

CCT 20/10

Clarification of examination requirements for communications towers, pump houses and weighbridges

AUDIENCE		MAIN POINTS		VERSION HISTORY		
~ Structures Maintenance Superintendents ~ Civil Maintenance Engineers		~ Inspection requirements for communications towers, pump houses and weighbridges		~ 1 st Issue		
BRIEFING REQUIREMENTS						
Information only		Briefed by line management and record of briefing supplied to the PCTE			✓	Briefed by PCTE or delegate

1. Introduction

John Holland Rail is responsible for the maintenance of a great variety of assets throughout the Country Regional Network (CRN). Part of these responsibilities includes the inspection and maintenance of miscellaneous structures, many of which have typically been subcontracted out for the inspection activities. As a result of change in organisational structure, these inspections have commenced being undertaken by internal resources. This Technical Note portrays the inspection requirements to undertake identified required inspections.

2. Communications Towers

Communications towers are made up of three main types steel lattice, steel poles and timber poles. They are either on Transport Asset Holding Entity of New South Wales (TAHE) or crown land. The responsibilities around these differ slightly due to our licencing arrangement, and should be confirmed prior to attending the site. Due to the fact that these assets are leased to third parties, John Holland has an obligation to ensure that the sites remain in a condition commensurate with the licence agreement.

There are amendments to CRN CS 100, CRN CM 302 and CRN CM 101 contained in this Technical Note.

3. Pump houses

There remains no pump houses within the CRN that has an operating pump that John Holland is responsible for the maintenance of. This asset is to be inspected for safety of the site, as per Miscellaneous Structures on Non-operational lines

Amendments to Section 11.11 for CRN CS 100 are contained in this Technical Note.

Disclaimer. This document was prepared for use on the CRN Network only. John Holland Rail Pty Ltd makes no warranties, express or implied, that compliance with the contents of this document shall be sufficient to ensure safe systems or work or operation. It is the document user's sole responsibility to ensure that the copy of the document it is viewing is the current version of the document as in use by JHR. JHR accepts no liability whatsoever in relation to the use of this document by any party, and JHR excludes any liability which arises in any manner by the use of this document.

Copyright. The information in this document is protected by Copyright and no part of this document may be reproduced, altered, stored or transmitted by any person without the prior consent of JHG.

4. Weighbridges

There are no in service weigh bridges, these are to be inspected in line with non-operational assets on non-operational corridors, and Heritage requirements

Amendments to Section 11.11 for CRN CS 100 are contained in this Technical Note

5. Updates to CRN CS 100

Technical Maintenance Plan						
Service Description	Safety Importance	Applicability	Service Schedule	Period	Latitude	Comments
11.10 Structures						
Detailed Structures Examination	S	Steel lattice communications tower and Steel pole communications tower	CSS 250	4 years	145 days	
		Timber pole communications tower	CSS 225	4 years	145 days	
Licence Compliance Inspection	N/A	All communications towers	CSS 251	1 yearly	36 days	To occur in conjunction with Detailed Structures Examination
11.11 Structures on Non-Operational Lines						
General Visual Inspection	NA	Tunnels, retaining walls and other miscellaneous structures (such as pump houses, weigh bridges and ash pits) not affecting public	CSS 403	4 yearly	145 days	May be varied by Civil Maintenance Engineer by Risk Assessment

6. Updates to CRN CM 101

CSS 250 Detailed Examination of Steel Communications Tower		Service Schedule CSS 250 Page 1 of 1
Description	Detailed examination of steel truss or steel pole communications tower	
Personnel	TLIB3098 - Examine concrete/masonry structures TLIB3088 - Examine steel structures	
Equipment	Torch, hand mirror, geologists hammer, 30 metre tape, binoculars, crayon, camera, wire brush, data logger or notebook	
Reference	CRN CM 302	
Task		
1	Obtain current defect listing and examination report	
Start The Job		
2	Clear vegetation to allow access to structure	
Foundation		
3	Clear material from footings and base of structure	
4	Examine structure footings for heaving of foundation material, erosion at footing, settlement, earth cracks	
5	Examine concrete or masonry footings visually and by hammer testing for impact damage, weathering or spalling of surfaces or mortar joints, cracking within members or at joints and evidence of reinforcement corrosion	
Structure		
6	Examine steel structure for alignment, settlement or movement	
7	Examine steel structure for corrosion around baseplate, between angles in bracing in rivet heads and holding down bolts	
8	Examine steel structure for loose bolts in connection, and condition of protective coating	
Finish The Job		
14	Identify and record all defects and compare to current defect listing noting new and deteriorating defects and defects that have been removed	
15	Protect site (if required) pending further corrective actions	
16	Pack up Worksite	
17	Update defect listing and program repairs required	
18	Complete examination certification	

CSS 251 Licence Compliance Inspection of Communications Tower		Service Schedule CSS 251 Page 1 of 1
Description	An inspection of the satisfying John Hollands requirements under the lease of the communications tower	
Personnel	-	
Equipment	Torch, data logger or notebook	
Reference	-	
Task		
1	Obtain current list of services on the tower	
Start The Job		
2	Clear vegetation to allow access to structure	
Compliance to licence requirements		
9	Verification that earthing protection is in place (note do no need to check functionality as electrical competencies are required to undertake this activity)	
10	Check and confirm that the correct number of services are on the tower	
11	Inspection of the associated building(s), including confirmation that air conditioning in functioning, Check the building for any leaks, Confirm that lighting is functional	
12	Inspect the land around the Telecommunications Tower, associated building(s) and fencing for noxious weeds, fire hazards from vegetation, signs of vandalism, safety hazards	
13	Where fencing is present, look for damaged fencing, unsecured gates or indications of unauthorised access	
Finish The Job		
14	Identify and record all defects and compare to current defect listing noting new and deteriorating defects and defects that have been removed	
15	Protect site (if required) pending further corrective actions	
16	Pack up Worksite	
17	Update defect listing and program repairs required	
18	Complete examination certification	

7. Updates to CRN CM 302

Defect Category	Bridge Examiner Response	Error! Reference source not found. Responsibility
A	For underbridges & culverts - immediately stop trains, prior to passage of next train. For overbridges & footbridges – close off to pedestrian and road traffic, stop trains if risk is to railway below. Advise Structures Superintendent immediately for further assessment.	Assess immediately
B	For underbridges & culverts - immediately impose a 20kph temporary speed restriction (TSR), prior to passage of next train. This imposed speed may be altered after further assessment. Advise Structures Superintendent immediately for further assessment.	Assess the same day
	For underbridge & culvert walkways / refuges - the area should be sealed off from use until repaired. Advise Structures Superintendent immediately for further assessment.	Assess within 24 hours
	For overbridges & footbridges - the area shall be barricaded or sealed off from use. If impacting on railway below impose a temporary speed restriction (TSR) Advise Structures Superintendent immediately for further assessment.	Assess within 24 hours
	For non-operational assets (ie communications towers) – the area should be sealed off from use until repaired. Advise Structures Superintendent immediately for further assessment.	Assess within 2 days
C	Report to the Structures Superintendent within 2 days.	Assess within 2 days of notification
	For non-operational assets (ie communications towers) report to the Structures Superintendent within 2 days.	Assess within 7 days
D	Report to Structures Superintendent via Asset Management System for weekly summary of defects review.	Assess within 7 days
E	Record in bridge examination report.	Assess as part of bridge management process

Member	Defect Type	Defect Size	Defect Category	Minimum Repair / Monitor Priority	Review Load Rating
Q. Communications Towers					
For timber pole communications towers see CRN CM 302 section 4.5					
Main member	Missing	Any	B	Rm6	Yes
	Corrosion loss	Perforation to any element	C	Ry2	Yes
		> 60% section loss	C	My2	Yes
		30-60% section loss	D	My2	
		< 30% section loss	E	Mxx	
Secondary member	Crack	Any	D	Mxx	
	Missing	Any	B	Ry2	Yes
	Corrosion loss	Perforations to any element	D	Mxx	
Main Member Fastenings (at connections)	Bolts missing	> 60%	B	Rm1	
	Loose	> 60%	B	Rm1	
	Loose / Missing	40% to 60%	B	Rm6	
		20% to 39%	C	Ry1	
		10% to 19%	D	Ry2	
Secondary Fastenings	Missing	> 75%	B	Ry1	Yes
	Loose	> 75%	C	Ry1	Yes
	Loose / Missing	50% to 75%	D	Ry1	Yes
		25% to 49%	E	Ry2	
Bed or Bearing Plate HD Bolts	Missing / Broken	> 50%	D	Ry1	Yes
		≤ 50%	E	Ry2	
Bed Plate	Broken		D	Mxx	
Footings	Crack	> 5mm wide & 1 metre long	C	Ry2	Yes
		3-5mm wide & < 1 metre	E	Mxx	Yes

Authorised for issue



Michael Wright

Principal Track & Civil Engineer