

CITY OF MASON CITY

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

CERRO GORDO COUNTY

BRIDGE REPAIR
STRUCTURE NO. 1796.1R065
4TH STREET S.E. OVER WILLOW CREEK
ON NORTHBOUND U.S. 65

SCALES AS NOTED

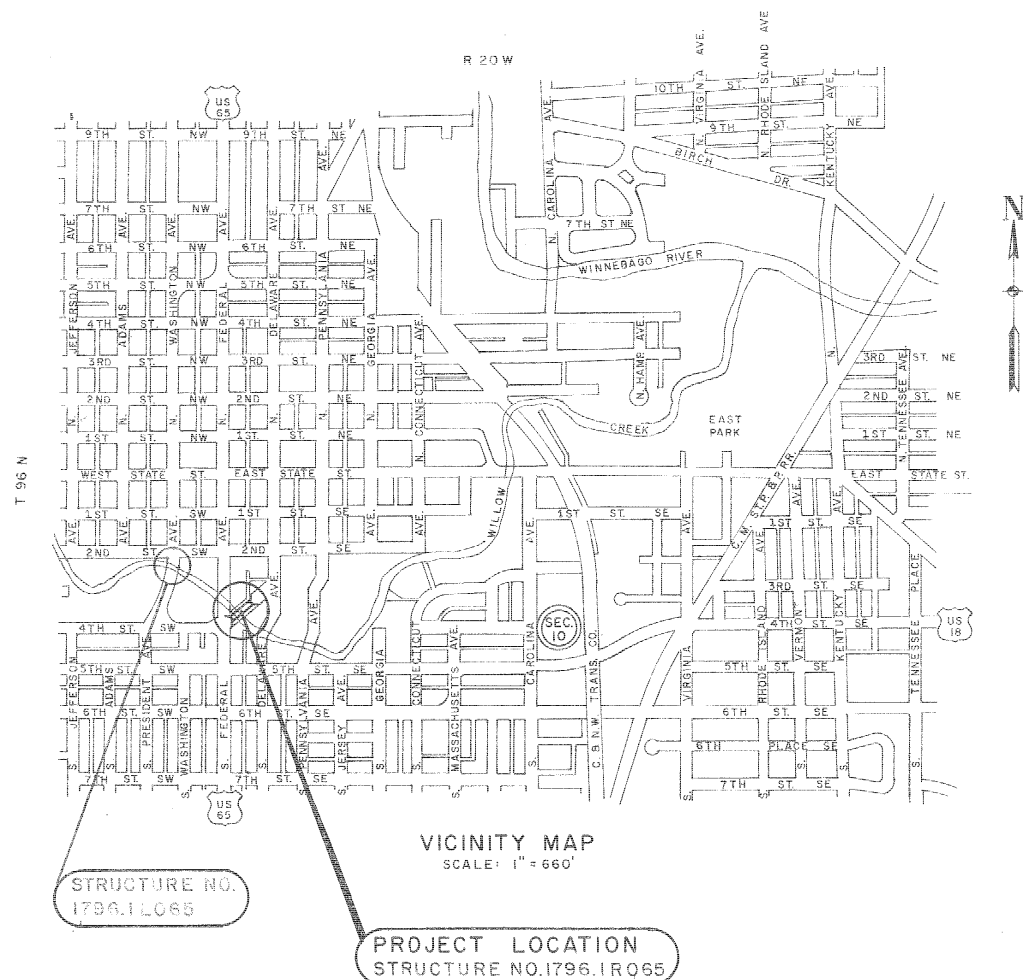
THE STANDARD SPECIFICATIONS, SERIES OF 1984
OF THE IOWA DEPARTMENT OF TRANSPORTATION
SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS

PROJECT NUMBER

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	REPAIR DETAILS & S. WASHINGTON AVE. PRESSURE RELIEF JOINT
3,4	TRAFFIC CONTROL LAYOUT & TRAFFIC CONTROL PLAN
5	DETAIL SHEET 521-3M TRAFFIC CONTROL LAYOUT FOR LANE CLOSURE ON FOUR-LANE UNDIVIDED HIGHWAY
6	DETAIL SHEET 530-4 DETAILS OF PRESSURE RELIEF JOINTS ON P.C.C. PAVEMENT
7	DETAIL SHEET 540-1 CONC. BARRIER RAIL TAPER SECTION
8	DETAIL SHEET 540-2 TEMPORARY CONC. BARRIER RAIL



TRAFFIC COUNT
6680 VPD (1981)

RECOMMENDED FOR APPROVAL

Frank Schmitz 10/31/83
DATE
WALLACE HOLLAND KASTLER SCHMITZ & CO.

AUTHORIZED FOR LETTING

HIGHWAY DIVISION
IOWA DEPARTMENT OF TRANSPORTATION

U.S. DEPT. TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

NOT APPLICABLE

DIVISION ADMINISTRATOR

APPROVED

MAYOR
CITY OF MASON CITY

APPROVED

CITY ENGINEER
CITY OF MASON CITY

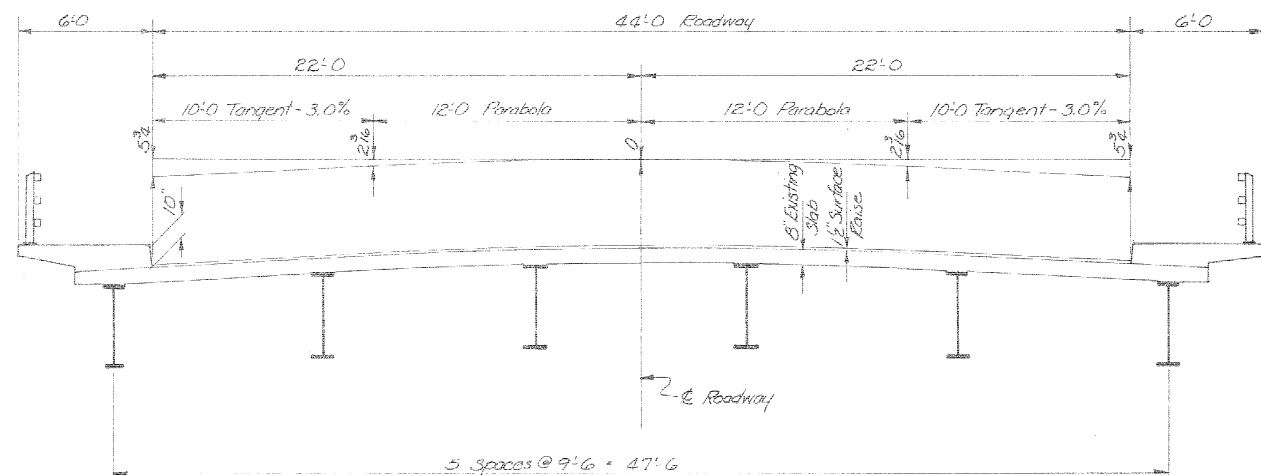
I hereby certify that this plan, specification or report was prepared by me or under my direct personal supervision and that I am a duly Registered Professional Engineer under the laws of the State of Iowa.

Gene E. Gutzko
Date 10/31/83 Reg. No. 3050

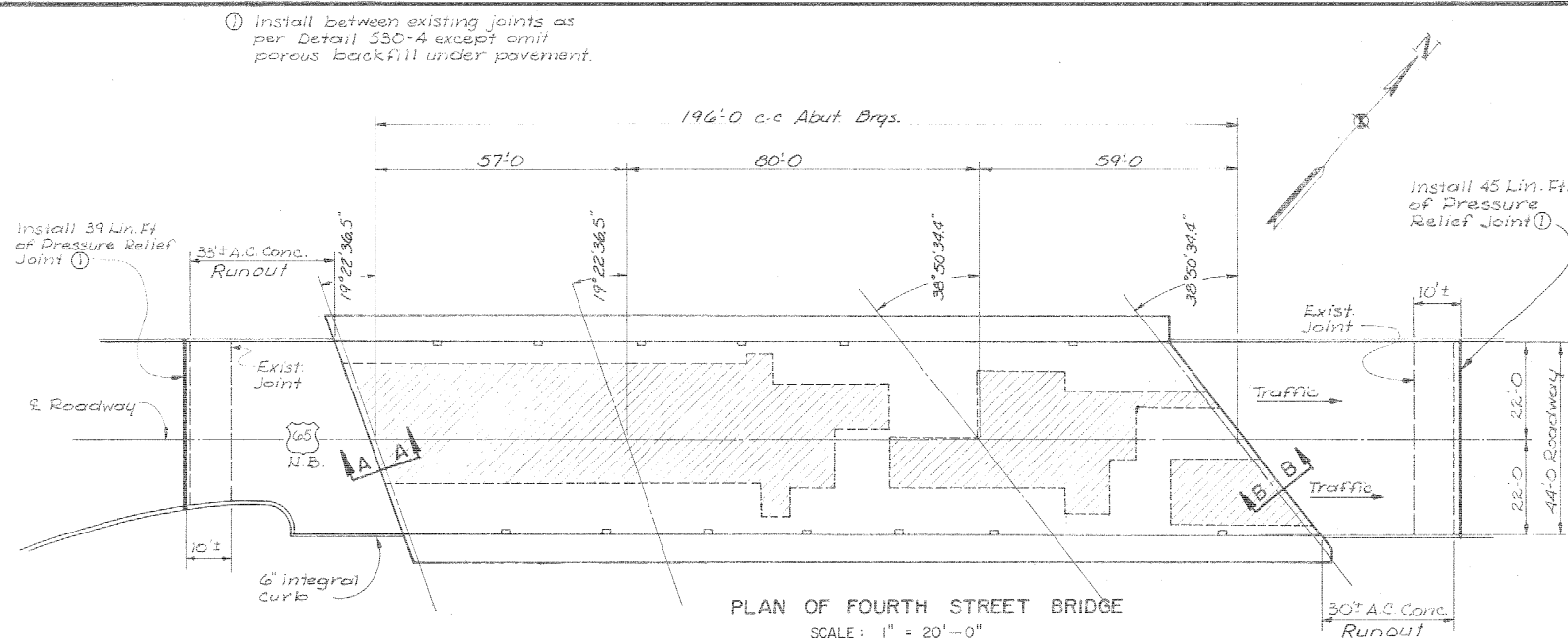
REVISED 1/24/85

CERRO GORDO COUNTY

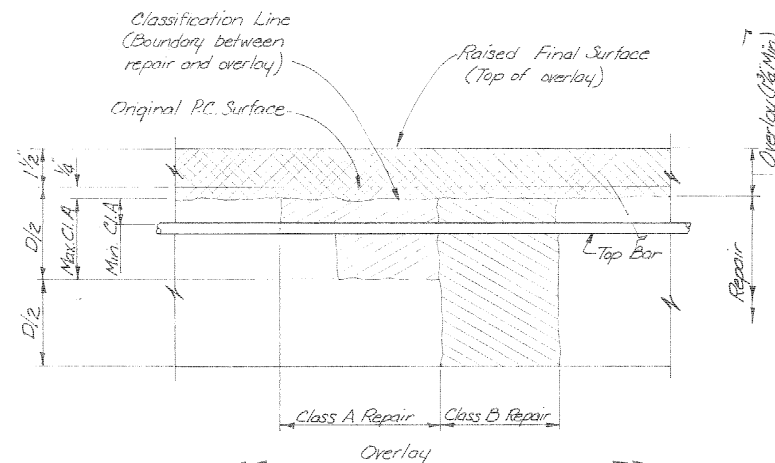
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		1	8



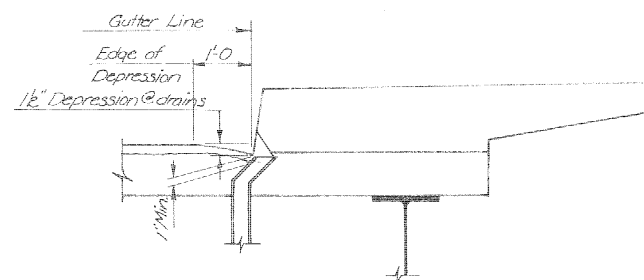
TYPICAL CROSS SECTION
SCALE: 1/4" = 1'-0"



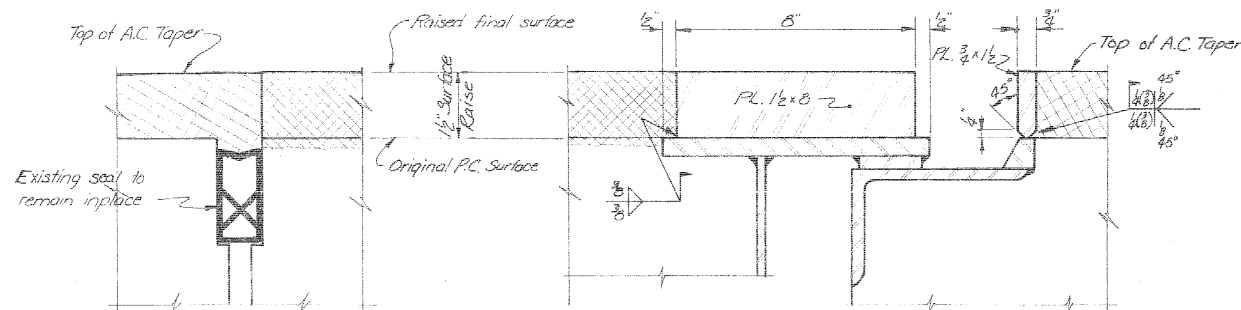
PLAN OF FOURTH STREET BRIDGE
SCALE: 1" = 20'-0"



REPAIR AND OVERLAY DEFINITION
NOT TO SCALE



SECTION AT DRAIN
SCALE: 3/4" = 1'-0"



SECTION A-A

SECTION B-B

NOTE: Seal weld PL 1/2 x 8 to curb plate at gutterline.

NOTE: THE HATCHED AREAS SHOWN ABOVE ARE THE APPROXIMATE LIMITS OF SPALLED AND DELAMINATED SURFACE AREAS AS DETERMINED BY A PRELIMINARY SURVEY USING VISUAL AND AUDIBLE METHODS. THE QUANTITY SHOWN FOR CLASS "A" REPAIR IS AN ESTIMATE ONLY. FINAL PAY QUANTITY WILL BE MEASURED IN THE FIELD BY THE ENGINEER.

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNITS	QUANTITY
1	BRIDGE FLOOR OVERLAY	SQ. YDS.	968
2	BRIDGE FLOOR REPAIR, CLASS "A"	SQ. YDS.	521
3	BRIDGE FLOOR REPAIR, CLASS "B"	SQ. YDS.	5
4	A.C. SPECIAL SURFACE COURSE	TONS	19.9
5	STRUCTURAL STEEL	LBS.	2562
6	TEMPORARY BARRIER RAIL, CONCRETE, FURNISH	LIN. FT.	400
7	TEMPORARY BARRIER RAIL, CONCRETE, PLACE AND MAINTAIN	LIN. FT.	800
8	JOINT, PRESSURE RELIEF	LIN. FT.	129
9	TRAFFIC CONTROL	L.S.	L.S.
10	CONCRETE SEALER - AS PER PLAN	SQ. FT.	720

GENERAL NOTES:

THIS DESIGN IS FOR THE REPAIR OF THE 196'-0" x 44' WELDED GIRDER BRIDGE ON 4TH STREET S.E. OVER WILLOW CREEK IN THE CITY OF MASON CITY, IOWA. ORIGINAL CONSTRUCTION PLANS ARE AVAILABLE FOR EXAMINATION IN THE OFFICE OF THE CITY ENGINEER, MASON CITY. THE WORK SHALL CONSIST OF CLASS "A" OR CLASS "B" REPAIR WHERE REQUIRED, BRIDGE FLOOR OVERLAY OVER THE ENTIRE AREA, ALL LABOR AND MATERIALS TO INSTALL RAISE PLATES ON EXPANSION JOINT AT THE N. END OF BRIDGE, FURNISHING AND PLACING THE ASPHALT CONCRETE TAPER AT EACH END OF THE STRUCTURE AND MAINTAINING ONE-LANE OF TRAFFIC ON THE BRIDGE DURING THE CONSTRUCTION PERIOD. (SEE TRAFFIC CONTROL PLAN.)

BASED UPON PRELIMINARY INSPECTIONS NO CLASS "B" REPAIR IS ANTICIPATED. HOWEVER, A NOMINAL FIVE (5) SQUARE YARDS OF CLASS "B" REPAIR HAS BEEN INCLUDED IN THE QUANTITIES TO ESTABLISH A UNIT PRICE THEREFOR.

THE ENTIRE BRIDGE FLOOR SHALL HAVE BRIDGE FLOOR OVERLAY. THE SURFACE RAISE SHOWN SHALL BE CONSIDERED A MINIMUM AND SCREED GUIDES SHALL BE ADJUSTED TO ACHIEVE A SMOOTH PROFILE. CARE SHALL BE EXERCISED DURING CLASS "A" REMOVAL TO PREVENT UNNECESSARY UNBONDING OF THE TOP REINFORCING STEEL.

FACE OF CURBS AND GUTTER LINES SHALL BE SEALED IN ACCORDANCE WITH SECTION 2413.09 AND THE ITEM "CONCRETE SEALER" SHALL BE FULL COMPENSATION THEREFOR. THE REMAINING SURFACE OF THE ROADWAY OVERLAY SHALL BE SEALED IN ACCORDANCE WITH SECTION 2521 OF THE 1977 IDOT STANDARD SPECIFICATIONS. COST OF THIS WORK SHALL BE CONSIDERED INCIDENTAL AND NO DIRECT PAYMENT WILL BE MADE THEREFOR.

THE ASPHALTIC CONCRETE RUNOUT AT EACH END OF THE BRIDGE SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 1/2 INCH AND TYPE SHALL BE APPROVED BY THE ENGINEER.

THE PERMANENT A.C. CONCRETE RUNOUTS SHALL END APPROXIMATELY 1'-0" FROM THE PRESSURE RELIEF JOINTS. AT THE SW END OF THE BRIDGE THE A.C. CONCRETE RUNOUT IS OF VARIABLE WIDTH.

THE UNIT PRICE BID PER TON FOR "A.C. SPECIAL SURFACE COURSE" SHALL INCLUDE ALL COSTS ASSOCIATED WITH FURNISHING AND PLACING THE A.C. TAPERS.

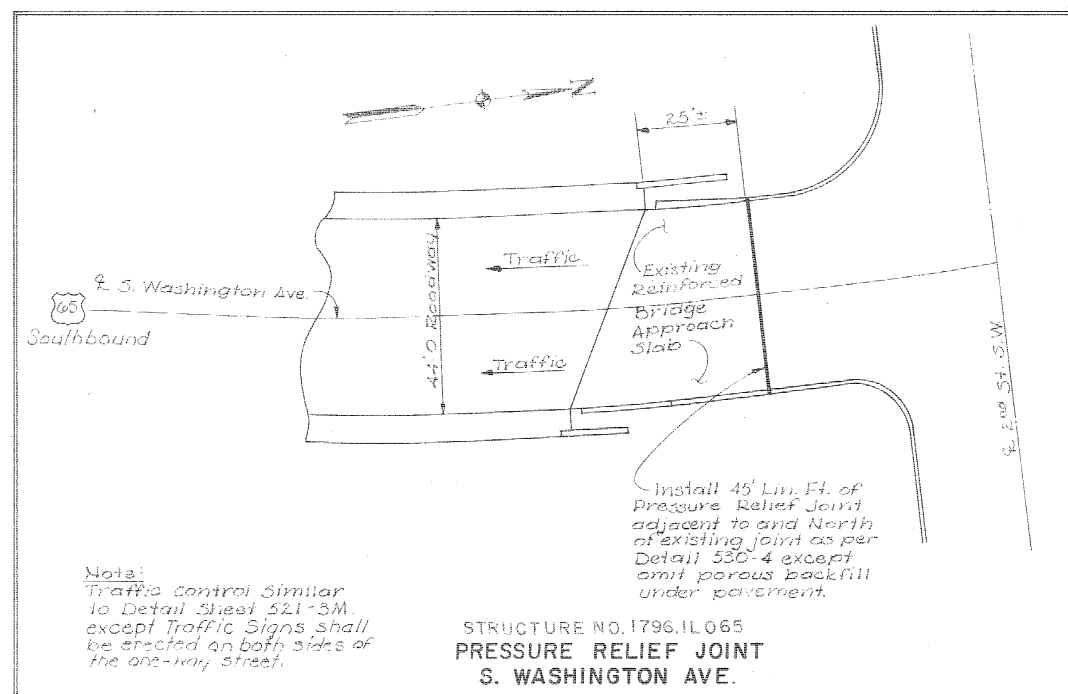
AT HIS EXPENSE THE CONTRACTOR MAY PLACE TEMPORARY A.C. CONCRETE FILLETS, EACH NOT LESS THAN 6 FT. IN LENGTH, OFF THE BRIDGE ENDS PRIOR TO ROUTING STAGE II TRAFFIC OVER THE STAGE I WORK AREA.

ITEM 8 ABOVE INCLUDES 45 LIN. FT. ON THE NORTH APPROACH TO THE WASHINGTON AVE. BRIDGE (SOUTH-BOUND U.S. 65).

DESIGN FOR REPAIR TO
196' x 44' CONT. WELDED GIRDER BRIDGE
OVER WILLOW CREEK
4TH STREET SE MASON CITY, IOWA

REPAIR DETAILS

CERRO GORDO COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
DESIGN NO. FILE NO. DESIGN SHEET OF



Note:
Traffic Control Similar
to Detail Sheet 521-3M.
except Traffic Signs shall
be erected on both sides of
the one-way street.

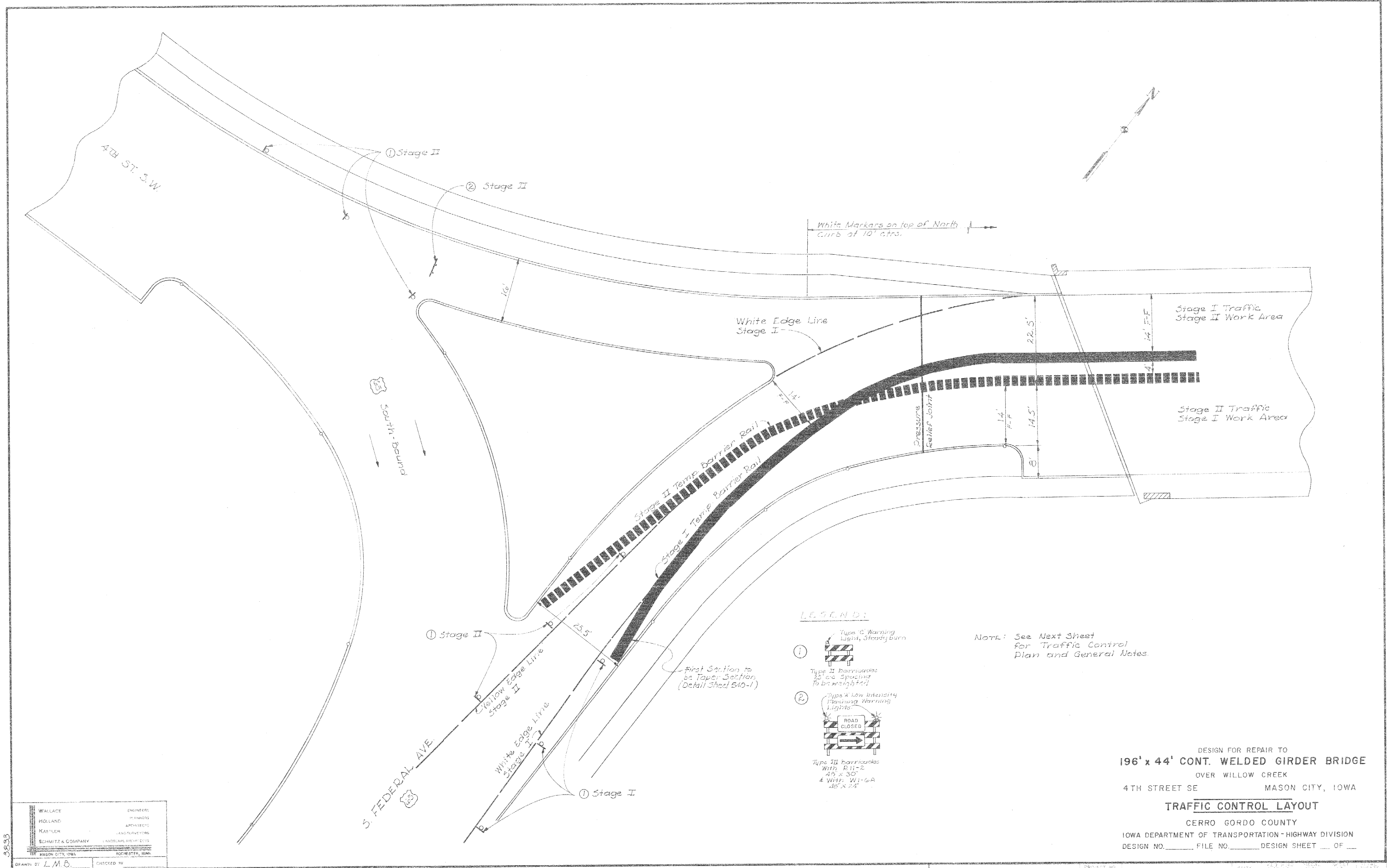
STRUCTURE NO. 1796.1L065
PRESSURE RELIEF JOINT
S. WASHINGTON AVE.

WALLACE	ENGINEERS
HOLLAND	PLANNING
KASTLER	ARCHITECTS
SCHMITZ & COMPANY	LANDSCAPE ARCHITECTS
MASON CITY, IOWA	ROCHESTER, MINN.

DRAWN BY *W. Wallace* CHECKED BY *G.E.G.*

CERRO GORDO COUNTY

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		2	8

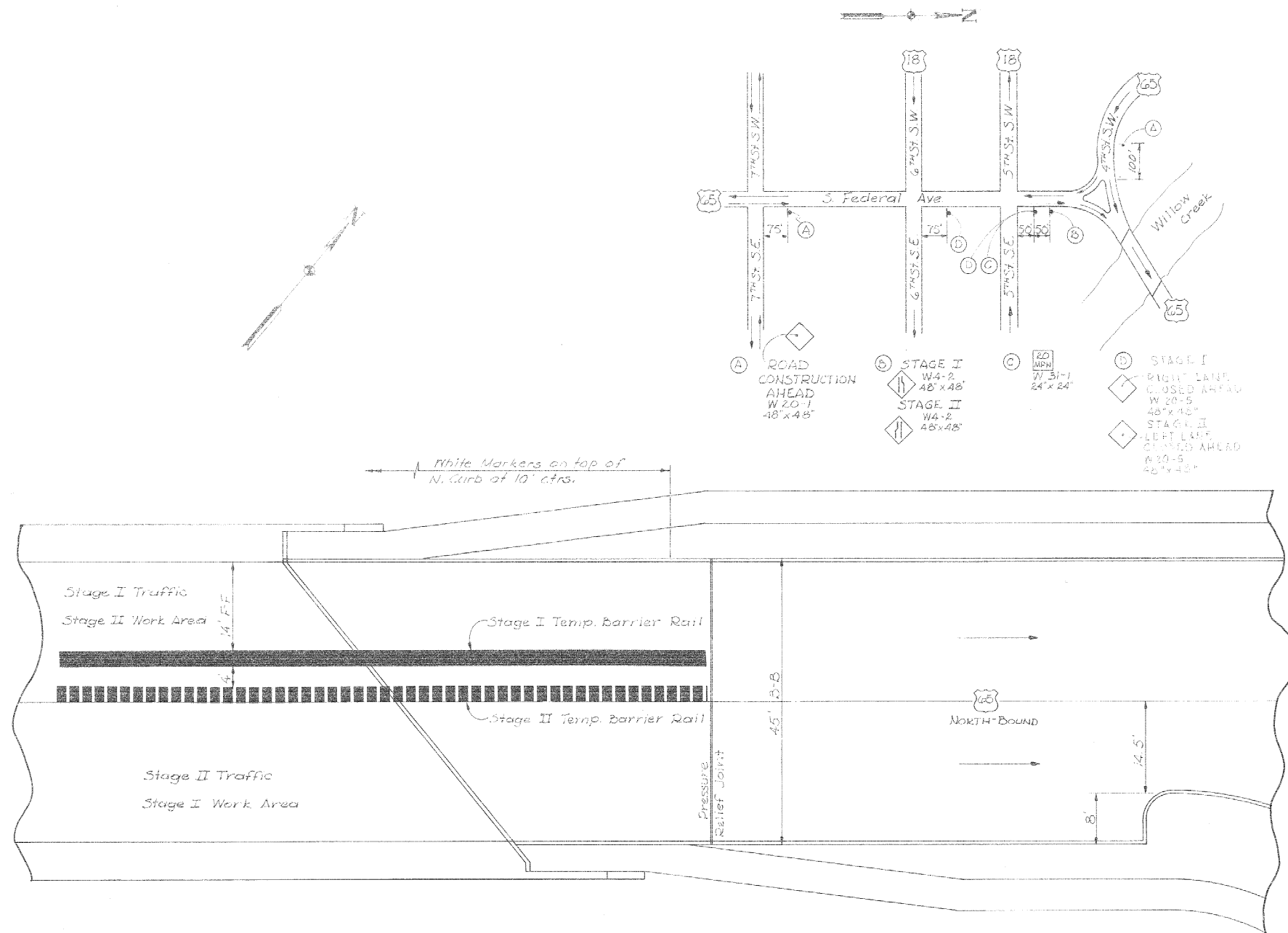


3833

WALLACE	ENGINEERS
HOLLAND	PLANNERS
KASTLER	ARCHITECTS
SCHMITZ & COMPANY	LANDSCAPE ARCHITECTS
MASON CITY, IOWA	ROCHESTER, MINN.

DRAWN BY L.M.B. CHECKED BY

DESIGN FOR REPAIR TO
196' x 44' CONT. WELDED GIRDER BRIDGE
 OVER WILLOW CREEK
 4TH STREET SE MASON CITY, IOWA
TRAFFIC CONTROL LAYOUT
 CERRO GORDO COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN NO. _____ FILE NO. _____ DESIGN SHEET ____ OF ____



TRAFFIC CONTROL PLAN

1. THROUGH TRAFFIC WILL BE MAINTAINED ON THE PROJECT AT ALL TIMES.
2. TRAFFIC CONTROL DEVICES, PROCEDURES AND LAYOUT SHALL BE IN ACCORDANCE WITH THE SUPPLEMENTAL SPECIFICATION FOR TRAFFIC CONTROL, 979, AND SPECIFICATION ARTICLE 1107.9 EXCEPT AS MODIFIED HEREIN AND AS SHOWN ON THE PLANS.
3. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR.
4. THE ENGINEER MAY REQUIRE MODIFICATION OF, OR ADDITIONS TO PAVEMENT MARKING DETAILS SHOWN. CONTRACTING PERMANENT EDGELINES OR CENTERLINES SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR WITH APPROPRIATE TEMPORARY LINES. CONTRACTOR SHALL REMOVE STAGE I TEMPORARY WHITE EDGE LINES PRIOR TO SHIFTING TRAFFIC TO STAGE II. REMOVE ALL REMAINING TEMPORARY PAVEMENT MARKINGS AND RESTORE PERMANENT EDGELINES AND CENTERLINES BEFORE THE STREET IS RETURNED TO NORMAL TRAFFIC.
5. PROPOSED SIGN SPACING MAY BE MODIFIED, AS APPROVED BY THE ENGINEER, TO MEET EXISTING SITE RESTRICTIONS OR TO PREVENT OBSTRUCTION OF THE MOTORIST'S VIEW OF PERMANENT SIGNING.
6. PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON THE SIDEWALK OR SHOULDER OPPOSITE THE WORK AREA. THE SIDEWALK OR SHOULDER ADJACENT TO THE WORK AREA SHALL BE CLOSED WITH NOT LESS THAN TWO SLAT FENCES AND TWO FLASHING LIGHT BARRICADES.
7. TRAFFIC CONTROL LAYOUT FOR INSTALLATION OF PRESSURE RELIEF JOINT ON S. WASHINGTON AVENUE BRIDGE APPROACH SHALL BE SIMILAR TO DETAIL SHEET 521-3M, EXCEPT TRAFFIC SIGNS SHALL BE ERECTED ON BOTH SIDES OF THE ONE-WAY STREET.
8. THE LOCATION FOR STORAGE OF EQUIPMENT BY THE CONTRACTOR DURING NON-WORKING HOURS WILL BE AS APPROVED BY THE ENGINEER IN CHARGE OF CONSTRUCTION.
9. THE CONTRACTOR SHALL FURNISH A MINIMUM OF ONE FLAGGER WHEN MOVING EQUIPMENT AGAINST THE FLOW OF TRAFFIC OUTSIDE OF THE WORK AREA.
10. THE LUMP SUM BID FOR "TRAFFIC CONTROL" SHALL BE FULL COMPENSATION FOR FURNISHING, ERECTING, MAINTAINING AND REMOVING ALL SIGNS, BARRICADES, PAVEMENT MARKINGS, AND ALL OTHER ITEMS OF WORK APPURTENANT THERETO.

GENERAL NOTES

1. DETAILS OF THE TEMPORARY BARRIER RAIL ARE INCLUDED ELSEWHERE IN THE PLANS. THE FIRST 10-FOOT SECTION SHALL BE A TAPERED SECTION. SEE DETAIL SHEET 540-1.
2. WHITE REFLECTORS (MARKERS) SHALL BE MOUNTED FACING ONCOMING TRAFFIC ON EACH 10-FOOT SECTION OF TEMPORARY BARRIER RAIL AND ON TOP OF THE NORTH CURB AT 10-FOOT INTERVALS BEGINNING 60 FEET WEST OF THE WEST END OF THE BRIDGE AND ENDING 60 FEET EAST OF THE EAST END OF THE BRIDGE. MARKERS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL.

DESIGN FOR REPAIR TO
196' x 44' CONT. WELDED GIRDER BRIDGE
 OVER WILLOW CREEK
 4TH STREET SE MASON CITY, IOWA

TRAFFIC CONTROL LAYOUT

CERRO GORDO COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
 DESIGN NO. _____ FILE NO. _____ DESIGN SHEET _____ OF _____

WALLACE	ENGINEER
HOLLAND	PLANNER
KASTLER	ARCHITECT
SCHMITZ COMPANY	LANDSCAPE ARCHITECT
MASON CITY, IOWA	BOONEVILLE, MISSOURI

DRAWN BY L.M.B. CHECKED BY

CERRO GORDO COUNTY

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		4	8

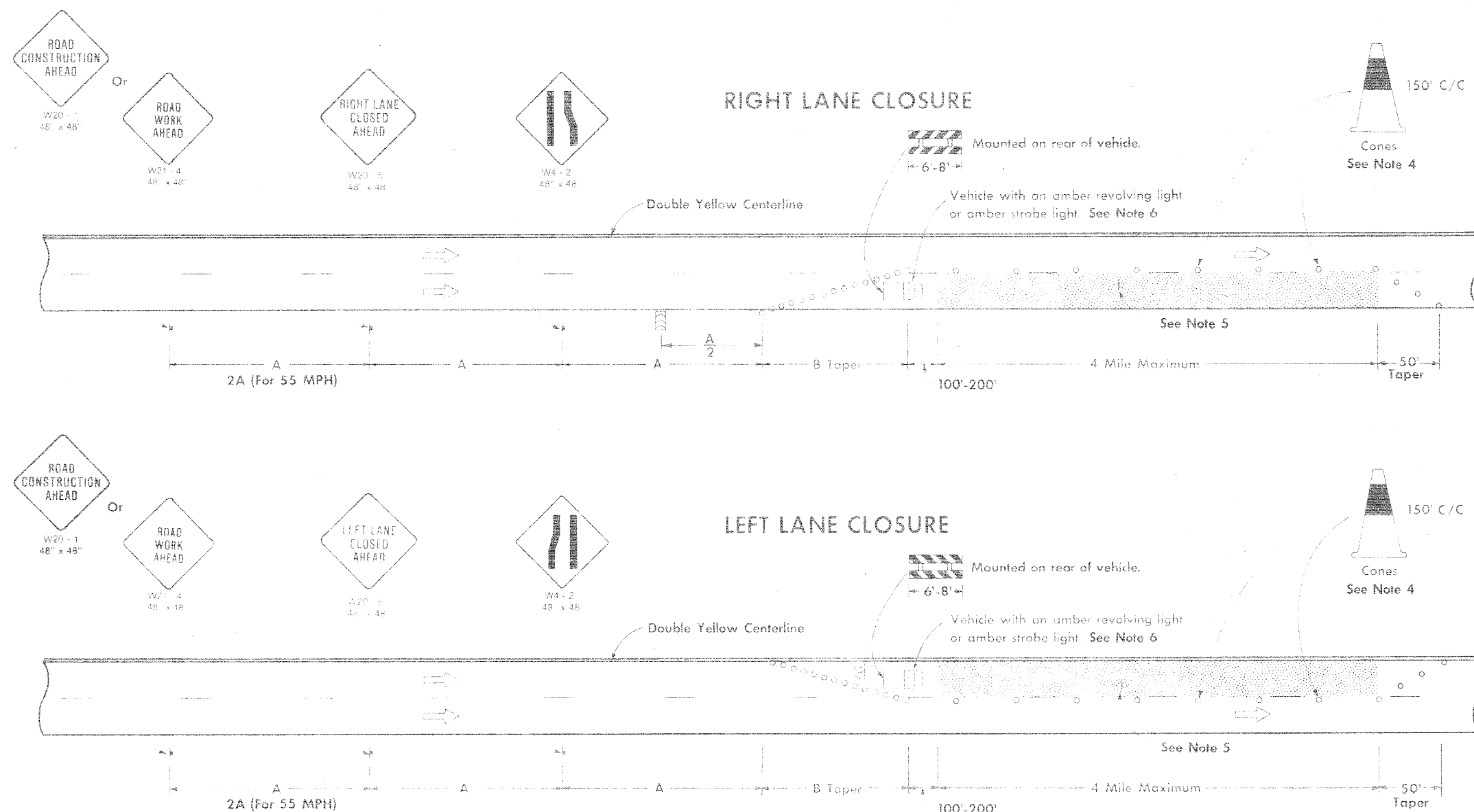
Speed Limit	Approximate Spacing	
	"A"	"B"
25	300'	150'
35	500'	300'
45	700'	630'
55	1000'	770'

LEGEND

-  Traffic Sign
-  Cone, Vertical Panel, Type I Barricade or Type II Barricade (To Be Weighted)
-  Type II Barricade (To Be Weighted)
-  Sequencing Arrow (Type "C")
-  Work Area

GENERAL NOTES:

- This layout is intended for short-term use during daylight hours.
- The maximum spacing between cones, Type II barricades or vertical panels in a taper should be approximately equal in feet to the speed limit.
- Vertical panels, cones or barricades shall not be intermixed through the work area on the laneline.
- When vertical panels or barricades are used, the spacing shall be 300' c/c.
- Type II barricades will be placed in the closed lane at a 1500-foot interval. Where coreouts, holes, or uncured concrete exist within the work area, an additional Type II barricade shall be placed just ahead of each.
- A Type III barricade may be substituted for the vehicle.
- During operations which encroach on the open lane, such as pavement sawing or concrete finishing, a flagger shall be posted adjacent to the open traffic lane and upstream of the operation. Encroachment shall be held to a minimum and shall be for as short a period of time as necessary. The flagger will alert motorists when equipment encroaches on the traveled way.
- When the project limits exceed 2 miles in length, the "Road Construction Next _____ Miles" (G20-1) sign shall be erected.
- When nighttime closure is necessary, Type "C" Steady Burn Warning Lights shall be required on all channelizing devices. Two Type "A" Low Intensity Flashing Warning Lights shall be required on the Type III barricade. Cones are not permitted in the taper at night.



FOR MAINTENANCE USE ONLY

DETAIL SHEET

521-3M

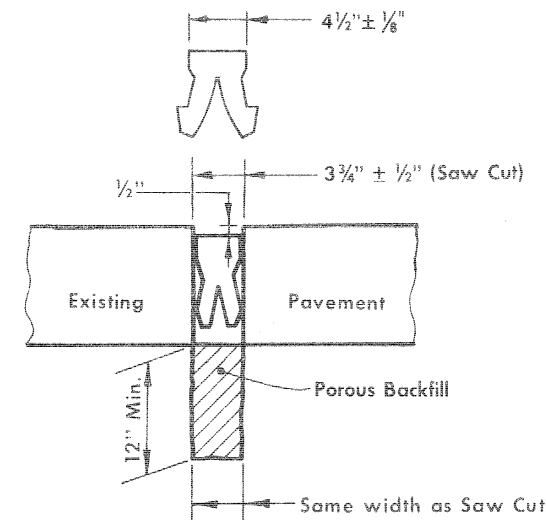
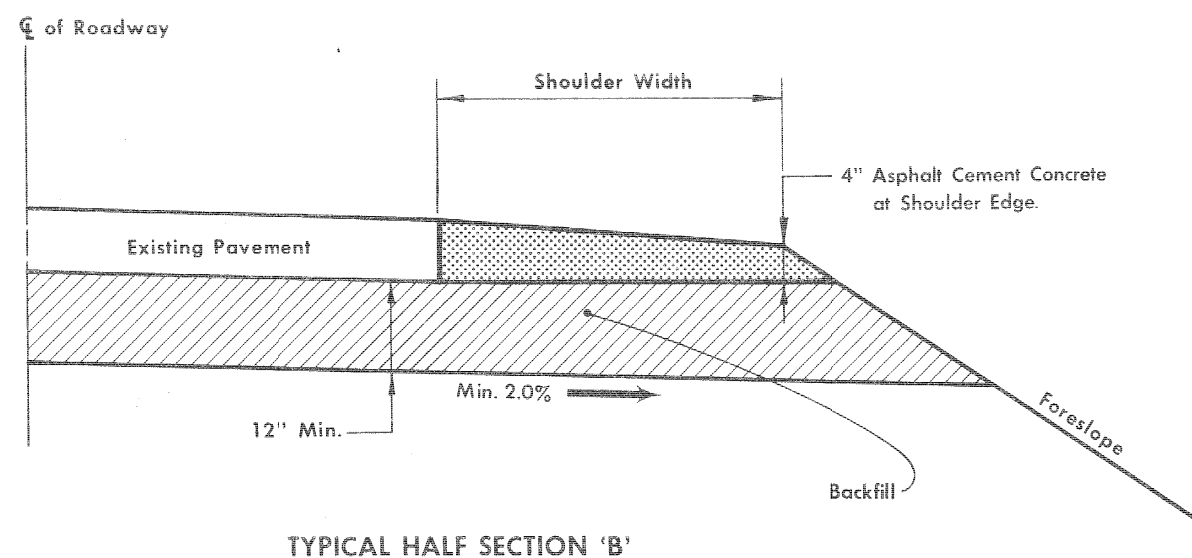
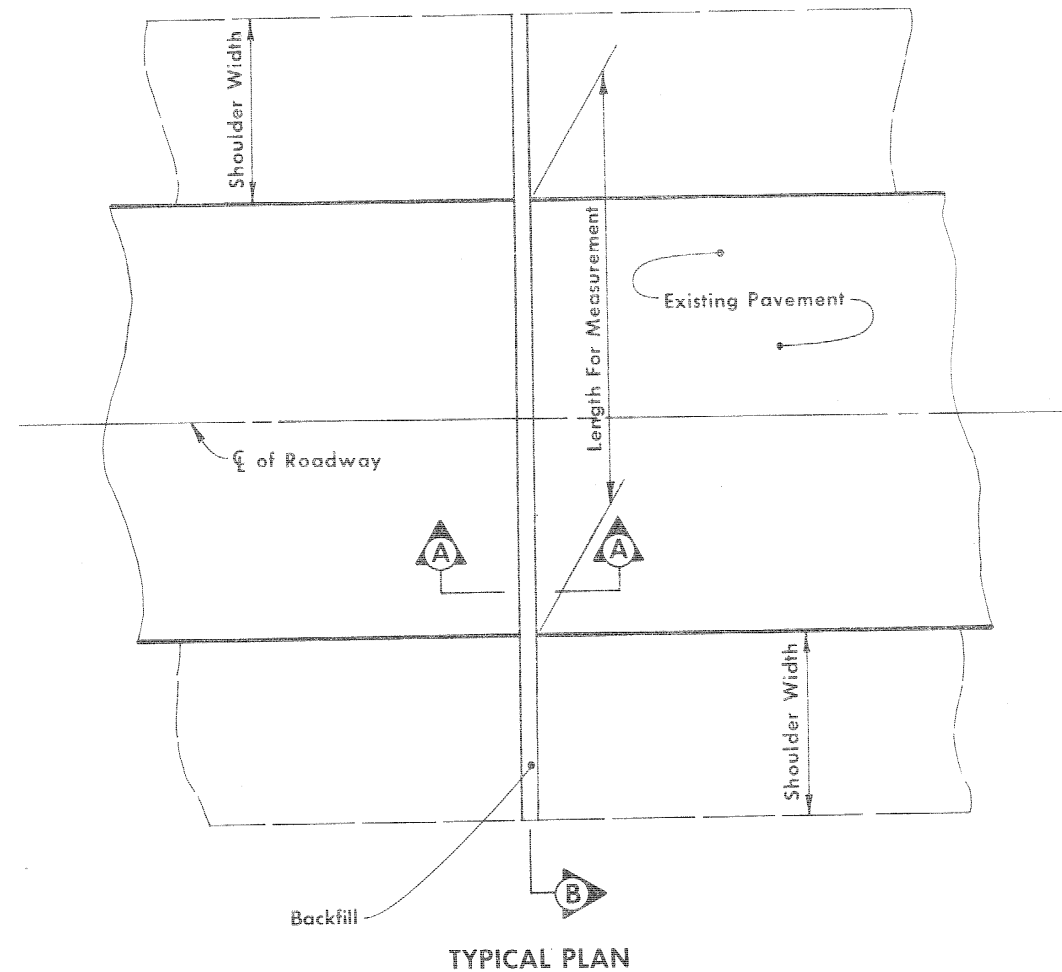
Revision Date 1-23-85

TRAFFIC CONTROL LAYOUT
FOR LANE CLOSURE ON
FOUR-LANE UNDIVIDED HIGHWAY

COUNTY

PROJECT NUMBER

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
OFFICE OF THE DISTRICT ENGINEER
DALLAS
YEAR 3
SHEET 8



GENERAL NOTES:
Details hereon cover Pressure Relief Joint construction on P. C. Conc. Pavement.

Pressure Relief Joints shall consist of a void with the dimensions indicated completely across width and depth of pavement filled with urethane foam. A trench of the dimensions shown hereon shall be excavated from foreslope to foreslope and backfilled with material meeting requirements of Standard and Supplemental Specifications for Pavement Repair and as specified hereon and as directed by the engineer. Top of porous backfill shall not extend above the bottom of pavement slab.

New Pressure Relief Joints which have been cut and have subsequently closed-up to 3 inches or less prior to filling with Urethane Foam at bridges, shall be recut.

When existing Pressure Relief Joints are to be reconstructed any expansion material present in the joint shall be removed and the joint recut to the proper dimensions (unless sufficient width exists) and limits as shown hereon, including the installation of porous backfill material.

At existing foam filled joints which are used as constructed, no additional treatment of joint is required.

At approaches to bridges a new Pressure Relief Joint shall be cut a minimum of 75 feet and not more than 125 feet from the bridge end, unless an existing satisfactory Pressure Relief Joint is present. This new joint shall be located at least 5 feet away from any existing joint or prominent cracks in pavement, unless otherwise specified by the engineer.

When the plans so indicate additional Pressure Relief Joints shall be cut at approximately 1/4 mile intervals at locations designated by the engineer. All Pressure Relief Joints are to be filled with Preformed Urethane Foam Joint material installed with lubricant adhesive (approved alternate may be used).

Price bid per lineal foot of "Pressure Relief Joint" shall include all necessary work and material to construct the joint as detailed hereon, including the disposal of concrete removed. Article 1109.03 of the standard specifications shall not apply. Furnishing and placing of Porous Backfill shall be considered incidental to the construction of Pressure Relief Joint.

DETAIL SHEET

530-4

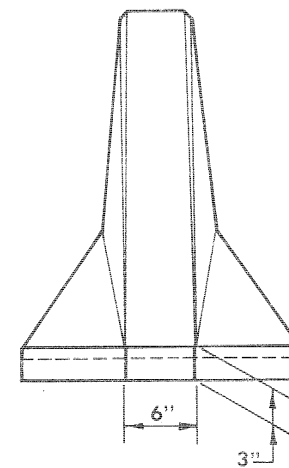
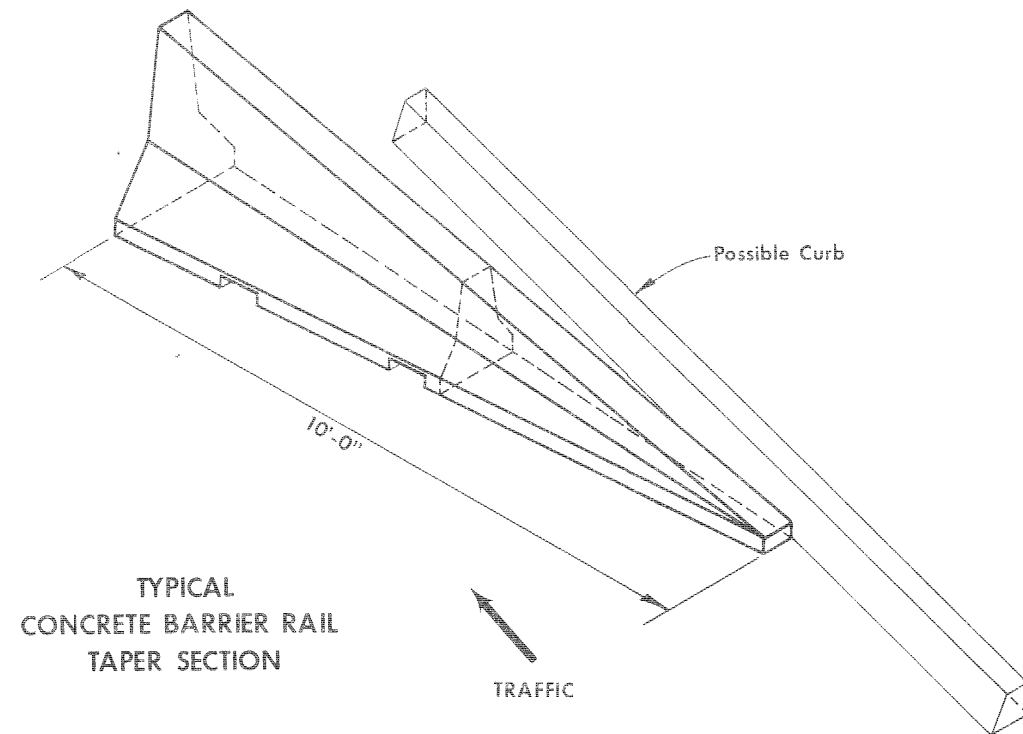
Revision Date 6-17-83

**DETAILS OF
PRESSURE RELIEF JOINTS
ON P.C.C. PAVEMENT**

COUNTY

PROJECT NUMBER

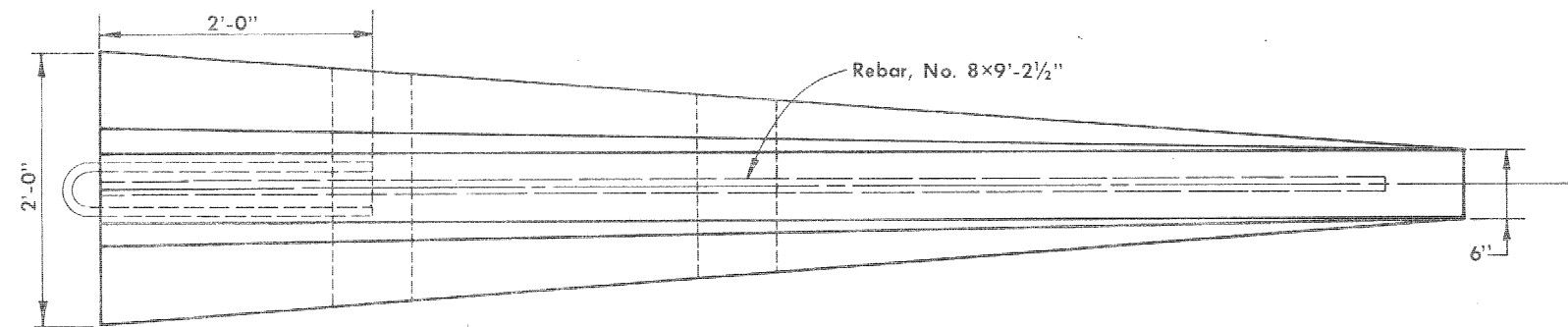
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		10	10



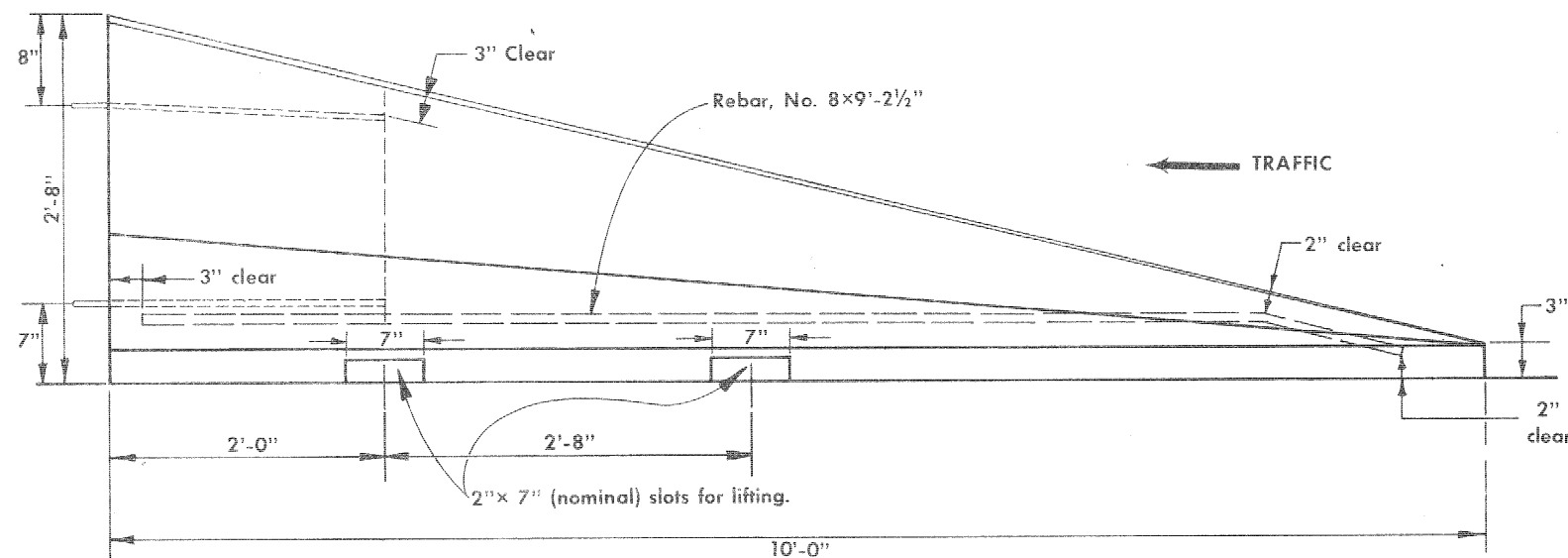
FRONT ELEVATION

GENERAL NOTES:
Details shown hereon are for the construction of a precast concrete barrier rail taper section. Details shown are typical. Alternate design details may be submitted to the engineer for approval prior to construction.

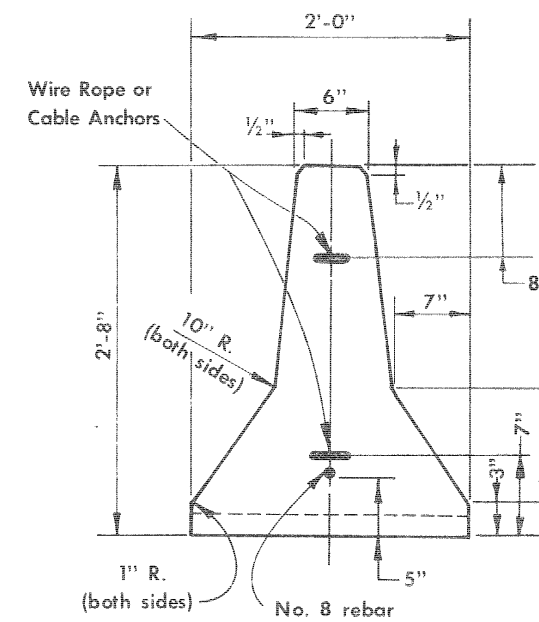
Concrete shall be Class 'D' Structural Concrete placed and finished in conformance with current standard specifications for "Structural Concrete". Approximately 0.486 cu. yds. of Class 'D' Structural Concrete will be required for each taper section.



PLAN



SIDE ELEVATION



FULL SECTION

DETAIL SHEET

540-1

Revision Date 11-10-83

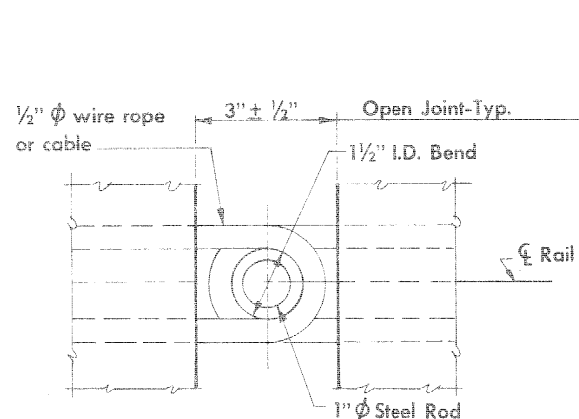
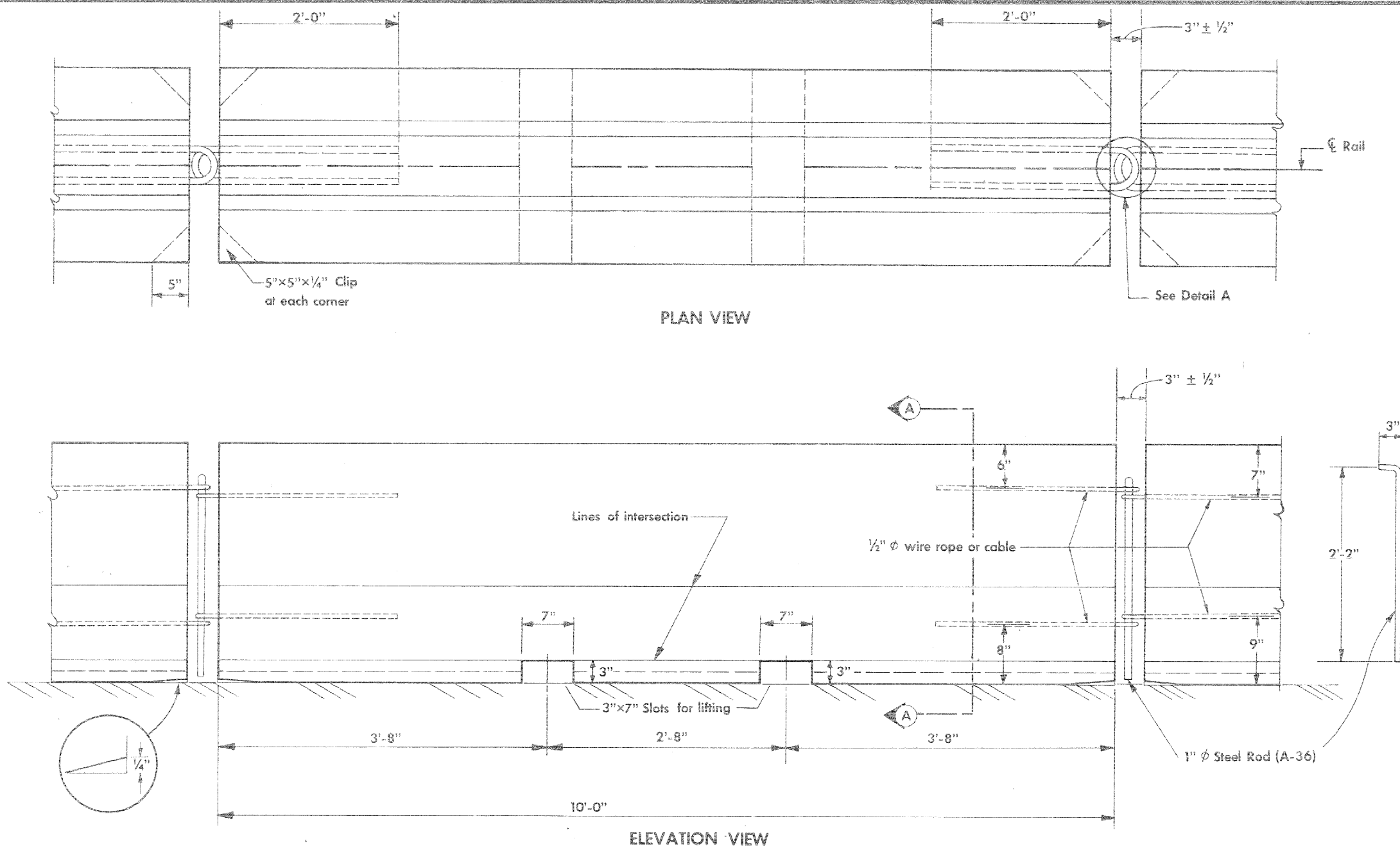
CONCRETE BARRIER RAIL TAPER SECTION

(Pre-Cast)

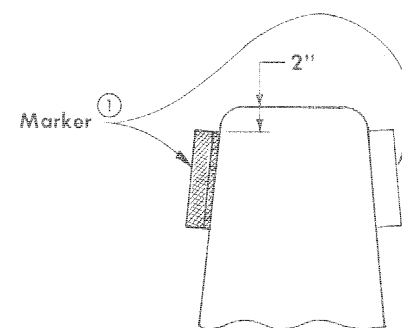
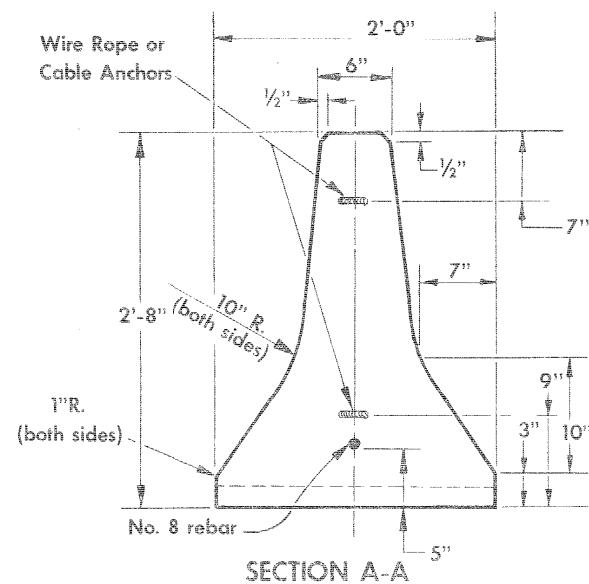
COUNTY

PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		7	8



Wire rope or cable to be $\frac{1}{2}$ " ϕ , with a minimum breaking strength of 20,000 pounds.



① Color same as adjacent edgeline.

GENERAL NOTES:

The details hereon are for the fabrication and installation of temporary concrete barrier rail. The barrier shall be Class "D" structural concrete and finished in conformance with current specifications.

Details shown are typical. Alternate design details may be submitted to the engineer for approval.

The contractor shall provide for an approved schedule of surveillance with a person on call and available 24 hours a day, each day of the week, to realign barrier rail which has been struck. Initiation of service shall be within one hour of notification of need.

Markers shall be furnished and installed by the contractor. Marker shall be placed on the barrier as recommended by the manufacturer, and as shown in the Marker Placement Detail or as directed by the engineer. The markers shall be installed at 10 ft. spacing on both sides of barrier. Refer to Details of Barrier Placement. The contractor shall maintain the markers and promptly repair or replace any damaged or missing units. All costs for furnishing, installing and maintaining markers shall be included in the price bid for the temporary barrier rail.

The barrier rail sections shall remain the property of the contractor and at the completion of the work shall be removed from the site by him.

When Temporary Barrier Rail is installed adjacent to a drop-off, tie downs as described and shown on Detail Sheet 540-10 shall be required.

The method of measurement for "Temporary Barrier Rail, Furnish Only" will be the maximum length furnished and in use on the project at any one time based on the nominal length times the number of units.

The price bid for "Temporary Barrier Rails Furnish Only" in linear feet shall be full compensation for furnishing temporary barrier rail as detailed and measured on this sheet.

The method of measurement for "Temporary Barrier Rail, Place Only" will be the length initially installed, and the length reinstalled in new position, as required by the plans based on the nominal length times the number of units.

The price bid for "Temporary Barrier Rails, Place Only" in linear feet of Barrier Rail shall be full compensation for placing temporary barrier rail as detailed on this sheet and elsewhere in the plan.

DETAIL SHEET

540-2

Revision Date 1-23-85

**DETAILS OF
TEMPORARY CONCRETE BARRIER RAIL**

COUNTY

PROJECT NUMBER

STATE	RD. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	1		2	2