

SUMMARY OF BRIDGE QUANTITIES

ITEM	ITEM QUANTITY	UNIT
Embankment (Granular Fill)	263	CY
Excavation (Class III)	2,422	CY
Concrete Grade 4.0 (AE) (Special)	620	CY
Concrete Grade 4.0 (AE)	316	CY
Concrete Grade 4.0 (AE)	749	CY
Concrete Masonry Coating	516	SY
Concrete Sealer	516	SY
Grout/Grout Control System	458	SY
Structural Steel (ASTM A709 Gr 50T 2) (Bridges)	522,572	LBS
Structural Steel (ASTM A709 Gr 50T 2) (Abutment Bridges)	67,984	LBS
Structural Steel (ASTM A500 Gr B) (Collision Beam) Expansion Device (Sliding Plate)	17,244	LBS
Expansion Device (Sliding Plate)	127	LF
Headed Stud Anchors	3,696	EA
Reinforcing Steel (Gr. 60)	93,230	LBS
Reinforcing Steel (Gr. 60) (Epoxy-Coated)	37,300	LBS
Steel Piles (HP 14x89)	7,910	LF
Test Pile (Special) (HP 14x89)	340	LF
Dynamic Pile Testing	4	EA
Temporary Shoring	1	LS
Expansion Bearings (H/A)	8	EA
Expansion Bearings (H/A) (Plaster Bridges)		
Steel Bearing Device (EXP)	8,737	LBS
Steel Bearing Device (FIX)	10,095	LBS
Bridge Handrail (Steel-Type 2, 2A)	252	LF
Abutment Strip Drain	354	SY
Bridge Backwall Protection System (Type K)	354	SY
Pipe Underdrains (4.0") (Type K)	150	LF
Waterproofing (Deck)	439	SY
Waterproofing (Plaster Bridges)	133	SY
Remove Structures (Bridges)	1	EA

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.  
 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.

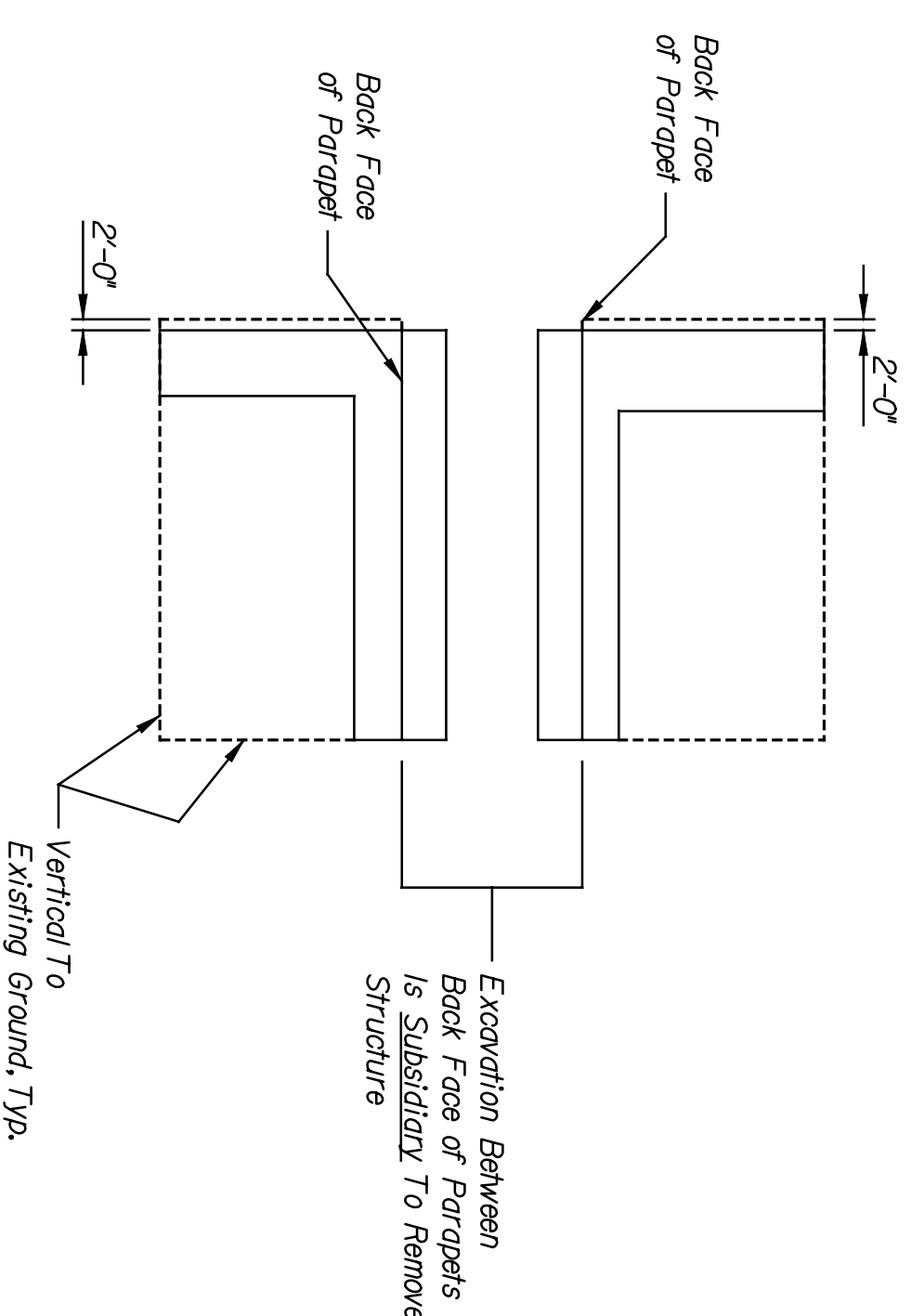
HORIZONTAL & VERTICAL GEOMETRY CONTROL: Refer to Railroad and Street plans for horizontal and vertical geometry control.

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

Abutment Footing Plan Shown

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-Par P-B-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

11A12 A #11 Bar, located in the abutment, 12th bar in bar size/location sequence

EMBAKMENT:

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.

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.

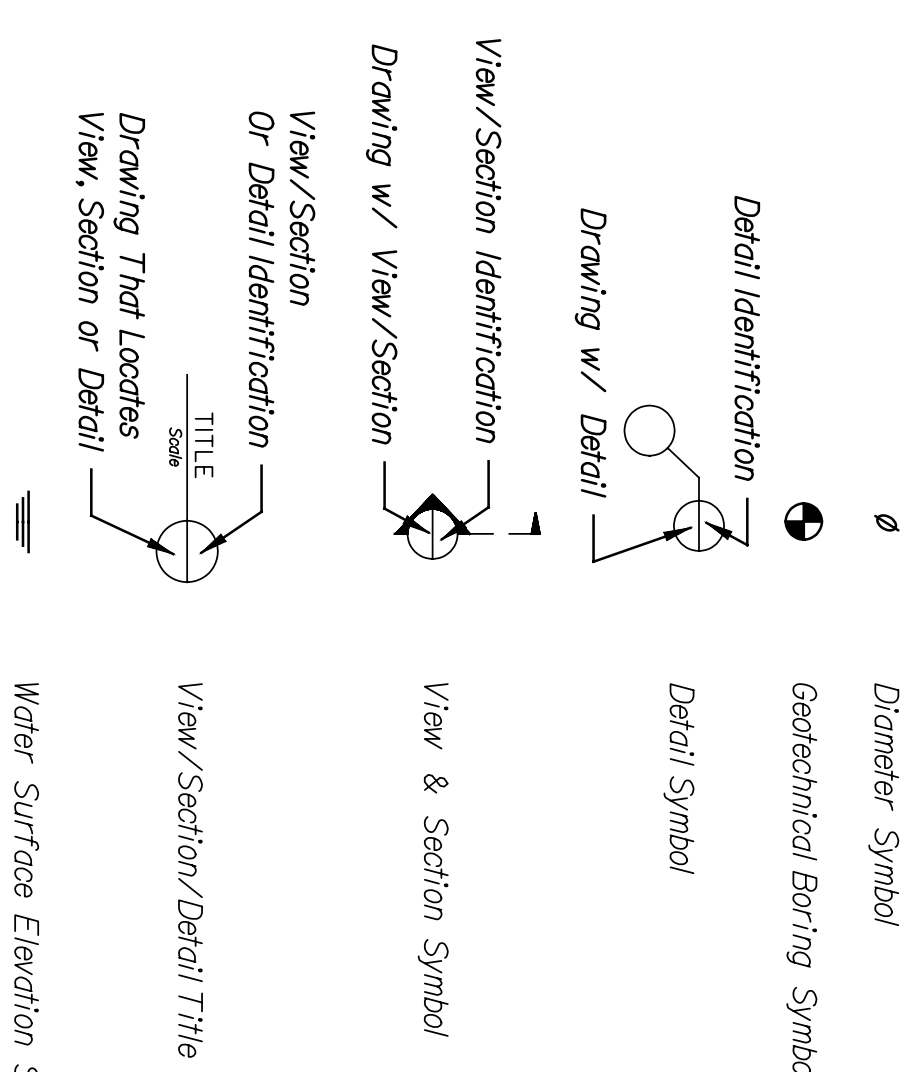
QUALITY CONTROL: Prior to placing structural steel, verify that the bridge seat elevations are equal to the plan elevation +/- 1/8" and submit the documentation of the elevations to the Engineer.

STATE	PROJECT NO.	YEAR	TOTAL SHEETS
KANSAS	472-84071	2005	B6.3

ABBREVIATIONS:

AASHTO	American Association of State Highway & Transportation Officials	IN.	Inches
ACI	American Concrete Institute	KIP	1000 Pounds
AISC	American Institute of Steel Construction	KSF	Kips per Square Foot
ANSI	American National Standards Institute	L.F.	Linear Feet
AREMA	American Railway Engineering and Maintenance-of-Way Association	Lbs.	Pounds
ASME	American Society of Mechanical Engineers	Max.	0.001 inches Minimum Maximum
ASTM	American Society of Testing & Materials	N/A	Not Applicable
AMS	American Welding Society	N.F.	Near Face
B/	Battion of Burlington Northern and Santa Fe Railway Company	PCF	Pounds per Cubic Foot
BNSF	Battion of Burlington Northern and Santa Fe Railway Company	PLF	Pounds per Linear Foot
Btm	Bottom	P.L.	Point of Intersection (Horizontal Curves)
CRSI	Concrete Reinforcing Steel Institute (www.crsi.org)	P.V.C.	Point of Vertical Curvature
C.F.	Cubic Feet	P.V.I.	Point of Vertical Intersection
C.S.	Curve to Spiral Point	P.V.T.	Point of Vertical Tangency
C.Y.	Cubic Yards	R	Radius
dft	dry film thickness	S.C.	Spiral to Curve Point
E.F.	Each Face	S.S.	Similar
E.S.	Equal Spaces	Sim.	Similar
E.W.	Each Way	S.T	Spiral to Tangent Point
Fc	Minimum 28-day Concrete Compressive Strength	SSPC	SSPC-The Society for Protective Coatings
F	Fatigue	SY	Square Yards
F.F.	For Face	T/	Top of
FT.	Feet	T.S.	Tangent to Spiral Point
Golv.	Galvanized	TYP.	Typical
		U.M.O.	Unless Noted Otherwise
		USACOE	U.S. Army Corps of Engineers
		UPRR	Union Pacific Railroad
		WUTA	Wichita Union Terminal Association

SYMBOLS



SHEET NO.	OF	SCALE AS NOTED	APPD.	DESIGNED	BY	DATE	TRACED	BY	DATE
1	1	AS NOTED		BJM					
2	1	AS NOTED							
3	1	AS NOTED							

REVISIONS

NO.	DATE	BY	APPD.

CITY OF WICHITA  
 IST STREET  
 SUMMARY OF QUANTITIES AND GENERAL NOTES

LOCATION: BNSF BR. 20.2  
 WICHITA, KS  
 LINE SEGMENT 1400