4. Spike and KDOT washer top of fence post
4. Travelled way N-S of Power Poles
4. Spike and KDOT washer top railroad tie
2. Set 1/2" rebar with KDOT aluminum cap 3" deep
2. Found 1/2" rebar Flush with Surface
2. Set 1/2" rebar with KDOT aluminum cap 6" deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 3" deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 6" deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
2. Set 1/2" rebar with KDOT aluminum cap 0.4' deep
2. Line 1/2" rebar starter 60.6'-E.S.W.
GUARDRAIL DETAILS

SHEETS TOTAL SHEET NO.

KANSAS DEPARTMENT OF TRANSPORTATION

SH. NO. 3

LEGEND

- Against Driving Traffic, Grade (Class A)
- Grading Pad (Turf)

Note: All stations and offsets are to face of blockouts.
* SRT or FLEAT End Terminals

File: Dr. Don B. 10-1-SEP-2017 0:32
Printed: 01-05-13 3:20:10 PM

CAD conform Certify This File
General Notes:

Install markers on the traffic side of all guardrail installations. Do not exceed 25 foot spacing on markers. No marker is installed between the head and post #5 when the guardrail is terminated with a crashworthy end terminal. Install flexible markers on a post behind guardrail post bolt head.

Insert flexible markers on the top of bridge rails at a spacing not to exceed 50' except for long bridges (greater than 200') where spacing may be increased to 100'.

On two-way roadways use flexible markers with white/silver high intensity reflective sheathing on both sides.

On narrow or divided roadways use flexible markers installed on the approach traffic side of divided only. Use marker color yellow/amber on the left side of roadway and white/silver on the right side of the roadway.

Use High Impact Polycarbonate Flexible Guardrail Marker with high intensity reflective sheeting or an approved equivalent, see Standard Specifications.

Use compatible joint hardware that complements Standard Specifications.

Subsidiary to the bid item "Steel Plate Guardrail".

Work and materials required for installation of markers on guardrail/bridge rail are included as part of the guardrail/bridge rail.

Flexible markers for the final (permanent) traffic configuration on projects with phased construction. For example a divided highway with one side closed and two-way traffic during construction.

Install flexible markers on the top of bridge rails at a spacing not to exceed 50' except for long bridges (greater than 200') where spacing may be increased to 100'.

On two-way roadways use flexible markers with white/silver high intensity reflective sheathing on both sides.

On narrow or divided roadways use flexible markers installed on the approach traffic side of divided only. Use marker color yellow/amber on the left side of roadway and white/silver on the right side of the roadway.

Use High Impact Polycarbonate Flexible Guardrail Marker with high intensity reflective sheeting or an approved equivalent, see Standard Specifications.

Use compatible joint hardware that complements Standard Specifications.

Subsidiary to the bid item "Steel Plate Guardrail".

Work and materials required for installation of markers on guardrail/bridge rail are included as part of the guardrail/bridge rail.

Flexible markers for the final (permanent) traffic configuration on projects with phased construction. For example a divided highway with one side closed and two-way traffic during construction.

Install markers on the traffic side of all guardrail installations. Do not exceed 25 foot spacing on markers. No marker is installed between the head and post #5 when the guardrail is terminated with a crashworthy end terminal. Install flexible markers on a post behind guardrail post bolt head.

Insert flexible markers on the top of bridge rails at a spacing not to exceed 50' except for long bridges (greater than 200') where spacing may be increased to 100'.

On two-way roadways use flexible markers with white/silver high intensity reflective sheathing on both sides.

On narrow or divided roadways use flexible markers installed on the approach traffic side of divided only. Use marker color yellow/amber on the left side of roadway and white/silver on the right side of the roadway.

Use High Impact Polycarbonate Flexible Guardrail Marker with high intensity reflective sheeting or an approved equivalent, see Standard Specifications.

Use compatible joint hardware that complements Standard Specifications.

Subsidiary to the bid item "Steel Plate Guardrail".

Work and materials required for installation of markers on guardrail/bridge rail are included as part of the guardrail/bridge rail.

Flexible markers for the final (permanent) traffic configuration on projects with phased construction. For example a divided highway with one side closed and two-way traffic during construction.

Install markers on the traffic side of all guardrail installations. Do not exceed 25 foot spacing on markers. No marker is installed between the head and post #5 when the guardrail is terminated with a crashworthy end terminal. Install flexible markers on a post behind guardrail post bolt head.

Insert flexible markers on the top of bridge rails at a spacing not to exceed 50' except for long bridges (greater than 200') where spacing may be increased to 100'.

On two-way roadways use flexible markers with white/silver high intensity reflective sheathing on both sides.

On narrow or divided roadways use flexible markers installed on the approach traffic side of divided only. Use marker color yellow/amber on the left side of roadway and white/silver on the right side of the roadway.

Use High Impact Polycarbonate Flexible Guardrail Marker with high intensity reflective sheeting or an approved equivalent, see Standard Specifications.

Use compatible joint hardware that complements Standard Specifications.

Subsidiary to the bid item "Steel Plate Guardrail".

Work and materials required for installation of markers on guardrail/bridge rail are included as part of the guardrail/bridge rail.

Flexible markers for the final (permanent) traffic configuration on projects with phased construction. For example a divided highway with one side closed and two-way traffic during construction.

Install markers on the traffic side of all guardrail installations. Do not exceed 25 foot spacing on markers. No marker is installed between the head and post #5 when the guardrail is terminated with a crashworthy end terminal. Install flexible markers on a post behind guardrail post bolt head.

Insert flexible markers on the top of bridge rails at a spacing not to exceed 50' except for long bridges (greater than 200') where spacing may be increased to 100'.

On two-way roadways use flexible markers with white/silver high intensity reflective sheathing on both sides.

On narrow or divided roadways use flexible markers installed on the approach traffic side of divided only. Use marker color yellow/amber on the left side of roadway and white/silver on the right side of the roadway.

Use High Impact Polycarbonate Flexible Guardrail Marker with high intensity reflective sheeting or an approved equivalent, see Standard Specifications.

Use compatible joint hardware that complements Standard Specifications.

Subsidiary to the bid item "Steel Plate Guardrail".

Work and materials required for installation of markers on guardrail/bridge rail are included as part of the guardrail/bridge rail.

Flexible markers for the final (permanent) traffic configuration on projects with phased construction. For example a divided highway with one side closed and two-way traffic during construction.
**WOOD POSTS**

**GENERAL NOTES**

- Use galvanized nails (one per post to hold block). See Standard Drawing RD603 for Thrie Beam Transition Section Blockout hole patterns.

**WOOD POST DETAILS**

- Use a laydown type curb where the face of the guardrail is not located at the face of the curb.

- Note: When face of guardrail is aligned with the face of a curb, measure the height of rail from the paved surface of the curb or pavement (foot as shown). Use a slotted type curb where the face of the guardrail is not located at the face of the curb.

**DETAILED PLACEMENT AT CURB**

- Use only one post/blockout type within guardrail run, this excludes the guardrail end terminals. For wood/polymer blockout requirements see standard specifications.

- Hot dip galvanize the posts after fabrication, see standard specifications.

**STEEL POSTS**

**GENERAL NOTES**

- Use finished steel for all parts that will be permanently in contact with the roadway. All parts must be finished in accordance with the standard specifications.

- Use only one post/blockout type within guardrail run, this excludes the guardrail end terminals. For wood/polymer blockout requirements see standard specifications.

**THREE BEAM POST DETAILS**

- Bolt "A" (Top) Wood or polymer block

- Bolt "B" (Bottom 2"") Wood or polymer block

- Bolt "C" (Bottom 6"") Steel post

**THREE BEAM BOLT & NUT DETAILS**

<table>
<thead>
<tr>
<th>BOLT SIZE SCHEDULE</th>
<th>BOLT</th>
<th>NUT</th>
<th>WASHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8&quot;</td>
<td>3/8&quot;</td>
<td>9/16&quot;</td>
<td>1/2&quot;</td>
</tr>
</tbody>
</table>

**ELEVATION AT INTERMEDIATE POST**

**W-BEAM POST DETAILS**

- Bolt "A" (Top) Wood or polymer block

- Bolt "B" (Bottom 2"") Wood or polymer block

**ELEVATION AT LAP**

**GUARDRAIL POST DETAILS**

- Bolt "A" (Top) Wood or polymer block

- Bolt "B" (Bottom 2"") Wood or polymer block

**BLANKET NOTES**

- General notes for all parts that will be permanently in contact with the roadway.

- Use finished steel for all parts that will be permanently in contact with the roadway. All parts must be finished in accordance with the standard specifications.

- Use only one post/blockout type within guardrail run, this excludes the guardrail end terminals. For wood/polymer blockout requirements see standard specifications.

- Hot dip galvanize the posts after fabrication, see standard specifications.
THREE BEAM TRANSITION - TWO LANES

THREE BEAM TRANSITION - FOUR LANES (DIVIDED)

ALTERNATE TREATMENT - TWO LANES (Flare Rate = 20:1)

PLAN VIEW TWO LANE

PLAN VIEW FOUR LANE

DETAILS OF GUARDRAIL PROTECTION AT ROADSIDE OBSOLET

THREE BEAM TRANSITION - TWO LANES

THREE BEAM TRANSITION - FOUR LANES (DIVIDED)

KDOT Graphics Certified: 07-23-2016

Sheets: 50:10
GENERAL NOTE

Use approved wood (shown & described) or sheet metal (SRT) provided by the manufacturer. Terminal post type used is independent of post type used on the remainder of the installation. No mixing of post types allowed in guard fence run.

Cable anchor assembly must be taut. Use a locking device, vice grips or channel lock pliers, to prevent the cable from twisting when tightening the nuts. The cable anchor assembly must be taut during installation, see Manufacturer's installation manual for procedures.

The cable anchor assembly shown on this sheet are for informational purposes and may not be an exact detail. See Manufacturer's Installation Manual (furnished to Engineer) for component details and installation instructions.

All work and materials required for installation of this terminal are paid under the bid item "Guardrail End Terminal (SRT)".

Galvanzie all steel parts after fabrication.

End Terminal (SRT) details shown on this sheet are for "Information Only" and may not be an exact detail. See Manufacturer's Installation Manual (furnished to Engineer) for component details and installation instructions.

See Standard Drawings RD611 and RD613 for guardrail details not shown.

Note: 10:1 or flatter slope from the shoulder line to 4' back of the face of the guardrail.

Note: Apply retroreflective sheeting to the buffer end of terminal after installation. Thoroughly clean and dry steel prior to installation. Locate sheeting to provide maximum visibility to approaching traffic.

Use approved wood (shown & described) or sheet metal (SRT) provided by the manufacturer. Terminal post type used is independent of post type used on the remainder of the installation. No mixing of post types allowed in guard fence run.

Cable anchor assembly must be taut. Use a locking device, vice grips or channel lock pliers, to prevent the cable from twisting when tightening the nuts. The cable anchor assembly must be taut during installation, see Manufacturer's installation manual for procedures.

The cable anchor assembly shown on this sheet are for informational purposes and may not be an exact detail. See Manufacturer's Installation Manual (furnished to Engineer) for component details and installation instructions.

All work and materials required for installation of this terminal are paid under the bid item "Guardrail End Terminal (SRT)".

Galvanize all steel parts after fabrication.

End Terminal (SRT) details shown on this sheet are for "Information Only" and may not be an exact detail. See Manufacturer's Installation Manual (furnished to Engineer) for component details and installation instructions.

See Standard Drawings RD611 and RD613 for guardrail details not shown.

Note: 10:1 or flatter slope from the shoulder line to 4' back of the face of the guardrail.

Note: Apply retroreflective sheeting to the buffer end of terminal after installation. Thoroughly clean and dry steel prior to installation. Locate sheeting to provide maximum visibility to approaching traffic.

Use approved wood (shown & described) or sheet metal (SRT) provided by the manufacturer. Terminal post type used is independent of post type used on the remainder of the installation. No mixing of post types allowed in guard fence run.

Cable anchor assembly must be taut. Use a locking device, vice grips or channel lock pliers, to prevent the cable from twisting when tightening the nuts. The cable anchor assembly must be taut during installation, see Manufacturer's installation manual for procedures.

The cable anchor assembly shown on this sheet are for informational purposes and may not be an exact detail. See Manufacturer's Installation Manual (furnished to Engineer) for component details and installation instructions.

All work and materials required for installation of this terminal are paid under the bid item "Guardrail End Terminal (SRT)".

Galvanize all steel parts after fabrication.

End Terminal (SRT) details shown on this sheet are for "Information Only" and may not be an exact detail. See Manufacturer's Installation Manual (furnished to Engineer) for component details and installation instructions.

See Standard Drawings RD611 and RD613 for guardrail details not shown.

Note: 10:1 or flatter slope from the shoulder line to 4' back of the face of the guardrail.

Note: Apply retroreflective sheeting to the buffer end of terminal after installation. Thoroughly clean and dry steel prior to installation. Locate sheeting to provide maximum visibility to approaching traffic.

Use approved wood (shown & described) or sheet metal (SRT) provided by the manufacturer. Terminal post type used is independent of post type used on the remainder of the installation. No mixing of post types allowed in guard fence run.

Cable anchor assembly must be taut. Use a locking device, vice grips or channel lock pliers, to prevent the cable from twisting when tightening the nuts. The cable anchor assembly must be taut during installation, see Manufacturer's installation manual for procedures.

The cable anchor assembly shown on this sheet are for informational purposes and may not be an exact detail. See Manufacturer's Installation Manual (furnished to Engineer) for component details and installation instructions.

All work and materials required for installation of this terminal are paid under the bid item "Guardrail End Terminal (SRT)".

Galvanize all steel parts after fabrication.

End Terminal (SRT) details shown on this sheet are for "Information Only" and may not be an exact detail. See Manufacturer's Installation Manual (furnished to Engineer) for component details and installation instructions.

See Standard Drawings RD611 and RD613 for guardrail details not shown.

Note: 10:1 or flatter slope from the shoulder line to 4' back of the face of the guardrail.

Note: Apply retroreflective sheeting to the buffer end of terminal after installation. Thoroughly clean and dry steel prior to installation. Locate sheeting to provide maximum visibility to approaching traffic.
FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N-P-K. Potash is exempt. In Summary of Quantities will be calculated:

- N = Nitrogen Rate of Application
- P = Phosphorous Rate of Application
- K = Potassium Rate of Application

The Contractor will be required to finish areas of excavation, borrow, and embankment in accordance with the specifications. Areas that require installation or construction of temporary water pollution control facilities shall be finished to prevent close conformity to the alignment, grade, and cross section shown on the plans or as established by the Engineer.

TYPICAL SECTION - DUAL PAVEMENT

SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave Protection</td>
<td>1 EACH</td>
</tr>
<tr>
<td>Erosion Control (Class 1, Type D)</td>
<td>4356 LF</td>
</tr>
<tr>
<td>Filter Sock</td>
<td>111 LF</td>
</tr>
<tr>
<td>Silt Fence</td>
<td>111 LF</td>
</tr>
<tr>
<td>Biodegradable Log (20&quot;)</td>
<td>111 LF</td>
</tr>
<tr>
<td>Biodegradable Log (12&quot;)</td>
<td>111 LF</td>
</tr>
<tr>
<td>Temporary Stream Crossing</td>
<td>111 LF</td>
</tr>
<tr>
<td>Temporary Inlet Sediment Barrier</td>
<td>111 LF</td>
</tr>
<tr>
<td>Sediment Removal (Set Price)</td>
<td>111 LF</td>
</tr>
<tr>
<td>Mulch Tacking Slurry</td>
<td>111 LF</td>
</tr>
</tbody>
</table>

NOTES: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. All disturbed areas shall be seeded, fertilized and mulched at the listed rate per acre. The areas are estimated.

Geekville (Erosion Control) shall be removed prior to placement of permanent shape protection.

Regreen and Quick Guard are the approved sterile wheatgrass products.

If the total disturbed area of the project, or just the seeding area, is 1 or more, then these bids items must be included.

- List size of material.

The amount of mulch and mulch tacking slurry in the bid quantities is estimated. The estimated quantity includes mulching associated with both temporary and permanent seeding operations. The total mulch and mulch tacking slurry required shall be determined in the field. The bid items for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.

The Soil Erosion Mix is to be placed under the Class 1 and/or Class 2 erosion control material.
TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)

- **Pipe size may vary**: Place 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 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 crossing.

See KDOT Specifications for more information.

**NOTES:**
1) Temporary Slope Drain and Temporary Berm may be used on either project foredunes or project backdunes.
2) Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.
3) Pipe shall be secured in place as approved by Engineer.
4) Temporary Berms under 2,000 feet shall be bid by Set Price.

**SECTION A-A**

**SECTION B-B**

**TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN**

**TYPICAL PROFILE OF TEMPORARY BERM**

**TEMPORARY BERM AND POLLUTION CONTROL**

**TEMPORARY STREAM CROSSING (AGGREGATE)**
Biodegradable Log or Filter Sock Slope Interruptions

1. Place biodegradable logs or filter sock tightly together minimum overlap of 18".
2. Wood stakes shall be 2" x 2" in cross section.
3. Refer to plan sheets to estimate length of biodegradable log and filter sock required.
4. Each log or sock (except compost filter sock) should be keyed into the ground at a minimum of 25% of its height. Compost filter sockets should be placed on smooth ground with no gaps between the sock and soil.
5. 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 150 feet, and the barrier ends need to be staggered.
3. Intermittent failure caused by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
4. Vegetative products, such as native Prairie hay, used for mulching and erosion control practices, excluding weed based mulch, shall meet the North American Weed Free Forage Standards.
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. This work shall be subject to the bid item Temporary Rock Ditch Check(s).

5. Aggregate excavated on site may be used as an alternative to the 6' rock, if approved by the Engineer.

6. Temporary Ditch Check (Rock). This work shall be subsidiary to the bid item Temporary Rock Ditch Check(s).

7. The Engineer may approve the use of larger aggregates for the downstream portion of the check when conditions warrant their use.

8. 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 assure water does not flow around end of ditch check.

2. Overlap sections a minimum of 6".

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 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 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.
The design must be approved by the engineer.

1. All P.V.C. pipes are to be schedule 40.

2. NOV. Flexible drain pipes to be attached to the good outlet structure with water-tight connections.

3. The orifice shall be sized to provide drawdown time of 2 to 5 days and approved by the engineer.

4. Skimmer designs may be used that dewaters the pond outlet structure with water-tight connections.

5) Must be water tight.

6) Anti-seep collar (6" conc.)

7) Embankment stabilized with vegetation

8) Existing ground line

9) Anti-flotation Concrete Block Type B (M:1 or flatter)

10) Stabilized outlet (shot rock)

11) Emergency Spillway (Shot rock)

12) Emergency Erosion and Pollution Control

13) Unspecified

14) Standard

15) Anti-seep collar (1" conc.)

16) 3' minimum thickness

17) 4' x 6' concrete or stone pad for skimmer

18) Orifice 4" (typ.)

19) Landscaping

20) Flat

21) Horizontal

22) Side View

23) Front View

24) Cross Section (Emergency Spillway)

25) Sediment Storage Basin Plan

26) Sediment Storage Basin Elevation

27) Section A-A

28) SEDIMENT STORAGE BASIN LOCATIONS

<table>
<thead>
<tr>
<th>STATION TO STATION</th>
<th>SEE</th>
<th>REQUIRED STORAGE CAPACITY</th>
</tr>
</thead>
</table>

NOTES:

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

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.

4. Skimmer dewatering device must be designed to keep the skimmer from being washed during a rain event. The design must be approved by the engineer.
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.

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

SPLICE SEAM:
When splices are necessary, overlap end of Stagger splice seams. 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. 6.
Single post ring and shank staple is acceptable. Staple Checks - shall be 30' apart. Staple Checks - shall be in 2 rows 4" on center apart.

TERMINAL FOLD:
The bottom edge of the blanket shall be turned under a minimum of 4 inches. Staple Checks - shall be 30' apart. Staple Checks - shall be 30' apart.

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

INSTALLATION DETAILS FOR EROSION CONTROL CLASS I

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, top blanket rolled, avoiding stretching.

1. ANCHOR SLOTS: The top of the blanket should be "slotted" off 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 of Stagger splice seams.

4. TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches. Staple Checks - shall be 30' apart. Staple Checks - shall be 30' apart.

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

6. STAPLE CHECK: Minimum 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.
### TYPICAL SECTION - DUAL PAVEMENT

- **TYPICAL SECTION - DUAL PAVEMENT**
- **OTHER**
- **FHWA APPROVAL**

### DETAILS

- **SCOTT H. SHIELDS APP'D**
- **DATE 3/01/13**
- **REVISIONS L850 6/01/13**

#### SUMMARY OF SEEDING QUANTITIES

<table>
<thead>
<tr>
<th>NAME</th>
<th>QTY (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Wildflower Mix 1</td>
<td></td>
</tr>
<tr>
<td>Common Evening Primrose</td>
<td>0.1</td>
</tr>
<tr>
<td>Illinois Bundleflower</td>
<td>0.2</td>
</tr>
<tr>
<td>Common Evening Primrose</td>
<td>0.3</td>
</tr>
<tr>
<td>Illinois Bundleflower</td>
<td>0.1</td>
</tr>
<tr>
<td>Messiah Woolly Pincushion</td>
<td>0.1</td>
</tr>
<tr>
<td>Maiden Choice</td>
<td>0.2</td>
</tr>
<tr>
<td>Russian Wildrye</td>
<td>0.1</td>
</tr>
<tr>
<td>Horned Poppy</td>
<td>0.3</td>
</tr>
<tr>
<td>Yellow Birdsong</td>
<td>0.8</td>
</tr>
<tr>
<td>Common Evening Primrose</td>
<td>0.3</td>
</tr>
<tr>
<td>Illinois Bundleflower</td>
<td>0.3</td>
</tr>
<tr>
<td>Messiah Woolly Pincushion</td>
<td>0.3</td>
</tr>
<tr>
<td>Maiden Choice</td>
<td>0.5</td>
</tr>
<tr>
<td>Russian Wildrye</td>
<td>0.2</td>
</tr>
<tr>
<td>Horned Poppy</td>
<td>0.3</td>
</tr>
<tr>
<td>Blackbird Seed</td>
<td>0.8</td>
</tr>
<tr>
<td>Red-winged Blackbird</td>
<td>0.2</td>
</tr>
<tr>
<td>Yellow Birdseed</td>
<td>0.2</td>
</tr>
<tr>
<td>Collegiate Burdick</td>
<td>0.3</td>
</tr>
<tr>
<td>Short-stemmed Burdick</td>
<td>0.1</td>
</tr>
<tr>
<td>Common Evening Primrose</td>
<td>0.2</td>
</tr>
<tr>
<td>Illinois Bundleflower</td>
<td>0.3</td>
</tr>
<tr>
<td>Messiah Woolly Pincushion</td>
<td>0.3</td>
</tr>
<tr>
<td>Maiden Choice</td>
<td>0.5</td>
</tr>
<tr>
<td>Russian Wildrye</td>
<td>0.2</td>
</tr>
<tr>
<td>Horned Poppy</td>
<td>0.3</td>
</tr>
<tr>
<td>Blackbird Seed</td>
<td>0.8</td>
</tr>
<tr>
<td>Red-winged Blackbird</td>
<td>0.2</td>
</tr>
<tr>
<td>Yellow Birdseed</td>
<td>0.2</td>
</tr>
<tr>
<td>Collegiate Burdick</td>
<td>0.3</td>
</tr>
<tr>
<td>Short-stemmed Burdick</td>
<td>0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NAME</th>
<th>QTY (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Wildflower Mix 2</td>
<td></td>
</tr>
<tr>
<td>Common Evening Primrose</td>
<td>0.1</td>
</tr>
<tr>
<td>Illinois Bundleflower</td>
<td>0.2</td>
</tr>
<tr>
<td>Common Evening Primrose</td>
<td>0.3</td>
</tr>
<tr>
<td>Illinois Bundleflower</td>
<td>0.1</td>
</tr>
<tr>
<td>Messiah Woolly Pincushion</td>
<td>0.1</td>
</tr>
<tr>
<td>Maiden Choice</td>
<td>0.2</td>
</tr>
<tr>
<td>Russian Wildrye</td>
<td>0.1</td>
</tr>
<tr>
<td>Horned Poppy</td>
<td>0.3</td>
</tr>
<tr>
<td>Yellow Birdsong</td>
<td>0.8</td>
</tr>
<tr>
<td>Common Evening Primrose</td>
<td>0.3</td>
</tr>
<tr>
<td>Illinois Bundleflower</td>
<td>0.3</td>
</tr>
<tr>
<td>Messiah Woolly Pincushion</td>
<td>0.3</td>
</tr>
<tr>
<td>Maiden Choice</td>
<td>0.5</td>
</tr>
<tr>
<td>Russian Wildrye</td>
<td>0.2</td>
</tr>
<tr>
<td>Horned Poppy</td>
<td>0.3</td>
</tr>
<tr>
<td>Blackbird Seed</td>
<td>0.8</td>
</tr>
<tr>
<td>Red-winged Blackbird</td>
<td>0.2</td>
</tr>
<tr>
<td>Yellow Birdseed</td>
<td>0.2</td>
</tr>
<tr>
<td>Collegiate Burdick</td>
<td>0.3</td>
</tr>
<tr>
<td>Short-stemmed Burdick</td>
<td>0.1</td>
</tr>
<tr>
<td>Common Evening Primrose</td>
<td>0.2</td>
</tr>
<tr>
<td>Illinois Bundleflower</td>
<td>0.3</td>
</tr>
<tr>
<td>Messiah Woolly Pincushion</td>
<td>0.3</td>
</tr>
<tr>
<td>Maiden Choice</td>
<td>0.5</td>
</tr>
<tr>
<td>Russian Wildrye</td>
<td>0.2</td>
</tr>
<tr>
<td>Horned Poppy</td>
<td>0.3</td>
</tr>
<tr>
<td>Blackbird Seed</td>
<td>0.8</td>
</tr>
<tr>
<td>Red-winged Blackbird</td>
<td>0.2</td>
</tr>
<tr>
<td>Yellow Birdseed</td>
<td>0.2</td>
</tr>
<tr>
<td>Collegiate Burdick</td>
<td>0.3</td>
</tr>
<tr>
<td>Short-stemmed Burdick</td>
<td>0.1</td>
</tr>
</tbody>
</table>

### SEEDING PERIODS

- **COOL SEASON**: February 1st to April 15th and September 1st to November 15th
- **WARM SEASON**: March 1st to April 15th and (if any) September 1st to November 15th

### OTHER MIXES

- STEEL - Mixed with the Other Mixes. Typically, 5% for triple road and 10% for 4-lane roads. Includes native monocot and dicot species of miscellaneous and other species of the region.
- OTHER - Mixed with the Other Mixes. Designated as all other turf areas, except the Shoulder. Usually includes a native Wildflower Mix.

### SUMMARY OF SEEDING QUANTITIES

- **REFER TO SHEET LA852A FOR PERMANENT SEEDING QUANTITIES SHOWN AS SOIL EROSION MIX**

### GENERAL NOTES

- The entire disturbed area, excepting the paved or surfaced areas, other readily separable areas of undisturbed native sod, and other separable vegetation, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.
- The entire area, excepting the paved or surfaced areas, should be tilled or disked where required, seeded, and mulched.

### OTHER VEGETATIVE MULCHES

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

### THE ABOVE RATES IS A GUIDE - 4.4T OF THE DISCRETION OF THE ENGINEER TO DETERMINE WHAT RATES ARE APPROPRIATE FOR ECONOMICALLY PROTECTIVE OF SEEN SEATED AREAS.
### Recapitulation Of Quantities

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor Construction Shoring</td>
<td>1</td>
<td>LSUM</td>
</tr>
<tr>
<td>Mobilization</td>
<td>1</td>
<td>LSUM</td>
</tr>
<tr>
<td>Common Excavation (Contractor Furnished)</td>
<td>22.39</td>
<td>YD</td>
</tr>
<tr>
<td>Compaction of Earthwork (Type A) (#6-5)</td>
<td>1264</td>
<td>CYD</td>
</tr>
<tr>
<td>Salvaged Trench</td>
<td>4945</td>
<td>YD</td>
</tr>
<tr>
<td>Water (Grading) (Set Price)</td>
<td>4556</td>
<td>YD</td>
</tr>
<tr>
<td>Guardrail, Steel Plate</td>
<td>5.25</td>
<td>LF</td>
</tr>
<tr>
<td>Guardrail End Terminal (FEAT) (Alt. 1)</td>
<td>4</td>
<td>EACH</td>
</tr>
<tr>
<td>Guardrail End Terminal (SERT) (Alt. 2)</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>Removal of Existing Structure</td>
<td>1</td>
<td>LSUM</td>
</tr>
<tr>
<td>Hot Mix Asphalt-Commerce Grade (Class A)</td>
<td>13</td>
<td>TONS</td>
</tr>
<tr>
<td>Reinforcing Steel (Grade 60)</td>
<td>180</td>
<td>LBS</td>
</tr>
</tbody>
</table>

See Sh. No. 11 For Temporary Erosion Control Quantities

### Summary Of Traffic Control Devices (Each)

#### Work Zone Signs

<table>
<thead>
<tr>
<th>Sign No.</th>
<th>Size - Sq.Ft.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>W20-1</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-2</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-3</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-4</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-7</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-3</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-6</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-5</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
</tbody>
</table>

#### Work Zone Sign (Special) (16.25 Sq. Ft. & Less)

<table>
<thead>
<tr>
<th>Sign No.</th>
<th>Size - Sq.Ft.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>W20-1</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-2</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-3</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-4</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-7</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
</tbody>
</table>

#### Work Zone Sign (Special) (16.26 Sq. Ft. & More)

<table>
<thead>
<tr>
<th>Sign No.</th>
<th>Size - Sq.Ft.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>W20-1</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-2</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-3</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-4</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-7</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
</tbody>
</table>

### Summary Of Traffic Control Devices (Each Per Day)

#### Work Zone Signs

<table>
<thead>
<tr>
<th>Sign No.</th>
<th>Size - Sq.Ft.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>W20-1</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-2</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-3</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-4</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
<tr>
<td>W20-7</td>
<td>16.26 &amp; Over</td>
<td></td>
</tr>
</tbody>
</table>

#### Work Zone Warning Light (Type "A" Low Intensity)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>Low Intensity</td>
<td></td>
</tr>
</tbody>
</table>

#### Work Zone Warning Light (Red Type "B" High Intensity)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type B</td>
<td>High Intensity</td>
<td></td>
</tr>
</tbody>
</table>

#### Portable Display

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td></td>
</tr>
</tbody>
</table>

#### Portable Changeable Message Sign

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message</td>
<td></td>
</tr>
</tbody>
</table>