ESTIMATED QUANTITIES

ITEM		SUBSTR.	SUPERSTR.	TOTAL
Bridge Approach Slab (Bridge)	sq. yd.	-	374	374
Pedestrian Fence (Structures)	lin. ft.	-	302	302
Structural Steel Piles (12 in.)	lin. ft.	1104	-	1104
Pile Point Reinforcement	each	16	-	16
Class B Concrete (Substructure)	cu. yd.	62.7	-	62.7
Slab on Steel	sq. yd.	-	918	918
** Safety Barrier Curb	lin. ft.	346	-	346
Sidewalk (Bridges)	sq. ft.	-	3328	3328
Form Liners	sq. yd.	-	70.4	70
Conduit System on Structure	lump sum	-	-	1
Temporary Coating-Concrete Bents (Weathering Steel)	lump sum	-	-	1
Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50W	lbs.	232020	-	232020
Vertical Drain at End Bents	each	2	-	2
Laminated Neoprene Bearing Pad (Tapered)	each	-	16	16
Corrugated Metal Pipe Pile Spacers	each	16	-	16

** Barrier curb shall be cast-in-place.
All concrete above the construction joint in the end bents is included in the Estimated Quantities for Slab on Steel.
All reinforcement in the end bents is included in the Estimated Quantities for Slab on Steel.
All concrete and reinforcing steel in sidewalk will be considered completely covered by the contract unit price for Sidewalk (Bridges).
Laminated (tapered) neoprene bearing pads shall be in accordance with Sec 716.

FOUNDATION DATA

TYPE	DESIGN DATA	BENT NO. 1	BENT NO. 2
Load Bearing Pile	Pile Type and Size	HP12x63	HP12x63
	Number, ea	8	8
	Approximate Length per Each, ft	58	80
	Pile Driving Verification Method	Modified Gates Formula	Modified Gates Formula
	Minimum Nominal Axial Compression Resistance, kip	806	806
	Hammer Energy Required, ft-lb	25,800	25,800

Manufactured pile point reinforcement shall be used on all piles in this structure at Bents 1 & 2.

Load Bearing Pile:
Minimum Nominal Axial Compressive Resistance = Maximum Factored Loads/Resistance Factor

ESTIMATED QUANTITIES FOR SLAB ON STEEL

ITEM		TOTAL
Class B-2 Concrete	cu. yd.	~~91.0~~ 254.3 △1
Reinforcing Steel	lbs.	4,810
Reinforcing Steel (Epoxy Coated)	lbs.	82,435

The table of Estimated Quantities for Slab on Steel represents the quantities used in preparing the cost estimate for concrete slabs. The area of the concrete slab will be measured to the nearest square yard with the horizontal dimensions as shown on the plan of slab. Payment for prestressed panels, stay-in-place forms, conventional forms, all concrete and coated and uncoated reinforcing steel will be considered completely covered by the contract unit price for the slab. Variations may be encountered in the estimated quantities but the variations cannot be used for an adjustment in the contract unit price.

Methods of forming the slab shall be as shown on the plans and in accordance with Sec 703.
All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC 4 and a finish Type I, II, or III.

The Estimated Quantities for Slab on Steel are based on skewed precast prestressed end panels.

The prestressed panel quantities are not included in the table of Estimated Quantities for Slab on Steel.

GENERAL NOTES:

1. The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the railroad's ditches and/or drainage structures.
2. Final vertical clearance from top of rails to bottom of superstructure shall be at least 23'-6". Track elevations shall be verified in the field prior to construction to determine if the final vertical clearance shown will be obtained.
3. The contractor must submit a proposed method of erosion and sediment control and have the method approved by the railroad.
4. All shoring systems that impact the railroad's operations and/or supports the railroad's embankment shall be designed and constructed per current railroad guidelines for temporary shoring.
5. All demolitions within the railroad's right-of-way and/or demolition that may impact the railroad's tracks or operations shall be in compliance with the railroad's demolition guidelines.
6. Erection over the railroad's right-of-way shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.
7. Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment.
8. False-work clearances shall comply with minimum construction clearances.
9. All permanent clearances shall be verified by the engineer before project closing.
10. Barrier curb is closed type. No drainage will be discharged on railroad right-of-way.

GENERAL NOTES:

Design Specifications:
2010-AASHTO LRFD 5th Edition
Load and Resistance Factor Design
Seismic Design Category = A
Seismic Peak Horizontal Ground Acceleration = 0.04

Design Loading:
HL-93 (LRFD, Superstructure, LRFD Substructure)
35#/Sq. Ft. future wearing surface.
Earth - 120 #/Cu. Ft., Equivalent Fluid Pressure 45#/Cu. Ft.

Design Unit Stresses:

Class B Concrete (Substructure)	f'c = 3,000 psi
Class B-1 Concrete (Safety Barrier Curb)	f'c = 4,000 psi
Class B-2 Concrete (Superstructure, except Safety Barrier Curb)	f'c = 4,000 psi
Reinforcing Steel (Grade 60)	fy = 60,000 psi
Structural Steel (ASTM A709 Grade 50W)	fy = 50,000 psi
Steel Pile (ASTM A709 Grade 50)	fy = 50,000 psi

For Precast Prestressed Panel Stresses, see Sheet No. 144.

Neoprene Pads:
Bearings shall be 60 durometer neoprene pads.
Laminated Neoprene Bearing Pads (Tapered) & Laminated Neoprene Bearing Pads shall be in accororddance with Sec 716.

Fabricated Steel Connections:
Field Connections shall be made with 3/4" diameter high strength bolts and 13/16" diameter holes, except as noted.

Joint Filler:
All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2", unless otherwise shown.

Structural Steel Protective Coatings:
Protective Coating:
System H in accordance with Sec 1081. Portions of the structural steel embedded in or in contact with concrete, including but not limited to the top flange of girders, shall be coated with not less than 2.0 mils of the prime coat for system H.
Prime Coat:
The prime coat shall be applied in the fabrication shop. The cost of the prime coat will be considered completely covered by the contract unit price for fabricated structural steel.

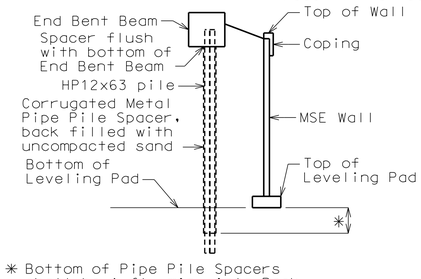
Concrete Protective Coating:
The coating for concrete bents (Weathering Steel) shall be applied on all concrete surfaces above the ground line including MSE retaining wall in accordance with Sec 711.

Concrete and masonary protective coating shall be applied on all exposed concrete and stone areas in accordance with Sec 711.

Traffic Handling:
20th Street will be open to thru traffic in the vicinity of the bridge.
Traffic will use a detour to bypass the construction area. See Roadway Plans.

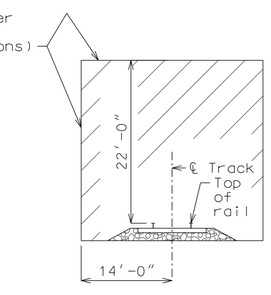
Miscellaneous:
"Sec" refers to the sections in the standard and supplemental specifications unless specified otherwise.

MSE Wall:
The contractor shall be solely responsible to coordinate construction of the wall with Bridge and Roadway construction and ensure that the Bridge and Roadway construction, resulting or existing obstructions, shall not impact the construction or performance of the wall. Soil reinforcement shall be designed and placed to avoid damage by pile driving, utility and sign foundations. (See Roadway and Bridge Plans.)



* Bottom of Pipe Pile Spacers shall be 1 ft. min. into Rock or 5 ft. min. into Soil.

DETAIL OF PILING AT END BENT



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE
(Normal to railroad)
(Not to scale)

STATE OF MISSOURI
David J. Glastetter
NUMBER PE-2000150018
PROFESSIONAL ENGINEER
THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED 8/30/2013
ROUTE N/A | STATE MO
DISTRICT BR | SHEET NO. 133
COUNTY JASPER
JOB NO. TDG-3200(718)
CONTRACT ID.
PROJECT NO.
BRIDGE NO. 2205040

DESCRIPTION | DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

2400 PERSHING ROAD
SUITE 400
KANSAS CITY, MO 64108
PHONE: (816)329-8600
FAX: (816)329-8601
TranSystems
MO STATE CERTIFICATE OF AUTHORITY # 273
ENGINEERING

Detailed MAY, 2013
Checked JUL, 2013

GENERAL NOTES AND QUANTITIES

Note: This drawing is not to scale. Follow dimensions.