BRIDGE REPAIR
FN-75-2(22)--21-75

PLYMOUTH COUNTY

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	6		1	17

PROJECT NUMBER
FN-75-2(22)--21-75

R.O.W. PROJECT NUMBER

PRELIMINARY ENGINEER NUMBER

IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division

PLANS OF ~~PROPOSED~~ IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
PLYMOUTH COUNTY
BRIDGE REPAIR

US 75 OVER W. FORK FLOYD RIVER N. OF MERRILL

SCALES AS NOTED

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: _____
Resident Construction Engineer

Date 15 Jan 85 Iowa Reg. No. 6021

REVIEWED AND FORWARDED TO AMES

Thomas E. De Witte Date June 1, 1983
District Construction Engineer

One 50% Reduced and Two Full-Size Prints To Be Made and Returned To

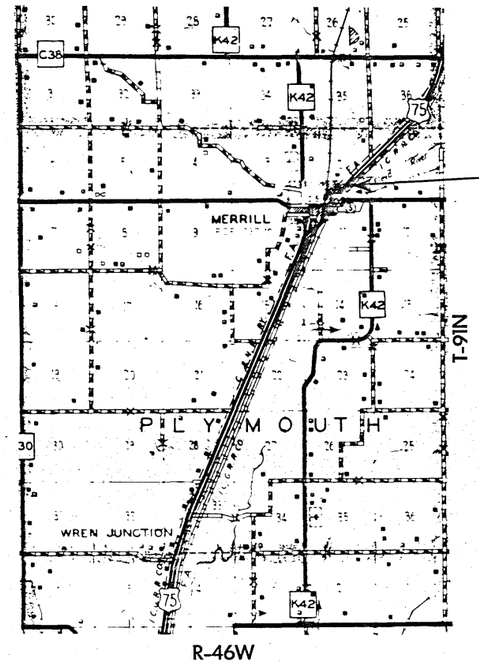
James R. Bump
District Engineer

AFTER MICROFILMING RETURN ORIGINAL
TO DISTRICT NO. 3

C.F.A. — JAMES PARSLEY
P.M. — JERRY BROWER
S.C. — PEDERSEN, CLARENCE

CONVENTIONAL SIGNS

State Line
Co. Line
Twp. Line
Sec. Line
Corp. Line
Urban Bdry
R.O.W. Lines
Survey Line — Old / New; Sta / Ref Point
Sec. Corner
Profile Grade
Railroad
Field Tile
Underground Lines — Old / New; G Gas / T Tel
Culverts — Old / New
Utility Poles — Power / Tel.
Fences — Barb / Mesh
Trees Or Brush
Stream
Dike — Old / New
County Road No
Primary Road No
U. S. Road No.
Interstate Road No



LOCATION MAP

LOCATION MAP SCALE
0 1 2 3
miles

INDEX OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	FINAL ~~ESTIMATE~~ SHEET
3 - 17	DESIGN NO. 482

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

STANDARD	ISSUED	REVISED

STANDARD ROAD PLANS 105-4 6-17-77

The following Standard Road Plans shall be considered applicable to construction work on this project.

IDENT	DATE	IDENT	DATE	IDENT	DATE
RE-2	8-16-74	RE-12	4-20-79	RE-48A	12-9-83
RE-7	12-9-83	RE-28	12-9-83	RE-52	12-9-83
		RE-47	12-9-83	RE-57	6-8-79

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.

[signature]
2795 1-24-84
IOWA REGISTRATION NUMBER DATE

DEPARTMENT OF TRANSPORTATION — IOWA — *Highway Division*

AUTHORIZED FOR LETTING [signature] 1-25-84
DEPUTY CHIEF ENGINEER DATE

U.S. DEPT. TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ENGINEER DATE

LETTING DATE MARCH 15, 1984 | STATE CONTROL SECTION NUMBER 75-0700 | FILE NO. 26795 | PLYMOUTH COUNTY | PROJECT NO. FN-75-2(22)--21-75 | SHEET NO. 1 OF 17

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.

1-24-84 DATE — James R. Sassaman (ESB) — REG. NO. 2663

JAMES R. SASSAMAN

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.

Fred W. Walker

DATE January 23 19 84 IOWA REG. NO. 4999

IN LETTING OF MARCH 15, 1984

DESIGN NO. 482 — OVER WEST FORK FLOYD RIVER — STA. 655+20.00

PLYMOUTH COUNTY — MAINT . NO. 7512.6S075

SECTION 2 — T-91N R-46W — PLYMOUTH TWP.

DESIGN FOR REPAIRS TO
240' x 52' CONTINUOUS I-BEAM BRIDGE

FINAL ~~ESTIMATE OF~~ QUANTITIES

NO.	ITEM	UNIT	TOTAL	
1	BRIDGE FLOOR OVERLAY	SQ. YDS.	[illegible]	1406.31
2	CLASS A BRIDGE FLOOR REPAIR	SQ. YDS.	[illegible]	358.83
3	TEMPORARY BARRIER RAIL - CONCRETE	LIN. FT.	491.8	
4	FLOODLIGHTING	L.S.	[illegible]	$3,000.00
5	TRAFFIC CONTROL	L.S.	[illegible]	$4,500.00
6	PAVEMENT MARKING	STA.	[illegible]	134.73
7	EPOXY SEALER FOR CONCRETE	SQ. FT.	[illegible]	1068.18
8	STRUCTURAL CONCRETE	CU. YDS.	7.8	
9	REINFORCING STEEL	LBS.	1357	
10	STEEL EXTRUSION JOINT WITH NEOPRENE	LIN. FT.	53.4	
11	REMOVAL OF EXISTING STRUCTURES	L.S.	[illegible]	$6,000.00
12	ABUTMENT REPAIR	L.S.	[illegible]	$5,000.00
13	JOINT, PREFORMED ELASTIC NEOPRENE 1 1/4 IN.	LIN. FT.	52.0	

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	INCLUDES 1 FLOODLIGHT.
6	INCLUDES PLACEMENT OF 65.9 STA. (9.7 STA. WHITE AND 56.2 STA. YELLOW) AND REMOVAL OF 59.8 STA.
7	INCLUDES 240 SQ. FT. OF BRIDGE SEAT SEALER FOR SEALING ABUTMENT BRIDGE SEATS.
8	TO BE CLASS "D" CONCRETE. INCLUDES COST OF GUARDRAIL ANCHOR INSERTS AND 114 LBS. OF ANCHOR BOLTS.
12	INCLUDES 27 LBS. OF STRUCTURAL STEEL FOR SPLICE BARS.

FINAL ~~ESTIMATE OF~~ ROADWAY QUANTITIES

	ITEM	UNIT	TOTAL	
14	Guardrail, Formed Steel Beam	Lin.Ft.	100	
15	Guardrail Posts, Beam	No.	52	
16	Guardrail End Anchorage, Beam RE-52	No.	4	
17	Remove & Reinstall Object Markers	No.	4	
18	Remove & Reinstall Delineator Posts	No.	8	
19	Removal of Existing Delineators	No.	4	
20	Removal of Guardrail End Anchorage	No.	4	
21	Removal of Formed Steel Beam Guardrail	Lin.Ft.	350	
22	Removal of Posts	No.	96	
23	Delineator, Single White	No.	14	
24	Mobilization	L.S.		$8,000.00
8001	Remove & Reinstall Guardrail	L.F.		150.00

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 8".
6, 8 & 9.	To be stockpiled for pickup by State Maintenance Forces.
7.	To be disposed of as per Std. Notation 213-1.

FINAL
~~ESTIMATE~~ SHEET

FILE NO. 26795 — PLYMOUTH COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
FN-75-2(22)--21-75	IOWA	5		2	[illegible]

19

TOTAL ESTIMATED BRIDGE QUANTITIES

ITEM Nº	ITEM	UNITS	QUANTITY
1	Bridge Floor Overlay	Sq. Yds.	1400
2	Class A Bridge Floor Repair	Sq. Yds.	299
3	Temporary Barrier Rail - Concrete	Lin. Ft.	491.8
4	Floodlighting	L.S.	Lump Sum
5	Traffic Control	L.S.	Lump Sum
6	Pavement Marking	Sta.	125.7
7	Epoxy Sealer for Concrete	Sq. Ft.	656
8	Structural Concrete	Cu. Yds.	7.8
9	Reinforcing Steel	Lbs.	1357
10	Steel Extrusion Joint with Neoprene	Lin. Ft.	53.4
11	Removal of Existing Structures	L.S.	Lump Sum
12	Abutment Repair	L.S.	Lump Sum
13	Joint, Preformed Elastic Neoprene 1 1/4 in.	Lin. Ft.	52.0

ITEM Nº. ESTIMATE REFERENCE INFORMATION:

4. Includes 1 Floodlights
6. Includes placement of 65.9 Stations (9.7 Stations white and 56.2 Stations yellow) and removal of 59.8 Stations.
7. Includes 240 sq.ft. of bridge seat sealer for sealing abutment bridge seats.
8. To be Class "D" Concrete. Includes cost of guard rail anchor inserts and 114 lbs. of anchor bolts.
12. Includes 27 lbs. of structural steel for splice bars.

TRAFFIC CONTROL PLAN

1. Through traffic will be maintained on the project at all times.
2. Traffic control on this project shall be in accordance with Detail Sheets 521-2A, 521-3B and 521-4, and special layout contained in the plans. For additional complementary information, refer to Supplemental Specification 920.
3. All traffic control devices shall be furnished, erected, maintained, and removed by the contractor.
4. Where possible, all post mounted signs shall be placed a minimum of 2 feet clear of the shoulder.
5. The location for storage of equipment by the contractor during non-working hours will be as approved by the engineer in charge of construction.
6. The engineer may require modification of, or additions to pavement marking details shown. Conflicting permanent edgelines or centerlines, or lanelines shall be removed and replaced with appropriate temporary lines. As applicable, permanent edgelines and centerlines and lanelines shall be restored before the roadway is returned to normal traffic. Current Supplemental Specifications shall apply.
7. 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.
8. Proposed changes in the Traffic Control Plan (includes layout sheets) shall be reviewed with the Office of Construction before changes are made.
9. The bid item "Traffic Control" shall include the cost for all traffic control measures required of the contractor except for those which are separate bid items or are incidental to other bid items.

See "ESTIMATE OF ROADWAY QUANTITIES" on design sheet 11 of 15.

GENERAL NOTES

THIS DESIGN IS FOR REPAIR TO THE EXISTING 240' x 52' CONTINUOUS I-BEAM BRIDGE, ORIGINAL DESIGN NUMBER 255, PLYMOUTH 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 OVERLAY.
2. BRIDGE FLOOR REPAIR.
3. REMOVAL AND RECONSTRUCTION OF THE TOP OF EAST ABUTMENT BACKWALL AND PORTION OF SUPERSTRUCTURE SLAB.
4. REMOVAL AND RECONSTRUCTION OF PORTION OF CURBS NEAR EAST ABUTMENT AND APPROACH GUARDRAIL ANCHOR BLOCKS.
5. INSTALLATION OF NEW EXPANSION DEVICE AT EAST ABUTMENT.
6. ADD EPOXY SEALER TO GUTTERS, FACE OF CURBS AND BRIDGE SEATS.
7. ALIGNMENT OF EAST ABUTMENT MASONRY PLATES.

STAGE CONSTRUCTION

CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST ONE LANE OF TRAFFIC MAINTAINED IN EACH DIRECTION AT ALL TIMES IN ACCORDANCE WITH "TRAFFIC CONTROL PLAN" NOTES ON THIS SHEET AND "TRAFFIC CONTROL LAYOUT" ON DESIGN SHEETS 10, 12, 13 AND 14 OF 15 .

BRIDGE FLOOR REPAIR

PLAN QUANTITY OF FLOOR REPAIR IS BASED ON THE "SURVEY PLOT" AS SHOWN ON DESIGN SHEET 7 OF 15 . HATCHED AREAS REPRESENT CLASS A BRIDGE FLOOR REPAIR. ACTUAL SPALLED AND HOLLOW AREAS, AS DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION, SHALL BE REPAIRED.

THE ENTIRE CONCRETE SURFACE OF THE FLOOR, INCLUDING AREAS OVER CLASS A BRIDGE FLOOR REPAIR, SHALL HAVE BRIDGE FLOOR OVERLAY. IN ORDER TO LIMIT ADDITIONAL DEAD LOAD, SURFACE RAISE SHALL BE RESTRICTED TO A MAXIMUM OF 1/2 INCH MORE THAN THAT SHOWN ON THE PLANS. PROFILE SHALL BE ADJUSTED TO THE EXTENT POSSIBLE WITHIN THESE LIMITS.

PRESENT FLOOR THICKNESS IS ABOUT 8 INCHES. THE CONTRACTOR WILL BE REQUIRED TO EXERCISE CARE IN REMOVING CONCRETE IN ORDER TO PREVENT UNNECESSARY UNBONDING OF REINFORCING STEEL.

THE TOP OF ABUTMENT BACKWALL (AT THE WEST ABUTMENT) BETWEEN GUTTER LINES SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS FOR CLASS A BRIDGE FLOOR REPAIR AND BRIDGE FLOOR OVERLAY WITH THE FOLLOWING EXCEPTIONS:

a. THE LOWER LIMIT FOR CLASS A BRIDGE FLOOR REPAIR SHALL BE TO SUITABLE EXISTING CONCRETE, AS DETERMINED BY THE ENGINEER, BUT TO AT LEAST 2 INCHES BELOW THE BOTTOM LIMIT FOR BRIDGE FLOOR OVERLAY.
b. IF MACHINE FINISHING FOR THE TOP OF BACKWALL IS NOT PRACTICABLE, A MANUAL TYPE SCREED OR METAL PLATE, WITH APPROVED VIBRATORS ATTACHED, SHALL BE USED.

THE EXPOSED TOP OF BACKWALL AREAS HAVE BEEN INCLUDED IN THE QUANTITIES SHOWN FOR "CLASS A BRIDGE FLOOR REPAIR" AND FOR "BRIDGE FLOOR OVERLAY".

REMOVAL OF EXISTING STRUCTURES

THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES" SHALL INCLUDE ALL COSTS ASSOCIATED WITH REMOVAL AND DISPOSAL OF PORTIONS OF THE SUPERSTRUCTURE SLAB AND CONCRETE END DIAPHRAGM, TOP PORTION OF ABUTMENT BACKWALL, EXPANSION DEVICE, CURBS AND GUARDRAIL ANCHOR BLOCKS AT THE EAST END OF BRIDGE AS SHOWN AND NOTED.

REMOVAL SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT ALL STRUCTURAL STEEL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

DAMAGE BEYOND DESIGNATED REMOVAL LIMITS SHALL BE REPAIRED WITH NO COST TO THE STATE OF IOWA.

STEEL EXTRUSION JOINT WITH NEOPRENE

THE UNIT PRICE BID FOR "STEEL EXTRUSION JOINT WITH NEOPRENE" SHALL INCLUDE ALL COSTS FOR FABRICATION AND INSTALLATION OF THE STRIP SEAL EXPANSION DEVICES AS SHOWN AND NOTED. COST OF TEMPORARY ERECTION MATERIAL AND CURB PLATE ASSEMBLIES SHALL BE INCLUDED IN THE PRICE BID PER LINEAL FOOT MEASURED FROM END TO END OF EXTRUSION ASSEMBLY.

ABUTMENT REPAIR

THE BID ITEM "ABUTMENT REPAIR" SHALL INCLUDE COSTS FOR ALIGNMENT OF EAST ABUTMENT BEARINGS AS SHOWN AND NOTED ON DESIGN SHEET 3 OF 15 INCLUDED IN THE LUMP SUM BID IS THE COST OF JACKING UP SUPERSTRUCTURE, CUTTING ANCHOR BARS, ALIGNING MASONRY PLATES AND FURNISHING AND WELDING THE 1" x 1" x 0'-8 SPLICE BARS.

EPOXY SEALER FOR CONCRETE

IN ADDITION TO REQUIREMENTS OF ART. 3413.09, AN EPOXY SEALER SHALL BE APPLIED ALONG EACH GUTTERLINE (SEE DETAIL ON DESIGN SHEET 6 OF 15). THE EPOXY SEALER MATERIAL AND APPLICATION SHALL COMPLY WITH MATERIALS I.M. 4912.12 . BEFORE APPLICATION OF EPOXY SEALER, NEW CONCRETE SURFACES MUST BE CURED AND ALL SURFACES 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 SHALL BE APPLIED PRIOR TO ANY OTHER SURFACE TREATMENT APPLICATION. FOR PORTLAND CEMENT CONCRETE FLOOR REPAIR, PAR. 2413.02A., THE EPOXY SEALER SHALL BE APPLIED ALONG EACH GUTTER LINE, EXTENDING ONE FOOT ONTO THE ROADWAY AND UP THE BATTER FACE OF CURB. FOR LATEX-MODIFIED CONCRETE FLOOR REPAIR, PAR. 2413.02B., THE EPOXY SEALER SHALL BE APPLIED TO THE BATTER FACE OF EACH CURB, BUT IT SHALL NOT BE APPLIED ON THE ROADWAY.

EPOXY SEALER SHALL ALSO BE APPLIED TO THE ABUTMENT BRIDGE SEATS AND EXTEND 6 INCHES UP THE FACE OF THE BACKWALL AS SHOWN AND NOTED ON DESIGN SHEET 6 OF 15 AND IN ACCORDANCE WITH THE FIFTH PARAGRAPH OF SUB-ARTICLE 2403.23C. THE SURFACE PREPARATION, EPOXY SEALER MATERIAL AND APPLICATION SHALL BE AS DESCRIBED FOR THE CURB AREAS TO BE TREATED. AMOUNTS FOR AREAS TO BE SEALED ARE INCLUDED IN THE ESTIMATED QUANTITY OF "EPOXY SEALER FOR CONCRETE".

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.

PREFORMED ELASTIC NEOPRENE JOINT

THE CONTRACT UNIT PRICE BID FOR " 1 1/4" PREFORMED ELASTIC NEOPRENE JOINT" SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING THE NEOPRENE JOINT AS SHOWN AND NOTED ON THESE PLANS.

COMPLETION OF OTHER WORK BEFORE OVERLAY

BEFORE PROCEEDING WITH BRIDGE FLOOR OVERLAY AND BRIDGE FLOOR REPAIR, THE CONTRACTOR MAY COMPLETE ALL STAGES OF OTHER CONSTRUCTION. ANY CONSTRUCTION SHALL HAVE STAGE LIMITS, TEMPORARY BARRIER RAIL AND TRAFFIC CONTROL AS DETAILED ON THESE PLANS. WHEN BACKWALLS ARE TO BE BUILT TO A RAISED SURFACE, AND WHEN FLOOR OVERLAY IS NOT A PART OF THE SAME STAGE, THE CONTRACTOR SHALL PROVIDE FOR PROFILE TRANSITION WITH A.C. SURFACING. PROFILE TRANSITION SHALL BE TAPERED AT A RATE OF 25' FOR 1 1/2 INCHES OF RAISE. THE A.C. TRANSITION MATERIAL SHALL BE A COMMERCIAL GRADE HOT MIX OR A MIX APPROVED BY THE ENGINEER. A.C. MAY BE PLACED BY HAND METHODS AND MAY BE COMPACTED BY ANY APPROVED METHOD. ALL COSTS FOR ADDITIONAL TRAFFIC CONTROL, REPOSITIONING OF BARRIER AND A.C. SURFACING SHALL BE BORNE BY THE CONTRACTOR.

APPROACHES

THE ASPHALTIC CONCRETE 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 BRIDGE CONTRACTOR SHALL GIVE ADEQUATE PRIOR NOTICE SO THAT ASPHALTIC CONCRETE MAY BE PLACED DURING NORMAL WORKING HOURS AND WORKING DAYS OF MAINTENANCE.

REINFORCING

ALL REINFORCEMENT SUPPLIED FOR THIS STRUCTURE MAY BE GRADE 40, 50 OR 60 WITH DESIGN STRESSES BASED ON GRADE 40.

ALL REINFORCEMENT SUPPLIED IS TO BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

SPECIFICATIONS:
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION SPECIFICATION, SERIES OF 1977, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BRIDGE MAINTENANCE Nº. : 7512.65075

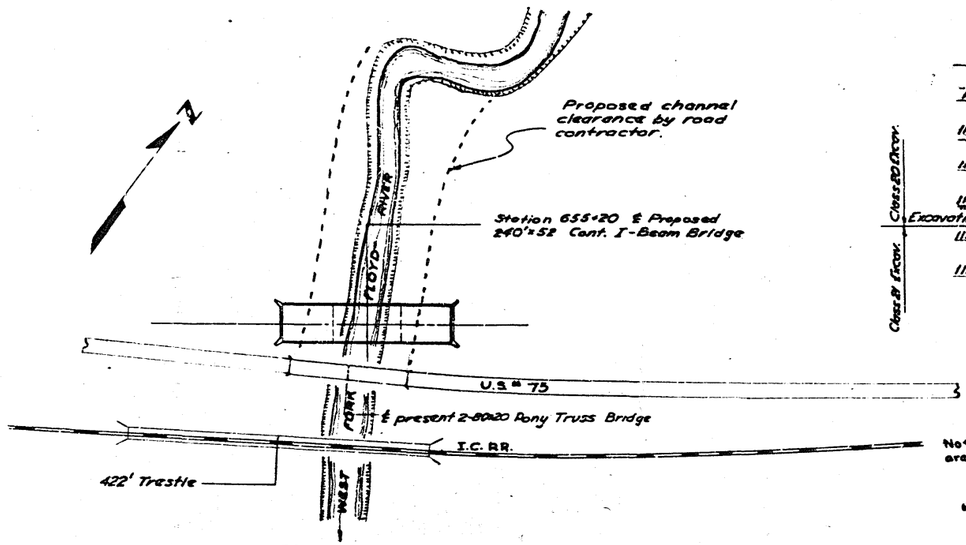
TRAFFIC COUNT: 6480 AADT (1983)

LOCATION:
U.S. #75 over
West Fork Floyd River
Section 2
T-91N R-46W
Plymouth Twp.
Plymouth County

Design For Repairs To
240'-0 x 52' CONTINUOUS I-BEAM BRIDGE
73'-3 End Spans 93'-6 Center Span
NOTES & QUANTITIES
Station: 655+20.00 January, 1984
PLYMOUTH COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 1 Of 15 File No.: 26795 Design No.: 482

DESIGNED BY: DETAILED BY: RAK
TRACED BY:
CHECKED BY: M. L. Timmons
Section Leader
PLYMOUTH COUNTY

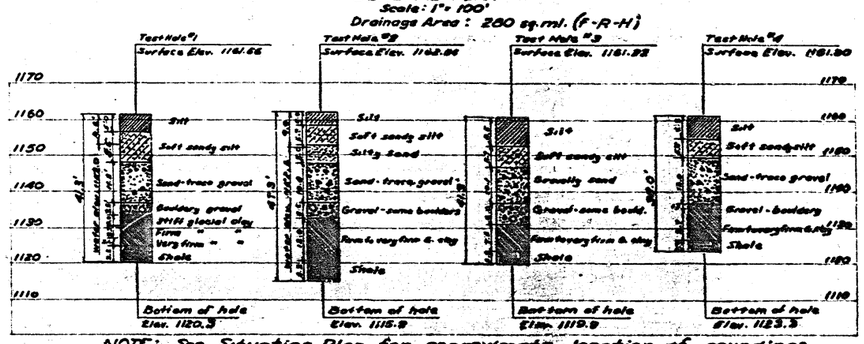
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
FN-75-2(22)--21-75	IOWA	5		3	



GENERAL PLAN

Scale: 1" = 100'

Drainage Area: 280 sq. mi. (F-R-H)



NOTE: See Situation Plan for approximate location of soundings.

SOUNDING DATA

Scale 1" = 20'

GENERAL NOTES:

This bridge is designed for H-20-44 loading with an allowance of 19 pounds per square foot of roadway for future wearing surface and with modifications listed on sheet 5.

The present 2-80+20 Pony Truss Bridge (FHC Design #2 Plymouth) is to be removed by others.

The bridge contractor is to clear channel 40 feet each side of roadway ℄ as shown by the shaded areas in the Situation Plan and ℄ Section.

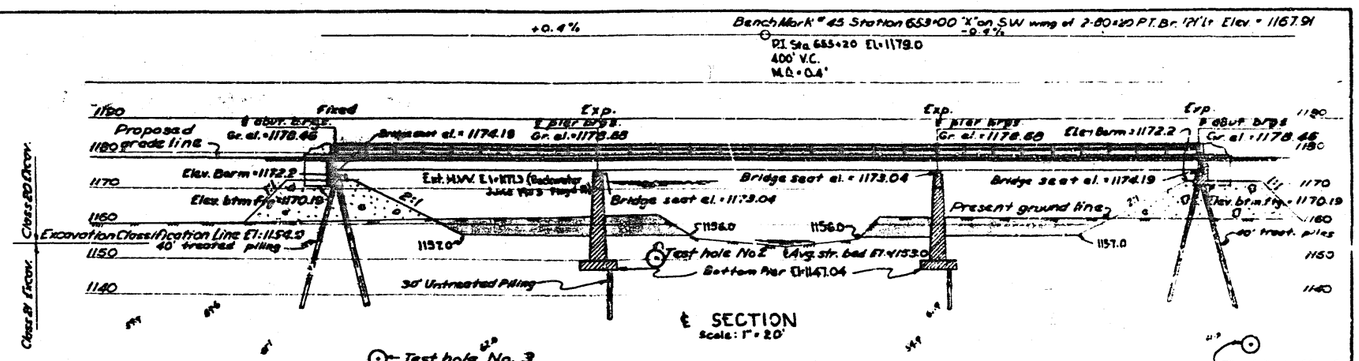
The bridge contractor is to build berms to elevations and shapes shown before abutment pile are driven. Suitable material from Class 10 channel excavation (about 1820 cy.) may be used for constructing the berms. Additional material required for berms is listed as Class 21 Excavation (about 1420 cy). Approach fills are not a part of this estimate.

Red lines on tracing or faint lines on print indicate present structure.

SPECIFICATIONS:

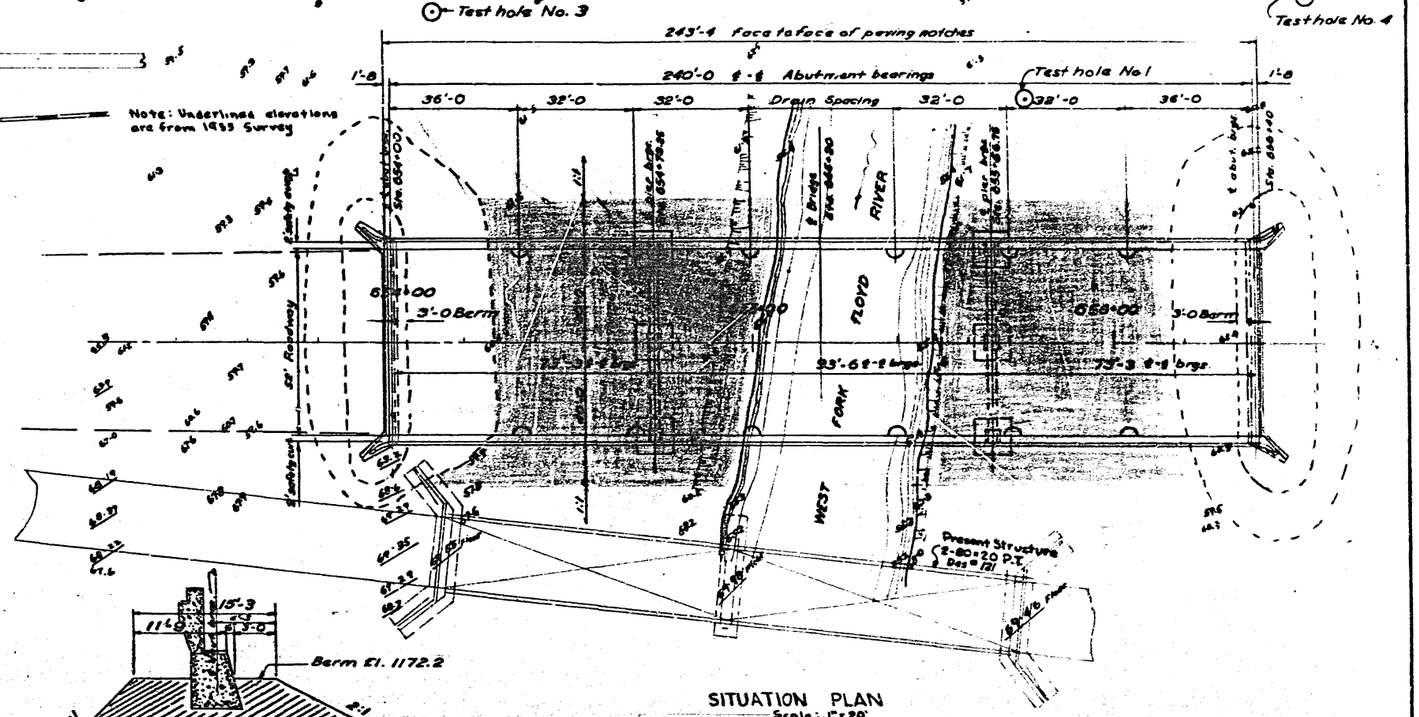
Design: AASHO Series of 1953 with modifications listed on sheet 5

Construction: Standard Specifications of the Iowa State Highway Commission, Series of 1952 plus current Special Provisions.



℄ SECTION

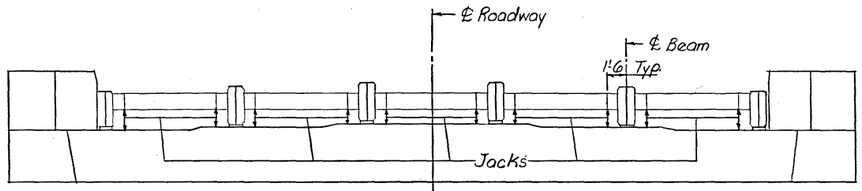
Scale: 1" = 20'


Test hole No. 3
Test hole No. 4
243'-4 face to face of paving notches
240'-0 ℄-℄ Abutment bearings
Test hole No. 1
36'-0
32'-0
32'-0
Drain Spacing
32'-0
32'-0
36'-0
1:1.8
1:1.8
Note: Underlined elevations are from 1955 Survey
℄ Sandy creek
Sta. 654+00
℄ Bridge
Sta. 654+80.30
℄ Bridge
Sta. 655+86.78
RIVER
FLOYD
FORK
WEST
℄ abut. bridge
Sta. 656+40
℄ Roadway
℄ Roadway
65'-0
65'-35
65'-35
65'-35

BEARING REALIGNMENT NOTES:

All bearing assemblies of the East Abutment are to be realigned as shown on this plan. Jacking reaction shall relieve the beam load just enough to move the masonry plates to the new position.
Masonry plates are to be secured in their new position.
Traffic shall be restricted to opposite lane at the time of repair.
Procedure for Bridge Bearing Realignment:

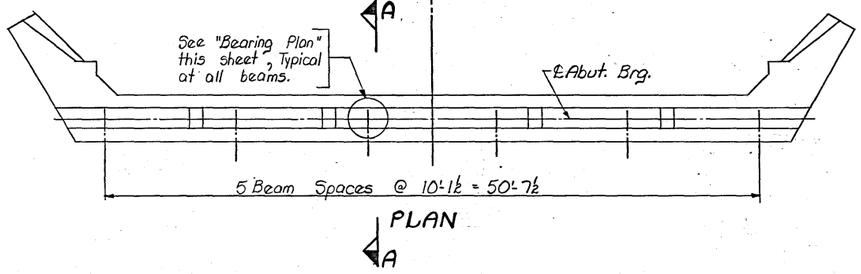
1. Jack beams just enough to move masonry plates.
2. Cut existing 1"x1" bars as shown.
3. Realign bearings by moving existing masonry plates towards the backwall to match ℄ existing Sole ℄.
4. Weld new 1"x1"x0'-8 bars as shown.



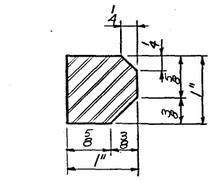
FRONT ELEVATION

Slab, Curbs and Backwall not shown.

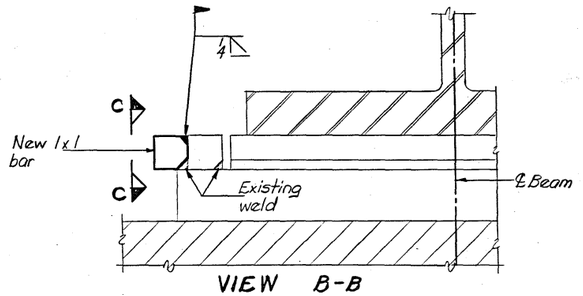
Jacks may be positioned under the abutment diophragm jacking stiffeners or directly under the beams. Dead load reaction of each beam is about 18 tons.



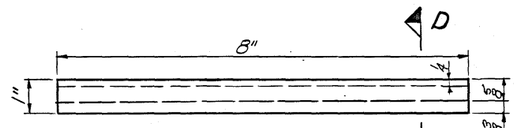
PLAN



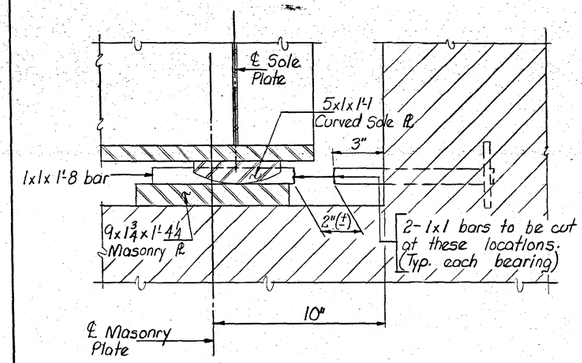
SECTION D-D



VIEW B-B

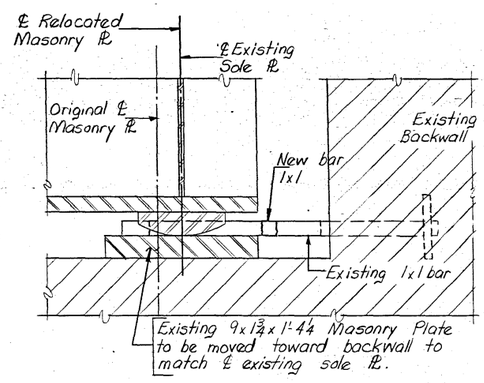


VIEW C-C

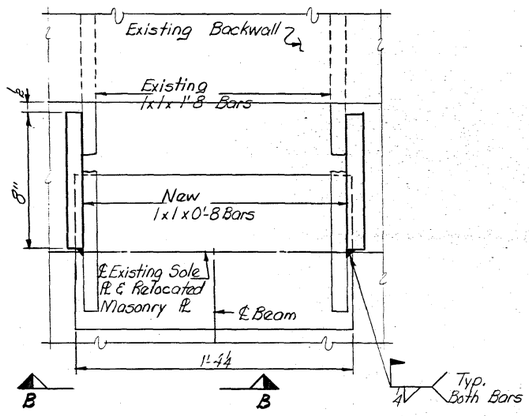


SECTION A-A

(EXISTING CONDITION SHOWN)



SECTION A-A



BEARING PLAN

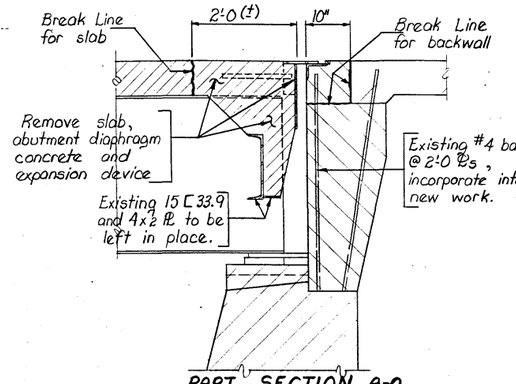
Design for Repairs To
240'-0 x 52' CONTINUOUS I-BEAM BRIDGE
73'-3 End Spans 93'-6 Center Span
EAST ABUTMENT - BEARING REPAIR
Station: 655+20.00 January, 1984
PLYMOUTH COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 3 Of 15 File No.: 26795 Design No.: 482

DESIGNED BY:
DETAILED BY: RAK
TRACED BY:
CHECKED BY: M. L. Lemmon

PLYMOUTH COUNTY

PROJECT NUMBER

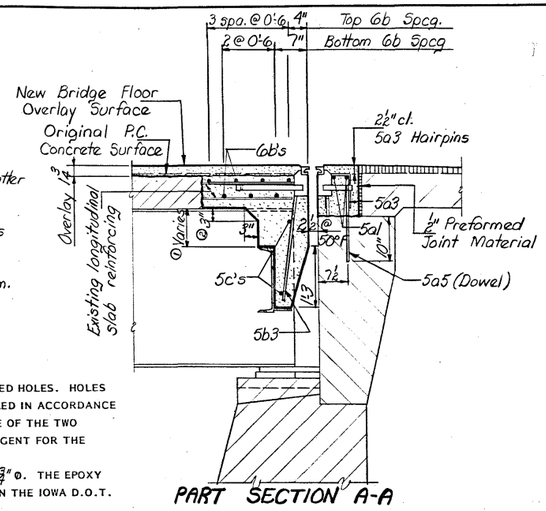
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	8		5	19



PART SECTION A-A
(Showing existing condition and break lines)

① Varies from about 1 7/16 @ gutter line to 8 3/8 @ ℄ Roadway.

② 3" between interior beams and will vary from 3" to about 1 7/16 between exterior beam and first interior beam.



PART SECTION A-A

DOWEL SETTING NOTE

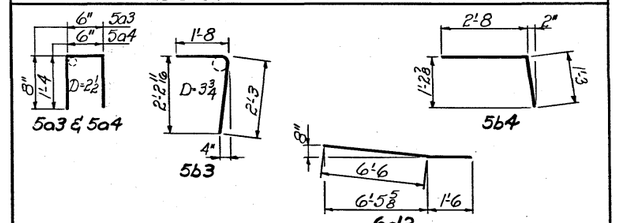
The 5a5 & 5b6 BARS SHALL BE SET AS DOWELS IN DRILLED HOLES. HOLES ARE TO BE 10" DEEP. THE DOWELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ONE OF THE TWO FOLLOWING SYSTEMS SHALL BE USED AS A BONDING AGENT FOR THE DOWELS:

1) EPOXY SYSTEM. DRILLED HOLES ARE TO BE ¾" ø. THE EPOXY GROUT SHALL BE ONE OF THOSE APPROVED IN THE IOWA D.O.T. MATERIALS I.M. 491.11 .
2) GROUT SYSTEM. DRILLED HOLES ARE TO BE 1⅛" ø. THE HYDRAULIC CEMENT GROUT SHALL BE ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13 .

REINFORCING BAR LIST

BAR	LOCATION	SHAPE	Nº.	LENGTH	WEIGHT
5a1	Backwall, Longit. - Stage I	—	2	29'-1	61
5a2	" , " - " II	—	2	27'-6	57
5a3	" , Hairpins	⊓	52	1'-10	99
5a4	" , " , Curb	⊓	2	3'-2	7
5a5	" , Dowel	—	52	1'-7	86
6b1	Slab, Longit., Top & Bott. - Stage I	—	7	28'-1	295
6b2	" , " " & " - " II	—	7	26'-8	280
5b3	" , Transv., B'twn Beams	⅂	35	3'-11	143
5b4	Curb, Longit.	⅂	6	3'-11	25
5b5	" "	—	2	1'-8	3
5b6	Backwall, Dowel - Curb Section	—	4	2'-4	10
5c1	Diaphragm, B'twn Beams	—	8	9'-9	81
5c2	" " " - Stage I	—	2	6'-3	13
5c3	" , " " - " II	—	2	4'-9	10
6d1	Curb Anchor Block, Horiz.	—	4	10'-9	65
6d2	" " " "	⟋	4	8'-0	48
6d3	Anchor Block Dowels	—	12	2'-5	44
6d4	Backwall Anchor Block, Horiz.	—	8	2'-6	30
				TOTAL (lbs.)	1357

BENT BAR DETAILS

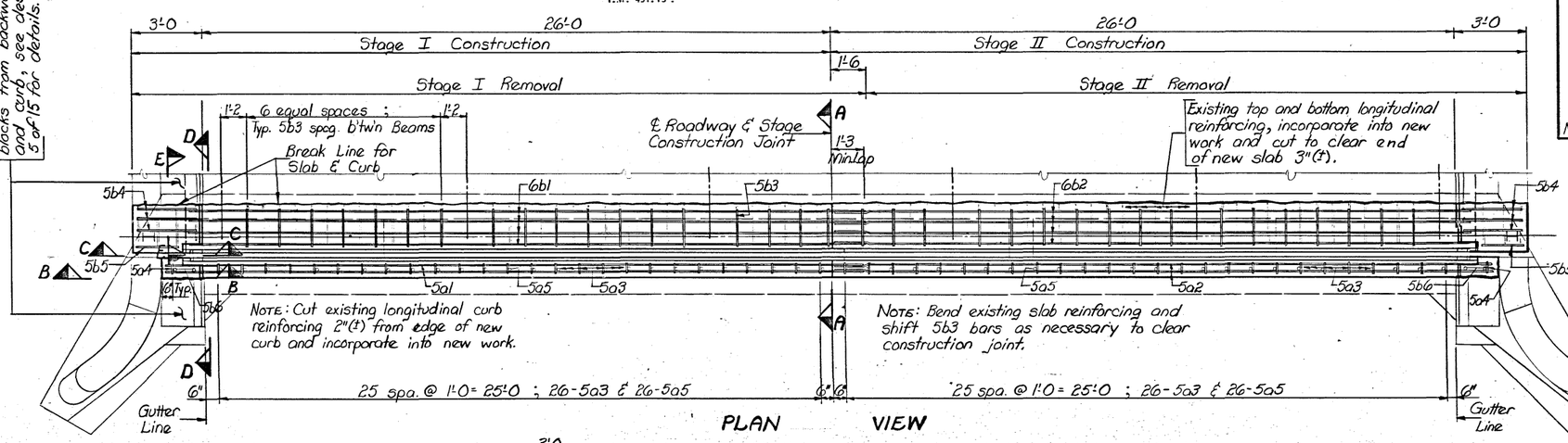


Note: All dimensions are out to out. D= Pin diameter.

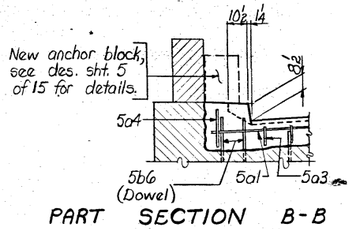
CONCRETE PLACEMENT QUANTITIES

LOCATION	STAGE I	STAGE II	TOTAL
Backwall	.7	.7	1.4
Slab	2.2	2.2	4.4
Curb	.1	.1	.2
Anchor Blocks	.9	.9	1.8
TOTAL - cu.yds.	3.9	3.9	7.8

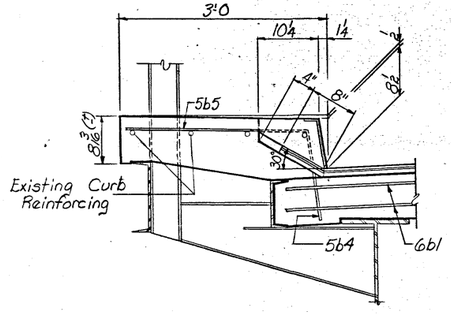
Remove existing anchor blocks from backwall and curb, see des. sht 5 of 15 for details.



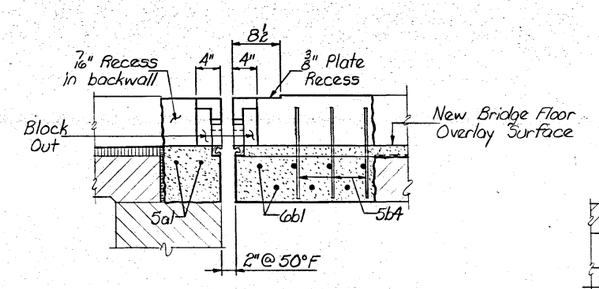
PLAN VIEW



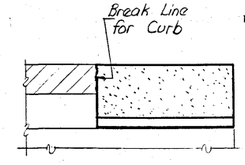
PART SECTION B-B



VIEW C-C
(Anchor Block Not Shown)



PART SECTION D-D
(Anchor Blocks Not Shown)



PART SECTION E-E

ABUTMENT AND SUPERSTRUCTURE NOTES

REMOVAL SHALL BE TO THE BREAK LINES SHOWN. EXISTING LONGITUDINAL REINFORCING STEEL IN THE SUPERSTRUCTURE SLAB AND THE VERTICAL #4 BARS IN THE FRONT FACE OF ABUTMENT BACKWALL ARE TO BE INCORPORATED INTO NEW WORK.

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

REINFORCING STEEL SHALL BE SECURELY WIRED IN PLACE PRIOR TO PLACING CONCRETE. MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

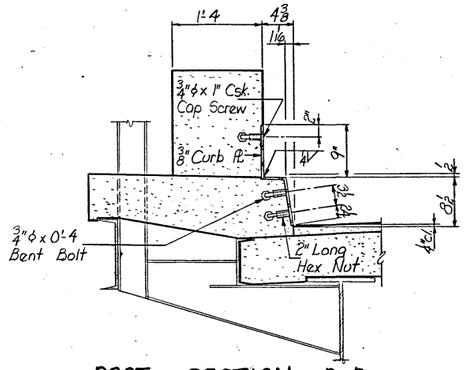
COST OF PREFORMED EXPANSION JOINT MATERIAL SHALL BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE".

Design For Repairs To
240'-0 x 52' CONTINUOUS I-BEAM BRIDGE
73'-3 End Spans 93'-6 Center Span
EAST ABUTMENT REPAIR DETAILS
Station: 655+20.00 January, 1984
PLYMOUTH COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 4 Of 15 File No.: 26795 Design No.: 482

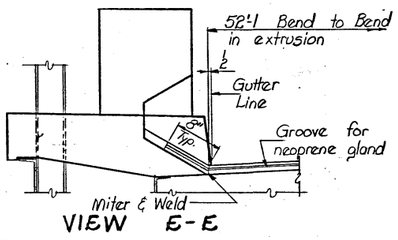
DESIGNED BY: RAR
TRACED BY:
CHECKED BY: M. L. Flammer

PLYMOUTH COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	5		6	19

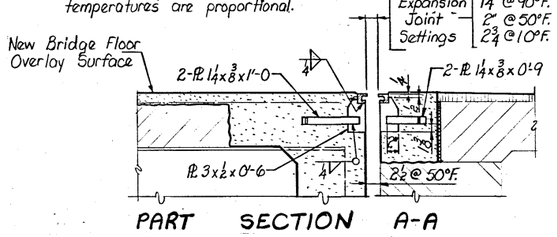


PART SECTION B-B

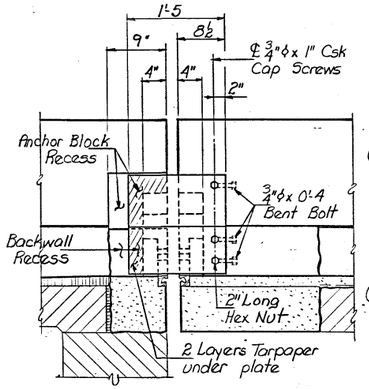


VIEW E-E

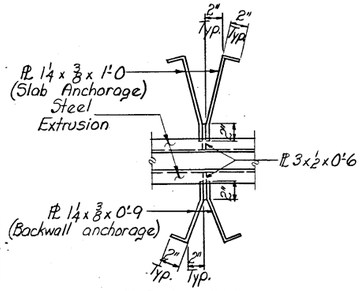
NOTE:
Joint settings for other temperatures are proportional.



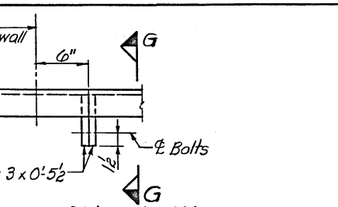
PART SECTION A-A



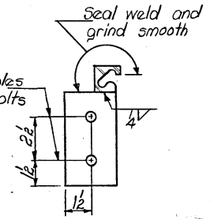
PART SECTION C-C



DETAIL "1"



PART PLAN VIEW
FIELD SPLICE DETAIL



SECTION G-G

EXPANSION DEVICE NOTES:

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

All work and materials for the installation of expansion joint are to comply with the written recommendations of the expansion joint manufacturer.

The expansion device shall be galvanized after welding.

The expansion device is to be parallel to grade.

Cap screws shall be countersunk ⅛" below top of plate.

The Stage I and Stage II sections of steel extrusion are to be field spliced at the construction joint as detailed in these plans. The joints at gutter is to be joined with a prequalified single groove weld, and all surfaces not in contact with concrete are to be 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.

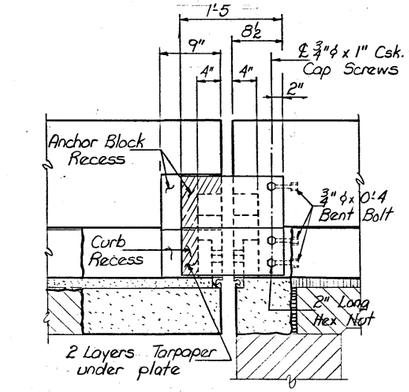
The minimum grade of Structural Steel for the expansion device shall be ASTM A-36.

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

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

The following devices are approved for use:

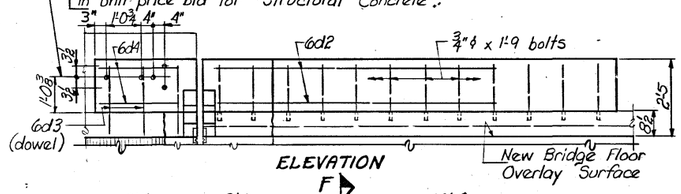
1. Watson - Bowman Co., Type A-2 Extrusion, S-300 Gland
2. ACME, Type A Extrusion, AS-300 Gland
3. D.S. Brown Co., Type SS Extrusion, SS-300 Gland
4. General Tire and Rubber Co., Profile A Extrusion, Gen.-Ship CD Gland.
5. Approved Equal.



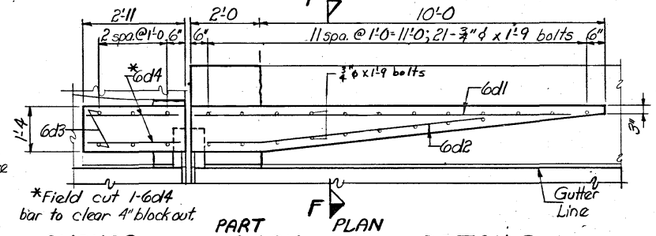
PART SECTION D-D

NOTE: It is intended that the bent curb plate will be positioned so it is flush with curb and anchor block surface. The purpose of 1/16" recess is to allow the curb plate to move during expansion and contraction of the bridge. The contractor is to use extreme care in forming and finishing the recess to correct length, depth and surface smoothness.

Provide five threaded steel inserts with solid bottom tapped to a minimum threaded depth of 2½" for use ⅞"ϕ galvanized high strength bolts with galvanized round washers. Cost of inserts is to be included in unit price bid for "Structural Concrete".



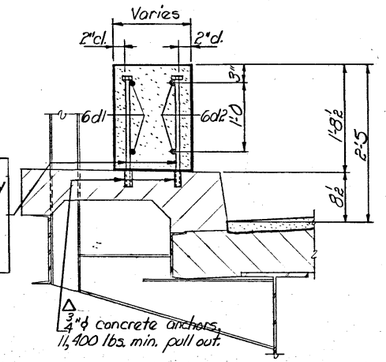
ELEVATION



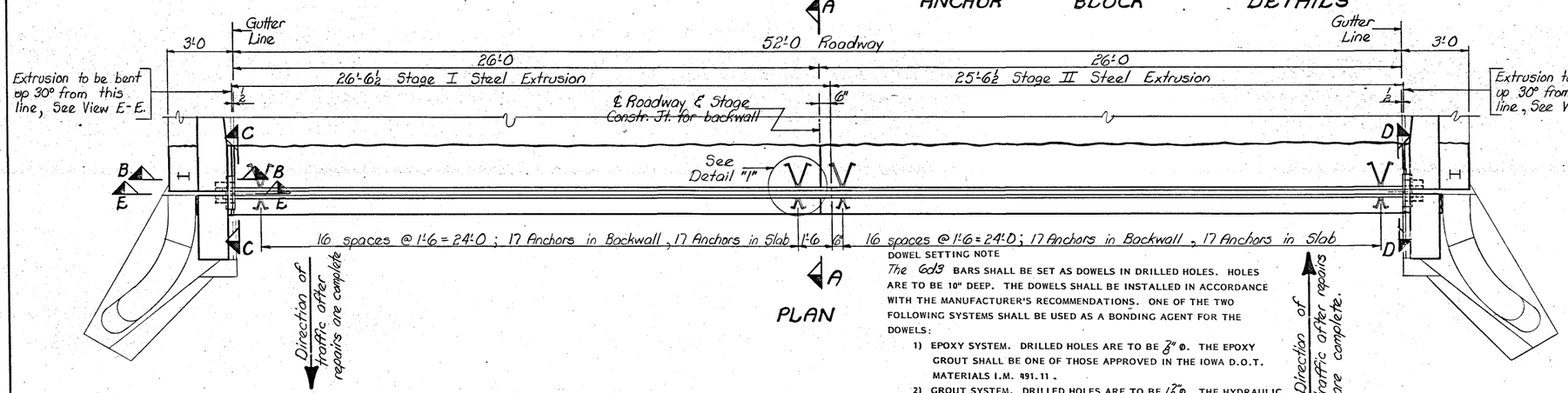
*Field cut 1-6d4 bar to clear 4" blockout

ANCHOR BLOCK DETAILS

△¾"ϕ bolts - 1'-9 long. Cost of concrete anchors and bolts is to be included in unit price bid for "Structural Concrete". (42 bolts req'd. 114 lbs.)



PART SECTION F-F



PLAN

DOWEL SETTING NOTE

The 6d3 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 ⅞" Ø. THE EPOXY GROUT SHALL BE ONE OF THOSE APPROVED IN THE IOWA D.O.T. MATERIALS I.M. 491.11.
2) GROUT SYSTEM. DRILLED HOLES ARE TO BE 1⅛" Ø. THE HYDRAULIC CEMENT GROUT SHALL BE ONE OF THOSE APPROVED IN MATERIALS I.M. 491.13.

Design For Repairs To
240'-0 x 52' CONTINUOUS I-BEAM BRIDGE
73'-3 End Spans 93'-6 Center Span

EXPANSION DEVICE DETAILS

Station: 655+20.00 January, 1984

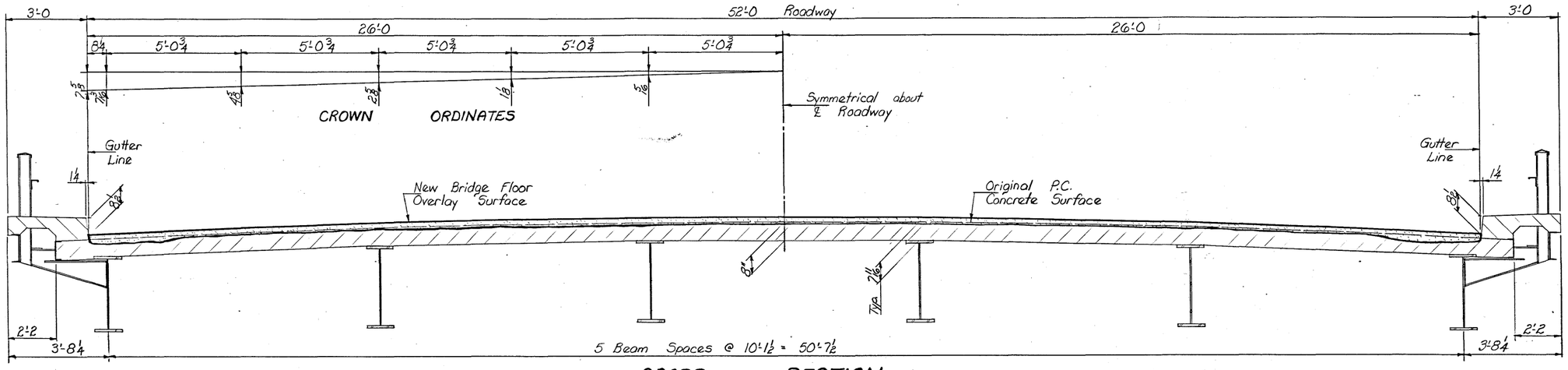
PLYMOUTH COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION

Design Sheet No.: 5 Of 15 File No.: 26795 Design No.: 482

DESIGNED BY: RAR
TRACED BY:
CHECKED BY: M. L. Flemmin

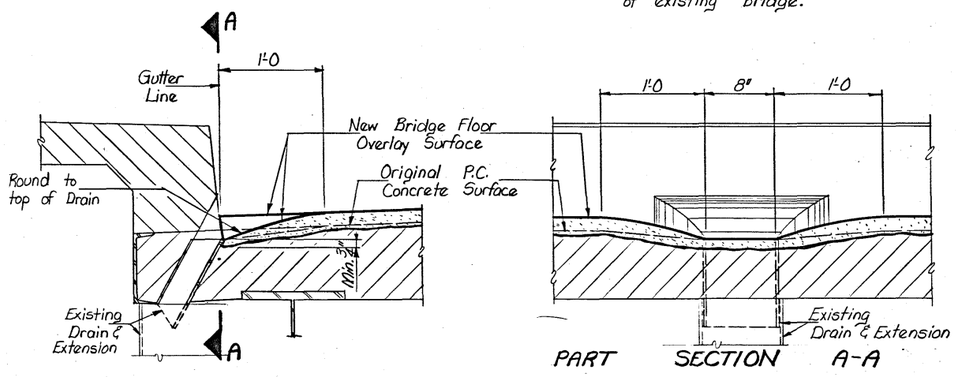
PLYMOUTH COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	6		7	19



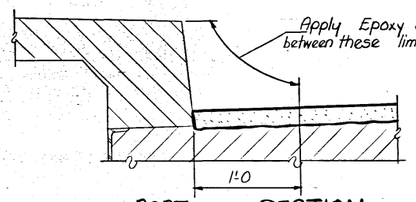
CROSS SECTION

NOTE: New Bridge Floor Overlay Surface is to be 1½ inches above and parallel to the Original P.C. Concrete Surface with screed guides adjusted to achieve a smooth profile. Crown ordinates shown are from plans of existing bridge.



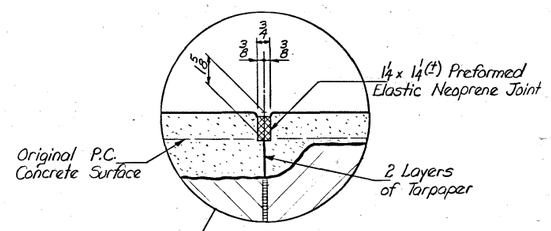
OVERLAY DETAIL NEAR DRAIN

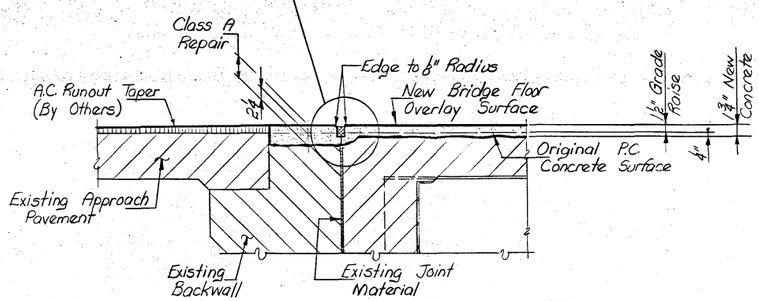
PART SECTION A-A



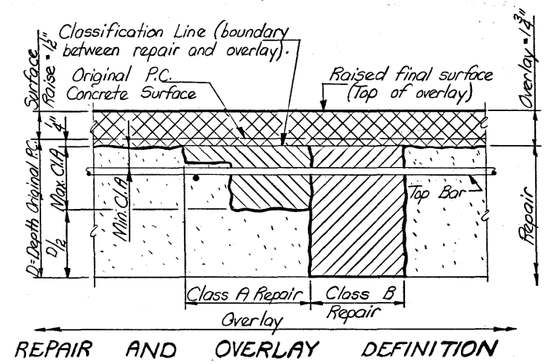
PART SECTION

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.

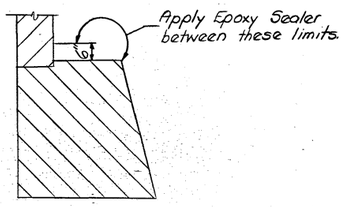




PART LONGITUDINAL SECTION AT WEST END OF BRIDGE



REPAIR AND OVERLAY DEFINITION



SECTION THRU ABUTMENT

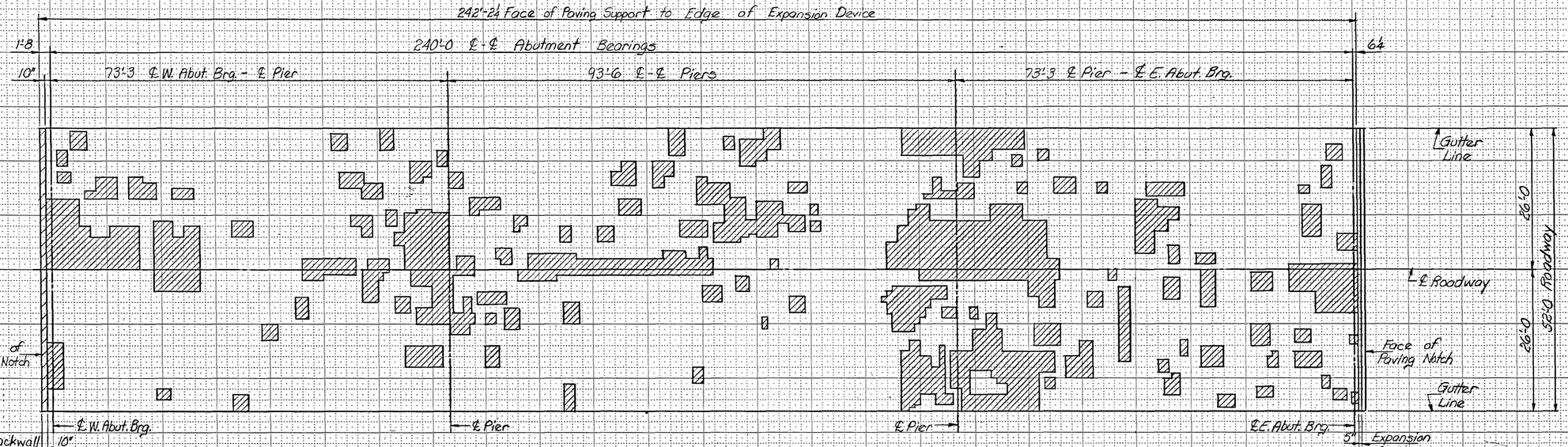
Showing limits of Epoxy Sealer applied to abutments.

Design For Repairs To
240'-0 x 52' CONTINUOUS I-BEAM BRIDGE
73'-3 End Spans 93'-6 Center Span
REPAIR DETAILS
Station: 655+20.00 January, 1984
PLYMOUTH COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 6 Of 15 File No.: 26795 Design No.: 482

DESIGNED BY: RAR
TRACED BY:
CHECKED BY: M. L. Flemmer

PLYMOUTH COUNTY

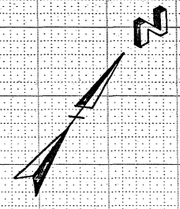
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	5		8	



SURVEY PLOT

Scale : 1" = 10' Date of Survey: April 28, 1983

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



Design For Repairs To
240'-0 x 52' CONTINUOUS I - BEAM BRIDGE
73'-3 End Spans 93'-6 Center Span
REPAIR DETAILS
Station: 655+20.00 January ,1984
PLYMOUTH COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 7 Of 15 File No.: 26795 Design No.: 482

DESIGNED BY:
DETAILED BY: RAR
TRACED BY:
CHECKED BY: M. L. Flemmer

PLYMOUTH COUNTY

PROJECT NUMBER

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	6		9	

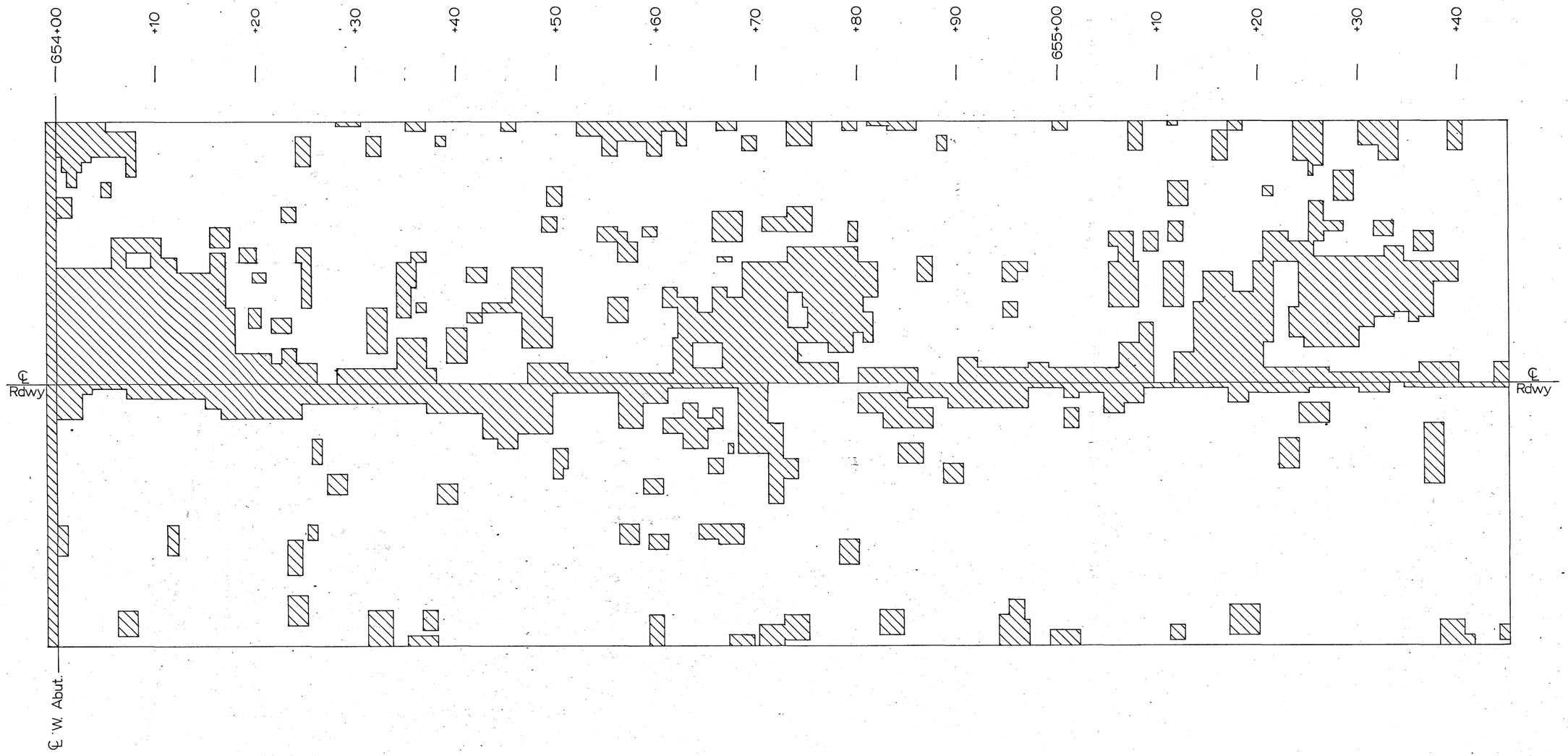
19

FINAL SURVEY — NOTE BOOK NO. — SURVEYED PLOTTED TEMPLATE AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED PLOTTED TEMPLATE AREAS CHECKED — BY — DATE

IRUNNING 44-131 56260

DESIGN NO. 482



ACTUAL CLASS "A" REPAIR AREAS

PLYMOUTH COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
FN-75-2(22)--21-75	IOWA	5		9A	19

DESIGN NO. 482

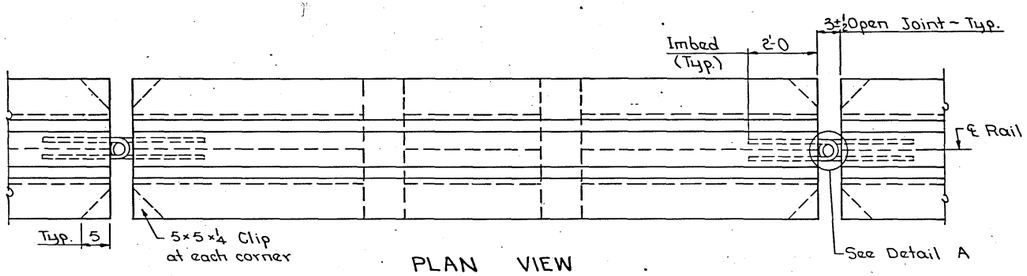


ACTUAL CLASS "A" REPAIR AREAS

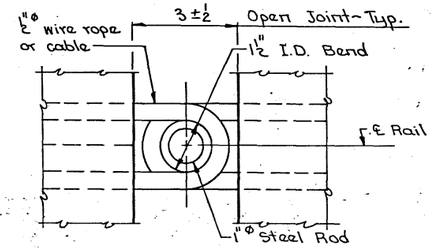
PLYMOUTH COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
FN-75-2(22)--21-75	IOWA	5		98	19

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



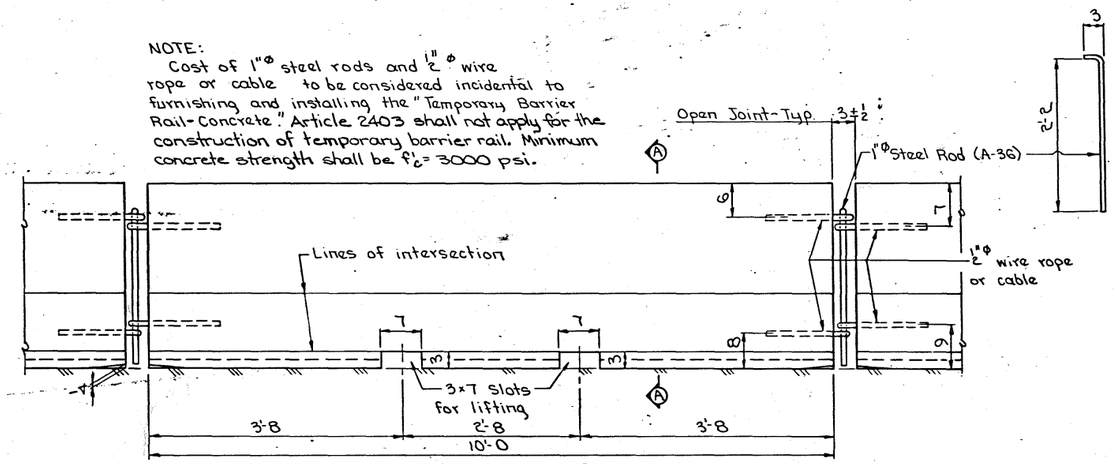
PLAN VIEW



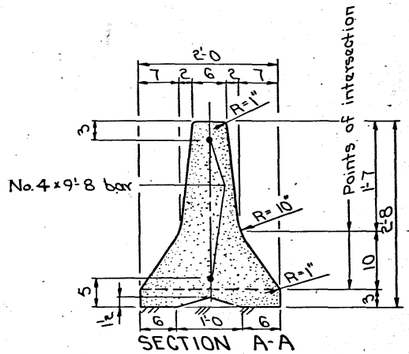
DETAIL A

1"Φ Wire rope or cable to be ½"Φ, with a minimum breaking strength of 20000 pounds.

NOTE:
Cost of 1"Φ steel rods and ½"Φ 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.

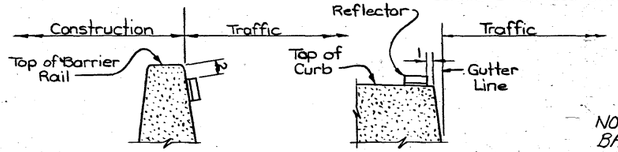


ELEVATION VIEW



SECTION A-A

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

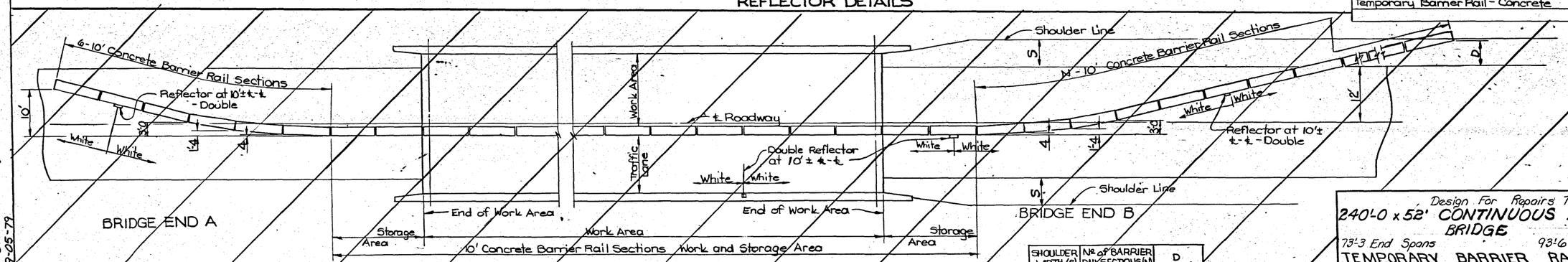


NOTE: SEE DES. SHT. 9 OF 15 FOR BARRIER RAIL LAYOUT

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 feet, therefore concrete barrier rail sections are required for bridge end "B".~~

REFLECTOR DETAILS



BRIDGE END A

BRIDGE END B

SHOULDER WIDTH (S)	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.

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°.

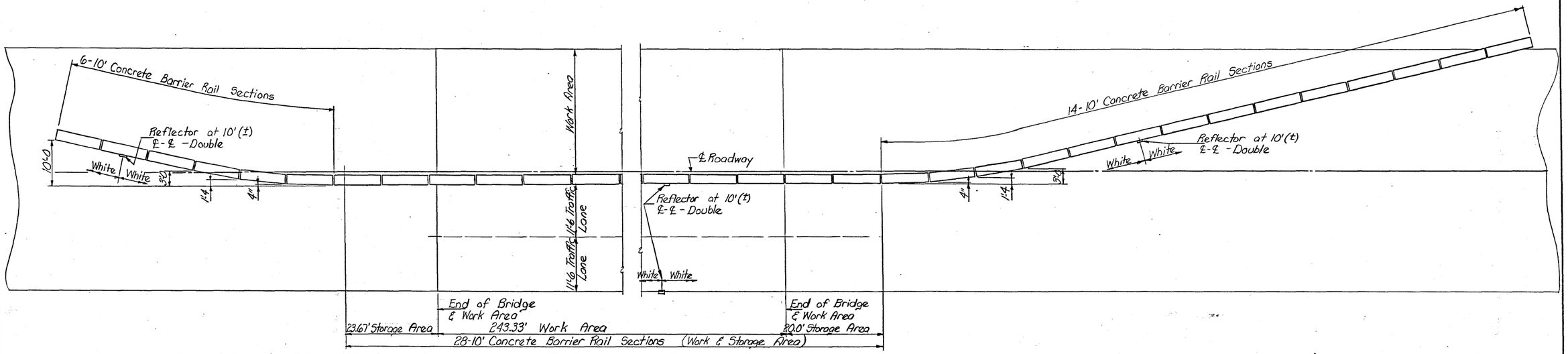
ESTIMATED QUANTITIES	
Item	Amount
Temporary Barrier Rail - Concrete	491.8 L.F.

Design For Repairs To
240'-0 x 52' CONTINUOUS I-BEAM BRIDGE
73'-3 End Spans 93'-6 Center Span
TEMPORARY BARRIER RAIL - CONCRETE
Station: 655+20.00 January, 1984
PLYMOUTH COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 8 Of 15 File No.: 26795 Design No.: 482

TRACED BY: M. P. Flemmer

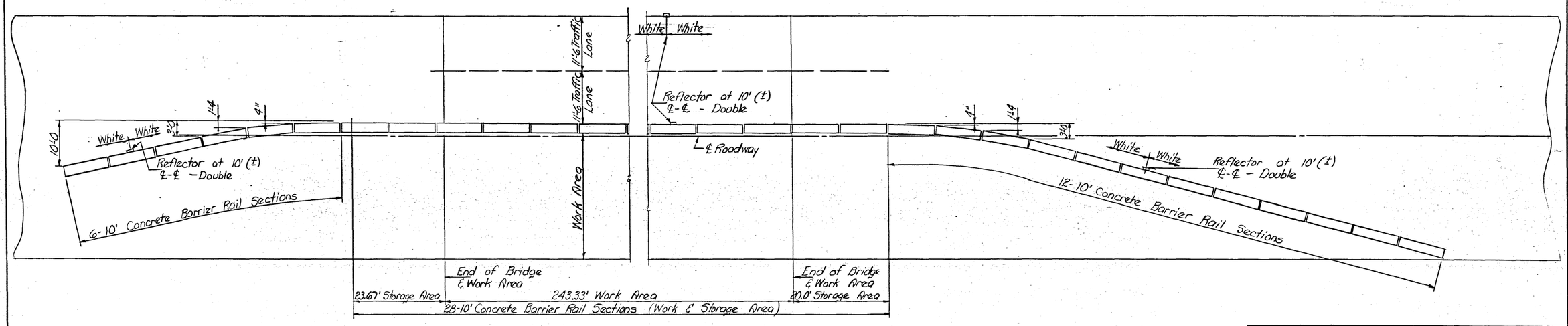
TEMPORARY BARRIER RAIL - CONCRETE	STANDARD 1033	PLYMOUTH COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	8		10	19



STAGE I TEMPORARY CONCRETE BARRIER RAIL LAYOUT ~ Two Way Traffic

Note: See des. sht. 8 of 15 for other details.



STAGE II TEMPORARY CONCRETE BARRIER RAIL LAYOUT ~ Two Way Traffic

Design For Repairs To
240'-0 x 52' CONTINUOUS I-BEAM BRIDGE
73'-3 End Spans 93'-6 Center Span
TEMPORARY BARRIER RAIL ∞ CONCRETE
Station: 655+20.00 January, 1984
PLYMOUTH COUNTY
IOWA DEPARTMENT OF TRANSPORTATION-HIGHWAY DIVISION
Design Sheet No.: 9 Of 15 File No.: 26795 Design No.: 482

DESIGNED BY: DETAILED BY: RAR
TRACED BY: CHECKED BY: M. L. F.

PLYMOUTH COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	8		11	19

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 day during which any such removals take place.

204-1

The installation of each continuous piece of guardrail shall be completely functional within five consecutive working days. The following shall apply unless modified by the engineer:

Grading work, if necessary, shall be completed prior to the removal of any existing guardrail or the installation of new guardrail.

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.

Not later than the next working day, concrete for the end anchorage (RE-52 or RE-53) shall be poured.

204-2

All holes resulting from operations of the contractor, including removal of guardrail posts, fence posts, utility poles, or foundation studies, shall be filled and consolidated to finished grade as directed by the engineer to prevent future settlement. The voids shall be filled as soon as practical--preferably the day created and not later than the following day. Any portion of the right-of-way or project limits (including borrow areas and operation sites) disturbed by any such operations shall be restored to an acceptable condition. This operation shall be considered incidental to other bid items in project.

232-3

EROSION CONTROL:

Following completion of work on this project seeding and fertilizing of all distrubed areas shall be done as directed by the engineer.

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.

213-1

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material which is not desirable to be incorporated in the work involved on this project (excavation or broken concrete). No payment for overhaul will be allowed for material hauled to these sites.

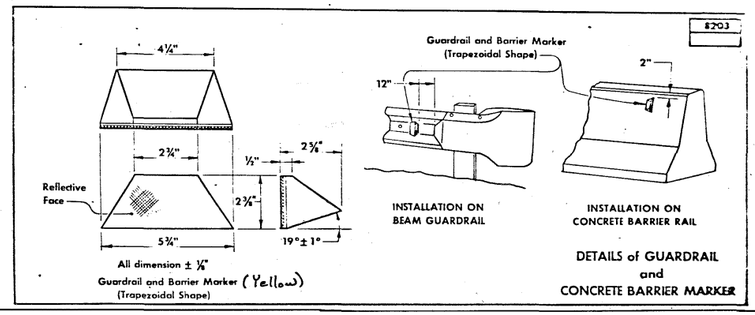
ESTIMATE REFERENCE INFORMATION 100-4

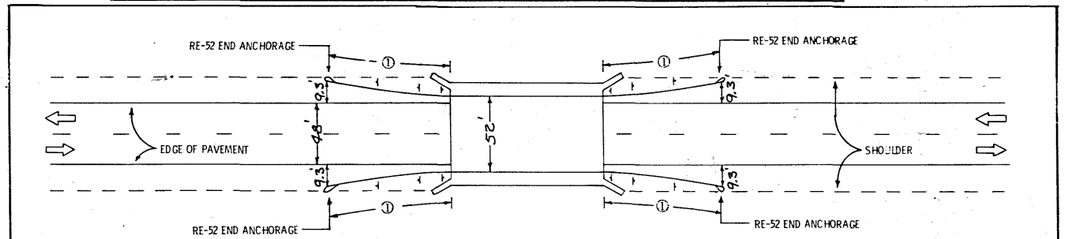
Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.

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 8".
6, 8 & 9.	To be stockpiled for pickup by State Maintenance Forces.
7.	To be disposed of as per Std. Notation 213-1.

ESTIMATE OF ROADWAY QUANTITIES

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	Remove & Reinstall Object Markers	No.	4
5	Remove & Reinstall Delineator Posts	No.	8
6	Removal of Existing Delineators	No.	4
7	Removal of Guardrail End Anchorage	No.	4
8	Removal of Formed Steel Beam Guardrail	Lin. Ft.	350
9	Removal of Posts	No.	96
10	Delineator, Single White	No.	14



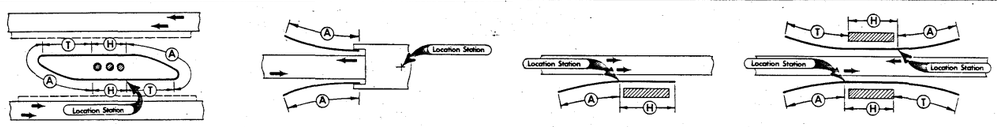


NOTE: ① BEAM GUARDRAIL SHALL BE INSTALLED AS SHOWN STANDARD ROAD PLAN RE-57 CASE H.

TABULATION OF "W" BEAM GUARDRAIL INSTALLATIONS

(Refer to appropriate Standard Road Plans)

108-8
12-28-79



LOCATION NO.	LOCATION STATION	STANDARD ROAD PLAN	FORMED STEEL "W" BEAM GUARDRAIL Case	(A) Lin. Ft.	(H) Lin. Ft.	(T) Lin. Ft.	TOTAL Lin. Ft.	BEAM GUARDRAIL POSTS 10"×10" SINGLE SPACER	8"×8" SINGLE SPACER	8"×8" NO SPACER	6"×8" NO SPACER	BEAM GUARDRAIL BRIDGE END ANCHORAGE Type	No.	BEAM GUARDRAIL END ANCHORAGE Type	No.	SPECIAL CONNECTION (Non-Bid Item) Type	No.	(L2) (Feet)	REMARKS
	655+20 S.W.	RE-57	H	62.5			62.5	3	8		2	*		RE-52	1				*Connect to bridge end
	655+20 S.E.	RE-57	H	62.5			62.5	3	8		2	*		RE-52	1				Post
	655+20 N.W.	RE-57	H	62.5			62.5	3	8		2	*		RE-52	1				
	655+20 N.E.	RE-57	H	62.5			62.5	3	8		2	*		RE-52	1				

REMOVAL OF BEAM GUARDRAIL

110-7
11-10-83

LOCATION No.	LOCATION Station	BEAM GUARDRAIL Remove	BEAM GUARDRAIL Remove & Reinstall	POSTS ROUND Remove	POSTS 8"×8" Remove	POSTS 8"×8" Remove & Reinstall	POSTS 10"×10" Remove	POSTS 10"×10" Remove & Reinstall	END ANCHORAGE NO.	END ANCHORAGE TYPE	REMARKS
	655+20 SW	87.5	37.5		21		3		1	RE-33	
	655+20 SE	87.5	37.5		21		3		1	RE-33	
	655+20 NW	87.5	37.5		21		3		1	RE-33	
	655+20 NE	87.5	37.5		21		3		1	RE-33	

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 STATION	DELINEATOR TYPE*	SINGLE WHITE D-1W NO.	OBJECT MARKER TRIPLE YELLOW OM2-3YV NO.	TYPE 3 OM-3L NO.	TYPE 3 OM-3R NO.	OFFSET BRACKETS ** NO.	REMARKS
655+20 S.W.	1	7	2		1		
655+20 S.E.	1		2	1			
655+20 N.W.	1		2	1			
655+20 N.E.	1	7	2		1		

DESIGN NO. 482
FILE NO. 26795
DES. SH. NO. 11 OF 15

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.

Fred W. Weeks
4989 January 12, 1984
IOWA REGISTRATION NUMBER DATE

Plymouth COUNTY

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	5		13	19