

1. The guardrail end anchorage assembly represented on these drawings is a proprietary design by Road Systems, Inc. and marketed under the name FLEAT. Any infringement on the rights of the design shall be the sole responsibility of the user.

2. These drawings are sufficient for plan details of the FLEAT when installed in connection with shoulder guardrail and precludes the requirement for shop drawing submittals unless the plans call for such submittals. The FLEAT shall be assembled in accordance with the manufacturer's detailed drawings, procedures, and specifications.

3. The FLEAT is available in steel or timber post configurations.

The steel post components are:

- Post #1 lower is W6" x 15# with soil plate welded
- Post #1 upper is 6" x 6" x 1/8" tube and is bolted to post #1 lower with 5/8" bolt
- Post 2 lower is W6" x 9#
- Post 2 upper is W6" x 9# and is bolted to post #2 lower with 3/4" bolt
- Posts #3 and beyond are W6" x 9# x 6'-0" guardrail posts

The wood post components are:

- Post #1 and #2 lowers are 6' long 6" x 8" x 1/8" foundation tubes
- Post #1 and #2 uppers are 6" x 8" BCT wood posts
- Posts #1 and #2 are connected with a ground strut and 5/8" bolts
- Posts #3 and beyond are 6'-0" long CRT wood posts

4. The FLEAT is intended for use as an approach terminal for shoulder guardrail applications. The beginning length of need point is located at Post 3 (see Sheets 2 and 4).

5. The FLEAT shall be installed as a flared approach terminal.

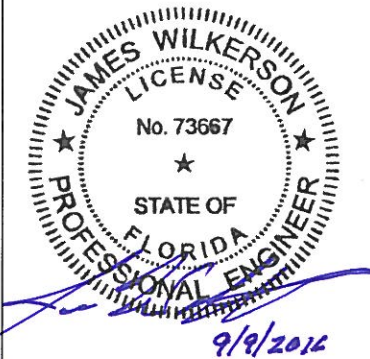
6. The FLEAT can only be used with single-faced guardrail.

7. For detail of shoulder widening, miscellaneous asphalt pavement and pay limits, see Index 400.

8. The FLEAT shall be paid for under the contract unit price of Guardrail, approach terminal (Flared), per EA.

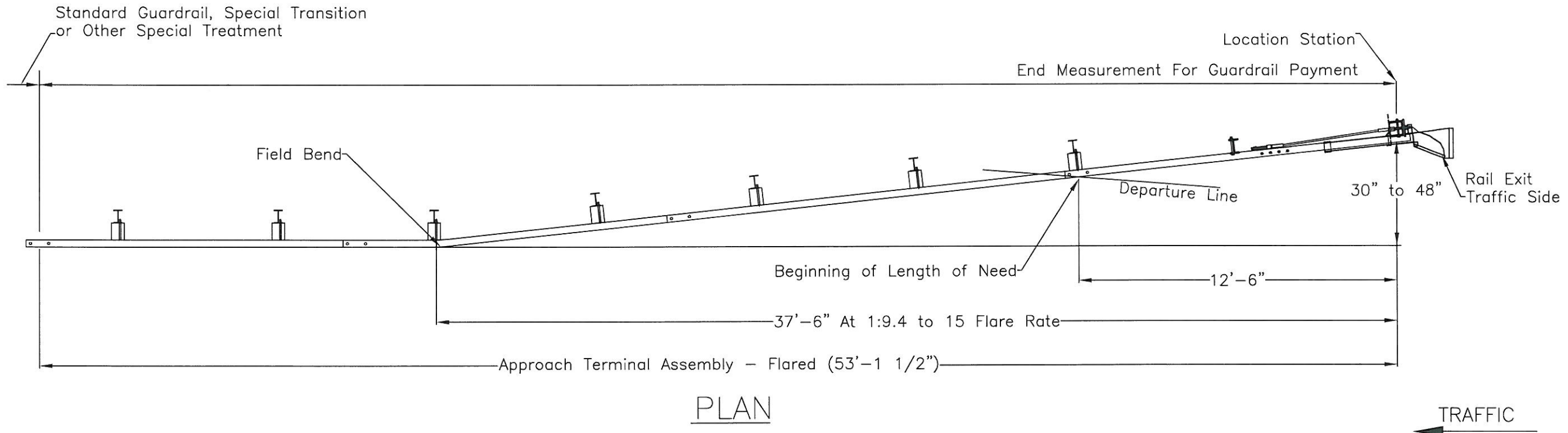
9. Site Conditions: The steel post system is not permitted adjacent to sidewalks.

TABLE OF CONTENTS	
SHEET	DRAWING NAME
1 OF 5	FLared Energy Absorbing Terminal (FLEAT) (2'-1" Mounting Height/TL-3/Flared)
2 OF 5	FLared Energy Absorbing Terminal (FLEAT) Steel Post System Layout
3 OF 5	FLared Energy Absorbing Terminal (FLEAT) Steel Post System Part Details
4 OF 5	FLared Energy Absorbing Terminal (FLEAT) Wood Post System Layout
5 OF 5	FLared Energy Absorbing Terminal (FLEAT) Wood Post System Part Details



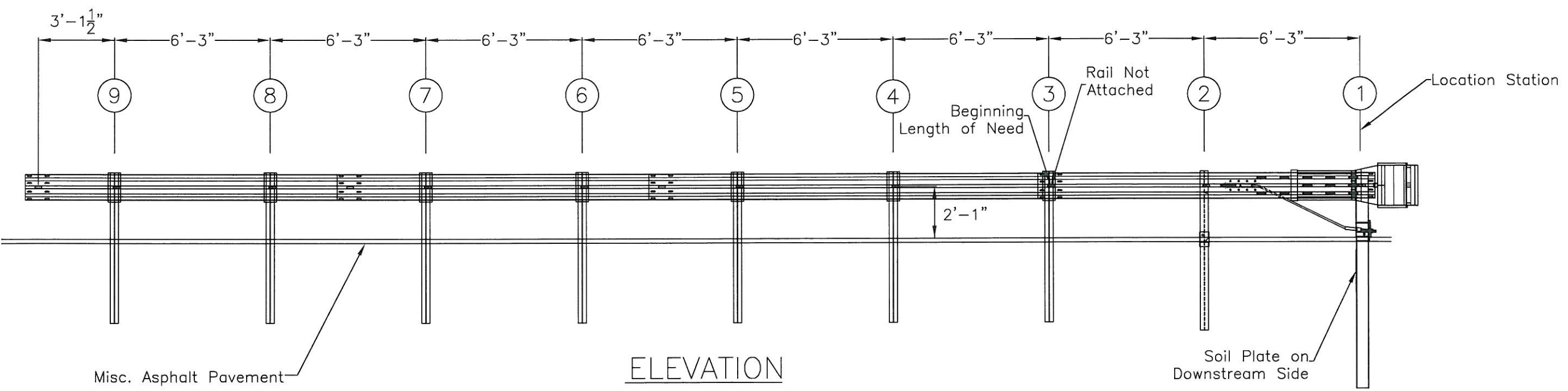
RD E. GIBNEY, P.L.C.  
17776 W. BURNING WOOD DR. SUITE 100  
DADE COUNTY, FLORIDA 33157  
RD E. GIBNEY, P.L.C.  
RD E. GIBNEY, P.L.C.  
RD E. GIBNEY, P.L.C.

REVISIONS			RSI Road Systems, Inc.	
DATE	BY	DESCRIPTION	FLared Energy Absorbing Terminal (FLEAT) (2'-1" Mounting Height/TL-3/Flared)	
			DATE: 06/29/2016	FILE NAME: FLEAT-SP-MGS
			SHEET: 1 OF 5	Florida APL No. 536-003-002



PLAN

TRAFFIC ←

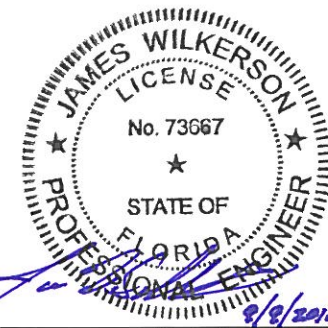


ELEVATION

Specification 536 – End Anchorage Assembly (FLARED)

MODEL	SYSTEM WIDTH	SYSTEM HEIGHT	SYSTEM LENGTH	DESIGN LENGTH	DESIGN SPEED	TEST LEVEL DESIGNATION
FLEAT	20"	31"	53'-1 1/2"	37'-6"	≥50 MPH	TL-3

NOTE: THE FLEAT TL-3 MAY BE USED FOR LOWER DESIGN SPEEDS.



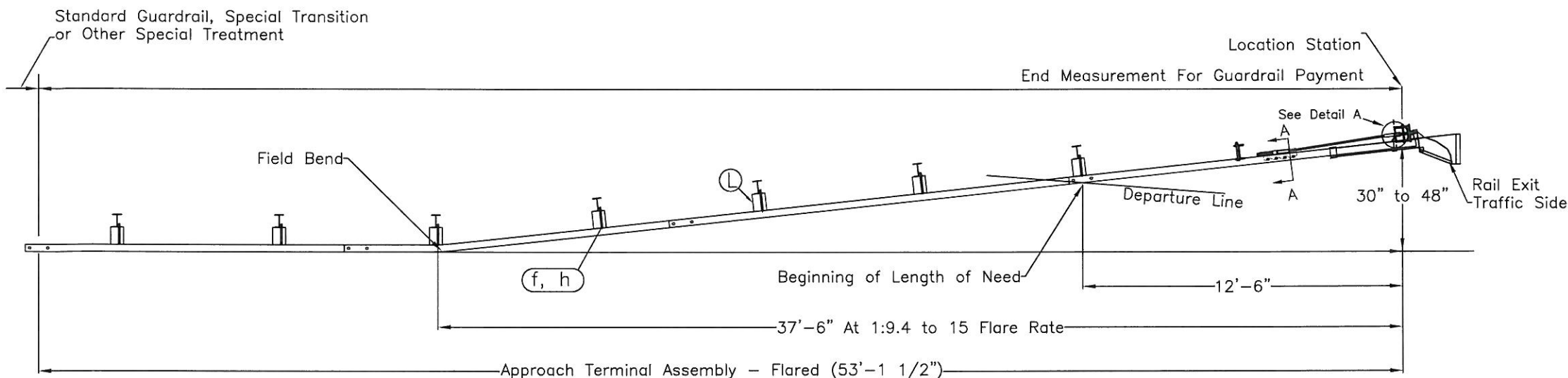
REVISIONS		
DATE	BY	DESCRIPTION

**RSI Road Systems, Inc.**

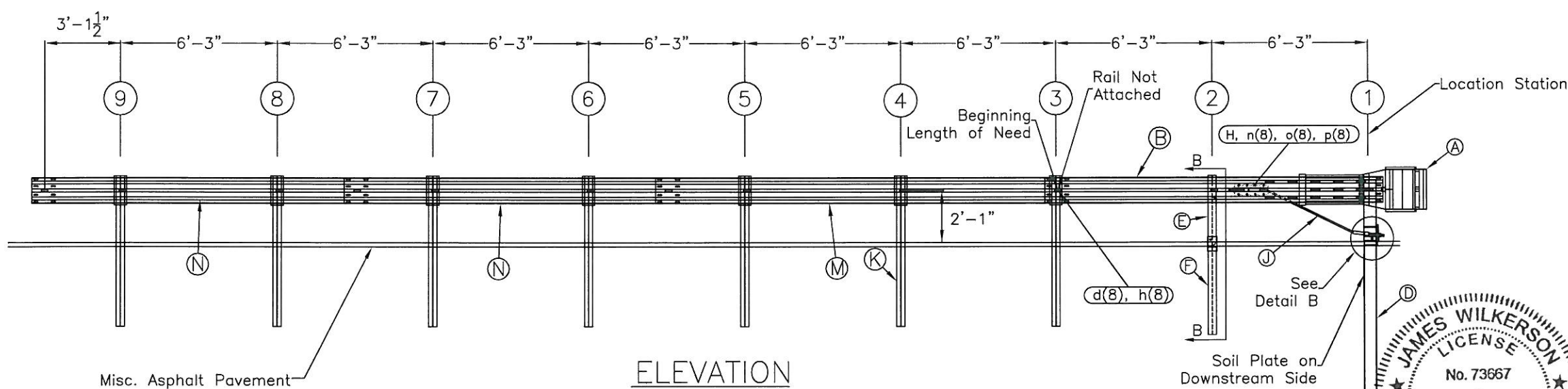
FLared Energy Absorbing Terminal (FLEAT) Steel Post System Layout

DATE: 06/29/2016 FILE NAME: FLEAT-SP-MGS

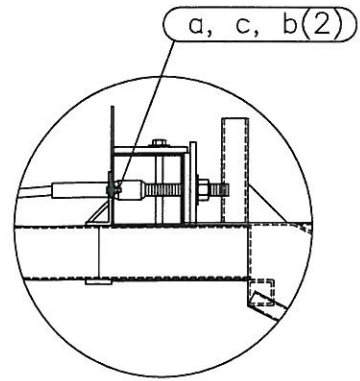
SHEET: 2 OF 5 Florida APL No. 536-003-002



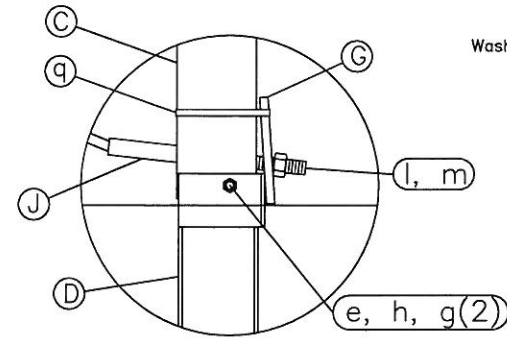
PLAN



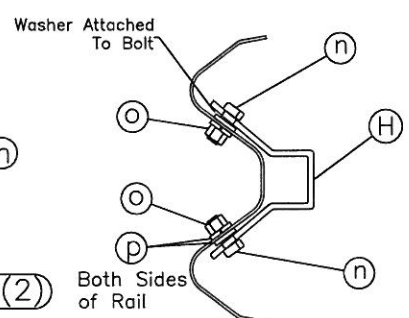
ELEVATION



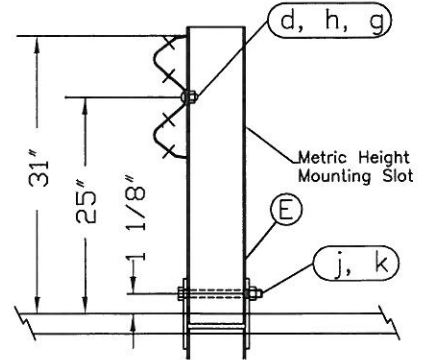
Detail A  
Impact Head Connection Detail



Detail B  
Post #1 Connection Detail



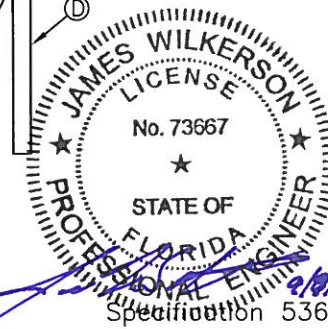
SECTION A-A  
Anchor Bracket



SECTION B-B  
Post #2

ITEM	QTY	DESCRIPTION	PART #
A	1	IMPACT HEAD	F3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	SF1303
C	1	FIRST POST TOP (6"x6"x $\frac{3}{8}$ " 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
K	7	6X9 STEEL POST	P621
L	7	TIMBER BLOCK (6"x8"x14")	P616
M	1	W-BEAM MGS RAIL SECTION (15'-7 1/2")	G1507
N	2	W-BEAM MGS RAIL SECTION (12'-6")	G1203A
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	25	5/8 Dia. x 1 1/4 SPLICE BOLT	B580122
e	1	5/8 Dia. x 9 HEX BOLT GRD 5	B580904A
f	7	5/8" x 10" H.G.R. Bolt	B581002
g	3	5/8 WASHER	W050
h	33	5/8 Dia. H.G.R. NUT	N050
j	1	3/4 Dia. x 8 1/2 HEX BOLT GRD A449	B340854A
k	1	3/4 Dia. HEX NUT	N030
l	2	1 ANCHOR CABLE HEX NUT	N100
m	2	1 ANCHOR CABLE WASHER	W100
n	8	RSI SHOULDER BLOT w/WASHER	SB12A
o	8	1/2 STRUCTURAL NUT	N012A
p	8	WASHER	W012A
q	1	BEARING PLATE RETAINER TIE	CT-100S

- GENERAL NOTES:
1. Refer to FLEAT Assembly Manual
  2. The lower sections of the Posts 1&2 shall not protrude more than 4 in above the ground (measured along a 5' cord). The center line of the hinge bolt at Post #2 is nominally 1 1/8" above the ground surface or misc. asphalt pavement. Site grading may be necessary to meet these 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. 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.



Specification 536 - End Anchorage Assembly (FLARED)

MODEL	SYSTEM WIDTH	SYSTEM HEIGHT	SYSTEM LENGTH	DESIGN LENGTH	DESIGN SPEED	TEST LEVEL DESIGNATION
FLEAT	20"	31"	53'-1 1/2"	37'-6"	≥50 MPH	TL-3

NOTE: THE FLEAT TL-3 MAY BE USED FOR LOWER DESIGN SPEEDS.

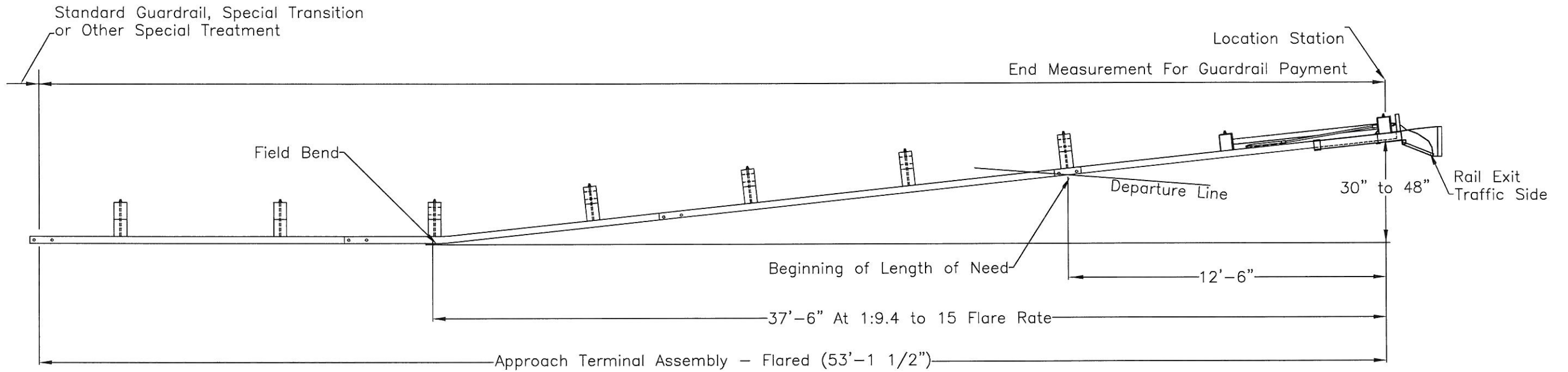
REVISIONS		
DATE	BY	DESCRIPTION

**RSI Road Systems, Inc.**

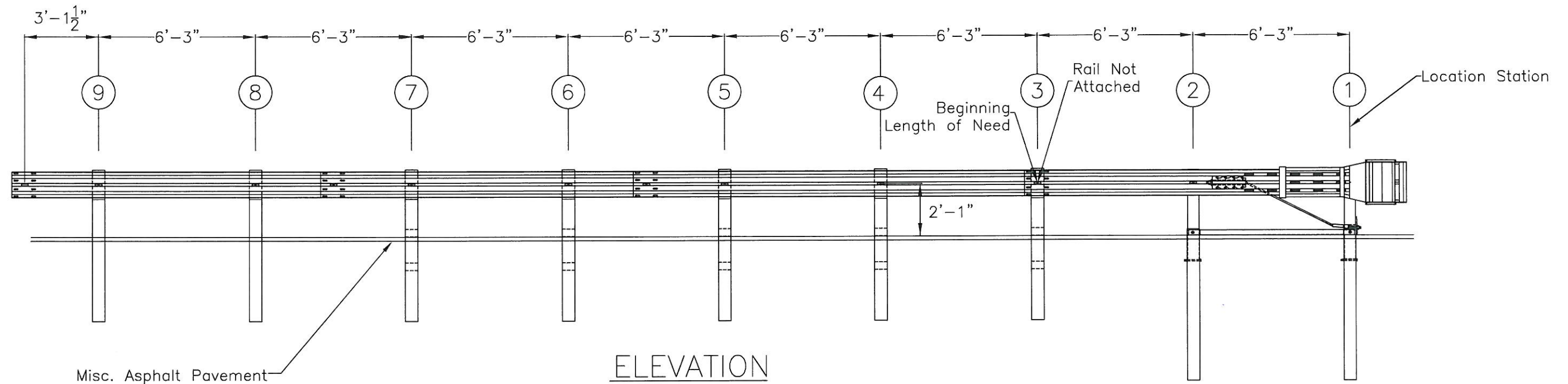
FLared Energy Absorbing Terminal (FLEAT)  
Steel Post System Part Details

DATE: 06/29/2016 FILE NAME: FLEAT-SP-MGS

SHEET: 3 OF 5 Florida APL No. 536-003-002



PLAN



ELEVATION

Specification 536 - End Anchorage Assembly (FLARED)

MODEL	SYSTEM WIDTH	SYSTEM HEIGHT	SYSTEM LENGTH	DESIGN LENGTH	DESIGN SPEED	TEST LEVEL DESIGNATION
FLEAT	20"	31"	53'-1 1/2"	37'-6"	≥50 MPH	TL-3

NOTE: THE FLEAT TL-3 MAY BE USED FOR LOWER DESIGN SPEEDS.

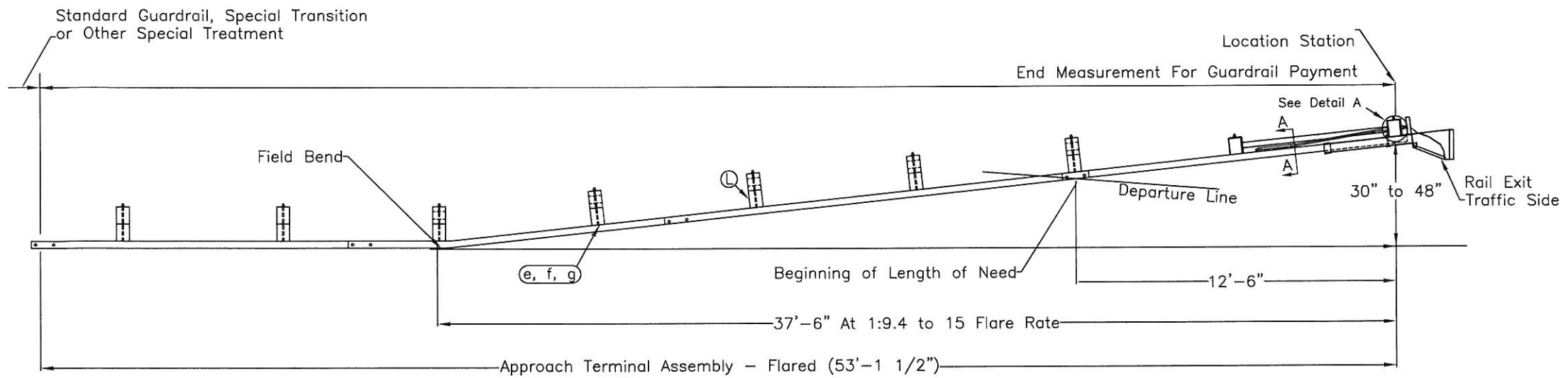


REVISIONS		
DATE	BY	DESCRIPTION

**RSI Road Systems, Inc.**

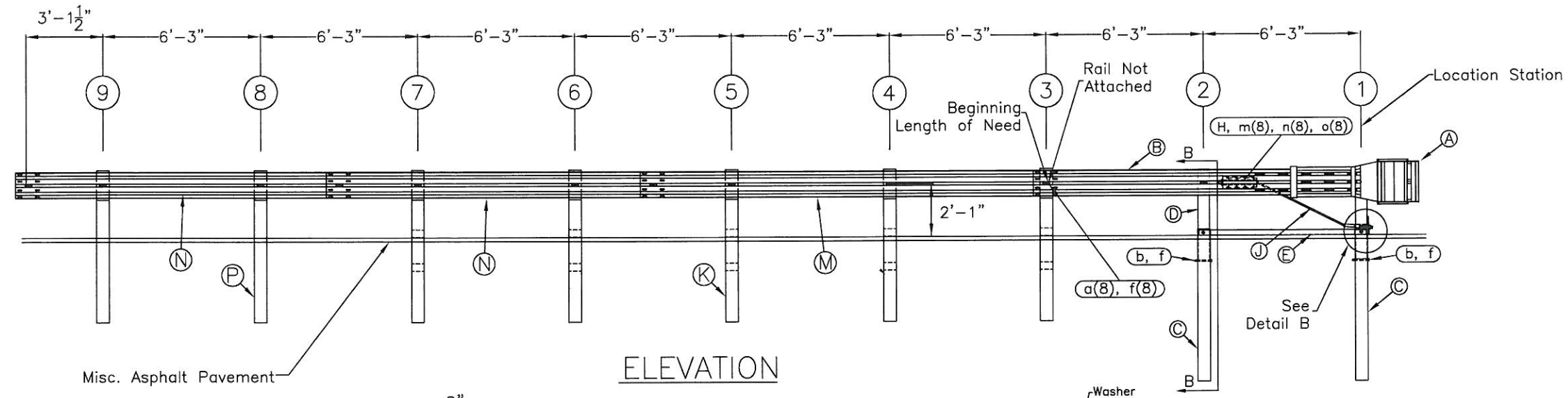
FLared Energy Absorbing Terminal (FLEAT)  
Wood Post System Layout

DATE: 06/29/2016 FILE NAME: FLT-SP-MGS  
SHEET: 4 OF 5 Florida APL No. 536-003-002

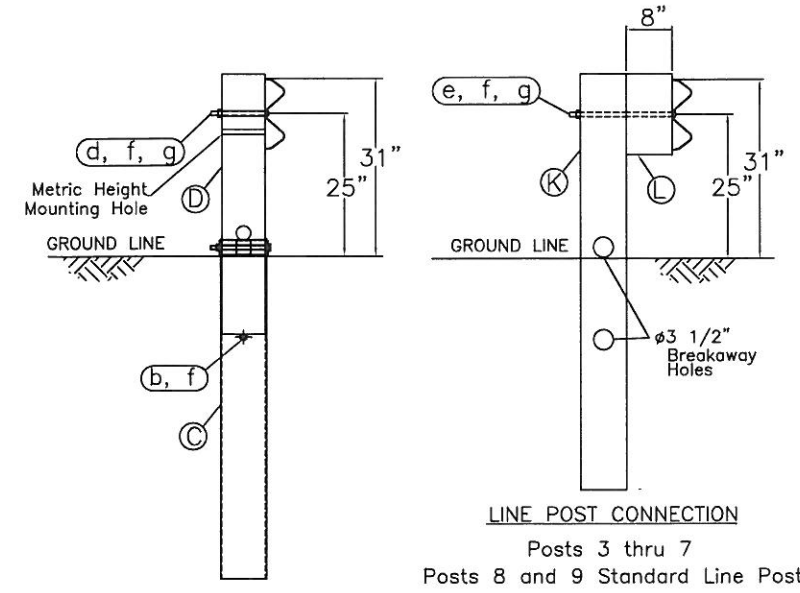


PLAN

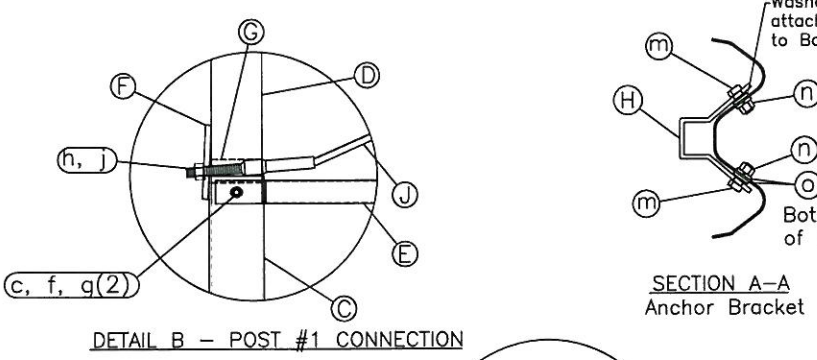
TRAFFIC ←



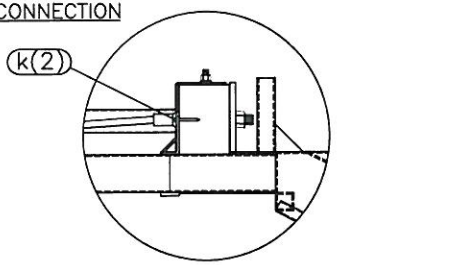
ELEVATION



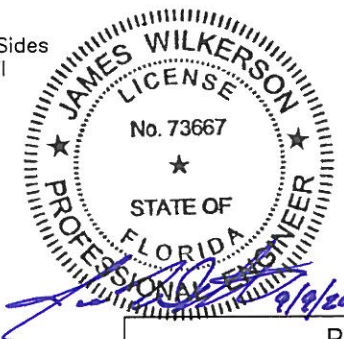
SECTION B-B  
Post #2



DETAIL B - POST #1 CONNECTION



DETAIL A - IMPACT HEAD CONNECTION



Specification 536 - End Anchorage Assembly (FLARED)

MODEL	SYSTEM WIDTH	SYSTEM HEIGHT	SYSTEM LENGTH	DESIGN LENGTH	DESIGN SPEED	TEST LEVEL DESIGNATION
FLEAT	20"	31"	53'-1 1/2"	37'-6"	≥50 MPH	TL-3

NOTE: THE FLEAT TL-3 MAY BE USED FOR LOWER DESIGN SPEEDS.

ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	F3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	SF1303
C	2	FOUNDATION TUBE (6" - 6"x8"x1/8")	E731
D	2	UNIVERSAL BCT WOOD POST (45" Long)	UP650
E	1	GROUND STRUT	E780
F	1	BEARING PLATE	E750
G	1	PIPE SLEEVE	E740
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
K	5	UNIVERSAL CRT WOOD POST (6')	UP671
L	7	TIMBER BLOCKOUT (6"x8"x14")	P675
M	1	W-BEAM MGS RAIL SECTION (15'-7 1/2")	G1507
N	2	W-BEAM MGS RAIL SECTION (12'-6")	G1203A
P	2	GUARDRAIL POST (6')	P674
HARDWARE (ALL DIMENSIONS IN INCHES)			
a	24	5/8 x 1 1/4 SPLICE BOLT	B580122
b	2	5/8 x 8 HEX BOLT	B580804
c	2	5/8 x 10 HEX BOLT	B581004
d	1	5/8 x 10 H.G.R. BOLT	B581002
e	7	5/8 x 22 H.G.R. BOLT	B582202
f	36	5/8 H.G.R. NUT	N050
g	10	5/8 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	RSI SHOULDER BOLT w/WASHER	SB12A
n	8	1/2 STRUCTURAL NUT	N012A
o	8	1/2 WASHER	W012A

GENERAL NOTES:  
 1. Refer to FLEAT Assembly Manual  
 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 these requirement.  
 3. 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.

REVISIONS		
DATE	BY	DESCRIPTION

**RSI Road Systems, Inc.**  
 FLared Energy Absorbing Terminal (FLEAT)  
 Wood Post System Part Details

DATE: 06/29/2016 FILE NAME: FLEAT-SP-MGS  
 SHEET: 5 OF 5 Florida APL No. 536-003-002