SOIL FOR EMBANKMENT CONSTRUCTION:
All soil used in the top 18 inches of embankment should conform to the following requirements: 6 ≤ PI ≤ 31 and 20 ≤ LL ≤ 51. Soils which contain substantial organic material, such as those classified as OL or OH according to the Unified Soil Classification System (ASTM D2487) should not be used to construct the embankment as OL or OH. The organic material may be removed, added or as directed by the Engineer.

Note: Intersection of all slope lines shall be uttess and rounded for pleasing appearance.

Ditch Plugs within the appropriate clear zone shall have side slopes of 10:1 or flatter.

Dimensions and slopes for standard ditches and fills. Plan and cross sections for variations.
Note: These are 4 general cases. Specific compaction requirements are determined on a project-by-project basis.
RECONSTRUCTION/REHABILITATION OF EXISTING ROADWAY (Removal and Placement of Salvaged Topsoil)

NEW ROADWAY ALIGNMENT (Removal and Placement of Salvaged Topsoil)

LEGEND

- Topped to be Salvaged
- Placement of Salvaged Topsoil

Note: Method of showing backslope thru shallow rock in white color of location where rock provides a short weight above the bottom of the ditch.

SPECIFICATIONS for details. See KDOT Standard Specifications and Place Salvaged Topsoil to finish foreslope, ditch and backslope.

KANSAS DEPARTMENT OF TRANSPORTATION

GENERAL NOTE:
Adjust the cut and fill sections to accommodate the placement of the salvaged topsoil. Part other areas of rock as indicated. See KDOT Standard Specifications for details. See KDOT Standard Specifications for details.
1. Found spike and KDOT washer in NW face of power pole.

2. Set spike and KDOT washer in east face of 19" tree.

3. Southwest corner of east headwall of box culvert.


1. Set of valve 0.8' deep, offset 22' W.

2. Side of tree incrementation.

3. Line of w wshr. in top of wood guardrail.

4. KDOT Country Club Distance.

Remove portion of exist. apron floors Lt. and Rt. to accommodate pole extensions.

See Sh. No's. 10, 13 & Cross Sections.
1. Set spike & KDOT washer in top corner fence post.

2. Set spike & KDOT washer in top of wooden guardrail post.

3. Set spike & KDOT washer in top of south gate post.

4. Found spike and KDOT washer in top corner of underdrain pipe.

5. Top of ditch backfill.

6. Reset outlet flume and guidepost.

Remove existing guardrail and backfill post holes as directed by the Engineer.

EARTHWORK BALANCE Sta. 91+00 to Sta. 100+25

Includes 85 Cu. Yds. Common Excavation from RCP inlet end channel work.
### GENERAL NOTES

- Use the proper identification cap for the party installing the monument, as shown on the exhibit.
- Make all stampings, forgings, and impressions legible. The stampings, forgings, and impressions will properly identify the location of the monument within the Public Land Survey System (PLSS).
- Reinforcing bars are to be spaced on 18" centers, unless otherwise specified.

### MATERIALS

- All materials shall conform to the requirements of the "Manual of SURVEYING INSTRUCTION," as published by the United States Department of the Interior, Bureau of Land Management.

### INSTRUCTIONS

- Concrete pavement shall be compacted in accordance with this plan, unless otherwise directed by the Engineer.
- Drilled holes for monuments shall be compacted as specified in this plan, unless otherwise directed by the Engineer.
- All work and materials required to install Types B-D monumentation will be paid under the bid item "Contractor Construction Staking (Lump Sum)"—see KDOT’s Standard Specifications for details.

### SECTION CORNER MONUMENTATION DETAIL SHEET

- This detail is applicable to the PLSS corner, the Engineer may direct or select specific locations for offset monuments, as shown.
- All work and materials required to install the Type A-1 and Type A-2 monuments as directed by the Engineer may direct or select specific locations for offset monuments, as shown.

### ADJUSTABLE MONUMENT BOX DETAIL

- (Neenah R:1968 Type 36-B or approved equivalent)

### DETAIL SHEET

- TRACED: SCOTT W. KING, APP’D.
- DETAILED: K.A.HALE
- KDOT Graphics Certified: 11-10-03
- PLOTTED: 1-15-16
- PLOTTED: 8-24-18
- KDOH Graphic Certified: 08-21-2019

### EXHIBIT

**2" DIA. PRE-STAMPED ALUMINUM CAPS**

**TYPE A-1**
- (Standard Land Corner Monument Box)
- Use Type A-1 or Type A-2 monument boxes as directed by the Engineer.
- Type A monuments may be used on a project as specified in the plans or as directed by the Engineer. Typically, Type A monuments are used on high traffic volume roadways, in urban areas, or as required by local governmental codes. Otherwise use Types B-D monumentation.
- Avoid installing monument boxes in vehicle wheelpaths where practicable.
- All work and materials required to install the Type A-1 and Type A-2 monument boxes will be paid under the bid item "Monument Box (Each)" and will be included in the plan quantities.

**TYPE A-2**
- (Standard Land Corner Monument Box)
- Use the proper identification cap for the party installing the monument, as shown on the exhibit.
- Make all stampings, forgings, and impressions legible. The stampings, forgings, and impressions will properly identify the location of the monument within the Public Land Survey System (PLSS).
- Reinforcing bars are to be spaced on 18" centers, unless otherwise specified.

**TYPE B**
- (Recessed Bar)
- Drilled hole for recessed monument
- No Surface Monuments Allowed in Pavement

**TYPE C**
- (Drilled Hole)
- Drilled hole for recessed monument
- 30" long #5 rebar

**TYPE D**
- (Shoulder/Ditch Subsurface Monument)
- 30" long #5 rebar

### SECTION CORNER MONUMENTATION DETAIL SHEET

- TRACED: SCOTT W. KING, APP’D.
- DETAILED: K.A.HALE
- KDOT Graphics Certified: 11-10-03
- PLOTTED: 1-15-16
- PLOTTED: 8-24-18
- KDOH Graphic Certified: 08-21-2019
**GENERAL NOTE**

The post shall be U-shaped (6' minimum length) and factory painted the color of persian red (KDOT Orange) by an electronically powder-coated oven-baked process. All installations shall have proper identification cap for the party installing it (See Exhibit). Monument(s) shall be set in accordance with the standard specifications and as shown on this drawing. Removal and disposal of existing concrete R/W markers shall not be paid for directly but shall be submitted to other lines of the contract.

In an urban area, the witness post may be omitted as directed by the Engineer.

The R/W survey monuments shall be paid for under the bid item "Right-of-Way Survey Monuments (Each)" and be included in the plan quantities. The table shown on this sheet is intended for additional monuments set in the field and will be billed out by the contracted survey company.

Mount R/W survey monument signs facing the road.

Mount R/W survey monument signs facing the road.

**NOTES:**

- Use caution, do not disturb the brand when setting a post. The witness post shall be turned or in place to the project centerline from the rebar. The "open face" of the U-post shall face the project centerline with the sign attached to the "open face". This exhibit is a side view, except for the sign which is shown as turned for the purpose of illustrating content only. (See Plan Detail)

- Drill or punch holes. Attach 2 flat washers, 1 lock washer, and 1 nut per bolt. Δ Or as directed by the Engineer.

- The R/W survey monuments shall be paid for under the bid item "Right-of-Way Survey Monuments (Each)" and be included in the plan quantities. The table shown on this sheet is intended for additional monuments set in the field and will be billed out by the contracted survey company.

Mount R/W survey monument signs facing the road.

Mount R/W survey monument signs facing the road.

**NOTE:**

- 4" (Min) to 6" (Max) from rebar to witness post. Use caution, do not disturb the brand when setting a post. The witness post shall be set or in place to the project centerline from the rebar. The "open face" of the U-post shall face the project centerline with the sign attached to the "open face". This exhibit is a side view, except for the sign which is shown as turned for the purpose of illustrating content only. (See Plan Detail)

- Drill or punch holes. Attach 2 flat washers, 1 lock washer, and 1 nut per bolt. Δ Or as directed by the Engineer.
Dimensions for alternate shapes shall be equal to or greater than those shown in the table, unless otherwise shown.

 transition to round pipe.
 Paid for as separate item of 2nd Section, except when structure shall bid as alternates. In that case End Sections shall be supplementary to bid Item “Trenchage Structure No.
 ** Included in pay length of pipe.
 Minimum waterway area is calculated at the inside of the bevel.

 END SECTION (TYPE I) NOMINAL DIMENSIONS

<table>
<thead>
<tr>
<th>Diam.</th>
<th>A</th>
<th>B**</th>
<th>C*</th>
<th>D</th>
<th>E</th>
<th>R</th>
<th>Show T</th>
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</thead>
<tbody>
<tr>
<td>12</td>
<td>6-6</td>
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<td>2-0</td>
<td>8</td>
<td>1-7</td>
<td>3</td>
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<tr>
<td>18</td>
<td>13-5</td>
<td>8-1</td>
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<td>2-0</td>
<td>8</td>
<td>1-7</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>19.5</td>
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<td>2-0</td>
<td>8</td>
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<tr>
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<td>41.5</td>
<td>33.8</td>
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<td>8</td>
<td>1-7</td>
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<td>1-7</td>
<td>3</td>
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<tr>
<td>84</td>
<td>75.3</td>
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<td>2-0</td>
<td>2-0</td>
<td>8</td>
<td>1-7</td>
<td>3</td>
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SIDE TAPERED INLET SECTION (TYPE III)-NOMINAL DIMENSIONS

<table>
<thead>
<tr>
<th>Diam.</th>
<th>A</th>
<th>B**</th>
<th>C*</th>
<th>D</th>
<th>E</th>
<th>R</th>
<th>Show T</th>
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</thead>
<tbody>
<tr>
<td>24</td>
<td>4.5</td>
<td>4.3</td>
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<td>15.4</td>
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<td>4.0</td>
<td>6.0</td>
<td>5.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Dimensions for alternate shapes shall be equal to or greater than those shown in the table, unless otherwise shown.
Contractor shall remove floor of apron as necessary to facilitate RCP extension connection to existing pipe and flowline elevations. Existing wing walls and hub-guard can remain.
This work shall be paid for and included in the bid item 'Removal of Existing Structures'.

Contractor shall remove mortar and bevel prior to extension to facilitate bell and spigot connection of extension pipe to existing pipe.
This work shall be paid for and included in the bid item 'Removal of Existing Structures'.
### Recapitulation of Bridge Quantities

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.430</td>
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</table>

### Recapitulation of Road Quantities

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<tr>
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<th>UNIT</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>129</td>
<td></td>
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</table>

### Removal of Existing Structures

<table>
<thead>
<tr>
<th>SIZE</th>
<th>LENGTH</th>
<th>REMARKS</th>
</tr>
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<tr>
<td>4</td>
<td>10</td>
<td>Existing sidewalk</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>4&quot;.D. sewer headwall, 4&quot;.D. Ditch</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>4&quot;.D. sewer headwall, 4&quot;.D. Ditch</td>
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</tbody>
</table>

### Earthwork

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<th>SIDE</th>
<th>TYPE</th>
<th>QUANTITY</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### Drainage Structures

<table>
<thead>
<tr>
<th>STATION</th>
<th>SIDE</th>
<th>TYPE</th>
<th>DRAINAGE STRUCTURE</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Summary of Quantities

For Temporary Erosion & Pollution Control Quantities, See Sh. No. 14
For Seeding Quantities, See Sh. No. 36
For Traffic Control Quantities, See Sh. No. 32
### 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 must be fertilized and seeded when required, seeded, and mulched. Soil preparation shall conform to the specifications.

Temporary seeding shall be done during any time of the year that the soil can be cultivated. After the temporary seeding has been completed on the entire project, permanent seeding shall be done during the normal seeding season.

**MULCHING** Mulch shall be spread uniformly over all disturbed areas and in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching materials is generally as follows:

- **9** - 25 lb per acre - 1 1/2" deep spread uniformly per acre.

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. Other vegetative materials are acceptable only with the Engineer's concurrence.

The above rates are a guide. It will be the discretion of the Engineer to determine what rates are sufficient for adequate protection of newly seeded areas.

---

### SOIL EROSION MIX

The Soil Erosion Mix is to be placed under the Class I and/or Class II erosion control measures. The Soil Erosion Mix consists of the Shoulder Areas of the Permanent Seed Mix used on the project.
### Erosion Control - Class 1, Type D

<table>
<thead>
<tr>
<th>Station</th>
<th>Side</th>
<th>Length</th>
<th>Width</th>
<th>SQ Yards</th>
</tr>
</thead>
<tbody>
<tr>
<td>91+00.00</td>
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<td>825.00</td>
<td>25.00</td>
<td>2292</td>
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<tr>
<td>93+00.00</td>
<td></td>
<td>475.00</td>
<td>55.00</td>
<td>2903</td>
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<tr>
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<td>1040</td>
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<tr>
<td>97+25.00</td>
<td></td>
<td>390.00</td>
<td>32.00</td>
<td>1387</td>
</tr>
</tbody>
</table>

**Total Erosion Control (Class 1, Type D)** = 7622 Sq. Yds

### Erosion Control - Class 2, Type F

<table>
<thead>
<tr>
<th>Station</th>
<th>Side</th>
<th>Length</th>
<th>Width</th>
<th>SQ Yards</th>
</tr>
</thead>
<tbody>
<tr>
<td>94+45.00</td>
<td></td>
<td>30.00</td>
<td>20.00</td>
<td>67</td>
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<tr>
<td>94+60.00</td>
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<td>40.00</td>
<td>14.00</td>
<td>62</td>
</tr>
</tbody>
</table>

**Total Erosion Control (Class 2, Type F)** = 129 Sq. Yds
NOTES:

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

2) Discharge of Slope Drains shall be to 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.

Temporary Berm

Temporary Slope Drain

Temporary Berm

Temporary Stream Crossing (Articulated Concrete Blocks)

Temporary Stream Crossing (Aggregate)

Temporary Berm

Temporary Stream Crossing (Articulated Concrete Blocks)

Temporary Stream Crossing (Aggregate)

Temporary Berm

Temporary Stream Crossing (Articulated Concrete Blocks)

Temporary Stream Crossing (Aggregate)
**Temporary Inlet Sediment Barrier (Silt Fence Method)**

**PLAN**

**SECTION A - A**

- **Drop Inlet Protection**

  - Bags = synthetic net 1.3mm mesh or burlap bags
  - Rock = approximately 1" to 2" diameter

- **Note:** 25% of log shall be above top of curb.

**SECTION C - C**

- **Soil or Gravel Backfill**

  - **Soil or Gravel**

  - **Gravel**

- **Wire Staples:** 6" long

**Material Requirements**

- **Synthetic Net:**
  - **Type:** 20 gauge or larger
  - **Material:** Non-compost biodegradable material
  - **Color:** White

- **Burlap Bags:**
  - **Material:** Non-compost biodegradable material
  - **Color:** White

- **Wire:**
  - **20 gauge**

- **Stakes:**
  - **Material:** Hardwood or Southern Pine
  - **Dimensions:** 1" x 1" or 1" x 3/4"

- **Crosspieces:**
  - **Material:** Steel U, T, L, or C Section
  - **Dimensions:** 0.95 lbs. per linear foot

**Instructions**

1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
2. Height of bags (minimum diameter) must not be above top of curb.
3. Alternative products may be used other than gravel bags such as the "Gutter Buddy". Products must be approved by the Engineer.
4. Curb inlet protection will be measured and paid for as Filter sock.

**Details**

- **Stakes shall be 4' (min.) long and of one material.**
- **Crosspieces shall be of same material as stakes.**
- **Steel U, T, L, or C Section**:
  - 0.95 lbs. per linear foot
- **Synthetic — same strength as wood stakes.**
- **Stakes (see notes):** 1" x 1" (typ.)
- **Crosspieces (see notes):** 1" x 3/4" (typ.)
- **Main Flowline of Ditch:** 6'' centers (max.).
- **Soil or Gravel Backfill:** 6'' in Anchor Trench.
- **Curb Inlet Protection**:
  - **Temporary Inlet Sediment Barrier**:
    - **Silt Fence**:
      1. **Stakes** shall be 4' (min.) long and of one of the following materials:
        - a. Hardwood = 1" x 3/4" x 3/4".
        - b. Southern Pine (No. 2) = 2" x 2" x 2.5".
        - c. Steel U, T, or C Section — 0.95 lbs. per linear foot.
        - d. Synthetic — same strength as wood stakes.
      2. **Crosspieces** shall be of same material as stakes.
      3. **Attach Fence Fabric and Chicken Wire along** Stake and Cross Pieces on 6" centers (typ.).
      4. **Use of high flow material is acceptable.**
      5. **Refer to plan sheets to estimate the length of silt fence required.**
Silt Fence:
- Stakes shall be 4' (min.) long and one of the following materials:
  a. Hardwood - 1 ½" x 1 ½".
  b. Southern Pine No. 2 - 2 ½" x 2 ½".
  c. Steel U, T, L, or C Section - 36 lbs. per ft.
  d. Synthetic - same strength as wood stakes.

- Attach fabric to stakes with 3 zip ties within the top 8" of the fence.

Alternative attachment methods may be approved by the Engineer on a performance basis.

Biodegradable Log or Filter Sock:
- Length of stakes shall be 2 times the height of the log (min.).
- Refer to plan sheets to estimate length of biodegradable log and filter sock required.
- Each log or sock (except compost filter socks) shall be laid into the ground at a minimum of 25% of its length. Compost filter socks should be placed in a stream prepared ground with no gaps between the sock and soil.
- Length of stakes shall be 2 times the height of the log at a minimum with minimum ground embedment equal to the height of the log / sock.

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

BIODEGRADABLE LOG OR FILTER Sock

<table>
<thead>
<tr>
<th>Product</th>
<th>Typical Height</th>
<th>Min. Embedment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodegradable Log (4' min. length)</td>
<td>4' - 12&quot; depth</td>
<td>2 times height</td>
</tr>
<tr>
<td>Filter Sock</td>
<td>4' - 12&quot; depth</td>
<td>2 times height</td>
</tr>
</tbody>
</table>

Terminology and Definitions:
- Trench:
- Geotextile fabric:
- Tire compaction zone:
- Downstream Apron:
- Groundline at:
- Temporary Erosion and Pollutioon Control:
- Alternatve Staking (Radial):
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 over excavated soil to ditch grade.

5. Aggregate excavated on site may be used as an alternative 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

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 10'.

3. Stakes shall be wood or steel according to Section 2114 of the Standard Specifications. Length of stakes shall be a minimum of 2 x the diameter of the log.

4. Use Erosion Control (Class 1) (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 60% of the 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 as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.

8. Overlap sections a minimum of 10'.
The design must be approved by the engineer.

Quantities

BB Detailed Designed CADD

APP'D 09/24/2013

Scott H. Shields

Other skimmer designs maybe used that dewaters time to 2 to 5 days and approved by the engineer.

PROPOSITION

Temporary Erosion and Pollution Control

Sediment Storage Basin Locations

Station to Station | Sid | Required Storage Capacity

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 watertight connections.
3. The grating shall be sized to provide drawdown time to 2 to 5 days and approved by the engineer.
4. Other skimmer designs maybe used that dewaters from the surface at a controlled rate. The design must be approved by the engineer.
Erosion Control Blankets shall be laid loosely in the direction of the slope, beginning at the bottom of the slope, in order for blanket to be in contact with the soil, backfilled, tamped and seeded. The top of the blanket should be "slotted" at the top of the slope and anchored in place with anchors 8 inches in direction of water flow. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.

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 x 6 inches deep with the blanket anchored 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 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.

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

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

6. **STAPLE CHECK**: Establish Staples in 2 rows 4" on center apart. Single post ring and shank staple is acceptable.

**NOTE:** Staples shall be 30' apart. Staple Checks - shall be 30' apart.

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.
INSTALLATION DETAILS FOR EROSION CONTROL CLASS 2

Erosion Control Mats shall be laid haysew in the direction of the flow, with the first course of the centerline of channel, where applicable, in order for the mat to be in contact with the soil, lay the mat haysew avoiding stretching.

1. ANCHOR FOLD: The top of the mat shall be folded under, buried and secured with approved anchors placed 6 inches apart. The top edge of the mat should be buried in a slot, 6 inches wide x 6 inches deep, centered in the bottom of the slot, backfilled and the mat folded over the top as shown in detail.

2. LONGITUDINAL SEAMS: The sideward edges of the mat shall overlap a maximum of 6 inches, with anchors catching the edges of both mats.

3. SPLICE SEAM: In case splices are necessary, overlap end of side by 12 inches in direction of water flow. Staple splice seams.

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

5. EDGE ANCHOR: Lay outside edge of mat into trench at top of side slope. Anchor at 3 foot intervals along trench.

6. TERMINUS: The bottom edge of the mat shall be anchored in place with anchors spaced at 9 inch intervals along the terminating edge.

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

PLAN VIEW - ANCHORING DIAGRAM

ISOMETRIC VIEW
## SUMMARY OF SEEDING QUANTITIES

<table>
<thead>
<tr>
<th>Name</th>
<th>PLS Rate</th>
<th>QTY (lb)</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATIVE WILDFLOWER MIX 1</td>
<td></td>
<td></td>
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<tr>
<td>NATIVE WILDFLOWER MIX 2</td>
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</tbody>
</table>

### General Notes

- The entire disturbed areas, including the power or surfaced areas, deep road cuts and areas of undocumented values, as well as those designated for more intensive revegetation, shall be fertilized and seeded.

- Soil preparation and surface finish in the seedbeds will be specified.

- All borrow areas shown on the plans are to be fertilized, seeded and mulched. However, operation in borrow areas where areas are grading may be modified when requested by the owner.

- In areas of less than 0.5 acres, Cool Season grasses may be mixed with Warm Season grasses. Seed the area during the Warm Season seeding period.

- The area to be seeded is kept free of weeds if cool season grasses are used. Seed the area any time of the year.

### Other Vegetative Mulches

- Other vegetative mulches are acceptable only with the Engineer's concurrence.

- Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood mulch, shall meet the North American Weed Free Forage Standards.

### Mulching

- Mulch shall be spread uniformly over all disturbed areas and punched in the soil. The rate of application per acre, thickness in place, and surface for the mulching material is generally as follows:

  - 0.5 - 2.5 Tons per acre for cool season seeding operations.

### Permanent Seeding

- In areas of less than 1 acre, Cool Season grasses may be mixed with Warm Season grasses. Seed the area during the Warm Season seeding period.

- All borrow areas shown on the plans are to be fertilized, seeded, and mulched. However, operation in borrow areas where areas are grading may be modified when requested by the owner.

- If temporary cover has provided stable slopes with no erosion, seed the permanent grasses into the existing cover. In areas of less than 0.5 acres, Cool Season grasses may be mixed with Warm Season grasses. Seed the area any time of the year.

### Temporary Seeding

- Temporary cover may be planted when a sufficient depth of soil exists to accommodate the new vegetation.

- If rock is exposed at the bottom of a ditch, it shall not be required.

- If rock is exposed at the bottom of a ditch, it shall not be required.

### Fertilize, Seed & Mulch

- Fertilize, seed, and mulch all disturbed areas.

### Soil Preparation

- Soil preparation shall conform to the Standard Specifications except as noted below.

### Cool Season Species

- Cool Season grasses are suitable for stabilization and surface treatment of disturbed areas.

### Warm Season Species

- Warm Season grasses are suitable for stabilization and surface treatment of disturbed areas.

### Mulching Material

- Mulching material shall be spread uniformly over all disturbed areas and punched into the soil. The rate of application per acre, thickness in place, and surface for the mulching material is generally as follows:

  - 0.5 - 2.5 Tons per acre for cool season seeding operations.

### Seed Mixes

- Native sod or other desirable vegetation shall be fertilized (lime when required), seeded, and mulched.

### Summary

- Seed mixtures shall be selected from the Native Wildflower Mix list.

### Native Wildflower Mix

- Native Wildflower Mixes listed in the Summary of Seeding Quantities will be acceptable.

### Wildflower Mix 1

- Wildflower Mix 1 includes wildflowers.

### Wildflower Mix 2

- Wildflower Mix 2 includes wildflowers.

### Additional Notes

- See LANDS for matching quality. Additionally, the quantity of mix is estimated at 0.5 to 2.5 Tons per acre.

### References

- Refer to the Standard Specifications, Division 05, Section 05.04 "Seeding," and Section 05.07 "Soil Mulch," for the seeding and mulching specifications.

### Credit Information

- Credit: CADD Drawn by: KDI Graphics Certified: 06-01-2020
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 centerlines of pavement markings) or as shown on the plans, or 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 that encourages them to cross to the opposite side of the roadway. 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 will induce them to attempt skirting the work area or making a midblock crossing.

5) When the driving surface is open to traffic as widened or is a temporary surface made of loose material, or when directed by the engineer a W8-15 (Grooved Pavement) or W-7 (Loose Gravel) sign shall be used on marine approaches. This sign should be placed a “C” distance after the W8-1 (Road Work Ahead) sign. A W8-15 motorcycle place shall be used to supplement the W8-15 or W8-7 signs. All signs shall be displayed as long as the condition is present.

6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 785-296-1183.
### TRAFFIC CONTROL

**CHANNELIZING DEVICES**

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 1:10 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Concrete Delineating Devices</th>
<th>Traffic Cones</th>
<th>Traffic Cones</th>
<th>Direction Indicating Devices</th>
<th>Pedestrian Channelizers</th>
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<tbody>
<tr>
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<td>Vertical Panels</td>
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<td>No</td>
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</tbody>
</table>

(1) Not allowed on centerline delineation along freeways or expressways.
(2) The stripes shall slope downward to the traffic side for channelization.
(3) May be used upon the approval of the engineer.
(4) Daytime operations only.

**TRAFFIC CONE**

- Hand trailing edge
- Support device
- 2" Max. height

**VERTICAL PANEL**

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

**TYPE 2 BARRICADE**

- For rails less than 36" long, 4" wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.

**DIRECTION INDICATOR BARRICADE**

- The stripes shall slope downward in the direction traffic is to pass.
- The direction indicator barricade shall be used in series to direct the motorist into the intended lane of travel.

**TRAFFIC CONE**

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

**DELINEATOR**

- White
- Orange

**TRAFFIC CONE**

- White
- Orange

- 6" to 8"
- 36" Min.
- 38" Max.
- 24" Min.
- 34" Min.

- 12" Max.
- 6" Min.

- Approx. 6" to 8"

- 45° Min.

- PEDESTRIAN CHANNELIZER

- 4" to 6"
1) Ground-mounted signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.

2) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

3) The height of the secondary sign mounted below another sign may be 4' measured from the bottom of the sign to the near edge of the pavement. Signs shall not overlap each other.

4) The height from the secondary sign mounted below another sign may be 6' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.

5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

6) Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not extend into the walkway nor shall it project beyond the back of curb.

When the sign width is equal to or greater than 2', three or more wood posts may be used with a minimum of 6' 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 skid out minimum sign spacing.
2. With the engineer's approval, use acceptable alternative sign stands.
Notes:

No traffic control is required if the work space is located outside of the clear zone.

For operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with high-intensity rotating, flashing, oscillating, or strobe lights is used.

1. Omit taper if paved shoulder is less than 8' wide.
**NOTES:**

- Trucks hauling material to the project shall STOP at the Flagger. After stopping, upon approval of the Engineer, trucks may be allowed to move around the Flagger.

- Place a Flagger at all highway and major collector intersections and at grade railroad intersections with lights and gates in the work zone to control traffic crossing the tracks to the left of the gate arm. The need for a Flagger at minor side road intersections shall be determined by the Engineer. Place a W20-7 (Flagger symbol) sign on each side road that is controlled by a Flagger.

- Existing signs shall not be covered or removed between Flagger stations.

- Temporary rumble strips may be used in lieu of lead in channelizing devices when the roadway is less than or equal to 30 ft. including paved shoulders. When extending circumstances exist, the Area Engineer may elect to eliminate both the lead in channelizers and the rumble strips.

- Minimum six (6) channelizers spaced at 30’ intervals.

- Optional rumble strips may be placed: One set between the W20-1 and W20-4, and one set between the W4-1 and W4-4, on each approach.

- Not required on substantial maintenance projects [10].

- The K020-5 (WAIT FOR PILOT CAR) sign shall be mounted on an approved portable support and not attached to the existing stop sign post.

- The K020-5 sign shall be placed immediately in front of the existing stop sign a minimum of 1 ft. below the bottom of the stop sign. The sign should be removed or covered when there is no pilot car.

**TYPICAL SIGNING FOR HIGHWAY OR MAJOR COLLECTOR APPROACH TO WORK SPACE**

**TYPICAL SIGNING FOR A MINOR SIDE ROAD APPROACH TO WORK SPACE**

**KANSAS DEPARTMENT OF TRANSPORTATION**
### Summary of Traffic Control Devices

#### Recapitulation of Quantities

<table>
<thead>
<tr>
<th>Devices</th>
<th>Description</th>
<th>Unit</th>
<th>lump sum</th>
<th>hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Zone Signs (0 to 9.25 Sq.Ft.)</td>
<td>Each Per Day</td>
<td></td>
<td></td>
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<tr>
<td>Work Zone Signs (9.26 to 16.25 Sq.Ft.)</td>
<td>Each Per Day</td>
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<tr>
<td>Work Zone Signs (16.26 Sq.Ft. &amp; More)</td>
<td>Each Per Day</td>
<td></td>
<td></td>
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<tr>
<td>Work Zone Baricades (Type 3 - 4 ft to 12')</td>
<td>Each Per Day</td>
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<tr>
<td>Work Zone Baricades (Pedestrian)</td>
<td>Each Per Day</td>
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<tr>
<td>Channelizer (Fixed)</td>
<td>Each Per Day</td>
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<tr>
<td>Channelizer (Portable)</td>
<td>Each Per Day</td>
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<tr>
<td>Work Zone Warning Light (Type &quot;A&quot; Low Intensity)</td>
<td>Each Per Day</td>
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<tr>
<td>Work Zone Warning Light (Red Type &quot;B&quot; High Intensity)</td>
<td>Each Per Day</td>
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<tr>
<td>Arrow Display</td>
<td>Each Per Day</td>
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<tr>
<td>Portable Changeable Message Sign</td>
<td>Each Per Day</td>
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<td>Portable Lighted Message Sign</td>
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<td>4&quot; Solid (Type II)</td>
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<tr>
<td>4&quot; Broken (8&quot;&quot;) (Type I)</td>
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<tr>
<td>4&quot; Broken (8&quot;&quot;) (Type II)</td>
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<tr>
<td>4&quot; Broken (3&quot;&quot;) (Type I)</td>
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<tr>
<td>4&quot; Broken (3&quot;&quot;) (Type II)</td>
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<td>4&quot; Dotted Extension (Type I)</td>
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<td>Work Zone Sign Removal</td>
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<tr>
<td>Traffic Signal Installation (Temporary)</td>
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<td>Traffic Control (Pedestrian)</td>
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<td>Portable Changeable Message Sign</td>
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File: CADconform Certify This File

STA. 100+25.00

STA. 100+50.00

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