Plotted on: Tuesday, January 04, 2005 8:12:56 AM
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	BY	DATE

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HNTB
ARCHITECTS ENGINEERS PLANNERS

200901

MATERIAL SPECIFICATIONS:

1) STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36 SPECIFICATIONS. WELDING TO BE PER AWS CODE.

2) ALL EXPOSED STEEL TO RECEIVE ONE COAT PRIMER.

3) END ANGLES FOR GAGE PANEL SHOULD HAVE 3" GAP MINIMUM TO IMPROVE SHUNT RESISTANCE. REINFORCING MATERIAL AND CLADDING TO BE CONSTRUCTED TO MEET SHUNTING REQUIREMENT. A NON-CONDUCTIVE SPACER TO BE ATTACHED TO GAGE FRAME.

4) CLADDING ON ENDS OF PANELS SHOULD EXTEND BEYOND CONCRETE 1/8" (+1/8", -0") TO IMPROVE MATCH WITH ADJACENT PANELS.

5) REINFORCING STEEL SHALL CONFORM TO CURRENT ASTM A615 SPECIFICATION, GRADE 60. IF ANY WELDING OF REINFORCEMENT STEEL IS REQUIRED, MATERIAL SHALL CONFORM TO ASTM A706 SPECIFICATION, GRADE 60.

6) CONCRETE MATERIAL MIXING, PLACING AND CURING TO BE IN ACCORDANCE WITH PCI "MANUAL FOR QUALITY CONTROL: PRECAST AND PRESTRESSED CONCRETE." MANUAL 115, EDITION 4. CEMENT SHALL HAVE NO MORE THAN 0.6% TOTAL ALKALI CONTENT. MAXIMUM WATER/CEMENT RATIO=0.44 (BY WEIGHT). AIR ENTRAINMENT=6%+/- 1% IN PLASTIC CONCRETE. SLUMP 3" MAXIMUM.

7) COPIES OF THE CONCRETE DESIGN MIX TO BE SUBMITTED TO RAILROADS FOR APPROVAL PRIOR TO THE START OF THE CASTING OPERATION.

8) TOP SURFACE SHALL BE NON-CRACK DESIGN AND IS TO BE SEALED TO PREVENT ION MIGRATION DUE TO SALTING.

9) CURING SHALL FOLLOW THE RECOMMENDATIONS AND PROCEDURES OF PCI IN 4TH EDITION DIVISION 4.

10) 3/16" WEEP/INSPECTION HOLES SHALL BE PLACED EVERY 2-FT. MIN. ALONG THE TOP OF THE STEEL FRAME ALONG A LINE 3/4" FROM OUTSIDE EDGE.

11) FLANGEWAY FILLER TO BE PERMANENTLY PREATTACHED AND HAVE THE FOLLOWING PROPERTIES:

- TENSILE STRENGTH (ASTM D412) 850PSI MIN.
- ULTIMATE ELONGATION (ASTM D412) 400% MIN.
- TEAR STRENGTH (ASTM D624) AT 25 DEGREES CELSIUS, 150-PLI MIN.
- HARDNESS (ASTM D2240) 75+/-5% SHORE A.
- COMPRESSION SET (ASTM 395 METHOD B) 100 DEGREES CELSIUS FOR 70 HOURS 45% MAX.
- ACCELERATED AGING TEST (ASTM D573) 70 HOURS AT 100 DEGREES CELSIUS MUST NOT EXHIBIT A REDUCTION IN PROPERTIES BY GREATER THAN 20%.
- OZONE RESISTANCE TEST (ASTM D518) MUST HAVE NO CRACKING AFTER EXPOSURE TO 50-PPHM OZONE FOR 96 HOURS AT 40 DEGREES CELSIUS.
- VOLUME RESISTIVITY = $1X10^{12}$ (OHM-CM) OR GREATER (ASTM D257), BUT USING 18% NACL/WATER SOLUTION IN PLACE OF DISTILLED WATER FOR 168 HOURS AT 25 DEGREES CELSIUS AND TESTED AT 500 VDC.
- ELECTRICAL RESISTANCE: MINIMUM RESISTANCE 10 MEGA OMS MEASURED AT 500 VDC.
- LOW TEMPERATURE BRITTLENESS (ASTM D2137) AT -40 DEGREES CELSIUS.
- A SAMPLE SECTION OF THE FLANGEWAY MATERIAL SHALL BE PHYSICALLY TESTED BY APPLYING A LATERAL FORCE OF 10 LB/IN AT 50 DEGREES CELSIUS. THE MAXIMUM LATERAL DISPLACEMENT OF THE TEST IS NOT TO EXCEED 1/4" (CROSSING TYPE 10C ONLY). TEST RESULTS MUST BE SUBMITTED FOR RAILROAD APPROVAL.
- MANUFACTURER TO DESIGN THE PREATTACHED FLANGEWAY FILLER TO ALLOW FOR REMOVAL OF PANELS FOR MAINTENANCE WITHOUT DAMAGING THE FLANGEWAY FILLER OR ANY OTHER COMPONENTS DESIGNED TO HOLD IT TOGETHER..

TOLERANCES:

1) OUT OF SQUARE 3/16" (MEASURED ALONG THE DIAGONAL)

2) LENGTH, WIDTH, AND THICKNESS: +/-1/8"

3) THE BOTTOM SURFACE, WHICH WILL BE IN CONTACT WITH THE TIES, SHALL NOT UNDULATE IN ANY DIRECTION MORE THAN 3/32". SEE SPECIAL TESTING NOTE 3 BELOW.

4) REINFORCEMENT PLACEMENT SHALL BE +/-3/4" HORIZONTAL, +/-1/8" VERTICAL.

FINISH:

1) ALL RECESSES AND MINOR CONCRETE SPALLS ARE TO BE FILLED AND FINISHED TO THE PANEL DIMENTIONS USING THE PROPER BONDING AGENT AND REPAIR MATERIAL SURFACE OF THE REPAIRED AREA IS TO MATCH THE COLOR AND TEXTURE OF THE SURROUNDING AREAS.

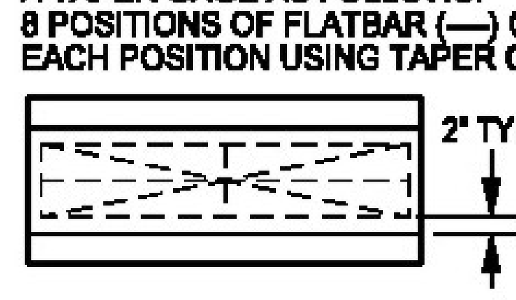
2) THE DRIVING SURFACE IS TO HAVE A LIGHT BROOM FINISH OR AS APPROVED BY RAILROADS. THE ADDITION OF WATER TO THE CONCRETE SURFACE FINISH DURING CASTING IS NOT PERMITTED.

SPECIAL TESTING:

1) TWICE ANNUALY, VENDORS SHALL SUBMIT (VIA AN INDEPENDENT TESTING LABORATORY TO THE RAILROADS) THE FOLLOWING TEST ON THE APPROVED MIXED DESIGN
- ASTM C666 FREEZE/THAW
- ASTM C227 MORTAR BAR METHOD
- ASTM C1260 AT TOTAL ALKALI BURDEN = 0.06%

2) GAGE PANELS SHALL BE DESIGNED WITH SHUNT RESISTANT FEATURES IN ORDER TO PROVIDE A MINIMUM ELECTRICAL RESISTANCE IN ACCORDANCE WITH THE STANDARD ELECTRICAL TEST (DWG 500930).

3) A REPRESENTATIVE SAMPLE OF PANELS SHALL BE CHECKED PERIODICALLY FOR BOTTOM FLATNESS BY USING A STRAIGHT EDGE CALIBRATED TO WITHIN +/-1/32" AND A TAPER GAGE AS FOLLOWS:
8 POSITIONS OF FLATBAR (—) CHECK FLATNESS AT EACH POSITION USING TAPER GAGE.



GENERAL:

1) THE MANUFACTURER SHALL BE ISO 9000 OR AAR M-1003 CERTIFIED. ALL TESTING PERSONNEL SHALL BE A MINIMUM OF ACI LEVEL I CERTIFIED.

2) THE FABRICATOR SHALL BE RESPONSIBLE FOR LOADING AND PROPERLY SECURING ALL PRECASTCONCRETE MEMBERS FOR SHIPMENT.

3) THE MANUFACTURER SHALL WARRANTY PRODUCT FOR A MINIMUM OF TEN YEARS AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP.

4) MAUNFACTURER TO PERMANENTLY MARK EACH PANEL WITH A CONCRETE IMPRINT FOR SIZE OF RAIL, WEIGHT OF PANEL, MANUFACTURER'S I.D., MONTH/DAY/YEAR OF MANUFACTURE, AND CROSSING TYPE. END OF EACH PANEL TO BE STENCILED PAINTED WITH SIZE OF RAIL, WEIGHT OF PANEL AND CROSSING TYPE.

COMMON STANDARDS

GENERAL SPECIFICATIONS FOR ROAD CROSSINGS WITH CONCRETE PANELS

FILE OWNER: UPRR	DATE: MARCH 21, 2003
REV. NO.: 1	DWG NO:200901

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CITY OF WICHITA
WICHITA CENTRAL CORRIDOR
PRECAST CONCRETE CROSSING
BNSF / UPRR
COMMON STANDARDS

NO.	DATE	REVISIONS	BY	APP'D
1				
2				
3				

SHEET NO. OF | SCALE | APP'D
DESIGNED | DETAILED | QUANTITIES | TRACED
DESIGN CK. | DETAIL CK. | QUAN.CK. | TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-84071	2005	R5.8	