIAL TO BE STRUCTURAL STEEL PER SPEC. 3306

GALVANIZE PER SPEC. 3394 AFTER FABRICATION.

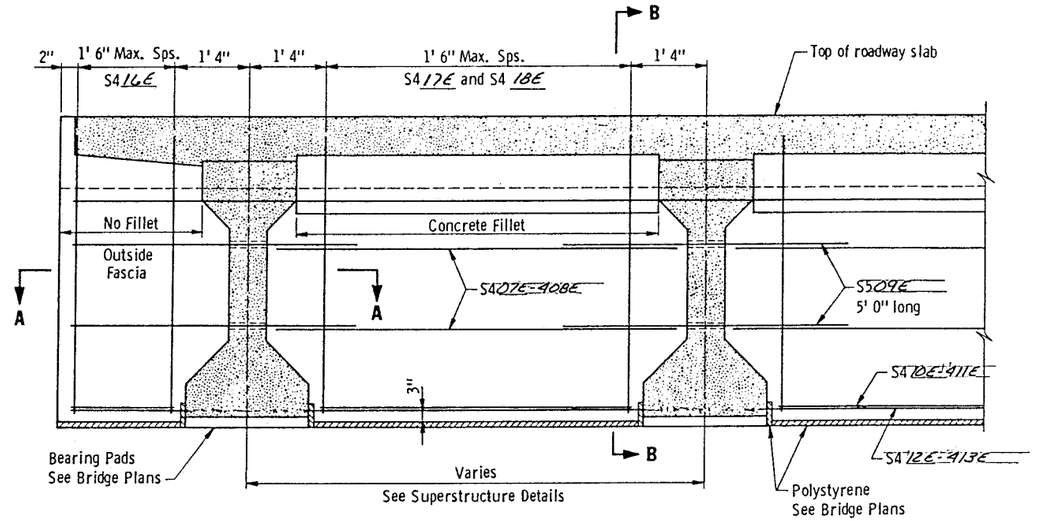
PAYMENT FOR FLOOR DRAIN TYPE I SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

BRIDGE FLOOR DRAIN

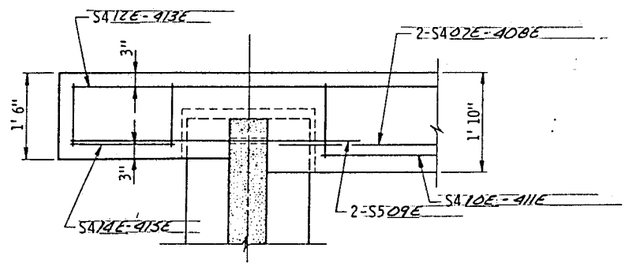
STRUCTURAL TUBING
B702 MODIFIED

2-19-91

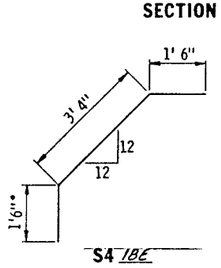
S.P. 55-399-51	DETAILS	55547
SHEET 18 OF 27 SHEETS		



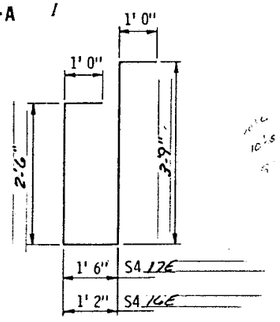
PART TRANSVERSE SECTION AT END DIAPHRAGM

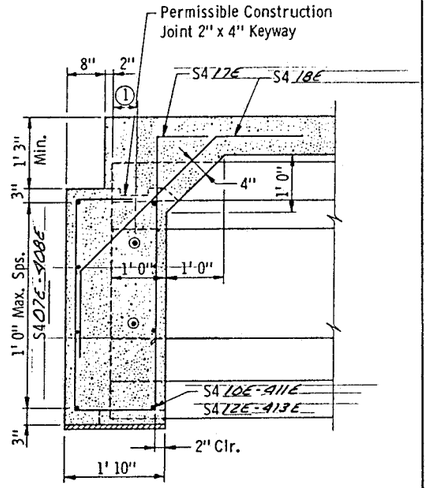


SECTION A-A



* May be eliminated for small beam heights





SECTION B-B

① See plans for dimensions

NOTE
All diaphragm bars shown are listed with the superstructure reinforcement. Diaphragm concrete and reinforcement quantities are included in superstructure quantities.
To be used at abutment end only.

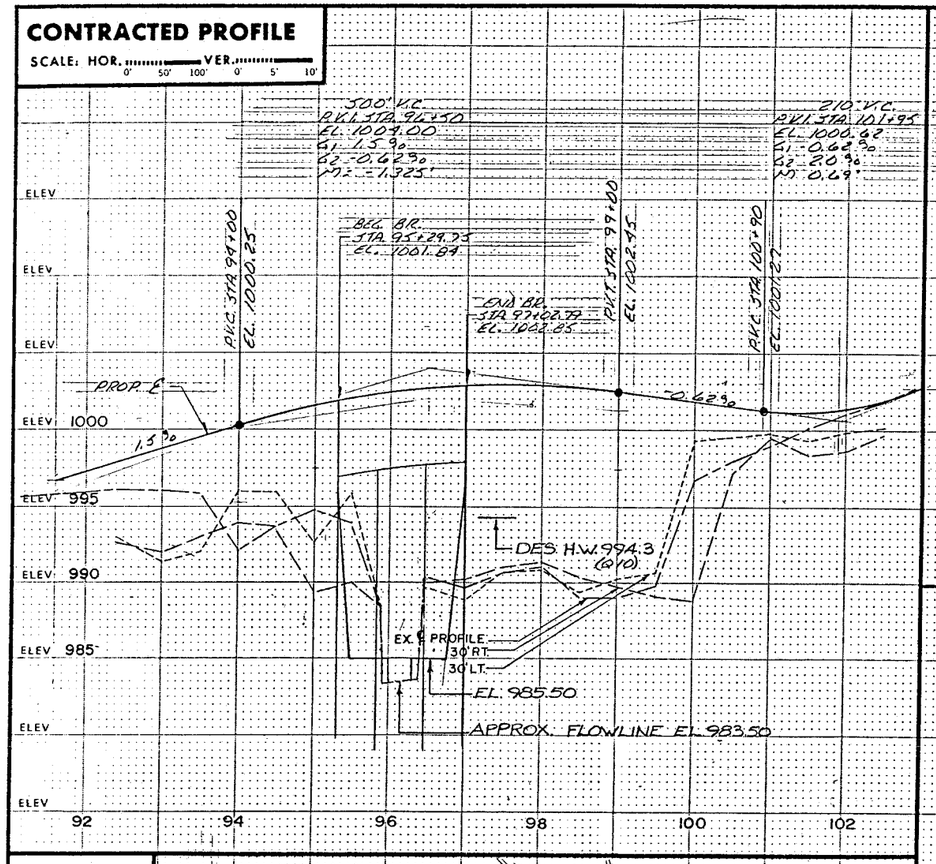
APPROVED: Oct. 20, 1976 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **CONCRETE END DIAPHRAGM** **(28"-54" PRESTRESSED CONCRETE BEAM SPAN WITH PILE BENT ABUTMENT)**	REVISION July 25, 1980	DETAIL NO. **B810**

2-19-91

S.P. 55-599-51	DETAILS	55547
SHEET 19 OF 27 SHEETS		

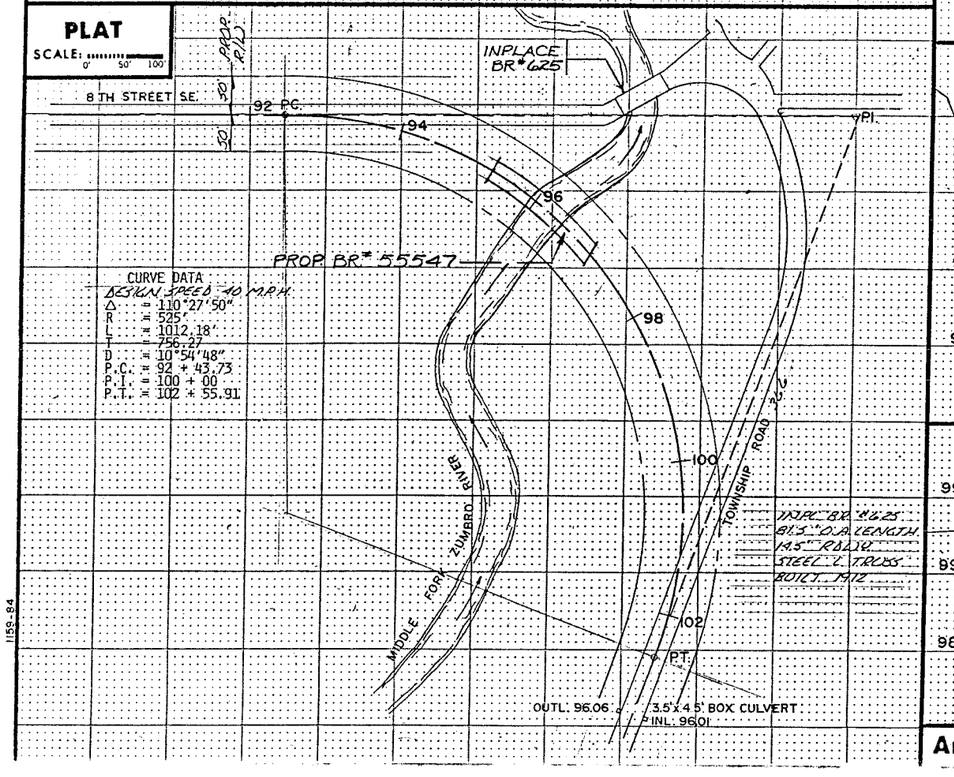
CONTRACTED PROFILE

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



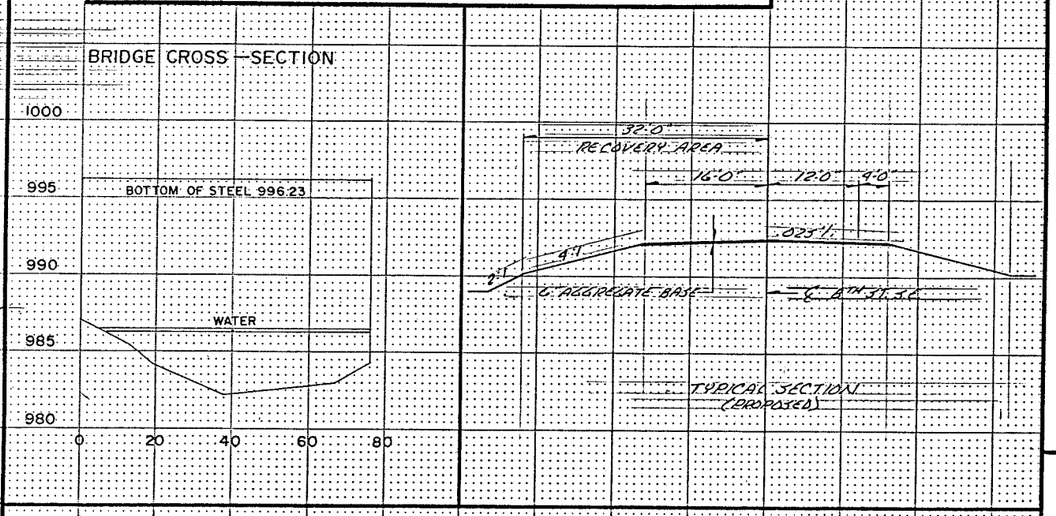
PLAT

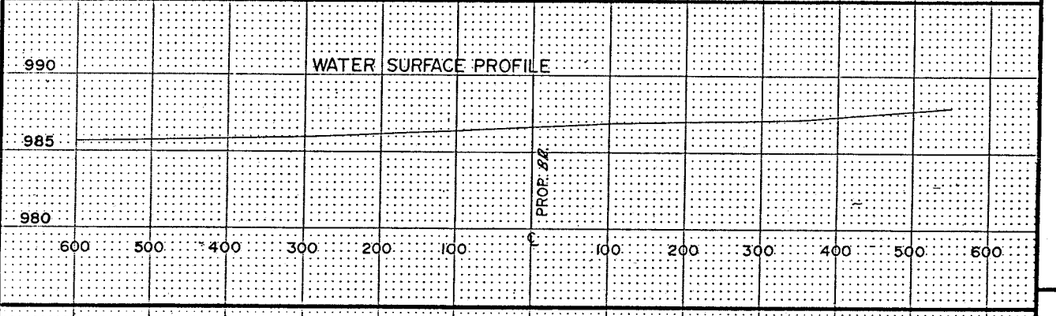
SCALE: 0' 50' 100'

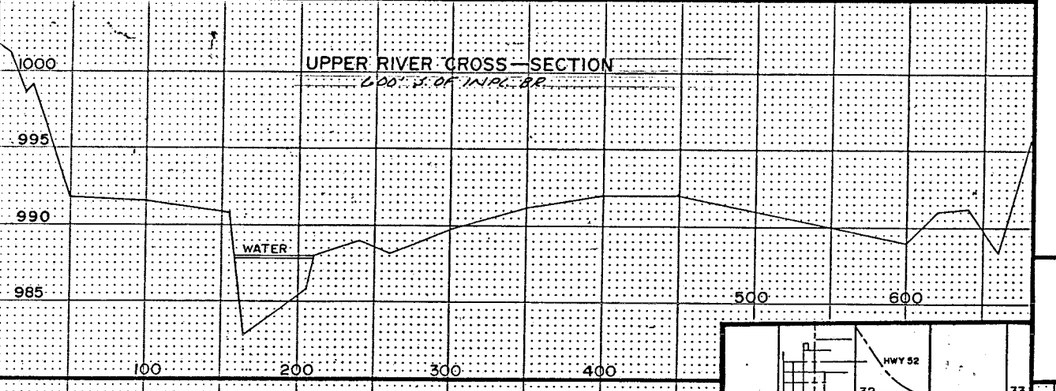


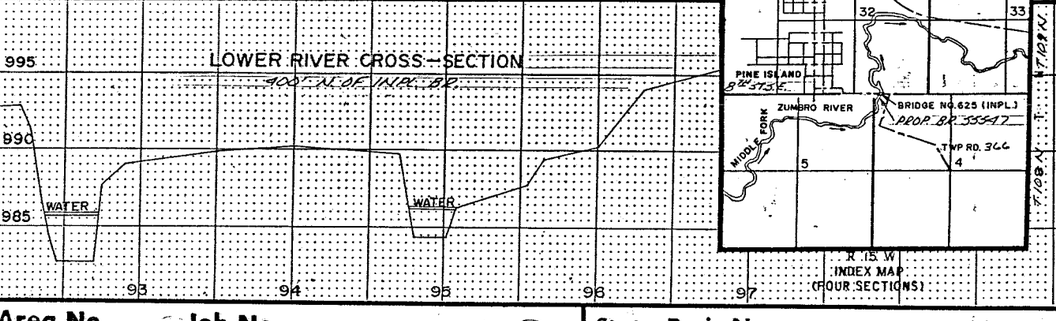
TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN









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 12/12/89

Stream or ditch designation MIDDLE FORK ZUMBRO RIVER
Drainage area 130.50 MI.
Max. flood on record. UNK. Design flood (10 yr. freq.) 8,000 C.F.S.
Max. observed highwater elevation UNK. Design highwater elevation 994.3
Design mean velocity through structure 6.6 F.P.S.
Low superstructure at or above elevation 997.5
Flowline elevation 983.5 Skew angle 0°
Waterway area req'd. below elevation 994.3 = 1178 Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 14,700 C.F.S. at stage 997.8 and mean velocity of 6.6 F.P.S. with 0.9 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.

FOUNDATION ENGINEERS RECOMMENDATION

DATE 12/12/89

3-52' PRESTR. CONC. BEAM SPANS
32' R.D.W.

Bridge survey sheets made from:

Bench mark elevation 998.54 (M.S.L. 1929 Adj.)
Location: X TOP OF CONC. CURB, S.W. COR. BR.

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT ON 8TH ST. S.E. (T.H., C.S.A.H., C.R. etc.)
PROPOSED BRIDGE LOCATED MILES OF
SEC. 4 TWP 108 N R 15 W
TOWNSHIP NEW HAVEN COUNTY OLMSTED
BRIDGE NO. 55547
2-19-91

1159-84

Area No. Job No. State Proj. No. 55-599-51 Sheet No. 20 of 29 Sheets

Fed. Proj. No.

N

LIMITS OF RANDOM RIPRAP
AVG. 1'-6" DEEP, TYP.

T-366

3:1 1/8"

FROJ

TEST PILE #2

℄ 30. ABUT.
STA. 95+30.30

℄ PIER #1
STA. 95+87.50

90°
TYP.

16:3 1/4"

T-367

WORKING LINE
F.T.C. @ STA. 95+32.50

TEST PILE #4

TEST PILE #3

℄ PIER #2
STA. 96+94.30

27:3 1/4"

TEST PILE #1

LIMITS OF RANDOM RIPRAP
AVG. 3'-0" DEEP, TYP.

T-368

PROP. ℄ ROADWAY

LIMITS OF RANDOM RIPRAP
SHOWN ARE APPROX. ONLY.
EXACT LIMITS ARE TO BE
DETERMINED BY THE
ENGINEER IN THE FIELD.

HORIZ. CURVE DATA
P.I. STA. 100+00
Δ = 110°27'30"
D = 10°39'48"
R = 535.00'
L = 1012.78'
T = 756.27'

℄ NO. ABUT.
STA. 97+01.50

APPROX. QUANTITY OF
GRANULAR FILTER 15.70 C.Y. /LF

VERTICAL CURVE DATA
500' V.C.
P.V.I. STA. 96+50
EL. 1009.00
G_1 1.5%
G_2 -0.62%
M -1.325'

ALONG ℄ ROADWAY

BEG. OF DECK
STA. 95+29.75
EL. 1001.84

37'-0"
SPAN #1

37'-0"
SPAN #2

37'-0"
SPAN #3

℄ 30. ABUT.

℄ PIER #1

℄ PIER #2

℄ NO. ABUT.

END OF DECK
STA. 97+02.29
EL. 1002.85

EL. 1010

EL. 1000

EL. 990

EL. 980

EL. 970

PROP ℄

EX. ℄

30' RT.

90° ℄

W36 MEMBER EL. 999.02

DES. H.O. EL. 999.3 (Q.A.)

2'-6"
TYP.

2:1

SL. N. S.C.
BK. BRN.

S. S.C.
TAN MOIST

LIMESTONE
GR. BR. MOIST
FIRM

DOLOMITE
BRN. MOIST FIRM

SHANOPEE DOLOMITE
BRN. TO BUFF. CONTAINS
5 LAYERS

T-366

30.
TYP.

6" GRANULAR FILTER

RANDOM RIPRAP CLASS III

STEEL H TEST PILE 25' LG.

APPROX. CHAN.
BOT. EL. 983.50

STEEL H TEST
PILE 15' LG.

CL. BRK.

S. LG. GR.

WEATHERED DOL-
OMITE, BRN TO
BUFF, 5 LAYERS

SHANOPEE DOLO-
MITE
FAIRLY GRASSY
GRADES INTO
HARDER, FRESHER
ROCK.

T-367

STEEL H TEST PILE 20' LG.

SL. N. PL. BRN.

N. S.C. BRN. FIRM

GR. BRN.

DK. DOLOMITE

SHANOPEE DOLOMITE
BRN. TO BUFF
5 LAYERS

T-368

Top Rock 999.50

Pier No. 2
Bottom Footing
997.5

Pier No. 1 Bottom Footing 978.3

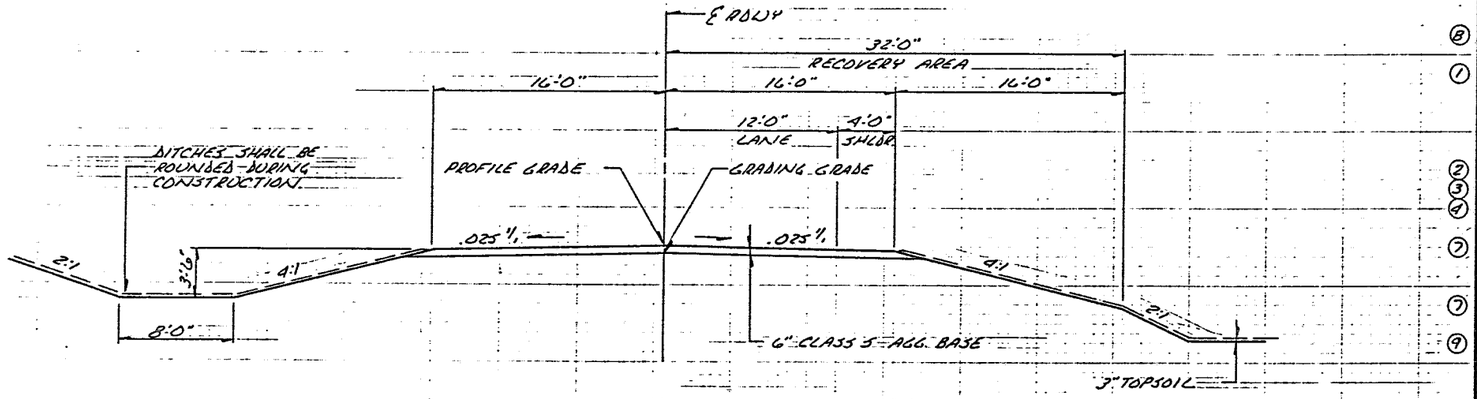
Top Rock 982.3

VSE Spread Footing option

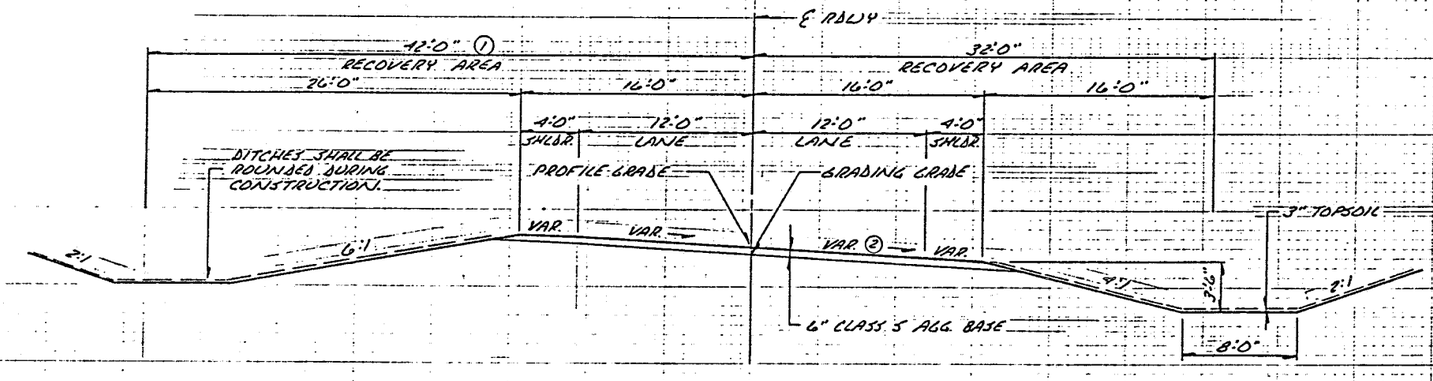
BRIDGE CONTRACTOR SHALL EXCAVATE & FILL TO THESE LINES FOR APPROX. 35 FT. LT. & RT. OF THE ℄ ROAD. THEN TAPER AT A 2:1 SLOPE TO NATURAL CHANNEL SLOPES. INCLUDES INCIDENTAL FOR SLOPE PREPARATION.

BORINGS SHOWN T366-368 TAKEN WITH
STD 140 LB HAMMER
30 INCH DROP
2 INCH O.D. SAMPLER

BRIDGE SURVEY PLAN AND PROFILE	DES:	DR:	APPROVED: 2-19-91	Bridge No.
	CHK:	CHK:		
State Proj. No. 35-399-51	Sheet No. 21 of 27 Sheets			35547



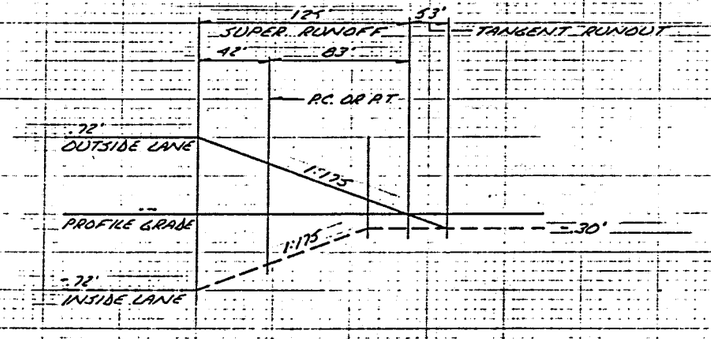
TYPICAL SECTION



① 42'0" RECOVERY AREA SHALL USED FROM STA. 92+50 THRU STA. 102+30 ONLY.

② SEE SUPERELEVATION CHART MAX. SUPER. = 0.06 ft/ft

TYPICAL SECTION IN SUPER.



SUPERELEVATION CHART

SCHEDULE OF ESTIMATED QUANTITIES (GRADING ~ NON. PART.)

	ITEM NO.	ITEM	MUNIC.	RURAL	TOTAL	UNIT
	2101.501	CLEARING	.75	3.25	4	ACRE
	2101.506	GRUBBING	.75	3.25	4	ACRE
⑧	2104.509	REMOVE BOX CULV.	—	1	1	EACH
	2105.501	COMMON EXCAVATION	1035	3370	4405 (P)	CU. YD.
①	2211.501	AGGREGATE BASE CLASS 5	400	1750	2150	TON
	2501.511	18" C.S. PIPE CULVERT	—	206	206	LIN. FT.
	2501.515	18" C.S. PIPE APRON	—	6	6	EACH
	2501.511	60" R.C. PIPE CULVERT CL II	—	40	40	LIN. FT.
	2501.515	60" R.C. PIPE APRON	—	2	2	EACH
②	2575.501	SEEDING	.5	2.1	2.6	ACRE
③	2575.502	SEED MIXTURE 800	20	85	105	POUND
④	2575.511	MULCH MATERIAL, TYPE 1	1.0	4.2	5.2	TON
	2105.523	COMMON BORROW (C.Y.)	1000	13,300	14,300	CU. YD.
⑦	2123.509	DOZER	2	8	10	HOUR
	2104.501	REMOVE PIPE CULVERTS	—	20	20	LIN. FT.
	2442.501	REMOVE OLD BRIDGE	1	—	1	L. SUM
⑦	2123.508	15 C.Y. SCRAPER	2	8	10	HOUR
	0563.501	TRAFFIC CONTROL	0.	0.	1	L. SUM
⑨	2104.509	REMOVE MISC. STRUCTURE		1	1	EACH

FOR INFORMATIONAL PURPOSES ONLY, NOT A BID ITEM, THE AMOUNT OF TOPSOIL REQ'D TO DRESS THE SLOPES & DITCH BOTTOMS IS 876 CU. YDS.

CONSTRUCTION NOTES

SELECTED GRANULAR MATERIALS SHALL CONSIST OF ALL SOILS ENCOUNTERED EXCEPT TOPSOILS, HIGHLY ORGANIC SOILS, DEBRIS, AND OTHER UNSUITABLE MATERIALS.

THE DENSITY OF THE SUBGRADE AND THE AGGREGATE SURFACE SHALL BE THAT ATTAINED BY THE METHOD OF ORDINARY COMPACTION IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3F2.

ALL DIMENSIONS AND SLOPES SHOWN ON THIS SHEET ARE APPROXIMATE.

DITCH BOTTOMS AND SLOPES WITHIN THE R/W SHALL BE COVERED WITH NOT LESS THAN 3" OF TOPSOIL. PAYMENT FOR SUCH WORK IS TO BE INCLUDED IN PRICE BID FOR COMMON EX.

WARNING — CONTRACTOR SHALL CALL GOPHER STATE ONE CALL @ 1-800-252-1166 48 HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS TO OBTAIN COMPLETE UTILITY PROPERTY & LOCATION INFORMATION.

THE EXISTING R.D.W. SHALL BE OBLITERATED AS SHOWN TO MATCH EXISTING TERRAIN AFTER THE PROPOSED ROADBED IS CONSTRUCTED. 3" OF TOPSOIL SHALL BE STRIPPED & STOCKPILED. APPROX. 1850 CU. YDS. (L.V.) OF MATERIAL SHALL BE OBTAINED FROM THE OBLITERATED ROAD & USED IN THE CONSTRUCTION OF THE PROPOSED R.D.W. IN SLOPES. 3" OF TOPSOIL SHALL THEN BE PLACED OVER THE DISTURBED AREAS. ALL WORK SHALL BE INCLUDED IN PRICE BID FOR THE EQUIPMENT HOURS LISTED AND BE PERFORMED UNDER THE DIRECTION OF THE ENGINEER IN THE FIELD.

BASIS FOR PLANNED QUANTITIES

① AGGREGATE BASE, CLASS 5: COMPACTED DENSITY = 140 LBS PER CU. FT. (DRY WEIGHT). INCL. 95 TONS FOR ENTRANCES.
② ROADWAY SEEDING BASED ON HORIZONTAL MEASUREMENT PLUS 10%.
③ SEED MIXTURE NO. 800, 40 LBS/ACRE.
④ MULCH MAT'L, TYPE 1, COMPUTED AT 2 TONS/ACRE.
⑤ COMMON EX. QUANTITY INCLUDES 1850 CU YDS OF TOPSOIL.
⑥ 130% SHRINKAGE FACTOR USED FOR EMBANKMENT CONSTRUCTION.
⑦ OBLITERATE EX. ROAD, SEE CONST. NOTES.
⑧ CONCRETE 39"x98", INCLUDES END SECTIONS.
⑨ 9.5'x3.5'x 29'-6", INCLUDES BARRIERS ON ROAD.

STANDARD PLATES

PLATE NO.	DESCRIPTION
0005	SPEC. REFERENCE TO STANDARD PLATE
3040 F	CORRUGATED METAL PIPE CULVERT
3123 1	METAL APRON FOR C.M.P. PIPE
3124 B	METAL APRON CONNECTION
3133 D	RIPRAP AT RCP OUTLET
3145 E	CONCRETE PIPE TIES "EYE BOLT TIE"
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
8000 I	STANDARD BARRICADES
9000 B	APPROACHES & ENTRANCES
3000 L	REINFORCED CONCRETE PIPE
3100 G	CONC. APRON FOR REINF. CONC. PIPE
8003 B	BREAKAWAY SIGN SUPPORT (PLASTIC)

THE ABOVE STANDARD DETAIL PLATES, APPROVED BY THE F.H.W.A., SHALL APPLY ON THIS PROJECT.

PLANS PREPARED BY:
ERICKSON ENGINEERING
3240 REPUBLIC AVE.
ST. LOUIS PARK, MN. 55426

UTILITIES

PINE ISLAND TELE.	N.S.P.	
CITY OF PINE ISLAND	DODGE CENTER	
(507) 356-8302	(507) 374-6410	

8TH ST. S.E. — OLMSTED CO.
MN. DEP'T OF TRANSPORTATION

TYPICAL CROSS SECTIONS & CONSTRUCTION NOTES

S.A. 55-599-51 — DM
SHEET 22 OF 127 SHEETS — BDJ

Fed. Proj. No.

ALL CONSTRUCTION NORTH OF EXISTING ℄ AND DASHED LINE SHALL BE BID AS MUNICIPAL CONSTRUCTION, INCLUDING REMOVAL OF BRIDGE NO. 625.

BEGIN PROJ. S.P. 55-597-01 STA. 86+50.00

TAPER EX. RDWY WIDTH @ STA. 86+50 TO MATCH PROP. RDWY WIDTH @ STA. 87+00.

750

33' EX. RT

33' EX. RT

85

30' PR. RT

30' PR. RT

90

20'R.

20'R.

APPROX. STA. 86+50 ℄ REMOVE 9.5'x5.5'x24' STONE ARCH. F:1 18" x 62" C.S. PIPE & 2-C.S. APRONS.

STA. 88+00 RT. CONST. ENTRANCE 20'W., 6:1 INSLOPES. F:1 18"x36" C.S. PIPE & 2-C.S. APRONS. (REMOVE 20' PIPE COLV.)

P.C. 92+42.73

OBLITERATE OLD ROAD

OBLITERATE OLD ROAD

IN PR. BR. #625

TREES & BRUSH

5' S/E

60

85

10' S/E

P.I. STA. 100+00
Δ = 110°27'50"
R = 525.00'
T = 756.27'
L = 1012.18'
D = 10°54'48"

TREES & BRUSH

130

TREES & BRUSH

100

PROP. BR. #55547

MIDDLE FORK ZUMBRO RIVER

10' S/E

TREES & BRUSH

125

ALL CONSTRUCTION SOUTH OF EXISTING ℄ AND DASHED LINE SHALL BE BID AS RURAL CONSTRUCTION.

N

1006.07 | 1004.57 | 1000.44 | 998.03 | 997.20 | 995.98 | 995.90 | 995.90 | 996.02 | 996.65 | 997.25 | 998.25 | 1000.25 | 1001.54 | 1002.30 | 1002.84 | 1002.86 | 1002.75

EL. 1010 / EL. 1005 / EL. 1000 / EL. 995 / EL. 990 / EL. 985 / EL. 980

+23.3

0.00%

+1.53%

E EX. GRADE

PROP. E GRADE (FINAL)

PROP. BR. #55547

+63 P.V.C. EL. 998.03
170' V.C.
M = 0.53'

+37 P.V.T. EL. 995.90

+48 P.V.I. EL. 995.90

+40 P.V.C. EL. 995.90
100' V.C.
M = 0.1875'

+10 P.V.I. EL. 995.90

+60 P.V.T. EL. 996.65

+100 P.V.C. EL. 1000.25
300' V.C.
M = 1.325'

+30 P.V.I. EL. 1000.00

+100 P.V.T. EL. 1002.75

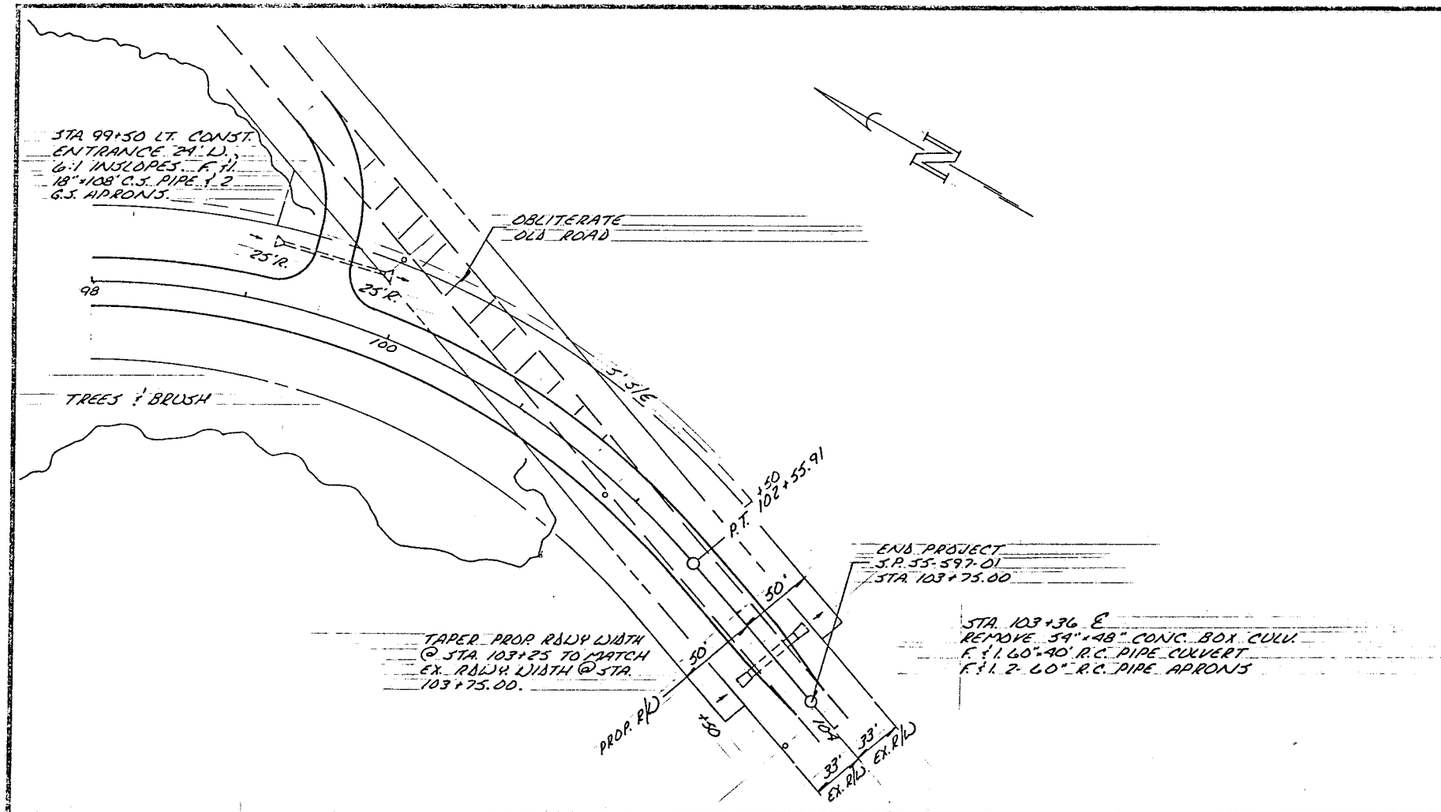
1006.07 | 1004.57 | 1000.44 | 997.10 | 995.52 | 995.5 | 995.52 | 996.00 | 996.30 | 996.24 | 992.07 | 994.92 | 985.42 | 985.39 | 991.09 | 988.89

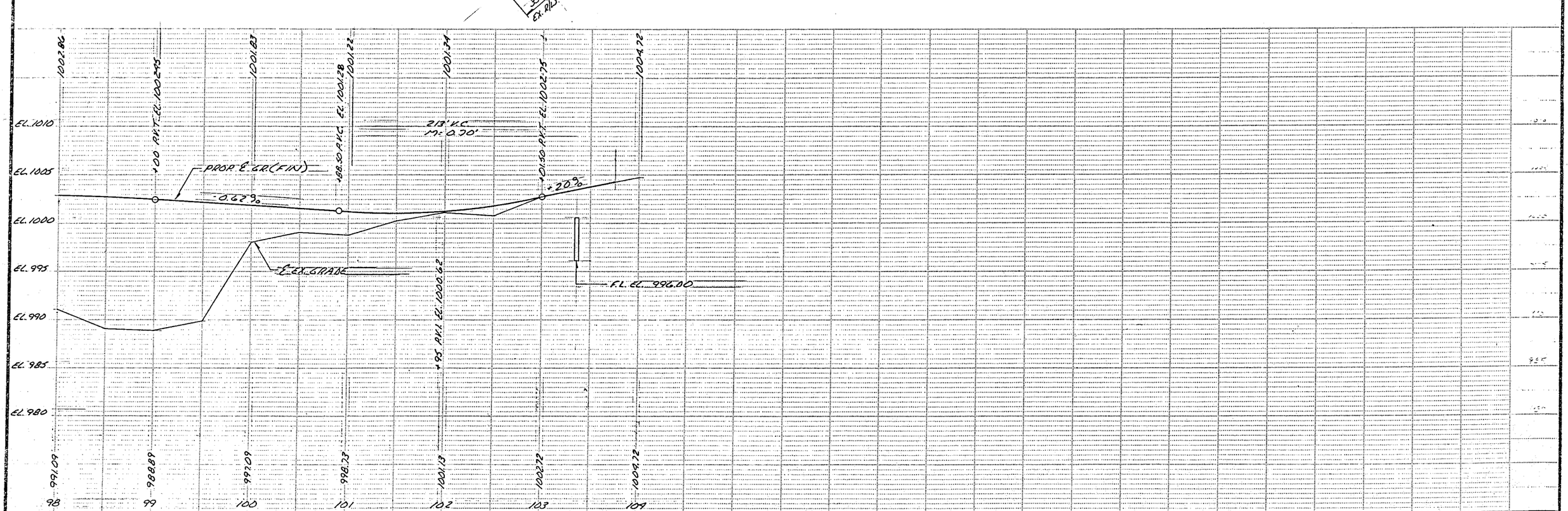
85 | 90 | 95 | 99

State Proj. No. 55-599-51

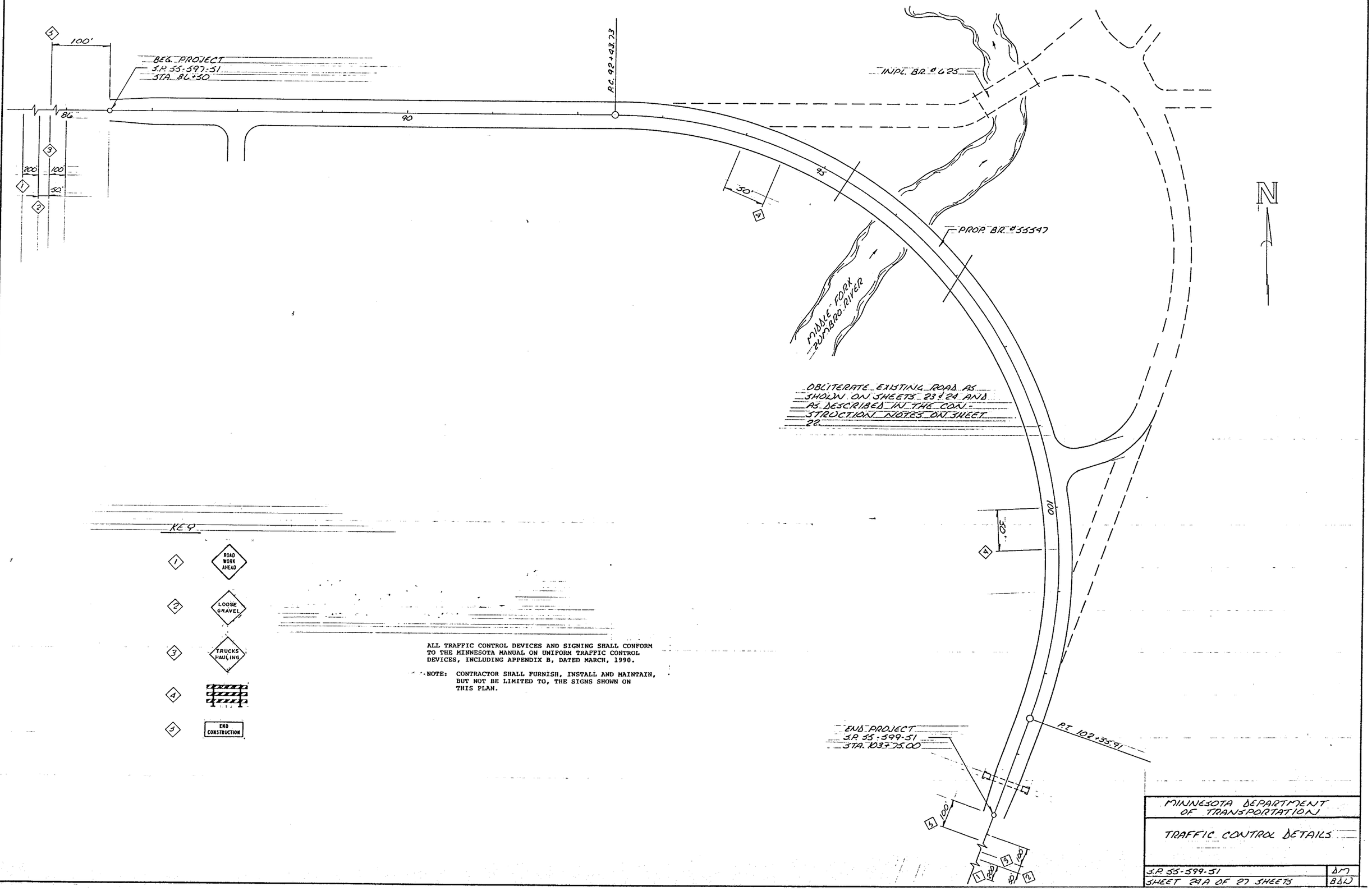
Sheet No. 23 of 27 Sheets

Fed. Proj. No.





State Proj. No. 55-599-51 Sheet No. 24 of 27 Sheets



KEY

1. ROAD WORK AHEAD
2. LOOSE GRAVEL
3. TRUCKS HAULING
4.
5. END CONSTRUCTION

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX B, DATED MARCH, 1990.

NOTE: CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN, BUT NOT BE LIMITED TO, THE SIGNS SHOWN ON THIS PLAN.

MINNESOTA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS

S.P. 55-599-51	AM
SHEET 24A OF 27 SHEETS	BAW

Fed. Proj. No.

T.S. EX. EMB.

R/W

995.5 89+00 995.4

3.96'

38 60 111

995.42 88+50 995.4

3.5' 3.84'

38 58 112

995.6 88+00 995.48

12:1

3.5'

F & I 18"x36' LG. C.S.P. & 2 G.S. APRONS.

36 49 114

996.19 87+50 995.91

4.12'

36 47 146

997.1 87+00 996.7

4:1 4:1 2:1 2:1

STA. 86+50 & F&I 18"x62' C.S. PIPE & 2 G.S. APRONS. INLET EL. 991.5 OUTLET EL. 991.3

998.35 86+50 997.85

2:1

29 38 101

10' 10'

T.S. EX. EMB.

R/W R/W S/E

996.3 92+00 996.75

3.5' 4:1 2:1 2:1 6.0'

44 128 173

996.25 91+50 996.01

3.5 5.14'

43 131 89

996 91+00 995.52

3.5 4.54'

42 111 73

995.64 90+50 995.4

3.5 4.3'

41 89 94

995.43 90+00 995.4

3.5 4.19'

37 63 112

995.43 89+50 995.4

4.07'

35 45 113

State Proj. No. 55-599-51

Sheet No. 25 of 27 Sheets

Fed. Proj. No.

T3 EX EMB

R/W R/W

994.92 95+00 1001.04

6:1 4:1 2:1 2:1 3/E

43 96 884

993.37 94+50 1000.45

10.27'

45 151 693

992.07 94+00 999.75

9.46'

46 143 592

995.87 93+50 999

8.39'

44 126 532

996.24 93+00 998.25

7.73'

42 115 420

996.24 92+50 997.5

6:1 4:1 2:1 2:1 2:1

6.86'

43 114 288

T3 EX. EMB.

R/W R/W

988.89 99+00 1001.95

3/E 6:1 4:1 2:1 2:1

46 46 1804

989.14 98+50 1002.21

46 46 1716

991.09 98+00 1002.36

46 46 1635

990.79 97+50 1002.4

44 44 1674

END BR. #55547
989.59 97+02.29 1002.35

40 174 4983

BEG. BR. #55547
994.57 95+29.75 1001.34

6:1 4:1 2:1 3/E

12.09'

10' 10'

26 28 602

State Proj. No. 55-599-51 Sheet No. 26 of 27 Sheets

Fed. Proj. No.

TS EX. EMB

R/W R/W S/C

1001.13 102+00 1000.84

4.09' 3.5

43 127 129

1000.23 101+50 1000.62

3.84' 3.5

43 140 155

998.73 101+00 1000.72

3.84' 3.5

43 154 178

999.09 100+50 1001.02

3.84' 3.5

44 119 498

997.09 100+00 1001.33

2:1 3:1 6:1 4:1 2:1

3.84'

54 87 1467

989.89 99+50 1001.64

10:1 12:1

FIL 18"ø 108' C.S.P. & 2 G.I. APRONS

54 62 1975

10' 10'

1004.73 104+00 1004.73

TS EX. EMB

R/W R/W

1004.22 103+75 1003.72

4:1 2:1

MSB 2947 16871

13 16 40

1003.72 103+50 1003.22

4:1 4:1

STA. 103+34. ℄ FILL 60"ø 40' R.C. PIPE & 2 R.C. PIPE APRONS. INLET EL. 996.1. OUTLET EL. 995.9.

34 66 149

1002.72 103+00 1002.22

4:1 4:1 2:1

39 104 115

1001.73 102+50 1001.38

6:1 2:1

3.34'

41 124 87

State Proj. No. 55-599-51

Sheet No. 27 of 27 Sheets