MEMORANDUM TO: GREG SCHIEBER, P.E., CHIEF
BUREAU OF CONSTRUCTION AND MATERIALS

We are handing you Final Plans for the project noted below for the June 15, 2020, letting.

Thomas Rhoads
Design Squad

135-87 KA-5130-02
HSIP-A513(002)
Project Number

Sedgwick
County

1.850 miles
Length

REMARKS:

1R project guardrail upgrades

I-135 beginning at the north edge wearing surface of the viaduct bridges thence north to the south end of the 37th Street Bridges in Sedgwick County

RECOMMENDED FOR SIGNATURE: APPROVED:

[Signatures]

SR. ROAD DESIGN LEADER

CHIEF, BUREAU OF ROAD DESIGN
STATE OF KANSAS
DEPARTMENT OF TRANSPORTATION
GUARDRAIL IMPROVEMENT
FEDERAL AID PROJECT
SEDGWICK COUNTY
I-135

NOTE: TRAFFIC TO BE CARRIED THROUGH CONSTRUCTION AS DIRECTED BY THE ENGINEER.

PROJECT NO. 135-087 KA-5129-02
FED. AID PROJ. NO. HSIP-A512(002)
GUARDRAIL

Plans Prepared By:

May 12, 2020

N.T.S.

12,200 FT. (Includes Equations)

May 12, 2020

12,200 FT.

12,200 FT.
GENERAL NOTE

REPAIR OF EXISTING SLOPES: All Contractor generated rutting or other damage to foreslopes or other areas outside of the pavement shall be repaired and seeded by the Contractor at their expense.

TRAFFIC CONTROL: The Contractor shall not leave the work zone with a bank wall or guardrail being constructed. The Contractor shall not remove existing guardrail until the extent to which it can be replaced is determined. The Contractor shall not temporarily install guardrails, unless advance notice is given. The work zone shall be limited to guardrail location at any given time for the duration of construction.

UTILITIES: Utilities have not been located. The Contractor shall only remove existing guardrail to the extent that any utility work is required before moving to the next location.

SEEDING: The project is considered "routine maintenance that disturbs less than 5 acres" according to section 1.1a of the NPDES General permit. The Contractor is required to follow section H13.0 of standard specifications. Stabilization is required before moving to the next location.

GUARDRAIL AND END TERMINALS: All guardrail end terminals shall be replaced with new and terminals unless specifically noted on the plans. All surveys and staking shall be submitted to the Contractor for review before proceeding. Rem. Drainage structure summary is noted on the plans.

SALVAGEABLE MATERIAL: Prior to removal of all existing guardrail, posts, end terminals and hardware, KDOT will inspect and have the option to salvage the materials removed from the project. Material to be salvaged by KDOT will be stockpiled on the project as determined by the Engineer so to be removed by KDOT forces. Material not salvaged to KDOT will become the property of the Contractor for removal and disposal from the project site.

QUANTITIES: Items not listed separately in the Summary of Quantities are subsidiary to the other items in the proposal.
Traffic Control Note

This ramp can be closed while the work is being done. Closure will be in accordance with TE704, signs posted on Pawnee of the Ramp being closed, message boards posted and press releases sent out ahead of time. Auxiliary lane on Pawnee leading to ramp will be coned off.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>SIDE</th>
<th>LENGTH (FT)</th>
<th>FLARE RM-5</th>
<th>END RG-10</th>
<th>REMARKS</th>
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<tr>
<td>Ramp onto NB I-135</td>
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<td>76</td>
<td></td>
<td></td>
<td>Remove Old Terminal Only</td>
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<tr>
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<td></td>
<td></td>
<td>New End Terminal Only</td>
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<tr>
<td>TOTALS</td>
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<th>REMARKS</th>
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</thead>
<tbody>
<tr>
<td>Ramp onto NB I-135</td>
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<td>STEEL GUARDRAIL (CGS)</td>
</tr>
<tr>
<td>Ramp onto NB I-135</td>
<td>East</td>
<td>38</td>
<td></td>
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<tr>
<td>TOTALS</td>
<td></td>
<td>76</td>
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<th>FLARE RM-5</th>
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<td>TOTALS</td>
<td></td>
<td>75</td>
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<td></td>
</tr>
</tbody>
</table>

Scale: 1" = 30'
Traffic Control Note

The Contractor shall close off outside mainline lane and exit ramp per TE744, put barricades across exit ramp, cover exit signage, use message boards for ramp closure and press releases sent out ahead of time.

### STEEL PLATE GUARDRAIL, REMOVAL (CGS)

<table>
<thead>
<tr>
<th>STATION TO STATION</th>
<th>LANES/SIDE</th>
<th>LENGTH (ft)</th>
<th>REMARKS</th>
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<tr>
<td>TOTALS</td>
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<td>30</td>
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### STEEL GUARDRAIL (CGS)

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>SIDE</th>
<th>LENGTH (ft)</th>
<th>FLARE RATE</th>
<th>GUARD FLOAT</th>
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<tr>
<td>I-135</td>
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<td>1</td>
<td>FLEAT</td>
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<tr>
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</table>

**KANSAS DEPARTMENT OF TRANSPORTATION**

**T-135 GUARDRAIL PLAN**

**SITE 3**

**SOUTHBOUND I-135 APPROACHING RAMP TO E. PAWNEE ST**
Traffic Control Note

The Contractor shall restrict NB I-135 to two lanes (outside lane closed) south of Lincoln Street per TE744. Close Lincoln Street on ramp per TE744, create gap in channelizers to allow traffic exiting from I-135 to Kellogg to exit to 4' auxiliary lane. Message boards and press releases ahead of time for Lincoln Street ramp closure will be required.
Traffic Control Note

The Contractor shall close this ramp and the outside auxiliary (4') lane of I-135 per TE744. End the lane closure just north of work area to allow mainline traffic to exit to 1/2" Street. Traffic from WB Kellogg to NB I-135 detoured to SB I-135, exit at Lincoln and enter right back to NB I-135 from Lincoln. Contractor shall post a detour route with message boards, send press releases ahead of time for closure of ramp.
GENERAL NOTES

Install flexible markers on a post behind the guardrail or bridge rail head on the traffic side of the barrier. Where the height of the bridge rail or concrete barrier is greater than 32", mount the flexible markers on the side of the barrier at a height of 32" as shown on this sheet. Where the height of the bridge rail or concrete barrier is less than 32" but greater than 20", flexible markers are mounted on the approach traffic side of the bracket only.

For guardrail, bridge rail, or concrete safety barrier located on two-way roadways, use flexible markers with white/silver high intensity reflective sheeting on both sides. For guardrail, bridge rail, or concrete safety barrier located on one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For bridge rail or concrete safety barrier located on the outside edge of one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For bridge rail or concrete safety barrier located in the median, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For bridge rail or concrete safety barrier located on the outside edge of one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only.

Flexible markers are installed on bridge rail and concrete safety barrier located in the median. Use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For bridge rail or concrete safety barrier located on the outside edge of one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only.

Flexible markers are mounted on the traffic side of guardrail installations at a spacing not to exceed 25'. No marker is installed between the head and post #5 when the guardrail is terminated with a crashworthy end terminal. Install flexible markers on the top of bridge rails at a spacing not to exceed 50', except for one-way bridges (greater than 200' long), where spacing may be increased to 100'. Install flexible markers on the top of concrete safety barrier at a spacing not to exceed 100', except for one-way bridges (greater than 200' long), where spacing may be increased to 150'. Install flexible markers on the top of guardrail, bridge rail, or concrete safety barrier at a spacing not to exceed 50', except for one-way bridges (greater than 200' long), where spacing may be increased to 100'.

For guardrail, bridge rail, or concrete safety barrier located on one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For bridge rail or concrete safety barrier located on the inside edge of one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For guardrail, bridge rail, or concrete safety barrier located on two-way roadways, use flexible markers with reflective sheeting installed on both sides. For guardrail, bridge rail, or concrete safety barrier located on one-way or divided roadways, use flexible markers with reflective sheeting installed on both sides. For guardrail, bridge rail, or concrete safety barrier located on one-way or divided roadways, use flexible markers with reflective sheeting installed on both sides. For guardrail, bridge rail, or concrete safety barrier located on one-way or divided roadways, use flexible markers with reflective sheeting installed on both sides.

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Bolt & Nut Details

Post in Pavement Plan

Post may be wood or steel.

Note: When face of guardrail is aligned with the face of a curb, measure the height of guardrail from the pavement surface at the curb's outer edge as shown. Use a straight-type post where the face of the guardrail is not located at the face of the curb.

Pole Location

When guardrail posts are installed in pavement, form openings in the pavement for the guardrail posts.

Transition Section Details.

See Standard Drawing RD613 for Thrie-Beam Transition Section Details.

Lap guardsplines, including terminal connector, in the direction of traffic. Where traffic is temporarily carried in the opposite direction of final configuration, lap railsplines in the direction of permanent traffic.

Steel Posts

Galvanize all bolts, nuts, and washers in accordance with the KDOT's Standard Specifications.

WOOD POSTS

Give all wood posts and wood blocks a preservative treatment, see standard specifications. Thoroughly saturate all cuts, injuries and bolt holes on wood posts and blocks with preservatives. Use only aged grade lumber treated in a vacuum, treated wood blocks, or treated post wood blocks, have proper aged post holes. Leave post and bolt holes to within post holes only. With the exception of the guardrail end terminal, all guardrail posts are to be painted or treated in accordance with the paint specification. Bolt and nut details are to be galvanized.

INTERMEDIATE POST

Use grade of steel for steel posts that meets the requirements of the standard specifications. Hot dip galvanize the posts after fabrication, see standard specifications. Use only one post/blockout type within guardrail run.

STEEL POSTS

W-BEAM POST DETAILS

Non-Metallic (Polymer) or Wood post

Bolt

4" x 6" x 14" Treated wood or polymer block

Steelframe

GALVANIZED (NOTES: Wood Posts)

10d Galvanized nail (One per post to hold block)

Steel post

Bolt "A"

8" Steel washer

10d Galvanized nail (One per post to hold block)

Steel post

Bolt "A"

8" Steel washer

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Steel post

Bolt "A"

8" Steel washer

Transition Section Details.

Note: All holes 5/32" dia.

STEEL POSTS

Galvanize all bolts, nuts, and washers in accordance with the KDOT's Standard Specifications.

BOLT SIZE SCHEDULE

BOLT & NUT DETAILS

Bolt

L

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

Post in Pavement Plan

Post may be wood or steel.

Note: When face of guardrail is aligned with the face of a curb, measure the height of guardrail from the pavement surface at the curb's outer edge as shown. Use a straight-type post where the face of the guardrail is not located at the face of the curb.

POSTS IN PAVEMENT PLAN

(AlTERNATE GEOMETRIES)

Applies to All Wood and Steel Posts (Steel Posts Shown)

Note: Low Strength Grout must have a 28-day compressive strength of 120 psi or less. All work and materials related to posts in pavement are subsidiary to other guardrail bid items. Rectangular geometry shown in Posts in Pavement detail. Circular geometry, as shown on this sheet, may be used at the Contractor's option.
Thrie Beam Transition. See KDOT's 'Thrie Beam Guardrail Transition Details' Standard Drawings.

Design Parameters table on this sheet for radius, length of curve and flare rate information.

Normal project side slope. See typical sections.

Guardrail shall be nested and post spacing reduced by length "D".

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

Use Type II Terminals. See 'Guardrail Auxiliary Details' Standard Drawings.

The minimum length of w-beam guardrail required between the guardrail end terminal and any transition section, including the thrie-beam transition, is 12'-6".

Note: Flare rate of a:b and curve length of 25'-0" shall be used when guardrail is located inside the shy line. Flare rate of 3:a and curve length of 12'-6" shall be used when guardrail is located inside the shy line.

Area of concern

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

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Note: Flare rate of a:b and curve length of 25'-0" shall be used when guardrail is located inside the shy line. Flare rate of 3:a and curve length of 12'-6" shall be used when guardrail is located inside the shy line.
1) Design Speed: Those items dedicated to temporary traffic control should be designed and installed using the posted/legal speed of the roadway prior to work starting.

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

3) Consideration should be made to separate pedestrian and, if needed, bicycle movements from both work zone activity and vehicular traffic. Unless a reasonable safe route does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway, in urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock work sites that will induce them to attempt crossing 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 W8-15p (Grooved Pavement) or W8-7 (Loose Gravel) sign shall be used on mainstream approaches. This sign should be placed 3' distance after the W2D2 (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 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or

TYPICAL WORK ZONE COMPONENTS

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

Minimum advance warning sign spacing (in feet):

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tbody>
<tr>
<td>URBAN (60 MPH OR LOWER)</td>
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<td>100</td>
<td>100</td>
</tr>
<tr>
<td>URBAN (55 MPH OR HIGHER)</td>
<td>350</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>RURAL (55 MPH OR LOWER)</td>
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<td>500</td>
<td>500</td>
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<tr>
<td>RURAL (60 MPH OR HIGHER)</td>
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<tr>
<td>EXPRESSWAY/INTERSTATE</td>
<td>1500</td>
<td>1500</td>
<td>2640</td>
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Channelizer Placement:
(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.
(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.
(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.
(4) Place directional indicator barcodes in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.
(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.
The stripes shall slope downward to the traffic side for channelization.

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

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

<table>
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<tr>
<th>Item</th>
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</tr>
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<td>Vertical Panel</td>
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<tr>
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<td>No</td>
</tr>
<tr>
<td>Traffic Cone</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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

**Notes:**
- (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.
FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

Note: Signs shown for one approach to work zone.

- Complete Closure: Type 3 Barricades
- Type 3 Barricades (Staggered Position)
- Work Space

XX Length to the Nearest 3 Mile (No Decimal Mileage)

Use R11-4 if less than 1 Mile
Use R11-3a if 1 Mile or more

Note: The R11-3a and R11-4 signs should be accompanied with appropriate detour signing, as shown on project traffic control plans.

FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

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

- Complete Closure: Type 3 Barricades
- Type 3 Barricades (Winged Position)
- Work Space

Use R11-4 if less than 1 Mile
Use R11-3a if 1 Mile or more

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

Note: Signs shown for one approach to work zone.

- Complete Closure: Type 3 Barricades
- Type 3 Barricades (Staggered Position)
- Work Space

Last Access for House or Field Entrance

Type 3 Barricade

- Channelizing Device

- Use R11-4 if less than 1 Mile
- Use R11-3a if 1 Mile or more

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

- Type 3 Barricade with Lights
- 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.

ROAD CLOSED GENERAL NOTES

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

As shown in Figure 2, 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 "BROAD DOT" (or "BROAD EDGE CLOSED") may be substituted for the words "ROAD CLOSED" on the R11-3a or R11-4 sign where applicable.
**SIGN LAYOUT INFORMATION**

**END ROAD WORK**
K620-2

**WAIT FOR PILOT CAR**
K620-5

**GROOVED PAVEMENT**
W8-15

**LOOSE GRAVEL**
W8-7

**UNEVEN LANES**
W8-11

**SHOULDER DROP-OFF**
W8-17

**NF US-75 CLOSED**
SP-01

**US-75 CLOSED NORTH OF TOPEKA**
SP-02

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**RURAL**

1. Ground-mounted signs shall be mounted at a minimum height of 9' measured from the bottom of sign to the near edge of the pavement.
2. Large signs having an area exceeding 80 square feet installed on multiple breakaway posts shall be mounted at 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.

**URBAN**

1. Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.
2. Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.
3. Signs mounted lower than 7' should not project more than 4' into pedestrian walkways.
4. The height from the front of the secondary sign mounted below another sign may be 8' measured from the bottom of sign to the near edge of the pavement.
5. Large signs having an area exceeding 80 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.
6. Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not protrude into the pathway or street.

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**FINES DOUBLE IN WORK ZONES**

**LETTER SPACINGS**

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

Install signs a minimum of 500' in advance of the work zone. 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.
**WOOD POST SETUP**

- **Direction of Traffic**
  - 3/8" Dia. Holes at 6" Centers

- **Ground Line**
  - 4" x 4" Treated Wood Post in Soil
  - 4" x 6" Treated Wood Post in Soil

- **Undisturbed Earth or Compacted Fill**

---

**TE712**

**SIGN POSTS**

**TRAFFIC CONTROL**

- Use manufacturer recommended spacers over the bolts nearest the ends of the splice.

- Place two bolts at both ends of the splice through the holes nearest the ends of the splice.

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Details for 2", 2 1/2", or 2 1/2" sign posts.

Place bolts in the same corner along each sign post.

Notes:
Notes:

For work in the median, install signs and channelizing devices for each direction of traffic according to the applicable typical drawing.

No traffic control is required if the Work Space is located outside of the clear zone.

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

Omit taper if paved shoulder is less than 8' wide.

Eliminate W7-3a if shoulder is closed for less than 2 miles.
SHIFTING TAPER DETAIL

Add signs and devices as shown for work inside a closed lane that extends near to (or into) the open traffic lane.

The double reverse curve (W24-1, W24-1a or W24-1b) should be used if the tangent distance between the two reverse curves is less than 600 ft. Only one W24-1 is required to be placed at an "A" distance in advance of the shifting taper.

For left lane closures use W4-2L and yellow edge line lane that extends near to (or into) the open traffic lane.

Add signs and devices as shown for work inside a closed activity area where work is in a closed lane adjacent to traffic and not separated by a concrete safety barrier system.

Left-side signs shall be omitted for a four-lane undivided highway.

One flagger should be stationed within each multi-lane roadway activity area where work is in a closed lane adjacent to traffic and not separated by a concrete safety barrier system.

Type 3 Barricades
- Length to the Nearest Whole Mile
- Channelizing Device
- Ahead, 1500 ft or ½ mile
- Right or Left
- To be determined by the Engineer
- Type "A" Low Intensity Warning Light

For left lane closures use W4-2L and yellow edge line along channelizing devices.

The W20-5 (Lane Closed) and W7-3A (Next X Miles) signs should be placed at 2 mile increments on a project of 4 miles or longer.
### Summary of Traffic Control Devices (Each)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
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<tbody>
<tr>
<td>Work Zone Signs (Special)</td>
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