

The successful delivery of the largest rigid pavement program undertaken by TfNSW (nee RMS)

Woolgoolga to Ballina Pacific Highway upgrade

ASCP Forum | 14th July 2020


PACIFIC
COMPLETE





Woolgoolga to Ballina

Michael Heathwood

Pavements Lead | Pacific Complete

An aerial photograph of a highway interchange with multiple lanes and ramps. A semi-transparent dark grey rectangular box is overlaid on the top left portion of the image, containing the title and a bulleted list. A thin red horizontal line is visible at the very top of the image, above the grey box.

Woolgoolga to Ballina

- **The Project**
- **The Delivery Partner**
- **Strategies for Success**
- **Quality of Product**



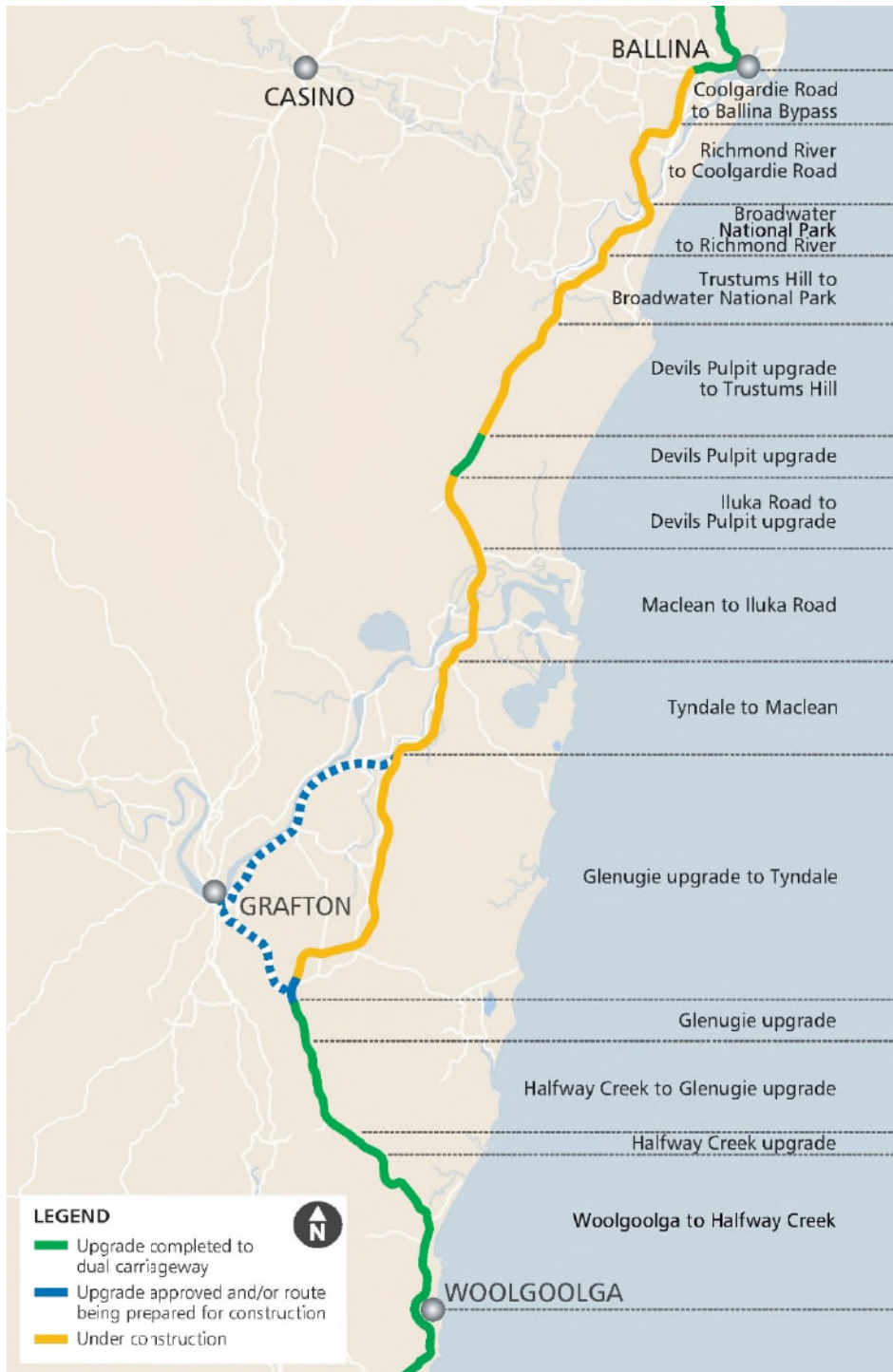
The Project

Woolgoolga to Ballina



#Woolgoolga2Ballina





Woolgoolga to Ballina



Final link



Our legacy



Delivery partner model

Woolgoolga to Ballina
Pacific Highway upgrade

Woolgoolga to Ballina



155km dual carriageway highway

170 bridges

Nine interchanges

Bypasses 5 towns

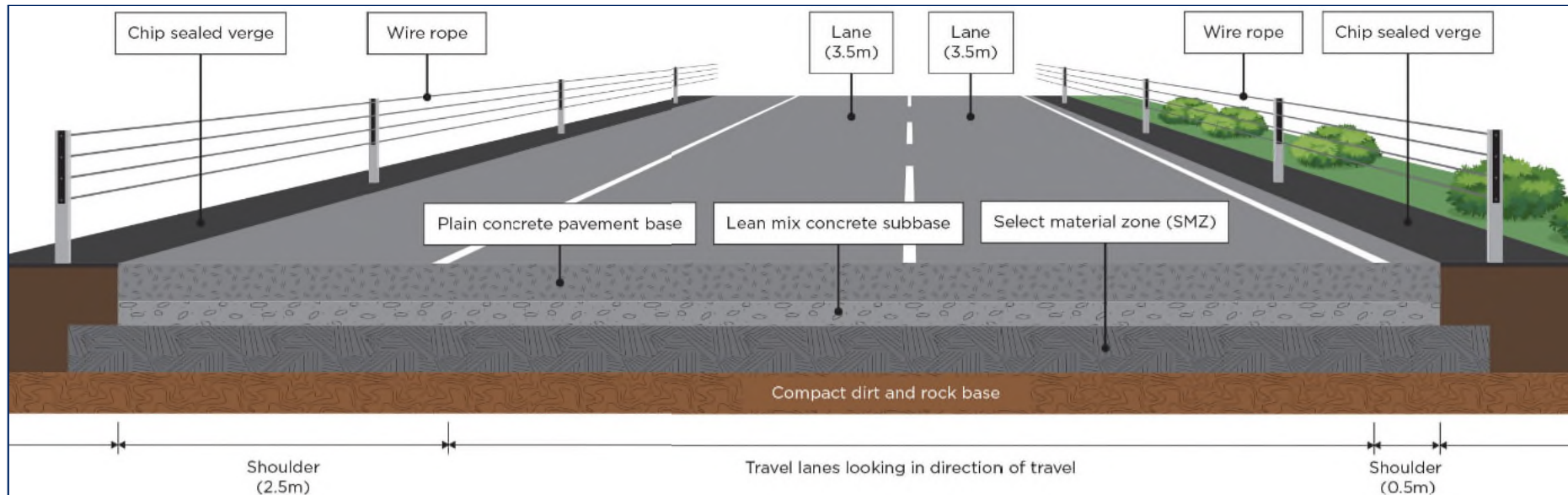
14.2 million cubic metres of earthwork

About 3,500 peak employment

Scope



- 78% of the mainline is rigid pavement (PCP)
- Standard RMS embankment with 150mm LCS and 250mm PCP



Portion of work	LMC + PCP (m3)
A – Glenugie to Maclean	310,000
C – Maclean to Richmond River	360,000
D – Richmond River to Ballina Bypass	80,000



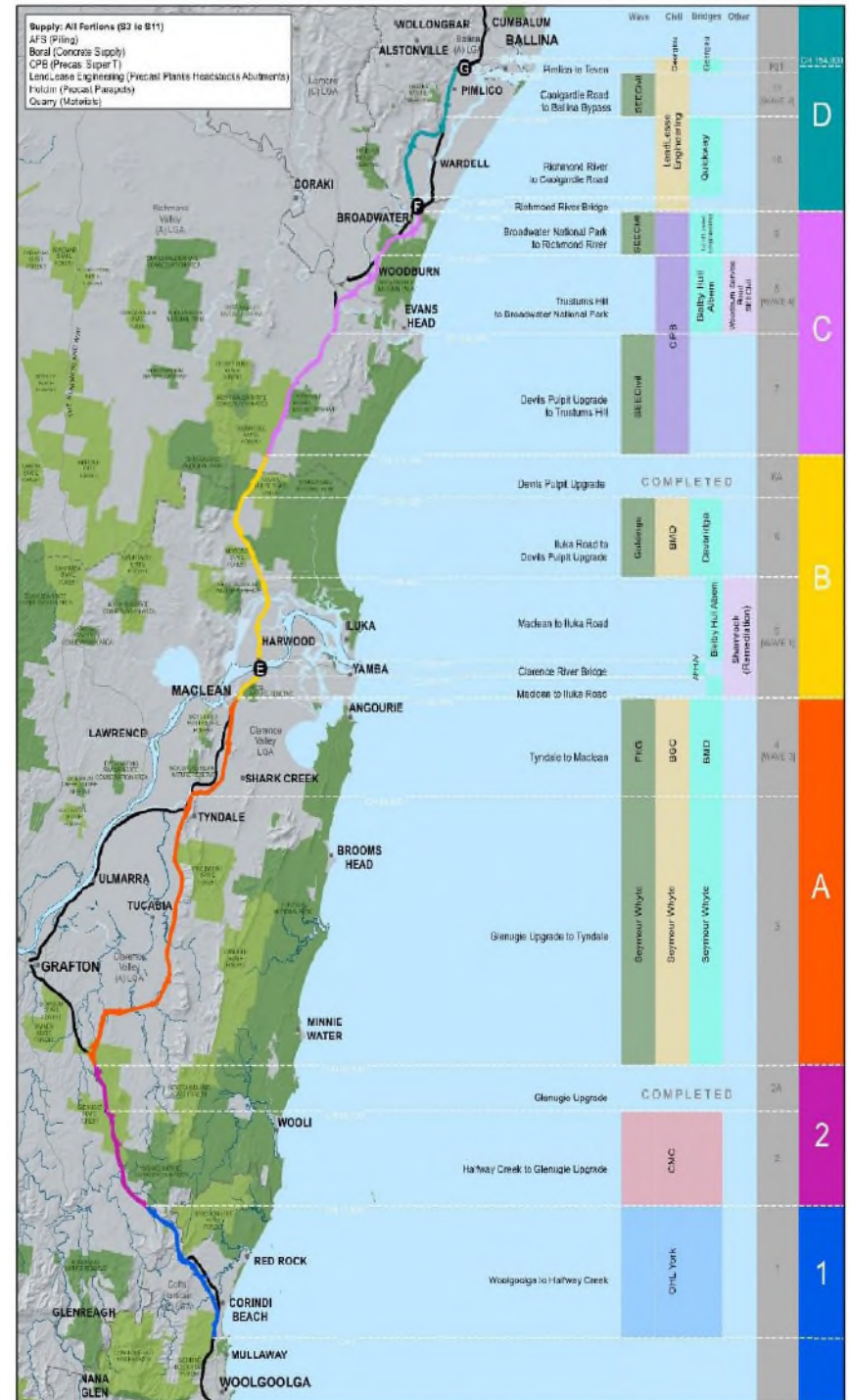
The Delivery Partner

Pacific Complete

Our goal: “driven to save lives”

As Australia’s first delivery partner, we are working with stakeholders at an unprecedented scale and pace to successfully deliver the final link in the Pacific Highway upgrade. This is our legacy.

... Pacific Complete Programme Leadership Team



Pacific Complete

- Pacific Complete - Who is it? What is it? Why?





Strategies for success

- **Materials Supply Agreements**
- **Laboratory establishment**
- **Concrete Mix consistency**

Strategies employed for Success

Materials Supply Agreements – Quarries



Laboratory establishment



Concrete Mix consistency



Materials Supply Agreements - Quarries

Executed through supply deeds

- ✓ Dedicated resources
- ✓ Made and stockpiled ahead of schedule
- ✓ DA approvals for movements adequate to meet demand

Quality of materials

- ✓ Contractor to manage



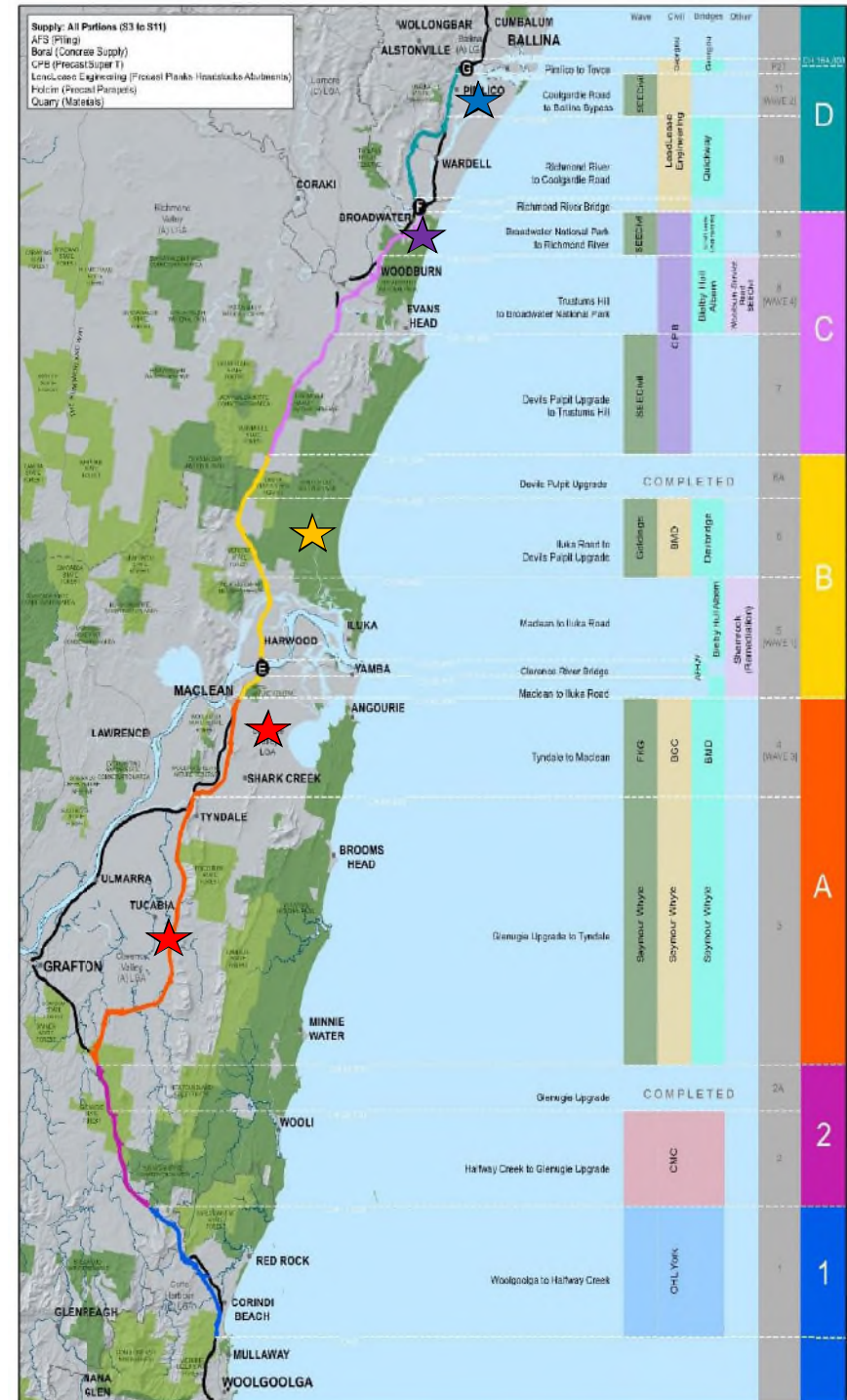
Laboratory establishment

Portion Wide Laboratory Establishment

- ✓ All contractors in that Portion used that specific laboratory for testing
- ✓ List of tests and cost per test procured separately

Challenges

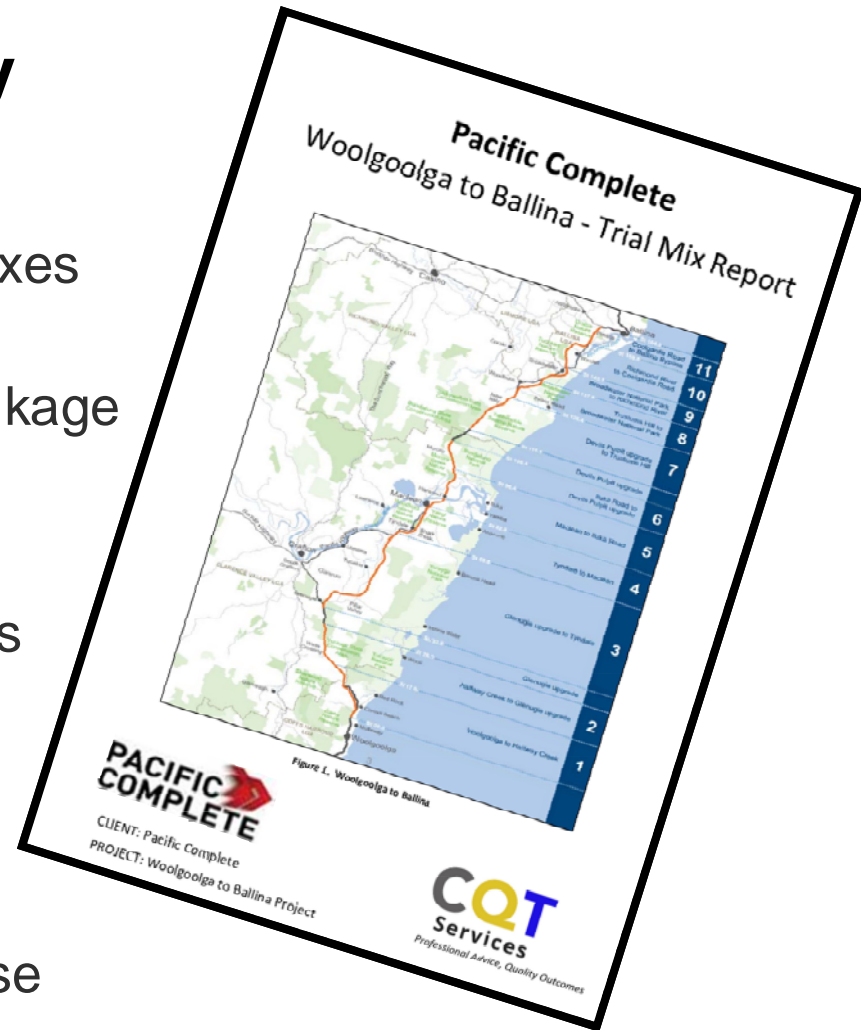
- ✓ Different approach to “Primary Testing”
- ✓ Clear definitions required around testing involved in each specification



Concrete mix consistency

Pacific Complete conducted 22 trial mixes during the course of the project

- ✓ Focus on minimizing the drying shrinkage
 - ✓ Workability, coarseness, grading characteristics → Slip-formability?
 - ✓ Box testing and Kelly Ball testing was additionally done
-
- Results of the trials confirmed the aggregates selected during the MSA procurement would be suitable for use
 - Subject to mix designs being conducted by the Contractors to suit the individual equipment



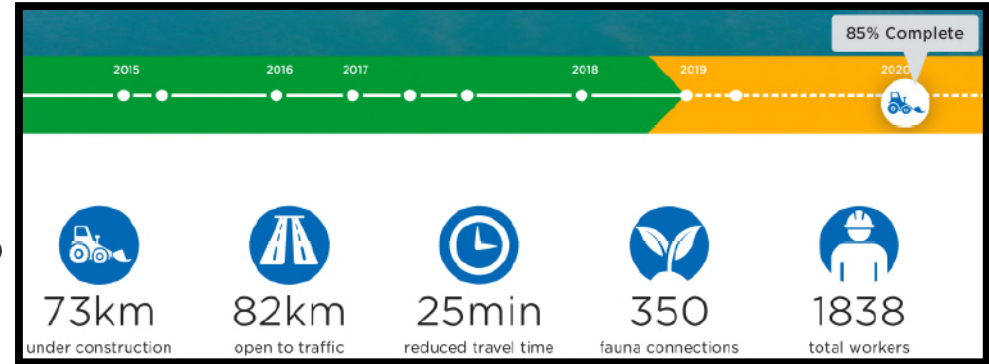


Quality of Product

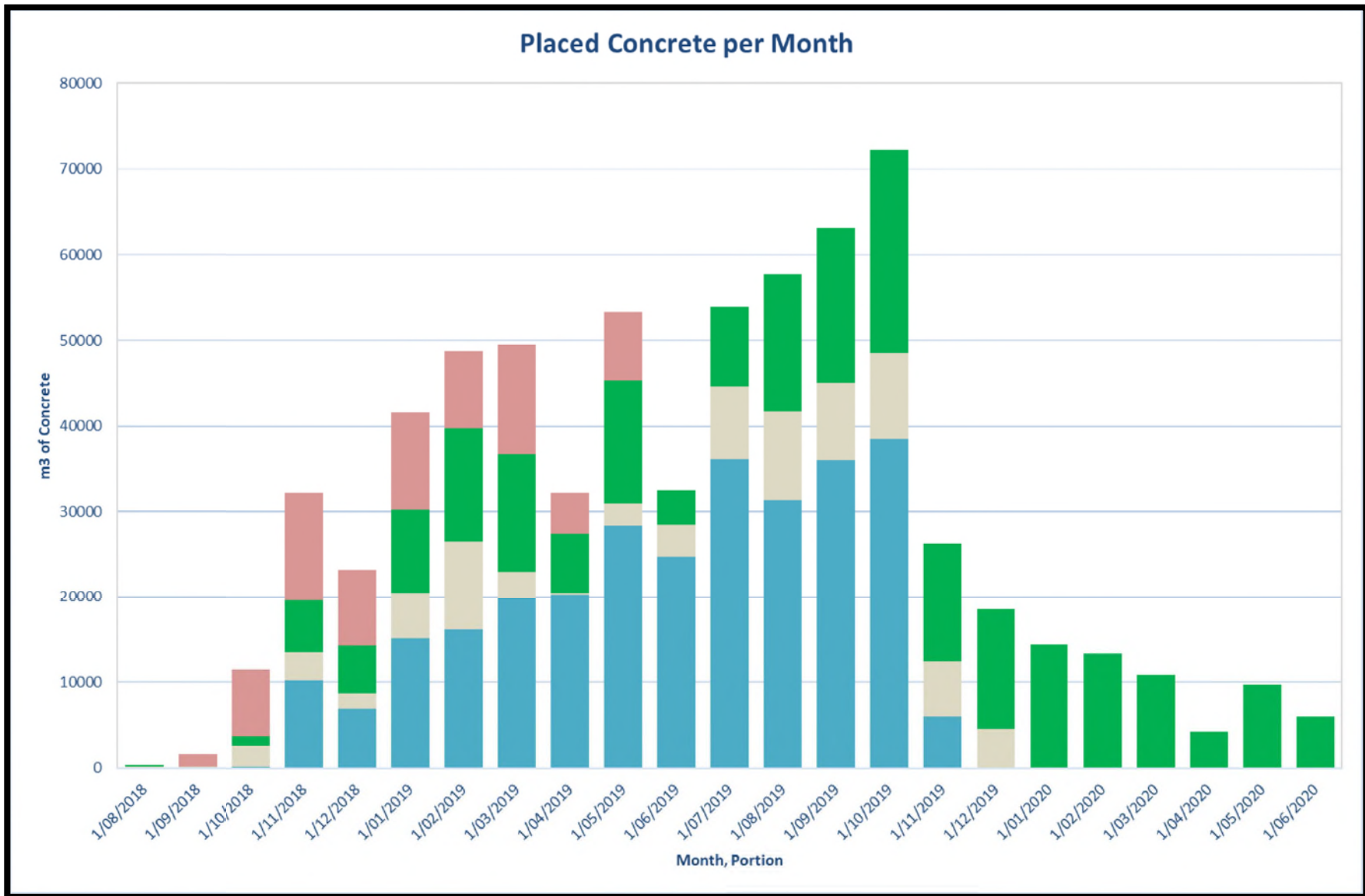
- Production Numbers
- Ride
- Bridge deck pavement

Program completion

- The construction program is 85% complete
 - 95% earthworks complete
 - 92% Concrete pavements complete
- There is in the order of:
 - 60,000 WAE drawings
 - 650,000 documents to be transmitted
 - 274 Property Adjustment plans
- Asset transfer workshops planned → 48



Production Numbers – Concrete pavement



Ride

The ride testing data is showing that across the program the contractors are all achieving outcomes of between 20-35 NAASRA bump counts and only small areas of base concrete being diamond ground for adverse ride or poor surface texture finish following 'imminent' rain ...

W2B has excellent riding quality

Bridge deck pavements

Innovation through design phase

- Apply R93 to bridge decks ...
- Needed to develop 'specific' bridge drawings
- 9 twin bridges diamond ground with Conventional Diamond Grinding
- Excellent results, especially for ride.

(slow) Lane 2 Pre

WHEELPATH		LEFT	RIGHT	AVG	LEFT	RIGHT	AVG	LEFT	RIGHT	AVG	LANE AVG	STANDARD DEVIATION	CV %	NAASRA
CHAINAGE		RUN 1			RUN 2			RUN 3			T188 REPORTABLE DATA			T187
FROM	TO													
0	10	3.04	2.70	2.87	3.07	2.69	2.88	3.11	2.71	2.91	2.89	0.03	1	75
10	20	1.99	3.13	2.56	1.89	3.20	2.54	1.96	3.11	2.54	2.55	0.02	1	66
20	30	2.57	2.54	2.55	2.48	2.69	2.59	2.60	2.54	2.57	2.57	0.02	1	67
30	40	3.12	1.85	2.49	3.08	1.81	2.50	3.16	1.83	2.49	2.49	0.01	0	65
40	50	2.96	2.64	2.80	3.11	2.84	2.97	3.09	2.81	2.95	2.91	0.13	5	76
50	60	5.61	5.43	5.52	5.71	5.34	5.52	5.81	5.29	5.55	5.53	0.02	0	145
AVG IRI											3.16	AVG NAASRA		82

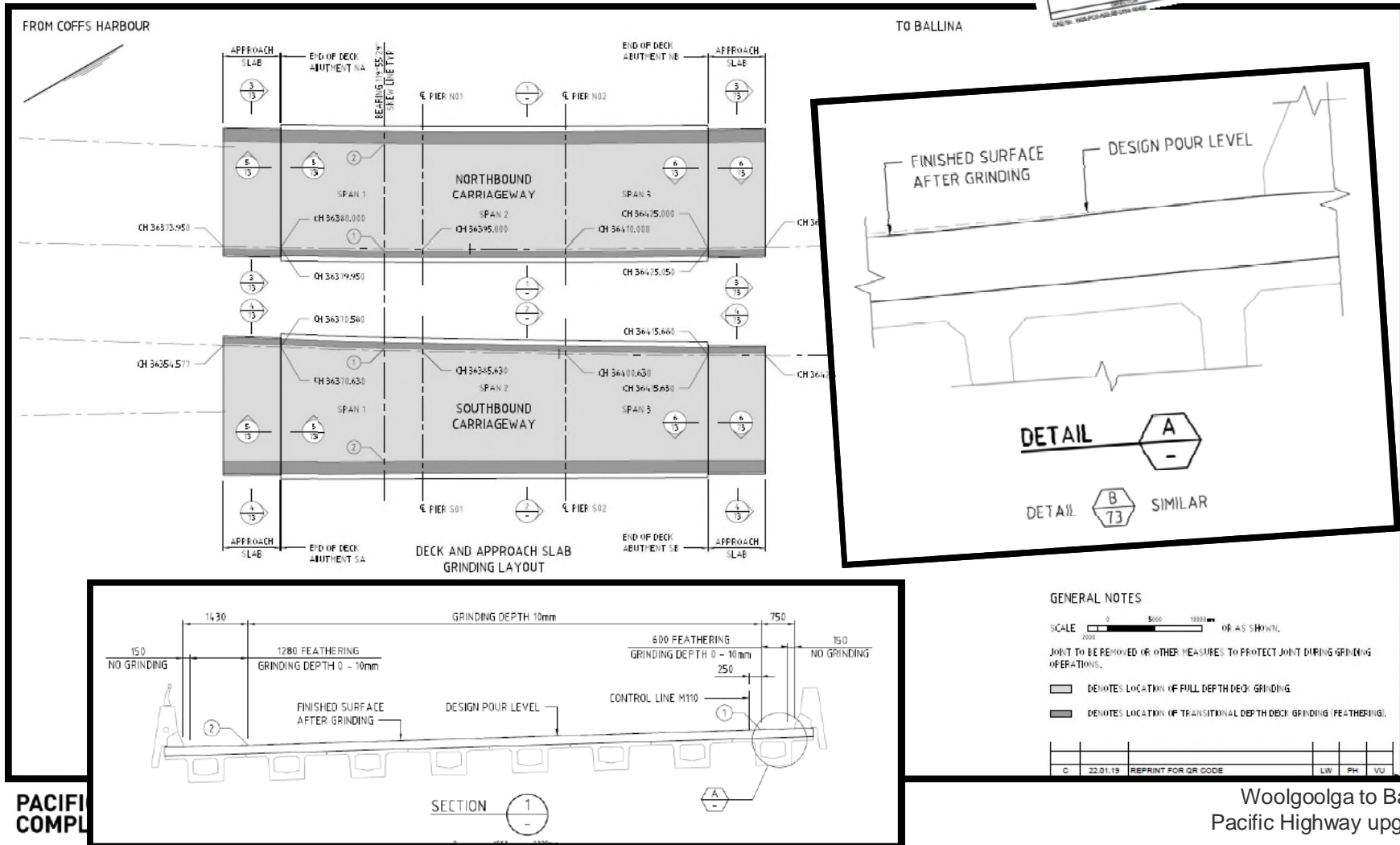
(slow) Lane 2 Post

WHEELPATH		LEFT	RIGHT	AVG	LEFT	RIGHT	AVG	LEFT	RIGHT	AVG	LANE AVG	STANDARD DEVIATION	CV %	NAASRA
CHAINAGE		RUN 1			RUN 2			RUN 3			T188 REPORTABLE DATA			T187
FROM	TO													
0	10	1.27	1.12	1.20	0.47	0.49	0.48	0.35	0.41	0.38	0.69	0.63	91	17
10	20	1.04	0.73	0.89	0.70	0.70	0.70	1.01	0.64	0.83	0.80	0.13	17	20
20	30	0.27	0.30	0.29	0.26	0.39	0.33	0.22	0.39	0.31	0.31	0.03	10	7
30	40	0.31	0.31	0.31	0.34	0.17	0.25	0.32	0.20	0.26	0.28	0.05	17	6
40	50	0.32	0.16	0.24	0.36	0.17	0.27	0.34	0.17	0.26	0.25	0.02	9	5
50	60	1.48	0.71	1.09	1.31	1.00	1.15	0.88	0.86	0.87	1.04	0.21	20	26
AVG IRI											0.56	AVG NAASRA		14

Bridge deck pavements

Apply R93 to bridge decks ... but ... must develop 'specific' bridge drawings

C	22.01.19	REPRINT FOR QR CODE	LW	DK	PH
B	15.10.18	REMOVAL OF STEP AT WINDED PLANKS	DPF	CH	JUTH
A	27.04.18	ISSUED FOR CONSTRUCTION	CLARENCE VALLEY COUNCIL		
ISSUE	DATE	REVISED	HIGHWAY No 10		
TWIN BRIDGES ON HW10 OVER PHEASANT CREEK					
AT 70.2km NORTH OF COFFS HARBOUR					
GRINDING DETAILS - SHEET A					
PACIFIC COMPLETE		CLIENT	Transport Roads & Maritime Services		
PREPARED	CHECKED	REGISTRATION No OF PLANS	DS2016/000693		
DESIGN D. Knight	P. Hamney	BRIDGE NUMBER	B11788/B11789		
DRAWING L. Walley	S. Goodberg	ISSUE STATUS:	FOR CONSTRUCTION		
APPROVED	DESIGN QA RECORDER	SHEET No	72	ISSUE	C



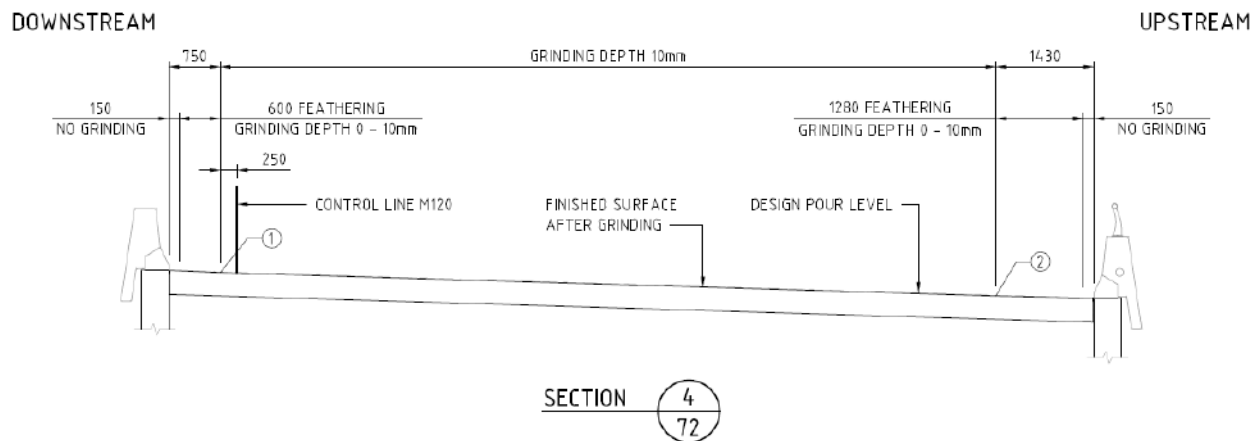
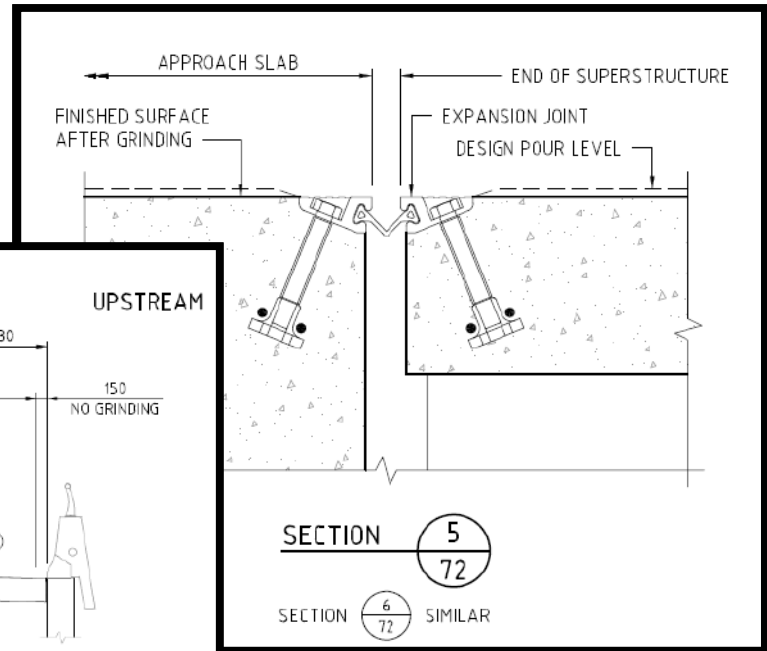
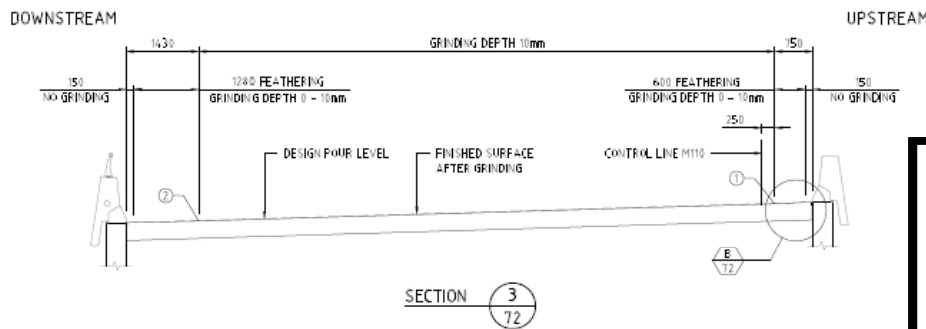
PACIFIC COMPL

Woolgoolga to Ballina Pacific Highway upgrade

Bridge deck pavements

Apply R93 to bridge decks ... but ... must develop 'specific' bridge drawings

C	22.01.18	REPRINT FOR QR CODE	UN	PREP. CHR. JAD
B	18.10.18	REMOVAL OF STEP AT WINGED PLANKS	CLARENCE VALLEY COUNCIL	
A	27.04.18	ISSUED FOR CONSTRUCTION	CLARENCE VALLEY COUNCIL	
ISSUE	DATE	REVISION	PROJECT	
HIGHWAY No 10		TWIN BRIDGES ON HW10 OVER PHEASANT CREEK AT 70.2km NORTH OF COFFS HARBOUR		
GRINDING DETAILS - SHEET B		CUBIT		
PACIFIC COMPLETE		NSW GOVERNMENT Transport Roads & Maritime Services		
PREPARED	CHECKED	REGISTRATION No OF PLANS DS2016/000693		
DESIGN D.Knight	P.Hamey	BRIDGE NUMBER	B11788/B11789	
DRAWING L.Walley	S.Goodberg	ISSUE STATUS:	FOR CONSTRUCTION	
APPROVED	DESIGN QR RECORDS	SHEET No	73	
		ISSUE	C	



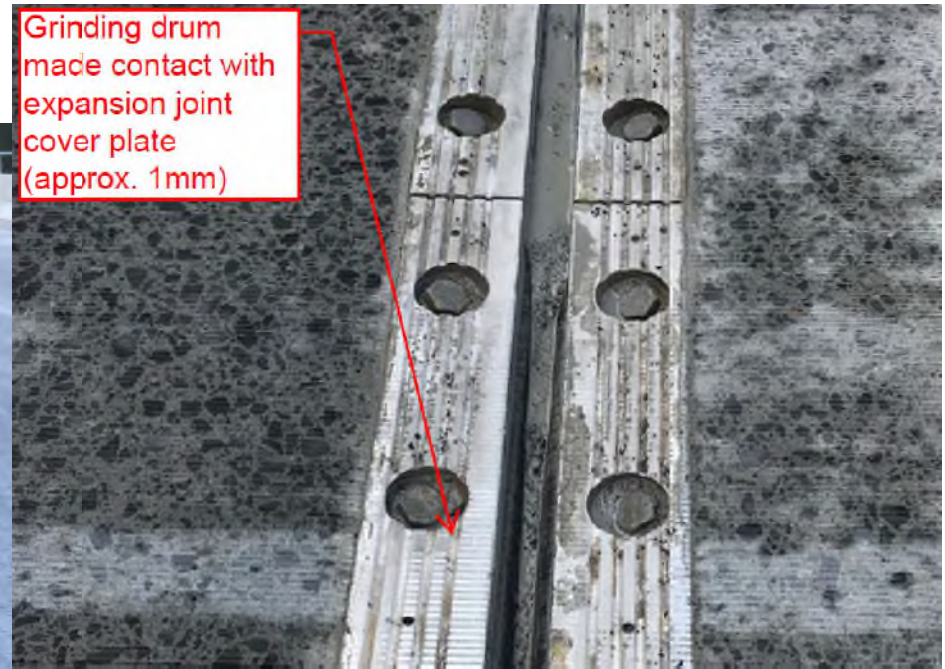
	36379.950	503200.625	6705291.067	24.976	24.636			36370.560	503209.902	6705286.041	24.962	24.612
END OF SUPERSTRUCTURE ABUTMENT NA	36380.000	503200.650	6705291.310	24.978	24.637			36370.630	503209.928	6705286.084	24.962	24.612
SPAN 1	36387.500	503204.653	6705291.774	25.035	24.695			36378.130	503213.847	6705292.482	25.034	24.676
CJ	36393.700	503207.178	6705303.129	25.082	24.742			36384.330	503217.158	6705297.162	25.086	24.729

GENERAL NOTES

SCALE 0 1000 2000mm OR AS SHOWN.

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 72.

Bridge deck pavements





Thanks – Q's & maybe A's?