This project will remain open to traffic during bridge construction. The project will be closed to traffic during roadway construction.
**GUARDRAIL CLEAR AREA**

Aggular guardrail installations less otherwise shown in the plans.

**FLARED GUARDRAIL DETAIL**

Applies to CSS ANE MGS (MGS Shown)

**PARALLEL GUARDRAIL DETAIL**

Applies to CSS ANE MGS (MGS Shown)

**GUARDRAIL CLEAR AREA**

How Area Free of Stockpiled Material, Equipment, or other Obstacles, such as Temporary Signage, 38" of Grade Vertical. This Clear Area Extends 105 Feet in the direction of the Final Traffic Configuration in the Direction of Permanent Traffic Operation and 150 Feet Beyond the Final Traffic Configuration in the Direction of Temporary Traffic Operation. The length of each end terminal post may be independent of the post type used in the remainder of the installation. However, no mixing of post types is permitted in the remaining w-beam and 3-beam installations.

**GENERAL NOTES**

Install the guardrail end terminals according to the Manufacturer’s Installation Manual. The Contractor will furnish a copy of the Manufacturer’s Installation Manual to the Engineer prior to the start of the installation.

**MINIEND TERMINAL**

First Post of End Terminal

6'-0" to Face of Rail

Guardrail End Terminal (MGS-SOFTSTOP)

MGS Posts AND Blockouts (Typ.)

Steel Post Design Available

Road Systems 40'-7½" 37'-6"

Trinity Industries 48'-7½" 46'-6½"

**CURVED W-Beam**

MGS Guardrail

52'-½" (Typ.) Height Transition

15'-7½" W-Beam Guardrail (Sold Separately)

15'-7½" W-Beam Guardrail (Sold Separately)

5'-0" from Face of Guardrail

**MIDWEST GUARDRAIL SYSTEM (MGS) END TERMINALS**

GUARDRAIL END TERMINAL ITEM

E D T ER M I N A L B I D I T E M

F-ADS OR PARALLEL

MOUNTING HEIGHT

CABLE TESTING

STEEL POST DESIGN AVAILABLE

ROAD POST DESIGN AVAILABLE

ENERGY ABSORPTION

MANUFACTURER

DIVISION LENGTH

MANUFACTURER SYSTEM LENGTH

Guardrail End Terminal (MGS-SOFTSTOP)

Guardrail End Terminal (MGS-MR)

Guardrail End Terminal (MGS-PSW/PST)

Guardrail End Terminal (MGS-SR)

Guardrail End Terminal (MGS-SRT)

Guardrail End Terminal (MGS-ST)

**CONVENTIONAL GUARDRAIL SYSTEM (CGS) END TERMINALS**

GUARDRAIL END TERMINAL ITEM

CABLE ACCESS

STEEL POST DESIGN AVAILABLE

ENERGY ABSORPTION

MANUFACTURER

DESIGN LENGTH

MANUFACTURER SYSTEM LENGTH

Guardrail End Terminal (CGS-SW)

Guardrail End Terminal (CGS-SRT)

Guardrail End Terminal (CGS-ST)

**GUARDRAIL AUXILIARY DETAILS**

**KANSAS DEPARTMENT OF TRANSPORTATION**

This roadway is located on the Leggett & Platt Parkway, Kansas City, Kansas. The roadway begins at the Kansas City Metropolitan Area and extends westward to the Missouri state line. The roadway is a four-lane divided highway with an average daily traffic of 40,000 vehicles. The roadway is primarily used for commuter traffic and connects the Kansas City Metropolitan Area with the Kansas City International Airport. The roadway is maintained by the Kansas Department of Transportation (KDOT). The roadway is a major thoroughfare in the Kansas City area and is a critical link in the regional transportation network.
**WOOD POSTS**

**GENERAL NOTES (Wood Posts)**
One steel wood and wood blocks a preservative treatment, see standard specifications. Thoroughly saturate all cuts, injuries and bolt holes on wood posts and blocks with preservative. For details of preservative treatment on steel posts, see standard specifications. For information on materials related to posts in pavement, see standard specifications. Any open joint must be adequately filled with a non-removable material. Note: All holes punch the requirements of the standard specifications. Use only one hole type in each guardrail post. See Standard Drawing RD613 for Thrie-Beam Guardrail Post Details.

**STEEL POSTS**

**GENERAL NOTES (Steel Posts)**
Use grades of steel for steel posts that meet the requirements of the standard specifications. See also the KDOT's Standard Specifications for steel posts. The requirements for steel posts in pavement are subject to the KDOT's Standard Specifications. For information on materials related to posts in pavement, see standard specifications. Any open joint must be adequately filled with a non-removable material. Note: All holes punch the requirements of the standard specifications. Use only one hole type in each guardrail post. See Standard Drawing RD613 for Thrie-Beam Guardrail Post Details.
For guardrail andrubrail sections,details, and general notes see KDOT’S W-Beam with Rubrail Bridge Approach Transition Details Drawings. For post details see KDOT’S Guardrail Post Details Standard Drawings. For guardrail and rubrail sections, details, and general notes see KDOT’S Guardrail Post Details Standard Drawings. For post details see KDOT’S Guardrail Post Details Standard Drawings.

This area to be maintained free of fixed objects.

Note: flare rate of a:b and curve length of 30'0' shall be used when guardrail is located inside the shay line.

A Flare Rate = 2a:b

Guardrail to be nested and post spacing reduced to half of normal spacing when "Y" is less than 3'-3". Ridgid barrier shall be used when "Y" is less than 3'-3".

On divided facility with adjacent traffic in one direction only, flare length of need may be reduced by length "D".

This area to be maintained free of fixed objects.

See table on this sheet for radius and flare rate.

Normal project side slope. See typical sections.

See KDOT’S Guardrail Auxiliary Details Standard Drawings. For guardrail and rubrail sections, details, and general notes see KDOT’S Guardrail Post Details Standard Drawings. For post details see KDOT’S Guardrail Post Details Standard Drawings.

DETAILS OF GUARDRAIL PROTECTION AT ROADSIDE OBSTACLE

PLAN VIEW TWO LANE

PLAN VIEW FOUR LANE

ENLARGEMENT - AREA OF CONCERN

W-BEAM WITH RUBRAIL BRIDGE APPROACH TRANSITION TYPICAL ALIGNMENTS (FLARED)
**GENERAL NOTE**

Include all material and work for this area installation in the pay item "Steel Plate Guardrail" paid by the lineal foot.

Use 10 or 12 gauge steel guardrail elements unless otherwise called out, see standard specifications.

W-Beams Transition consists of one 12-6" W-beam section nested in back of one 20-6" section. Furred remaining rail elements in either 12-6" or 20-6" sections.

Guardrail parts furnished under this specification shall be interchangeable with similar parts furnished under the above mentioned "Steel Plate Guardrail." Guardrail rail elements, post fittings, bolts, nuts, washers and anchor bolts after fabrication in accordance with the standard specifications.

Shop or field drill holes in posts and include steel nailing for attachment. When holes are made to fit touch-up any damage to the galvanized coating with zinc based paint.

Shop bend rail when radius is less than 1 1/2".

Fabricate Special End Shoe from 10 gauge steel in accordance with standard specifications. The Special End Shoe has the same section as guardrail and is attachable to guardrail by guardsplugs, inclusive Special End Shoe, to the bid item "Steel Plate Guardrail." Where

Include all material and work for this installation in the pay item "Steel Plate Guardrail" paid by the lineal foot.

See Std. Drawing RD611 for additional details of posts not shown on this sheet.

---

**SECTION B-B**

- Transition from 27" rail height at bridge
- Post spacing

**SECTION C-C**

- Transition from 27" rail height at bridge
- Post spacing

**SECTION A-A**

- TYPICAL END RUB RAIL DETAILS

**SECTION B-B**

- PLAN OF RUBRAIL ON WOOD POSTS
- PLAN OF RUBRAIL ON STEEL POSTS

**SECTION C-C**

- ELEVATION SPECIAL END SHOE

**SECTION D-D**

- BRIDGE APPROACH TRANSITION DETAILS

---

**Wood Posts**

- (a) 3" x 3" x 1/8" 3#4" x 21#2" post bolt slot. This shall be installed in the
- 1/4" hole for 3" x 3" x 1/8" post bolt. The anchor bolt size shall be in the left reglar
- 3" x 3" x 1/8" post bolt. The anchor bolt shall be in the right reglar

---

**Steel Posts**

- Blocks used with steel posts shall be grooved to fit over the flange of the post and may be Wood or Polymer.
**PIPE CULVERT SUMMARY**

<table>
<thead>
<tr>
<th>Station</th>
<th>Type</th>
<th>Size of End Designa *</th>
<th>Dimension</th>
<th>Flow Line</th>
<th>Plan Flow</th>
<th>H.W. Location</th>
<th>Degree of Rotation</th>
<th>L.D. of Pipe</th>
<th>Length of Pipe</th>
<th>C.R. Grade</th>
<th>A.A. Class No.</th>
<th>Pipe Gauge</th>
<th>Pipe Corrugation</th>
<th>Remarks</th>
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<tr>
<td>73C-4948-01</td>
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</tbody>
</table>

**Notes:**
- All materials shown in the plans shall be as shown or noted.
- Design side slopes of horizontal roadways shall be as noted.
- When inside diameter of pipe is 36" or less, design side slope to intersect inside diameter of pipe outside of Clear Zone.
- When inside diameter of pipe is 60" or less, provide end sections of the same material and coating type as the pipe.
- Type IV End Sections are only made of CS or ACS.

**Additional Notes:**
- Flow Line: Length of Pipe
- Plan Flow: L.D. of Pipe
- H.W. Location: C.R. Grade
- Degree of Rotation: A.A. Class No.
- L.D. of Pipe: Pipe Gauge
- Length of Pipe: Pipe Corrugation
- C.R. Grade: Remarks

**Design Side Slope:**
- When inside diameter of pipe is 24" or less, design side slope to intersect inside diameter of pipe outside of Clear Zone.

**Tables and Diagrams:**
- Tables show various pipe culvert specifications including size, material, and dimensions.
- Diagrams illustrate the plan and section views of the culvert, showing the location and details of the pipe and its surrounding environment.

---

*Legend:*
- F: Flow Line
- P: Plan Flow
- H.W.: H.W. Location
- D.: Degree of Rotation
- L.D.: L.D. of Pipe
- L.: Length of Pipe
- C.R.: C.R. Grade
- Pipe Gauge
- Pipe Corrugation
- Remarks

---

*Reference:*
- Note to Designer: KDOT Pipe Policy provides guidance in determining the prohibited and/or restricted uses of CS, ACS, PVCP, CSP, and RCP pipe as referenced in AASHTO AASHP-10. Refer to the KDOT Design Manual, Volume II, Roadway Design for additional guidance.

EMBANKMENTS: Complete the embankment of the embankment as shown on the Bridge Excavation sheet prior to driving the embankment or completing with the embankment filling excavation.

BRIDGE EXCAVATION: Contour grade 25.50 soil designate the Excavation Boundary Plane of Class I and Class II Excavation. Contour grade 5.00 soil designate the Plot Line location:

S td. B ase:
P lo tte d  B y:
P lo t D a t e :

Staking for clear span bridges requires two independent contractor construction staking for deep span bridges requires two independent surveys. See KDOT Specifications.

CONCRETE: Superstructure concrete is bid as Concrete (Grade 40). Substructure concrete is bid as Concrete (Grade 40 or 60). In the event of a design tip elevation, the construction tip elevation shall be used. The Contractor may use Concrete (Grade 40 or 60) or A82, and are included in the bid.

CONTRACTOR CONSTRUCTION STAKING: Contractors shall be at the Contractor's expense and shall be considered subsidiary to other bid items.

CONSTRUCTION JOINTS: The construction joints shown are optional with the Contractor, but if used, place only at locations shown, or at locations approved by the Engineer.

CONCRETE: Superstructure concrete is placed as shown on the Bridge Excavation sheet for the limits of pile excavation. Backfill compaction at the abutments.

CONSTRUCTION LOADS: Limited traffic is permitted on the new subdrainage, backfill, embankment or any concrete paving during the curing period, when any exposed deck will be left during the curing period. See KDOT Specifications for additional instructions.

FALSEWORK INSPECTION: This project has falsework plans that show the additional required elements.

FALSEWORK PLANS: A licensed Professional Engineer shall review the falsework plans, submit a list of items to be considered subsidiary to other items in the proposal.

PILING: Drive all piling to penetrate or bear upon the Whitehorse Boundary Plane of Class | and Class || Excavation; Class || above the plane, Class || below the plane. See the Bridge Excavation sheet for the limits of pile excavation.
**ABUTMENT DETAILS**

**Reinforcing Steel in Top of Abutment**

- **ABUTMENT DETAILS**
- **ABUTMENT No. 1 = 5'-0"**
- **ABUTMENT No. 2 = 5'-0"**

**ELEVATION**

- **ABUTMENT No. 1 = 5'-0"**
- **ABUTMENT No. 2 = 5'-0"**

**PLAN**

- **ABUTMENT No. 1 = 5'-0"**
- **ABUTMENT No. 2 = 5'-0"**

**Typical Section**

- **ABUTMENT No. 1 = 5'-0"**
- **ABUTMENT No. 2 = 5'-0"**

Legend:

- EF = Each Face

Adjust stirrups to avoid conflict with rail bars.
CONCRETE PLACING SEQUENCE

When long span steel beams having a concrete dead load deflection greater than 0.5 are used, or when filler following with greater than 10% of clear span is used, follow the placing sequence shown. Segments, combined continuous pours are allowed, but stop a discontinuous pour at a construction joint shown.

When filler following with 12% of or less clear span is used, the Contractor, subject to the approval of the Engineer, may use a continuous pour or may discontinue the pour at any construction joint shown.

The Contractor may place the corral rail continuously from one end of the bridge to the other.

DEAD LOAD CAMBER DIAGRAM AT TENTH POINTS

Long Term Deflections = Initial Deflections x 3.5
(Initial Deflections Based on E = 3.644 x 10^6 p.s.i.)

Values reduced 30% for skew.
PRESSTRESSED PILES: Field-fitted prestressed concrete pipe splices are incorporated, in accordance with the manufacturer’s recommendations subject to the approval of the Engineer.

Method of attachment of pipe to build-up may be by any of the methods given in the literature. Method of reinforcing steel is used for attachment-the area shall be no less than that used in the building piles.

ALTERNATE METHODS: Method of attachment of pipe to build-up may be any of the following methods:
1. Cast 4-#2 or 4-#4 bars (space) and project from pipe head a minimum of 2'-0".
2. Cast 8-#5 bars, or 4-#8 bars (space) and project from pipe head a minimum of 2'-0".
3. 0.75" holes in pipe head (equally spaced) for installation of grouted dowel bars of same size and length as in 2.
4. Prestressed concrete pipe cap unless approved by the Engineer.

TEST PILES: Drive test piles where called for on the bridge plans. The test piles located within the limits of the substructure shall be part of the bridge pile system.

MEASUREMENT AND PAYMENT: Measurement and payment for all piles shall comply with the Standard Specifications.

The following items are covered in Division 1000 of the Standard Specifications.

REINFORCEMENT: Use reinforcing steel conforming to ASTM A615, Grade 60. Hoops and spirals may be either smooth or deformed bars.

PRESSTRESSING STEEL: Use uncoated seven-wire stress relieved prestressing steel. Hoops and spirals may be either plain or prestressed steel.

Pipe Section

Conical Flanges

Note: Pipe shall be drilled with a projecting ring fitting inside the pipe. Diameter of ring fitting shall be 1/2".

Pipe Splice Point

Pipe Splicing and Welding

Note: Pipe splices may be spigot welded, longitudinal welded, or seamless steel pipe.

PIPE PILE POINT

Note: Pipe shall be marked at Pick-up and reinstallation is permitted for all welding applications during pile splicing.

CAST IN PLACE CONCRETE PILES

Note: Concrete for prestressed shall be FC = 5,000 PSI. Concrete for prestressed shall be FC = 5,000 PSI.

WELDING: All field welding shall meet the requirements of the Standard Specifications.

Use only Shielded Metal Arch Welding (SMAW) stick welding for all applications.

Use only low hydrogen (E7018) series welding rod (electrode) for all welding applications during pile splicing. See General Notes for proper storage of welding rod. Welding filler rod (electrode) for Field welding of splices.

NEW ELECTRODES are to be purchased for each field project. The new electrodes shall comply with the requirements as determined by the manufacturer and shall be previously tested. Containers opened and closed with indelible ink in front of the Engineer.

Special qualifications shall be placed on the new electrodes and shall be approved by the Engineer.

PAINT: All paint shall comply with the Standard Specifications, or to the requirements of the Standard Specifications.

MTL TEST REPORTS: Steel piles test reports and steel shell test reports shall comply with the Standard Specifications.

Every pile driven without a test shall be the minimum thickness specified. Piles driven without a test shall be consistent with sufficient strength and thickness to withstand driving without injury and to meet the requirements of the Standard Specifications.

TYPICAL PILES: All piles and all splices of piles shall be similar to the pile shown. The pile shall not be more than two diameters in length from the point of the pile cap.

SPACERS: Spacers for steel piles and steel shell splicing shall comply with the Standard Specifications.

For integral pile bent outstands and piers, if a pilesplice is required, the pile shall be reinforced within a region extending 5'-0" above and 10'-0" below the bottom of the concrete wall. For outstands, the pile splice shall be at least 1'-0" deep.

With the approval of the Engineer, one splice per bent may be installed in the regions described above, with a maximum of not more than 24 splices per bent. Each splice shall be of the same size as in the building piles.

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### DRAINAGE STRUCTURES

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<th>Station</th>
<th>Slope</th>
<th>Size</th>
<th>Type</th>
<th>Length</th>
<th>End kond</th>
<th>Total Kond</th>
<th>Design Water Elevation</th>
<th>End Section Water Elevation</th>
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</table>

### ERADICATION OF TRAVELLED WAY

<table>
<thead>
<tr>
<th>Location</th>
<th>Length (STA)</th>
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<tbody>
<tr>
<td>STA 39+52</td>
<td>75' Lt. to STA 39+57, 50' Lt.</td>
</tr>
<tr>
<td>STA 40+00</td>
<td>50' Lt. to STA 40+05, 50' Lt.</td>
</tr>
<tr>
<td>STA 40+10, 60' Lt.</td>
<td>60' Lt. to STA 40+15, 60' Lt.</td>
</tr>
<tr>
<td>STA 40+20</td>
<td>60' Lt. to STA 40+25, 60' Lt.</td>
</tr>
<tr>
<td>STA 40+30</td>
<td>60' Lt. to STA 40+35, 60' Lt.</td>
</tr>
<tr>
<td>STA 40+40</td>
<td>60' Lt. to STA 40+45, 60' Lt.</td>
</tr>
<tr>
<td>STA 40+50</td>
<td>60' Lt. to STA 40+55, 60' Lt.</td>
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### EARTHWORK

<table>
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<th>Location</th>
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<td>75' Lt. to STA 39+57, 50' Lt.</td>
</tr>
<tr>
<td>STA 40+00</td>
<td>50' Lt. to STA 40+05, 50' Lt.</td>
</tr>
<tr>
<td>STA 40+10, 60' Lt.</td>
<td>60' Lt. to STA 40+15, 60' Lt.</td>
</tr>
<tr>
<td>STA 40+20</td>
<td>60' Lt. to STA 40+25, 60' Lt.</td>
</tr>
<tr>
<td>STA 40+30</td>
<td>60' Lt. to STA 40+35, 60' Lt.</td>
</tr>
<tr>
<td>STA 40+40</td>
<td>60' Lt. to STA 40+45, 60' Lt.</td>
</tr>
<tr>
<td>STA 40+50</td>
<td>60' Lt. to STA 40+55, 60'Lt.</td>
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### SUMMARY OF QUANTITIES

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<thead>
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<th>Unit</th>
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See General Note. Subsidiary (see General Note). See General Note.
**SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES**

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<thead>
<tr>
<th>BID ITEM</th>
<th>QUANTITY</th>
<th>LINE</th>
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<tbody>
<tr>
<td>Perennial Ryegrass</td>
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<tr>
<td>Buffalograss (Treated)</td>
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<tr>
<td>Blue Grama Grass Seed</td>
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<tr>
<td>Tall Fescue (Endophyte Free)</td>
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</tr>
<tr>
<td>Western Wheatgrass Seed</td>
<td>0.07</td>
<td></td>
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</tbody>
</table>

**GENERAL NOTES**

- The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of ungrazed native sod or other desirable vegetation, shall be fertilized with certified and, if required, seeded, and mulched. Soil preparation shall conform to Standard Specifications.
- Temporary seeding shall be done at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.
- The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.

**SOIL EROSION MIX**

- The Soil Erosion Mix consists of the following materials:
  - **Shoulder Area**:
    - Fine-Grained Soil Mix (30%)
    - Fine-Grained Soil Mix (50%)
    - Fine-Grained Soil Mix (20%)
  - **Erosion Control (Class 2, Type C)**
    - Fine-Grained Soil Mix (30%)
    - Fine-Grained Soil Mix (50%)
    - Fine-Grained Soil Mix (20%)

**POLLUTION CONTROL**

- Geotextile (Erosion Control) shall be removed prior to placement of permanent slope protection.
- Synthetic Sediment Barrier is to be placed under the class A erosion control material.
- Temporary Seeding shall be done at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.

**TEMPORARY EROSION AND POLLUTION CONTROL**

- The Soil Erosion Mix is to be placed under the class A erosion control material.
- Temporary Seeding shall be done at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.
<table>
<thead>
<tr>
<th>Station</th>
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<th>Width FT</th>
<th>Notes</th>
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</thead>
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<tr>
<td>39+44.04</td>
<td>Lt. 21.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39+56.19</td>
<td>Lt. 17.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39+69.89</td>
<td>Lt. 21.7</td>
<td></td>
<td></td>
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</tbody>
</table>

TOTAL EROSION CONTROL - CLASS 1, TYPE C

KANSAS DEPARTMENT OF TRANSPORTATION

LA852A-EC

DESIGNED: SHS

APP'D: MRM

REVISIONS: NO.

DATE: 10-SEP-2020

FILE: LA852A-EC.dgn

PLOTTED BY: J. B. ECKMAH

PLOT DATE: 1/04/2006

SHEET NO.: 27/50

QUANTITIES:

LENGTH (FT) WIDTH (FT)
Temporary Erosion and Sediment Control

1) Temporary Slope Drain and Temporary Berm may be used on either project forelopes or project backslopes.

2) Discharge of Slope Drains shall be piped into stabilized ditch or area or into Sediment Basins.

3) Pipe shall be secured in place as approved by Engineer.

4) Temporary Berms under 2,000 feet shall be bid by Set Price.

NOTES:

Temporary Slope Drain and Temporary Berm shall flow through the pipes without overtopping (OHW) flows designated in the Contract Documents.

- Pipe shall be placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the channel.

- Mix 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the channel.

See KDOT Specifications for more information.

Surface of Compacted Fill

6'' Metal, Plastic or Flexible Rubber Pipe

Temporary Berm

Fill Material

Articulated Concrete Blocks w/ Filter Fabric

TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN

TYPICAL PROFILE OF TEMPORARY BERM

TYPICAL PLAN VIEW OF TEMPORARY BERM AND TEMPORARY SLOPE DRAIN
**Material Requirements**

- **Ditch**: Crushed rock or gravel for backfill.
- **Filter Sock**: Non-compost biodegradable material or other approved materials.
- **Filter Bag**: Synthetic net (3mm mesh) or burlap bags.
- **Anchor Trench**: Soil or gravel backfill.
- **Cross Pieces**: Same material as stakes.
- **Steel U, T, L, or C Section**: .95 lbs. per ft. for stakes.
- **Gravel**: 1'-0"; or 1'-6" to 1'-8" diameter log.

**Procedure**

1. **Log Mesh**: Use mesh with 0.5" openings or larger. Must allow water infiltration. Must not prohibit water infiltration. Log mesh shall be of the following sizes:
   - **Hardwood**: 1" x 1" (min.)
   - **Southern Pine (No. 2)**: 2" x 2" (min.)
   - **Steel U, T, L, or C Section**: 0.95 lbs. per ft.
   - **Synthetic**: Same strength as wood stakes.

2. **Stakes**: 4' (min.) long and of one of the following materials:
   - **Hardwood**: 1" x 1" (min.)
   - **Southern Pine (No. 2)**: 2" x 2" (min.)
   - **Steel U, T, L, or C Section**: 0.95 lbs. per ft.
   - **Synthetic**: Same strength as wood stakes.

3. **Attach Fence Fabric**: Tightly overlap ends of the following materials:
   - **Silt Fence Fabric**: Over Chicken Wire along Main Flowline of Ditch.
   - **Silt Fence Fabric over Chicken Wire**: Over Stake and Cross Pieces on Bottom Center Line.

4. **Silt Fence Fabric**: 1'-6" to 1'-8" diameter log

5. **Drop Inlet Protection**: BIODEGRADABLE LOG/FILTER SOCK

**Temporary Erosion and Pollution Control**

- **Silt Fence**: Use of high flow material is acceptable. Use of the following materials:
  - **Hardwood**: 1" x 1" (min.)
  - **Southern Pine (No. 2)**: 2" x 2" (min.)
  - **Steel U, T, L, or C Section**: 0.95 lbs. per ft.
  - **Synthetic**: Same strength as wood stakes.

- **Attach Fence Fabric**: Securely on 6" centers (max).

- **Drop Inlet Use**: 1'-0" to 1'-8" diameter log

**Section A - A**

- **Base of Ditch**: 4' maximum spacing.
- **Top of Ditch beyond inlet**: 3' (max.)
- **Main Flowline of Ditch**: Soil or gravel backfill.
- **Silt Fence Fabric over Chicken Wire**: Over Stake and Cross Pieces on Bottom Center Line.
- **Silt Fence**: Over Stake and Cross Pieces on Bottom Center Line.

**Section C - C**

- **Main Flowline of Ditch**: Soil or gravel backfill.
- **Silt Fence Fabric over Chicken Wire**: Over Stake and Cross Pieces on Bottom Center Line.
- **Cross Pieces**: Same material as stakes.

**Section B - B**

- **Main Flowline of Ditch**: Soil or gravel backfill.
- **Silt Fence Fabric over Chicken Wire**: Over Stake and Cross Pieces on Bottom Center Line.
- **Cross Pieces**: Same material as stakes.
- **Stake every 4'**: Soil or gravel backfill.
Silt Fence Fabric

**GENERAL NOTES**

- Stake (typ.)
- Section A - A
- 6'' (min.)
- 2' (max.)
- 4' (max.)
- 6'' long x 1'' wide
- Wire Staples (on center)
- Geotextile fabric
- Tire compaction zone
- Machine slice
- Post embedment
- 2' min. @ 3' o/c
- Plastic zip ties, or other material (50 lb. tensile strength) located in top 8".
- Biodegradable log or filter sock
- Slope interruptions
- Direction of Flow
- Downstream Apron
- Biodegradable log section
- Slope interruptions
- Direction of Flow
- Downstream Apron
- Lateral stake (typ.)
- Trench
- Soil or Gravel Backfill

**INSTALLATION NOTES**

- Stake (typ.)
- Section B - B
- 6'' (min.)
- 3' wide
- Geotextile fabric
- Tire compaction zone
- Machine slice
- Depth
- 6'' - 12''
- 4'' - 8''
- 18'' - 20''
- Straw/Compost
- Excelsior / Wood Chips / Coconut Fiber

**APPLICATION NOTES**

- Stake (typ.)
- Section B - B
- 6'' (min.)
- 3' wide
- Geotextile fabric
- Tire compaction zone
- Machine slice
- Depth
- 6'' - 12''
- 4'' - 8''
- 18'' - 20''
- Straw/Compost
- Excelsior / Wood Chips / Coconut Fiber

**BIODEGRADABLE LOG OR FILTER Sock**

- Place biodegradable log or filter sock tightly together minimum overlap of 18".
- Wood stakes shall be 2'' x 2'' (nom.).
- Refer to plans sheets to estimate length of biodegradable log and filter sock required.
- Each log or sock (except compact filter socks) should be keyed into the ground at a minimum of 25% of its height.
- Compact filter socks should be placed an unprepared ground with no gaps between the sock and soil.
- Length of stakes shall be 2 times the height of the log with minimum ground embedment equal to the height of the log / sock.

**SILT FENCE BARRIER**

- Stake (typ.)
- Section A - A
- 6'' (min.)
- 2' (max.)
- 4' (max.)
- 6'' long x 1'' wide
- Wire Staples (on center)
- Geotextile fabric
- Tire compaction zone
- Machine slice
- Depth
- 6'' - 12''
- 4'' - 8''
- 18'' - 20''
- Straw/Compost
- Excelsior / Wood Chips / Coconut Fiber

**GENERAL NOTES**

- Slope interruptions shall be placed along contour lines with a short section turned upgrade at each end of the barrier.
- Maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
- Intermittent maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
- Internments damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
- Agricultural products, such as native prairie hay, used for mulching or erosion control practices, excluding weed based mulls, shall meet the North American Weed Free Forage Standards.
GENERAL NOTES

1) The choice of ditch check methods is at the option of the Contractor.

2) Use only rock checks in situations where the ditch slope is 6 percent or greater.

3) Ditch checks damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired by Contractor at no extra cost to KDOT.
ROCK DITCH CHECK NOTES

1. Rock shall be clean aggregate, D50 = 6".
2. Place rock in such manner that water will flow over, not around ditch check.
3. Do not use rock ditch checks in clear zone.
4. Excavation: The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch shall be excavated to the dimensions of the Rock Ditch Check and to a minimum depth of 6'' (150mm). After placement of the rock, backfill and compact any excavated soil to ditch grade. This work shall be subsidiary to the item Temporary Ditch Check (Rock).
5. Aggregate excavated on site may be used as an alternate to the 6'' rock, if approved by the Engineer.
6. The Engineer may approve the use of larger aggregates for the downstream portion of the check when conditions warrant their use.
7. When the use of larger rock is approved, the upstream portion of the check should be constructed of D50 = 6" or smaller.

BIODEGRADABLE LOG DITCH CHECK NOTES

1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 1/2.
3. Stakes shall be wood or steel according to Section 2164 of the Standard Specifications. Length of stakes shall be a minimum of 5 x the diameter of the log.
4. Use Erosion Control (Class I) (Type C) as the downstream apron when required.
5. A downstream apron is required when directed by the Engineer. Apron material will be paid at contract unit price.
6. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.
7. Use Class I or smooth rock check (classification C-4948-01) or biodegradable filter sock check.
Notes:
1. All P.V.C. pipes are to be schedule 40.
2. HDPE flexible drain pipe is to be attached to the pond outlet structure with water-tight connections.
3. The orifice shall be sized to provide drawdown time to 2 to 5 days and approved by the engineer.
4. Other skimmer designs may be used that dewater from the surface at a controlled rate. The design must be approved by the engineer.

Temporary Sediment Basins shall be constructed at locations as directed by the Engineer or as approved in the SWPPP Schedule. All work and materials necessary, including but not limited to, the fill material, compaction, drainage pipes, aggregates and all other incidentals necessary to construct the basin, shall be paid as "Temporary Sediment Basin".

NOTE: Lengths and top dimensions shall be determined in the field by the Engineer.

1) Temporary Sediment Basins shall be constructed at locations as directed by the Engineer or as approved in the SWPPP Schedule.
2) Lengths and top dimensions shall be determined in the field by the Engineer.
3) Skimmer dewatering device required and must be used regardless the size of the drainage area.
Erosion Control Blankets shall be laid loosely in the direction of water flow, beginning at the bottom of the slope. In order for the blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.

1. ANCHOR SLOTS: The top of the blanket should be "slotted" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide + 6 inches deep with the blanket positioned in the bottom of the slot, then backfilled, tamped and seeded.

2. LONGITUDINAL SEAMS: The edges of the blanket should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets.

3. SPLICE SEAM: When splices are necessary, overlap end to end in a minimum of 8 inches in direction of water flow.

4. TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place 9 inches apart.

5. TYPICAL ANCHORS: Anchor design shall be as recommended by the manufacturer.

6. STAPLE CHECKS: Establish Staples in 2 rows 4" on center apart. Staple Checks shall be 30' apart.

NOTE: Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards. Single post ring and shank staple is acceptable.
SUMMARY OF SEEDING QUANTITIES

<table>
<thead>
<tr>
<th>BID ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed (Sand Dropseed)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Seed (Sterile Wheatgrass)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Seed (Little Bluestem Grass Seed) (Aldous)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Seed (Big Bluestem Grass Seed) (Kaw)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Seed (Indiangrass Seed) (Osage)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Seed (Tall Dropseed)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Seed (Switchgrass)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Seed (Bluegrass)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Seed (Other Vegetative Mulches)</td>
<td>3.2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>Fertilizer (16-20-0)</td>
<td>128</td>
<td>Lbs.</td>
</tr>
</tbody>
</table>

OPTION: Broadcast Tall Drop Seed on the soil surface.

OPTION: Spread the wildflower seed separately from the grass seed mix. Package and deliver the wildflower seed separately from the grass seed mix. Package and deliver the Tall Drop Seed separately from the Tall Drop Seed mix. Spread the wildflower seed separately from the grass seed and the Wildflower Seed. Place the P&S along the line of the P&S. If P&S is more than one inch thick, then the P&S shall be spread evenly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. Refer to the Standard Specifications, Division 900, Section 904 "Seeding," and Section 907 "Sodding," for the seeding and sodding specifications.

FOR WILDFLOWERS: A ratio and application rate that equals or exceeds the required minimum rate per acre of 2.0 lbs. of wildflower seed per acre, seed the area any time of the year.

For Cool Season Species: Seed the area during the warm season seeding period. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area. When the area has been regraded, seed the grass or wildflower seed in a separate seed box and drill (cover) seed "X." Place the wildflower seed in a separate seed box and drill (cover) seed "Y." Place the grass seed in a separate seed box and drill (cover) seed "Z." Place the wildflower seed in a separate seed box and drill (cover) seed "W." Place the grass seed in a separate seed box and drill (cover) seed "U." Place the wildflower seed in a separate seed box and drill (cover) seed "T." Place the grass seed in a separate seed box and drill (cover) seed "S." Place the wildflower seed in a separate seed box and drill (cover) seed "R." Place the grass seed in a separate seed box and drill (cover) seed "Q." Place the wildflower seed in a separate seed box and drill (cover) seed "P." Place the grass seed in a separate seed box and drill (cover) seed "O." Place the wildflower seed in a separate seed box and drill (cover) seed "N." Place the grass seed in a separate seed box and drill (cover) seed "M." Place the wildflower seed in a separate seed box and drill (cover) seed "L." Place the grass seed in a separate seed box and drill (cover) seed "K." Place the wildflower seed in a separate seed box and drill (cover) seed "J." Place the grass seed in a separate seed box and drill (cover) seed "I." Place the wildflower seed in a separate seed box and drill (cover) seed "H." Place the grass seed in a separate seed box and drill (cover) seed "G." Place the wildflower seed in a separate seed box and drill (cover) seed "F." Place the grass seed in a separate seed box and drill (cover) seed "E." Place the wildflower seed in a separate seed box and drill (cover) seed "D." Place the grass seed in a separate seed box and drill (cover) seed "C." Place the wildflower seed in a separate seed box and drill (cover) seed "B." Place the grass seed in a separate seed box and drill (cover) seed "A." Place the wildflower seed in a separate seed box and drill (cover) seed "X." Place the grass seed in a separate seed box and drill (cover) seed "Y." Place the wildflower seed in a separate seed box and drill (cover) seed "Z." Place the grass seed in a separate seed box and drill (cover) seed "U." Place the wildflower seed in a separate seed box and drill (cover) seed "T." Place the grass seed in a separate seed box and drill (cover) seed "S." Place the wildflower seed in a separate seed box and drill (cover) seed "R." Place the grass seed in a separate seed box and drill (cover) seed "Q." Place the wildflower seed in a separate seed box and drill (cover) seed "P." Place the grass seed in a separate seed box and drill (cover) seed "O." Place the wildflower seed in a separate seed box and drill (cover) seed "N." Place the grass seed in a separate seed box and drill (cover) seed "M." Place the wildflower seed in a separate seed box and drill (cover) seed "L." Place the grass seed in a separate seed box and drill (cover) seed "K." Place the wildflower seed in a separate seed box and drill (cover) seed "J." Place the grass seed in a separate seed box and drill (cover) seed "I." Place the wildflower seed in a separate seed box and drill (cover) seed "H." Place the grass seed in a separate seed box and drill (cover) seed "G." Place the wildflower seed in a separate seed box and drill (cover) seed "F." Place the grass seed in a separate seed box and drill (cover) seed "E." Place the wildflower seed in a separate seed box and drill (cover) seed "D." Place the grass seed in a separate seed box and drill (cover) seed "C." Place the wildflower seed in a separate seed box and drill (cover) seed "B." Place the grass seed in a separate seed box and drill (cover) seed "A."
1) **Design Speed**: Those items delegated to temporary traffic control should be designed and installed using the posted/legal speed of the roadway prior to work starting.

2) **Minimum Lane Width**: Lane widths shall be a minimum of 11' (measured between centers of pavement markings) or as shown on the plans, as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

3) Consideration should be made to separate pedestrian and, if needed, bicycle movements from both work site activity and vehicular traffic. Unless a reasonable safe route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing, barricades, or road closures. In urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (other than midblock locations) so that pedestrians are not confronted with midblock work sites that would induce them to attempt skirting the work site or making a midblock crossing.

4) When existing pedestrian facilities are disrupted, closed, or relocated, the temporary facilities shall be designed to accommodate all pedestrian and bicycle requirements.

5) When the driving surface is open to traffic is milled or is a temporary surface made of loose material, or when directed by the engineer, a W8-15 (Grooved Pavement) or W8-7 (Loose Gravel) sign shall be used on mainline approaches.

6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 645-700. designations.

---

### Minimum advance warning sign spacing (in feet):

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (40 MPH OR LOWER)</td>
<td>100</td>
<td>90</td>
<td>70</td>
</tr>
<tr>
<td>URBAN (45 MPH OR HIGHER)</td>
<td>250</td>
<td>230</td>
<td>210</td>
</tr>
<tr>
<td>RURAL (55 MPH OR LOWER)</td>
<td>500</td>
<td>450</td>
<td>400</td>
</tr>
<tr>
<td>RURAL (60 MPH OR HIGHER)</td>
<td>750</td>
<td>700</td>
<td>650</td>
</tr>
<tr>
<td>EXPRESSWAY/RECREATION</td>
<td>1000</td>
<td>800</td>
<td>600</td>
</tr>
</tbody>
</table>

**Taper Formulas**:

- For speeds of 45 MPH or more:
  
  \[ L = WS \]

- For speeds of 40 MPH or less:
  
  \[ L = W/2 + 100 \]

Where:

- **L** = Minimum length of taper in feet
- **W** = Numerical value of posted speed in mph prior to work starting
- **S** = Shoulder taper

**Buffer Space**:

- **A** = 115
- **B** = 125
- **C** = 200
- **D** = 250
- **E** = 300
- **F** = 350
- **G** = 400
- **H** = 450
- **I** = 500
- **J** = 550
- **K** = 600
- **L** = 650
- **M** = 700
- **N** = 750

---

**General Notes**:

- When concrete barrier system is used, portable channelizing devices are not needed along the barrier extension section.

---

**Temporary Traffic Control**

- Directional indication barricades shall be placed in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.
- Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.
- Place directional indicator barricades in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.
- Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

---

**Typical Work Zone Components**

- When concrete barrier system is used, portable channelizing devices are not needed along the barrier section.

---

**Taper Formula**:

\[ L = WS \text{ for speeds of } 45 \text{ MPH or more} \]

\[ L = W/2 + 100 \text{ for speeds of } 40 \text{ MPH or less} \]

Where:

- **L** = Minimum length of taper in feet
- **W** = Numerical value of posted speed in mph prior to work starting
- **S** = Shoulder taper

---

**Taper Formula**:

\[ L = WS \]

\[ L = W/2 + 100 \]

Where:

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- **A** = 115
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- **E** = 300
- **F** = 350
- **G** = 400
- **H** = 450
- **I** = 500
- **J** = 550
- **K** = 600
- **L** = 650
- **M** = 700
- **N** = 750
- **O** = 800

---

**General Notes**:

- Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

---

**Temporary Traffic Control**

- Directional indication barricades shall be placed in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.
- Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.
For rails less than 36" long, 4"wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.

The stripes shall slope downward to the traffic side for channelization.

The direction indicator barricade shall be used in series to direct the motorist into the intended lane of travel.

1. Support device shall not project beyond the detection plate into the pathway.
2. Hand trailing edges and detection plates are optional for continuous walls.
3. Interconnect pedestrian channelizers to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Treat height differentials > 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 12:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

Gores

Diversions

Cross-overs

Diversions

Tangents

Tapers

Ramps

Head

Head to

Identifier

Object

Daytime operations only.

May be used upon the approval of the engineer.

Not allowed on centerline delineation along freeways or expressways.

The stripes shall slope downward to the traffic side for channelization.

May be used upon the approval of the engineer.

Daytime operations only.
Note: Signs shown for one approach to work zone.

FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

Note: Signs shown for one approach to intersection (work zone).

FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS

ROAD CLOSED

Complete closure Type 3 barricades

Type 3 barricade (winged position)

NOTE:
The R11-3A and R11-4 signs should be accompanied with appropriate outline signing, as shown on project traffic control plans.

FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE

Note: Signs shown for one approach to work zone.

ROAD CLOSED

Complete closure Type 3 barricades

Type 3 barricade (winged position)

NOTE:
The R11-3A (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is 1 mile or greater.

As shown in Figure 1, at the point where thru traffic must detour and local traffic can proceed to the location where the roadway is completely closed, the R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) or R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY or ROAD CLOSED TO THRU TRAFFIC) sign shall be used with Type 3 barricades (winged position), placed on the shoulders of roadway.

As shown in Figure 3, when local traffic must be allowed access into the work zone, Type 3 barricades shall be longitudinally staggered to maintain the appearance of a closed roadway. A second line of end-to-end Type 3 barricades shall be placed just beyond the last access point in the work zone, to completely close the roadway.

The R11-4 (ROAD CLOSED TO THRU TRAFFIC) sign shall be used when the distance to the point of complete closure of the roadway is less than 1 mile.

The R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is 1 mile or greater.

The words "BRIDGE OUT" (or BRIDGE CLOSED) may be substituted for the words "ROAD CLOSED" on the R11-3a or R11-4 sign where applicable.
SIGN LAYOUT INFORMATION

END ROAD WORK
KG20-2

WAIT FOR PILOT CAR
KG20-5

EXPWY/FREEWAY

STD. SIZE EXPWY/FREEWAY
6" C
48"x48" (OPTIONAL)

STD. SIZE EXPWY/FREEWAY
8" D
48"x48"

EXPWY/FREEWAY

GROOVED PAVEMENT

STD. SIZE EXPWY/FREEWAY
6" C
48"x24"

STD. SIZE EXPWY/FREEWAY
8" D
48"x48"

EXPWY/FREEWAY

LOOSE GRAVEL

STD. SIZE EXPWY/FREEWAY
6" C
24"x6" 48"x12"

STD. SIZE EXPWY/FREEWAY
8" D
30"x24"

EXPWY/FREEWAY

UNEVEN LANES

STD. SIZE EXPWY/FREEWAY
6" C
48"x48"

STD. SIZE EXPWY/FREEWAY
8" D
48"x48"

EXPWY/FREEWAY

SHOULDER DROP-OFF

STD. SIZE EXPWY/FREEWAY
30"x24" (OPTIONAL)

EXPWY/FREEWAY

GIANT ROLLER (OPTIONAL)

STD. SIZE EXPWY/FREEWAY
48"x48"

EXPWY/FREEWAY

SIGN NUMBER KI-104a
GROUND 5'-0" 3'-0"
COLOR: ORANGE
TYPE: REFLECTIVE

SIGN NUMBER KI-105a
GROUND 4'-0" 3'-0"
COLOR: WHITE
TYPE: NON-REFLECTIVE

SIDE LETTER SPACINGS

<table>
<thead>
<tr>
<th>LETTER SPACING</th>
<th>3/16&quot; x 3/16&quot;</th>
<th>1/8&quot; x 1/8&quot;</th>
<th>1/4&quot; x 1/4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>B</td>
<td>0.75</td>
<td>1.5</td>
<td>2.25</td>
</tr>
<tr>
<td>C</td>
<td>0.5</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>D</td>
<td>0.25</td>
<td>0.5</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Notes:

Typically, there are two sets of informational signs installed per project: one for each direction of traffic.

Install signs a minimum of 500' in advance of the work zone ahead sign. The engineer may designate a more appropriate location if conditions dictate.

The informational signs are not to interfere with the traffic control signs for the project.

When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

In the case of hitting rock when driving posts:
1. Shift the sign location. Do not violate minimum sign spacing.
2. With the engineer's approval, use acceptable alternative sign stands.
Perforated square steel tube (P.S.S.T.) post setup

- **Sign post**
- **Ground line**
- **Direction of traffic**

**3 lb/f U-Channel setup**

- **Sign post**
  - (splice post to non-impacting side of stub)
- **Top of stub**
- **18" Min. lap splice**
- **Bottom of sign post**

Notes:
- Place two bolts at both ends of the splice through the holes nearest the ends of the splice.
- Use manufacturer recommended spacers over the bolts between the spliced pieces of U-Channel.

Details for 2", 2 1/4", or 2 1/2" sign posts:
- Place bolts in the same corner along each sign post.
STA. 43+51.44 TO STA. 43+85.00

Mainline 1:5

STA. 43+05.00

C = 50
F = 0
Sta. 43+04
F = 0
Sta. 43+17
C = 0
F = 0
Sta. 43+26
Sta. 43+43
Ahd.
Bk.
C = 0
F = 390

STA. 42+17
C = 230
F = 0
Sta. 42+55
C = 300
F = 0
Sta. 42+57

STA. 43+51.44

43+51.44

F = 498

3 :1
10:1
2077.81

3 :1
10:1
2077.26

3 :1
10:1
2076.71

