

INFORMATION HANDOUT

For Contract No. 05-1G6304
At 05-SLO,SB-166-21.0/25.5

Identified by
Project ID 0515000056

MATERIALS INFORMATION

Summary of existing material investigations

Water Source Information

PRODUCT INFORMATION

Temporary Alternative Crash Cushion

Quadguard II CZ

ABSORB

ACZ 350

SLED

In line Terminal System

SKT-MGS

XLite

XTension

Flared Terminal System

FLEAT

SRT-31

XTension

Transition detail for 31" Terminal System End Treatment with Rail Splicing at posts to MGS

Summary of Investigations

1. ROADWAY:

Investigations carried out on the existing road, SLo,SB-166 PM 21.0/25.5 indicate that these materials are suitable for cold in-place recycling. Coring tests and Ground Penetrating Radar (GPR) was used on subject roadbed. The results indicated that the engineering properties of these materials may be improved to provide sufficient strength required to extend the life of this pavement for five years by recycling the upper 0.33' from PM 21.0 to 23.8 and PM 24.3 to 25.5 and 0.25' from PM23.8 to 24.3 with asphalt emulsion and capping with 0.20' of RHMA-G

The general structural section, from the bottom up, is native material, and hot mix asphalt. Cores GPRs and core samples indicated a depth of hot mix asphalt that ranged from 0.32' to 0.60'

The existing AC appears to have some transverse and longitudinal cracking. There is some isolated alligator cracking.

Any reliance placed by the contractor on this information shall be at their own risk and they shall undertake their own separate testing program to determine the materials present and conditions prevailing at the time of construction.

District: County: Route: Post Mile: Direction: Lane:

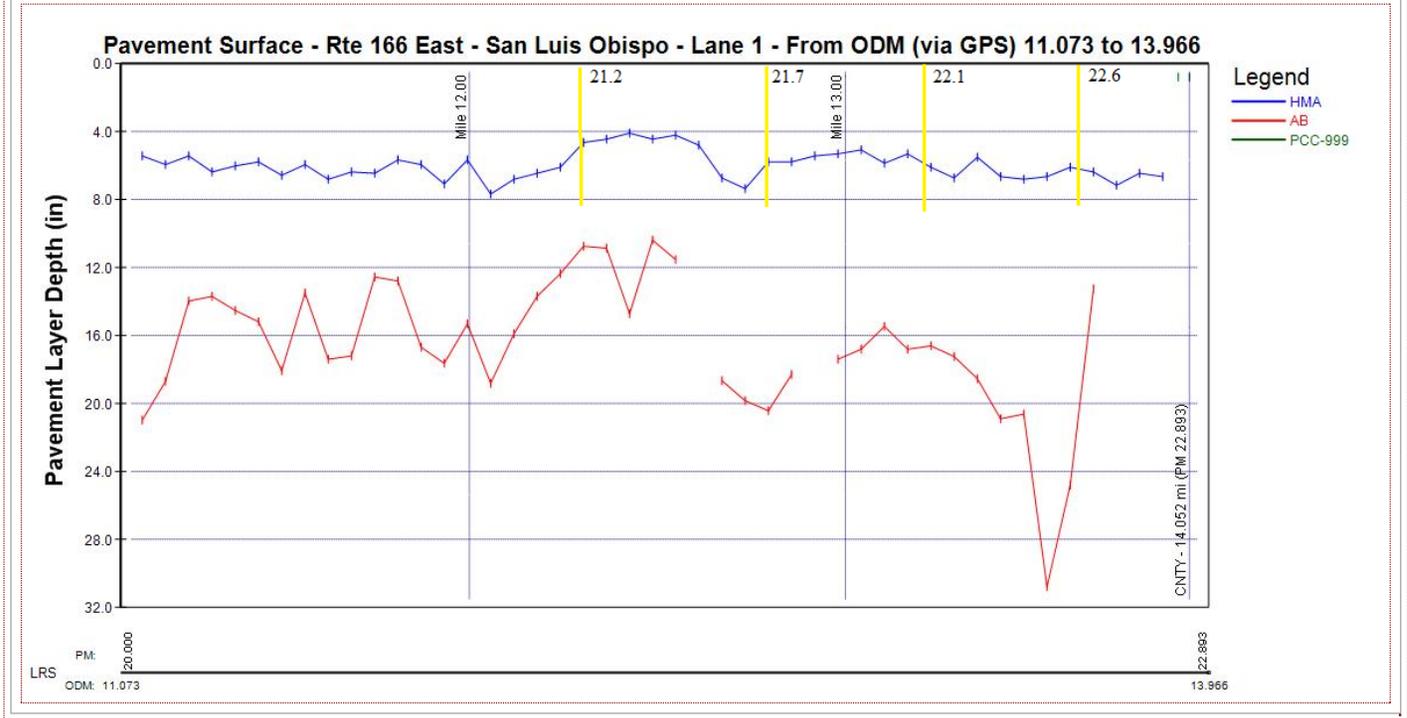
View Range: Inc:

Show cores independent of direction & lane

 US Units-Ft
 US Units-In
 SI Units

Associated ODM:

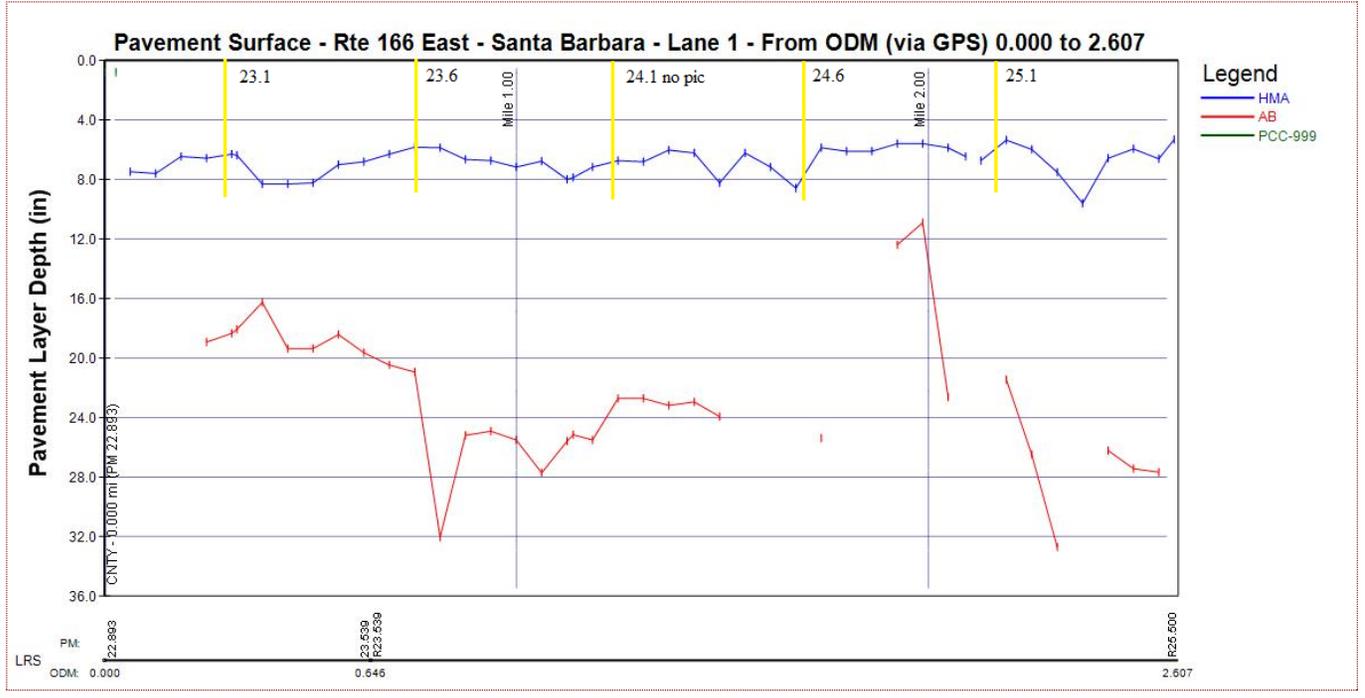
Bridges/OH Connectors Ramps Lanes Route Boundaries Misc



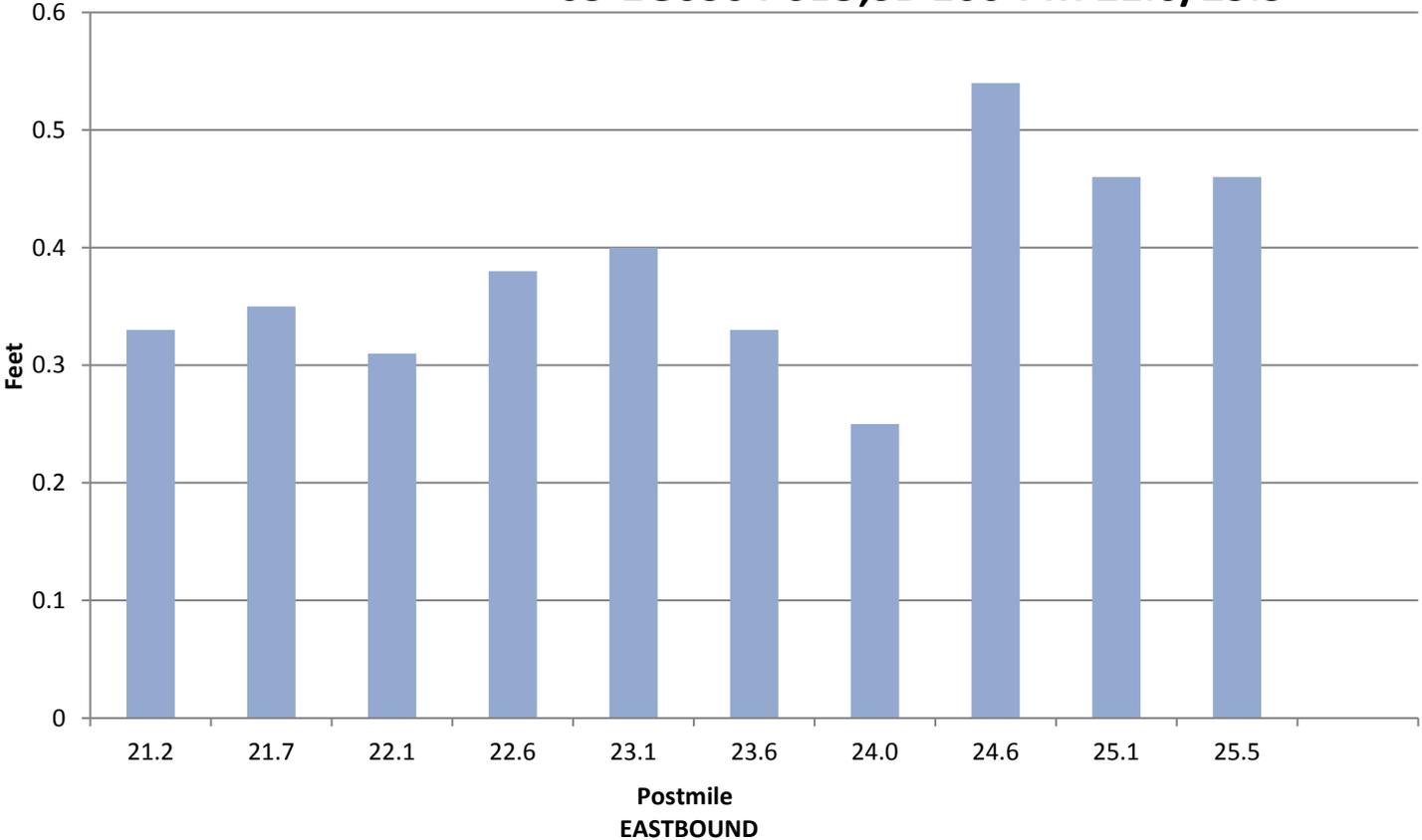
District: District 5 | County: Santa Barbara-2 | Route: 166 | Post Mile: R24.197 | Direction: East | Lane: 1
 View Range: 2.607 | Inc: 0.5
 Associated ODM: 1.304

Show cores independent of direction & lane
 US Units-Ft
 US Units-In
 SI Units

Bridges/OH | Connectors | Ramps | Lanes | Route Boundaries | Misc



Existing AC Thickness by Coring
05-1G6304-SLO,SB 166-PM 21.0/25.5





CITY OF SANTA MARIA
UTILITIES DEPARTMENT
Business Services • Regulatory Compliance
Solid Waste Services • Water Resources

2065 EAST MAIN STREET • SANTA MARIA, CALIFORNIA 93454-8026 • 805-925-0951 EXT. 7270 • FAX 805-928-7240

September 8, 2015

Arman Asefvaziri, PE
Caltrans District 5 – Maintenance Design
50 Higuera Street
San Luis Obispo, CA 93401

Re: Water Source for Construction Project EA: 05-1G640 on Route 166

Mr. Asefvaziri;

Thank you for your inquiry regarding water for the above referenced project.

Your inquiry indicated that the project is 5.5 miles long, and would need a total of approximately 113,000 gallons of non-potable water, about 7,000 to 8,000 gallons per day.

The City of Santa Maria has non-potable water available for a construction project (EA: 05-1G640) in San Luis Obispo and Santa Barbara county on Route 166 from 3.2 miles east of Alamo Creek Bridge to Aliso Creek Bridge.

Contractors wishing to purchase water for this project would need to contact our department.

Sincerely,

Lisa Long
Utilities Business Manager

Our Mission – “To provide the highest quality service in the most efficient, cost-effective and courteous manner.”

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

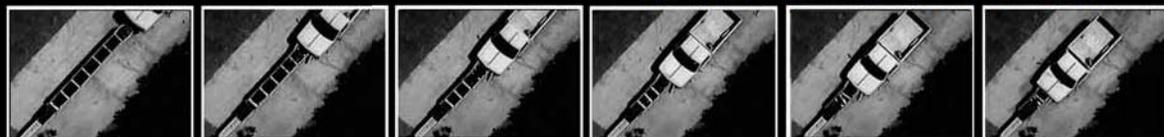


Modular plate base reduces anchorage and speeds installation

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



ENERGY ABSORPTION
SYSTEMS, INC.



SAVING LIVES BY DESIGN

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



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™



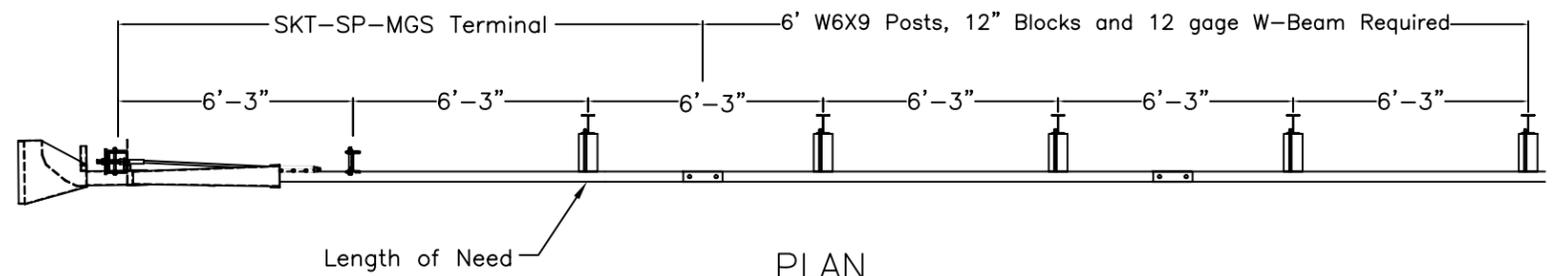
ENERGY ABSORPTION
SYSTEMS, INC.

SAVING LIVES BY DESIGN®

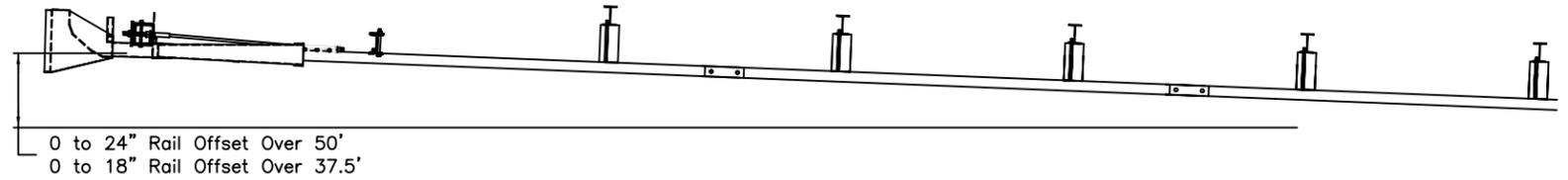
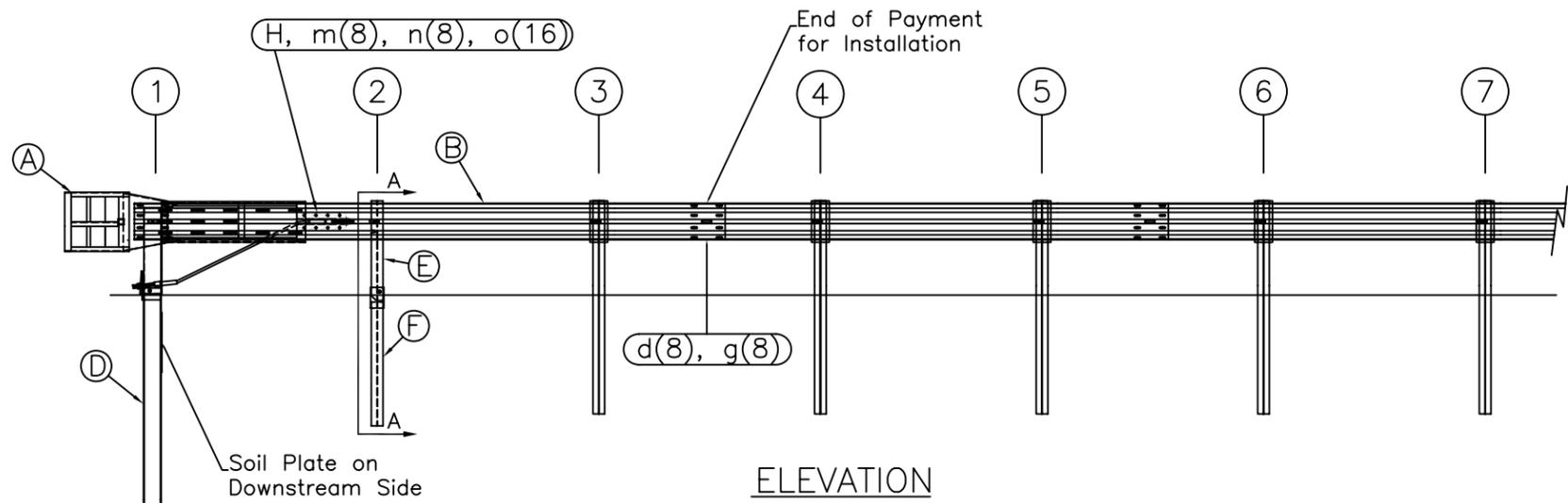
www.energyabsorption.com

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)

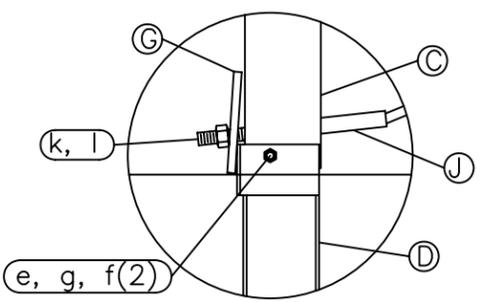
DRAWING NUMBER	DRAWING NAME	MOST RECENT REVISION DATE
300-148	SLED END TREATMENT ANCHORED/UNANCHORED CONFIGURATIONS	6/9/2011
300-147	SLED END TREATMENT SYSTEM	6/10/2011
300-146	SLED END TREATMENT TL3	6/10/2011
45044-Y	SLED END TREATMENT MODULE	6/10/2011
45044-T	SLED END TREATMENT TRANSITION ASSEMBLY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



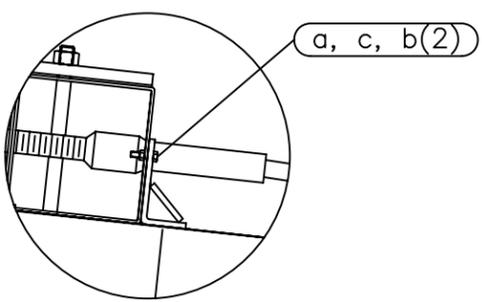
TRAFFIC →



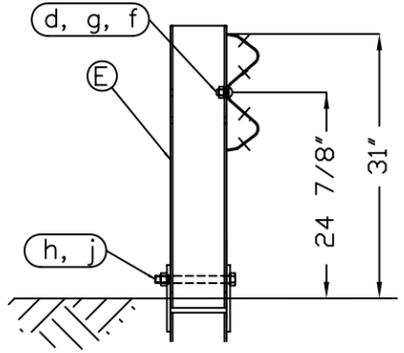
OPTIONAL FLARED INSTALLATION
25:1 maximum flare rate



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

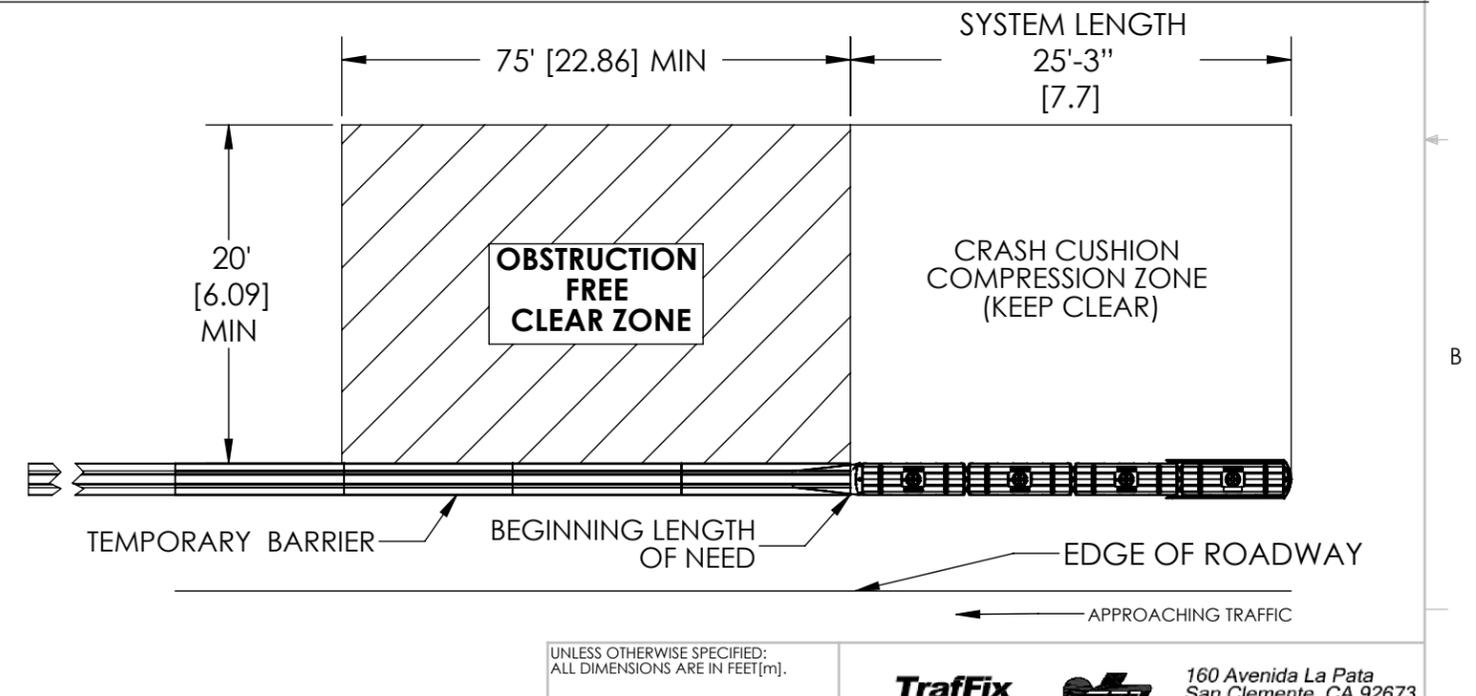
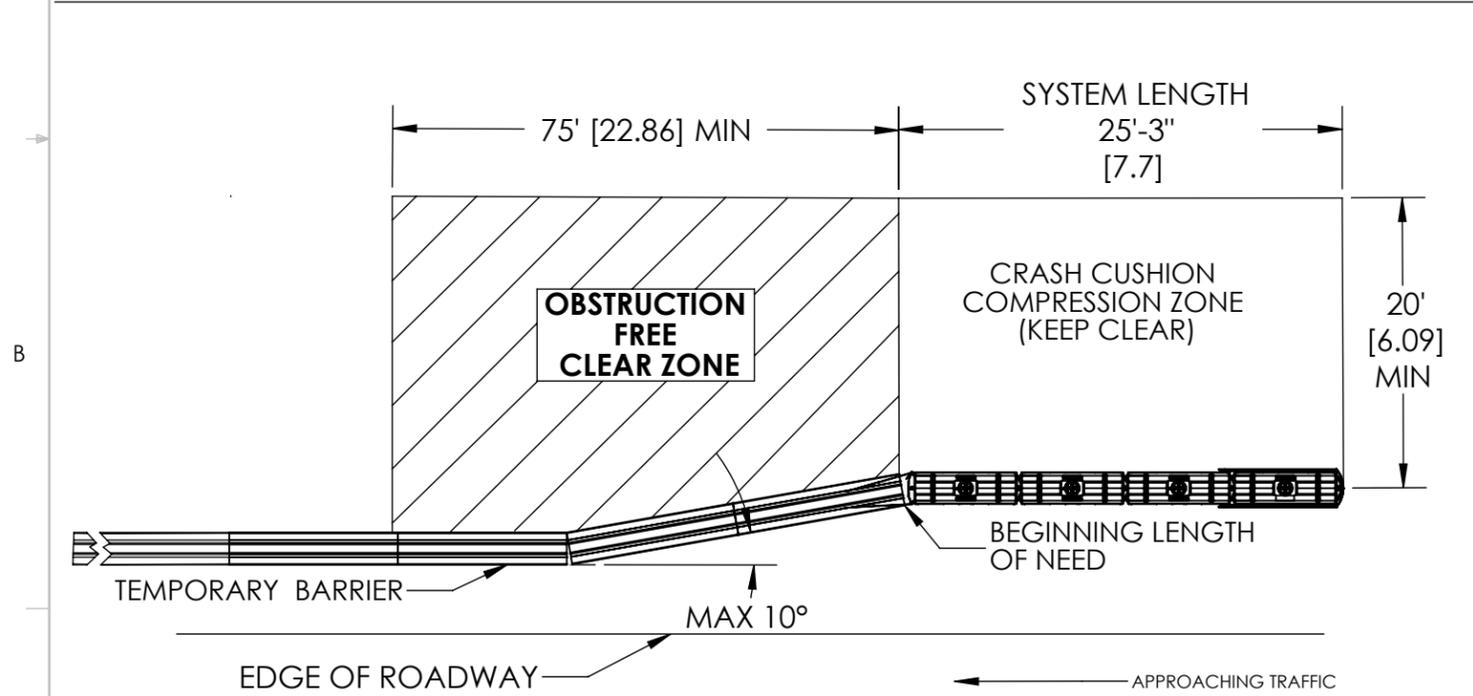
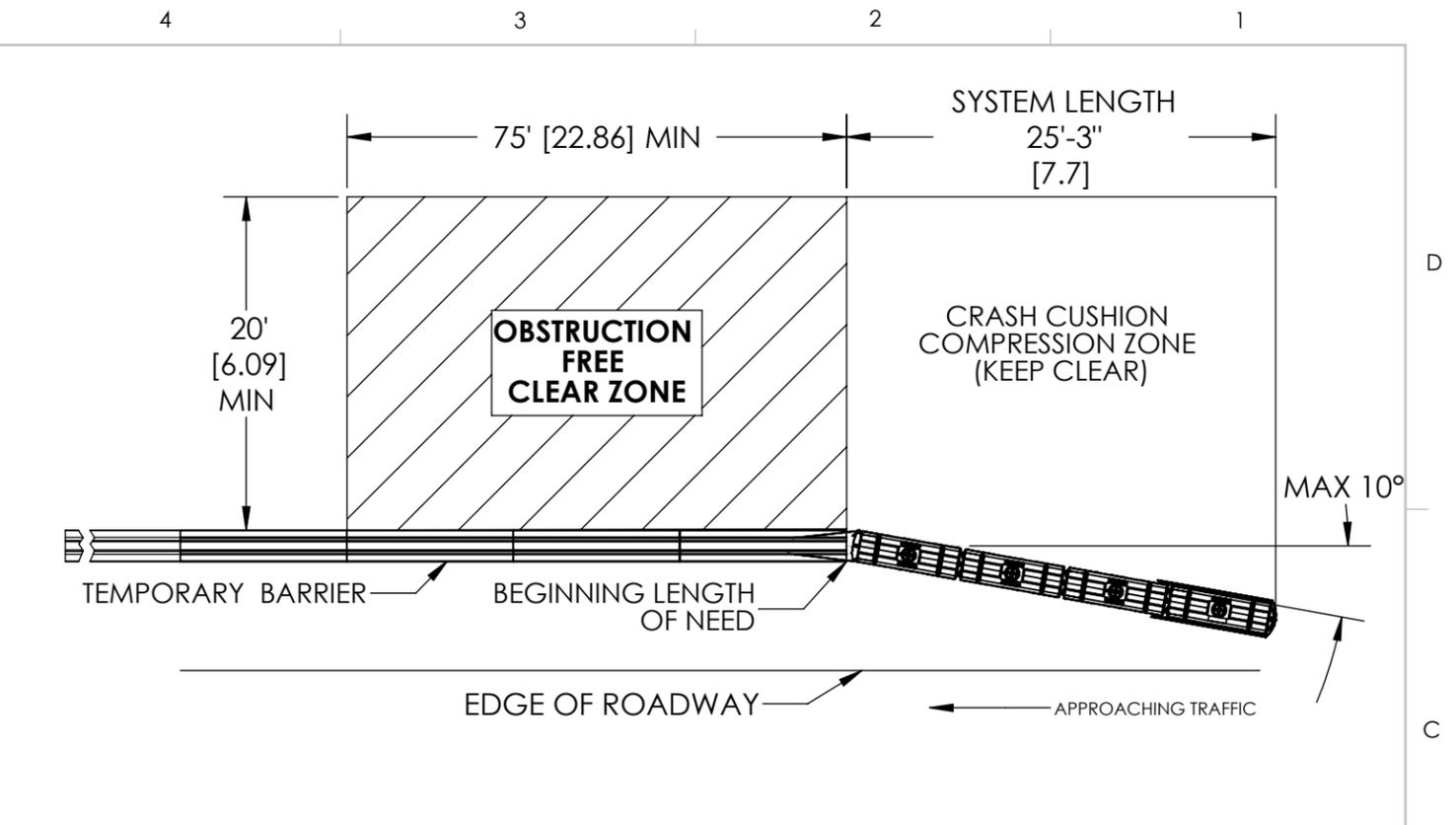
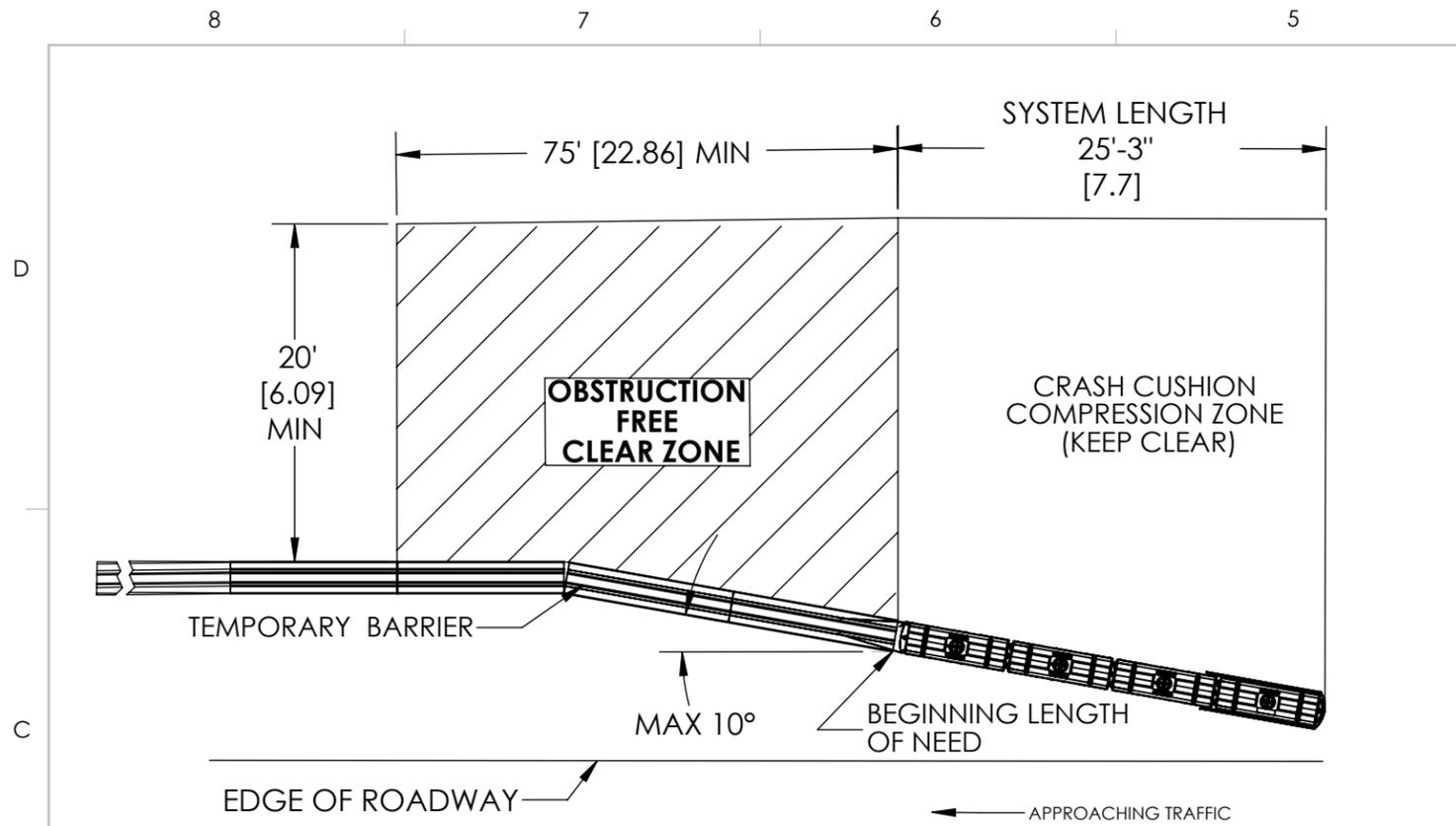
HARDWARE (ALL DIMENSIONS IN INCHES)			
a	2	5/16 x 1 HEX BOLT GRD 5	B5160104A
b	4	5/16 WASHER	W0516
c	2	5/16 HEX NUT	N0516
d	9	5/8 Dia. x 1 1/4 SPLICE BOLT (POST #2)	B580122
e	1	5/8 Dia. x 9 HEX BOLT GRD 5	B580904A
f	3	5/8 WASHER	W050
g	10	5/8 Dia. H.G.R NUT	N050
h	1	3/4 Dia. x 8 1/2 HEX BOLT GRD A449	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		Sheet:	1
		Date:	02/24/10
Drawing Name: SKT-SP-S-MGS		By:	JRR
		Scale:	None
		Rev:	0



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].



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**

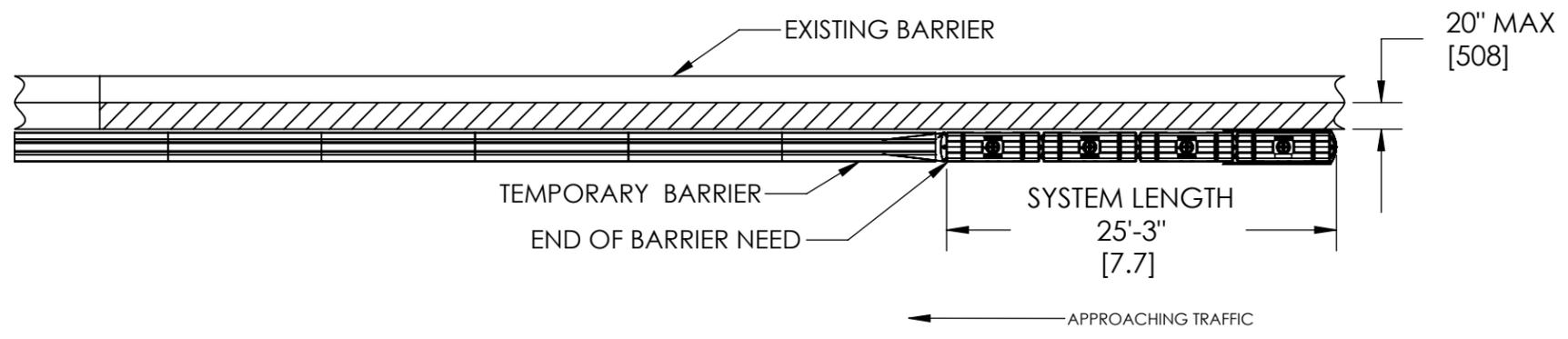
REV **C**

SHEET 1 OF 2

8 7 6 5 4 3 2 1

D
C
B
A

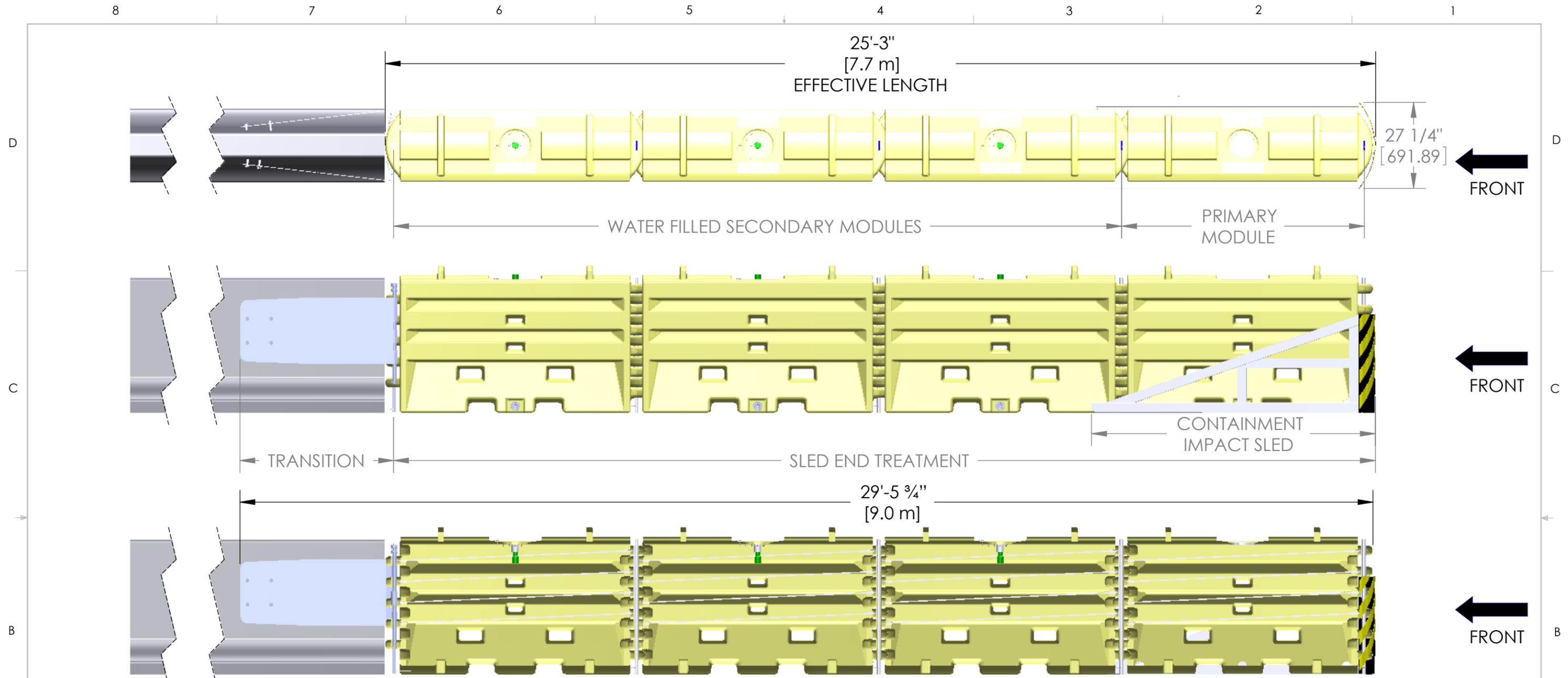
D
C
B
A



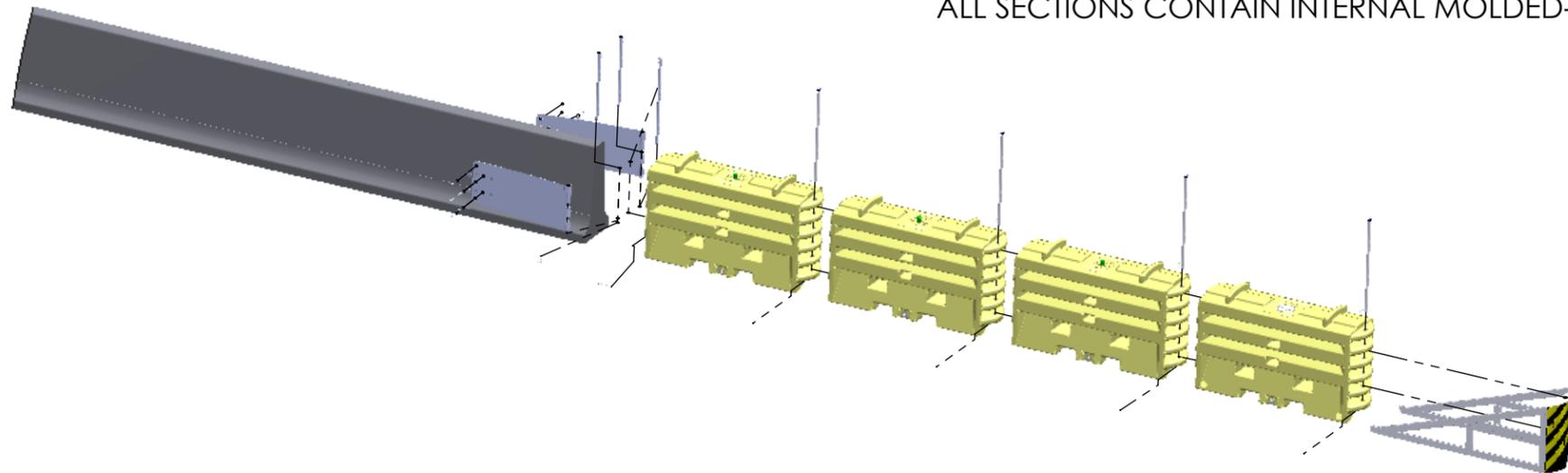
ROADSIDE INSTALLATION ON APPROACH OF ELEVATED BRIDGES OR ROADWAYS
 PLACEMENT OF THE SLED SYSTEM ON ELEVATED BRIDGE DECKS OR ROADWAYS ADJACENT TO EXISTING RAIL OR BARRIER SHALL BE OFFSET AT LEAST 20 INCHES [0.5 METER] FROM THE EXISTING RAIL OR BARRIER.
 HATCHED AREA TO BE KEPT CLEAR OF ANY OBJECTS

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 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 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

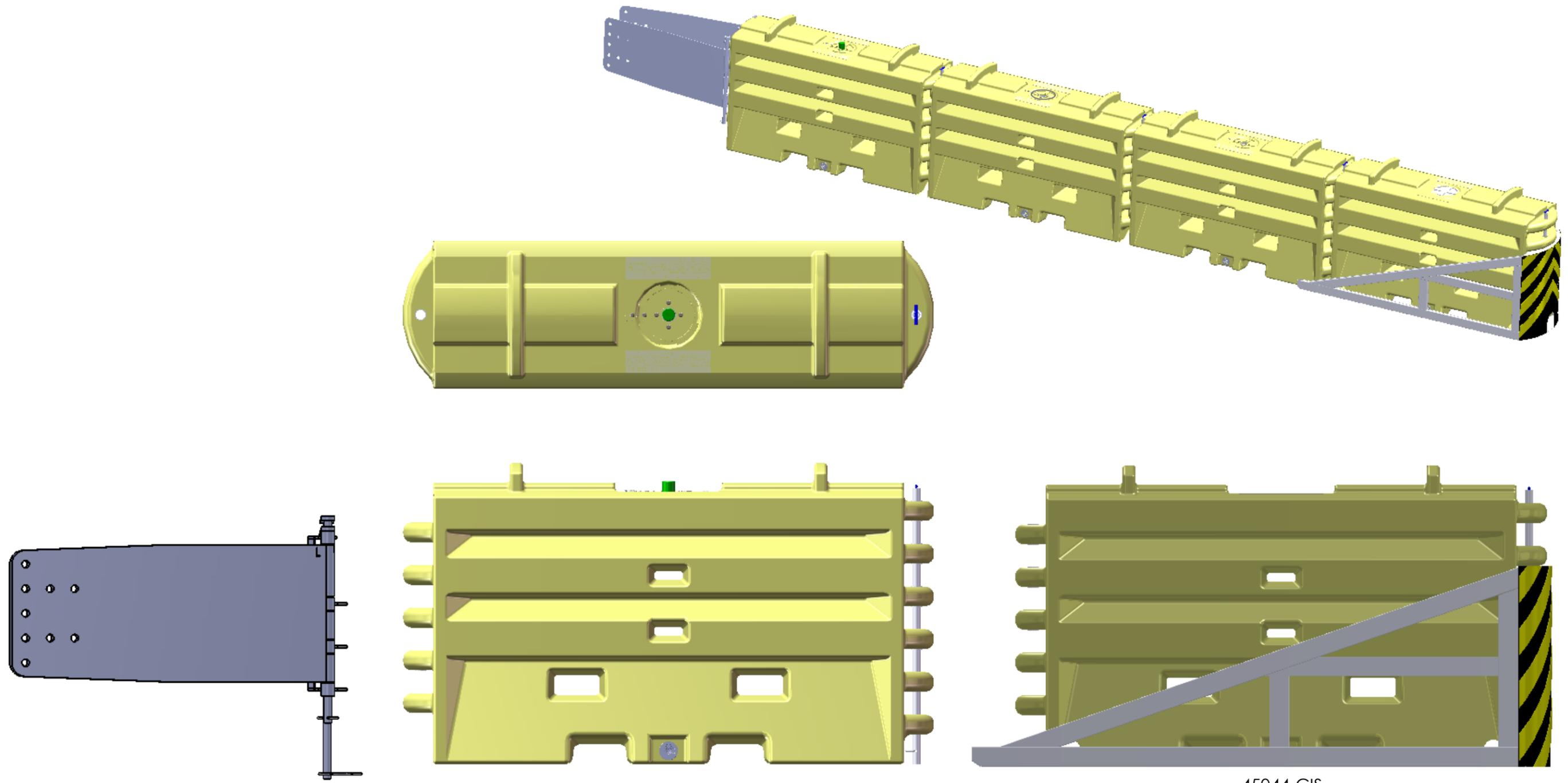
REV
A

SHEET 1 OF 1

8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
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**

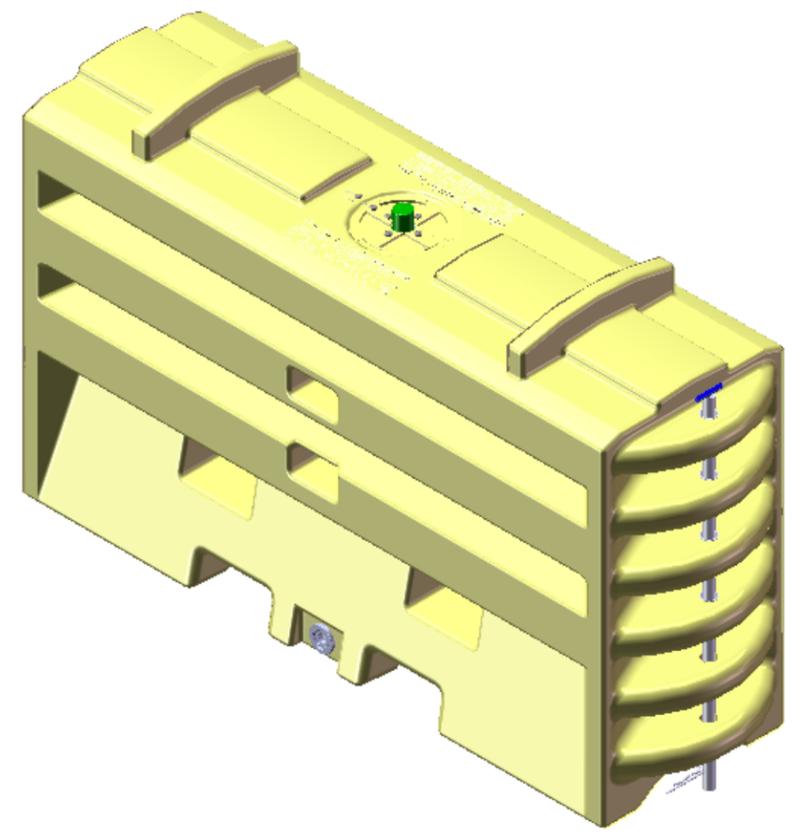
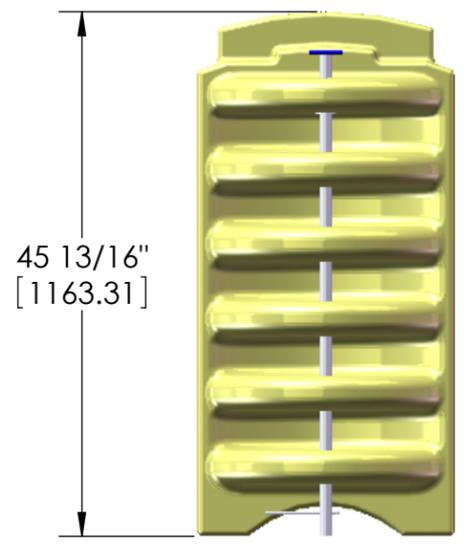
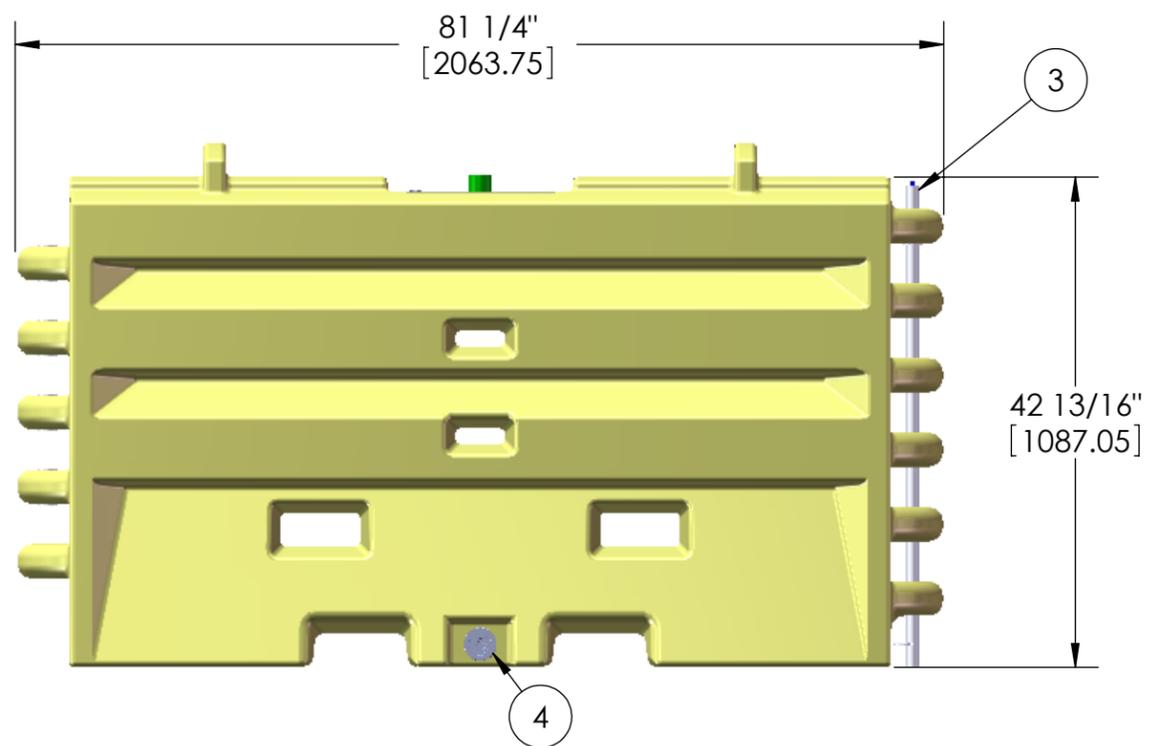
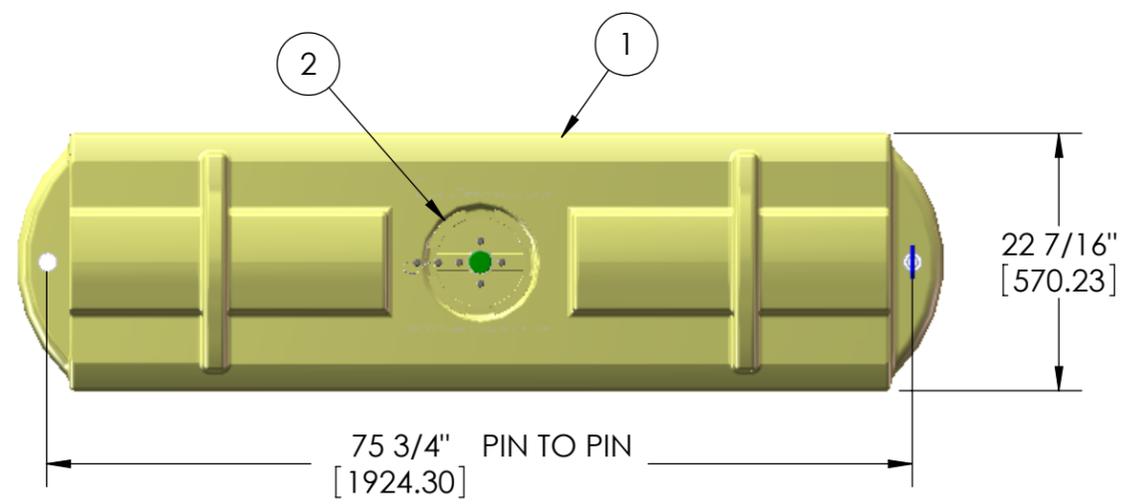
SHEET 1 OF 1

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
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SHEET 1 OF 1

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

D

C

B

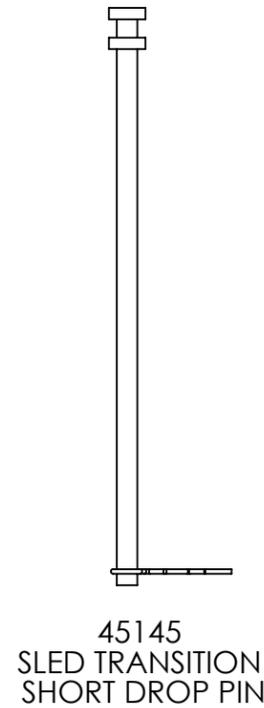
A

D

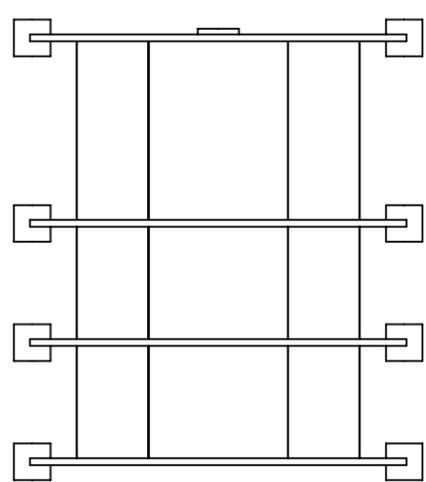
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A



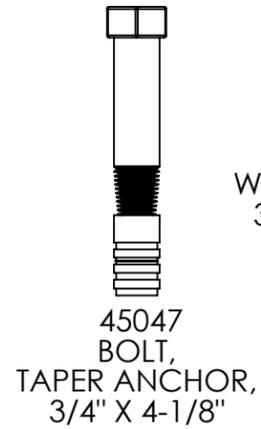
45145
SLED TRANSITION
SHORT DROP PIN



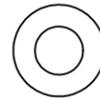
45130
SLED TRANSITION FRAME



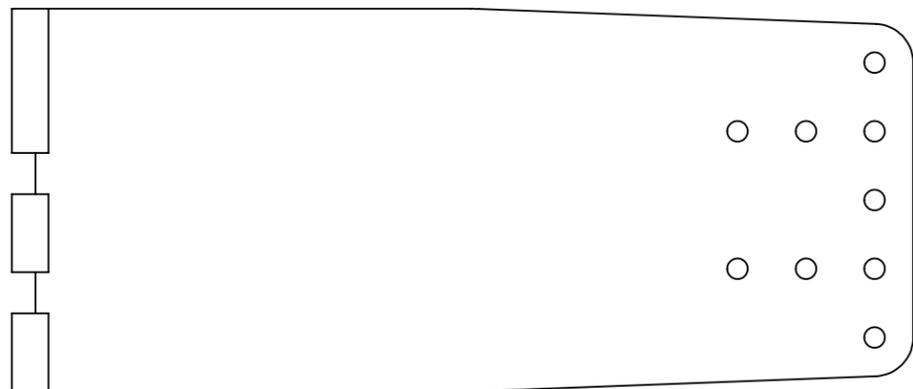
45140
SLED TRANSITION
LONG DROP PIN



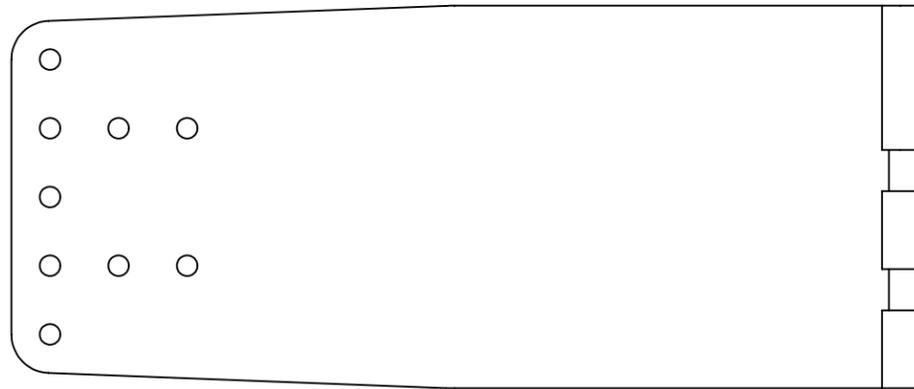
45047
BOLT,
TAPER ANCHOR,
3/4" X 4-1/8"



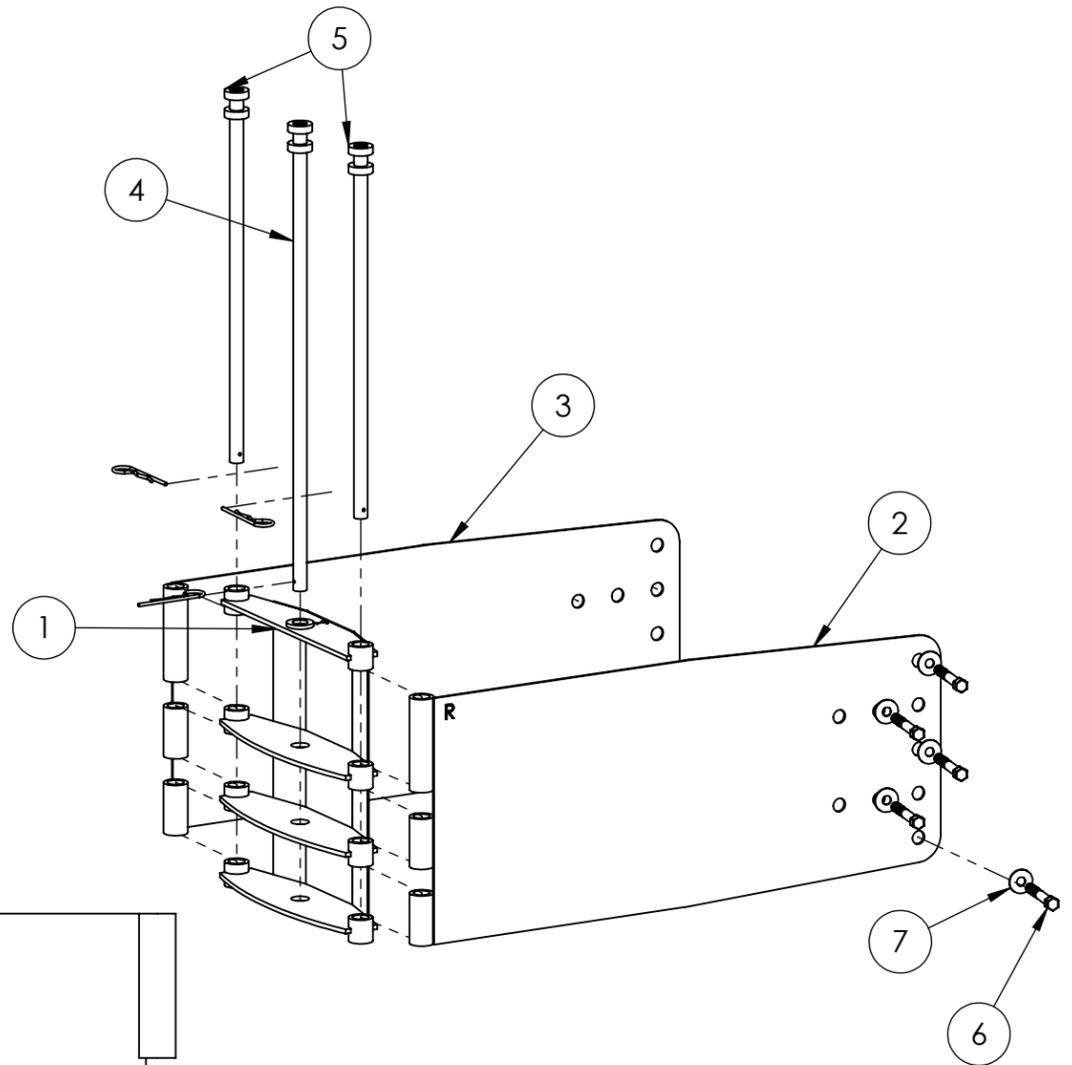
12060
WASHER, FLAT,
3/4"ID X 2"OD



45150L
SLED TRANSITION PANEL, LEFT



45150R
SLED TRANSITION PANEL, RIGHT



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

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

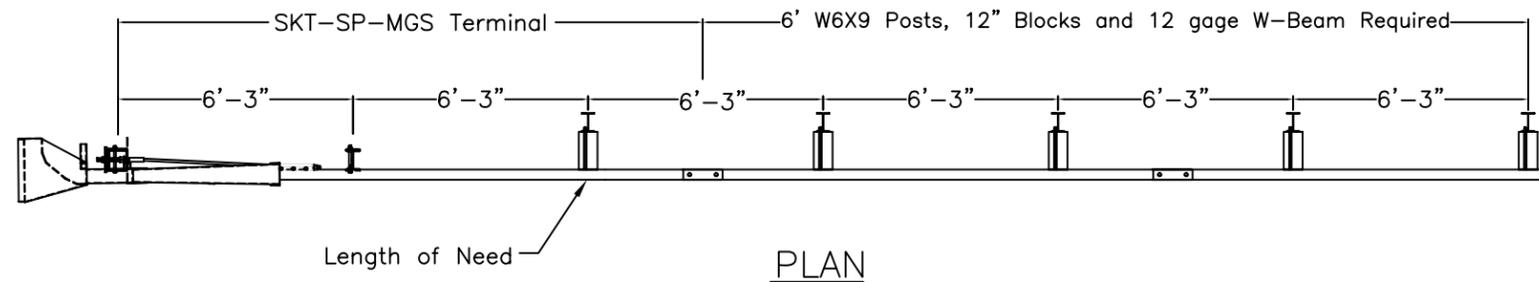
Traffix Devices Inc.
160 Avenida La Pata
San Clemente, CA 92673
(949) 361-5663
FAX (949) 361-9205
www.traffixdevices.com

TITLE: **SLED END TREATMENT TRANSITION ASSY**

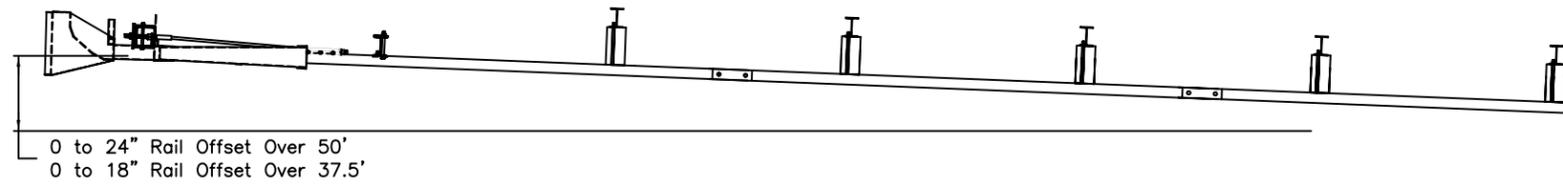
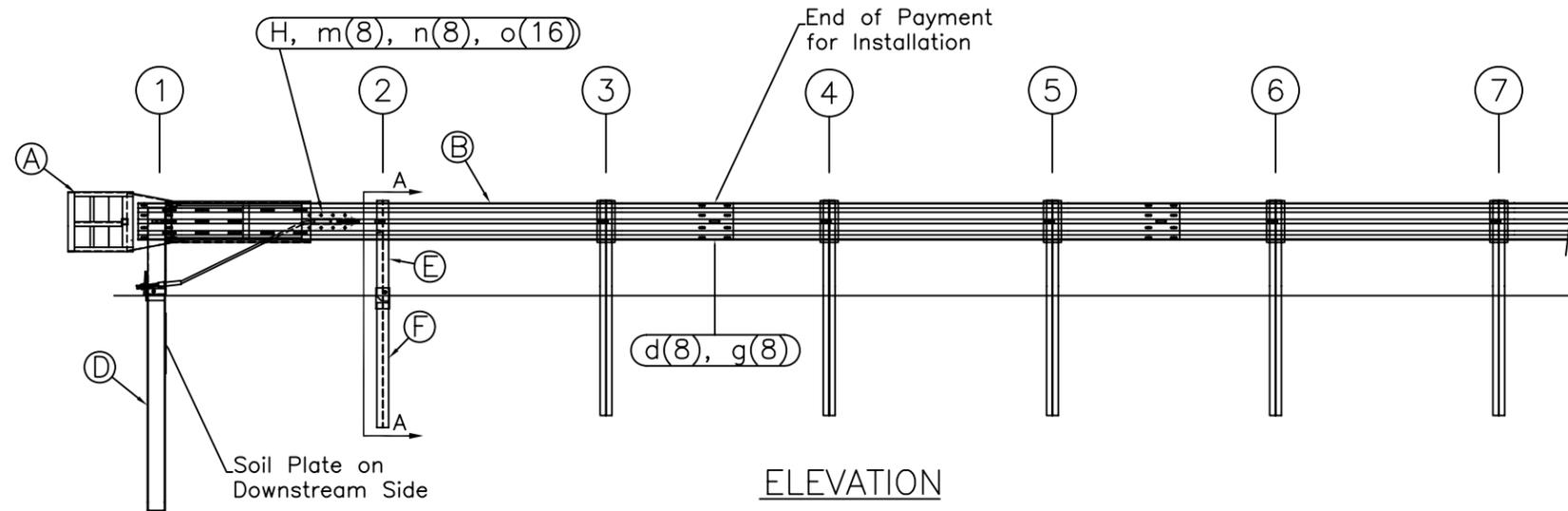
SIZE **B** DWG. NO. **45044-T** REV **B**

SHEET 1 OF 6

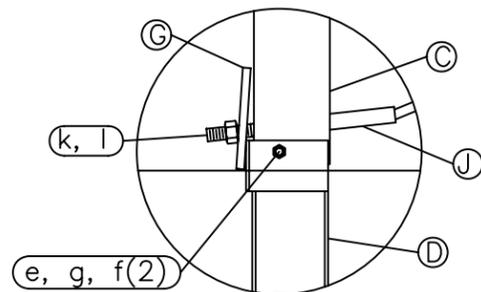
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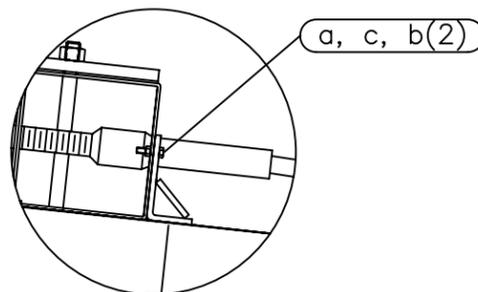
TRAFFIC →



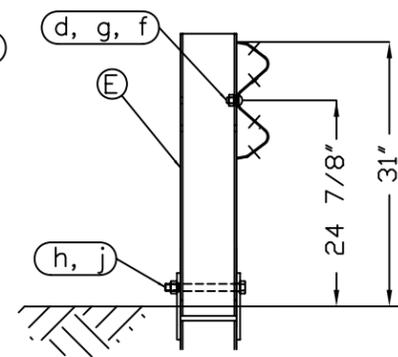
OPTIONAL FLARED INSTALLATION
25:1 maximum flare rate



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

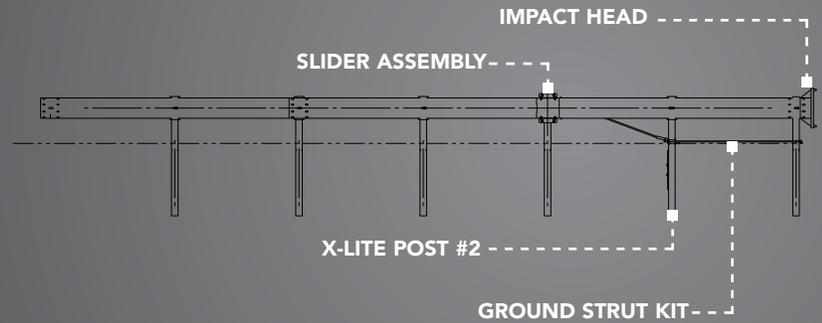
X-LITE® | REDIRECTIVE, GATING GUARDRAIL TERMINAL

- LOW COST HAZARD PROTECTION
- AVAILABLE AS A TANGENT OR FLARED SYSTEM
- SIMPLE INSTALLATION
- NCHRP 350 TL-3 ACCEPTED



PHYSICAL SPECIFICATIONS

Classification	R-G	
Length	37' 6"	11.43 m
Width	Tangent or Flared	
Height	27 5/8" or 31"	710 or 790 mm
Straight / Variable Flare	4'	1.2 m
Test Level	NCHRP 350	TL-3



CRASHWORTHY, AFFORDABLE NCHRP 350 TL-3 END TERMINAL

The Redirective, Gating, NCHRP 350 TL-3 X-LITE Guardrail End Terminal features excellent impact performance at an affordable price. Utilizing a superior telescoping, non-extruding design, the X-LITE Guardrail End Terminal provides the life saving performance of a redirective, gating terminal without the high cost. The X-LITE Terminal has been engineered to allow maximum interchangeably for flared and tangent roadside applications. This results in significant savings in inventory and maintenance costs. In addition, The X-LITE Terminal has been designed using many standard, non-proprietary guardrail components. The Terminal is available with I-Beam steel posts using wood or composite blockouts.

FREQUENTLY ASKED QUESTIONS

What makes the X-LITE Terminal different from the other redirective, gating terminals on the market?

The X-LITE Terminal utilizes a telescoping, non-extruding design to provide safe and consistent performance. The X-LITE Terminal is also engineered with maximum interchangeability between flared and tangent roadside applications. Lastly, The X-LITE Terminal is engineered using simple design and standard guardrail components that can be procured in kit or system form.

Can the X-LITE Terminal be attached to concrete barrier?

Yes, The X-LITE Terminal can be attached to concrete barrier with the addition of standard transitions.

Can the X-LITE Terminal be installed using composite blockouts?

Yes, The X-LITE Terminal can be installed using either wood or composite blockouts.

FEATURES

- » Utilizes a non-extruding, fixed impact head design
- » Uses similar components for tangent and flared systems
- » W-Beam telescopes during impact
- » 27 5/8" or 31" (710 mm or 790 mm) height option
- » Easy to install
- » Designed using many standard non-proprietary W-Beam guardrail components
- » BLON begins at post 3

WHERE TO USE

Side of road where a recommended clear zone and recoverable slope is attainable.

DISTRIBUTED BY:



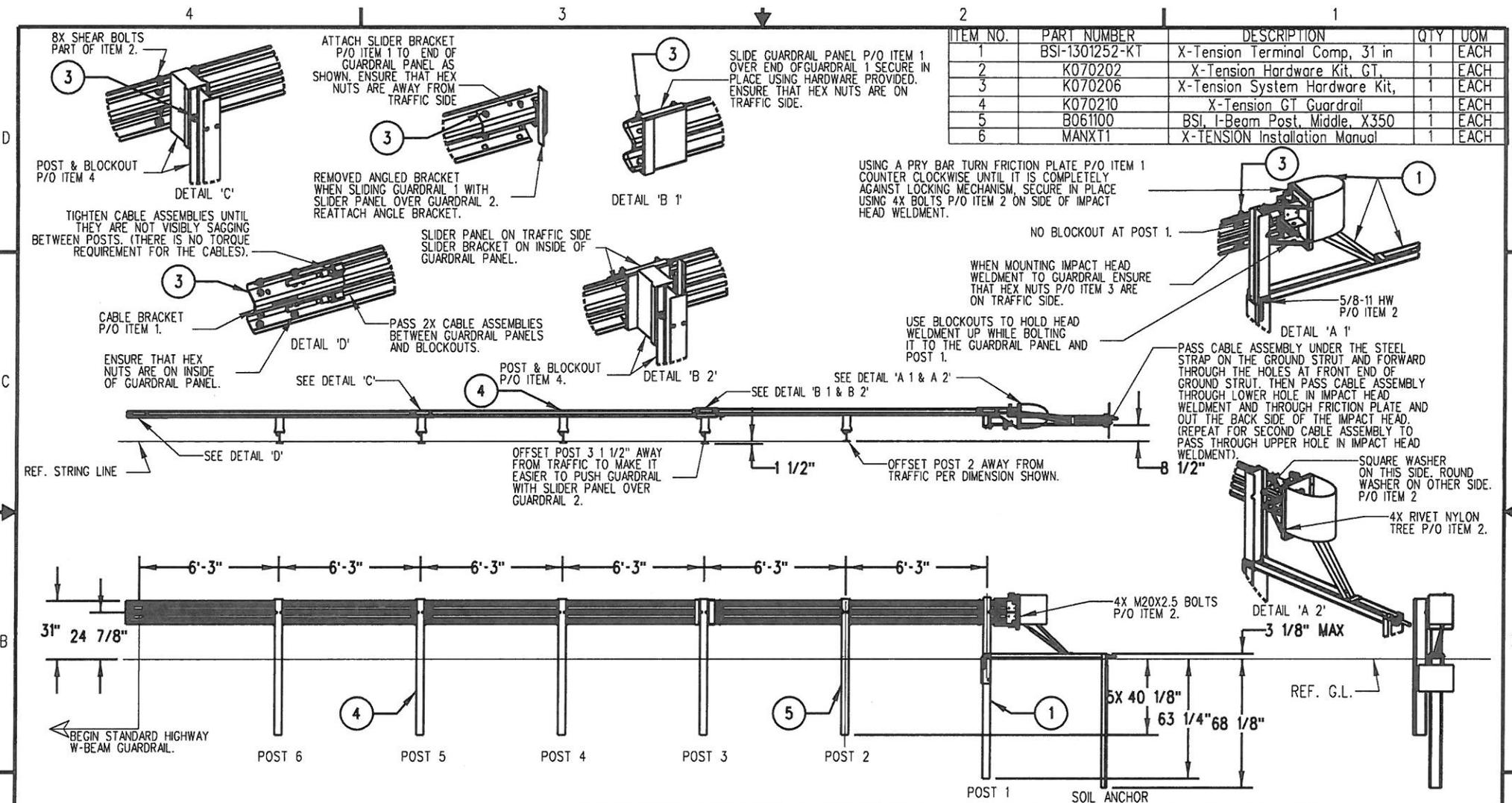
Lindsay Transportation Solutions Sales and Services, Inc.

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 X-LITE 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 # XL04-03252013



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.

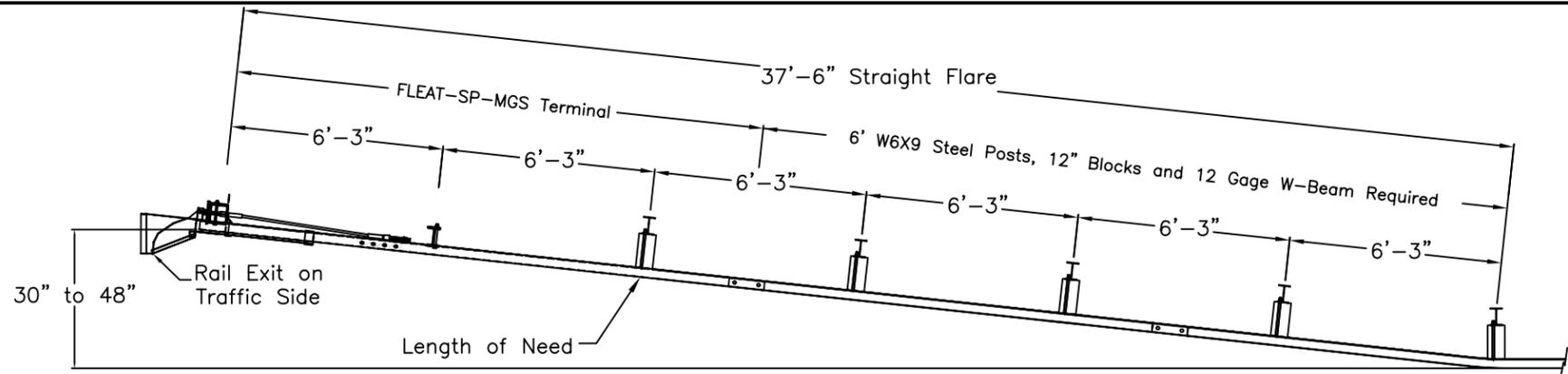
1/2012 BARRIER SYSTEMS INC. THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BARRIER SYSTEMS INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF BARRIER SYSTEMS INC. IS PROHIBITED.		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS DECIMAL ANGLES $\pm 1/16$ $\pm .015$ $\pm 1/2^\circ$ $\pm .010$ $\pm .010$	
APPROVALS DRAWN BY: NMV DRAWN DATE: 2/08/13 APPR'D BY: JMT APPR'D DATE: 2/08/13		THRD ANGLE PROJECTION  INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5-1994 DO NOT SCALE DRAWING	
REV	ECN*	DATE	SCALE
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A	2022	2/08/13	B
1			1:50

LINDSAY
TRANSPORTATION SOLUTIONS

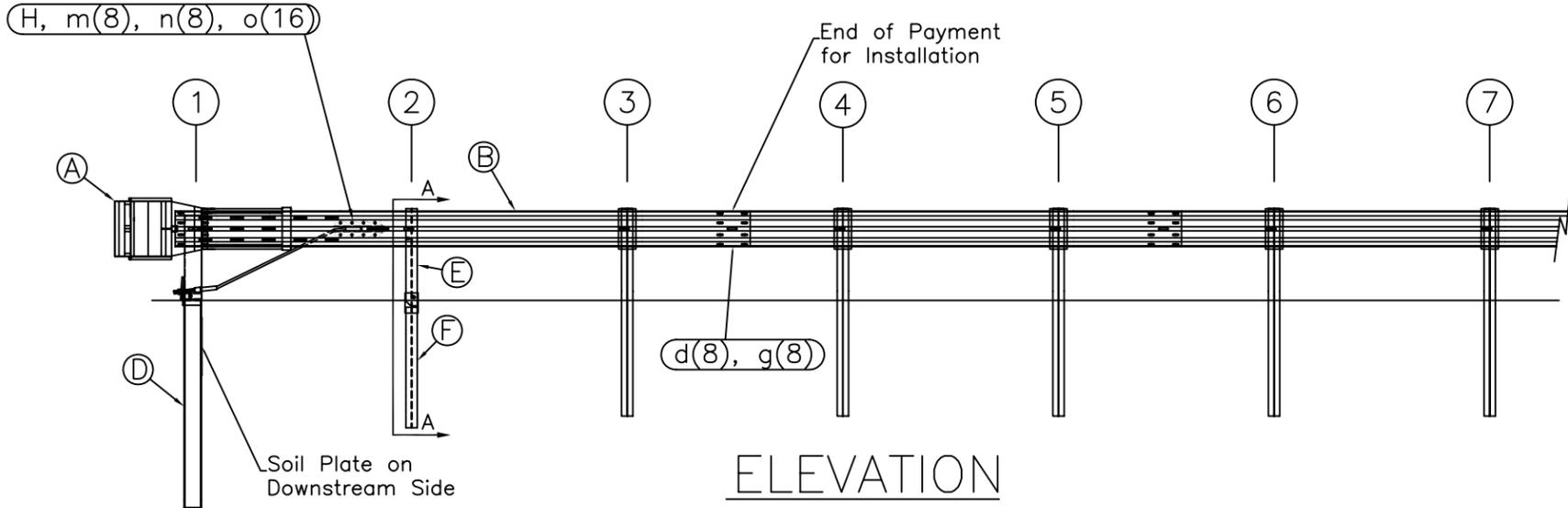
BARRIER SYSTEMS INC.
3333 Voco Valley Parkway, Ste 800
Vacoala, CA 95688
Tel: 800-800-5691
www.barriersystemsinc.com

TITLE: X-TENSION GUARDRAIL TERMINAL SYSTEM
STEEL POST WITH COMPOSITE BLOCKOUT
31" RAIL HEIGHT

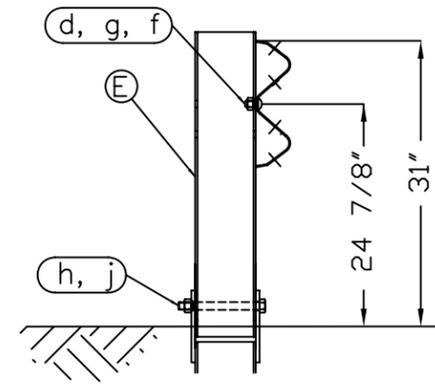
SIZE: B
DWG NO.: XTGTSS5
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SHEET: 1 OF 1



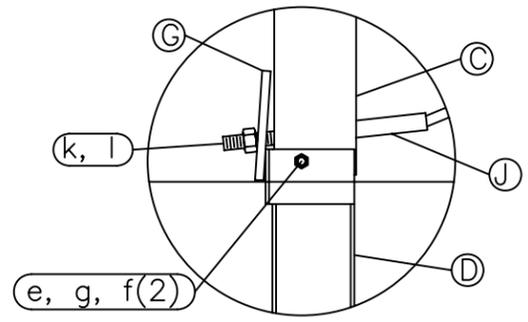
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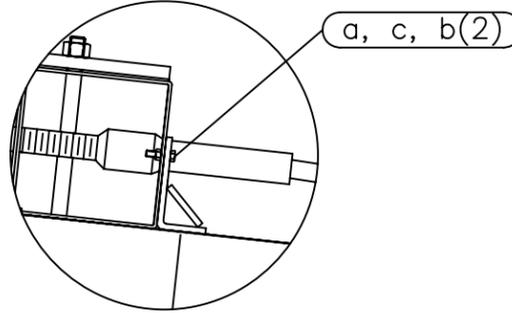
ELEVATION



SECTION A-A
Post #2



Post #1 Connection Detail



Impact Head Connection Detail

ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	F3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	MGS-SF1303
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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

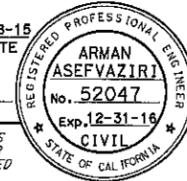
HARDWARE (ALL DIMENSIONS IN INCHES)			
a	2	5/16 x 1 HEX BOLT GRD 5	B5160104A
b	4	5/16 WASHER	W0516
c	2	5/16 HEX NUT	N0516
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h	1	3/4 Dia. x 8 1/2 HEX BOLT GRD A449	B340854A
j	1	3/4 Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
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m	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:

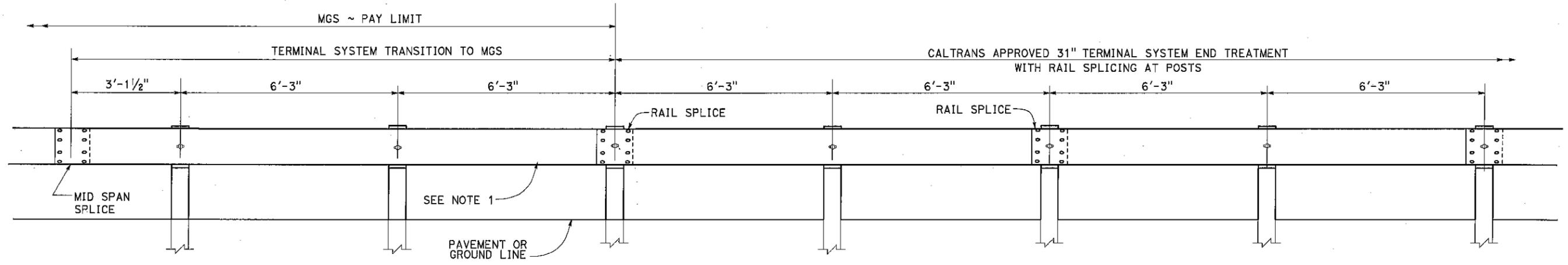
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Big Spring, TX
Phone: 432-263-2435
or Phone: 330-346-0721

FLEAT-SP-MGS Terminal Midwest Guardrail System 31" Top of Rail		Sheet:	1
		Date:	02/24/10
Drawing Name: FLT-SP-S-MGS		By:	JRR
		Scale:	None
		Rev:	0

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO, SB	166	21.0/25.5		
 REGISTERED CIVIL ENGINEER			10-28-15	DATE	
PLANS APPROVAL DATE					
					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTE:
1. USE 15'-7 1/2" LENGTH RAIL.



TRANSITION DETAIL FOR 31" TERMINAL SYSTEM END TREATMENT WITH RAIL SPLICING AT POSTS TO MIDWEST GUARDRAIL SYSTEM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE DESIGN
 FUNCTIONAL SUPERVISOR: KELLY McCLAIN
 CALCULATED-DESIGNED BY: ARMAN ASEFVAZIRI
 CHECKED BY: KELLY McCLAIN
 REVISED BY: AA
 DATE REVISED: 10-28-15