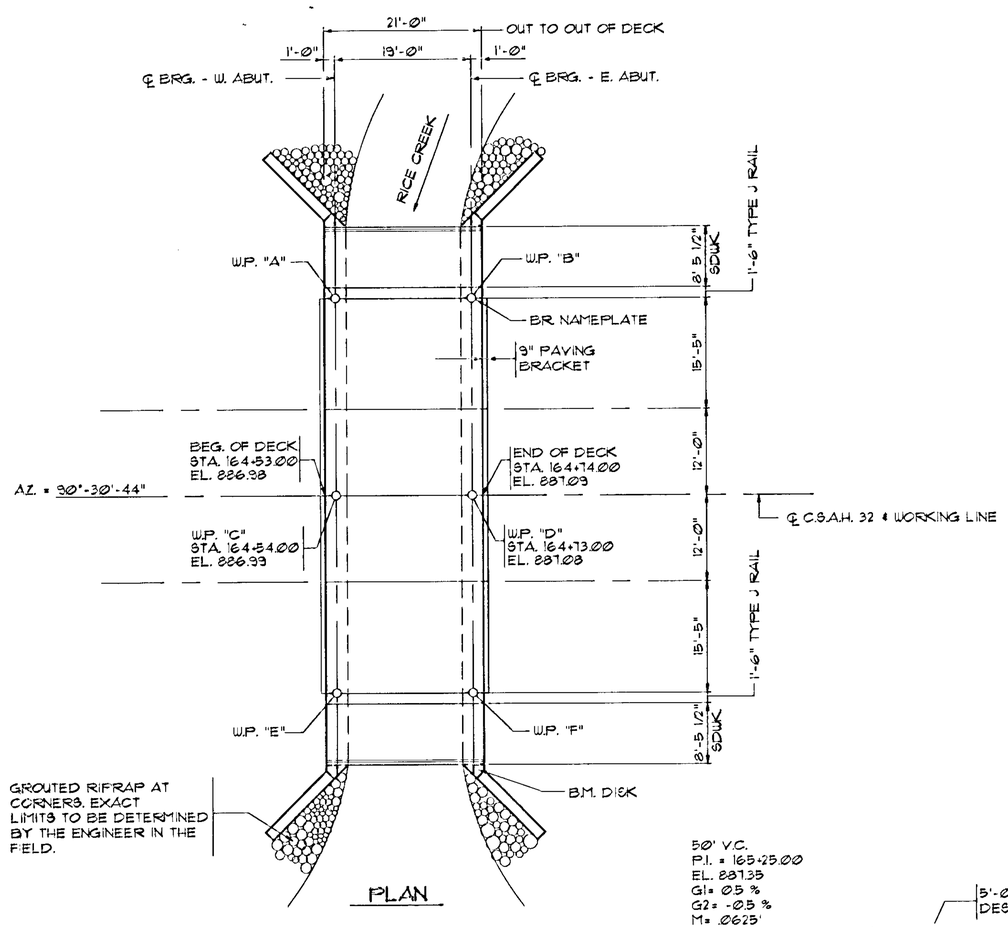


① STA. 164+63.00 Non-Part.

CONSTRUCTION NOTES

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION", AS AMENDED BY THE JAN. 2,1991 SUPPLEMENTAL SPECIFICATION SHALL GOVERN.

BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR RODS. THE SUPERSTRUCTURE BEAMS SHALL BE ERECTED IN FINAL POSITION FRIOR TO DRILLING HOLES FOR AND PLACING ANCHOR RODS.

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.

CONTRACTOR SHALL NOT BACKFILL BEHIND ABUTMENTS FRIOR TO BRIDGE SLAB BEING POURED.

APPROVED Peter K. Peterson
COUNTY ENGINEER
ANOKA COUNTY
DATE: 2-6-92

DESIGN DATA

1989 (AND CURRENT INTERIM) A.A.S.H.T.O. DESIGN SPECIFICATIONS
DESIGN LOADING HS25 LIVE LOAD
LOAD FACTOR DESIGN METHOD
DEAD LOAD INCLUDES 17 PSF ALLOWANCE FOR FUTURE WEARING COURSE
REINFORCED CONCRETE:
F'c = 4000 PSI N=8
Fy = 60,000 PSI (REINFORCEMENT)
DECK AREA = 1570 SQ. FT.
ADT FOR YEAR 2010 = 8,000
DESIGN SPEED = 40 MPH
OPERATING RATING = 30

SHEET INDEX

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE NO. 02558

ITEM NO.	2401.601	2401.512	2401.513	2401.541	2442.501	2404.501	2401.501	2401.501	2452.507	2452.508	2452.513	2557.501		2402.521	2511.507	0401.601					
ITEM	STRUCTURE EXCAVATION	BRIDGE SLAB CONCRETE (3Y36)	TYPE J RAILING CONCRETE (3Y46)	REINFORCEMENT BARS (EPOXY COATED)	REMOVE OLD BRIDGE ①	CONCRETE OVERLAY TYPE SPECIAL	STRUCTURE CONCRETE (1A43)	STRUCTURE CONCRETE (3Y43)	C.I.P. CONC. PILING DELIVERED (12")	C.I.P. CONC. PILING DRIVEN (12")	C.I.P. CONC. TEST PILES 60 FT. LONG (12")	WIRE FENCE DESIGN (9-1)		STRUCTURAL STEEL (3306)	GROUTED RIPRAP	SLOPE PREPARATION					
UNIT	LUMP SUM	SQ. FT.	LIN. FT.	POUND	LUMP SUM	SQ. FT.	CU. YD.	CU. YD.	LIN. FT.	LIN. FT.	EACH	LIN. FT.		POUND	CU. YD.	LUMP SUM					
QUANTITY	1	1570 (P)	42 (P)	51,700 (P)	1	1152 (P)	115 (P)	178 (P)	1500	1500	2	42 (P)		910 (P)	.30	1					

BRW, INC.
THRESHER SQUARE, 700 THIRD STREET SOUTH, MINNEAPOLIS, MN 55415
PLANNING
TRANSPORTATION
ENGINEERING
URBAN DESIGN

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

SIGNED: Mark Mora
DATE: 1/27/92 REG. NO. 20496

C.S.A.H. 32 ANOKA CO.
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 02558
GENERAL PLAN & ELEVATION

0.1 MI. E. OF JCT. C.S.A.H. 17 IN THE CITY OF BLAINE ON C.S.A.H. 32 OVER RICE CREEK.

21'-0" SPAN REINF. CONC. RIGID FRAME
54'-10" ROADWAY, SIDEWALK EACH SIDE
SPAN IDENT. NO. 108

SEC 36 T31N R23W

CITY OF BLAINE
ANOKA COUNTY

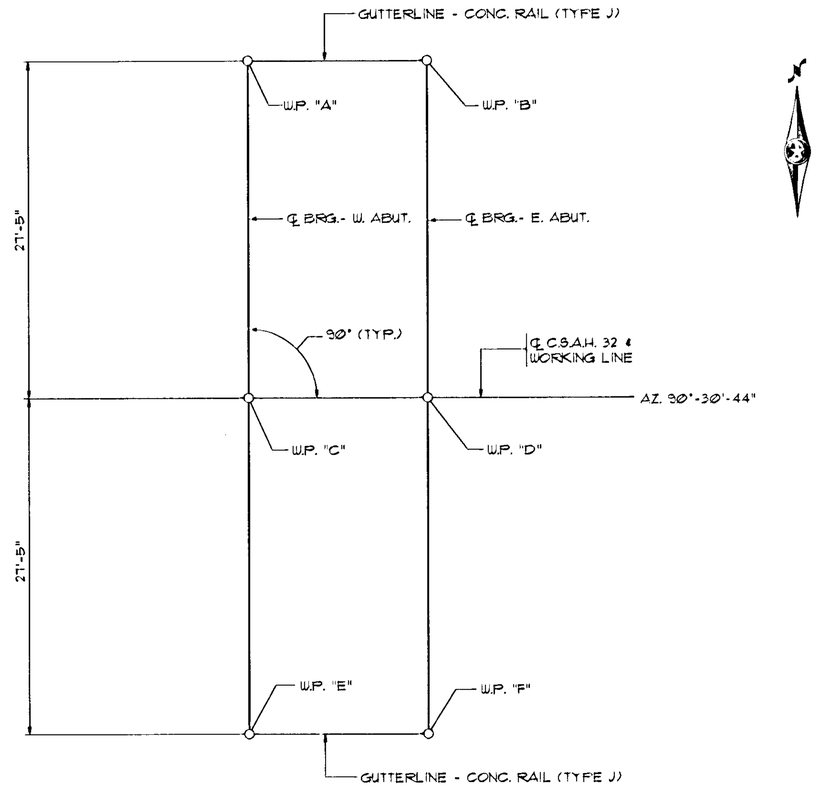
DATED 4-23-92

APPROVED: Daniel M. Manning
STATE BRIDGE ENGINEER

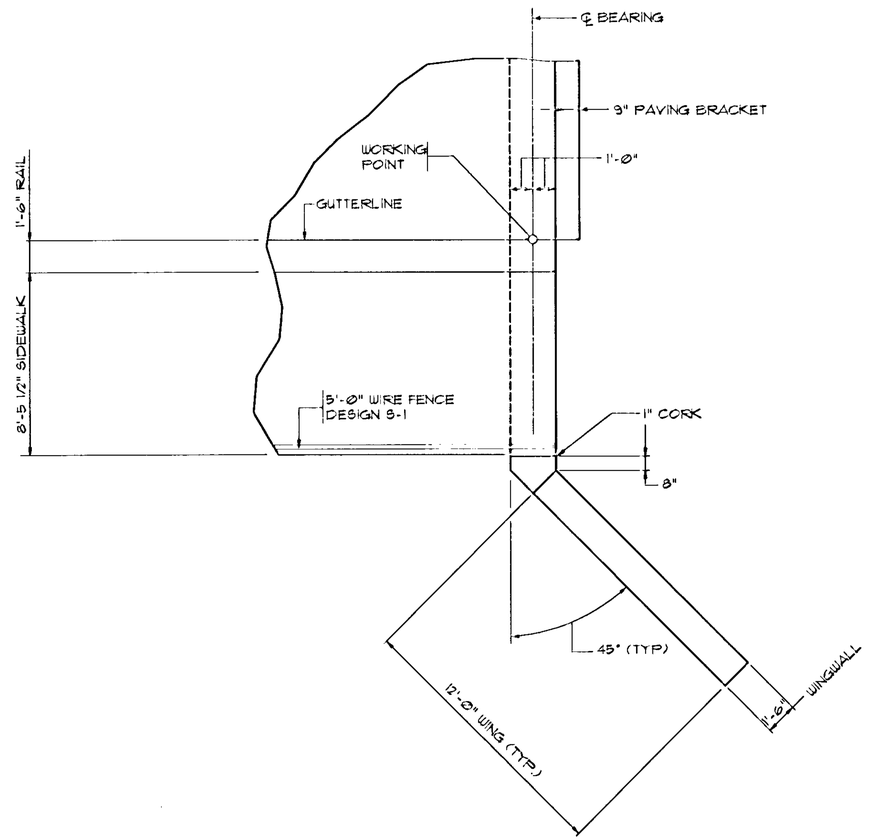
DES: MKM	DRW: DJV	02558
CHK:	CHK:	

STATE PROJECT NO. S.A.P. 02-632-04, S.A.P. 62-601-05

BRW JOB NO. 17-9011 PLOT DATE: 11-18-91



WORKING POINT LAYOUT



TYPICAL CORNER LAYOUT

DIMENSIONS BETWEEN WORKING POINTS							
POINT	STATION	A	B	C	D	E	F
A	164+54.00		19.00	27.42	33.35		58.03
B	164+73.00			33.35	27.42	58.03	
C	164+54.00				19.00	27.42	33.35
D	164+73.00					33.35	27.42
E	164+54.00						19.00
F	164+73.00						

COORDINATES		
POINT	N-COORD.	E-COORD.
A		
B		
C		
D		
E		
F		

ELEVATIONS			
TOP OF ROADWAY	TOP OF ROAD TO E.B. SEAT	BRIDGE SEAT	POINT
886.50	1.33	885.17	A
886.59	1.33	885.26	B
886.99	1.33	885.66	C
887.08	1.33	885.75	D
886.50	1.33	885.17	E
886.59	1.33	885.26	F

TOP OF ROADWAY TO BRIDGE SEAT		
	W. ABUT.	E. ABUT.
SLAB THICKNESS	14"	14"
WEARING COURSE	2"	2"
TOTAL	1.33	1.33

S.A.P. 02-632-04 , S.A.P. 62-601-03

BRW INC. 700 THIRD STREET SOUTH, MINNEAPOLIS, MN 55415
ENGINEERING TRANSPORTATION PLANNING URBAN DESIGN

BRIDGE LAYOUT

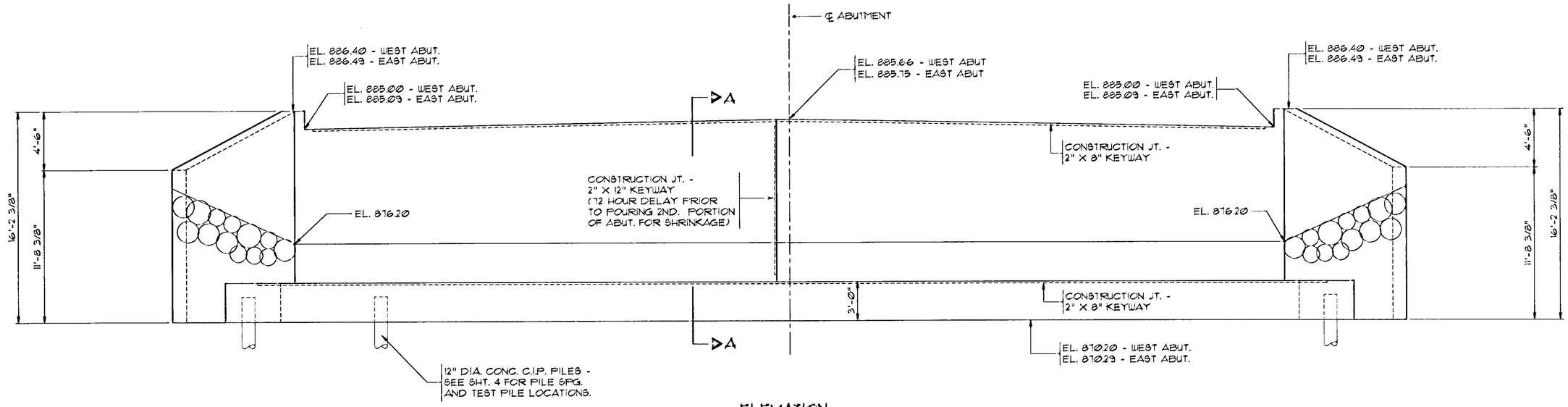
DES: MKM	DRW: DJV	APPROVED: 4-28-92
CHK: X	CHK: MKM	

SHEET NO. 2 OF 13 SHEETS

BRIDGE NO. 02558

DRAWING NAME: X

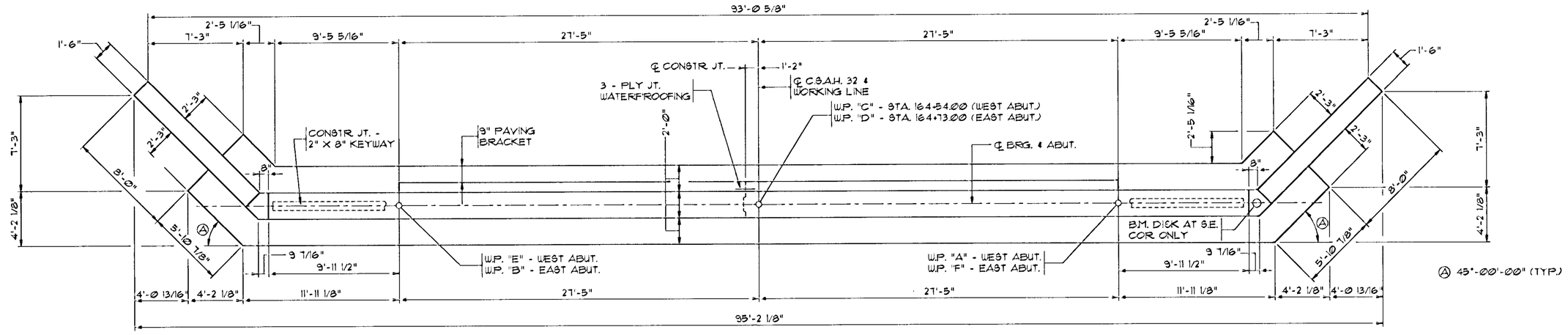
PLOT DATE: 11-18-91



ELEVATION

NOTE:

SEE SHEET 5 FOR SECTION A-A



PLAN

S.A.P. 02-632-04 , S.A.P. 62-601-05

BRW ENGINEERING TRANSPORTATION PLANNING URBAN DESIGN
BRW INC. 700 THIRD STREET SOUTH, MINNEAPOLIS, MN 55415

ABUTMENT DETAILS

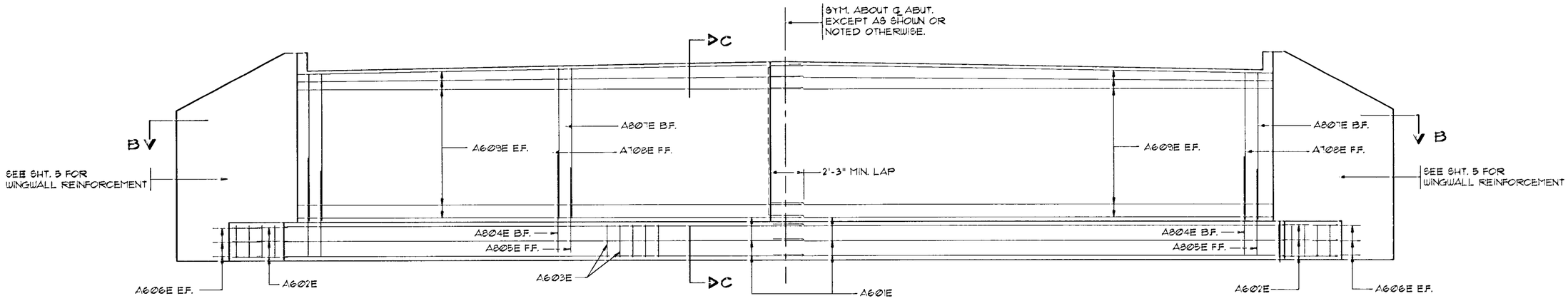
DES: MKM	DRW: DJV	APPROVED: 4-23-92
CHK: X	CHK: MKM	

SHEET NO. 3 OF 13 SHEETS

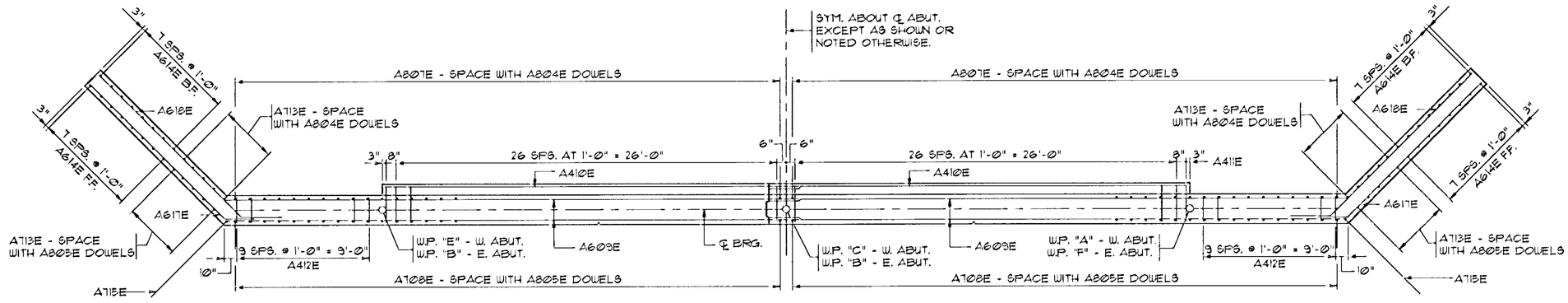
BRIDGE NO. 02558

DRAWING NAME: X

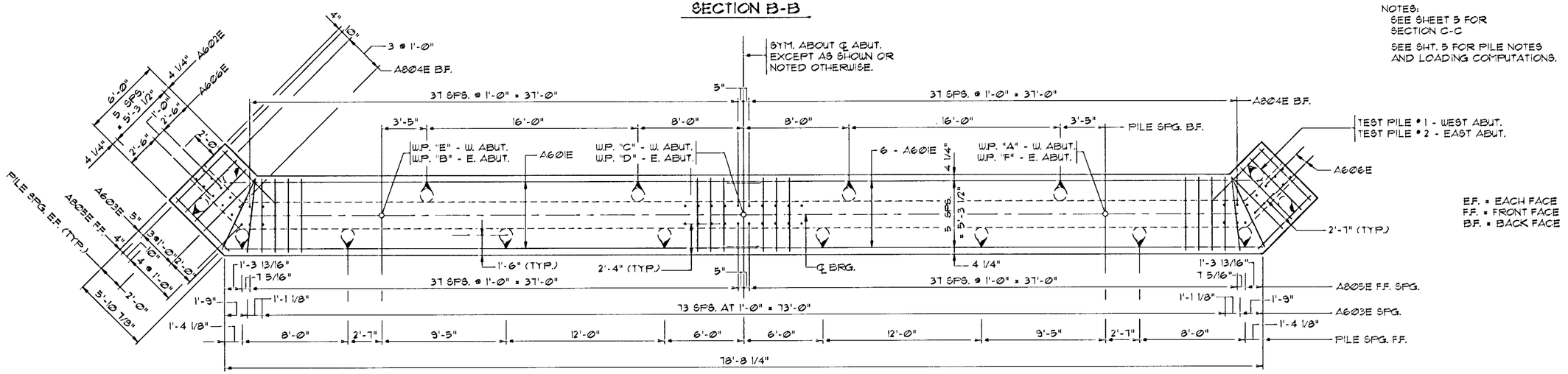
PLOT DATE: 11-13-91



ELEVATION



SECTION B-B



NOTES:
SEE SHEET 5 FOR SECTION C-C

SEE SHT. 5 FOR PILE NOTES AND LOADING COMPUTATIONS.

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

FOOTING PLAN

S.A.P. 02-632-04 , S.A.P. 62-601-05

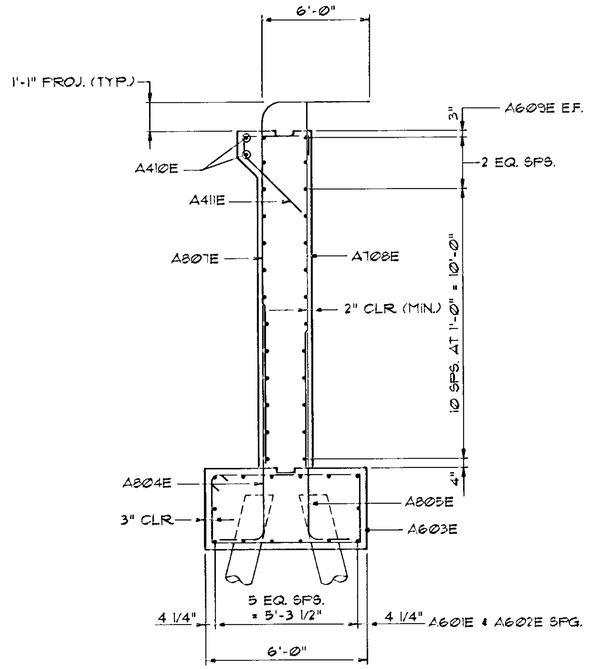
BRW INC. 700 THIRD STREET SOUTH, MINNEAPOLIS, MN 55415
ENGINEERING TRANSPORTATION PLANNING URBAN DESIGN

ABUTMENT REINFORCEMENT

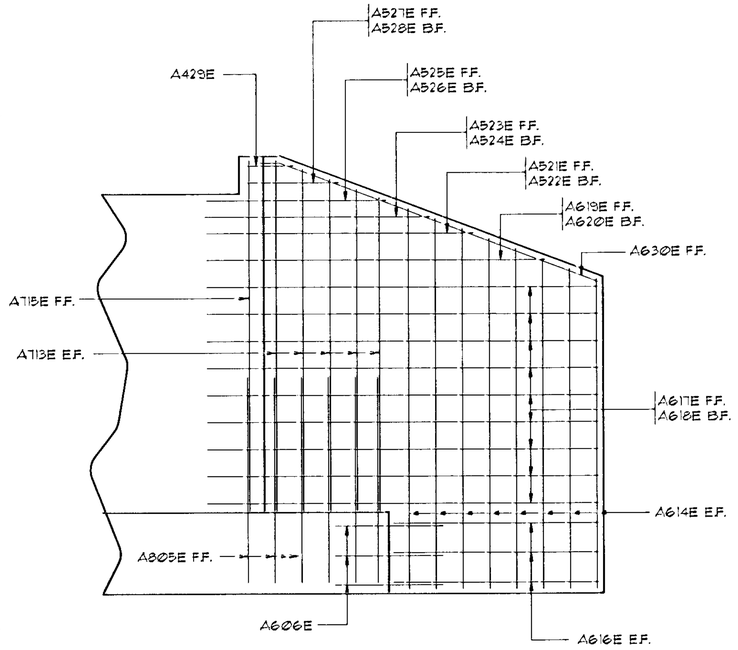
DES: MKM	DRW: DJV	APPROVED:	BRIDGE NO.
CHK: X	CHK: MKM	4-23-92	02558

SHEET NO. 4 OF 13 SHEETS

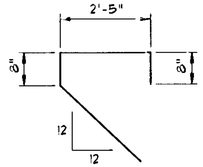
DRAWING NAME: X PLOT DATE: 11-18-91



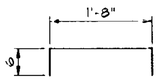
SECTION C-C



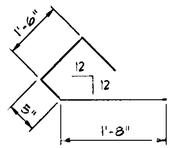
TYPICAL WINGWALL REINFORCEMENT



A411E



A412E



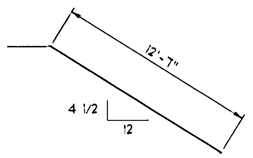
A423E

BILL OF REINFORCEMENTS - ABUTMENTS

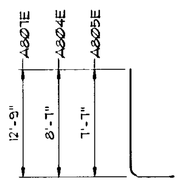
MARK	NO.	LENGTH	SHAPE	LOCATION
A601E	56	40'-6"	STR.	FOOTING - LONGIT.
A602E	56	5'-3"	STR.	FOOTING - LONGIT.
A603E	172	17'-1"	BENT	FOOTING - TIES
A804E	172	10'-2"	BENT	FOOTING - DOWELS
A805E	176	8'-11"	BENT	FOOTING - DOWELS
A606E	24	5'-0"	STR.	FOOTING - WING DOWELS
A807E	152	18'-9"	BENT	STEM - VERTICAL
A708E	152	12'-9"	STR.	STEM - VERTICAL
A603E	104	39'-6"	STR.	STEM - HORIZONTAL
A410E	8	28'-3"	STR.	PAVING BRKT. - LONGIT.
A411E	112	6'-9"	BENT	PAVING BRKT. - TIES
A412E	40	2'-8"	BENT	BR. SEAT - TIES
A713E	40	(1)	STR.	WINGWALL - VERT.
A614E	64	(2)	STR.	WINGWALL - VERT.
A715E	4	12'-11"	STR.	WINGWALL - VERT.
A616E	24	7'-8"	STR.	WINGWALL - HORIZONTAL
A617E	36	15'-0"	BENT	WINGWALL - HORIZONTAL
A618E	36	15'-8"	BENT	WINGWALL - HORIZONTAL
A619E	4	13'-0"	BENT	WINGWALL - HORIZONTAL
A620E	4	13'-8"	BENT	WINGWALL - HORIZONTAL
A521E	4	10'-4"	BENT	WINGWALL - HORIZONTAL
A522E	4	11'-0"	BENT	WINGWALL - HORIZONTAL
A523E	4	8'-9"	BENT	WINGWALL - HORIZONTAL
A524E	4	9'-6"	BENT	WINGWALL - HORIZONTAL
A525E	4	7'-1"	BENT	WINGWALL - HORIZONTAL
A526E	4	8'-0"	BENT	WINGWALL - HORIZONTAL
A527E	4	3'-10"	BENT	WINGWALL - HORIZONTAL
A528E	4	4'-8"	BENT	WINGWALL - HORIZONTAL
A423E	4	4'-10"	BENT	WINGWALL - HORIZONTAL
A630E	8	13'-4"	BENT	WINGWALL - HORIZONTAL

(1) 8 SER OF 5 BARS (11'-6" TO 12'-11")

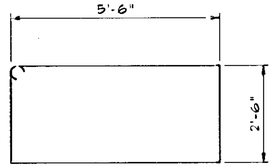
(2) 8 SER OF 8 BARS (11'-5" TO 14'-0")



A630E



A804E , A805E, & A807E



A603E

SUMMARY OF QUANTITIES - BOTH ABUTMENTS

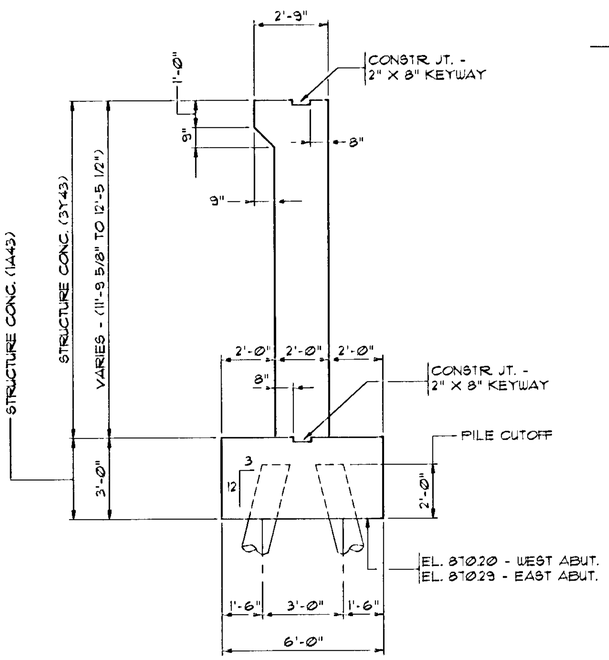
	ITEM	UNIT	QUANTITY
	STRUCTURE CONCRETE (1A43)	CU. YD.	115
	STRUCTURE CONCRETE (3Y43)	CU. YD.	178
	REINFORCEMENT BARS (EPOXY COATED)	LB.	40,670
(3)	3-PLY JOINT WATERPROOFING	LIN. FT.	60
	C.I.P. CONCRETE TEST PILE 60 FT. LONG (12" DIA.)	EACH	2
	C.I.P. CONCRETE PILING DELIVERED (12" DIA.)	LIN. FT.	1500
	C.I.P. CONCRETE PILING DRIVEN (12" DIA.)	LIN. FT.	1500
(2)(1) | STRUCTURE EXCAVATION | LUMP SUM | 1 |
(4) | BENCHMARK | EACH | 1 |

(1) COMPUTED QUANTITY = 581 CU. YD. FOR INFORMATIONAL PURPOSES ONLY SEE SPECIAL PROVISIONS.

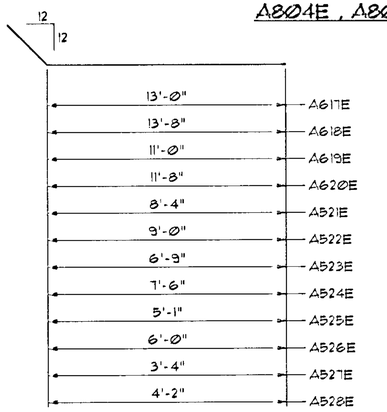
(2) SEE SPECIAL PROVISIONS.

(3) TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

(4) STATE WILL FURNISH DISK. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STANDARD PLATE NO. 9301B FOR PLACING OF DISK IN CONCRETE.



SECTION A-A



A617E - A620E & A521E - A528E

REQUIRED PILES
BOTH ABUTMENTS

2 - CAST-IN-PLACE CONCRETE TEST PILES 60 FT. LONG.
30 - CAST-IN-PLACE CONCRETE PILES, EST. LENGTH 50 FT.

32 - CAST-IN-PLACE CONCRETE PILES REQUIRED FOR 2 ABUTMENTS

PILE NOTES :

1) PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.

2) PILES MARKED THUS ◀ MUST BE BATTERED 3" PER FOOT IN DIRECTION SHOWN.

3) ALL PILES TO BE CAST-IN-PLACE CONCRETE PILES.

4) PILES ARE TO HAVE A NOMINAL DIAMETER OF 12".

5) FOR PILE SPLICE SEE SHEET NO. 10

COMPUTED PILE LOAD (TONS PER PILE)

LOCATION	DEAD LOAD + EARTH PRESSURE	LIVE LOAD	TOTAL
ABUTMENTS	12.1	43	55.1

S.A.P. 02-632-04 , S.A.P. 62-601-05

BRW INC. 700 THIRD STREET SOUTH, MINNEAPOLIS, MN 55415
ENGINEERING TRANSPORTATION PLANNING URBAN DESIGN

ABUTMENT REINFORCEMENT

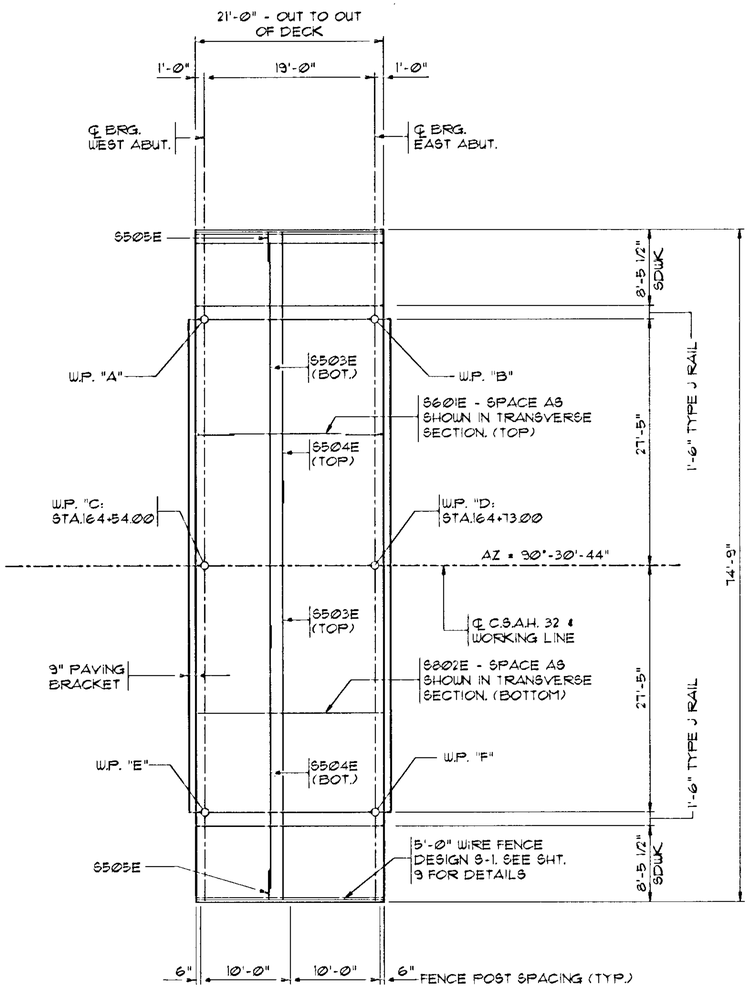
DES:	MKM	DRW:	DJV	APPROVED:	4-23-92
CHK:	X	CHK:	MKM		

SHEET NO. 5 OF 13 SHEETS

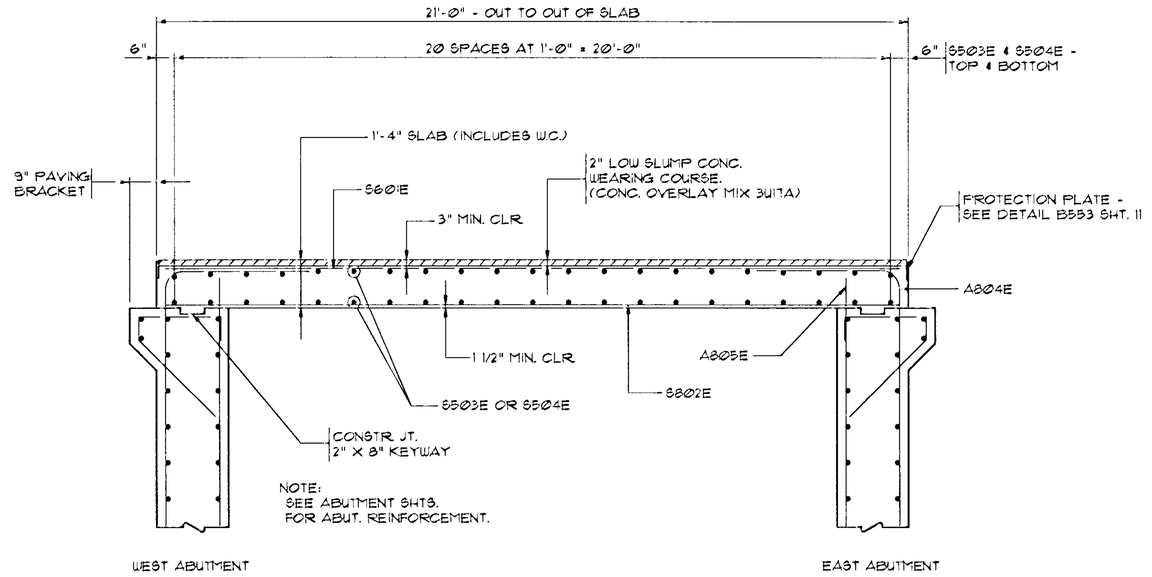
BRIDGE NO. 02558

DRAWING NAME: X

PLOT DATE: 11-13-91



DECK PLAN



LONGITUDINAL SECTION THRU SLAB

S.A.P. 02-632-04 , S.A.P. 62-601-03

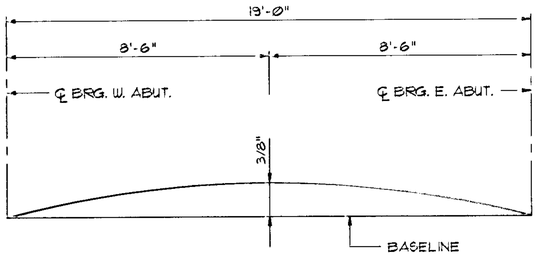
BRW INC. 700 THIRD STREET SOUTH, MINNEAPOLIS, MN 55415
ENGINEERING TRANSPORTATION PLANNING URBAN DESIGN

SUPERSTRUCTURE DETAILS & REINF.

DES: MKM	DRW: DJV	APPROVED: 7-23-72	BRIDGE NO. 02558
CHK: X	CHK: MKM		
SHEET NO. 6 OF 13 SHEETS			

DRAWING NAME: X

PLOT DATE: 11-19-91



CAMBER DIAGRAM

BASELINE IS PROFILE GRADE.
THE CAMBER DIAGRAM SHOWS THE CAMBER REQUIRED FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION. THESE FIGURES DO NOT INCLUDE ANY ALLOWANCE FOR SETTLEMENT OF FORMS.

SUMMARY OF QUANTITIES

	ITEM	UNIT	QUANTITY
(1)	BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	1570
(1)	TYPE J RAILING CONCRETE (3Y46)	LIN. FT.	42
	REINFORCEMENT BARS (EPOXY COATED)	LB.	11,030
(1)	CONCRETE OVERLAY TYPE SPECIAL	SQ. FT.	1152
(3)	BRIDGE NAMEPLATE (SEE DETAIL B101)	EACH	1
(2)	WIRE FENCE DESIGN 8-1	LIN. FT.	42
(5)	STRUCTURAL STEEL (3306)	LB.	910

(1) APPROX. VOLUME OF BRIDGE SLAB CONCRETE (3Y36) = 68 CU. YDS.
APPROX. VOLUME OF TYPE J RAIL CONC. (3Y46) = 5 CU. YD.
APPROX. VOLUME OF 2" LOW SLUMP WEARING COURSE = 8 CU. YDS.

(2) SEE SPECIAL PROVISIONS.

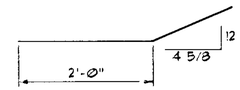
(3) INCLUDED IN PRICE BID FOR OTHER ITEMS.

(4) INCLUDES RAILING QUANTITIES.

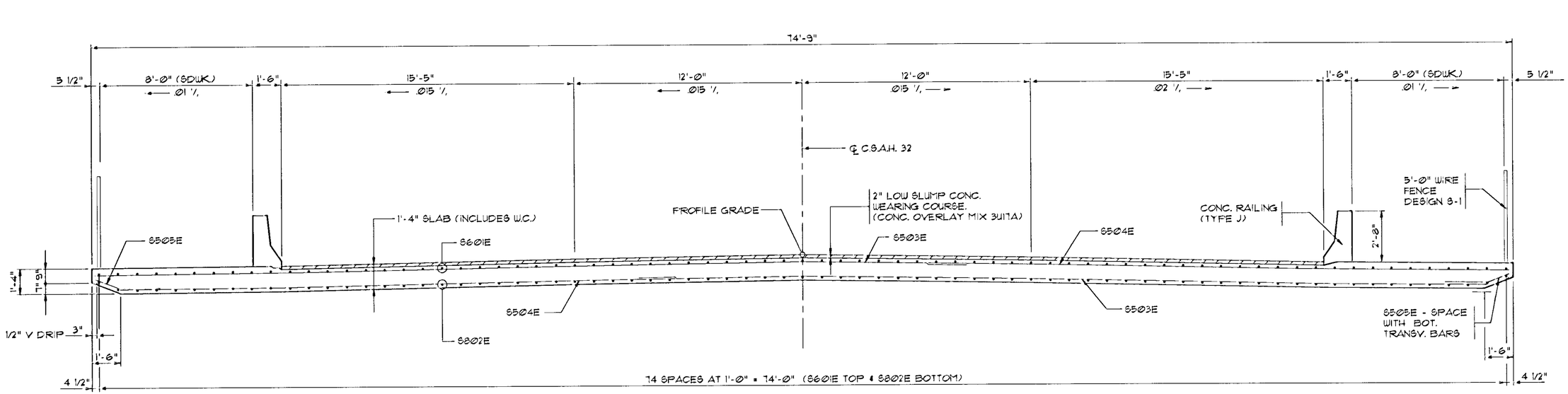
(5) INCLUDES WEIGHT OF PROTECTION PLATE , SEE DETAIL B553

BILL OF REINFORCEMENT - SUPERSTRUCTURE

MARK	NO.	LENGTH	SHAPE	LOCATION
S601E	75	20'-6"	STR	SLAB - TOP LONGIT.
S802E	75	20'-6"	STR	SLAB - BOTTOM LONGIT.
S503E	42	45'-0"	STR	SLAB - TOP & BOTTOM TRANSVERSE
S504E	42	32'-0"	STR	SLAB - TOP & BOTTOM TRANSVERSE
S505E	42	3'-10"	BENT	SLAB - BOTTOM TRANSVERSE



S505E



TRANSVERSE SECTION THRU DECK

S.A.P. 02-632-04 , S.A.P. 62-601-05

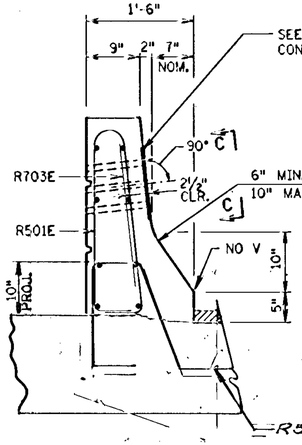
BRW INC. 700 THIRD STREET SOUTH, MINNEAPOLIS, MN 55415
ENGINEERING TRANSPORTATION PLANNING URBAN DESIGN

SUPERSTRUCTURE DETAILS & REINF.

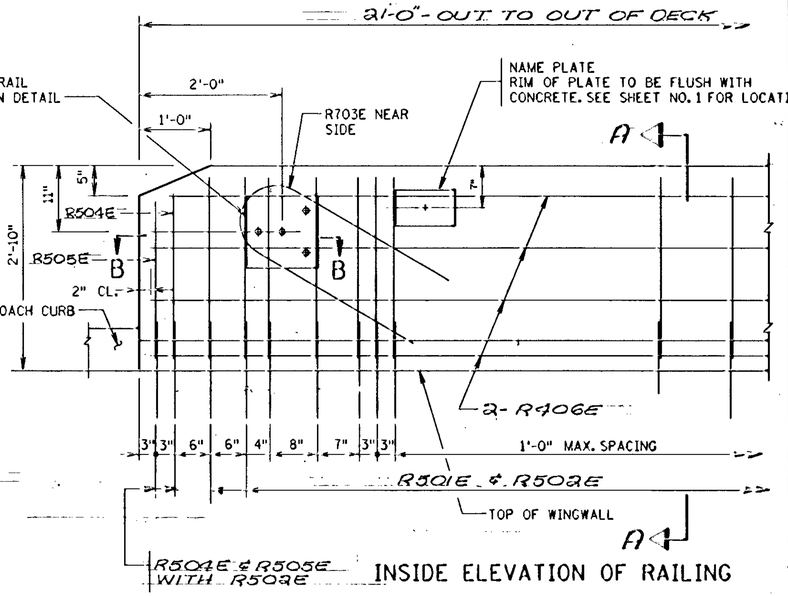
DES: MKM	DRW: DJV	APPROVED: 4-28-92	BRIDGE NO. 02558
CHK: X	CHK: MKM		
SHEET NO. 7 OF 13 SHEETS			

DRAWING NAME: X

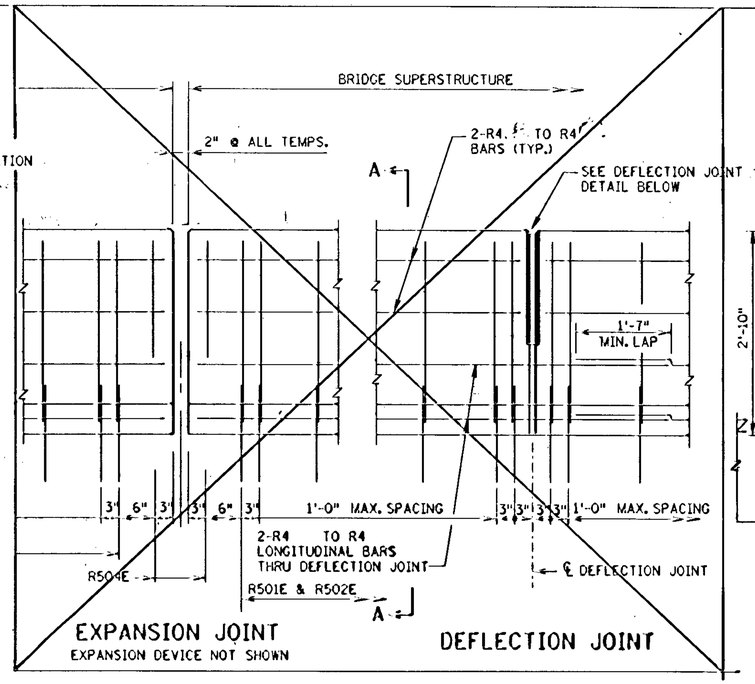
PLOT DATE: 11-19-91



END VIEW

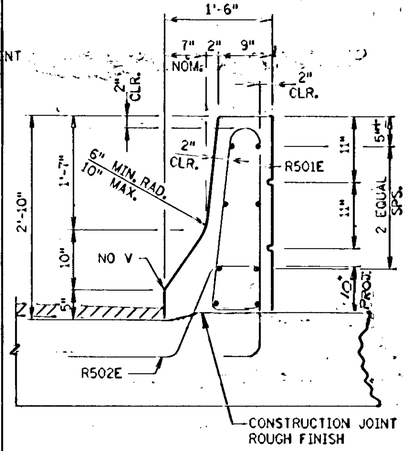


INSIDE ELEVATION OF RAILING



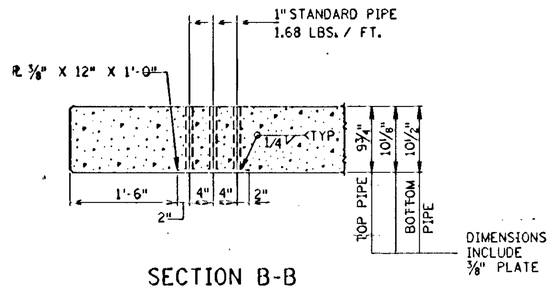
EXPANSION JOINT
EXPANSION DEVICE NOT SHOWN

DEFLECTION JOINT

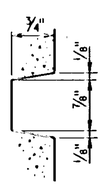


SECTION A-A

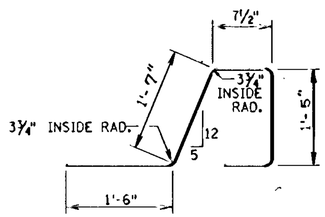
BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R501E	52	6'-6"	BENT	RAIL VERT.
R502E	62	5'-10"	BENT	RAIL VERT.
R703E	4	6'-6"	BENT	RAIL VERT.
R504E	4	6'-2"	BENT	RAIL VERT.
R505E	4	6'-2"	BENT	RAIL VERT.
R406E	16	20'-6"	BENT	RAIL LONG.



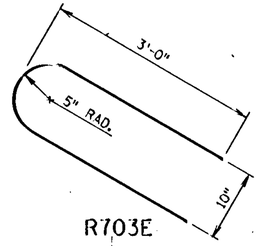
SECTION B-B
(REINFORCEMENT NOT SHOWN)



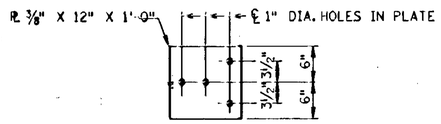
RAIL RUSTICATION



R502E

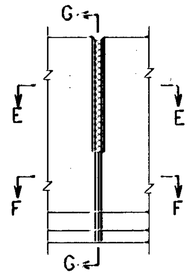


R703E

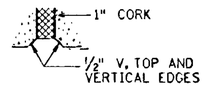


VIEW C-C

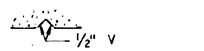
GUARDRAIL CONNECTION DETAIL
GALVANIZE AFTER FABRICATION PER SPEC. 3394
ESTIMATED WEIGHT = 19 LBS.



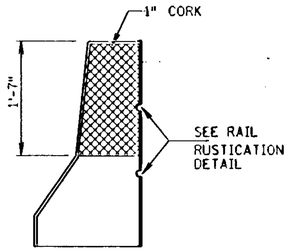
ELEVATION



SECTION E-E

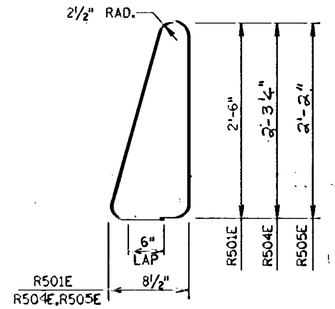


SECTION F-F



SECTION G-G

DEFLECTION JOINT



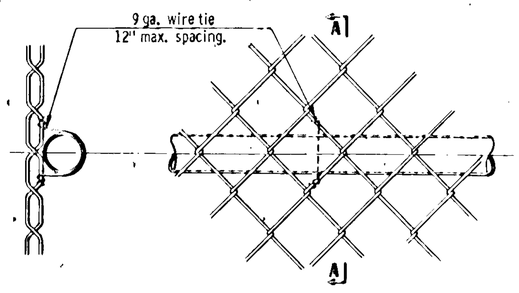
R501E, R504E, R505E

GENERAL NOTES:

BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.
CONCRETE RAILING = 440 LBS./FT.
CONCRETE RAILING = .109 CU. YDS./FT.
RAIL TO BE CONCRETE 3Y46.
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.
LENGTH OF RAILING CONCRETE TO BE MEASURED FOR PAYMENT BETWEEN OUTSIDE FACES OF RAIL.
GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

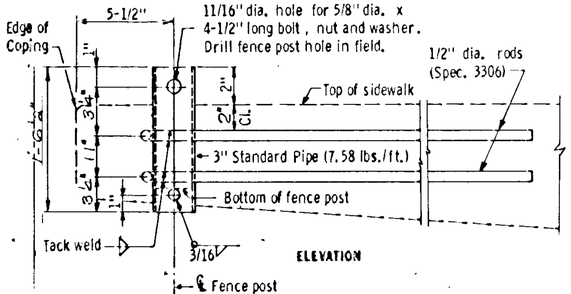
(MODIFIED)

TITLE: CONCRETE RAILING (TYPE J) WITH INTEGRAL END POST	DES:	DR: R.J.V.	APPROVED: 4-28-72	Bridge No. 023558
	CHK:	CHK: M.K.M.	Sheet No. 8 of 13 Sheets	

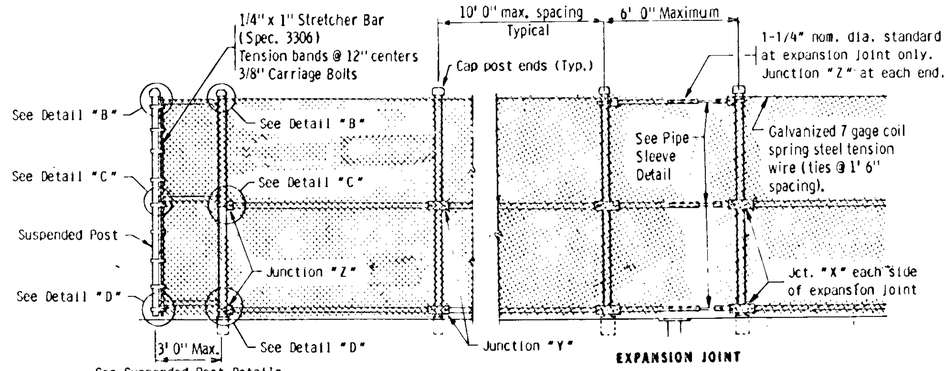


SECTION A-A FART ELEVATION

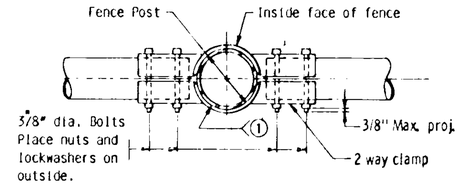
FABRIC TIE



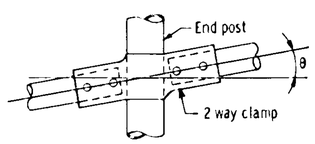
PIPE ANCHORAGE FOR FENCE POSTS
TYPE 1



PART ELEVATION



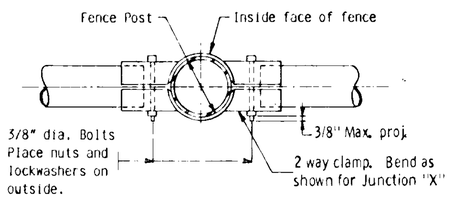
PLAN VIEW



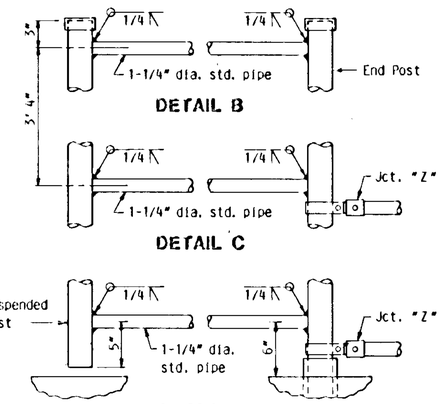
ELEVATION
JUNCTION "X"

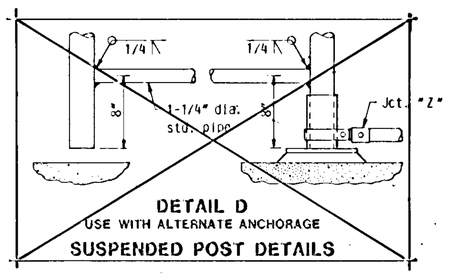
2-WAY CLAMP BENDING TABLE

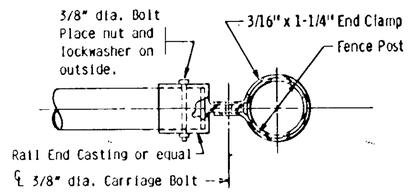
GRADE OF FENCE	θ
0^0 to 2^0	0^0
2^0 to 6^0	4^0
6^0 to 10^0	8^0



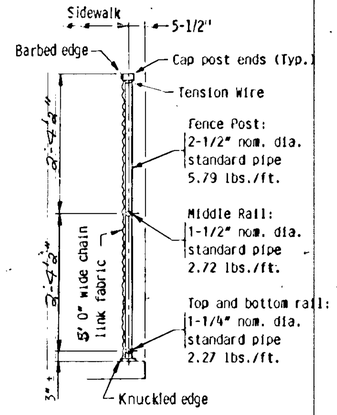
JUNCTION "Y"



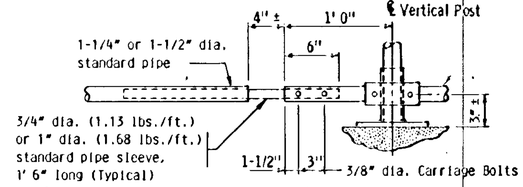




JUNCTION "Z"



TYPICAL SECTION THRU FENCE



PIPE SLEEVE DETAIL
For 4" maximum bridge expansion

GENERAL NOTES:

For post spacing, location, type of anchorages & other details, see sheet no. 6

Maximum spacing for 2-1/2" standard pipe posts = 10' 0". Post spacings of 10' 0" are desired for efficient use of standard pipe lengths.

Fence posts and anchorages shall be set vertical, unless otherwise noted.

See special provisions for requirements not included on this sheet and for basis of payment.

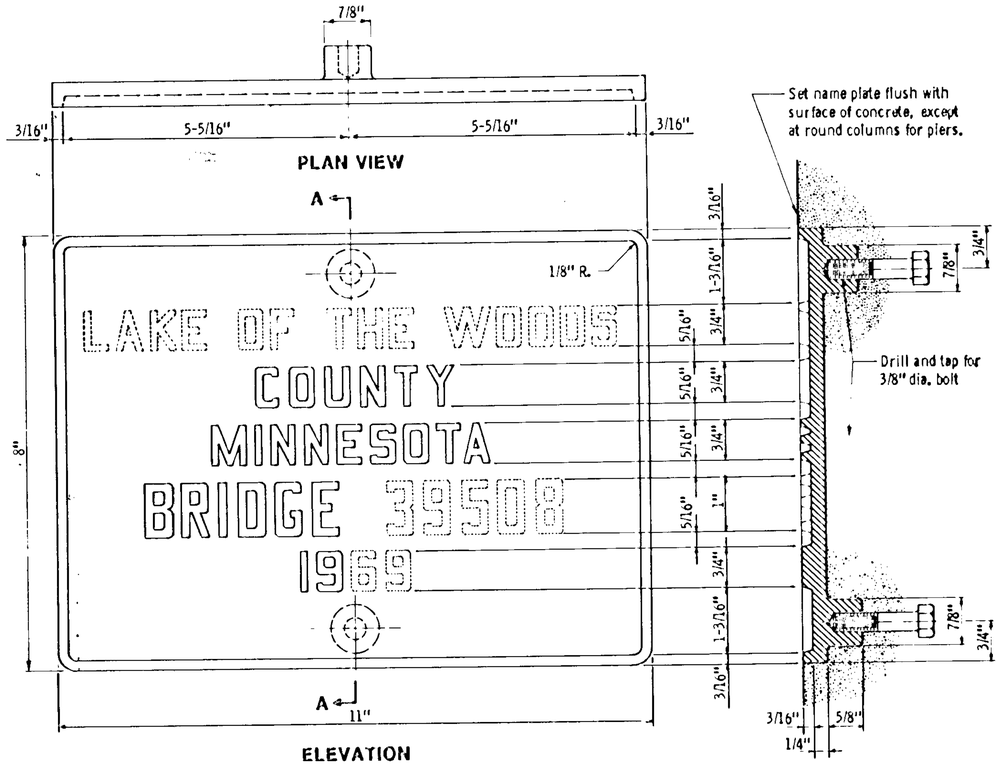
All posts shall have a means to securely hold the top tension wire in position and allow for the removal and replacement of a post without damaging the top wire.

Wire ties may be 9 gage galvanized steel or 0.179" minimum aluminum alloy conforming to ASTM B211, Alloy 1100-H18. Use 12-1/2 gage galvanized hog rings for tension wire ties.

℄ of fence post anchorage to be a minimum of 6" from joints.

(MODIFIED)

REVISED:	APPROVED: Nov. 26, 1985	FIG. 5-397.205
TITLE: 5 FT. WIRE FENCE FOR PEDESTRIAN WALKS (USE WITH TYPE J RAILING)	DES: DR: D.J.V. CKK: CKK: M.K.M	APPROVED: 4-28-92
Sheet No. 9 of 13 Sheets		Bridge No. 02558



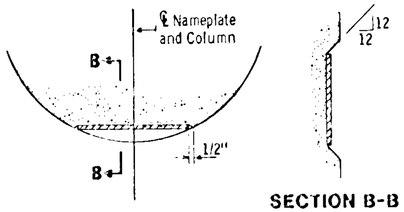
The dotted letters & numbers shown above are for illustration.
Data to be shown on name plate is as follows:

COUNTY ANOKA
BRIDGE 02558
YEAR 1992

1234567890 3/16"

ABCDEFGHIJKLMNOPQRSTUVWXYZ 3/16"

LETTERS & NUMBERS FOR NAMEPLATES

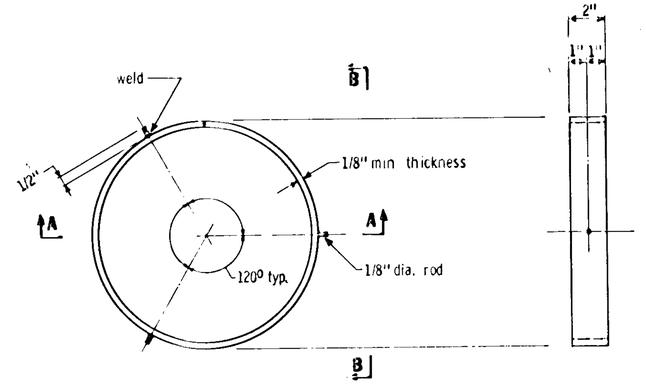


NAMEPLATE PLACEMENT
(Round Concrete Pier Columns)

NOTES:

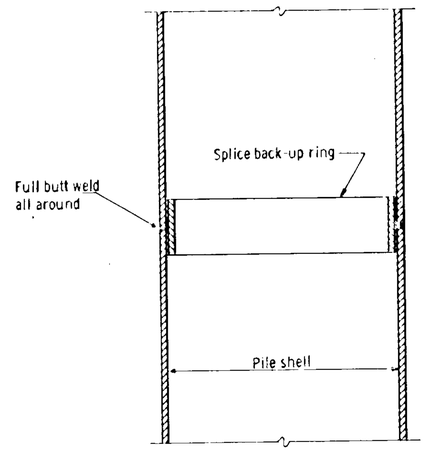
No shop drawing required.
Material shall comply with Spec. 3327
Letters and numbers shall conform to those shown.
Draft on letters and numbers shall not be more than 3" in 12".
Horizontal spacing of letters and numbers shall produce a balanced layout in proportion to spacing shown.
Top surface of letters,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

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



PLAN VIEW
(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 electrodes 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.

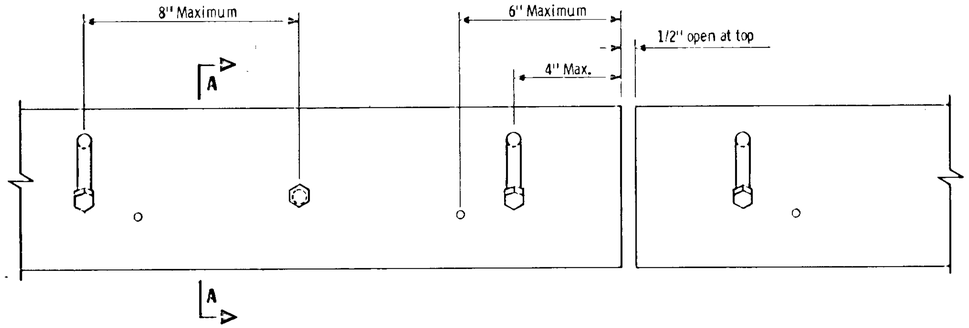
Low-hydrogen electrodes shall be placed in a holding oven for at least 8 hours, after having been exposed to the atmosphere for more than 2 hours.

Electrodes which have become wet, soiled or damaged shall not be used.

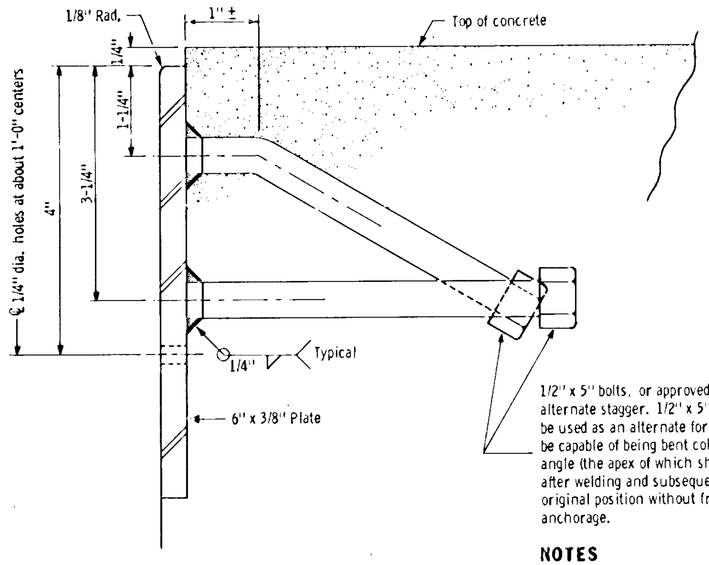
Welding shall not be done when the ambient temperature is lower than 0° F. or when the pile is wet or exposed to falling rain or snow. When the pile metal temperature is below 32° F., the pile metal in the area of the weld shall be heated to a minimum temperature of 70° F. and maintained at this temperature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

APPROVED July 21, 1972 Engineering Standards Engineer RESEARCH AND STANDARDS DIVISION	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **PILE SPLICE** **CAST-IN-PLACE CONCRETE PILES**		DETAIL NO. **B201**

TITLE: DETAILS	DES:	DR. D.J.V.	APPROVED: 4-28-92	Bridge No. 02558
	CHK:	CHK: M.M.M.		
	Sheet No. 10 of 13 Sheets			



ELEVATION
(Concrete not shown)



SECTION A-A

1/2" x 5" bolts, or approved equal, at 8" centers with alternate stagger. 1/2" x 5" stud welded fastners 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.

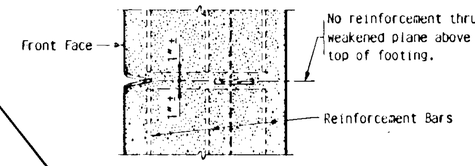
NOTES

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

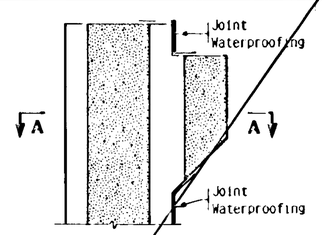
Materials: Structural steel per spec. 3306. Galvanize after fabrication per spec. 3394

Set plate to proper grade and crown. Plates shall be straightened to a tolerance of 1/16" in 10 feet after galvanizing.

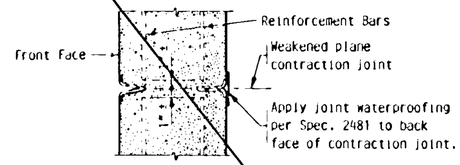
APPROVED Sept. 28, 1977 Developed by BRIDGE STANDARDS AND THE BRIDGES & STRUCTURES SECTION Issued by RESEARCH & STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **PROTECTION PLATE FOR END OF SLAB**		DETAIL NO. **B553**



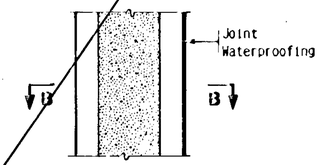
SECTION A-A



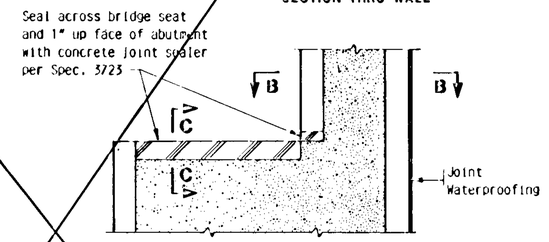
SECTION THRU PAVING BRACKET



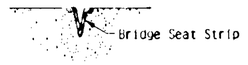
SECTION B-B



SECTION THRU WALL

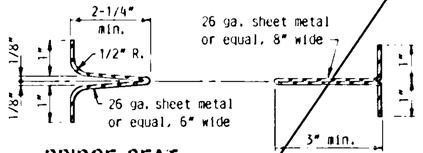


SECTION THRU BRIDGE SEAT



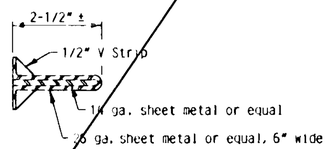
SECTION C-C

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 not less than the 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 be not less than 1-1/2" 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 a 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.

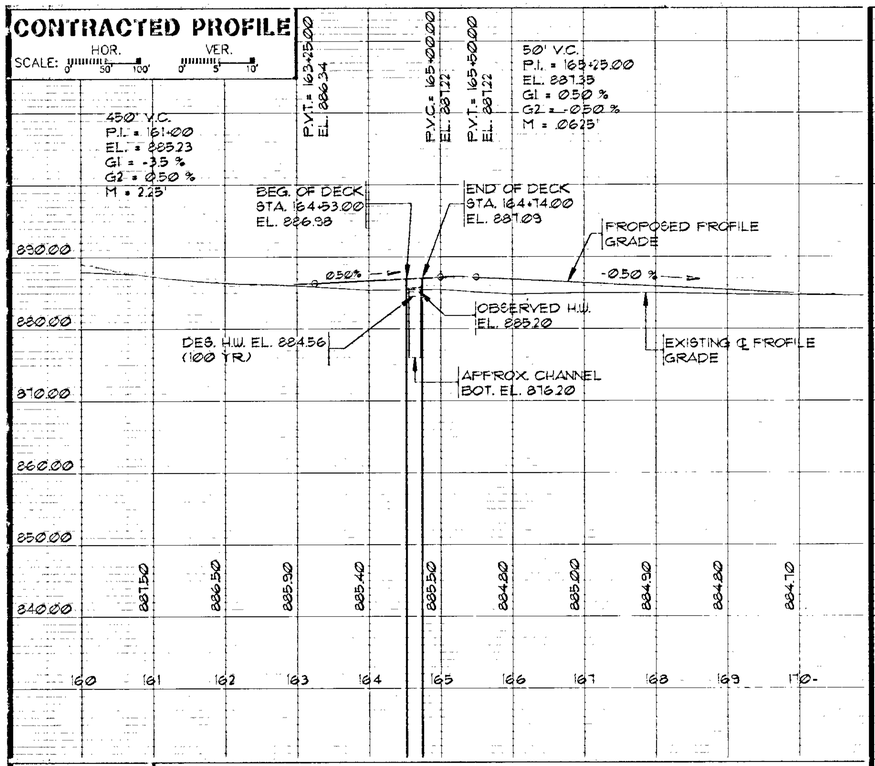
The cost of forming the joint shall be included in the price bid for other items.

APPROVED February 20, 1987 Developed by: ENGINEERING STANDARDS and BRIDGES & STRUCTURES Issued by: ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **CONTRACTION JOINT**	REVISION	DETAIL NO. **B801**

TITLE: **DETAILS**	DES:	DR: O.J.V.	APPROVED: 4-28-92	Bridge No. 02558
	CHK:	CHK: M.K.M.	Sheet No. 11 of 13 Sheets	

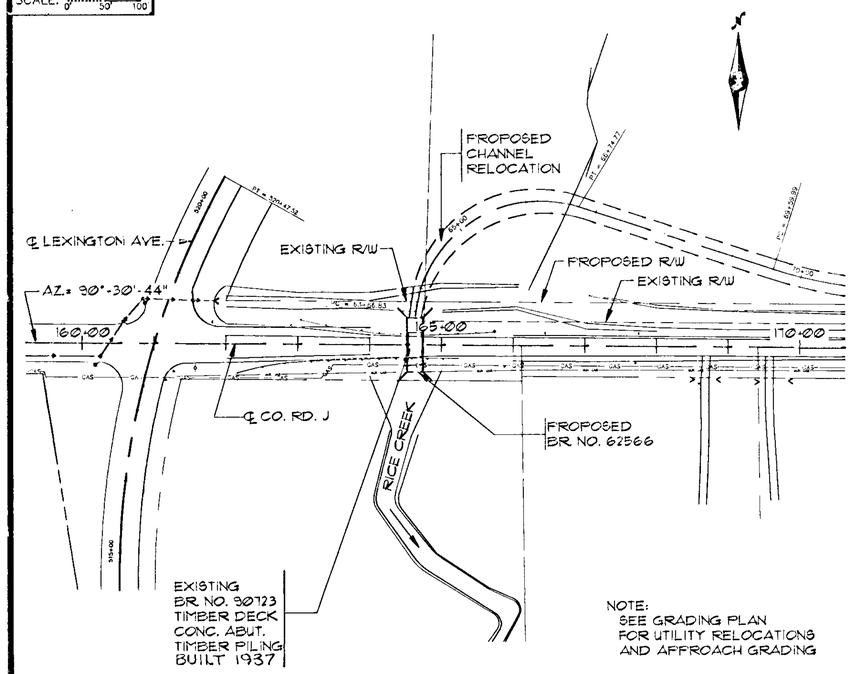
CONTRACTED PROFILE

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



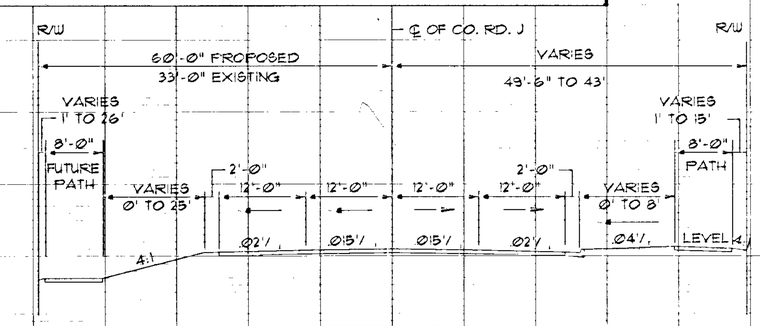
PLAT

SCALE: 0 50 100

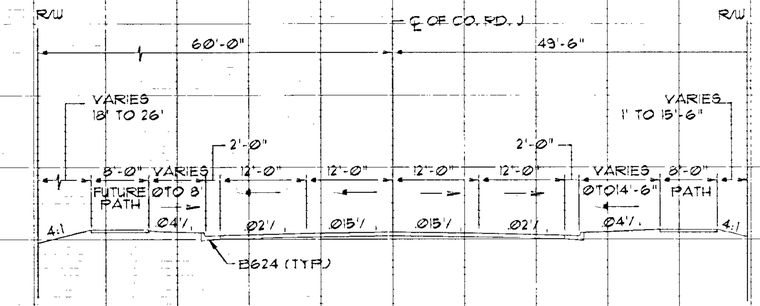


TYPICAL SECTION & PERTINENT DATA

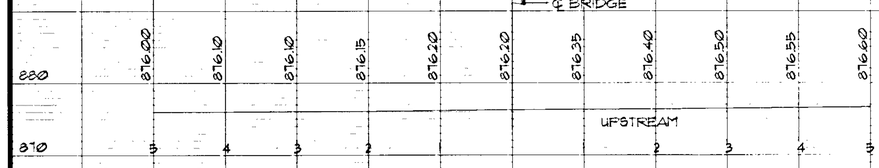
SCALES AS SHOWN



TYPICAL PROPOSED ROADWAY SECTION APPROACHING BRIDGE

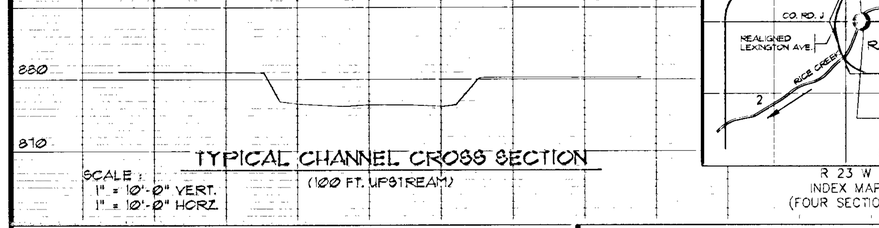


TYPICAL PROPOSED ROADWAY SECTION LEAVING BRIDGE



CHANNEL BOTTOM PROFILE

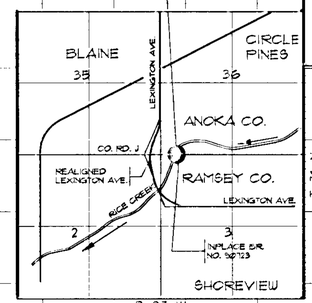
SCALE :
1" = 10'-0" VERT.
1" = 100'-0" HORZ.



TYPICAL CHANNEL CROSS SECTION

(100 FT. UPSTREAM)

SCALE :
1" = 10'-0" VERT.
1" = 10'-0" HORZ.



R 23 W
INDEX MAP
(FOUR SECTIONS)

Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

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

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

3. Apparent highwater elevation _____ Obtained from _____

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

HYDRAULIC ENGINEERS RECOMMENDATION
DATE 1-24-91
① SEE HYDRAULIC LETTER DATED 1-24-91

Stream or ditch designation RICE CREEK
Drainage area 146 SQ. MILES
Max. flood on record UNKN. Design flood (100 yr. freq.) 803 C.F.S.
Max. observed highwater elev. 885.20 Design highwater elev. 884.56
Design mean velocity through structure 5.16 F.P.S.
Low superstructure at or above elev. 885.23
Flowline elev. 876.20 Skew angle NONE
Waterway area req'd below elev. * = 134 Sq.Ft. at Rt. angles to channel
* WATERWAY AREA RESTRICTED TO MATCH EXISTING CONDITION
In the interest of flood plain zoning the regional flood (500 yr. freq.) is ① C.F.S. at stage ① and mean of velocity of ① F.P.S. with ① Ft. swellhead ①
The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

FOUNDATION ENGINEERS RECOMMENDATION
DATE 2/20/90
REPORT NO. 4220-90-324 (TWIN CITY TESTING)

Bridge survey sheets made from BRW FIELD SURVEY NOTES

Bench mark elevation 885.10 (M.S.L. 1929 Adj.)
Location: BRASS DISK IN S.E. COR WINGWALL ON EXISTING BR. NO. 90723 OVER RICE CREEK

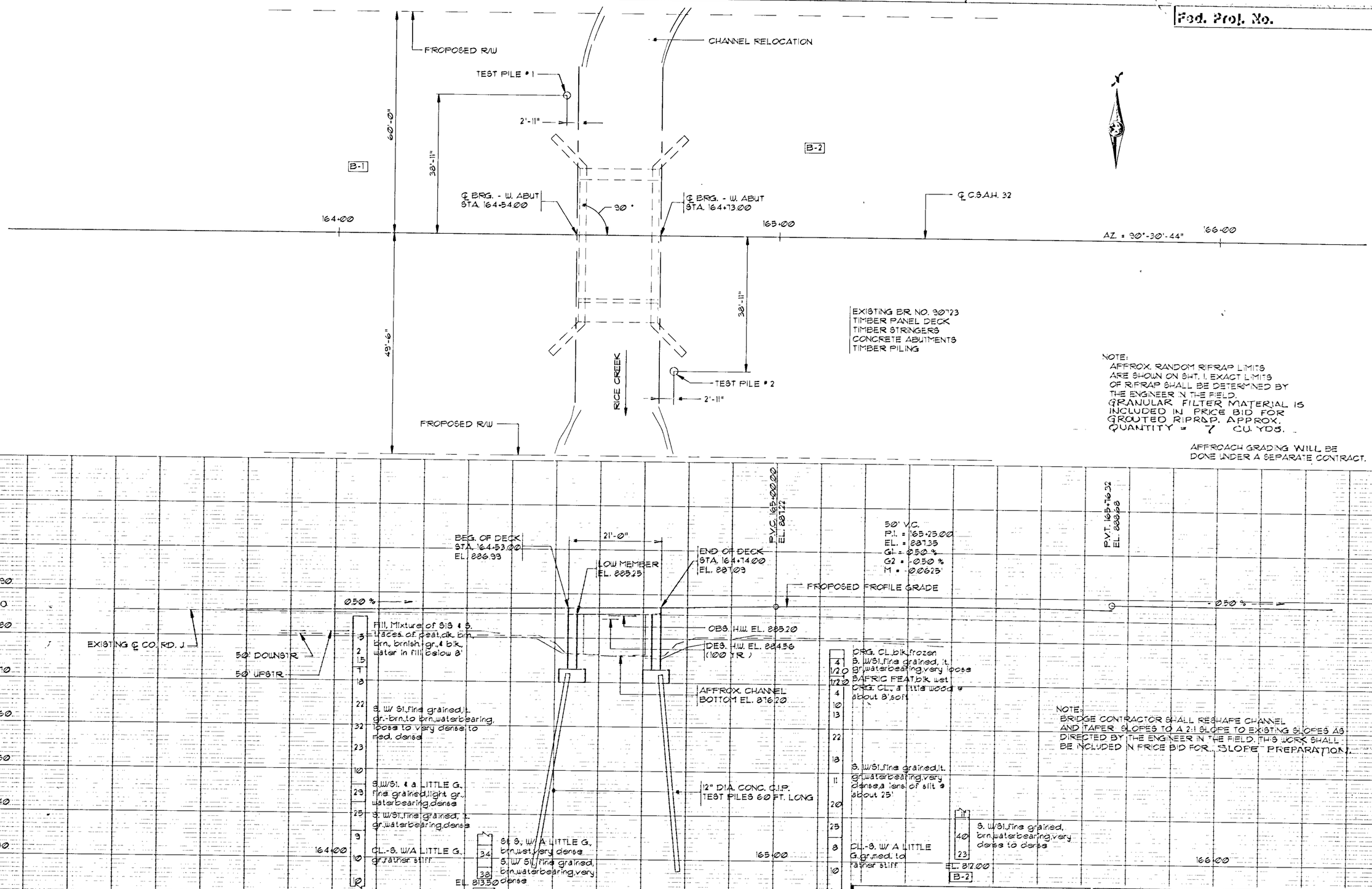
MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT _____ ON C.S.A.H. 32
PROPOSED BRIDGE LOCATED .01 (T.H., C.S.A.H., C.R. etc.) MILES EAST OF JCT. OF C.S.A.H. 17 IN THE CITY OF BLAINE
SEC. 36 TWP. 31N R. 23W
CITY OF BLAINE COUNTY ANOKA
BRIDGE NO. 02558
4-23-72

Area No. **Job No.** **State Proj. No.** S.A.P. 02-632-04 **Sheet No.** 12 **of** 13 **Sheets**

Fed. Proj. No.



BRIDGE SURVEY PLAN AND PROFILE	DES: X	DR: DJV	APPROVED: 4-23-92
	CHK: X	CHK: X	
State Proj. No. S.A.P. 02-632-04	Sheet No. 13 of 13 Sheets		Bridge No. 02558