

29-200.243

DESIGN DATA				
Traffic	Average Daily			Max.Hr.
Current 2006	Pass: 1,780	Trucks: 1,250	Total: 3,030	305
Forecast 2026	Pass: 3,545	Trucks: 2,490	Total: 6,035	605
Clear Zone Dist. 32 FT		Design Speed: 75 mph		
Minimum Sight Dist. for Stopping: 820 FT				
Full Control of Access				
No Point of Access Other Than at Interchange Ramps				
Pavement Design Life 30 (years)				

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

AC-S-TIP-SBI-6-029(057)196
SBI-6-029(071)197
S-BRI-6-029(054)198
PEMBINA COUNTY

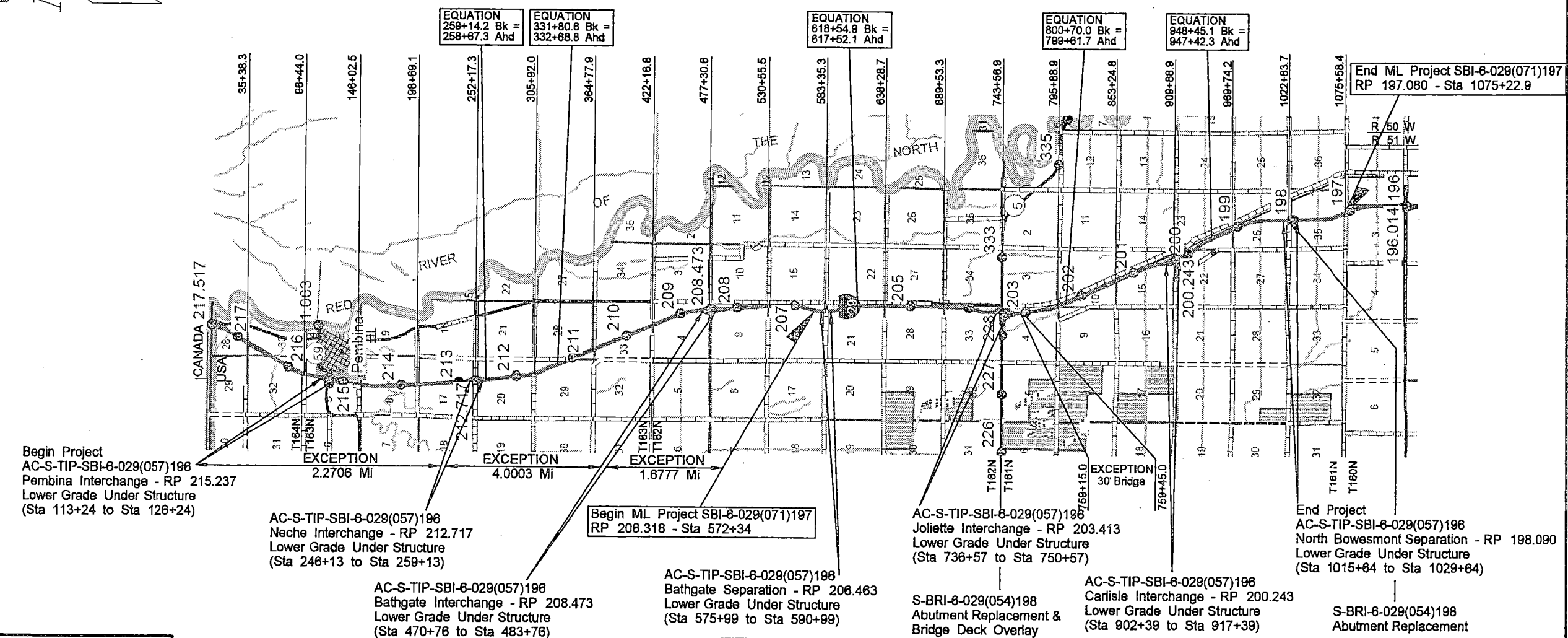
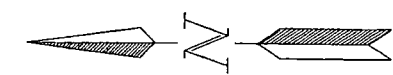
Bowesmont Interchange to Pembina Interchange (NB)
Grade Lowering, Mill & Overlay, Ramp Overlays,
Centerline Culvert Replacement, Structure Rehabilitation

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	AC-S-TIP-SBI-6-029(057)196	15924	1	1

GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota
Department of Transportation October 2002; Standard Drawings
currently in effect; and other Contract Provisions submitted herein.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
AC-S-TIP-SBI-6-029(057)196 - Grade Lowering	1.8371	17.4077
SBI-6-029(071)197 - Mill & Overlay	8.4797	9.5839
S-BRI-6-029(054)198 - Joliette & North Bowesmont Structure Rehabilitation		

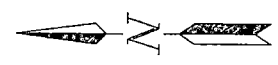


DESIGNERS	
Darell Ame	
Travis Cork	
Kris Altepetter	

APPROVED DATE 01/31/08
Ronald Jason Henke
OFFICE OF PROJECT DEVELOPMENT ND DEPARTMENT OF TRANSPORTATION
APPROVED DATE
FEDERAL HIGHWAY ADMINISTRATION U.S. DEPARTMENT OF TRANSPORTATION

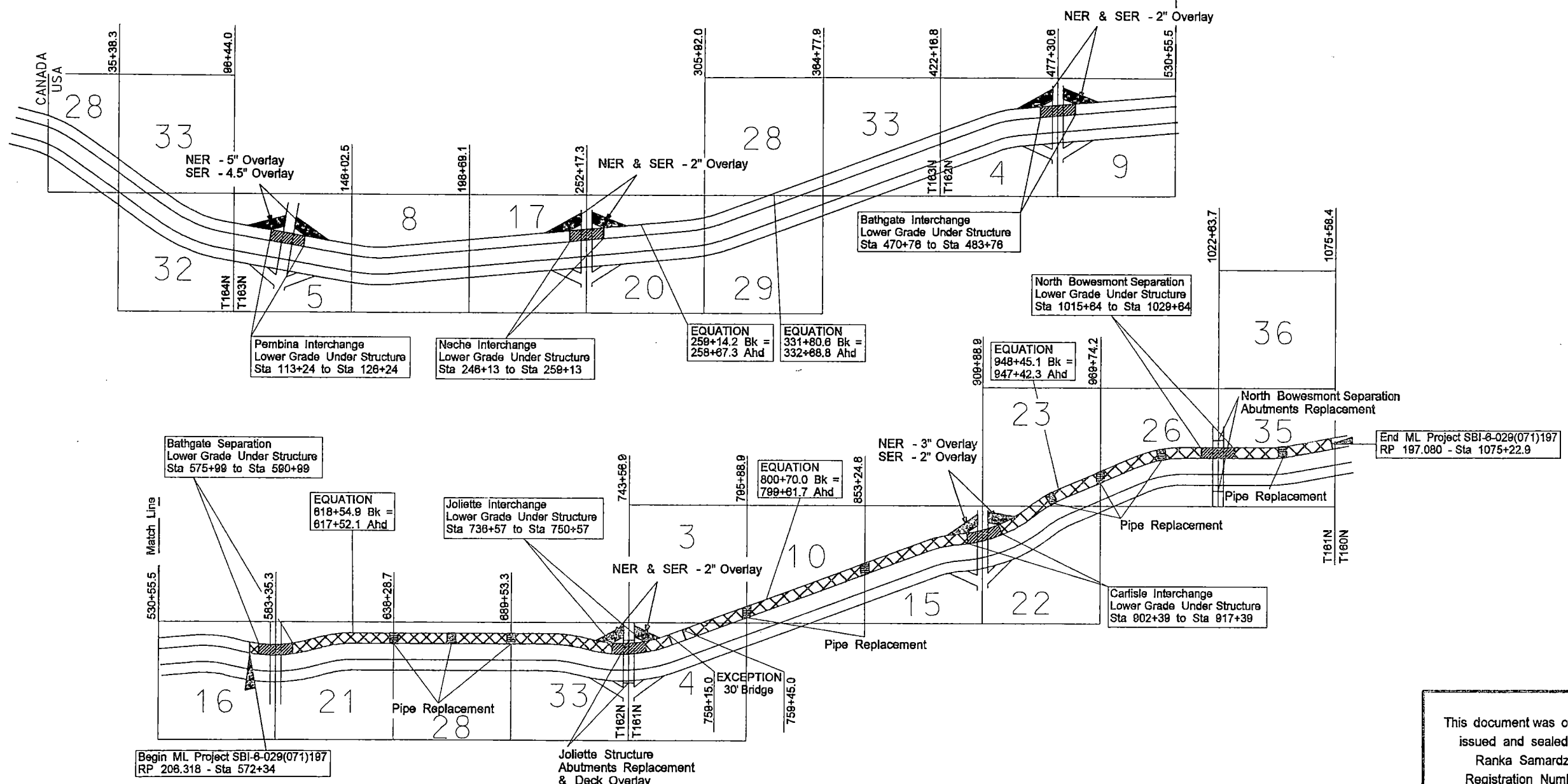
I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.
APPROVED DATE 2-7-08
James Douglas Rath
NDDOT DIV-DIST OR CONSULTANT FIRM

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	S-TIP-SBI-6-029(057)196	4	1

SBI-6-029(071)197
BRI-6-029(054)198



Project S-TIP-SBI-6-029(057)196
Grade Lowering Under Structures, PCC Pavement with Shoulder Alternates

Project SBI-6-029(071)197
Mill & Overlay
Ramp Overlays
Pipe Replacement

Project BRI-6-029(054)198
North Bowesmont Separation Structure - Abutment Replacement
Joliette Interchange Structure - Abutment Replacement & Deck Overlay

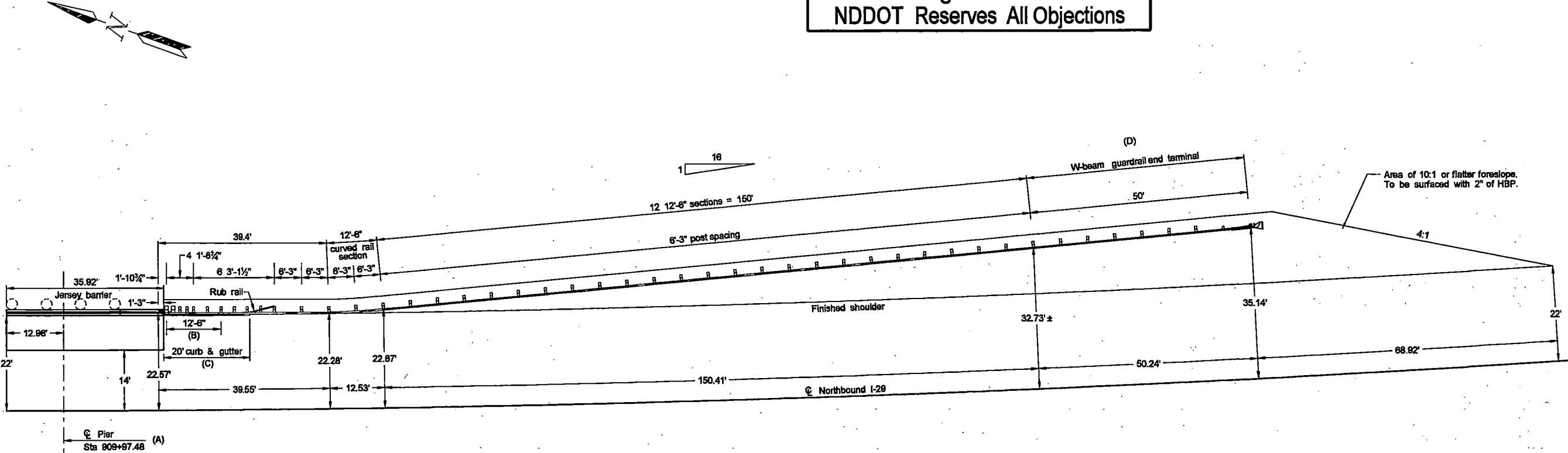
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SCOPE OF WORK

Bowesmont Interchange to Pembina Interchange
RP 197.080 to RP 215.237

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	S-TIP-SBI-6-029(057)196	130	9

23 USC § 409 Documents
NDDOT Reserves All Objections



- (A) The engineer shall field verify station at
 @ pier and adjust stationing as necessary.
- (B) 12'-6" Double rail section
- (C) The curb and gutter shall be installed
 as shown on Jersey Barrier & Curb and
 Gutter Details.
- (D) The W-beam guardrail end terminal to be
 installed at this location shall be either a
 FLEAT or a Slotted Rail Terminal.

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 PE-5047,
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 of Transportation

Jersey Barrier and W-Beam Guardrail Layout
 Outside Pier Protection

 Carlisle Interchange
 RP 200.243
 Northbound Roadway

I-29

23 USC § 409 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	S-TIP-SBI-6-029(05)196	130	10

W-BEAM GUARDRAIL SUMMARY OF QUANTITIES																								
W-BEAM GUARDRAIL AT OBSTRUCTIONS WITH JERSEY BARRIER																								
LOCATION	(A) TERMINAL CON- NECTOR	(A) 5/8" Ø x 22" LONG GUARD- RAIL BOLT	(A) 5/8" Ø x 20" LONG GUARD- RAIL BOLT	(A) 7/8" Ø x 10" LONG H.S. HEX HEAD BOLT	(A) 5/8" Ø x 18" LONG GUARD- RAIL BOLT	(A) 6"x 8" x 14" WOOD OFF- SET BLOCK	(A) 6"x 8" x 8" TIMBER POST	(A) 5/8" Ø x 1 1/4" LONG GUARD- RAIL BOLT	(A) 12'-8" DOUBLE RAIL SECTION	(A) 12'-8" STRAIGHT RAIL SECTION	(A) 12'-8" CURVED RAIL SECTION	(A) 5/8" Ø x 12" LONG HEX HEAD BOLT	(A) 1/2" Ø x 4" LONG LAG SCREW	(A) 6" x 8" x 7'-0" TIMBER POSTS	(A) RUB RAIL END SHOE	(A) C 6 x 8.2 x 14'-8 1/4" RUB RAIL SECTION	(A) C 6 x 8.2 x 12'-7" BENT RUB RAIL SECTION	(A) 5/8" Ø x 1 1/2" LONG GUARD- RAIL BOLT	(A) 7 3/4" x 4 1/2" x 3/8" RUB RAIL SPLICE PLATE	(A) 10"x 10" x 8'-0" TIMBER POST	(A) 10"x 8" x 21" TAPERED TIMBER BLOCK	(A) 6"x 8" x 21" TIMBER BLOCK	(A) 6"x 9 3/4" x 14" TIMBER BLOCK	(A) REFL- ECTOR- IZED PLATES
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 910+19.27 to 910+46.27 Lt. Sta 910+58.82 to 910+71.35 Lt.	1	2	10	4	8 3	1 3	6 3	24 18	1	1	1	2	1	3	1	1	1	4	1	2	2	7	1	1 6
TOTAL	1	2	10	4	11	4	9	40	1	1	1	2	1	3	1	1	1	4	1	2	2	7	1	7

W-beam guardrail	
Sta 910+19.27 to 910+46.27 Lt.	28.9 LF
Sta 910+58.82 to 910+71.35 Lt.	12.5 LF
Total	39.4 LF

W-beam guardrail end terminal	
Sta 912+21.76 to 912+72.0 Lt.	1 ea

Reset W-beam guardrail	
Sta 910+46.27 to 910+58.82 Lt.	12.5 LF
Sta 910+71.35 to 912+21.76 Lt.	150 LF
Total	162.5 LF

Jersey barrier formed or slipformed	
Sta 909+84.47 to 910+20.52 Lt.	35.9 LF

Curb & gutter - type 1 special	
Sta 910+20.52 to 910+40.59 Lt.	20 LF

Remove W-beam guardrail & posts	
Sta 909+53.73 to 912+15.86 Lt.	262.5 LF

Remove end treatment & transition	
Sta 912+15.86 to 912+52.73 Lt.	1 ea

Remove 3-cable guardrail & posts	
Sta 905+58.6 to 910+58.6 Rt. Mdn.	500 LF
Sta 908+94.1 to 913+31.6 Lt. Mdn.	437.5 LF
Total	937.5 LF

(A) These items are not to be bid separately but shall be included in the price bid for the item "W-Beam Guardrail".

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W-Beam Guardrail Quantities

Carlisle Interchange
RP 200.243
Northbound Roadway

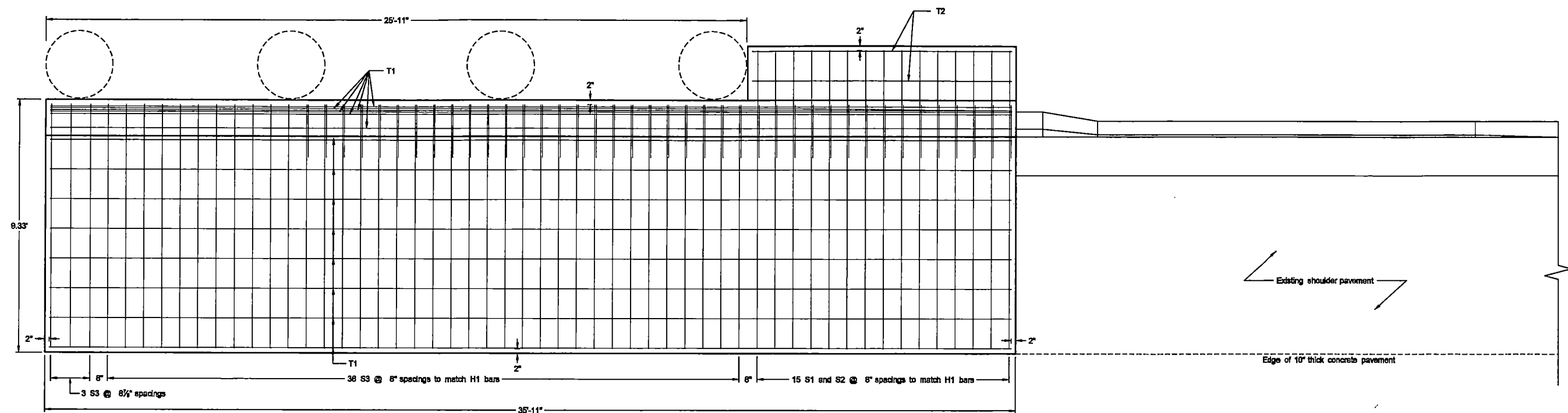
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ND	S-TIP-SBI-6-029(057)196	130	11



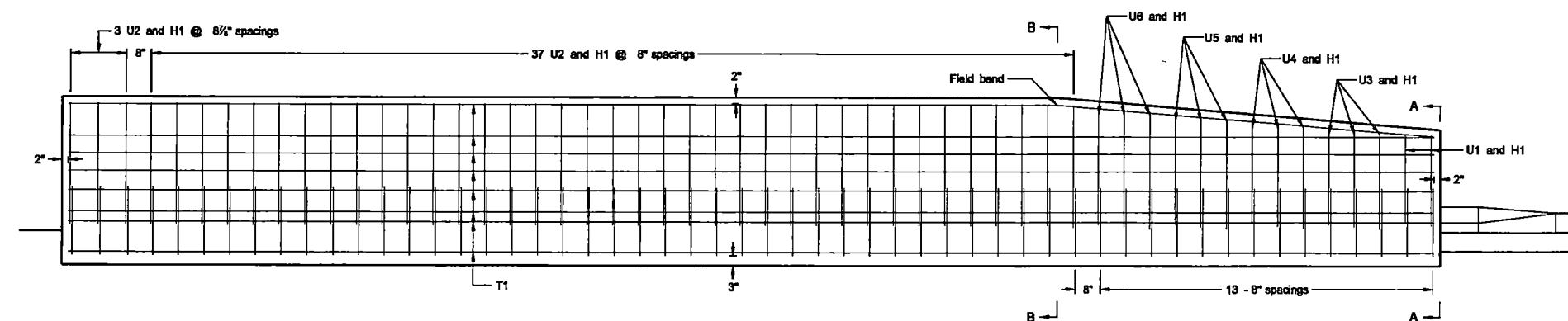
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1-29

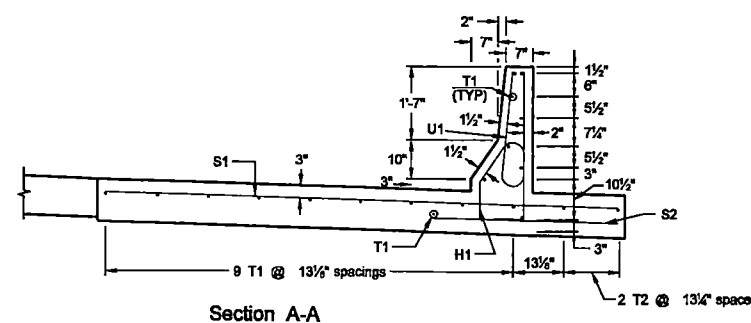
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ND	S-TIP-SBI-8-029(057)196	130	12



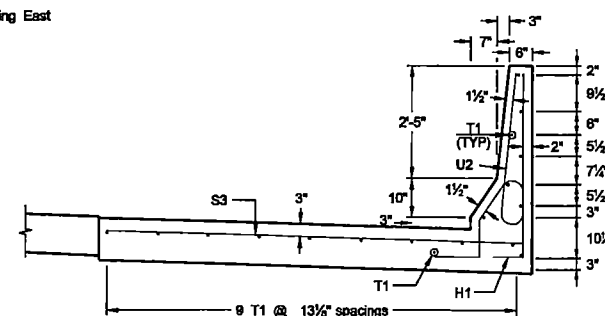
Plan View



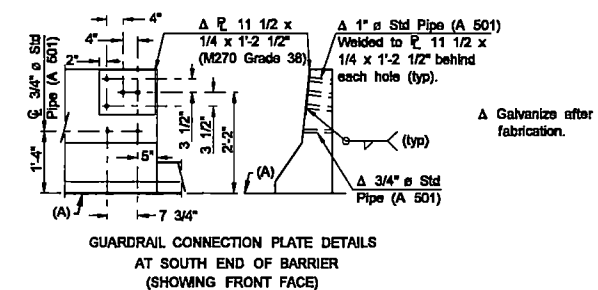
Elevation View
Facing East



Section A-A



Section B-B



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Jersey Barrier Details
Reinforcing Steel Layout
Outside Pier Protection

Carlisle Interchange
RP 200.243
Northbound I-29

23 USC § 409 Documents
NDDOT Reserves All Objections

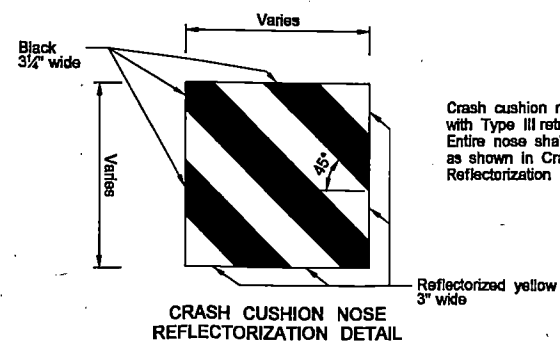
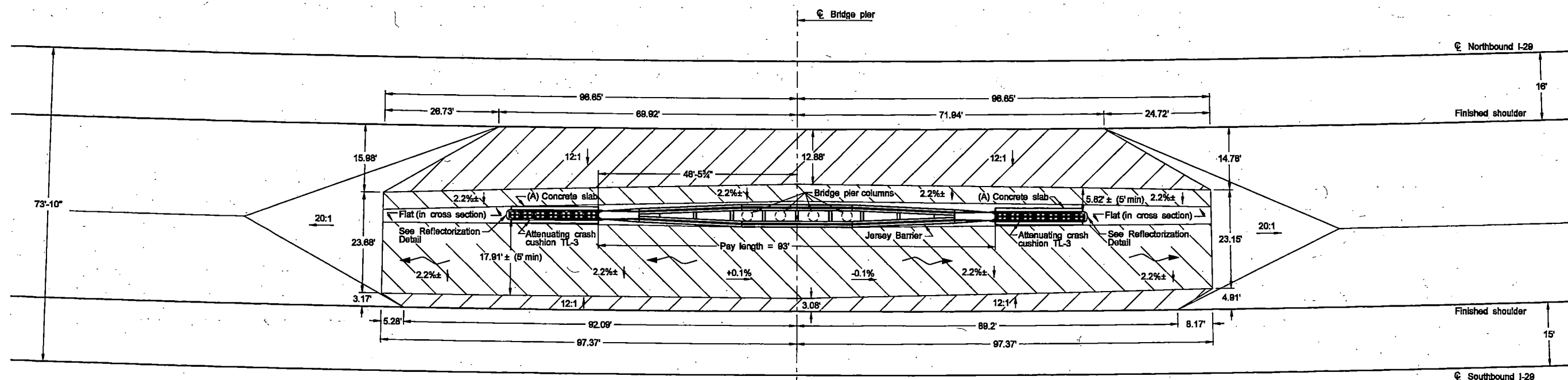


23 USC § 409 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	S-TIP-SBI-6-029(057)196	130	35

The amount of embankment required at this installation is 108 CY. This quantity is for informational purposes only and shall not be measured or paid for separately. The embankment material will be obtained from the item "Common excavation type - A."

The width of the areas of 12:1 foreslope may be field adjusted as necessary due to variance between the elevations of the northbound and southbound roadways, provided that the areas adjacent to the attenuation devices remain flat for a distance of 5 feet minimum, as shown.



Crash cushion nose shall be black with Type III retroreflective sheeting. Entire nose shall receive reflectorization as shown in Crash Cushion Nose Reflectorization Detail.

(A) The concrete slab shall be installed in accordance with the crash cushion manufacturer's recommendations.

All costs for installing the concrete slab shall be included in the price bid for the item "Attenuating crash cushion TL-3."

Jersey barrier formed or slip formed
93 LF

Attenuating crash cushion TL-3
2 EA

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Jersey Barrier and Crash Cushion Layout

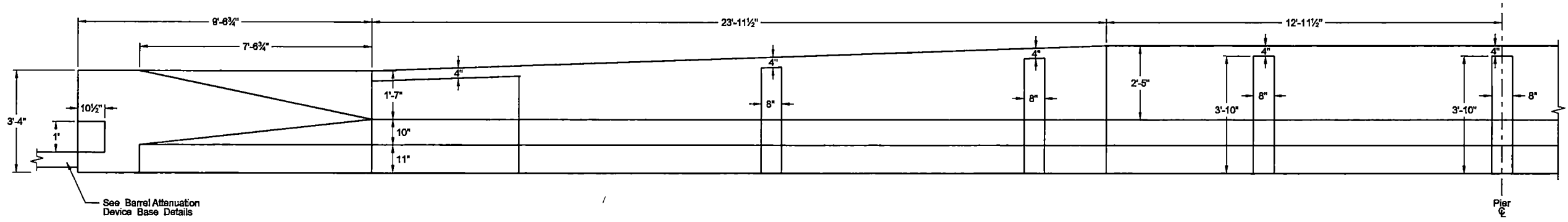
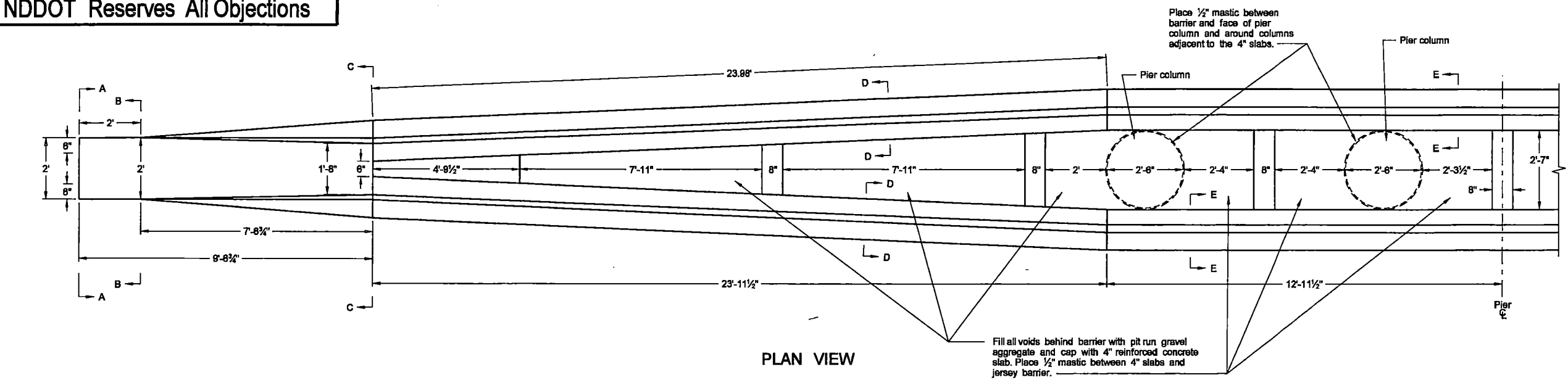
Median Pier Protection

Carlisle Interchange
RP 200.243

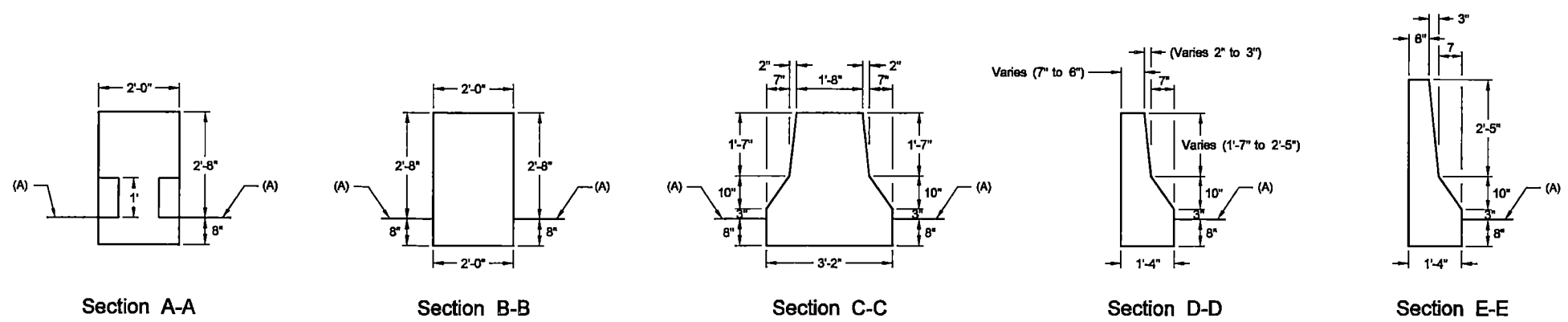
I-29

23 USC § 409 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	S-TIP-SBI-6-029(057)196	130	36



Note: One half of jersey barrier is shown. Barrier layout is symmetrical about pier centerline.



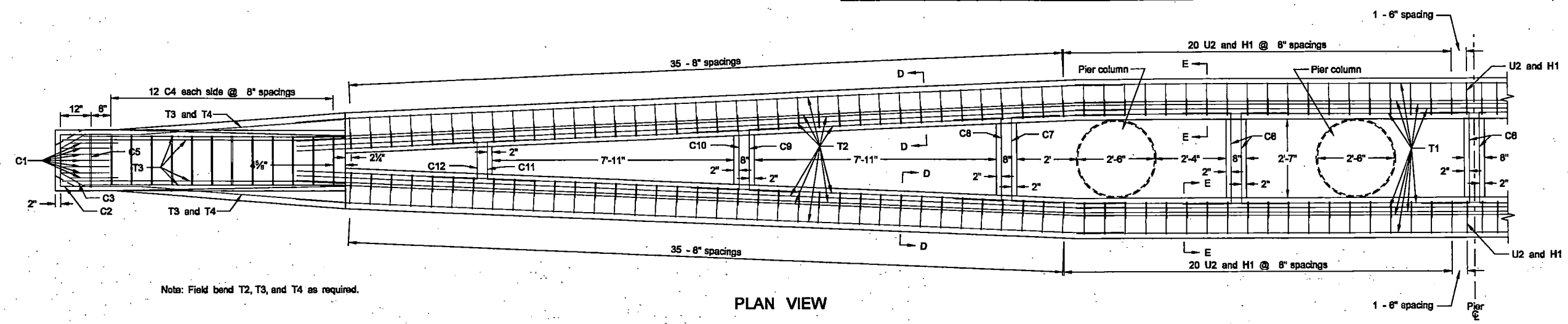
Jersey Barrier Details
Median Pier Protection
Carlisle Interchange
RP 200.243

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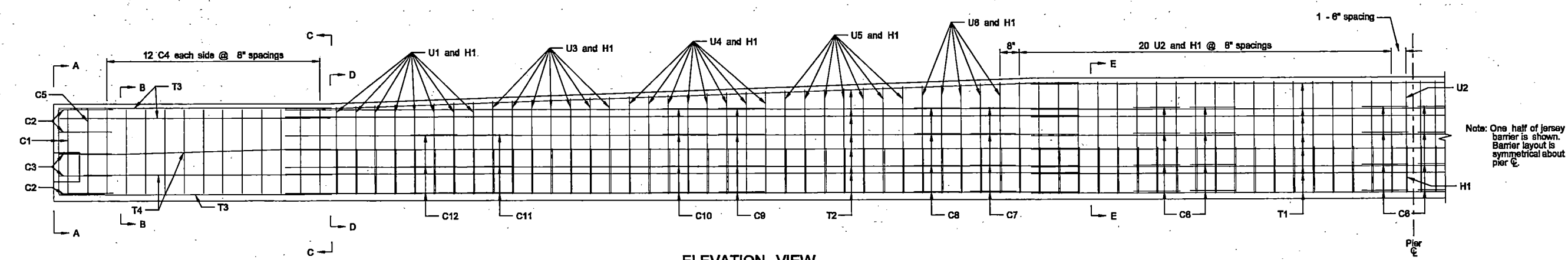
(A) Finished surface

23 USC § 409 Documents
NDDOT Reserves All Objections

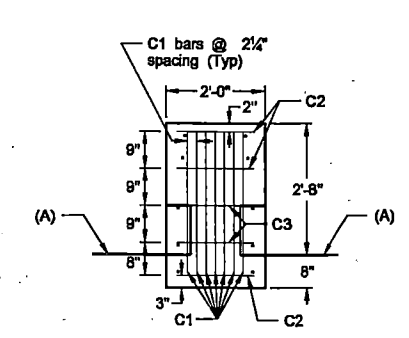
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	S-TIP-SBI-6-029(057)196	130	37



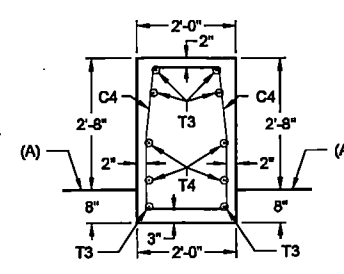
PLAN VIEW



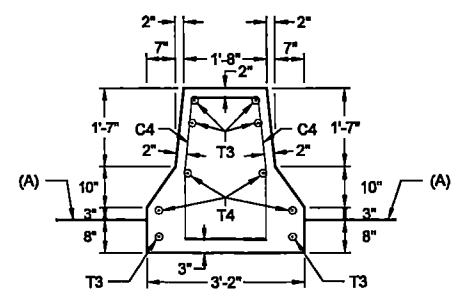
ELEVATION VIEW



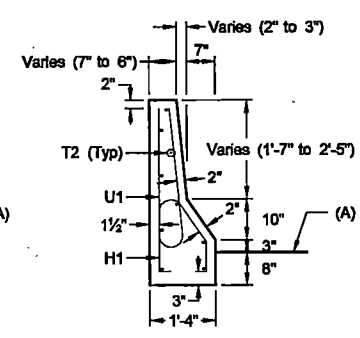
SECTION A-A



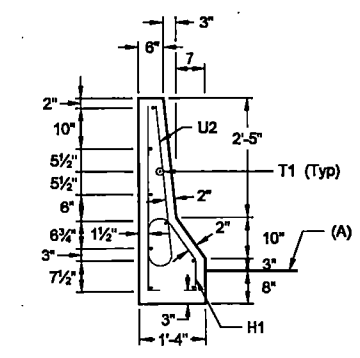
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

(A) Finished surface

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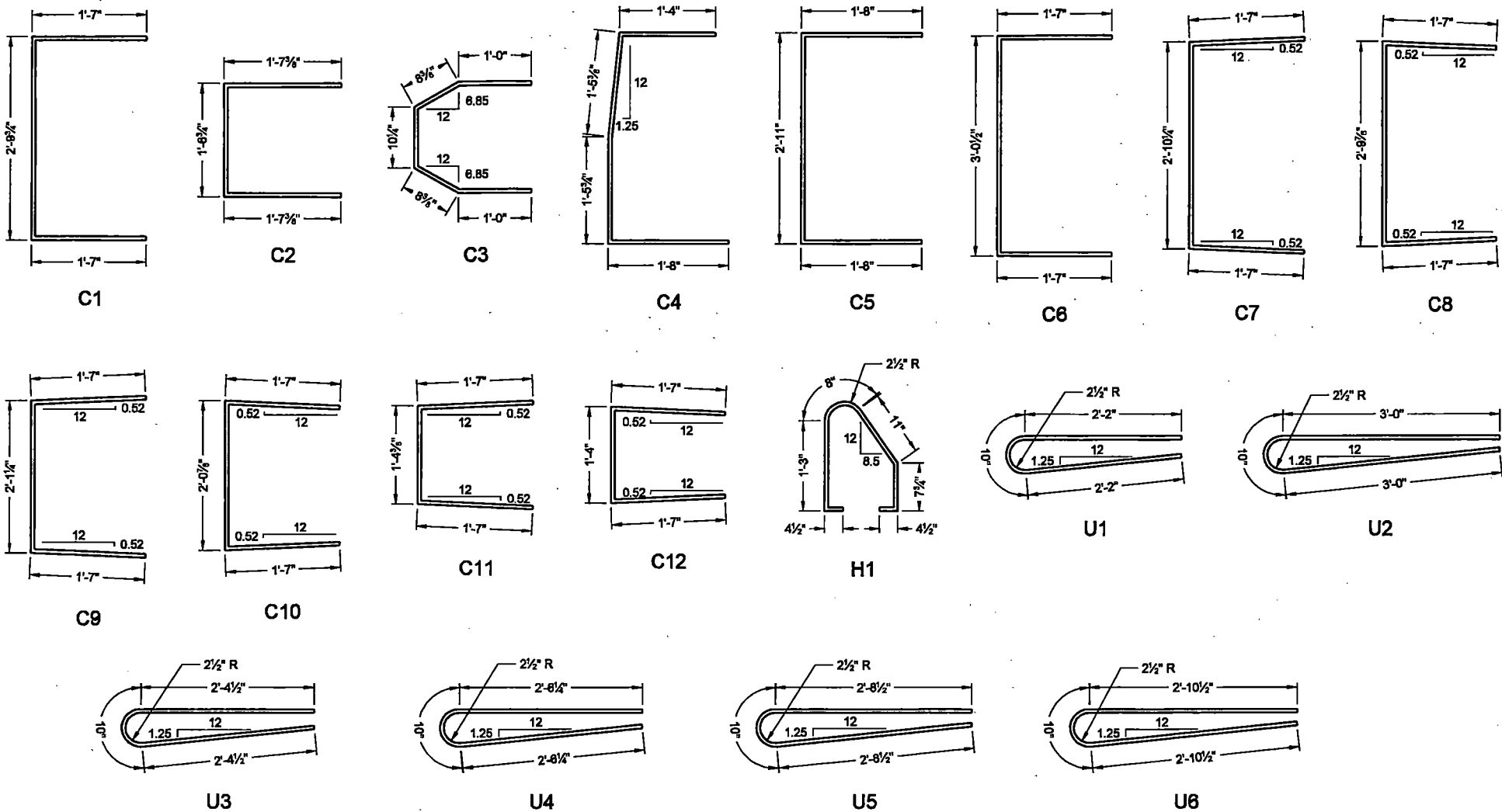
Jersey Barrier Details
Reinforcing Steel Layout

Carlisle Interchange
RP 200.243

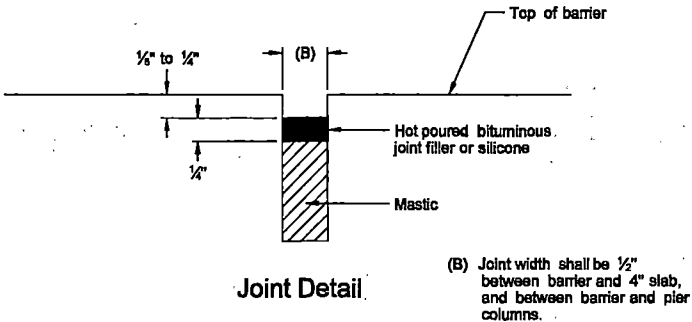
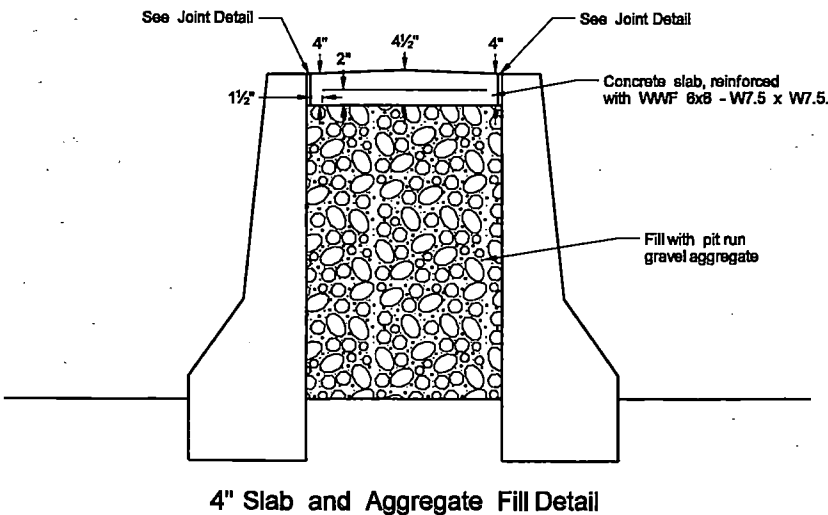
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	S-TIP-SBI-6-029(057)196	130	38

23 USC § 409 Documents
NDDOT Reserves All Objections

BAR LIST				
MARK	SIZE	NO.	LENGTH	SHAPE
C1	8	14	5'-11 3/4"	BENT
C2	5	8	4'-8 1/2"	BENT
C3	5	4	4'-3"	BENT
C4	5	48	5'-11 1/8"	BENT
C5	5	4	6'-3"	BENT
C6	5	24	6'-2 1/2"	BENT
C7	5	8	6'-0 1/4"	BENT
C8	5	8	5'-11 7/8"	BENT
C9	5	8	5'-3 1/4"	BENT
C10	5	8	5'-2 7/8"	BENT
C11	5	8	4'-8 3/4"	BENT
C12	5	8	4'-8"	BENT
H1	5	224	4'-2 3/4"	BENT
T1	5	18	25'-11"	STRAIGHT
T2	5	36	27'-2"	STRAIGHT
T3	5	12	9'-4 1/4"	STRAIGHT
T4	5	8	8'-7"	STRAIGHT
U1	5	32	5'-2"	BENT
U2	5	84	6'-10"	BENT
U3	5	28	5'-7"	BENT
U4	5	32	5'-10 1/2"	BENT
U5	5	28	6'-3"	BENT
U6	5	20	6'-7"	BENT



BENT BAR DETAILS

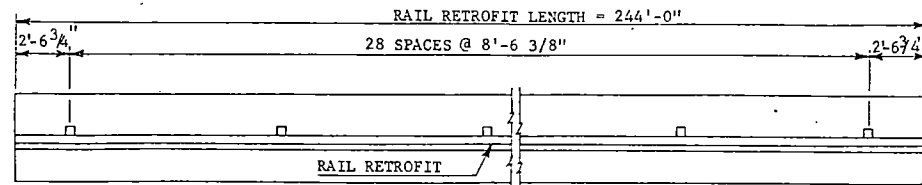


- Construction notes:
1. Barriers shall be constructed according to the provisions of Section 602.03 B.4 except that there shall be no deflection joints. Make 1/2" V-grooves in all faces of the barriers at approximately 10-foot spacings.
 2. Dimensions of bent bars are given out to out. The length of bent bars listed is the sum of the detailing dimensions. All radii are given to the inside of the bend.
 3. Reinforcing steel shall be grade 60, and concrete shall be Class AAE-3.
 4. Longitudinal reinforcing shall be lap spliced 18".
 5. Surface finish "D" shall be required for all exposed surfaces of the barrier.

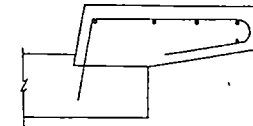
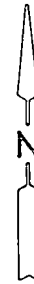
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Jersey Barrier Details, Bent Bar Details, Bar List, Joint Detail, 4" Slab and Aggregate Fill Detail

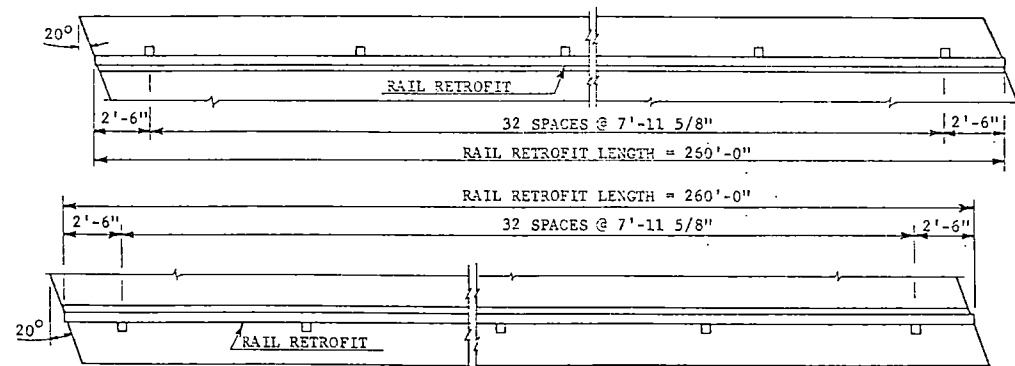
Carlisle Interchange
RP 200.243



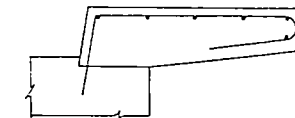
PLAN SHOWING RAIL RETROFIT POST SPACING
BRIDGE NO. 29-196.014 BOWSMONT INT. 488.0 L.FT.



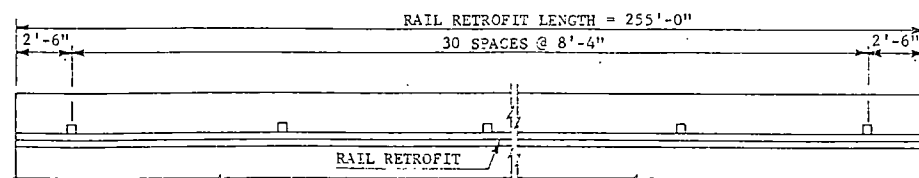
EXISTING CURB
BR. NO. 29-196.014
BR. NO. 29-203.413



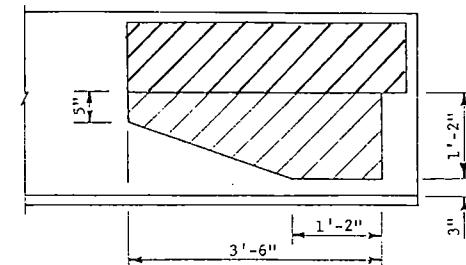
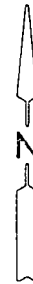
PLAN SHOWING RAIL RETROFIT POST SPACING
BRIDGE NO. 29-200.243 CARLISLE INT 520.0 L.FT.



EXISTING CURB
BR. NO. 29-200.243



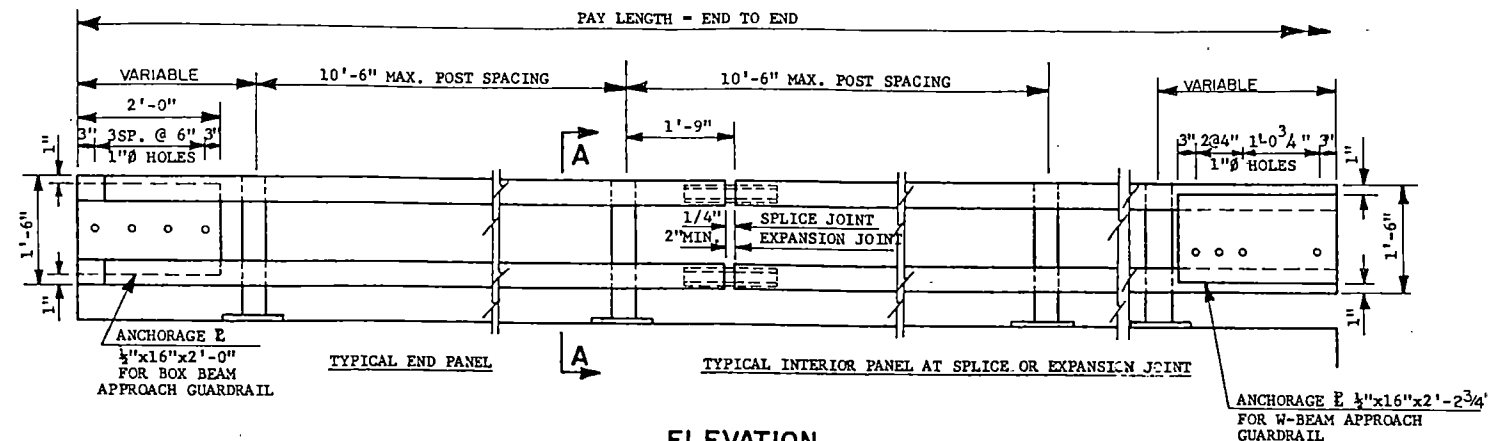
PLAN SHOWING RAIL RETROFIT POST SPACING
BRIDGE NO. 29-203.413 JOLIETTE INT. 510.0 L.FT.



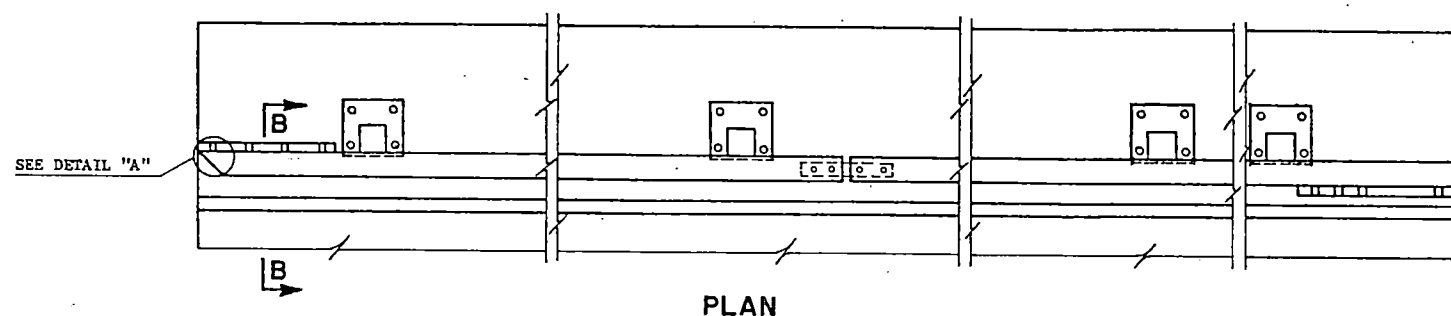
PLAN VIEW

SHOWING SPECIAL END BLOCK
WHICH NEEDS TO BE REMOVED
PRIOR TO INSTALLATION OF
RAIL RETROFIT.
HEIGHT OF END BLOCK IS 1'-6"
LOCATED ON ALL 4 CORNERS
AT BRIDGE NO. 29-196.014
" " 29-200.243
" " 29-203.413
REMOVAL TO BE INCIDENTAL TO
THE ITEM "DOUBLE BOX BEAM
RAIL RETROFIT (FREE STANDING)"

QUANTITIES	
DOUBLE BOX BEAM RAIL RETROFIT (FREE STANDING)	1514.0 L.FT.
1-29 RAIL RETROFIT	



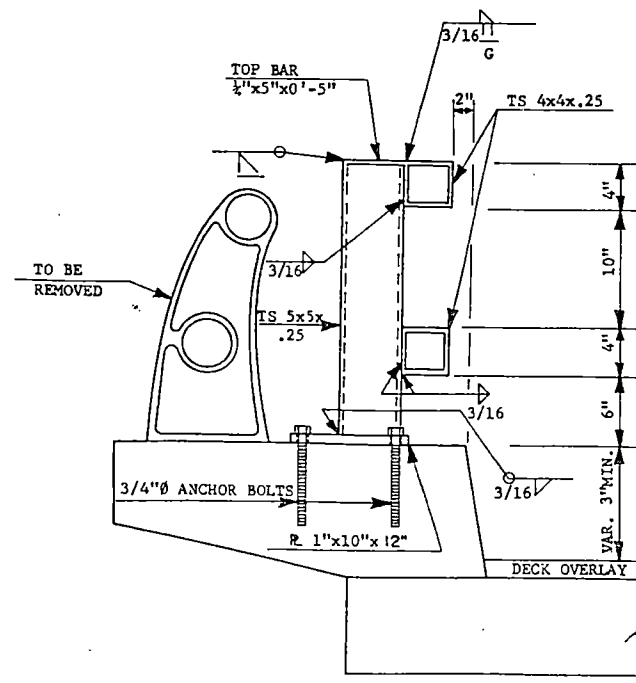
ELEVATION



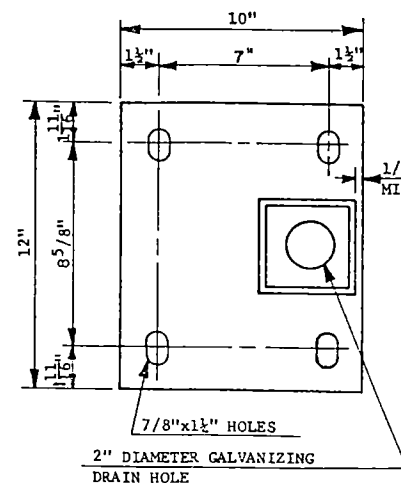
PLAN

CUT TOP AND BOTTOM WALL TO SHAPE AND BEND SIDE WALLS AS SHOWN. THE REMAINING TOP AND BOTTOM WALLS SHALL BE WELDED TO THE SIDEWALLS.

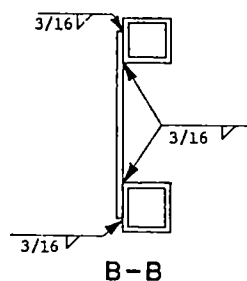
DETAIL "A"



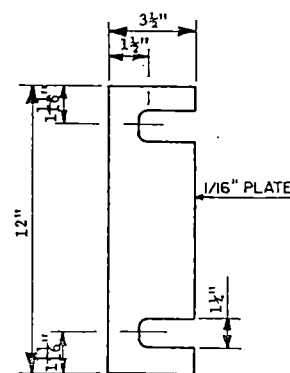
A-A



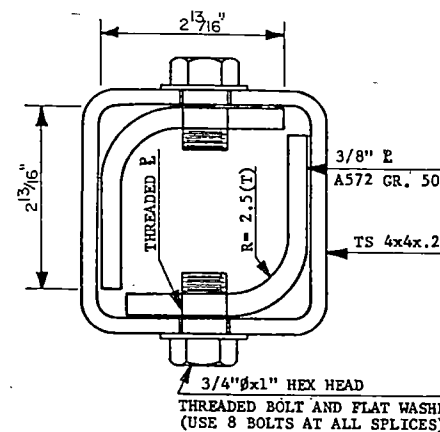
POST BASE DETAIL



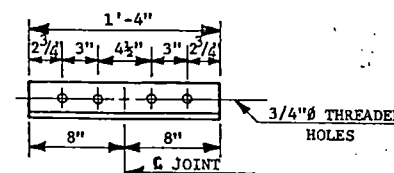
B-B



POST SHIM



RAIL SPLICE



RAIL SPLICE SLEEVE

NOTES:

1. THE BID ITEM SHALL BE "DOUBLE BOX BEAM RAIL RETROFIT". THE PAY LENGTH SHALL BE END TO END AND SHALL BE IN LINEAR FEET.
2. THE RAILING AND POSTS SHALL CONFORM TO ASTM A500, COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES, GRADE B. THE POST TOPS, POST BASE, SHIMS AND ANCHORAGE PLATES SHALL CONFORM TO ASTM A36 STRUCTURAL STEEL.
3. THE ANCHOR BOLTS MUST BE ABLE TO DEVELOP IN TENSION THE EQUIVALENT OF A 3/4" ϕ A325 BOLT. (13,195 LBS.) THE ANCHOR BOLTS MAY BE MECHANICAL TYPE, GROUTIN TYPE OR OTHER TYPE THAT CAN DEVELOP THE REQUIRED TENSION IN THE EXISTING CONCRETE.
4. THE TRAFFIC FACE OF THE POST SHALL BE INSTALLED VERTICAL. THE POSTS SHALL BE PERPENDICULAR TO THE TOP OF THE CURB IN THE OTHER DIRECTION. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQUIRED FOR PROPER ALIGNMENT.
5. RAILS SHALL BE FABRICATED SO THAT EACH RAIL IS ATTACHED TO A MINIMUM OF 2 POSTS AND A MAXIMUM OF 4 POSTS.
6. THE BOX BEAM RAIL RETROFIT SHALL BE FABRICATED AND GALVANIZED ACCORDING TO SECTION 862 OF THE STANDARD SPECIFICATIONS.
7. THE SPLICE JOINT GAP SHALL ALWAYS BE 1/4". THE EXPANSION JOINT GAP SHALL BE 2" UNLESS OTHERWISE SHOWN ON THE BRIDGE PLANS.
8. ALL ANCHOR AND SPLICE BOLTS SHALL BE GALVANIZED AND WILL BE A325.
9. THE CONTRACTOR SHALL SUBMIT THE SHOP DRAWINGS FOR DOUBLE BOX BEAM RAIL FOR APPROVAL BY THE BRIDGE ENGINEER BEFORE FABRICATION.
10. EXISTING POSTS AND RAILING SHALL BE REMOVED AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE COST FOR THIS REMOVAL SHALL BE INCIDENTAL TO THE PAY ITEM "DOUBLE BOX BEAM RAIL RETROFIT".

DOUBLE BOX BEAM
RAIL RETROFIT
(FREE STANDING)

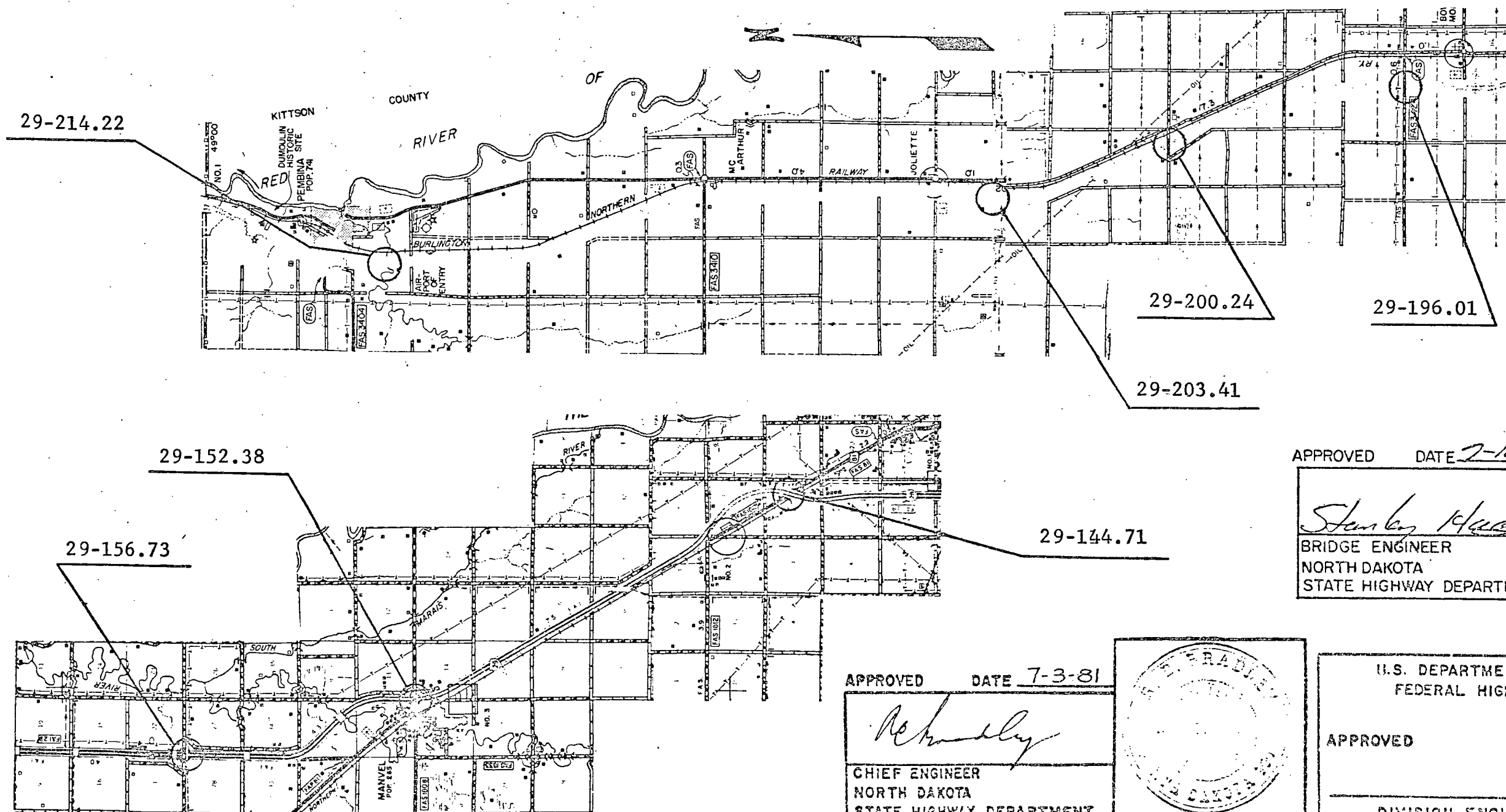
NORTH DAKOTA STATE HIGHWAY DEPARTMENT

REPAIR & OVERLAY PORTLAND CEMENT CONCRETE BRIDGE
DECKS IN GRAND FORKS & PEMBINA COUNTIES
FEDERAL AID PROJECT NO. IR-029-3(36)092
CONTRACT NO. 2

FHWA REGION	STATE	PROJECT	SHEET NO.
8	N.D.	IR-029-3(36)092	1

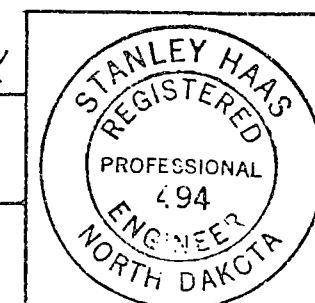
GOVERNING SPECIFICATIONS:

Standard Specifications adopted by the North Dakota State Highway Department, Oct. 1976, and approved by the Federal Highway Administration on December 17, 1976, and other Contract Provisions submitted herewith.



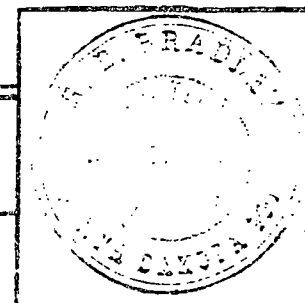
APPROVED DATE 2-10-81

Stanley Haas
BRIDGE ENGINEER
NORTH DAKOTA
STATE HIGHWAY DEPARTMENT



APPROVED DATE 7-3-81

Rehder
CHIEF ENGINEER
NORTH DAKOTA
STATE HIGHWAY DEPARTMENT



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ENGINEER

DATE

THE CONTRACTOR SHALL NOTIFY THE DISTRICT OFFICE OF THE STATE HIGHWAY DEPARTMENT WELL IN ADVANCE OF ANY WORK REQUIRED TO BE DONE BY THE STATE MAINTENANCE SO AS NOT TO INTERFERE WITH THE CONTRACTOR'S OPERATIONS.

STRUCTURAL DETAILS OF SPECIFIC STRUCTURES ARE AVAILABLE AT THE DISTRICT OFFICE OR AT THE BRIDGE DIVISION OF THE CENTRAL OFFICE IN BISMARCK.

LIMITS OF CLASS 2 AND 3 OVERLAY SHALL BE DETERMINED BY THE ENGINEER AND OUTLINED WITH SOME SUITABLE MARKING. THESE AREAS SHALL NOT BE EXPANDED UNLESS APPROVED BY THE ENGINEER.

ANY REINFORCING STEEL WHICH IS REPLACED IN THE DECK OR ABUTMENT SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 109-5 OF THE ND STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES. THE LAP LENGTH SHALL BE A MINIMUM OF 30 DIAMETERS. NO WELDED SPLICES WILL BE ALLOWED.

WITH THE EXCEPTION OF THE BOWESMONT INTERCHANGE, THE OVERLAY SHALL BE PLACED OVER ONE HALF OF THE BRIDGE FROM THE LONGITUDINAL CENTERLINE TO THE CURB IN ONE CONTINUOUS POUR. TRAFFIC SHALL BE MAINTAINED ON THE OTHER HALF OF THE ROADWAY.

CANOPY
SHOULD THE DEPTH OF CONCRETE REMOVAL MAKE IT POSSIBLE FOR THE CHIPPING HAMMER TO PENETRATE THE FULL DEPTH OF THE SLAB, A MEANS OF PROTECTING THE ROADWAY BENEATH THE STRUCTURE FROM FALLING DEBRIS SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.

PAYMENT FOR SUCH PROTECTION WILL BE MADE IN ACCORDANCE WITH SECTION 109.5 OF THE ND STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES.

SUB-BASE MATERIAL

THE COST OF PLACING ANY REQUIRED AGGREGATE UNDER THE REPLACED APPROACH PANELS AND THE PCC PAVEMENT PANELS, INCLUDING THAT REQUIRED TO BRING THEM TO THE PROPER GRADE, SHALL BE INCIDENTAL TO THE ITEMS REMOVE AND REPLACE APPROACH SLAB AND REMOVE AND REPLACE PCC PAVEMENT.

ROSEMONT INTERCHANGE

WORK ON THE ABUTMENT MODIFICATION AND ON THE DECK OVERLAY SHALL NOT BEGIN UNTIL THE SPRING OF 1983 AND SHALL BE OPENED TO TWO-WAY TRAFFIC BY JULY 15, 1983.

PANEL REMOVAL

THE THICKNESS OF THE EXISTING PCC PAVEMENT PANELS AND/OR THE APPROACH SLAB MAY VARY FROM THE ORIGINAL PLACEMENT THICKNESS DUE TO MUDJACKING WHICH HAS BEEN DONE BY MAINTENANCE FORCES ON SOME STRUCTURES. THE COST OF ANY EXTRA REMOVAL SHALL BE INCIDENTAL TO THE ITEMS REMOVE AND REPLACE PCC PAVEMENT AND REMOVE AND REPLACE APPROACH SLAB.

REFACING CURBS

THE ROADWAY FACES OF THE CURBS TO BE REFACED SHALL BE CLEANED BY SANDBLASTING AND/OR CHIPPING TO A DEPTH SUFFICIENT TO OBTAIN SOUND, DURABLE CONCRETE. THE MINIMUM DEPTH OF CONCRETE REMOVED SHALL BE SUCH THAT AN AVERAGE DEPTH OF ONE INCH OF CLEARANCE BEYOND THE INSIDE SURFACE OF THE VERTICAL CURB STEEL IS OBTAINED.

THE CURBS SHALL BE REFACED BEFORE THE OVERLAY CONCRETE IS PLACED ON THE DECK. PRIOR TO REFACING THE CURB, THE CLEANED SURFACE SHALL BE TREATED WITH A CEMENT GROUT OR OTHER APPROVED BONDING AGENT. THE CURBS SHALL BE REFACED WITH LOW SLUMP OVERLAY CONCRETE. THE THICKNESS OF THIS REFACING MATERIAL SHALL PROVIDE A MINIMUM OF ONE AND ONE-HALF INCHES OF COVER ON THE STEEL REINFORCEMENT. TO OBTAIN A UNIFORM, EVEN FACE ON THE CURBS, FORMING OR OTHER METHODS APPROVED BY THE ENGINEER SHALL BE USED. PAYMENT WILL BE AT THE UNIT PRICE BID PER LINEAR FOOT OF CURB REFACED AND WILL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK.

CLASS OF CONCRETE

THE CONCRETE MIX USED IN THE OVERLAYS SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS. ALL OTHER CONCRETE SHALL BE EITHER CLASS AE-1 OR AE-3 AT THE OPTION OF THE CONTRACTOR.

HOT BITUMINOUS PAVEMENT - SPECIAL

THE ASPHALT CEMENT AND THE TACK COAT ARE NOT SEPARATE PAY ITEMS, BUT SHALL BE INCLUDED IN THE PRICE BID FOR "HOT BITUMINOUS PAVEMENT-SPECIAL". THE AGGREGATE USED FOR HOT BITUMINOUS PAVEMENT AND THE TYPE AND GRADE OF LIQUID ASPHALT FOR TACK SHALL BE APPROVED BY THE ENGINEER IN THE FIELD. THE HOT BITUMINOUS PAVEMENT MATERIAL SHALL BE HOT MIXED, BLADE LAID, COMPACTED AND MAY BE OBTAINED FROM A COMMERCIAL SOURCE. IT IS INTENDED THAT THE OPTIMUM AMOUNT OF ASPHALT CEMENT BE USED IN THE MIX, AND THE QUANTITY SHOWN UNDER THE BASIS OF ESTIMATE MAY BE ADJUSTED BY THE ENGINEER IF NECESSARY.

SHOP DRAWINGS

THE CONTRACTOR SHALL SUBMIT THE FOLLOWING SHOP DRAWINGS TO THE BRIDGE ENGINEER FOR APPROVAL BEFORE FABRICATION:

- ## 1. STEEL EXTRUSIONS FOR EXPANSION JOINT MODIFICATIONS

CONSTRUCTION JOINTS

ALL CONSTRUCTION JOINTS SHALL BE CLEANED OUT PRIOR TO PLACEMENT OF THE OVERLAY. THE OVERLAY SHALL THEN BE SAW CUT AT THESE LOCATIONS WITHIN 24 HOURS OF PLACEMENT. THE SAW CUT SHALL BE 1" DEEP BY 1/8" TO 3/8" WIDE. THE JOINT SHALL THEN BE SEALED WITH HOT POURED ELASTIC TYPE JOINT SEALER "0" TO 1/8" BELOW THE FINISHED PAVEMENT. THE COST OF ANY SUCH WORK SHALL BE INCIDENTAL TO CLASS 1 OVERLAY.

GUARD RAIL AND/OR END POSTS

THE APPROACH GUARD RAIL WHICH IS SPECIFIED TO BE REMOVED AND RESET SHOULD BE RESET SO THAT THE TOP OF THE RAIL IS 27" ABOVE THE GROUND LINE AS RE-ESTABLISHED FOR THE BRIDGE APPROACHES. ALSO, THE BRIDGE END OF THE GUARD RAIL SHOULD MATCH THE ELEVATION OF THE MOUNTING HOLES IN THE END POSTS.

IF THE CONTRACTOR WISHES TO REMOVE ANY APPROACH GUARD RAIL OR END POSTS OTHER THAN THOSE SPECIFIED IN CONNECTION WITH PLACING CURB AND GUTTER SECTIONS, APPROACH TAPERS, OR DECK OVERLAYS, HE SHALL DO SO FOR HIS CONVENIENCE ONLY. THE COST OF ANY SUCH REMOVAL SHALL BE AT THE CONTRACTOR'S EXPENSE, AND THE REMOVED ITEMS SHALL BE REPLACED TO EXISTING CONDITIONS.

TWO-LANE, TWO-WAY ROADWAYS: THE MAINTENANCE AND PROTECTION OF TRAFFIC

FOR TWO-LANE, TWO-WAY ROADWAYS AT 32ND AVENUE, THOMPSON, AND MAYVILLE INTERCHANGES PROVIDES FOR FLAGGING THE TRAFFIC AT ALL TIMES, UNTIL THE ROADWAY IS COMPLETELY OPEN TO TRAFFIC. IN LIEU OF PROVIDING FLAGGING DURING THE TIME ONE-LANE TRAFFIC IS MAINTAINED A TRAFFIC SIGNAL SYSTEM MAY BE PROVIDED ELIMINATING THE NEED FOR FLAGGING DURING THE TIME ONE-LANE TRAFFIC IS MAINTAINED. THE COST OF FLAGGING DURING THE ONE-LANE TRAFFIC IS MAINTAINED SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE PRICE BID FOR TRAFFIC CONTROL. THE TRAFFIC SIGNAL SYSTEM SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.

PORTABLE PRECAST CONCRETE MEDIAN BARRIERS: THE NUMBER OF PRECAST CONCRETE MEDIAN BARRIERS FURNISHED ON THE PROJECT SHALL BE 90-10 FOOT UNITS. THIS NUMBER WILL PROVIDE COVERAGE FOR LONGEST STRUCTURE AND APPROACH ON THIS PROJECT. IF THE CONTRACTOR CHOOSES TO WORK ON MORE THAN ONE STRUCTURE, ADDITIONAL BARRIERS AND ATTENUATION DEVICES SHALL BE FURNISHED AT HIS OWN EXPENSE. THE 90-10 FOOT BARRIERS SHALL BECOME THE PROPERTY OF THE STATE UPON COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL FURNISH, INSTALL, MOVE AND DELIVER TO THE STATE HIGHWAY DISTRICT YARD AS REQUIRED. THE COST OF FURNISHING, INSTALLING, MOVING AND DELIVERING THE PRECAST CONCRETE MEDIAN BARRIERS SHALL BE INCIDENTAL TO THE PRICE BID FOR TRAFFIC CONTROL.

SHOULDER REPAIR

AREAS OF BITUMINOUS SURFACED SHOULDERS USED TO CARRY TRAFFIC DURING CONSTRUCTION SHALL BE MAINTAINED BY THE CONTRACTOR AND, AFTER COMPLETION OF THE WORK, SHALL BE RESTORED TO SATISFACTORY CONDITION. THE CONTRACTOR WILL BE REIMBURSED AT THE RATE OF \$25.00 PER TON FOR HOT MIX USED TO MAINTAIN AND REPAIR THE SHOULDERS. THIS PAYMENT WILL CONSTITUTE FULL REIMBURSEMENT FOR ALL MATERIALS, LABOR, AND EQUIPMENT REQUIRED TO MAINTAIN AND REPAIR THE SHOULDERS. THE QUALITY OF AGGREGATE AND GRADE OF ASPHALT CEMENT USED FOR THE HOT MIX SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

MOUNTABLE CURB & GUTTER

WHERE SPECIFIED, THE MOUNTABLE CURB & GUTTER SHALL BE BUILT TO MATCH THE NEW GRADE AS ESTABLISHED FOR THE BRIDGE APPROACHES. IN A DISTANCE OF 10 FEET, THE CURB SHALL TRANSITION FROM THE EXISTING SECTION ON THE BRIDGE TO THE TYPICAL SECTION SHOWN ON THE STANDARD.

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO
6	N.D.	IR-029-3(36)092	3

SPECIAL PROVISIONS	
NO.	NAME
SP-103-3	Award and Execution of Contract
SP-107-7	Legal Relations and Responsibility to Public
SP-108-9	Prosecution and Progress
SP-108-19	Prosecution and Progress
SP-109-4	Measurement and Payment
SP-406-7	Hot Bituminous Pavement
SP-746-1	Flagging
SP-756-2	Field Laboratory
SP-762-6	Maintenance and Protection of Traffic
SP-384	Pressure Relief Joint Filler
SP-402	Repair and Overlay of Portland Cement Concrete Decks with Low Slump Concrete
SP-370	Railway Protection Insurance
SP-600-3	Portland Cement Concrete
SP-806-3	Aggregates For Portland Cement

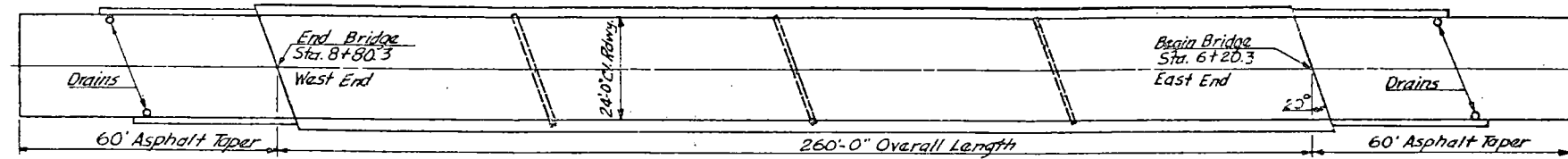
SUMMARY OF QUANTITIES

[illegible]

Revised 7/14/82

NOTES & QUANTITIES

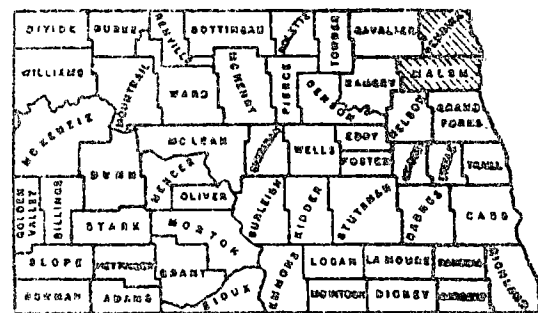
FED. ROAD DIST. NO.	STATE	Federal Aid Project Number	TOTAL SHEETS
8	N.D.	1R-029-3(36)092	12



PLAN
24'-0" Clear Roadway

CONTRACT NO. 2

CARLISLE INTERCHANGE



SKETCH-MAP OF NORTH DAKOTA
SHOWING COUNTIES

DESIGN DATA

TRAFFIC	AVERAGE DAILY	EST. 8TH MAX. PER.
CURRENT TRAFFIC (1957) 11050 PASS. 185 TRUCKS 1256 TOTAL		148
TRAFFIC FORECAST (1977) 13570 PASS. 630 TRUCKS 4200 TOTAL		700
DESIGN SPEED	70 MPH	
TRAFFIC CLASSIFICATION	MIXED	
MINIMUM SIGHT DISTANCE (NON PASSING)	600	
MINIMUM SIGHT DISTANCE (SAFE PASSING)	3200	
MINIMUM PASSING SIGHT DISTANCE FOR MARKING	1200	
BRIDGES DESIGN LOADING	H20 S16 (1953)	
MINIMUM WIDTH	24'	



SCALES
LAYOUT SHEET: 1 IN. = 5000 FT.
PLAN AND
PROFILE DRAWINGS (PART. 1 IN. = 10 FT.)
STRUCTURAL DRAWINGS: AS SHOWN
CROSS SECTION SHEETS: 1 IN. = 10 FT.

LIST OF STRUCTURAL DRAWINGS

29-5(9)-1	H-6228	H-6405	29-7
29-5(9)-2	H-6347	H-0104	29-7.5
29-5(9)-3	H-0401	H-6225	29-8
H-6406	H-6198	H-6330	

LIST OF STANDARD DRAWINGS

Fed Aid Name Plate	STD. 149
Bridge Bench Marks	STD. 16

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT

PLANS
FOR THE PROPOSED IMPROVEMENT OF A
STATE HIGHWAY
IN PEMBINA COUNTY

FEDERAL AID PROJECT NO. I-29-5(9)195
STRUCTURAL PLANS

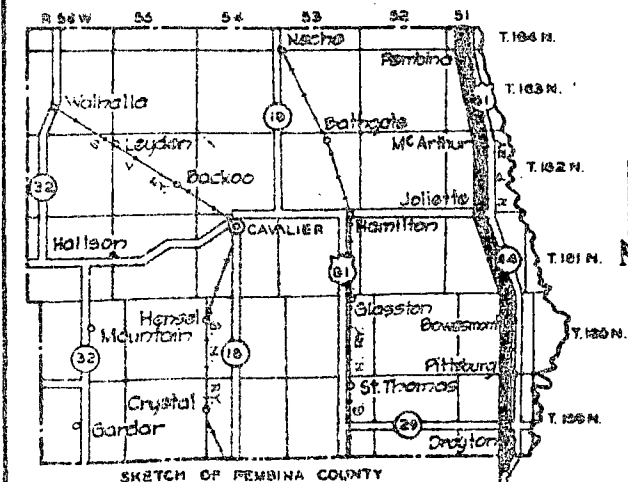
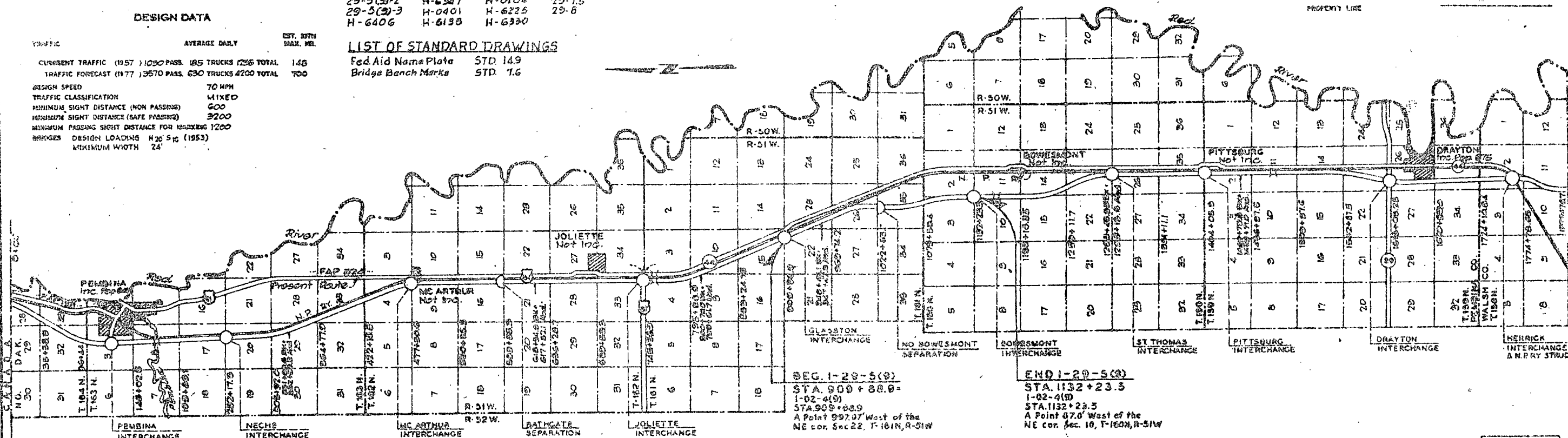
INDEX OF DRAWINGS	
SHEET NO. 1	TITLE PAGE & SUMMARY OF QUANTITIES
SHEETS NO. 2	TO 9 INCL. PLAN AND PROFILE DRAWINGS
SHEETS NO. 10	TO 24 INCL. STRUCTURAL DRAWINGS
SHEETS NO. 25	TO 26 INCL. CROSS SECTIONS
Sheets 7 to 9 Inc. & 25 to 26 Inc. are from I-02-4(9)	

GOVERNING SPECIFICATIONS:
Standard Specifications adopted by the North Dakota State Highway Department Jan. 1934 and approved as amended by the Bureau of Public Roads May 7, 1956. Required Special Provisions dated Oct. 9, 1957 and approved by the Bureau of Public Roads Nov. 20, 1957 and others submitted herewith.

KEY TO CONVENTIONAL SIGNS

STATE & NATIONAL LINES	---
COUNTY LINE	---
TOWNSHIP & RANGE LINES	---
GRADE LINE	---
CENTERLINE OF CONSTRUCTION	---
OLD RIGHT OF WAY LINE	---
NEW RIGHT OF WAY LINE	---
ABANDONED RIGHT OF WAY LINE	---
PROPERTY LINE	---

LENGTH OF PROJECT	
PROJECT MILES-GROSS	4.230
MILES-NET	0.000
TOTALS	4.230 0.000



QUANTITIES											
LOCATION	15B	60A	62A	63A	65C	BRIDGE BENCH MARKS	ORNAMENTAL METAL RAILING	64'-10 1/2" PRE STRESSED GIRDER 26"	61'-15" PRE STRESSED GIRDER 22"	65C FURNISH DELIVER STEEL PILING (LARS) 1050	65C DRIVEN STEEL PILING LF
	CLASS 2 EXCAVATION CU YD	WATER FOR COMPACTION CU YD	CLASS A-1 CONCRETE CU YD	REINFORCING STEEL LB.	STRUCTURAL STEEL LB.			EACH	EACH	LF	LF
909+88.9 E	75	3	3174	52988	6300	1	594	24		1050	2904
1022+63.7 E	90	3	2862	47616	5100	1	472		20	3150	2904
1192+23.5 E	100	3	2862	47616	5100	1	472		20	3240	2994
GRAND TOTAL	265	9	8898	130220	16300	3	1448	24	40	7440	8802

APPROVED DATE 8-11-58
Ref. [Signature]
CHIEF ENGINEER
NORTH DAKOTA STATE
HIGHWAY DEPARTMENT

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER DATE

BRIDGE CODE NO.	FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
X781	5	N.D.	1-29-5(9)		1	5

Dimensions for reinforcing steel bent bars are given center to center unless noted.

The fabricator shall add a prefix to each bar designation to differentiate between structures and/or units of a structure on the project.

Welding will not be paid for directly, but shall be included in the unit price bid for structural steel.

All exposed corners of concrete shall be beveled with 3/4" triangular moldings unless otherwise noted.

The roadway face of curbs, the outside vertical faces of the curbs, slab and girders, all of the end posts and all of the piers shall be given the "Rubbed Surface Finish". All other concrete shall be given the "Ordinary Surface Finish".

The entire curb shall be poured in one continuous run.

The dead load deflection and the vertical curve corrections have been accounted for and the true slab surface will be obtained by finishing the concrete 6" above the top of girders as shown.

The Structural Contractor shall completely backfill (using "Extra Compaction"), (1) behind the abutments to the subgrade elevation using material stockpiled at each end of the bridge by the Grading Contractor, and (2) in front of the abutments to the berm elevation using material removed from the various excavations on the bridge.

The Contractor will be responsible for maintaining existing traffic during his operations. Any detour that may be provided shall allow for two-way or four-way traffic as required and have sufficient gravel surfacing for all-weather use. The cost of maintaining this traffic shall be included in the unit price bid for various pay items.

The embankment at each end of the structure will be placed by the Grading Contractor.

Furnish and deliver steel piling shall be as shown on this sheet unless additional amounts are ordered by the Engineer. Piling not used shall become the property of the State.

"Driving Steel Piling" shall be according to Section 65C of the Standard Specifications except that the pay quantities will be measured below the bottom of the concrete pier or abutment.

A single or double acting steam, air or diesel hammer or a 4000-pound (minimum) gravity hammer may be used in driving the steel piles. The minimum size of hammer allowable will be one that develops not less than 22,000 foot pounds of energy per blow. A special pile driving cap recessed to fit closely around the pile and having full bearing on the pile head shall be used.

The 14BP89 steel test piling in place 10 feet left of survey line of overhead Station 7 + 37.5 shall be cut off to an elevation of 794.0 feet (Approximately 2 feet below the ground surface). The cost of excavating and cutting shall be included in the unit price bid for "Driving Steel Piling 14BP89".

The cost of incidental items shown on the plans but not listed in the estimate of quantities shall be included in the unit price bid for the various pay items.

Piling shall be driven to practical refusal.

ESTIMATE OF QUANTITIES	
SPEC. NO.	BID ITEM
12	REMOVING EXISTING STRUCTURE AT STA. _____ CU. YD.
16	EXCAVATION CLASS 1 _____ CU. YD.
15B	" " CLASS 2 70 75 CU. YD.
"	" " CLASS 3 _____ CU. YD.
60	CONCRETE CLASS A-1 _____ CU. YD.
60A	" " CLASS A-1 1/2 317.4 CU. YD.
	WATER FOR COMPACTION (10 GAL./CU. YD.) 3 "M" GAL.
62A	REINFORCING STEEL _____ LB.
63A	STRUCTURAL STEEL 5506 6300 LB.
64A	UNTREATED TIMBER _____ M.B.M.
64B	TREATED TIMBER _____ M.B.M.
65C	FURNISH & DELIVER STEEL PILING (14BP73) 1050 LIN. FT.
65D	DRIVE STEEL PILING 2904 LIN. FT.
65E	FURNISH & DELIVER STEEL PILING (14BP89) 2100 LIN. FT.
65F	UNTREATED TIMBER TEST PILES _____ EACH
65G	TREATED TIMBER TEST PILES _____ EACH
	ORNAMENTAL METAL RAILING 504 LIN. FT.
81	TEMPORARY CROSSING AND DETOUR _____
	BRIDGE BENCH MARKS 1 SET
*	64'-10 1/2" PRESTRESSED GIRDERS ~ 36" 24 EACH

SEE SPECIAL PROVISIONS

STRUCTURAL DRAWINGS

GENERAL DRAWING THIS SHEET

SUBSTRUCTURE H-6220, H-6347, H-0401, 29-5(9)-1

SUPERSTRUCTURE H-6405, H-0104, 29-5(9)-2, 29-5(9)-3, STD. 7.6, STD. 14.9

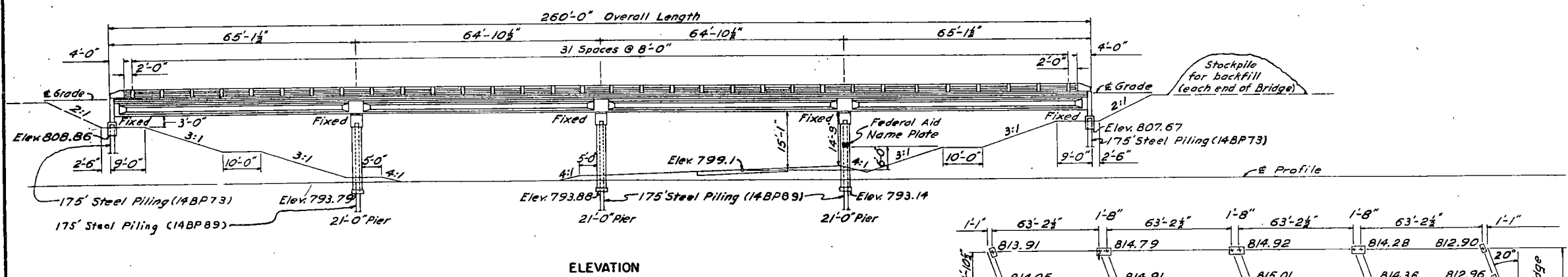
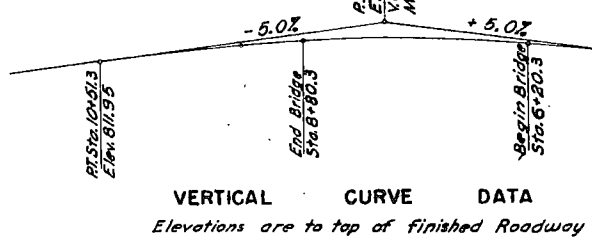
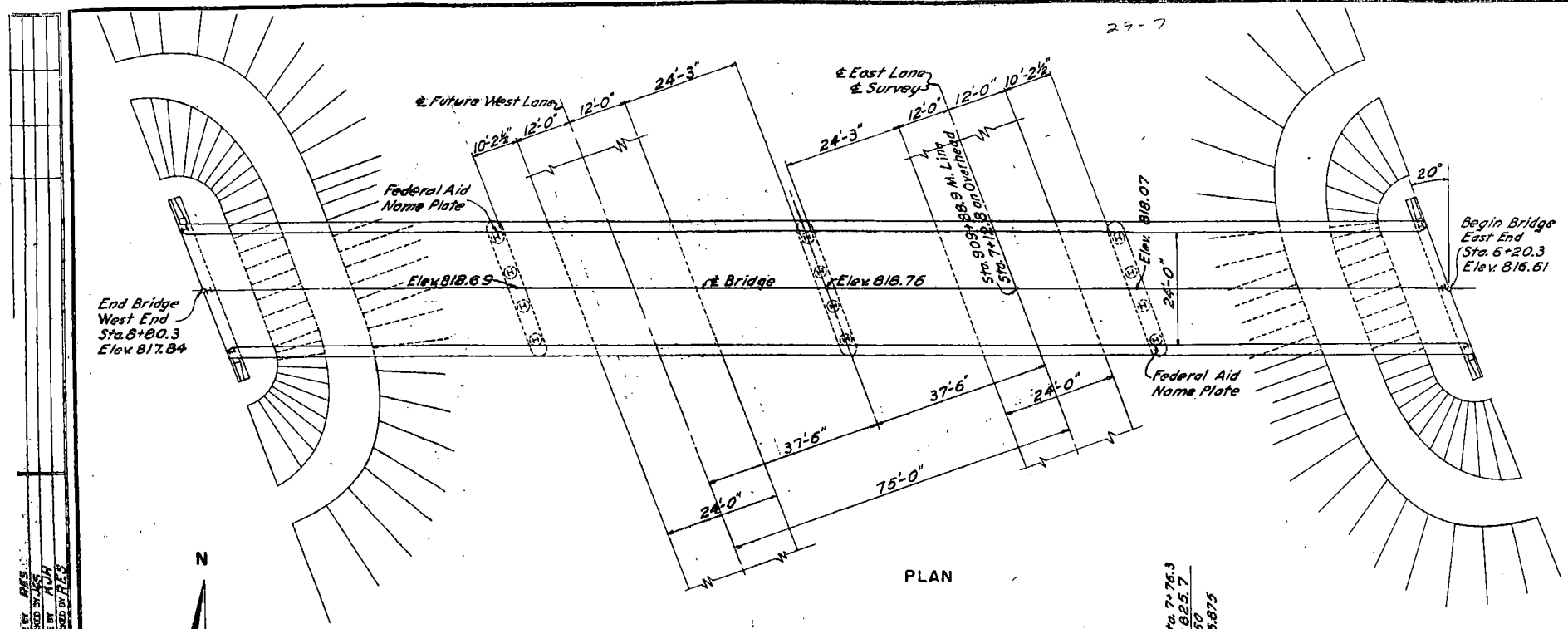
DESIGN LOADING H20 S16 (1953) SCALE 1 INCH = 15 FEET

NORTH DAKOTA
STATE HIGHWAY INTERCHANGE
GLASSTON INTERCHANGE
BRIDGE LAYOUT

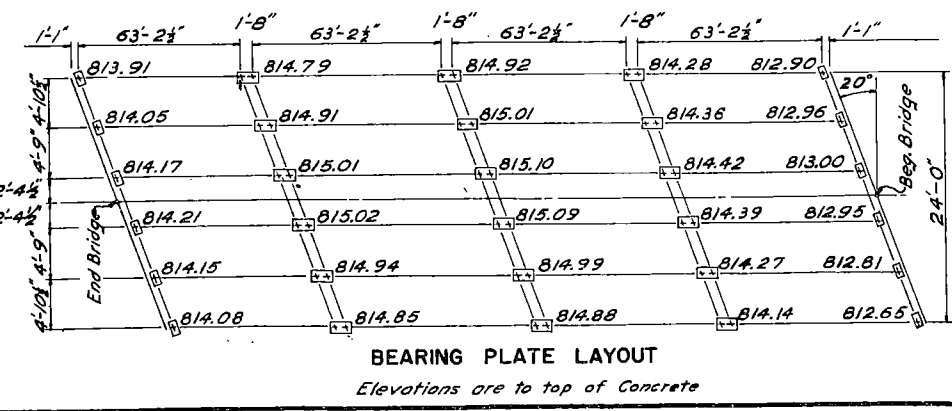
PROJECT 1-29-5(9) STA. 909+88.9

PEMBINA COUNTY

APPROVED 6-10-58 DATE *Joseph R. Kish* REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA



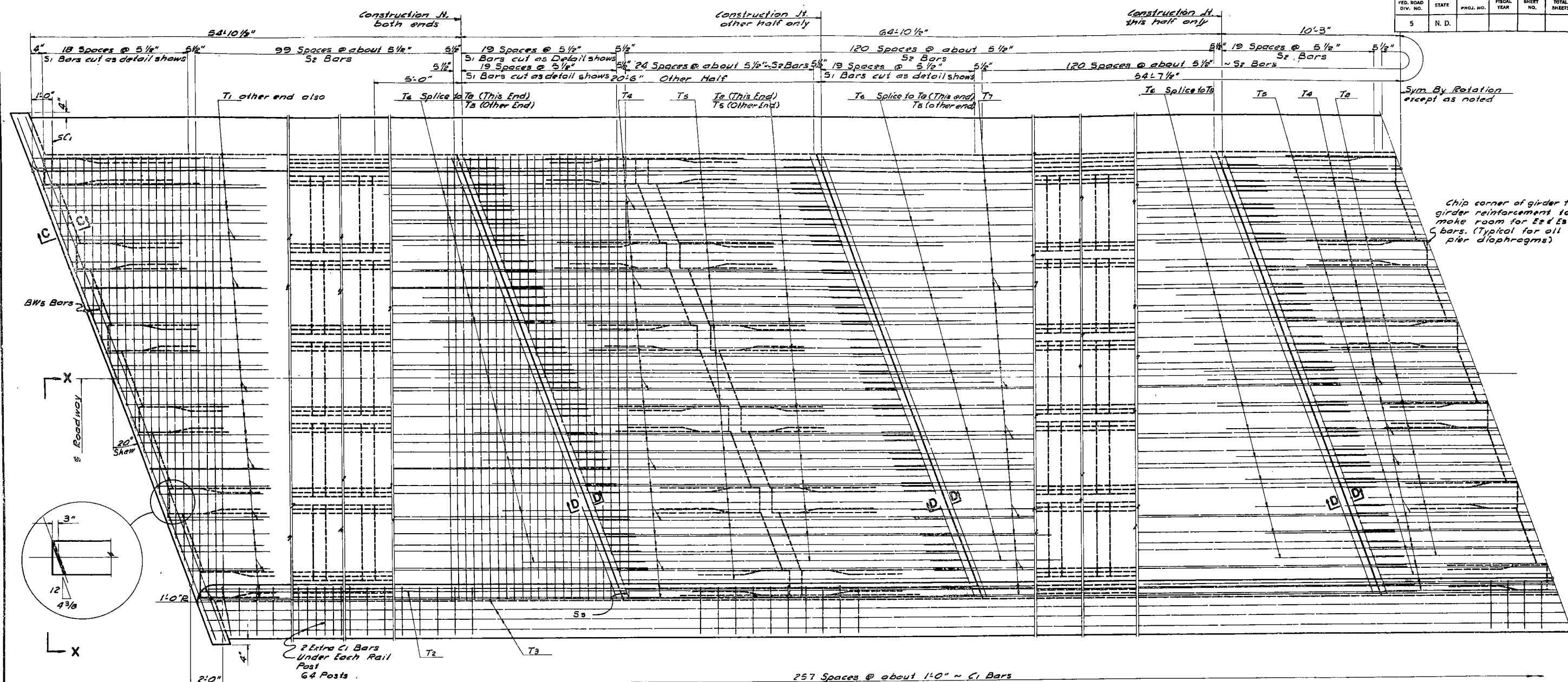
BENCH MARKS			PILE LOADING						
NO.	DESCRIPTION	LOCATION	ELEV.	LOCATION	DEAD LOAD	LIVE LOAD	EARTH	WIND	DESIGN LOAD
18	Jr. Main Hub Gnd. by Tele. Pole	Sta. 896+38	793.81	ABUTMENT	30.05T.	24.85T.	3.20T.	50 LB.	58.10 T.
19	1st Main Hub Gnd. by Tele. Pole	Sta. 905+62	795.62	PIER	58.05T.	21.23T.	2.70T.	15 LB.	61.98T.
19A	1st Main Hub Gnd. by Tele. Pole	Sta. 905+62	795.62					100 LB. LL.	
19B	Comp. Post Brass Cap	Sta. 918+42	794.78					LONG. FORCE	
		190.5' L. (Main Line)						ICE	



29-7

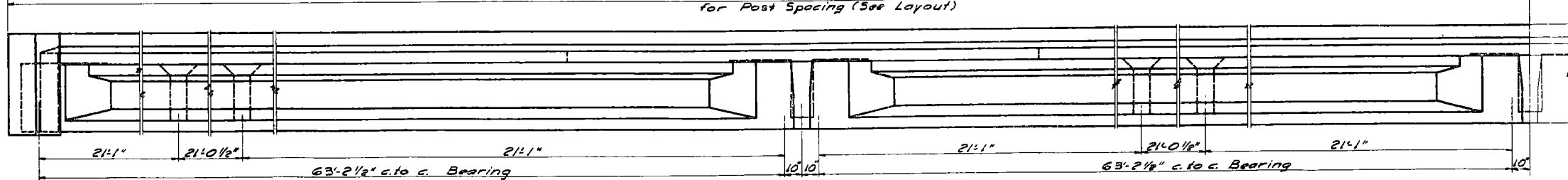
MADE BY
CHECKED BY
QUANTITIES CHECKED BY

FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N. D.				



HALF PLAN
Showing Reinforcing Steel

130'-0"
for Post Spacing (See Layout)

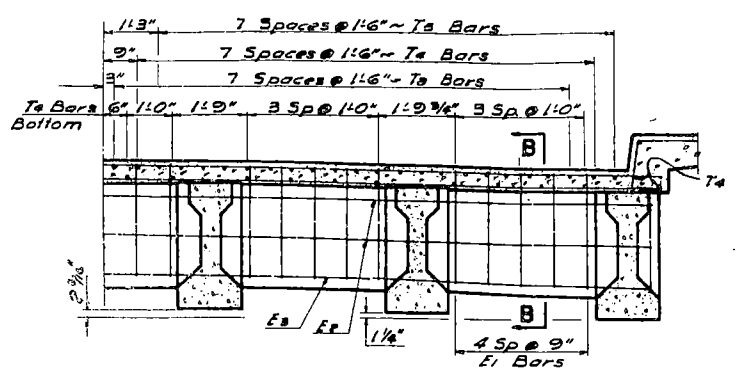


ELEVATION

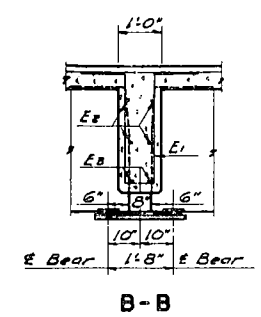
Theoretical Centerline

260' PRESTRESSED GIRDER
4-SPAN CONTINUOUS
SLAB
24' ROADWAY
20° SKEW

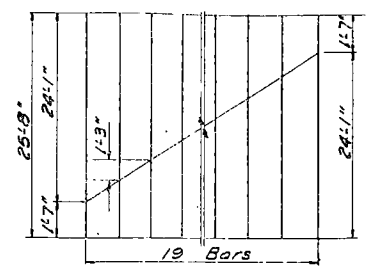
NO.	DATE	REVISIONS	MADE BY	CHECKED BY
1	10/1/59	1	W.C.	W.C.
2	10/1/59	2	W.C.	W.C.
3	10/1/59	3	W.C.	W.C.
4	10/1/59	4	W.C.	W.C.
5	10/1/59	5	W.C.	W.C.
6	10/1/59	6	W.C.	W.C.
7	10/1/59	7	W.C.	W.C.
8	10/1/59	8	W.C.	W.C.
9	10/1/59	9	W.C.	W.C.
10	10/1/59	10	W.C.	W.C.
11	10/1/59	11	W.C.	W.C.
12	10/1/59	12	W.C.	W.C.
13	10/1/59	13	W.C.	W.C.
14	10/1/59	14	W.C.	W.C.
15	10/1/59	15	W.C.	W.C.
16	10/1/59	16	W.C.	W.C.
17	10/1/59	17	W.C.	W.C.
18	10/1/59	18	W.C.	W.C.
19	10/1/59	19	W.C.	W.C.
20	10/1/59	20	W.C.	W.C.
21	10/1/59	21	W.C.	W.C.
22	10/1/59	22	W.C.	W.C.
23	10/1/59	23	W.C.	W.C.
24	10/1/59	24	W.C.	W.C.
25	10/1/59	25	W.C.	W.C.
26	10/1/59	26	W.C.	W.C.
27	10/1/59	27	W.C.	W.C.
28	10/1/59	28	W.C.	W.C.
29	10/1/59	29	W.C.	W.C.
30	10/1/59	30	W.C.	W.C.
31	10/1/59	31	W.C.	W.C.
32	10/1/59	32	W.C.	W.C.
33	10/1/59	33	W.C.	W.C.
34	10/1/59	34	W.C.	W.C.
35	10/1/59	35	W.C.	W.C.
36	10/1/59	36	W.C.	W.C.
37	10/1/59	37	W.C.	W.C.
38	10/1/59	38	W.C.	W.C.
39	10/1/59	39	W.C.	W.C.
40	10/1/59	40	W.C.	W.C.
41	10/1/59	41	W.C.	W.C.
42	10/1/59	42	W.C.	W.C.
43	10/1/59	43	W.C.	W.C.
44	10/1/59	44	W.C.	W.C.
45	10/1/59	45	W.C.	W.C.
46	10/1/59	46	W.C.	W.C.
47	10/1/59	47	W.C.	W.C.
48	10/1/59	48	W.C.	W.C.
49	10/1/59	49	W.C.	W.C.
50	10/1/59	50	W.C.	W.C.
51	10/1/59	51	W.C.	W.C.
52	10/1/59	52	W.C.	W.C.
53	10/1/59	53	W.C.	W.C.
54	10/1/59	54	W.C.	W.C.
55	10/1/59	55	W.C.	W.C.
56	10/1/59	56	W.C.	W.C.
57	10/1/59	57	W.C.	W.C.
58	10/1/59	58	W.C.	W.C.
59	10/1/59	59	W.C.	W.C.
60	10/1/59	60	W.C.	W.C.
61	10/1/59	61	W.C.	W.C.
62	10/1/59	62	W.C.	W.C.
63	10/1/59	63	W.C.	W.C.
64	10/1/59	64	W.C.	W.C.
65	10/1/59	65	W.C.	W.C.
66	10/1/59	66	W.C.	W.C.
67	10/1/59	67	W.C.	W.C.
68	10/1/59	68	W.C.	W.C.
69	10/1/59	69	W.C.	W.C.
70	10/1/59	70	W.C.	W.C.
71	10/1/59	71	W.C.	W.C.
72	10/1/59	72	W.C.	W.C.
73	10/1/59	73	W.C.	W.C.
74	10/1/59	74	W.C.	W.C.
75	10/1/59	75	W.C.	W.C.
76	10/1/59	76	W.C.	W.C.
77	10/1/59	77	W.C.	W.C.
78	10/1/59	78	W.C.	W.C.
79	10/1/59	79	W.C.	W.C.
80	10/1/59	80	W.C.	W.C.
81	10/1/59	81	W.C.	W.C.
82	10/1/59	82	W.C.	W.C.
83	10/1/59	83	W.C.	W.C.
84	10/1/59	84	W.C.	W.C.
85	10/1/59	85	W.C.	W.C.
86	10/1/59	86	W.C.	W.C.
87	10/1/59	87	W.C.	W.C.
88	10/1/59	88	W.C.	W.C.
89	10/1/59	89	W.C.	W.C.
90	10/1/59	90	W.C.	W.C.
91	10/1/59	91	W.C.	W.C.
92	10/1/59	92	W.C.	W.C.
93	10/1/59	93	W.C.	W.C.
94	10/1/59	94	W.C.	W.C.
95	10/1/59	95	W.C.	W.C.
96	10/1/59	96	W.C.	W.C.
97	10/1/59	97	W.C.	W.C.
98	10/1/59	98	W.C.	W.C.
99	10/1/59	99	W.C.	W.C.
100	10/1/59	100	W.C.	W.C.



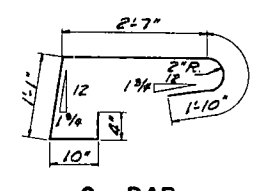
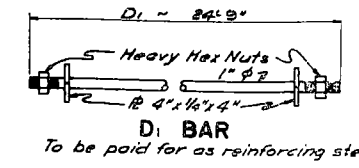
PIER DIAPHRAGM
Showing Reinforcing Steel over Pier



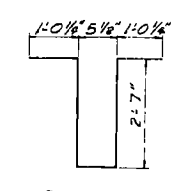
B-B



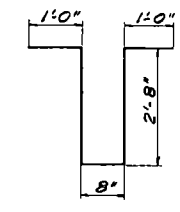
S1 BAR CUTTING DIAGRAM
Make Ten Sets as Shown



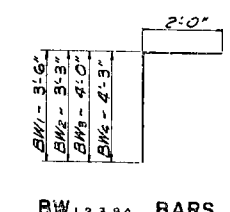
C1 BAR



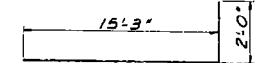
D2 BAR



E1 BAR



BW1,2,3,4 BARS

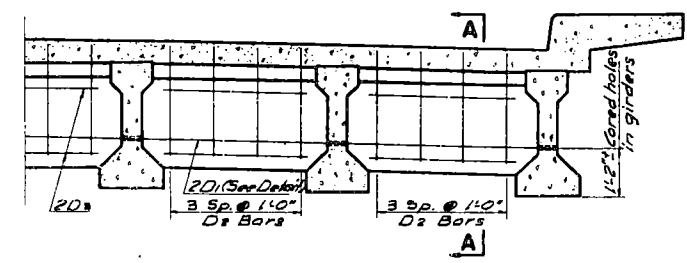


E3 BAR

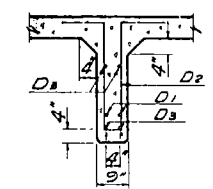
BENT BAR DETAILS

BAR LIST - COMPLETE SLAB				
MARK	NO.	SIZE	LENGTH	SHAPE
D1	644	5	6'8"	Bent
D2	16	(See Detail)		
D3	160	4	7'8"	Bent
D4	160	4	3'3"	Str.
E1	75	4	8'0"	Bent
E2	12	5	26'6"	Str.
E3	12	7	17'3"	Bent
S1	190	4	25'8"	Str.
S2	934	4	25'8"	Str.
S3	16	4	27'3"	Str.
T1	160	4	28'6"	Str.
T2	18	6	31'3"	Str.
T3	108	5	30'9"	Str.
T4	120	4	20'0"	Str.
T5	64	5	20'0"	Str.
T6	64	5	7'3"	Str.
T7	160	4	25'0"	Str.
T8	32	5	25'0"	Str.
BW1	40	5	5'6"	Bent
BW2	40	5	5'3"	Str.
BW3	12	5	6'0"	Str.
BW4	12	5	6'3"	Str.
BW5	10	5	32'6"	Str.

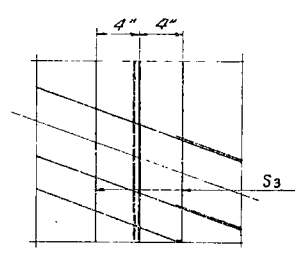
See Cutting Diagram
When bars are spliced
Lap #4 bars 20"
Lap #5 bars 25"
Lap #6 bars 30"
The projecting end, nut & plate
of the D1 Bars shall be painted
with two coats of aluminum
paint.



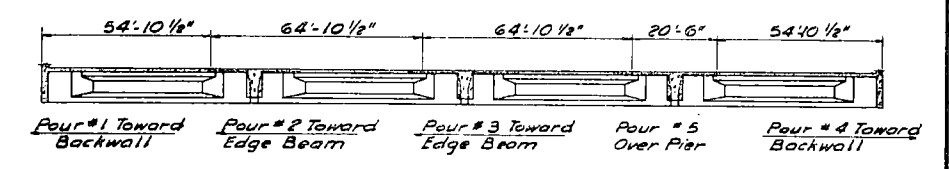
INTERMEDIATE DIAPHRAGM



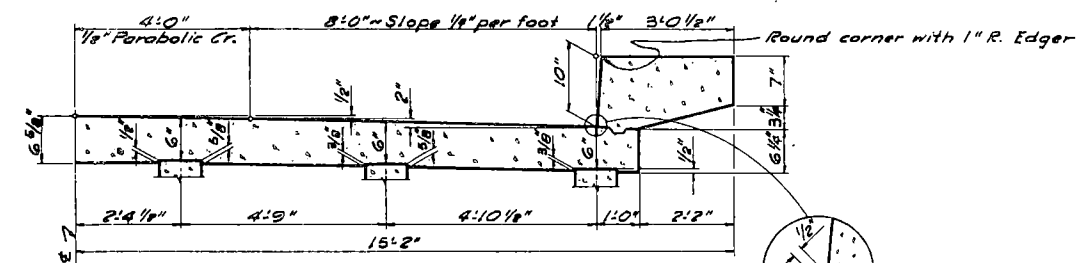
A-A



D-D

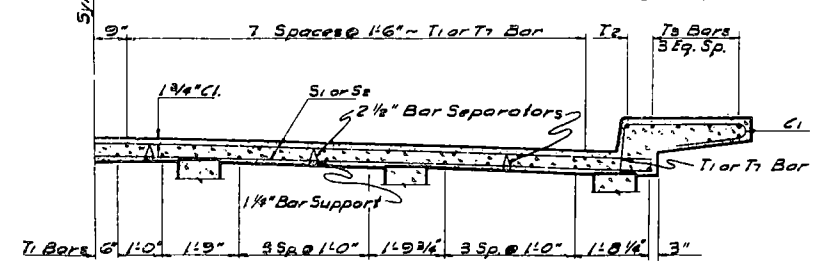


POURING SEQUENCE

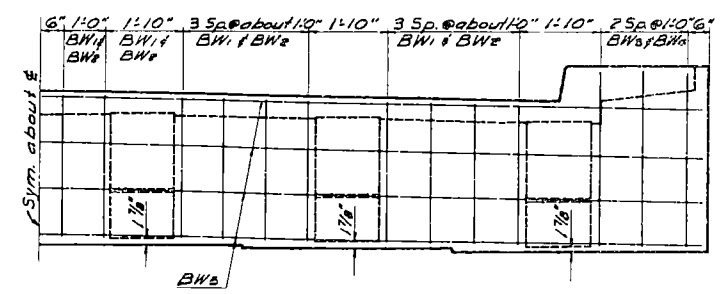


HALF SLAB SECTION
Showing Dimensions

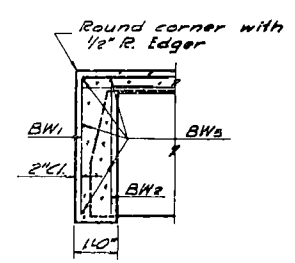
Seal Corner with Asphalt
Flashing Compound (At High Grade)



HALF SLAB SECTION
Showing Reinforcing at Center of Spans



X-X



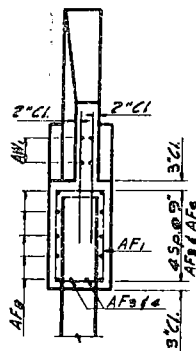
C-C

QUANTITIES	
Concrete Class A-1 1/2	206.0 C.Y.
Reinforcing Steel	42,892 lbs.
Structural Steel	6,300 lbs.

**260' PRESTRESSED GIRDER
4-SPAN CONTINUOUS
SLAB**
24' ROADWAY
20° SKEW

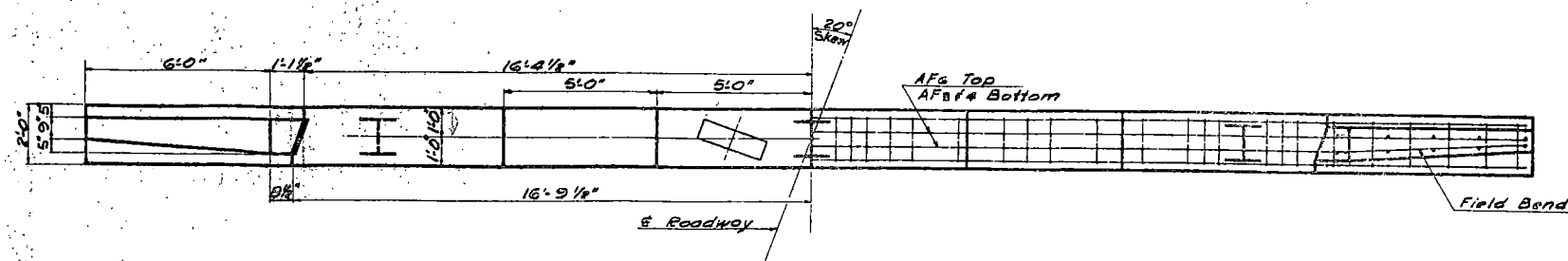
BAR LIST			
MARK	NO.	SIZE	LENGTH SHAPE
AF1	12	5	9' 10" Bent
AF2	34	5	12' 10" "
AF3	7	3	31' 8" Sir
AF4	7	3	17' 8" "
AF5	1	8	31' 4" "
AF6	6	8	33' 6" "
AF7	4	5	30' 0" "
AF8	10	4	9' 10" "
AW1	8	8	9' 0" Sir
AW2	4	6	18' 8" Bent
AW3	4	4	51' 3" Sir
AW4	4	4	61' 0" "
AW5	4	4	61' 9" "
AW6	4	4	62' 9" "
AW7	4	4	51' 6" "

NOTE:
AFA and AFB bars are spliced on alternate sides between the piles.
AFB, AFB, and AFB Bars are spliced at the outer piles.

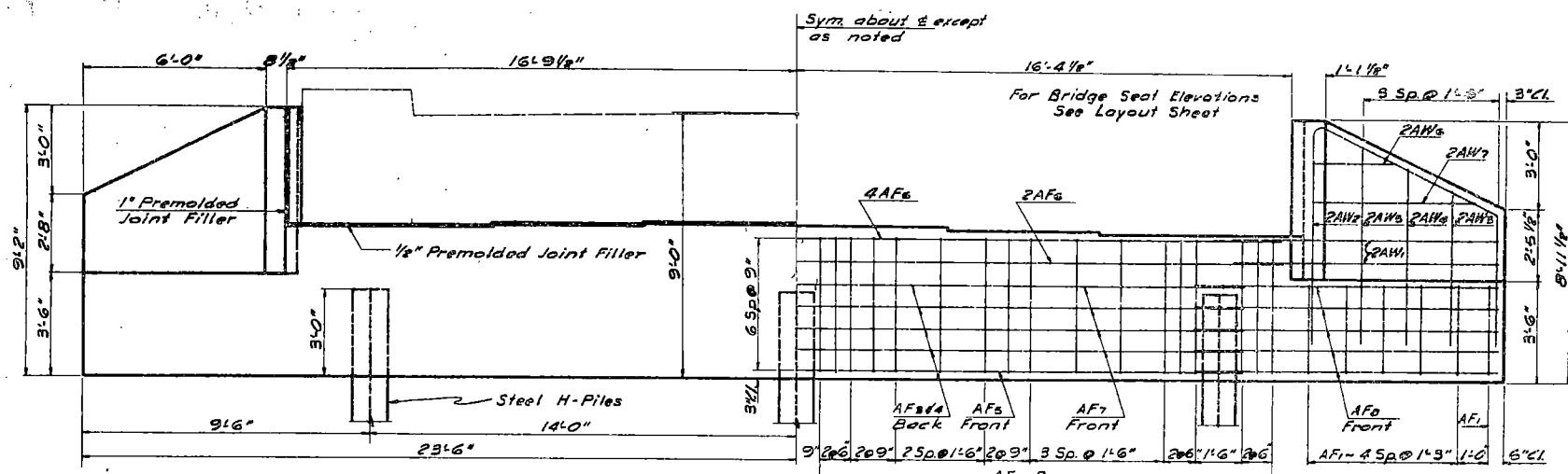


QUANTITIES	
Concrete Class A-1 1/2	18.2 C.Y.
Reinforcing Steel	2670 Lbs

PRESTRESSED GIRDER
9' ABUTMENT
24'-0" ROADWAY
20° SKEW

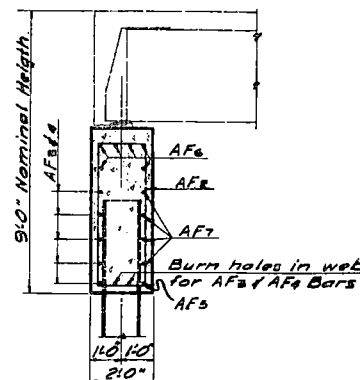


HALF PLAN
Showing Dimensions

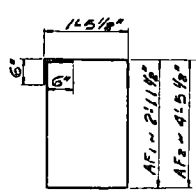


HALF ELEVATION

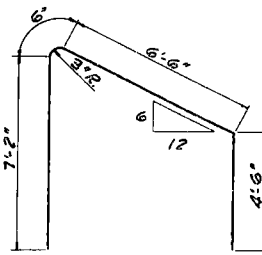
Showing Dimensions



WALL SECTION



AF₁ & AF₂ BARS

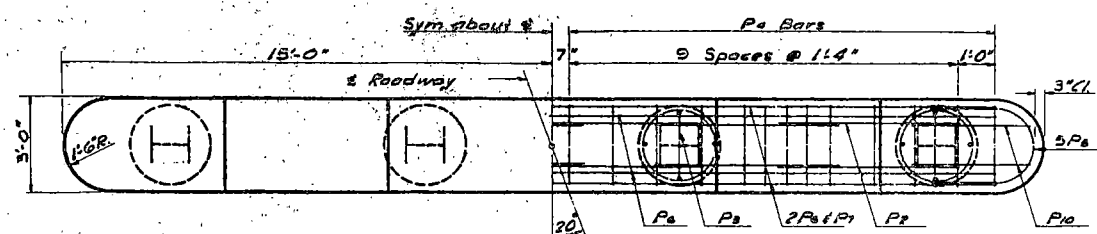
AW₂ BAR

BENT BAR DETAILS

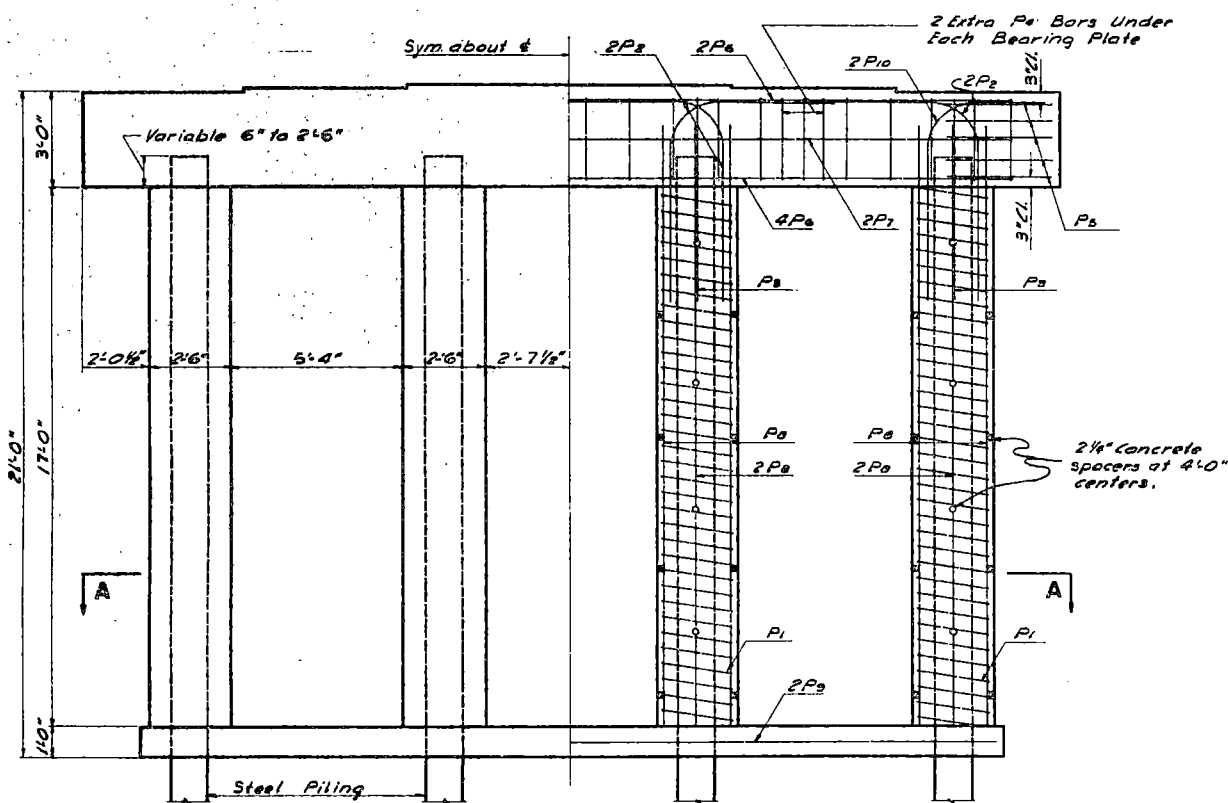
44-38861-223

FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	N. D.				

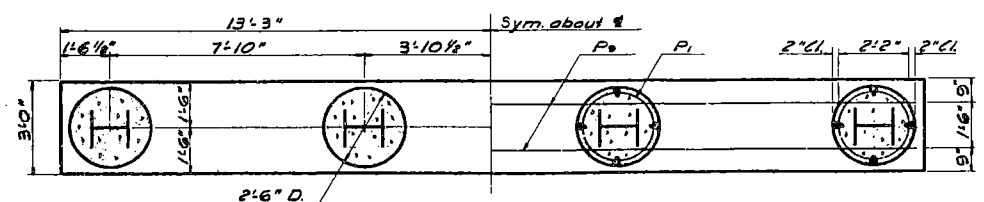
Risers shall be poured simultaneously with pier cap. With the steps centered between girders. Elevations are shown on layout sheet.



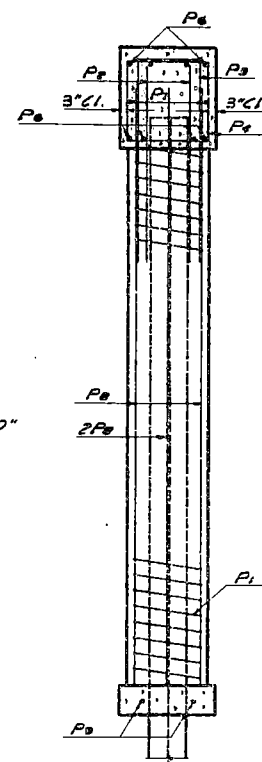
TOP PLAN



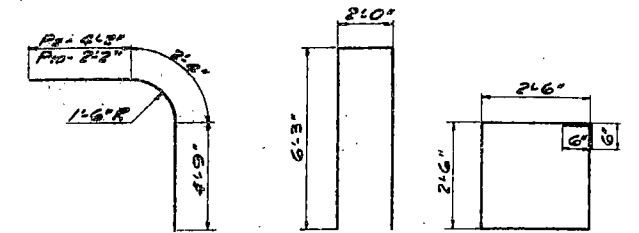
ELEVATION



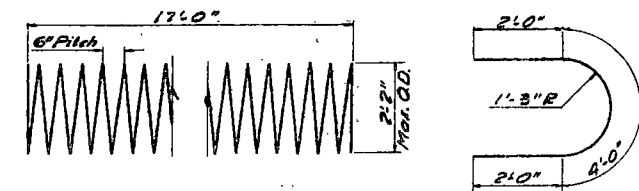
SECTION A-A



SECTION ON C



P2 & P10 BARS P3 BAR P4 BAR



P1 BAR P5 BAR

BENT BAR DETAILS

BAR LIST				
MARK	NO.	SIZE	LENGTH	SHAPE
P1	4	3	242'-3"	Bent
P2	12	8	11'-3"	"
P3	4	6	14'-6"	"
P4	34	5	11'-0"	"
P5	10	5	8'-0"	"
P6	6	9	27'-0"	Str.
P7	2	4	27'-0"	"
P8	16	4	19'-0"	"
P9	2	6	26'-0"	"
P10	4	8	9'-3"	Bent

QUANTITIES	
Concrete Class A 1 1/2	250 C.Y.
Reinforcing Steel	2252 lbs

21' PIER
DETAIL
FOR PRESTRESSED
GIRDER SPANS
24' ROADWAY
20° SKEW

