NOTES FOR ALL INSTALLATIONS:

LIMITATION OF USE: This Temporary Concrete Barrier System is intended for work zone traffic control and other temporary applications. It shall not be used for permanent traffic railing construction unless specifically permitted by the Plans. Exemptions from the Back Filled Roadway Installations, the Barrier Units must be installed on a flexible pavement (asphalt) or rigid pavement (concrete) surface as shown with a cross slope of 1:10 or flatter. Except as shown for transition installations, Type K Barrier Units are not intended to be bolted down or staked down in locations where they can be impacted from the back side.

HANDLING: At no time shall the Barrier Units be lifted or moved by use of Bars 6D that extend from the ends of the units. Approximate weight of one unit equals 2.7 tons.

SURFACE PREPARATION: Except as shown for the Back Filled Roadway Installations, remove all debris, loose dirt and sand from the pavement, bridge deck or Asphalt Pad surface within the barrier footprint just prior to placement of the Barrier Units.

CONNECTION PIN ASSEMBLY: Steel for Connection Pin and Top Plate assemblies shall be in accordance with ASTM A36 or ASTM A709 Grade 36. Nondestructive testing of welds shall not be required. At the Contractor's option, a 3\(\frac{3}{8}\)" diameter hole may be provided at the bottom of the Connection Pin, as shown for the installation of a vandal resistance bolt.

CONNECTION PIN INSTALLATION: Initially set Barrier Units by using a 3\(\frac{3}{8}\) wooden block between ends of adjacent units. Install Connection Pin between adjacent Barrier Units as shown, then pull newly placed Barrier Unit away from adjacent Barrier Unit to remove slack between Connection Pin and Bars 6D (except as shown on Sheet 5). Barrier Units shall not be used unconnected.

DETAIL OF CONNECTION BETWEEN BARRIER UNITS

CONCRETE FOR FILLING TAPERED TRAFFIC RAILING TOES: Provide concrete for filling tapered toes of Traffic Railings as shown meeting the material requirements of Specification Section 346, any Class, or a commercially available prebagged concrete mix (3000 psi minimum compressive strength). Sampling, testing, evaluation and certification of the concrete in accordance with Specification Section 346 is not required. Admix with water the surfice upon and against which the concrete fill will be placed prior to placing concrete. Place and finish concrete fill using forms or by hand methods to the general configurations shown so as to provide a smooth shape transition between the Type K Barrier and the adjacent traffic railing. A low slump is desirable if placing and finishing concrete by hand methods. Cure the concrete fill by application of a curing compound, or by covering with a wet tarp or burlap for a minimum of 24 hours. Completely remove the concrete fill upon relocation or removal of the Type K Temporary Concrete Barrier.

NOTES FOR THREE BEAM GUARDRAIL SPlice INSTALLATIONS:

THREE-BEAM GUARDRAIL: Provide Three-Beam Guardrail for splices in accordance with AASHTO M 380, Type III (Zinc coated) and as follows:

- Two panels per splice (one panel per side) of Class B (10 Gauge), or
- Four panels per splice (two nested panels per side) of Class A (12 Gauge).

Guardrail panel length shall be 12'-6". Provide and install all other associated metallic guardrail components (Terminal Connectors, Shoulder Bolts, Hex Bolts and Nuts, Filler Plates, etc.) in accordance with Index No. 400. Install Three-Beam Anchor Bolts in any standard seven anchor bolt holes in the Three-Beam Terminal Connector.

If reinforcing steel is encountered when drilling holes for Guardrail Anchor Bolts in Type K Barrier Units, shift Three-Beam Terminal Connector so as to clear reinforcing steel or select a different bolt hole to use. Do not drill or cut through reinforcing steel within Type K Barrier Units. Drilling or cutting through reinforcing steel within permanent concrete traffic railings is permitted. Do not drill or cut through utilities or conduits within permanent concrete traffic railings.

GUARDRAIL OFFSET BLOCKS: Provide and install timber Offset Blocks meeting the material requirements of Index No. 400. Field trim Offset Blocks as required for proper fit. Utilize Offset Blocks as shown and required in order to prevent bending or kinking of Three-Beam Guardrail panels.

REUSE OF UNITS: Barrier Units may be reused provided they have the structural integrity and surface qualities of new units. Do not use Barrier Units without Marking Plates.

REUSE OF CONNECTION DETAILS: Connection pins may be reused if they have the structural integrity of new pins.

INSTALLATIONS ON CURVED ALIGNMENTS: The details presented in these Standards are shown for installations on tangent alignments. Details for horizontally curved alignments are similar.

TRANSITIONS: Transitions are required between freestanding, bolted down, staked down and back filled Type K Barrier Installations, see Sheet B for transition requirements and details. Transitions are also required between installations of Type K Barrier and other types of temporary barriers, see Index No. 415 for transition requirements and details. Splices and transitions are required between installations of Type K Barrier and permanent Bridge or Roadway Traffic Railings, see Sheets 9 through 13 for transition requirements and details. Transitions are required between installations of Type K Barrier and Proprietary (QPL) Barrier Systems, see Sheets 14 and 15 for transition requirements and details.

PAYMENT: Barrier units for work zone traffic control and other temporary applications shall be paid for under the contract unit price for Barrier Wall (Temporary) (Type K), LF. Any relocation of the Barrier Units required for the project shall be paid for under the contract unit price for Barrier Wall (Temporary) (Relocate) (Type K), LF. Type C Steady-Burn Lights shall be paid for under the contract unit price for Lights (Temp. Barrier Wall Mount) (Type C, Steady-Burn Unit), ED. The Contractor shall furnish the temporary availability of Department owned units. Regardless of unit source the Contractor shall furnish all hardware and shall be responsible for all handling including loading, transport, unloading, stockpiling, installation, removal and return. Unless otherwise noted on the Plans, the Barrier Units shall become the property of the Contractor and shall be removed from the site prior to acceptance of the completed project.

NOTES FOR TYPE K TEMPORARY CONCRETE BARRIER SYSTEM

TYPE K TEMPORARY CONCRETE BARRIER SYSTEM

REVIEWS

Sheet

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Sheet No.

Added language to TRANSITIONS note for 60 Barrier Systems

2010 Interim Design Standard

Index No. 414
**TYPE K TEMPORARY CONCRETE BARRIER SYSTEM**

**DESCRIPTION**

- **APPLICATION:** Where existing flexible pavement is not present, construct the Asphalt Pad using Miscellaneous Asphalt Pavement in accordance with Specification Section 339 with the exception that the use of a pre-emergent herbicide is not required. No separate payment will be made for the Asphalt Pad.

**NOTES FOR FREE STANDING ROADWAY INSTALLATION:**

- **LIMITATION OF USE:** This installation technique can only be used on flexible pavement or an Asphalt Pad as shown. Stakes must not be installed on both sides of the Barrier Units.

**ASPHALT PAD:** Where existing flexible pavement is not present, construct the Asphalt Pad using Miscellaneous Asphalt Pavement in accordance with Specification Section 339 with the exception that the use of a pre-emergent herbicide is not required. No separate payment will be made for the Asphalt Pad.

**STAKES:** Provide steel for Stake assemblies in accordance with ASTM A 36 or ASTM A 709 Grade 36. All welding shall be in accordance with the American Welding Society Structural Welding Code, (Steel) ANSI/ABS D1.1 (current edition). Weld metal shall be E60XX or E70XX. Nondestructive testing of welds is not required.

**REMOVAL OF STAKES:** Upon removal or relocation of Barrier Units, completely remove all Stakes and completely fill the remaining holes in flexible pavement that is to remain with hot or cold patch asphalt material.

**REMOVAL OF KEEPER PINS:** Upon removal or relocation of Barrier Units, remove all Keeper Pins and completely fill the remaining holes in bridge decks and approach slabs that are to remain with Magnesium Ammonium Phosphate pre-emergent herbicide.

**LIMITATION OF USE:** This installation technique can only be used on flexible pavement or an Asphalt Pad as shown. Stakes must not be installed on both sides of the Barrier Units.

**FREESTANDING BRIDGE OR APPROACH SLAB INSTALLATIONS**

**NOTES FOR FREE STANDING BRIDGE OR APPROACH SLAB INSTALLATIONS:**

- **KEEPER PINS:** Keeper Pins shall be 1/2 diameter, smooth steel bar in accordance with ASTM A 36 or ASTM A 709 Grade 36. As directed by the Engineer in order to limit vibration induced translation of the Barrier Units, install one (1) Keeper Pin per Barrier Unit on the traffic side of the Barrier Units as shown. Do not drill into or otherwise damage bridge deck expansion joints or drains.

- **REMOVAL OF KEEPER PINS:** Upon removal or relocation of Barrier Units, remove all Keeper Pins and completely fill the remaining holes in bridge decks and approach slabs that are to remain with Magnesium Ammonium Phosphate pre-emergent herbicide in accordance with Specification Section 930 or with an Epoxy Resin Compound, Type 1 or Q, in accordance with Specification Section 930 or with an Epoxy Resin Compound, Type 1 or Q.

**ASPHALT PAD:** Where existing flexible pavement is not present, construct the Asphalt Pad using Miscellaneous Asphalt Pavement in accordance with Specification Section 339 with the exception that the use of a pre-emergent herbicide is not required. No separate payment will be made for the Asphalt Pad.
**REVISIONS**

**DATE**  **DESCRIPTION**  **DATE**  **DESCRIPTION**

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**NOTES FOR FREESTANDING MEDIAN INSTALLATION:**

KERREER PINS: Required for Bridge Decks only. Keeper Pins shall be ½ diameter, smooth steel bar in accordance with ASTM A 36 or ASTM A 709 Grade 36. As directed by the Engineer in order to limit vibration induced translation of the Barrier Units, install one (1) Keeper Pin per Barrier Unit as shown. Alternate Keeper Pin locations from side to side of Barrier Units along the length of the installation. Do not drill into or otherwise damage bridge deck expansion joints or drains. Upon removal or relocation of Barrier Units, remove all Keeper Pins and completely fill the remaining holes in bridge decks and approach slabs that are to remain with Magnesium Ammonium Phosphate Concrete in accordance with Specification Section 930 or with an Epoxy Resin Compound, Type I or Q, in accordance with Specification Section 926. If a flexible pavement overlay is present and is to remain, completely fill the remaining holes in the flexible pavement with hot or cold patch asphalt material.

ASPHALT PAD: Where existing pavement is not present, construct the Asphalt Pad using Miscellaneous Asphalt Pavement in accordance with Specification Section 339 with the exception that the use of a pre-emergent herbicide is not required. No separate payment will be made for the Asphalt Pad.

**FREESTANDING MEDIAN INSTALLATION** (BRIDGE DECK SHOWN, APPROACH SLAB, ASPHALT PAD, FLEXIBLE OR RIGID PAVEMENT SIMILAR)

**FLOWABLE FILL BACK FILL ROADWAY INSTALLATIONS**

**NOTES FOR SOIL BACK FILLED ROADWAY INSTALLATIONS:**

SOIL BACK FILL MATERIAL: Provide Back Fill Material consisting of any available clean soil. Compact Back Fill Material until the soil mass is firm and unyielding. Provide erosion control as specified in the Plans. If none is specified in the Plans, provide erosion control as required to maintain the integrity of the Back Fill embankment.

GEOTEXTILE FABRIC: Provide Type D-5 Geotextile Fabric in accordance with Index No. 199 to contain Back Fill Material behind Barrier Units. Geotextile Fabric may be continuous over the length and height of the installation or may be individual pieces as required to cover the Lift / Drain Slots and open vertical joints between Barrier Units.