MEMORANDUM

TO: ALL HOLDERS OF STANDARD DETAILS BOOK, VOLUME 3

FROM: GREGORY L. BAILEY, DIRECTOR
ENGINEERING DIVISION

SUBJECT: ADDENDUM 3 TO THE 1999 STANDARD DETAILS BOOK, VOLUME 3

Attached for your use is Addendum 3 to the 1999 Standard Details Book, Volume 3. This addendum is necessary to revise the West Virginia Department of Transportation, Division of Highways Standard Details Volume 3, dated August 1, 1999.

Also included in this package are copies of the Standard Details that have been approved for use. The revision is as follows:

- Add the attached Standard Details, dated September 22, 2008

Please note that the Standard Details added by this addendum consists of the entire series of 4 ft spread boxes (17’ thru 42” deep) and bridge deck scuppers. All Standard Detail pages are assigned a prefix BR-.* or BRD-.*.

Any questions concerning this addendum should be directed to Mr. Joe Hall at (304)558-9733 or Nimal Suhir at (304) 558-9712.

GLB:ns
FACE OF PARAPET

SECTION A-A

#4 BAR INSERTED THRU TUBING
PRIOR TO GALV. BAR
SHALL BE WELDED
INSIDE & OUTSIDE

CIRCULAR STEEL PIPE DRAIN

NOTE:
STRUCTURAL STEEL TUBING FOR DECK DRAINS SHALL BE 8" X 4" X 3/8" COLD FORMED STEEL IN CONFORMITY WITH ASTM A500, GRADE B. CONTRACTOR MAY SUBSTITUTE 1" WALL THICKNESS TUBING FOR 3/8" TUBING AT HIS OPTION AND EXPENSE.

PAYMENT FOR THE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID ITEM PRICE FOR ITEM 603018-XXX, PRESTRESSED CONCRETE BEAMS.

NUMBER OF DRAINS REQUIRED:

SEE DETAIL "A"

8" X 4" X 3/8" STRUCTURAL TUBING
EXTEND 6" BENEATH BOTTOM OF GIRDER

FACE OF BEAM

SECTION B-B

#4 BAR INSERTED THRU TUBING
PRIOR TO GALV. BAR
SHALL BE WELDED INSIDE & OUTSIDE

NOTE:
STRUCTURAL STEEL TUBING FOR DECK DRAINS SHALL BE 8" X 4" X 3/8" COLD FORMED STEEL IN CONFORMITY WITH ASTM A500, GRADE B. CONTRACTOR MAY SUBSTITUTE 1" WALL THICKNESS TUBING FOR 3/8" TUBING AT HIS OPTION AND EXPENSE.

PAYMENT FOR THE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID ITEM PRICE FOR ITEM 603018-XXX, PRESTRESSED CONCRETE BEAMS.

NUMBER OF DRAINS REQUIRED:

SEE DETAIL "A"

8" X 4" X 3/8" STRUCTURAL TUBING
EXTEND 6" BENEATH BOTTOM OF GIRDER

FACE OF BEAM

SECTION C-C

#4 BAR INSERTED THRU TUBING
PRIOR TO GALV. BAR
SHALL BE WELDED INSIDE & OUTSIDE

NOTE:
STRUCTURAL STEEL TUBING FOR DECK DRAINS SHALL BE 8" X 4" X 3/8" COLD FORMED STEEL IN CONFORMITY WITH ASTM A500, GRADE B. CONTRACTOR MAY SUBSTITUTE 1" WALL THICKNESS TUBING FOR 3/8" TUBING AT HIS OPTION AND EXPENSE.

PAYMENT FOR THE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID ITEM PRICE FOR ITEM 603018-XXX, PRESTRESSED CONCRETE BEAMS.

NUMBER OF DRAINS REQUIRED:
1. STRUCTURAL STEEL TUBING FOR DECK DRAINS SHALL BE 8" X 4" X 3/8" COLD FORMED STEEL IN ACCORDANCE WITH ASTM A500, GRADE B. CONTRACTOR MAY SUBSTITUTE 1/2" WALL THICKNESS TUBING FOR 3/8" TUBING AT HIS OPTION AND EXPENSE.

2. ALL MATERIALS FOR DRAINAGE SHALL BE GALVANIZED AFTER FABRICATION AND THEN PAINTED.

3. NUMBER OF DRAINS REQUIRED:

4. NUMBER OF DRAINS REQUIRED:

NOTE:

1. COSTS FOR THE DRAINAGE SYSTEM, INCLUDING GALVANIZING, PAINTING, FLOOR DRAINS, DOWNSPOUTS AND SUPPORTS ARE INCLUDED IN ITEM 603018-XXX, PRESTRESSED CONC. BEAMS.

2. ALL MATERIALS FOR DRAINAGE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111, 2 OUNCES.

3. PAYMENT FOR THE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID ITEM PRICE FOR ITEM 603018-XXX, PRESTRESSED CONC. BEAMS.

4. NUMBER OF DRAINS REQUIRED: 8" O SCH. 40 PIPE (GALV.)

EXTEND 6" MIN. BENEATH BOTTOM OF GIRDER

CIRCULAR STEEL PIPE DRAIN

PIPE STRAP DETAIL

N.T.S.

PPE STRAP DETAIL

N.T.S.

SECTION C-C

1" X 2" VERTICAL SLOT IN PLATE

1" X 2" HORIZONTAL SLOT IN ANGLE

1" X 2" VERTICAL SLOT IN PLATE

1" X 2" HORIZONTAL SLOT IN ANGLE

NOTE:

1. DOWNSPOUT DETAIL

2. THE DRAIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111, 2 OUNCES.

3. NUMBER OF DRAINS REQUIRED.

4. NUMBER OF DRAINS REQUIRED:

NOTE:

1. DOWNSPOUT DETAIL

2. THE DRAIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111, 2 OUNCES.

3. NUMBER OF DRAINS REQUIRED.

4. NUMBER OF DRAINS REQUIRED:

NOTE:

1. DOWNSPOUT DETAIL

2. THE DRAIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111, 2 OUNCES.

3. NUMBER OF DRAINS REQUIRED.

4. NUMBER OF DRAINS REQUIRED:

NOTE:

1. DOWNSPOUT DETAIL

2. THE DRAIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111, 2 OUNCES.

3. NUMBER OF DRAINS REQUIRED.

4. NUMBER OF DRAINS REQUIRED:

NOTE:
1. COSTS FOR THE DRAINAGE SYSTEM, INCLUDING GALVANIZING, PAINTING, FLOOR DRAINS, DOWNSPOUTS AND SUPPORTS ARE INCLUDED IN ITEM 603016-XXX, PRESTRESSED CONC. BOX BEAMS.

2. ALL MATERIALS FOR DRAINAGE SHALL BE GALVANIZED AFTER FABRICATION AND THEN PAINTED.

3. NUMBER OF DRAINS REQUIRED:

NOTE:

1. STRUCTURAL STEEL TUBING FOR DECK DRAINS SHALL BE 8" X 4" X 3/8" COLD FORMED STEEL IN ACCORDANCE WITH ASTM A500, GRADE B. CONTRACTOR MAY SUBSTITUTE 1" WALL THICKNESS TUBING FOR 3/8" TUBING AT HIS OPTION AND EXPENSE.

2. THE DRAIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M630-02, 2 OUNCES.

3. PAYMENT FOR THE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID ITEM PRICE FOR ITEM 603016-XXX, PRESTRESSED CONC. BOX BEAMS.

4. NUMBER OF DRAINS REQUIRED:

NOTE:

1. THE DRAIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111, 2 OUNCES.
CIRCULAR STEEL PIPE DRAIN

1. COSTS FOR THE DRAINAGE SYSTEM, INCLUDING GALVANIZING, PAINTING, FLOOR DRAINS, DOWNSPOUTS AND SUPPORTS ARE INCLUDED IN ITEM 615001-001, STEEL SUPERSTRUCTURE.

2. ALL MATERIALS FOR DRAINAGE SHALL BE GALVANIZED AFTER FABRICATION AND THEN PAINTED.

3. NUMBER OF DRAINS REQUIRED.

NOTE:
1. STRUCTURAL STEEL TUBING FOR DECK DRAINS SHALL BE 8" X 4" X (3/8") COLD FORMED STEEL IN ACCORDANCE WITH ASTM A500, GRADE B. CONTRACTOR MAY SUBSTITUTE WALL THICKNESS TUBING FOR (3/8") TUBING AT HIS OPTION AND EXPENSE.

2. THE DRAIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111, 2 OUNCES.

3. PAYMENT FOR THE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID ITEM PRICE FOR ITEM 615001-001, STEEL SUPERSTRUCTURE.

4. NUMBER OF DRAINS REQUIRED.

NOTE:
1. STRUCTURAL STEEL TUBING FOR DECK DRAINS SHALL BE 8" X 4" X (3/8") COLD FORMED STEEL IN ACCORDANCE WITH ASTM A500, GRADE B. CONTRACTOR MAY SUBSTITUTE WALL THICKNESS TUBING FOR (3/8") TUBING AT HIS OPTION AND EXPENSE.

2. THE DRAIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111, 2 OUNCES.

3. PAYMENT FOR THE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID ITEM PRICE FOR ITEM 615001-001, STEEL SUPERSTRUCTURE.

4. NUMBER OF DRAINS REQUIRED.
THE CONCRETE SHALL ATTAIN A COMPRESSIVE STRENGTH OF AT LEAST XXX psi as shown by standard cylinders cured identically with the beams before transferring beam spans to the structure or before releasing the end anchors. Cylinder strength shall be XXX psi within 20 days.

 Pretensioning xxxx X strand bars shall be used. An initial force of XXXX lbs to each low-relaxation strand. The department will select the strand if the strand is no less than the number of strands shown on the plans. The strand locations are determined by numbering the sequence of the strands. The strand drawings shall also show the strand pattern for desired strands.

 WHEN THE TOP SURFACE OF EACH BEAM IS APPROVED TO BE MACHINED AND FREE OF EASINESS, THE WIRE FABRIC IS PERMITTED INSTEAD OF REINFORCING STEEL BARS PROVIDED AN EQUAL STEEL AREA IS ATTAINED. WIRE FABRIC MUST CONFORM TO THE REQUIREMENTS OF AASHTO M203. THE CONCRETE MUST BE PLACED UNCOATED SEVEN WIRE LOW-RELAXATION STRAND IN ACCORDANCE WITH AASHTO M203. THE STRANDS SHALL BE PLACED SYMMETRICALLY IN EACH LAYER. SHOP DRAWINGS SHALL SHOW THE STRAND LOCATIONS AND THE DETENSIONING PLAN BY NUMBERING THE SEQUENCE OF THE STRANDS. THE STRAND DRAWINGS SHALL ALSO SHOW THE STRAND PATTERN FOR DEBONDED STRANDS.

 THE EXTENT THAT THE ENGINEER DETERMINES THE STRENGTH OF THE CONCRETE CURED, BEFORE TRANSFERRING BEAM SPANS TO THE STRUCTURE, OR BEFORE RELEASING THE END ANCHORS, CYLINDER STRENGTH SHALL BE XXX PSI WITHIN 20 DAYS.

 PRETENSIONED XSTRAND BARS SHALL BE USED. AN INITIAL FORCE OF XXXX LBS TO EACH LOW-RELAXATION STRAND. THE DEPARTMENT WILL SELECT THE STRAND IF THE FINISHED UNITS CONTAINED MANUFACTURED CONCRETE TO THE EXTENT THAT THE ENGINEER DETERMINES THE STRENGTH OF THE CONCRETE CURED, BEFORE TRANSFERRING BEAM SPANS TO THE STRUCTURE, OR BEFORE RELEASING THE END ANCHORS, CYLINDER STRENGTH SHALL BE XXX PSI WITHIN 20 DAYS.

 THE CONCRETE SHALL ATTAIN A COMPRESSIVE STRENGTH OF AT LEAST XXX psi as shown by standard cylinders cured identically with the beams before transferring beam spans to the structure or before releasing the end anchors. Cylinder strength shall be XXX psi within 20 days.

 THREADED BAR DETAIL

 STRAND SPlicing DETAILS

 NUMBER OF 1/2" DIA. 7 WIRE STRANDS IN INDICATED ROW

 SCHEDULE

 W. VA. DEPARTMENT OF HIGHWAYS
 ENGINEERING DIVISION

 APPROVED: ____________________ DATE: ________