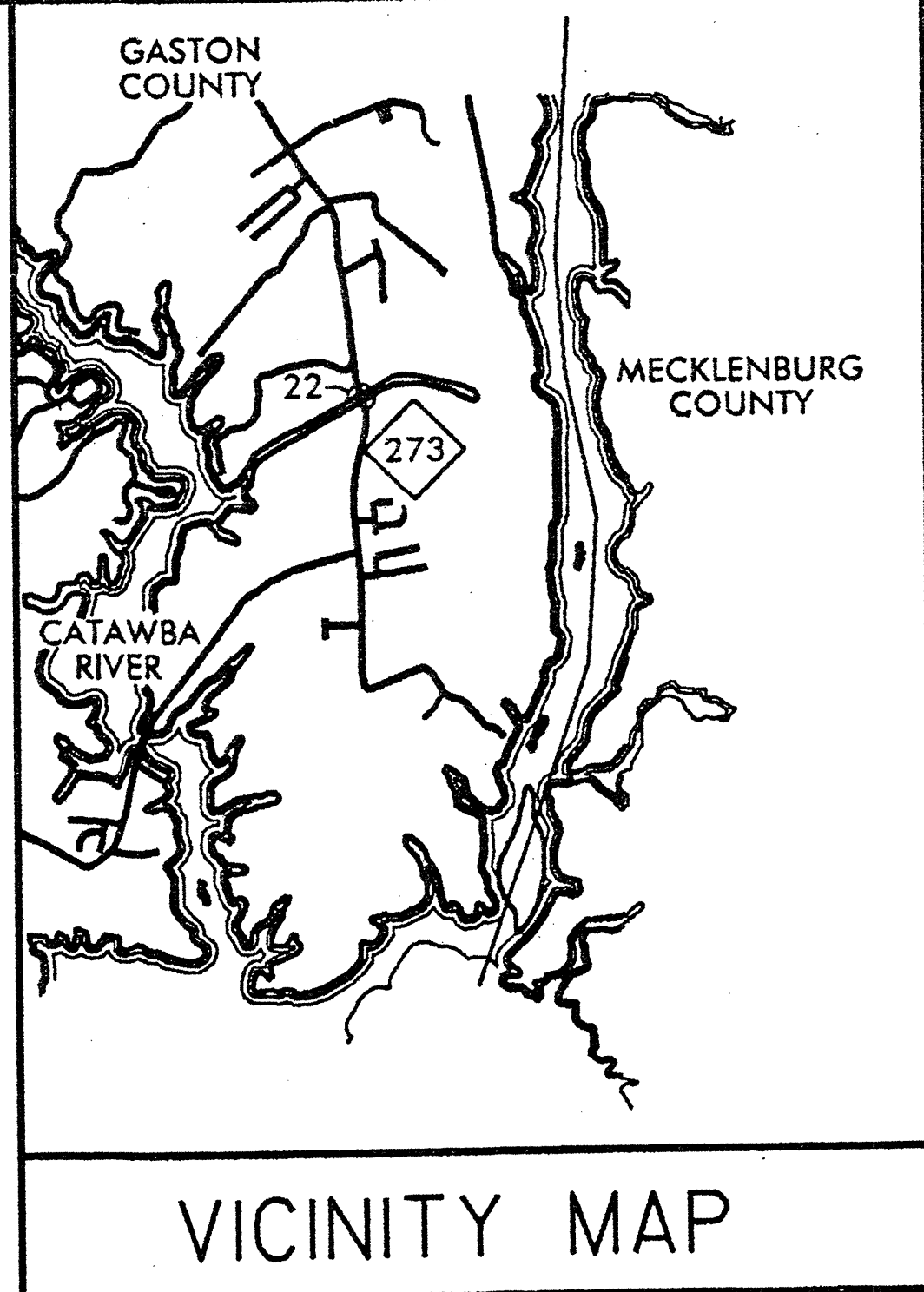


PROJECT NO.: BP-5300Z

CONTRACT: C202807



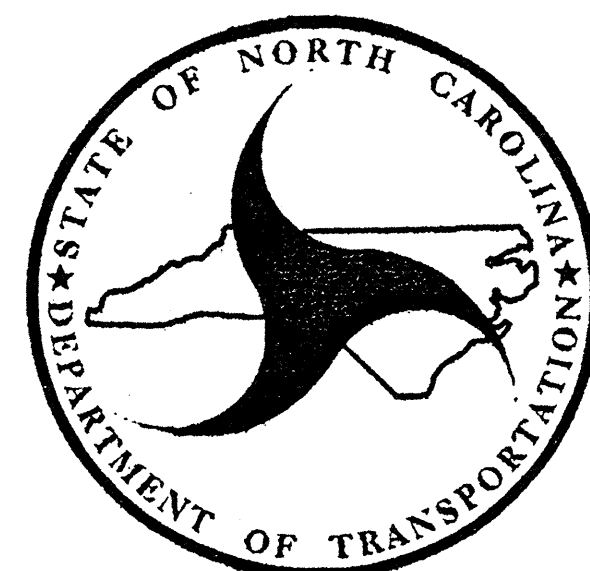
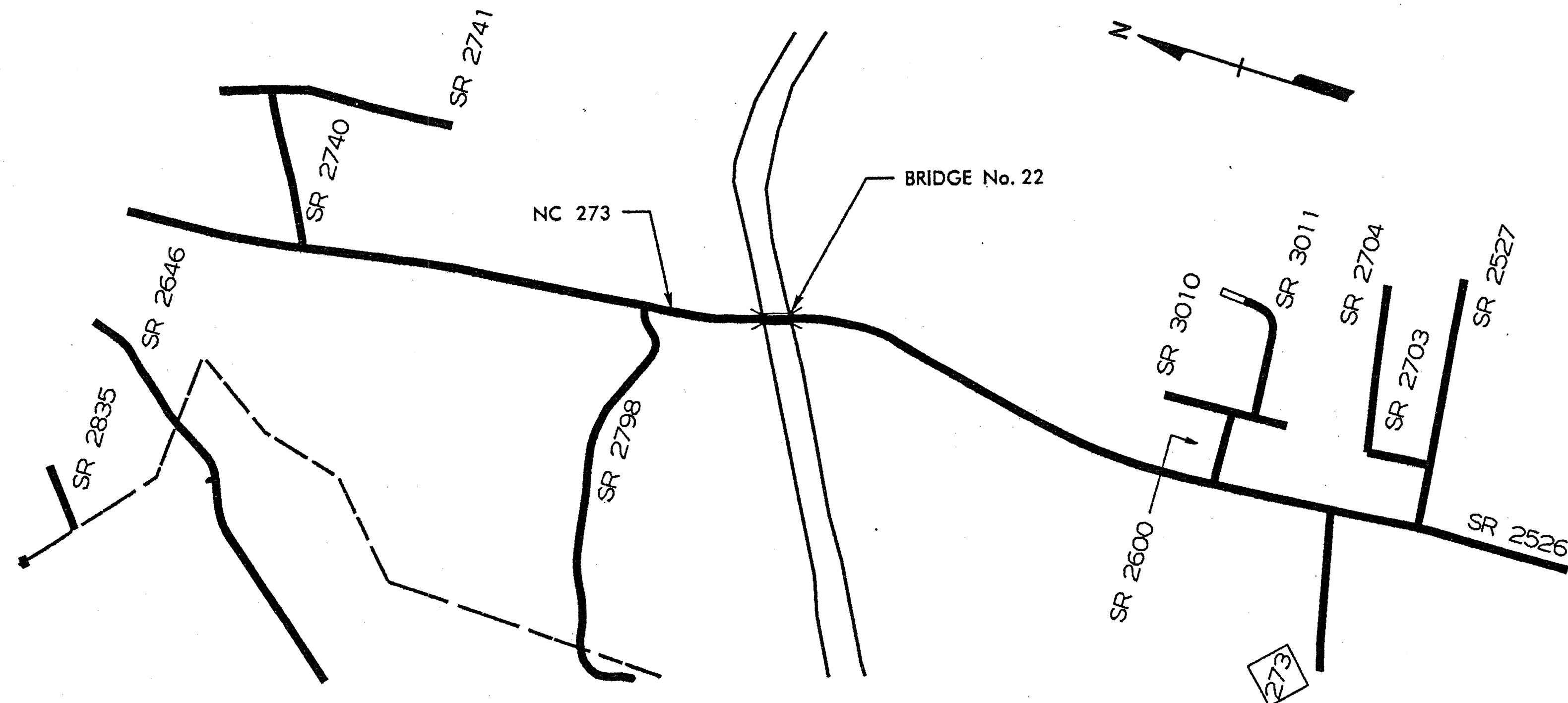
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GASTON COUNTY

| STATE | STATE PROJECT REFERENCE NO. | |
|------------|-----------------------------|-------------|
| N.C. | BP-5300Z | |
| V.D. NO. | P.A. NO. | DESCRIPTION |
| 45438.1.1 | BRSTP-0273(4) | P.E. |
| 45438.3.23 | BRSTP-0273(4) | CONST. |
| | | |
| | | |
| | | |
| | | |

LOCATION: BRIDGE NO. 22 ON SR 273 OVER DUKE POWER FEEDER CABLE

TYPE OF WORK: BRIDGE PRESERVATION - STRUCTURAL STEEL REPAIR, CLEANING & PAINTING OF STRUCTURE



DESIGN DATA

PROJECT LENGTH

2012 STANDARDS SPECIFICATION

LETTING DATE:
FEBRUARY 21, 2012

Prepared in the Office of
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
1000 Birch Ridge Drive Raleigh, N.C. 27610

RICK NELSON, P.E.
PROJECT ENGINEER

THEO BEACH, P.E.
PROJECT DESIGN ENGINEER



CONTRACT: C202807 TIP PROJECT: BP-5300Z

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

GASTON COUNTY

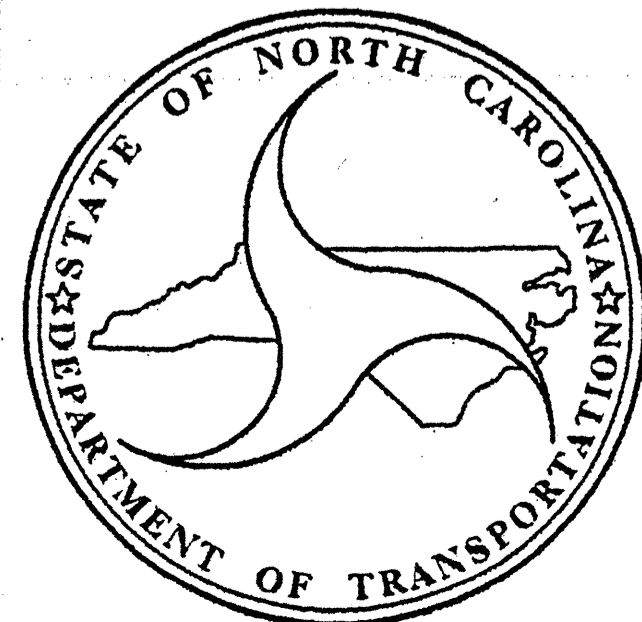
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | BP-5300Z | IA | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 45438.1.1 | BRSTP-0273(4) | P.E. | |
| 45438.3.23 | BRSTP-0273(4) | CONST. | |
| | | | |
| | | | |
| | | | |
| | | | |

LOCATION: BRIDGE NO.22 ON SR 273 OVER DUKE POWER FEEDER

TYPE OF WORK: BRIDGE PRESERVATION - STRUCTURAL STEEL REPAIR, CLEANING & PAINTING OF STRUCTURE

INDEX OF SHEETS

| | |
|----------------------|---------------------------------|
| <i>1</i> | <i>TITLE SHEET</i> |
| <i>1A</i> | <i>INDEX OF SHEETS</i> |
| <i>2</i> | <i>SUMMARY OF QUANTITIES</i> |
| <i>SI-S14</i> | <i>STRUCTURES</i> |
| <i>TCP-1 - TCP-6</i> | <i>TRAFFIC MANAGEMENT PLANS</i> |



Prepared In the Office of:
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
 1000 Birch Ridge Drive Raleigh, N.C. 27606

RICK NELSON, P.E.
 PROJECT ENGINEER

THEO BEACH, P.E.
 PROJECT DESIGN ENGINEER

COMPUTED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

| Item Number | Sec # | Quantity | Unit | Description |
|--------------|-------|----------|------|---|
| 0000100000-N | 800 | Lump Sum | | MOBILIZATION |
| 4400000000-E | 1110 | 739 | SF | WORK ZONE SIGNS (STATIONARY) |
| 4405000000-E | 1110 | 787 | SF | WORK ZONE SIGNS (PORTABLE) |
| 4410000000-E | 1110 | 200 | SF | WORK ZONE SIGNS (BARRICADE MOUNTED) |
| 4430000000-N | 1130 | 20 | EA | DRUMS |
| 4435000000-N | 1135 | 20 | EA | CONES |
| 4445000000-E | 1145 | 144 | LF | BARRICADES (TYPE III) |
| 4450000000-N | 1150 | 2,940 | HR | FLAGGER |
| 4510000000-N | SP | 150 | HR | LAW ENFORCEMENT |
| 4516000000-N | 1180 | 28 | EA | SKINNY DRUM |
| 4600000000-N | SP | 1 | EA | GENERIC TRAFFIC CONTROL ITEM AFAD |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM CLEAN AND REPAINT OF BRIDGE # 22 |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM POLLUTION CONTROL |
| 8860000000-N | SP | Lump Sum | | GENERIC STRUCTURE ITEM UNDER STRUCTURE WORK PLATFORM |
| 8867000000-E | SP | 285 | LF | GENERIC STRUCTURE ITEM LOCALIZED CLEANING AND SEALING |
| 8889000000-E | SP | 1,737 | LB | GENERIC STRUCTURE ITEM STRUCTURAL STEEL REPAIR, APPROX. LBS |
| 8897000000-N | SP | 1,379 | EA | GENERIC STRUCTURE ITEM BOLT REMOVAL AND REPLACEMENT |
| 8897000000-N | SP | 4 | EA | GENERIC STRUCTURE ITEM JACKING AND ADJUSTMENT OF BEARINGS |
| 8897000000-N | SP | 1,300 | EA | GENERIC STRUCTURE ITEM REMOVAL OF TACK WELDS |

GENERAL NOTES

EXISTING BRIDGE DETAILS INDICATED ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE AND REPAIR DETAILS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL AND REPAIR OF THE EXISTING PORTIONS OF THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL SUBMIT PLANS FOR REMOVAL AND REPAIR IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

ALL WELDING TO BE DONE IN ACCORDANCE WITH THE AWS "BRIDGE WELDING CODE".

THE COSTS ASSOCIATED WITH WELDING THE STRUCTURAL STEEL REPAIR PLATES TO THE EXISTING MEMBERS SHALL BE INCLUDED IN THE BID PRICE FOR "STRUCTURAL STEEL REPAIR", SEE SPECIAL PROVISIONS.

ALL VISUAL AND NON DESTRUCTIVE WELD TESTING SHALL BE PERFORMED BY NCDOT.

STRUCTURAL STEEL REPAIR MATERIAL SHALL BE AASHTO M270 GRADE 50.

CLEAN AND PAINT STRUCTURAL STEEL AFTER ALL REPAIRS ARE MADE.

FOR PAINTING OF STRUCTURAL STEEL, SEE PAINTING EXISTING STRUCTURES SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

THE COST OF LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO MAKE STRUCTURAL STEEL REPAIRS INCLUDING MISCELLANEOUS STEEL BOLTING SHALL BE INCLUDED IN THE BID PRICE FOR "STRUCTURAL STEEL REPAIR".

FOR UNDER STRUCTURE WORK PLATFORM, SEE SPECIAL PROVISIONS.

STRINGER AND TRUSS NOTES

ALL NEW AND REPLACEMENT BOLTED/RIVET CONNECTIONS DETAILED ON PLANS SHALL BE 7/8" DIAMETER HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

ALL 7/8" DIAMETER BOLTS SHALL BE GALVANIZED.

FOR BOLT REMOVAL AND REPLACEMENT, SEE SPECIAL PROVISIONS.

TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

CARE SHOULD BE TAKEN IN REPLACING HIGH STRENGTH BOLTS FOR THE STRINGER AND TRUSS CONNECTIONS. EACH BOLT REPLACED SHALL BE REMOVED, ONE BOLT OR RIVET AT A TIME FOR EACH CONNECTION. ALL SURFACE PREPARATION AROUND THE BOLT HOLE SHALL BE COMPLETED BEFORE RETIGHTING.

BOLT HOLES FOR BOLT REPLACEMENTS MAY NEED BE INCREASED AS NECESSARY TO ACCOMMODATE THE 7/8" H.S. BOLTS. THE HOLE SIZE SHALL NOT EXCEED 1 1/16" DIAMETER. ENLARGING EXISTING AND/OR CREATING NEW BOLT HOLES SHALL BE DONE BY FIELD DRILLING. TORCH CUTTING IS NOT PERMITTED. SEE SPECIAL PROVISIONS.

ALL EXISTING TACK WELDS BETWEEN THE FILLER PLATES AND GUSSET PLATES SHALL BE REMOVED, SEE SPECIAL PROVISIONS.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE STABILITY DURING PLATE AND ANGLE REPLACEMENT. SUPPORT DETAILS SHALL BE SUBMITTED FOR REVIEW AND ACCEPTANCE PRIOR TO THE REPAIRS BEING MADE.

ROCKER BEARING JACKING NOTES

JACK ALL FOUR ROCKER BEARINGS AT PIERS 1 & 4 ENOUGH TO SUPPORT ALL DEAD LOAD OF THE BRIDGE. LOOSEN THE BOLT HOLDING THE ROCKER BEARING PIN BUT DO NOT REMOVE PIN. CLEAN PIN AND ADJACENT PLATES OF RUST. LUBRICATE THE PIN, AND ROTATE THE BEARINGS TO DEMONSTRATE MOVEMENT AND A WORKING DRAWING. IF PIN CANNOT BE ADJUSTED AFTER CLEANING AND LUBRICATION, NOTIFY THE ENGINEER. IF ALL ROCKER BEARING PINS HAVE MOVEMENT THEN RETIGHTEN PIN BOLTS AND CLEAN BEARING SURFACES BEFORE SETTING BACK IN PLACE.

THE CONTRACTOR IS RESPONSIBLE FOR SUPPORTING ALL LOADS VERTICALLY AND LATERALLY DURING THE JACKING PROCEDURE. ALL COST ASSOCIATED WITH PREPARING ENGINEERING SUBMITTALS FOR JACKING, ANY ASSOCIATED TEMPORARY SUPPORTS, BLOCKING, MISCELLANEOUS COMPONENTS OR EQUIPMENT SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR "BRIDGE JACKING".

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

SEQUENCE OF WORK NOTES

- 1- THE CONTRACTOR SHALL SUBMIT ALL WORKING DRAWINGS FOR REVIEW AND ACCEPTANCE.
- 2- ERECT THE UNDER STRUCTURE WORK PLATFORM AND REQUIRED CONTAINMENT STRUCTURE.
- 3- PACK RUST SHALL BE REMOVED AND PENETRATING SEALER SHALL BE APPLIED TO CREVICES BETWEEN GUSSET PLATES, FILLER PLATES, JOINTS AND BACK TO BACK ANGLES OF EXISTING STRUCTURAL STEEL.
- 4- BEARINGS AT BENT NO. 1 AND BENT NO. 4 SHALL BE JACKED, CLEANED, ADJUSTED, AND RESET.
- 5- ONCE THE BEARINGS HAVE BEEN RESET IN THEIR PERMANENT AND SECURE CONDITION, REPAIRS TO THE STRUCTURAL STEEL SHALL BE COMPLETED.
- 6- THE STRUCTURE SHALL THEN BE BLASTED, PRIMED, AND PAINTED. THE CONTRACTOR SHOULD NOTE THAT EPOXY MASTIC AND CAULKING IS REQUIRED PER THE SPECIAL PROVISIONS ENTITLED LOCALIZED CLEANING AND SEALING AND SEALING OF EXISTING STEEL.

TOTAL BILL OF MATERIAL

| PAY ITEM | QUANTITY |
|--|---------------|
| UNDER STRUCTURE WORK PLATFORM | LUMP SUM |
| LOCALIZED CLEANING AND SEALING OF EXISTING STEEL | 285 LIN. FEET |
| REMOVAL OF TACK WELDS | 1,300 EACH |
| JACKING AND ADJUSTMENTS TO BEARING | 4 EACH |
| STRUCTURAL STEEL REPAIR | 1,737 LBS. |
| BOLT REMOVAL & REPLACEMENT | 1,379 EACH |
| PAINTING EXISTING STRUCTURES | LUMP SUM |
| POLLUTION CONTROL | LUMP SUM |

IN CASE ADDITIONAL AREAS OF REPAIR ARE NEEDED THAT WERE NOT ADDRESSED IN THE CONTRACT PLANS, 100 EXTRA BOLTS WHICH INCLUDE NUTS AND WASHERS HAVE BEEN ADDED TO THE "BOLT REMOVAL & REPLACEMENT" QUANTITY IN THE TOTAL BILL OF MATERIAL. THESE REPAIRS SHALL INCLUDE ANY BOLTS MISSING AND ANY OTHER AREAS AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL INCLUDE THESE ADDITIONAL BOLTS IN THEIR BID AND SHALL HAVE NO CLAIM AGAINST THE DEPARTMENT FOR ANY ADDITIONAL WORK ASSOCIATED WITH REPLACING AND INSTALLING BOLTS UNLESS THEY EXCEED THE NUMBER SHOWN IN THE CONTRACT PLANS. ANY HARDWARE NOT USED AFTER ALL REPAIRS ARE COMPLETED SHALL BE TURNED OVER TO THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.

PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22

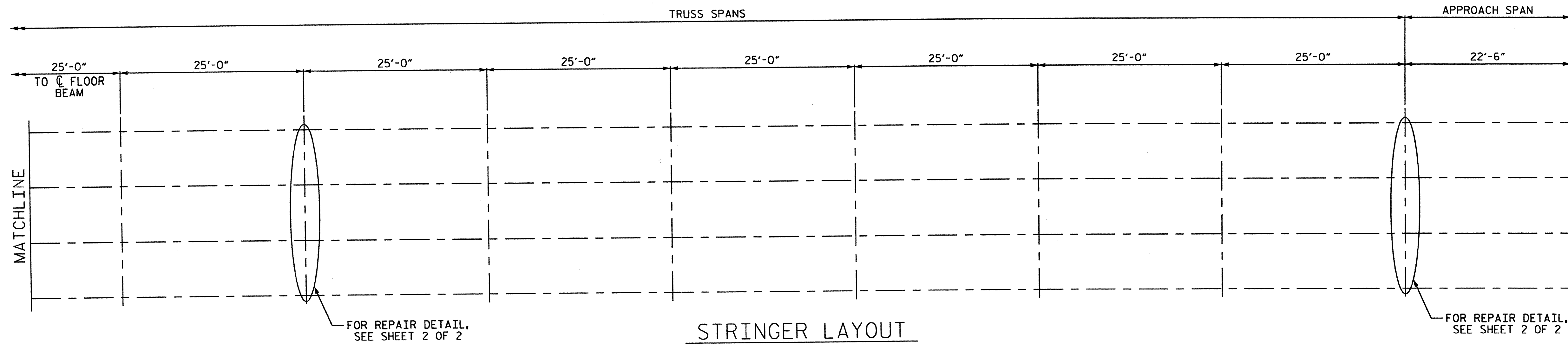
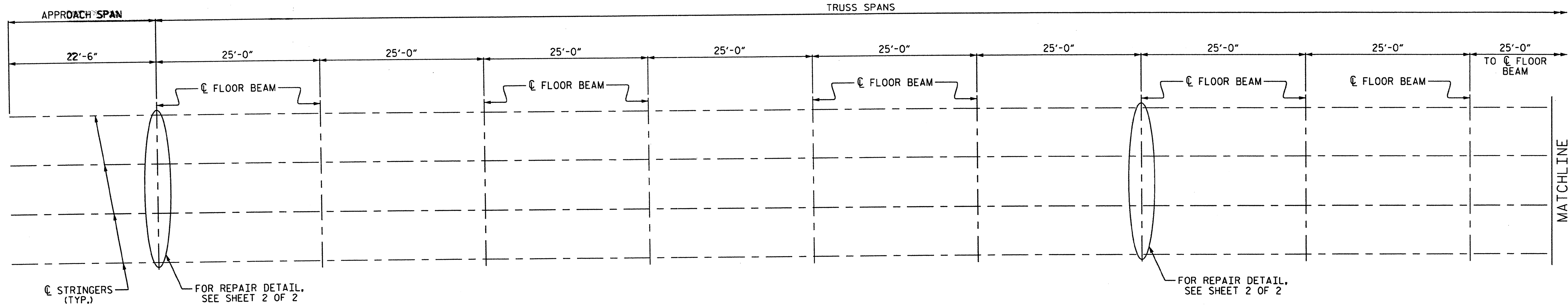
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TOTAL BILL OF MATERIAL & NOTES

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-1 |
| 1 | | | 3 | | | TOTAL SHEETS 14 |
| 2 | | | 4 | | | |

DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYTIME*****
 *****DGN*****
 *****USERNAME*****



PROJECT NO. BP-5300Z

COUNTY GASTON

BRIDGE NO. 22

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STEEL TRUSS
 STRINGER LAYOUT

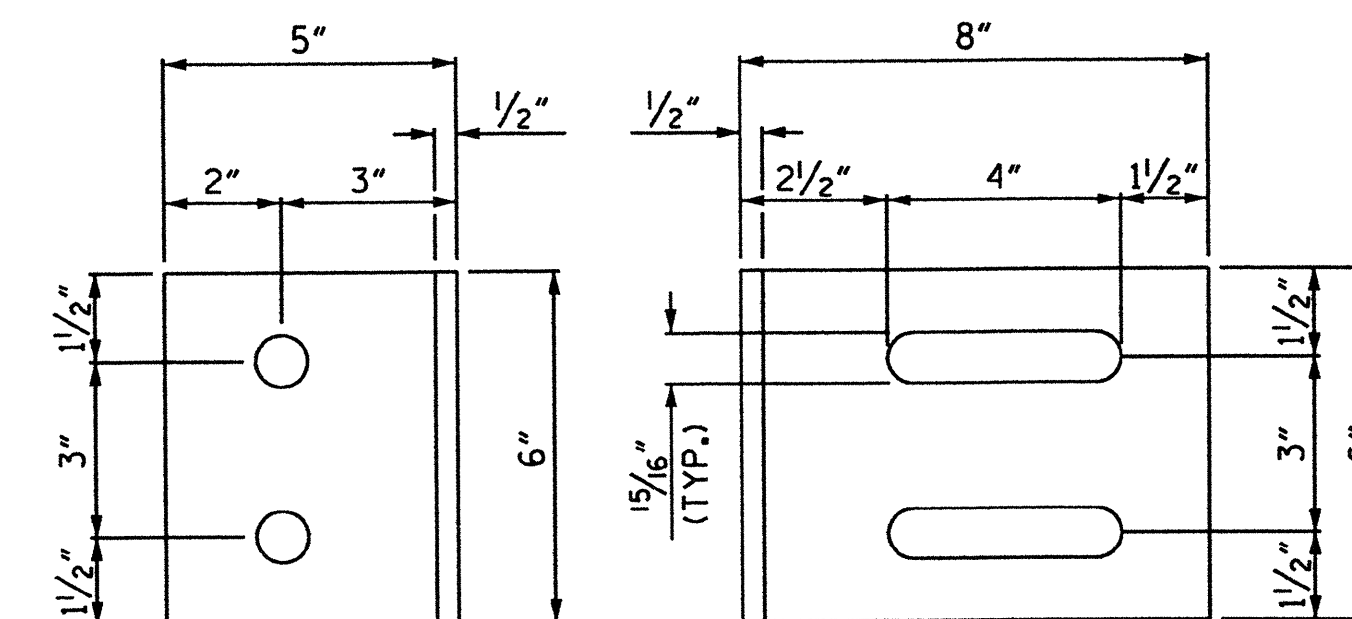
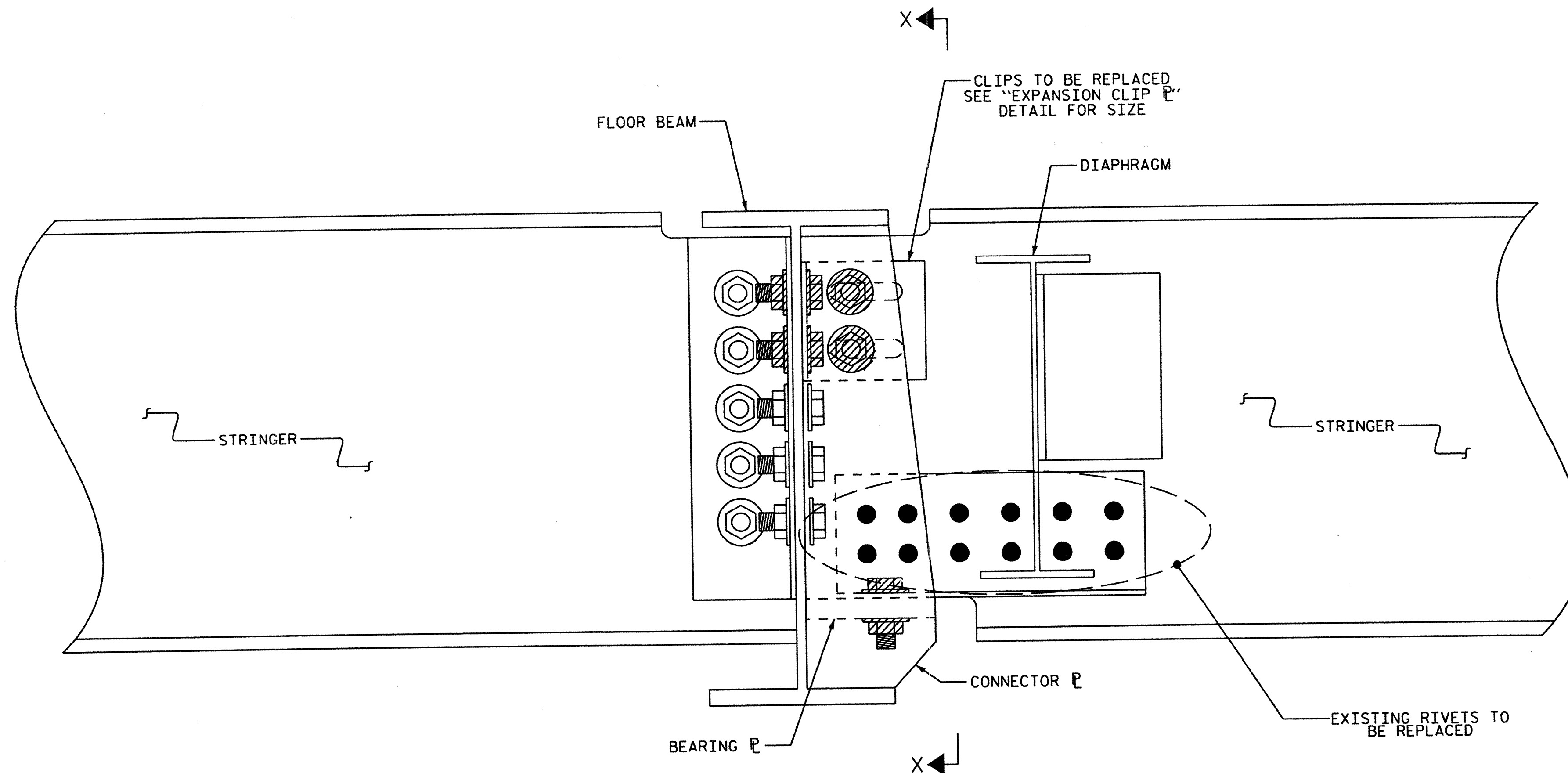
DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T. BEACH DATE : 9-2011

*****SYSTEM*****
 *****DCN*****
 *****USERNAME*****

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-2 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 14 |

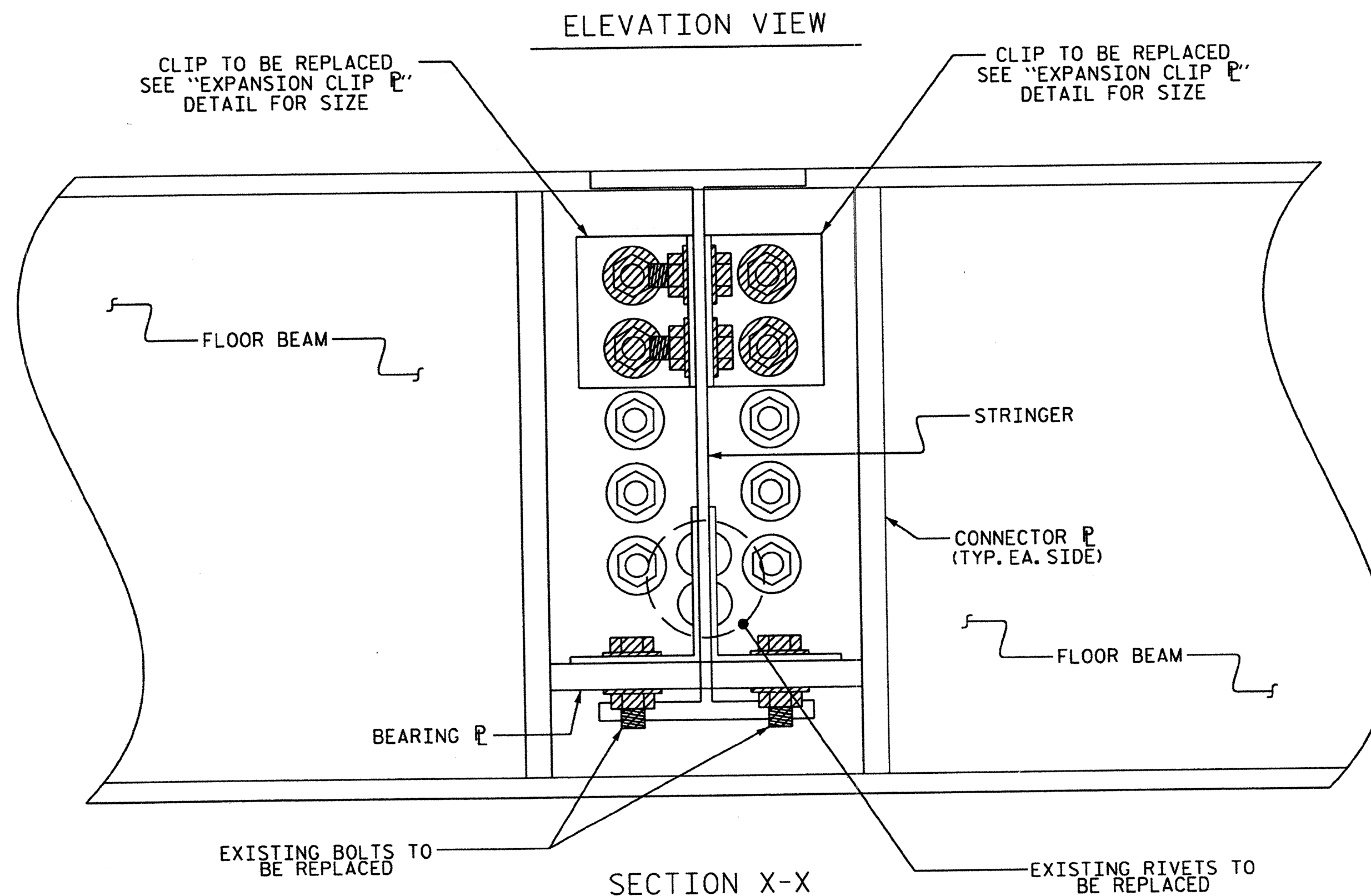
NOTES

H.S. BOLTS AT THE EXPANSION SLOTS SHALL BE TIGHTENED SNUG AGAINST PLATE BUT LOOSE ENOUGH TO ALLOW THERMAL MOVEMENT.



EXPANSION CLIP P

TO ENSURE PROPER FIT-UP THE CONTRACTOR SHALL FIELD VERIFY THE HOLE LOCATIONS BEFORE FABRICATION.



SECTION X-X

STRINGER REPAIR

| QUANTITIES | | |
|--------------------------------|--------|------|
| | NUMBER | LBS. |
| BOLT REMOVAL AND REPLACEMENT * | 224 | - |
| STRUCTURAL STEEL PLATES ** | 32 | 437 |
| TOTAL | | 437 |

* INCLUDES ONE WASHER AND NUT PER BOLT
** INCLUDES BOLTS, WASHER AND NUTS

PROJECT NO. BP-5300Z

COUNTY GASTON

BRIDGE NO. 22

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STRINGER REPAIR
DETAILS

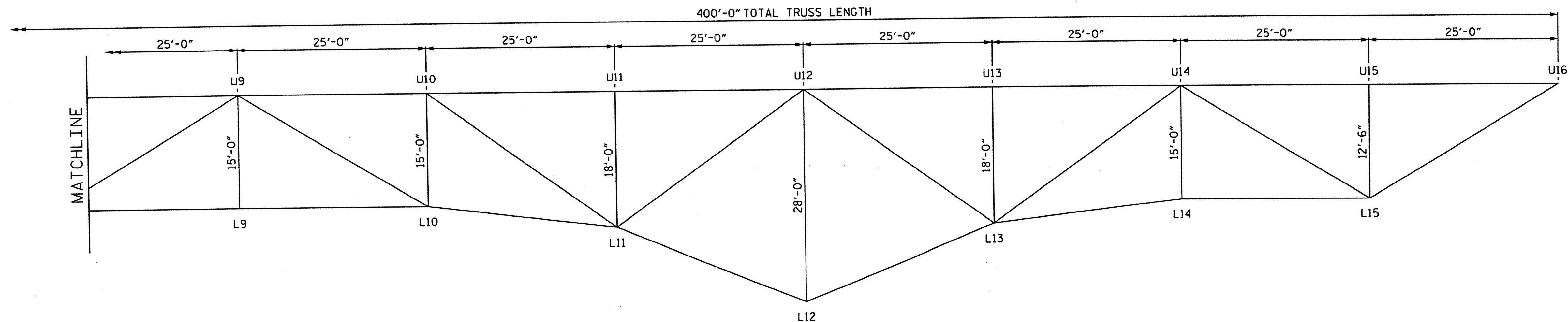
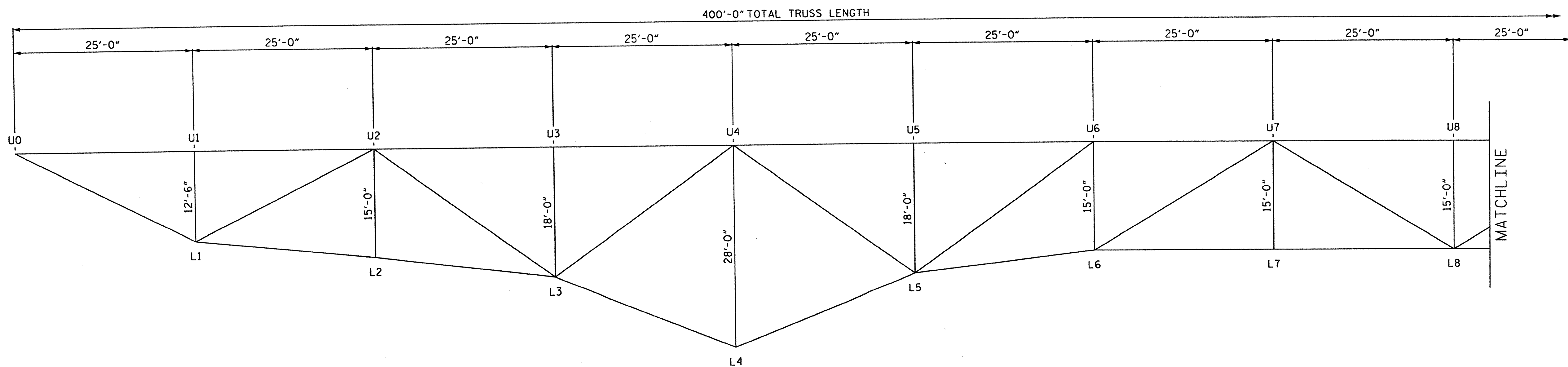
BOLT KEY

- ⊙ EXISTING BOLT
- REPLACEMENT 1/8" H.S. BOLT
- RIVET TO BE REPLACED WITH 1/8" Ø H.S. BOLT

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-3 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 14 |

DRAWN BY : T. BANKOVICH DATE : 9-2011
CHECKED BY : T. BEACH DATE : 9-2011

*****SYSTEM*****
*****USER*****



GENERAL LAYOUT

EAST TRUSS SHOWN, WEST TRUSS SIMILAR

| TRUSS MEMBER TABLE | | | | | | | |
|--------------------|----------|-----------------|-----------|-----------------|----------|-----------------|-----------|
| TOP CHORD | | BOTTOM CHORD | | VERTICAL BEAMS | | DIANGONAL BEAMS | |
| MEMBER LOCATION | SIZE | MEMBER LOCATION | SIZE | MEMBER LOCATION | SIZE | MEMBER LOCATION | SIZE |
| U0-U2 | 12 CB 53 | U0-L1 | 12 CB 53 | U1-L1 | 12 CB 31 | L1-U2 | 12 CB 40 |
| U2-U4 | 12 CB 92 | L1-L2 | 12 CB 79 | U2-L2 | 12 CB 27 | U2-L3 | 12 CB 25 |
| U4-U6 | 12 CB 65 | L2-L3 | 12 CB 79 | U3-L3 | 12 CB 40 | L3-U4 | 12 CB 40 |
| U6-U7 | 10 CB 49 | L3-L4 | 12 CB 133 | U4-L4 | 12 CB 79 | U4-L5 | 12 CB 45 |
| U7-U8 | 12 CB 85 | L4-L5 | 12 CB 133 | U5-L5 | 12 CB 40 | L5-U6 | 12 CB 106 |
| | | L5-L6 | 10 CB 49 | U6-L6 | 10 CB 72 | L6-U7 | 12 CB 79 |
| | | L6-L8 | 12 CB 53 | U7-L7 | 12 CB 27 | U7-L8 | 12 CB 27 |
| | | | | U8-L8 | 12 CB 27 | | |

*** TRUSS SYMMETRICAL ABOUT U8-L8 BEAM CENTERLINE ***

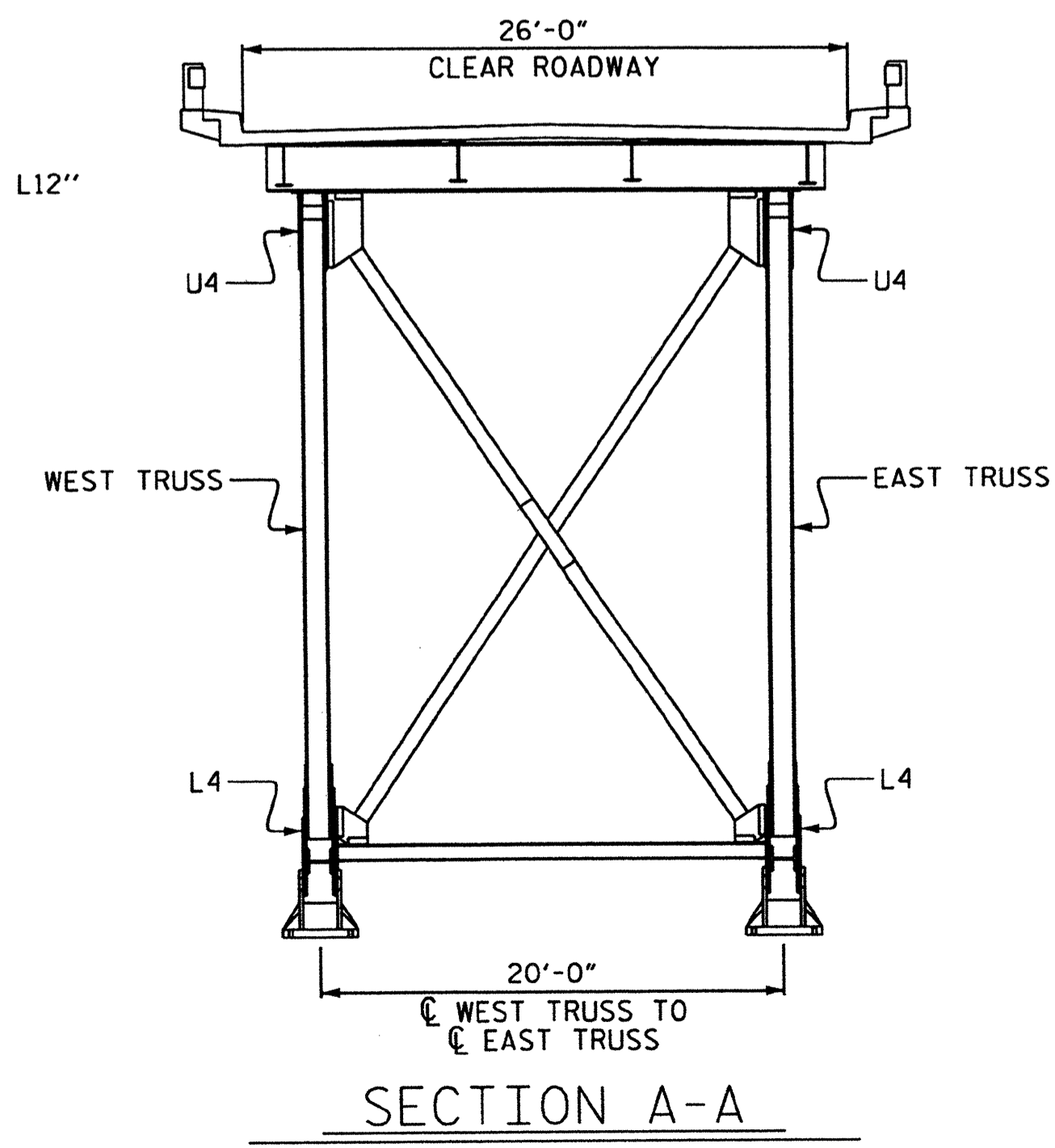
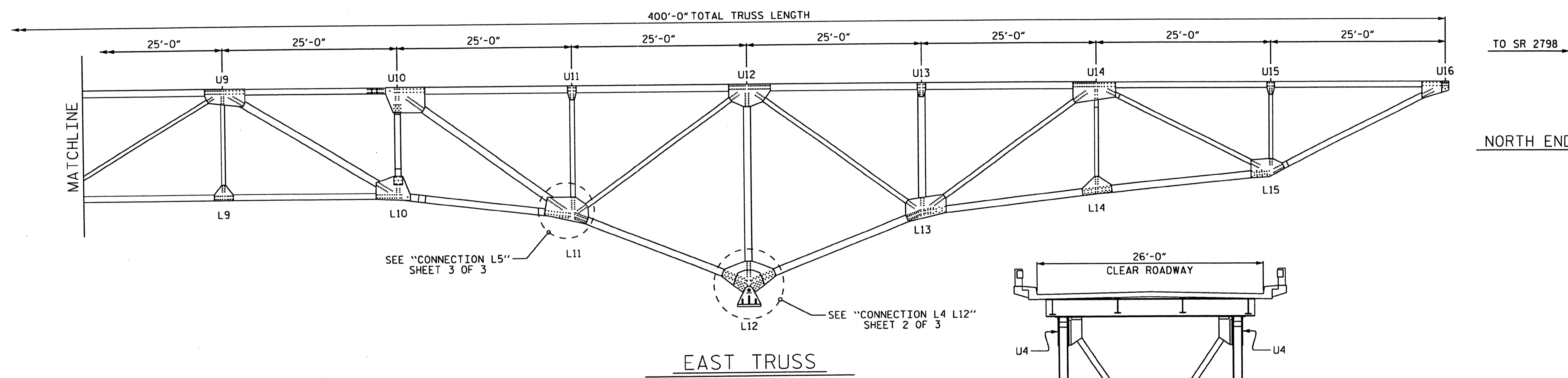
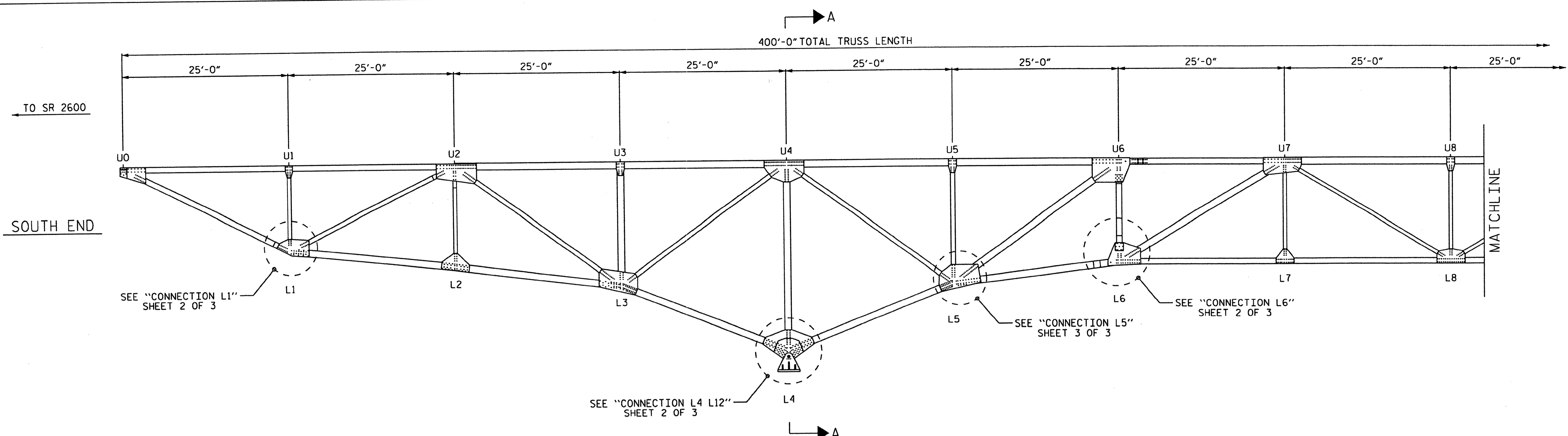
PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STEEL TRUSS
 GENERAL LAYOUT

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-4 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 14 |

DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYTIME*****
 *****DCN*****
 *****USERNAME*****



| EAST TRUSS QUANTITIES | | | |
|--|--------|------|----------|
| | NUMBER | LBS. | LIN. FT. |
| BOLT REMOVAL AND REPLACEMENT * | 413 | - | - |
| STRUCTURAL STEEL PLATES ** | 4 | 113 | - |
| LOCALIZED CLEANING AND SEALING OF EXISTING STEEL | - | - | 120 |
| TOTAL | | 113 | 120 |

* INCLUDES ONE WASHER AND NUT PER BOLT
 ** INCLUDES BOLTS, WASHERS AND NUTS

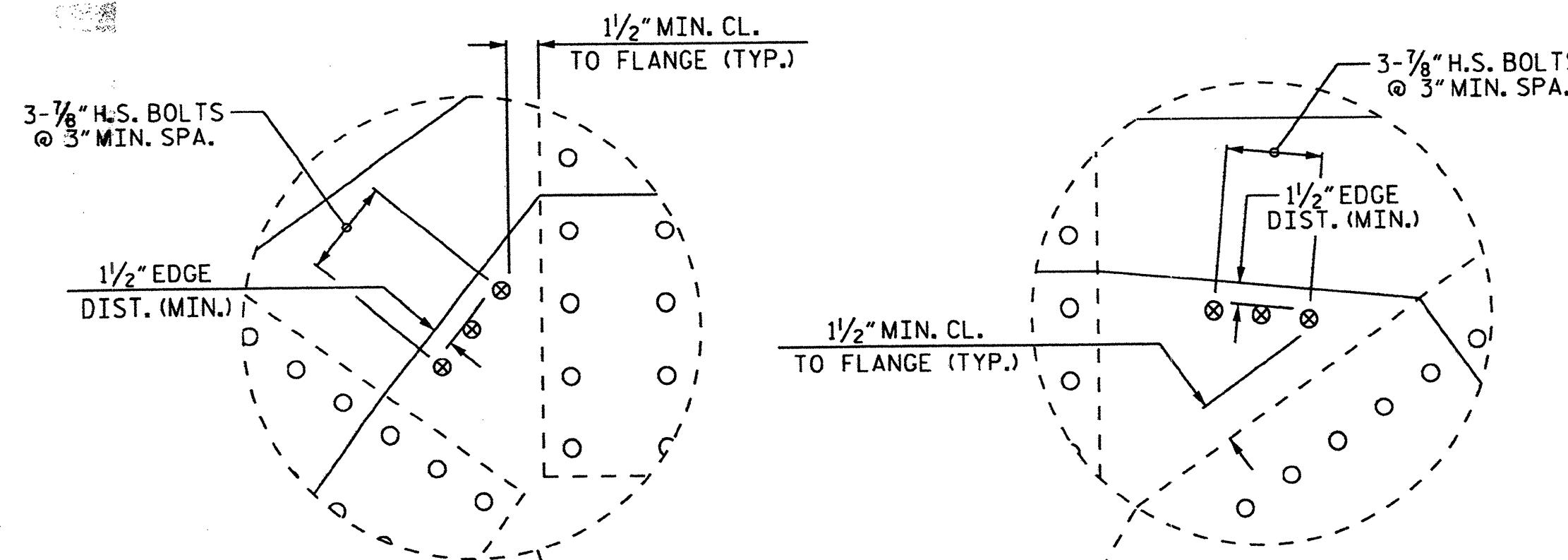
PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22

SHEET 1 OF 3

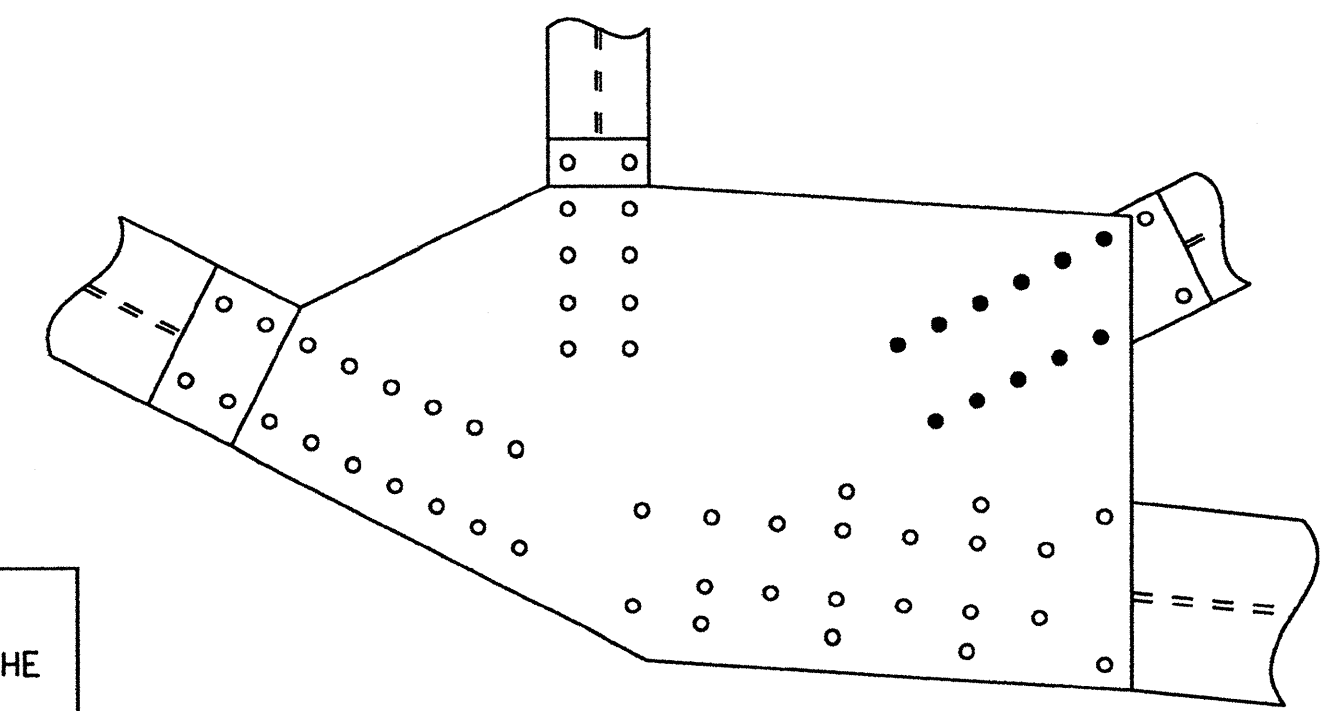
| REVISIONS | | | | | | SHEET NO. |
|-----------|----|------|-----|----|------|--------------|
| NO. | BY | DATE | NO. | BY | DATE | S-5 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 14 |

DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYSTEM*****
 *****SDGN*****
 *****USERNAME*****

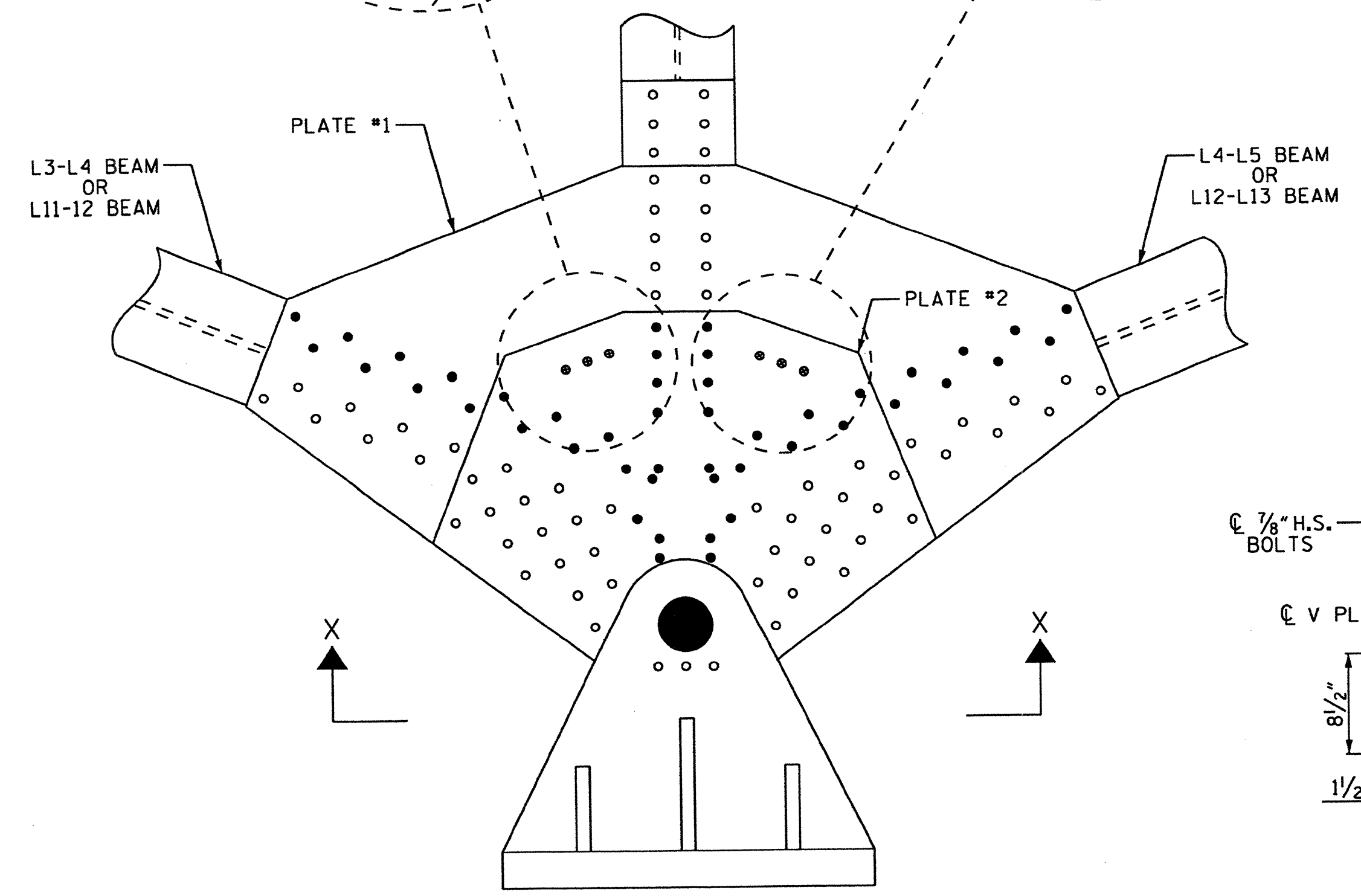


NOTE: VISIBLE PACK RUST SHALL BE REMOVED BETWEEN DOUBLE ANGLES AND CREVICES IN ACCORDANCE WITH THE NOTES AND THE SPECIAL PROVISIONS.



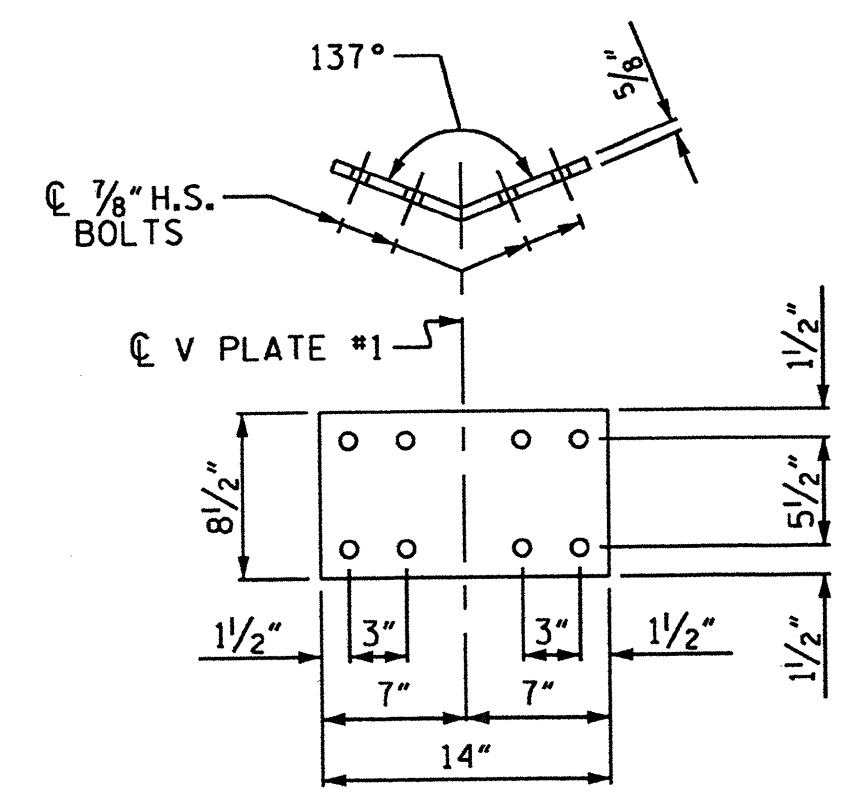
CONNECTION L1
OUTSIDE PLATE

11 BOLTS TO BE REPLACED
12 LIN. FT OF PACK RUST REMOVAL BY LOCALIZED CLEANING AND SEALING OF EXISTING STEEL



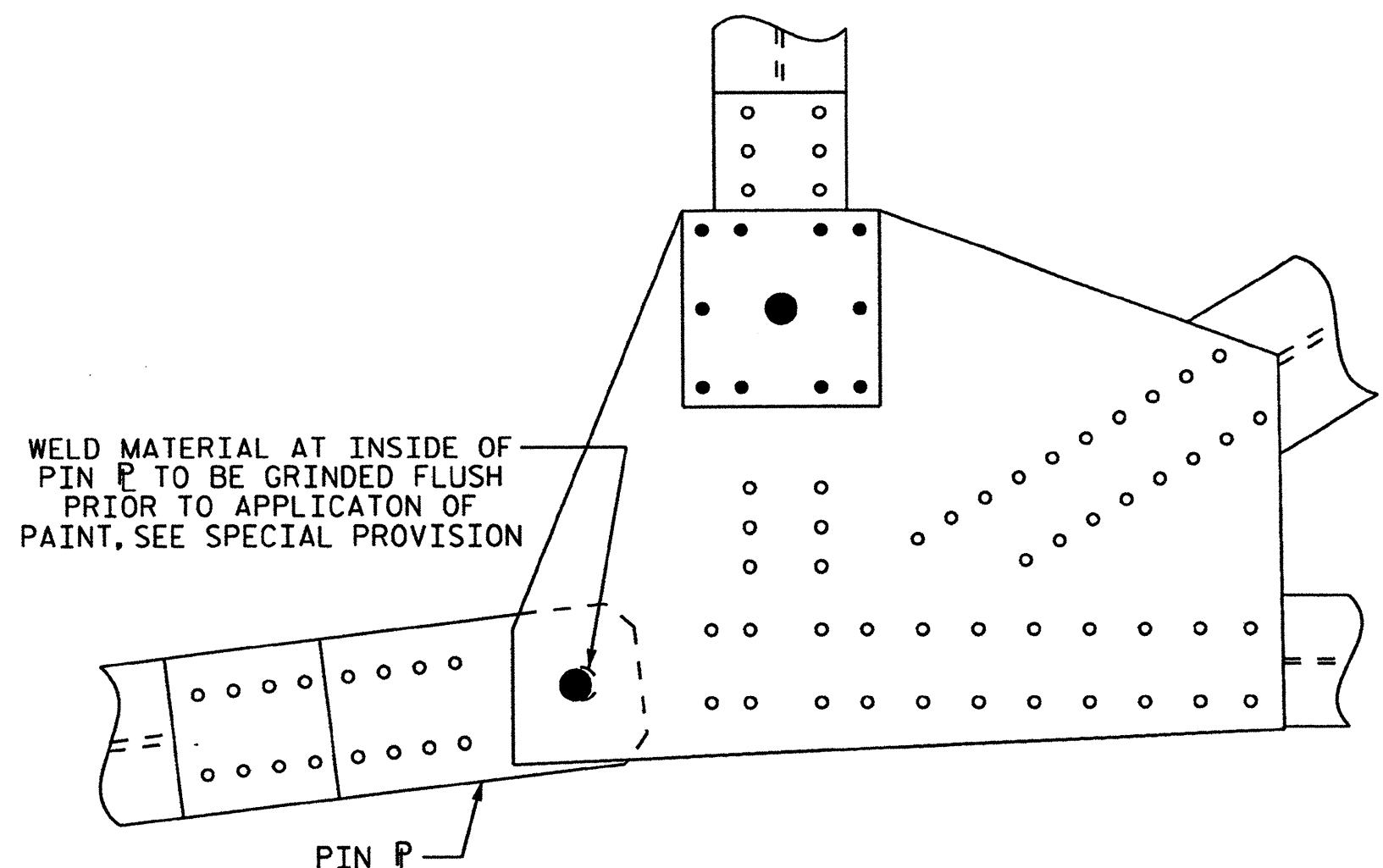
CONNECTION L4 L12

PLATES ON INSIDE AND OUTSIDE OF TRUSS
92 BOLTS TO BE REPLACED PER CONNECTION
12 NEW BOLT LOCATIONS PER CONNECTION
48 LIN. FT OF PACK RUST REMOVAL BY LOCALIZED CLEANING AND SEALING OF EXISTING STEEL



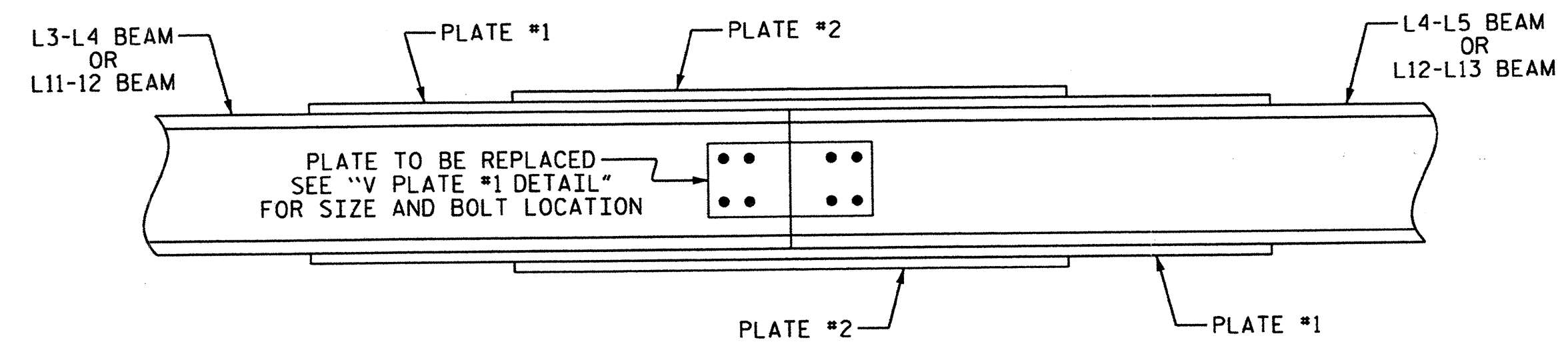
V PLATE #1
DETAIL

TO ENSURE PROPER FIT-UP THE CONTRACTOR SHALL FIELD VERIFY THE HOLE LOCATIONS BEFORE FABRICATION.



CONNECTION L6
OUTSIDE PLATE

10 BOLTS TO BE REPLACED
18 LIN. FT OF PACK RUST REMOVAL BY LOCALIZED CLEANING AND SEALING OF EXISTING STEEL



VIEW X-X

LOOKING UNDER BEAMS
8 BOLTS TO BE REPLACED PER CONNECTION

PROJECT NO. BP-5300Z
COUNTY GASTON
BRIDGE NO. 22

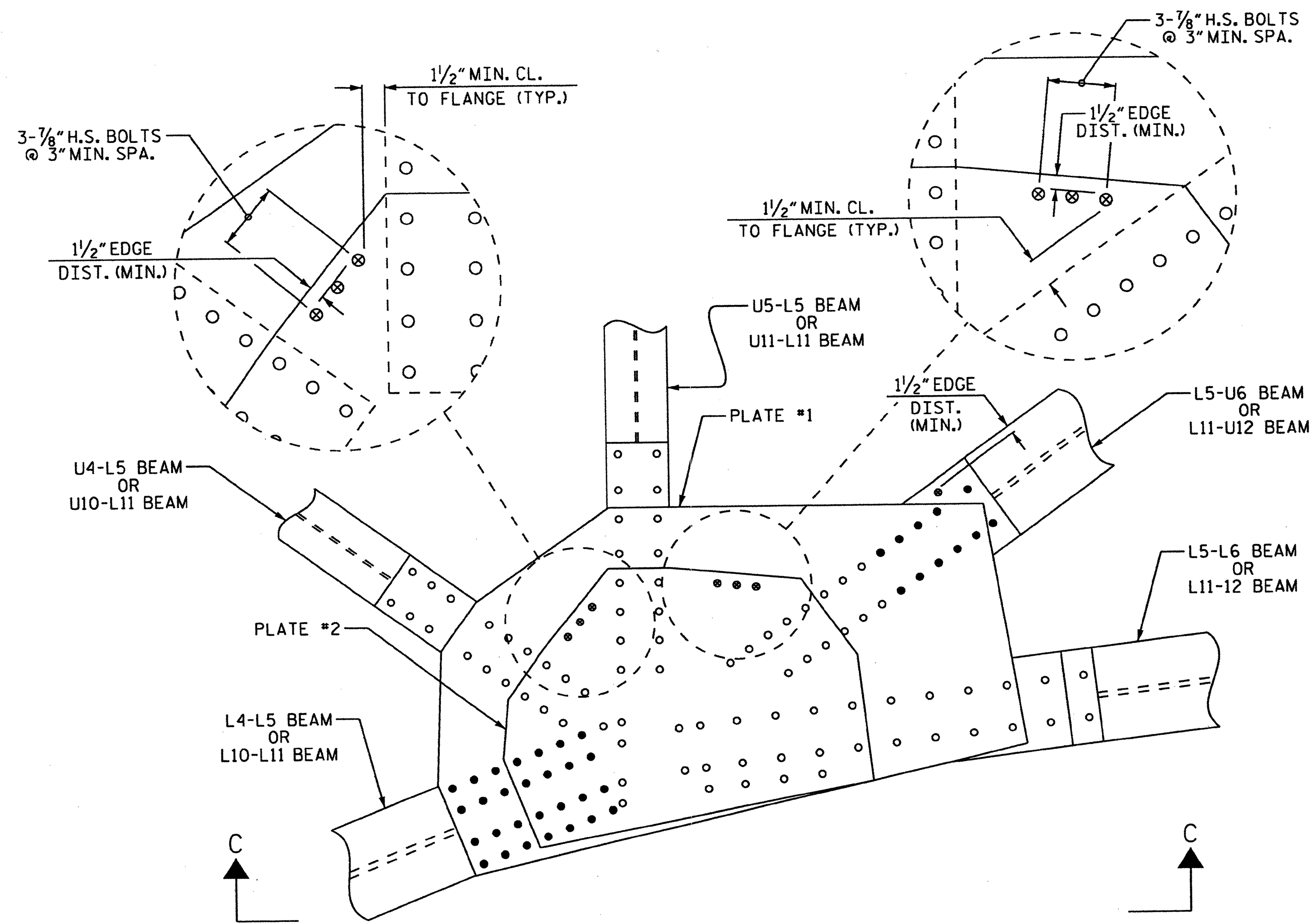
SHEET 2 OF 3

| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | | SHEET NO. S-6 |
|--|-----|-------|-----|-----|-------|--------------------|
| STEEL TRUSS | | | | | | TOTAL SHEETS 14 |
| EAST TRUSS REPAIR DETAILS | | | | | | |
| REVISIONS | | | | | | |
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

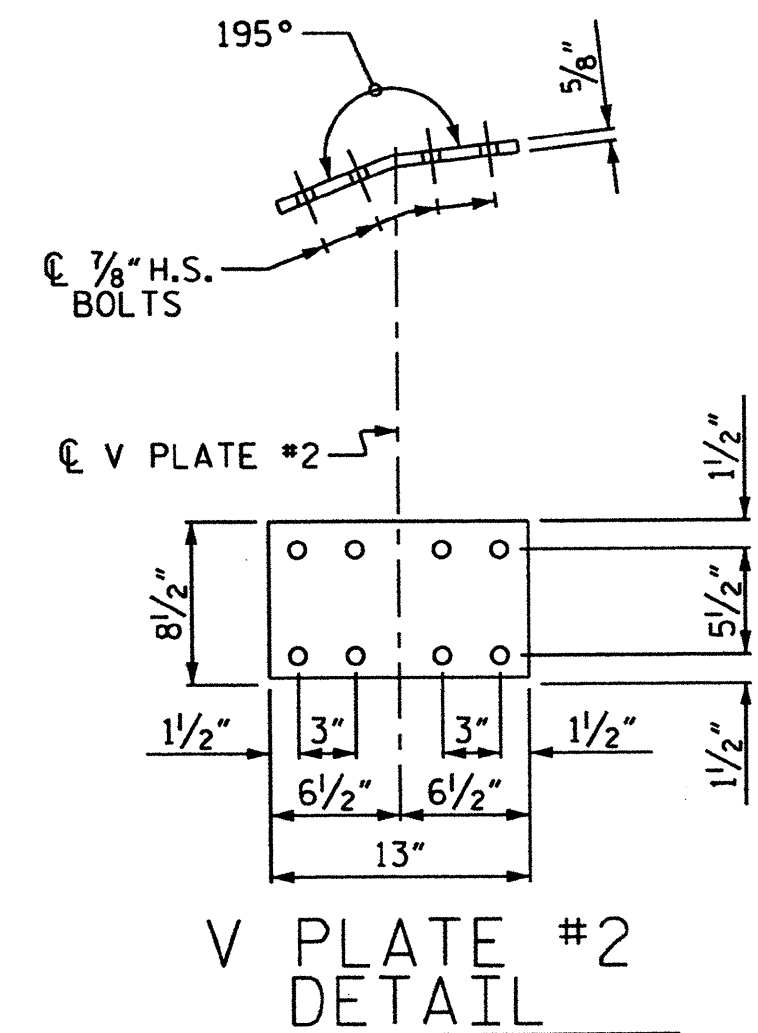
- BOLT KEY**
- EXISTING BOLT/RIVET
 - REPLACEMENT 7/8" H.S. BOLT
 - ⊗ NEW 7/8" H.S. BOLT LOCATION

DRAWN BY : T. BANKOVICH DATE : 9-2011
CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYSTEM*****
*****DCN*****
*****USERNAME*****



NOTE: VISIBLE PACK RUST SHALL BE REMOVED BETWEEN DOUBLE ANGLES AND CREVICES IN ACCORDANCE WITH THE NOTES AND THE SPECIAL PROVISIONS.

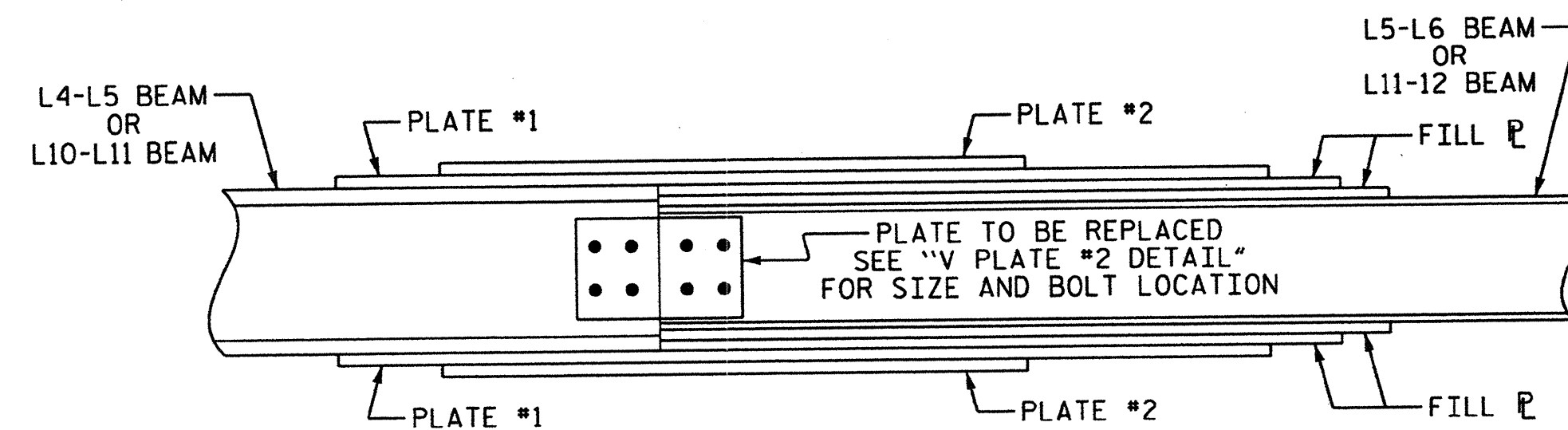


TO ENSURE PROPER FIT-UP THE CONTRACTOR SHALL FIELD VERIFY THE HOLE LOCATIONS BEFORE FABRICATION.

CONNECTION L5

PLATES ON INSIDE AND OUTSIDE OF TRUSS
(L5 SHOWN, L11 SIMILAR)

78 BOLTS TO BE REPLACED PER CONNECTION
14 NEW BOLT LOCATIONS PER CONNECTION
42 LIN. FT OF PACK RUST REMOVAL BY LOCALIZED
CLEANING AND SEALING OF EXISTING STEEL



VIEW C-C
LOOKING UNDER BEAMS
8 BOLTS TO BE REPLACED PER CONNECTION

- BOLT KEY**
- EXISTING BOLT/RIVET
 - REPLACEMENT 7/8\"/>
 - ⊗ NEW 7/8\"/>

PROJECT NO. BP-5300Z
COUNTY GASTON
BRIDGE NO. 22

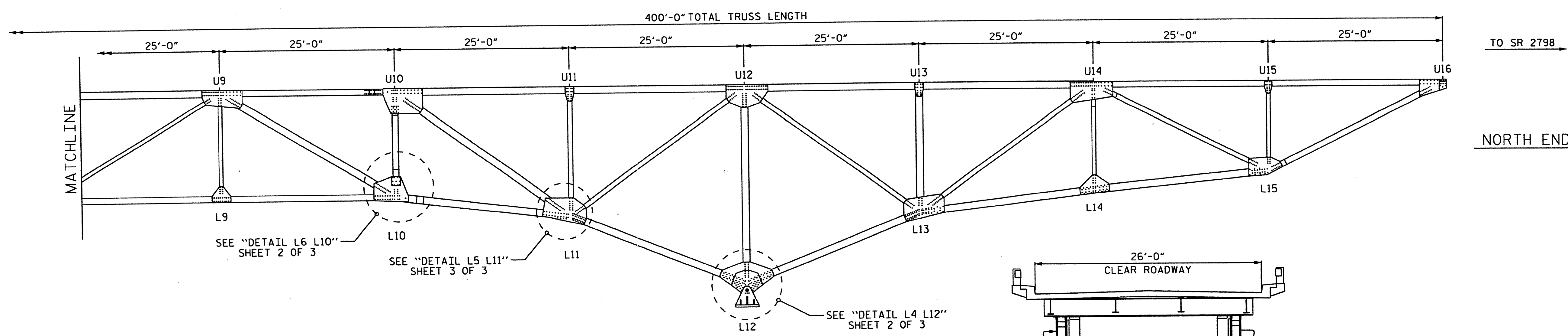
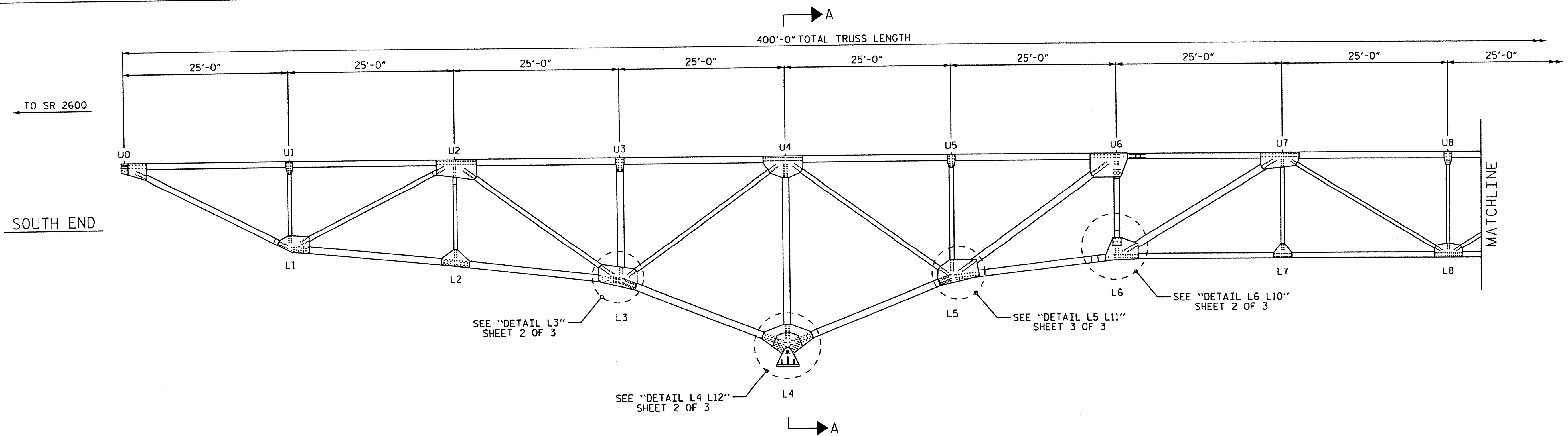
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STEEL TRUSS
EAST TRUSS
REPAIR DETAILS

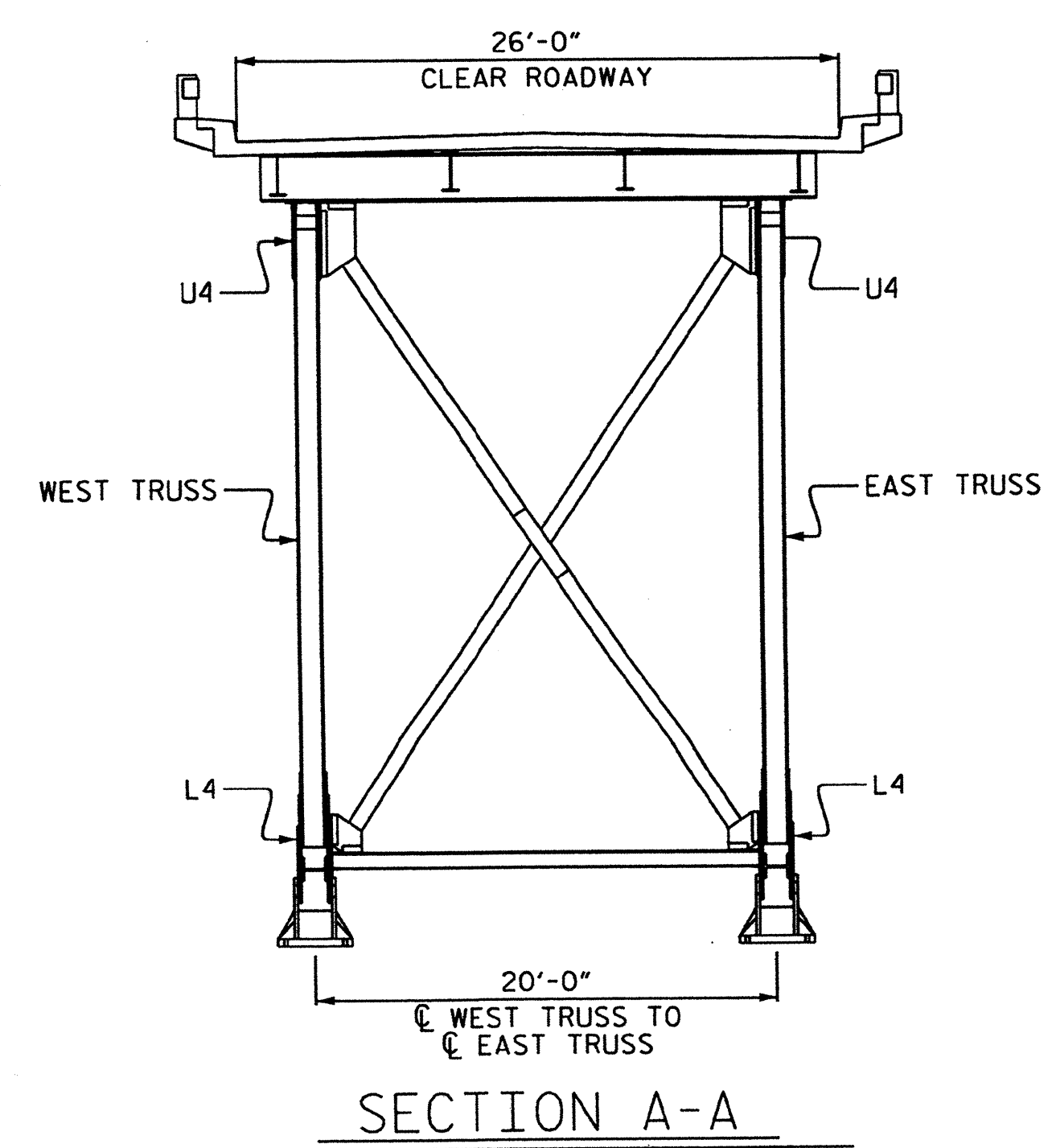
| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-7 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 14 |

DRAWN BY : T. BANKOVICH DATE : 9-2011
CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYSTEM*****
*****DCN*****
*****USERNAME*****



WEST TRUSS



| WEST TRUSS QUANTITIES | | | |
|--|--------|------|----------|
| | NUMBER | LBS. | LIN. FT. |
| BOLT REMOVAL AND REPLACEMENT * | 448 | - | - |
| STRUCTURAL STEEL PLATES ** | 4 | 113 | - |
| LOCALIZED CLEANING AND SEALING OF EXISTING STEEL | - | - | 135 |
| TOTAL | | 113 | 135 |

* INCLUDES ONE WASHER AND NUT PER BOLT
 ** INCLUDES BOLTS, WASHERS AND NUTS

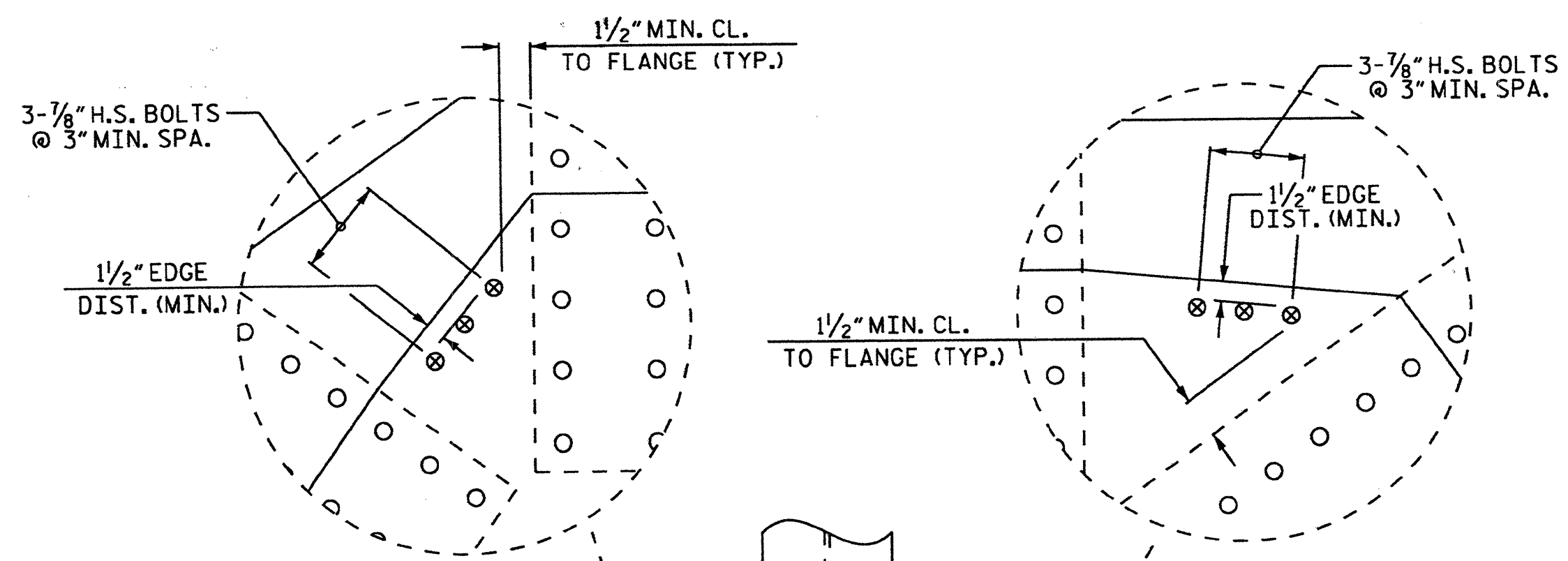
PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22
 SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STEEL TRUSS
 WEST TRUSS
 LAYOUT

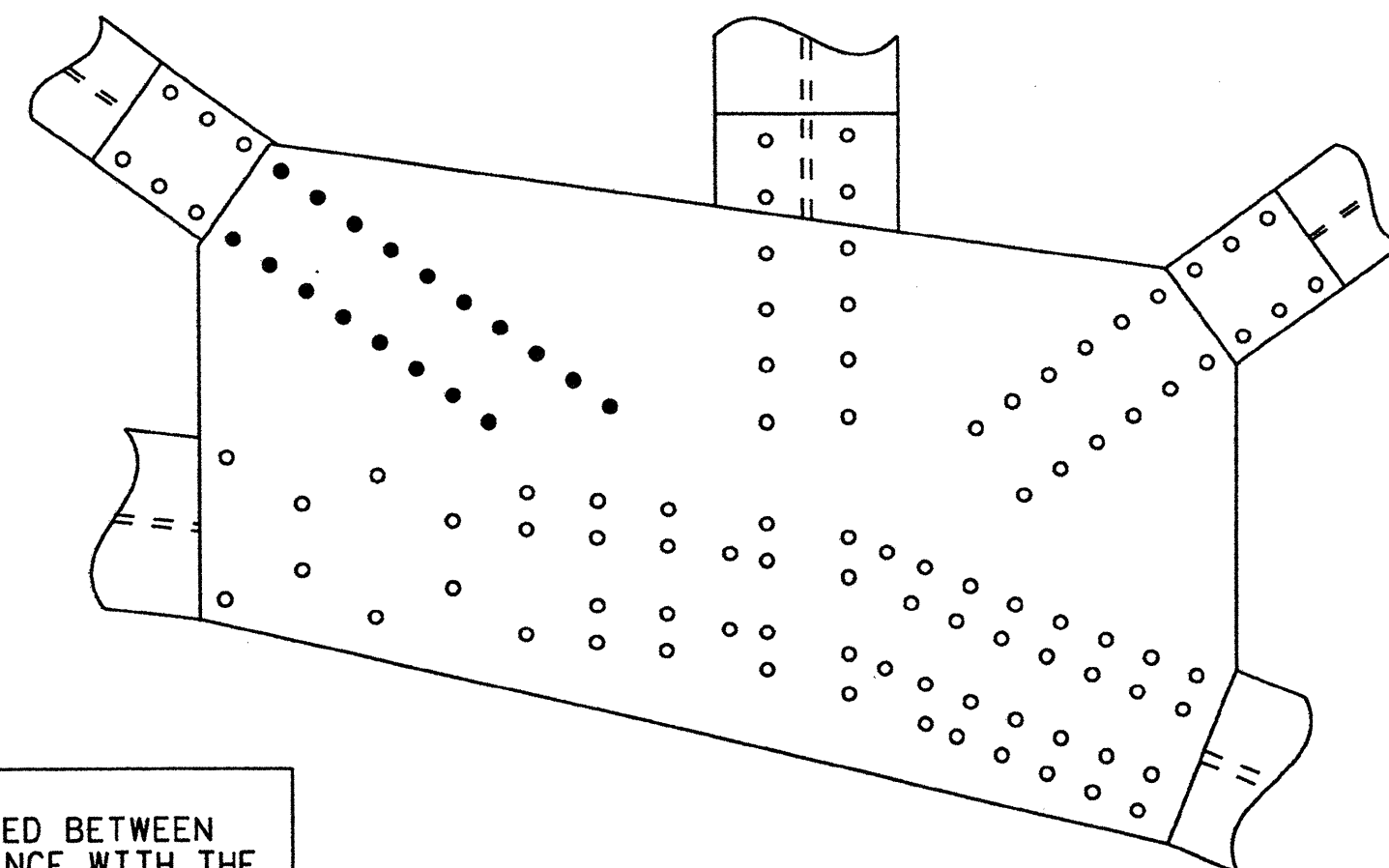
| REVISIONS | | | | | | SHEET NO. S-8 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 14 |
| 2 | | | 4 | | | |

DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYTIME*****
 *****DCN*****
 *****USERNAME*****

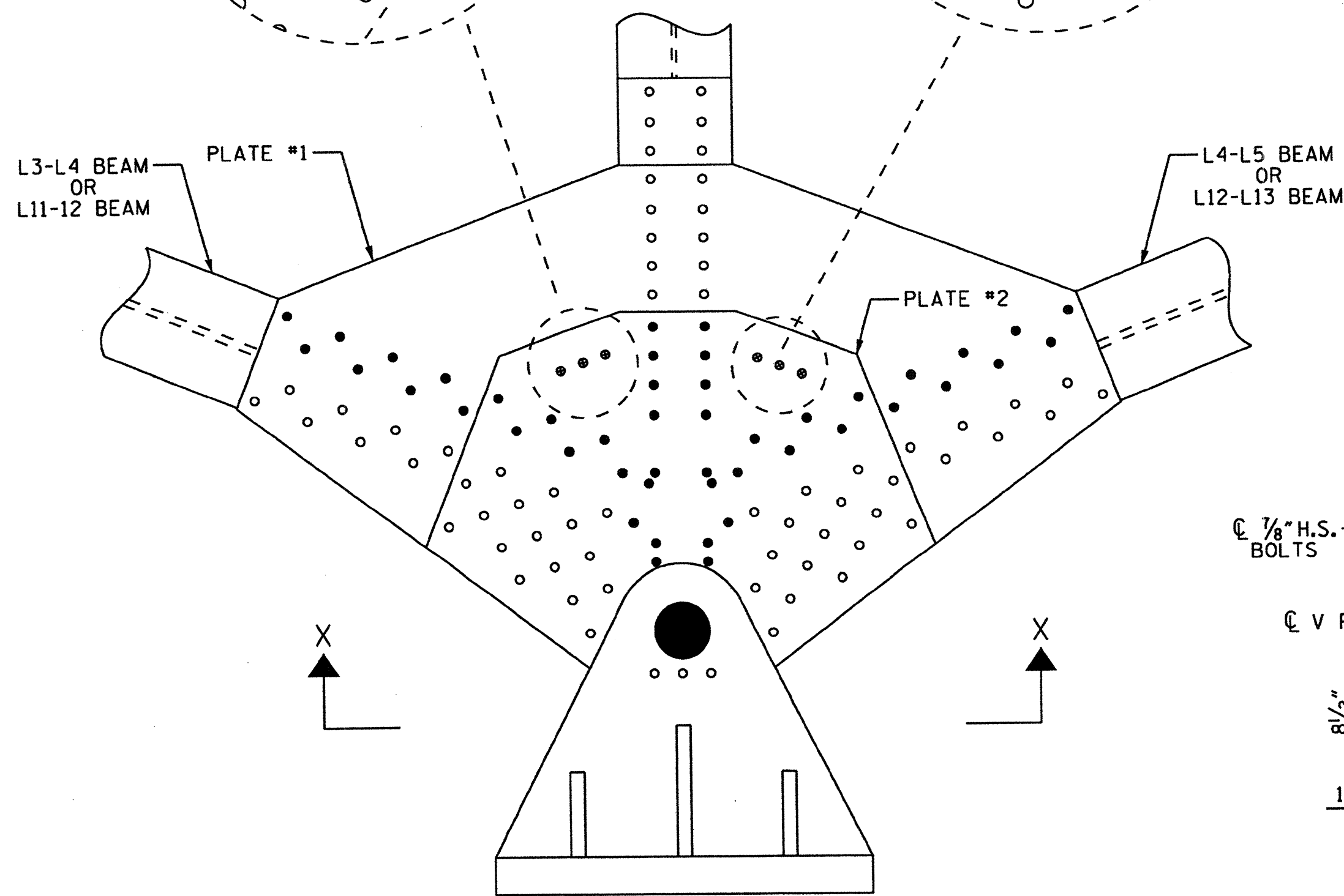


NOTE: VISIBLE PACK RUST SHALL BE REMOVED BETWEEN DOUBLE ANGLES AND CREVICES IN ACCORDANCE WITH THE NOTES AND THE SPECIAL PROVISIONS.



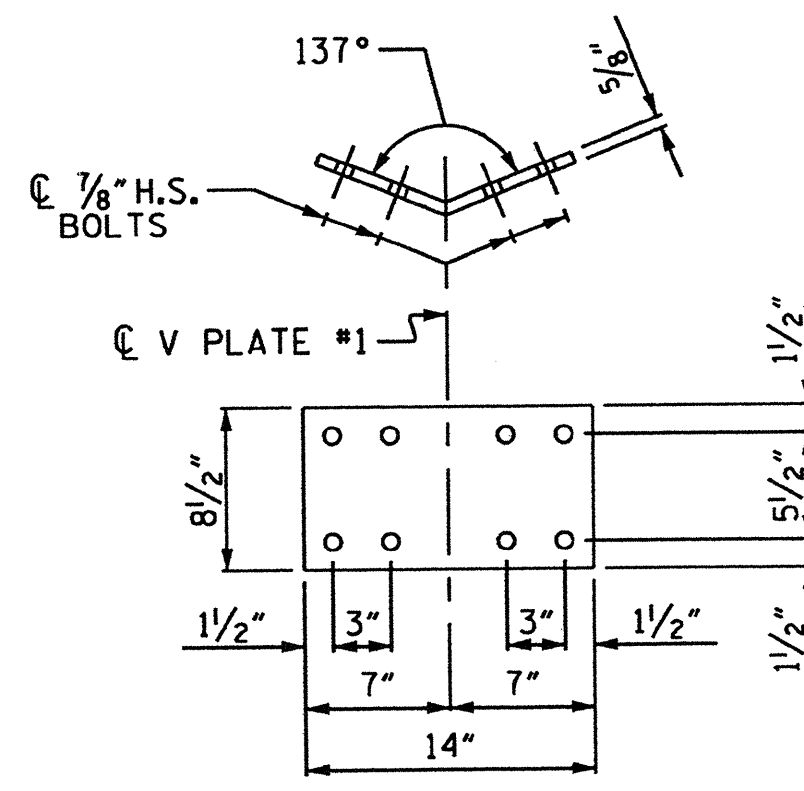
DETAIL L3
PLATES ON INSIDE AND OUTSIDE OF TRUSS

36 BOLTS TO BE REPLACED
26 LIN. FT OF PACK RUST REMOVAL BY LOCALIZED CLEANING AND SEALING OF EXISTING STEEL



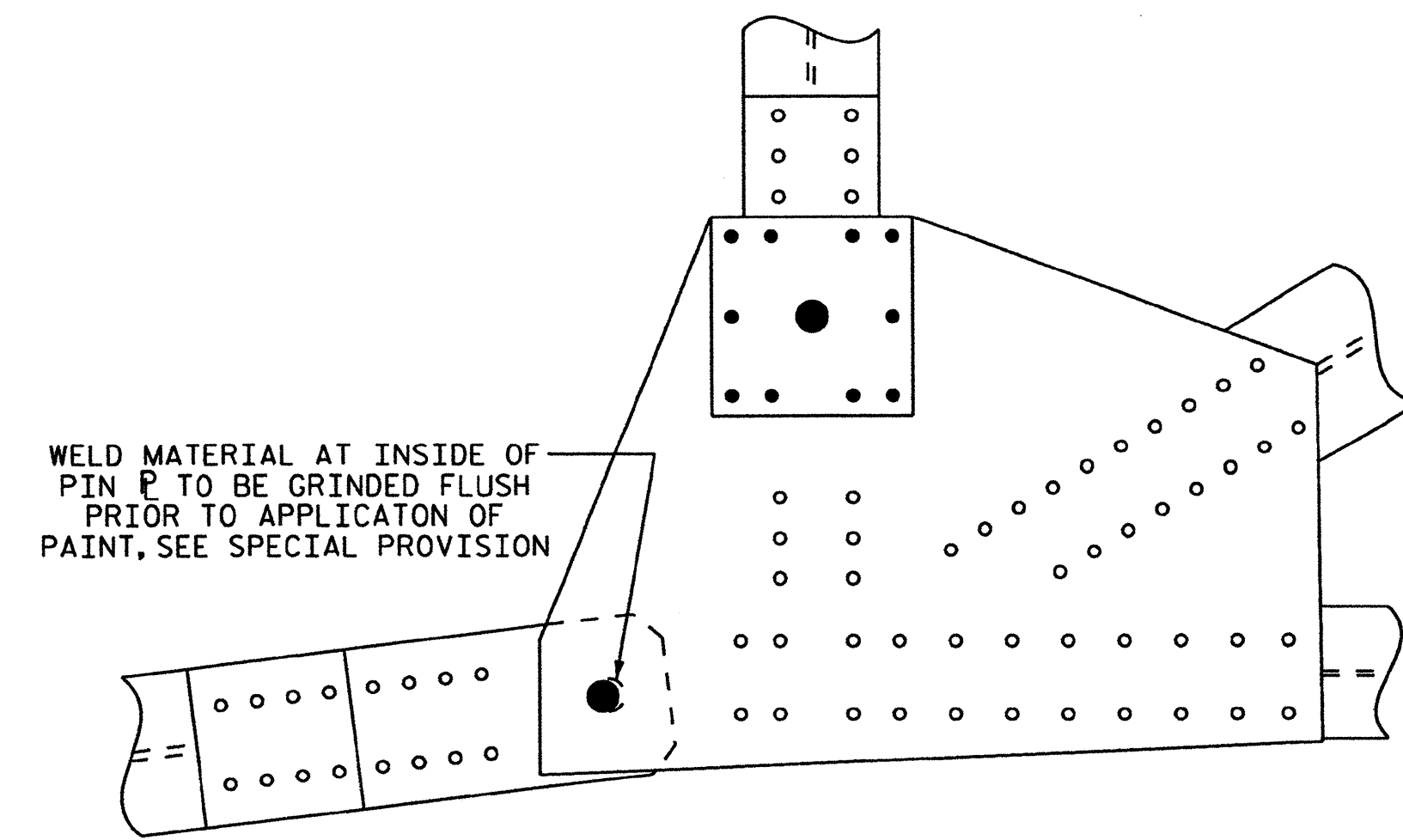
CONNECTION L4 L12
PLATES ON INSIDE AND OUTSIDE OF TRUSS

92 BOLTS TO BE REPLACED PER CONNECTION
12 NEW BOLT LOCATIONS PER CONNECTION
48 LIN. FT OF PACK RUST REMOVAL BY LOCALIZED CLEANING AND SEALING OF EXISTING STEEL



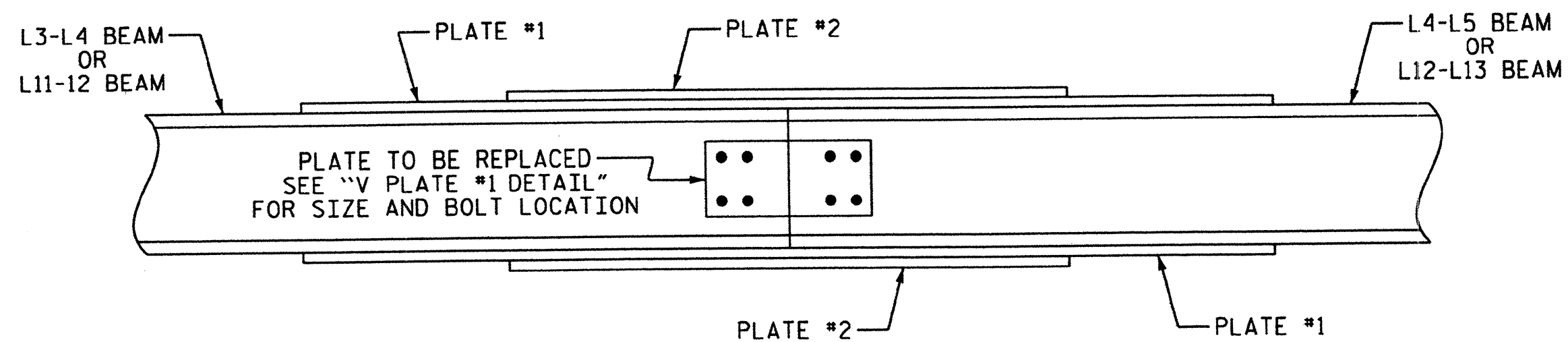
V PLATE #1
DETAIL

TO ENSURE PROPER FIT-UP THE CONTRACTOR SHALL FIELD VERIFY THE HOLE LOCATIONS BEFORE FABRICATION.



CONNECTION L6
OUTSIDE PLATE
(L6 SHOWN, L10 SIMILAR)

10 BOLTS TO BE REPLACED PER CONNECTION
18 LIN. FT OF PACK RUST REMOVAL BY LOCALIZED CLEANING AND SEALING OF EXISTING STEEL



VIEW X-X

LOOKING UNDER BEAMS

8 BOLTS TO BE REPLACED PER CONNECTION

PROJECT NO. BP-5300Z
COUNTY GASTON
BRIDGE NO. 22

SHEET 2 OF 3

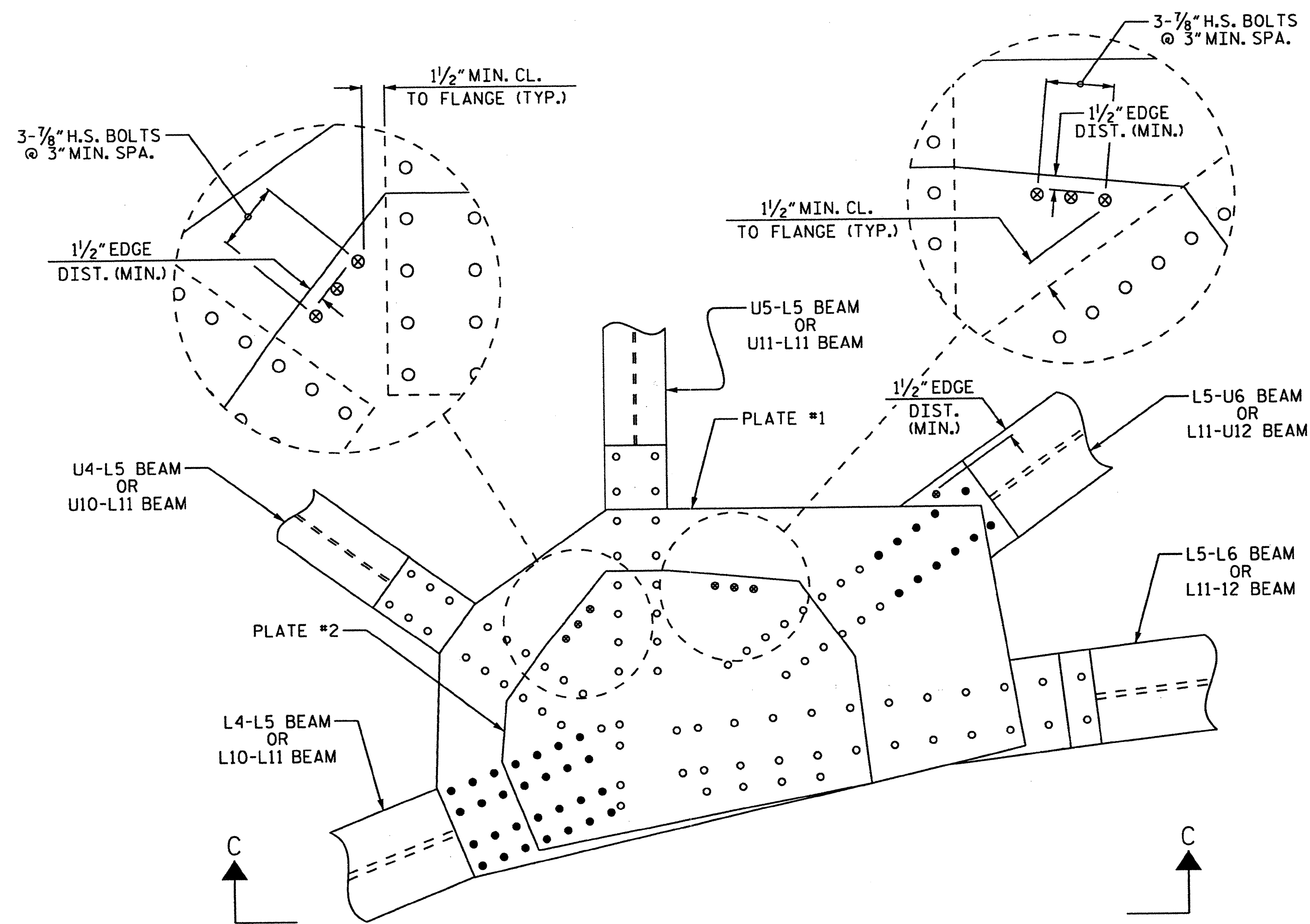
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STEEL TRUSS
WEST TRUSS
REPAIR DETAILS

- BOLT KEY**
- EXISTING BOLT/RIVET
 - REPLACEMENT 7/8" H.S. BOLT
 - ⊗ NEW 7/8" H.S. BOLT LOCATION

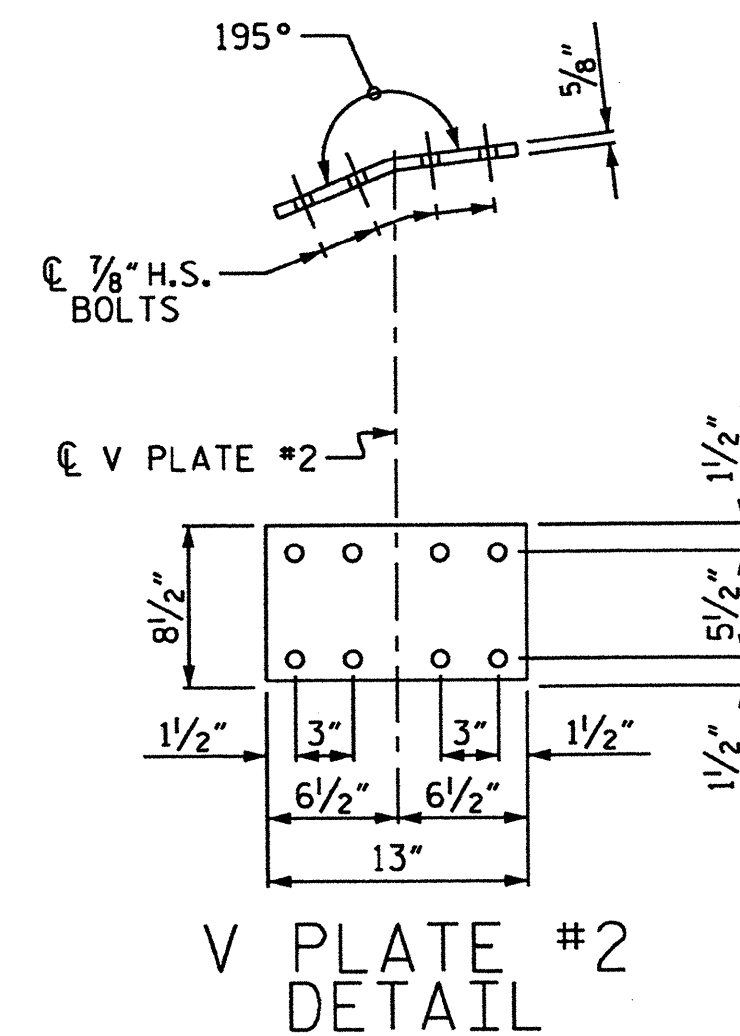
| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-9 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 14 |

DRAWN BY: T. BANKOVICH DATE: 9-2011
CHECKED BY: T.J. BEACH DATE: 9-2011

*****SYSTEM*****
*****DCN*****
*****USERNAME*****



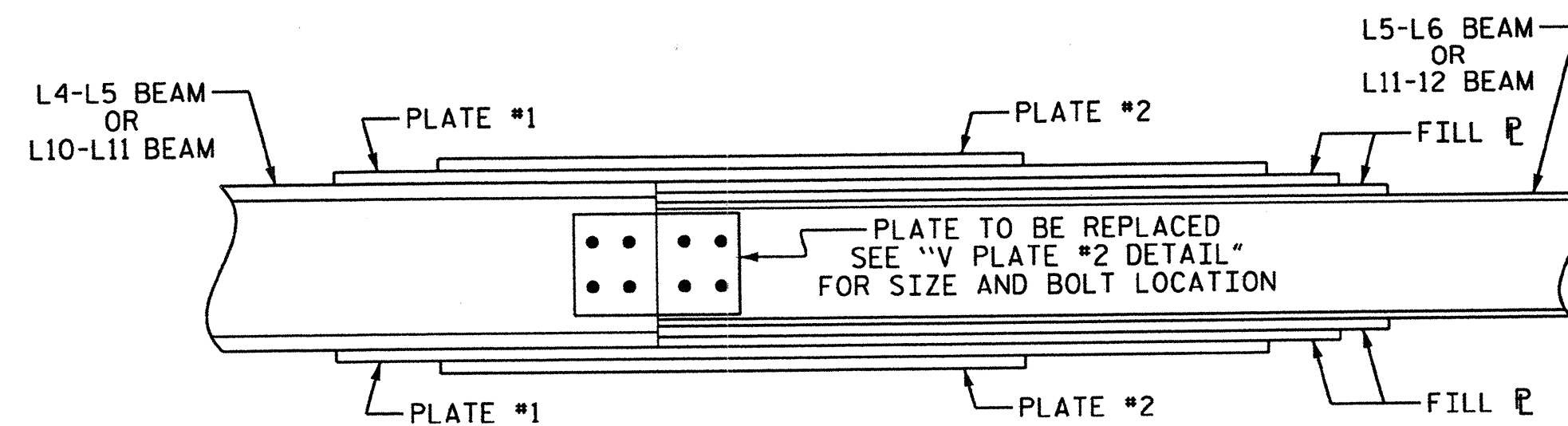
NOTE: VISIBLE PACK RUST SHALL BE REMOVED BETWEEN DOUBLE ANGLES AND CREVICES IN ACCORDANCE WITH THE NOTES AND THE SPECIAL PROVISIONS.



TO ENSURE PROPER FIT-UP THE CONTRACTOR SHALL FIELD VERIFY THE HOLE LOCATIONS BEFORE FABRICATION.

CONNECTION L5
 PLATES ON INSIDE AND OUTSIDE OF TRUSS
 (L5 SHOWN, L11 SIMILAR)

78 BOLTS TO BE REPLACED PER CONNECTION
 14 NEW BOLTS LOCATIONS PER CONNECTION
 42 LIN. FT OF PACK RUST REMOVAL BY LOCALIZED CLEANING AND SEALING OF EXISTING STEEL



VIEW C-C
 LOOKING UNDER BEAMS
 8 BOLTS TO BE REPLACED PER CONNECTION

PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22

SHEET 3 OF 3

| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | | SHEET NO. S-10 |
|--|-----|-------|-----|-----|-------|--------------------|
| STEEL TRUSS | | | | | | TOTAL SHEETS 14 |
| WEST TRUSS REPAIR DETAILS | | | | | | |
| REVISIONS | | | | | | |
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

- BOLT KEY**
- EXISTING BOLT/RIVET
 - REPLACEMENT 7/8" H.S. BOLT
 - ⊗ NEW 7/8" H.S. BOLT LOCATION

DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYTIME*****
 *****DCN*****
 *****USERNAME*****

NOTES:

USING A PACHOMETER, CHECK THE CAP FOR MAIN REINFORCING STEEL INTERFERENCE WITH THE HOLES. IF NECESSARY, ADJUST THE HOLE LOCATION SLIGHTLY TO AVOID REINFORCING STEEL.

FOR ANCHOR BOLT PLACEMENT SEE "ADHESIVELY ANCHOR BOLTS & DOWELS" SPECIAL PROVISION. NO FIELD TESTING IS REQUIRED.

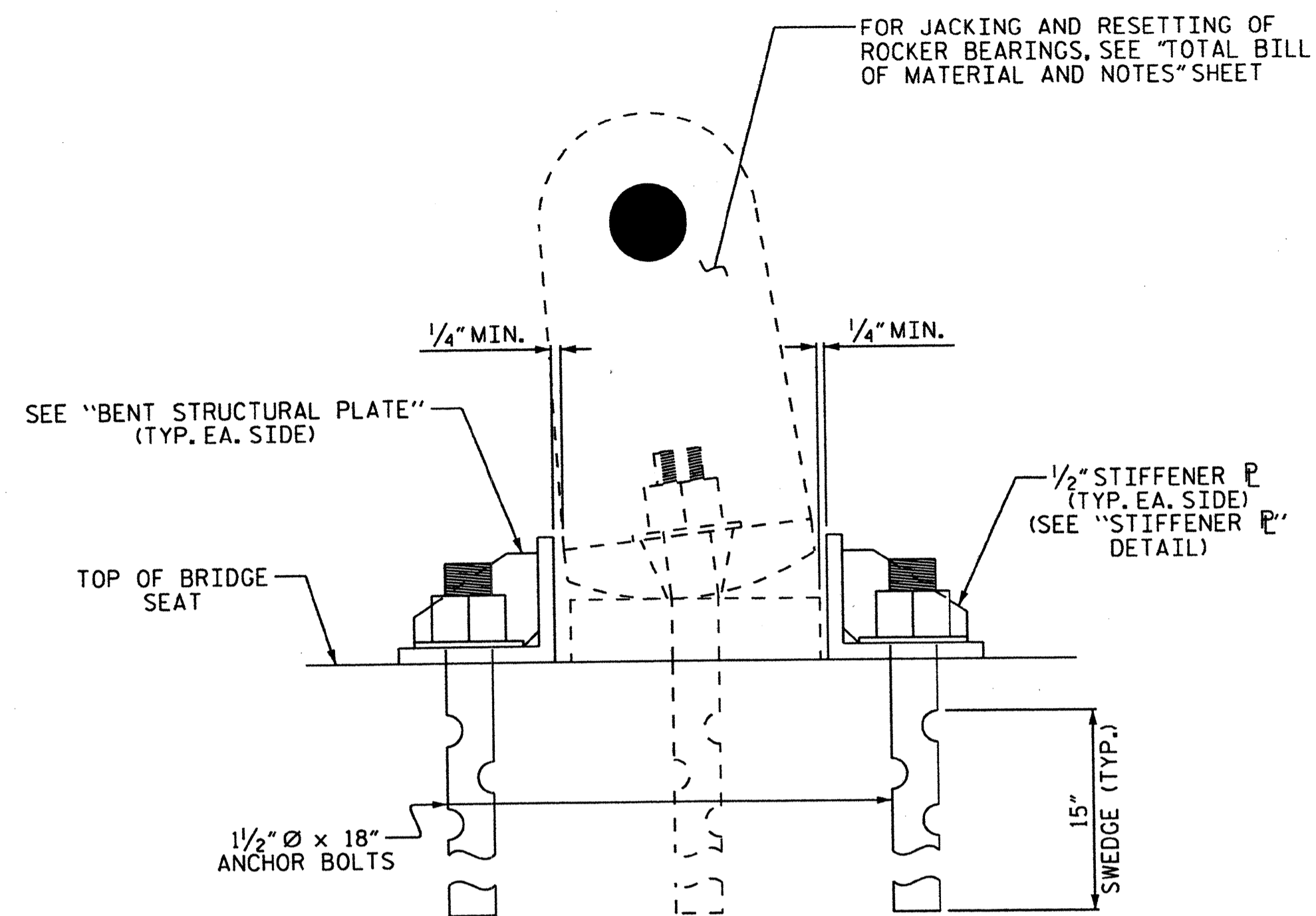
THE NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP TOOL.

ALL STRUCTURAL STEEL PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

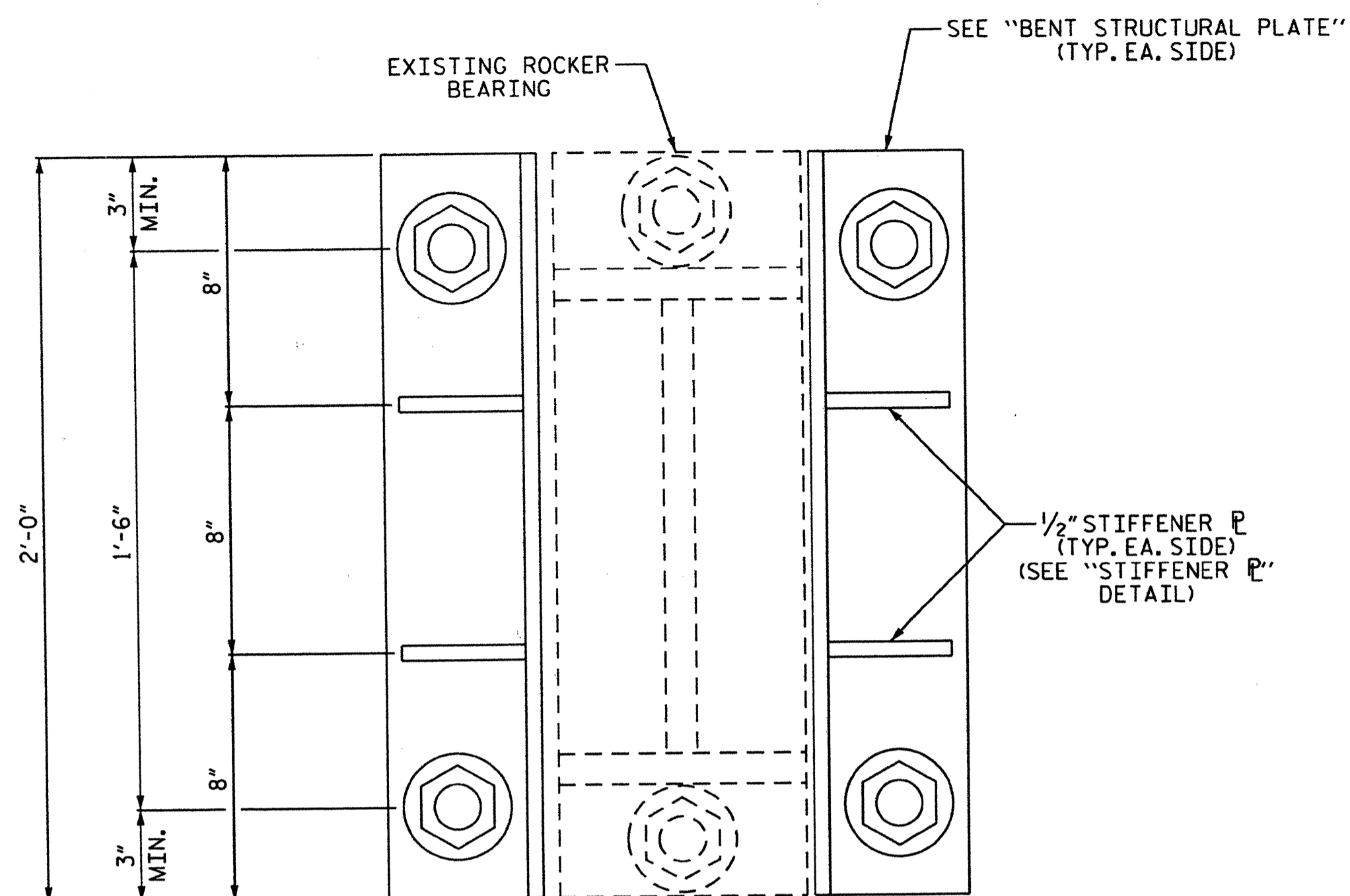
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENT OF AASHTO M291-DH OR AASHTO M292-2. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHER. SHOP INSPECTION IS REQUIRED.

SEE SECTION 1072 OF THE STANDARD SPECIFICATIONS FOR BENDING THE "BENT STRUCTURAL PLATE".

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.



END VIEW



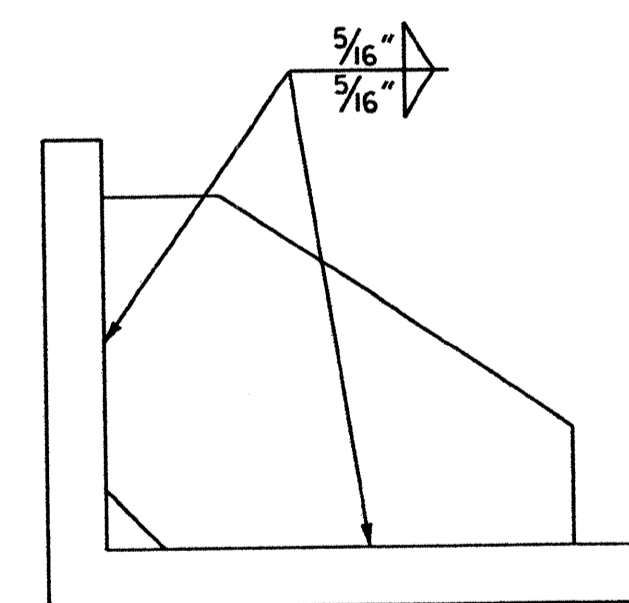
PLAN VIEW

BEARING QUANTITIES

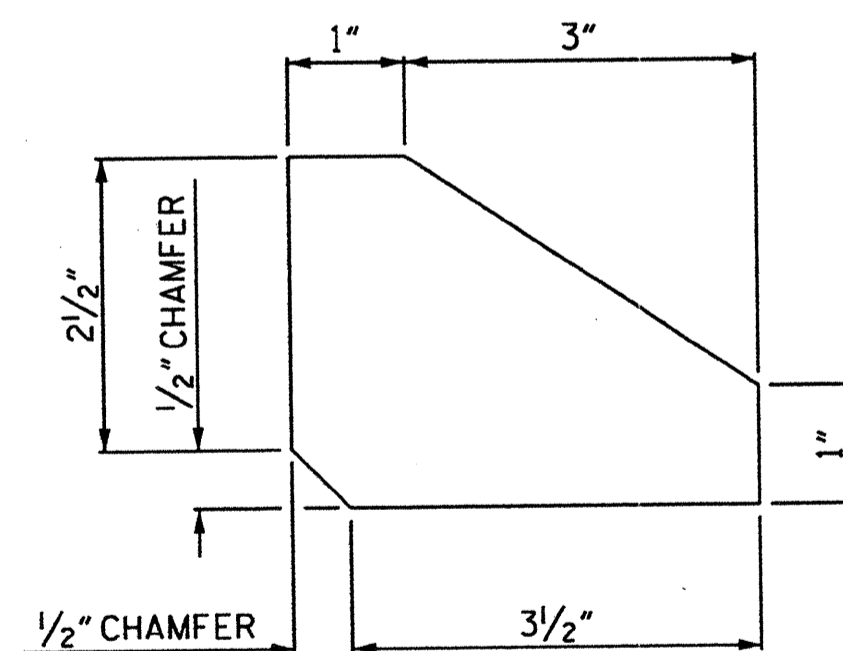
| | NUMBER | LBS. |
|-------------------------------------|--------|------|
| 1 1/2" Ø 18" ANCHOR BOLTS * | 16 | 144 |
| BENT STRUCTURAL PLATES ** | 8 | 242 |
| JACKING AND ADJUSTMENTS OF BEARINGS | 4 | - |
| TOTAL | | 386 |

* INCLUDES ONE WASHER AND NUT PER BOLT

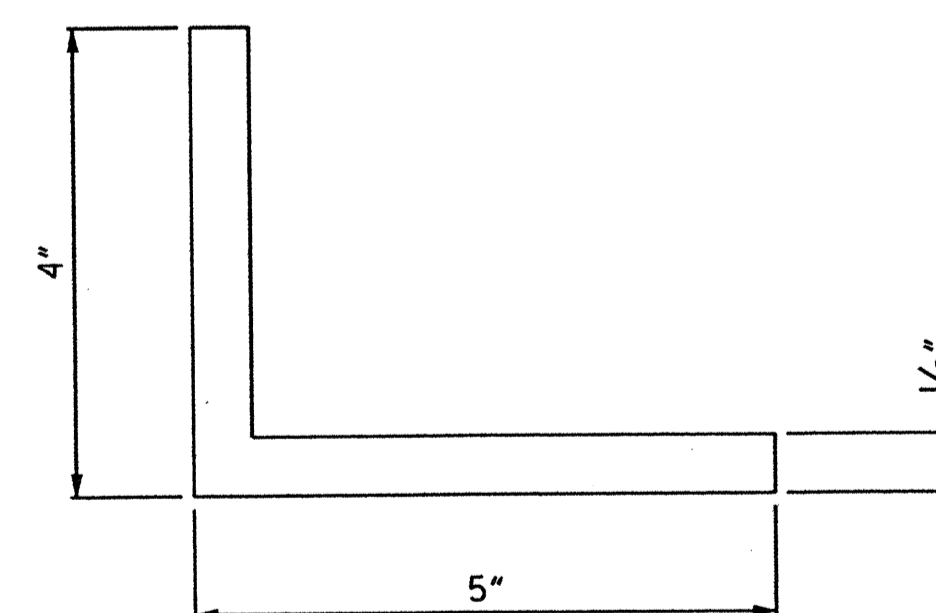
** INCLUDES 2 STIFFENER PLATE PER EACH BENT STRUCTURAL PLATE



STIFFENER PLATE WELDING DETAIL



STIFFENER PLATE



BENT STRUCTURAL PLATE

PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STEEL TRUSS
 ROCKER BEARING
 REPAIR
 PIERS 1 & 4
 (EAST AND WEST TRUSS)

REVISIONS

| NO. | BY: | DATE: | NO. | BY: | DATE: |
|-----|-----|-------|-----|-----|-------|
| 1 | | | 3 | | |
| 2 | | | 4 | | |

SHEET NO.

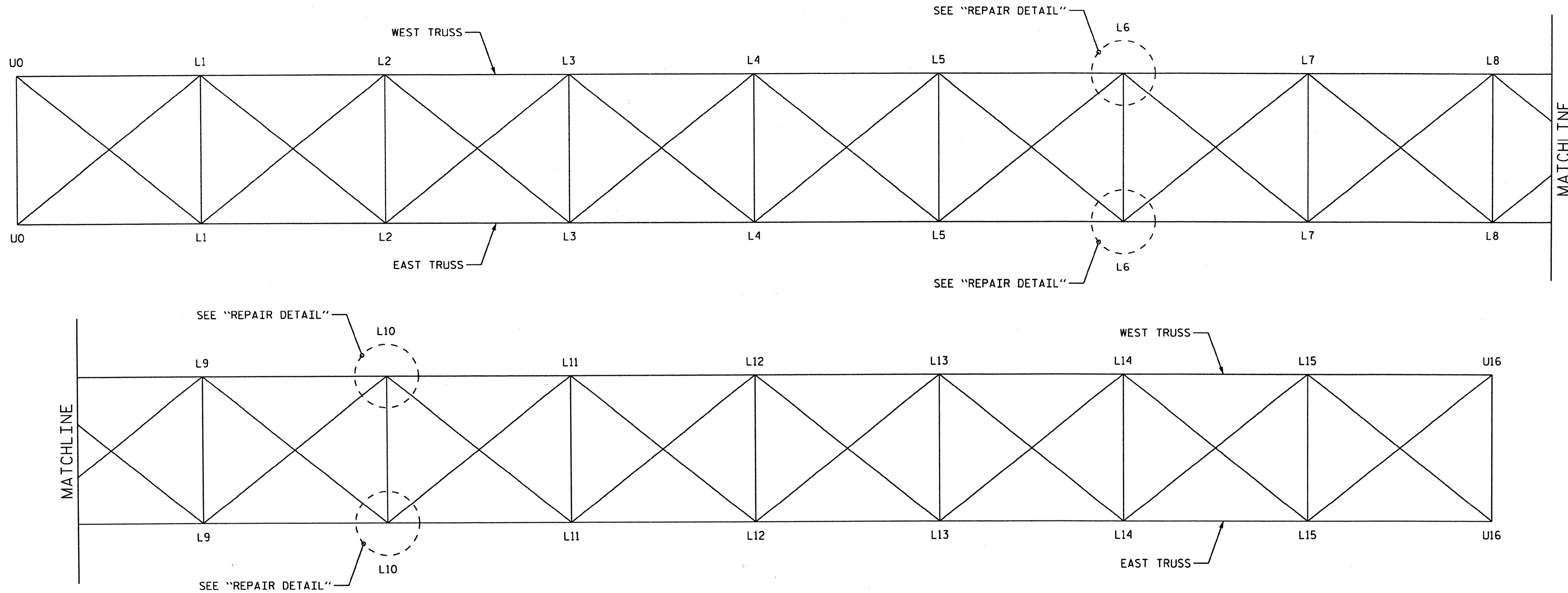
S-11

TOTAL SHEETS

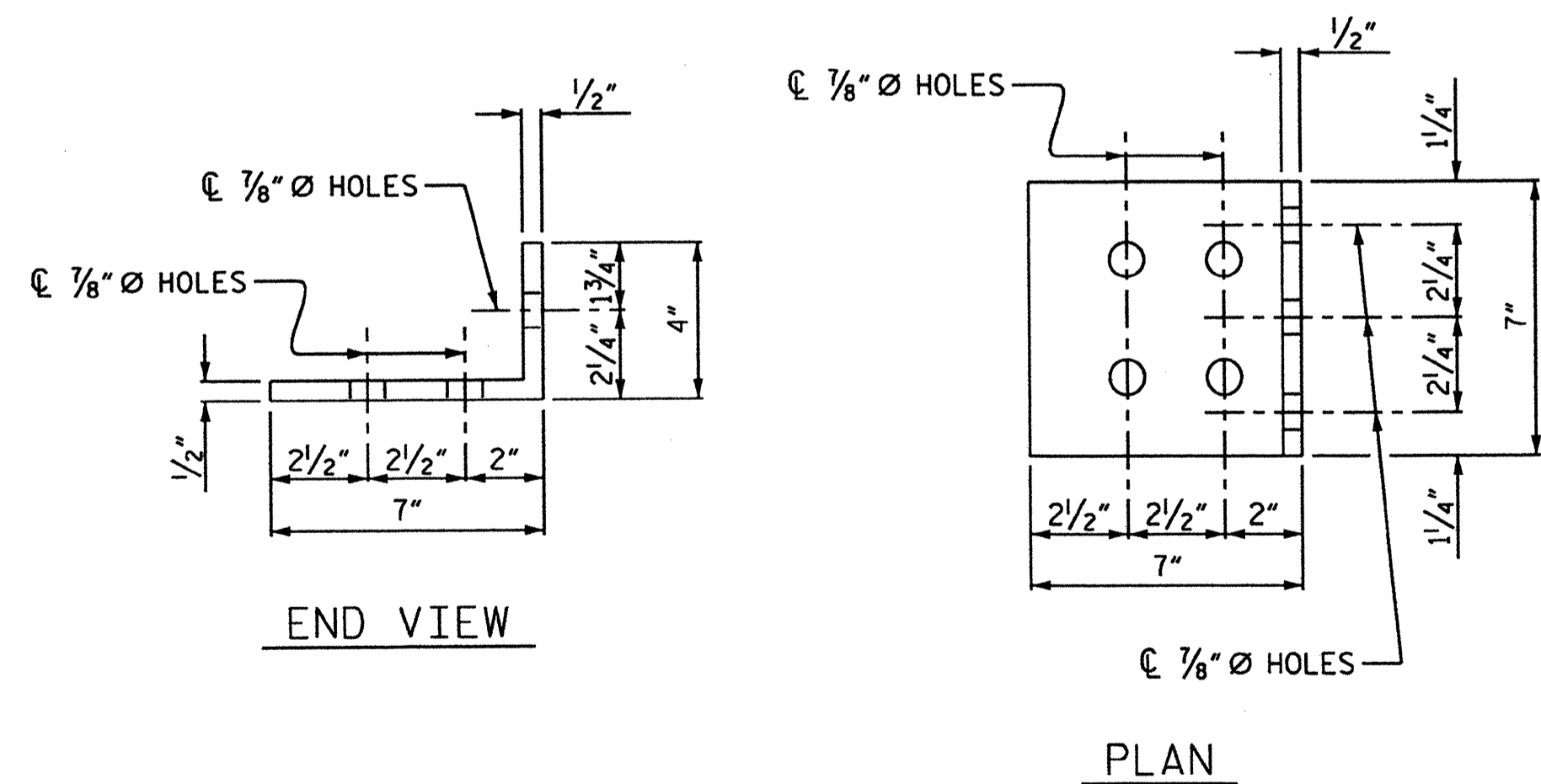
14

DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYSTEMTIME*****
 *****DCN*****
 *****USERNAME*****

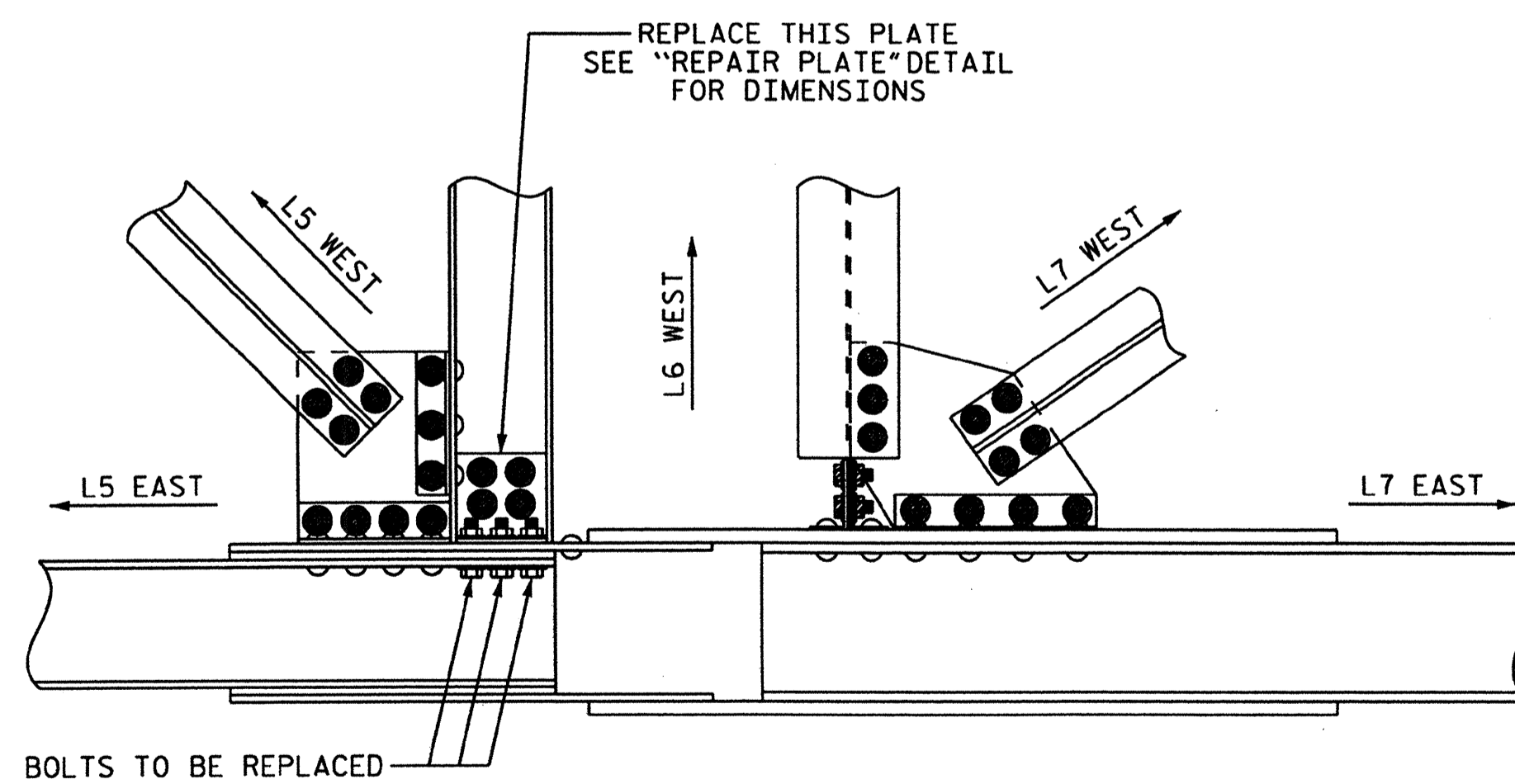


BOTTOM LATERAL BRACING LAYOUT



REPAIR PLATE

TO ENSURE PROPER FIT-UP THE CONTRACTOR SHALL FIELD VERIFY THE HOLE LOCATIONS BEFORE FABRICATION.



REPAIR DETAIL

L6 EAST SHOWN, ALL OTHER LOCATIONS SIMILAR

BOLT KEY

● REPLACEMENT 7/8" H.S. BOLT

PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STEEL TRUSS
 BOTTOM LATERAL
 BRACING REPAIR

| QUANTITIES | | |
|--------------------------------|--------|------|
| | NUMBER | LBS. |
| BOLT REMOVAL AND REPLACEMENT * | 96 | - |
| STRUCTURAL STEEL PLATES ** | 4 | 70 |
| TOTAL | | 70 |

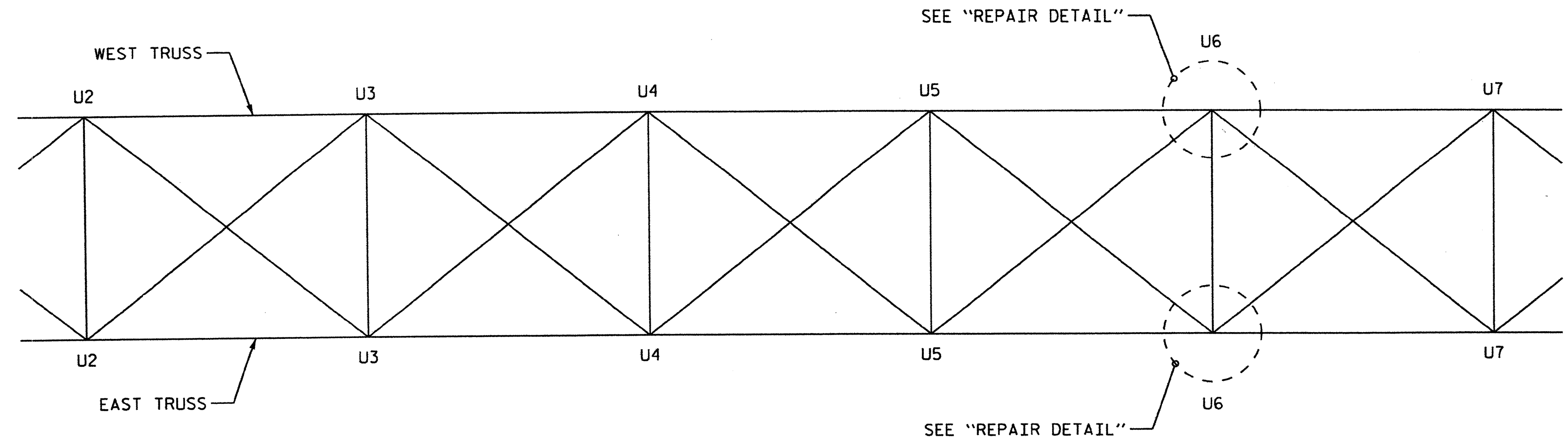
* INCLUDES ONE WASHER AND NUT PER BOLT
 ** INCLUDES BOLTS, WASHERS AND NUTS

| REVISIONS | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-----------|
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

S-12
TOTAL SHEETS 14

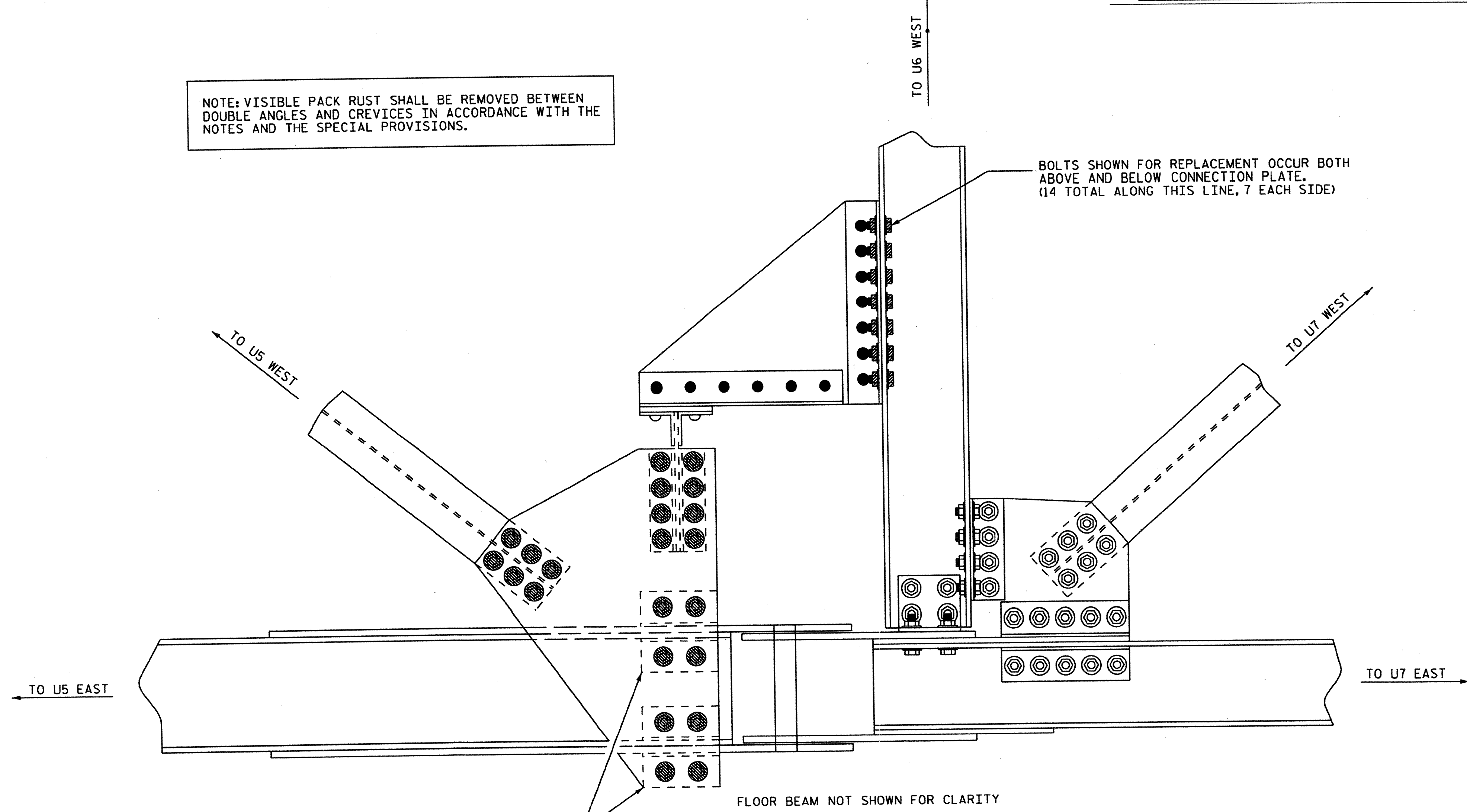
DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYTIME*****
 *****DON*****
 *****USER*****



PARTIAL TOP LATERAL BRACING LAYOUT

NOTE: VISIBLE PACK RUST SHALL BE REMOVED BETWEEN DOUBLE ANGLES AND CREVICES IN ACCORDANCE WITH THE NOTES AND THE SPECIAL PROVISIONS.



BOLTS SHOWN FOR REPLACEMENT OCCUR BOTH ABOVE AND BELOW CONNECTION PLATE. (14 TOTAL ALONG THIS LINE, 7 EACH SIDE)

UPPER LATERAL BRACING REPAIR
(U6 EAST SHOWN, U6 WEST SIMILAR)

| QUANTITIES | | |
|--|--------|--------|
| | NUMBER | LIN FT |
| BOLT REMOVAL AND REPLACEMENT * | 98 | - |
| LOCALIZED CLEANING AND SEALING OF EXISTING STEEL | - | 30 |
| TOTAL | | |

* INCLUDES ONE WASHER AND NUT PER BOLT

PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22

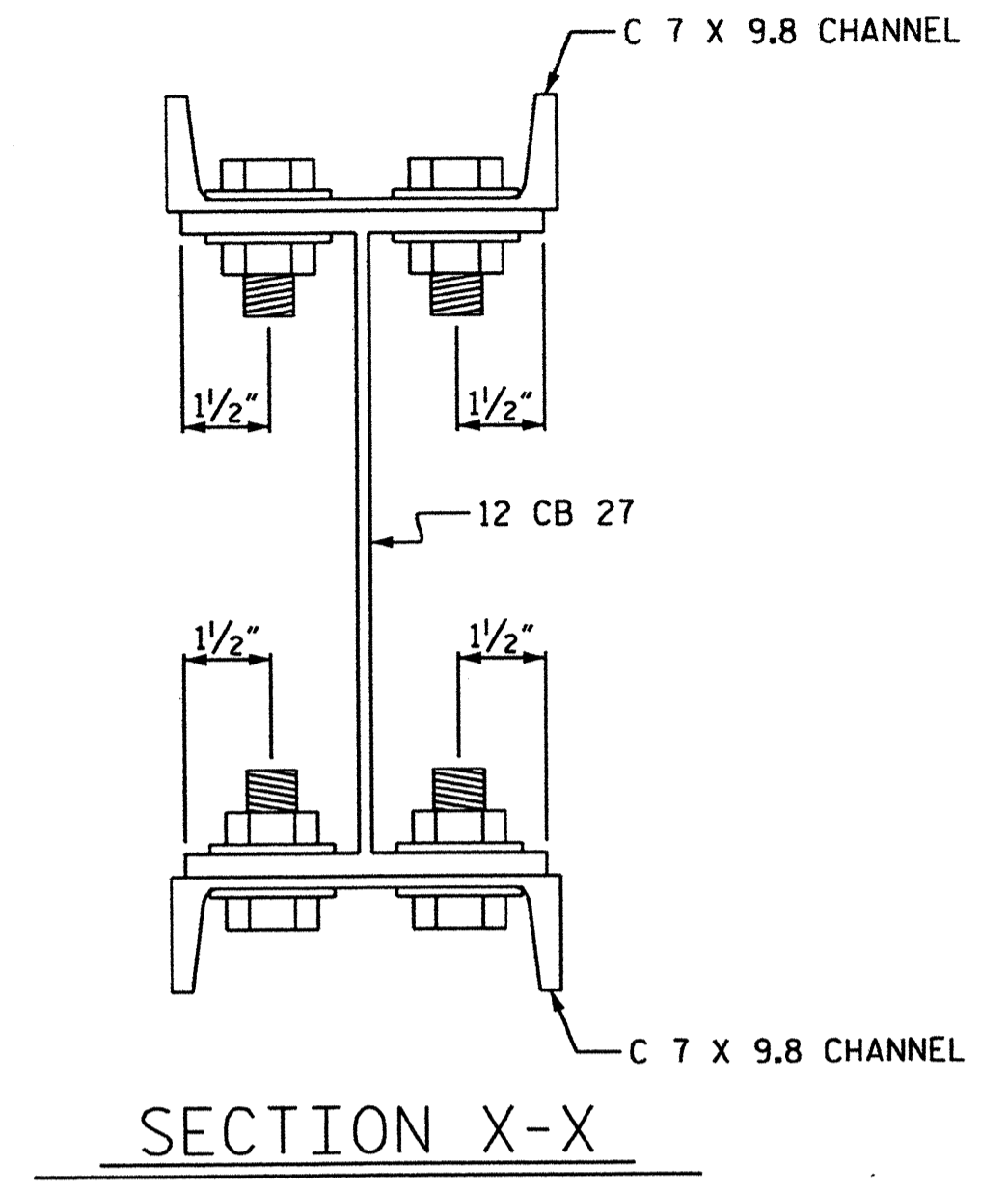
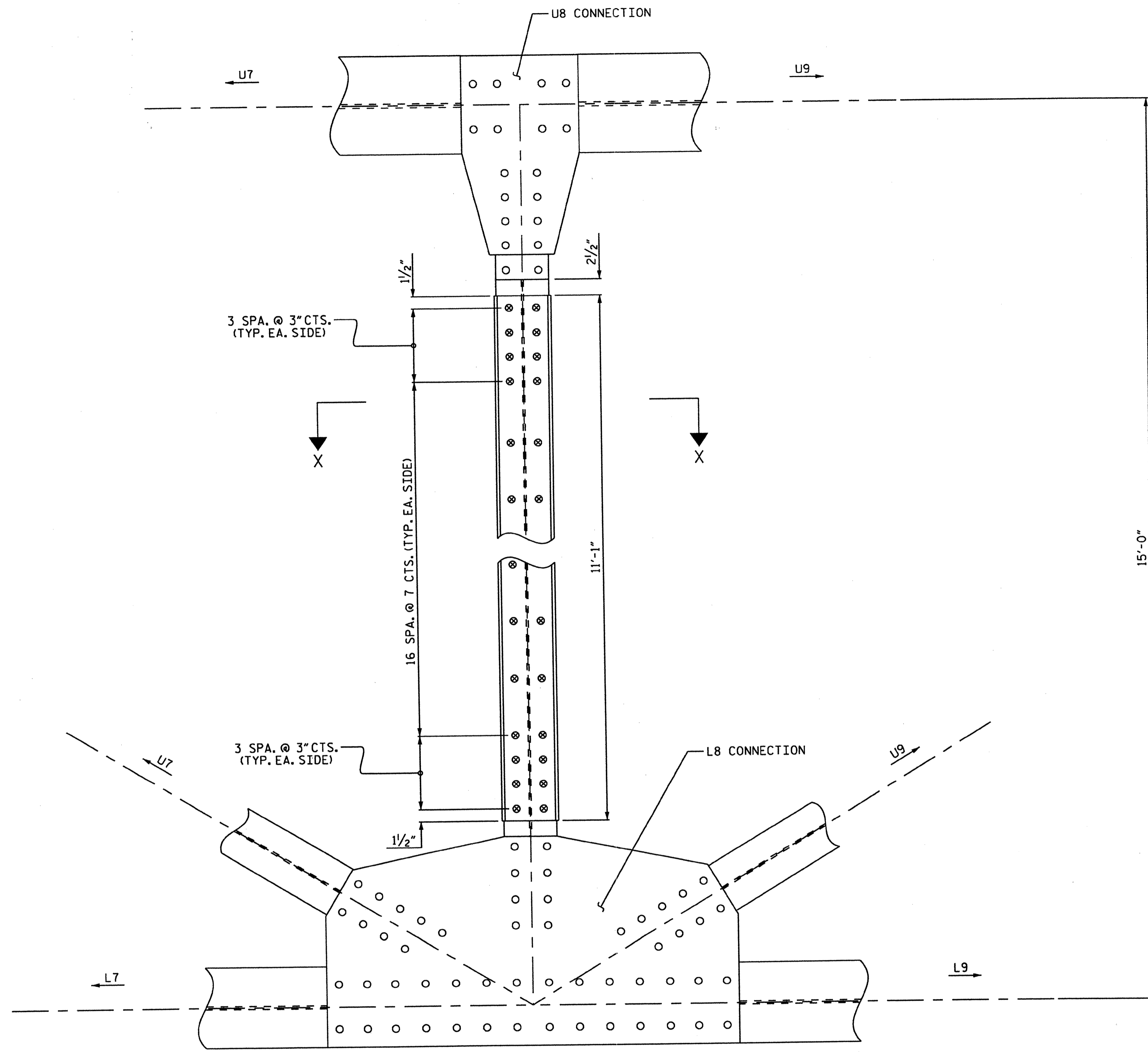
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STEEL TRUSS
 UPPER LATERAL
 BRACING REPAIR
 (EAST AND WEST TRUSS)

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | 5-13 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 14 |

DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYTIME*****
 *****DCN*****
 *****USERNAME*****



| EAST TRUSS QUANTITIES | | |
|-----------------------|--------|------|
| | NUMBER | LBS. |
| C 7 X 9.8 CHANNEL ** | 4 | 618 |
| TOTAL | | 618 |

** INCLUDES BOLTS, WASHERS AND NUTS

U8-L8 BEAM REPAIR
 (REPAIR REQUIRED FOR BOTH EAST AND WEST TRUSS)

- BOLT KEY**
- EXISTING BOLT/RIVET
 - ⊗ NEW 7/8" H.S. BOLT LOCATION

PROJECT NO. BP-5300Z
 COUNTY GASTON
 BRIDGE NO. 22

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STEEL TRUSS
U8-L8 BEAM REPAIR

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-14 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 14 |

DRAWN BY : T. BANKOVICH DATE : 9-2011
 CHECKED BY : T.J. BEACH DATE : 9-2011

*****SYTIME*****
 *****DCN*****
 *****USERNAME*****

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

| | |
|-----------------------------|-----------|
| STATE PROJECT REFERENCE NO. | SHEET NO. |
| BP - 5 3 0 0 Z | TCP-1 |

**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
GASTON COUNTY**

BP-5300Z

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-
ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C.,
DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE
CONSIDERED A PART OF THESE PLANS:

| STD. NO. | TITLE |
|----------|-------------------------------|
| 1101.02 | TEMPORARY LANE CLOSURES |
| 1101.03 | TEMPORARY ROAD CLOSURES |
| 1101.11 | TRAFFIC CONTROL DESIGN TABLES |
| 1110.01 | STATIONRY WORK ZONE SIGNS |
| 1110.02 | PORTABLE WORK ZONE SIGNS |
| 1130.01 | DRUM |
| 1135.01 | CONES |
| 1145.01 | BARRICADES |
| 1150.01 | FLAGGING DEVICES |
| 1180.01 | SKINNY-DRUM |

INDEX OF SHEETS

| SHEET NO. | TITLE |
|-----------|---|
| TCP-1 | LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS |
| TCP-2 | GENERAL NOTES AND PHASING |
| TCP-3 | ROAD CLOSURE DETAIL WITH OFF-SITE DETOUR |
| TCP-4 | OFF-SITE DETOUR SIGNING |
| TCP-5 | LANE CLOSURE WITH FLAGGERS |
| TCP-6 | LANE CLOSURE WITH AUTOMATED FLAGGING ASSISTANCE DEVICES (AFAD) |

LEGEND

- GENERAL**
- DIRECTION OF TRAFFIC FLOW
 - NORTH ARROW
- TRAFFIC CONTROL DEVICES**
- TYPE III BARRICADE
 - DRUM
 - FLASHING ARROW PANEL (TYPE C)
 - STATIONARY SIGN
 - PORTABLE SIGN
 - CHANGEABLE MESSAGE SIGN
 - TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)

25-OCT-2011 12:41
D:\DOT\SR001\GROUPS-WZ\TCCC\TMUN\WZTC\DesignGroup3\Squad3B\Special Projects\BP-5300Z (Div. 12)
meishak AT 1E244732

PROJECT:

| | |
|--------------------------------|---|
| APPROVED: _____ DATE: _____ | PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT |
| SEAL | J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER |
| | G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER |
| | JESSE GILSTRAP TRAFFIC CONTROL PROJECT DESIGN ENGINEER |
| | MARIO ISHAK TRAFFIC CONTROL DESIGN ENGINEER |

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR AS DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

| ROAD NAME | DAY AND TIME RESTRICTIONS |
|-----------|---|
| 1. NC-273 | MONDAY TO FRIDAY, 6:00AM TO 9:00AM AND 2:00PM TO 8:00PM |

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

- | ROAD NAME |
|-----------|
| 1. NC-273 |
-
- | HOLIDAY |
|---|
| 1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATE UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER. |
| 2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00AM DECEMBER 31st TO 8:00PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00PM THE FOLLOWING TUESDAY. |
| 3. FOR EASTER, BETWEEN THE HOURS OF 6:00AM THURSDAY AND 8:00PM MONDAY. |
| 4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00AM FRIDAY TO 8:00PM TUESDAY. |
| 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00AM THE DAY BEFORE INDEPENDENCE DAY AND 8:00PM THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 6:00AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00PM THE TUESDAY AFTER INDEPENDENCE DAY. |
| 6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00AM FRIDAY AND 8:00PM TUESDAY. |
| 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00AM TUESDAY TO 8:00PM MONDAY. |
| 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS. |

C) DO NOT CLOSE ROADS AS FOLLOWS:

| ROAD NAME | DAY AND TIME RESTRICTIONS |
|----------------------------------|------------------------------------|
| 1. NC-273 (APR 15 TO SEPT 30) | MONDAY TO SUNDAY, 6:00AM TO 8:00PM |
| 1. NC-273 (OCT 1 TO APR 14) | MONDAY TO FRIDAY, 6:00AM TO 8:00PM |

D) DO NOT STOP TRAFFIC AS FOLLOWS:

| ROAD NAME | DAY AND TIME RESTRICTIONS | DURATION AND OPERATION |
|-----------|--|--------------------------------------|
| 1. NC-273 | MONDAY TO FRIDAY, 6:00AM TO 9:00AM AND 2:00PM TO 8:00PM | 15 MINUTES FOR TRAFFIC OPERATIONS |

E) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- F) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

I) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- K) PROVIDE DETOUR SIGNING AND DEVICES, WITH-IN & OFF THE PROJECT LIMITS, TO CLOSE THE ROAD ACCORDING TO TRAFFIC CONTROL PLANS.
- L) COVER OR REMOVE ALL DETOUR SIGNS AND DEVICES, WITH-IN & OFF THE PROJECT LIMITS, TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
- M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- N) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR SHOWN IN THE PLANS.
- O) PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGN R11-2 ATTACHED OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- P) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 100 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

MISCELLANEOUS

- Q) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.
- R) RETURN TRAFFIC TO ITS EXISTING LANE & TRAFFIC/PEDESTRIAN CONFIGURATION AT THE END OF EACH WORK PERIOD.

PHASING

Phase I

STEP 1: PERFORM STRUCTURAL REPAIRS AND PAINT REMOVAL & PAINTING OPERATIONS AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012" AND USING SHEETS TCP-3, TCP-4, TCP-5 AND TCP-6.

NOTE: CONTRACTOR MAY CONDUCT PAINTING OPERATIONS SIMULTANEOUSLY WITH STRUCTURAL REPAIRS AS DIRECTED BY THE ENGINEER.

CLOSURE OF NC 273 FOR STRUCTURAL REPAIRS:

- INSTALL DETOUR SIGNING FOR NC 273 AS SHOWN ON SHEET TCP-3.
- CLOSE NC 273 USING ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9 AND SHEET TCP-3.

CLOSURE OF NC 273 FOR PAINT REMOVAL & PAINTING OPERATIONS:

- INSTALL DETOUR SIGNING FOR NC 273 AS SHOWN ON SHEET TCP-3.
- CLOSE NC 273 USING ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9 AND SHEET TCP-3.

LANE CLOSURES ON NC 273 FOR PAINT REMOVAL & PAINTING OPERATIONS:

NOTE: CONTRACTOR SHALL SELECT EITHER FLAGGERS OR THE AUTOMATED FLAGGING ASSISTANCE DEVICES (AFAD) FOR TEMPORARY LANE CLOSURE OPERATIONS.

HOWEVER, ONCE SELECTED THE CONTRACTOR SHALL NOT BE ALLOWED TO SWITCH BETWEEN FLAGGERS AND AFAD FOR TEMPORARY LANE CLOSURE OPERATIONS DURING THIS CONTRACT, UNLESS APPROVED BY THE ENGINEER.

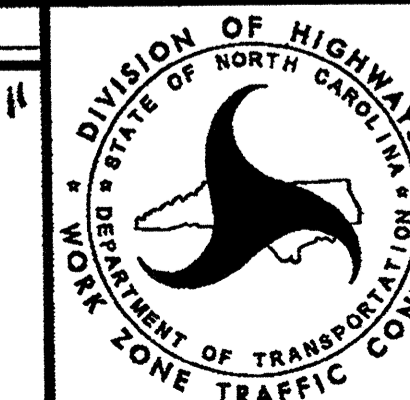
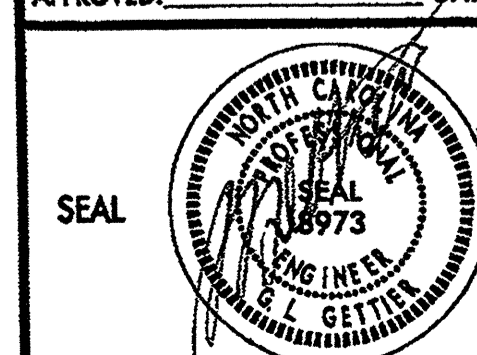
- CLOSE ONE LANE ON NC 273 UTILIZING ONE OF THE FOLLOWING:
 - FLAGGING OPERATIONS AS SHOWN ON SHEET TCP-5.
 - OR
 - AUTOMATED FLAGGING ASSISTANCE DEVICES (AFAD) AS SHOWN ON SHEET TCP-6.

STEP 2: REMOVE ALL TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER AND RETURN WORK AREA BACK TO ITS EXISTING LANE & TRAFFIC CONFIGURATION AT THE END OF EACH WORK PERIOD.

NOTE: REPEAT PHASE I, STEPS 1 & 2 UNTIL COMPLETION OF STRUCTURAL REPAIRS AND PAINTING OPERATIONS.

26-OCT-2011 12:40 \\DOT\SR001\DOT\GROUPS-WZTCCC\TMU\WZTC\DesignGroup3\Squad3B\SpecialProjects\BP-5300Z (Div. 12) AT TE244732 mshnk

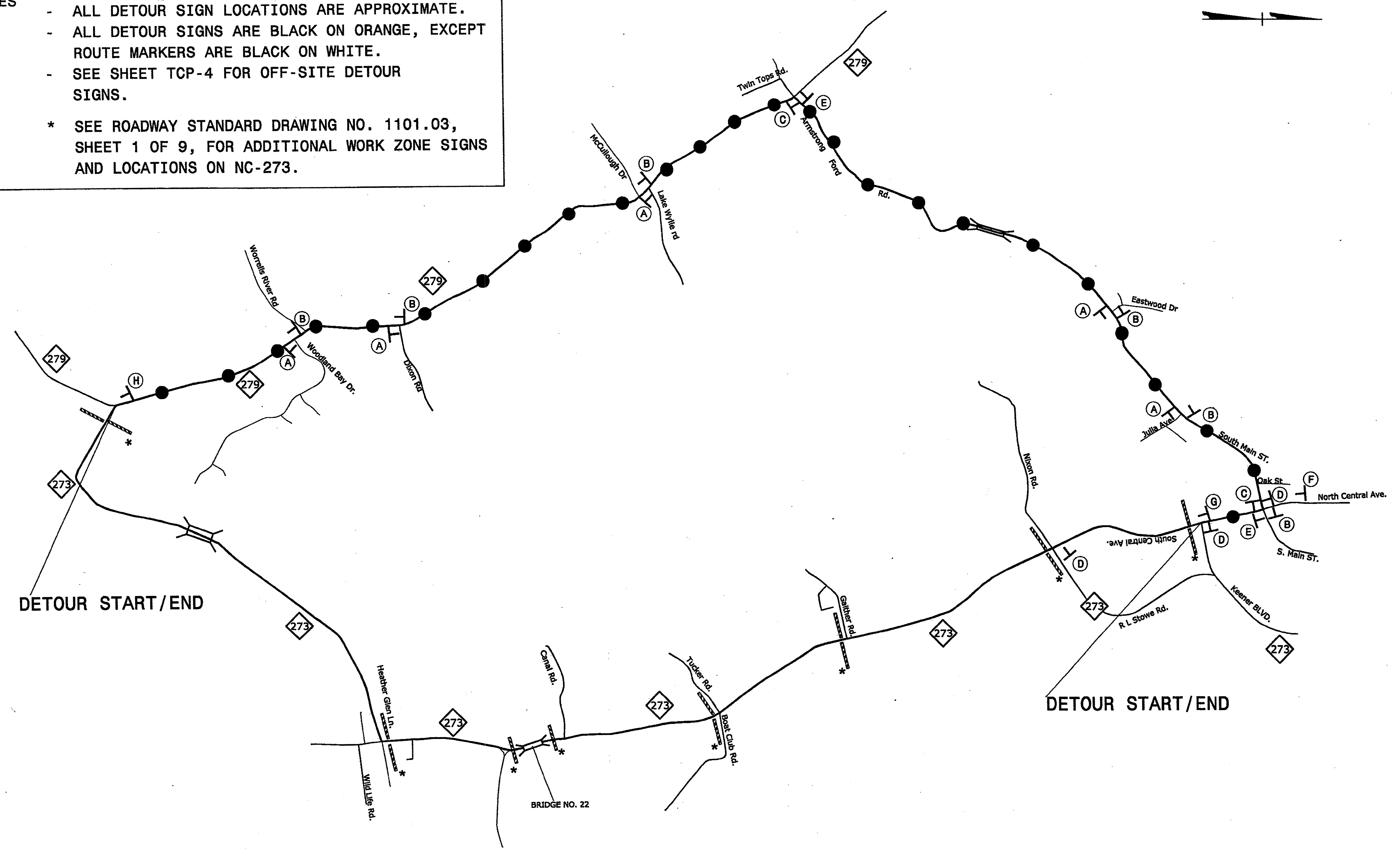
APPROVED: _____ DATE: _____



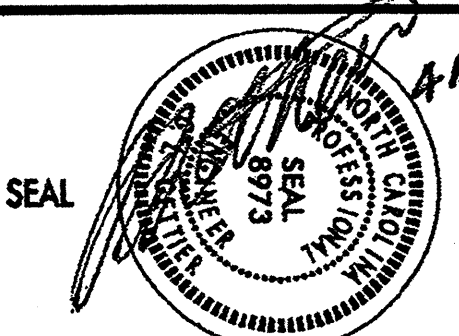
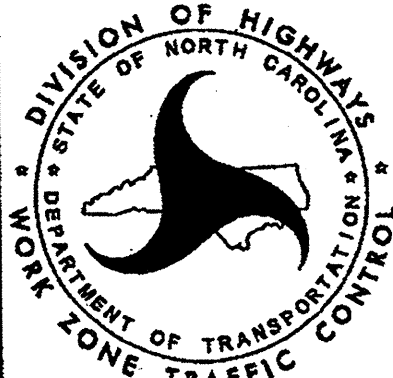
**PROJECT NOTES
AND
PHASING**

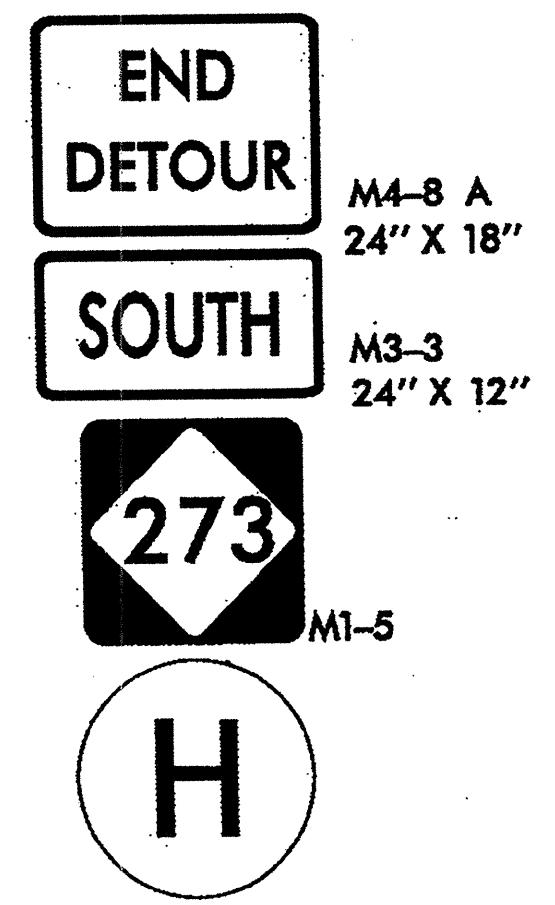
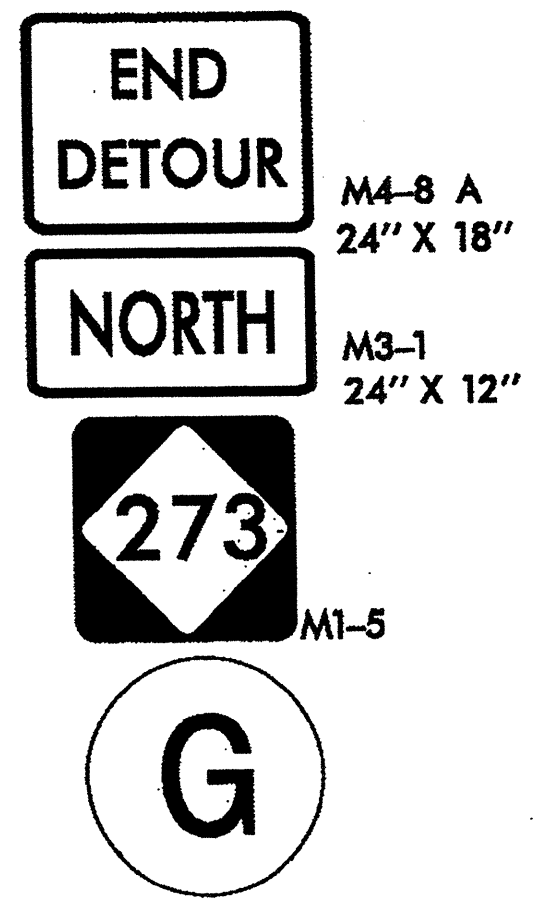
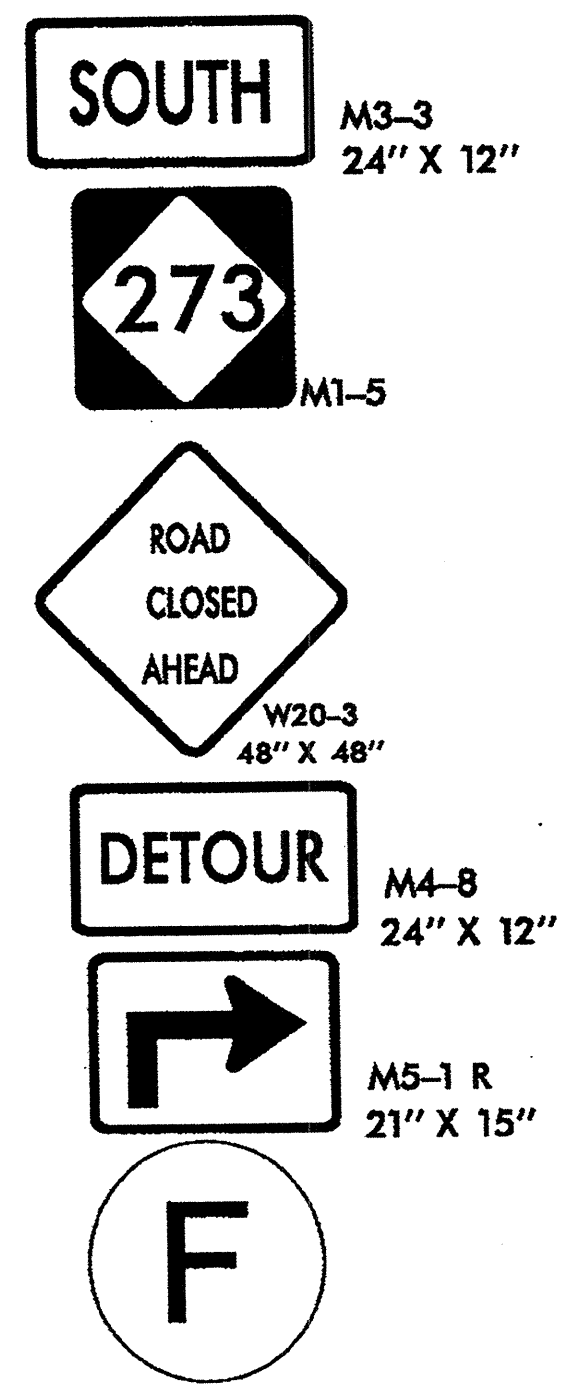
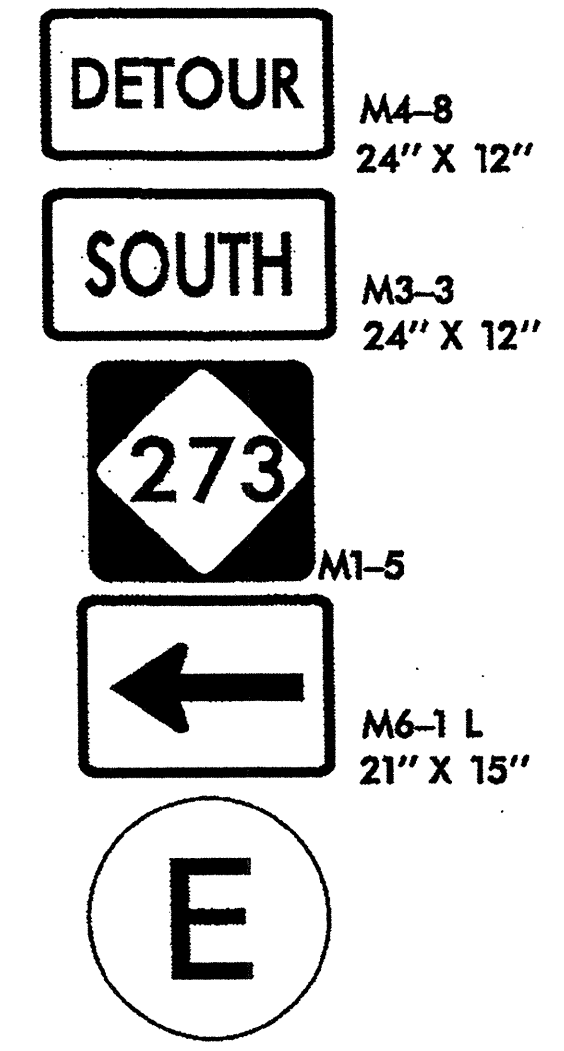
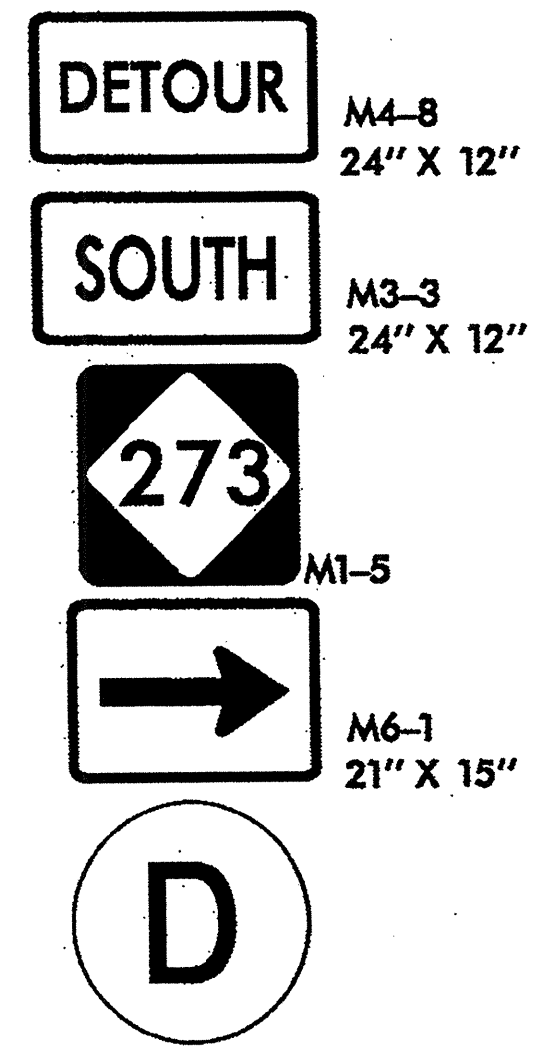
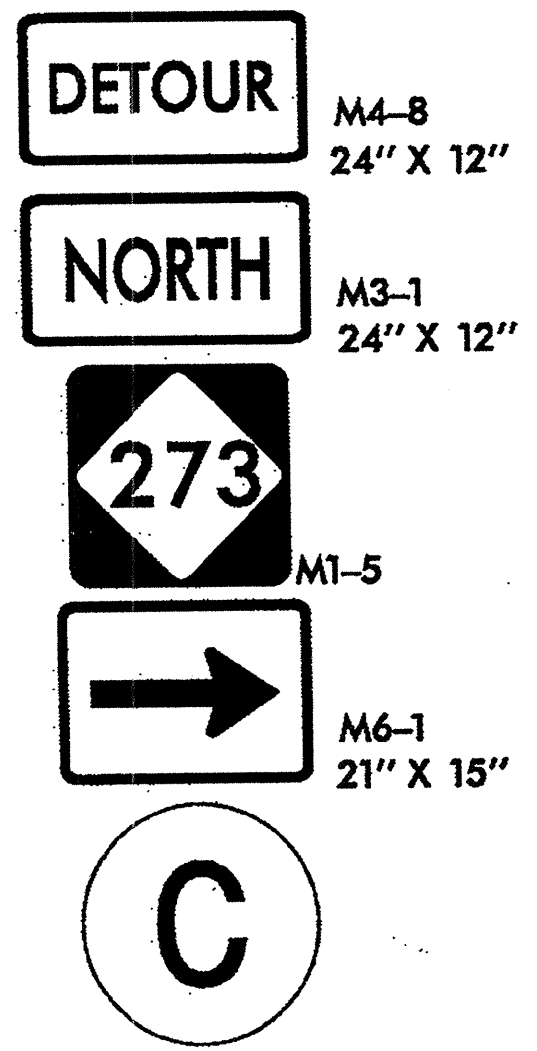
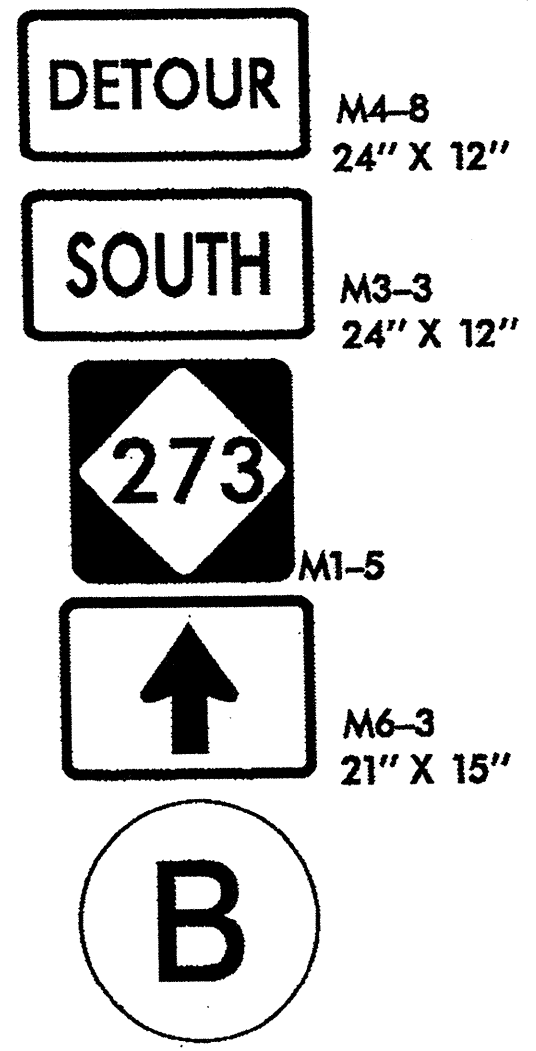
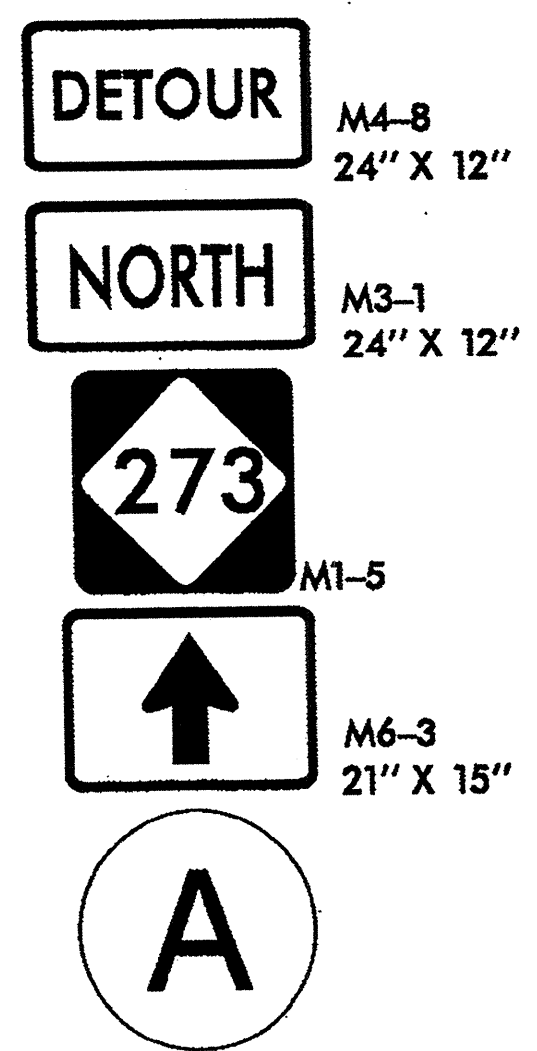
NOTES

- ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.
- ALL DETOUR SIGNS ARE BLACK ON ORANGE, EXCEPT ROUTE MARKERS ARE BLACK ON WHITE.
- SEE SHEET TCP-4 FOR OFF-SITE DETOUR SIGNS.
- * SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 1 OF 9, FOR ADDITIONAL WORK ZONE SIGNS AND LOCATIONS ON NC-273.



03-AUG-2011 09:24
 \\DOT\UP\SR01\1\TE\4732
 msiskok AT TEL:4732
 \Groups-WZTC\TMU\WZTC\Des\gn\Group3\Squad3B\Special Projects\BP-5300Z ID\1.12

| | | |
|--|---|---|
| APPROVED: _____ DATE: _____  |  | ROAD CLOSURE DETAIL WITH OFF-SITE DETOUR |
|--|---|---|



03-AUG-2011 09:25
 \\D:\DPSROOT\GROUPS-WZTCCC\TMU\WZTC\DesignGroup3\Squad3B\SpecialProjects\BP-5300Z (Div. 12)
 AT TE244732
 msishak

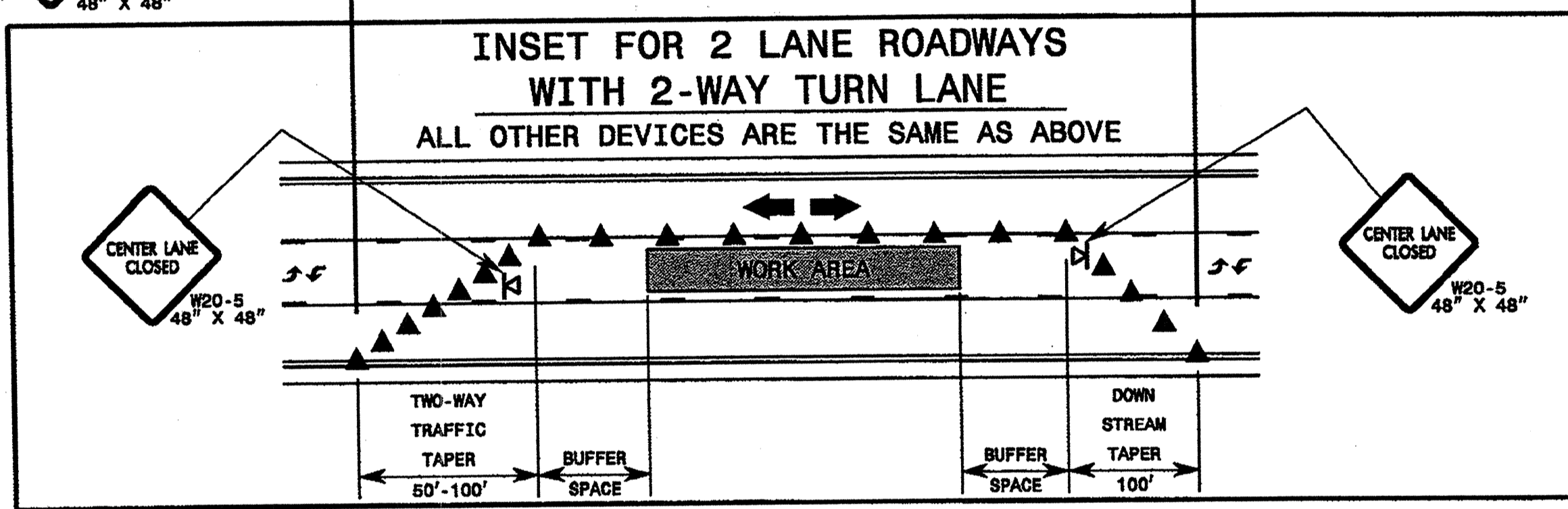
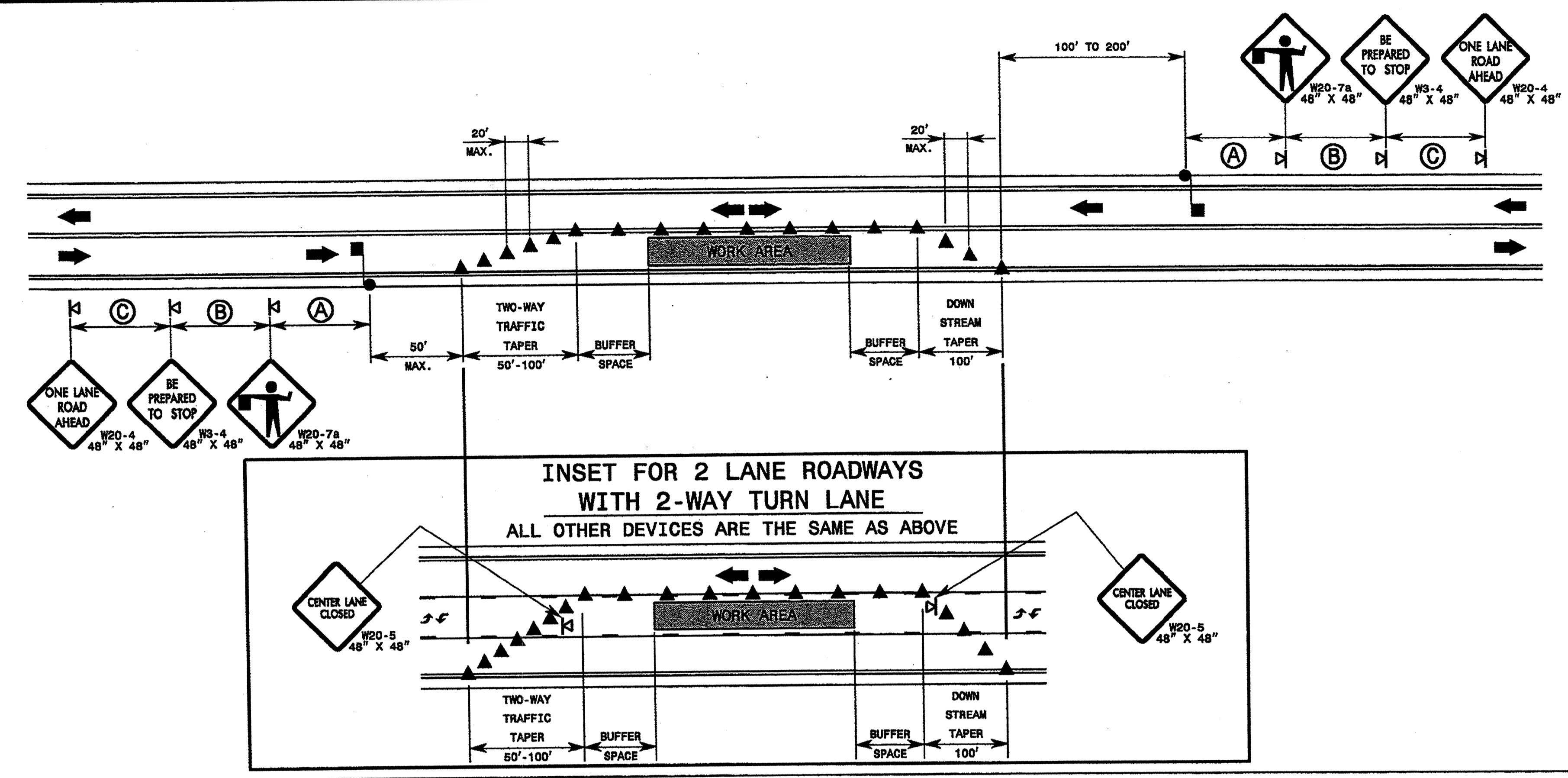
| | | |
|---------------------------------|--|----------------------------------|
| APPROVED: _____ DATE: _____ | | OFF-SITE DETOUR SIGNS |
|---------------------------------|--|----------------------------------|

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY - 1 LANE CLOSED

SHEET 1 OF 15
1101.02



- GENERAL NOTES FOR FLAGGER OPERATIONS**
- REFER TO STD. 1101.11 SHEET 4 FOR SIGN SPACING.
 - INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
 - REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
 - PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
 - EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO STD. 1101.11 SHEET 2).
 - DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
 - DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES. REFER TO ROADWAY STANDARD DRAWING 1180.01 FOR SKINNY-DRUM REQUIREMENTS.
 - USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND RECOMMEND THE USE OF LAW ENFORCEMENT.
 - REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
 - DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

- GENERAL NOTES FOR PILOT CAR OPERATIONS**
- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
 - IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.
 - CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
 - MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
 - DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
 - ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

LEGEND

- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY - 1 LANE CLOSED

SHEET 1 OF 15
1101.02

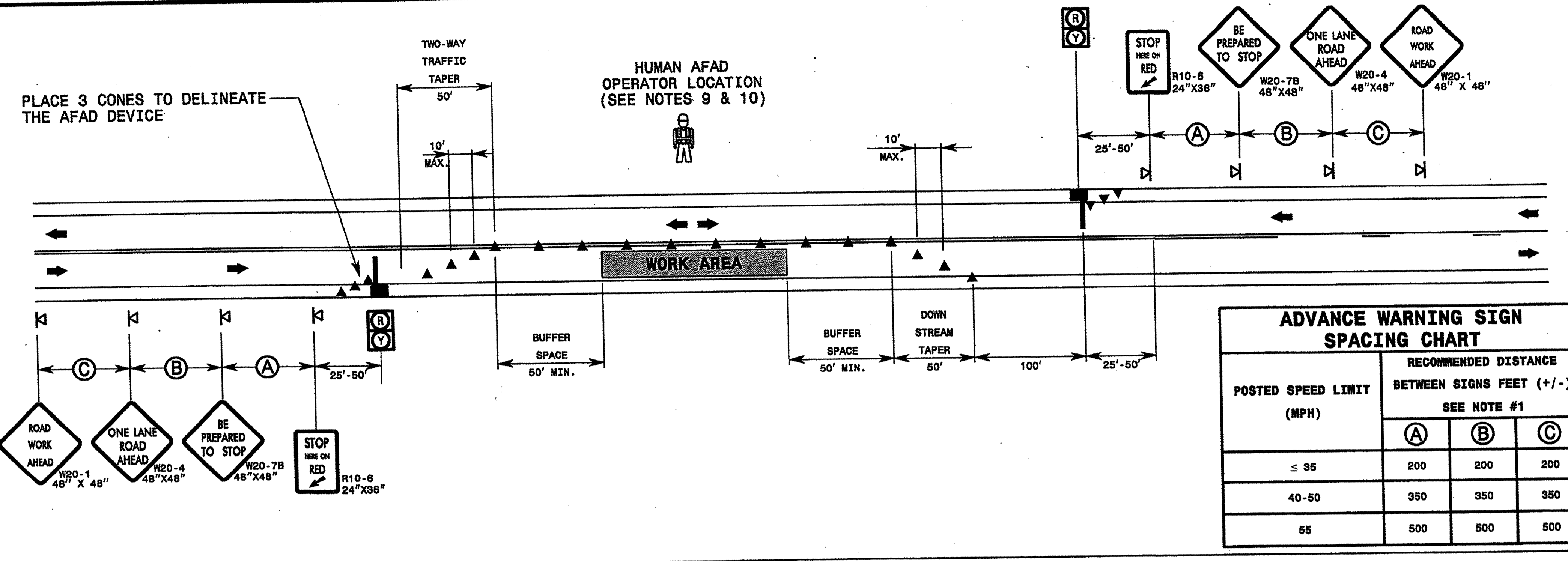
26-OCT-2010 12:07 PM \\NORTH-CAROLINA\GROUPS-WZTCC\TMU\WZTC\Design\Group3\Special\Projects\BP-5300Z (Div. 12) 1101.02.dwg

| | | | |
|--------------------------------|--|--|--|
| APPROVED: _____ DATE: _____ | | | <p>LANE CLOSURE WITH FLAGGERS</p> |
|--------------------------------|--|--|--|

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12
TEMPORARY LANE CLOSURES USING
AUTOMATED FLAGGING ASSISTANCE DEVICES
RED/YELLOW LENS (TYPE I)

DETAIL DRAWING FOR



ADVANCE WARNING SIGN SPACING CHART

| POSTED SPEED LIMIT (MPH) | RECOMMENDED DISTANCE BETWEEN SIGNS FEET (+/-) | | |
|--------------------------|---|-----|-----|
| | SEE NOTE #1 | | |
| | (A) | (B) | (C) |
| ≤ 35 | 200 | 200 | 200 |
| 40-50 | 350 | 350 | 350 |
| 55 | 500 | 500 | 500 |

GENERAL NOTES

- 1- INSTALLATION AND REMOVAL OF THE AFAD DEVICES REQUIRES A NORMAL FLAGGING SET UP AS SHOWN ON THE DETAIL. IN ORDER TO SAFELY INSTALL THE TAPER AND DEVICES, PLACE THE SYSTEM IN THE "ALL RED"/"ALL STOP" CONDITION TO STOP BOTH DIRECTIONS OF TRAFFIC. ONCE THE DEVICES ARE INSTALLED AND WORKERS SAFELY AWAY FROM THE LANE, BEGIN CONTROLLING TRAFFIC WITH THE AFADS. REFER TO SIGN SPACING CHART BELOW FOR SIGN SPACING. ALL SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTIONS, ETC.
- 2- INSTALL LANE CLOSURES WITH THE DIRECTION OF THE TRAFFIC FLOW; REMOVE LANE CLOSURES AGAINST THE DIRECTION OF THE TRAFFIC FLOW.
- 3- PLACE CONES OR SKINNY DRUMS FROM THE TWO WAY TRAFFIC TAPER TO THE DOWNSTREAM TAPER ON EQUAL SPACING NO GREATER THAN TWO TIMES THE POSTED SPEED LIMIT. USE EITHER ALL CONES OR ALL SKINNY DRUMS AROUND AFAD AND FOR APPROACH TAPER.
- 4- THE BOTTOM OF THE SIGNAL HEAD HOUSING OR SIGN DISPLAYS SHALL BE A MINIMUM OF 7' ABOVE PAVEMENT.
- 5- AN AFAD SHALL BE OPERATED BY A QUALIFIED FLAGGER WHO HAS RECEIVED TRAINING ON THE OPERATION FOR THE SPECIFIC AFAD DEVICE THEY ARE OPERATING. QUALIFIED FLAGGERS MUST BE CERTIFIED BY A NCDOT APPROVED SOURCE. THE FLAGGER OPERATING THE AFAD(S) SHALL NOT LEAVE THE AFAD(S) UNATTENDED AT ANY TIME WHILE THEY ARE BEING USED TO ASSIGN THE RIGHT-OF-WAY.
- 6- THE AFAD SHOULD BE PARKED 2 FEET OUTSIDE OF THE LANE BEING CONTROLLED UNLESS THERE IS NOT ENOUGH SHOULDER. IF THERE IS LIMITED ROOM OUTSIDE THE LANE BEING CONTROLLED, THE AFAD MAY BE POSITIONED PARTIALLY WITHIN THE LANE AS NECESSARY WITH THE GATE ARM REACHING AT LEAST TO THE CENTER OF THE LANE BUT NOT EXCEEDING THE LANE WIDTH.
- 7- WHEN WORK IS NOT PURSUED FOR 30 MINUTES OR LONGER, ALL PARTS OF THE AFAD UNIT SHALL BE REMOVED FROM THE TRAVEL LANE A MINIMUM OF 2' FROM THE EDGELINE. THE GATE ARMS SHALL BE IN THE UPRIGHT POSITION, REMOVE ALL TRAFFIC CONTROL DEVICES FROM ROAD, PLACE 2 CONES BY EACH AFAD UNIT AND ALL SIGNS ASSOCIATED WITH THE AFAD SYSTEM SHALL BE LAID DOWN EXCEPT THE "ROAD WORK AHEAD" SIGNS. EACH AFAD UNIT SHALL BE PLACED IN THE "CAUTION MODE" EITHER FLASHING YELLOW SIGNAL DISPLAY OR THE "SLOW" SIGN INDICATED AND YELLOW BEACON FLASHING.
- 8- IN THE EVENT THAT ONE OR BOTH AFAD UNITS BECOME INOPERATIVE, BE PREPARED AT ALL TIMES TO REPLACE THE UNIT OR SYSTEM WITH THE SAME TYPE AND MODEL OF AFAD, OR REVERT TO NORMAL FLAGGING OPERATIONS, OR TERMINATE ALL CONSTRUCTION ACTIVITIES REQUIRING THE USE OF THE AFAD UNTIL THE AFAD IS OPERATIVE OR QUALIFIED HUMAN FLAGGERS ARE AVAILABLE.
- 9- A SINGLE OPERATOR MAY SIMULTANEOUSLY OPERATE TWO AFADS AS LONG AS THE OPERATOR HAS AN UNOBSTRUCTED VIEW OF BOTH AFADS; THE OPERATOR HAS AN UNOBSTRUCTED VIEW OF APPROACHING TRAFFIC IN BOTH DIRECTIONS; AND THE AFADS ARE SPACED NO GREATER THAN THE MANUFACTURER'S RECOMMENDATIONS.
- 10- IF THE AFADS ARE SPACED GREATER THAN THE MANUFACTURER'S RECOMMENDATIONS, THEN AN OPERATOR MUST BE ASSIGNED TO AND CONTROL EACH INDIVIDUAL AFAD.
- 11- AFAD OPERATORS MAY CONTROL TRAFFIC AT SIDE STREETS OR DRIVEWAYS BETWEEN THE AFAD UNITS WHILE OPERATING THE AFAD SYSTEM IF APPROVED BY THE ENGINEER. AFAD UNITS MUST CONTINUE TO BE WITHIN CLEAR SIGHT OF THE OPERATOR DURING THIS WORK ACTIVITY.

LEGEND

- ▲ CONES OR SKINNY DRUMS
- AFAD (Automated Flagging Assistance Device w/ Gate Arm)
- ⊓ PORTABLE SIGN
- ← DIRECTION OF TRAFFIC FLOW

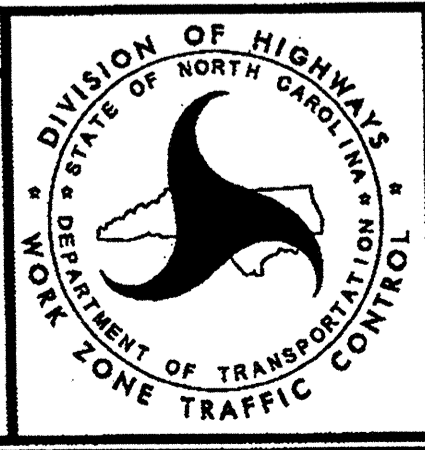
1-12
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

DETAIL DRAWING FOR
TEMPORARY LANE CLOSURES USING
AUTOMATED FLAGGING ASSISTANCE DEVICES
RED/YELLOW LENS (TYPE I)

SHEET 14 OF 15
1101.02

03-AUC-20110827
NCDOT GROUPS-WZTCCC-TMU-WZTC-DesignGroup3\Squad3B\SpecialProjects\BP-5300Z (Div. 12)
WZTCCC
AT 11/24/12

APPROVED: _____ DATE: _____



LANE CLOSURE WITH
AUTOMATIC FLAGGING
ASSISTANCE DEVICES
(AFAD)

STANDARD NOTES

DESIGN DATA:

| | | |
|--|-------|-------------------------------|
| SPECIFICATIONS | ----- | A.A.S.H.T.O. (CURRENT) |
| LIVE LOAD | ----- | SEE PLANS |
| IMPACT ALLOWANCE | ----- | SEE A.A.S.H.T.O. |
| STRESS IN EXTREME FIBER OF | | |
| STRUCTURAL STEEL - AASHTO M270 GRADE 36 | - | 20,000 LBS. PER SQ. IN. |
| - AASHTO M270 GRADE 50W | - | 27,000 LBS. PER SQ. IN. |
| - AASHTO M270 GRADE 50 | - | 27,000 LBS. PER SQ. IN. |
| REINFORCING STEEL IN TENSION | | |
| GRADE 60 | -- | 24,000 LBS. PER SQ. IN. |
| CONCRETE IN COMPRESSION | ----- | 1,200 LBS. PER SQ. IN. |
| CONCRETE IN SHEAR | ----- | SEE A.A.S.H.T.O. |
| STRUCTURAL TIMBER - TREATED OR | | |
| UNTREATED - EXTREME FIBER STRESS | ----- | 1,800 LBS. PER SQ. IN. |
| COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER | ----- | 375 LBS. PER SQ. IN. |
| EQUIVALENT FLUID PRESSURE OF EARTH | ----- | 30 LBS. PER CU. FT. (MINIMUM) |

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2006 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER. DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS. WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0". EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED. WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN