

Webster IA 7 #28

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		1	15
PROJECT NUMBER				
FN-7-5(12)--21-94				
R.O.W. PROJECT NUMBER				
PRELIMINARY ENGINEER NUMBER				

CONVENTIONAL SIGNS

State Line
Co. Line
Twp. Line
Sec. Line
Corp. Line
Urban Bdry.
R.O.W. Lines
Survey Line

Sec. Corner
Profile Grade
Railroad
Field Tile
Underground Lines
Culverts
Utility Poles
Fences
Trees Or Brush
Stream
Dike

County Road No.
Primary Road No.
U. S. Road No.
Interstate Road No.

IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
WEBSTER COUNTY
BRIDGE REPAIR

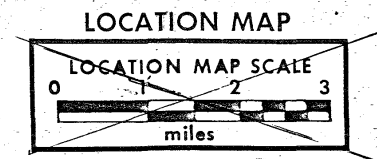
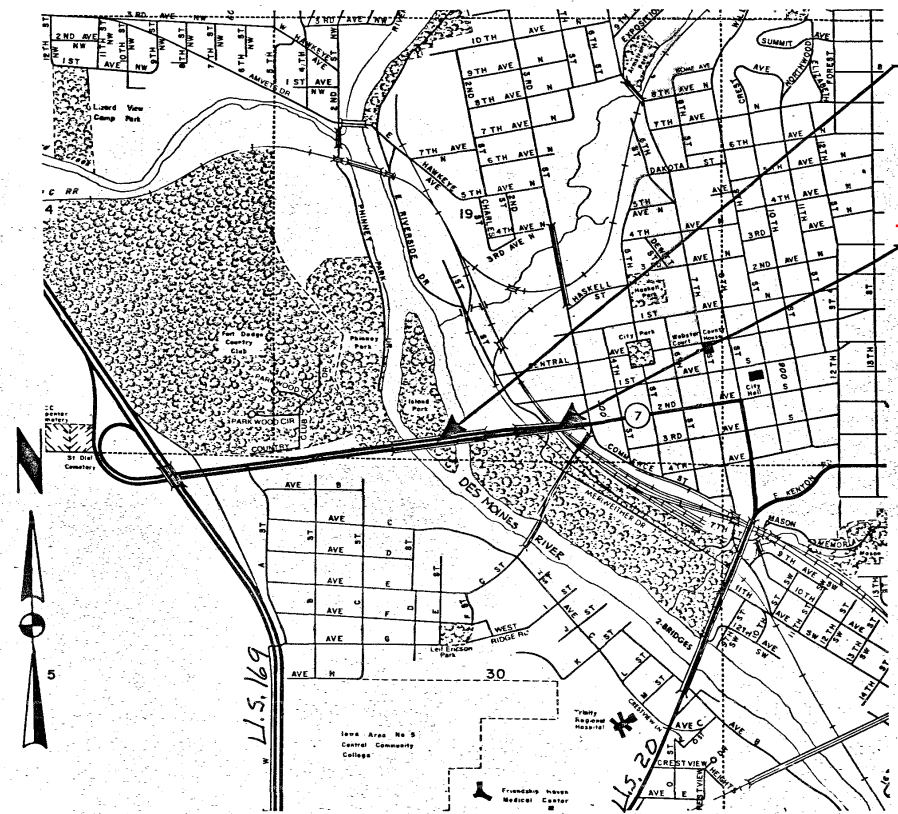
ON IOWA 7 IN FORT DODGE OVER THE DES MOINES RIVER AND THE C.&N.W. RR

THE STANDARD SPECIFICATIONS, SERIES OF 1977
OF THE IOWA DEPARTMENT OF TRANSPORTATION
SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT
(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET
3-11	DESIGN NO. 382
12-15	DESIGN NO. 482

BRIDGE REPAIR
FN-7-5(12)--21-94

WEBSTER COUNTY



NOT TO SCALE
Part of the City of Ft. Dodge
T-89N R-28W
Section 19
Wahonska Twp.

CONSTRUCTION PLANS SHOWING PROJECT AS BUILT

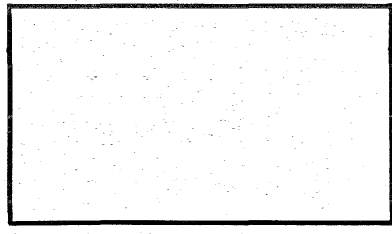
Plan Preparation Supervised By: Ron DeBor
Resident Construction Engineer
Date 12-11-84 Iowa Reg. No. 5795

REVIEWED AND FORWARDED TO AMES
Roy Kuhn District Construction Engineer
Date _____
Three Full-Size Prints To Be Made and Returned To
Robert Humphrey District Engineer

AFTER MICROFILMING RETURN ORIGINAL
TO DISTRICT NO. 2

YEAR	WORK	CONTRACTOR	PROJ. INSPECTOR
1983	Curb Repair	Crow Const. Co. Inc.	T. Lane
1983	Rec. Repair	Pressure Const. Co.	T. Lane
1983	Lighting	Dickson Const. Co.	T. Lane

DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION STANDARDS REQUIRED (Available at Bridge Design Services)		
STANDARD	ISSUED	REVISED



DEPARTMENT OF TRANSPORTATION
IOWA
Highway Division
AUTHORIZED FOR LETTING
3-4-83
DEPUTY CHIEF ENGINEER DATE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
UNDER MY SUPERVISION AND THAT ENGINEERING
DECISIONS WITH REGARD TO THE DESIGN WERE
MADE BY ME OR BY OTHER DULY REGISTERED
PROFESSIONAL ENGINEERS UNDER THE LAWS OF
THE STATE OF IOWA.
2792 3-4-83
IOWA REGISTRATION NUMBER DATE

U.S. DEPT. TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ENGINEER DATE

03-03-83 William C Eyer REG. NO. 2926
DATE WILLIAM C. EYER

03-03-83 William C. Ever REG. NO. 2926
DATE WILLIAM C. EVER

IN LETTING OF APRIL 12, 1983

DESIGN NO. 382 OVER DES MOINES RIVER STA. 213+16 TO STA. 224+25
WEBSTER COUNTY MAINT. NO. 9475.25007 IOWA No. 7
SECTION 19 T-89N R-28W WAHKONSA TWP.

DESIGN FOR REPAIR TO
MULTISPAN CONTINUOUS PLATE
GIRDER BRIDGE

ESTIMATE OF QUANTITIES

NO.	ITEM	UNIT	TOTAL
1	Structural Concrete	Cu. Yds.	43.1
2	Reinforcing Steel	Lbs.	2582
3	Removals, As per Plan	L.S.	Lump Sum \$200.00
4	Removal & Re-erection of Existing Rail, as per plan	L.S.	Lump Sum \$12,000.00
5	Conduit, Rigid Steel, 1" dia.	Lin. Ft.	120
6	Conduit, Rigid Steel, 2" dia.	Lin. Ft.	868
7	Junction Box, as per plan	No.	4
8	Cable 1/C, No. 8 AWG 600 V.	Lin. Ft.	2040
9	Ground Wire, Bare Copper, 6 AWG	Lin. Ft.	1020
10	Connector, RM-12, as per plan	No.	10
11	Lighting, as per plan	L.S.	Lump Sum \$650.00
12	Shotcrete Repair	Sq. Ft.	643
13	Concrete Sealer, as per plan	Sq. Ft.	9500
14	Temporary Barrier Rail - Concrete	Lin. Ft.	81.75
15	Floodlight	L.S.	Lump Sum \$1700.00
16	Traffic Control	L.S.	Lump Sum \$7000.00
17	Pavement Marking	Sta.	20.6

ESTIMATE REFERENCE INFORMATION

Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.

ITEM NO.	DESCRIPTION
1	All Structural Concrete ^{was M4} shall be Class-D.
5 & 6	Includes cost of expansion fittings.
10	Included are 4 Type Y-1 connectors for phase line; 4 Type Y-2 connectors for neutral line and 2 Type L-2 connectors for phase line (1) and neutral line (1) in existing junction box. Four 10 ampere 600 volt fuses are required for Type Y-1 connectors and are considered incidental to this item.
12	Includes 14 sq. ft. of repair for bridge seat surfaces.
17	Includes 10.3 Sta. for removal of pavement marking and 10.3 Sta. for placing white marking (temporary and permanent)

EXTRA WORK ORDERS

[illegible]

ESTIMATE REFERENCE INFORMATION

Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.

ITEM NO.	DESCRIPTION
18	All structural concrete shall be Class B. ^{class H9}
5-6 22 & 23	Includes the cost of expansion fitting.
10 27	Included are 3 Type Y-1 connectors for phase line, 3 Type Y-2 connectors for neutral line and 2 Type L-2 connectors (for phase line (1) and neutral line (1)) in existing junction box. Three 10 ampere 600 volt fuses are required for Type Y-1 connectors and are considered incidental to this item.

ESTIMATE SHEET

FILE NO 26710

WEBSTER COUNTY

PROJECT NUMBER.	
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FN-7-5(12)--21-94

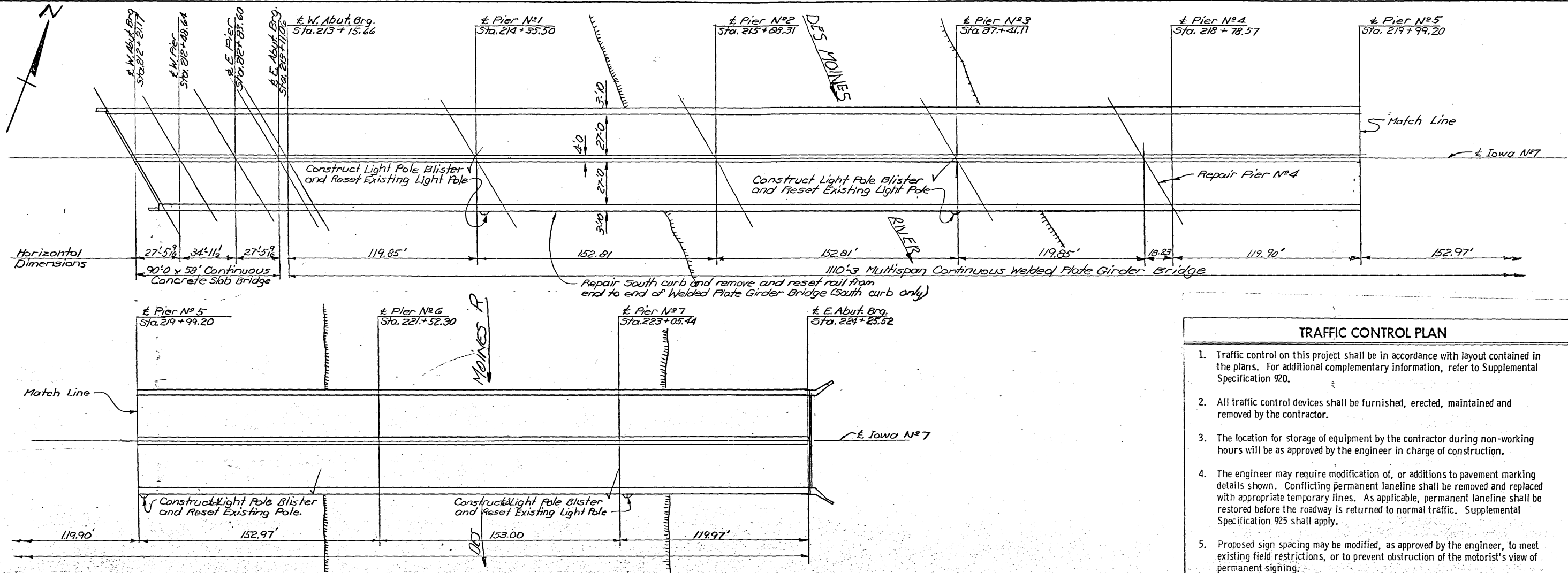
STATE
IOWA

	FED. ROAD DIST. NO.
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FISCAL YEAR	
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SHEET NO.	2
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TOTAL
SHEETS
15



SITUATION PLAN

TRAFFIC CONTROL PLAN

1. Traffic control on this project shall be in accordance with layout contained in the plans. For additional complementary information, refer to Supplemental Specification 920.
2. All traffic control devices shall be furnished, erected, maintained and removed by the contractor.
3. The location for storage of equipment by the contractor during non-working hours will be as approved by the engineer in charge of construction.
4. The engineer may require modification of, or additions to pavement marking details shown. Conflicting permanent lane line shall be removed and replaced with appropriate temporary lines. As applicable, permanent lane line shall be restored before the roadway is returned to normal traffic. Supplemental Specification 925 shall apply.
5. Proposed sign spacing may be modified, as approved by the engineer, to meet existing field restrictions, or to prevent obstruction of the motorist's view of permanent signing.
6. Proposed changes in the Traffic Control Plan (includes layout sheet) shall be reviewed with the Office of Construction before changes are made.
7. The bid item "Traffic Control" shall include the cost for all traffic control measures required of the contractor except for those which are covered by a separate bid item. Pavement marking, floodlighting, and temporary barrier rail are separate bid items.
8. All traffic control on this project (Designs 382 and 482 Webster County) shall be erected in accordance with the Traffic Control Layout. All traffic control items (Barrier Rail, Floodlighting, pavement markings, signs, barricades, etc.) shall be in place before work is started on either design and shall remain in place until work is complete on both designs. The bid items, "Temporary Barrier Rail - Concrete", "Floodlighting", "Pavement Marking", and "Traffic Control" are included only in Design 382 but are to be full compensation for all traffic control required for both Design 382 and 482.

TOTAL ESTIMATED QUANTITIES			
Item No.	Item	Units	Quantity
1	Structural Concrete	Cu. Yds.	43.1
2	Reinforcing Steel	Lbs.	2582
3	Removals, As Per Plan	L.S.	Lump Sum
4	Removal & Reerection of Existing Rail, As Per Plan	L.S.	Lump Sum
5	Conduit, Rigid Steel, 1" dia.	Lin. Ft.	120
6	Conduit, Rigid Steel, 2" dia.	Lin. Ft.	868
7	Junction Box, As Per Plan	No.	4
8	Cable J/C, No. 8 AWG 600 V.	Lin. Ft.	2040
9	Ground Wire, Bare Copper, 6 AWG	Lin. Ft.	1020
10	Connector, RM-12, As Per Plan	No.	10
11	Lighting, As Per Plan	L.S.	Lump Sum
12	Shotcrete Repair	Sq. Ft.	643
13	Concrete Sealer, As Per Plan	Sq. Ft.	9500
14	Temporary Barrier Rail - Concrete	Lin. Ft.	81.75
15	Floodlighting	L.S.	Lump Sum
16	Traffic Control	L.S.	Lump Sum
17	Pavement Marking	Sta.	152.6

- ESTIMATE REFERENCE INFORMATION
- Item No. 12 Includes 14 sq. ft. of repair for bridge seat surfaces.
- Item No. 17 Includes 10.3 Sta. for removal of pavement marking and 10.3 Sta. for placing white marking (temporary and permanent).

GENERAL NOTES
(See Design Sheet No. 3 for "General Notes".)

LOCATION:
Webster County
T-89N R-28W
Wahkansa Twp.
Section 19
Iowa No. 7 over
Des Moines River
Maint. No. 9475.25007

Design for Repair to
MULTISPAN CONTINUOUS PLATE
GIRDER BRIDGE

SITUATION PLAN
Sta. 213 + 16 to Sta. 224 + 25 (Iowa No. 7) Jan., 1983

WEBSTER COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No. 1 Of 9 File No. 26710 Design No. 382

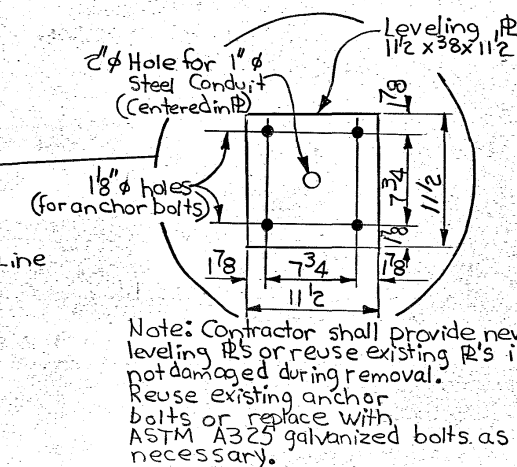
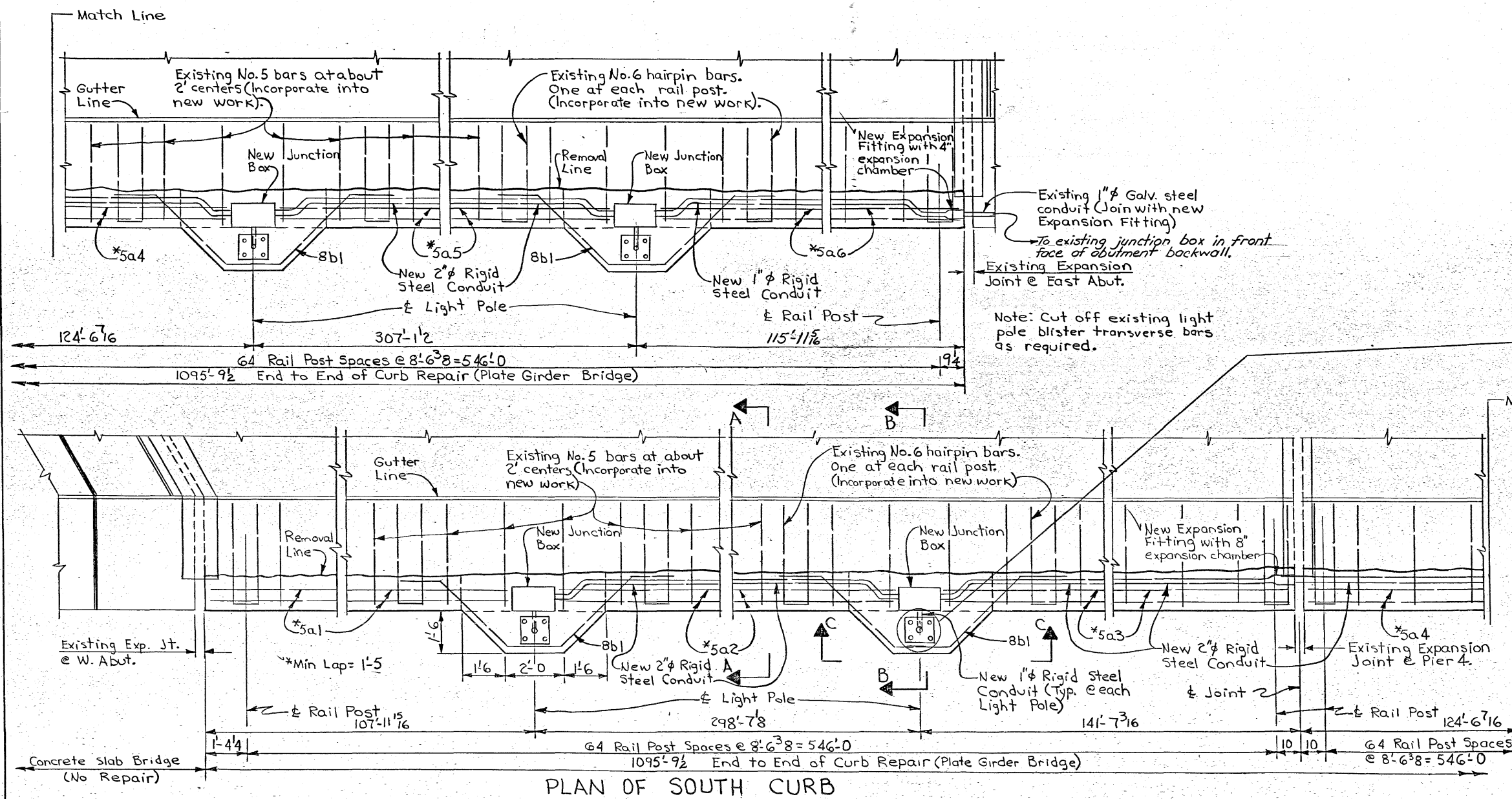
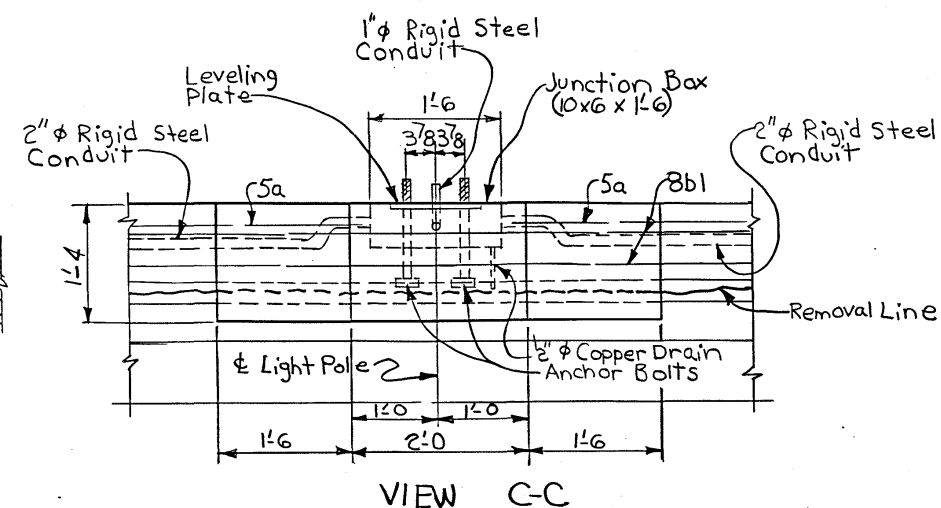
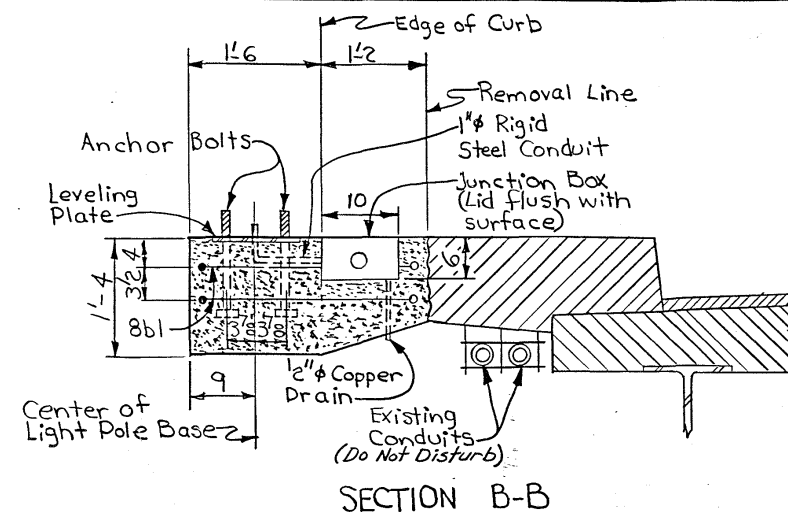
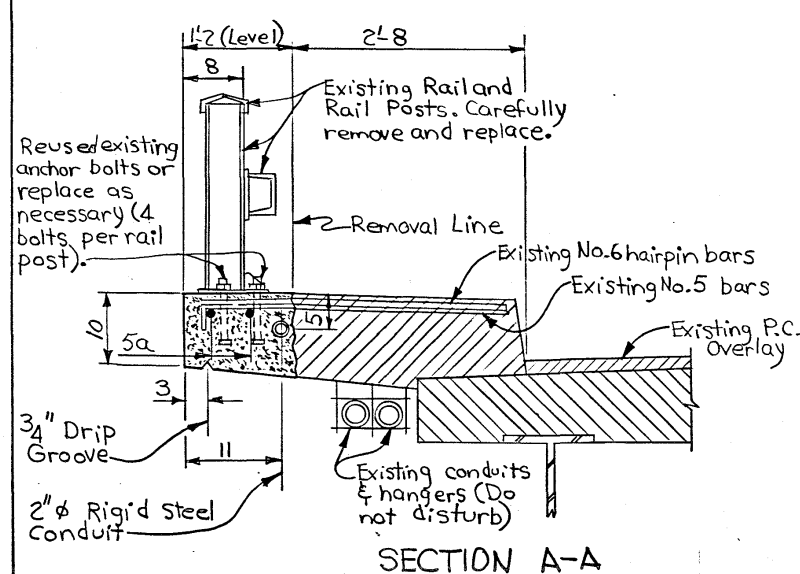
STATE	PLS. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	1		3	15

DESIGNED BY: W.R. Johnston
CHECKED BY: C.E. Cole
TRACED BY: C.E. Cole
CHECKED BY: G.L. Port

SECTION LEADER: W.C. EYER

WEBSTER COUNTY

PROJECT NUMBER: FN-7-5(12)--21-94



Design for Repair to
MULTISPAN CONTINUOUS PLATE
GIRDER BRIDGE
REPAIR DETAILS
Sta 213+16 to Sta 224+25 (Lowway No. 7) Jan. 1983
WEBSTER COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No. 2 Of 9 File No. 26710 Design No. 382

DESIGNED BY: W. Johnston
DETAILED BY: W. Johnston

TRACED BY:
CHECKED BY: G.L. Port

WEBSTER COUNTY

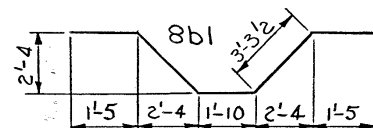
PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		4	15

REINFORCING BAR LIST

Bar	Location	Shape	No.	Length	Weight
5a1	Curb, Longitudinal	—	6	36'-7"	229
5a2	Curb, Longitudinal	—	16	38'-4"	640
5a3	Curb, Longitudinal	—	8	36'-3"	302
5a4	Curb, Longitudinal	—	8	32'-0"	267
5a5	Curb, Longitudinal	—	16	39'-5"	658
5a6	Curb, Longitudinal	—	6	39'-4"	246
8b1	Light Pole Blister	—	8	11'-3"	240
Total (lbs.)					2582

BENT BAR DETAILS



Dimensions are out to out

CONCRETE PLACEMENT QUANTITIES

Location	Quantity
South Curb	43.1
Total (cu. yd)	43.1

LIGHTING NOTES

Construction shall conform with the current Iowa Department of Transportation Standard Specifications Sections 2523 and 4185. The contractor shall remove and reposition light poles and place new conduit, wiring, junction boxes and all other electrical fittings and appurtenances as detailed and noted on these plans and in accordance with applicable details on Standard Road plans RM-2A, RM-2C, RM-9 and RM-12.

All new anchor bolts and nuts shall be galvanized and shall conform to the requirements of ASTM A-325.

All "C" entrance holes in junction boxes shall be drilled and tapped for the specified conduit size. All other holes shall have a concrete - tight slip fit. Conduit ends shall not protrude into junction box more than 1/4". Drain pipe end shall be flush with inside surface of box. Grounding buttons shall be located approximately 3" from the inside surface of the box wall, and not closer than 3" to the edge of any hole in the box floor. Holes for drain pipe shall be placed in the low corner of the box, with a minimum clearance of 1" between the edge of the hole and the inside surface of the box wall. Typical details are shown on this sheet.

GENERAL NOTES

This bridge was originally constructed as a Multispan Continuous Plate Girder Bridge (Design No. 1457 Webster County). A 90'-0" Continuous Concrete Slab Bridge (Design No. 1471 Webster County) was later added to the west approach of the original bridge. This design is for repair to the original bridge (Design No. 1457). Plans of the existing structure may be obtained at the Ames Office of the Highway Division. Repairs shall consist of removal and replacement of the south steel bridge rail, removal and replacement of a portion of the south curb, removing and resetting four light poles, placement of lighting conduit, installing wiring and lighting appurtenances, and repair of Pier No. 4.

The contractor shall remove and replace a portion of the existing south curb as detailed and noted on these plans. Existing reinforcing shall be carefully exposed and incorporated into new work. The cost of removal and disposal of broken concrete shall be included in the lump sum bid item, "Removals, As Per Plan".

All exposed corners of 90° or sharper are to be filleted with a 3/4" dressed and beveled strip.

Minimum clear distance from face of concrete to near reinforcing bar (existing or new) is to be 2" unless otherwise noted or shown.

The contractor shall carefully remove and reinstall the railing and rail posts from the south curb. All elements of the rail, including anchor bolts, and all hardware, are to be reused or replaced in kind. Any anchor bolts which are lost or damaged shall be replaced with galvanized ASTM A325 bolts. The bid item "Removal and Re-erection of Existing Rail, As per Plan" shall be full compensation for removing and reinstalling the rail as detailed and noted on these plans. Any damage to paint on rails and rail posts shall be repaired by the contractor as directed by the engineer at no extra cost to the State.

The reinforcing for this structure may be grade 40, 50 or 60 reinforcement in accordance with the Standard Specifications. The design stresses for all grades are based on grade 40 reinforcement.

At least one lane of eastbound traffic shall be maintained at all times in accordance with the "Traffic Control Plan" note on Design Sheet 1 and with traffic control layout on Design Sheet 9. Westbound traffic is not to be disturbed.

DESIGN STRESSES:

Design Stresses for the following materials are in accordance with the AASHTO Standard Specifications for Highway Bridges, Series of 1977:

Reinforcing steel in accordance with Section 1.5, Grade 40.

Concrete in accordance with Section 1.5, f'c=3500 psi.

SPECIFICATIONS:

Design : AASHTO, Series of 1977

Construction: Iowa Department of Transportation, Series of 1977, plus current Supplemental Specifications and Special Provisions including:

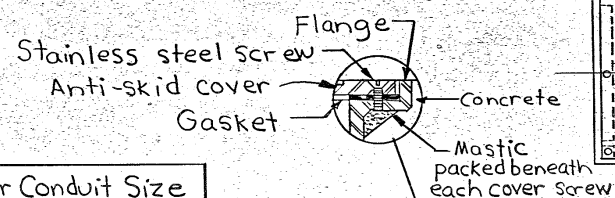
Spec. 920 "Supplemental Specifications for Traffic Controls."

Spec. 925 "Supplemental Specifications for Pavement Marking."

GENERAL NOTES (cont)

Four light poles are to be removed and reinstalled. These poles are presently mounted on concrete blisters on the south curb and are to be reinstalled on new concrete blisters as detailed on Design Sheet 2. The lump sum bid item "Lighting, As Per Plan", shall include the cost of all material, labor, and equipment required to remove and reinstall these light poles as detailed and noted on the plans. Any damage to light poles during construction shall be repaired by the contractor at no cost to the State.

Pier No. 4 is to be repaired as detailed and noted on Design Sheets 4 and 5. The contractor shall provide the engineer a safe means (scaffolding, etc.) of inspecting all surfacing of Pier 4 so that the engineer can designate the actual areas of repair at the time of construction. The cost of providing scaffolding, etc., shall be included in the price bid for "Shotcrete Repair".



Bossed For	Hole	For Conduit Size
5 Threads	C	4" & 1" Rigid Steel
None	D	1" Rigid Steel
None	E	1/2" (Copper Pipe)

Note: The grounding buttons are to be blind drilled and tapped for 3/8" x 0-034 bolts.

One junction box shall have one hole C for 2" conduit and one hole C for 1" conduit. Two junction boxes shall have two holes C for 2" conduit. One junction box shall have one hole C for 2" conduit.

Grounding button (Typ.)

5/16"

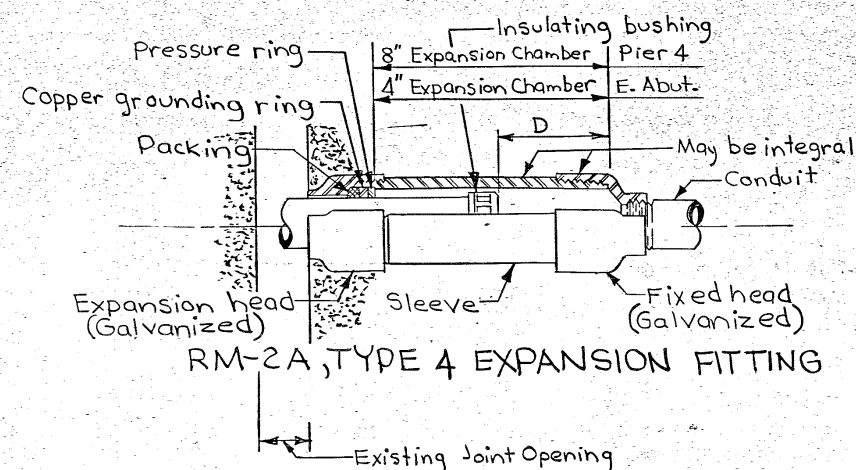
10"

E (Typ.)

Grounding button (Typ.)

SECTION D-D

RM-9, TYPE 1 JUNCTION BOX
WATERTIGHT, CAST IRON - FLUSH MOUNT



Temperature (°F)	Expansion Setting D (in.)	
	E. Abut	Pier 4
0°	2 7/8	5 3/4
50°	2	4
90°	1 1/8	2 1/4

Note: Expansion settings for other temperatures are proportional.

Design for Repair to
MULTISPAN CONTINUOUS PLATE
GIRDER BRIDGE

REPAIR DETAILS

Sta 213+16 to Sta 224+25 (Iowa No. 7) Jan 1983

WEBSTER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No. 3 Of 9 File No.: 26710 Design No.: 382

DESIGNED BY: W. Johnston
DETAILED BY: W. Johnston

TRACED BY:
CHECKED BY: G.L. Port

WEBSTER COUNTY

PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	6		5	15

SHOTCRETE REPAIR NOTES

The contractor shall repair Pier 4 with "Shotcrete" as noted and shown on this sheet and Design Sheet 5.

The Standard Specifications & Supplemental Specifications, including "Supplemental Specifications for Shotcrete", dated 3-17-83, Spec. No. 924 shall apply to this work.

The amounts of repair shown are from maintenance reports and field observation. The engineer shall determine by visual and audible inspection the actual areas of the pier caps, columns, struts and stems to be repaired. The contractor shall be paid for the actual amount of repairs made on a square foot basis at the price bid per square foot. Article 1109.03 of the Standard Specifications does not apply.

BRIDGE SEAT REPAIR NOTES

The contractor shall repair the bridge seat surfaces as noted and shown on this sheet and Design Sheet 5. Concrete used for repair shall be Class D Structural Concrete.

The engineer shall determine by visual and audible inspection the actual areas of bridge seat to be repaired. It is not anticipated that bridge seat repair will extend under existing masonry plates.

Concrete shall be removed to a minimum depth of 4 inches and deeper as required to remove unsound material; removal shall avoid feather edges. Existing reinforcing bars that are exposed during concrete removal are to be protected and incorporated into the new concrete. Article 2403.15 shall apply for preparation and, in addition, concrete surfaces and reinforcing shall be sandblasted. Areas of bridge seat so repaired shall be measured in square feet by the engineer and included in the quantity of "Shotcrete Repair". Payment shall be at the contract unit price bid for "Shotcrete Repair".

Bridge seat surfaces not formed shall have a seven day wet cure as for shotcrete (Spec. SP924).

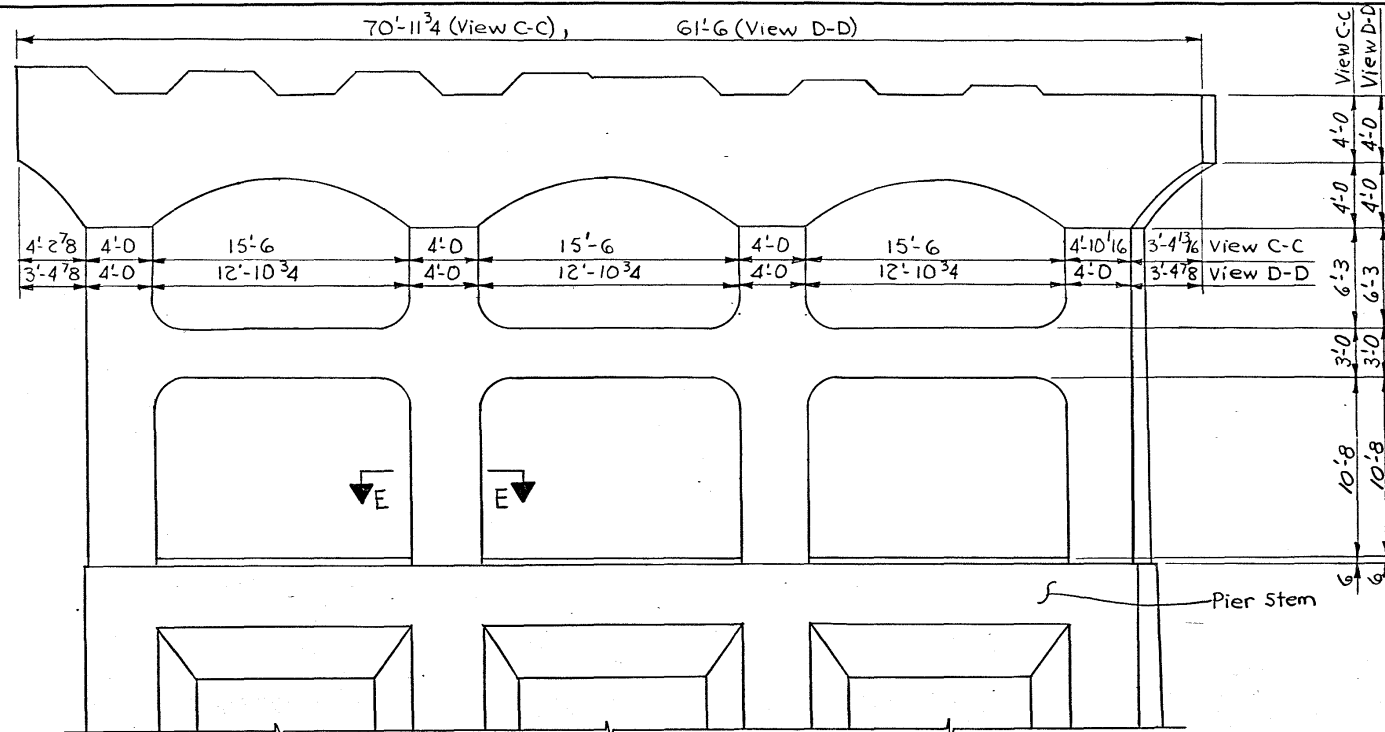
CONCRETE SEALER NOTES

A concrete sealer shall be applied to all surfaces (old and new) of Pier 4 from ground line up to and including bridge seat surfaces. The bridge seat surface is to include all surfaces of the bridge seat steps and edge fillets.

The sealer shall be one of those listed in Appendix B of Materials I.M. 491.12.

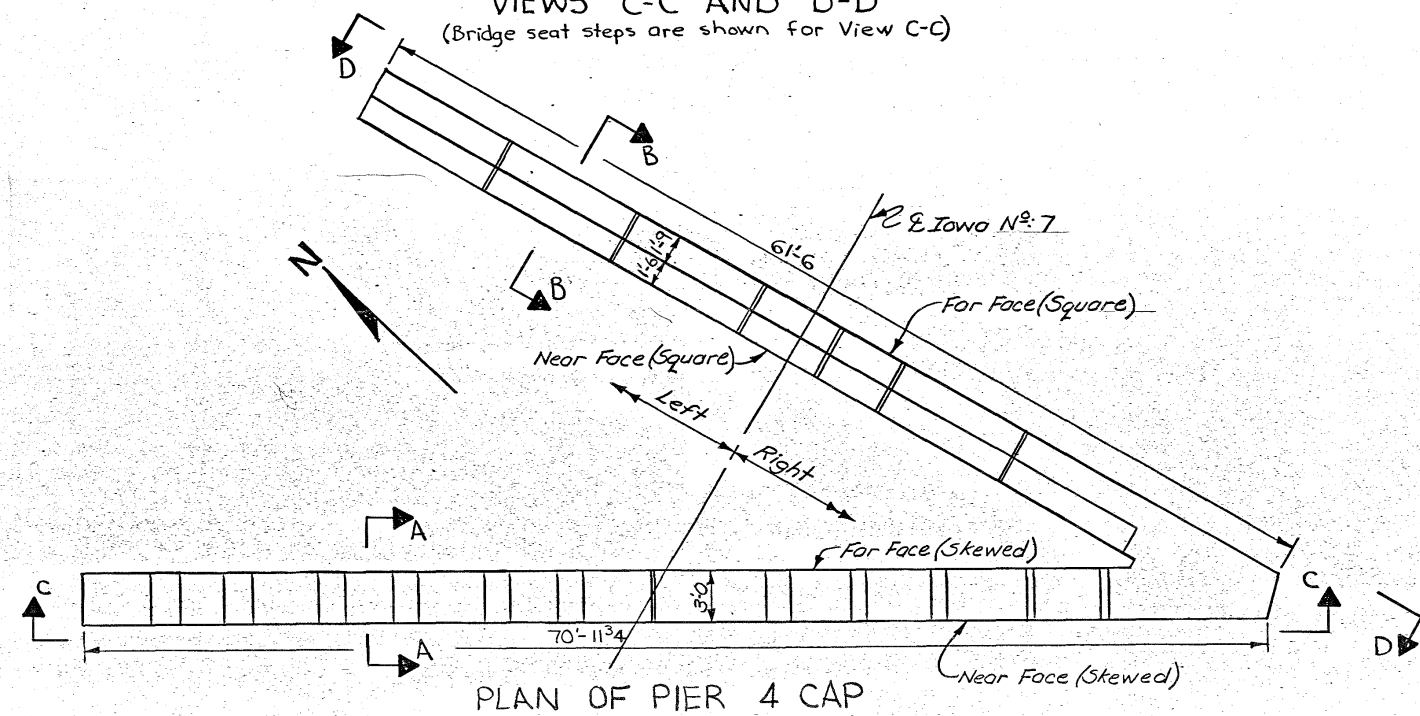
Before application of the sealer, new concrete surfaces shall receive the regular specified cure plus an additional seven days of air cure. As directed by the engineer, old surfaces may require removal of unsound material by sand blast and/or hand methods. All areas shall be at least lightly sand blasted and air cleaned. Unless otherwise noted, sealer material shall be applied by procedures in accordance with the manufacturer's recommendations at the coverage rate approved in Materials I.M. 491.12.

The quantity, in square feet, of "Concrete Sealer, As Per Plan" will be computed from measurements of areas actually prepared and coated and payment will be made at the contract unit price per square foot. Article 1109.03 of the Standard Specifications does not apply.

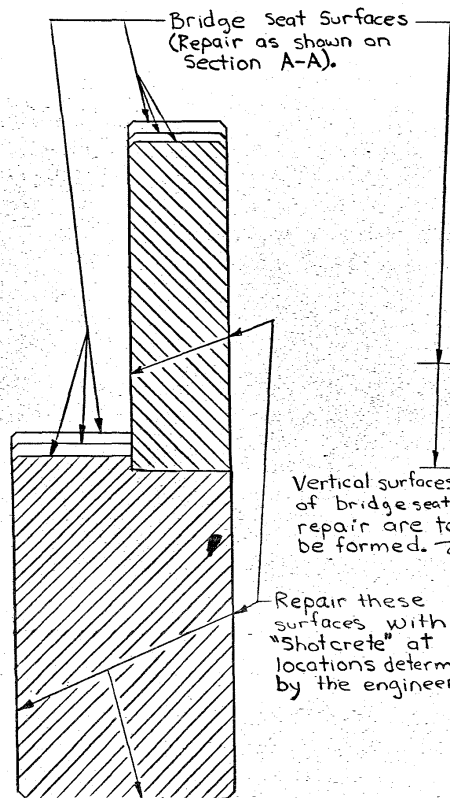


VIEWS C-C AND D-D

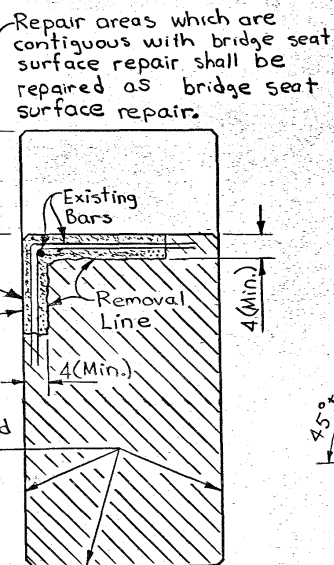
(Bridge seat steps are shown for View C-C)



PLAN OF PIER 4 CAP

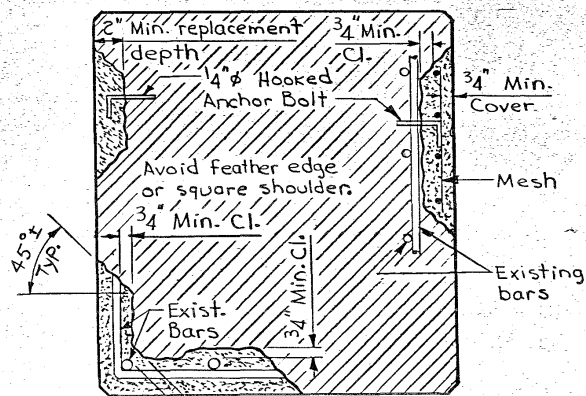


SECTION B-B



SECTION A-A

(Showing method of repair for bridge seat surfaces - actual areas of repair to be determined by the engineer.)



SECTION E-E

(Showing "shotcrete" repair details. These details are typical for columns, stems, struts and all surfaces of caps except bridge seat surfaces. Exact location of repairs will be determined by the engineer.)

Design for Repair to
MULTISPAN CONTINUOUS PLATE
GIRDER BRIDGE

PIER 4 REPAIR DETAILS

Sta 213+16 to Sta 224+25 (E Iowa No. 7) Jan 1983

WEBSTER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No. 4 Of 9 File No. 26710 Design No. 382

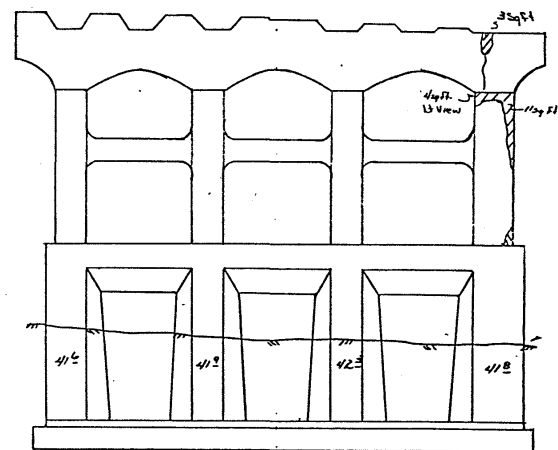
DESIGNED BY: W. Johnston
DETAILED BY: W. Johnston

TRACED BY:
CHECKED BY: G. L. Port

WEBSTER COUNTY

PROJECT NUMBER

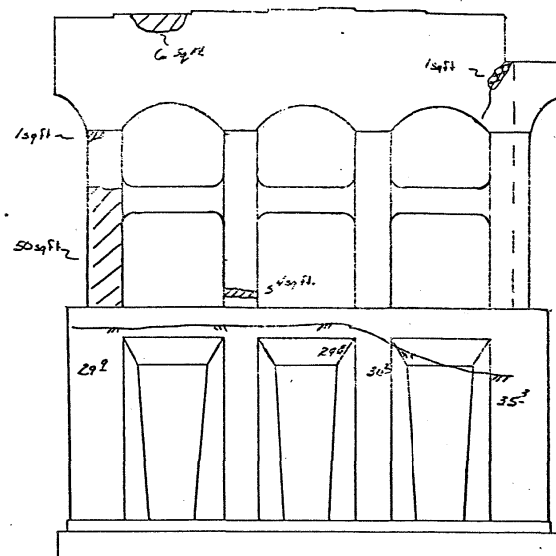
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	6		6	15



Actual 195.56
Total 194.56 ft

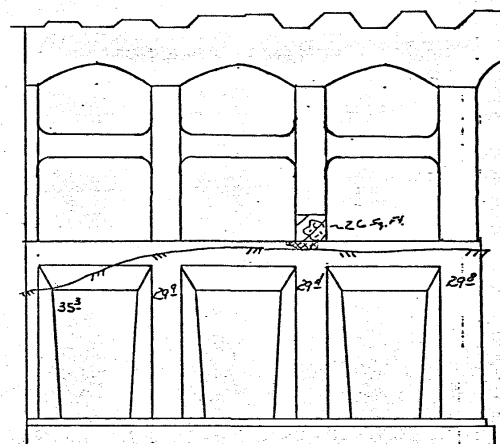
56.5'
(Plan)

PIER 4
(Near Face of Skewed Portion)



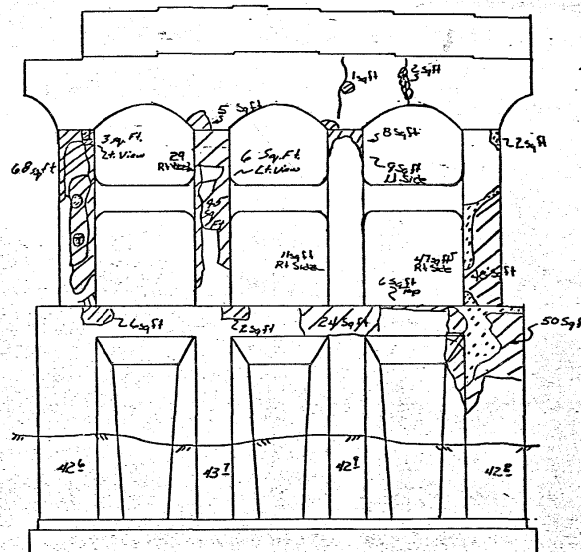
Actual 79.85
Total 62.5 ft

PIER 4
(Near Face of Square Portion)



Total 268.8 ft.
36.26 Actual

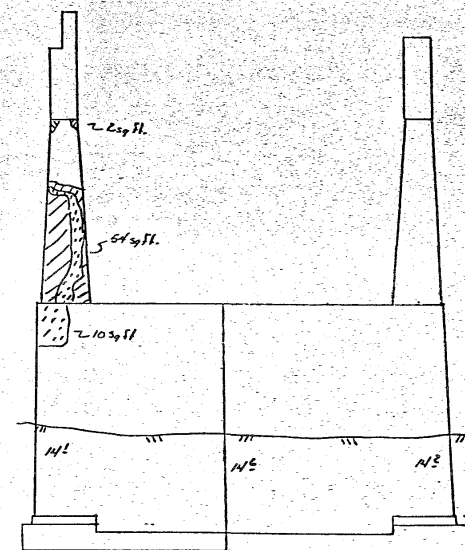
PIER 4
(Far Face of Skewed Portion)



Actual 95.31
Total 37.5 ft

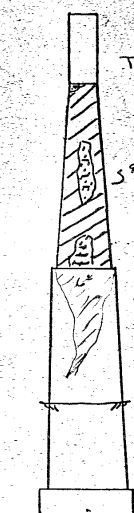
PIER 4
(Far Face of Square Portion)

Note: Hatched and dotted areas indicate areas of anticipated repair. Actual areas of repair to be determined by the engineer in the field.



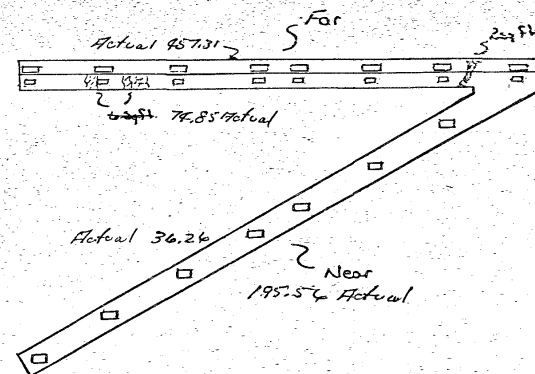
Left End

PIER 4



Right End

Total 150.5 ft
143.5 ft actual



PIER 4
(Bridge Seats)

Actual 36.26

195.56 Actual

Actual 95.31

74.85 Actual

193.5 ft Actual

Total 8.5 ft

Design for Repair to
MULTISPAN CONTINUOUS PLATE
GIRDER BRIDGE

PIER 4 REPAIR DETAILS
WEBSTER COUNTY

Sta 213+16 to Sta 224+25 (Iowa No. 7) Jan. 1983

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No. 5 Of 9 File No. 26710 Design No. 382

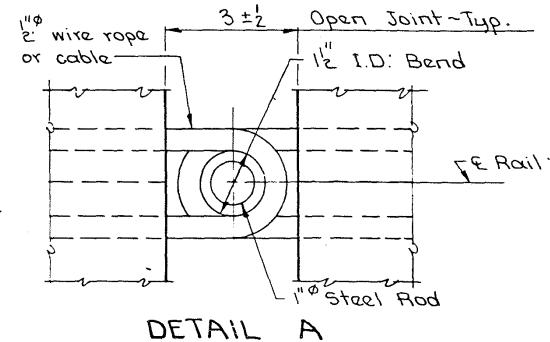
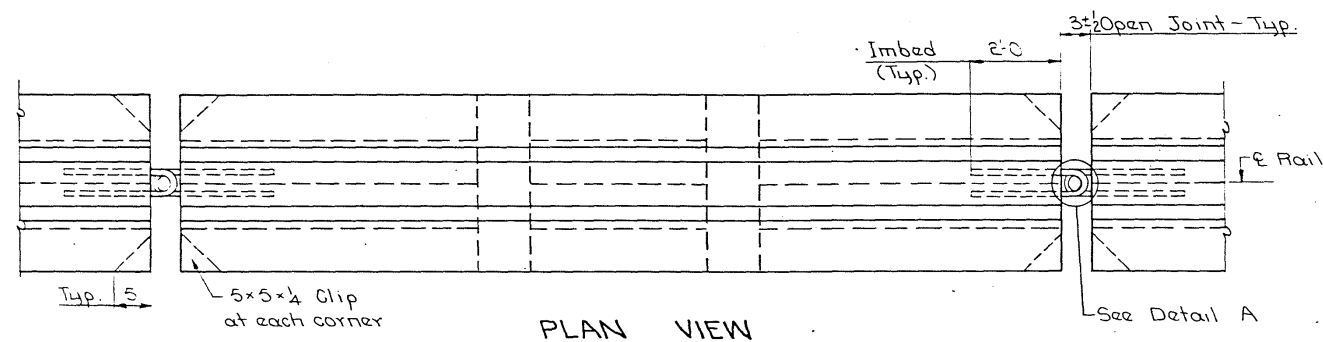
DESIGNED BY: W. Johnston
DETAILED BY: W. Johnston

TRACED BY:
CHECKED BY: G.L. Port

WEBSTER COUNTY

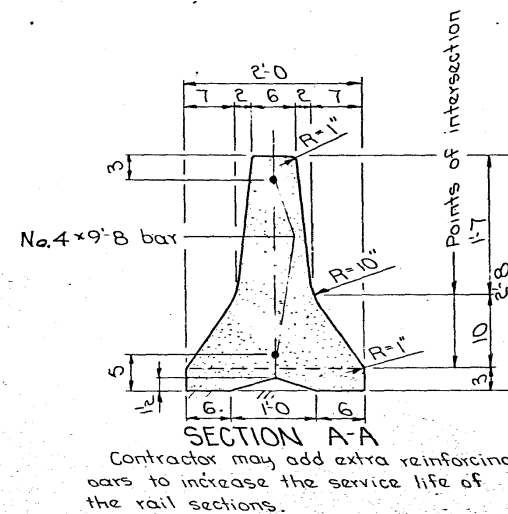
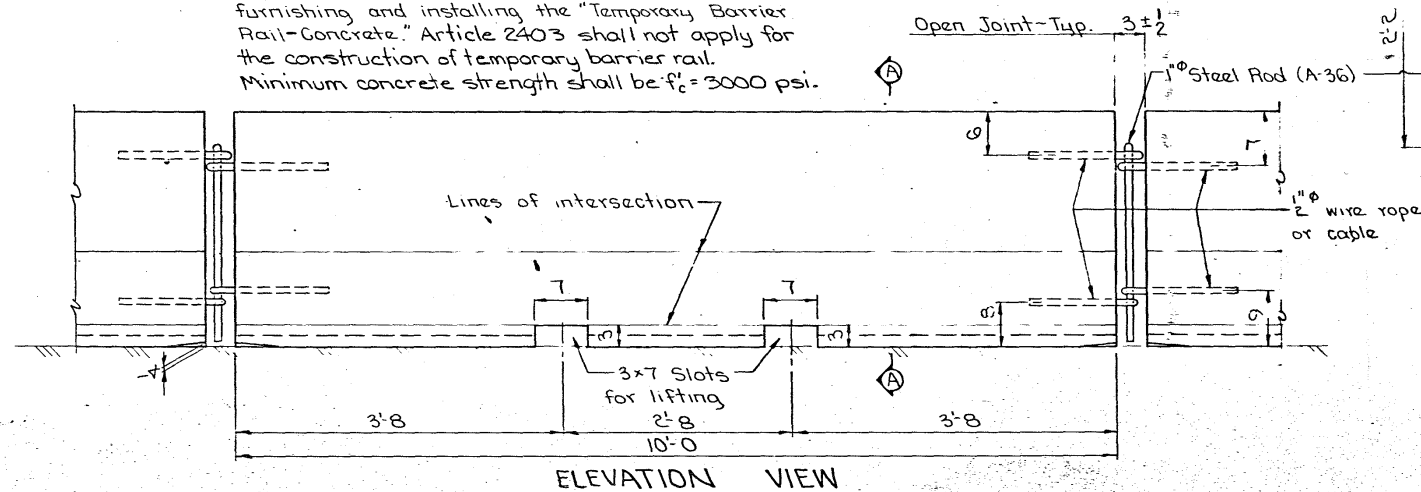
PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		7	15



Wire rope or cable to be 1/2" with a minimum breaking strength of 20000 pounds.

NOTE:
Cost of 1" steel rods and 1/2" wire rope or cable to be considered incidental to furnishing and installing the "Temporary Barrier Rail-Concrete." Article 2403 shall not apply for the construction of temporary barrier rail. Minimum concrete strength shall be $f'_c = 3000$ psi.

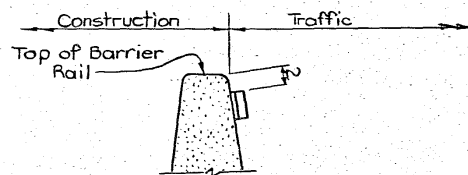


NOTE:

The temporary barrier rail is to be bid on a lineal foot basis measured from end to end of rail as shown on Design Sheet 9. Barrier is to become the property of the contractor at the completion of work and shall be removed from the site by him.

Traffic reflectors shall be a retro-reflective type, approved by the engineer, and they shall be located as shown on this sheet. The contractor shall maintain the reflectors and shall promptly replace any missing or damaged units. All costs for furnishing, installing and maintaining reflectors shall be included in the price bid for "Temporary Barrier Rail - Concrete".

Refer to other details, notes, and quantity items elsewhere on these plans for traffic control to be established in conjunction with the temporary barrier rail.



Revised 10-13-82 - Reflector spacing and notes changed.
Revised 7-17-81 Reflector requirement changed.
Revised 01-05-83 Notes and dimensions for storage length deleted.
DESIGNED BY: W. Johnston
CHECKED BY: G. L. Port

Design for Repair to
MULTISPAN CONTINUOUS PLATE
GIRDER BRIDGE
TEMPORARY BARRIER RAIL-CONCRETE
Sta 213+16 to Sta 224+25 (Iowa No. 7) Jan., 1983
WEBSTER COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 6 Of 9 File No.: 26710 Design No.: 382

DESIGNED BY: W. Johnston
DETAILED BY:

TRACED BY:
CHECKED BY: G. L. Port

TEMPORARY BARRIER RAIL - CONCRETE

STANDARD 1032

WEBSTER COUNTY

PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		8	15