Diary Number: _____ Inspector Name: _____

TRACS Number: _____ Date: _____

Division IX: Incidentals
Title: MSKT MASH Tangent Terminal MASH Test Level 3

Admin Instructions: Use this Quantlist with Manufacturers Assembly Manual supplied by the manufacturer/Contractor/Subcontractor or download the Manual from http://www.roadsystems.com/mash-mskt/

Plan Reference:
Route:
Offset from edge line:
Begin Station:
End Station

Attribute Numbers	Weight	Narratives	References
0.	Minor	All stakeholders participated in the pre-activity meeting.	Construction Bulletin 02-01
1.	Minor	Certificates of Compliance or Certificates of Analysis conforming to the requirements of Subsection [106.05] shall be submitted.	Standard Specifications 1012-1 Standard Specifications 106.05 Standard Specifications 905-2
2.	Minor	The Contractor furnished Certificates of Compliance conforming to the requirements of Subsection 106.05, which state that steel or iron products incorporated in the project meet the "Buy America" Act requirements certifying that all manufacturing processes producing a steel or iron product, including any application of a coating to iron or steel, occurred in the United States.	23 CFR Part 635 Special Provisions 106.15 Standard Specifications 106.05
3.	Critical	AZ811 or Blue stake is done before placement of the post (locating utility, pipes, box culverts and sleeves).	Standard Specifications 107.15
4.	Minor	For other than High Strength Anchor Bolts, Certificate of Compliance required and three samples per lot, or 0.1% of lots in excess of 3000, for each bolt diameter, including nuts and washers.	Construction and Materials, Materials Quality Assurance. Appendix C 1012
5.	Critical	When a traffic control plan is included in the project plans, this plan shall govern unless an alternate plan, acceptable to the Engineer, is submitted by the contractor.	Standard Specifications 701-1

6.	Major	Earthwork placement, grading, compacting, and bituminous surfacing shall be completed prior to installation of posts for guardrail terminals.	Standard Specifications 905-3.10
7.	Minor	The Roadway Pavement Structural Section approach and widening is built to plans dimensions.	Guardrail End Terminal Pad Layout C10.21
8.	Major	The Roadway Pavement Structural Section approach and widening matches the cross slope of the existing roadway.	Guardrail End Terminal Pad Layout C10.21
9.	Critical	Guardrail elements are spliced by lapping in the direction of traffic in the nearest adjacent lane.	Manufacturer Drawings Figure 2 P.7 Standard Specifications 905-3.01
10.	Major	The face of the impact head be delineated with an object marker that meets State specifications for better night visibility and should conform to Signing and Marking Standard Drawing.	Installation Manual P. 18 Signing and Marking Standard Drawings M-34
11.	Major	The mounting height of the flexible guardrail markers from the top of the reflective sheeting is approximately 38" ± 1 inches above the surface of the adjacent roadway.	Standard Specifications 905-3.11(A)
12.	Major	Flexible vertical delineators shall be installed on the side of the post facing oncoming traffic of the nearest travel lane, level and true.	Standard Specifications 905-3.11 (A)
13.	Critical	The rail height is in accordance with the contract plans. This should be 31" +/- 1" above the edge of the finished grade.	Installation Manual P.16 Figure 5 P.10 4.4.1
14.	Major	There is no radius rail within the MSKT 50'-0" length (TL-3) Radius rail may begin beyond post #9. (MFG Requirement)	P.20 Inspection Checklist Installation Manual NOTE: P.17
15.	Critical	The end rail panel is not attached to the post at post location #1.	P.20 Inspection Checklist Installation Manual
16.	Critical	Attach the MSKT W-Beam guardrail end section to span from post 1 to 3 (12'-6" long rail). The Universal End Panel can be identified with eight (8) holes 3/4" diameter to attach the cable anchor bracket and thirteen (13) slots. Ten (10) slots 1/2" x 4" are in the corrugations of the rail and three (3) slots 1/2" x 4" are in the valley of the rail.	Installation Manual P.17 4.4.4
17.	Critical	The end rail panel is 12'-6" long. The second rail must be 9'-4 ½" long to establish the Mid-span splices between posts. A second rail length of 15'-7 ½" may also be used.	P.20 Inspection Checklist Installation Manual
18.	Major	Be sure the 3/4" x 8 1/2" hinge bolt at post #2 is on the downstream side of the post. (toward post #3).	P.20 Inspection Checklist NOTE: P.10 Figure 5 Installation Manual
19.	Major	The 5/8" x 9" hinge bolt at post location #1 is on the upstream side of the post.	P.20 Inspection Checklist Figure 6 P.11 Installation Manual
20.	Critical	The lower stub at posts #1 and #2 do not protrude more than 4" above the ground line (measured by the AASHTO 5' cord method). Site grading may	P.20 Inspection Checklist Installation

		be necessary to meet this requirement.	Manual P.16 4.4.2
21.	Major	At post #2, the open-ended slot(s) at the post bolt is on the upstream side of the post. Be sure upper post #2 is installed with slots facing post #1.	P.20 Inspection Checklist Installation Manual P.10 Figure 5
22.	Major	Standard steel W6x9# or W6x8.5# x 6'-0" guardrail posts are used at post locations #3 and beyond. Timber CRT posts may also be used at post locations #3 and beyond.	P.20 Inspection Checklist Installation Manual P.16 4.4.1
23.	Minor	All posts within the MSKT are spaced at 6'-3" centers.	P.20 Inspection Checklist Installation Manual P.16 4.4.1
24.	Major	Routed Wood Blockouts or Composite Blockouts are acceptable for use with the Steel Post System.	MSKT Crash Test Data
25.	Critical	When the guardrail is installed parallel to the edge of the shoulder, for the MSKT a 25:1 (or less) flare away from the roadway is recommended so the impact head will not encroach on the shoulder thereby reducing the potential for nuisance impacts. (The flare is not required and may be decreased or eliminated.)	Installation Manual P.15 4.2
26.	Major	Attach the impact head to the first post with two 5/16" x 1" hex bolts, nut and (2) washers, one each for the top and bottom post angle attachments.	Installation Manual P.18 4.4.6
27.	Major	The 8" x 8" bearing plate at post #1 is correctly positioned with the 5" dimension up (resting on the angle spacer) and 3" dimension down. A retainer/tie has been placed over the bearing plate to prevent rotation.	P.20 Inspection Checklist
28.	Critical	The cable anchor bracket shoulder bolts are properly attached to the W-Beam guardrail and the cable anchor bracket is fully seated on the shoulder portion of the bolts.	P.20 Inspection Checklist
29.	Major	The Anchor cable should be taut and the cable anchor bracket should be fully seated on the shoulder portion of the cable anchor bolts.	Installation Manual P.19 4.4.7
30.	Major	At post #2 the ¾" x 8 ½" hex bolt and nut should be used. However, at post #1 a second ⅝" x 9" hex bolt, hex nut, and two washers are placed through the extended side plates on lower post # 1, (Not through the post itself.)	Installation Manual P.17 4.4.3
31.	Major	If the posts were augered, the backfill material around the posts is properly compacted.	P.20 Inspection Checklist Installation Manual
32.	Major	No washers are used on the face of the rail except at the cable anchor bracket bolts.	P.20 Inspection Checklist
33.	Major	The color of the reflective portion of the barrier markers conform to the color of the adjacent edge line.	Standard Specifications 905-3.11 (A)
34.	Minor	Wood CRT 6" x 8" x 6', Steel W6 x 8.5# x 6' or Steel W6 x 9# x 6' Posts are used at locations 3-8	MSKT Installation Manual P.23
35.	Major	Any post which is bent or otherwise damaged to the extent it is unfit for use in the unfinished work, as determined by the Engineer, shall be removed and replaced at no additional cost to the Department.	Standard Specification 905-3.02
36.	Major	Where curb, gutter, sidewalk, buried items, shoulders or pavement are disturbed in the construction of guardrail, the damage shall be repaired as approved by the Engineer.	Specification 905-3.02
37.	Minor	Quantlist Minimum Frequency is being followed, One per installation.	Construction Bulletin 07-01