Sheet I-35 # 38

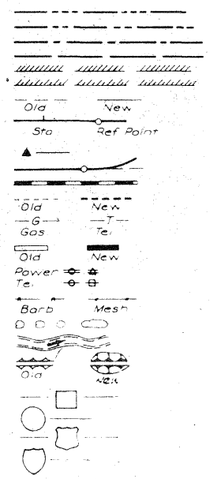
BRIDGE REPAIR

I-IR-35-5(30)114--14-85

STORY - HAMILTON 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

INTERSTATE ROAD SYSTEM

STORY - HAMILTON COUNTY

BRIDGE REPAIR

2 LOCATIONS-ON I-35--13th ST. AT AMES & CO. RD. AT RANDALL INTERCHANGE

SCALE: AS NOTED

THE STANDARD SPECIFICATIONS, SERIES OF 1977
OF THE IOWA DEPARTMENT OF TRANSPORTATION
DID ~~SHALL~~ APPLY TO CONSTRUCTION WORK ON THIS PROJECT

(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

Spec. 788 "Supplemental Specifications for Traffic Controls"

NO MILEAGE SUMMARY

"Inspected by - Kenny Sorenson - PE"

Contractor EIK Horn - 1978

IOWA 1 2

PROJECT NUMBER
I-IR-35-5(30)114--14-85

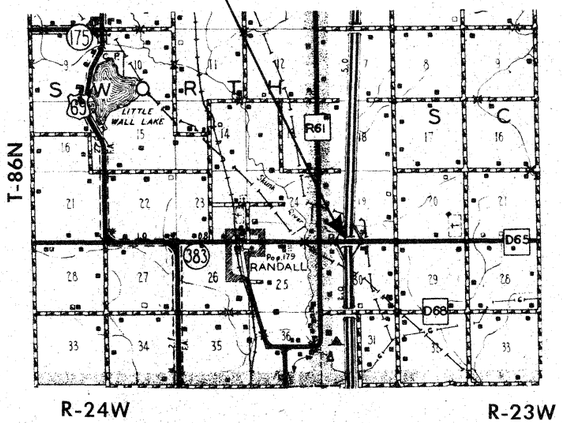
R.O.W. PROJECT NUMBER

PRELIMINARY ENGINEER NUMBER

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET
3-8	BRIDGE REPAIR DES. NO. 378 (STORY CO.)
~~9-12~~	~~BRIDGE REPAIR DES. NO. 278 (HAMILTON CO.)~~

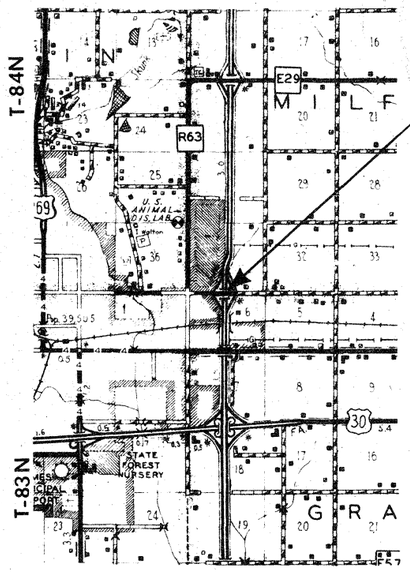
DES. NO. ~~278~~



HAMILTON COUNTY

LOCATION MAP

LOCATION MAP SCALE
0 1 2 3
miles



DES. NO. 378

STORY COUNTY

Corrected by - Richard Eccles
checked by - Merrill M. Heintz

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

STANDARD	ISSUED	REVISED
NONE REQUIRED		

100

CONSTRUCTION PLANS
SHOWING PROJECT AS BUILT
Asst. Roy W. Kuhn Date 2-11-80
Full 3
Returned to: District Engineer
After Reviewing Return Original to District No. 1

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.
E. Gerstels
2797 1-12-78
IOWA REGISTRATION NUMBER DATE

DEPARTMENT OF TRANSPORTATION IOWA — Highway Division
AUTHORIZED FOR LETTING 1-19-78
DEPUTY CHIEF ENGINEER DATE

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

38

8

LETTING DATE FEBRUARY 28, 1978 STATE CONTROL SECTION NUMBER 85-1300 40-1300 FILE NO. 26027 STORY-HAMILTON COUNTY PROJECT NO. I-IR-35-5(30)114--14-85 NO. 1 OF 12

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.

01-12-78 (DATE) — William C. Eyer (WILLIAM C. EYER) — REG. NO. 2926

IN LETTING OF February 28, 1978

DESIGN NO. 378 | I-35 OVER 13th ST. | STA. 671+83.30 (I-35)
STORY COUNTY | MAINT. NO. 8513.6L035 | STA. 1671+83.30 (Local Rd.)
SECTION 6 | T-83N | R-23W | GRANT TWP.

DESIGN FOR REPAIR TO SOUTHBOUND
DUAL 159'-2x39' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGES

ESTIMATE OF QUANTITIES

NO.	ITEM	UNIT	TOTAL
1	Bridge Floor Overlay	Sq. Yds.	~~704.1~~ 704.2
2	Class "A" Bridge Floor Repair	Sq. Yds.	~~127.9~~ 164.36
3	Floodlighting	L.S.	Lump Sum
4	Temporary Barrier Rail-Concrete	Lin. Ft.	340.7
	Extra Work Orders		
2001	4" Underdrain	Lin. Ft.	378
5003	21"x8" Bridge Floor Repair	Sq. Yds.	28

ESTIMATE REFERENCE INFORMATION 100-4

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

ITEM NO.	DESCRIPTION
2	This item to utilize IR funds.

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.

01-12-78 (DATE) — William C. Eyer (WILLIAM C. EYER) — REG. NO. 2926

IN LETTING OF February 28, 1978

DESIGN NO. 278 | LOCAL RD. OVER I-35 | STA. 1106+00.30 (Local Rd.)
HAMILTON COUNTY | MAINT. NO. 4028.00035 | STA. 106+00.30 (I-35)
SECTIONS 19 & 30 | T-86N | R-23W | SCOTT TWP.

DESIGN FOR REPAIR TO
219'-7x30' PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

ESTIMATE OF QUANTITIES

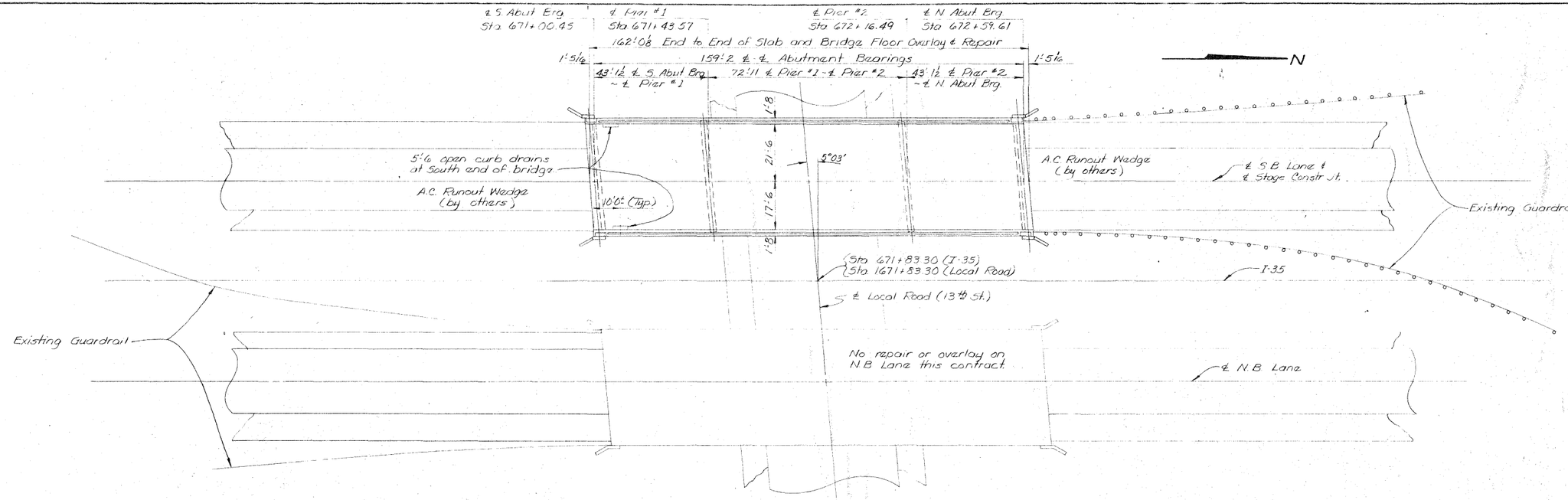
NO.	ITEM	UNIT	TOTAL
1	Bridge Floor Overlay	Sq. Yds.	~~743.4~~ 743.7
2	Class "A" Bridge Floor Repair	Sq. Yds.	107.1 141.51
3	Floodlighting	L.S.	Lump Sum
	Extra Work Orders		
5001	Shoulder to provide Superelevation	Tons	15
8002	Class "A" Bridge Floor Repair	Sq. yds.	34

ESTIMATE REFERENCE INFORMATION 100-4

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

ITEM NO.	DESCRIPTION
2	This item to utilize IR funds.

ESTIMATE SHEET



SITUATION PLAN

GENERAL NOTES:

This design is for repair to the existing southbound Dual 159'-2" x 39' Pretensioned Prestressed Concrete Beam Bridge, original Design # 863 Story County. Plans of the existing structure may be obtained at the Ames office of the Highway Division. Repairs shall consist of bridge floor repair and bridge floor overlay.

Construction shall be done in stages with at least one lane of traffic maintained at all times in accordance with Hwy. Div. Spec. # 788 and with Design Sheets 4, 5 & 6. Cost of all traffic control devices, to be furnished and or maintained by the contractor will be considered incidental to the other work and no separate payment will be made.

A plot of preliminary survey of spalled and hollow areas determined by audible and visual sounding is shown on Design Sheet No. 2. Hatched areas on the Sounding Plot represent boundaries of spalled and hollow areas. No preliminary survey for areas of high corrosion potential, as determined by an electrical detection device, is available. The Engineer will survey the floor using audible and visual sounding and an electrical corrosion device at the time of construction. All spalled and hollow and all areas registering 0.45 volts or greater on the electrical corrosion detection device will be combined to establish the areas of repair. Hatched areas, as shown on the plans or as adjusted by the Engineer, are to be repaired by Class A methods.

The slab area within the curb drain openings is included in the plan quantity for bid item "Bridge Floor Overlay".

Temporary Barrier Rail - Concrete shall be installed for each construction stage of the Southbound bridge as shown and noted on Design Sheet No. 4. An amount of rail sufficient for work on one stage of construction is provided by the bid item, "Temporary Barrier Rail - Concrete". The quantity shown on the plans shall be the quantity for which payment is made.

The entire concrete surface of the floor, including areas over Class A repair, shall have Bridge Floor Overlay. Surface raise, as shown on the plans, shall be considered a minimum; screed guides shall be adjusted to achieve a smooth profile.

Present Floor thickness is about 6½ inches. The contractor will be required to exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

Floodlighting will be required as shown on Design Sheet #4.

The A.C. runout taper at each end 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.

The contractor is hereby notified that removal of any existing traffic markers, warning devices or guardrail barriers shall be scheduled subject to the approval of the engineer. The contractor may be required to place temporary warning devices at certain locations where replacement features are not installed the same during which any such removals take place.

These plans require the removal of existing pavement striping and placement of temporary pavement striping before other stage construction is started. This design also requires the removal of temporary striping and the replacement of permanent pavement striping after construction is completed. This work is to be performed by the Contractor as a part of traffic control. Removal and placement of pavement striping will be considered incidental and no separate payment will be made.

TOTAL ESTIMATED QUANTITIES

Item No.	Item	Units	Quantity
1	Bridge Floor Overlay	Sq. Yds.	1094 1,144
2	Class "A" Bridge Floor Repair	Sq. Yds.	127.9 164
3	Floodlighting	L.S.	Lump Sum
4	Temporary Barrier Rail - Concrete	Lin. Ft.	340.7
	Extra Work Orders		
2001	H.E. Shoulders	Tons	878
2003	Class "B" Bridge Floor Repair	Sq. yds.	28

Item #2: This item to utilize IR Funds.

LOCATION:

Story County
T-83-N R-23-W
Section 6
Grant Twp
I-35 over 13th St
Maint No. 8513 6L035

SPECIFICATIONS:

Construction: Iowa Department of Transportation Standard Specifications, Series of 1977, plus current Supplemental Specifications and Special Provisions including:
Spec. 788: Supplemental Specifications for Traffic Controls.

Design for Repair to Southbound
DUAL 159'-2" x 39' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
43'-1½" End Spans 72'-11 Interior Span

SITUATION PLAN

Sta. 671+83.30 (I-35)
Sta. 1671+83.30 (Local Road)
Jan. 1978

STORY COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

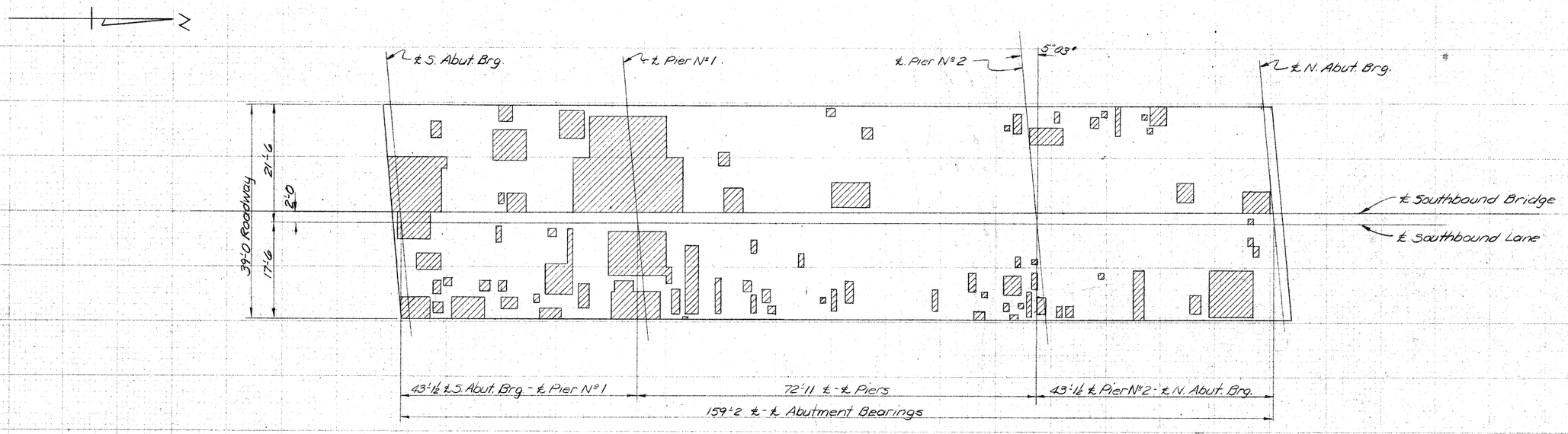
Design Sheet No.: 2 Of 6 File No.: 26027 Design No.: 378

DESIGNED BY: W. Johnston
DETAILED BY: W. Johnston
TRACED BY: J. Mahney
CHECKED BY: G.L. Ahrt

Section Leader: M. Eyer

Story Hamilton County

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
FJR-35-5(30)114-14-85	IOWA	5		3	12



SOUNDING PLOT
(SOUTHBOUND BRIDGE)

Design for Repair to Southbound
DUAL 159'-2" x 39' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

43'-1½ End Spans 72'-11 Interior Span

SOUNDING PLOT

Sta. 671+83.30 (I-35)
Sta. 1671+83.30 (Local Road) Jan. 1978

STORY COUNTY

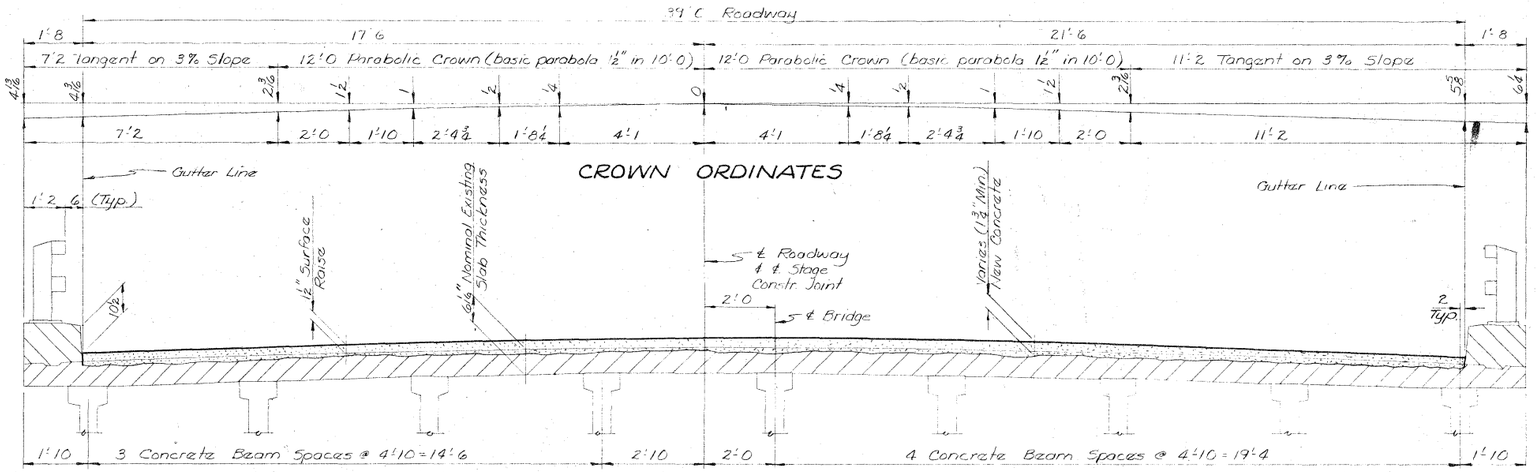
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

Design Sheet No.: 2 Of 6. File No.: 26027 Design No.: 378

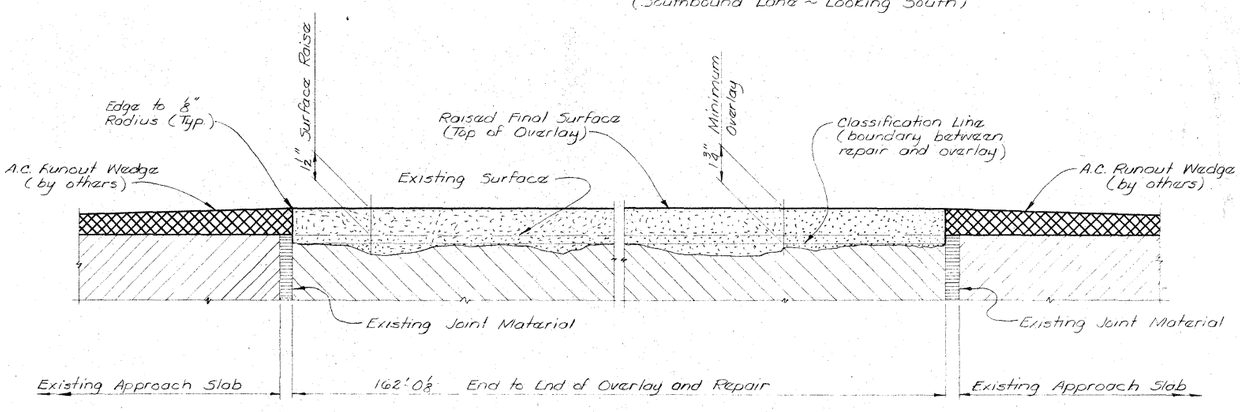
Detailed by: C. Cole Checked by: W.R. Johnston

STORY- HAMILTON COUNTY

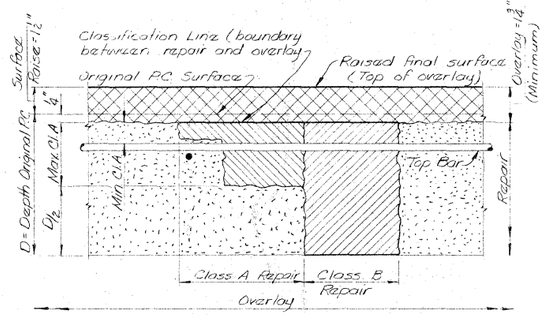
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	5		4	12



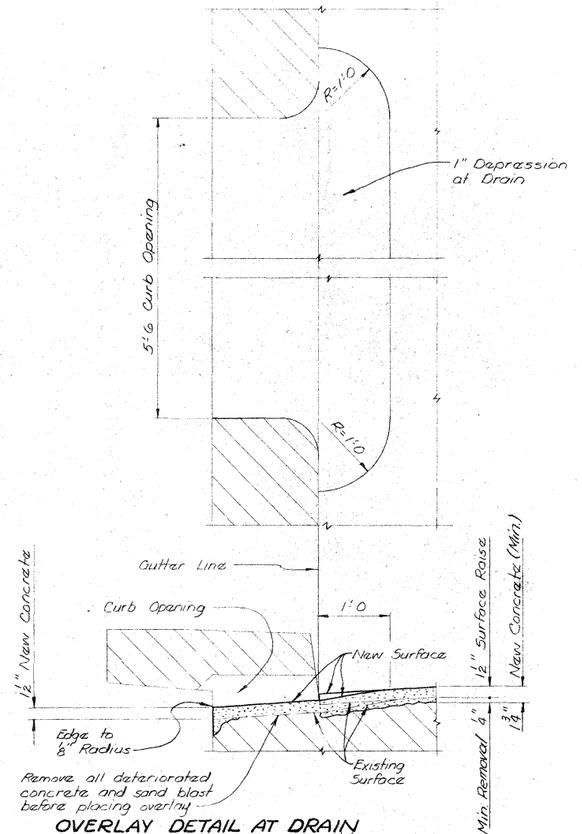
TYPICAL CROSS SECTION
(Southbound Lane ~ Looking South)



PART LONGITUDINAL SECTION



REPAIR AND OVERLAY DEFINITION



OVERLAY DETAIL AT DRAIN

NOTE: The surface of the slab in curb drain openings ~~shall~~ will receive 1/2" of overlay concrete as shown. Concrete ~~may~~ will be placed by hand methods but ~~shall~~ will be tamped in place as firmly as practical; density requirements ~~will~~ will be waived for concrete so placed. The engineer ~~shall~~ will measure the plan area of the curb drain opening and include the quantity in the item, "Bridge Floor Overlay."

Design for Repair to Southbound

DUAL 159'-2 x 39' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

43'-1 1/2 End Spans 72'-11 Interior Span

REPAIR DETAILS

Station: 671+83.30 (I-35)
Station: 1671+83.30 (Local Road)

Jan. 1978

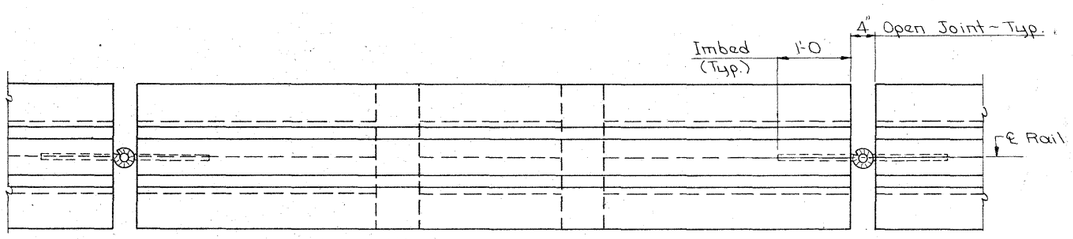
STORY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

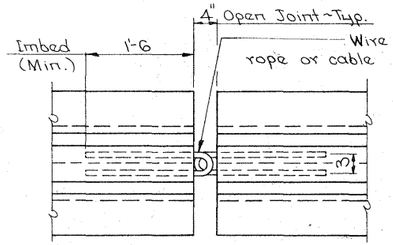
Design Sheet No.: 3 Of 6 File No.: 26027 Design No.: 378

DESIGNED BY: W. Johnston W. Johnston
TRACED BY: J. Matney C.J. Pond
Story - Hamilton County

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	5		5	12



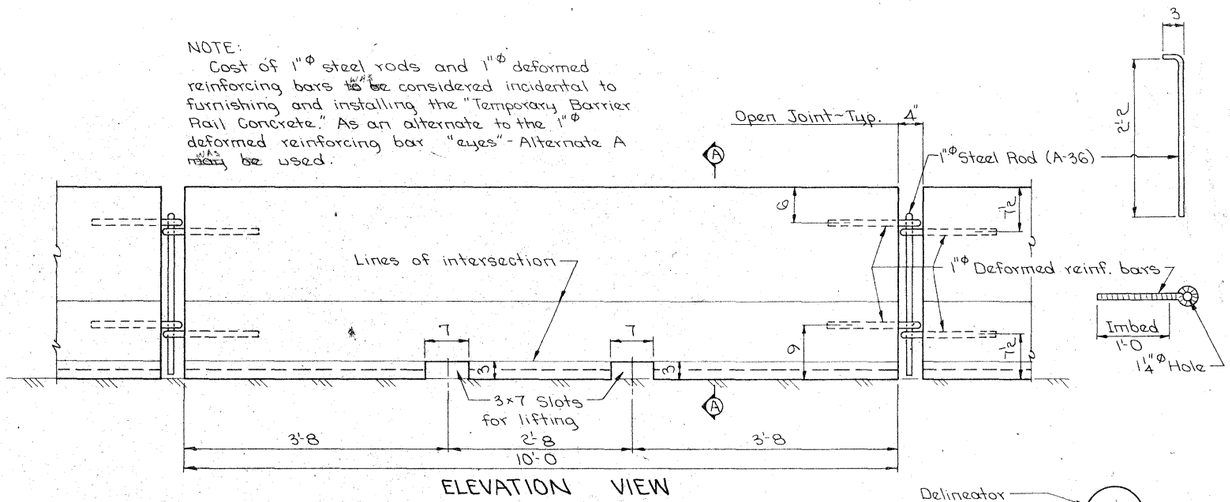
PLAN VIEW



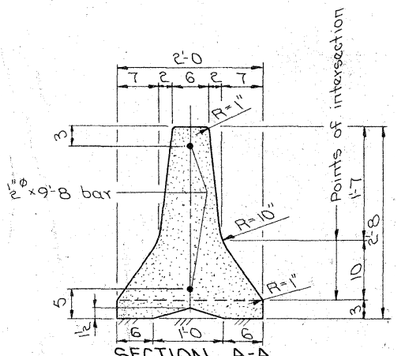
ALTERNATE A DETAIL

Wire rope or cable to be 5/8"Φ, with a minimum breaking strength of 32000 pounds.

NOTE:
Cost of 1"Φ steel rods and 1"Φ deformed reinforcing bars to be considered incidental to furnishing and installing the "Temporary Barrier Rail Concrete." As an alternate to the 1"Φ deformed reinforcing bar "eyes" - Alternate A may be used.

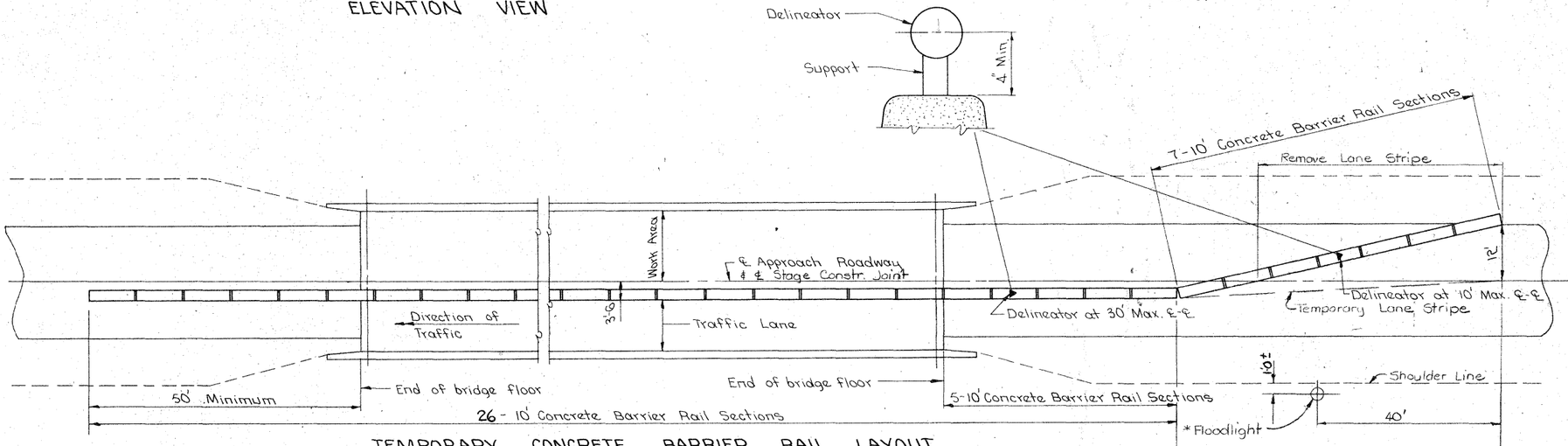


ELEVATION VIEW



SECTION A-A

Contractor may add extra reinforcing bars to increase the service life of the rail sections.



TEMPORARY CONCRETE BARRIER RAIL LAYOUT FOR ONE WAY TRAFFIC

* One floodlight required for each stage of construction on southbound bridge (2 floodlight locations).

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. The contractor may provide extra rail sections at each end of the bridge in order to provide additional storage and work area. The extra rail sections are to be paid for by the contractor. The signing is to be shifted by the contractor as directed by the Engineer to accommodate the additional rail sections.

No stationary equipment is to be placed in front of the temporary barrier at any time.

Barrier is to become the property of the contractor at the completion of work and removed from the site by him.

Delineators shall be installed on top of the temporary barrier rail. Delineators shall comply with Article 4186.07 except that the contractor may submit an alternate design for prior approval. Reflectors shall be white (or colorless) and they shall be oriented to face the traffic squarely, whether on a flared length of rail or on a parallel length of rail. Delineators shall be two-way, i.e. reflect in opposite directions when two directions of traffic are to be accommodated. The contractor shall supply a suitable bracket or support for each delineator such that the delineator will be stable during construction. Spacing shall be at a maximum of 10 feet apart on the flared length of rail and at a maximum of 30 feet apart on the parallel length of rail. The contractor shall maintain the delineators and he shall promptly repair or replace any damaged or missing units. All costs for furnishing, installing and maintaining delineators shall be included in the price bid for "Temporary Barrier Rail-Concrete" Delineators and Supports are to become property of the contractor. Delineators may be removed during daylight hours to allow for use of the top of the concrete barrier as a support for the paving machine.

~~ESTIMATED~~ QUANTITIES

Item	Amount
Temporary Barrier Rail - Concrete *	340.7 L.F.

Design for Repair to Southbound
DUAL 159'-2 x 39' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES
43'-1 1/2 End Spans 72'-11 Interior Span
TEMPORARY BARRIER RAIL-CONCRETE
Station: 671+83.30 (I-35)
Station: 1671+83.30 (Local Road) Jan. 1978
STORY COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 4 Of 6 File No.: 26027 Design No.: 378

ISSUED 12-30-77

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

TEMPORARY BARRIER RAIL - CONCRETE | STANDARD 1032 | STORY-HAMILTON COUNTY | PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		6	12