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 Design Filename: k:\b29049\BridgesDec2004\Base Bld\Murdock\drawings\ml00.dgn.

ITEM	ITEM QUANTITY	UNIT
Embankment (Granular Fill)	2,944	CY
Excavation (Class III)	919	CY
Concrete Grade 4.0 (AE)	760	CY
Concrete Grade 4.0 (AE)	389	CY
Concrete Grade 4.0 (AE)	909	CY
Concrete Masonry Coating	661	SY
Concrete Sealer	661	SY
Griffin Control System	632	SY
Structural Steel (ASTM A709 Gr 50T2)	440,583	LBS
Structural Steel (Bridges)		
Structural Steel (Pier/Bridge)	79,064	LBS
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
Electric Bearing Devices (Type 1)	8	EA
Electric Bearing Devices (Type 2)		
Steel Bearing Device (EXP)	9,133	LBS
Steel Bearing Device (FIX)	11,950	LBS
Bridge Handrail (Steel-Type 2)	288	LF
Abutment Strip Drain	446	SY
Bridge Backwall Protection System	446	SY
Pipe Underdrains (4.0") (Type K)	170	LF
Waterproofing (Deck)	505	SY
Waterproofing (Pier/Bridge)	154	SY

This sheet designed by:



ARCHITECTS ENGINEERS PLANNERS

**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.  
Wichita Central Corridor Railroad Grade Separation Project, Douglas Avenue to 21st Street, Wichita, Kansas-Hazardous Materials Screening Report, HNTB Corporation, September 2000.  
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.

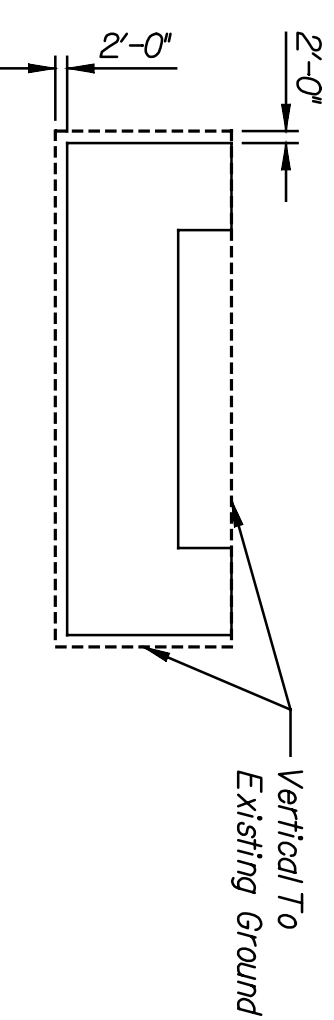
**HORIZONTAL & VERTICAL GEOMETRY CONTROL:**  
Refer to Railroad and Street plans for horizontal and vertical geometry control.

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**

**REINFORCING:**  
All bar bending dimensions and tolerances are in accordance with CRSI's 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-Dowel
P-Pier	PB-Pier Beam	PC-Pier Column
PW-Pier Wall	S-Sub/Deck	R-Railing
C-Curb		

IN = Bar Mark Sequence (00-99)  
Reinforcing Bar Annotation Example:  
11A12

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.

Provide protective shoring as indicated in the plans and specifications. Additional shoring may be required.

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	83.3

**ABBREVIATIONS:**  
AASHTO American Association of State Highway & Transportation Officials  
ACI American Concrete Institute  
AISC American Institute of Steel Construction  
ANSI American National Standards Institute  
AREMA American Railway Engineering and Maintenance-of-Way Association  
ASME American Society of Mechanical Engineers & Materials  
ASTM American Society of Testing and Materials  
AWS American Welding Society  
BNSF Burlington Northern and Santa Fe Railway Company  
Brim Bottom  
CRSI Concrete Reinforcing Steel Institute (www.crsi.org)  
C.F. Cubic Feet  
C.S. Curve to Spiral Point  
C.Y. Cubic Yards  
dft dry film thickness  
E.F. Each Face  
E.S. Equal Spaces  
E.W. Each Way  
F.C. Minimum 28-day Concrete Compressive Strength  
F.F. Fahrenheit  
F.T. Far Face  
Feet  
Golv. Galvanized  
U.N.C. Unless Noted Otherwise  
U.S.A.C.O.E U.S. Army Corps of Engineers  
UPRR Union Pacific Railroad  
WUTA Wichita Union Terminal Association

IN. Inches  
KIP 1000 Pounds  
KSF Kips per Square Foot  
L.F. Linear Feet  
Lbs. Pounds  
mils 0.001 inches  
Min. Minimum  
Max. Maximum  
N/A Not Applicable  
N.F. Near Face  
P.C.F. Pounds per Cubic Foot  
P.L.F. Pounds per Linear Foot  
P.V.C. Point of Vertical Curvature (Horizontal Curves)  
P.V.I. Point of Vertical Intersection  
P.V.T. Point of Vertical Tangency  
R Radius  
S.C. Spiral to Curve Point  
S.M. Similar  
S.T. Spiral to Tangent Point  
SSFC Society for Protective Coatings  
SY Square Yards  
T/ Top of  
T.S. Tangent to Spiral Point  
T.Y. Typical

View/Section Identification  
Drawing w/ View/Section  
View & Section Symbol

Detail Identification  
Drawing w/ Detail  
Detail Symbol

View/Section Identification  
Drawing That Locates View, Section or Detail  
View/Section/Detail Title  
Water Surface Elevation Symbol

SYMBOLS  
Diameter Symbol  
Geotechnical Boring Symbol

View/Section Identification  
Drawing w/ View/Section  
View & Section Symbol

Detail Identification  
Drawing w/ Detail  
Detail Symbol

View/Section Identification  
Drawing That Locates View, Section or Detail  
View/Section/Detail Title  
Water Surface Elevation Symbol

View/Section Identification  
Drawing That Locates View, Section or Detail  
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View/Section/Detail Title  
Water Surface Elevation Symbol

SHEET NO.	OF	SCALE AS NOTED	APP'D.
1	3	AS NOTED	
2	3	AS NOTED	
3	3	AS NOTED	

NO.	DATE	REVISIONS	BY	APP'D.

DESIGNED	CHECKED	SCALE	DATE	DESIGNED	CHECKED	SCALE	DATE

**CITY OF WICHITA**  
**MURDOCK**  
**WICHITA CENTRAL CORRIDOR**

**SUMMARY OF QUANTITIES AND GENERAL NOTES**

LOCATION: BNSF BR. 2115 WICHITA, KS  
LINE SEGMENT: 1400