GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 12/14, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

DIGITALLY SIGNED 10/30/2020

GENERAL NOTES

1. UVSTLAR LEVELS SHALL BE SHOWN VERTICALLY USING UNITS OF LM/LG.
   2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LORRED BY THE RESPECTIVE OWNSERS AS PER AGREEMENT WITH SUCH OWNERS.
   3. ANY EQUIPMENT OR MACHINERY THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
   4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAIL RECEIVES CONTINUOUS MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS.
   5. ALL LAD MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 1027.12 OF THE STANDARD SPECIFICATIONS.
   6. ALL TREES THAT DO NOT INTERFERE WITH THE PROPOSED CONSTRUCTION OF SHOULDER OR CENTERLINE ARE TO BE LEFT INTACT AS DIRECTED BY THE ENGINEER, CARE AND PROTECTION SHALL BE USED TO MAINTAIN THE TREES FROM DAMAGE OR DEATH FROM THE CONSTRUCTION ACTIVITIES.
   7. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLAN IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CITED TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY ORDER AS APPROVED BY THE RESIDENT ENGINEER.
   8. ALL FLOWABLEBASE AND ASPHALT PAVEMENT REMOVALS SHALL BE PAID FOR UNDER THE ITEMS 312-1: UNCLASSIFIED EXCAVATION.
   9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SNARKS ALONG A HEAT LINE. AFTER REMOVING THE PAVEMENT TO BE REMOVED, SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

GOVERNING SPECIFICATIONS AND GENERAL NOTES
DETAIL OF TURNOUTS, ASPHALT STREETS,
COUNTY ROADS & STATE HIGHWAYS
CURB & GUTTER SECTION

TRANSITION FROM OPEN SHOULDER
TO CURB & GUTTER SECTION

TRANSITION FROM OPEN SHOULDER
TO CURB & GUTTER SECTION
### Advance Warning Signs and Devices - STPU-0043(29)

<table>
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<th>SIGN NUMBER</th>
<th>DESCRIPTION</th>
<th>SIGN SIZE</th>
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<th>STAGE 2</th>
<th>MAXIMUM NUMBER REQUIRED</th>
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<th>VERTICAL PANELS</th>
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### Erosion Control - STPU-0043(29)

#### Premature Erosion Control

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### Erosion Control - STPU-0043(29)

#### Erosion Control Rating - STPU-0043(29)

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### Clearing and Grubbing - STPU-0043(29)

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### CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS - STPU-0043(29)

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<th>THERMOLASTIC PAVEMENT MARKING</th>
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**TOTALS:**
- RED PAINT: 415 Ft
- WHITE: 20 Ft
- 415 Ft + 20 Ft = 435 Ft
- 3552 Ft + 664 Ft = 4216 Ft
- 4216 Ft / 435 Ft = 9.67

**NOTE:** This is high traffic volume road as defined in section 05-03-03 of the Std. Spec. for highway construction.

### STANDARD SIGNS & POSTS - STPU-0043(29)

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<tr>
<th>SIGN NUMBER</th>
<th>SIGN SIZE</th>
<th>MAXIMUM NUMBER REQUIRED</th>
<th>CHANNEL POST SIGN SUPPORT (TYPE D-1)</th>
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**TOTALS:**
- 4.5 Ft
- 2

### CONCRETE DITCH PAVING - STPU-0043(29)

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**TOTALS:**
- 4.00 Ft
- 1.75
- 0.02

### CONCRETE ISLAND - STPU-0043(29)

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**TOTAL:**
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### MAILBOXES - STPU-0043(29)

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**SELECTED PIPE BEDDING - STPU-0043(29)

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**TOTAL:**
- C-60 PT

### CONCRETE COMBINATION CURB AND GUTTER - STPU-0043(29)

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**TOTAL:**
- 144-1
- 144-1
# Base and Surfacing - STP-MRDSRN

**Station** | **Site** | **Location** | **Driveways & Truckways - STP(04/29)**
--- | --- | --- | ---
**Station** | **Site** | **Location** | **Driveways & Truckways - STP(04/29)**
--- | --- | --- | ---

**Base Mat**
- **Type**: 8 in. 6% Min. Aggregate
- **Min**: 86% Min. Aggregate

**Surface Course**
- **Type**: 4 in. Asphalt Binder
- **Min**: 30% Min. Aggregate

**Driveway & Truckway Section**
- **Type**: 2 in. PG 64-22

**Roadway Project Temporary Drives**
- **Type**: 76.96

**Driveway & Truckway Section**
- **Type**: 2 in. PG 64-22

**Driveway & Truckway Section**
- **Type**: 2 in. PG 64-22

**Driveway & Truckway Section**
- **Type**: 2 in. PG 64-22

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<th>ITEM NUMBER</th>
<th>ITEM DESCRIPTION</th>
<th>QUANTITY</th>
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<td>SP &amp; 701</td>
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<td>SP</td>
<td>RAILROAD PREEMPT INTERCONNECT SYSTEM</td>
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<td>BATTERY BACKUP SYSTEM</td>
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<td>LED BLANK OUT SIGN</td>
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<td>TRAFFIC SIGNAL HEAD, LED, (3 SECTION, 1 WAY)</td>
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<tr>
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<td>CONCRETE PULL BOX (TYPE 1, 1&quot;)</td>
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<td>TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION (32&quot;)</td>
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<td>SERVICE PORT ASSEMBLY (2 CIRCUITS)</td>
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<td>18 STREET NAME SIGN</td>
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<td>SP &amp; 733</td>
<td>VIDEO DETECTOR (CLA)</td>
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<td>VIDEO CABLE</td>
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<td>733</td>
<td>VIDEO MONITOR (CL2)</td>
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<td>SP &amp; 733</td>
<td>VIDEO PROCESSOR, EDGE CARD (2 CAMERAS)</td>
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<td>VEHICLE DETECTOR RACK (16 CHANNEL)</td>
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*Note: One spare video detector and one spare video processor shall be supplied.*

---

**Overhead Street Name Marker Standard Mast Arm Mounted**

- **Peyton St:**
  - 4" Uppercase
  - 1" Lowercase
  - White letter on green background
  - 1/4" white border strip

- **Griffin St:**
  - 4" Uppercase
  - 1" Lowercase
  - White letter on green background
  - 1/4" white border strip

- **2nd St:**
  - 4" Uppercase
  - 1" Lowercase
  - White letter on green background
  - 1/4" white border strip

**Notes:**

1. Reflective sheathing shall comply with AASHTO A595 Type I or II, reflective sheathing. Sheeting and legend shall be applied in such a manner to provide visible and reflectively visible grade. Application of sheathing is due for rejection of materials due to hazards.

2. Aluminum sign blank shall be alloy 6061-T6 or 5252-H11. The aluminum sign shall be 0.030 inch nominal thickness and of the size shown with 1/8" corner radius prior to fabrication of the signs. The layout shall be approved by an agent of the city county.

3. When crossing has two names, the sign for the crossing to the left may be installed in the backside of the mast arm on the sidewalk left pole size standard staging sheet for more information for mounting mast arm assembly.

4. The series C2000 standard alphabet shall be used for all legends.
GENERAL NOTES:

- The full width of each section shall be poured monolithically.
- Toe walls shall be constructed full width at each end of ditch paving and poured monolithically.
- Solid sod along ditch paving to be placed within 14 days of ditch paving construction.
- 1'-wide transverse expansion joints shall be placed in concrete ditch paving at 49 intervals, the space shall be filled with approved joint filler complying with AASHTO M213.

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH, WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.
CONCRETE COMBINATION CURB AND GUTTER

DETAIL OF GUTTER SLOPE
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.

LONGITUDINAL SECTION

ELEVATION

ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB

CONCRETE CURB

DETAILS OF MODIFIED CURB

ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

STANDARD DRAWING CG-1
### Table of Dimensions

| Size | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 18'' | 18.0 | 20.0 | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 |
| 24'' | 24.0 | 26.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 | 18.0 | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 24.0 | 25.0 | 26.0 | 27.0 | 28.0 | 29.0 | 30.0 | 31.0 | 32.0 | 33.0 | 34.0 |

*The measured span and rise shall not vary more than ±2% from the values specified by Agency. W JGIA.*

### Architectural Pipes

| 6   | 6  | 6  | 1.5 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 8.0 | 8.5 | 9.0 | 9.5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 |
| 10  | 10 | 10 | 2.0 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 8.0 | 8.5 | 9.0 | 9.5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 13.0 | 13.5 |

### Circular Pipes

| Size | OD | Wall | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 18'' | 18  | 20   | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |

### Multiple R.C. Pipe Culverts

| Size | OD | Wall | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 18'' | 18  | 20   | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |

### Multiple C.M. Pipe Culverts

| Size | OD | Wall | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| 18'' | 18  | 20   | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
### Reinforced Concrete Arch Pipe Dimensions

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### Reinforced Concrete Horizontal Elliptical Pipe Dimensions

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### Construction Sequence
- Place structural concrete to grade, do not compact.
- Install pipe in place.
- Compact structural concrete outside the inside limits of the pipe.
- Install and compact the fill material inside the inside limits of the pipe.

Note: Backfill and structural concrete material will not be paid for separately; but compensation will be considered to be included in the price bid per linear foot of concrete pipe.

### Legend
- Normal soil
- Reinforced soil
- Cutaway pipe
- Cutaway grout
- Moles
- Trench edge
- Groundwater

### Embankment and Trench Installations
1. Materials in the trench and embankment shall be compacted to the maximum density according to the type of material submitted.
2. Fill treads above walls of embankments shall be placed on the outside of the pipe. The top edge of the pipe shall be protected from damage by the emplacement of concrete or other embankment materials.
3. Fill embankments shall be placed on the inside of the pipe. The top edge of the pipe shall be protected from damage by the emplacement of concrete or other embankment materials.

### General Notes
1. Concrete pipe culverts shall be placed only when the alignment, grading or excavation, or backfill of the embankment has been completed to the satisfaction of the Engineer.
2. Concrete pipe culverts shall be placed above walls of embankments or cuts in the same manner as noted in the plans, sections and specifications. Pipe shall conform to specifications required by the Engineer.
3. Concrete pipe culverts shall be placed above walls of embankments or cuts in the same manner as noted in the plans, sections and specifications. Pipe shall conform to specifications required by the Engineer.
4. Pipe shall be protected during construction and in the embankment to prevent damage during backfilling or other operations.
5. The maximum standard bond of the concrete pipe shall be 25 kips on the inside face of the pipe, and 20 kips on the outside face of the pipe, as shown in the plans, sections and specifications.
6. Materials placed on the outside of the pipe shall be placed at the top edge of the pipe to prevent damage during backfilling or other operations.
7. Materials placed on the inside of the pipe shall be placed at the top edge of the pipe to prevent damage during backfilling or other operations.
8. Materials placed on the outside of the pipe shall be placed at the top edge of the pipe to prevent damage during backfilling or other operations.
9. Materials placed on the inside of the pipe shall be placed at the top edge of the pipe to prevent damage during backfilling or other operations.
10. Materials placed on the outside of the pipe shall be placed at the top edge of the pipe to prevent damage during backfilling or other operations.
11. Materials placed on the inside of the pipe shall be placed at the top edge of the pipe to prevent damage during backfilling or other operations.
12. Materials placed on the outside of the pipe shall be placed at the top edge of the pipe to prevent damage during backfilling or other operations.
13. Materials placed on the inside of the pipe shall be placed at the top edge of the pipe to prevent damage during backfilling or other operations.

### Minimum Height of Fill

#### Over Circular R.C. Pipe Culverts

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#### Over R.C. Arch & Horizontal Elliptical Pipe Culverts

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### Maximum Height of Fill

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#### Over R.C. Arch & Horizontal Elliptical Pipe Culverts

<table>
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<tr>
<th>Type</th>
<th>ID</th>
<th>Span</th>
<th>Rise</th>
<th>Length</th>
<th>Inside</th>
<th>Outside</th>
<th>Width</th>
<th>Thickness</th>
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DETAIL OF PAVEMENT MARKINGS FOR RAILROAD CROSSING

PAVEMENT MARKING TO BE SYMMETRICAL ABOUT RAILROAD

NOTES:

1. THE DISTANCE FROM THE RAILROAD CROSSING MARKING TO THE NEAREST TRACK BOLLARD VARY ACCORDING TO THE APPROACH SPEED AND THE SIGHT DISTANCE OF THE VEHICULAR TRAFFIC APPROACHING, BUT PROBABLY SHOULD BE NOT LESS THAN 50 FEET.

2. A THREE LANE ROADWAY SHOULD BE MARKED WITH A CENTERLINE FOR TWO-LANE APPROACH OPERATION ON THE APPROACH TO A CROSSING.

3. ON MULTI-LANE ROADS THE TRANSVERSE BANDING SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL RR SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

4. REFER TO STANDARD ALPHABET FOR HIGHWAY SIGNS AND MARKINGS FOR RR SYMBOLS DETAILS.
Note: Where left turn heads (H1) or D1 and D2 is not called for on plans, grass length may still be allowed for future uses. Any existing grass areas shall still be aligned with parallel lines as shown on details.

General Notes:

1. For section "Protected/Preserved" left turn heads should be placed 3 feet from the center of the approaching left turn lane.

2. Where it is necessary to place heads other than as shown on plan details, resulting in head extending more than 2 feet past to the left of the centerline of the approaching left turn lane, they may be cut to approximate length determined by the designer. A 4" by 4" cutout is required. The composition shall be considered when installing the post and if additional compensation is required.

3. Signal heads spaced in any case less than 8 feet apart may be located according to the dimensions shown in relation to the approach side of the intersection.

4. Maximum mounting height of signal faces located between 40 feet and 63 feet from stop shall be in accordance with Figure 40-051 of user notes.
MAIN BREAKER NOT NEAR CONTROLLER CABINET
SECONDARY REQUIRED

NOTES TO CONTRACTOR AND AGENCY RESPONSIBLE FOR MAINTENANCE OF THE HYDROPNEUMATIC SYSTEMS:
- The main breaker near controller cabinet is not required when the secondary breaker is not required.
- The service point shall be provided by the city and county to a service pole with external service breaker main breaker at a mutually acceptable point within the improvement.
- The service point shall be provided by the city and county.
- The service point shall be provided by the city and county.

GROUND ROD - A 30 x 30 x 4 x 1/2 ground rod shall be installed at the concrete fill box for each pole and the controller.
- The ground rod shall be included in the fill box.
- The main circuit breaker and controller box shall be ordered separately.

MAIN BREAKER WIRING (TEMP)_indentification
- Service ground is typically tied to neutral at the main breaker. As such, controller grounding is not required to neutral at secondary breaker or in controller cabinet.

Note: All electrical ground conductors shall be 1/2" diameter ground wire of equal size as neutral conductors.
### Table for Two-Way Traffic Superlevation

<table>
<thead>
<tr>
<th>Degree of Curve</th>
<th>25 MPH (L)</th>
<th>30 MPH (L)</th>
<th>45 MPH (L)</th>
<th>50 MPH (L)</th>
<th>55 MPH (L)</th>
<th>60 MPH (L)</th>
<th>65 MPH (L)</th>
<th>70 MPH (L)</th>
<th>75 MPH (L)</th>
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</thead>
<tbody>
<tr>
<td>0°/0' CC</td>
<td>600</td>
<td>630</td>
<td>720</td>
<td>750</td>
<td>780</td>
<td>810</td>
<td>840</td>
<td>870</td>
<td>900</td>
</tr>
<tr>
<td>0°/0' NC</td>
<td>600</td>
<td>630</td>
<td>720</td>
<td>750</td>
<td>780</td>
<td>810</td>
<td>840</td>
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<tr>
<td>1°/0' NC</td>
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<td>780</td>
<td>810</td>
<td>840</td>
<td>870</td>
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**General Notes:**
1. On pavement with two-way traffic, the superlevation shall be revolved in the inside pavement edge unless otherwise noted on the plans.
2. Superlevation values shown on the cross sections are maximum values.
3. Lengths in Table may be reduced in multiples of 25 ft or 50 ft, as permit during calculation.
4. Pavements wider than 2 lanes shall have additional transition lengths as follows:
   - 1 lane undivided: +0.25
   - 2 lanes divided: +0.5
   - 3 lanes divided: +0.75

**Formulas:**
- For inside pavement edge, \( S = \frac{L}{R} \)
- For outside pavement edge, \( S = \frac{L}{R} \)

**General Notes:**
- Normal Crown (CC): 0°/0'
- Normal Crown (NC): 0°/0'
- Maximum Crown (CC): 1°/0'
- Maximum Crown (NC): 1°/0'

**Superimposed Crown:**
- 1°/0'

**Reference Sources:**
- Arkansas State Highway Commission
- Tables and Method of Superimposed Crown for Two-Way Traffic
CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE
1. Place perimeter controls, H.E. Tilt fences, diversion ditches, sediment basins, etc.
2. Perform clearing and grubbing operation.

EXCAVATION

CONSTRUCTION SEQUENCE
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 of excavation, place permanent or temporary seeding, construct ditch, construct buffer, construct diversion ditches, install erosion control devices as required.

EMBANKMENT

CONSTRUCTION SEQUENCE
1. Construct diversion ditches, ditch check, sediment basins, H.E. Tilt fences, or other erosion control devices as specified.
2. Place Phase 1 embankment with permanent or temporary seeding.
3. Place Phase 2 embankment with permanent or temporary seeding.
4. Place final Phase 2 embankment with permanent or temporary seeding.

All embankment slopes shall be prepared, prepared seeded and mulched as the work progresses. Slopes shall be constructed and stabilized in equal increments not to exceed 3% measured horizontally.

GENERAL NOTE

NOTE:
- Number of phases will vary, first phases shown for illustration.
- Interceptor or diversion ditch shown for illustration.

ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3