

# IOWA DEPARTMENT OF TRANSPORTATION

Project Development Division  
Plans of Proposed Improvement on The

## FARM TO MARKET SYSTEM CRAWFORD COUNTY BRIDGE DECK OVERLAY

### BHS-CO24(56)--63-24

LOCATED ON HIGHWAY M-55, BETWEEN T AVE. AND U AVE. NISHNABOTNA TOWNSHIP

The Standard Specifications, Series of 2001, of the Iowa Department of Transportation Plus Current Special Provisions and Supplemental Specifications Shall Apply to Construction Work on this Project

Scales: As Noted

PROJECT NUMBER: BHS-CO24(56)--63-24

#### INDEX OF SHEETS

No.	Description
1	TITLE PAGE, LOCATION MAP, AND TRAFFIC NOTES
2	QUANTITY SHEET INCLUDING ESTIMATE OF QUANTITIES, ITEM NOTES, AND GENERAL NOTES
3	PLOT OF BRIDGE DECK DELAMINATIONS
4	DETAIL SHEET

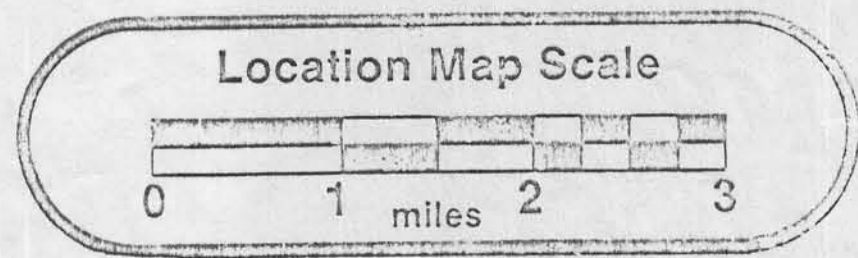
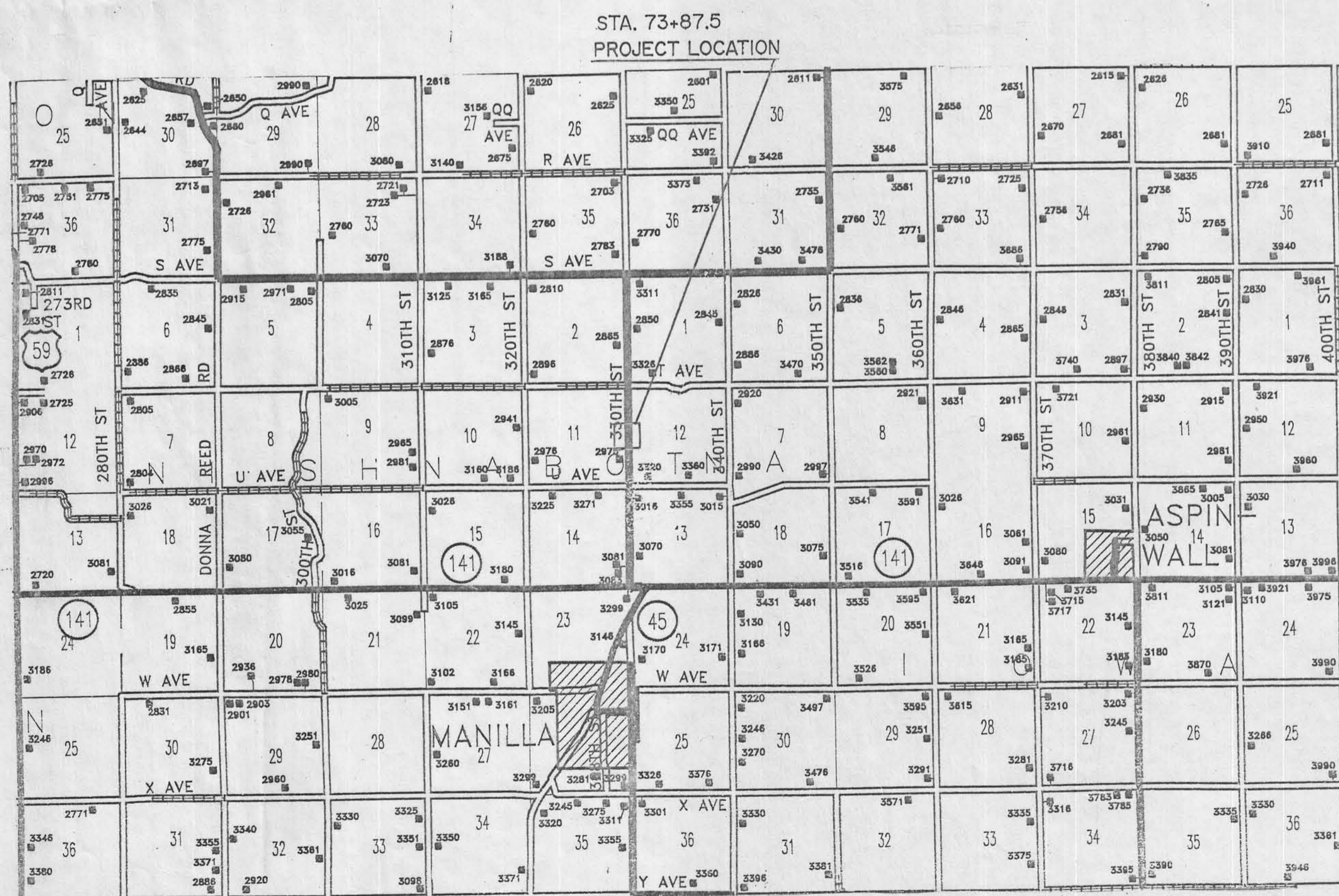
#### MILEAGE SUMMARY

Div.	Location	Lin. Ft.	Miles
	BRIDGE @ STA. 73+87.5	126'-8 3/4"	0.024
	TOTAL	126'-8 3/4"	0.024

#### ROAD STANDARD PLANS

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

Identification	Date	Identification	Date	Identification	Date
RG-6	10-02-01				
RS-27	10-28-97				



FHWA NO. 126420

T-82N

2000 AADT 940 V.P.D.

Approved \_\_\_\_\_  
Board of Supervisors

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

PAUL J. ASSMAN, P.E. DATE \_\_\_\_\_

Iowa Department of Transportation  
HIGHWAY DIVISION  
Accepted for Letting  
DISTRICT LOCAL SYSTEMS ENG. DATE \_\_\_\_\_

Pages or sheets covered by this seal \_\_\_\_\_  
My license renewal date is December 31, 2004

**GENERAL NOTES:**

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 125' X 28' CONTINUOUS CONCRETE SLAB BRIDGE ON COUNTY HIGHWAY M-55. COPIES OF THE ORIGINAL DESIGN AND REPAIR PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR. CONTACT THE OFFICE OF CONTRACTS - PROJECT DEVELOPMENT DIVISION - IOWA D.O.T. - AMES.

**REPAIR SHALL CONSIST OF:**

1. BRIDGE FLOOR REPAIR, CLASS "A"
2. BRIDGE FLOOR REPAIR, CLASS "B", TO INCLUDE REMOVING FLOOR DRAINS AND REPLACING WITH NEW DRAINS
3. BRIDGE FLOOR OVERLAY
4. REPAIRING DETERIORATED CONCRETE IN CURBS
5. INSTALLATION OF HMA LEVELING COURSES AT EACH APPROACH

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

BRIDGE FLOOR OVERLAY SHALL CONSIST OF REMOVING THE FLOOR CONCRETE TO A DEPTH OF 1/4" BELOW THE EXISTING SURFACE, EXCEPT AT DRAINS AND ELSEWHERE AS NOTED, TRANSPORTING THE CONCRETE REMOVED FROM THE PROJECT, AND OVERLAYING WITH 1 3/4" OF PCC.

UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR ARE KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE STARTING DATE.

CONTRACTOR SHALL NOTIFY ONE-CALL (1-800-292-8989) FOR UTILITY LOCATES PRIOR TO COMMENCING WORK.

PRESENT FLOOR THICKNESS IS ABOUT 21 1/2 INCHES. THE CONTRACTOR SHALL EXERCISE CARE IN ORDER TO PREVENT UNNECESSARY REMOVAL OF CONCRETE BELOW THE TOP OF THE TOP LAYER OF REINFORCING. THE ENERGY OF HAND TOOLS SHALL BE RESTRICTED NEAR THE BOTTOM OF THE DESIGNATED CLASS A REPAIR AREAS IN ORDER TO PREVENT UNBONDING OF REINFORCING. NO CONCRETE SHALL BE REMOVED BELOW THE TOP OF THE TOP LONGITUDINAL REINFORCING WITHOUT PRIOR PERMISSION FROM THE COUNTY ENGINEER.

AREAS OF CURB INDICATED ON THE "PLOT OF BRIDGE DECK DELAMINATIONS" OR DESIGNATED BY THE ENGINEER ARE TO BE REPAIRED USING CONCRETE REPAIR NOTES AND DETAILS INCLUDED IN THESE PLANS.

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

PLAN QUANTITY OF FLOOR REPAIR IS BASED ON THE "PLOT OF BRIDGE DECK DELAMINATIONS" AS SHOWN IN THESE PLANS. HATCHED PORTIONS REPRESENT CLASS B BRIDGE FLOOR REPAIR. ACTUAL SPALLED AND HOLLOW AREAS, AS DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION SHALL BE REPAIRED.

CONTRACTOR SHALL PLACE TYPICAL ASPHALT LEVELING COURSES AT BRIDGE APPROACH SECTIONS AS NOTED AND SHOWN ON STANDARD ROAD PLAN RG-6. SHOULDER MATERIAL FOR AREAS AFFECTED BY LEVELING COURSES WILL BE PROVIDED AND PLACED BY COUNTY.

10-29-02 313-1  
It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. These areas shall not impact wetlands or "Waters Of The U.S.". No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans.

01-20-84 232-5  
The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service area(s) will be subject to the approval of the resident engineer.

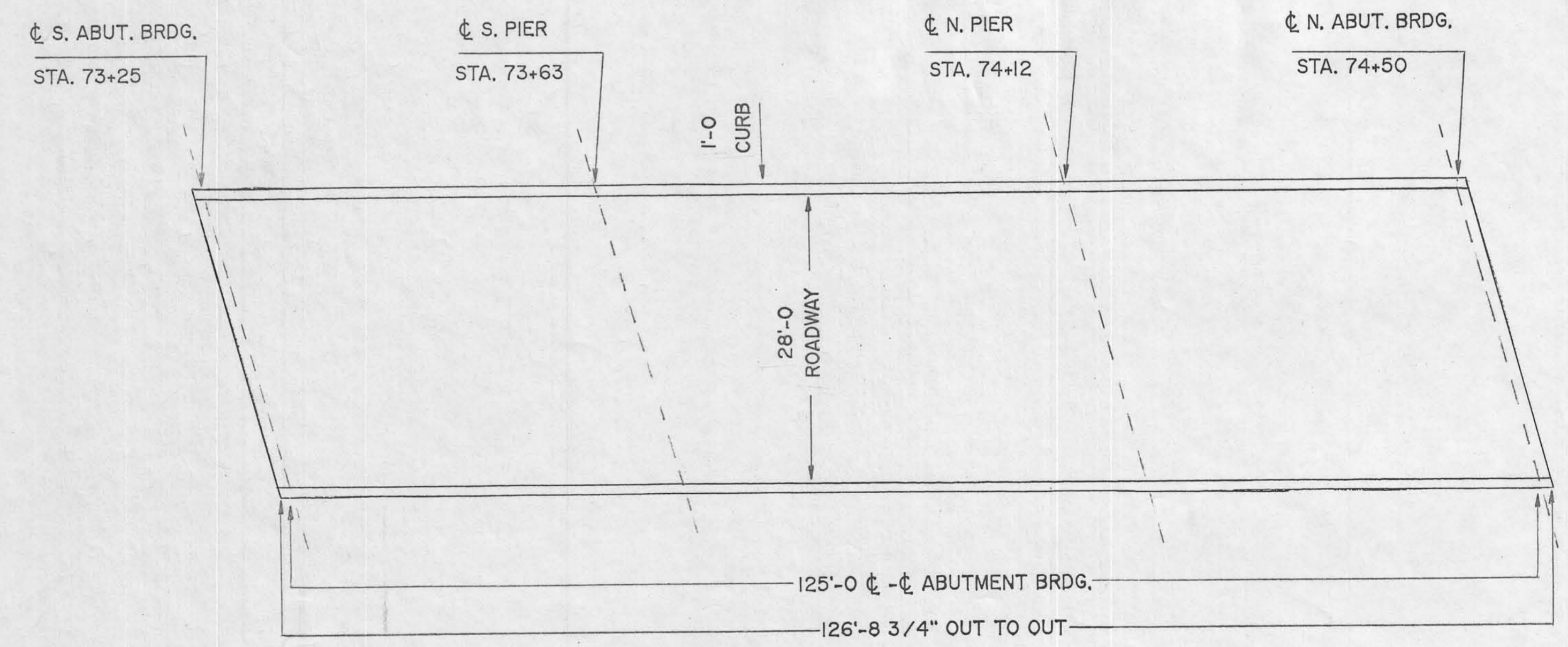
04-30-02 313-7  
Unless otherwise directed or authorized, all hot mix asphalt and other bituminous materials, which are not specifically addressed or described in the contract documents shall become the property of the contractor.

- The contractor, in accordance with current rules and regulations of the Iowa Department of Natural Resources, may:
1. With the approval of the Engineer, blend or otherwise process the material for use with shoulder or special backfill aggregate, for use on the project.
  2. With the approval of the Engineer, place with material in areas designated by the Engineer as Soil Aggregate Subbase without extra charge.
  3. Remove the material from the project and stockpile for the contractor's future use.

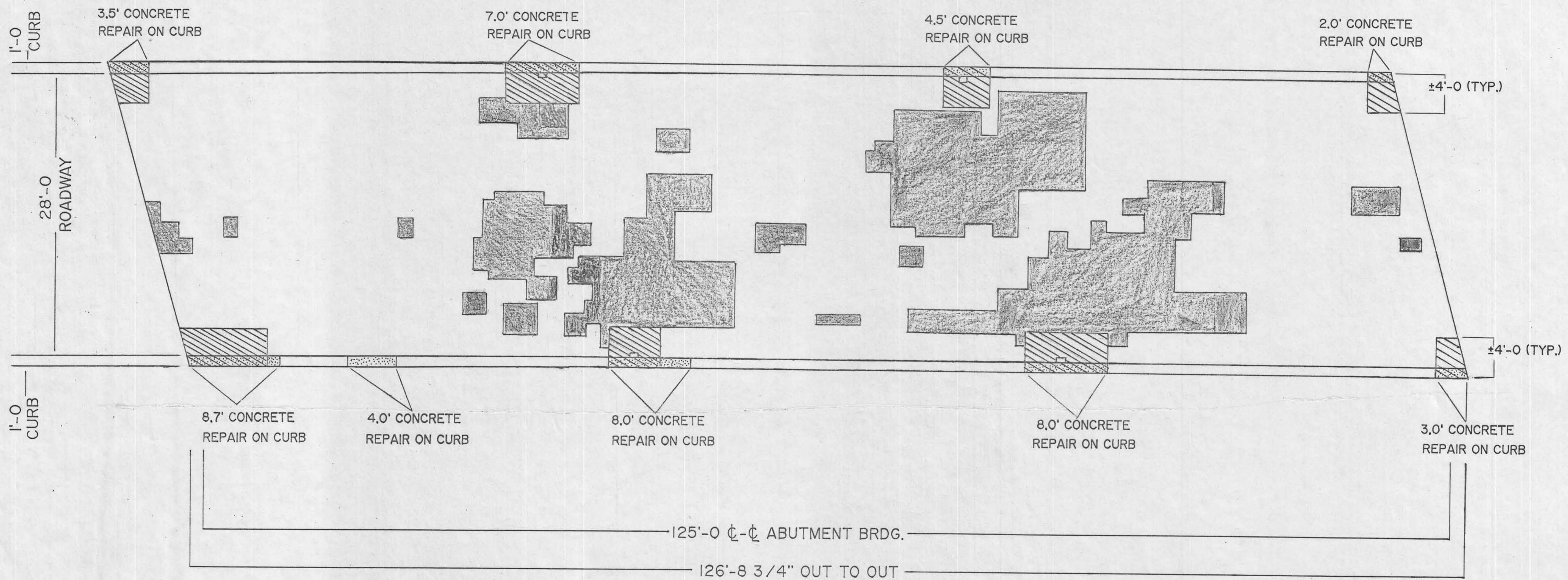
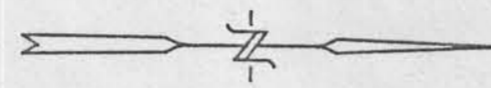
ESTIMATE OF QUANTITIES : BHS-CO24(56)--63-24				
REF. NO.	ITEM NO.	DESCRIPTION	UNITS	TOTAL
1	2413-0698071	BRIDGE FLOOR OVERLAY	SY	394.27
2	2413-0698072	BRIDGE FLOOR REPAIR, CLASS A	SY	91.68
3	2413-0698073	BRIDGE FLOOR REPAIR, CLASS B	SY	13.50
4	2426-6772016	CONCRETE REPAIR	SF	48.70
5	2303-0000100	HOT MIX ASPHALT MIXTURE, COMMERCIAL MIX (INCLUDES ASPHALT BINDER), AS PER PLAN	TON	15.54
6	2527-9263110	PAINTED PAVEMENT MARKING	STA	8.993
7	2518-6910000	SAFETY CLOSURE	EACH	2.0
8	2528-8445110	TRAFFIC CONTROL	LS	1.00
9	2533-4980005	MOBILIZATION	LS	1.00

**ESTIMATE REFERENCE SECTION**  
DATA LISTED BELOW IS FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS.

ITEM NO.	DESCRIPTION
1	INCLUDES COST OF FURNISHING AND PLACING CONCRETE SEALER.
3	COST OF BRIDGE REPAIR CLASS B SHALL INCLUDE THE COST OF REMOVING AND INSTALLING 4 NEW FLOOR DRAINS AT EXISTING LOCATIONS SHOWN ON THE PLAN. INSTALLATION OF DRAINS SHALL BE TO EXISTING ELEVATIONS. BRIDGE DECK OVERLAY AT DRAINS SHALL BE DONE IN ACCORDANCE TO THE DETAILS PROVIDED IN THIS PLAN.
4	FOR CONCRETE REPAIR OF BRIDGE CURBS REFER TO DETAIL PROVIDED IN THESE PLANS.
5	CONTRACTOR SHALL PLACE TYPICAL ASPHALT LEVELING COURSES AT BRIDGE APPROACH SECTIONS AS NOTED AND SHOWN ON STANDARD ROAD PLAN RG-6. SHOULDER MATERIAL FOR AREAS AFFECTED BY LEVELING COURSES WILL BE PROVIDED AND PLACED BY COUNTY.



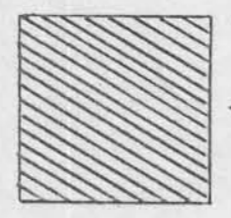
**SITUATION PLAN**  
(NOT TO SCALE)



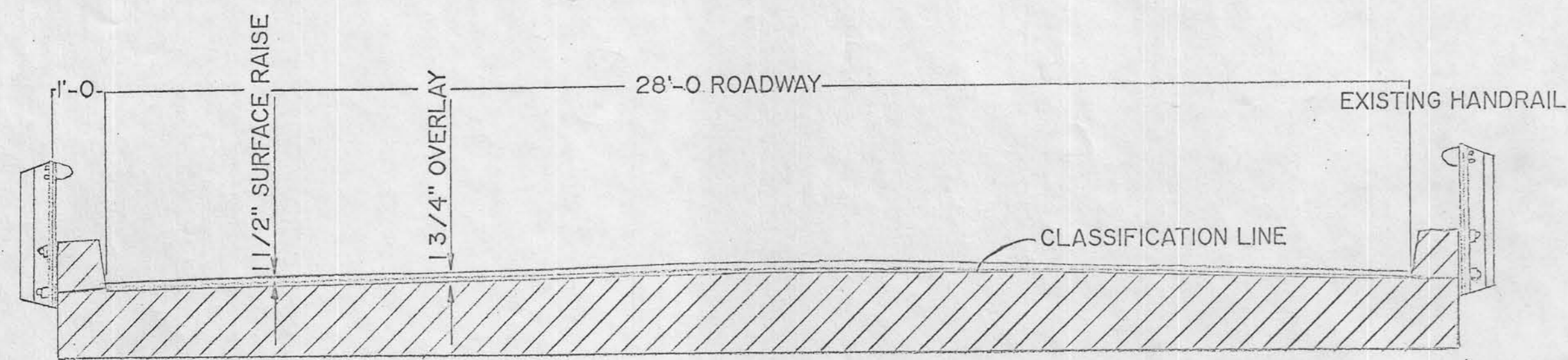
**PLOT OF BRIDGE  
DECK DELAMINATIONS**  
(NOT TO SCALE)



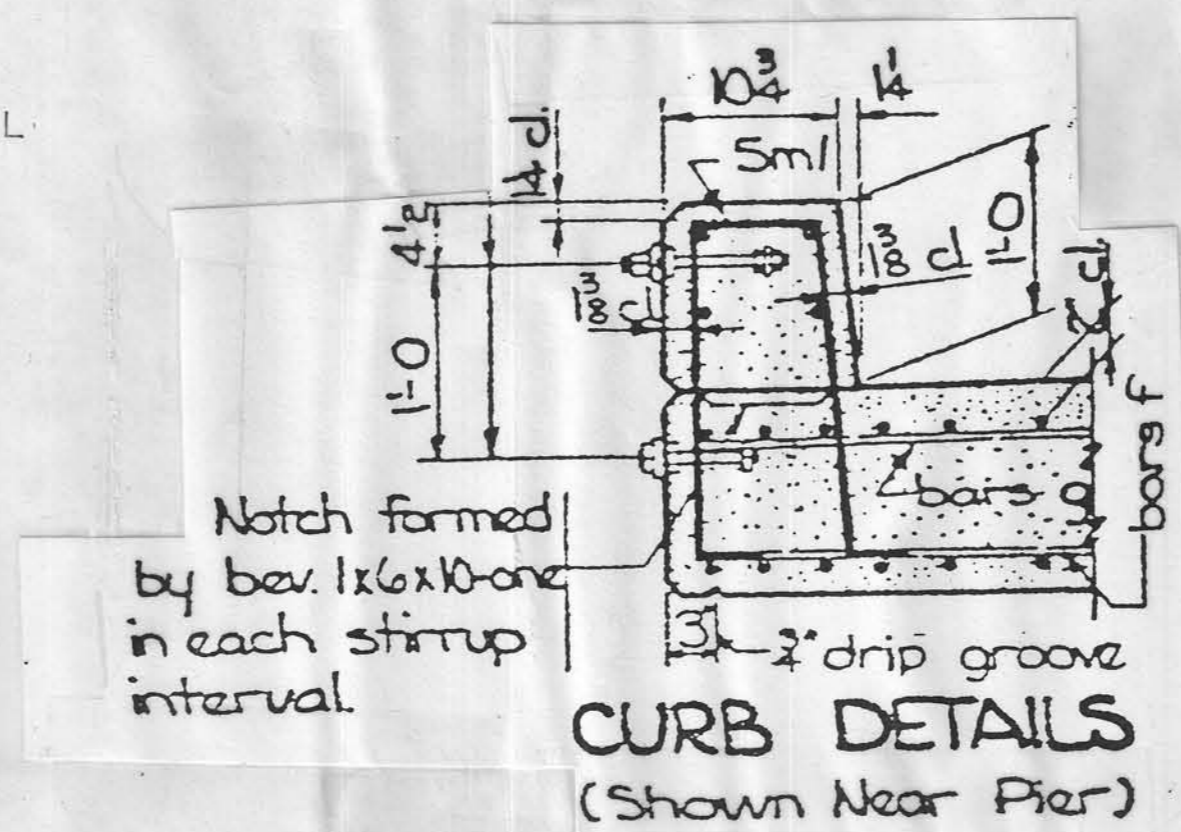
—BRIDGE FLOOR REPAIR, CLASS A



—BRIDGE FLOOR REPAIR, CLASS B

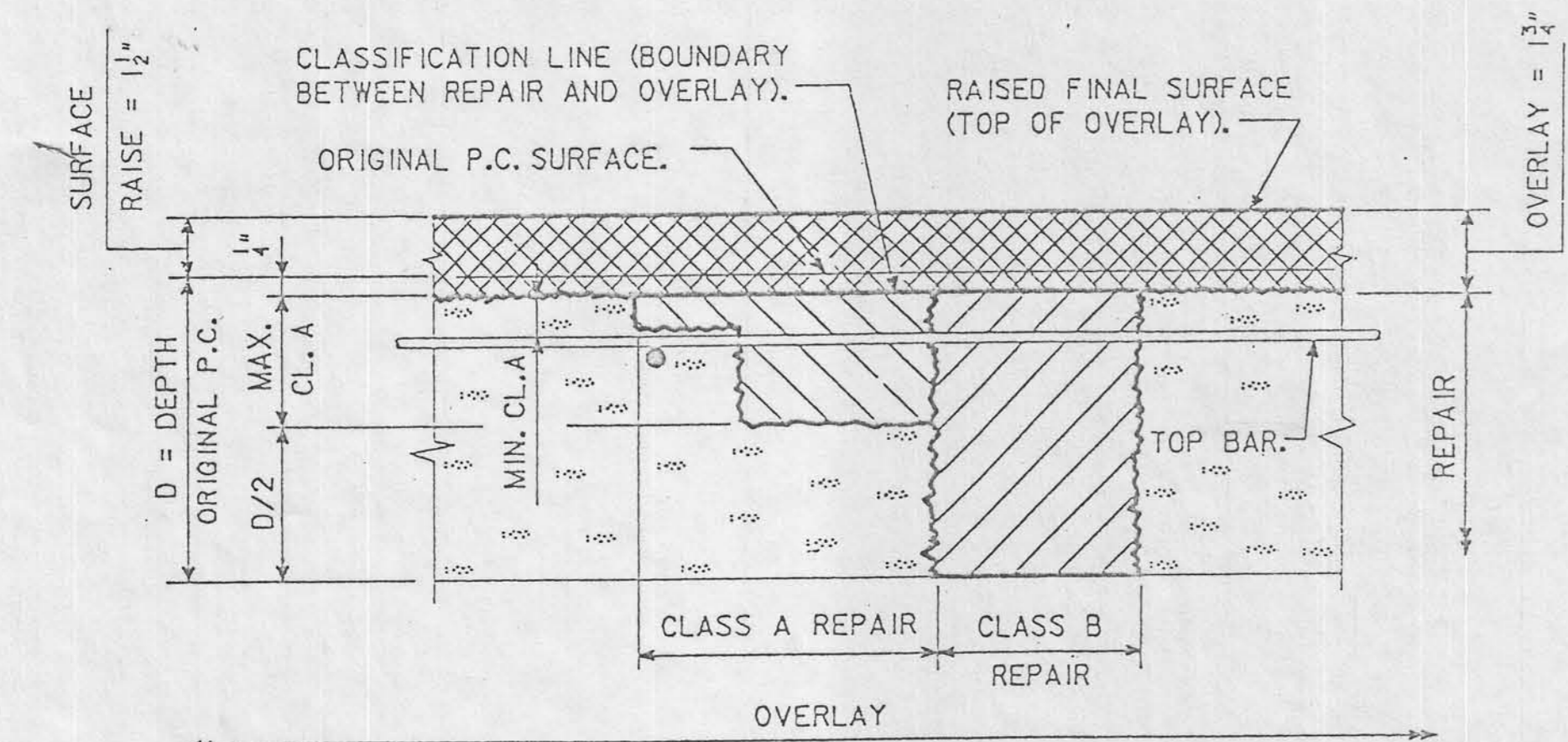


TYPICAL CROSS SECTION

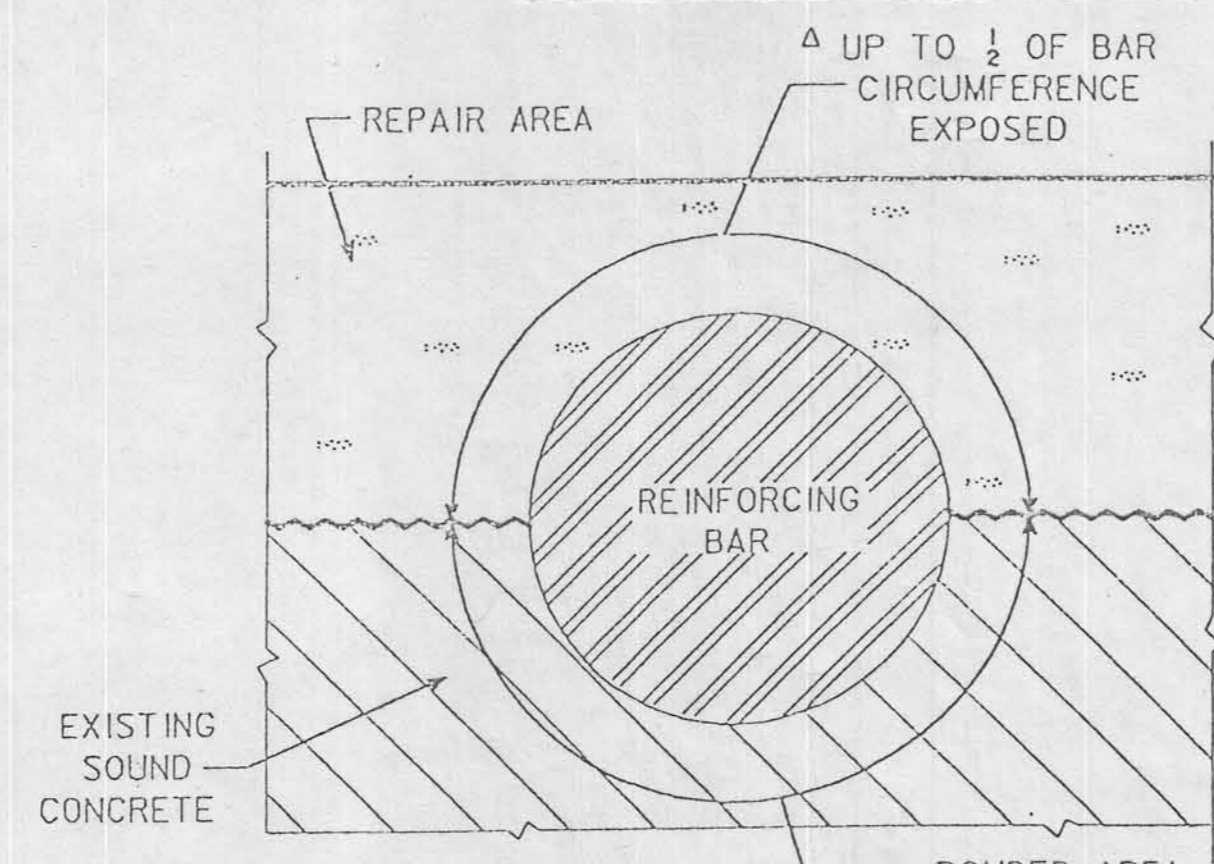


TABULATION OF SAFETY CLOSURES			108-13A 10-28-7
Refer to Section 2518 of the Standard Specifications			
STATION	CLOSURE TYPE		REMARKS
	Road Qty.	Hazard Qty.	
71+00	1		S. END
77+00	1		N. END

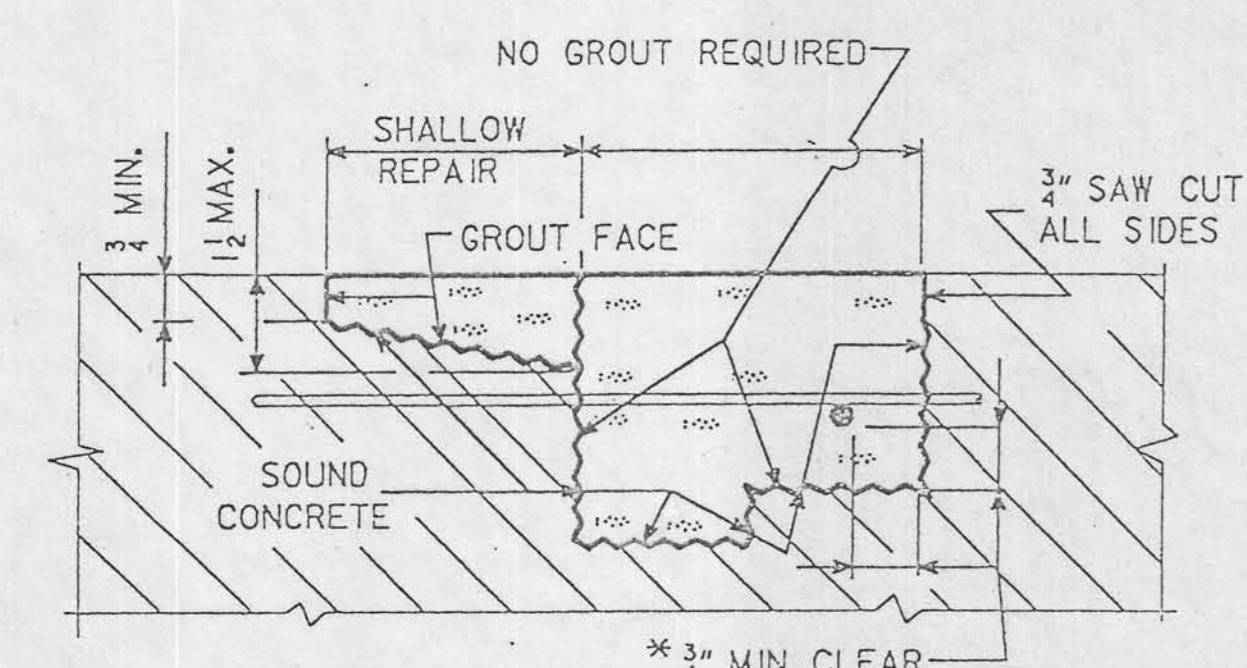
TABULATION OF PAVEMENT MARKINGS			
LINE TYPE *	STATION TO STATION	SIDE	LENGTH Sta.
EDGE LINE RT.	72+49.147 - 75+25.871	RT.	2,767
EDGE LINE LT.	72+49.147 - 75+25.871	LT.	2,767
NO PASSING ZONE LINE	72+49.147 - 75+25.871	LT.	2,767
BROKEN CENTER LINE	72+49.147 - 75+25.871	C	0,692
TOTAL (STA.)			8,993



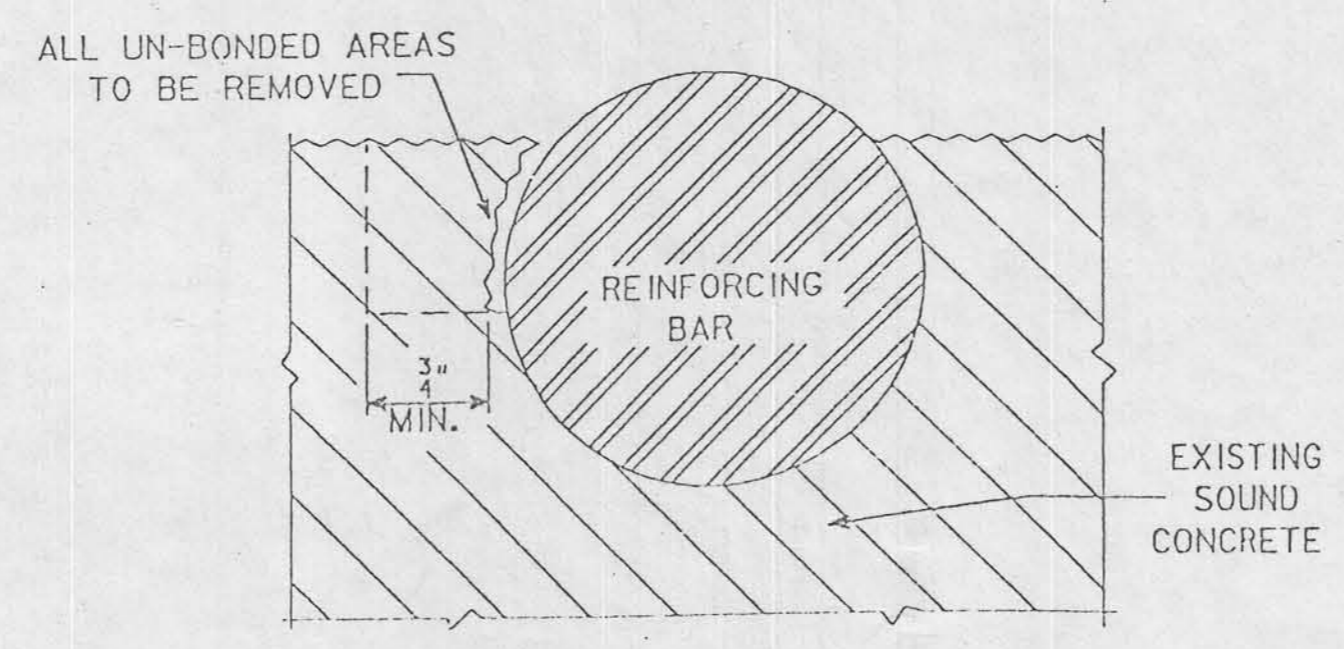
REPAIR AND OVERLAY DEFINITION



Δ IF MORE THAN 1/2 OF THE REBAR IS EXPOSED IT SHALL BE TREATED AS AN UN-BONDED REBAR.

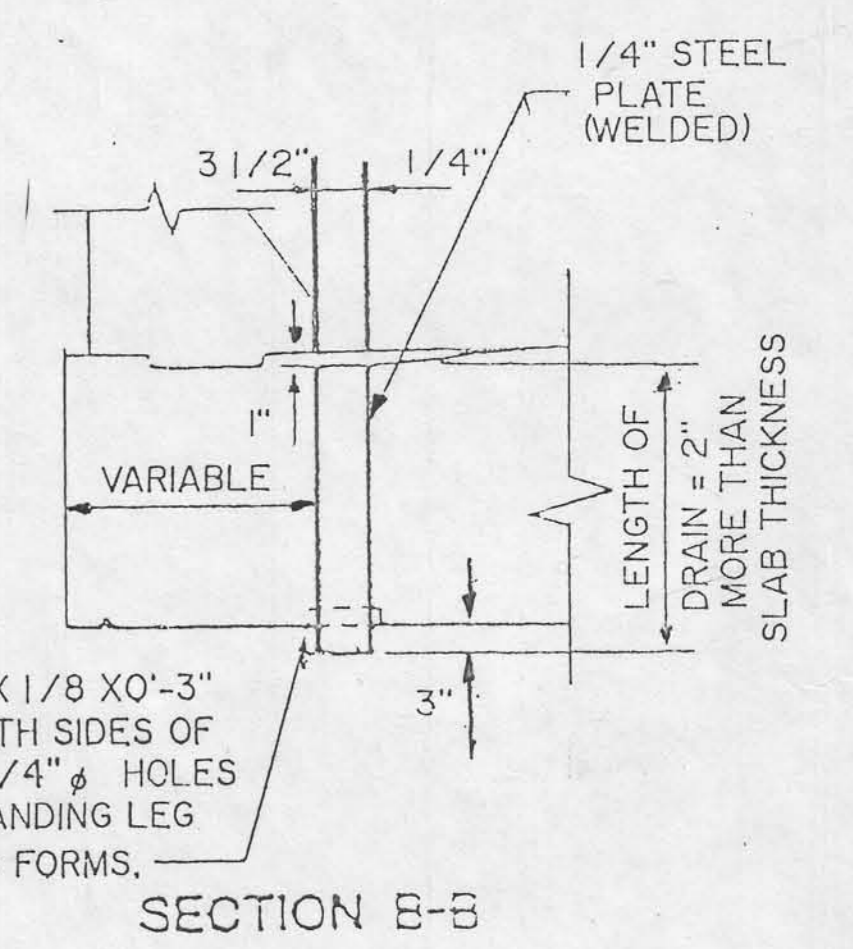


REPAIR DEFINITION  
\* INDICATES CLEARANCE FOR AN UN-BONDED REBAR.

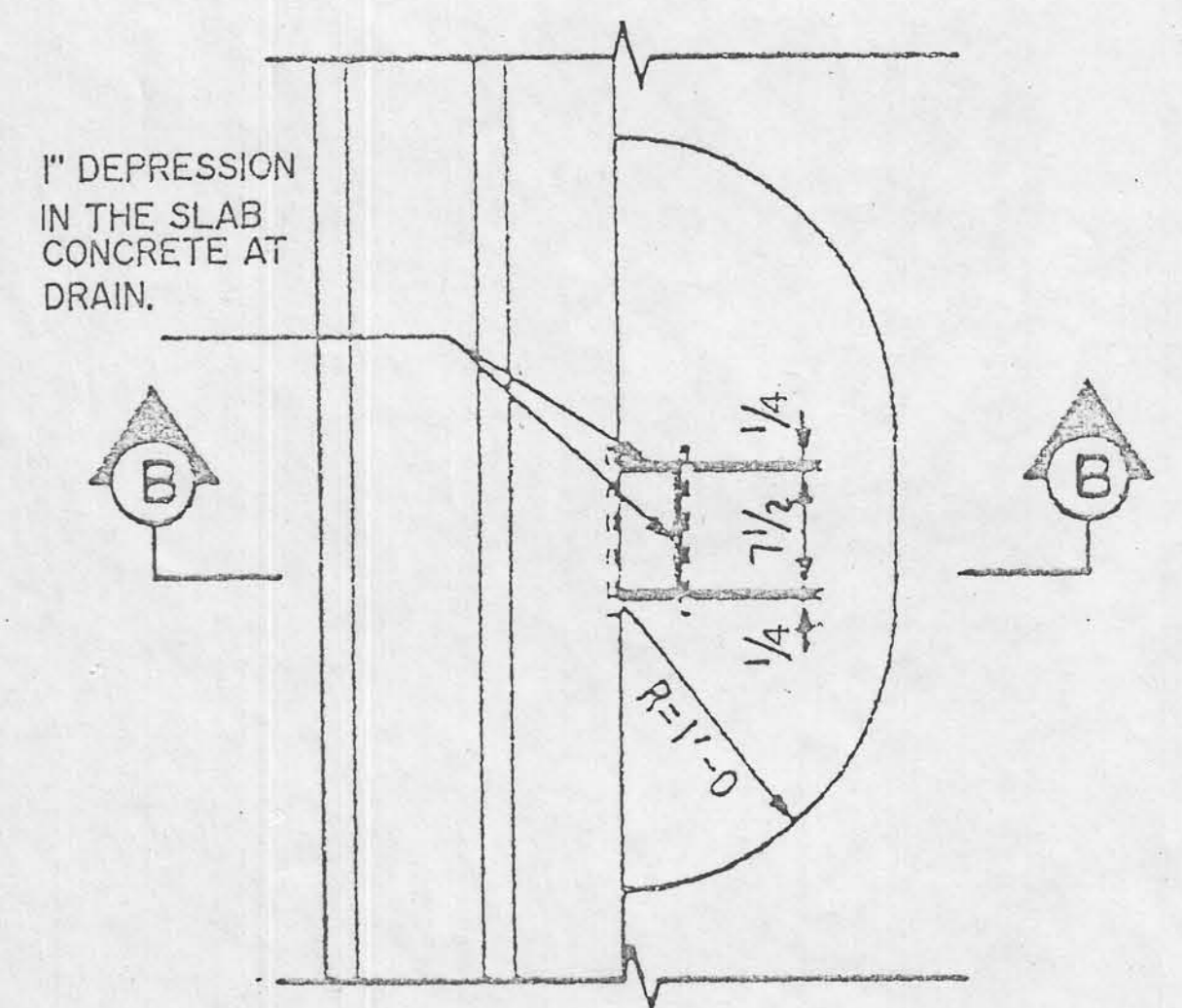


CONCRETE REMOVAL ADJACENT TO REINFORCING

NOTE:  
4" x 8" OUTSIDE DIMENSION ROLLED TUBE WITH 1/4" WALL THICKNESS MAY BE SUBSTITUTED FOR THE WELDED DRAIN SHOWN.



L 1 1/4 X 1 1/4 X 1/8 X 0'-3" WELDED TO BOTH SIDES OF DRAIN WITH 2-1/4" HOLES IN EACH OUTSTANDING LEG FOR NAILING TO FORMS.



PART PLAN

FLOOR DRAIN DETAILS

# STATE OF IOWA STATE HIGHWAY COMMISSION

## PLANS FOR PROPOSED IMPROVEMENT ON THE FARM TO MARKET SYSTEM CRAWFORD COUNTY

PROJECT NO. SN1945  
DESIGNS FOR  
125'x28' & 100'x28' CONTINUOUS CONCRETE SLAB BRIDGES

THE IOWA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR  
CONSTRUCTION WORK, SERIES OF 1960, SHALL APPLY TO WORK ON THIS  
PROJECT, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND  
SPECIAL PROVISIONS.

FED ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IOWA	SN-1945	1963	1	3

SHEET NO.	ITEM
1	TITLE SHEET & ESTIMATE OF QUANTITIES
2	PLAN FOR 100'x28' BRIDGE
3	PLAN FOR 125'x28' BRIDGE

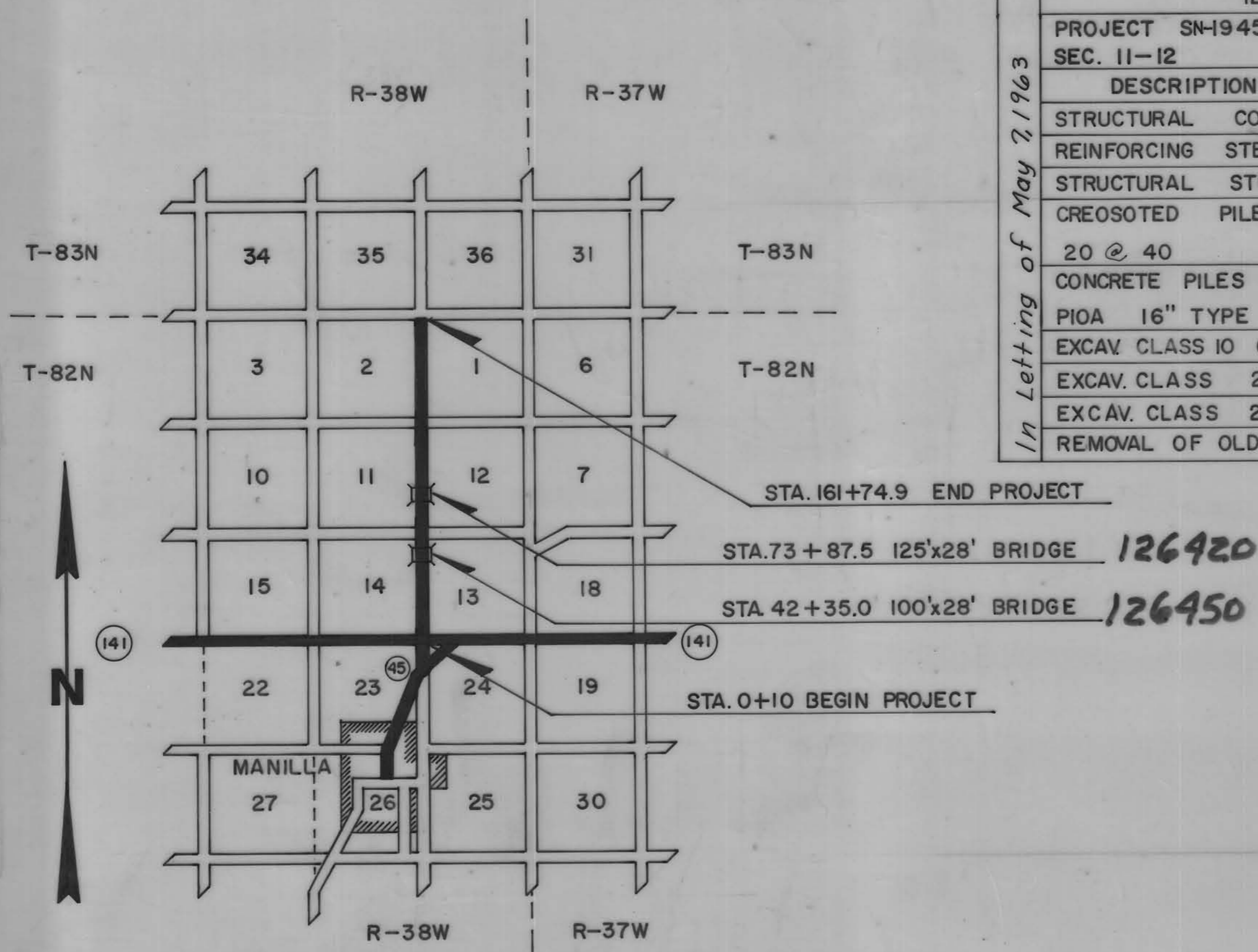
In Letting of May 2 1963

100'x28' CONTINUOUS CONCRETE SLAB BRIDGE			
PROJECT SN1945 SEC. 13-14	DESIGN 263	STA. 42+35 NISHNABOTNA TWP.	
DESCRIPTION	ABUTMENTS	SUPERSTRUCTURE	TOTALS
STRUCTURAL CONCRETE	35.0 C.Y.	165.7 C.Y.	200.7 C.Y.
REINFORCING STEEL	2,784 LBS.	36,715 LBS.	39,499 LBS.
STRUCTURAL STEEL		5,332 LBS.	5,332 LBS.
CREOSOTED PILES 20 @ 40	800 L.F.		800 L.F.
CONCRETE PILES 14 @ 45'		630 L.F.	630 L.F.
PIOA 16" TYPE III			
EXCAV. CLASS 10 CHANNEL	1,570 C.Y.		1,570 C.Y.
EXCAV. CLASS 20	11 C.Y.		11 C.Y.
REMOVAL OF OLD BRIDGE			LUMP SUM

In Letting of May 2 1963

125'x28' CONTINUOUS CONCRETE SLAB BRIDGE			
PROJECT SN1945 SEC. 11-12	DESIGN 363	STA. 73+87.5 NISHNABOTNA TWP.	
DESCRIPTION	ABUTMENTS	SUPERSTRUCTURE	TOTALS
STRUCTURAL CONCRETE	36.4 C.Y.	251.2 C.Y.	287.6 C.Y.
REINFORCING STEEL	2,842 LBS.	55,065 LBS.	57,907 LBS.
STRUCTURAL STEEL		6,533 LBS.	6,533 LBS.
CREOSOTED PILES 20 @ 40	800 L.F.		800 L.F.
CONCRETE PILES 16 @ 50		800 L.F.	800 L.F.
PIOA 16" TYPE III			
EXCAV. CLASS 10 CHANNEL	150 C.Y.		150 C.Y.
EXCAV. CLASS 20	17 C.Y.		17 C.Y.
EXCAV. CLASS 24	100 C.Y.		100 C.Y.
REMOVAL OF OLD BRIDGE			LUMP SUM

BRIDGE SIGN ASSEMBLY NOTE:  
THESE BRIDGES WILL REQUIRE BRIDGE SIGN ASSEMBLIES (FURNISHED & PLACED BY OTHERS) IN ACCORDANCE WITH THE TRAFFIC AND HIGHWAY PLANNING INSTRUCTION NO. II, REVISED OCT. 1, 1961.



S.N.-1945

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

CHAIRMAN \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

BOARD OF SUPERVISORS

APPROVED \_\_\_\_\_ DATE APR 5 1963

R.M. Taitton  
DEPUTY CHIEF ENGINEER  
IOWA HIGHWAY COMMISSION

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

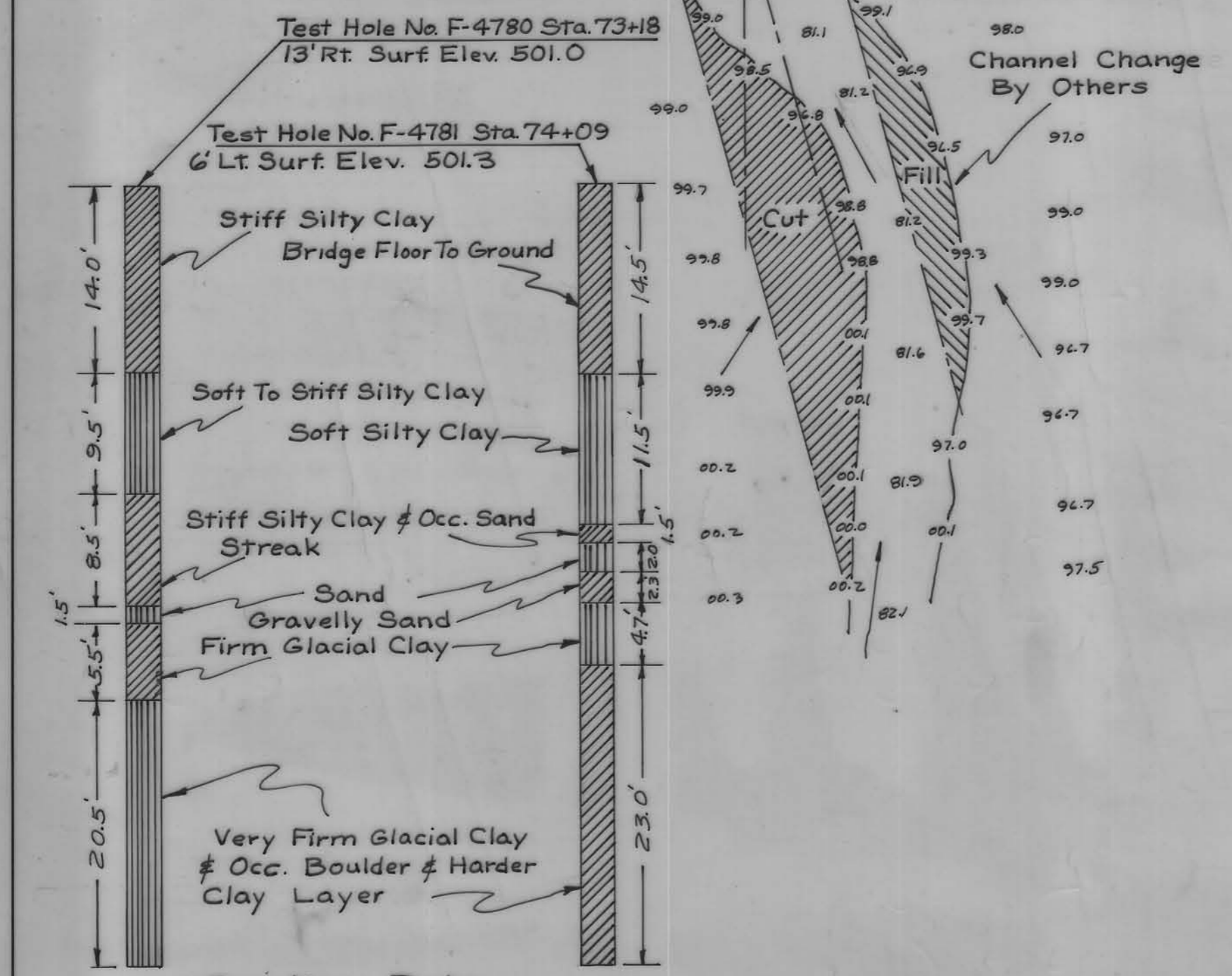
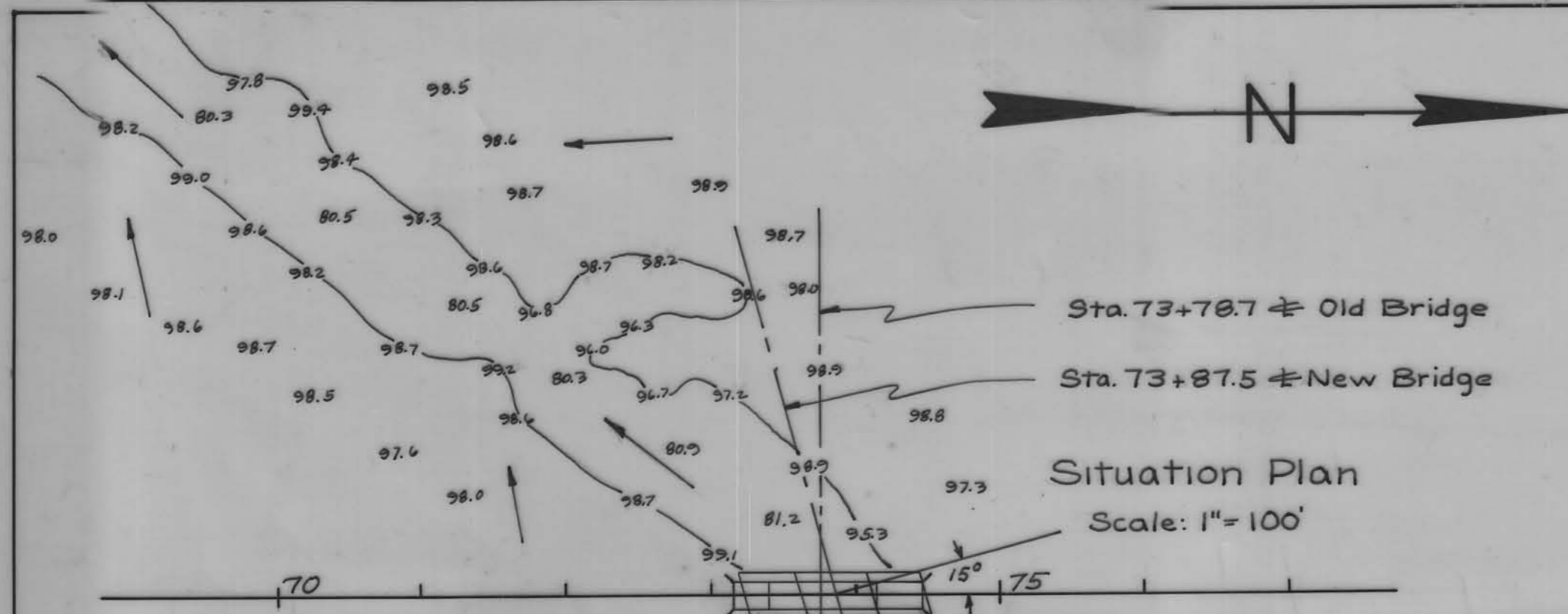
APPROVED \_\_\_\_\_

DIVISION ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

OK 12/2/63 CP-3-63

Nishnabotna Township  
T-82N R-38W  
Bet. Sec. 11#12

Bench Mark No. 6 Spk. In F. Post 125' Rt. Sta. 70+87.6 Elev. 503.94

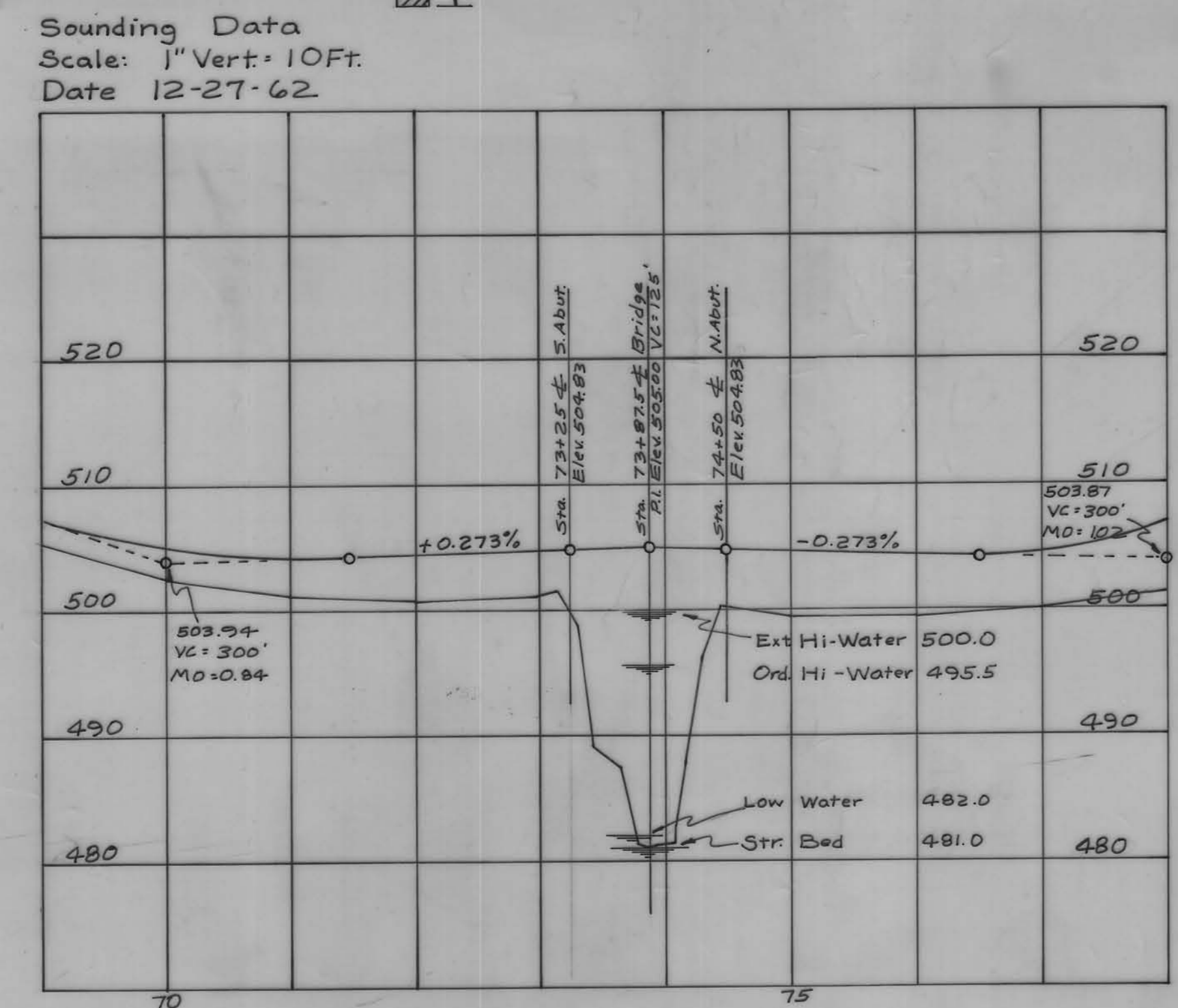


Estimate Of Quantities

Description	Abutments	Superstructure	Totals
Structural Concrete	36.4 c.y.	251.2 c.y.	287.6 c.y.
Reinforcing Steel	2,842 lbs.	55,065 lbs.	57,907 lbs.
Structural Steel		6,533 lbs.	6,533 lbs.
Creosoted Piles 20@40'	800 L.F.		800 L.F.
Concrete Piles 16@50' P10A 16" Type III		800 L.F.	800 L.F.
Excavation Class 10 Channel	150 c.y.		150 c.y.
Excavation Class 20	17 c.y.		17 c.y.
Excavation Class 24	100 c.y.		130 c.y.
Removal Of Old Bridge			Lump Sum

Note: 946 Metal Chairs Required

Sta. 73+78.7 ± Present 75'x16' Pony Truss Bridge With 24'x16' I-Beam # 30'x16' I-Beam Approaches, Wood Floor, Wood Substructure. DA-39 Sq. Mi. Replace With 125'x28' Continuous Concrete Slab Bridge, On 15° Skew, At Sta. 73+87.5. Bridge Contractor To Remove Present Bridge And Pile Within 300' Of Bridge Site As Directed By County Engineer. All Matching Parts Of Pony Truss To Be Marked By Contractor.



Scale: Vert: 1" = 10'  
Horiz: 1" = 100'

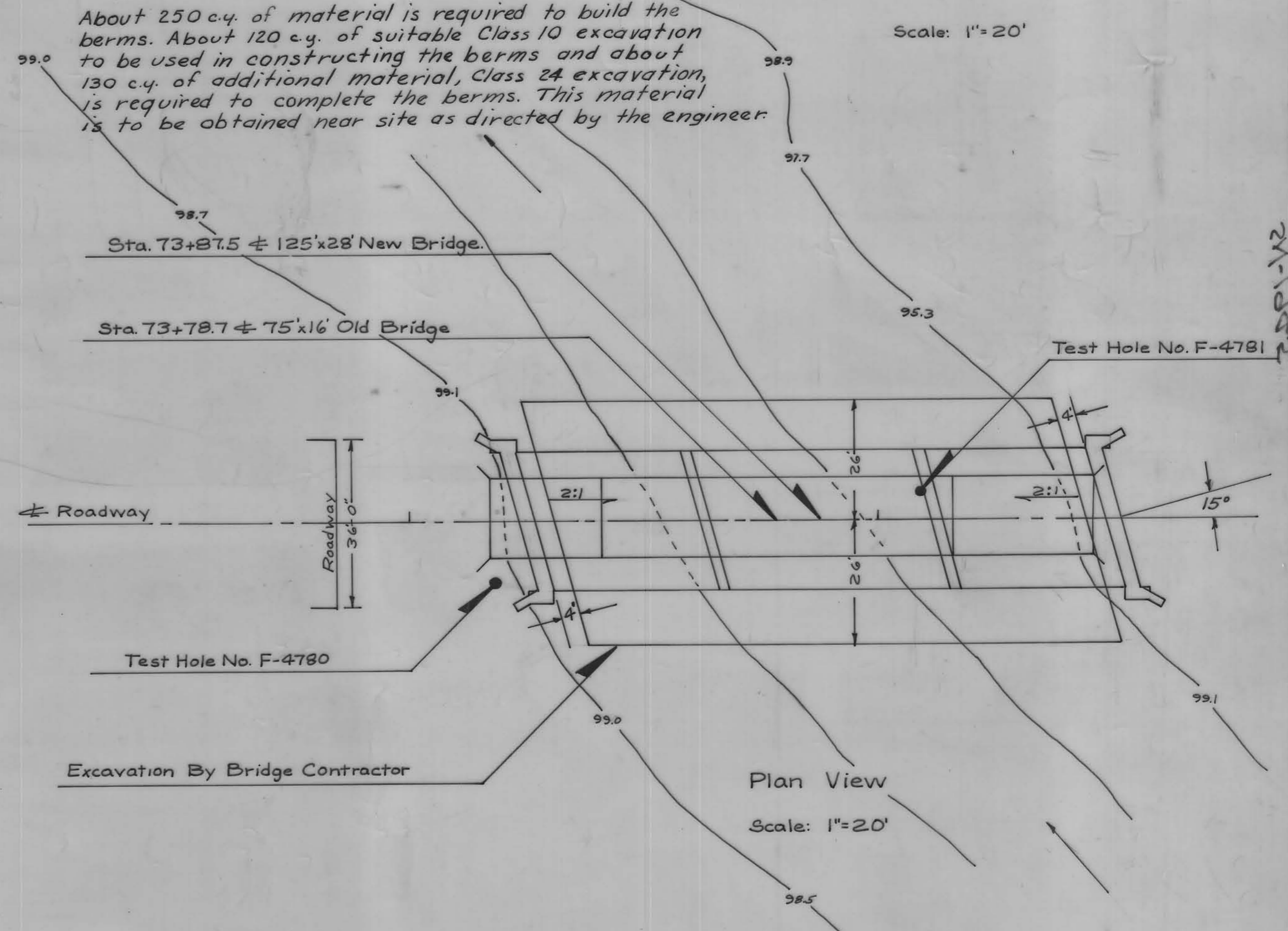
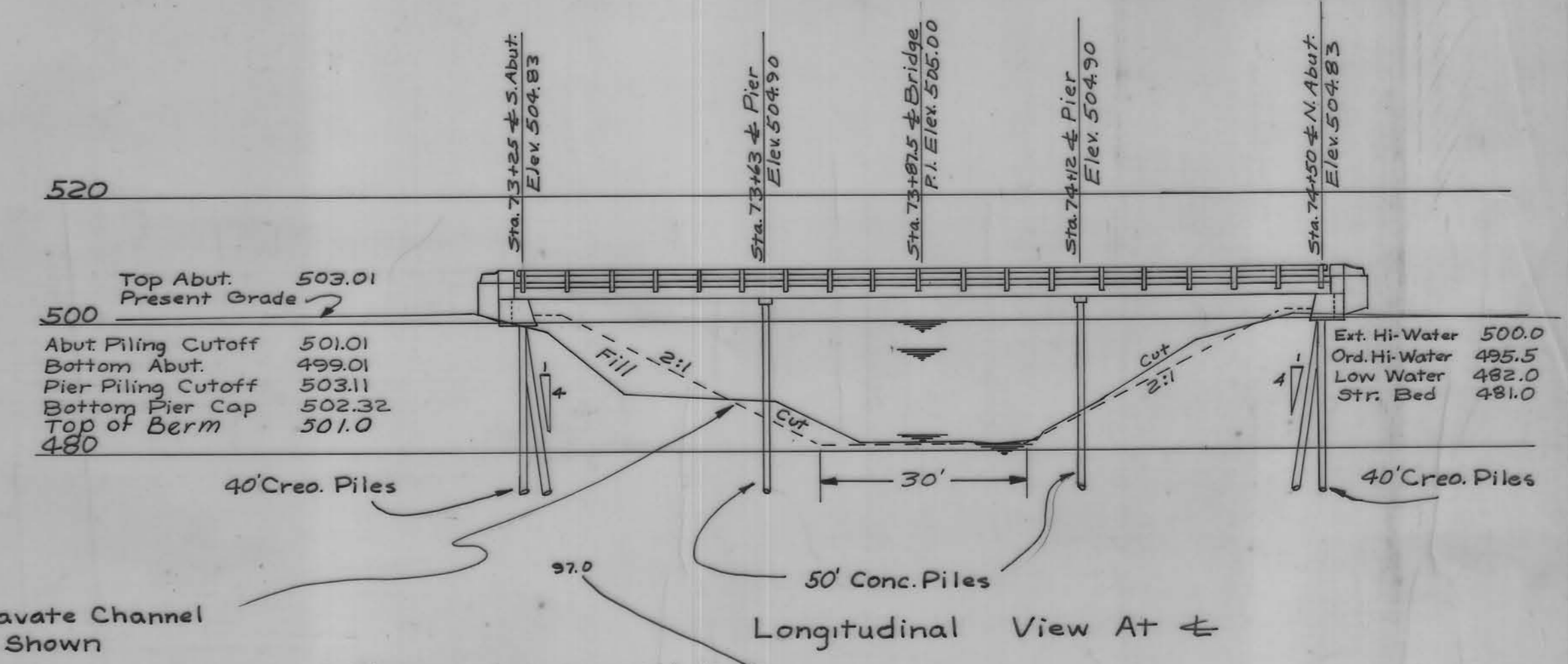
General Notes:  
Iowa Highway Commission Standard Design J8-1, J8-2 And J8-4, July, 1960, And P10A, June, 1959, Shall Apply To This Bridge.

All Reinforcing Bars Shall Be Securely Wired In Place And Adequately Supported On Bar Chairs.

Iowa Highway Commission Standard Specifications, Series Of 1960, With Current Special Provisions And Supplemental Specifications.

Bridge Sign Assembly Note:  
Place Triple Three-Inch Red Reflectors (M-200) At Each End Of The Bridge On The Right Hand Side Only For Approaching Traffic. By County. See Traffic And Highway Planning Instruction No. 11, Revised October 1, 1960.

Location:  
Bet. Sec. 11#12 Nishnabotna Twp.  
T-82N R-38W  
Over Nishnabotna River



Design For  
125'x28' Continuous Concrete Slab Bridge  
Skew Angle 15°  
Steel Channel Rail  
Stub Abutments And Concrete Pile Bents  
Sta. 73+87.5  
Proj. No. SM-1945  
Crawford County, Iowa  
Feb. 25, 1963