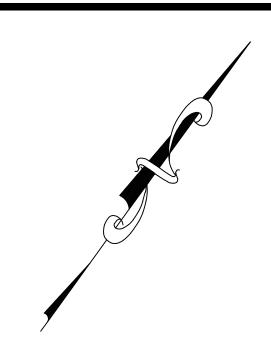
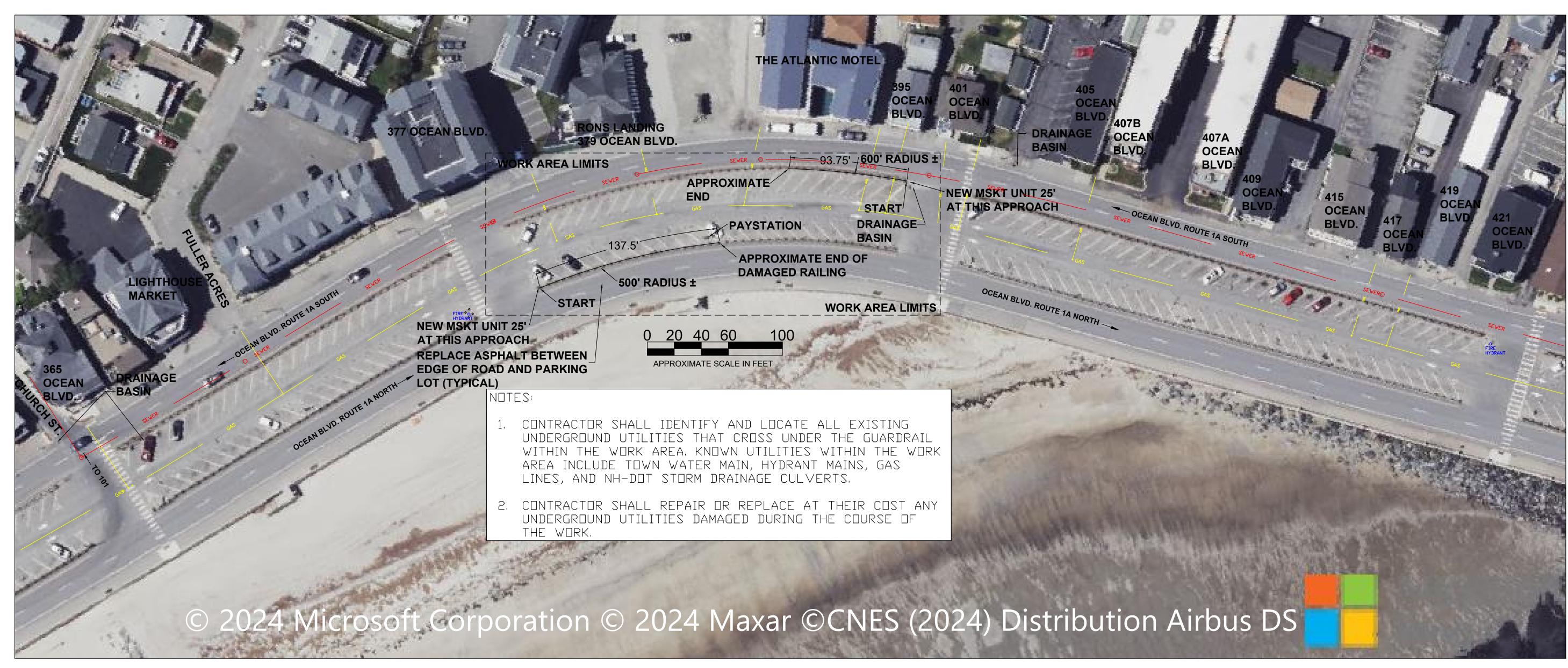
GUARDRAIL REPLACEMENT HAMPTON BEACH STATE PARK HAMPTON, NH PROJECT NO. OPS-2434





2 GUARDRAIL REPLACEMENT WORK AREA

NOTE: THIS TABLE IS PROVIDED AS REFRENCE ONLY, BIDDERS SHALL VERIFY THE QUANTIES OF ALL ITEMS REQUIRED BEFORE SUBMITTING THEIR BID.

LOCATION	MEASURED LENGTH	606.140 BEAM GUARDRAIL STANDARD SECTION LENGTH	606.5A 6"x8" W00D RAIL LENGTH	#6"X8" W <i>00</i> D P <i>0</i> STS	#6"X8" W <i>OO</i> D BL <i>OC</i> KS	#FBB03	#FBB04		RETROREFLECTIVE	DELINEATOR (WHITE) WITH	304.3 6" ROAD BASE CUBIC YARDS (COMPACTED)	ASPHALT §" MIX CUBIC YARDS (COMPACTED)
(IA NORTH BOUND)	37.5′	2.5'	3'	19	19	19	19		3	3	8	4
(IA SOUTH BOUND)	93.75'	68.75'	69.25'	2	2	2	2		2	2	5	3
TOTALS	23 .25'	8 .25'	82.25'	25	25	25	25	2	5	5	3	7

NOTE:

1. THE MSKT-SP-MGS EAGRT 25' SECTION
SHALL INCLUDE THE TERMINAL UNIT, FIRST
5 POSTS, HARDWARE, STEEL RAIL AND ANY
OTHER ITEMS NEEDED TO COMPLETE
INSTALLATION OF THE EAGRT SECTION.

2. THE NUMBER OF WOOD POSTS, WOOD BLOCKS, HARDWARE, BEAM GUARDRAIL LENGTH, AND TIMBER RAIL REFERENCED IN THE TABLE DOES NOT INCLUDE THE FIRST 5 POSTS, BEAM GUARDRAIL AND HARDWARE THAT IS PART OF THE MSKT-SP-MGS 25' EAGRT

2 GUARDRAIL REPLACEMENT SCHEDULE

0F (

I. CONTRACTOR SHALL OBTAIN A
DIGSAFE NUMBER PRIOR TO
COMMENCING ANY EXCAVATIONS.

2. PROVIDE ALL NECESSARY TRA
CONTROL PROTECTION PER THE

CONTROL PROTECTION PER THE TOWN OF HAMPTON POLICE DEPARTMENT. PROVIDE UNIFORMED POLICE OFFICER IF NECESSARY PER THE TOWN OF HAMPTON PD.

3. REMOVE ALL DAMAGED STEEL

MOUNTED ON STEEL POSTS OR U-CHANNEL POSTS AND REINSTALL AFTER GUARDRAIL AND ASPHALT WORK HAVE BEEN COMPLETED.

5. REPLACE WOOD POSTS, OFFSET BLOCKS, AND TIMBER RAILS

BLOCKS, AND TIMBER RAILS.

6. INSTALL NEW GALVANIZED BEAM GUARDRAIL IN ACCORDANCE WITH DOT STANDARD SPECTION

7. CLEAN THE SITE AND DISPOSE ALL THE CONSTRUCTION DEBRIS AT THE END OF THE JOB.

	GUARDRAIL	GUARDRAIL REPLACEMENT AT	AT
/oci	HAMPTON BEACH STATE PARK HAMPTON, NH	STATE PARK HA	MPTON, NH
S A	APPROVED BY:	PROJECT # OPS-2434	PATE: SEP 23, 2024
	PRAWN BY: FDWARD MISSEY	SCAE:	

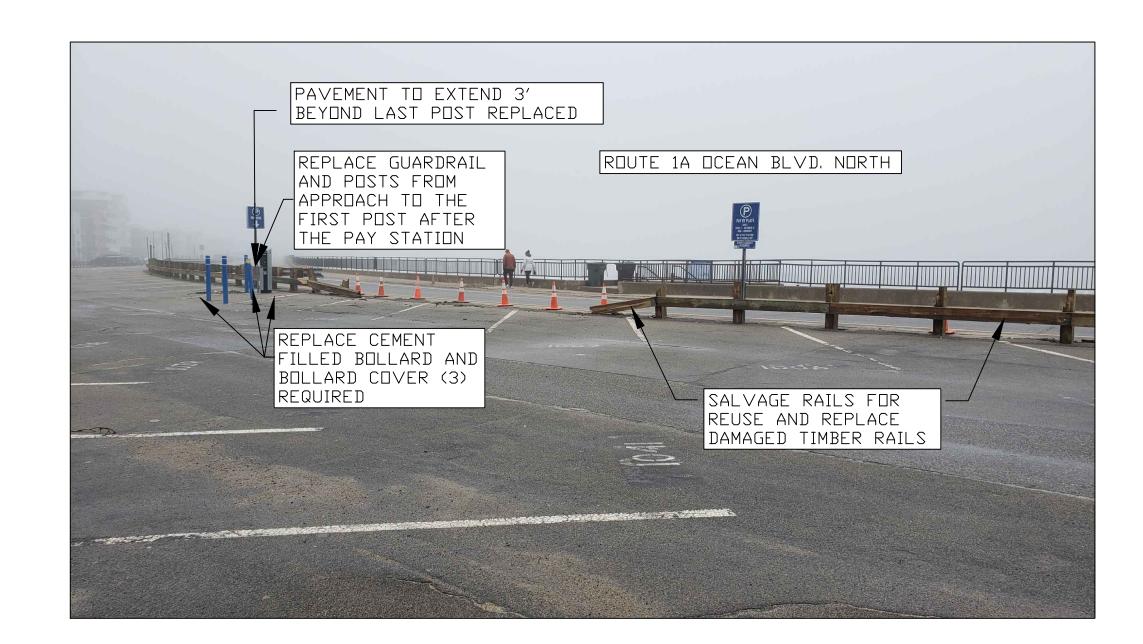


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TURAL RESOURCES
PROJECTS AND MAINTENANCE
ON BEACH STATE PARK

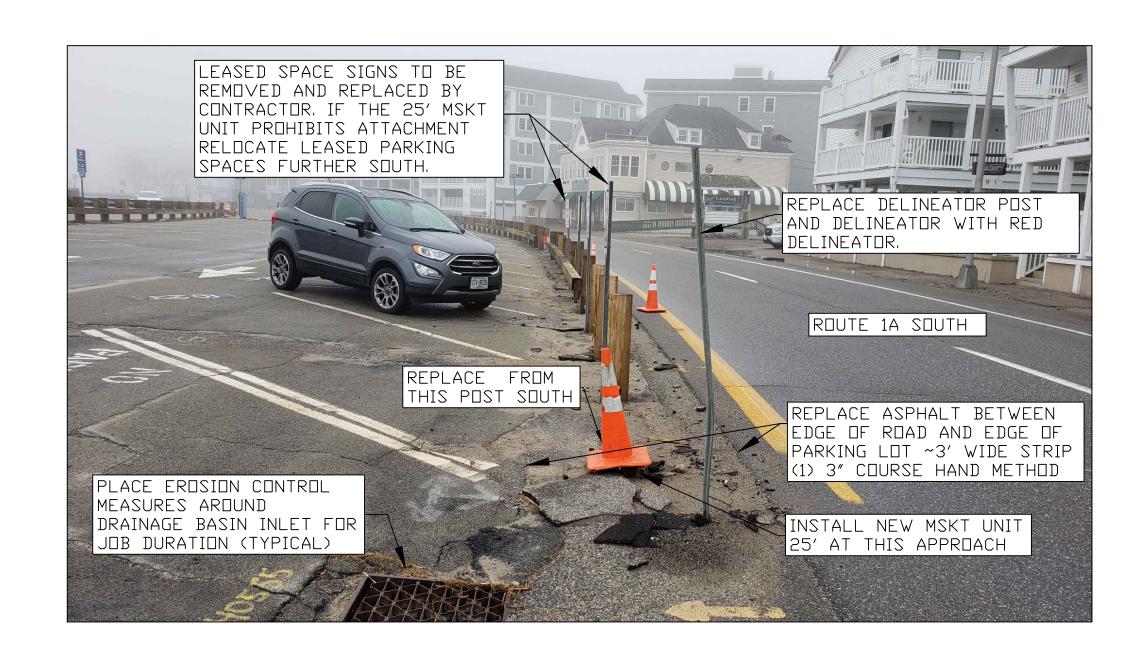
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GUARDRAIL REPLACEMENT AT HAMPTON BEACH STATE PARK HAMPTON, NH



MID SPAN ROUTE IA OCEAN BLVD. NORTH



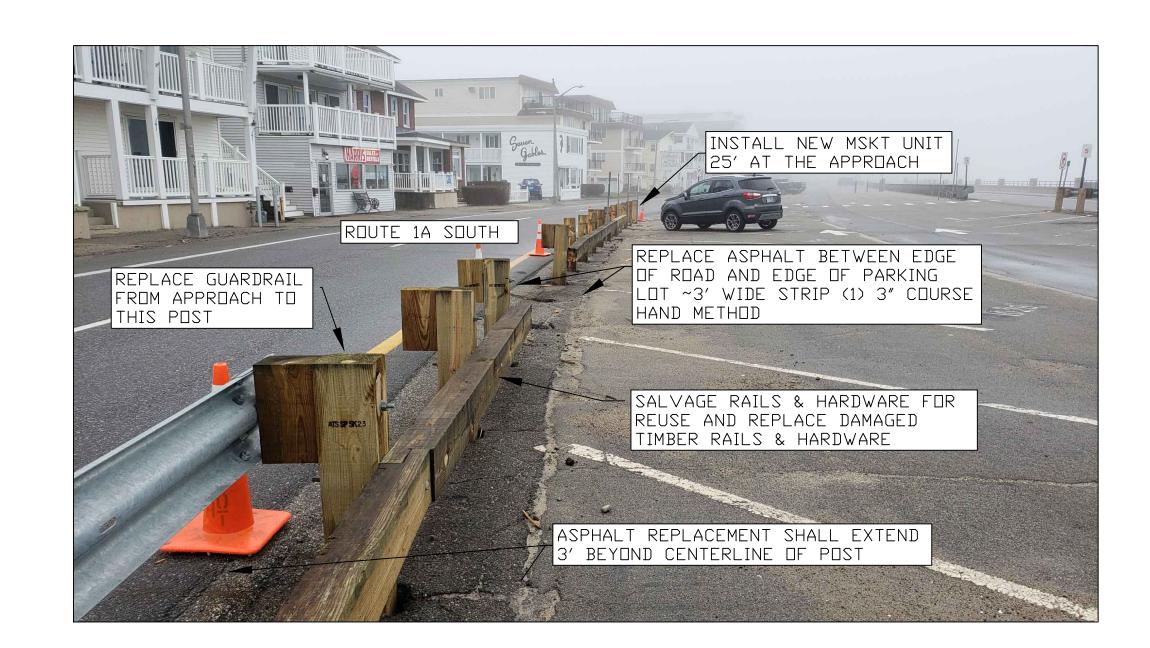
APPROACH AT ROUTE IA OCEAN BLVD. SOUTH

NDTE

1. SALVAGED ITEMS DEEMED REUSABLE INCLUDING TIMBER RAILS, STEEL RAILING AND HARDWARE SHALL BE DELIVERED TO THE HAMPTON BEACH STATE PARK MAINTENANCE GARAGE FOR STORAGE.



PPROACH AT ROUTE IA OCEAN BLVD. NORTH



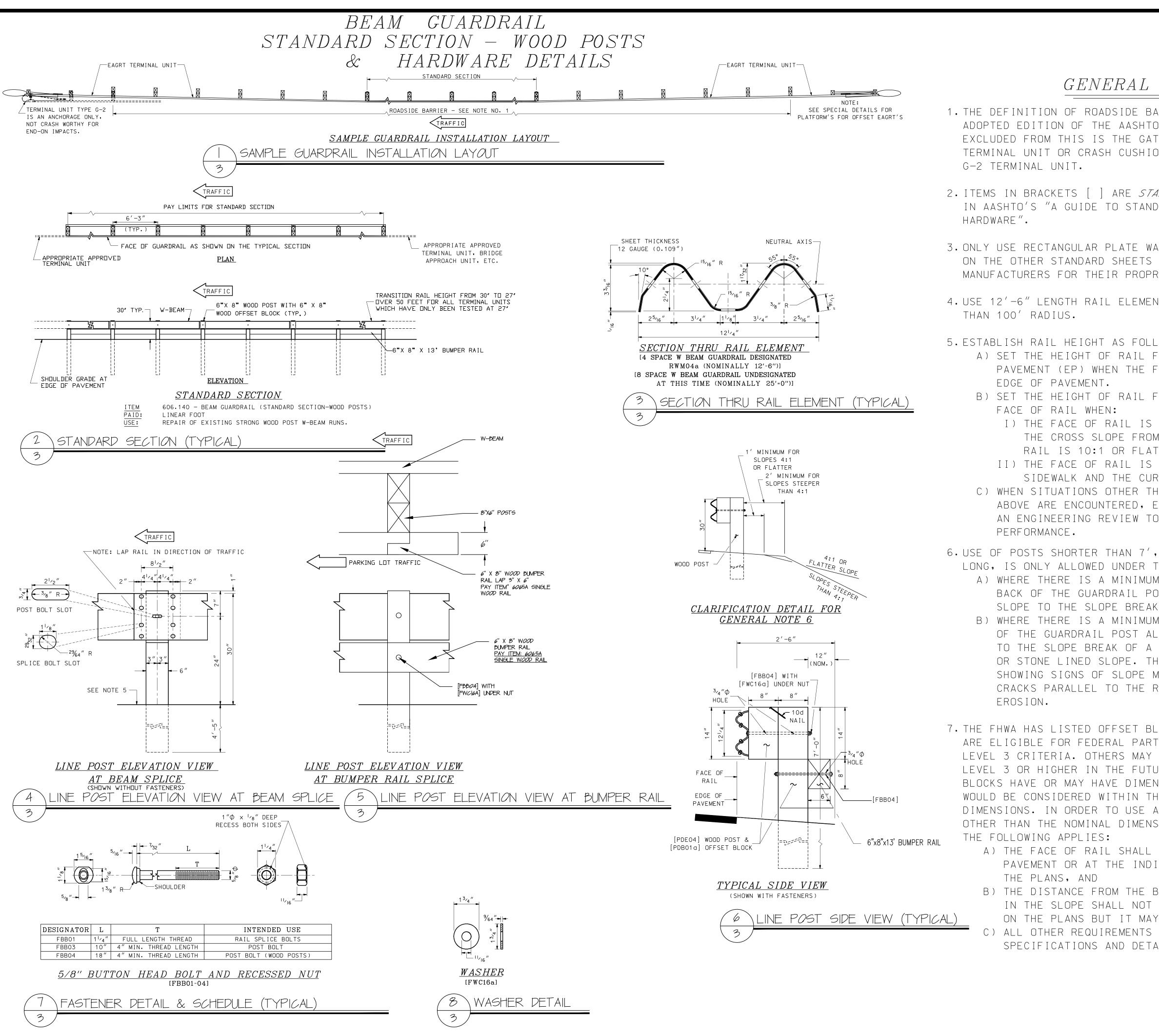
MIDSPAN AT ROUTE IA OCEAN BLVD. SOUTH

CONTRACTOR SHALL OBTAIN A DIGSAFE NUMBER PRIOR TO COMMENCING ANY EXCAVATIONS. CONTROL PROTECTION PER THE TOWN OF HAMPTON POLICE DEPARTMENT. PROVIDE UNIFORMED POLICE OFFICER IF NECESSARY PER THE TOWN OF HAMPTON PD. AND WOOD POSTS. SALVAGE ANY SIGNS THAT MAY BE MOUNTED ON STEEL POSTS OR U-CHANNEL POST 4. ALL U-CHANNEL SIGN POSTS, PARKING SIGNS AND TRAFFIC SIGNS ARE TO REMAIN IN PLACE DURING THE COURSE OF THIS WORK. 5. REPLACE W*OO*D P*OSTS, OFFS*ET BLOCKS, AND TIMBER RAILS. 6. INSTALL NEW GALVANIZED BEAM GUARDRAIL IN ACCORDANCE WITH DOT STANDARD SPECIFICATIONS SECTION THE END OF THE JOB.

7. CLEAN THE SITE AND DISPOSE ALL THE CONSTRUCTION DEBRIS AT

SHEET





GENERAL NOTES

- 1. THE DEFINITION OF ROADSIDE BARRIER IS PER THE LATEST ADOPTED EDITION OF THE AASHTO ROADSIDE DESIGN GUIDE. EXCLUDED FROM THIS IS THE GATING PORTION OF A GUARDRAIL TERMINAL UNIT OR CRASH CUSHION AS WELL AS THE ENTIRE
- 2. ITEMS IN BRACKETS [] ARE *STANDARD ELEMENTS* DESCRIBED IN AASHTO'S "A GUIDE TO STANDARDIZED HIGHWAY BARRIER
- 3. ONLY USE RECTANGULAR PLATE WASHERS [FWRO3] WHERE SHOWN ON THE OTHER STANDARD SHEETS OR AS REQUIRED BY THE MANUFACTURERS FOR THEIR PROPRIETARY PRODUCTS.
- 4. USE 12'-6" LENGTH RAIL ELEMENTS IN RAIL CURVES OF LESS
- 5. ESTABLISH RAIL HEIGHT AS FOLLOWS:
 - A) SET THE HEIGHT OF RAIL FROM THE EDGE OF THE PAVEMENT (EP) WHEN THE FACE OF RAIL IS AT THE
 - B) SET THE HEIGHT OF RAIL FROM THE GROUND AT THE
 - I) THE FACE OF RAIL IS OFFSET FROM THE EP AND THE CROSS SLOPE FROM THE EP TO THE FACE OF RAIL IS 10:1 OR FLATTER OR
 - II) THE FACE OF RAIL IS AT THE BACK OF A CURBED SIDEWALK AND THE CURB IS AT THE EDGE OF PAVEMENT
 - C) WHEN SITUATIONS OTHER THAN THOSE DESCRIBED IN A OR B ABOVE ARE ENCOUNTERED, ESTABLISH RAIL HEIGHT THROUGH AN ENGINEERING REVIEW TO ENSURE APPROPRIATE SYSTEM
- 6. USE OF POSTS SHORTER THAN 7', BUT NOT LESS THAN 6'-0' LONG, IS ONLY ALLOWED UNDER THE FOLLOWING CONDITIONS:
 - A) WHERE THERE IS A MINIMUM DISTATNCE OF 1' FROM THE BACK OF THE GUARDRAIL POST ALONG A 10:1 OR FLATTER SLOPE TO THE SLOPE BREAK OF A 4:1 OR FLATTER SLOPE OR
 - B) WHERE THERE IS A MINIMUM DISTANCE OF 2' FROM THE BACK OF THE GUARDRAIL POST ALONG A 10:1 OR FLATTER SLOPE TO THE SLOPE BREAK OF A STEEPER THAN 4:1 STABLE SOIL OR STONE LINED SLOPE. THE TERM STABLE INCLUDES NOT SHOWING SIGNS OF SLOPE MOVEMENT (SUCH AS DEPRESSIONS, CRACKS PARALLEL TO THE ROADWAY, ETC.) OR ACTIVE
- 7. THE FHWA HAS LISTED OFFSET BLOCKS ON THEIR WEBSITE THAT ARE ELIGIBLE FOR FEDERAL PARTICIPATION PER NCHRP 350 TEST LEVEL 3 CRITERIA. OTHERS MAY BE ADDED UNDER MASH AT TEST LEVEL 3 OR HIGHER IN THE FUTURE. SOME OF THESE OFFSET BLOCKS HAVE OR MAY HAVE DIMENSIONS THAT VARY MORE THAN WOULD BE CONSIDERED WITHIN THE NORMAL CONTEXT OF NOMINAL DIMENSIONS. IN ORDER TO USE ANY OFFSET BLOCKS THAT HAVE OTHER THAN THE NOMINAL DIMENSIONS AS SHOWN ON THE PLANS,
 - A) THE FACE OF RAIL SHALL REMAIN AT THE EDGE OF PAVEMENT OR AT THE INDICATED LOCATION AS SHOWN ON
 - B) THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE SHALL NOT BE LESS THAN WHAT IS SHOWN ON THE PLANS BUT IT MAY BE MORE.
 - C) ALL OTHER REQUIREMENTS OF THE PERTINENT SPECIFICATIONS AND DETAILS REMAIN IN FORCE.

CONTRACTOR SHALL OBTAIN A DIGSAFE NUMBER PRIOR TO COMMENCING ANY EXCAVATIONS. 2. PROVIDE ALL NECESSARY TRAFIC CONTROL PROTECTION PER THE TOWN OF HAMPTON POLICE DEPARTMENT. PROVIDE UNIFORMED POLICE OFFICER IF NECESSARY PE THE TOWN OF HAMPTON PD. 3. REMOVE ALL STEEL GUARDRAIL AND WOOD POSTS. SALVAGE ANY SIGNS THAT MAY BE MOUNTED ON

STEEL POSTS OR U-CHANNEL POST

PARKING SIGNS AND TRAFFIC SIGNS

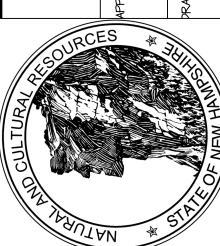
4. ALL U-CHANNEL SIGN POSTS,

ARE TO REMAIN IN PLACE DURING THE COURSE OF THIS WORK. 5. REPLACE WOOD POSTS, OFFSET BLOCKS, AND TIMBER RAILS.

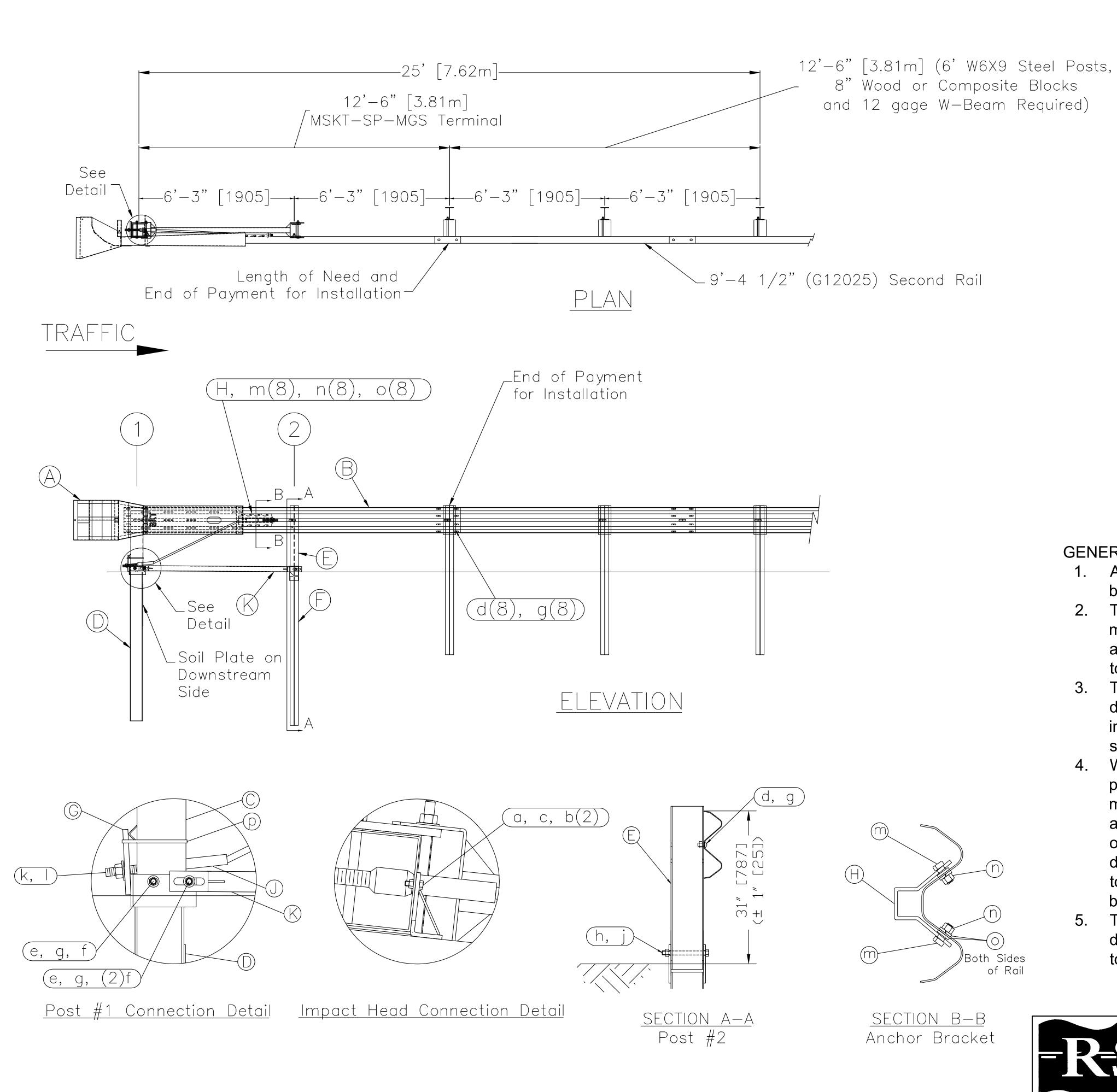
STANDARD SPECIFICATIONS SECTION

6. INSTALL NEW GALVANIZED BEAM GUARDRAIL IN ACCORDANCE WITH DOT

606. 7. CLEAN THE S CONSTRUCTION D OF THE JOB.	ITE <i>O</i> F ALL DEBRIS AT 1	THE END
AT AMPTON, NH	PATE: SEP. 23, 2024	
RDRAIL REPLACEMENT AT FACH STATE PARK HAMPTON, NH	PROJECT # OPS-2434	SCALE:
GUARDRAIL HAMPTON BEACH 9	APPROVED BY:	RAWN BY: EDWARD MUSSEY
LE OURCE	S	Witten .



SHEET



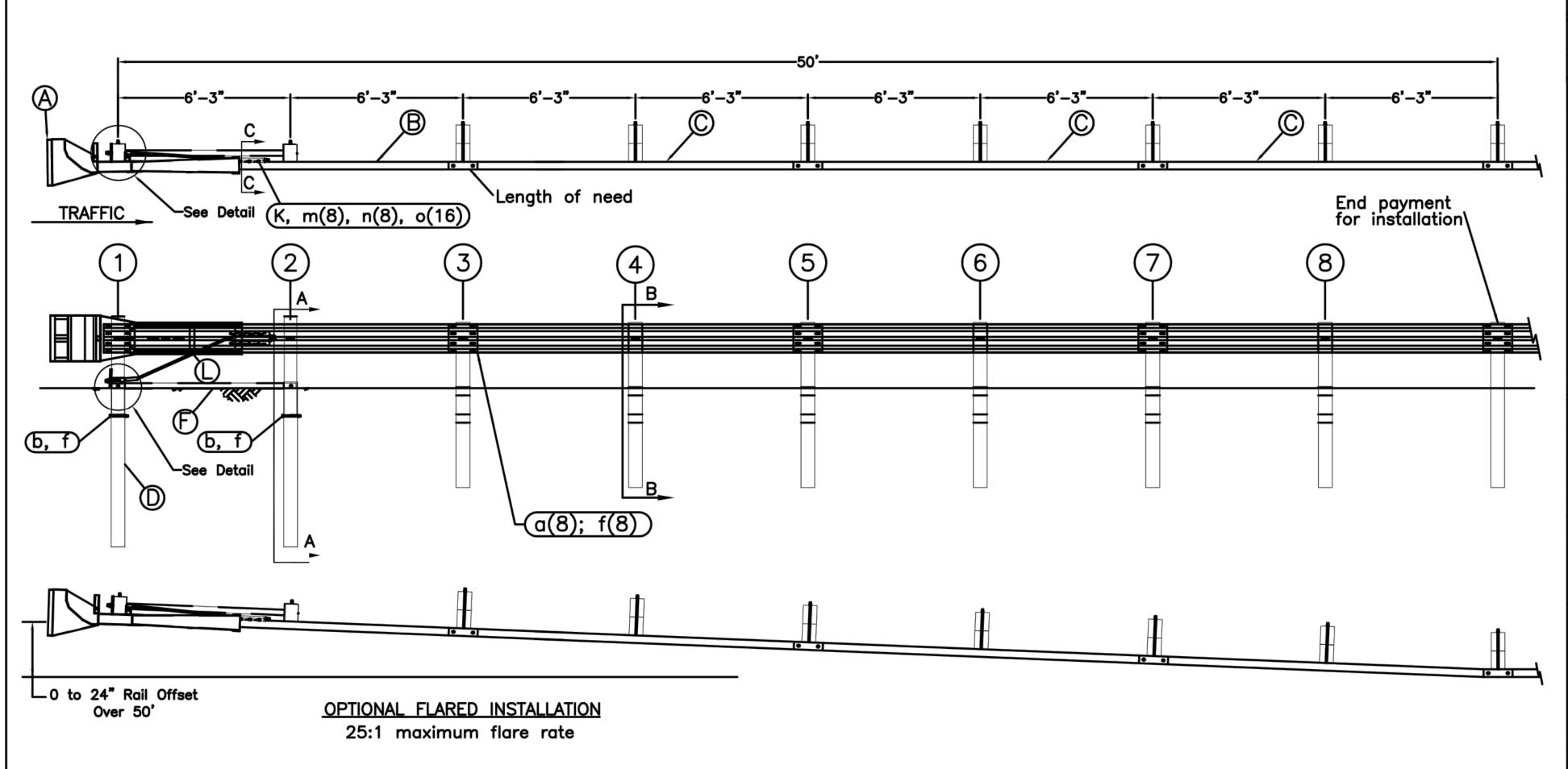
b 4 5/16 WASHER W0516 c 2 5/16 HEX NUT N0516 d 9 5/8 Dia. x 1 1/4 SPLICE BOLT (POST #2) B580122 e 2 5/8 Dia. x 9 HEX BOLF GRD 5 B580904A f 3 5/8 WASHER W050 g 11 5/8 Dia. H.G.R NUT N050 h 1 3/4 Dia. x 8 1/2 HEX BOLT GRD A449 B340854A j 1 3/4 Dia. HEX NUT N030 k 2 1 ANCHOR CABLE HEX NUT N100 I 2 1 ANCHOR CABLE WASHER W100 m 8 1/2 RSI SHOULDER BOLT W/WASHER SB12A n 8 1/2 STRUCTURAL NUT N012A	ITEM	QTY	BILL OF MATERIALS	ITEM NO.
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n 8 1/2 STRUCTURAL NUT N012A		2	1 ANCHOR CABLE WASHER	W100
	m	8	1/2 RSI SHOULDER BOLT W/WASHER	SB12A
1 /O CTDLICTLIDAL WACHED	n	8	1/2 STRUCTURAL NUT	NO12A
0 8 1/2 STRUCTURAL WASHER WOTZA	0	8	1/2 STRUCTURAL WASHER	WO12A
p 1 BEARING PLATE RETAINER TIE CT-100ST	р	1	BEARING PLATE RETAINER TIE	CT-100ST

GENERAL NOTES:

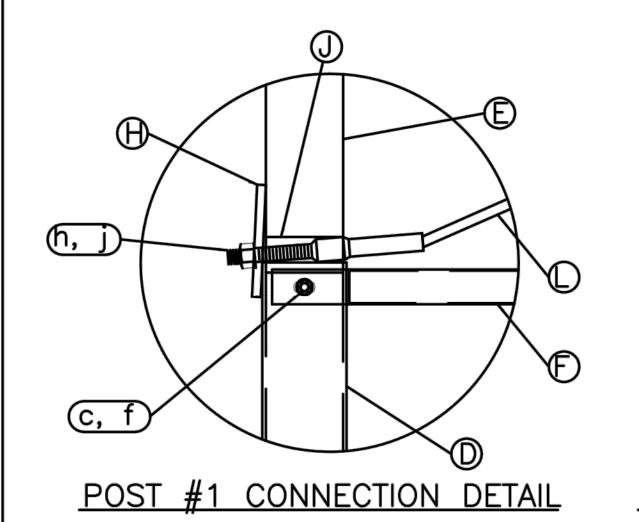
- 1. All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
- 2. The lower sections of the Posts 1&2 shall not protrude more than 4 in. [100] above the ground (measured along a 5' [1.5m] cord) Site grading may be necessary to meet this requirement.
- 3. The lower section of the hinged post 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 encoutnered, a 12" [300] ° post hole, 20 in/ [500] deep cored into the rock surface may be used if approved by the engineer for Posts 1 and/or 2. Granular material will be placed in the bottom of the hole, approximately 2.5" [60] deep to provide drainage. The first and/or second 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. 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.

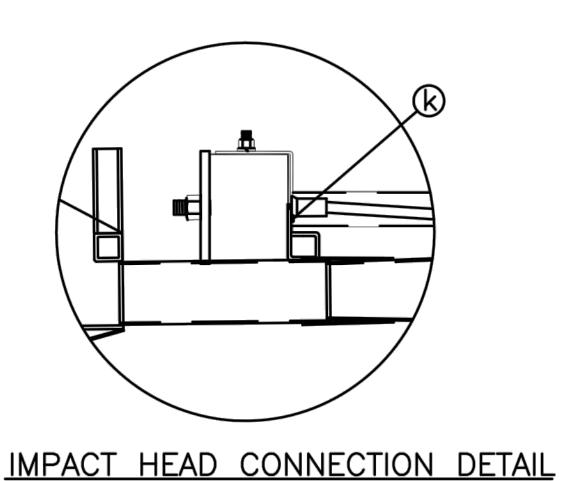


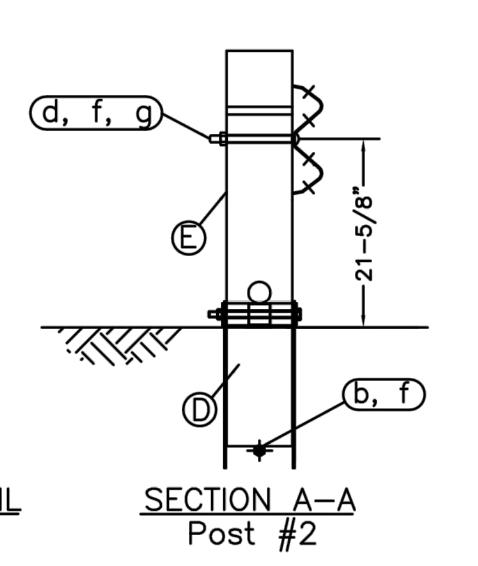
MSKT-SP-I	Sheet:	
Terminal 1	Date:	
i Gillillai i	07/30/16	
Level 2	JRR	
Drawing Name:	Scale:	Rev:
MSKT-SP-MGS-TL2	NONE	0

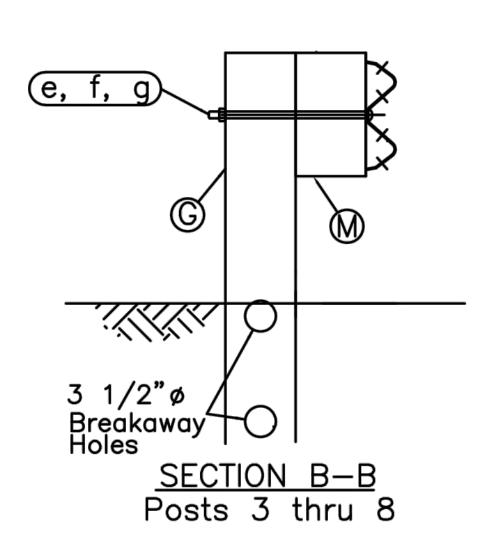


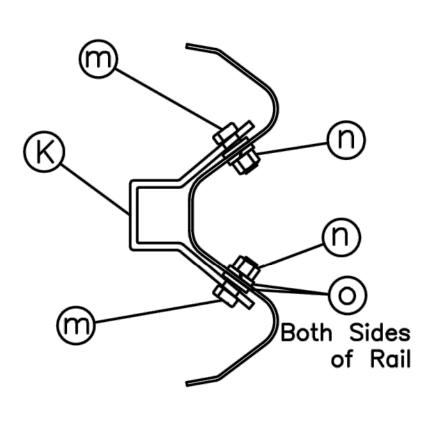
ITEM	QTY	BILL OF MATERIALS	ITEM NO.
Α	1	IMPACT HEAD	S3000
В	1	W-BEAM END SECTION, 12'-6",12 Ga.	S1303
С	3	W-BEAM, 12'-6", 12 Ga.	G1203
D	2	FOUNDATION TUBE	E731
Ε	2	BCT WOOD POST	UP650
F	1	GROUND STRUT	E780
G	6	CRT WOOD POST	UP671
Н	1	BEARING PLATE	E750
J	1	PIPE SLEEVE	E740
K	1	CABLE ANCHOR BOX	S760
L	1	BCT CABLE ANCHOR ASSEMBLY	E770
М	6	TIMBER BLOCKOUT OR RECYC. EQUIV.	P675
		HARDWARE (ALL DIMENSIONS IN INCHES)	
а	24	5/8ø x 1 1/4 SPLICE BOLT	B580122
b	2	5/8ø x 7 1/2 HEX BOLT	B580754
С	2	5/8ø x 10 HEX BOLT	B581004
d	1	5/8ø x 10 H.G.R. BOLT	B581002
е	6	5/8ø x 18 H.G.R. BOLT	B581802
f	35	5/8ø H.G.R. NUT	N050
g	7	5/8ø 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	SB12A
n	8	1/2 A325 STRUCTURAL NUT	N012A
0	8	1/2 STRUCTURAL WASHER	W012A











<u>SECTION C—C</u> Anchor Bracket

NOTE: THIS DETAIL MAY BE USED AS AN ALTERNATE TO THE MSKT-SP-MGS TERMINAL TEST LVEL 2 DETAIL SHORTEN LENGTH TO 25'

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 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.
- 4. When competent rock is encountered, a 12" Ø post hole, 20" into the rock surface may be used if approved by the engineer for Posts 1&2. 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.
- 5. 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.
- 6. A site evalution should be considered if there is less than 25' between the outlet side of the terminal and any adjacent driving lane.
- 7. The soil tubes may be driven with an approved driving head. They shall not be driven with the post in the tube.
- 8. 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

Sales: 432-263-2435

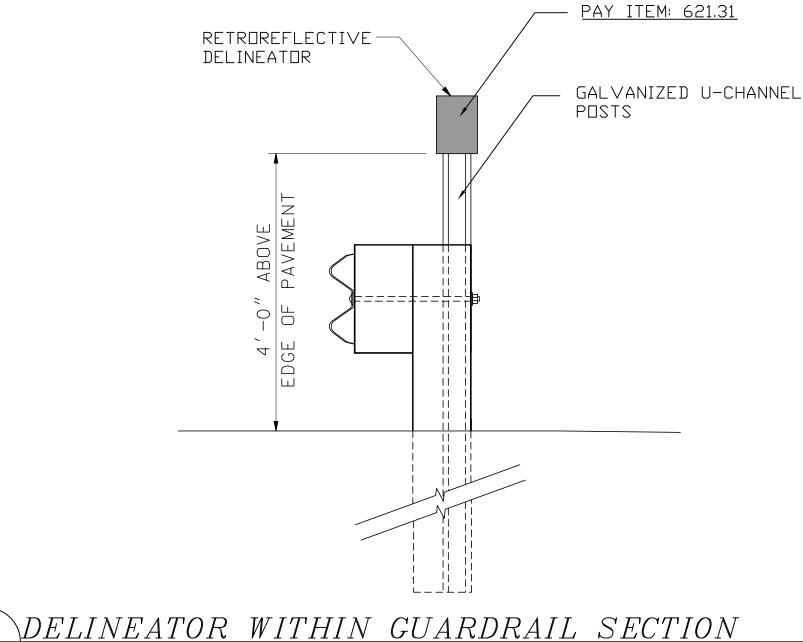
Technical: 330-346-0721

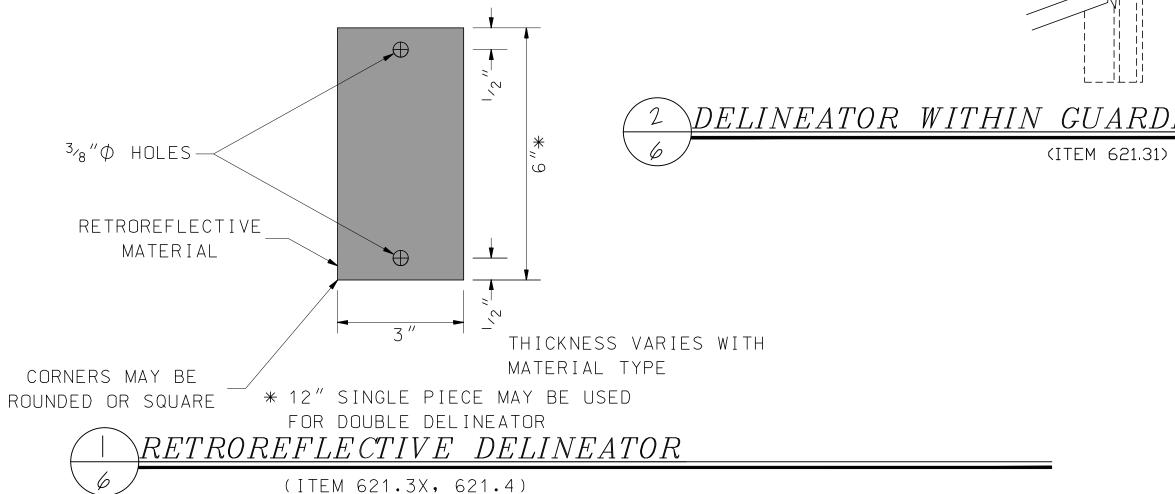
Sequential Kinking SKT - Assem Wood Post Sy	ibly stem	Sheet: 5 Date: 10/06/12 By: JRR			
wing Name: SKT-W-2US	Scale: NONE	Rev: ∩			
OIX1-VV-200					

<u>APPROXIMATE SPACING FOR</u> <u>DELINEATORS ON HORIZONTAL CURVES</u>

RADIUS OF CURVE (FT)	SPACING FOR BEAM GUARDRAIL DELINEATORS ON CURVE = S (FT)		
≤ 50	18.75		
> 50 BUT ≤ 115	25		
> 115 BUT ≤ 180	25		
> 180 BUT ≤ 250	25		
> 250 BUT ≤ 300	50		
> 300 BUT ≤ 400	50		
> 400 BUT ≤ 500	50		
> 500 BUT ≤ 600	50		
> 600 BUT ≤ 700	75		
> 700 BUT ≤ 800	75		
> 800 BUT ≤ 900	75		
> 900 BUT < 1,000	75		
> 1,000 ON MAINLINE	100		

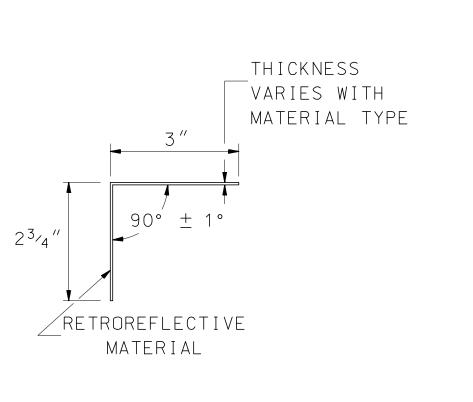
1. THE MINIMUM SPACING SHALL BE 18.75 FEET FOR BEAM GUARDRAIL DELINEATORS.

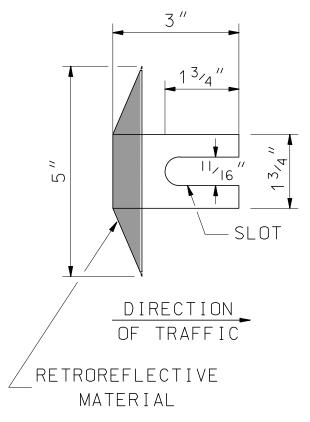


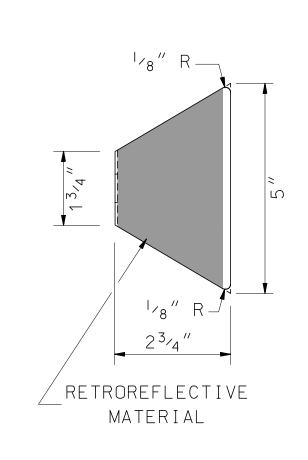


GENERAL NOTES

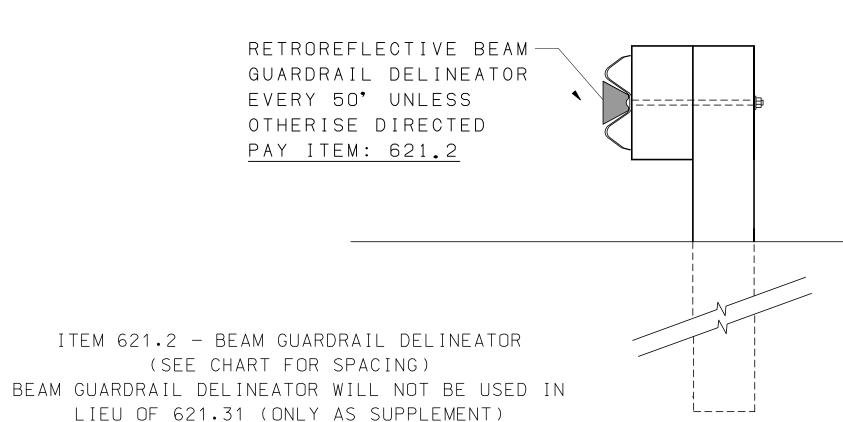
- 1. DELINEATORS SHALL BE MOUNTED ALONG THE LEFT SIDE OF THE ROADWAY BEHIND GUARDRAIL ONLY. DELINEATORS SHALL BE INSTALLED SO THAT THE DELINEATOR POST IS ADJACENT TO THE TRAILING EDGE OF THE NEAREST GUARDRAIL POST.
- 2. WHEN DELINEATION IS USED ONLY ON CURVES, THREE DELINEATORS SHALL BE PLACED BEFORE AND AFTER THE CIRCURAL PORTION OF THE CURVE.
- 3. WHEN DELINEATION IS USED ON TANGENTS, THE SPACING SHALL BE 250 FEET. THE TANGENT SPACING SHALL BEGIN BEYOND THE SPACING REQUIREMENTS FOR CURVES.
- 4. DELINEATOR COLORS SHALL IN ALL CASES CONFORM TO THE COLOR OF THE EDGELINES.
- 5. DELINEATORS WILL NOT BE PLACED BEHIND SIDEWALK.



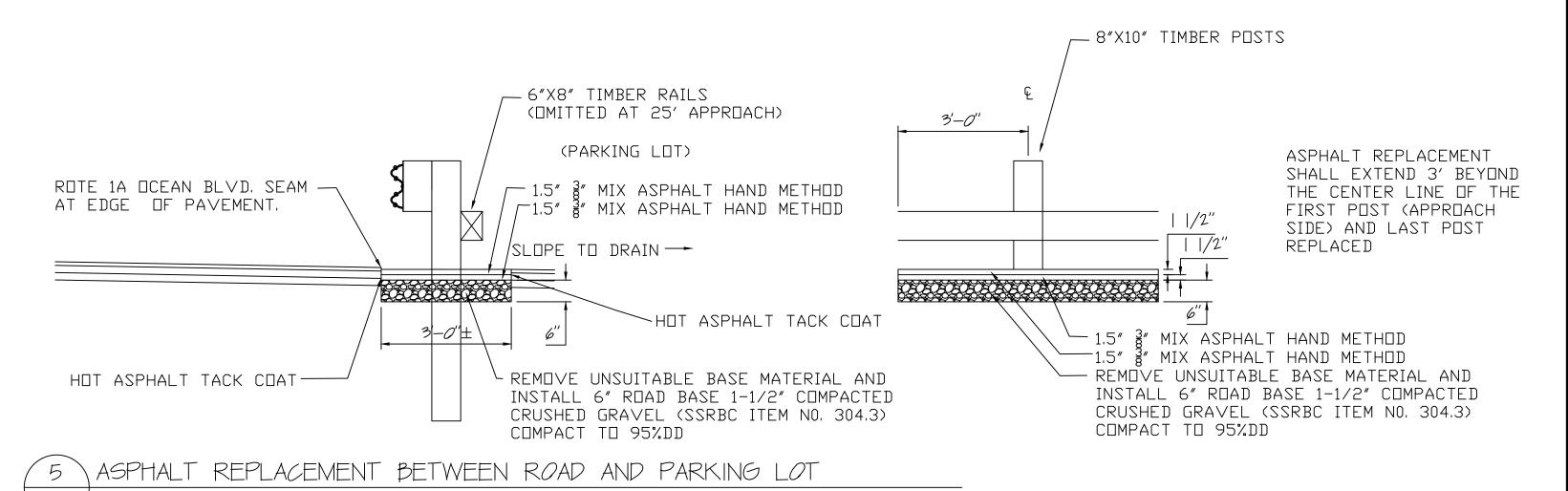




RETROREFLECTIVE BEAM GUARDRAIL DELINEATOR (ITEM 621.2)



RETROREFLECTIVE BEAM GUARDRAIL DELINEATOR (ITEM 621.2)



S. REMOVE ALL STEEL GUARDRAIL AND WOOD POSTS, SALVAGE ANY SIGNAS THAT MAY BE MOUNTED POSTS, SALVAGE ANY SIGNAS THAT MAY BE MOUNTED POSTS, OF SET POSTS OF U-CHANNEL SIGN POSTS, OF SET PARKING SIGNAS AND TRAFFIC SIGNAS ARE TO REMAIN IN PLACE DERING THE COURSE OF THIS WORK.

5. REPLACE WOOD POSTS, OF SET PLOCKS, AND TIMBER RAILS.

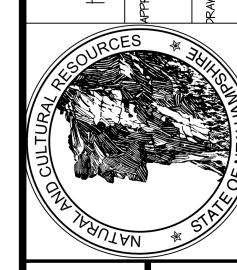
6. INSTALL NEW GALVANIZED BEAM GUARDRAIL IN ACCORDANCE WITH DOT STANDARD SPECIFICATION DEBRIS AT THE END OF THE JOB.

7. CLEAN THE SITE OF ALL CONSTRUCTION DEBRIS AT THE END OF THE JOB.

I. CONTRACTOR SHALL OBTAIN A DIGSAFE NUMBER PRIOR TO COMMENCING ANY EXCAVATIONS.

2. PROVIDE ALL NECESSARY TRAFIC CONTROL PROTECTION PER THE TOWN OF HAMPTON POLICE DEPARTMENT. PROVIDE UNIFORMED POLICE OFFICE IF NECESSARY PER THE TOWN OF HAMPTON PROVIDED POLICE OFFICE OFFIC

THE TOWN OF HAMPTON PD.



STATE OF NEW HAMPSHIRE
DEPARTMENT OF NATURAL AND
CULTURAL RESOURCES
PITAL PROJECTS, AND MAINTENANCE SECTION
HAMPTON BEACH STATE PARK

SHEET

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