April 24, 2013

To: Tony Schrempp
   MnDOT Central Resident Construction Office

From: Arielle Ehrlich
      State Bridge Design Engineer
      Bridge Office

Subject: S.P. 2774-27504A
         Bridge No. 27504
         Revised Plan Sheets

Enclosed is the revised plan sheet 9-R2 for Bridge 27504. The deflection diagram for Beam 7 was flipped between spans, and this revision was made to reflect the correct deflection diagram. This revision will not affect the cost for this project.

Copies of prints sent to:
   • Tony Schrempp (1)
   • Paul Pilarski (1)
   • Ben Jilk (1)
   • Bridge Office File (1)

Encl: Copies of prints as noted.

c.c.: N. Daubenberger / A. Ehrlich
      J. Southward
September 13, 2013

To: Steve Barrett  
   Resident Engineer  
   Golden Valley

From: Arielle Ehrlich  
   State Bridge Design Engineer  
   Bridge Office

Subject: S.P. 2774-16  
   Bridge No. 27504  
   Revised Plan Sheets

Enclosed are the revised plan sheets 16-R2, 17R and 18-R2 for Bridge 27504. These revisions were made to clarify section E-E on sheet 16-R2, to change slope of Mock-Up panel on sheet 17R and to change Construction Sequence on sheet 18-R2. These revisions will not affect the cost for this project.

Copies of prints sent to:
   • Steve Barrett (3)  
   • Ron Rauchle (1)  
   • Paul Pilarski (1)  
   • Ben Jilk (1)  
   • Bridge Office File (1)

Encl: Copies of prints as noted.

c.c.: N. Daubengerger / A. Ehrlich  
       J. Southward
July 30, 2013

To: Steve Barrett  
Resident Engineer  
Golden Valley  

From: Arielle Ehrlich  
State Bridge Design Engineer  
Bridge Office  

Subject: S.P. 2774-16  
Bridge No. 27504  
Revised Plan Sheets  

Enclosed are the revised plan sheets 1-R2, 2-R2, 3-R2 and 23-R1 for Bridge 27504. These revisions were made to add conduit through the sidewalk on the bridge. Since this adds a pay item, this revision will affect the cost for this project.

Copies of prints sent to:  
- Steve Barrett (3)  
- Ron Rauchle (1)  
- Paul Pilarski (1)  
- Ben Jilk (1)  
- Bridge Office File (1)  

Encl: Copies of prints as noted.

c.c.: N. Daubenberger / A. Ehrlich  
J. Southward
Addendum 1 for changes to the Plans and Special Provisions for Bridge Nos. 7268 and 27504:

Plans for Bridge No. 7268:

1) On Sheet 1R of 22 for Bridge No. 7268 the following changes were made:
   a. Notes and call-outs were added for reconstruction of paving brackets.
   b. Circle note 12 was revised.
   c. Signatures were updated.

2) On Sheet 2R of 22 for Bridge No. 7268 the following changes were made:
   a. In the “Schedule of Quantities”, the quantity for Anchorages Type Reinf Bars changed from 92 each to 176 each.
   b. In the “Schedule of Quantities”, a pay item was added for Structural Steel (3306) with a quantity of 1400 pounds.
   c. In the “Schedule of Quantities”, a pay item was added for Furnish and Install Beam Stiffeners with a quantity of 8 each.

3) On Sheet 6R of 22 for Bridge No. 7268 the following changes were made:
   a. A second reinforcing anchorage was added to the paving bracket, with quantities adjusted accordingly.
   b. A note was added specifying the paving bracket is level.
   c. A call-out for the deck protection plate was added.

4) On Sheet 8R of 22 for Bridge No. 7268 the following changes were made:
   a. Added beam stiffener angles and call-outs to “Framing Plan”.
   b. Added circle note S1 for beam stiffener angles.

5) On Sheet 9R of 22 for Bridge No. 7268 the following changes were made:
   a. Added beam stiffener angle details.
6) On Sheet 12R of 22 for Bridge No. 7268 the following changes were made:
   a. Added beam stiffeners to “Summary of Quantities”.
   b. Added beam stiffener to “Section B-B”.

7) On Sheet 15R of 22 for Bridge No. 7268 the following changes were made:
   a. Revised details for F1 bearings.

Plans for Bridge No. 27504:

8) On Sheet 1R of 34 for Bridge No. 27504 the following changes were made:
   a. Notes and call-outs were added for reconstruction of paving brackets.
   b. Circle note 12 was revised
   c. Sigratures were updated.

9) On Sheet 2R of 34 for Bridge No. 27504 the following changes were made:
   a. In the “Schedule of Quantities”, the quantity for Structural Steel (3309) changed from 2000 pounds to 3400 pounds; and the quantity for Anchorages Type Reinf Bars changed from 96 each to 184 each.
   b. In the “Schedule of Quantities”, a pay item was added for Furnish and Install Beam Stiffeners with a quantity of 8 each.

10) On Sheet 3R of 34 for Bridge No. 27504 the following changes were made:
    a. Deck thickness was revised in “Reconstructed Transverse Section”.

11) On Sheet 5R of 34 for Bridge No. 27504 the following changes were made:
    a. Circle note 3 was revised.

12) On Sheet 6R of 34 for Bridge No. 27504 the following changes were made:
    a. A second reinforcing anchorage was added to the paving bracket, with quantities adjusted accordingly.
    b. A note was added specifying the paving bracket is level.
    c. A call-out for the deck protection plate was added
13) On Sheet 8R of 34 for Bridge No. 27504 the following changes were made:
   a. Revised notes to clarify new steel and salvaged steel.
   b. Added stiffener angles and call-outs to “Framing Plan”.
   c. Added circle note S1 for stiffener angles.

14) On Sheet 9R of 34 for Bridge No. 27504 the following changes were made:
   a. Added deflection ordinate at field splice location.
   b. Added notes to clarify new and salvaged steel.
   c. Added stiffener angle to “Beam 7 Elevation”.

15) On Sheet 11R of 34 for Bridge No. 27504 the following changes were made:
   a. Added beam stiffener angle details.

16) On Sheet 12R of 34 for Bridge No. 27504 the following changes were made:
   a. Added quantity for beam stiffeners in “Summary of Quantities”.
   b. Revised circle note 12.
   c. Added circle note 13.
   d. Clarified 1'-2” dimension in “Partial Deck Plan”.

17) On Sheet 13R of 34 for Bridge No. 27504 the following changes were made:
   a. Revised circle note 12.
   b. Added circle note 13.
   c. Clarified 1'-2” dimension in “Partial Deck Plan”.

18) On Sheet 14R of 34 for Bridge No. 27504 the following changes were made:
   a. Added descriptions to Panel P1 and P3 titles.

19) On Sheet 16R of 34 for Bridge No. 27504 the following changes were made:
a. Revised haunch forming scheme and call-outs.

b. Revised note for reinforcing bars attached to vertical adjustment device.

20) On Sheet 18R of 34 for Bridge No. 27504 the following changes were made:
   a. Revised required grout strength in Sequence note 3.
   b. Switched order of Sequence steps 5 and 6, and revised note 6.
   c. Revised Sequence notes 7, 9, and 10.

21) On Sheet 21R of 34 for Bridge No. 27504 the following changes were made:
   a. Revised haunch forming scheme.

22) On Sheet 22R of 34 for Bridge No. 27504 the following changes were made:
   a. Revised haunch forming scheme.

23) On Sheet 23R of 34 for Bridge No. 27504 the following changes were made:
   a. Added longitudinal section at pier.

24) On Sheet 26R of 34 for Bridge No. 27504 the following changes were made:
   a. Revised rail rustication from 3/16" to 1/2".

25) On Sheet 31R of 34 for Bridge No. 27504 the following changes were made:
   a. Revised details for F1 bearings

Special Provisions:

26) For SB-7.5, make the following revisions:
a. Replace the title with the following:

(2401) Structural Concrete: (Contractor Concrete Mix Design, Bridge Nos. 7268 and 27504)“.

b. Replace the first sentence of the first paragraph with the following:

For the cast-in-place deck of Bridge No. 7268 and the precast deck panels of Bridge No. 27504, the Contractor shall design a 3Y33HP concrete mix that will minimize cracking.

c. Delete SB-7.5.C.7 (Modulus of elasticity tests)

d. Delete SB-7.5.C.8 (Creep and shrinkage tests)

e. Revise the title of SB-7.5.E to “Slab Placement and Curing”.

f. Revise the title of SB-7.5.E.1 to “Full-depth slab curing”, and replace the second paragraph with the following:

Bridge slab shall have conventional wet curing applied immediately following the finishing machine or air screed. The conventional wet curing shall consist of pre-wetted burlap covered with white plastic sheeting. The burlap shall cover 100% of the deck area with no visible openings, the only exception being that area of the deck which will be located beneath the permanent barrier. The wet curing shall be placed no later than 30 minutes after the finishing machine has completed final strike-off of the concrete surface. If, at any time, the Contractor fails to place the wet curing within the 30 minute time period, and to the satisfaction of the Engineer, the Contractor will be assessed a non-compliance charge of $500.00 for every 5 minute period or any portion thereof, which the Engineer determines that the Contractor has not complied. The non-compliance charge, set forth above, may be assessed more than once. The slab surface shall be kept continuously wet for an initial curing period of at least 7 days. The Contractor must provide adequate personnel to ensure the burlap is maintained in a wet condition on weekends and/or holidays. In order to comply with the wet curing requirement a work bridge following the finish machine may be required, and an additional center rail may be required on wide bridges.

If for any reason wet burlap cannot be placed within 30 minutes after carpet dragging, apply a membrane curing compound within 30 minutes meeting the requirements of MnDOT Spec. 3754, section B (Requirements for Concrete Pavement Membrane Curing Compound). Apply the curing compound with approved power-operated spray equipment. Place the membrane cure material homogeneously to provide
a uniform solid white opaque coverage on all exposed concrete surfaces (equal to a white sheet of paper). The membrane cure shall be placed within 30 minutes of concrete placement unless otherwise directed by the Engineer. Failure to comply with this provision will result in a price reduction for the concrete item involved in accordance with MnDOT Spec. 1503. The curing compound is not a substitute for the cure specified above and below, but is required for moisture retention until the conventional wet curing material can be placed.

27) For SB-7.6C, add the following lab testing requirements:

4. Hardened air content (ASTM C457) at a minimum of 7 days

5. Rapid chloride permeability (ASTM C1202) at 28 days and 56 days (2 specimens for 28 day test and 2 test specimens for 56 day test) (Take 2 specimens from each batch of a 2 batch mix)

6. ASR Expansion results

28) For SB-8.1.G, add the following to the end of the paragraph:

Repair of coatings by use of aerosol spray paint is not permitted.

29) In the second paragraph under SB-8.4, replace the reference to SB-7.5 with SB-8.5.

30) Replace SB-8.7.A.2 with the following:

Immediately before the studs are installed, the weld area shall be cleaned to bright metal by sandblasting or other approved methods.

31) Add the following paragraph after the 6th paragraph of SB-10.A:

The Contractor shall demonstrate the ability to accurately locate and splice post-tensioning ducts by placing two lines of ducts in the mock-up panels, and splicing and sealing the ducts after the placement of the panel concrete. Grouting of these ducts will not be required.

32) Revise the second paragraph under SB-11.1.A as follows:

The concrete for the precast panels shall be mix 3Y33HP, as per SB-7.5.

33) Replace the bulleted note under SB-11.1.B.11 with the following:

Submit written verification acknowledging compatibility with chip seal wearing course. Verification letter shall be signed by representatives from
the chip seal epoxy manufacturer and the grout manufacturer, and indicate acknowledgement from the Contractor.

34) Add the following to the end of SB-11.6.A:

Inplace shear connectors shall be removed such that no more than the attached flange of the angle or channel remains, as long as material left in place does not impede grout flow. Contractor shall take care to not damage beam flanges.

35) Replace SB-11.6.D with the following:

Correct any shifting of precast concrete deck panels during subsequent placement and joining of all the deck panels.

36) Add SB-11.6.E as follows:

Protect openings over girder flanges from surface water and debris intrusion that may occur prior to grouting pockets. Alternatively, Contractor may propose method for cleaning flanges after deck panel placement subject to the approval of the Engineer.

37) Make the following revisions to SB-11.7:

a. Move Step F (install strands) up to Step D.

b. Rename Step D (grout transverse joints) as Step E.

c. Rename Step E as Step F and replace with the following:

Fully tension strands. Do not begin stressing operations until the grout in the transverse joint reaches the strength and age designated on the plans. Stress strands within 36 hours of transverse joint grouting, but not until the panel transverse shear key joint grout has attained the required compressive strength (based on manufacturer’s data).

d. Replace Step G with the following:

Grout all ducts (See SB-12) upon approval of stressing logs from the Engineer.

38) Replace SB-11.8.H with the following:

Do not apply distributed loads exceeding 10 psf, or concentrated loads exceeding 1000 pounds, to the precast concrete deck panels until the
structural non-shrink grout in the shear blockouts and the girder haunches has reached a strength of 2500 psi, based on manufacturer’s published data.

39) Insert the following after the first sentence of SB-12.3.A:

Storage of prestressing strand in direct contact with the ground will not be permitted.

40) Under SB-12.3.E.a, add the following requirement to the grouting operation plan:

13. Warm weather grout contingency plan

41) Add the following to the end of the first paragraph of SB-12.3.E.e:

Head boxes are recommended for placement of grout in transverse panel joints and shear blockouts.

42) Revise the second sentence of the second paragraph of SB-13.F.5 to read as follows:

Conduct normal grouting operations at a pressure of 10 psi to 15 psi measured at the grout inlet.

43) Revise the second sentence of the second paragraph of SB-13.F.5 to read as follows:

Concrete for bridge seat repairs shall be either mix 3Y43 or 3Y46

44) Add the following new special provision:

SB-13.10 Beam Stiffeners

This work consists of furnishing and installing supplemental beam stiffeners at the piers of the inplace beams of Bridge Nos. 7268 and 27504, as shown in the Plans. The work shall be performed in accordance with Mn/DOT 2402, 2471, and the following:

Material for the stiffeners shall conform to the requirements of Mn/DOT 3309, and shall be galvanized after fabrication per Mn/DOT 3394.

Fasteners shall be high strength conforming to the requirements of Mn/DOT 3391, and shall be galvanized per Mn/DOT 3392.

Beam stiffeners will be measured by each stiffener installed and accepted.
Payment for Item No. 2433.602, "FURNISH AND INSTALL BEAM STIFFENERS", will be made at the Contract price per each and shall be compensation in full for all costs of performing the work described above.
# Schedule of Quantities

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<th>Item No.</th>
<th>Item Description</th>
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<th>Quantity</th>
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<td>Remove metal pipe railing</td>
<td>lin. ft</td>
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<tr>
<td>2104.999</td>
<td>Remove regulated waste material (bridge)</td>
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<td>Haul salvaged material</td>
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<td>Sidewalk concrete (by)</td>
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<td>2451.541</td>
<td>Reinforcement bars epoxy coated</td>
<td>pound</td>
<td>13850 (P)</td>
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<td>Structure excavation</td>
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<td>pound</td>
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<td>Erecting structural metals</td>
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<td>Ornamental metal railing type special</td>
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<td>2453.602</td>
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<td>Organic zinc-rich paint system (shop)</td>
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</table>

## Construction Notes

The 2005 edition of the Minnesota Department of Transportation Standard Specifications for Construction shall govern.

Plans of inplace bridge no. 2105 are available at the Minnesota Department of Transportation.

The first two digits of each bar mark indicate the bar number which approximates the nominal diameter of the bar in millimeters (mm).

Bars marked with the suffix "E" shall be epoxy coated in accordance with Spec. 3550.

No cutting will be permitted unless the cutting limits have been outlined by the contractor and approved by the engineer, removal, and reconstruction shall conform to MNDOT Spec. 3403.

Prefabricated joint filler materials are incidental. Payment is to be included in price bid for other items.

Approved bondgroin bond to be applied to all contact surfaces between new and inplace concrete.

The subsurface utility information in this plan is utility quality level A. This utility quality level was determined according to the guidelines in the Minnesota Department of Transportation Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

### Revision

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<th>Date</th>
<th>Description</th>
<th>Approved By</th>
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<tr>
<td>5-28-13</td>
<td>Revised quantities, added pay items</td>
<td>TMS</td>
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<tr>
<td>7-30-13</td>
<td>Added pay item</td>
<td>BJI</td>
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INPLACE TRANSVERSE SECTION

RECONSTRUCTED TRANSVERSE SECTION

NOTES:

1. All dimensions for inplace structure are approximate. Field verify.
2. Remove inplace barrier, sidewalk, concrete deck and wearing course, inclusive in item "remove concrete slab, curbs, overlay, rail." (Fig 1)
3. Remove tubular metal rail, inclusive in item "remove metal pipe railing." (Fig 1)
4. Concrete end stairways to remain inplace. Repair of damage due to deck removal. Operations inclusive in item "remove concrete slab, curbs, overlay, rail." (Fig 1)
5. Construct a new precast deck, sidewalks, concrete parapet and ornamental metal railings. (Fig 1)
6. 9.5" minimum total thickness after bridge deck, planing and chip seal wearing course is applied. (Fig 1)
7. In-place conduit to go to be removed, inclusive in item "remove concrete slab, curbs, overlay, rail." (Fig 1)
8. Replace beam from south abutment to field splice. (Fig 1)
9. 2" R.S.C. to be installed in west sidewalk. Combination deflection/expansion fitting to be provided at each end of bridge. All natural inclusive in item "concrete system fitting."
### Dimensions Between Working Points

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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<td>95.87</td>
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### Top of Roadway to Bridge Seat

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<tr>
<th>SLAB THICKNESS</th>
<th>STOOL THICKNESS</th>
<th>BEAM HEIGHT</th>
<th>BEARING HEIGHT</th>
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<td>S. Abut</td>
<td>5&quot;V</td>
<td>YARD</td>
<td>20'</td>
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<td>YARD</td>
<td>20'</td>
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<tr>
<td>S. Abut</td>
<td>5&quot;V</td>
<td>YARD</td>
<td>30'</td>
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1. NEW BEAM 7 AT SOUTH ABUTMENT.

Certified by: [Signature]

Bridge Layout

Sheet No. 4 of 34 Sheets
NOTES:
F.F. denotes front face
B.F. denotes back face
1. REPLACEMENT OF BEARING ASSEMBLIES TO BE INCLUDED IN ITEM
   "RECONSTRUCT EXPANSION BEARINGS" & "RECONSTRUCT FIXED BEARINGS"
   INCLUDES REMOVAL OF EMBEDDED PLATES AT ABUTMENT BEARINGS, Voids
   NOT FILLED AS PART OF "RECONSTRUCT BRIDGE SEAL" TO BE FILLED WITH
   AN APPROVED NON-Shrink GROUT AND FINISHED LEVEL WITH ADJACENT SURFACE.
2. GRAYED REINFORCEMENT BARS MAY BE USED TO REPLACE CUT END
   DIAPHRAGM REINFORCEMENT. GRAYED REINFORCEMENT BARS SHALL
   BE INCLINED TO ITEM "REMOVING CONCRETE SLAB, CURB, OVERLAY, RAIL".
   SEE SPECIAL PROVISIONS.
3. REMOVE CONCRETE DIAPHRAGMS ON EACH SIDE OF BEAM 7 AT
   THE SOUTH ABUTMENT. REMOVAL INCLUDED IN PAYMENT FOR ITEM
   "REMOVING CONCRETE SLAB, CURB, OVERLAY, RAIL".
   PROVIDE MEANS OF TEMPORARY STABILIZATION FOR EXISTING SUPPORT.
   BACK HATCHED AREA DENOTES REMOVAL OF CONCRETE
   REINFORCEMENT, RAILING, PLANK AND JOINT MATERIAL INCLUDED IN
   PAYMENT FOR ITEM "REMOVING CONCRETE SLAB, CURB, OVERLAY, RAIL".
   CROSS-HATCHED AREA DENOTES REMOVAL OF CONCRETE AND REINFORCEMENT
   AT REMOVALS INCLUDED IN PAYMENT FOR "REMOVING CONCRETE SLAB, CURB,
   OVERLAY, RAIL".
   DENOTES REMOVAL OF LOOSE CONCRETE ON PIER CAP, INCLUDED
   IN PAYMENT FOR "CONCRETE SURFACE REPAIR".
   HATCHED AREA DENOTES REMOVAL OF PAYING BRACKETS,
   INCLUDED IN PAYMENT FOR "RECONSTRUCT PAYING BRACKET".

REMOVAL PLAN
N.A. & S.E. CORNER SHOWN
N.W. & N.W. CORNER SIMILAR

REMOVAL ELEVATION
S.N. & N.E. CORNER SHOWN
N.S. & N.W. CORNER SIMILAR

REMOVAL DETAILS

DATE DESCRIPTION APPROVED BY
5-28-13 NOTES T.R.S.

CERTIFIED BY Anthony M. Hoagland LIC. NO. 017304
LICENSED PROFESSIONAL ENGINEER DATE
HAND T. R. STEVENS LIC. NO. 2382
4-7-13 SHEET NO. 5R OF 34 SHEETS

BRIDGE NO. 27504
STRUCTURAL STEEL NOTES:
ALL STRUCTURAL STEEL SHALL CONFORM TO SPEC. 3309 UNLESS OTHERWISE NOTED.
SHEAR STUD CONNECTORS TO BE INCLUDED IN WEIGHT OF "SUPPLYING STRUCTURAL STEEL (3309)" AND CONFORM TO SPEC. 3309.
SPECIAL ASSEMBLY PER WS/FT SPEC 2473.3600 WILL BE REQUIRED FOR BEAM SPLICES.
ALL BOLTED CONNECTIONS SHALL BE MADE WITH 1/4" DIAMETER A325 BOLTS, EXCEPT AS NOTED.
SHEAR CONNECTORS TO PROJECT A MINIMUM OF 2" INTO STRUCTURAL SLAB. IN NO CASE SHALL THEY BE INSTALLED CLOSER THAN 1" FROM TOP OF STRUCTURAL SLAB. ENGINEER TO FIELD VERIFY BEAM ELEVATION AND AUTHORIZE STUD LENGTH.
SEE SPECIAL PROVISIONS.

FRAMING PLAN

NOTES:
1. DENOTES NEW EXPANSION BEARING ASSEMBLY TYPE 1.
2. DENOTES NEW EXPANSION BEARING ASSEMBLY TYPE 2.
3. DENOTES NEW FIXED BEARING ASSEMBLY TYPE 1.
4. DENOTES NEW ANGLE STEIFFENERS AT PIER BEARINGS.
5. DENOTES NEW 9/16" BENT E STEIFFENERS WITH NEW CONNECTOR STEIFFENERS.
6. DENOTES NEW DIAPHRAGMS AND 2 250 BEAM SECTIONS BDG. TO BE HEAT-CAMBERED TO MEET ANTICIPATED DEFLECTION.

REVISION
DATE DESCRIPTION APPROVED BY
5-28-13 ANGLE STEIFFENERS AT PIER, NOTES TRS
SUPERSTRUCTURE CONSTRUCTION SEQUENCE

The contractor shall submit to the engineer for review a detailed construction sequence of work tasks to be performed before removal of the existing structure. Detailed work task sequence shall include the intended method for forming the girder haunches and quality control construction method for obtaining the proper alignment and grade for the precast deck panels. The plans have been developed assuming the following construction sequence:

1. Excavate all of the precast deck panels as shown in the superstructure sheets. Before placing panels at centerline of pier and work towards both abutments simultaneously, place both P1 and P2 panels at each cross section before moving to the next pair of panels. Care should be taken to ensure the precast slab panels and in tight contact with the abutments and separating them and proper alignments achieved using leveling bolts to achieve the required grade. Torque all leveling bolts on each panel to within 15 percent of each other to ensure proper distribution of panel weight to the supporting bearings. At no time will construction equipment be allowed on the precast slab panels until construction of the precast slab is complete, and the haunches and keysyms have achieved a minimum compressive strength of 2,000 psi. Before construction begins on the final panel, the contractor shall ensure all bolts are in contact with the top surface of the slab panels are released from the casting grade and the precast slab panels are only supported at all the leveling bolts.

2. Form the girder haunches, notes all panels shall be erected and the panels shall be longitudinally post-tensioned and accepted by the engineer prior to placing concrete for haunches. Once the girder haunches are complete, the following shall be performed:

   a. Clean transverse joint surfaces, fill the transverse joints with non-shrink grout until 1/4" higher than the tops of the precast deck panels.

   b. Begin at either end of the bridge, tension the strands in each post-tensioning assembly. Strand tensioning shall be completed in 24 hours of casting of transverse joints, but only if the strand has achieved a compressive strength of 2,000 psi.

   c. Install post-tensioning ducts with manufacturer's recommended product.

   d. Cap and seal all duct vent tubes.

3. Install shear studs and damper test per specifications.

4. Fill all shear stud pockets in the precast deck panels. Duct splice pockets and haunches with the specified grout mix. Close to specified tightening specifications.

5. Place end closure pour with concrete mix C33/33FSP5 specialized.

6. Place longitudinal closure pour concrete mix C33/33FSP5 special.

7. Remove leveling bolts and fill holes with the specified grout mix.

8. Perform bridge deck planking, see special provisions.

9. Place tamping rail and sidewalks.

10. Seal all deck and joint cracks with joint and crack sealant, contact to verify compatibility of any joint/crack sealant with chip seal wearing course supplier.

11. Place epoxy chip seal wearing course see special provisions.
INSIDE ELEVATION OF BARRIER & METAL RAILING

ELEVATION SHOWN IS FOR BOTH WEST AND EAST BARRIERS

NOTE:
SEE SHEET NO. 26 FOR CONCRETE PARAPET AND REINFORCEMENT DETAILS.
SEE SHEET NO. 27 FOR RAIL PANEL DETAILS.

Watch deck panel joints.
GENERAL NOTES:
ALL STRUCTURAL STEEL TUBING IN THE RAIL SHALL BE ASTM A 500, GRADE B AND SHALL CONFORM TO WSDOT SPEC. 3320. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO WSDOT SPEC. 3320.
ANCHOR RODS SHALL CONFORM TO WSDOT SPEC. 3320, TYPE A, SEE SPECIAL PROVISIONS FOR RAIL ANCHORAGE REQUIREMENTS.
VENT HOLES SHALL BE DRILLED IN THE RAIL POST BASE AND THE RAIL TUBES AS NECESSARY TO FACILITATE GALVANIZING.
GALVANIZE BOLTS, NUTS, AND WASHERS PER SPEC. 5590.
GALVANIZE ALL OTHER STRUCTURAL STEEL PER WSDOT SPEC. 3320 AFTER FABRICATION.
RAIL POSTS AND PICKETS SHALL BE VERTICAL AS NOTED OR SHOWN.
HORIZONTAL RAISLS SHALL BE PARALLEL TO THE TOP OF THE PARAPET.
RAILING, BASE PLATES AND EXPOSED PORTIONS OF BOLTS, NUTS AND WASHERS SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
THE METAL RAILING SHALL BE GROUNDED WITH 9/16" CLEI COPPER ROD AS PER WSDOT SPEC. 2557.
PRICE BID ORNAMENTAL METAL RAILING INCLUDES THE ANCHORAGE AND ALL MATERIAL ABOVE TOP OF CONCRETE PARAPET.
LENGTH OF ORNAMENTAL METAL RAILING FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE EDGES OF THE ORNAMENTAL METAL RAILING.
SEE SHEET 26 FOR ADDITIONAL DETAILS AND NOTES.
SET NAMEPLATE FLUSH WITH SURFACE OF CONCRETE, EXCEPT AT ROUND COLUMNS FOR PIERS.

ELEVATION
THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION.
DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS.
BRIDGE: 27504

NAMEPLATE PLACEMENT
(ROUND CONCRETE PIER COLUMNS)

SECTION B-B

NAMEPLATE AND COLUMN

SECTION A-A

1234567890
NUMBERS FOR NAMEPLATE

NOTES:
NO SHOP DRAWING REQUIRED.
MATERIAL SHALL COMPLY WITH Mn/DOT SPEC 3327.
LETTERS AND NUMBERS SHALL CONFORM TO THOSE SHOWN.
DRAFT ON LETTERS AND NUMBERS SHALL NOT BE MORE THAN 3" IN 12".
HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.
TOP SURFACE OF LETTERS, NUMBERS AND FRAMES SHALL BE BURNISHED.
FURNISH 2 STEEL BOLTS 3/8" DIA. X 3" LONG WITH EACH PLATE.
ALL COMBINATIONS FOR 3/8" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN FOR THE 1" HIGH LETTERS AND NUMBERS.
ELEVATION
CONCRETE NOT SHOWN

SECTION A-A

NOTES:
PLATES SHALL EXTEND FULL WIDTH OF ROADSIDE BETWEEN GIRDLE LINES WITH A 1/8" OPEN JOINT AT EACH BREAK IN GIRDLE PROFILE. MAX. LENGTH 82 FT.
MATERIALS: STRUCTURAL STEEL PER MV/DT SPEC 3306,
GALVANIZED AFTER FABRICATION PER MV/DT SPEC 5994
SET PLATE TO PROPER GRADE AND CROWN.

REVISION
B553 MOD

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
PROTECTION PLATE
(FLAT FOR SLAB)
### CONCRETE WEARING COURSE

- **Low Slump**
- **Other**

#### EXPANSION JOINTS

- **Joint Manufacturer**
- **Manufacturer Identification**
  - MFR'S No. AND/OR LETTER DESIGNATION FOR JOINT USED
  - NAME AND ADDRESS (CITY, STATE)
- **Size of Gland**
- **Manufacturer Identification**
  - MFR'S No. AND/OR LETTER DESIGNATION FOR GLAND USED

#### ELASTOMERIC BEARING PADS

- **Pad Manufacturer**
  - NAME AND ADDRESS (CITY, STATE)

#### SPECIAL SURFACE FINISH

- **System**
  - **Color**

#### FINISHING ROADWAY FACES OF BARRIER RAILING

- **Type**
  - **Color**

#### ANTI-GRAFFITI COATING

- **Manufacturer**
  - **Name and Address (City, State)**
- **Product Name**
  - **Location**

### PAINT SYSTEM

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<td>INTERMEDIATE COAT W/DOT MATERIAL SPECIFICATION NUMBER</td>
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<tr>
<td>Finish</td>
<td>W/DOT MATERIAL SPECIFICATION NUMBER</td>
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### PLAN QUALITY

- RATE 1 (AGREE), 2 (INCOMPLETE), OR 3 (DISAGREE, PLEASE COMMENT BELOW):
- **DIMENSIONS AND DETAILS**
  - ADEQUATELY DESCRIBED REQUIRED CONSTRUCTION,
  - BAR LISTS AND QUANTITIES WERE TYPICALLY COMPLETE AND FREE OF ERRORS.
  - SCALE OF DRAWINGS AND OVERALL LEGIBILITY OF LINES AND TEXT WAS GOOD.
  - SPECIAL PROVISIONS ADEQUATELY DESCRIBED SPECIAL WORK AND PAYMENT.

#### COMMENTS

- **Number of Bridge Supplemental Agreements**
  - **Cost** $ |

- **List Significant Errors or Omissions in Plan Details or Pay Quantities in the Space Provided At Right.**

### BRIDGE REMOVAL / BRIDGE OPENING

- **Number of and Date Old Bridge Was Removed if Applicable**
- **Bridge Number**
  - **Date Removed**
- **Date New Bridge Was Opened to Traffic**
- **Notify the Bridge Office Bridge Management Unit with This Information as Soon as Possible, 518-365-4557**

### OTHER ITEMS

- **Utilities Added During Construction and Specialty Items**
  - **Final Quantities Entered on Schedule of Quantities**: 
    - **Yes** | **No**

#### SUMMARY OF SIGNIFICANT AS-BUILT CHANGES

- **The As-Built Information was Added to the Plan by**
  - **Inspector's Signature**
  - **Checked By**: PROJECT ENGINEER/SUPERVISOR SIGNATURE
  - **Date**
  - **At the Time of the Final, This Completed As-Built Bridge Data Sheet Must Be Submitted to the Bridge Office - ATTN: REGIONAL CONSTRUCTION ENGINEER 09080L**

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**AS-BUILT DETAILS (AS NEEDED)**

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**AS-BUILT BRIDGE DATA**

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**Sheet No. 34 of 34 Sheets** BRIDGE NO. 27504