MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY AND RAMSEY COUNTY

CONSTRUCTION PLAN FOR GUARDRAIL, END TREATMENT AND CONCRETE BARRIER REPLACEMENT

LOCATED ON ANOKA CO. HIGHWAY NO'S. 1,13,22(2),11,78,3(2)
LOCATED ON RAMSEY CO. HIGHWAY NO'S. 31(2),34,53

ANOKA COUNTY
STATE PROJ. NO. 02-030-03

RAMSEY COUNTY
STATE PROJ. NO. 62-030-08

MINN. PROJ. NO. STPX0299 (266)
MINN. PROJ. NO.

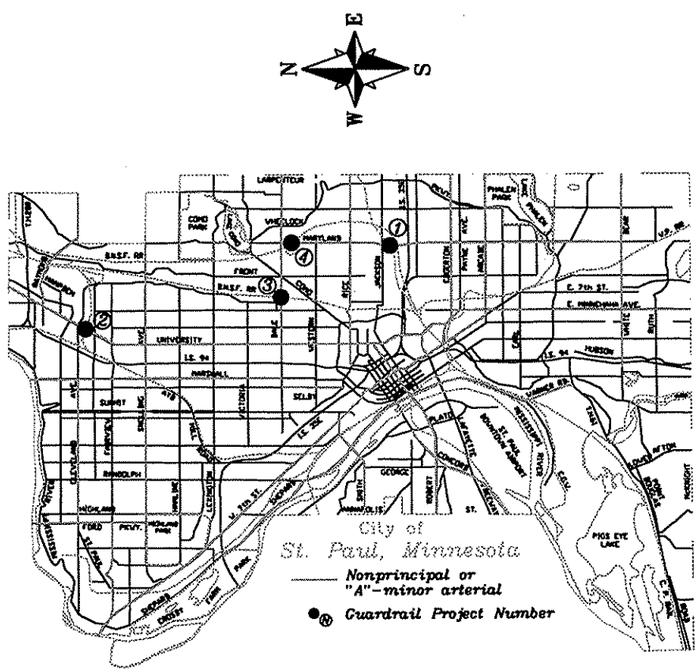
GOVERNING SPECIFICATIONS

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

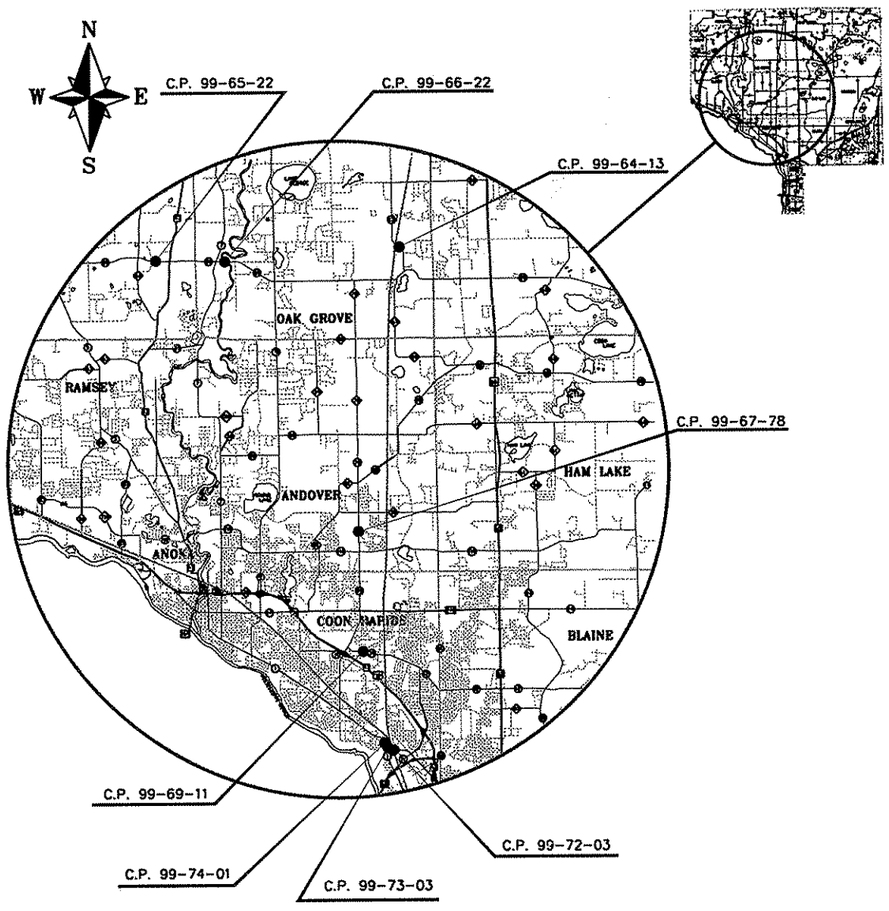
INDEX

THIS PLAN CONTAINS 26 SHEETS

1999 RAMSEY COUNTY GUARDRAIL PROGRAM



1999 ANOKA COUNTY GUARDRAIL PROGRAM



Approved 5/10/2000 — ANOKA COUNTY ENGINEER

Approved 5/16/2000 — RAMSEY COUNTY ENGINEER

Approved 5-18-2000 — STATE BRIDGE ENGINEER

Approved 5-19-2000 — METRO - ASSISTANT DIVISION ENGINEER - STATE AID
REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

Approved 5/23/2000 — APPROVED FOR STATE AND FEDERAL AID FUNDING - STATE AID ENGINEER

NO	DATE	BY	CKD	APPR	REVISION

NAME: TITLE.dwg 4-25-00 4:17:51 pm EST

minnesota metric

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

DATE 5/5/00 REG. NO. 25066

DRAWN BY KGJ DATE 9/13/99
DESIGN BY LR DATE 9/13/99
CHECKED BY LR DATE 9/13/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-030-03
STATE PROJECT NO. 62-030-08
STATE AID PROJECT NO.
COUNTY PROJECT NO.

TITLE SHEET

Sheet 1 of 26 Sheets

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL QUAN.		ANOKA COUNTY S.P. 02-030-03				RAMSEY COUNTY S.P. 62-030-08			
						PARTICIPATING		NON-PART.		PARTICIPATING		NON-PART.	
				EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
(1)	2021.501	MOBILIZATION	LS	1		0.9				0.1			
	2101.502	CLEARING	TREE	1								1	
⚠	2104.501	REMOVE GUARD RAIL - PLATE BEAM	LF	772		767				5			
⚠	2104.501	REMOVE CABLE GUARD RAIL	LF	1663						1663			
⚠	2104.509	REMOVE TWISTED END TREATMENT	EACH	23		23							
	2301.501	CONCRETE PAVEMENT	SY	7		7							
(3)	2401.513	TYPE F RAILING CONCRETE (3Y46)	LF	943		943							
	2401.514	MEDIAN BARRIER CONCRETE (3Y46)	LF	12		12							
	2401.541	REINFORCEMENT BARS (EPOXY COATED)	LB	15350		15350							
	2402.604	REPAIR AND RECONSTRUCT EXPANSION JOINT DEVICE(TYPE 4)	LF	437		437							
	2404.603	CONCRETE OVERLAY (3U17A)	SF	155		155							
	2433.506	REMOVE MEDIAN BARRIER	LF	12		12							
(2)	2433.506	REMOVE TYPE G RAILING	LF	934		934							
	2433.602	REPAIR AND REPLACE JOINT FILLER/JOINT SEALER	LF	1198		1198							
	2433.602	REPAIR AND REPLACE JOINT SEALANT (SLOPE PAVING)	LF	611				611					
	2433.602	REPAIR CRACK (PRESSURE INJECTION)	LF	124				124					
	2433.603	REPAIR SPALLED CONCRETE	SF	100		47		53					
(5)	2433.604	RECONSTRUCT RAILING WATERPROOFING	LS	1		1							
	2433.605	REPAIR/REPLACE BEARING ASSEMBLY	EACH	6				6					
	2554.501	TRAFFIC BARRIER DESIGN A8307	LF	1633						1633			
	2554.501	TRAFFIC BARRIER DESIGN B8307	LF	749.5		749.5							
	2554.521	ANCHORAGE ASSEMBLY - PLATE BEAM	EACH	2						2			
	2554.523	END TREATMENT - ECCENTRIC LOADER ELT	EACH	7		7							
(4)	2554.523	END TREATMENT - ENERGY ABSORBING TERMINAL	EACH	14		14							
	2554.523	TWISTED END TREATMENT	EACH	8						8			
⚠	2554.603	WATER FILLED BARRIER	LF	200		200							
⚠	2554.603	RELOCATE WATER FILLED BARRIER	LF	200		200							
(1)	2563.601	TRAFFIC CONTROL	LS	1		0.9				0.1			

① LUMP SUM ITEM INCLUDES MOBILIZATION AND TRAFFIC CONTROL FOR ALL SUB-PROJECTS.
② INCLUDES REMOVAL OF METAL RAILING
③ INCLUDES ALL WORK NECESSARY TO CONSTRUCT CONCRETE BARRIER AND REATTACHMENT OF PLATE BEAM GUARDRAIL.
④ USE "BRAKEMASTER" END TREATMENT OR APPROVED EQUAL.
⑤ LUMP SUM ITEM INCLUDES RAILING WATERPROOFING OF BRIDGES 02521 & 02522.

PROJECT LOCATIONS

PROJ. NO.	C.S.A.H./ST.	LOCATION
ANOKA CO. PROJECTS		
99-73-03	3	PROJECT IS LOCATED AT THE CO. ROAD 3 BRIDGE OVER C.S.A.H. 1 IN THE CITY OF COON RAPIDS
99-72-03	3	PROJECT IS LOCATED AT THE CO. ROAD 3 BRIDGE OVER THE BURLINGTON NORTHERN TRACKS JUST EAST OF THE BR. OVER C.S.A.H. 1 IN THE CITY OF COON RAPIDS
99-69-11	11	PROJECT IS LOCATED ON C.S.A.H. 11, NORTHDALE BLVD., ON THE APPROACH GUARDRAIL FOR THE BRIDGE OVER COON CREEK BETWEEN EAGLE ST. N.W., S. OF NORTHDALE BLVD. AND XEON ST. N.W. NORTH OF NORTHDALE BLVD.
99-74-01	1	PROJECT IS LOCATED ON C.S.A.H. 1 (COON RAPIDS BLVD.) AT IT'S INTERSECTION WITH COON CREEK ON THE S. SIDE OF #1, PROTECTING THE OUTLET END OF THE COON CREEK CULVERTS.
99-64-13	13	PROJECT IS LOCATED APPROX. 1,206m N. OF THE JCT. OF C.S.A.H. 22 AND C.S.A.H. 13 AT THE BRIDGE GUARDRAIL PROTECTION FOR THE CEDAR CREEK BRIDGE ON C.S.A.H. 13 JUST E. OF THE B.N. R.R. X-ING WITH C.S.A.H. 13.
99-66-22	22	PROJECT IS LOCATED AT THE GUARDRAIL APPROACH PROTECTION FOR THE C.S.A.H. 22 BRIDGE CROSSING THE RUM RIVER IN THE CITY OF OAK GROVE BETWEEN C.S.A.H. 7 AND C.S.A.H. 9.
99-65-22	22	PROJECT IS LOCATED AT THE GUARDRAIL APPROACH PROTECTION FOR THE C.S.A.H. 22 BRIDGE OVER FORD BROOK APPROX. 583m W. OF THE INTERSECTION OF T.H. 47 AND C.S.A.H. 22 IN BURNS TOWNSHIP.
99-67-78	78	PROJECT IS LOCATED AT THE GUARDRAIL APPROACH PROTECTION FOR THE C.S.A.H. 78 BRIDGE OVER COON CREEK APPROXIMATELY 1099m N. OF THE INTERSECTION OF C.S.A.H. 78 AND BUNKER LAKE BLVD. (C.S.A.H. 116).
RAMSEY CO. PROJECTS		
1	MARYLAND AVE.	PROJECT IS LOCATED AT THE INTERSECTION OF MARYLAND ST. AND THE C.P.R.R. OVERPASS AND THE B.N.S.F.R.R. OVERPASS BETWEEN JACKSON ST. AND L'ORIENT ST. IN IN THE CITY OF ST. PAUL.
2	UNIVERSITY AVE.	PROJECT IS LOCATED AT THE UNIVERSITY AVE. UNDERPASS AT IT'S INTERSECTION WITH THE M.C.R.R. RAILROAD TRACKS BETWEEN CLEVELAND AVE. AND PRIOR AVE. IN THE CITY OF ST. PAUL.
3	DALE ST.	PROJECT IS LOCATED ON DALE ST. AT IT'S INTERSECTION WITH THE B.N.S.F.R.R. BETWEEN MINNEHAHA AVE. AND TOPPING AVE. IN THE CITY OF ST. PAUL.
4	MARYLAND AVE.	PROJECT IS LOCATED AT THE MARYLAND AVE. UNDERPASS AT IT'S INTERSECTION WITH THE B.N.S.F.R.R. TRACKS BETWEEN KENT ST. AND MACKUBIN ST. IN THE CITY OF ST. PAUL.

NO	DATE	BY	CKD	APPR	REVISION
⚠	06/13/00	KGJ	LAR		ADDED 2 ITEMS , REVISED QUANTITIES IN RAMSEY CO. COLUMN

NAME: EST-QUAN.dwg 6-13-00 8:36:24 am EST

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 09/16/99 REG. NO. 25066

DRAWN BY KGJ DATE 9/16/99
DESIGN BY KGJ DATE 9/16/99
CHECKED BY LR DATE 9/16/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-030-03
STATE AID PROJECT NO. 62-030-08
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

ESTIMATED QUANTITIES SUMMARY

Sheet 2 of 26 Sheets

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

NOTES	ITEM NO.	ITEM	UNIT	TOTAL QUAN. EST.	TOTAL QUAN. FINAL
	2021.501	MOBILIZATION	LS	1	
	2104.501	REMOVE GUARD RAIL – PLATE BEAM	LF	200	
	2104.509	REMOVE TWISTED END TREATMENT	EA	3	
②	2401.513	TYPE F RAILING CONCRETE (3Y46)	LF	487	
	2401.514	MEDIAN BARRIER CONCRETE (3Y46)	LF	6	
	2401.541	REINFORCEMENT BARS (EPOXY COATED)	LB	8180	
	2401.604	REPAIR AND RECONSTRUCT EXPANSION JOINT DEVICE (TYPE 4)	LF	182	
	2404.603	CONCRETE OVERLAY (3U17A)	SF	80	
	2433.506	REMOVE MEDIAN BARRIER	LF	6	
①	2433.506	REMOVE TYPE G RAILING	LF	481	
	2433.602	REPAIR AND REPLACE JOINT FILLER/JOINT SEALER	LF	512	
	2433.602	REPAIR AND REPLACE JOINT SEALANT (SLOPE PAVING)	LF	209	
	2433.602	REPAIR CRACK (PRESSURE INJECTION)	LF	46	
	2433.603	REPAIR SPALLED CONCRETE	SF	47	
	2433.604	RECONSTRUCT RAILING WATERPROOFING	LS	1	
	2433.605	REPAIR/REPLACE BEARING ASSEMBLY	EA	1	
③	2554.523	END TREATMENT– ENERGY ABSORBING TERMINAL	EACH	2	
④	2554.603	TRAFFIC BARRIER DESIGN B8307	LF	200	
	2563.601	TRAFFIC CONTROL	LS	1	

① INCLUDES REMOVAL OF METAL RAILING.
② INCLUDES ALL WORK NECESSARY TO REATTACH PLATE BEAM GUARDRAIL.
③ USE "BRAKEMASTER" END TREATMENT OR APPROVED EQUAL.
④ FOR REPLACEMENT OF DAMAGED GUARD RAIL AT VARIOUS LOCATIONS TO BE DETERMINED IN THE FIELD DURING CONST.

STANDARD PLATES

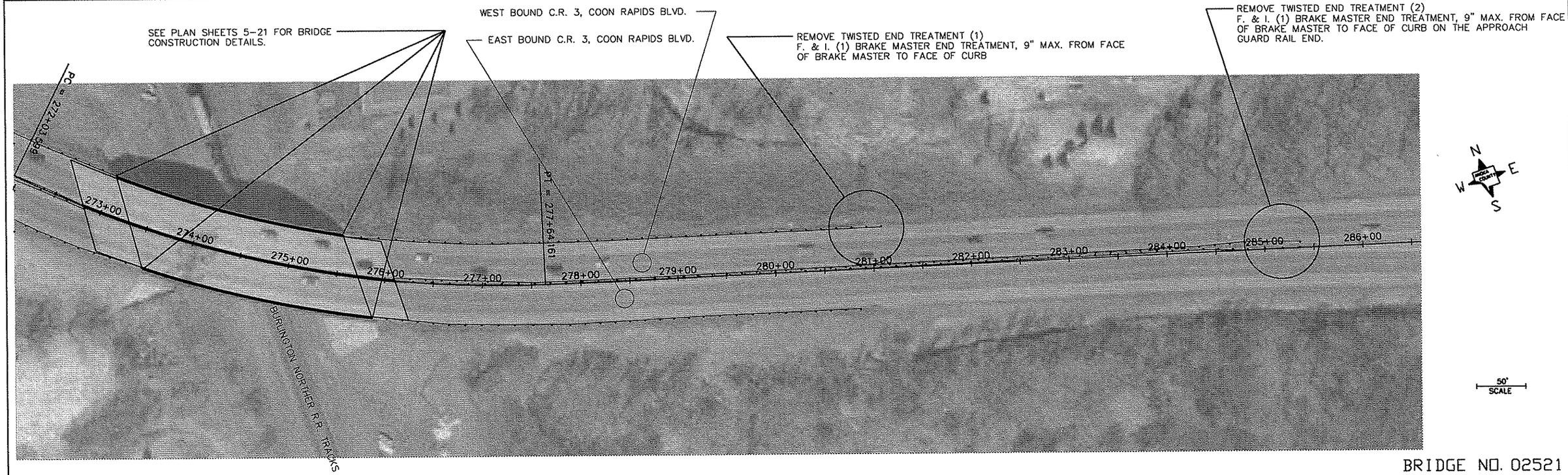
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
8000 I	STANDARD BARRICADES
8307 P	STEEL PLATE BEAM GUARDRAIL

BRIDGE NO. 02521

ADT (1996)= 19,231
Proj. ADT (2015) = 30,770
Proj. HCADT (1995) = _____
No. of Traffic Lanes 2 No. of Parking Lanes 0
Shoulder Width 2.4m

Functional Classification MINOR ARTERIAL
Design Speed 50 MPH
Based on Stopping Sight Distance
Height of Eye 1070mm Height of Object 150mm



BRIDGE NO. 02521

NO	DATE	BY	CKD	APPR	REVISION

NAME: D997203.dwg 5-10-00 8:40:31 am EST

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 09/16/99 REG. NO. 25066

DRAWN BY KGJ DATE 09/16/99
DESIGN BY KGJ DATE 09/16/99
CHECKED BY LAR DATE 09/16/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-030-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 99-72-03
COUNTY PROJECT NO. _____

PLAN VIEW

Sheet 3 of 26 Sheets

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL QUAN. EST.	TOTAL QUAN. FINAL
	2021.501	MOBILIZATION	LS	1	
	2104.501	REMOVE TWISTED END TREATMENT	EA	5	
	2301.501	CONCRETE PAVEMENT	SY	7	
(2)	2401.513	TYPE F RAILING CONCRETE (3Y46)	LF	456	
	2401.514	MEDIAN BARRIER CONCRETE (3Y46)	LF	6	
	2401.541	REINFORCEMENT BARS (EPOXY COATED)	LB	7170	
	2402.604	REPAIR AND RECONSTRUCT EXPANSION JOINT DEVICE (TYPE 4)	LF	255	
	2404.603	CONCRETE OVERLAY (3U17A)	SF	75	
	2433.506	REMOVE MEDIAN BARRIER	LF	6	
(1)	2433.506	REMOVE TYPE G RAILING	LF	453	
	2433.602	REPAIR AND REPLACE JOINT FILLER/JOINT SEALER	LF	686	
	2433.602	REPAIR AND REPLACE JOINT SEALANT (SLOPE PAVING)	LF	402	
	2433.602	REPAIR CRACK (PRESSURE INJECTION)	LF	78	
	2433.603	REPAIR SPALLED CONCRETE	SF	53	
	2433.604	RECONSTRUCT RAILING WATERPROOFING	LS	1	
	2433.605	REPAIR/REPLACE BEARING ASEMBLY	EA	5	
(3)	2554.523	END TREATMENT- ENERGY ABSORBING TERMINAL	EA	4	
	2563.601	TRAFFIC CONTROL	LS	1	

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

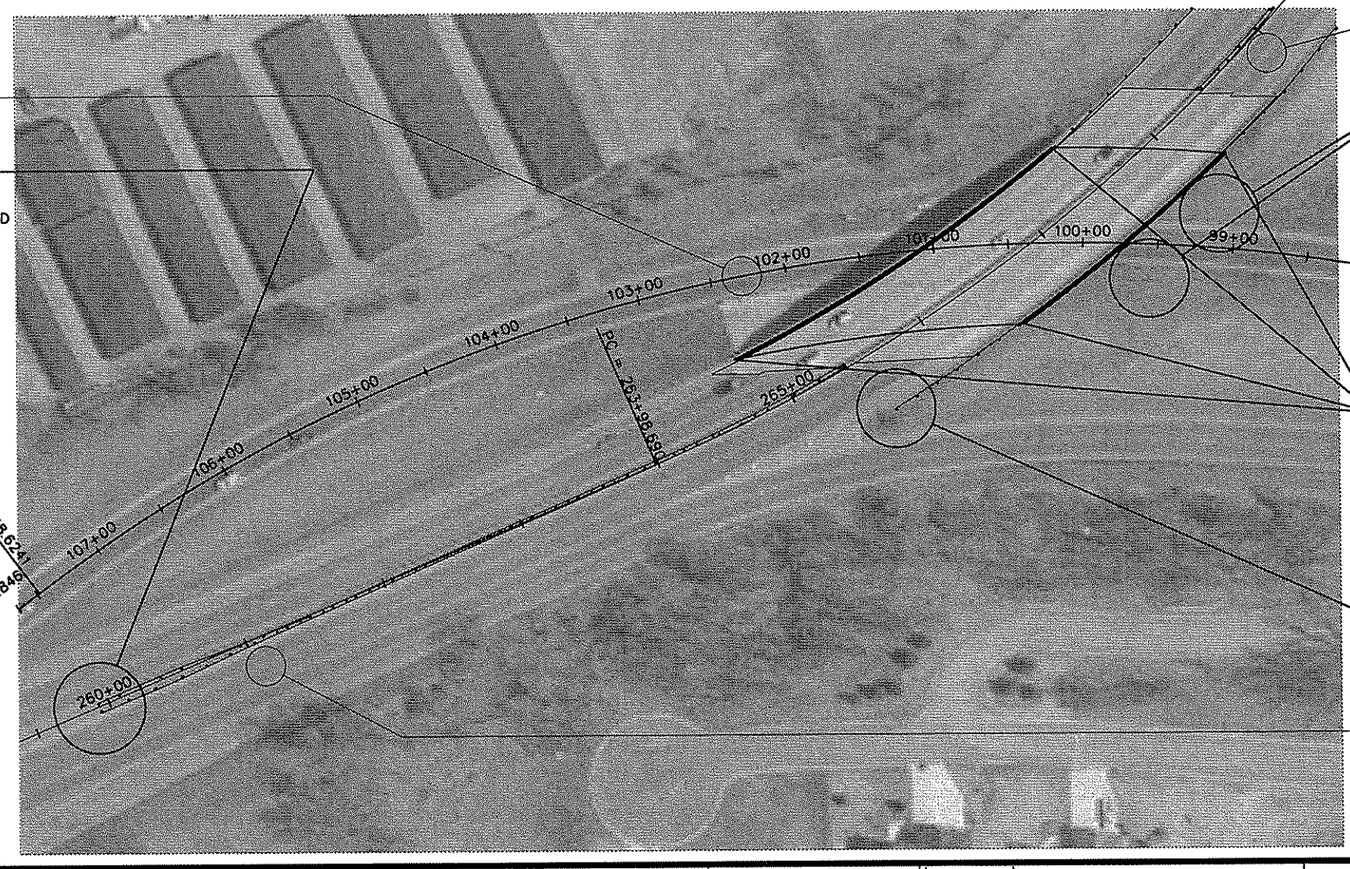
PLATE NO.	DESCRIPTION
8000 I	STANDARD BARRICADES
8329 G	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)

BRIDGE NO. 02522

ADT (1995)= 19,231
Proj. ADT (2015) = 30,770
Proj. HCADT (1995) = _____
No. of Traffic Lanes 4 No. of Parking Lanes 0
Shoulder Width, 2.4m

Functional Classification MINOR ARTERIAL
Design Speed 50 MPH
Based on Stopping Sight Distance
Height of Eye 1070mm Height of Object 150mm

① INCLUDES REMOVAL OF METAL RAILING.
② INCLUDES ALL WORK NECESSARY TO REATTACH PLATE BEAM GUARDRAIL.
③ USE "BRAKEMASTER" END TREATMENT OR APPROVED EQUAL.



50' Scale

BRIDGE NO. 02522

NO	DATE	BY	CKD	APPR	REVISION

NAME: D997303.dwg 5-10-00 8:43:08 am EST

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 09/16/99 REG. NO. 25066

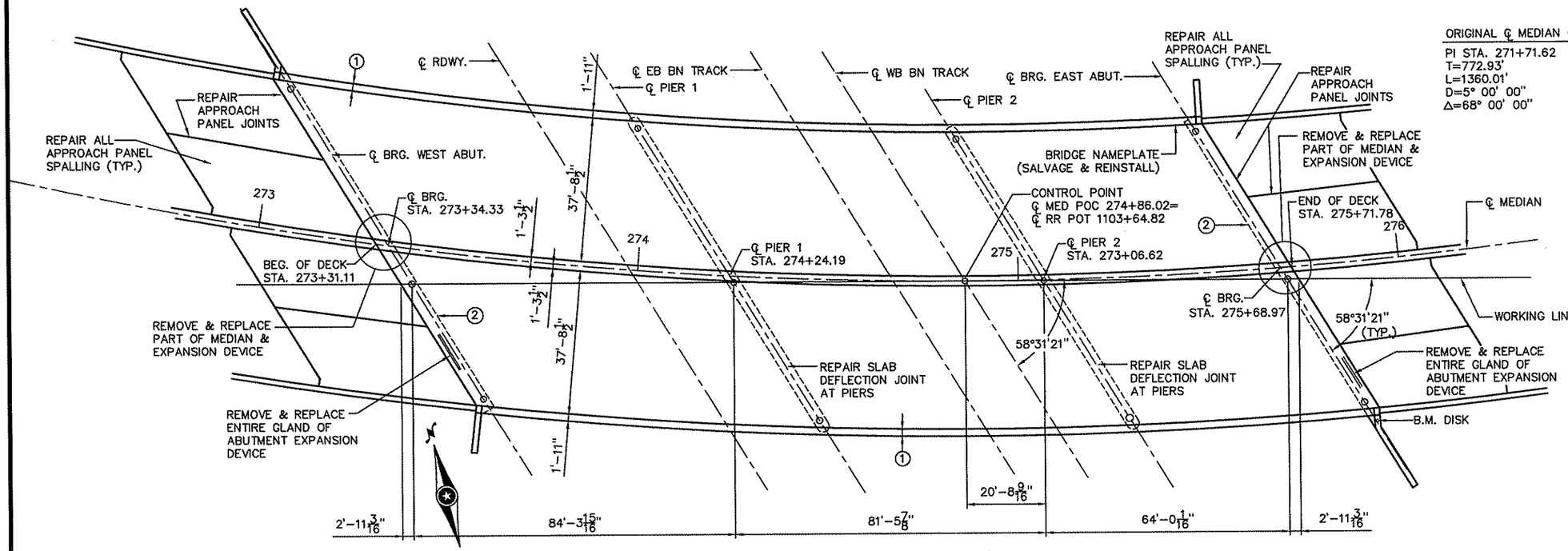
DRAWN BY KGJ DATE 9/16/99
DESIGN BY KGJ DATE 9/16/99
CHECKED BY LAR DATE 9/16/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-030-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 99-73-03
COUNTY PROJECT NO. _____

PLAN VIEW

Sheet 4 of 26 Sheets



GENERAL PLAN

ORIGINAL ℄ MEDIAN CURVE DATA:
PI STA. 271+71.62
T=772.93'
L=1360.01'
D=5° 00' 00"
Δ=68° 00' 00"

DESIGN DATA

MAXIMUM ALLOWABLE DESIGN STRESSES:
REINFORCED CONCRETE:
f'c = 4000 PSI N=8
Fy = 60000 PSI (REINFORCEMENT)

DECK AREA : 19703 SQ. FT.

CONSTRUCTION NOTES

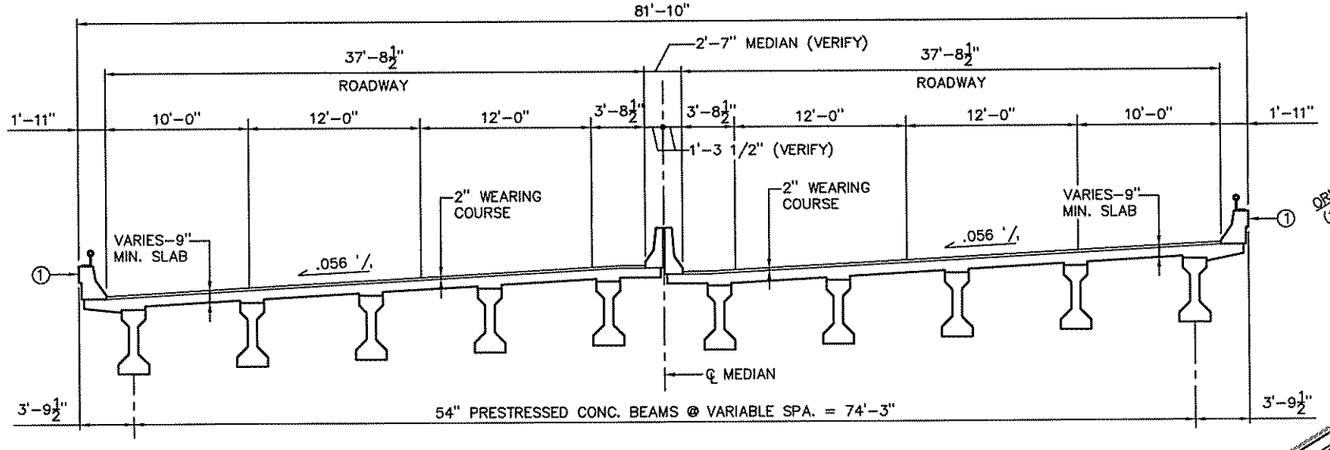
THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE MAY 2, 1994 SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE.

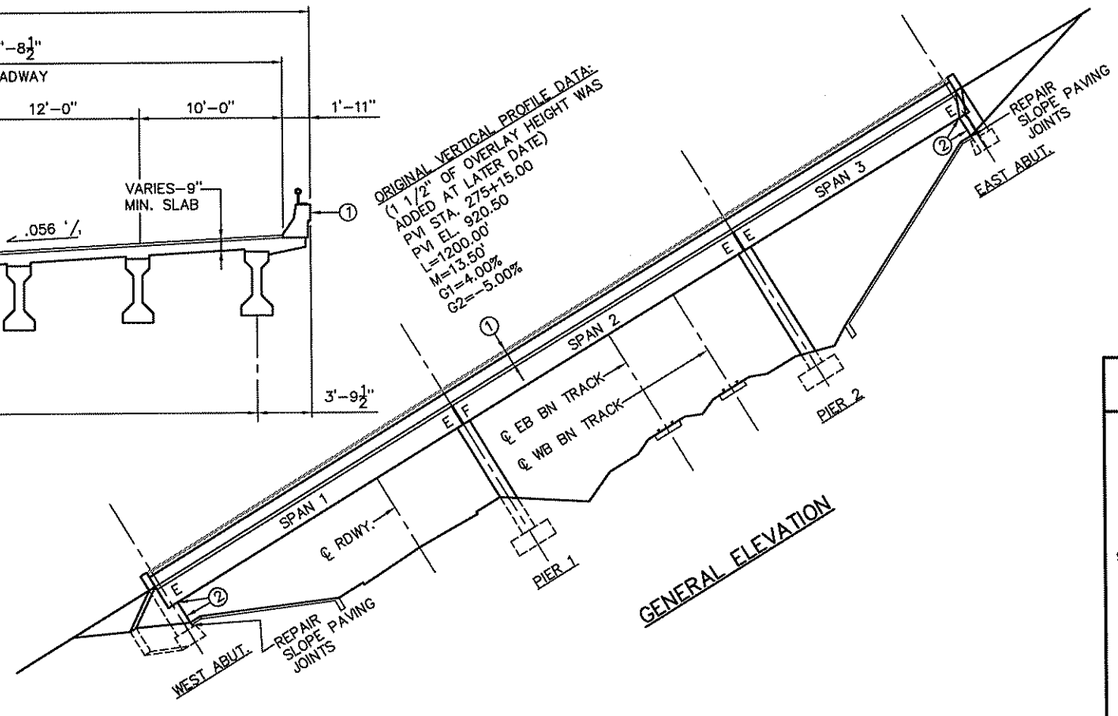
BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.

THE CONTRACTOR SHALL MAKE FIELD MEASUREMENTS AS NECESSARY, PRIOR TO FABRICATION OF EXPANSION JOINT REPAIRS, TO ASSURE PROPER FIT IN THE FINAL WORK.

NO REMOVAL WILL BE PERMITTED UNTIL THE REMOVAL LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. REMOVAL AND RECONSTRUCTION SHALL CONFORM TO SPEC. 2433.



EXISTING SECTION THRU BRIDGE



GENERAL ELEVATION

GENERAL NOTES

SEE SHEET 4 OF 26 FOR THE "STATEMENT OF ESTIMATED QUANTITIES" FOR BRIDGE 02521.

FOR ABUTMENT, SLAB, & APPROACH SPALLING REPAIR REFER TO GENERAL NOTES ON SHEET 19 & THE SPECIAL PROVISIONS.

① REMOVE EXISTING TYPE G RAILINGS & REPLACE WITH NEW TYPE F RAILINGS

② REPAIR CRACKING & SPALLING ON FRONT FACE OF ABUTMENT & REMOVE & REPLACE SELECT ABUTMENT BEARING ASSEMBLIES

ANOKA COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 02521

COON RAPIDS BOULEVARD BY-PASS OVER BURLINGTON NORTHERN R.R. IN COON RAPIDS

90'-82'-62' PRESTRESSED CONC. GIRDER SPANS
72' ROADWAY
31°28'39" SKEW
SPAN IDENTIFICATION NO. 501

SEC 26 T31N R24W
CITY OF COON RAPIDS ANOKA COUNTY

DATED 5-18-00
APPROVED Donald J. Flemming
STATE BRIDGE ENGINEER

S.P. 02-030-03

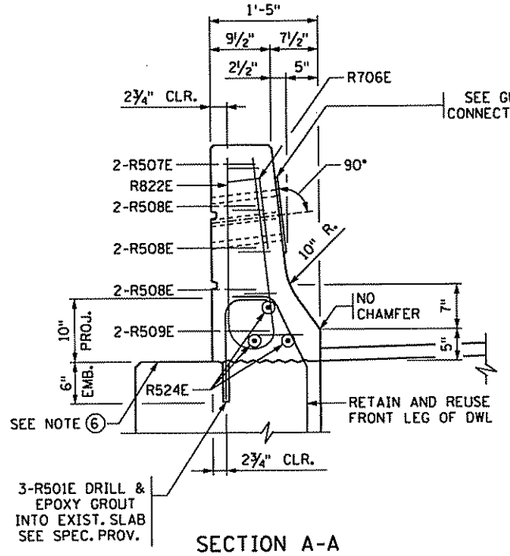
CERTIFIED BY Dave D Thorp PROFESSIONAL ENGINEER REG. NO. 24384 DATE 4-25-00

BRW A DAMES & MOORE GROUP COMPANY

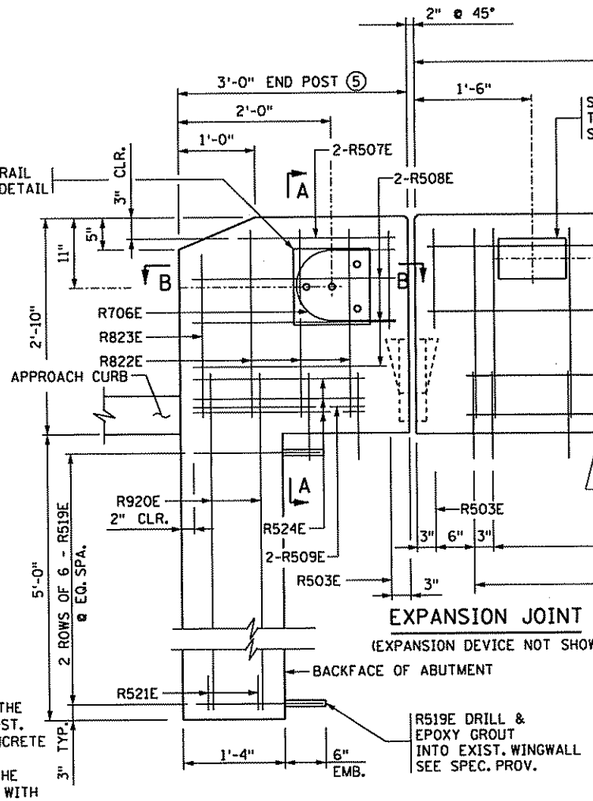
GENERAL PLAN & ELEVATION

DES: DDL	DRW: MJF	APPROVED:	BRIDGE NO.
CHK: MKM	CHK: DDL		
SHEET NO. 5 OF 26 SHEETS			02521

DATE: 4-24-00
FILE: 21GPE.DWG

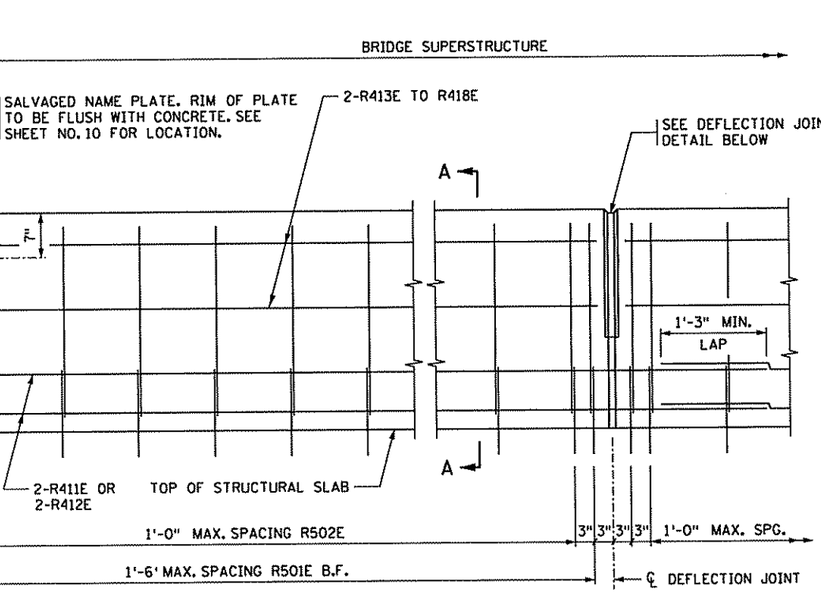


SECTION A-A

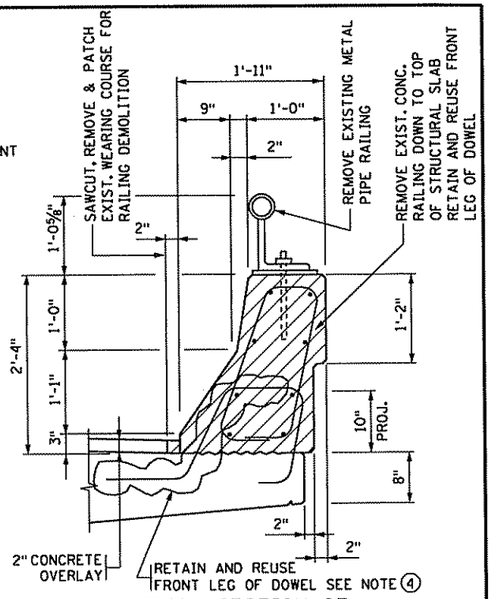


EXPANSION JOINT

(EXPANSION DEVICE NOT SHOWN)



DEFLECTION JOINT



DEMOLITION SECTION OF EXISTING TYPE G RAIL

NOTES:

2) CONTRACTOR SHALL SHEET PILE OR USE OTHER MEANS TO SUPPORT THE APPROACH ROADWAY AS REQUIRED TO CONSTRUCT SEPERATE END POST. COST SHALL BE INCIDENTAL TO ITEM 2401.513 "TYPE F RAILING CONCRETE (3Y46)".

④ RETAIN AND REUSE THE FRONT LEG OF THE DECK DOWELS ON BOTH THE DECK AND WINGWALLS. CLEAN, STRAIGHTEN AND COAT RETAINED BARS WITH EPOXY REPAIR PAINT. THIS WORK SHALL BE INCIDENTAL TO ITEM 2433.506 "REMOVE TYPE G RAILING".

⑤ EXISTING WINGWALL LENGTH OF 1'-8".

⑥ REMOVE END OF EXPOSED REINF. TO 1½" BELOW SURFACE OF CONCRETE. COAT END OF BAR WITH EPOXY REPAIR PAINT AND PATCH THE SURFACE OF THE CONCRETE. COST SHALL BE INCIDENTAL TO ITEM 2433.506 "REMOVE TYPE G RAILING".

INSIDE ELEVATION OF RAILING

(CONCRETE OVERLAY NOT SHOWN)

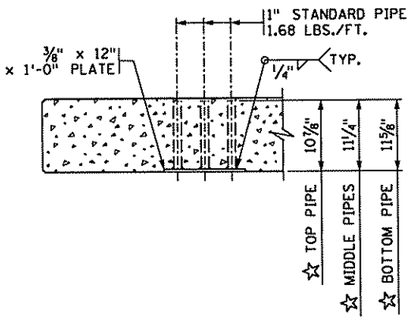
F RAILING QUANTITIES FOR BRIDGE 02521

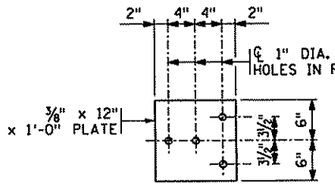
	ITEM	QUAN.	UNIT
①	TYPE F RAILING CONCRETE (3Y46)	487	LIN. FT.
	REMOVE TYPE G RAILING	481	LIN. FT.
①	CONCRETE OVERLAY (3U17A)	80	SQ. FT.
	REINFORCEMENT BARS (EPOXY COATED)	8140	LB.
③②	1½" Ø PVC CONDUIT	14	LIN. FT.
③②	1½" Ø PVC CONDUIT END CAPS	16	EACH
③②	1" x12" CORK	48	LIN. FT.

① APPROXIMATE CONCRETE VOLUMES:
TYPE F RAILING 54 CU. YD.
CONCRETE OVERLAY 0.5 CU. YD.

② SEE SPECIAL PROVISIONS.

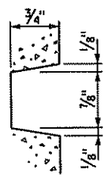
③ INCLUDED IN PRICE BID FOR OTHER ITEMS.



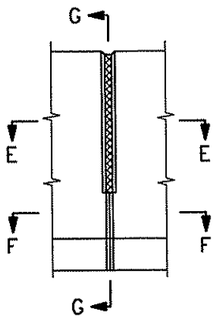


GUARDRAIL CONNECTION DETAIL

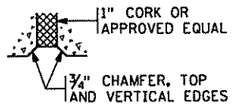
GALVANIZE AFTER FABRICATION PER SPEC. 3394
ESTIMATED WEIGHT = 20 LBS



RAIL RUSTICATION

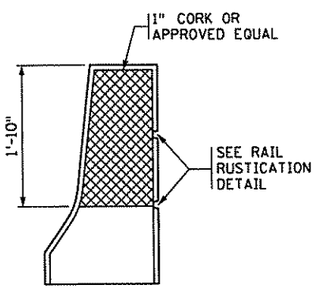


ELEVATION



SECTION E-E

SECTION F-F



SECTION G-G

DEFLECTION JOINT DETAILS

GENERAL NOTES

LENGTH OF "TYPE F RAILING CONCRETE (3Y46)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.

CONCRETE RAILING = 442 LBS./FT. (0.109 CU. YDS./FT.)

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

MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.

SEE RAILING SHEET 8 FOR JOINT & CONDUIT SPACING.

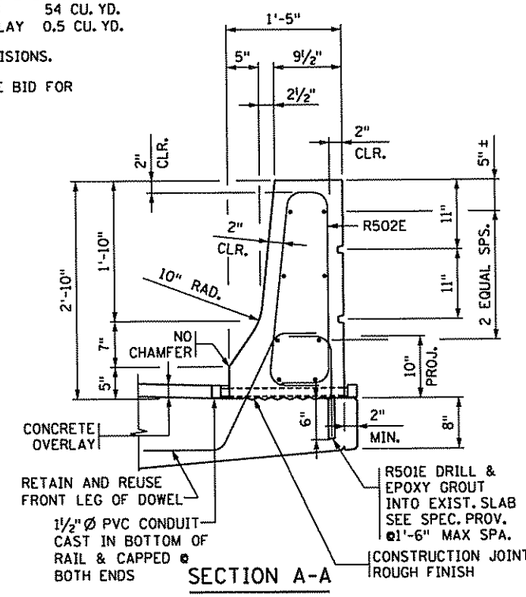
GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, SPEC. 3306.

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

RAIL QUANTITIES ARE INCLUDED IN QUANTITY SUMMARY ON THIS SHEET.

REMOVAL OF BRIDGE WEARING COURSE SHALL BE INCIDENTAL TO BID ITEM "REMOVE TYPE G RAILING".

DEMOLITION OF EXISTING TYPE G RAILING TO BE INCLUDED IN PRICE BID FOR 2433.506 "REMOVE TYPE G RAILING".



SECTION A-A

S.P. 02-030-03

CERTIFIED BY David Stong PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25 2000

TITLE: CONCRETE RAILING (TYPE F) WITH SEPERATE END POST (WITH CONCRETE OVERLAY)

APPROVED:				FIG. 5-397.117E (MOD.)
DES: DDL		DR: MJF	APPROVED:	BRIDGE NO. 02521
CHK: MKM		CHK: DDL		

SHEET NO. 6 OF 26 SHEETS

PLOT DATE: 4-25-00

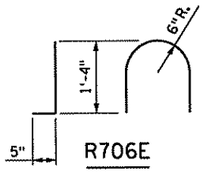
FILE: 21RAIL.DGN

BILL OF REINFORCEMENT FOR RAILING

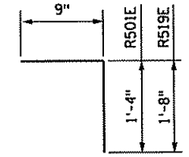
BAR	NO.	LENGTH	SHAPE	LOCATION
R501E	328	2'-1"		RAIL DOWEL B.F.
R502E	555	6'-6"		RAIL VERTICAL
R503E	8	4'-6"		RAIL VERTICAL
R706E	4	4'-1"		RAIL VERTICAL
R507E	8	2'-8"		END POST
R508E	24	3'-6"		END POST
R509E	8	3'-4"		END POST
R411E	48	40'-0"		RAIL LONGITUDINAL
R412E	4	7'-9"		RAIL LONGITUDINAL
R413E	20	18'-0"		RAIL LONGITUDINAL
R414E	20	16'-4"		RAIL LONGITUDINAL

BILL OF REINFORCEMENT FOR RAILING

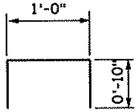
BAR	NO.	LENGTH	SHAPE	LOCATION
R415E	20	15'-9"		RAIL LONGITUDINAL
R416E	20	17'-8"		RAIL LONGITUDINAL
R417E	20	15'-10"		RAIL LONGITUDINAL
R418E	20	15'-1"		RAIL LONGITUDINAL
R519E	48	2'-5"		END POST
R920E	8	14'-4"		END POST
R921E	8	2'-8"		END POST
R822E	12	5'-4"		END POST
R823E	4	4'-9"		END POST
R524E	12	2'-3"		END POST



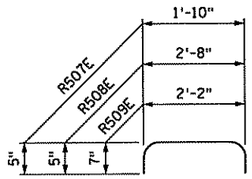
R706E



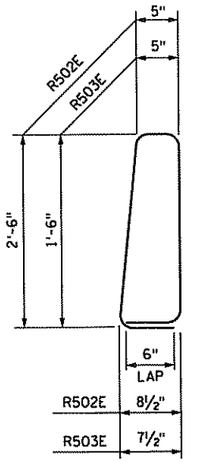
R501E & R519E



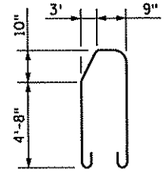
R521E



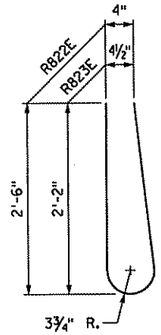
R507E, R508E & R509E



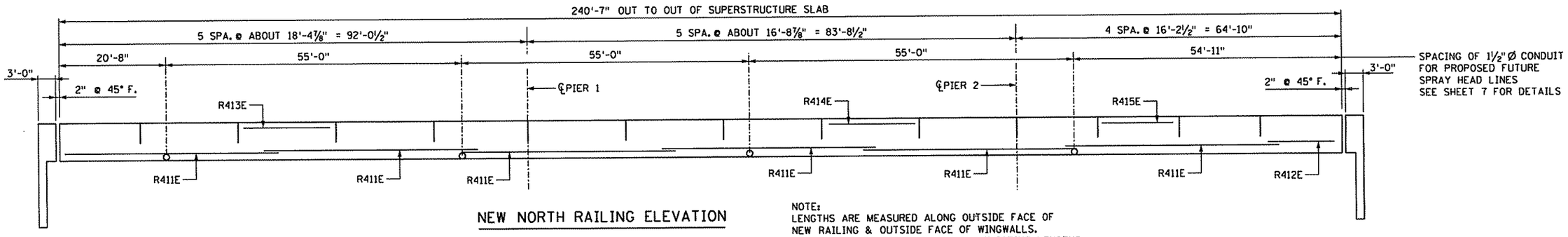
R502E & R503E



R920E

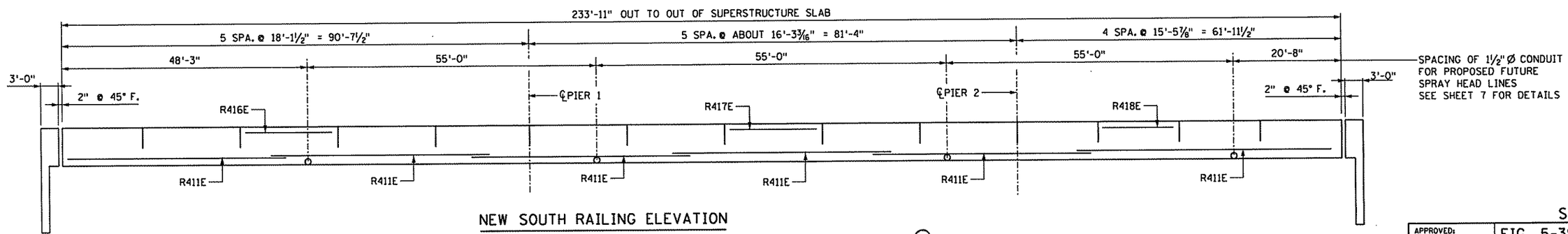


R822E & R823E



NEW NORTH RAILING ELEVATION

NOTE:
LENGTHS ARE MEASURED ALONG OUTSIDE FACE OF NEW RAILING & OUTSIDE FACE OF WINGWALLS.
CONTRACTOR TO FIELD VERIFY ALL EXISTING LENGTHS.



NEW SOUTH RAILING ELEVATION

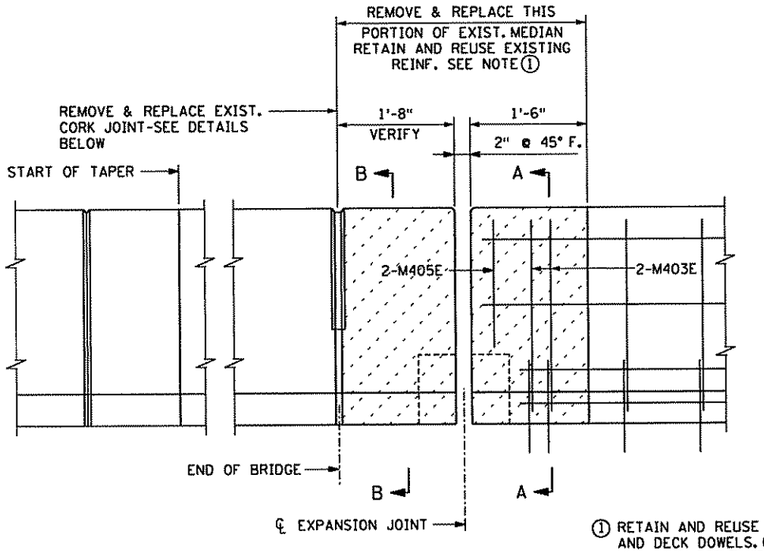
FILE: 21B-RAIL.DGN PLOT DATE: 4-25-00

CERTIFIED BY David Thorp PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25, 2000

TITLE: CONCRETE RAILING (TYPE F)
WITH SEPERATE END POST
(WITH CONCRETE OVERLAY)

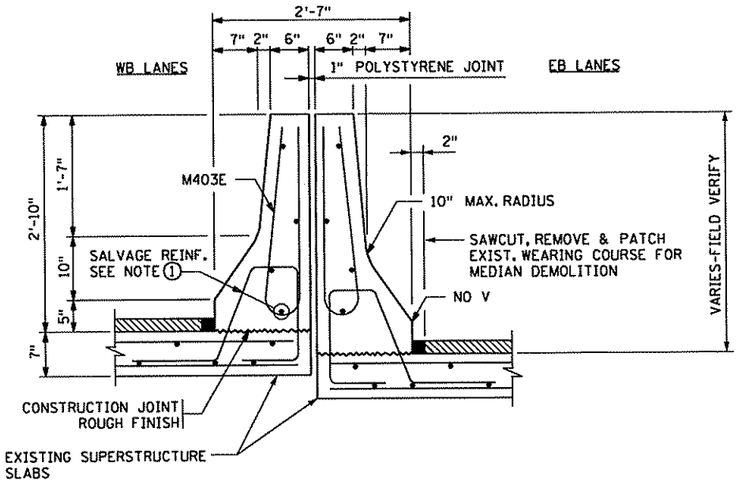
DES: DDL		APPROVED:	
CHK: MKM	ORI: MJF	APPROVED:	
	CHK: DDL		

S.P. 02-030-03
FIG. 5-397.117E (MOD.)
SHEET NO. 7 OF 26 SHEETS
BRIDGE NO. 02521



EXPANSION JOINT

EXPANSION DEVICE NOT SHOWN
SEE EXP. JOINT SHEETS

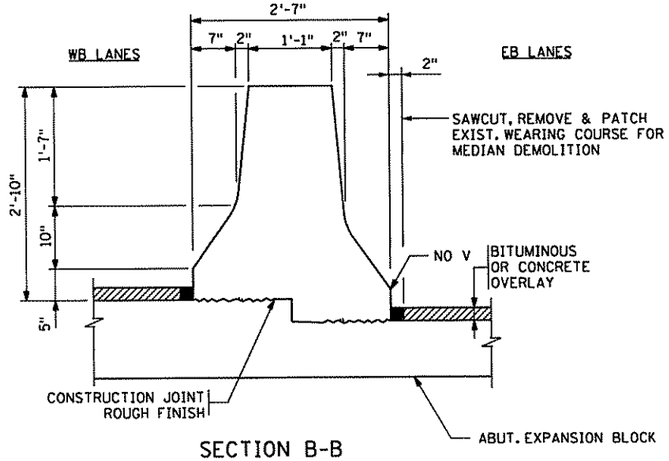


SECTION A-A

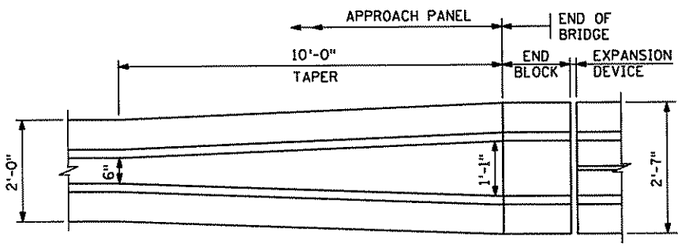
① RETAIN AND REUSE EXISTING HORIZONTAL REINFORCEMENT AND DECK DOWELS. CLEAN, STRAIGHTEN AND COAT THE RETAINED REINF. WITH EPOXY REPAIR PAINT. CLEANING STRAIGHTENING AND COATING OF RETAINED REINF. IS INCIDENTAL TO ITEM 2433.506 "REMOVE MEDIAN BARRIER".

INSIDE ELEVATION OF BARRIER

(WEARING COURSE NOT SHOWN)



SECTION B-B



PLAN VIEW APPROACH BARRIER

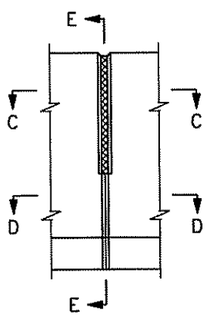
MEDIAN BARRIER QUANTITIES FOR BRIDGE 02521

	ITEM	QUAN.	UNIT
③	MEDIAN BARRIER CONCRETE (3Y46)	6	LIN. FT.
	REMOVE MEDIAN BARRIER	6	LIN. FT.
③	CONCRETE OVERLAY (3U17A)	2	SQ. FT.
	REINFORCEMENT BARS (EPOXY COATED)	40	LB.
④⑤	1" x17" CORK	3	LIN. FT.

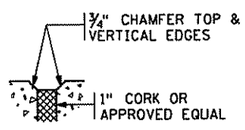
③ APPROXIMATE CONCRETE VOLUMES:
MEDIAN BARRIER 1 CU. YD.
CONCRETE OVERLAY 0.1 CU. YD.

④ SEE SPECIAL PROVISIONS.

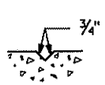
⑤ INCLUDED IN PRICE BID FOR OTHER ITEMS.



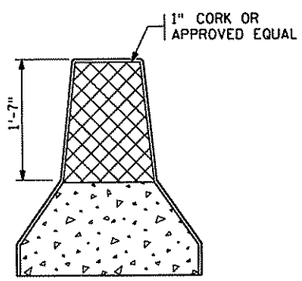
ELEVATION



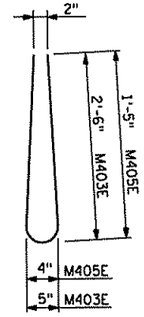
SECTION C-C



SECTION D-D



SECTION E-E



M403E & M405E

DEFLECTION JOINT DETAILS

BILL OF REINFORCEMENT FOR BARRIER

BAR	NO.	LENGTH	SHAPE	LOCATION
M403E	8	5'-4"		BARRIER VERT.
M405E	4	3'-1"		BARRIER VERT.

GENERAL NOTES

CONCRETE BARRIER = 675 LBS./FT.

CONCRETE BARRIER = .167 CU. YDS./FT.

FINISH ALL EDGES OF BARRIER WITH ½" V EXCEPT WHERE OTHERWISE NOTED.

BARRIER QUANTITIES ARE INCLUDED IN SUMMARY OF BARRIER QUANTITIES ON THIS SHEET.

CONCRETE IN MEDIAN TO BE MIX NO. 3Y46.

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS SHOWN ON THIS DRAWING.

DEMOLITION OF PORTION OF MEDIAN BARRIER TO BE INCLUDED IN PRICE BID FOR 2433.506 "REMOVE MEDIAN BARRIER".

FILE: 2IMED.DGN PLOT DATE: 4-24-00

S.P. 02-030-03

APPROVED: FIG. 5-397.131 (MOD.)

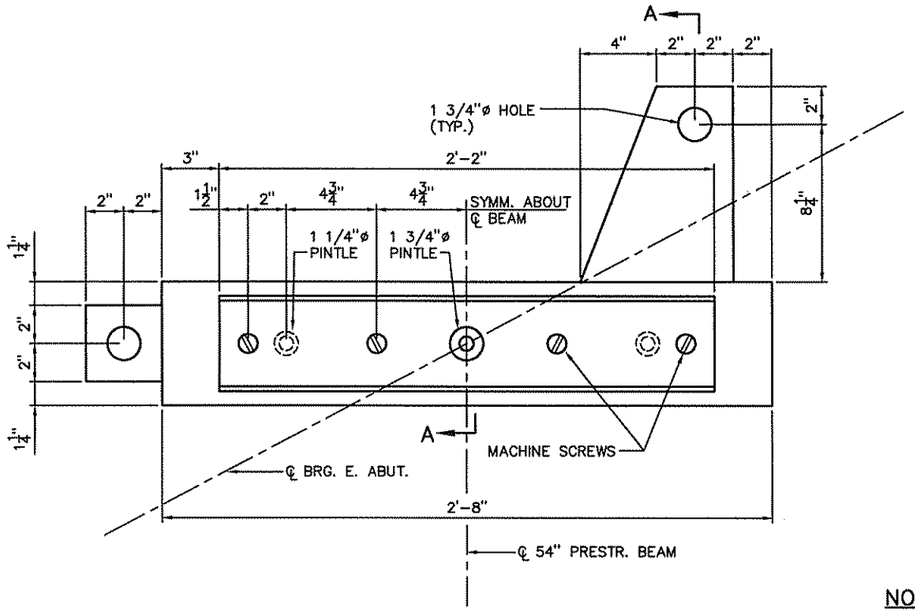
CERTIFIED BY David Wong PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25, 2000

TITLE: SPLIT MEDIAN BARRIER (TYPE J - WITH WEARING COURSE)

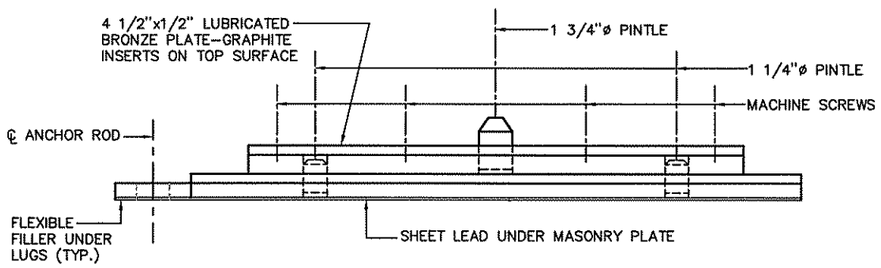
DES: DDL DR: MJF APPROVED:
CHK: MKM CHK: DDL

SHEET NO. 8 OF 26 SHEETS

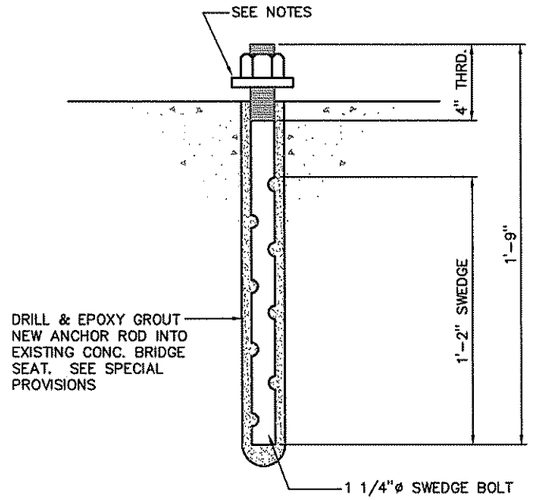
BRIDGE NO. 02521



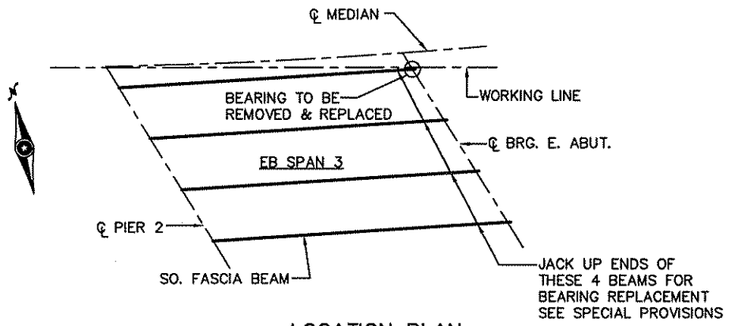
REPLACEMENT BEARING PLAN



REPLACEMENT BEARING ELEVATION



ANCHOR ROD DETAIL



LOCATION PLAN

NOTES:

LUBRICATED BRONZE PLATES SHALL COMPLY WITH SPEC. 3329.

ALL PLATES EXCEPT LUBRICATED BRONZE PLATES SHALL COMPLY WITH SPEC. 3306.

STEEL PLATES AND PINTLES SHALL BE GALVANIZED AFTER FABRICATION PER SPEC. 3394. NO PAINT.

ANCHOR RODS SHALL BE GALVANIZED PER SPEC. 3392. NO PAINT, WITH ONE CUT WASHER AND NUT. ANCHOR RODS SHALL PROJECT 3/8" ABOVE NUTS.

FINISH CENTER 3" OF TOP BASE PLATE TO 250 MICRO. A 1/16" TOLERANCE IN THICKNESS WILL BE PERMITTED.

SHEET LEAD SHALL COMPLY WITH SPEC. 3335.

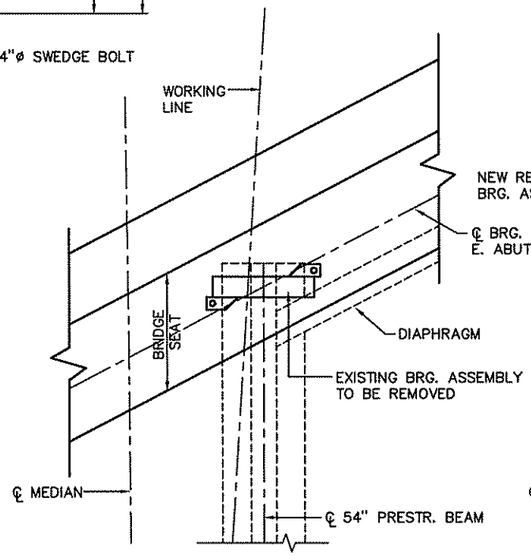
PLATES SHALL BE FLAT AFTER FABRICATION AND WELDING.

PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS SHEET.

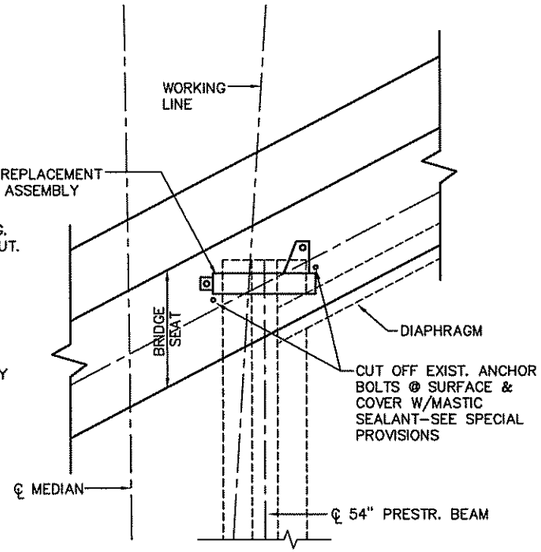
LUG PLATES MAY BE PART OF BOTTOM MASONRY PLATE AS AN OPTION.

WELDING SIZES PER SPEC. 2471.3J4b

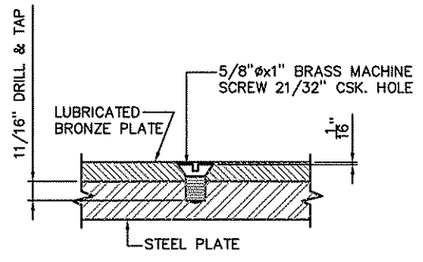
EXISTING BEARING REMOVAL IS INCIDENTAL TO 2433.602 "REPLACE BEARING ASSEMBLY".



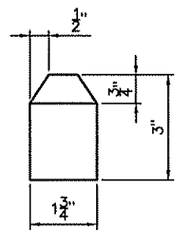
EXISTING BEARING CONDITION



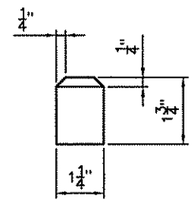
REPLACEMENT BEARING CONDITION



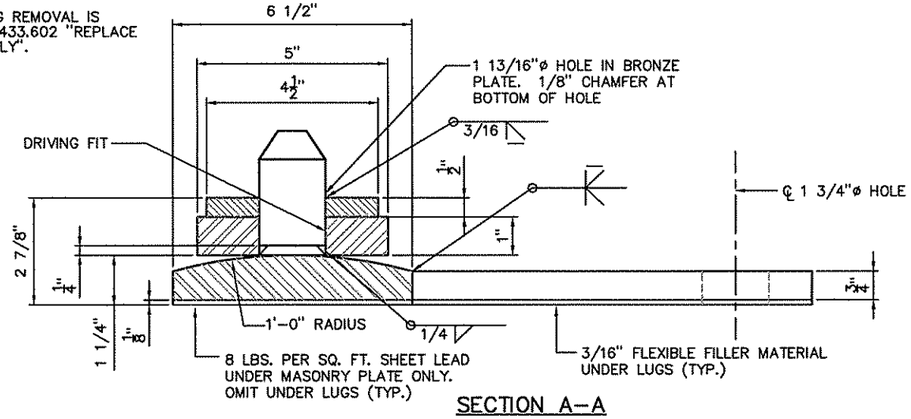
MACHINE SCREW DETAIL



1 3/4"ø PINTLE



1 1/4"ø PINTLE



SECTION A-A

S.P. 02-030-03

CERTIFIED BY David Dhong PROFESSIONAL ENGINEER REG. NO. 24384 DATE 4-25-00

BRW A DAMES & MOORE GROUP COMPANY

BEARING ASSEMBLY REPLACEMENT

DES: DDL	DRW: MJF	APPROVED:	BRIDGE NO.
CHK: MKM	CHK: DDL		02521
SHEET NO. 9 OF 26 SHEETS			

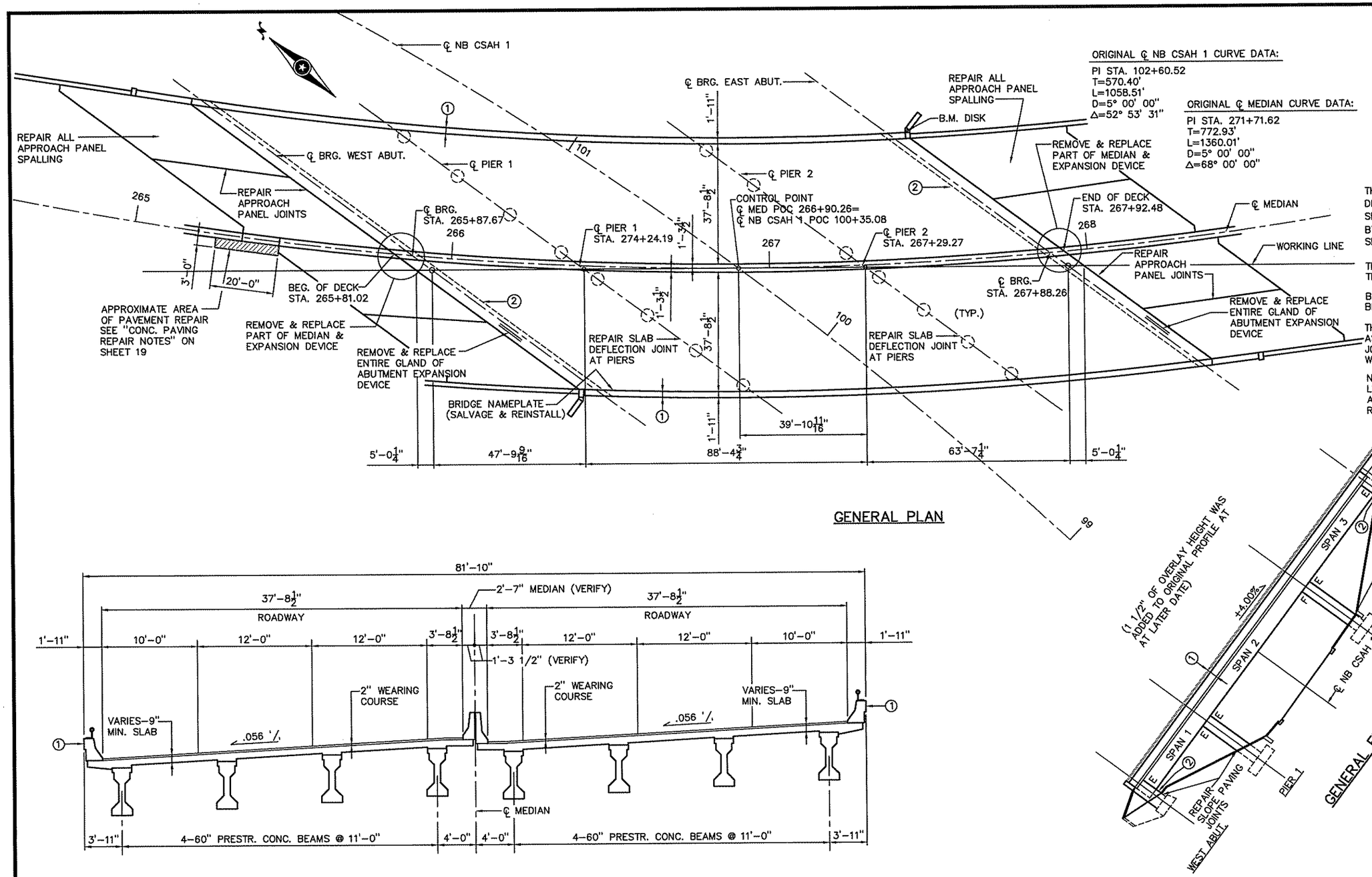
DATE: 4-24-00

FILE: 21BRG.DWG

DESIGN DATA

MAXIMUM ALLOWABLE DESIGN STRESSES:
REINFORCED CONCRETE:
f'c = 4000 PSI N=8
Fy = 60000 PSI (REINFORCEMENT)

DECK AREA : 17621 SQ. FT.



GENERAL PLAN

EXISTING SECTION THRU BRIDGE

GENERAL ELEVATION

CONSTRUCTION NOTES

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

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE.

BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.

THE CONTRACTOR SHALL MAKE FIELD MEASUREMENTS AS NECESSARY, PRIOR TO FABRICATION OF EXPANSION JOINT REPAIRS, TO ASSURE PROPER FIT IN THE FINAL WORK.

NO REMOVAL WILL BE PERMITTED UNTIL THE REMOVAL LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. REMOVAL AND RECONSTRUCTION SHALL CONFORM TO SPEC. 2433.

GENERAL NOTES

SEE SHEET 3 OF 26 FOR THE "STATEMENT OF ESTIMATED QUANTITIES" FOR BRIDGE 02522.

FOR ABUTMENT, SLABS, & APPROACH SPALLING REPAIR REFER TO GENERAL NOTES ON SHEET 19 & THE SPECIAL PROVISIONS.

① REMOVE EXISTING TYPE G RAILINGS & REPLACE WITH NEW TYPE F RAILINGS

② REPAIR CRACKING & SPALLING ON FRONT FACE OF ABUTMENT & REMOVE & REPLACE SELECT ABUTMENT BEARING ASSEMBLIES

ANOKA COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 02522

COON RAPIDS BOULEVARD BY-PASS OVER EAST RIVER ROAD NORTHBOUND (C.S.A.H. 1) IN COON RAPIDS

53'-89'-59' PRESTRESSED CONC. GIRDER SPANS
72' ROADWAY
53°17'41" SKEW
SPAN IDENTIFICATION NO. 501

SEC 26 T31N R24W
CITY OF COON RAPIDS ANOKA COUNTY

DATED _____

APPROVED _____
STATE BRIDGE ENGINEER

S.P. 02-030-03

CERTIFIED BY David Dhuy PROFESSIONAL ENGINEER REG. NO. 24384 DATE 4-25-00

BRW A DAMES & MOORE GROUP COMPANY

GENERAL PLAN & ELEVATION

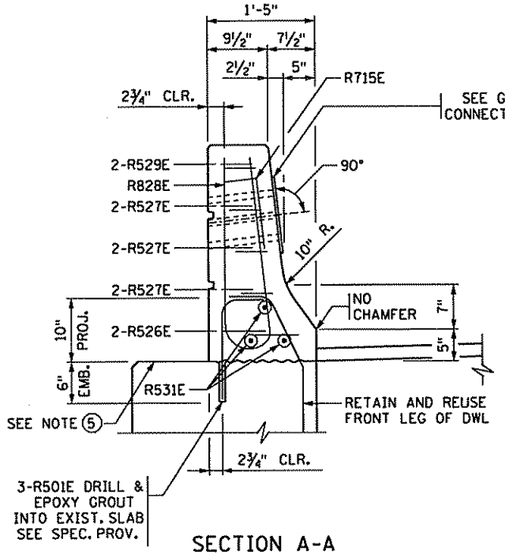
DES: DDL	DRW: MJF	APPROVED:
CHK: MKM	CHK: DDL	

SHEET NO. 10 OF 26 SHEETS

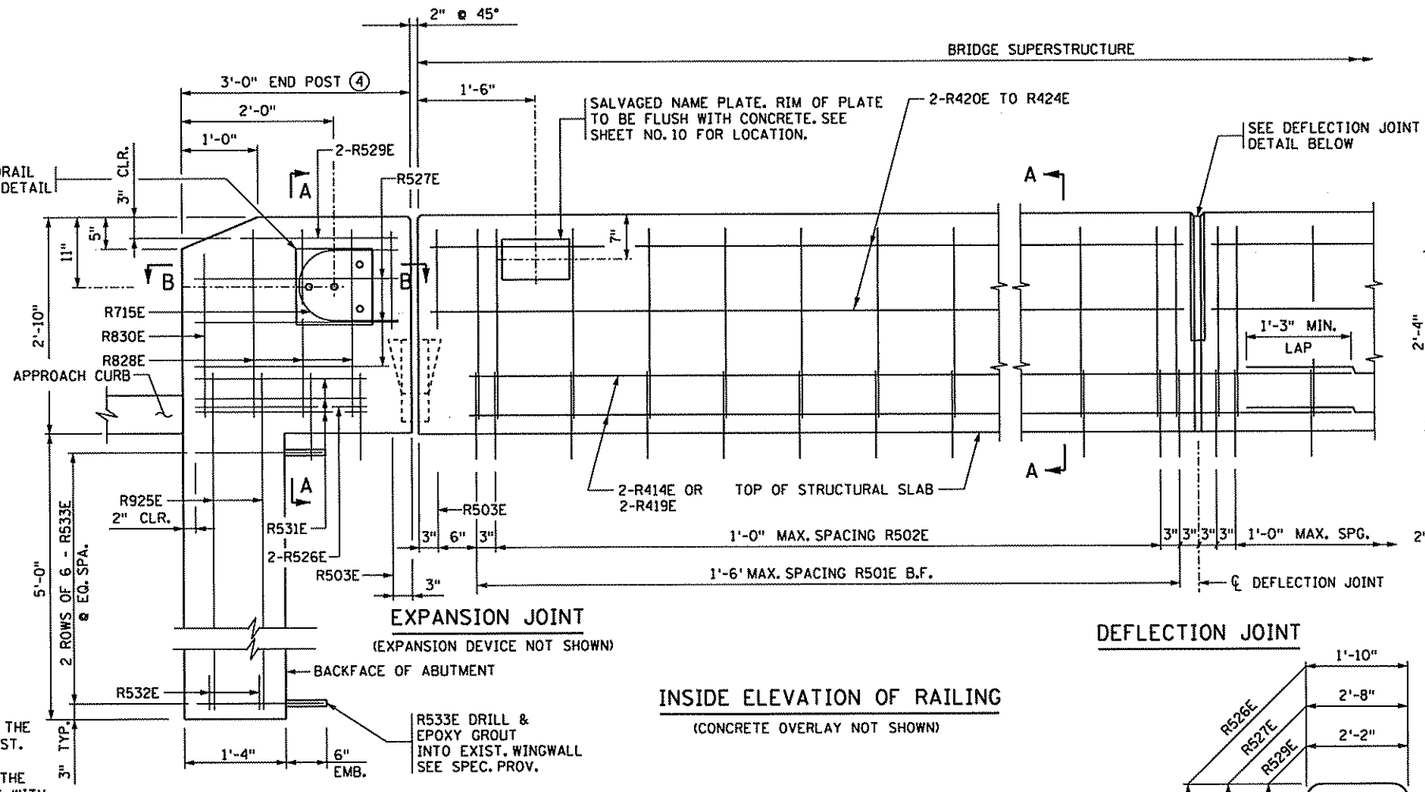
BRIDGE NO. 02522

DATE: 4-24-00

FILE: 22GPE.DWG



SECTION A-A

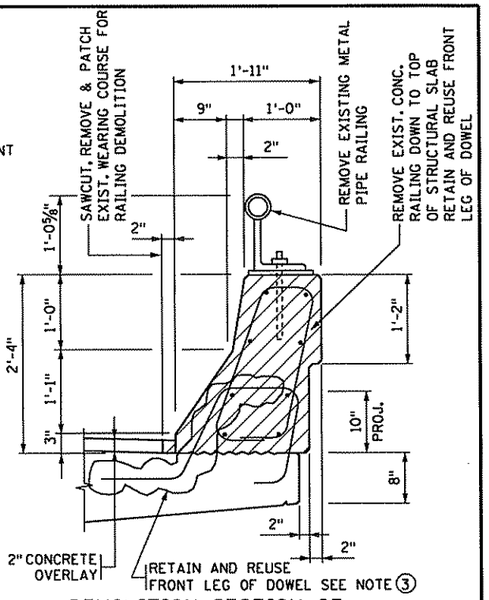


EXPANSION JOINT

(EXPANSION DEVICE NOT SHOWN)

INSIDE ELEVATION OF RAILING

(CONCRETE OVERLAY NOT SHOWN)



DEMOLITION SECTION OF EXISTING TYPE G RAIL

DEFLECTION JOINT

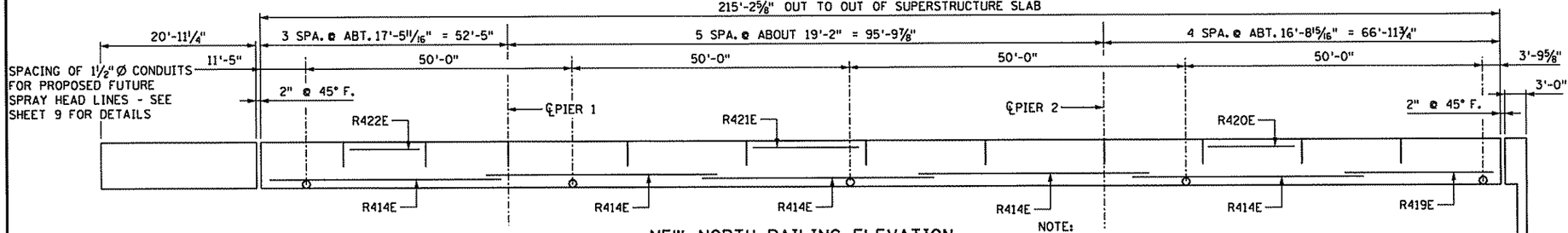
R526E, R527E & R529E

NOTES:

1) REMOVAL OF BRIDGE WEARING COURSE SHALL BE INCIDENTAL TO BID ITEM 2433.506 "REMOVE TYPE G RAILING".
2) CONTRACTOR SHALL SHEET PILE OR USE OTHER MEANS TO SUPPORT THE APPROACH ROADWAY AS REQUIRED TO CONSTRUCT SEPERATE END POST. INCIDENTAL TO ITEM 2401.513 "TYPE F RAILING CONCRETE (3Y46)".
③ RETAIN AND REUSE THE FRONT LEG OF THE DECK DOWELS ON BOTH THE DECK AND WINGWALLS. CLEAN, STRAIGHTEN AND COAT RETAINED BARS WITH EPOXY REPAIR PAINT. THIS WORK SHALL BE INCIDENTAL TO ITEM 2433.506 "REMOVE TYPE G RAILING".
④ EXISTING WINGWALL LENGTH OF 1'-8".
⑤ REMOVE END OF EXPOSED REINF. TO 1½" BELOW SURFACE OF CONCRETE. COAT END OF BAR WITH EPOXY REPAIR PAINT AND PATCH THE SURFACE OF THE CONCRETE. COST SHALL BE INCIDENTAL TO ITEM 2433.506 "REMOVE TYPE G RAILING".

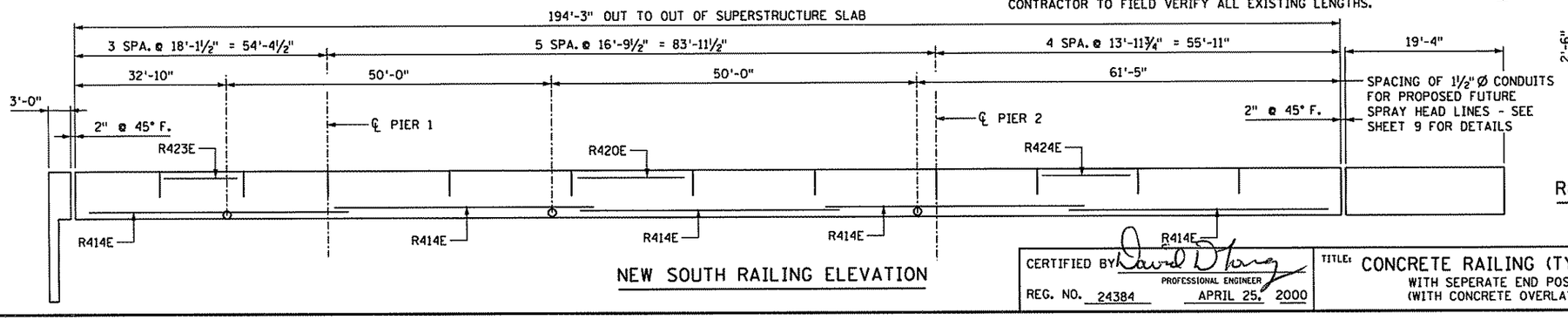
BILL OF REINFORCEMENT FOR RAILING

BAR	NO.	LENGTH	SHAPE	LOCATION
R715E	2	4'-1"	⊂	RAIL VERTICAL
R419E	4	21'-2"	—	RAIL LONGITUDINAL
R420E	36	16'-4"	—	RAIL LONGITUDINAL
R421E	20	18'-9"	—	RAIL LONGITUDINAL
R422E	12	17'-1"	—	RAIL LONGITUDINAL
R423E	12	17'-8"	—	RAIL LONGITUDINAL
R424E	16	13'-7"	—	RAIL LONGITUDINAL
R925E	4	14'-4"	⊂	END POST
R526E	4	2'-8"	⊓	END POST
R527E	12	3'-6"	⊓	END POST
R828E	6	5'-4"	⊂	END POST
R529E	4	3'-4"	⊓	END POST
R830E	2	4'-9"	⊂	END POST
R531E	6	2'-3"	—	END POST
R532E	4	2'-8"	⊓	END POST
R533E	24	2'-5"	⌐	END POST

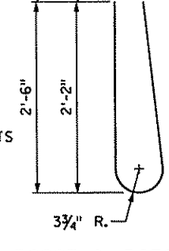


NEW NORTH RAILING ELEVATION

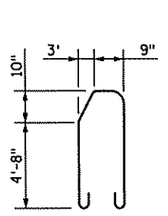
NOTE:
LENGTHS ARE MEASURED ALONG OUTSIDE FACE OF NEW RAILING & OUTSIDE FACE OF WINGWALLS. CONTRACTOR TO FIELD VERIFY ALL EXISTING LENGTHS.



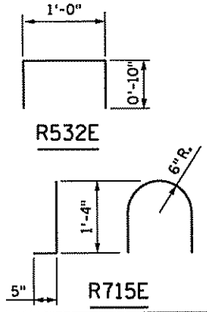
NEW SOUTH RAILING ELEVATION



R828E & R830E



R925E



CERTIFIED BY David Thang PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25, 2000

TITLE: CONCRETE RAILING (TYPE F) WITH SEPERATE END POST (WITH CONCRETE OVERLAY)

S.P. 02-030-03

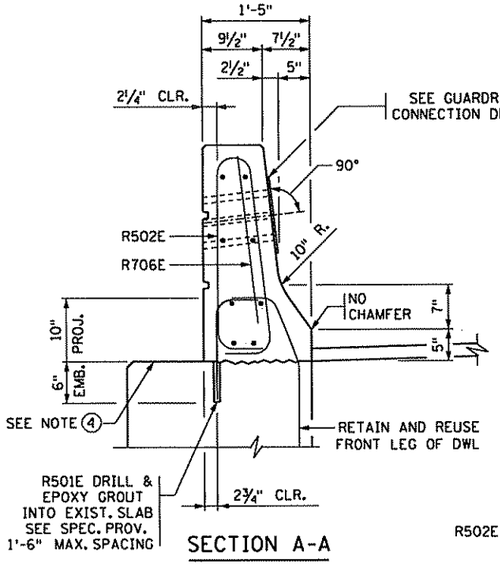
APPROVED: FIG. 5-397.117E (MOD.)

DES: DDL DR: MJF APPROVED:
CHK: MKM CHK: DDL

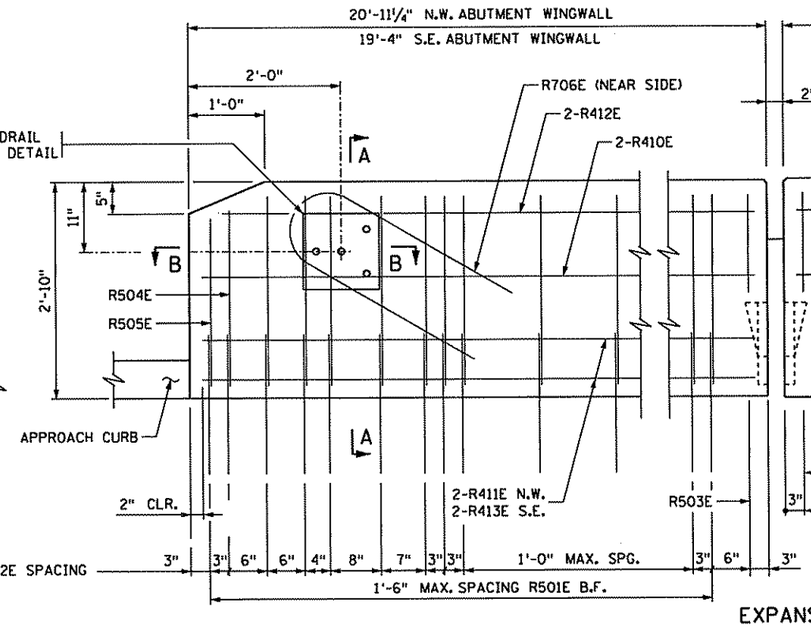
SHEET NO. 11 OF 26 SHEETS

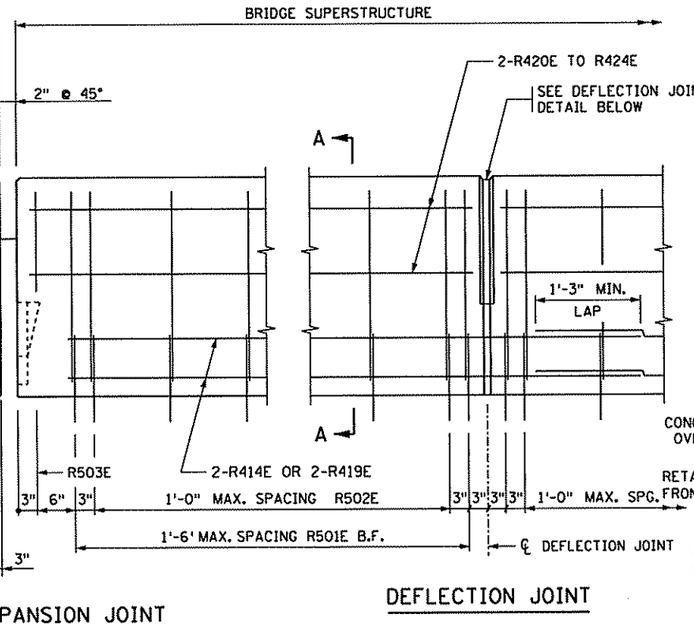
BRIDGE NO. 02522

FILE: 22B-RAIL.DGN PLOT DATE: 4-25-00

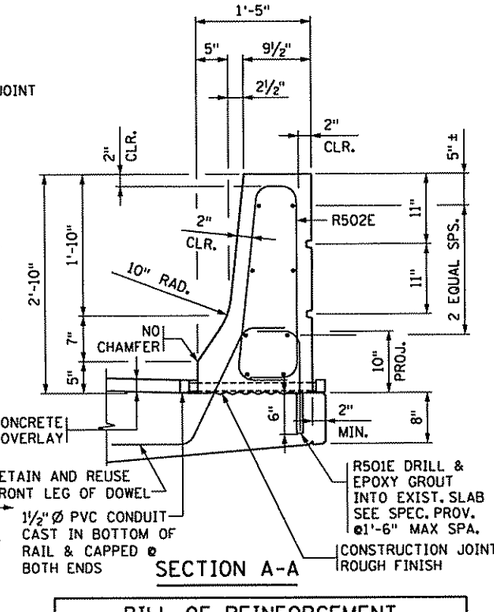


SECTION A-A





DEFLECTION JOINT



SECTION A-A

F RAILING QUANTITIES FOR BRIDGE 02522

	ITEM	QUAN.	UNIT
①	TYPE F RAILING CONCRETE (3Y46)	456	LIN. FT.
	REMOVE TYPE G RAILING	453	LIN. FT.
①	CONCRETE OVERLAY (3U17A)	75	SQ. FT.
	REINFORCEMENT BARS (EPOXY COATED)	7130	LB.
③②	1½"Ø PVC CONDUIT	14	LIN. FT.
③②	1½"Ø PVC CONDUIT END CAPS	16	EACH
③②	1"x12" CORK	40	LIN. FT.

① APPROXIMATE CONCRETE VOLUMES:
TYPE F RAILING 50 CU. YD.
CONCRETE OVERLAY 0.5 CU. YD.

② SEE SPECIAL PROVISIONS.

③ INCLUDED IN PRICE BID FOR OTHER ITEMS.

EXPANSION JOINT
(EXPANSION DEVICE NOT SHOWN)

INSIDE ELEVATION OF RAILING
(CONCRETE OVERLAY NOT SHOWN)

BILL OF REINFORCEMENT FOR RAILING

BAR	NO.	LENGTH	SHAPE	LOCATION
R501E	306	2'-1"	⌐	RAIL DOWEL B.F.
R502E	516	6'-6"	▱	RAIL VERTICAL
R503E	8	4'-6"	▱	RAIL VERTICAL
R504E	2	5'-11"	▱	RAIL VERTICAL
R505E	2	5'-9"	▱	RAIL VERTICAL
R706E	2	6'-7"	⊂	RAIL VERTICAL
R410E	4	20'-7"	—	RAIL LONGITUDINAL
R411E	4	20'-1"	—	RAIL LONGITUDINAL
R412E	4	19'-0"	—	RAIL LONGITUDINAL
R413E	4	18'-6"	—	RAIL LONGITUDINAL
R414E	40	40'-0"	—	RAIL LONGITUDINAL

GENERAL NOTES (CONT.)

DEMOLITION OF EXISTING TYPE G RAILING TO BE INCLUDED IN PRICE BID FOR 2433.506 "REMOVE TYPE G RAILING".

④ REMOVE END OF EXPOSED REINF. TO 1½" BELOW SURFACE OF CONCRETE. COAT END OF BAR WITH EPOXY REPAIR PAINT AND PATCH THE SURFACE OF THE CONCRETE. COST SHALL BE INCIDENTAL TO ITEM 2433.506 "REMOVE TYPE G RAILING".

GENERAL NOTES

LENGTH OF "TYPE F RAILING CONCRETE (3Y46)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.

CONCRETE RAILING = 442 LBS./FT. (0.109 CU. YDS./FT.)

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

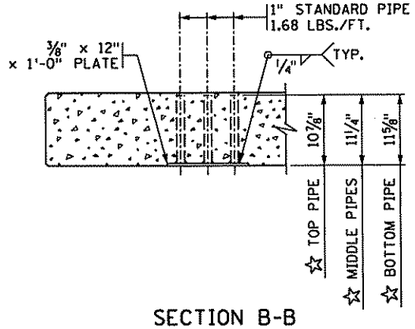
MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.

SEE RAILING SHEET 10 FOR JOINT & CONDUIT SPACING.

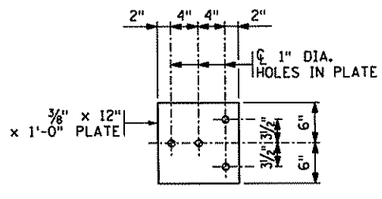
GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, SPEC. 3306.

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

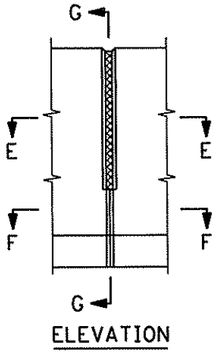
RAIL QUANTITIES ARE INCLUDED IN QUANTITY SUMMARY ON THIS SHEET.



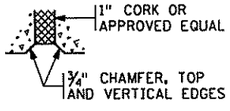
SECTION B-B
(REINFORCEMENT NOT SHOWN)
☆ DIMENSIONS INCLUDE ⅜" PLATE



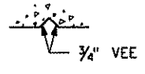
GUARDRAIL CONNECTION DETAIL
GALVANIZE AFTER FABRICATION PER SPEC. 3394
ESTIMATED WEIGHT = 20 LBS



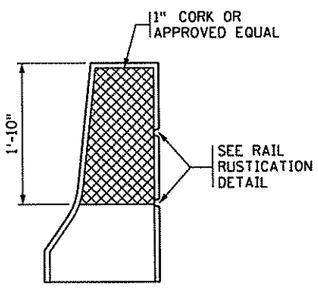
ELEVATION



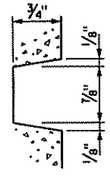
SECTION E-E



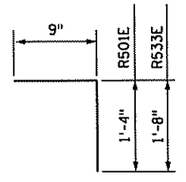
SECTION F-F



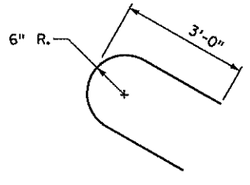
SECTION G-G



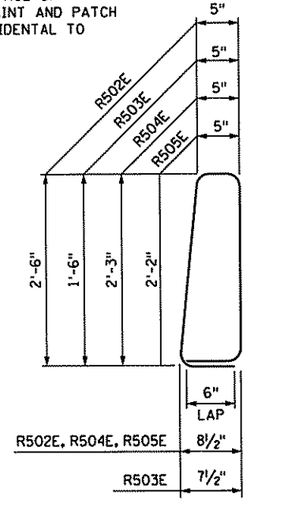
RAIL RUSTICATION



R501E & R533E



R706E



R502E, R503E, R504E & R505E

DEFLECTION JOINT DETAILS

PLOT DATE: 4-25-00
FILE: 22RAIL.DGN

CERTIFIED BY David D Young PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25, 2000

TITLE: CONCRETE RAILING (TYPE F)
WITH INTEGRAL END POST
(WITH CONCRETE OVERLAY)

DES: DDL DR: MJF APPROVED:
CHK: MKM CHK: DDL

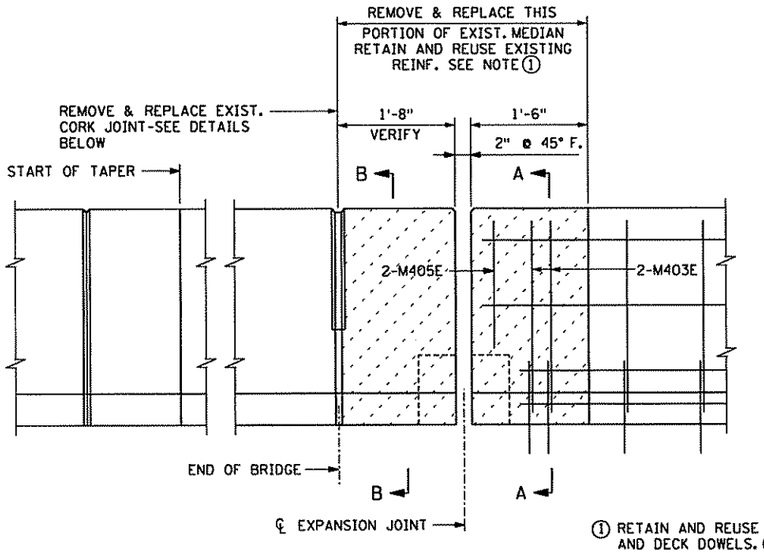
SHEET NO. 12 OF 26 SHEETS

APPROVED:

S.P. 02-030-03

FIG. 5-397.117E (MOD.)

BRIDGE NO. 02522



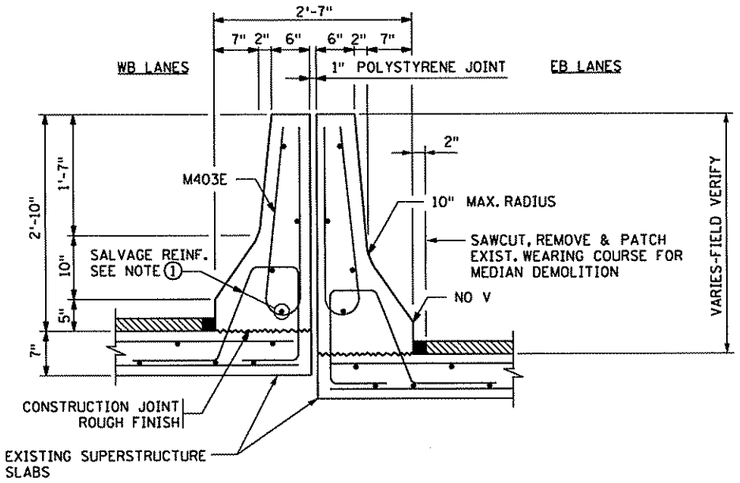
EXPANSION JOINT

EXPANSION DEVICE NOT SHOWN
SEE EXP. JOINT SHEETS

① RETAIN AND REUSE EXISTING HORIZONTAL REINFORCEMENT AND DECK DOWELS. CLEAN, STRAIGHTEN AND COAT THE RETAINED REINF. WITH EPOXY REPAIR PAINT. CLEANING STRAIGHTENING AND COATING OF RETAINED REINF. IS INCIDENTAL TO ITEM 2433.506 "REMOVE MEDIAN BARRIER".

INSIDE ELEVATION OF BARRIER

(WEARING COURSE NOT SHOWN)



SECTION A-A

BILL OF REINFORCEMENT FOR BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
M403E	8	5'-4"		BARRIER VERT.
M405E	4	3'-1"		BARRIER VERT.

GENERAL NOTES

CONCRETE BARRIER = 675 LBS./FT.

CONCRETE BARRIER = .167 CU. YDS./FT.

FINISH ALL EDGES OF BARRIER WITH ½" V EXCEPT WHERE OTHERWISE NOTED.

BARRIER QUANTITIES ARE INCLUDED IN SUMMARY OF BARRIER QUANTITIES ON THIS SHEET.

CONCRETE IN MEDIAN TO BE MIX NO. 3Y46.

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS SHOWN ON THIS DRAWING.

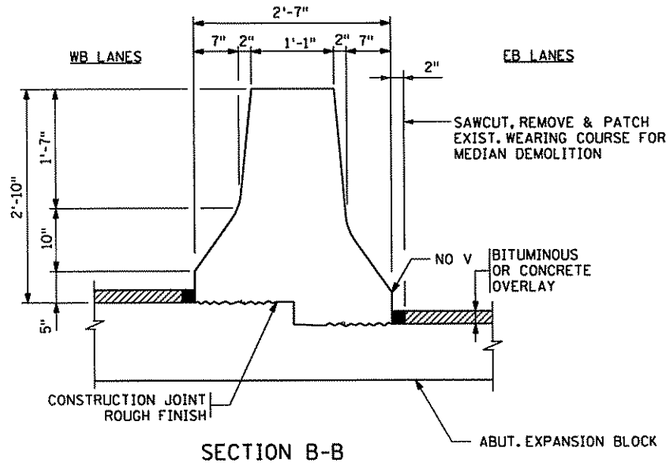
DEMOLITION OF PORTION OF MEDIAN BARRIER TO BE INCLUDED IN PRICE BID FOR 2433.506 "REMOVE MEDIAN BARRIER".

MEDIAN BARRIER QUANTITIES FOR BRIDGE 02522		
ITEM	QUAN.	UNIT
③ MEDIAN BARRIER CONCRETE (3Y46)	6	LIN. FT.
REMOVE MEDIAN BARRIER	6	LIN. FT.
③ CONCRETE OVERLAY (3U17A)	2	SQ. FT.
REINFORCEMENT BARS (EPOXY COATED)	40	LB.
④⑤ 1"x17" CORK	3	LIN. FT.

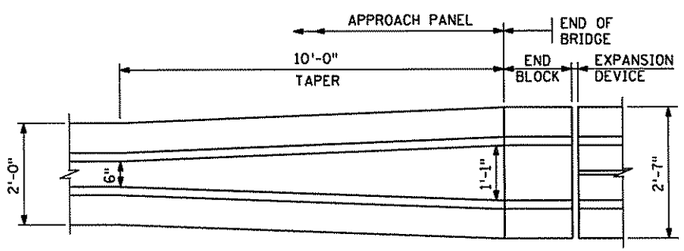
③ APPROXIMATE CONCRETE VOLUMES:
MEDIAN BARRIER 1 CU. YD.
CONCRETE OVERLAY 0.1 CU. YD.

④ SEE SPECIAL PROVISIONS.

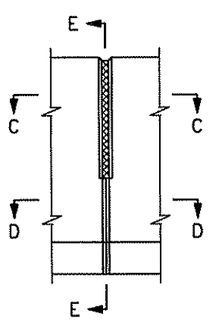
⑤ INCLUDED IN PRICE BID FOR OTHER ITEMS.



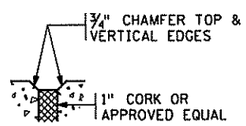
SECTION B-B



PLAN VIEW APPROACH BARRIER

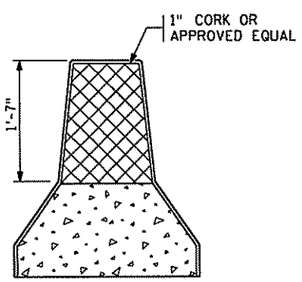


ELEVATION

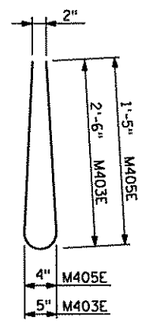


SECTION C-C

SECTION D-D



SECTION E-E



M403E & M405E

DEFLECTION JOINT DETAILS

S.P. 02-030-03

APPROVED: FIG. 5-397.131 (MOD.)

CERTIFIED BY David Wong PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25, 2000

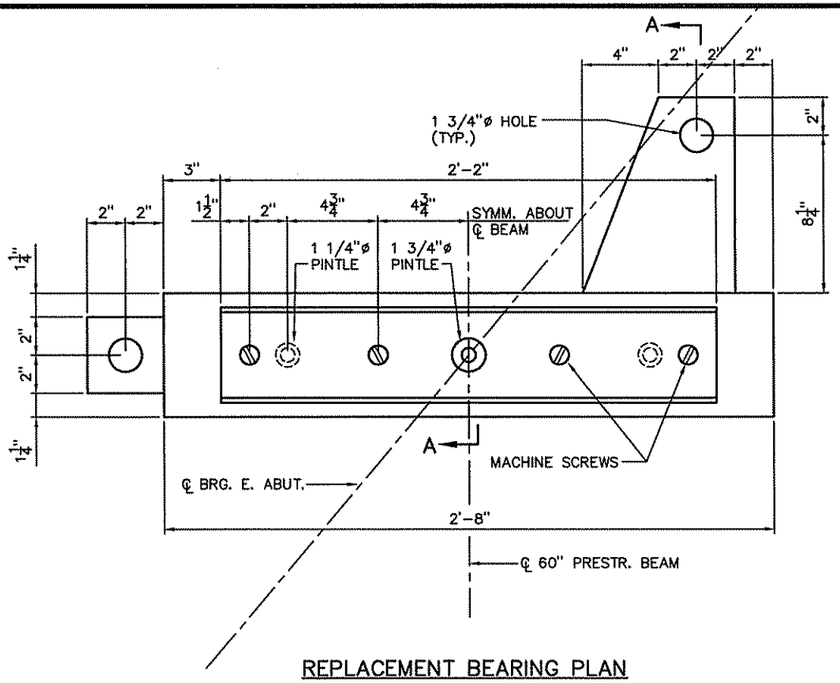
TITLE: SPLIT MEDIAN BARRIER (TYPE J - WITH WEARING COURSE)

DES: DDL DR: MJF APPROVED:
CHK: MKM CHK: DDL

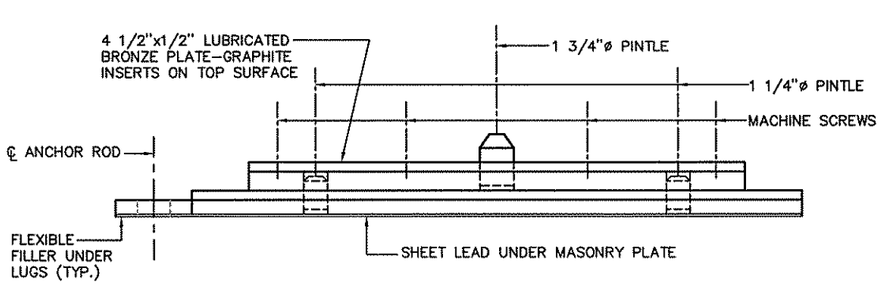
SHEET NO. 13 OF 26 SHEETS

BRIDGE NO. 02522

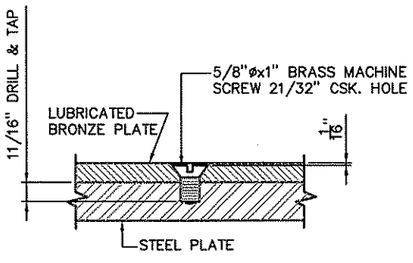
FILE: 22MED.DGN PLOT DATE: 4-24-00



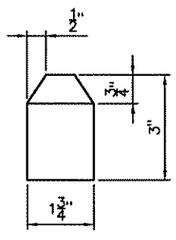
REPLACEMENT BEARING PLAN



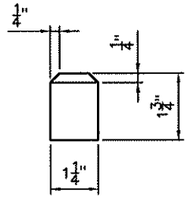
REPLACEMENT BEARING ELEVATION



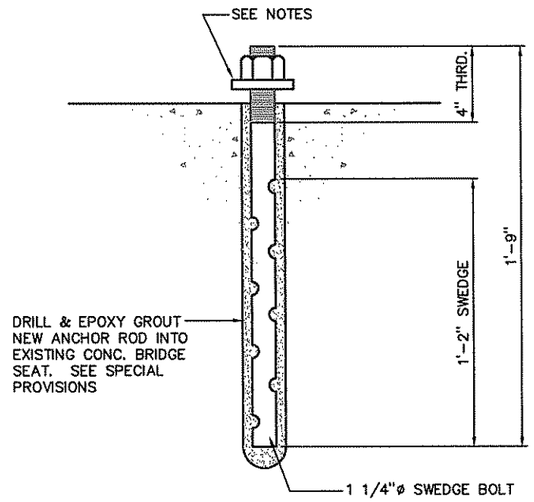
MACHINE SCREW DETAIL



1 3/4"ø PINTLE



1 1/4"ø PINTLE



ANCHOR ROD DETAIL

NOTES:

LUBRICATED BRONZE PLATES SHALL COMPLY WITH SPEC. 3329.

ALL PLATES EXCEPT LUBRICATED BRONZE PLATES SHALL COMPLY WITH SPEC. 3306.

STEEL PLATES AND PINTLES SHALL BE GALVANIZED AFTER FABRICATION PER SPEC. 3394. NO PAINT.

ANCHOR RODS SHALL BE GALVANIZED PER SPEC. 3392. NO PAINT, WITH ONE CUT WASHER AND NUT. ANCHOR RODS SHALL PROJECT 3/8" ABOVE NUTS.

FINISH CENTER 3" OF TOP BASE PLATE TO 250 MICRO. A 1/16" TOLERANCE IN THICKNESS WILL BE PERMITTED.

SHEET LEAD SHALL COMPLY WITH SPEC. 3335.

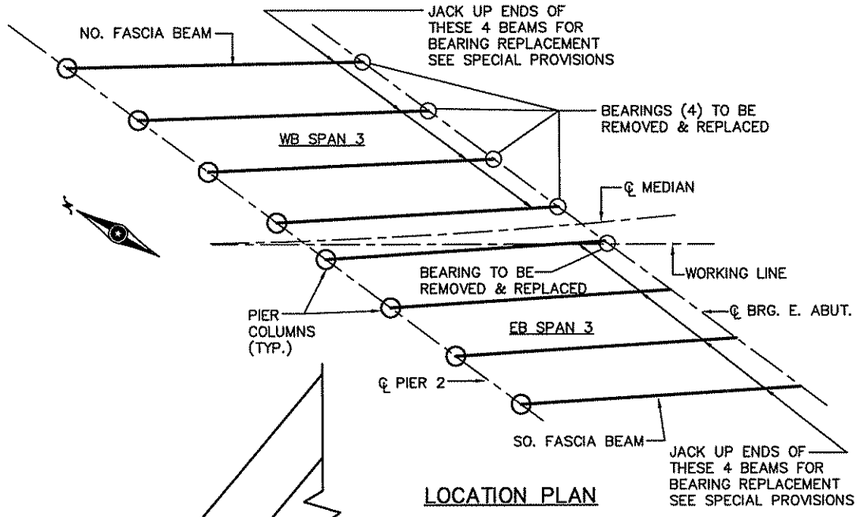
PLATES SHALL BE FLAT AFTER FABRICATION AND WELDING.

PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL SHOWN ON THIS SHEET.

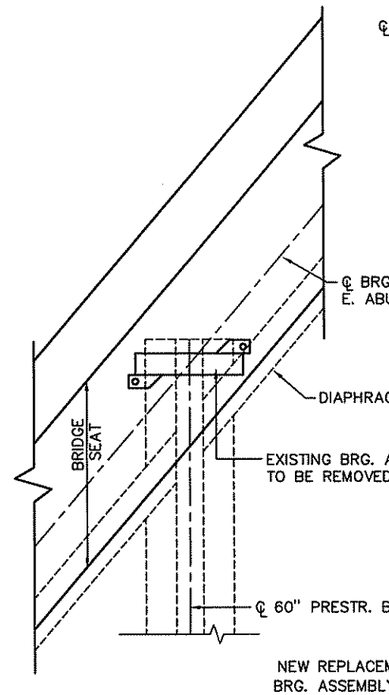
LUG PLATES MAY BE PART OF BOTTOM MASONRY PLATE AS AN OPTION.

WELDING SIZES PER SPEC. 2471.3J4b

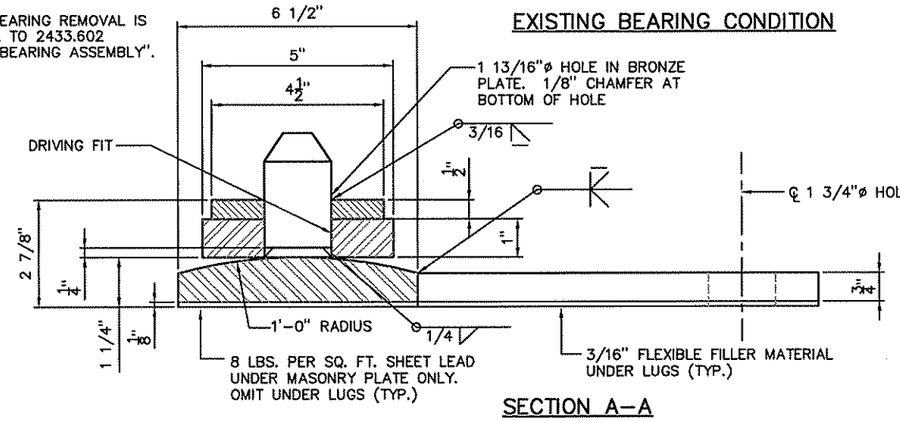
EXISTING BEARING REMOVAL IS INCIDENTAL TO 2433.602 "REPLACE BEARING ASSEMBLY".



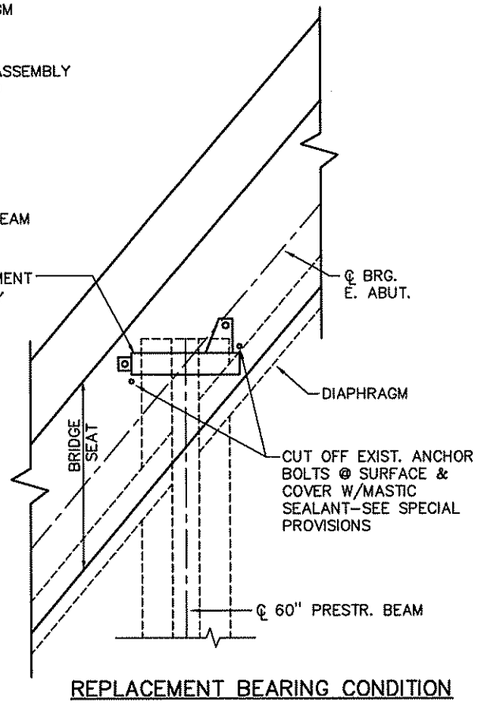
LOCATION PLAN



EXISTING BEARING CONDITION



SECTION A–A



REPLACEMENT BEARING CONDITION

S.P. 02-030-03

CERTIFIED BY David D Thorp PROFESSIONAL ENGINEER REG. NO. 24384 DATE 4-25-00

BRW A DAMES & MOORE GROUP COMPANY

BEARING ASSEMBLY REPLACEMENT

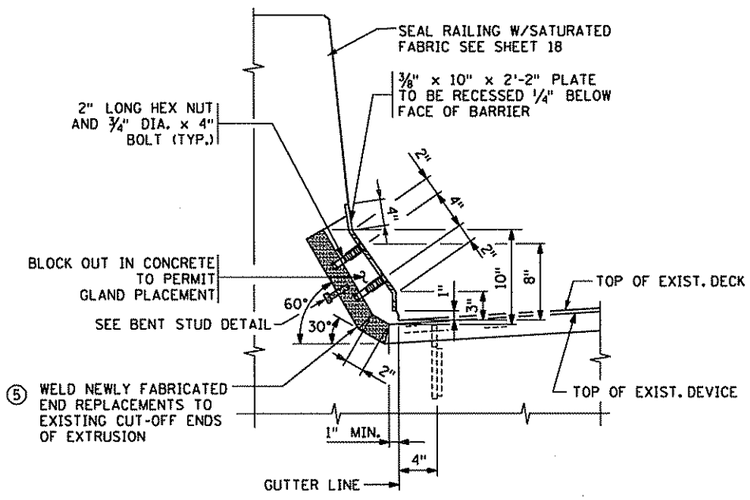
DES: DDL	DRW: MJF	APPROVED:
CHK: MKM	CHK: DDL	

SHEET NO. 14 OF 26 SHEETS

BRIDGE NO. 02522

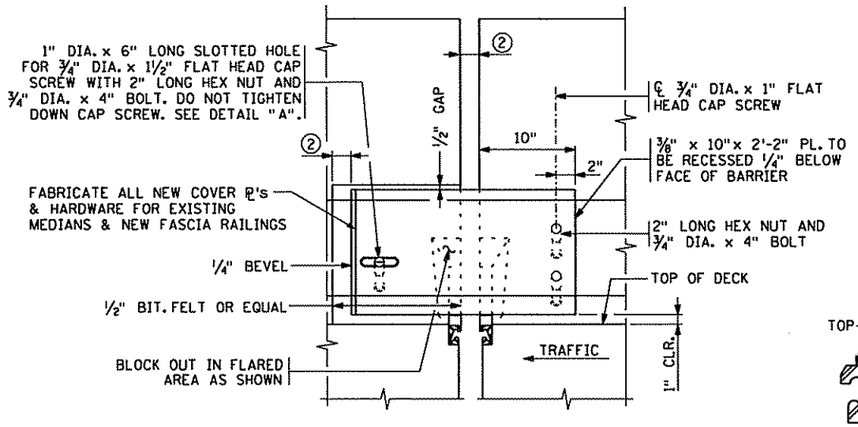
DATE: 4-24-00

FILE: 22BRG.DWG

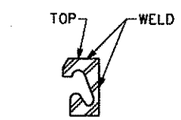


PROPOSED SECTION THROUGH RAILING

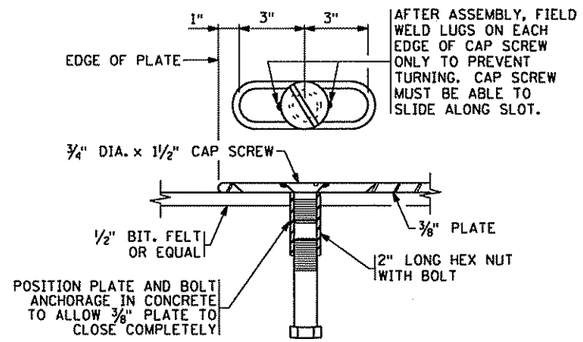
TYPE F RAILING



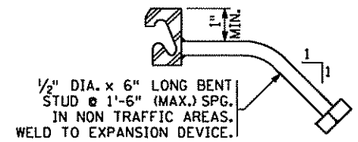
RAILING ELEVATION



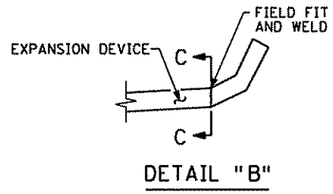
SECTION C-C



DETAIL "A"



BENT STUD DETAIL



DETAIL "B"

GENERAL NOTES

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

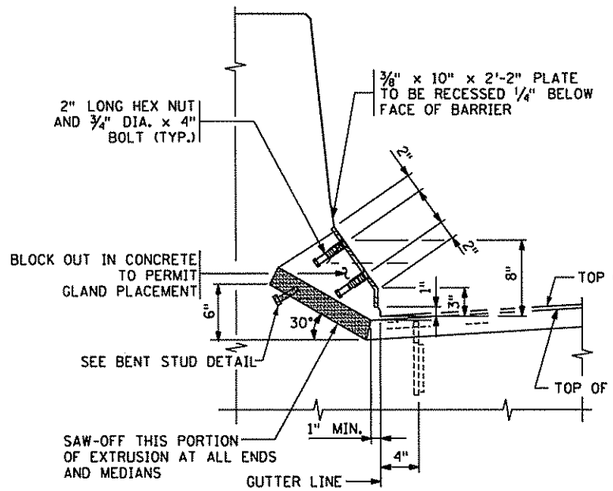
JOINTS SHALL BE CLOSE FIT AND WELDED. REPAIR AFTER WELDING AS PER Mn/DOT SPEC. 2471.3L.

STRUCTURAL STEEL SHALL COMPLY WITH Mn/DOT SPEC. 3306 OR Mn/DOT SPEC. 3309.

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

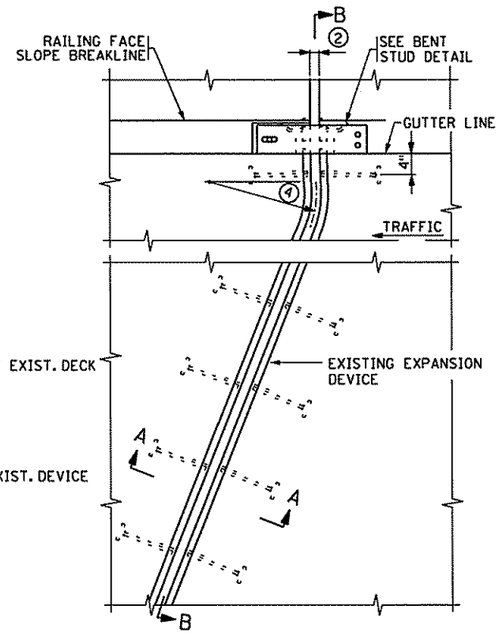
LENGTH OF PAYMENT FOR DEVICE IS FROM OUT TO OUT OF EXTRUSION ALONG THE SKEW.

1. DIMENSIONS SHOWN ARE ALONG THE SKEW. EXACT LENGTHS ALONG ℄ JOINT TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
2. MATCH EXISTING JOINT OPENING.
4. EXISTING 1'-6" RADIUS
5. IT IS THE CONTRACTORS RESPONSIBLILITY TO FIELD DETERMINE THE MANUFACTURER AND TYPE OF EXISTING JOINT SUPPORT RAIL EXTRUSION AND GLAND. CONTRACTOR SHALL SUPPLY NEW MATERIALS TO MATCH EXISTING. NEW GLAND SHALL BE SIZED TO FIT OUT TO OUT OF NEW SUPPORT RAIL CONFIGURATION.

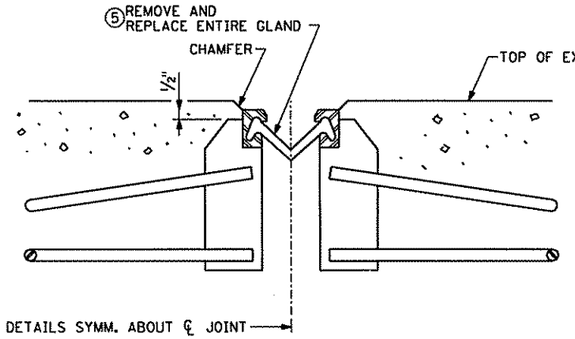


EXISTING SECTION THROUGH RAILING

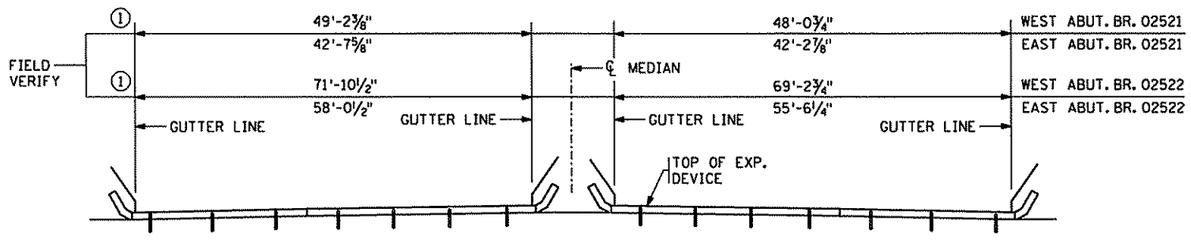
TYPE F RAILING



PLAN VIEW @ EXPANSION DEVICE



SECTION A-A



SECTION B-B ~ ALONG ℄ JOINT

S.P. 02-030-03

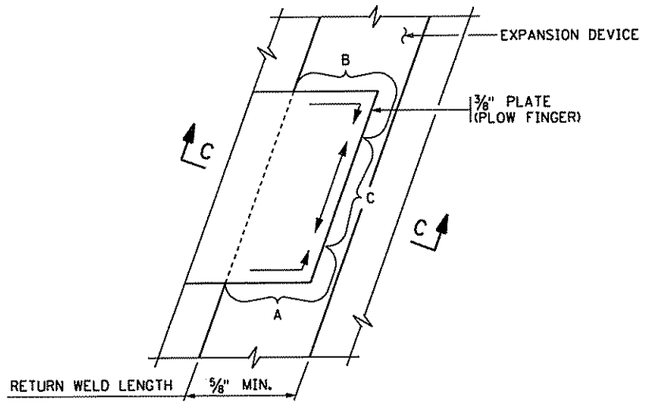
FIG. 5-397.627 (MOD.)

CERTIFIED BY David D Thorp PROFESSIONAL ENGINEER REG. NO. 24384 APRIL 25, 2000	TITLE: WATERPROOF EXPANSION DEVICE REPAIR WITH TYPE F BARRIER	DES: DDL DR: MJF CHK: MKM CHK: DDL	APPROVED:
		SHEET NO. 15 OF 26 SHEETS	BRIDGE NO. 02521&02522

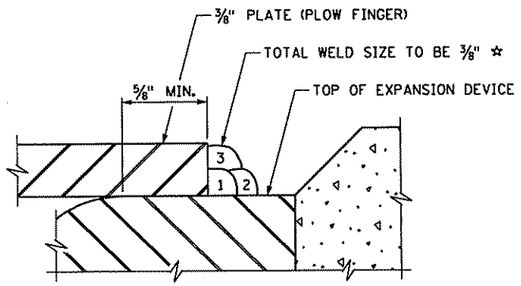
REVISION: 05-13-99

APPROVED: _____ STATE BRIDGE ENGINEER

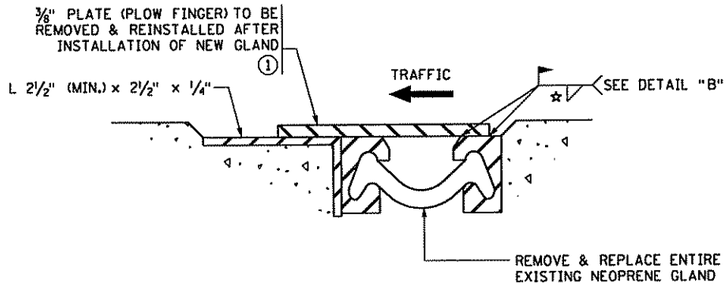
FILE: 21JOINT.DGN PLOT DATE: 4-24-00



DETAIL "B"



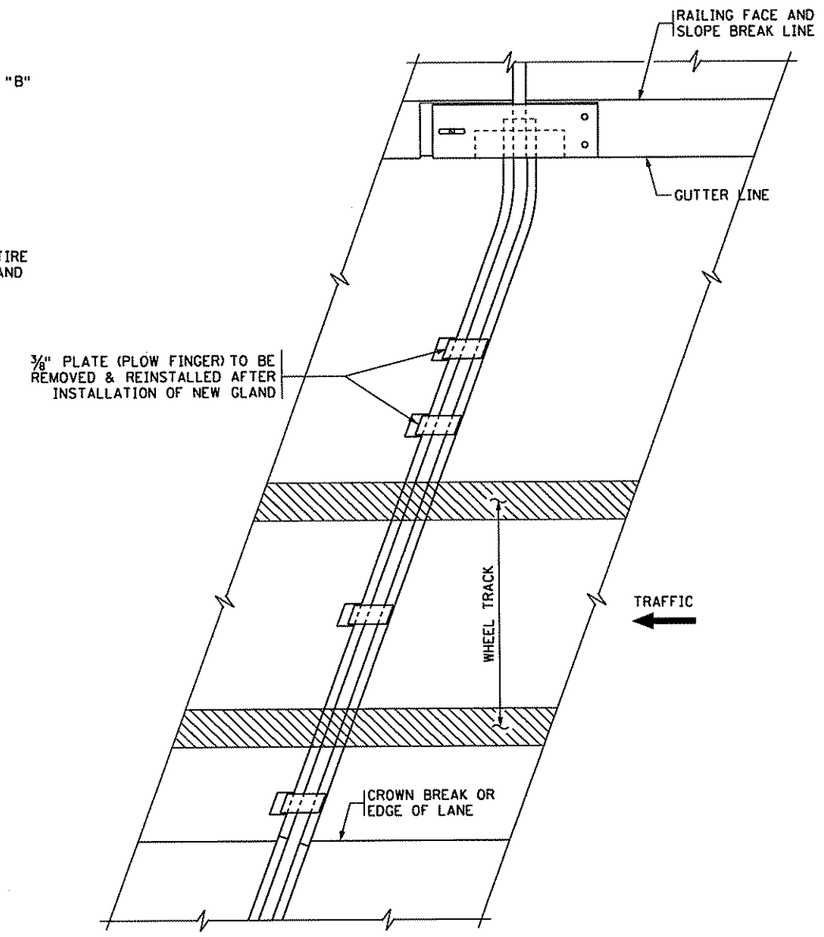
SECTION C-C



SECTION A-A

NOTE:

3/8" PLATES (PLOW FINGERS) TO BE REMOVED & REINSTALLED FOR INSTALLATION OF NEW GLAND IN ACCORDANCE WITH DETAILS ON THIS SHEET.



PLAN VIEW AT EXPANSION DEVICE

GENERAL NOTES

① 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.

SNOW PLOW FINGER REMOVAL AND REPLACEMENT SHALL BE INCIDENTAL FOR PRICE BID "REPAIR & RECONSTRUCT EXPANSION JOINT DEVICE TYPE 4".

☆ WELDING PROCEDURE FOR PLOW FINGERS

A. ALL WELDING SHALL BE DONE WITH 1/8" AWS Mn/DOT 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 Mn/DOT SPEC. 2471.3L

PLOT DATE: 4-24-00

FILE: 21SNOWPL.DGN

REVISION: 02-16-99

APPROVED: _____

STATE BRIDGE ENGINEER

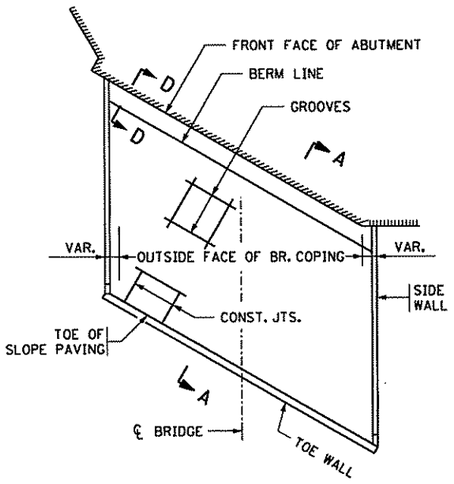
CERTIFIED BY David L Thorp
PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25, 2000

TITLE: WATERPROOF EXPANSION DEVICE SNOW PLOW PROTECTION

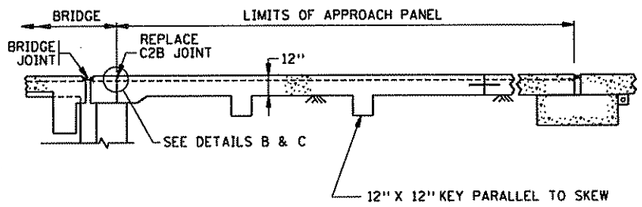
DES: DDL DR: MJF APPROVED:
CHK: MKM CHK: DDL

SHEET NO. 16 OF 26 SHEETS

S.P. 02-030-03
FIG. 5-397.628 (MOD.)
BRIDGE NO. 02521&02522



EXISTING SLOPE PAVING PLAN



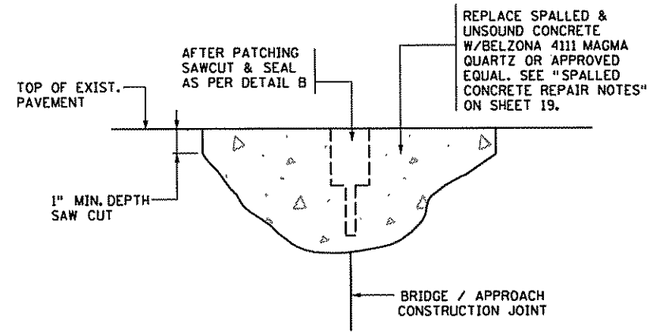
APPROACH PANEL SECTION
(REINFORCEMENT NOT SHOWN)

CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE ②

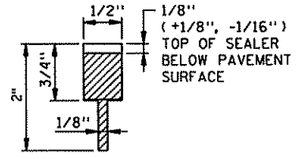
CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITHOUT DOWELS	WITH DOWELS		
C2B		B	3723

① DESIGN C2B - PRIOR TO SEALING JOINT (DETAIL B) WITH HOT POUR JOINT SEALER, A STRIP OF PAPER 1/2" WIDE SHALL BE PLACED ON THE BOTTOM OF THE 1/2" WIDE JOINT.

② ALL WORK TO REMOVE EXISTING SEALANT, CLEAN JOINT, SAW CUT CONSTRUCTION JOINT REPAIRS AND INSTALL NEW JOINT SHALL BE PAID FOR AS 2433.603 "REPAIR AND REPLACE JOINT FILLER/ JOINT SEALER".

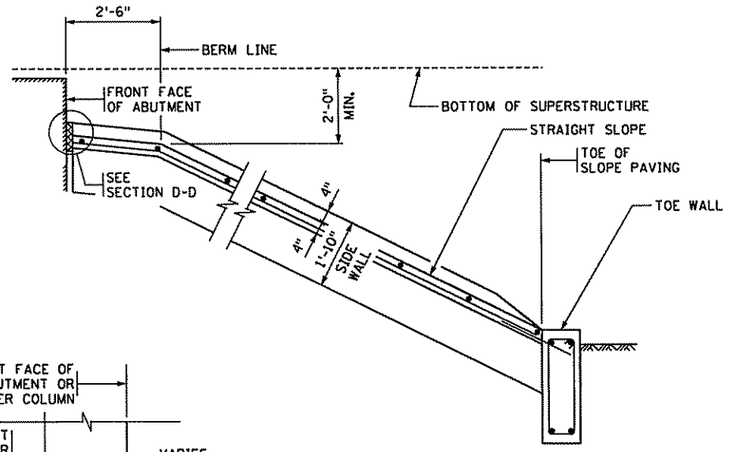


DETAIL C

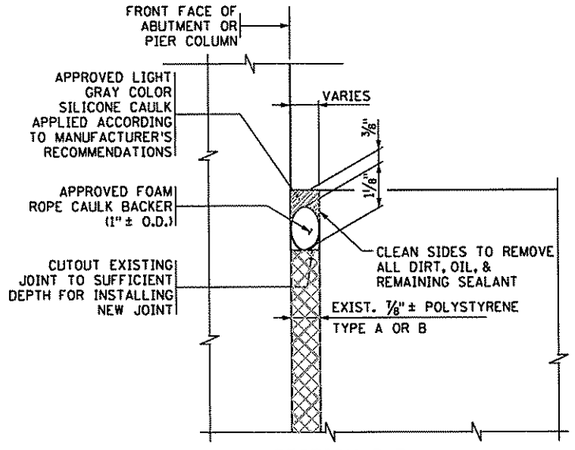


DETAIL B ①
SAWED

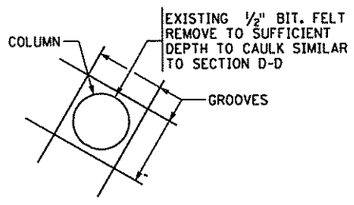
SPALLED CONCRETE REPAIR AT CONSTRUCTION JOINTS



SECTION A-A



SECTION D-D



DETAIL WHERE PIER COLUMN EXTENDS THROUGH SLOPE PAVING

NOTES:
ALL WORK TO REMOVE EXISTING SEALANT, CLEAN JOINT, AND INSTALL NEW JOINT SHALL BE PAID FOR AS 2433.603 "REPAIR AND REPLACE JOINT SEALANT (SLOPE PAVING)".

APPROVED: _____
STATE BRIDGE ENGINEER

CERTIFIED BY: David D Story
PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25, 2000

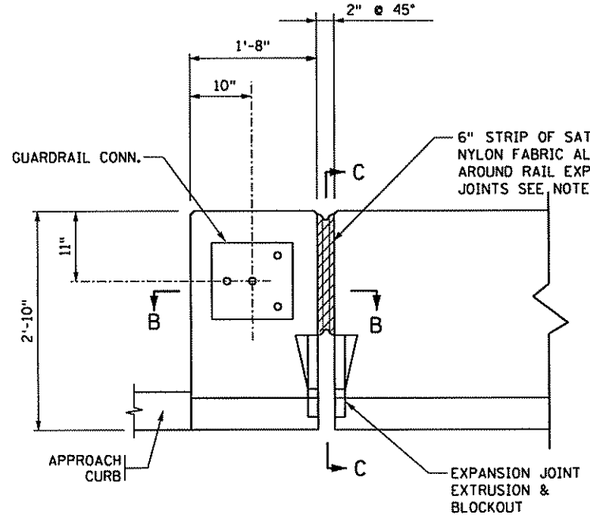
TITLE: SLOPE PAVING & APPROACH PANEL JOINT REPAIR

DES: DDL	DR: MJF	APPROVED:	BRIDGE NO. 02521&02522
CHK: MKM	CHK: DDL		

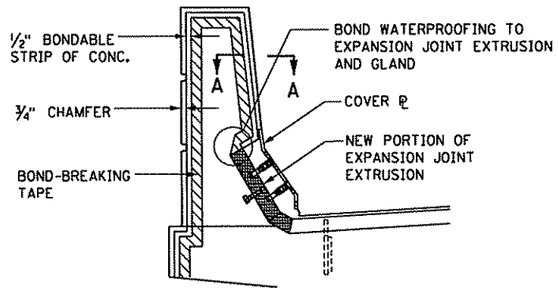
SHEET NO. 17 OF 26 SHEETS

S.P. 02-030-03

PLOT DATE: 4-24-00
FILE: SLOPPAV.DGN

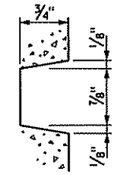


RAIL WATERPROOFING ELEVATION

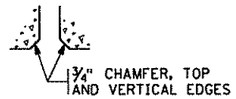


SECTION C-C

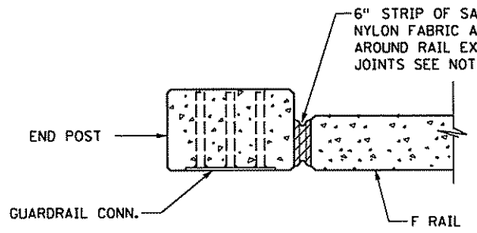
NOTE: FASCIA RAILING SHOWN
MEDIAN RAILING SIMILAR



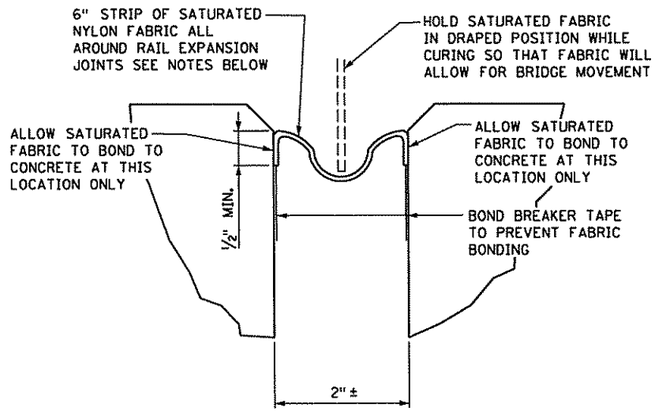
RAIL RUSTICATION



RAIL CORNERS



SECTION B-B



SECTION A-A

GENERAL NOTES FOR RAILING WATERPROOFING

1.) CLEAN THE INSIDE OF THE JOINT BY USING A SAND BLASTER, NEEDLE GUN, OR GRINDER. THIS PROCESS SHALL CLEAR AWAY ALL DIRT AND OIL, AND TAKING OFF THE TOP LATENCE LAYER OF CONCRETE.

2.) AFTER PREPARING THE JOINT, THE PROPER AMOUNT OF BELZONA 2211 ELASTOMER, OR APPROVED EQUAL SHALL BE MIXED AND SPREAD EVENLY ONTO TO THE NYLON FABRIC IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE COATED FABRIC SHOULD THEN BE SPANNED BETWEEN THE ENDS OF THE CONCRETE BARRIERS ACCORDING TO THE DETAILS SHOWN ABOVE. BOND THE FABRIC TO BOTH SIDES OF THE JOINT AND TO THE EXPANSION JOINT EXTRUSION AND GLAND.

3.) AS THE COATED FABRIC BEGINS TO SET UP THE BELZONA 2221 ELASTOMER OR EQUAL SHALL BE MIXED AND BRUSHED OVER THE COATED FABRIC TO ENSURE PROPER COVERAGE AND SEALING.

4.) COMPLETED APPLICATION SHALL BE ALLOWED TO CURE ACCORDING TO DATA FURNISHED BY THE MANUFACTURER.

5.) ALL WORK TO COMPLETE RAILING WATERPROOFING AT EXPANSION JOINTS SHALL BE PAID FOR AS 2433.601 "RECONSTRUCT RAILING WATERPROOFING".

FILE: MISCDETS.DGN PLOT DATE: 4-24-00

S.P. 02-030-03

CERTIFIED BY: David D Thorp PROFESSIONAL ENGINEER
REG. NO. 24384 APRIL 25, 2000

TITLE: RAILING WATERPROOFING AT EXPANSION JOINTS

DES: DDL | DR: MJF | APPROVED:
CHK: MKM | CHK: DDL

SHEET NO. 18 OF 26 SHEETS

BRIDGE NO. 02521&02522

SUMMARY OF QUANTITIES FOR PRESSURE INJECTION CRACK REPAIR ①②

BRIDGE	LOCATION	DESCRIPTION	ESTIMATED LENGTH
BRIDGE 02521	EAST ABUTMENT	APPROXIMATLY 2 VERTICAL CRACKS (NEAR 4TH BEAM FROM THE NORTH)	14 LF
BRIDGE 02521	WEST ABUTMENT	APPROXIMATLY 5 VERTICAL CRACKS (2 NEAR 1ST BEAM SOUTH OF MEDIAN) (3 NEAR 1ST BEAM BRG. ON NORTH)	32 LF
BRIDGE 02522	EAST ABUTMENT	APPROXIMATLY 8 VERTICAL CRACKS (DISTRIBUTED ALONG FULL LENGTH)	78 LF
BRIDGE 02522	WEST ABUTMENT	NOT APPLICABLE	0 LF
		TOTAL	124 LF

① QUANTITIES LISTED ARE APPROXIMATE FOR BIDDING PURPOSES. ANY MODIFICATIONS TO THE QUANTITIES WILL BE PAID FOR AT THE UNIT PRICE BID FOR 2433.603 "REPAIR CRACK (PRESSURE INJECTION)".

② PRICE BID FOR 2433.603 "REPAIR CRACK (PRESSURE INJECTION)" SHALL INCLUDE ALL WORK AS DESCRIBED IN THE PRESSURE INJECTION CRACK REPAIR NOTES. SEE SPECIAL PROVISIONS.

SUMMARY OF QUANTITIES FOR SPALLED CONCRETE REPAIR ③④

BRIDGE	LOCATION	DESCRIPTION	ESTIMATED LENGTH
BRIDGE 02521	EAST ABUTMENT	2 SPALL LOCATIONS (NEAR 4TH BEAM FROM THE SOUTH)	8 SF
BRIDGE 02521	WEST ABUTMENT	MISC. LOCATIONS	4 SF
BRIDGE 02521	APPROACH PANELS	MISC. SPALLING ON APPROACH ⑤ PANELS & APPROACH PANEL JOINTS	35 SF
BRIDGE 02522	EAST ABUTMENT	MISC. LOCATIONS	4 SF
BRIDGE 02522	WEST ABUTMENT	MISC. LOCATIONS	4 SF
BRIDGE 02522	APPROACH PANELS	MISC. SPALLING ON APPROACH ⑤ PANELS & APPROACH PANEL JOINTS	45 SF
		TOTAL	100 SF

③ QUANTITIES LISTED ARE APPROXIMATE FOR BIDDING PURPOSES. ANY MODIFICATIONS TO THE QUANTITIES WILL BE PAID AT THE UNIT PRICE BID FOR 2433.604 "REPAIR SPALLED CONCRETE".

④ PRICE BID FOR 2433.604 "REPAIR SPALLED CONCRETE" SHALL INCLUDE ALL WORK AS DESCRIBED IN THE SPALLED CONCRETE REPAIR NOTES. SEE SPECIAL PROVISIONS.

⑤ CONCRETE SPALLS AT APPROACH PANEL JOINTS SHALL BE REPAIRED PER "SPALLED CONCRETE REPAIR AT CONSTRUCTION JOINTS" SEE SHT. 17.

PRESSURE INJECTION CRACK REPAIR NOTES

1.) REMOVE UNSOUND CONCRETE AT CRACK EDGES BY SAW CUTTING 1" DEEP EACH SIDE AND EXCAVATING UNSOUND CONCRETE.

2.) CLEAN ANY EXPOSED REINFORCEMENT AND COAT WITH AN APPROVED EPOXY COATING REPAIR MATERIAL.

3.) CLEAN SURFACE ALONG THE CRACK. BLOW OUT CRACK WITH DRY AND OIL-FREE COMPRESSED AIR.

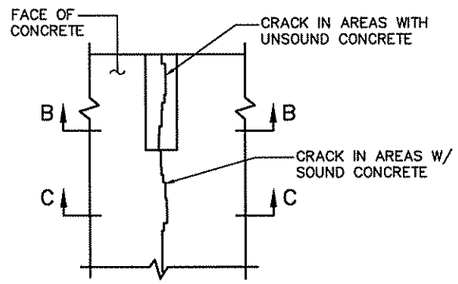
4.) BOND INJECTION PORTS ALONG CRACK WITH CRACK SEALING COMPOUND IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. MAXIMUM INJECTION PORT SPACING IS 6".

5.) SEAL SURFACE OF CRACK BETWEEN INJECTION PORTS WITH CRACK SEALING COMPOUND IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. MINIMUM CRACK SEALING COMPOUND STRIP IS 2" WIDE BY 1/8" DEEP.

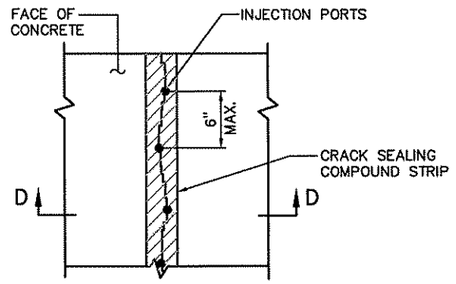
6.) CONNECT PRESSURE INJECTOR TO BOTTOM PORT. INJECT EPOXY RESIN UNTIL RESIN APPEARS VISABLY AT THE NEXT PORT ABOVE. INSERT INJECTOR INTO THAT PORT AND CONTINUE UNTIL THE ENTIRE CRACK HAS BEEN INJECTED.

7.) AFTER INJECTION RESIN HAS SET, THE PORTS AND SEALING COMPOUND SHALL BE REMOVED WITH A CHISEL OR GROUND OFF.

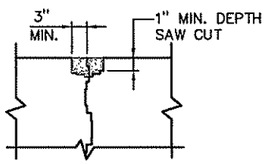
8.) PATCH CONCRETE IN ACCORDANCE WITH THE "SPALLED CONRETE REPAIR NOTES".



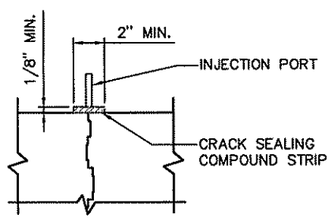
REMOVAL DETAIL AT CRACK REPAIR
(SEE PRESSURE INJECTION CRACK REPAIR NOTES)



PRESSURE INJECTION CRACK REPAIR DETAIL
(SEE PRESSURE INJECTION CRACK REPAIR NOTES)



SECTION B-B



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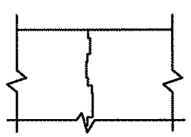
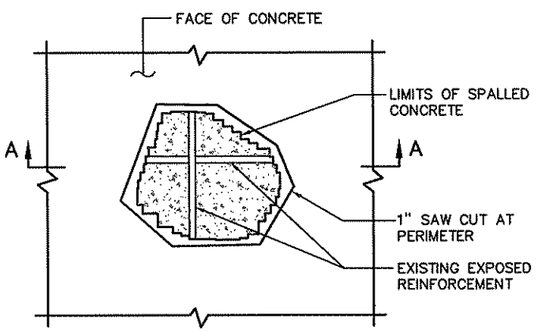
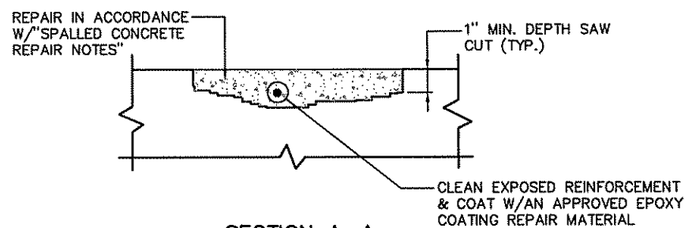


SECTION C-C



SPALLED CONCRETE REPAIR DETAIL
(SEE SPALLED CONCRETE REPAIR NOTES)



SECTION A-A

SPALLED CONCRETE REPAIR NOTES

1.) SAW CUT ALL EDGES TO A MINIMUM DEPTH OF 1" AROUND THE PERIMETER AND REMOVE BACK TO SPALLED AREA.

2.) CLEAN THE AREAS TO BE REPAIRED BY USING A SAND BLASTER, NEEDLE GUN, OR GRINDER. THIS PROCESS SHALL CLEAR AWAY ALL DIRT & OIL AND TAKING OFF THE TOP LATENCE LAYER OF CONCRETE.

3.) IF REINFORCEMENT IS EXPOSED, CLEAN EXISTING REINFORCEMENT AND COAT WITH APPROVED EPOXY COATING REPAIR MATERIAL.

4.) AFTER PREPARING THE AREA, THE PROPER AMOUNT OF BELZONA 4111 MAGMA QUARTZ OR APPROVED EQUAL SHALL BE MIXED COMPLETELY ACCORDING TO PROPER MIXING INSTRUCTIONS PROVIDED BY THE MANUFACTURER.

5.) TROWEL MIXED MATERIAL INTO THE PREPARED AREAS LEVEL WITH THE EXISTING CONCRETE. THE AREA SHOULD BE ALLOWED TO FULLY CURE ACCORDING TO THE CURE TIMES PROVIDED IN THE INSTRUCTIONS.

6.) ALLOW MATERIAL TO FULLY CURE ACCORDING TO THE CURE TIMES PROVIDED BY THE MANUFACTURER PRIOR TO CUTTING JOINTS OR ALLOWING TRAFFIC BACK ONTO THE REPAIR.

CONCRETE PAVING REPAIR NOTES

1.) REMOVAL AND DISPOSAL OF THE EXISTING CONCRETE PAVEMENT (TO A MINIMUM DEPTH OF 6") SHALL BE IN ACCORDANCE WITH SPEC. 2433. THE CONCRETE REMOVALS AND DISPOSAL SHALL BE INCLUDED IN THE PRICE BID FOR 2301.501 "CONCRETE PAVEMENT".

2.) PLACE NEW 6" CONCRETE PAVING (MIX 3A41) TO MATCH ADJACENT SURFACES IN ACCORDANCE WITH 2301.501 "CONCRETE PAVEMENT".

3.) DAMAGE DUE TO THE CONTRACTOR'S OPERATIONS TO PORTIONS OF THE STRUCTURE THAT ARE TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

FILE: ABUTREP.DWG DATE: 4-24-00

S.P. 02-030-03

CERTIFIED BY David N. Hong PROFESSIONAL ENGINEER REG. NO. 24384 DATE 4-25-00

BRW A DAMES & MOORE GROUP COMPANY

CONCRETE REPAIR

DES: DDL	DRW: MJF	APPROVED:
CHK: MKM	CHK: DDL	

SHEET NO. 19 OF 26 SHEETS

BRIDGE NO. 02521&02522

NOTES:

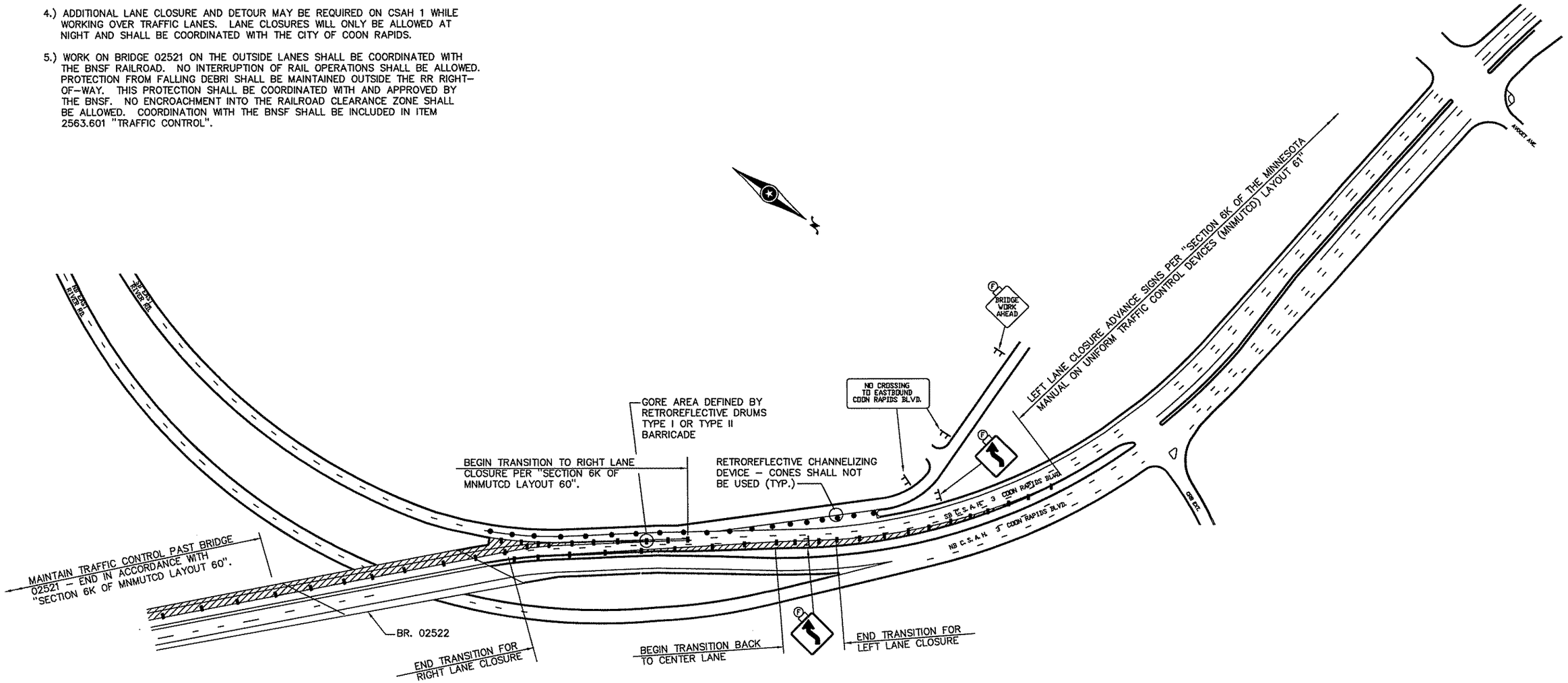
1.) USE THIS PLAN FOR CONSTRUCTION WORK ON THE OUTSIDE LANE AND RAILING.

2.) FOR RIGHT LANE CLOSURE ON WESTBOUND COON RAPIDS BLVD. – REFER TO "SECTION 6K OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES MNMUTCD LAYOUT 60". TRAFFIC CONTROL SHALL START PRIOR TO BRIDGE NO. 02521 AND END AFTER BRIDGE NO. 02522.

3.) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DESIGN, INSTALL AND MAINTAIN ALL TRAFFIC CONTROL AS REQUIRED TO COMPLETE WORK. PAID FOR AS ITEM 2563.601 "TRAFFIC CONTROL".

4.) ADDITIONAL LANE CLOSURE AND DETOUR MAY BE REQUIRED ON CSAH 1 WHILE WORKING OVER TRAFFIC LANES. LANE CLOSURES WILL ONLY BE ALLOWED AT NIGHT AND SHALL BE COORDINATED WITH THE CITY OF COON RAPIDS.

5.) WORK ON BRIDGE 02521 ON THE OUTSIDE LANES SHALL BE COORDINATED WITH THE BNSF RAILROAD. NO INTERRUPTION OF RAIL OPERATIONS SHALL BE ALLOWED. PROTECTION FROM FALLING DEBRI SHALL BE MAINTAINED OUTSIDE THE RR RIGHT–OF–WAY. THIS PROTECTION SHALL BE COORDINATED WITH AND APPROVED BY THE BNSF. NO ENCROACHMENT INTO THE RAILROAD CLEARANCE ZONE SHALL BE ALLOWED. COORDINATION WITH THE BNSF SHALL BE INCLUDED IN ITEM 2563.601 "TRAFFIC CONTROL".



EASTBOUND LANE CLOSURE AND TRAFFIC CONTROL
RIGHT LANE CLOSURE

FILE: CSAH3.DWG DATE: 4–24–00

S.P. 02–030–03

CERTIFIED BY David D Hang PROFESSIONAL ENGINEER REG. NO. 24384 DATE 4–25–00

BRW A DAMES & MOORE GROUP COMPANY

PROPOSED TRAFFIC CONTROL PLAN

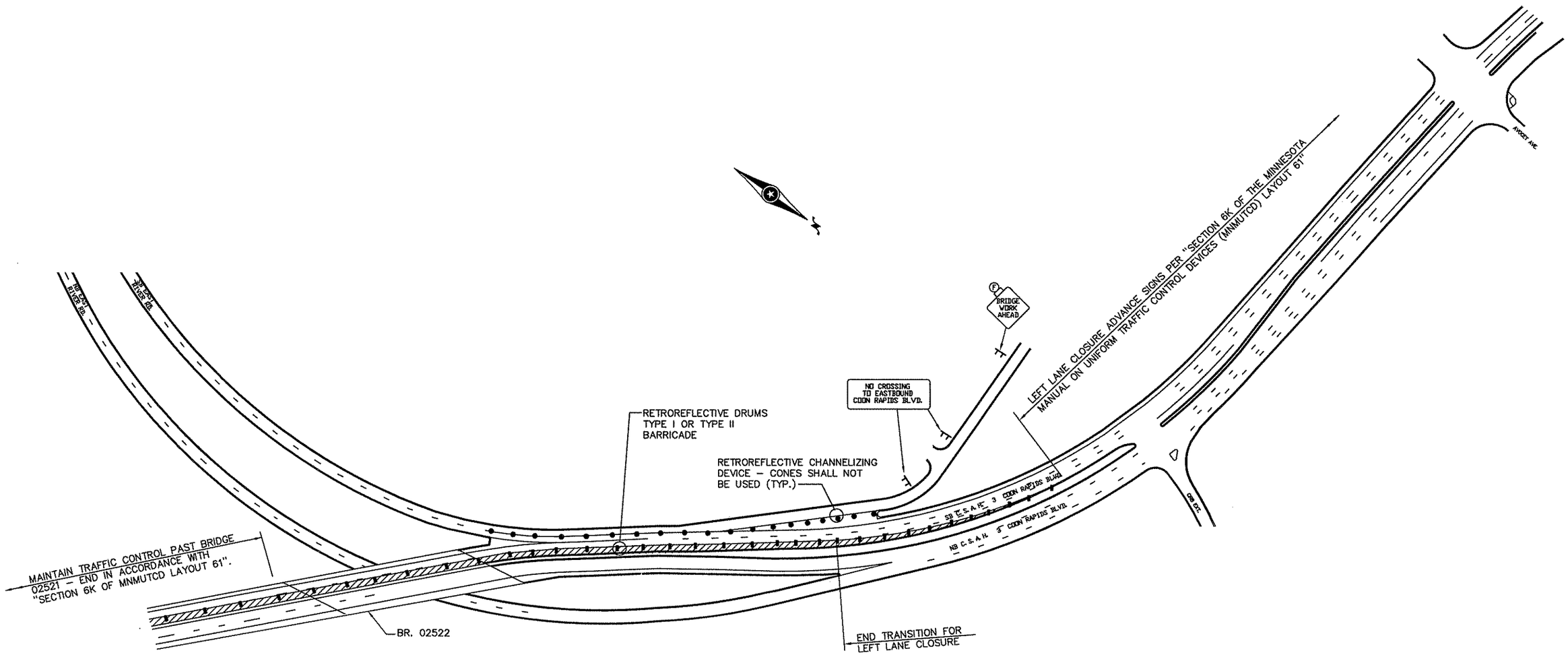
DES: DDL	DRW: MJF	APPROVED:	BRIDGE NO.
CHK: MKM	CHK: DDL		
SHEET NO. 20 OF 26 SHEETS			02521&02522

NOTES:

1.) USE THIS PLAN FOR CONSTRUCTION WORK ON MEDIAN BARRIER & CENTER LANE.

2.) FOR LEFT LANE CLOSURE ON WESTBOUND COON RAPIDS BLVD. – REFER TO "SECTION 6K OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES MNMUTCD LAYOUT 61". TRAFFIC CONTROL SHALL START PRIOR TO BRIDGE NO. 02521 AND END AFTER BRIDGE NO. 02522.

3.) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DESIGN, INSTALL AND MAINTAIN ALL TRAFFIC CONTROL AS REQUIRED TO COMPLETE WORK. PAID FOR AS ITEM 2563.601 "TRAFFIC CONTROL".



EASTBOUND LANE CLOSURE AND TRAFFIC CONTROL
LEFT LANE CLOSURE

FILE: CSAH3B.DWG DATE: 4-24-00

CERTIFIED BY David Dhorg PROFESSIONAL ENGINEER REG. NO. 24384 DATE 4-25-00

BRW A DAMES & MOORE GROUP COMPANY

PROPOSED TRAFFIC CONTROL PLAN

DES: DDL	DRW: MJF	APPROVED:
CHK: MKM	CHK: DDL	

S.P. 02-030-03

SHEET NO. 21 OF 26 SHEETS

BRIDGE NO. 02521&02522

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL QUAN. EST.	TOTAL QUAN. FINAL
	2021.501	MOBILIZATION	LS	1	
	2104.509	REMOVE TWISTED END TREATMENT	EACH	3	
(1)	2554.523	END TREATMENT– ENERGY ABSORBING TERMINAL	EACH	3	
	2563.601	TRAFFIC CONTROL	LS	1	

(1) USE "BRAKEMASTER" END TREATMENT OR APPROVED EQUAL.

STANDARD PLATES

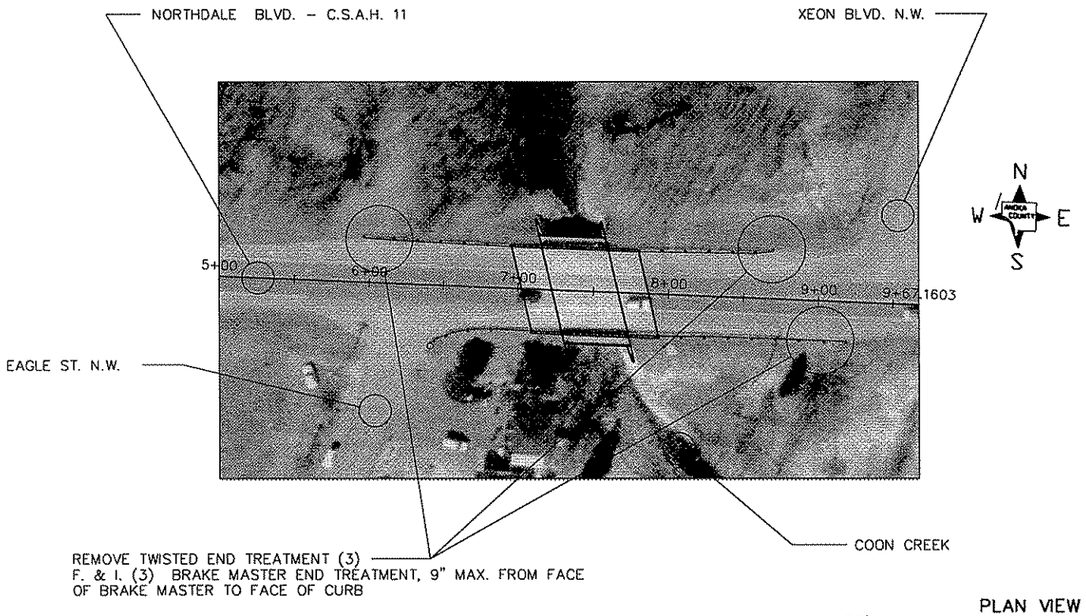
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
8000 1	STANDARD BARRICADES

ADT (1996)= 14,095
Proj. ADT (2015) = 22,552
Proj. HCADT (1995) =
No. of Traffic Lanes 2 No. of Parking Lanes 0
Shoulder Width 1.8m

Functional Classification Minor Arterial
Design Speed 45 MPH
Based on Stopping Sight Distance
Height of Eye 1070mm Height of Object 150mm

PLAN VIEW
BR.NO. 02553
C.P. 99–69–11



50'
SCALE

PLAN VIEW
BR.NO. 02553
C.P. 99–69–11

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL QUAN. EST.	TOTAL QUAN. FINAL
	2021.501	MOBILIZATION	LS	1	
	2104.509	REMOVE TWISTED END TREATMENT	EACH	1	
(1)	2554.523	END TREATMENT– ENERGY ABSORBING TERMINAL	EACH	1	
	2563.601	TRAFFIC CONTROL	LS	1	

(1) USE "BRAKEMASTER" END TREATMENT OR APPROVED EQUAL.

STANDARD PLATES

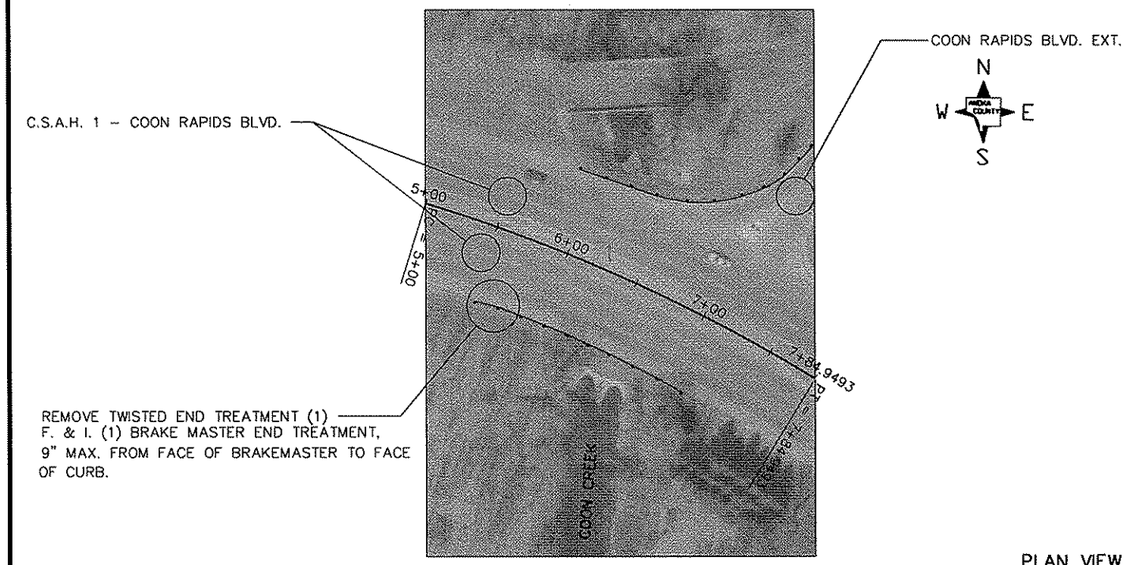
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
8000 1	STANDARD BARRICADES

ADT (1996)= 39,893
Proj. ADT (2015) = 63,829
Proj. HCADT (1995) =
No. of Traffic Lanes 3 No. of Parking Lanes 0
Shoulder Width 2.4m

Functional Classification Minor Arterial
Design Speed 45 MPH
Based on Stopping Sight Distance
Height of Eye 1070mm Height of Object 150mm

PLAN VIEW
BR.NO. 92164
C.P. 99–74–01



50'
SCALE

PLAN VIEW
BR.NO. 92164
C.P. 99–74–01

NO	DATE	BY	CKD	APPR	REVISION

NAME: D996911.dwg 3-21-00 2:04:36 pm EST

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 09/16/99 REG. NO. 25066

DRAWN BY KGJ DATE 09/16/99
DESIGN BY KGJ DATE 09/16/99
CHECKED BY LAR DATE 09/16/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-030-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 99-69-11
COUNTY PROJECT NO. 99-74-01

PLAN VIEW

Sheet 22 of 26 Sheets

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL QUAN. EST.	TOTAL QUAN. FINAL
	2021.501	MOBILIZATION	LS	1	
	2104.501	REMOVE GUARDRAIL – PLATE BEAM	LIN FT	565	
	2104.509	REMOVE TWISTED END TREATMENT	EACH	4	
	2554.501	TRAFFIC BARRIER DESIGN B8307	LIN FT	520	
	2554.523	END TREATMENT – ECCENTRIC LOADER ELT	EACH	3	
(1)	2554.523	END TREATMENT– ENERGY ABSORBING TERMINAL	EACH	1	
	2563.601	TRAFFIC CONTROL	LS	1	

① USE "BRAKEMASTER" END TREATMENT OR APPROVED EQUAL.

STANDARD PLATES

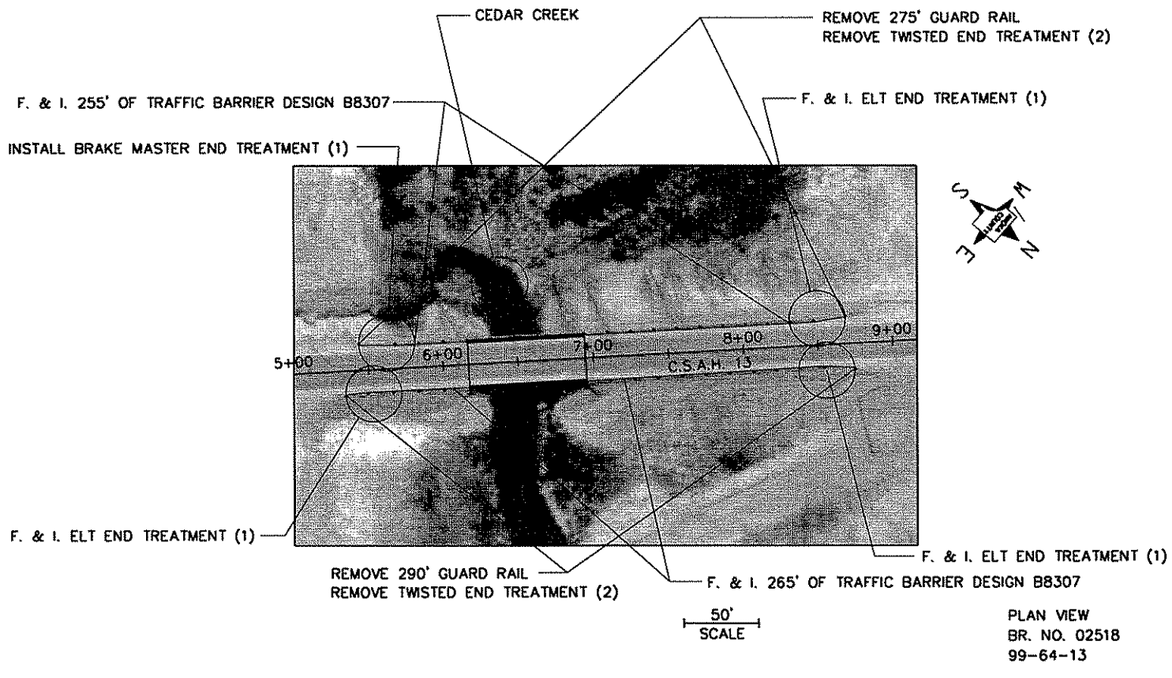
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
8000 I	STANDARD BARICADES
8307P	STEEL PLATE BEAM GUARDRAIL
8329G	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)

ADT (1995)= 2026
Proj. ADT (2015) = 3242
Proj. HCADT (1995) = _____
No. of Traffic Lanes 2 No. of Parking Lanes 0
Shoulder Width 3 m

Functional Classification COLLECTOR
Design Speed 55 MPH
Based on Stopping Sight Distance
Height of Eye 1070mm Height of Object 150mm

PLAN VIEW
BR. NO. 02518
99-64-13



PLAN VIEW
BR. NO. 02518
99-64-13

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL QUAN. EST.	TOTAL QUAN. FINAL
	2021.501	MOBILIZATION	LS	1	
	2104.509	REMOVE TWISTED END TREATMENT	EACH	3	
	2104.603	REMOVE GUARD RAIL – PLATE BEAM	LIN FT	2	
	2554.501	TRAFFIC BARRIER DESIGN B8307	LIN FT	29.5	
(1)	2554.523	END TREATMENT– ENERGY ABSORBING TERMINAL	EACH	3	
	2563.601	TRAFFIC CONTROL	LS	1	

① USE "BRAKEMASTER" END TREATMENT OR APPROVED EQUAL.

STANDARD PLATES

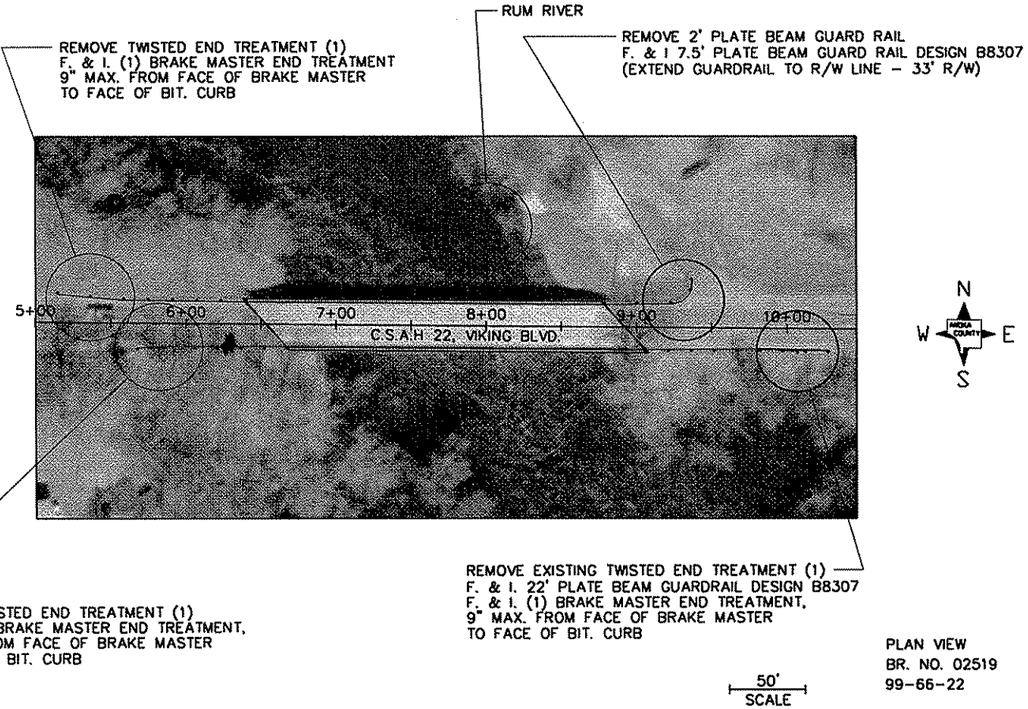
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
8000 I	STANDARD BARRICADES
8307P	STEEL PLATE BEAM GUARDRAIL

ADT (1995)= 4719
Proj. ADT (2015) = 7550
Proj. HCADT (1995) = _____
No. of Traffic Lanes 2 No. of Parking Lanes 0
Shoulder Width 1.8m

Functional Classification COLLECTOR
Design Speed 55 MPH
Based on Stopping Sight Distance
Height of Eye 1070mm Height of Object 150mm

PLAN VIEW
BR. NO. 02519
99-66-22



PLAN VIEW
BR. NO. 02519
99-66-22

NO	DATE	BY	CKD	APPR	REVISION

NAME: D996413.dwg 3-21-00 2:10:43 pm EST

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 09/16/99 REG. NO. 25066

DRAWN BY KGJ DATE 09/16/99
DESIGN BY KGJ DATE 09/16/99
CHECKED BY LAR DATE 09/16/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-030-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 99-64-13
COUNTY PROJECT NO. 99-66-22

PLAN VIEW

Sheet 23 of 26 Sheets

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL QUAN. EST.	TOTAL QUAN. FINAL
	2021.501	MOBILIZATION	LS	1	
	2104.509	REMOVE TWISTED END TREATMENT	EACH	2	
	2554.523	END TREATMENT – ECCENTRIC LOADER ELT	EACH	2	
	2563.601	TRAFFIC CONTROL	LS	1	

STANDARD PLATES

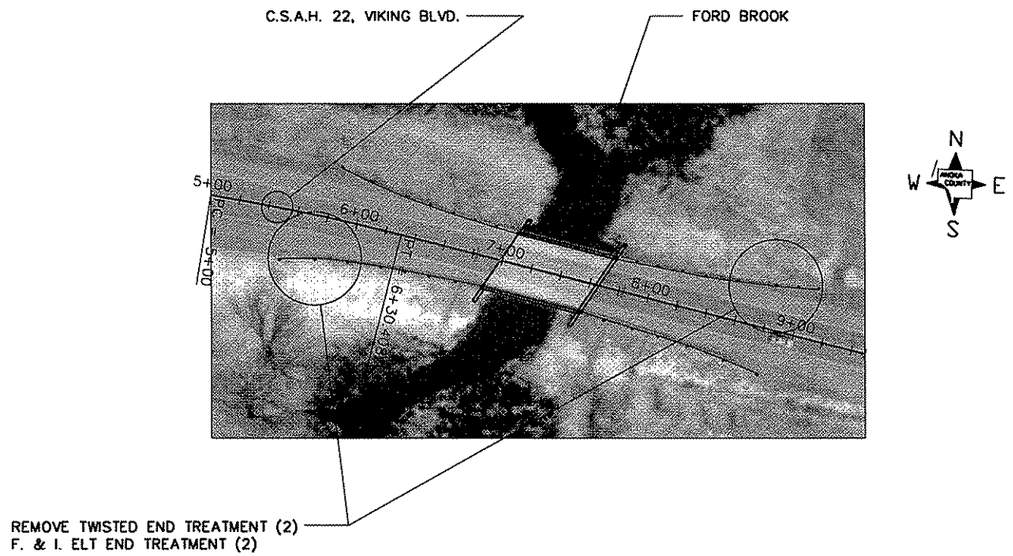
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
8000 I	STANDARD BARRICADES
8329 G	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)

ADT (1995)= 3001
Proj. ADT (2015) = 4802
Proj. HCADT (1995) = _____
No. of Traffic Lanes 2 No. of Traffic Lanes 0
Shoulder Width 2.4m

Functional Classification MINOR ARTERIAL
Design Speed 55 MPH
Based on Stopping Sight Distance
Height of Eye 1070mm Height of Object 150mm

PLAN VIEW
BR.NO. 02548
C.P. 99-65-22



50' SCALE

PLAN VIEW
BR.NO. 02548
C.P. 99-65-22

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL QUAN. EST.	TOTAL QUAN. FINAL
	2021.501	MOBILIZATION	LS	1	
	2104.509	REMOVE TWISTED END TREATMENT	EACH	2	
	2554.523	END TREATMENT – ECCENTRIC LOADER ELT	EACH	2	
	2563.601	TRAFFIC CONTROL	LS	1	

STANDARD PLATES

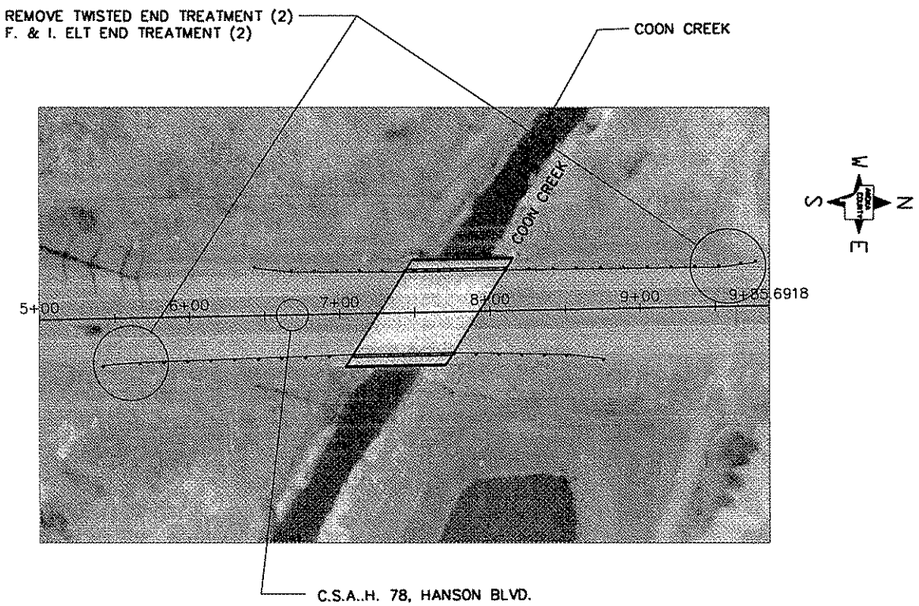
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
8000 I	STANDARD BARRICADES
8329 G	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)

ADT (1995)= 12,021
Proj. ADT (2015) = 19,234
Proj. HCADT (1995) = _____
No. of Traffic Lanes 2 No. of Traffic Lanes 0
Shoulder Width 3.6m

Functional Classification MINOR ARTERIAL
Design Speed 55 MPH
Based on Stopping Sight Distance
Height of Eye 1070mm Height of Object 150mm

PLAN VIEW
BR.NO. 02539
C.P. 99-67-78



50' SCALE

PLAN VIEW
BR.NO. 02539
C.P. 99-67-78

NO	DATE	BY	CKD	APPR	REVISION

NAME: D996522.dwg 3-21-00 2:15:32 pm EST

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 09/16/99 REG. NO. 25066

DRAWN BY KGJ DATE 09/16/99
DESIGN BY KGJ DATE 09/16/99
CHECKED BY LAR DATE 09/16/99

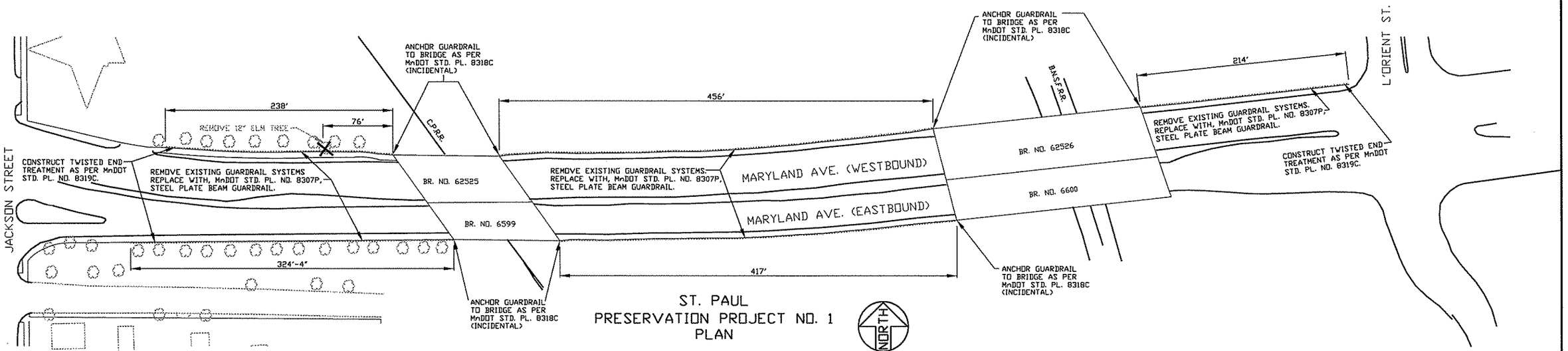
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-030-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 99-65-22
COUNTY PROJECT NO. 99-67-78

PLAN VIEW

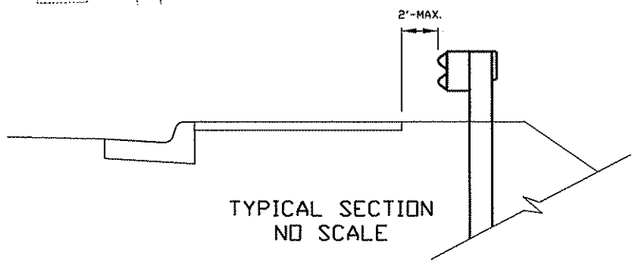
Sheet 24 of 26 Sheets



ST. PAUL
PRESERVATION PROJECT NO. 1
PLAN

NORTH

SCALE: 0 50' 100'



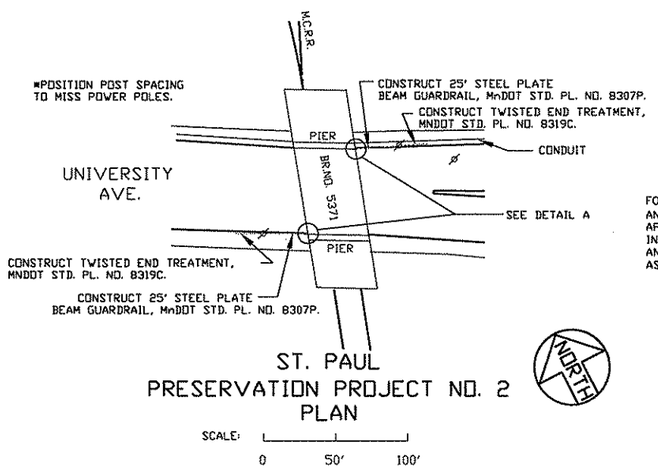
TYPICAL SECTION
NO SCALE

STANDARD DETAIL PLATES	
MnDOT NO.	STANDARD DETAIL
8307P	STEEL PLATE BEAM GUARDRAIL
8318C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES & BCT'S
8319C	TWISTED END TREATMENT

STATEMENT OF ESTIMATED QUANTITIES		
ITEM	UNIT	TOTAL QUANTITY
MOBILIZATION	LUMP SUM	1
REMOVE CABLE GUARDRAIL	LIN. FT.	1663
CLEARING	TREE	1
TRAFFIC BARRIER DESIGN 8307A	LIN. FT.	1558
TWISTED END TREATMENT	EACH	3
TRAFFIC CONTROL	LUMP SUM	1

NOTES:

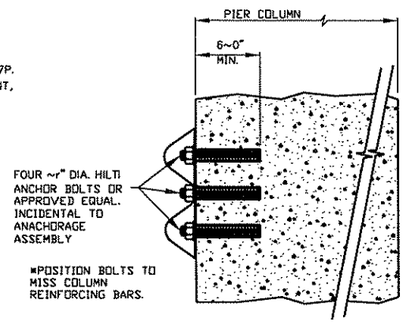
1. TRAFFIC BARRIER DESIGN 8307A INCLUDES ALL HARDWARE, POSTS, ANCHORAGE ASSEMBLIES & CONNECTIONS, AS SHOWN AS IN THE MnDOT STANDARD PLATES AND THE PLAN FOR PRESERVATION PROJECT NO. 1 AND NO. 2.
2. THE GUARDRAIL POST SPACING AND ALIGNMENT, ADJACENT TO THE BRIDGE RAILING, SHALL BE AS SHOWN ON MnDOT STANDARD PLAN NO. 5-297-609. NO RUB RAIL SHALL BE REQUIRED.



ST. PAUL
PRESERVATION PROJECT NO. 2
PLAN

NORTH

SCALE: 0 50' 100'



DETAIL A NO SCALE

GUARDRAIL ANCHORAGE ASSEMBLY
FOR BRIDGES

*MODIFICATION TO MnDOT STD. PL. NO. 8318C
SECTION A-A

NOTE:
REMOVAL OF CONCRETE SIDEWALK WILL REQUIRE 1" MINIMUM DEEP SAW CUT AND SHALL BE 1" MIN. LARGER THAN POST DIMINSION. VOIDS SHALL BE FILLED WITH GROUT OR CONCRETE MIX NO. 3U18. THIS WORK SHALL BE INCIDENTAL TO EITHER THE TRAFFIC BARRIER OR TWISTED END TREATMENT DEPENDING ON LOCATION.

STATEMENT OF ESTIMATED QUANTITIES		
ITEM	UNIT	TOTAL QUANTITY
MOBILIZATION	LUMP SUM	1
TRAFFIC BARRIER DESIGN 8307A	LIN. FT.	50
TWISTED END TREATMENT	EACH	2
ANCHORAGE ASSEMBLY - PLATE BEAM	EACH	2
TRAFFIC CONTROL	LUMP SUM	1

STANDARD DETAIL PLATES	
MnDOT NO.	STANDARD DETAIL
8307P	STEEL PLATE BEAM GUARDRAIL
8318C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES & BCT'S (MODIFIED)
8319C	TWISTED END TREATMENT

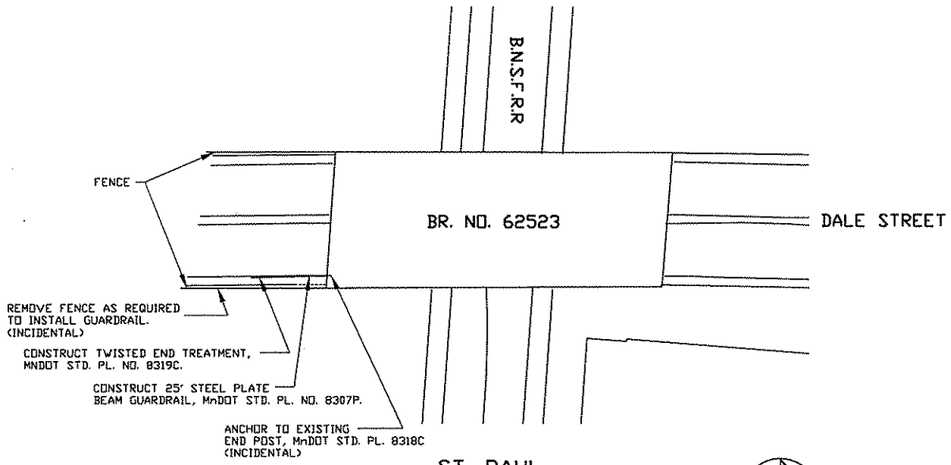
project1and2.dwg 3-13-00 1:21:17 pm EST

DESIGNED	TM	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
DGN CHECK		
DRAWN	BBB	SIGNED Tracy C. Moe DATE 3/29/00 REG. NO. 10529
DWG CHECK		

PREPARED BY BRIDGE DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS
ST. PAUL
PRESERVATION PROJECT NO. 1 AND NO. 2

STATE AID PROJECT NUMBER: 62-030-08
CAD DRAWING NAME: cad/bridges/dwgs/preservation/project1
DATE: 9/16/99
SHEET NO. 25 OF 26 SHEET(S)

PROJECT:
DRAWER:
GUARD RAIL



ST. PAUL
PRESERVATION PROJECT NO. 3
PLAN

NORTH

SCALE: 0 50' 100'

STATEMENT OF ESTIMATED QUANTITIES

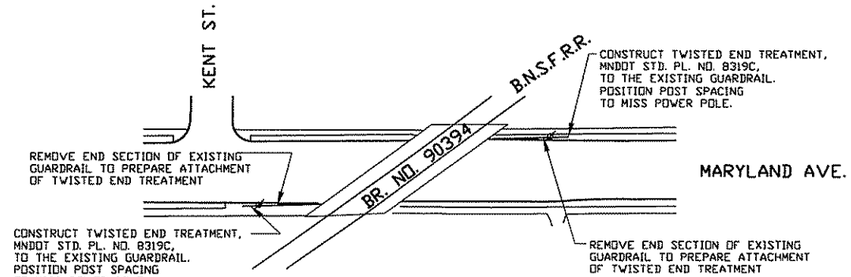
ITEM	UNIT	TOTAL QUANTITY
MOBILIZATION	LUMP SUM	1
TRAFFIC BARRIER DESIGN 8307A	LIN. FT.	25
TWISTED END TREATMENT	EACH	1
TRAFFIC CONTROL	LUMP SUM	1

STANDARD DETAIL PLATES

MnDOT NO.	STANDARD DETAIL
8307P	STEEL PLATE BEAM GUARDRAIL
8318C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES & BCT'S
8319C	TWISTED END TREATMENT

NOTES:

1. TRAFFIC BARRIER DESIGN 8307A INCLUDES ALL HARDWARE, POSTS, ANCHORAGE ASSEMBLIES & CONNECTIONS AS SHOWN IN THE MnDOT STANDARD PLATES AND THE PLAN FOR PRESERVATION PROJECT NO. 3 AND NO. 4.
2. THE GUARDRAIL POST SPACING AND ALIGNMENT, ADJACENT TO THE BRIDGE RAILING, SHALL BE AS SHOWN ON MnDOT STANDARD PLAN NO. 5-297-609. NO RUB RAIL SHALL BE REQUIRED.



ST. PAUL
PRESERVATION PROJECT NO. 4
PLAN

NORTH

SCALE: 0 50' 100'

STATEMENT OF ESTIMATED QUANTITIES

ITEM	UNIT	TOTAL QUANTITY
MOBILIZATION	LUMP SUM	1
REMOVE GUARD RAIL - PLATE BEAM	LIN. FT.	5
TWISTED END TREATMENT	EACH	2
TRAFFIC CONTROL	LUMP SUM	1

STANDARD DETAIL PLATES

MnDOT NO.	STANDARD DETAIL
8319C	TWISTED END TREATMENT

project3and4.dwg 31300 12328

SAINT PAUL	DESIGNED	TM	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
	DGN CHECK		
	DRAWN	BBB	SIGNED Tracy C. Moe DATE 3/29/00 REG. NO. 10529
	DWG CHECK		

PREPARED BY **BRIDGE DIVISION** FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

ST. PAUL
PRESERVATION PROJECT NO. 3 AND NO. 4

STATE PROJECT NUMBER: 62-030-08

CAD DRAWING NAME: DWG

DATE: 09/16/99

SHEET NO. 26 OF 26 SHEET(S)

PROJECT: PROJECT
DRAWER: DRAWER

GUARDRAIL

SAINT PAUL