

INFORMATION HANDOUT

For Contract No. 05-1A7204

At 05-SB-101-21.0/27.1

Identified by

Project ID 0512000012

WATER SOURCE INFORMATION

Goleta Water District- Temporary Meter Program Information dated July 2014

PRODUCT INFORMATION

Temporary Alternative Crash Cushion

Crash Cushion (Type ADIEM)

Crash Cushion (QuadGuard II CZ System)

Crash Cushion (Type ABSORB)

Crash Cushion (Type ACZ 350)

Crash Cushion (Type SLED)

MANUFACTURER DRAWINGS

Alternative In Line Terminal Systems

Type SKT-SP-MGS

Type X-LITE

Type 31" X-TENSION

Alternative Flared Terminal System

FLEAT-MGS

Type SRT-31

Type 31" X-TENSION

DETAILS

Transition Detail for 31" Terminal System End Treatment with Rail Splicing at Posts to MidWest Guardrail System



Temporary Meter Program Information

July 2014

For temporary water service as defined in the District Code and Regulations, an Application for Water Service must be submitted including proposed use and expected duration of the temporary service request (not to exceed 18 months).

Temporary service will be provided through a water main 'end drain' or fire hydrant, if available. If the Project Applicant requires more than one temporary meter, a separate application is required for each service requested. If an Applicant with an active temporary service desires to relocate the temporary meter, an additional written request including any changes in use or duration must be submitted along with an installation administration charge. All Temporary Meter Applications are subject to review and approval as outlined in the District Standards and Specifications. All temporary water is subject to availability.

Application

In order for the District to approve temporary service, a standard District Application and Agent Authorization Form is required. The following must be included in the Application project description:

1. Preferred hydrant location. The District will review the proposed location for safety and accessibility prior to approval.
2. Purpose of use.
3. Requested start date.
4. Requested duration of use (maximum 18 months). The District will schedule removal of the temporary meter based upon the requested period of use.

Fees

Deposit and fees applicable from July 1, 2014 through June 30, 2015:

- \$242.00 – Installation administration charge to be paid by check to the Goleta Water District. This is the same charge for any subsequent relocation of the meter for the same project and account.
- \$1,256.00 – Refundable security deposit to cover any damages to the meter, to be paid by check to the Goleta Water District.
- The monthly service charge for a temporary meter and backflow device is \$397.48 and is prorated when applicable. The commodity charge is \$7.91 per HCF (hundred cubic feet) unit of water. These charges are billed on a monthly basis and do not need to be paid initially.

Installation

Once a complete application is submitted, the District will review the request. If the request is approved and fees and deposits received, a letter will be provided outlining any conditions as well as projected installation and removal dates. A minimum of two business days for installation can be anticipated.

Relocation

Relocation of the meter to another hydrant for the same project may also be requested in writing. If the relocation is to a different project site, a new application, fee and deposit will be required prior to District review.

Removal

The meter will be removed on the date determined in the District approval letter. The customer may request, in writing, an adjustment of the service termination date for either early removal or extension of service ten business days in advance. Requests for extension of service will be reviewed by the District prior to approval of such extension. Following removal of the meter, a final invoice will be prepared and forwarded to the customer with the final balance or refund due.

Please be aware that temporary water service is not guaranteed. Temporary water service may be curtailed or limited in the future by Water Shortage Emergencies and related District actions, including actions under Water Code Sections 350 et seq.

ADIEM™

Advanced Dynamic Impact Extension Module



The Advanced Dynamic Impact Extension Module (ADIEM™) is a cost effective energy-absorbing system that utilizes lightweight, crushable concrete modules. Enhanced coatings and optional covers provide additional protection from the elements.

Features

- No site-specific foundation pad needed.
Can be placed on existing surfaces such as concrete, asphalt or compacted soil/base material.
- Composed of three component groups; reinforced concrete base, engineered lightweight concrete modules, and anchor brackets.

- Re-directive capability.
(Beginning Length of Need at 15' (4.6 m) from nose.)
- NCHRP Report 350 Test Level 3 compliant.

Installation and Repair Advantages

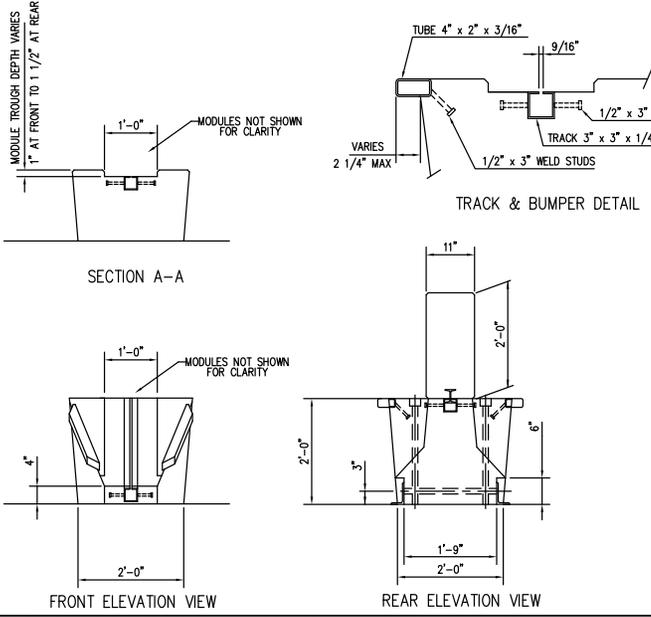
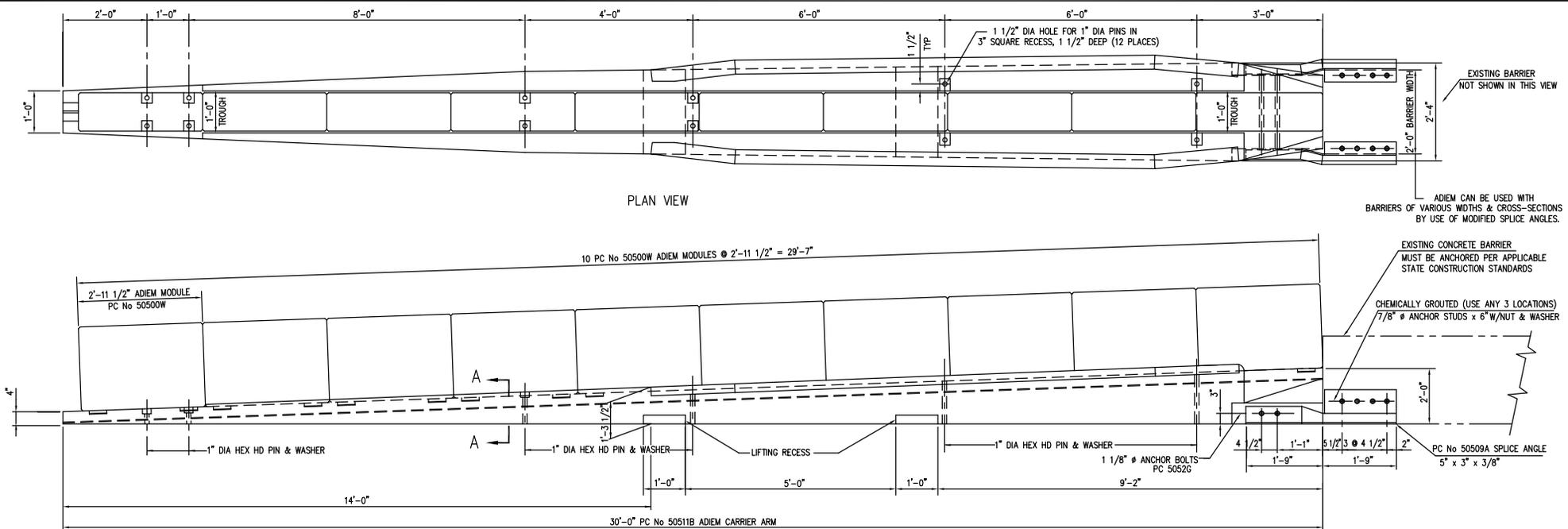
- Pinned anchorage allows unit to be moved and relocated quickly.
- All ten lightweight modules are common in design and composition, requiring no sequence priority when attaching or replacing damaged modules.
- Impact damage to the product is typically confined to the modules making repair a simple process.
- Contains no torque-sensitive bolts.
- No concrete to pour.

Specifications

- System Length: 30'- 0" (9.2 m) Base
- System Width: 32" (313 mm) at Widest Point
- System Height: 28" (712 mm) at Nose, 48" (1.2 m) at Hazard
- Base Weight: 11,500 lbs. (5216 kg)

1-800-527-6050
www.highwayguardrail.com

1-888-323-6374
www.energyabsorption.com



BILL OF MATERIAL			ANCHOR PIN SCHEDULE PER SURFACE (SEE NOTES 1-5)		
PRODUCT CODE	QTY	DESCRIPTION	PCC	ACP	BASE
50500W	10	MODULES x 2'-11 1/2"			
50511B	1	BASE x 30'-0"			
50508A	1	SPLICE ANGLE x 3'-6" RT			
50509A	1	SPLICE ANGLE x 3'-6" LT			
6549W	1	GARNA-THANE COATING (1 GAL)			
5052G	2	1 1/8" Ø x 25" HEX HD BOLT			
4963G	4	1 1/8" WASHER			
3976G	2	1 1/8" HEX NUT			
4616G	6	7/8" Ø STUD x 6" (FULL THD)			
3725G	6	7/8" WASHER			
3735G	6	7/8" HEX NUT			
5206B	1	ADHESIVE HY150 CARTRIDGE			
3900G	12	1" WASHER			
5665G	SEE SCHEDULE	1" Ø HEX HD PIN x 48"			4
5642G		1" Ø HEX HD PIN x 42"		4	
5650G		1" Ø HEX HD PIN x 36"	4		4
5641G		1" Ø HEX HD PIN x 30"		4	4
5646G		1" Ø HEX HD PIN x 24"	4	4	
5643G		1" Ø HEX HD PIN x 18"	4		

- #### ADIEM INSTALLATION INSTRUCTIONS
- The ADIEM base is to be placed on a smooth surface (the same horizontal plane as the concrete barrier) and parallel to the mainline or ramp traveled lane(s).
 - Install anchor rods for ADIEM base by driving in soil or soft asphalt or driving in pre-drilled holes for hard asphalt or concrete (no epoxy required). The base should not be moved after the holes are drilled. The holes should be drilled using, at a minimum, a 35# hammer and minimum 36 inch long drill bit. (A 50# hammer is recommended.)
 - Attach connection brackets to base with two (2) 1 1/8" X 25" hex head bolts provided. Then field drill holes in the existing barrier and attach connection brackets to it with chemically grouted hardware provided.
 - Oil the ADIEM base track. Slide the modules onto the base. Be careful not to damage edges of the modules while sliding onto the base.
 - If the modules are scuffed or nicked, apply GARNA-THANE coating to the affected area.
 - Recommended tools and equipment:
35/50# air hammer/drill
1 3/8" Ø x 36" rock drill
1 1/4" Ø x 12" rock drill
Sledge hammer
Oil
Wrenches

OPTIONAL ANCHOR ITEMS	
PRODUCT CODE	DESCRIPTION
5205B	ADHESIVE DISPENSER
5207B	MIXER HIT HY150 (NOZZLE)
5208B	FILLER HIT HY150 (FILLER TUBE)
5209B	BIT TE-C+ 11/16-18 (11/16" Ø BIT)

- #### ALTERNATE ADIEM INSTALLATION INSTRUCTIONS
- At a holding site, the modules are slid into the ADIEM base after the base track. Be careful not to damage the edges of the modules while sliding them onto the base.
 - If the modules are scuffed or nicked, apply GARNA-THANE coating to the affected area.
 - The unit is then delivered to the job site. The unit is to be placed on a smooth surface (the same horizontal slope as the concrete barrier) and parallel to the mainline or ramp traveled lane (s).
 - The front module should be removed so the remaining modules can be shifted for easy access for drilling the anchor rod holes.
 - Install anchor rods for ADIEM base by driving in soil or soft asphalt or driving in predrilled holes for hard asphalt or concrete (no epoxy required). The base should not be moved after the holes are drilled. The holes should be drilled using, at a minimum, a 35# hammer and a minimum 36 inch long drilling bit. (A 50# hammer is recommended.)
 - Attach connection brackets to base with two (2) 1 1/8" X 25" hex head bolts provided. Then field drill holes in the existing barrier and attach connection brackets to it with chemically grouted hardware provided.

- ★ EACH CARTRIDGE INCLUDES 1 EACH : MIXER HY 150 CARTRIDGE(NOZZLE) : FILLER HIT HY 150 (FILLER TUBE)
- NOTES:
1) ANCHOR PINS ARE 1" DIA HEX HD, POINTED, GALV RODS (A307)
2) PORTLAND CEMENT CONCRETE (PCC)
3) ASPHALTIC CONCRETE (ACP)
4) BASE AND/OR COMPACTED SOIL (BASE)
5) ADIEM INSTALLATION NOT RECOMMENDED ON LOOSE SOIL.

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REV.	CHKD.	BY	DATE	REMARKS
6	B.T.	L.H.	12/10/03	REPLACED GROUT WITH HILTI, UPDATED DWG
5	L.H.	03/12/03		DELETED NOTE #7, REVISED NOTE #3
4	D.D.	L.H.	12/17/99	REVISED COATING, ADDED TITLE BLOCK
3	BT	3-14-97		DELETED PC 5484, ADDED PC 5052, CHG QTY PC 3976
2	BT	2-14-97		GENERAL UPDATES

ERECTION DETAILS

DRAWN	B.TAKACH
CHECKED	D.D.
APPROVED	
DATE	3/19/96
ENG. FILE #	SS349-01E
SHTS:	E1 OF 1
DRAWING NO.	SS 349
REV.	8

TRINITY INDUSTRIES, INC.
 HIGHWAY SAFETY PRODUCTS
 2525 STEMMONS FREEWAY, DALLAS, TX 75207

QUADGUARD[®] CZ SYSTEM

PORTABLE NON-GATING REDIRECTIVE CRASH CUSHION FOR WORK ZONES



OVERVIEW

The innovative QuadGuard CZ System has been improved with the addition of modular plate bases to reduce anchorage and speed installation. The QuadGuard CZ System meets all of today's strict crash cushion performance criteria. The QuadGuard CZ System provides the same lifesaving efficiency and features of the permanent QuadGuard System, in a compact, portable system that is easier than ever to install.

During head-on impacts, the QuadGuard Systems telescope rearward and crush the cartridges to absorb the energy of impact. When impacted from the side at angles up to 20°, the QuadGuard Systems safely redirect the errant vehicle back toward its original travel path without allowing gating.

FEATURES AND BENEFITS

- ▶ NCHRP 350 TL-3 performance requires only 30 anchors
- ▶ Compact, modular design can accommodate speeds from 70 km/h (45 mph) to 115 km/h (71 mph)
- ▶ 80% reusability after most design impacts
- ▶ Lifting points allow easy repositioning as a complete unit
- ▶ Easy to access anchor holes allow for fast installation
- ▶ Available in 610, 762 & 910 mm (24, 30 & 36 in.) widths to protect a wide array of hazards

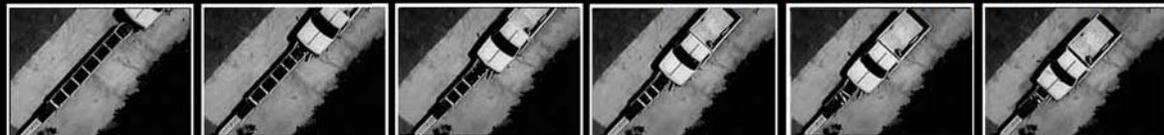


Modular plate base reduces anchorage and speeds installation

Built-in lifting points allow the system to be moved as a complete unit



ENERGY ABSORPTION
SYSTEMS, INC.



SAVING LIVES BY DESIGN

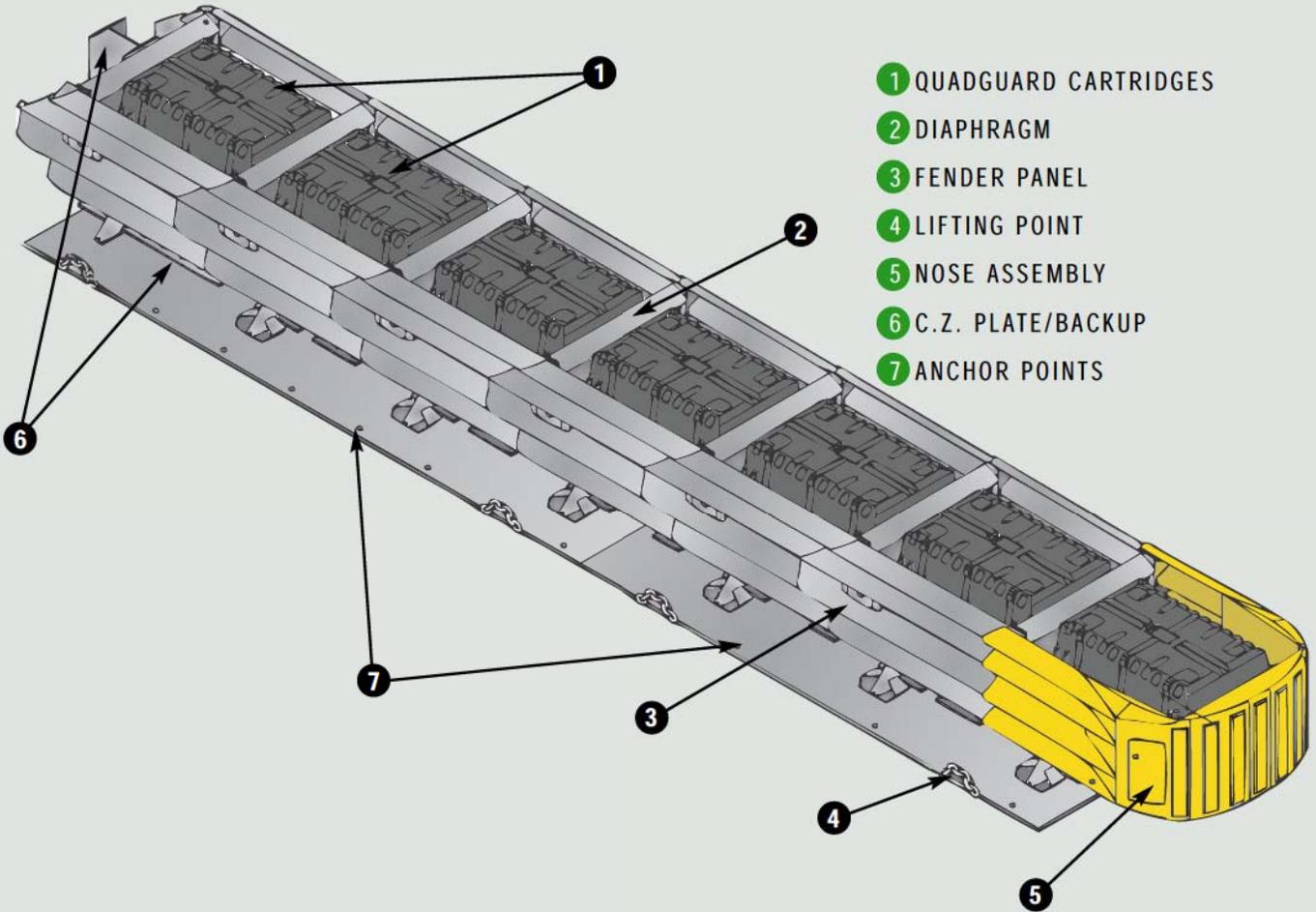
QUICK & EASY INSTALLATION & REMOVAL



- ▶ Only 30 anchor bolts needed for TL-3 six bay unit
- ▶ Easy access to anchor holes
- ▶ Entire system can be moved as a single unit using lifting points

SPECIFICATIONS

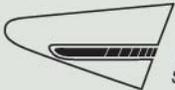
Minimum Width at Backup	610.0 mm	(2')
Maximum Width at Backup	915 mm	(3')
Weight (typical 6-bay unit)	1594.0 kg	(3512 lb.)
Length (typical 6-bay unit)	6.4 m	(21')



- 1 QUADGUARD CARTRIDGES
- 2 DIAPHRAGM
- 3 FENDER PANEL
- 4 LIFTING POINT
- 5 NOSE ASSEMBLY
- 6 C.Z. PLATE/BACKUP
- 7 ANCHOR POINTS



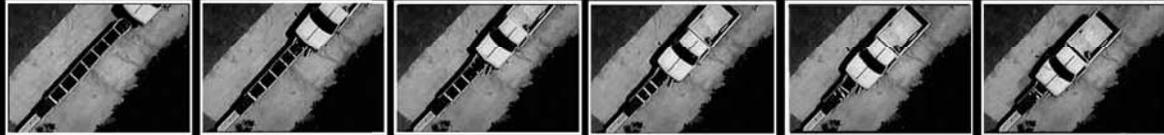
WWW.QUIXTRANS.COM



ENERGY ABSORPTION
SYSTEMS, INC.

35 East Wacker Drive • Chicago, IL 60601
Tel: (312) 467-6750 • Fax: (312) 467-9625
www.energyabsorption.com

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Distributed By:

General specifications for the QuadGuard System are subject to change without notice to reflect improvements and upgrades. Additional information is available in the Product Manual for this system. Contact Energy Absorption Systems for details.

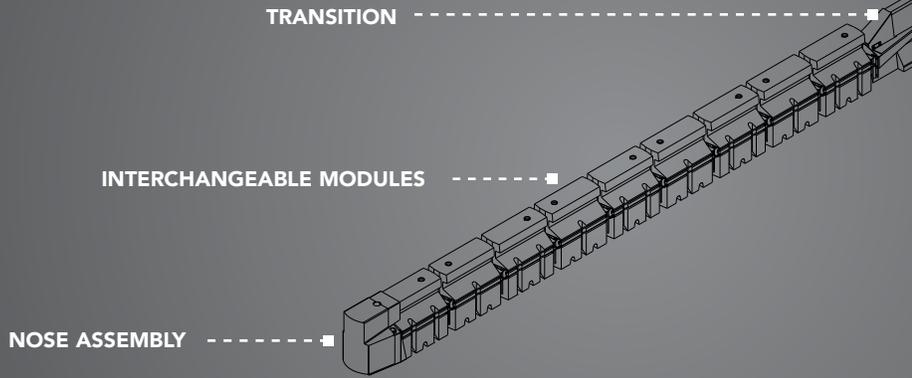
ABSORB 350® | NON-REDIRECTIVE CRASH CUSHION - SACRIFICIAL

- ANCHORLESS INSTALLATION - NO FOUNDATION REQUIRED
- COST EFFECTIVE PROTECTION FROM CONCRETE BARRIER ENDS
- WORLDWIDE PROVEN PERFORMANCE
- NCHRP 350 ACCEPTED



PHYSICAL SPECIFICATIONS

Classification	NR-S	
TL-3 Length	32'	9.7 m
Width	24"	610 mm
Height	32"	813 mm
Module Weight Empty	110 lb.	50 kg
Test Level	NCHRP 350	TL 1/2/3



NARROW ANCHORLESS WATER FILLED CRASH CUSHION

No ground anchoring, the largest selection of transitions and modular technology allow the ABSORB 350 System to be used in multiple speed conditions. The ABSORB 350 System is ideal for contractors due to the ease of maintenance after an impact and quick deployment. At 24" (610 mm) wide, it is ideally suited for narrow areas where road and workspace is limited. The ABSORB 350 System is easy to restore after an impact because the System uses uniform modular components. The use of standardized modular components also helps to reduce inventory costs.

FREQUENTLY ASKED QUESTIONS

Can the nose be angled off the barrier to better face traffic?

Yes, as long as all of the ABSORB 350 modules remain pinned and connected. For larger angles, it is recommended that the last barrier section be moved to face traffic.

Can the ABSORB 350 System be moved while filled with water?

Yes, the System is rigid enough to be repositioned filled with water by sliding the optional wheel / jack assembly under each element.

What transitions are available?

Dozens of transition options are available, including attachments to; Standard NJ / J / K / F, Wide / X-Wide NJ, I-Lock, Smooth Face, JJ Hook, QMB, ArmorGuard®, Orion®, BarrierGuard® and ZoneGuard®.

Can the ABSORB 350 System be used during cold weather?

Since ABSORB 350 modules have no internal steel parts, the use of any approved anti icing chemical is acceptable.

FEATURES

- » Rapid deployment and retrieval
- » No ground anchoring required
- » Low initial price
- » Narrow footprint
- » Can be deployed on almost any road surface
- » Meets NCHRP 350 TL-1, TL-2, TL-3 test criteria
- » Easily transitioned to multiple widths and shapes of barriers
- » Nose and transition are reusable after most design impacts
- » Approved for use in permanent and work zone locations

DISTRIBUTED BY:



Lindsay Transportation Solutions Sales and Services, Inc.

180 River Road • Rio Vista, CA 94571 • +1 707.374.6800 U.S. Toll Free: 888.800.3691 • www.barrriersystemsinc.com

General details for the ABSORB 350 System are subject to change without notice to reflect improvements and upgrades.

Additional information is available from Lindsay Transportation Solutions Sales and Services, Inc. © Lindsay Transportation Solutions, Inc.

PT # ABS04-03252013

ACZ-350™

PORTABLE
TL-2 & TL-3
END
TREATMENT



OVERVIEW

The ACZ-350 System combines ease of use and NCHRP 350, gating, non-redirective TL-2 and TL-3 crash cushion performance for work zone protection. This partially reusable crash cushion can be easily transported, and installed with No Roadway Anchors.

SUPERIOR IMPACT PERFORMANCE

The unique design of the ACZ-350 systems protects errant drivers from impacting concrete barrier ends, and also contains the errant vehicle from vaulting into the workzone.

NON-REDIRECTIVE, GATING CRASH CUSHION SYSTEM

All Crash Cushions defined as Non-redirective and Gating require a clear zone. Clear Zones are areas behind the crash cushion that NO workers, machinery, obstructions or other debris could interfere with an errant vehicle. This area should also remain relatively flat. If there are any questions or concerns, please contact your local Energy Absorption Systems, Inc. representative.

FEATURES AND BENEFITS

- No Vaulting
- Safely contains errant vehicle
- Accommodates impacts up to 2,000 kg, (4,500 lbs) traveling at speeds up to 100 km/h (62 mph)
- Simple and Fast Installation
- Protects Permanent or Temporary, Steel or Concrete Barrier
- Ideal for Work Zones
- No Foundation or Anchoring

EASY CLEAN-UP
NARROW PROFILE
MINIMUM INTRUSION
LOW COST/ AFFORDABLE
QUICK/EASY TO MOVE

ACZ-350™



ENERGY ABSORPTION
SYSTEMS, INC.

SAVING LIVES BY DESIGN®

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EASY DEPLOYMENT AND REMOVAL

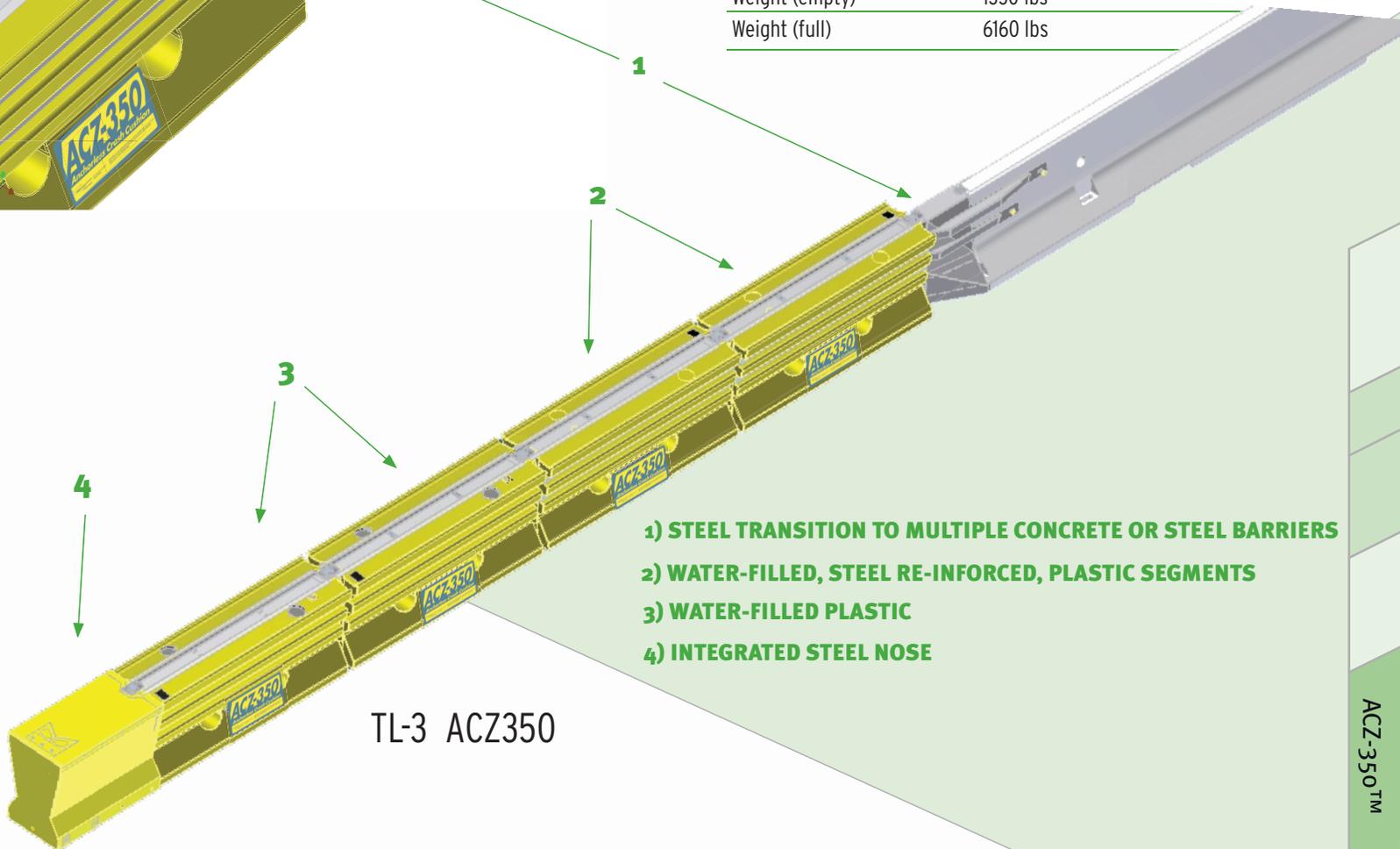
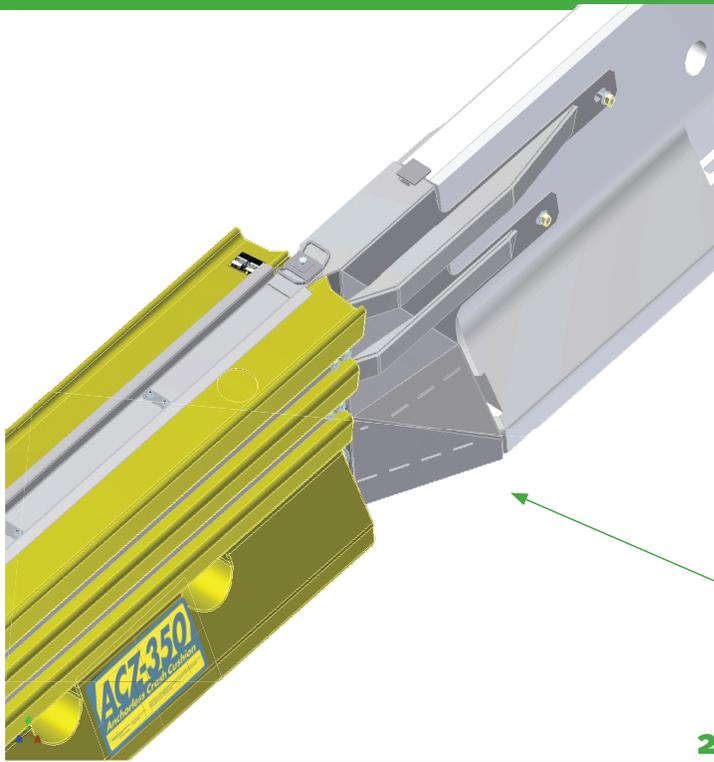
The ACZ-350 System can be easily unloaded and positioned without cranes or heavy equipment. Deployment involves three simple steps:

1. Unload
2. Position and pin barrier sections.
3. Fill Segments with water

SPECIFICATIONS

TL-3

Length	31'-7" (9.6 m)
Width	1'-10" (.6m)
Height	2' 9" (.8m)
Weight (empty)	1350 lbs
Weight (full)	6160 lbs



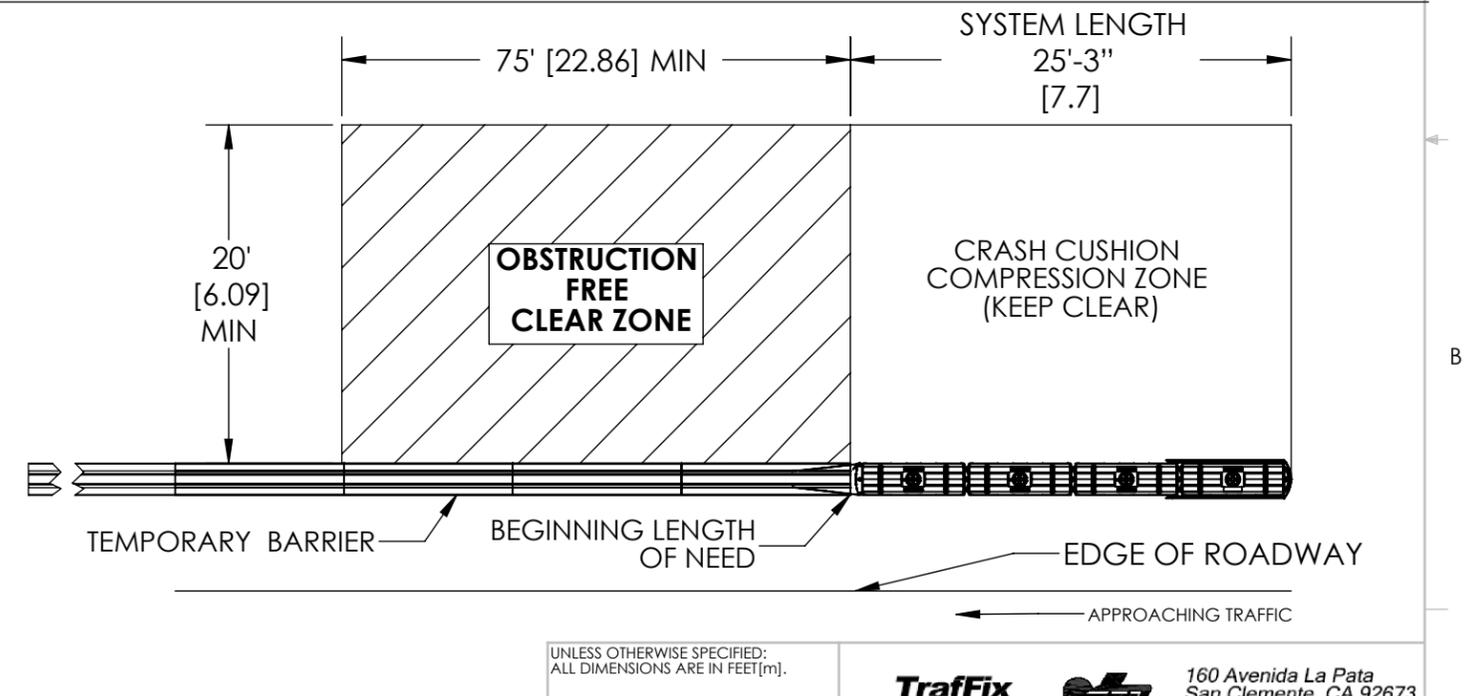
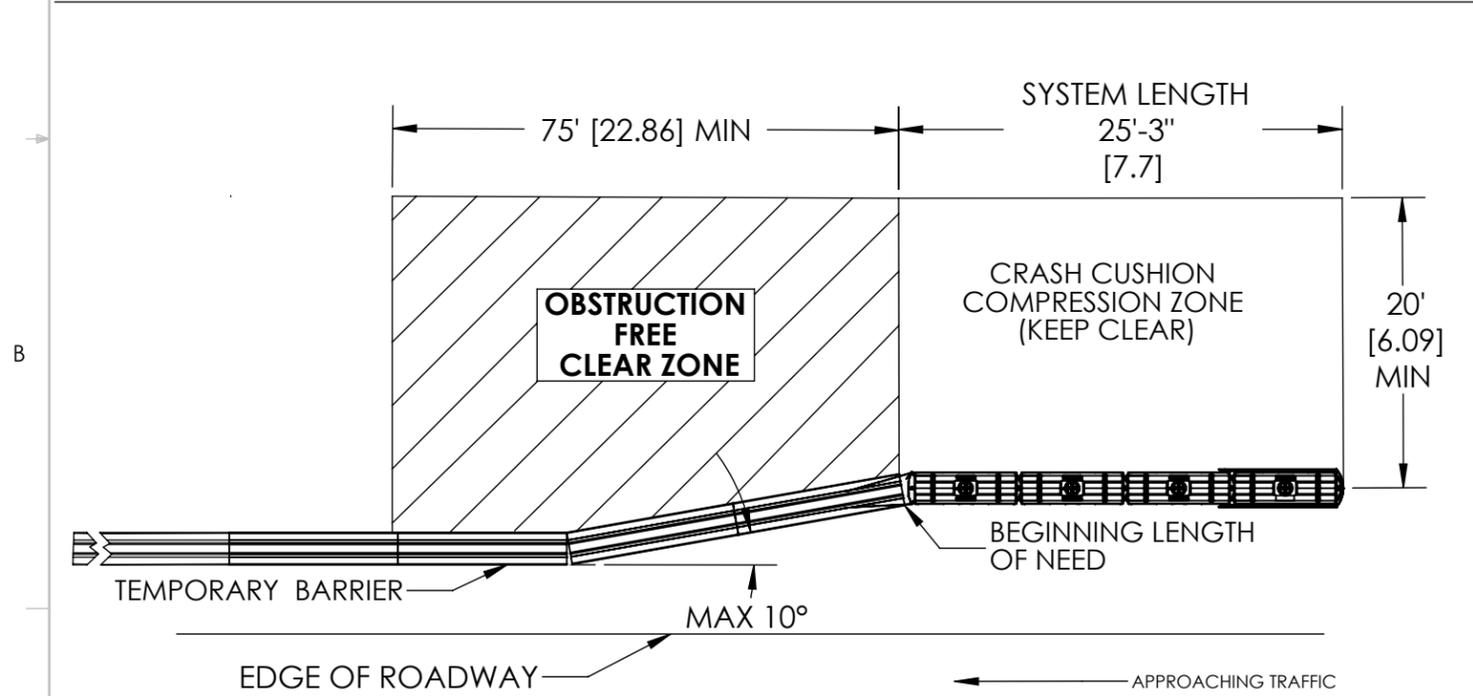
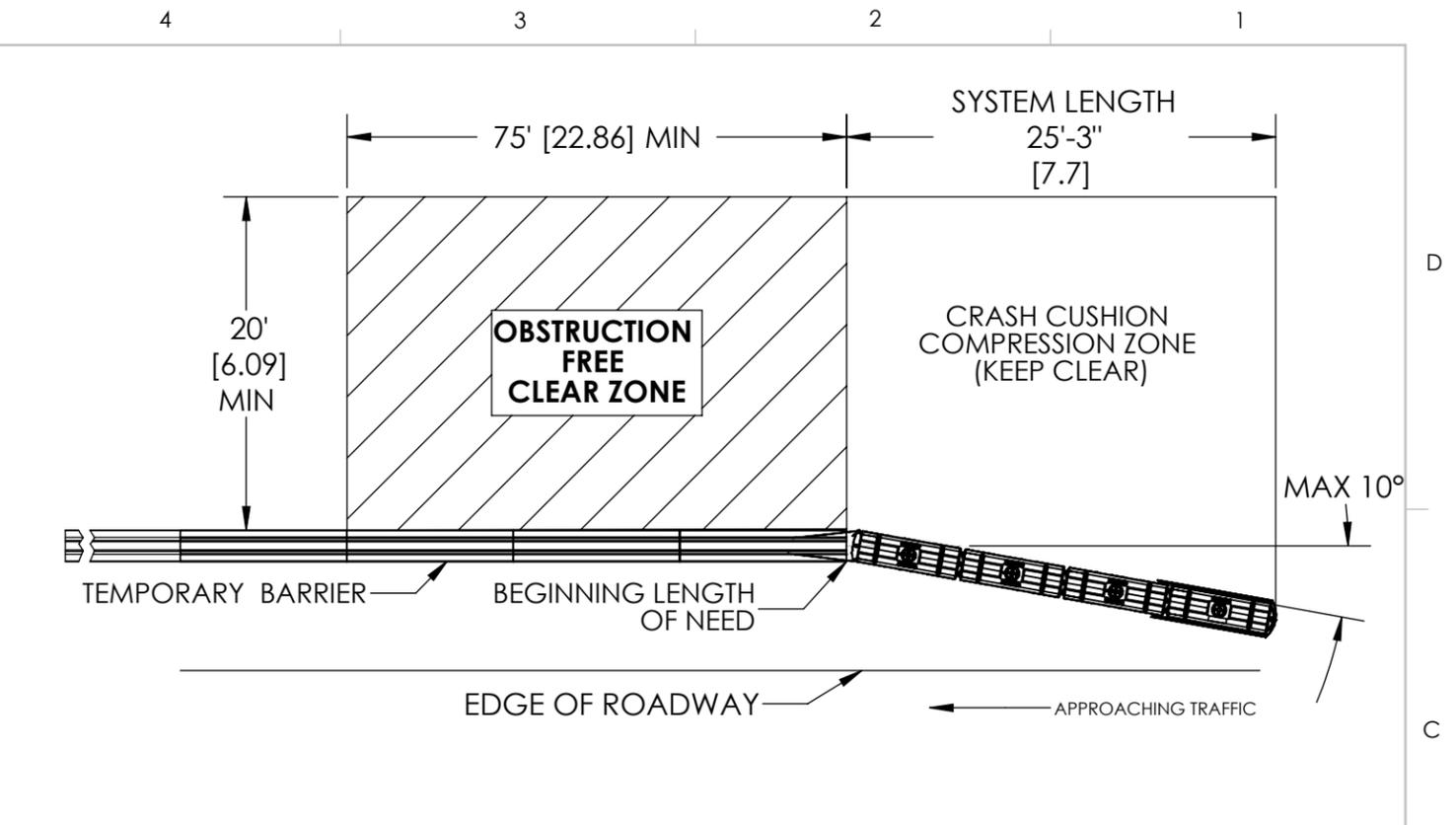
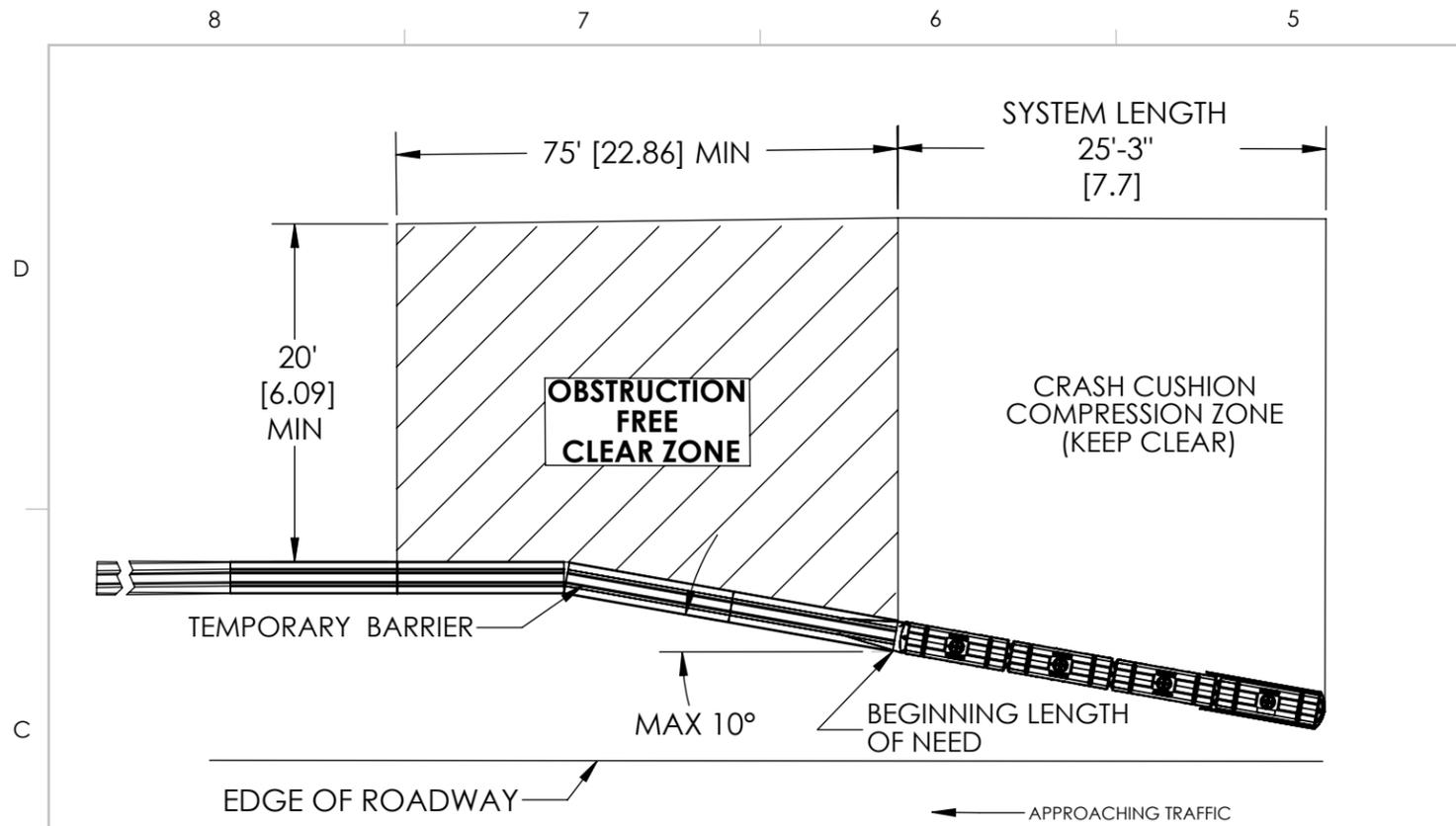
- 1) STEEL TRANSITION TO MULTIPLE CONCRETE OR STEEL BARRIERS
- 2) WATER-FILLED, STEEL RE-INFORCED, PLASTIC SEGMENTS
- 3) WATER-FILLED PLASTIC
- 4) INTEGRATED STEEL NOSE

TL-3 ACZ350

DISTRIBUTED BY:

SLED EURO TERMINAL MANUFACTURED BY TRAFFIX DEVICES, INC., 160 AVENIDA LA PATA, SAN CLEMENTE, CA 92673 (PHONE: 949-361-5663) AND DISTRIBUTED BY A&A SAFETY. (PHONE: 513-943-6100)

DRAWING NUMBER	DRAWING NAME	MOST RECENT REVISION DATE
300-148	SLED END TREATMENT ANCHORED/UNANCHORED CONFIGURATIONS	6/9/2011
300-147	SLED END TREATMENT SYSTEM	6/10/2011
300-146	SLED END TREATMENT TL3	6/10/2011
45044-Y	SLED END TREATMENT MODULE	6/10/2011
45044-T	SLED END TREATMENT TRANSITION ASSEMBLY (PAGE 1 OF 6 ONLY)	6/2/2010
SPEED CONFIGURATION	TL-2 & TL-3 SPEED CONFIGURATION	--



NOTES:

1. MINIMUM LENGTHS OF TEMPORARY CONCRETE BARRIER ARE BASED ON UN-ANCHORED LENGTHS
2. SLED END TREATMENT SYSTEM DOES NOT REQUIRE ATTACHMENT TO A FOUNDATION. THE SYSTEM CAN BE LOCATED ON FIRM SOIL, ASPHALT, OR CONCRETE SURFACES.
3. SLED SYSTEM ANGLED TOWARD TRAFFIC AT ANGLE APPROPRIATE PER STATE AND LOCAL SPECIFICATION FOR GATING CRASH CUSHION.
4. RUN OF BARRIER SHALL MEET THE LENGTH OF NEED CALCULATION
5. SLED SYSTEM TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND SPECIFICATION
6. AN APPROPRIATE OBSTRUCTION FREE CLEAR ZONE MUST BE ADJACENT TO THE SLED SYSTEM. THE OBSTRUCTION FREE CLEAR ZONE REPRESENTS THE IMPACT TEST RECOVERY AREA OF APPROXIMATELY 75 FT LONG BY 20 FT WIDE.
7. IN ADDITION TO THE RECOMMENDED OBSTRUCTION FREE CLEAR ZONE, AN AREA DIRECTLY ADJACENT TO THE CRASH CUSHION (CRASH CUSHION COMPRESSION ZONE) MUST BE KEPT CLEAR

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS ARE IN FEET [m].

Traffix Devices Inc.
160 Avenida La Pata
San Clemente, CA 92673
(949) 361-5663
FAX (949) 361-9205
www.traffixdevices.com

TITLE: **SLED END TREATMENT ANCHORED/UNANCHORED CONFIGURATIONS**

DRAWN BY: Mary Dralle
CHECKED BY: FA
APPROVED BY: FA

DATE: 06-09-11
DATE: 06-09-11
DATE: 06-09-11

SIZE **B**

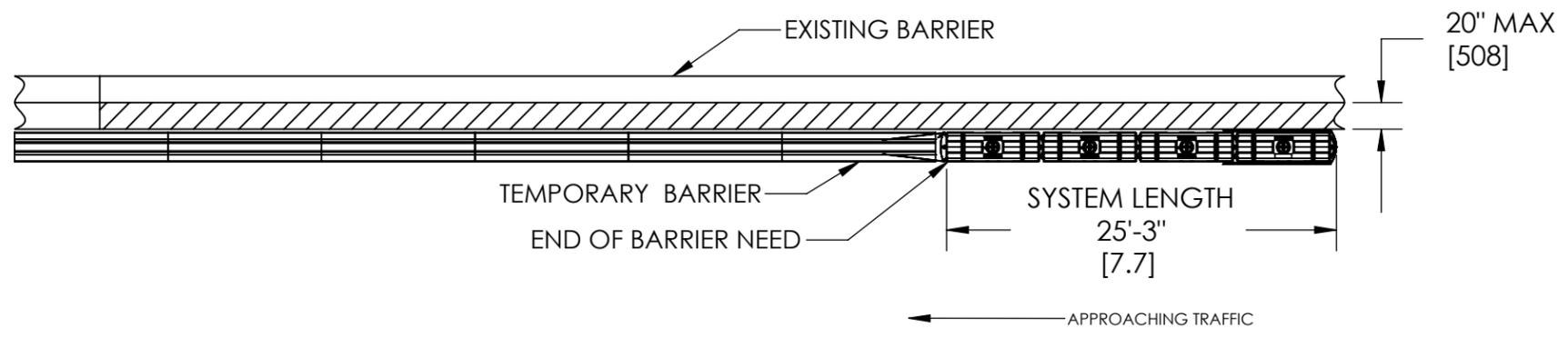
DWG. NO. **300-148**

REV **C**

SHEET 1 OF 2

8 7 6 5 4 3 2 1

D
C
B
A



ROADSIDE INSTALLATION ON APPROACH OF ELEVATED BRIDGES OR ROADWAYS
 PLACEMENT OF THE SLED SYSTEM ON ELEVATED BRIDGE DECKS OR ROADWAYS ADJACENT TO EXISTING RAIL OR BARRIER SHALL BE OFFSET AT LEAST 20 INCHES [0.5 METER] FROM THE EXISTING RAIL OR BARRIER.
 HATCHED AREA TO BE KEPT CLEAR OF ANY OBJECTS

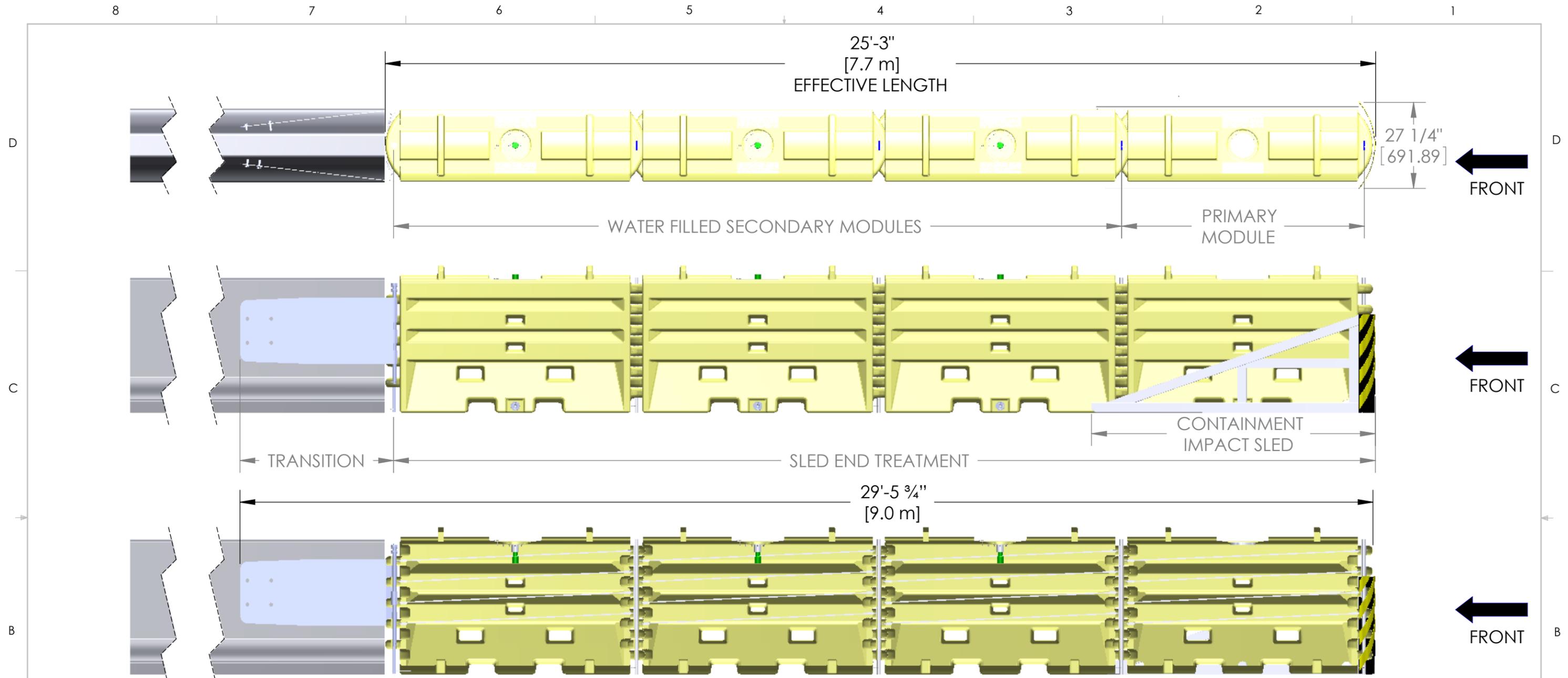
UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS ARE IN FEET[m].

TraFFix Devices Inc.  160 Avenida La Pata
San Clemente, CA 92673
(949) 361-5663
FAX (949) 361-9205
www.traffixdevices.com

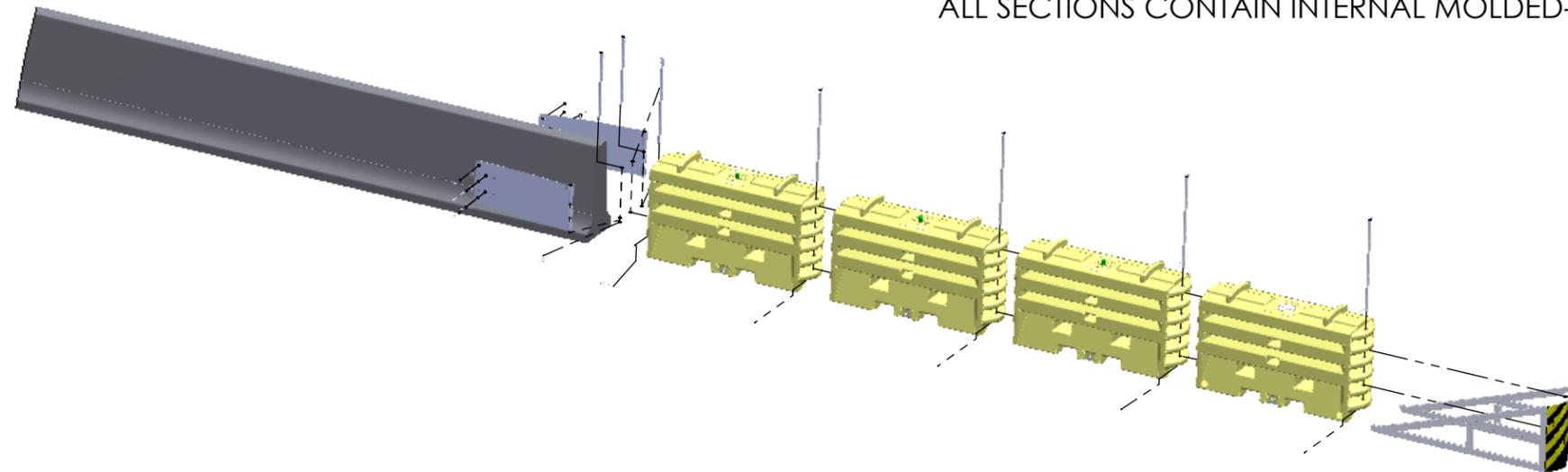
TITLE: SLED END TREATMENT
ANCHORED/UNANCHORED
CONFIGURATIONS

DRAWN BY: Mary Dralle	DATE: 06-09-11	SIZE B	DWG. NO. 300-148	REV C
CHECKED BY: FA	DATE: 06-09-11			
APPROVED BY: FA	DATE: 06-09-11			SHEET 2 OF 2

8 7 6 5 4 3 2 1



CUT AWAY SLED END TREATMENT
ALL SECTIONS CONTAIN INTERNAL MOLDED-IN CABLES.



UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS ARE IN INCHES[mm].
TOLERANCES:
FRACTIONAL: X/X ± 1" [25.4mm]
DECIMAL: .000 ± .0625
DEGREES: ± 0.5°

Traffix Devices Inc.  160 Avenida La Pata
San Clemente, CA 92673
(949) 361-5663
FAX (949) 361-9205
www.traffixdevices.com

TITLE:
SLED END TREATMENT SYSTEM

DRAWN BY: Mary Dralle
CHECKED BY: FA
APPROVED BY: FA

DATE: 06-10-11
DATE: 06-10-11
DATE: 06-10-11

SIZE
B

DWG. NO.
300-147

REV
A

SHEET 1 OF 1

8 7 6 5 4 3 2 1

D

D

C

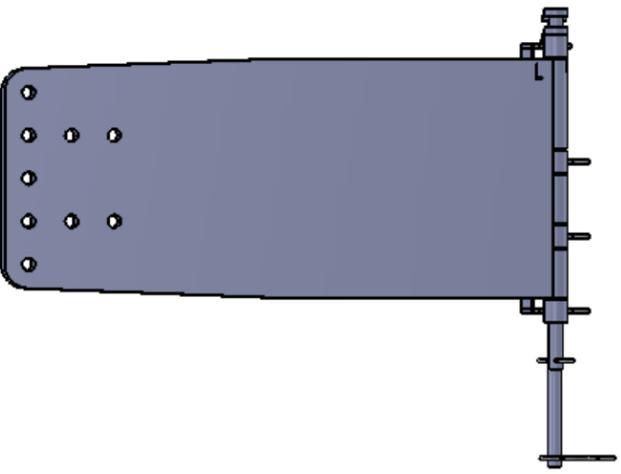
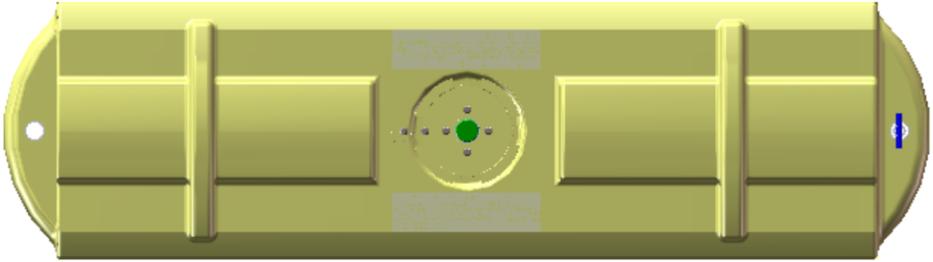
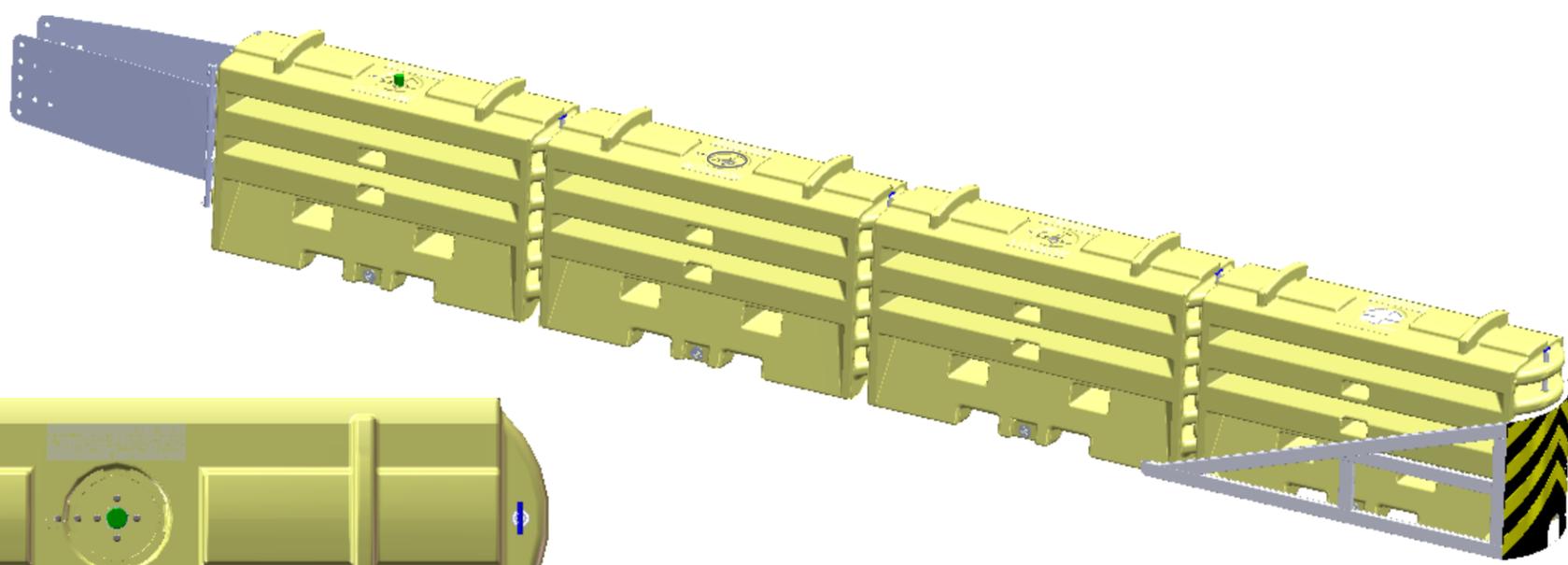
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B

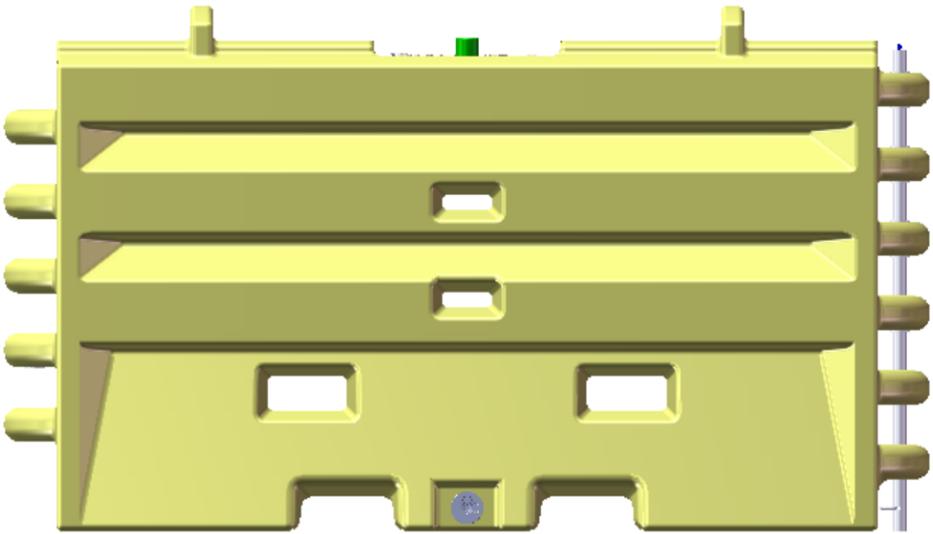
B

A

A



45044-T



45044-Y



45044-CIS

UNLESS OTHERWISE SPECIFIED:
 ALL DIMENSIONS ARE IN INCHES[mm].
 TOLERANCES:
 FRACTIONAL: X/X ± 1/16" [1.6mm]
 DECIMAL: .000 ± .0625
 DEGREES: ± 0.5°

Traffix Devices Inc.  160 Avenida La Pata
 San Clemente, CA 92673
 (949) 361-5663
 FAX (949) 361-9205
 www.traffixdevices.com

TITLE:
SLED End Treatment TL3

PN	DESCRIPTION	QTY
45044-Y-CIS	Containment Impact Sled	1
45044-Y	43" SLED End Treatment Module	3
45044-T	SLED End Treatment Transition	1

DRAWN BY: Mary Dralle
 CHECKED BY: GM
 APPROVED BY: GM
 DATE: 06-10-11
 DATE: 06-10-11
 DATE: 06-10-11

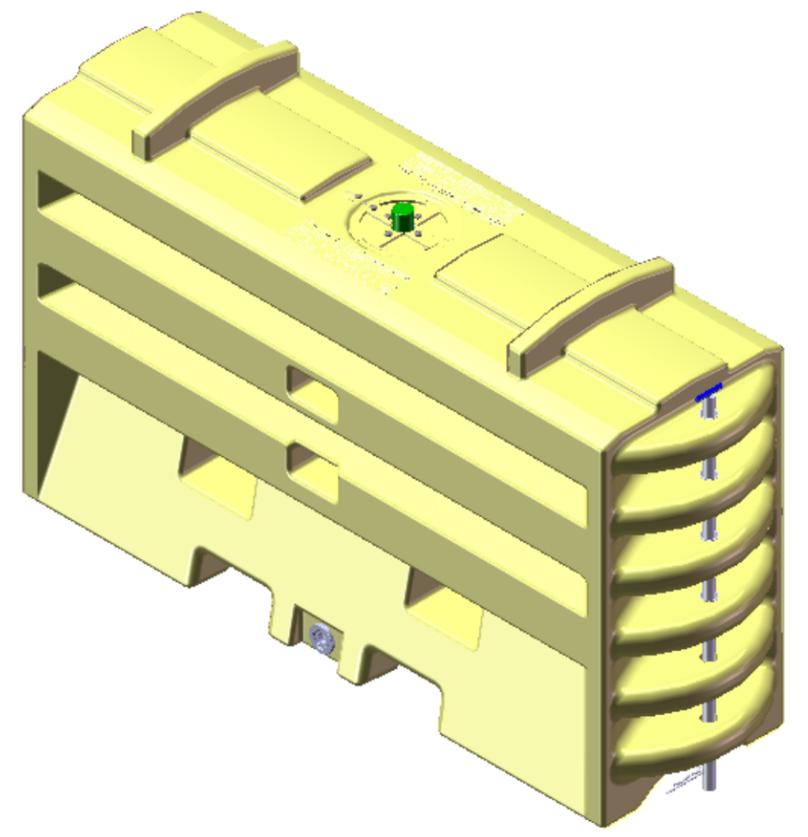
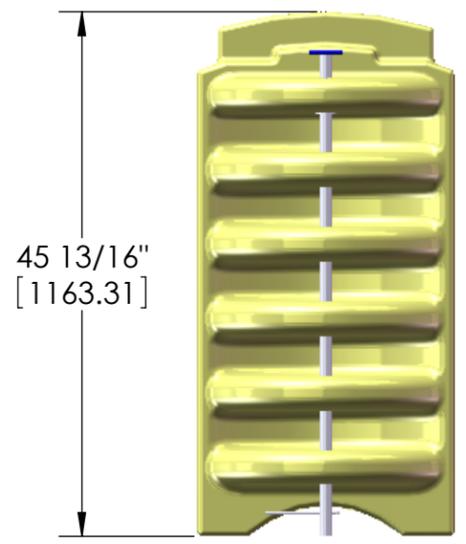
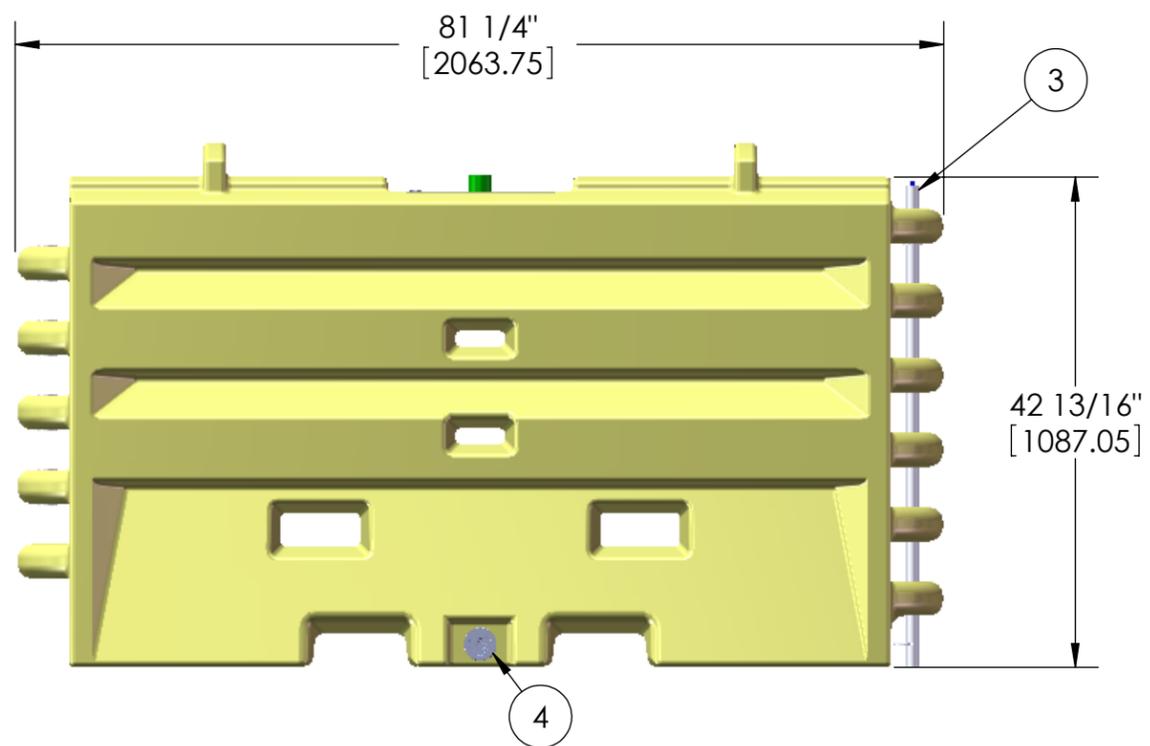
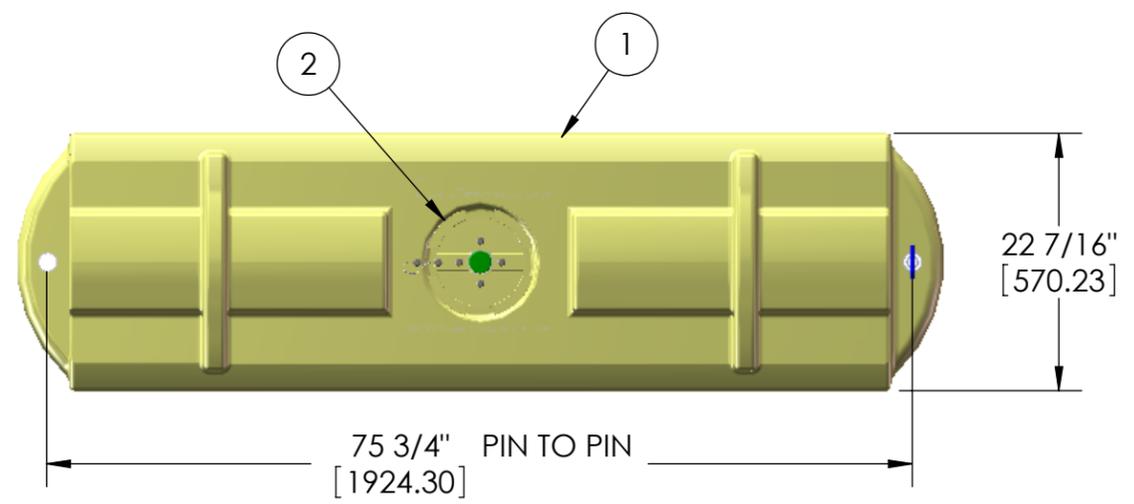
SIZE **B** DWG. NO. **300-146** REV **A**

SHEET 1 OF 1

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

D
C
B
A



D
C
B
A

SLED END TREATMENT
 UNITS: INCHES [mm]
 COLOR: YELLOW
 EMPTY WEIGHT: APPROX. 160 LBS. [73 kg]
 FILLED WEIGHT: APPROX. 2000 LBS [907 kg].
 FILL MATERIAL: WATER

ITEM	DESCRIPTION	PN	QTY
1	43" SLED End Treatment	45044-YEL	1
2	Water Level Indicator Fill Cap	18009-Y-I	1
3	Sentry Water Cable Barrier T-Pin w/Keeper Pin	45043-CP	1
4	Water Wall Drain Plug	45033-RC-B	1

UNLESS OTHERWISE SPECIFIED:
 ALL DIMENSIONS ARE IN INCHES[mm].
 TOLERANCES:
 FRACTIONAL: X/X ± 1/16" [1.6mm]
 DECIMAL: .000 ± .0625
 DEGREES: ± 0.5°

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 San Clemente, CA 92673
 (949) 361-5663
 FAX (949) 361-9205
 www.traffixdevices.com

TITLE:
SLED END TREATMENT MODULE

DRAWN BY: Mary Dralle
 CHECKED BY: FA
 APPROVED BY: FA

DATE: 06-10-11
 DATE: 06-10-11
 DATE: 06-10-11

SIZE **B** DWG. NO. **45044-Y** REV **A**

SHEET 1 OF 1

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
A

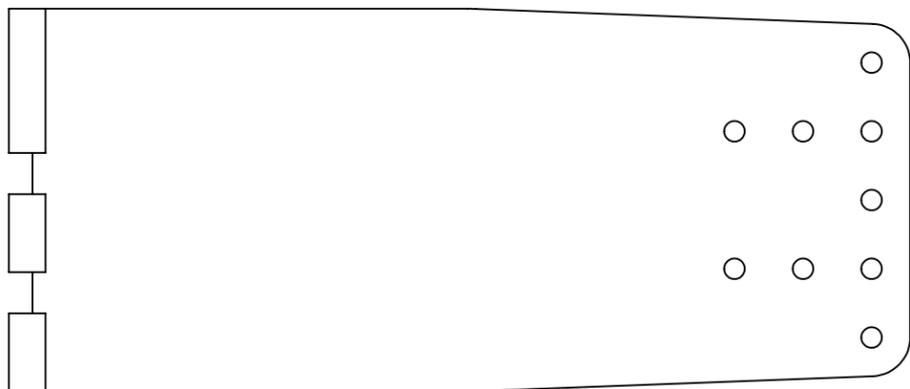
45145
SLED TRANSITION
SHORT DROP PIN

45130
SLED TRANSITION FRAME

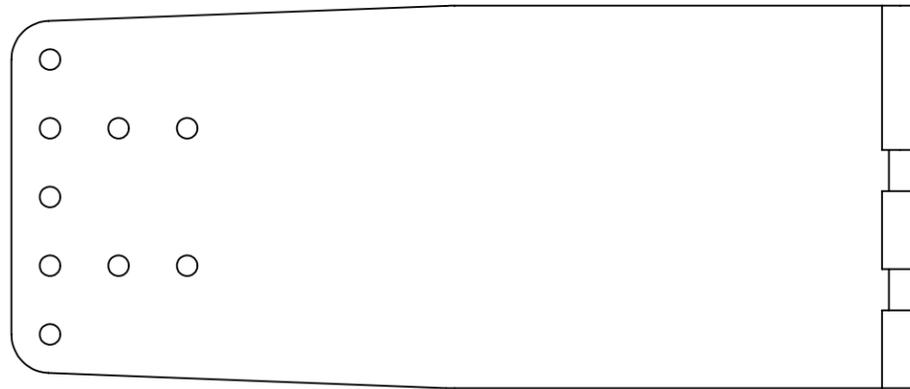
45140
SLED TRANSITION
LONG DROP PIN

45047
BOLT,
TAPER ANCHOR,
3/4" X 4-1/8"

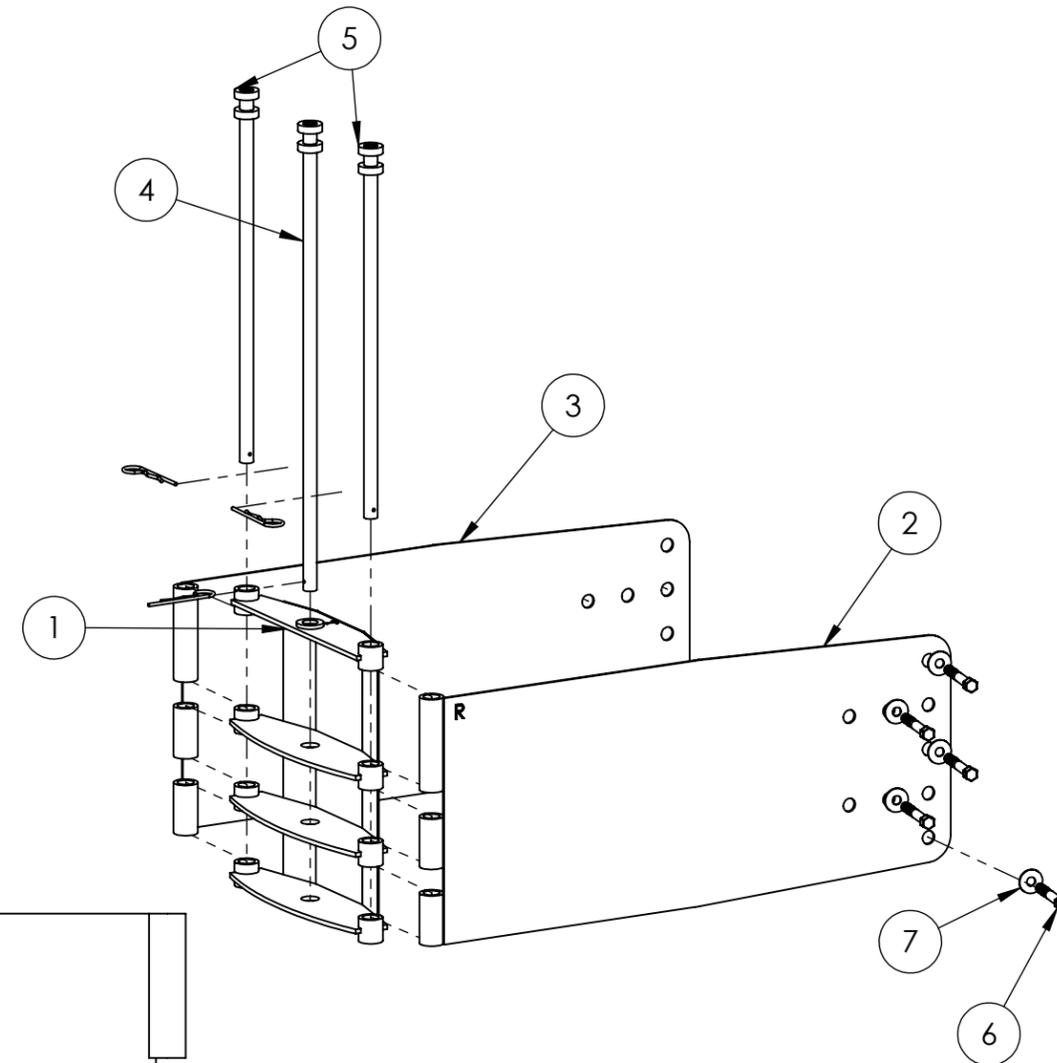
12060
WASHER, FLAT,
3/4"ID X 2"OD



45150L
SLED TRANSITION PANEL, LEFT



45150R
SLED TRANSITION PANEL, RIGHT



ITEM NO.	DESCRIPTION	PN	QTY
1	SLED TRANSITION FRAME ASSY	45130	1
2	RIGHT SLED TRANSITION PANEL ASSY	45150R	1
3	LEFT SLED TRANSITION PANEL ASSY	45150L	1
4	SLED TRANSITION LONG DROP PIN	45140	1
5	SLED TRANSITION SHORT DROP PIN	45145	2
6	BOLT, TAPER ANCHOR, 3/4" X 4-1/8"	45047	9
7	WASHER, FLAT, 3/4"ID X 2"OD	12060	9

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS ARE IN INCHES[mm].
TOLERANCES:
FRACTIONAL: X/X ± 1/16" [1.6mm]
DECIMAL: .000 ± .0625
DEGREES: ± 0.5°

DRAWN BY: Mary Dralle
CHECKED BY: FA
APPROVED BY: FA
DATE: 06-02-10
DATE: 06-02-10
DATE: 06-02-10

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San Clemente, CA 92673
(949) 361-5663
FAX (949) 361-9205
www.traffixdevices.com

TITLE: **SLED END TREATMENT TRANSITION ASSY**

SIZE **B** DWG. NO. **45044-T** REV **B**

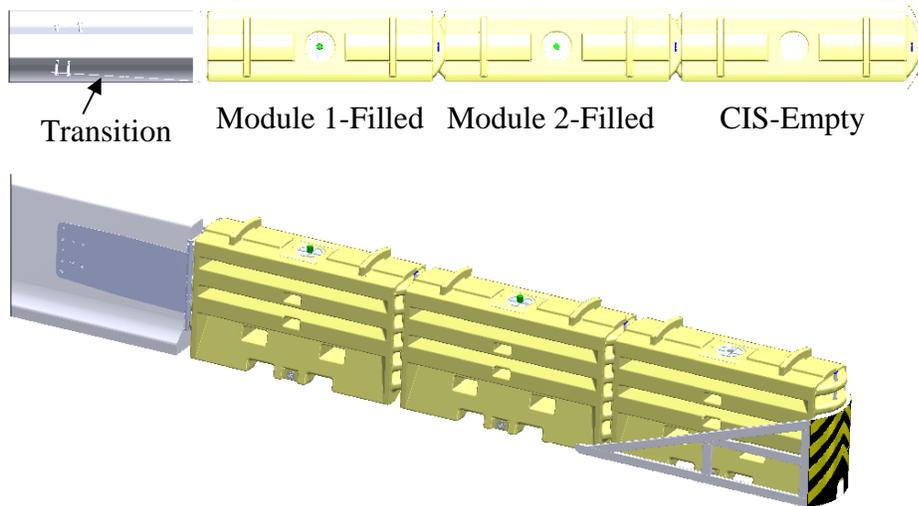
SHEET 1 OF 6

2. FINISH: HOT DIP GALVANIZE
1. MATERIAL: A36 AND A513 STEEL
NOTES: UNLESS OTHERWISE SPECIFIED

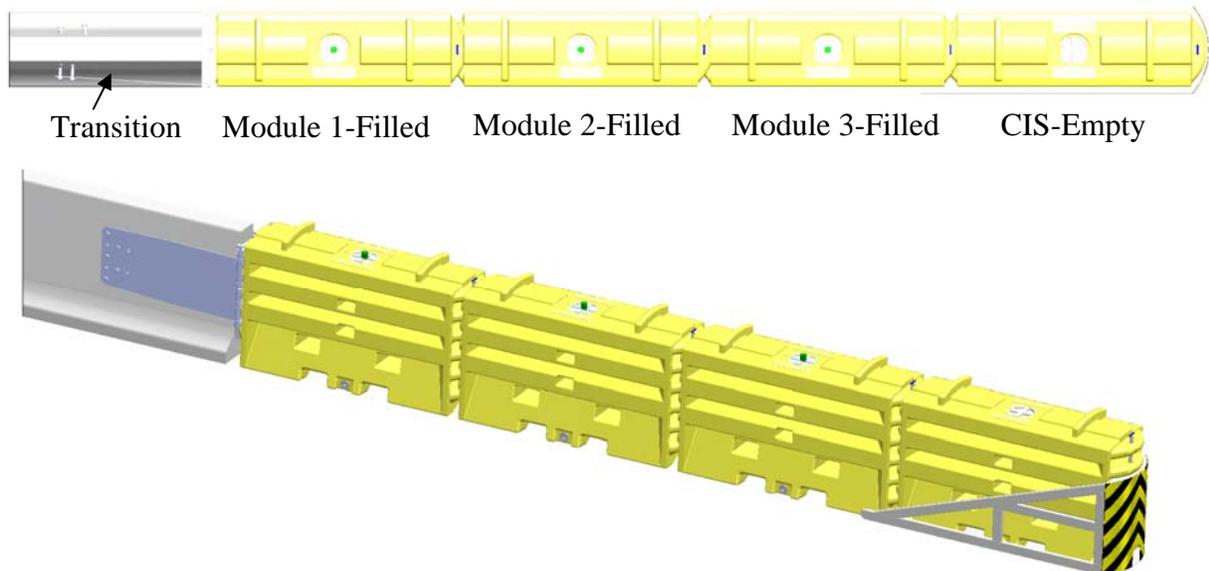
8 7 6 5 4 3 2 1

Speed Configuration

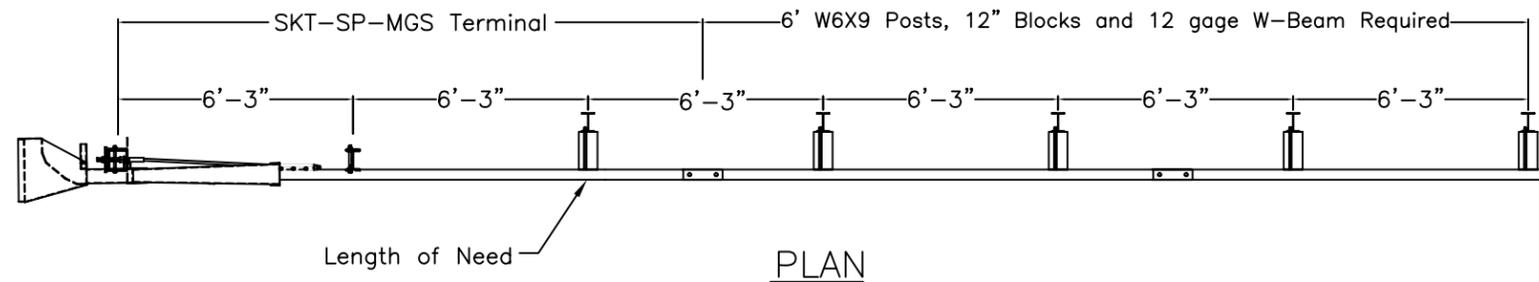
TL-2 Configuration



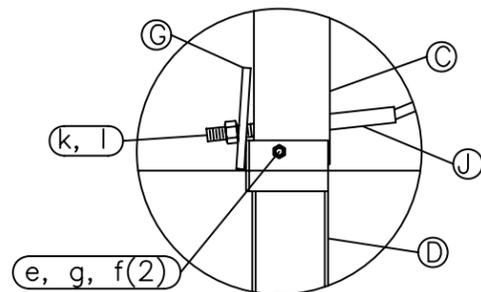
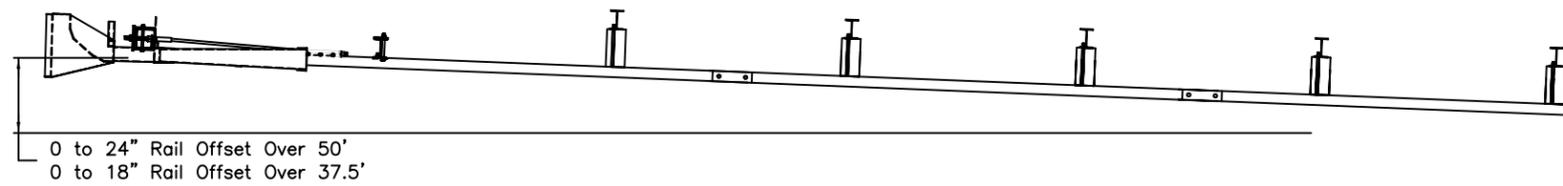
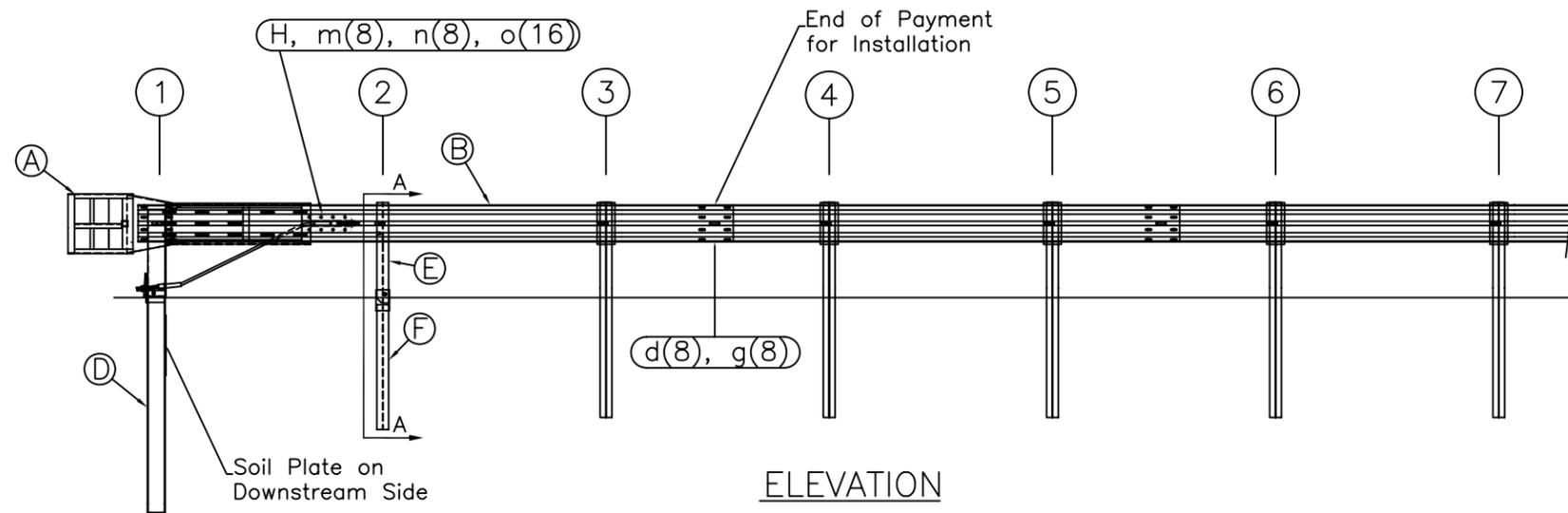
TL-3 Configuration



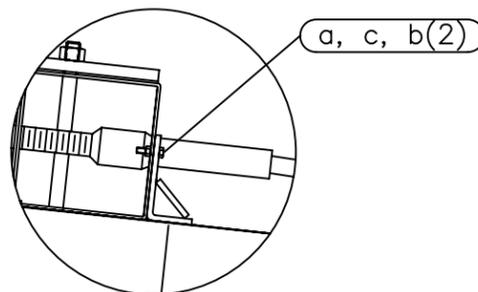
* CIS is ALWAYS empty.



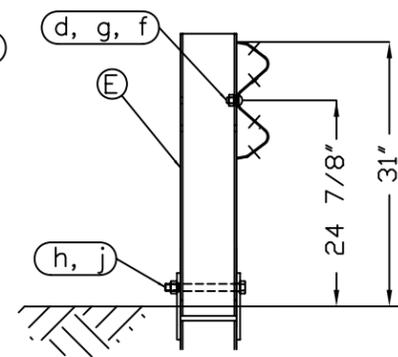
TRAFFIC →



Post #1 Connection Detail



Impact Head Connection Detail



SECTION A-A
Post #2

ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	S3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	MGS-SF1303
C	1	FIRST POST TOP (6X6X $\frac{1}{2}$ Tube)	TPHP1A
D	1	FIRST POST BOTTOM (6' W6X15)	TPHP1B
E	1	SECOND POST ASSEMBLY TOP	UHP2A
F	1	SECOND POST ASSEMBLY BOTTOM	HP3B
G	1	BEARING PLATE	E750
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770

HARDWARE (ALL DIMENSIONS IN INCHES)			
a	2	5/16 x 1 HEX BOLT GRD 5	B5160104A
b	4	5/16 WASHER	W0516
c	2	5/16 HEX NUT	N0516
d	9	5/8 Dia. x 1 1/4 SPLICE BOLT (POST #2)	B580122
e	1	5/8 Dia. x 9 HEX BOLT GRD 5	B580904A
f	3	5/8 WASHER	W050
g	10	5/8 Dia. H.G.R NUT	N050
h	1	3/4 Dia. x 8 1/2 HEX BOLT GRD A449	B340854A
j	1	3/4 Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
l	2	1 ANCHOR CABLE WASHER	W100
m	8	CABLE ANCHOR BOX SHOULDER BOLT	SB58A
n	8	1/2 A325 STRUCTURAL NUT	N055A
o	16	1 1/16 OD x 9/16 ID A325 STR. WASHER	W050A

GENERAL NOTES:

- All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
- The lower sections of the Posts 1&2 shall not protrude more than 4 in above the ground (measured along a 5' cord). Site grading may be necessary to meet this requirement.
- The lower sections of the hinged posts should not be driven with the upper post attached. If the post is placed in a drilled hole, the backfill material must be satisfactorily compacted to prevent settlement.
- When competent rock is encountered, a 12" \varnothing post hole, 20 in. deep cored into the rock surface may be used if approved by the engineer for post 1. Granular material will be placed in the bottom of the hole, approximately 2.5" deep to provide drainage. The first post can be field cut to length, placed in the hole and backfilled with suitable backfill. The soil plate may be trimmed if required.
- A site evaluation should be considered if there is less than 25' between the outlet side of the terminal and any adjacent driving lane.
- The breakaway cable assembly must be taut. A locking device (vice grips or channel lock pliers) should be used to prevent the cable from twisting when tightening nuts.



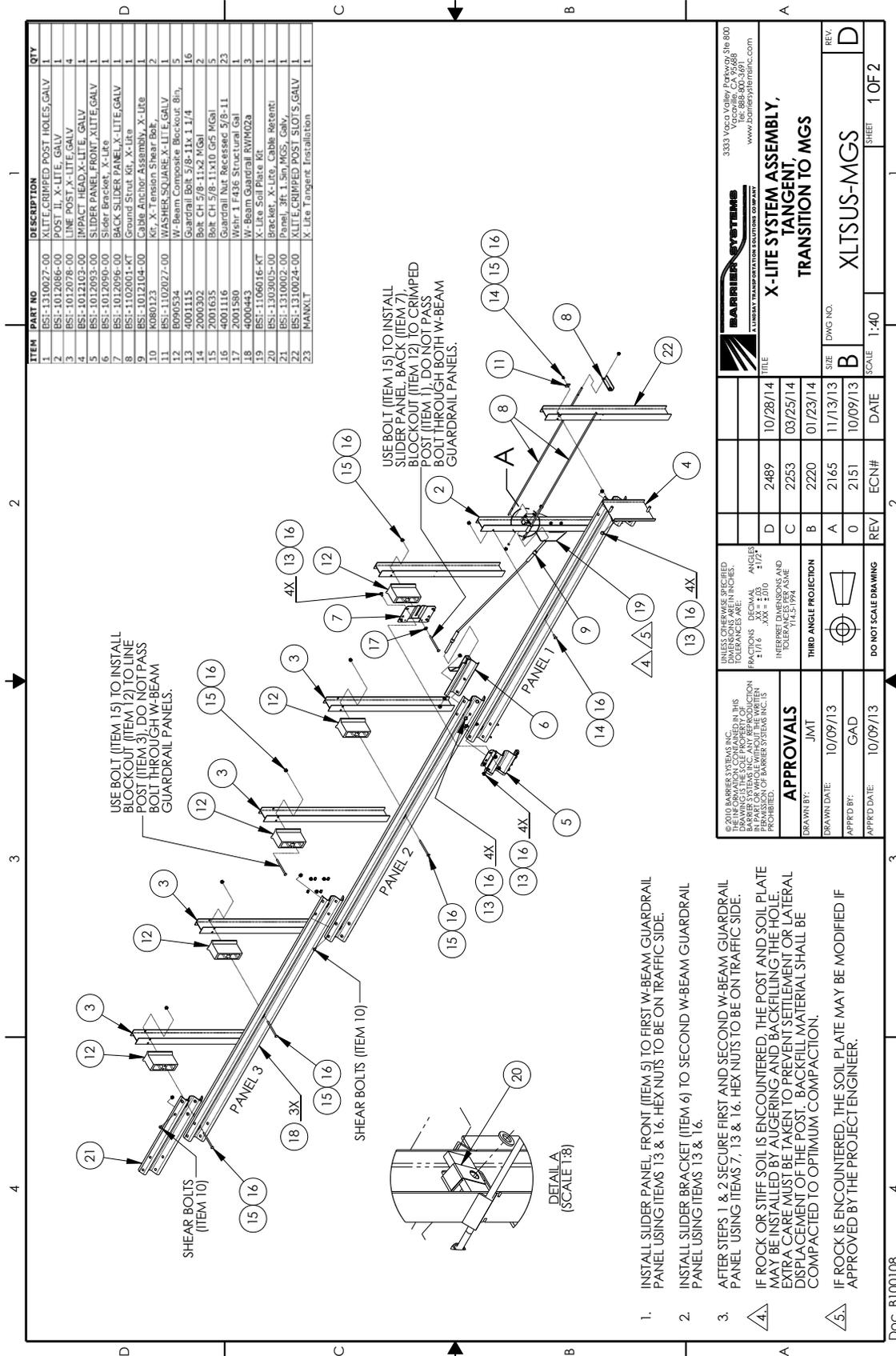
SKT-SP-MGS Terminal
Midwest Guardrail System
31" Top of Rail

Drawing Name: SKT-SP-S-MGS

Scale: None

Sheet: 1
Date: 02/24/10
By: JRR
Rev: 0

Appendix A - System Configuration, 37' 6" MGS



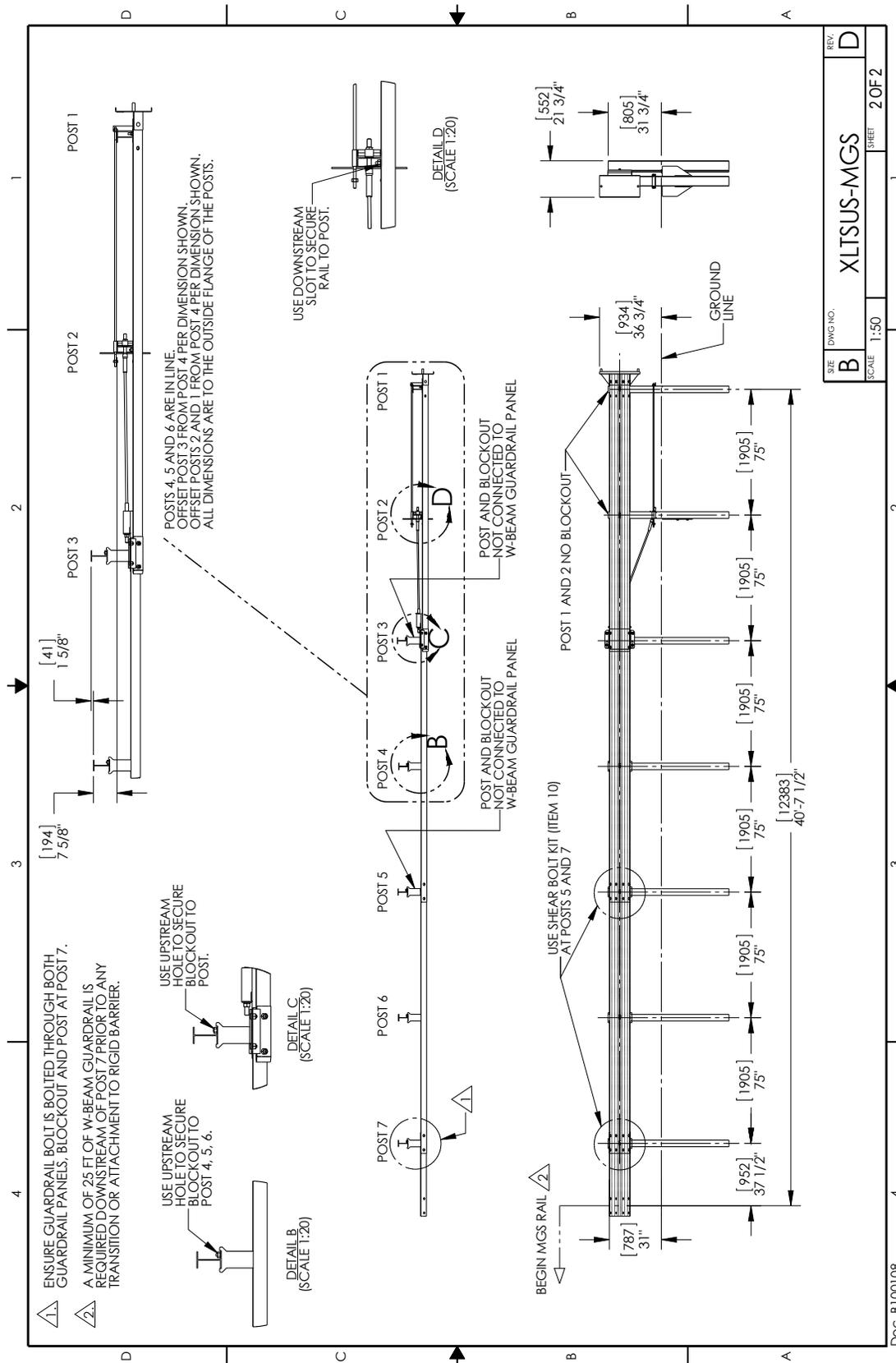
ITEM	PART NO.	DESCRIPTION	QTY
1	BSI-1310027-00	X-LITE, CRIMPED POST HOLES, GALV	1
2	BSI-1012066-00	POST II, X-LITE, GALV	1
3	BSI-1012078-00	LINE POST, X-LITE, GALV	4
4	BSI-1012103-00	IMPACT HEAD, X-LITE, GALV	1
5	BSI-1012093-00	SLIDER PANEL, FRONT, X-LITE, GALV	1
6	BSI-1012090-00	Slider Bracket, X-Lite	1
7	BSI-1012096-00	BACK SLIDER PANEL, X-LITE, GALV	1
8	BSI-1102001-KT	Ground Strut Kit, X-Lite	1
9	BSI-1012104-00	Cable Anchor Assembly, X-Lite	2
10	K080123	Kit, X-Tension Shear Bolts	1
11	BSI-1102027-00	WASHER, SQUARE, X-LITE, GALV	1
12	0905334	W-Beam Composite Bracket, 8in.	3
13	0905334	W-Beam Composite Bracket, 1 1/4	16
14	2000233	Soil Plate Kit, 1.5m MGS	2
15	2001635	Soil Plate Kit, 1.5m MGS	5
16	4001116	Guardrail Nut Recessed 5/8-11	23
17	2001580	Wshir 1 F436 Structural Gal	1
18	4000443	W-Beam Guardrail RVM02a	3
19	BSI-1106016-KT	X-Lite Soil Plate Kit	1
20	BSI-1310002-00	Bracket, X-Lite, Cable Retentl.	1
21	BSI-1310002-00	Panel, 3ft, 1.5m MGS, Galv.	1
22	BSI-1310024-00	X-LITE, CRIMPED POST SLOTS, GALV	1
23	MANKIT	X-Lite Tangent Installation	1

1. INSTALL SLIDER PANEL FRONT (ITEM 5) TO FIRST W-BEAM GUARDRAIL PANEL USING ITEMS 13 & 16. HEX NUTS TO BE ON TRAFFIC SIDE.
 2. INSTALL SLIDER BRACKET (ITEM 6) TO SECOND W-BEAM GUARDRAIL PANEL USING ITEMS 13 & 16.
 3. AFTER STEPS 1 & 2 SECURE FIRST AND SECOND W-BEAM GUARDRAIL PANEL USING ITEMS 7, 13 & 16. HEX NUTS TO BE ON TRAFFIC SIDE.
- IF ROCK OR STIFF SOIL IS ENCOUNTERED, THE POST AND SOIL PLATE MAY BE INSTALLED BY AUGERING AND BACKFILLING THE HOLE. EXTRA CARE MUST BE TAKEN TO PREVENT SETTLEMENT OR LATERAL DISPLACEMENT OF THE POST. BACKFILL MATERIAL SHALL BE COMPACTED TO OPTIMUM COMPACTION.
- IF ROCK IS ENCOUNTERED, THE SOIL PLATE MAY BE MODIFIED IF APPROVED BY THE PROJECT ENGINEER.

		3333 Voca Valley, CA 95726, Ste 800 Tel: 888-800-3691 www.barriersystems.com	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.		TOLERANCES ARE:	
FINISHES:	DIMENSIONS:	ANGLES:	PROJECTIONS:
1:16	XX = ±.010	45°	1:16
INTERPRET DIMENSIONS AND TOLERANCES TO THE WRITTEN DIMENSIONS AND TOLERANCES.		THIRD ANGLE PROJECTION	
APPROVALS		DATE	
DRAWN BY: JMT	DATE: 10/09/13	REV: 0	DATE: 10/09/13
APP'D BY: GAD	DATE: 10/09/13	REV: 1	DATE: 10/09/13
DO NOT SCALE DRAWING		SCALE: 1:40	SHEET: 1 OF 2
TITLE: X-LITE SYSTEM ASSEMBLY, TANGENT, TRANSITION TO MGS		DWG NO.: B	REV.: D

Doc. B100108

Appendix A - System Configuration, 37' 6" MGS





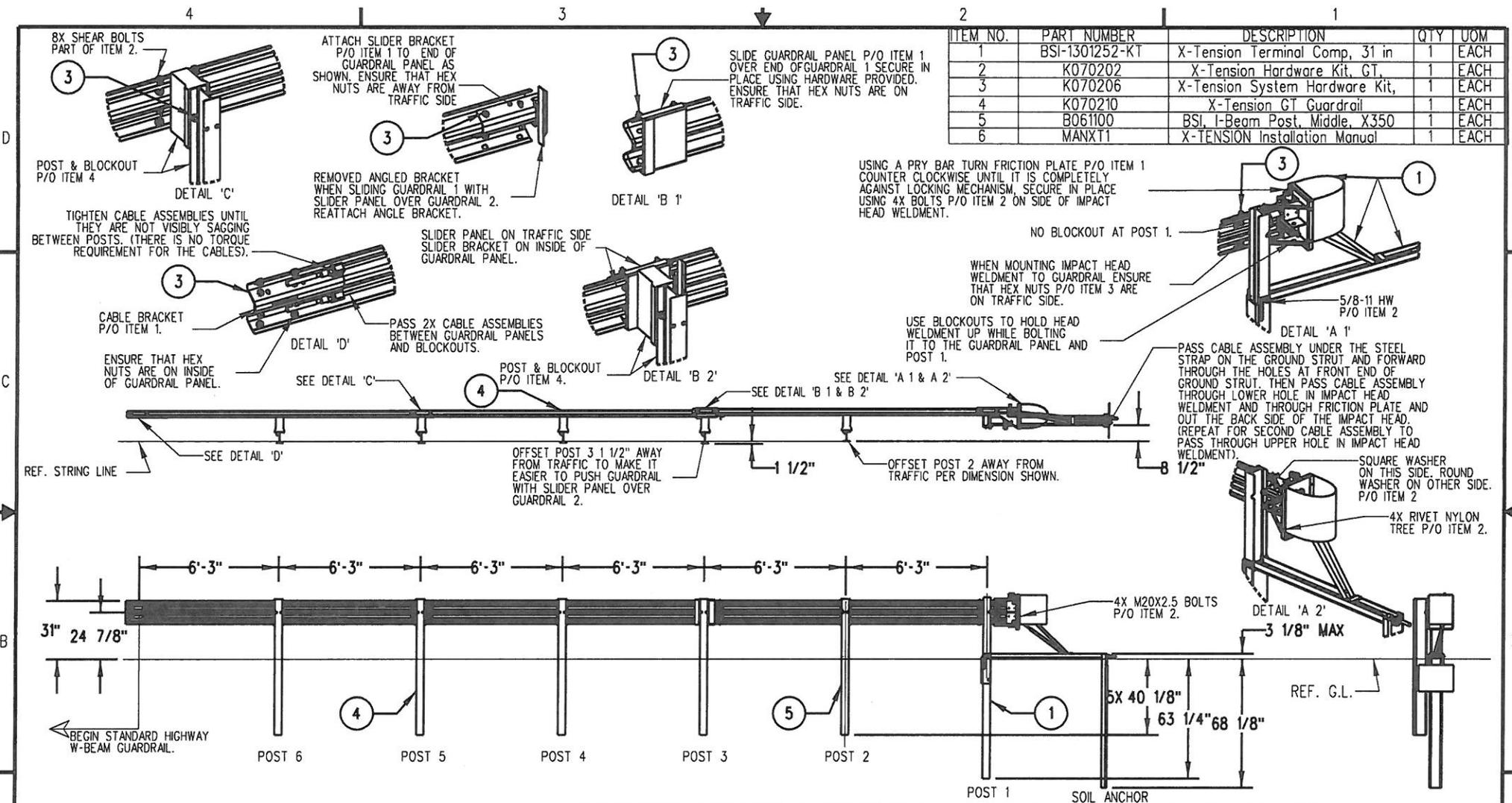
Lindsay Transportation Solutions Sales and Services, Inc.

180 River Road • Rio Vista, CA 94571 • +1 707.374.6800 U.S. Toll Free: 888.800.3691 • www.barrriersystemsinc.com

Installation manual for the X-LITE Tangent System are subject to change without notice to reflect improvements and upgrades.

Additional information is available from Lindsay Transportation Solutions Sales and Services, Inc. © Lindsay Transportation Solutions, Inc.

X-LITE TANGENT INSTALLATION 11212014 v10



ITEM NO.	PART NUMBER	DESCRIPTION	QTY	UOM
1	BSI-1301252-KT	X-Tension Terminal Comp, 31 in	1	EACH
2	K070202	X-Tension Hardware Kit, GT.	1	EACH
3	K070206	X-Tension System Hardware Kit,	1	EACH
4	K070210	X-Tension GT Guardrail	1	EACH
5	B061100	BSL I-Beam Post, Middle, X350	1	EACH
6	MANXT1	X-TENSION Installation Manual	1	EACH

- NOTES: UNLESS OTHERWISE SPECIFIED.
- SYSTEM TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
 - ONLY TIGHTEN THE CABLE ASSEMBLIES USING THE NUTS AT THE CABLE BRACKET (SEE DETAIL 'D'). DO NOT TIGHTEN THE CABLES AT THE FRONT OF THE GROUND ANCHOR.
 - WHEN DRIVING STEEL POST, ENSURE THAT A DRIVING CAP WITH TIMBER OR PLASTIC INSERT IS USED TO PREVENT DAMAGE TO THE GALVANIZING TO THE TOP OF THE POST.

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APPROVALS				TITLE X-TENSION GUARDRAIL TERMINAL SYSTEM STEEL POST WITH COMPOSITE BLOCKOUT 31" RAIL HEIGHT			
<small>DRAWN BY:</small> NMV <small>DRAWN DATE:</small> 2/08/13 <small>APPR'D BY:</small> JMT <small>APPR'D DATE:</small> 2/08/13	<small>THIRD ANGLE PROJECTION</small> 	<small>REV</small> 2067 <small>DATE</small> 03/02/13 <small>REV</small> 2022 <small>DATE</small> 2/08/13	<small>SIZE</small> B <small>SCALE</small> 1:50	<small>DWG NO.</small> XTGTSS5 <small>SHEET</small> 1 OF 1	<small>REV.</small> B		



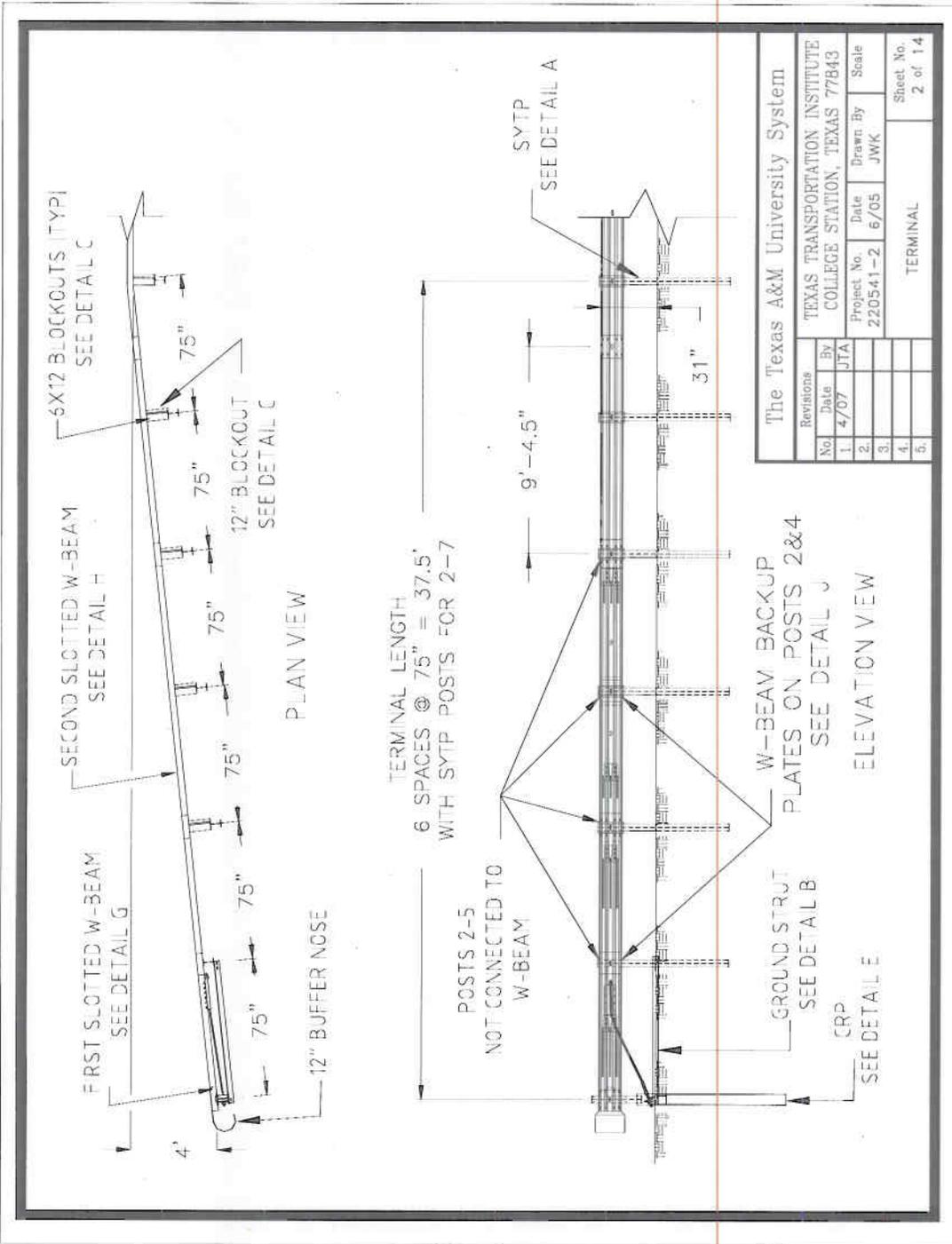


Figure 2. Layout of the SRT-31.

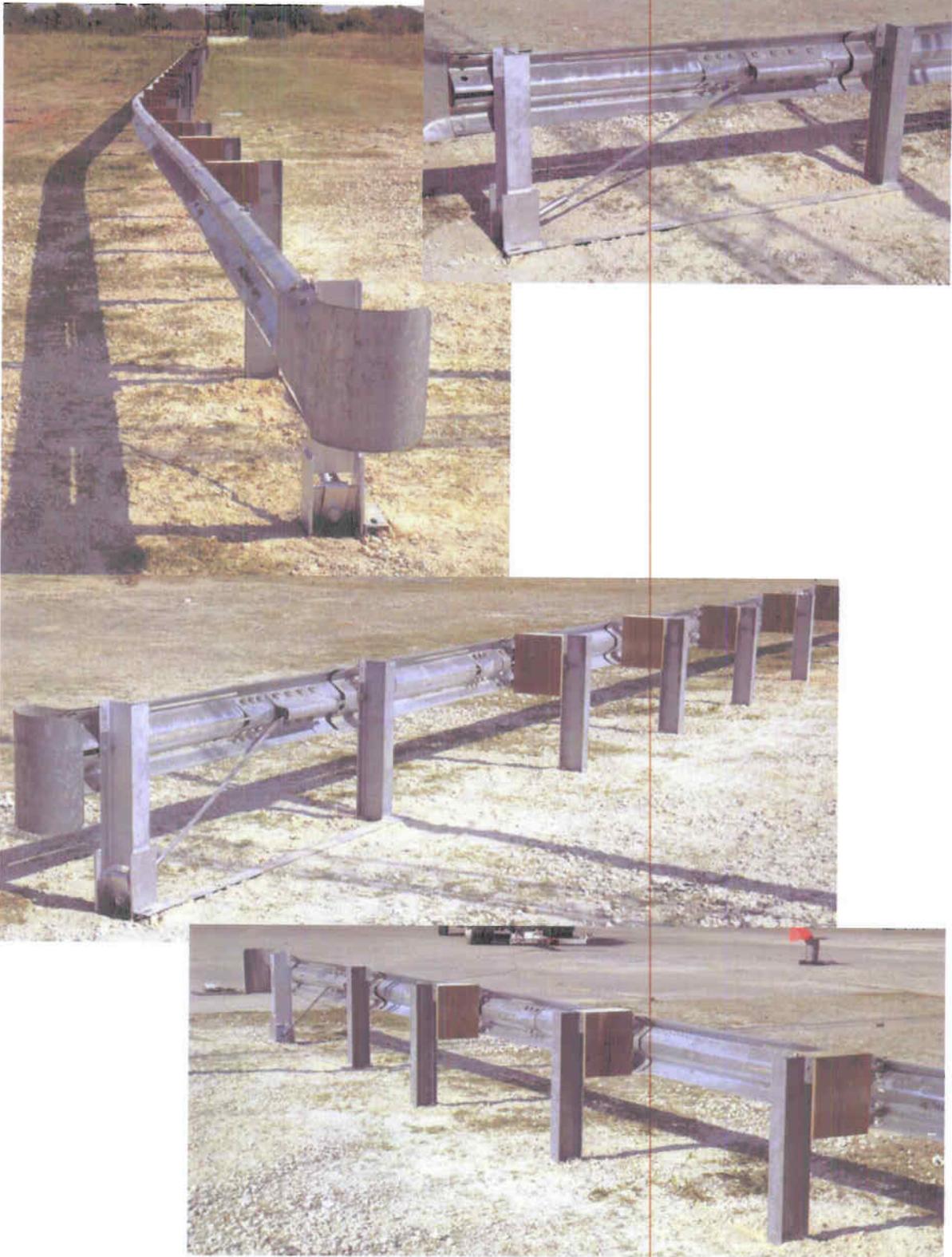
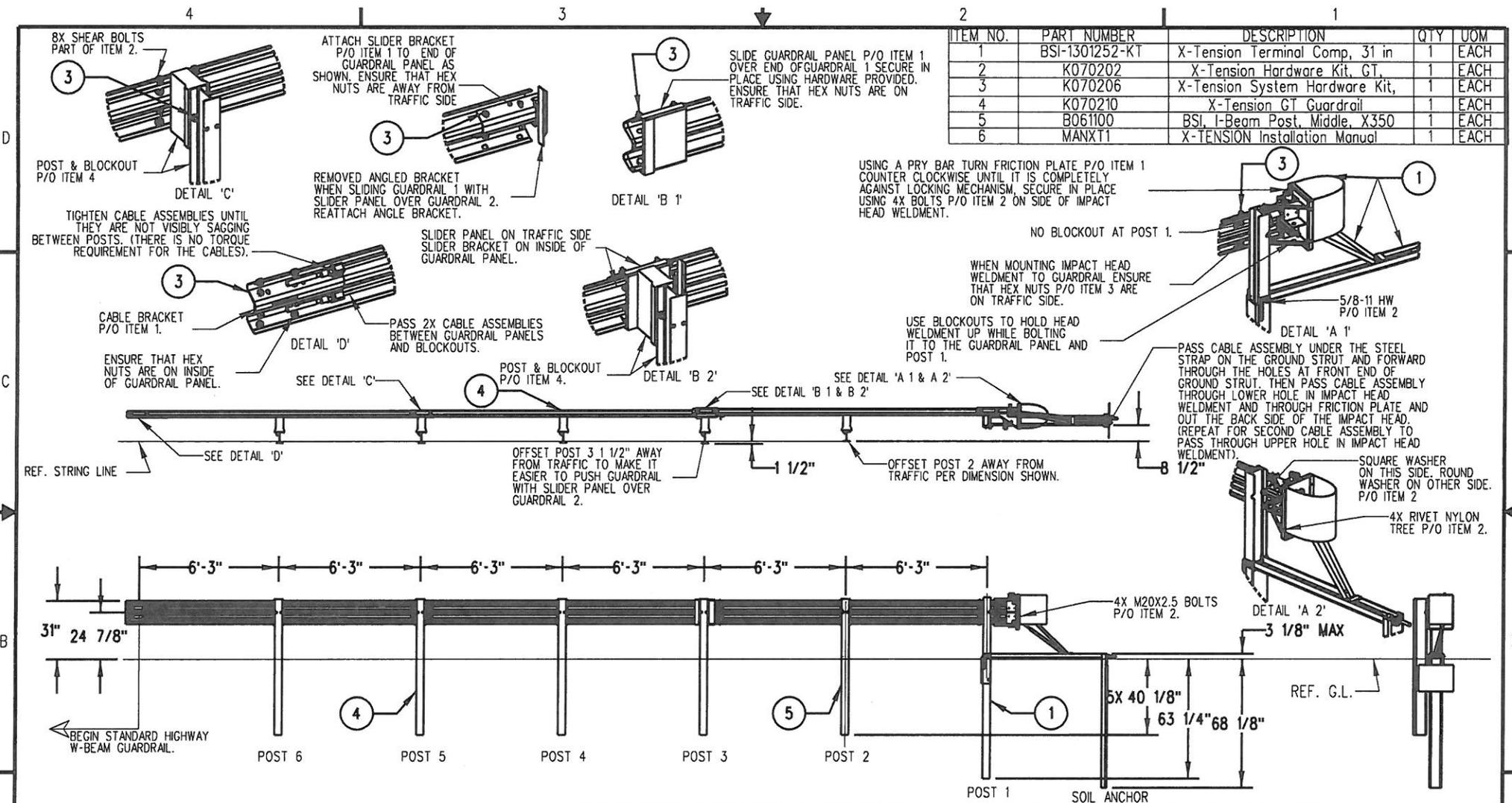


Figure 12. SRT-31 prior to testing.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY	UOM
1	BSI-1301252-KT	X-Tension Terminal Comp, 31 in	1	EACH
2	K070202	X-Tension Hardware Kit, GT,	1	EACH
3	K070206	X-Tension System Hardware Kit,	1	EACH
4	K070210	X-Tension GT Guardrail	1	EACH
5	B061100	BSL I-Beam Post, Middle, X350	1	EACH
6	MANXT1	X-TENSION Installation Manual	1	EACH

- NOTES: UNLESS OTHERWISE SPECIFIED.
- SYSTEM TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
 - ONLY TIGHTEN THE CABLE ASSEMBLIES USING THE NUTS AT THE CABLE BRACKET (SEE DETAIL 'D'). DO NOT TIGHTEN THE CABLES AT THE FRONT OF THE GROUND ANCHOR.
 - WHEN DRIVING STEEL POST, ENSURE THAT A DRIVING CAP WITH TIMBER OR PLASTIC INSERT IS USED TO PREVENT DAMAGE TO THE GALVANIZING TO THE TOP OF THE POST.

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APPROVALS				TITLE X-TENSION GUARDRAIL TERMINAL SYSTEM STEEL POST WITH COMPOSITE BLOCKOUT 31" RAIL HEIGHT			
<small>DRAWN BY:</small> NMV <small>DRAWN DATE:</small> 2/08/13 <small>APPR'D BY:</small> JMT <small>APPR'D DATE:</small> 2/08/13	<small>THIRD ANGLE PROJECTION</small> 	<small>REV</small> 2067 <small>DATE</small> 03/02/13 <small>REV</small> 2022 <small>DATE</small> 2/08/13	<small>SCALE</small> 1:50	<small>SIZE</small> B <small>DWG NO.</small> XTGTSS5	<small>REV.</small> B	<small>SHEET</small> 1 OF 1	

