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3 OF 5	MASH Sequential Kinking Terminal (MSKT TL2) Steel Post System Part Details
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5 OF 5	MASH Sequential Kinking Terminal (MSKT TL2) Wood Post System Part Details

1. The guardrail approach terminal represented on these drawings is a proprietary design by Road Systems, Inc. and marketed under the name MSKT. 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 MSKT when installed in connection with shoulder guardrail and precludes the requirement for shop drawing submittals unless the plans call for such submittals. The MSKT shall be assembled in accordance with the manufacturer's detailed drawings, procedures, and specifications.

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

The steel post components are:
- Post #1 lower is W6" x 15# with welded soil plate
- Post #1 upper is 6" x 6" x 1/8" tube and is bolted to post #1 lower with 5/8" bolt
- Post #1 and #2 are connected with a ground line strut
- Post #2 lower is W6" x 9#
- Post #2 upper is W6" x 9# and is bolted to post #2 lower with ¾" bolt
- Posts #3 and beyond are W6" x 9# x 6'-0" guardrail posts

The wood post components are:
- Post #1 lower is W6" x 15# with welded soil plate
- Post #1 upper is 6" x 6" x 1/8" tube and is bolted to post #1 lower with 5/8" bolt
- Post #1 and #2 are connected with a ground line strut
- Post #2 lower is W6" x 9#
- Post #2 upper is W6" x 9# and is bolted to post #2 lower with ¾" bolt
- Posts #3 and #4 are 6'-0" long CRT wood posts

4. The MSKT 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 MSKT shall be installed as a parallel approach terminal.

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

7. For details of shoulder grading around the MSKT approach terminal, see the Installation Manual.

8. Site Conditions: The steel post system is not permitted adjacent to sidewalks. A site evaluation should be considered if there is less than 25' beyond the back side of the terminal and any adjacent driving lane.

JAMES WILKERSON LICENSE No. 73667 STATE OF FLORIDA PROFESSIONAL ENGINEER
4/3/2022

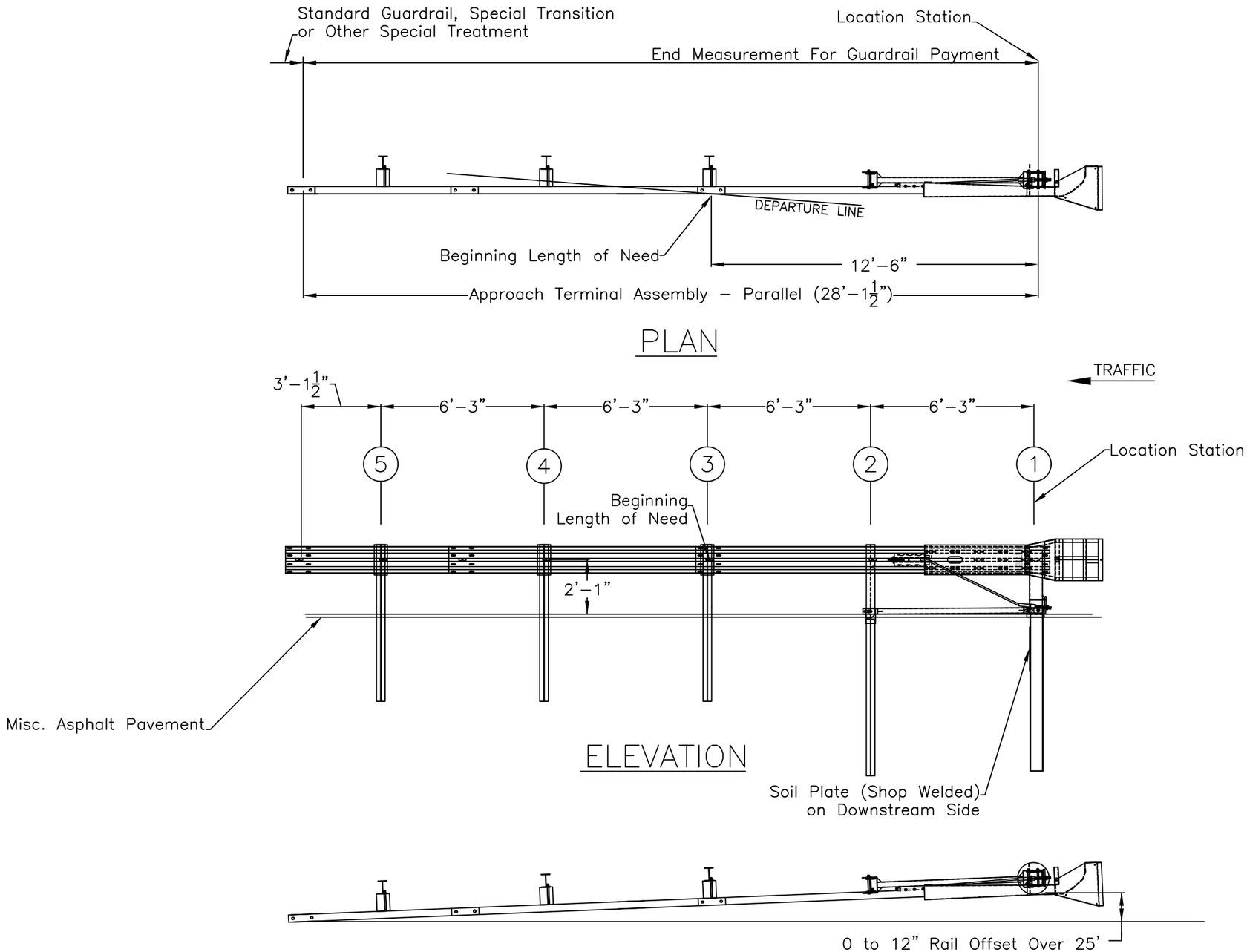
James N Wilkerson
Digitally signed by James N Wilkerson
Date: 2022.05.31 22:20:34 -05'00'

REVISIONS		
DATE	BY	DESCRIPTION

Road Systems, Inc.

MASH Sequential Kinking Terminal (MSKT TL2)
(2'-1" Mounting Height/TL-2/Parallel)

DATE:	FILE NAME:
10/20/2021	MSKT TL2
SHEET: 1 OF 5	Florida APL No.



OPTIONAL FLARED INSTALLATION
1:25 Maximum Flare Rate

James N Wilkerson

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Date: 2022.05.31 12:20:58 -05'00'

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5/31/2022

Specification 536 – Approach Terminal (PARALLEL)

MODEL	SYSTEM WIDTH	SYSTEM HEIGHT	SYSTEM LENGTH	DESIGN LENGTH	DESIGN SPEED	TEST LEVEL DESIGNATION
MSKT	20"	31"	28'–1 1/2"	25'–0"	<45 MPH	TL–2

NOTE: THE MSKT TL–2 MAY BE USED FOR LOWER DESIGN SPEEDS.

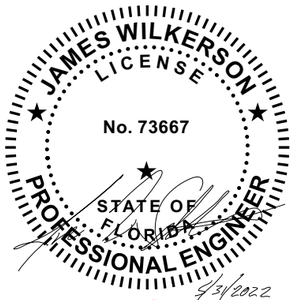
REVISIONS

DATE	BY	DESCRIPTION

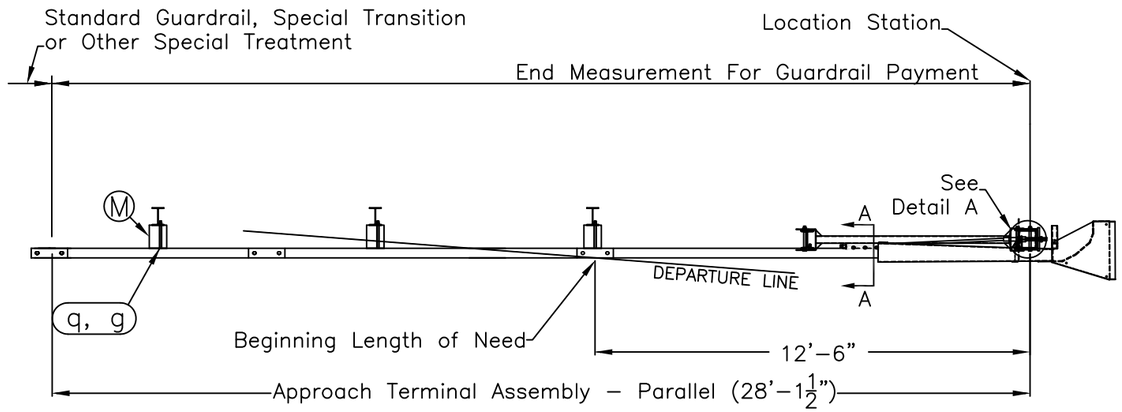
Road Systems, Inc.

MASH Sequential Kinking Terminal (MSKT TL2)
Steel Post System Layout

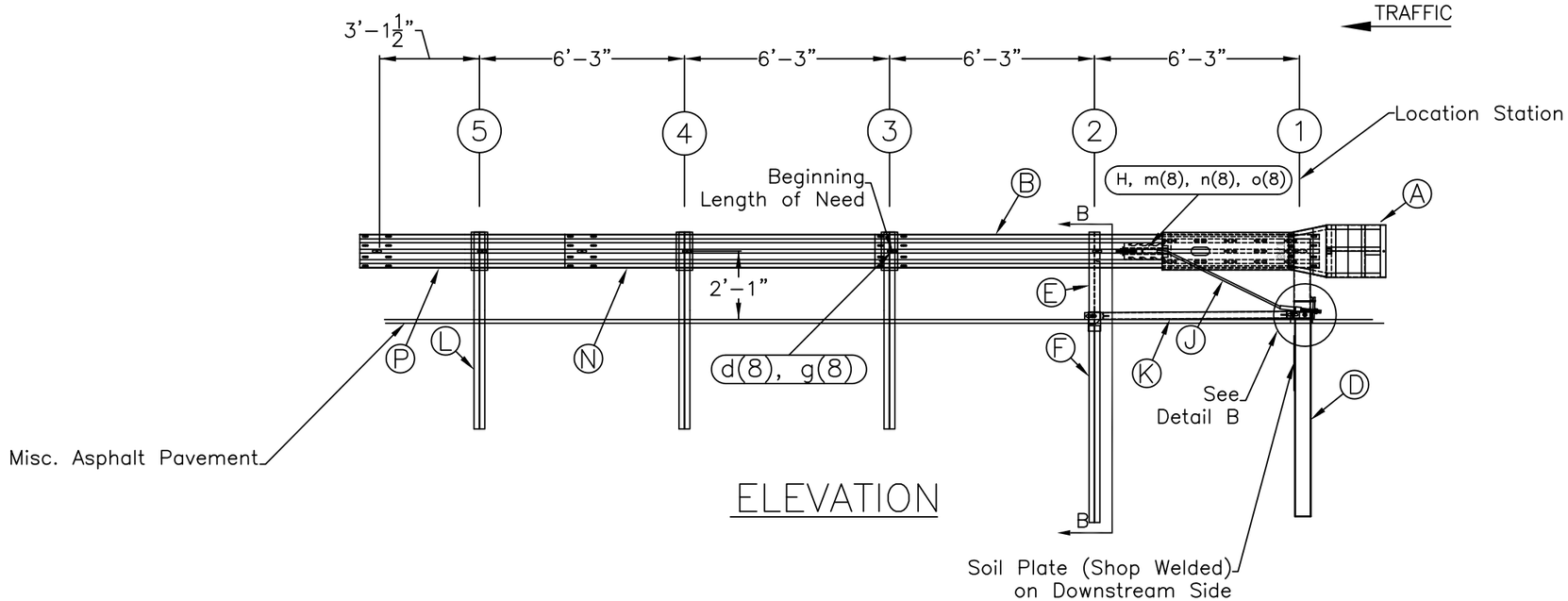
DATE: 10/20/2021
FILE NAME: MSKT TL2
SHEET: 2 OF 5
Florida APL No.



James N Wilkerson
4/3/2022
Digitally signed by James N Wilkerson
Date: 2022.05.31 22:21:14 -05'00'



PLAN



ELEVATION

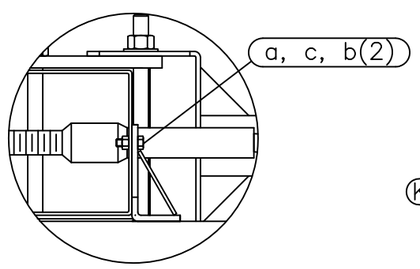
ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	MS3000
B	1	W–BEAM GUARDRAIL END SECTION, 12 Ga.	SF1303
C	1	FIRST POST TOP (6X6X⅛" Tube)	MTPHP1A
D	1	FIRST POST BOTTOM (6' W6X15)	MTPHP1B
E	1	SECOND POST ASSEMBLY TOP	UHP2A
F	1	SECOND POST ASSEMBLY BOTTOM	HP2B
G	1	BEARING PLATE	E750
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
K	1	STRUT	MS785
L	3	6x9 (6x8.5) STEEL POST	P621
M	3	ROUTED WOOD BLOCK	P616
N	1	W–BEAM MGS RAIL SECTION (9'–4 1/2")	G12025
P*	1	W–BEAM MGS RAIL SECTION (6'–3")	G1201A

HARDWARE (ALL DIMENSIONS IN INCHES)

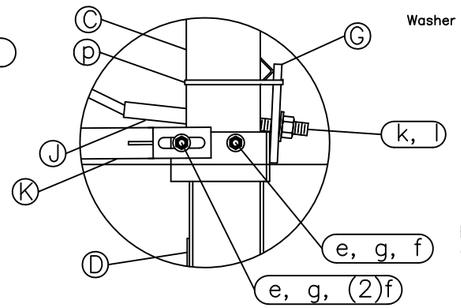
a	2	5/16 x 1 HEX BOLT GRD 5	B5160104A
b	4	5/16 WASHER	W0516
c	2	5/16 HEX NUT	N0516
d	17	5/8 Dia. x 1 1/4 SPLICE BOLT (POST #2)	B580122
e	2	5/8 Dia. x 9 HEX BOLT A449	B580904A
f	3	5/8 WASHER	W050
g	22	5/8 Dia. H.G.R NUT	N050
h	1	3/4 Dia. x 8 1/2 HEX BOLT GRD A449	B340854A
j	1	3/4 Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
l	2	1 ANCHOR CABLE WASHER	W100
m	8	1/2 RSI SHOULDER BOLT W/WASHER	SB12A
n	8	1/2 STRUCTURAL NUT	N012A
o	8	1/2 STRUCTURAL WASHER	W012A
p	1	BEARING PLATE RETAINER TIE	CT–100ST
q	3	5/8" x 10" H.G.R. BOLT	B581002

P*: 6'-3" rail section is required when attaching to a transition. It may be omitted if standard guardrail is continued downstream.

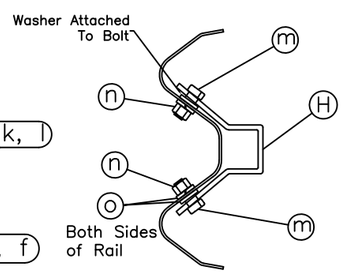
GENERAL NOTES:
1. Refer to MSKT Assembly Manual
2. The lower sections of the Posts 1&2 shall not protrude more than 4 in above the ground (measured along a 5' cord parallel to the system). The center line of the hinge bolt at Post #2 is nominally 1 1/8" above the ground surface or misc. asphalt pavement.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



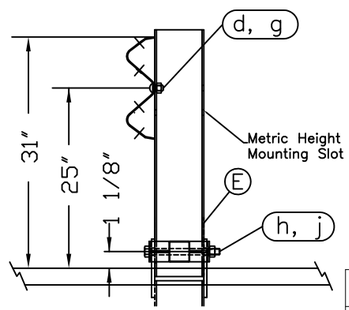
Detail A
Impact Head Connection Detail



Detail B
Post #1 Connection Detail



SECTION A–A
Anchor Bracket



SECTION B–B
Post #2

Specification 536 – Approach Terminal (PARALLEL)

MODEL	SYSTEM WIDTH	SYSTEM HEIGHT	SYSTEM LENGTH	DESIGN LENGTH	DESIGN SPEED	TEST LEVEL DESIGNATION
MSKT	20"	31"	28'–1 1/2"	25'–0"	<45 MPH	TL–2

NOTE: THE MSKT TL–2 MAY BE USED FOR LOWER DESIGN SPEEDS.

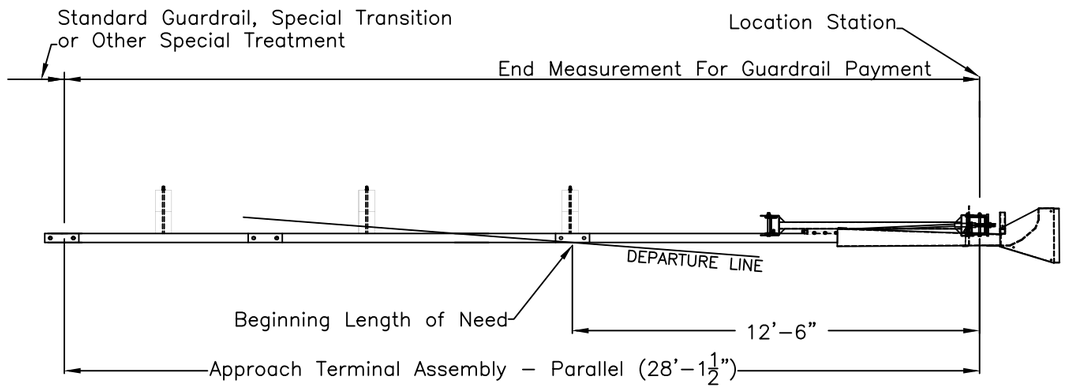
REVISIONS		
DATE	BY	DESCRIPTION

RSI **Road Systems, Inc.**

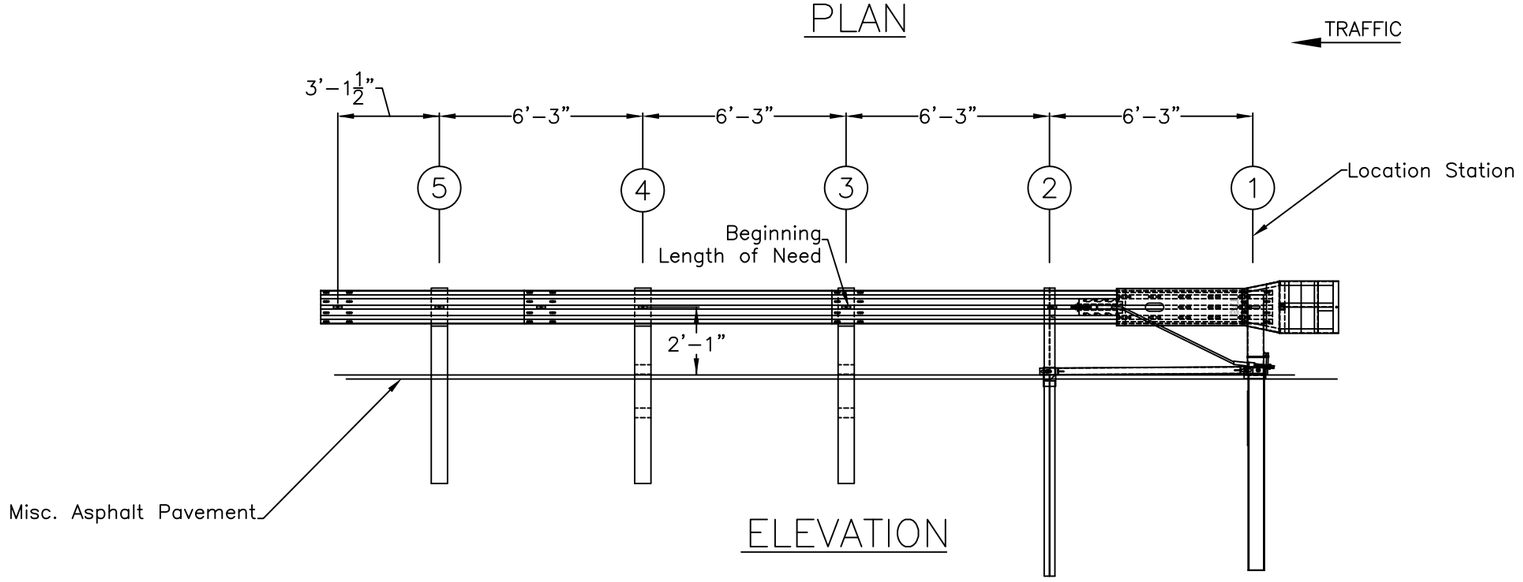
MASH Sequential Kinking Terminal (MSKT TL2)
Steel Post System Part Details

DATE: 10/20/2021 | FILE NAME: MSKT TL2

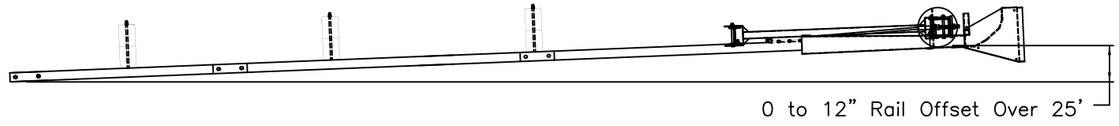
SHEET: 3 OF 5 | Florida APL No.



PLAN



ELEVATION



OPTIONAL FLARED INSTALLATION
1:25 Maximum Flare Rate

James N Wilkerson

Digitally signed by James N Wilkerson
Date: 2022.05.31 22:21:29 -05'00'

JAMES WILKERSON LICENSE No. 73667 STATE OF FLORIDA PROFESSIONAL ENGINEER

5/31/2022

Specification 536 – Approach Terminal (PARALLEL)

MODEL	SYSTEM WIDTH	SYSTEM HEIGHT	SYSTEM LENGTH	DESIGN LENGTH	DESIGN SPEED	TEST LEVEL DESIGNATION
MSKT	20"	31"	28'–1 1/2"	25'–0"	<45 MPH	TL–2

NOTE: THE MSKT TL–2 MAY BE USED FOR LOWER DESIGN SPEEDS.

REVISIONS

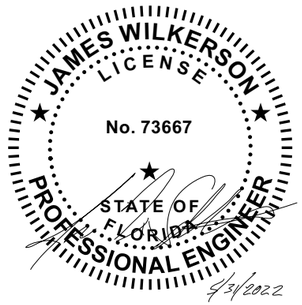
DATE	BY	DESCRIPTION

Road Systems, Inc.

MASH Sequential Kinking Terminal (MSKT TL2)
Wood Post System Layout

DATE: 10/20/2021 | FILE NAME: MSKT TL2

SHEET: 4 OF 5 | Florida APL No.



James N Wilkerson

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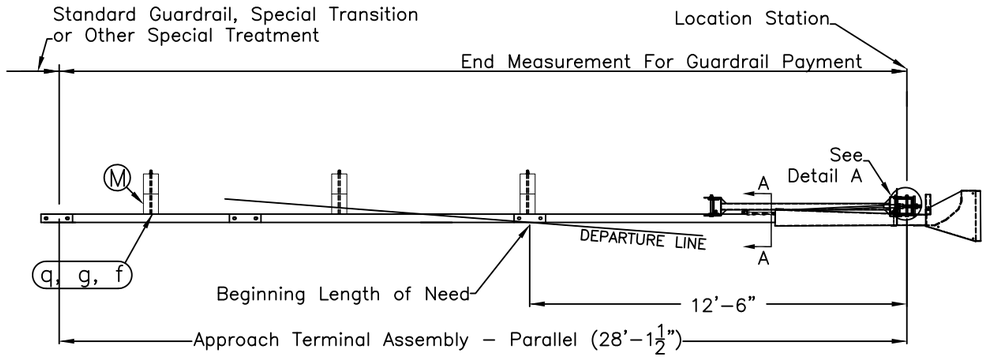
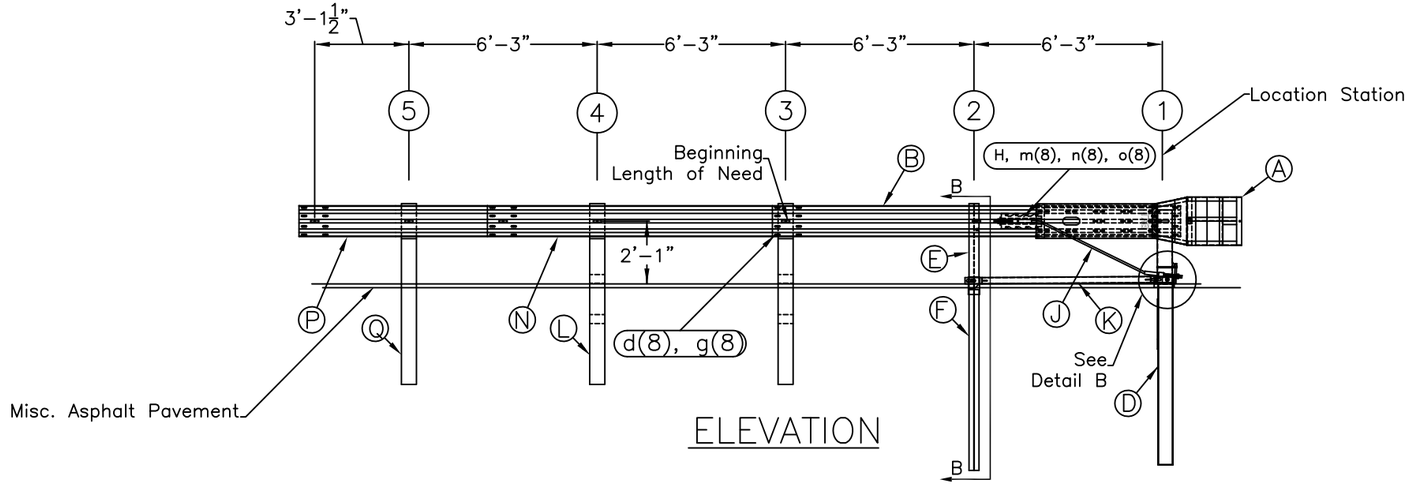


PLAN



ELEVATION

ITEM	QTY	BILL OF MATERIALS	ITEM NO.
A	1	IMPACT HEAD	MS3000
B	1	W–BEAM GUARDRAIL END SECTION, 12 Ga.	SF1303
C	1	FIRST POST TOP (6X6X$\frac{1}{8}$" Tube)	MTPHP1A
D	1	FIRST POST BOTTOM (6' W6X15)	MTPHP1B
E	1	SECOND POST ASSEMBLY TOP	UHP2A
F	1	SECOND POST ASSEMBLY BOTTOM	HP2B
G	1	BEARING PLATE	E750
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
K	1	STRUT	MS785
L	2	UNIVERSAL CRT POST	P671
M	3	TIMBER BLOCK	P675
N	1	W–BEAM MGS RAIL SECTION (9'–4 1/2")	G12025
P*	1	W–BEAM MGS RAIL SECTION (6'–3")	G1201A
Q	1	WOOD GUARDRAIL POST 6'	P674

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	17	5/8 Dia. x 1 1/4 SPLICE BOLT (POST #2)	B580122
e	2	5/8 Dia. x 9 HEX BOLT A449	B580904A
f	6	5/8 WASHER	W050
g	22	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	1/2 RSI SHOULDER BOLT W/WASHER	SB12A
n	8	1/2 STRUCTURAL NUT	N012A
o	8	1/2 STRUCTURAL WASHER	W012A
p	1	BEARING PLATE RETAINER TIE	CT–100ST
q	3	5/8" x 18" H.G.R. BOLT	B581802

P*: 6'-3" rail section is required when attaching to a transition. It may be omitted if standard guardrail is continued downstream.

GENERAL NOTES:

1. Refer to MSKT 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 parallel to the system). 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.

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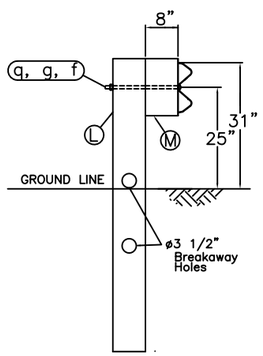
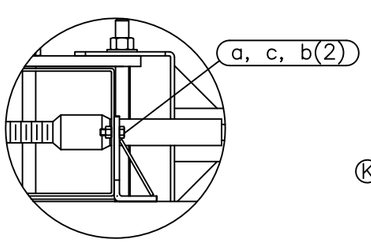
Specification 536 – Approach Terminal (PARALLEL)

MODEL	SYSTEM WIDTH	SYSTEM HEIGHT	SYSTEM LENGTH	DESIGN LENGTH	DESIGN SPEED	TEST LEVEL DESIGNATION
MSKT	20"	31"	28'–1 1/2"	25'–0"	<45 MPH	TL–2

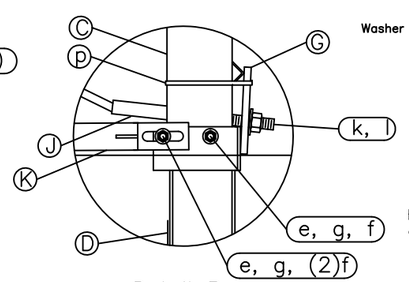
NOTE: THE MSKT TL–2 MAY BE USED FOR LOWER DESIGN SPEEDS.



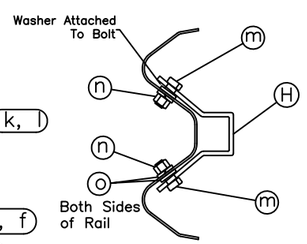
LINE POST CONNECTION
Posts 3 thru 4



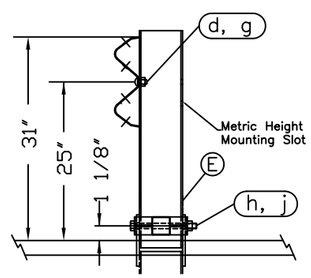
Detail A
Impact Head Connection Detail



Detail B
Post #1 Connection Detail



SECTION A–A
Anchor Bracket



SECTION B–B
Post #2

REVISIONS		
DATE	BY	DESCRIPTION

Road Systems, Inc.

MASH Sequential Kinking Terminal (MSKT TL2)
Wood Post System Part Details

DATE: 10/20/2021 | FILE NAME: MSKT TL2

SHEET: 5 OF 5 | Florida APL No.