GENERAL NOTES:

Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Seismic Performance Category A
Acceleration Coefficient = 0.04

All concrete for leveling pad and coping shall be Class B or B-1 with f'c = 4000 psi.

The MSE wall system shall be built vertical.

The MSE wall system shall be a large block wall system.

Factor of safety shall be 2.0 for overturning, 1.5 for sliding and 2.0 for bearing.

The cost of joint filler, complete-in-place, will be considered completely covered by the contract unit price for Concrete Traffic Barrier (Special). See Roadway Plans.

For seismic design the factor of safety shall be 1.5 for overturning and 1.1 for sliding.

Φ = 26° for backfill material to be retained by the mechanically stabilized earth wall system.

Φ = 24° for foundation soil material the wall is to rest on.

$\Phi \geq$ 34° for the select granular backfill for structural systems.

Design Φ = 34° for the select granular backfill for structural systems.

The boring logs or other factual records of subsurface data and investigations performed for the design of this project will be provided in the bridge electronic deliverable file or available from the Project Contact upon written request.

A filter cloth meeting the requirements for a Separation Geotextile material shall be placed between the select granular backfill for structural systems and the backfill being retained by the mechanically stabilized earth wall system.

Topmost layer of reinforcement shall be fully covered with select granular backfill for structural systems, as approved by the wall manufacturer, before placement of the Separation Geotextile.

Coping shall be required on this structure. Bond breaker (roofing felt or other approved alternate) between wall panel and coping required if coping is cast in place.

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, guardrail post installation, utility and sign foundations. (See Roadway and Bridge plans.)

MSE wall subgrade soils supporting the entire reinforced backfill zone shall exhibit suitable bearing capacity and be free of soft and/or otherwise unsuitable zones. The entire wall foundation shall be proof-rolled prior to placement of any new fill. Proof-rolling consists of rolling the ground surface with a loaded tandem axle dump truck or similar heavy rubber tired construction equipment and noting any areas which rut or deflect during rolling. If unsuitable soils are identified during proof-rolling, or otherwise identified during inspection, they should be remediated and documented in accordance with recommendations from a qualified representative of the Geotechnical Engineer. Unsuitable zones may be areas that perform poorly during proof-rolling, or material types that are unacceptable for foundation materials (deleterious material such as old construction debris, trash, etc. or other as determined by the construction inspector).

Panel and coping reinforcement shall be epoxy coated.

~~The allowable bearing pressure shall be 5 ksf~~ 1

Anchorage reinforcement shall be spaced to avoid roadway drainage system behind wall.

Based upon the wall heights, preliminary design computations indicate that an allowable bearing capacity of up to 7,000 psf may be required. The cut soil subgrade is not anticipated to exhibit 7,000 psf allowable bearing pressure. It is therefore anticipated that subgrade remediation will be required to achieve the anticipated 7,000 psf bearing capacity. The bid item "Select Granular Backfill (Special)", as indicated in the plans, has been established for subgrade remediation to improve the allowable bearing capacity. The final wall design (signed and sealed by a Professional Engineer registered in the State of Missouri) will be the Contractor's responsibility. Encountered conditions should be observed during construction, and field decisions should be made to determine an appropriate approach to achieve the allowable bearing pressures required by the final wall design. The Contractor shall be responsible for achieving the allowable bearing capacity required by the final wall design. Quantities established for subgrade remediation may increase or decrease based on the final wall design and geotechnical engineering review. Approved changes to the Select Granular Backfill (Special) quantities shall be paid for at the contract unit price. 1

Adjustment in the vertical alignment of the drainage pipes from that depicted in the plans may be necessary to ensure positive flow out of the drainage system.

Outlet ends of pipes shall be located to avoid clogging or flow into the drainage system.

The MSE wall system shall be built in accordance with Sec. 720.

Temporary Coating for concrete bents shall be applied to all exposed concrete areas of MSE walls under the bridge end bents in accordance with Sec 711.

Sacrificial Graffitti Protection System shall be applied to all exposed concrete areas of MSE walls in accordance with Sec 711.

MSE Wall Systems Data Table

Proprietary Wall Systems		Combination Wall Systems			
Manufacturer	System	Facing Unit Manufacturer	Facing Unit	Geogrid Manufacturer	Geogrid

MSE Wall Systems Data Table is to be completed by Engineer's construction personnel to record the manufacturer of the proprietary wall system or the manufacturers of the combination wall system that was used for constructing the MSE wall.

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ESTIMATED QUANTITIES FOR MSE WALL

Item		Total
Sacrificial Graffiti Protection System	lump sum	1
Mechanically Stabilized Earth Wall Systems	sq. ft.	27,848
Form Liners for MSE Wall Systems	sq. yd.	126
Select Granular Backfill (Special)	cu. yd.	3,476
Geogrid	sq. yd.	1,723

Conduit Notes:
Minimum bend radius for conduit is 12".

All conduit shall be rigid non-metallic schedule 40 heavy wall PVC (polyvinyl chloride plastic) with 3" min. cover in concrete. Each section of conduit shall bear the Underwriters Laboratories, Inc., (UL) label.

Shift reinforcing steel in field where necessary to clear conduit and junction boxes.

Light standards, wiring and fixtures shall be furnished and installed by others.

For details of light standards and wiring, see electrical plans.

Expansion fittings shall be placed as shown and set in accordance with the manufacturer's requirements and based on the air temperature at the time of setting given an estimated total expansion movement of 1 inches at open and filled joints using a maximum temperature range of 120° F and a maximum temperature of 110° F.

All barrier curb junction boxes shall be PVC molded in accordance with Sec 1062 and designed for flush mounting. The conduit terminations shall be permanent or separable. The terminations and covers shall be of watertight construction and shall meet requirements for NEMA 4 enclosure.

Placement of junction boxes and covers complete-in-place shall be flush with the roadway face of the corral rail. Junction boxes and covers may be recessed up to 1/4".

Drainage shall be provided at low points or other critical locations of all conduits and all junction boxes in accordance with Sec 707. All conduits shall be sloped to drain where possible.

Payment for furnishing and installing Conduit System, complete-in-place, will be considered completely covered by the contract lump sum price for Conduit System on Structure.

RETAINING WALL #2 20TH STREET NEAR END BENT NO. 2 OF BRIDGE A0427

ROAD FROM RTE. 43 TO I-49
ABOUT 1.3 MILES SSE. OF DOWNTOWN JOPLIN
STA. 255+84.24 ℄ 20TH STREET

STD. 607.11

Detailed MAY, 2013
Checked JUL, 2013

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

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	STATE
N/A	MO
DISTRICT	SHEET NO.
BR	128
COUNTY	
JASPER	
JOB NO.	
TDG-3200(718)	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
2205040	

DESCRIPTION
DATE

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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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MO STATE CERTIFICATE OF AUTHORITY # 273
ENGINEERING