

## **CASS® S3 Assembly/Repair Checklist** **(File With Project/Maintenance Records)**

Performed by: \_\_\_\_\_

Date: \_\_\_\_\_

Location: \_\_\_\_\_

- 1. Ensure only Valtir CASS® S3 parts are used for the assembly/repair of CASS® S3 and that all parts are free of damage. (p 4)
- 2. Ensure required traffic control is in place to conduct CASS® S3 assembly/repair. (p 4)
- 3. Ensure proper site grading for the CCT complies with state/specifying agency guidelines for guardrail terminals or AASHTO Roadside Design Guide, whichever is more stringent. (pp 5 & 14)
- 4. Ensure proper site grading for the CASS® S3 complies with state/specifying agency guidelines or AASHTO Roadside Design Guide. (pp 5 & 14)
- 5. Ensure the Sleeve Cover is paced on the post and is flush with the top of the Post Sleeve. (p 17).
- 6. Ensure the Bottom CRP and Top CRP are oriented correctly. (p 18)
- 7. Ensure the top of the Bottom CRP's does not protrude more than 4" [100 mm] above the finished grade. (p 18)
- 8. Ensure the bent part of the Cable Anchor Bracket at CRP's is up and hooked over the Top CRP's. (pp 21 & 22)
- 9. Ensure two (2) 1" Hex Nuts have been placed on the ends of the cable fittings at the CRP's. (p 22)
- 10. Ensure the cables are located and assembled at the proper holes of the Terminal Line Posts with the Cable Lock Bolts. (pp 21 & 22)
- 11. Ensure that the Field Applied Fittings have a single cable strand bent over the wedge. (p 24)
- 12. Ensure the bottom cable is located on the non-traffic side of the post and the high bottom cable is located on the traffic side of the post. (p 26)
- 13. Ensure Cable Spacer is placed between the top two (2) cables. (p 26)
- 14. Ensure the CASS® S3 delineators are placed per the contract plans. (p 26)
- 15. Ensure the Stainless Steel Post Strap is placed above the top cable. (p 26)
- 16. Ensure the Fittings are a minimum of 1 1/2" [38 mm], maximum of 4" [100 mm] into the turnbuckle. (p 28)
- 17. Ensure the Tension on the cable has been checked and is as specified in the "CASS® S3 Temperature/Tension Chart". (p 28)
- 18. Ensure there are no damaged/frayed/bent cables. (p 28)
- 19. Ensure delineation is placed on CASS® S3 CRP's and line post per MUTCD and/or state/specifying agency. (p 28)

# **CASS® S3 Routine Inspection Checklist**

## **(File with Maintenance Records)**

Performed by: \_\_\_\_\_

Date: \_\_\_\_\_

Location: \_\_\_\_\_

Valtir recommends the state/specifying agency develop and administer their own end terminal inspection program, based on location of unit, volume of traffic and impact history.



Important: CASS® S3 and all of its components shall be inspected for damage after every impact. **Repair using only Valtir parts that are specified for use within the CASS® S3 **C**Able **S**afety **S**ystem Product Description Assembly Manual, latest edition.**

If no CASS® S3 or Cable Barrier inspection program exists, Valtir recommends visual drive-by inspections at least once every month and walk-up inspections every one (1) year. These inspections shall, at a minimum, consist of:

### **Visual Drive-By Inspections (Recommended Frequency: Monthly)**

- Check for damage caused by vehicle impacts.
- Check for damage caused by impacts from snowplow, mowing or roadway operations.
- Check for misalignment.
- Check for missing system components.
- Check for vandalism.
- Check for damage caused by adverse weather conditions (i.e. erosion, weight of snow, UV).

### **Walk-Up Inspections (Recommended Frequency: Yearly)**

Walk-Up Inspections include ALL Visual Drive-By Inspection items (listed above) as well as the items listed below.

- Ensure required traffic control is in place to conduct walk-up inspection.
- Check and record the tension per the manufacturer's recommendation.
- Clear and dispose of any debris or trash found on the CASS® S3 or interfere with the performance of CASS® S3.
- Check for erosion to the site grading around the system or any CRP movement.
- Check all fasteners to ensure they are tight.

If any of the above items are identified during the inspection process as being deficient, swift action shall be taken to correct and repair the CASS® S3 to working condition as outlined in the **CASS® S3 4:1 **C**Able **S**afety **S**ystem** Product Description Assembly Manual, latest edition.

## CASS® S3 Temperature / Tension Chart

Pre-Stretched Cable			
°F	Tension (lbf)*	°C	kN
-15	7500	-26	33.3
-10	7300	-23	32.5
-5	7100	-21	31.6
0	7000	-18	31.1
5	6800	-15	30.3
10	6600	-12	29.4
15	6500	-9	28.9
20	6300	-7	28.0
25	6100	-4	27.1
30	6000	-1	26.7
35	5800	2	25.8
40	5600	4	24.9
45	5500	7	24.4
50	5300	10	23.6
55	5100	13	22.7
60	5000	16	22.2
65	4800	18	21.4
70	4600	21	20.5
75	4500	24	20.0
80	4300	27	19.1
85	4100	29	18.2
90	4000	32	17.8
95	3800	35	16.9
100	3600	38	16.0
105	3500	41	15.6
110	3300	43	14.7
115	3100	46	13.8
120	3000	49	13.3
125	2800	52	12.5
130	2700	54	12
135	2600	57	11.6
140	2500	60	11.1
145	2400	63	10.7
150	2300	65	10.2
160	2100	71	9.3
170	1900	77	8.5
180	1700	82	7.6
190	1500	88	6.7
200	1300	93	5.8

\* Tolerance: –200 to + 800 pounds force [-0.9 to + 3.6 kN]

# Tension Log

## CABLE SAFETY SYSTEM™

Project Owner: \_\_\_\_\_  
 Project Number: \_\_\_\_\_ Project Description: \_\_\_\_\_  
 CASS™ Version: \_\_\_\_\_ Valtir Drawing #: \_\_\_\_\_  
 Date Checked: \_\_\_\_\_ By: \_Company/Agency: \_\_\_\_\_  
 IR Temperature of Steel: \_\_\_\_\_ Corresponding Chart Lbf. Tension: \_\_\_\_\_

**ALWAYS check tension in a tangential (NON-radii) section of the cable installation, a minimum of 500 LF from a terminal.**

Run # \_\_\_\_\_ STA: \_\_\_\_\_ to STA: \_\_\_\_\_ LF of Run: \_\_\_\_\_

<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____
Top _____		Top _____		Top _____
Low Top _____		Low Top _____		Low Top _____
High Bottom _____		High Bottom _____		High Bottom _____
Bottom _____		Bottom _____		Bottom _____

<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____
Top _____		Top _____		Top _____
Low Top _____		Low Top _____		Low Top _____
High Bottom _____		High Bottom _____		High Bottom _____
Bottom _____		Bottom _____		Bottom _____

<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____
Top _____		Top _____		Top _____
Low Top _____		Low Top _____		Low Top _____
High Bottom _____		High Bottom _____		High Bottom _____
Bottom _____		Bottom _____		Bottom _____

<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____
Top _____		Top _____		Top _____
Low Top _____		Low Top _____		Low Top _____
High Bottom _____		High Bottom _____		High Bottom _____
Bottom _____		Bottom _____		Bottom _____

<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____	↓	<b>Loc:</b> _____ <b>Actual Lbf.</b> _____
Top _____		Top _____		Top _____
Low Top _____		Low Top _____		Low Top _____
High Bottom _____		High Bottom _____		High Bottom _____
Bottom _____		Bottom _____		Bottom _____