### PAVEMENT MARKING

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### MOBILIZATION

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### SUMMARY OF QUANTITIES

**Sheet 1 of 2**
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**Regulatory Signs**

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**Miscellaneous Signs**

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<th>SEC</th>
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**Effective 34Jul12**

TOTAL 616.10.05
ALL COORDINATES SHOWN ON THIS SHEET ARE MODIFIED STATE PLANE (GROUND) MISSOURI WESTERN ZONE, NAD 1983
PROJECTION FACTOR: 1.0000966760

N: 1,051,088.264  
E: 2,789,896.459  
ELEV: 832.77
### Coordinate Point Listing

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<th>STATION</th>
<th>LOCATION</th>
<th>OFFSET (USFT)</th>
<th>Northing (US Survey ft)</th>
<th>Easting (US Survey ft)</th>
<th>Elevation</th>
<th>DESCRIPTION</th>
<th>GPK</th>
<th>POINT ID</th>
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### Project Coordinate Information

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<td>GEOID18</td>
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<td>ELEVATIONS</td>
<td>DETERMINED BY GPS OBSERVATION</td>
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### Project Projection Factor

1.000000088

### Reference Control Information

COORDINATE SYSTEM: MO COORDINATE SYSTEM OF 1983
REFERENCE GEODETIC SYSTEM: MO GEODETIC REFERENCE SYSTEM
COORDINATE SYSTEM: MO GEOGRAPHIC REFERENCE SYSTEM

### Control Station: 10-101

### Example of Project Coordinate to S.P.C.

- PROJECT NOORTHING X AVERAGE GRID FACTOR = STATE PLANE NOORTHING
- PROJECT EASTING X AVERAGE GRID FACTOR = STATE PLANE EASTING

Example: Control Point

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<tr>
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<th>Z</th>
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### Linear Unit Conversion

1 METER = 3.280833333 US SURVEY FEET (USFT)
Traffic Control Legend,
Sign Spacing, Device Spacing, Channelizing Taper Lengths
And Recommended Maximum Speed Reductions

### Sign Spacing for Advance Sign Series (11:12)

<table>
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<th>PERMANENT POSTED SPEED MPH</th>
<th>UNDIVIDED HIGHWAY (1)</th>
<th>DIVIDED HIGHWAY (5)</th>
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<tr>
<td>20</td>
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<td>500</td>
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<td>200</td>
<td>1000</td>
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<tr>
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<td>1500</td>
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### Taper Lengths and End Treatments for Concrete Barrier

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<th>PERMANENT POSTED SPEED MPH</th>
<th>MINIMUM LANE TAPER LENGTH (L)</th>
<th>END TREATMENT (4)</th>
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<tr>
<td>20</td>
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<td>H-TREATMENT</td>
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<td>40</td>
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<td>H-TREATMENT</td>
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### Taper Lengths and Spacing for Channelizers

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<th>MINIMUM SHOULDER TAPER LENGTH BASED ON 10' SHOULDER</th>
<th>BUFFER LENGTH FT</th>
<th>THROUGH TAPER</th>
<th>THROUGH WORK AREA</th>
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<td>120</td>
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<td>100</td>
</tr>
<tr>
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<td>45'</td>
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<td>60</td>
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<td>60</td>
<td>20'</td>
<td>60'</td>
<td>360</td>
<td>80</td>
<td>360</td>
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**The SA dimension is the distance from the transition or point of restriction to the first sign.**

**The SB dimension is the distance between the first and second signs.**

**The SC dimension is the distance between the second and third signs.**

(The "first sign" is the sign in a three-sign series that is closest to the temporary traffic control zone. The "third sign" is the sign that is furthest upstream from the temporary traffic control zone.)

### Details Notes:

1. **Spacing between signs and spacing between last sign and flagger, beginning of taper, or signed condition.**
2. **Spacing may be adjusted as necessary to meet field conditions.**
3. **Taper lengths shown include length required for lane and 10' shoulder.**
4. **Concrete barrier may be installed at 8’ flare rate from the shoulder point of the limits of the clear zone where the side slope is 6:1 or flatter.**

---

**Traffic Control Legend**

- **Sign:** Single speed
- **Flashing Arrow Panel:** Flagger
- **Channelizer:** Changeable Message Board
- **Protective Vehicle:** Protective vehicle with work sign, flashing arrow panel, and rear-mounted impact attenuator unit.

**Legend Note:**

The protective vehicle sign shall be mounted at a recommended height of 48 in. above the road surface.

**General Notes:**

1. SEE STANDARD PLAN 616.10 FOR DETAILS AND ITEMS NOT SHOWN.
2. EXISTING SIGNS SHALL BE COVERED DURING WORKING HOURS ONLY IF IN CONFLICT WITH TRAFFIC CONTROL PLANS.
3. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING, COVERING, UNCOVERING OR REMOVING SIGNS.
4. CONES ALLOWABLE FOR DAYTIME OPERATIONS ON MINOR ROUTES ONLY.
5. LOCATE FLASHING ARROW PANEL AT BEGINNING OF TAPER WHEN FEASIBLE, ARROW PANELS IS ALWAYS LOCATED BEHIND CHANNELIZERS OR CONES.

---

**EPG Table 616.12 Recommended Maximum Speed Reductions**

<table>
<thead>
<tr>
<th>Activity (i.e., workers, equipment or material) Location</th>
<th>Recommended Work Zone Speed Reduction (when applicable)</th>
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<tr>
<td>10 FT BEYOND EDGE OF TRAVELWAY TO EDGE OF RIGHT OF WAY</td>
<td>NO SPEED REDUCTION</td>
</tr>
<tr>
<td>IN TRAFFIC LANE OR WITHIN 10 FT. OF THE TRAFFIC LANE</td>
<td>10 MPH</td>
</tr>
<tr>
<td>HEAD-TO-HEAD ON MULTILANE</td>
<td>10 MPH</td>
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</table>

**Temporary Traffic Control Sheet 1 of 12**

---

**CLEAR ZONE:**

- **10 FT BEYOND EDGE OF TRAVELWAY TO EDGE OF RIGHT OF WAY:**
- **IN TRAFFIC LANE OR WITHIN 10 FT. OF THE TRAFFIC LANE:**
- **HEAD-TO-HEAD ON MULTILANE:**

**SPECIAL CIRCUMSTANCES WITHIN A TEMPORARY TRAFFIC CONTROL WORK ZONE MAY WARRANT A LOWER SPEED LIMIT THAN RECOMMENDED ABOVE. ALL SPEED LIMIT REDUCTIONS GREATER THAN 10 MPH SHALL BE DOCUMENTED, SUBMITTED TO AND APPROVED BY THE DISTRICT WORK ZONE COORDINATOR.**
NOTE:
CHANNELIZER LOCATIONS FOR EXAMPLE PURPOSES ONLY
SEE TTC SHEET 1 FOR REINFORCEMENT AND SIGN SPACING

NOT TO SCALE
NOTE:
CHANNELIZER LOCATIONS FOR EXAMPLE PURPOSES ONLY
SEE TTC SHEET 1 FOR DEVICE AND SIGN SPACING

NOT TO SCALE
TYPICAL LEFT OR RIGHT LANE CLOSURE
MULTI-LANE DIVIDED HIGHWAY

NOTES:

SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.

TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.

ALTERNATIVE TEMPORARY TRAFFIC CONTROL SET-UPS SHOULD BE CONSIDERED WHEN REDUCTION IN CAPACITY CANNOT BE TOLERATED.

FOR NIGHT TIME OPERATIONS, REVIEW EPS 616.6.83 WARNING LIGHTS FOR USE OF SEQUENTIAL LIGHTS.

REVIEW EPS 616.6.83 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES.

A FLASHING ARROW BOARD SHALL BE USED WHEN A FREEWAY LANE IS CLOSED.
WHEN MORE THAN ONE FREEWAY LANE IS CLOSED, A SEPARATE ARROW BOARD SHALL BE USED FOR EACH CLOSED LANE.
TWO-LANE DIVIDED HIGHWAY
WITH BARRIER

NOTES:

1. SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

2. SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

3. REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NECESSARY.

4. TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.

5. REVIEW STATIONARY LANE CLOSURE.

6. SEE LANE CLOSURE WIDTH AND LANE RESTRICTION.

7. FOR NIGHTTIME OPERATIONS, REVIEW EPG 616.6.03 WARNING LIGHTS FOR USE OF SEQUENTIAL LIGHTS.

8. IF RIBBLE STRIPS ARE USED, REVIEW EPG 616.6.07 RIBBLE STRIPS.

9. REVIEW EPG 616.6.63 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES.

11. FLARE BARRIER TO EXTEND BEYOND CLEAR ZONE OR FLARE BARRIER TO THE EDGE LINE AND USE APPROVED END TREATMENT.

12. CONCRETE BARRIER SHALL BE INSTALLED AT AN 8:1 FLARE RATE WITHIN THE TRAVEL LANES.

13. CONCRETE BARRIER MAY BE INSTALLED AT AN 8:1 FLARE RATE FROM THE SHOULDER POINT TO THE LIMITS OF THE CLEAR ZONE WHERE THE SLOPE IS 6:1 OR FLATTER.

14. APPROVED CRASH CUSHION ARE TO BE USED WHEN THE POSTED SPEED LIMIT PRIOR TO ROAD WORK IS GREATER THAN OR EQUAL TO 40 MPH.

15. BARRIER HEIGHT TRANSITION MAY BE USED WHEN THE POSTED SPEED LIMIT PRIOR TO ROAD WORK IS LESS THAN 40 MPH.
MOVING OPERATION ON
MULTI-LANE DIVIDED HIGHWAY
OPEN TO TRAFFIC
NOTES:

(1) SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.

(2) SEE TRAFFIC CONTROL SHEET 1 FOR SIGN SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.

(3) REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.

(4) TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.

(5) FOR NIGHT TIME OPERATIONS, REVIEW EPG 616.6.63 WARNING LIGHTS FOR USE OF SEQUENTIAL LIGHTS.

(6) REVIEW EPG 616.6.63 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES.

(7) ADVANCED LANE CLOSURE SIGNING IS AS SHOWN ON EPG TA-34. LANE CLOSURE WITH A TEMPORARY TRAFFIC BARRIER.

(8) CROSSOVER PAVEMENT WIDTH MAY BE WIDER AS NEEDED.

(9) FLARE BARRIER TO EXTEND BEYOND CLEAR ZONE OR FLARE BARRIER TO EDGE LINE AND USE APPROVED END TREATMENT.

(10) SEE STANDARD PLAN 616.10 FOR ADDITIONAL INFORMATION.
NOTES:

1. SEE TRAFFIC CONTROL SHEET 1 FOR WORK ZONE SPEED LIMIT GUIDELINES.
2. SEE TRAFFIC CONTROL SHEET 1 FOR SIGNS, SPACING, DEVICE SPACING AND CHANNELIZING TAPER LENGTHS.
3. REMOVE AND/OR MODIFY ANY EXISTING PAVEMENT MARKING AS NEEDED.
4. TEMPORARY PAVEMENT MARKING REQUIRED WITH LONG TERM CLOSURES.
5. FOR NIGHT TIME OPERATIONS, REVIEW EPG 616.6.83 WARNING LIGHTS FOR USE OF SEQUENTIAL LIGHTS.
6. REVIEW EPG 616.6.82 CHANNELIZING DEVICES FOR DIFFERENT TYPES AND GUIDELINES FOR THE DEVICES.
7. ADVANCED LANE CLOSURE SIGNING IS AS SHOWN ON EPG 14-34. LANE CLOSURE WITH A TEMPORARY TRAFFIC BARRIER.
8. Crossover pavement width may be wider as needed.
9. CRASH CUSHION SHALL CONSIST OF IMPACT ATTENUATOR (SAND BARRELS) OR OTHER TEMPORARY CRASHWORTHY DEVICE, AS APPROVED BY THE ENGINEER.
10. SEE STANDARD PLAN 616.10 FOR ADDITIONAL INFORMATION.
U.I.P. AND REHABILITATE EXISTING (65'-78'-50') CONTINUOUS CONCRETE BOX GIRDER SPANS

TYPICAL SECTION THRU EXISTING DECK

Optional Concrete Bearing Surface

Low Strength Concrete Bearing Surface

High Strength Concrete Bearing Surface

The contractor shall select one of the alternate concrete bearing surfaces listed in the table. The alternate concrete bearing surfaces method of measurement and parts of payment shall be in accordance with Sec. 713.

General Notes:

Design Specifications:

ADOT 2020 LRFD (11th Ed.) Standard Specifications

Bridge Deck Rating = 5

Design Loadings:

HD-44 and Military: 24,000 lb. Tandem axle (180k)

HD-44 and Military: 48,000 lb. Tandem axle (360k) Construction

Design Unit Stresses:

Class F-2 Concrete: Multi-Cycle Full Depth Repair 4444 = 4,000 psi

Miscellaneous:

Preparing and dressing adjacent to bridge ends shall match new bridge bearing surface throughly.

All concrete repairs shall be in accordance with Sec. 713, unless otherwise noted.

Cutting of existing joint is indicated by light dashed lines. Heavy lines indicate new joint.

Contractor shall verify all dimensions onied before ordering new material.

In order to maintain grade and a minimum thickness of wearing surface as shown on plans, it may be necessary to use additional quantities of wearing surface thickness increases throughout the area. The cost of surcharging and elevating the existing wearing surface to full section, possibly in increments, is the responsibility of the contractor. The contractor shall provide an additional section for the cut-off joint section to the existing surface to full section.

Traffic Control:

Traffic to be maintained on structure during construction. See roadway plans for traffic control and sheet No. 3 for staged construction details.

REPAIRS TO BRIDGE: ROUTE 1-435 SB

OVER RAYTOWN ROAD

ROUTE 1-435 SB FROM ROUTE 16 TO ROUTE 350

Over 0.5 MILE SOUTH OF ROUTE 350

DESIGN STATION 41D+44.028 - BEARER EXISTING

Sheet No. 1 of 3

Note: This drawing is not to scale. Follow dimensions.
**Deck Repair Notes:**

Order of Repair:
1. Remove existing wearing surface plus 1/2" of existing deck.
2. Sand deck to identify areas in need of repair.
3. Outline special repair zones, complete the following repairs:
   a. Half-Sole repair
   b. Full-Depth repair
4. Outline special repair zones, complete the following repairs:
   a. Half-Sole repair
   b. Full-Depth repair
5. Place new wearing surface.

**Special Repair Zones:**

A bold line will be established to determine the overall condition of the slab after completion of the wearing surface removal and scarification operations. The bridge deck will then be scored to determine whether special repair zone work will be required.

If it is determined by the engineer that special repair zones are unnecessary, use details for General Special Repair Zones.

Any deck repair in areas not designated as a special repair zone shall be completed prior to work in Zone A. Deck repair required in the areas designated as special repair zones shall be completed in alphabetical sequence beginning with Zone A, Zones B, C, D, etc. Designation may be assigned at the same time.

Removal and deck repair shall be completed in the special repair zone and concrete shall have attained a compressive strength of 3200 psi. No traffic shall be permitted over the slab that is undergoing deck repair.

When the full-depth repair extends over a diaphragm or wall and the deteriorated concrete extends into the diaphragm or wall, all deteriorated concrete shall be removed and replaced as full-depth repair. Concrete to be repaired shall be placed in the repair area without prior review and approval from the engineer.

Interior railings installed by the contractor consisting of the special repair slab shall be removed where entry access is available.

If any single repair area does not exceed 5 square feet in size and the total repair area within a special repair zone does not exceed 20 square feet, the special repair zone may be repaired at the same time.

Half-Sole repair in the special repair zone, on either side of the Intermediate beams, shall be to a depth that will not exceed half the thickness of the slab. In addition, the repair detail shall extend to a minimum of 10 feet from the edge of the slab. Half-Sole repair in the special repair zone on the opposite side of the Intermediate beams shall be to a depth that will not exceed half the thickness of the slab. In addition, the repair detail shall extend to a minimum of 10 feet from the edge of the slab.
U.I.P. AND REHABILITATE EXISTING (65' - 78' - 50') CONTINUOUS CONCRETE BOX GIRDER SPANS

TYPICAL SECTION THRU EXISTING DECK
- Hatch existing concrete sector, apply
  anti-skid paste to blend repairs into
  existing concrete:
- Limits of cleaning and epoxy coating line Sec. 7.11.  Use all lines of demarcation concrete prior to final application of epoxy coating.

Optional Concrete Bearing Surface
- Type of concrete bearing surface: Type I/II/III
- Low shear concrete bearing surface
- Deteriorated concrete bearing surface
- Aspetto construction personnel will complete column labeled "Type I/II/III".
- The contractor shall select one of the alternate concrete bearing surfaces listed in the table.  The alternate concrete bearing surface method of measurement and points of payment shall be in accordance with Sec. 7.11.

Estimated Quantities

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<th>Item</th>
<th>Unit</th>
<th>Total</th>
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<tr>
<td>Removal of Existing Bearing Surface</td>
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<tr>
<td>Trench Cleaning</td>
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<td>Trench Cleaning</td>
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<tr>
<td>Full Depth Repair</td>
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<td>Partial Depth Repair</td>
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<tr>
<td>Stamping and Epoxy Coating</td>
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<tr>
<td>Stamping and Epoxy Coating</td>
<td>sq. 400</td>
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</tbody>
</table>

General Notes:
- Design Specifications: 2000 AASHO LEF-4, 10th Ed.; Standard Specifications 1993 LEF-4 and Military 24,000 lb, Tension 1/2 J-1111
- Design Loadings: 24,000 lb, Tension 1/2 J-1111
- Design Unit Stresses:
  - Class B-1 Concrete (Half-Cone and Full Depth Repair): 6 x 3,000 psi
  - Half-Cone Bearing Surface: 6 x 3,000 psi
- All concrete repairs shall be in accordance with Sec. 7.11, unless otherwise noted.
- Limits of existing work is indicated by light dashed lines.  Heavy lines indicate new work.
- Contractor shall verify all dimensions in field before ordering new materials.
- In order to maintain grade and a minimum thickness of wearing surface as shown on plans, it is necessary that the existing concrete wearing surface be removed at various locations throughout the structure.  The cost of cleaning and installing the wearing surface shall be considered materials required to the contract unit price, including all additional labor, materials or equipment for variations in thickness of wearing surface.
- Traffic Handling:
  - Structure to be closed during construction.  Traffic to be maintained on other routes.
  - Routing plan for traffic control.

TYPICAL SECTION THRU CURB BLOCKOUT
SHOWING CURB REPAIRS AND PROTECTIVE COATING
- Expose to both barriers

REPAIRS TO BRIDGE: ROUTE J-435 NB
OVER RAYTOWN ROAD
ROUTE J-435 NB FROM ROUTE J-70 TO ROUTE J-10
GEORGE H. MILLER NORTH OF ROUTE J-70
BEGINNING STATION 41+60.000 FEET EXISTING

Designed Oct. 2022
Drawn Oct. 2023
Sheet No. 1 of 2

Note: This drawing is not in scale, follow dimensions.