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## BRIDGE STANDARD DRAWINGS

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## ROADWAY STANDARD DRAWINGS

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**32 FT. CLEAR ROADWAY BRIDGE - HYDRODEMOLITION**

**ROAD TRANSITIONS AND NEW GUARDRAIL**

**TYPICAL SECTIONS OF IMPROVEMENT**

---

**NOTES:**

1. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.
2. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.
3. COLD MILLED MATERIAL IS TO REMAIN THE PROPERTY OF THE CONTRACTOR IF AND WHERE BY THE ENGINEER.
4. LONGITUDINAL JOINTS ARE TO BE PLACED PER TYPICAL SECTION IN ACCORDANCE WITH STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION, 2014 EDITION, SECTION 410.07 UNLESS OTHERWISE APPROVED IF AND WHERE BY THE ENGINEER.
5. ALL CROSS SLOPES ARE TO MATCH EXISTING CROSS SLOPES UNLESS OTHERWISE APPROVED BY THE ENGINEER.
6. REFER TO SPECIAL DETAILS AND QUANTITY SHEETS FOR ROADWAY TRANSITIONS, GUARDRAIL WIDENING AND GUARDRAIL INSTALLATION INFORMATION.
8. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING TRANSITIONS SHALL BE REPAIRED AT SARINC ACROSS A NEXT LINE. AFTER REPAIRING THE PAVEMENT TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
2 LANE ROADWAY - NORTH

LT. LANE TRANSITIONS FROM 24'-0" TO 35'-0"

RT. LANE TRANSITIONS FROM 24'-0" TO 35'-0"

* ROADWAY WIDTH TRANSITIONS FROM 24'-0" TO 62'-0"

AT INTERSECTION

2 LANE ROADWAY - SOUTH

24'-0" ACWW SURFACE COURSE (0'/")

24'-0" TACK COAT

0.020" (TYP.)

24'-0" COLD MILLING

24'-0" EXISTING BRIDGE DECK

2 LANE BRIDGE

24'-0" CLEAR ROADWAY

24'-0" ACHM SURFACE COURSE (0'/")

24'-0" TACK COAT

0.020" (TYP.)

24'-0" COLD MILLING

24'-0" EXISTING BRIDGE DECK

NOTES:

1. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.

2. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.

3. COLD MILLED MATERIAL IS TO REMAIN THE PROPERTY OF THE CONTRACTOR IF AND WHERE APPROVED IF AND WHERE BY THE ENGINEER.

4. REFER TO SPECIAL DETAILS AND QUANTITY SHEETS FOR ROADWAY TRANSITIONS, GUARDRAIL INSTALLATION, AND GUARDRAIL EXTENSIONS.

5. ALL CROSS SLOPES ARE TO MATCH EXISTING CROSS SLOPES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

6. REFER TO SPECIAL DETAILS AND QUANTITY SHEETS FOR ROADWAY TRANSITIONS, GUARDRAIL INSTALLATION, AND GUARDRAIL EXTENSIONS.

7. FOR HORIZONTAL AND VERtical CONTROLS AT DIAGONAL LOCATIONS, THE GUARDRAIL 90" WIDE LENGTH MUST MATCH THE LANE WIDTH AND SLIP EDGE OF THE MAIN LANE TRANSITIONS. THE MAIN LANE TRANSITIONS AND GUARDRAIL EXTENSIONS SHALL BE PAVED PRIOR TO CONSTRUCTION OF THE GUARDRAIL TRANSITIONS.

8. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED ALONG THE TRANSITIONS AND GUARDRAIL INSTALLATION INFORMATION.

9. REFER TO SPECIAL DETAILS AND QUANTITY SHEETS FOR ROADWAY TRANSITIONS, GUARDRAIL INSTALLATION, AND GUARDRAIL EXTENSIONS.

10. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.

11. STRINGLINE WILL BE USED TO MAINTAIN A UNIFORM HORIZONTAL ALIGNMENT.

12. THE CONTRACTOR SHALL FURNISH & MAINTAIN STD. W8-11 "UNEVEN LANES" SIGNS (48" X 48") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL LONGITUDINAL JOINTS DURING MILLING AND PAVING OPERATIONS.

13. COLD MILLED MATERIAL IS TO REMAIN THE PROPERTY OF THE CONTRACTOR IF AND WHERE APPROVED IF AND WHERE BY THE ENGINEER.

14. REFER TO SPECIAL DETAILS AND QUANTITY SHEETS FOR ROADWAY TRANSITIONS, GUARDRAIL INSTALLATION, AND GUARDRAIL EXTENSIONS.

15. ALL CROSS SLOPES ARE TO MATCH EXISTING CROSS SLOPES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

16. REFER TO SPECIAL DETAILS AND QUANTITY SHEETS FOR ROADWAY TRANSITIONS, GUARDRAIL INSTALLATION, AND GUARDRAIL EXTENSIONS.

17. FOR HORIZONTAL AND VERtical CONTROLS AT DIAGONAL LOCATIONS, THE GUARDRAIL 90" WIDE LENGTH MUST MATCH THE LANE WIDTH AND SLIP EDGE OF THE MAIN LANE TRANSITIONS. THE MAIN LANE TRANSITIONS AND GUARDRAIL EXTENSIONS SHALL BE PAVED PRIOR TO CONSTRUCTION OF THE GUARDRAIL TRANSITIONS.

18. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED ALONG THE TRANSITIONS AND GUARDRAIL INSTALLATION INFORMATION.

19. REFER TO SPECIAL DETAILS AND QUANTITY SHEETS FOR ROADWAY TRANSITIONS, GUARDRAIL INSTALLATION, AND GUARDRAIL EXTENSIONS.


21. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED ALONG THE TRANSITIONS AND GUARDRAIL INSTALLATION INFORMATION.
24 FT. CLEAR ROADWAY BRIDGES - HYDRODEMOLITION
(Road Transitions and New Guardrail)

1. Stringline will be used to maintain a uniform horizontal alignment.
2. The contractor shall furnish and maintain standard 6-foot stringlines.
3. Cold milled material is to remain the property of the contractor.
4. Longitudinal joints are to be placed per typical section in accordance with standard specification for highway construction, 2014 edition, section 410.07 unless otherwise approved by the engineer.
5. All cross slopes are to match existing cross slopes unless otherwise approved by the engineer.
6. Refer to special details and quantity sheets for roadway transitions, guardrail, median and guardrail installation information.
7. For horizontal and vertical control at guardrail locations, the guardrail recess slopes and edges shall match the slopes and edges of the main lane. Transitions and guardrail extensions shall be paved prior to construction of the guardrail widening.
8. Longitudinal joints during milling and paving operations.

Notes:

6 - BR. NO. 07413 - HWY. 14, SEC. 3
4 - BR. NO. 03519 - HWY. 95, SEC. 1
2 - BR. NO. 03519 - HWY. 95, SEC. 1

TYPICAL SECTIONS OF IMPROVEMENT
ARKANSAS HIGHWAY DISTRICT 9

LEGEND

- HYDRODEMOLITION

HWY 102, SEC 1
1.00 MILE 8.999 BR. END
OVER KANSAS CITY SOUTHERN R.R.
179 - 4 13/16" BRIDGE NO. 95669
27'-0" CLEAR ROADWAY
(HYDRODEMOLITION)

DISTRICT 9
INSET - I
NOT TO SCALE
WIDENING FOR GUARDRAIL REQUIRING EARTHWORK

* NOTES:
1. REFER TO STD. DWG. GR-9 FOR SLOPE REQUIREMENTS BEHIND GUARDRAIL.
2. FOR HORIZONTAL AND VERTICAL CONTROL, THE GUARDRAIL WIDENING SHALL MATCH THE SLOPES AND GRADES OF THE MAIN LANE. CONSTRUCT BRIDGE APPROACH AND MAIN LANE TRANSITIONS BEFORE PAVING GUARDRAIL WIDENING.

TRENCH & SHOULDER PREP.
FOR MAINTENANCE OF TRAFFIC

NOT ES TRENCHING & SHOULDER PREP. FOR MAINTENANCE OF TRAFFIC IS TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. THE QUANTITY WILL BE ESTIMATED.

SPECIAL DETAILS

1'-6"
2'-0"
5'-6" NORM.
0.020 /
0.040 /
0.040 /
0.020 /
0.040 /
TERMINATION OF TRANSITION 2" ACHM SURFACE COURSE (1/2"

DETAIL FOR TRANSITIONS

1. ACHM SHALL BE PLACED FOR ROADWAY TRANSITIONS AND
   TRANSITION NOTES:
   * ACHM WIDE TO PREVENT WIDE TRANSITIONS AND
   GUARDRAIL WIDENING AFTER HYDRODEMOLITION HAS BEEN COMPLETED.
   * DIMENSIONS AND QUANTITIES WILL BE FIELD CHECKED BY THE ENGINEER.
   * QUANTITIES ARE SHOWN FOR ESTIMATING AND BIDDING PURPOSES ONLY.
   * QUANTITIES WILL BE PAID BY ACTUAL MEASUREMENTS TAKEN IN THE FIELD.

DETAIL FOR GRADE RAISE TRANSITION

DETAILED FOR PAVEMENT MILL & INLAY
AT BRIDGE ENDS TO REPAIR ASPHALT ROADWAY

* AND WHERE DIRECTED BY THE ENGINEER.
TEMPORARY EROSION CONTROL DETAILS

EROSION CONTROL DETAIL: SILT FENCE WITH SHOULDER WIDENING FOR GUARDRAIL INSTALLATIONS

1. Refer to Fig. 3.6.1.0 for slope requirements behind guardrail.
2. For horizontal and vertical control, the guardrail widening shall match the grades and slopes of the main lane shoulders. Construct the widening with stone or mastic where extending guardrail, extending.

LEGEND

- Silt fence
- Filter socks
- Wattle ditch check
- Rock ditch check

NOTES:

- Implement Erosion Control E-11:
  - Rock ditch check quantity has been estimated providing one rock ditch check for each corner of ditch. Refer to standard quantity notes.

TEMPORARY EROSION CONTROL GENERAL NOTES:

- The quantities and locations of the erosion control devices shown in these plans may be estimated or may be altered if and when dictated by the engineer.
- Erosion control measures to be placed only when the soil disturbing activity in that area is complete.
- Refer to Section 110 of the Standard Specifications for additional requirements.

- Erosion control measures to be placed during appropriate stages above devices shall not be placed as long as required to control erosion.
CONSTRUCTION SEQUENCE

STAGE 1
- Install advance warning signs and end road work signs at the locations shown.
- Install maintenance of traffic devices as shown in stage and remove construction pavement markings on multiple lanes.
- On closed lane and shoulder - set up, check and quantify approach devices listed in quantity sheets. Ensure guidance at sites for quantities maintained.
- Convey layout along initial traffic. Convey approach devices and guidance with aid of permanent installations.

STAGE 2
- Mirror installation of advance warning signs and end road work signs for stage 1.
- Mirror installation of traffic devices for stage 2 and install temporary construction pavement markings in lane of travel until Shoulder lane is returned to normal traffic.
- On closed lane & shoulder - set up, check and quantify approach devices listed in quantity sheets. Ensure guidance at sites for quantities maintained.
- Convey layout along initial traffic. Convey approach devices and guidance with aid of permanent installations.
- Return traffic to normal pattern.

MAINTENANCE OF TRAFFIC NOTES:
1. The contractor shall provide 2-way radio communication for flag persons for construction under traffic.
2. The contractor shall furnish and maintain standard signs 120" x 20" with black legend on orange background at all transverse joints exposed to traffic.
3. The contractor shall furnish and maintain standard "right lane" signs 30" x 20" with black legend on orange background at all longitudinal joints during milling and paving operations.
4. The edge lines shall not be placed on the finished asphalt surface until after all work adjacent to the paving zone including grooving, compacting and excess is completed in order to avoid damaging the edge lines.
5. 6. The edge lines shall not be placed on the finished asphalt surface during milling and paving operations.

MATCH LINE A TAPER 1/2 MILE ROAD (1) W20-4 ONE LANE 140' 50' 45' LEGEND HERE ON (1) R10-6 12" WHITE STOP LINE TRAFFIC FLOW ARROWS
(24" X 36"
(1) W3-3 30" X 36"
(1) G20-2 36" X 18"
(1) R2-1 END SPEED ROAD WORK
(36" X 36"
(2) R4-1 36" X 36"
(2) W21-5a

2.231 DIST.NO. ARK.
6 60377
012377 JOB NO.
MILE HWY. 95 250' 500' 1 250' 250' 250' THRU END OF TRANSITIONS

CONSTRUCTION SEQUENCE
- Install advance warning signs and end road work signs at the locations shown.
- Install maintenance of traffic devices as shown in stage and remove construction pavement markings on multiple lanes.
- On closed lane and shoulder - set up, check and quantify approach devices listed in quantity sheets. Ensure guidance at sites for quantities maintained.
- Convey layout along initial traffic. Convey approach devices and guidance with aid of permanent installations.
- Return traffic to normal pattern.

MAINTENANCE OF TRAFFIC NOTES:
1. The contractor shall provide 2-way radio communication for flag persons for construction under traffic.
2. The contractor shall furnish and maintain standard signs 120" x 20" with black legend on orange background at all transverse joints exposed to traffic.
3. The contractor shall furnish and maintain standard "right lane" signs 30" x 20" with black legend on orange background at all longitudinal joints during milling and paving operations.
4. The edge lines shall not be placed on the finished asphalt surface until after all work adjacent to the paving zone including grooving, compacting and excess is completed in order to avoid damaging the edge lines.
5. Flagging may be used if and where directed by the engineer.
6. Vertical panel quantities and provide for bridge clear roadway width of 28'-0" or less.

MATCH LINE A TAPER 1/2 MILE ROAD (1) W20-4 ONE LANE 140' 50' 45' LEGEND HERE ON (1) R10-6 12" WHITE STOP LINE TRAFFIC FLOW ARROWS
(24" X 36"
(1) W3-3 30" X 36"
(1) G20-2 36" X 18"
(1) R2-1 END SPEED ROAD WORK
(36" X 36"
(2) R4-1 36" X 36"
(2) W21-5a

2.231 DIST.NO. ARK.
6 60377
012377 JOB NO.
MILE HWY. 95 250' 500' 1 250' 250' 250' THRU END OF TRANSITIONS

CONSTRUCTION SEQUENCE
- Install advance warning signs and end road work signs at the locations shown.
- Install maintenance of traffic devices as shown in stage and remove construction pavement markings on multiple lanes.
- On closed lane and shoulder - set up, check and quantify approach devices listed in quantity sheets. Ensure guidance at sites for quantities maintained.
- Convey layout along initial traffic. Convey approach devices and guidance with aid of permanent installations.
- Return traffic to normal pattern.

MAINTENANCE OF TRAFFIC NOTES:
1. The contractor shall provide 2-way radio communication for flag persons for construction under traffic.
2. The contractor shall furnish and maintain standard signs 120" x 20" with black legend on orange background at all transverse joints exposed to traffic.
3. The contractor shall furnish and maintain standard "right lane" signs 30" x 20" with black legend on orange background at all longitudinal joints during milling and paving operations.
4. The edge lines shall not be placed on the finished asphalt surface until after all work adjacent to the paving zone including grooving, compacting and excess is completed in order to avoid damaging the edge lines.
5. Flagging may be used if and where directed by the engineer.
6. Vertical panel quantities and provide for bridge clear roadway width of 28'-0" or less.

MATCH LINE A TAPER 1/2 MILE ROAD (1) W20-4 ONE LANE 140' 50' 45' LEGEND HERE ON (1) R10-6 12" WHITE STOP LINE TRAFFIC FLOW ARROWS
(24" X 36"
(1) W3-3 30" X 36"
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(1) R2-1 END SPEED ROAD WORK
(36" X 36"
(2) R4-1 36" X 36"
(2) W21-5a

2.231 DIST.NO. ARK.
6 60377
012377 JOB NO.
MILE HWY. 95 250' 500' 1 250' 250' 250' THRU END OF TRANSITIONS

CONSTRUCTION SEQUENCE
- Install advance warning signs and end road work signs at the locations shown.
- Install maintenance of traffic devices as shown in stage and remove construction pavement markings on multiple lanes.
- On closed lane and shoulder - set up, check and quantify approach devices listed in quantity sheets. Ensure guidance at sites for quantities maintained.
- Convey layout along initial traffic. Convey approach devices and guidance with aid of permanent installations.
- Return traffic to normal pattern.

MAINTENANCE OF TRAFFIC NOTES:
1. The contractor shall provide 2-way radio communication for flag persons for construction under traffic.
2. The contractor shall furnish and maintain standard signs 120" x 20" with black legend on orange background at all transverse joints exposed to traffic.
3. The contractor shall furnish and maintain standard "right lane" signs 30" x 20" with black legend on orange background at all longitudinal joints during milling and paving operations.
4. The edge lines shall not be placed on the finished asphalt surface until after all work adjacent to the paving zone including grooving, compacting and excess is completed in order to avoid damaging the edge lines.
5. Flagging may be used if and where directed by the engineer.
6. Vertical panel quantities and provide for bridge clear roadway width of 28'-0" or less.

MATCH LINE A TAPER 1/2 MILE ROAD (1) W20-4 ONE LANE 140' 50' 45' LEGEND HERE ON (1) R10-6 12" WHITE STOP LINE TRAFFIC FLOW ARROWS
(24" X 36"
(1) W3-3 30" X 36"
(1) G20-2 36" X 18"
(1) R2-1 END SPEED ROAD WORK
(36" X 36"
(2) R4-1 36" X 36"
(2) W21-5a

2.231 DIST.NO. ARK.
6 60377
012377 JOB NO.
MILE HWY. 95 250' 500' 1 250' 250' 250' THRU END OF TRANSITIONS

CONSTRUCTION SEQUENCE
- Install advance warning signs and end road work signs at the locations shown.
- Install maintenance of traffic devices as shown in stage and remove construction pavement markings on multiple lanes.
- On closed lane and shoulder - set up, check and quantify approach devices listed in quantity sheets. Ensure guidance at sites for quantities maintained.
- Convey layout along initial traffic. Convey approach devices and guidance with aid of permanent installations.
- Return traffic to normal pattern.

MAINTENANCE OF TRAFFIC NOTES:
1. The contractor shall provide 2-way radio communication for flag persons for construction under traffic.
2. The contractor shall furnish and maintain standard signs 120" x 20" with black legend on orange background at all transverse joints exposed to traffic.
3. The contractor shall furnish and maintain standard "right lane" signs 30" x 20" with black legend on orange background at all longitudinal joints during milling and paving operations.
4. The edge lines shall not be placed on the finished asphalt surface until after all work adjacent to the paving zone including grooving, compacting and excess is completed in order to avoid damaging the edge lines.
5. Flagging may be used if and where directed by the engineer.
6. Vertical panel quantities and provide for bridge clear roadway width of 28'-0" or less.
MAINTENANCE OF TRAFFIC NOTES:
1. The contractor shall provide 2-way face communication for flag person for construction under traffic.
2. The contractor shall furnish and maintain standard signs (36" x 36") with black legend on orange background at all longitudinal joints during milling and paving operations.
3. The contractor shall furnish and maintain standard portable signal system.
4. The end work shall not be placed on the finished surface until after all work adjacent to the pavement edge including spreading, compaction, and seal is completed in order to avoid damaging the edge line.

MAINTENANCE OF TRAFFIC DETAILS:
1. The contractor shall furnish and maintain standard portable signal system.
2. Flagging may be used if and where directed by the engineer.
3. Vertical panel quantities are provided for bridge clear roadway width of 28'-0" or less.

CONSTRUCTION SEQUENCE

STAGE 1:
- Install Advance Warning Signs and End Road Work Signs at the locations shown for Stage 1.
- Install maintenance of traffic devices as shown in Stage 1 removable construction pavement markings (12" white stop lines).
- On closed lane & shoulder - at 2 locations and right shoulder construct bridge headwall to maintain the existing approach distance.
- Install permanent pavement markings.
- Install main lane then right lane.
- Removal of unused approach distances and make road adjacent to the pavement edge.
- Remove temporary pavement markings.
- Install permanent pavement markings.
- Return traffic to normal pattern.

STAGE 2:
- Mirror installation of Advance Warning Signs and End Road Work Signs for Stage 2.
- Mirror installation of traffic devices for Stage 2 and install removable construction pavement markings (12" white stop lines) on opposite lane for Stage 2.
- On closed lane & shoulder - at 2 locations and right shoulder construct bridge headwall to maintain the existing approach distance.
- Install permanent pavement markings.
- Return maintenance of traffic devices to Stage 1 removable construction pavement markings.
- Install mirror Advance Warning Signs and End Road Work Signs at the locations shown for Stage 2.
- Return traffic to normal pattern.

LEGEND
- Vertical Panel
- Temporary Traffic Sign
- Traffic Flow Arrows

LANE CLOSURE WITH PORTABLE TRAFFIC SIGNAL SYSTEM & VERTICAL PANELS FOR HYDRODEMOLITION BRIDGES
24'-0" CLEAR ROADWAY ON THE BRIDGE DECKS

ADVANCE WARNING (2 LANE ROADWAY) MAINTENANCE OF TRAFFIC DETAILS
CONSTRUCTION SEQUENCE

STAGE 1
INSTALL ADVANCE WARNING SIGNS AND DEVICES FOR MAINTENANCE OF TRAFFIC.
HYDRODEMOLITION CONSTRUCTED FOR RIGHT HALF OF BRIDGE NO. 03144.

STAGE 2
RELOCATE MAINTENANCE OF TRAFFIC SIGNS AND DEVICES)
HYDRODEMOLITION CONSTRUCTED FOR LEFT HALF OF BRIDGE NO. 03144.

NOTE:
IF MAIN ST. HAS EXISTING YELLOW CENTERLINE PAINTING MARKINGS
WHERE ROAD DETOUR IS ONE LANE, REMOVE EXISTING PAINTING MARKINGS
FOR DETOUR AND REPLACE WITH YELLOW REFLECTORIZED PAINT MARKINGS
ONCE CONSTRUCTION ON BRIDGE NO. 03144 IS COMPLETE.
CONSTRUCTION SEQUENCE

STAGE 1
- Install advance warning signs and devices for maintenance of traffic.
- Hydrodemolition constructed for right half of Bridge No. 03144.

STAGE 2
- Relocate maintenance of traffic signs and devices for right half of Bridge No. 03144.
- Hydrodemolition constructed for left half of Bridge No. 03144.
- Construct mill and ash mix inlay transitions.

NOTES
- If main st, use existing yellow centerline pavement markings.
- Where road detour is one lane, replace current temporary markings for detour and replace with yellow reflectorized wing lane pavement markings once construction on Bridge No. 03144 is complete.
MAINTENANCE OF TRAFFIC DETAILS

2 LANE BRIDGE

STAGE 1

2 LANE BRIDGE

STAGE 2

TYPICAL SECTIONS (2 LANE ROADWAYS W/ TRAFFIC DRUMS)
MAINTENANCE OF TRAFFIC DETAILS
PERMANENT PAVEMENT MARKING DETAILS

BRIDGES < 2,000 ADT

1. Bridge and roadway dimensions vary for each site. Refer to typical sections.
2. Pavement markings are to be placed prior to the final lift of the surface course.
3. Refer to "Permanent Pavement Markings Details" for pavement marking quantities at each bridge site.

BRIDGES > 2,000 ADT

1. The 6" yellow striping quantity has been estimated based on a double yellow centerline for each bridge site.
2. The project must be marked for passing/no passing zones prior to the placement of the final striping. Contact the maintenance division after the final lift of the surface course has been placed to schedule the zones of the project.

PERMANENT PAVEMENT MARKINGS DETAILS

TWO LANE ROADWAYS W/ BRIDGE

CONSULT EDGE LINE

CONTINUOUS EDGE LINE

YELLOW/YELLOW @ 80' SPACING (TYP.)

C.L. WITH RAISED PAVEMENT MARKERS (TYPE II)

PAVEMENT MARKING YELLOW (6") REFLECTORIZED

THERMOPLASTIC PAVEMENT MARKING YELLOW (6") - THERMOPLASTIC PAVEMENT MARKER QUANTITIES AT EACH BRIDGE SITE.

THERMOPLASTIC PAVEMENT MARKING YELLOW (6") - THERMOPLASTIC PAVEMENT MARKER QUANTITIES AT EACH BRIDGE SITE.

REFLECTORIZED PAINT MARKING WHITE: MARKING WHITE 6" - CONTINUOUS EDGE LINE

REFLECTORIZED PAINT MARKING YELLOW: MARKING YELLOW WITH RAISED PAVEMENT MARKERS TYPE II

NOTES:
## Advance Warning Signs and Devices (District 9)

### Lane Closure for Hydrodemolition Bridges

<table>
<thead>
<tr>
<th>Sign Number</th>
<th>Description</th>
<th>Sign Size</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Maximum Number Required</th>
<th>Total Signs Required</th>
<th>Vertical Panels</th>
<th>Traffic Drums</th>
<th>Barricades (Type I)</th>
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### Notes
- These maintenance of traffic items are to be relocated between bridge sites and districts if and where directed by the engineer.

## Advance Warning Signs and Devices (District 8)

### Lane Closure for Hydrodemolition Bridges

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<thead>
<tr>
<th>Sign Number</th>
<th>Description</th>
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</table>

### Notes
- These maintenance of traffic items are to be relocated between bridge sites and districts if and where directed by the engineer.

**Note:** Lane closures have both high and low traffic volume in district 8 as defined in Section 0404.03 Standard Specifications for Highway Construction. Refer to permanent pavement marking details for list of high and low roads in each district.

**Quantities Estimated:**
See Section 104.03 of the Std. Spec.
## COLD MILLING ASPHALT PAVEMENT (DIST. 9 - BOX 1 OF 2)

<table>
<thead>
<tr>
<th>BRIDGE STRUCTURE NO.</th>
<th>ROUTE</th>
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<th>LOCATION</th>
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<th>LENGTH</th>
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### DISTRICT TOTAL:

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### PROJECT TOTAL:

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<tr>
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**Notes:**
- Average depth of asphalt is estimated and shown for information only. Patches will be removed with the hydrodemolition process.

## COLD MILLING ASPHALT PAVEMENT (DIST. 8 - BOX 2 OF 2)

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<th>BRIDGE STRUCTURE NO.</th>
<th>ROUTE</th>
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<th>AVG. ASPHALT DEPTH</th>
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**Notes:**
- Average depth of asphalt is estimated and shown for information only. Patches will be removed with the hydrodemolition process.
### BASE AND SURFACING - MAIN LANE TRANSITIONS (DIST 3 - BOX 1 OF 2)

<table>
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<th>NO.</th>
<th>QTY</th>
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<th>LOCATION</th>
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**SUBTOTALS:**
- BASIS OF ESTIMATE (DIST 3) ACME SURFACE COURSE (1") 84.6% MIN. AGGREGATE 2.4% ASPHALT BINDER
- MAXIMUM NUMBER OF OPERATIONS = 115 FOR PG 54-22

### BASE AND SURFACING - MAIN LANE TRANSITIONS (DIST 8 - BOX 2 OF 2)

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<th>NO.</th>
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**SUBTOTALS:**
- BASIS OF ESTIMATE (DIST 8) ACME SURFACE COURSE (1") 84.6% MIN. AGGREGATE 2.4% ASPHALT BINDER
- MAXIMUM NUMBER OF OPERATIONS = 115 FOR PG 54-22

### TRENCHING AND SHOULDER PREPARATION - MAINT OF TRAFFIC (DIST 9 BOX 1 OF 2)

<table>
<thead>
<tr>
<th>LOCATION</th>
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<th>ACME SURFACE COURSE (1&quot;)</th>
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**SUBTOTALS:**
- BASIS OF ESTIMATE (DIST 9) ACME SURFACE COURSE (1") 84.6% MIN. AGGREGATE 2.4% ASPHALT BINDER
- QUANTITIES ESTIMATED.

### TRENCHING AND SHOULDER PREPARATION - MAINT OF TRAFFIC (DIST 9 BOX 2 OF 2)

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**SUBTOTALS:**
- BASIS OF ESTIMATE (DIST 9) ACME SURFACE COURSE (1") 84.6% MIN. AGGREGATE 2.4% ASPHALT BINDER
- QUANTITIES ESTIMATED.

See Section 104.03 of the Std. Specs.

### QUANTITIES

- TRAVEL KEY: 5/7/2021 2:08:31 PM
- REVISED DATE: $REVISED DATE$
- MAXIMUM ACHM BASIS
- TOTAL ACHM BASIS
- SUBTOTALS
  - ACHM BASIS
  - SUBTOTALS
### BASE AND SURFACING (ADD.) FOR GUARDRAILS - (DIST. 9 - BOX 1 OF 2)

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### BASE AND SURFACING (ADD.) FOR GUARDRAILS - (DIST. 8 - BOX 2 OF 2)

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### Basis of Estimate (Dist. 8):

(PG 48-2) ACHM SURFACE COURSE (Y%) = 0.05 MILE ASPHALT, 0.10 MILE GRANULAR BASE, 0.15 MILE PAVEMENT SURFACE, 0.20 MILE OTHER.

### Basis of Estimate (Dist. 9):

(PG 48-2) ACHM SURFACE COURSE (Y%) = 0.05 MILE ASPHALT, 0.10 MILE GRANULAR BASE, 0.15 MILE PAVEMENT SURFACE, 0.20 MILE OTHER.

### Basis of Estimate (Dist. 8):

(PG 48-2) ACHM SURFACE COURSE (Y%) = 0.05 MILE ASPHALT, 0.10 MILE GRANULAR BASE, 0.15 MILE PAVEMENT SURFACE, 0.20 MILE OTHER.

### BASIS OF ESTIMATE (DIST. 8):

(PG 48-2) ACHM SURFACE COURSE (Y%) = 0.05 MILE ASPHALT, 0.10 MILE GRANULAR BASE, 0.15 MILE PAVEMENT SURFACE, 0.20 MILE OTHER.

### Basis of Estimate (Dist. 9):

(PG 48-2) ACHM SURFACE COURSE (Y%) = 0.05 MILE ASPHALT, 0.10 MILE GRANULAR BASE, 0.15 MILE PAVEMENT SURFACE, 0.20 MILE OTHER.

### Basis of Estimate (Dist. 8):

(PG 48-2) ACHM SURFACE COURSE (Y%) = 0.05 MILE ASPHALT, 0.10 MILE GRANULAR BASE, 0.15 MILE PAVEMENT SURFACE, 0.20 MILE OTHER.

### Basis of Estimate (Dist. 9):

(PG 48-2) ACHM SURFACE COURSE (Y%) = 0.05 MILE ASPHALT, 0.10 MILE GRANULAR BASE, 0.15 MILE PAVEMENT SURFACE, 0.20 MILE OTHER.
### PERMANENT AND CONSTRUCTION PAVEMENT MARKINGS (DIST. 9 - BOX 1 OF 2)

<table>
<thead>
<tr>
<th>NO.</th>
<th>STRUCTURE</th>
<th>ROUTE</th>
<th>MILE</th>
<th>DESCRIPTION</th>
<th>REMOVAL OF PERMANENT MARKINGS</th>
<th>REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS</th>
<th>RAISED PAVEMENT MARKINGS</th>
<th>THERMOPLASTIC PAVEMENT MARKINGS</th>
<th>REFLECTANCE PAVEMENT MARKINGS</th>
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<tr>
<td>1</td>
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<td>03106</td>
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<td></td>
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</tbody>
</table>

**SUBTOTALS**: 1561 4423 86 396 5104 2774

*Quantity is estimated.*

**Note**: lane roadways, shoulders and curbs. For existing road/pavement, refer to permanent pavement markings. For new road/pavement, refer to construction pavement markings. For new road/pavement, refer to permanent pavement markings. This project has been placed to schedule the zoning of the project.

### PERMANENT AND CONSTRUCTION PAVEMENT MARKINGS (DIST. 8 - BOX 2 OF 2)

<table>
<thead>
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<th>REMOVAL OF PERMANENT MARKINGS</th>
<th>REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS</th>
<th>RAISED PAVEMENT MARKINGS</th>
<th>THERMOPLASTIC PAVEMENT MARKINGS</th>
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**SUBTOTALS**: 128 1120 14 182 1074 3974

**Note**: lane roadways, shoulders and curbs. For existing road/pavement, refer to permanent pavement markings. For new road/pavement, refer to construction pavement markings. For new road/pavement, refer to permanent pavement markings. This project has been placed to schedule the zoning of the project.

*Quantity is estimated.*
### Approach Gutter (Dist. 9 - Box 1 Of 2)

<table>
<thead>
<tr>
<th>BR. No.</th>
<th>Bridge No.</th>
<th>Route</th>
<th>Log Mile</th>
<th>Location</th>
<th>Gutter Width</th>
<th>Price</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01743</td>
<td>102</td>
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<td>4</td>
<td>0.16</td>
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<td>3</td>
<td>01743</td>
<td>14</td>
<td>15.749</td>
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<td>0.16</td>
<td>TON</td>
</tr>
</tbody>
</table>

**Note:** The notchings of the end concrete posts is subsidiary to the bid price for the new W-Beam guardrail.

### Approach Gutter (Dist. 9 - Box 2 Of 2)

<table>
<thead>
<tr>
<th>BR. No.</th>
<th>Bridge No.</th>
<th>Route</th>
<th>Log Mile</th>
<th>Location</th>
<th>Gutter Width</th>
<th>Price</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01743</td>
<td>102</td>
<td>8.806</td>
<td>SOUTH</td>
<td>4</td>
<td>0.16</td>
<td>TON</td>
</tr>
<tr>
<td>3</td>
<td>01743</td>
<td>14</td>
<td>15.749</td>
<td>SOUTH</td>
<td>4</td>
<td>0.16</td>
<td>TON</td>
</tr>
</tbody>
</table>

**Note:** The notchings of the end concrete posts is subsidiary to the bid price for the new W-Beam guardrail.
### EARTHWORK (DIST. 9 - BOX 1 OF 2)

<table>
<thead>
<tr>
<th>Location Description</th>
<th>Uncompacted Volume</th>
<th>Compacted Volume</th>
<th>Acid Establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>entire district &amp; jessie for guarnesta</td>
<td>202</td>
<td>202</td>
<td>220</td>
</tr>
<tr>
<td>to address 9 &amp; work done by the engineer</td>
<td>10</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

**TOTAL** 212 3224 220

---

### EARTHWORK (DIST. 8 - BOX 2 OF 2)

<table>
<thead>
<tr>
<th>Location Description</th>
<th>Uncompacted Volume</th>
<th>Compacted Volume</th>
<th>Acid Establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>entire district &amp; jessie for guarnesta</td>
<td>202</td>
<td>202</td>
<td>220</td>
</tr>
<tr>
<td>to address 9 &amp; work done by the engineer</td>
<td>10</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

**TOTAL** 212 3224 220

---

### BENCH MARKS (DISTRICTS 8 & 9)

<table>
<thead>
<tr>
<th>Station</th>
<th>Location</th>
<th>Bench Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
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</tr>
</tbody>
</table>

**Notes:**
1. Only used for information only, bench marks shall be furnished and placed by the contractor.
2. New bench marks provided for bridges.
3. All new bench marks shall be located in the district.

* bench marks estimates: see section 104.02 of the std. specs.

---

### EROSION CONTROL (DIST. 9 - BOX 1 OF 2)

<table>
<thead>
<tr>
<th>Location</th>
<th>Seeding</th>
<th>Lime</th>
<th>Mulch</th>
<th>Cover</th>
<th>Water</th>
<th>Second Seeding Application</th>
<th>Matted Ditch Checks</th>
<th>Rock Ditch Checks</th>
<th>Filter Rock Int</th>
<th>Silt Fence</th>
<th>Sediment Removal &amp; Disposal</th>
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</thead>
<tbody>
<tr>
<td>Entire Project Stage 1</td>
<td>2.00</td>
<td>3.00</td>
<td>5.00</td>
<td>5.00</td>
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<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
</tr>
</tbody>
</table>

**Note:** The temporary erosion control devices shown above and on the plans shall be installed in such a sequence to control erosion and sedimentation on U.S. Waterways as explained by the National Pollutant Discharge Elimination System (NPDES). The quantities estimated: see section 104.02 of the std. specs.

### EROSION CONTROL (DIST. 8 - BOX 2 OF 2)

<table>
<thead>
<tr>
<th>Location</th>
<th>Seeding</th>
<th>Lime</th>
<th>Mulch</th>
<th>Cover</th>
<th>Water</th>
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<th>Filter Rock Int</th>
<th>Silt Fence</th>
<th>Sediment Removal &amp; Disposal</th>
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<tbody>
<tr>
<td>Entire Project Stage 1</td>
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<td>5.00</td>
<td>5.00</td>
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<td>3.00</td>
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</tbody>
</table>

**Note:** The temporary erosion control devices shown above and on the plans shall be installed in such a sequence to control erosion and sedimentation on U.S. Waterways as explained by the National Pollutant Discharge Elimination System (NPDES). The quantities estimated: see section 104.02 of the std. specs.

---

### EROSION CONTROL (DIST. 9 - BOX 1 OF 2)

<table>
<thead>
<tr>
<th>Location</th>
<th>Seeding</th>
<th>Lime</th>
<th>Mulch</th>
<th>Cover</th>
<th>Water</th>
<th>Second Seeding Application</th>
<th>Matted Ditch Checks</th>
<th>Rock Ditch Checks</th>
<th>Filter Rock Int</th>
<th>Silt Fence</th>
<th>Sediment Removal &amp; Disposal</th>
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</thead>
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<tr>
<td>Entire Project Stage 2</td>
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<td>3.00</td>
<td>5.00</td>
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<td>3.00</td>
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<td>3.00</td>
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</tbody>
</table>

**Note:** The temporary erosion control devices shown above and on the plans shall be installed in such a sequence to control erosion and sedimentation on U.S. Waterways as explained by the National Pollutant Discharge Elimination System (NPDES). The quantities estimated: see section 104.02 of the std. specs.
### Schedule of Bridge Quantities - Job No. 012377

<table>
<thead>
<tr>
<th>District</th>
<th>Site No.</th>
<th>County</th>
<th>Route</th>
<th>Section</th>
<th>LOC Mile</th>
<th>Bridge No.</th>
<th>DRG No.</th>
<th>Ext Dwg. Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>1</td>
<td>Benton</td>
<td>HWY. 167</td>
<td>Varies</td>
<td>Varies</td>
<td>03144</td>
<td>03144</td>
<td>9566, 5500H, 5500I, 5500P</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>Marion</td>
<td>HWY. 167</td>
<td>Varies</td>
<td>Varies</td>
<td>03519</td>
<td>03519</td>
<td>11579, 11582</td>
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<tr>
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<td>3</td>
<td>Marion</td>
<td>HWY. 167</td>
<td>Varies</td>
<td>Varies</td>
<td>05669</td>
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<td>5491, 5492</td>
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<td>6</td>
<td>4</td>
<td>Conway</td>
<td>HWY. 167</td>
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<td>Varies</td>
<td>01743</td>
<td>01743</td>
<td>64049</td>
</tr>
</tbody>
</table>

**Reference Table**

- **Bridge No.**
- **Drawing No.**
- **Ext Dwg. Nos.**

**Existing Bridge Deck Has Asphalt Overlays**  Site roadway plans for average depth at each bridge site.

**Existing Bridge Deck Has Spalls Filled With Asphalt**

**Quantity Shown Is For Estimating and Bidding Purposes Only. Actual Quantity, If Any, Will Be Determined in the Field**

**Existing Bridge Has Filled Joints To Be Removed and Replaced With Poured Silicone Joints**

**Use File Encasement at Bottom of All Beam Piles. Quantity Assumes 3" Minimum File Encasement Above and Below Ground Line (20-" Total Per Pile). See Std. Dwg. 55050. Adjust Encasement Form As Necessary to Incorporate Pile Bracing.**

---

**Schedule of Bridge Quantities - Districts 8 & 9 Bridge Preservation (2021)**

- **Various Counties**

**Arkansas State Highway Commission**

**Little Rock, Arkansas**

**Bridge Engineer**

**Print Date:** 5/7/2021

**ARKANSAS STATE HIGHWAY COMMISSION**

**LICENSED PROFESSIONAL ENGINEER**

**ROUTE:** 8 & 9

**SECTION:** VARIES

**DATE:** 5/7/2021

**SCHEDULE OF BRIDGE QUANTITIES**

<table>
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<tr>
<th>DISTRICT No.</th>
<th>BRIDGE No.</th>
<th>LOC MILE</th>
<th>DRAWING NO.</th>
<th>LUMP SUM</th>
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**Arkansas Highway Capacity Commission**

**Date:** 5/7/2021

**Printing Dept., Hwy. Div.**

**Scale:** NONE

**Sheets 64049**

**Total SHEETS:** 334

**Total SQ. FT:** 173.0

**Total LIN. FT:** 1,894.0

**Total TOTAL:** 5,215.0

---

**Arkansas Department of Transportation**

**Date:** 5/7/2021

**Printing Dept., Hwy. Div.**

**Scale:** NONE

**Sheets 64049**

**Total SHEETS:** 334

**Total SQ. FT:** 173.0

**Total LIN. FT:** 1,894.0

**Total TOTAL:** 5,215.0

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**Arkansas State Highway Commission**

**Date:** 5/7/2021

**Printing Dept., Hwy. Div.**

**Scale:** NONE

**Sheets 64049**

**Total SHEETS:** 334

**Total SQ. FT:** 173.0

**Total LIN. FT:** 1,894.0

**Total TOTAL:** 5,215.0
<table>
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<th>ITEM NUMBER</th>
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<tr>
<td>ITEM</td>
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<td>UNIT</td>
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### REVISIONS

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<th>SHEET NUMBER</th>
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<td>REVISION TO 02/25/21</td>
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<tr>
<td>3/12/21</td>
<td>REVISION TO 02/25/21</td>
<td>22</td>
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### BRIDGE PRESERVATION DATA TABLE (DISTRICT 9)

<table>
<thead>
<tr>
<th>CURRENT CONTRACT SITE NO.</th>
<th>BRIDGE NO.</th>
<th>ORIGINAL CONTRACT NO.</th>
<th>COUNTY</th>
<th>ROUTE</th>
<th>SECTION</th>
<th>SUPERSTRUCTURE TYPE</th>
<th>DECK TREATMENT TYPE</th>
<th>THREE-BEAM GUARDRAIL CONNECTION PRESENT?</th>
<th>GRADE BASE NEEDS?</th>
<th>APP. GUTTER TYPE/STD. DRAWING</th>
<th>BRIDGE JOINT TREATMENT STD. DRAWING</th>
<th>BRIDGE JOINT TREATMENT LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0569</td>
<td>9585</td>
<td>BENTON</td>
<td>HWY. 102</td>
<td>1</td>
<td>STEEL I-BEAM &amp; R/C SLAB</td>
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<td>NO</td>
<td>PTZ/55057</td>
<td>BENTS 1-3, BENT 4</td>
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<tr>
<td>2</td>
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<td>9386</td>
<td>MARION</td>
<td>HWY. 14</td>
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<td>R/C SLAM</td>
<td>HYDRODEMOLITION</td>
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<td>NO STD. DWG. - USE TYPE A JOINT REPAIR AND SP</td>
<td>NO</td>
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<td>3</td>
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<td>9295</td>
<td>MARION</td>
<td>HWY. 14</td>
<td>3</td>
<td>STEEL I-BEAM</td>
<td>HYDRODEMOLITION</td>
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<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>BENTS 2 &amp; 3</td>
</tr>
</tbody>
</table>

### BRIDGE PRESERVATION DATA TABLE (DISTRICT 8)

<table>
<thead>
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<th>CURRENT CONTRACT SITE NO.</th>
<th>BRIDGE NO.</th>
<th>ORIGINAL CONTRACT NO.</th>
<th>COUNTY</th>
<th>ROUTE</th>
<th>SECTION</th>
<th>SUPERSTRUCTURE TYPE</th>
<th>DECK TREATMENT TYPE</th>
<th>THREE-BEAM GUARDRAIL CONNECTION PRESENT?</th>
<th>GRADE BASE NEEDS?</th>
<th>APP. GUTTER TYPE/STD. DRAWING</th>
<th>BRIDGE JOINT TREATMENT STD. DRAWING</th>
<th>BRIDGE JOINT TREATMENT LOCATION</th>
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<td>4</td>
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<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>BENTS 2 &amp; 3</td>
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</tbody>
</table>
SECTION 803. GROOVED FINISH: The LMC Overlay surface of the bridge deck and approach slabs shall be grooved as specified in Section 509 and Job SP "Joint Rehabilitation for Bridge Decks".
**RAILING REPAIR DETAILS**

**SECTION A-A**

**REMOVAL DETAILS**

- Damaged Post
- 1'-3" Bars
- Clean and retain existing longitudinal bars protruding from slab into the rail
- Cut line at edge of rail
- Retain W-Beam Guardrail

**SECTION A-A**

**REPLACEMENT DETAILS**

- Existing longitudinal bars as necessary
- P301 bars
- Bent No. 1 Cap or Bent No. 6 Cap
- Bent No. 1 (left side) Bent No. 6 (right side)
- Replacement Post Will Be Notched for W-beam Placement. See "SECTION A-A REPLACEMENT DETAILS."

**GENERAL NOTES:**

- **CONCRETE:** Concrete shall be Class "S(AE)" with a minimum 28 day compressive strength of 4,000 psi and shall be poured in the dry.
- All exposed corners shall be chamfered 1/8" unless otherwise noted.
- **REINFORCING STEEL:** All reinforcing steel shall be Grade 60; yield strength = 60,000 psi conforming to AASHTO M 31 or M 322, Type A, with mill test reports.
- All exposed corners shall be chamfered 1/8" unless otherwise noted.
- **REINFORCING STEEL:** All reinforcing steel shall be Grade 60; yield strength = 60,000 psi conforming to AASHTO M 31 or M 322, Type A, with mill test reports.
- P501 bars and any additional reinforcing required by the Engineer in the field that is to be dowelled into existing concrete shall be placed into the drilled holes and secured using an approved non-shrink grout or resin anchoring system listed on the QPL. The diameter of the drilled holes and the installation procedures shall be as recommended by the grout manufacturer or the resin anchoring system manufacturer.
- The use of all materials, labor, equipment, and incidentals to perform the work as set forth in the Plans and Specifications shall be in accordance with the Arkansas State Highway Commission." See SP Job 012377 "RAILING REPAIR."
**CONCRETE REPAIR NOTES**

1. Concrete repairs shall be performed in accordance with Special Provision Job No. 012377 (CONCRETE REPAIR).

2. Limits shown are not exact areas and locations but are representative of potential repair areas to be encountered. The final limits and locations shall be determined by the Engineer.

3. Concrete repairs shall consist of removing all unsatisfactory concrete described as below: any loose, adherent, immersed, severely spalled or deteriorated concrete and replacing with an approved material listed in Special Provision Job No. 012377 (CONCRETE REPAIR).

4. Saw cut around all damaged areas as shown on the "SAW CUT DETAIL". Exercise caution during the saw cutting operation. Any reinforcement damaged during the saw cutting will be replaced at the contractor’s expense.

5. Concrete repairs shall be paid for under the item "SURFACE PATCHING" when the depth of repair is 1" or less.

6. Concrete repairs shall be paid for under the item "SPALL REPAIR" when the depth of the repair exceeds 1". The minimum depth of spall repair shall extend to the face of the transverse reinforcing steel in the cap or to sound concrete. The exposed reinforcing steel shall be blast cleaned prior to applying the concrete mortar.

7. The surface of the concrete for Surface Patching and Spall Repair shall be prepared in accordance with the repair mortar manufacturer’s recommendations.

8. Areas to be repaired under the item "SURFACE PATCHING" shall utilize "Rapid Set Mortar Mix" manufactured by CTS Cement. The contractor may submit an alternate product for review and approval.

9. Areas to be repaired under the item "SPALL REPAIR" shall utilize either "Rapid Set Mortar Mix" or "Rapid Set Concrete Mix" manufactured by CTS Cement. The appropriate product shall be determined by the actual depth of repair encountered. The contractor may submit an alternate product for review and approval.

10. After all concrete repairs are completed, the repaired concrete surfaces shall receive a Class 2 Protective Surface Treatment. The cost of the Class 2 Treatment shall be paid for as "SPALL REPAIR".

**SPALL REPAIR DETAILS**

- Where unsound concrete is still present beyond 2” removal depth, further concrete removal is required to achieve a minimum 1” depth beyond spall removal.

**SURFACE PATCH DETAIL**

- Saw cut existing concrete 1” deep to obtain a rectangular area.

**SAW CUT DETAIL**

- Denotes area of existing concrete to be repaired.

**SPALL REPAIR DETAIL**

- Denotes area of existing concrete to be repaired.
PLAN OF APPROACH GUTTER

Remove the existing terminal section as needed and attach a new guard rail to the existing guard rail on the bridge.

SECTION A-A

APPROXIMATE QUANTITIES FOR ONE SQUARE 20'-0" APPROACH GUTTER

Concrete (Cu. Yd.)

<table>
<thead>
<tr>
<th>Width (ft)</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.06</td>
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</tbody>
</table>

Preformed Joint (Cu. Yd.)

<table>
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<tr>
<th>Width (ft)</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>10</td>
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</table>

Cement Mortar (Cu. Yd.)

<table>
<thead>
<tr>
<th>Width (ft)</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0.21</td>
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### STAGE 1 LATEX MODIFIED CONCRETE OVERLAY

**Stage 3 Construction**

- Use 5" x 12" Type 3 or 4 Joint Sealer. See Subsections 501.22(b) and 501.05(b).
- Apply Latex Modified Concrete Overlay (LMC) when preparing surface for LMC Overlay.
- Use 5" x 12" Type 3 or 4 Joint Sealer. See Subsections 501.22(b) and 501.05(b).
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

LEGEND

* GUARDRAIL TERMINAL (TYPE 1)
** GUARDRAIL TERMINAL (TYPE 2)

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE 1) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS. NOTE: GUARDRAIL TERMINAL (TYPE 2) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.

FOR A DISTANCE OF UP TO 200', LAP OF GUARDRAIL SHALL BE AS SHOWN.

CHANGE TO LAP IN DIRECTION OF TRAVEL.

METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

ARIZONA STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-8
DETAILS OF WIDENING FOR GUARDRAIL

METHOD OF INSTALLATION OF GUARDRAIL
AT FIXED OBSTACLE

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 2'-0" EACH SIDE TO SUPPORT GUARDRAIL.

NORMAL ROADWAY WIDTH
WIDTH OF SURFACING
SECTION ON CURVE
SECTION ON TANGENT
SECTION ON FLATTER

GUARDRAIL DETAILS
STANDARD DRAWING GR-9
ARKANSAS STATE HIGHWAY COMMISSION
THREE BEAM RAIL

TRANSITION SECTION

CONNECTOR PLATE

STRUCTURAL STEEL TUBING

BLOCKOUT DETAIL

THREE BEAM RAIL

SPICE AT POST

SPECIAL END SHOE

HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKOUTS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.

STAYS SPACED AT 1'-6" O.C.

WF X 2-1/2" SLOT

OPTIONAL Ø 1" DIA. HOLE

NOTE: STEEL POST & WOOD HOLE PUNCHING DETAIL

USE SAME TYPES OF BLOCKOUTS AND STEEL POSTS FOR STEEL POST,

WOOD POSTS & BLOCKOUTS (TYP.) (FOR BRIDGES ENDS TO STANDARD DRAWINGS GR-12)
THREE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POSTS 1-7

W-BEAM TO THREE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST POST 8

GENERAL NOTES:
1. POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE, GRADE AND VERTICALLY IN CROSS SECTION.
2. WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

THREE BEAM RAIL WITH WOOD OR PLASTIC BLOCKOUTS & WOOD POSTS POSTS 1-6

THREE BEAM RAIL WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST POST 7

W-BEAM TO THREE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST POST 8
THREE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

The sizes shown are typical only and may vary. The guardrail sections shall be placed in wood and shall be fixed using bolts as specified.

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Refer to (drawing) for additional details.

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Refer to (drawing) for additional details.

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-12
CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE
1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES, DIVERSION DITCHES, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION

EXISTING GROUND
INTERCEPTOR OR DIVERSION DITCH
EXISTING GROUND

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

EMBANKMENT

CONSTRUCTION SEQUENCE
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND DITCH CHECKS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND DITCH CHECKS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND DITCH CHECKS AND MAINTAIN UNTIL ENTIRE SLOPE IS COMPLETELY STABILIZED.

GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

NOTE:
NUMBER OF PHASES WILL VARY. THREE PHASES SHOWN FOR ILLUSTRATION.