

J:\PROJECTS\2023\20230510\10431_C0W_WDC_BRIDGE REPLACEMENT AT 15TH STREET\100-230431_CADD\SHETS\06_CIVIL\BRIDGE\202401_GENERAL NOTES.DWG
 PLOTTED: Friday, August 01, 2025 @ 09:48 AM

SUMMARY OF QUANTITIES

Item	Excavation		Concrete		Reinforcing Steel		Structural Steel			Drilled Shafts (42") (Cased)	Bridge Backwall Protection System	Abutment Strip Drain	Welded Stud Shear Connectors 3/4" ø	Bearing (Steel Reinforced) (Elastomeric)	Sonic Test (Drilled Shaft) (Set Price)	Bridge Deck Grooving
	Class I	Class II	(Grade 4.0) (AE)(SA)(MPC)	(Grade 4.0) (AE)	(Grade 60)	(Epoxy Coated) (Grade 60)	(M270) (GR 50T2)	(A709) (GR 50)	(A709) (GR 36)							
Location	Cu. Yds.	Cu. Yds.	Cu. Yds.	Cu. Yds.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lin. Ft.	Sq. Yds.	Sq. Yds.	Each	Each	Each	Sq. Yds.
Abutment No. 1	71.2	—	**	22.1	2,287	**	—	—	—	—	16.7	15.6	—	—	—	—
Pier No. 1	—	1.1	—	18.0	2,471	—	—	—	—	35.0	—	—	—	3	1	—
Pier No. 2	—	0.5	—	18.0	2,471	—	—	—	—	35.0	—	—	—	3	1	—
Abutment No. 2	72.0	—	**	22.1	2,287	**	—	—	—	—	16.7	15.6	—	—	—	—
Substr. Total	143.2	1.6	—	80.2	9,516	—	—	—	—	70.0	33.4	31.2	—	—	2	—
Superstr. Total	—	—	55.6	—	—	13,588	40,321	2,336	345	—	—	—	534	6	—	183.9
Total	143.2	1.6	55.6	80.2	9,516	13,588	40,321	2,336	345	70.0	33.4	31.2	534	6	2	183.9

** Quantities are included in the Superstructure Total Quantity.

GENERAL NOTES

PLAN SPECIFICATIONS: "KDOT Standard Specifications for Road and Bridge Construction, 2015 Edition" are referenced for bridge construction. When differences occur between plan notes and these specifications, the plan notes govern.

REMOVAL OF EXISTING STRUCTURE: Removal of the existing structure is included in the bid item, "Removal of Existing Structures", Lump Sum. All materials removed from the existing structure shall become the property of the Contractor. Remove this material from the site.

DEMOLITION PLANS: This is a Category A Demolition. Submit detailed Demolition Plans to the Field Engineer per KDOT Specifications. No Demolition work will begin without approved Demolition Plans. A Licensed Professional Engineer is not required.

TEMPERATURE: The design temperature for all dimensions is 60 F.

QUANTITIES: Items not listed separately in the Summary of Quantities are subsidiary to other items in the proposal.

DIMENSIONS: All dimensions shown on the design plans are horizontal dimensions unless otherwise noted. Make necessary allowances for roadway grade and cross slope.

BRIDGE EXCAVATION: Elevation 1297.35 shall designate the Excavation Boundary Plane of Class I and Class II Excavation: Class I above the plane, Class II below the plane. See the Bridge Excavation sheet for the limits of pay excavation.

CONTRACTOR CONSTRUCTION STAKING: Contractor Construction Staking for clear span bridges requires two independent surveys. See KDOT Specifications.

DRILLED SHAFTS: Construct the drilled shafts using the cased method. A permanent casing is required. All excavation, concrete, reinforcing steel, pipes for Sonic Testing, casings, labor, and incidentals necessary to complete the shaft as shown on the details and as directed by KDOT Specifications shall be included in the bid item "Drilled Shafts (42") (Cased)". Use Grade 4.0 Concrete in the drilled shaft. In no case shall the bottom of the drilled shaft be placed higher than the elevation shown.

If the location of the top of the shaft is such that the casing cannot be overtopped to remove concrete impurities, provide extra casing length to over-pour the concrete in the shaft and chip back to the plan elevation of the top of the shaft.

If the permanent casing is to be corrugated metal pipe (CMP) then it will be galvanized.

SONIC TESTING: Equip all drilled shafts with piping to allow sonic testing to be done. Install pipes at locations shown on the plans. All wet pours will be tested. Also, the Engineer has the option to require sonic, non-destructive, integrity testing at any location of concern. Sonic testing shall be paid for at the unit price set for "Sonic Test (Drilled Shaft) (Set Price)". If the sonic testing indicates defective concrete in the shaft, the Engineer will measure the first sonic test for payment, and the Contractor is responsible for subsequent sonic testing of that shaft. Report test results directly to the Engineer. No work will be done above the top of drilled shaft without the approval of the Engineer.

PERMANENT CASING: See KDOT Specifications.

DRILLED SHAFT BACKFILL: Backfill the annular space between the temporary casing and the permanent casing with granular material as defined in the KDOT Specifications.

COLUMN CONSTRUCTION: Cure the drilled shaft footing as required by the KDOT Specifications before beginning the column construction (placing resteel or formwork). Do not place cast in place shear bolts, coil inserts or other devices used as falsework support in the column without the approval of the Engineer. Do not remove the column formwork without the approval of the Engineer. Curing shall continue after the formwork is removed as required by the KDOT Specifications.

PIER BEAM CONSTRUCTION: Cure the columns as required by the KDOT Specifications before beginning the pier beam construction (placing resteel or formwork). Do not drill and grout bolts or other devices into the columns used for falsework support unless approved by the Engineer. Cure the columns as required by the KDOT Specifications before placing pier beam concrete. Do not remove falsework used to support the pier beam until the pier beam concrete has cured as required by the KDOT Specifications. Do not set beams on the pier beam until after the falsework is removed or the pier beam concrete has 0.75f_c strength as tested.

BEARING (STEEL REINFORCED ELASTOMERIC): Elastomeric Bearing Device shall be factory bonded to the steel sole plate by a vulcanization process. The steel sole plate and swedge anchor bolt are subsidiary to the bid item, "Bearing (Steel Reinforced Elastomeric)" and shall be furnished by the bearing device fabricator.

ERECTION ELEVATION CHECKS: After the abutment and pier concrete has cured and before setting any structural steel, present verification to the Engineer that the elevations at the bearings match plan elevation ($\pm 1/4"$). Present verification to the Engineer that the elevations at all field splice locations match the elevations ($1/2"$) in the plans before any connection is fully tightened. (For steel beams that are blocked on the ground, fully tighten the bolted connections prior to erection.)

BRIDGE BACKWALL PROTECTION SYSTEM: Apply a Bridge Backwall Protection System to the approach side of the abutments and the wings in accordance with KDOT Specifications and the manufacturer's recommendations. Cover the abutments to the limits shown on Sheet 36, not including the top of the pavement rest. Prior to backfilling, repair any damage done to the system at no extra cost to the State.

ABUTMENT STRIP DRAIN: See the General Notes on Sheet 36.

BACKFILL COMPACTION: Compact backfill at the abutments.

EMBANKMENT: Complete the embankment of the abutments as shown on the Bridge Excavation sheet prior to commencing with the abutment footing excavation.

STRUCTURAL STEEL: The rolled beams, web splice plates, and flange splice plates shall meet AASHTO M270, Grade 50 T2 requirements except as noted. Connection plates, stiffener plates, and diaphragms shall meet ASTM A709, Grade 50 requirements except as noted. All other structural steel shall meet ASTM A709, Grade 36, unless noted otherwise. Field Splices shall be made only where shown on the Contract Plans as a "splice" or as an "optional splice." Elimination of any "splice" may be requested.

WELDING: Material, Fabrication and Construction shall conform to KDOT Specifications. On the shop drawings, show a code or symbol in the tail of the weld symbol that refers to an approved, pre-qualified weld procedure.

WELDED STUD SHEAR CONNECTORS: Weld Shear Stud Connectors with automatically timed stud welding equipment connected to a suitable power source. All stud welding shall conform to KDOT Specifications. For bridges with skewed reinforcing steel the contractor has the option to place the Welded Shear Stud Connectors parallel to the skew angle.

BOLTS: All bolts, nuts and hardened flat washers shall conform to the heavy hex structural requirements of ASTM F3125 Grade A325, Type 1, and KDOT Specifications unless otherwise noted. Direct Tension Indicators (DTIs) are to comply with the requirements of the latest edition of ASTM F959. No allowance will be made for high strength bolts used for permanent or temporary connections. This work is subsidiary to the bid item, "Structural Steel". The number of bolts is shown for the convenience of the Contractor.

BOLTED CONNECTIONS: Beam Connections: Use 3/4 inch diameter heavy hex structural bolts for the main member connections. Use 13/16 inch diameter bolt holes. Do not ream during field erection. Accurately align all connections by driving 13/16 inch diameter drift pins in all corners and in 1/4 of the remaining holes in each plate. See KDOT Specifications.

Secondary Member Connections: Use 3/4 inch diameter heavy hex structural bolts for the secondary member connections. Use 13/16 inch diameter bolt holes. Oversized or slotted holes, as specified in the KDOT Specifications, may be used in only one of the two members connected and must be shown in the approved shop drawings. Oversized or slotted holes may require additional standard hardened washers or plate washers. Report to the Engineer prior to any required field reaming that will remove more than 1/4 inch of material from one ply of the connected parts.

Use Direct Tension Indicators (DTIs) on all high strength bolts. Place the DTI under the bolt head and turn the nut to tighten. This method is preferred whenever possible. Face the protrusions on the DTI to the underside of the bolt head. Place a hardened flat washer under the nut. See KDOT Specifications.

FILLETS: Construct the finished deck to plan grade by varying the depth of the fillet over the beam to provide for beam profile, concrete dead load deflection and, if necessary, vertical curvature. After the beams are completely erected and the falsework bents are removed, profile each beam. Correct any variation between the actual profile and the concrete dead load deflection shown in the plans by varying the depth of the concrete fillets over the beams so that the finished floor is constructed to the theoretical grade. The minimum depth of the slab over the beam shall be 8 inches.

The theoretical amount of concrete required for the fillets is 1.3 C.Y. This amount of concrete is included in the Summary of Quantities. Any additional concrete required to construct the fillets will be subsidiary.

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DESIGN DATA

DESIGN SPECIFICATIONS: AASHTO Specifications, 2020 Edition and latest Interim Specifications. Load and Resistance Factor Design.

DESIGN LOADING: H10
(Per the LRFD Guide Specs for the Design of Pedestrian Bridges, 2009 Edition with 2015 Interim Revisions.)

UNIT STRESSES:

Concrete (Grade 4.0)	f _c = 4 ksi
Concrete (Grade 4.0)(AE)	f _c = 4 ksi
Concrete (Grade 4.0)(AE)(SA)(MPC)	f _c = 4 ksi
Reinforcing Steel (Grade 60)	f _y = 60 ksi
Structural Steel (M270)(GR 50T2)	F _y = 50 ksi
Structural Steel (A709)(GR 50)	F _y = 50 ksi
Structural Steel (A709)(GR 36)	F _y = 36 ksi

DESIGN FOOTING PRESSURES:

Loading (ksf)	Design (≡)	Allowable (**)
Abut. No. 1 & 2	1.37	2.00

DESIGN DRILLED SHAFT CAPACITY:

Loading (kips)	Design (≡)	Allowable (**)
Piers No. 1 & 2	357.4	400.0

≡ "Design" values shown above are *Factored Bearing Pressure* in kips per square foot.

** "Allowable" values shown above are *Factored Bearing Resistance* in kips per square foot as listed within the project Geotechnical Exploration Report provided by GSI Engineering, LLC Dated May 5, 2025.



IMPROVEMENT PLANS FOR
**15TH STREET BRIDGE OVER THE
 WICHITA DRAINAGE CANAL**
 WICHITA, KS

GENERAL NOTES & QUANTITIES

PROJECT NO.
472-2023-085864

SCALE
NONE

DRAWN	DESIGNED	CHECKED
RAM	DMU	JTH

NO.	REVISION	DATE

ISSUED FOR CONSTRUCTION 8-1-2025

SHEET NO.

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