

TO DIST 12/7/82

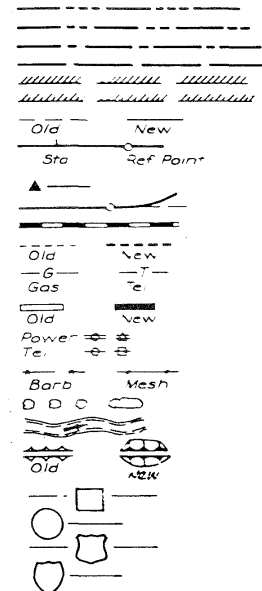
BRIDGE REPAIR
FN-30-3(14)--21-37

GREENE COUNTY

Greene 115 30 #30

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
GREENE COUNTY
BRIDGE REPAIR

ON U.S. 30 OVER BUTTRICK CREEK 2.5 MILES WEST OF GRAND JUNCTION

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)

CONSTRUCTION PLANS SHOWING PROJECT AS BUILT

Plan Preparation Supervised By: Ron DeBoer
Resident Construction Engineer

Date 12-11-84 Iowa Reg. No. 5795

REVIEWED AND FORWARDED TO AMES

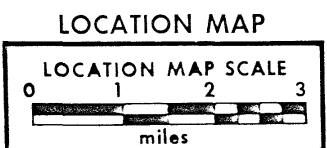
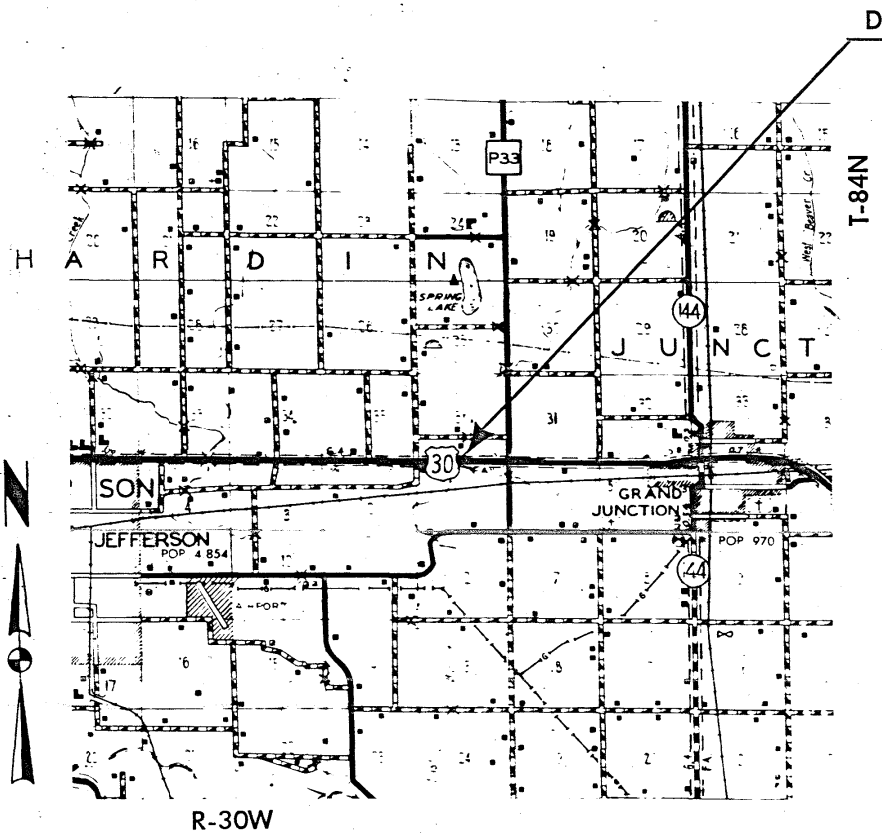
Ray W. Kuhn Date _____
District Construction Engineer

One 30% Reduced and Three Full-Size Prints To Be Made and Returned To

Bob Humphrey
District Engineer

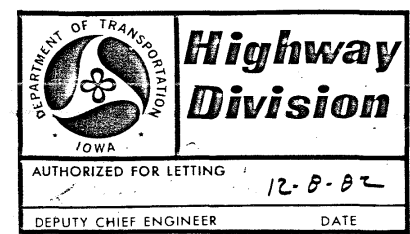
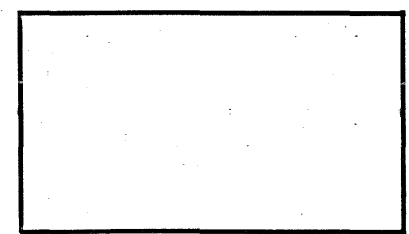
AFTER MICROFILMING RETURN ORIGINAL
TO DISTRICT NO. 1

THIS AS BUILT PLAN INCLUDES			
YEAR	WORK	CONTRACTOR	PROJ. INSPECTOR
1983	BRIDGE REPAIR	CRAMER BROS.	J. DELUHERY



INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET
3-13	DESIGN NO. 182

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



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.

R. Pittman
2792 12-7-82
IOWA REGISTRATION NUMBER DATE

U.S. DEPT. TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ENGINEER DATE

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.

Dec 6 1982 James R. Sassaman REG. NO. 2663
DATE JAMES R. SASSAMAN

IN LETTING OF JANUARY 18, 1983	DESIGN NO. 182	OVER BUTTRICK CREEK	STA. 1245+15.00
	GREENE COUNTY	MAINT. NO. 3712.85080	
	SECTION 36	T-84N R-30W	HARDIN TWP.
	DESIGN FOR REPAIRS TO 180' x 28' CONTINUOUS I-BEAM BRIDGE		
	ESTIMATE OF QUANTITIES		
	NO.	ITEM	TOTAL
		UNIT	
	1	Bridge Floor Overlay	Sq. Yds. 570 569.5 ✓
	2	Class A Bridge Floor Repair	Sq. Yds. 384 377.7 ✓
	3	Traffic Control	L. S. Lump Sum ✓
	4	Pavement Marking	Sta. 87 886.26 ✓
	5	Temporary Barrier Rail - Concrete	Lin. Ft. 420.0 ✓
	6	Epoxy Sealer for Concrete	Sq. Ft. 760 ✓
	7	Structural Concrete	Cu. Yds. 10.0 ✓
	8	Steel Extrusion Joint with Neoprene	Lin. Ft. 29.1 ✓
	9	Reinforcing Steel	Lbs. 929 ✓
	10	Floodlighting	L. S. Lump Sum ✓
	11	Traffic Control Signals - Furnish & Install	L. S. Lump Sum ✓
	12	Removal of Existing Structures	L. S. Lump Sum ✓
	13	Removal of Pavement	Sq. Yds. 24 22.1 ✓
	14	Reinforced Bridge Approach Section, as per plan	Sq. Yds. 21.8 ✓
	15	Class 20 Excavation	Cu. Yds. 10 ✓
	16	Granular Backfill	Cu. Yds. 14 ✓
	EXTRA WORK ORDER		
	8001	FURNISH & PLACE 4" RUNDOUT TAPERS	TONS 13.50 ✓

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	Included cleaning joints at E. end and sealing joints at both ends of bridge.	
4	Included placement of 44.7 Stations (13.3 Sta. white, 31.4 Sta. yellow) and removal of 42.3 Stations.	
6	Included 132 sq. ft. of bridge seat sealer for sealing abutment bridge seats.	
7	To be Class D.	
10	Included 2 Floodlights.	
11	Included 4 Traffic Control Signals. Traffic Control Signals ^{was} are to be removed and are to remain the property of the Contractor.	

ESTIMATE SHEET

FILE NO. 26625

GREENE COUNTY

PROJECT NUMBER		STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
FN-30-3(14)--21-37		IOWA	5		2	13

TRAFFIC CONTROL PLAN

1. Traffic control on this project ^{was} ~~shall be~~ in accordance with layouts contained in the plans. For additional complementary information, refer to Supplemental Specification 854.
2. 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.
3. All traffic control devices ^{was} ~~shall be~~ furnished, erected, maintained, and removed by the contractor.
4. The location for storage of equipment by the contractor during non-working hours ^{was} ~~will be as~~ approved by the engineer in charge of construction.
5. The engineer may require modification of, or additions to, pavement marking details shown. Conflicting permanent edgelines or centerlines ^{was} ~~shall be~~ removed and replaced with appropriate temporary lines. As applicable, permanent edgelines and centerlines ^{was} ~~shall be~~ restored before the roadway is returned to normal traffic.
6. Proposed sign spacing ^{was} ~~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.
7. Proposed changes in the Traffic Control Plan (includes layout sheets) shall be reviewed with the Office of Construction before changes are made.
8. The bid item "Traffic Control" ~~shall~~ include the cost for all traffic control measures required of the contractor except for pavement markings, flood-lighting, temporary barrier rail and traffic signals.

GENERAL NOTES

This design is for repair to the existing 180' x 28' Continuous I-Beam Bridge, original Design 656 Greene County. Plans of the existing structure may be obtained at the Ames Office of the Iowa D.O.T. Highway Division.

Repairs ~~shall~~ consist of the following:

1. Bridge Floor Repair.
2. Bridge Floor Overlay.
3. Remove portion of approach pavement at west abutment and excavate behind abutment.
4. Remove expansion device, west abutment backwall, anchor blocks and portions of slab, curbs, N.W. end post and tapered blocks.
5. Reconstruct west abutment backwall, portions of slab, curbs and N.W. end post while installing steel extrusion joint.
6. Repair face of N.W. wing wall.
7. Reconstruct bridge approach section, anchor blocks and portions of tapered blocks on curbs.
8. Repair spill on north end of east abutment bridge seat.
9. Add epoxy sealer to gutters, face of curbs and top of abutment bridge seats.
10. Seal joints between approach pavement and backwall at both abutments and between superstructure and backwall at east abutment.

STAGE CONSTRUCTION

Construction ^{was} ~~shall be~~ done in stages with at least one lane of traffic maintained at all times in accordance with "Traffic Control Plan" notes on this sheet and "Traffic Control Layout" on sheets 8, 9 & 10 of 11.

BRIDGE FLOOR REPAIR

Plan quantity of floor repair is based on the "Survey Plot" as shown on Design Sheet 6 of 11. Hatched portions represent Class A Bridge Floor Repair. Actual spalled and hollow areas, as determined by the engineer at the time of construction, ^{was} ~~shall be~~ repaired. The entire concrete surface of the floor, including areas over bridge floor repair, shall have Bridge Floor Overlay.

Present floor thickness is about 7 1/4 inches. The contractor will be required to exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

Surface raise as shown on the plans shall be considered minimum. In order to limit additional dead load, surface raise ^{was} ~~shall be~~ restricted to a maximum of 1/2 inch more than that shown on the plans. Profile ^{was} ~~shall be~~ adjusted to the extent possible within these limits.

EPOXY SEALER FOR CONCRETE

In addition to requirements of Art. 2413.09, an epoxy sealer ^{was} ~~shall be~~ applied to the curbs. The epoxy sealer material and application ^{was} ~~shall~~ comply with Materials I.M. 491.12. Before application of epoxy, new concrete surfaces ^{was} ~~must be~~ cured and all surfaces ^{was} ~~must be~~ sound, clean and dry. As directed by the engineer, old surfaces may require removal of unsound material by sandblast and/or hand methods. Epoxy sealer ^{was} ~~shall be~~ applied prior to any other surface treatment application. For portland cement concrete floor repair, Par. 2413.02A., the epoxy sealer ^{was} ~~shall be~~ applied along each gutter line, extending one foot onto the roadway and up the batter face of the curb. For latex-modified concrete floor repair, 2413.02B., the epoxy sealer shall be applied to the batter face of each curb, end to end, but it shall not be applied on the roadway. Other areas requiring epoxy sealer may be designated elsewhere on these plans. Quantity of "Epoxy Sealer for Concrete," in square feet, to be paid for will be computed from measurements of areas actually covered and Art. 1109.03 shall not apply. Plan quantity is based on PC Concrete floor repair.

SPECIFICATION:

Construction: Iowa Department of Transportation Specifications, Series of 1977, plus current Supplemental Specifications and Special Provisions including: Spec. 854, "Supplement Specifications for Traffic Controls." Spec. 875, "Supplemental Specifications for Pavement Marking."

STRUCTURAL CONCRETE

The Structural Concrete quantity includes concrete for rebuilding back-wall, slab, curbs, end post and end post base, guardrail anchor blocks and tapered blocks at west end. The cost for furnishing and placing all preformed joint material ^{was} ~~is to be included~~ in the unit bid price for "Structural Concrete".

STEEL EXTRUSION JOINT

The unit price bid for "Steel Extrusion Joint with Neoprene" is to include all labor and material necessary for the fabrication and installation (including curb plates and temporary erection material) of the strip seal expansion device as detailed on sheet 4 & 5 of 11.

REMOVAL OF EXISTING STRUCTURES

The lump sum bid for "Removal of Existing Structures" is to include all costs for removal and disposal of the following:

1. West abutment backwall and entire expansion device along with guardrail anchor blocks and portions of slab abutment diaphragm, curbs, tapered blocks, northwest end post and wing post base.
 2. Deteriorated & spalled concrete of north end of east abutment bridge seat.
 3. Cutting of steel channels and rail to provide opening between railing and concrete end post at west abutment.
- The removals ^{was} ~~shall be~~ in accordance with Section 2401, except that structural steel (expansion device) ^{was} ~~shall~~ become property of the contractor. It is intended that all the reinforcing and the insert assembly for cap screws of anchor blocks for guardrail ^{was} ~~will be~~ salvaged and reused. If reinforcing or insert assemblies are damaged, in the opinion of the engineer, the bridge contractor shall furnish new material at no additional cost.

REMOVAL OF PAVEMENT

The contractor is to remove a portion of the existing Portland Cement Concrete Pavement from the west end of the bridge as shown on sheet 4 of 11. The unit price bid for "Removal of Pavement" ^{was} ~~is to include~~ the cost of removal and disposal of the existing approach pavement as noted and shown.

BRIDGE APPROACH SECTION

The contractor ^{was} ~~is to~~ construct new bridge approach pavement at west abutment as detailed on sheet 4 of 11. The unit price bid for "Reinforced Bridge Approach Section, as per Plan" ^{was} ~~shall be~~ considered full compensation for furnishing all material, excavation and labor necessary to construct the bridge approach section.

EXCAVATION

It ^{was} ~~will be~~ necessary to support the earth and/or granular material behind the abutment and next to traffic during the removal and reconstruction of the backwall by some method as approved by the engineer. All costs for supporting the earth and/or granular material ^{was} ~~shall be~~ included in the unit price bid for "Class 20 Excavation."

APPROACHES

The Asphaltic Concrete runoff taper at each end of the bridge will be placed by local Highway Division Maintenance forces before traffic is shifted to new construction. The Bridge Contractor shall give adequate prior notice so that Asphaltic Concrete may be placed during normal working hours and working days of Maintenance.

TRAFFIC COUNT: 3,350 A.A.D.T. (1980)

LOCATION:

Bridge Maintenance No. 3712.85030
U.S. #30 over Buttrick Creek
Section 36
Hardin Twp.
T-84 N R-30 W
Greene County

Design For Repairs to
180'-0" x 28' CONTINUOUS I-BEAM
BRIDGE

55'-0" End Spans 70'-0" Center Span

GENERAL NOTES & ESTIMATED QUANT.

Station: 1245+15.00 November, 1982

GREENE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No.: 1 Of 11 File No.: 26625 Design No.: 182

Item No.	Item	Units	Quantity
1	Bridge Floor Overlay	sq. yds.	570 569.5 ✓
2	Class A Bridge Floor Repair	sq. yds.	384 377.70 ✓
3	Traffic Control	l.s.	Lump Sum ✓
4	Pavement Marking	sta.	870 86.26 ✓
5	Temporary Barrier Rail-Concrete	lin. ft.	4200 ✓
6	Epoxy Sealer for Concrete	sq. ft.	760 ✓
7	Structural Concrete	cu. yds.	10.0 ✓
8	Steel Extrusion Joint with Neoprene	lin. ft.	291 ✓
9	Reinforcing Steel	lbs.	929 ✓
10	Floodlighting	l.s.	Lump Sum ✓
11	Traffic Control Signals-Furnish & Install	l.s.	Lump Sum ✓
12	Removal of Existing Structures	l.s.	Lump Sum ✓
13	Removal of Pavement	sq. yds.	24 22.1 ✓
14	Reinforced Bridge Approach Section, As per Plan	sq. yds.	21.8 ✓
15	Class 20 Excavation	cu. yds.	10 ✓
16	Granular Backfill	cu. yds.	14 ✓
EXTRA WORK ORDERS			
8001	FURNISH & PLACE 7/8" RUNOUT TAPERS	TONS	13.50 ✓

Item No.	Estimate Reference Information:
1	Included cleaning joints at E. end and sealing joints at both ends of bridge.
4	Included placement of 44.7 stations (133 sta. white, 31.4 sta. yellow) and removal of 42.3 stations.
6	Included 132 sq. ft. of bridge seat sealer for sealing abutment bridge seats.
7	To be Class D.
10	Included 2 Floodlights
11	Included 4 Traffic Control Signals. Traffic Control Signals ^{was} are to be removed and are to remain the property of the Contractor.

DESIGNED BY: Gallmann
DETAILED BY: D.A. W. H. H.

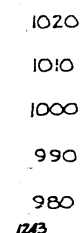
TRACED BY: M. J. F. H.
CHECKED BY: M. J. F. H.

Section Leader Sassaman

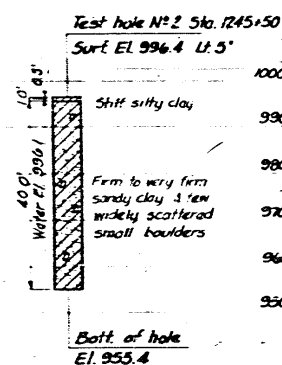
GREENE COUNTY

PROJECT NUMBER FN-30-3(14)-21-37

STATE IOWA
FED. ROAD DIST. NO. 6
FISCAL YEAR
SHEET NO. 3
TOTAL SHEETS 13



Note: Downstream $1\frac{1}{2}$ miles on
US 30, present 2-55'x18' con-
crete arches - Design No. 1-1914.



Note Creek dry when soundings made except for a few pot holes.

NOTE: THIS SHEET FROM ORIGINAL
DESIGN IS INCLUDED FOR INFORMATION
ONLY.

GENERAL NOTES

This bridge is designed for H20-44 loading plus an allowance of 19 lbs per sq ft of roadway for future wearing surface in accordance with the AASHTO Specifications Series of 1953 except that this bridge is designed so that an increase in the live load of 100% will not increase the total stress to more than 150% of the specification.

Approach fills, if any as shown, are not a part of this estimate but are to be placed & compacted before abutment piles are driven. The Bridge Contr. is to level off and shape berms to the elevations shown.

The Bridge Contractor is to clear the channel as indicated by the shaded areas on the Situation Plan & Section (27' each side of E Roadway.)

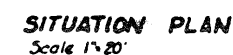
SPECIFICATIONS

Design AASHO, Series of 1933, modified as noted above.
Construction Iowa State Highway Commission Standard
Specifications Series of 1952 plus current special provisions

TOTAL ESTIMATED QUANTITIES				
Item	Superstr.	2 Piers	2 Abuts.	Total
Concrete	1537 c.y.	640 c.y.	666 c.y.	2843 c.y.
Structural Steel	152,140 lbs.	—	—	152,140 lb.
Reinforcing Steel	36,855 lbs.	7,282 lbs.	4026 lbs.	48,163 lb.
Cresosoted Piling	—	—	26 @ 45'	1170 lin f.
Untreated Piling	—	48 @ 35'	—	1680 lin f.
Excavation - Class 10	—	—	—	475 c.y.
Excavation - Class 20	—	36 c.y.	120 c.y.	156 c.y.
Excavation - Class 21	—	125 c.y.	—	125 c.y.



LONGITUDINAL SECTION ALONG A ROADWAY
Scale 1"=20'



DESIGN NO. 182
FILE NO. 26625
DES. SH. NO. 2 OF 11

LOCATION
Over Buttrick Creek
Section 36
Hardin Twp
Greene County

Design for

180'±20' CONTINUOUS I-BEAM BRIDGE
55'-0" End Spans 70'-0" Center Span
Concrete Floor & Substructure Steel Rail

GENERAL / SITUATION PLANS

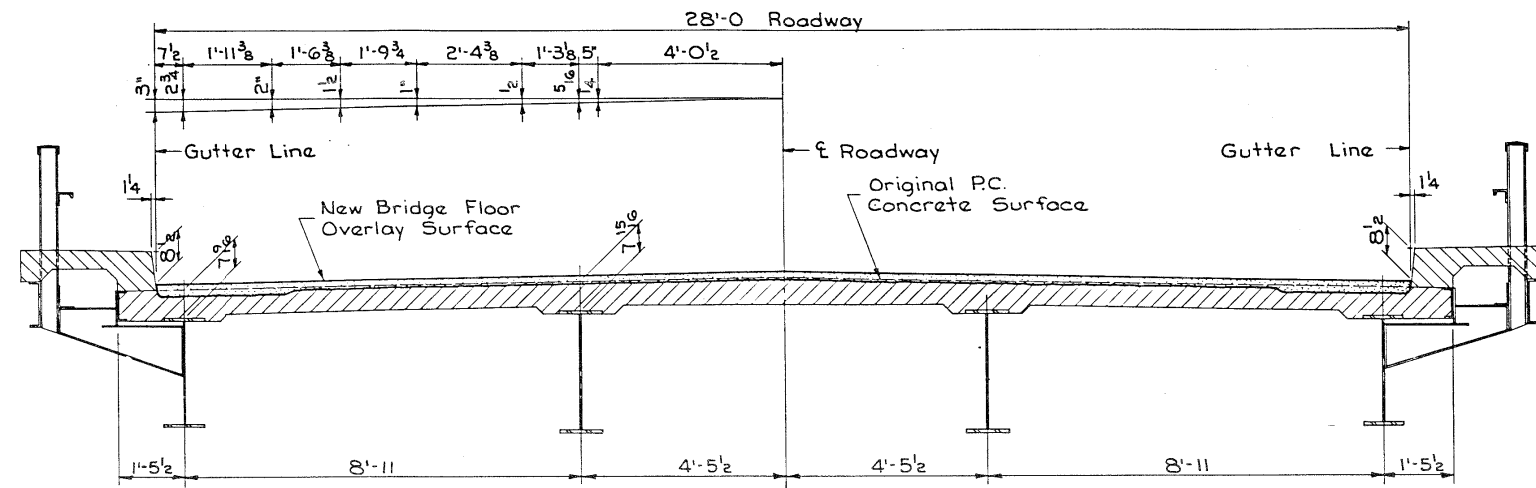
Station 1245+15.00 Project No.#K-029(2)

GREENE COUNTY

Iowa State Highway Commission
October 1935

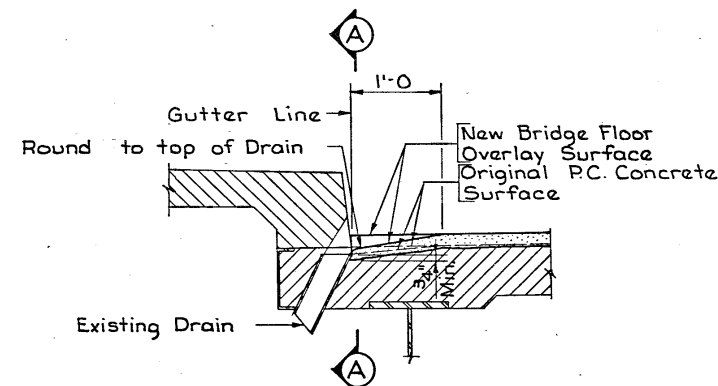
Sheet 1 of 4

Design 656 Greene County File No 16374
4 of 13
Drawn by *LD* Checked by *W*

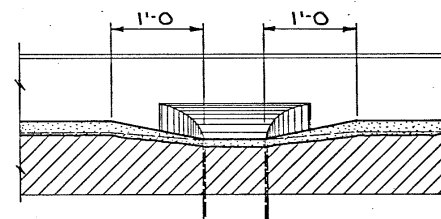


CROSS SECTION

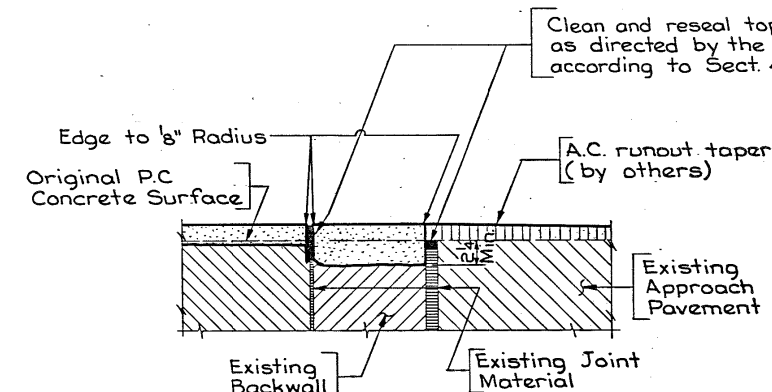
NOTE: New Bridge Floor Overlay Surface is to be 1 1/2 inches above and parallel to the Original P.C. Concrete Surface with screed guides adjusted to achieve a smooth profile.



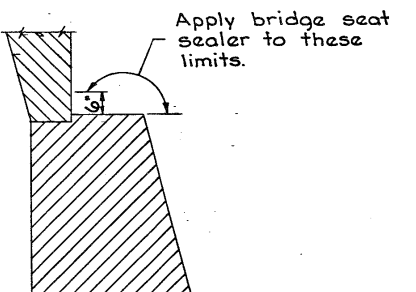
PART SECTION AT DRAIN



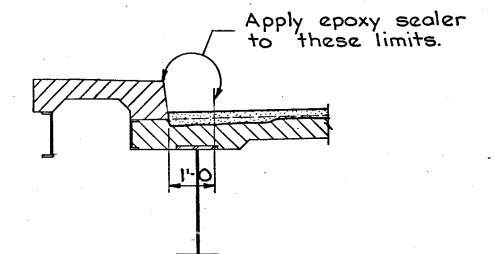
SECTION A-A



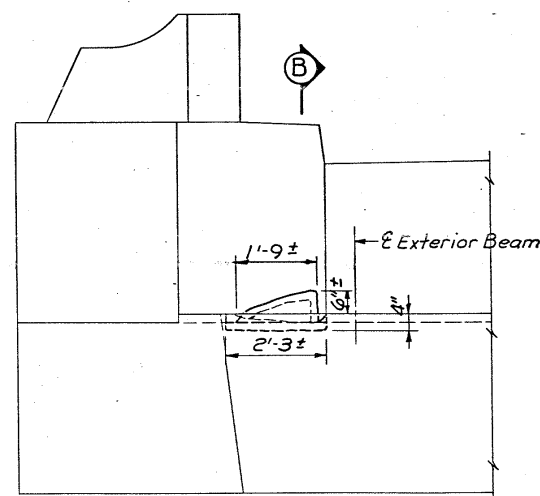
PART SECTION THRU EAST ABUTMENT



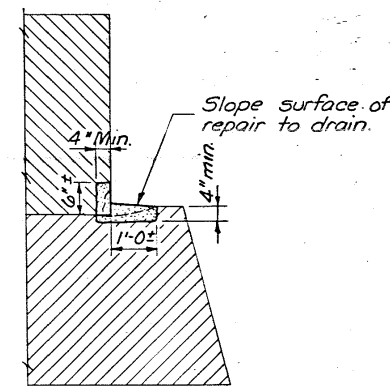
SECTION THRU ABUTMENT
Showing limits of bridge seat sealer applied to abutment.



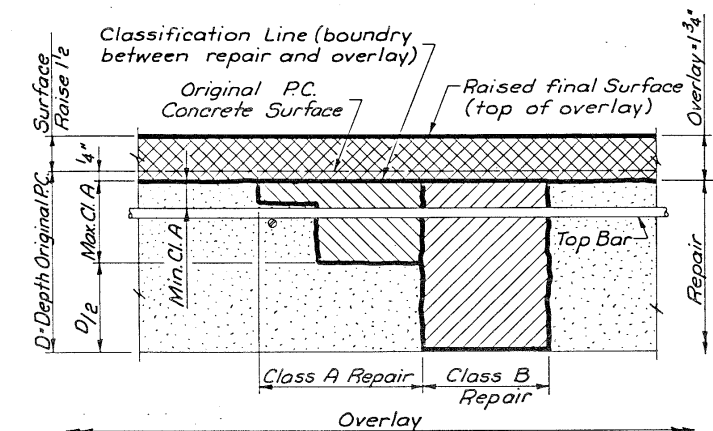
PART SECTION
Showing limits of Epoxy Sealer if portland cement concrete is used for floor repair.
If latex modified concrete is used for the floor repair, the same limits apply except the sealer shall not be applied to the 1'-0" width of the roadway.



PART ELEVATION EAST ABUTMENT
Looking East



PART SECTION B-B



REPAIR AND OVERLAY DEFINITION

Design For Repairs to
180'-0" x 28' CONTINUOUS I-BEAM BRIDGE
55'-0" End Spans 70'-0" Center Span
REPAIR DETAILS
Station: 1245+15.00 November, 1982
GREENE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 3 Of 11 File No.: 26625 Design No.: 182

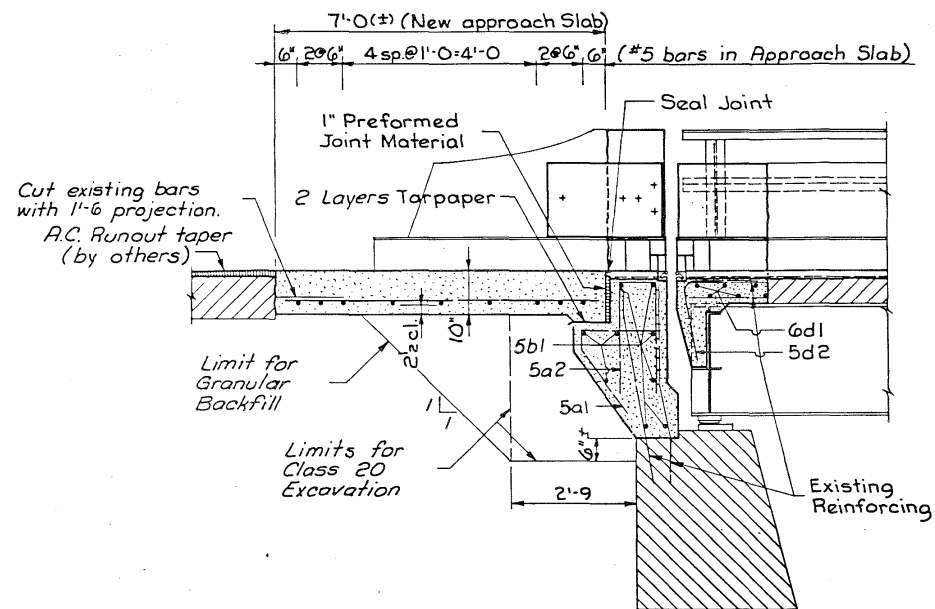
DESIGNED BY: H. Bollmann
DETAILED BY: D.A. Wright

TRACED BY:
CHECKED BY: M. E. L. L. L.

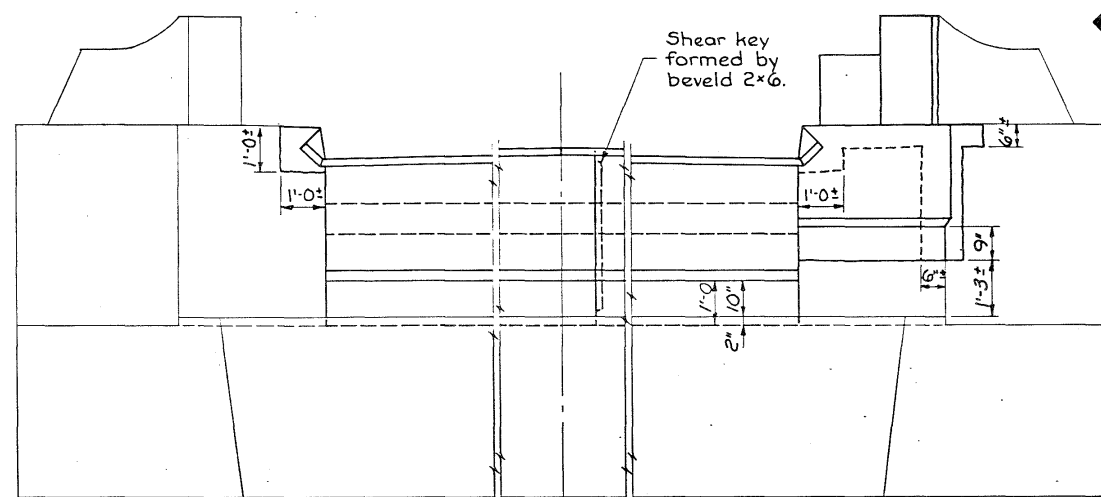
GREENE COUNTY

PROJECT NUMBER

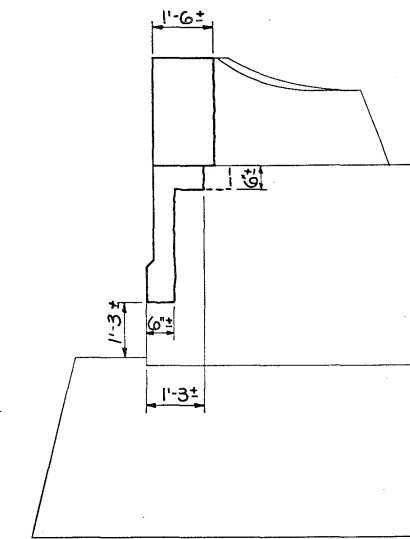
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		5	13



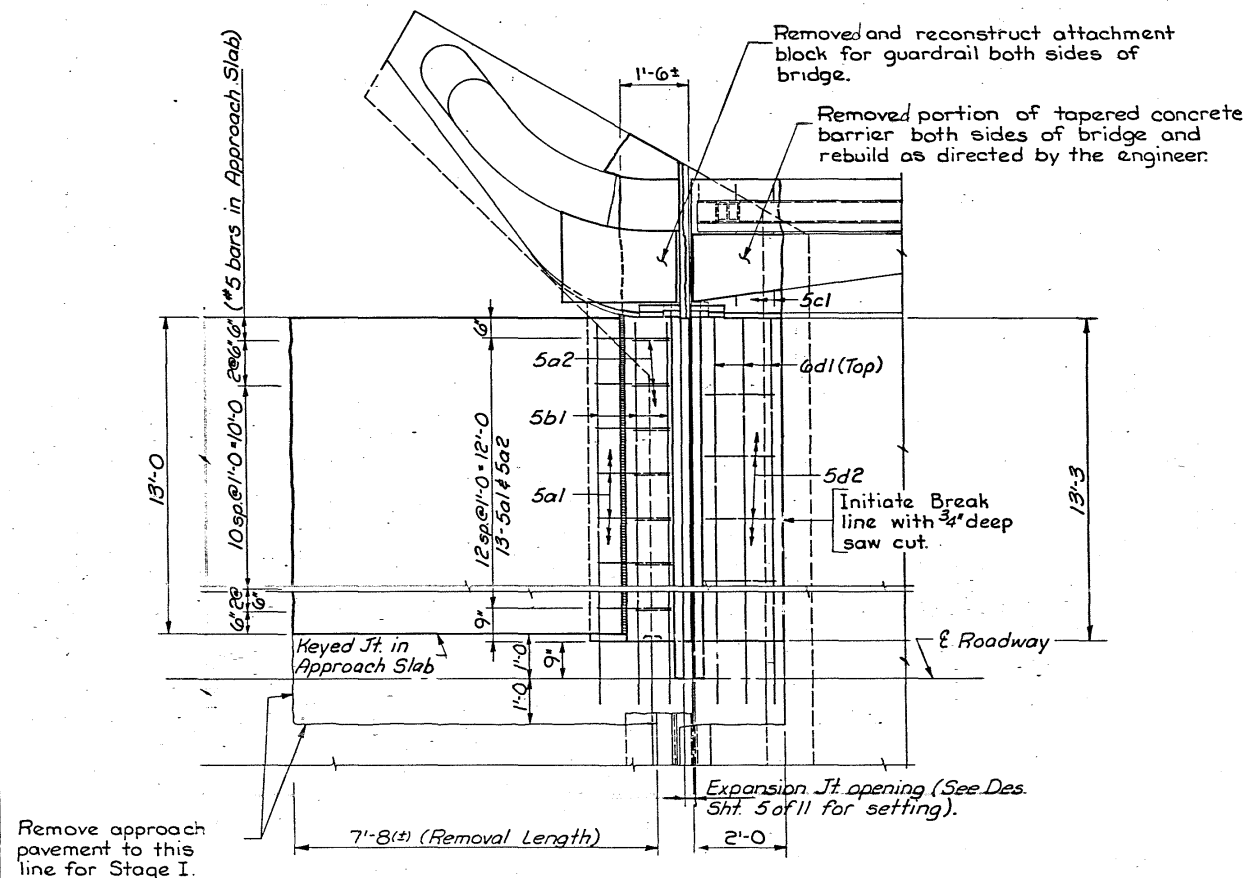
SECTION NEAR EXTERIOR BEAM



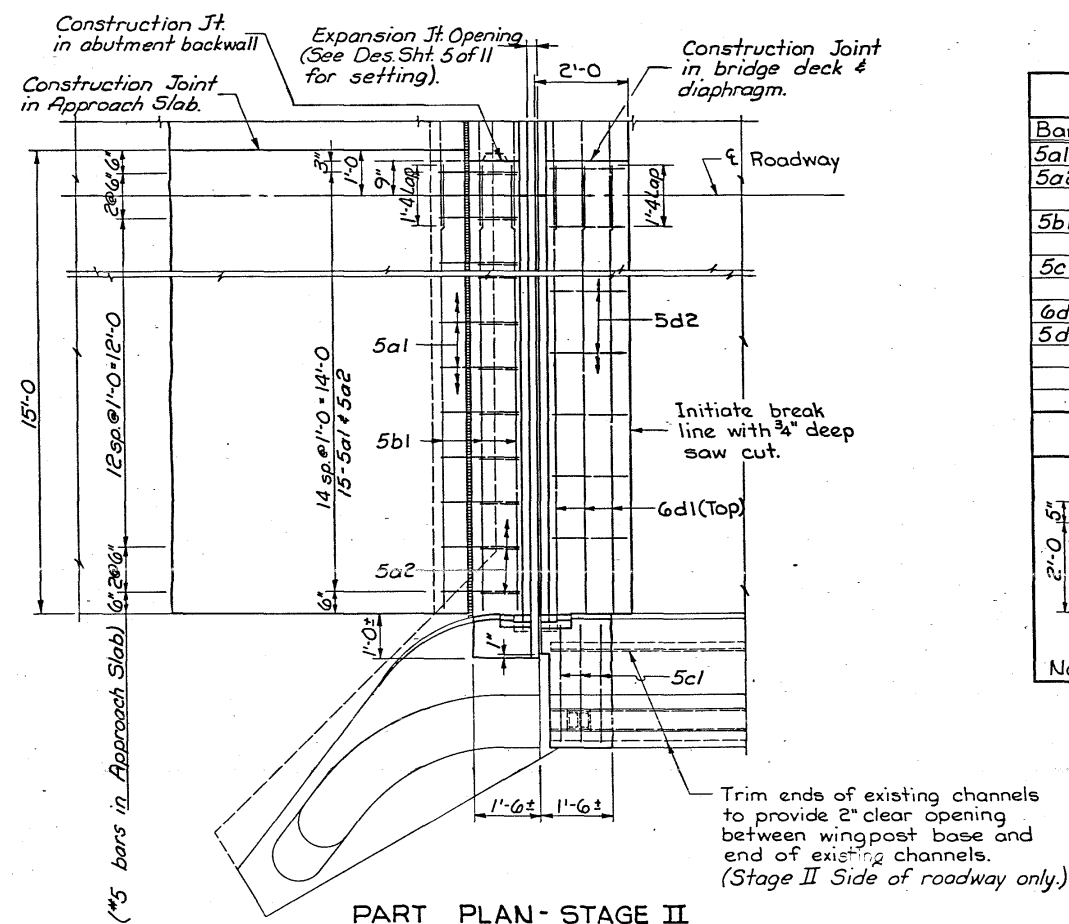
PART FRONT ELEVATION WEST ABUTMENT



VIEW A-A



PART PLAN - STAGE I
West Abutment



PART PLAN - STAGE II
West Abutment

Note: Concrete guardrail anchor block and tapered concrete barrier not shown.

REINFORCING		BAR		LIST	
Bar	Location	Shape	No.	Length	Weight
5a1	Backwall, Vertical	⌋	28	4'-5	129
5a2	Backwall, Vertical	⌋	28	5'-11	173
5b1	Backwall, Longit.	—	18	14'-6	272
5c1	Curb, Transverse	—	6	2'-7	16
6d1	Floor, Transverse	—	12	15'-4	276
5d2	Diaphragm	⌋	18	3'-4	63
Total ~ lbs.					929

BENT	BAR	DETAILS
NOTE: All dimensions are out to out. D=Finished bend diameter.		

CONCRETE		PLACEMENT		QUANTITIES	
Location	Stage I	Stage II	Total		
Backwall	3.1	3.2	6.3		
Superstructure & Curbs	1.3	1.4	2.7		
Anchor & Tapered Block	.4	.4	.8		
End Post	.2	.2	.4		
Total ~ cu yds	5.0	5.0	10.0		

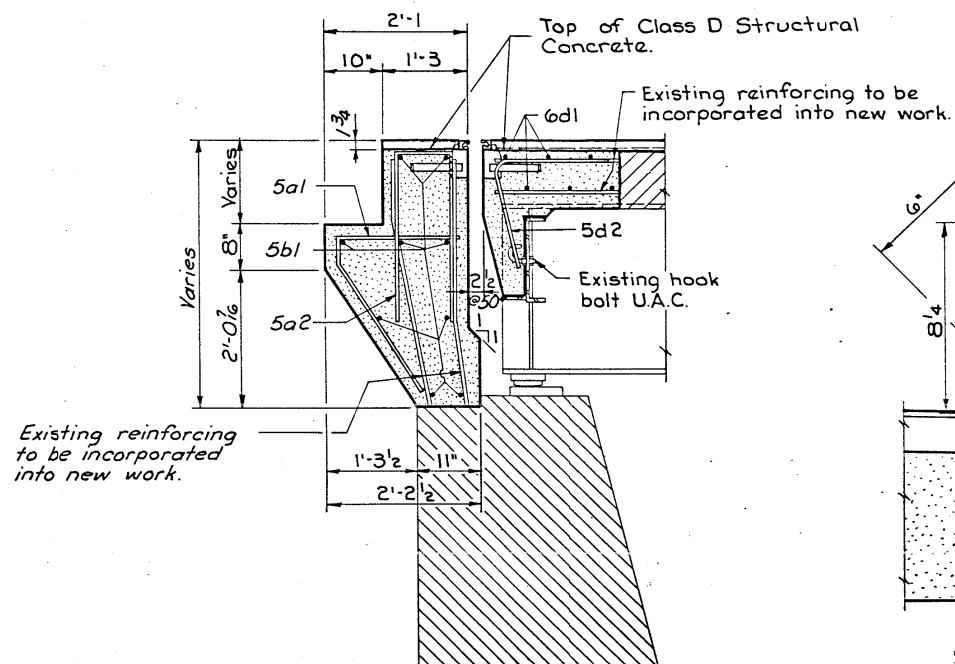
Design For Repairs to
180'-0" x 28' CONTINUOUS I-BEAM
BRIDGE
55'-0" End Spans 70'-0" Center Span
REPAIR DETAILS
Station: 1245+15.00 November, 1982
GREENE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 4 Of 11 File No.: 26625 Design No.: 182

DESIGNED BY: M. Gallman
DETAILED BY: D.A. Wright
TRACED BY:
CHECKED BY: M.L. F.

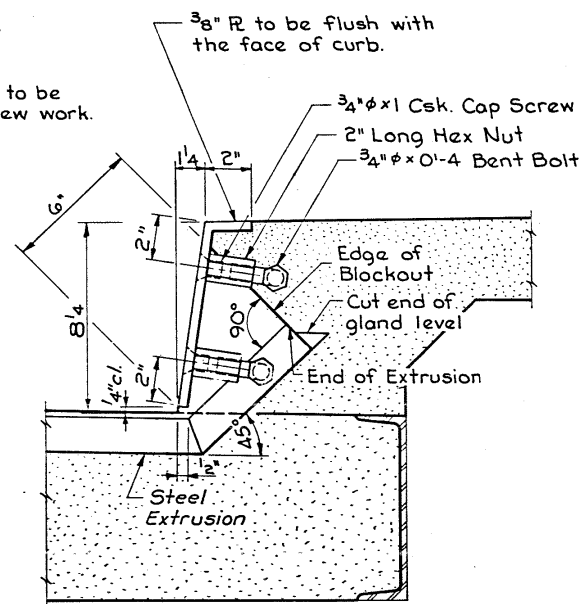
GREENE COUNTY

PROJECT NUMBER

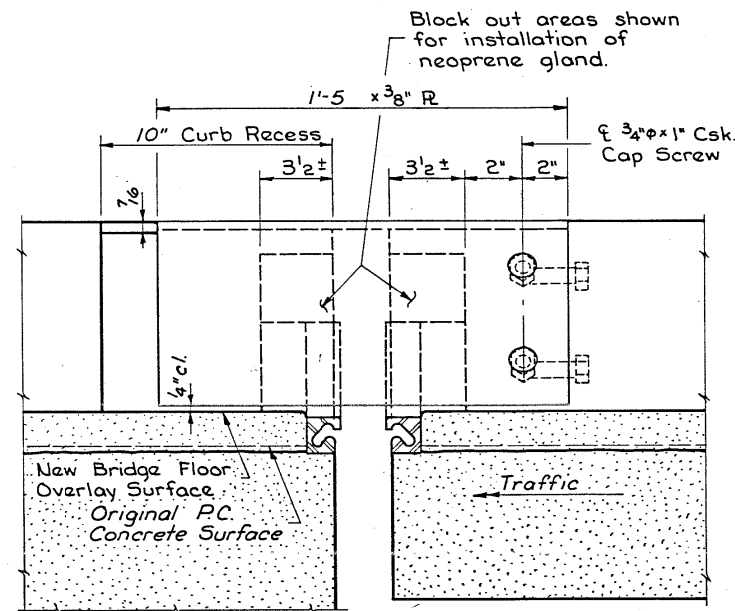
STATE: IOWA
FED. ROAD DIST. NO.: 5
FISCAL YEAR:
SHEET NO.: 6
TOTAL SHEETS: 13



TYPICAL SECTION - West Abutment



SECTION AT N. GUTTER



SECTION D-D

EXPANSION DEVICE NOTES

The contractor shall submit for approval shop drawings of the expansion devices showing layout, material to be used, and provisions for holding device during placement of concrete.

The expansion device shall be galvanized after welding.

The expansion device is to be parallel to grade.

Cap screws shall be countersunk 1/16" below top of the plate.

Stage I & Stage II sections of steel extrusion are to be field spliced as detailed on this sheet. The steel extrusion shall be furnished in 14 foot (+) lengths. The joint at the turned up section along the gutter is to be joined with a prequalified single groove weld, and all surfaces not in contact with concrete are ground flush. No weld shall be permitted in the internal section of the extrusion where the neoprene gland is to be located.

The neoprene gland is to be placed as one continuous piece from end to end of the steel extrusions.

The minimum grade of Structural Steel for the expansion device shall be ASTM A-36.

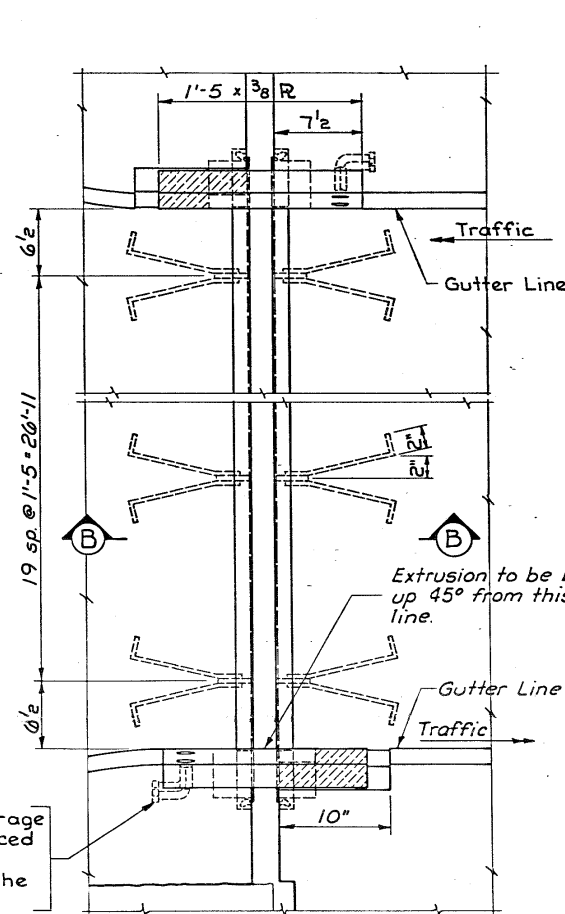
The neoprene gland shall conform to ASTM D-2628 modified to exclude recovery tests and compression set.

Blockout details may be altered from those shown provided the gland may be installed and removed if necessary.

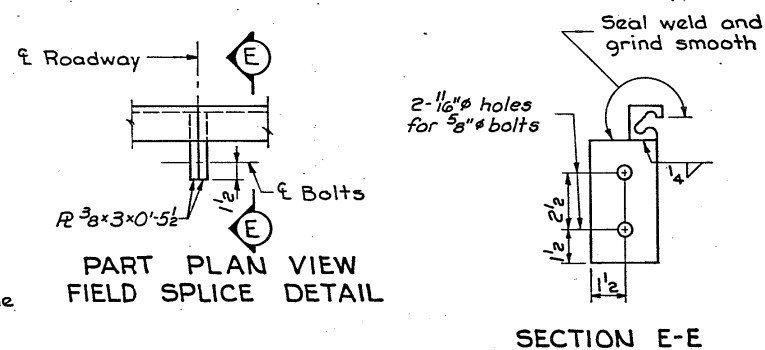
The contract unit price bid for "Steel Extrusion Joint with Neoprene" shall be full compensation for furnishing and installing the expansion joints. This work will consist of furnishing all required materials, (including the 3/8" plates at the curbs and their anchorage systems), and the installation and adjustment of the expansion joints in accordance with the details shown on the plans and as directed by the engineer. The furnishing and installation of all necessary hardware and accessories as supplied by the expansion joint manufacturer are to be included in this work, including the anchorage system and any temporary erection material. All work and materials for the installation of the expansion joints are to comply with the written recommendations of the expansion joint manufacturer.

The following devices are approved for use.

1. Watson-Bowman Co., Type A-2 extrusion.
2. ACME, Type A extrusion.
3. D. S. Brown Co., Type "SS" extrusion.
4. Approved equal.

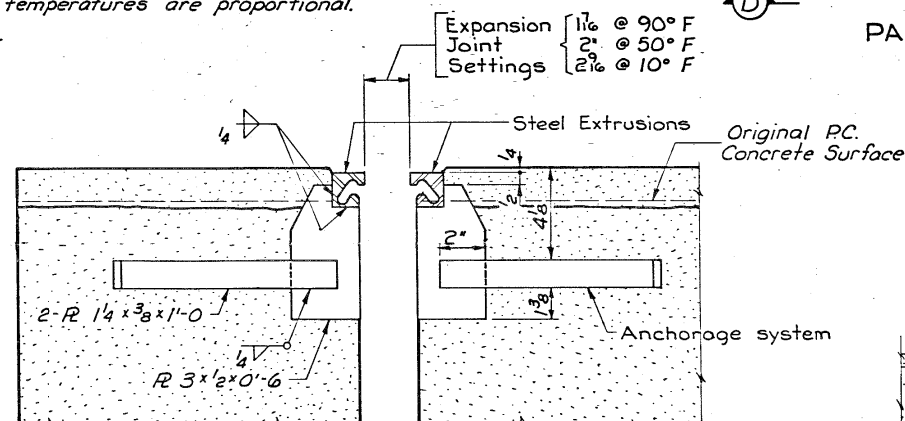


PART PLAN VIEW OF EXPANSION DEVICE @ WEST ABUTMENT

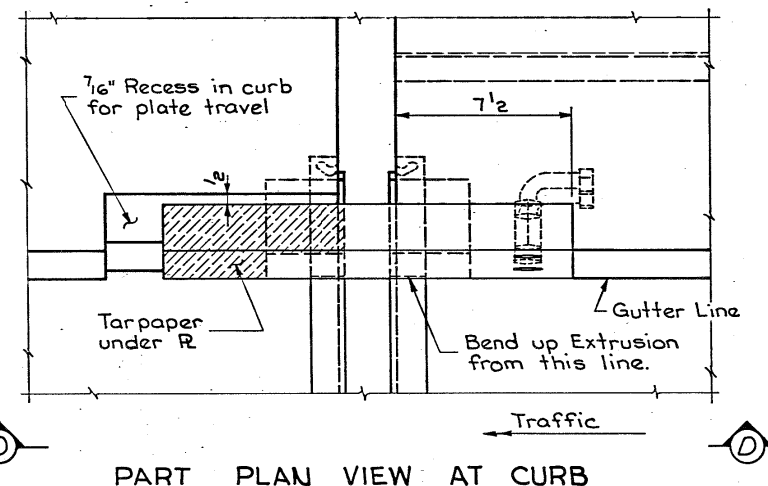


SECTION E-E

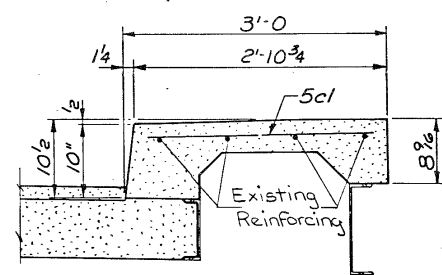
Note: Joint settings for other temperatures are proportional.



SECTION B-B



PART PLAN VIEW AT CURB



TYPICAL CURB SECTION

ALLOWABLE NEOPRENE GLANDS	
Manufacturer	Gland
Watson-Bowman Co.	S300
ACME	A5300
D.S. Brown Co.	SS400

Design For Repairs to
180'-0" x 28' CONTINUOUS I-BEAM BRIDGE
 55'-0" End Spans 70'-0" Center Span
REPAIR DETAILS
 Station: 1245+15.00 November, 1982
GREENE COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
 Design Sheet No.: 5 Of 11 File No.: 26625 Design No.: 182

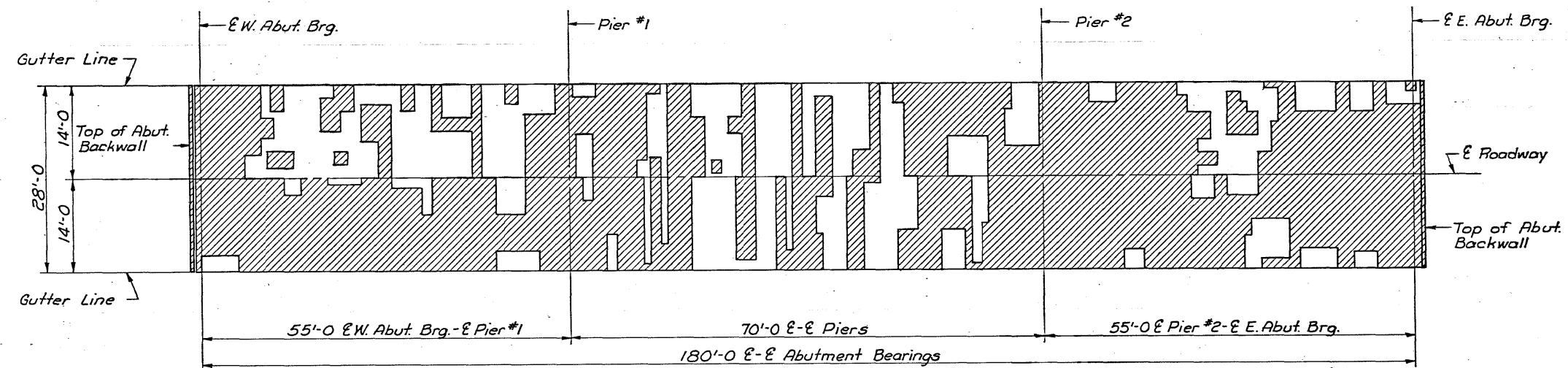
DESIGNED BY: *H. Pollock*
 CHECKED BY: *D.A. Wright*

TRACED BY: *M. L. J. J. J.*
 CHECKED BY: *M. L. J. J. J.*

GREENE COUNTY

PROJECT NUMBER

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



SURVEY PLOT

Scale: 1"=10'

Date of Survey: October, 1982

Note: Hatched portions represent areas which have spalls and delaminations. Plan quantity for Class A Bridge Floor Repair is based on these hatched areas.

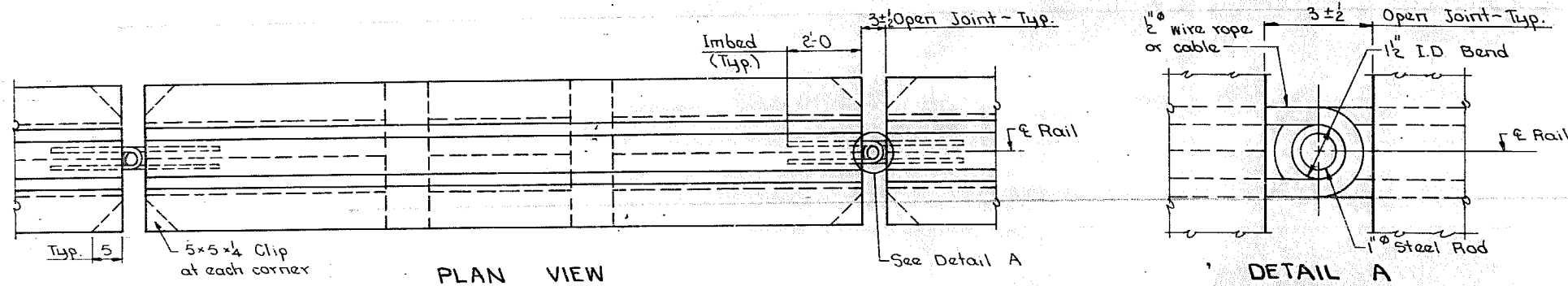


DESIGNED BY: H. Gallman
 DETAIL BY: D.A. Wright

TRACED BY: _____
 CHECKED BY: M. J. [Signature]

GREEN COUNTY

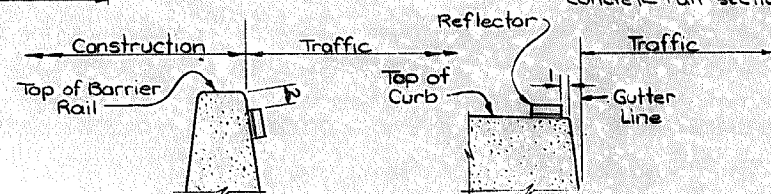
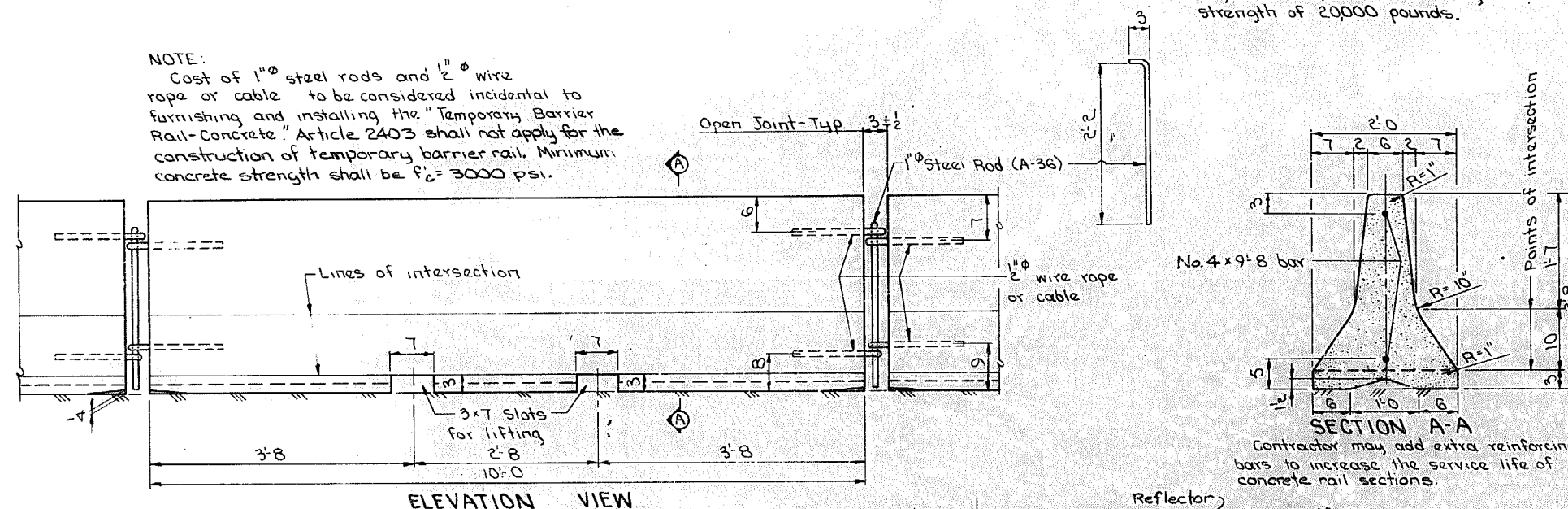
Design For Repairs to				
180'-0" x 28' CONTINUOUS I-BEAM				
BRIDGE				
55'-0" End Spans		70'-0" Center Span		
REPAIR DETAILS				
Station: 1245+15.00		November, 1982		
GREENE COUNTY				
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION				
Design Sheet No.: 6 Of 11 File No.: 26625 Design No.: 182				
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	6		8	13



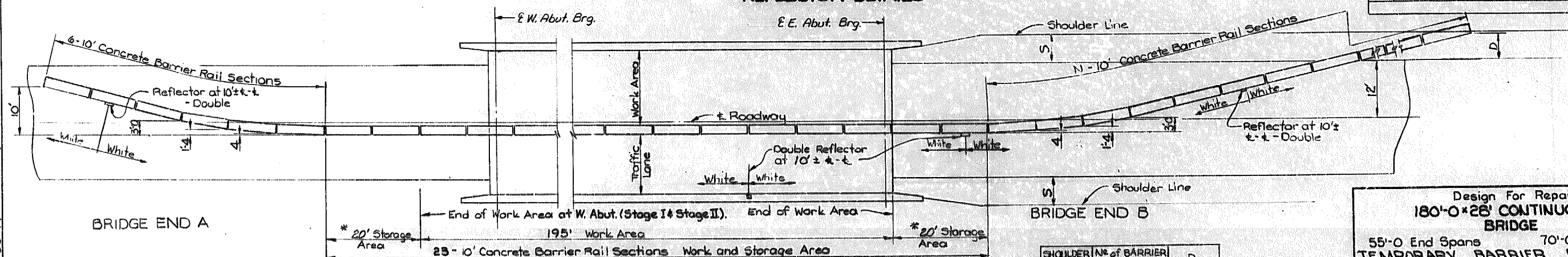
NOTE:
The temporary barrier rail is to be bid on a lineal foot basis measured from end to end of rail as shown on these plans.
Barrier is to become the property of the contractor at the completion of work and removed from the site by him.
No stationary equipment or construction material is to be placed 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".
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" steel rods and 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.



ESTIMATED QUANTITIES	
Item	Amount
Temporary Barrier Rail - Concrete	420.0 L.F.



TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR TWO WAY TRAFFIC

* Nominal. May be increased to a maximum of 25' storage so that the specified number of T.B.R. sections can be accommodated.

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

SHOULDER WIDTH (ft)	No. of BARRIER RAIL SECTIONS (N)	D
4 ft.	9	2.5 ft.
6 ft.	10	5 ft.
8 ft.	11	7 ft.
10 ft.	12	9.5 ft.

Design For Repairs to
180'-0" x 28' CONTINUOUS I-BEAM BRIDGE
55'-0" End Spans 70'-0" Center Span
TEMPORARY BARRIER RAIL-CONCRETE
Station: 1245+15.00 November, 1982
GREENE COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 7 Of 11 File No.: 26625 Design No.: 182

DESIGNED BY: B. Gallun
DETAILED BY: D.A. Wright

TRACED BY: M.J. Elmer
CHECKED BY: M.J. Elmer

TEMPORARY BARRIER RAIL - CONCRETE

STANDARD 1033

GREENE COUNTY

PROJECT NUMBER

STATE: IOWA
FED. ROAD DIST. NO.: 1
FISCAL YEAR: 1982
SHEET NO.: 9
TOTAL SHEETS: 13

Revised: 10-13-82. Reflector spacing and notes changed.
Revised: 7-17-81. Reflector requirement changed. Bridge End B Details changed for variable shoulder.
Reviewed: 09-05-79