Mr. Bill Korman  
Korman Signs, Incorporated  
3029 Lincoln Avenue  
Richmond, Virginia  23228

Dear Mr. Korman:

Thank you for your letter of May 23, 2002, requesting Federal Highway Administration (FHWA) acceptance of a number of your company’s portable sign stands as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Accompanying your letter were reports of crash testing conducted by General Testing Services and video of the tests. You requested that we find these devices acceptable for use on the NHS under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 “Recommended Procedures for the Safety Performance Evaluation of Highway Features.” On June 13, 2002, you met with Mr. Artimovich of my office and provided information in addition to that in the original request.

Introduction

The FHWA guidance on crash testing of work zone traffic control devices is contained in two memoranda. The first, dated July 25, 1997, titled “INFORMATION: Identifying Acceptable Highway Safety Features,” established four categories of work zone devices: Category I devices were those lightweight devices which could be self-certified by the vendor, Category II devices were other lightweight devices which needed individual crash testing, Category III devices were barriers and other fixed or massive devices also needing crash testing, and Category IV devices were trailer mounted lighted signs, arrow panels, etc. The second guidance memorandum was issued on August 28, 1998, and is titled “INFORMATION: Crash Tested Work Zone Traffic Control Devices.” This later memorandum lists devices that are acceptable under Categories I, II, and III.

A brief description of your requests, including designation of the sign stands and the sizes and substrates you wish to use follows:

Request Number 1:

Stands:     SS560, SS560A, SS560E, SS560AE
Signs:      60x60 or smaller Diamond or Square  
            48x60 or smaller Rectangle
Substrates: 0.100, and .080 Al., 5/8 or ½ Plywood, 6.35mm SP, Endurance, HDPE,  
            10mm CP, Alpolic, Roll Up, 3-4mm ACS

Other:     With or without 48x30 or smaller supplementary panel using 10mm CP,  
            Alpolic, or Roll Up  
            With or without flags, light or ballast
Mounting Ht: 60 inches for diamond, 63 inches for rectangle, 21 inches for supplemental sign

**Request Number 2:**
- Signs: 48x60 or smaller Rectangle
- Substrates: Alpolic, 10mm CP, Roll Up
- Other: With or without flags, lights, or ballast
- Mounting Ht: 21 inches

**Request Number 3:**
- Stands: SS548E, SS548AE, SS548CE, SS548CAE
- Signs: 60x60 or smaller Diamond or Square
- Signs: 48x60 or smaller Rectangle
- Substrate: Roll Up
- Other: With or without 48x30 or smaller supplementary panel using 10 mm CP, Alpolic, or Roll Up
- With or without flags, or ballast
- Mounting Ht: 48 to 60 inches for diamond or rectangle, 21 inches for supplemental sign

**Request Number 4:**
- Stands: Type III Barricade
- Signs: 60x60 or smaller Diamond or Square
- Signs: 60x48 or smaller Rectangle
- Signs: 25 Square Foot or smaller combination of signs
- Substrate: Alpolic
- Other: With or without ballast
- Mounting Ht: N/A

**Request Number 5:**
- Stand: SS1
- Signs: 48x48 or smaller Diamond or Square
- Signs: 48x60 or smaller Rectangle
- Substrates: .100 and .080 Al., 5/8 and 1/2 Plywood, Endurance, 6.35mm SP, HDPE, 10mm CP, Alpolic, Roll Up, 3-4mm ACS
- Other: With or without flags, or ballast
- Mounting Ht: 13 to 14 Inches for diamond, 24 inches for rigid rectangle
- 13 to 28 inches for roll-up rectangle for 48x60 and 48x24 inch signs

**Request Number 6:**
- None: Deleted from original request. Repeated elsewhere in this submittal

**Request Number 7:**
Stands: SS548, SS548AE, SS548CE, SS548CAE
Signs: 60x60 or smaller Diamond or Square
48x60 or smaller Rectangle
Substrates: 10mm CP, Alpolic, Roll Up
Other: With or without flags, light, or ballast
Mounting Ht: 19 to 21 inches

Request Number 8:
Stands: SS548, SS548A, SS548C, SS548CA
Signs: 60x60 or small Diamond or Square
Substrate: Roll Up
Other: With or without flags, or ballast
Mounting Ht: 19 to 21 Inches

Request Number 9:
Stands: SS548UC, SS548UCA, SS548UCX, SS548UCAX
Signs: 60x60 or smaller Diamond or Square
48x60 or smaller Rectangle
Substrate: Roll Up
Other: With or without flags, or ballast
Mounting Ht: 21 Inches

Request Number 10:
Stands: SS560UC, SS560UCA, SS560UCX, SS560UCAX
Signs: 60x60 or smaller Diamond or Square
48x60 or smaller Rectangle
Substrate: Roll Up
Other: With or without flags, or ballast
Mounting Ht: 60 Inches

Request Number 11:
Stands: SS548UCR, SS548UCRA, SS560UCR, SS560UCRA, SS548UCRX,
SS548UCRAX, SS560UCRX, SS560UCRAX
Signs: 60x60 or smaller Diamond or Square
48x60 or smaller Rectangle
Substrate: Roll Up
Other: With or without flags, or ballast
Mounting Ht: 13 Inches

Request Number 12:
Stands: SS548, SS548E, SS548A, SS548AE, SS548C, SS548CE, SS548CA,
SS548CAE
Signs: 48x48 or smaller Diamond or Square
48x60 or smaller Rectangle
Substrates: .080 Al, Endurance, 6.35mm SP, 10mm CP, HDPE, Alpolic, 3-4mm ACS
Other: With or without flags, light, or ballast
Mounting Ht: 19 Inches

Abbreviations used in the above requests are:
  Al.: Solid aluminum substrate
  SP: Solid plastic (ABS) substrate
  CP: Corrugated plastic
  HDPE: Hollow core blow molded high density polyethylene waffle pattern substrate
  Alpolic: 2 mm aluminum laminate composite substrate
  ACS: Aluminum composite substrate/aluminum laminate 3 or 4 mm thick.

Enclosure #1 is a summary of the acceptances that this request embraces, with an indication of the mounting height of each sign that was tested and is to be considered for acceptance.

Testing
Full-scale automobile testing was conducted on your company’s devices. Generally, two stand-alone examples of the device were tested in tandem, one head-on and the next placed six meters downstream turned at 90 degrees, as called for in our guidance memoranda. In some cases, different combinations of sign sizes and/or substrates were used on the two stands tested in order to qualify a broader range of hardware. The “worst case scenario” tests for the head-on and 90-degree impacts were discussed in advance with Mr. Artimovich. Enclosure #2 is a summary of the 37 crash tests conducted to support the requests. Enclosure #3 is another summary which relates the individual stands to the tests conducted as part of this submission, as well as to earlier FHWA letters of acceptance which support the individual request. Enclosure #4 is a summary of the product description and a glossary of terms used to describe the variations in your company’s stands. Enclosure #5 contains a drawing of each stand, for reference.

Findings
Damage was limited to moderate cracking of the windshield in a number of tests, as noted in Enclosure #2, plus various damage to the bumper, hood, and roof of the test vehicles. There were no instances of passenger compartment penetration or intrusion.

The results of the testing met the FHWA requirements and, therefore, the devices described in the various requests above and detailed in the enclosed tables and drawings are acceptable for use on the NHS under the range of conditions tested, when proposed by a State.

Please note the following standard provisions that apply to FHWA letters of acceptance:
Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor conformity with the Manual on Uniform Traffic Control Devices.

Any changes that may adversely influence the crashworthiness of the device will require a new acceptance letter.

Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the device being marketed is significantly different from the version that was crash tested, it reserves the right to modify or revoke its acceptance.

You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.

You will be expected to certify to potential users that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance, and that they will meet the crashworthiness requirements of FHWA and NCHRP Report 350.

To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-100 shall not be reproduced except in full. This letter, and the test documentation upon which this letter is based, is public information. All such letters and documentation may be reviewed at our office upon request.

The may include patented components and if so are considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if proprietary devices are specified for use on Federal-aid projects, except exempt, non-NHS projects, they: (a) must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with existing highway facilities or that no equally suitable alternative exists or; (c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which is enclosed.

Sincerely yours,

Carol H. Jacoby, P.E.
Director, Office of Safety Design

Enclosure
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Notes: Maximum Sign size = 60x60 diamond/square, or 48x60 rectangle
Check Product Literature for actual capacity
Rigid rectangular signs mounting height is usually 2-3 inches higher than diamond shape
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* Interpretation: Vehicle damaged prior to this test.

** 50 lb Sand Bag
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* Interpretation: Windshield had minor cracking prior to this test.

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SSS60: X footprint stand with telescopic steel square tube legs. The sign support assembly consists of a pivoting steel tube upright that contains a telescopic steel tube mast topped with 3 flag holders, built in sign rigid and roll up sign holders, and is connected to the base via two vertically positioned extension springs. This stand supports rigid or roll up signs at a normal operating height of 60 inches (1524mm) above the ground.

SSS60E: Same as the SSS50 except the telescopic mast is longer to accommodate 60x60 signs

SSS60A: Same as the SSS50 except the legs are square aluminum tubing.

SSS60AE: Same as the SSS60A except the telescopic mast is longer to accommodate 60x60 signs.

SSS60UC: Same base and upright construction as SSS50 except special telescopic mast supports only roll up signs via a clamping mechanism that captures the vertical rib.

SSS60UCX: Same as SSS60UC without mechanical clamping assembly. Made to accept 1x1/snap button.

SSS60UCA: Same as SSS60UC except the legs are square aluminum tubing.

SSS60UCAx: Same as SSS60UCA without mechanical clamping assembly. Made to accept 1x1/snap button.

SSS60UCR: Same X footprint stand as SSS50 but the sign support assembly consists of a rigid tube welded to the base and supports only roll up signs via a clamping mechanism that captures the vertical rib.

SSS60UCRX: Same as SSS60UCR without mechanical clamping assembly. Made to accept 1x1/snap button.

SSS60UCRA: Same as SSS60UCR except the legs are square aluminum tubing.

SSS60UCRAX: Same as SSS60UCRA without mechanical clamping assembly. Made to accept 1x1/snap button.

SSS548: Same as SSS560 but reduced in size and weight accordingly for mounting signs at an operating height of 21 inches (533mm) above the ground. This stand supports rigid or roll up signs.

SSS548E: Same as SSS548 except telescopic mast is longer to accommodate 60x60 signs or to allow roll up signs only to be mounted up to a maximum height of 60 inches (1524mm).

SSS548A: Same as SSS548 except legs are square aluminum tubing.

SSS548AE: Same as SSS548A except mast is longer to accommodate 60x60 signs or to allow roll up signs only to be mounted up to a maximum height of 60 inches (1524mm).

SSS548C: Same as SSS548 except legs and mast telescope to make the unit more compact.

SSS548CE: Same as SSS548C except mast is longer to accommodate 60x60 signs or to allow roll up signs only to be mounted up to a maximum of 60 inches (1524mm).

SSS548CA: Same as SSS548C except legs are square aluminum tubing.

SSS548CAE: Same as SSS548CA except mast is longer to accommodate 60x60 signs or to allow roll up signs only to be mounted up to a maximum of 60 inches (1524mm).

SSS548UC: X footprint stand with telescopic steel square tube legs. The sign support assembly consists of a pivoting steel tube upright that is connected to base via two vertically positioned extension springs. The upright contains a clamping mechanism that captures the vertical rib of a roll up sign at a 21 inch (533mm) mounting height. The unit is more compact and weighs less than conventional stands and only supports roll up signs.

SSS548UCX: Same as SSS548UC without mechanical clamp assembly. Made to accept 1x1/snap button.

SSS548UCA: Same as SSS548UC except legs are made from aluminum square tubing.

SSS548UCAx: Same as SSS548UCA without mechanical clamp assembly. Made to accept 1x1/snap button.

SSS548UCR: X footprint stand with telescopic steel square tube legs. The sign support assembly consists of a rigid tube upright welded to the base and supports only roll up signs via a clamping system that captures the vertical rib.

SSS548UCRX: Same as SSS548UCR without mechanical clamp assembly. Made for 1x1/snap button.

SSS548UCRA: Same as SSS548UCR except legs are made from aluminum square tubing.

SSS548UCRAX: Same as SSSUCRA without mechanical clamp assembly. Made for 1x1/snap button.

SS1: Tripod Stand with rigid steel legs and telescopic mast that supports a roll up or rigid sign.

Type III Barricade: Any Type III barricade that has been accepted as crashworthy by the FHWA.

Alpolic: Signs with this designation are manufactured from Alpolic 350 a 2mm aluminum composite material and covered with 3M Diamond Grade reflective sheeting or without any sheeting.

AI: Signs with this designation indicate alloy 5052HB3 solid aluminum sheet in the thickness gauge and size specified and covered with 3M Diamond Grade reflective sheeting or without any sheeting.

Roll Up: Signs with this designation indicate either mesh fabric, 3M RS-34, or 3M RS-24 Diamond Grade roll up material with cloth or plastic pockets and either two or three cross braces (ribs) depending on the sign shape and application.

SP: Indicates a solid plastic substrate most commonly ABS.

CP: Indicates a corrugated plastic substrate.

HDPE: Indicates a hollow core blow molded high density polyethylene waffle pattern substrate.

Endurance: Indicates a corrugated thermoplastic material manufactured by Relxite Corporation.

Flag: Indicates a 24x24 vinyl flag mounted on a 3/4x36 wooden dowel KSI Model No. VFO2436.

Light: Empcolite Model 212 Type B flashing light with batteries, and plastic mounting adapter.

Ballast: Sand bags weighing 45 to 55 lbs.

Supp. Panel: This term refers to an additional sign mounted under the primary sign using Alpolic, Roll Up, or 10mm CP.

3-4mm ACS: An aluminum composite material similar to Alpolic 350 but provided in a thickness of either 3 or 4 mm.
SS560

BACK VIEW

TELESCOPIC MAST 25.4MM x 1.6MM
ROLL UP SIGN MOUNTING BRACKET
RIGID SIGN MOUNTING BRACKET
EXTENSION SPRINGS

1524MM

1581MM

2743MM

3241MM

1220MM

FLAG HOLDERS

.080 ALUMINUM SIGN
REFER TO DRAWING # K0236

BRONZE BEARING PIVOT
REFER TO DETAIL A ANTI-SKID RUBBER TIP

FRONT VIEW

DETAIL - A -

TOP VIEW

LOCKED

UN-LOCKED

SIDE VIEW

BASE
31.75MM X 2.1MM SQUARE STEEL TUBING WITH
4.91MM STEEL LEG MGT.FLANGES

LEGS
31.75MM X 1.6MM SQUARE STEEL TUBING

TELESCOPIC MAST 25.4MM X 1.6MM SQUARE STEEL TBC.
SPRINGS - EXTENSION TYPE
FINISH - ZINC

Korman Signs

SCHEMATIC DRAWING FOR MODEL SS560
HEAVY DUTY FLEXIBLE SIGN STAND WITH
AN .080 ALUMINUM SIGN

SIZE  FSCM NO.  DWG NO.  REV
---  ------  -------  ----

SCALE = NOT TO SCALE  9/13/99  SHEET  SDV
SS560E

BRAKE VIEW

TELESCOPIC MAST 25.4MM x 1.6MM
NOTE: MAST WILL EXTEND ENOUGH TO ACCOMODATE 60X60 SIGNS
ROLL UP SIGN MOUNTING BRACKET
RIGID SIGN MOUNTING BRACKET
EXTENSION SPRINGS

FRONT VIEW

FLAG HOLDERS
.080 ALUMINUM SIGN
REFER TO DRAWING # 19239
BRONZE BEARING PIVOT
REFER TO DETAIL A ANTI-ROD NUMBER TIP

DETAIL - A -

TOP VIEW

LOCKED
UN-LOCKED

SIDE VIEW

BASE
31.75MM X 2.1MM SQUARE STEEL TUBING WITH 4.91MM STEEL LEG NUTS/FLANGES
LEG
31.75MM X 1.6MM SQUARE STEEL TUBING
TELESCOPIC MAST 25.4MM X 1.6MM SQUARE STEEL TDG.
SPRINGS - EXTENSION TYPE
FINISH - ZINC

Korman Signs

SCHEMATIC DRAWING FOR MODEL SS560E
HEAVY DUTY FLEXIBLE SIGN STAND WITH AN .080 ALUMINUM SIGN

SIZE FSCM NO. DWG NO. C9219C
SCALE - NOT TO SCALE 9/13/99 SHEET D2L
SS560A

FLAGS REFER TO DWG. K9239A (OPTIONAL)

RIGID ALPOLIC 350 SIGN – REFER TO DWG. K9249

RIGID SIGN MOUNTING BRACKET

EXTENSION SPRINGS

ROLL UP SIGN MOUNTING BRACKET

TELESCOPIC MAST 25.4 X 2MM

3658MM

1626MM

3353MM

1220MM

4369MM

1524MM

1524MM (60°)

BRONZE BEARING PIVOT

SEE LATCH DETAIL

ANTI-SKID RUBBER TIP

LEG LATCH DETAIL

KICK RELEASE LEVER

TOP VIEW LOCKED

TOP VIEW UN-LOCKED

SIDE VIEW

BASE:
31.75MM X 2.1MM SQUARE STEEL TUBING WITH 4.91 MM STEEL LEG MTG. FLANGES

LEGS:
31.75MM X 2.56MM SQUARE ALUMINUM TUBING

TELESCOPIC MAST – 25.4MM X 2.56MM SQUARE ALUMINUM TBG.

SPRINGS – EXTENSION TYPE

FINISH – ZINC

Korman Signs Inc.

SCHEMATICAL DRAWING FOR MODEL SS560A
FLEXIBLE SIGN STAND WITH A 2MM ALPOLIC SIGN

SCALE: NOT TO SCALE

DATE: 6/12/02 DRAWN BY: DCC

DWG. NO. C9209A
**Legend per MUTCD**

**NOTE:** SS560UCR IDENTICAL EXCEPT LEGS ARE 24" (610M) LONGER.

Model SS548UCR
Ultra Compact Sign Stand

**BASE**
31.75 mm x 2.11 mm SQUARE STEEL TUBING WITH 4.91 mm STEEL LED MG & FLANGES

**LEGS**
TELESCOPIC 31.75 mm AND 28.43 mm SQUARE STEEL TUBING WITH 2.1 mm AND 1.8 mm WALL THICKNESS, RESPECTIVELY

**FINISH** - ZINC

**Model 4848DFUC**
Roll Up Sign

Fabric
1220 mm x 1220 mm Reflective Roll up Sign Sheeting

Crossbraces
Vertical 9.53 mm thick, 31.75 mm wide, 1645 mm long
Horizontal 4.66 mm thick, 31.75 mm wide, 1645 mm long pultruded fiberglass
**SS560UCRAX**

**Back View**
- Vertical rib of roll up sign
- Half-height (max.) alum. mast 25.4mm sq. x 2.54mm thick attached to vert. rib — see detail No. 1, DWG KB609
- Snap button attachment to base tube
- 3175mm
- 2464mm
- 470mm to top of upright
- 343mm

**Top View**
- 1626mm
- 583mm
- 3356mm
- 1219mm max.

**Side View**
- 343mm
- 60 x 60
- 48 x 48
- 48 x 60
- 204mm
- 1855mm
- 2444mm

**Flags**
- Refer to DWG. K9239A (optional)

**Roll up sign**
- Refer to DWG. KB69X

**Velcro**

**See latch detail**

**Flag holders**

**Anti-skid rubber tip**

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**Korman Signs INC.**

**Schematic drawing for model SS560UCRAX**

**Flexible sign stand with a 6060DFUXC ROLL UP SIGN**

**Base:**
- 38.3mm and 32.07mm square steel tubing with 4.91 mm steel leg mtg. flanges

**Legs:**
- Telescopic 31.75mm and 25.42mm square alum. tubing with 2.56mm and 2.46mm wall thickness, respectively

**Finish:**
- Zinc/aluminum

**Clamping:**
- See detail No. 1 drawing KB609

**Scale:** Not to scale

**Date:** 6/12/02

**Drawn by:** DCC

**Drawing No.:** KB49T
BASE
31.75MM X 2.1MM SQUARE STEEL TUBING WITH 4.91MM STEEL LEG MTG.FLANGES

LEGS
TELESCOPIC 31.75MM AND 25.42MM SQUARE STEEL TUBING WITH 2MM AND 1.8MM WALL THICKNESS, RESPECTIVELY

TELESCOPIC MAST WITH 25.4MM AND 19MM SQUARE STEEL TUBING WITH 1.6MM AND 1.6MM WALL THICKNESS, RESPECTIVELY

SPRINGS - EXTENSION TYPE
FINISH - ZINC

SCHEMATIC DRAWING FOR MODEL SS548C
FLEXIBLE SIGN STAND WITH A 4848DF ROLL UP SIGN

SIK Korman Signs Inc.

SIZE | FSCM NO. | DWG NO. | REV
--- | --- | --- | ---
| | | C92280 | |

SCALE - NOT TO SCALE 10/28/09 SHEET DSC
NOTE: Model SS548CE is identical except mast is longer to allow mounting roll-up signs up to a mounting ht. of 60" (1524 mm)

BASE
31.75mm x 2.1mm SQUARE STEEL TUBING WITH 4.91mm STEEL LEG MTD FLANGES

LEGS
TELESCOPIC 31.75mm AND 25.42MM SQUARE STEEL TUBING WITH 2mm AND 1.8mm WALL THICKNESS, RESPECTIVELY

TELESCOPIC MAST WITH 25.44MM AND 19MM SQUARE STEEL TUBING WITH 1.6MM AND 1.6MM WALL THICKNESS, RESPECTIVELY

SPRINGS - EXTENSION TYPE
FINISH - ZINC

SCHEMATIC DRAWING FOR MODEL SS548C
FLEXIBLE SIGN STAND WITH A 2MM ALPOLIC SIGN

SIZE  FSCM NO.  DWG NO.  REV

SCALE - NOT TO SCALE  10/6/99  SHEET  DSC
BASE:
31.75MM X 2.1MM SQUARE STEEL TUBING WITH 4.91MM STEEL LEG MFG. FLANGES

LEGS:
TELESCOPIC 31.75MM AND 25.42MM SQUARE ALUM TUBING WITH 2.56MM AND 2.46MM WALL THICKNESS, RESPECTIVELY

MAST - 2 PIECE WITH 25.4MM AND 19MM THICK SQUARE STEEL TKG. BOTH WITH 1.6MM WALL THICKNESS

SPRINGS - EXTENSION TYPE

FINISH - ZINC/ALUMINUM

SCHEMATIC DRAWING FOR MODEL SS548CA
FLEXIBLE SIGN STAND WITH A 4848DF ROLL UP SIGN

SCALE: NOT TO SCALE
DATE: 6/12/02  DRAWN BY: DCC  DWG. NO. C9229A

Korman Signs INC.
SCHEMATIC DRAWING FOR MODEL SS548CAE
FLEXIBLE SIGN STAND WITH A 4848DF ROLL UP SIGN

BASE:
31.75MM X 2.1MM SQUARE STEEL TUBING WITH
4.91 MM STEEL LEG MFG. FLANGES

LEG:
TELESCOPIC 31.75MM AND 25.42MM SQUARE ALUM
TUBING WITH 2.56MM AND 2.46MM WALL THICKNESS,
RESPECTIVELY

MAST – 2 PIECE WITH 25.4MM AND 19MM THICK
SQUARE STEEL TUBG. BOTH WITH 1.6MM WALL THICKNESS

SPRINGS – EXTENSION TYPE

FINISH – ZINC/ALUMINUM

Korman Signs
INC.

DATE: 6/12/02  DRAWN BY: DCC  DWG. NO. C61202D

NOT TO SCALE
Legend per MUTCD

Model SS548UC
Ultra Compact Sign Stand

BASE
31.75mm x 2.1mm SQUARE STEEL TUBING WITH 4.91mm STEEL LEG WTG/FLANGES

LEGS
TELESOPIC 31.75mm AND 25.42mm SQUARE STEEL TUBING WITH 2mm AND 1.8mm WALL THICKNESS, RESPECTIVELY

SPRINGS - EXTENSION TYPE
FINISH - ZINC

Model 4848DFUC
Roll Up Sign

Fabric
3M Diamond Grade Reflective Roll up Sign Sheeting #RS-24

Crossbraces(Ribs)
Vertical 9.53mm thick, 31.75mm wide, 1645mm long. Horizontal 4.66mm thick, 31.75mm wide, 1645mm long, pultruded fiberglass

Pockets
Lexan or Heavy Duty Triangular Fabric

Schematic Drawing for Model SS548UC
Ultra Compact Sign Stand w/ 48x48 Roll Up Sign

Korman Signs Inc.
**Legend per MUTCD**

**Model 4848DFUC**
Roll Up Sign

Fabric
1220mm x 1220mm Reflective Roll up Sign Sheeting

Crosstraces
- Vertical: 9.53mm thick, 31.75 mm wide, 1645 mm long
- Horizontal: 4.66mm thick, 31.75 mm wide, 1645 mm long
- Pultruded fiberglass

**Model SS548UCR**
Ultra Compact Sign Stand

**BASE**
- 31.75mm x 2.1mm SQUARE STEEL TUBING WITH 4.91mm STEEL LEG MTG FLANGES

**LEGS**
- TELESCOPIC 31.75mm and 25.42mm SQUARE STEEL TUBING WITH 2mm and 1.6mm WALL THICKNESS, RESPECTIVELY

**FINISH - ZINC**

[Image of schematic drawing for Model SS548UCR, Ultra Compact Sign Stand w/ 48x48 Roll up Sign]
SCHEMATIC DRAWING FOR MODEL SS548URCX
FLEXIBLE SIGN STAND WITH A 6060DFUCX ROLL UP SIGN

BASE:
31.75MM X 2.1MM SQUARE STEEL TUBING WITH
4.91 MM STEEL LEG MFG. FLANGES

LEGS:
TELESCOPING 31.75MM AND 25.42MM SQUARE
STEEL TUBING WITH 2MM AND 1.6MM THICKNESS,
RESPECTIVELY

FINISH – ZINC

Korman Signs
INC.

SCALE: NOT TO SCALE

DATE: 6/12/02 | DRAWN BY: DCC  | DWG. NO.: KB49R
Legend per MUTCD

Model SS548UCRA
Ultra Compact Sign Stand

Base
31.75 mm x 2.1 mm square steel tubing with 4.91 mm steel leg mtg flanges

Legs
Telescopic 31.70 and 25.42 mm square aluminum tubing with 2.56 mm and 2.46 mm wall thickness, respectively

Clamp
See Detail No 1

Model 4848DFUC
Roll Up Sign

Fabric
1220mm x 1220mm Reflective Roll up Sign Sheeting

Crossbraces
Vertical 9.53 mm thick, 31.75 mm wide, 1645 mm long. Horizontal 4.66 mm thick, 31.75 mm wide, 1645 mm long pultruded fiberglass

Korman Signs Inc.
SS1

Flags (Optional)
Refer to Drawing K9239A

Telescopic Mast
25.4mm x 1.6mm
1371mm Long

Roll up sign mounting fingers

Leg restraining chain

2565mm

1194mm

1321mm

2057mm

1172mm

Front View

Side View

Back View

Upper sign holder

0.8mm Aluminum or
Rigid Alpolic
Refer to Drawing K9249

Angle clip

1524mm

1270mm

610mm

Master Bracket
31.75mm x 2.1mm square steel tubing with
31.75mm x 0.35mm steel leg with flanges

Legs
31.75mm x 1.6mm square steel tubing

Telescopic Mast
25.4mm x 1.6mm square steel tubing

Finish - Zinc

Schematic Drawing for Model SS-1
With a 2mm Alpolic sign or .080 gauge aluminum
Size 48 x 60

Korman Signs Inc.

Size FSCM No. DWG No.
9/29/99 SHEET

9289BB

Scale - Not to Scale

DSC
FLAGS (OPTIONAL)  
REFER TO  
DRAWING K9239A

TELESCOPIC MAST  
25.4MM X 1.6MM  
1371MM LONG

ROLL UP SIGN  
MOUNTING FINGERS

LEG RESTRAINING CHAIN

1194MM

1172MM

1321MM

2388MM

1880MM

MASTER BRACKET  
31.75MM X 2.1MM SQUARE STEEL TUBING WITH  
31.75MM X 6.35MM STEEL LEG MTD, FLANGES  
LEGS  
31.75MM X 1.6MM SQUARE STEEL TUBING  
TELESCOPIC MAST  
25.4MM X 1.6MM SQUARE STEEL TUBING  
FINISH - ZINC

Korman Signs

SCHEMATIC DRAWING FOR MODEL SS-1  
WITH A 2MM ALPOLIC SIGN OR 0.080 GAUGE ALUMINUM

SIZE  
FSCM NO.  
DWG NO.  
REV

SCALE - NOT TO SCALE  
9/29/99  
SHEET  
DSC
Layout for impacts 2A and 3B

Sign mounted directly to 4's of top rail.

Extruded plastic panels.

Type III Barricade mfg'd

By Kccessories squared

Type TL133-2: Shear pin

Barricade Assy forum with 12' or 2' telescopic

Korman Signs

Test article dimensions type III
Barricade w/ 60x60 acrylic sign
No true scale