

INFORMATION HANDOUT

For Contract No. 05-1A7304

At 05-Mon-101-49.8/55.3

Identified by

Project ID 0512000011

Alternative In-Line Terminal System Manufacturer drawings

SKT MGS

ET 31

31" X-TENSION

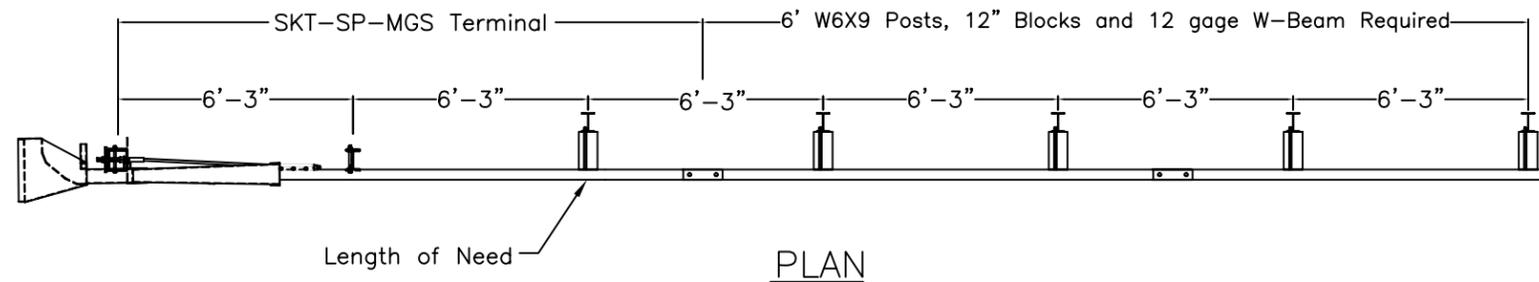
Alternative Flared Terminal System Manufacturer drawings

FLEAT MGS

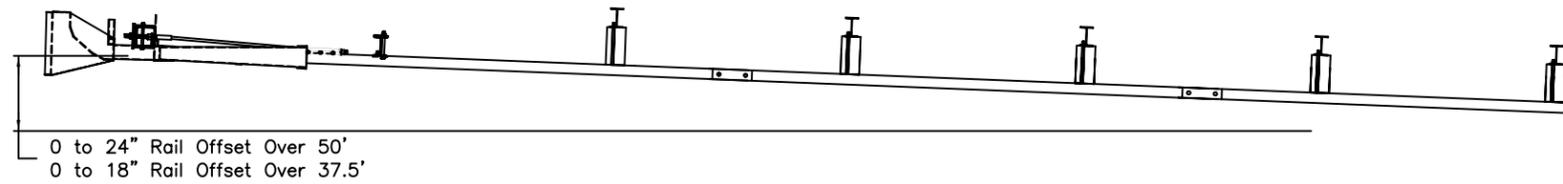
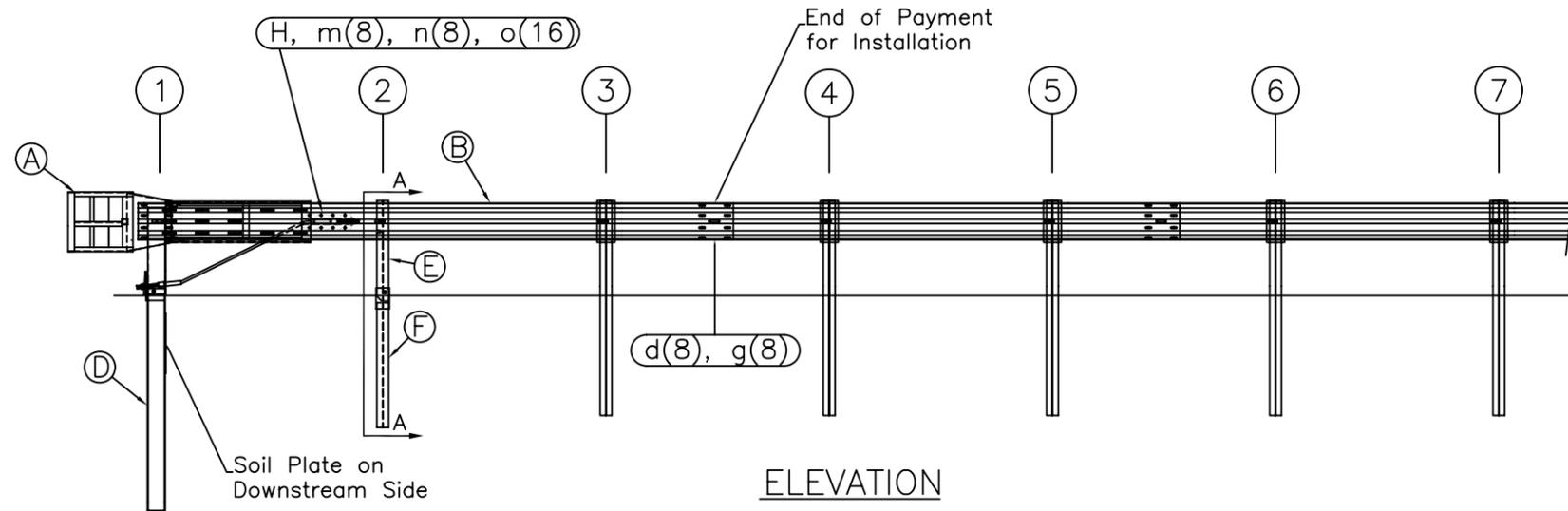
SRT-31"

31" X-TENSION

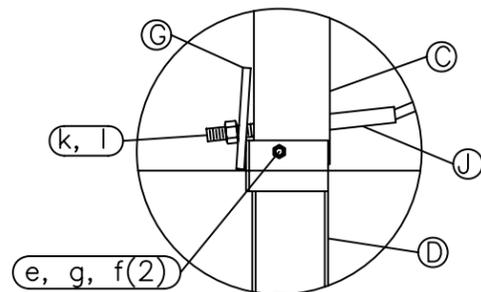
MGS Transition to X-Tension Terminal System Detail



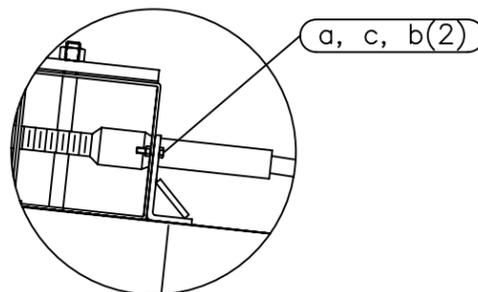
TRAFFIC →



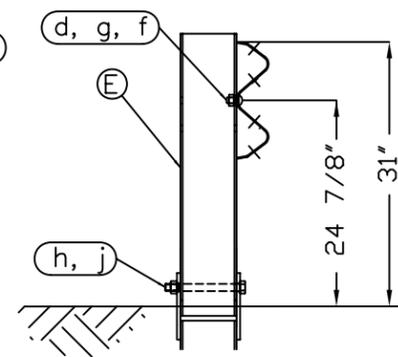
OPTIONAL FLARED INSTALLATION
25:1 maximum flare rate



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

**ET-31™ Guardrail End Treatment
NCHRP Report 350 Test Level 3
System Length 53'-1 1/2" (16.19 m)**

For specific assembly, maintenance, or repair details refer to the state or specifying agency's standard drawings and/or Trinity standard layout drawings.

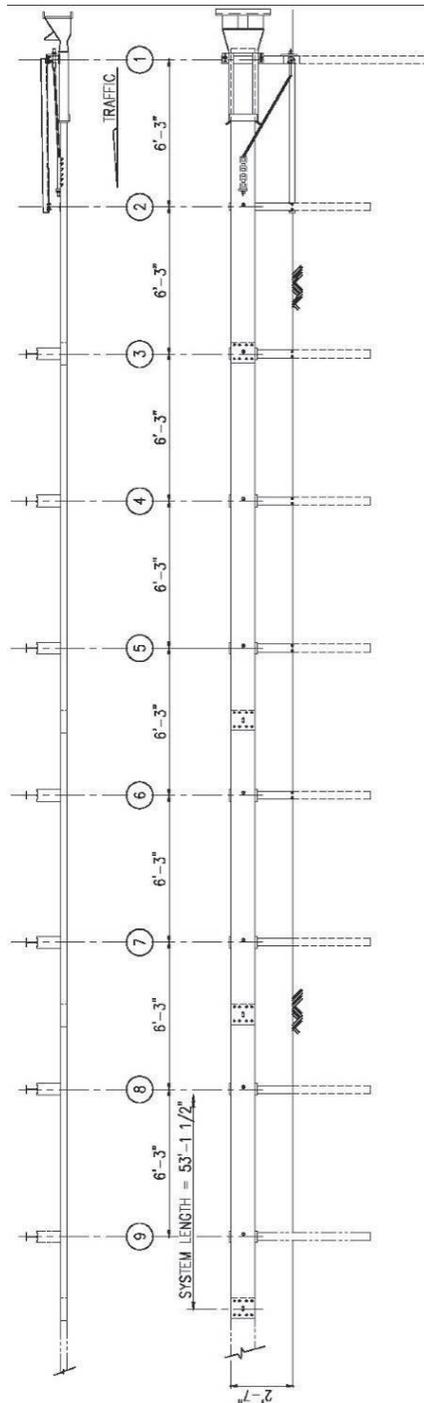
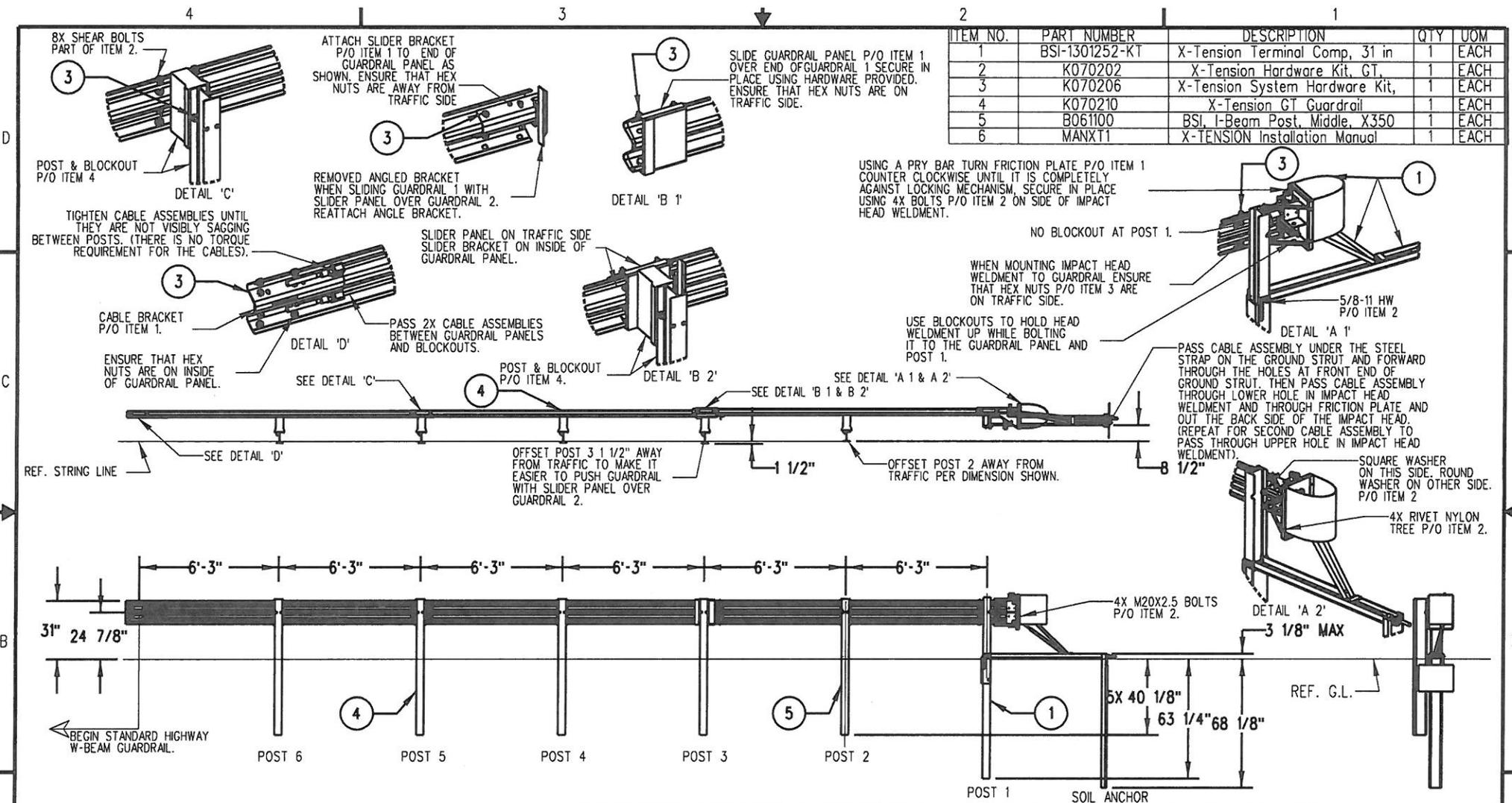


Figure 4 (TL-3)

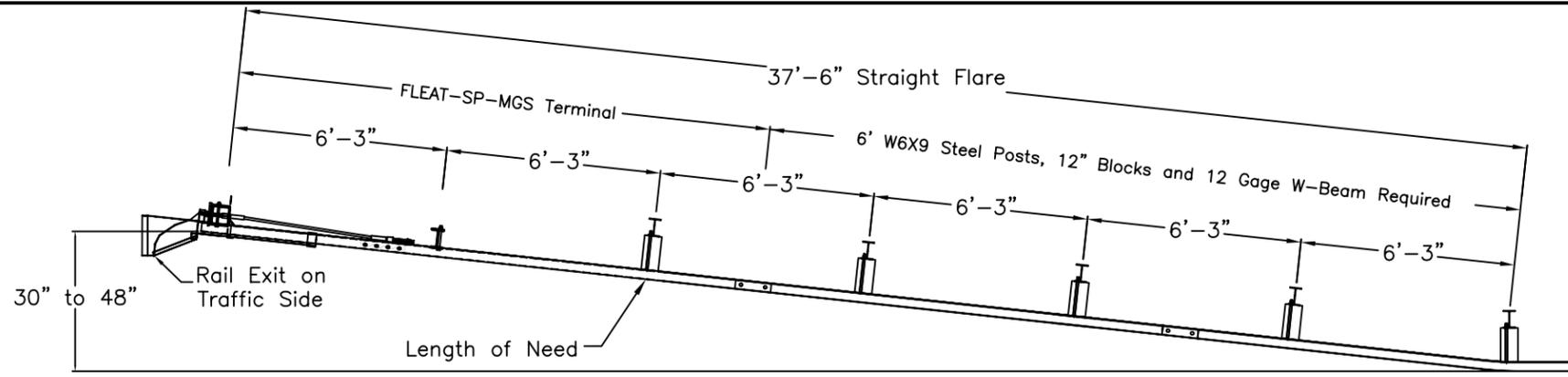
[This drawing represents one version of the 53'-1 1/2" (16.19 m) system]



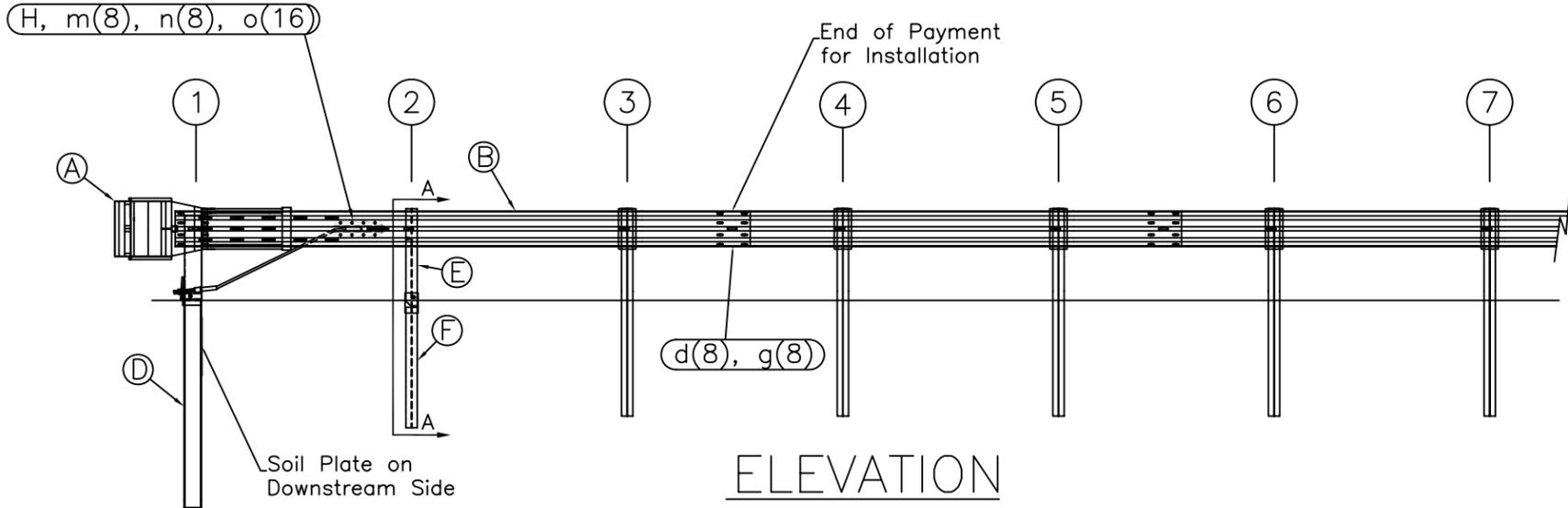
ITEM NO.	PART NUMBER	DESCRIPTION	QTY	UOM
1	BSI-1301252-KT	X-Tension Terminal Comp, 31 in	1	EACH
2	K070202	X-Tension Hardware Kit, GT.	1	EACH
3	K070206	X-Tension System Hardware Kit,	1	EACH
4	K070210	X-Tension GT Guardrail	1	EACH
5	B061100	BSL I-Beam Post, Middle, X350	1	EACH
6	MANXT1	X-TENSION Installation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

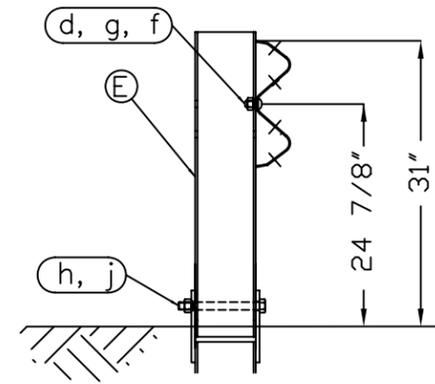
<small>©2012 BARRIER SYSTEMS INC. THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BARRIER SYSTEMS INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF BARRIER SYSTEMS INC. IS PROHIBITED.</small>		<small>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:</small> <small>FRACTIONS DECIMAL ANGLES</small> <small>± 1/16 .003 ± .03 ± 1/2°</small> <small>.XXX ± .010</small>				<small>BARRIER SYSTEMS INC.</small> <small>3333 Voco Valley Parkway, Ste 800</small> <small>Yonkers, CA 95688</small> <small>Tel: 800-800-5691</small> <small>www.barriersystemsinc.com</small>	
APPROVALS DRAWN BY: NMV DRAWN DATE: 2/08/13 APPR'D BY: JMT APPR'D DATE: 2/08/13				<small>THIRD ANGLE PROJECTION</small> 		TITLE X-TENSION GUARDRAIL TERMINAL SYSTEM STEEL POST WITH COMPOSITE BLOCKOUT 31" RAIL HEIGHT	
REV: B		DATE: 2/08/13		SCALE: 1:50		SHEET: 1 OF 1	



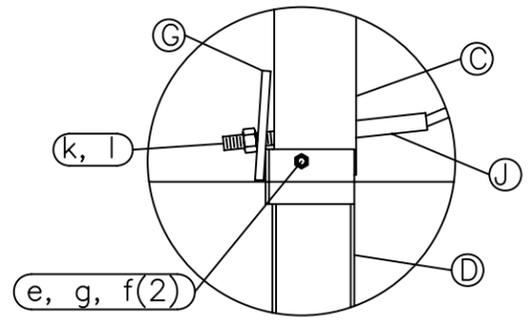
PLAN



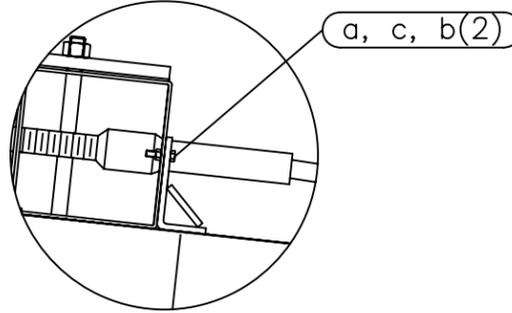
ELEVATION



SECTION A-A
Post #2



Post #1 Connection Detail



Impact Head Connection Detail

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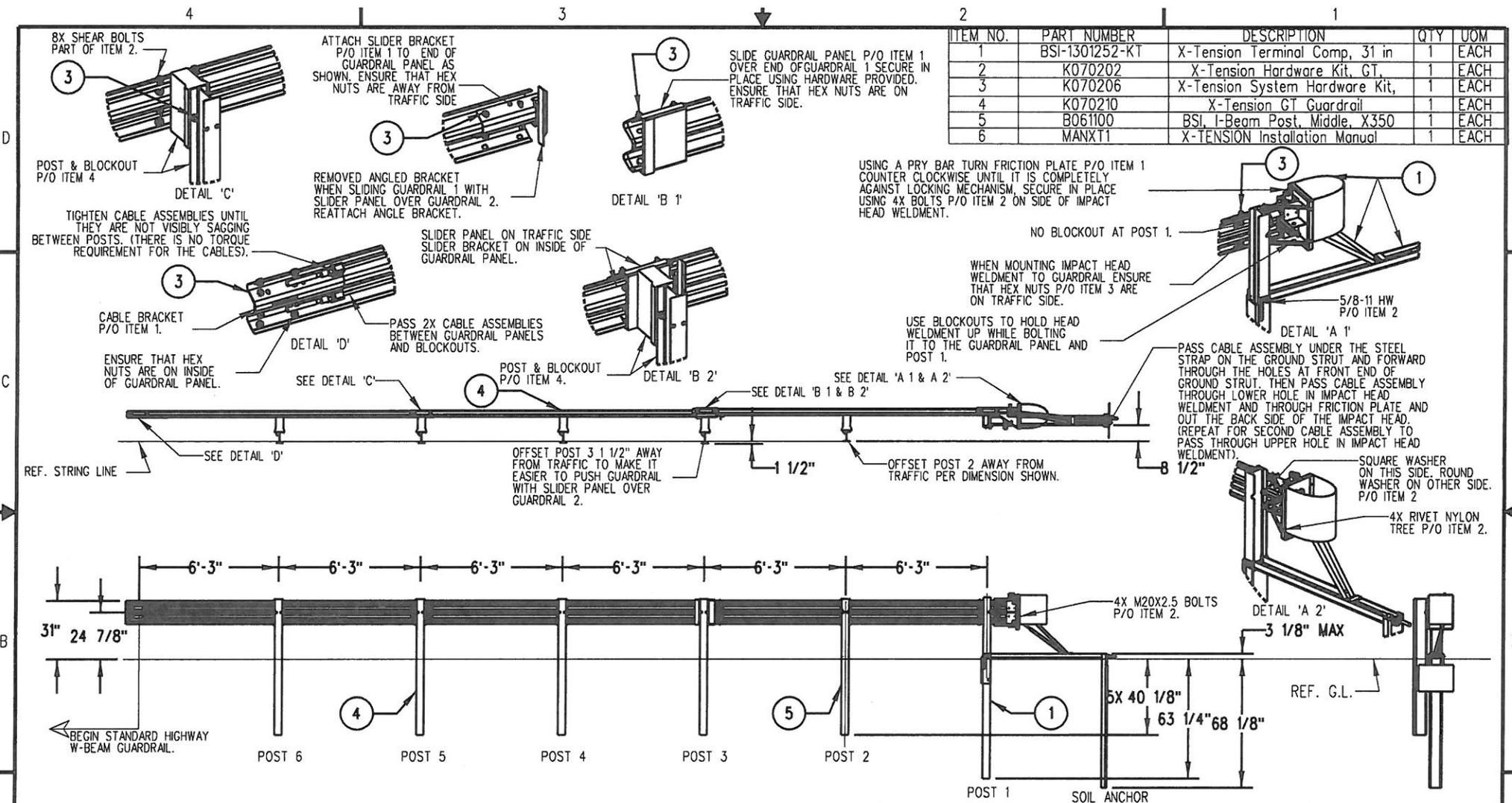
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d	9	5/8 Dia. x 1 1/4 SPLICE BOLT (POST #2)	B580122
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f	3	5/8 WASHER	W050
g	10	5/8 Dia. H.G.R NUT	N050
h	1	3/4 Dia. x 8 1/2 HEX BOLT GRD A449	B340854A
j	1	3/4 Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
l	2	1 ANCHOR CABLE WASHER	W100
m	8	CABLE ANCHOR BOX SHOULDER BOLT	SB58A
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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



ITEM NO.	PART NUMBER	DESCRIPTION	QTY	UOM
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4	K070210	X-Tension GT Guardrail	1	EACH
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APPROVALS				TITLE			
DRAWN BY: NMV		THRD ANGLE PROJECTION		2067 03/02/13		SIZE DWG NO.	
DRAWN DATE: 2/08/13				2022 2/08/13		B X-TENSION GUARDRAIL TERMINAL SYSTEM STEEL POST WITH COMPOSITE BLOCKOUT 31" RAIL HEIGHT	
APPR'D BY: JMT		DO NOT SCALE DRAWING		REV ECN* DATE		SCALE 1:50	
APPR'D DATE: 2/08/13		REV ECN* DATE		DATE		SHEET 1 OF 1	

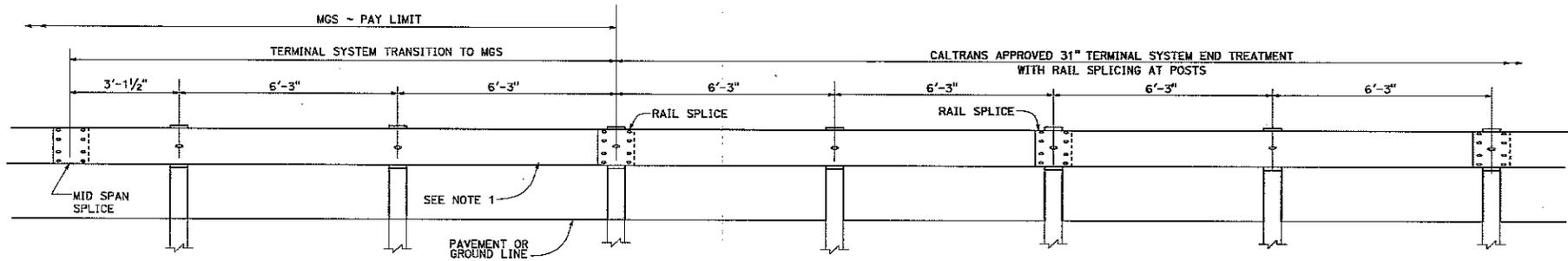
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL No. SHEETS

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	



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



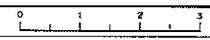
**TRANSITION DETAIL FOR 31" TERMINAL SYSTEM END TREATMENT
WITH RAIL SPLICING AT POSTS TO MIDWEST GUARDRAIL SYSTEM**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CALTRANS
 FUNCTIONAL SUPERVISOR
 CALCULATED-DESIGNED BY
 CHECKED BY
 REVISED BY
 DATE REVISED

BORDER LAST REVISED 7/2/2010

USERNAME =>st114640
DGN FILE => mgs transition details.dgn

RELATIVE BORDER SCALE
IS IN INCHES



UNIT 0000

PROJECT NUMBER & PHASE

00000000001

CALCULATED DATE PLOTTED => 22-FEB-2014
 DGN FILE NAME PLOTTED => 12335