CONTRACT NO. B-21128

| BRIDGES OVER 20' SPAN | | | | | |
|---|---|---|---|---|---|
| FEDERAL REGION NO. | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 5 | IND. | BHF/220-1(34) | 1993 | 1 | 120 |
| | | NH-220-1(33) | | | |

## INDEX

| PROJECT | STRUCTURE | TYPE | SPAN | OVER | STATION |
|---|---|---|---|---|---|
| BHF/220-1(34)<br>NH-220-1(33) | 912-45-5085B<br>912-45-2353B<br>912-45-5088A | COMPOSITE PLATE GIRDER<br>COMPOSITE STEEL BEAM<br>COMP. BM. & CONC. GIRDER | SEE GEN-PLAN | CHICAGO AVE. & SR 312<br>NORFOLK AND SOUTHERN RR<br>U.S. 12 & INDUSTRIAL BLVD. | |

| SHEET NO. | SHEET DESIGNATION | SUBJECT | F.H.W.A. APPROVAL |
|---|---|---|---|
| 1 | ONE SHEET | TITLE SHEET & INDEX | |
| 2-13 | TWELVE SHEETS | TRAFFIC MAINTENANCE | |
| 14 | ONE SHEET | SIGNAL MODIFICATIONS | |
| 15 | ONE SHEET | LIGHTING MODIFICATIONS | |
| 16 | ONE SHEET | MISCELLANEOUS TRAFFIC DETAILS | |
| 17 | W-1 | GENERAL PLAN (STR. 912-45-5085B) | |
| 18 | W-2 | GENERAL PLAN DETAILS | |
| 19 | W-3 | GENERAL PLAN DETAILS | |
| 20 | W-4 | BENT NO. 1 DETAILS | |
| 21 | W-5 | BENT NO. 1 DETAILS AND BILL OF MATERIALS | |
| 22 | W-6 | PIER NO. 2 DETAILS | |
| 23 | W-7 | PIER NO. 3 DETAILS | |
| 24 | W-8 | BENT NO. 4 DETAILS | |
| 25 | W-9 | BENT NO. 4 DETAILS AND BILL OF MATERIALS | |
| 26 | W-10 | BEARING DETAILS | |
| 27 | W-11 | FRAMING PLAN | |
| 28 | W-12 | STRUCTURAL STEEL DETAILS | |
| 29 | W-13 | STRUCTURAL STEEL DETAILS AND FABRICATION & ERECTION NOTES | |
| 30 | W-14 | SUPERSTRUCTURE DETAILS | |
| 31 | W-15 | SUPERSTRUCTURE DETAILS AND BILL OF MATERIALS | |
| 32 | W-16 | CORNER DETAILS | |
| 33 | W-17 | APPROACH DETAILS | |
| 34 | W-18 | SCREED PLAN | |
| 35 | W-19 | SCREED TABLE - SOUTHBOUND LANES | |
| 36 | W-20 | SCREED TABLE - NORTHBOUND LANES | |
| 37 | W-21 | GENERAL PLAN (STR. 912-45-2353B) | |
| 38 | W-22 | GENERAL PLAN DETAILS | |
| 39 | W-23 | GENERAL PLAN DETAILS | |
| 40 | W-24 | BENT NO. 1 & 4 DETAILS | |
| 41 | W-25 | BENT NO. 1 & 4 DETAILS AND BILL OV MATERIALS | |
| 42 | W-26 | PIER NO. 2 & NO. 3 DETAILS | |
| 43 | W-27 | PIER NO. 2 & NO. 3 DETAILS AND BILL OF MATERIALS | |
| 44 | W-28 | BEARING DETAILS | |
| 45 | W-29 | FRAMING PLAN AND DETAILS | |
| 46 | W-30 | STRUCTURAL STEEL DETAILS | |
| 47 | W-31 | STRUCTURAL STEEL DETAILS AND FABRICATION & ERECTION NOTES | |
| 48 | W-32 | SUPERSTRUCTURE DETAILS | |
| 49 | W-33 | SUPERSTRUCTURE DETAILS AND BILL OF MATERIALS | |
| 50 | W-34 | CORNER DETAILS | |
| 51 | W-35 | BRIDGE APPROACH DETAILS | |
| 52 | W-36 | SCREED PLAN | |
| 53 | W-37 | SCREED TABLE | |
| 54 | W-38 | GENERAL PLAN (STR. 912-45-5088A) | |
| 55 | W-39 | GENERAL PLAN DETAILS | |
| 56 | W-40 | GUARD RAIL PLAN & DETAILS | |
| 57 | W-41 | WING RECONSTRUCTION DETAILS & BILL OF MATERIALS | |
| 58 | W-42 | FRAMING PLAN & STRUCTURAL STEEL DETAILS | |
| 59 | W-43 | STRUCTURAL STEEL DETAILS | |
| 60 | W-44 | STRUCTURAL STEEL DETAILS & FABRICATION & ERECTION NOTES | |
| 61 | W-45 | SUPERSTRUCTURE DETAILS SPANS "A" & "D" | |
| 62 | W-46 | SUPERSTRUCTURE DETAILS SPANS "B" & "C" | |
| 63 | W-47 | SUPERSTRUCTURE DETAILS | |
| 64 | W-48 | SUPERSTRUCTURE DETAILS | |
| 65 | W-49 | SUPERSTRUCTURE DETAILS AND BILL OF MATERIALS | |
| 66 | W-50 | APPROACH DETAILS AND BILL OF MATERIALS | |
| 67 | W-51 | SCREEDS - SPANS "A" & "D" | |
| 68 | W-52 | SCREEDS - SPANS "B" & "C" | |
| 69 | W-53 | SCREED TABLE - NBL | |
| 70 | W-54 | SCREED TABLE - SBL | |
| 71 | W-55 | CRASHWALL DETAILS - PIER 3 | |
| 72 | W-56 | CRASHWALL DETAILS - PIERS 3, 4, & 5 AND BILL OF MATERIALS | |
| 73 | ONE SHEET | BRIDGE SUMMARY - STRUCTURE 912-45-5085B | |
| 74 | ONE SHEET | BRIDGE SUMMARY - STRUCTURE 912-45-2353B | |
| 75 | ONE SHEET | BRIDGE SUMMARY - STRUCTURE 912-45-5088A | |

| TRAFFIC DATA | 5085B, 2353B | 5088A |
|---|---|---|
| A.D.T. (19 ) | 44,500 V.P.D | 34,400 V.P.D |
| A.D.T. (20 PROJECTED) | V.P.D | V.P.D |
| D.H.V. (20 PROJECTED) | V.P.D | V.P.D |
| TRUCKS | D.H.V. 10% A.D.T. % | D.H.V. 10% A.D.T. % |
| POSTED SPEED | 55 M.P.H. | 50 M.P.H. |
| ACCESS CONTROL | LIMITED | LIMITED |
| FUNCTIONAL CLASSIFICATION | URBAN FREEWAY | URBAN FREEWAY |

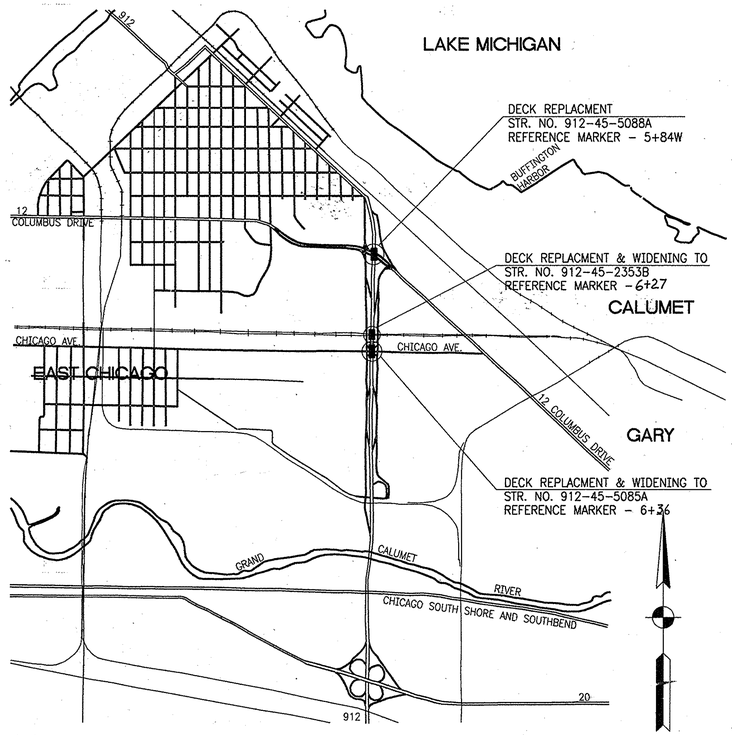
# INDIANA DEPARTMENT OF TRANSPORTATION

# BRIDGE PLANS

## FOR SPANS OVER 20 FEET ON STATE ROAD 912

PROJECT NO. ST/220-1( ) P.E.
BHF/220-1(34 ) R/W
NH-220-1(33) CONST.

BRIDGE DECK REPLACEMENT AND WIDENING TO STRUCTURES: 912-45-5085A & 912-45-2353A AND BRIDGE DECK REPLACEMENT TO STRUCTURE: 912-45-5088, ALL IN LAKE COUNTY, INDIANA.




Scale: 1" = 2000'

## INDEX CONTINUED
### STANDARD DRAWINGS

| SHEET NO. | SHEET DESIGNATION | SUBJECT | PURPOSE/USE | F.H.W.A. APPROVAL | ADOPTED "A" REVISION "R" |
|---|---|---|---|---|---|
| 76 | BRIDGE STD. BR-1 | CONCRETE BRIDGE RAILING TRANSITION TYPE TGB | CONCRETE BRIDGE RAILING TYPE TGB | 03-09-93 | A AUG. 1992 |
| 77 | BRIDGE STD. BR-1A | CONCRETE BRIDGE RAILING TRANSITION TYPE TGB | PLATE WASHER, G.R. ATTACHMENT, EXTENSION DETAILS | 03-09-93 | A AUG. 1992 |
| | BRIDGE STD. BR-2 | CONCRETE BRIDGE RAILING TRANSITION TYPE WGB | | | |
| | BRIDGE STD. BR-2A | CONCRETE BRIDGE RAILING TRANSITION TYPE WGB | | | |
| 78 | BRIDGE STD. C1 | MISCELLANEOUS DETAILS | REINFORCING BAR NOTES, BAR BENDING DETAILS | 01-26-93 | A DEC 1992 |
| | BRIDGE STD. C2 | MISCELLANEOUS DETAILS | | | |
| 79 | BRIDGE STD. C3 | MISCELLANEOUS DETAILS | CONSTRUCTION JOINT TYPE A | 01-26-93 | A NOV 1992 |
| 80 | BRIDGE STD. C4 | PRESTRESSED CONCRETE PILES | | 12-04-74 | R 10-29-74 |
| | BRIDGE STD. C5 | PRECAST DECK PANEL DETAILS | | | |
| | BRIDGE STD. D | CASTING DETAILS AND ROADWAY DRAINS | | | |
| | BRIDGE STD. D1 | ADJUSTING FRAME DETAILS FOR ROADWAY DRAINS | | | |
| | BRIDGE STD. | PRESTRESSED CONCRETE | | | |
| | BRIDGE STD. | PRESTRESSED CONCRETE | | | |
| | BRIDGE STD. PB10 | TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS | | | |
| | BRIDGE STD. PB11 | ELASTOMERIC BEARING PADS FOR CONCRETE BEAMS | | | |
| 81 | BRIDGE STD. R2B | BRIDGE LIGHTING DETAILS | EXPANSION SLEEVE | 05-19-88 | R 04-04-88 |
| 82 | BRIDGE STD. S1 | MISCELLANEOUS DETAILS | B BORROW PLACEMENT | 01-22-87 | R 12-01-86 |
| | BRIDGE STD. SH1 | STEEL SHOE DETAILS | | | |
| 82A | BRIDGE STD. SS-1 | EXPANSION JOINTS CLASS-SS | | 06-20-91 | A APRIL 1991 |
| 82B | BRIDGE STD. SS-2 | EXPANSION JOINTS CLASS-SS | | 06-20-91 | A APRIL 1991 |
| | BRIDGE STD. T SHEET A | STANDARD TEMPORARY BRIDGE | | | |
| | BRIDGE STD. T SHEET B | STANDARD TEMPORARY BRIDGE | | | |
| 83 | ROAD STD. SHEET A | STANDARD PAVEMENT JOINTS | | PENDING | R 03-01-90 |
| 84 | ROAD STD. SHEET B | STANDARD PAVEMENT JOINTS | R.C. BRIDGE APPROACH DETAILS | 01-26-93 | A NOV 1992 |
| | ROAD STD. SHEET MA | MISCELLANEOUS STANDARDS | | | |
| | ROAD STD. SHEET MB | MISCELLANEOUS STANDARDS | | | |
| 85 | ROAD STD. SHEET MB-2 | MISCELLANEOUS STANDARDS | | 05-21-82 | R 04-01-82 |
| | ROAD STD. SHEET MB-4 | MISCELLANEOUS STANDARDS | | | |
| | ROAD STD. SHEET MC | MISCELLANEOUS STANDARDS | | | |
| 86 | ROAD STD. SHEET MC-1 | MISCELLANEOUS STANDARDS | | 01-11-89 | R 09-01-88 |
| 87 | ROAD STD. SHEET MC-2 | MISCELLANEOUS STANDARDS | | 01-11-89 | R 09-01-88 |
| | ROAD STD. SHEET MD | MISCELLANEOUS STANDARDS | | | |
| 88 | ROAD STD. SHEET MD-2 | MISCELLANEOUS STANDARDS | | 05-05-87 | R 04-01-87 |
| 89 | ROAD STD. SHEET MR | MISCELLANEOUS STANDARDS | | 04-10-84 | R 02-01-84 |
| 90 | ROAD STD. SHEET MT | MISCELLANEOUS STANDARDS | | 07-19-83 | R 05-02-83 |
| | | MISCELLANEOUS STANDARDS | | | |
| 91 | ROAD STD. SHEET MT-6E | MISCELLANEOUS STANDARDS | | 08-05-88 | A AUG. 1988 |
| 92 | ROAD STD. SHEET MT-6F | MISCELLANEOUS STANDARDS | | 06-28-89 | R 05-01-89 |
| 93 | ROAD STD. SHEET MT-6H | MISCELLANEOUS STANDARDS | | 08-05-88 | A AUG. 1988 |
| 94 | ROAD STD. SHEET MT-7 | MISCELLANEOUS STANDARDS | | 07-19-83 | R 05-02-83 |
| 95 | ROAD STD. SHEET MT-9 | MISCELLANEOUS STANDARDS | | 08-05-88 | A AUG. 1988 |
| 96 | ROAD STD. SHEET MT-9A | MISCELLANEOUS STANDARDS | | 08-05-88 | A AUG. 1988 |
| 97 | ROAD STD. SHEET MT-10 | MISCELLANEOUS STANDARDS | | 08-05-88 | R 08-01-88 |
| 98 | ROAD STD. SHEET MT-19 | MISCELLANEOUS STANDARDS | | 01-06-88 | A. NOV. 1987 |
| | ROAD STD. SHEET MP | MISCELLANEOUS STANDARDS | | | |
| | ROAD STD. SHEET MQ | MISCELLANEOUS STANDARDS | | | |
| | ROAD STD. SHEET MT2 | MISCELLANEOUS STANDARDS | | | |
| | ROAD STD. SHEET MT3 | MISCELLANEOUS STANDARDS | | | |
| 99 | ROAD STD. SHEET B-1 | TYPICAL BRIDGE APPROACH GUARDRAIL | | 03-09-93 | A AUG 1992 |
| 100 | ROAD STD. SHEET E-1 | GUARDRAIL END TREATMENT TYPE I | | 07-20-92 | A DEC 1991 |
| 101 | ROAD STD. SHEET E-2 | GUARDRAIL END TREATMENT TYPE OS | | 07-20-92 | A DEC 1991 |
| | ROAD STD. SHEET E-3 | GUARDRAIL END TREATMENT TYPE MS | | | |
| | ROAD STD. SHEET E-4 | CURVED W-BEAM GUARDRAIL SYSTEM | | | |
| | ROAD STD. SHEET E-4A | CURVED W-BEAM GUARDRAIL SYSTEM | | | |
| | ROAD STD. SHEET E-4B | CURVED W-BEAM GUARDRAIL SYSTEM | | | |
| 102 | ROAD STD. SHEET G-1 | W-BEAM GUARDRAIL COMPONENTS | | 03-09-93 | A AUG 1992 |
| 103 | ROAD STD. SHEET G-2 | THRIE-BEAM GUARDRAIL COMPONENTS | | 07-20-92 | A DEC 1991 |
| 104 | ROAD STD. SHEET G-3 | W-BEAM GUARDRAIL ASSEMBLIES | | 07-20-92 | A DEC 1991 |
| | ROAD STD. SHEET H-1 | HAZARD PROTECTION GUARDRAIL | | | |
| 105 | ROAD STD. SHEET H-2 | HAZARD PROTECTION GUARDRAIL | | 03-09-93 | A AUG 1992 |
| | ROAD STD. SHEET P-1 | PIER PROTECTION GUARDRAIL | | | |
| 106 | ROAD STD. SHEET P-2 | PIER PROTECTION GUARDRAIL | | 03-09-93 | A AUG 1992 |
| | ROAD STD. SHEET P-3 | PIER PROTECTION GUARDRAIL | | | |
| 107 | ROAD STD. SHEET P-4 | PIER PROTECTION GUARDRAIL | | 03-09-93 | A AUG 1992 |
| 108 | ROAD STD. SHEET T-1 | GUARDRAIL TRANSITION TYPE TGB | | 03-09-93 | A AUG 1992 |
| | ROAD STD. SHEET T-1A | GUARDRAIL TRANSITION TYPE WGB | | | |
| 109 | ROAD STD. SHEET T-2 | GUARDRAIL TRANSITION TYPE GP | | 03-09-93 | A AUG 1992 |
| 110 | ROAD STD. SHEET T-3 | GUARDRAIL TRANSITION TYPE VH | | 03-09-93 | A AUG 1992 |
| 111 | ROAD STD. SHEET T-4 | PIER CONNECTION DETAILS | | 07-20-92 | A DEC 1991 |
| 112 | ROAD STD. SHEET CB-1 | CONCRETE MEDIAN BARRIER | | 01-11-89 | R 09-01-88 |
| 113 | ROAD STD. SHEET CB-2 | TEMPORARY CONCRETE BARRIER | | 01-11-89 | R 09-01-88 |
| 114 | ROAD STD. SHEET 1 DETOURS | STANDARD DETOUR SIGNS | | PENDING | A SEPT 1988 |
| | ROAD STD. SHEET 1A DETOURS | STANDARD DETOUR SIGNS | | | |
| | ROAD STD. SHEET 1B DETOURS | STANDARD DETOUR SIGNS | | | |
| 115 | ROAD STD. SHEET 2 DETOURS | STANDARD DETOUR SIGNS | | 06-20-91 | R 04-01-91 |
| 116 | ROAD STD. SHEET 2A DETOURS | STANDARD DETOUR SIGNS | | PENDING | A SEPT 1988 |
| 117 | ROAD STD. SHEET 3 DETOURS | STANDARD DETOUR SIGNS | | PENDING | R 09-01-88 |
| 118 | ROAD STD. SHEET 3A DETOURS | STANDARD DETOUR SIGNS | | PENDING | R 09-01-88 |
| 119 | ROAD STD. SHEET 4 DETOURS | STANDARD DETOUR SIGNS | | 01-11-89 | R 09-01-88 |
| | ROAD STD. SHEET 5 DETOURS | STANDARD DETOUR SIGNS | | | |
| 120 | ROAD STD. SHEET 5A DETOURS | STANDARD DETOUR SIGNS | | PENDING | R 09-01-88 |

NOTE:
WHENEVER ST or BHF-220-1( )
APPEARS ON THESE PLANS OR CONTRACT DOCUMENTS
IT SHALL BE INTERPRETED AS NH-220-1(33) also BHF-220-1(34)

INDIANA DEPARTMENT OF HIGHWAYS
STANDARD SPECIFICATIONS DATED 1993
TO BE USED WITH THESE PLANS.
DES. NO. 8717645, 8717655, 8717665

| REVISIONS | |
|---|---|
| DATE | SHEET NO. |
| 1/17/94 | Supp 1, 30, 48, 62 |
| | |
| | |
| | |
| | |
| | |

PLANS PREPARED BY:

RQAW

REID, QUEBE, ALLISON, WILCOX & ASSOCIATES, INC.
4755 KINGSWAY DRIVE SUITE 400
INDIANAPOLIS, INDIANA 46205

CERTIFIED BY: RAMAN D. PATEL P.E.
(317) 255-6060

RAMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

APPROVED FOR LETTING: _____
CHIEF DIVISION OF DESIGN -- INDIANA DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION
APPROVED:
DIVISION ADMINISTRATOR DATE

BRIDGE FILE:912-45-5085B/2353B/5088A

RQAW FILE: 93006/3654/3655/3656

B 21128 PART 1 OF 2

C:\ACAD12\WORK.603\3656\TITLESH.DWG
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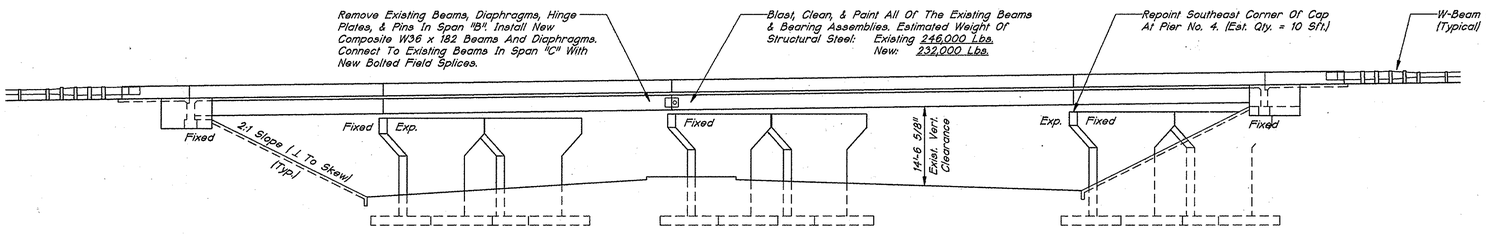
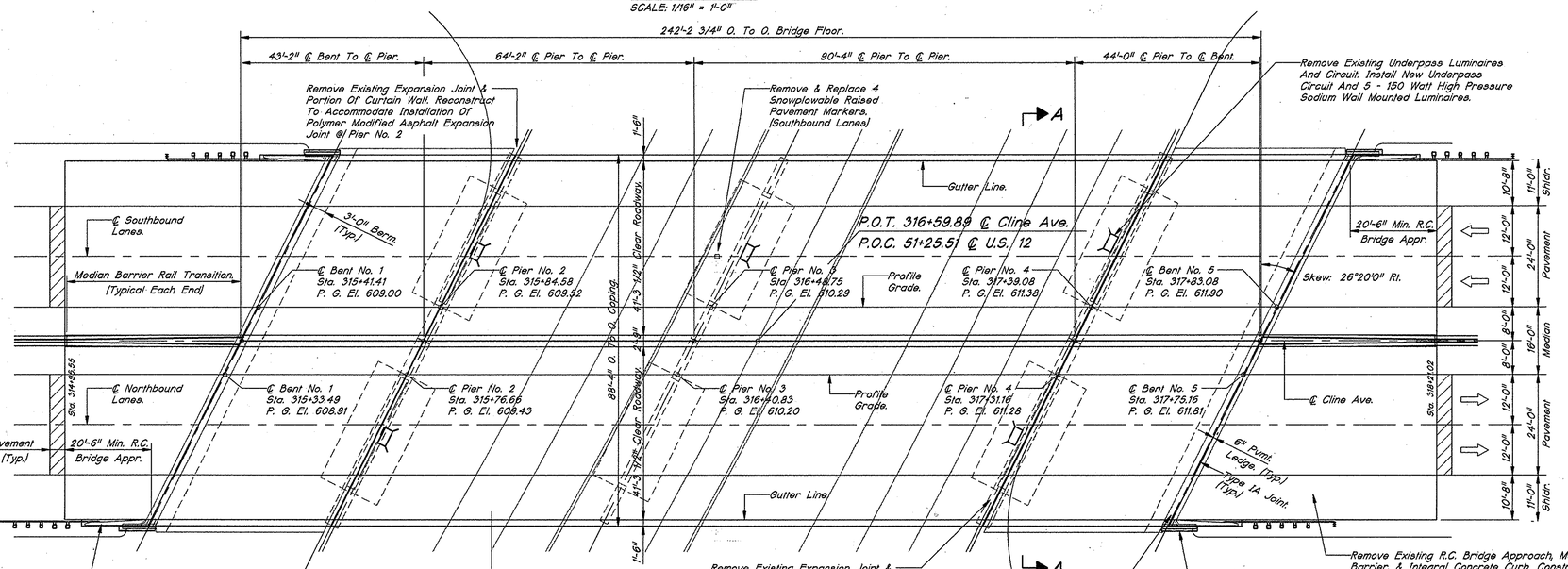
Structure To Be Re-Built To A 1.20% Grade.



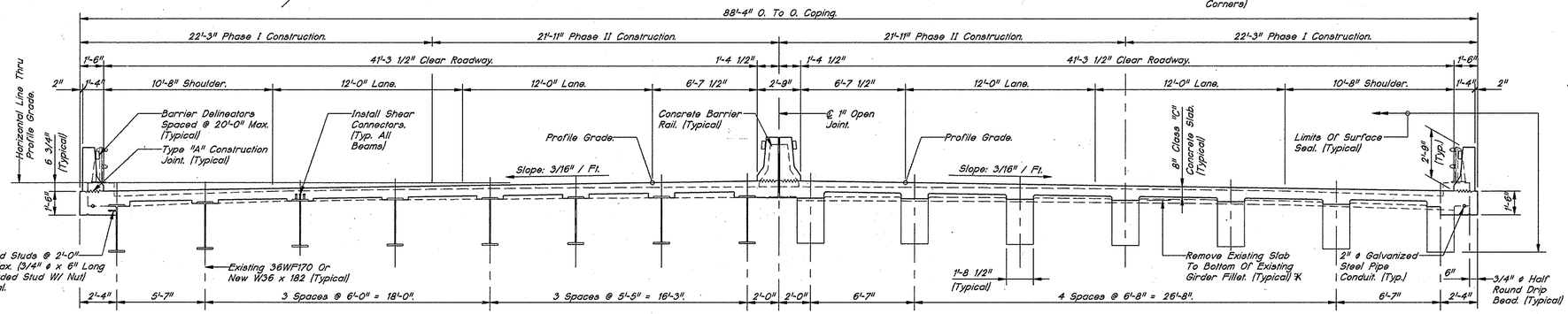

## ELEVATION

SCALE: 1/16" = 1'-0"




## PLAN

SCALE: 1/16" = 1'-0"




Showing Spans "B" & "C"

Showing Spans "A" & "D"

## SECTION A-A

SCALE: 1/4" = 1'-0"

* Stirrup reinforcing to be cleaned, straightened, and bent to provide 1½" clear cover.

## GENERAL NOTES:

PLANS FOR THE EXISTING STRUCTURE ARE ON FILE IN THE BRIDGE DEPARTMENT AT THE INDIANA DEPARTMENT OF TRANSPORTATION AS BRIDGE FILE NO. 912-45-5088 AND ARE AVAILABLE UPON REQUEST.

REINFORCING STEEL COVERING TO BE 2 1/2" IN TOP AND 1" MIN. IN BOTTOM OF FLOOR SLAB AND 2" IN ALL OTHER PARTS UNLESS NOTED.

CONCRETE IN SUPERSTRUCTURE AND RAILINGS TO BE CLASS "C".

CONCRETE IN END BENTS AND WINGWALLS TO BE CLASS "A".

## MATERIAL NOTES:

BITUMINOUS WEDGE:

110 POUNDS PER SQUARE YARD H.A.C. SURFACE TYPE 11, HV OVER VARIABLE DEPTH BITMINOUS BINDER, HV OR BASE, HV

BITUMINOUS SHOULDER:

660 POUNDS PER SQUARE YARD BITUMINOUS BASE, HV (TYPE NO. 5D)

PAVEMENT RELIEF JOINT:

1,980 POUNDS PER SQUARE YARD BITUMINOUS BASE, HV (TYPE NO. 5D)

## DESIGN DATA:

ALLOWABLE DESIGN STRESSES: CLASS A CONCRETE f'c = 3,500 PSI
CLASS C CONCRETE f'c = 4,000 PSI
REINFORCING STEEL fy = 60,000 PSI

LIVE LOADS: HS20-44 LOADING IN ACCORDANCE WITH 1989 A.A.S.H.T.O. SPECIFICATIONS AND INTERIMS. CHECKED FOR MILITARY LOADING.

DEAD LOADS: ACTUAL WEIGHT PLUS 35 POUNDS PER SQUARE FOOT FOR FUTURE WEARING SURFACE AND 15 POUNDS PER SQUARE FOOT FOR PERMANENT METAL DECK FORMS.

**Note:** For Guardrail Locations & Additional Details On U.S. 12 (Under Structure) See Drawing W-40.

**Note:** Shoring Of Existing Concrete Girders In Spans "A" & "D" Is Not Required. Existing Steel Beams In Span "C" Shall Be Supported By The Use Of A Temporary Bent Placed In Median Of U. S. 12. (9 Kips Per Beam Deadload)

All Removed Bridge Railing Posts, or Brackets And All Incidental Parts Shall Remain The Sole Property Of The Indiana Department Of Transportation. This material shall be delivered to the Gary Sub-District at no additional cost to the state. Aluminum rail panels to become property of the contractor.

## GENERAL PLAN

BRIDGE DECK REPLACEMENT
CONTINUOUS STEEL BEAM AND R. C. GIRDER BRIDGE
4 SPANS @ 39'-11 1/2", 64'-2", 90'-4", & 40'-9 1/2"
SKEW: 26°20' RIGHT 2 - 41'- 3 1/2" CLEAR ROADWAY
STATE ROAD 912 OVER U.S. 12 (INDUSTRIAL HIGHWAY)

# INDIANA DEPARTMENT OF TRANSPORTATION

LAKE COUNTY

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-38 OF W-56 SHEET: 54 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

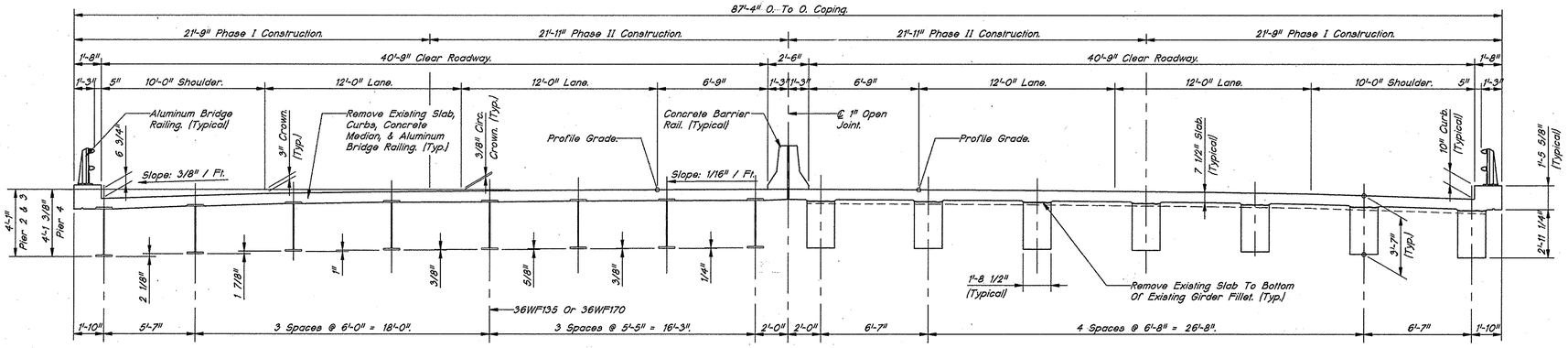
BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

C:\ACAD12\WORK\603\3654\W-38.DWG
Scale: 1" = 2000'
Time: 11/02/93 at 18:02 RQAW

RQAW FILE: 93007/3654

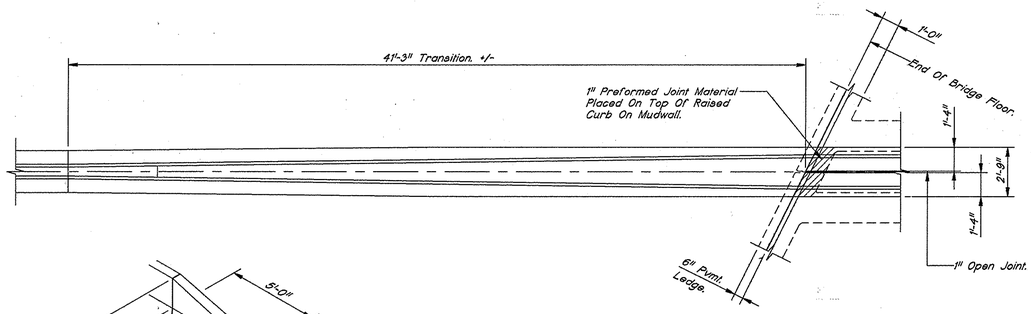


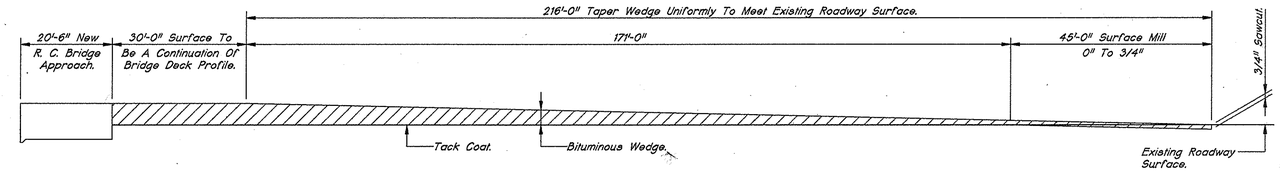

Showing Spans "B" & "C"

Showing Spans "A" & "D"

## SECTION THRU EXISTING DECK

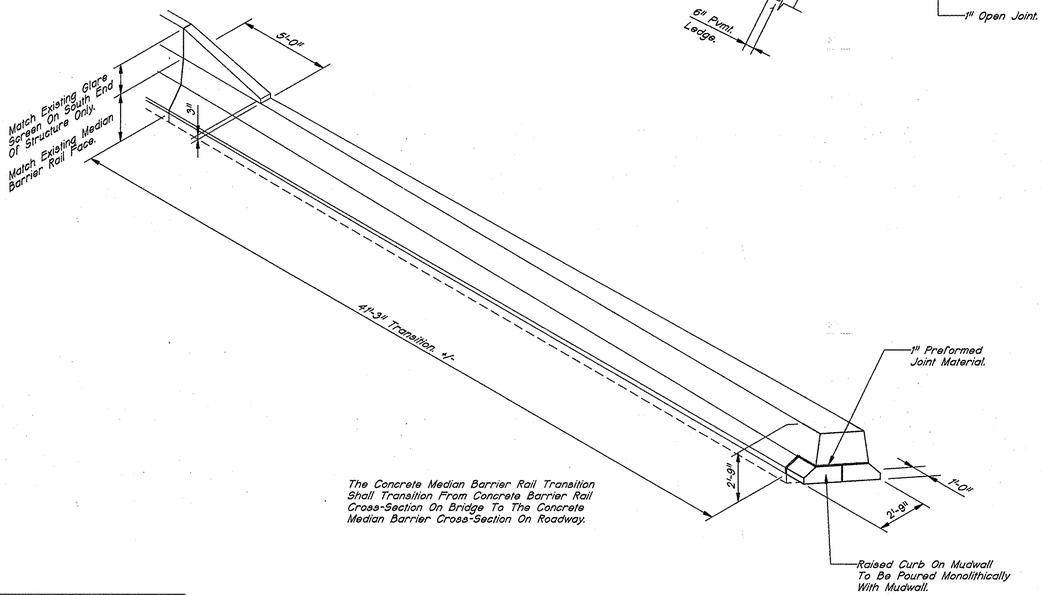
SCALE: 1/4" = 1'-0"




## BITUMINOUS WEDGE DETAIL

SCALE: NONE




## MODIFIED SECTION CONCRETE MEDIAN BARRIER

SCALE: NONE

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

C:\ACAD12\WORK.603\3654\W-39.DWG
Scale: 1 = 1.0000
Time: 11/02/93 at 18:00 RQAW

RQAW FILE: 93007/3654

## GENERAL PLAN DETAILS

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

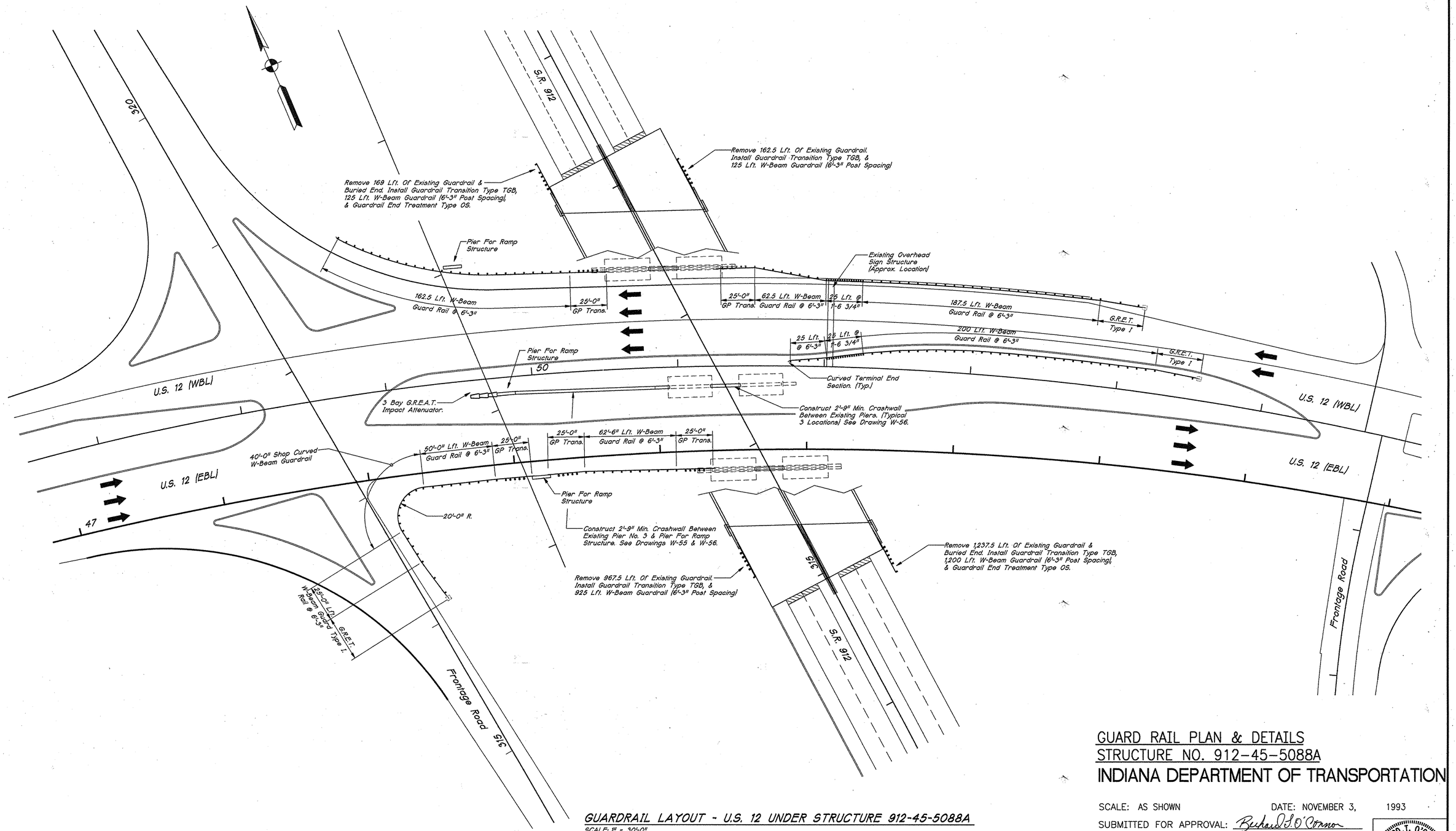
DRAWING: W-39 OF W-56 SHEET: 55 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER




GUARDRAIL LAYOUT - U.S. 12 UNDER STRUCTURE 912-45-5088A

SCALE: 1" = 30'-0"

# GUARD RAIL PLAN & DETAILS
# STRUCTURE NO. 912-45-5088A
# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-40 OF W-56 SHEET: 56 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ

DESIGNED RJZ CHK. AP

TRACED CHK.

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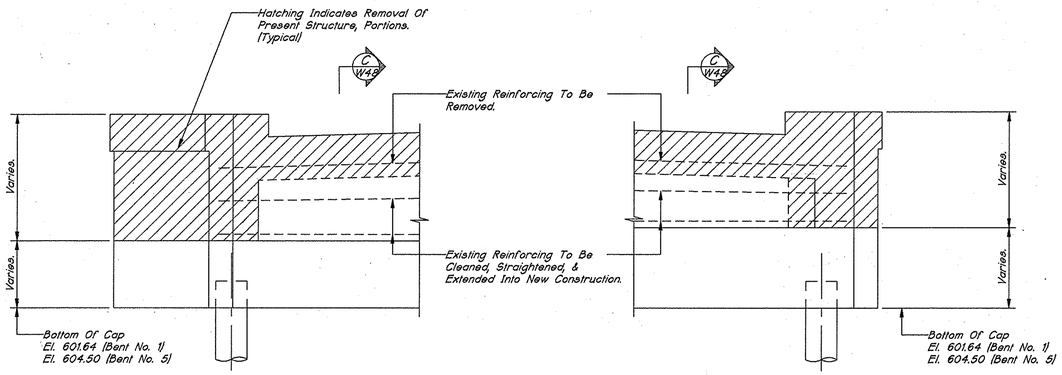
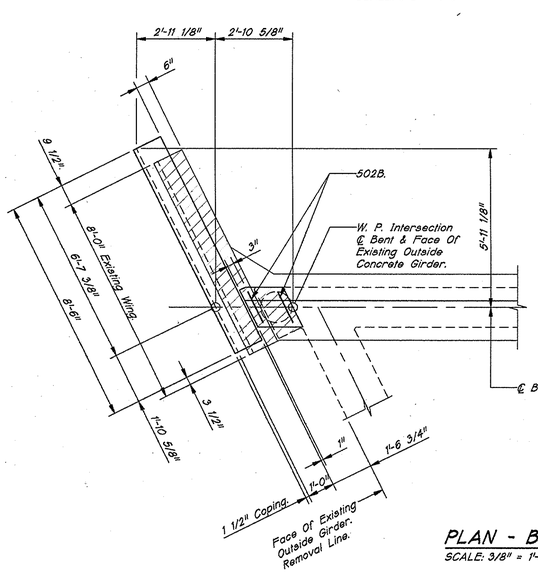
Time: 11/02/93 at 17:58 RQAW

RQAW FILE: 93007/3654



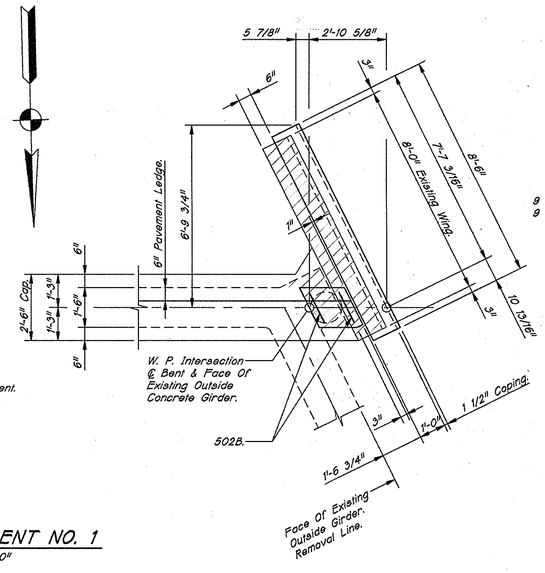

## ELEVATION - BENT NO. 1 - REMOVAL

SCALE: 3/8" = 1'-0"

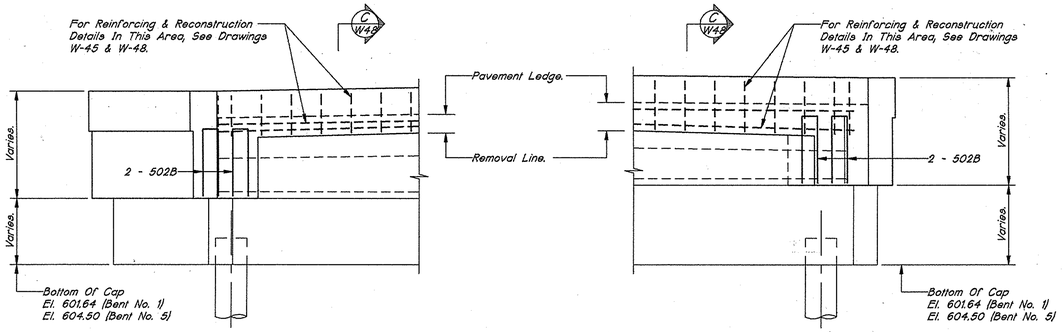



## PLAN - BENT NO. 1

SCALE: 3/8" = 1'-0"




Bent No. 5 Same By 180° Rotation




## ELEVATION - BENT NO. 1 - RECONSTRUCTION

SCALE: 3/8" = 1'-0"

| | | | |
|---|---|---|---|
| DRAWN | GKN | CHK. | SCJ |
| DESIGNED | RJZ | CHK. | AP |
| TRACED | | CHK. | |

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## WINGWALL SECTION (REMOVAL)

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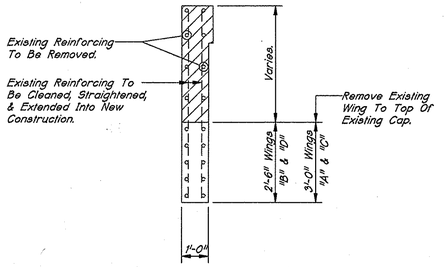


## WINGWALL SECTION (RECONSTRUCTION)

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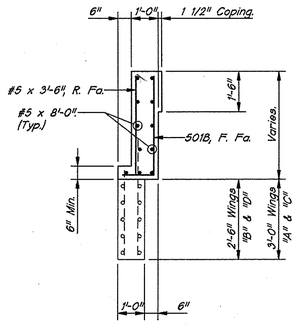
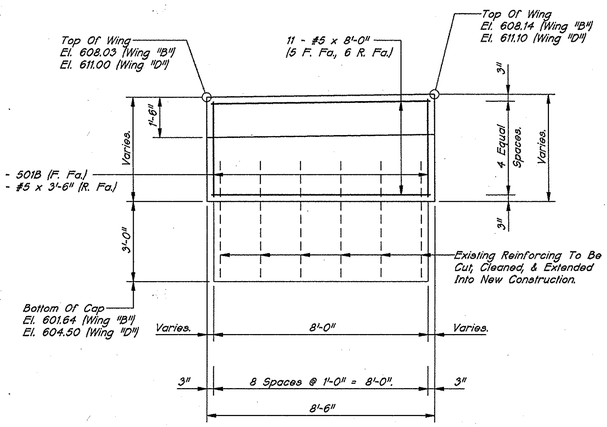



## BILL OF MATERIALS (4 REQUIRED)

| REINFORCING STEEL EPOXY COATED | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| 501B | 9 | 4'-8" | |
| 502B | 2 | 6'-3" | |
| #5 | 11 | 8'-0" | |
| #5 | 9 | 3'-6" | |
| | | | |
| TOTAL #5 | | | 182 |
| | | | |
| TOTAL REINFORCING | | | 182 |
| | | | |
| CONCRETE | | | (CYS.) |
| | | | |
| "A" IN SUBSTRUCTURE | | | 1.5 |
| | | | |
| MISCELLANEOUS | | | (QTY.) |
| | | | |
| SURFACE SEAL (ESTIMATED) | | | 60 SFT. |
| | | | |

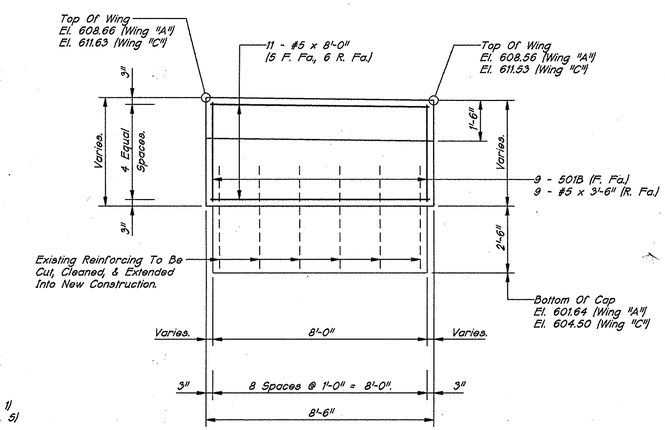
## WINGWALL ELEVATION "B" & "D"

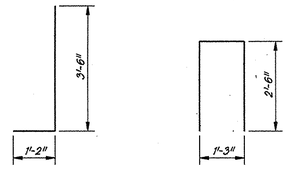
SCALE: 3/8" = 1'-0"




## WINGWALL ELEVATION "A" & "C"

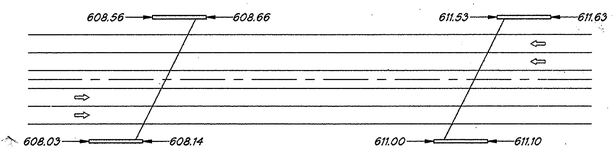
SCALE: 3/8" = 1'-0"




501B x 4'-8" 502B x 6'-3"

Wing "A" Wing "C"




Wing "B" Wing "D"

Bent No. 1 Bent No. 5

## WING LOCATION DIAGRAM

SCALE: NONE

## NOTES:

FOR GENERAL NOTES, SEE DRAWING W-38.

ALL REINFORCING SHALL BE EPOXY COATED.

FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.

# WING RECONSTRUCTION DETAILS & BILL OF MATERIALS

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard J. O'Connor

DRAWING: W-41 OF W-56 SHEET: 57 OF 120

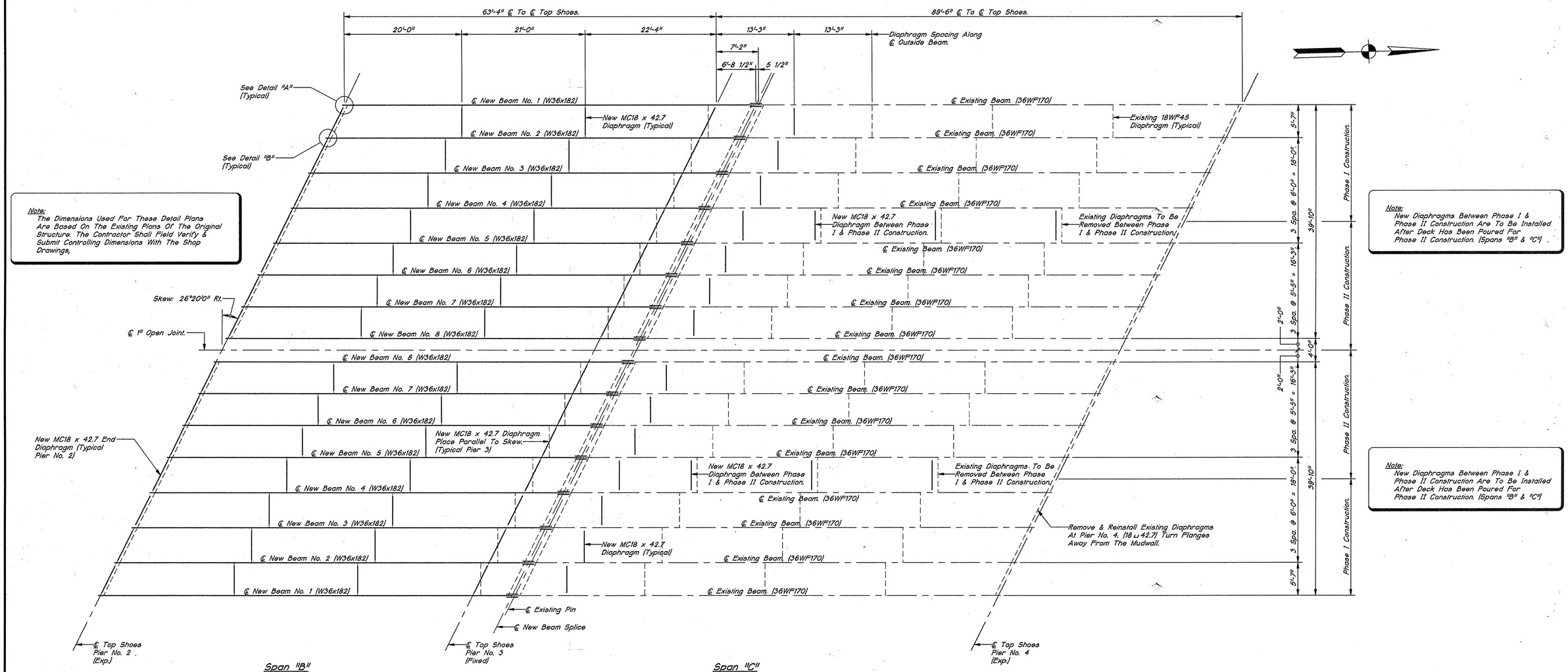
PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

RQAW FILE: 93007/3654

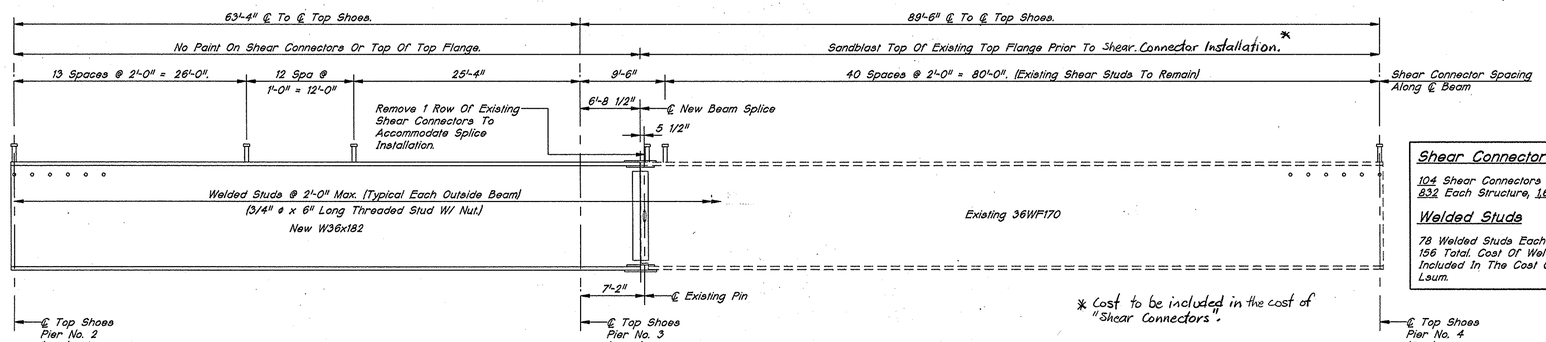



## FRAMING PLAN

SCALE: 1/8" = 1'-0"

**Note:**
The Dimensions Used For These Detail Plans Are Based On The Existing Plans Of The Original Structure. The Contractor Shall Field Verify & Submit Controlling Dimensions With The Shop Drawings.

**Note:**
New Diaphragms Between Phase I & Phase II Construction Are To Be Installed After Deck Has Been Poured For Phase II Construction. (Spans "B" & "C").




## BEAM ELEVATION

SCALE: NONE

* Cost to be included in the cost of "Shear Connectors".

**Shear Connectors**

104 Shear Connectors Required Each Beam, 832 Each Structure, 1664 Total.

**Welded Studs**

78 Welded Studs Each Outside Beam, 156 Total. Cost Of Welded Studs To Be Included In The Cost Of "Structural Steel," Lsum.

## NOTES:

FOR GENERAL NOTES, SEE DRAWING W-38.

FOR ADDITIONAL DETAILS & FABRICATION & ERECTION NOTES, SEE DRAWING W-44.

# FRAMING PLAN & STRUCTURAL STEEL DETAILS

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-42 OF W-56 SHEET: 58 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

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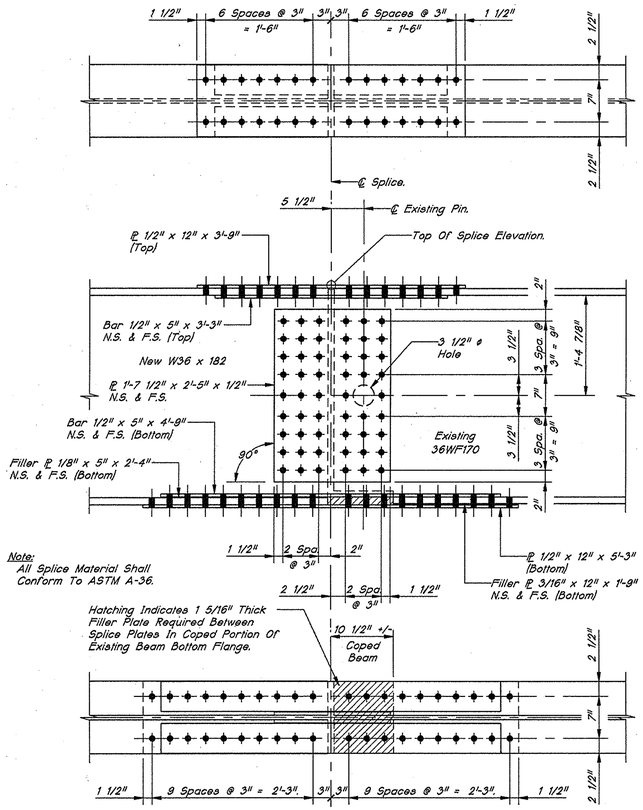


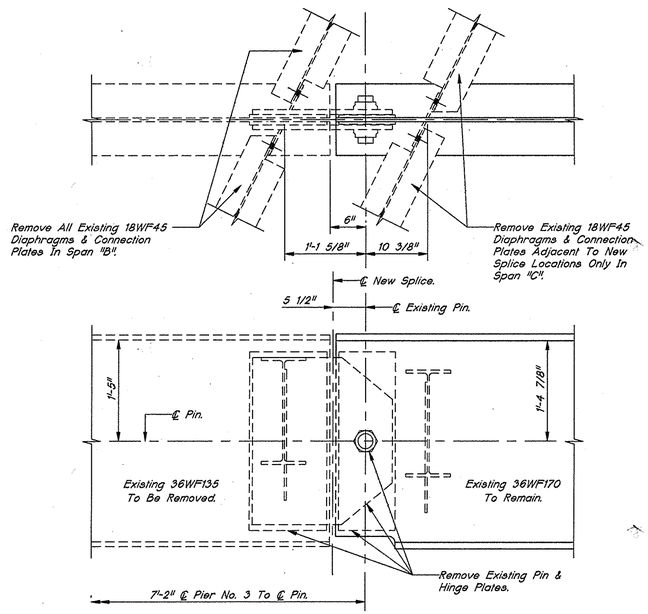

## SPLICE DETAIL

SCALE: 1" = 1'-0"

## TABLE OF SPLICE ELEVATIONS

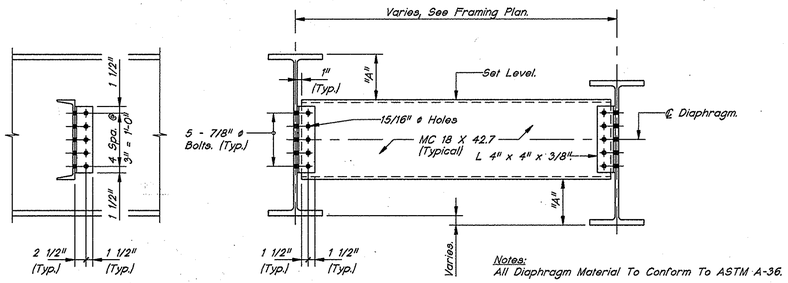
| Beam Number | Splice | |
|---|---|---|
| | NBL | SBL |
| 1 | 608.73 | 608.23 |
| 2 | 608.94 | 609.37 |
| 3 | 609.14 | 609.50 |
| 4 | 609.26 | 609.54 |
| 5 | 609.32 | 609.54 |
| 6 | 609.41 | 609.56 |
| 7 | 609.46 | 609.55 |
| 8 | 609.53 | 609.55 |

Top Of Splice Elevations Are Given With Falsework Removed And Carrying Steel Deadload Only. Top Of Beam Shall Be Adjusted To Above Elevations Prior To Bolting Of Field Splices.




## HINGE REMOVAL DETAIL

SCALE: 1" = 1'-0"

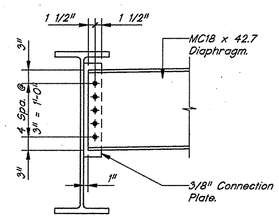



Notes:
All Diaphragm Material To Conform To ASTM A-36.

Dimension "A" To Be Set Equal +/- 1".

## INTERIOR DIAPHRAGM DETAILS

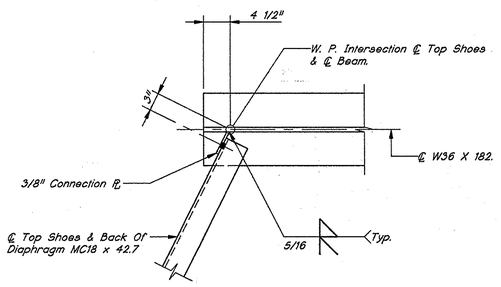
SCALE: 3/4" = 1'-0"




Notes:
All Diaphragm Material To Conform To ASTM A-36.

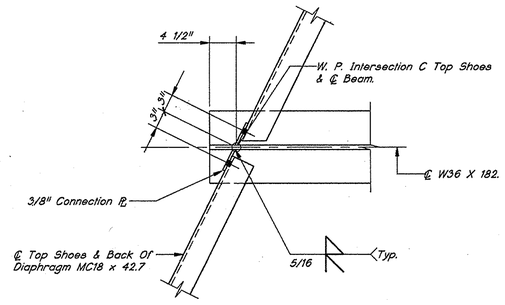
## END DIAPHRAGM DETAILS

SCALE: 3/4" = 1'-0"




## DETAIL "A"

SCALE: 1" = 1'-0"

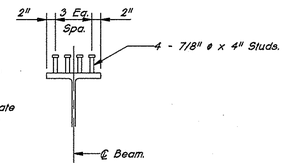



## DETAIL "B"

SCALE: 1" = 1'-0"

Notes:
Studs Shall Be Automatically Welded To The Beam By The Use Of A Stud Welding Gun. The Welds Shall Be Of Sufficient Strength To Permit The Studs To Be Bent 30°.

The Contractor May Use Welded Channels Or 3/4" ø Welded Studs As Alternate Shear Connectors. If Used They Shall Have Equivalent Shear Value And The Proposed Size And Spacing Shall Be Submitted For Approval.




## SHEAR CONNECTOR DETAIL

SCALE: NONE

# STRUCTURAL STEEL DETAILS
# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-43 OF W-56 SHEET: 59 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

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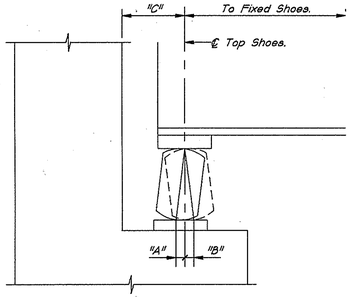


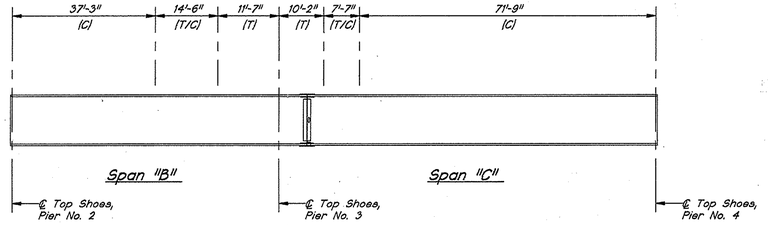

Pier No. 2 & No. 4

## SHOE SETTING TABLE

| | Dimension "A" Or "B" - ℄ Top Shoe To ℄ Bearing Plate | | | | | | |
|---|---|---|---|---|---|---|---|
| | Dimension "A" | | | | Dimension "B" | | |
| Temperature of Beam | 0° | 20° | 40° | 60° | 80° | 100° | 120° |
| Pier No. 2 | 5/16" | 3/16" | 1/8" | 0" | 1/8" | 3/16" | 5/16" |
| Pier No. 4 | 3/8" | 1/4" | 1/8" | 0" | 1/8" | 1/4" | 3/8" |

## EXPANSION SHOE SETTING DATA

SCALE: NONE




## TENSION - COMPRESSION DIAGRAM

SCALE: NONE

T = Tension
T/C = Reversal
C = Compression

## FABRICATION AND ERECTION NOTES:

ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE.

THE CONTRACTOR SHALL PREPARE DETAILED WORKING OR SHOP DRAWINGS TO ENABLE HIM TO FABRICATE, ERECT, AND CONSTRUCT ALL PARTS IN CONFORMITY WITH THE ENGINEERS DRAWINGS AND SPECIFICATIONS AND SHALL SUBMIT FIVE (5) COPIES TO THE ENGINEER. SEE ARTICLE 711.04 OF THE SPECIFICATIONS.

BOLTED CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS 7/8" DIA. UNLESS OTHERWISE NOTED. OPEN HOLES SHALL BE 15/16" DIA. UNLESS NOTED.

THE SHOP DETAILS SHOW A PLAN OF MATCH MARKING FOR ALL REAMED PIECES. ALL SPLICE TO BE REMOVED, CLEANED, AND DEBURRED AFTER REAMING. SPLICE PLATES SHALL NOT EXTEND BEYOND THE END OF THE BEAM AFTER BOLTING FOR SHIPMENT.

ALL PAINT SHALL BE IN ACCORDANCE WITH THE CURRENT STATE HIGHWAY SPECIFICATIONS. SHOP PAINT: INORGANIC ZINC SILICATE PRIMER. FIELD PAINT: VINYL FINISH COAT, LIGHT GREEN COLOR NO. 24466, FEDERAL STANDARD 595.

STRUCTURAL STEEL FOR WELDING MAY BE FLAME CUT IF THE FLAME CUTTING IS MECHANICALLY GUIDED. HAND FLAME CUTTING SHALL BE USED ONLY WHEN APPROVED AND THE SURFACE IS FURTHER TREATED BY MILLING AND GRINDING OR CHIPPING AND GRINDING.

THE SHOP PLANS SHALL INDICATE THAT REAMING IS TO BE DONE IN THE FIELD.

HOLES FOR BEAM SPLICES AND SPLICE PLATES SHALL BE SUBPUNCHED OR SUBDRILLED AND REAMED TO SIZE WHILE ASSEMBLED. SEE ARTICLE 711.24 OF THE SPECIFICATIONS. FLANGE SPLICE BARS SHALL BE SUBDRILLED AND REAMED OR DRILLED FULL SIZE WHILE ASSEMBLED.

DIAMETER OF HOLES IN ALL MATERIAL CONNECTING TOP SHOES OR BEARING PLATE TO BEAM FLANGES TO BE 1" DIAMETER. (1/8" LARGER THAN THE DIAMETER OF THE BOLTS) BOLTS CONNECTING BEAM FLANGE TO TOP SHOE SHALL EXTEND INTO THE TOP SHOE A MINIMUM OF ONE (1) INCH.

SHIMS BETWEEN BEAMS AND TOP SHOE OR BEARING PLATE MAY BE BUILT-UP. NO SHIM SHALL BE LESS THAN 1/8" THICKNESS.

MATERIALS AS LISTED ON THE SHOP DRAWINGS WHICH DO NOT REQUIRE MILL TEST REPORTS MAY BE CHANGED FROM THAT SHOWN ON THE CONTRACT PLANS SUBJECT TO APPROVAL. THE MATERIAL SPECIFICATION SHALL BE GIVEN ON THE SHOP DRAWINGS IF DIFFERENT FROM THAT SHOWN ON THE CONTRACT PLANS. SEE ARTICLE 711.07 OF THE SPECIFICATIONS.

RIVETS SHALL NOT BE USED IN THE ASSEMBLY OF THE STRUCTURAL STEEL.

AS SOON AS THE ENGINEER HAS APPROVED THE FIELD WELDS, ALL WELDS ON ANY SURFACE FROM WHICH THE SHOP COAT HAS BEEN OMITTED OR BECOMES WORN OFF OR HAS OTHERWISE BECOME DEFECTIVE SHALL BE THOROGHLY CLEANED OF ALL CHARRED PAINT OR ANY FOREIGN MATTER AND COMPLETELY COVERED WITH ONE COAT OF SHOP PAINT.

ALL STRUCTURAL STEEL SHALL BE ERECTED AND BEAMS ADJUSTED TO THEIR TRUE ELEVATION BEFORE BOLTING FIELD SPLICES. THE ELEVATION SHALL BE CHECKED WITH SPLICES CONNECTED BY FULL SIZE DRIFT PINS AND ERECTION BOLTS AND WITH BEAMS UNSUPPORTED BY ANY FALSEWORK. SEE DRAWING W-43 FOR TRUE ELEVATION OF SPLICES.

ESTIMATED WEIGHT OF STRUCTURAL STEEL (A-36) 234,000 LBS. (117,000 LBS. EACH STRUCTURE)

THE WEIGHT OF HIGH STRENGTH BOLTS IS NOT INCLUDED IN THE ESTIMATED WEIGHT OF STRUCTURAL STEEL. THE COST OF THESE BOLTS SHALL BE INCLUDED IN THE COST OF THE STRUCTURAL STEEL.

SHEAR CONNECTORS: 1,664 EACH / 832 EACH, EACH STRUCTURE)

FIELD DRILLED HOLES: 1,064 EACH / 532 EACH, EACH STRUCTURE)

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED _____ CHK. _____

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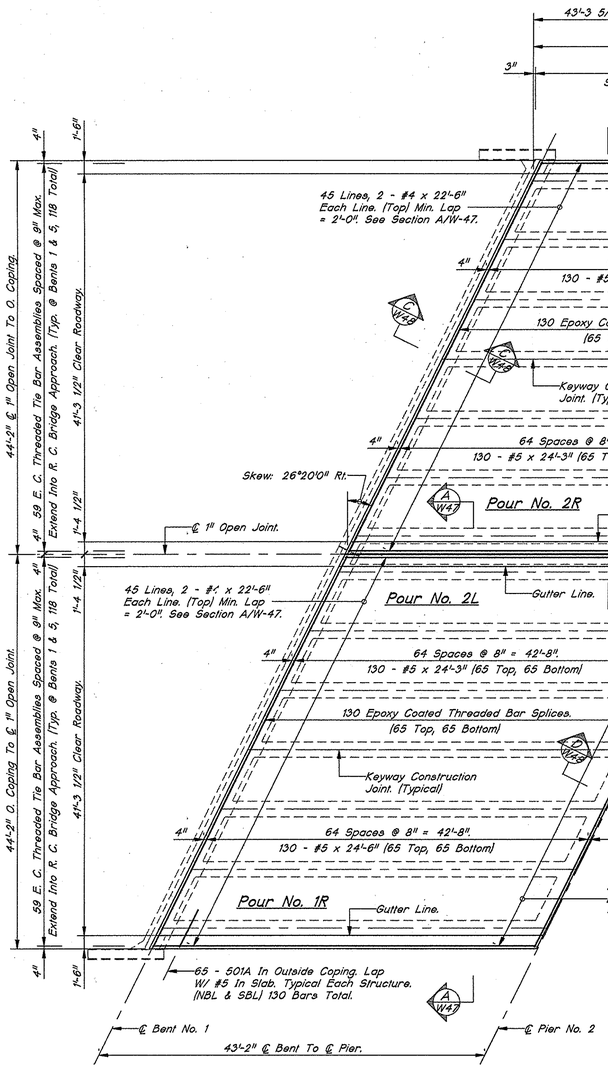
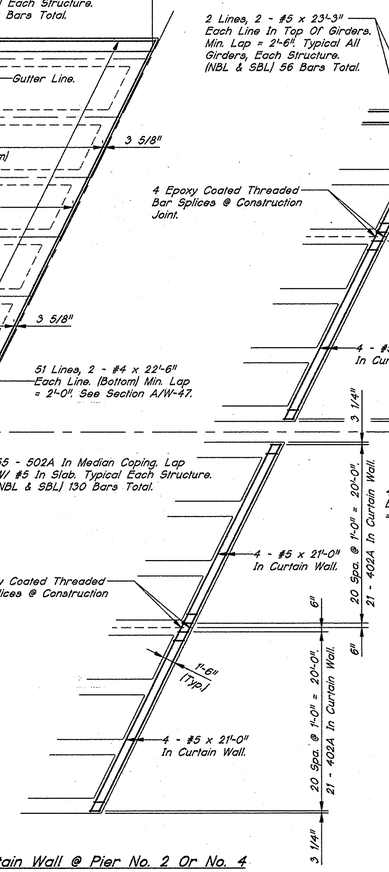
STRUCTURAL STEEL DETAILS &
FABRICATION & ERECTION NOTES
INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993
SUBMITTED FOR APPROVAL: Richard T. O'Connor
DRAWING: W-44 OF W-56 SHEET: 60 OF 120
PROJECT: ST/220-1 ( )
BRIDGE CONTRACT NO: 21128
BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER



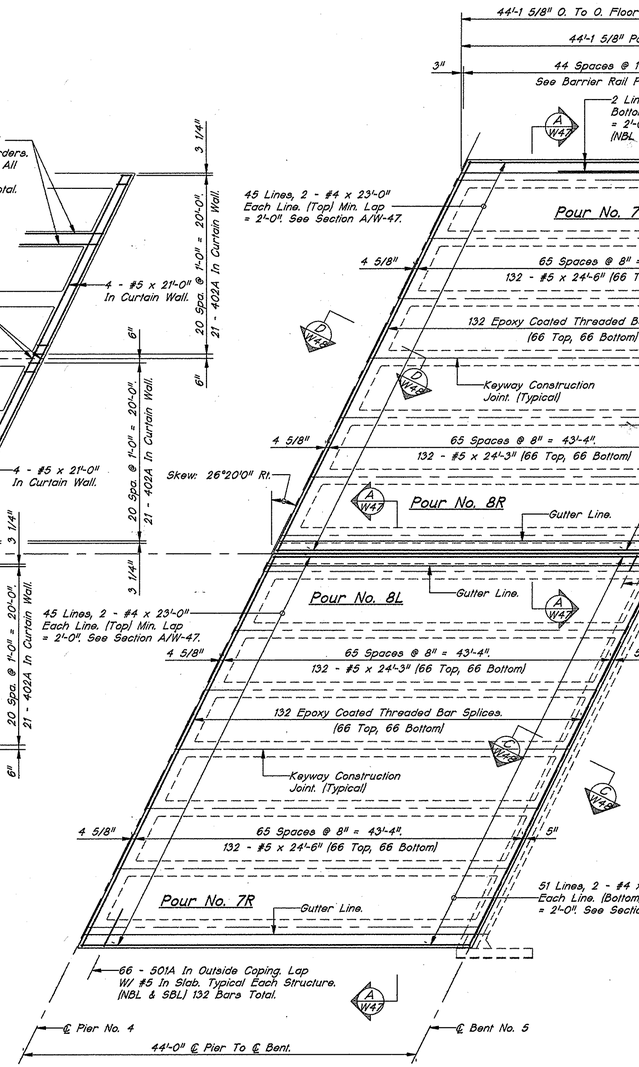

Span "A"



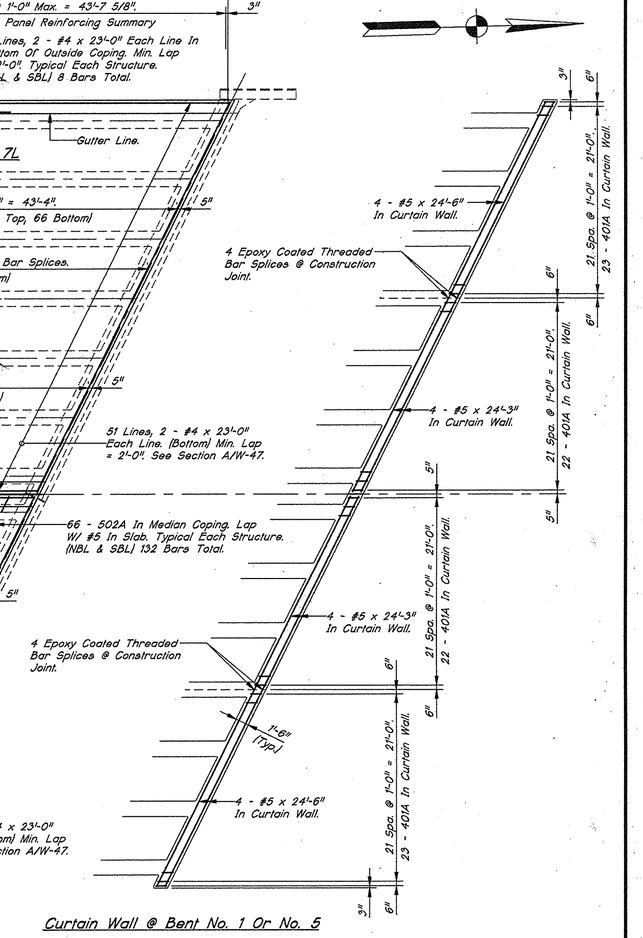

Curtain Wall @ Pier No. 2 Or No. 4

## FLOOR SLAB PLAN

SCALE: 1/8" = 1'-0"




Span "D"




Curtain Wall @ Bent No. 1 Or No. 5

## Barrier Rail Panel Reinforcing Summary

*Typical 43'-3 5/8" Panel Reinforcing (2 Panels Required)*
*44 - 505A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 4'-6" Each Line (F. Fa.)*
*44 - 503A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 4'-6" Each Line (R. Fa.)*
*Min. Lap = 1'-3". See Detail "A", Drawing W-47.*

*Typical 43'-3 5/8" Median Panel Reinforcing (2 Panels Required)*
*44 - 505A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 4'-6" Each Line (F. Fa.)*
*44 - 504A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 4'-6" Each Line (R. Fa.)*
*Min. Lap = 1'-3". See Detail "A", Drawing W-47.*

*Typical 44'-1 5/8" Panel Reinforcing, (2 Panels Required)*
*45 - 505A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 5'-3" Each Line (F. Fa.)*
*45 - 503A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 5'-3" Each Line (R. Fa.)*
*Min. Lap = 1'-3". See Detail "A", Drawing W-47.*

*Typical 44'-1 5/8" Median Panel Reinforcing, (2 Panels Required)*
*45 - 505A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 5'-3" Each Line (F. Fa.)*
*45 - 504A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 5'-3" Each Line (R. Fa.)*
*Min. Lap = 1'-3". See Detail "A", Drawing W-47.*

## NOTES:

*FOR GENERAL NOTES, SEE DRAWING W-38.*

*THE TOP REINFORCING IN THE DECK SHALL BE SECURELY TIED DOWN TO THE DECK FORMS AND/OR THE GIRDERS TO PREVENT LIFTING DURING CONCRETE PLACEMENT.*

*ALL REINFORCING IN THE SUPERSTRUCTURE SHALL BE EPOXY COATED.*

*LAPS SHOWN ARE MINIMUM LAP LENGTHS.*

*FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.*

*FOR BARRIER DELINEATOR SPACING, SEE GENERAL PLAN.*

*FOR ADDITIONAL NOTES, DETAILS, AND BILL OF MATERIALS, SEE DRAWINGS W-46 Thru W-48.*

# SUPERSTRUCTURE DETAILS
# SPANS "A" & "D"
# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-45 OF W-56 SHEET: 61 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

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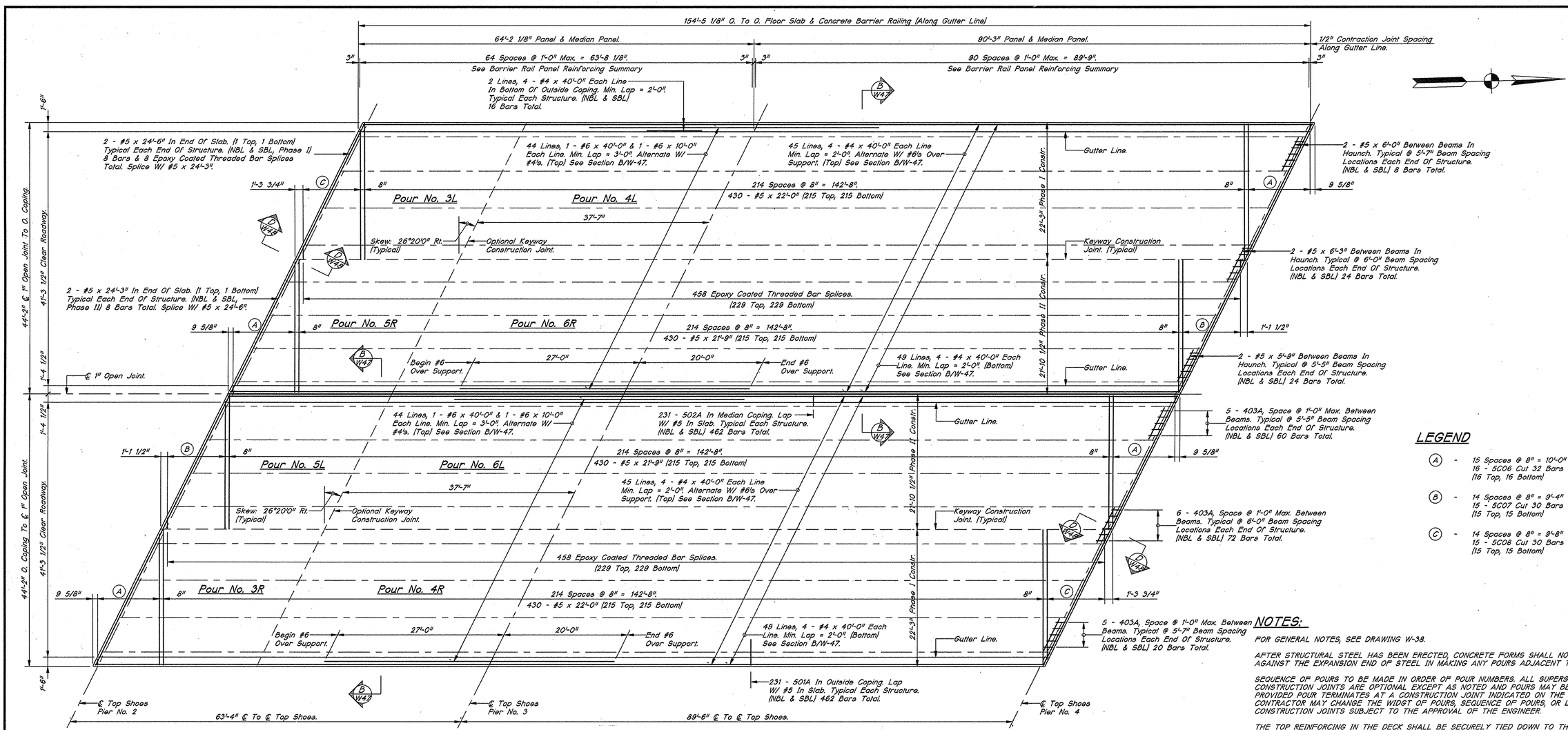
Scale: 1 = 1.0000
Time: 11/02/93 at 17:45 RQAW

RQAW FILE: 93007/3654




## FLOOR SLAB PLAN

SCALE: 1/8" = 1'-0"

## LEGEND

- (A) - 15 Spaces @ 8" = 10'-0" 16 - 5C06 Cut 32 Bars (16 Top, 16 Bottom)
- (B) - 14 Spaces @ 8" = 9'-4" 15 - 5C07 Cut 30 Bars (15 Top, 15 Bottom)
- (C) - 14 Spaces @ 8" = 9'-8" 15 - 5C08 Cut 30 Bars (15 Top, 15 Bottom)

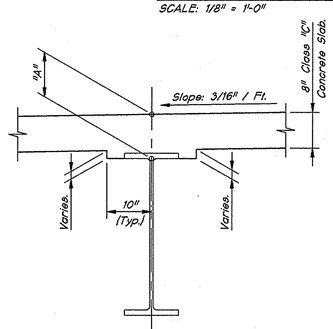
## Barrier Rail Panel Reinforcing Summary

Typical 64'-2 1/8" Panel Reinforcing. (2 Panels Required)
65 - 505A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 25'-3" Each Line (F. Fa.)
65 - 503A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 25'-3" Each Line (R. Fa.)
Min. Lap = 1'-3". See Detail "A", Drawing W-47.

Typical 64'-2 1/8" Median Panel Reinforcing. (2 Panels Required)
65 - 505A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 25'-3" Each Line (F. Fa.)
65 - 504A & 3 Lines, 1 - #4 x 40'-0" & 1 - #4 x 25'-3" Each Line (R. Fa.)
Min. Lap = 1'-3". See Detail "A", Drawing W-47.

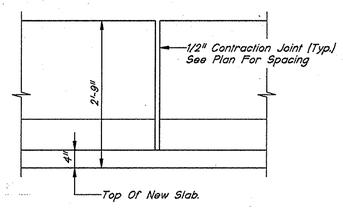
Typical 90'-3" Panel Reinforcing. (2 Panels Required)
91 - 505A & 3 Lines, 2 - #4 x 40'-0" & 1 - #4 x 12'-6" Each Line (F. Fa.)
91 - 503A & 3 Lines, 2 - #4 x 40'-0" & 1 - #4 x 12'-6" Each Line (R. Fa.)
Min. Lap = 1'-3". See Detail "A", Drawing W-47.

Typical 90'-3" Median Panel Reinforcing. (2 Panels Required)
91 - 505A & 3 Lines, 2 - #4 x 40'-0" & 1 - #4 x 12'-6" Each Line (F. Fa.)
91 - 504A & 3 Lines, 2 - #4 x 40'-0" & 1 - #4 x 12'-6" Each Line (R. Fa.)
Min. Lap = 1'-3". See Detail "A", Drawing W-47.



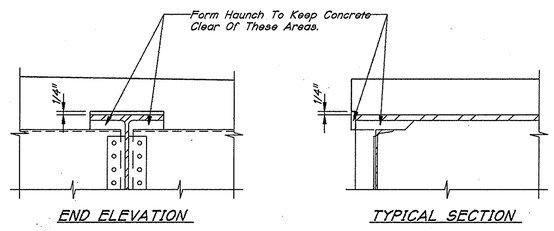

## FILLET DETAIL

SCALE: 3/4" = 1'-0"




## CONTRACTION JOINT DETAIL

SCALE: 3/4" = 1'-0"




END ELEVATION — TYPICAL SECTION

## BEAM BLOCK-OUT DETAIL

SCALE: NONE

| BEAM NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| DIMENSION "A" | 11 5/8" | 10 5/8" | 9 3/4" | 9 7/8" | 10 5/8" | 11" | 11 3/4" | 12 3/8" |

Rev. 1/27/94 STR Form Note

## NOTES:

FOR GENERAL NOTES, SEE DRAWING W-38.

AFTER STRUCTURAL STEEL HAS BEEN ERECTED, CONCRETE FORMS SHALL NOT BE BLOCKED AGAINST THE EXPANSION END OF STEEL IN MAKING ANY POURS ADJACENT TO STEEL SPANS.

SEQUENCE OF POURS TO BE MADE IN ORDER OF POUR NUMBERS. ALL SUPERSTRUCTURE CONSTRUCTION JOINTS ARE OPTIONAL EXCEPT AS NOTED AND POURS MAY BE CONTINUOUS PROVIDED POUR TERMINATES AT A CONSTRUCTION JOINT INDICATED ON THE PLANS. THE CONTRACTOR MAY CHANGE THE WIDGT OF POURS, SEQUENCE OF POURS, OR LOCATION OF CONSTRUCTION JOINTS SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE TOP REINFORCING IN THE DECK SHALL BE SECURELY TIED DOWN TO THE DECK FORMS AND/OR THE BEAMS TO PREVENT LIFTING DURING CONCRETE PLACEMENT.

PERMANENT METAL DECK FORMS MAY NOT BE USED AT THIS STRUCTURE.

ALL REINFORCING IN THE SUPERSTRUCTURE SHALL BE EPOXY COATED.

LAPS SHOWN ARE MINIMUM LAP LENGTHS.

FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.

FOR BARRIER DELINEATOR SPACING, SEE GENERAL PLAN.

FOR ADDITIONAL NOTES, DETAILS, AND BILL OF MATERIALS, SEE DRAWINGS W-47, W-48, & W-49.

# SUPERSTRUCTURE DETAILS SPANS "B" & "C"

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-46 OF W-56 SHEET: 62 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

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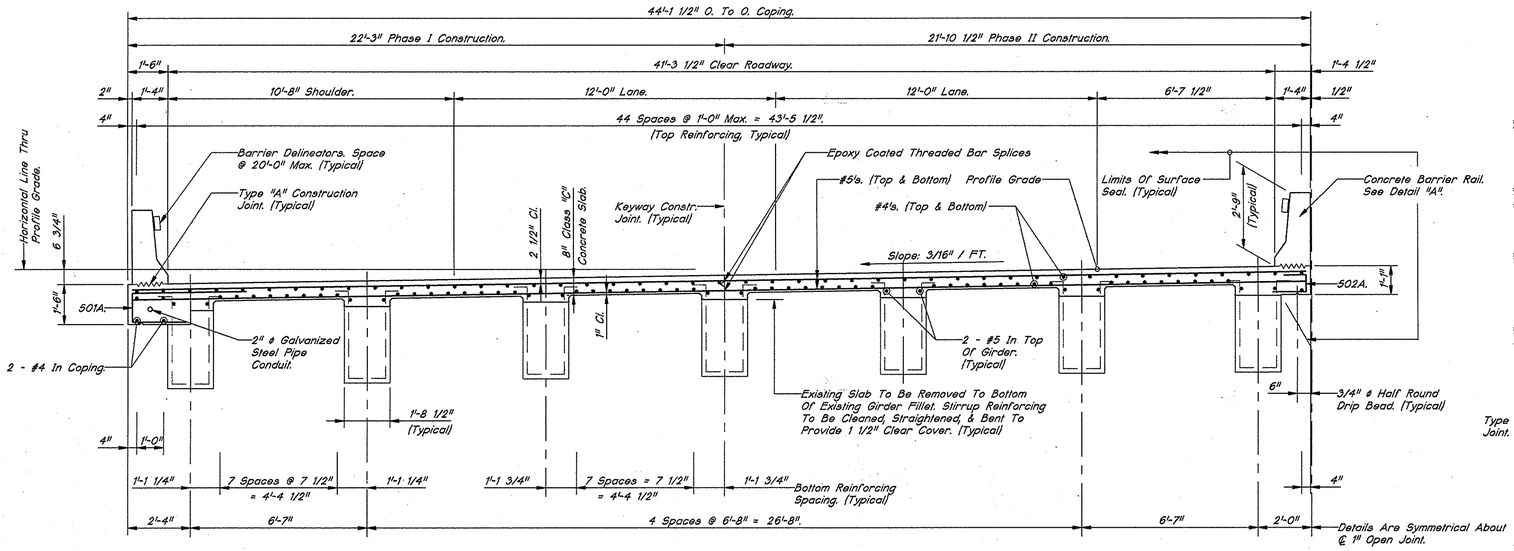
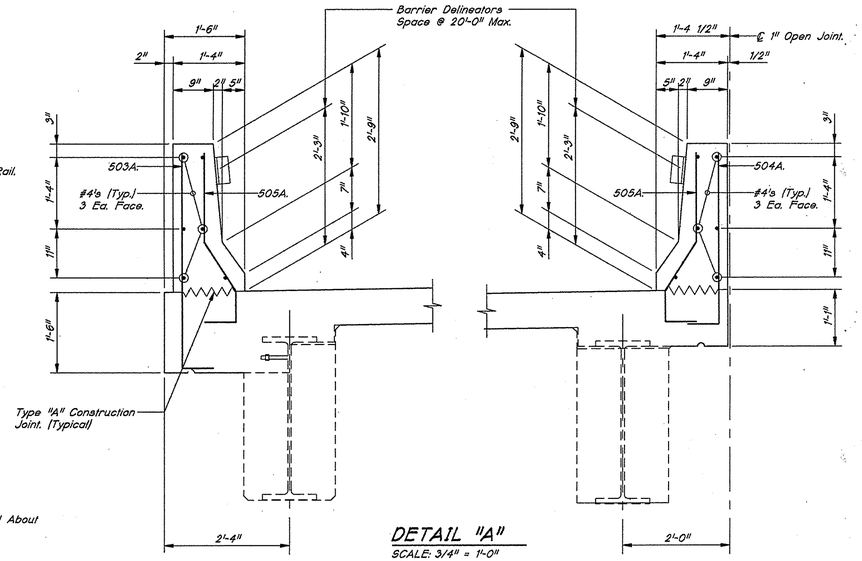
RQAW FILE: 93007/3654



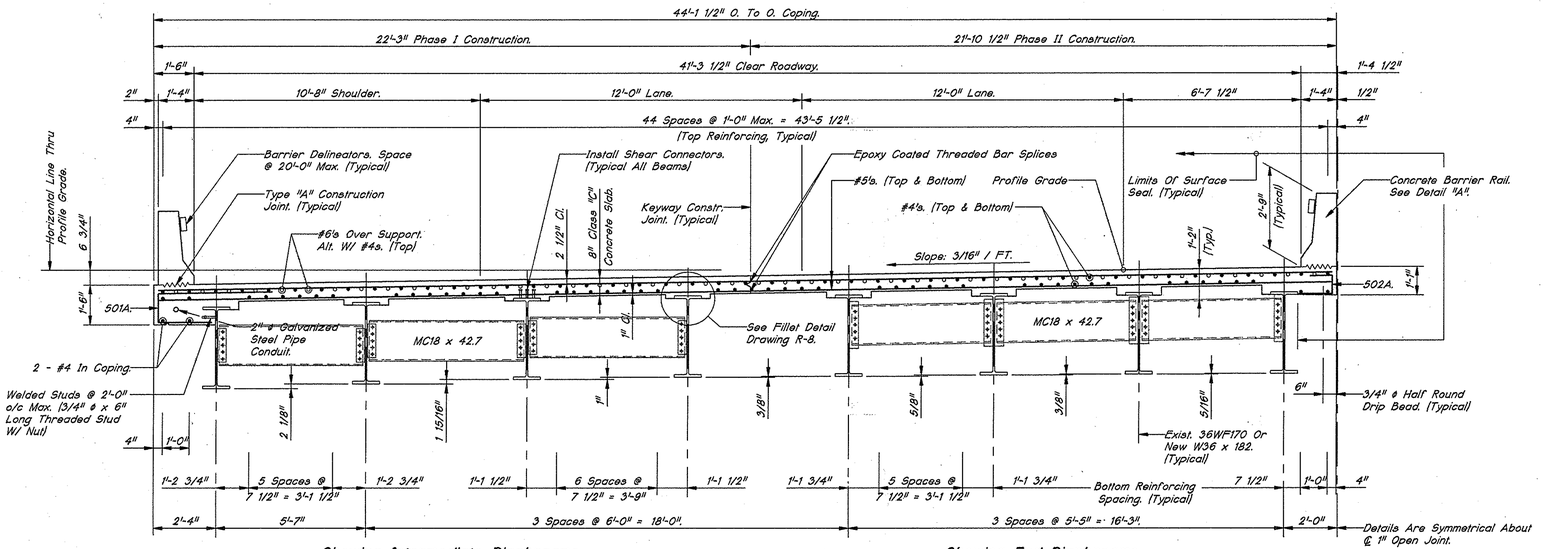

## SECTION (A / W47)

SCALE: 3/8" = 1'-0"




## DETAIL "A"

SCALE: 3/4" = 1'-0"




## Showing Intermediate Diaphragms Span "B"

## SECTION (B / W47)

SCALE: 3/8" = 1'-0"

## Showing End Diaphragms Span "B"

## NOTES:

FOR GENERAL NOTES, SEE DRAWING W-38.

ALL REINFORCING IN THE SUPERSTRUCTURE SHALL BE EPOXY COATED.

FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.

FOR TYPE "A" CONSTRUCTION JOINT, SEE BRIDGE STANDARD C3.

FOR OPTIONAL SPLICE IN VERTICAL RAILING REINFORCING, SEE BRIDGE STANDARD C3.

FOR ADDITIONAL DETAILS & BILL OF MATERIALS, SEE DRAWINGS W-48 & W-49.

# SUPERSTRUCTURE DETAILS

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-47 OF W-50 SHEET: 63 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ

DESIGNED RJZ CHK. AP

TRACED CHK.

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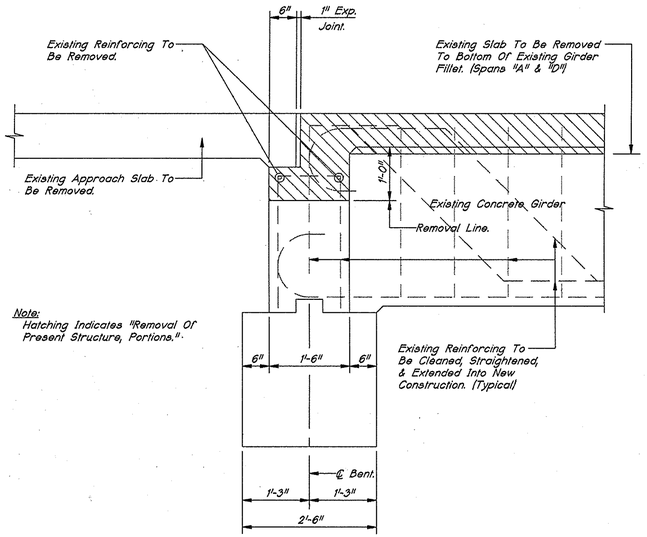
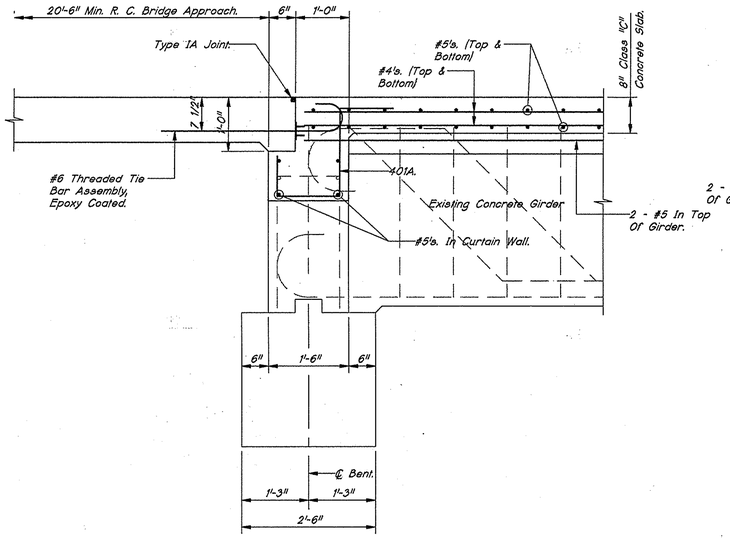



Bent No. 1 Or No. 5

## REMOVAL SECTION (C W48)

SCALE: 3/4" = 1'-0"




Bent No. 1 Or No. 5

## RECONSTRUCTION SECTION (C W48)

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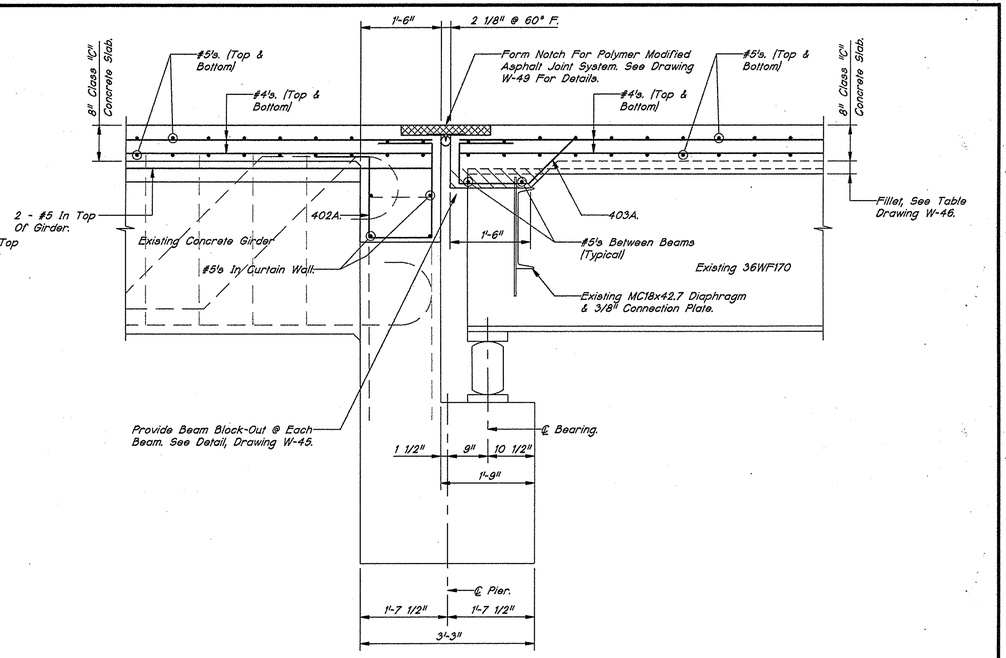


Pier No. 4

## RECONSTRUCTION SECTION (D W48)

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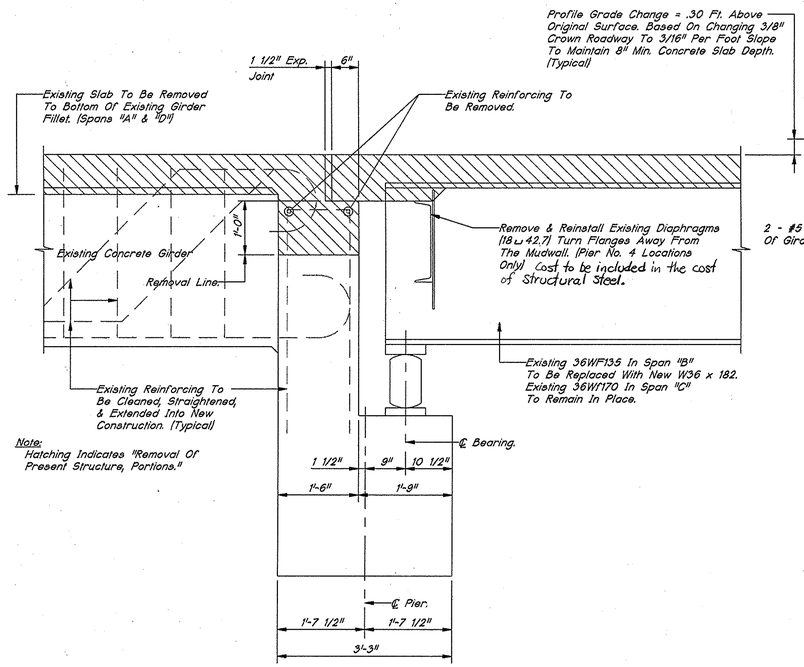


Pier No. 2 Or No. 4

## REMOVAL SECTION (D W48)

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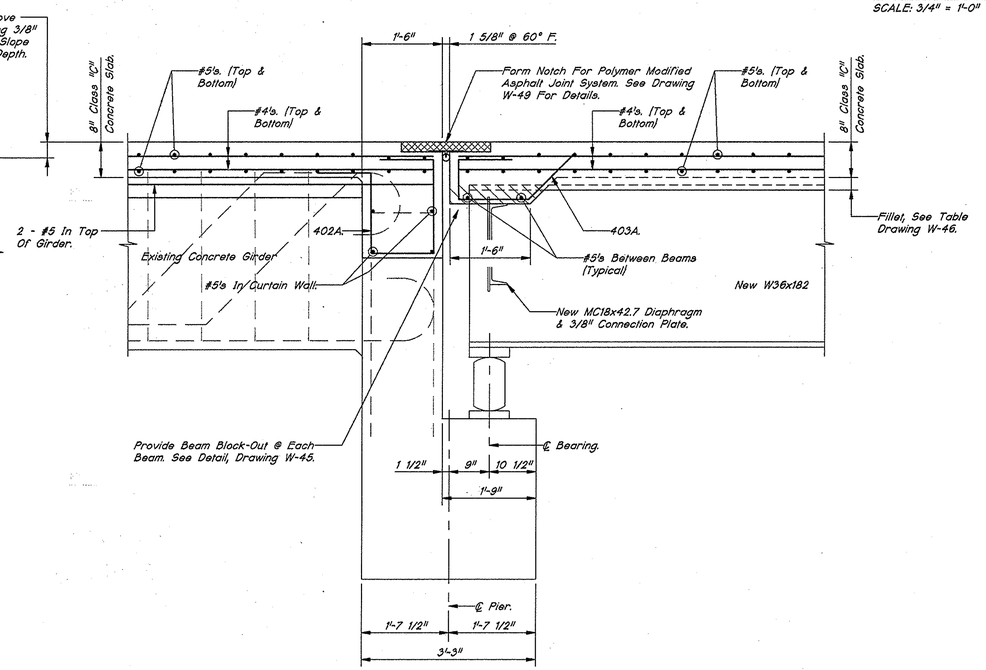


Pier No. 2

## RECONSTRUCTION SECTION (D W48)

SCALE: 3/4" = 1'-0"

## NOTES:

FOR GENERAL NOTES, SEE DRAWING W-38.

ALL REINFORCING IN THE SUPERSTRUCTURE SHALL BE EPOXY COATED.

FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.

FOR ADDITIONAL DETAILS & BILL OF MATERIALS, SEE DRAWING R-11.

# SUPERSTRUCTURE DETAILS

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-48 OF W-56 SHEET: 64 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ

DESIGNED RJZ CHK. AP

TRACED CHK.

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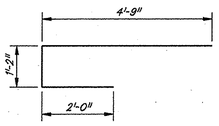
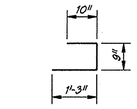
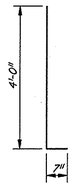
RQAW FILE: 93007/3654



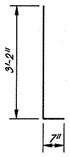

501A x 7'-11"



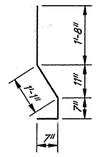

502A x 2'-10"



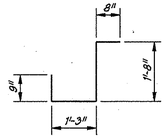

503A x 4'-7"



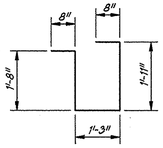

504A x 3'-9"



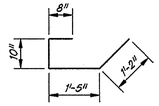

505A x 3'-11"



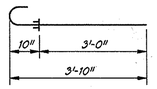

401A x 4'-4"



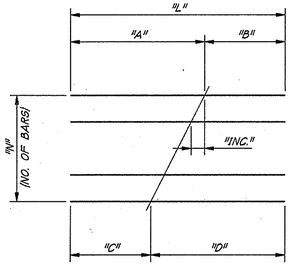

402A x 5'-2"




403A x 4'-1"

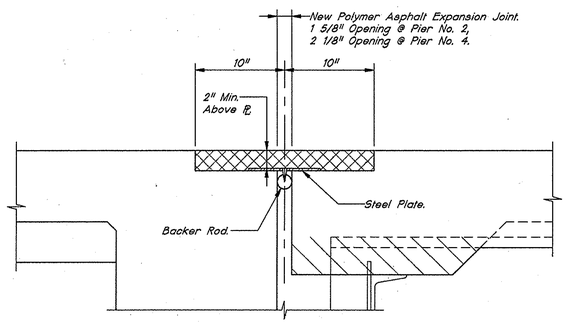



#6 - THREADED TIE BAR ASSEMBLY, EPOXY COATED



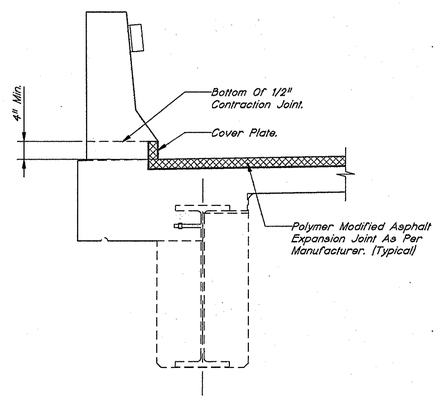

CUTTING DIAGRAM

| TABLE | | | | | | | |
|---|---|---|---|---|---|---|---|
| MARK | "N" | "L" | "A" | "B" | "C" | "D" | "INC" |
| 5C06 | 16 | 22'-3" | 21'-3" | 1'-0" | 1'-0" | 21'-3" | 1'-4 3/16" |
| 5C07 | 15 | 22'-7" | 20'-9" | 1'-10" | 1'-10" | 20'-9" | 1'-4 1/4" |
| 5C08 | 15 | 23'-4" | 21'-1" | 2'-3" | 2'-3" | 21'-1" | 1'-4 1/8" |




TYPICAL POLYMER ASPHALT ASPHALT JOINT SYSTEM

SCALE: NONE




TYPICAL RAILING @ JOINT

SCALE: 3/4" = 1'-0"

## BILL OF MATERIALS SPAN "A" - NBL (SBL SAME)

| REINFORCING STEEL EPOXY COATED | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| 501A | 65 | 7'-11" | |
| 502A | 65 | 2'-10" | |
| 503A | 44 | 4'-7" | |
| 504A | 44 | 3'-9" | |
| 505A | 88 | 3'-11" | |
| #5 | 134 | 24'-6" | |
| #5 | 134 | 24'-3" | |
| #5 | 28 | 23'-3" | |
| #5 | 8 | 21'-0" | |
| TOTAL #5 | | | 9,138 |
| 401A | 45 | 4'-4" | |
| 402A | 42 | 5'-2" | |
| #4 | 12 | 40'-0" | |
| #4 | 196 | 22'-6" | |
| #4 | 12 | 4'-6" | |
| TOTAL #4 | | | 3,578 |
| TOTAL REINFORCING | | | 12,716 |
| CONCRETE | | | (CYS.) |
| "C" IN SUPERSTRUCTURE | | | |
| POUR NO. 1 | | | 32.7 |
| POUR NO. 2 | | | 30.9 |
| TOTAL "C" IN SUPERSTRUCTURE | | | 63.6 |
| CLASS "C" IN RAILING | | | 8.4 |
| MISCELLANEOUS | | | (QTY.) |
| SURFACE SEAL (ESTIMATED) | | | 2,575 SFT. |
| BARRIER DELINEATORS | | | 4 EACH |
| POLYMER MODIFIED ASPHALT | | | |
| EXPANSION JOINT | | | 47 LFT. |
| CONDUIT, STEEL, GALV., 2 IN. | | | 44 LFT. |
| THREADED BAR SPLICES, | | | |
| EPOXY COATED | | | 138 EACH |
| THREADED TIE BAR ASSEMBLY, | | | |
| EPOXY COATED | | | 59 EACH |

## BILL OF MATERIALS SPANS "B" & "C" - NBL (SBL SAME)

| REINFORCING STEEL EPOXY COATED | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| #6 | 44 | 40'-0" | |
| #6 | 44 | 10'-0" | |
| TOTAL #6 | | | 3,304 |
| 501A | 231 | 7'-11" | |
| 502A | 231 | 2'-10" | |
| 503A | 156 | 4'-7" | |
| 504A | 156 | 3'-9" | |
| 505A | 312 | 3'-11" | |
| 5C06 | 32 | 22'-3" | |
| 5C07 | 15 | 22'-7" | |
| 5C08 | 15 | 23'-4" | |
| #5 | 4 | 24'-6" | |
| #5 | 4 | 24'-3" | |
| #5 | 430 | 22'-0" | |
| #5 | 430 | 21'-9" | |
| #5 | 12 | 6'-3" | |
| #5 | 4 | 6'-0" | |
| #5 | 12 | 5'-9" | |
| TOTAL #5 | | | 26,682 |
| 403A | 76 | 4'-1" | |
| #4 | 420 | 40'-0" | |
| #4 | 12 | 25'-3" | |
| #4 | 12 | 12'-6" | |
| TOTAL #4 | | | 11,732 |
| TOTAL REINFORCING | | | 41,718 |
| CONCRETE | | | (CYS.) |
| "C" IN SUPERSTRUCTURE | | | |
| POUR NO. 3 | | | 18.2 |
| POUR NO. 4 | | | 84.7 |
| POUR NO. 5 | | | 17.4 |
| POUR NO. 6 | | | 80.9 |
| TOTAL "C" IN SUPERSTRUCTURE | | | 201.2 |
| CLASS "C" IN RAILING | | | 30.1 |
| MISCELLANEOUS | | | (QTY.) |
| SURFACE SEAL (ESTIMATED) | | | 9,450 SFT. |
| BARRIER DELINEATORS | | | 20 EACH |
| CONDUIT, STEEL, GALV., 2 IN. | | | 155 LFT. |
| THREADED BAR SPLICES, | | | |
| EPOXY COATED | | | 462 EACH |

## BILL OF MATERIALS SPAN "D" - NBL (SBL SAME)

| REINFORCING STEEL EPOXY COATED | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| 501A | 66 | 7'-11" | |
| 502A | 66 | 2'-10" | |
| 503A | 45 | 4'-7" | |
| 504A | 45 | 3'-9" | |
| 505A | 90 | 3'-11" | |
| #5 | 136 | 24'-6" | |
| #5 | 136 | 24'-3" | |
| #5 | 28 | 23'-3" | |
| #5 | 8 | 21'-0" | |
| TOTAL #5 | | | 9,268 |
| 401A | 45 | 4'-4" | |
| 402A | 42 | 5'-2" | |
| #4 | 12 | 40'-0" | |
| #4 | 196 | 23'-0" | |
| #4 | 12 | 5'-3" | |
| TOTAL #4 | | | 3,649 |
| TOTAL REINFORCING | | | 12,917 |
| CONCRETE | | | (CYS.) |
| "C" IN SUPERSTRUCTURE | | | |
| POUR NO. 7 | | | 33.2 |
| POUR NO. 8 | | | 31.4 |
| TOTAL "C" IN SUPERSTRUCTURE | | | 64.6 |
| CLASS "C" IN RAILING | | | 8.6 |
| MISCELLANEOUS | | | (QTY.) |
| SURFACE SEAL (ESTIMATED) | | | 2,625 SFT. |
| BARRIER DELINEATORS | | | 4 EACH |
| POLYMER MODIFIED ASPHALT | | | |
| EXPANSION JOINT | | | 47 LFT. |
| CONDUIT, STEEL, GALV., 2 IN. | | | 45 LFT. |
| THREADED BAR SPLICES, | | | |
| EPOXY COATED | | | 140 EACH |
| THREADED TIE BAR ASSEMBLY, | | | |
| EPOXY COATED | | | 59 EACH |

NOTES:

FOR GENERAL NOTES, SEE DRAWING W-38.

ALL REINFORCING IN THE SUPERSTRUCTURE SHALL BE EPOXY COATED.

FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.

# SUPERSTRUCTURE DETAILS & BILL OF MATERIALS

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-49 OF W-56 SHEET: 65 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

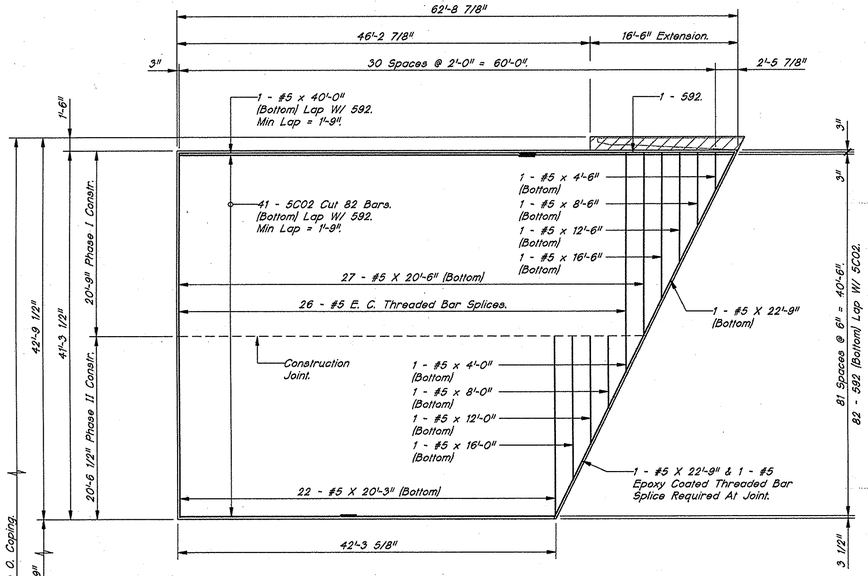
DRAWN GKN CHK. SCJ

DESIGNED RJZ CHK. AP

TRACED CHK.

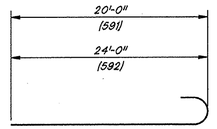
C:\ACAD12\WORK.603\3654\W-49.DWG
Scale: 1 = 1.0000
Times: 11/02/93 at 17:32 RQAW

RQAW FILE: 93007/3654

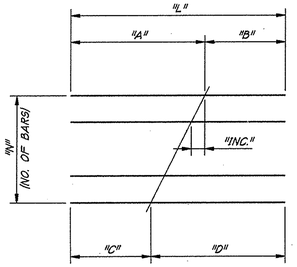



## TYPICAL R. C. BRIDGE APPROACH PLAN

SCALE: 1/8" = 1'-0"




591 X 20'-7"
592 X 24'-7"




CUTTING DIAGRAM

## BILL OF MATERIALS
## NBL & SBL

| REINFORCING STEEL | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| 5C01 | 82 | 24'-3" | |
| 5C02 | 82 | 59'-9" | |
| 591 | 166 | 20'-7" | |
| 592 | 166 | 24'-7" | |
| #5 | 2 | 40'-0" | |
| #5 | 8 | 22'-9" | |
| #5 | 76 | 20'-6" | |
| #5 | 76 | 20'-3" | |
| #5 | 4 | 16'-9" | |
| #5 | 2 | 16'-6" | |
| #5 | 2 | 16'-0" | |
| #5 | 4 | 12'-9" | |
| #5 | 2 | 12'-6" | |
| #5 | 2 | 12'-0" | |
| #5 | 4 | 8'-9" | |
| #5 | 2 | 8'-6" | |
| #5 | 2 | 8'-0" | |
| #5 | 4 | 4'-9" | |
| #5 | 2 | 4'-6" | |
| #5 | 2 | 4'-0" | |
| TOTAL #5 | | | 18,858 |
| TOTAL REINFORCING | | | 18,858 |
| REINFORCING STEEL EPOXY COATED | | | |
| * 4 APPROACH SLAB EXTENSIONS @ 375 LBS. EACH | | | 1,500 |
| TOTAL EPOXY COATED REINFORCING | | | 1,500 |
| MISCELLANEOUS | | | (QTY.) |
| CEMENT CONCRETE PAVEMENT | | | |
| REINFORCED, 10 IN. | | | 764 SYS. |
| * APPROACH SLAB EXTENSIONS (4 @ 2.75 SYS. EACH) | | | 11 SYS. |
| TOTAL CEMENT CONCRETE | | | |
| PAVEMENT REINFORCED, 10 IN. | | | 775 SYS. |
| COMPACTED AGGREGATE | | | |
| FOR BASE, 0 | | | 262 TONS |
| * CONCRETE BRIDGE RAILING | | | |
| TRANSITION TYPE TGB | | | 4 EACH |
| SURFACE SEAL (ESTIMATED) | | | 6,900 SFT. |
| EPOXY COATED THREADED BAR SPLICES. | | | 86 EACH |
| PAVEMENT, REMOVE | | | 780 SYS. |

| TABLE | | | | | | | |
|---|---|---|---|---|---|---|---|
| MARK | "N" | "L" | "A" | "B" | "C" | "D" | "INC" |
| 5C01 | 41 | 24'-3" | 22'-3" | 2'-0" | 12'-3" | 12'-0" | 3" |
| 5C02 | 41 | 59'-9" | 40'-0" | 19'-9" | 30'-0" | 29'-9" | 3" |

NOTES:

* Hatched Areas Indicate R.C. Bridge Approach Slab Extensions Under Concrete Barrier Rail Transition Type TGB. See Bridge Standard BR-1 & BR-1A For Details And Reinforcing.

Place 6" Min. Compacted Aggregate For Base, Type "O" Under New R.C. Approach Slabs and Extensions.

NOTES:

FOR GENERAL NOTES, SEE DRAWING W-50.

LAPS SHOWN ARE MINIMUM LAP LENGTHS.

FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.

FOR PAVEMENT JOINT DETAILS, SEE ROAD STANDARD SHEET A.

FOR ADDITIONAL R. C. BRIDGE APPROACH DETAILS, SEE ROAD STANDARD SHEET B.

# APPROACH DETAILS & BILL OF MATERIALS
# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-50 OF W-56 SHEET: 66 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

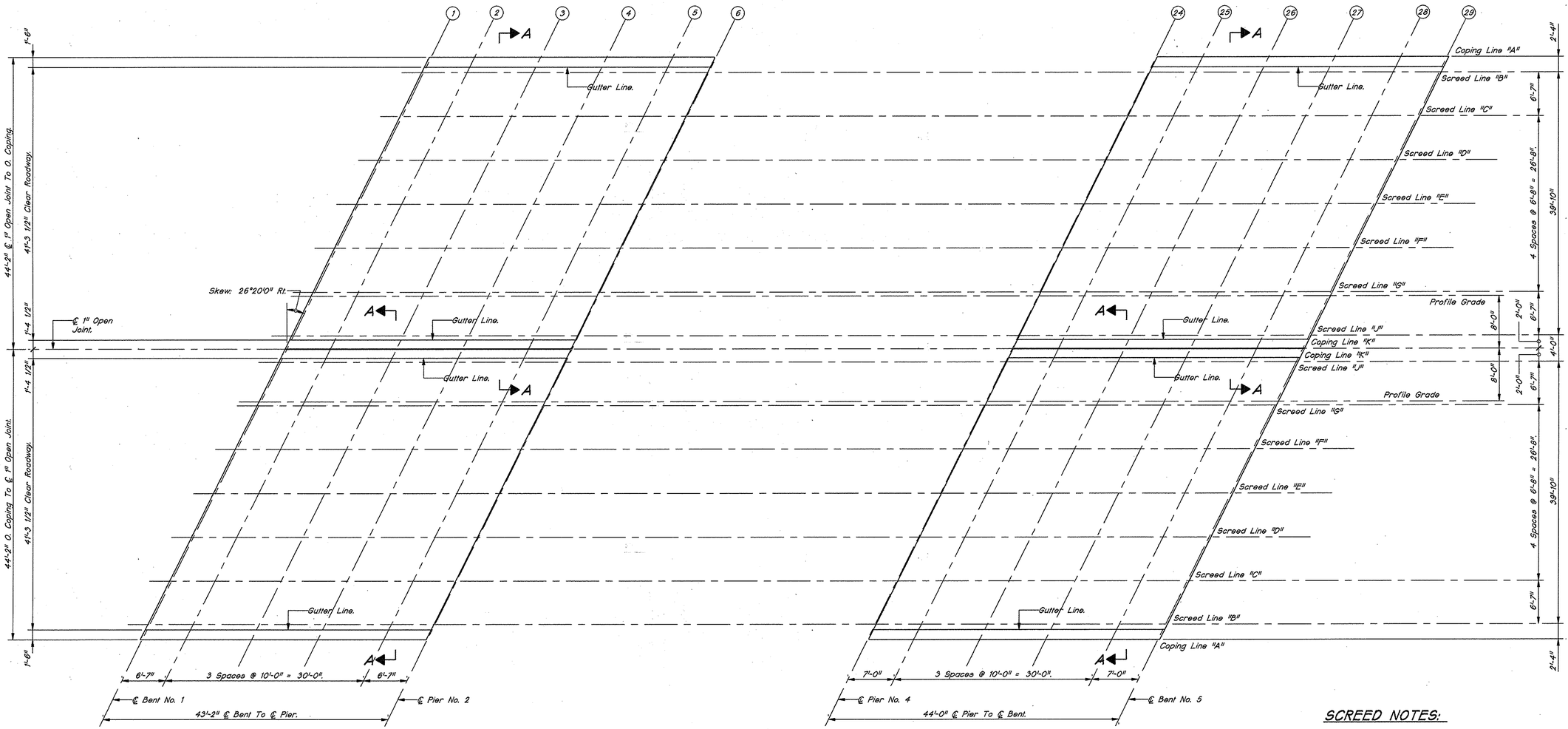
BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

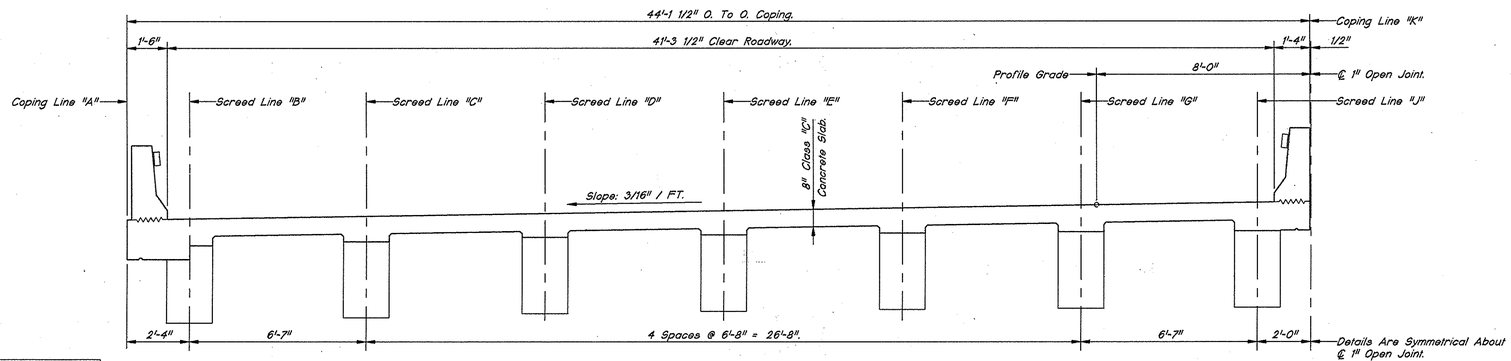
C:\ACAD12\WORK.603\3654\W-50.DWG
Scale: 1" = 1.0000
Time: 11/02/93 at 17:29 RQAW

RQAW FILE: 93007/3654




## SCREED PLAN

SCALE: 1/8" = 1'-0"




## SECTION A-A

SCALE: 3/8" = 1'-0"

## SCREED NOTES:

SCREED ELEVATIONS SHALL BE DETERMINED BY ADDING THE CONCRETE DEAD LOAD DEFLECTIONS TO THE FINAL CONCRETE ELEVATIONS AT ALL SCREED POINTS.

TAKE ELEVATIONS AT ALL SCREED POINTS ON TOP OF BEAM, ENTER THE ELEVATIONS BELOW THE TABULATED ELEVATIONS IN THE SCREED TABLE, SUBTRACT THESE ELEVATIONS FROM THE TABULATED ELEVATIONS AND USE THE RESULTING DIMENSIONS AS THE HEIGHT FOR THE SETTING OF THE SCREED OR COPING FORM ABOVE THAT POINT. THIS DIMENSION REMAINS UNCHANGED REGARDLESS OF HOW MUCH OR IN WHAT ORDER THE CONCRETE IS POURED.

NO CONCRETE IS TO BE POURED UNTIL THE ABOVE OPERATION IS COMPLETE.

DO NOT SET SCREEDS OR COPING FORMS BY LEVELING.

# SCREEDS – SPANS "A" & "D"

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-51 OF W-56 SHEET: 67 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

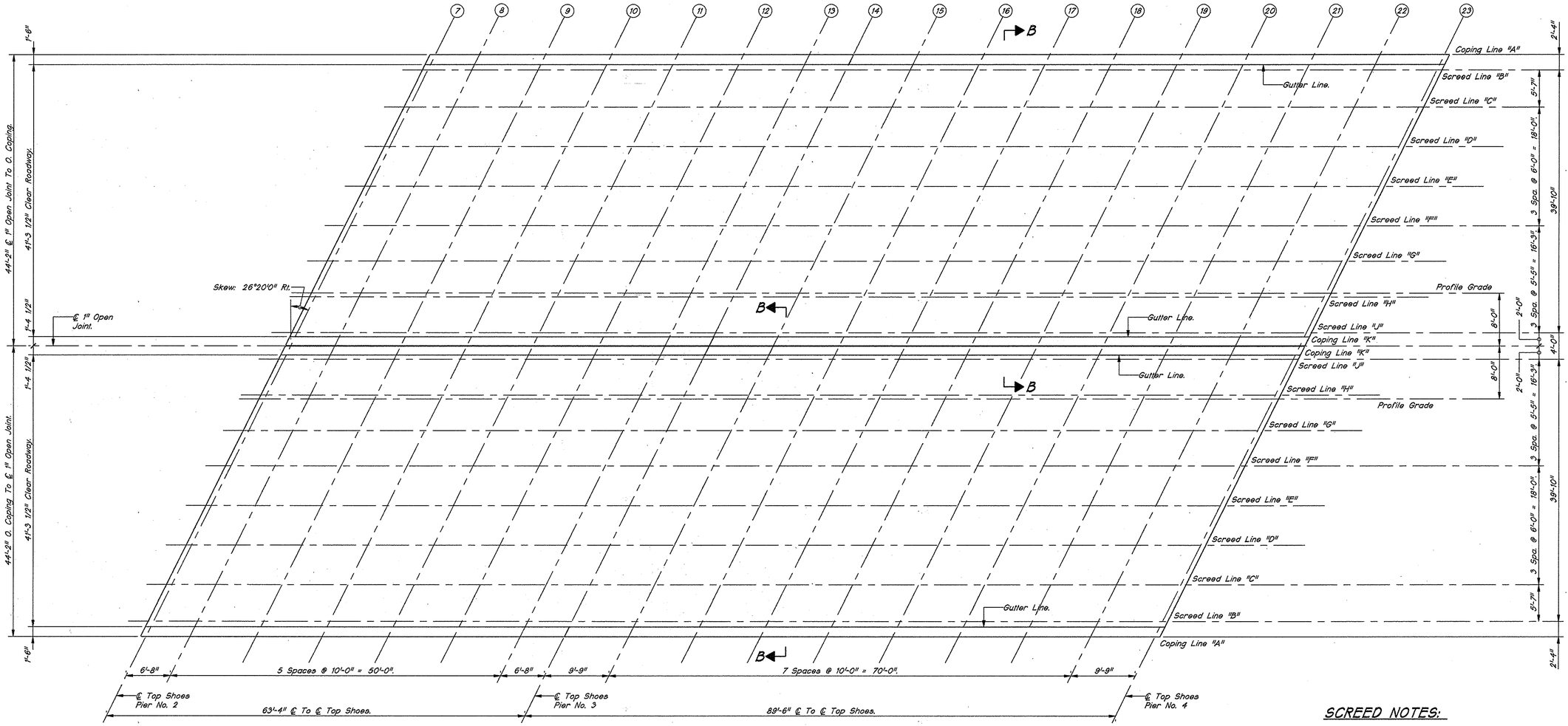
BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

C:\ACAD12\WORK.603\3654\W-51.DWG
Scale: 1" = 1.0000
Time: 11/02/93 at 17:27 RQAW

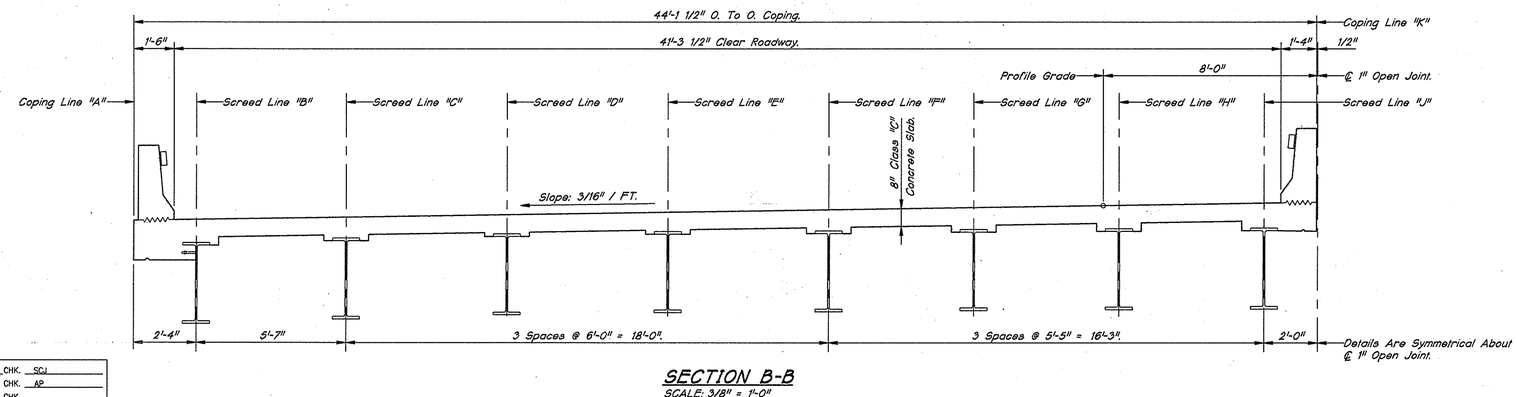
RQAW FILE: 93007/3654




Span "B" | Span "C"

## SCREED PLAN

SCALE: 1/8" = 1'-0"




## SECTION B-B

SCALE: 3/8" = 1'-0"

### SCREED NOTES:

SCREED ELEVATIONS SHALL BE DETERMINED BY ADDING THE CONCRETE DEAD LOAD DEFLECTIONS TO THE FINAL CONCRETE ELEVATIONS AT ALL SCREED POINTS.

TAKE ELEVATIONS AT ALL SCREED POINTS ON TOP OF BEAM, ENTER THE ELEVATIONS BELOW THE TABULATED ELEVATIONS IN THE SCREED TABLE, SUBTRACT THESE ELEVATIONS FROM THE TABULATED ELEVATIONS AND USE THE RESULTING DIMENSIONS AS THE HEIGHT FOR THE SETTING OF THE SCREED OR COPING FORM ABOVE THAT POINT. THIS DIMENSION REMAINS UNCHANGED REGARDLESS OF HOW MUCH OR IN WHAT ORDER THE CONCRETE IS POURED.

NO CONCRETE IS TO BE POURED UNTIL THE ABOVE OPERATION IS COMPLETE.

DO NOT SET SCREEDS OR COPING FORMS BY LEVELING.

# SCREEDS – SPANS "B" & "C"

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-52 OF W-56 SHEET: 68 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

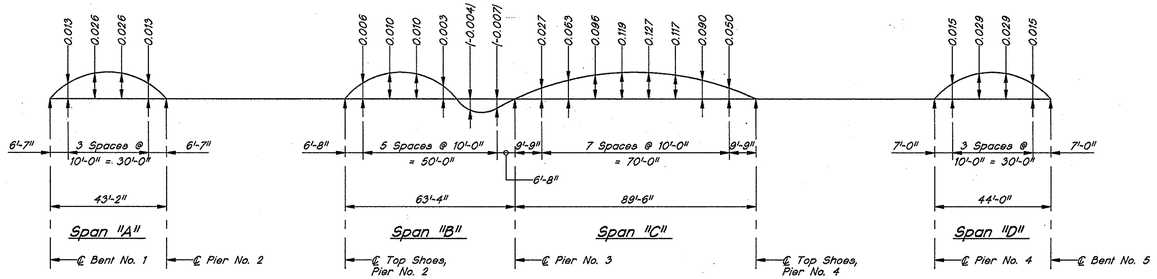
DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

G:\ACAD12\WORK 603\3654\W-52.DWG
Scale: 1 = 1.0000
Time: 11/02/93 at 16:29 RQAW

RQAW FILE: 93007/3654

| | | SPAN "A" | | | | | | SPAN "B" | | | | | | | | SPAN "C" | | | | | | | | | | SPAN "D" | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SCREED POINT NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| A | ELEVATION – TOP OF SCREED | 608.120 | 608.215 | 608.345 | 608.465 | 608.575 | 608.640 | 608.650 | 608.735 | 608.860 | 608.980 | 609.095 | 609.205 | 609.325 | 609.410 | 609.555 | 609.710 | 609.865 | 610.005 | 610.135 | 610.245 | 610.335 | 610.415 | 610.485 | 610.495 | 610.595 | 610.725 | 610.845 | 610.955 | 611.020 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | ELEVATION – TOP OF SCREED | 608.170 | 608.265 | 608.395 | 608.515 | 608.625 | 608.690 | 608.700 | 608.785 | 608.910 | 609.030 | 609.145 | 609.255 | 609.375 | 609.460 | 609.605 | 609.760 | 609.915 | 610.055 | 610.185 | 610.295 | 610.385 | 610.465 | 610.535 | 610.545 | 610.645 | 610.775 | 610.895 | 611.005 | 611.070 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | ELEVATION – TOP OF SCREED | 608.310 | 608.400 | 608.535 | 608.655 | 608.760 | 608.825 | 608.820 | 608.905 | 609.030 | 609.150 | 609.265 | 609.375 | 609.495 | 609.580 | 609.725 | 609.880 | 610.035 | 610.175 | 610.305 | 610.415 | 610.510 | 610.590 | 610.655 | 610.680 | 610.780 | 610.915 | 611.035 | 611.140 | 611.210 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | ELEVATION – TOP OF SCREED | 608.460 | 608.550 | 608.685 | 608.805 | 608.910 | 608.975 | 608.950 | 609.035 | 609.160 | 609.280 | 609.395 | 609.505 | 609.625 | 609.710 | 609.855 | 610.010 | 610.165 | 610.305 | 610.435 | 610.545 | 610.635 | 610.715 | 610.785 | 610.830 | 610.930 | 611.065 | 611.185 | 611.290 | 611.360 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | ELEVATION – TOP OF SCREED | 608.600 | 608.695 | 608.825 | 608.945 | 609.055 | 609.120 | 609.080 | 609.165 | 609.290 | 609.410 | 609.520 | 609.635 | 609.750 | 609.840 | 609.985 | 610.140 | 610.290 | 610.435 | 610.565 | 610.675 | 610.765 | 610.845 | 610.915 | 610.975 | 611.075 | 611.205 | 611.325 | 611.435 | 611.500 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F | ELEVATION – TOP OF SCREED | 608.745 | 608.840 | 608.970 | 609.090 | 609.200 | 609.265 | 609.210 | 609.295 | 609.420 | 609.540 | 609.650 | 609.765 | 609.880 | 609.970 | 610.115 | 610.270 | 610.420 | 610.565 | 610.695 | 610.805 | 610.895 | 610.975 | 611.045 | 611.120 | 611.215 | 611.350 | 611.470 | 611.575 | 611.645 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | ELEVATION – TOP OF SCREED | 608.890 | 608.980 | 609.115 | 609.235 | 609.340 | 609.405 | 609.325 | 609.410 | 609.535 | 609.655 | 609.770 | 609.880 | 610.000 | 610.085 | 610.230 | 610.385 | 610.540 | 610.680 | 610.810 | 610.920 | 611.015 | 611.095 | 611.160 | 611.260 | 611.360 | 611.495 | 611.615 | 611.720 | 611.790 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | ELEVATION – TOP OF SCREED | * | * | * | * | * | * | 609.440 | 609.530 | 609.650 | 609.770 | 609.885 | 610.000 | 610.115 | 610.200 | 610.345 | 610.500 | 610.655 | 610.800 | 610.925 | 611.035 | 611.130 | 611.210 | 611.275 | * | * | * | * | * | * |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | ELEVATION – TOP OF SCREED | 609.030 | 609.125 | 609.255 | 609.375 | 609.485 | 609.550 | 609.560 | 609.645 | 609.770 | 609.890 | 610.000 | 610.115 | 610.230 | 610.320 | 610.465 | 610.620 | 610.770 | 610.915 | 611.045 | 611.155 | 611.245 | 611.325 | 611.395 | 611.405 | 611.500 | 611.635 | 611.755 | 611.860 | 611.930 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K | ELEVATION – TOP OF SCREED | 609.075 | 609.165 | 609.300 | 609.420 | 609.525 | 609.590 | 609.600 | 609.690 | 609.810 | 609.930 | 610.045 | 610.160 | 610.275 | 610.360 | 610.505 | 610.660 | 610.815 | 610.960 | 611.085 | 611.195 | 611.290 | 611.370 | 611.435 | 611.445 | 611.545 | 611.680 | 611.800 | 611.905 | 611.975 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

* – INDICATES LINE NOT USED.




CONCRETE DEADLOAD DEFLECTION DIAGRAM (FEET)

SCALE: NONE

## SCREED NOTES:

SCREED ELEVATIONS SHALL BE DETERMINED BY ADDING THE CONCRETE DEAD LOAD DEFLECTIONS TO THE FINAL CONCRETE ELEVATIONS AT ALL SCREED POINTS.

TAKE ELEVATIONS AT ALL SCREED POINTS ON TOP OF BEAM, ENTER THE ELEVATIONS BELOW THE TABULATED ELEVATIONS IN THE SCREED TABLE, SUBTRACT THESE ELEVATIONS FROM THE TABULATED ELEVATIONS AND USE THE RESULTING DIMENSIONS AS THE HEIGHT FOR THE SETTING OF THE SCREED OR COPING FORM ABOVE THAT POINT. THIS DIMENSION REMAINS UNCHANGED REGARDLESS OF HOW MUCH OR IN WHAT ORDER THE CONCRETE IS POURED.

NO CONCRETE IS TO BE POURED UNTIL THE ABOVE OPERATION IS COMPLETE.

DO NOT SET SCREEDS OR COPING FORMS BY LEVELING.

# SCREED TABLE – NBL

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-53 OF W-56 SHEET: 69 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

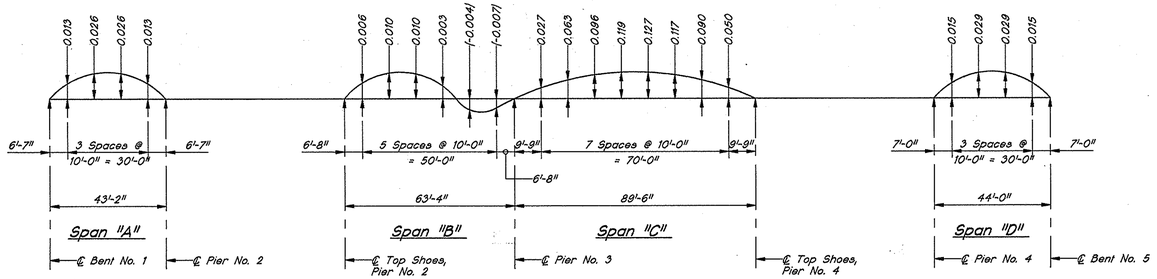
DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

C:\ACAD12\WORK.603\3654\W-53.DWG
Scale: 1 = 1.0000
Time: 11/02/93 at 16:31 RQAW

RQAW FILE: 93007/3654

| | | SPAN "A" | | | | | | SPAN "B" | | | | | | | | SPAN "C" | | | | | | | | | SPAN "D" | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SCREED POINT NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| A | ELEVATION – TOP OF SCREED | 608.645 | 608.740 | 608.870 | 608.990 | 609.100 | 609.165 | 609.175 | 609.260 | 609.385 | 609.505 | 609.620 | 609.730 | 609.850 | 609.935 | 610.080 | 610.235 | 610.390 | 610.530 | 610.660 | 610.770 | 610.860 | 610.940 | 611.010 | 611.020 | 611.120 | 611.250 | 611.370 | 611.480 | 611.545 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | ELEVATION – TOP OF SCREED | 608.670 | 608.760 | 608.895 | 609.015 | 609.120 | 609.185 | 609.195 | 609.285 | 609.405 | 609.525 | 609.640 | 609.755 | 609.870 | 609.955 | 610.100 | 610.255 | 610.410 | 610.555 | 610.680 | 610.790 | 610.885 | 610.965 | 611.030 | 611.040 | 611.140 | 611.275 | 611.395 | 611.500 | 611.570 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | ELEVATION – TOP OF SCREED | 608.735 | 608.825 | 608.960 | 609.080 | 609.185 | 609.250 | 609.250 | 609.335 | 609.460 | 609.580 | 609.695 | 609.805 | 609.925 | 610.010 | 610.155 | 610.310 | 610.465 | 610.605 | 610.735 | 610.845 | 610.940 | 611.020 | 611.085 | 611.105 | 611.205 | 611.340 | 611.460 | 611.565 | 611.635 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | ELEVATION – TOP OF SCREED | 608.800 | 608.890 | 609.025 | 609.145 | 609.250 | 609.315 | 609.310 | 609.395 | 609.520 | 609.640 | 609.750 | 609.865 | 609.980 | 610.070 | 610.215 | 610.370 | 610.525 | 610.665 | 610.795 | 610.905 | 610.995 | 611.075 | 611.145 | 611.170 | 611.270 | 611.405 | 611.525 | 611.630 | 611.700 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | ELEVATION – TOP OF SCREED | 608.860 | 608.995 | 609.085 | 609.205 | 609.315 | 609.380 | 609.370 | 609.455 | 609.580 | 609.700 | 609.810 | 609.925 | 610.040 | 610.130 | 610.270 | 610.430 | 610.580 | 610.725 | 610.850 | 610.960 | 611.055 | 611.135 | 611.200 | 611.235 | 611.335 | 611.465 | 611.585 | 611.695 | 611.760 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F | ELEVATION – TOP OF SCREED | 608.925 | 609.020 | 609.150 | 609.270 | 609.380 | 609.445 | 609.425 | 609.510 | 609.635 | 609.755 | 609.870 | 609.980 | 610.100 | 610.185 | 610.330 | 610.485 | 610.640 | 610.780 | 610.910 | 611.020 | 611.115 | 611.195 | 611.260 | 611.300 | 611.400 | 611.530 | 611.650 | 611.760 | 611.825 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | ELEVATION – TOP OF SCREED | 608.990 | 609.085 | 609.215 | 609.335 | 609.445 | 609.510 | 609.480 | 609.565 | 609.690 | 609.810 | 609.920 | 610.035 | 610.150 | 610.240 | 610.380 | 610.540 | 610.690 | 610.835 | 610.960 | 611.070 | 611.165 | 611.245 | 611.310 | 611.365 | 611.460 | 611.595 | 611.715 | 611.820 | 611.890 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | ELEVATION – TOP OF SCREED | * | * | * | * | * | * | 609.530 | 609.615 | 609.740 | 609.860 | 609.975 | 610.085 | 610.205 | 610.290 | 610.435 | 610.590 | 610.745 | 610.885 | 611.015 | 611.125 | 611.220 | 611.300 | 611.365 | * | * | * | * | * | * |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | ELEVATION – TOP OF SCREED | 609.055 | 609.145 | 609.280 | 609.400 | 609.505 | 609.575 | 609.585 | 609.670 | 609.795 | 609.915 | 610.025 | 610.140 | 610.255 | 610.345 | 610.485 | 610.645 | 610.795 | 610.940 | 611.065 | 611.175 | 611.270 | 611.350 | 611.415 | 611.425 | 611.525 | 611.660 | 611.780 | 611.885 | 611.955 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K | ELEVATION – TOP OF SCREED | 609.075 | 609.165 | 609.300 | 609.420 | 609.525 | 609.590 | 609.600 | 609.690 | 609.810 | 609.930 | 610.045 | 610.160 | 610.275 | 610.360 | 610.505 | 610.660 | 610.815 | 610.960 | 611.085 | 611.195 | 611.290 | 611.370 | 611.435 | 611.445 | 611.545 | 611.680 | 611.800 | 611.905 | 611.975 |
| | ELEVATION – TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DISTANCE TOP OF SCREED TO TOP OF BEAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

* – INDICATES LINE NOT USED.




CONCRETE DEADLOAD DEFLECTION DIAGRAM (FEET)

SCALE: NONE

## SCREED NOTES:

SCREED ELEVATIONS SHALL BE DETERMINED BY ADDING THE CONCRETE DEAD LOAD DEFLECTIONS TO THE FINAL CONCRETE ELEVATIONS AT ALL SCREED POINTS.

TAKE ELEVATIONS AT ALL SCREED POINTS ON TOP OF BEAM, ENTER THE ELEVATIONS BELOW THE TABULATED ELEVATIONS IN THE SCREED TABLE, SUBTRACT THESE ELEVATIONS FROM THE TABULATED ELEVATIONS AND USE THE RESULTING DIMENSIONS AS THE HEIGHT FOR THE SETTING OF THE SCREED OR COPING FORM ABOVE THAT POINT. THIS DIMENSION REMAINS UNCHANGED REGARDLESS OF HOW MUCH OR IN WHAT ORDER THE CONCRETE IS POURED.

NO CONCRETE IS TO BE POURED UNTIL THE ABOVE OPERATION IS COMPLETE.

DO NOT SET SCREEDS OR COPING FORMS BY LEVELING.

# SCREED TABLE – SBL

# INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T. O'Connor

DRAWING: W-54 OF W-56 SHEET: 70 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

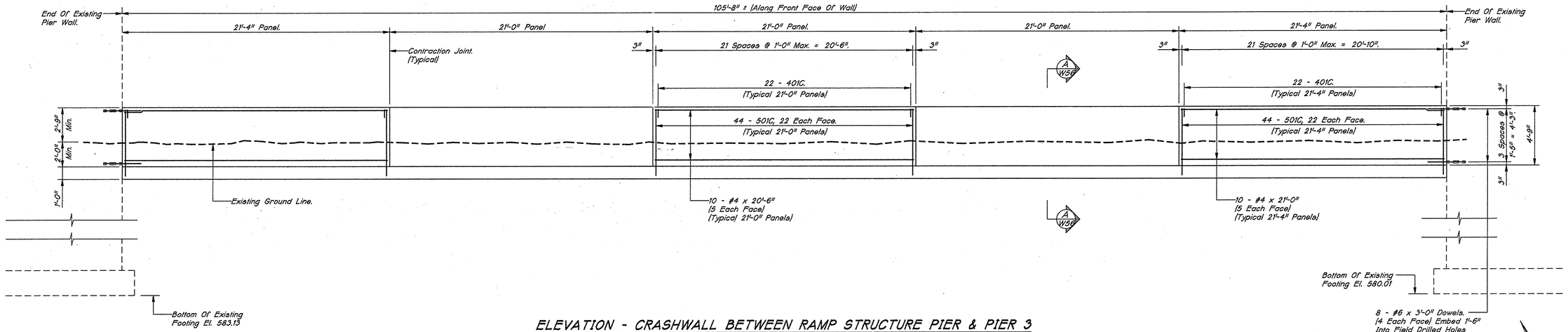
BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

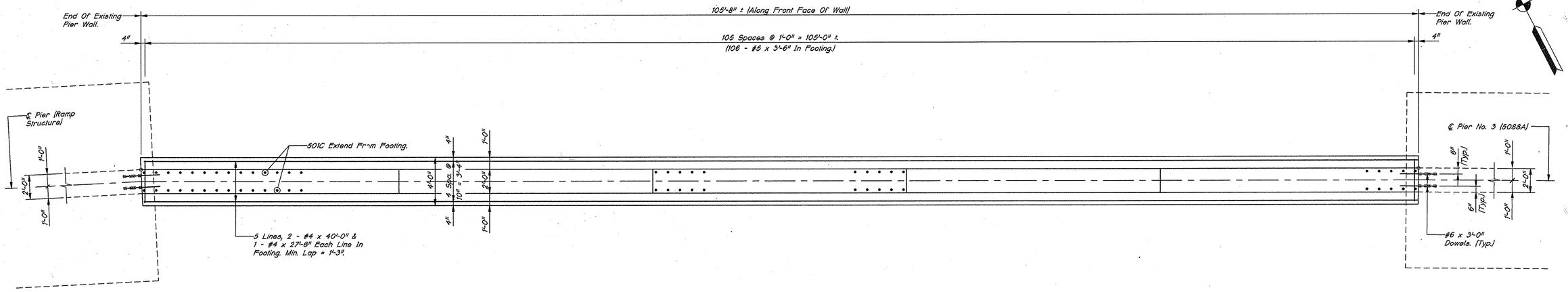
C:\ACAD12\WORK\603\3654\W-54.DWG
Scale: 1" = 1.0000'
Time: 11/02/93 at 16:33 RQAW

RQAW FILE: 93007/3654




## ELEVATION - CRASHWALL BETWEEN RAMP STRUCTURE PIER & PIER 3

SCALE: 1/4" = 1'-0"




Pier No. 3 (Ramp Structure)

## FOOTING PLAN - CRASHWALL BETWEEN RAMP STRUCTURE PIER & PIER 3

SCALE: 1/4" = 1'-0"

Pier No. 3 (5088A)

### NOTES:

FOR GENERAL NOTES, SEE DRAWING W-38.

ALL REINFORCING SHALL BE EPOXY COATED.

FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.

FOR ADDITIONAL DETAILS & BILL OF MATERIALS, SEE DRAWING W-56.

## CRASHWALL DETAILS – PIER 3

## INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard T O'Connor

DRAWING: W-55 OF W-56 SHEET: 71 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

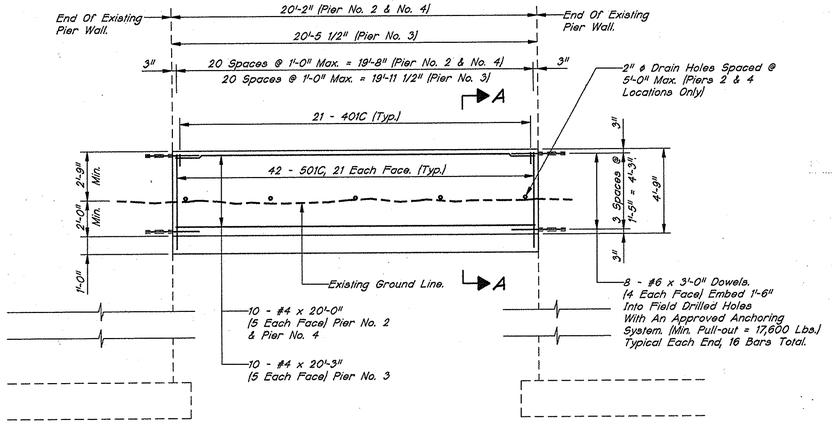
BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED ____ CHK. ____

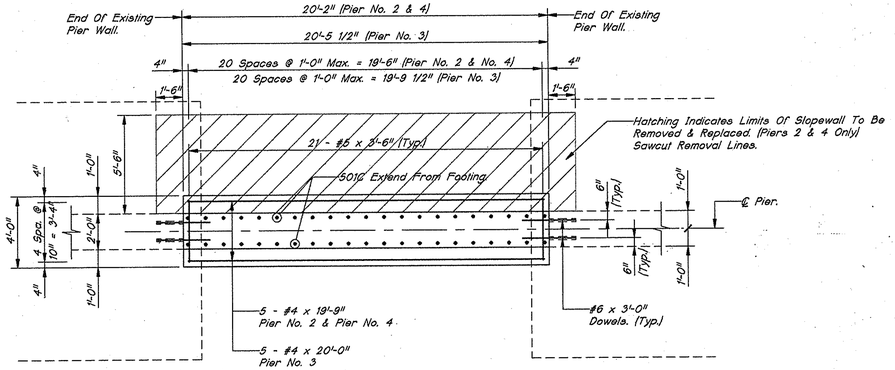
C:\ACAD12\WORK.603\3654\W-55.DWG
Scale: 1 = 1.0000
Time: 11/02/93 at 16:36 RQAW

RQAW FILE: 93007/3654



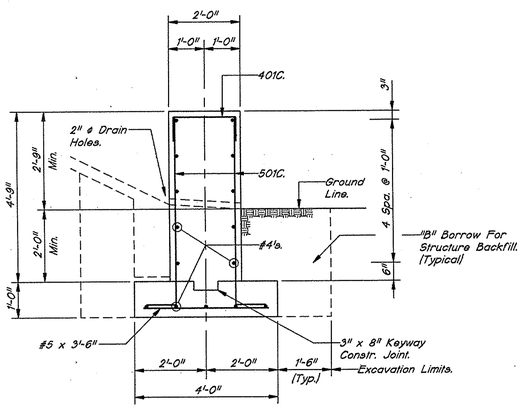

## ELEVATION - CRASHWALL AT PIERS 2, 3, & 4

SCALE: 1/4" = 1'-0"




## FOOTING PLAN - CRASHWALL AT PIERS 2, 3, & 4

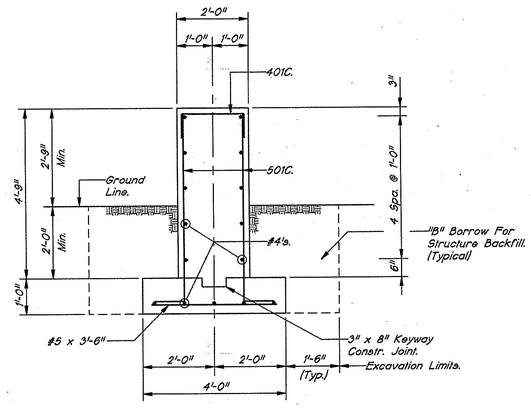
SCALE: 1/4" = 1'-0"




Pier No. 2 & 4 Locations

## SECTION A-A

SCALE: 1/2" = 1'-0"




Pier No. 3 Locations

## SECTION A-A

SCALE: 1/2" = 1'-0"

## BILL OF MATERIALS CRASHWALL - PIER 2

| REINFORCING STEEL EPOXY COATED | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| #6 | 16 | 3'-0" | |
| TOTAL #6 | | | 72 |
| 501C | 42 | 6'-2" | |
| #5 | 21 | 3'-6" | |
| TOTAL #5 | | | 347 |
| 401C | 21 | 3'-0" | |
| #4 | 10 | 20'-0" | |
| #4 | 5 | 19'-9" | |
| TOTAL #4 | | | 242 |
| TOTAL REINFORCING | | | 661 |
| CONCRETE | | | (CYS.) |
| "A", IN SUBSTRUCTURE | | | 10.1 |
| MISCELLANEOUS | | | (QTY.) |
| SURFACE SEAL (ESTIMATED) | | | 160 SFT. |
| FIELD DRILLED HOLES IN CONCRETE | | | 16 EACH |
| FOUNDATION EXCAVATION, UNCLASSSIFIED | | | 19 CYS. |
| B BORROW FOR STRUCTURE BACKFILL | | | 16 CYS. |
| SLOPEWALL, REMOVE | | | 16 SYS. |
| SLOPEWALL, 4" | | | 31 SYS. |

## BILL OF MATERIALS CRASHWALL - PIER 3

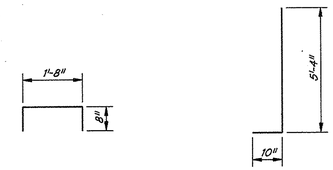
| REINFORCING STEEL EPOXY COATED | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| #6 | 16 | 3'-0" | |
| TOTAL #6 | | | 72 |
| 501C | 42 | 6'-2" | |
| #5 | 21 | 3'-6" | |
| TOTAL #5 | | | 347 |
| 401C | 21 | 3'-0" | |
| #4 | 10 | 20'-3" | |
| #4 | 5 | 20'-0" | |
| TOTAL #4 | | | 244 |
| TOTAL REINFORCING | | | 663 |
| CONCRETE | | | (CYS.) |
| "A", IN SUBSTRUCTURE | | | 10.2 |
| MISCELLANEOUS | | | (QTY.) |
| SURFACE SEAL (ESTIMATED) | | | 160 SFT. |
| FIELD DRILLED HOLES IN CONCRETE | | | 16 EACH |
| FOUNDATION EXCAVATION, UNCLASSSIFIED | | | 19 CYS. |
| B BORROW FOR STRUCTURE BACKFILL | | | 16 CYS. |

## BILL OF MATERIALS CRASHWALL - PIER 4

| REINFORCING STEEL EPOXY COATED | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| #6 | 16 | 3'-0" | |
| TOTAL #6 | | | 72 |
| 501C | 42 | 6'-2" | |
| #5 | 21 | 3'-6" | |
| TOTAL #5 | | | 347 |
| 401C | 21 | 3'-0" | |
| #4 | 10 | 20'-0" | |
| #4 | 5 | 19'-9" | |
| TOTAL #4 | | | 242 |
| TOTAL REINFORCING | | | 661 |
| CONCRETE | | | (CYS.) |
| "A", IN SUBSTRUCTURE | | | 10.1 |
| MISCELLANEOUS | | | (QTY.) |
| SURFACE SEAL (ESTIMATED) | | | 160 SFT. |
| FIELD DRILLED HOLES IN CONCRETE | | | 16 EACH |
| FOUNDATION EXCAVATION, UNCLASSSIFIED | | | 19 CYS. |
| B BORROW FOR STRUCTURE BACKFILL | | | 16 CYS. |
| SLOPEWALL, REMOVE | | | 16 SYS. |
| SLOPEWALL, 4" | | | 31 SYS. |

## BILL OF MATERIALS CRASHWALL - PIER 3 (RAMP)

| REINFORCING STEEL EPOXY COATED | | | |
|---|---|---|---|
| SIZE & MARK | NO. OF BARS | LENGTH | WEIGHT (LBS.) |
| #6 | 16 | 3'-0" | |
| TOTAL #6 | | | 72 |
| 501C | 220 | 6'-2" | |
| #5 | 106 | 3'-6" | |
| TOTAL #5 | | | 1,802 |
| 401C | 110 | 3'-0" | |
| #4 | 10 | 40'-0" | |
| #4 | 5 | 27'-6" | |
| #4 | 20 | 21'-0" | |
| #4 | 30 | 20'-6" | |
| TOTAL #4 | | | 1,271 |
| TOTAL REINFORCING | | | 3,145 |
| CONCRETE | | | (CYS.) |
| "A", IN SUBSTRUCTURE | | | 28.0 |
| MISCELLANEOUS | | | (QTY.) |
| SURFACE SEAL (ESTIMATED) | | | 800 SFT. |
| FIELD DRILLED HOLES IN CONCRETE | | | 16 EACH |
| FOUNDATION EXCAVATION, UNCLASSSIFIED | | | 85 CYS. |
| B BORROW FOR STRUCTURE BACKFILL | | | 54 CYS. |




401C x 3'-0" 501C x 6'-2"

## NOTES:

FOR GENERAL NOTES, SEE DRAWING W-38.

ALL REINFORCING SHALL BE EPOXY COATED.

FOR REINFORCING BAR NOTES, SEE BRIDGE STANDARD C1.

## CRASHWALL DETAILS – PIERS 2, 3, & 4 & BILL OF MATERIALS

## INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: AS SHOWN DATE: NOVEMBER 3, 1993

SUBMITTED FOR APPROVAL: Richard J. O'Connor

DRAWING: W-56 OF W-56 SHEET: 72 OF 120

PROJECT: ST/220-1 ( )

BRIDGE CONTRACT NO: B-21128

BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR REGISTERED No. 17778 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN GKN CHK. SCJ
DESIGNED RJZ CHK. AP
TRACED CHK.

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Scale: 1 = 1.0000
Time: 11/02/93 at 17:24 RQAW

RQAW FILE: 93007/3654

## STRUCTURE QUANTITIES – STRUCTURE NO. 912-45-5088A

| ITEM | CONCRETE | | | | CONCRETE RAILING CLASS "C" | | REINF. STEEL | EPOXY COATED REINF. STEEL | STRUCT. STEEL *** (A-36) | FIELD DRILLED HOLES | ANCHOR PLATES MK-AP1 | ANCHOR PLATES MK-AP2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CLASS "C" IN SUPERSTR. | CLASS "A" IN SUBSTR. | CLASS "B" ABOVE FOOTING | CLASS "B" IN FOOTING | | | | | | | | |
| | CYS. | CYS. | CYS. | CYS. | CYS. | LFT. | LBS. | LBS. | LBS. | EACH. | EACH. | EACH. |
| NORTHBOUND LANES: | | | | | | | | | | | | |
| SUBSTRUCTURE: | | | | | | | | | | | | |
| BENT NO. 1 | | 1.5 | | | | | | 182 | | | | |
| BENT NO. 5 | | 1.5 | | | | | | 182 | | | | |
| SUPERSTRUCTURE: | | | | | | | | | | | | |
| SPAN "A" | 63.6 | | | | 8.4 | | | 12,716 | | | | |
| SPANS "B" & "C" | 201.2 | | | | 30.1 | | | 41,718 | 117,000 | 532 | | |
| SPAN "D" | 64.6 | | | | 8.6 | | | 12,917 | | | | |
| SUB-TOTAL | 329.4 | 3.0 | | | 47.1 | | | 67,715 | 117,000 | 532 | | |
| | | | | | | | | | | | | |
| SOUTHBOUND LANES: | | | | | | | | | | | | |
| SUBSTRUCTURE: | | | | | | | | | | | | |
| BENT NO. 1 | | 1.5 | | | | | | 182 | | | | |
| BENT NO. 5 | | 1.5 | | | | | | 182 | | | | |
| SUPERSTRUCTURE: | | | | | | | | | | | | |
| SPAN "A" | 63.6 | | | | 8.4 | | | 12,716 | | | | |
| SPANS "B" & "C" | 201.2 | | | | 30.1 | | | 41,718 | 117,000 | 532 | | |
| SPAN "D" | 64.6 | | | | 8.6 | | | 12,917 | | | | |
| SUB-TOTAL | 329.4 | 3.0 | | | 47.1 | | | 67,715 | 117,000 | 532 | | |
| CRASHWALLS | | 58.4 | | | | | | 5,130 | | | | |
| Reinf. Steel for Approach Structures | | | | | | | | | | | | |
| Reinf. Steel for R.C. Bridge Approaches | | | | | | | 18,858 | 1,500 | | | | |
| Reinf. Steel for Pvm't, Tapers, etc. | | | | | | | | | | | | |
| GRAND TOTAL | 658.8 | 64.4 | | | 94.2 | | 18,858 | 142,060 | 234,000 | 1,064 | | |

| ITEM | PILES | | | | | | BRONZE PLATE | CAST IRON GRATES, BASINS & FITTINGS | EXPANSION JOINT | | | | | | BEARING ASSEMBLY TYPE I | BEARING ASSEMBLY TYPE II | BEARING ASSEMBLY TYPE III | BEARING ASSEMBLY TYPE IV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STEEL ENCASED CONC. 12" | | STEEL H HP10 X 42 | | EPOXY COATED SHELLS 10" | | | | TYPE BS-6 | TYPE BS-8 | TYPE BS-9 | TYPE BS-11 | CLASS S-S | POLYMER MODIFIED ASPHALT | | | | |
| | NO. | LFT. | NO. | LFT. | NO. | LFT. | EACH | LBS. | LFT. | LFT. | LFT. | LFT. | LFT. | LFT. | EACH | EACH | EACH | EACH |
| NORTHBOUND LANES: | | | | | | | | | | | | | | | | | | |
| SUBSTRUCTURE: | | | | | | | | | | | | | | | | | | |
| BENT NO. 1 | | | | | | | | | | | | | | | | | | |
| BENT NO. 5 | | | | | | | | | | | | | | | | | | |
| SUPERSTRUCTURE: | | | | | | | | | | | | | | | | | | |
| SPAN "A" | | | | | | | | | | | | | | 47.0 | | | | |
| SPANS "B" & "C" | | | | | | | | | | | | | | | | | | |
| SPAN "D" | | | | | | | | | | | | | | 47.0 | | | | |
| SUB-TOTAL | | | | | | | | | | | | | | 94.0 | | | | |
| | | | | | | | | | | | | | | | | | | |
| SOUTHBOUND LANES: | | | | | | | | | | | | | | | | | | |
| SUBSTRUCTURE: | | | | | | | | | | | | | | | | | | |
| BENT NO. 1 | | | | | | | | | | | | | | | | | | |
| BENT NO. 5 | | | | | | | | | | | | | | | | | | |
| SUPERSTRUCTURE: | | | | | | | | | | | | | | | | | | |
| SPAN "A" | | | | | | | | | | | | | | 47.0 | | | | |
| SPANS "B" & "C" | | | | | | | | | | | | | | | | | | |
| SPAN "D" | | | | | | | | | | | | | | 47.0 | | | | |
| SUB-TOTAL | | | | | | | | | | | | | | 94.0 | | | | |
| CRASHWALLS | | | | | | | | | | | | | | | | | | |
| Reinf. Steel for Approach Structures | | | | | | | | | | | | | | | | | | |
| Reinf. Steel for R.C. Bridge Approaches | | | | | | | | | | | | | | | | | | |
| Reinf. Steel for Pvm't, Tapers, etc. | | | | | | | | | | | | | | | | | | |
| GRAND TOTAL | | | | | | | | | | | | | | 188.0 | | | | |

| ITEM | FIELD DRILLED HOLES IN CONCRETE | SHEAR CONNECTOR | EPOXY C. THREADED BAR SPLICES | THREADED TIE BAR ASSEMBLY EPOXY C. | CONDUIT STEEL GALVANIZED 2 IN. | BARRIER DELINEATORS | MASONRY COATING (ESTIMATED) ** | SURFACE SEAL (ESTIMATED) ** | STEEL SHEET PILING | "B" BORROW FOR STR. BACKFILL | FOUNDATION EXCAVATION UNCLASSIFIED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | EACH | EACH | EACH | EACH | LFT. | EACH | SFT. | SFT. | SFT. | CYS. | CYS. |
| NORTHBOUND LANES: | | | | | | | | | | | |
| SUBSTRUCTURE: | | | | | | | | | | | |
| BENT NO. 1 | | | | | | | | 60 | | | |
| BENT NO. 5 | | | | | | | | 60 | | | |
| SUPERSTRUCTURE: | | | | | | | | | | | |
| SPAN "A" | | | 138 | 59 | 44 | 4 | | 2,575 | | | |
| SPANS "B" & "C" | | 832 | 462 | | 155 | 20 | | 9,450 | | | |
| SPAN "D" | | | 140 | 59 | 45 | 4 | | 2,625 | | | |
| SUB-TOTAL | | 832 | 740 | 118 | 244 | 28 | | 14,770 | | | |
| | | | | | | | | | | | |
| SOUTHBOUND LANES: | | | | | | | | | | | |
| SUBSTRUCTURE: | | | | | | | | | | | |
| BENT NO. 1 | | | | | | | | 60 | | | |
| BENT NO. 5 | | | | | | | | 60 | | | |
| SUPERSTRUCTURE: | | | | | | | | | | | |
| SPAN "A" | | | 138 | 59 | 44 | 4 | | 2,575 | | | |
| SPANS "B" & "C" | | 832 | 462 | | 155 | 20 | | 9,450 | | | |
| SPAN "D" | | | 140 | 59 | 45 | 4 | | 2,625 | | | |
| SUB-TOTAL | | 832 | 740 | 118 | 244 | 28 | | 14,770 | | | |
| CRASHWALLS | 64 | | | | | | | 1,280 | | 102.0 | 142.0 |
| Reinf. Steel for Approach Structures | | | | | | | | | | | |
| Reinf. Steel for R.C. Bridge Approaches | | | 86 | | | | | 6,900 | | | |
| Reinf. Steel for Pvm't, Tapers, etc. | | | | | | | | | | | |
| GRAND TOTAL | 64 | 1,664 | 1,566 | 236 | 488 | 56 | | 37,720 | | 102.0 | 142.0 |

## APPROACH STRUCTURES

| STRUCTURE NUMBER | LOCATION | LEFT | RIGHT | CROSS | SIZE | DESCRIPTION | | LENGTH | SKEW | FLOW LINE | | | CONCRETE CLASS "A" | "B" BORROW | METHOD OF BACKFILL | THICKNESS | | VELOCITY | RIPRAP | PIPE END SECTION | REINF. STEEL | REMARKS | PLANS REF. SHEET NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | GROUP | SEE RD. STD. SHEET "MP" FOR ACCEPTABLE TYPE OF PIPE IN WITHIN EACH GROUP | | | COVER | UP STREAM | DOWN STREAM | | | | STEEL * | ALUM. * | | | | | | |
| | | | | | INCHES | | | | | FT. | ELEV. | ELEV. | CYS. | CYS. | | | | | SYS. | EACH | LBS. | | |
| | | | | | | | | | | | TOTALS | | | | | | | | | | | Total of Reinf. Steel Carried to "Structure Quantities" | |

## PAVED SIDE DITCH AND SODDING SUMMARY TABLE

| STATION TO STATION | LEFT | RIGHT | PAVED SIDE DITCH (LFT.) | | | | | | | PAVED SIDE DITCH (LFT.) | | | | SHEET NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TYPE | PAY LENGTH | NO. OF LUGS | PAY LENGTH | CUT OFF WALLS | PAY LENGTH | TOTAL PAY LENGTH | FOR PSD | FOR DITCHES | OTHER | TOTAL SYS. | |
| TOTALS | | | | | | | | | | | | | | |

## RIGHT-OF-WAY MARKERS

| STATION | LEFT | RIGHT | OFFSET |
|---|---|---|---|

## APPROACH TABLE

| LOCATION | | | DESCRIPTION | WIDTH | RADII | GRADE | LENGTH | DISTANCE BEYOND R/W FT. | EXCAVATION (CYS.) | | BITUM. SURFACE | | BITUM. BINDER | | BITUM. BASE | | COMP. AGG. BASE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STATION | LT. | RT. | | FT. | FT. | % | FT. | | CUT | FILL | #/SYD. | TONS | #/SYD. | TONS | #/SYD. | TONS | DEPTH IN. | TONS |
| | | | | | | | | TOTALS | | | | | | | | | | |

## UNDERDRAIN TABLE

| RUN NUMBER | LOCATION | 6" GROUP "K" PIPE | 6" NON-PERF FBCCS PIPE | OUTLET | AGGREGATE | BENDS | SODDING | DELINEATOR POST |
|---|---|---|---|---|---|---|---|---|
| | | | | | CYS. | EACH | SYS. | EACH |
| | TOTALS | | | | | | | |

## MONUMENTS

| SHEET NO. | LOCATION | TYPE |
|---|---|---|

C:\ACAD12\WORK.603\3654\SUMMARY.DWG
Scale: 1 = 1.0000
Time: 11/02/93 at 18:22 RQAW

SUMMARIZED GKN CHK. SCJ
TRACED GKN CHK. SCJ

**NOTES:**

Weight of Spirals includes weight of 1 1/2 extra turns top and bottom. Spacers and 1 1/2 turns at laps shall be included in the cost of the Spiral.

* If the Contractor elects to use metal pipe, the thickness shall be as shown in the Approach Structures Table.

** The quantity for Surface Seal is approximate only, and it shall be the Contractor's responsibility to determine the quantity on which he bases his bid.

*** The weight of Structural Steel is approximate only, and it shall be the Contractor's responsibility to determine the weight on which he bases his bid.

For Test Bar Samples, see Bridge Standard C1.

**LEGEND OF ABBREVIATION**

F.B.C.C.S./P.I. — FULLY BITUMINOUS COATED CORRUGATED STEEL WITH PAVED INVERT
F.B.C.C.A.A./P.I. — FULLY BITUMINOUS COATED CORRUGATED ALUMINUM ALLOY WITH PAVED INVERT
F.B.C.C.S. — FULLY BITUMINOUS COATED CORRUGATED STEEL
C.S. — CORRUGATED STEEL
C.A.A. — CORRUGATED ALUMINUM ALLOY
S.P.S. — STRUCTURAL PLATE STEEL
F.B.C.P.C.S. — FULLY BITUMINOUS COATED PERFORATED CORRUGATED STEEL

## REVISIONS

| DATE | ITEM |
|---|---|

## BRIDGE SUMMARY

## INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: NONE DATE NOVEMBER 3, 1993
SUBMITTED FOR APPROVAL: Richard T. O'Connor
DRAWING: OF SHEET: 75 OF 120
PROJECT: ST/220-1 ( )
BRIDGE CONTRACT NO: B-21128
BRIDGE FILE: 912-45-5088A

RICHARD T. O'CONNOR
No. 17778

RQAW FILE: 93007/3654