GENERAL NOTES

ALL BORROW AREAS PROVIDED BY THE CONTRACTOR SHALL BE APPROVED BY THE ENGINEER AS TO THE SUITABILITY OF THE MATERIAL AND LOCATION. CLEARANCE, CARE SHALL BE TAKEN TO MINIMIZE INTERFERENCE WITH THE MOVEMENT OF WILDLIFE. AREAS WHICH IN THE OPINION OF THE ENGINEER, MAY LEAD TO AN UNSEASONAL APPROACH TO THE PROJECT, WILL NOT BE APPROVED.

ALL BORROW AREAS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ANY DISPOSAL. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL PERMITS AND CLEARANCES FROM STATE AND FEDERAL REGULATORY AGENCIES FOR THESE BORROW LOCATIONS.

IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RECORD THEIR SUB-GRADE/ASPHALT CONSTRUCTION STAKING. LOCATED AT STA. 49+48.07, 0.00' OFFSET.

EXCAVATION TO BE MADE AWAY FROM ROADWAY SHALL BE EXECUTED BY THE CONTRACTOR. THESE ITEMS MAY BE SUBMITTED FOR A WORKER AS A COMMON EXCAVATION CONTRACTOR PREVIOUSLY NOTED IN THE AGREEMENT WITH THE LANDOWNER, APPROVED BY THE ENGINEER, OR ALL DISTURBED AREAS USED TO PROVIDE ROADWAY AREAS FOR COMMON EXCAVATION CONTRACTOR PERMITTED.

THE UTILITIES AS INDICATED ON THESE PLANS, BOTH ABOVE AND BELOW GROUND, REPRESENT THE BEST INFORMATION AVAILABLE AT THE TIME OF THE ISSUANCE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT EACH OF THE UTILITY COMPANIES INVOLVED PRIOR TO BEGINNING ANY EXCAVATION OR CONSTRUCTION WORK ON THIS PROJECT TO ACCURATELY LOCATE THE LOCATION OF THEIR UTILITY AND TO COORDINATE THE WORK WITH ANY NECESSARY UTILITY AUTHORITY AND LOCATION.

ANY MATERIAL BURIED OR STORED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PROFESSIONAL APPROVED BORROW LOCATION.

ALL DEPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENTAL QUALITY. IN ADDITION, IF ANY BLACK TOPped ROAD WITHIN A BORROW AREA WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PENDAL. ANY MATERIAL BURIED IN WATERS OF THE UNITED STATES ON WETLANDS IS SUBJECT TO THE REQUIREMENTS OF THE U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS.

STAGE 1: TRAFFIC CONTROL (Creation of project)
CLEANING & SURVEYING
CONSTRUCTION STAKING
EXCAVATION, GRADES, GROUND-FOUNDATION STABILIZATION BENCH MARKS
DRAINAGE STRUCTURES
EXCAVATION, SUBGRADE (Operation of Project)
Cement Treated Subgrade

STAGE 2: ASPHALT PAVEMENT (by McPherson County)
STAGE 3: AGGREGATE SHOULDER
FINISHING (asphalt paving, concrete finishing)
SUBGRADE MATERIAL
SUBGRADE COMPLETION
SEEDING

PROJECT ALIGNMENTS

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LEGEND

- Road Construction
- Drainage Structures
- Utility Piping
- Storm Drain
- City Water Line
- Telephone Line
- Gas Line
- Utility Pole
- Utility Pedestal
- Telephone Pedestal
- Guy Anchor
- Sign Post
- Pole Sign
- Hydrant
- Valve Box
- Manhole
- Storm Sewer
- Light Pole

UTILITY SERVICES:

- Water
- Sewer
- Gas
- Electric

CONSTRUCTION ITEMS:

- Pavement Marking
- Erosion Control
- Drainage Structures
- SHOULDER
- FINISH GRADE (Ditch Foreslopes)
- CEMENT TREATED SUBGRADE
- DRAINAGE STRUCTURES
- AGGREGATE SHOULDER
- DRAINAGE STRUCTURES
- SLOPE PROTECTION
- SLOPE PROTECTION
- EROSION CONTROL (Duration of Project)
- DRAINAGE STRUCTURES
- BORROW
- EXCAVATION, GRADING, & FOUNDATION STABILIZATION

GENERAL NOTES & ACCOUNTS

McPherson County Public Works
1115 West Avenue A
McPherson, KS 67460
CUT SECTION
14th AVENUE

Note: See Superelevation Typical Section
for high side rounding.

Pavement

Point where Normal Shoulder
Step of 4% is equal to
Pavement Gross Slope of 4.00%.

Maintain Normal Shoulder
Step of 4% when Superelevation is less than or equal to Normal Shoulder Step.

PROFILE SHOWING METHOD OF ATTAINING
L = 153'0" A & B = See Superelevation Diagram
For materials designated to be subgraded compaction of soils, including shales, designated for backfill embankment, including side roads and entrances.

Unless otherwise noted on the Plans, compact all surfacing with Shoulder Replacement

Note: These are 4 general cases. Specific compaction requirements are determined on a project by project basis.

General Note

Profile Grade of Project

Top of Subgrade

Top of Subgrade

Top of Subgrade

Profile Grade of Project

Excavation thru Cuts not Subgraded is subsidiary.

Excavation thru Cuts not Subgraded

18" Compaction (Type AA)(MR-5-5)

18" Compaction (Type AA)(MR-5-5)

18" Compaction (Type AA)(MR-5-5)

3'-0" Paved Shoulder

3'-0" Paved Shoulder

3'-0" Paved Shoulder

2'-0" Paved Shoulder

2'-0" Paved Shoulder

2'-0" Paved Shoulder

6" Foundation Treatment (Type AA)(MR-5-5)

6" Foundation Treatment (Type AA)(MR-5-5)

6" Foundation Treatment (Type AA)(MR-5-5)

2'-0" Ground line

2'-0" Ground line

2'-0" Ground line

6" Foundation Treatment (Type AA)(MR-5-5)

6" Foundation Treatment (Type AA)(MR-5-5)

6" Foundation Treatment (Type AA)(MR-5-5)

SECTION B-B

SECTION A-A

SECTION B-B

SECTION C-C

SECTION C-C

General Note
Project No. 59 C-4928-01
Sta. 14+50.00  BEGIN

Entrance and ent. pipe  Sta. 22+40.17 REMOVE

Entrance and ent. pipe  Sta. 23+19.00   REMOVE

See Sheet No. 15, 17, 19
Remove and reset end section Lt. & Rt.
36"x8' CRP (RCP) Rt.
36"x38' CRP (RCP) Lt.
Existing 36" CRP with
Sta. 23+18.51    EXTEND

See Sheet No. 12 for Section Corner references.
See Sheet No. 12 for the R/W location details.

Contractor shall protect fence in Ayers yard.
Located STA 25+58.36, 33.2' Rt. shall be graded around the monitoring well. during construction. The proposed ditch Contractor shall protect monitoring well.

See Sheet 12 for the R/W location details.
BY R/Cisholm Rd. +30.59' x +13.05 R/W Chisholm Rd. at 26+00 E exist. R/W 50.00'


In travel way public road W. 1/2" rebar 0.3' deep, drove to 0.6' deep at 38+71.13' x +71.13 R/W 14th Avenue & 30+52.1' S.S.W. to centerline top most N. vent pipe for Norther Gas Pipeline.

1.5' to 2' rebar in 0.3' deep. Found 5/8" rebar with G.S.S. cap 4" deep.

In centerline travel way public road N. 38.7' S. to base of guy wire.

Note: Ayers - Temporary Easement = 0.13 Ac.
AGGREGATE DITCH LINING (Dwa)

Concrete Grade 3.0 shall be used for Concrete Ditch Lining.

Welded wire reinforcement shall be of the electrically welded square mesh type with No. W1.4 wires spaced at 6" ctrs. each way. Reinforcement as shown is included in the unit price bid for "Concrete Ditch Lining" measurements of Concrete Ditch Lining shall be in sq. yds. of outside surface area. Add 1'-6" times "W" for each footer. The exact location and dimensions may be adjusted, if required, by the Engineer at the time of construction. Longitudinal construction joints may be constructed at the Contractor’s option. (c) Welded wire can be substituted with macro fiber reinforcement. See Standard Specifications for macro fiber and application rate requirements.

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Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in heights and classes of pipe.

Pipe material shall follow KDOT Pipe Policy for geographic location, loadings, and climate. $('.end').css('font-size', 'smaller');

### CONNECTION DETAIL

#### UNIVERSAL REFORMED END with H-7 or H-10 BAND

- **DETAILS FOR H-7 HUGGER BAND (12" thru 36") or H-10 HUGGER BAND (12" thru 100")**

  - **Diameter**

  - **Min. Gauge of Round Pipe**

  - **Min. Gauge of Anti-Plane**

  - **Minimum Gauge of Round Pipe**

### METAL END SECTION FOR ROUND & PIPE CULVERTS (TYPE 1) & ARCH METAL CULVERTS (TYPE 1 & 2)

- **Details for H-12 or H-13 HUGGER BAND**

- **Connection Detail**
  - Single Harness
  - Universal Reformed End with Hugger Band
  - Connection Detail Double Harness

- **Dimensions in Inches**
  - Type 1
  - Type 2
  - Type 3
  - Type 4
  - Type 5

- **Connections**
  - Type 1 and Type 2 connections are recommended for Round Pipe.
  - Available for all Round and equivalent Pipe-Arch sizes,

- **Pipe Wall Thickness**

- **Min. Gauge of Round Pipe**

- **Min. Gauge of Anti-Plane**
END ELEVATION (TYPE I)

SECTION A-A
Showing rounding of inside edge of end section.

END ELEVATION (TYPE III)

OUTLET END

SECTION A-A

END ELEVATION (TYPE III)

INLET END

PLAN VIEW

SECTION A-A

Side Tapered Inlet Section (Type III)-Nominal Dimensions

Dimensions for alternate shapes shall be equal to or greater than those shown in the table, unless otherwise shown.
END SECTION (TYPE I) NOMINAL DIMENSIONS

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<th>Sq. Ft.</th>
<th>Area Sq. Ft.</th>
<th>Span</th>
<th>Rise</th>
<th>Overall Length</th>
<th>Barrier Length</th>
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<th>Rp</th>
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Note: Gain in length due to joint fit tolerance will not be paid for.

FLARED END SECTION
ELEVATION

END ELEVATION

PLAN AND SECTION

Design of end section shall conform to standard reinforced concrete horizontal elliptical pipe. Slight variations in the dimensions specified will be allowed.

Note: Reinforced concrete pipe extensions are based on the surveyed end of pipe. Replacement of any additional pipe length required due to the removal of the existing end section will not be paid for directly, but will be reimbursable for the bid item "Removal of Existing Structures".

Added ref. to KDOT Pipe Policy

KDOT Graphics Certified

rd663.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE END SECTION FOR REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE TYPE I
### PIPE CULVERT SUMMARY

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**NOTE**: Unless otherwise noted, minimum pipe gauge & corrugations to be as shown in RD660.

**Summary of Quantities for End Section information.**

- **Design side slope to intersect inside diameter of pipe outside of Clear Zone.**
- **Pipe Corrugations**

**When inside diameter of pipe is 36" or less.**

- **Note to Designer:** KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume 2 (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

**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.**

- **Submit Shop Drawing of connection for review.**

---

**PLAN**

(Showing Rotation about $\phi$)

- **Angle of Rotation**
- **Edge of Shoulder**
- **Edge of Pavement**
- **Horizontal to roadside, Lt.**
- **Horizontal to roadside, Rt.**
- **Direction of Stationing**

**SECTION**

- **Crown Grade**
- **Play length**
- **Side slope**
- **Length of Pipe**
- **X-X**
- **Y-Y**

**INLET END**

- **Design side slope to intersect inside diameter of pipe outside of Clear Zone.**

---

**SUMMARY of PIPE CULVERTS**

**RD659**

**KANSAS**

**PROJECT NO.**

**STATE**

**KANSAS**

**YEAR**

**59 C-4928-01**

**TOTAL SHEETS**

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## SURFACING MATERIAL (SS-5)

<table>
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## AGGREGATE SHOULDER (AS-1) [6"]

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<th>LOCATION</th>
<th>WIDTH (FT)</th>
<th>AREA (SQ. YD.)</th>
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## 6" CEMENT TREATED SUBGRADE

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<th>LOCATION</th>
<th>WIDTH (FT)</th>
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## GEOFABRIC

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## SLOPE PROTECTION (RIPRAP STONE) *

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<th>QUANTITY (TONS)</th>
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## REMOVAL OF EXISTING STRUCTURES

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## CLEARING AND GRUBBING

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## MOBILIZATION

<table>
<thead>
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## FOUNDATION STABILIZATION

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## FIELD OFFICE AND LABORATORY

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## CONTRACTOR CONSTRUCTION STAKING

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## MOBILIZATION (DBE)

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## SUMMARY OF QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
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</thead>
<tbody>
<tr>
<td></td>
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</table>

---

* Based on dry weight for rock materials and on unit weight for soils.

---

**Note:** Slope Protection (Riprap Stone) shall be Light 100 Lb. rock.
### SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Quantity</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary Sediment Basin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary Inlet Sediment Barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodegradable Log (9&quot;)</td>
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<tr>
<td>Synthetic Sediment Barrier</td>
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<tr>
<td>Erosion Control (Class 1, Type Y)</td>
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<tr>
<td>Silt Fence</td>
<td></td>
<td></td>
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<tr>
<td>Soil Erosion Mix</td>
<td></td>
<td></td>
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<tr>
<td>Temporary Seed (Sterile Wheatgrass)</td>
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<tr>
<td>Temporary Seed (Canada Wildrye)</td>
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<td>Water Pollution Control Manager</td>
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<tr>
<td>SWPPP Design</td>
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<tr>
<td>SWPPP Inspection</td>
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<td></td>
</tr>
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</table>

### SOIL EROSION MIX

The Soil Erosion Mix is to be placed under the Class 1 and/or Class 2 erosion control material.

The Soil Erosion Mix consists of the Shoulder Area of the Permanent Seed Mix used on the project.

### GENERAL NOTES

The entire disturbed areas, excepting the paved or surfaced areas, steep rocky slopes and areas of uncut natural sod or other desirable vegetation, shall be fertilized timet when required, seeded, and mulched. Soil preparation shall conform to the Standard Specifications.

Temporary seeding shall be done during any of the time 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.

### OTHER VEGETATIVE MULCHES

Biodegradable and non-biodegradable vegetative mulches are acceptable only with the Engineer's concurrence.

### EXPOSED ROCK, SHALE, OR OTHER MATERIAL

Exposed rock, shale, or other material shall not be graded into the disturbed area of the project that requires seeding and erosion control measures to be placed. Any irregular areas due to plant, gravel, riprap, etc. shall not be included in this measurement.

Temporary mulch tacking slurry required shall be determined in the field. The bid item for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.

The amount of mulch and mulch tacking slurry in the bid quantities is estimated. (Acres of Seeding X 1.5 X 2 Tons/Acre).

The estimated quantity includes existing vegetation associated with both temporary and permanent seeding operations. The terraced and vegetative mulches are to be used in the field. The bid item for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.

#### Notes:

- Projects less than 1 acre shall be billed as "Seeding" by the lump sum. See Permanent Seeding Summary of Seeding Quantities sheet LA850 for further details.
- Geotextile (Erosion Control) shall be removed prior to placement of permanent slope protection.
- Regrading and Switchover are the approved sterile wheatgrass products.
- If the seeded disturbed area of the project, not just the seeding area, is 1 acre or more, then these bid items shall be included.
Pipe size may vary.

Temporary Berm and Temporary Slope Drain shall be bid by Set Price.

NOTES:

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

2) Discharge of Slope Drains shall be 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 laid by 5m Prics.

Pipe size may vary.

See KDOT Specifications for more information.
Temporary Inlet Sediment Barrier

Temporary Inlet Sediment Barrier (Silt Fence Method)

**Plan Section A - A**

- **Main Flowline of Ditch**
- **Wire Shaped-Up Ring**
- **Top of Ditch Beyond Soil**
- **Steel Cross**
- **Main Flowline of Ditch**
- **Wire Shaped-Up Ring**
- **Top of Ditch Beyond Soil**
- **Main Flowline of Ditch**

**Section C - C**

- **Cross Pieces**
- **Main Flowline of Ditch**

**Material Requirements**

- **Silt Fence**:
  1. Steel - 1" thick long and of one of the following materials:
     a. Hardwood - 1" x 1" x 3 ½
     b. Southern Pine (No. 2) - 2 ⅝" x 2 ⅝"
     c. Steel U, T, L, or C Section - .95 lbs. per 12 ft.
     d. Synthetic - same strength as wood stakes.
  2. Cross pieces shall be of same material as stakes.
  3. Attach fence fabric securely on 6" centers (max).
  4. Use of high flow material is acceptable.
  5. Refer to plan sheets to estimate the length of silt fence required.

- **Bag**:
  - Synthetic net 3.5mm mesh or burlap bags
  - Rock - approximately 1" to 2" diameter
  - Width 12" to 18" and of 4' maximum spacing

- **Note**: 25% of log shall be Tightly overlapped ends.

- **Drop inlet protection**:
  - 1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
  - 2. Height of bags (12 minimum diameter) must not be done top of curbs.
  - 3. Alternative products may be used other than gravel bags such as the Filter sock. Products must be approved by the Engineer.
  - 4. Curb line protection will be measured and paid for as Filter sock.
SILT FENCE:

1. Stakes shall be 4' (min.) long and of one of the following materials:
   a. Hardwood - 1-1/8" x 1-1/8".
   b. Southern Pine No. 2 - 2 7/8" x 2 7/8".
   c. Steel U, T, L, or C Section - 3/8" dia., per 4 ft. or
   d. Synthetic - same strength as wood stakes.

2. Attach fabric to the top 8" of the fence with 3 zip ties. Minimum attachment methods may be approved by the engineer on a performance basis.
3. Use of high-flow material is acceptable.
4. Refer to plan sheets to estimate the lengths of silt fence required.

BIODEGRADABLE LOG OR FILTER SOCK:
1. Place biodegradable logs or filter sock tightly together minimum overlap of 18".
2. Wood stakes shall be 2" x 2" (nom).
3. Refer to plan sheets to estimate length of biodegradable log or filter sock required.
4. Each log or sock (except compost filter socks) shall be keyed into the ground with minimum of 200 lbs. of its height. Compost filter socks should be placed on a prepared ground with no gaps between the sock and soil.
5. Length of stakes should be 2 times the height of the log or filter sock with minimum ground embedment equal to the height of the log / sock.

**SILT FENCE BARRIER**

**GENERAL NOTES**

- Stake: 4' (min.) long @ 3' o/c
- Groundline at 6" long x 1" wide
- Wire staples: (50 lb. tensile strength) located in top 8".

**INSTALLATION NOTES**

- Stake: 4' (max.) long @ 3' o/c
- Geotextile fabric: 3' wide
- Tire compaction zone: 6" - 12" depth
- Machine slice: 2' min. after embedment
- 4' max. spacing
- 4' min. length post at 3' wide
- Plastic zip ties, or other material approved by the field engineer,

**DEVIATIONS**

Deviations should be approved by the Field Engineer.

**POLLUTION CONTROL**

Temporary Erosion and Pollutant Sediment Control

- **SILT FENCE**
  - **STANDARD BASE FILE**
    - **Plot Location**: la852d.dgn
    - **Plot Date**: 1-SEP-2020 15:42
    - **Plotter**: JonA

**STANDARD BASE FILE**

- **DESIGNED**
  - **DESIGN CK.**
  - **DETAILED**
  - **DETAIL CK.**
  - **QUANTITIES**
  - **QUAN. CK.**
  - **APP'D**
  - **RA**
  - **SHS**

**TOTAL SHEETS**

- **SHEET NO.**
  - **REVISIONS**
  - **BY**
  - **APP'D**

**STATE PROJECT NO.**

- **DATE**
  - **REVISIONS**
  - **NO.**
  - **YEAR**

- **FHWA APPROVAL**

- **CADconform Certify This File**

**KANSAS DEPARTMENT OF TRANSPORTATION**

- **DATE**
  - **REVISIONS**
  - **NO.**
  - **YEAR**

- **FHWA APPROVAL**

- **CADconform Certify This File**

**DATABASE**

- **STATE PROJECT NO.**
  - **DATE**
  - **REVISIONS**
  - **NO.**
  - **YEAR**

- **FHWA APPROVAL**

- **CADconform Certify This File**

**GENERAL NOTES**

1. Slope interruptions shall be placed along contour lines, with a 250-foot turner 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 vegetation or erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

- **Biodegradable Log or Filter Sock**
  - **Slope Interruptions**
  - **Biodegradable Log / Silt Fence**

**OR Filter Sock**

- **LOW FLOW**
  - **HIGH FLOW**

<table>
<thead>
<tr>
<th>9&quot; Sediment Log</th>
<th>9&quot; Filter Sock</th>
<th>12&quot; Sediment Log</th>
<th>12&quot; Filter Sock</th>
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<td>40</td>
<td>60</td>
<td>80</td>
<td>60</td>
<td>60</td>
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</table>

**Soil or Gravel Backfill**

- **on center**
  - **4' (max.)**

**Straw/Compost**

- **on center**
  - **4' (max.)**

- **Excelsior / Wood Chips / Coconut Fiber**
  - **on center**
  - **4' (max.)**

- **Standards.**

- **mulch, shall meet the North American Weed Free Forage mulching and erosion control practices, excluding wood based**

- **4) Agricultural products, such as native prairie hay, used for vegetation or erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.**

**SILT FENCE BARRIER**

- **NO SCALE**

**GENERAL NOTES**

- **Stake: 4' (max.)**
  - **Geotextile fabric: 3' wide**
  - **Tire compaction zone: 6" - 12" depth**
  - **Machine slice: 2' min. after embedment**
  - **4' max. spacing**
  - **4' min. length post at 3' wide**
  - **Plastic zip ties, or other material approved by the field engineer,**

**DEVIATIONS**

Deviations should be approved by the Field Engineer.
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.

2) 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".

3. Do not use rock ditch checks in clear zone.

4. Excavate: 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 subsidiary to the rock ditch checks.

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 ft.

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.

TYPICAL ELEVATION

ROCK DITCH CHECK
No Scale

Biodegradable Log Ditch Check
No Scale

18" min. 1 diameter Biodegradable Log Section

Downstream Apron (Optional)

Plan

Direction of Flow

Deflection of Flow

Biodegradable Log Ditch Check

Downstream Apron (Optional)

Direction of Flow

ALI DETAIL

OPTIONAL

Downstream Apron (Optional)

Direction of Flow

Alt. Detail

OPTIONAL

Deflection of Flow

ALI DETAIL

OPTIONAL

Supplementary Design

Pollution Control

ROCK DITCH CHECKS

Biodegradable Log Ditch Checks

ROCK DITCH CHECKS

Supplementary Design

Pollution Control

ROCK DITCH CHECKS

Biodegradable Log Ditch Checks

State Department of Transportation

Kansas Department of Transportation

Project No.

Sheet No.

KANSAS DEPARTMENT OF TRANSPORTATION

DATE

REVISIONS

SHS

DESIGNED

DESIGN CHK.

DETAILED

DETAILED CHK.

QUANTITIES

QUAN.CK.

APP'D

REVISIONS

BY

APPROVED

NO.

NO.

TOTAL SHEETS

SHEET NO.

YEAR

STATE

REVISIONS

BY

APPROVED

NO.

NO.

TOTAL SHEETS

SHEET NO.

YEAR

STATE

16/8/2016

Scott H. Shields

1-SEP-2020 15:42

Jon A

Plotted By:

File:

Plot Location:

Plot Date:
NOTES:
1) 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 materials, compaction, drainage pipes, aggregates 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) Other skimmer designs maybe used that dewater the pond outlet structure with water-tight connections.

5) Skimmer comes to rest on pad. Use tether's or guide post's to ensure the skimmer comes to rest on pad.

Sediment Storage Basin Locations

<table>
<thead>
<tr>
<th>Station to Station</th>
<th>Side</th>
<th>Required Storage Capacity</th>
</tr>
</thead>
</table>

SEDIMENT STORAGE BASIN LOCATIONS

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

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 maybe used that dewater from the surface at a controlled rate. The design must be approved by the engineer.
**GENERAL NOTES**

The active disturbed areas, including the power or surface areas, deep cuts, slopes and areas of constructed or altered erosion control structures should be fertilized prior to seeding, prior to seeding if it is necessary to expose the soil. Seeding and soil treatment should be coordinated with the seeding of the disturbed areas and with the construction and design of the project.

All borrow areas shown on the plans are to be backfilled, seeded and mulched. However, operation in borrow areas where crops are growing may be allowed when requested by the owner.

Varying cut grades have provided additional material to be seeded in the fill section. If there are areas where the existing material prior to seeding then it may be necessary to expose the soil. No seeds should be planted in Borrow Areas shown on the plans, unless otherwise indicated on the plans.

**SUMMARY OF SEEDING QUANTITIES**

<table>
<thead>
<tr>
<th>Material</th>
<th>Rate/acre</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer (12-12-12)</td>
<td>2.5</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Ryegrass) (Perennial)</td>
<td>7</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Fescue) (Tall) (Endophyte-Free)</td>
<td>4.5</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Brome)</td>
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<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
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<td>LB</td>
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<td>LB</td>
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<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Other)</td>
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<td>LB</td>
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<tr>
<td>Seed (Other)</td>
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<tr>
<td>Seed (Other)</td>
<td>0.5</td>
<td>112.5</td>
<td>LB</td>
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</table>

**FERTILIZER**

A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P, K will be acceptable. Mulch which shall be spread uniformly over all disturbed areas and seeded in the soil unless otherwise noted on the plans. The rate of application per areaoid thickness of 25. The rate of application per areaoid thickness of 25.

**MULCHING**

The total mulch required shall be determined in the field. The bid item for mulching shall be paid for according to the rate/acre listed in Summary of Seeding Quantities will be acceptable.

**WILDFLOWER SEED**

Native Wildflower Mixes

- **Native Wildflower Mix 1**
- **Native Wildflower Mix 2**

Pack and deliver the wildflower seed separately from the soil surface.

**OPTION A - Broadcast Tall Drop Seed on the soil surface.**

**OPTION B - Seeded with the Shoulder Mix.**

Typically 15 feet for shoulder areas and 30 feet for other areas. Size of the arrested areas shall be determined as noted on the plans. Areas that are seeded when rocks, sand, gravel or other materials are present shall be seeded with a field hose or a water pressurized sprayer using a fine mist nozzle. If there is a need to expose the soil, then it shall be necessary to expose the soil. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area.

**OTHER MIX**

Seeded with the "Other" Mix. Designated as all other areas, except the Shoulder. Usually includes a Native Wildflower Mixes.

**SUMMARY OF SEEDING QUANTITIES**

<table>
<thead>
<tr>
<th>Material</th>
<th>Rate/acre</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer (13-13-13)</td>
<td>2.5</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>2.5</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Brome)</td>
<td>4.5</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>11.3</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>50</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>25</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>20</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>10</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>5</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>2</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>1</td>
<td>112.5</td>
<td>LB</td>
</tr>
<tr>
<td>Seed (Bermuda)</td>
<td>0.5</td>
<td>112.5</td>
<td>LB</td>
</tr>
</tbody>
</table>

**OPTION A - Broadcast Tall Drop Seed on the soil surface.**

**OPTION B - Seeded with the Shoulder Mix.**

Typically 15 feet for shoulder areas and 30 feet for other areas. Size of the arrested areas shall be determined as noted on the plans. Areas that are seeded when rocks, sand, gravel or other materials are present shall be seeded with a field hose or a water pressurized sprayer using a fine mist nozzle. If there is a need to expose the soil, then it shall be necessary to expose the soil. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area.

**OTHER MIX**

Seeded with the "Other" Mix. Designated as all other areas, except the Shoulder. Usually includes a Native Wildflower Mixes.
Sta. 50+00.00  Chisholm Road
Sta. 25+25.54  14th Avenue

6" Solid White Edge Line
6" Solid White Edge Line
6" Solid White Edge Line
6" Solid White Edge Line
6" Solid White Edge Line
6" Solid White Edge Line

4" Solid Yellow Double Line
4" Solid Yellow Double Line
4" Solid Yellow Double Line
4" Solid Yellow Double Line
4" Solid Yellow Double Line
4" Solid Yellow Double Line

4" Broken Yellow Line
4" Solid Yellow No Passing Line
4" Broken Yellow Line
4" Broken Yellow Line

12' 12'
10.5'
10.5'
10.5'
10.5'
10.5'

15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00

6" Solid White Edge Line
6" Solid White Edge Line

4" Solid Yellow Double Line
4" Solid Yellow Double Line
4" Solid Yellow Double Line
4" Solid Yellow Double Line
4" Solid Yellow Double Line
4" Solid Yellow Double Line

4" Solid Yellow No Passing Line
4" Broken Yellow Line
4" Broken Yellow Line
4" Broken Yellow Line
4" Broken Yellow Line
4" Broken Yellow Line
4" Broken Yellow Line

50.00 73.00 27.00 42.00 67.00
88.00 58.00

STATE KANSAS
YEAR 2020
PROJECT NO. 59 C-4928-01
PROJECT SHEETS TOTAL 28 54
SHEET NO. 64
REFERENCES NOTED
REFERENCES CHECKED BY DATE

PAVEMENT MARKING PLAN
ROADWAY DESIGNATION 14th Avenue
NAVD88
VERT. DATUM NAD83 -1502 KS South Zone
HORZ. DATUM Scale 1" = 50'

STA 14+50 TO STA 30+50

NORTH ARROW
1115 WEST AVENUE A
McPHERSON, KS 67460

McPHERSON COUNTY PUBLIC WORKS
1115 WEST AVENUE A
McPHERSON, KS 67460
TYPICAL MARKING FOR AUXILIARY PASSING LANE

TYPICAL ROAD JUNCTION MARKINGS WITH BYPASS LANES

TYPICAL SPACING FOR DOTTED EXTENSION LINES, UNLESS OTHERWISE NOTED ON PLANS.

TYPICAL SPACING FOR LANE DROP, UNLESS OTHERWISE NOTED ON PLANS.

TYPICAL SPACING FOR BROKEN LINES UNLESS OTHERWISE NOTED ON PLANS.

NOTE: ALL PAVEMENT MARKINGS SHALL BE BROKEN AT CROSS ROADS.

FOR HIGHWAY JUNCTIONS THE NO PASSING ZONE WILL EXTEND 1000' FROM INTERSECTION.

NOTE:
- DOTTED EXTENSION LINE TAPER LENGTH
- POSTED SPEED * 12
- FOR POSTED SPEEDS ABOVE 40 MPH

NOTE:
- 6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.
- ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.

NOTE:
- THE SPACING DETAIL.
- IF ARROWS ARE USED SPACE THE ARROWS AS SHOWN IN THE SPACING DETAIL.

NOTE:
- LONGITUDINAL PAVEMENT MARKING LINES SHALL BE OFFSET A MINIMUM OF 2" FROM LONGITUDINAL PAVEMENT JOINTS.

NOTE:
- ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED.
- 6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.
**TYPICAL SIGNING AND MARKING**

FOR RIGHT LANE MUST TURN RIGHT

A three-lane roadway should be marked with a centerline for two-lane approach operation on the approach to a crossing.

On multi-lane roads, the transverse bands should extend across all approach lanes, and individual R X R symbols should be used in each approach lane.

Refer to standard alphabet for highway signs and markings for R X R symbols details.

**TYPICAL CROSSWALKS**

**TYPE I: CROSSWALK LINES SHALL BE 12" SOLID WHITE LINES.**

They shall be spaced a minimum of 8' apart from inside edge to inside edge.

**TYPE II: THESE LINES SHOULD BE SOLID WHITE 24" WIDE PLACED PARALLEL TO THE DIRECTION OF TRAFFIC FLOW. THE LINE PLACEMENT IS DETERMINED BY LANE LINE, CENTER LINE, AND WHITE PATH IN SUCH A MANNER AS TO MINIMIZE TRAFFIC WEAR. THE CROSSWALK WIDTH SHOULD BE NOT LESS THAN 8'. THE TRANSVERSE CROSSWALK LINES MAY BE ADDED. WHEN REQUIRED, STOP LINES SHALL BE INSTALLED A MINIMUM OF 5' FROM CROSSWALKS.**

**TYPICAL APPROACH TAPER DETAIL**

The approach taper length from point A to point B is to be determined using chart C. Values for L were calculated using the equations below and increased to the next higher 5 MPH increment.

- Speeds < 45 MPH: L = W*S
- Speeds > 45 MPH: L = W*S^2

If arrows are used and unless otherwise specified, the space between lines should be at least four times the height of the characters for slow speed roads but not more than ten times the height of the characters, under any conditions.

For speeds less than or equal to 40 MPH, R = 180°.

For speeds greater than or equal to 45 MPH, R = 300°.
NOTE: FOR SPECIFIC PAVEMENT MARKING DETAILS AND DIMENSIONS SEE PLAN SHEETS

NOTE: ALL TOTALS REFLECT ACTUAL QUANTITY OF PAVEMENT MARKING MATERIALS REQUIRED.

NOTE: WORDS & SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

PRIOR TO COMMENCEMENT OF PAVEMENT MARKING WORK THE ENGINEER WILL ESTABLISH THE LIMITS FOR "NO PASSING" ZONES. THESE LIMITS SHALL BE USED FOR THE LOCATION OF "NO PASSING" LINES AND FOR THE COMPUTATION OF ACTUAL MARKING QUANTITIES FOR THIS LINE TYPE.

NOTE: FOR SPECIFIC PAVEMENT MARKING DETAILS AND DIMENSIONS SEE PLAN SHEETS

NOTE: ALL TOTALS REFLECT ACTUAL QUANTITY OF PAVEMENT MARKING MATERIALS REQUIRED.
Project Location

405-135-2038-200

McPherson, KS 67460
1115 West Avenue A

McPherson County Public Works

1135 West Avenue A
McPherson, KS 67440

Components for "Typical Signing - Fig. #1"

- w/1 - R11-4
- w/2 - Warning Light - Type "A"
- 2 - Type III Barricade (Staggered)
- 1 - R20-3 - (1000 FT)
- 1 - R20-3 - (500 FT)
- w/1 - R11-2
- w/2 - Warning Light - Type "A"
- 3 - Type III Barricade (Total Closure)

Mainline:
- w/1 - R11-4
- w/2 - Warning Light - Type "A"
- 2 - Type III Barricade (Staggered)
- 1 - R20-3 - (1000 FT)
- 1 - R20-3 - (500 FT)
- w/1 - R11-2
- w/2 - Warning Light - Type "A"
- 2 - Type III Barricade (Total Closure)

Side Road:
- Detour Route
TRAFFIC CONTROL PLAN

Elyria

Detail Area #6

Detail Area #7

Detail Area #8

CR-2043

15th Ave.

16th Ave.

17th Ave.

18th Ave.

19th Ave.

CR-2043

w/D3-1 sign - "14th Avenue"

M4-9L sign

w/D2-5 sign - "14th Avenue"

(set for WB traffic)

(set for EB traffic)

(set for SE-bound traffic)

(set for NW-bound traffic)

(set for EB traffic)

(set for WB traffic)

(set for SB traffic)
1) Design Speed: Those items delegated to temporary traffic control should be designed and installed using the posted/legible 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 lighting.

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 roadways 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, this sign 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 site or making a midblock crossing.

4) When existing pedestrian facilities are disrupted, closed, or relocated, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.

5) When the driving surface open to traffic is milled or is a temporary surface made of loose material, or when directed by the engineer, a W8-15 (Grooved Shoulder) sign shall be used on midblock applications. This sign should be placed a 3/4 distance after the W20-1 (Road Work Ahead) sign. A W8-15p motorcycle plaque 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.

**TYPICAL WORK ZONE COMPONENTS**

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

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>Taper Formulas:</th>
<th>Channelizer Placement:</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN (40 MPH OR LOWER)</td>
<td>L = WS for speeds of 40 MPH or more</td>
<td>(1) The spacing between devices in transition area (taper) should not exceed a distance in feet equal to 1/2 the posted speed limit in mph prior to work starting.</td>
</tr>
<tr>
<td>URBAN (45 MPH OR HIGHER)</td>
<td>L = WS/3 for speeds of 40 MPH or less</td>
<td>(2) The spacing between devices in the advanced warning area and the activity area should not exceed a distance in feet equal to two times the posted speed limit in mph prior to work starting.</td>
</tr>
<tr>
<td>RURAL (55 MPH OR LOWER)</td>
<td>Where:</td>
<td>(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.</td>
</tr>
<tr>
<td>RURAL (60 MPH OR HIGHER)</td>
<td>L = Minimum length of taper in feet</td>
<td>(4) Place directional indicator barriers in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.</td>
</tr>
<tr>
<td>EXPRESSWAY/FREeway</td>
<td>S = Numerical value of posted speed prior to work starting in MPH</td>
<td>(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.</td>
</tr>
<tr>
<td></td>
<td>W = Width in offset feet</td>
<td></td>
</tr>
<tr>
<td>Buffer Space</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>LENGTH (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>175 170 150 125 100 75 50</td>
</tr>
<tr>
<td>25</td>
<td>225 200 180 150 125 100 75</td>
</tr>
<tr>
<td>30</td>
<td>275 250 225 200 175 150 125</td>
</tr>
<tr>
<td>35</td>
<td>325 300 275 250 225 200 175</td>
</tr>
<tr>
<td>40</td>
<td>375 350 325 300 275 250 225</td>
</tr>
<tr>
<td>45</td>
<td>425 400 375 350 325 300 275</td>
</tr>
<tr>
<td>50</td>
<td>475 450 425 400 375 350 325</td>
</tr>
<tr>
<td>55</td>
<td>525 500 475 450 425 400 375</td>
</tr>
<tr>
<td>60</td>
<td>575 550 525 500 475 450 425</td>
</tr>
<tr>
<td>65</td>
<td>625 600 575 550 525 500 475</td>
</tr>
<tr>
<td>70</td>
<td>675 650 625 600 575 550 525</td>
</tr>
<tr>
<td>75</td>
<td>725 700 675 650 625 600 575</td>
</tr>
</tbody>
</table>

- Buffer Space
- Neither work activity nor storage of equipment, vehicles, or materials should occur in the buffer space. When a protection vehicle is placed in advance of the work zone, the space upstream of the vehicle constitutes the buffer space.

If temporary concrete safety barrier system is used to separate approaching traffic from the work space, the barrier system shall be considered part of the activity area. A full lane width should be available throughout the length of the barrier space.
The stripes shall slope downward to the traffic side for channelization. For rails less than 36" long, 4" wide stripes may be used.

**Location**

<table>
<thead>
<tr>
<th>Portable</th>
<th>Fixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum</td>
<td>Tubular Markers</td>
</tr>
<tr>
<td>Conical Delineator</td>
<td>Type 2 Barricade</td>
</tr>
<tr>
<td>Vertical Panel</td>
<td>Traffic Cones</td>
</tr>
<tr>
<td>Direction Indicator Barricade</td>
<td>Pedestrian Channelizer</td>
</tr>
</tbody>
</table>

**Item**

<table>
<thead>
<tr>
<th>Traffic Cones</th>
<th>Vertical Panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Barricade</td>
<td>Hand Trailing Edges</td>
</tr>
<tr>
<td>Vertical Panels</td>
<td>Support Device</td>
</tr>
</tbody>
</table>

**Location**

1. Support devices 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 channels to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Tread height differenials = 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 10:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

**Location**

<table>
<thead>
<tr>
<th>Portable</th>
<th>Fixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum</td>
<td>Tubular Markers</td>
</tr>
<tr>
<td>Conical Delineator</td>
<td>Type 2 Barricade</td>
</tr>
<tr>
<td>Vertical Panel</td>
<td>Traffic Cones</td>
</tr>
<tr>
<td>Direction Indicator Barricade</td>
<td>Pedestrian Channelizer</td>
</tr>
</tbody>
</table>

**Location**

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 CONTROL CHANNELIZING DEVICES**

**TF702**

**Channelizing Devices**

<table>
<thead>
<tr>
<th>Device</th>
<th>Location</th>
<th>Portable/Fixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum</td>
<td>Portable</td>
<td>Yes/Yes/Yes/Yes</td>
</tr>
<tr>
<td>Conical Delineator</td>
<td>Yes/Yes/Yes/Yes</td>
<td></td>
</tr>
<tr>
<td>Vertical Panel</td>
<td>No/No/Yes/No</td>
<td></td>
</tr>
<tr>
<td>Direction Indicator Barricade</td>
<td>No/No/Yes/No</td>
<td></td>
</tr>
<tr>
<td>Type 2 Barricade</td>
<td>No/No/No/No</td>
<td></td>
</tr>
<tr>
<td>Tubular Markers</td>
<td>(2)/(2)/(3)/(3)</td>
<td></td>
</tr>
<tr>
<td>Vertical Panels</td>
<td>(2)/(2)/(2)/(2)</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

- **Portable**
  - Yes: Yes
  - No: No
  - (1): Yes
  - (3): Yes

- **Fixed**
  - Yes: Yes
  - No: No
  - (2): Yes
  - (4): No

---

**KANSAS DEPARTMENT OF TRANSPORTATION**

**Drawn By:**

**File:**

**Plotted:**

**REVISIONS**

**KDOT Graphics Certified:**

**KDOT Graphics Certified:**

**FHWA APPROVAL:**

**DESIGNED:**

**DETAILED:**

**QUANTITIES**

**QUAN. CK.:**

**DETAIL CK.:**

**DESIGN CK.:**

**TRACED:**

**TRACE CK.:**

**APP'D DATE:**

**L.E.R.:**

**R.W.B.:**

**Kristina Ericksen:**

**CHANNELIZING DEVICES**

**TRAFFIC CONTROL**

**KANSAS STATE PROJECT NO.**

**YEAR:**

**TOTAL SHEETS:**

**SHEET NO:**

**06/01/15**

**03-29-2018**

**59 C-4928-01**

**2020**

**36**

**54**
FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

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

Note: Signs shown for one approach to work zone.

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

Note: Signs shown for one approach to work zone.

ROAD CLOSED GENERAL NOTES

As shown in Figure 1, at the point where thru traffic must divert 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 or ROAD CLOSED LOCAL TRAFFIC ONLY) 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 R11-4 sign when appropriate detour signing, as shown on project traffic control plans.

Approved signs mounted on Type 3 barricades should not cover more than 50% of the top two rails or 33% of the total area of the three rails.

When barricades are placed end-to-end or staggered, a Type "A" low intensity warning light shall be mounted to the vertical post near each outside corner of the end barricades.
FIGURE 1: SIDE ROAD OR ENTRANCE CLOSED THROUGH WORK AREA

FIGURE 2: SIDE ROAD OR ENTRANCE OPEN THROUGH WORK AREA

FIGURE 3: LOW VOLUME ENTRANCE CONSTRUCTED HALF AT A TIME

Note: Consider large vehicles making right turns into and out of entrance and use figure 4 as needed.
### SIGN LAYOUT INFORMATION

#### Standard Sizes

| Expwy/Freeway | Widths | Height
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4' x 6'</td>
<td>6' x 6'</td>
<td>10' x 10'</td>
</tr>
</tbody>
</table>

#### Grooved Pavement

| Widths | Height
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4' x 6'</td>
<td>6' x 6'</td>
</tr>
</tbody>
</table>

#### Loose Gravel

| Widths | Height
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4' x 6'</td>
<td>6' x 6'</td>
</tr>
</tbody>
</table>

#### Uneven Lanes

| Widths | Height
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4' x 6'</td>
<td>6' x 6'</td>
</tr>
</tbody>
</table>

### Other Information

- **End Road Work**: KD02-2
- **Wait for Pilot Car**: KD02-5
- **Next Miles**: W7-3a
- **Shoulder Drop-off**: WB-17
- **Special Sign**: SP-01, SP-02

### Sign Specifications

- **Legend/Border**: Background Color: White
- **Font**: 23.0 Font
- **Dimension**: 3.9 Dimensions in inches
- **Letter Spacing**:
  - Uppercase: 9" D
  - Lowercase: 5" D
- **Face of Sign**: 3" Min.
- **Border**: 6" Min.
- **Legend Border**: Reflective

### Design Principles

1. **Ground-mounted signs** shall be mounted at a minimum height of 6' 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. 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 protrude into the walkway nor shall it project beyond the back of curb.
5. The informational signs are not to interfere with the traffic control signs for the project.
6. The informational signs shall be located on sidewalks or areas designated for pedestrian or bicyclist traffic.
7. Signs mounted lower than 7' should not project more than 4' into pedestrian facilities.
8. The height from the bottom of the secondary sign mounted below another sign may be 4' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.
9. Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.
10. 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 protrude into the walkway nor shall it project beyond the back of curb.

### Traffic Control Sign Information

#### Fines Double in Work Zones

- **RURAL**:
  - Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.
  - Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicyclist traffic.
  - Signs mounted lower than 7' should not project more than 4' into pedestrian facilities.
  - The height from the bottom of the secondary sign mounted below another sign may be 4' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.
  - Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.
- **URBAN**:
  - Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.
  - Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicyclist traffic.
  - Signs mounted lower than 7' should not project more than 4' into pedestrian facilities.
  - The height from the bottom of the secondary sign mounted below another sign may be 4' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.
  - Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.
  - 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 protrude into the walkway nor shall it project beyond the back of curb.

### 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 road work 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.
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP

WOOD POST SETUP

4 1/2" x 4" Wood Post in Soil

44" Min. Length

Stub Post

84" Min. at Ground Level

Install Corner Bolt at both ends and at ground line

Undisturbed Earth or Compacted Fill

Perforated Square Steel Tube (P.S.S.T.) Post Setup

Direction of Traffic

4 1/2" Dia. Holes at 6" Centers

4 1/2" Dia. Hole

14 1/2" Post + 6" Footing

4 1/2" x 6" Treated Wood Post

Ground Line

Undisturbed Earth or Compacted Fill

Section A-A

Section B-B

Ground Line

Undisturbed Earth or Compacted Fill

Section A-A

Section B-B

3 LB/F U-Channel Setup

4 1/4" x 4" Wood Post in Soil

42" Min. Length

2 1/2" Std. Corner Bolt

8 1/2" Hex Jam Nut

Post Anchor Sleeve

Post Anchor

Sign Post

Section A-A

Section B-B

Details for 2", 2 1/2", or 2 1/2" sign posts. Place bolts in the same corner along each 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 nearest the ends of the splice.

See TE710 for Additional Details and Requirements

TRAFFIC CONTROL SIGN POSTS

KANSAS DEPARTMENT OF TRANSPORTATION

Drawn By: JonA

Plotted: te712.dgn

1-SEP-2020 15:42

REVISIONS

BY

APP'D

DATE

NO.

TRACED

TRACE CK.

APP'D

QUANTITIES

QUAN. CK.

DETAILED

DETAIL CK.

FHWA APPROVAL

DESIGNED

DESIGN CK.

KANSAS STATE PROJECT NO.

TOTAL SHEETS

SHEET NO.

YEAR

06/01/15

B.A.H.

R.W.B.

Kristina Pyle

SIGN POSTS

TRAFFIC CONTROL

59 C-4928-01

2020

40

54
FOR EXCAVATION AND COMPACTION EARTHWORK QUANTITY DETAILS SEE SHT. 18