MINNESOTA DEPARTMENT OF TRANSPORTATION
OLMSTED COUNTY
CONSTRUCTION PLAN FOR BRIDGE NO. 55556

LOCATED 4 MI. W. OF ROCHESTER ON C.R.117 OVER THE S. FORK ZUMBRO RIVER (Geographical Description)

SEC. 25 TWP. 106N R 15W (Legal Description)

STATE PROJ. NO. 55-598-36

GROSS LENGTH	227.16 FEET	0.043 MILES
BRIDGES-LENGTH	227.16 FEET	0.043 MILES
EXCEPTIONS-LENGTH	FEET	MILES
NET. LENGTH	227.16 FEET	0.043 MILES

STATE AID PROJ. NO.

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

MN. PROJ. NO. BROS 5595 (207)

GOVERNING SPECIFICATIONS

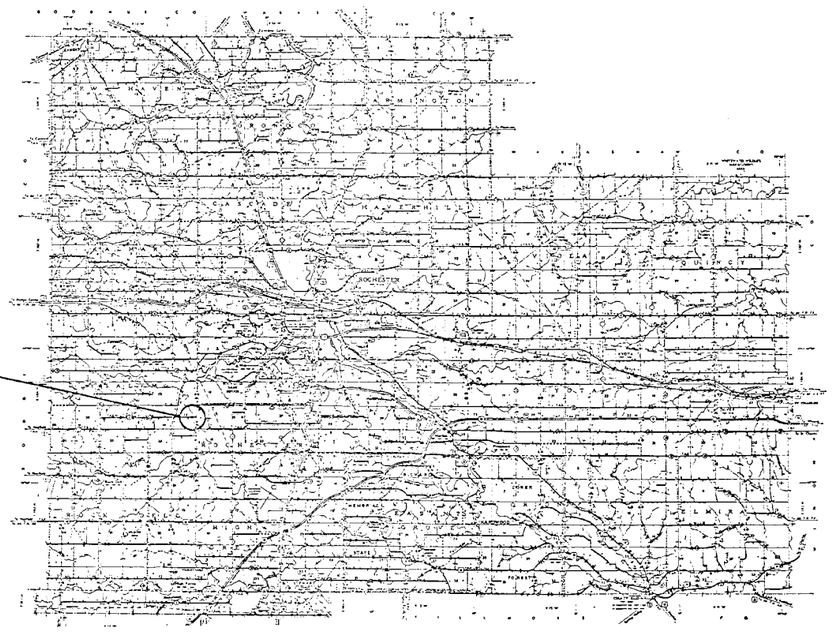
THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE MAY 2, 1994 SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

LIST OF SHEETS

NO.	TITLE
1	TITLE SHEET
2	GENERAL PLAN & ELEVATION
3	BRIDGE LAYOUT
4-10	WEST ABUTMENT DETAILS
11-17	EAST ABUTMENT DETAILS
18-22	PIER DETAILS
23	FRAMING PLAN
24	PRESTR. CONC. BEAM DETAILS
25-27	SUPERSTRUCTURE DETAILS
28	CONC. RAIL, TYPE J
29-31	WATERPROOF EXPANSION DEVICE
32-38	DETAILS
39	BRIDGE SURVEY
40	BRIDGE SURVEY ~ PLAN & PROFILE

PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
EXISTING R/W
NEW R/W
TEMP EASE
RAILROAD R/W
UNSURFACED RD. OR SHLD.
EDGE OF LAKE
SWAMP BOUNDARY
MISCELLANEOUS BOUNDARY
CORPORATE OR CITY LIMITS
VACATED PLATTED PROPERTY
RECREATIONAL TRAIL
ALIGNMENT STATIONS
ALIGNMENT POINTS
RIVER OR CREEK
DRAINAGE DITCH
BRIDGE
RAILROAD (SINGLE TRACK)
RR CROSSING PAVEMENT MARKING
RR CROSSING GATE
RR CROSSBUCK SIGN
RR CROSSBUCK SIGN W/LIGHTS
BARBED WIRE FENCE
CHAIN LINK FENCE
WOVEN WIRE, COMBINATION WOVEN AND BARB
WOOD FENCE
BILLBOARD
RETAINING WALL
GUARDRAIL (CABLE)
GUARDRAIL (PLATE BEAM)
DRAIN TILE
CULVERT
CULVERT WITH APRONS
WOODS OR BRUSH, NURSERY
DECIDUOUS TREES
CONIFER (EVERGREEN) TREES
HEDGE
BUSH OR SHRUB
STUMP
SWAMP OR MARSH
MONUMENT (CI,ACT,ACP,BCP,...)
CONCRETE OR STONE MONUMENT
IRON PIPE
IRON PIN OR REBAR
IRON PIN WITH BRASS DISK
NAIL, PK NAIL, SPIKE, SFP, T-BAR, ...
VERTICAL CONTROL B.M.
HORIZONTAL CONTROL
POWER POLE
LIGHT POLE
LIGHT AND TELEPHONE POLE
LIGHT, TELEPHONE AND POWER POLE
GUY POLE GP
POLE ANCHOR
TELEPHONE POLE
TELEPHONE AND POWER POLE
UNDERGROUND CABLE PEDESTAL PED
TELEPHONE MANHOLE (VAULT) MH
ELECTRIC CABLE IN CONDUIT P
TELEPHONE CABLE IN CONDUIT T
BURIED ELECTRIC CABLE P-BUR
BURIED TELEPHONE CABLE T-BUR
GAS LINE G
WATER LINE
VALVE
FIRE HYDRANT
WATER MANHOLE
WELL WELL
LAWN SPRINKLER HEAD
MANHOLE MH
CATCH BASIN CB
SEPTIC TANK SEPTIC TANK
FORCE MAIN LIFT STA. LIFT
SEWER LINE
PERMANENT BARRICADE
TRAFFIC SIGNAL LIGHT
HAND HOLE
ENTRANCE
BUILDING NUMBER 1-S-F
SATELLITE DISH
STEEL TOWER TOWER
FLAG POLE F.P.



PROP. BRIDGE NO. 55556
S.P. 55-598-36
BEG. PROJ. 144+37.09
END PROJ. 145+64.25
EXIST. BRIDGE NO. L6231
STEEL BEAM SPAN
LENGTH 24'
RDWY. WIDTH 24'

PROJECT LOCATION



OLMSTED COUNTY

DESIGN DESIGNATION

≤ N18 20
R VALUE
ADT (CURRENT YEAR 1997) 266
PROJ. ADT (2017) 399
PROJ. HCADT (2016)
SOIL FACTOR
TON DESIGN
SHOULDER WIDTH

Design Speed 55 MPH
Based on Stopping Sight Distance
Height of eye 3.5' Height of object 0.5'
Design Speed not achieved at:

STA. 142-34.76	TO STA. 150-40.57	MPH 40
STA.	TO STA.	MPH
STA.	TO STA.	MPH

THIS PLAN CONTAINS 40 SHEETS

Dale Drawer
DESIGN ENGINEER: 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 6-5-97 REGISTRATION NUMBER 20666

Michael Sheehan DATE 6-10-97
APPROVED: COUNTY ENGINEER

Donald J. Flemming DATE 8-12-97
RECOMMEND FOR APPROVAL: STATE BRIDGE ENGINEER

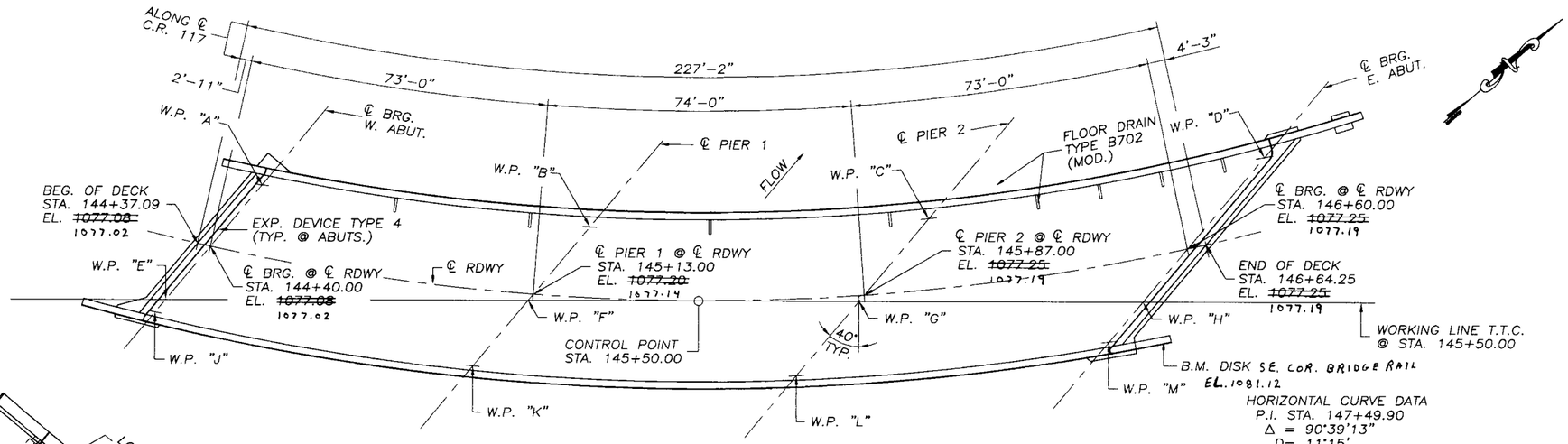
M.E. Knowlton DATE 7/2/97
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/POLICY

Bruce D. Murray DATE 8-18-97
APPROVED FOR STATE-AID, FUNDING STATE-AID ENGINEER
‡ FEDERAL-AID

ERICKSON ENGINEERING
Consulting Engineers

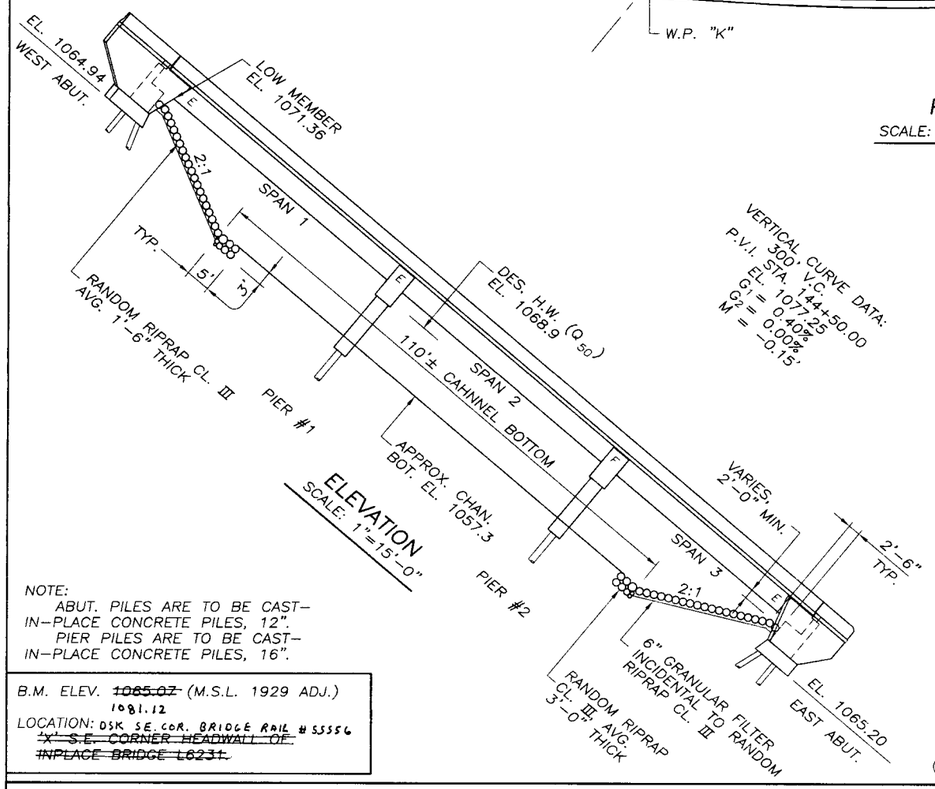
STATE AID PROJ. NO.

STATE PROJ. NO. 55-598-36



HORIZONTAL CURVE DATA
P.I. STA. 147+49.90
Δ = 90°39'13"
D= 11°15'
R= 509.30'
T= 515.14'
L= 805.81'
P.C. STA. 142+34.76
P.T. STA. 150+40.57

PLAN
SCALE: 1"=15'-0"



ELEVATION
SCALE: 1"=15'-0"

NOTE:
ABUT. PILES ARE TO BE CAST-IN-PLACE CONCRETE PILES, 12".
PIER PILES ARE TO BE CAST-IN-PLACE CONCRETE PILES, 16".

B.M. ELEV. ~~1085.07~~ 1081.12 (M.S.L. 1929 ADJ.)
LOCATION: DSK S.E. COR. BRIDGE RAIL # 55556 ~~'X' S.E. CORNER HEADWALL OF INPLACE BRIDGE L6231.~~

VERTICAL CURVE DATA:
P.V.I. STA. 144+50.00
EL. 1077.25
V.C. 300'
G_1 = 0.40%
G_2 = 0.00%
M = -0.15'

CONSTRUCTION NOTES

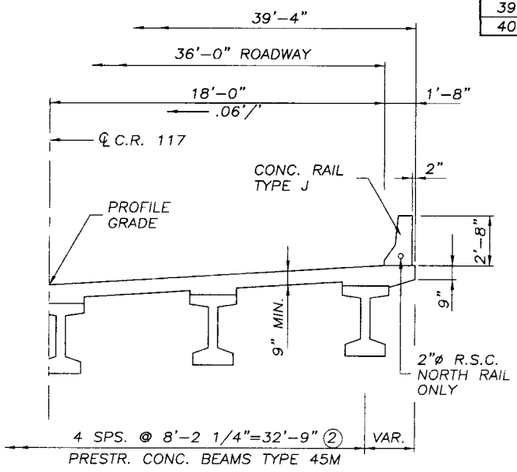
THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMMENDED BY THE MAY 2,1994 SUPPLEMENTAL SPECIFCATIONS SHALL GOVERN.

THE FIRST DIGIT OR THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE. 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 AT EACH ABUTMENT SHALL NOT BE STARTED UNTIL THE APPROACH FILL AT THAT ABUTMENT HAS BEEN CONSTRUCTED TO FULL HEIGHT AND CROSS-SECTION.

② ℄ BEAMS AND FACIA WORKING POINTS ARE POINTS OF INTERSECTION OF CONCENTRIC CIRCLES AT ℄ ABUTMENT BEARING AND ℄ PIER (ALONG ℄ BEAM).



HALF TRANSV. SECTION THRU DECK
SCALE: 1/4"=1'-0"

① BR. L6231 & BR. L6159 ② NON-PARTICIPATING

SCHEDULE OF QUANTITIES FOR THE ENTIRE BRIDGE

ITEM NO.	2021.501	2401.501	2401.501	2401.512	2401.513	2401.541	2401.541	2402.521	2402.546	2402.591	2402.595	2405.502	2405.511	2442.501	2452.507
ITEM	MOBILIZATION	STRUCTURAL CONCRETE (1A43)	STRUCTURAL CONCRETE (3Y43)	BRIDGE SLAB CONCRETE (3Y33A)	TYPE J RAILING CONCRETE (3Y46A)	REIN-FORCEMENT BARS (EPOXY COATED)	REIN-FORCEMENT BARS	STRUCTURAL STEEL (3306)	FLOOR DRAIN TYPE B702 (MOD.)	EXPANSION JOINT DEVICES, TYPE 4	BEARING ASSEMBLY	PRESTR. CONCRETE BEAMS 45M	DIAPH. FOR TYPE 45M PRESTR. BEAMS	REMOVE OLD BRIDGE ①	C.I.P. CONCRETE PILING DELIVERED 12"
QUANTITY	1	80 (P)	347 (P)	8946 (P)	504 (P)	96510 (P)	2990 (P)	830 (P)	8	103 (P)	30 (P)	1103 (P)	231 (P)	1	1200
UNIT	LUMP SUM	CU.YD.	CU.YD.	SQ. FT.	LIN. FT.	POUND	POUND	POUND	EACH	LIN. FT.	EACH	LIN. FT.	LIN. FT.	LUMP SUM	LIN. FT.

ITEM NO.	2452.507	2452.508	2452.508	2452.519	2452.519	2545.509	2511.501	0401.601	0401.601	0401.601	0452.602	0452.602
ITEM	C.I.P. CONCRETE PILING DELIVERED 16"	C.I.P. CONCRETE PILING DRIVEN 12"	C.I.P. CONCRETE PILING DRIVEN 16"	C.I.P. CONCRETE TEST PILES, 70 FT. LONG 12"	C.I.P. CONCRETE TEST PILES, 70 FT. LONG 16"	CONDUIT SYSTEM (TELEPHONE) ②	RANDOM RIPRAP, CLASS III	STRUCTURE EXCAVATION	SLOPE PREP-ARATION	FOUNDATION PREP-ARATION	PILE POINTS 12"	PILE POINTS 16"
QUANTITY	1020	1200	1020	4	2	1	390 (P)	1	1	1	24	19
UNIT	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LUMP SUM	CU. YD.	LUMP SUM	LUMP SUM	LUMP SUM	EACH	EACH

DESIGN DATA

1992 & INTERIM. A.A.S.H.T.O. DESIGN SPECS.
LOAD FACTOR DESIGN METHOD ~ HS25 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 (LOW RELAX)

DECK AREA = 8946 SQ. FT. A.D.T. = 266 (1996)
OPERATING RATING = H.S. 45
DESIGN SPEED = 40 MPH

LIST OF SHEETS

NO.	TITLE
1	TITLE SHEET
2	GENERAL PLAN & ELEVATION
3	BRIDGE LAYOUT
4-10	WEST ABUTMENT DETAILS
11-17	EAST ABUTMENT DETAILS
18-22	PIER DETAILS
23	FRAMING PLAN
24	PRESTRESSED BEAM DETAILS
25-27	SUPERSTRUCTURE DETAILS
28	CONCRETE RAIL DETAILS
29-31	WATERPROOF EXPANSION DEVICE
32-38	BRIDGE DETAILS
39	BRIDGE SURVEY
40	BRIDGE SURVEY ~ PLAN & PROFILE

APPROVED:
Michael A. Kuchar
COUNTY ENGINEER
OLMSTED COUNTY
DATE: 6-10-97

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.
Dale Drawe
REG. NO. 20666
DATE: 6-5-97

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

C.R. 117 OLMSTED COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

LOCATED ON C.R. 117, 4.0 MILES S.W. OF ROCHESTER OVER THE SO. FORK ZUMBRO RIVER.

3 - 73 FT. PRESTR. CONC. BEAM SPANS
36 FT. RDWY. ~ 40° SKEW ~ 11°15' CURVE
SPAN IDENTIFICATION NO. 501

GENERAL PLAN & ELEVATION

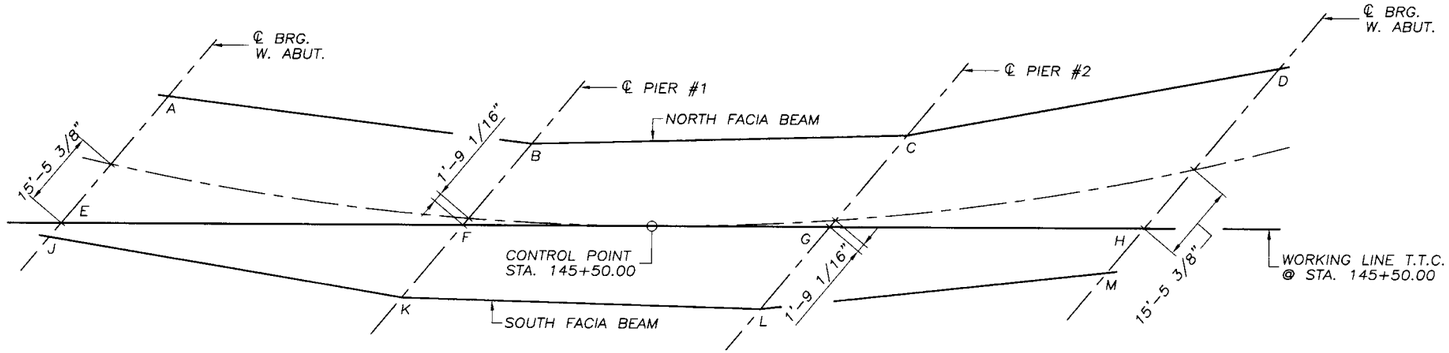
SEC. 25 TWP. 106N R 15W

TOWNSHIP: SALEM
COUNTY: OLMSTED

APPROVED:
Donald D. Flemming
STATE BRIDGE ENGINEER

S.P. 55-598-36
SHEET 2 OF 40 SHEETS

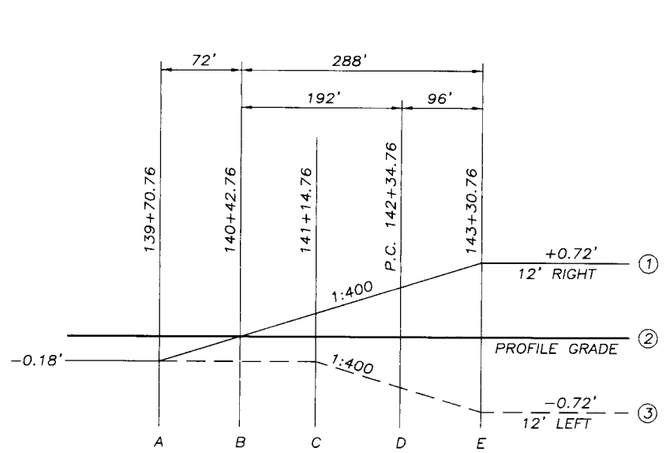
DES.:	CSK	DRN.:	DM	55556
CHK.:	RB	CHK.:	CSK	

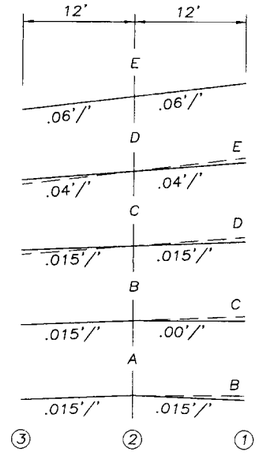


LAYOUT SHOWING WORKING POINTS

SCALE: 1"=15'-0"







SUPERELEVATION DIAGRAM

AS-BUILT
MAR 19 2001
ENGINEERING

NOTE: SEE SHEET 25 FOR CORNER DETAILS.

TOP OF SLAB TO BRIDGE SEAT

	W. ABUT.	PIER 1	PIER 2	E. ABUT.
SLAB THICKNESS	9"	9"	9"	9"
STOOL HEIGHT	3 1/2"	3 1/2"	3 1/2"	3 1/2"
BEAM	3'-9"	3'-9"	3'-9"	3'-9"
BEARING HEIGHT	5 1/8"	3 7/8"	2 1/2"	3 7/8"
TOTAL	5'-2 5/8"	5'-1 3/8"	5'-0"	5'-1 3/8"

DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M
A	144+48.54		73.87			33.30	64.81	135.93			62.04	126.81	
B	145+24.84			75.70		96.10	21.35	62.39	124.67	98.92		56.82	118.81
C	146+03.03				76.15	171.37	91.27	24.05	51.34	174.02	106.86		48.81
D	146+81.69						167.41	95.91	41.98		182.62	115.06	
E	144+33.03						80.98			3.66	70.27	142.00	
F	145+11.98							73.93		83.38	19.04	62.29	130.11
G	145+85.78								63.38		87.40	21.59	56.58
H	146+47.99										150.26	79.01	11.68
J	144+31.43										72.06		
K	145+01.22											72.32	
L	145+71.26												70.16
M	146+39.20												

ELEVATIONS

TOP OF SLAB	SLAB TO BRIDGE SEAT	BRIDGE SEAT	POINT
1076.16	5.22	1070.94	A
1076.27	5.11	1071.16	B
1076.31	5.00	1071.31	C
1076.31	5.11	1071.20	D
			E
			F
			G
			H
1078.08	5.22	1072.86	J
1078.21	5.11	1073.10	K
1078.27	5.00	1073.27	L
1078.27	5.11	1073.16	M

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT
OF TRANSPORTATION

BRIDGE NO. 55556

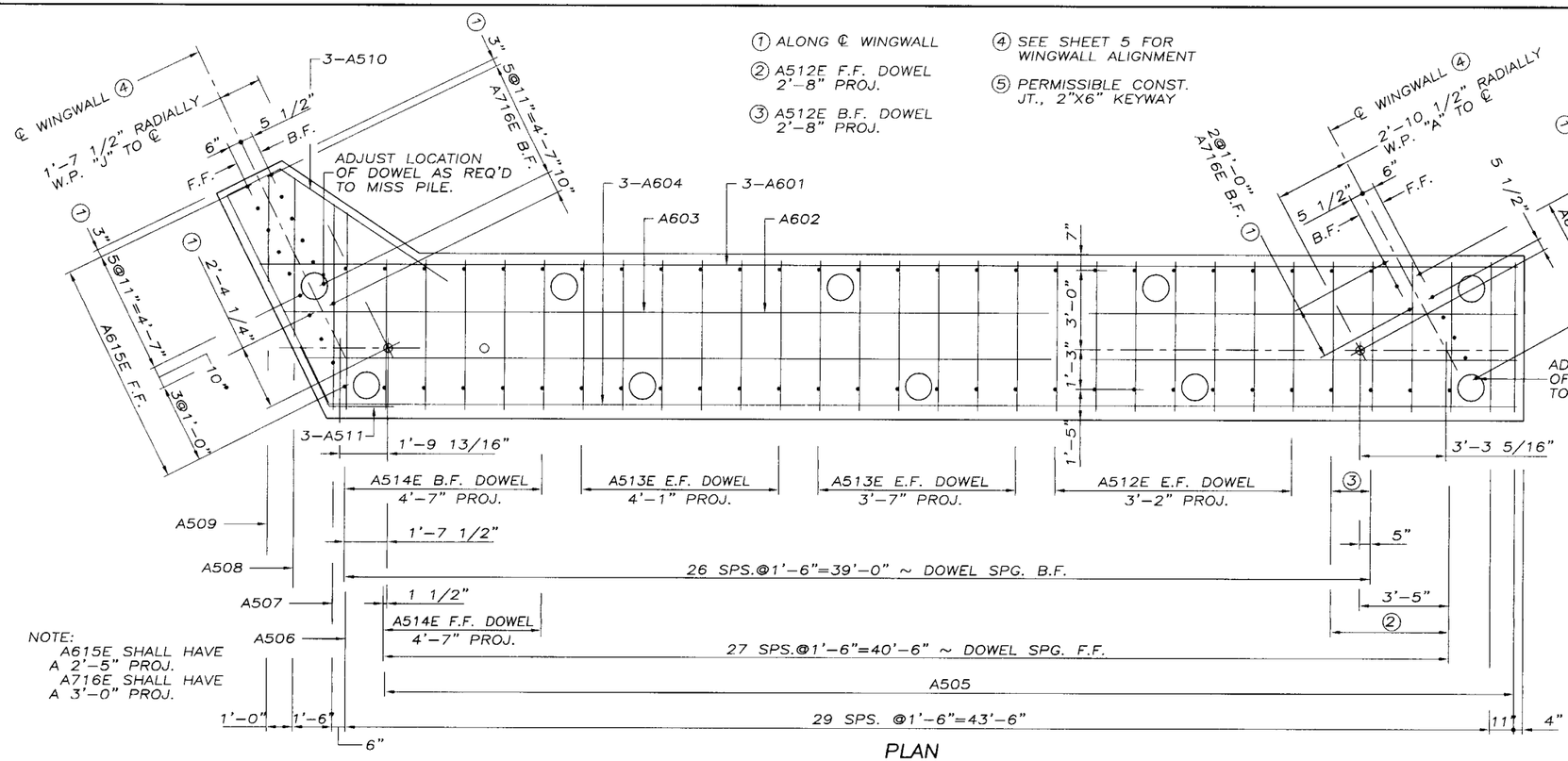
BRIDGE LAYOUT

APPROVED:

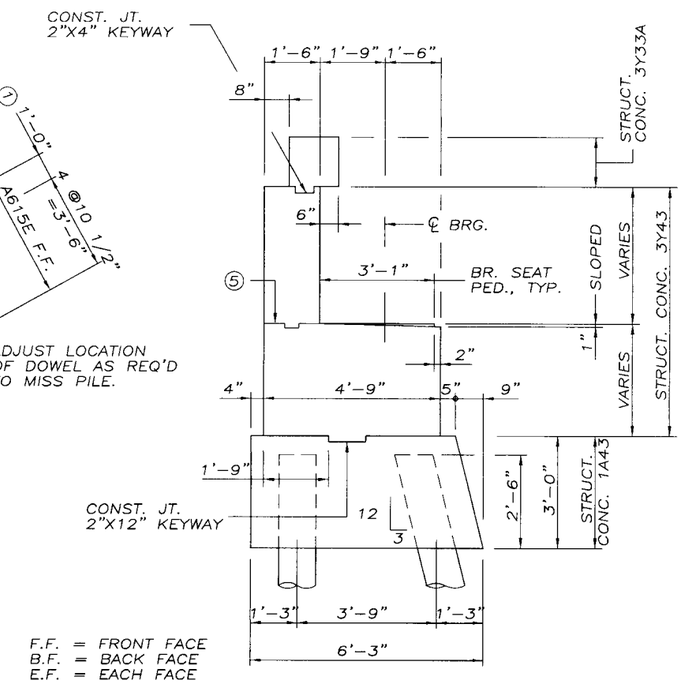
S.P. 55-598-36

SHEET 3 OF 40 SHEETS

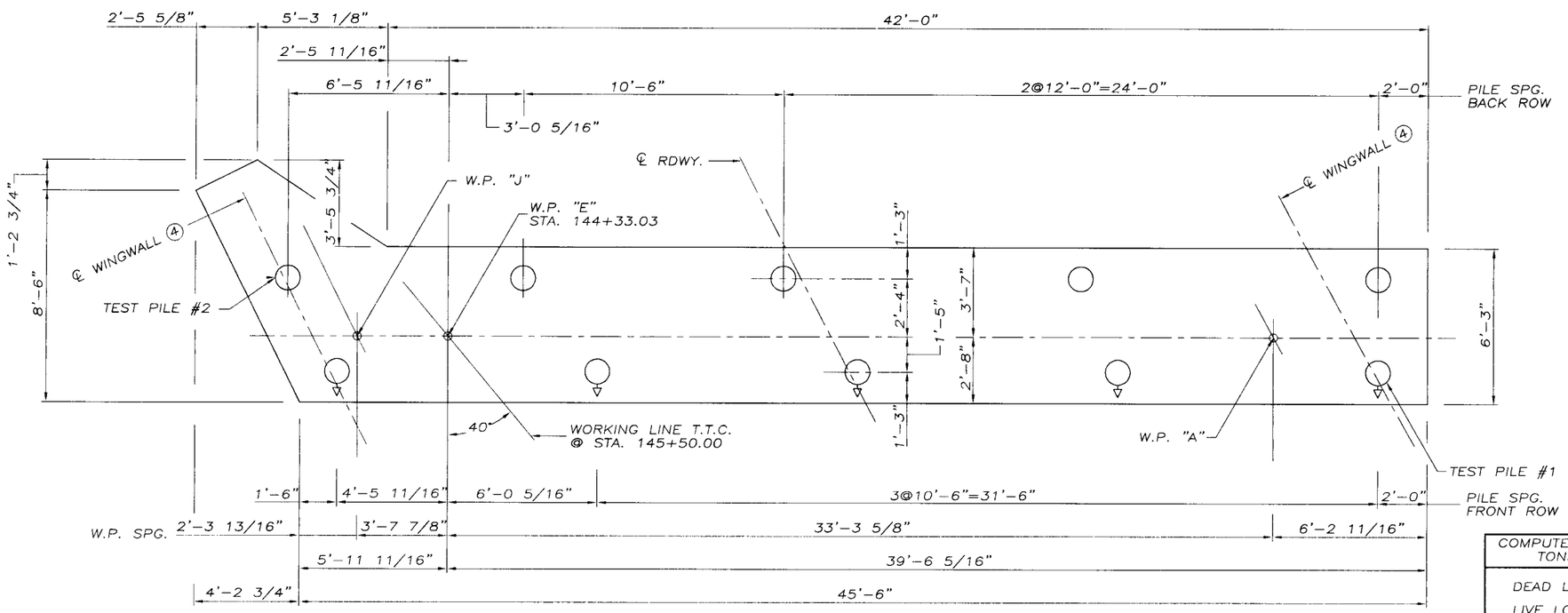
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



PLAN
SHOWING REINFORCEMENT



SECTION THRU ABUTMENT
SCALE: 1/2"=1'-0"



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

PILE NOTES:

2 – C.I.P. CONC. TEST PILES, 70 FT. LG.
8 – C.I.P. CONC. PILES, EST. LENGTH 60 FT. LG.
10 – C.I.P. CONC. PILES REQ'D. FOR WEST ABUT.
AVERAGE DRIVEN ELEV. 1009.5±

PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.

PILES MARKED THUS ◇▸ TO BE BATTERED 3" PER FOOT IN THE DIRECTION SHOWN.

ALL PILING SHALL HAVE A NOMINAL DIA. OF 12".

FOR PILE SPLICE DETAILS SEE DETAIL B201.

SEE SURVEY SHEET FOR TEST PILE LOCATIONS.

ALL PILES SHALL HAVE PILE POINTS.

COMPUTED PILE LOADS ~ TONS PER PILE	
DEAD LOAD	45.0
LIVE LOAD	13.2
TOTAL	58.2

AS-BUILT
MAR 09 2001
ENGINEERING

CERTIFIED BY _____ PROFESSIONAL ENGINEER
REG. NO. 20666 1996

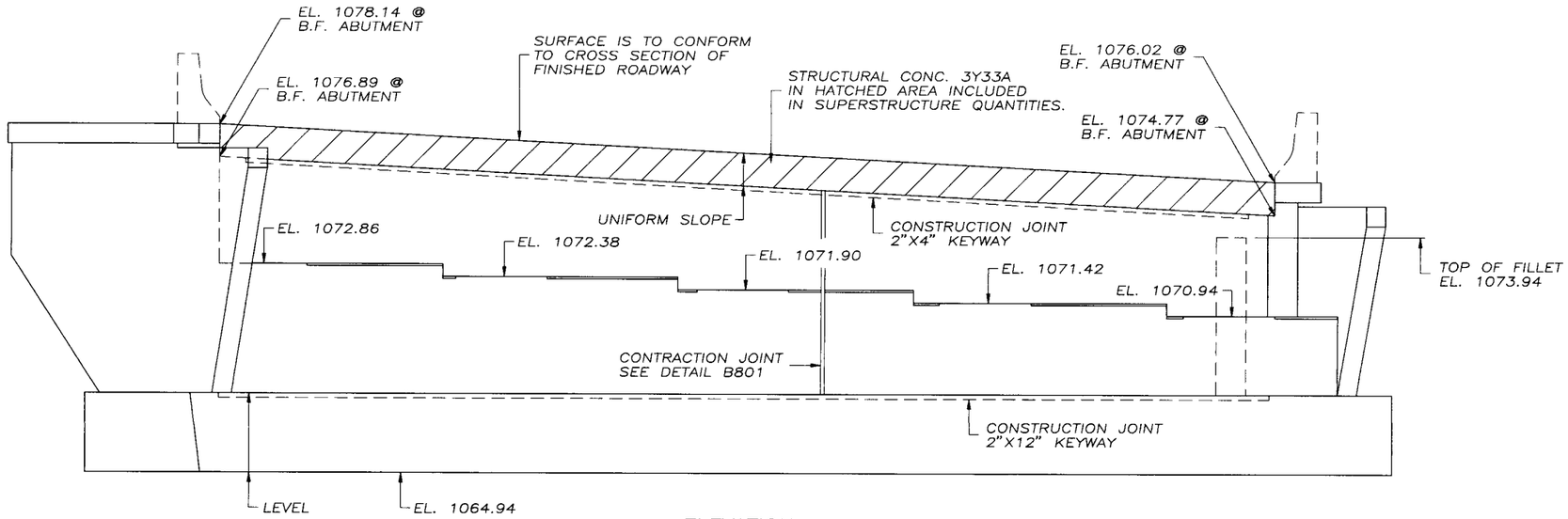
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

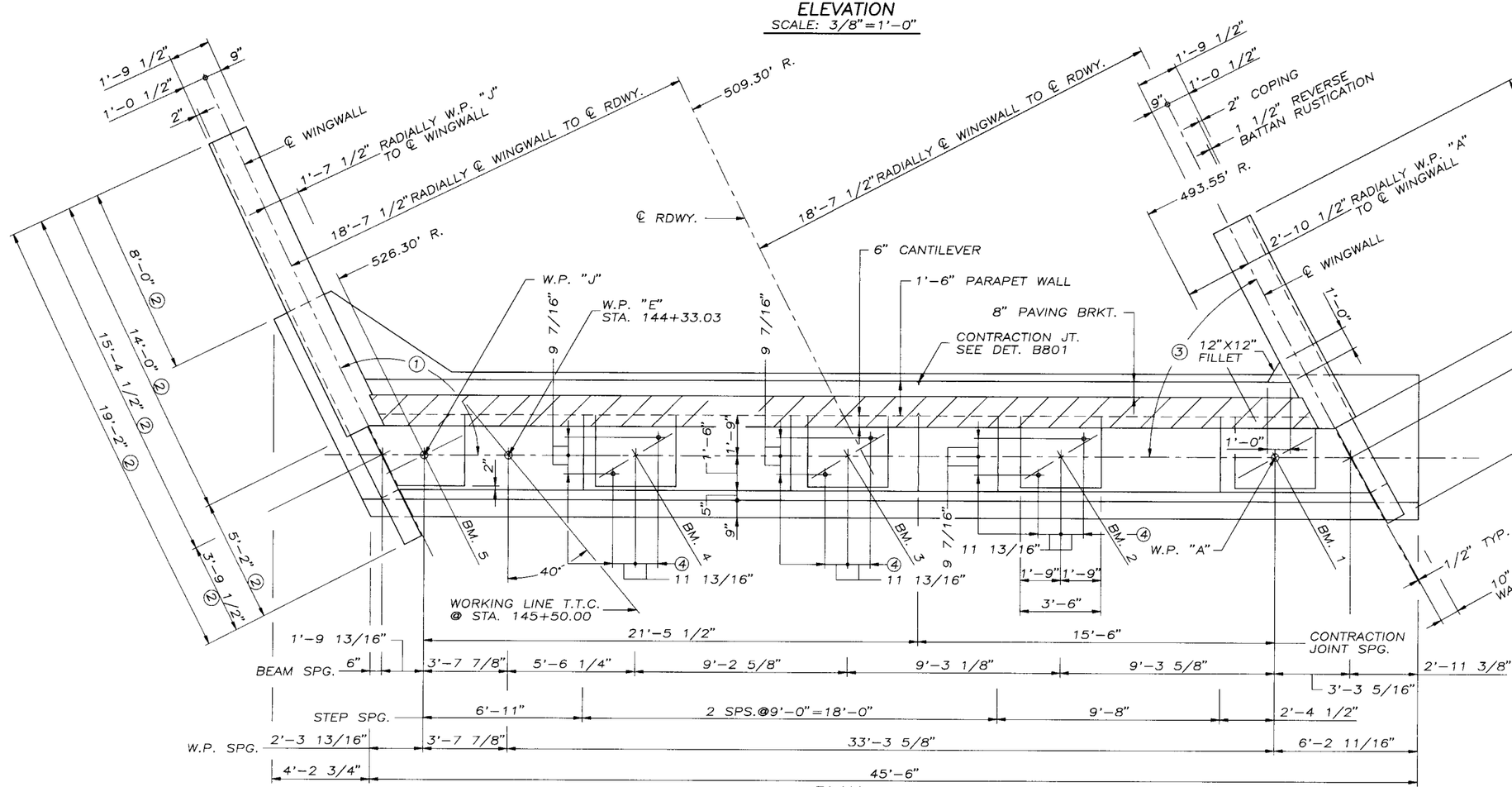
WEST ABUTMENT DETAILS

APPROVED:
S.P. 55-598-36
SHEET 4 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



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



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

CERTIFIED BY Dale Davis
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

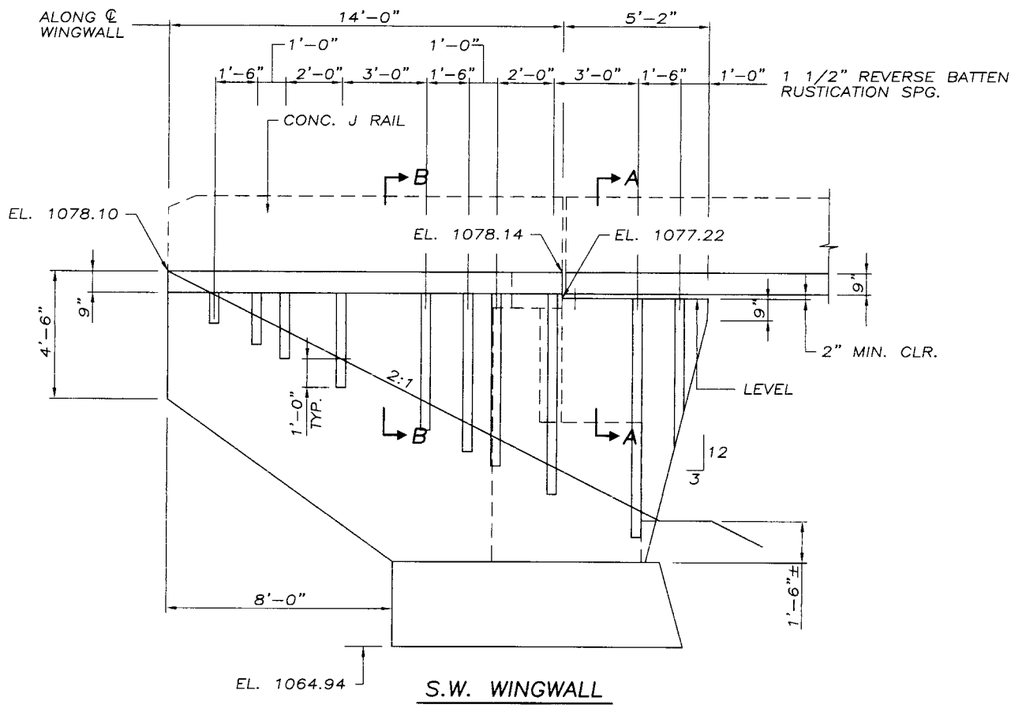
WEST ABUTMENT DETAILS

APPROVED:

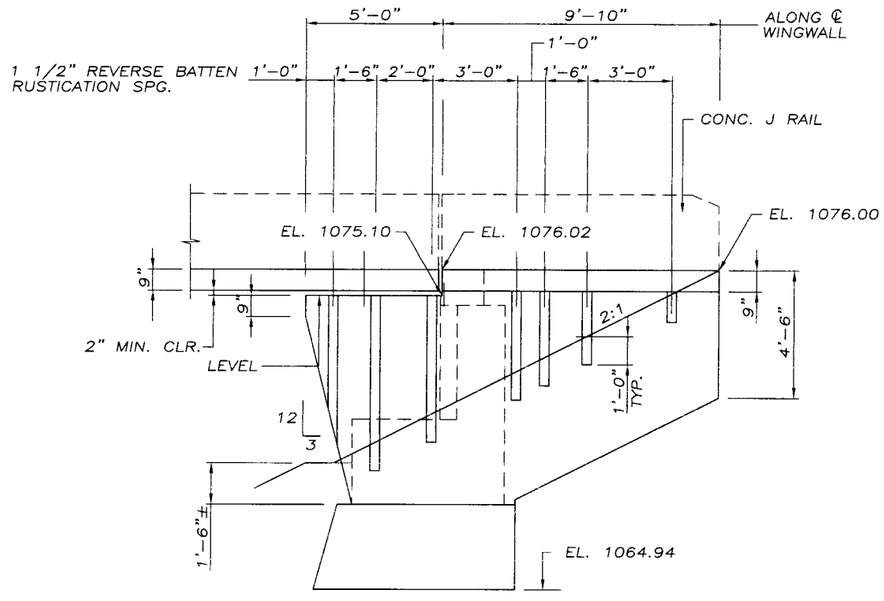
S.P. 55-598-36

SHEET 5 OF 40 SHEETS

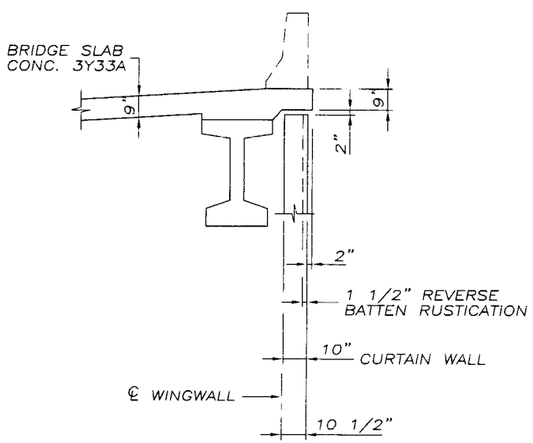
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



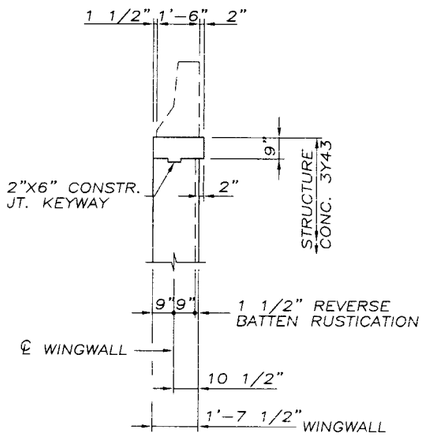
S.W. WINGWALL



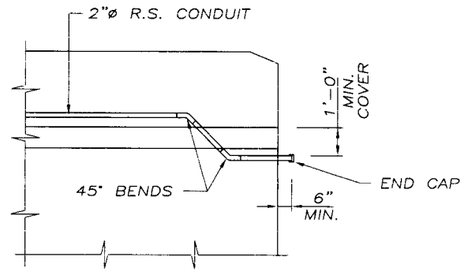
N.W. WINGWALL



SECTION A–A



SECTION B–B



NOTE: SEE SHEET 27 FOR ADDITIONAL INFORMATION.

TELEPHONE CONDUIT DETAIL

(NORTH RAIL & WINGWALLS ONLY)

AS-BUILT
MAR 0 9 2001
ENGINEERING

CERTIFIED BY Dale Drawer
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

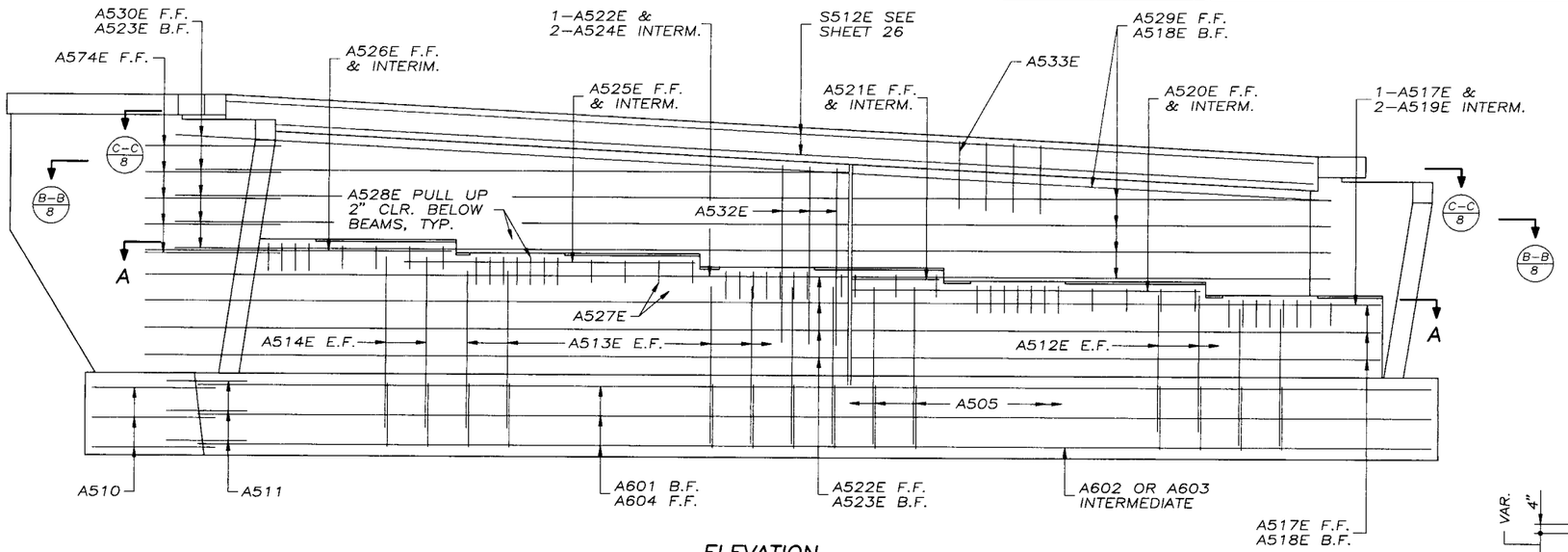
WEST ABUTMENT DETAILS

APPROVED:

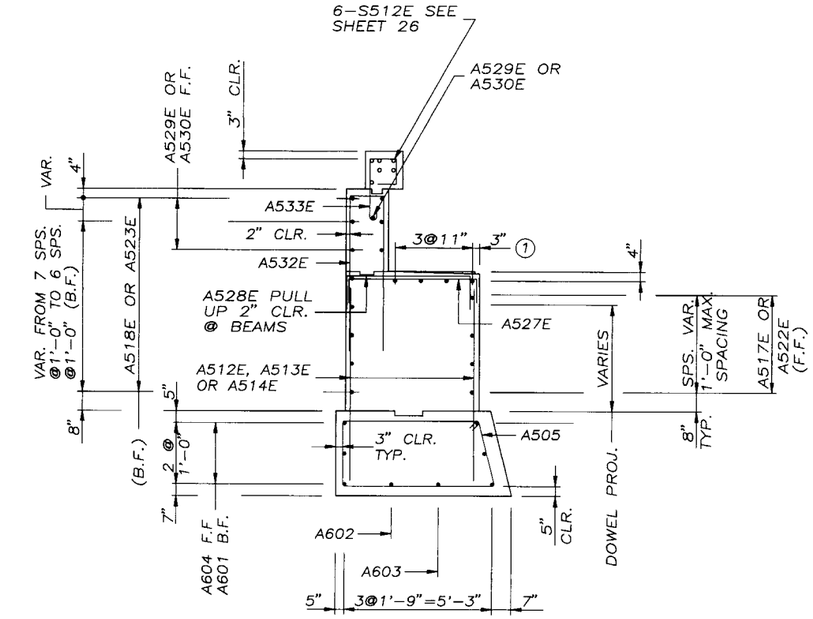
S.P. 55-598-36

SHEET 6 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	

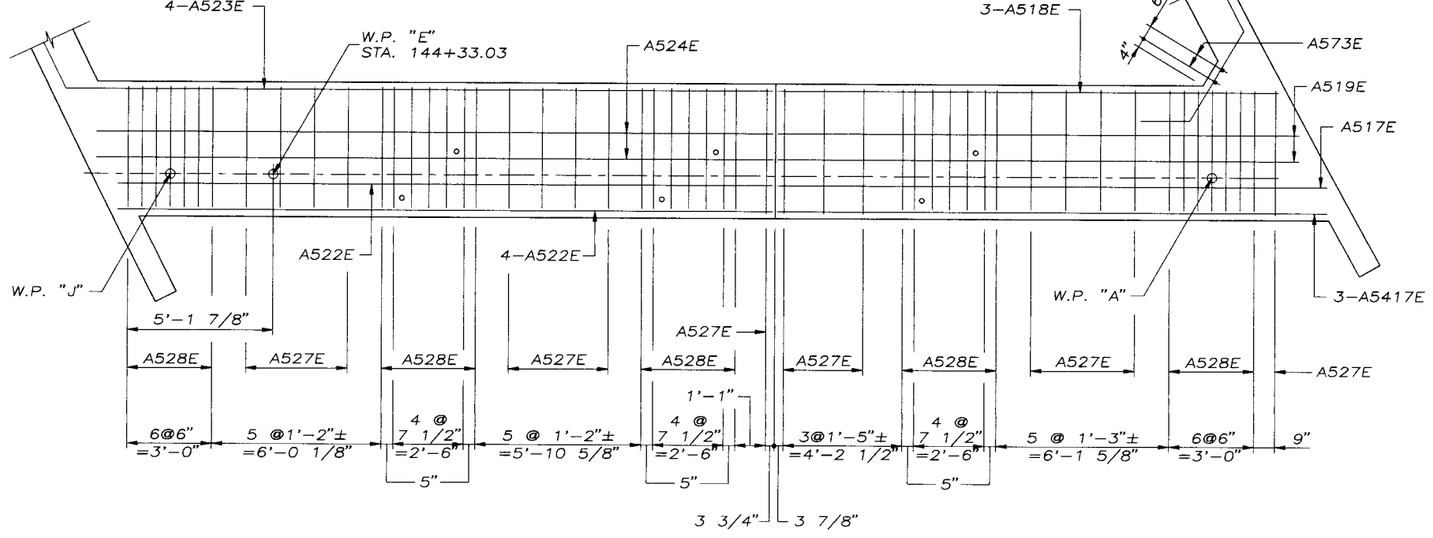


ELEVATION
SCALE: 3/8"=1'–0"



SECTION THRU ABUTMENT
PILING NOT SHOWN

(1) HORIZONTAL BRIDGE SEAT REINFORCEMENT



SECTION A–A
SCALE: 3/8"=1'–0"

F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE

AS-BUILT
MAR 09 2001
ENGINEERING

CERTIFIED BY Dale Drawer
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

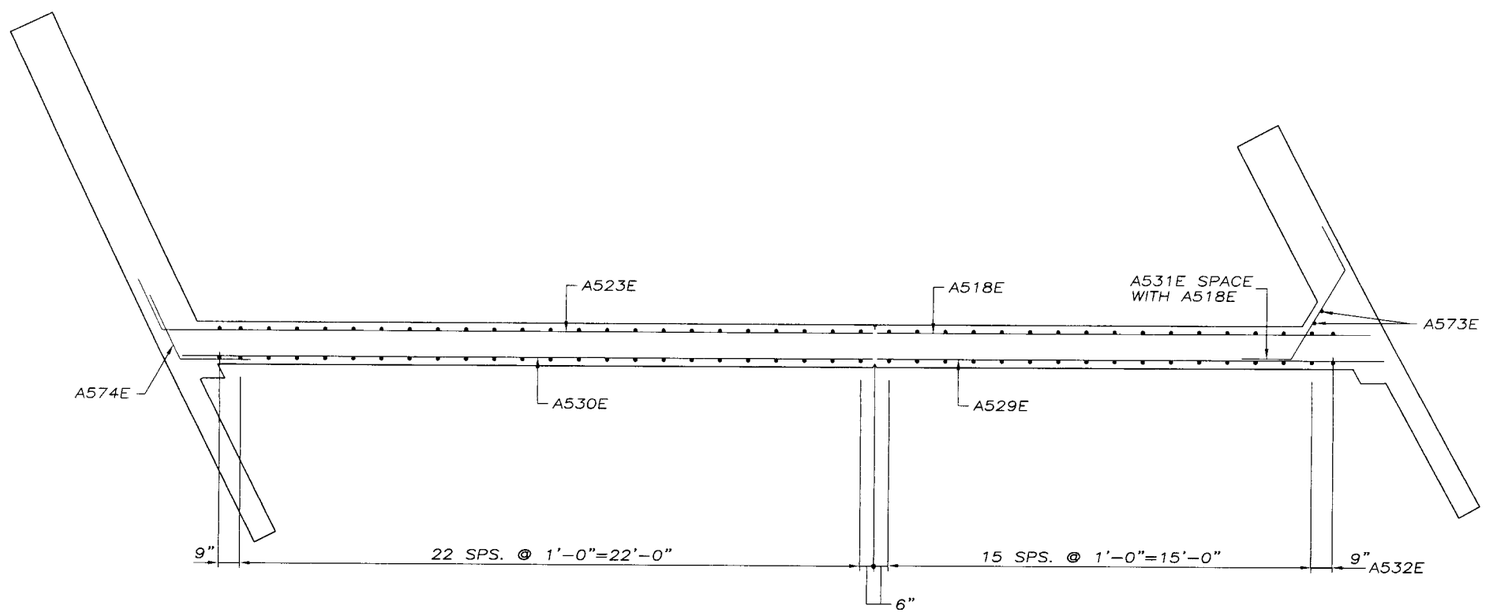
MINNESOTA DEPARTMENT
OF TRANSPORTATION

BRIDGE NO. 55556

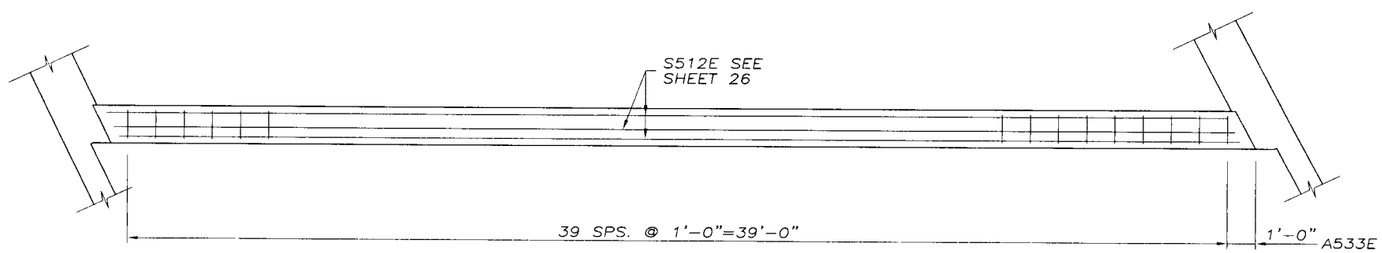
WEST ABUTMENT DETAILS

APPROVED:
S.P. 55–598–36
SHEET 7 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



SECTION B-B
SCALE: 3/8"=1'-0"



SECTION C-C
SCALE: 3/8"=1'-0"

AS-BUILT
MAR 09 2001
ENGINEERING

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT
OF TRANSPORTATION

BRIDGE NO. 55556

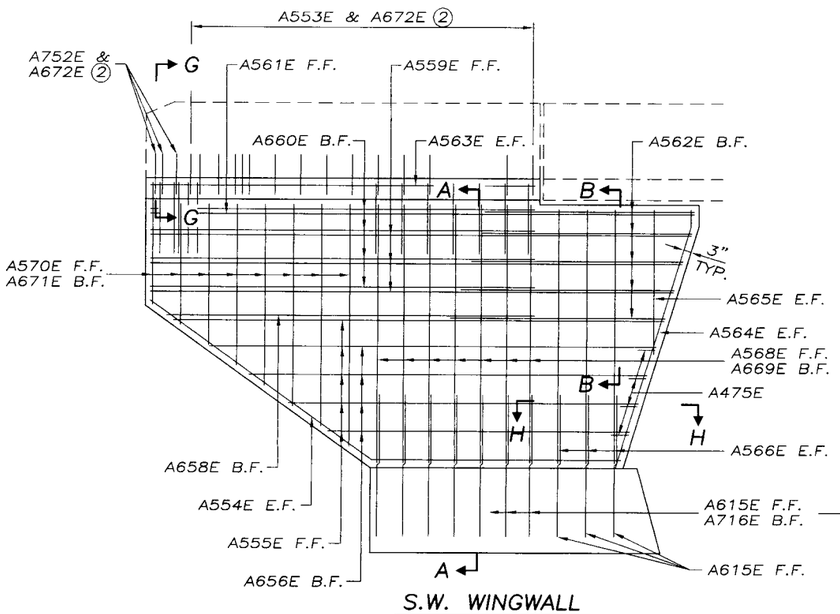
WEST ABUTMENT DETAILS

APPROVED:

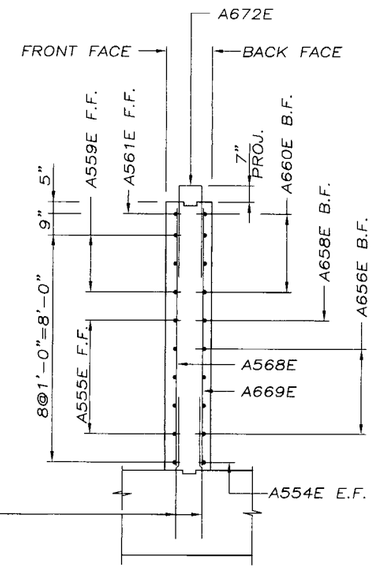
S.P. 55-598-36

SHEET 8 OF 40 SHEETS

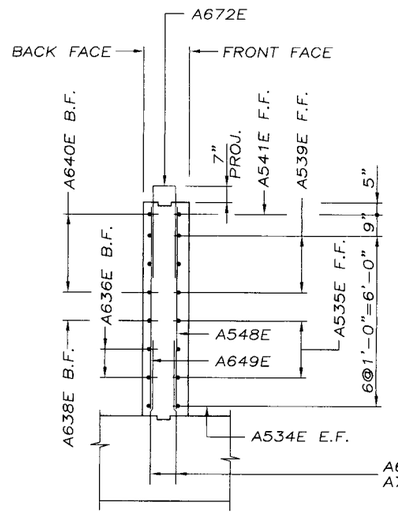
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



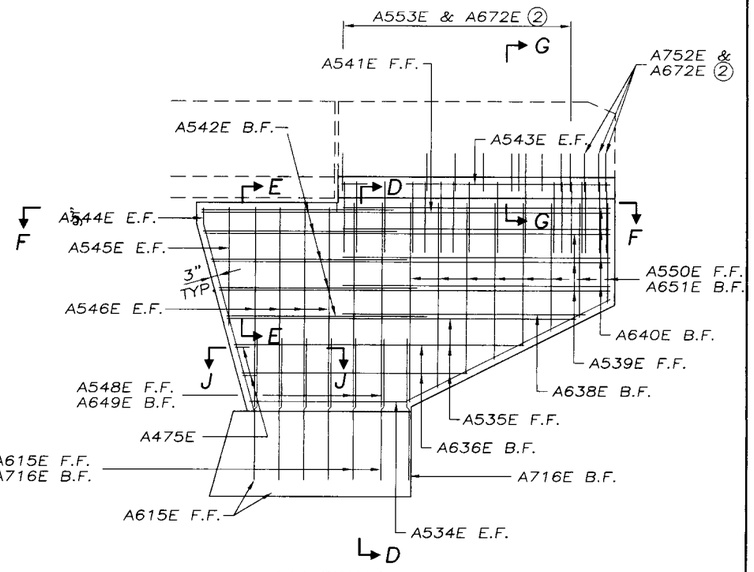
S.W. WINGWALL



SECTION A–A

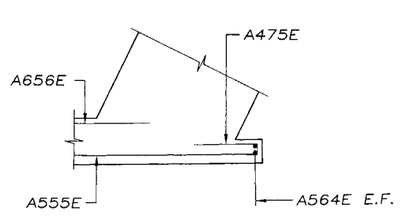


SECTION D–D



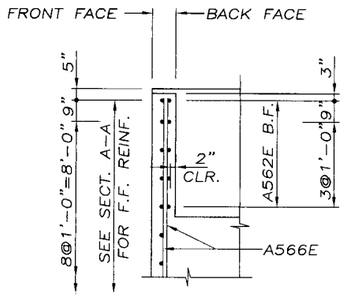
N.W. WINGWALL

NOTE: SEE TELEPHONE CONDUIT DETAIL, SHEET 6

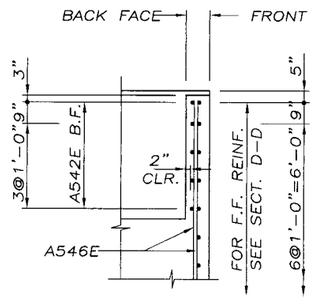


SECTION H–H

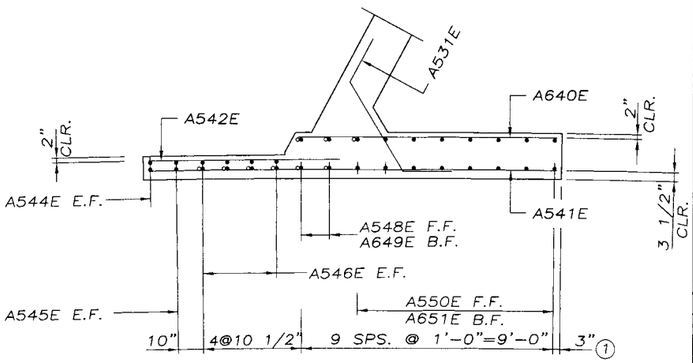
SEE SECTION C–C FOR VERT. BARS



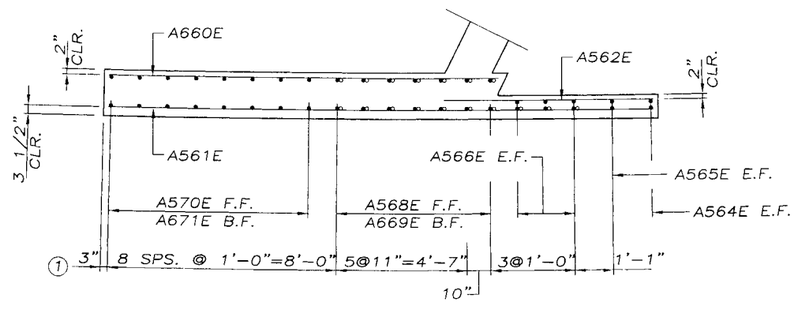
SECTION B–B



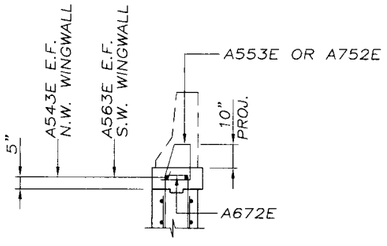
SECTION E–E



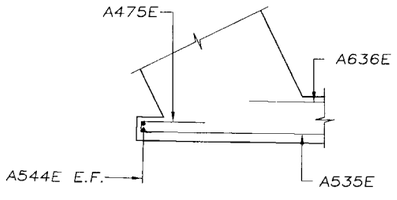
SECTION F–F



SECTION C–C



SECTION G–G



SECTION J–J

SEE SECTION F–F FOR VERT. BARS

(1) SPACING IS ALONG ℄ WINGWALL

(2) SEE CONC. J RAIL SHEET 28 FOR SPG.

RECEIVED MAR 19 2001 ENGINEERING

CERTIFIED BY Dale Draves PROFESSIONAL ENGINEER

REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

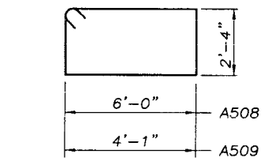
WEST ABUTMENT DETAILS

APPROVED:

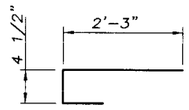
S.P. 55-598-36

SHEET 9 OF 40 SHEETS

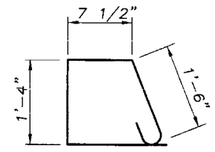
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



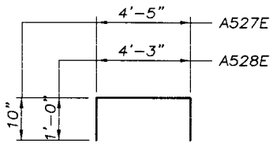
A508 & A509



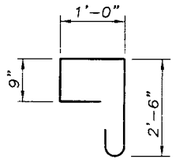
A475E



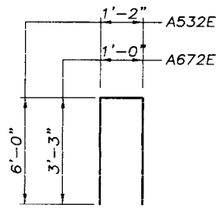
A752E & A553E



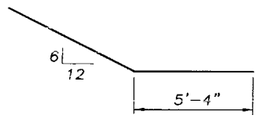
A527E & A528E



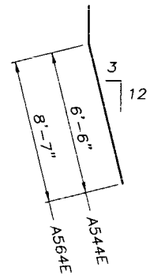
A533E



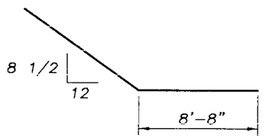
A532E & A672E



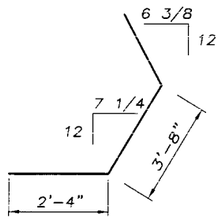
A534E



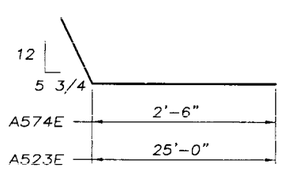
A544E & A564E



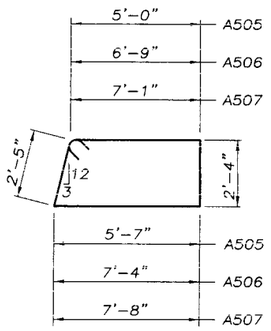
A554E



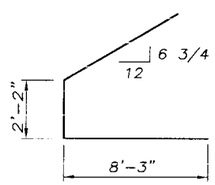
A531E



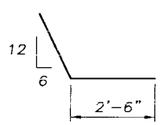
A523E & A574E



A505, A506 & A507



A510



A511

BILL OF REINFORCEMENT ~ WEST ABUTMENT

BAR	NO.	LENGTH	SHAPE	LOCATION
A601	3	47'-10"	STRT.	FTG. ~ LONGITUDINAL
A602	1	46'-11"	STRT.	FTG. ~ LONGITUDINAL
A603	1	46'-1"	STRT.	FTG. ~ LONGITUDINAL
A604	3	45'-3"	STRT.	FTG. ~ LONGITUDINAL
A505	30	16'-3"	BENT	FTG. ~ TIE
A506	1	19'-9"	BENT	FTG. ~ TIE
A507	1	20'-5"	BENT	FTG. ~ TIE
A508	1	17'-7"	BENT	FTG. ~ TIE
A509	1	13'-9"	BENT	FTG. ~ TIE
A510	3	18'-6"	BENT	FTG. ~ TIE
A511	3	5'-0"	BENT	FTG. ~ TIE
A512E	20	5'-2"	STRT.	FTG. ~ DOWEL
A513E	24	6'-1"	STRT.	FTG. ~ DOWEL
A514E	11	7'-1"	STRT.	FTG. ~ DOWEL
A615E	16	4'-11"	STRT.	FTG. ~ DOWEL
A716E	10	5'-6"	STRT.	FTG. ~ DOWEL
A517E	4	19'-4"	STRT.	BRIDGE SEAT ~ HORIZ.
A518E	8	17'-6"	STRT.	BR. SEAT & PARAPET WALL~HORIZ.
A519E	2	18'-4"	STRT.	BRIDGE SEAT ~ HORIZ.
A520E	4	12'-10"	STRT.	BRIDGE SEAT ~ HORIZ.
A521E	4	3'-2"	STRT.	BRIDGE SEAT ~ HORIZ.
A522E	5	23'-2"	STRT.	BR. SEAT & PARAPET WALL~HORIZ.
A523E	9	27'-0"	BENT	BR. SEAT & PARAPET WALL~HORIZ.
A524E	2	24'-0"	STRT.	BRIDGE SEAT ~ HORIZ.
A525E	4	11'-0"	STRT.	BRIDGE SEAT ~ HORIZ.
A526E	4	8'-6"	STRT.	BRIDGE SEAT ~ HORIZ.
A527E	17	6'-1"	BENT	BRIDGE SEAT ~ TIE
A528E	35	6'-3"	BENT	BRIDGE SEAT ~ TIE
A529E	6	18'-0"	STRT.	PARAPET WALL ~ HORIZ.
A530E	6	24'-6"	STRT.	PARAPET WALL ~ HORIZ.
A531E	6	8'-0"	BENT	PARAPET WALL ~ FILLET (HORIZ.)
A532E	41	13'-2"	BENT	PARAPET WALL ~ VERTICAL
A533E	40	5'-5"	BENT	PARAPET WALL ~ TIE
A534E	2	13'-4"	BENT	N.W. WING ~ HORIZ.
A535E	1 SER. OF 3	7'-10" TO 12'-5"	STRT.	N.W. WING ~ HORIZ.
A636E	1 SER. OF 2	7'-7" TO 9'-7"	STRT.	N.W. WING ~ HORIZ.
A638E	1	8'-4"	STRT.	N.W. WING ~ HORIZ.
A539E	1 SER. OF 3	13'-9" TO 14'-3"	STRT.	N.W. WING ~ HORIZ.
A640E	4	9'-2"	STRT.	N.W. WING ~ HORIZ.
A541E	1	14'-4"	STRT.	N.W. WING ~ HORIZ.
A542E	5	6'-10"	STRT.	N.W. WING ~ HORIZ.
A543E	2	9'-6"	STRT.	N.W. WING ~ HORIZ.
A544E	2	7'-1"	BENT	N.W. WING ~ VERTICAL
A545E	2	3'-8"	STRT.	N.W. WING ~ VERTICAL
A546E	8	6'-10"	STRT.	N.W. WING ~ VERTICAL
A548E	2	7'-0"	STRT.	N.W. WING ~ VERTICAL
A649E	2	7'-0"	STRT.	N.W. WING ~ VERTICAL
A550E	1 SER. OF 8	3'-6" TO 6'-11"	STRT.	N.W. WING ~ VERTICAL
A651E	1 SER. OF 8	3'-6" TO 6'-11"	STRT.	N.W. WING ~ VERTICAL
A752E	6	5'-0"	BENT	WINGWALL ~ TIE
A553E	30	5'-0"	BENT	WINGWALL ~ TIE
A554E	2	18'-4"	BENT	S.W. WING ~ HORIZ.
A555E	1 SER. OF 5	10'-8" TO 17'-3"	STRT.	S.W. WING ~ HORIZ.
A656E	1 SER. OF 4	10'-3" TO 14'-6"	STRT.	S.W. WING ~ HORIZ.
A658E	1	12'-10"	STRT.	S.W. WING ~ HORIZ.
A559E	1 SER. OF 3	18'-3" TO 18'-9"	STRT.	S.W. WING ~ HORIZ.
A660E	4	13'-7"	STRT.	S.W. WING ~ HORIZ.
A561E	1	18'-10"	STRT.	S.W. WING ~ HORIZ.
A562E	5	7'-0"	STRT.	S.W. WING ~ HORIZ.
A563E	2	13'-7"	STRT.	S.W. WING ~ HORIZ.
A564E	2	9'-2"	BENT	S.W. WING ~ VERTICAL
A565E	2	4'-10"	STRT.	S.W. WING ~ VERTICAL
A566E	6	8'-11"	STRT.	S.W. WING ~ VERTICAL
A568E	7	9'-1"	STRT.	S.W. WING ~ VERTICAL
A669E	7	9'-1"	STRT.	S.W. WING ~ VERTICAL
A570E	1 SER. OF 8	3'-6" TO 8'-6"	STRT.	S.W. WING ~ VERTICAL
A671E	1 SER. OF 8	3'-6" TO 8'-6"	STRT.	S.W. WING ~ VERTICAL

SUMMARY OF QUANTITIES ~ WEST ABUTMENT

	STRUCTURE CONCRETE (1A43)	33	CU. YD.
	STRUCTURE CONCRETE (3Y43)	53	CU. YD.
	REINFORCEMENT BARS	1220	POUND
	REINFORCEMENT BARS, EPOXY COATED	4820	POUND
①	STRUCTURE EXCAVATION	.5	LUMP SUM
	C.I.P. CONCRETE TEST PILES, 70 FT. LONG, 12"	2	EACH
②	C.I.P. CONCRETE PILING DRIVEN, 12"	480	LIN. FT.
②	C.I.P. CONCRETE PILING DELIVERED, 12"	480	LIN. FT.
	PILE POINTS, 12"	10	EACH

① SEE SPECIAL PROVISIONS.

② DOES NOT INCLUDE TEST PILES.

BILL OF REINFORCEMENT ~ WEST ABUTMENT (CONT'D)

A672E	36	7'-4"	BENT	WINGWALL ~ TIE
A573E	2	5'-8"	STRT.	FILLET ~ VERTICAL
A574E	5	5'-0"	BENT	PARAPET WALL~HORIZ.
A475E	6	3'-0"	BENT	WINGWALL ~ HORIZ.

AS-BUILT
MAR 15 2000
ENGINEERING

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

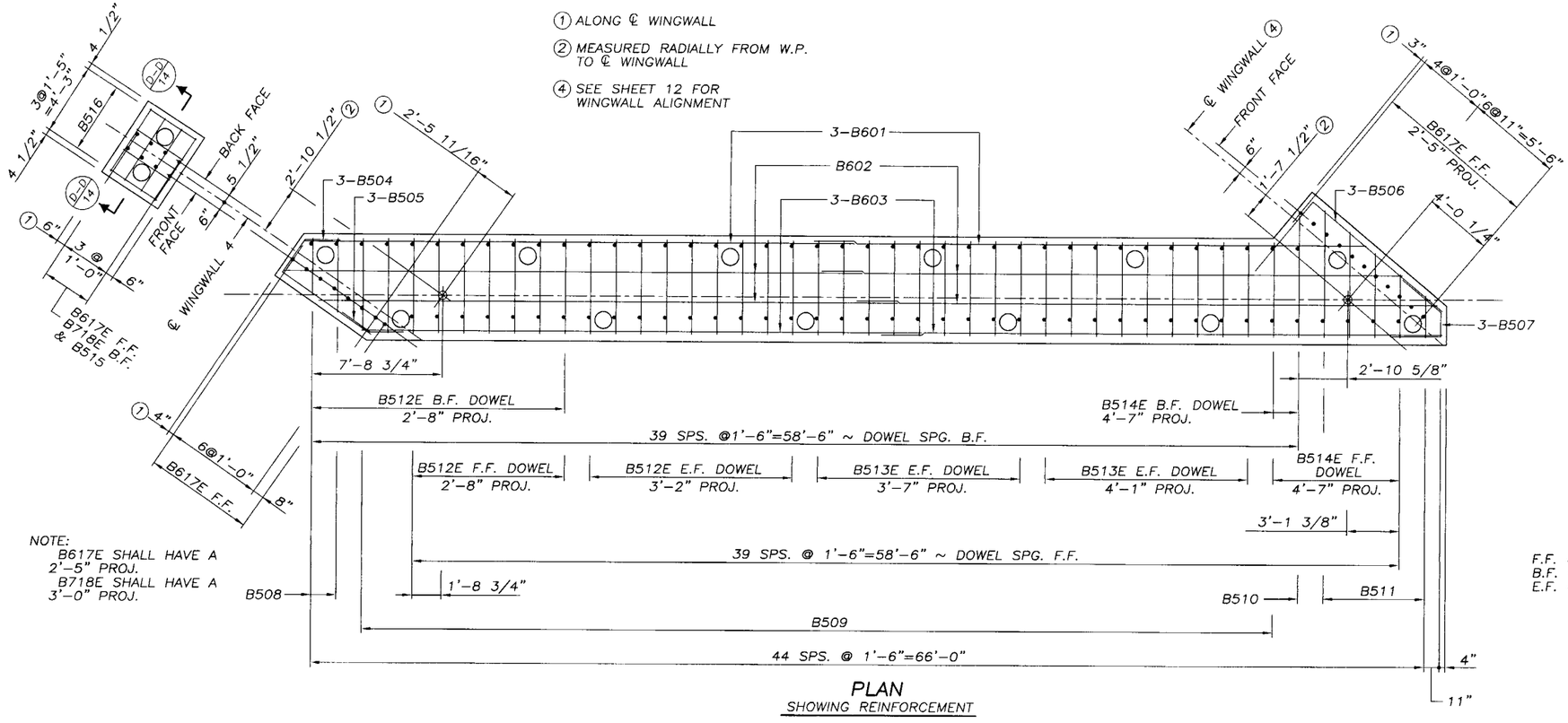
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556
WEST ABUTMENT REINFORCEMENT

APPROVED:

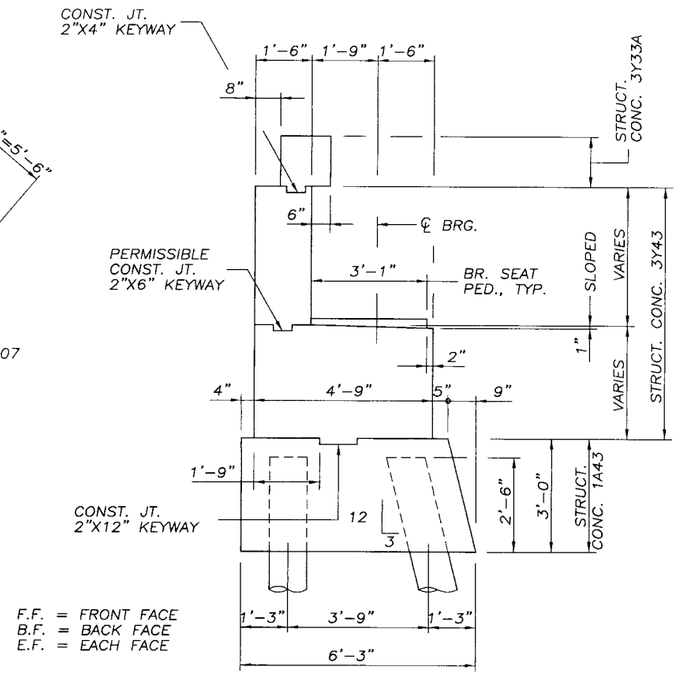
S.P. 55-598-36
SHEET 10 OF 40 SHEETS

DES.:	CSK	DRN.:	DM	55556
CHK.:	RB	CHK.:	CSK	

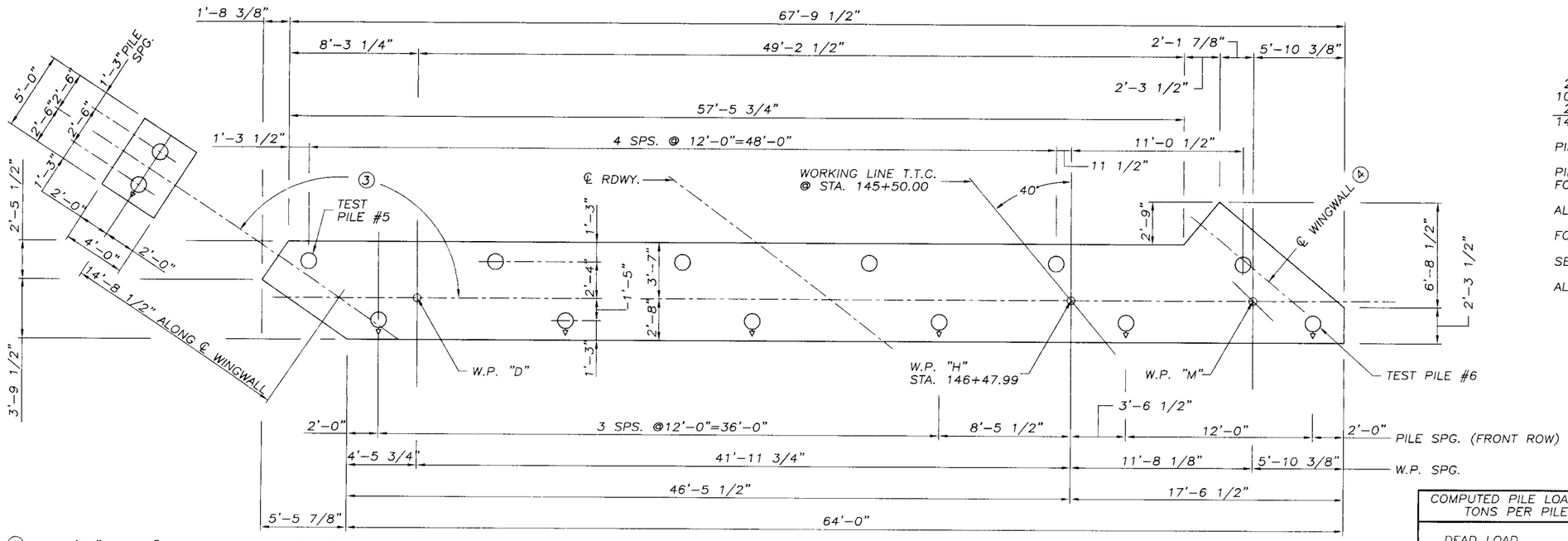


NOTE:
B617E SHALL HAVE A 2'-5" PROJ.
B718E SHALL HAVE A 3'-0" PROJ.

PLAN
SHOWING REINFORCEMENT



SECTION THRU ABUTMENT
SCALE: 1/2"=1'-0"



③ 146°09'12" FROM ℄ BRG. TO CHORD OF ARC ALONG ℄ WINGWALL. CHORD OF WINGWALL ARC IS FROM ℄ BRG. TO ℄ PEDESTAL FOOTING. WINGWALL IS CURVED.

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

PILE NOTES:

2 – C.I.P. CONC. TEST PILES, 70 FT. LG.
10 – C.I.P. CONC. PILES, EST. LENGTH 60 FT. LG.
2 – C.I.P. CONC. WINGWALL PILES, EST. LENGTH 60 FT. LG.
14 – C.I.P. CONC. PILES REQ'D. FOR EAST ABUT.
AVERAGE DRIVEN ELEV. 1005.00

PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.

PILES MARKED THUS ◇▸ TO BE BATTERED 3" PER FOOT IN THE DIRECTION SHOWN.

ALL PILING SHALL HAVE A NOMINAL DIA. OF 12".

FOR PILE SPLICE DETAILS SEE DETAIL B201.

SEE SURVEY SHEET FOR TEST PILE LOCATIONS.

ALL PILES SHALL HAVE PILE POINTS.

AS-BUILT MAR 0 9 2001 ENGINEERING

COMPUTED PILE LOADS ~ TONS PER PILE	
DEAD LOAD	48.3
LIVE LOAD	11.0
TOTAL	59.3

CERTIFIED BY Dale Draves PROFESSIONAL ENGINEER
REG. NO. 20666 1996

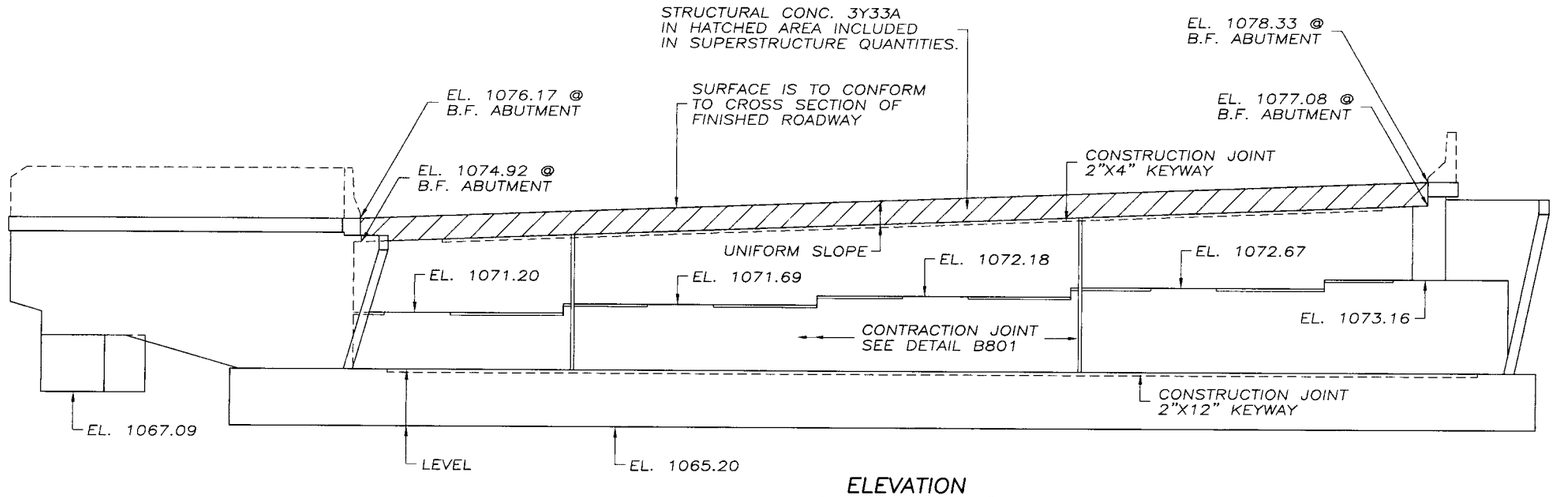
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

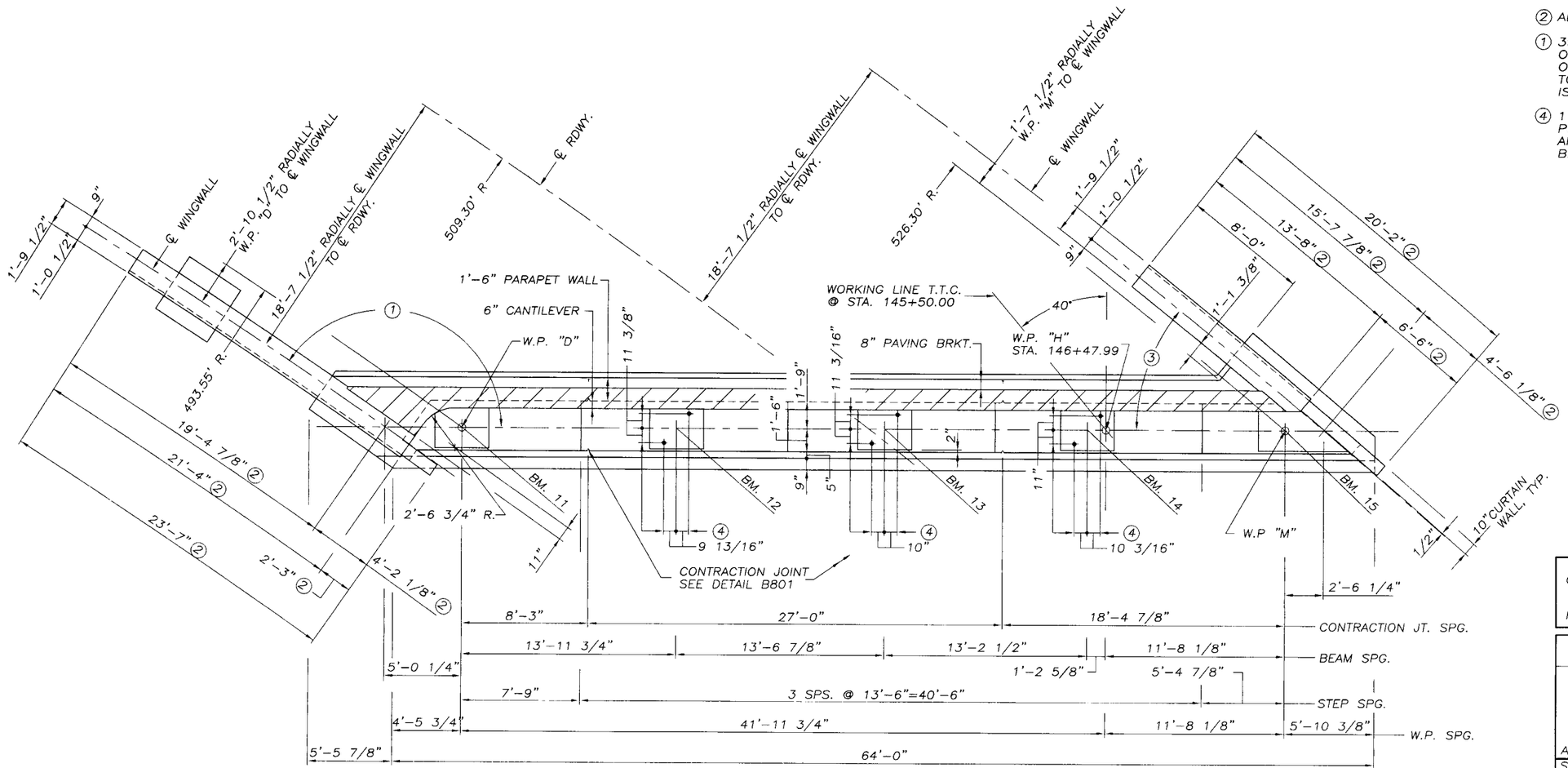
EAST ABUTMENT DETAILS

APPROVED:
S.P. 55-598-36
SHEET 11 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



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



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

① 146°25'44" FROM ℄ BRG. TO CHORD OF ARC ALONG ℄ WINGWALL. CHORD OF WINGWALL ARC IS FROM ℄ BRG. TO END OF WINGWALL. WINGWALL IS CURVED.

② ALONG ℄ WINGWALL.

① 39°19'35" FROM ℄ BRG. TO CHORD OF ARC ALONG ℄ WINGWALL. CHORD OF WINGWALL ARC IS FROM ℄ BRG. TO END OF WINGWALL. WINGWALL IS CURVED.

④ 1 1/2"ø ANCHOR RODS FOR CURVED PLATE BRG. ASS'Y. SEE DETAIL B310. ANCHOR RODS INCLUDED IN PRICE BID FOR BEARING ASSEMBLIES.

AS-BUILT
MAR 09 2001
ENGINEERING

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

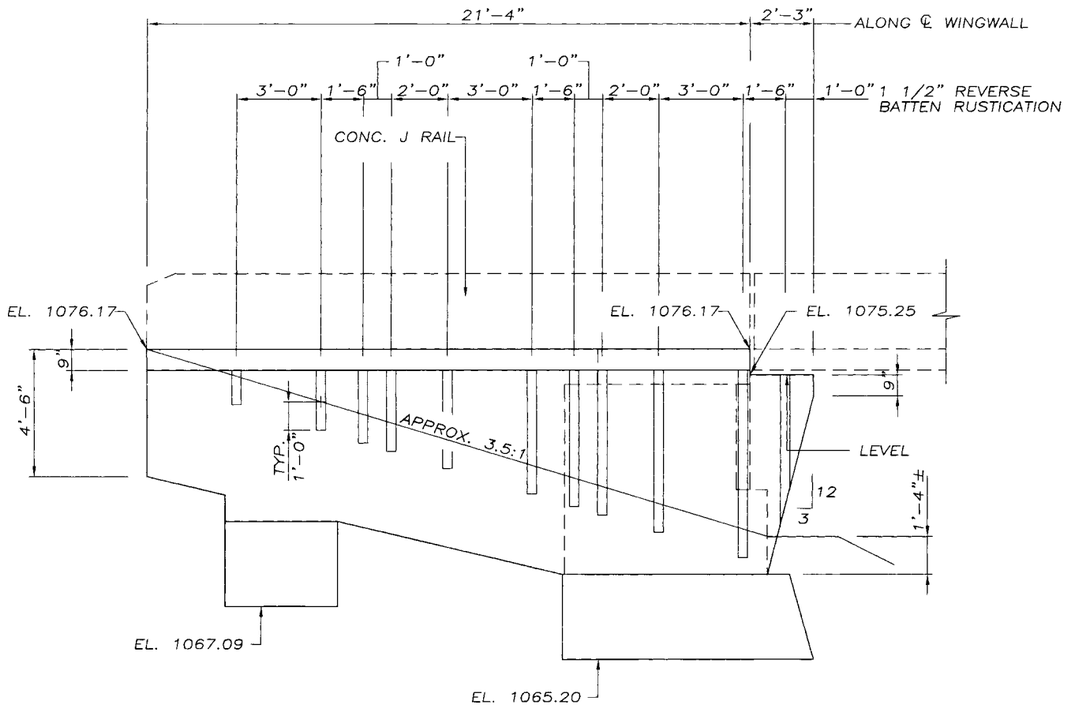
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

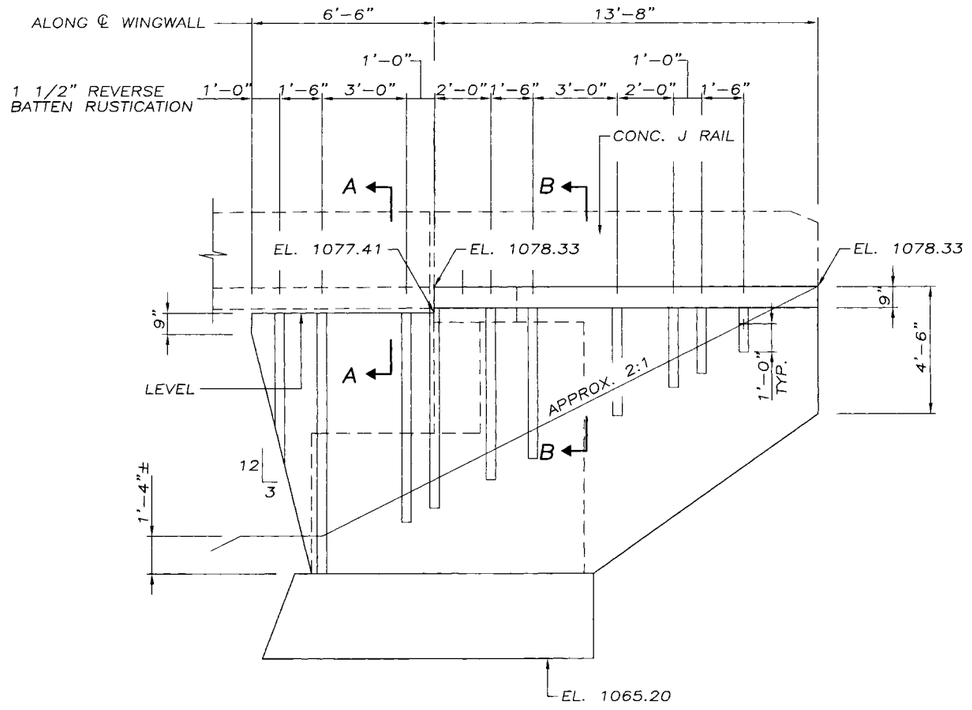
EAST ABUTMENT DETAILS

APPROVED:
S.P. 55-598-36
SHEET 12 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	

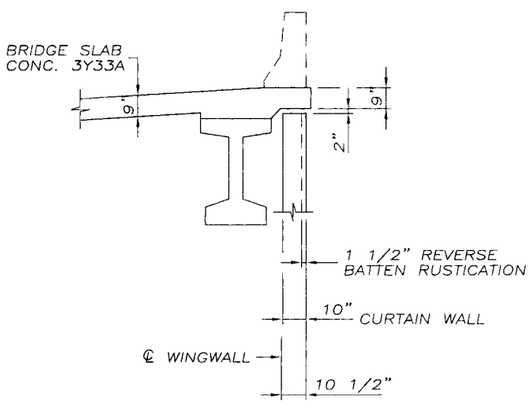


N.E. WINGWALL

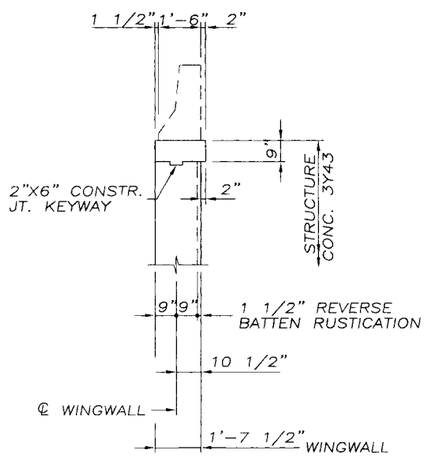


S.E. WINGWALL

NOTE: SEE TELEPHONE CONDUIT DETAIL FOR NORTH WING-WALL ON SHEET 6.



SECTION A-A



SECTION B-B

AS-BUILT
MAR 19 2001
ENGINEERING

CERTIFIED BY Dale Drowes
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

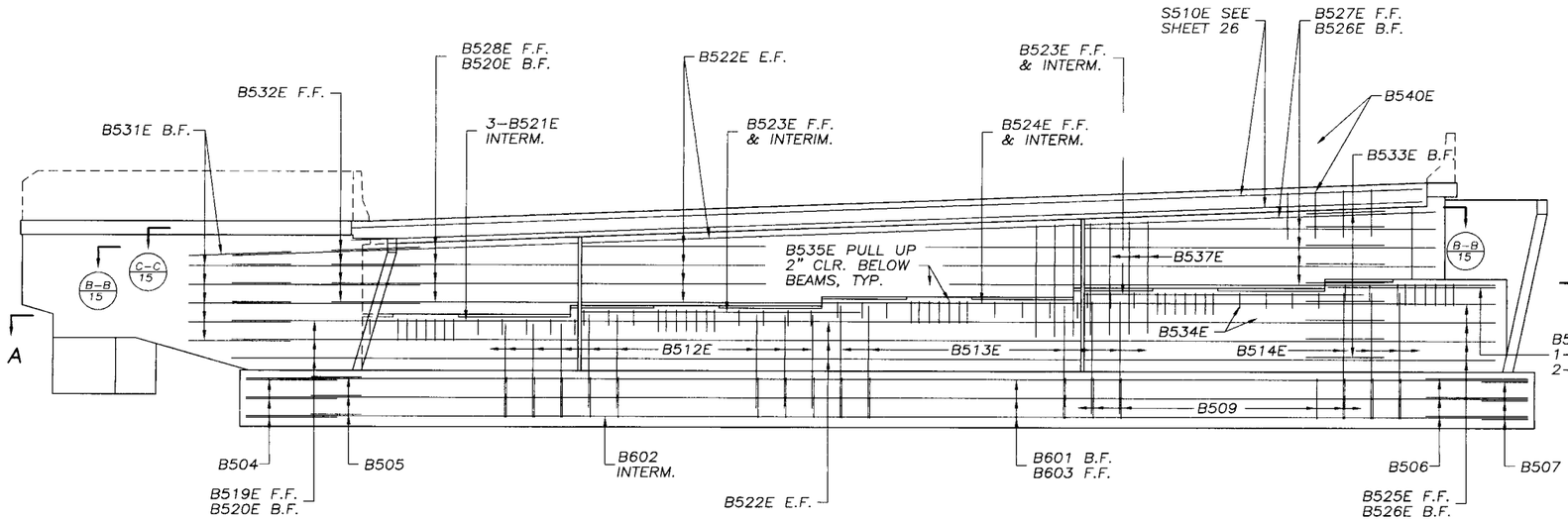
EAST ABUTMENT DETAILS

APPROVED:

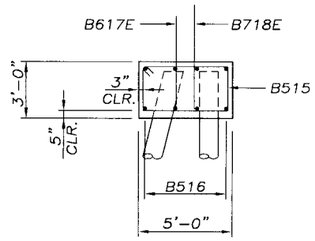
S.P. 55-598-36

SHEET 13 OF 40 SHEETS

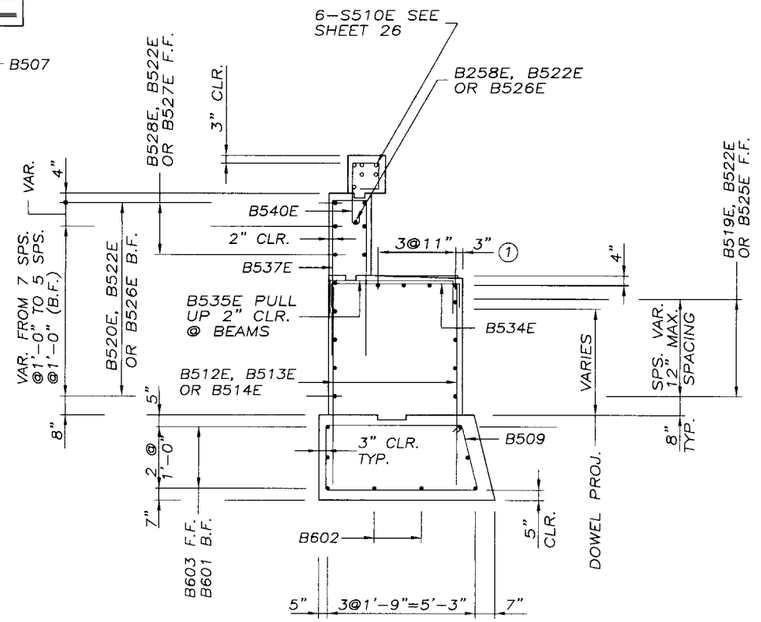
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



ELEVATION
SCALE: 1/4"=1'-0"

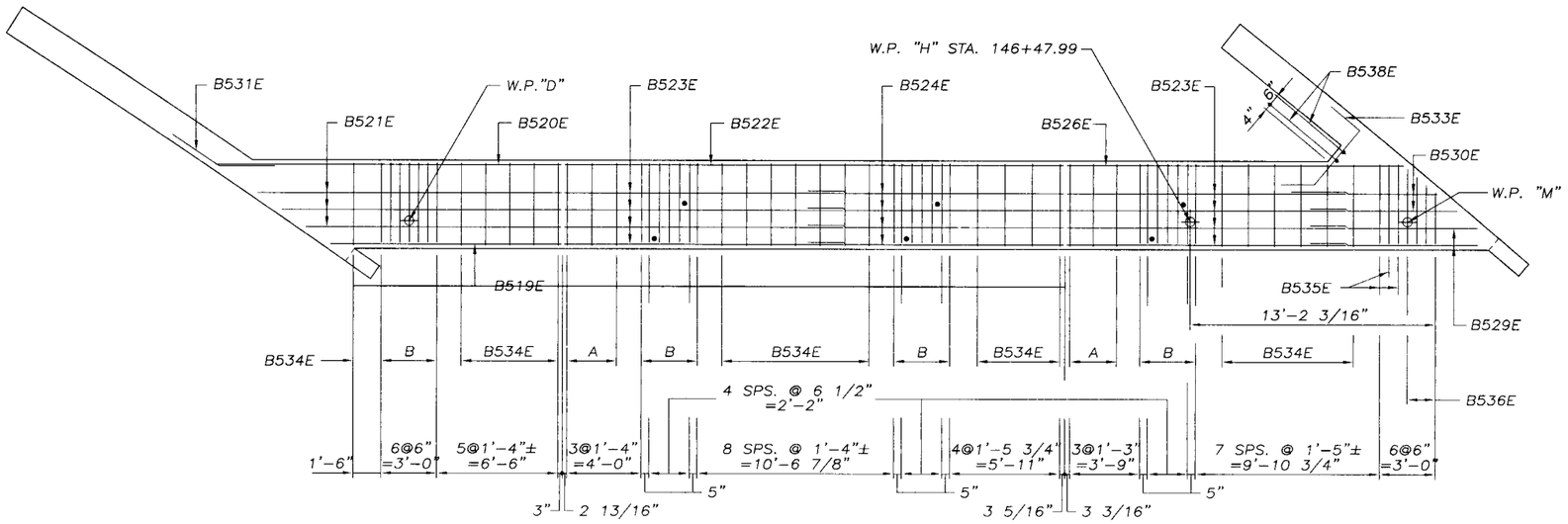


SECTION D-D
(FROM SHEET 11)
SCALE: 1/4"=1'-0"



SECTION THRU ABUTMENT
PILING NOT SHOWN

(1) HORIZONTAL BRIDGE SEAT REINFORCEMENT



A = B534E
B = B535E

SECTION A-A
SCALE: 1/4"=1'-0"

F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE

RECEIVED
MAR 19 2001
ENGINEERING

CERTIFIED BY Dale Drews
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

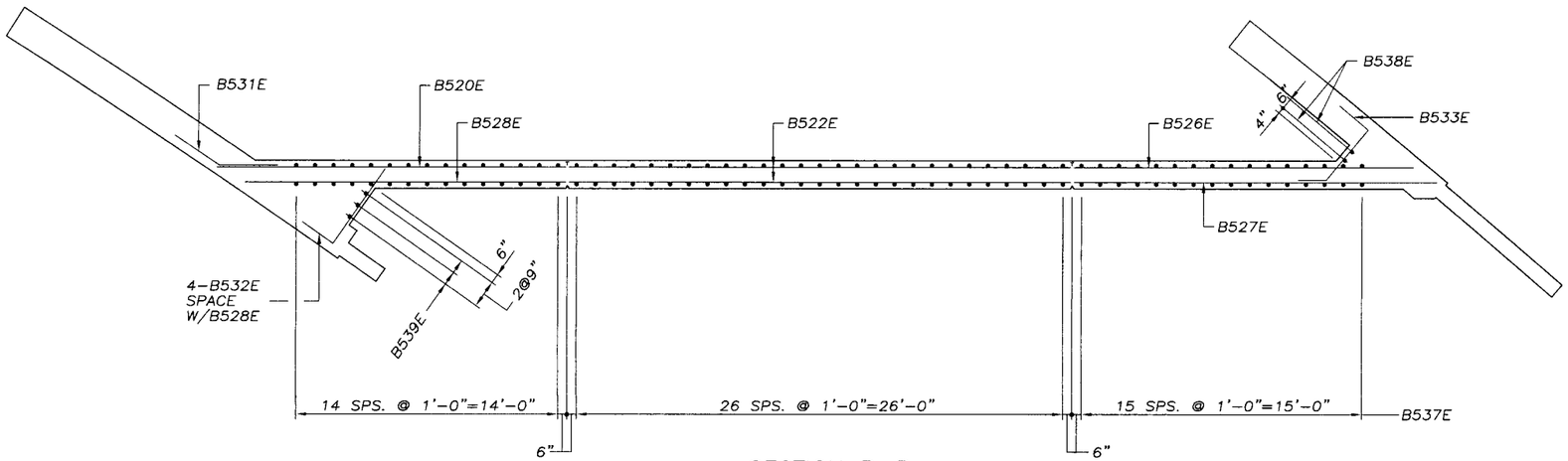
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

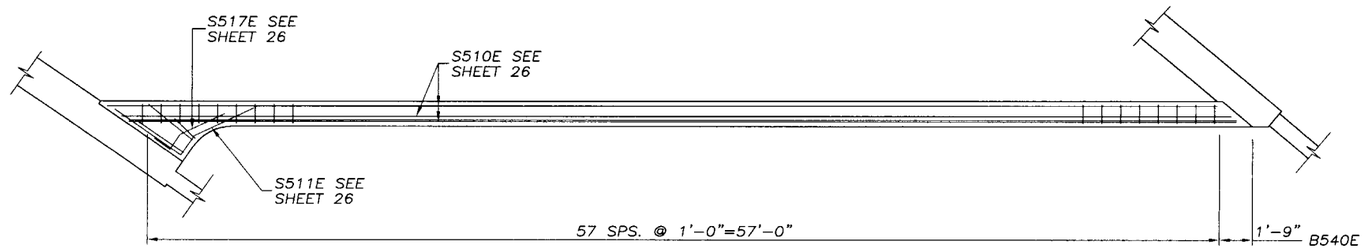
EAST ABUTMENT DETAILS

APPROVED:
S.P. 55-598-36
SHEET 14 OF 40 SHEETS

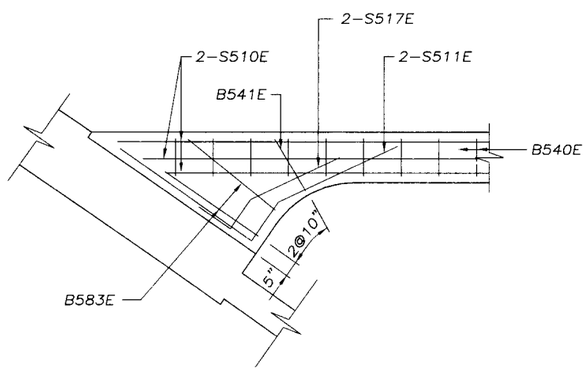
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



SECTION B-B
SCALE: 1/4"=1'-0"



SECTION C-C
SCALE: 1/4"=1'-0"



AS-BUILT
MAR 0 9 2001
ENGINEERING

CERTIFIED BY _____ PROFESSIONAL ENGINEER

REG. NO. 20666 1996

MINNESOTA DEPARTMENT
OF TRANSPORTATION

BRIDGE NO. 55556

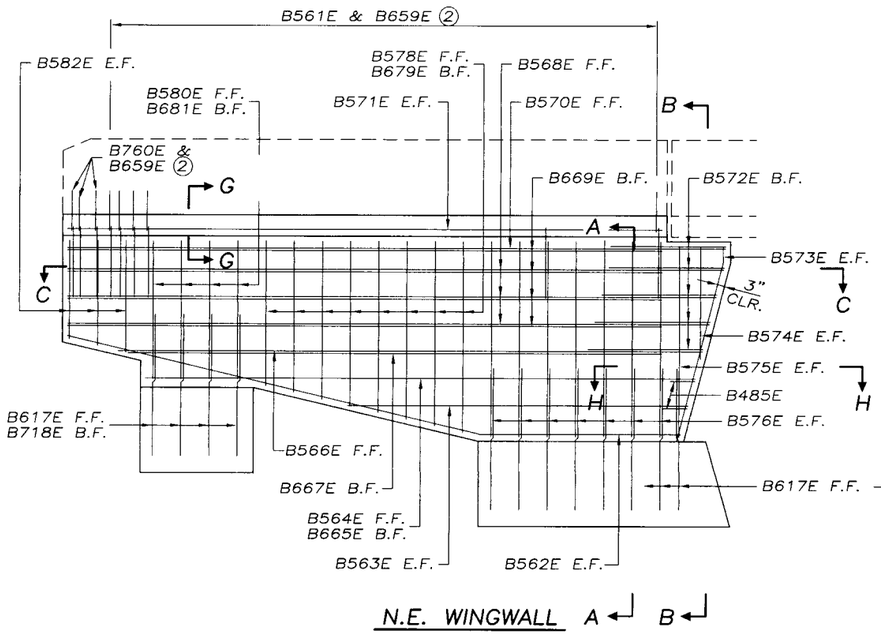
EAST ABUTMENT DETAILS

APPROVED:

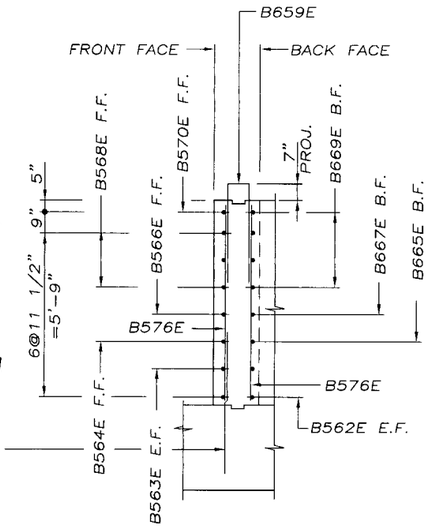
S.P. 55-598-36

SHEET 15 OF 40 SHEETS

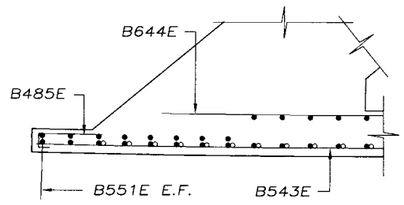
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



N.E. WINGWALL A B

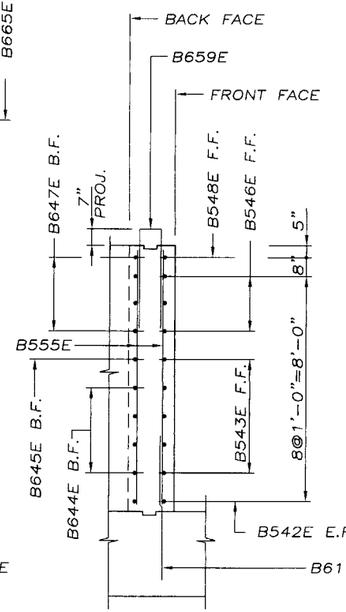


SECTION A–A

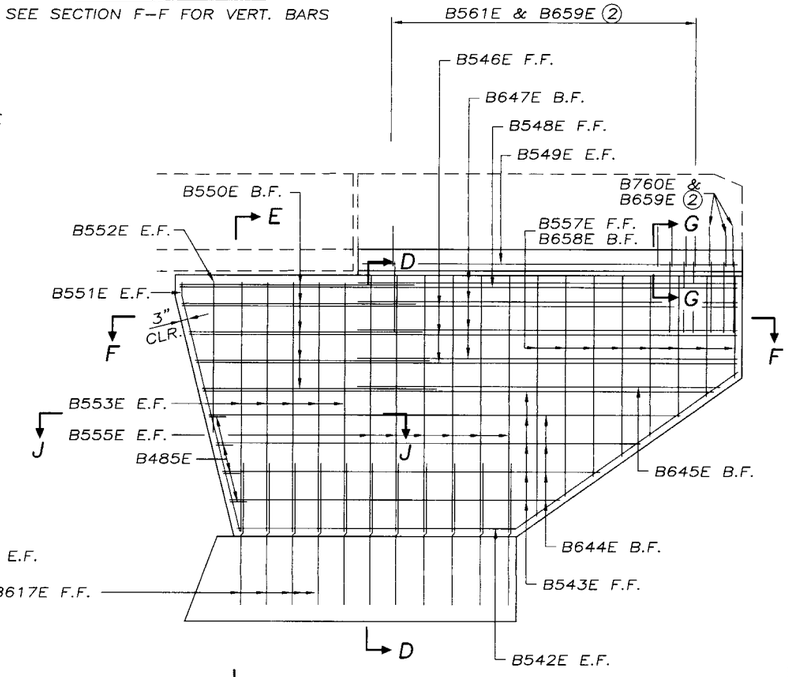


SECTION J–J

SEE SECTION F–F FOR VERT. BARS

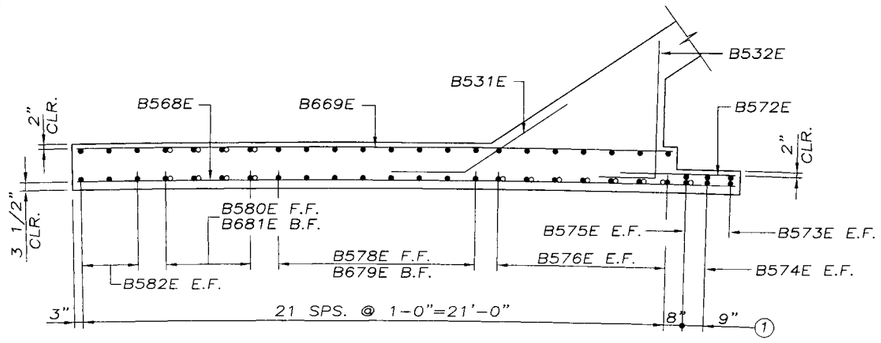


SECTION D–D

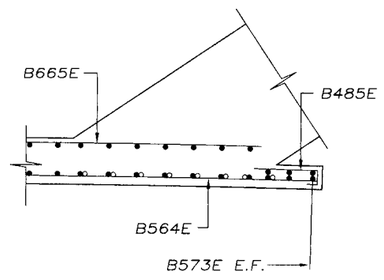


D

E S.E. WINGWALL

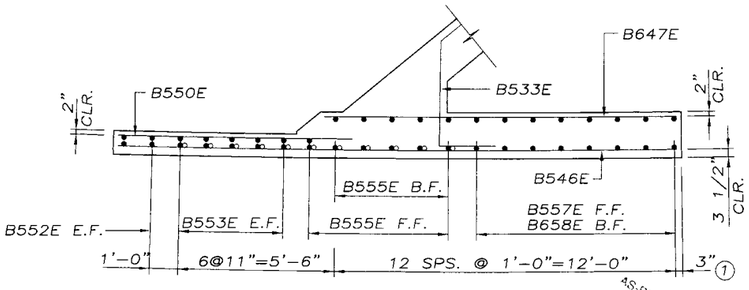


SECTION C–C



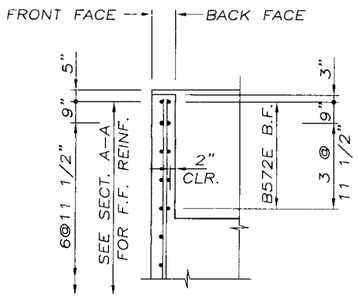
SECTION H–H

SEE SECTION C–C FOR VERT. BARS

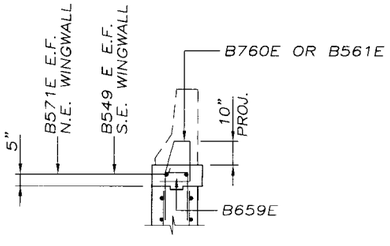


SECTION F–F

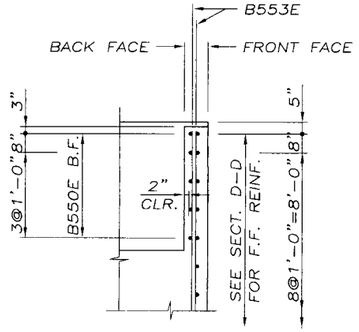
AS-BUILT
MAR 09 2001
ENGINEERING



SECTION B–B



SECTION G–G



SECTION E–E

NOTE: SEE TELEPHONE CONDUIT DETAIL, SHEET 6.

B.F. = BACK FACE
F.F. = FRONT FACE
E.F. = EACH FACE

(1) SPACING ALONG ℄ WINGWALL

(2) SEE CONC. RAIL TYPE J FOR SPG.

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER

REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

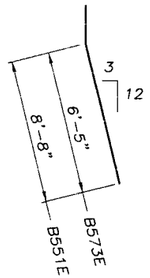
EAST ABUTMENT DETAILS

APPROVED:

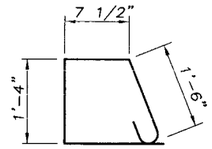
S.P. 55-598-36

SHEET 16 OF 40 SHEETS

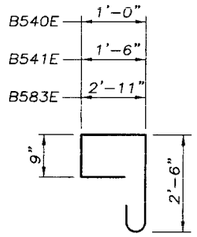
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



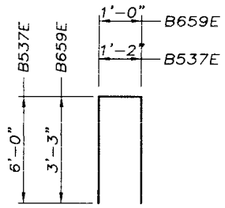
B551E & B573E



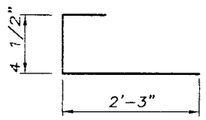
B760E & B561E



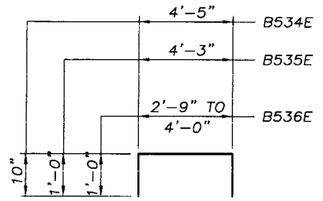
B540E, B541E & B583E



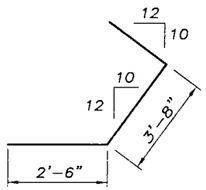
B537E & B659E



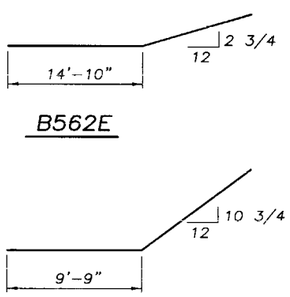
B485E



B534E, B535E & B536E

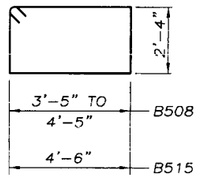


B533E

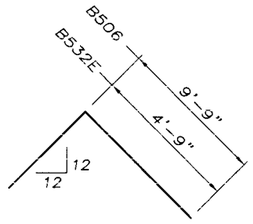


B562E

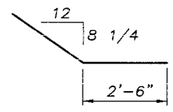
B542E



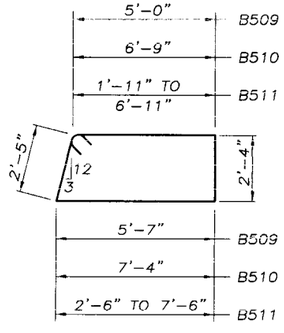
B508 & B515



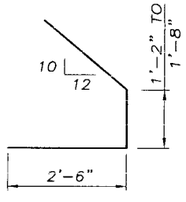
B506 & B532E



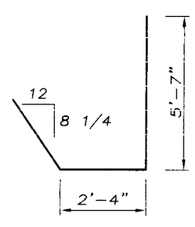
B505 & B531E



B509, B510 & B511



B507



B504

BILL OF REINFORCEMENT ~ EAST ABUTMENT

	BAR	NO.	LENGTH	SHAPE	LOCATION
(1)	B601	6	32'-9"	STRT.	FTG. ~ LONGITUDINAL
(1)	B602	4	34'-5"	STRT.	FTG. ~ LONGITUDINAL
(1)	B603	6	33'-3"	STRT.	FTG. ~ LONGITUDINAL
	B504	3	10'-6"	BENT	FTG. ~ LONGITUDINAL
	B505	3	5'-0"	BENT	FTG. ~ LONGITUDINAL
	B506	3	15'-6"	BENT	FTG. ~ LONGITUDINAL
	B507	1 SER. OF 3	6'-9" TO 7'-3"	BENT	FTG. ~ LONGITUDINAL
	B508	1 SER. OF 2	12'-5" TO 14'-5"	BENT	FTG. ~ TIE
	B509	37	16'-3"	BENT	FTG. ~ TIE
	B510	1	19'-9"	BENT	FTG. ~ TIE
	B511	1 SER. OF 5	10'-1" TO 20'-1"	BENT	FTG. ~ TIE
	B512E	36	5'-2"	STRT.	FTG. ~ DOWEL
	B513E	36	6'-1"	STRT.	FTG. ~ DOWEL
	B514E	8	7'-1"	STRT.	FTG. ~ DOWEL
	B515	4	14'-7"	BENT	N.E. WING FTG. ~ TIE
	B516	8	3'-6"	STRT.	N.E. WING FTG. ~ HORIZ.
	B617E	23	4'-11"	STRT.	FTG. ~ DOWEL
	B718E	4	5'-6"	STRT.	FTG. ~ DOWEL
	B519E	3	12'-4"	STRT.	BRIDGE SEAT ~ HORIZ.
	B520E	7	18'-6"	STRT.	BR. SEAT & PARAPET WALL~HORIZ.
	B521E	1 SER. OF 3	13'-8" TO 16'-4"	STRT.	BRIDGE SEAT ~ HORIZ.
	B522E	17	26'-10"	STRT.	BR. SEAT & PARAPET WALL~HORIZ.
	B523E	8	15'-0"	STRT.	BRIDGE SEAT ~ HORIZ.
	B524E	4	13'-8"	STRT.	BRIDGE SEAT ~ HORIZ.
	B525E	4	22'-6"	STRT.	BRIDGE SEAT ~ HORIZ.
	B526E	10	18'-2"	STRT.	BR. SEAT & PARAPET WALL~HORIZ.
	B527E	5	19'-4"	STRT.	PARAPET WALL ~ HORIZ.
	B528E	5	17'-3"	STRT.	PARAPET WALL ~ HORIZ.
	B529E	2	9'-0"	STRT.	BRIDGE SEAT ~ HORIZ.
	B530E	1 SER. OF 2	6'-9" TO 7'-11"	STRT.	BRIDGE SEAT ~ HORIZ.
	B531E	6	5'-0"	BENT	BR. SEAT & PARAPET WALL~HORIZ.
	B532E	4	6'-9"	BENT	PARAPET WALL ~ HORIZ.
	B533E	9	7'-8"	BENT	BR. SEAT & PARAPET WALL~HORIZ.
	B534E	29	6'-1"	BENT	BRIDGE SEAT ~ TIE
	B535E	31	6'-3"	BENT	BRIDGE SEAT ~ TIE
	B536E	1 SER. OF 4	4'-9" TO 6'-0"	BENT	BRIDGE SEAT ~ TIE
	B537E	58	13'-2"	BENT	PARAPET WALL ~ VERTICAL
	B538E	2	8'-4"	STRT.	PARAPET WALL ~ VERTICAL
	B539E	3	7'-2"	STRT.	PARAPET WALL ~ VERTICAL
	B540E	58	5'-5"	BENT	PARAPET WALL ~ TIE
	B541E	1	6'-0"	BENT	PARAPET WALL ~ TIE
	B542E	2	19'-2"	BENT	S.E. WING ~ HORIZ.
	B543E	1 SER. OF 5	11'-8" TO 18'-2"	STRT.	S.E. WING ~ HORIZ.
	B644E	1 SER. OF 4	11'-4" TO 15'-7"	STRT.	S.E. WING ~ HORIZ.
	B645E	1	12'-0"	STRT.	S.E. WING ~ HORIZ.
	B546E	1 SER. OF 3	19'-2" TO 19'-8"	STRT.	S.E. WING ~ HORIZ.
	B647E	4	12'-9"	STRT.	S.E. WING ~ HORIZ.
	B548E	1	19'-10"	STRT.	S.E. WING ~ HORIZ.
	B549E	2	13'-4"	STRT.	S.E. WING ~ HORIZ.
	B550E	5	8'-4"	STRT.	S.E. WING ~ HORIZ.
	B551E	2	9'-3"	BENT	S.E. WING ~ VERTICAL
	B552E	2	5'-4"	STRT.	S.E. WING ~ VERTICAL
	B553E	10	8'-10"	STRT.	S.E. WING ~ VERTICAL
	B555E	11	9'-0"	STRT.	S.E. WING ~ VERTICAL
	B557E	1 SER. OF 8	3'-6" TO 8'-5"	STRT.	S.E. WING ~ VERTICAL
	B658E	1 SER. OF 8	3'-6" TO 8'-5"	STRT.	S.E. WING ~ VERTICAL
	B659E	50	7'-6"	BENT	WINGWALL ~ TIE
	B760E	6	5'-0"	BENT	WINGWALL ~ TIE
	B561E	44	5'-0"	BENT	WINGWALL ~ TIE
	B562E	2	21'-10"	BENT	N.E. WING ~ HORIZ.
	B563E	2	10'-10"	STRT.	N.E. WING ~ HORIZ.
	B564E	1	19'-2"	STRT.	N.E. WING ~ HORIZ.
	B665E	1	18'-11"	STRT.	N.E. WING ~ HORIZ.
	B566E	1	20'-2"	STRT.	N.E. WING ~ HORIZ.
	B667E	1	19'-0"	STRT.	N.E. WING ~ HORIZ.
	B568E	1 SER. OF 3	22'-4" TO 23'-2"	STRT.	N.E. WING ~ HORIZ.
	B669E	4	21'-0"	STRT.	N.E. WING ~ HORIZ.

SUMMARY OF QUANTITIES ~ EAST ABUTMENT

	STRUCTURE CONCRETE (1A43)	47	CU. YD.
	STRUCTURE CONCRETE (3Y43)	73	CU. YD.
	REINFORCEMENT BARS	1770	POUND
	REINFORCEMENT BARS, EPOXY COATED	6250	POUND
(2)	STRUCTURE EXCAVATION	.5	LUMP SUM
	C.I.P. CONCRETE TEST PILES, 70 FT. LONG, 12"	2	EACH
(3)	C.I.P. CONCRETE PILING DRIVEN, 12"	720	LIN. FT.
(3)	C.I.P. CONCRETE PILING DELIVERED, 12"	720	LIN. FT.
	PILE POINTS, 12"	14	EACH

(2) SEE SPECIAL PROVISIONS.

(3) DOES NOT INCLUDE TEST PILES.

BILL OF REINFORCEMENT ~ EAST ABUTMENT (CONT'D)

B570E	1	23'-3"	STRT.	N.E. WING ~ HORIZ.
B571E	2	21'-0"	STRT.	N.E. WING ~ HORIZ.
B572E	5	4'-2"	STRT.	N.E. WING ~ HORIZ.
B573E	2	7'-0"	BENT	N.E. WING ~ VERTICAL
B574E	2	4'-0"	STRT.	N.E. WING ~ VERTICAL
B575E	2	6'-8"	STRT.	N.E. WING ~ VERTICAL
B576E	14	6'-10"	STRT.	N.E. WING ~ VERTICAL
B578E	1 SER. OF 8	5'-1" TO 6'-9"	STRT.	N.E. WING ~ VERTICAL
B679E	1 SER. OF 8	5'-1" TO 6'-9"	STRT.	N.E. WING ~ VERTICAL
B580E	4	5'-0"	STRT.	N.E. WING ~ VERTICAL
B681E	4	5'-0"	STRT.	N.E. WING ~ VERTICAL
B582E	2 SER. OF 3	3'-6" TO 3'-11"	STRT.	N.E. WING ~ VERTICAL
B583E	2	7'-0"	BENT	PARAPET WALL ~ TIE
B485E	6	3'-0"	BENT	WINGWALL ~ TIE

(1) 2'-5" MIN. LAP

AS-BUILT
MAR 09 2001
ENGINEERING

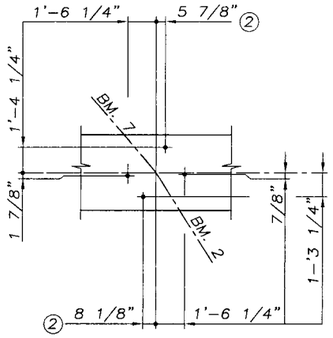
CERTIFIED BY Dale Drawe
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

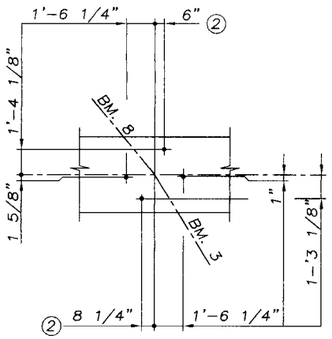
MINNESOTA DEPARTMENT OF TRANSPORTATION

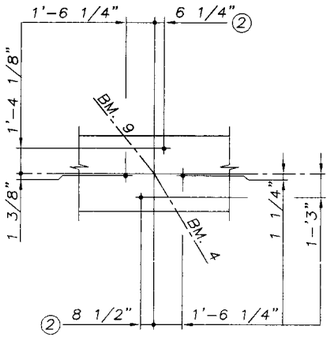
BRIDGE NO. 55556
EAST ABUTMENT
REINFORCEMENT

APPROVED:
S.P. 55-598-36
SHEET 17 OF 40 SHEETS

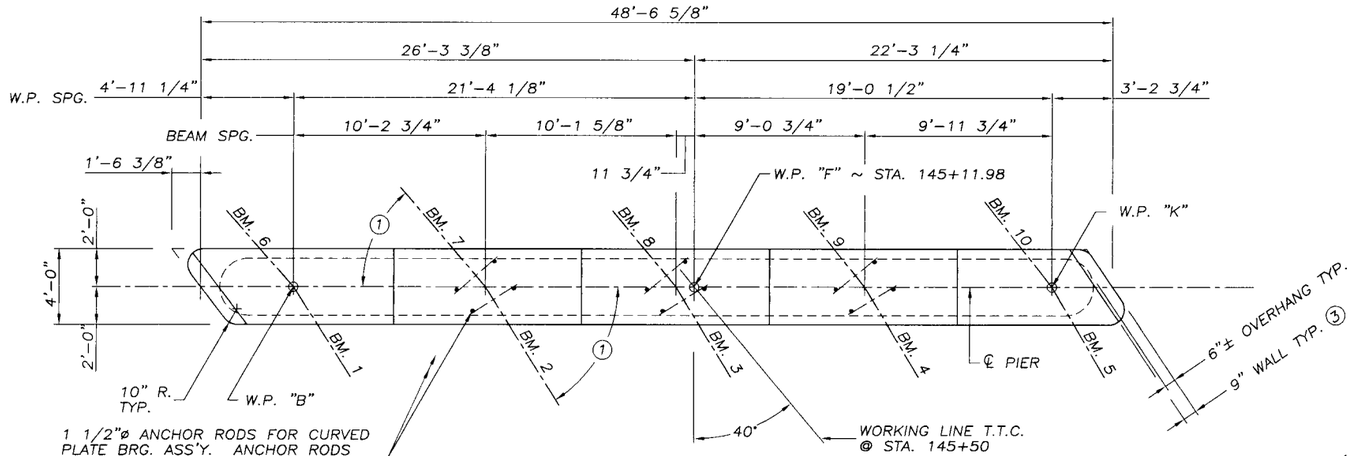
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



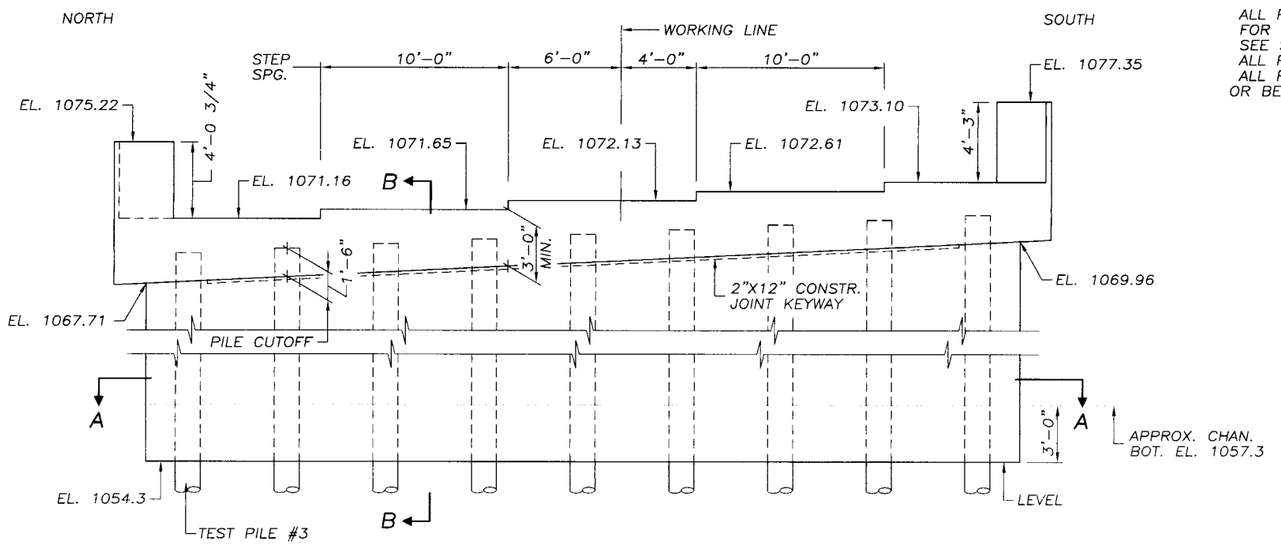




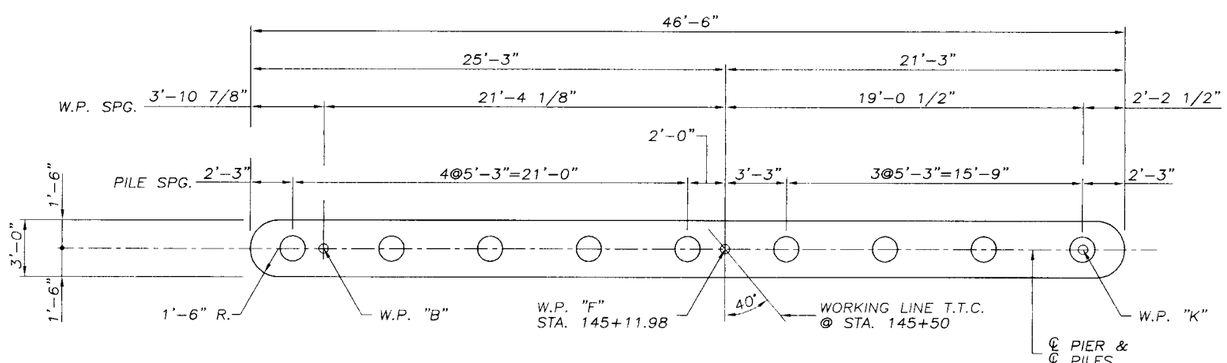
ANCHOR ROD LAYOUT



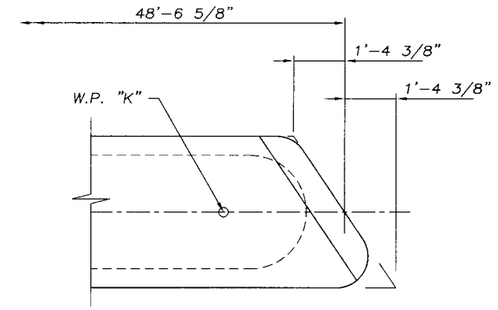
PLAN
SCALE: 1/4"=1'-0"



ELEVATION
SCALE: 1/4"=1'-0"



SECTION A–A



PILE NOTES:

1 – C.I.P. CONC. TEST PILES, 70 FT. LG.
8 – C.I.P. CONC. PILES, EST. LENGTH 60 FT. LG.
9 – C.I.P. CONC. PILES REQ'D. FOR PIER 1

AVERAGE DRIVEN ELEV. 1017.84

ALL PILING SHALL HAVE A NOMINAL DIAMETER OF 16".
FOR PILE SPLICE DETAILS SEE DETAIL B201.
SEE SURVEY SHEET FOR TEST PILE LOCATION.
ALL PILES SHALL HAVE PILE POINTS.
ALL PIER PILES SHALL BE DRIVEN TO EL. 1032.0 OR BELOW.

SECTION B–B

(1) VARIES, SEE FRAMING PLAN ANGLE D, SHEET 23.

(2) 1 1/2"ø ANCHOR RODS FOR CURVED PLATE BRG. ASSY. SEE DETAIL B310. ANCHOR RODS INCLUDED IN PRICE BID FOR BEARING ASSEMBLIES.

(3) SEE SHEET 22 FOR "TYPICAL SECTION THRU CURTAIN WALL".

COMPUTED PILE LOADS ~ TONS PER PILE	
DEAD LOAD	65.8
LIVE LOAD	11.8
TOTAL	77.6

AS-BUILT
MAR 0 9 2001
ENGINEERING

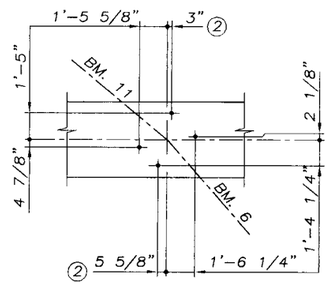
CERTIFIED BY [signature] PROFESSIONAL ENGINEER
REG. NO. 20666 1996

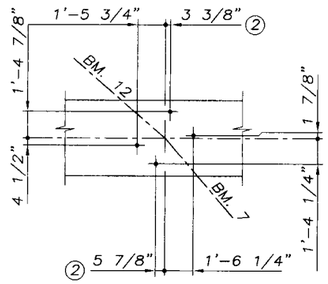
MINNESOTA DEPARTMENT OF TRANSPORTATION

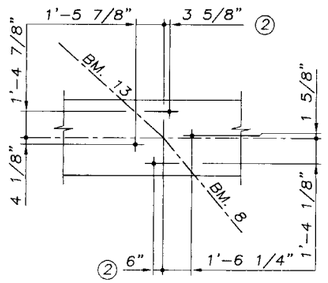
BRIDGE NO. 55556
PIER 1 DETAILS

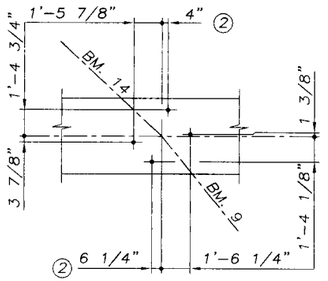
APPROVED:
S.P. 55-598-36
SHEET 18 OF 40 SHEETS

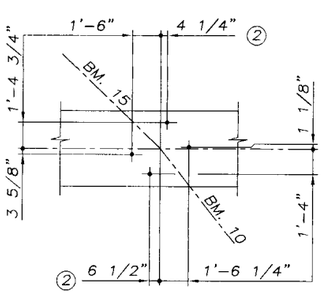
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



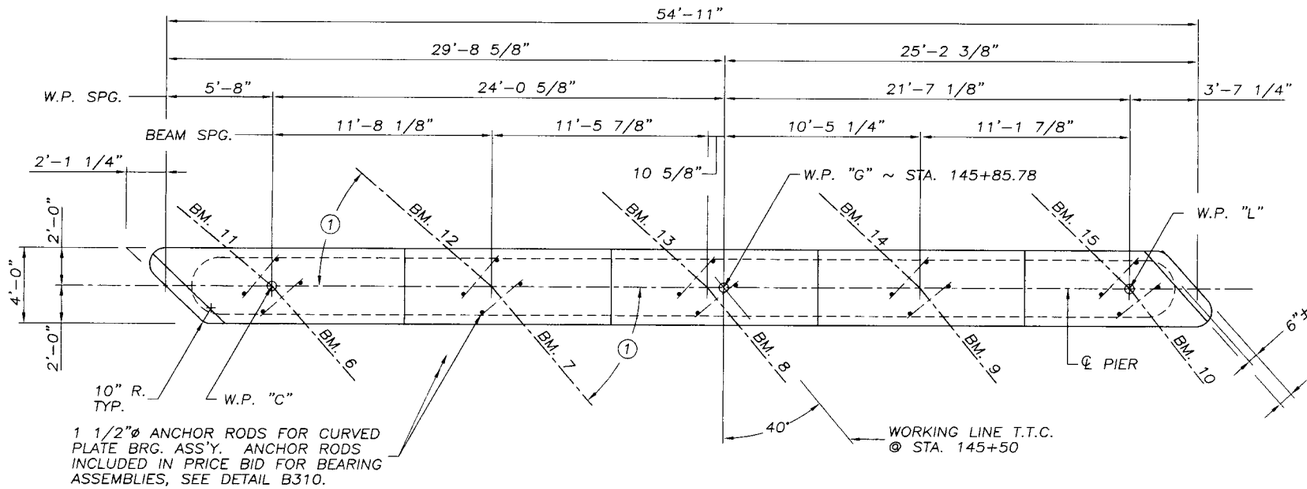




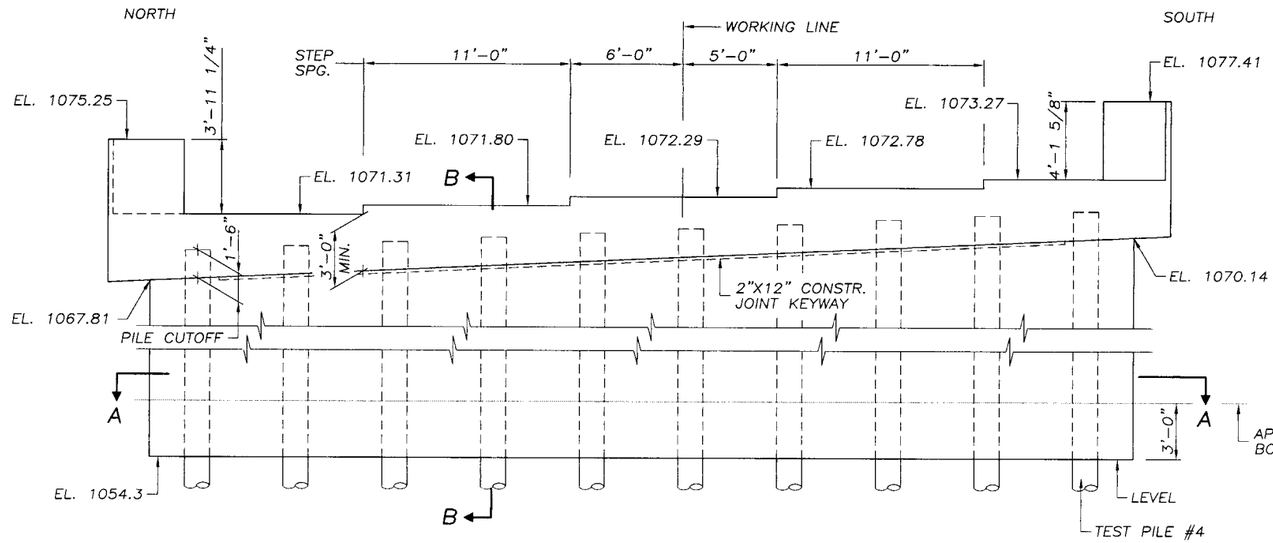




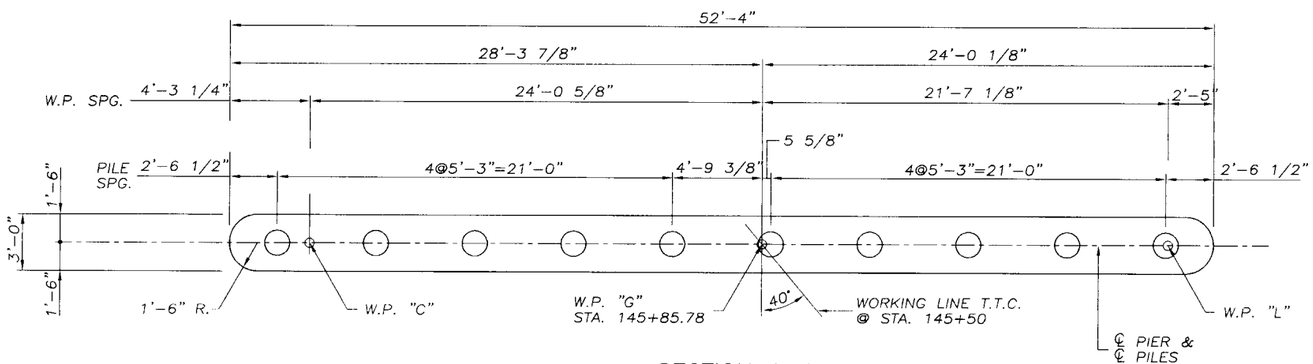
ANCHOR ROD LAYOUT



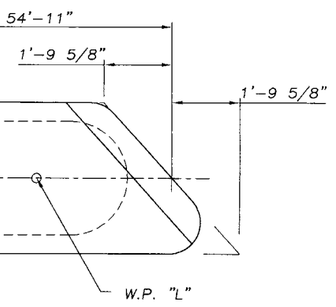
PLAN
SCALE: 1/4"=1'-0"

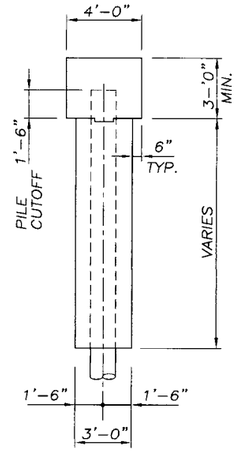


ELEVATION
SCALE: 1/4"=1'-0"



SECTION A–A





SECTION B–B

① VARIES, SEE FRAMING PLAN ANGLE D, SHEET 23.

② 1 1/2"ø ANCHOR RODS FOR CURVED PLATE BRG. ASS'Y. SEE DETAIL B310. ANCHOR RODS INCLUDED IN PRICE BID FOR BEARING ASSEMBLIES.

③ SEE SHEET 22 FOR "TYP. SECTION THRU CURTAIN WALL.

PILE NOTES:

1 – C.I.P. CONC. TEST PILES, 70 FT. LG.
9 – C.I.P. CONC. PILES, EST. LENGTH 60 FT. LG.
10 – C.I.P. CONC. PILES REQ'D. FOR PIER 2

AVERAGE DRIVEN ELEV. 1011.08

ALL PILING SHALL HAVE A NOMINAL DIAMETER OF 16".
FOR PILE SPLICE DETAILS SEE DETAIL B201.
SEE SURVEY SHEET FOR TEST PILE LOCATION.
ALL PILES SHALL HAVE PILE POINTS.
ALL PIER PILES SHALL BE DRIVEN TO EL. 1032.0 OR BELOW.

AS-BUILT
MAR 09 2001
ENGINEERING

COMPUTED PILE LOADS ~ TONS PER PILE	
DEAD LOAD	62.5
LIVE LOAD	10.6
TOTAL	73.1

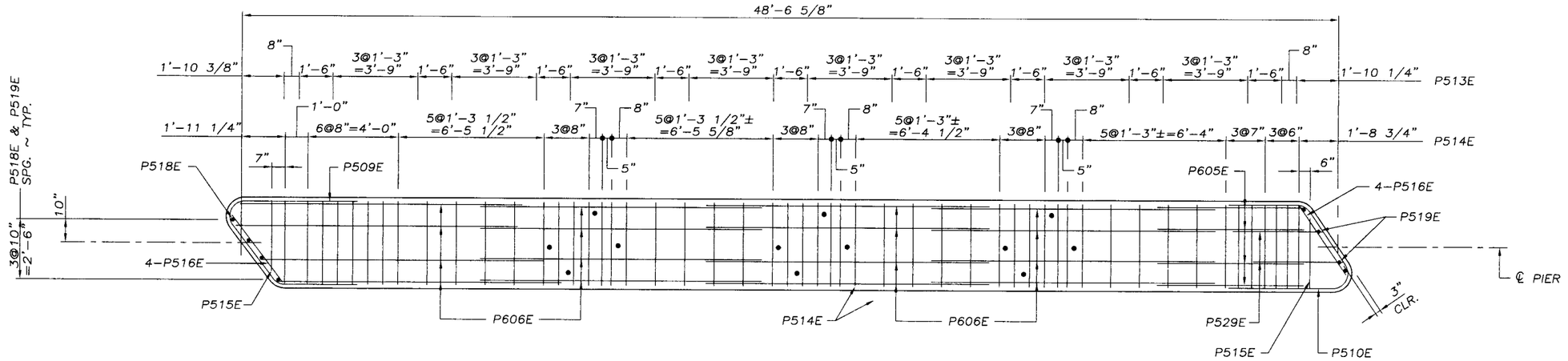
CERTIFIED BY Dale Drawer
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

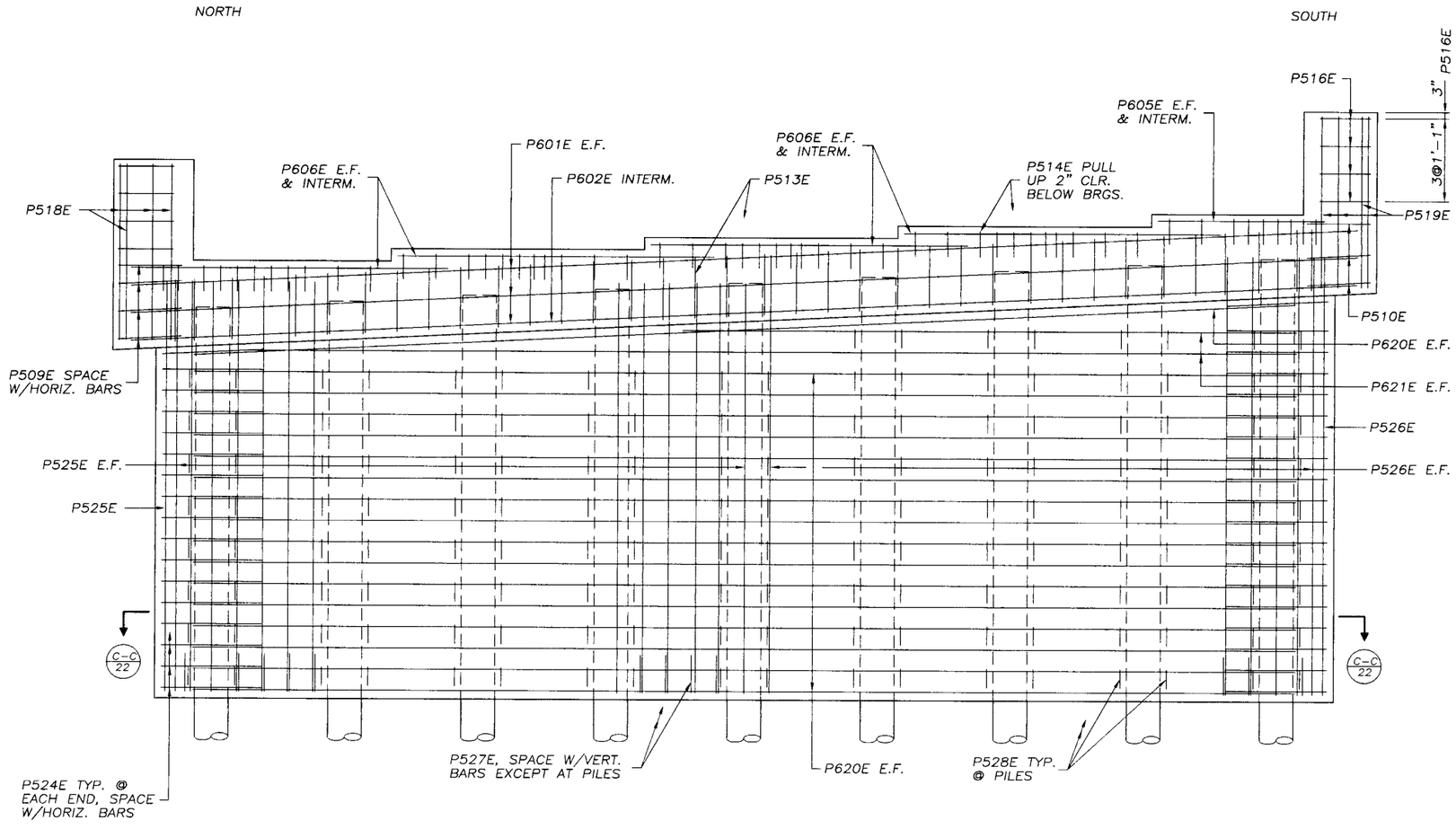
BRIDGE NO. 55556
PIER 2 DETAILS

APPROVED:
S.P. 55-598-36
SHEET 19 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



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



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

AS-BUILT
MAR 09 2001
ENGINEERING

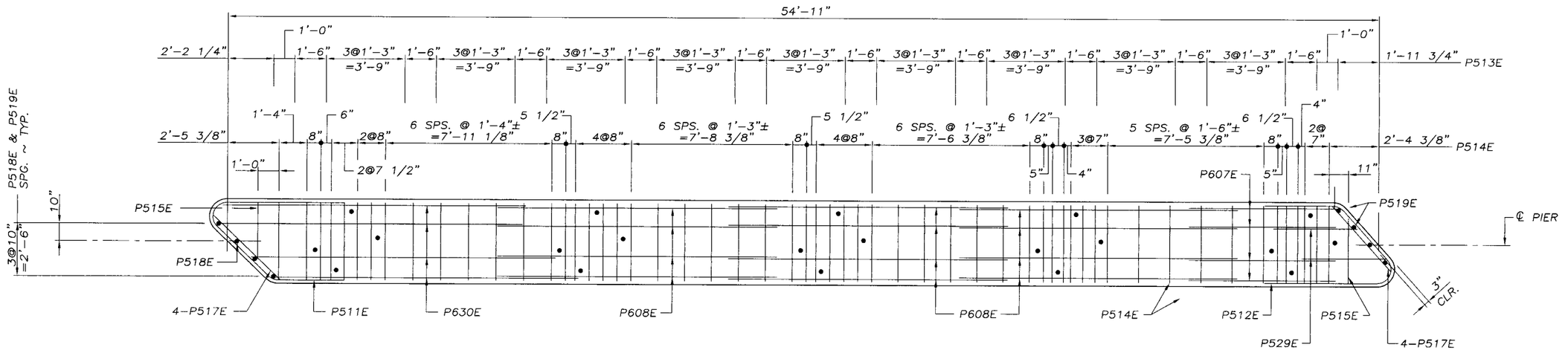
CERTIFIED BY _____ PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

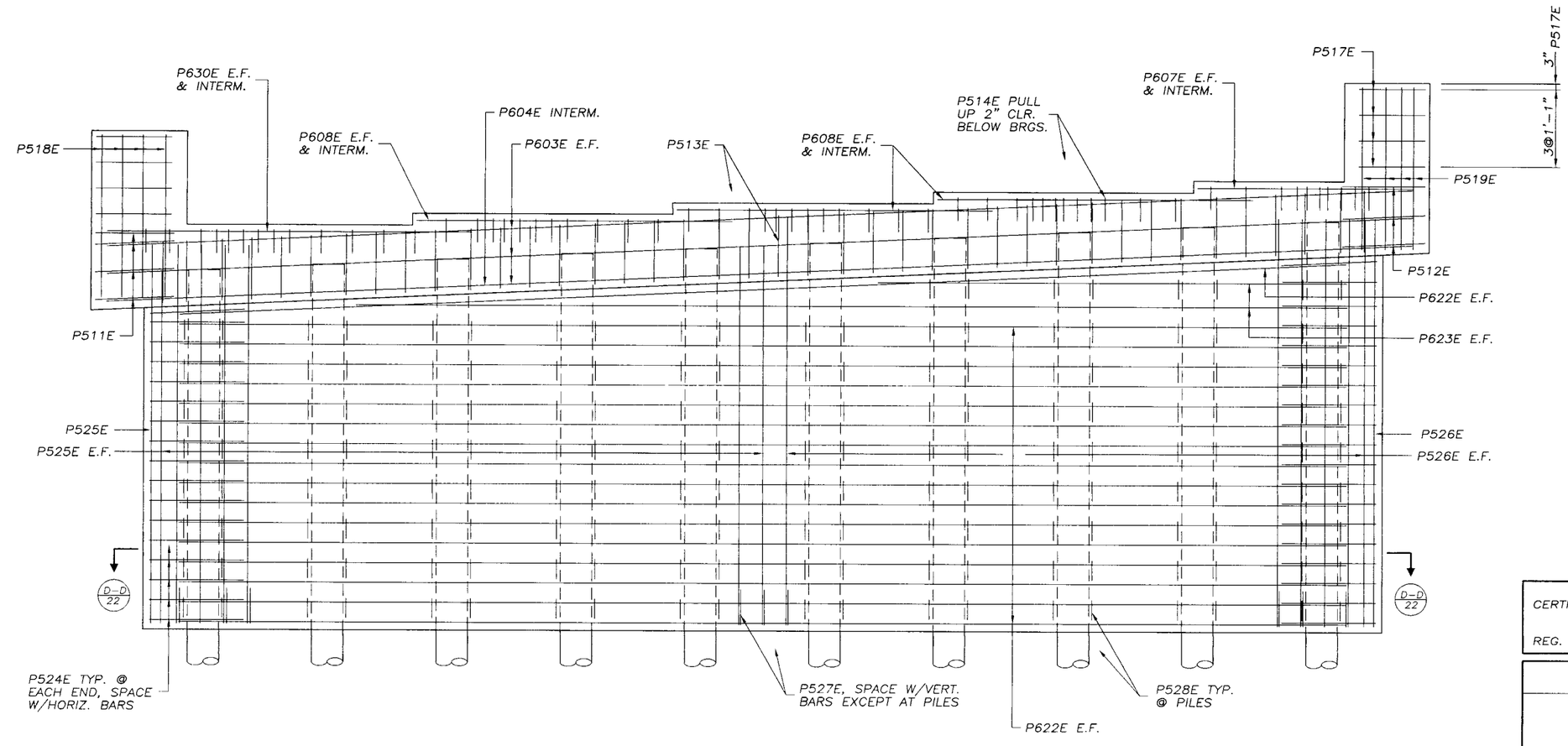
BRIDGE NO. 55556
PIER 1 DETAILS

APPROVED:

S.P. 55-598-36			
SHEET 20 OF 40 SHEETS			
DES.: CSK	DRN.: DM		55556
CHK.: RB	CHK.: CSK		



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



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

AS-BUILT
MAR 09 2001
ENGINEERING

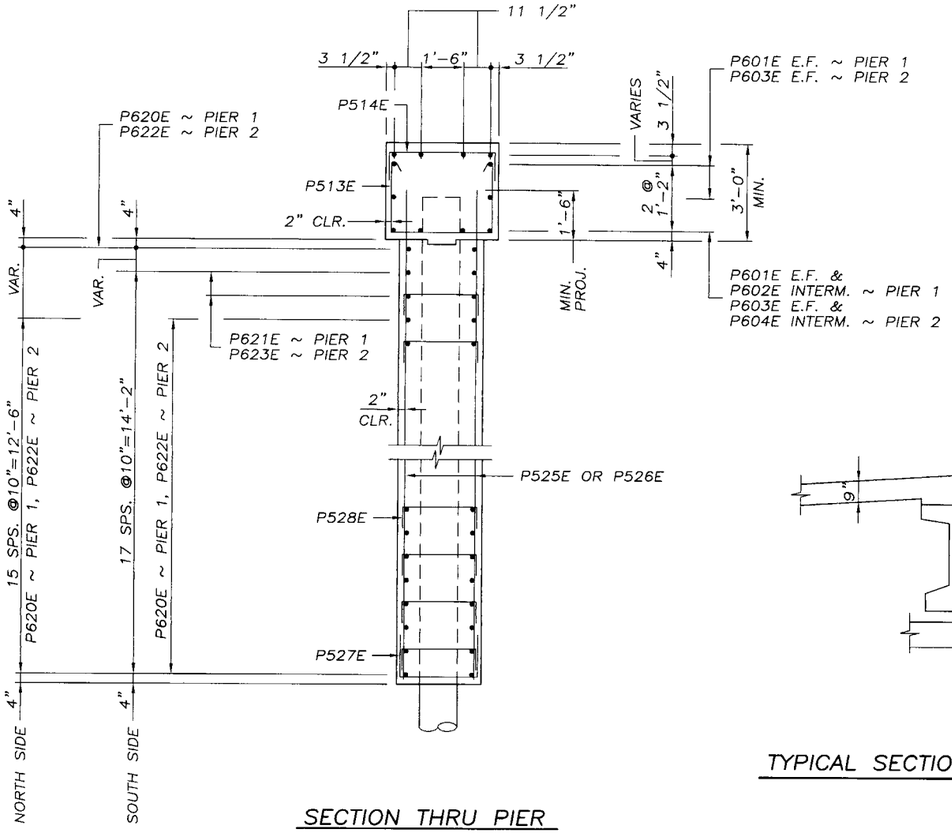
CERTIFIED BY Dale Drawe
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

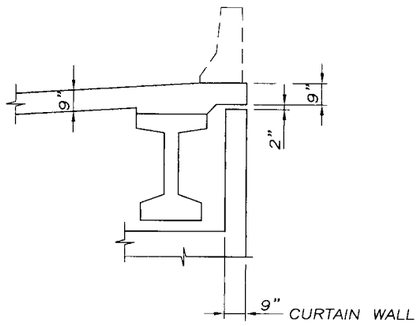
BRIDGE NO. 55556
PIER 2 DETAILS

APPROVED:
S.P. 55-598-36
SHEET 21 OF 40 SHEETS

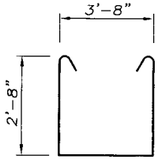
DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



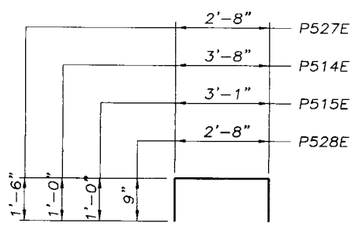
SECTION THRU PIER



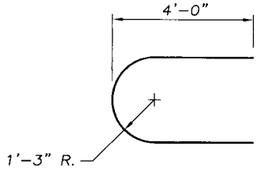
TYPICAL SECTION @ CURTAIN WALL



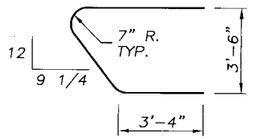
P513E



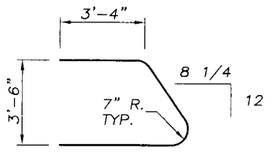
P514E, P515E, P527E & P528E



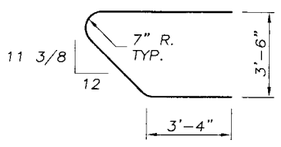
P524E



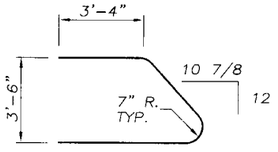
P509E



P510E



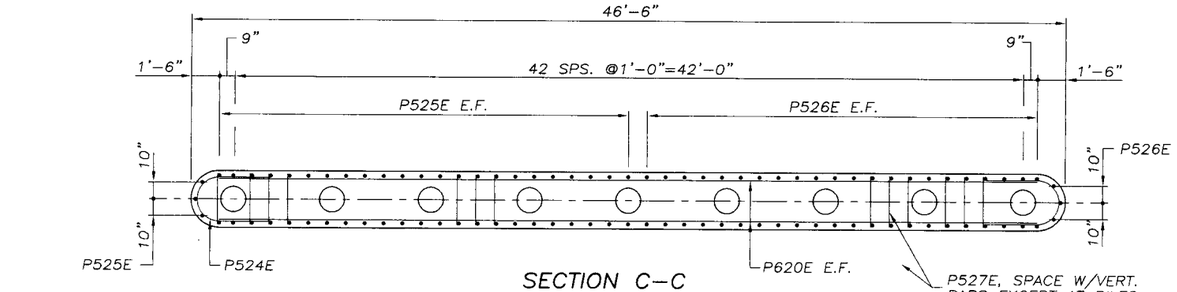
P511E



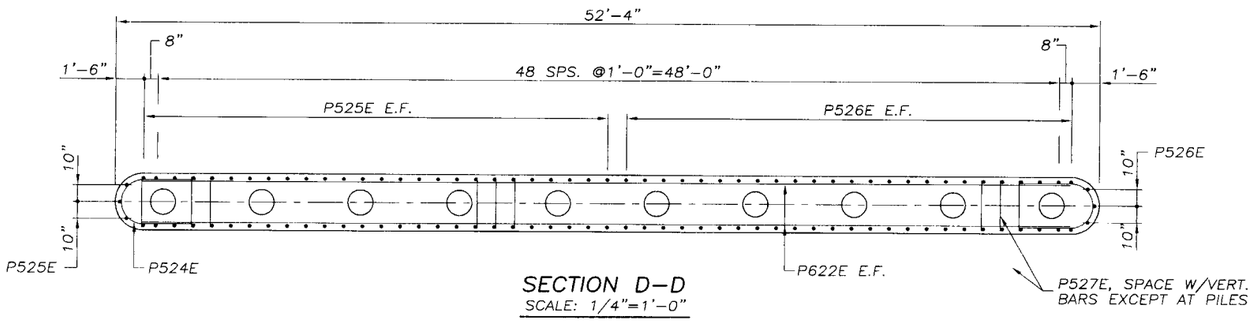
P512E

BILL OF REINFORCEMENT ~ PIERS

BAR	PIER 1	PIER 2	LENGTH	SHAPE	LOCATION
P601E	6	——	47'-0"	STRT.	CAP ~ HORIZONTAL
P602E	2	——	48'-0"	STRT.	CAP ~ HORIZONTAL
P603E	——	6	53'-0"	STRT.	CAP ~ HORIZONTAL
P604E	——	2	54'-2"	STRT.	CAP ~ HORIZONTAL
P605E	4	——	6'-6"	STRT.	CAP ~ HORIZONTAL
P606E	16	——	12'-6"	STRT.	CAP ~ HORIZONTAL
P607E	——	4	7'-0"	STRT.	CAP ~ HORIZONTAL
P608E	——	12	13'-6"	STRT.	CAP ~ HORIZONTAL
P509E	4	——	12'-10"	BENT	CAP ~ HORIZONTAL
P510E	3	——	12'-4"	BENT	CAP ~ HORIZONTAL
P511E	——	4	14'-6"	BENT	CAP ~ HORIZONTAL
P512E	——	3	13'-8"	BENT	CAP ~ HORIZONTAL
P513E	36	40	9'-9"	BENT	CAP ~ STIRRUP
P514E	52	55	5'-8"	BENT	CAP ~ TIE
P515E	2	2	5'-1"	BENT	CAP ~ TIE
P516E	8	——	3'-8"	STRT.	CURTAIN WALL ~ HORIZ.
P517E	——	8	4'-0"	STRT.	CURTAIN WALL ~ HORIZ.
P518E	4	4	7'-0"	STRT.	CURTAIN WALL ~ VERT.
P519E	4	4	6'-8"	STRT.	CURTAIN WALL ~ VERT.
P620E	34	——	43'-6"	STRT.	PIER ~ HORIZONTAL
P621E	2 SER. OF 2	——	15'-8" TO 32'-10"	STRT.	PIER ~ HORIZONTAL
P622E	——	34	49'-4"	STRT.	PIER ~ HORIZONTAL
P623E	——	2 SER. OF 2	21'-0" TO 39'-7"	STRT.	PIER ~ HORIZONTAL
P524E	36	36	9'-5"	BENT	PIER ~ HORIZONTAL
P525E	49	55	15'-10"	STRT.	PIER ~ VERTICAL
P526E	47	53	17'-2"	STRT.	PIER ~ VERTICAL
P527E	34	41	5'-8"	BENT	PIER ~ TIE
P528E	152	168	4'-2"	BENT	PIER ~ TIE @ PILES
P529E	2	2	4'-0"	STRT.	CAP ~ HORIZ.
P630E	——	4	14'-6"	STRT.	CAP ~ HORIZ.



SECTION C–C
SCALE: 1/4"=1'-0"



SECTION D–D
SCALE: 1/4"=1'-0"

SUMMARY OF QUANTITIES ~ PIERS

	ITEM	PIER 1	PIER 2	TOTAL	UNIT
	STRUCTURAL CONCRETE (3Y43)	99	112	211	CU. YD.
	REINFORCEMENT BARS, EPOXY COATED	7020	7840	14860	POUND
②	FOUNDATION PREPARATION	.5	.5	1	L. SUM
	C.I.P. CONCRETE TEST PILES, 70 FT. LONG, 16"	1	1	2	EACH
③	C.I.P. CONCRETE PILING DRIVEN, 16"	480	540	1020	LIN. FT.
③	C.I.P. CONCRETE PILING DELIVERED, 16"	480	540	1020	LIN. FT.
	PILE POINTS, 16"	9	10	19	EACH

② SEE SPECIAL PROVISIONS.

③ DOES NOT INCLUDE TEST PILES.

AS BUILT MAR 0 9 ENGINEER

CERTIFIED BY Dale Drawe PROFESSIONAL ENGINEER

REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

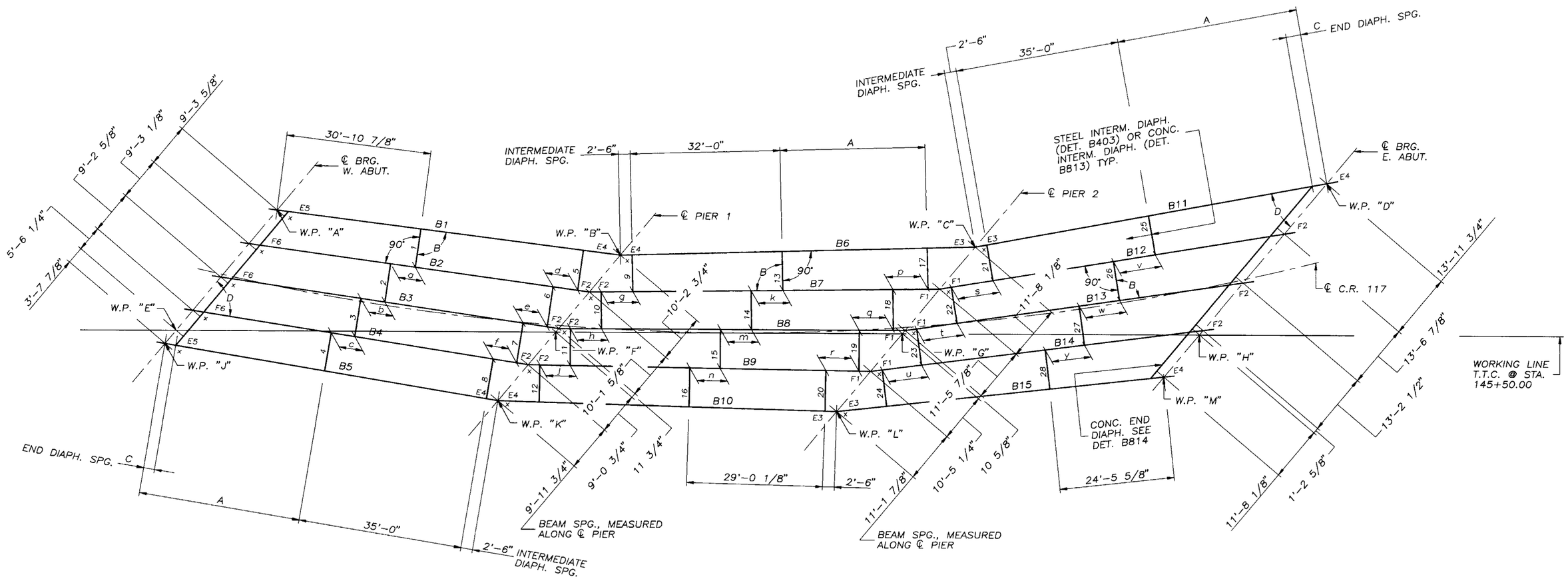
BRIDGE NO. 55556
PIER DETAILS & QUANTITIES

APPROVED:

S.P. 55-598-36

SHEET 22 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



FRAMING PLAN
SCALE: 3/32"=1'-0"

INTERMEDIATE DIAPHRAGMS		
DIAPH.	① LENGTH	ANGLE B
1	8'-2 1/4"	90°36'25"
2	8'-2 1/4"	90°35'00"
3	8'-2 1/4"	90°33'40"
4	8'-2 1/4"	90°32'25"
5	8'-6 3/4"	90°36'25"
6	8'-6 1/2"	90°35'00"
7	8'-6 3/8"	90°33'40"
8	8'-6 1/8"	90°32'25"
9	7'-9 3/8"	89°10'04"
10	7'-9 5/8"	89°12'18"
11	7'-9 7/8"	89°14'22"
12	7'-10 1/8"	89°16'17"
13	8'-3"	89°10'04"
14	8'-3"	89°12'18"
15	8'-3"	89°14'22"
16	8'-3"	89°16'17"
17	8'-8 3/8"	89°10'04"
18	8'-8"	89°12'18"
19	8'-7 3/4"	89°14'22"
20	8'-7 3/8"	89°16'17"
21	7'-8"	88°52'05"
22	7'-8 1/2"	88°55'50"
23	7'-8 7/8"	88°59'12"
24	7'-9 1/8"	89°02'15"
25	8'-4 3/8"	88°52'05"
26	8'-4 3/8"	88°55'50"
27	8'-4 1/4"	88°59'12"
28	8'-4 1/4"	89°02'15"

① MEASURED ℄ BEAM TO ℄ BEAM ALONG ℄ DIAPHRAGM.

DIAPHRAGM SPACING	
OFFSET	LENGTH
a	5'-3 7/8"
b	5'-2 3/8"
c	5'-0 7/8"
d	5'-3 7/8"
e	5'-2 3/8"
f	5'-0 7/8"
g	6'-9 1/2"
h	6'-7 3/8"
j	6'-5 1/2"
k	6'-9 1/2"
m	6'-7 3/8"
n	6'-5 1/2"
p	7'-6"
q	7'-3 1/8"
r	7'-0 5/8"
s	9'-0"
t	8'-8 1/2"
u	8'-5 1/4"
v	9'-0"
w	8'-8 1/2"
y	8'-5 1/4"

PRESTRESSED CONCRETE BEAM DIMENSIONS					
BEAM	② LENGTH	③ LENGTH	④ A	④ C	D
1	73'-0 7/8"	74'-3 7/8"	———	11 3/4"	57°07'20"
2	72'-6 7/8"	73'-9 7/8"	35'-10 3/8"	11 3/8"	57°43'45"
3	72'-1 3/8"	73'-4 3/8"	35'-4 7/8"	11 1/8"	58°18'45"
4	71'-8 1/8"	72'-11 1/8"	34'-11 5/8"	10 7/8"	58°52'25"
5	71'-3 1/4"	72'-6 1/4"	34'-6 3/4"	10 5/8"	59°24'50"
6	74'-1 3/8"	75'-4 3/8"	30'-11 3/8"	———	48°25'56"
7	73'-2"	74'-5"	30'-3"	———	49°15'52"
8	72'-3 1/2"	73'-6 1/2"	29'-7 1/4"	———	50°03'34"
9	71'-5 3/4"	72'-8 3/4"	29'-0 1/8"	———	50°49'12"
10	70'-8 7/8"	71'-11 7/8"	———	———	51°32'54"
11	75'-4 1/4"	76'-7 1/4"	38'-7 3/4"	1'-5 1/2"	39°36'34"
12	73'-7 1/8"	74'-10 1/8"	36'-10 5/8"	1'-5 5/8"	40°44'29"
13	72'-0 3/8"	73'-3 3/8"	35'-3 7/8"	1'-5 7/8"	41°48'39"
14	70'-7 5/8"	71'-10 5/8"	33'-11 1/8"	1'-6 1/8"	42°49'27"
15	69'-4 1/2"	70'-7 1/2"	———	1'-6 3/8"	43°47'12"

② ℄ BRG. TO ℄ BRG. OF BEAM

③ OUT-TO-OUT LENGTH OF BEAM.

④ MEASURED ℄ BRG. TO ℄ DIAPHRAGM ALONG ℄ BEAM.

NOTE:

F1 = FIXED CURVED PLATE BEARING ASSEMBLY, TYPE 1, SEE DETAIL B310.
F2 = FIXED CURVED PLATE BEARING ASSEMBLY, TYPE 2, SEE DETAIL B310.
E3 = EXPANSION CURVED PLATE BEARING ASSEMBLY, TYPE 3, SEE DETAIL B311.
E4 = EXPANSION CURVED PLATE BEARING ASSEMBLY, TYPE 4, SEE DETAIL B311.
E5 = EXPANSION CURVED PLATE BEARING ASSEMBLY, TYPE 5, SEE DETAIL B311.
F6 = FIXED CURVED PLATE BEARING ASSEMBLY, TYPE 6, SEE DETAIL B310.

AS-BUILT MAR 09 2001 ENGINEERING

CERTIFIED BY _____ PROFESSIONAL ENGINEER
REG. NO. 20666 1996

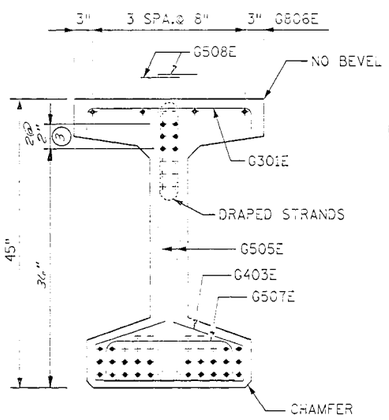
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

FRAMING PLAN

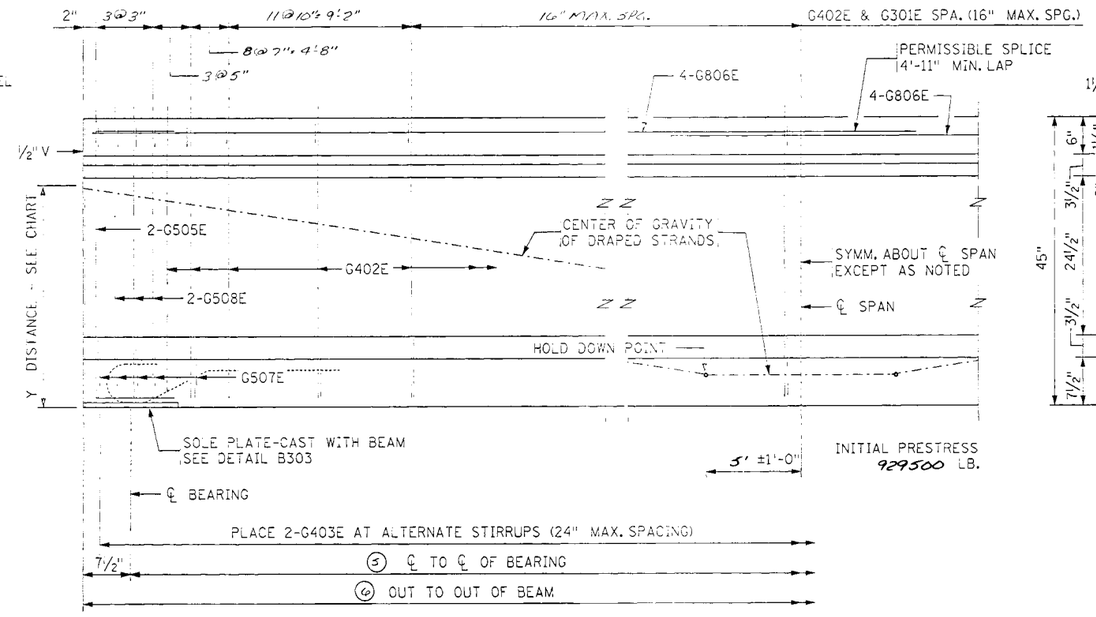
APPROVED:
S.P.55-598-36
SHEET 23 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	

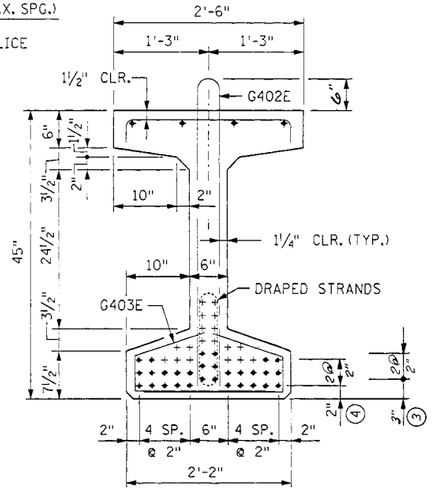


END VIEW

CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED



BEAM ELEVATION



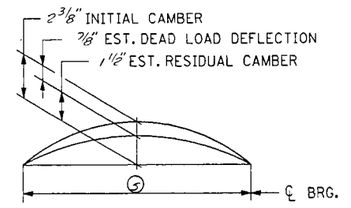
SECTION AT ℄ SPAN

③ DRAPED STRANDS
④ STRAIGHT STRANDS

Y DISTANCES (IN INCHES)			
	NO.	℄ SPAN	END
STRAIGHT STRANDS	24	3.50	X
DRAPED STRANDS	6	5.00	38.00□
TOTAL STRANDS	30	3.80	X

Y = DISTANCE TO CENTER OF GRAVITY OF STRANDS FROM BOTTOM OF BEAM. ALL STRANDS SPACED 2" CENTER TO CENTER, HORIZONTALLY AND VERTICALLY, EXCEPT AS NOTED.

□ A TOLERANCE OF ± 1" WILL BE PERMITTED IN THIS DIMENSION.

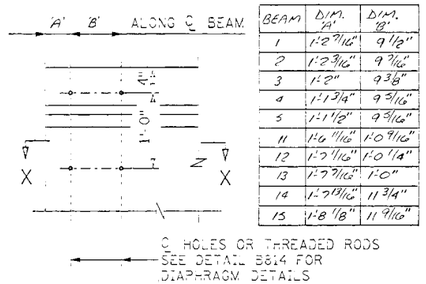


CAMBER DIAGRAM

INITIAL CAMBER IS GIVEN AFTER DIAPHRAGMS ARE IN PLACE.

DEAD LOAD DEFLECTION SHOWN IS FOR WEIGHT OF SLAB, WEARING COURSE, RAILING, SIDEWALK AND MEDIAN WHERE APPLICABLE.

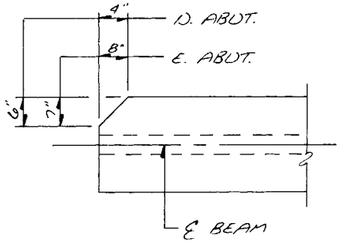
ENGINEER WILL TAKE ELEVATIONS AT TOP OF BEAMS AFTER ERECTION AND WILL ALLOW FOR DEFLECTION SHOWN TO ENABLE CONTRACTOR TO BUILD FORMS TO CORRECT GRADE AND SPECIFIED SLAB THICKNESS.



BEAM	DIM. 'A'	DIM. 'B'
1	1'-2 9/16"	9 1/2"
2	1'-2 9/16"	9 7/16"
3	1'-2"	9 3/8"
4	1'-1 3/4"	9 5/16"
5	1'-1 1/2"	9 5/16"
11	1'-0 11/16"	1'-0 9/16"
12	1'-0 11/16"	1'-0 11/16"
13	1'-0 7/16"	1'-0"
14	1'-0 9/16"	11 3/4"
15	1'-0 1/8"	11 9/16"

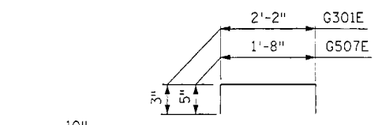
CONCRETE END DIAPHRAGM

(PARAPET ABUTMENT)

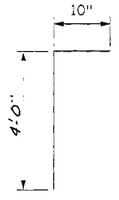


TOP FLANGE ~ BEAM COPING
BEAMS B1-B5 @ D. ABUT. END
BEAMS B11-B15 @ E. ABUT. END

BEAM DIMENSIONS		
BM.	⑤	⑥
1	73'-0 7/8"	74'-3 7/8"
2	72'-6 7/8"	73'-9 7/8"
3	72'-1 3/8"	73'-4 3/8"
4	71'-8 1/8"	72'-11 1/8"
5	71'-3 1/4"	72'-6 1/4"
6	74'-1 3/8"	75'-4 3/8"
7	73'-2"	74'-5"
8	72'-3 1/2"	73'-6 1/2"
9	71'-5 3/4"	72'-8 3/4"
10	70'-8 7/8"	71'-11 7/8"
11	75'-4 1/4"	76'-7 1/4"
12	73'-7 1/8"	74'-10 1/8"
13	72'-0 3/8"	73'-3 3/8"
14	70'-7 5/8"	71'-10 5/8"
15	69'-4 1/2"	70'-7 1/2"



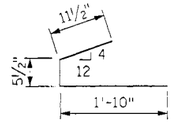
G301E & G507E



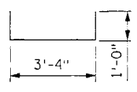
G508E



G402E



G403E



G505E

GENERAL NOTES:

PRESTRESSING STRANDS SHALL BE ½" DIA. 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.

TOPS OF BEAMS SHALL BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BOND.

PROVIDE HANDLING HOOKS OR DEVICES AS REQUIRED BY CONTRACTOR.

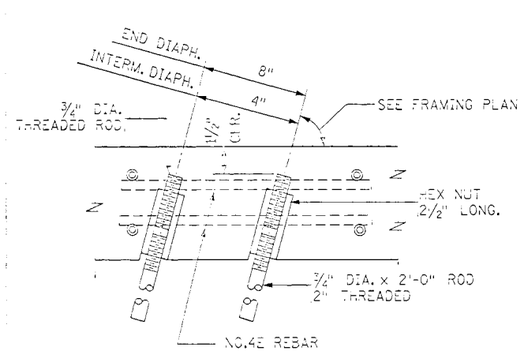
EACH BEAM SHALL BE MARKED, SHOWING BRIDGE NUMBER, CASTING DATE, AND INDIVIDUAL IDENTIFICATION LETTERS AND NUMBERS. MARKINGS SHALL BE MADE ON THE FACE OF THE BEAM, NEAR THE END, SO LOCATED THAT THEY WILL BE EXPOSED AFTER THE END DIAPHRAGMS HAVE BEEN CAST. FACIA BEAMS SHALL BE MARKED ON THE INSIDE FACE. ALL MARKINGS SHALL BE STENCILED 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 END MARKED "X" AND DIAPHRAGM SPACING.

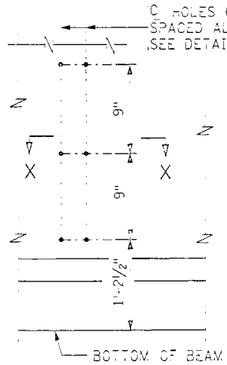
APPROXIMATE WEIGHT OF BEAM IS 25.7 TONS, (MAX.).

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.

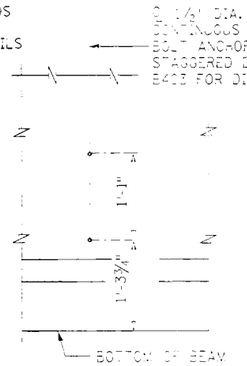


SECTION X-X

USE AT FACIA BEAM AND INTERIOR BEAMS WITH STAGGERED DIAPHRAGMS



CONCRETE INTERMEDIATE DIAPHRAGM



STEEL INTERMEDIATE DIAPHRAGM

MINIMUM CONCRETE STRENGTH - P.S.I.		
	① f'ci	② f'c
REQUIRED MIN. CONCRETE STRENGTH	4700	6000

① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.

② MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.

MODIFIED

BEAMS B1-B15 | APPROVED: NOV. 6, 1995 | FIG. 5-397.514

S.P. 55-598:36

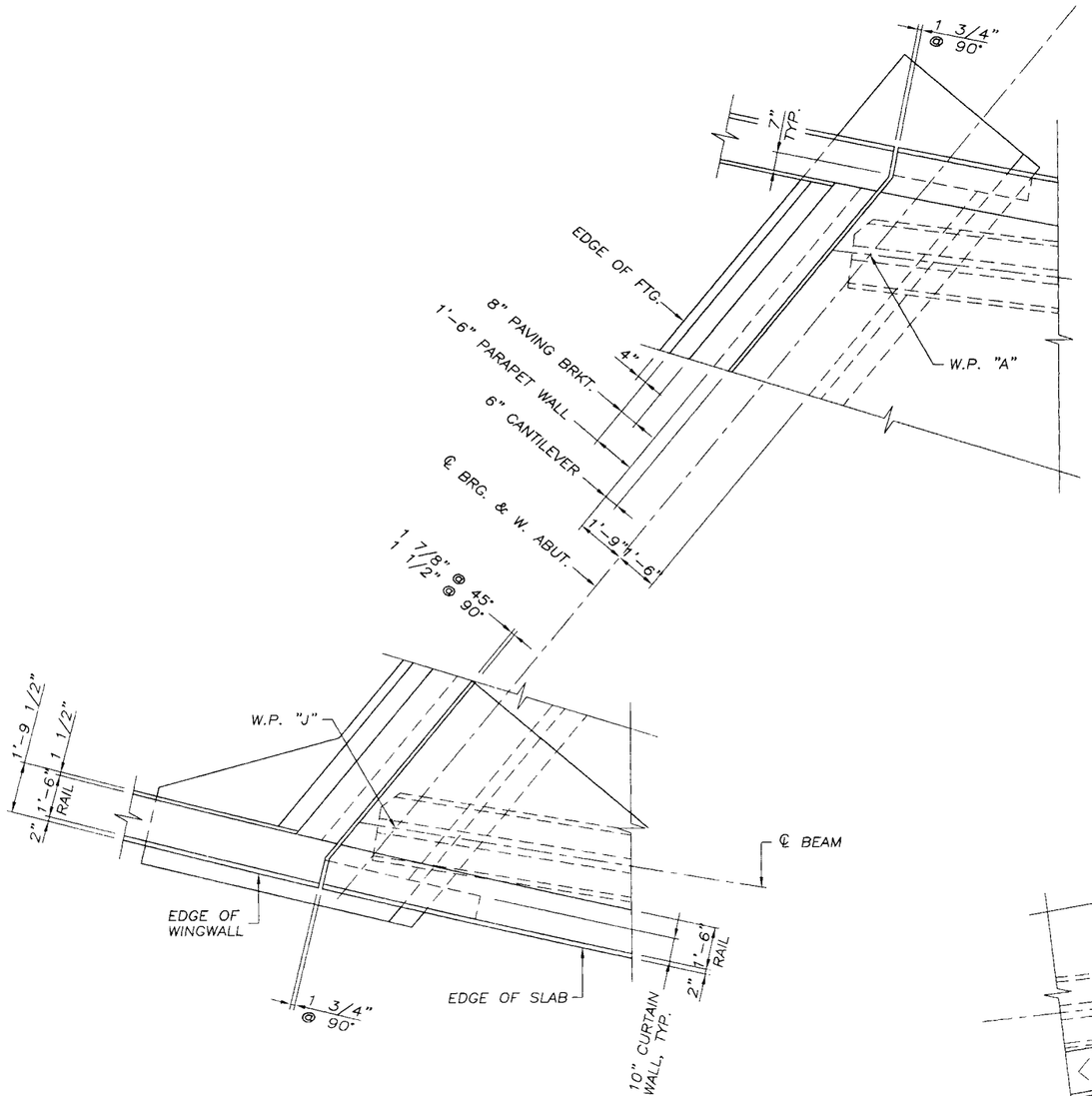
CERTIFIED BY [signature] PROFESSIONAL ENGINEER
REG. NO. [illegible] 19[illegible]

TITLE: 45" PRESTRESSED CONCRETE BEAM (PRETENSIONED) TYPE 45M - 74

DES: CSK | DR: DM | APPROVED:
CHK: RB | CHK: CSK

SHEET NO. 29 OF 40 SHEETS

BRIDGE NO. 55556



WEST ABUTMENT CORNER DETAILS

EAST ABUTMENT CORNER DETAILS

AS-BUILT
MAR 19 2003
ENGINEERING

CERTIFIED BY Dale Draves
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

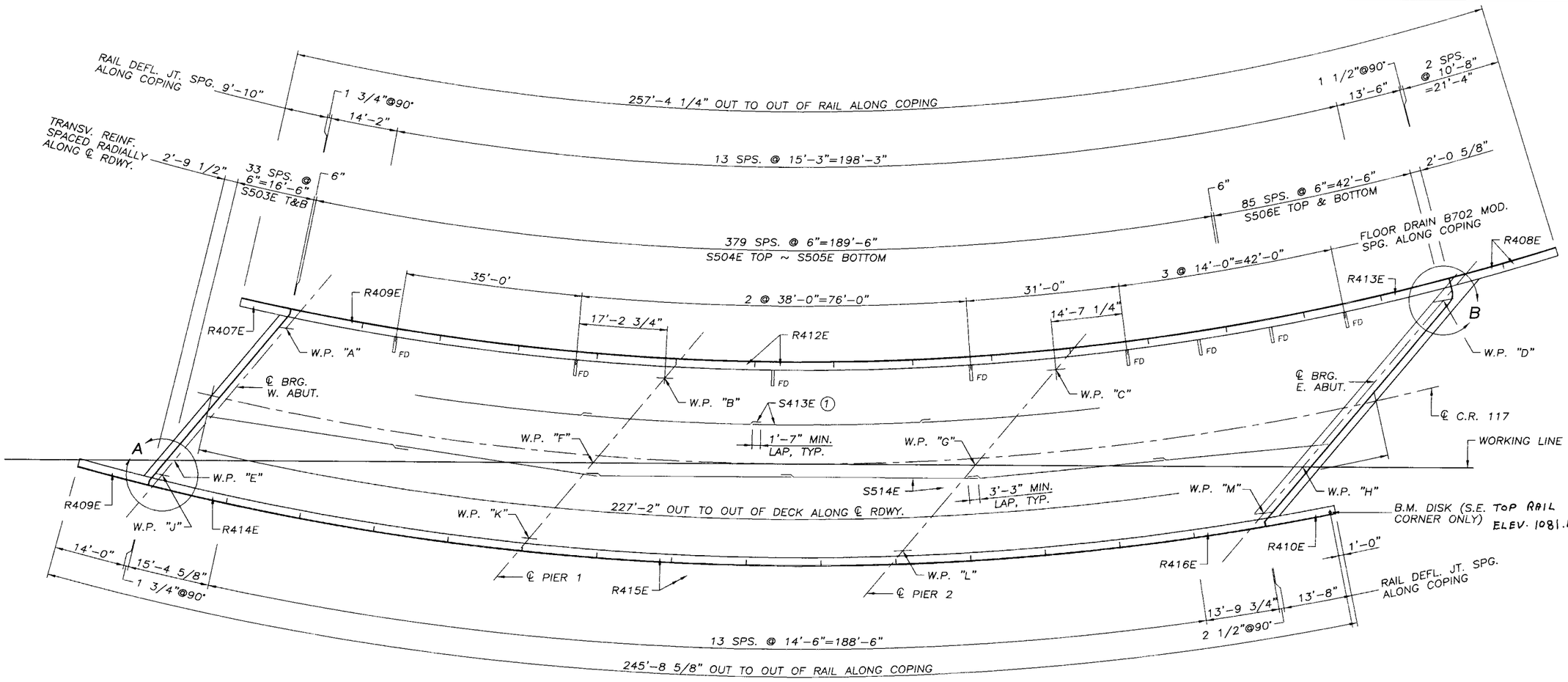
SUPERSTRUCTURE DETAILS

APPROVED:

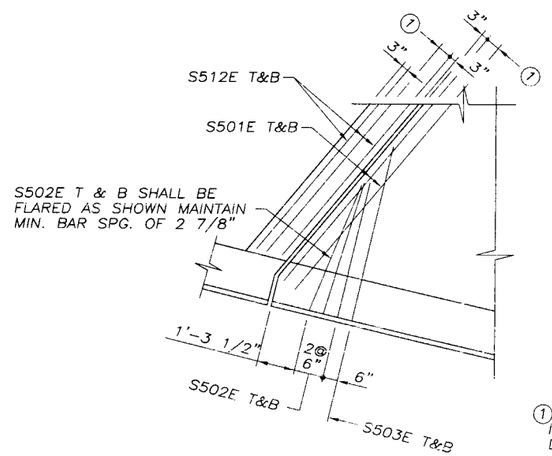
S.P. 55-598-36

SHEET 25 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	

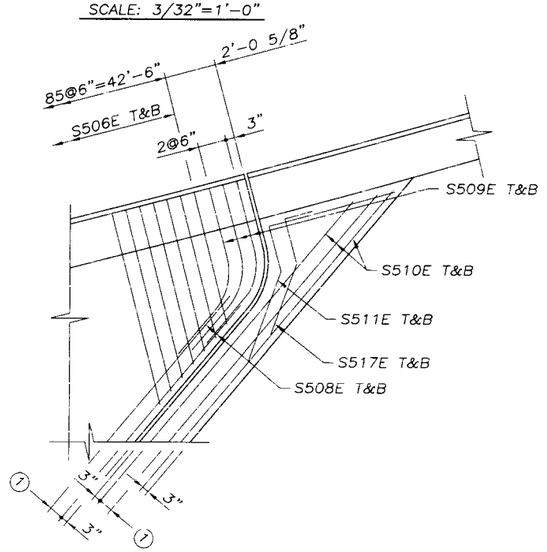


DECK PLAN
SCALE: 3/32"=1'-0"

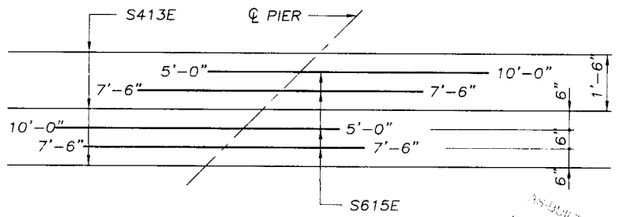


DETAIL A

(1) BARS SHALL BE PLACED INSIDE OR NEAR EXPANSION DEVICE SEE SHEET 27.



DETAIL B



S615E PLACEMENT DIAGRAM

(1) S413E WHICH INTERFERES WITH FLOOR DRAINS ARE TO BE CUT IN THE FIELD TO FIT BETWEEN FLOOR DRAINS. THE CUT END SHALL BE PATCHED WITH AN APPROVED EPOXY COATING. THE REPAIR SHALL BE PERFORMED AS SOON AS POSSIBLE, BEFORE VISIBLE OXIDATION APPEARS.

RECEIVED MAR 19 2001 ENGINEERING

CERTIFIED BY Dale Draves PROFESSIONAL ENGINEER

REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

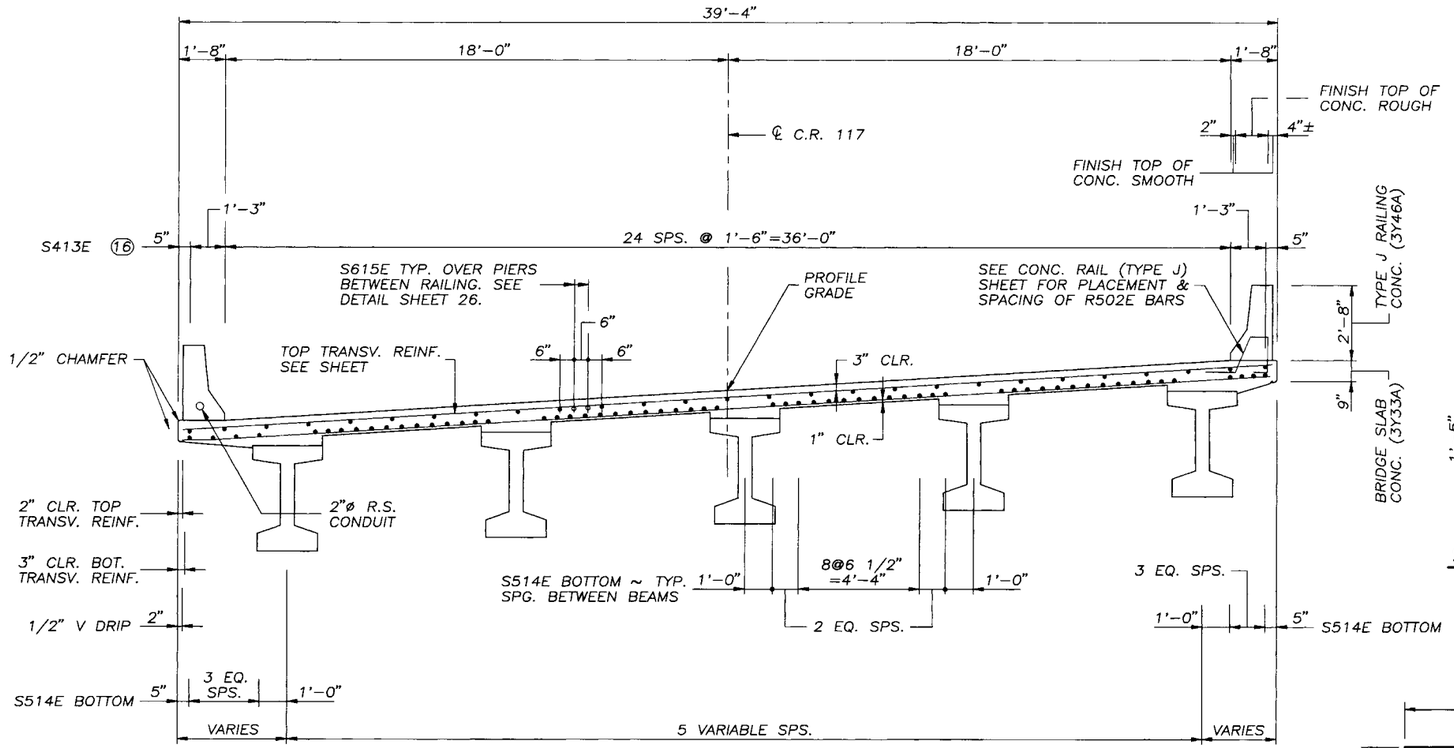
SUPERSTRUCTURE DETAILS

APPROVED:

S.P.55-598-36

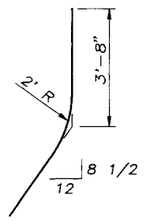
SHEET 26 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	

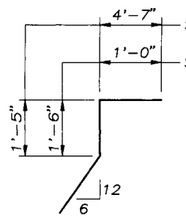


SECTION THRU DECK

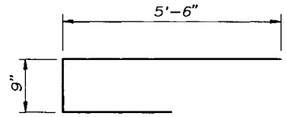
SCALE: 3/8"=1'-0"



S509E

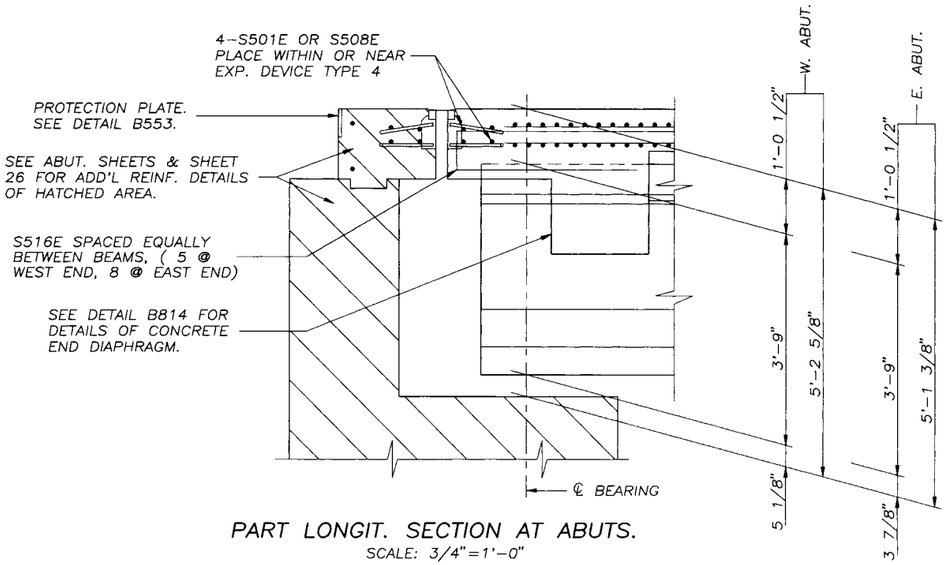


S511E & S517E



S516E

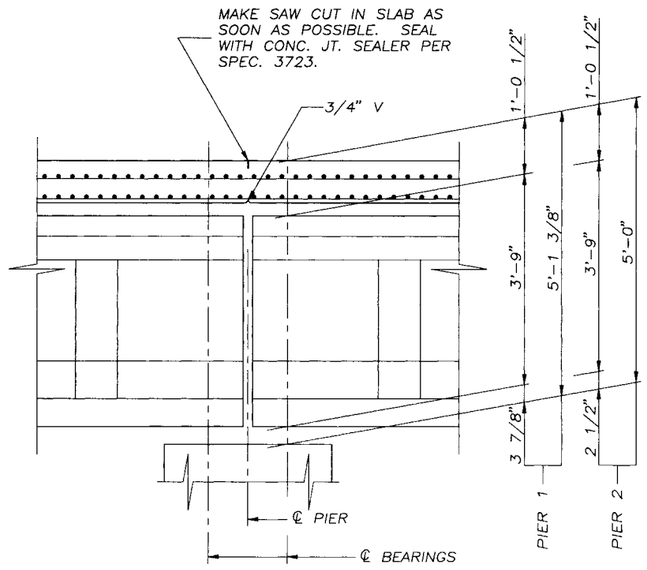
(16) S413E WHICH INTERFERES WITH FLOOR DRAINS ARE TO BE CUT IN THE FIELD TO FIT BETWEEN FLOOR DRAINS. THE CUT END SHALL BE EPOXY COATED WITH AN APPROVED EPOXY COATING. THE REPAIR SHALL BE PERFORMED AS SOON AS POSSIBLE, BEFORE VISIBLE OXIDATION APPEARS.



PART LONGIT. SECTION AT ABUTS.

SCALE: 3/4"=1'-0"

NOTE: SECTIONS SHOWN ARE TAKEN ALONG ℄ ROADWAY.



LONGITUDINAL SECTION AT PIERS

SCALE: 3/4"=1'-0"

BILL OF REINFORCEMENT ~ SUPERSTRUCTURE

BAR	NO.	LENGTH	SHAPE	LOCATION
S501E	4	43'-0"	STRT.	TRANSV. @ WEST END ~ T&B
S502E	6	4'-10"	STRT.	TRANSV. @ WEST END ~ T&B
S503E	2 SER. OF 34	6'-3" TO 37'-5"	STRT.	TRANSV. @ WEST END ~ T&B
S504E	380	39'-0"	STRT.	TRANSV. ~ TOP
S505E	380	38'-10"	STRT.	TRANSV. ~ BOTTOM
S506E	2 SER. OF 86	4'-9" TO 37'-8"	STRT.	TRANSV. @ EAST END ~ T&B
S508E	4	56'-7"	STRT.	TRANSV. @ EAST END ~ T&B
S509E	6	7'-0"	BENT	TRANSV. @ EAST END ~ T&B
S510E	6	59'-0"	STRT.	TRANSV. @ EAST END ~ T&B
S511E	2	9'-0"	BENT	TRANSV. @ EAST END ~ T&B
S512E	6	40'-2"	STRT.	TRANSV. @ WEST END ~ T&B
(3) S413E	189	34'-0"	STRT.	LONGIT. ~ TOP
(4) S514E	360	40'-9"	STRT.	LONGIT. ~ BOTTOM
S615E	96	15'-0"	STRT.	LONGIT. @ PIERS
S516E	52	8'-7"	BENT	BETWEEN BEAMS @ ENDS
S517E	2	4'-6"	BENT	TRANSV. @ EAST END ~ T&B

(3) 7 LINES WITH 1'-7" MINIMUM LAP.
(4) 6 LINES WITH 3'-3"" MINIMUM LAP.

(5) SUMMARY OF QUANTITIES ~ SUPERSTRUCTURE

(13) STRUCTURAL CONCRETE (3Y43)	10	CU. YD.
(7) BRIDGE SLAB CONCRETE (3Y33A)	8946	SQ. FT.
(12) TYPE J RAILING CONCRETE (3Y46A)	504	LIN. FT.
REINFORCEMENT BARS, EPOXY COATED	70580	POUND
(10) PRESTRESSED CONCRETE BEAMS, TYPE 45M-74	15	EACH
PRESTRESSED CONCRETE BEAMS 45M	1103	LIN. FT.
DIAPH. FOR TYPE 45M PRESTR. CONC. BEAMS	231	LIN. FT.
STRUCTURAL STEEL (3306)	830	POUND
EXPANSION JOINT DEVICE TYPE 4	103	LIN. FT.
(8) NAME PLATE (SEE DETAIL B101)	1	
(11) PROTECTION PLATE (SEE DETAIL B553)		
BEARING ASSEMBLY	30	EACH
(9) FIXED CURVED PLATE BRG. ASSEMBLY, TYPE 1	6	EACH
(9) FIXED CURVED PLATE BRG. ASSEMBLY, TYPE 2	9	EACH
(9) EXP. CURVED PLATE BRG. ASSEMBLY, TYPE 3	4	EACH
(9) EXP. CURVED PLATE BRG. ASSEMBLY, TYPE 4	6	EACH
(9) EXP. CURVED PLATE BRG. ASSEMBLY, TYPE 5	2	EACH
(9) FIXED CURVED PLATE BRG. ASSEMBLY, TYPE 6	3	EACH
(6) (8) CORK ~ 1"X11" (RAILING)	46	LIN. FT.
(6) (14) CONDUIT SYSTEM (TELEPHONE)	1	L. SUM
FLOOR DRAINS TYPE B702 MOD.	8	EACH
(15) BENCH MARK DISK	1	

(5) INCLUDES RAILING AND END DIAPHRAGM QUANTITIES.

(6) SEE SPECIAL PROVISIONS.

(7) APPROX. VOL.= 277 C. Y. BASED ON AN AVG. STOOL HEIGHT OF 2 1/4".

(8) INCLUDED IN PRICE BID FOR OTHER ITEMS.

(9) PAYMENT FOR BEARINGS INCLUDED IN ITEM BEARING ASSEMBLIES PER EACH. SEE SPECIAL PROVISIONS.

(10) PAYMENT FOR BEAMS INCLUDED IN ITEM PRESTR. CONC. BMS. 45M/L.F.

(11) INCLUDED IN STRUCTURAL STEEL (3306).

(12) APPROX. VOLUME = 51 CU. YDS.

(13) END DIAPHRAGM CONCRETE

(14) INCLUDES 265 L.F. 2"ø R.S.C. (LAST 3" OF CONDUIT SHALL BE THREADED) 4-45° ELBOWS, 2 APPROVED EXPANSION FITTINGS AND 2 END CAPS. PROJECT CONDUIT A MIN. OF 6" PAST END OF RAIL, SEE DETAIL SHEET 6. ALL MATERIAL SHALL BE FURNISHED & INSTALLED BY THE BRIDGE CONTRACTOR.

(15) COUNTY WILL FURNISH DISK. PAYMENT FOR PLACING IS TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

AS-BUILT
MAR 19 2001
ENGINEERING

CERTIFIED BY Dale Drowe
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55556

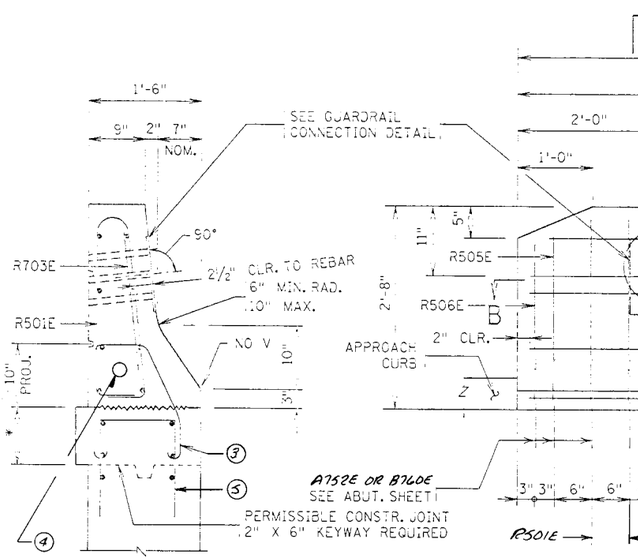
SUPERSTRUCTURE DETAILS

APPROVED:

S.P. 55-598-36

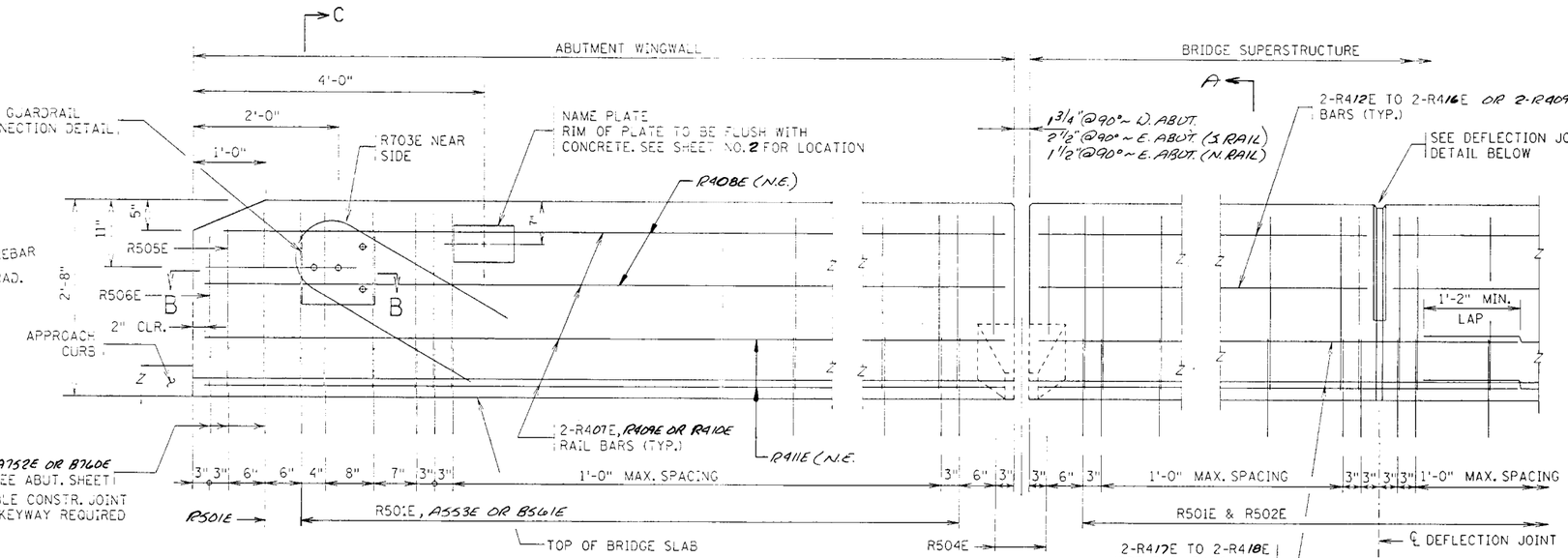
SHEET 27 OF 40 SHEETS

DES.: CSK	DRN.: DM	55556
CHK.: RB	CHK.: CSK	



SECTION C-C

* THICKNESS TO BE THE SAME AS SLAB IN SECTION A-A

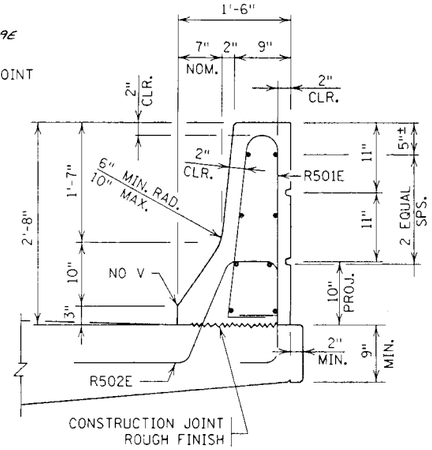


INSIDE ELEVATION OF RAILING

EXPANSION JOINT

EXPANSION DEVICE NOT SHOWN

A ↓ DEFLECTION JOINT



SECTION A-A

③ A752E OR A553E ~ W. ABUT.
B760E OR B561E ~ E. ABUT.

④ 2"ϕ R.S. CONDUIT ~ NORTH RAIL ONLY, SEE DETAIL, SHEET 6

⑤ A672E ~ W. ABUT.
B659E ~ E. ABUT.
SPACE W/ ③

BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R501E	397	6'-3"	BENT	RAIL VERT.
R502E	319	5'-6"	BENT	RAIL VERT.
R703E	4	6'-7"	BENT	RAIL VERT.
R504E	8	5'-0"	BENT	RAIL VERT.
R505E	4	5'-10"	BENT	RAIL VERT.
R506E	4	5'-7"	BENT	RAIL VERT.
R407E	8	9'-4"	STR'T.	RAIL HORZ.
R408E	8	10'-3"	STR'T.	RAIL HORZ.
R409E	12	13'-8"	STR'T.	RAIL HORZ.
R410E	8	13'-3"	STR'T.	RAIL HORZ.
R411E	4	21'-0"	"	" "
R412E	32	14'-10"	"	" "
R413E	4	13'-1"	"	" "
R414E	4	15'-0"	"	" "
R415E	32	14'-1"	"	" "
R416E	4	13'-5"	"	" "
① R417E	24	38'-8"	"	" "
② R418E	24	37'-3"	"	" "

NOTES:

CONCRETE RAILING = 403 LBS./FT. (.100 CU. YDS./FT.)

GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, SPEC. 3306.

FINISH ALL EDGES OF RAIL WITH ½" VEE, EXCEPT WHERE OTHERWISE NOTED.

SEE SUPERSTRUCTURE SHEET FOR JOINT SPACING.

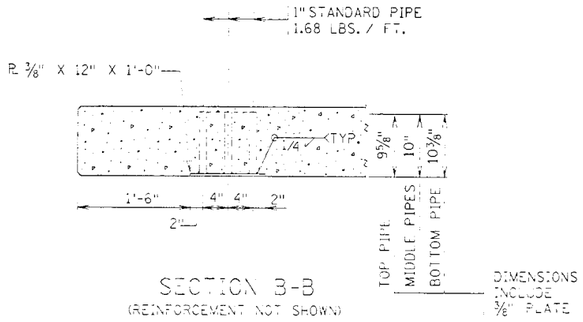
GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

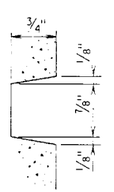
MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20'-0".

① 6 LINES, 1'-2" MIN. LAP ~ NORTH RAIL

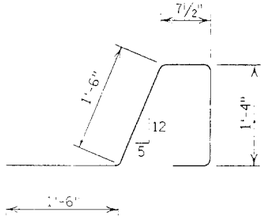
② 6 LINES, 1'-2" MIN. LAP ~ SOUTH RAIL



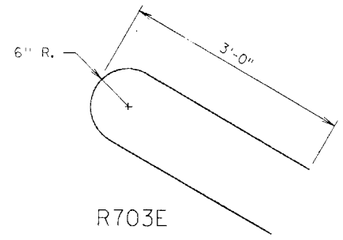
SECTION B-B
(REINFORCEMENT NOT SHOWN)



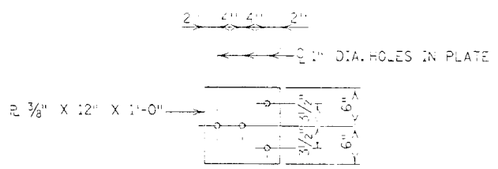
RAIL RUSTICATION



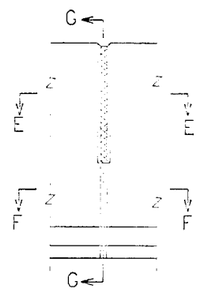
R502E



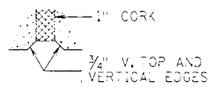
R703E



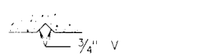
GUARDRAIL CONNECTION DETAIL
GALVANIZE AFTER FABRICATION PER SPEC. 3394
ESTIMATED WEIGHT = 20 LBS.



ELEVATION

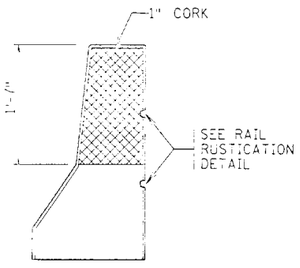


SECTION E-E

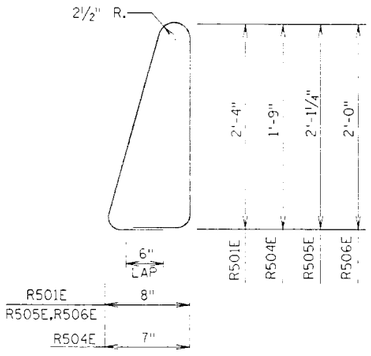


SECTION F-F

DEFLECTION JOINT



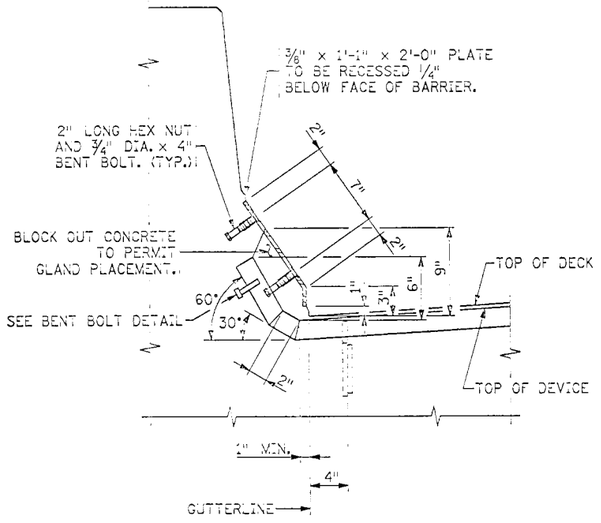
SECTION G-G



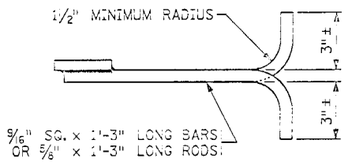
R501E, R504E, R505E & R506E

S.P. 55-598-36

CERTIFIED BY _____ PROFESSIONAL ENGINEER	TITLE: CONCRETE RAILING (TYPE J) WITH INTEGRAL END POST	DES: CSK DR: DM CHK: RB CHK: CSK APPROVED:	APPROVED: 8/31/91 FIG. 5-397.115
REG. NO. 20666 19 96		Sheet No. 28 of 40 Sheets	Bridge No. 55556

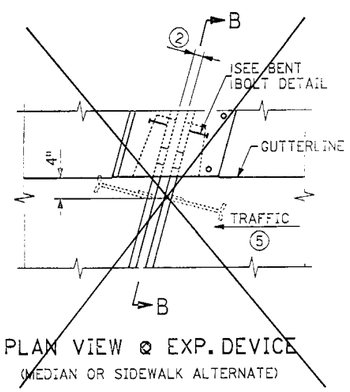


SECTION THROUGH RAILING
(TYPE J RAILING)

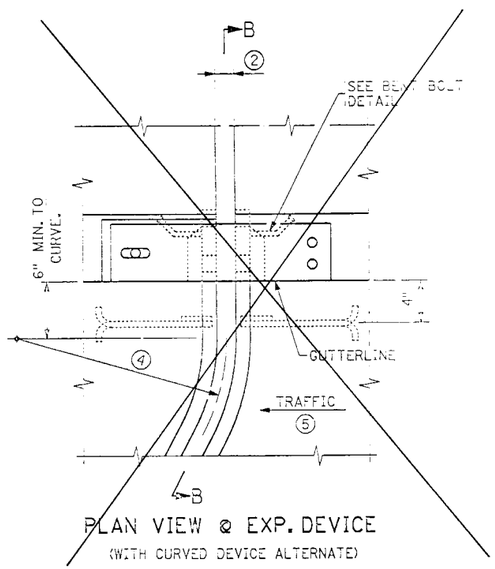


BAR-ROD DETAIL

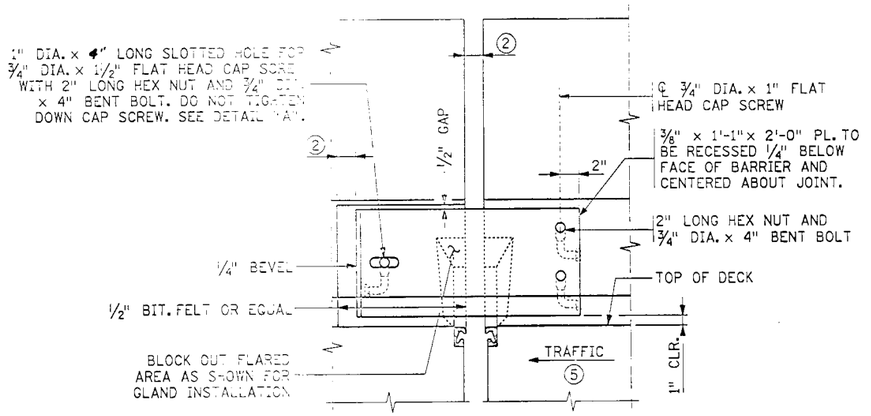
PLAN VIEW @ EXP. DEVICE
(WITH STRAIGHT DEVICE)



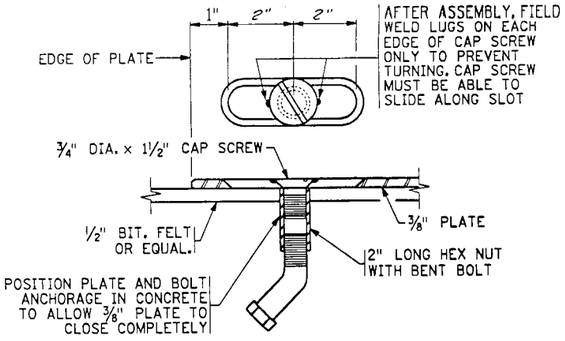
PLAN VIEW @ EXP. DEVICE
(MEDIAN OR SIDEWALK ALTERNATE)



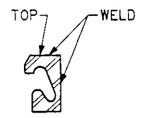
PLAN VIEW @ EXP. DEVICE
(WITH CURVED DEVICE ALTERNATE)



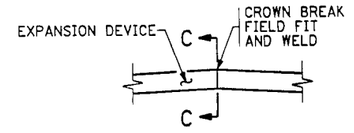
RAILING ELEVATION



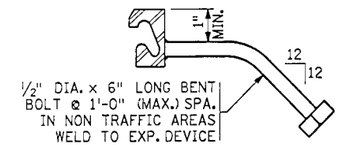
DETAIL "A"



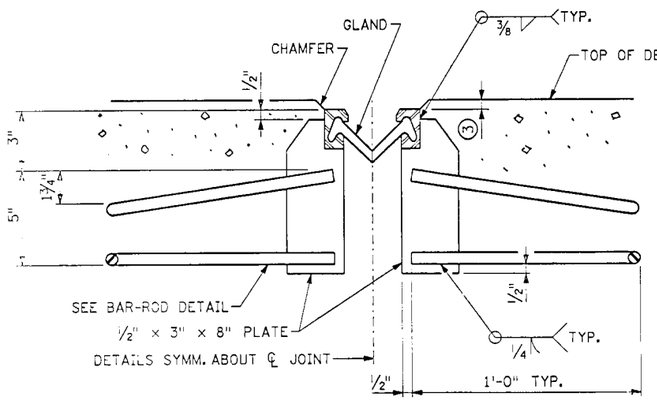
SECTION C-C



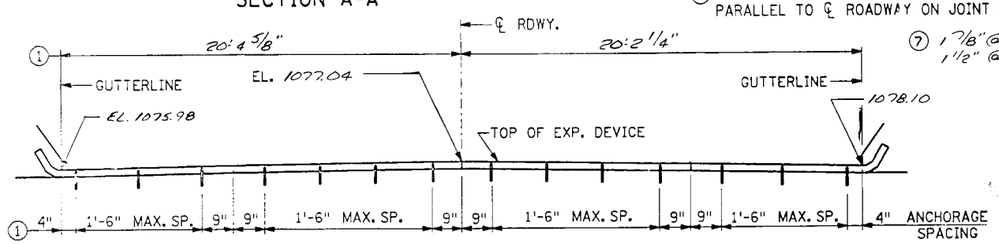
DETAIL "B"



BENT BOLT DETAIL



SECTION A-A



SECTION B-B ~ ALONG ℄ JOINT

~~(ELEVATIONS SHOWN ARE 1/8" BELOW TOP OF SLAB @ ℄ JT.)~~

(ELEVATIONS SHOWN ARE 1/2" BELOW TOP OF SLAB @ ℄ JT.)

NOTES

GALVANIZE STRUCTURAL STEEL AFTER FABRICATION AS PER SPEC. 3394. GALVANIZE FASTENERS AS PER SPEC. 3392.

JOINTS IN ROADWAY PLATE OR EXTRUSION SHALL BE LOCATED AT BREAKS IN TRANSVERSE PROFILE AND AS OTHERWISE REQUIRED. JOINTS SHALL BE CLOSE FIT AND WELDED. REPAIR AFTER WELDING AS PER SPEC. 2471.3L.

STRUCTURAL STEEL SHALL COMPLY WITH SPEC. 3306 OR 3309.

EXPANSION DEVICE SHALL BE STRAIGHTENED TO A TOLERANCE OF 1/8" IN 10 FEET.

CAP SCREWS SHALL BE COUNTERSUNK 1/16" BELOW TOP OF PLATE.

LENGTH OF PAYMENT FOR DEVICE IS FROM OUT TO OUT OF EXTRUSION ALONG CENTERLINE OF JOINT.

(1) DIMENSIONS ARE ALONG CENTERLINE OF JOINT.

(2) 2 1/8" AT 45°; 2 3/4" AT 90°

(3) 1/8" ~~(1/4" MAX.)~~.
1/2" (5/8" MAX.) WHEN SNOWPLOW FINGERS ARE USED.

(4) SEE SUPERSTRUCTURE DETAILS FOR RADIUS.

(5) SEE SHEET 2 FOR DIRECTION OF TRAFFIC.

(6) PLACE BAR-ROD NORMAL TO JOINT ON NEW BRIDGES; PARALLEL TO ℄ ROADWAY ON JOINT REPLACEMENTS.

(7) 1 7/8" @ 45°
1 1/2" @ 90°

S.P. 55-598-36

APPROVED: MODIFIED

FIG. 5-397.627

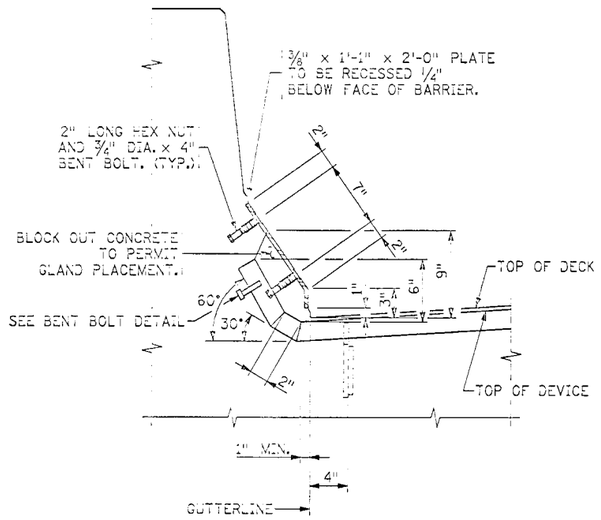
CERTIFIED BY [signature] PROFESSIONAL ENGINEER
REG. NO. 20666 6-7 1996

TITLE: WEST ABUTMENT
WATERPROOF EXPANSION DEVICE
(WITH TYPE J BARRIER)

DES: CSK | DR: DM | CHK: RB | CHK: CSK | APPROVED:

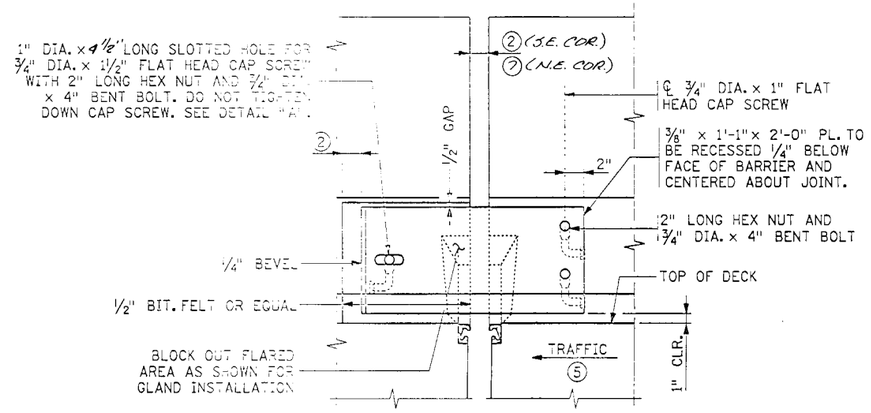
SHEET NO. 29 OF 40 SHEETS

BRIDGE NO. 55556

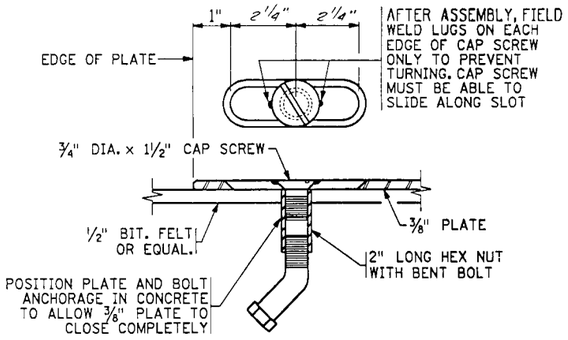


SECTION THROUGH RAILING

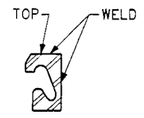
(TYPE J RAILING)



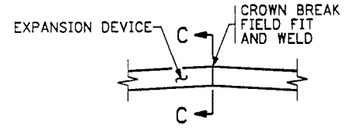
RAILING ELEVATION



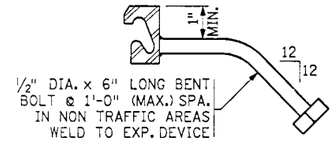
DETAIL "A"



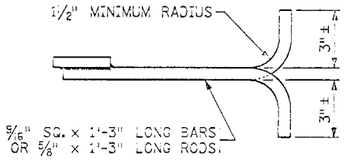
SECTION C-C



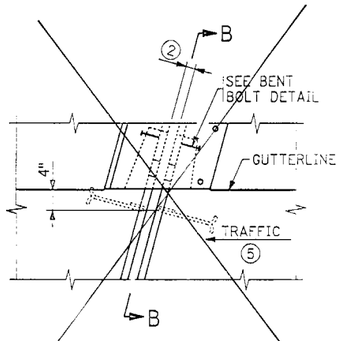
DETAIL "B"



BENT BOLT DETAIL

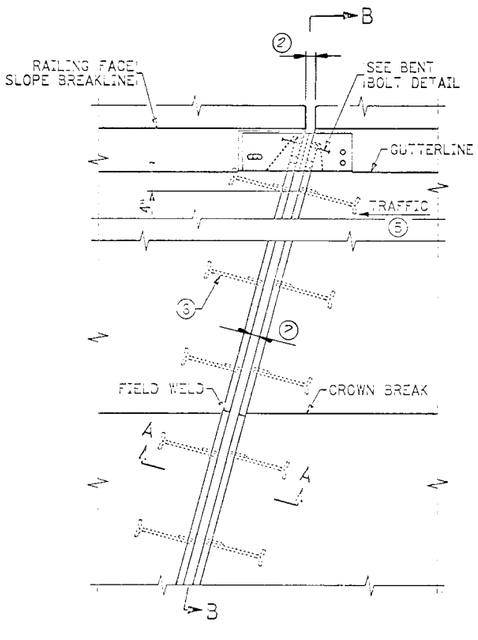


BAR-ROD DETAIL



PLAN VIEW @ EXP. DEVICE

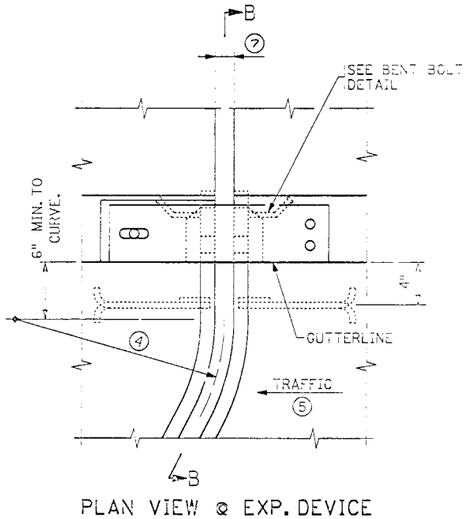
(MEDIAN OR SIDEWALK ALTERNATE)



PLAN VIEW @ EXP. DEVICE

(WITH STRAIGHT DEVICE)

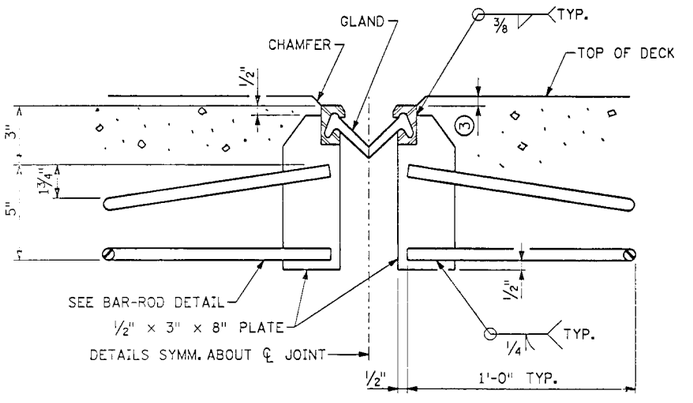
S.E. CORNER



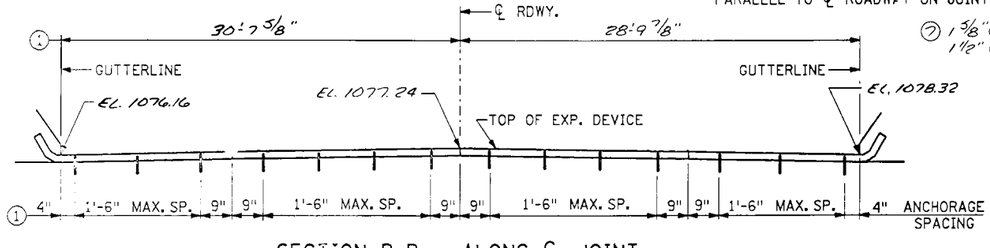
PLAN VIEW @ EXP. DEVICE

(WITH CURVED DEVICE ALTERNATE)

N.E. CORNER



SECTION A-A



SECTION B-B ~ ALONG ℄ JOINT

~~(ELEVATIONS SHOWN ARE 1/2" BELOW TOP OF SLAB @ ℄ JT.)~~

(ELEVATIONS SHOWN ARE 1/8" BELOW TOP OF SLAB @ ℄ JT.)

NOTES

GALVANIZE STRUCTURAL STEEL AFTER FABRICATION AS PER SPEC. 3394. GALVANIZE FASTENERS AS PER SPEC. 3392.

JOINTS IN ROADWAY PLATE OR EXTRUSION SHALL BE LOCATED AT BREAKS IN TRANSVERSE PROFILE AND AS OTHERWISE REQUIRED. JOINTS SHALL BE CLOSE FIT AND WELDED. REPAIR AFTER WELDING AS PER SPEC. 2471.3L.

STRUCTURAL STEEL SHALL COMPLY WITH SPEC. 3306 OR 3309.

EXPANSION DEVICE SHALL BE STRAIGHTENED TO A TOLERANCE OF 1/8" IN 10 FEET.

CAP SCREWS SHALL BE COUNTERSUNK 1/16" BELOW TOP OF PLATE.

LENGTH OF PAYMENT FOR DEVICE IS FROM OUT TO OUT OF EXTRUSION ALONG CENTERLINE OF JOINT.

(1) DIMENSIONS ARE ALONG CENTERLINE OF JOINT.

(2) 3/4" AT 45°; 1 1/2" AT 90°

(3) 1/8" (1/4" MAX.).
~~1/2" (5/8" MAX.) WHEN SNOWPLOW FINGERS ARE USED.~~

(4) SEE SUPERSTRUCTURE DETAILS FOR RADIUS.

(5) SEE SHEET 2 FOR DIRECTION OF TRAFFIC.

(6) PLACE BAR-ROD NORMAL TO JOINT ON NEW BRIDGES; PARALLEL TO ℄ ROADWAY ON JOINT REPLACEMENTS.

(7) 1 5/8" @ 45°
1 1/2" @ 90°

S.P. 55-598-36

APPROVED: MODIFIED

FIG. 5-397.627

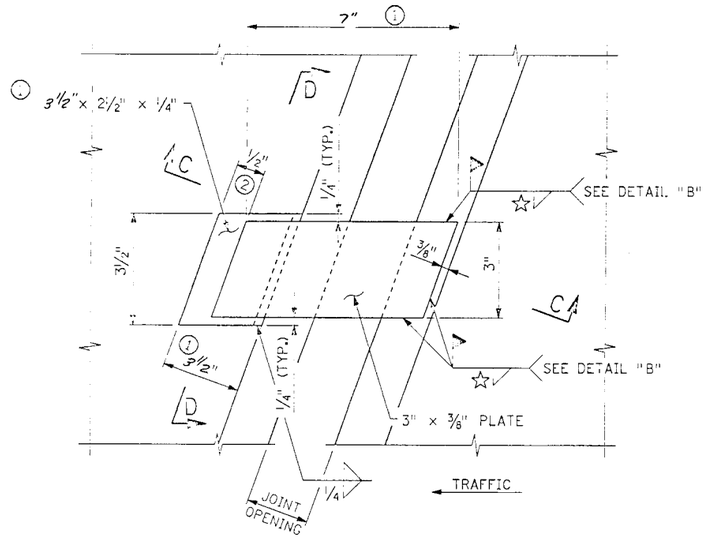
CERTIFIED BY Dale Drawer
PROFESSIONAL ENGINEER
REG. NO. 20660 6-7 1996

TITLE: EAST ABUTMENT
WATERPROOF EXPANSION DEVICE
(WITH TYPE J BARRIER)

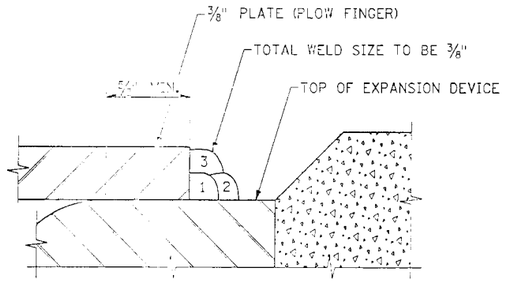
DES: DR: APPROVED:
CHK: CHK:

SHEET NO. 30 OF 40 SHEETS

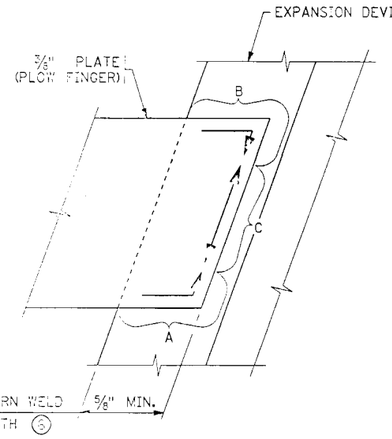
BRIDGE NO. 55556



DETAIL "A"

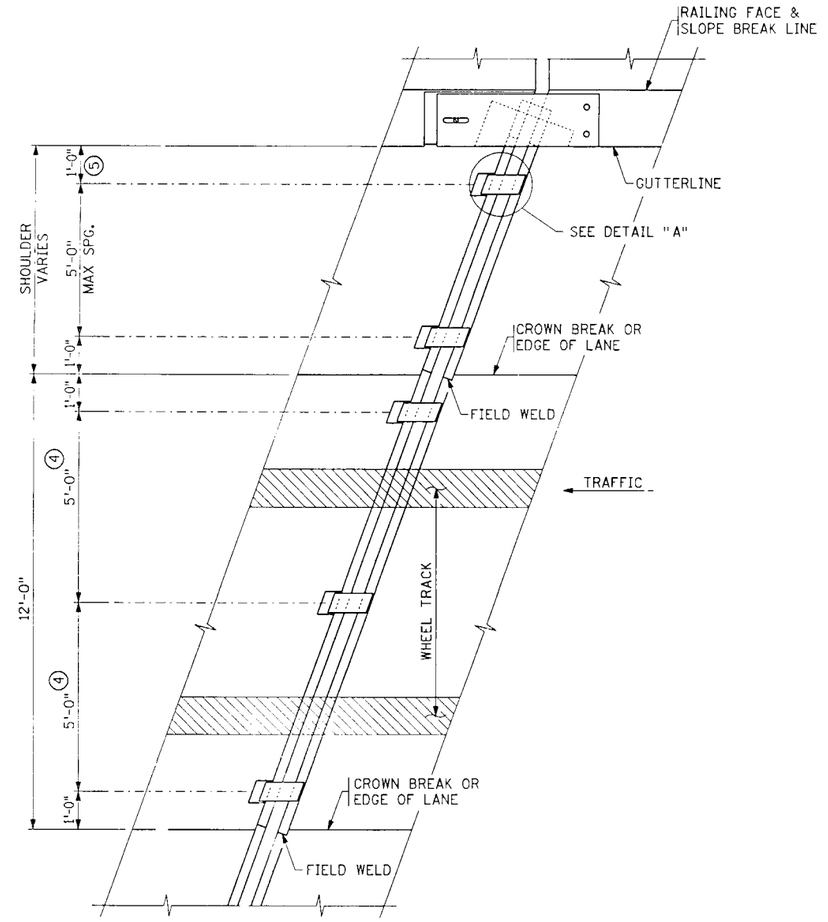


SECTION THRU WELD

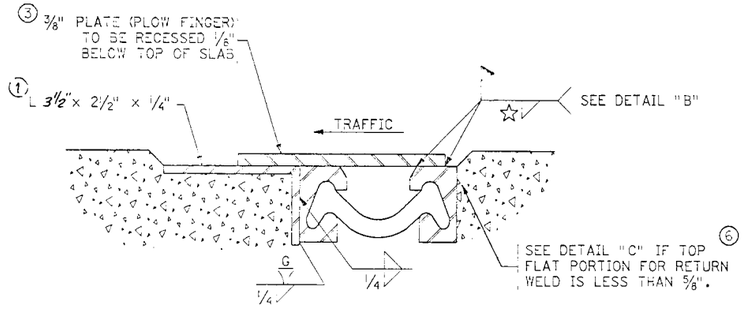


PLAN

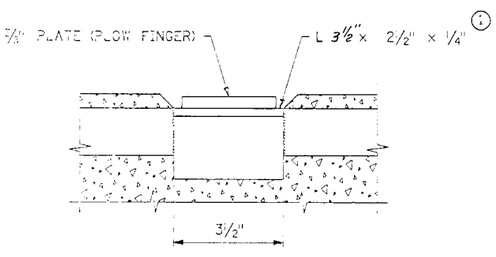
DETAIL "B"



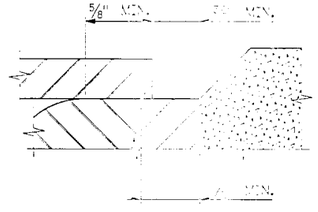
PLAN VIEW AT EXPANSION DEVICE



SECTION C-C



SECTION D-D



DETAIL "C"

☆ WELDING PROCEDURE FOR PLOW FINGERS

A. ALL WELDING SHALL BE DONE WITH 1/8 INCH AWS SPEC. 5.1 TYPE E7016 OR E7018 ELECTRODE.

B. WELD PASS 1 IN AREAS A AND B FIRST, THEN AREA C. FOLLOW WITH PASSES 2 AND 3 IN SAME ORDER AS SHOWN IN DETAIL "B".

C. REMOVE ALL WELD SLAG AND OTHER RESIDUE BETWEEN PASSES.

D. ALLOW AT LEAST 5 MINUTES COOLING TIME BETWEEN EACH OF NINE WELD PASSES.

E. REPAIR ALL GALVANIZING DAMAGED BY REMOVAL AND WELDING, IN ACCORDANCE WITH SPEC. 2471.3L

NOTES

DO NOT GALVANIZE PLOW FINGERS.

① VARIES WITH SKEW AND EXPANSION OPENING.

② MINIMUM IN CLOSED POSITION.

③ EVERY SNOW PLOW FINGER SHALL HAVE FULL AND DIRECT BEARING ON THE PLATE THAT IS LOCATED UNDER THE MOVEMENT SIDE OF THE FINGER. (NO CLICKING NOISE WILL BE ALLOWED.)

④ MODIFY IF LANE WIDTH DIFFERS FROM 12'-0".

⑤ OMIT LAST PLOW FINGER ON DEVICE WITH CURVED END.

⑥ ADD BACKING BAR AS REQUIRED; ½" MIN. THICKNESS, 1½" DEEP.

⑦ USE AT WEST ABUTMENT ONLY

S.P. 55-598-36

APPROVED: MODIFIED

FIG. 5-397.628

CERTIFIED BY _____ PROFESSIONAL ENGINEER

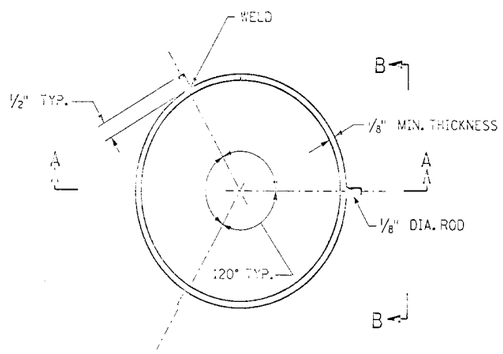
REG. NO. _____ 6-7 19 90

TITLE: ⑦ WATERPROOF EXPANSION DEVICE SNOW PLOW PROTECTION (USE ON SKEWS OVER 15° AND LESS THAN 30°)

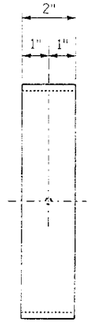
DES: CSK	DR: DM	APPROVED:
CHK: RB	CHK: CSK	

SHEET NO. 31 OF 40 SHEETS

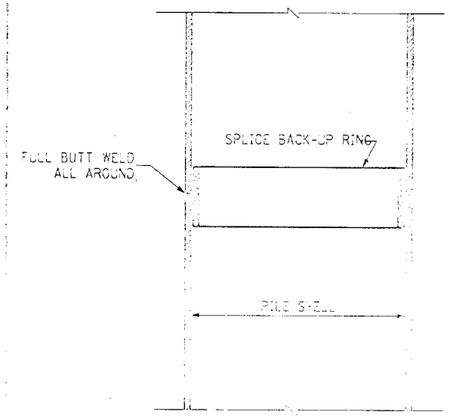
BRIDGE NO. 55556



PLAN VIEW SPLICE
(PILE NOT SHOWN)



SECTION B-B
(PILE NOT SHOWN)



SECTION A-A

NOTES:

APPROVED COMMERCIAL PILE SPLICE BACK-UP RING MAY BE USED IN LIEU OF THE TYPE DETAILED. BACK-UP RING SHALL HAVE A TIGHT FIT.

WELDING ELECTRODE SHALL BE A.W.S. TYPE E7016 OR E7018 (LOW-HYDROGEN).

LOW-HYDROGEN ELECTRODES SHALL BE SUPPLIED IN HERMETICALLY (AIR-TIGHT) SEALED CONTAINERS.

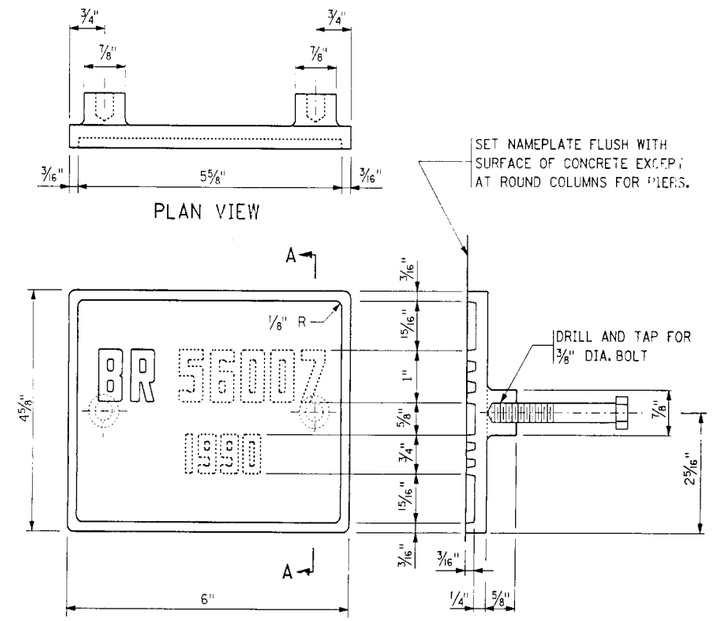
LOW-HYDROGEN ELECTRODES SHALL BE STORED IN HOLDING OVENS AT A TEMPERATURE OF NOT LESS THAN 250° F.

LOW-HYDROGEN ELECTRODES SHALL BE PLACED IN A HOLDING OVEN FOR AT LEAST 8 HOURS IF THEY HAVE BEEN EXPOSED TO THE ATMOSPHERE FOR MORE THAN 2 HOURS.

ELECTRODES WHICH HAVE 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: SEPT. 6, 1992 OFFICE of BRIDGES and STRUCTURES	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION PILE SPLICE CAST-IN-PLACE CONCRETE PILES	DATE: DR: CHK:



PLAN VIEW

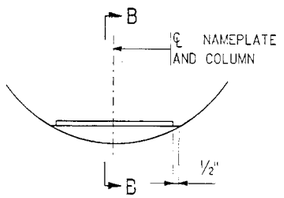
ELEVATION

SECTION A-A

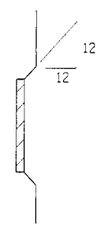
THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION.
DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS:

BRIDGE 55556

YEAR 1996



NAMEPLATE PLACEMENT
(ROUND CONCRETE PIER COLUMNS)



SECTION B-B



NUMBERS FOR NAMEPLATE

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.

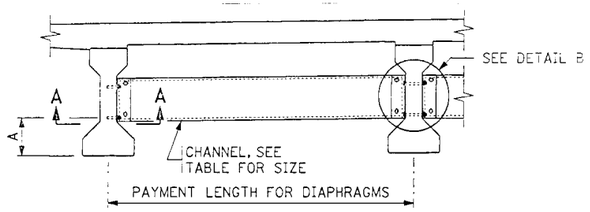
FURNISH 2 STEEL BOLTS ⅜" DIA. × 3" LONG WITH EACH PLATE.

ALL DIMENSIONS FOR ¾" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN FOR THE 1" HIGH LETTERS AND NUMBERS.

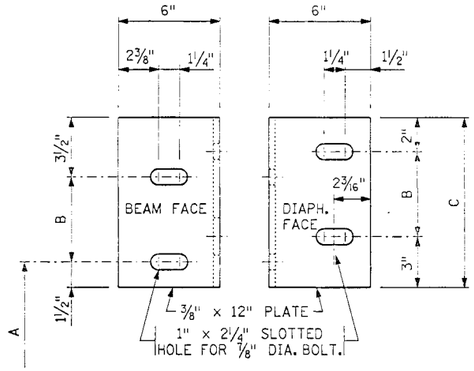
APPROVED: JUNE 5, 1995 OFFICE of BRIDGES and STRUCTURES	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION BRIDGE NAMEPLATE (FOR NEW BRIDGES)	REVISION	DETAIL NO. B101

CERTIFIED BY _____ PROFESSIONAL ENGINEER REG. NO. 20666 19 96	TITLE: MISC. BRIDGE DETAILS	DES.: CSK	DRWN.: DM	APPROVED:	BRIDGE NO. 55556
		CHK.: RB	CHK.: CSK		
		S.P.55-598-36			
		SHEET 32 OF 40 SHEETS			

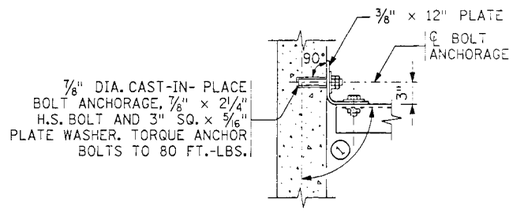
TABLE				
	BEAM HEIGHT	DISTANCE A	DISTANCE B	DISTANCE C	CHANNEL SIZE
BULB TEE	~~28M~~	1'-0"	5"	10"	~~C10x15.3~~
	~~30"~~	1'-2"	7"	1'-0"	~~C12x20.7~~
	~~36"~~	1'-3"	7"	1'-0"	~~C12x20.7~~
	~~40"~~	1'-5"	7"	1'-0"	~~C12x20.7~~
	45M	1'-3¾"	1'-1"	1'-6"	MC18x42.7



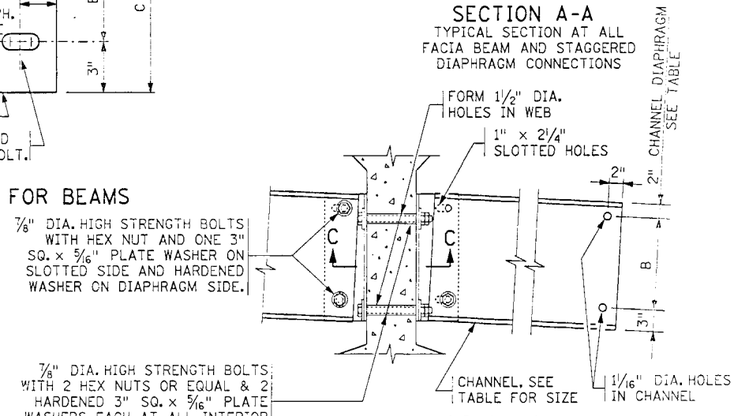
PART TRANSVERSE SECTION AT DIAPHRAGM



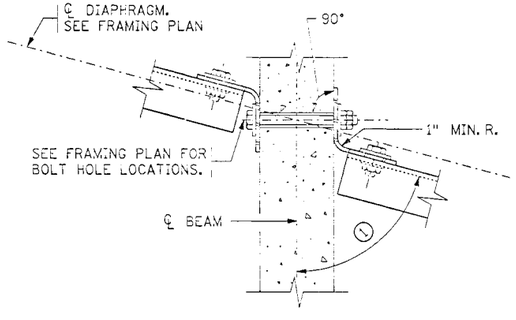
DIAPHRAGM CONNECTION FOR BEAMS



SECTION A-A
TYPICAL SECTION AT ALL FACIA BEAM AND STAGGERED DIAPHRAGM CONNECTIONS



DETAIL B
INTERIOR BEAM WITH CONTINUOUS LINE OF DIAPHRAGMS



SECTION C-C
TYPICAL SECTION AT CONTINUOUS INTERIOR DIAPHRAGMS

NOTES:

SEE SPEC. 2405.3M FOR INSTALLATION

THE LEG OF THE 12" PLATE SHALL BE SHOP BENT TO CONFORM TO THE DIAPHRAGM. A ⅜" x 6" x 6" ANGLE MAY BE USED FOR DIAPHRAGMS PERPENDICULAR TO BEAMS.

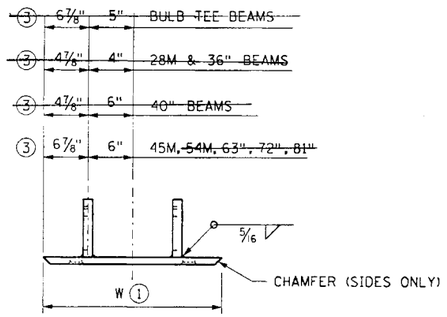
FOR BOLT LENGTHS GREATER THAN 8½", USE HIGH STRENGTH BOLTS PER SPEC. SAE GRADE 5 OR BETTER.

ALL STRUCTURAL STEEL SHOWN ON THIS DETAIL, INCLUDING BOLTS AND WASHERS, SHALL BE INCLUDED IN THE PAYMENT FOR DIAPHRAGMS FOR PRESTRESSED BEAMS.

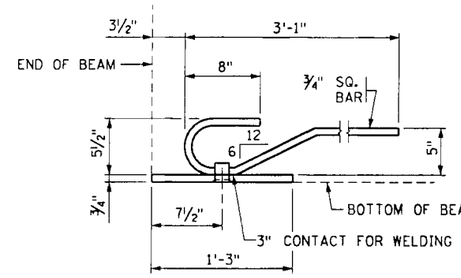
DIAPHRAGMS OVER THE PIERS ARE CONSIDERED TO BE INTERMEDIATE IF THE SLAB IS CONTINUOUS.

(1) FOR SKEW ANGLES UNDER 20°, USE 90° LESS THE SKEW ANGLE. FOR SKEW ANGLES OVER 20°, USE 90°.

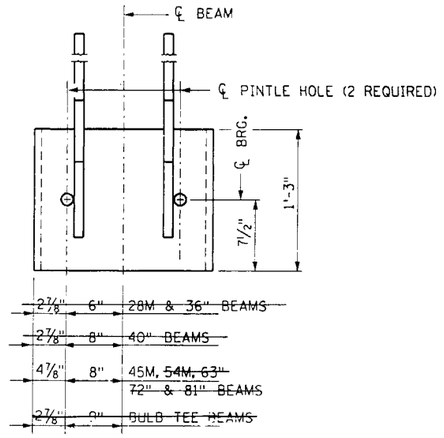
APPROVED: MAY 23, 1995	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
OFFICE of BRIDGES and STRUCTURES	STEEL INTERMEDIATE DIAPHRAGM (FOR 28M - 45M PRESTRESSED CONCRETE BEAMS AND 30" BULB TEE BEAMS)		B403



FRONT VIEW

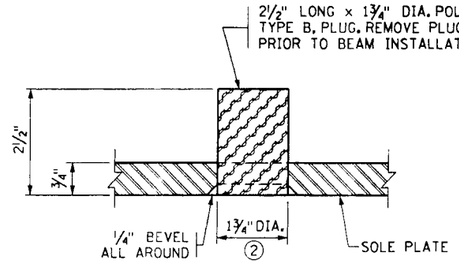


SIDE VIEW



TOP VIEW

BEAM SIZE	W VALUE
~~28M,36"~~	1'-5¾"
~~40"~~	1'-9¾"
45M, ~~54M 63",72",81"~~	2'-1¾"
~~BULB TEES~~	~~1'-11¾"~~



PINTLE HOLE DETAIL

NOTES:

MATERIAL TO BE STRUCTURAL STEEL PER SPEC. 3306.

SOLE PLATE FOR BEARING ASSEMBLY TO BE HOT DIPPED GALVANIZED PER SPEC. 3394 AFTER FABRICATION.

PINTLE HOLES SHALL BE FREE OF ZINC BUILD UP FROM GALVANIZING.

PAYMENT FOR SOLE PLATES TO BE INCLUDED IN PRICE BID FOR PRESTRESSED CONCRETE BEAMS.

(1) DIMENSION "W" TO BE THE WIDTH AT THE BOTTOM FLANGE OF THE BEAM MINUS ¼".

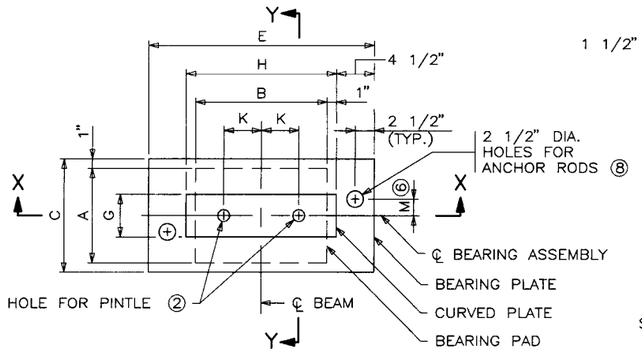
(2) FOR 1½" DIA. PINTLES.

(3) THESE DIMENSIONS MAY BE MODIFIED TO CLEAR PRESTRESSED STRANDS, HOWEVER, CHANGES MUST BE APPROVED BY THE ENGINEER.

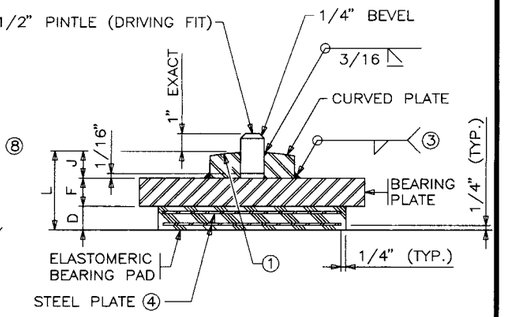
AS BUILT
MAR 19 2001
SEAL ENGINEER

APPROVED: SEPT. 8, 1992	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION 11/19/92 KLW	DETAIL NO.
OFFICE of BRIDGES and STRUCTURES	SOLE PLATE PRESTRESSED CONCRETE BEAMS (FOR BEARINGS WITH PINTLES)		B303

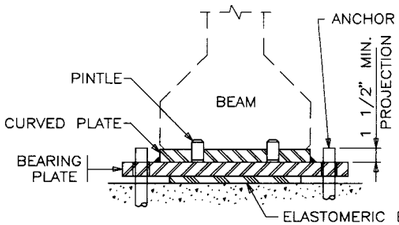
CERTIFIED BY	TITLE:	DES.: CSK	DRWN.: DM	APPROVED:	BRIDGE NO.
PROFESSIONAL ENGINEER	MISC. BRIDGE DETAILS	CHK.: RB	CHK.: CSK		55556
REG. NO. 20666 19 96		S.P.55-598-36			
		SHEET 33 OF 40 SHEETS			



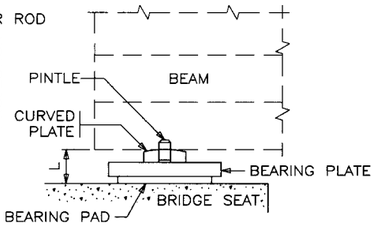
PLAN



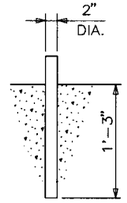
SECTION Y–Y



SECTION X–X



END ELEVATION
(ANCHOR RODS NOT SHOWN)



ANCHOR ROD DETAIL

TABLE

ASSY TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE A	BEARING PAD SIZE B	BEARING PAD SIZE D	STEEL PLATES NO.	STEEL PLATES THICK.	LAMINATES NO.	LAMINATES THICK.	SHAPE FACTOR	BEARING PLATE SIZE C	BEARING PLATE SIZE E	BEARING PLATE SIZE F	CURVED PLATE SIZE G	CURVED PLATE SIZE H	CURVED PLATE SIZE J	PINTLE DIA.	PINTLE DISTANCE K ⑤	ANCHOR ROD OFFSET M ⑥	ASSY. HEIGHT L
F1	PIER 2 ⑦	45M	10	24	1/2	–	–	–	–	7.1	12	35	1	4 1/2	26	1	1 1/2	8	1"	2 1/2
F2	E.ABUT & PIER 1 ⑦	45M	10	24	1 7/8	3	1/8	2	1/2	7.1	12	35	1	4 1/2	26	1	1 1/2	8	⑨	3 7/8
F6	W. ABUT. ⑦	45M	10	24	3 1/8	5	1/8	4	1/2	7.1	12	35	1	4 1/2	26	1	1 1/2	8	2"	5 1/8

⑦ INTERIOR BEAMS ONLY.
⑧ USE 2 1/2" X 5 1/2" SLOTTED HOLE AT PIER 1, E. ABUT., & W. ABUT., ANCHOR ROD CENTERED IN HOLE.
⑨ 1" @ PIER 1
0" @ E. ABUT.

NOTES:

ELASTOMERIC MATERIALS & PAD CONSTRUCTION SHALL COMPLY WITH SPEC. 3741.

ALL STEEL PLATES & ANCHOR RODS SHALL COMPLY WITH SPEC. 3306.

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 & STRUCTURAL STEEL BEARING ASSEMBLY AFTER FABRICATION PER SPEC. 3394, EXCEPT AS NOTED.

PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIALS ON THIS DETAIL.

① THE RADIUS OF THE CURVED PLATE SHALL BE 1'–0" MINIMUM AND 1'–6" MAXIMUM. FINISH TO 250 MICRO. THE FINISHED THICKNESS OF THE PLATE MAY BE 1/16" LESS THAN SHOWN.

② 2 PINTLES, 1 1/2" DIA. FOR TOTAL LOADS TO 390 KIPS.

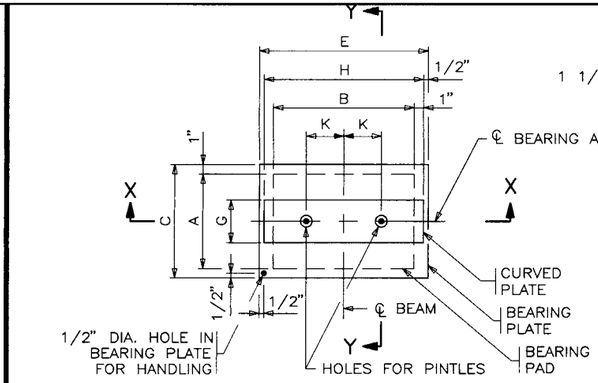
③ FOR BEARING AND CURVED PLATE THICKNESS UP TO 1 1/2" USE 5/16" FILLET WELDS; FOR THICKNESSES OVER 1 1/2" TO 2 1/4" USE 3/8" FILLET WELDS; FOR THICKNESSES OVER 2 1/4" USE 1/2" FILLET WELDS. USE MINIMUM PREHEAT OF 300°F.

④ DO NOT GALVANIZE THESE PLATES.

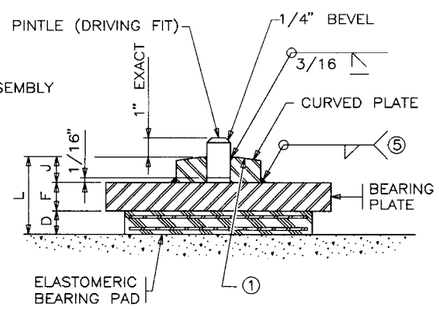
⑤ SEE DETAIL B303 FOR PINTLE DISTANCE K.

⑥ OFFSET MAY BE OPPOSITE OF THAT SHOWN. SEE ANCHOR ROD LAYOUT FOR DETAILS. DIMENSION IS TO CENTER OF ANCHOR ROD AND CENTER OF SLOTTED HOLE.

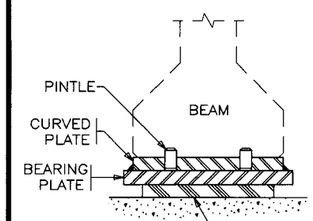
APPROVED: JANUARY 12, 1993	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
OFFICE of BRIDGES and STRUCTURES	CURVED PLATE BEARING ASSEMBLY (PRESTRESSED CONCRETE BEAMS) (FIXED)		B310 MODIFIED



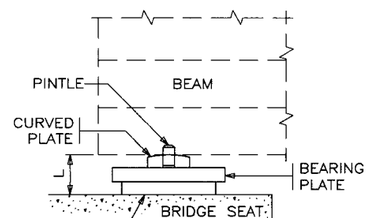
PLAN



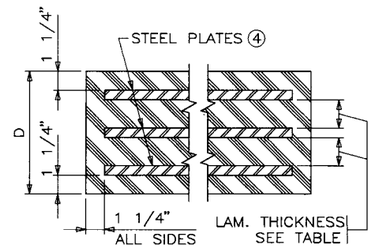
SECTION Y–Y
(ENLARGED BEARING ASSEMBLY)



SECTION X–X



END ELEVATION



SECTION THRU BEARING PAD

TABLE

ASSY TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE A	BEARING PAD SIZE B	BEARING PAD SIZE D	STEEL PLATES NO.	STEEL PLATES THICK.	LAMINATES NO.	LAMINATES THICK.	SHAPE FACTOR	BEARING PLATE SIZE C	BEARING PLATE SIZE E	BEARING PLATE SIZE F	CURVED PLATE SIZE G	CURVED PLATE SIZE H	CURVED PLATE SIZE J	PINTLE DIA.	PINTLE DISTANCE K ④	ASSY. HEIGHT L
E3	PIER 2 ⑥	45M	10	24	1/2	–	–	–	–	7.1	12	27	1	4 1/2	26	1	1 1/2	8	2 1/2
E4	E. ABUT. & PIER 1 ⑥	45M	10	24	1 7/8	3	1/8	2	1/2	7.1	12	27	1	4 1/2	26	1	1 1/2	8	3 7/8
E5	W. ABUT. ⑥	45M	10	24	3 1/8	5	1/8	4	1/2	7.1	12	27	1	4 1/2	26	1	1 1/2	8	5 1/8

NOTES:

ELASTOMERIC MATERIALS & PAD CONSTRUCTION SHALL COMPLY WITH SPEC. 3741.

ALL STEEL PLATES SHALL COMPLY WITH SPEC. 3306

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. 3309.

GALVANIZE STRUCTURAL STEEL BEARING ASSEMBLY AFTER FABRICATION PER SPEC. 3394, EXCEPT AS NOTED.

PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIALS ON THIS DETAIL.

① THE RADIUS OF THE CURVED PLATE SHALL BE 1'–4" MINIMUM AND 2'–0" MAXIMUM. FINISH TO 250 MICRO. THE FINISHED THICKNESS OF THE PLATE MAY BE 1/16" 1/16" LESS THAN SHOWN.

② DO NOT GALVANIZE THESE PLATES.

③ THE TOTAL THICKNESS SHOWN INCLUDES THE STEEL PLATES.

④ SEE DETAIL B303 FOR PINTLE DISTANCE K.

⑤ WELDING PER SPEC. 2471.

⑥ FASCIA BEAMS ONLY.

AS-BUILT
MAR 19 2001
ENGINEERING

DESIGN DATA:
MAXIMUM HORIZONTAL LOAD IS 70 KIPS FOR 1 1/2" PINTLES.

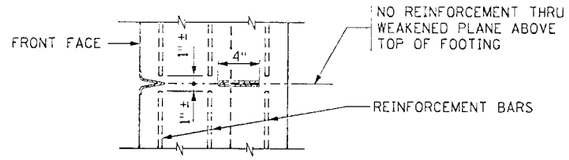
APPROVED: MAY 23, 1995	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
OFFICE of BRIDGES and STRUCTURES	CURVED PLATE BEARING ASSEMBLY (PRESTRESSED CONCRETE BEAMS) (EXPANSION)		B311

CERTIFIED BY Dale Drawer PROFESSIONAL ENGINEER
REG. NO. 20666 19 96

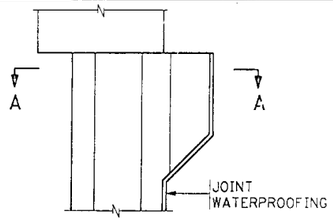
TITLE: MISC. BRIDGE DETAILS

DES.: CSK	DRN.: DDP	APPROVED:
CHK.: RAB	CHK.: CSK	
S.P. 55–598–36		
SHEET 34 OF 40 SHEETS		

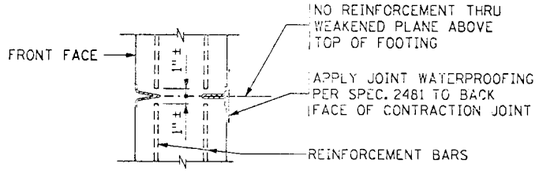
BRIDGE NO. 55556



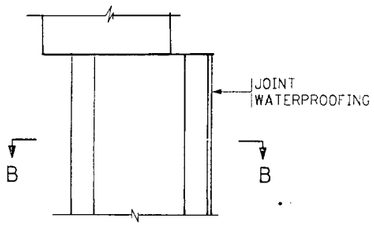
SECTION A-A



SECTION THRU WALL
(WITH END BLOCK)



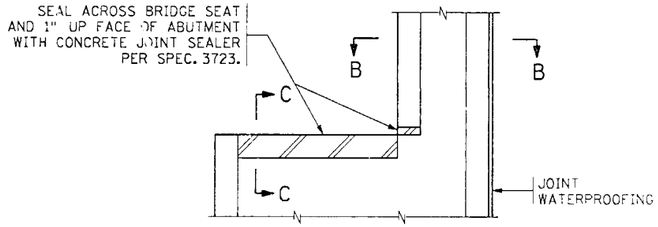
SECTION B-B



SECTION THRU WALL
(WITHOUT

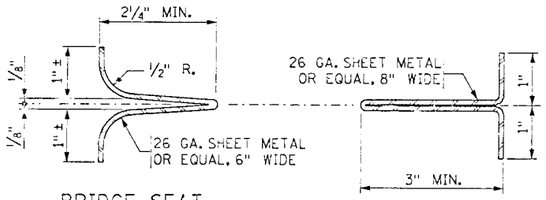


SECTION C-C



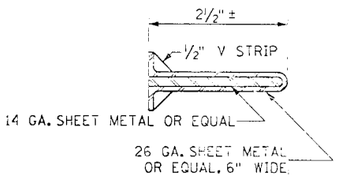
SECTION THRU BRIDGE SEAT

PART SECTION
THRU ABUTMENT AT JOINT



BRIDGE SEAT
AND FRONT STRIP

BACK STRIP



ALTERNATE BRIDGE SEAT
AND FRONT STRIP

NOTES:

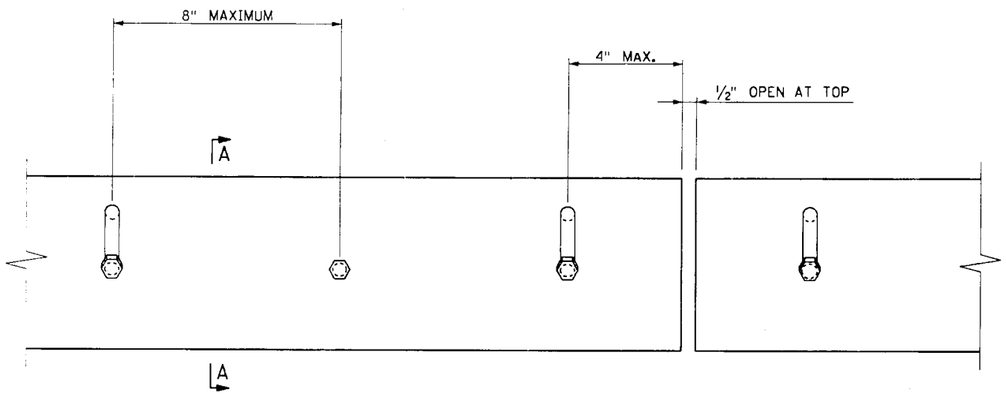
THE METHODS AND MATERIALS INDICATED ON THIS SHEET SHALL BE CONSIDERED AS SUGGESTED ONLY. VARIATIONS WILL BE PERMITTED, SUBJECT TO APPROVAL BY THE ENGINEER, BUT MUST PROVIDE DUMMY JOINTS OF A DEPTH SHOWN, AND A WIDTH AT THE FRONT FACE OF THE ABUTMENT OF NOT GREATER THAN 5/16". THE SEPARATION OF THE HORIZONTAL REINFORCEMENT BARS SHALL NOT BE LESS THAN 1½" NOR MORE THAN 3", CENTERED AS SHOWN, REGARDLESS OF THE PROCEDURE USED FOR FORMING THE DUMMY JOINT.

IF THE FRONT AND BRIDGE SEAT STRIPS ARE GALVANIZED METAL, THEY SHALL BE SECURELY FASTENED TO THE FORMS SO THAT THEY WILL BE REMOVED WITH THE FORMS. IF SUITABLE PLASTIC OR OTHER DURABLE MATERIAL, SATISFACTORY TO THE ENGINEER, IS USED, THE MATERIAL MAY BE LEFT IN PLACE.

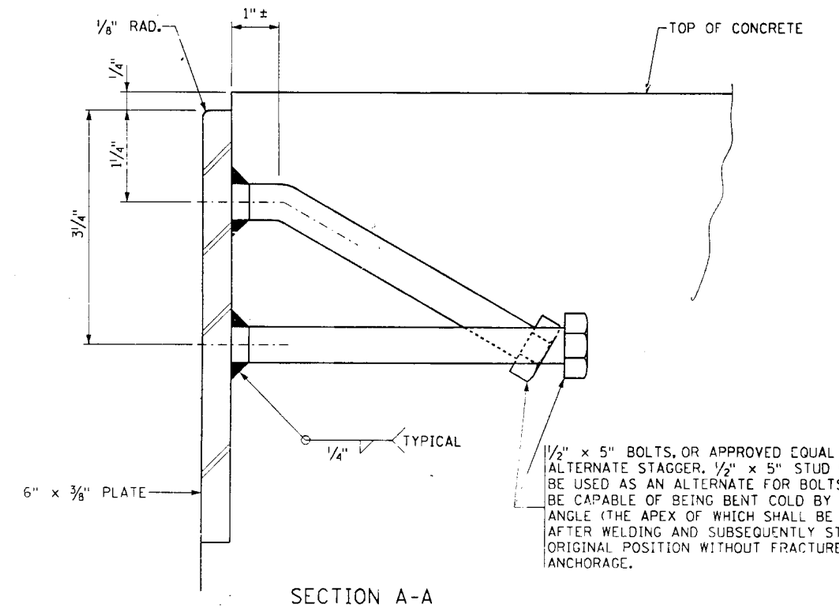
THE BACK STRIP MAY BE GALVANIZED METAL, A SUITABLE PLASTIC, OR OTHER DURABLE MATERIAL SATISFACTORY TO THE ENGINEER. THE BACK STRIP SHALL REMAIN IN PLACE AFTER THE FORMS ARE REMOVED.

THE COST OF FORMING THE JOINT SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.

APPROVED: AUGUST 4,1992	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	DATE:	DETAIL NO.
OFFICE of BRIDGES and STRUCTURES	CONTRACTION JOINT	DR: CHK:	B80[illegible]



ELEVATION
(CONCRETE NOT SHOWN)



½" x 5" BOLTS, OR APPROVED EQUAL AT 8" CENTERS WITH ALTERNATE STAGGER. ½" x 5" STUD WELDED FASTENERS MAY BE USED AS AN ALTERNATE FOR BOLTS. THE ANCHORAGE SHALL BE CAPABLE OF BEING BENT COLD BY HAMMERING THRU A 30° ANGLE (THE APEX OF WHICH SHALL BE AT THE FUSION POINT) AFTER WELDING AND SUBSEQUENTLY STRAIGHTENED TO ITS ORIGINAL POSITION WITHOUT FRACTURE OF THE WELD OR ANCHORAGE.

SECTION A-A

NOTES:

PLATES SHALL EXTEND FULL WIDTH OF ROADWAY BETWEEN GUTTER LINES WITH A ½" OPEN JOINT AT EACH BREAK IN CROWN PROFILE. MAXIMUM LENGTH 22 FEET.

MATERIALS: STRUCTURAL STEEL PER SPEC. 3306. GALVANIZE AFTER FABRICATION PER SPEC. 3394

SET PLATE TO PROPER GRADE AND CROWN. PLATES SHALL BE STRAIGHTENED TO A TOLERANCE OF 1/16" IN 10 FEET AFTER GALVANIZING.

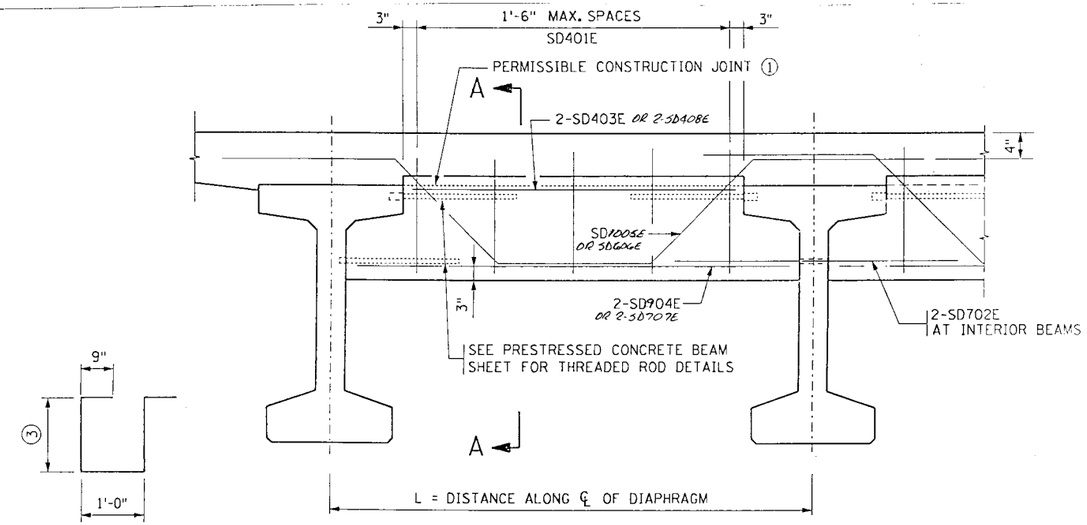
APPROVED: AUGUST 4,1992	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	DATE:	DETAIL NO.
OFFICE of BRIDGES and STRUCTURES	PROTECTION PLATE FOR END OF SLAB	DR: CHK:	B553

CERTIFIED BY _____ PROFESSIONAL ENGINEER
REG. NO. 20666 19 96

TITLE: MISC. BRIDGE DETAILS

DES.: CSK	DRWN.: DM	APPROVED:
CHK.: RB	CHK.: CSK	
S.P.55-598-36		
SHEET 35 OF 40 SHEETS		

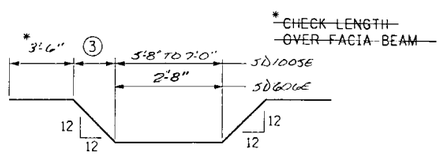
BRIDGE NO. 55556



SD401E

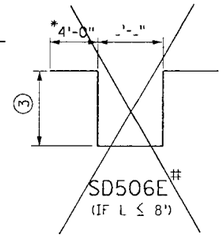
PART TRANSVERSE SECTION

(L > 8' SHOWN)

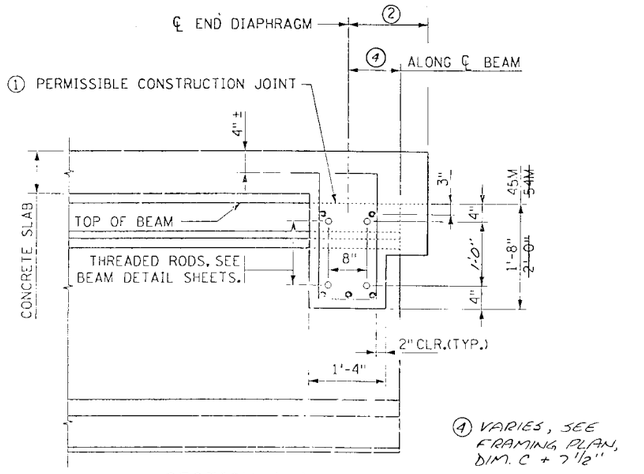


SD1005E & SD606E

(IF L > 8')



LONGITUDINAL REINFORCEMENT IN BOTTOM OF DIAPHRAGM					
DISTANCE "L" ALONG ℄ OF DIAPHRAGM	BARS REQUIRED				
	STRAIGHT		BENT		
	NO.	SIZE	NO.	SIZE	#
UP TO 8'	2	6	1	5	
OVER 8' TO 11'	2	7	1	6	
OVER 11' TO 13'	2	8	1	8	
OVER 13' TO 15'	2	9	1	10	
OVER 15' TO 18'	2	11	1	11	



SECTION A-A

BILL OF REINFORCEMENT FOR END DIAPHRAGM

BAR	NO.	LENGTH	SHAPE	LOCATION
SD401E	52	6'-6"		VERTICAL TIE
SD702E	12	6'-0"		LONG. THRU BEAM
SD403E	2 PER OF 4	8'-8" TO 10'-0"		LONG. TOP ~ E. ABUT.
SD904E	2 PER OF 4	11'-11" TO 12'-11"		LONG. BOT. ~ E. ABUT.
SD1005E	1 PER OF 4	18'-10" TO 20'-2"		LONGITUDINAL ~ E. ABUT.
SD606E	4	15'-9"		LONGITUDINAL ~ D. ABUT.
SD707E	8	8'-2"		LONGIT. BOT. ~ D. ABUT.
SD408E	8	6'-0"		LONGIT. TOP ~ D. ABUT.

NOTES:

DIAPHRAGM CONCRETE TO BE MIX NO. 3Y43.

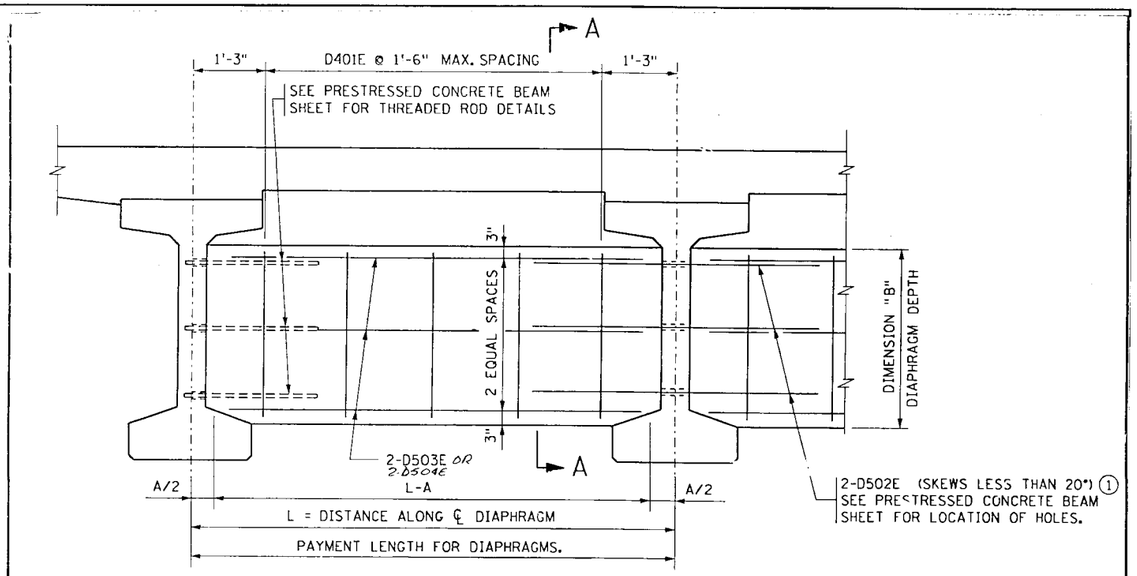
ALL DIAPHRAGM CONCRETE AND REINFORCEMENT BARS SHOWN ON THIS DETAIL TO BE INCLUDED IN PAYMENT FOR SUPERSTRUCTURE QUANTITIES. THREADED RODS ARE INCLUDED IN PAYMENT FOR PRESTRESSED CONCRETE BEAMS.

(1) USE OF CONSTRUCTION JOINT REQUIRES CLEARANCE FOR EXPANSION DEVICE. WHEN CONSTRUCTION JOINT IS USED AT THIS LOCATION, DIAPHRAGM FALSEWORK SHALL REMAIN INPLACE UNTIL COMPLETION OF 5 DAY CURING PERIOD.

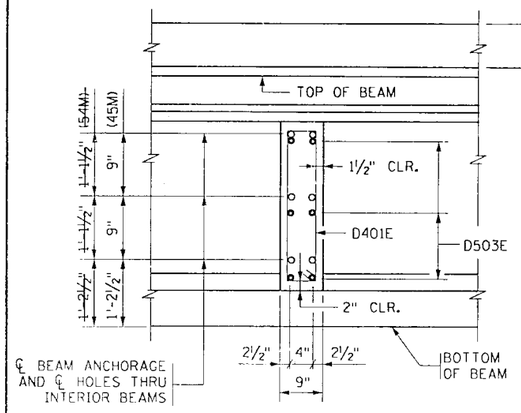
(2) PERPENDICULAR TO CENTERLINE OF DIAPHRAGM. SEE PLANS FOR DIMENSION.

(3) 2'-2" (45M); ~~2'-6" (54M)~~ BASED ON 3½" STOOL AND 9" DECK.

APPROVED: APRIL 6, 1993	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION		DETAIL NO.
OFFICE of BRIDGES and STRUCTURES	CONCRETE END DIAPHRAGM (45M - 54M PRESTRESSED CONCRETE BEAM SPANS) (PARAPET ABUTMENTS)		B814



PART TRANSVERSE SECTION

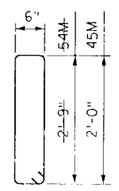


SECTION A-A

BEAM HEIGHT	DIM. "A" VOLUME COMP.	DIM. "B" DIAPHRAGM DEPTH	D401E LENGTH
45M-45"	7¼"	2'-4"	5'-9"
~~54M-54"~~	~~6⅞"~~	~~3'-1"~~	~~7'-3"~~

CONCRETE VOLUME PER DIAPHRAGM

$\frac{(L-A) \times B \times 0.75}{27}$ = CUBIC YARDS



D401E

BILL OF REINFORCEMENT FOR DIAPHRAGMS

BAR	NO.	LENGTH	SHAPE	LOCATION
D401E	148	5'-11"		TIE-VERTICAL
~~D502E~~	~~—~~	~~6'-0"~~		~~HORIZONTAL-THRU BEAM~~
D503E	48	6'-8"		HORIZ. ~ DIAPHS 9,12,21,24
~~D504E~~	~~120~~	~~7'-2"~~		~~HORIZ. ~ DIAPHS 1-8,13-20,25-36~~

GENERAL NOTES

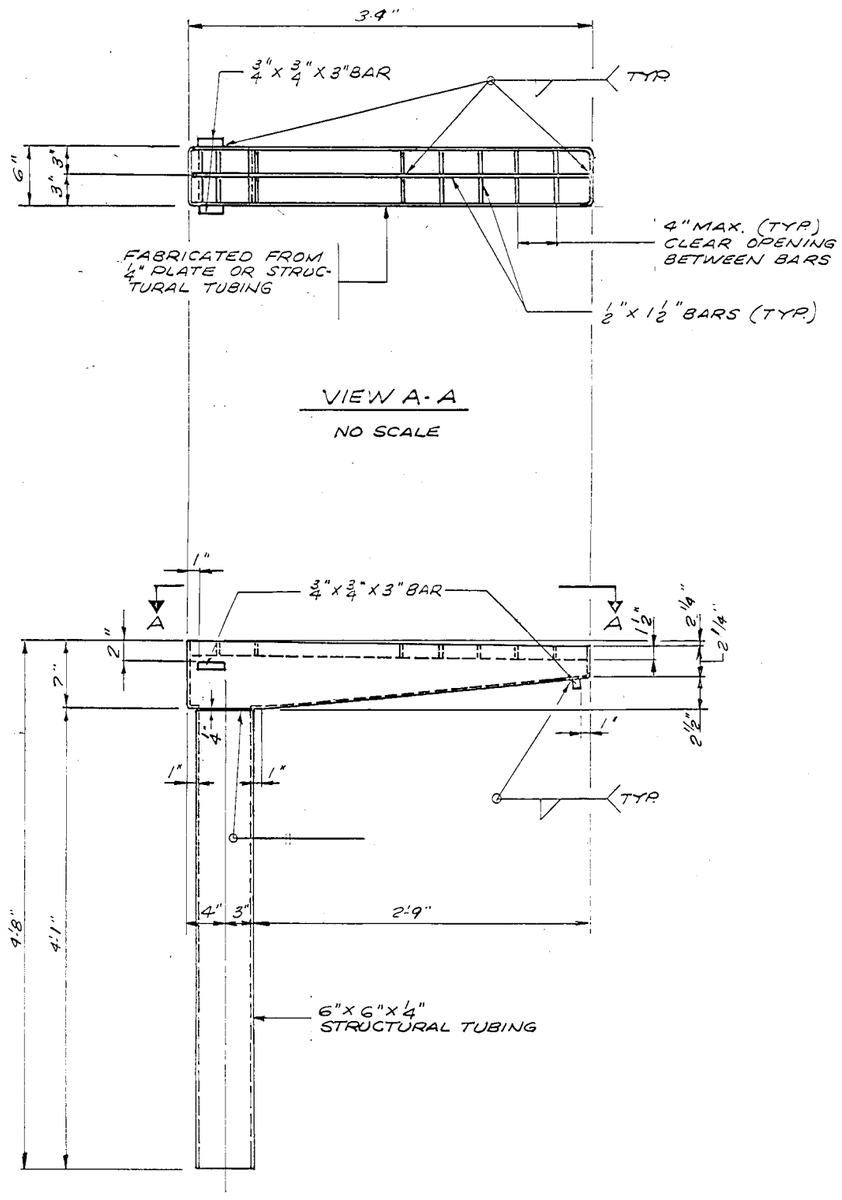
DIAPHRAGMS TO BE CONCRETE MIX NO. 3Y43

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.

(1) FOR DIAPHRAGMS 20° AND OVER, USE THREADED RODS AS SHOWN ON STANDARD PRESTRESSED CONCRETE BEAM SHEET.

APPROVED: AUGUST 4, 1992	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	DATE:	DETAIL NO.
OFFICE of BRIDGES and STRUCTURES	CONCRETE INTERMEDIATE DIAPHRAGM (45M - 54M PRESTRESSED CONCRETE BEAM SPANS)	DR: CHK:	B813

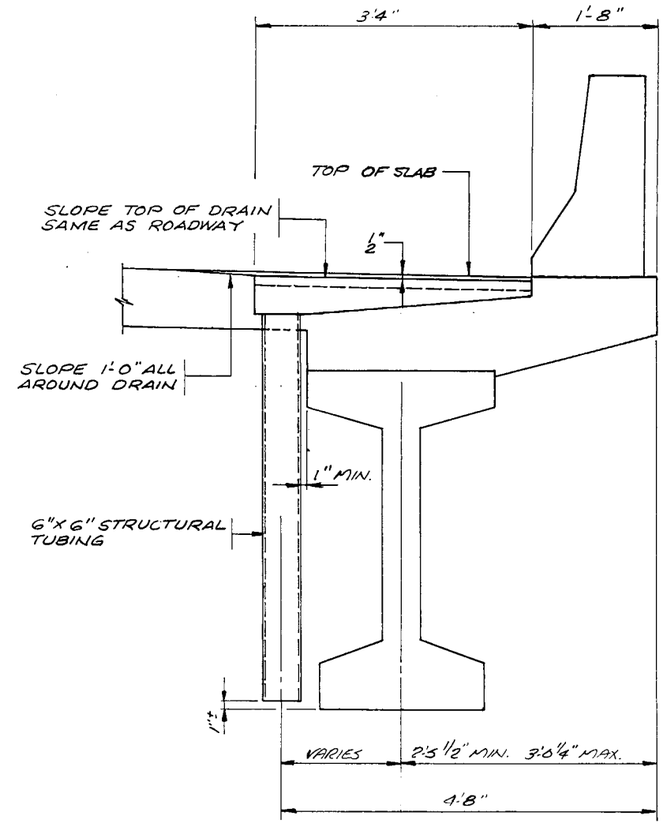
CERTIFIED BY	TITLE:	DES.: CSK	DRWN.: DM	APPROVED:	BRIDGE NO.
PROFESSIONAL ENGINEER	MISC. BRIDGE DETAILS	CHK.: RB	CHK.: CSK		55556
REG. NO. 20666 19 96		S.P.55-598-36			
		SHEET 36 OF 40 SHEETS			



ELEVATION - 8702 MOD.

NO SCALE

GALVANIZE AFTER FABRICATION PER MN. SPEC. 3394.



FLOOR DRAIN PLACEMENT DIAGRAM

CERTIFIED BY _____ PROFESSIONAL ENGINEER

REG. NO. 20666 19 96

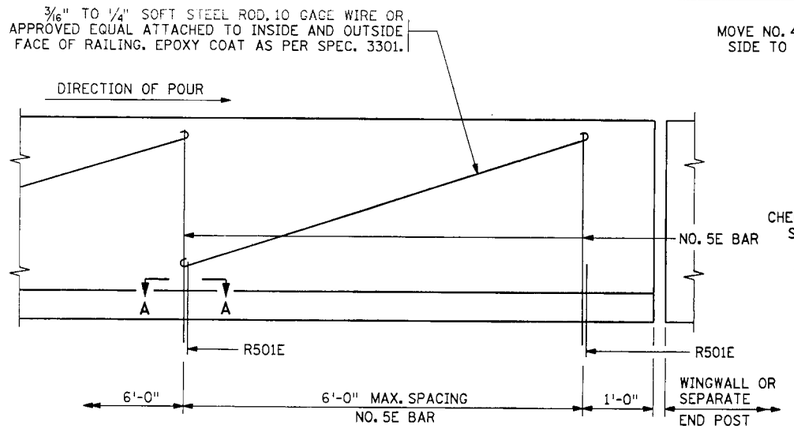
S.P. 55-598-36

FLOOR DRAIN DETAIL (8702 MODIFIED)

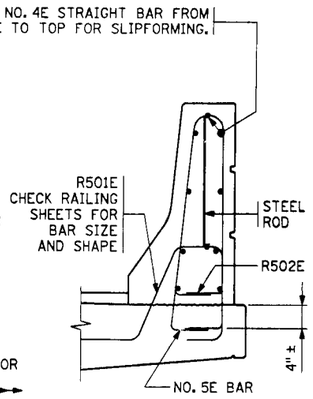
DRAWN	CHECKED	APPROVED
W.N.J.	CSK	

SHEET 37 OF 40 SHEETS

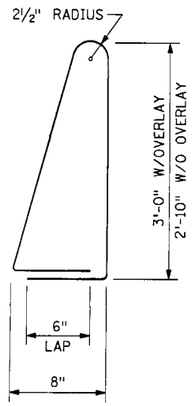
BRIDGE NO. 55556



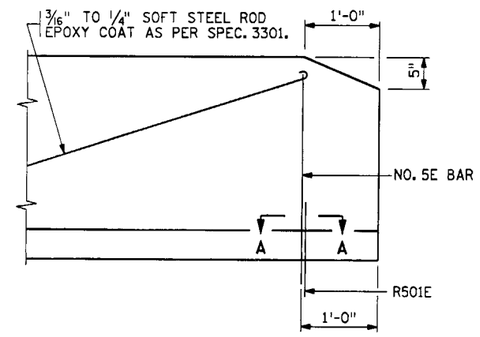
INSIDE ELEVATION OF RAILING



RAILING SECTION



NO. 5E BAR



INSIDE ELEVATION OF RAILING
AT END OF WINGWALL

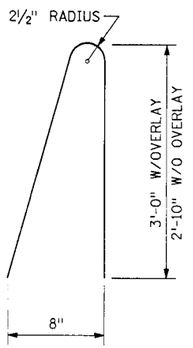
NOTES:

CONTRACTOR WILL TOOL V-GROOVE AT DEFLECTION JOINTS AT TIME RAIL IS CAST AND SHALL EXTEND V-GROOVE AROUND ENTIRE PERIMETER OF RAIL.

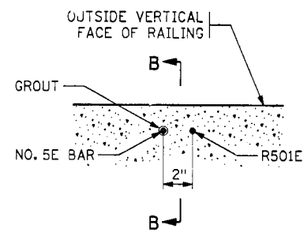
FOR ADDITIONAL DIMENSIONS, DETAILS, REINFORCEMENT AND NOTES SEE RAILIN SHEET.

FORM RAIL FOR A MINIMUM OF 4' ON EACH SIDE OF EXPANSION DEVICES, LIGI STANDARDS AND DECK DRAIN BOX OUTS

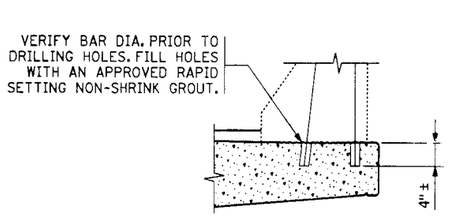
PAY QUANTITIES WILL NOT BE ADJUSTED AS A RESULT OF SELECTING THIS ALTERNATE.



NO. 5E BAR
DRILLED IN ALTERNATE



SECTION A-A



SECTION B-B

INSTALLATION DETAILS
FOR NO. 5E (DRILLED IN ALTERNATE)

ROVED: MAY 23, 1995

OFFICE of
RIDGES and STRUCTURES

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CONCRETE RAILING (TYPE J)
(SLIPFORM ALTERNATE)

REVISION

DETAIL NO.
B830

CERTIFIED BY
PROFESSIONAL ENGINEER
REG. NO. 20666 1996

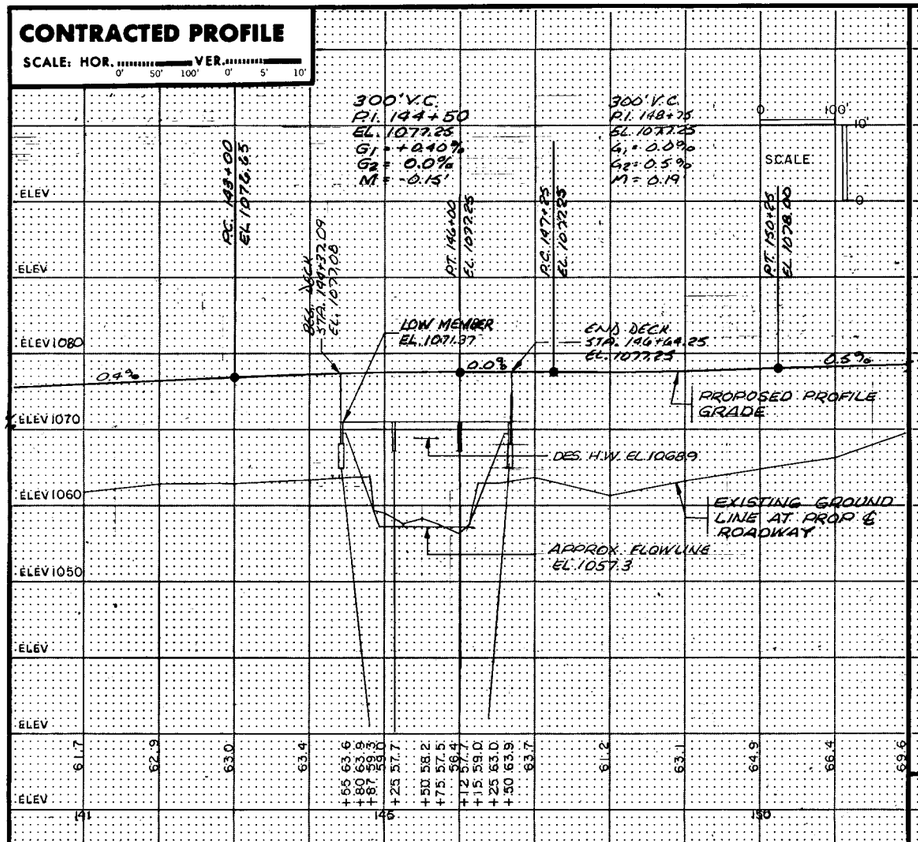
TITLE:
MISC. BRIDGE DETAILS

DES.: CSK	DRWN.: DM	APPROVED:
CHK.: RB	CHK.: CSK	
S.P. 55-598-36		
SHEET 38 OF 40 SHEETS		

BRIDGE NO.
55556

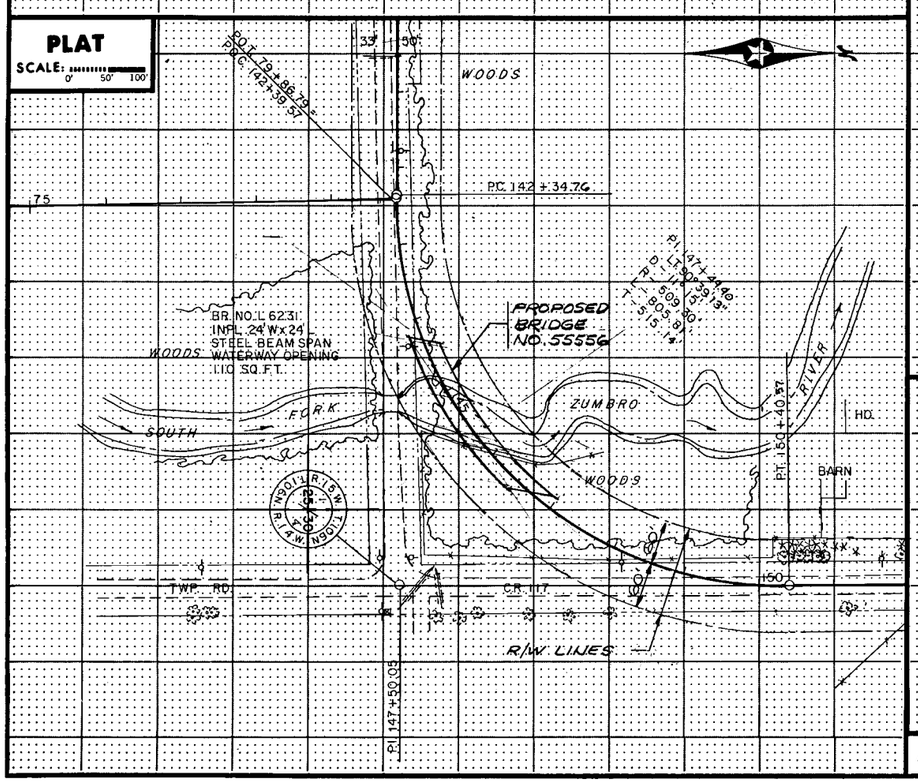
CONTRACTED PROFILE

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



PLAT

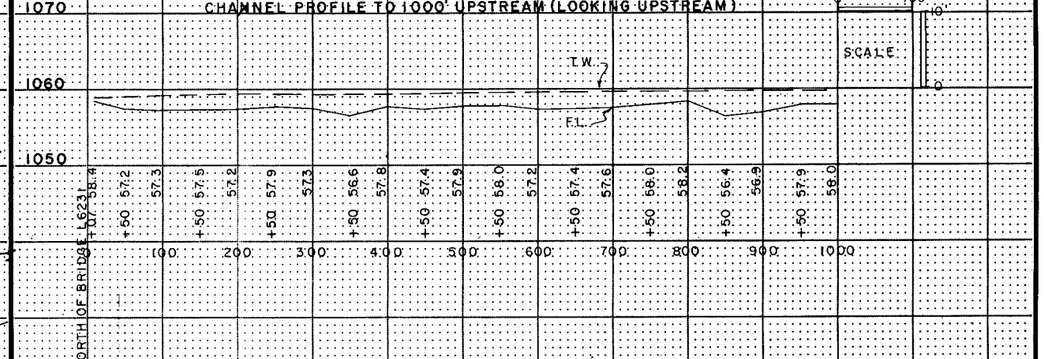
SCALE: 0' 50' 100'



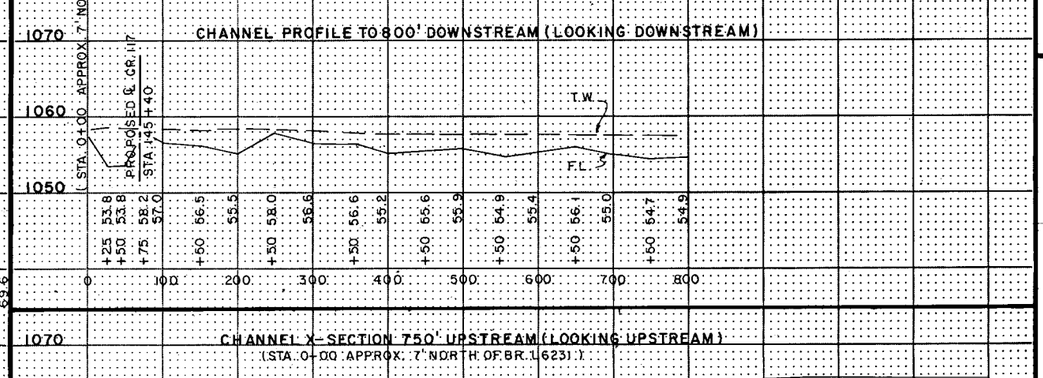
TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN

CHANNEL PROFILE TO 1000' UPSTREAM (LOOKING UPSTREAM)

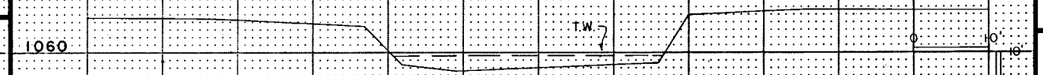


CHANNEL PROFILE TO 800' DOWNSTREAM (LOOKING DOWNSTREAM)



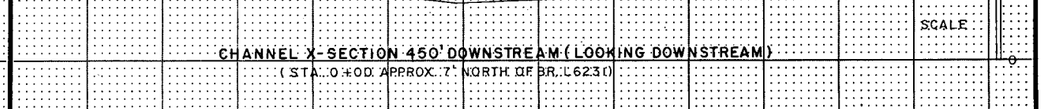
CHANNEL X-SECTION 750' UPSTREAM (LOOKING UPSTREAM)

(STA. 0+00 APPROX. 7' NORTH OF BR. L6231)



CHANNEL X-SECTION 450' DOWNSTREAM (LOOKING DOWNSTREAM)

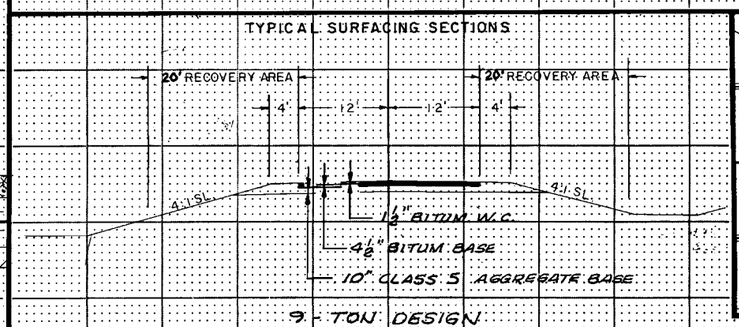
(STA. 0+00 APPROX. 7' NORTH OF BR. L6231)

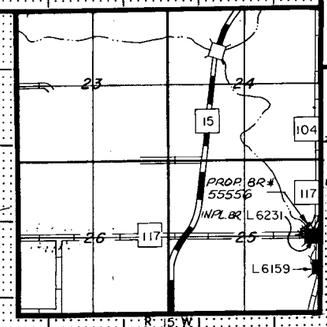


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Professional Engineer under the laws of the State of Iowa.

Date 6-7-90 Reg. No. 20608

TYPICAL SURFACING SECTIONS





AS-BUILT
MAR 09 2001
ENGINEERING

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 1070.6 Obtained from JULY 1978 OLMSTED COUNTY DATA

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

HYDRAULIC ENGINEERS RECOMMENDATION

DATE 10-24-90

Stream or ditch designation SOUTH FORK ZUMBRO RIVER

Drainage area 71.2 SQ. MILES

Max. flood on record UNKNOWN Design flood (50 yr. freq.) 7800 C.F.S.

Max. observed highwater elevation 1070.6 Design highwater elevation 1068.9

Design mean velocity through structure 5.1 F.P.S. Avg.

Low superstructure at or above elevation 1070.5

Flowline elevation 1057.3 Skew angle 90°

Waterway area req'd. below elevation 1068.9 = 1515 Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 9400 C.F.S. at stage 1069.8 and mean velocity of 5.0 F.P.S. with 0.4 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.

PIER SCOUR EL. 1042.0

ENGINEERS RECOMMENDATION

DATE 3-19-91

3-73 FT. PRESTRESSED CONC. BEAM SPANS
36'-0" ROADWAY
90° SKEW

AS-BUILT
MAR 09 2001
ENGINEERING

Bridge survey sheets made from: SURVEY CONDUCTED BY OLMSTED COUNTY

Bench mark elevation 1065.07 (M.S.L. 1929 Adj.)

Location: X S.E. CORNER HDWL. BR. L6231

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT 2.47 ON C.R. 117 (T.H., C.S.A.H., C.R. etc.)

PROPOSED BRIDGE LOCATED 4 MILES S.W. OF ROCHESTER

SEC. 25 TWP. 106 N R. 15

TOWNSHIP SALEM COUNTY OLMSTED

INPLACE BRIDGE NO. L6231

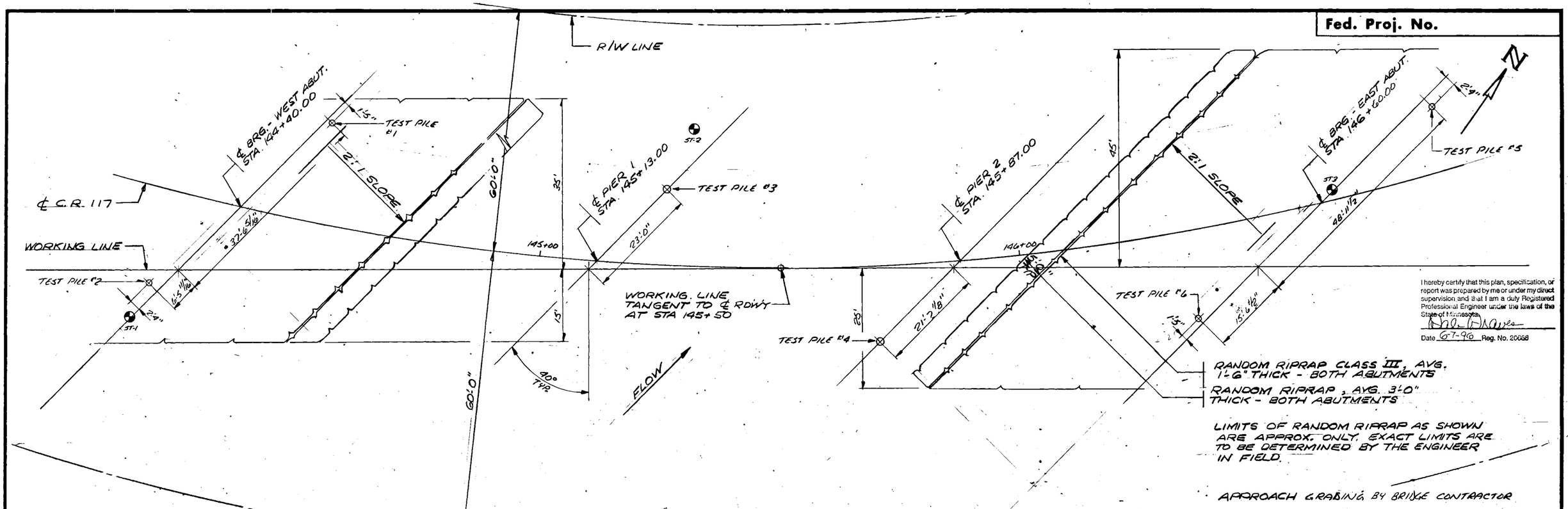
PROPOSED " " 55556

Area No. Job No.

State Proj. No. 55-598-36

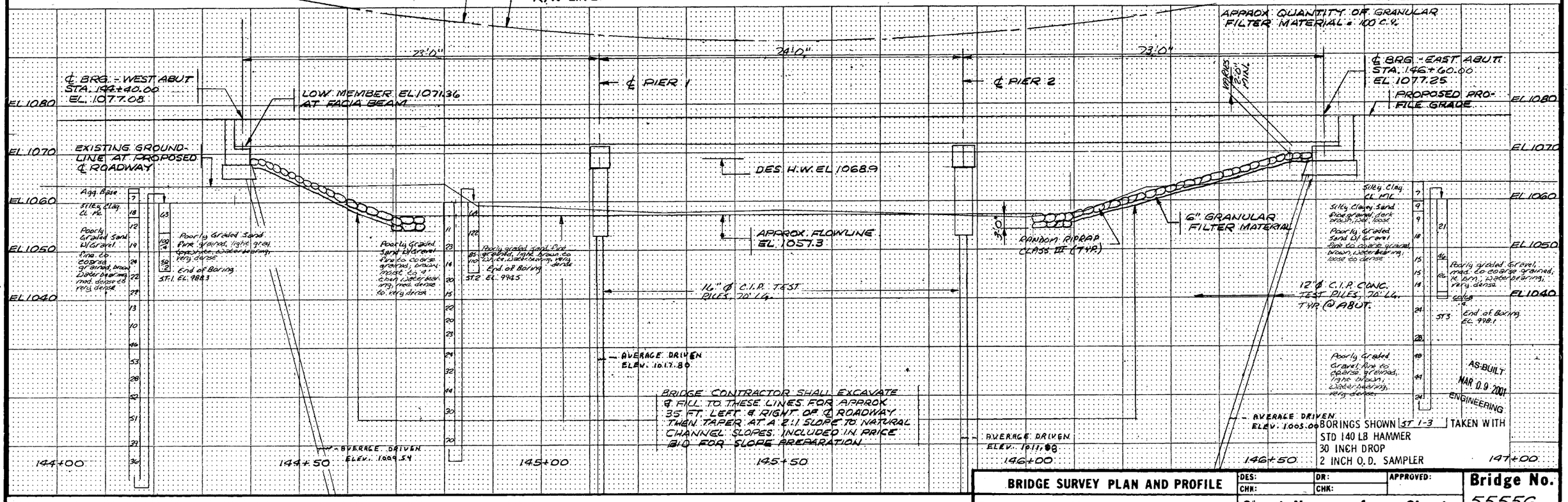
Sheet No. 39 of 40 Sheets

Fed. Proj. No.



I hereby certify that this plan, specification, or report 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 6-7-96 Reg. No. 20668



BRIDGE SURVEY PLAN AND PROFILE	DES:	DR:	APPROVED:	Bridge No. 55556
	CHK:	CHK:		
State Proj. No. 55-598-36	Sheet No. 40 of 40 Sheets			