MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
U.I.P. EXISTING (33'-6"-53") CONTINUOUS VOIED SLAB SPANS

GENERAL NOTES:
Design Specifications:
- Bridge Deck Rating 4.7
- Design Unit Stresses:
  - Live Load 45 kips = 1,050 psf
  - Reinforcing Steel (Grade 60) Sy = 60,000 psi
- Joint Filler:
  - All joints shall be in accordance with Sec 1057 for
    - Roadway: Filler expansion and partition joint filler, except as noted.
- Reinforcing Steel:
  - Minimum clearspace to reinforcing steel shall be 1-1/2", unless otherwise shown.
- Resin Anchors:
  - The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.
- Miscellaneous:
  - Traffic control structure to be maintained during construction. See Job No. JS0842 net roadway signs for traffic control.
  - "Joint" refers to the sections in the standard plan and supplemental specifications unless specified otherwise.
  - Outline of old work is indicated by dashed lines. Heavy lines indicate new work.
  - Contractor shall verify all dimensions in field before ordering new materials.
  - Bars in old concrete to be removed shall be cleanly stripped and embedded in new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.
  - The area assumed by the removal of concrete and not covered with new concrete shall be coated with an approved bituminous paint.

SECTION THRU EXISTING SLAB

<table>
<thead>
<tr>
<th>Estimated Quantities</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Removal of Asphalt paving surface</td>
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<tr>
<td>Barrier Curb (Type B)</td>
</tr>
<tr>
<td>Repairing concrete deck (hot-oil)</td>
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</tbody>
</table>

* Barrier curb shall be cast-in-place option or slip-form method.

REPAIRS TO BRIDGE OVER VETTER STREET
STATE ROAD FROM RTE. 54 TO RTE. J
ABOUT 2.1 MILES EAST OF RTE. 54
PROJECT NO. STA. 100+64.40 (North Exist.)
JOB NO. JS0873
RTE. 50
COLE COUNTY

STD. 70/80/PS
A07221

Date: 11-05-20

Detailed Sep. 1954
Checked Sep. 1954

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

Sheet No. 1 of 7
SECTION THRU EXISTING SLAB

Weekend construction shall consist of removing existing median curbs, constructing Type E Concrete Barrier curbs, removing existing asphalt overlay and repairing deck.
Openings in deck shall be blocked during weekday traffic.

Stage 1 Weekend Construction

Stage 1 Weekday Construction

Stage 1 Weekday Eastbound Traffic

Details showing staged construction

COLE COUNTY A07221

NOTES:

This drawing is not to scale. Follow dimensions.
Stage 2 Weekend Construction

Bridge No. A07222

Bridge No. A07221

Weekend construction shall consist of removing existing asphalt overlay and repaving deck.

Openings in deck shall be plated during weekend traffic.

Stage 2 Weekday Construction

Bridge No. A07222

Bridge No. A07221

Weekdays with no traffic will be limited due to the required two lanes of traffic in both directions. Work will be performed at the discretion of the contractor.

Final Section Thru Slab

Bridge No. A07222

Bridge No. A07221

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

Details showing staged construction

COLE COUNTY A07221
PLAN OF SLAB SHOWING REPAIR ZONES

Notes:

Any post-tensioning rebar in the areas designated as special repair zones shall be completed in the following sequence: first the rebar in the remainder of the bridge that is adjacent to Zone 4 and not designated as a special repair zone shall be completed prior to work in Zone 4.

Repair of rebar shall be completed in the special repair zone and concrete shall have a compressive strength greater than 3000 psi before work can be started in the next special repair zone. In the event concrete designated for repair is adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be performed at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 10 square feet, the special repair zone requirements do not apply to that zone. Any damage sustained to the void pipe as a result of the construction operations shall be patched or replaced as required by the engineer.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Coats of patching on exposed voids will be considered completely covered by the contract unit price for repairing concrete deck (post-tensioned).

Note: This drawing is not to scale. Follow dimensions.
SECTION NEAR BARRIER CURB (TYPE D)

PART SECTION NEAR BARRIER CURB (TYPE D)

DETAILS OF BARRIER CURB (TYPE D)

Notes:
- All longitudinal dimensions shown are parallel to grade.
- Concrete in barrier curb shall be Class B-11 with f'c = 4000 psi.
- Measurement of barrier curb is to the nearest linear foot. Reduced at the gutter line from fill face to fill face.
- All expanded edges of barrier curb shall have 1/2" radius or 3/8" bevel unless otherwise shown.
- Payment for concrete, reinforcing steel, resin anchors, and any other work incident to the barrier curb, complete in place, will be conditioned on payment for shell, complete in place.
- All reinforcement shall be epoxy coated.

Cost of furnish and installing the resin anchor system complete, including all concrete reinforcement bars shall be considered COMPLETELY covered by the contract unit price for Barrier Curb Type D.

The 5/8" diameter resin anchor system shall have a minimum ultimate pullout strength of 15,000 lbs. in concrete with f'c = 4000 psi.

An epoxy coated MS (gauge 60) reinforcing bar shall be substituted for the 5/8" Ø threaded rod.
TYPICAL SECTION NEAR BARRIER CURB (TYPE D) AT SUPPORT LOCATIONS

NOTES:

Top of barrier curb shall be built parallel to grade with barrier curb joint lines (except at end bents) near to grade.

Payment for all concrete and reinforcement complete lineals will be considered completely covered by the contract unit price for Barrier Curb (Type D) per lineal foot.

Concrete in the barrier curb shall be Class B-1.

Measurement of barrier curb (Type D) is to the nearest linear foot for each structure, measured at gutterline from fill side to fill side.

The curb shall be poured by application of Type 1-0 or Type 2 liquid membrane-forming compound in accordance with Sec 1085. Scale prevention treatments will not be permitted.

1/8" Bevel. 1/2" Radius or otherwise as approved by the engineer

OPTIONAL SLIP-FORM BRIDGE BARRIER CURB (TYPE D)

COLE COUNTY A07221
SECTION THRU EXISTING SLAB

Weekend construction shall consist of removing existing median curbs, constructing Type 2 Concrete Barrier Curbs, removing existing asphalt overlay and repairing deck.

Openings in deck shall be plowed during weekday traffic.

Work during day on weekdays will be limited due to the required two lanes of traffic in both directions. Work will be performed at the discretion of the contractor.

The contractor will have the option of performing the same work allowed on weekends provided two lanes of traffic in both directions are provided in accordance with the traffic control plans, JSP0722.
Weekend construction shall consist of removing existing asphalt overlay and repairing deck. Openings in deck shall be plated during weekday traffic.

Work during day or weekends will be limited due to the required two lanes of traffic in both directions. Work will be performed at the discretion of the contractor.

The contractor will have the option of performing the same work allowed on weekends provided two lanes of traffic in both directions are provided in accordance with traffic control plans JSP0872.

DETAILS SHOWING STAGED CONSTRUCTION

Note: This drawing is not to scale. Follow directions.
PLAN OF SLAB SHOWING REPAIR ZONES

Notes:

Any half-slab repairs required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A shall not be designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repairs, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply for this zone. Any damage sustained to the void pores as a result of the removal process will be patched or replaced as required by the engineer. Zones with the same letter designation may be repaired at the same time.

An exposed void in the deck shall be patched as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for repairing concrete deck (not spliting).

COLE COUNTY A07221
SECTION NEAR BARRIER CURB (TYPE D)

PART SECTION NEAR BARRIER CURB (TYPE D)

DETAILS OF BARRIER CURB (TYPE D)

Notes:

All longitudinal dimensions shown are parallel to grade.
Concrete in barrier curb shall be Class B-1 with f'c = 4000 psi.
Measurement of barrier curb is to the nearest linear foot, measured at the gutter line from fill face to fill face.
All exposed edges of barrier curb shall have 1/2" radius or 3/8" bevel unless otherwise shown.
Payment for concrete, reinforcing steel, resin anchors, and any other work incidental to the barrier curb complete in place, will be considered completely covered by the contract unit price for Barrier Curb (Type D).
All reinforcement shall be epoxy coated.
Cost of furnishing and installing the resin anchor system complete in-place will be considered completely covered by the contract unit price for Barrier Curb (Type D).
The 5/8" diameter resin anchor systems shall have a minimum ultimate pullout strength of 15,500 lbs. in concrete with f'c = 4,000 psi.
An epoxy coated M5 Grade 60 reinforcing bar shall be substituted for the 5/8" Ø threaded rod.
TYPICAL SECTION NEAR BARRIER CURB (TYPE D) AT SUPPORT LOCATIONS

Notes:
1. Top of barrier curb shall be built parallel to grade, with barrier curb jointed (except at end bents) normal to grade.
2. Paint all concrete and reinforcement.
3. Concrete in the barrier curb shall be Class B-1.
4. The curb shall be cured by application of Type 1-0 or Type 5 (Class 9) water-releasing compound in accordance with Sec. 1059. Sodium preventative treatment shall not be permitted.

PART SECTION B-B

Notes:
1. Section thru joint

OPTIONAL SLIP-FORM BRIDGE BARRIER CURB (TYPE D)

Notes: This drawing is not to scale. Follow dimensions.
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
U.I.P. EXISTING (33' - 41' - 33') CONTINUOUS VOIDED SLAB SPANS

SECTION THRU EXISTING SLAB

**GENERAL NOTES:**
- DESIGN SPECIFICATIONS:
  - RCP = RCP-11th Edition
  - Bridge Deck Rating = 4
- DESIGN UNIT STRESSES:
  - Light Duty Concrete: 4" = 4,000 psf
  - Reinforcing Steel (Grade 60): 0.1" = 60,000 psi
- JOINT FILLER:
  - All joint filler shall be in accordance with Sect. 1051 for
deflection, temperature, and partition joint filler, except as noted.
- REINFORCING STEEL:
  - Minimum clearance to reinforcing steel shall be 1-1/2" unless
  otherwise noted.
- REIN ANCHOR:
  - All anchor shall use one of the qualified resin anchor systems
  in accordance with Sect. 1059.
- MISCELLANEOUS:
  - Traffic over structure to be maintained during construction. See
  Job No. 1590532 roadway plans for traffic control.
  - "Self" refers to the sections in the standard and memorandum
  specifications unless specified otherwise.
  - Outline of old work is indicated by dashed lines. Heavy lines
  indicate new work.
  - Contractor shall verify all dimensions in field before ordering
  new material.

Bars bonded in old concrete not removed shall be cleanly stripped
and removed unless concrete work permits. If length is available, all
bars shall extend into new concrete to at least 60
diameters. For smooth bars and 30 diameters for deformed bars,
unless otherwise noted.

The area enclosed by the removal of concrete not covered with
new concrete shall be coated with an approved bituminous joint.

**Estimated Quantities**

- **Removal of Asphalt Wearing Surface**
  - Linear ft: 312

- **Curb Replacement**
  - Linear ft: 110

- **Barrier Curb (Type D1)**
  - Linear ft: 110

- **Repairing Concrete Deck**
  - Linear ft: 60

**Note:**
- Barrier curb shall be cast-in-place option or slip-form option.

**REPAIRS TO BRIDGE OVER VETTER STREET**

STATE ROAD FROM RTE. S4 TO RTE. J
ABOUT 2.1 MILES EAST OF RTE. S4
PROJECT NO. STA. 100+64.40 (Watch Exst.)
JOB NO. J550973
RTE. S0

COLE COUNTY

DATE: 1-1-87

1-01306-05-222
A07222

Note: This drawing is not to scale. Follow dimensions.
Existing Bridge No. A-722 (WB)

SECTION THRU EXISTING SLAB

Weekend construction shall consist of removing existing median curbs, constructing Type III Concrete barrier curbs, removing existing asphalt overlay and repainting deck.

Openings in deck shall be plated during weekday traffic.

Stage 1 Weekend Construction

Weekend construction will be limited due to the required two lanes of traffic in both directions. Work will be performed on the

Stage 1 Weekday Construction

The contractor will have the option of performing the same work allowed on weekends provided two lanes of traffic in both directions are provided in accordance with the traffic control plans, 3/30/87.

Stage 1 Weekday Eastbound Traffic

Stage 1 Weekday Westbound Traffic
Stage 2 Weekend Construction

Weekend construction shall consist of removing existing asphalt overlay and repaving deck.
Openings in deck shall be plated during weekday traffic.

Stage 2 Weekday Construction

Work during day on weekdays will be limited due to the required two lanes of traffic in both directions. Work will be performed at the discretion of the contractor. The contractor will have the option of performing the same work allowed on weekends (provided the lanes of traffic in both directions are provided in accordance with traffic control plans). 200722.

Final Section Thru Slab

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

Any repair required in the areas designated as special repair zones shall be completed in a specified sequence, any repair in the repair of the bridge that is not designated as a special repair zone shall be completed prior to work in Zone 4.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3000 psi before work can be started in the next special repair zone. If, after the special repair zone has been completed 3/4 of the amount of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 12 square feet, the special repair zone requirement does not apply to that zone. Any damage sustained to the void type as a result of the contractor's operations shall be repaired or replaced as required by the engineer at the contractor's expense.

An exposed void in the deck shall be repaired as approved by the engineer in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repointing Concrete Deck (work specified).
TYPICAL SECTION NEAR BARRIER CURB (TYPE D) AT SUPPORT LOCATIONS

Notes:
- Top of barrier curb shall be built parallel to grade with barrier curb joints except at end panel normal to grade.
- Payment for all concrete and reinforcement, complete-in-place, will be considered completely completed by the contract unit price for barrier curb.
- Concrete in the barrier curb shall be Class B-1.
- Measurement of barrier curb (Type D) is to the nearest linear foot for each structure, measured at gutterline from fill face to fill face.
- The curb shall be cured by application of Type I-1 or Type II liquid hydrocarbon-forming compound. In accordance with Class F-1. Scale prevention treatment will not be required.

OPTIONAL SLIP-FORM BRIDGE BARRIER CURB (TYPE D)

NOTES:
- Each side of joint location.

SECTION A-A

- Cost of silicone joint sealant and backer rod considered separate will be considered complete-covered by the contract unit price for barrier curb (Type D).

SECTION THRU JOINT

Notes:
- This drawing is not to scale; follow dimensions.
### BILL OF REINFORCING STEEL

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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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**TOTALS**
- S: 4
- TOTAL: 4.00

**Bending Diagrams**

**Notes:**
- This drawing is not to scale. Follow dimensions.
- The drawing shows the bar bill for testing.
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
U.I.P. EXISTING (33'-41'-33') CONTINUOUS VOIDED SLAB SPANS

SECTION THRU EXISTING SLAB

**General Notes:**
- **Design Specifications:**
  - 2005 - AASHTO 11TH Edition
  - Bridge Deck Rating = T
- **Design Unit Strengths:**
  - Class B-1 Concrete, f'c = 4,000 psi
  - Reinforcing Steel (grade 60) fy = 60,000 psi
- **Joint Fillers:**
  - All joint fillers shall be in accordance with Sec 1037 for.
  - Expansion joint rubber expansion and partition joint fillers, as noted.
- **Reinforcing Steel:**
  - Minimum clearance to reinforcing steel shall be 1-1/2" unless otherwise shown.

**Rein Anchors:**
- The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

**Miscellaneous:**
- Traffic over structure to be maintained during construction. See Job No. JSP0872 roadway plans for traffic control.
- *Sec* refers to the sections in the standard and supplemental specifications unless otherwise noted.
- Outline of old work is indicated by dashed lines. Heavy lines indicate new work.
- Contractor shall verify all dimensions in field before ordering new materials.
- Bored in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old back shall extend into new concrete at least 20 linear ft. and 20 diameters for deformed bars.
- If otherwise noted.
- The areas exposed by the removal of concrete not covered with new concrete shall be coated with an approved bituminous material.

**Final Quantities**

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<td>Curb Removal</td>
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<td>Barrier Curb (Type D)</td>
<td>Linear ft.</td>
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<tr>
<td>Repairing Concrete Deck (Half-Soled)</td>
<td>sq. ft.</td>
<td>444</td>
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*Silo-form Barrier Curb

**Repairs to Bridge Over Vetter Street**

STATE ROAD FROM RTE. 54 TO RTE. J
ABOUT 2.1 MILES EAST OF RTE. 54
PROJECT NO.           STA. 100+44.40 (Match Exist.)
JOB NO. JSP0873       RTE. 50

*Silo-form Barrier Curb*
SECTION THRU EXISTING SLAB

Weekend construction shall consist of removing existing median curbs, constructing Type B Concrete Barrier Curbs, removing existing asphalt overlay and repairing deck.

Openings in deck shall be placed during weekday traffic.

Stage I Weekday Westbound Traffic

Stage I Weekday Construction

Stage I Weekday Eastbound Traffic

Weekdays during day off weekends will be limited due to the required two lanes of traffic in both directions. Work will be performed at the discretion of the Contractor.

The contractor will have the option of performing the same work allowed on weekends provided the two lanes of traffic in both directions are provided in accordance with the traffic control plans, JSP0872.
Stage 2 Weekend Construction

Bridge No. A07222

Stage 2 Westbound
Weekend Traffic

Type F Temporary Concrete
Traffic Barrier
(Roadway Item) (Typ.)

Stage 2 Eastbound
Weekend Traffic

Bridge No. A07221

Stage 2 Weekend Construction

Weekend construction shall consist of removing existing asphalt
overlay and repairing deck.

Openings in deck shall be plated during weekday traffic.

Stage 2 Weekday

Bridge No. A07222

Stage 2 Weekday Westbound Traffic

2'-0" Temp. Traffic

Control Device
(Roadway Item)

Stage 2 Weekday Eastbound Traffic

Bridge No. A07221

Stage 2 Weekday

Work during day on weekends will be limited due to the required two
lanes of traffic in both directions. Work will be performed at the
discretion of the contractor.

The contractor will have the option of performing the same work
allowed on weekends provided two lanes of traffic in both directions
are provided in accordance with traffic control plans. JSP0812.

28'-6" Westbound Traffic

Bridge No. A07222

28'-6" Eastbound Traffic

Bridge No. A07221

FINAL SECTION THRU SLAB

Details showing staged construction

Note: This drawing is not to scale. Follow dimensions.
PLAN OF SLAB SHOWING REPAIR ZONES

Notes:

Any half-spoil required in the areas designated as special repair zones shall be completed in alphabetical sequence. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A.

Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 10 square feet, the special repair zone may be designated as a single repair area. If any single repair area does not exceed 4 square feet in size and the total repair within a special repair zone does not exceed 10 square feet, the special repair zone may be designated as a single repair area.

After the repair has been completed, the exposed void in the deck shall be patched as approved by the engineer in a manner that results in the deck area completely free of sharp edges. Cost of patching an exposed void will be considered completely covered by the contract unit price for Repairs of Concrete Deck Half-Spoilings.
SECTION NEAR BARRIER CURB (TYPE D)

PART SECTION NEAR BARRIER CURB (TYPE D)

DETAILS OF BARRIER CURB (TYPE D)

Notes:
All longitudinal dimensions shown are parallel to grade.
Concrete in barrier curb shall be Class B-1 with f'c = 4000 psi.

Measurement of barrier curb is to the nearest linear foot measured at the
gutter line from fill face to fill face.
All exposed edges of barrier curb shall have 1/2" radius or 3/8" bevel
unless otherwise shown.

Payment for concrete, reinforcing steel, resin anchors, and any other work
incidental to the barrier curb complete in place, will be considered
completely covered by the contract unit price for Barrier Curb (Type D).
All reinforcement shall be epoxy coated.

Cost of furnishing and installing the resin anchor system
complete (no loops) will be considered completely covered by
the contract unit price for Barrier Curb (Type D).
The 5/8" diameter resin anchor systems shall have a minimum
ultimate pullout strength of 15,000 lbs. in concrete with
f'c = 4,000 psi.
An epoxy coated M5 Grade 60 reinforcing bar shall be
substituted for the 5/8" @ threaded rod.
TYPICAL SECTION NEAR BARRIER CURB (TYPE D) AT SUPPORT LOCATIONS

Notes:
- Top of barrier curb shall be built parallel to grade. 
- Curb on both sides of support joint shall be at least 10 in. high.
- Concrete on curb shall be C3002D-1.
- Concrete in the barrier curb shall be C3002D-1.
- Measurement of curb (Type D) is to the nearest linear foot for each structural member.
- The curb shall be cured by application of Type 1-0 or Type 3 Liquid Waterstop Forming Compound in accordance with Sec. 1006. Specified treatment will not be permitted.

Notes:
- Joint sealant and breaker rods shall be used on all slip-form barrier curves. Curb of joint filler shall be in accordance with Sec. 1017 for silicone joint sealant for saw cut and formed joints.
- Plastic waterstop shall not be used with slip-form option.
- C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge barrier curb (Type D).
- For slip-form option, all sides of the barrier curb (Type D) shall have a vertically broomed finish, and the curb top shall have a transversely broomed finish.

PART SECTION B-B

Notes:
- (#) Each side of joint location.

SECTION THRU JOINT

PART SECTION C-C

OPTIONAL SLIP-FORM BRIDGE BARRIER CURB (TYPE D)

Note: This drawing is not to scale. Follow dimensions.
Plan Showing End Post Reinforcement

Elevation Showing End Post Reinforcement

Elevation of Existing End Post Showing Partial Concrete Removal

Notes:

For details of repair anchors, see Sheet No. 2.

Stake points and anchors are necessary to other work and/or other trades in the same area. The undersides of the concrete and deck surfaces are present and clear according to the plans.

Bridge post not shown for clarity.

For partial removal of end post concrete slab on ground and existing guardrail post, the work shall be considered completely secured by the contract unit price for such blockout.

Details of Guard Rail Attachment

Details of Left End Post at End Bents No. 1 & 4

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

Design Specifications:
Bridge Deck Rating = Y

Visual Elements:
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall vary all dimensions in field before ordering new materials.

Roadway surfacing adjacent to bridge ends shall match new bridge roadway surface (roadway These Plans Accurately Depict the Configuration and Location of the Roadway and All Appurtenances, Including Modification Designated or Authorized by the Engineer of Record.

SIGNATURE DATE

Traffic Handling:
Traffic to be maintained or structure during construction. See roadway plans for traffic controls.

TYPICAL SECTION THRU EXISTING DECK

ERESSIONS TO BRIDGE: RTE. 50 (WBL) OVER VETTERS STREET

ROUTE 50 FROM ROUTE W TO COUNTY 54
BEGINNING 0.7 MILES EAST OF ROUTE W

BEGINNING STATION 10+04.405 (WBL EXISTING)

STD. 012-20

Detailed Aug. 2015
Redrafted Aug. 2015

Note: This drawing is not to scale. Failing dimensions. Sheet No. 1 of 4
## Bill of Reinforcing Steel

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<td></td>
<td></td>
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<td></td>
<td>500 lb.</td>
</tr>
<tr>
<td>3</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>1000 lb.</td>
</tr>
<tr>
<td>4</td>
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<td></td>
<td>1500 lb.</td>
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</table>

**Summary:**
- Total: 3500 lb.
- Gross: 4000 lb.

---

**Notes:**
- The drawings are not to scale. Follow the dimensions provided.
- Sheet No. 4 of 4

---

**Bill of Reinforcing Steel:**

**Dimensions:**

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Location</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>H</th>
<th>K</th>
<th>Net Weight</th>
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<td></td>
<td>1500 lb.</td>
</tr>
</tbody>
</table>

**Summary:**
- Total: 3500 lb.
- Gross: 4000 lb.

---

**Notes:**
- The drawings are not to scale. Follow the dimensions provided.
- Sheet No. 4 of 4
U.I.P. AND REHABILITATE EXISTING (33'-41'-33') CONTINUOUS VOIDED SLAB SPANS

GENERAL NOTES:

Design Specifications
2002 ASHTO LEF 97th Ed. Standard Specifications
Bridge Deck Rating F.1

Method of Work
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
Contractor shall verify all dimensions in field before ordering new material.

Roadway Surfacing
Roadway surfacing adjacent to bridge ends shall match new bridge wearing surface (Roadway Trench).

In order to maintain grade and minimum thickness of overlay as shown on plans, it may be necessary to use additional quantities of overlay at various locations throughout the structure. The cost of furnishing and installing the overlay will be considered completely covered in the contract unit price, including all additional labor, materials, or equipment for variations in overlay quantities.

The area exposed by the removal of concrete and not covered with new concrete shall be coated with approved qualified special mortar in accordance with Sec 706.4.

Traffic Considerations
Traffic to be maintained on structure during construction. See roadway plans for traffic controls.

TYPICAL SECTION THRU EXISTING DECK

These plans accurately depict the configuration and location of the roadway and all appurtenance features, including modifications.
Designated or authorized by the engineer of record.

SIGNATURE DATE

DETAIL "A"

* 3' UBAM shall be filled in next to existing curve to maintain 2'-0" (min.).

Estimated Quantities

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curb Blockout</td>
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</tbody>
</table>

REPAIRS TO BRIDGE: RTE. 50 (EBL) OVER VETERS STREET

ROUTE: 54 FROM ROUTE 54 TO ROUTE W
ABOUT 2.1 MILES EAST OF ROUTE 54
BEGINNING STATION 100444.40 (MATCH EXISTING)

NDOT 617.20

Detailed Aug. 2015
Drawn Aug. 2015
Note: This drawing is not to scale. Follow dimensions.
Sheet No. 1 of 4
Notations

For details of resin anchors, see Sheet No. 2.

Shall install anchors where necessary to clear exits, and/or bolts for bridge rail or new curb outlets (if present) and clear existing reinforcement.

Bridge rail not shown for clarity.

Payment for partial removal of end post concrete, tube rail, and drilling guard rail attachment holes thru existing and post will be considered completely covered by the contract unit price for curb blockout.

DETAILS OF RIGHT END POST AT END BENTS NO. 1 & 4

*Manufacturer’s recommended embedment lengths (5’ minimum embedment)
MISSOURI STATE HIGHWAY DEPARTMENT

ELEVATION A-A
ELEVATION B-B
ELEVATION C-C
ELEVATION D-D
SECTION E-E
SECTION F-F
SECTION G-G SHOWING KEISED COLUMN JOINT
PLAN
DETAILS OF INT. BENT NO. 6

PLAN
DETAILS OF INT. BENT NO. 7

BRIDGE: BOLIVAR STREET UNDERPASS
STATE ROAD ROUTE 50 RELOCATION
ABOUT IN JEFFERSON CITY
PROJECT NO. RTE. 50-SEC. 2612U
COLE COUNTY

Note: See detail No. 4 of 7 for Plan of footing showing reinforcement.

Sheet No. 5 of 7.
MISSOURI STATE HIGHWAY DEPARTMENT

GENERAL NOTES:
- Design Specifications:  AASHTO-M154
- Steel Bar: 500 ksi (Minimum Yield Stress)
- Concrete: Class B & Stress (2000 psi)
- Overhead Conduits: Class B & Stress 1/8
- Surfacing: Superpave
- Subsurface: 500 ksi
- Joint Filler: Type 1

Note: All pilings were driven to refusal into solid rock at or near the Final Bearing shown.

Steel piles are intended to reach bedrock or a total depth greater than 60 feet as furnished in two pieces for field splicing, and these splices were made in accordance with Standard Specifications RD-6-65.

All pilings were driven with an approved power hammer, developing an energy of 75,000 ft-lb at the time of driving.

GENERAL PLAN:
- Plan Bearing: NW 80° 20' 0"
- Elevation: Heavy Mountain

LOCATION SKETCH
- South of Highway 26
- North of Highway 26

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

C-1 Filler Bar (One Hole Type) 6.125 bb. 6/20
- 12.125 lb. 6' 0" 6750 lb. 6750 lb.
- 12.125 lb. 6' 0" 6750 lb. 6750 lb.

Note: These footings are constructed to meet the requirements of Standard Specifications and the Engineer's instructions.

FINAL QUANTITIES:
- Quantities include all necessary materials and labor.
- Final quantities are based on the Engineering specifications.

DESIGNED: 10-11-11 1ST EDITION: 11-10-11
REvised: 11-11-11 2ND EDITION: 12-12-11
CHECKED: 1ST ED: 12-12-11 2ND ED: 12-12-11

293
GENERAL NOTES:

ALL STRUCTURAL STEEL SHALL BE ASTM A510, GALVANIZED.
ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.
FIELD CONNECTIONS: HIGH-STRENGTH BOLTS @ 8", HOLE @ 6" CENTRED AS NOTED. THE TURN-OF-NUT METHOD OF TENSIONING BOLT THREAD PRIOR TO HIGH-STRENGTH BOLTS MAY BE USED (SEE BTO SPEC. 712.10.2).
CONCRETE ANCHORS SHALL BE THE NON-DRILLING EXPANSION TYPE. THEY SHALL HAVE A CERTIFIED CONCRETE PULL-OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 10,000 POUNDS IN 5500 PSI CONCRETE. THE HOLE SHALL BE PRE-DRILLED WITH A CONVENTIONAL CARBIDE JIG. BORE.
THE COST OF FURNISHING AND ERECTING THE SIGN SUPPORTS, INCLUDING THE CONCRETE ANCHORS COMPLETE-INCLUSIVE, SHALL BE PAID FOR AS FABRICATED SIGN SUPPORTS, LUMP SUM.
CENTER AND LEVEL SIGN ON BRACKETS. SIGN TO BE FURNISHED BY OTHERS.

SIGN SUPPORTS
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

PART SECTION SHOWING RESIN ANCHORS

**5" for A1256R only**
**2 1/2" for A1256F only**

Resin Anchor System
- Fill hole with qualified special mortar
- Sandblast seal with silicone joint sealant for formed joints
(see Sec T11.40)

DETAIL "A"

PART PLAN SHOWING RESIN ANCHORS

* This dimension may be reduced to 0" to avoid rebar and voids in the slab.

CANTILEVER SIDEWALK RETROFIT FOR SLAB BRIDGES

Estimated Quantities

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<tr>
<th>Item</th>
<th>Estimated Quantities</th>
<th>Final Quantities</th>
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<tbody>
<tr>
<td>Resin Anchor System (Slab Bridges)</td>
<td>each</td>
<td>1.045</td>
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<tr>
<td>Silicone Joint Sealant</td>
<td>linear foot</td>
<td>1.564</td>
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</tbody>
</table>

GENERAL NOTES:
- See roadway plans for traffic control.
- Temporary weight shall be placed on the sidewalk in line with the resin anchors. This temporary weight shall be sufficient to balance the cantilevered sidewalk. It shall remain in place until the epoxy bonding agent is cured.
- Resin Anchors:
  - The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.
  - Cost of furnishing and installing the anchor system complete in place shall be included in the price bid for Resin Anchor System (Slab Bridges) including the qualified special mortar to cap the resin anchor.
  - The minimum ultimate pullout strength shall be in accordance with Sec 1039 with FC = 4000 psi.
  - An epoxy coated Grade 60 reinforcing bar shall be substituted for the 1/4" threaded rod stud.
  - The epoxy bonding agent shall extend the full length of reinforcing bar.
  - The silicone joint sealant will be measured to the nearest linear foot. Silicone Joint Sealant, including all materials, equipment, labor, and any other incidental work necessary to complete this work, will be paid for at the contract unit price for Silicone Joint Sealant.

Detailed Mar. 2007
Checked Mar. 2007
Note: This drawing is not to scale. Follow dimensions.
## DIST 5 SLAB BRIDGES WITH SIDEWALKS
### FOR CONTRACT
(Total 6)

<table>
<thead>
<tr>
<th>Bridge No</th>
<th>County</th>
<th>Feature Intersected</th>
<th>Facility Carried</th>
<th>Bridge Length Ft.</th>
<th>Comment</th>
<th>Resin Anchor System (Slab Bridges)</th>
<th>Silicone Joint Sealant Lin. Ft.</th>
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<td>A0566</td>
<td>Cole</td>
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<td>Jackson</td>
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<td>Dix RD</td>
<td>92</td>
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<td>62</td>
<td>92</td>
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<td>A1256R</td>
<td>Boone</td>
<td>Hinkson</td>
<td>Rte. 740</td>
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<td>245</td>
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<tr>
<td>A1308</td>
<td>Cole</td>
<td>US 54</td>
<td>Jefferson ST</td>
<td>184</td>
<td>Sidewalk on one side only</td>
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<td>184</td>
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<td>A1420</td>
<td>Cole</td>
<td>US 50</td>
<td>Bolivar ST</td>
<td>253</td>
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<td>338</td>
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</table>

**SubTotal** | **1,045** | **1,564** |
TITLE SHEET

SEE

COLE CO. RTE. 54

CO26-54(6)

A-1305
MISSOURI STATE HIGHWAY DEPARTMENT

Note: All dimensions are horizontal.
For Sections 6A-6B-6C-6D see Sheet C.
For Curb reinforcing see Sheet F.

PLAN OF SLAB

Note: The contractor shall use an approved oscillating screed type, self-propelled mechanical finishing machine and shall pour and satisfactorily finish the roadway slab at a rate of not less than 30 cubic yards per hour. The contractor shall ensure that the transverse construction joints shown on plans unless he can demonstrate to the satisfaction of the engineer that he is equipped to pour and satisfactorily finish the roadway slab at a rate which will permit a continuous pouring through some or all of these joints. Finishing machine load will not be permitted on concrete less than 96 hours old.

BRIDGE OVER EXISTING ROUTE 50
STATE ROAD: ROUTE 54 RELOCATION
IN JEFFERSON CITY
PROJECT NO. 62447-X (RTE. 54) STA. 22+467
COLE COUNTY

Sheet No. 5 of 7.
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

GENERAL ELEVATION

Note: Railing F11 shall be completed to the finish roadway section and up to the surface of the bottom of the concrete beam within the limits of the structure and not less than 20 ft back of the face of the last beam. Lanes are shown for any variety within the underground utility.

WIDEN SUBSTRUCTURE & SUPERSTRUCTURE

EXISTING TWIN (46'-0"-27') CONTINUOUS SLAB SPANS (VIVIDS)

Note: (a) Indicates location of barriers. Barriers shall be all 4-ft. long and shall be installed at all locations identified above except from the District Office. Barriers shall be in place and finished at a point of existing bridge.

PLAN

Note: Stationing based on PBD Survey. Reflective utilities and drop inlets that interfere with substructure construction. (Bays 27). Extend safety barrier curb along Missouri Blvd as required for protection of bridge substructure. (Bays 27).}

GENERAL NOTES:

Design Specifications: AASHTO, 1986 and AASHTO H84 thru 1986

Lidell Hacket Design

Design Limiting: HS-20-44 Modified 20,000 1000 4000 5000 6000 7000 8000 9000 10000

Earth 60 TP 65 70, Equivalent Fluid Pressure 45 TP 65

Design Unit Stresses:

Class B Concrete (b) Fy = 3600 psi

Class B Concrete Quality Control, Ins. Bond Astm 12

and Bond Aspect Fu = 4,000 psi

Class B Concrete Polyethylene except Safety Barrier Curb Fy= 6000 psi

Reinforcing Steel (Concr. 1200 b) = 60000 psi

Grip Panel 7 x 10000 psi

Joint Cutter:

All joint cutter shall meet the requirements of M6 Spec. 1057.6.4.

except as noted.

Reinforcing Steel:

Maximum clearances for reinforcing shall be 1" unless otherwise shown. Bars located above concrete not removed shall be directly shaped and embedded into new concrete when possible. Spacing of 24" is available. Bars shall extend into new concrete at least 40 diameters. Smooth bars 300 mm diameter for reinforced bars, unless otherwise noted.

Construction Clearance:

Trenching over existing lines shall be constructed with a minimum vertical clearance of 42" and a horizontal clearance of 52-4/8"

Running of old work is indicated by light dashed lines. Maintenance indicators are noted. Traffic over structure is to be maintained during construction. For details of ship construction, see Sheet No. E

ESTIMATED QUANTITIES:

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<th>ITEM</th>
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<th>UNITS</th>
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<td>Class B Concrete</td>
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B.M. No. E1504.37 a on N.C. con. of Bridge over Mo Blvd.

30.7 E. and Mkt Rd. 54

BRIDGE ROUTE 54 OVER MISSOURI BLVD.

STATE ROAD

IN JEFFERSON CITY

PROJECT NO.

JOB NO. 5-U-54-238B

RTE. 54

COLE

COUNTY

SEEN FINAL PLANS

A-1305R

DRAFTED MARCH 1988

COLE APRIL 1988

NOTE: This diagram is not to scale. Follow dimensions.
Details of Intermediate Bent No. 2

Note: This drawing is not to scale. Follow dimensions.
Details of Intermediate Bent No. 3

Note: All dimensions are in feet and inches. Refer to section A-A for additional details.

- Payment for removal of existing concrete shall be included in portal removal of substructure concrete. Lump sum (see Special Provisions).
- Elevation shown; E.S.L. similar in rotation.
GENERAL NOTE:

CONCRETE FOR PRECAST BARRIER CURBS SHALL BE CLASS B1 WITH F COA 500 PSI
TOP OF BARRIER CURB SHALL BE PARALLELED TO GRANITE BARRIER CURB JOINTS
NORMAL TO GRANITE.

ALL EXPOSED EDGES OF BARRIER CURBS SHALL HAVE A = RADIUS OR R = BEVEL
UNLESS OTHERWISE NOTED.

@ CONTRACTOR SHALL USE ONE OF THE REINFORCEMENT SYSTEMS LISTED IN THE
CURTIS SPECIAL PROVISIONS. THE REINFORCEMENT SYSTEMS SHALL BE Installed IN ACCORDANCE
WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AS ADJUSTED BY THE CURTIS
DESIGN BUREAU.

THREADED BOLTS SHALL HAVE AN ULTIMATE CAPACITY OF 36,000 POUNDS.
PAYMENT FOR SUPPLEMENTAL AND INSTALLING REINFORCEMENT SYSTEMS SHALL BE
FULLY REIMBURSED BY THE CONCUR MANUFACTURER FOR BAR RESISTANCE.

WHEN THE BARRIER CURB IS BID BY LINEAL FEET, THE CONTRACT UNIT PRICE
SHALL BE BASED UPON A 50% OF ALL REINFORCEMENT AND REINFORCEMENT
SYSTEMS COMPLETE.

MEASUREMENT OF PRECAST SAFETY BARRIER CURB IS TO THE NEAREST LINEAR
FEET FOR EACH STRUCTURE, MEASURED ALONG THE TOP EDGE FROM END OF CURB
TO END OF CURB.

NOTE:

STAINING AND MOVING ARE NOT SHOWN IN PART ELEVATION.

ALL REINFORCEMENT BARS ARE MEASURED ALONG CENTER LINE OF
BAR TO THE NEAREST INCH.

ALL REINFORCEMENT SHALL BE GRADE 60 AND EPOXY COATED.

SILICONE SEALANT

BARRIER CURB

SILICONE TOOLED

DETAIL "A"

ROADWAY FACE OF CURB

SILICONE JOINT

DETAIL "A"

PART SECTION C-C

TYPICAL PRECAST PART SECTION B-B

TYPICAL SECTION THRU RIGHT MEDIAN PRECAST SAFETY BARRIER CURB

WITH 1/4" HOLE

PL 3/8" X 2" X 2"

BROOMED & FILLED WITH BONDED MATERIAL AFTER TIDING (1/2" ALONG CURB)
GENERAL ELEVATION

Note: Roadway fill shall be completed to the Final roadway section. The fill shall extend to the elevation of the top of the concrete beam within the limits of the structure. No fill shall extend to the fill face of the End Beams before piles are driven for any bents falling within the embankment section.

Note: "B" indicates location of bents. Boring data for all locations is available upon request from the District Office. Boring data for numbered sections is in plans of existing bridges.

Reinforcing Steel: Minimum clearance to reinforcing shall be 1/2" unless otherwise shown. Bars placed in old concrete not removed shall be closely spaced and embordered into new concrete whenever possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Construction Clearances: Fullwidth over existing lanes shall be constructed with a minimum vertical clearance of 10" from the high side of the existing roadway and a minimum lateral clearance of 52'-6".

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work. Traffic over structure shall be maintained during construction, for details of stage construction, see Sheet No. 7.

FINAL QUANTITIES

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<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
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</tr>
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</table>

BRIDGE ROUTE 54 OVER MISSOURI BLVD.

STATE ROAD

IN JEFFERSON

PROJECT NO. STA. 23 + 28.44

JOB NO. S-UT-54-2585

COLE COUNTY

DATE 4/21/89

BIDS: E.O.C. on N.E. corner of Bridge over Mo. Blvd.

S.W. E. & Math. Asst. 54

A-1305R
# Complete Bill of Reinforcing Steel

<table>
<thead>
<tr>
<th>BAR NO.</th>
<th>LOCATION</th>
<th>DIMENSIONS</th>
<th>B</th>
<th>C</th>
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## Bending Diagrams

- **Diagram 1**: Shows the bending sequence for bar 1.
- **Diagram 2**: Shows the bending sequence for bar 2.
- **Diagram 3**: Shows the bending sequence for bar 3.
- **Diagram 4**: Shows the bending sequence for bar 4.

### Notes
- All standard hooks and bends other than 180° will be bent with a 90° die.
- All bends will be made in accordance with the procedures at hand.
- If the bending sequence is not shown, the bar may be bent in any order.

### Table

<table>
<thead>
<tr>
<th>BAR NO.</th>
<th>LOCATION</th>
<th>DIMENSIONS</th>
<th>B</th>
<th>C</th>
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**Coyle County**  
**A:1305R**

---

**Date**: April 1005  
**Checked**: April 1958  
**Drawn**: R. L. S.

---

**Notes**
- All standard hooks and bends other than 180° will be bent with a 90° die.
- All bends will be made in accordance with the procedures at hand.
- If the bending sequence is not shown, the bar may be bent in any order.
Note: The contractor shall use an approved oscillating pored type self-propelled mechanized finishing machine and shall pour and simultaneously finish the roadway slab at a rate of not less than 5 cubic yards per hour. He shall observe the transverse construction joints shown on plans unless he can demonstrate to the satisfaction of the engineer that he is equipped to pour and satisfactorily finish the roadway slab at a rate which will permit a continuous pouring thru same or all of these joints. Finishing machine load will not be permitted on concrete less than 48 hours old.

Place transverse reinforcing bars and aids on concentric arcs.

Place transverse reinforcing parallel to bents.

All dimensions are horizontal.

For curb and median reinforcing see sheet 2.

For Sections 4A and 5A, see sheet 5.

Dimensions for spacing voids longitudinally marked * are minimum dimensions.

---

**TABLE OF SLAB DIMENSIONS**

<table>
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<th>Span</th>
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**Note:** This drawing is not to scale. Floor dimensions.
BRIDGE OVER BROADWAY STREET
STATE ROAD - ROUTE 54 RELLOCATION
IN JEFFERSON CITY
PROJECT NO. 091-54RTE 54I STA. 46+00.03
COLE COUNTY

SECTION A-A
Dimensions not shown same as shown for Section A-A

Note: Fiber tubes for producing voids shall have an outside diameter of .18" and a wall thickness of .010" and shall be anchored to girders by means of the Fiber Form at not more than 8" centers. See Special Provisions for metal tube alternate for voids.

For location of Sections A-A and B-B see Sheets G 11.

Note: This drawing is not to scale. Follow dimensions.
PART PLAN OF SLAB SHOWING
PRECAST SAFETY BARRIER CURB

NOTE: LONITUDINAL DIMENSIONS ARE PARALLEL TO GRADE AT TOP OF SLAB.
PART PLAN OF SLAB SHOWING
PRECAST SAFETY BARRIER CURB

NOTE: LONGITUDINAL DIMENSIONS ARE PARALLEL TO GRADE AT TOP OF SLAB.
PLAN OF EXISTING SLAB SHOWING SPECIAL REPAIR ZONES

Notes:
- All calculations required in the areas designated as special repair zones shall be computed on an identical sequence, any error in the remainder of the bridge shall be paid for by the contractor.
- All calculations shall be completed in the manner specified by the engineer.

Concrete repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 2000 psi before work can be started in the next special repair zone. Where repair comprises in areas adjacent to areas or subsequent repair, the concrete shall be separated with a material such as polythene sheeting and in normal or cured concrete, zones with the same letter designation may be repaired at the same time.

If any special repair area does not exceed 6 square feet or size, and the total repair within a special repair zone does not exceed 1 square foot, the special repair area shall be treated as a single repair zone. The special repair area shall be treated as described above.

The use of concrete in the deck shall be controlled as required by the engineer, and if specified in the contract documents shall be approved or rejected as required by the engineer.

An expanded mesh in the deck shall be placed as required by the engineer in a pattern that shall ensure the condition specified. Where concrete is specified, the meshing shall be specified and shall be used in accordance with the contract documents for repairing concrete deck slab failures.
DEVELOPED SECTION NEAR LEFT CURB BLOCKOUT

Notes:
- Concrete in curb blockout shall be Class B with 
  \( f_{c} = 4000 \text{ psi} \).
- Grout to be used for curb blockout is to the nearest 
  coarsest material available at the top outside edge or project 
  from edge to outside edge. Match existing curb and 
  parapet if possible.
- Placement of concrete shall be on a 2-inch-thick 
  concrete base or 2-inch-thick bed until otherwise 
  shown.
- Refer to concrete section for concrete details.
- An exposed edge of curb blockout shall have 1/2" radius 
  or 27 gauge unless otherwise shown.
- Do not cut or place concrete until proper exposure 
  thickness is reached. Refer to concrete section for 
  proper exposure.
- For Bridge Engineer's location in a detailed drawing, see 
  Section A-A. Refer to sheet with Sheet No. 4.

SECTION A-A  SECTION B-B

FILLED JOINT DETAIL

PART SECTION NEAR LEFT CURB BLOCKOUT
<table>
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<tr>
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**Bill of Reinforcing Steel**

**Dimensions**

- **Note:** This drawing is not to scale. Follow instructions. Sheet No. 6 of 6.
PLAN OF EXISTING SLAB SHOWING SPECIAL REPAIR ZONES

Notes:

As time permitting, required in the areas designated as special repair zones shall be completed in accordance with the requirements of this plan. All work shall be completed in accordance with the requirements of this plan.

Formed and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3050 psi before work can be placed in the next adjacent repair zone. Panel plans and concrete in areas adjacent to areas of subsequent repair shall be separated with a material such as paper, sheets, or wood in intervals of 8 feet.

Zones with the same letter designation may be repaired at the same time.

If any single repair area does not exceed 8 square feet in size and the total repair area in any special repair zone does not exceed 16 square feet, the special repair zone may be omitted. The use of a repair area, however, shall be subject to the approval of the engineer in the event that the engineer deems it necessary.

An exposed concrete slab shall be polished or replaced as required by the engineer in a manner that shall maintain the visual appearance of the concrete, except as otherwise specified by the engineer. The cost of concrete or other materials used in the slab shall be at the expense of the contractor.
TITLE SHEET
SEE
COLE CO. RTE. 54
C026-54(6)
A-1309
MISSOURI STATE HIGHWAY DEPARTMENT

SECTION C-C
- Span: 8'11.11/4" except as shown
- Spans 9'-01/2" (2 double) as shown (Placed parallel to Chord "A")
- Const. Jt. Key 10'-0" x 1'-0"
- E. Column
- 9'-41/2" (Evenly Spaced)
- 9'-5' (Evenly Spaced)
- Elev. G78.0

SECTION D-D
- Span: 8'11.11/4" except as shown
- Spans 9'-01/2" (2 double) as shown (Placed parallel to Chord "A")
- Const. Jt. Key 10'-0" x 1'-0"
- E. Column
- 9'-41/2" (Evenly Spaced)
- 9'-5' (Evenly Spaced)
- Elev. G76.0

PLAN
- Details of Int. Bent No. 2
- Const. Jt. Key 10'-0" x 1'-0"
- E. Column
- Chord "A"
- E. Roadway
- Const. Jt. Key 10'-0" x 1'-0"
- E. Column
- Chord "B"
- E. Roadway

DETAILS OF INT. BENT NO. 3

BRIDGE: S. B. LANE, MADISON ST. UNDERPASS
STATE ROAD: ROUTE 54 RELOCATION
IN: JEFFERSON CITY
PROJECT NO: 64-0030 (RTE. 54) STA. 65+68.64 (E. MED)
COLE COUNTY

Sheet No. 8 of 10

Note: This drawing is not to scale. Follow dimensions.
MISSOURI STATE HIGHWAY DEPARTMENT

FOOTING AND PILE DATA

<table>
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</table>

NOTE: All piles were driven to practical refusal or an impervious rock or other point bearing material at not less than the Plan Bearing shown.

GENERAL NOTES:

- For Barring Data see sheet No. 8 of 10.
- * Indicates location of baring.
GENERAL NOTES:

Design Specifications:

2002 ADAHDR LEED (V1) Standard Specifications
Bridge Deck Repair, w.

Design Specifications:

Class B1 Concrete (Cut Blockout) 7 0 = 1,000 psi
Hardening Street (Grate C6) 5 0 = 90,000 psi

All cut blockout areas shall be epoxy coated.

Reinforcing Steel:

Removal of reinforcing steel shall be 1/8" unless otherwise noted.

Joint Filler:

All joint fillers shall be in accordance with Sec 710 for precast concrete filler expansion joint filler.

Miscellaneous:

Overlaid by black wear surface, indicated by light dashed lines. Nursery areas, indicated as such.

Contractor shall verify all dimensions before ordering new materials.

Bridge surfaces adjacent to bridge ends shall match new bridge wearing surface roadway levels.

Existing bridge deck shall be removed and replaced or at the contract unit price which includes new bridge deck and surfacing. Replacement material to be selected by the Contractor at unit prices for Unit Blockout.

Concrete Protective Coatings:

Protective coating for concrete slab and edges. (Exposed) shall be applied at time of the bridge deck and in accordance with Sec 710.

Traffic Handlings:

Removal to be closed during construction traffic to be maintained or other routes during construction. See roadway plans for traffic control.

PART ELEVATION SHOWING SUBSTRUCTURE REPAIR (UNIFORMED) AT END BENT NO. 5 WING 

(REPAIR IS LOCATED ON THE RIGHT WING)

PART ELEVATION SHOWING LIMITS OF PROTECTIVE COATING AT INTERMEDIATE BENTS NO. 2, 3 & 4 (ALL COLUMNS)

PART ELEVATION SHOWING LIMITS OF PROTECTIVE COATING AT END BENT NO. 5 WINGS

DECK REPAIR DETAIL

REPAIRS TO BRIDGE: MADISON STREET OVER ROUTE 54

Erected by: 12/01/2017

Sheet No. 1 of 8

Note: This drawing is not to scale. Follow dimensions.
PART PLAN SHOWING END POST REINFORCEMENT

PLAN SHOWING END POST RESIN ANCHOR SYSTEMS AND DIMENSIONS

SECTION B-B

ELEVATION SHOWING END POST RESIN ANCHOR SYSTEMS AND DIMENSIONS

PART ELEVATION OF EXISTING END POST SHOWING CONCRETE REMOVAL

NOTES:

For details and dimensions, see Sheet No. 2.

- Vertical leg of existing flange at the inside face shall be extended and fixed to the ground level and vertical plate at the roadway face shall be removed to the inside. Tension anchors shall be set at the bumper and the remaining holes shall be filled with a 2 component structural adhesive.

DETAILS OF END POST AT END BENT NO. 5

Part not shown.
PART PLAN OF EXISTING SLAB SHOWING SPECIAL REPAIR ZONES

Notes:

1. All work required to the work described by special repair zones shall be completed in accordance with the requirements of the repair zones and the sectional areas of the repair zones. The repair zones shall be supported in accordance with the requirements of the repair zones. The repair zones shall be supported in accordance with the requirements of the repair zones. The repair zones shall be supported in accordance with the requirements of the repair zones. The repair zones shall be supported in accordance with the requirements of the repair zones.

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3. Zones with the same letter designation may be repaired at the same time except for the zones designated to be repaired at the same time. The zones designated to be repaired at the same time shall be repaired at the same time. The zones designated to be repaired at the same time shall be repaired at the same time. The zones designated to be repaired at the same time shall be repaired at the same time. The zones designated to be repaired at the same time shall be repaired at the same time.

4. The total repair area of each special repair zone does not exceed 10% of the total repair area. The total repair area of each special repair zone does not exceed 10% of the total repair area. The total repair area of each special repair zone does not exceed 10% of the total repair area. The total repair area of each special repair zone does not exceed 10% of the total repair area. The total repair area of each special repair zone does not exceed 10% of the total repair area.

5. Concrete repairs shall be completed in accordance with the requirements of the repair zones. Concrete repairs shall be completed in accordance with the requirements of the repair zones. Concrete repairs shall be completed in accordance with the requirements of the repair zones. Concrete repairs shall be completed in accordance with the requirements of the repair zones.

6. In exposed areas of the deck, shall be painted as approved by the owner's representative. Concrete repairs shall be completed in accordance with the requirements of the repair zones. Concrete repairs shall be completed in accordance with the requirements of the repair zones. Concrete repairs shall be completed in accordance with the requirements of the repair zones.

7. This drawing is not to scale. Follow dimensions.
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
U.I.P. EXISTING (4 @ 47.5') CONT. VOIDED SLAB SPANS

HALF SECTION THRU EXISTING VOIDED SLAB

GENERAL NOTES:

Design Specifications:
- 2002 - AASHTO 11th Edition
- Bridge Deck Rating = 6
- Design Unit Stress:
  - Class B-1 Concrete (Curb Blockout): f'c = 4,000 psi
  - Reinforcing Steel (Grade 60): f_y = 60,000 psi
- Reinforcing Steel:
  - Minimum service to reinforcing steel shall be 1/2", unless otherwise specified.
- Bar bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible.
- Length of new reinforcing shall be 45" for smooth bars and 30" for deformed bars, unless otherwise noted.
- Joint Fillers:
  - All joint fillers shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.
- Anchor Bars:
  - The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.
  - Cost of furnishing and installing the resin anchor system complete shall be considered completely covered by the contract unit price for Curb Blockout.
  - The 5/8" diameter resin anchor system shall have a maximum ultimate pullout strength of 15,500 lbs. In concrete with
    - An epoxy coated #5 Grade 60 reinforcing bar shall be substituted for the 5/8" threaded rod.
  - Mix specifications:
    - Concrete:
      - Mix design is indicated by dashed lines. Heavy lines indicate new work.
      - Contractor shall verify all dimensions in field before ordering.
      - The existing bridge rail shall be stored at a location as designated by the engineer at the Missouri Department of Transportation.

REPAIRS TO BRIDGE OVER MOREAU RIVER OVERFLOW
STATE ROAD FROM RTE. CC SOUTHWEST TO RTE. D
ABUT 1.5 MILES S.W. OF RTE. CC
PROJECT NO.: STA. 386+65 TO STA. 386+70
(MATCH EXIST.)
JOB NO.: JSP0821
RTE. 40 W.B.

COLE COUNTY

809-00
611-00

73
### BILL OF REINFORCING STEEL

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**Notes:**
- Dimensions shown in the drawing are not to scale. Follow dimensions.
- Two additional 45-60 are included in the bar bill for testing.

---

**Detailed View:**
- 90° STRAIGHT 135° STRAP
- Detailed View: 90° 135° STRAP

**Renewing Diagrams:**
- Cole County A14152

---

**Dimensions:**
- 90° view 135° view

---

**Bill of Rebar:**
- Total: 9
- Total Weight: 150 lbs.
TITLE SHEET

SEE

COLE CO. RTE. 54

C026-54(6)

A-1672
MISSOURI STATE HIGHWAY DEPARTMENT

GENERAL NOTES:
- Design Specifications: IA.A.S.H.O. '86
- Design Loading: 100 kips, 45 mph, Future Heavy Vehicle
- Earth (10% Equivalent Fluid Pressure 30 psi)
- Design weir stresses:
  - Class 8 Concrete (Superstructure) R: 1.0, 2,000 psi
  - Class 7 Concrete (Superstructure) R: 1.0, 200 psi
  - Reinforcing Steel R: 30,000 psi
- Steel Pipe: 30' 6" 13.25" OD 0.035 wall = 200 lbs

Note: Conventional roadway fills (full roadway width) should be placed in the following order of preference: concrete beam at front of and not less than 50' from back of final beam. As beams are driven, fill shall be placed.

Note: Beam shall be carried a' into hard, undisturbed rock or alluvial fan and grid washed against vertical faces of beam.

FOOTING AND PILE DATA

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Note: All steel shall be driven to practical refusal on or into solid rock or other suitable bearing material not less than 500 psi. When driven, examples are recommended for verification and in certain cases shall be driven with a hammer. Note: All concrete and reinforcement above fillings in intermediate bents shall be included in superstructure quantities. No payment for excavation will be allowed at final beam No. 4.

ESTIMATED QUANTITIES

- Pile: 40' L: 0.025
- Concrete: 0.015
- Rebar: 0.005

Note: All concrete and reinforcement above fillings in intermediate bents is included in superstructure quantities. No payment for excavation will be allowed at final beam No. 4.

BRIDGE OVER STADIUM DRIVE

STATE ROAD - ROUTE 54 RELOCATION

IN JEFFERSON CITY

PROJECT NO. 108-0071-541 STA. 12+88.20

COLE COUNTY

Sheet No. 1 of 10
MISSOURI STATE HIGHWAY DEPARTMENT

COMPLETE BILL OF REINFORCING STEEL

Sizing Sketches & Cutting Diagrams

BRIDGE OVER STADIUM DRIVE
STATE ROAD - ROUTE 54 RELOCATION
IN JEFFERSON CITY
PROJECT NO. (COLE COUNTY)

COLE COUNTY

DESIGNED: Feb. 1997 by Johnson
INSTRUCTED: Late 1997 by Walker
CHECKED: Sept. 1997 by Semencisek

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

Sheet No. 2 of 10

A-1672
Missouri State Highway Department

General Notes:
- All handrail posts shall be set normal to grade. Aluminum handrails shall be bolted to concrete. Vertical and horizontal alignment of post and handrail shall be in line with adjacent rail system. All parts of handrail, except anchor bolts, nuts, washers, and set screws are to be of aluminum material.
- The contract unit price per piece of handrail post or bridge rail shall include preliminary, none, or proportion of the cost of anchor bolts, shims, and necessary components. All fittings will be furnished by the contractor.
- All gravel fill will be noted. Hand rails to be fabricated in two or three pieces. Lengths, unless otherwise approved, shall be noted.
- All set screws are to be located at the end of each handrail post, parapet and bridge rail. All handrails shall have a radius of not less than 1/2 inch, and all joints shall be securely fastened with drive or cast aluminum ends cast in lieu of welded aluminum closure plates.

Single Tube Aluminum Railing

Elevation of Right Curb and Parapet

Section A-A

Bridge Over Stadium Drive
State Road - Route 54 Relocation
In Joplin, Missouri
Project No. 09-21905, Section 1
Coale County

Note: This drawing is not to scale, follow dimensions.
TYPICAL SECTION THRU SLAB

NOTE: APPLY A PENETRATION SEAL (SEAL COAT) IMMEDIATELY BEFORE OR AFTER THE APPLICATION OF THE PAVEMENT SEAL COAT. REMOVE EXISTING PRECAST CURB AND REMOVE EXISTING CURB FILLER. DEMOLISH MEDIAN dafür REMOVAL OF THE EXISTING MEDIAN MEDIAN

GENERAL NOTES:

DESIGN SPECIFICATIONS:
AASHTO 1985 AND INTERIM 1984 THRU 1988
DESIGN UNIT STRENGTH:
CLASS B1 CONCRETE (PRECAST SAFETY BARRIER CURB) F'2= 4,000 PSI
REINFORCING STEEL (GRADE 60) FT'= 40,600 PSI
JOINT FILLER:
ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD SPEC 1057 2.4 EXCEPT AS NOTED.

REINFORCING STEEL:
MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1/4 UNLESS OTHERWISE SHOWN
TRAFFIC MAINTAINED:
RECONSTRUCT LINE OF TRAFFIC IN EACH DIRECTION ON STRUCTURE DURING CONSTRUCTION (SEE ROADWAY PLANS)
OUTLINE OF OLD WORK TO BE INDICATED BY LIGHT DASHED LINES; HEAVY LINES INDICATE NEW WORK

ESTIMATED QUANTITIES

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<tr>
<td>REINFORCING STEEL</td>
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NOTE: ALL OTHER RECOMMENDED MATERIALS, SUCH AS CEMENT OR OTHER MODIFIERS SHALL BE APPLIED AT A RATE OF 5% TO 10% OVER BASEMENT. THESE MATERIALS ARE NOT SPECIFIC TO SPECIAL PROVISIONS SHALL BE APPLIED AT A RATE OF 5% TO 10% OVER BASEMENT.

REPAIRS TO
BRIDGE OVER STADIUM DRIVE
STATE ROAD = ROUTE 54
IN JEFFERSON CITY
PROJECT NO. 72-08.29
JOB NO. 5-U-04-2988
RTE. 54
COLE COUNTY
COLE 4/21/69

SEE FINAL PLANS

NOTE: THIS DRAWING IS NOT TO SCALE - FOLLOW DIMENSIONS
SHEET NO. 1 OF 2
PART PLAN OF SLAB SHOWING PRECAST SAFETY BARRIERS CLISE

NOTE: DIMENSIONS SHOWN ARE TAKEN AT TOP OF PLINT PARALLEL TO GRACE

SHEET NO. 2 OF 3

COLE COUNTY A-1672R
GENERAL NOTES:

Design Specifications:
- AASHTO LRFD Bridge Design Specifications
- AASHTO Standard Specifications for Highway Bridges
- AASHTO Standard Specifications for Reinforced Concrete Bridges

Reinforcement:
- All reinforcement shall be in accordance with the American Concrete Institute (ACI) specifications.
- All reinforcement shall be placed in accordance with the American Society of Civil Engineers (ASCE) guidelines.

Concrete:
- Concrete shall be placed in accordance with the American Society for Testing and Materials (ASTM) standards.
- All concrete shall be placed in accordance with the American Concrete Institute (ACI) guidelines.

Joint Filler:
- All joint filler shall be in accordance with the American Concrete Institute (ACI) guidelines.
- All joint filler shall be placed in accordance with the American Society of Civil Engineers (ASCE) guidelines.

ERG:
- All ERG shall be in accordance with the American Concrete Institute (ACI) guidelines.
- All ERG shall be placed in accordance with the American Society of Civil Engineers (ASCE) guidelines.

Concrete Protection:
- Concrete shall be protected in accordance with the American Concrete Institute (ACI) guidelines.
- All concrete shall be protected in accordance with the American Society of Civil Engineers (ASCE) guidelines.

Estimated Quantities:

<table>
<thead>
<tr>
<th>Item</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Epoxy Primer</td>
<td>400 square ft</td>
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<tr>
<td>Epoxy Sealer</td>
<td>500 square ft</td>
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<td>Epoxy Coating</td>
<td>600 square ft</td>
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<tr>
<td>Protective Coating</td>
<td>100 square ft</td>
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PART ELEVATION OF BENTS NO. 2 AND 3 SHOWING PROTECTIVE COATING

Note: For location of resin anchor see Sheets No. 3 and 4.

DETAILS OF RESIN ANCHOR SYSTEM

- 4-way anchor as recommended by the American Concrete Institute (ACI)
- All anchors shall be placed in accordance with the American Society of Civil Engineers (ASCE) guidelines.
PLAN OF EXISTING SLAB SHOWING SPECIAL REPAIR ZONES

Notes:
1. All blasting required in the areas designated as special repair zones shall be completed in alphabetical sequence, any repair in the remainder of the bridge that is approved to occur a method designated as a special repair zone shall be completed after work in special repair zones.

2. Removal and repair shall be completed as per special repair zone and concrete shall have attained a compressive strength of 3000 psi before work can be started in the new special repair zone. Before any concrete is poured adjacent to areas of subsequent repair, the concrete shall be separated with a minimum of 0.50" precut joints. In the removal of old concrete, zones with the same letter designation may be repaired at the same time.

3. In any special repair zone does not exceed a square area of 5'x5' and the total repair within the special repair zone does not exceed 10 square feet in area, the special repair zone may be combined and the maximum project phase permits. The work in each special repair zone is completed and the concrete is ready to be placed or replaced as required by the engineer of the contractor's sequence.

An approved use of the deck shall be finished as approved by the engineer in a manner that should maintain the visual and aesthetic appearance of the overhead of the deck or other concrete that is removed or replaced subject to the conditions of the work permit and approved pre-construction plans for improving concrete deck blasting.
SECTION NEAR LEFT CURB BLOCKOUT

Notes: All structural dimensions shown are clear and are taken at the outside edge or perimeter. Bridge parts are shown for clarity.

Concrete in curb blockout shall be Class 4 with 6,000 psi.

Measurement of curb blockout is to the nearest linear edge, including on the top, bottom, edge or perimeter, and no wing or step on any other block used for curb blockout, composted in place, and to be included in the contract unit price for curb blockout per linear foot.

Allow 1/2" radius on 1/2" base unless otherwise shown.

Cost or pay operators curb or painted edges shall be included in the contract unit price for curb blockout.

For anchor and other details, see Sheet No. 1.

Note: This drawing is not to scale. Follow dimensions.
ELEVATION NEAR RIGHT CURB BLOCKOUT

Note: All construction dimensions shown are along grade and are taken at top outside edge of pavement.

Bridge parapet shown for clarity.

NOTES:

Concrete for curb blockout shall be class B-4 with Fa = 4000 psi.

Measurement of curb blockout is to the nearest linear foot. All notes are to the right and left edges of pavement, except at wing and shoulder. Where leading curb and parapet.

Paint for concrete, resilient rubber, steel, and anchors, and any other work incidental to this work blockout, except as shown, shall be included in the contract unit price for curb blockout per linear foot.

All exposed edges of curb blockout shall be 1/2" radius of 3/8" bend unless otherwise shown.

Cost or any concrete curb or poured pavement will be included in the contract and price for curb blockout.

For floor and other details, and additional notes, see Sheet No. 1.

Sheet No. 4 of 6.

ELEVATION NEAR RIGHT CURB BLOCKOUT

SECTION A-A

SECTION B-B

PART SECTION NEAR RIGHT CURB BLOCKOUT
<table>
<thead>
<tr>
<th>No.</th>
<th>Section</th>
<th>(Location)</th>
<th>Type</th>
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<th>Grade</th>
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**Bridge: West Traffic Loop Underrail**

State Road: Route 50 Relocation

In Jefferson City

Project No: MTE-50-SEL.26(2) U

 sta 763 + 00.67

Cole County

Drawing No: A-1416

Sheet No: 2 of 2

Note: This drawing is not to scale. Follow dimensions.
MISSOURI STATE HIGHWAY DEPARTMENT

BRIDGE: WEST TRAFFIC LOOP UNDERPASS
STATE ROAD ROUTE 50 RELOCATION
IN JEFFERSON CITY

PROJECT NO: RTE.50-SEC.26[21U] STA. 765+03.67
COLE COUNTY

SECTION A-A
Note: Curb and Parapet not shown

BENDING SKETCH

PART SPAN (1-2) PART SPAN (2-3) SHOWING TOP REINFORCEMENT