

INFORMATION HANDOUT

For Contract No. 05-1A3504
At 05-SB-246-29.9/31.4

Identified by
Project ID 0500020315

MANUFACTURER DRAWINGS

In-Line Terminal Systems

SKT-SP-MGS

by Road Systems, Inc.

ET-PLUS 31

by Trinity Highway Products, LLC.

Flared Terminal Systems

FLEAT-MGS

by Road Systems, Inc.

SRT-31

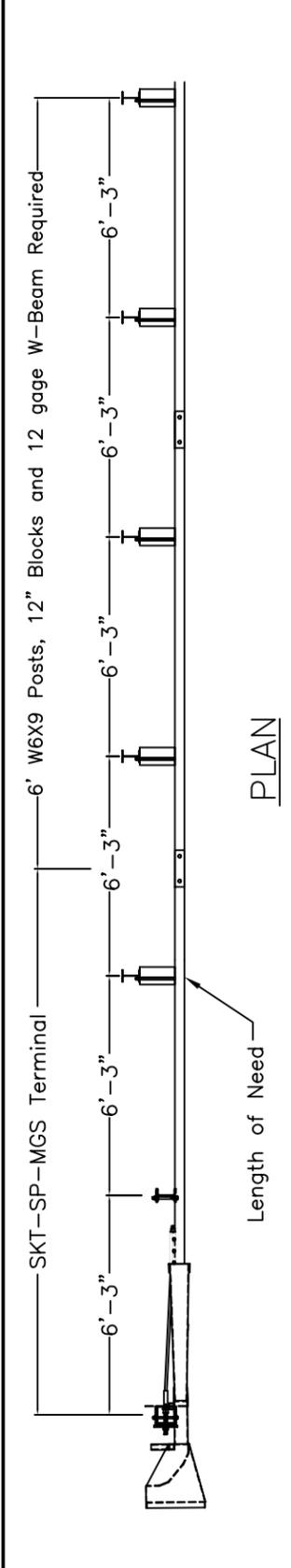
by Trinity Highway Products, LLC.

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.C.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

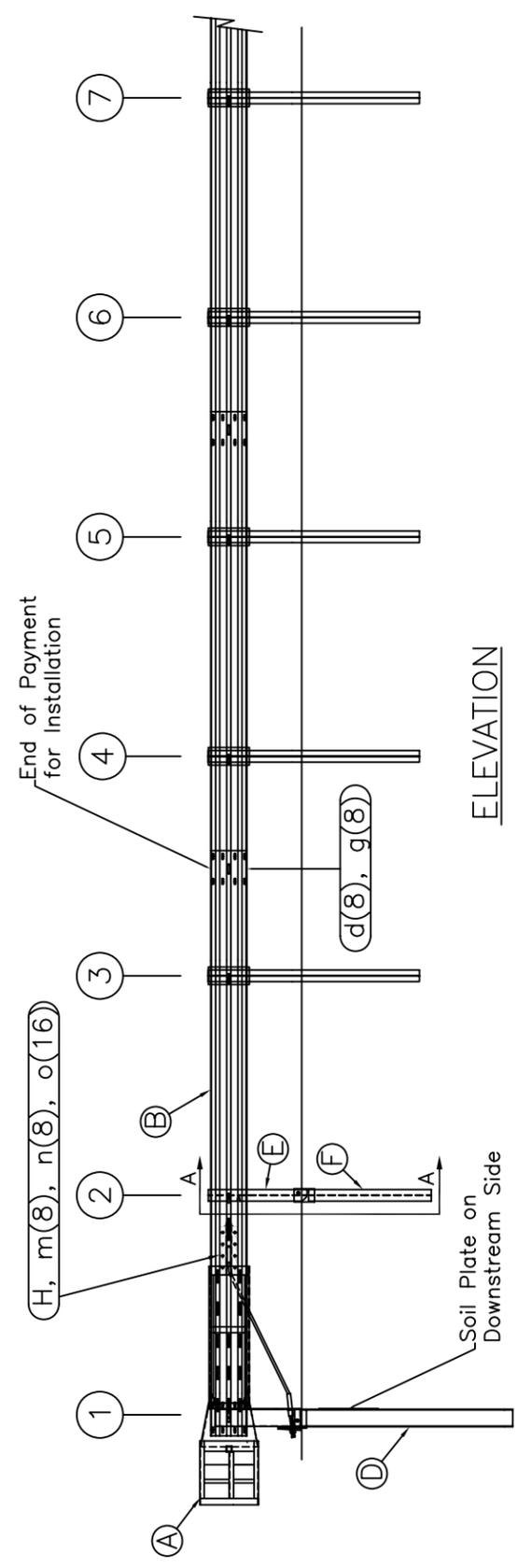
GENERAL NOTES:

1. All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
2. 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.
3. 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.
4. 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.
5. A site evaluation should be considered if there is less than 25' between the outlet side of the terminal and any adjacent driving lane.
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.

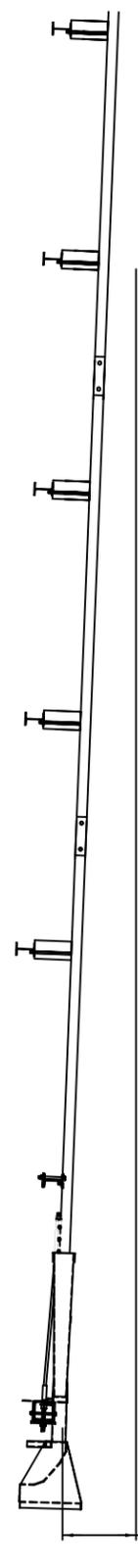


PLAN

TRAFFIC →

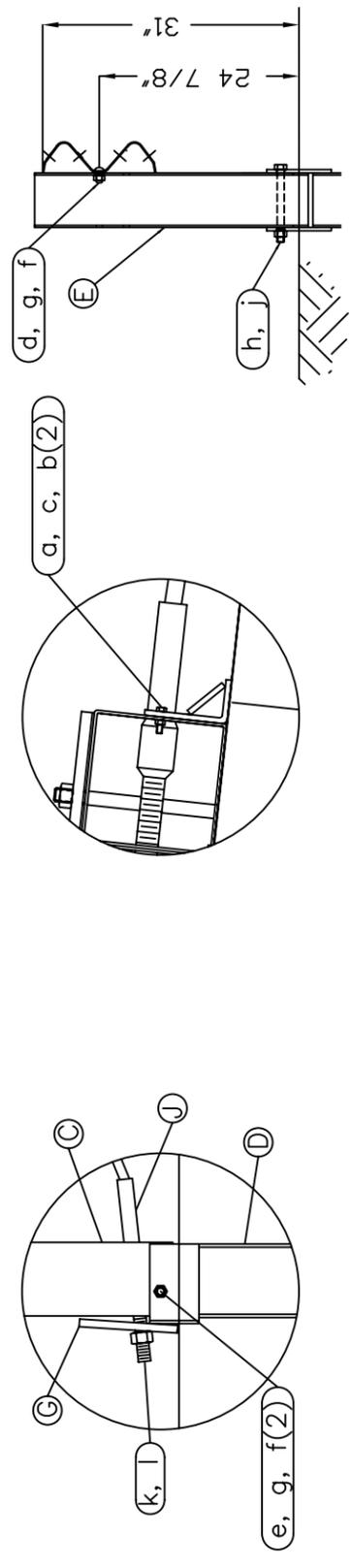


ELEVATION



OPTIONAL FLARED INSTALLATION

25:1 maximum flare rate



SECTION A-A
Post #2

Post #1 Connection Detail

Impact Head Connection Detail

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

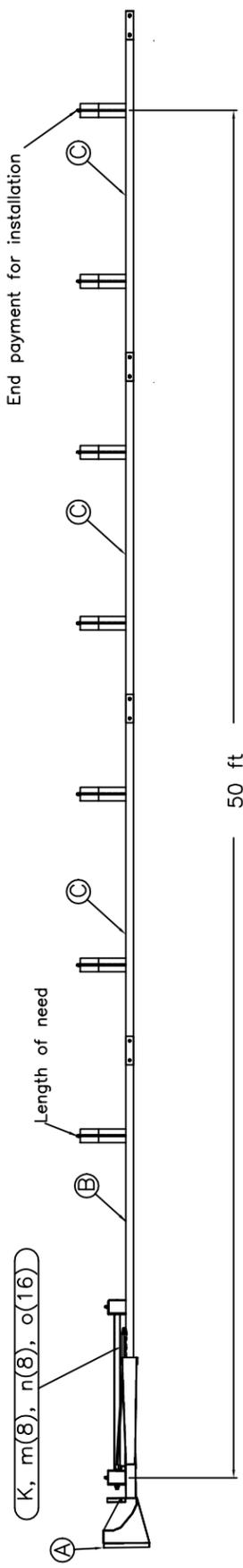
Sheet:	1
Date:	02/24/10
By:	JRR
Rev:	0

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

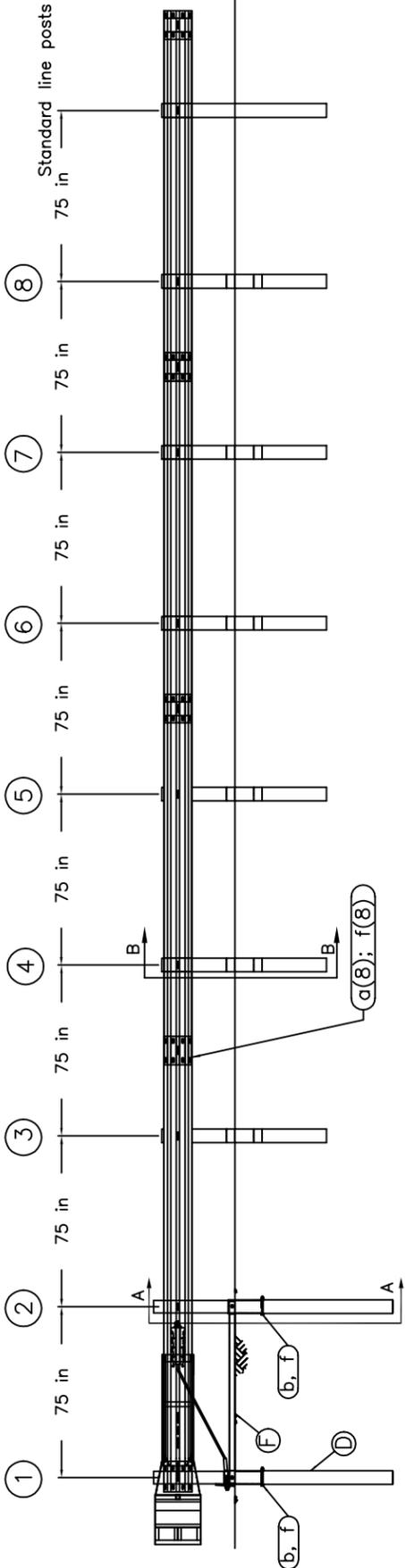
ITEM QTY	BILL OF MATERIALS	ITEM NO.
A 1	IMPACT HEAD	S3000
B 1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	S1303 MGS
C 3	W-BEAM GUARDRAIL, 12 Ga.	G1203 MGS
D 2	FOUNDATION TUBE	E731
E 2	BCT WOOD POST	P650 MGS
F 1	GROUND STRUT	E780
G 6	CRT WOOD POST	P671 MGS
H 1	BEARING PLATE	E750
J 1	PIPE SLEEVE	E740
K 1	CABLE 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	5/8 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 6	5/8 ϕ x 22 H.G.R. BOLT	B582202
f 35	5/8 ϕ 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

GENERAL NOTES:

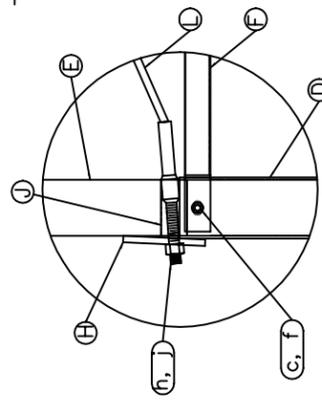
- Breakaway posts are required with the SKT.
- All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
- The SKT can be flared at a rate of up to 25:1 to prevent the impact head from encroaching on the shoulder.
- The foundation tubes shall not protrude more than 4" above the ground (measured along a 5' cord). Site grading may be necessary to meet this requirement.
- When rock is encountered, a 12" ϕ 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.
- 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.
- 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 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.



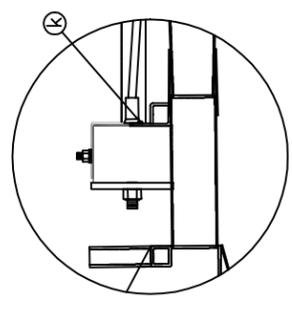
PLAN



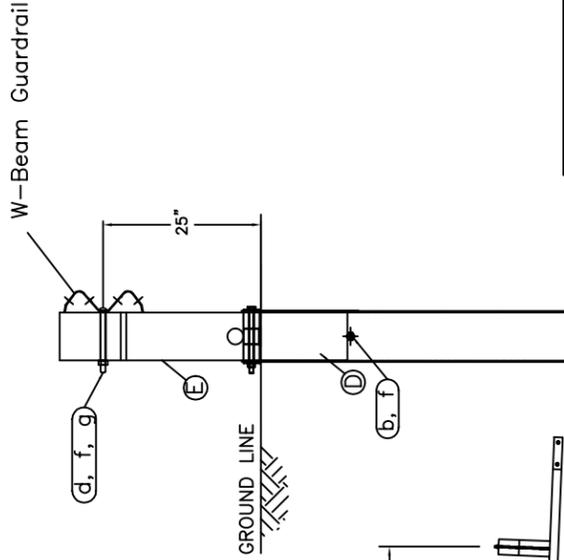
ELEVATION



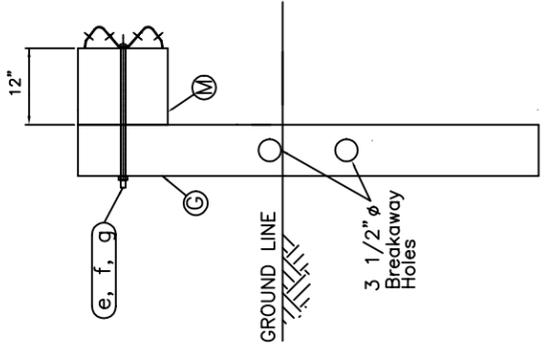
POST #1 CONNECTION DETAIL



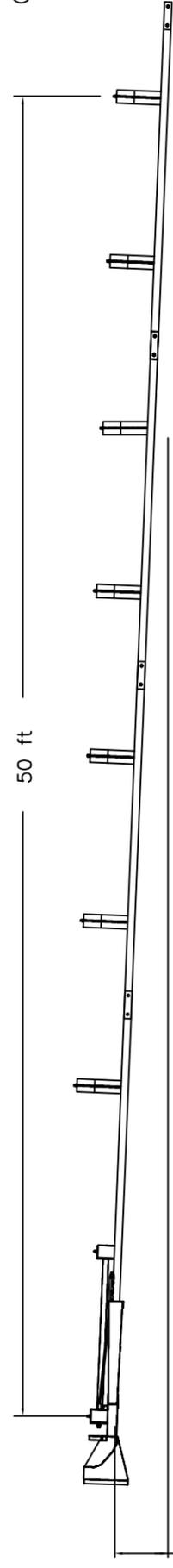
IMPACT HEAD CONNECTION DETAIL



SECTION A-A
Post #2



SECTION B-B
Posts 3 thru 8



0 to 24" Rail Offset

OPTIONAL FLARED INSTALLATION

25:1 maximum flare rate

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

Sheet: A1	Sequential Kinking Terminal SKT - Assembly	Midwest Guardrail System Wood Post System
Date: 12/01/04		
By: JRR	Drawing Name: SKT-MGS-W-US	Scale: NONE
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.

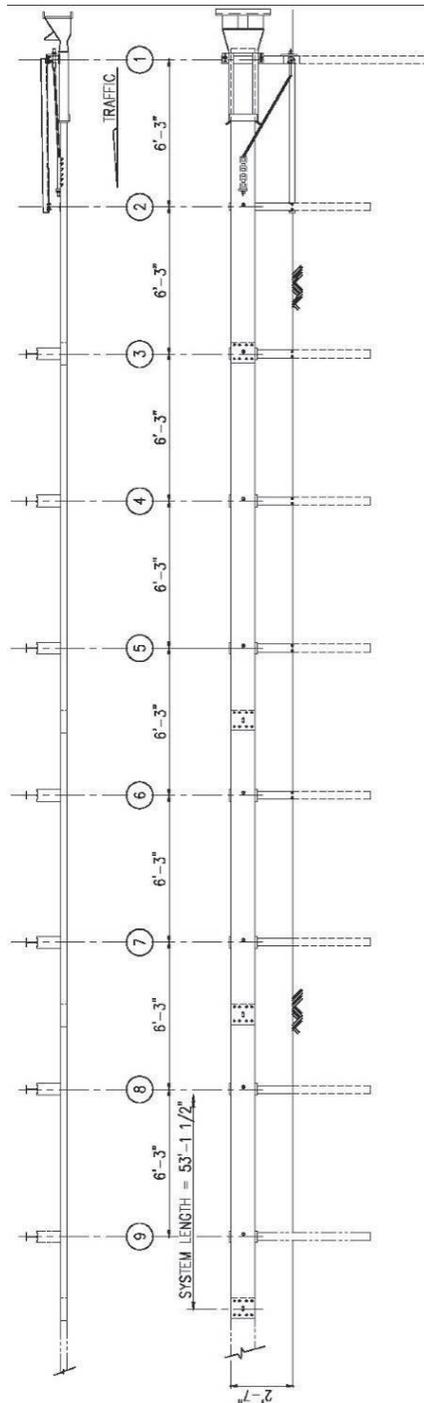
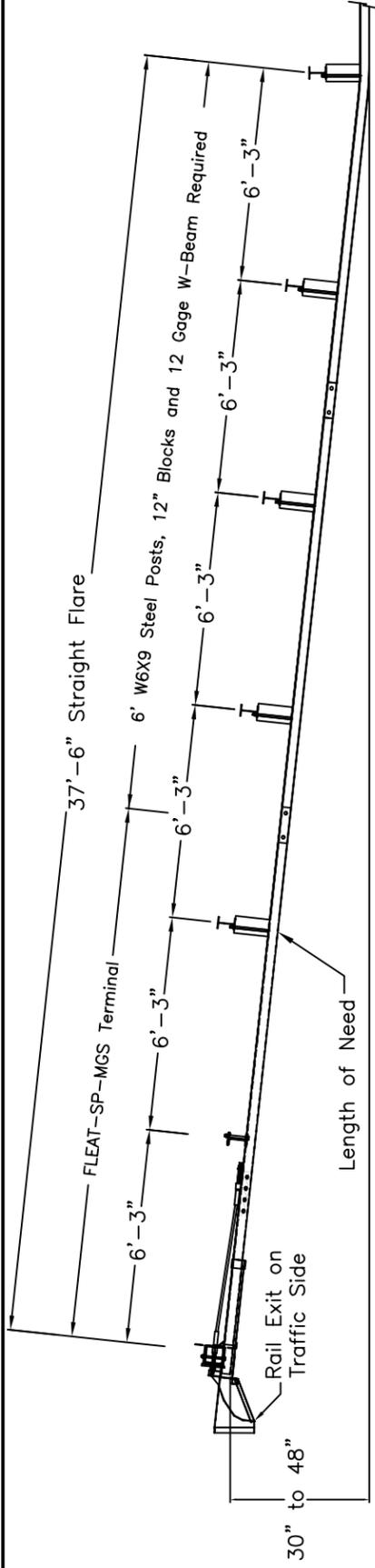


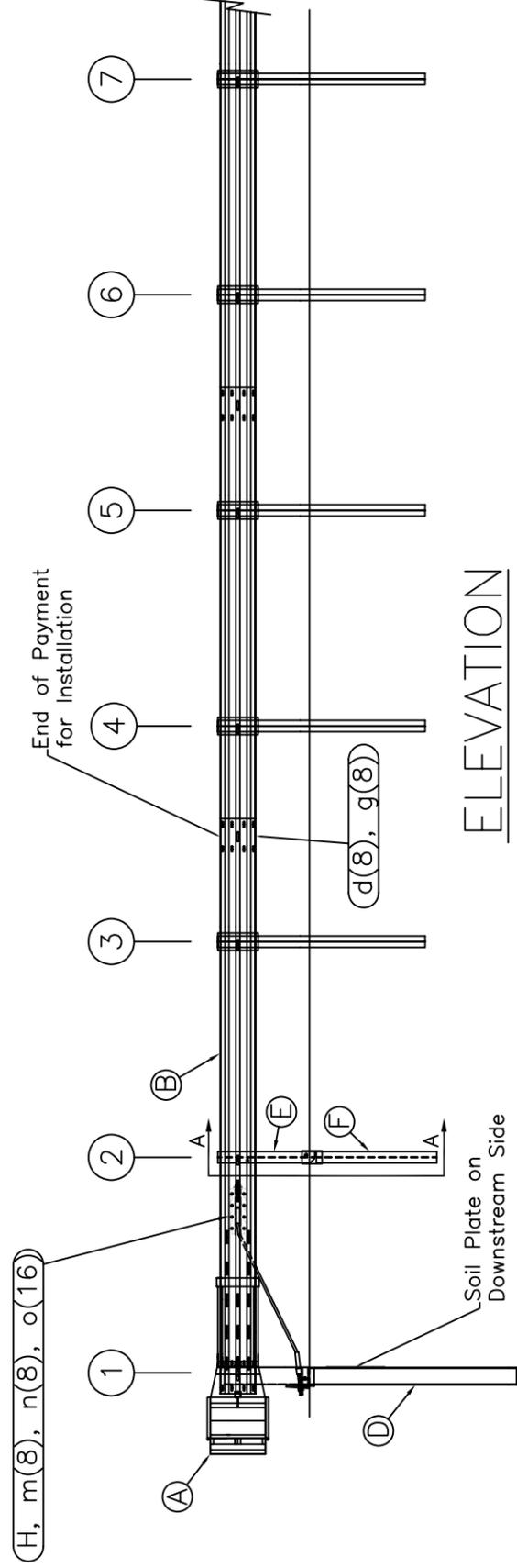
Figure 4 (TL-3)

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

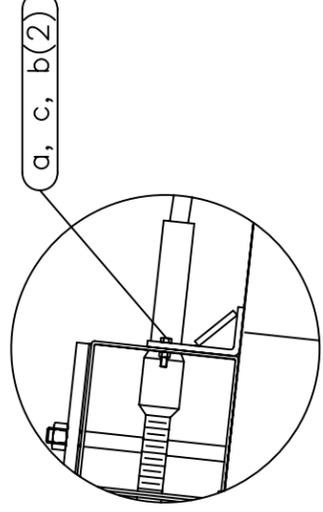


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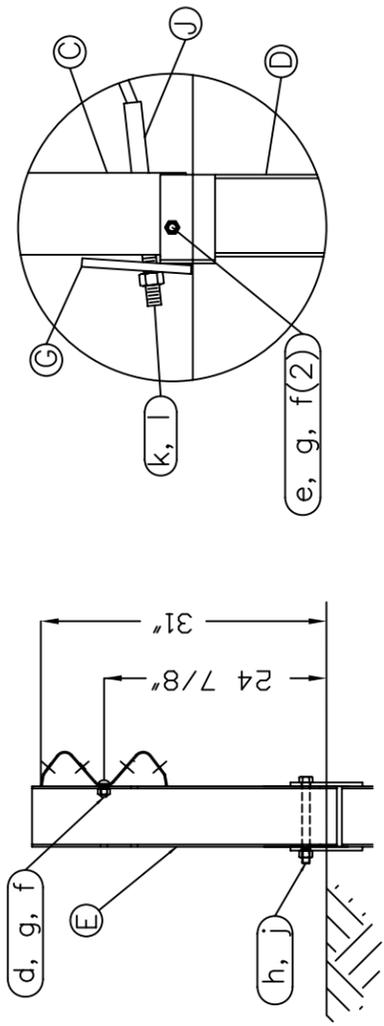
TRAFFIC →



ELEVATION



Impact Head Connection Detail



SECTION A-A
Post #2

Post #1 Connection Detail

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

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

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

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