

DATE	BY

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 Design Filename: k:\b29049\brldgesDec2004\Bollard Lighting Alternate\murdock\drawings\m100.dgn.

ITEM	BASE BID ITEM QUANTITY	UNIT	ALTERNATE NO. 5 ITEM QUANTITY	UNIT
Embankment (Granular F111) Excavation (Class III)	2,944	CY	-	-
<del>Concrete Grade 4.0 (Special)</del>	<del>760</del>	<del>CY</del>	-	-
<del>Concrete Grade 4.0 (AE)</del>	<del>389</del>	<del>CY</del>	-	-
Concrete Grade 4.0 (AE)	909	CY	-	-
Concrete Masonry Coating	661	SY	-	-
Concrete Sealer	661	SY	-	-
Grout/Grout Control System	632	SY	-	-
Structural Steel (ASTM A709 Gr 50T 2) (Bridges)	440,583	LBS	-	-
<del>Structural Steel (ASTM A709 Gr 50T 2) (Plate)</del>	<del>79,064</del>	<del>LBS</del>	-	-
Structural Steel (ASTM A500, Gr. B) (Collision Beam)	20,050	LBS	-	-
Expansion Device (Sliding Plate)	127	LF	-	-
Headed Stud Anchors	3,600	EA	-	-
Reinforcing Steel (Gr. 60)	121,590	LBS	-	-
Reinforcing Steel (Gr. 60) (Epoxy-Coated)	49,030	LBS	-	-
Steel Piles (HP 14x89)	9,900	LF	-	-
Test Pile (Special) (HP 14x89)	348	LF	-	-
Dynamic Pile Test	4	EA	-	-
<del>Estimate Bearing Devices (Plate)</del>	<del>8</del>	<del>EA</del>	-	-
<del>Steel Bearing Device (EXP)</del>	<del>9,133</del>	<del>LBS</del>	-	-
Steel Bearing Device (FIX)	11,950	LBS	-	-
Bridge Handrail (Steel-Type 2)	288	LF	(198)	LF
Abutment Strip Drain	446	SY	-	-
Bridge Backwall Protection System	446	SY	-	-
Pipe Underdrains (4.0") (Type K)	170	LF	-	-
Waterproofing (Deck)	505	SY	-	-
<del>Waterproofing (Plate)</del>	<del>154</del>	<del>SY</del>	-	-

\*\* Bollard Lighting handrail (Type I & IA) bid with lighting package.

This sheet designed by:



ARCHITECTS ENGINEERS PLANNERS

SUMMARY OF BRIDGE QUANTITIES

BRIDGE GENERAL NOTES

RAILROAD BRIDGE DESIGN SPECIFICATIONS: AREMA Manual for Railway Engineering, 2002.  
 CONSTRUCTION SPECIFICATIONS Wichita Central Corridor Railroad Grade Separation Project, 25th Street to Waterman, Wichita, Kansas-Project Specifications, HNTB Corporation, 2005.  
 MATERIAL and TESTING SPECIFICATIONS: The material and test specifications, current as of the publication of the project specifications, will be used. In cases of discontinuance or material changes to the specification, the engineer will be contacted for guidance.  
 REFERENCES: Wichita Central Corridor Railroad Grade Separation Project, Douglas Avenue to 21st Street, Wichita, Kansas-Final Geotechnical Investigation Report, HNTB Corporation, September 2003.  
 BNSF Railway Guidelines, 2002.  
 BNSF Railway / Union Pacific Railroad Standard Drawings  
 Engineering and Shop Drawings for Existing Bridges at 2nd Street, 1st Street and Douglas Avenue.

HORIZONTAL & VERTICAL GEOMETRY CONTROL: Refer to Railroad and Street plans for horizontal and vertical geometry control.

The track profile grade is at the top of rail.

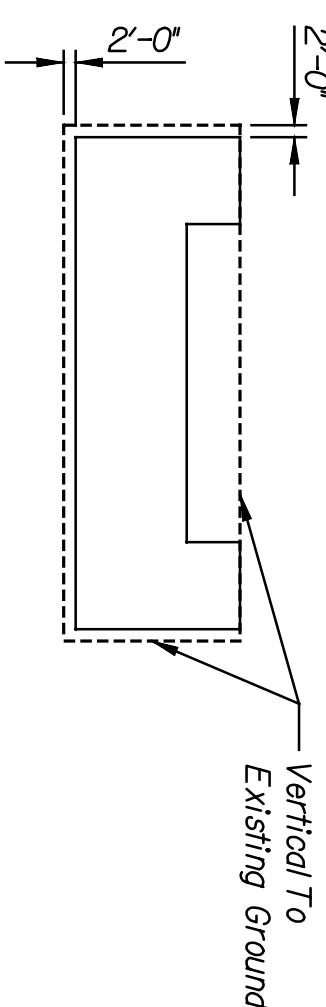
All elevations shown are U.S.G.S. Datum (NGVD 29) City Datum = U.S.G.S. Datum - 1187.41.

STRUCTURAL EXCAVATION:

Structural excavation shall be in accordance with the plans and specifications.

STRUCTURAL BACKFILL:

Structural backfill shall be located within the limits identified in the plans and specifications. Structural backfill shall meet or exceed the requirements of Embankment.



EXCAVATION FOR PAYMENT LIMITS

Abutment Footing Plan Shown

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NOTES:

Negative quantities are denoted by the number surrounded by parentheses (XX). Negative quantities are subtractions from the base bid quantities, all other quantities are additions. The extension of the negative quantities on the official bid tab will reduce the overall cost of the Alternate. This project will be awarded to the Contractor with the lowest and best total base bid amount plus alternates selected by the City, the total of which is within the Owner's approved budget.

REINFORCING: All bar bending dimensions and tolerances are in accordance with CRS/IS Manual of Standard Practice.  
 Reinforcing bars will be designated as follows: SSCOM SS = Bar Size (No. 3 to No. 18)  
 CC = Component Designator, as follows:  
 A-Abutment F-Footing D-Dowell  
 P- Pier PB-Pier Beam PC-Pier Column  
 PW-Pier Wall S-Slab/Deck R-Railing  
 C-Curb

IN = Bar Mark Sequence (00-99)  
 Reinforcing Bar Annotation Example: I1A12 A #11 Bar, located in the abutment, 12th bar in bar size/location sequence

EMBANKMENT: Fill material located within the volume bounded by the back face the abutment, back face of the wingwall(s), ends of the wingwall(s) and above the limits of structural backfill shall be classified as embankment.  
 Excavated materials not considered suitable for use as backfill or embankment shall be wasted off site. All embankment quantities are anticipated to be from an approved borrow site provided by the Contractor. Reuse of excavated materials in the embankment will only be permitted if the Contractor provides tests verifying the materials proposed for reuse meet the requirements for compacted granular fill. Embankment materials shall consist of compacted granular fill with a minimum effective internal friction angle of 32 degrees when tested by the standard direct shear test AASHTO T-236 utilizing a sample of the material compacted to 100% of maximum laboratory dry density of optimum moisture content. For all embankment materials placed on the project, except for the UPRR track construction work between 17th and 21st Streets, the moisture content of the fill at the time of placement and compaction shall be within the range of 3% below to 3% above the optimum moisture content value determined by the Standard Proctor (ASTM D-698). Embankment shall be compacted to at least 100% of the material's maximum Standard Proctor dry density (ASTM D-698). Embankment materials shall be free of organic material, debris and less than 10% by weight shall pass the no. 200 sieve. The fill shall be placed and compacted in lifts of 8 inches or less in loose thickness. Where the existing embankment is left in place, new embankment shall be stair-stepped into the existing embankment. The Contractor is responsible for furnishing and placing compacted granular fill that meets the design and performance requirements of the project. Payment for embankment shall be based on plan quantities. No additional payment will be authorized unless the Engineer approves embankment beyond the plan limits.

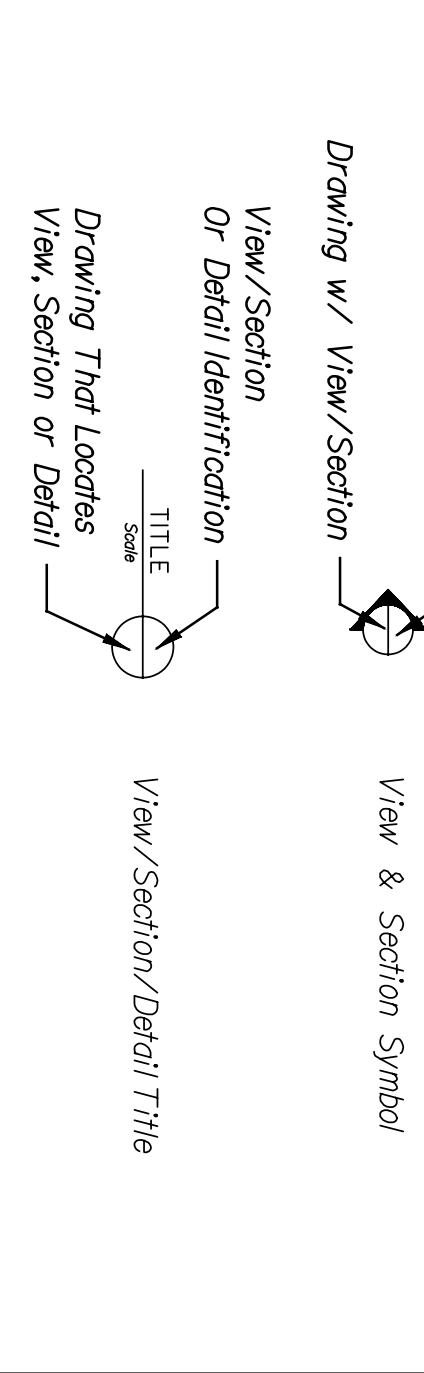
PROTECTIVE SHORING: Provide protective shoring as required by the BNSF Railway Federal, state and local regulations.  
 Additional shoring may be required.  
 Provide protective shoring as indicated in the plans and specifications.  
 Protective shoring plans & calculations shall be designed and sealed by a professional engineer licensed in the State of Kansas.  
 Protective shoring calculations, plans and details shall be submitted eight (8) weeks prior to commencing shoring operations.  
 Protective shoring calculations, plans and details shall be submitted to the Engineer and distributed to the BNSF, UPRR and WUTA for approval. Protective shoring construction shall not begin until approved by the Engineer and the railroads.

QUANTITIES: Items not listed separately in the Summary of Bridge Quantities are subsidiary to other items.  
 QUALITY CONTROL: Prior to placing structural steel, verify that the bridge seat elevations are equal to the plan elevation +/- 1/8" and submit the documentation of the elevations to the Engineer.

STATE	PROJECT NO.	YEAR	TOTAL SHEETS
KANSAS	472-84071	2005	BL3.3

ABBREVIATIONS:	IN.	Inches
AASHTO American Association of State Highway & Transportation Officials	KIP	1000 Pounds
ACI American Concrete Institute	KSF	Kips per Square Foot
AISC American Institute of Steel Construction	L.F.	Linear Feet
ANSI American National Standards Institute	Lbs.	Pounds
AREMA American Railway Engineering and Maintenance-of-Way Association	mil	0.001 inches
ASME American Society of Mechanical Engineers & Materials	Min.	Minimum
ASTM American Society of Testing and Materials	Max.	Maximum
AWA American Welding Society	N/A	Not Applicable
BNSF	N.F.	Near Face
Bm	P.C.F.	Pounds per Cubic Foot
BNSF	PLF	Pounds per Linear Foot
B/	P.L.	Point of Intersection
BNSF	P.V.C.	(Horizontal Curves)
Bm	P.V.I.	Point of Vertical Curvature
BNSF	P.V.T.	Point of Vertical Intersection
Bm	P.V.T.	Point of Vertical Tangency
BNSF	R	Radius
CRSI Concrete Reinforcing Steel Institute (www.crsi.org)	S.C.	Spiral to Curve Point
C.F.	Sim.	Similar
C.S.	S.T.	Spiral to Tangent Point
C.Y.	SSFC	SSFC: The Society for Protective Coatings
dft	SY	Square Yards
E.F.	T/	Top of
E.S.	T.S.	Tangent to Spiral Point
E.W.	TYP.	Typical
F	U.N.C.	Unless Noted Otherwise
F.F.	USACOE	U.S. Army Corps of Engineers
FT.	UPRR	Union Pacific Railroad
Gov.	WUTA	Wichita Union Terminal Association

SYMBOLS		
∅	Diameter Symbol	
⊕	Geotechnical Boring Symbol	
⊙	Detail Symbol	
⊕	View/Section Identification	
⊕	View & Section Symbol	
⊕	View/Section Or Detail Identification	
⊕	View/Section/Detail Title	
≡	Water Surface Elevation Symbol	



NO.	DATE	REVISIONS	BY	APP'D.
3				
2				
1				

**CITY OF WICHITA**  
**WICHITA CENTRAL CORRIDOR**  
**ALTERNATE 5**  
**MURDOCK**

**SUMMARY OF QUANTITIES AND GENERAL NOTES**

SHEET NO.	OF	SCALE AS NOTED	APP'D.
DESIGNED BY	DATE	DRAWN BY	DATE
CHECKED BY	DATE	INCHES	DATE
DESIGNER	SCALE	BY	DATE