

# INFORMATION HANDOUT

**For Contract No. 05-1G6404  
At 05-SLO-41-49.6/50.4**

**Identified by  
Project ID 0515000057**

## **PRODUCT INFORMATION**

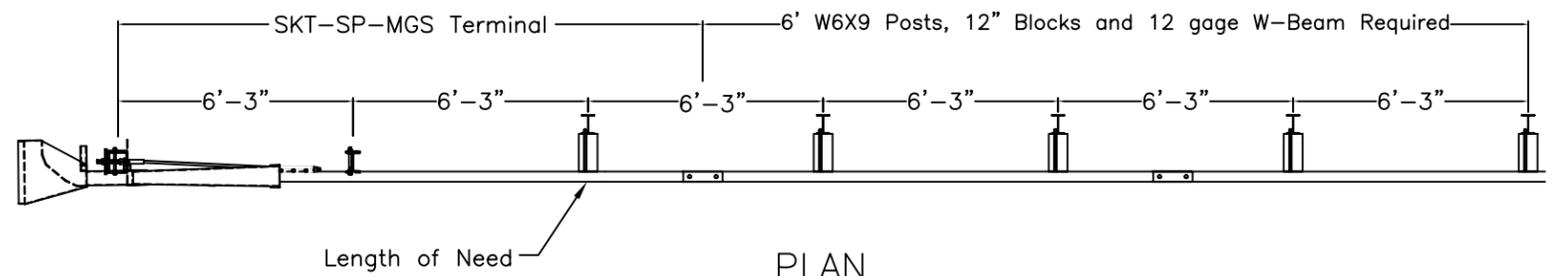
Alternative In Line Terminal System

SKT-SP-MGS

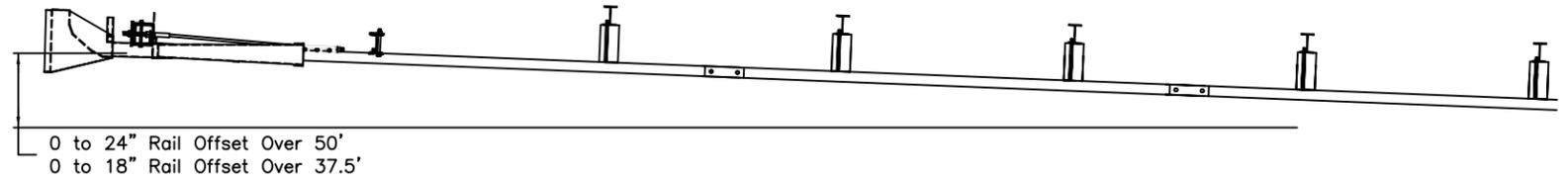
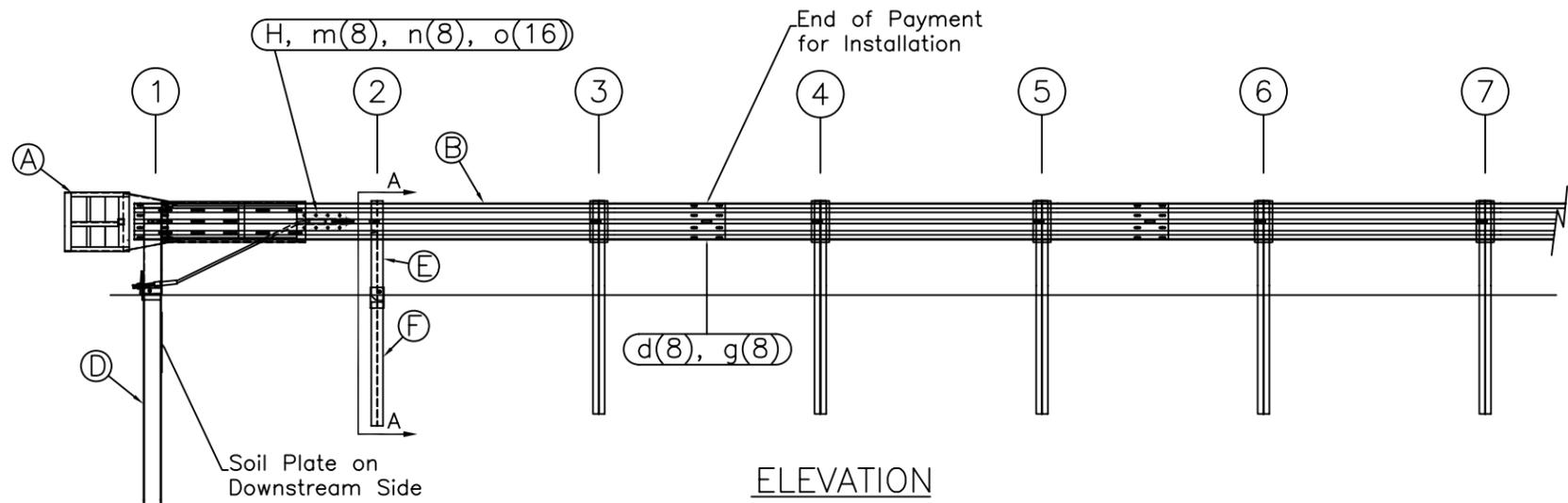
X-Lite

31" X-Tension

Transition Detail for 31" Terminal System End Treatment with Rail Splicing at post to MGS



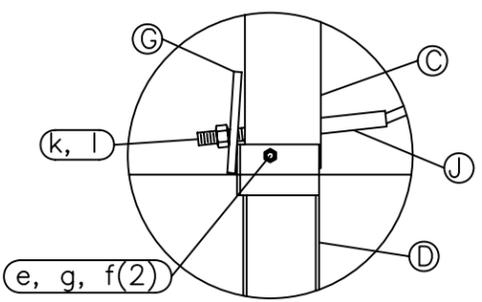
TRAFFIC →



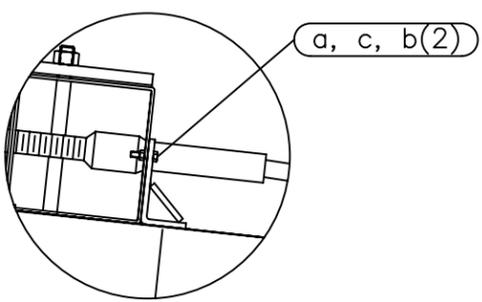
ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	S3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	MGS-SF1303
C	1	FIRST POST TOP (6X6X $\frac{1}{2}$ Tube)	TPHP1A
D	1	FIRST POST BOTTOM (6' W6X15)	TPHP1B
E	1	SECOND POST ASSEMBLY TOP	UHP2A
F	1	SECOND POST ASSEMBLY BOTTOM	HP3B
G	1	BEARING PLATE	E750
H	1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

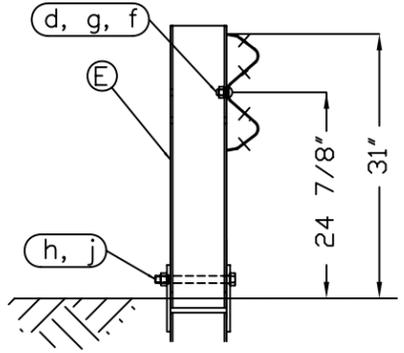
- GENERAL NOTES:
- All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
  - The lower sections of the Posts 1&2 shall not protrude more than 4 in above the ground (measured along a 5' cord). Site grading may be necessary to meet this requirement.
  - The lower sections 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.



Post #1 Connection Detail



Impact Head Connection Detail



SECTION A-A Post #2

**RSI**  
Road Systems, Inc.  
Big Spring, TX  
Phone: 432-263-2435  
or Phone: 330-346-0721

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

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

Drawing Name: SKT-SP-S-MGS  
Scale: None

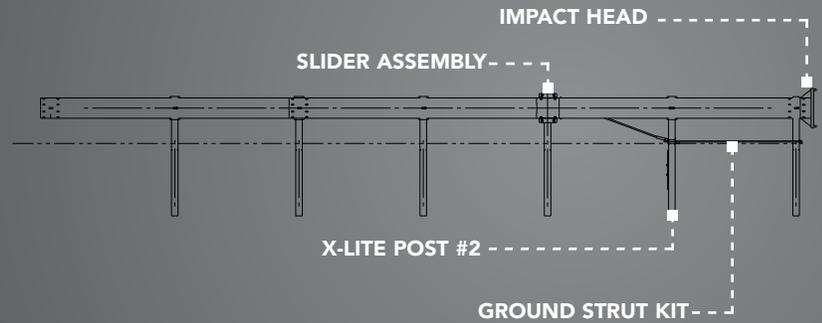
## X-LITE® | REDIRECTIVE, GATING GUARDRAIL TERMINAL

- 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:**



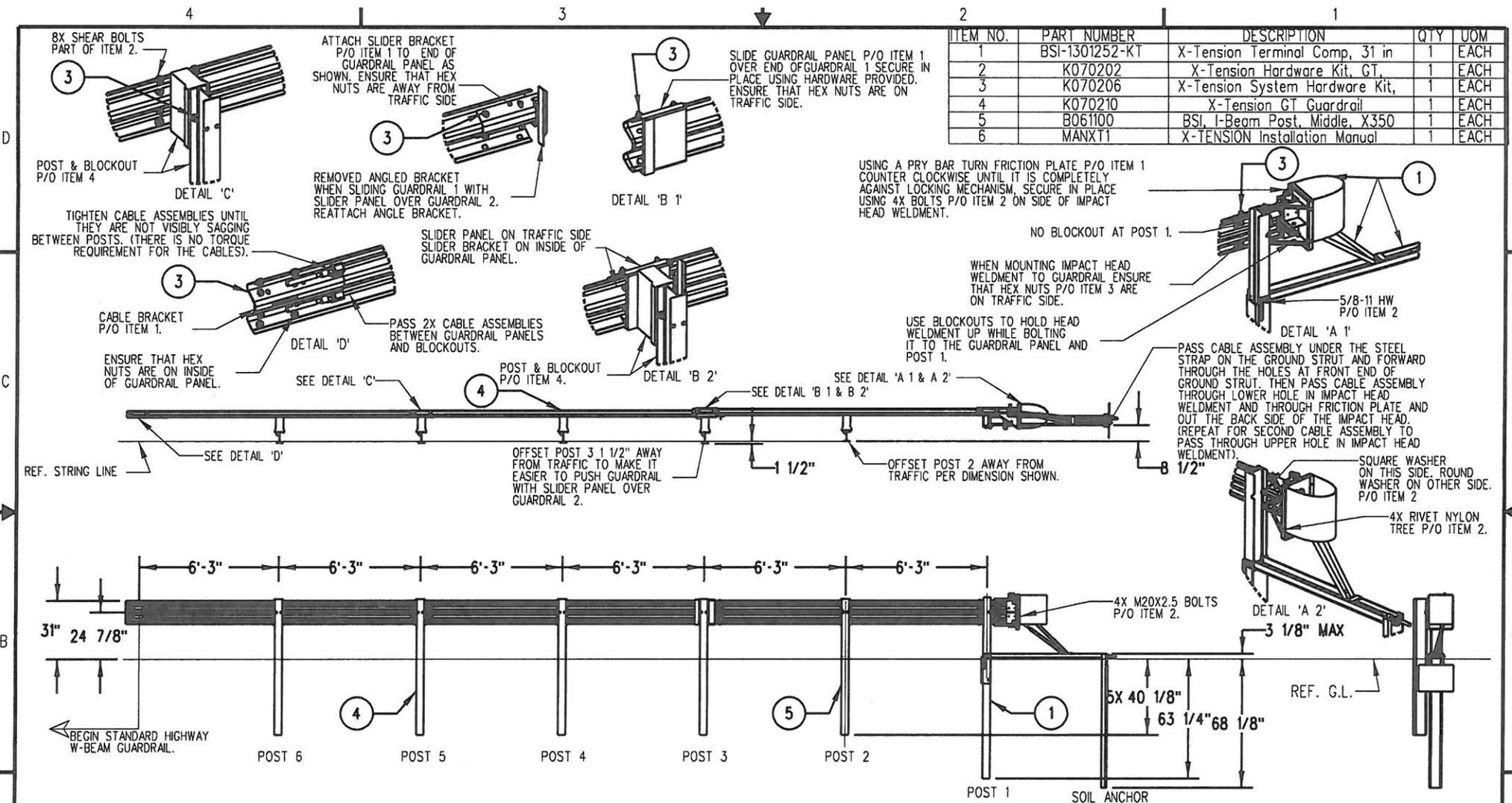
Lindsay Transportation Solutions Sales and Services, Inc.

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.

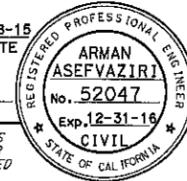
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<b>APPROVALS</b> DRAWN BY: NMV DRAWN DATE: 2/08/13 APPR'D BY: JMT APPR'D DATE: 2/08/13		INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5-1994 THIRD ANGLE PROJECTION 	
REV	ECN*	DATE	SCALE
B	2067	03/02/13	B
A	2022	2/08/13	B
1			1:50

**LINDSAY**  
TRANSPORTATION SOLUTIONS

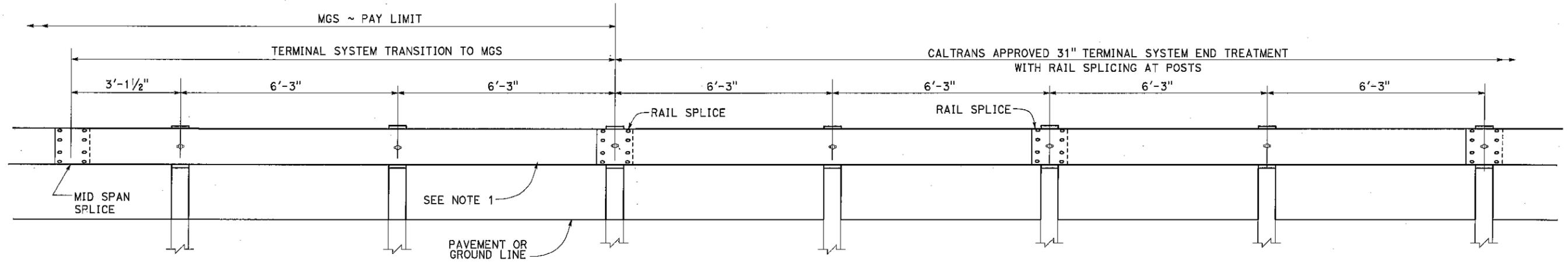
BARRIER SYSTEMS INC.  
3333 Voco Valley Parkway, Ste 800  
Vacoala, CA 95688  
Tel: 800-800-5691  
www.barriersystemsinc.com

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

SIZE: B  
DWC NO.: B  
SCALE: 1:50  
SHEET: 1 OF 1

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