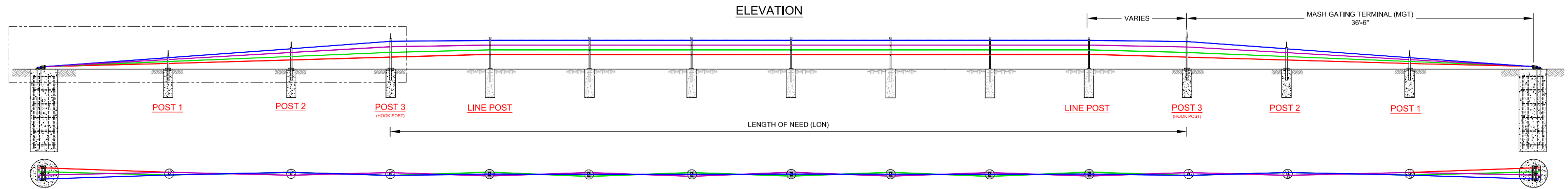
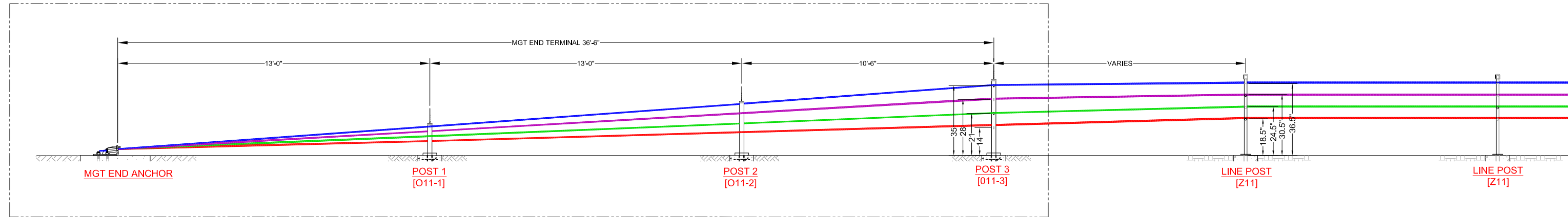


NCHRP 350 TL-4 LENGTH OF NEED & MASH GATING TERMINAL



MASH GATING TERMINAL (MGT) DETAIL



ROPE TENSION TABLE

ROPE	TENSION (LBS)	TENSION (kN)
0	5700	25.4
10	5400	24.0
20	5100	22.7
30	4800	21.4
40	4500	20.0
50	4200	18.7
60	3900	17.3
70	3600	16.0
80	3300	14.7
90	3000	13.3
100	2700	12.0
110	2400	10.7
120	2100	9.3
130	1800	8.0
140	1500	6.7

GENERAL NOTES:

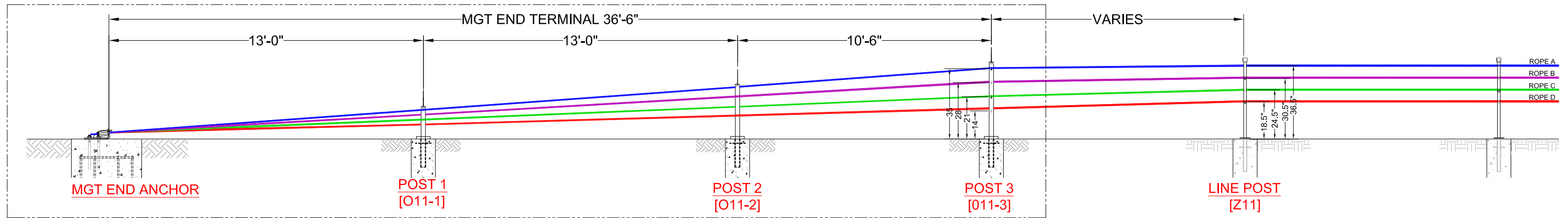
1. THE BRIFEN WIRE ROPE SAFETY FENCE SYSTEM (WRSF) 4 ROPE Z-POST LENGTH OF NEED (LON) HAS BEEN SUCCESSFULLY TESTED TO NCHRP 350 TL-4 CONDITIONS ON SLOPES 6:1 OR FLATTER AND NCHRP 350 TL-3 CONDITIONS ON SLOPES 4:1 TO 6:1. REFER TO FHWA ELIGIBILITY LETTER (HSSD/B-82). THE BRIFEN MASH GATING TERMINAL (MGT) HAS BEEN SUCCESSFULLY TESTED TO MASH 2016, SECOND EDITION. REFER TO FHWA ELIGIBILITY LETTER (HSST1/CC-137).
2. BRIFEN WRSF DRAWINGS, SPECIFICATIONS, AND PRODUCT MANUALS SHOULD BE REVIEWED PRIOR TO STARTING INSTALLATION. FOR ADDITIONAL INFORMATION OR QUESTIONS, CONTACT BRIFEN USA, INC. AT 1-866-427-4336.
3. BRIFEN WRSF SHALL BE INSTALLED ON SMOOTH SURFACE WITHOUT HUMPS, DROP-OFFS, HOLES, ETC THAT MAY INTERFERE WITH THE STABILITY OF AN ERRANT VEHICLE AT CONTACT WITH THE FENCE. GRADING, FILL, AND COMPACTION MAY BE REQUIRED TO ASSURE THAT ROPES ARE INSTALLED AT THE DESIGN HEIGHT.
4. THE POST SPACING SHALL BE DETERMINED BY THE SPECIFYING AGENCY. POST SPACING MAY BE DECREASED TO AVOID OBSTRUCTIONS OR UTILITIES. IN NO EVENT SHALL THE POST SPACING EXCEED 21'-0\".
5. THE MASH GATING TERMINAL IS 36'-6\" FROM THE CENTER OF THE END ANCHOR TO THE HOOK POST (POST 3). THE LENGTH OF NEED SHALL THEN START AT POST 3. THE MGT POST (POST 1, 2, AND 3) ARE TO BE SET IN CONCRETE SOCKETED FOUNDATIONS.
6. PURSUANT TO MASH TESTING CRITERIA, ALL END TERMINAL TESTS ARE CONDUCTED ON LEVEL TERRAIN. PLACEMENT OF END TERMINALS ON SLOPES MAY RESULT IN NON CRASH WORTHY PERFORMANCE IN SOME CONDITIONS.
7. TO PREVENT EXCESSIVE LATERAL LOAD ON ANY ONE SINGLE LINE POST, IT IS RECOMMENDED THAT THE FENCE TAPER (FLARE RATE) NOT EXCEED 25:1; 50:1 PREFERRED. SIMILARLY, VERTICAL CURVES SHOULD NOT EXCEED 25:1; 50:1 PREFERRED. CONSULT BRIFEN USA FOR INSTALLATION ON CURVES SHARPER THAN NORMAL INTERSTATE ROADWAY DESIGNS. REDUCED POST SPACING IS RECOMMENDED FOR CURVE RADIUS.
8. ANCHOR, LINE POST DIMENSIONS AND STEEL REINFORCEMENT WILL BE DETERMINED ON PROJECT SPECIFIC SOIL CLASSIFICATION, PROPERTIES AND TEMPERATURE EXTREMES. CONTACT BRIFEN USA, INC. FOR ADDITIONAL INFORMATION.

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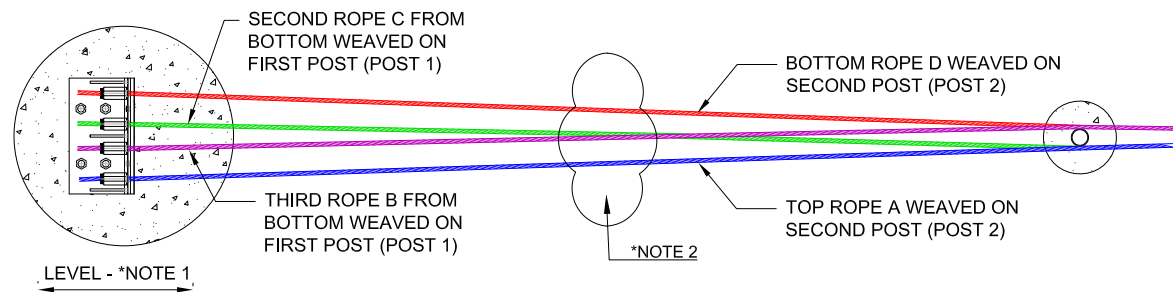
BRIFEN★USA INC.

Revision			BRIFEN NCHRP 350 TL-4 Z-POST WITH TL-3 MASH GATING TERMINAL INSTALLATION & LAYOUT DETAILS		
No.	Date	By	Date	Drawn By	Scale
1.	7/30/2021	JR	6.21.2021	JAR	None
2.	8/9/2021	JR			
3.	8/26/2022	JR			
4.			VERSION 16		
5.			Dwg. No.	MASH350-OP-ZP-01	Sheet No 1 OF 3

MASH GATING TERMINAL (MGT) DETAIL



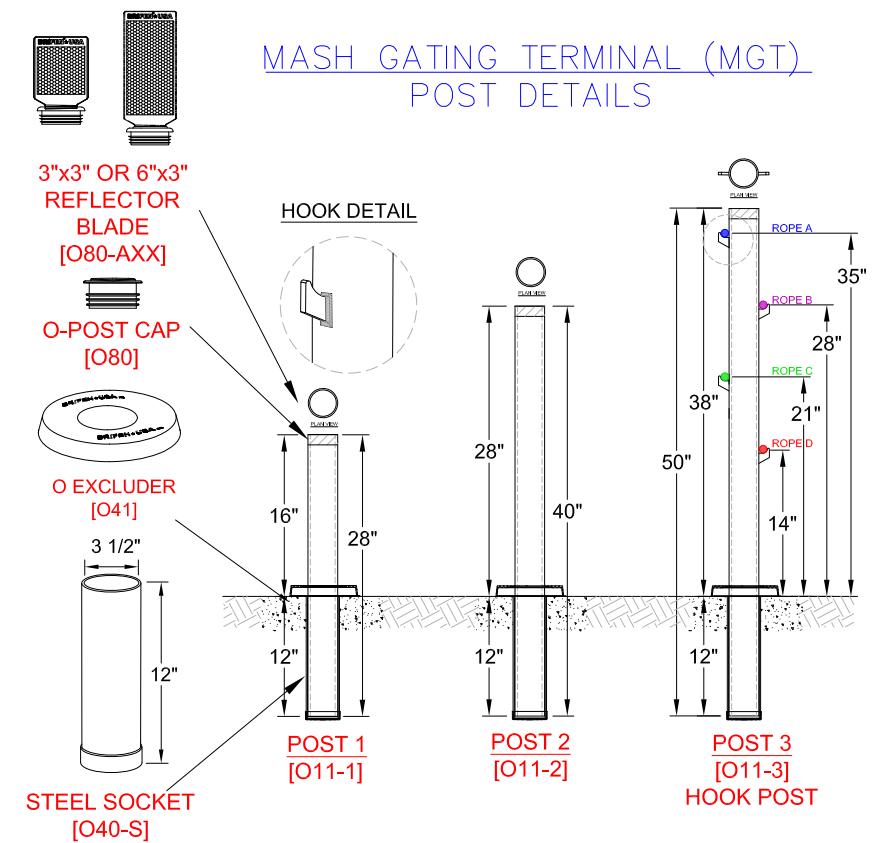
MGT END ANCHOR ROPE WEAVE DETAIL



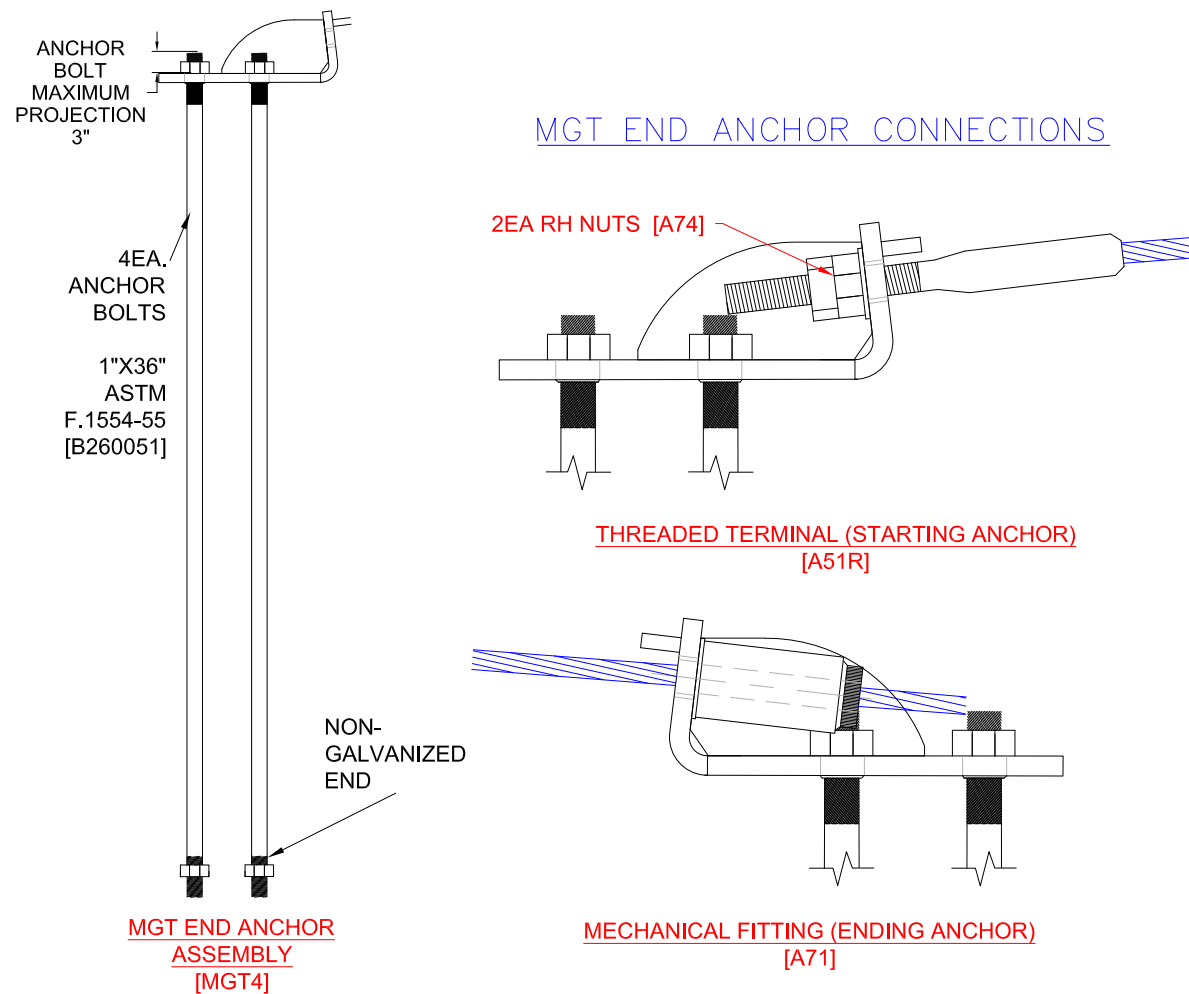
NOTE

1. MASH GATING TERMINAL (MGT) END ANCHOR PLATE SHALL BE INSTALLED LEVEL (FRONT TO BACK WHEN VIEWED FROM THE END OF THE FENCE). IF MGT END ANCHOR IS PLACED ON A SLOPE, THE PLATE SHOULD BE INSTALLED TO MATCH THE SLOPE (LEFT TO RIGHT WHEN VIEWED FROM THE END OF THE FENCE).
2. SINCE ROPES ALTERNATE SIDES OF EACH SUCCESSIVE POST, THE TRAILING END TERMINAL MAY HAVE ROPES REVERSED DEPENDING ON ODD OR EVEN NUMBER OF POSTS IN FENCE.
3. SIZE AND DESIGN OF MGT END ANCHOR, POST 1-3, AND LINE POST FOUNDATIONS (POST MOUNTING METHOD) ARE BEST DETERMINED BY PROJECT SPECIFIC SOIL INFORMATION AND GEOTECHNICAL EVALUATION. IF UNEXPECTED ROCK IS ENCOUNTERED, PLEASE CONTACT BRIFEN. BRIFEN RECOMMENDS IF CONCRETE FOUNDATIONS ARE SPECIFIED, THE 28 DAY COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 3000 PSI. END TERMINAL FOUNDATION AND POST 1-3 FOUNDATIONS SHALL ALWAYS BE APPROPRIATE SIZED CONCRETE FOUNDATIONS.
4. THESE HOLES ARE FOR THE TEMPORARY EYE BOLT [T18] FOR A WINCH ATTACHMENT DURING INITIAL INSTALLATION ONLY.

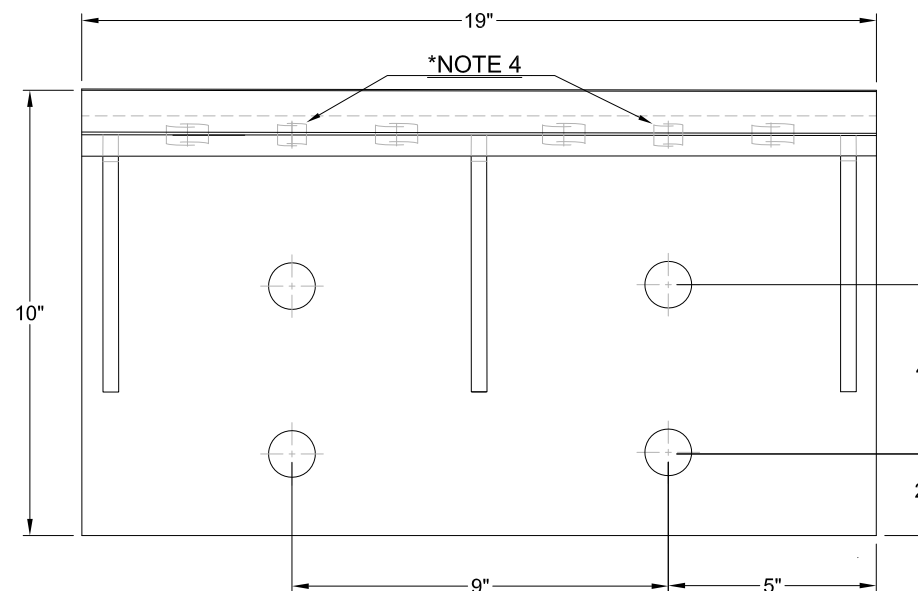
MASH GATING TERMINAL (MGT) POST DETAILS



MGT END ANCHOR CONNECTIONS



MGT ANCHOR BOLT TEMPLATE

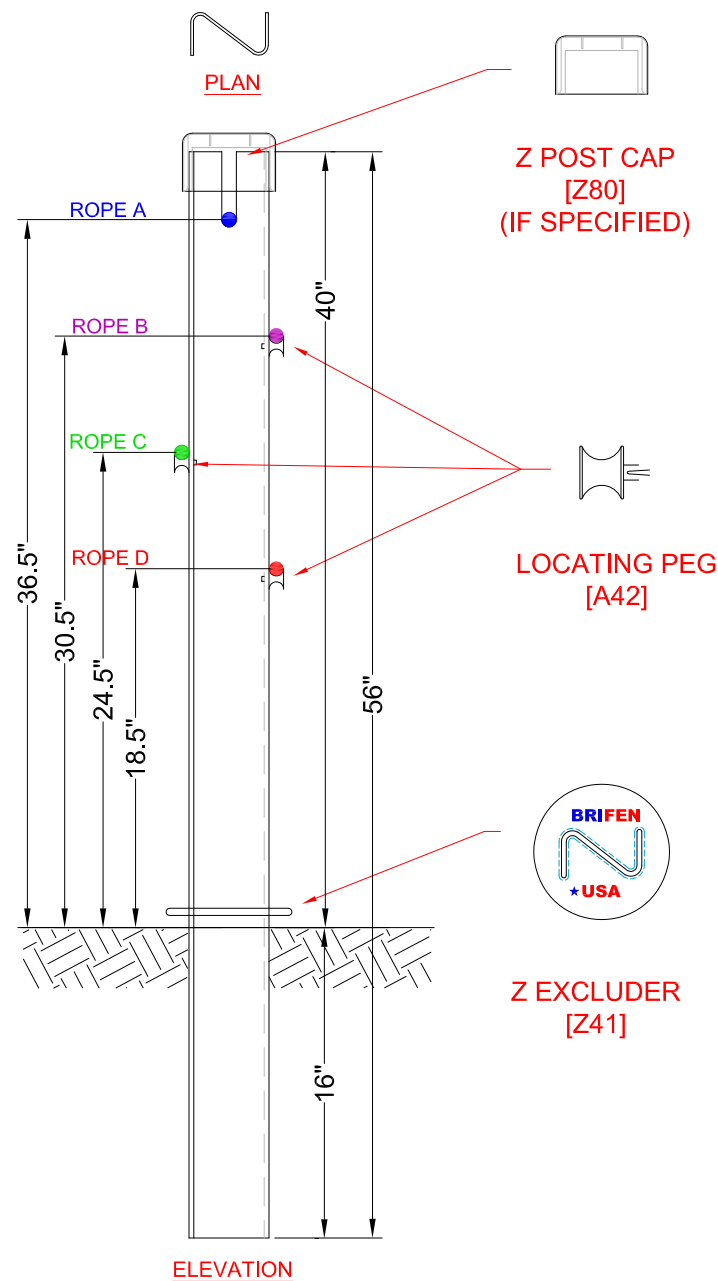


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BRIFEN USA INC.

Revision			BRIFEN TL-3 MASH GATING TERMINAL INSTALLATION & LAYOUT DETAILS		
No.	Date	By	Date	Drawn By	Scale
1.	7/30/2021	JR	6.21.2021	JAR	None
2.	8/9/2021	JR	VERSION 16		Sheet No 2 OF 3
3.	2/17/2025	JR	Dwg. No.	MASH350-OP-ZP-01	
4.					
5.					

LINE POST ASSEMBLY
[Z11]



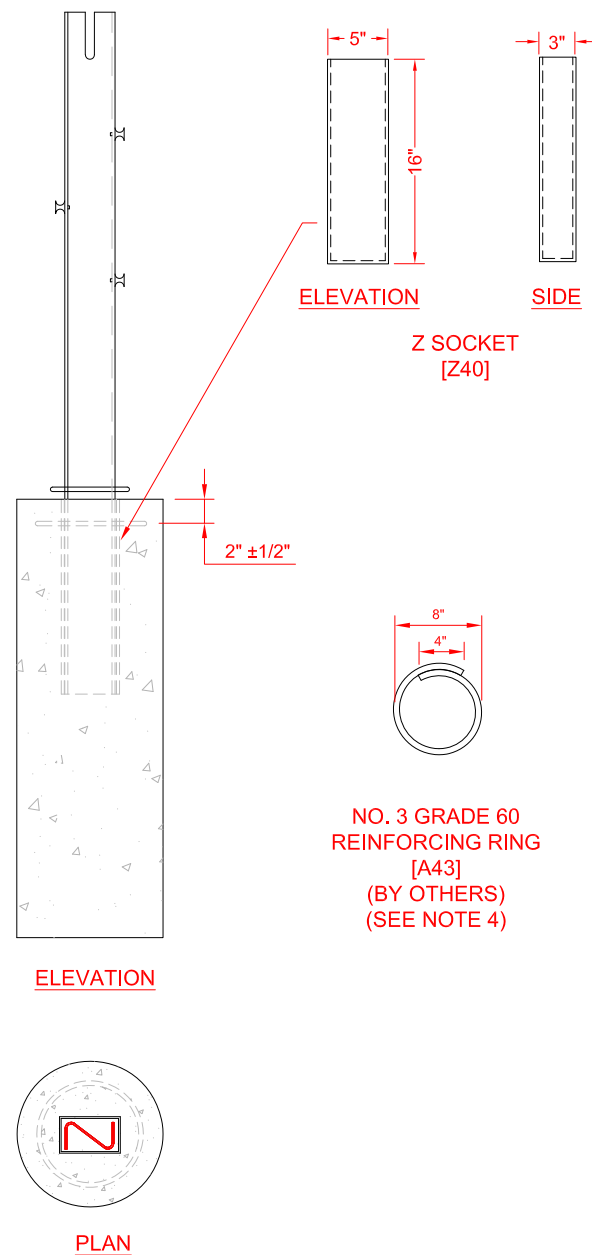
LINE POST
[O11-3]

NOTES SPECIFIC TO LINE POST ASSEMBLY

1. ROPE HEIGHTS SHALL BE $\pm 1"$ TO GROUND LINE.
2. POST SHALL BE $\pm 4"$ FROM VERTICAL PLUMB.
3. POST CAPS SHALL BE USED IF SPECIFIED.
4. REFLECTORS SHALL BE SPACED ACCORDING TO AGENCY SPECIFICATIONS.
5. REFLECTORS CAN BE PLACED ON THE POST CAP OR POST.

SOCKET ASSEMBLY

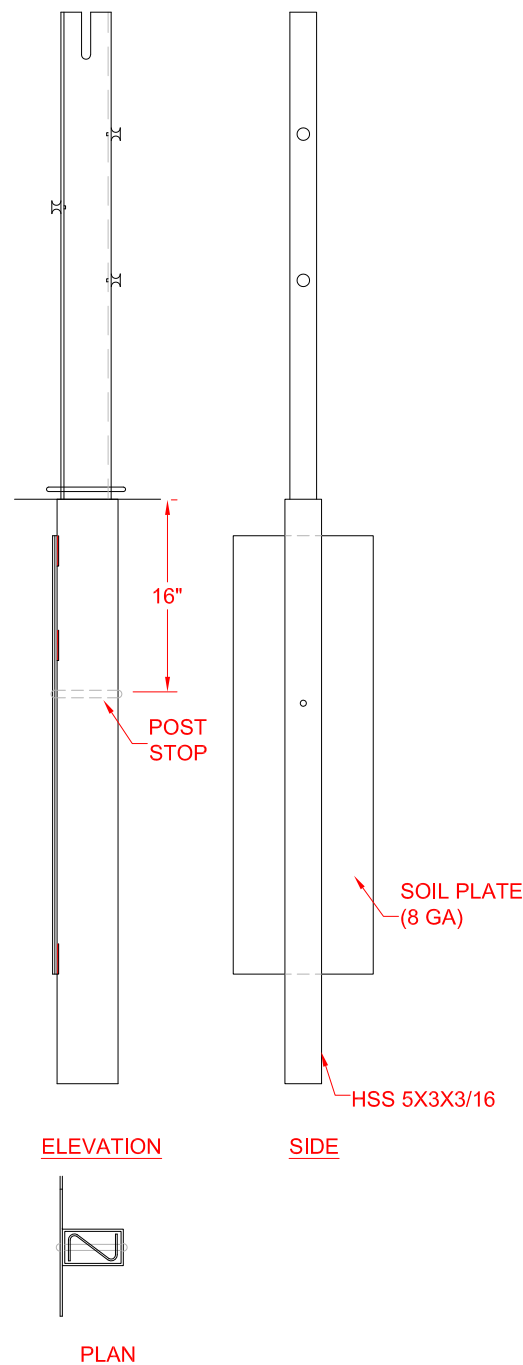
CONCRETE FOOTING



NOTES SPECIFIC TO CONCRETE FOOTING

1. SIZE OF FOOTING WILL BE DETERMINED BY SOIL CONDITIONS, FOUNDATION TYPE AND PROJECT CONDITIONS.
2. CONCRETE BASED ON AGENCY SPECIFICATIONS.
3. CONCRETE BY OTHERS.
4. REINFORCING RING (BY OTHERS) WILL BE USED ACCORDING TO FOUNDATION SIZE AND TYPE. THE REINFORCING RING MAY BE OMITTED IF THE FOOTING IS PLACED IN A CONTINUOUS CONCRETE MOW STRIP.
5. FOOTING SHALL BE FLUSH WITH THE GROUND LINE, TO A MAXIMUM OF 1 INCH BELOW OR ABOVE GROUND LINE.
6. SOCKET SHALL BE $\pm 2^\circ$ OF VERTICAL PLUMB.

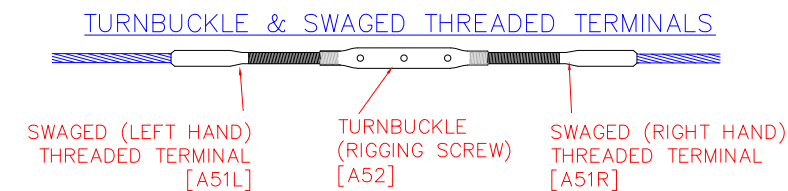
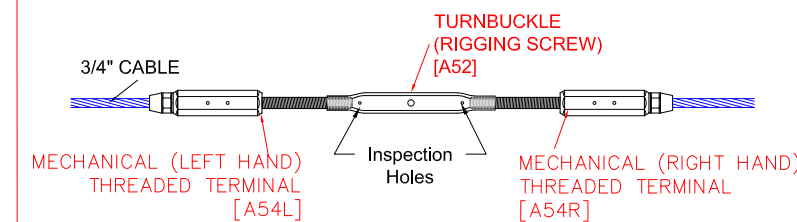
DRIVE SOCKET
[Z44]



NOTES SPECIFIC TO DRIVE SOCKETS

1. SIZE OF SOIL PLATE WILL BE DETERMINED BY SOIL CONDITIONS AND PROJECT CONDITIONS.
2. THE SOIL PLATE SHALL BE PARALLEL TO ROADWAY AND CAN FACE TOWARD OR AWAY FROM THE TRAVEL LANE.
3. SOCKET SHALL BE FLUSH WITH THE GROUND LINE, TO A MAXIMUM OF 1 INCH BELOW OR ABOVE GROUND LINE.
4. SOCKET SHALL BE $\pm 2^\circ$ OF VERTICAL PLUMB.
5. SOCKETS SHALL BE DRIVEN IN A MANNER TO NOT DISTORT OR DESTROY THE TOP OF SOCKET TO A DEGREE THAT PLACES THE SOCKET OR LINE POST OUT OF CONSTRUCTION TOLERANCES.

TURNBUCKLE & MECHANICAL THREADED TERMINALS



NOTES SPECIFIC TO ROPE CONNECTION DETAIL

1. THE WIRE ROPE TERMINALS SHALL BE THREADED A MINIMUM OF 1" INTO RIGGING SCREW.

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Revision			BRIFEN NCHRP 350 TL-4 Z-POST INSTALLATION & LAYOUT DETAILS		
No.	Date	By	Date	Drawn By	Scale
1.	7/30/2021	JR	6.21.2021	JAR	None
2.	8/9/2021	JR	VERSION 16		
3.					
4.			Dwg. No.	MASH350-OP-ZP-01	Sheet No 3 OF 3
5.					