STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-84071	2005	W4.1	

DATE | BY

SUMMARY OF QUANTITIES: CAST-IN-PLACE RETAINING WALLS

ITEM / WALL	CLASS III EXCAVATION (CU. YDS.)	GRADE 4.0 CONCRETE (CU. YDS.)	GRADE 4.0(AE) CONCRETE (CU. YDS.)	REINFORCING STEEL (GRADE 60) (LBS.)	REINFORCING STEEL (GRADE 60) (EPOXY COATED) (LBS.)	STEEL PILES HP 14 X 89 (LIN. FT.)	ABUTMENT STRIP DRAIN (SQ. YDS.)	METAL RAILING (SALVAGED) (LIN. FT.)	BRIDGE BACKWALL PROTECTION SYSTEM (SQ.YDS.)	TEMPORARY SHORING (LUMP SUM)	CONCRETE MASONRY COATING (SQ.YDS.)	CONCRETE SEALER (SQ.YDS.)	GRAFFITI PROTECTION SYSTEM (SQ.YDS.)
2nd Street Wall (NE)	82	4.7	9.7	1,630	-----	216	12	14	15	-------	23	23	20
2nd Street Wall (SE)	88	6.2	19.8	1,380	690	318	17	-------	20	-------	26	26	24
1st Street Wall (NE)	525	51.9	144.4	7,880	3,910	1,152	82	-------	105	-------	136	136	125
1st Street Wall (SE)	767	75.9	184.8	10,220	4,820	1,848	142	-------	150	Lump Sum	169	169	154
Total C.I.P. Walls	1,462	138.7	358.7	21,110	9,420	3,534	253	14	290	Lump Sum	354	354	323

GENERAL NOTES

DESIGN SPECIFICATIONS:
AREMA Manual for Railway Engineering, 2002

CONSTRUCTION SPECIFICATIONS:
Kansas Department of Transportation, Standard Specifications for State Road and Bridge Construction, 1990, English Version, and Special Provisions.
Applicable sections of the 2002 AREMA Manual for Railway Engineering including Chapter 8, "Concrete Structures and Foundations".
The AREMA Manual for Railway Engineering can be obtained from the following address:

American Railway Engineering and Maintenance-of-Way Association (AREMA)
8201 Corporate Drive, Suite 1125
Landover, MD 20785-2230
Telephone (301) 459-3200

DESIGN LOADING:
Earth & Other Loads -- As specified by AREMA.

Track Loading Surcharge -- Cooper E80. Model as two line loads per track at 5'-0" axle spacing. Line loads are calculated to back of footing heel.

Live Load Surcharge -- Use an equivalent height of earth due to the Track Loading Surcharge to calculate load.

Equivalent Fluid Pressure -- 37 pcf

UNIT STRESSES:

Grade 4.0 Concrete	f'c = 4,000 psi	fc = 1,600 psi
Grade 4.0 Concrete (AE)	f'c = 4,000 psi	fc = 1,600 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi	fs = 24,000 psi

CONCRETE:
Concrete in footings shall be Grade 4.0. Concrete in the walls shall be Grade 4.0 (AE). All exposed edges shall be beveled with a ¾" triangular moulding unless otherwise noted.

REINFORCING STEEL:
Reinforcing Steel shall conform to the requirements of A.S.T.M. A615 Grade 60. Epoxy coat all reinforcing steel in the front face of all walls, except 2nd Street Wall (NE). All bar spacings are center to center unless otherwise shown.
The clear distance from face of concrete to near edge or end of reinforcing bar shall be 2" unless otherwise noted.

EXCAVATION:
All excavation for the retaining walls shall be Class III Excavation. See Excavation Details for limits of pay excavation.

STRUCTURAL BACKFILL:
Compacted granular fill shall be used for all structural backfill. It shall meet the minimum soil parameters, gradation and other properties shown on the plans and in the specifications. See General Note 36 on Sheet G1.1. The Contractor is responsible for furnishing and placing compacted granular fill that meets the design and performance requirements of the project. Structural backfill shall be placed within the limits identified on the plans and in the specifications and shall be subsidiary to bid item "Class III Excavation."

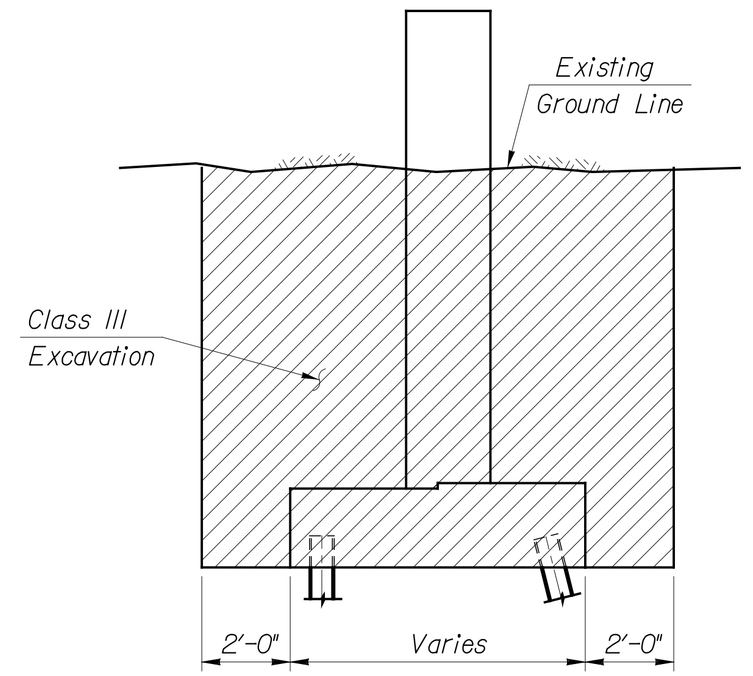
BRIDGE BACKWALL PROTECTION SYSTEM:
Apply a Bridge Backwall Protection System to the back face of the retaining walls from the top of the footings to 1'-0" below the top of the final ground line or to the top of the asphalt in accordance with the KDOT Specifications and manufacturer's recommendations. Bridge Backwall Protection System shall extend full length of walls, stopping 1'-0" from each end of wall. Prior to backfilling, repair any damage done to the system at no extra cost to the City.

ABUTMENT STRIP DRAIN:
The contractor shall excavate to the limits shown on the Excavation Details, grade the bottom of the backfill area, place the strip drain, and place the perforated pipe and the backfill.
Perforated pipe shall be placed next to the strip drain. Outside the limits of the strip drain, non-perforated pipe shall be used. Care shall be taken to enclose the perforated pipe with the extension of the filter fabric.
Compaction shall be required. See Specifications.
The Abutment Strip Drain material shall meet the requirements of KDOT Specifications.
Perforated pipe and non-perforated outlet pipe shall be corrugated polyethylene tubing and shall meet the requirements of KDOT Specifications. 4" round Perforated Pipe and 4" round Outlet Pipe are subsidiary to Strip Drain.
The bottom of the backfilled area (on top of retaining wall footing heel) shall be graded to drain and backfilled with a cohesive type soil. The soil should be a silty clay or clay under the Kansas Classification System with a minimum plasticity index of 20. The material shall be compacted to conform to Type C standards.

CONCRETE MASONRY COATING:
Concrete masonry coating shall be applied to the exposed face of the cast-in-place retaining walls from the top of the wall to the top of footing. The color of the concrete masonry coating shall be white and shall be selected from the manufacturer's standard colors. The Contractor shall provide the Engineer with a color sample for approval. A non-petroleum base form release agent shall be used on formed surfaces to be coated. See Special Provisions.

CONCRETE SEALER AND GRAFFITI PROTECTION SYSTEM:
Concrete sealer and graffiti protection system shall be applied to the exposed face of the cast-in-place retaining walls after application of the Concrete Masonry Coating. Apply concrete sealer from the top of wall to the top of footing. Apply graffiti protection system from the top of wall to 1'-6" above the top of footing. See Special Provisions.

TEMPORARY SHORING:
Temporary shoring, to the approximate limits shown in the plans, will be required to retain cut during construction of the 1st Street Wall (SE). Payment shall be at the lump sum price bid for "Temporary Shoring". See Special Provisions.



EXCAVATION DETAILS

Note:
Class III Excavation shall be computed on the basis of the cross-hatched area and shall extend 2'-0" beyond each end of retaining wall, except where adjacent to existing abutment or wall.

NO.	DATE	REVISIONS	BY	APP'D
2				
1				

CITY OF WICHITA

WICHITA CENTRAL CORRIDOR

CAST-IN-PLACE RETAINING WALLS
SUMMARY OF QUANTITIES AND GENERAL NOTES

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

This sheet designed by:

HNTB
ARCHITECTS ENGINEERS PLANNERS

Plotted on: Tuesday January 04, 2005 09:16 AM
MHayes Plot Queue: \\cbsw100\KC029049-PS
Plot Scale: 0.083333x000000 Pen Tables: \\cvpw00\Jobs\29049\Bridge\Cadd\Library\plotpen\Fullsize.pen
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