

BRIDGE REPAIR
FN-60-2(10)--21-84

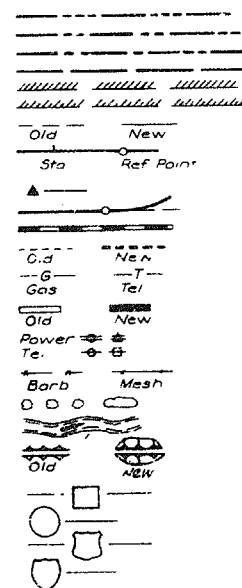
SIoux COUNTY

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

SIoux COUNTY

BRIDGE REPAIR

IOWA 60 OVER DRAINAGE DITCH JUST N. OF PLYMOUTH CO. LINE

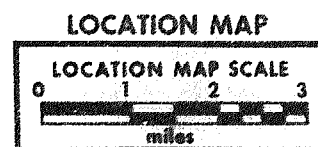
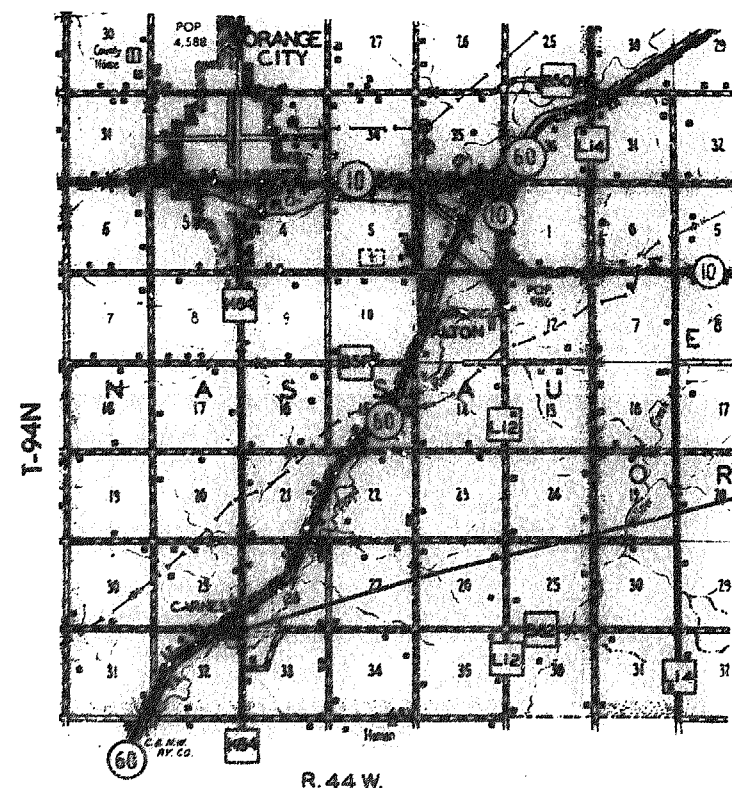
SCALES AS NOTED

THE STANDARD SPECIFICATIONS, SERIES OF 1984
OF THE IOWA DEPARTMENT OF TRANSPORTATION,
SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT

(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

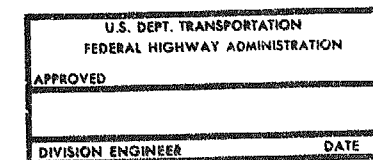
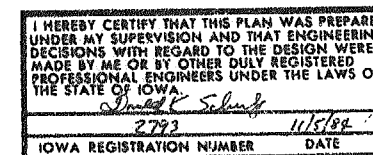
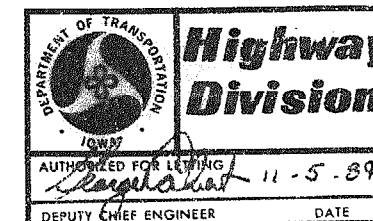
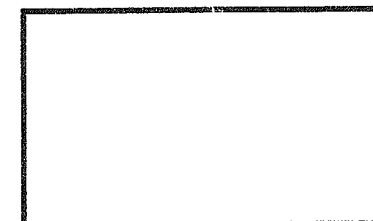
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	6		1	13
PROJECT NUMBER				
FN-60-2(10)--21-84				
R.O.W. PROJECT NUMBER				
PRELIMINARY ENGINEER NUMBER				

INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET
3 - 13	DESIGN NO. 2884



STANDARD ROAD PLANS			
IDENT	DATE	IDENT	DATE
RE-2	8-16-74		
RE-12	4-20-79		
RE-47	12-9-83		
RE-48A	8-31-84		
RE-52	8-31-84		
RE-57	6-8-79		
RL-11	4-20-79		

STANDARD BRIDGE PLANS		
STANDARD	ISSUED	REVISED



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.
11/5/84 William A. Lundquist REG. NO. 4449
DATE WM. A. LUNDQUIST

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.
11/5/84 Fred W. Walker REG. NO. 4989
DATE

DESIGN NO. 2804 OVER CREEK STA. 528+25.3
SIOUX COUNTY MAINT. NO. 8410.05060
SECTION 32 T-54N R-44W NASSAU TWP.

DESIGN FOR REPAIRS TO A 15° SKEW
60' x 44' SINGLE SPAN
CONCRETE & I-BEAM BRIDGE

ESTIMATE OF QUANTITIES

NO.	ITEM	UNIT	TOTAL
1	CLASS A BRIDGE FLOOR OVERLAY	SQ. YDS.	82
2	BRIDGE FLOOR OVERLAY	SQ. YDS.	307
3	TEMPORARY FLOODLIGHTING	L.S.	LUMP SUM
4	TEMPORARY BARRIER RAIL - FURNISH ONLY	LIN. FT.	300
5	TEMPORARY BARRIER RAIL - PLACE ONLY	LIN. FT.	600
6	PAVEMENT MARKINGS	STA.	92.2
7	CONCRETE SEALER, AS PER PLAN	SQ. FT.	235
8	TRAFFIC CONTROL	L.S.	LUMP SUM
9	TEMPORARY TRAFFIC SIGNALS	L.S.	LUMP SUM
10	REMOVAL OF ASPHALT CEMENT CONC. SURFACING	SQ. YDS.	157
11	STRUCTURAL CONCRETE CLASS D	CU. YDS.	3.7
12	REINFORCING STEEL	LBS.	529
13	CONCRETE BARRIER RAIL - CAST IN PLACE	LIN. FT.	124.9
14	REMOVALS	L.S.	LUMP SUM
15	REMOVE AND STOCKPILE EXISTING HANDRAIL	L.S.	LUMP SUM

ESTIMATE REFERENCE INFORMATION 100-4
Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.

ITEM NO.	DESCRIPTION
4 & 5	ALL TEMPORARY BARRIER RAIL SHALL BE NOMINAL 10' LONG CONCRETE UNITS.
6	INCLUDES 45.6 STA. REMOVAL OF PAVEMENT MARKINGS, 31.5 STA. OF YELLOW TEMPORARY AND PERMANENT PAVEMENT MARKINGS AND 15.1 STA. OF WHITE TEMPORARY AND PERMANENT PAVEMENT MARKINGS.
9	TRAFFIC SIGNALS ARE TO BE REMOVED AND ARE TO REMAIN THE PROPERTY OF THE CONTRACTOR.
13	INCLUDES 511 LIN. FT. #5 EPOXY COATED REINFORCING BARS AND 462 LIN. FT. #6 EPOXY COATED REINFORCING BARS.
15	INCLUDES HAULING EXISTING RAIL, POSTS, BOLTS, FITTINGS, ETC. TO THE NEAREST IOWA D.O.T. MAINTENANCE YARD.

ESTIMATED ROADWAY QUANTITIES 100-00 1-20-84

NO.	ITEM	UNIT	TOTAL
1	Guardrail, Formed Steel Beam	Lin. Ft.	100
2	Guardrail Posts, Beam	No.	52
3	Guardrail End Anchorage, Beam RE-52	No.	4
4	Removal of Formed Steel Beam Guardrail	Lin. Ft.	100
5	Removal of Posts	No.	44
6	Removal of Anchor Section, RE-9	No.	4
7	Remove & Reinstall Object Markers	No.	4
8	Remove & Reinstall Formed Steel Beam Guardrail	Lin. Ft.	150
9	Embankment-In-Place	Cu. Yds.	78

ESTIMATE REFERENCE INFORMATION 100-4
Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.

ITEM NO.	DESCRIPTION
1.	Shall consist of 25' sections to be used as part of the RE-52 end anchors.
2.	Includes 12 posts 10' x 10', 32 posts 8' x 8' and 8 posts 6' x 2'.
4.	To be stockpiled for pickup by State Maintenance Forces.
5 & 6.	To be disposed of as per Std. Notation 213-1.
9.	Contractor shall provide required material. Quantity is estimate only and payment will be made on the actual volume of material placed.

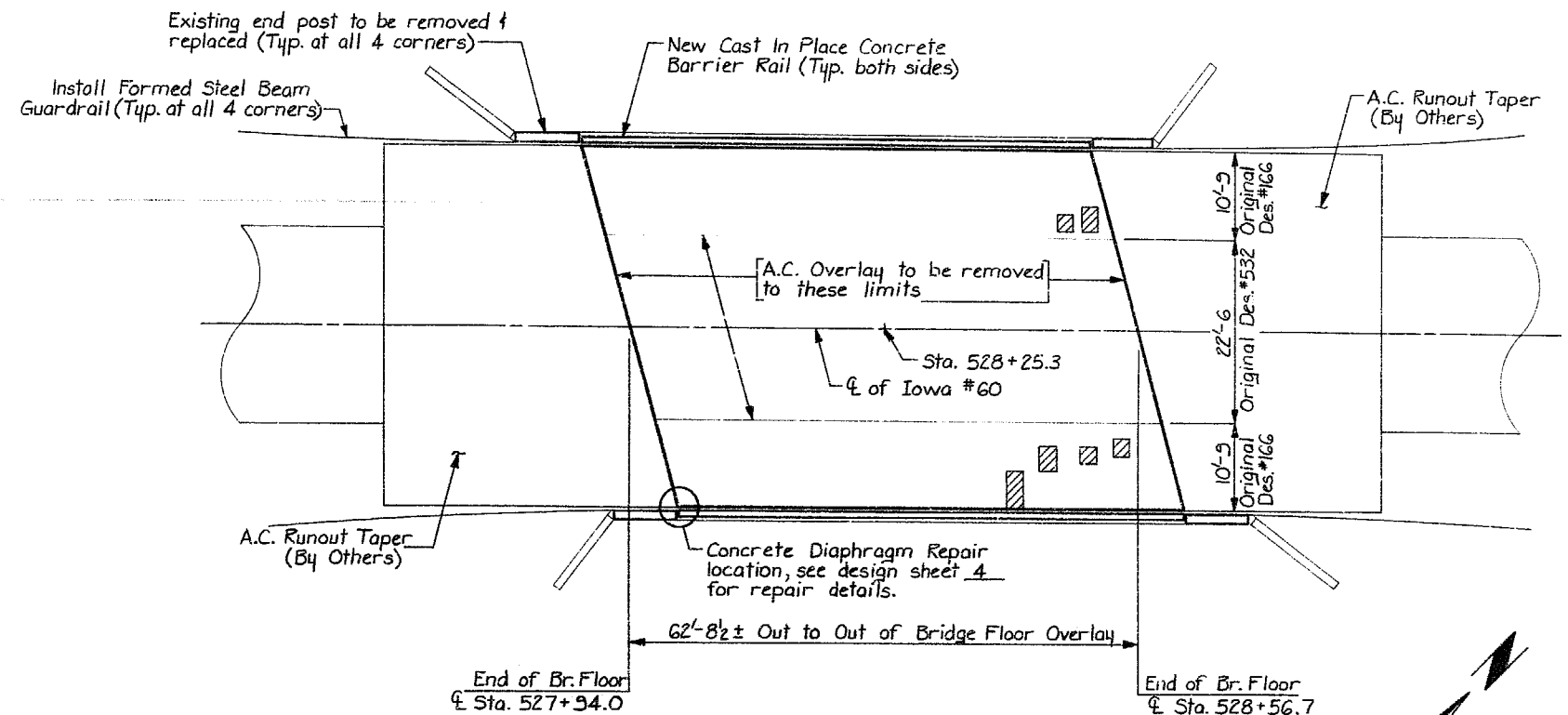
ESTIMATE SHEET

FILE NO. 27088

SIOUX COUNTY

PROJECT NUMBER FN-60-2(10)-21-84

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		2	13



SURVEY PLOT
Dated: July 2, 1984

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 60.
CONCRETE IN ACCORDANCE WITH SECTION 1.5, $f'_c = 3,500$ PSI

SPECIFICATIONS:
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION SPECIFICATION, SERIES OF 1984, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

For Estimated Roadway Quantities see des. sht. no. 7.

BRIDGE ESTIMATED QUANTITIES			
Item No.	Item	Unit	Quantity
1	Class A Bridge Floor Repair	Sq. Yds.	82
2	Bridge Floor Overlay	Sq. Yds.	307
3	Temporary Floodlighting	L.S.	lump sum
4	Temporary Barrier Rail	Furnish Only	Lin. Ft. 300
5		Place Only	Lin. Ft. 600
6	Pavement Markings	Sta.	92.2
7	Concrete Sealer, As Per Plan	Sq. Ft.	235
8	Traffic Control	L.S.	lump sum
9	Temporary Traffic Signals	L.S.	lump sum
10	Removal of Asphalt Cement Concrete Surfacing	Sq. Yds.	157
11	Structural Concrete Class D	Cu. Yds.	3.1
12	Reinforcing Steel	Lbs.	529
13	Concrete Barrier Rail - Cast In Place	Lin. Ft.	124.9
14	Removals	L.S.	lump sum
15	Remove and Stockpile Existing Handrail	L.S.	lump sum

- Item No. Estimate Reference Information
- 445 All Temporary Barrier Rail shall be nominal 10' long concrete units.
- 6 Includes 45.6 Sta. removal of pavement markings, 31.5 Sta. of yellow temporary and permanent pavement markings and 15.1 Sta. of white temporary and permanent pavement markings.
- 9 Traffic signals are to be removed and are to remain the property of the contractor.
- 13 Includes 511 lin. ft. #5 epoxy coated reinforcing bars and 462 lin. ft. #6 epoxy coated reinforcing bars.
- 15 Includes hauling existing rail, posts, bolts, fittings, etc. to the nearest Iowa D.O.T. maintenance yard.

LOCATION:
Iowa #60 over Creek just North of
Plymouth County Line
T-34N, R-44W
Nassau Twp.
Section 32
Sioux County
Maint. No. 8410.0 S 060

Details for Repairs to a 15° Skew
**60'-44' SINGLE SPAN
CONCRETE & I-BEAM BRIDGE**
SURVEY PLOT AND QUANTITIES
Sta. 528+25.3 Nov., 1984
SIoux COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No. 1 Of 11 File No. 27088 Design No. 2884

DESIGNED BY: LeRoy Orberg
CHECKED BY: Thayne Sorenson

TRACED BY:
CHECKED BY:

Section Leader: W.A. Lundquist

Sioux COUNTY

PROJECT NUMBER
FN-60-2(10)--21-84

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		3	13

GENERAL NOTES

THIS DESIGN IS FOR REPAIR TO THE EXISTING 60' x 44' CONCRETE & I-BEAM BRIDGE. THIS BRIDGE WAS ORIGINALLY BUILT AS A 60' x 24' I-BEAM BRIDGE, ORIGINAL DESIGN NO. 532 SIOUX COUNTY AND WIDENED TO A 44' ROADWAY UNDER DESIGN NO. 166 SIOUX COUNTY. PLANS FOR BOTH DESIGN NO.'S MAY BE OBTAINED AT THE AMES OFFICE OF THE HIGHWAY DIVISION. REPAIRS SHALL CONSIST OF COMPLETELY REMOVING THE 3 1/2 ± INCHES OF A.C. OVERLAY OVER THE ORIGINAL PORTION OF THE STRUCTURE, BRIDGE FLOOR REPAIR, BRIDGE FLOOR OVERLAY, CONCRETE REPAIR TO EAST END OF SOUTH ABUTMENT DIAPHRAGM, REMOVING AND REPLACING ALL FOUR CONCRETE END POSTS, REMOVAL OF EXISTING ALUMINUM HANDRAIL, INSTALLATION OF CAST IN PLACE BARRIER RAIL AND INSTALLATION OF APPROACH GUARDRAIL.

PRESENT FLOOR THICKNESS OF THE WIDENED PORTION OF THE BRIDGE (DESIGN NO. 166) IS 7 INCHES FROM GUTTER LINE TO FIRST INTERIOR BEAM AND THEN VARYING TO 12 1/2± INCHES AT THE JUNCTURE WITH THE ORIGINAL BRIDGE (DESIGN NO. 532). PRESENT FLOOR THICKNESS OF THE ORIGINAL BRIDGE IS 12 1/2± INCHES. THIS INCLUDES AN ORIGINAL SLAB THICKNESS OF 9 INCHES AND 3 1/2± INCHES OF A.C. OVERLAY.

PLAN QUANTITY OF FLOOR REPAIR IS BASED ON THE "SURVEY PLOT" AS SHOWN ON DESIGN SHEET 1 FOR THE WIDENED PORTION OF THE BRIDGE AND ESTIMATED AS 50% OF THE A.C. SURFACED PORTION OF THE ORIGINAL BRIDGE. HATCHED PORTIONS SHOWN ON THE "SURVEY PLOT" REPRESENT CLASS A BRIDGE FLOOR REPAIR. THE ACTUAL QUANTITY WILL BE DETERMINED BY THE ENGINEER AFTER THE A.C. OVERLAY HAS BEEN REMOVED. ACTUAL SPALLED AND HOLLOW AREAS, AS DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION, SHALL BE REPAIRED. THE ENTIRE CONCRETE SURFACE OF THE BRIDGE FLOOR, INCLUDING AREAS OVER BRIDGE FLOOR REPAIR, SHALL HAVE BRIDGE FLOOR OVERLAY.

THE BID ITEM FOR "REMOVALS" SHALL INCLUDE ALL COSTS FOR THE REMOVAL AND DISPOSAL OF THE PORTION OF EAST END OF SOUTH ABUTMENT DIAPHRAGM TO BE REPAIRED AND THE EXISTING FOUR END POSTS.

THE BID ITEM FOR "REMOVE AND STOCKPILE EXISTING HANDRAIL" IS TO INCLUDE ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING ALUMINUM RAIL, HAULING AND STOCKPILING THE RAIL, POSTS, BOLTS, FITTINGS ETC. TO THE NEAREST IOWA DOT MAINTENANCE YARD. THIS ITEM INCLUDES CUTTING OFF AND PAINTING EXISTING ANCHOR BOLTS AS NOTED ON DESIGN SHEET 5.

THE BID ITEM "STRUCTURAL CONCRETE CLASS D" INCLUDES CONCRETE FOR REPAIRING THE EAST END OF SOUTH ABUTMENT DIAPHRAGM AND REPLACING ALL FOUR END POSTS. THIS BID ITEM ALSO INCLUDES THE COST OF SETTING ALL DOWELS FOR END POSTS.

CONSTRUCTION SHALL BE DONE IN STAGES, WITH AT LEAST ONE LANE OF TRAFFIC MAINTAINED AT ALL TIMES IN ACCORDANCE WITH THE "TRAFFIC CONTROL PLAN" NOTE.

BEFORE PROCEEDING WITH BRIDGE FLOOR OVERLAY AND BRIDGE FLOOR REPAIR THE CONTRACTOR MAY COMPLETE ALL STAGES OF OTHER CONSTRUCTION. ANY CONSTRUCTION SHALL HAVE STAGE LIGHTS, TEMPORARY BARRIER RAIL AND TRAFFIC CONTROL AS DETAILED ON THESE PLANS. TEMPORARY BARRIER RAIL AND TRAFFIC CONTROL MAY BE ADJUSTED TO FIT THE ACTUAL WORK AND STORAGE AREA.

SCREED EXTENSION OR OVERLAP BEYOND THE LONGITUDINAL CONSTRUCTION JOINT MAY BE LESS THAN THE 6 INCHES REQUIRED BY SUB-ARTICLE 2413.03C.1. THE ENGINEER MAY REQUIRE ADDITIONAL VIBRATION OR SPECIAL FINISHING PROCEDURES ADJACENT TO THE LONGITUDINAL CONSTRUCTION JOINT.

REMOVALS AND DISPOSALS OF ITEMS SCHEDULED FOR REMOVAL SHALL BE IN ACCORDANCE WITH SECTION 2481 OF THE SPECIFICATIONS. ANY DAMAGE TO ANY STEEL OR CONCRETE NOT TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRED BY HIM AT NO EXTRA COST TO THE STATE.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING CONSTRUCTION.

THE REINFORCEMENT SUPPLIED FOR THIS STRUCTURE MAY BE GRADE 60, 50 OR 40 REINFORCEMENT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE DESIGN STRESSES FOR ALL GRADES ARE BASED ON GRADE 60 REINFORCEMENT.

ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A 3/4" DRESSED AND BEVELED STRIP.

REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS POURED.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

QUANTITY OF "CONCRETE SEALER, AS PER PLAN" IN SQUARE FEET, TO BE PAID FOR WILL BE COMPUTED FROM MEASUREMENTS OF AREAS ACTUALLY COVERED AND ARTICLE 1109.03 SHALL NOT APPLY. PLAN QUANTITY IS BASED ON P.C. CONCRETE FLOOR REPAIR.

THE A.C. RUNOUT TAPER AT THE ENDS OF THE BRIDGE WILL BE PLACED BY LOCAL HIGHWAY DIVISION MAINTENANCE FORCES BEFORE TRAFFIC IS SHIFTED TO NEW CONSTRUCTION. THE CONTRACTOR SHALL GIVE ADEQUATE PRIOR NOTICE SO THAT THE A.C. MAY BE PLACED DURING NORMAL WORKING HOURS AND WORKING DAYS OF MAINTENANCE.

FAINT LINES ON PRINTS AND ON TRACINGS INDICATE EXISTING PORTION OF THE BRIDGE.

FLOODLIGHTING WILL BE REQUIRED AS SHOWN ON DESIGN SHEET 8.

SURFACE RAISE, AS SHOWN ON THE PLANS, SHALL BE CONSIDERED A MINIMUM. IN ORDER TO LIMIT THE ADDITIONAL DEAD LOAD, SURFACE RAISE SHALL BE RESTRICTED TO A MAXIMUM OF 1/2" MORE THAN SHOWN ON THE PLANS. PROFILE SHALL BE ADJUSTED TO THE EXTENT POSSIBLE WITHIN THESE LIMITS.

THE PRICE BID FOR "REMOVAL OF ASPHALT CEMENT CONCRETE SURFACING" SHALL BE CONSIDERED FULL COMPENSATION FOR REMOVAL AND DISPOSAL OF THE EXISTING 3 1/2 INCHES OF A.C. OVERLAY TO THE LIMITS DETAILED ON DES. SH. 3.

TRAFFIC CONTROL PLAN

- Through traffic will be maintained on the project at all times.
- Traffic control on this project shall be in accordance with layouts contained in the plans. For additional complementary information, refer to current Supplemental Specification for Traffic Controls.
- When special traffic control sheet entitled, "Traffic Control Layout One-Way Traffic on Bridges" is not used, Detail Sheet 520-2 shall be used for unfinished work or work within 12 feet of the traveled way, and Detail Sheet 520-3 for work in progress that encroaches on the traveled way.
- All traffic control devices shall be furnished, erected, maintained, and removed by the contractor.
- Where possible, all post mounted signs shall be placed a minimum of two feet clear of the shoulder.
- The location for storage of equipment by the contractor during non-working hours will be as approved by the engineer in charge of construction.
- The engineer may require modification of, or additions to, pavement marking details shown. Conflicting permanent edgelines or centerlines shall be removed and replaced with appropriate temporary lines. As applicable, permanent edgelines and centerlines shall be restored before the roadway is returned to normal traffic.
- 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.
- Proposed changes in the Traffic Control Plan (includes layout sheets) shall be reviewed with the Office of Construction before changes are made.
- The bid item "Traffic Control" shall include the cost of all traffic control measures required of the contractor except those which are separate bid items or are incidental to other bid items.

Details for Repairs to a 15° Skew
**60' x 44' SINGLE SPAN
CONCRETE & I-BEAM BRIDGE**

NOTES

Sta. 528+25.3

Nov. , 1984

SIOUX COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No.: 2 Of 11 File No.: 27088 Design No.: 2884

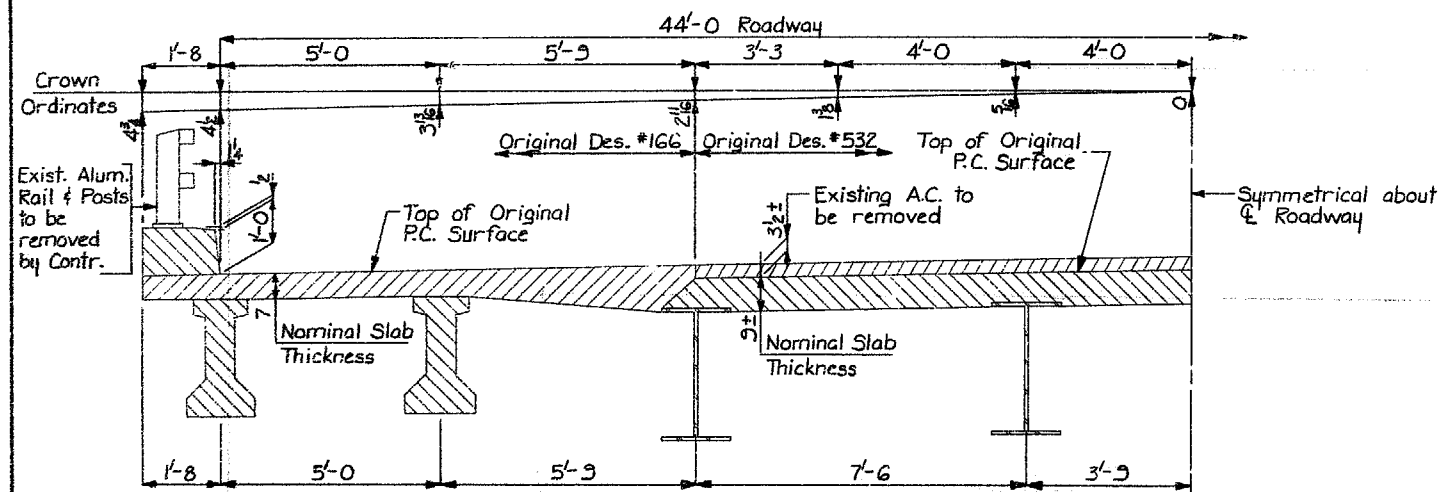
DESIGNED BY: LeRoy Orndberg
CHECKED BY: Thayne Sorensen

TRACED BY:
CHECKED BY:

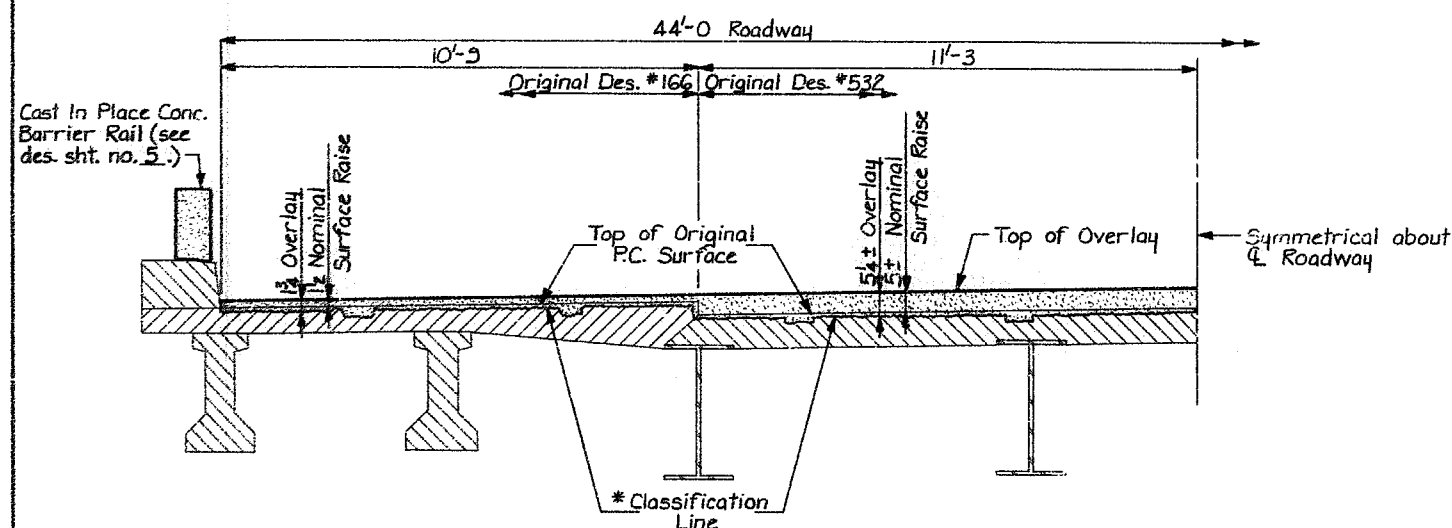
SIOUX COUNTY

PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	6		4	15

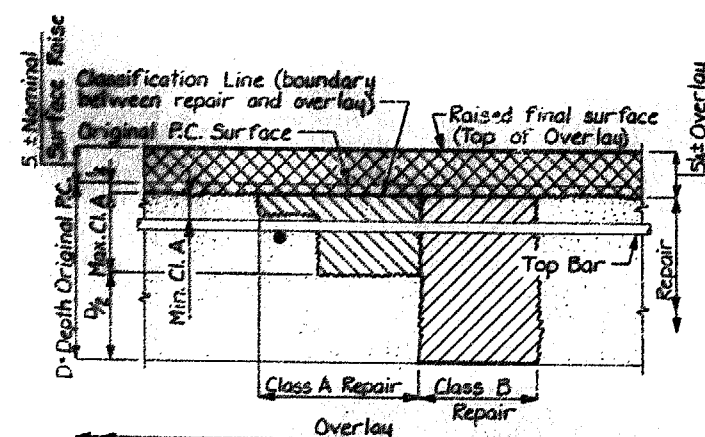


HALF CROSS SECTION OF EXISTING BRIDGE



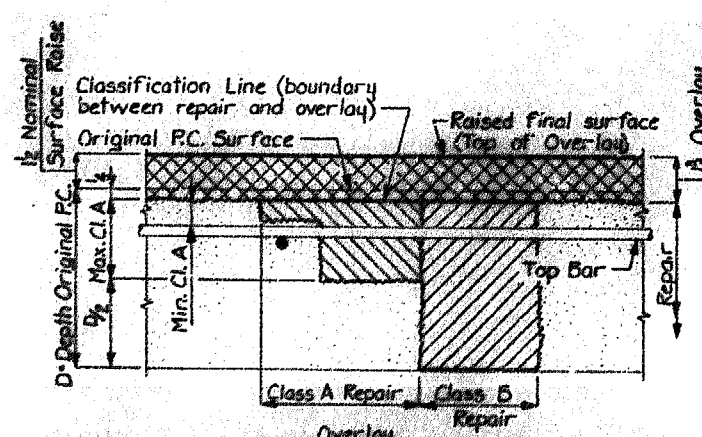
Note: See "Half Cross Section of Existing Structure" for Crown Ordinates.

HALF CROSS SECTION OF PROPOSED RESURFACING



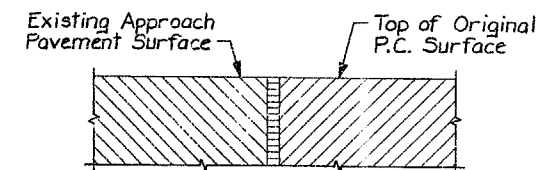
REPAIR AND OVERLAY DEFINITION

For 22'-6" width of bridge at $\bar{C}$, original Design #532.

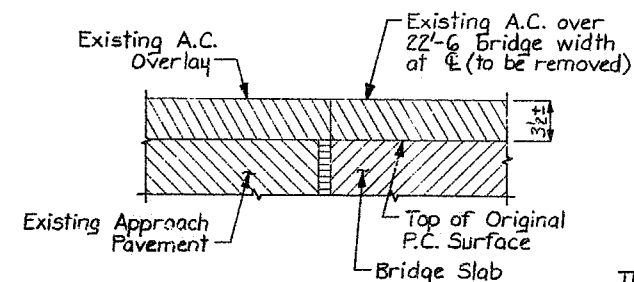


REPAIR AND OVERLAY DEFINITION

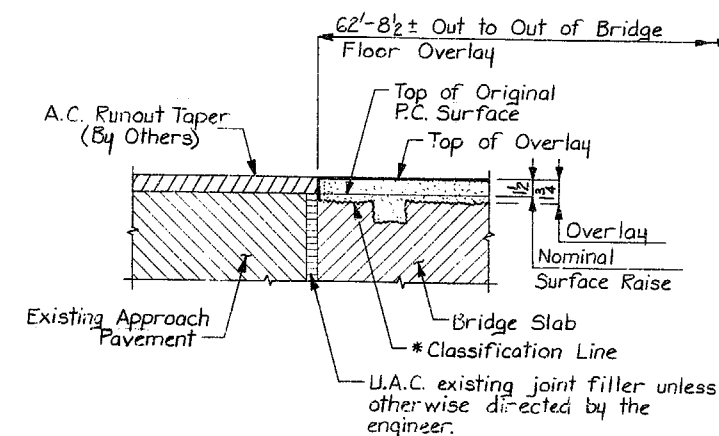
For 2-10'-3" portions of widened bridge, original Design #166.



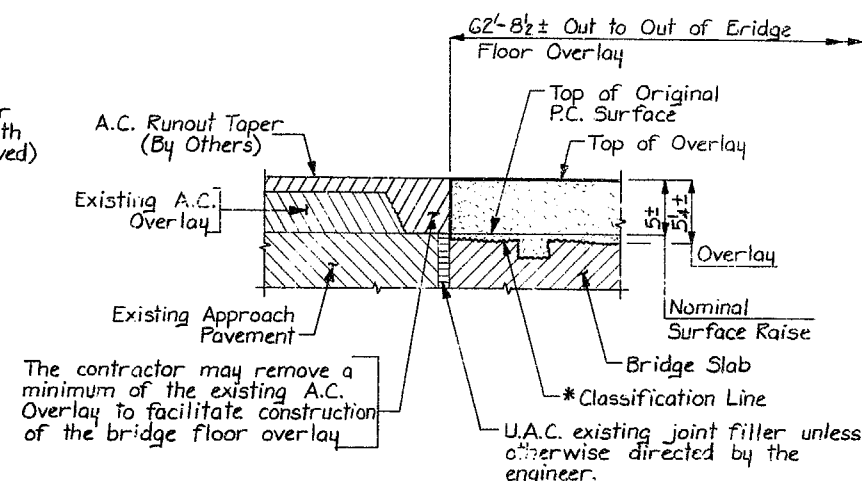
Existing conditions of original design #166



Existing conditions of original design #532



Proposed Resurfacing of original design #166



Proposed Resurfacing of original design #532

PART LONGIT. SECTIONS ALONG ROADWAY

* Note: Classification Line is the boundary between repair and overlay 4" below top of Original P.C. Surface.

Details for Repairs to a 15° Skew
60' x 44' SINGLE SPAN CONCRETE & I-BEAM BRIDGE
REPAIR DETAILS
 Sta. 528+25.3 Nov., 1984
SIoux COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
 Design Sheet No.: 3 Of 11 File No.: 27088 Design No.: 2884

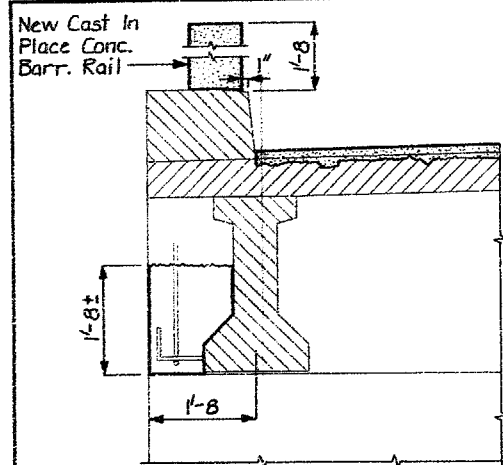
DESIGNED BY: LeRoy Orndorff
 CHECKED BY: Thayne Sorenson

TRACED BY:
 CHECKED BY:

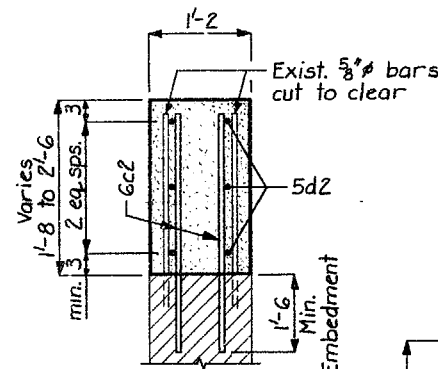
SIoux COUNTY

PROJECT NUMBER

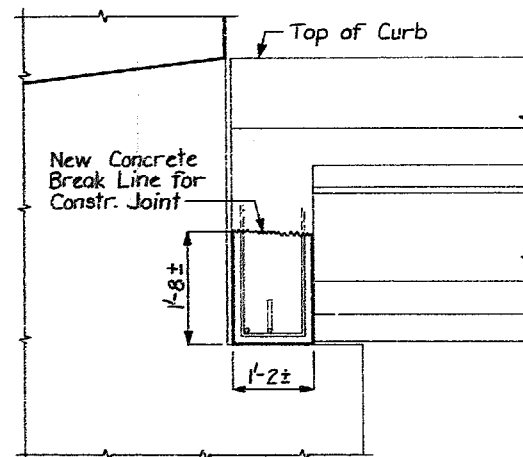
STATE: IOWA
 DIST. NO.: 6
 FISCAL YEAR: 1984
 SHEET NO.: 5
 TOTAL SHEETS: 13



SECTION B-B

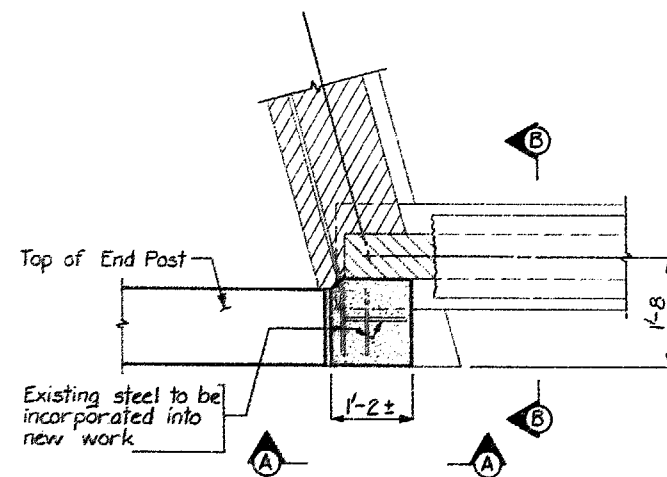


SECTION D-D



VIEW A-A

Note: 0.1 cu. yds. Class D Structural Concrete required for repair.



PART PLAN SECTION SOUTH EAST CORNER

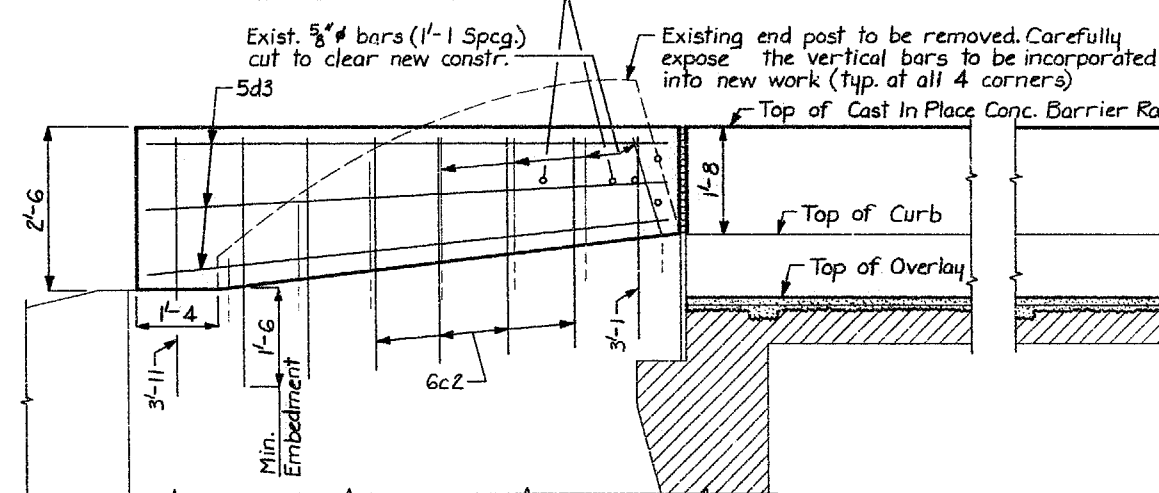
CONC. PLACEMENT QUANT'S-4 POSTS

Location	Quantity
7'-5 End Post 2 at 0.7	1.4
8'-4 End Post 2 at 0.8	1.6
Total (Cu. Yds.)	3.0

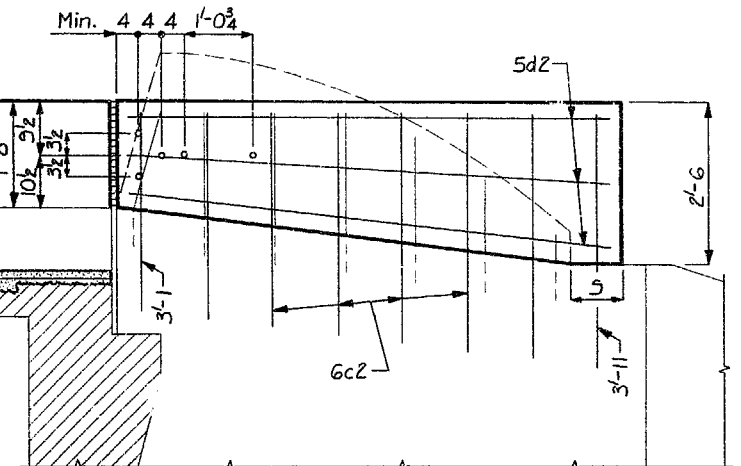
REINF. BAR LIST - 4 END POSTS

Bar	Location	Shape	No.	Length	Weight
6c2	End Post vert.	—	64	shown	336
5d2	7'-5 End Post horiz.	—	12	7'-5	93
5d3	8'-4 End Post horiz.	—	12	8'-0	100
Total Weight (Lbs.)					529

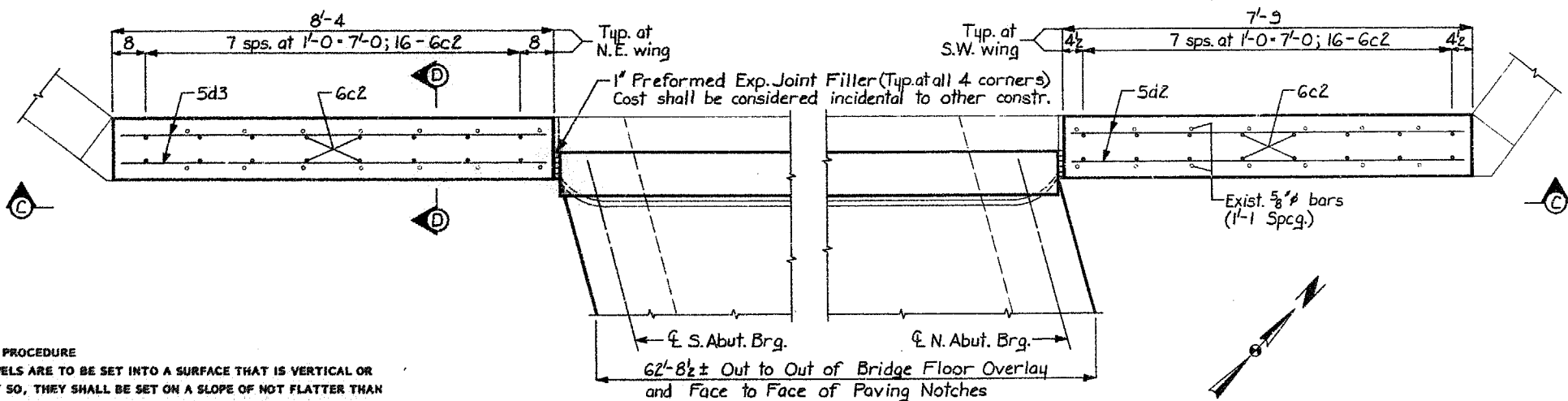
PROVIDE FIVE THREADED STEEL INSERTS WITH SOLID BOTTOM TAPPED TO A MINIMUM THREADED DEPTH OF 2 1/2" FOR USE WITH 7/8" GALVANIZED HIGH STRENGTH BOLTS WITH GALVANIZED ROUND WASHERS.



SECTION C-C



ANCHOR BOLTS SHALL CONFORM TO REQUIREMENTS OF ASTM A 325 OR A 449 AND SHALL BE GALVANIZED IN COMPLIANCE WITH ASTM A 153. ANCHOR BOLTS SHALL BE INSTALLED IN THREADED STEEL INSERTS HELD IN PROPER POSITION BY USE OF AN ASSEMBLY SET IN THE CONCRETE AND ALLOWING A MINIMUM EMBEDMENT OF 2 1/2" FOR THE ANCHOR BOLTS. THE COMPONENTS AND PROCEDURE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
THE COST OF THE RE-2 TYPE F TERMINAL SECTION, THREADED STEEL INSERTS AND ANCHOR BOLTS SHALL BE INCLUDED IN THE PRICE BID FOR "Structural Conc. Cl. D".



PART PLAN VIEW (Showing new end posts)

DOWEL SETTING PROCEDURE

IF THE DOWELS ARE TO BE SET INTO A SURFACE THAT IS VERTICAL OR APPROXIMATELY SO, THEY SHALL BE SET ON A SLOPE OF NOT FLATTER THAN 2 HORIZONTAL TO 1 VERTICAL. IN ALL CASES THE DOWELS SHALL BE INSTALLED BY THE FOLLOWING PROCEDURE.

- DRILL HOLE APPROXIMATELY TWICE THE DIAMETER OF THE DOWEL BAR AND TO DEPTH INDICATED.
 - FILL HOLE WITH WATER AND ALLOW TO STAND LONG ENOUGH TO THOROUGHLY SATURATE THE SURROUNDING CONCRETE (ABOUT FOUR HOURS).
 - BLOW OUT ALL FREE WATER AND FILL HOLE 2/3 FULL OF MORTAR.
 - INSERT DOWEL BY DRIVING, IF NECESSARY, AND MANIPULATE OR TAP WITH A HAMMER TO CONSOLIDATE MORTAR AND SECURE COMPLETE EMBEDMENT.
 - ADD MORE MORTAR, IF NECESSARY, TO FILL HOLE.
 - MORTAR SHALL CONSIST OF EQUAL PARTS PORTLAND CEMENT AND SAND WITH JUST ENOUGH WATER TO MAKE A WORKABLE MIX.
- ALL DOWELS SHALL BE SET A MINIMUM OF 4 INCHES FROM THE EDGE OF EXISTING CONCRETE TO THE E OF THE DRILLED HOLE.

Details for Repairs to a 15° Skew
60'-44' SINGLE SPAN CONCRETE & I-BEAM BRIDGE
REPAIR DETAILS
Sta. 528+25.3 Nov., 1984
SIoux COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 4 Of 11 File No.: 27088 Design No.: 2884

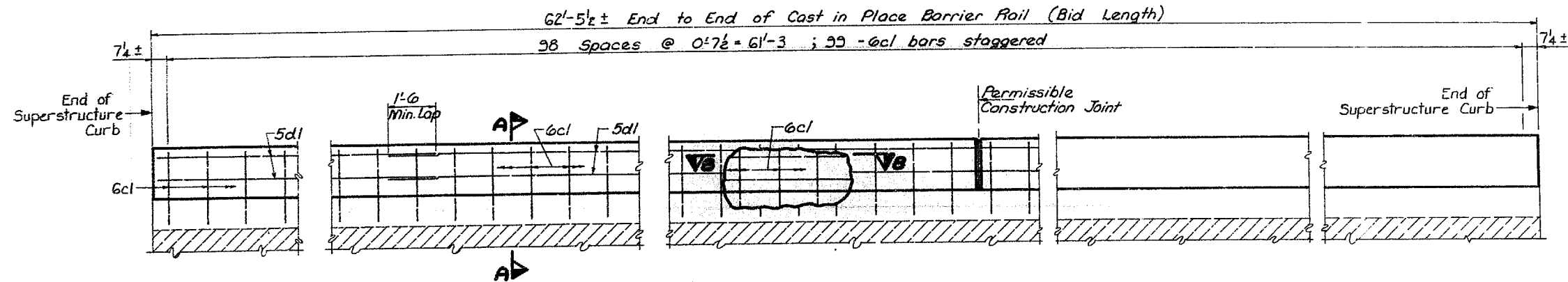
DESIGNED BY: LeRoy Orndorff
CHECKED BY: Thayne Sorenson

TRACED BY:
CHECKED BY:

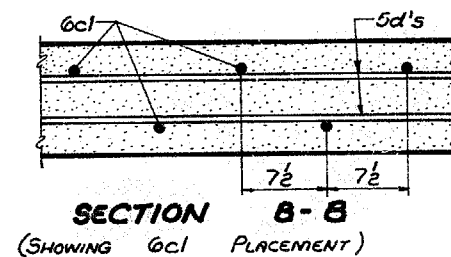
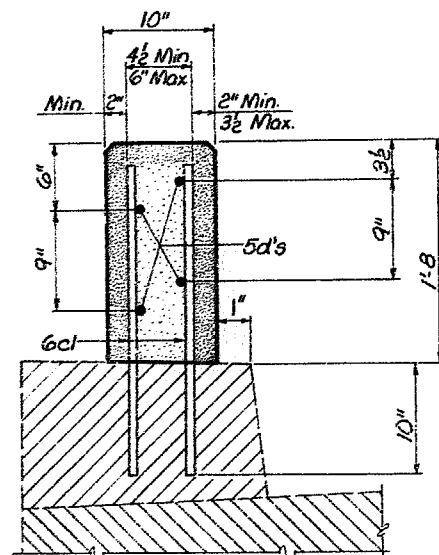
Sioux COUNTY

PROJECT NUMBER

STATE: IOWA
FISCAL YEAR: 1984
SHEET NO.: 6
TOTAL SHEETS: 13

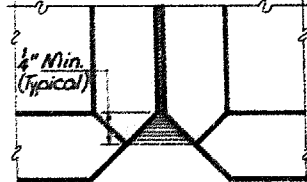


ELEVATION OF CAST IN PLACE BARRIER RAIL

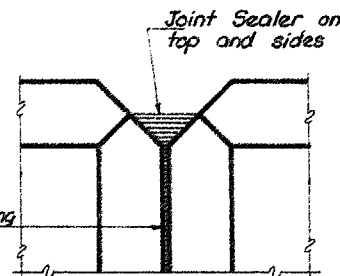


Existing aluminum handrail not shown.

PART SECTION A-A



PART PLAN VIEW



PART ELEVATION VIEW

CAST IN PLACE BARRIER RAIL JOINT DETAILS

Hatched area indicates area of bond breaking coating.

Note: The existing rail anchor bolts exposed by removal of 14 rail posts shall be cut off flush with or slightly below the concrete surface and the remaining exposed ends shall be painted with two coats of zinc rich paint complying with Article 4182.02 of the Standard Specifications. Cast is to be included in the price bid for "Remove and Stockpile Existing Handrail".

EPOXY REINFORCING STEEL ~ TWO RAILS					
BAR	LOCATION	SHAPE	N ^o	LENGTH	WEIGHT
6cl	Rail, Vertical	—	198	2'-4"	63.2
5dl	Rail, Longitudinal	—	16	31'-11"	53.3
TOTAL (lbs)					122.7

CONCRETE PLACEMENT SUMMARY	
CONCRETE	TOTAL
124.5' @ 0.05 cu yds per lin ft	6.25 cu yds.

ESTIMATED QUANTITIES		
ITEM	UNITS	QUANTITY
Rail, Concrete Barrier (Cast In Place)	lin. ft.	124.5

CAST IN PLACE BARRIER RAIL NOTES:

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

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

Top of the cast in place barrier rail is to be parallel to the theoretical G grade.

The permissible construction joints are to be placed between vertical bars at a minimum spacing of 20 feet. Construction joint contact surfaces are to be coated with an approved bond breaker.

Cost of joint sealer and bond breaker shall be considered incidental to other construction.

The cast in place barrier rail is to be bid on a lineal foot basis measured from end to end of rail. The number of lineal feet of cast in place barrier rail installed will be paid for at the contract price per lineal foot based on plan quantities. Price bid for cast in place barrier rail shall be full compensation for furnishing all material, including reinforcing steel, and all of the equipment and labor required to erect the rail in accordance with these plans and current specifications.

All cast in place barrier rail concrete is to be Class D.

The joint sealer shall conform to Fed. Spec. TT-S00230 or TT-S00227 for type II, Class A or B.

All reinforcing is to be epoxy coated. The epoxy coating shall be in accordance with Article 4151.03B of the Standard Specifications.

DOWEL SETTING NOTE

The 6cl bars shall be set as dowels in drilled holes. Holes are to be 10" deep. The dowels shall be installed in accordance with the manufacturer's recommendations. One of the two following systems shall be used as a bonding agent for the dowels:

- 1) Epoxy system. Drilled holes are to be 7/8" dia. The epoxy grout shall be one of those approved in the I.D.O.T. Materials I.M. 491.11.
- 2) Grout system. Drilled holes are to be 2" dia. The hydraulic cement grout shall be one of those approved in Materials I.M. 491.13.

Details for Repairs to a 15° Skew

60' x 44' SINGLE SPAN CONCRETE & I-BEAM BRIDGE

CAST IN PLACE BARRIER RAIL DETAILS

Sta. 528+25.3 Nov., 1984

SIOUX COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No.: 5 Of 11 File No.: 27088 Design No.: 2884

DESIGNED BY: LeRoy Ornborg
 CHECKED BY: Thayne Sorenson

TRACED BY:
 CHECKED BY:

CAST IN PLACE BARRIER RAIL

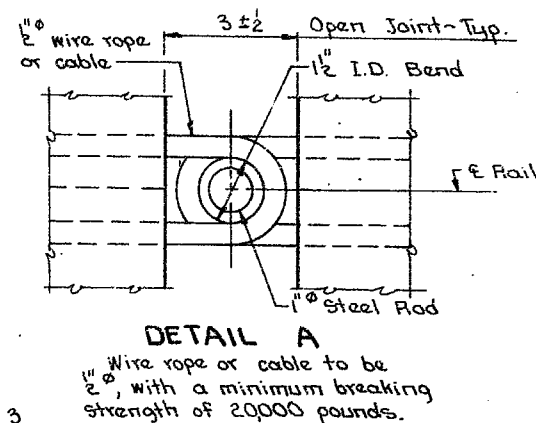
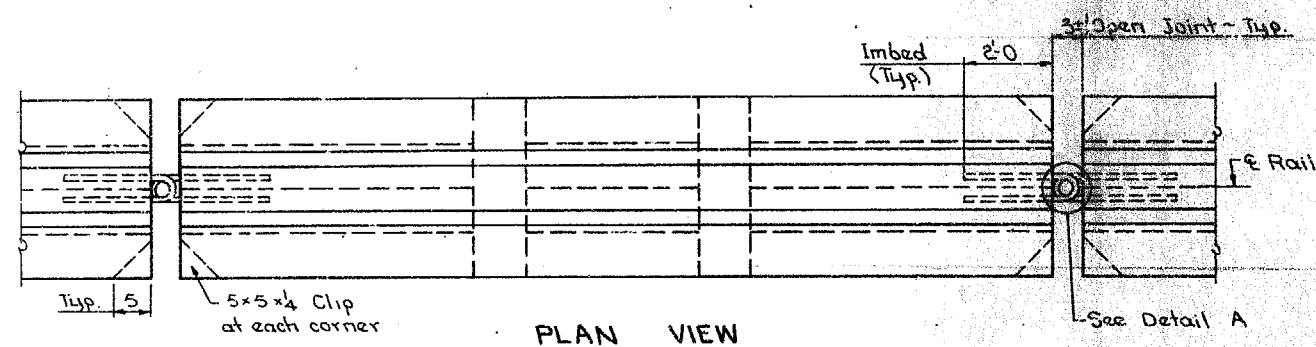
STANDARD SHEET 1031

SIOUX COUNTY

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		7	13

Revised 8-23-83: Notes concerning steel inserts and anchor bolts changed.
 Revised: 7-7-87: G-rail requirement changed.
 Revised: 6-16-1980: This sheet re-drawn.

Revised 08-27-84: Changed to agree with 1984 Specs.
Revised 01-05-83: Note and dimensions for storage length deleted.
Revised 10-13-82: Reflector spacing and notes changed.
Revised 7-17-81: Reflector requirement changed. Bridge end B details changed for variable shoulder.
Revised 09-05-79



NOTE:

Barrier is to become the property of the contractor at the completion of work and removed from the site by him.
No stationary equipment or construction material is to be placed in front of the temporary barrier at any time.

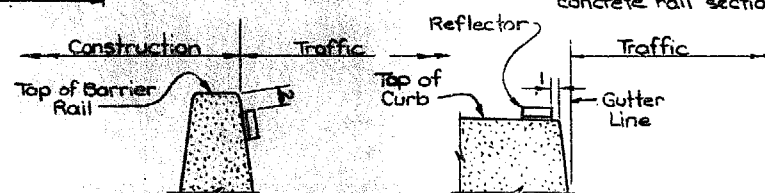
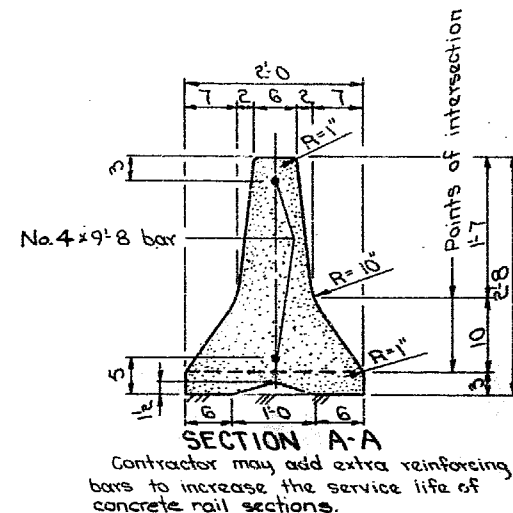
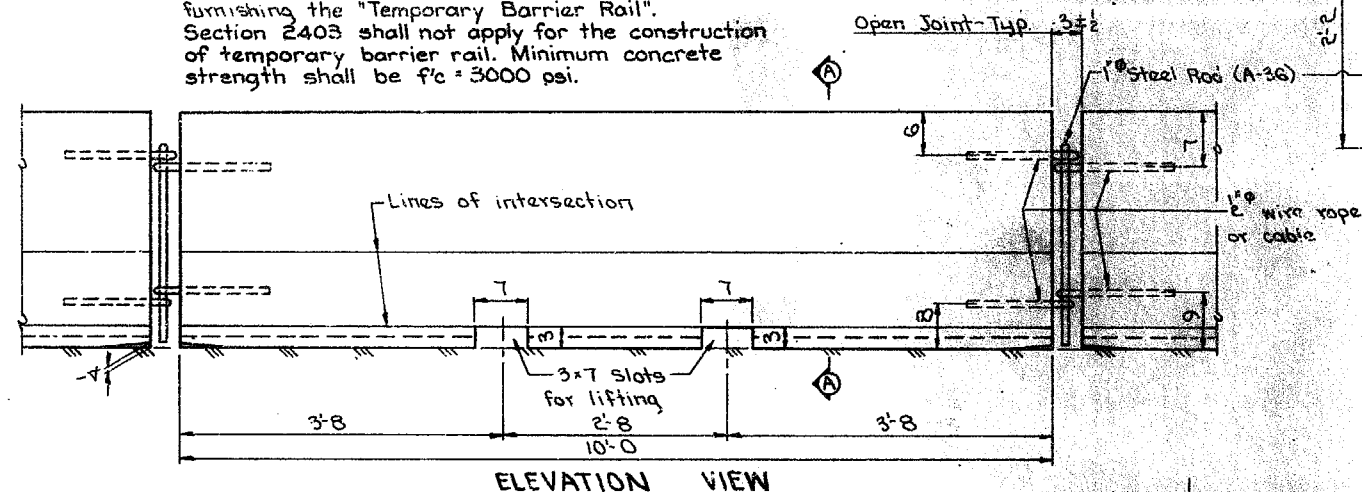
Traffic reflectors shall be a retro-reflective type, approved by the engineer, and they shall be located as shown on this sheet. The contractor shall maintain the reflectors and shall promptly replace any missing or damaged units. All costs for furnishing, installing and maintaining reflectors shall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

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.

Shoulder width at this bridge site is 10 feet, therefore 12 concrete barrier rail sections are required for bridge end "B".

NOTE:

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

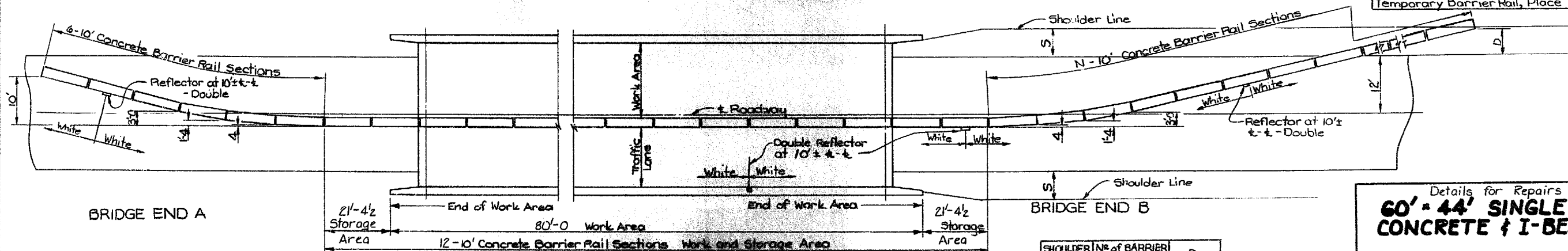


Item Reference:

All Temporary Barrier Rail shall be nominal 10' long concrete units.

ESTIMATED QUANTITIES

Item	Amount
Temporary Barrier Rail, Furnish Only	300 L.F.
Temporary Barrier Rail, Place Only	600 L.F.



TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR TWO WAY TRAFFIC

Note: The layout shown is for one stage of construction and would be the same for the other stage by rotating 180°.

SHOULDER WIDTH (S)	NO. OF BARRIER RAIL SECTIONS (N)	D
10 FT.	12	9.5 FT.

Details for Repairs to a 15° Skew
60' x 44' SINGLE SPAN CONCRETE & I-BEAM BRIDGE
TEMPORARY BARRIER RAIL-CONCRETE
Sta. 528 + 25.3 Nov., 1984
SIoux COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 6 Of 11 File No.: 27088 Design No.: 2884

DESIGNED BY: LeRoy Ornberg
CHECKED BY: Thayne Sorenson

TRACED BY:
CHECKED BY:

TEMPORARY BARRIER RAIL - CONCRETE

STANDARD 1033

Sioux COUNTY

PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		8	13

204-1
1-20-84

Removal of any existing guardrail and installation of new posts and beam rail, except for the approach end section, shall be completed on the same working day. Beam rail shall be fully connected to all posts and protected with a Type E terminal section plus Type II barricade with Type A warning light.

204-2
1-20-84

213-1
1-20-84

EROSION CONTROL:

232-3
1-20-84

SEEDING:

3 lbs. of Fescue, Kentucky 31 per 1,000 sq. ft.

FERTILIZER:

15 lbs. of 15-15-15 (or equivalent) chemically combined fertilizer per 1,000 sq. ft.

Equivalent 13-13-13 = 17.3 Lbs/1000 sq. ft.

14-14-14 = 16.1 Lbs/1000 sq. ft.

15-15-15 = 15.0 Lbs/1000 sq. ft.

16-16-16 = 14.1 Lbs/1000 sq. ft.

Mechanical rotary tillage equipment shall be required for the preparation of the seedbed. Hand equipment shall be required in areas inaccessible to field equipment.

The preparation of the seedbed, furnishing and application of seed and fertilizer to all disturbed areas on this project shall be considered incidental to work on this project and no extra compensation will be allowed.

251-2
6-22-8

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.	Shall consist of 25' sections to be used as part of the RE-52 end anchors.
2.	Includes 12 posts 10' x 10', 32 posts 8" x 8" and 8 posts 6" x 8".
4.	To be stockpiled for pickup by State Maintenance Forces.
5 & 6.	To be disposed of as per Std. Notation 213-1.
9.	Contractor shall provide required material. Quantity is estimate only and payment will be made on the actual volume of material placed.

ESTIMATED ROADWAY QUANTITIES

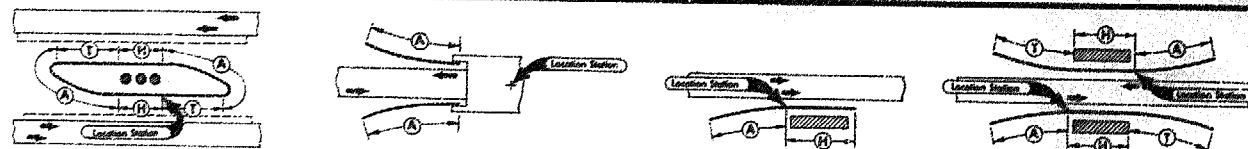
100-00

1-20-84

No.	ITEM	UNIT	TOTAL
1	Guardrail, Formed Steel Beam	Lin. Ft.	100
2	Guardrail Posts, Beam	No.	52
3	Guardrail End Anchorage, Beam RF-52	No.	4
4	Removal of Formed Steel Beam Guardrail	Lin. Ft.	100
5	Removal of Posts	No.	44
6	Removal of Anchor Section, RF-9	No.	4
7	Remove & Reinstall Object Markers	No.	4
8	Remove & Reinstall Formed Steel Beam Guardrail	Lin. Ft.	150
9	Embankment-In-Place	Cu. Yds.	78

TABULATION OF "W" BEAM GUARDRAIL INSTALLATIONS

(Refer to appropriate Standard Road Plans)



LOCATION		STANDARD ROAD PLAN	FORMED STEEL "W" BEAM GUARDRAIL				BEAM GUARDRAIL POSTS				BEAM GUARDRAIL BRIDGE END ANCHORAGE		BEAM GUARDRAIL END ANCHORAGE		SPECIAL CONNECTION (Non-Bid Item)		(12) (Feet)	REMARKS	
NO.	STATION		Case	(A)	(H)	(T)	TOTAL	10"x10" SINGLE SPACER	8"x8" SINGLE SPACER	8"x8" NO SPACER	6"x8" NO SPACER	Type	No.	Type	No.	Type			No.
				Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.												
	528+25 S.E.	RE-57	G	62.5			62.5	3	8		2	*		RE-52	1				*Attach to Abutment
	528+25 S.W.	RE-57	G	62.5			62.5	3	8		2	*		RE-52	1				End Post, requires
	528+25 N.E.	RE-57	G	62.5			62.5	3	8		2	*		RE-52	1				wood chip filling to
	528+25 N.W.	RE-57	G	62.5			62.5	3	8		2	*		RE-52	1				RE-57 52

TABULATION OF GRADING FOR GUARD RAIL INSTALLATIONS

107-23
8-4-78

HAZARD LOCATION (Station)	LOCATION POINT (Station)	INSTALLATION (Type)	'V' DISTANCE (Lin. Ft.)	CLASS 10 EXCAVATION (Cu. Yds.)	PIPE		REMARKS
					Size (Inches)	Type Length (Lin. Ft.)	
527+08 S.W.	527+26 S.W.	1	4	12			
528+00 S.E.	527+38 S.E.	1	4	30			
528+50 N.W.	529+12 N.W.	1	4	12			
528+52 N.E.	529+24 N.E.	1	4	24			

TABULATION OF DELINEATORS AND OBJECT MARKERS

Refer to Standard Road Plan RE-48A-B* and RE-29C **Not a Bid Item

108-17
11-10-83

LOCATION		DELINEATOR	OBJECT MARKER				REMARK
STATION	TYPE*	SINGLE WHITE D-1W NO.	TRIPLE YELLOW OM2-3YV NO.	TYPE 3		OFFSET BRACKETS ** NO.	
				OM-3L	OM-3R		
				NO.	NO.		
528+25 S.E.	3				1		
528+25 S.W.	3			1			
528+25 N.E.	3			1			
528+25 N.W.	3				1		

REMOVAL OF BEAM GUARDRAIL

110-7
11-10-8

LOCATION		BEAM GUARDRAIL		POSTS					END ANCHORAGE		REMARKS
				ROUND	8"x8"		10"x10"				
No.	Station	Remove	Remove & Reinstall	Remove	Remove	Remove & Reinstall	Remove	Remove & Reinstall	NO.	TYPE	
	528+25 S.E.	37.5	37.5	13					1	RE-9	
	528+25 S.W.	12.5	37.5	9					1	RE-9	
	528+25 N.E.	12.5	37.5	9					1	RE-9	
	528+25 N.W.	37.5	37.5	13					1	RE-9	

ROADWAY DESIGN

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

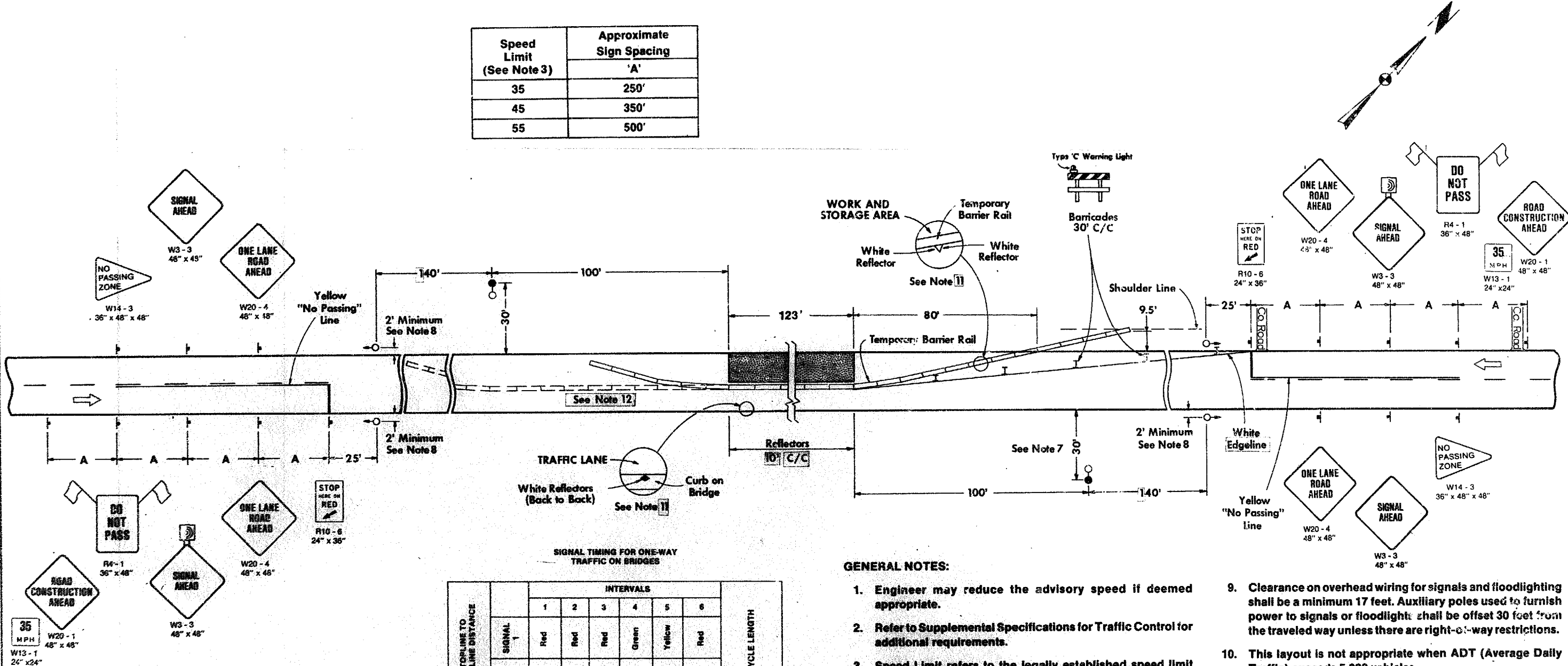
Ed. W. Walker
4989 *October 26, 1984*

IOWA REGISTRATION NUMBER _____ DATE _____

SIoux COUNTY

STATE	CONTRACT NO.	YEAR	Q	13
IOWA	5		9	

Speed Limit (See Note 3)	Approximate Sign Spacing
	'A'
35	250'
45	350'
55	500'



LEGEND

- Traffic Sign
- Type I Barricade (4' wide) (Type "C" Steady Burn Warning Light Required For Nighttime Use) (To Be Weighted)
- Temporary Safety Lighting (Floodlighting)
- Type "B" High Intensity Flashing Warning Light
- Work and Storage Area
- Traffic Signal

DESIGN NO. 2884
FILE NO. 27088
DES. SH. NO. 8 OF 11

SIGNAL TIMING FOR ONE-WAY TRAFFIC ON BRIDGES

STOPLINE TO STOPLINE DISTANCE	SIGNAL	INTERVALS						CYCLE LENGTH
		1	2	3	4	5	6	
		Red	Red	Red	Green	Yellow	Red	
850'	Secs.	26.6	3.8	17.1	26.6	3.8	17.1	95 Secs.
	%	28	4	18	28	4	18	100 %
750'	Secs.	23.8	3.4	15.3	23.8	3.4	15.3	85 Secs.
	%	28	4	18	28	4	18	100 %
650'	Secs.	21.0	3.0	13.5	21.0	3.0	13.5	75 Secs.
	%	28	4	18	28	4	18	100 %
550'	Secs.	17.6	2.2	11.7	17.6	2.2	11.7	65 Secs.
	%	27	5	18	27	5	18	100 %
450'	Secs.	14.6	3.3	9.4	14.6	3.3	9.4	55 Secs.
	%	27	6	17	27	6	17	100 %

STOPLINE TO STOPLINE DISTANCE	SIGNAL	INTERVALS						CYCLE LENGTH
		1	2	3	4	5	6	
		Red	Red	Red	Green	Yellow	Red	
850'	Secs.	26.4	3.6	30.0	26.4	3.6	30.0	120 Secs.
	%	22	3	25	22	3	25	100 %
750'	Secs.	28.8	4.8	28.4	28.8	4.8	28.4	120 Secs.
	%	24	4	22	24	4	22	100 %
650'	Secs.	25.2	4.2	23.1	25.2	4.2	23.1	105 Secs.
	%	24	4	22	24	4	22	100 %
550'	Secs.	20.7	4.5	19.8	20.7	4.5	19.8	90 Secs.
	%	23	5	22	23	5	22	100 %
450'	Secs.	19.2	4.0	16.8	19.2	4.0	16.8	80 Secs.
	%	24	5	21	24	5	21	100 %

GENERAL NOTES:

- Engineer may reduce the advisory speed if deemed appropriate.
- Refer to Supplemental Specifications for Traffic Control for additional requirements.
- Speed Limit refers to the legally established speed limit before construction and not the advisory speed during construction.
- Contractor shall be responsible for placement and removal of white edgelines, yellow "No Passing" lines and 12-inch wide stop lines. Dashed yellow centerline or yellow "No Passing" line between the stop lines shall be removed prior to the beginning of construction and replaced before opening to two-way traffic. Reflectors shall be removed before opening to two-way traffic.
- Contractor shall set signal timing within limits of table with approval of engineer.
- For Temporary Floodlighting see Design Detail 570-2.
- Pole for Temporary Floodlighting shall be offset 30 feet from the traveled way unless there are right-of-way restrictions.
- Traffic signal shall be placed a minimum of 2 feet from the face of the curb or the edge of the pavement.
- Clearance on overhead wiring for signals and floodlighting shall be a minimum 17 feet. Auxiliary poles used to furnish power to signals or floodlighting shall be offset 30 feet from the traveled way unless there are right-of-way restrictions.
- This layout is not appropriate when ADT (Average Daily Traffic) exceeds 5,000 vehicles.
- Reflectors mounted back to back will be placed on both the curb and Temporary Barrier Rail Sections. Spacing of the reflectors shall be at 10-foot intervals through the taper and work area.
- The trailing end of the temporary barrier rail may be lengthened up to 100 feet at the contractor's option and expense. The location of all signs, traffic signals, and floodlights shall remain as shown.
- For the construction period, remove existing edgeline through the Work and Storage Area plus a distance of 165 feet on each end.

TRAFFIC CONTROL LAYOUT ONE-LANE TRAFFIC ON BRIDGES FOR 10-FOOT APPROACH SHOULDERS

TWO-LANE ROADWAY

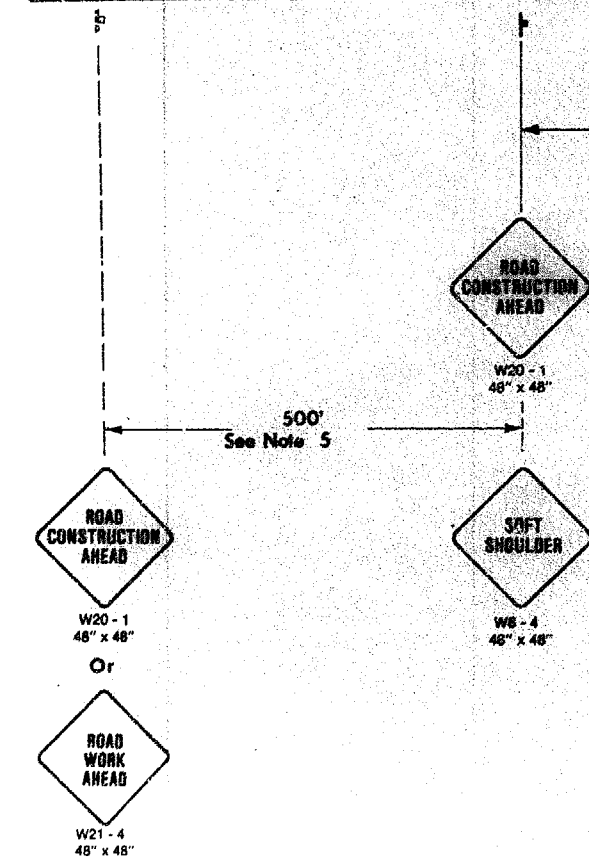
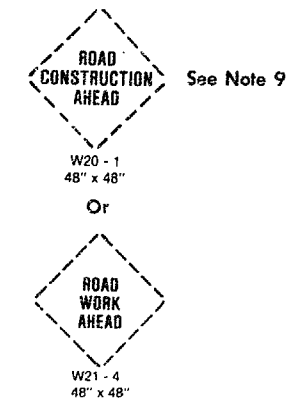
TYPICAL APPLICATIONS

Culvert Work
Shoulder Work
Utility Operations
Backslope Repair
Guardrail Installation
Island Modification
Unfinished Work
County Road Intersection with Primary Road

Speed Limit (See Note 7)	Approximate Sign Spacing 'A'
35	500'
45	700'
55	1000'

TABLE OF BARRICADE SPACING	
Horizontal Curve Radius	Maximum Barricade Spacing
Less than 300'	20'
300' to 1000'	50'
Greater than 1000'	300'

Note: A minimum of three barricades is required.



A vehicle with an amber revolving light or an amber strobe light may be substituted for the Type II barricade.

GENERAL NOTES

- This layout represents traffic controls required for:
 - Work which does not interfere with traffic but does result in men and equipment operating within 12 feet of the edge of the traveled way.
 - Identifying areas where roadside work has been started but remains incomplete within 30 feet of the edge of the traveled way, except when no work or physical obstruction is present.
- A work area may be set up on both sides of the road, except where a shoulder dropoff exists in which case only one work area will be permitted. For a work area on one side only there shall be no parking on the opposite shoulder within 500 feet of the work area.
- Refer to Supplemental Specifications For Traffic Control for additional requirements.
- Advisory speed plates are not to be used in this situation.
- When construction creates a shoulder dropoff, a "Soft Shoulder" sign will follow the "Road Construction Ahead" sign. When the dropoff exceeds three inches, a minimum of three barricades will be required as noted in the Table.
- Where no shoulder dropoff exists:
 - Work or equipment within 12 feet of the traveled way and confined to a spot location (roadway length less than 200 feet) shall be marked with barricades at 25-foot spacing or a vehicle with an amber revolving light or an amber strobe light visible to oncoming traffic.
 - Work or equipment within 12 feet of the traveled way and extending more than 200 feet of roadway length shall be marked with barricades as noted in the Table.

- No barricades are required for equipment operating or work in progress more than 12 feet from the traveled way.
 - When a physical obstruction is present at unfinished and unattended work within 30 feet of the traveled way, the location shall be marked with barricades. Locations shall be barricaded with at least three barricades according to the Table, except where spacing would be less than 20 feet.
- Speed limit refers to the legally established speed limit before construction.
 - Individual Type I barricades may be omitted during working hours in areas where placement interferes with the work.
 - Sign required only when dropoff exceeds three inches, or sight distance is restricted (typically a No-Passing Zone) in the work area.

LEGEND

- Traffic Sign
- Type I Barricade (Type "C" Steady Burn Warning Light Required For Nighttime Use) (To Be Weighted)
- Type II Barricade (Type "A" Low Intensity Flashing Warning Light Required For Nighttime Use) (To Be Weighted)
- Type "A" Low Intensity Flashing Warning Light
- Work Area

DESIGN NO. 2884
FILE NO. Z7088
DES. SHEET 2 OF 11

DETAIL SHEET

520-2

Revision Date 6-22-84

TRAFFIC CONTROL WHERE
WORK AREA DOES NOT
REQUIRE LANE CLOSURE

Sioux COUNTY

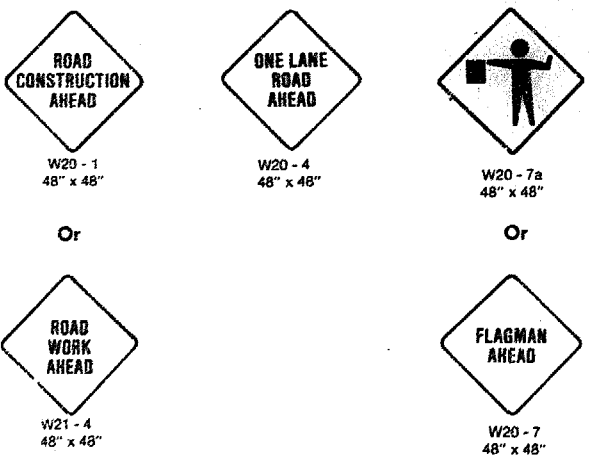
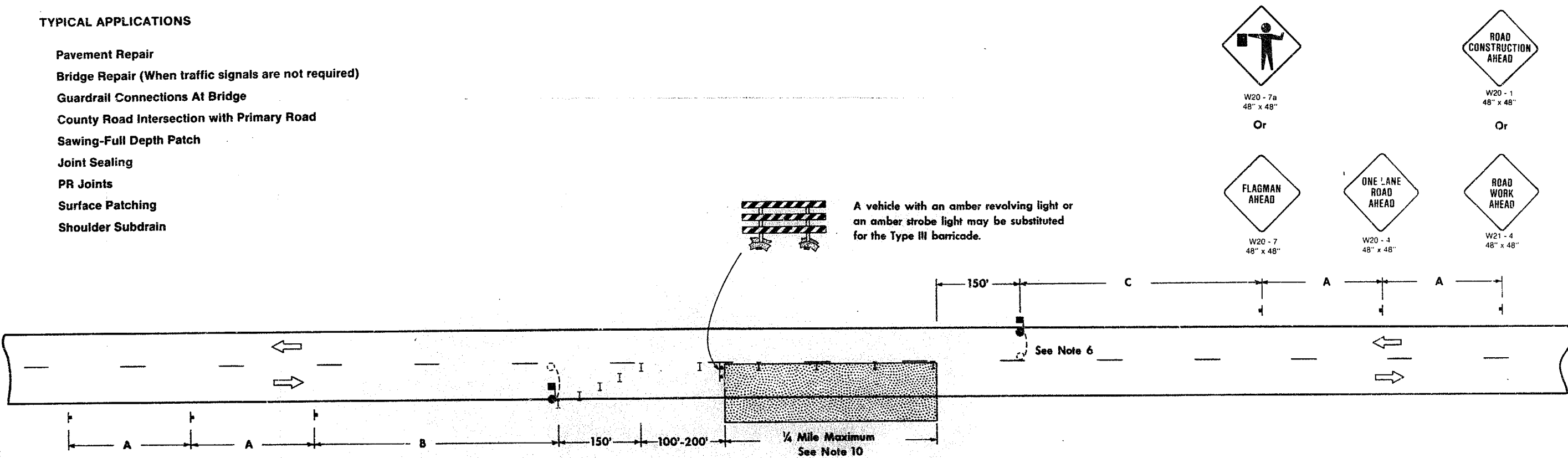
PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		11	13

TWO-LANE ROADWAY

TYPICAL APPLICATIONS

- Pavement Repair
- Bridge Repair (When traffic signals are not required)
- Guardrail Connections At Bridge
- County Road Intersection with Primary Road
- Sawing-Full Depth Patch
- Joint Sealing
- PR Joints
- Surface Patching
- Shoulder Subdrain



Speed Limit (See Note 5)	Approximate Sign Spacing		
	"A"	"B" or "C" Range (See Note 9)	"B" + "C" Maximum
35	250'	500'-3000'	3500'
45	350'	700'-3000'	3700'
55	500'	1000'-3000'	4000'

- LEGEND**
- Traffic Sign
 - Flagger
 - Work Area
 - Channelizing Devices (Vertical Panel, Cone, or Type I Barricade) (To Be Weighted)
 - Type III Barricade
- DESIGN NO. 2884
FILE NO. 27088
DES. SH. NO. 10 OF 11

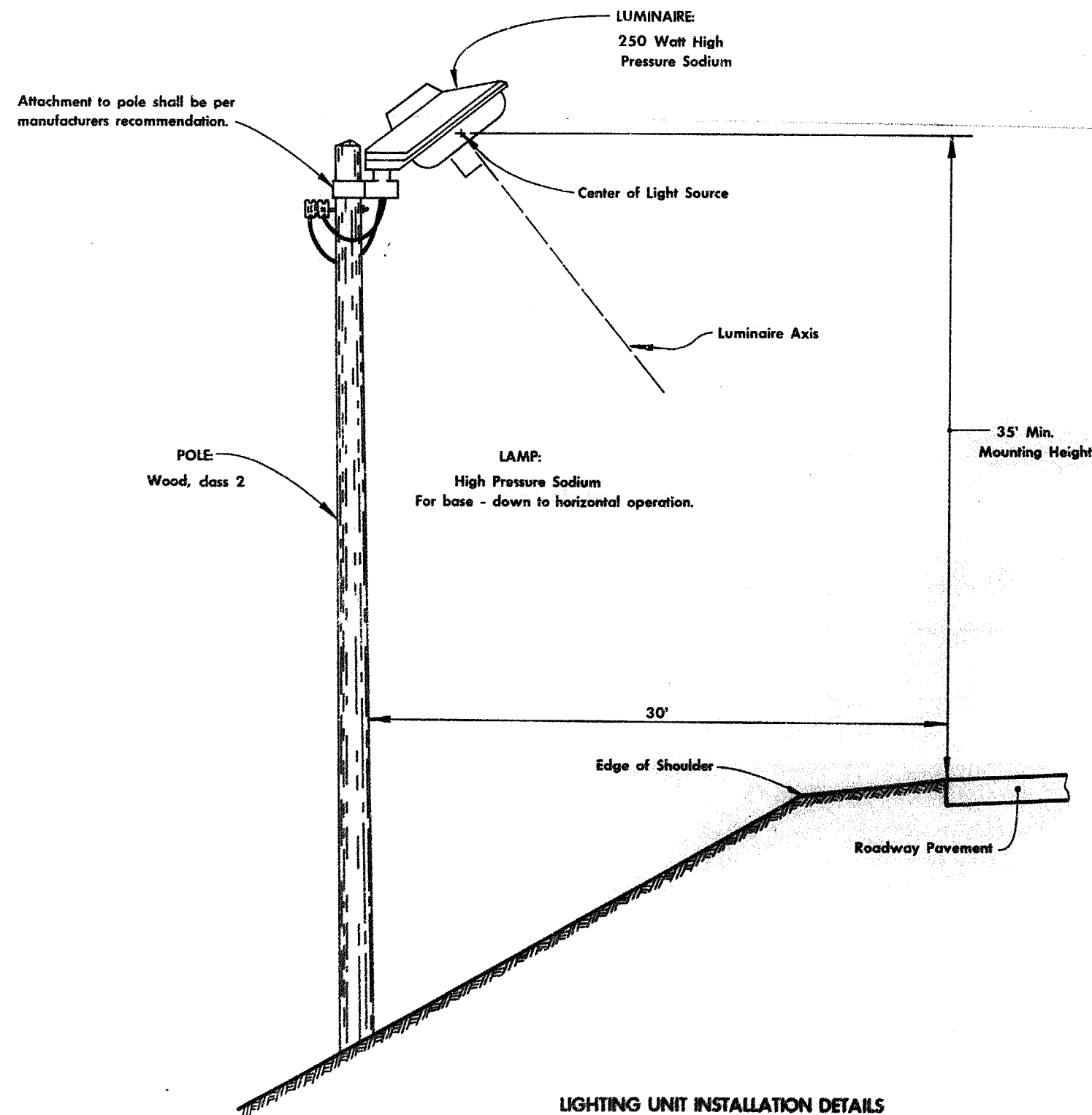
GENERAL NOTES:

- Conditions represented are for work which requires closing traffic lane during daylight hours only.
- No parking on opposite shoulder within 500 feet of work area.
- Refer to Supplemental Specifications For Traffic Control for additional requirements.
- In general, spacing of channelizing devices thru a work area shall be as follows:
 - (a) 20' where horiz. curve radius is less than 300'.
 - (b) 50' where horiz. curve radius is from 300' to 1000'.
 - (c) 300' for all other cases.
 - (d) Where cutouts or holes exist within a given work area an additional channelizing devices will be placed just ahead of each.
- Speed limit refers to the legally established speed limit before construction.
- The flagger shall stop the first vehicle from the position shown, then cross traffic lane to stop other vehicles.
- An additional flagger shall be stationed at intersections or crossings within the work area, to prevent vehicles from entering the work area against the flow of traffic.
- Individual channelizing devices may be omitted during working hours in areas where placement interferes with the work. Channelizing devices on taper required at all times.
- "B" and "C" distances are to remain as near minimum values as work permits. However, to be able to move the work area without moving the advance signing, "B" and "C" distances may be varied within the limits of the Table. Maximum movement can be achieved by setting one "B" or "C" value at the minimum and the other value at its maximum.
- With the approval of the engineer, the length of the work area may, for a short duration, be changed to as much as 1/2 mile maximum to improve the sight distance to the flagger. In this event radio contact shall be required between the flaggers.

DETAIL SHEET **520-3**

Revision Date 6-22-84

TRAFFIC CONTROL FOR WORK AREAS LESS THAN 1/4 MILE LONG REQUIRING LANE CLOSURE



GENERAL NOTES:

Temporary floodlighting will be required on this project. The lighting shall conform to current Standard Specifications for floodlighting, Sections 2528.08 and 2528.12(D) except as modified hereon.

Temporary floodlighting shall consist of either a pole mounted luminaire as illustrated hereon or a luminaire mounted on portable type equipment. Location of the temporary floodlighting shall be as shown in the Traffic Control Plan or as determined by the engineer. The contractor shall determine pole length by field measurement to obtain specified mounting height. Luminaire axis shall be directed to within the limits of the near traffic lane unless specified otherwise.

The luminaire shall be designed to operate without a mastarm such as the "Expressway" luminaire by the Holophane Division of Johns-Manville, Inc. or the "Interstate" luminaire by the American Electric Division of I.T.T.

Aerial lighting circuits shall be aluminum or A.C.S.R. triplex. Underground lighting circuits shall be type U.S.E. or U.F. All circuit design and materials shall be approved by the engineer before installation commences.

Price bid for "Temporary Floodlighting" shall include all costs for furnishing, installing, maintaining and servicing the Temporary Floodlighting Units, all costs for electrical energy, and the cost of removing all lighting materials from the construction site.

DETAIL SHEET

570-2

Revision Date 8-24-84

TEMPORARY FLOODLIGHTING

(Offset)

(modified)

DESIGN NO. 2884
FILE NO. 27088
DES. SH. NO. 11 OF 11

Sioux COUNTY

PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	3		13	13