MEMORANDUM

TO: ALL BRIDGE DESIGNERS

FROM: Gregory L. Bailey, P. E.
Director
Engineering Division

SUBJECT: Standard Bridge General Notes

In an effort to reduce the volume of general notes in bridge contract plans, Technical Section was requested to study and implement changes to that end. Results are summarized in a spreadsheet which is available for your use on the West Virginia Division of Highways website at http://www.transportation.wv.gov/highways/engineering/pages/publications.aspx.

Note that this document will continue to be updated, without notice. To ensure you have the current version, you should access this document through the website address above.

Should you require any additional information, please contact Mr. Todd West of this office, at (304) 558-9738 or by e-mail at Todd.G.West@wv.gov.

GLB:Htc

cc: DDT(TGW, JH), DD, DD(MF)
The bridge is designed with the load and resistance factor design (LRFD) in accordance with the AASHTO LRFD Bridge Design Specifications, second edition dated 1998 with the 1999 thru 2003 Interims, using 40 degree F, but water reducing admixture shall be used. The Contractor's attention is called to the test requirements for the reducer admixture.

Clause 8.0.4(b) states that the designer shall build all substructure concrete. Payment shall be included in item 601003-001. Retarder will not be required below 50 degrees F, but water reducing admixture shall be used. The Contractor's attention is called to the test requirements for the reducer admixture.

The abutment curtain wall and end block shall not be poured until after the superstructure is in place. The Superstructure has been designed as a composite section. Redistribution of negative moments has not been used for steel girder design. The bridge deck is designed as a composite section with elastomeric bearing pads and painting. OK

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Class 2 concrete shall be used for pier, abutments, wingwalls, and approach rails. The top surface of each beam shall receive a rough broom finish. All beams shall be treated with silane, see Class B concrete shall be used for piers, abutments, wingwalls, and approach slabs. Note Not Required Show in quantity tables. Also in 601.1 of the specs.

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Class 4 concrete shall be used on piers, abutments, wingwalls, and approach rails. All reinforcing bar dimensions are out to out. Minimum length of lap splice unless otherwise noted:

<table>
<thead>
<tr>
<th>Beam</th>
<th>Bottom</th>
<th>Top</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>2.5</td>
<td>1.5</td>
<td>4.0</td>
</tr>
<tr>
<td>18</td>
<td>3.5</td>
<td>2.5</td>
<td>6.0</td>
</tr>
<tr>
<td>24</td>
<td>4.5</td>
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<tr>
<td>36</td>
<td>6.5</td>
<td>5.5</td>
<td>12.0</td>
</tr>
</tbody>
</table>

No reduction of 7-day wet cure will be permitted. OK

The Contractor shall not be permitted to add additional amounts of cement to the approved mix design in order to obtain high early strength and/or reduce cure time.

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The bridge deck is designed in accordance with the Empirical Deck Method. OK

A uniform Deck Load of 15 PSF is included in the design for permanent deck forms. OK

The design provides for an additional wearing surface of 25 pound per square feet of roadway surface. This additional wearing surface is not included in the contract. OK

A water reducing retarding admixture in accordance with Section 707.2 of the specifications shall be used in all superstructure concrete. Payment shall be included in item 601003-001. Retarder will not be required below 50 degrees F, but water reducing admixture shall be used. The Contractor's attention is called to the test requirements for the reducer admixture.

Prestressing Steel shall be 1/2 inch DIA (A=0.153 SQ IN), 270 - grade Low Relaxation uncoated seven (7) wire stabilized strand in accordance with AASHTO M203, Supplement S1, with minimum tensile strength (f's) of 270,000 PSI.

### BOX BEAM NOTES:

The top flange of each beam shall be filled with a smooth brown finish. All beams shall be treated with lime, see Sheet BR-101. OK

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### BRIDGE GENERAL NOTES

#### DISPOSITION

**LEGEND**

OK: Means note is acceptable in appropriate situations

Note Not Required: Means note is covered elsewhere (usually noted) and therefore use of note is disregarded

In process of adding to specs: Intent is to add note to specifications on special provision. It is acceptable to use this general note during this period. Once note is added to specification, disposition will be updated.

### BLAST CLEANING AND PAINTING:

Upon completion of all fabrication operations in the shop, and before shipment to the project site, all weathering steel bridge components shall be blast cleaned to a Near White surface condition according to SSPC-SP 7. Prior to the start of any blast cleaning of a roll, groove, cutting fluids, or other foreign matter shall be removed from the surfaces of the steel to satisfy cleaning according to SSPC-SP 7.

All steel mill and fabricator identification markings for steel plates, shapes, or fabricated members shall be by metal tags, suspension, or some other readily recognizable material; or, shall be marked in an area of the completed member which will be excised or covered with concrete. Marking methods and locations are subject to approval of the Engineer.

The color of the final top coat shall be 30045 according to Federal Standard 595 and the Gloss at an angle of 60 degrees shall be 50%. Steel surfaces shall be cleaned to a Near White surface condition after coating the structural steel. The members or portions of members listed below shall be blast cleaned and shop painted according to Section 688 using the Inorganic Zinc Rich, Low VOC System, Section 711.2.2. Apply the full paint system in the fabrication shop, except for the surfaces of high strength bolted connections, which shall be shop painted prior to primer. The color of the final top coat shall be SG50 according to Federal Standard 505 and the Gloss at an angle of 60 degrees shall be 50%.

Note Not Required: Added to 2013 Supplemental. Available as a Special Provision in meantime. Section 621.

### PROTECTION OF CONCRETE SUBSTRUCTURE:

Before placing any concrete substructure members on the concrete substructure units, the contractor shall seal all areas exposed of the abutments, and tops, sides, and all sides of all per square to the ground or water level line with an approved water-based concrete water. Preparations of surfaces, application rates, and methods shall be recommended by the concrete manufacturer.

A high strength fastener used in regions of the structure that require painting shall be Type 1 or 3 and shall be mechanically galvanized.


### BRIDGE GENERAL NOTES

**SPECIFICATIONS**

Abbreviations:

- All fasteners shall be 3/8” high Strength Bolts (ASAHTO M200) unless otherwise noted. The threaded ends of the bolts shall be placed on the inside where possible for protection from the weather.

- Bolts shall be 1/4” larger than the nominal diameter of the fastener.

- High strength fasteners shall meet Section 609.8 and shall be black (uncoated) Type 3 (weathering steel). The high strength fasteners used in regions of the structure that require painting shall be Type 1 or 3 and shall be mechanically galvanized.

- Anchor bolts, nuts, and washers may be manufactured from ordinary mild steel and shall be hot dipped galvanized according to ASAHTO M200 after fabrication. The fabricator's shop drawings shall identify the material specifications and grade for each item and are subject to approval of the Engineer.

### SECURITY:

All access to the bridge system is controlled and guarded. Each person shall be given a pass to access the site. Items 601002-001, Class B-Steel Structures.

Additional:

- Items included in the bridge system for structure excavation, shall be paid for as unclassified excavation. Item 212001-00 in roadway quantities.

- Items shown in plans. May use for added embankment.

- Items shown on plans. May not use for added embankment.
The Contractor shall install a temporary bridge at the location shown on the plans prior to closing the existing bridge. It shall be maintained until the new bridge is open to traffic. The bridge length shall be...
The Contractor's attention is directed to Section 107.27.1.1 of the Supplemental Specifications dated January 1, 2003.

No construction equipment or loads that are not required to complete the slab, parapets, railing, overlay, paving, or other appurtenances shall be allowed on the bridge deck. Note Not Required

The Contractor shall submit forming plans and supporting calculations for the overhang to the Engineer for approval prior to erecting the formwork. Note Not Required

Deck slab overhang forms shall be supported from the bottom flange of fascia girders or stringers. The Contractor shall submit forming plans and supporting calculations for the overhang to the Engineer for approval prior to erecting the formwork. OK

No construction equipment with an axle load greater than 20,000 lbs. (20 kips) shall be permitted on the bridge deck. OK

No construction equipment or loads that are not required to complete the slab, parapets, railing, overlay, paving, or other appurtenances shall be allowed on the bridge deck. Note Not Required

The Contractor's attention is directed to Section 615.6, Erection and 615.2.2, Erection Drawings, of the Supplemental Specifications dated January 1, 2003.

The Contractor's attention is directed to Section 616, Footings, of the Supplemental Specifications dated January 1, 2003.

The Contractor's attention is directed to Section 616.4.1, Spec. for Pile Driving Apparatus, of the Standard Specifications dated January 1, 2003.

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