SUMMARY OF QUANTITIES

Location \ Item	Excavation Class I m3	Excavation Class II m3	Concrete Grade 30 (AE) m3	Concrete Grade 30 (AE) (SW) kg	Reinforcing Steel Grade 420 Epoxy Coated kg	Reinforcing Steel Grade 420 kg	Pre-Drilled Pile Holes m	Steel Piles m	Steel Test Piles m	Bridge Backwall Prot. System m2	Abutment Strip Drain m2	Bridge Handrail (Steel) m	Bridge Drainage System kg	Bridge Plaque Each
Abutment No. 1	59	—	—	**	**	—	24.50	45.60	11.40	23.6	22.15	—	—	—
Pier No. 1	—	45	35.7	—	70	790	—	112.50	—	—	—	—	—	—
Pier No. 2	—	45	35.7	—	70	790	—	101.60	12.70	—	—	—	—	—
Abutment No. 2	59	—	—	**	**	—	17.20	47.20	—	23.6	22.15	—	—	—
														—
Substr. Total	118	90	△ 74.2	—	—	△ 1 580	41.70	306.90	24.10	47.2	44.3	—	—	—
Superstr. Total	—	—	—	349.3	46 720	—	—	—	—	—	—	112.6	589	1
Total	118	90	△ 74.2	349.3	46 720	△ 1 580	41.70	306.90 †	24.10 †	47.2	44.3	112.6	589	1

△ Includes quantity for concrete end posts.

** Quantities are included in the Superstructure Total Quantity.

† Summary of Piling
Abutment No. 1 5 piles @ 11.40 m
Pier No. 1 9 piles @ 12.50 m
Pier No. 2 9 piles @ 12.70 m
Abutment No. 2 4 piles @ 11.80 m

* NOTE: Only steel pile HP250X62 shall be used on this project

INDEX TO BRIDGE DRAWINGS

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16	Pier Details
17–18	Superstructure Details
19–22	Rail Details
23	Bill of Reinforcing Steel and Bending Diagrams
	Standards
24	Standard Pile Details
25	Bridge Excavation
26	Supports and Spacers for Reinforcing Steel

GENERAL NOTES

EMBANKMENT: The Grading Contractor shall complete the embankment at the abutments as shown on the Bridge Excavation sheet prior to driving abutment piling.

BRIDGE EXCAVATION: Elevation 392.473 shall designate the Excavation Boundary Plane of Class I and Class II Excavation; Class I above the plane, Class II below the plane. See Bridge Excavation sheet for limits of pay excavation.

BACKFILL COMPACTION: Backfill compaction shall be required at abutments.

PILING : Drive all piling to an elevation of 384.000. Driving shall stop when in the opinion of the Engineer additional driving may damage the piling. Drive all piling to the minimum computed bearing value equal to the Allowable Pile Driving Load:

Abut. No. 1 500 kN Pier No. 1 500 kN

Abut. No. 2 500 kN Pier No. 2 500 kN

When using the pile driving formula in the KDOT Specifications, the Contractor shall drive the pile to the Allowable Load and penetration, but in no case shall the pile be driven to MORE THAN 750 kN.

At any location where problems are experienced, pile damage is suspected, or apparent refusal occurs significantly above the design pile tip elevation, the Engineer may request that the Pile Driving Analyzer (PDA) equipment be used.

CANTILEVERED SIDEWALK: The concrete for the cantilevered sidewalks shall be placed after the falsework for the bridge slab has been released or struck.

CORRAL RAIL: Build the rail after the falsework is struck or released.

CONCRETE: Superstructure concrete is bid as Concrete Grade 30 (AE)(SW). Substructure concrete is bid as Concrete Grade 30 (AE). Bevel all exposed edges of all concrete with a 20 mm triangular moulding, except as otherwise noted on the plans. Construction joints are optional with the Contractor, but if used, place only at locations shown, or at locations approved by the Engineer.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise note. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615M, Grade 420.

BROKEN CONCRETE: Waste the broken concrete from the existing bridge on sites provided by the Contractor and approved by the Engineer.

CAMBER: Provide camber as shown on the Camber Diagram unless the contractor uses either long span steel beam falsework (concrete dead load deflection greater than 5 mm) or timber falsework with greater than 3.75 m clear span. If either case exists, submit falsework plans which show the additional required camber.

FALSEWORK: Leave the falsework in place for the entire unit until 15 days after the last concrete pour for the unit or longer as directed by the Engineer. Notify the Engineer a minimum of two days prior to removal of the falsework. The Engineer will measure and record bridge deck elevations before the falsework is struck.

CONCRETE PLACING SEQUENCE: The sequence of placing concrete in the slab and curbs shall be as shown, or the Contractor shall submit an alternate placing sequence for review. The alternate placing sequence shall be given to the Engineer at the Preconstruction Conference. The alternate placing sequence shall include the proposed rate of concrete placement in cubic meters per hour, the plant capacity, a description of the equipment used in placing the concrete, proposed admixtures, and the quantity of concrete in each placing segment. Any additional cost for the Contractor's alternate plan of placing concrete, including admixtures, shall be at the Contractor's expense and shall be considered subsidiary to the bid item, "Concrete (Grade 30) (AE)(SW)". Approval of the Contractor's alternate sequence is required prior to placement of concrete in the deck.

REMOVAL OF EXISTING STRUCTURES: Removal of 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.

PRE-DRILLED PILE HOLES: The piles at both abutments shall be predrilled to the elevations designated on the plans and then driven to the minimum computed design bearing value. After each pile is driven to final position, the void around the pile shall be backfilled completely with loose sand. All labor, materials and incidentials required to perform this work shall be included in the bid item, "Pre-Drilled Pile Holes".

PROJECT COORDINATION: The Contractor shall coordinate the bridge construction with the storm sewer and sanitary sewer construction in the area of Abutment #1.
The Contractor shall coordinate the bridge construction with the construction of the concrete lining channel improvements. Coordinate with the gas line relocation on the bridge.

DESIGN DATA

DESIGN SPECIFICATIONS:
AASHTO Specifications, 1996 Edition and latest interim Specifications. Load Factor Design

DESIGN LOADING:
MS18-44

Design Dead Load includes an allowance of 1.2 kPa for a future wearing surface.

UNIT STRESSES:

Concrete Grade 30	f'c = 30 MPa
Concrete Grade 30 (AE)	f'c = 30 MPa
Concrete Grade (AE)(SW)	f'c = 30 MPa
Reinforcing Steel (Grade 420)	fy = 420 MPa

DESIGN PILE LOAD:

Loading	Design Load (kN per Piling)	Allowable Load (kN per Piling)
Abut. No. 1 Group I (100%)	392	500
Abut. No. 2 Group I (100%)	490	500
Pier Group I (100%)	491	500

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
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MURDOCK AVENUE BRIDGE
PROJECT NAME

GENERAL NOTES AND QUANTITIES
SHEET TITLE

KJS	DPG	PAF
DESIGN BY:	DRAWN BY:	CHECKED BY:
FEB. 1999	97042	10 / 39
DATE	JOB NO.	SHEET/OF

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