DESIGN DATA				
Traffic	Average Daily			Est.Max.Hr.
Current 1999	Pass: 2345	Trucks 625	Total 2970	300
Forecast 2019	Pass: 3755	Trucks 1000	Total 4755	480
Minimum Sight Dist. for:		Design Speed 70 mph		
Stopping 600'		Bridges		
Full Control of Access				
No Point of Access Other Than at Interchange Ramps				

JOB# 24

FHWA REGION	STATE	PROJECT NO.	SHEET NO.
8	ND	IM-2-094(046)227	1

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT IM-2-094(046)227
IN STUTSMAN COUNTY
CONCRETE PAVEMENT REPAIR, DOWEL BAR RETROFIT, GRINDING & INCIDENTALS
(West Bound Roadway)
CONCRETE PAVEMENT REPAIR, DOWEL BAR RETROFIT TEST SECTIONS, & HBP OVERLAY
(East Bound Roadway)

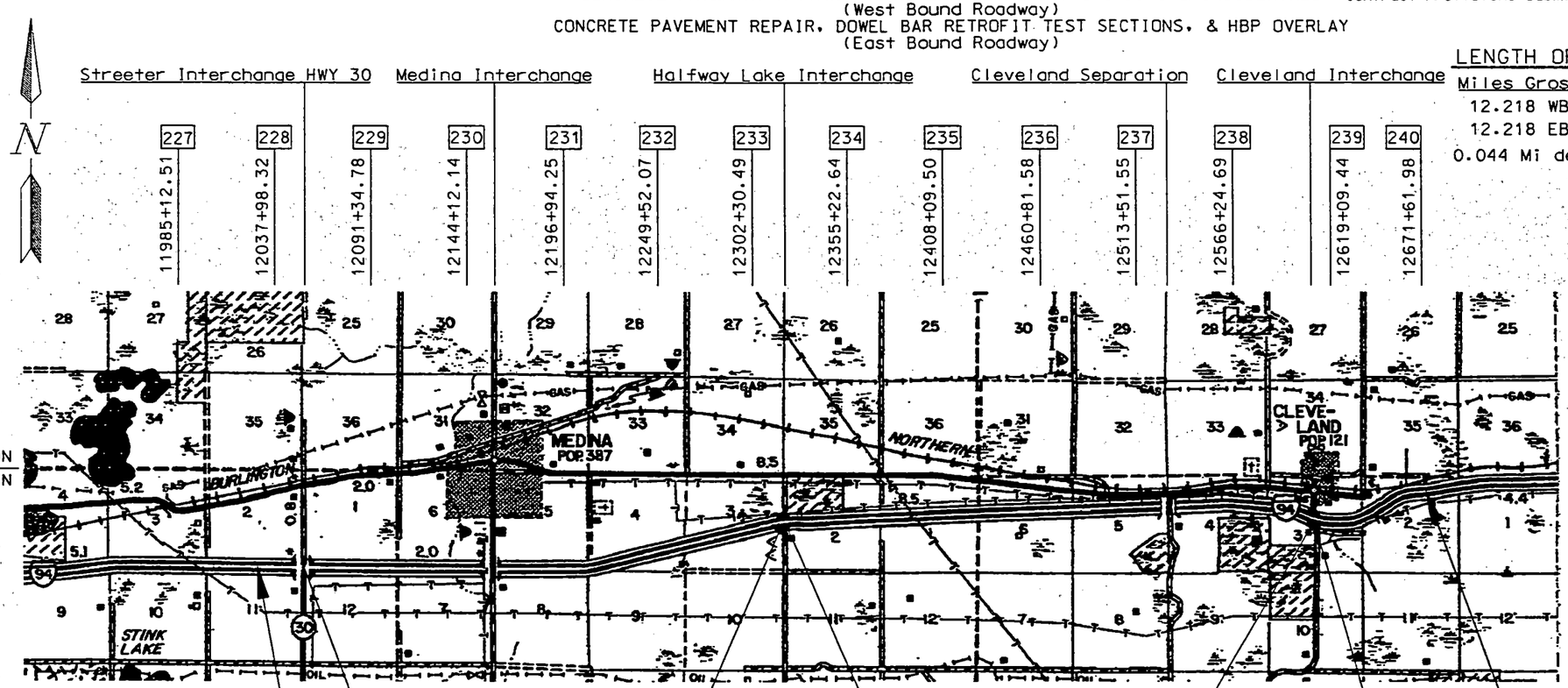
GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota Department of Transportation October 1997; Standard Drawings currently in effect; and other Contract Provisions submitted herein.

LENGTH OF PROJECT

Miles Gross	Miles Net
12.218 WB	12.174 WB
12.218 EB	12.174 EB

0.044 Mi deducted for bridges



Begin Project Sta 12029+65.58
Sta 1017+00 on Project
IR-094-6 (53) 228
Sec 11, T 139 N, R 69 W.

EQUATION
12054+76.83 Bk =
12055+34.88 Ahd

End Project Sta 12675+37.46
Sta 63+60.00 on Project
IR-094-6(53)228
Sec 2, T 139 N, R 67 W

DESIGNER Chad Fuirop
DESIGNER Brad Pfeifer
DESIGNER
RECOMMEND APPROVAL 2-26, 1999
DESIGN ENGINEER Kenneth E. Birst

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

APPROVED DATE 3-1-99

David K. D. Leer

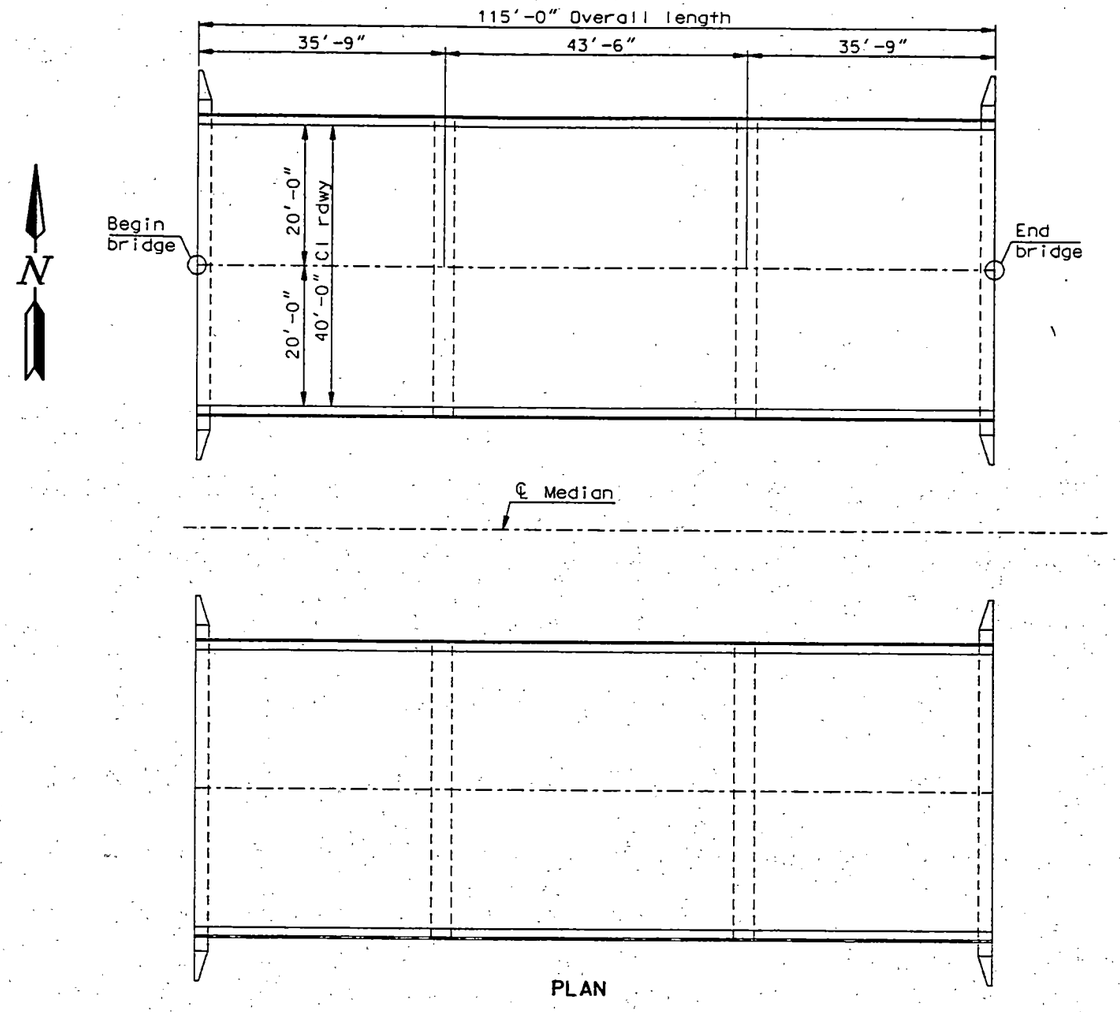
DIRECTOR OF HIGHWAYS
AND ENGINEERING

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

DAVID K. D. LEER
REGISTERED
PROFESSIONAL
P.E. 1199
ENGINEER
NORTH DAKOTA

...\20094227.046\design\title.dgn Feb. 26, 1999 08:23:46

BRIDGE CODE	FHWA REGION	STATE	FEDERAL AID PROJECT NUMBER	SHEET NO.
X-221	8	ND	IM-2-094(046)227	74



SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	7000	SPECIAL SURFACE FINISH	SF	696.0
930	8642	NOSING CONCRETE	CF	7.8
930	8644	SILICONE SEALANT	LF	80.0
930	9612	SPALL REPAIR	SF	116.0

CLEVELAND INTERCHANGE

BRIDGE LAYOUT

NOTES

100 SCOPE OF WORK: The work at this site consists of joint repair at each end of the bridge, spall repair on the deck behind the barrier walls, and placing special surface finish on the barriers and facia beams.

602 SPECIAL SURFACE FINISH: The bid item "Special Surface Finish" shall include all labor, equipment and material required to remove the existing surface finish and apply a new surface finish on the designated surfaces. The new surface finish shall match the color and texture of the existing surface finish. The junction of new surface finish and existing surface finish shall be along straight lines and shall be made so as not to leave a gap.

The special surface finish shall be Thoroseal by Thoro System Products, Tammscoat by Tamms Industries, Sikatop 144 by Sika Corporation or an approved equal. The surface preparation, application and curing shall be according to the manufacturer's recommendation.

The estimated quantities are based on the details and the plan view showing the locations. The actual limits of the surface finish shall be determined by the Engineer in the field.

930 SPALL REPAIR: The bid item "Spall Repair" shall include all labor, equipment and material required to rebuild the edge of the deck and add a 45° bevel behind the jersey barrier on the deck edge. The estimated quantities are based on the following limits for the designated areas shown on the plan view:

Little or no spall area:	.5 square foot/lineal foot
Moderate spall area:	.75 square foot/lineal foot
Severe spall area:	1 square foot/lineal foot

The actual limits and designated areas of severity shall be determined by the Engineer in the field.

All areas to be repaired shall have adequate preparation as recommended by the repair mortar manufacturer. The edges of the areas to be repaired shall be neat lined created by saw cutting or by other means approved by the Engineer. All loose concrete shall be removed. The surface shall be cleaned by sandblasting or high pressure water blasting. After the surface has dried and just before the mortar is placed, the surface shall be coated with a bonding agent recommended by the manufacturer of the repair mortar.

The area shall be rebuilt to the section shown in the details. The repair mortar shall be EMACO 588-CR by Master Builders Technologies, Thorite by Thoro System Products, SikaTop 122, by Sika Corporation, Duraltop Gel by Tamms Industries or an approved equal. The contractor shall follow the manufacturer's recommendations on installing and curing the repair mortar.

930 NOSING CONCRETE: The nosing concrete material shall be an elastomeric concrete or a polymeric concrete that will provide a durable edge that can withstand live-load traffic without chipping or spalling. The nosing concrete material shall be Silspec 900 PNS, manufactured by Siliconce Specialties, Inc., Wabocrete II, manufactured by Watson Bowman Acme, Elastomeric Concrete, Manufactured by D. S. Brown Company, or an approved equal. The nosing concrete shall be mixed and installed according to the manufacturer's recommendation. All labor and materials required to install the nosing concrete shall be included in the bid item "Nosing Concrete".

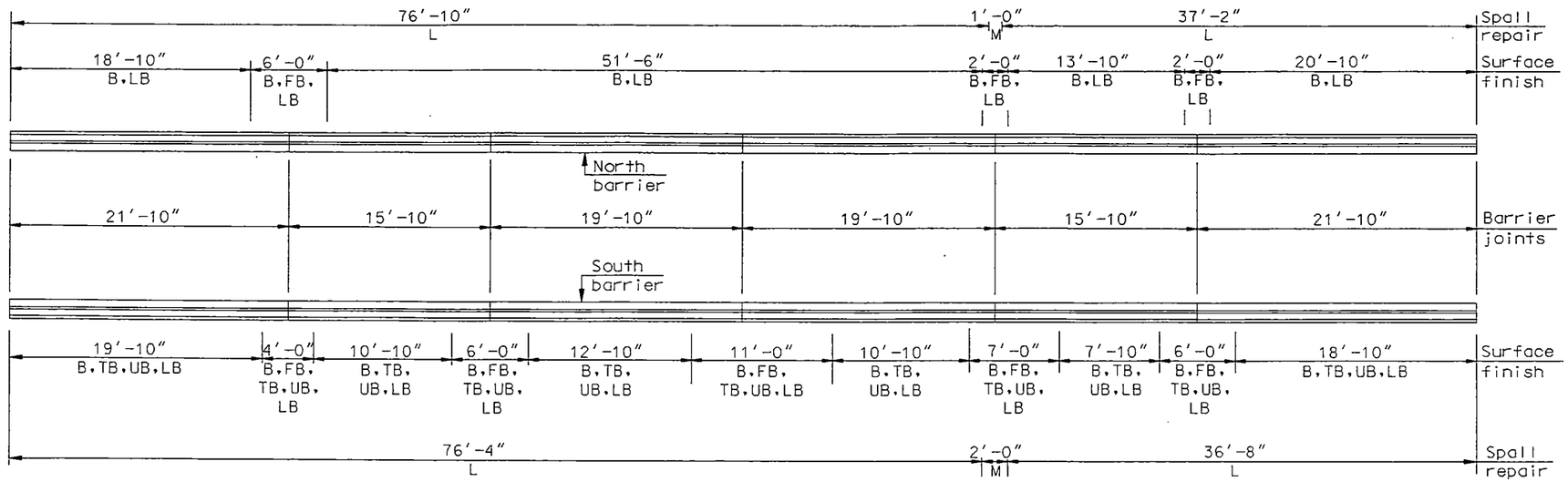
930 SILICONE SEALANT: The silicone sealant shall be a rapid cure, self leveling, cold applied two component silicone sealant that will bond to and be compatible to the nosing concrete used. The sealant shall be installed according to the manufacturer's recommendation. The silicone sealant and the nosing concrete must be supplied as a complete system. The backer rod and any necessary bonding material shall be included in the bid item "Silicone Sealant".

930 TECHNICAL ASSISTANCE: The Contractor shall acquire technical assistance from the manufacturer of the nosing concrete and silicone sealant for the surface preparation and installation of the nosing concrete and the silicone sealant. A technical representative must be present for the start of surface preparation and installation for at least one day. The Contractor shall contact the manufacturer at least two weeks prior to the installation. The technical assistance shall be provided at no addidtion cost to the Department.

CLEVELAND INTERCHANGE

NOTES

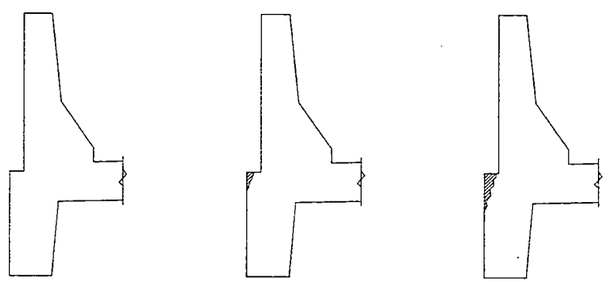
FHWA REGION	STATE	FEDERAL AID PROJECT NUMBER	SHEET NO.
8	ND	IM-2-094(046)227	76



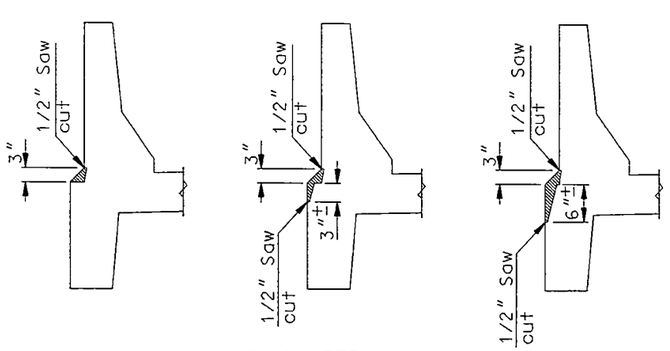
BARRIER PLAN VIEW
Spall repair locations &
Special surface finish locations

SURFACES:
FB = Facia Beam
B = Bevel
BB = Back of Barrier
TB = Top of Barrier
UB = Upper Barrier
LB = Lower Barrier
ALL = All Six Surfaces

SPALL REPAIRS:
L = Little or no spall
M = Moderate spall
S = Severe spall

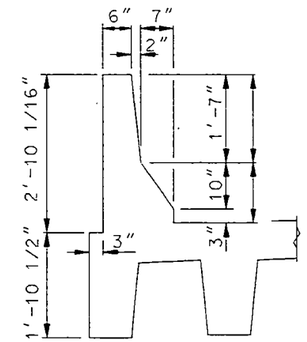


EXISTING CONDITIONS

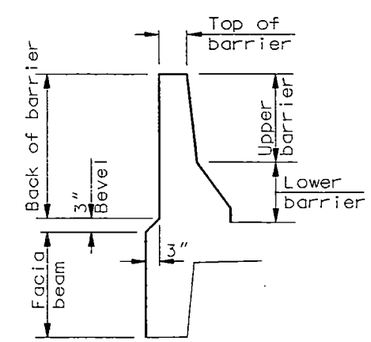


SPALL REPAIR

LITTLE OR NO SPALL | MODERATE SPALL | SEVERE SPALL



EXISTING END VIEW
Showing dimensions



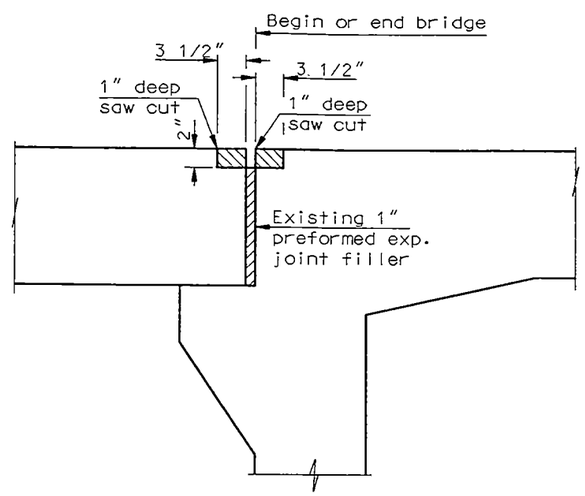
MODIFIED END VIEW
Showing area for special surface finish

CLEVELAND INTERCHANGE

SPECIAL SURFACE FINISH AND SPALL REPAIR

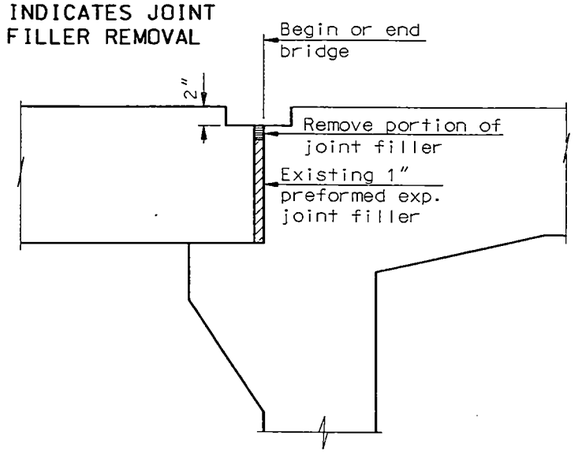
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	ND	IM-2-094(046)227	77

INDICATES CONCRETE REMOVAL

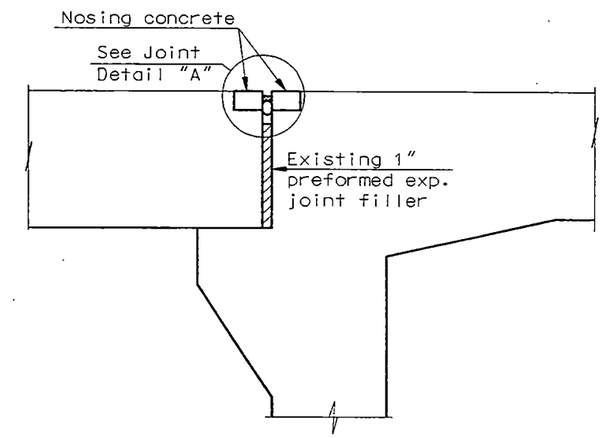


STAGE 1

INDICATES JOINT FILLER REMOVAL



STAGE 2



STAGE 3

APPROACH SLAB – BRIDGE DECK JOINT

STAGE 1:

1. Remove concrete between the curbs at the ends of deck and approach slabs to allow for nosing concrete.

STAGE 2:

2. Remove the amount of the existing preformed expansion joint filler necessary to accomodate the placement of nosing concrete and backer rod.

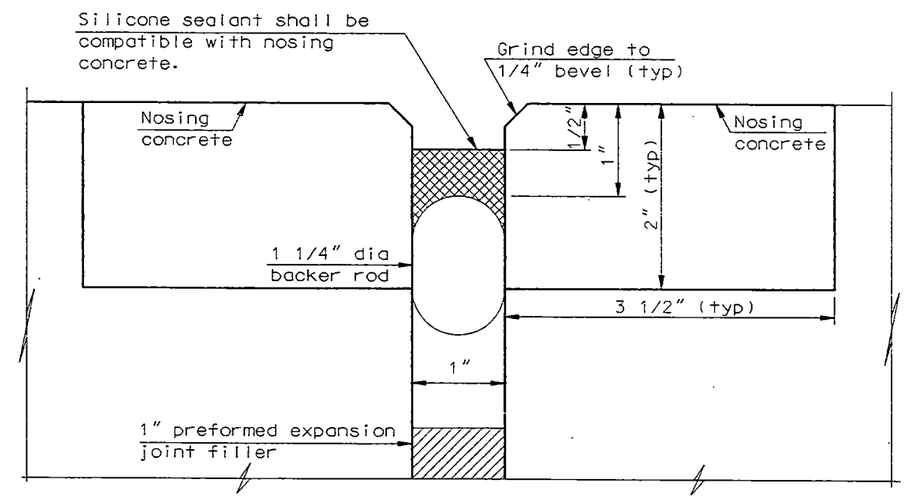
STAGE 3:

3. Place nosing concrete in the blockout areas, both in the deck and the approach slab.

4. After the nosing concrete has cured, grind the 1/4" edge bevel, clean and prepare the joint, apply any necessary bonding material, install the backer rod and the silicone sealant.

NOTES:

Saw cutting and removal of concrete shall be included in the pay item "Nosing concrete".



JOINT DETAIL A

QUANTITIES (TWO ENDS)		
Nosing Concrete	7.8	CF
Silicone Sealant	80	LF

CLEVELAND INTERCHANGE

JOINT DETAILS

FHWA REGION	STATE	PROJECT NO.	SHEET NO.
8	N.D.	SAP-9-0999(011)000	1

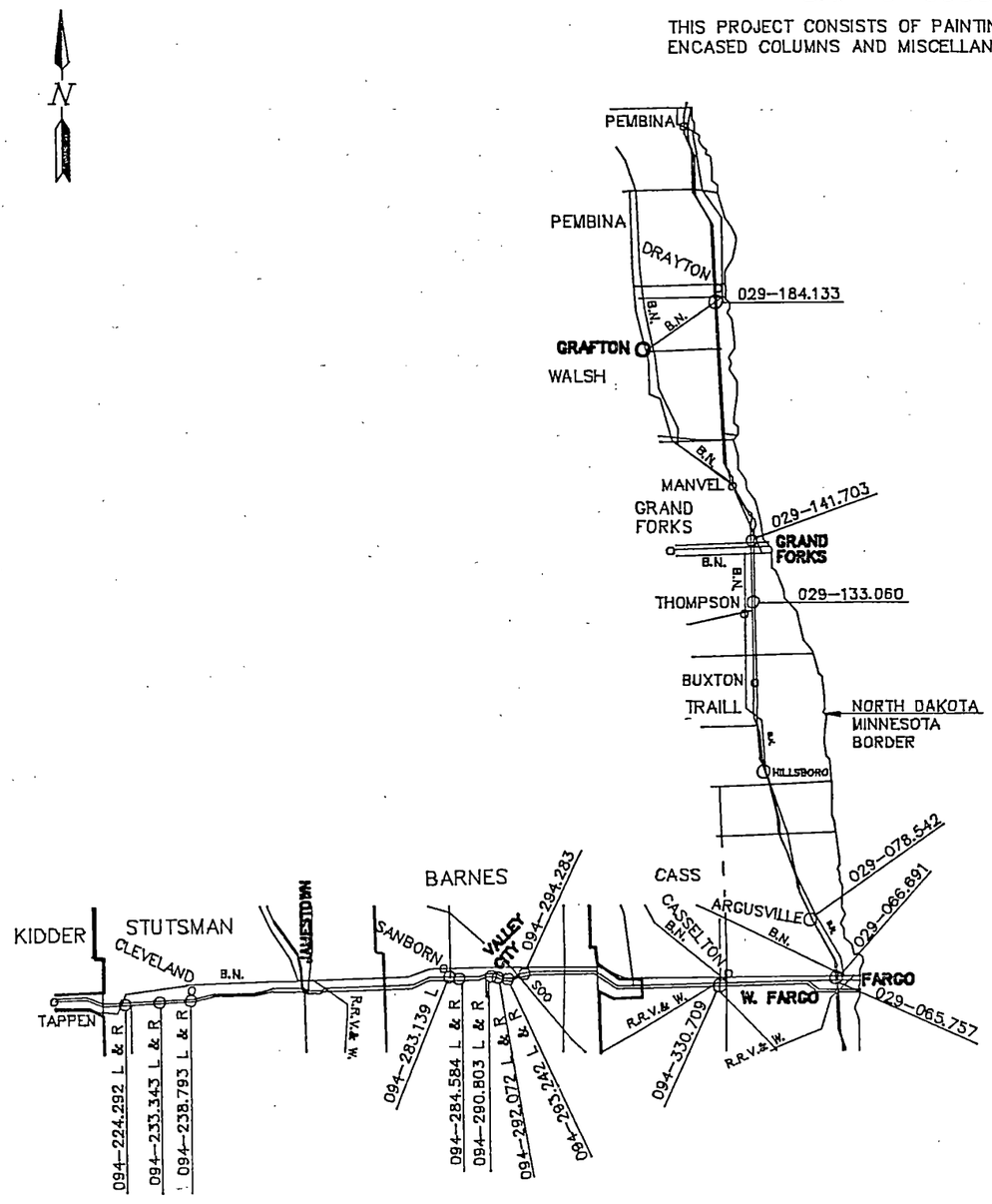
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

JOB # ___

STUTSMAN, BARNES, CASS GRAND FORKS AND WALSH COUNTY
SAP-9-0999 (011) 000

THIS PROJECT CONSISTS OF PAINTING FACIA GIRDERS, STEEL ENCASED COLUMNS AND MISCELLANEOUS SPOT COAT.

CONTRACT NO. 2



GOVERNING SPECIFICATIONS

STANDARD SPECIFICATIONS ADOPTED BY THE NORTH DAKOTA STATE HIGHWAY DEPARTMENT NOVEMBER 1986, STANDARD DRAWINGS CURRENTLY IN EFFECT, AND OTHER CONTRACT PROVISIONS SUBMITTED HEREIN.

INDEX

FOREST D. DUROW REGISTERED PROFESSIONAL ENGINEER 948 NORTH DAKOTA

1-23-91 Forest D. Durow
DATE NAME

APPROVED DATE 1-23-91

Ray Zink

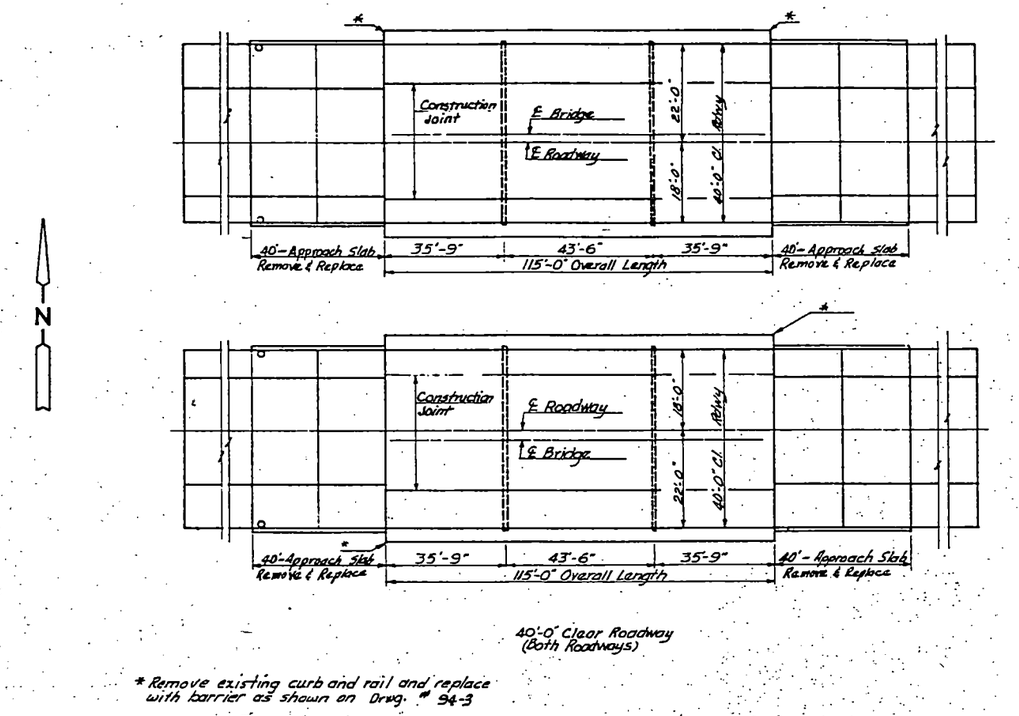
CHIEF ENGINEER
NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

RAY ZINK REGISTERED PROFESSIONAL P.E. 972 ENGINEER NORTH DAKOTA

90LCS125

TO PPD 1/23/91

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-6(53)228L	57



* Remove existing curb and rail and replace with barrier as shown on Drwg. # 94-3

** ESTIMATE OF QUANTITIES

SPEC. NO.	CODE NO.	BID ITEM		
202	0113	Removal of Concrete	20	C.Y.
602	0130	Class AAE-3 Concrete	18	C.Y.
602	7000	Special Surface Finish	1419	S.F.
612	0115	Reinforcing Steel - Grade 60	2327	lbs.
716	0100	Adjust Catch Basin	2	Ea.
750	0100	Linseed Oil Treatment	12.9	Gal.
900	9501	Approach Slab (Remove & Replace)	371	S.Y.
900	9700	Class 1 Overlady	489	S.Y.
900	9701	Class 2 Overlay	98	S.Y.
900	9702	Class 3 Overlay	24.5	S.Y.
900	9703	Class 2A Overlay	175	L.F.

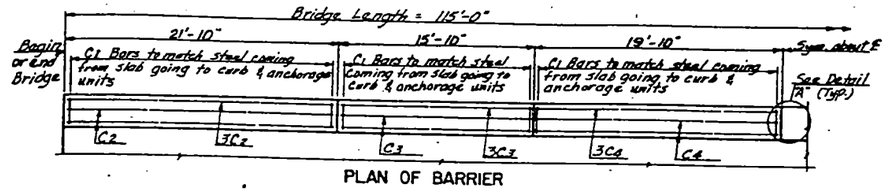
** North bridge only this contract

CLEVELAND INTERCHANGE

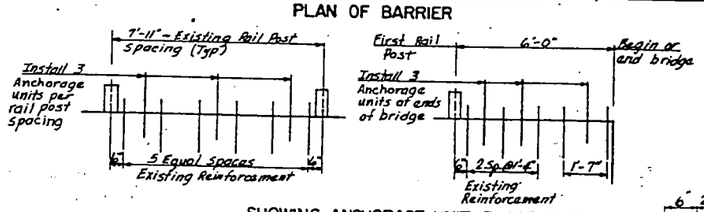
OVERLAY DETAILS

94-238.793 LT.-2

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-6(53)228L	58

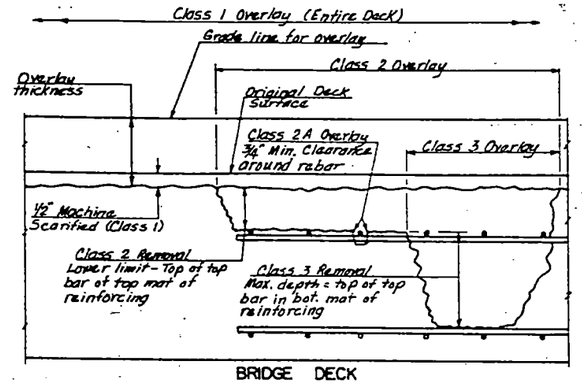


PLAN OF BARRIER



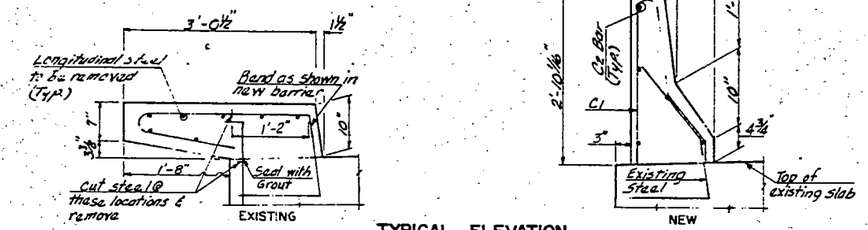
SHOWING ANCHORAGE UNIT PLACEMENT

BAR LIST (ONE BRIDGE)				
MARK	NO	SIZE	LENGTH	SHAPE
C1	266	5	5'-8"	Bent
C2	20	4	21'-6"	Str.
C3	20	4	15'-6"	"
C4	20	4	19'-6"	Str.

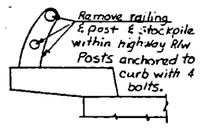


BRIDGE DECK
(Overlay classifications)

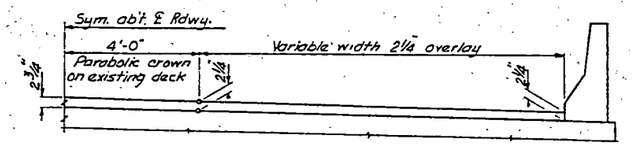
Class 4 Removal shall be below limits of Class 3 Removal to full depth



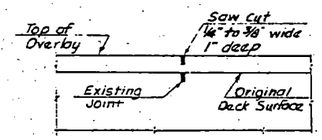
TYPICAL ELEVATION



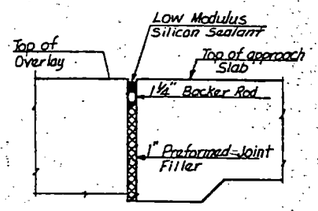
EXISTING CURB WITH POSTS AND RAILING



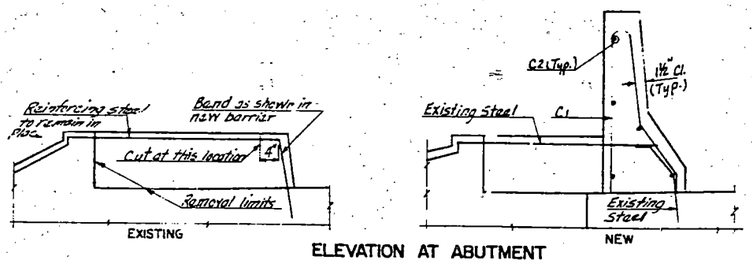
ELEVATION



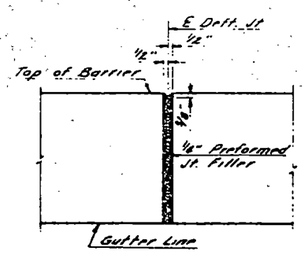
CONSTRUCTION OR RELIEF JOINTS
(TRANSVERSE & LONGITUDINAL)
Incidental to Class 1 Overlay



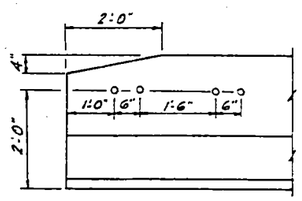
DETAIL AT END OF BRIDGE



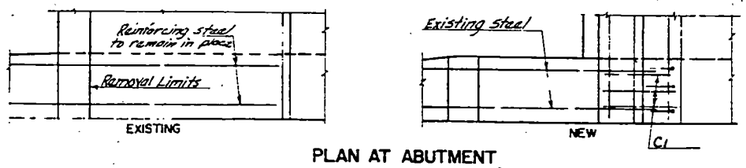
ELEVATION AT ABUTMENT



BARRIER DEFLECTION JOINT
DETAIL "A"

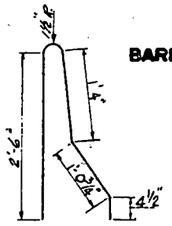


BARRIER END DETAILS



PLAN AT ABUTMENT

Remove existing curb & replace with barrier wall.
C1 bars to match steel coming from slab into curb.



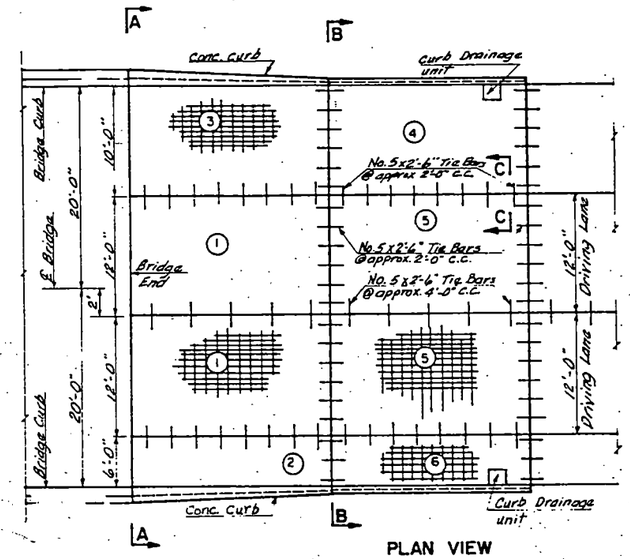
C1
Dimensions shown are out to out

QUANTITIES (ONE BRIDGE)		
Removal of Concrete	20.0	C.Y.
Class AAE-3 Concrete	19.0	C.Y.
Reinforcing Steel-Grade 60	2,327	Lbs.

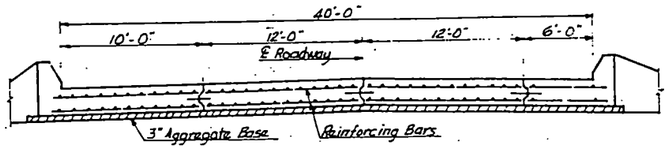
HALFWAY LAKE
&
CLEVELAND INTERS.

BARRIER WALL & OVERLAY DETAILS

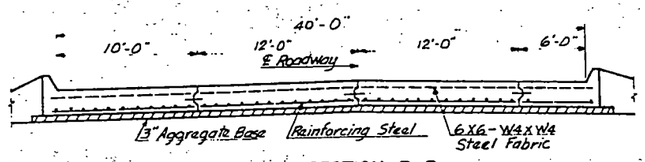
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-6(53)228L	59



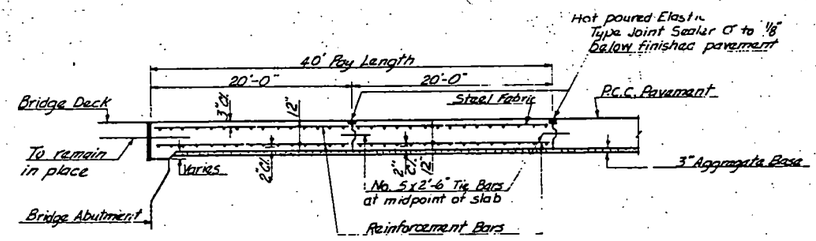
PLAN VIEW



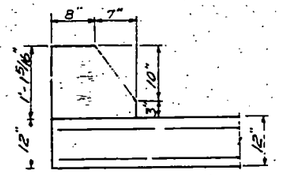
SECTION A–A



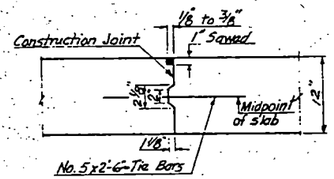
SECTION B–B



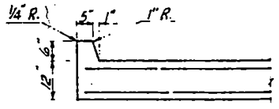
ELEVATION VIEW



ELEVATION AT A–A



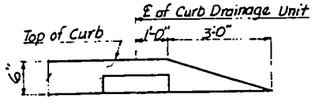
SECTION C–C



ELEVATION AT B–B

NOTE:
All labor and materials required in removal and replacement of approach slabs will be incidental to the pay item "Approach Slab (Remove & Replace)". (Approx. 64 C.Y. of concrete)

Top of approach slab to match top of deck overlay



DETAIL OF CURB HEIGHT TRANSITION AT END OF APPROACH SLABS

NOTE:
Curb sections on panels 2 & 3 to be transitioned from section shown at A-A to section shown at B-B.

* Top Reinforcing Steel

REINFORCING BARS									
LONGITUDINAL					TRANSVERSE				
PANEL	NO.	SIZE	LENGTH	LBS.	PANEL	NO.	SIZE	LENGTH	LBS.
1	23	#8	19'-6"	1198	1	18	#6	11'-6"	311
2	12	#8	19'-6"	625	2	18	#6	5'-6"	149
3	20	#8	19'-6"	1041	3	18	#6	9'-6"	257
4	20	#7	19'-6"	797	4	18	#5	9'-6"	178
5	23	#7	19'-6"	917	5	18	#5	11'-6"	216
6	12	#7	19'-6"	478	6	18	#5	5'-6"	103
1*	23	#5	19'-6"	492	1*	18	#4	11'-6"	138
2*	12	#5	19'-6"	257	2*	18	#4	5'-6"	66
3*	20	#5	19'-6"	428	3*	18	#4	9'-6"	114

84 No. 5 x 2'-6" Tie Bars = 219 lbs.

NOTE:
Bar list for information purposes only

Longitudinal Bars spaced @ about 6" c.c.
Transverse Bars spaced @ about 1'-1½" c.c.

QUANTITIES

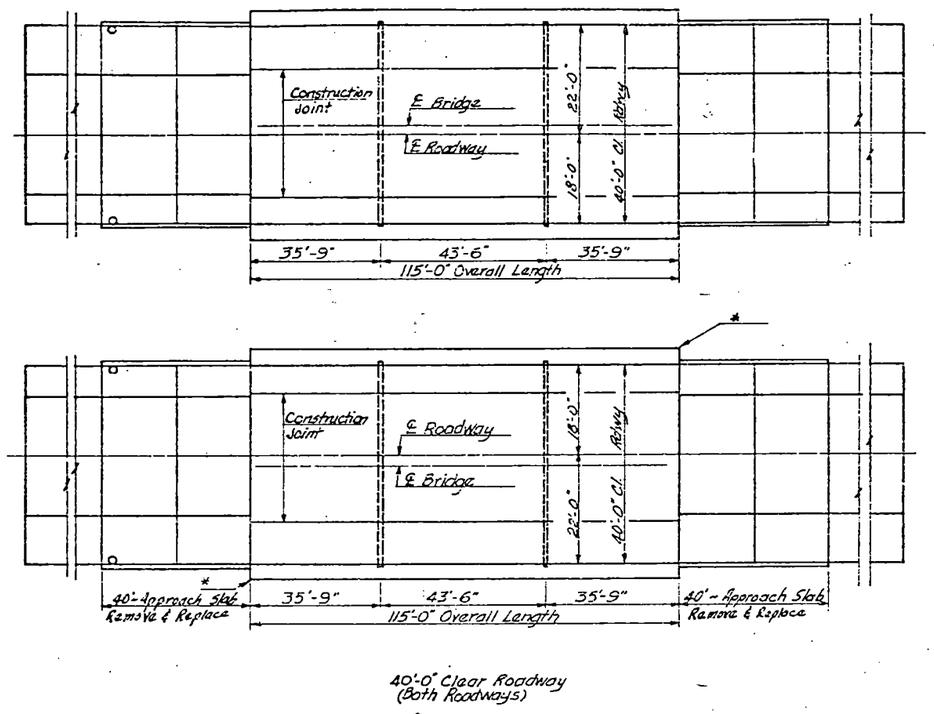
HALFWAY LAKE & CLEVELAND INTERS.

BRIDGE APPROACH PANELS

40' ROADWAY

94–4

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-6(49)228R	



* Remove existing curb and rail and replace with barrier as shown on sheet # 94-3

** ESTIMATE OF QUANTITIES

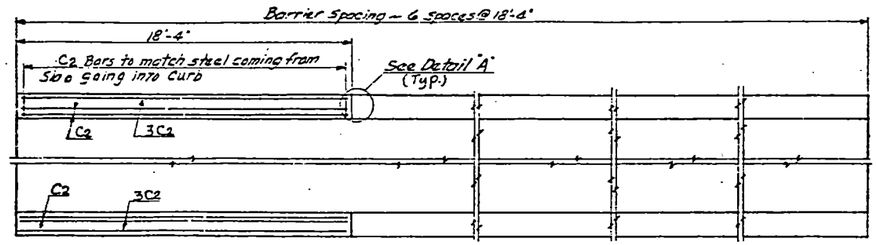
SPEC. NO.	CODE NO.	BID ITEM			
202	0113	Removal of Concrete	20.9	~~20~~	C.Y.
602	0130	Class AAE-3 Concrete	18.8	~~18~~	C.Y.
602	7000	Special Surface Finish	1483	~~1419~~	S.F.
612	0115	Reinforcing Steel - Grade 60		~~1761~~	lbs.
716	0100	Adjust Catch Basin		~~[illegible]~~ 2	Ea.
750	0100	Linseed Oil Treatment	13.2	~~12.9~~	Gal.
900	9501	Approach Slab (Remove & Replace)		~~[illegible]~~ 371	S.Y.
900	9700	Class 1 Overlady	511	489	S.Y.
900	9701	Class 2 Overlay	102	98	S.Y.
900	9702	Class 3 Overlay	26	24.5	S.Y.

** South bridge only this contract

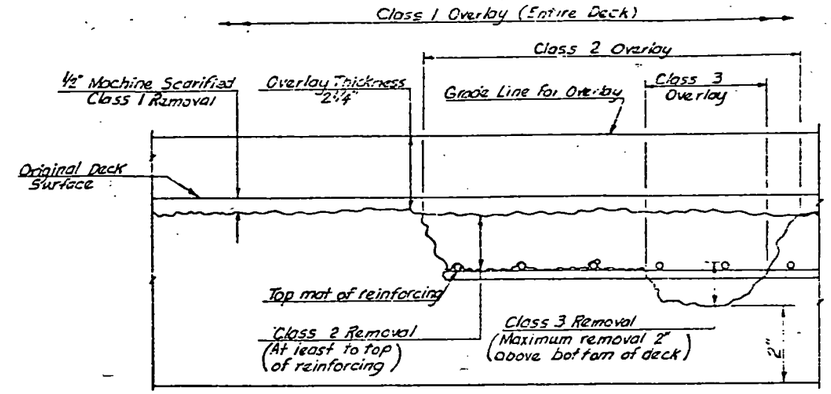
CLEVELAND INTERCHANGE

OVERLAY DETAILS

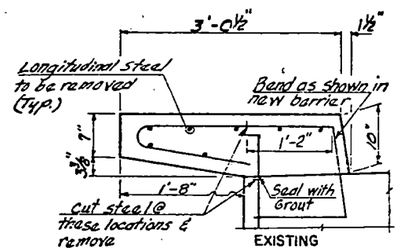
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-6(49)228 S	

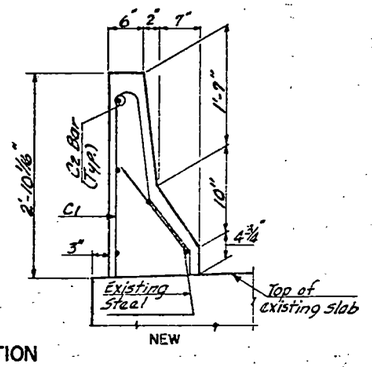


PLAN OF BARRIER

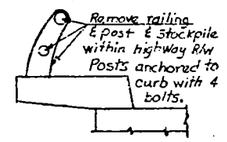


BRIDGE DECK

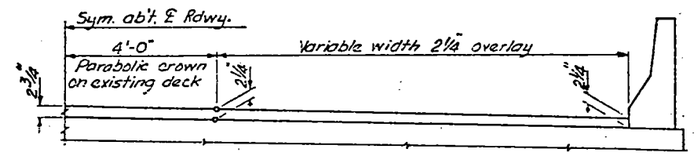




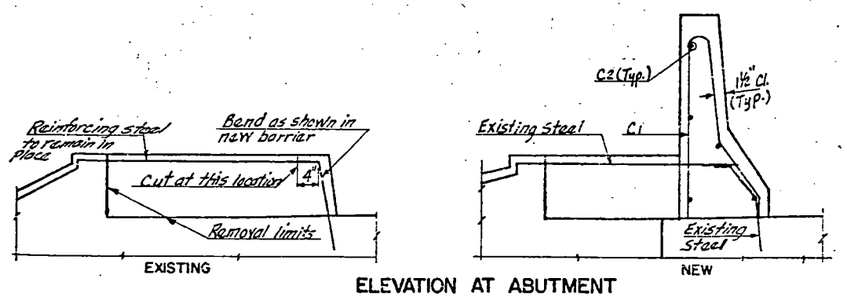
TYPICAL ELEVATION



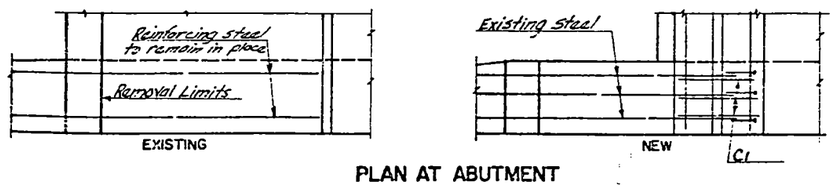
EXISTING CURB WITH POSTS AND RAILING



ELEVATION

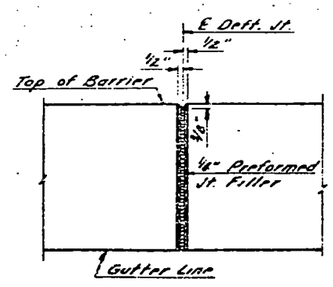


ELEVATION AT ABUTMENT

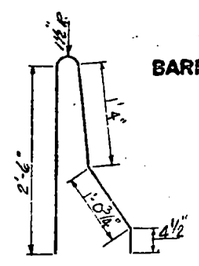


PLAN AT ABUTMENT

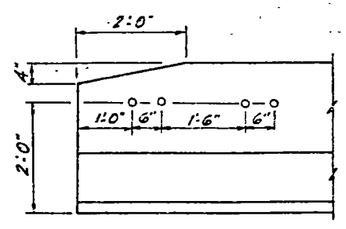
Remove existing curb & replace with barrier wall.
C1 bars to match steel coming from slab into curb.



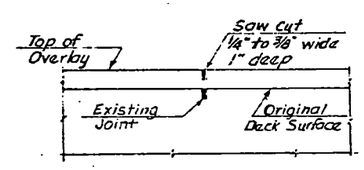
BARRIER DEFLECTION JOINT
DETAIL "A"



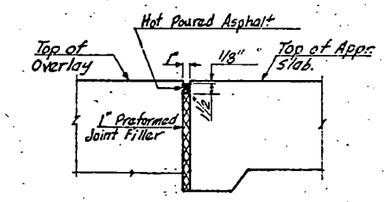
C1
Dimensions shown are out to out



BARRIER END DETAILS



CONSTRUCTION OR RELIEF JOINTS
(TRANSVERSE & LONGITUDINAL)
Incidental to Class 1 Overlay



DETAIL AT END OF BRIDGE

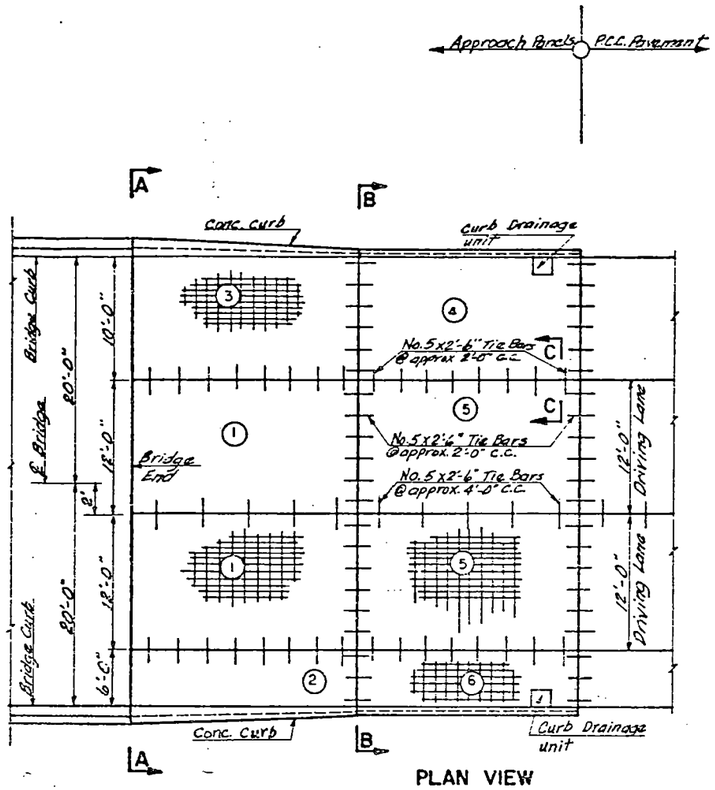
QUANTITIES (ONE BRIDGE)		
Removal of Concrete	22.3 ~~[illegible]~~ ~~[illegible]~~	C.Y.
Class AAE-3 Concrete	18.8 18.0	C.Y.
Reinforcing Steel-Grade 60	1761	Lbs.

BAR LIST (ONE BRIDGE)				
MARK	NO	SIZE	LENGTH	SHAPE
C1	176	5	5'-8"	Bent
C2	60	4	18'-0"	Str.
			18-10	

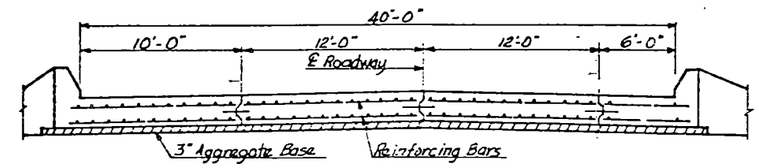
180

BARRIER WALL & OVERLAY DETAILS

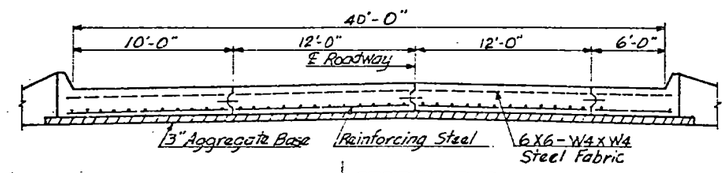
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.
8	N.D.	IR-094-6(49)228	



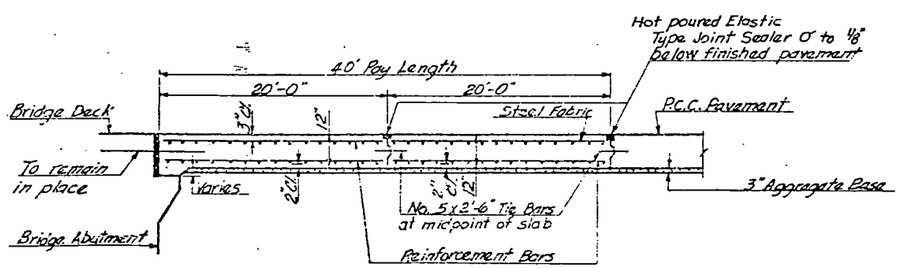
PLAN VIEW



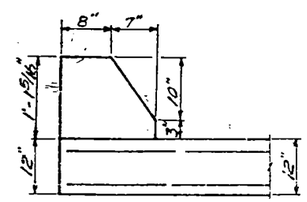
SECTION A-A



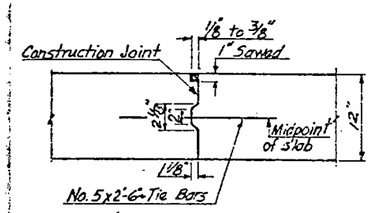
SECTION B-B



ELEVATION VIEW



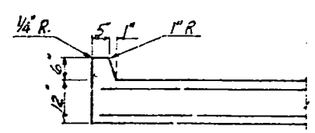
ELEVATION AT A-A



SECTION C-C

NOTE:
All labor and materials required in removal and replacement of approach slabs will be incidental to the pay item "Approach Slab (Remove & Replace)". (Approx 64 C.Y. of Concrete)

Top of approach slab to match top of deck overlay



ELEVATION AT B-B

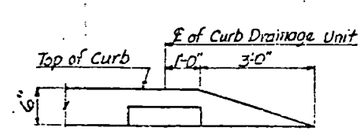
* Top Reinforcing Steel

REINFORCING BARS									
LONGITUDINAL					TRANSVERSE				
PANEL	NO.	SIZE	LENGTH	LBS.	PANEL	NO.	SIZE	LENGTH	LBS.
1	--	#8	19'-6"	1198	1	18	#6	11'-6"	311
		#6	19'-6"	425	2	12	#6	4'-6"	119
		#5	19'-6"	1041	3	18	#6	9'-6"	257
4	20	#7	19'-6"	797	4	18	#5	9'-6"	178
5	23	#7	19'-6"	917	5	18	#5	11'-6"	216
6	12	#7	19'-6"	478	6	18	#5	5'-6"	103
1*	23	#5	19'-6"	492	1*	18	#4	11'-6"	138
2*	12	#5	19'-6"	257	2*	18	#4	5'-6"	66
3*	20	#5	19'-6"	428	3*	18	#4	9'-6"	114

84 No. 5 x 2'-6" Tie Bars = 219 lbs.

NOTE:
Bar list for information purposes only

Longitudinal Bars spaced @ about 6" c.c.
Transverse Bars spaced about 1'-6" c.c.



DETAIL OF CURB HEIGHT TRANSITION AT END OF APPROACH SLABS

NOTE:
Curb sections on panels 2 & 3 to be transitioned from section shown at A-A to section shown at B-B.

QUANTITIES

BRIDGE APPROACH PANELS

40' ROADWAY

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N D	I-01-6(10)		1	40

NORTH DAKOTA STATE HIGHWAY DEPARTMENT

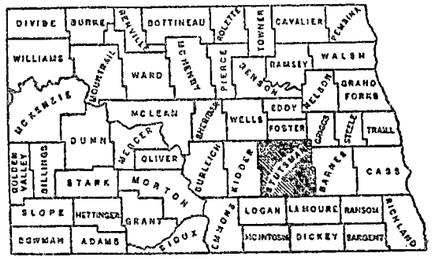
PLANS

FOR THE PROPOSED IMPROVEMENT OF A

STATE HIGHWAY

IN STUTSMAN COUNTY

FEDERAL AID PROJECT NO. I-01-6(10)



SKETCH-MAP OF NORTH DAKOTA
SHOWING COUNTIES

SCALES
- LAYOUT SHEET. 1 IN. 7040 FT.
- PLAN AND PROFILE DRAWINGS HOR. 1 IN. 100 FT. VERT. 1 IN. 10 FT.
- STRUCTURAL DRAWINGS - AS SHOWN
- CROSS SECTION SHEETS:- 1 IN. - 10 FT.

INDEX OF DRAWINGS

SHEET NO. 1	TITLE PAGE	
SHEET NO. 1	TYPICAL SECTIONS & SUMMARY OF QUANTITIES	
* SHEETS NO. 2	TO 10 INCL.	PLAN AND PROFILE DRAWINGS
SHEETS NO. 11	TO 27 INCL.	STRUCTURAL DRAWINGS
* SHEETS NO. 28	TO 40 INCL.	CROSS SECTIONS

* Sheets No. 8, 9, 12, 18, 19, 20, 21, 22, 23, 93, 94, 95, 103, 201, 203, 205, 237, 238, 247, 248, 258, 259 from Proj. No. I-01-6(13)

LENGTH OF PROJECT		
PROJECT	MILES-GROSS	MILES-NET
I-01-6(10)	5.471	0.044
TOTALS	5.471	0.044

GOVERNING SPECIFICATIONS:
Standard Specifications adopted by the North Dakota State Highway department Jan. 1956 and approved as standard by the Bureau of Public Roads May 7, 1956 Required Special Provisions dated Oct. 9, 1957 and approved by the Bureau of Public Roads November 29, 1957 and others submitted herewith.

KEY TO CONVENTIONAL SIGNS

STATE & NATIONAL LINES
COUNTY LINE
TOWNSHIP & RANGE LINES
GRADE LINE
CENTERLINE OF CONSTRUCTION
OLD RIGHT OF WAY LINE
NEW RIGHT OF WAY LINE
ABANDONED RIGHT OF WAY LINE
PROPERTY LINE
STONE WALL
OTHER FENCES
POLE LINES
POWER LINES
BRIDGE
GROUND
GRADE
ELEVATION
TRAVELED WAY
RAILROADS
HEDGES AND TREES
TRAILS
CITY OR VILLAGE CORPORATE LIMITS
SECTION CORNER
QUARTER SECTION CORNER
BUILDINGS
OLD CULVERTS
NEW CULVERTS
DRAINAGE
BENCH MARKS
WATERS EDGE
MARSH
WIRE ROPE GUARD RAIL
SNOW FENCE
RIPRAP
GUARD POSTS
COBBLE GUTTERS
CONCRETE GUTTERS

DESIGN DATA

TRAFFIC	AVERAGE DAILY	EST. 30TH MAX. HR.
PRESENT TRAFFIC (1958)	1450 PASS. 450 TRUCKS	1900 TOTAL 250
TRAFFIC FORECAST (1975)	5440 PASS. 960 TRUCKS	6400 TOTAL 900

DESIGN SPEED 70 MPH
TRAFFIC CLASSIFICATION 'M'
MINIMUM SIGHT DISTANCE (NON PASSING) 600 FT.

BRIDGES	Sta.	Clear Rdwy Width	Design Loading
	1307+34.8	40'	H20 S16
	1517+43.13	24'	H15 S12
	1595+11.77	40'	H20 S16

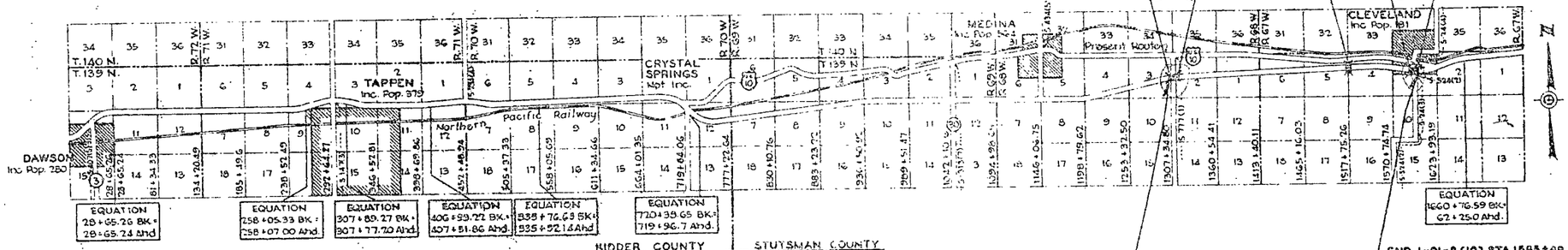
LIST OF STRUCTURAL DRAWINGS

H-6403	H-3114-1
H-6324	H-3114-2
H-6337	H-3113
H-6217	H-0106
H-6121	H-0104
H-6119	CP2
IW-088	H-6405
IW-86	01-6(10)-1
IW-050	

2-115' Bridges 0.022 — 1306+77.3 — 1307+92.3

1517+43.13 BRIDGE 0.0 Length

2-115' Bridges 0.022 — 1594+54.27 — 1595+69.27

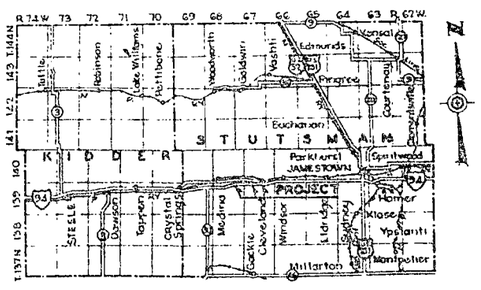


BEG. I-01-6(10) STA. 1306+77.3 = STA. 13064 77.3 I-01-6 (13)
28.2' N. & 56.2' W. of NE Cor. of SE ¼ Sec. 3, T. 139 N., R. 68 W.

END I-01-6(10) STA. 1595+69.27 = STA. 1595+69.27 I-01-6 (13)
575.1' N. & 2476.4' E. of SW Cor. of NW ¼ Sec. 3, T. 139 N., R. 67 W.

LAYOUT MAP

5280 0 5280
SCALE IN FEET



SKETCH MAP OF KIDDER & STUTSMAN COUNTIES

① See Special Provisions

QUANTITIES

	15B		60A	67A	63A	65G	65S	65B	65L			
	EXCAVATION CLASS 2		CONCRETE CLASS A 1½	REINFORCING STEEL	STRUCTURAL STEEL	STEEL ENCASED PILING	STEEL ENCASED TEST PILES 50' LENGTH	TREATED TIMBER PILING	TREATED TIMBER TEST PILES 50' LENGTH	ORNAMENTAL METAL RAILING	PRE-STRESSED GIRDERS 62' LENGTH	PRE-STRESSED GIRDERS 43'-11" LGTH.
	CU. YD.		CU. YD.	LB.	LB.	L.F.	Each	L.F.	Each	L.F.	Each	Each
STA. 1307+34.80	449		536.0	151690		2640	2			428		
STA. 1517+43.13	155		512.9	55541	0000			2184	3	408	10	8
STA. 1595+11.77	49		534.4	151520		2640	2			428		
GRAND TOTAL	253	①	1583.3	316791	0000	5280	4 ①	2184	3	1264	10 ①	8 ①

APPROVED DATE 2-18-58
R. H. Bradley
CHIEF ENGINEER
NORTH DAKOTA STATE HIGHWAY DEPARTMENT

R. H. BRADLEY REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

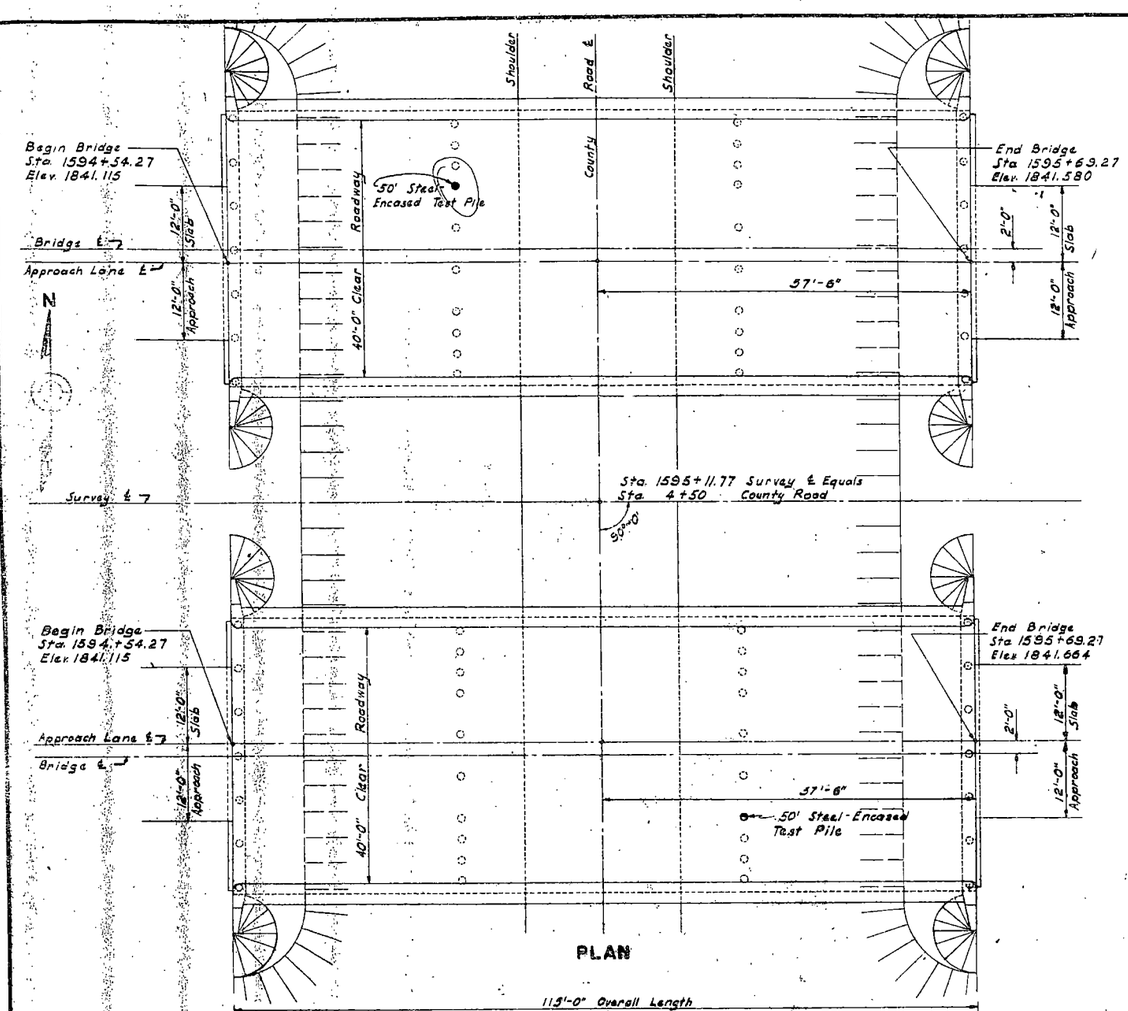
APPROVED

DIVISION ENGINEER DATE

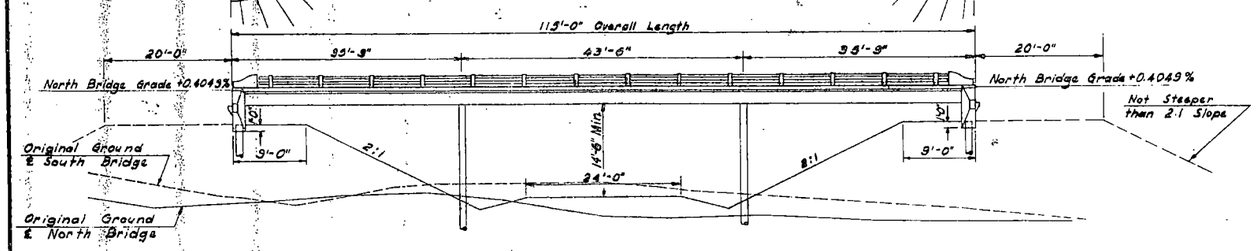
I-01-6(10)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.	I-01-6(10)			

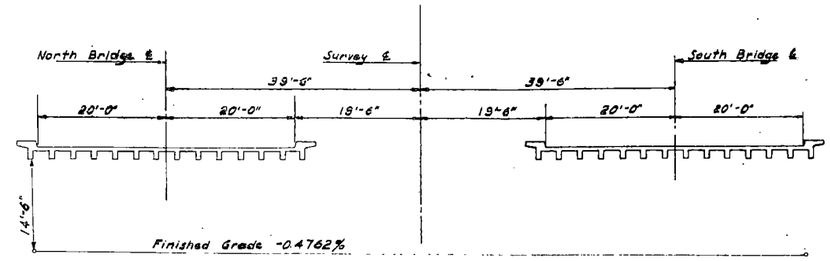
CODE: X221



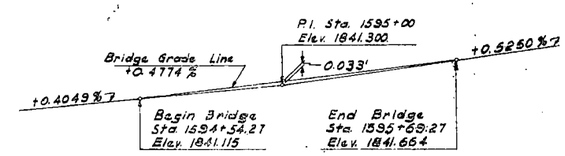
PLAN



ELEVATION



℄ PROFILE - COUNTY ROAD



SOUTH BRIDGE GRADE DATA

Elevations are to top of finished Roadway ℄

NOTES:

Reinforcing steel bar dimensions for bent bars are given center to center unless otherwise noted.

The surface of railing and posts and the outside and roadway vertical faces of curbs shall be given the "Rubbed Surface Finish." All other concrete surfaces shall be given the "Ordinary Surface Finish."

All exposed edges of concrete shall be beveled with ¾" triangular molding.

The entire floor slab shall be poured in one continuous run.

The Structural and Grading Contractors will be responsible for maintaining existing traffic during the structural and grading operations at structural locations. Any detour that may be provided shall allow two-way traffic and have sufficient surfacing to provide for all-weather use. The cost of maintaining this traffic shall be included in the unit price bid for the several pay items.

STEEL-ENCASED PILING will be required to develop a bearing capacity of not less than the design loads shown on this sheet.

The Structural Contractor may substitute precast concrete piles for the steel-encased piling and the steel-encased test piles called for on the plans if the design for such substituted concrete piles is in accordance with the approved highway drawing CP.2. The precast concrete piles, in place in the substructure units, will be paid for at the contract unit price bid for steel-encased piling and steel-encased test piles.

The embankment at both ends of the bridges shall be placed and compacted by the Grading Contractor in two stages, timed to agree with the Structural Contractor's work. The first stage, consisting of embankment up to the berm elevation, shall be completed before any abutment piles are driven (using "Extra Compaction" according to Section 17 of the Standard Specifications. The final stage shall be completed after the superstructure is in place.

Due to the anticipated difficulty in driving the abutment piling through the embankment material, the Structural Contractor will be required, if necessary, to drill pilot holes sufficiently deep to permit driving of piling to the required penetration and bearing. All piling shall be driven a minimum of fifteen (15) feet into the original ground, below finished section.

* H20-S16 and Alternate Loading designated in P.P.M. 20-4, Section 4c.

See Sheet No. 01-6(10)-1 for Bench Mark Notes.

ESTIMATE OF QUANTITIES

SPEC. NO.	BID ITEM		TOTAL BRIDGE	
12	REMOVING EXISTING STRUCTURE AT STA.			
15	EXCAVATION CLASS 1			CU. YD.
	" CLASS 2		49	CU. YD.
	" CLASS 3			CU. YD.
△ 17	EMBANKMENT	GRADING ITEM		
60A	CONCRETE CLASS A-1			CU. YD.
	" CLASS A-1½		534.4	CU. YD.
62A	REINFORCING STEEL 131,537	~~131,960~~ 131,520		LB.
63A	STRUCTURAL STEEL			LB.
64A	UNTREATED TIMBER			M.F.B.M.
64B	TREATED TIMBER			M.F.B.M.
65A	UNTREATED TIMBER PILING	@ FT.		LIN. FT.
65B	TREATED TIMBER PILING	@ FT.		LIN. FT.
□ 65D	STEEL-ENCASED PILING	66 AT 40 FT.	2640	LIN. FT.
65E	UNTREATED TIMBER TEST PILES			EACH
65F	TREATED TIMBER TEST PILES			EACH
□ 999	STEEL-ENCASED TEST PILES	AT 50 FT.	2	EACH
81	TEMPORARY CROSSING AND DETOUR			
	ORNAMENTAL METAL RAILING		428	LIN. FT.

△ SEE NOTES

□ SEE SPECIAL PROVISIONS

STRUCTURAL DRAWINGS

GENERAL DRAWING	This Sheet
SUBSTRUCTURE	CP2 & H-3113, 01-6(10)-1
SUPERSTRUCTURE	H-3113 & H-0104

DESIGN LOADING	SCALE
*	1/32 INCH = 1 FEET

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

INTERCHANGE BRIDGE LAYOUT

PROJECT I-01-6(10) STA. 1595+11.77

STUTSMAN COUNTY

APPROVED

1/23/50 DATE — Joseph P. Kirby BRIDGE ENGINEER

BENCH MARKS

NO.	DESCRIPTION	LOCATION	ELEV.
70	Top 1" Iron Pin (12' Below Gr.)	Sta. 1545+03 ~ 101' Rt	1793.31
71	" " " "	Sta. 1570+38 ~ 177' Lt	1854.04
72	Spike In Fence Post ~ N. side ~ 244.8' E.	Sta. 1601+58 ~ 113' Lt	1852.14

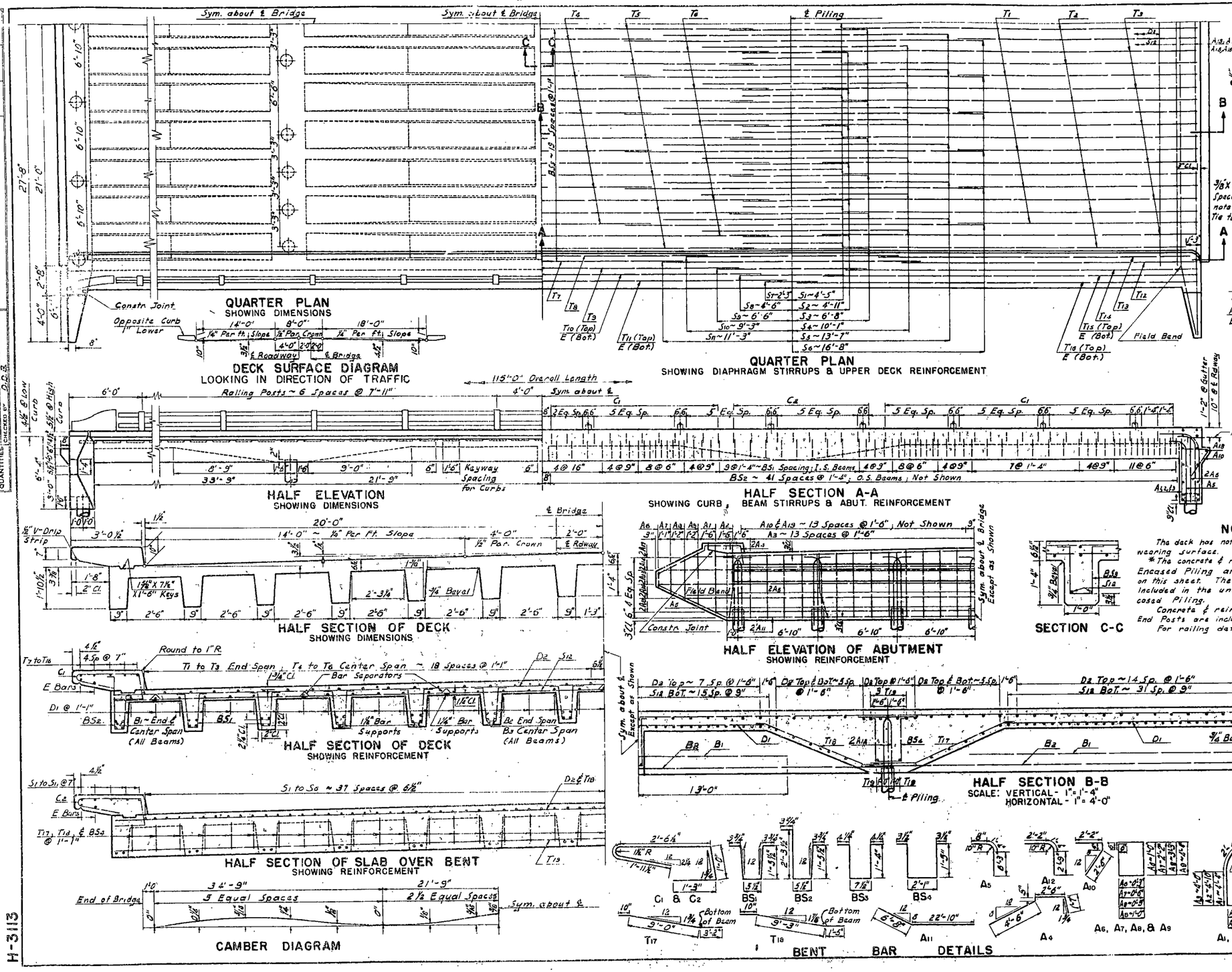
PILE LOADING

LOCATION	DEAD LOAD	LIVE LOAD	EARTH	WIND 50 LB.	WIND 15 LB.	WIND 100 LB. L.L.	LONG. FORCE	ICE		DESIGN LOAD
Pier	18.3	12.0								30.3 T.
Abutment	17.1	9.8								26.9 T.

IW-090

IW-090

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N.D.				



BAR LIST

MARK	NO	SIZE	LENGTH	SHAPE
A1	4	5	14'-9"	Bent
A2	4	5	16'-0"	"
A3	34	5	14'-3"	"
A4	8	5	9'-0"	"
A5	56	5	8'-3"	"
A6	4	4	3'-6"	"
A7	4	4	6'-4"	"
A8	4	4	9'-0"	"
A9	4	4	11'-5"	"
A10	56	5	5'-0"	"
A11	8	6	29'-6"	"
A12	80	6	6'-3"	"
A13	8	4	28'-3"	Str.
A14	8	4	28'-0"	"
A15	8	6	24'-0"	"
A16	8	4	25'-0"	"
A17	8	6	23'-9"	"
A18	4	6	21'-6"	"
A19	56	6	5'-0"	Bent
B1	84	11	26'-0"	Str.
B2	56	11	37'-6"	"
B3	28	11	44'-0"	"
BS1	1820	4	4'-0"	Bent
BS2	168	4	4'-10"	"
BS3	40	4	4'-0"	"
BS4	78	4	5'-6"	"
C1	128	4	6'-3"	Bent
C2	40	5	6'-3"	"
D1	117	4	25'-0"	Str.
D2	97	4	42'-6"	"
E	12	4	39'-3"	"
S1	26	9	8'-9"	Str.
S2	24	9	9'-3"	"
S3	28	9	12'-0"	"
S4	24	9	17'-9"	"
S5	24	9	24'-9"	"
S6	24	9	3'-0"	"
S7	4	8	4'-9"	"
S8	4	8	9'-0"	"
S9	4	8	13'-0"	"
S10	4	8	18'-5"	"
S11	4	8	22'-6"	"
S12	97	5	42'-6"	"
T1	24	5	21'-0"	Str.
T2	28	5	31'-0"	"
T3	24	5	32'-9"	"
T4	12	5	19'-0"	"
T5	14	5	37'-0"	"
T6	12	5	39'-6"	"
T7	2	4	24'-5"	"
T8	2	4	28'-6"	"
T9	2	4	34'-0"	"
T10	2	4	39'-0"	"
T11	2	4	42'-6"	"
T12	4	4	26'-0"	"
T13	4	4	27'-0"	"
T14	4	4	30'-9"	"
T15	4	4	32'-9"	"
T16	4	4	35'-0"	"
T17	18	4	13'-0"	Bent
T18	18	4	11'-6"	"
T19	10	9	42'-6"	Str.
*AS1	14	3	40'-0"	Bent
*AP1	98	6	6'-0"	Str.
*BS5	20	3	170'-6"	Bent
*BP1	140	6	23'-6"	Str.

DESIGN LOADING: H20-S16(55) and Alternate Loading designated in P.P.M. 20-6, Section 4c.

NOTES:

The deck has not been designed for a future wearing surface. f'c = 1200 psi.

*The concrete & reinforcing steel in the Steel-Encased Piling are not included in the quantities on this sheet. The cost of these items shall be included in the unit price bid for Steel-Encased Piling.

Concrete & reinforcing steel quantities for End Posts are included on this sheet.

For railing details see sheet no. H-0104

QUANTITIES

Ornamental Metal Railing	214 ± L.F.
Concrete Class A-1	
Concrete Class A-1½	267.2 C.Y.
Reinforcing Steel	~~65,960 Lb.~~ 65,980
Steel Encased Piling (See Layout)	

KC 7/21/58

THREE SPAN CONTINUOUS CONCRETE T-BEAM

40 FT. CLEAR ROADWAY

H-3113

H-3113