

INFORMATION HANDOUT

For Contract No. 10-1C9904

At 10-SJ-5-R12.4/R17.5

Identified by

Project ID 1014000190

MATERIALS INFORMATION

Water Source Information – City of Manteca dated 07/23/2015

Water Source Information – Southern San Joaquin Irrigation District dated 06/17/2015

SKT Wood Post MGS terminal system manufacturer drawing

SKT Steel Post MGS terminal system manufacturer drawing

X-Lite terminal system manufacturer drawing

31" X-Tension terminal system manufacturer drawing

Soft-Stop terminal system manufacturer drawing

FLEAT Wood Post MGS terminal system manufacturer drawing

FLEAT Steel Post MGS terminal system manufacturer drawing

SRT-31 terminal system manufacturer drawing

Oamilda, Jhoanna R@DOT

From: Houghton, Mark <mhoughton@ci.manteca.ca.us>
Sent: Thursday, July 23, 2015 1:19 PM
To: Oamilda, Jhoanna R@DOT
Cc: Grove, Heather
Subject: Construction Water

Jhoanna,

The City of Manteca is providing reclaimed water at our treatment plant for public construction use. If you want to use the water, the water truck drivers (either Caltrans or the contractor) have to go through some training (30 minute class) and you have to sign up. If you would like to pursue this, please contact Heather Grove, our Laboratory Manager, to arrange for the training. I have copied her on this email.

Thanks

Mark Houghton
Director of Public Works
City of Manteca

Don't get mad. Don't get even. Get stronger, faster and more powerful. Fill yourself with knowledge and empathy and an indomitable spirit, because no one else can do that for you. In the end, it's your life, your choice and your world. Give 110%, always."
-- Apolo Ohno, American speed skater

Oamilda, Jhoanna R@DOT

From: Grove, Heather <hgrove@ci.manteca.ca.us>
Sent: Thursday, July 23, 2015 1:56 PM
To: Oamilda, Jhoanna R@DOT; mhoughton@ci.manteca.ca.us
Cc: Firmalo, Justine
Subject: RE: Construction Water

Jhoanna,

City of Manteca has Recycled Water Workshops scheduled every two weeks on Wednesday at 8:00. If the contractor is interested in taking recycled water in Manteca for his project, the water truck driver will have to attend one of the workshops prior to beginning. Here is a list of dates in the next couple months for the workshops:

July 29

Aug 12

Aug 26

Sep 9

Sep 23

Oct 7

Oct 21

Please call Justine Firmalo at 209-456-8470 to sign up for one of the workshops. If you have any questions, you can contact me at the below information.

Heather Grove
Laboratory Supervisor
City of Manteca WQCF
1001 W. Center St.
Manteca, CA 95337
(209)456-8473
(209)923-8990 fax
hgrove@ci.manteca.ca.us

From: Oamilda, Jhoanna R@DOT [mailto:jhoanna.oamilda@dot.ca.gov]
Sent: Thursday, July 23, 2015 1:46 PM
To: Houghton, Mark
Cc: Grove, Heather
Subject: RE: Construction Water

Hello,

Thank you so much for the reply. The awarded contractor will contact Heather Grove during construction to arrange for the training, if the contractor decides to choose this water source.

Thank you.

Jhoanna R. Oamilda

*District 10 – Stockton, Maintenance Design
1976 E. Dr. Martin Luther King Jr. Blvd
Stockton, Ca 95205*

Oamilda, Jhoanna R@DOT

From: Oamilda, Jhoanna R@DOT
Sent: Wednesday, July 22, 2015 3:12 PM
To: 'emedeiros@ci.manteca.ca.us'
Subject: Caltrans-Request for Water Source for 2016 Construction Project (10-1C9901)

Hello Mr. Medeiros,

My name is Jhoanna Oamilda and I work for Caltrans District 10 in Stockton. I am writing in regards to finding construction water for our upcoming 2016 project in San Joaquin County on State Route 5. In an effort to conserve water in the State, we have been directed to provide in each of our projects a non-potable water source or if not available, a potable water source to include as an Information Handout in the projects PS&E package.

Other Caltrans Project Engineer may have contacted you with their projects and I apologize in advance if my request may sound redundant. As a result of this ongoing drought, we have been directed to contact any potential water source for each Caltrans construction projects.

Can City of Manteca provide us a non-potable water for our upcoming 2016 project in San Joaquin County on State Route 5, west of Manteca and South of Lathrop?

If the water source is available, the awarded contractor would need to contact City of Manteca and apply for a temporary construction permit prior to the start of construction and pay any applicable permit fee if they choose this source.

If you could please email me back or call me to let me know, I would greatly appreciate it. Thank you so much for your time.

Jhoanna R. Oamilda

*District 10 – Stockton, Maintenance Design
1976 E. Dr. Martin Luther King Jr. Blvd
Stockton, Ca 95205
Office: (209) 948-7837*

Oamilda, Jhoanna R@DOT

From: Julie Vrieling <jvrieling@ssjid.com>
Sent: Wednesday, June 17, 2015 12:51 PM
To: Oamilda, Jhoanna R@DOT
Subject: RE: Caltrans - Request for Non-Potable Water or Potable Water Source for 2016 Construction Projects

At this time we aren't allowing any waters to be used for purposes other than irrigation. Next year, at the time of your projects, you are welcome to contact Dawn Driesen in the Engineering Department (209-249-4619, ddriesen@ssjid.com) to see if things have changed and if we are accepting permit applications for these purposes.

From: Oamilda, Jhoanna R@DOT [mailto:jhoanna.oamilda@dot.ca.gov]
Sent: Wednesday, June 17, 2015 11:51 AM
To: Julie Vrieling
Subject: Caltrans - Request for Non-Potable Water or Potable Water Source for 2016 Construction Projects

Hello Ms. Vrieling,

My name is Jhoanna Oamilda and I work for Caltrans District 10 in Stockton.

I am writing in regards to finding construction water sources for our upcoming 2016 Maintenance Overlay Project in San Joaquin County, on Route 5, in Lathrop from south of SJ-120 to Lathrop Road.

10-1C9904; SJ-5-R12.4/R17.5

As part of our efforts to conserve water in the State, we have been directed to provide in each of our projects a non-potable water source in an information handout as part of our projects PS&E packages.

This means that as the designer we need to check during design stage for a readily available non-potable water source 1st and if not possible, then a potable water source that the contractor can select to use during construction

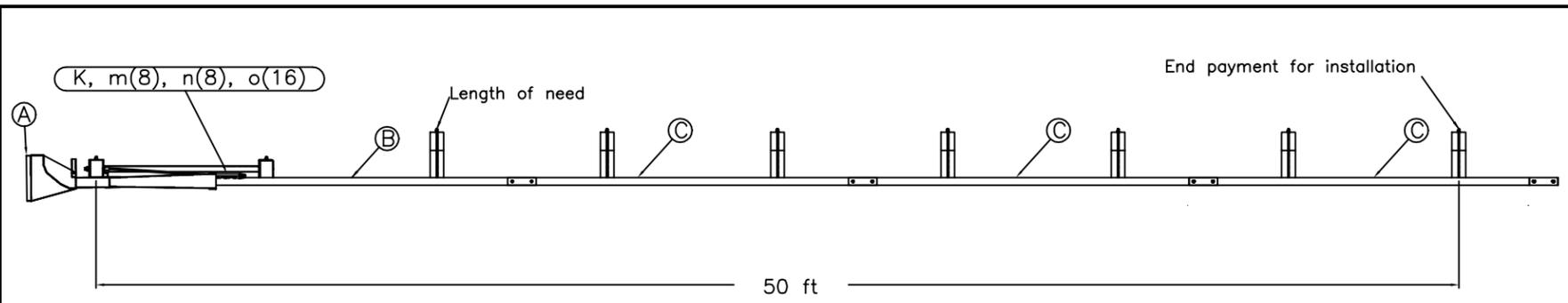
Does South San Joaquin Irrigation District (SSJID) have either non-potable and potable water available that could be listed as a potential water source for this construction project (10-1C9901) in Lathrop area?

We understand that if a source is available, the awarded contractor would need to contact SSJID to apply for a temporary construction permit prior to the start of construction and pay any applicable permit fee if they choose this source.

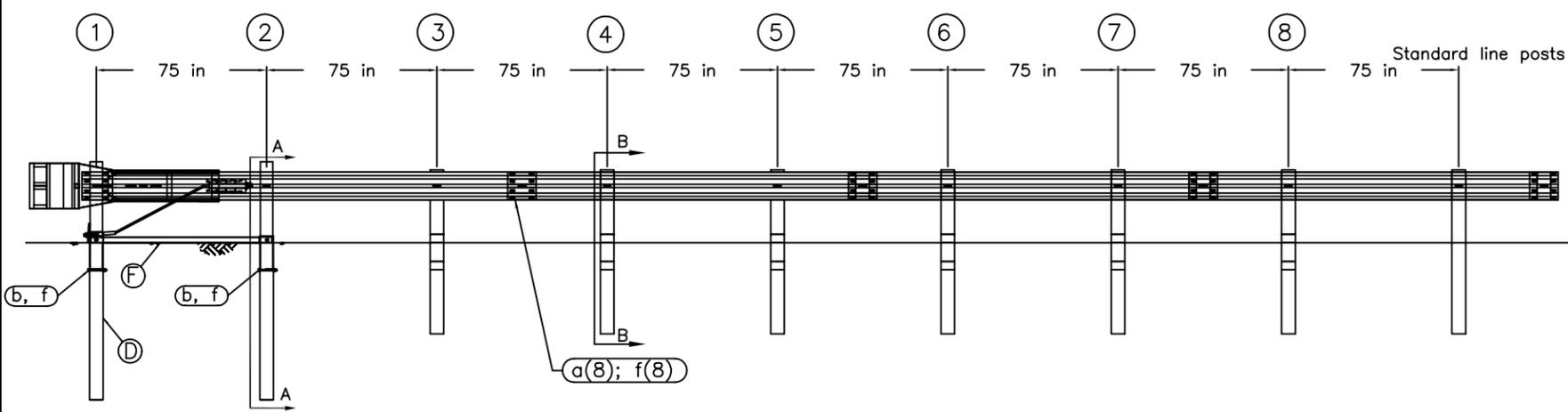
If you could please email me back or call me to let me know if you do have a source or any additional information on the process, I would greatly appreciate it. Once I hear back from you I will include this information in my PS&E Package.

Thank You.

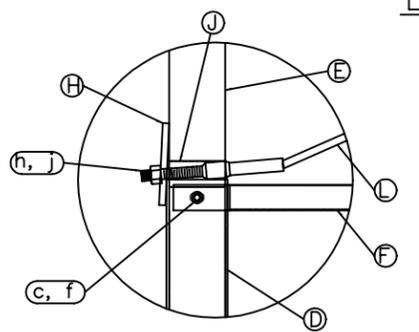
Jhoanna Oamilda
(209) 948-7837



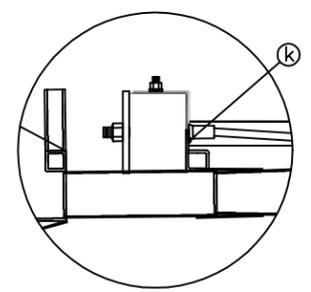
TRAFFIC → PLAN



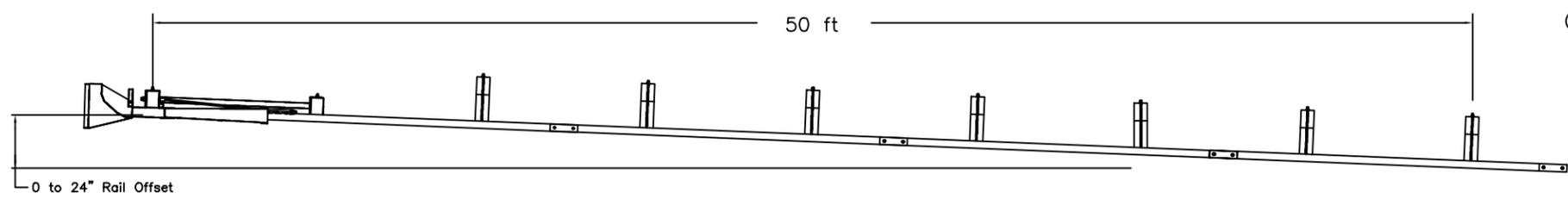
ELEVATION



POST #1 CONNECTION DETAIL



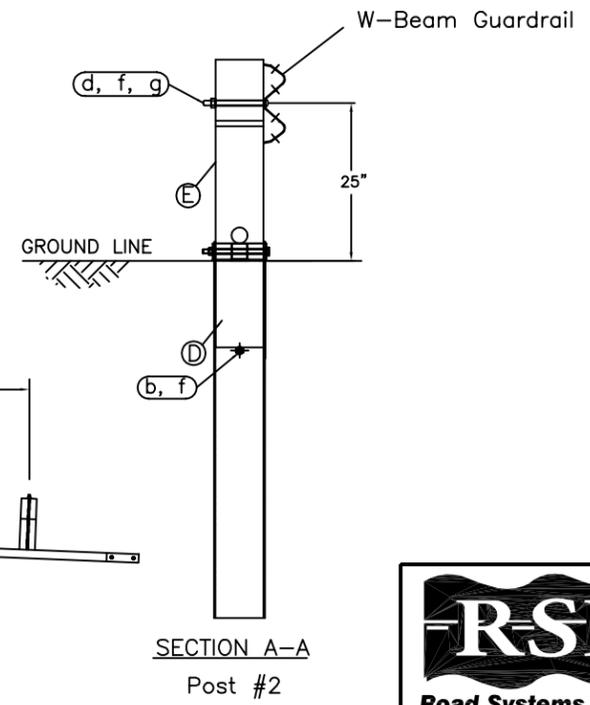
IMPACT HEAD CONNECTION DETAIL



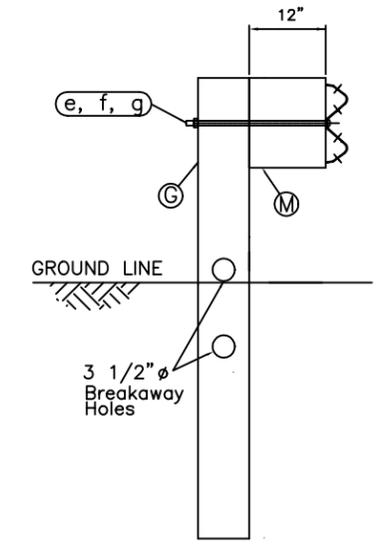
OPTIONAL FLARED INSTALLATION
25:1 maximum flare rate

- GENERAL NOTES:
1. Breakaway posts are required with the SKT.
 2. All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
 3. The SKT can be flared at a rate of up to 25:1 to prevent the impact head from encroaching on the shoulder.
 4. The foundation tubes shall not protrude more than 4" above the ground (measured along a 5' cord). Site grading may be necessary to meet this requirement.
 5. When rock is encountered, a 12" Ø post hole, 20" into the rock surface may be used if approved by the engineer. Granular material will be placed in the bottom of the hole, approximately 2.5" deep to provide drainage. The first two posts can be field cut to length, placed in the hole and backfilled with adequately compacted material excavated from the hole.
 6. 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.
 7. A site evaluation should be considered if there is less than 25' between the outlet side of the terminal and any adjacent driving lane.
 8. The soil tubes may be driven with an approved driving head. They shall not be driven with the post in the tube.
 9. The wood blockouts should be "toe-nailed" to the rectangular wood posts to prevent them from turning when the wood shrinks.

ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	S3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	S1303 MGS
C	3	W-BEAM GUARDRAIL, 12 Ga.	G1203 MGS
D	2	FOUNDATION TUBE	E731
E	2	BCT WOOD POST	P650 MGS
F	1	GROUND STRUT	E780
G	6	CRT WOOD POST	P671 MGS
H	1	BEARING PLATE	E750
J	1	PIPE SLEEVE	E740
K	1	CABLE ANCHOR BOX	S760
L	1	BCT CABLE ANCHOR ASSEMBLY	E770
M	6	MGS TIMBER BLOCKOUT OR EQUIV.	P618
HARDWARE (ALL DIMENSIONS IN INCHES)			
a	24	5/8Ø x 1 1/4 SPLICE BOLT	B580122
b	2	5/8Ø x 7 1/2 HEX BOLT	B580754
c	2	5/8Ø x 10 HEX BOLT	B581004
d	1	5/8Ø x 10 H.G.R. BOLT	B581002
e	6	5/8Ø x 22 H.G.R. BOLT	B582202
f	35	5/8Ø H.G.R. NUT	N050
g	7	H.G.R. WASHER	W050
h	2	1 ANCHOR CABLE HEX NUT	N100
j	2	1 ANCHOR CABLE WASHER	W100
k	2	3/8 x 3 LAG SCREW	E350
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



SECTION A-A
Post #2



SECTION B-B
Posts 3 thru 8

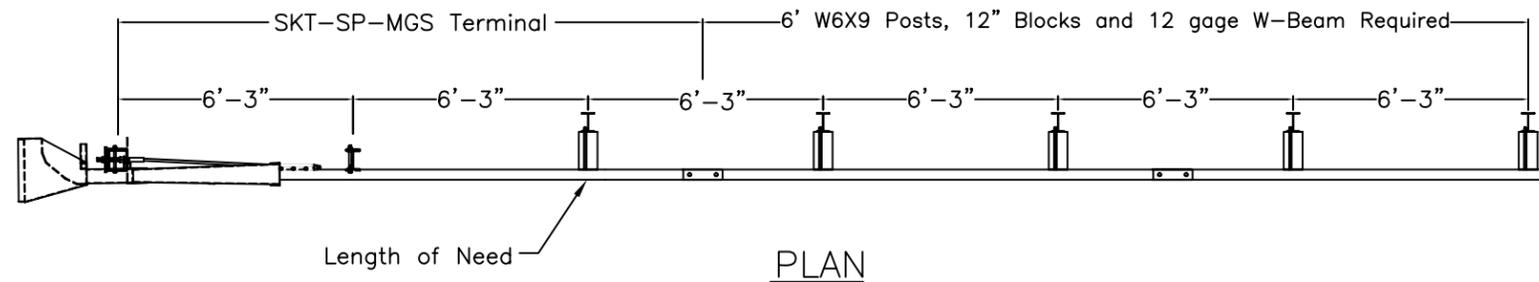
RSI
Road Systems, Inc.
Big Spring, TX
Phone: 432-263-2435
or Phone: 330-346-0721

Sequential Kinking Terminal
SKT - Assembly

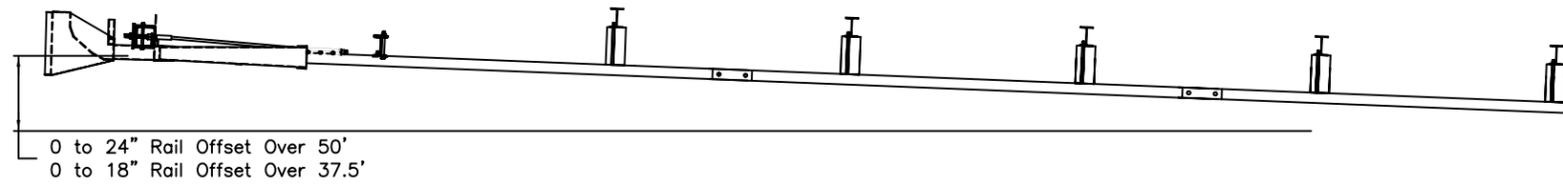
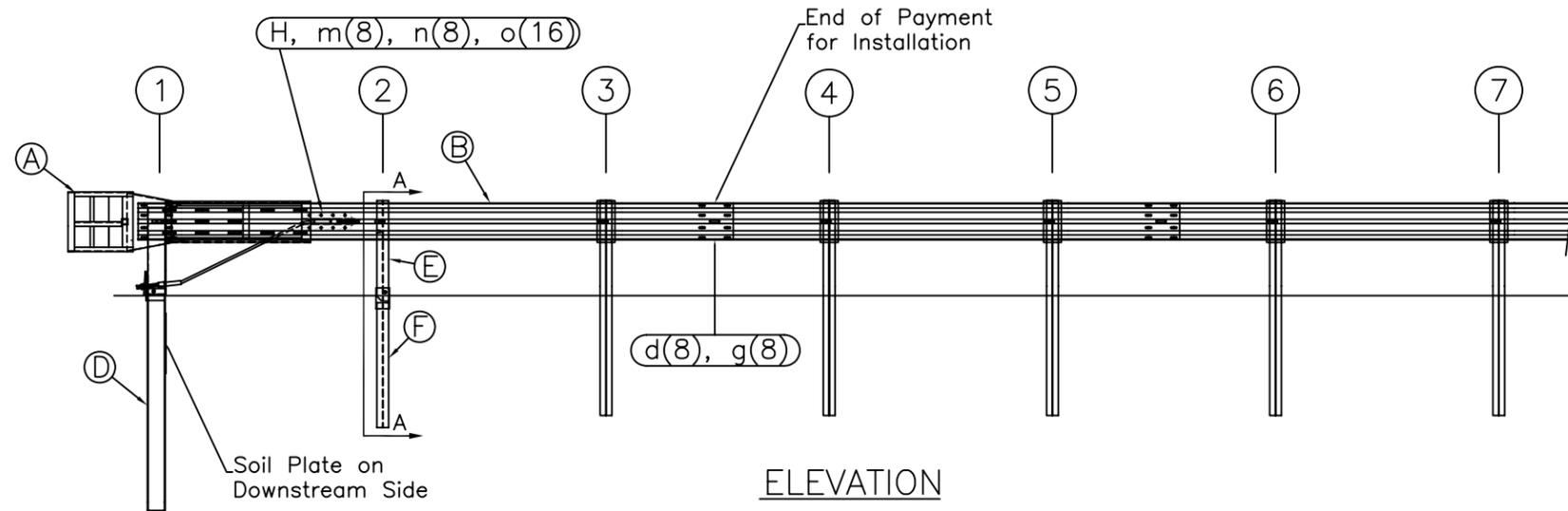
Midwest Guardrail System
Wood Post System

Drawing Name: SKT-MGS-W-US Scale: NONE

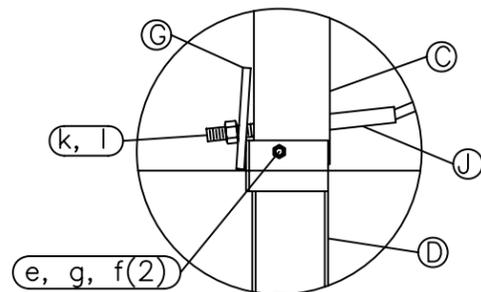
Sheet: A1
Date: 12/01/04
By: JRR
Rev: 0



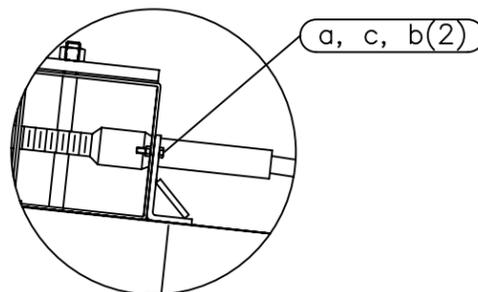
TRAFFIC →



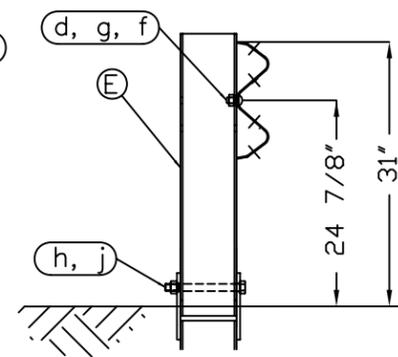
OPTIONAL FLARED INSTALLATION
25:1 maximum flare rate



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.



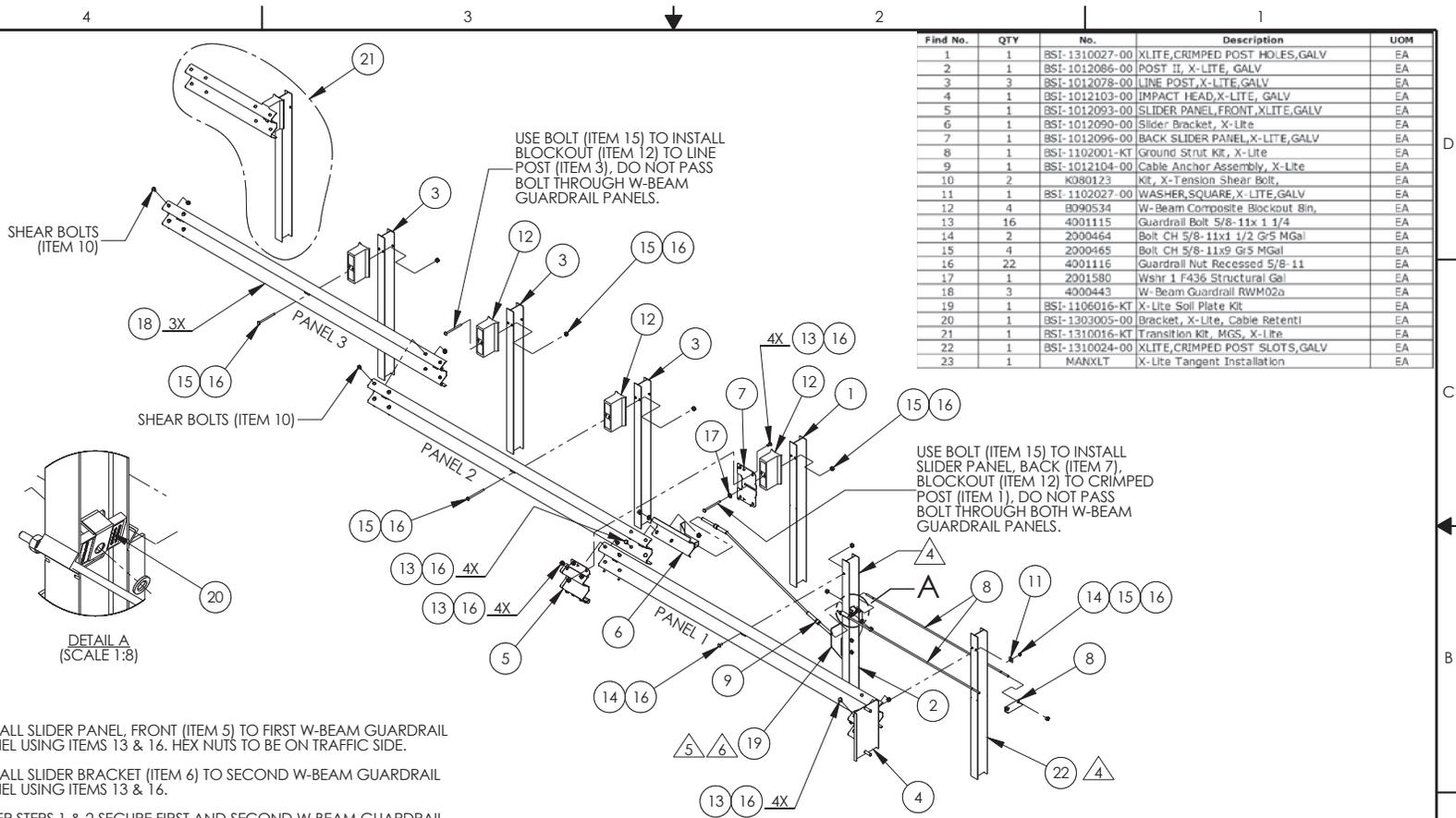
SKT-SP-MGS Terminal
Midwest Guardrail System
31" Top of Rail

Drawing Name:
SKT-SP-S-MGS

Scale:
None

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

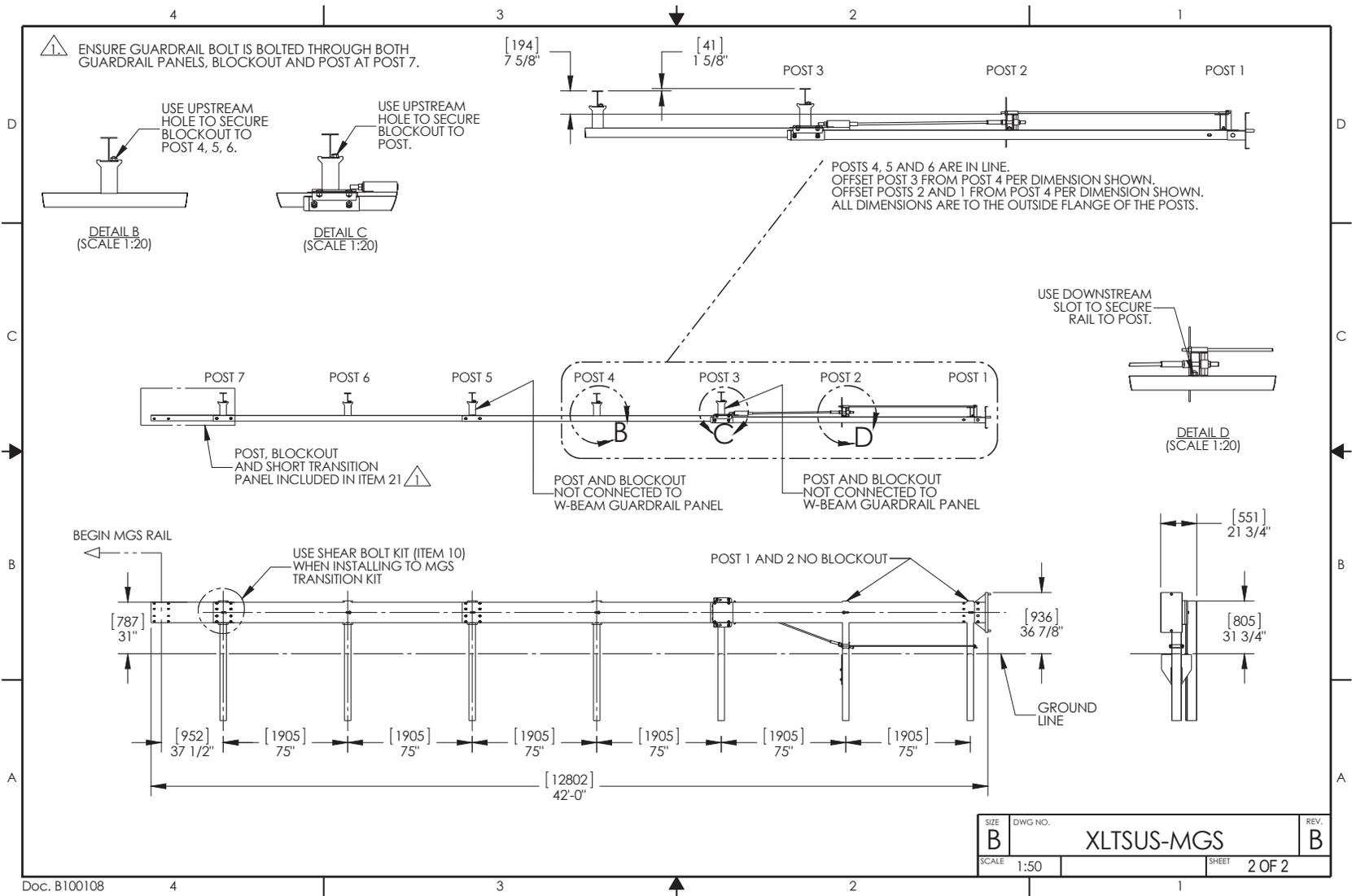
Find No.	QTY	No.	Description	UOM
1	1	BSI-1310027-00	XLITE, CRIMPED POST HOLES, GALV	EA
2	1	BSI-1012066-00	POST II, X-LITE, GALV	EA
3	3	BSI-1012078-00	LINE POST, X-LITE, GALV	EA
4	1	BSI-1012103-00	IMPACT HEAD, X-LITE, GALV	EA
5	1	BSI-1012093-00	SLIDER PANEL, FRONT, X-LITE, GALV	EA
6	1	BSI-1012090-00	Slider Bracket, X-Lite	EA
7	1	BSI-1012096-00	BACK SLIDER PANEL, X-LITE, GALV	EA
8	1	BSI-1102001-KT	Ground Strut Kit, X-Lite	EA
9	1	BSI-1012104-00	Cable Anchor Assembly, X-Lite	EA
10	2	KD80123	Kit, X-Tension Shear Bolt,	EA
11	1	BSI-1102027-00	WASHER, SQUARE, X-LITE, GALV	EA
12	4	B090534	W-Beam Composite Blockout Bin,	EA
13	16	4001115	Guardrail Bolt 5/8-11x 1 1/4	EA
14	2	2000464	Bolt CH 5/8-11x1 1/2 Gr5 MGal	EA
15	4	2000465	Bolt CH 5/8-11x9 Gr5 MGal	EA
16	22	4001116	Guardrail Nut Recessed 5/8-11	EA
17	1	2001580	Wshr 1 F436 Structural Gal	EA
18	3	4000443	W-Beam Guardrail RWM02a	EA
19	1	BSI-1106016-KT	X-Lite Soil Plate Kit	EA
20	1	BSI-1303005-00	Bracket, X-Lite, Cable Retenti	EA
21	1	BSI-1310016-KT	Transition Kit, MGS, X-Lite	EA
22	1	BSI-1310024-00	XLITE, CRIMPED POST SLOTS, GALV	EA
23	1	MANXLT	X-Lite Tangent Installation	EA



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.
4. SLOT ON POSTS 1 AND 2 TO FACE GUARDRAIL PANEL.
5. 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.
6. IF ROCK IS ENCOUNTERED, THE SOIL PLATE MAY BE MODIFIED IF APPROVED BY THE PROJECT ENGINEER.

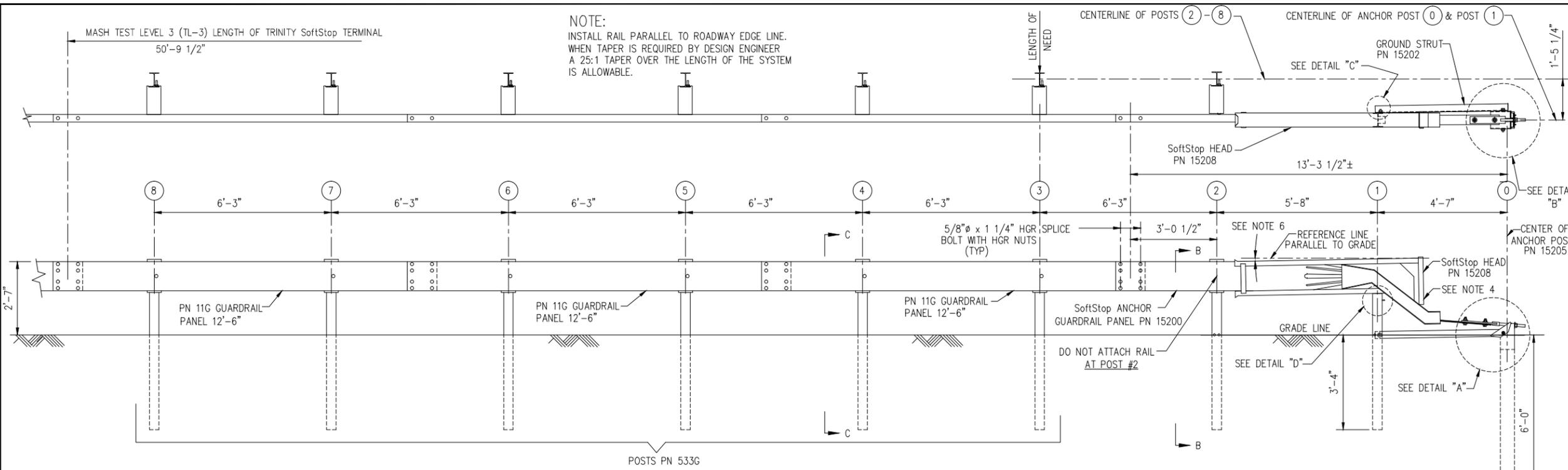
© 2010 BARRIER SYSTEMS INC. THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BARRIER SYSTEMS INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF BARRIER SYSTEMS INC. IS PROHIBITED.		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS DECIMAL ANGLES ±1/16 .XX ±.03 ±1/2° .XXX ±.010		3333 Vaca Valley Parkway Ste 800 Vacaville, CA 95688 Tel: 888-800-3691 www.barriersystemsinc.com	
APPROVALS DRAWN BY: JMT DRAWN DATE: 10/09/2013 APPRD BY: GAD APPRD DATE: 10/09/13		THIRD ANGLE PROJECTION DO NOT SCALE DRAWING		TITLE: X-LITE SYSTEM ASSEMBLY, TANGENT, TRANSITION TO MGS SIZE: B DWG NO.: XLTSUS-MGS SCALE: 1:40 SHEET: 1 OF 2	
		INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5-1994		REV. B DATE: 10/23/14 ECN#: 2151 DATE: 11/13/13	

Appendix A - System Configuration, 37' 6" MGS



Appendix A -Bill of Materials - X-Lite Tangent, MGS 37' 6"

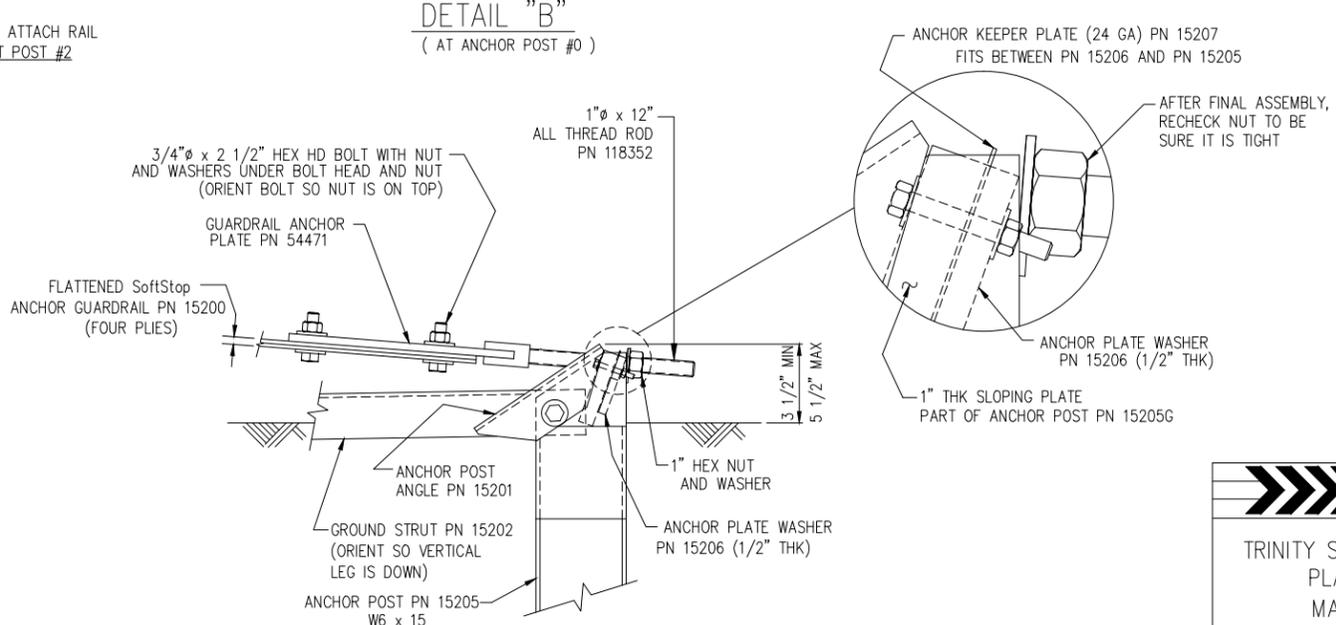
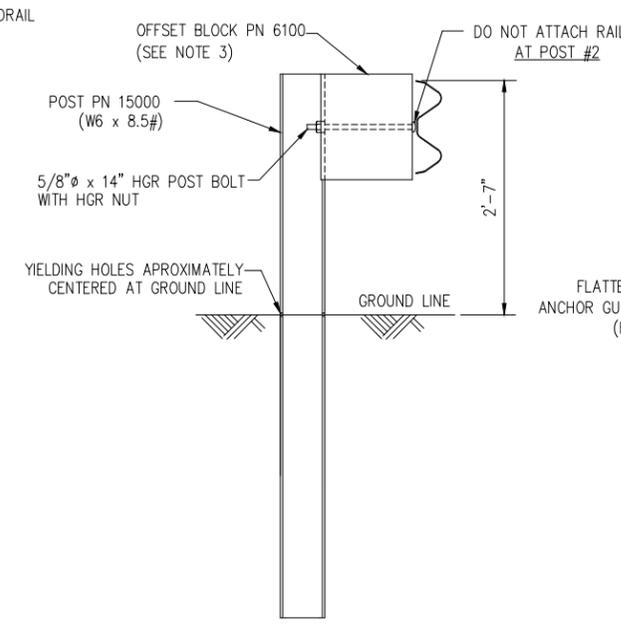
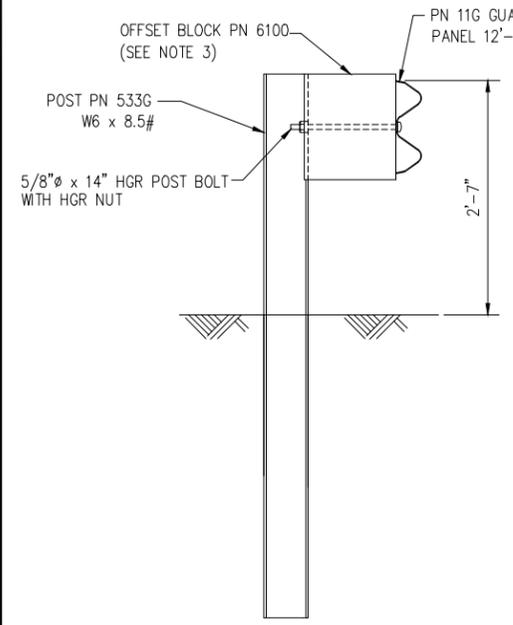
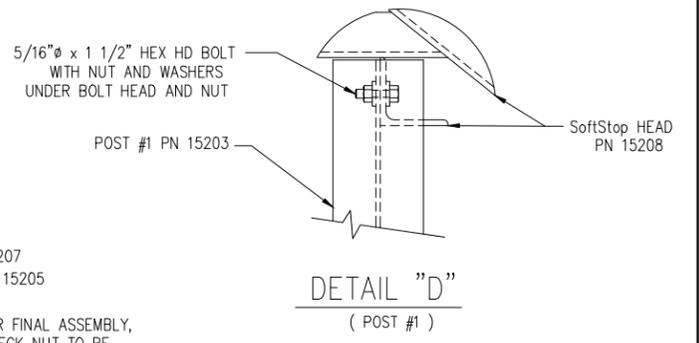
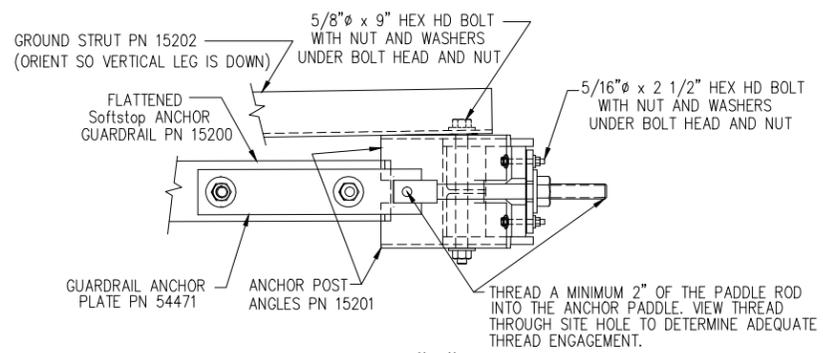
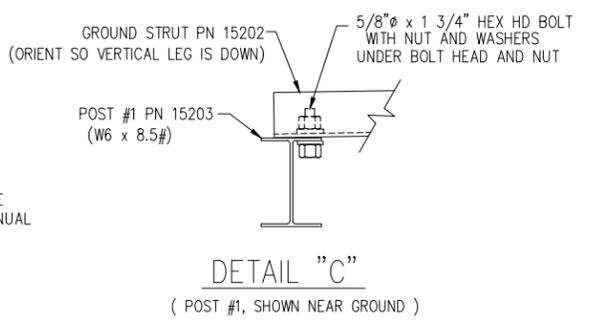
Item	Description	Full System	Kit Only
BSI-1310024-00	XLITE,CRIMPED POST SLOTS,GALV	1.00	1.00
BSI-1310027-00	XLITE,CRIMPED POST HOLES,GALV	1.00	1.00
BSI-1012086-00	POST II, X-LITE, GALV	1.00	1.00
BSI-1012078-00	LINE POST,X-LITE,GALV	3.00	-
BSI-1012103-00	IMPACT HEAD,X-LITE, GALV	1.00	1.00
BSI-1012093-00	SLIDER PANEL,FRONT,XLITE,GALV	1.00	1.00
BSI-1012090-00	Slider Bracket, X-Lite	1.00	1.00
BSI-1012096-00	BACK SLIDER PANEL,X-LITE,GALV	1.00	1.00
BSI-1012097-00	Ground Strut, X-Lite	2.00	2.00
BSI-1012098-00	Ground Strut Angle	1.00	1.00
BSI-1012104-00	Cable Anchor Assembly, X-Lite	1.00	1.00
K080123	Kit, X-Tension Shear Bolt,	2.00	2.00
BSI-1102027-00	WASHER,SQUARE,X-LITE,GALV	1.00	1.00
B090534	W-Beam Composite Blockout 8in,	4.00	-
4001115	Guardrail Bolt 5/8-11x 1 1/4	16.00	-
2000464	Bolt CH 5/8-11x1 1/2 Gr5 MGal	2.00	-
2000465	Bolt CH 5/8-11x9 Gr5 MGal	4.00	-
4001116	Guardrail Nut Recessed 5/8-11	26.00	-
2001580	Wshr 1" F436 Structural	1.00	-
4000443	W-Beam Guardrail RWM02a	3.00	-
BSI-1312100-00	Soil Plate	1.00	1.00
2000220	C-Scr HH 5/8-11x3 1/2 Gr5 MGal	2.00	2.00
2001636	Wshr 5/8 F436 Struct MGal	4.00	4.00
2000312	Nut HX 5/8-11 Gr5 Mgal	2.00	1.00
BSI-1303005-00	Bracket, X-Lite, Cable Retenti	1.00	1.00
BSI-1310016-KT	Transition Kit, MGS, X-Lite	1.00	1.00



NOTE:
 INSTALL RAIL PARALLEL TO ROADWAY EDGE LINE.
 WHEN TAPER IS REQUIRED BY DESIGN ENGINEER
 A 25:1 TAPER OVER THE LENGTH OF THE SYSTEM
 IS ALLOWABLE.

BILL OF MATERIAL			
PART NUMBER	QTY	DESCRIPTION	
11G	3	12/12'6/3'1.5/S GUARDRAIL (12GA)	
15200G	1	SoftStop ANCHOR GUARDRAIL (12GA)	
15208A	1	SoftStop HEAD	
15203G	1	POST #1 4'-9 1/2" (SYTP)	
15000G	1	POST #2 6'-0" (SYTP)	
6100B	7	OFFSET BLOCK 6 x 12 x 14	
54471G	1	GUARDRAIL ANCHOR PLATE	
15205A	1	ANCHOR POST #0	
15201G	2	ANCHOR POST ANGLE 10" LG	
15207G	1	ANCHOR KEEPER PLATE (24 GA)	
15206G	1	ANCHOR PLATE WASHER (1/2" THK)	
15202G	1	GROUND STRUT x 4'-8 1/4"	
533G	6	POST #3-#8 6'-0"	
HARDWARE			GR
4902G	1	1" WASHER	F-436
3908G	1	1" HEX NUT	A563 DH
3717G	2	3/4" x 2 1/2" HEX HD BOLT	A-325
3701G	4	3/4" WASHER	F-436
3704G	2	3/4" HEX NUT	A563 DH
3360G	32	5/8" x 1 1/4" HGR SPLICE BOLT	A-307
3540G	7	5/8" x 14" HGR POST BOLT	A-307
3391G	1	5/8" x 1 3/4" HEX HD BOLT	A-325
4489G	1	5/8" x 9" HEX HD BOLT	A-325
4372G	4	5/8" WASHER	F-436
3340G	41	5/8" HGR HEX NUT	A563 A
105285G	2	5/16" x 2 1/2" HEX HD BOLT	GR-5
105286G	1	5/16" x 1 1/2" HEX HD BOLT	GR-5
118352G	1	1" x 12" ALL THREAD ROD	A193 B7
3240G	6	5/16" WASHER	
3245G	3	5/16" HEX NUT	A563 A

- NOTES:**
- REFER TO SoftStop ASSEMBLY MANUAL.
 - SoftStop IS A MASH TEST LEVEL 3 (TL-3) END TREATMENT.
 - 12" NOMINAL DEEP PLASTIC OFFSET BLOCKS (ROUTED) ARE ACCEPTABLE ALTERNATES.
 - MANUFACTURER SUGGESTS CUSTOMER TO PROVIDE REFLECTORIZATION OF THE TERMINAL.
 - 25' GUARDRAIL PANELS (12GA) ARE AN ACCEPTABLE ALTERNATE TO SHOWN 12'-6" PANELS.
 - IT IS ACCEPTABLE TO INSTALL THE SoftStop HEAD PARALLEL TO THE GRADE LINE OR WITH AN UPWARD TILT. SEE SoftStop ASSEMBLY MANUAL FOR SPECIFIC DETAILS.

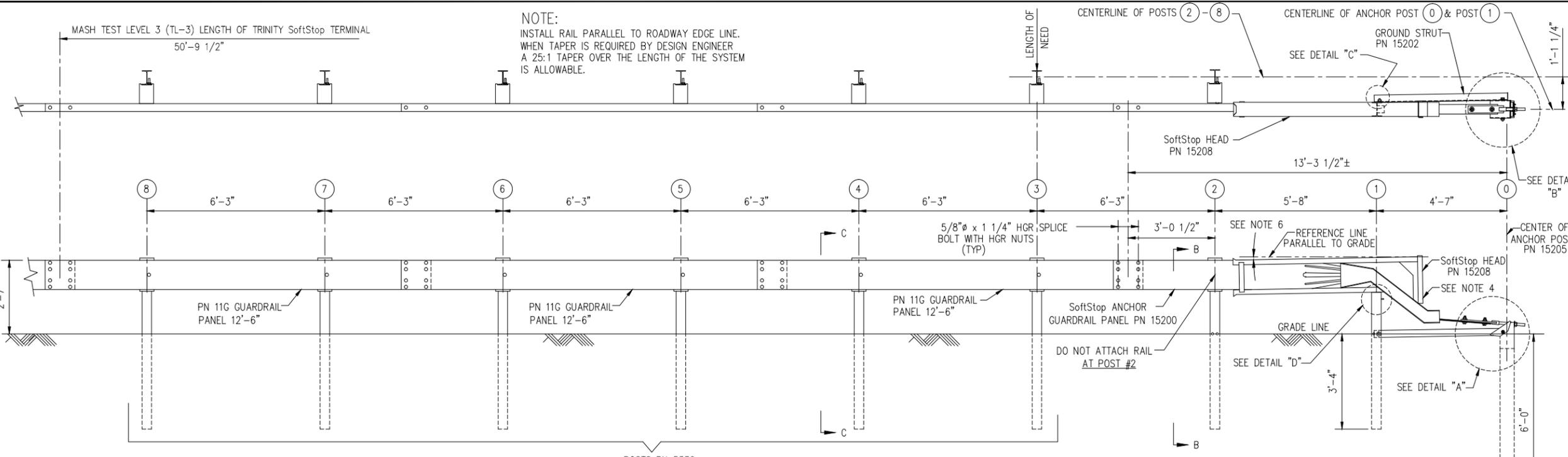


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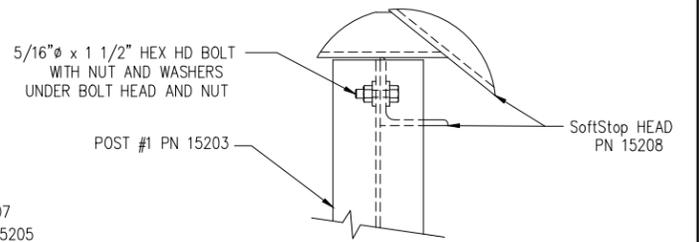
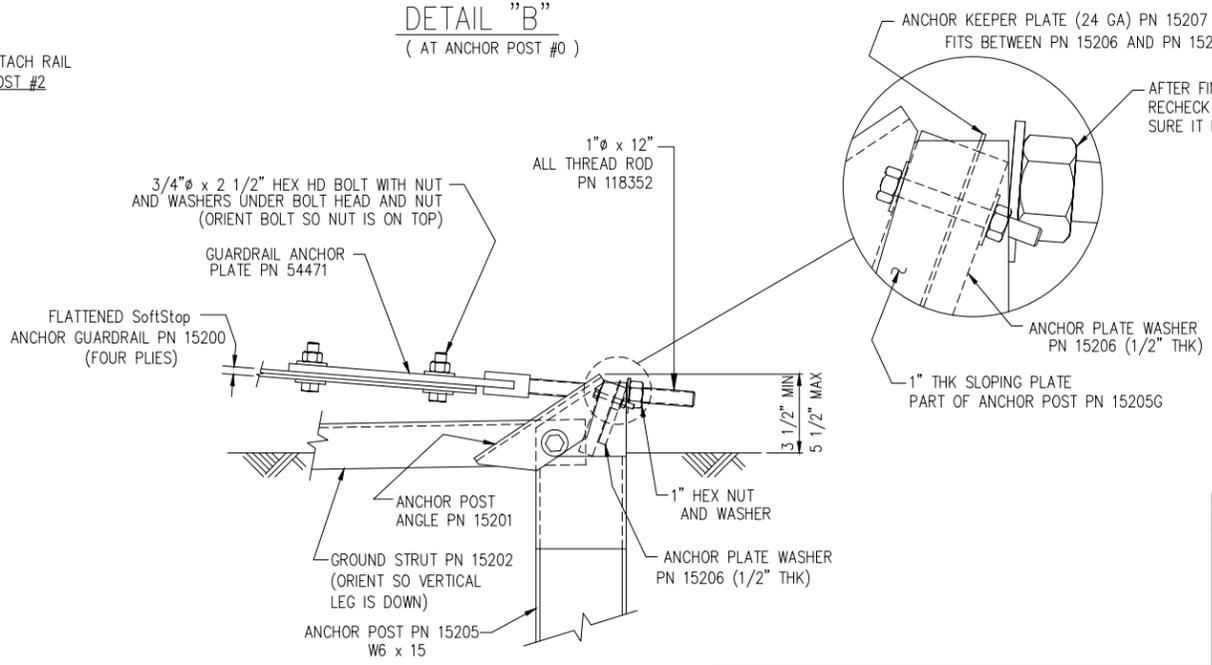
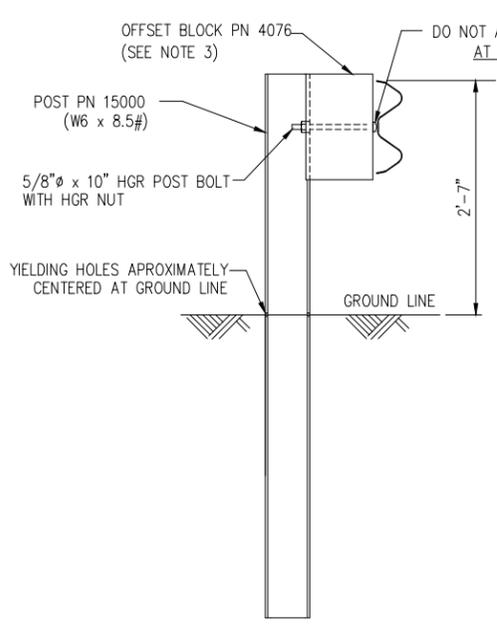
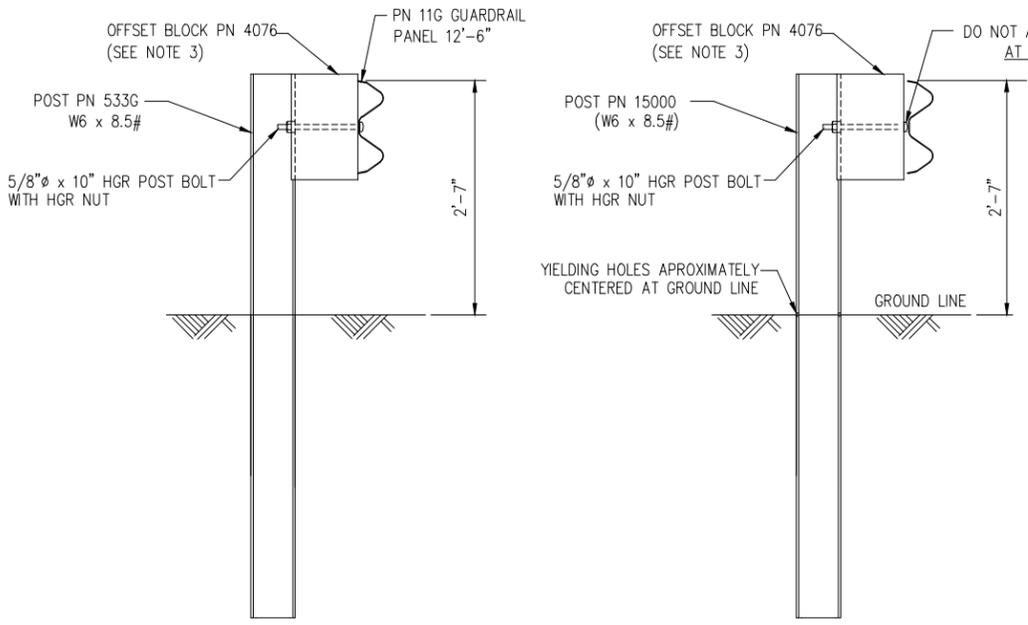
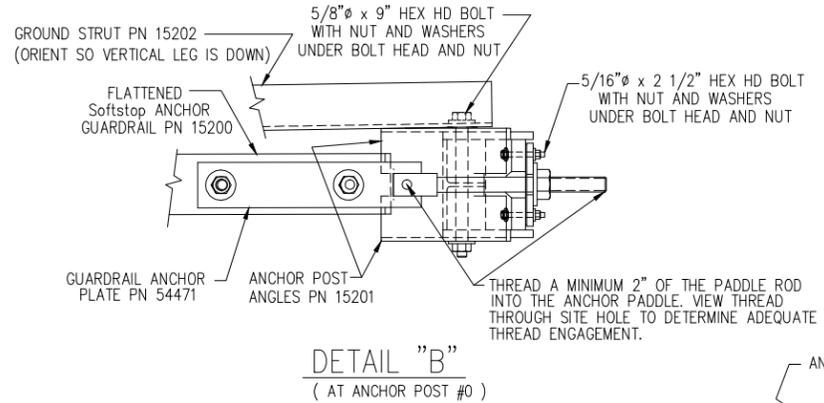
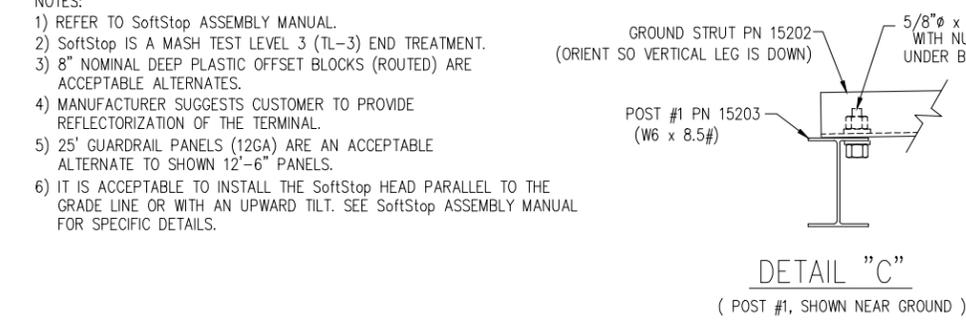
TRINITY SoftStop TERMINAL (12" BLOCKS)
 PLAN, ELEVATION & SECTION
 MASH TEST LEVEL 3 (TL-3)

DRAWN	BT
CHECKED	BS
SCALE	N.T.S.
DATE	01/10/12
ENG. FILE #	SS 645-01EM
SHT.No.	E1 OF 1
DRAWING NO.	SS 645

TRINITY HIGHWAY PRODUCTS, LLC.
 2525 STEMMONS FREEWAY
 DALLAS, TX 75207



- NOTES:
- 1) REFER TO SoftStop ASSEMBLY MANUAL.
 - 2) SoftStop IS A MASH TEST LEVEL 3 (TL-3) END TREATMENT.
 - 3) 8" NOMINAL DEEP PLASTIC OFFSET BLOCKS (ROUTED) ARE ACCEPTABLE ALTERNATES.
 - 4) MANUFACTURER SUGGESTS CUSTOMER TO PROVIDE REFLECTORIZATION OF THE TERMINAL.
 - 5) 25' GUARDRAIL PANELS (12GA) ARE AN ACCEPTABLE ALTERNATE TO SHOWN 12'-6" PANELS.
 - 6) IT IS ACCEPTABLE TO INSTALL THE SoftStop HEAD PARALLEL TO THE GRADE LINE OR WITH AN UPWARD TILT. SEE SoftStop ASSEMBLY MANUAL FOR SPECIFIC DETAILS.



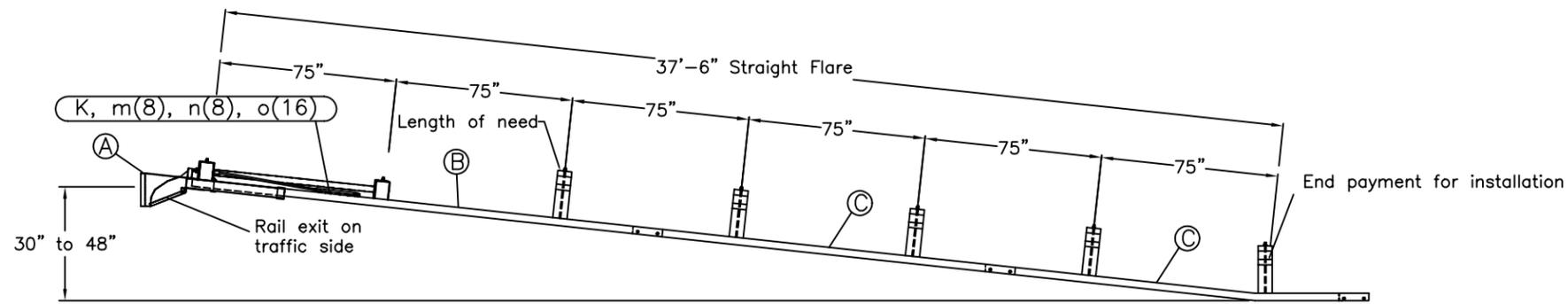
BILL OF MATERIAL			
PART NUMBER	QTY	DESCRIPTION	
11G	3	12/12'6/3'1.5/S GUARDRAIL (12GA)	
15200G	1	SoftStop ANCHOR GUARDRAIL (12GA)	
15208A	1	SoftStop HEAD	
15203G	1	POST #1 4'-9 1/2" (SYTP)	
15000G	1	POST #2 6'-0" (SYTP)	
4076B	7	OFFSET BLOCK 6 x 8 x 14	
54471G	1	GUARDRAIL ANCHOR PLATE	
15205A	1	ANCHOR POST #0	
15201G	2	ANCHOR POST ANGLE 10" LG	
15207G	1	ANCHOR KEEPER PLATE (24 GA)	
15206G	1	ANCHOR PLATE WASHER (1/2" THK)	
15202G	1	GROUND STRUT x 4'-8 1/4"	
533G	6	POST #3-#8 6'-0"	
HARDWARE			GR
4902G	1	1" WASHER	F-436
3908G	1	1" HEX NUT	A563 DH
3717G	2	3/4" x 2 1/2" HEX HD BOLT	A-325
3701G	4	3/4" WASHER	F-436
3704G	2	3/4" HEX NUT	A563 DH
3360G	32	5/8" x 1 1/4" HGR SPLICE BOLT	A-307
3500G	7	5/8" x 10" HGR POST BOLT	A-307
3391G	1	5/8" x 1 3/4" HEX HD BOLT	A-325
4489G	1	5/8" x 9" HEX HD BOLT	A-325
4372G	4	5/8" WASHER	F-436
118352G	1	1" x 12" ALL THREAD ROD	A193 B7
3340G	41	5/8" HGR HEX NUT	A563 A
105285G	2	5/16" x 2 1/2" HEX HD BOLT	GR-5
105286G	1	5/16" x 1 1/2" HEX HD BOLT	GR-5
3240G	6	5/16" WASHER	
3245G	3	5/16" HEX NUT	A563 A

TRINITY SoftStop TERMINAL (8" BLOCKS)
PLAN, ELEVATION & SECTION
MASH TEST LEVEL 3 (TL-3)

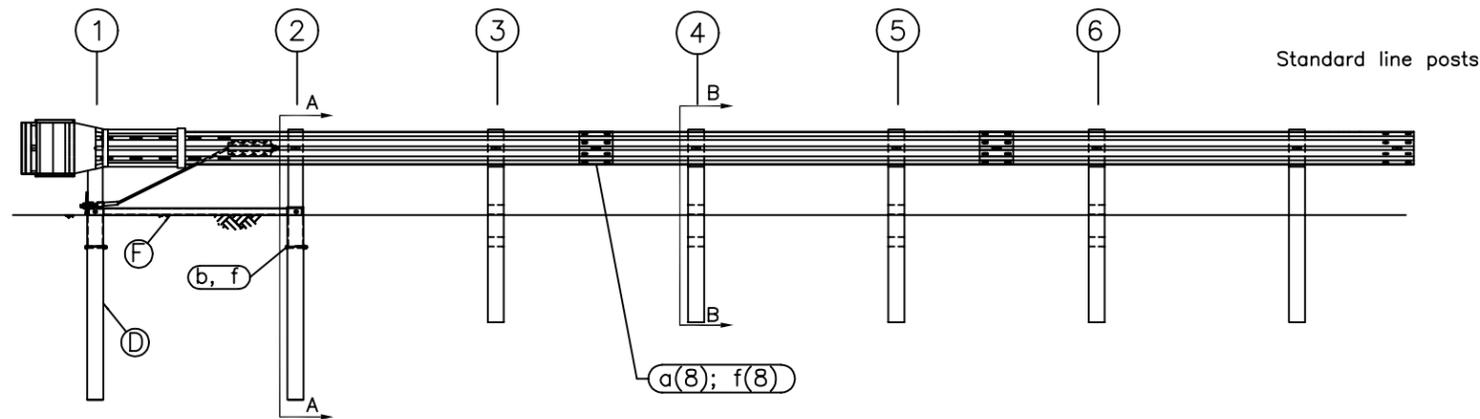
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DATE	11/14/12
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SHT.No.	E1 OF 1
DRAWING NO.	SS 646

TRINITY HIGHWAY PRODUCTS, LLC.
2525 STEMMONS FREEWAY
DALLAS, TX 75207

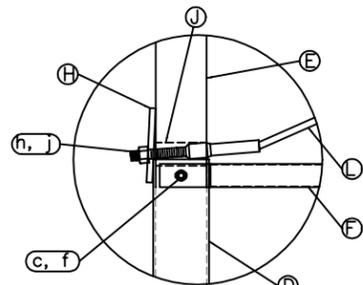
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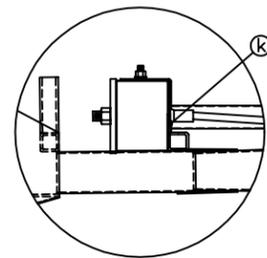
TRAFFIC → PLAN



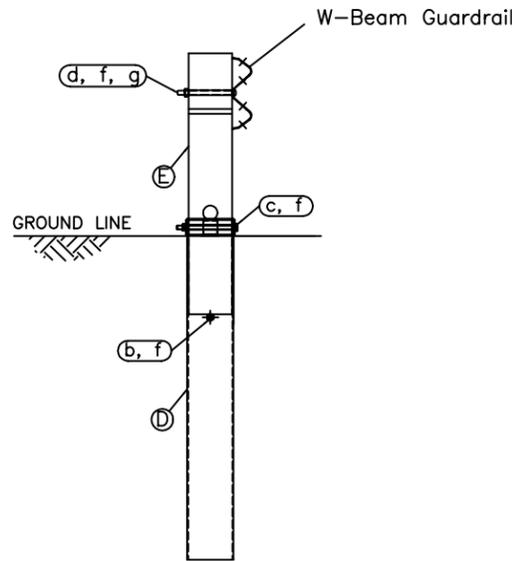
ELEVATION



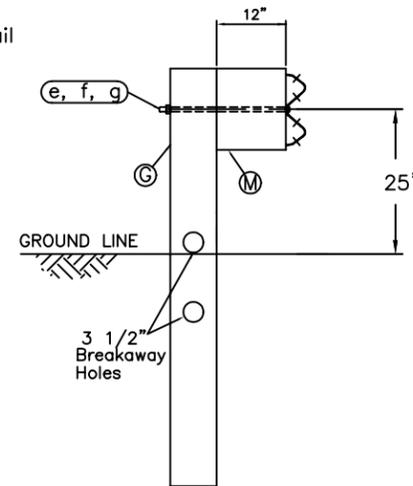
POST #1 CONNECTION DETAILS



IMPACT HEAD CONNECTION DETAIL



SECTION A-A
Post #2



SECTION B-B
Posts 3 thru 6

ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	F3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	F1303 MGS
C	2	W-BEAM GUARDRAIL, 12 Ga.	G1203 MGS
D	2	FOUNDATION TUBE	E731
E	2	BCT WOOD POST	P650 MGS
F	1	GROUND STRUT	E780
G	4	CRT WOOD POST	P671 MGS
H	1	BEARING PLATE	E750
J	1	PIPE SLEEVE	E740
K	1	CABLE ANCHOR BOX	S760
L	1	BCT CABLE ANCHOR ASSEMBLY	E770
M	4	MGS TIMBER BLOCKOUT OR RECYC. EQUIV.	P618
HARDWARE (ALL DIMENSIONS IN INCHES)			
a	16	5/8 ϕ x 1 1/4 SPLICE BOLT	B580122
b	2	5/8 ϕ x 7 1/2 HEX BOLT	B580754
c	2	5/8 ϕ x 10 HEX BOLT	B581004
d	1	5/8 ϕ x 10 H.G.R. BOLT	B581002
e	4	5/8 ϕ x 22 H.G.R. BOLT	B582202
f	25	5/8 ϕ H.G.R. NUT	N050
g	5	H.G.R. WASHER	W050
h	1	ANCHOR CABLE HEX NUT	N100
j	2	ANCHOR CABLE WASHER	W100
k	2	3/8 x 3 LAG SCREW	E350
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:

- Breakaway posts are required with the FLEAT.
- All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
- The foundation tubes shall not protrude more than 4 in above the ground (measured along a 5' cord). Site grading may be necessary to meet this requirement.
- When rock is encountered, a 12" ϕ post hole, 20 in into the rock surface may be used if approved by the engineer. Granular material will be placed in the bottom of the hole, approximately 2.5" deep to provide drainage. The first two posts can be field cut to length, placed in the hole and backfilled with adequately compacted material excavated from the hole.
- 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.
- The soil tubes may be driven with an approved driving head. They shall not be driven with the post in the tube.
- The wood blockouts should be "toe-nailed" to the rectangular wood posts to prevent them from turning when the wood shrinks.



Road Systems, Inc.

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

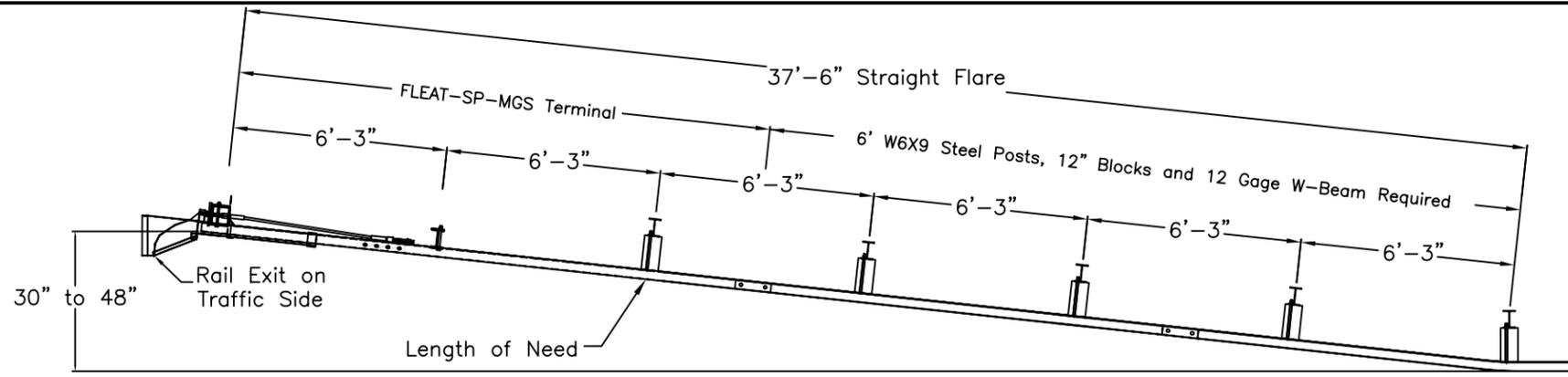
Flared Energy Absorbing
Terminal - FLEAT Assembly
Midwest Guardrail System

Wood Post System

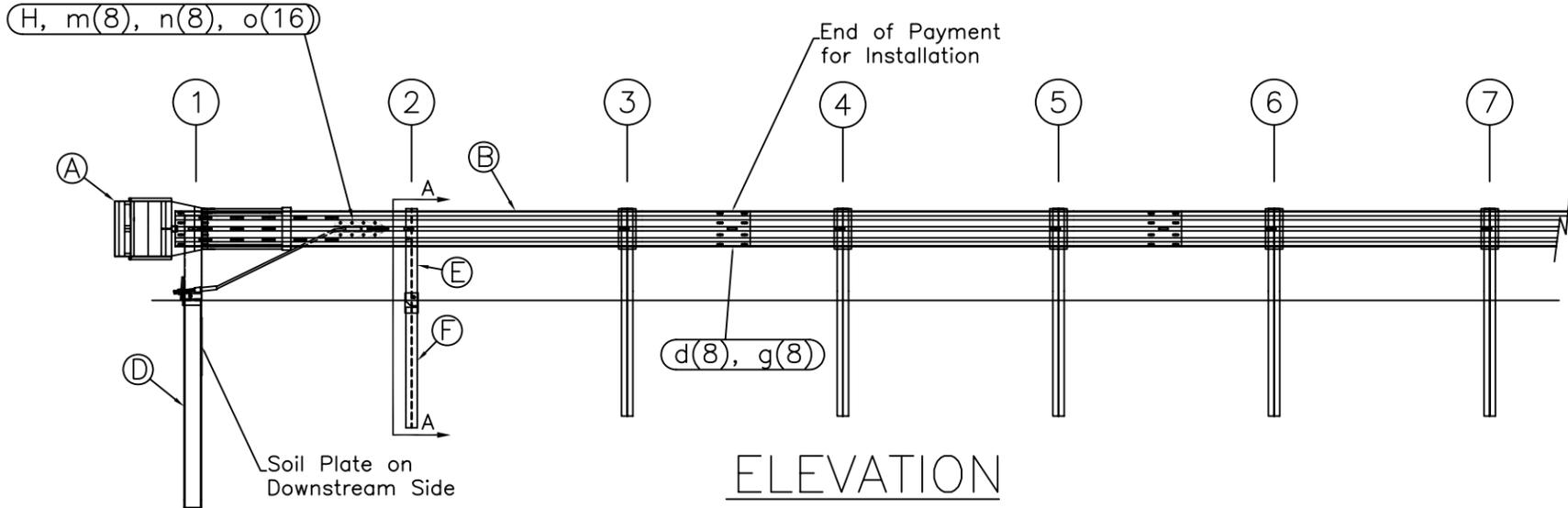
Drawing Name:
FLT-MGS-W-US

Scale:
None

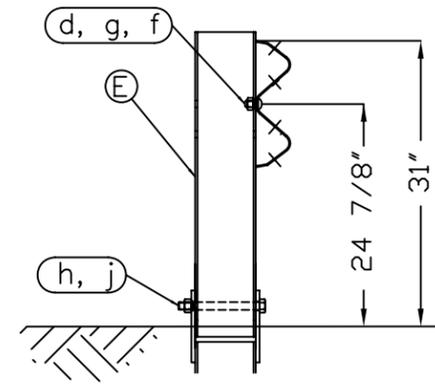
Sheet:
A1
Date:
12/01/2004
By:
JRR
Rev:
0



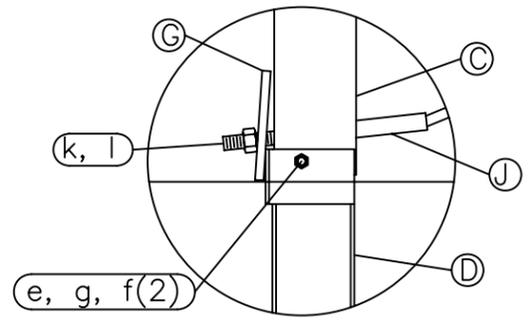
PLAN



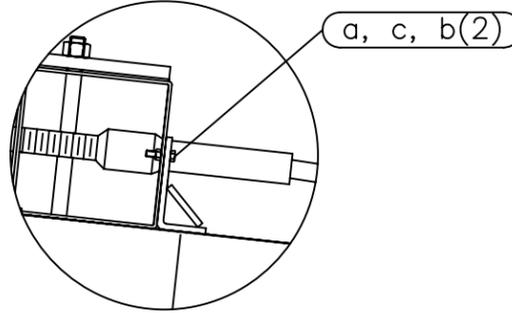
ELEVATION



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
C	1	FIRST POST TOP (6X6X $\frac{1}{8}$ " 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" Ø 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.
- 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.

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

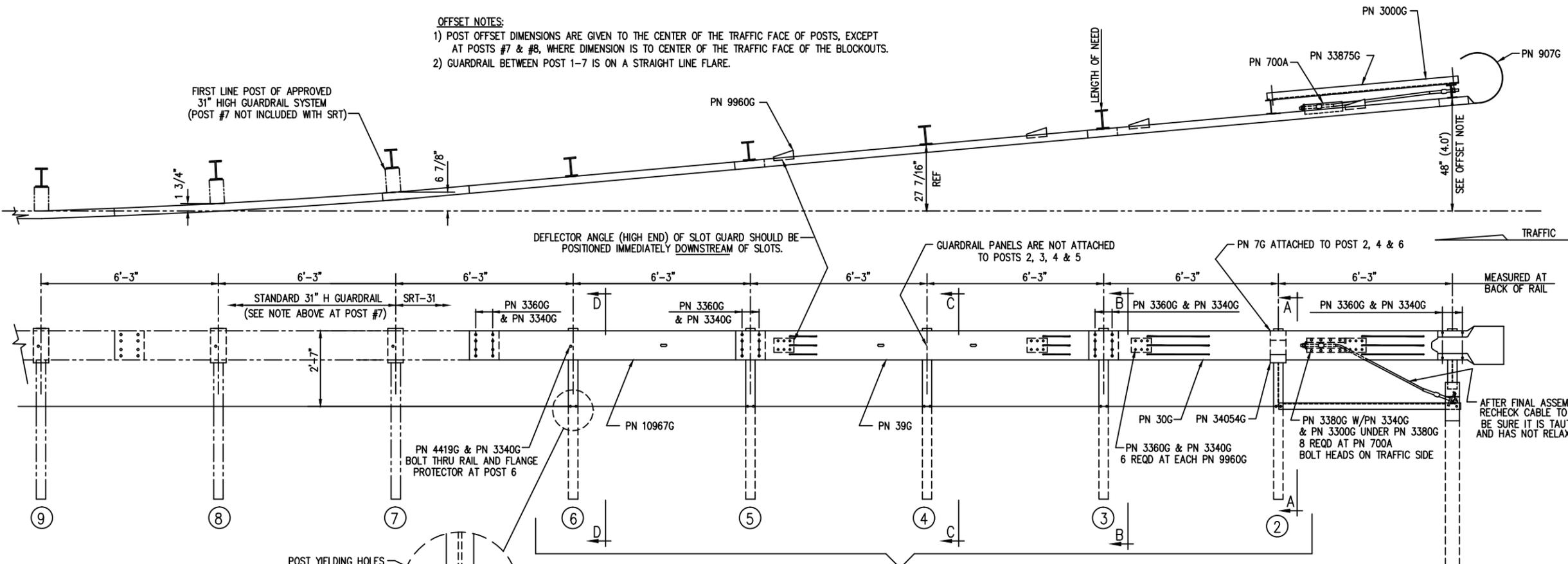
**FLEAT-SP-MGS Terminal
Midwest Guardrail System
31" Top of Rail**

Drawing Name: **FLT-SP-S-MGS** Scale: **None**

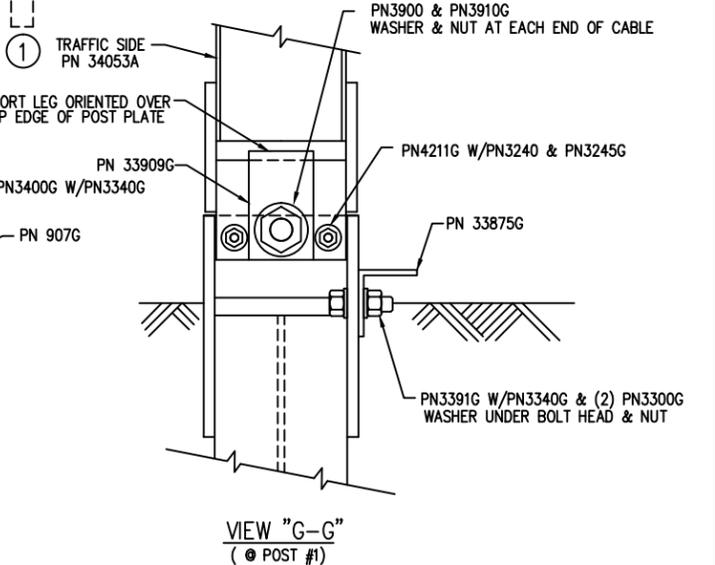
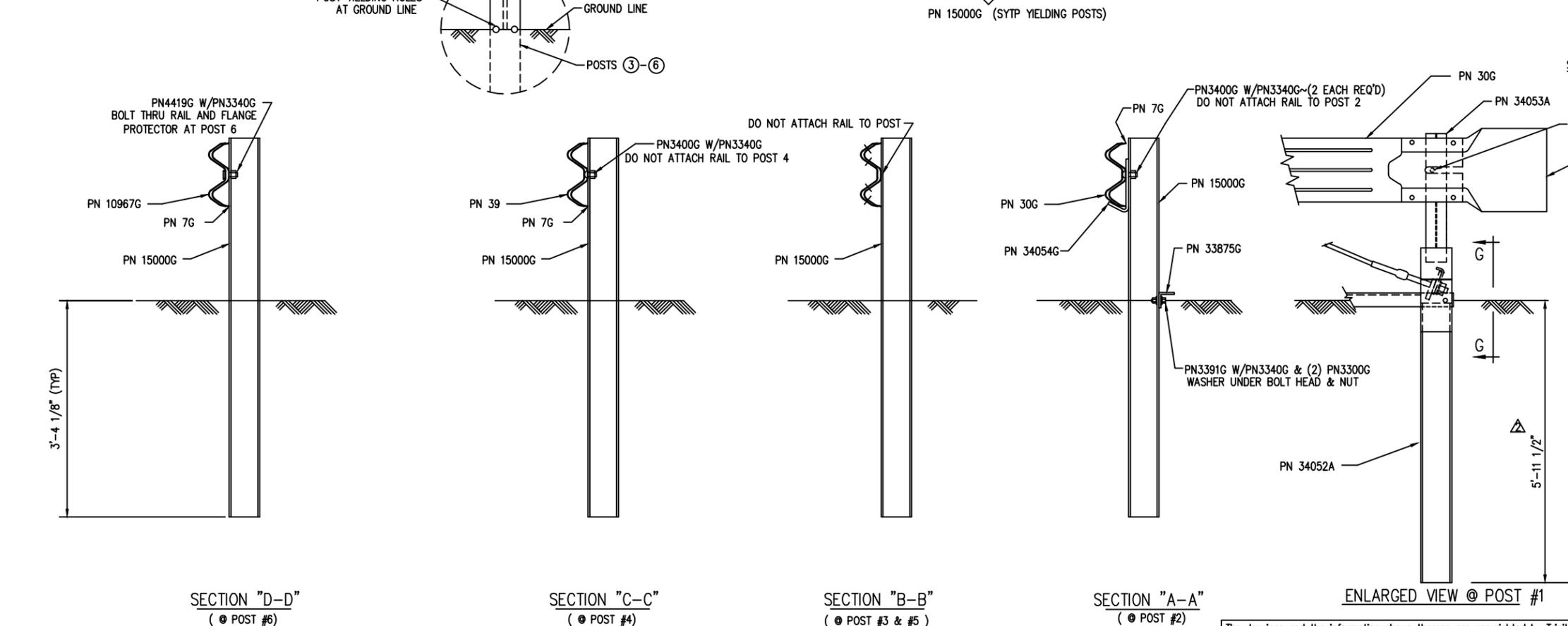
Sheet:	1
Date:	02/24/10
By:	JRR
Rev:	0

OFFSET NOTES:
 1) POST OFFSET DIMENSIONS ARE GIVEN TO THE CENTER OF THE TRAFFIC FACE OF POSTS, EXCEPT AT POSTS #7 & #8, WHERE DIMENSION IS TO CENTER OF THE TRAFFIC FACE OF THE BLOCKOUTS.
 2) GUARDRAIL BETWEEN POST 1-7 IS ON A STRAIGHT LINE FLARE.

FIRST LINE POST OF APPROVED 31" HIGH GUARDRAIL SYSTEM (POST #7 NOT INCLUDED WITH SRT)



BILL OF MATERIAL		
PN	QTY	DESCRIPTION
7G	3	12/6"/FLG PROTECTOR (AT POST 2, 4 & 6)
30G	1	12/12/6"/S SRT-1 (GUARDRAIL)
39G	1	12/12/6"/S SRT-2 (GUARDRAIL)
700A	1	CABLE ANCHOR BRACKET
907G	1	12/BUFFER/ROLLED (TERMINAL)
3000G	1	3/4 x 6'-6" CABLE
HARDWARE		
3240G	2	5/16" WASHER (AT POST 1)
3245G	2	5/16" HEX NUT (AT POST 1)
3300G	12	5/8" WASHER
3340G	67	5/8" HEX HGR NUT
3360G	52	5/8" x 1 1/4" HGR SPLICE BOLT
3380G	8	5/8" x 1 1/2" HEX HD BOLT
3400G	4	5/8" x 2" HGR POST BOLT (AT POSTS 1, 2 & 4)
3391G	2	5/8" x 1 3/4" HEX BOLT (A325) (AT STRUT)
3900G	2	1" WASHER (AT CABLE)
3910G	2	1" HEX NUT (AT CABLE)
4211G	2	5/16" x 1 3/4" HEX BOLT (AT POST 1)
4419G	1	5/8" x 1 3/4" COUNTERSUNK HD BOLT (AT POST 6)
9960G	4	SLOT GUARD BRACKET
10967G	1	12/9/4.5/31.5/S SRT-3 (GUARDRAIL)
15000G	5	6'-0" SYT POST (W6 X 8.5)
33909G	1	CABLE ANCHOR BRACKET (AT POST 1)
33875G	1	ANGLE STRUT 3 x 3 x 1/4
34052A	1	CR POST 1 BOT (W6 X 15)
34053A	1	CR POST 1 TOP (W6 X 8.5)
34054G	1	POST SHELF ANGLE (AT POST 2)



REV.	CHK'D	BY	DATE	REMARKS
4	BT	LH	10/6/10	OFFSET POSTS #7 & #8
3	BT	LH	2/26/09	REVISED HARDWARE
2	SG	LH	7/28/08	REVISED POST #1 LENGTH IN GROUND
1	SG	LH	1/16/08	REVISED HARDWARE QUANTITY IN BILL OF MATERIAL

SRT-31

SLOTTED RAIL TERMINAL SRT-31 (31" H)
ERECTION DETAILS
(3 PANELS, CR AND SYT POSTS)

DRAWN	BT
CHECKED	SG
SCALE	NTS
DATE	10/30/07
ENG. FILE #	SS436-01E
SHT.No.	E1 OF 1
DRAWING NO.	SS 436
REV.	4

TRINITY HIGHWAY PRODUCTS, LLC.
2525 STEMMONS FREEWAY
DALLAS, TX 75207

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