

General Notes

SPECIFICATIONS: All references to the standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, with current supplemental specifications. All references to the AASHTO Specifications are to the current edition of the AASHTO LRFD Bridge Design Specifications, with interims.

DESIGN LOADS: Beam & Slab sections are designed for 1.25*HL93 (KYHL93) Live Load.

DESIGN LOAD DISTRIBUTION: Beams are designed according to the AASHTO LRFD Bridge Design Specifications for beam spacings up to 6ft and overhangs up to 3'-0" with a 9" wide barrier.

FUTURE WEARING SURFACE: These beams are designed for a 15 PSF future wearing surface load.

SUBSTRUCTURE DESIGN LOADS: Unfactored design reaction forces per beam end.

DC (kips): Beam, Slab, Diaphragms, SIP Forms, and assumed railing dead loads of 533 lbs/ft.
 DW (kips): Future wearing surface.
 LL+I (kips): LL with Dynamic load allowance.

MATERIAL DESIGN SPECIFICATIONS:

for Beam Steel FY = 50000 PSI
 for Steel Reinforcement FY = 60000 PSI
 for Class "AA" Deck Concrete FY = 4000 PSI

MATERIAL STEEL	A.S.T.M	AASHTO
High Strength Low Alloy Structural Steel	A709 GR 50	M270 GR 50
Shear Stud Connectors	UNS G 1018	M-169
Sheet lead and Pig Lead	B29-79	
High strength bolts, nuts, and washers	F3125 Grade A325	M-164 Type 1

All steel in longitudinal rolled wide flange beams shall meet the longitudinal Charpy V-Notch toughness test for non-fracture critical components Zone 2 in accordance with the following:

M270 GR 50 (up to 2" thickness) of 15 ft-lbs at 40°F.

Sampling and testing procedures shall be in accordance with AASHTO T243 current edition, utilizing (H) frequency testing. When plate thickness exceeds 1½" frequency of testing shall be (P).

HIGH STRENGTH BOLT CONNECTIONS: Unless otherwise specified on the plans, all bolted connections shall be ASTM F3125 Grade A325 ¾" diameter high strength bolts, nuts, and washers. Open holes shall be 1⅜" diameter. Type 1 galvanized bolts shall be used as described in AASHTO M164. All high strength bolted field connections are to be installed with "direct tension indicators" (DTI's) in accordance with the Standard Specifications and ASTM F959. All DTI's shall be manufactured from a steel conforming to the chemical requirements of ASTM A325 for Type 1 galvanized steel. DTI's shall be installed under the bolt head with the bumps facing the underside of the bolt head. Put a hardened washer under the nut and tension from the nut.

BEVELED EDGES: Bevel all exposed edges ¾".

REINFORCEMENT: Dimensions shown from the face of concrete to reinforcement are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2" unless otherwise noted. Epoxy coat all bars. Use stirrup bend diameters for all bent bars.

CORROSION PROTECTION: These beams and all steel components are to be hot dip galvanized according to ASTM A123. Weathering Steel is not allowed.

SHEAR CONNECTORS: The minimum length of studs is 6". Provide the necessary length to penetrate at least 2" above bottom of slab.

Include all costs for shear connectors with the price of the steel beams. Including shear connectors, welding and welding material, and materials necessary to field weld or shop weld the shear connectors in place according to the plans and specifications.

If the Contractor wishes to use something other than the stud shear connectors shown on the plans, the proposed arrangement shall be submitted for approval with the shop plans.

Studs shall be welded in accordance with AWS Specifications.

MILL TEST REPORTS: Notarized mill test reports shall be furnished in triplicate to the Department, showing that all material used in the structural steel conform to the requirements of the specifications.

PROHIBITED WELDING: No welding of any nature, other than indicated on the plans, is to be performed without the written consent of the designer, and then only in the manner and at the locations designated in the authorization.

SLAB: Ensure the entire superstructure slab and diaphragms are poured continuously, out to out, before allowing any concrete to set.

SHOP DRAWINGS: The fabricator shall submit all required shop plans, by email, to the design engineer for review. These submissions shall depict the shop plans in .pdf format. As either 11"x17" or 22"x36" sheets. Designers will make review comments on these electronic submissions as needed and shall return them to the fabricator. Upon reconciliation of the designers comments, files shall be returned to the designer and plans will be forwarded to the Division of Structural Designs Shop Plan coordinator for distribution. Only plans submitted directly to the shop plan coordinator will be distributed and only plans electronically stamped "Distributed by The Division of Structural Design" are to be used for fabrication. While this process does not require the submission of paper copies, The Division of Structural Design reserves the right to require such copies on a case by case basis.

When any changes to the design plans are proposed by the Fabricator or Supplier, the shop drawings reflecting these changes shall be submitted to the Design Engineer through the contractor.

KENTUCKY
 DEPARTMENT OF HIGHWAYS
 COMPOSITE STEEL BEAM
 SUPERSTRUCTURES
 GENERAL NOTES

STANDARD DRAWING NO. BSB-101
 SUBMITTED  02-26-20
DIRECTOR DIVISION OF STRUCTURAL DESIGN DATE
 APPROVED  02-26-20
STATE ENGINEER DATE