

# Department of State Growth

## STANDARDISED BRIDGE DESIGN

### PRECAST PLANK UNITS

<b>DRAWING LIST</b>		
NUMBER	REVISION	DRAWING
SD-51.001	01	COVER SHEET AND DRAWING LIST
SD-51.002	01	GENERAL NOTES
SD-51.003	00	INSITU KERB AND BARRIER DETAILS (REGULAR)
SD-51.004	00	INSITU KERB AND BARRIER DETAILS (LOW)
SD-51.005	00	REGULAR BARRIER TRANSITION DETAILS
SD-51.006	01	8m PSC PLANK UNIT GENERAL ARRANGEMENT PLANS AND SECTIONS
SD-51.007	02	8m PSC PLANK UNIT TYPICAL REINFORCING DETAILS
SD-51.008	01	10m PSC PLANK UNIT GENERAL ARRANGEMENT PLANS AND SECTIONS
SD-51.009	02	10m PSC PLANK UNIT TYPICAL REINFORCING DETAILS
SD-51.010	01	12m PSC PLANK UNIT GENERAL ARRANGEMENT PLANS AND SECTIONS
SD-51.011	02	12m PSC PLANK UNIT TYPICAL REINFORCING DETAILS
SD-51.012	01	14m PSC PLANK UNIT GENERAL ARRANGEMENT PLANS AND SECTIONS
SD-51.013	02	14m PSC PLANK UNIT TYPICAL REINFORCING DETAILS
SD-51.014	01	16m PSC PLANK UNIT GENERAL ARRANGEMENT PLANS AND SECTIONS
SD-51.015	02	16m PSC PLANK UNIT TYPICAL REINFORCING DETAILS

DRAWING SD-51.001.dwg

01	DRAWING LIST UPDATED	MP (P&S)	05/08/2019				
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019				
No.	Amendment Description	Initials	Date				
A3 original	This sheet may be prepared using colour and may be incomplete if copied						

DRAWN:  
... W. CLARKSON (P&S) .....

REVIEWED:  
... R. CASSIDY (P&S) .....

APPROVED:  
... A. PERCY (STATE GROWTH)  
ASSET ENGINEER BRIDGES .....



**Department of State Growth**

STANDARDISED BRIDGE DESIGN  
PRECAST PLANK UNITS

COVER SHEET AND DRAWING LIST

**DO NOT SCALE**

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STANDARD DRAWING NUMBER	
<b>SD-51.001</b>	<b>01</b>

**GENERAL NOTES**

1. CONTRACTOR SHALL CONFIRM ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART BE OVERSTRESSED DURING CONSTRUCTION ACTIVITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY WORKS. WORKMANSHIP & MATERIALS ARE TO BE IN ACCORDANCE WITH (IN ORDER OF PRECEDENCE) THE PROJECT SPECIFICATION, THE DRAWINGS, DSG STANDARD SPECIFICATIONS AND THE BRIDGE DESIGN CODE **AS5100:2017**.
4. THE CONTRACTOR SHALL ONLY BUILD FROM DRAWINGS WITH STATUS OF "FOR CONSTRUCTION". DRAWINGS HAVING ANY OTHER STATUS, INCLUDING "WORK IN PROGRESS" AND "FOR APPROVAL", MAY BE SUBJECT TO CHANGE.
5. U.N.O. DENOTES UNLESS NOTED OTHERWISE.
6. C.O.S. DENOTES CONFIRM ON SITE.

**DESIGN SPECIFICATIONS**

1. BRIDGE DESIGN STANDARD : AS5100-2017
2. DESIGN LOADS : SM1600 - 50% PER PLANK  
: HLP400 - 33% PER PLANK
3. DESIGN SPEED : VARIES
4. BARRIER PERFORMANCE LEVEL : LOW OR REGULAR
5. CONCRETE UNIT WEIGHT (INCLUDING REBAR) : 26.5 kN/m³
6. EXPOSURE CLASSIFICATION : VARIES

**DIMENSIONS**

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. REDUCED LEVELS, CHAINAGES & COORDINATES ARE ALL IN METRES. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM.
3. DIMENSIONS SHALL NOT BE SCALED FROM DRAWINGS.
4. ANY DISCREPANCIES SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE DESIGNER.
5. ALL CHAINAGES REFER TO THE ROAD DESIGN LINE AND ARE IN METRES.

**CHAMFERS AND FILLETS**

1. UNLESS NOTED OTHERWISE, ALL EXPOSED CONCRETE EDGES HAVING A CONTAINED ANGLE LESS THAN 120° SHALL BE PROVIDED WITH 20mm FILLETS OR CHAMFERS AS APPROPRIATE.

**CONSTRUCTION JOINTS**

1. CJ DENOTES CONSTRUCTION JOINT
2. EJ DENOTES EXPANSION JOINT
3. CONSTRUCTION JOINTS SHALL BE USED ONLY AS SHOWN ON THE DRAWINGS.
4. NO CONSTRUCTION JOINTS SHOWN ON THE DRAWINGS SHALL BE OMITTED WITHOUT THE WRITTEN APPROVAL OF THE DESIGNERS.
5. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER. CONTRACTORS SHALL ALLOW FOR ALL NECESSARY CONSTRUCTION JOINTS.
6. CONSTRUCTION JOINT SURFACE SHALL BE PREPARED IN ACCORDANCE WITH DSG STANDARD SECTION 610.20

**GENERAL LIMITATIONS OF STANDARD DESIGNS**

1. REFER TO THE STANDARD DESIGN GUIDE REPORT FOR FURTHER INFORMATION REGARDING SPECIFIC HYDRAULIC, GEOTECHNICAL AND SEISMIC DESIGN REQUIREMENTS
2. THESE STANDARDISED DESIGNS SHALL BE CONSTRUCTED WITH A CERTIFIED SUBSTRUCTURE THAT HAS BEEN DESIGNED TO SUIT THE TASMANIAN IN-SITU CONDITIONS
3. THE PRECAST PLANK CERTIFICATION REMAINS VALID ONLY WHEN THE PLANKS HAVE BEEN USED FOR THEIR INTENDED PURPOSE, UNMODIFIED AND IN ACCORDANCE WITH THESE DRAWINGS, THE DESIGN GUIDE, DSG SPECIFICATIONS AND **AS5100:2017**

**REINFORCEMENT**

1. ALL REINFORCEMENT IS DESIGNATED AS FOLLOWS UNLESS IT IS DESCRIBED FULLY IN ACCORDANCE WITH **AS4671** SECTION 5.  

SYMBOL	DESCRIPTION	TYPE TO <b>AS4671</b>
SL	MESH-SQUARE GRID	D500L
RL	MESH-RECTANGULAR GRID	D500L
R	PLAIN BARS	R250N
S	DEFORMED BARS	D250N
N	DEFORMED BARS	D500N
2. ALL REINFORCEMENT IS DESIGNATED AS FOLLOWS:  
 e.g. 8-N12-150 T
  - THE NUMBER PRECEDING THE BAR SYMBOL (8) IS THE NUMBER OF BARS
  - THE NUMBER FOLLOWING THE BAR SYMBOL (12) IS THE NOMINAL BAR DIAMETER IN MILLIMETRES
  - THE NUMBER FOLLOWING THE 'DASH' (150) IS THE SPACING IN MILLIMETRES
  - THE LETTER FOLLOWING THE SPACING (T) IS THE LOCATION OF THE BAR IN THE ELEMENT AS FOLLOWS:

T	TOP
B	BOTTOM
NF	NEAR FACE
FF	FRONT FACE
EF	EACH FACE
LV	LENGTH VARIES

3. REINFORCEMENT SPACING NOT SHOWN SHALL BE TAKEN AS EQUAL.
4. REINFORCING BAR SHOWN ON THESE DRAWINGS ARE DIAGRAMMATIC ONLY. IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
5. BARS SHOWN MAY REPRESENT MORE THAN ONE LENGTH AND/OR PROFILE.
6. BARS MAY NOT BE SHOWN IN TRUE POSITION FOR CLARITY.
7. ALL HOOKS, BEND AND COGS ARE STANDARD AND SHALL BE IN ACCORDANCE WITH AS5100 BRIDGE DESIGN 2017 UNLESS NOTED OTHERWISE.
8. ALL REINFORCEMENT IS DIMENSIONED OUT-TO-OUT ALONG EACH STRAIGHT PORTION OF THE BAR.
9. WELDING OF REINFORCEMENT NOT PERMITTED UNLESS NOTED OTHERWISE.

**LAP LENGTHS FOR REINFORCEMENT**

1. LAPS AND OTHER SPLICES IN REINFORCEMENT SHALL ONLY BE MADE AT THE POSITION SHOWN ON THE DRAWINGS, UNLESS ALTERNATIVE OR EXTRA LOCATIONS ARE APPROVED IN WRITING BY THE DESIGNERS. LAP LENGTHS SHALL BE AS TABULATED BELOW UNLESS SHOWN OTHERWISE ON THE DRAWINGS:

BAR DIAMETER	MIN. LAP LENGTH
12	300
16	500
20	750
24	1000
28	1200
32	1500

(NOTE: THE MINIMUM LAP LENGTH SHOWN SHALL BE INCREASED BY 25% FOR HORIZONTAL BARS WITH 300mm OR MORE CONCRETE CAST BELOW THE BAR.)

2. REINFORCEMENT SPLICES SHALL BE STAGGERED AND NO MORE THAN 50% OF SPLICES SHALL BE AT ANY ONE SECTION UNLESS SHOWN OTHERWISE.
3. WHERE MORE THAN HALF THE BARS ARE SPLICED AT ANY ONE SECTION, THE SPLICE LENGTHS SHALL BE INCREASED BY 30%.

**CONCRETE**

1. CONCRETE BLINDING LAYERS SHALL BE MINIMUM 50 THICK.
2. MAXIMUM AGGREGATE SIZE SHALL BE 20mm, UNLESS NOTED OTHERWISE.
3. CONCRETE TO BE USED IN EACH ELEMENT OF THE WORK SHALL BE OF THE GRADE SHOWN BELOW UNLESS NOTED OTHERWISE ON THE DRAWINGS. THE GRADE DESIGNATION SPECIFIES THE CONCRETE STRENGTH.
4. EXPOSURE CLASSIFICATION VARIES. STANDARDISED DESIGNS INCLUDE A1, A2, B1, B2, C1 & C2 CLASSIFICATIONS

ELEMENT	CONCRETE GRADE	CHARACTERISTIC COMP. STRENGTH AT 28 DAYS (MPa)	EXPOSURE CLASSIFICATION	MIN COVER (mm)
PRECAST BEAMS	VR 450/50	50		REFER BELOW
			A1	30
			A2	30
			B1	30
			B2	40
			C1	65
			C2	75

5. CONCRETE TO BE COMPACTED AND CURED IN ACCORDANCE WITH **AS5100.5** SECTION 4. MEMBERS TO BE USED IN EXPOSURE CLASSIFICATIONS C1 OR C2 REQUIRE 14 DAYS CURING. CLASSIFICATIONS A1/A2/B1/B2 REQUIRE 7 DAYS CURING.
6. THE CONCRETE MIX USED IN THIS STANDARDISED DESIGN DOES NOT INCLUDE ANY ADMIXTURES. NO ADMIXTURES SHALL BE ADDED UNLESS APPROVED AND CERTIFIED BY THE DESIGNER.

**STRUCTURAL STEELWORK**

1. ALL WORKMANSHIP AND MATERIALS SHALL BE ACCORDANCE WITH **AS5100**.
2. WELDING SHALL BE PERFORMED BY A QUALIFIED OPERATOR IN ACCORDANCE WITH **AS1554**.
3. STRUCTURAL STEEL SHALL BE GRADE 300, UNLESS NOTED OTHERWISE.
4. BOLTS AND NUTS TO **AS1252** GRADE 8.8/S UNLESS NOTED OTHERWISE. WASHERS TO **AS1237**.
5. STEEL PLATE SHALL BE GRADE 300 & COMPLY WITH **AS3678**, UNLESS NOTED OTHERWISE.
6. SHS, RHS & CHS SHALL BE GRADE 350 AND COMPLY WITH **AS1163**, UNLESS NOTED OTHERWISE.
7. ALL BOLTS, NUTS & WASHERS TO BE HOT DIPPED GALV.
8. ALL WELDS TO BE 6mm CONTINUOUS FILLET WELDS UNLESS NOTED OTHERWISE.
9. ALL STEELWORK SHALL BE HOT DIPPED GALV AFTER FABRICATION.
10. GALVANIZING SHALL COMPLY WITH **AS/NZS4680**.
11. WELDING SHALL BE CATEGORY SP WITH E49XX ELECTRODES TO COMPLY WITH **AS/NZS1554-PART 1**.
12. CAST-IN ANCHOR ASSEMBLY SHALL BE HOT-DIP GALVANIZED. AFTER ASSEMBLY GALVANIZED SURFACES SHALL BE RENOVATED WITH TWO PACK INORGANIC ZINC-RICH PRIMER.
13. BOLT TYPES SHALL BE AS FOLLOWS :
  - ALL BOLTS SHALL BE HOT DIP GALVANIZED TO **AS/NZS4680:1999 4.6/S**
  - COMMERCIAL BOLTS TO **AS1111**, SNUG TIGHTENED, 8.8/S
  - HIGH STRENGTH STRUCTURAL BOLTS, WITH BOLTS, NUTS AND HARDENED WASHER TO **AS5100.6 / AS1252:1996 8.8/TB**
  - HIGH STRENGTH STRUCTURAL BOLTS AS ABOVE, FULLY TENSIONED TO **AS5100.6** IN A BEARING TYPE JOINT.
  - 8.8/TF HIGH STRENGTH STRUCTURAL BOLTS AS ABOVE, FULLY TENSIONED TO **AS5100.6** IN A FRICTION TYPE JOINT AND U.N.O. WITH FAYING SURFACES LEFT UNCOATED.
14. SLOTTED HOLES AND WASHERS TO BE FABRICATED AND INSTALLED IN ACCORDANCE WITH **AS5100.6**
15. THE LENGTH OF A BOLT SHALL BE SUCH THAT AT LEAST ONE CLEAR THREAD SHOWS ABOVE THE NUT AND AT LEAST ONE THREAD PLUS THE THREAD RUN OUT IS CLEAR BENEATH THE NUT AFTER TIGHTENING. ONE FULL AND ONE HALF NUT MUST BE USED IN ORDER TO ACHIEVE A SOUND LOCKING MECHANISM TO PREVENT VIBRATION LOOSENING.



DRAWING SD-51.002.dwg

01	NOTES REVISED	MP (P&S)	05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		

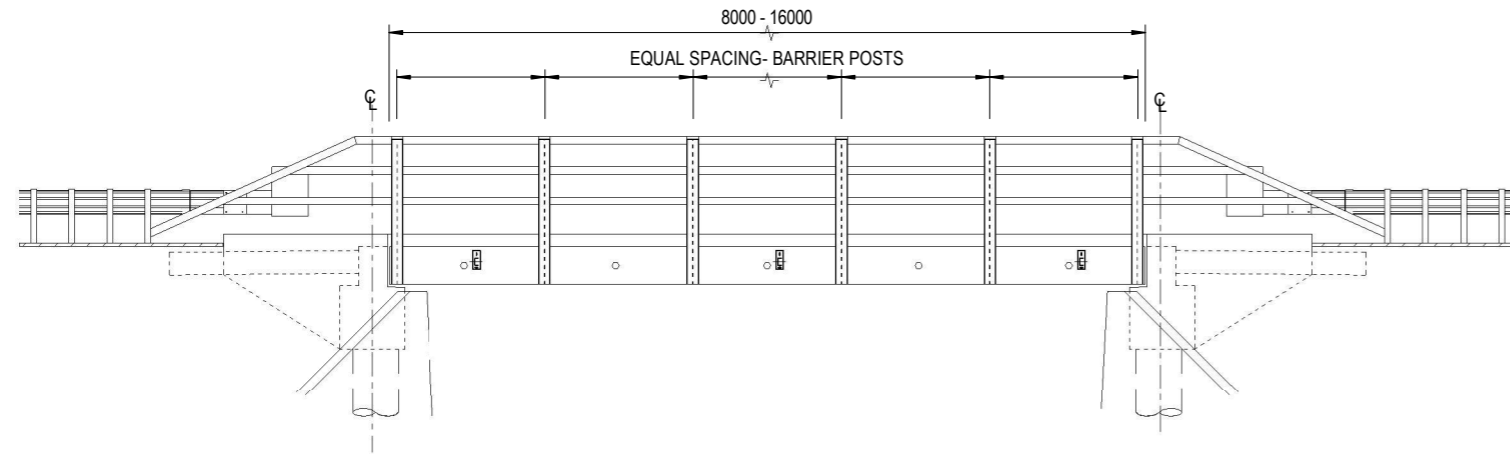
DRAWN:  
... W. CLARKSON (P&S) ...  
REVIEWED:  
... R. CASSIDY (P&S) ...  
APPROVED:  
... A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES ...



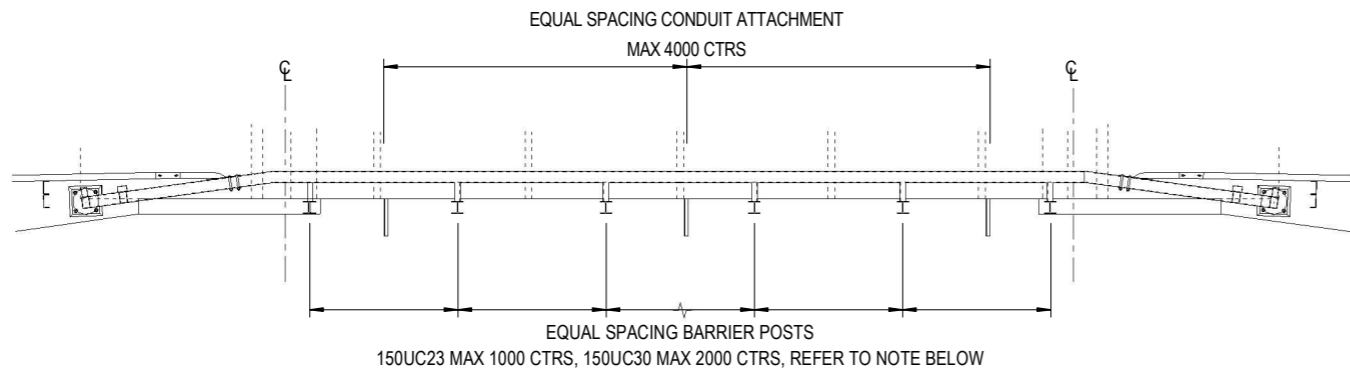
**Department of State Growth**  
STANDARDISED BRIDGE DESIGN  
PRECAST PLANK UNITS  
  
GENERAL NOTES

**DO NOT SCALE**  
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STANDARD DRAWING NUMBER <b>SD-51.002</b>	<b>01</b>
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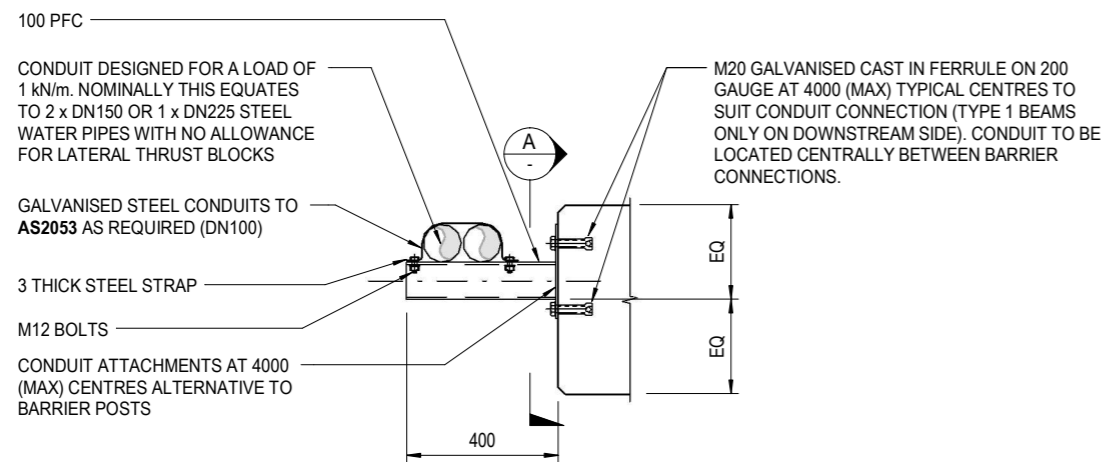


**TRAFFIC BARRIER ELEVATION - REGULAR**  
SCALE: 1 : 100



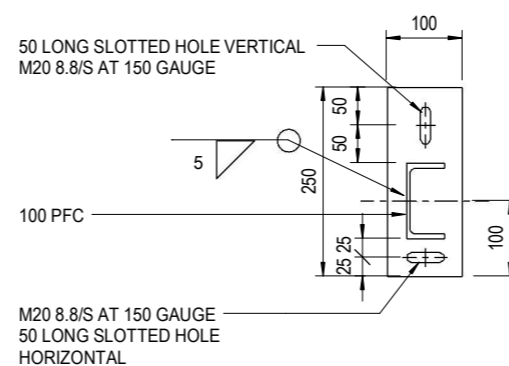
**TRAFFIC BARRIER PLAN (REGULAR)**  
SCALE: 1 : 100

150UC23 AT 1000 CTRS MAX. FOR 8m PLANK AND 10m PLANK EXPOSURE CLASSIFICATION C1/C2  
150UC30 AT 2000 CTRS MAX. FOR 10m PLANK A1/A2/B1/B2, 12m, 14m AND 16m PLANKS

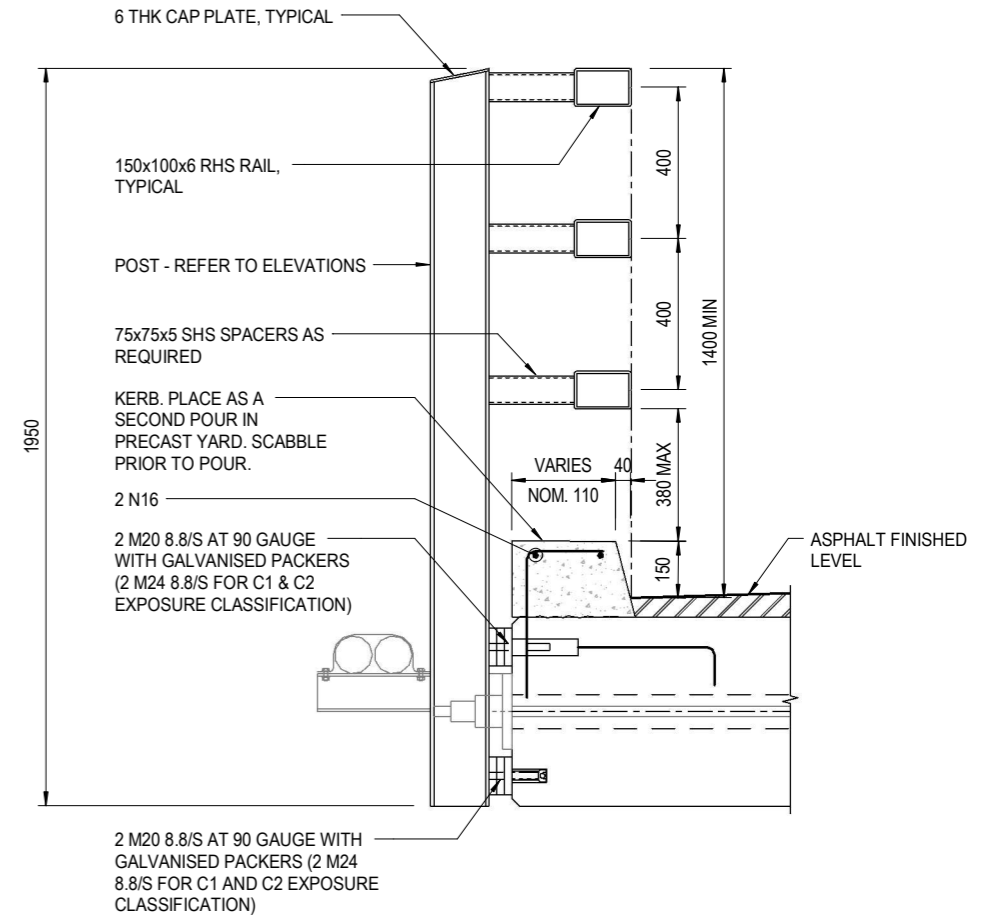


**CONDUIT ATTACHMENT SECTION - TYPICAL**  
SCALE: 1 : 20

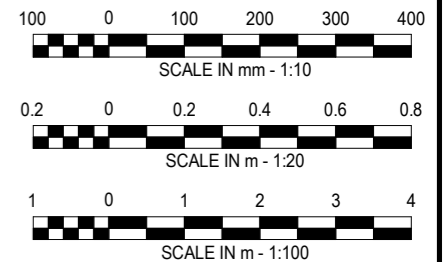
NOTE: TO BE CONSTRUCTED IF DESIRED BY THE ROAD OWNER



**DETAIL**  
1 : 10



**TRAFFIC BARRIER SECTION - TYPICAL (REGULAR)**  
SCALE: 1 : 20



**NOTES**

1. FOR GENERAL NOTES REFER TO SHEET 0001.

**STEELWORK**

1. (a) STEEL PLATES SHALL COMPLY WITH **AS3678** GRADE 250 UNLESS NOTED OTHERWISE.  
(b) STEEL RECTANGULAR HOLLOW SECTIONS SHALL COMPLY WITH **AS1163** GRADE 350.  
(c) STEEL HOT ROLLED ANGLES SHALL COMPLY WITH **AS/NZS3679.1** GRADE 300 PLUS.
2. BARRIER RAILING AND STEELWORK SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH **AS/NZS4680**.
3. GRADE 8.8 BOLTS, NUTS AND WASHERS TO **AS1252** GALVANIZED TO **AS/NZS4680** UNLESS NOTED OTHERWISE.
4. WELDING SHALL BE IN ACCORDANCE WITH **AS1554 - PART 1 SP**.
5. BARRIER POSTS SHALL BE ERECTED VERTICAL.

DRAWING SD-51.003.dwg

00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		

DRAWN:	W. CLARKSON (P&S)
REVIEWED:	R. CASSIDY (P&S)
APPROVED:	A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES



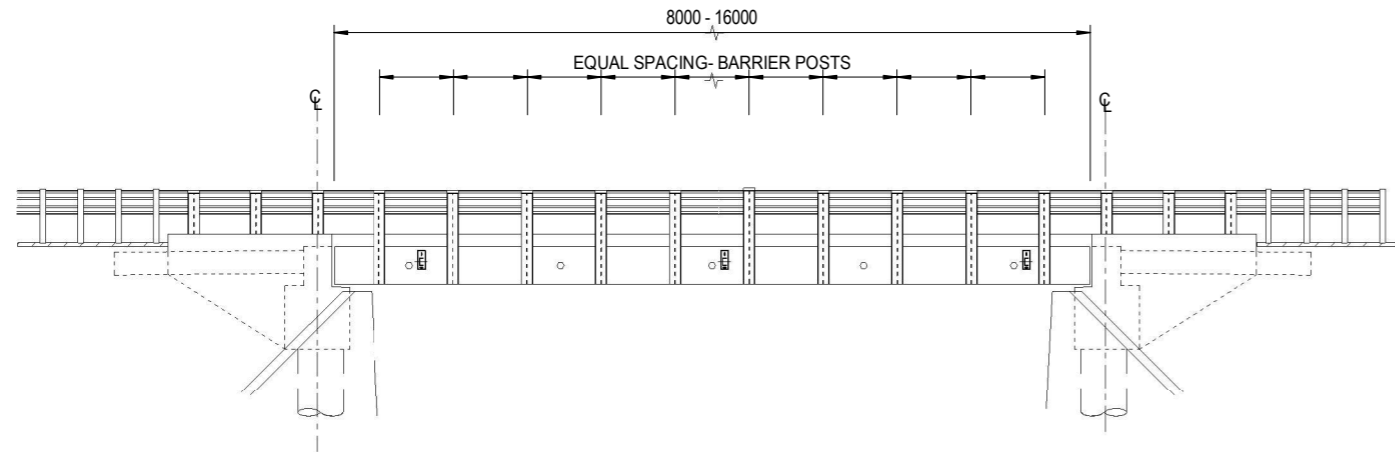
**Department of State Growth**  
STANDARDISED BRIDGE DESIGN  
PRECAST PLANK UNITS

**INSITU KERB AND BARRIER DETAILS (REGULAR)**

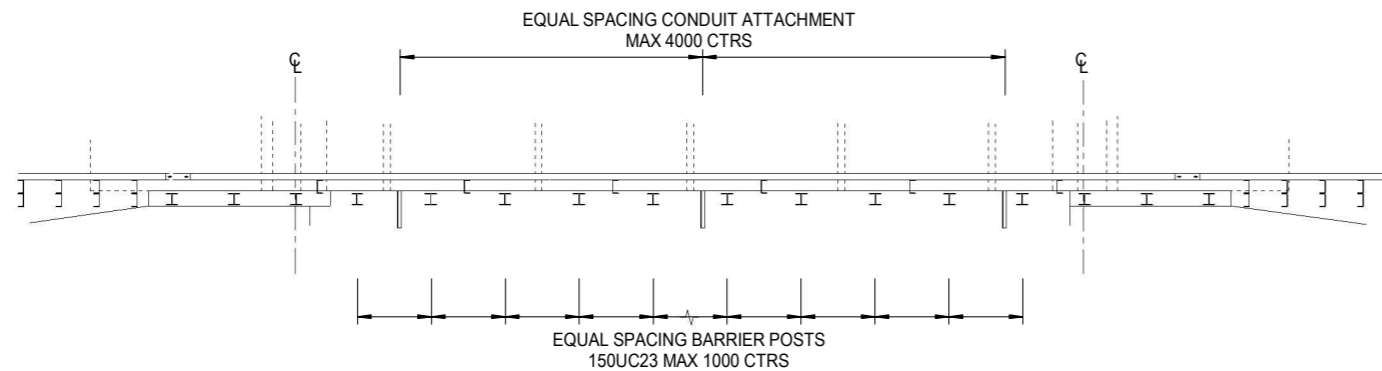
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STANDARD DRAWING NUMBER  
**SD-51.003**

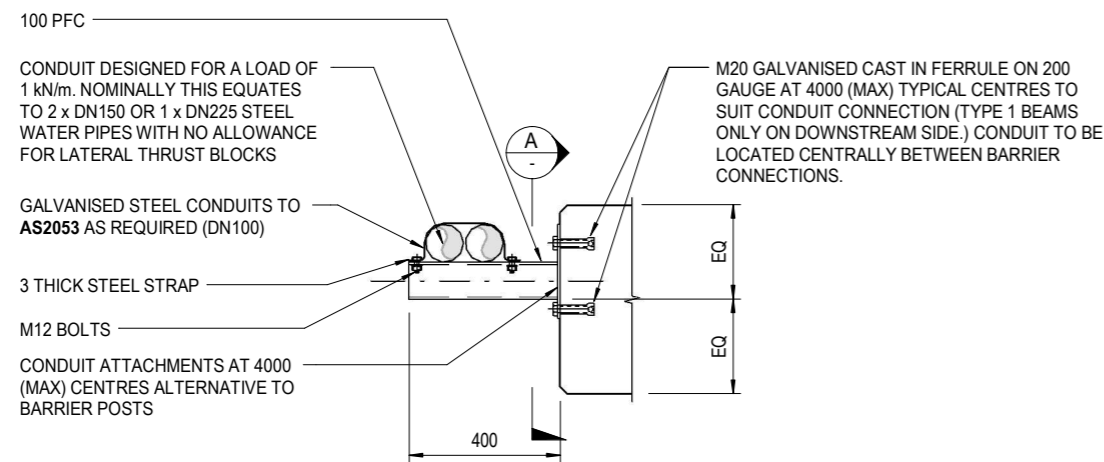
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**TRAFFIC BARRIER ELEVATION (LOW)**  
SCALE: 1 : 100

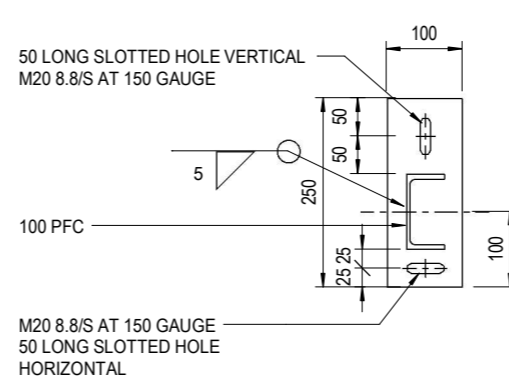


**TRAFFIC BARRIER PLAN (LOW)**  
SCALE: 1 : 100

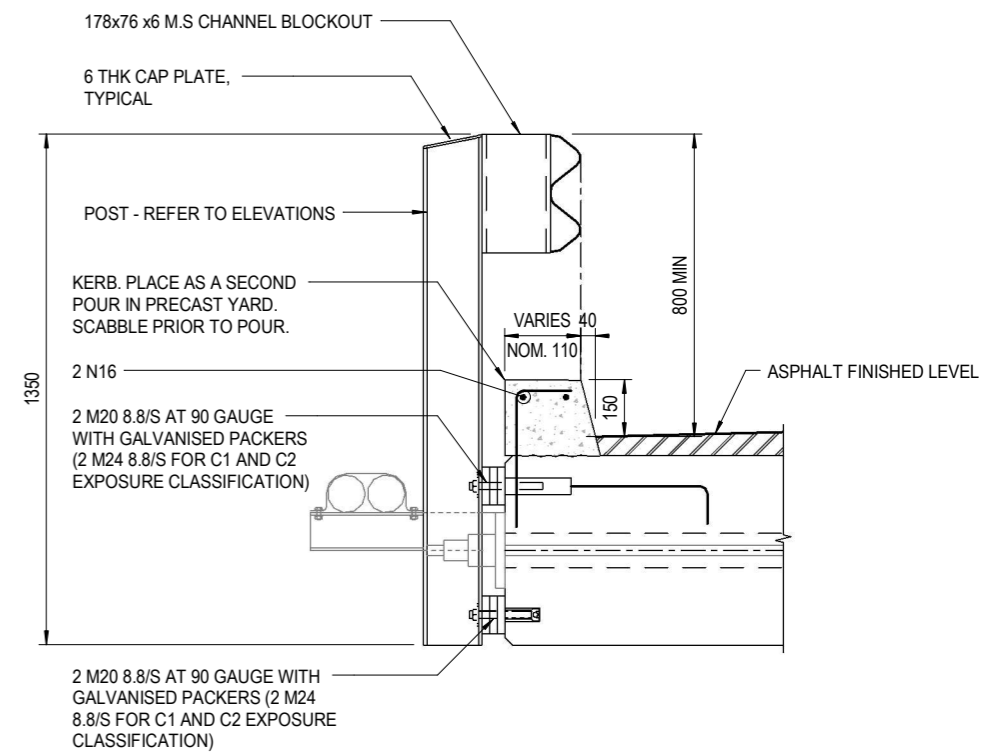


**CONDUIT ATTACHMENT SECTION - TYPICAL**  
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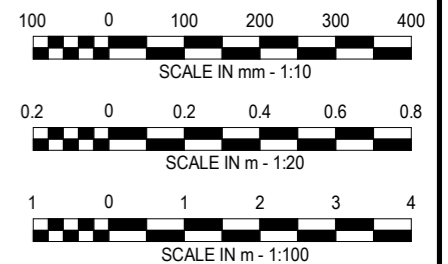
NOTE: TO BE CONSTRUCTED IF DESIRED BY THE ROAD OWNER



**DETAIL A**  
SCALE: 1 : 10



**TRAFFIC BARRIER SECTION - TYPICAL (LOW)**  
SCALE: 1 : 20



**NOTES**

1. FOR GENERAL NOTES REFER TO SHEET 0001.

**STEELWORK**

1. (a) STEEL PLATES SHALL COMPLY WITH **AS3678** GRADE 250 UNLESS NOTED OTHERWISE.  
(b) STEEL RECTANGULAR HOLLOW SECTIONS SHALL COMPLY WITH **AS1163** GRADE 350.  
(c) STEEL HOT ROLLED ANGLES SHALL COMPLY WITH **AS/NZS3679.1** GRADE 300 PLUS.
2. BARRIER RAILING AND STEELWORK SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH **AS/NZS4680**.
3. GRADE 8.8 BOLTS, NUTS AND WASHERS TO **AS1252** GALVANIZED TO **AS/NZS4680** UNLESS NOTED OTHERWISE.
4. WELDING SHALL BE IN ACCORDANCE WITH **AS1554 - PART 1 SP**.
5. BARRIER POSTS SHALL BE ERECTED VERTICAL.

DRAWING SD-51.004.dwg

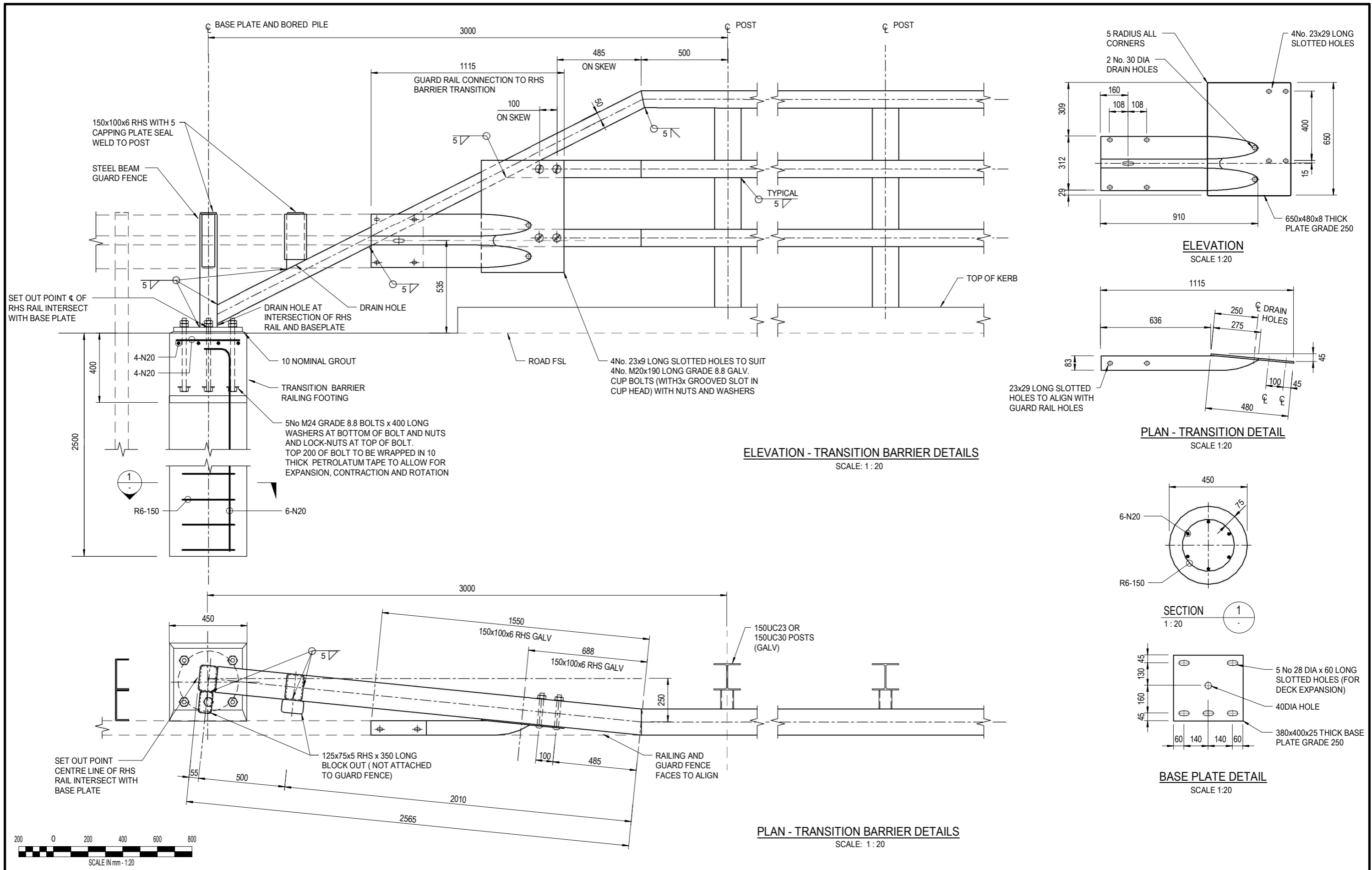
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 REVIEWED: R. CASSIDY (P&S)  
 APPROVED: A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES



**Department of State Growth**  
 STANDARDISED BRIDGE DESIGN  
 PRECAST PLANK UNITS  
 INSITU KERB AND BARRIER DETAILS (LOW)

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 STANDARD DRAWING NUMBER  
**SD-51.004**  
**00**



DRAWING SD-51.005.dwg

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REVIEWED:  
... R. CASSIDY (P&S) ...

APPROVED:  
... A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES ...



Department of State Growth

STANDARDISED BRIDGE DESIGN  
PRECAST PLANK UNITS

REGULAR BARRIER TRANSITION DETAILS

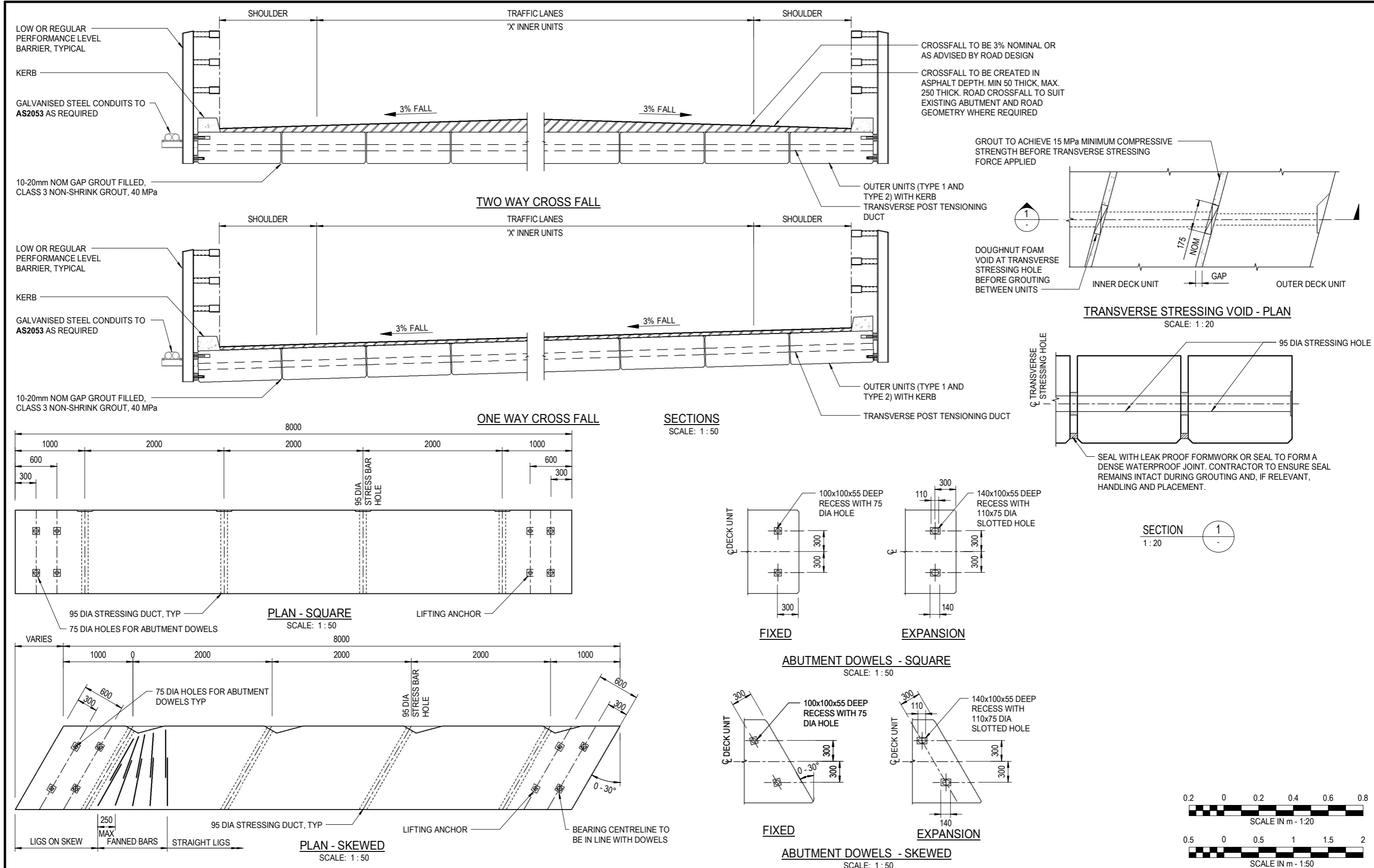
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STANDARD DRAWING NUMBER  
**SD-51.005**

**00**

PRINTED DATE 9/10/2019 10:14:21 AM



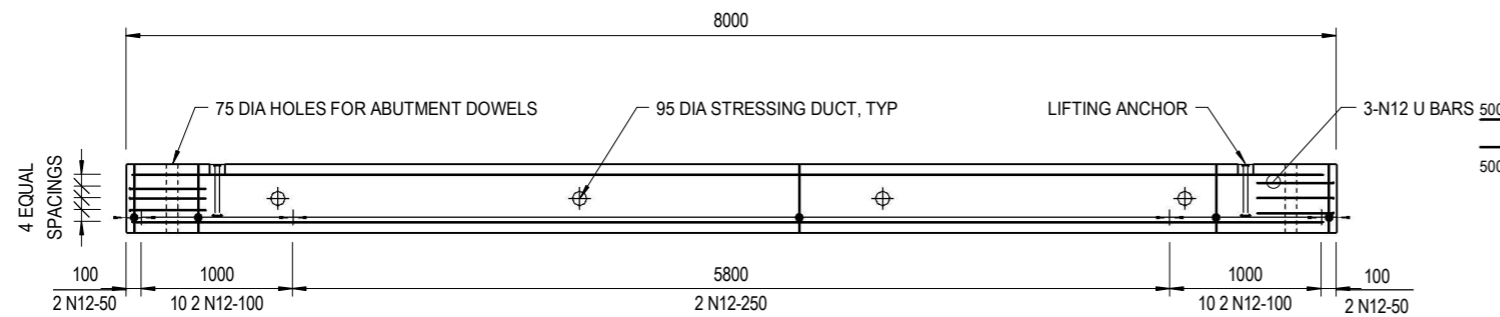
DRAWING: SD-51.006.dwg			
No.	Amendment Description	Initials	Date
01	NOTES REVISED	MP (P&S)	05/08/2019
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 APPROVED: A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES

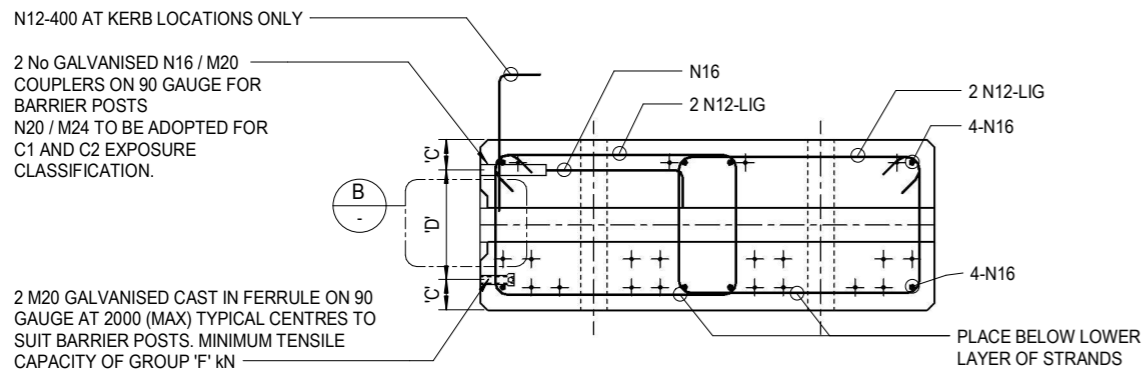


Department of State Growth  
 STANDARDISED BRIDGE DESIGN  
 PRECAST PLANK UNITS  
 GENERAL ARRANGEMENT PLANS AND SECTIONS  
 8m PSC PLANK UNIT

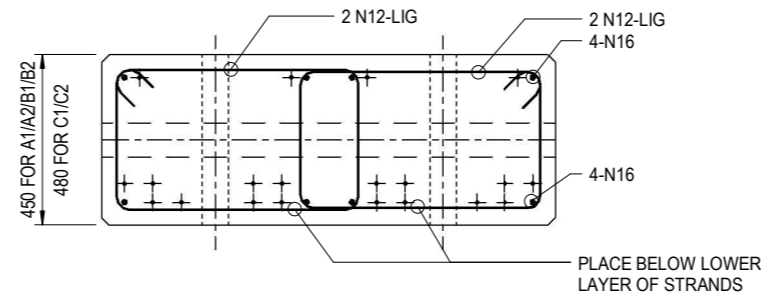
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 STANDARD DRAWING NUMBER  
**SD-51.006**  
**01**



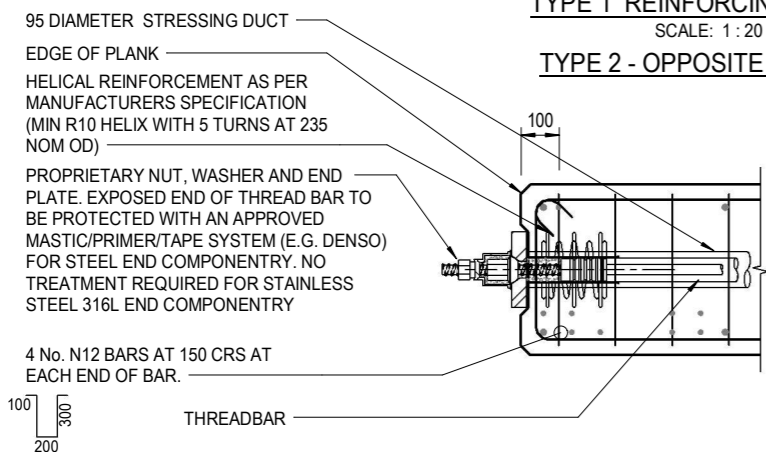
**PLANK ELEVATION**  
SCALE: 1 : 50



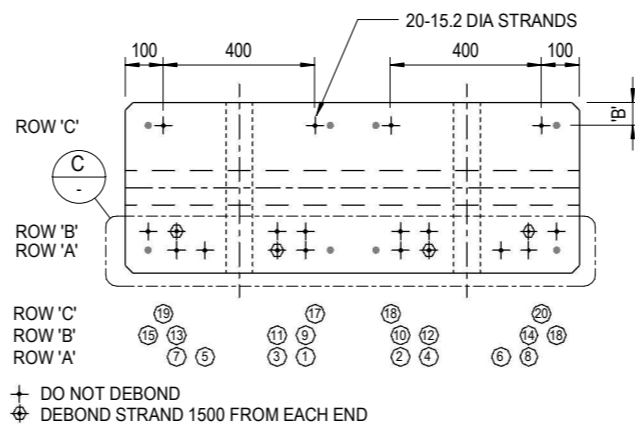
**TYPE 1 REINFORCING DETAIL**  
SCALE: 1 : 20  
**TYPE 2 - OPPOSITE SIMILAR**



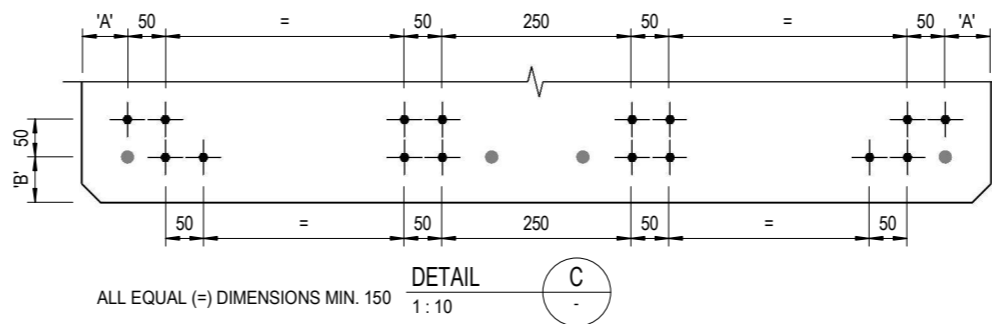
**TYPE 3 REINFORCING DETAIL**  
SCALE: 1 : 20



**DETAIL B**  
1 : 20  
**REINFORCEMENT AROUND POST**  
**TENSIONING DUCTS**



**TENDON RELEASE ORDER - TYPICAL**  
SCALE: 1 : 20



**CONCRETE**

1. BEAMS SHALL BE CAST HORIZONTAL.
2. DIMENSIONED LENGTH OF PLANK IS THE REQUIRED LENGTH OF FINISHED PRODUCT, AFTER ELASTIC SHORTENING AND LONGER TERM SHRINKAGE AND CREEP EFFECTS.
3. CONCRETE STRENGTH GRADE SHALL BE VR450/50.
4. MINIMUM CONCRETE CYLINDER STRENGTH AT RELEASE OF TENDONS SHALL BE 32 MPa.

**REINFORCEMENT**

1. SPACING - TAKEN AS EQUAL UNLESS NOTED OTHERWISE.
2. WELDING - SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.
3. BARS SHALL BE BENT AROUND A 4 DIA PIN UNLESS NOTED OTHERWISE.

**PRESTRESSING**

1. TENDONS SHALL BE 15.2 DIA. 7 WIRE ORDINARY TYPE 2 RELAXATION STRAND TO AS4672.
2. TOTAL INITIAL FORCE IN TENDONS SHALL BE 170 KN. AFTER ALLOWANCES HAVE BEEN MADE FOR ALL LOSSES IN GRIPS, JACKS ETC.
3. TENDONS SHALL BE RELEASED IN THE ORDER SHOWN OR AS APPROVED BY THE ENGINEER.
4. AFTER TRANSFER OF PRESTRESS, TENDONS SHALL BE CUT FLUSH WITH THE END OF THE PLANK AND EXPOSED TENDONS SEALED AGAINST CORROSION BY APPLICATION OF TWO LAYERS OF AN APPROVED EPOXY RESIN.

**LIFTING ANCHORS**

1. LIFTING ANCHORS SHALL BE DESIGNED BY THE MANUFACTURER.
2. ANCHORS SHALL BE SUPPLIED HOT DIP GALVANIZED IN ACCORDANCE WITH AS/NZS4680.

**HANDLING AND LIFTING**

1. ESTIMATED MASS OF PLANK IS 11.1 TONNES FOR EXPOSURE CLASSIFICATIONS A1/A2/B1/B2. ESTIMATED MASS OF PLANK IS 11.9 TONNES FOR EXPOSURE CLASSIFICATIONS C1/C2.
2. PLANK SHALL BE LIFTED ONLY BY LIFTING ANCHORS PROVIDED AND SHALL BE STORED AND TRANSPORTED ON TEMPORARY SUPPORTS LOCATED AT NO MORE THAN 500 FROM ENDS OF PLANKS. TOP SURFACE OF PLANKS SHALL BE KEPT UPPERMOST AT ALL TIMES.
3. MASSES CALCULATED USING A CONCRETE DENSITY OF 24.0 kN/m<sup>3</sup> AND A STEEL DENSITY OF 76.9 kN/m<sup>3</sup>

**NOTE:**

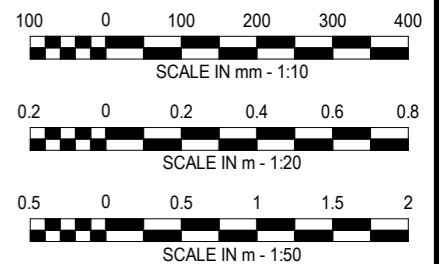
1. FOR GENERAL NOTES REFER SHEET 0001
2. BEARINGS ARE TO BE DESIGNED IN ACCORDANCE WITH AS5100.4:2017 FOR A PEAK ULTIMATE FORCE OF 425 KN PER END, PER PLANK. FOR THE PURPOSES OF SUBSTRUCTURE DESIGN, IT IS NOTED THAT THESE PEAK FORCES WILL NOT BE CONCURRENTLY ACTING ON ALL BEARINGS. IT IS THE RESPONSIBILITY OF THE SUBSTRUCTURE DESIGNER TO DETERMINE OVERALL SUBSTRUCTURE LOADING, BASED ON THE CONFIGURATION ADOPTED.

EXPOSURE CLASSIFICATION	DIMENSION 'A'*	DIMENSION 'B'	DIMENSION 'C'	DIMENSION 'D'	FORCE 'F'	HOG AT TRANSFER
A1/A2/B1	50	50	70	310	165	4
B2	60	60	80	290	175	3
C1	85	85	105	270	190	2
C2	95	95	115	250	205	2

\* FOR CLASSIFICATIONS B2/C1/C2 DIMENSION 'A' MAY BE INCREASED TO 100 IF DESIRED TO SUIT STRESSING PLATE DIMENSIONS

EXPOSURE CLASSIFICATION	STAINLESS STEEL 316L	STEEL - DOUBLE CORROSION PROTECTION	STEEL - ALKYD PRIMER AND GLOSS
A1 / A2	✓	✓	✓
B1 / B2	✓	✓	-
C1 / C2	✓	✓	-

1. ALKYD PROTECTIVE COATING TO COMPRISE:  
- CLASS 2 1/2 SURFACE PREPARATION  
- 75 µm MIN DFT HIGH BUILD ALKYD PRIMER  
- 40 µm MIN DFT ALKYD GLOSS TOP COAT



DRAWING SD-51.007.dwg

No.	Amendment Description	Initials	Date
02	BEARING FORCES NOTED	AF (P&S)	09/10/2019
01	NOTES REVISED	MP (P&S)	05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019

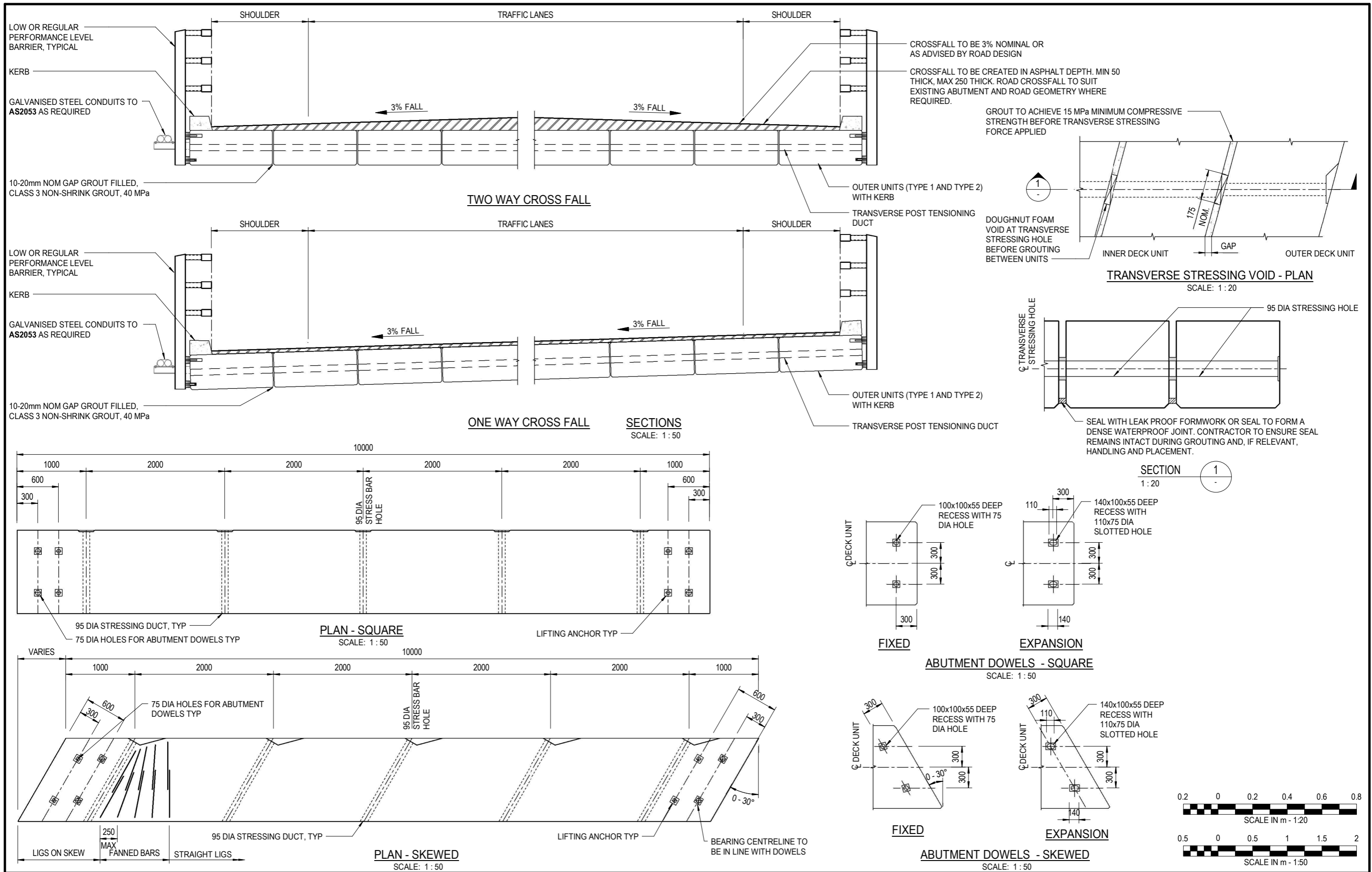
A3 original This sheet may be prepared using colour and may be incomplete if copied

DRAWN: W. CLARKSON (P&S)  
REVIEWED: R. CASSIDY (P&S)  
APPROVED: A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES



Department of State Growth  
STANDARDISED BRIDGE DESIGN  
PRECAST PLANK UNITS  
TYPICAL REINFORCING DETAILS  
8m PSC PLANK UNIT

**DO NOT SCALE**  
Use of this drawing is governed by the conditions outlined on the DIER website. It is the users responsibility to ensure it is the current revision.  
STANDARD DRAWING NUMBER  
**SD-51.007**  
**02**



DRAWING SD-51.008.dwg		
01	NOTES REVISED	MP (P&S) 05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S) 12/07/2019
No.	Amendment Description	Initials Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied	

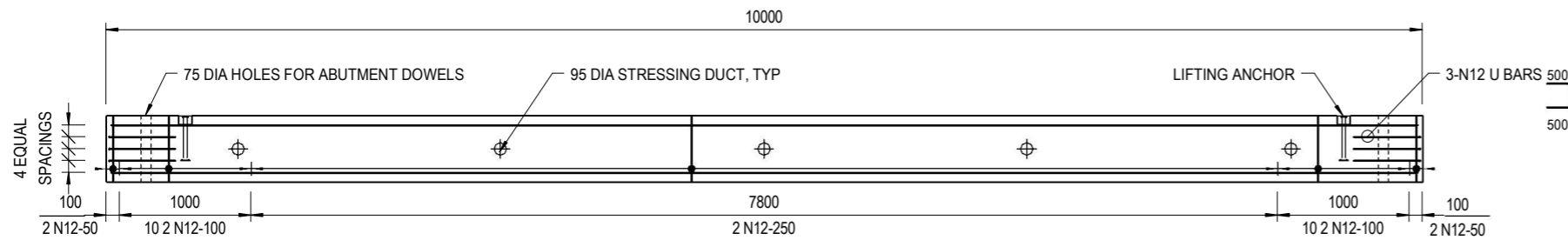
DRAWN: W. CLARKSON (P&S)  
 REVIEWED: R. CASSIDY (P&S)  
 APPROVED: A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES



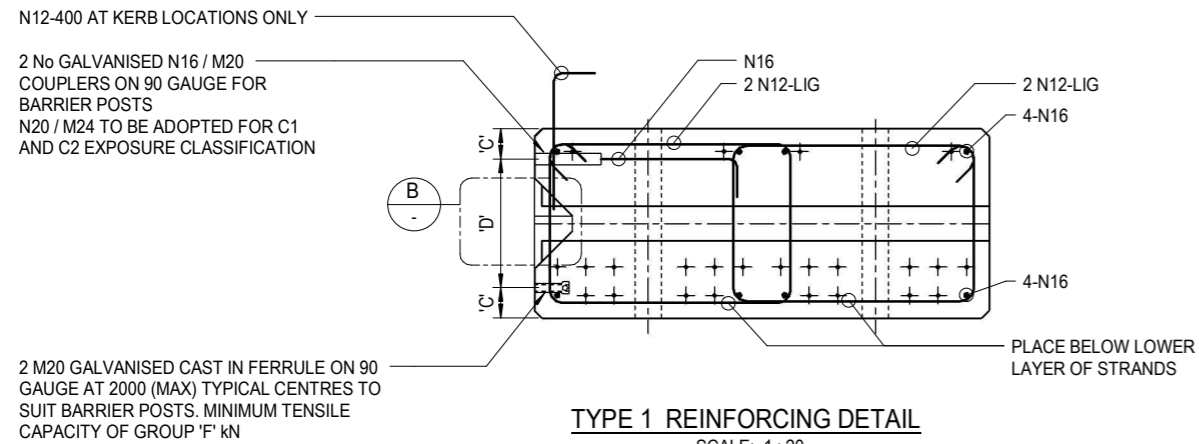
Department of State Growth  
 STANDARDISED BRIDGE DESIGN  
 PRECAST PLANK UNITS  
 GENERAL ARRANGEMENT PLANS AND SECTIONS  
 10m PSC PLANK UNIT

**DO NOT SCALE**  
 Use of this drawing is governed by the conditions outlined on the DIER website. It is the users responsibility to ensure it is the current revision.  
 STANDARD DRAWING NUMBER  
**SD-51.008**  
**01**



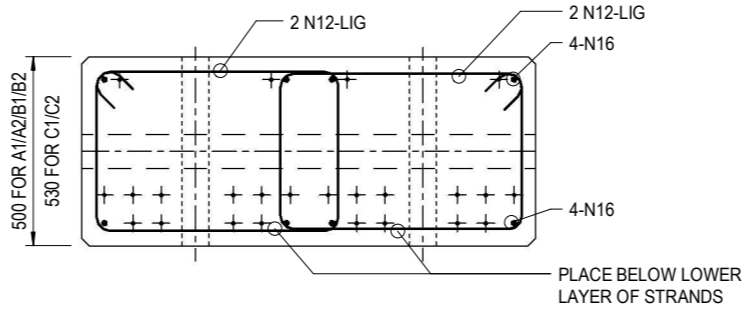


**PLANK ELEVATION**  
SCALE: 1 : 50

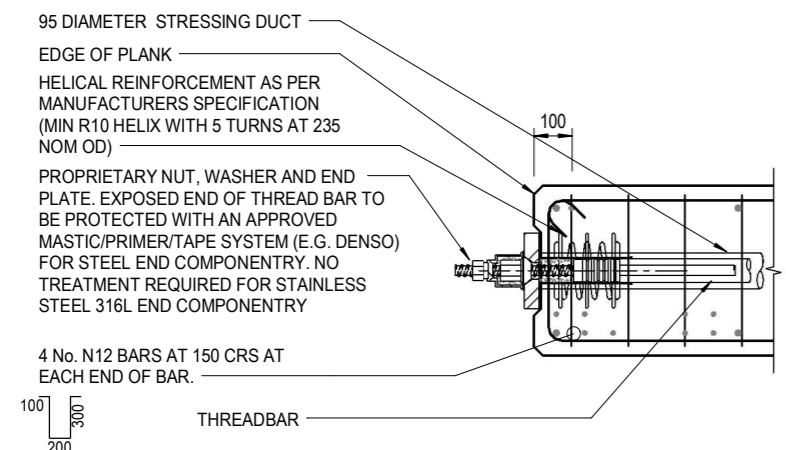


**TYPE 1 REINFORCING DETAIL**  
SCALE: 1 : 20

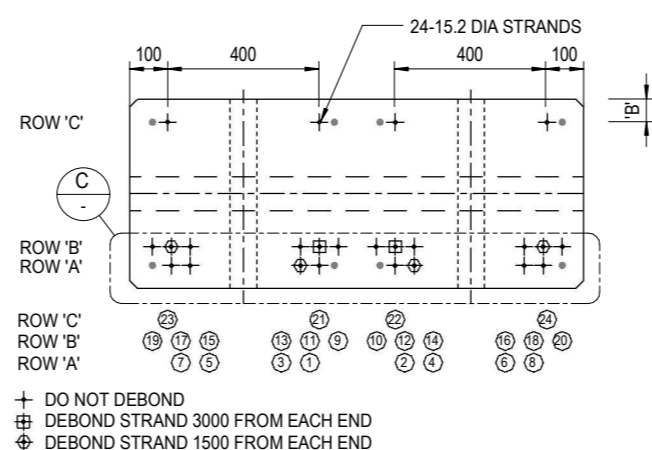
TYPE 2 - OPPOSITE SIMILAR



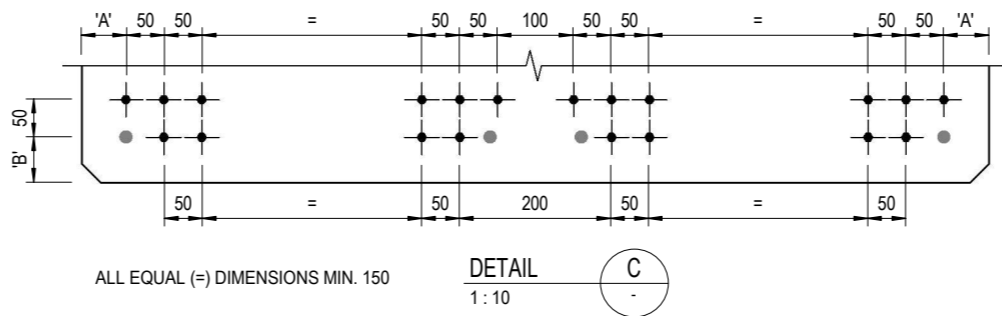
**TYPE 3 REINFORCING DETAIL**  
SCALE: 1 : 20



**REINFORCEMENT AROUND POST TENSIONING DUCTS**  
SCALE: 1 : 20



**TENDON RELEASE ORDER - TYPICAL**  
SCALE: 1 : 20



**TYPICAL REINFORCING DETAILS 10m PSC PLANK UNIT**  
SCALE: 1 : 10

**CONCRETE**

1. BEAMS SHALL BE CAST HORIZONTAL.
2. DIMENSIONED LENGTH OF PLANK IS THE REQUIRED LENGTH OF FINISHED PRODUCT, AFTER ELASTIC SHORTENING AND LONGER TERM SHRINKAGE AND CREEP EFFECTS.
3. CONCRETE STRENGTH GRADE SHALL BE VR450/50.
4. MINIMUM CONCRETE CYLINDER STRENGTH AT RELEASE OF TENDONS SHALL BE 32 MPa.

**REINFORCEMENT**

1. SPACING - TAKEN AS EQUAL UNLESS NOTED OTHERWISE.
2. WELDING - SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.
3. BARS SHALL BE BENT AROUND A 4 DIA PIN UNLESS NOTED OTHERWISE.

**PRESTRESSING**

1. TENDONS SHALL BE 15.2 DIA. 7 WIRE ORDINARY TYPE 2 RELAXATION STRAND TO AS4672.
2. TOTAL INITIAL FORCE IN TENDONS SHALL BE 170 KN. AFTER ALLOWANCES HAVE BEEN MADE FOR ALL LOSSES IN GRIPS, JACKS ETC.
3. TENDONS SHALL BE RELEASED IN THE ORDER SHOWN OR AS APPROVED BY THE ENGINEER.
4. AFTER TRANSFER OF PRESTRESS, TENDONS SHALL BE CUT FLUSH WITH THE END OF THE PLANK AND EXPOSED TENDONS SEALED AGAINST CORROSION BY APPLICATION OF TWO LAYERS OF AN APPROVED EPOXY RESIN.

**LIFTING ANCHORS**

1. LIFTING ANCHORS SHALL BE DESIGNED BY THE MANUFACTURER.
2. ANCHORS SHALL BE SUPPLIED HOT DIP GALVANIZED IN ACCORDANCE WITH AS/NZS4680.

**HANDLING AND LIFTING**

1. ESTIMATED MASS OF PLANK IS 15.5 TONNES FOR EXPOSURE CLASSIFICATIONS A1/A2/B1/B2. ESTIMATED MASS OF PLANK IS 16.4 TONNES FOR EXPOSURE CLASSIFICATIONS C1/C2.
2. PLANK SHALL BE LIFTED ONLY BY LIFTING ANCHORS PROVIDED AND SHALL BE STORED AND TRANSPORTED ON TEMPORARY SUPPORTS LOCATED AT NO MORE THAN 500 FROM ENDS OF PLANKS. TOP SURFACE OF PLANKS SHALL BE KEPT UPPERMOST AT ALL TIMES.
3. MASSES CALCULATED USING A CONCRETE DENSITY OF 24.0 kN/m<sup>3</sup> AND A STEEL DENSITY OF 76.9 kN/m<sup>3</sup>

**NOTE:**

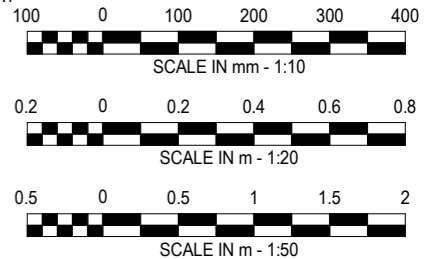
1. FOR GENERAL NOTES REFER SHEET 0001
2. BEARINGS ARE TO BE DESIGNED IN ACCORDANCE WITH AS5100.4:2017 FOR A PEAK ULTIMATE FORCE OF 505 KN PER END, PER PLANK. FOR THE PURPOSES OF SUBSTRUCTURE DESIGN, IT IS NOTED THAT THESE PEAK FORCES WILL NOT BE CONCURRENTLY ACTING ON ALL BEARINGS. IT IS THE RESPONSIBILITY OF THE SUBSTRUCTURE DESIGNER TO DETERMINE OVERALL SUBSTRUCTURE LOADING, BASED ON THE CONFIGURATION ADOPTED.

EXPOSURE CLASSIFICATION	DIMENSION 'A'*	DIMENSION 'B'	DIMENSION 'C'	DIMENSION 'D'	FORCE 'F'	HOG AT TRANSFER
A1/A2/B1	50	50	70	360	195	6
B2	60	60	80	340	210	5
C1	85	85	105	320	160	4
C2	95	95	115	300	170	3

\* FOR CLASSIFICATIONS B2/C1/C2 DIMENSION 'A' MAY BE INCREASED TO 100 IF DESIRED TO SUIT STRESSING PLATE DIMENSIONS

EXPOSURE CLASSIFICATION	STAINLESS STEEL 316L	STEEL - DOUBLE CORROSION PROTECTION	STEEL - ALKYD PRIMER AND GLOSS
A1 / A2	✓	✓	✓
B1 / B2	✓	✓	-
C1 / C2	✓	✓	-

1. ALKYD PROTECTIVE COATING TO COMPRISE:  
- CLASS 2 1/2 SURFACE PREPARATION  
- 75 µm MIN DFT HIGH BUILD ALKYD PRIMER  
- 40 µm MIN DFT ALKYD GLOSS TOP COAT



DRAWING SD-51.009.dwg

No.	Amendment Description	Initials	Date
02	BEARING FORCES NOTED	AF (P&S)	09/10/2019
01	NOTES REVISED	MP (P&S)	05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019

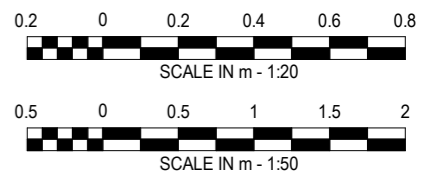
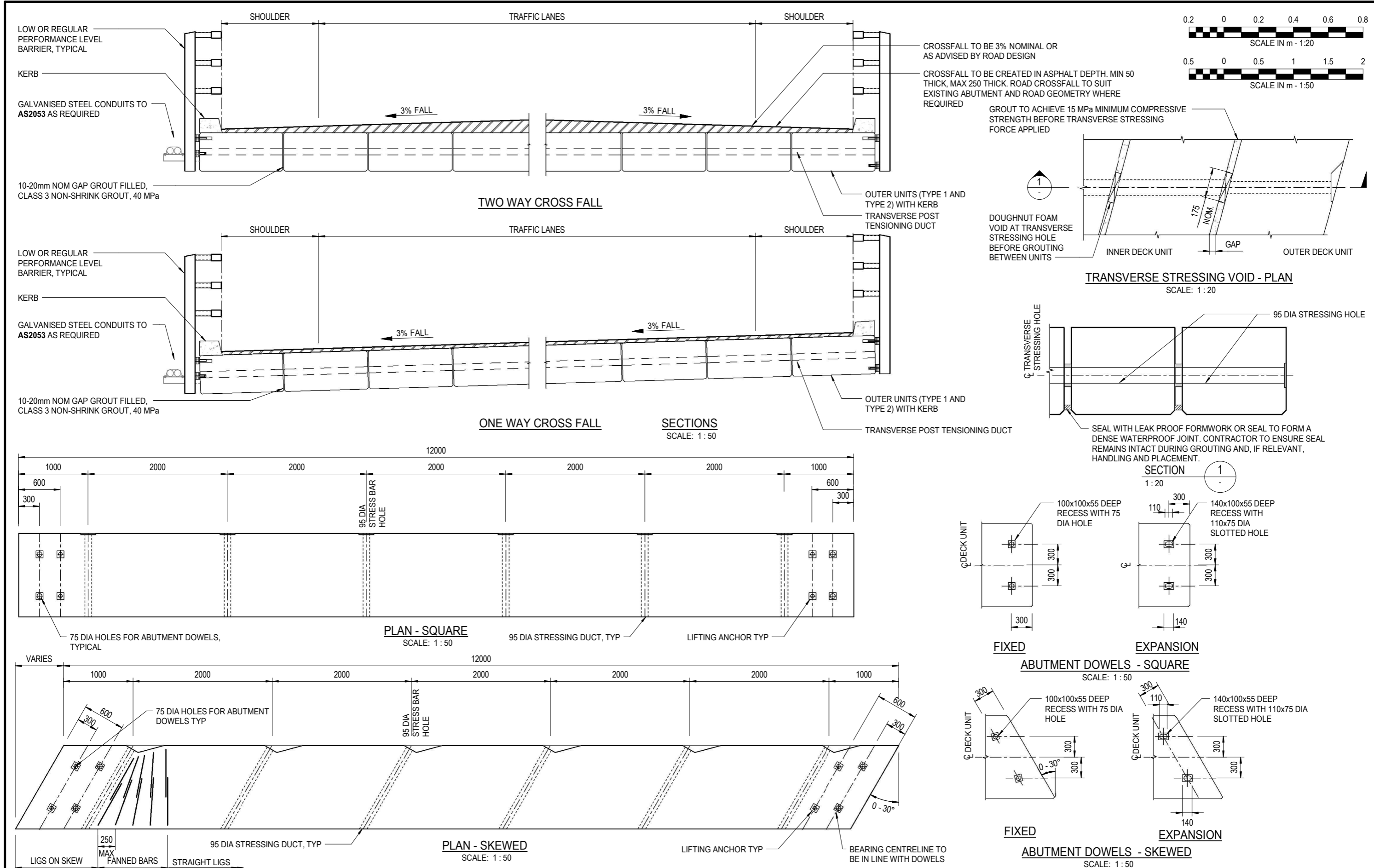
A3 original This sheet may be prepared using colour and may be incomplete if copied

DRAWN: W. CLARKSON (P&S)  
 REVIEWED: R. CASSIDY (P&S)  
 APPROVED: A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES



Department of State Growth  
 STANDARDISED BRIDGE DESIGN  
 PRECAST PLANK UNITS  
 TYPICAL REINFORCING DETAILS  
 10m PSC PLANK UNIT

**DO NOT SCALE**  
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 STANDARD DRAWING NUMBER  
**SD-51.009**  
**02**



DRAWING SD-51.010.dwg

No.	Amendment Description	Initials	Date
01	NOTES REVISED	MP (P&S)	05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019

A3 original This sheet may be prepared using colour and may be incomplete if copied

DRAWN:  
... W. CLARKSON (P&S) ...

REVIEWED:  
... R. CASSIDY (P&S) ...

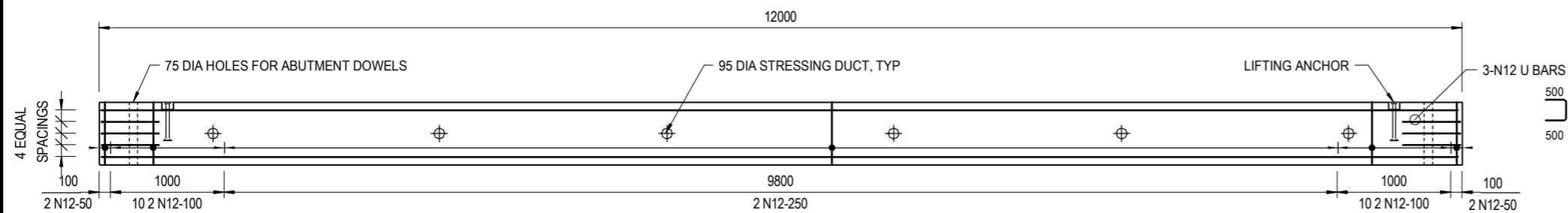
APPROVED:  
... A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES ...



**Department of State Growth**  
STANDARDISED BRIDGE DESIGN  
PRECAST PLANK UNITS

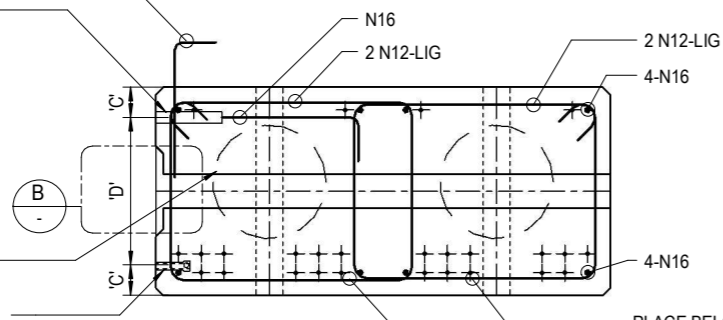
GENERAL ARRANGEMENT PLANS AND SECTIONS  
12m PSC PLANK UNIT

<b>DO NOT SCALE</b> Use of this drawing is governed by the conditions outlined on the DIER website. It is the users responsibility to ensure it is the current revision.	
STANDARD DRAWING NUMBER <b>SD-51.010</b>	<b>01</b>



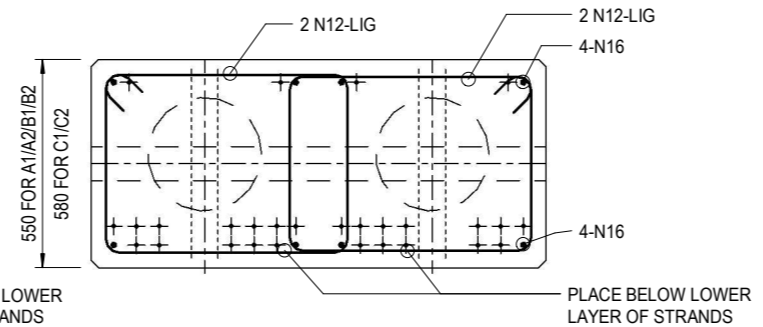
**PLANK ELEVATION**  
SCALE: 1 : 50

N12-400 AT KERB LOCATIONS ONLY  
2 No GALVANISED N16 / M20 COUPLERS ON 90 GAUGE FOR BARRIER POSTS N20 / M24 TO BE ADOPTED FOR C1 AND C2 EXPOSURE CLASSIFICATION.

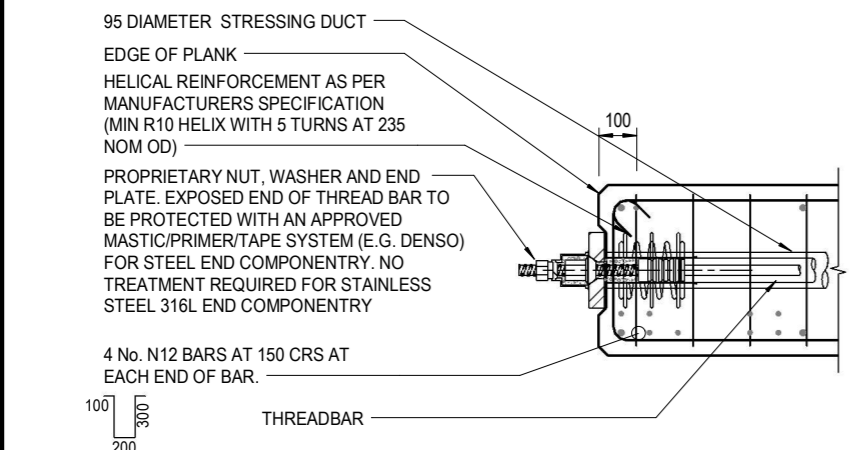


**TYPE 1 REINFORCING DETAIL**  
SCALE: 1 : 20

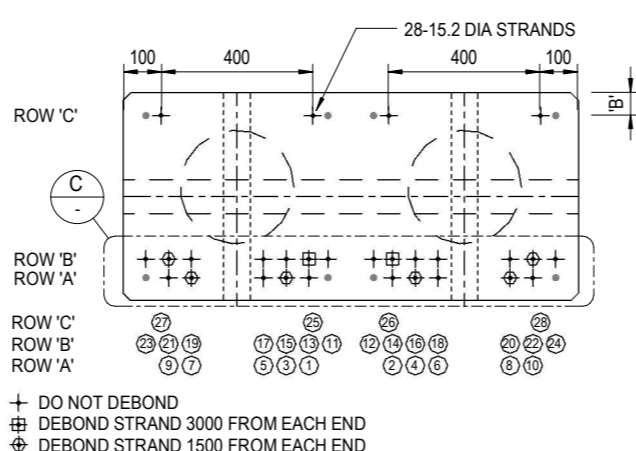
TYPE 2 - OPPOSITE SIMILAR



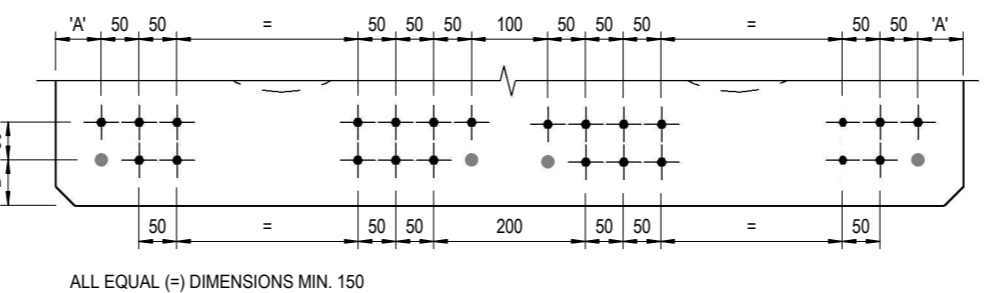
**TYPE 3 REINFORCING DETAIL**  
SCALE: 1 : 20



**DETAIL B**  
1 : 20  
**REINFORCEMENT AROUND POST TENSIONING DUCTS**



**TENDON RELEASE ORDER - TYPICAL**  
SCALE: 1 : 20



**DETAIL C**  
1 : 10

**CONCRETE**

1. BEAMS SHALL BE CAST HORIZONTAL.
2. DIMENSIONED LENGTH OF PLANK IS THE REQUIRED LENGTH OF FINISHED PRODUCT, AFTER ELASTIC SHORTENING AND LONGER TERM SHRINKAGE AND CREEP EFFECTS.
3. CONCRETE STRENGTH GRADE SHALL BE VR450/50.
4. MINIMUM CONCRETE CYLINDER STRENGTH AT RELEASE OF TENDONS SHALL BE 32 MPa.

**REINFORCEMENT**

1. SPACING - TAKEN AS EQUAL UNLESS NOTED OTHERWISE.
2. WELDING - SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.
3. BARS SHALL BE BENT AROUND A 4 DIA PIN UNLESS NOTED OTHERWISE.

**PRESTRESSING**

1. TENDONS SHALL BE 15.2 DIA. 7 WIRE ORDINARY TYPE 2 RELAXATION STRAND TO AS4672.
2. TOTAL INITIAL FORCE IN TENDONS SHALL BE 170 kN. AFTER ALLOWANCES HAVE BEEN MADE FOR ALL LOSSES IN GRIPS, JACKS ETC.
3. TENDONS SHALL BE RELEASED IN THE ORDER SHOWN OR AS APPROVED BY THE ENGINEER.
4. AFTER TRANSFER OF PRESTRESS, TENDONS SHALL BE CUT FLUSH WITH THE END OF THE PLANK AND EXPOSED TENDONS SEALED AGAINST CORROSION BY APPLICATION OF TWO LAYERS OF AN APPROVED EPOXY RESIN.

**LIFTING ANCHORS**

1. LIFTING ANCHORS SHALL BE DESIGNED BY THE MANUFACTURER.
2. ANCHORS SHALL BE SUPPLIED HOT DIP GALVANIZED IN ACCORDANCE WITH AS/NZS4680.

**HANDLING AND LIFTING**

1. ESTIMATED MASS OF PLANK IS 20.5 TONNES FOR EXPOSURE CLASSIFICATIONS A1/A2/B1/B2. ESTIMATED MASS OF PLANK IS 21.6 TONNES FOR EXPOSURE CLASSIFICATIONS C1/C2.
2. PLANK SHALL BE LIFTED ONLY BY LIFTING ANCHORS PROVIDED AND SHALL BE STORED AND TRANSPORTED ON TEMPORARY SUPPORTS LOCATED AT NO MORE THAN 500 FROM ENDS OF PLANKS. TOP SURFACE OF PLANKS SHALL BE KEPT UPPERMOST AT ALL TIMES.
3. MASSES CALCULATED USING A CONCRETE DENSITY OF 24.0 kN/m<sup>3</sup> AND A STEEL DENSITY OF 76.9 kN/m<sup>3</sup>

**NOTE:**

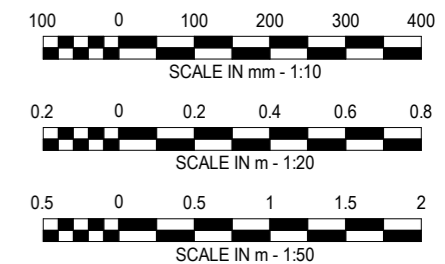
1. FOR GENERAL NOTES REFER SHEET 0001
2. BEARINGS ARE TO BE DESIGNED IN ACCORDANCE WITH AS5100.4:2017 FOR A PEAK ULTIMATE FORCE OF 590 kN PER END, PER PLANK. FOR THE PURPOSES OF SUBSTRUCTURE DESIGN, IT IS NOTED THAT THESE PEAK FORCES WILL NOT BE CONCURRENTLY ACTING ON ALL BEARINGS. IT IS THE RESPONSIBILITY OF THE SUBSTRUCTURE DESIGNER TO DETERMINE OVERALL SUBSTRUCTURE LOADING, BASED ON THE CONFIGURATION ADOPTED.

EXPOSURE CLASSIFICATION	DIMENSION 'A'*	DIMENSION 'B'	DIMENSION 'C'	DIMENSION 'D'	FORCE 'F'	HOG AT TRANSFER
A1/A2/B1	50	50	70	410	175	9
B2	60	60	80	390	185	8
C1	85	85	105	370	195	6
C2	95	95	115	350	205	5

\* FOR CLASSIFICATIONS B2/C1/C2 DIMENSION 'A' MAY BE INCREASED TO 100 IF DESIRED TO SUIT STRESSING PLATE DIMENSIONS

EXPOSURE CLASSIFICATION	STAINLESS STEEL 316L	STEEL - DOUBLE CORROSION PROTECTION	STEEL - ALKYD PRIMER AND GLOSS
A1 / A2	✓	✓	✓
B1 / B2	✓	✓	-
C1 / C2	✓	✓	-

1. ALKYD PROTECTIVE COATING TO COMPRISE:  
- CLASS 2 1/2 SURFACE PREPARATION  
- 75 µm MIN DFT HIGH BUILD ALKYD PRIMER  
- 40 µm MIN DFT ALKYD GLOSS TOP COAT



DRAWING SD-51.011.dwg

No.	Amendment Description	Initials	Date
02	BEARING FORCES NOTED	AF (P&S)	09/10/2019
01	NOTES REVISED	MP (P&S)	05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019

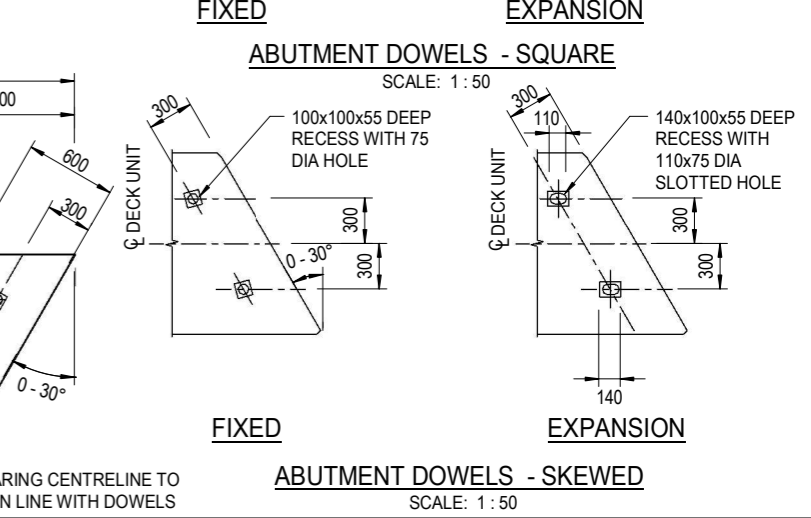
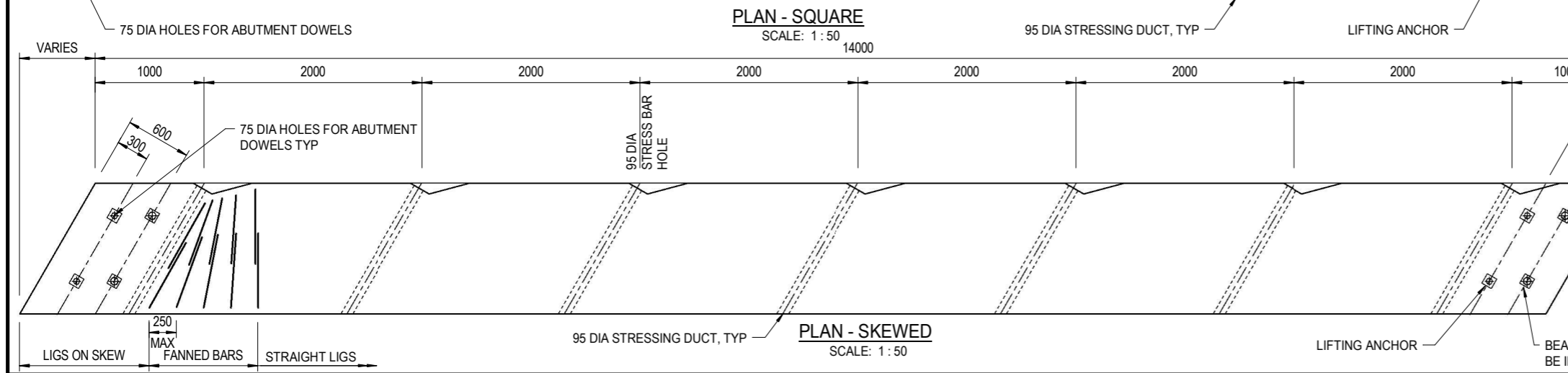
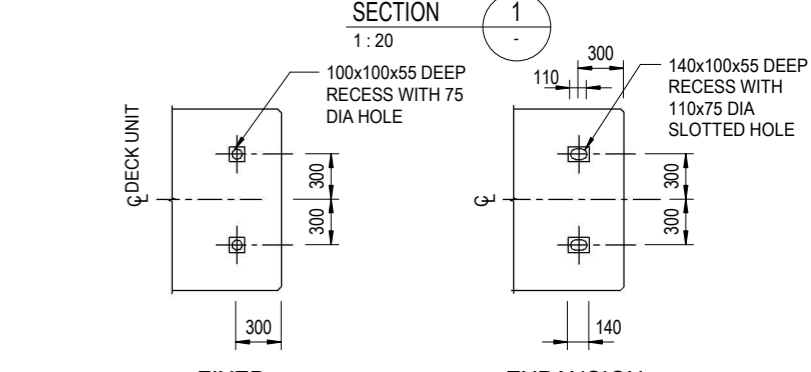
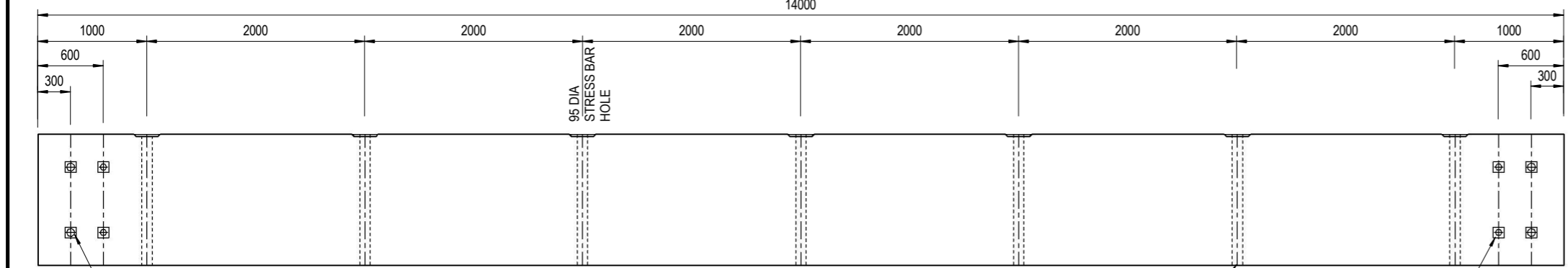
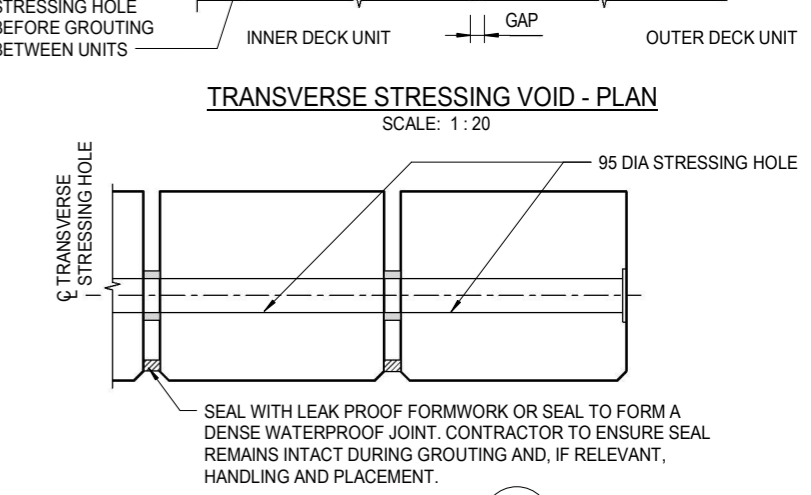
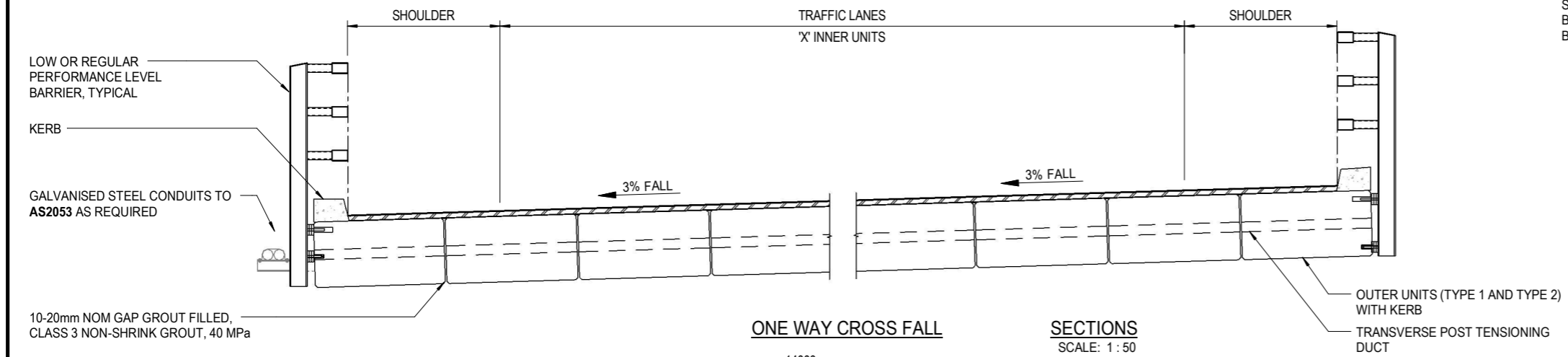
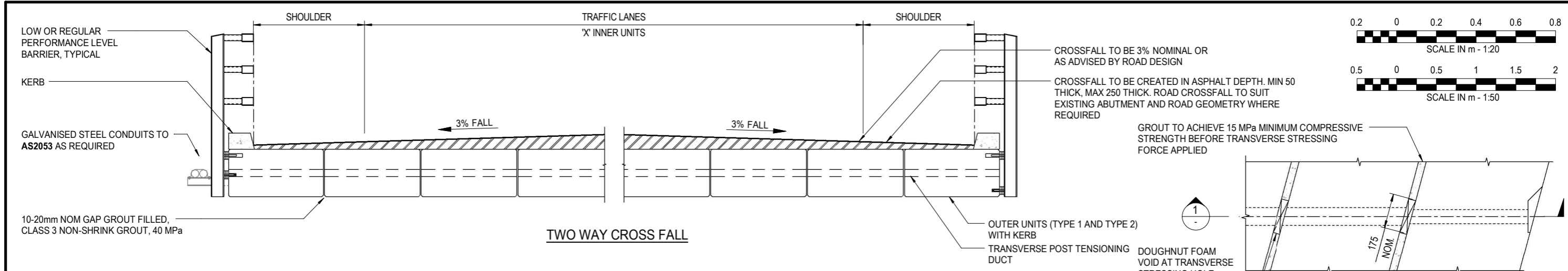
A3 original This sheet may be prepared using colour and may be incomplete if copied

DRAWN: W. CLARKSON (P&S)  
REVIEWED: R. CASSIDY (P&S)  
APPROVED: A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES



Department of State Growth  
STANDARDISED BRIDGE DESIGN  
PRECAST PLANK UNITS  
TYPICAL REINFORCING DETAILS  
12m PSC PLANK UNIT

**DO NOT SCALE**  
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STANDARD DRAWING NUMBER  
**SD-51.011**  
**02**



DRAWING SD-51.012.dwg

01	NOTES REVISED	MP (P&S)	05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		

DRAWN: W. CLARKSON (P&S)

REVIEWED: R. CASSIDY (P&S)

APPROVED: A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES



Department of State Growth

STANDARDISED BRIDGE DESIGN

PRECAST PLANK UNITS

GENERAL ARRANGEMENT PLANS AND SECTIONS

14m PSC PLANK UNIT

**DO NOT SCALE**

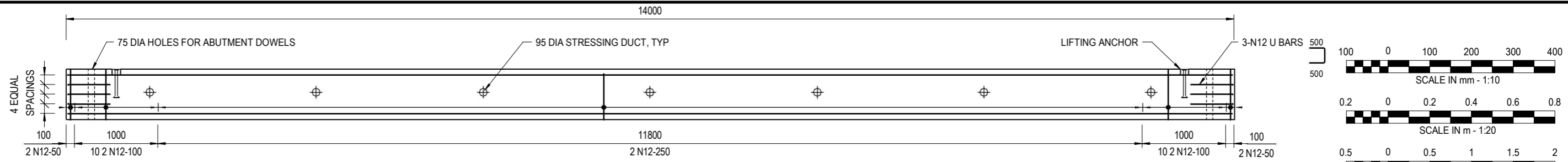
Use of this drawing is governed by the conditions outlined on the DIER website. It is the users responsibility to ensure it is the current revision.

STANDARD DRAWING NUMBER

**SD-51.012**

**01**

PRINTED DATE 9/10/2019 10:15:27 AM



**PLANK ELEVATION**  
SCALE: 1 : 50

**CONCRETE**

1. BEAMS SHALL BE CAST HORIZONTAL.
2. DIMENSIONED LENGTH OF PLANK IS THE REQUIRED LENGTH OF FINISHED PRODUCT, AFTER ELASTIC SHORTENING AND LONGER TERM SHRINKAGE AND CREEP EFFECTS.
3. CONCRETE STRENGTH GRADE SHALL BE VR450/50.
4. MINIMUM CONCRETE CYLINDER STRENGTH AT RELEASE OF TENDONS SHALL BE 32 MPa.

**REINFORCEMENT**

1. SPACING - TAKEN AS EQUAL UNLESS NOTED OTHERWISE.
2. WELDING - SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.
3. BARS SHALL BE BENT AROUND A 4 DIA PIN UNLESS NOTED OTHERWISE.

**PRESTRESSING**

1. TENDONS SHALL BE 15.2 DIA. 7 WIRE ORDINARY TYPE 2 RELAXATION STRAND TO AS4672.
2. TOTAL INITIAL FORCE IN TENDONS SHALL BE 170 kN. AFTER ALLOWANCES HAVE BEEN MADE FOR ALL LOSSES IN GRIPS, JACKS ETC.
3. TENDONS SHALL BE RELEASED IN THE ORDER SHOWN OR AS APPROVED BY THE ENGINEER.
4. AFTER TRANSFER OF PRESTRESS, TENDONS SHALL BE CUT FLUSH WITH THE END OF THE PLANK AND EXPOSED TENDONS SEALED AGAINST CORROSION BY APPLICATION OF TWO LAYERS OF AN APPROVED EPOXY RESIN.

**LIFTING ANCHORS**

1. LIFTING ANCHORS SHALL BE DESIGNED BY THE MANUFACTURER.
2. ANCHORS SHALL BE SUPPLIED HOT DIP GALVANIZED IN ACCORDANCE WITH AS/NZS4680.

**HANDLING AND LIFTING**

1. ESTIMATED MASS OF PLANK IS 22.6 TONNES FOR EXPOSURE CLASSIFICATIONS A1/A2/B1/B2. ESTIMATED MASS OF PLANK IS 23.8 TONNES FOR EXPOSURE CLASSIFICATIONS C1/C2.
2. PLANK SHALL BE LIFTED ONLY BY LIFTING ANCHORS PROVIDED AND SHALL BE STORED AND TRANSPORTED ON TEMPORARY SUPPORTS LOCATED AT NO MORE THAN 500 FROM ENDS OF PLANKS. TOP SURFACE OF PLANKS SHALL BE KEPT UPPERMOST AT ALL TIMES.
3. MASSES CALCULATED USING A CONCRETE DENSITY OF 24.0 kN/m<sup>3</sup> AND A STEEL DENSITY OF 76.9 kN/m<sup>3</sup>

**NOTE:**

1. FOR GENERAL NOTES REFER SHEET 0001
2. BEARINGS ARE TO BE DESIGNED IN ACCORDANCE WITH AS5100.4:2017 FOR A PEAK ULTIMATE FORCE OF 675 kN PER END, PER PLANK. FOR THE PURPOSES OF SUBSTRUCTURE DESIGN, IT IS NOTED THAT THESE PEAK FORCES WILL NOT BE CONCURRENTLY ACTING ON ALL BEARINGS. IT IS THE RESPONSIBILITY OF THE SUBSTRUCTURE DESIGNER TO DETERMINE OVERALL SUBSTRUCTURE LOADING, BASED ON THE CONFIGURATION ADOPTED.

EXPOSURE CLASSIFICATION	DIMENSION 'A' *	DIMENSION 'B'	DIMENSION 'C'	DIMENSION 'D'	FORCE 'F'	HOG AT TRANSFER
A1/A2/B1	50	50	70	460	155	14
B2	60	60	80	440	165	13
C1	85	85	105	420	170	10
C2	95	95	115	400	180	9

\* FOR CLASSIFICATIONS B2/C1/C2 DIMENSION 'A' MAY BE INCREASED TO 100 IF DESIRED TO SUIT STRESSING PLATE DIMENSIONS

EXPOSURE CLASSIFICATION	STAINLESS STEEL 316L	STEEL - DOUBLE CORROSION PROTECTION	STEEL - ALKYD PRIMER AND GLOSS
A1 / A2	✓	✓	✓
B1 / B2	✓	✓	-
C1 / C2	✓	✓	-

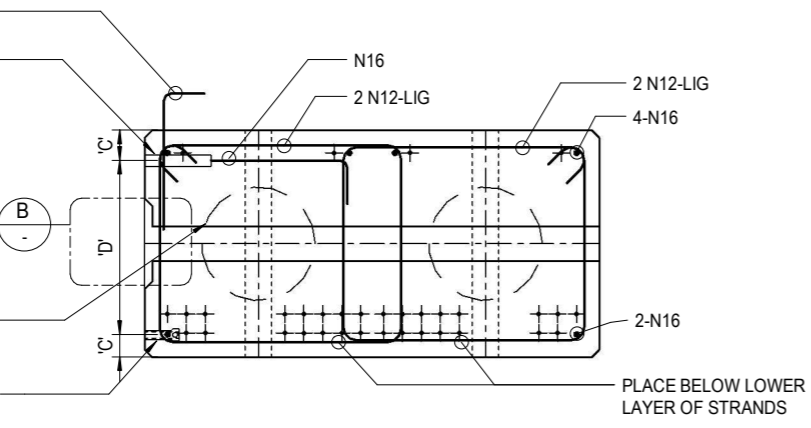
1. ALKYD PROTECTIVE COATING TO COMPRISE:  
 - CLASS 2 1/2 SURFACE PREPARATION  
 - 75 µm MIN DFT HIGH BUILD ALKYD PRIMER  
 - 40 µm MIN DFT ALKYD GLOSS TOP COAT

N12-400 AT KERB LOCATIONS ONLY

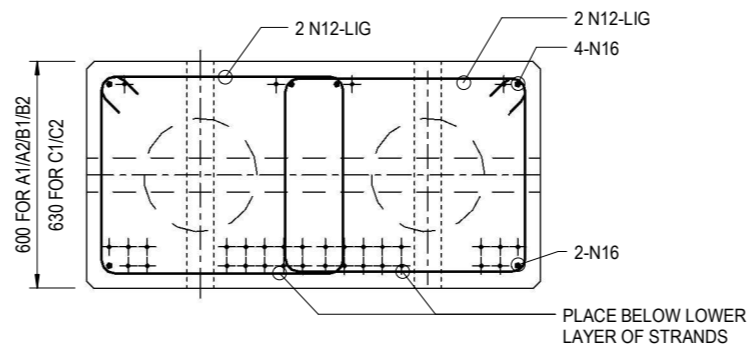
2 No GALVANISED N16 / M20 COUPLERS ON 90 GAUGE FOR BARRIER POSTS  
 N20 / M24 TO BE ADOPTED FOR C1 AND C2 EXPOSURE CLASSIFICATION

300DIA VOID, 1.7m LENGTH EVERY 2m

2 M20 GALVANISED CAST IN FERRULE ON 90 GAUGE AT 2000 (MAX) TYPICAL CENTRES TO SUIT BARRIER POSTS. MINIMUM TENSILE CAPACITY OF GROUP 'F' kN



**TYPE 1 REINFORCING DETAIL**  
SCALE: 1 : 20  
**TYPE 2 - OPPOSITE SIMILAR**



**TYPE 3 REINFORCING DETAIL**  
SCALE: 1 : 20

95 DIAMETER STRESSING DUCT

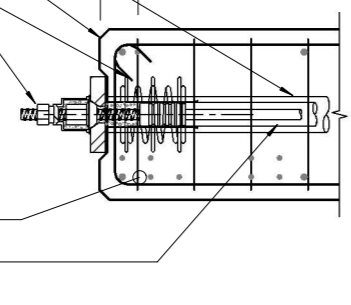
EDGE OF PLANK

HELICAL REINFORCEMENT AS PER MANUFACTURERS SPECIFICATION (MIN R10 HELIX WITH 5 TURNS AT 235 NOM OD)

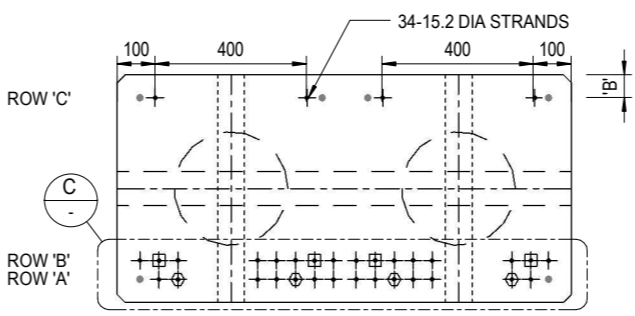
PROPRIETARY NUT, WASHER AND END PLATE. EXPOSED END OF THREAD BAR TO BE PROTECTED WITH AN APPROVED MASTIC/PRIMER/TAPE SYSTEM (E.G. DENSO) FOR STEEL END COMPONENTRY. NO TREATMENT REQUIRED FOR STAINLESS STEEL 316L END COMPONENTRY

4 No. N12 BARS AT 150 CRS AT EACH END OF BAR.

THREADBAR



**DETAIL B**  
1 : 20  
**REINFORCEMENT AROUND POST TENSIONING DUCTS**



ROW 'C'

ROW 'B'

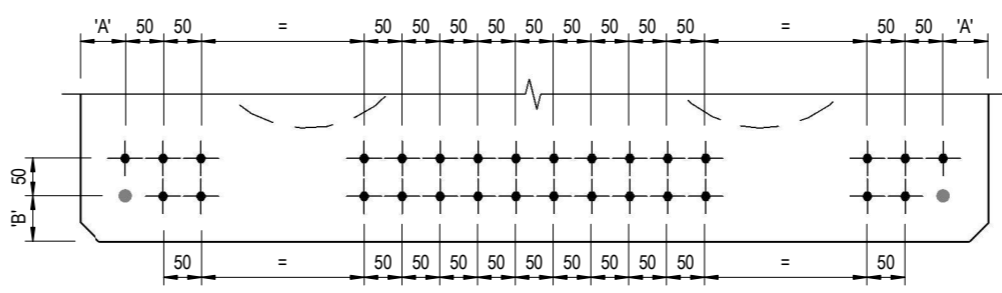
ROW 'A'

DO NOT DEBOND

DEBOND STRAND 3000 FROM EACH END

DEBOND STRAND 1500 FROM EACH END

**TENDON RELEASE ORDER - TYPICAL**  
SCALE: 1 : 20



ALL EQUAL (=) DIMENSIONS MIN. 150  
**DETAIL C**  
1 : 10

DRAWING SD-51.013.dwg

No.	Amendment Description	Initials	Date
02	BEARING FORCES NOTED	AF (P&S)	09/10/2019
01	NOTES REVISED	MP (P&S)	05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019

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DRAWN: W. CLARKSON (P&S)

REVIEWED: R. CASSIDY (P&S)

APPROVED: A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES



Department of State Growth

STANDARDISED BRIDGE DESIGN  
PRECAST PLANK UNITS

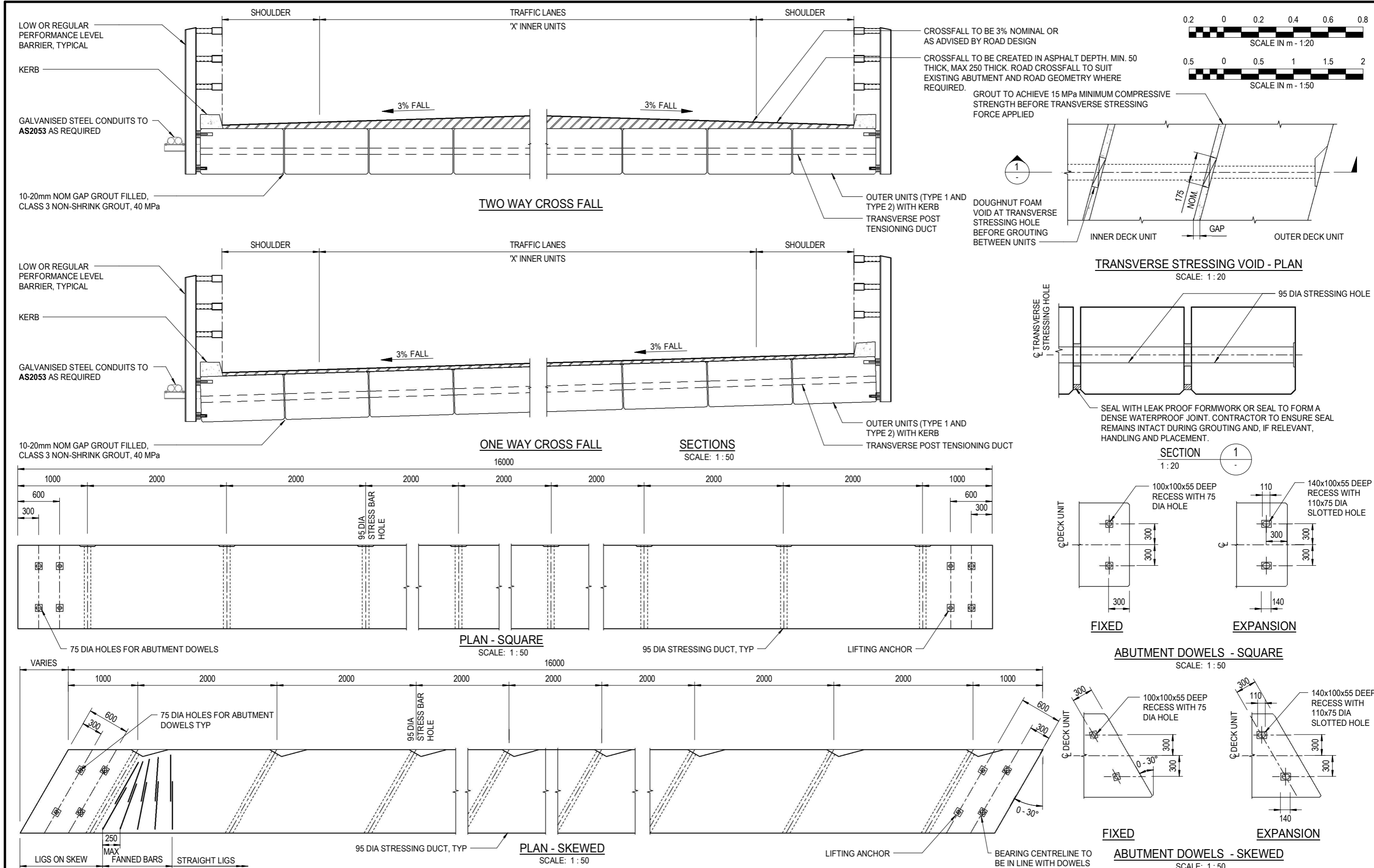
TYPICAL REINFORCING DETAILS  
14m PSC PLANK UNIT

**DO NOT SCALE**

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STANDARD DRAWING NUMBER  
**SD-51.013**

**02**



DRAWING SD-51.014.dwg

No.	Amendment Description	Initials	Date
01	NOTES REVISED	MP (P&S)	05/08/2019
00	ISSUED FOR CONSTRUCTION	MP (P&S)	12/07/2019

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DRAWN:  
... W. CLARKSON (P&S) ...

REVIEWED:  
... R. CASSIDY (P&S) ...

APPROVED:  
... A. PERCY (STATE GROWTH) ASSET ENGINEER BRIDGES ...



**Department of State Growth**  
 STANDARDISED BRIDGE DESIGN  
 PRECAST PLANK UNITS

GENERAL ARRANGEMENT PLANS AND SECTIONS  
 16m PSC PLANK UNIT

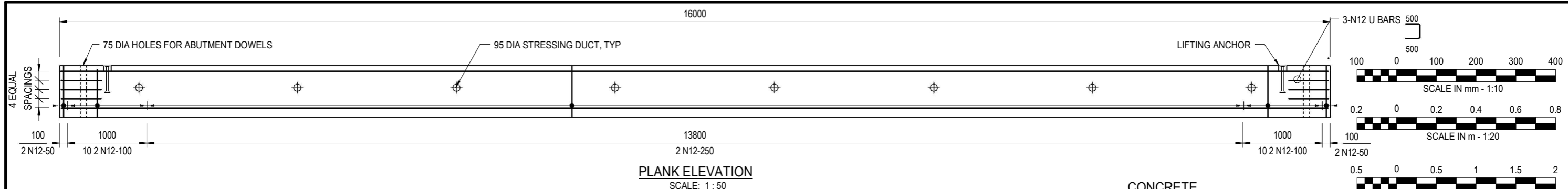
**DO NOT SCALE**

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**SD-51.014**

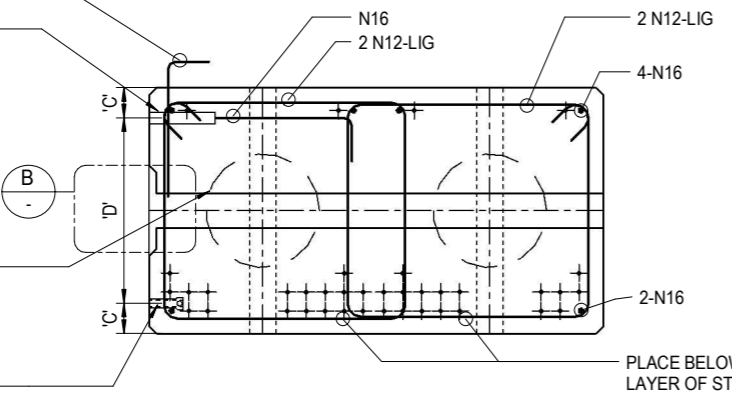
**01**

PRINTED DATE 9/10/2019 10:15:47 AM



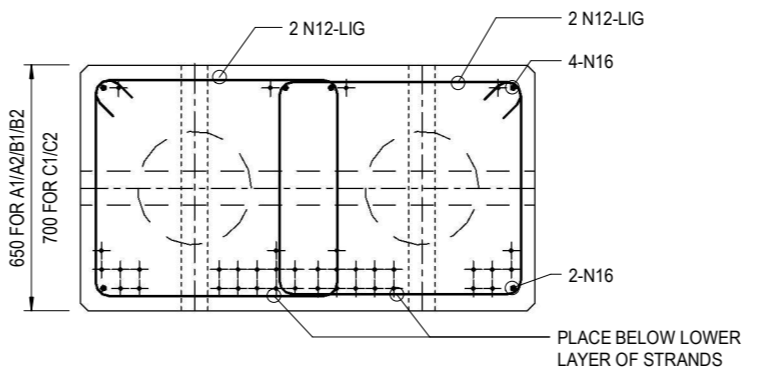
**PLANK ELEVATION**  
SCALE: 1 : 50

N12-400 AT KERB LOCATIONS ONLY  
 2 No GALVANISED N16/M20 COUPLERS ON 90 GAUGE FOR BARRIER POSTS N20/M24 TO BE ADOPTED FOR C1 AND C2 EXPOSURE CLASSIFICATION  
 300DIA VOID, 1.7m LENGTH EVERY 2m  
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**TYPE 1 REINFORCING DETAIL**  
SCALE: 1 : 20

TYPE 2 - OPPOSITE SIMILAR



**TYPE 3 REINFORCING DETAIL**  
SCALE: 1 : 20

**CONCRETE**

- BEAMS SHALL BE CAST HORIZONTAL.
- DIMENSIONED LENGTH OF PLANK IS THE REQUIRED LENGTH OF FINISHED PRODUCT, AFTER ELASTIC SHORTENING AND LONGER TERM SHRINKAGE AND CREEP EFFECTS.
- CONCRETE STRENGTH GRADE SHALL BE VR450/50.
- MINIMUM CONCRETE CYLINDER STRENGTH AT RELEASE OF TENDONS SHALL BE 32 MPa.

**REINFORCEMENT**

- SPACING - TAKEN AS EQUAL UNLESS NOTED OTHERWISE.
- WELDING - SHALL NOT BE PERMITTED UNLESS NOTED OTHERWISE.
- BARs SHALL BE BENT AROUND A 4 DIA PIN UNLESS NOTED OTHERWISE.

**PRESTRESSING**

- TENDONS SHALL BE 15.2 DIA. 7 WIRE ORDINARY TYPE 2 RELAXATION STRAND TO AS4672.
- TOTAL INITIAL FORCE IN TENDONS SHALL BE 170 kN. AFTER ALLOWANCES HAVE BEEN MADE FOR ALL LOSSES IN GRIPS, JACKS ETC.
- TENDONS SHALL BE RELEASED IN THE ORDER SHOWN OR AS APPROVED BY THE ENGINEER.
- AFTER TRANSFER OF PRESTRESS, TENDONS SHALL BE CUT FLUSH WITH THE END OF THE PLANK AND EXPOSED TENDONS SEALED AGAINST CORROSION BY APPLICATION OF TWO LAYERS OF AN APPROVED EPOXY RESIN.

**LIFTING ANCHORS**

- LIFTING ANCHORS SHALL BE DESIGNED BY THE MANUFACTURER.
- ANCHORS SHALL BE SUPPLIED HOT DIP GALVANIZED IN ACCORDANCE WITH AS/NZS4680.

**HANDLING AND LIFTING**

- ESTIMATED MASS OF PLANK IS 28.2 TONNES FOR EXPOSURE CLASSIFICATIONS A1/A2/B1/B2. ESTIMATED MASS OF PLANK IS 30.6 TONNES FOR EXPOSURE CLASSIFICATIONS C1/C2.
- PLANK SHALL BE LIFTED ONLY BY LIFTING ANCHORS PROVIDED AND SHALL BE STORED AND TRANSPORTED ON TEMPORARY SUPPORTS LOCATED AT NO MORE THAN 500 FROM ENDS OF PLANKS. TOP SURFACE OF PLANKS SHALL BE KEPT UPPERMOST AT ALL TIMES.
- MASSSES CALCULATED USING A CONCRETE DENSITY OF 24.0 kN/m³ AND A STEEL DENSITY OF 76.9 kN/m³

**NOTE:**

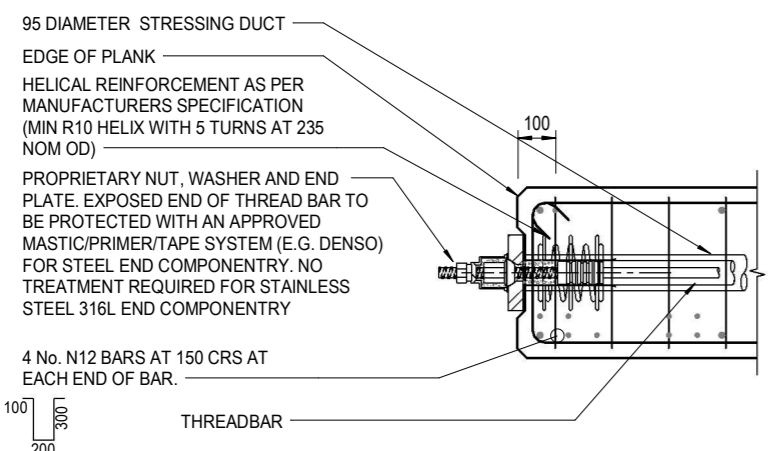
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C1	85	85	105	490	150	10
C2	95	95	115	470	155	9

\* FOR CLASSIFICATIONS B2/C1/C2 DIMENSION 'A' MAY BE INCREASED TO 100 IF DESIRED TO SUIT STRESSING PLATE DIMENSIONS

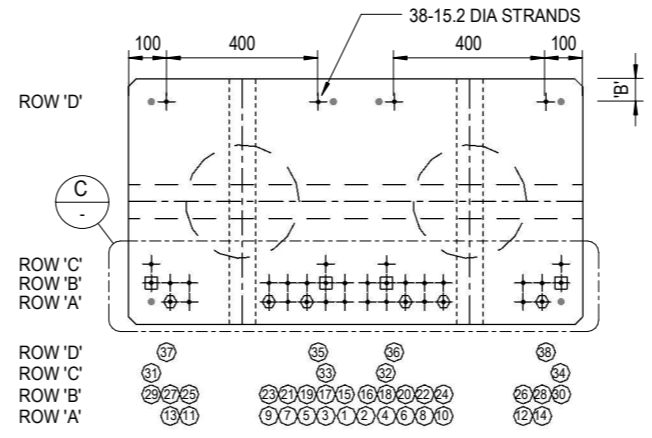
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B1 / B2	✓	✓	-
C1 / C2	✓	✓	-

- ALKYD PROTECTIVE COATING TO COMPRISE:  
 - CLASS 2 1/2 SURFACE PREPARATION  
 - 75 µm MIN DFT HIGH BUILD ALKYD PRIMER  
 - 40 µm MIN DFT ALKYD GLOSS TOP COAT

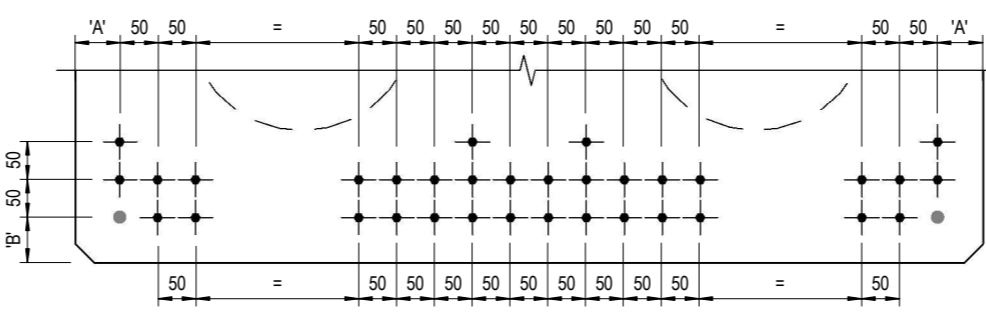


**DETAIL B**  
1 : 20

**REINFORCEMENT AROUND POST TENSIONING DUCTS**



**TENDON RELEASE ORDER - TYPICAL**  
SCALE: 1 : 20



ALL EQUAL (=) DIMENSIONS MIN. 150  
**DETAIL C**  
1 : 10

DRAWING SD-51.015.dwg

No.	Amendment Description	Initials	Date
02	BEARING FORCES NOTED	AF (P&S)	09/10/2019
01	NOTES REVISED	MP (P&S)	05/08/2019
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**Department of State Growth**  
 STANDARDISED BRIDGE DESIGN  
 PRECAST PLANK UNITS  
 TYPICAL REINFORCING DETAILS  
 16m PSC PLANK UNIT

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**SD-51.015**  
**02**