COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

NEW BRIDGE †
BRIDGE No: †
DESIGN FILE No: †
DESIGN STANDARD: AS 5100 SET 2007 - BRIDGE DESIGN SET
AS/RMS 5100.5 INTERIM - MAY 2015
MAXIMUM No OF VEHICLES PER DAY: 150
CARRIAGEWAY WIDTH: 4200mm

ROAD TRAFFIC LOADING: SM1600

NUMBER OF DESIGN LANES: 1
DESIGN TRAFFIC SPEED: †
ACCOMPANYING LANE FACTORS: 1
FATIGUE LOADING:
NUMBER OF HEAVY VEHICLES PER LANE PER DAY: MAXIMUM 20
ROUTE FACTOR: 0.5

TRAFFIC BARRIER PERFORMANCE LEVEL: LOW

THE DESIGN BARRIER PERFORMANCE LEVEL IS LOW. IF ANY OTHER PERFORMANCE LEVEL IS REQUIRED FOR A SPECIFIC SITE, THE DESIGN SHALL BE ADJUSTED IN ACCORDANCE WITH AS 5100.

EARTHQUAKE LOADING

BRIDGE CLASSIFICATION: †
IMPORTANCE FACTOR: †
ACCELERATION COEFFICIENT: †
SITE FACTOR (AS 1170-1993): †
DESIGN CATEGORY: †

WIND LOADING

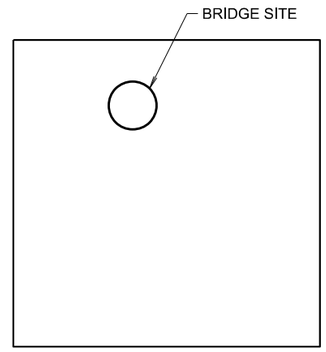
DESIGN SPEED = m/sec at SLS †
= m/sec at ULS †

WATER FLOW DATA †

	SLS	ULS
ARI		
FLOW VELOCITY (m/s)		
FLOOD LEVEL (m)		
SCOUR DEPTH (m)		
(i) ABUTMENT A		
(ii) PIER 1		
(iii) ABUTMENT B		

DEPTH OF DEBRIS MATTRESS mm †

† DIFFERENTIAL SETTLEMENT:
mm TOTAL BETWEEN BRIDGE SUPPORTS



LOCALITY PLAN †

REFERENCE DOCUMENTS:

CBS OVERARCHING GUIDE
CBS SUITABILITY AND INVESTIGATION GUIDE
CBS DESIGN GUIDE
CBS CONSTRUCTION GUIDE
CBS OPERATION AND MAINTENANCE GUIDE
GEOTECHNICAL INVESTIGATION REPORT No : †
HYDRAULIC INVESTIGATION REPORT No : †
DURABILITY INVESTIGATION REPORT No : †

NOTE:

THESE DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ABOVE REFERENCE DOCUMENTS PARTICULARLY THE DESIGN GUIDE AND TO BE CONSTRUCTED IN ACCORDANCE WITH RMS QA CONSTRUCTION SPECIFICATIONS. ANY VARIATION TO THIS STANDARD DRAWING SHALL NOT BE USED WITHOUT THE APPROVAL OF THE RMS PRINCIPAL ENGINEER BRIDGES.

† DENOTES DESIGN DATA RELEVANT TO THE SPECIFIC SITE TO BE DETERMINED BY THE DESIGNER.

Transport Roads & Maritime Services

PREPARED BY
BRIDGE ENGINEERING
110 GEORGE STREET
PARRAMATTA NSW 2150
PHONE (02) 8837-0811
FACSIMILE (02) 8837-0055

DESIGNED AND PRODUCED UNDER A QUALITY SYSTEM CERTIFIED AS COMPLYING WITH ISO/AS 9001 BY AN ACCREDITED CERTIFICATION BODY

CBS MODULAR BRIDGE DESIGN REQUIREMENTS

1. THE FOLLOWING STRUCTURAL ELEMENTS ARE NOT COVERED IN THIS STANDARD DESIGN AND SHALL BE DESIGNED, VERIFIED AND CERTIFIED IN ACCORDANCE WITH AS 5100 AND RMS REFERENCE DOCUMENTS BY SUITABLY QUALIFIED ENGINEERS EXPERIENCED IN BRIDGE DESIGN WITH A LEVEL OF EXPERIENCE DETERMINED BY THE COUNCIL:
   - PILES, PILE CAPS, COLUMNS, WALL UNDER ABUTMENT SILL BEAM AND FOOTINGS.
   - ANCHORAGE REINFORCEMENT FROM PILES, COLUMNS, FOOTINGS, WALLS AND PILE CAPS INTO HEADSTOCK AND SILL BEAM RECESSES.
   - RESTRAINT AND HOLDING DOWN BRACKETS FOR BRIDGES WHERE THE ULTIMATE WATER FLOW VELOCITY EXCEEDS 4m/s AND WHERE THE OVERTOPPING EXCEEDS 5m.
   - THE PIER HEADSTOCK SUPPORTING UNEQUAL SPANS ON EACH SIDE.
   - TRAFFIC BARRIER, RAILING, ATTACHMENTS, RESTRAINT BRACKET, REINFORCEMENTS IN THE PRECAST MODULES AND WINGWALLS FOR BARRIERS WITH HIGHER PERFORMANCE LEVEL THAN LOW.
   - TEMPORARY SUPPORTS AND BRACINGS FOR ALL PRECAST ELEMENTS.
   - ANY REQUIRED EMBANKMENT/SCOUR PROTECTION.
2. THE SUBSTRUCTURES ARE DESIGNED FOR MAXIMUM OUT OF POSITION OF PILES MEASURED AT CUT OFF LEVELS OF PILES OF ±75mm.

JACKING OF BRIDGE DECK FOR BEARING REPLACEMENT

JACKING PLATE (FOR INFORMATION ONLY) TO BE 120mm x 16PL x 120mm FOR 10 TONNES JACK
FOR JACKING LOCATIONS REFER SHEET Nos 7, 14, 16, 18 AND 20.
MAXIMUM REQUIRED LOADS PER JACK ARE 50kN (SLS) AND 60kN (ULS).
THE MAXIMUM LIFT DURING JACKING SHALL BE LIMITED TO 10mm.
NO TRAFFIC LOAD IS PERMITTED ON THE BRIDGE DURING JACKING.
ALL JACKS AT ENDS OF GIRDERS SHALL BE HYDRAULICALLY LINKED AND HAVE A CENTRAL MECHANISM TO ENSURE THAT THE SAME VERTICAL DISPLACEMENT OCCURS AT EACH JACKING POINT AT ALL TIMES DURING THE JACKING OPERATION.
AT PIERS BOTH ENDS OF GIRDERS SHALL BE JACKED SIMULTANEOUSLY.
STEEL PLATES SHALL BE PLACED BETWEEN CONCRETE BEARING SURFACES AND JACK TO ENSURE CONCRETE BEARING STRESS AT SLS DOES NOT EXCEED 18 MPa.

APPROVED FOR USE
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PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

REGISTRATION No OF PLANS
ISSUE STATUS:
SHEET No MB10SL01 | No OF SHEETS 40 | ISSUE

SCHEDULE OF DRAWINGS

DRAWING NUMBER	DRAWING TITLE
MB10SL01	COVER SHEET
MB10SL02	SCHEDULE OF DRAWINGS AND LIST OF SPECIFICATIONS
MB10SL03	GENERAL ARRANGEMENT - SHEET A
MB10SL04	GENERAL ARRANGEMENT - SHEET B
MB10SL05	GENERAL ARRANGEMENT - SHEET C
MB10SL06	GENERAL ARRANGEMENT - SHEET D
MB10SL07	PRECAST ABUTMENT SILL BEAMS CONCRETE
MB10SL08	PRECAST ABUTMENT WINGWALL CONCRETE - SHEET A
MB10SL09	PRECAST ABUTMENT WINGWALL CONCRETE - SHEET B
MB10SL10	PRECAST ABUTMENT SILL BEAM REINFORCEMENT
MB10SL11	PRECAST ABUTMENT WINGWALL REINFORCEMENT - SHEET A
MB10SL12	PRECAST ABUTMENT WINGWALL REINFORCEMENT - SHEET B
MB10SL13	PRECAST ABUTMENT WINGWALL REINFORCEMENT - SHEET C
MB10SL14	PIERS PRECAST HEADSTOCK - 2 COLUMNS - CONCRETE
MB10SL15	PIERS PRECAST HEADSTOCK - 2 COLUMNS - REINFORCEMENT
MB10SL16	PIERS PRECAST HEADSTOCK - 3 COLUMNS - CONCRETE
MB10SL17	PIERS PRECAST HEADSTOCK - 3 COLUMNS - REINFORCEMENT
MB10SL18	PIERS PRECAST HEADSTOCK - 4 COLUMNS - CONCRETE
MB10SL19	PIERS PRECAST HEADSTOCK - 4 COLUMNS - REINFORCEMENT
MB10SL20	PIERS PRECAST HEADSTOCK - 4 PILES - CONCRETE
MB10SL21	PIERS PRECAST HEADSTOCK - 4 PILES - REINFORCEMENT
MB10SL22	NOT USED
MB10SL23	PIER COLUMNS - CONCRETE
MB10SL24	PIER COLUMNS - REINFORCEMENT
MB10SL50	BEARINGS - SHEET A
MB10SL51	BEARINGS - SHEET B
MB10SL52	PRECAST MODULE CONCRETE - SHEET A
MB10SL53	PRECAST MODULE CONCRETE - SHEET B
MB10SL54	NOT USED
MB10SL55	PRECAST MODULE REINFORCEMENT - SHEET A
MB10SL56	PRECAST MODULE REINFORCEMENT - SHEET B
MB10SL57	PRECAST MODULE REINFORCEMENT - SHEET C
MB10SL58	DECK ASSEMBLY - SHEET A
MB10SL59	DECK ASSEMBLY - SHEET B
MB10SL60	DECK ASSEMBLY - SHEET C
MB10SL61	RESTRAINT AND HOLDING DOWN BRACKET - SHEET A
MB10SL62	RESTRAINT AND HOLDING DOWN BRACKET - SHEET B
MB10SL63	NOT USED
MB10SL64	TRAFFIC BARRIER RAILING - SHEET A
MB10SL65	TRAFFIC BARRIER RAILING - SHEET B
MB10SL66	TRAFFIC BARRIER RAILING - SHEET C
MB10SL67	TRAFFIC BARRIER RAILING - SHEET D
MB10SL68	BAR SHAPES DIAGRAM

NOTE: SHEETS No MB10SL22, MB10SL25 TO MB10SL49, MB10SL54 AND MB10SL63 NOT USED

LIST OF RMS QA CONSTRUCTION SPECIFICATIONS

No.	SPECIFICATION TITLE
B30	EXCAVATION AND BACKFILL FOR BRIDGEWORKS.
B50	DRIVEN REINFORCED CONCRETE PILES.
B58	BORED CAST-IN-PLACE REINFORCED CONCRETE PILES (WITH PERMANENT CASING).
B59	BORED CAST-IN-PLACE REINFORCED CONCRETE PILES (WITHOUT PERMANENT CASING).
B80	CONCRETE WORK FOR BRIDGES.
B110	SUPPLY OF PRESTENSIONED PRECAST CONCRETE MEMBERS.
B115	PRECAST CONCRETE MEMBERS (NOT PRETENSIONED).
B150	ERECTION OF PRETENSIONED PRECAST CONCRETE MEMBERS.
B153	ERECTION OF PRECAST CONCRETE MEMBERS (NOT PRETENSIONED).
B204	WELDING OF BRIDGES AND OTHER ROAD STRUCTURES.
B220	PROTECTIVE TREATMENT OF BRIDGE STEELWORK.
B240	SUPPLY OF BOLTS, NUTS, SCREWS AND WASHERS.
B241	MANUFACTUREAND SUPPLY OF MINOR STEEL ITEMS.
B264	ERECTION OF BARRIER RAILINGS AND MINOR COMPONENTS.
B281	LAMINATED ELASTOMERIC BEARINGS.
B284	INSTALLATION OF BRIDGE BEARINGS.
B312	COLD APPLIED ELASTOMERIC JOINT SEALANTS.
B344	SPRAYED BITUMENOUS WATERPROOFING MEMBRANES.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

SCHEDULE OF DRAWINGS AND LIST OF SPECIFICATIONS

PREPARED BY
BRIDGE ENGINEERING SECTION
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REGISTRATION
No OF PLANS

BRIDGE No

ISSUE STATUS

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BRIDGE ENGINEER (NEW DESIGN)

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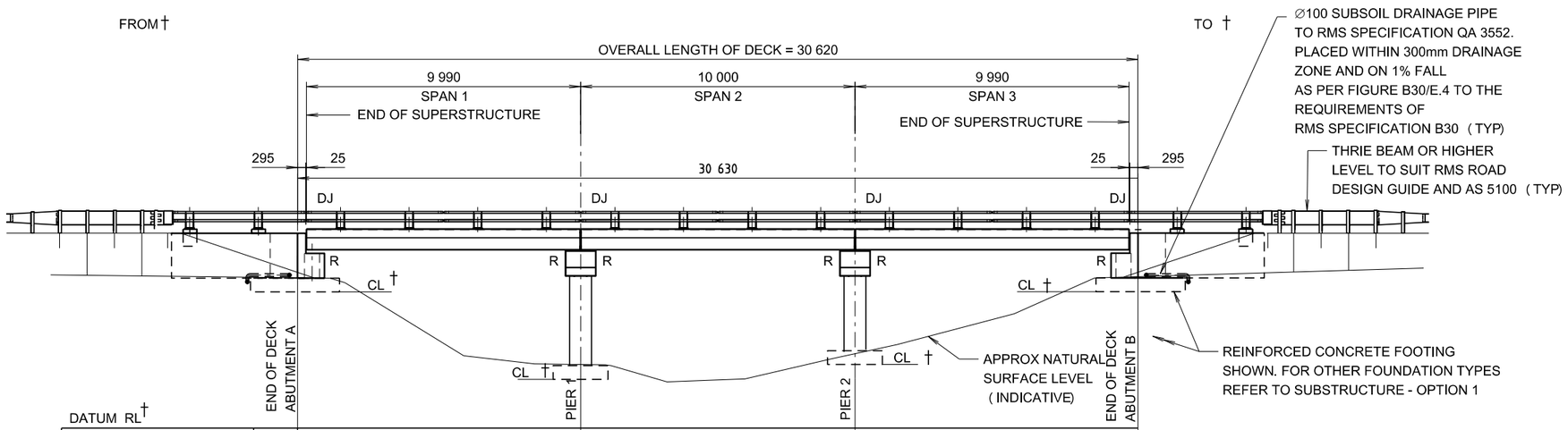
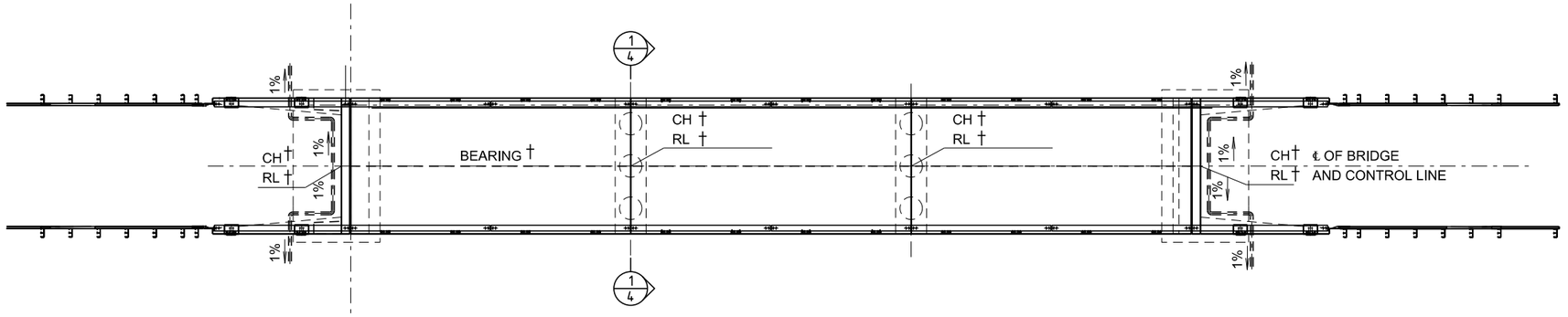


ELEVATION

SITE PLAN †



PLAN

SPILL THROUGH BATTER, CONTOURS, WATER FLOW DIRECTION AND NORTH DIRECTION TO BE ADDED TO SUIT BRIDGE LOCATION

GENERAL NOTES

SCALE 0 1 2 3 4 5m (1 0.5) OR AS SHOWN.

DIMENSIONS ARE IN MILLIMETRES.
CHAINAGES AND REDUCED LEVELS ARE IN METRES.
REDUCED LEVELS ARE RELATED TO AN ASSUMED DATUM
R DENOTES RESTRAINED BEARING.
DJ DENOTES DECK JOINT.
BRIDGE WITH 3/10m SPANS SHOWN. BRIDGES WITH 1/10m SPAN OR MULTIPLE EQUAL OF 10m SPANS ARE SIMILAR UNLESS SPECIFIED OTHERWISE
† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.

SUBSTRUCTURE - OPTION 1

CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTINGS/PILE CAPS AND PILES AT PIERS AND REINFORCED CONCRETE FOOTINGS/PILE CAPS AND PILES AT ABUTMENTS.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

GENERAL ARRANGEMENT - SHEET A

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DRAWING	D.G.C.	A Dey

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07.10.2016
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REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL03

CAD No CBS_10SL_T3_GA.dgn

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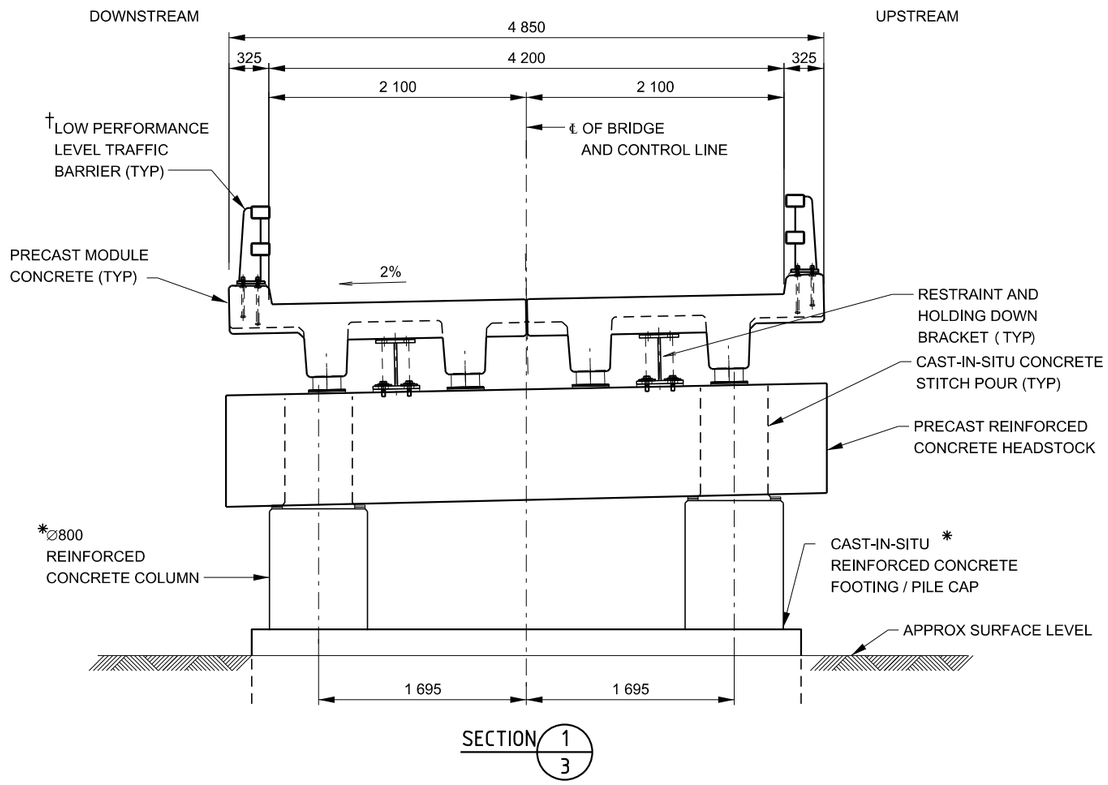
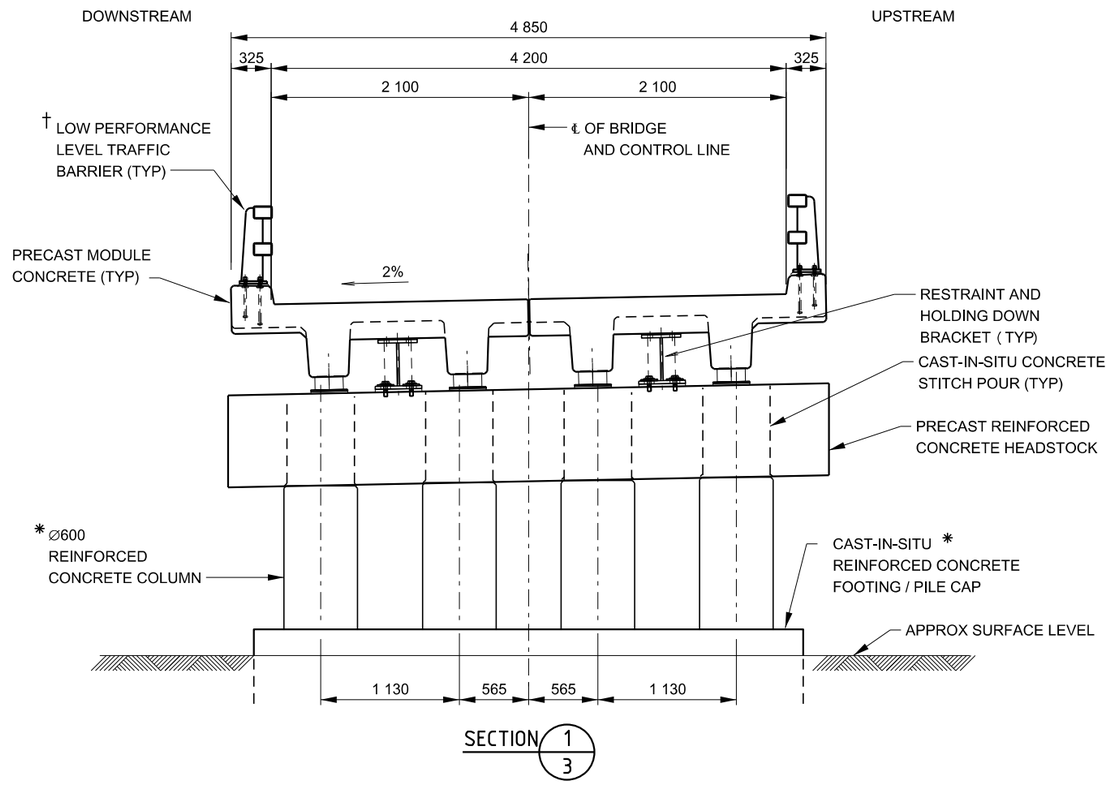
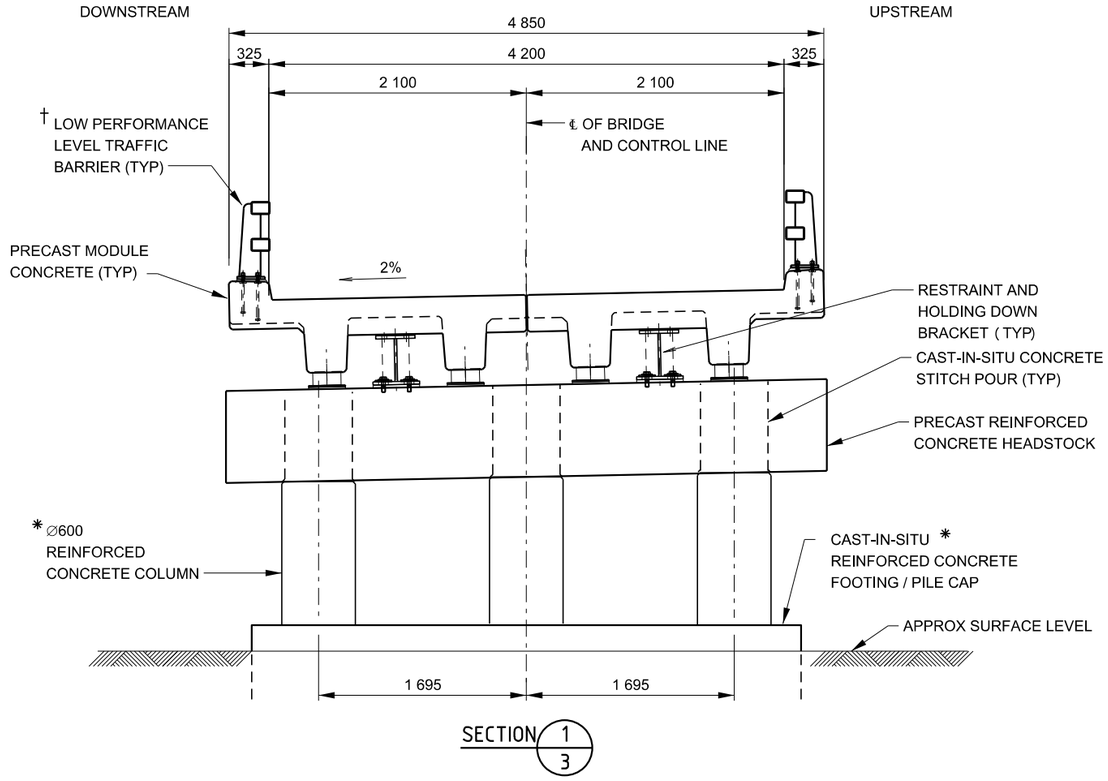


OPTION 1 WITH TWO CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES



OPTION 1 WITH FOUR CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES



OPTION 1 WITH THREE CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES

GENERAL NOTES

SCALE 0 500 1 000 1 500mm (500 250) OR AS SHOWN

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 3.

* DENOTES COLUMNS AND FOOTINGS OR PILE CAP AND PILES TO BE DESIGNED BY BRIDGE ENGINEER TO SUIT SPECIFIC BRIDGE SITE.

† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

GENERAL ARRANGEMENT - SHEET B

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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL04

CAD No CBS_10SL_T3_GB.dgn

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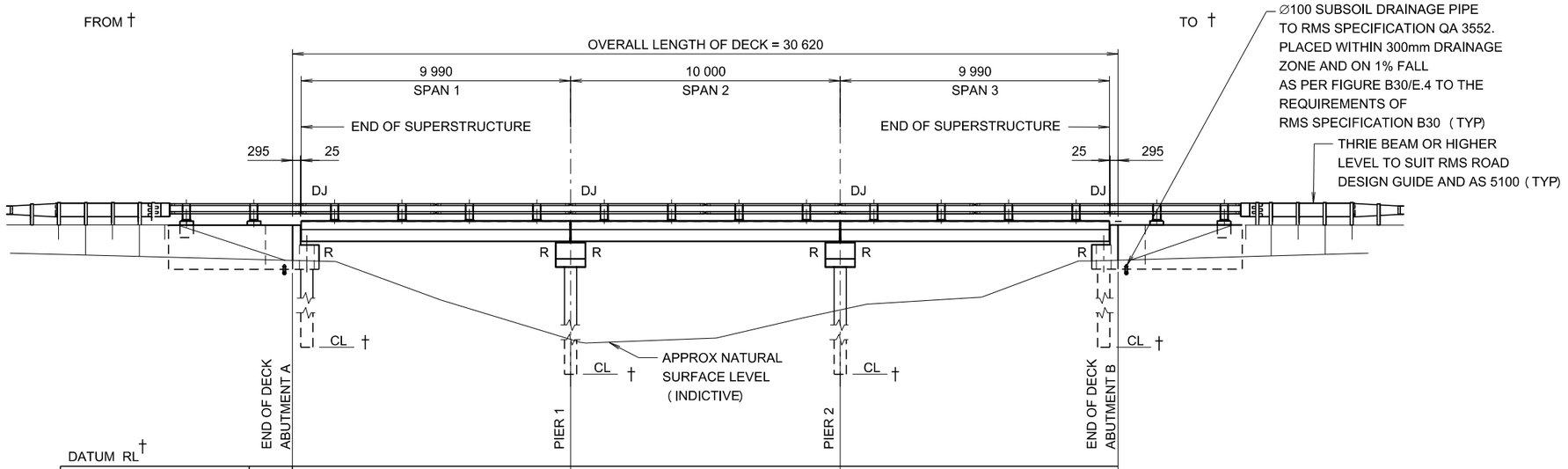
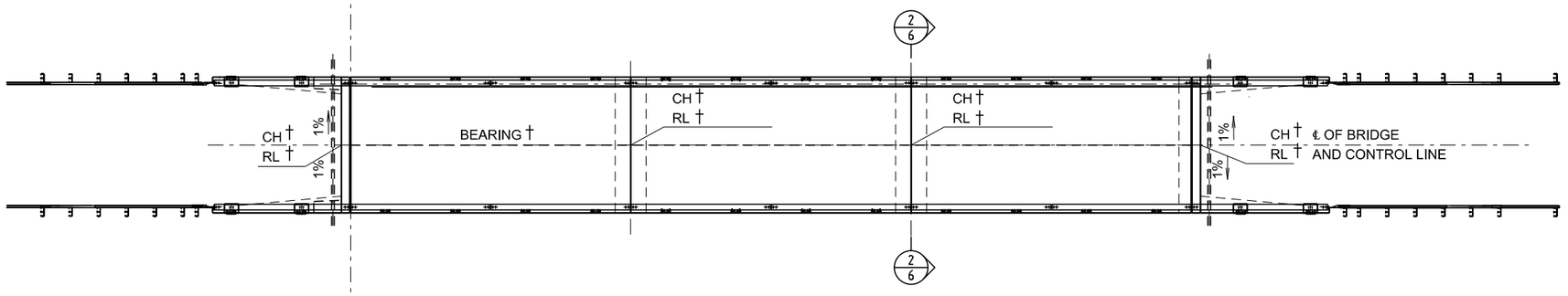


DATUM RL †

DESIGN SURFACE LEVEL ALONG CONTROL LINE	†	†	†	†
EXISTING SURFACE LEVEL ALONG CONTROL LINE	†	†	†	†
CHAINAGE ALONG CONTROL LINE	†	†	†	†

ELEVATION

SITE PLAN †



PLAN
SPILL THROUGH BATTER, CONTOURS, WATER FLOW DIRECTION AND NORTH DIRECTION TO BE ADDED TO SUIT BRIDGE LOCATION

GENERAL NOTES

SCALE 0 1 2 3 4 5m (1 0.5) OR AS SHOWN.

DIMENSIONS ARE IN MILLIMETRES.
CHAINAGES AND REDUCED LEVELS ARE IN METRES.
REDUCED LEVELS ARE RELATED TO AN ASSUMED DATUM
R DENOTES RESTRAINED BEARING.
DJ DENOTES DECK JOINT.
BRIDGE WITH 3/10m SPANS SHOWN. BRIDGES WITH 1/10m SPAN OR MULTIPLE EQUAL OF 10m SPANS ARE SIMILAR UNLESS SPECIFIED OTHERWISE
† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.

SUBSTRUCTURE - OPTION 2

PRECAST REINFORCED CONCRETE PILES AT PIERS AND ABUTMENTS

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

GENERAL ARRANGEMENT - SHEET C

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07.10.2016
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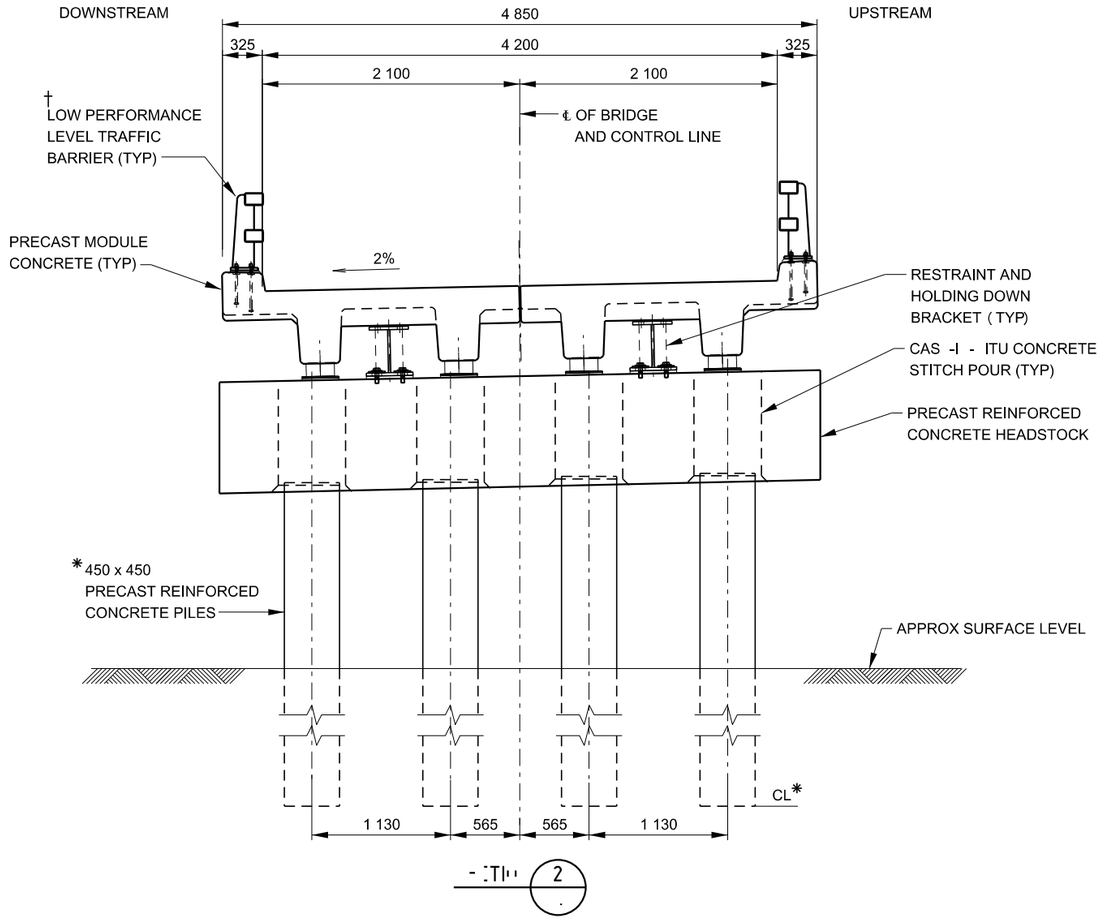
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL05

CAD No CBS_10SL_T3_GC.dgn



OPTION 2 WITH FOUR PRECAST REINFORCED CONCRETE PILES

GENERAL NOTES

SCALE 0 1 000 1 OR AS SHOWN

2

* DENOTES THE CONTRACT LEVEL AND THE DESIGN OF THE PRECAST REINFORCED CONCRETE PILES SHALL BE CARRIED OUT BY SUITABLY QUALIFIED ENGINEER TO SUIT SPECIFIC BRIDGE SITE AND SHALL BE DETAILED TO COMPLY WITH RMS STANDARD DRAWING .

† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIG .

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

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE -

GENERAL ARRANGEMEN -

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PHONE (02) 883 -

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DESIGN	S Assi	A Dey
DRAWING		A Dey

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07.10.2016
DATE

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BRIDGE ENGINEER (NEW DESIGN)

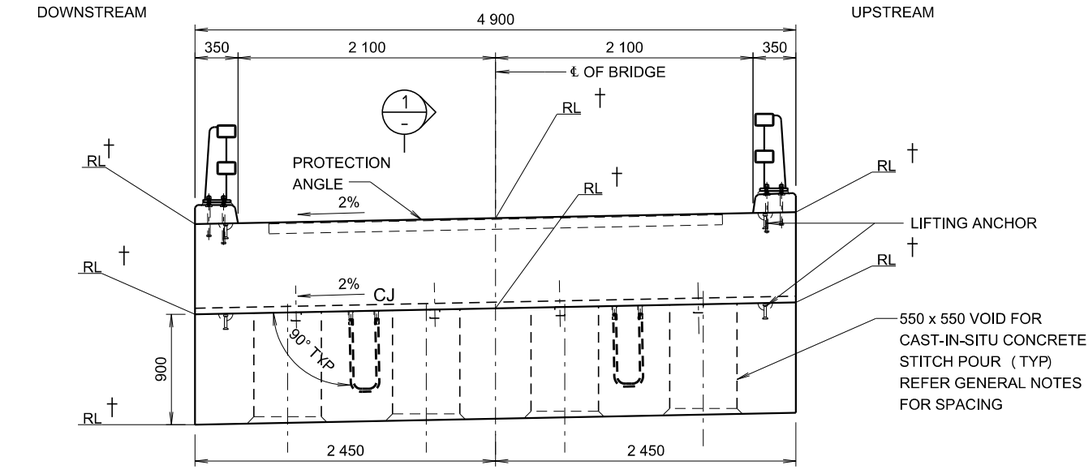
REGISTRATION
No OF PLANS

BRIDGE No

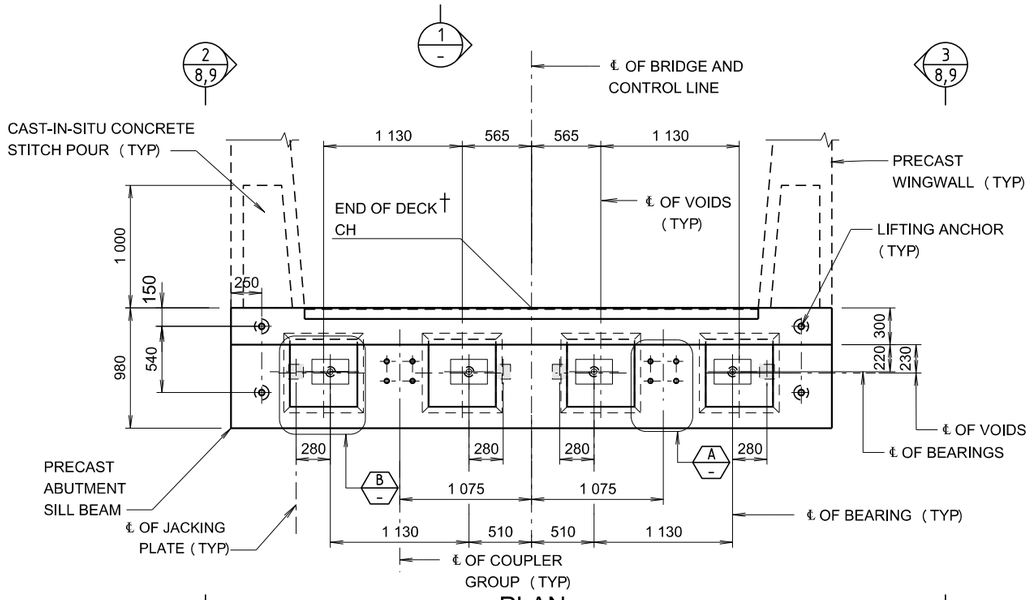
ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL06

CAD No GBS_10SL_T3_G .

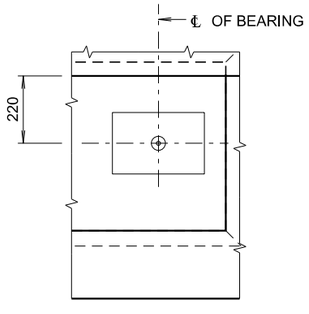


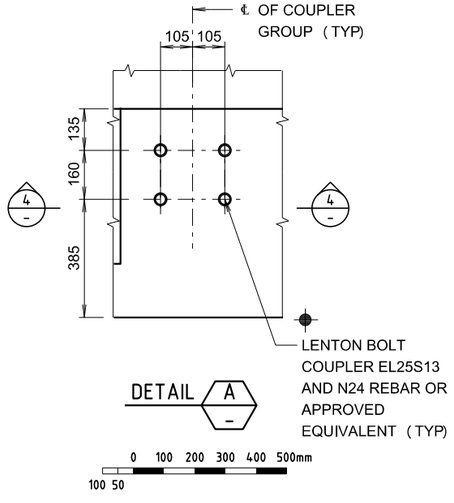
ELEVATION

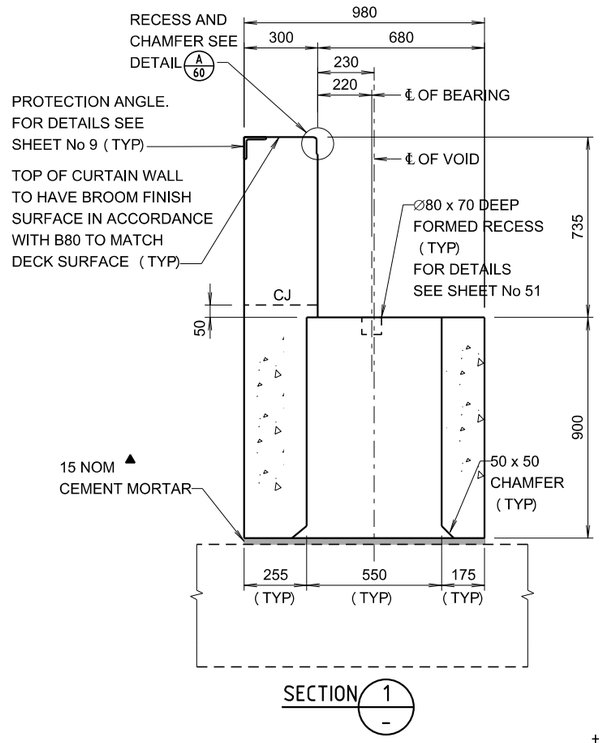


PLAN

⌖ - DENOTES JACKING PLATE LOCATIONS

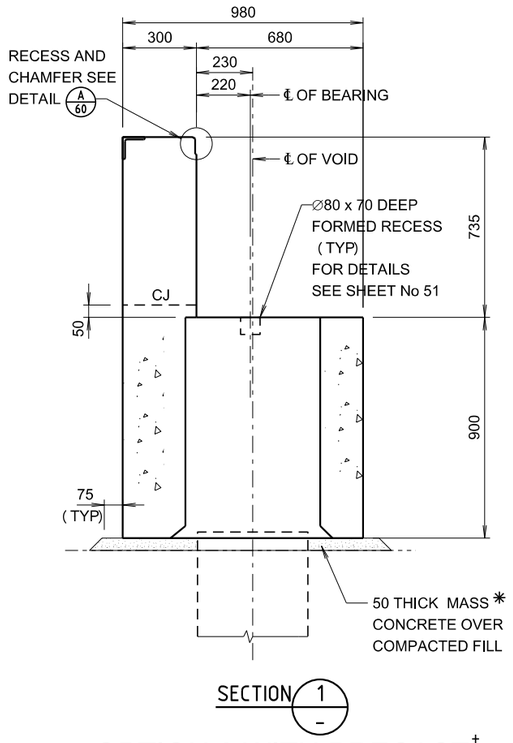






OPTION 1 - WITH CAST IN-SITU † REINFORCED CONCRETE FOOTING/PILE CAP AND PILES

0 250 500 750mm
250 125



OPTION 2 WITH PRECAST † REINFORCED CONCRETE PILES

0 250 500 750mm
250 125

GENERAL NOTES

SCALE 0 500 1 000 1 500mm
500 250
OR AS SHOWN

VOIDS ARE SHOWN FOR THE OPTIONS OF FOUR PILES/COLUMNS OR FOUR ANCHORAGE GROUPS FROM FOOTING/WALL.
VOIDS FOR OTHER OPTIONS ARE SIMILAR EXCEPT AS SHOWN IN THE TABLE BELOW:

No OF PILES/COLUMNS/ANCHORAGE GROUPS	VOID/PILE SPACING
2	3390
3	1695

† DENOTES TO BE SPECIFIED TO SUIT BRIDGE DESIGN.
✳ DENOTES TYPICAL SUPPORT UNDER PRECAST SILL BEAM, EXCEPT FOR AREAS UNDER VOIDS, AND WINGWALLS OR SUITABLE ALTERNATIVE TEMPORARY SUPPORT METHOD.
⌖ DENOTES HOT DIP GALVANIZED IN ACCORDANCE WITH RMS SPECIFICATION B241.
FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 8.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST ABUTMENT SILL BEAMS CONCRETE

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

NSW GOVERNMENT Transport Roads & Maritime Services
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	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL07

CAD No CBSAA1_10SL_T3.dgn

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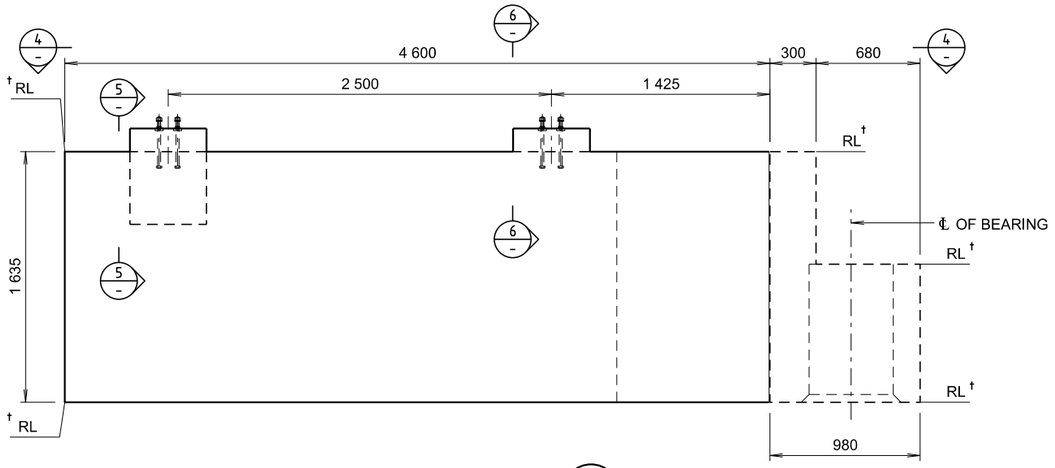
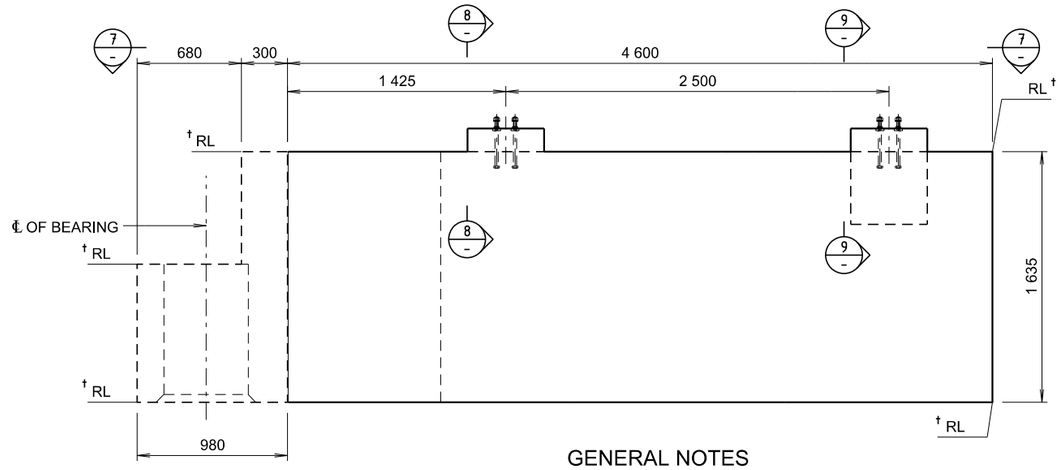




VIEW 2/7

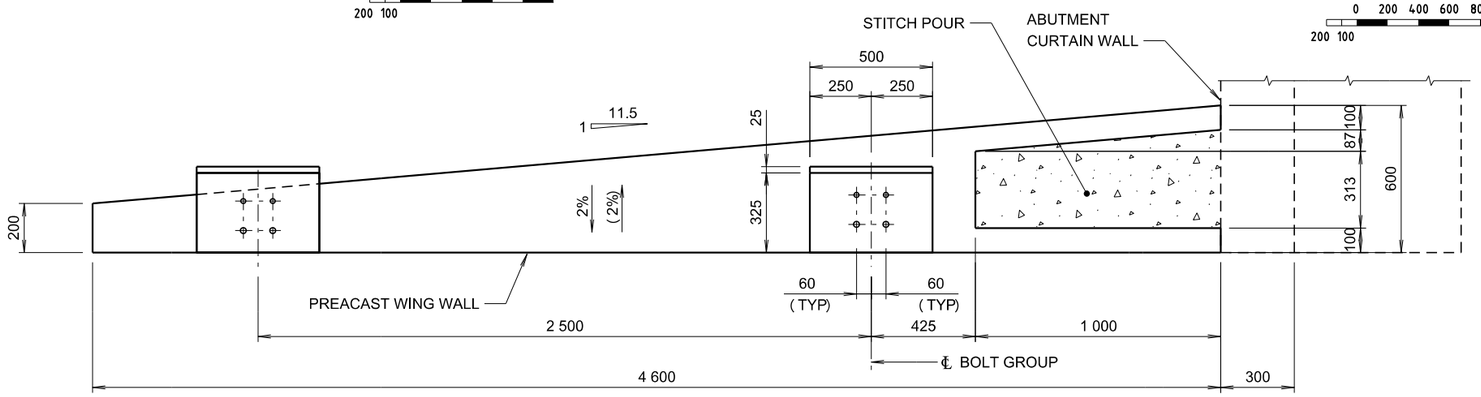
TRAFFIC BARRIER NOT SHOWN

0 200 400 600 800 1 000mm
200 100

VIEW 3/7

TRAFFIC BARRIER NOT SHOWN

0 200 400 600 800 1 000mm
200 100

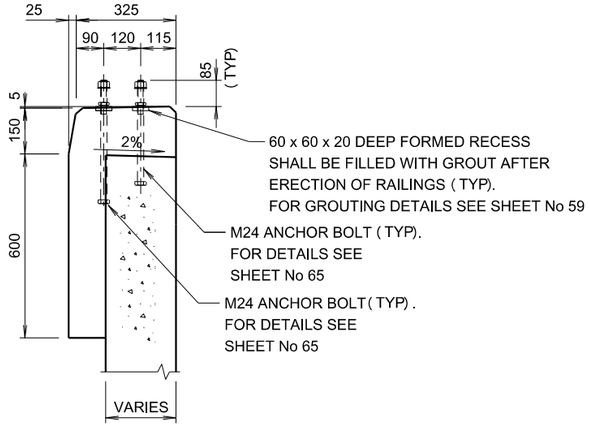


VIEW 4/– SHOWN

VIEW 7/– SIMILAR EXCEPT WHERE SHOWN IN BRACKETS

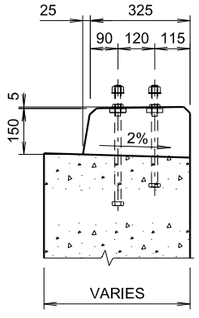
4.6m PRECAST WINGWALL

2 REQUIRED AS SHOWN
2 REQUIRED OPPOSITE HAND



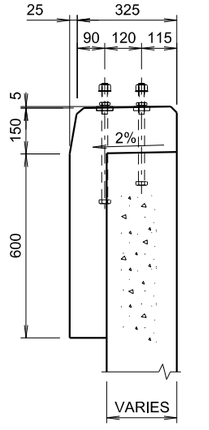
VIEW 5/–

0 100 200 300 400 500mm
100 50



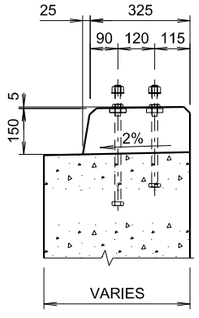
SECTION 6/–

0 100 200 300 400 500mm
100 50



SECTION 9/–

0 100 200 300 400 500mm
100 50



SECTION 8/–

0 100 200 300 400 500mm
100 50

GENERAL NOTES

SCALE 0 250 500 750mm
250 125
OR AS SHOWN.

CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF ALL CONCRETE SHALL BE 40 MPa.
EDGES SHALL BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.
ALL SURFACES OF VOIDS IN PRECAST SILL BEAM AND IN WINGWALL IN CONTACT WITH CONCRETE STITCH POUR SHALL BE ROUGHENED DURING MANUFACTURE AS CONSTRUCTION JOINT IN ACCORDANCE WITH RMS SPECIFICATION B80.
THE PROPOSED METHOD OF MANUFACTURE OF PRECAST SILL BEAM AND WING WALL SHALL BE AS SUBMITTED TO THE PRINCIPAL MINIMUM 2 WEEKS PRIOR TO THE COMMENCEMENT OF ANY WORK ON THESE MEMBERS.
MASS OF PRECAST SILL BEAM IS APPROXIMATELY 11.0 TONNES.
MASS OF PRECAST 4.6m WINGWALL IS APPROXIMATELY 6.3 TONNES
MASS OF PRECAST 3.7m WINGWALL IS APPROXIMATELY 5.4 TONNES
MASSES BASED ON UNIT WEIGHT OF 2550kg/m^3.
DURING STORAGE, TRANSPORT AND HANDLING, PRECAST SILL BEAMS AND WINGWALLS SHALL BE IN AN UPRIGHT POSITION AND SUPPORTED AT NOT MORE THAN 600mm FROM EACH END.
LIFTING ANCHORS SHALL BE SWIFT LIFT OR APPROVED EQUIVALENT DESIGNED BY THE PRECAST ITEM MANUFACTURE TO THE SATISFACTION OF THE PRINCIPLE.
THE LOCATIONS MAY VARY TO SUIT THIS DESIGN.
▲ DENOTES LEVELING MORTAR PLACED, EXCEPT FOR AREA UNDER VOIDS, IN ACCORDANCE WITH AS 1597.2 OR APPROVED ALTERNATIVE METHOD SUCH AS PLACING THE HEADSTOCK ON SHIMS AND FILL GAP WITH NON-SHRINK HIGH STRENGTH GROUT CONBEXTRA HS OR APPROVED EQUIVALENT.
THE MORTAR SHOULD BE SUFFICIENTLY STIFF TO PROVIDE A LAYER NO LESS THAN 15mm THICK AFTER THE SILL BEAM IS PLACED IN POSITION.
THE SILL BEAM SHALL BE PLACED IN POSITION BEFORE THE MORTAR HAS SET SO THAT UNIFORM BEARING IS OBTAINED.
ALL FASTENERS AND STAINLESS STEEL DOWELS SHALL CONFORM TO THE REQUIREMENTS OF RMS SPECIFICATION B24O.
† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.
FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 7.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST ABUTMENT WINGWALL CONCRETE - SHEET A

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
NSW GOVERNMENT
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL08

CAD No CBSAA2_10SL_T3.dgn

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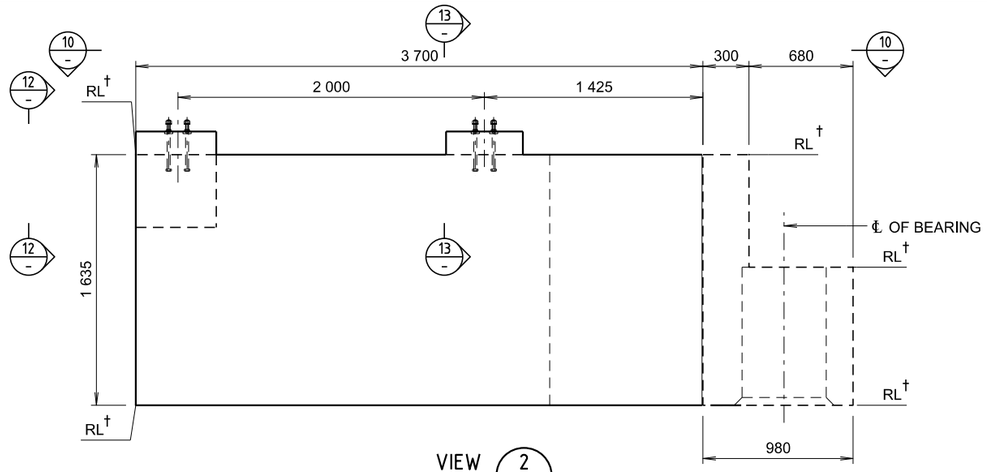
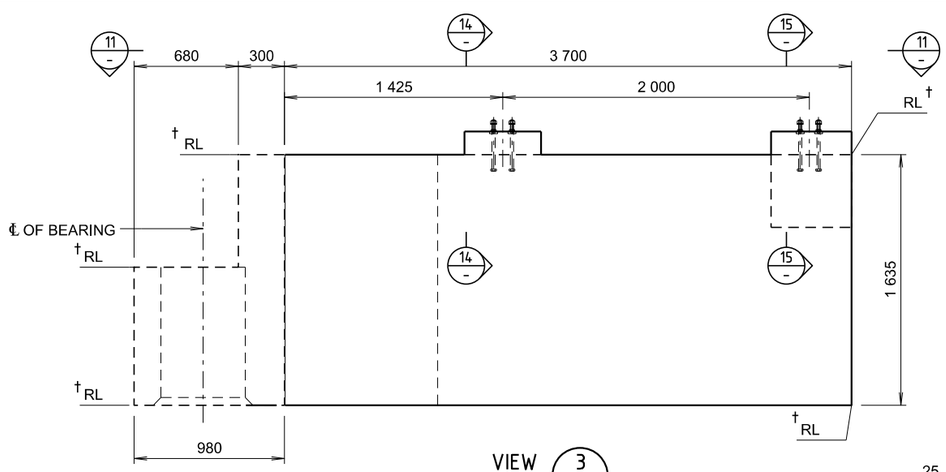


VIEW 2/7

TRAFFIC BARRIER NOT SHOWN

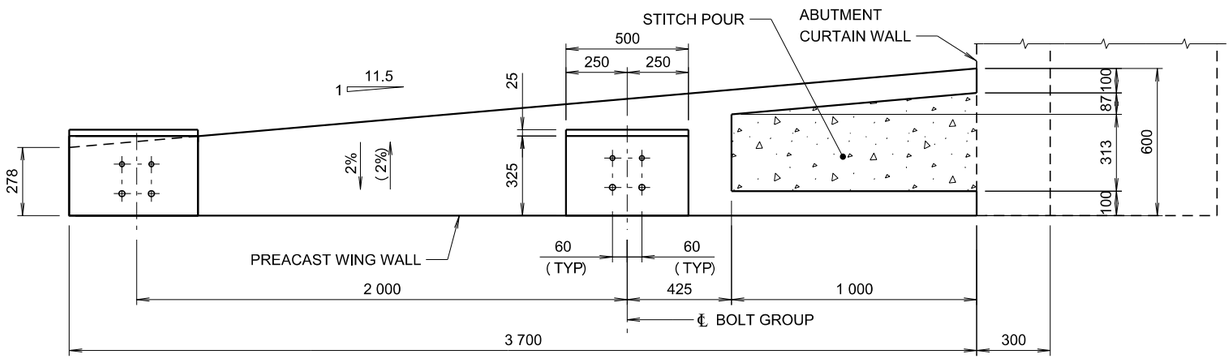
0 200 400 600 800 1 000mm
200 100



VIEW 3/7

TRAFFIC BARRIER NOT SHOWN

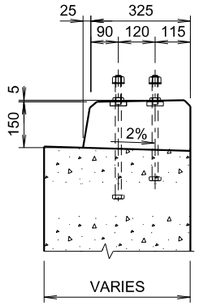
0 200 400 600 800 1 000mm
200 100



NOTE:
CROSS FALL AT THE TOP OF THE WINGWALL TO MATCH THE ABUTMENT SILL BEAM CROSS FALL

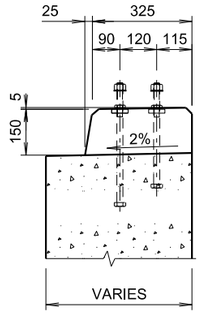
VIEW 10/- SHOWN

VIEW 11/- SIMILAR EXCEPT WHERE SHOWN IN BRACKETS



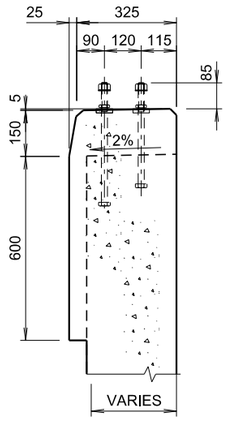
SECTION 13/-

0 100 200 300 400 500mm
100 50



SECTION 14/-

0 100 200 300 400 500mm
100 50

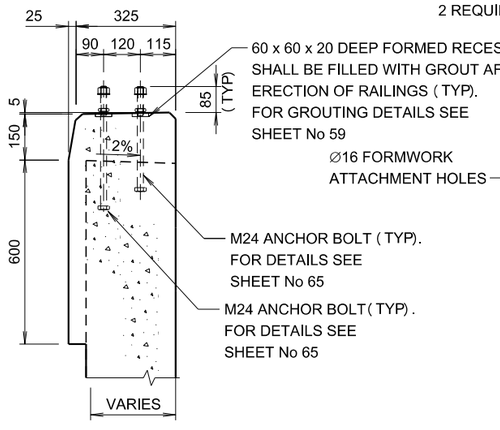


SECTION 15/-

0 100 200 300 400 500mm
100 50

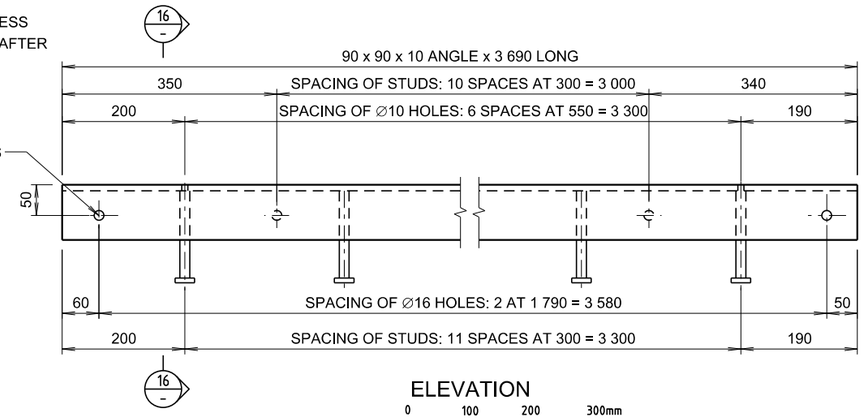
3.7m PRECAST WINGWALL

2 REQUIRED AS SHOWN
2 REQUIRED OPPOSITE HAND



VIEW 12/-

0 100 200 300 400 500mm
100 50

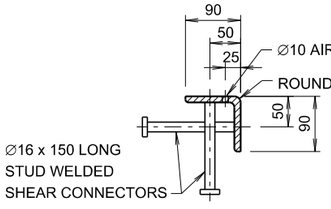


ELEVATION

0 100 200 300mm
100 50

PROTECTION ANGLE ASSEMBLY

2 REQUIRED



SECTION 16/-

0 100 200 300mm
100 50

GENERAL NOTES

SCALE 0 250 500 750mm (250 125) OR AS SHOWN

STEEL SECTIONS SHALL CONFORM TO AS/NZS 3679.1-300.
STEEL DOWELS SHALL CONFORM TO AS/NZS 4671-R250N.
THE WELD CATEGORY SHALL BE SP IN ACCORDANCE WITH AS/NZS 1554.1.
WELDING SYMBOLS COMPLY WITH AS 1101.3.
PROTECTION ANGLE ASSEMBLIES SHALL BE HOT-DIP GALVANISED AFTER FABRICATION.
EDGES TO BE PROTECTIVE TREATED SHALL BE ROUNDED TO A RADIUS OF 1.5mm UNLESS NOTED OTHERWISE.
† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.
FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEETS No 7 AND 8.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST ABUTMENT WINGWALL CONCRETE - SHEET B

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

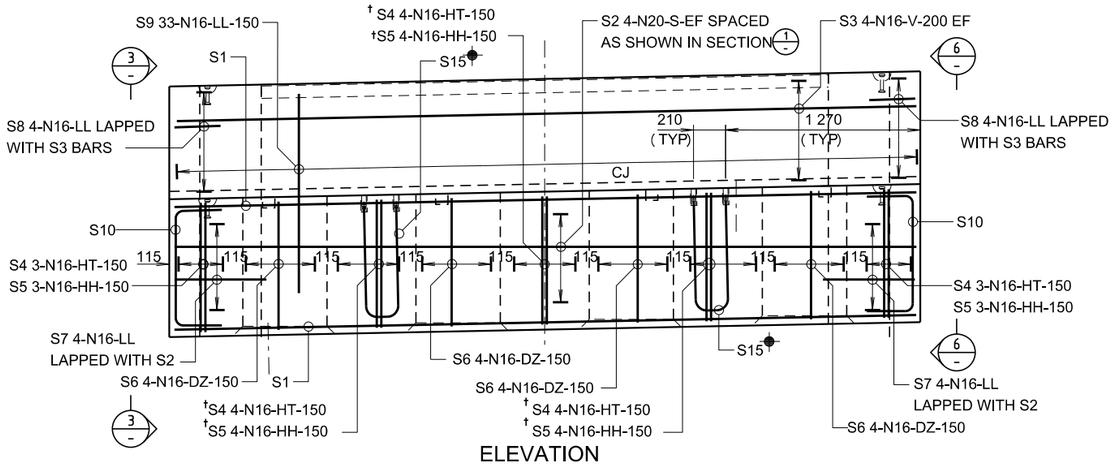
Transport Roads & Maritime Services
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

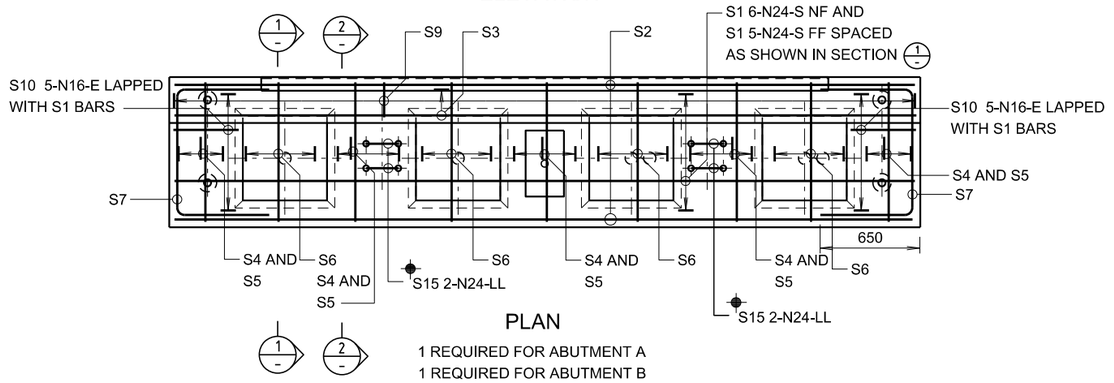
APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE
Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL09

CAD No CBSAA3_10SL_T3.dgn

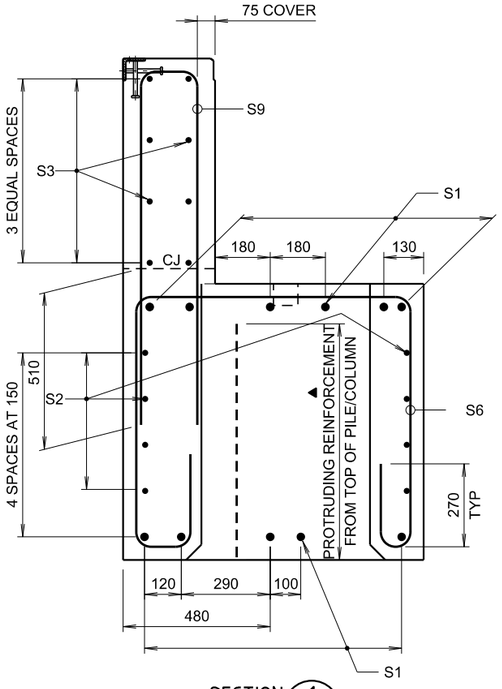


ELEVATION

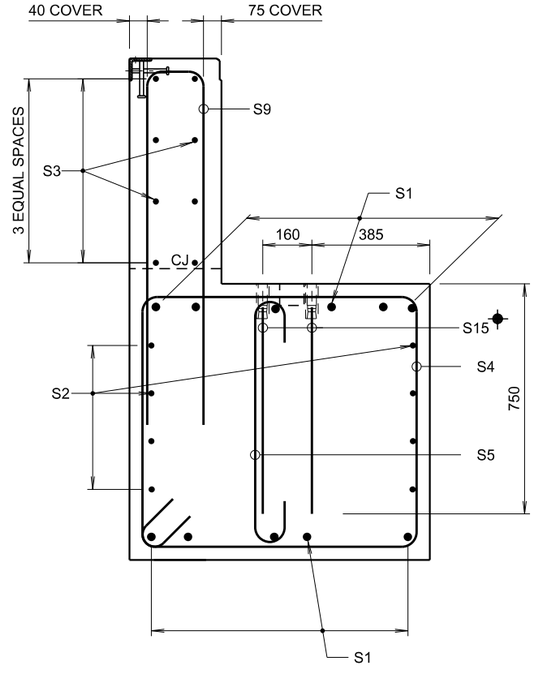


PLAN

1 REQUIRED FOR ABUTMENT A
1 REQUIRED FOR ABUTMENT B



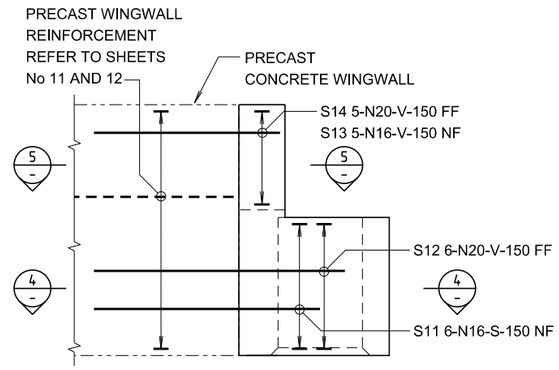
SECTION 1



SECTION 2

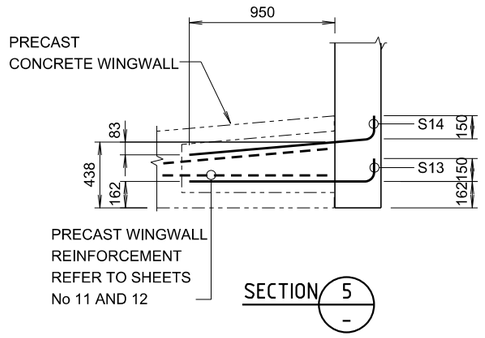
0 100 200 300 400 500mm
100 50

▲ DENOTES TYPICAL PROTRUDING REINFORCING BARS INTO SILL BEAM ARE INDICATIVE ONLY. THE NUMBER AND DEVELOPMENT LENGTH OF THESE BARS SHALL BE DETERMINED BY THE DESIGNER TO SUIT SUBSTRUCTURE DESIGN.

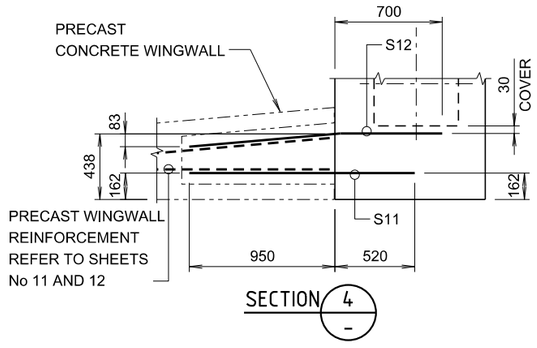


VIEW 3 SHOWN

VIEW 6 SIMILAR BUT OPPOSITE HAND



SECTION 5



SECTION 4

GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm / 200 100 OR AS SHOWN.

NOMINAL COVER TO REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE 35 mm UNLESS SPECIFIED OTHERWISE.

UNLESS OTHERWISE SPECIFIED, THE LAP LENGTH SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32	N36
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	510	650	880	1190	1520	1870	2760
b) OTHER BARS:	430	530	690	910	1170	1440	1740

THE DEVELOPMENT LENGTH SHALL BE 80% OF THE VALUE TABULATED ABOVE.

REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR COUPLERS, DOWELS, ANCHOR BOLTS, HOLES AND RECESSES.

REINFORCEMENT FOR OPTION 1 WITH FOUR PILES/COLUMNS IS SHOWN.

REINFORCEMENT FOR OTHER OPTIONS ARE SIMILAR EXCEPT AS NOTED OTHERWISE.

† DENOTES NUMBER OF BARS TO BE ADJUSTED TO SUIT THE NUMBER OF VOIDS.

⊕ DENOTES LENTON BOLT COUPLER EL25S13 AND N24 REBAR TO BE THREADED AT ENDS AND TIGHTENED INTO COUPLERS IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS OR APPROVED EQUIVALENT.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST ABUTMENT SILL BEAM REINFORCEMENT

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
NSW GOVERNMENT
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL10

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07.10.2016
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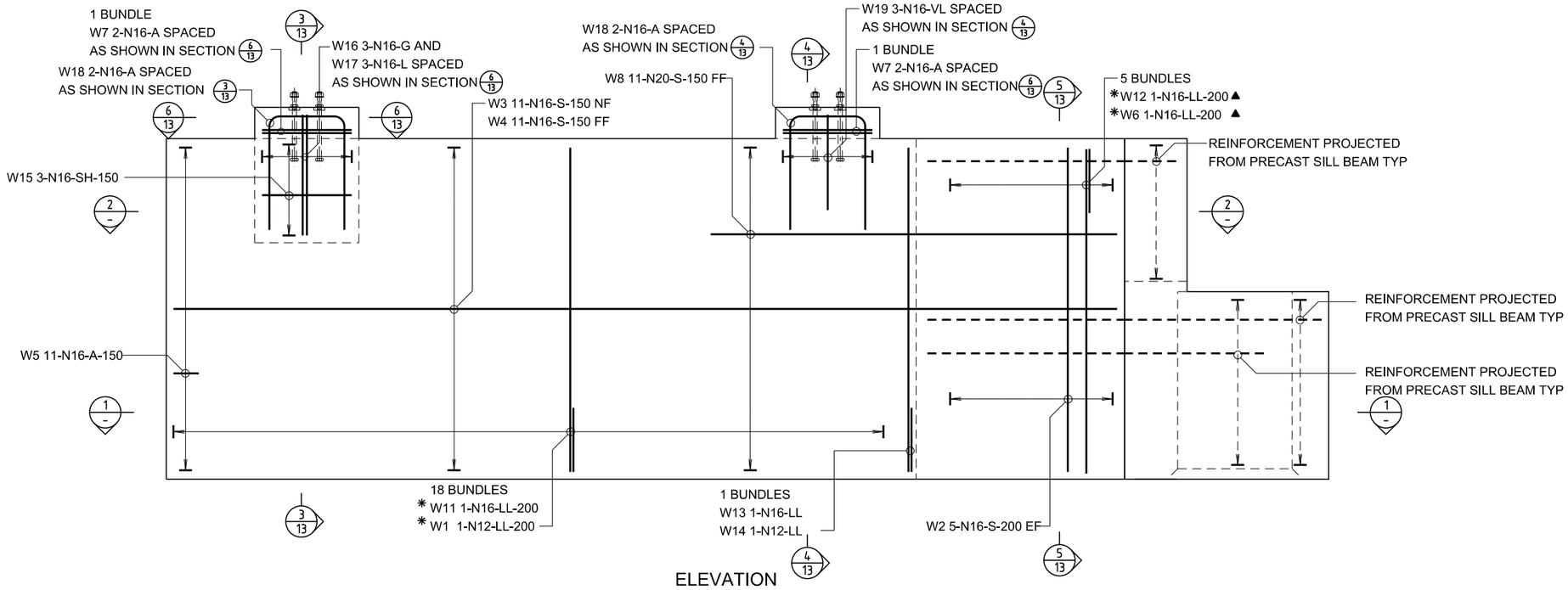
CAD No GBSSR1_10SL_T3.dgn



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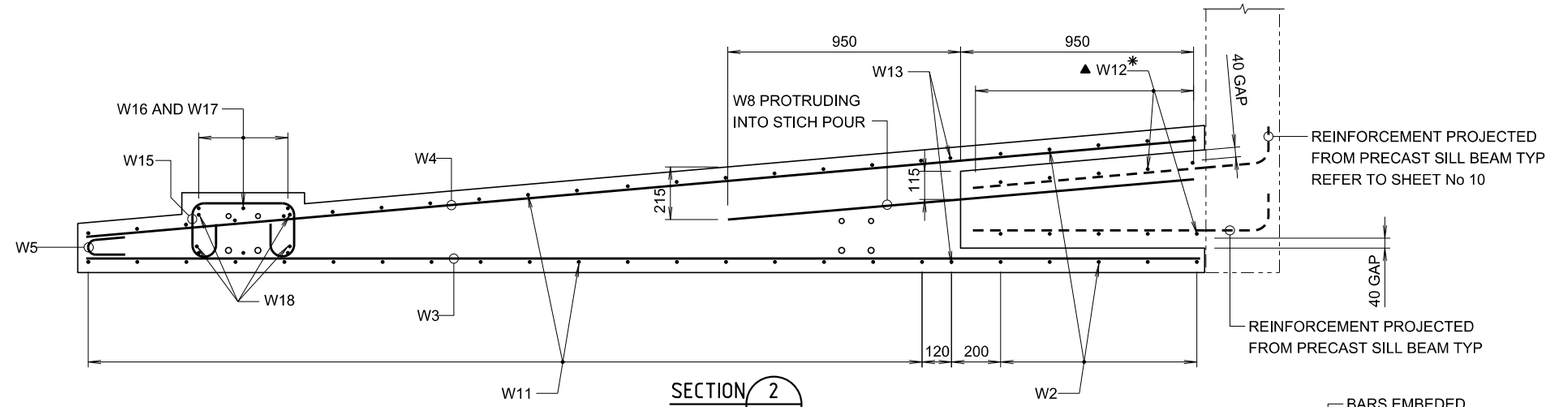
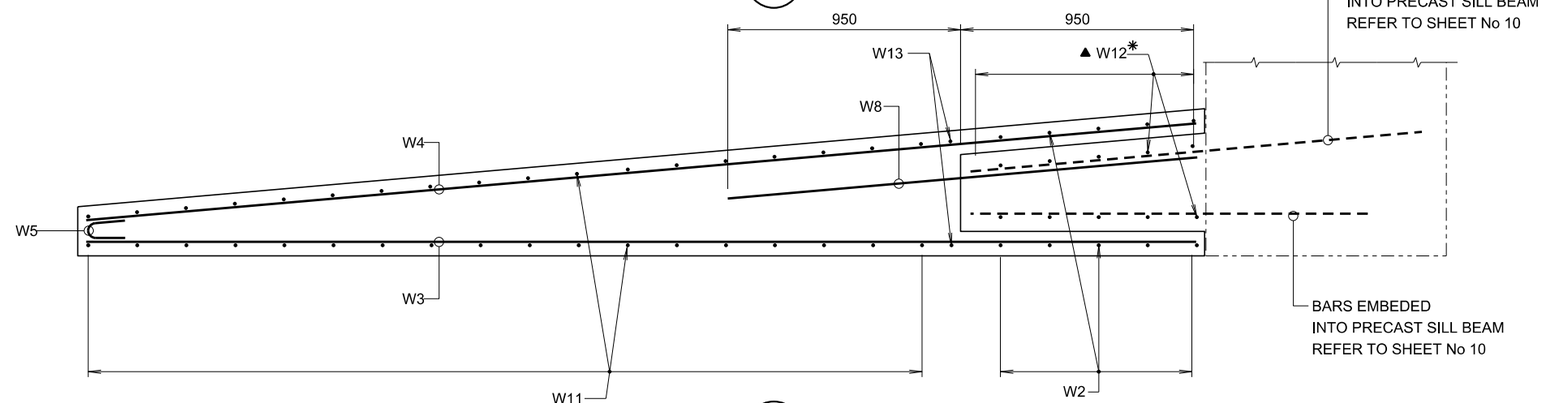


SECTION 2/-



SECTION 1/-

4.6m PRECAST WINGWALL

GENERAL NOTES

SCALE 0 250 500 750mm (250 125) OR AS SHOWN.

NOMINAL COVER TO REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE 35 mm UNLESS SPECIFIED OTHERWISE.
UNLESS OTHERWISE SPECIFIED, THE LAP LENGTH SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32	N36
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	510	650	880	1190	1520	1870	2760
b) OTHER BARS:	430	530	690	910	1170	1440	1740

THE DEVELOPMENT LENGTHS SHALL BE 80% OF THE VALUE TABULATED ABOVE.
✱ DENOTES VARIABLE LENGTH BAR.
▲ DENOTES STITCH POUR REINFORCEMENT
REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR DOWELS, ANCHOR BOLTS, HOLES AND RECESSES.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST ABUTMENT WINGWALL REINFORCEMENT - SHEET A

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

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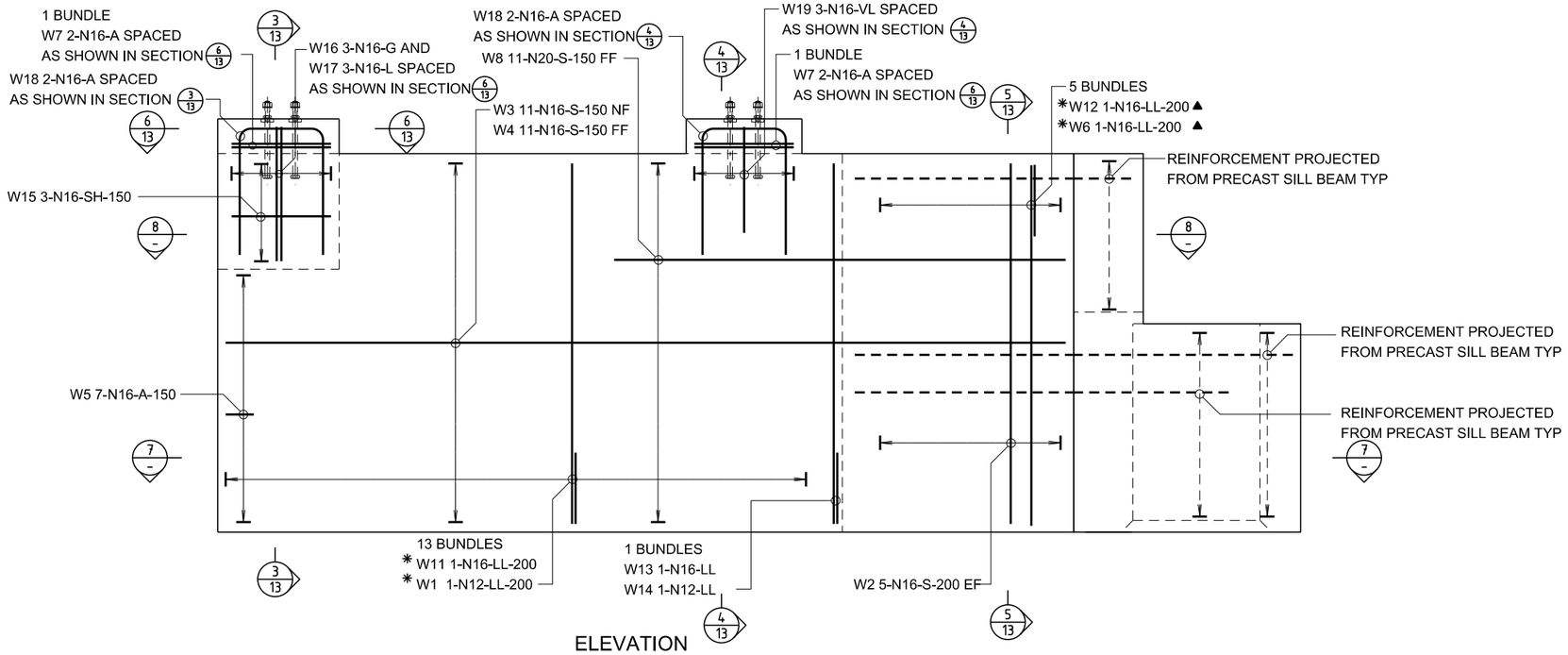
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL11

CAD No 10MWA_SL_T3.dgn



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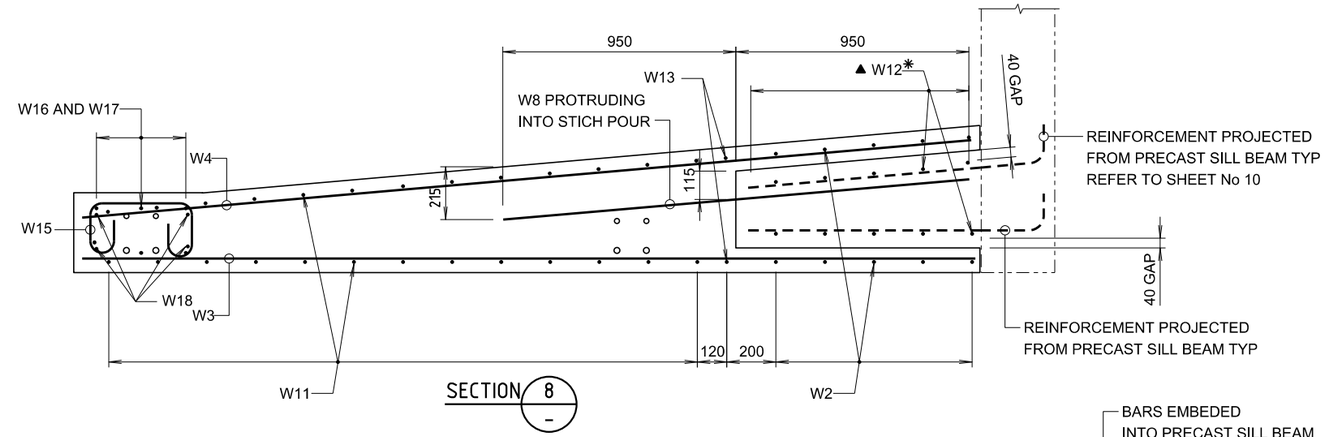

3.7m PRECAST WINGWALL

GENERAL NOTES

SCALE 0 250 500 750mm (250 125) OR AS SHOWN

▲ DENOTES STITCH POUR REINFORCEMENT
FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 11.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST ABUTMENT WINGWALL REINFORCEMENT - SHEET B

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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL12

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07.10.2016
DATE

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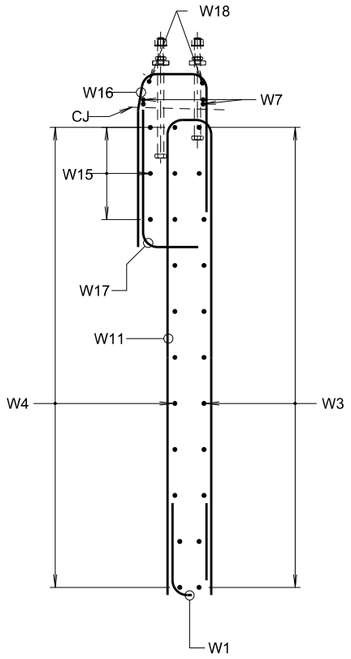
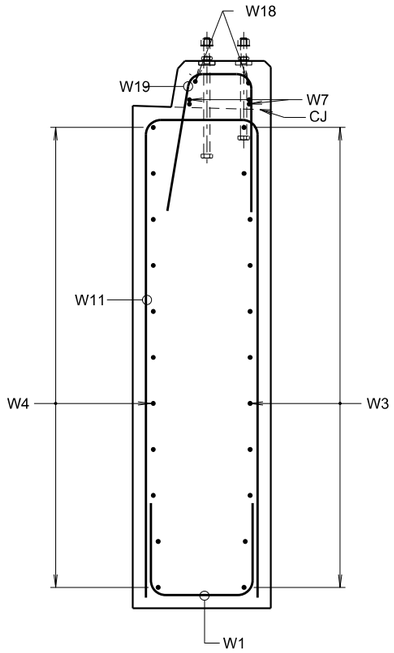
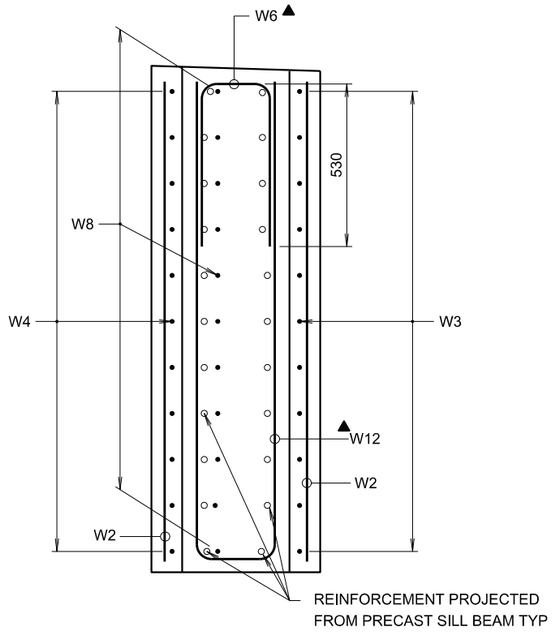
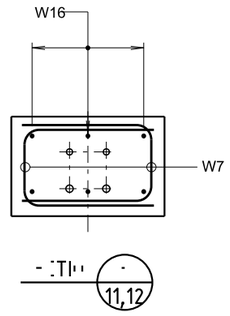
BRIDGE ENGINEER (NEW DESIGN)

CAD No 10MWB_SL_T3.dgn









GENERAL NOTES

SCALE 0 100 200 3 ' ' 100 . OR AS SHOWN

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 1 .

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE -

PRECAST ABUTMENT WINGWALL REINFORCEMEN -

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 883 -

NSW GOVERNMENT Transport Roads & Maritime Services

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DESIGN	S Assi	A Dey
DRAWING		A Dey

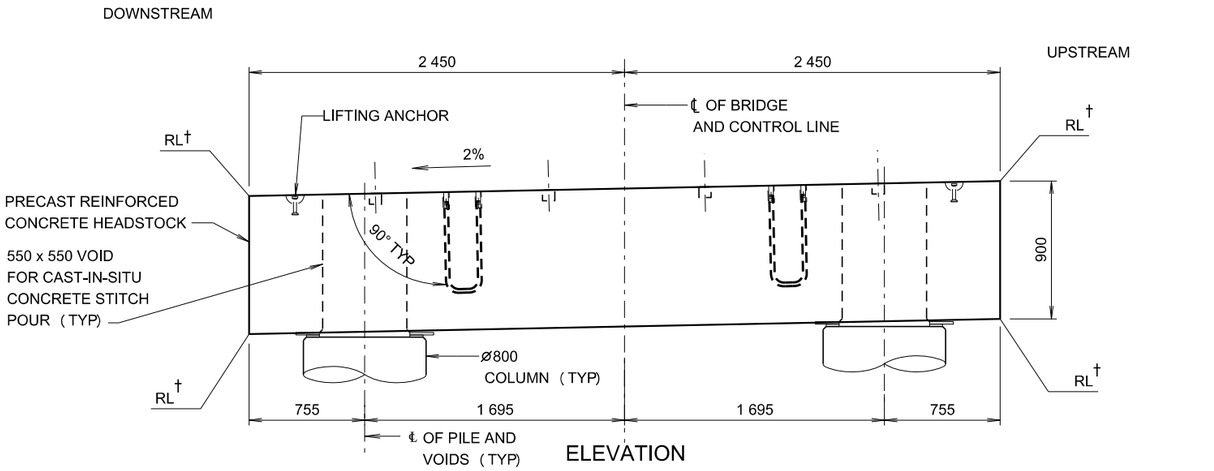
APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

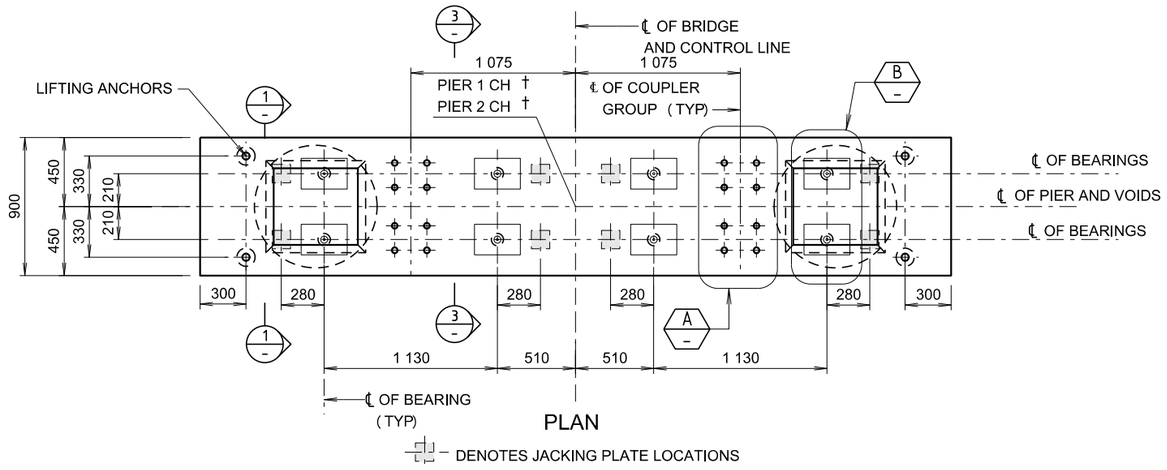
Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

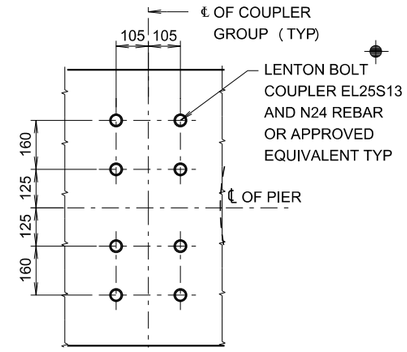
REGISTRATION
No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL13

CAD No 10MWC_SL_T .

7/10/2016 :\B ridge\Standards_2015\Standard in Development\B1000_MODULAR BRIDGES\SINGLE LANE\10M_SL_T3\10MWC_SL_T .







DETAIL A

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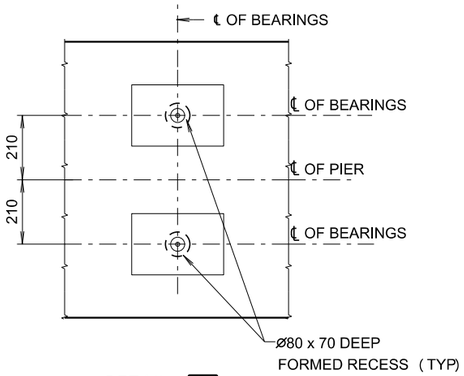
100 50



DETAIL B

0 100 200 300 400 500mm
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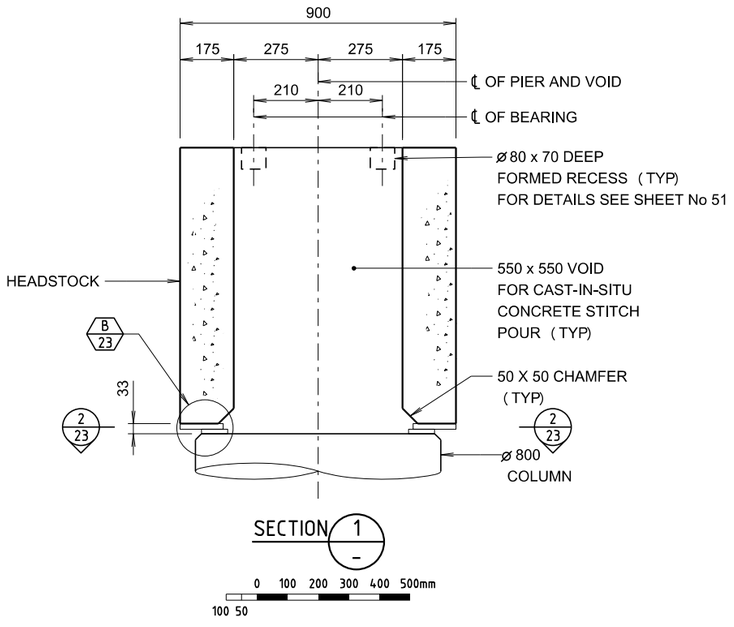
GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm
200 100
OR AS SHOWN.

CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF ALL CONCRETE SHALL BE 40 MPa.
EDGES SHALL BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.
ALL SURFACES OF VOIDS IN PRECAST HEADSTOCK IN CONTACT WITH CONCRETE STITCH POUR SHALL BE ROUGHENED DURING MANUFACTURE AS CONSTRUCTION JOINT, IN ACCORDANCE WITH RMS SPECIFICATION B80.
THE PROPOSED METHOD OF MANUFACTURE OF PRECAST HEADSTOCK SHALL BE AS SUBMITTED TO THE PRINCIPAL MIN 2 WEEKS PRIOR TO THE COMMENCEMENT OF ANY WORK ON THESE MEMBERS.
MASS OF PRECAST HEADSTOCK IS APPROXIMATELY 8.7 TONNES BASED ON UNIT WEIGHT OF 2550kg/m^3.
DURING STORAGE, TRANSPORT AND HANDLING, PRECAST HEADSTOCKS SHALL BE IN AN UPRIGHT POSITION AND SUPPORTED AT NOT MORE THAN 600mm FROM EACH END.
LIFTING ANCHORS SHALL BE SWIFT LIFT OR APPROVED EQUIVALENT DESIGNED BY THE PRECAST ITEM MANUFACTURE TO THE SATISFACTION OF THE PRINCIPLE.
THE LOCATIONS MAY VARY TO SUIT THIS DESIGN.
† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.
✱ DENOTES DOWELS TO CONFORM TO THE REQUIREMENTS OF RMS SPECIFICATION B240.



SECTION 1

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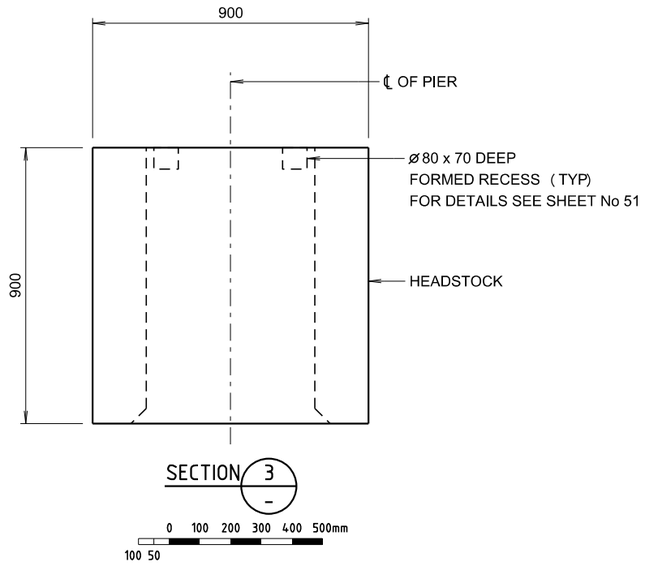

SECTION 3

0 100 200 300 400 500mm
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OPTION 1 WITH TWO CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIERS PRECAST HEADSTOCK - 2 COLUMNS - CONCRETE

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
www.rms.gov.au

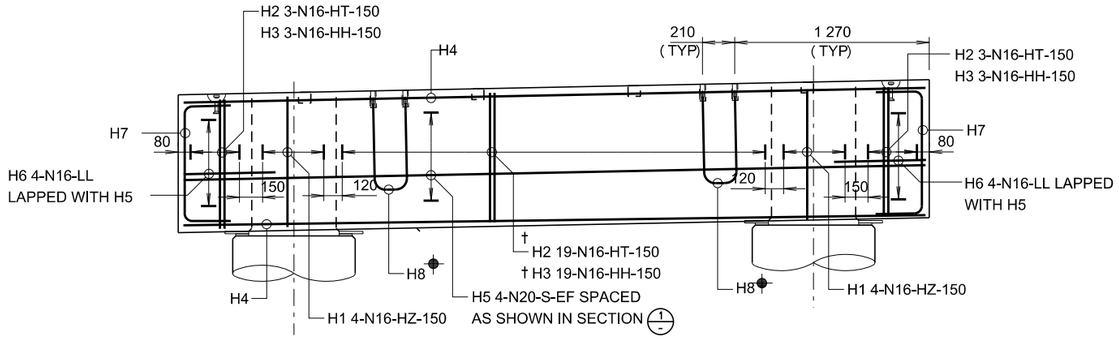
	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION
No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL14

CAD No 10M2CP_SL_T3.dgn



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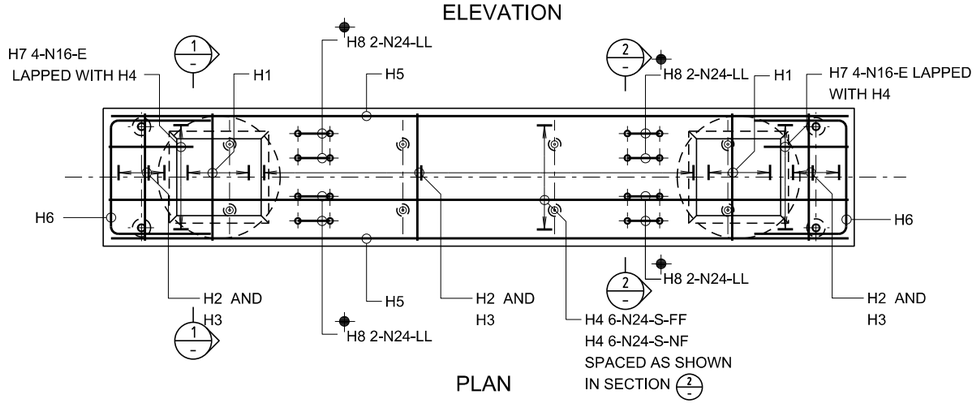
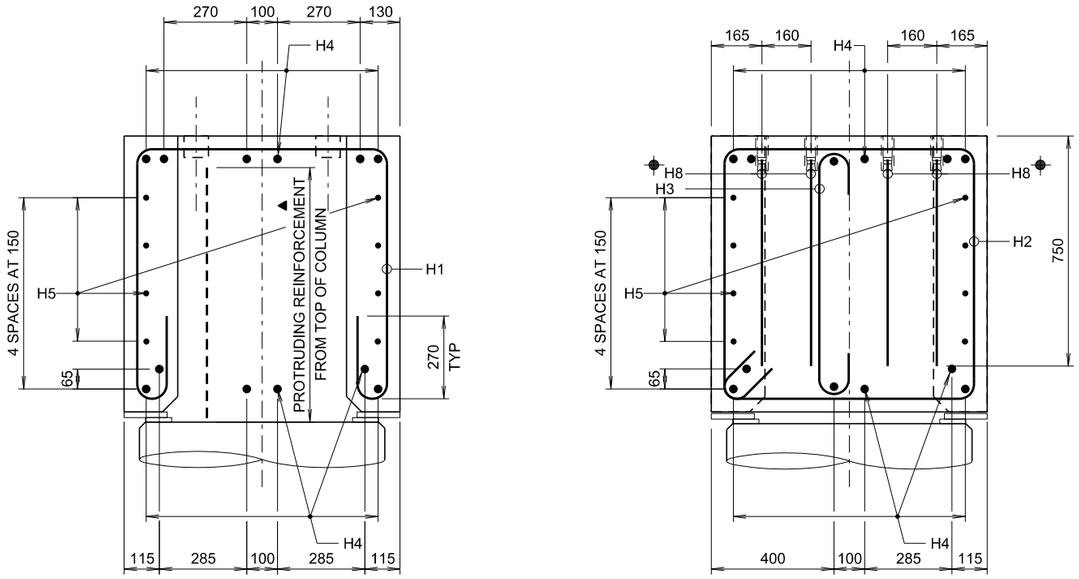


PLAN



SECTION 1

0 100 200 300 400 500mm

100 50

▲ DENOTES TYPICAL PROTRUDING REINFORCING BARS INTO HEADSTOCK ARE INDICATIVE ONLY. THE NUMBER AND DEVELOPMENT LENGTH OF THESE BARS SHALL BE DETERMINED BY THE DESIGNER TO SUIT SUBSTRUCTURE DESIGN.

SECTION 2

0 100 200 300 400 500mm

100 50

OPTION 1 WITH TWO CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES

GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm — 200 100 — OR AS SHOWN.

NOMINAL COVER TO REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE 35 mm UNLESS SPECIFIED OTHERWISE.
UNLESS OTHERWISE SPECIFIED, THE LAP LENGTH SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32	N36
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	510	650	880	1190	1520	1870	2760
b) OTHER BARS:	430	530	690	910	1170	1440	1740

THE DEVELOPMENT LENGTH SHALL BE 80% OF THE VALUE TABULATED ABOVE.
REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR COUPLERS, DOWELS, ANCHOR BOLTS, HOLES AND RECESSES.
REINFORCEMENT FOR OPTION 1 WITH TWO COLUMNS IS SHOWN.
REINFORCEMENT FOR OTHER OPTIONS ARE SIMILAR EXCEPT AS NOTED OTHERWISE.

† DENOTES NUMBER OF BARS TO BE ADJUSTED TO SUIT THE NUMBER OF VOIDS.

⊕ DENOTES LENTON BOLT COUPLER EL25S13 AND N24 REBAR TO BE THREADED AT ENDS AND TIGHTENED INTO COUPLERS IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS OR APPROVED EQUIVALENT.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIERS PRECAST HEADSTOCK - 2 COLUMNS - REINFORCEMENT

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
NSW GOVERNMENT
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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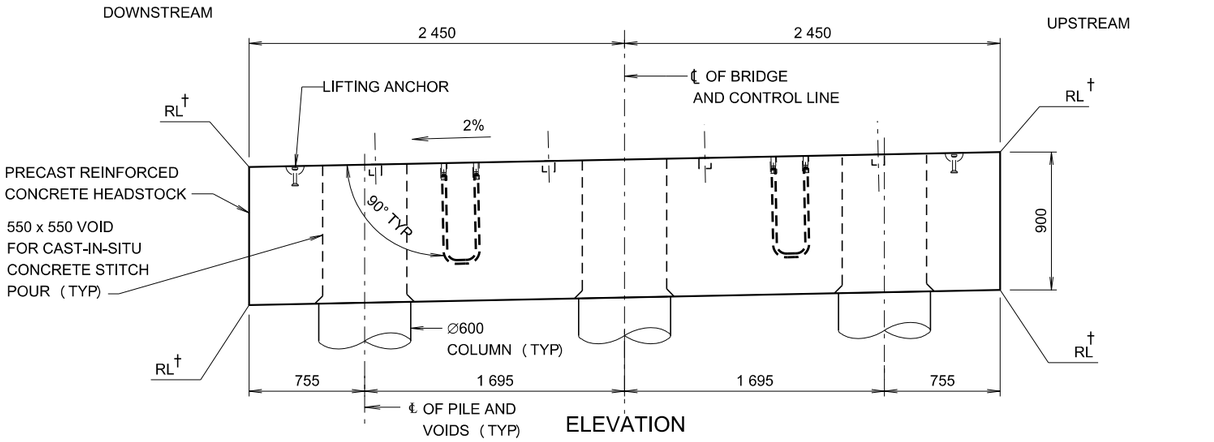
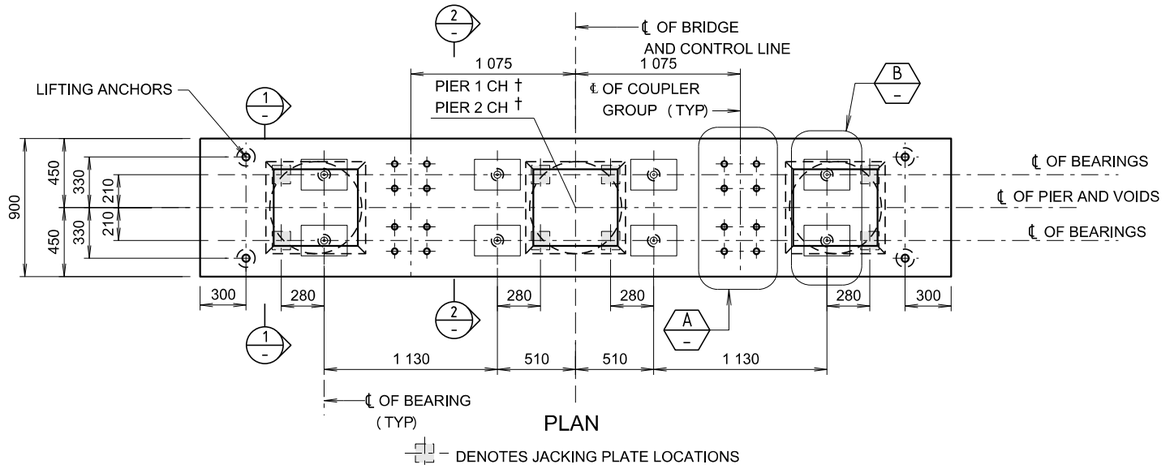
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

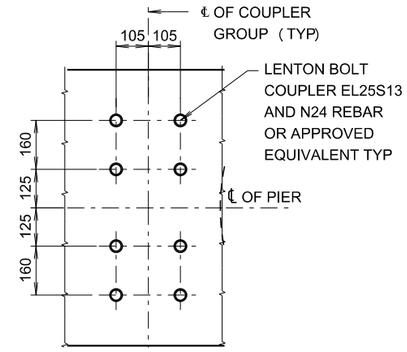
Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL15

CAD No 10M2CR_SI_T3.dgn

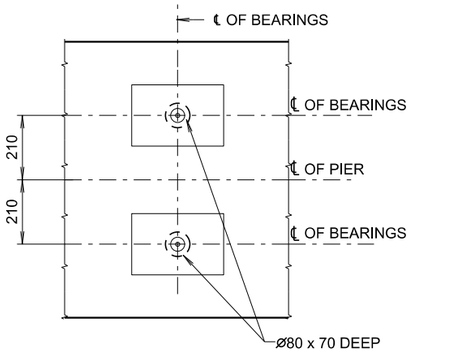






DETAIL A

0 100 200 300 400 500mm
100 50



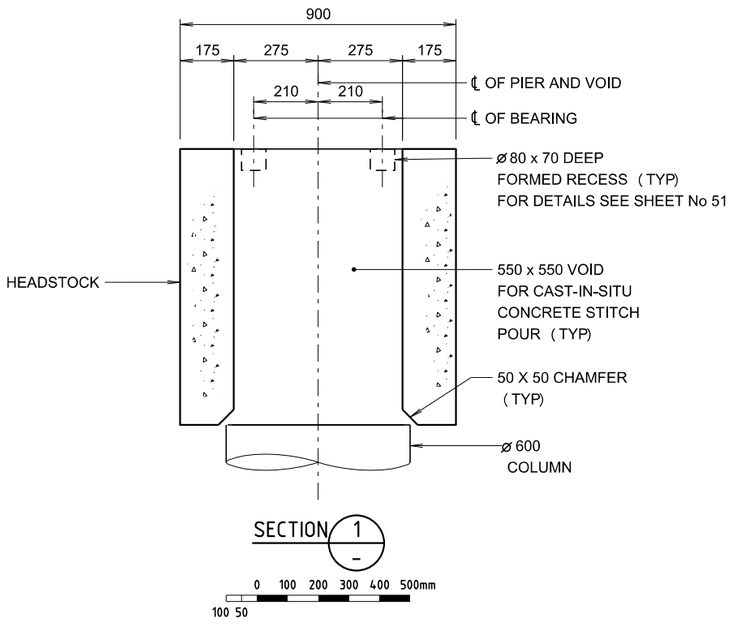
DETAIL B

0 100 200 300 400 500mm
100 50

GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm (200 100) OR AS SHOWN.

CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF ALL CONCRETE SHALL BE 40 MPa.
EDGES SHALL BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.
ALL SURFACES OF VOIDS IN PRECAST HEADSTOCK IN CONTACT WITH CONCRETE STITCH POUR SHALL BE ROUGHENED DURING MANUFACTURE AS CONSTRUCTION JOINT, IN ACCORDANCE WITH RMS SPECIFICATION B80.
THE PROPOSED METHOD OF MANUFACTURE OF PRECAST HEADSTOCK SHALL BE AS SUBMITTED TO THE PRINCIPAL MIN 2 WEEKS PRIOR TO THE COMMENCEMENT OF ANY WORK ON THESE MEMBERS.
MASS OF PRECAST HEADSTOCK IS APPROXIMATELY 8.0 TONNES BASED ON DENSITY OF CONCRETE OF 2550kg/m^3.
DURING STORAGE, TRANSPORT AND HANDLING, PRECAST HEADSTOCKS SHALL BE IN AN UPRIGHT POSITION AND SUPPORTED AT NOT MORE THAN 600mm FROM EACH END.
LIFTING ANCHORS SHALL BE SWIFT LIFT OR APPROVED EQUIVALENT DESIGNED BY THE PRECAST ITEM MANUFACTURE TO THE SATISFACTION OF THE PRINCIPLE.
THE LOCATIONS MAY VARY TO SUIT THIS DESIGN.
† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.
⊕ DENOTES HOT DIP GALVANIZED IN ACCORDANCE WITH RMS SPECIFICATION B241



SECTION 1

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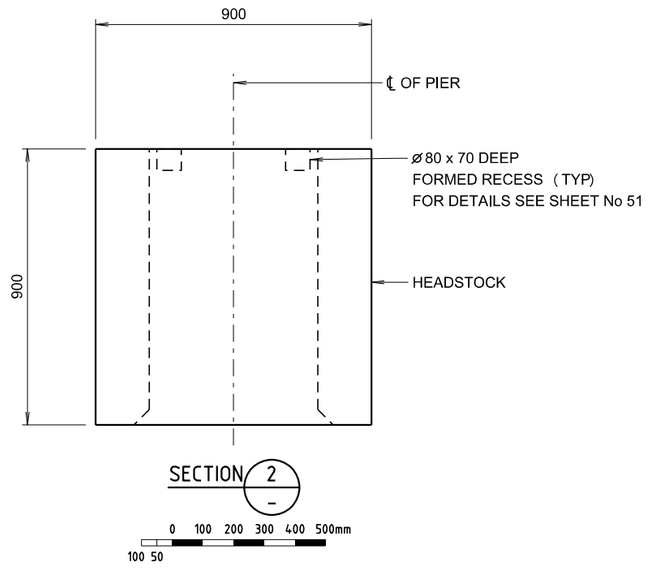

SECTION 2

0 100 200 300 400 500mm
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OPTION 1 WITH THREE CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIERS PRECAST HEADSTOCK - 3 COLUMNS - CONCRETE

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
NSW GOVERNMENT
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL16

CAD No 10M3CP_SL_T3.dgn

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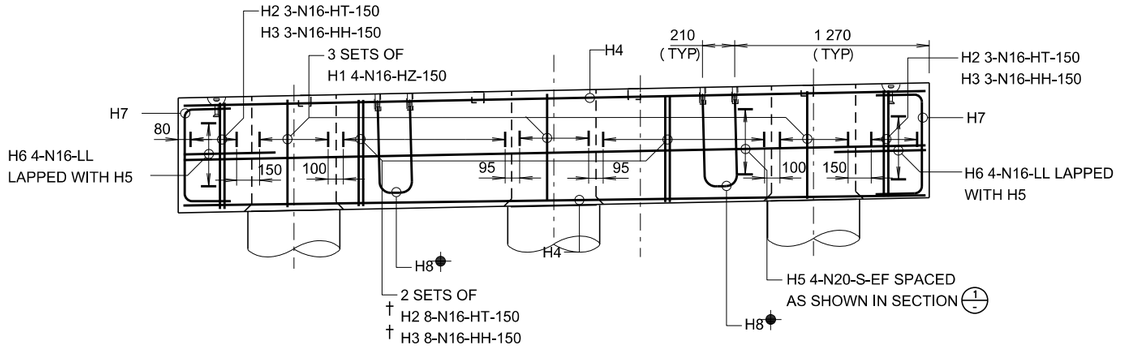

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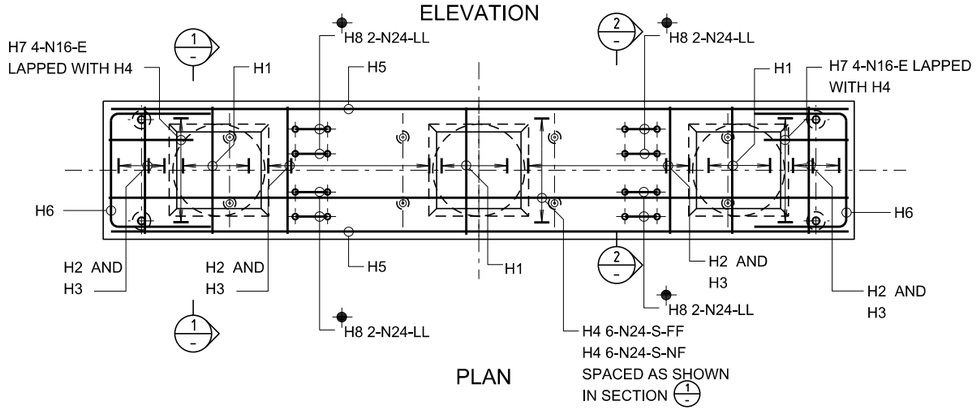
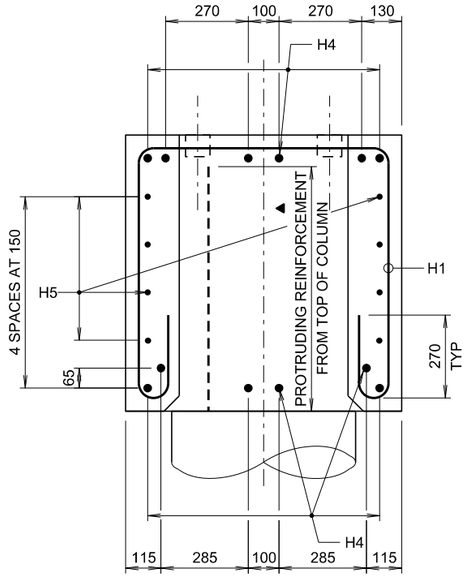
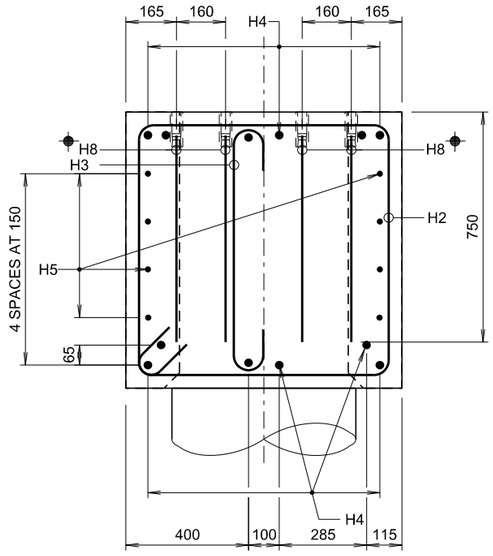


PLAN



SECTION 1



SECTION 2

▲ DENOTES TYPICAL PROTRUDING REINFORCING BARS INTO HEADSTOCK ARE INDICATIVE ONLY. THE NUMBER AND DEVELOPMENT LENGTH OF THESE BARS SHALL BE DETERMINED BY THE DESIGNER TO SUIT SUBSTRUCTURE DESIGN.

OPTION 1 WITH THREE CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES

GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm / 200 100 OR AS SHOWN.

NOMINAL COVER TO REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE 35 mm UNLESS SPECIFIED OTHERWISE.
UNLESS OTHERWISE SPECIFIED, THE LAP LENGTH SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32	N36
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	510	650	880	1190	1520	1870	2760
b) OTHER BARS:	430	530	690	910	1170	1440	1740

THE DEVELOPMENT LENGTH SHALL BE 80% OF THE VALUE TABULATED ABOVE.
REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR COUPLERS, DOWELS, ANCHOR BOLTS, HOLES AND RECESSES.
REINFORCEMENT FOR OPTION 1 WITH THREE COLUMNS IS SHOWN.
REINFORCEMENT FOR OTHER OPTIONS ARE SIMILAR EXCEPT AS NOTED OTHERWISE.
† DENOTES NUMBER OF BARS TO BE ADJUSTED TO SUIT THE NUMBER OF VOIDS.
⊕ DENOTES LENTON BOLT COUPLER EL25S13 AND N24 REBAR TO BE THREADED AT ENDS AND TIGHTENED INTO COUPLERS IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS OR APPROVED EQUIVALENT.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIERS PRECAST HEADSTOCK - 3 COLUMNS - REINFORCEMENT

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
NSW GOVERNMENT
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

APPROVED FOR USE
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PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
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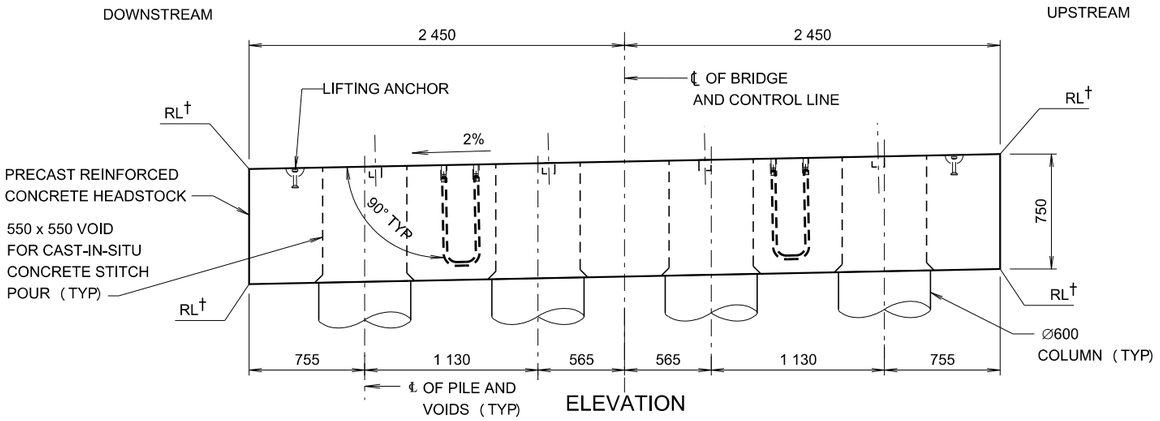
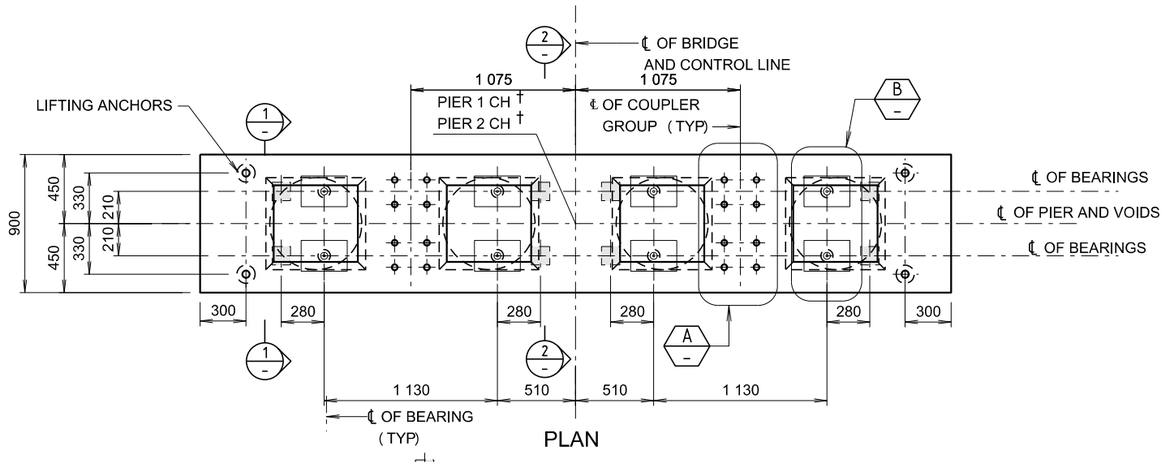
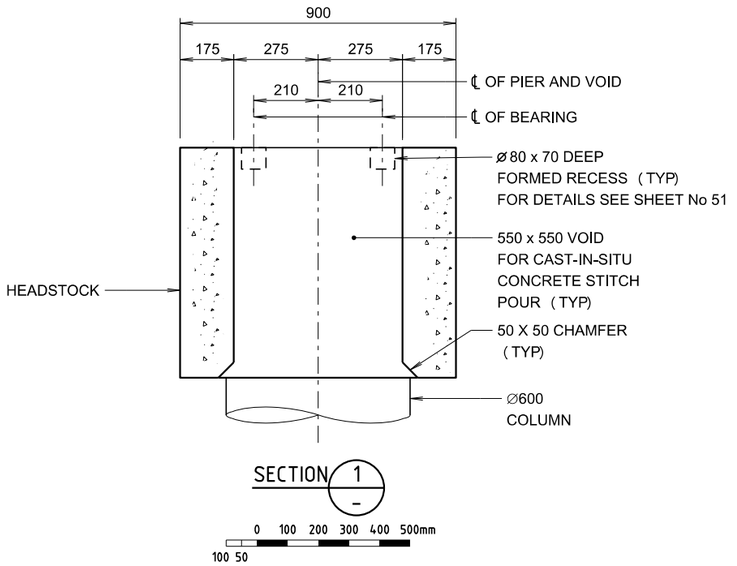


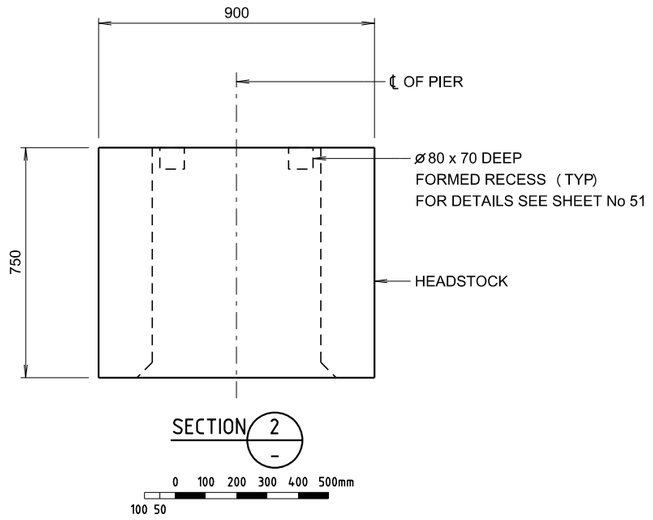
ELEVATION

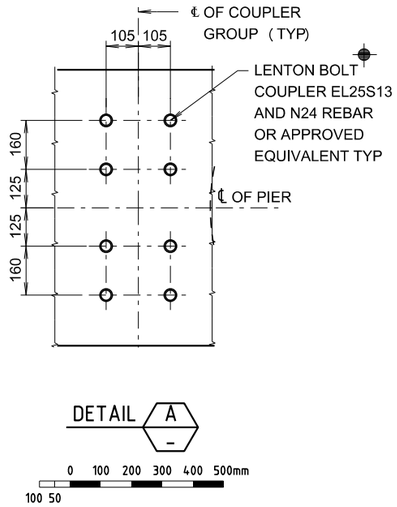


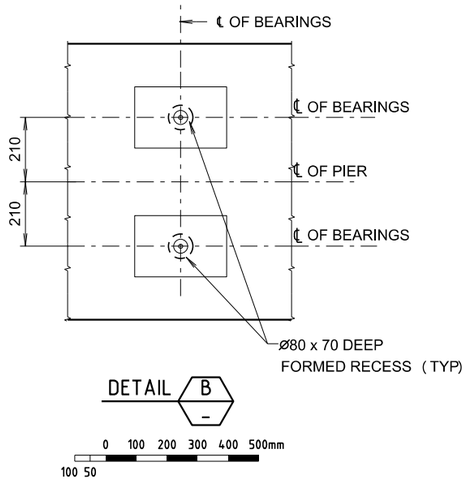
PLAN

DENOTES JACKING PLATE LOCATIONS









GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm / 200 100 OR AS SHOWN.

CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF ALL CONCRETE SHALL BE 40 MPa.
EDGES SHALL BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.
ALL SURFACES OF VOIDS IN PRECAST HEADSTOCK IN CONTACT WITH CONCRETE STITCH POUR SHALL BE ROUGHENED DURING MANUFACTURE AS CONSTRUCTION JOINT, IN ACCORDANCE WITH RMS SPECIFICATION B80.
THE PROPOSED METHOD OF MANUFACTURE OF PRECAST HEADSTOCK SHALL BE AS SUBMITTED TO THE PRINCIPAL MIN 2 WEEKS PRIOR TO THE COMMENCEMENT OF ANY WORK ON THESE MEMBERS.
MASS OF PRECAST HEADSTOCK IS APPROXIMATELY 6.1 TONNES BASED ON UNIT WEIGHT OF 2550kg/m^3.
DURING STORAGE, TRANSPORT AND HANDLING, PRECAST HEADSTOCKS SHALL BE IN AN UPRIGHT POSITION AND SUPPORTED AT NOT MORE THAN 600mm FROM EACH END.
LIFTING ANCHORS SHALL BE SWIFT LIFT OR APPROVED EQUIVALENT DESIGNED BY THE PRECAST ITEM MANUFACTURE TO THE SATISFACTION OF THE PRINCIPLE.
THE LOCATIONS MAY VARY TO SUIT THIS DESIGN.
† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.
✳ DENOTES DOWELS TO CONFORM TO THE REQUIREMENTS OF RMS SPECIFICATION B240.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIERS PRECAST HEADSTOCK - 4 COLUMNS - CONCRETE

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS

APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
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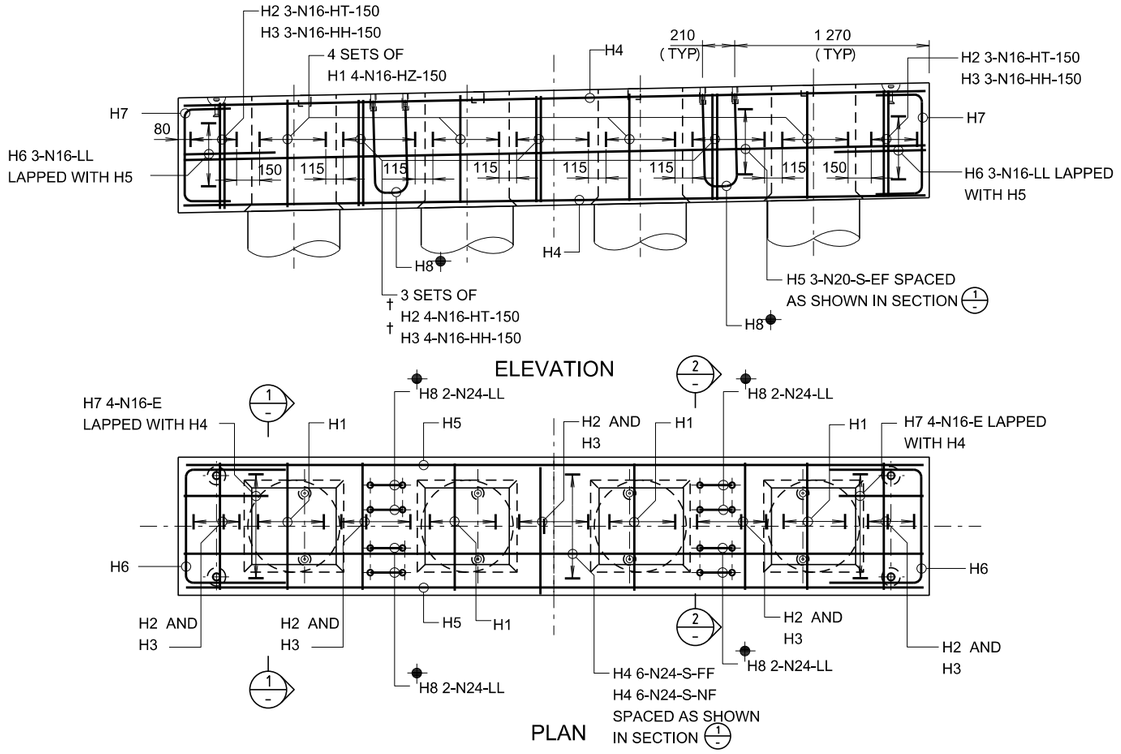
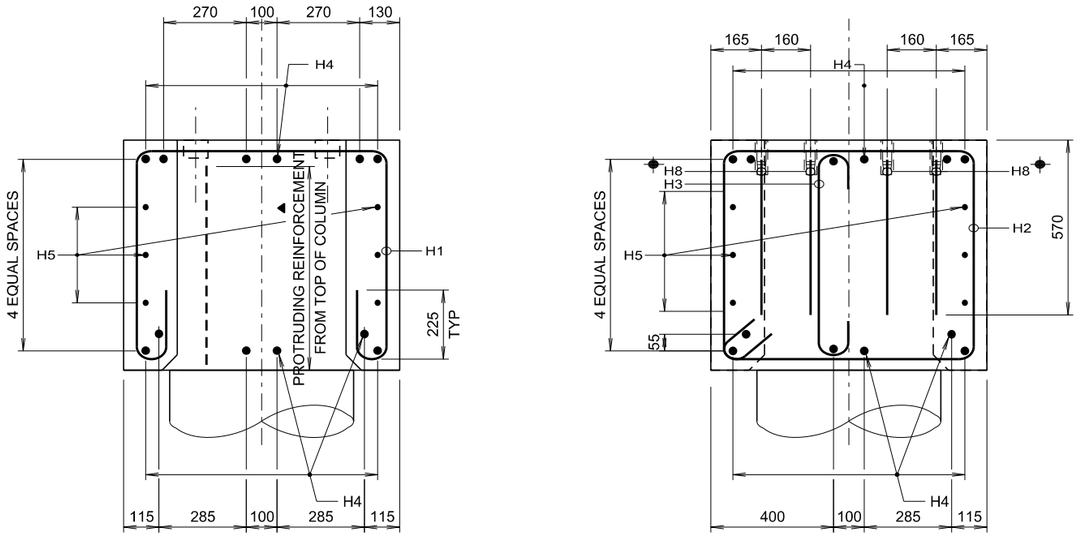
CAD No 10M4CP_SL_T3.dgn

OPTION 1 WITH 4 CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES





SECTION 1

0 100 200 300 400 500mm

100 50

▲ DENOTES TYPICAL PROTRUDING REINFORCING BARS INTO HEADSTOCK ARE INDICATIVE ONLY. THE NUMBER AND DEVELOPMENT LENGTH OF THESE BARS SHALL BE DETERMINED BY THE DESIGNER TO SUIT SUBSTRUCTURE DESIGN.

SECTION 2

0 100 200 300 400 500mm

100 50

OPTION 1 WITH FOUR CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTING/PILE CAP AND PILES

GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm / 200 100 OR AS SHOWN.

NOMINAL COVER TO REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE 35 mm UNLESS SPECIFIED OTHERWISE.
UNLESS OTHERWISE SPECIFIED, THE LAP LENGTH SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32	N36
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	510	650	880	1190	1520	1870	2760
b) OTHER BARS:	430	530	690	910	1170	1440	1740

THE DEVELOPMENT LENGTH SHALL BE 80% OF THE VALUE TABULATED ABOVE.
REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR COUPLERS, DOWELS, ANCHOR BOLTS, HOLES AND RECESSES.
REINFORCEMENT FOR OPTION 1 WITH FOUR COLUMNS IS SHOWN.
REINFORCEMENT FOR OTHER OPTIONS ARE SIMILAR EXCEPT AS NOTED OTHERWISE.
† DENOTES NUMBER OF BARS TO BE ADJUSTED TO SUIT THE NUMBER OF VOIDS.
⊕ DENOTES LENTON BOLT COUPLER EL25S13 AND N24 REBAR TO BE THREADED AT ENDS AND TIGHTENED INTO COUPLERS IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS OR APPROVED EQUIVALENT.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIERS PRECAST HEADSTOCK - 4 COLUMNS - REINFORCEMENT

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

NSW GOVERNMENT Transport Roads & Maritime Services www.rms.gov.au

APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

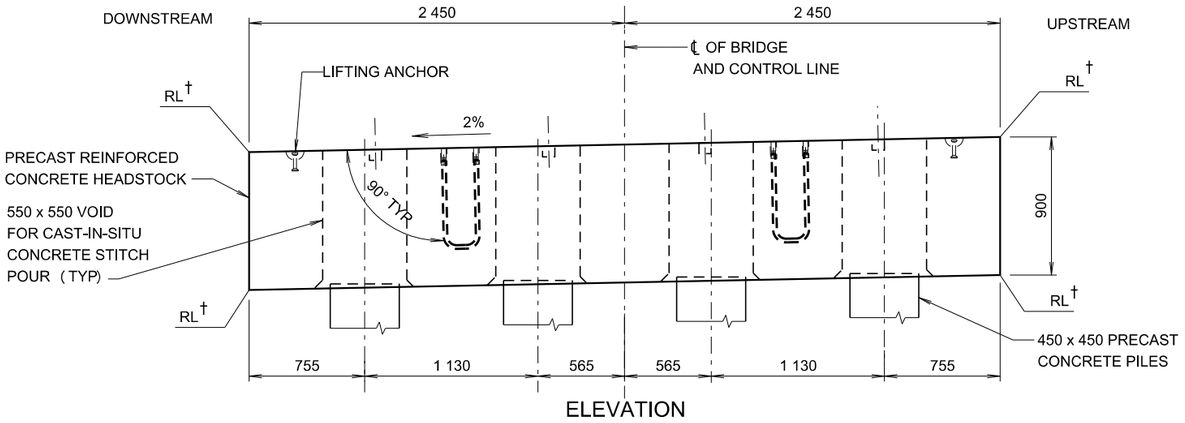
REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL19

CAD No 10M4CR_SL_T3.dgn



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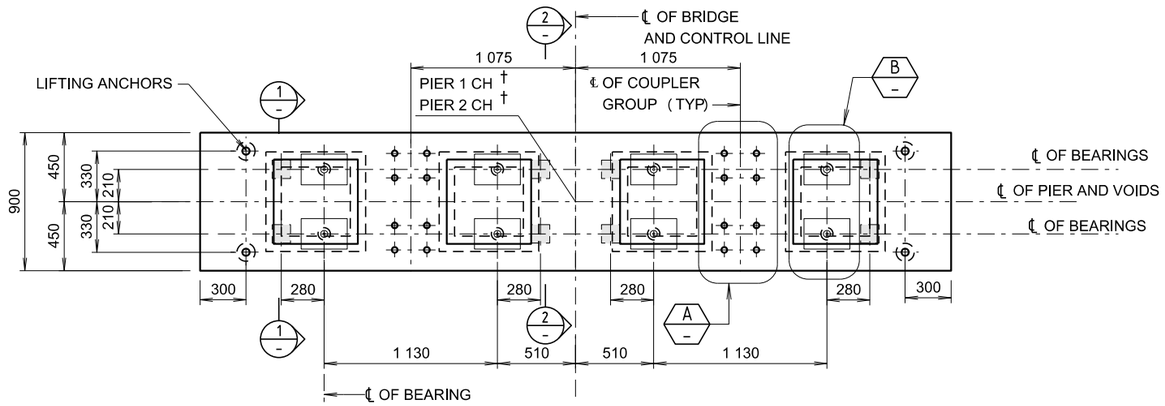
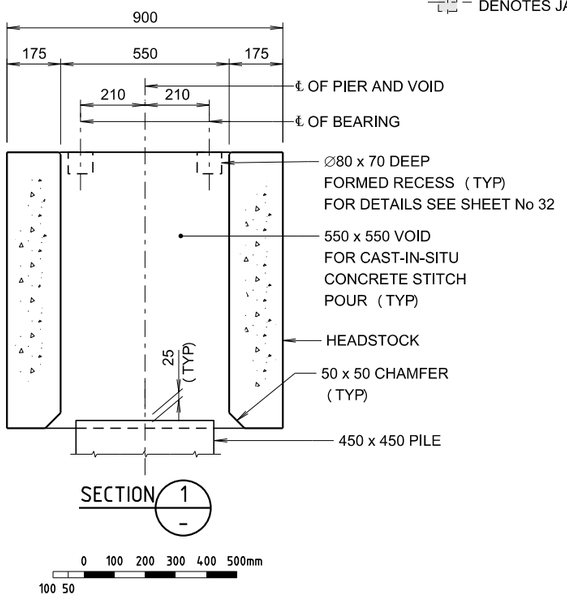
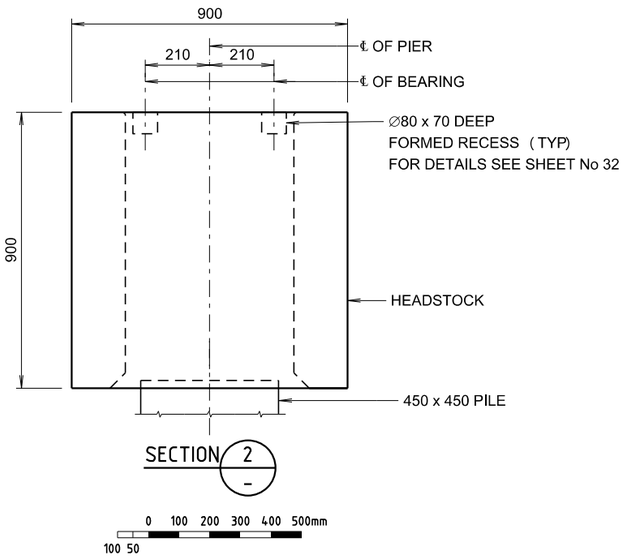


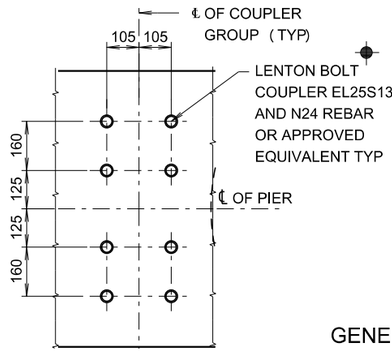
PLAN

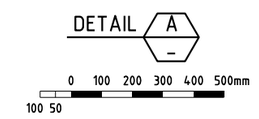
DENOTES JACKING PLATE LOCATIONS

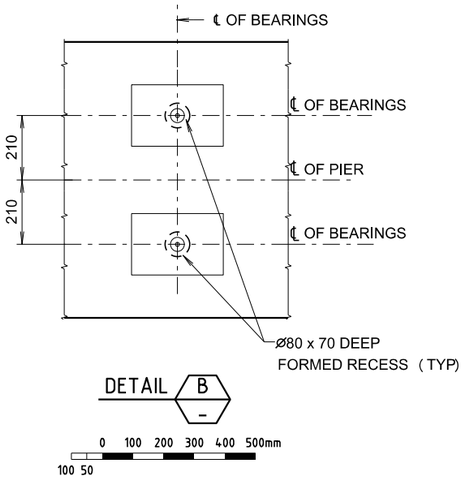




OPTION 2 WITH FOUR PRECAST REINFORCED CONCRETE PILES







GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm (200 100) OR AS SHOWN.

CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF ALL CONCRETE SHALL BE 40 MPa.
EDGES SHALL BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.
ALL SURFACES OF VOIDS IN PRECAST HEADSTOCK IN CONTACT WITH CONCRETE STITCH POUR SHALL BE ROUGHENED DURING MANUFACTURE AS CONSTRUCTION JOINT, IN ACCORDANCE WITH RMS SPECIFICATION B80.
THE PROPOSED METHOD OF MANUFACTURE OF PRECAST HEADSTOCK SHALL BE AS SUBMITTED TO THE PRINCIPAL MIN 2 WEEKS PRIOR TO THE COMMENCEMENT OF ANY WORK ON THESE MEMBERS.
MASS OF PRECAST HEADSTOCK IS APPROXIMATELY 7.3 TONNES BASED ON UNIT WEIGHT OF 2550kg/m^3
DURING STORAGE, TRANSPORT AND HANDLING, PRECAST HEADSTOCKS SHALL BE IN AN UPRIGHT POSITION AND SUPPORTED AT NOT MORE THAN 600mm FROM EACH END.
LIFTING ANCHORS SHALL BE SWIFT LIFT OR APPROVED EQUIVALENT DESIGNED BY THE PRECAST ITEM MANUFACTURE TO THE SATISFACTION OF THE PRINCIPLE.
THE LOCATIONS MAY VARY TO SUIT THIS DESIGN.
† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.
✳ DENOTES DOWELS TO CONFORM TO THE REQUIREMENTS OF RMS SPECIFICATION B240.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIERS PRECAST HEADSTOCK - 4 PILES - CONCRETE

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
NSW GOVERNMENT
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DRAWING	D.G.C.	A Dey

REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL20

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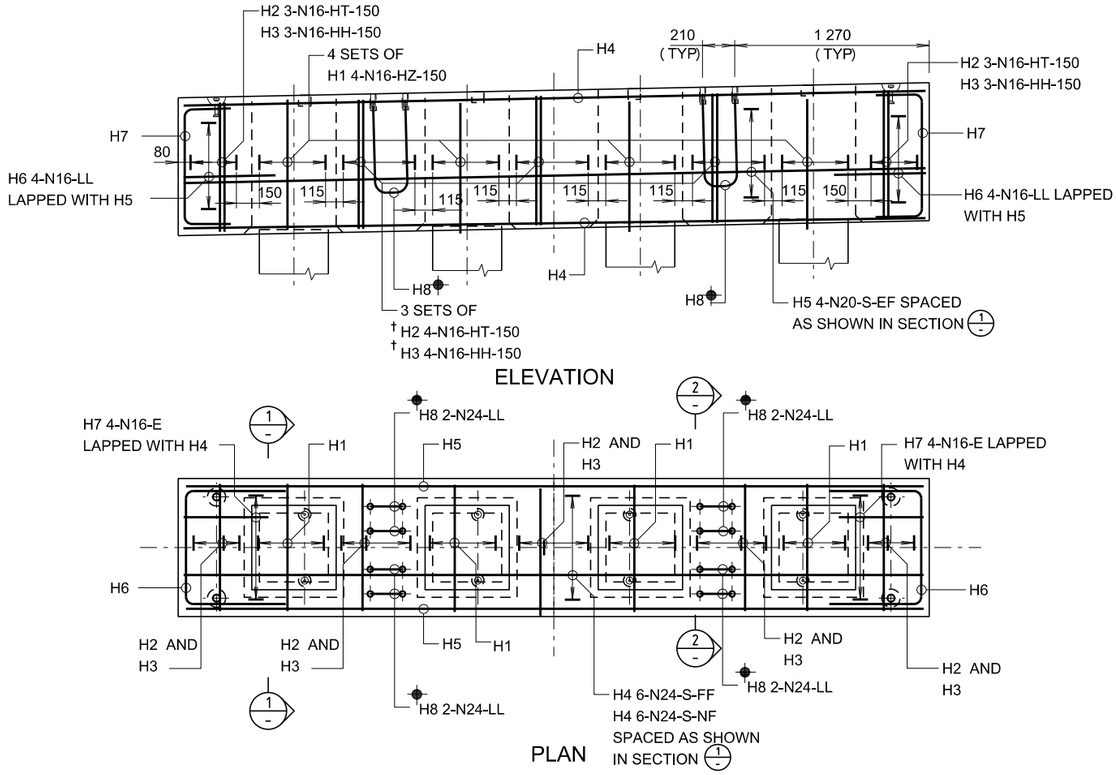
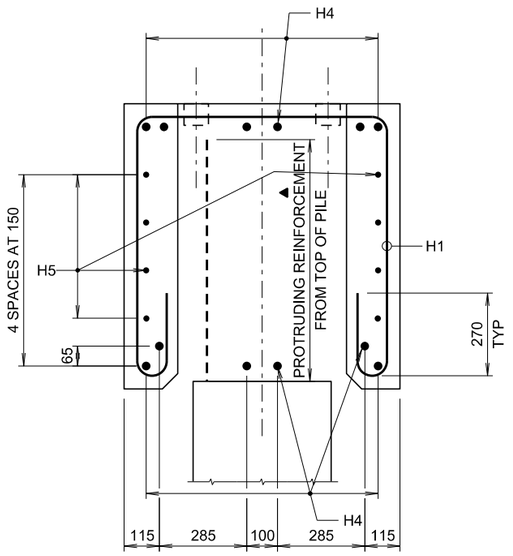
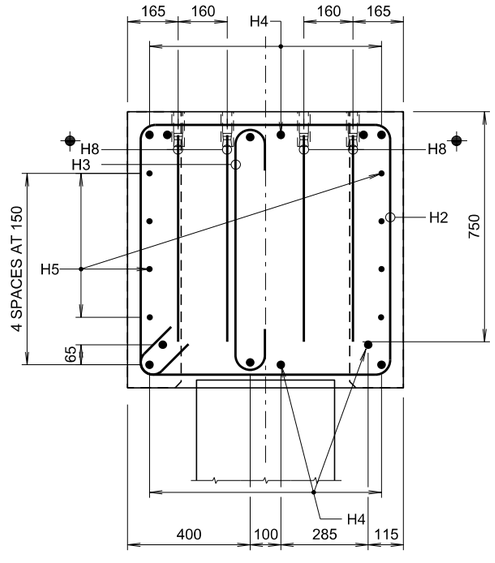
CAD No 10M4PP_SL_T3.dgn

11:26:18 AM 7/10/2016 K:\Bridge\Standards_2015\Standards in Development\B1000_MODULAR BRIDGES\SINGLE LANE\10M_SL_T3\10M4PP_SL_T3.dgn





▲ DENOTES TYPICAL PROTRUDING REINFORCING BARS INTO HEADSTOCK ARE INDICATIVE ONLY. THE NUMBER AND DEVELOPMENT LENGTH OF THESE BARS SHALL BE DETERMINED BY THE DESIGNER TO SUIT SUBSTRUCTURE DESIGN.



OPTION 2 WITH FOUR PRECAST REINFORCED CONCRETE PILES

GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm (200 100) OR AS SHOWN.

NOMINAL COVER TO REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE 35 mm UNLESS SPECIFIED OTHERWISE.
UNLESS OTHERWISE SPECIFIED, THE LAP LENGTH SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32	N36
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	510	650	880	1190	1520	1870	2760
b) OTHER BARS:	430	530	690	910	1170	1440	1740

THE DEVELOPMENT LENGTH SHALL BE 80% OF THE VALUE TABULATED ABOVE.
REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR COUPLERS, DOWELS, ANCHOR BOLTS, HOLES AND RECESSES.
REINFORCEMENT FOR OPTION 2 WITH FOUR PILES IS SHOWN.
REINFORCEMENT FOR OTHER OPTIONS ARE SIMILAR EXCEPT AS NOTED OTHERWISE.

† DENOTES NUMBER OF BARS TO BE ADJUSTED TO SUIT THE NUMBER OF VOIDS.
⊕ DENOTES LENTON BOLT COUPLER EL25S13 AND N24 REBAR TO BE THREADED AT ENDS AND TIGHTENED INTO COUPLERS IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS OR APPROVED EQUIVALENT.

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COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIERS PRECAST HEADSTOCK - 4 PILES - REINFORCEMENT

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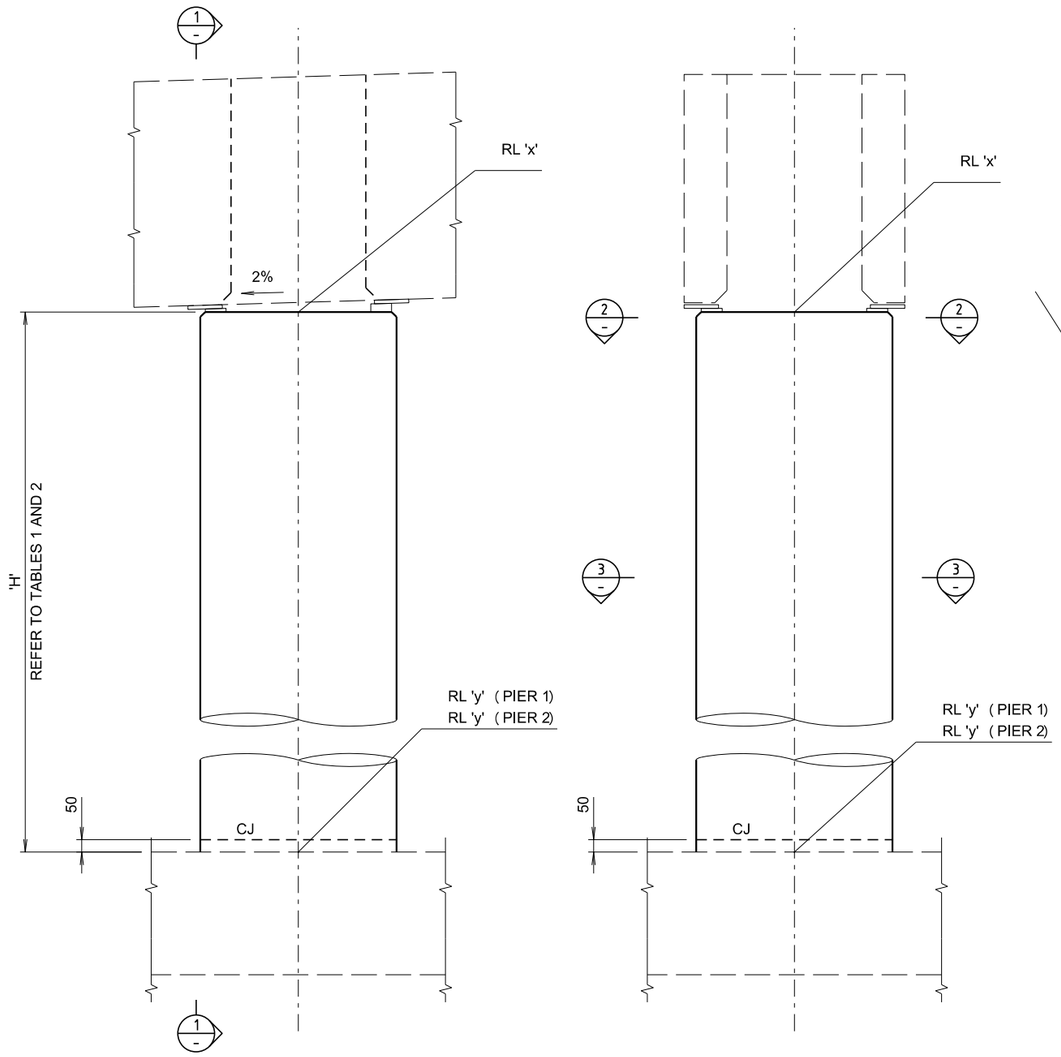
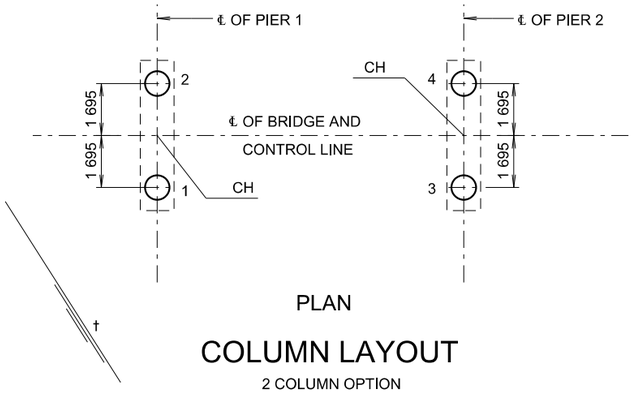
REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL21

CAD No 10M4PR_SL_T3.dgn



ELEVATION



PLAN

COLUMN LAYOUT

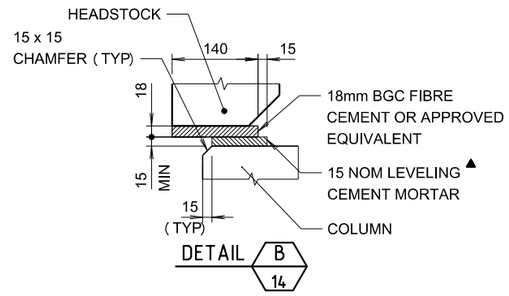
2 COLUMN OPTION

0 1 2 3 4 5m

1 0.5

TABLE 1 †

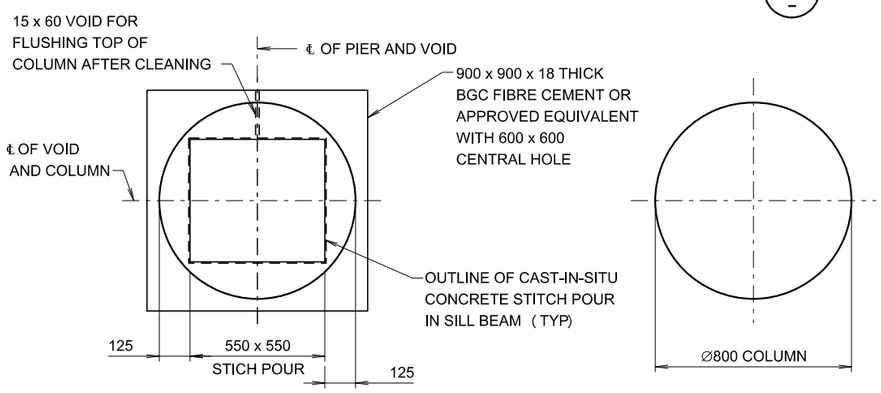
COLUMN No	RL 'x'	RL 'y'	H
1 AND 3			
2 AND 4			



THE TEMPORARY SUPPORTS DETAILED ON
THIS DRAWING IS APPLICABLE
FOR SUBSTRUCTURE WITH ∅800 COLUMNS.

0 100 200 300mm

100 50



SECTION 2 -,14

SECTION 3 -

SECTION 1 -

GENERAL NOTES

SCALE 0 250 500 750mm

250 125

OR AS SHOWN.

CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF ALL CONCRETE SHALL BE 40MPa.
EDGES SHALL BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.
THE PLACING OF CONCRETE IN THE COLUMNS SHALL BE CARRIED OUT IN ONE CONTINUOUS OPERATION UNLESS SPECIFIED OTHERWISE.

† DENOTES DATA TO BE SPECIFIED TO SUIT BRIDGE DESIGN.

▲ DENOTES LEVELING MORTAR PLACED, EXCEPT FOR AREA UNDER VOIDS, IN ACCORDANCE WITH AS 1597.2 OR APPROVED ALTERNATIVE MATERIAL. THE MORTAR SHOULD BE SUFFICIENTLY STIFF TO PROVIDE A LAYER NO LESS THAN 15mm THICK AFTER THE HEADSTOCK IS PLACED IN POSITION. THE HEADSTOCK SHALL BE PLACED IN POSITION BEFORE THE MORTAR HAS SET SO THAT UNIFORM BEARING IS OBTAINED.

OPTION 1 WITH TWO CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTINGS/PILE CAPS AND PILES

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIER COLUMNS - CONCRETE

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No OF PLANS

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CAD No CBSPC_10SL_T3.dgn

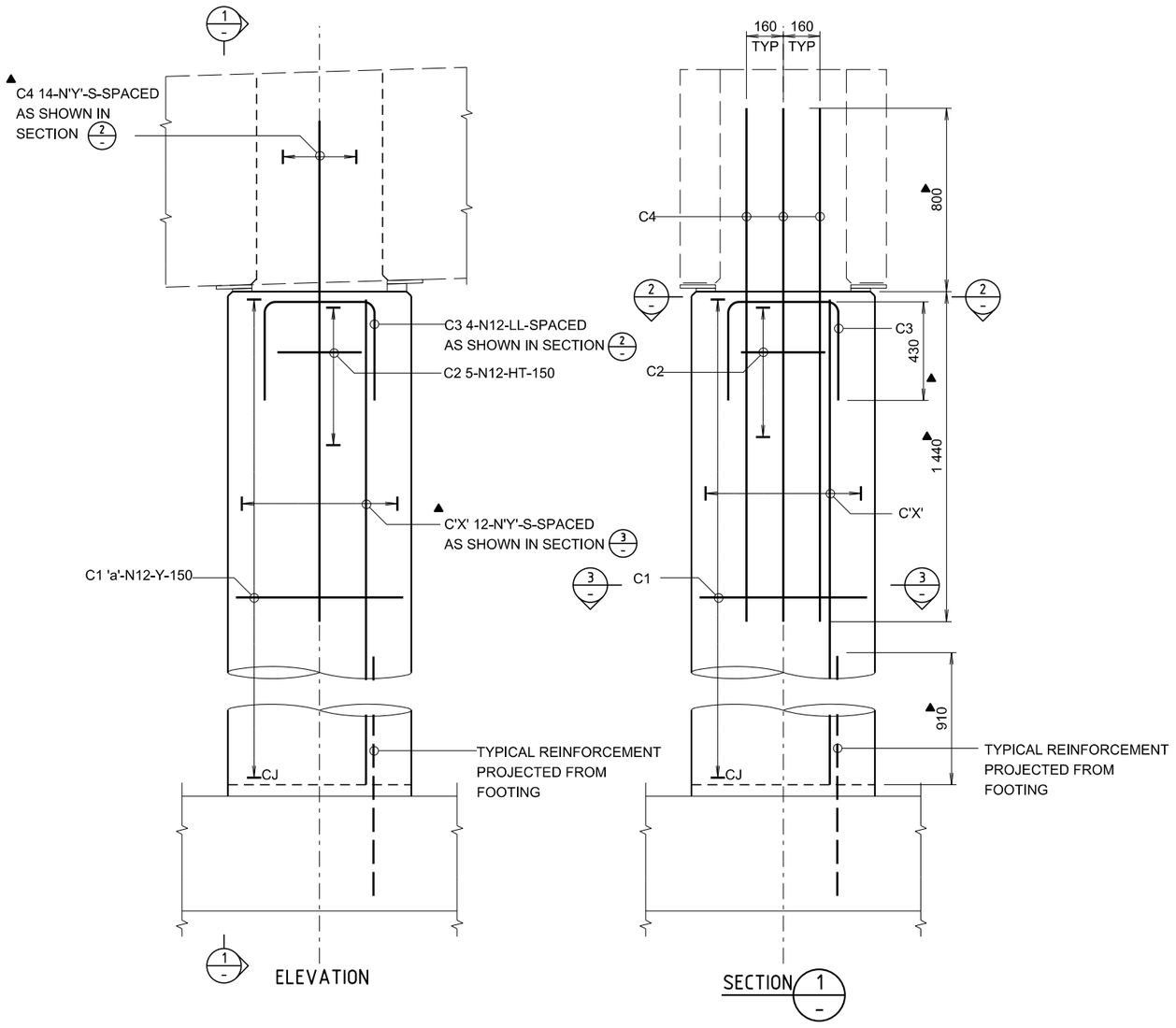
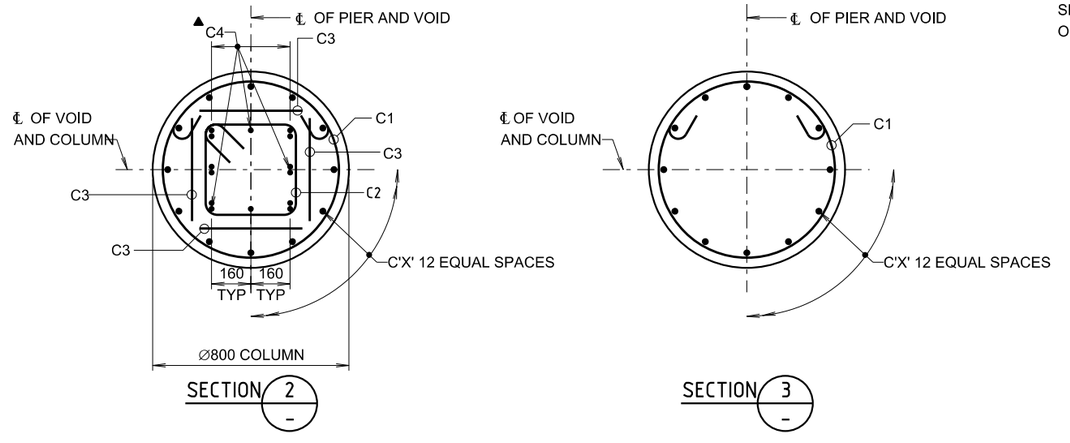


TABLE 1

COLUMN LOCATION	'X'	'Y'	'a'
PIER 1			
PIER 2			



OPTION 1 WITH TWO CIRCULAR COLUMNS ON REINFORCED CONCRETE FOOTINGS/PILE CAPS AND PILES

GENERAL NOTES

SCALE 0 250 500 750mm (250 125) OR AS SHOWN.

NOMINAL COVER TO REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE 40mm UNLESS SPECIFIED OTHERWISE.

UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS THE LAP LENGTHS SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32	N36
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	510	650	880	1190	1520	1870	2760
b) OTHER BARS:	430	530	690	910	1170	1440	1740

THE DEVELOPMENT LENGTH SHALL BE 80% OF THE VALUE TABULATED ABOVE.

✳ DENOTES VARIABLE LENGTH BAR.
REINFORCEMENT IN THE FOOTING AND HEADSTOCK MAY BE DISPLACED TO AVOID COLUMN REINFORCEMENT AND DOWELS AS NECESSARY.

▲ DENOTES NUMBER AND DIAMETER OF BARS, EMBEDMENT LENGTHS INTO HEADSTOCK AND COLUMNS AND LAP LENGTHS ARE INDICATIVE ONLY AND SHALL BE DETERMINED BY THE DESIGNER TO SUIT SUBSTRUCTURE DESIGN OF SPECIFIC BRIDGE SITE.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PIER COLUMNS - REINFORCEMENT

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
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DRAWING	D.G.C.	A Dey

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ISSUE STATUS

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ISSUE | No SHEETS 40 | SHEET No MB10SL24

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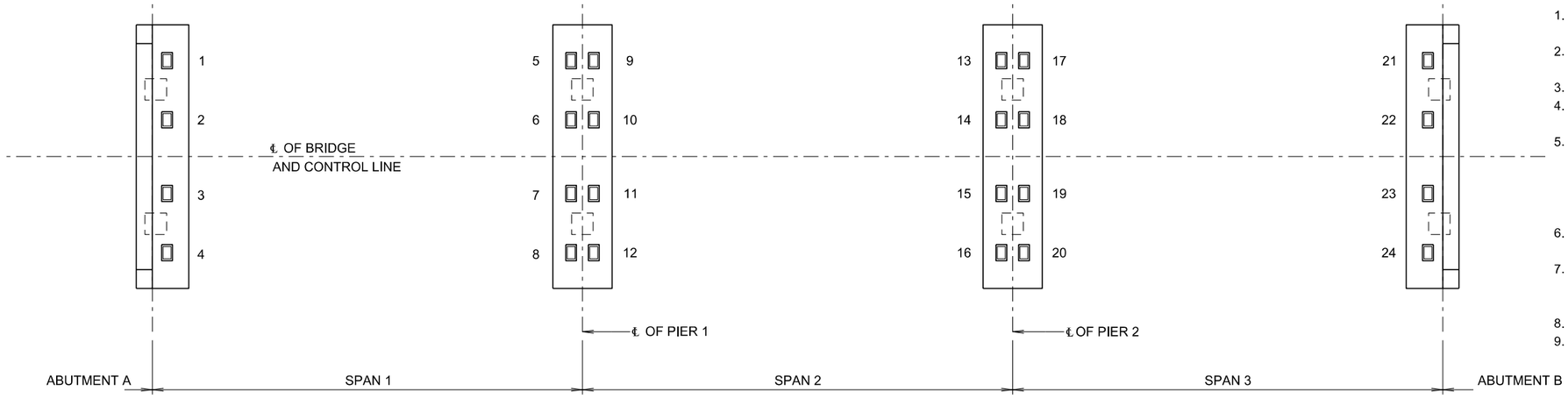
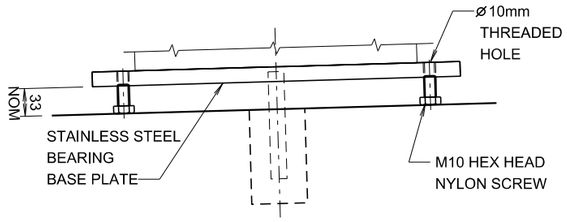


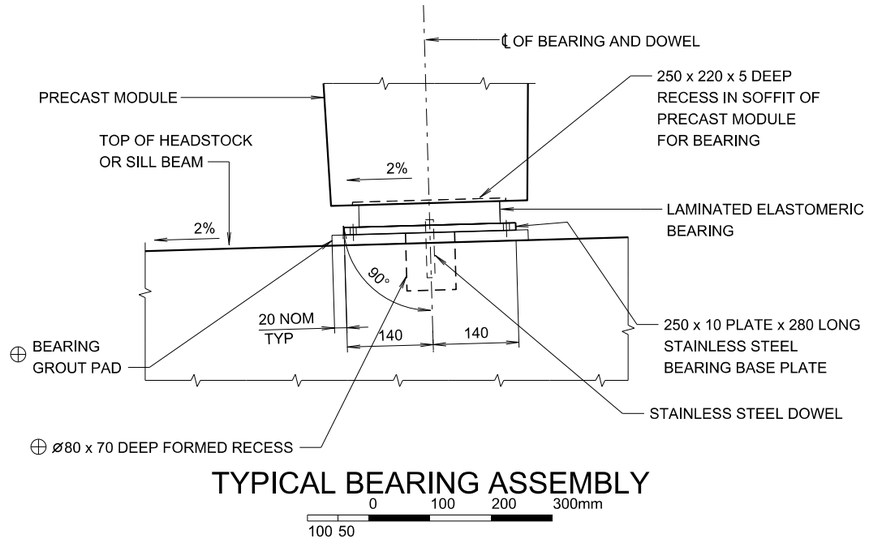
BEARING LAYOUT

NOT TO SCALE

BEARING INSTALLATION PROCEDURE

1. INSERT NYLON SCREWS TO PLATE WITH HEADS DOWNWARDS AND PROTRUDING 15mm.
2. PLACE BEARING PLATE ON HEADSTOCK/ABUTMENT SILL BEAM WITH DOWEL PLACED INTO FORMED HOLE.
3. PLACE BEARINGS ON PLATES.
4. HOIST PRECAST MODULE INTO POSITION, RESTING ON TEMPORARY SUPPORTS.
5. THE TEMPORARY SUPPORT MUST BE STABLE AND ACCURATELY PLACED (REFER CONSTRUCTION GUIDE) . THE TEMPORARY SUPPORT MAY BE HYDRAULIC JACKS, SCREW JACKS OR TEMPORARY PACKERS; HOWEVER THE METHODOLOGY USED MUST ENSURE THAT THE DECK MODULES ARE STABLE AND PLACED ACCURATELY.
6. ADJUST AND SUPPORT PRECAST MODULE IN PERMANENT POSITION OVER TEMPORARY SUPPORTS.
7. ADJUST NYLON SCREWS UNDER EACH BEARING PLATE SO THAT BEARING IS PRESSED FIRMLY AND EVENLY UP INTO THE RECESS IN SOFFIT OF MODULE AND BEARING PLATE AND SOFFIT OF MODULE ARE PARALLEL.
8. FORM AND GROUT UNDER BEARING PLATE.
9. ONCE GROUT HAS REACHED MINIMUM STRENGTH OF 30 MPa AND IT IS AT LEAST 7 DAYS OLD TRANSFER LOAD TO PERMANENT BEARINGS AND REMOVE TEMPORARY SUPPORTS.





TYPICAL BEARING ASSEMBLY

0 100 200 300mm

100 50

GENERAL NOTES

SCALE AS SHOWN

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 51.

TABLE 1

LOCATION		BEARING No.	TOP OF BEARING RL "X"	LOCATION		BEARING No.	TOP OF BEARING RL "X"	LOCATION		BEARING No.	TOP OF BEARING RL "X"
ABUTMENT A	SPAN 1	1		PIER 1	SPAN 2	9		PIER 2	SPAN 3	17	
		2				10				18	
		3				11				19	
		4				12				20	
PIER 1		5		PIER 2		13		ABUTMENT B		21	
		6				14				22	
		7				15				23	
		8				16				24	

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

BEARINGS - SHEET A

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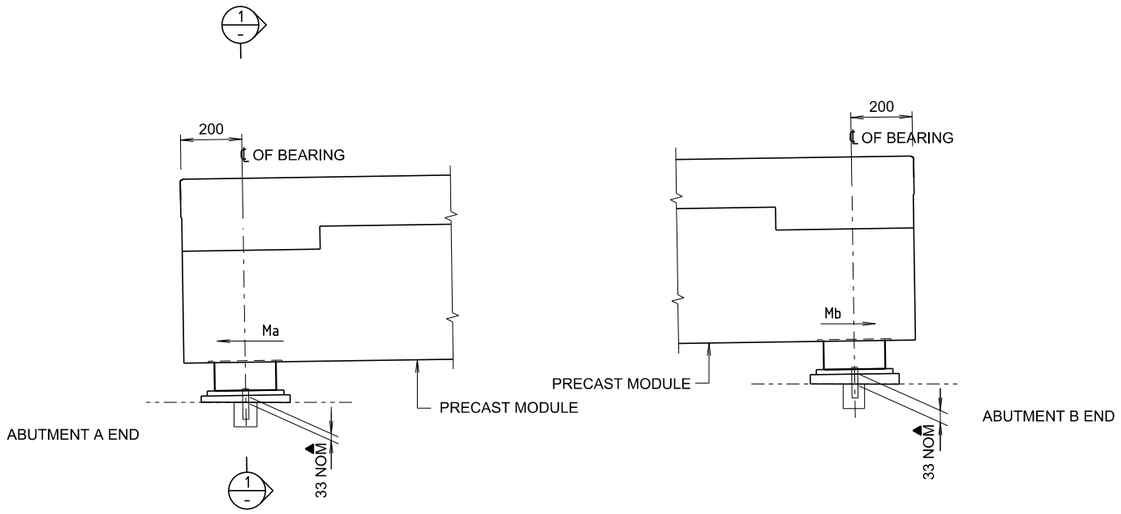


ELEVATION OF PRECAST MODULE AFTER DECK CONSTRUCTION

0 100 200 300 400 500mm
100 50

TABLE 2

LONGITUDINAL GRADE ON TOP OF BEARING BASEPLATE

	MEASURED HOG	Ma	Mb
SPAN No 1 - 3	5	0.19%	0.19%
	10	0.38%	0.38%
	15	0.58%	0.58%
	20	0.77%	0.77%

HOGS SHALL BE MEASURED TWO WEEKS PRIOR TO THE ERECTION OF THE PRECAST MODULE AND THE GRADE OF THE TOP OF BASEPLATES SHALL BE DETERMINED FROM THE FIGURES IN TABLE 2 ACCORDINGLY.

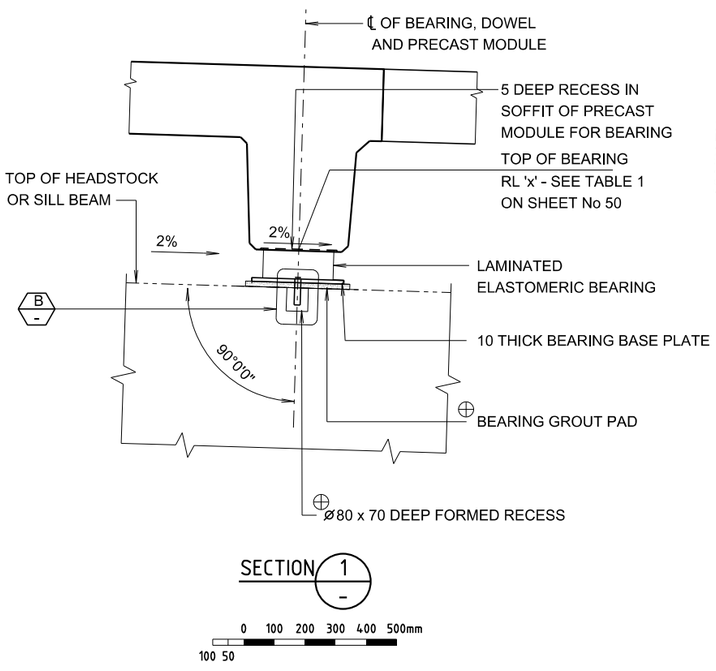
GENERAL NOTES

SCALE 0 100 200 300 400 500mm / 100 50 OR AS SHOWN.

THE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF GROUT SHALL BE 40MPa.
STEEL PLATE SHALL BE STAINLESS STEEL GRADE 304 TO ASTM A276.
THE WELD CATEGORY SHALL BE 1C, III IN ACCORDANCE WITH AS/NZS 1554.6.
WELDNG SYMBOLS COMPLY WITH AS 1101.3.

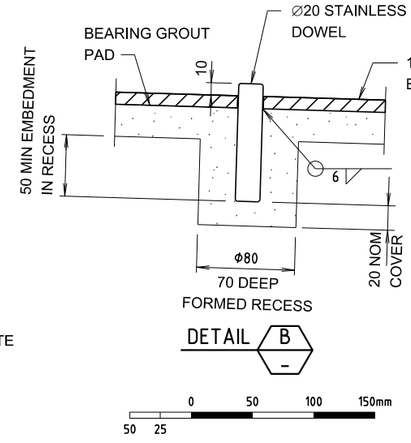
▲ DENOTES THE MINIMUM AND MAXIMUM THICKNESS OF GROUT SHALL BE 15mm AND 70mm AT ANY LOCATION.

⊕ DENOTES THE GROUT USED TO FILL FORMED RECESSES AND CONSTRUCT GROUT PADS AND SHALL BE SHRINKAGE COMPENSATED HIGH FLOW CEMENTITIOUS GROUT EPIREZ SUPERFLOW HF OR CONBEXTRA HS OR APPROVED EQUIVALENT.
MINIMUM COMPRESSIVE STRENGTH OF GROUT SHALL BE 40MPa.
GROUTING SHALL BE CARRIED OUT TO ENSURE THAT THE FORMED RECESSES ARE COMPLETELY FILLED AND THAT THERE ARE NO VOIDS UNDER THE BASE PLATES.
SIDE FACES OF GROUT PADS SHALL BE VERTICAL.
THE FORMWORK FOR THE GROUT PADS MUST REMAIN IN PLACE FOR A MINIMUM OF 3 DAYS AND CURING COMPOUNDS SHALL BE APPLIED TO THE SIDES OF THE GROUT PADS AFTER THE REMOVAL OF FORMWORK.



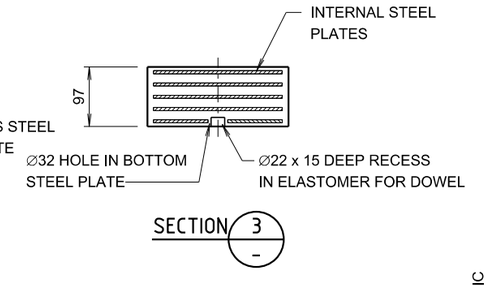
SECTION 1

0 100 200 300 400 500mm
100 50

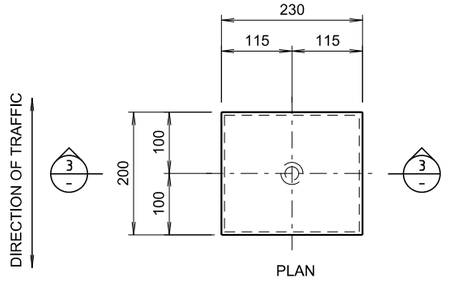


DETAIL B

0 50 100 150mm
50 25

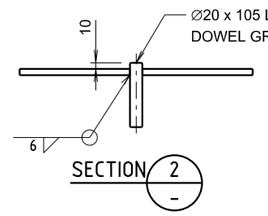


SECTION 3



LAMINATED ELASTOMERIC BEARING
AS PART No 020906R-5
24 REQUIRED - MODIFIED AS SHOWN

0 100 200 300mm
100 50



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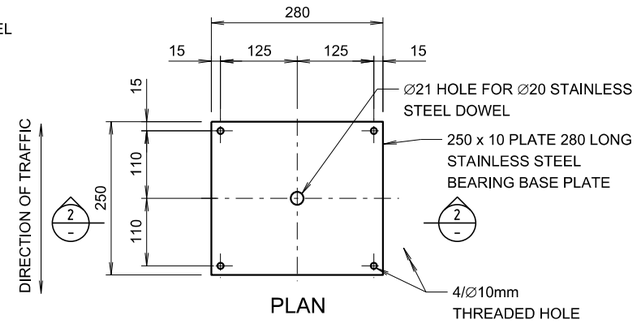

BEARING BASE PLATE ASSEMBLY

0 100 200 300mm
100 50

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

BEARINGS - SHEET B

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
www.rms.gov.au

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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL51

CAD No CBSBB_10SL_T3.dgn

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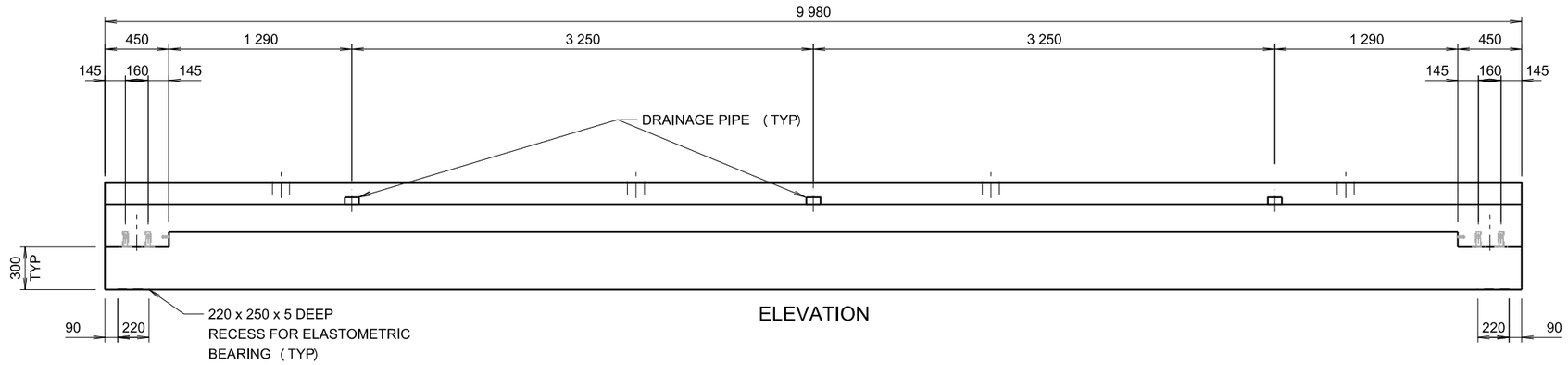

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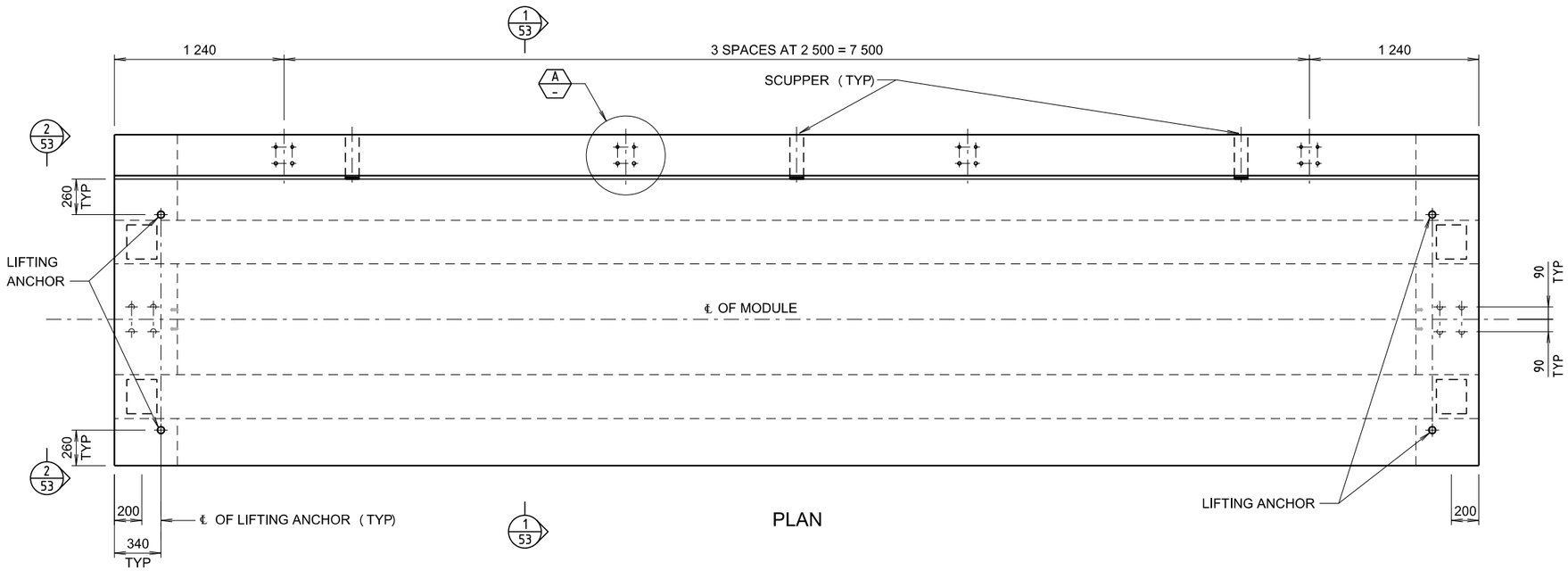
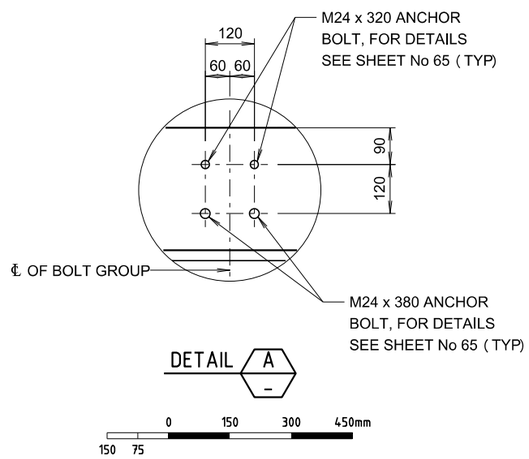


PLAN

PRECAST MODULE CONCRETE

6 REQUIRED



GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm (200 100) OR AS SHOWN

CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 50 MPa.
MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT TRANSFER OF PRESTRESS SHALL BE 35 MPa.
STRANDS SHALL BE 7-WIRE, ORDINARY, DIAMETER 12.7mm, TENSILE STRENGTH 1870 MPa, RELAX 2, TO AS/NZS 4672.1 WITH MINIMUM BREAKING FORCE OF 184 kN.
THE FORCE IN EACH 12.7mm DIA STRAND AT THE MID-SPAN OF THE MODULE IMMEDIATELY AFTER THE RELEASE OF THE TENSIONING JACK SHALL BE 138 kN.
AFTER TRANSFER OF PRESTRESS, STRANDS SHALL BE CUT FLUSH WITH THE END OF MODULE AND EXPOSED STRANDS SEALED AGAINST CORROSION BY THE APPLICATION OF EPOXY RESIN. THE SEQUENCE OF RELEASE OF PRESTRESS STRANDS SHALL BE SYMMETRICAL ABOUT THE CENTRELINE OF THE PRECAST MODULE.
CALCULATED HOG OF MODULE AT TRANSFER IS 5mm
AND IS 8mm AT 28 DAYS, ASSUMING:

- DENSITY = 2550 kg/m³
- ELASTIC MODULUS AT TRANSFER = 32 800 MPa
- STEAM CURING AT 70 deg C FOR 8 HOURS AFTER CASTING
- STORAGE IN OPEN AIR, AFTER STEAM CURING, AT 20 deg C AVERAGE TEMPERATURE AND RELATIVE HUMIDITY IN RANGE 50% - 75%
- NO LOADS EXCEPT MODULE SELF WEIGHT

MASS OF MODULE IS APPROXIMATELY 19.6 TONNES.
DURING STORAGE, TRANSPORT AND HANDLING, MODULE SHALL BE IN AN UPRIGHT POSITION AND SUPPORTED AT NOT MORE THAN 600mm FROM EACH END.
SCUPPERS TO BE CUT FROM 125 x 75 x 4 RHS, HOT DIP GALVANISED AFTER FABRICATION.
LIFTING ANCHORS SHALL BE SWIFT LIFT OR APPROVED EQUIVALENT DESIGNED BY THE PRECAST MODULE MANUFACTURE TO THE SATISFACTION OF THE PRINCIPLE.
THE LOCATIONS MAY VARY TO SUIT THIS DESIGN.
THE PROPOSED METHOD FOR MANUFACTURE OF THE PRECAST MODULE AND RELEASE OF PRESTRESS STRANDS SHALL BE SUBMITTED TO THE PRINCIPLE, MINIMUM 2 WEEKS PRIOR TO THE COMMENCEMENT OF ANY WORK ON THE PRECAST MODULE.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST MODULE CONCRETE - SHEET A

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

NSW GOVERNMENT Transport Roads & Maritime Services
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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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07.10.2016
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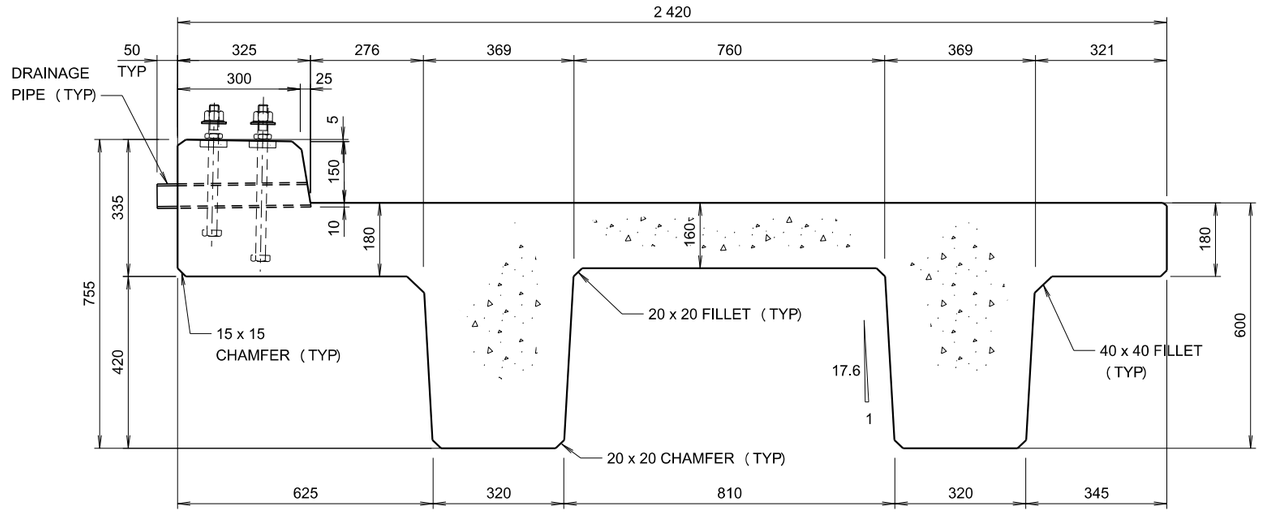
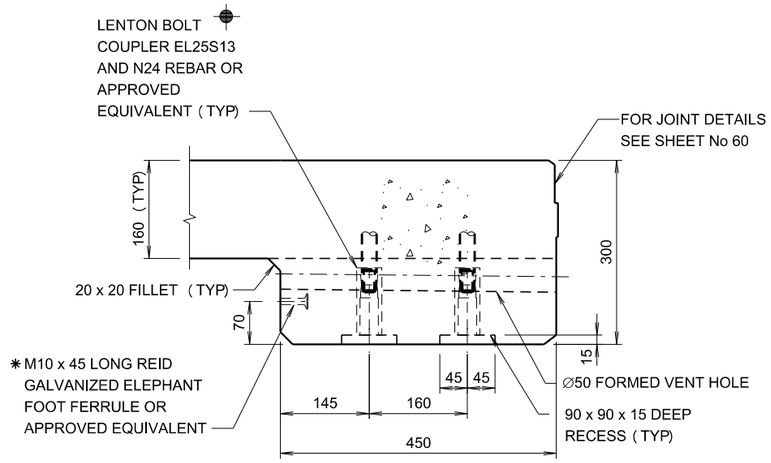
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL52

CAD No 10MC1B_SL_T3.dgn



SECTION 1/52



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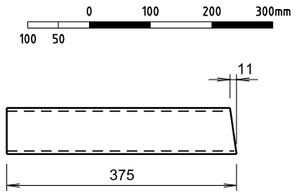
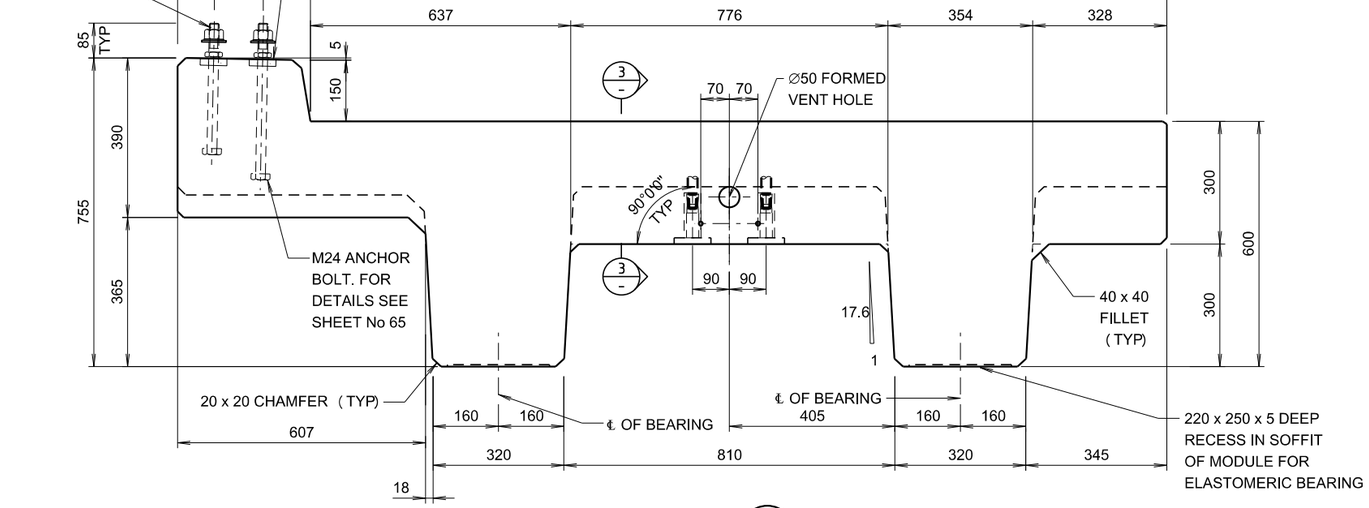


DRAINAGE PIPE

125 x 75 x 4 RHS
18 REQUIRED



VIEW 2/52

GENERAL NOTES

SCALE 0 150 300 450mm (150 75) OR AS SHOWN

LOCATION OF VENT HOLES MAY BE DISPLACED SLIGHTLY TO CLEAR REINFORCEMENT AND TO PROVIDE FOR THE REQUIRED COVER

∗ DENOTES FOR TEMPORARY FIXING MODULE HOLD DOWN BRACKET IN CASTING YARD AS DETAILED ON SHEET 61.

⌖ DENOTES HOT DIP GALVANIZED IN ACCORDANCE WITH RMS SPECIFICATION B241.

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 52.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST MODULE CONCRETE - SHEET B

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
www.rms.gov.au

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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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07.10.2016
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BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS

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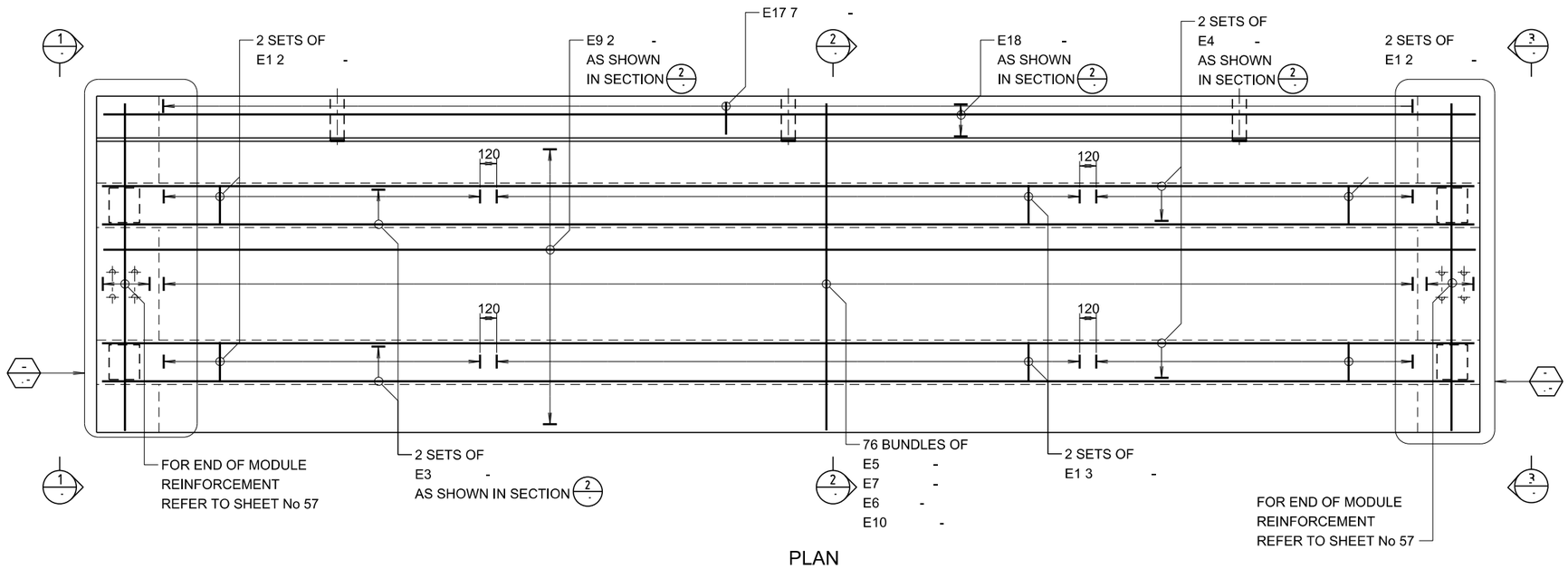
ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL53

CAD No 10MC1C_SL_T3.dgn



PLAN

PRECAST MODULE REINFORCEMENT

STRANDS NOT SHOWN
REINFORCEMENT AT END OF MODULE NOT SHOWN FOR CLARITY

GENERAL NOTES

SCALE 0 200 400 1 00 OR AS SHOWN
200 100

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET Nos 56 AND 5 .

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS
MODULAR BRIDGE DRAWINGS
TYPE -

PRECAST MODULE REINFORCEMEN -

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 883 -

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ISSUE | No SHEETS 40 | SHEET No MB10SL55

CAD No 10MR1A_SL_T .

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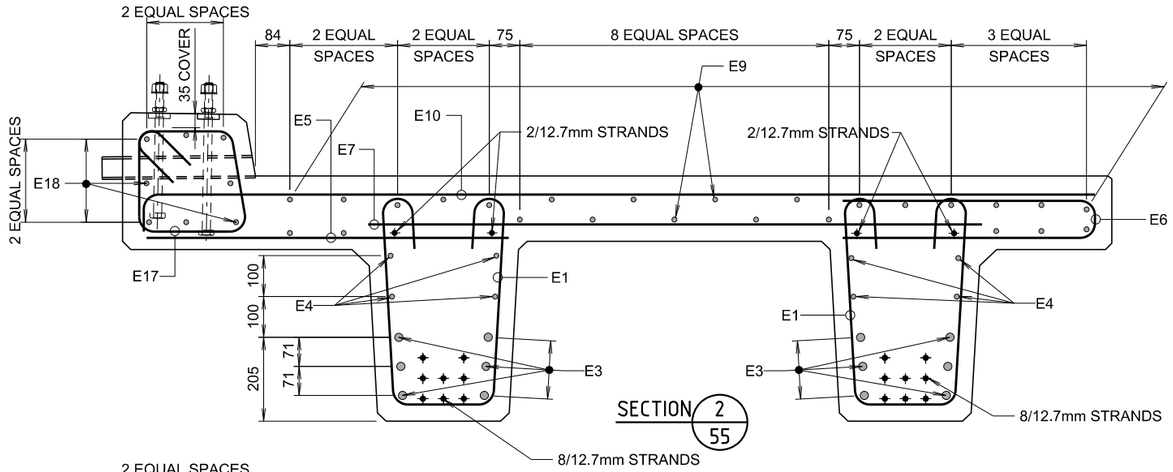

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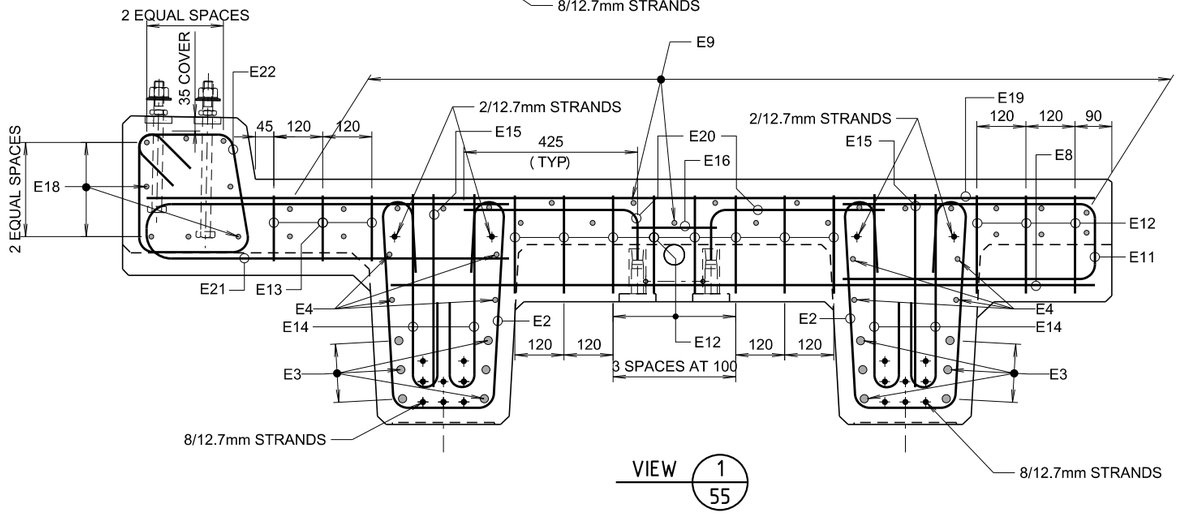
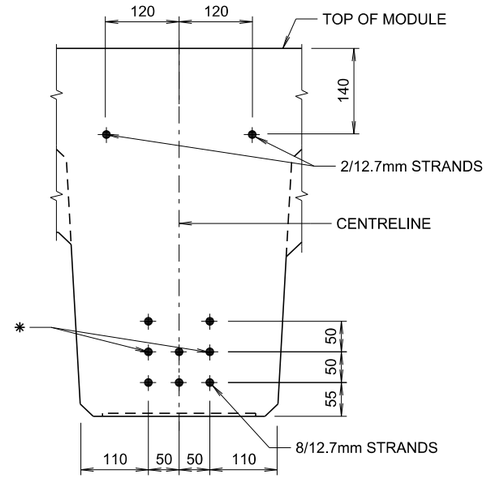


VIEW 1/55

VIEW 3/55 SIMILAR BUT OPPOSITE HAND



TYPICAL STRAND LAYOUT

0 100 200 300mm
100 50

STANDARD BAR SHAPES DIAGRAM

S	A	HT	B, C, FITMENT BENDS, A	P	FITMENT BENDS AND HOOKS; C, B, A
L	A, B	LL	A, C, B	AZ	C C, A, FITMENT BENDS, A, B
D	C, D = INTERNAL DIA, A, B	Q	FITMENT BENDS AND HOOKS; A, B, C, D	CZ	175, 175, A, A, FITMENT BENDS, B
KZ	B, FITMENT BENDS, 175, A; ELEVATION; END VIEW	C	A, B, C, D, E		

BAR MARKING LEGEND

THE METHOD USED TO LABEL REINFORCEMENT ON THE DRAWINGS IS AS FOLLOWS:

E1 10-N16-S-300EF

- E — STRUCTURE ELEMENT DENOTATION
- 1 — BAR NUMBER IN SEQUENCE
- 0 — NUMBER OF BARS IN THE SET
- N — BAR STRUCTURAL PROPERTIES
- 16 — BAR SIZE IN MILLIMETRES
- S — BAR SHAPE CODE
- 300 — SPACING ALONG LIMIT LINE
- EF — INFORMATION FOR PLACING

WHERE THE BAR SPACING IS APPROXIMATE ONLY, THE FOLLOWING FORMAT SHALL BE USED:
E1 10-N16-S-300EF APPROX

GENERAL NOTES

SCALE 0 150 300 450mm (150 75) OR AS SHOWN

* DENOTES STRANDS SHALL BE DEBONDED FOR A LENGTH OF 1000mm AT EACH END OF PRECAST MODULE.
FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 57

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST MODULE REINFORCEMENT - SHEET B

PREPARED BY
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PHONE (02) 8837-0811

NSW GOVERNMENT Transport Roads & Maritime Services
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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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BRIDGE ENGINEER (NEW DESIGN)

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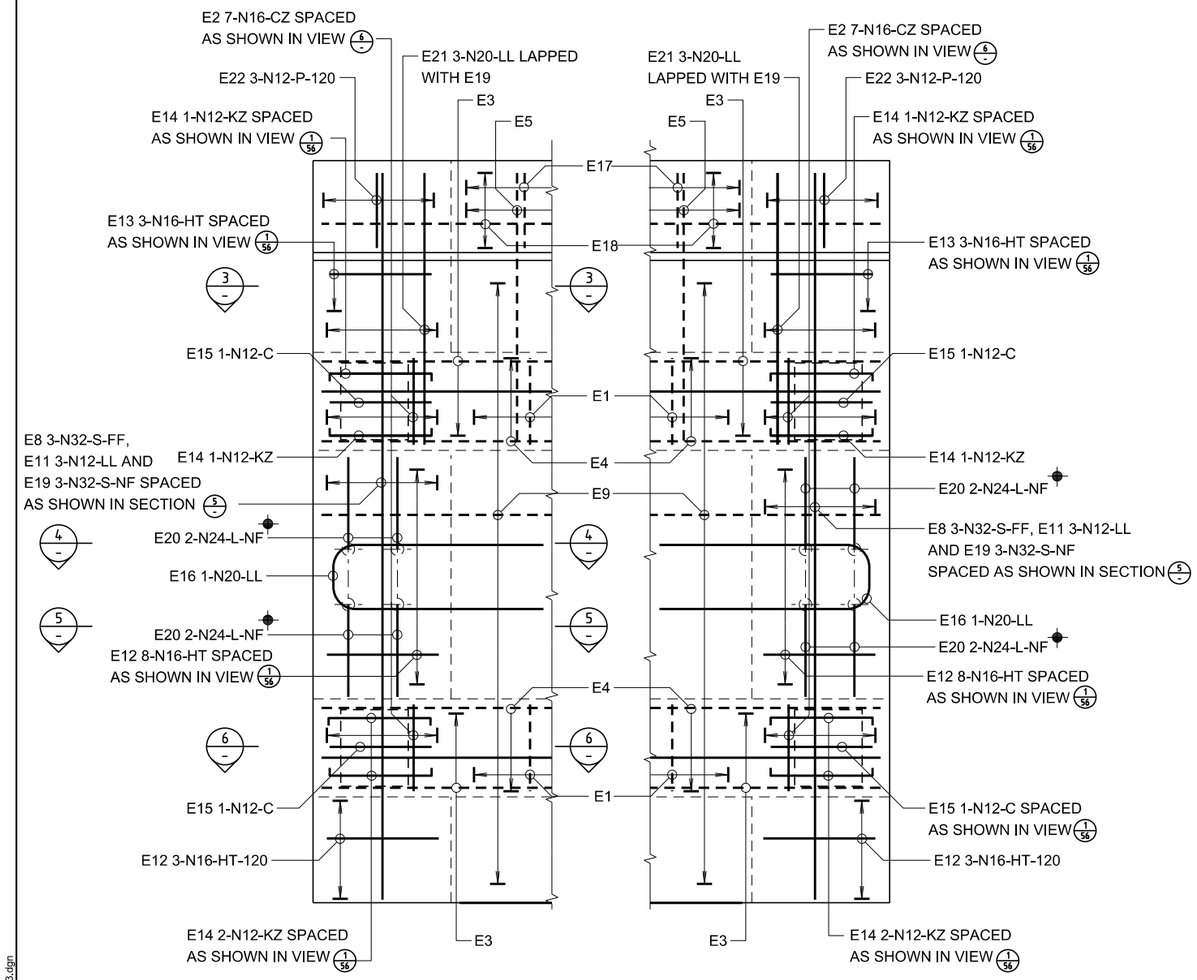

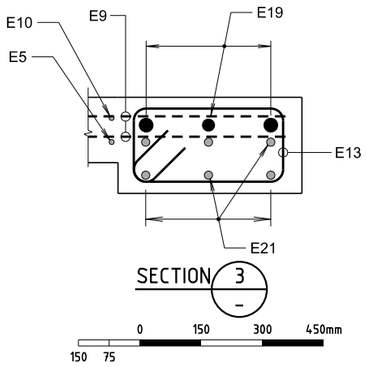

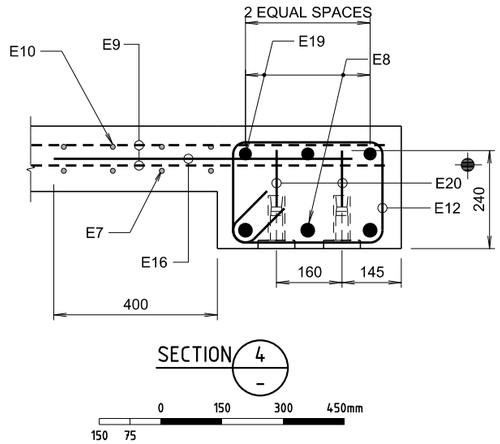

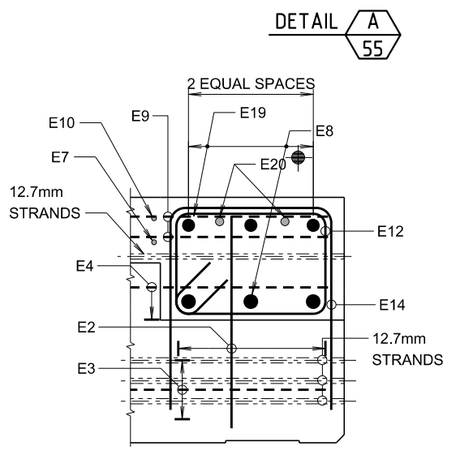

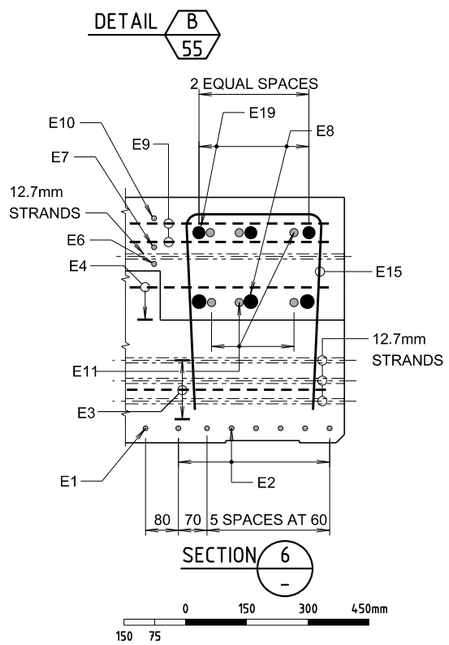

GENERAL NOTES

SCALE 0 100 200 300 400 500mm / 100 50 OR AS SHOWN.

NOMINAL COVER TO REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE 35 mm UNLESS SPECIFIED OTHERWISE.
THE COVER SPECIFIED IS BASED ON THE MODULE BEING CAST IN A RIGID STEEL FORMWORK MOULD WITH INTENSE COMPACTION USING A VIBRATING TABLE OR FORM VIBRATORS.
REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR FORMED HOLE, RECESS, COUPLERS AND BOLT.
UNLESS OTHERWISE SPECIFIED, THE MINIMUM LENGTHS OF LAPS SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32	N36
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	460	620	820	1100	1400	1720	...
b) OTHER BARS:	350	470	630	850	1080	1320	...

THE DEVELOPMENT LENGTH SHALL BE 80% OF THE VALUE TABULATED IN THE TABLE UNLESS NOTED OTHERWISE.
◆ DENOTES LENTON BOLT COUPLER EL25S13 AND N24 REBAR TO BE THREADED AT ENDS AND TIGHTENED INTO COUPLERS IN ACCORDANCE WITH SUPPLIERS RECOMMENDATIONS OR APPROVED EQUIVALENT.

REINFORCEMENT NOTES

1 AUSTRALIAN STANDARD BAR SHAPES ARE IN ACCORDANCE WITH AS 1100.501.
2 BAR SIZE IS THE NOMINAL DIAMETER IN MILLIMETRES, OR THE AS/NZS 4671 FABRIC NUMBER.
3 THE GRADE OF REINFORCEMENT, IF NOT STATED ON THE DRAWINGS, SHALL BE D500N TO AS/NZS 4671.
4 WHERE SHOWN ON THE DRAWINGS, "W" SHALL DENOTE PLAIN ROUND REINFORCING BARS EQUIVALENT TO GRADE R500L TO AS/NZS 4671.
5 WHERE SHOWN ON THE DRAWINGS, RL AND SL SHALL DENOTE WELDED REINFORCING FABRIC (RECTANGULAR AND SQUARE), RESPECTIVELY.
6 DIMENSIONS SHOWN ON BAR SHAPES DIAGRAMS ARE MEASURED FROM THE OUTSIDE FACES OF THE BARS AND ARE IN MILLIMETRES.
7 THE INCLUDED ANGLE OF ANY BEND SHALL BE A RIGHT ANGLE IF NO DIMENSION SHOWN.
8 BARS OF DIAMETER GREATER THAN 24mm SHALL NOT BE REBENT.
9 BAR BENDING AND HOOK DETAILS SHALL BE IN ACCORDANCE WITH SECTION 5.13 OF AS 5100-BRIDGE DESIGN.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

PRECAST MODULE REINFORCEMENT - SHEET C

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

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BRIDGE ENGINEER (NEW DESIGN)

CAD No 10MR1C_SL_T3.dgn

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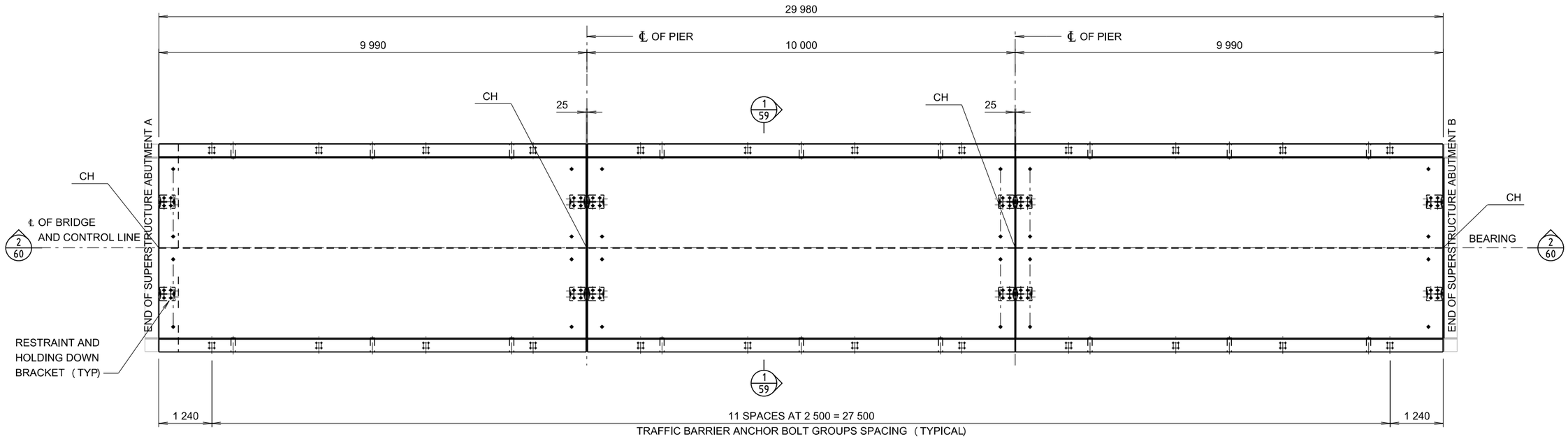
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL57



PLAN

GENERAL NOTES

SCALE 0 150 300 450mm (150 75) OR AS SHOWN.

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 60.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

DECK ASSEMBLY - SHEET A

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

NSW GOVERNMENT Transport Roads & Maritime Services
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DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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07.10.2016
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BRIDGE ENGINEER (NEW DESIGN)

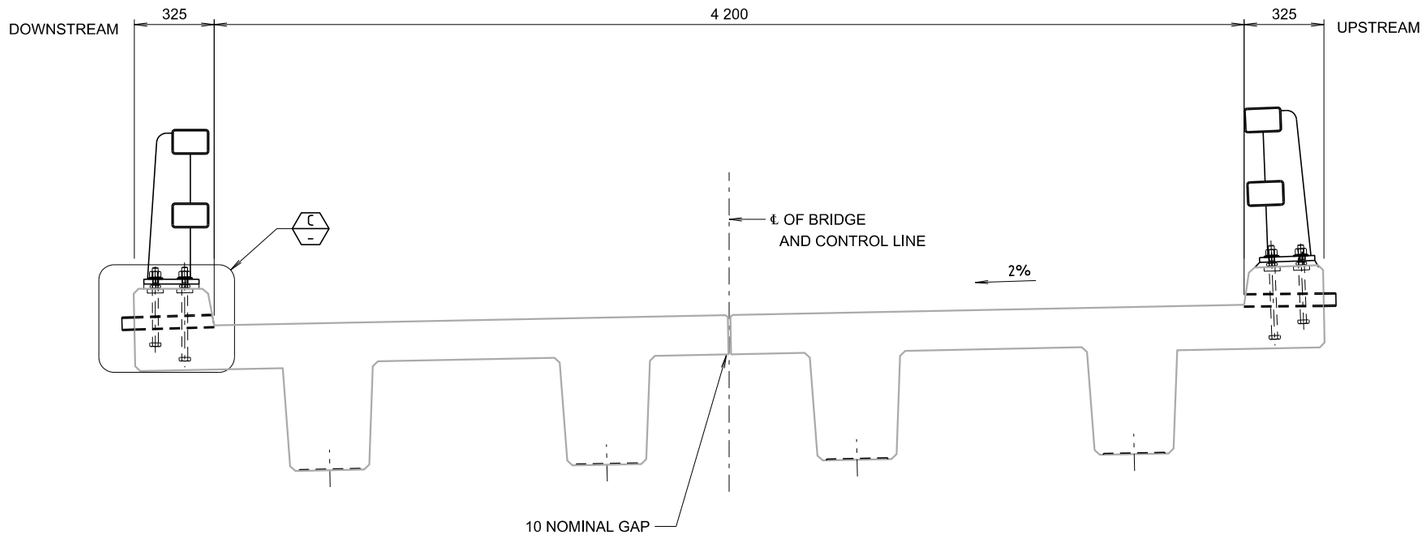
REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

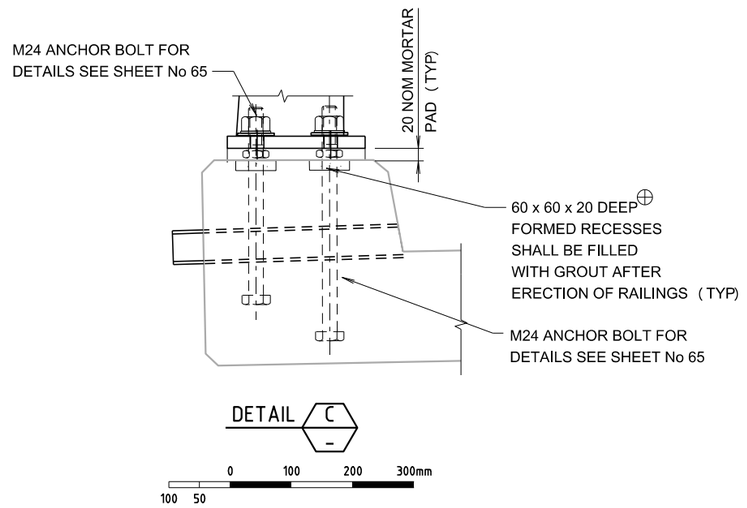
ISSUE | No SHEETS 40 | SHEET No MB10SL58

CAD No CBSDCA_10SL_T3.dgn

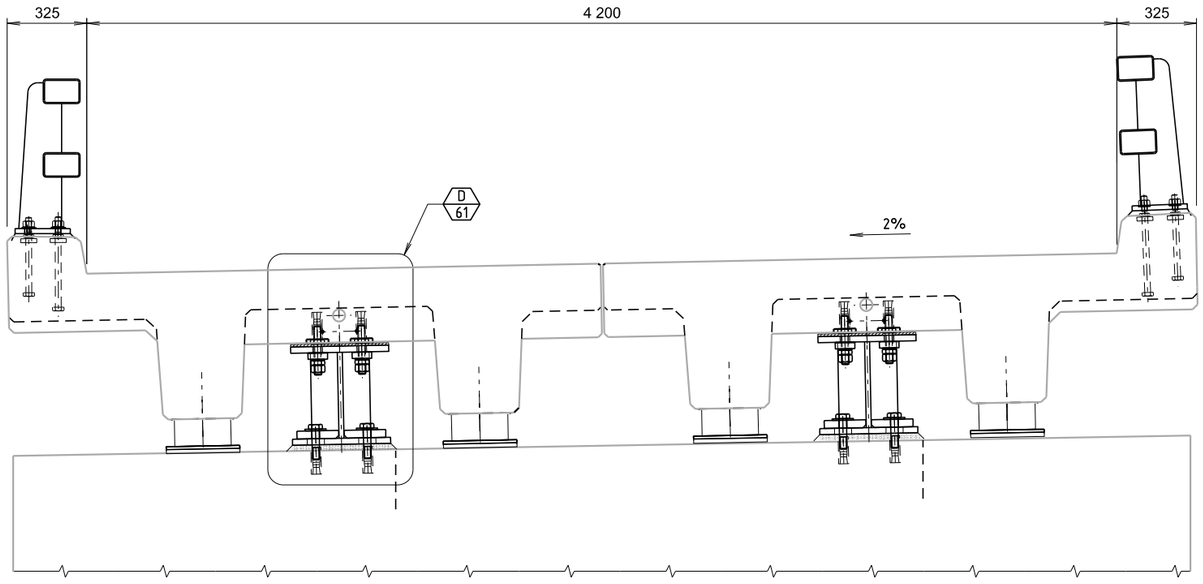


TYPICAL CROSS SECTION

SECTION 1/58



DETAIL C



TYPICAL CROSS SECTION
AT ABUTMENTS AND PIERS

GENERAL NOTES

SCALE 0 150 300 450mm (150 75) OR AS SHOWN

⊕ DENOTES THE GROUT USED SHALL BE SHRINKAGE COMPENSATED HIGH FLOW CEMENTITIOUS GROUT EPIREZ SUPERFLOW HF OR CONBEXTRA HS OR APPROVED EQUIVALENT.

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 60.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

DECK ASSEMBLY - SHEET B

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PHONE (02) 8837-0811

Transport Roads & Maritime Services
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DRAWING	D.G.C.	A Dey

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BRIDGE No

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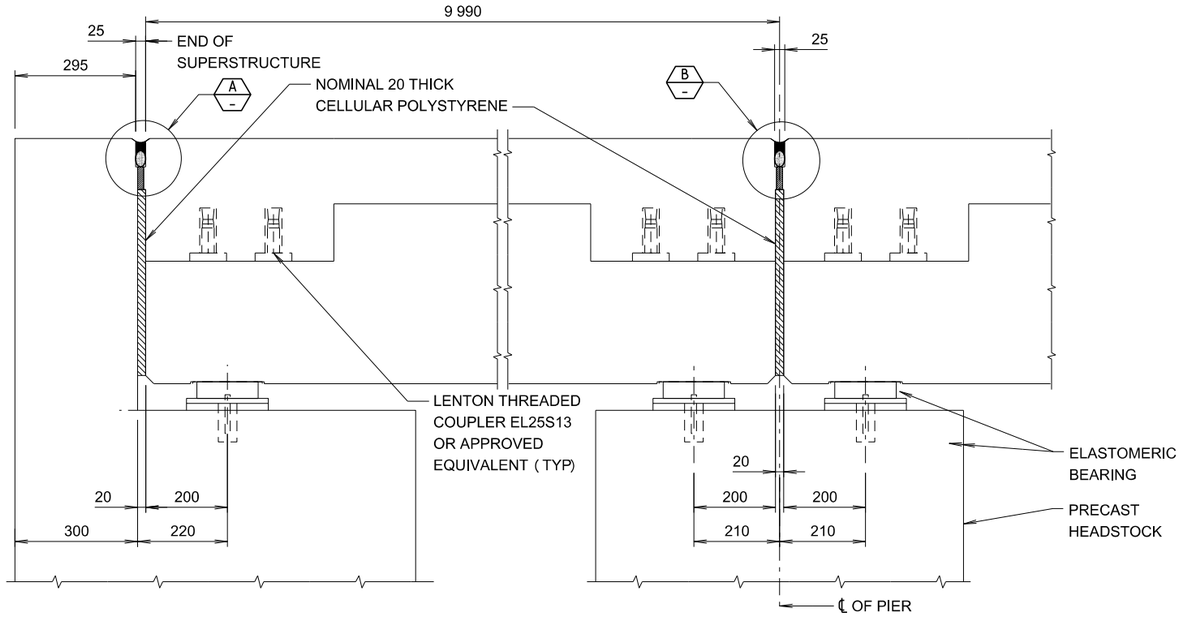
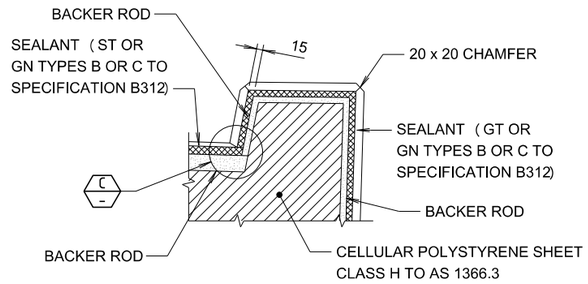


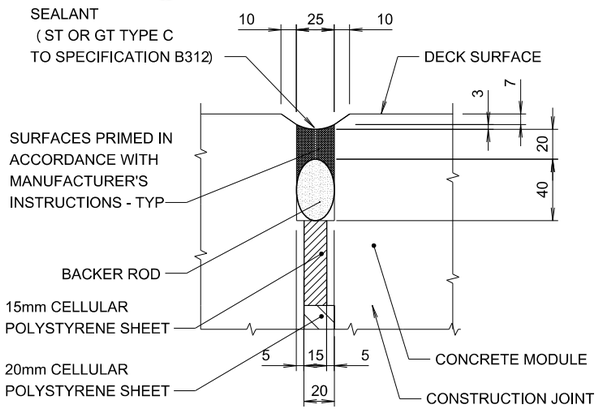
JOINT DETAIL AT ABUTMENTS

JOINT DETAIL AT PIERS

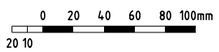


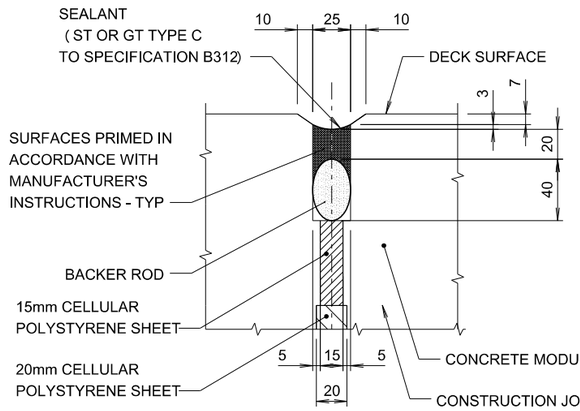
JOINT DETAIL AT PARAPET

SECTION 2/58

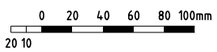


DETAIL A

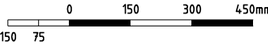




DETAIL B

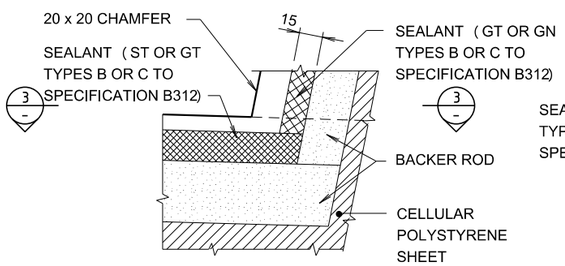


GENERAL NOTES

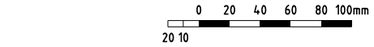
SCALE 

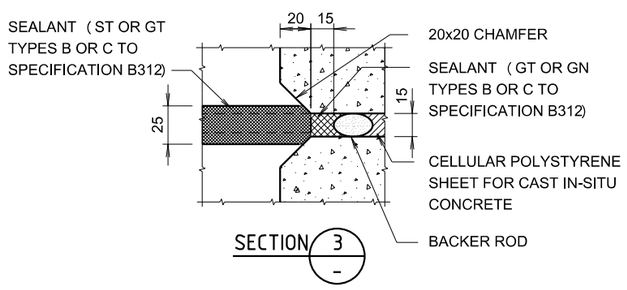
OR AS SHOWN.

MAXIMUM JOINT MOVEMENT ± 10mm.
ALL SEALANTS SHALL CONFORM TO ROADS AND MARITIME SERVICES QA SPECIFICATION B312.
SINGLE COMPONENT SEALANTS SHALL NOT BE USED IN ARID OR SEMI-ARID REGIONS WEST OF THE GREAT DIVIDING RANGE. UNLESS COMPLETE CURING IS GUARANTEED BEFORE OPENING TRAFFIC.
BACKER RODS SHALL BE NON ABSORBENT, CLOSED CELL POLYETHYLENE OR NEOPRENE (PARBURY'S EXPANDAFOAM BACKER ROD OR APPROVED EQUIVALENT) INSTALLED WITH 25% COMPRESSION.
THE SEALANT SHALL BE APPLIED BETWEEN 7:00am AND 11:00am, AT TEMPERATURES NOT LESS THAN 10 deg C OR NOT MORE THAN 35 deg C.
JOINT MOVEMENT FROM INSTALLATION SHALL NOT INDUCE STRAIN MORE THAN THE ALLOWABLE STRAIN SPECIFIED IN RMS AS SPECIFICATION B312.

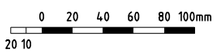


DETAIL C





SECTION 3



ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

DECK ASSEMBLY - SHEET C

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
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	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

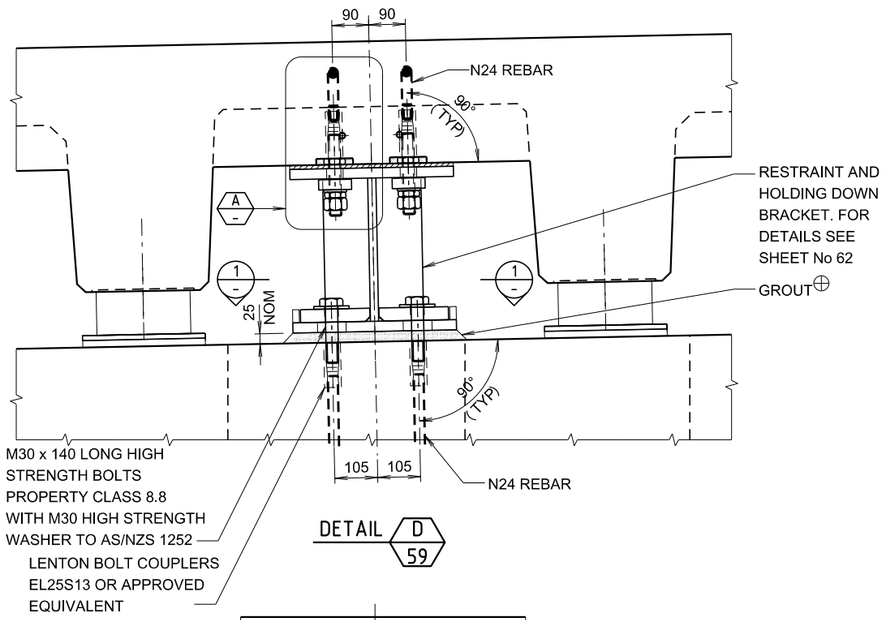
APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

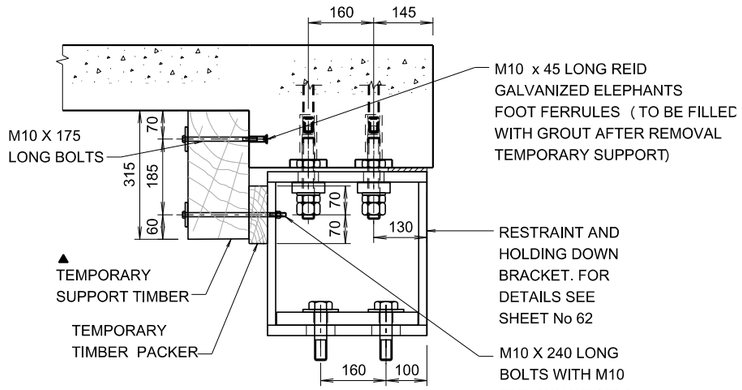
REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL60

CAD No CBSDCC_10SL_T3.dgn

11:26:29 AM 7/10/2016 K:\Bridge\Standards_2015\Standards in Development\B1000_MODULAR BRIDGES\SINGLE LANE\10M_SL_T3\CBSDCC_10SL_T3.dgn



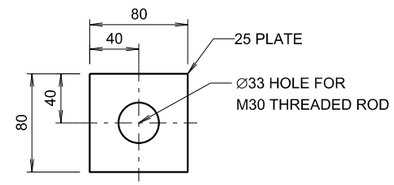
DETAIL D 59



MODULE RESTRAINT AND HOLDING DOWN BRACKET TEMPORARY SUPPORT ASSEMBLY

TO BE FIXED TO THE MODULE IN THE CASTING YARD AND SHALL NOT BE USED FOR TEMPORARY SUPPORT OF PRECAST MODULE.

▲ DENOTES OR SUITABLE ALTERNATIVE TEMPORARY SUPPORT AND TO BE REMOVED AFTER GROUTING AND FIXING BRACKET ON SITE

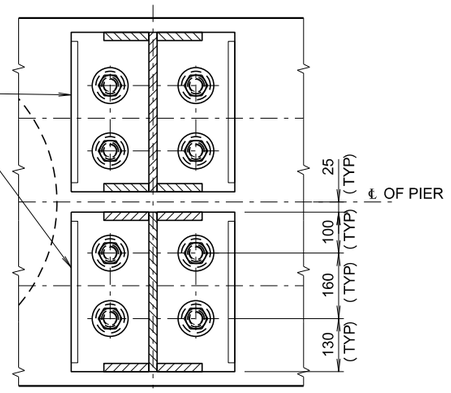


WASHER PLATE

96 REQUIRED

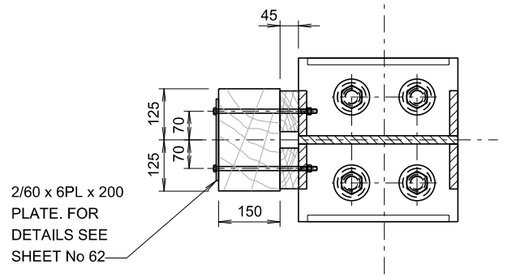
0 50 100 150mm

50 25



SECTION 1

RESTRAINT AND HOLDING DOWN BRACKET LAYOUT AT PIERS

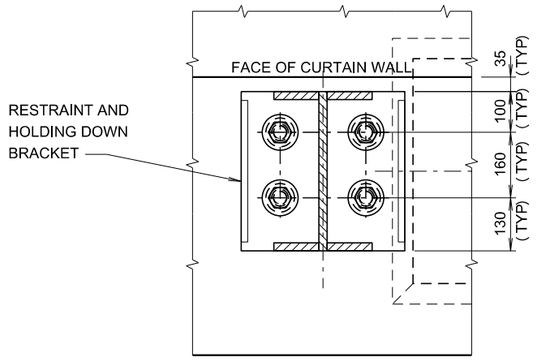


SECTION 2

GENERAL NOTES

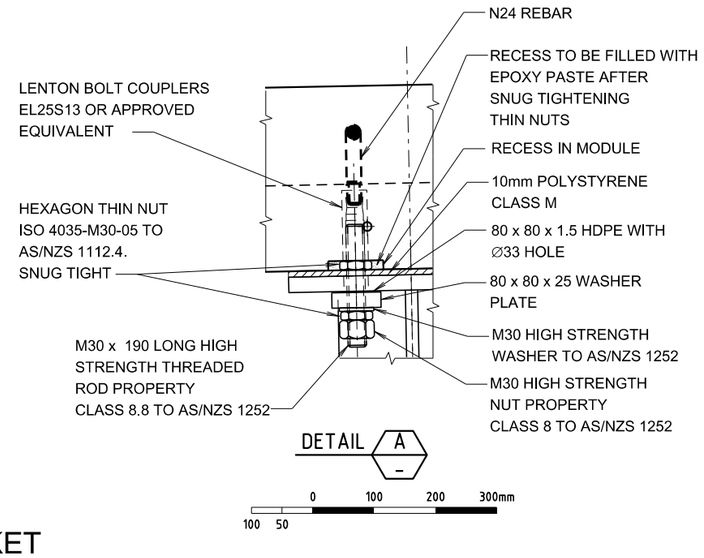
SCALE 0 150 300 450mm (150 75) OR AS SHOWN

STEEL PLATES SHALL CONFORM TO AS/NZS 3678-250.
STEEL SECTIONS SHALL CONFORM TO AS/NZS 3679.1-300.
BOLTING CATEGORY FOR HIGH STRENGTH STEEL BOLTS AND THREADED RODS SHALL BE 8.8/S IN ACCORDANCE WITH AS 5100.6.
HIGH STRENGTH STEEL NUTS FOR STRUCTURAL BOLTING SHALL BE PROPERTY CLASS 8 TO AS/NZS 1252.
THE WELD CATEGORY SHALL BE SP IN ACCORDANCE WITH AS/NZS 1554.1
ALL WELDING SHALL CONFORM TO AS/NZS 1554.1 WITH ADDITIONAL REQUIREMENTS AS GIVEN IN ROADS AND MARITIME SERVICES SPECIFICATION B204.
AREA OF ANCHOR BOLT TO BE IN CONTACT WITH GROUT SHALL BE WRAPED WITH DENSO TAPE.
ALL FASTENERS TO COMPLY WITH THE REQUIREMENTS OF RMS SPECIFICATION B240.
EDGES TO BE PROTECTIVE TREATED SHALL BE ROUNDED TO A RADIUS OF 1.5mm UNLESS SPECIFIED OTHERWISE.
AFTER ASSEMBLY DAMAGED GALVANISED SURFACES SHALL BE RENOVATED WITH TWO PACK ORGANIC ZINC-RICH PRIMER.
ALL STEEL COMPONENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ROADS AND MARITIME SERVICES SPECIFICATION B241.
BOLTS, RODS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AS 1214.
⊕ DENOTES THE GROUT USED SHALL BE SHRINKAGE COMPENSATED HIGH FLOW CEMENTITIOUS GROUT EPIREZ SUPERFLOW HF OR CONBEXTRA HS OR APPROVED EQUIVALENT.



SECTION 1

RESTRAINT AND HOLDING DOWN BRACKET LAYOUT AT ABUTMENTS



DETAIL A

0 100 200 300mm

100 50

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

RESTRAINT AND HOLDING DOWN BRACKET - SHEET A

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PHONE (02) 8837-0811

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	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

APPROVED FOR USE

W Ariyaratne
PRINCIPAL ENGINEER BRIDGES

07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL61

CAD No CBSDT_10SL_T3.dgn

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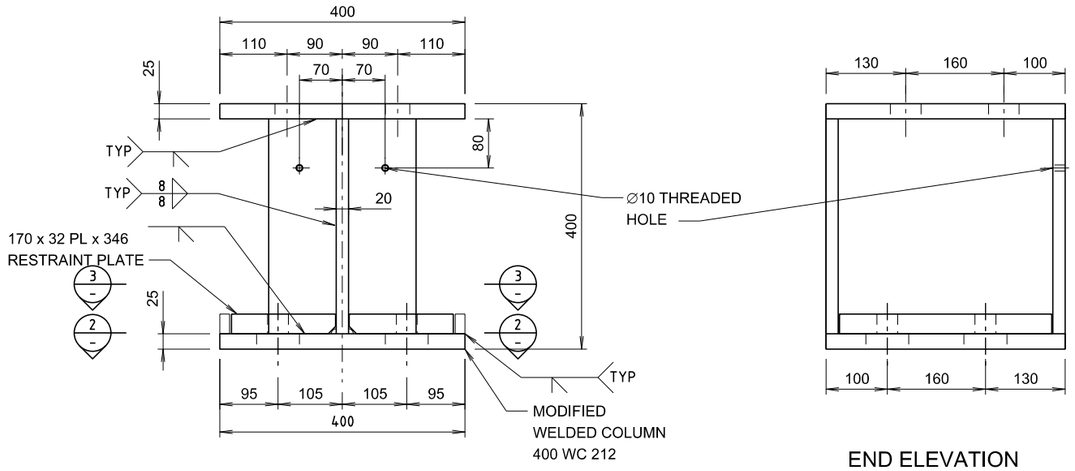


ELEVATION

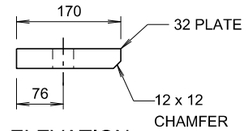
END ELEVATION

RESTRAINT AND HOLDING DOWN BRACKET

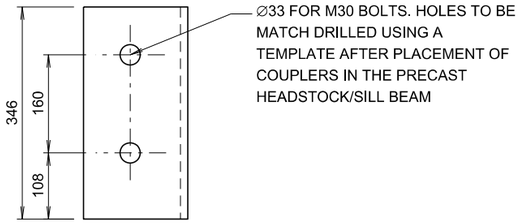
24 REQUIRED

0 100 200 300mm

100 50



ELEVATION



PLAN

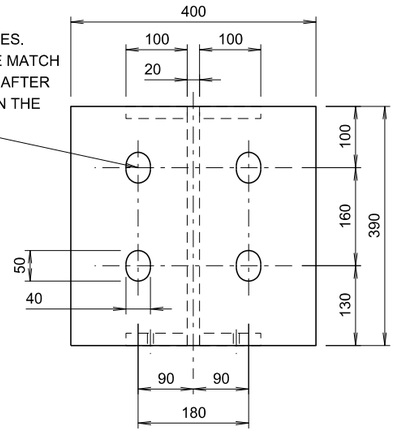
RESTRAINT PLATE

48 REQUIRED

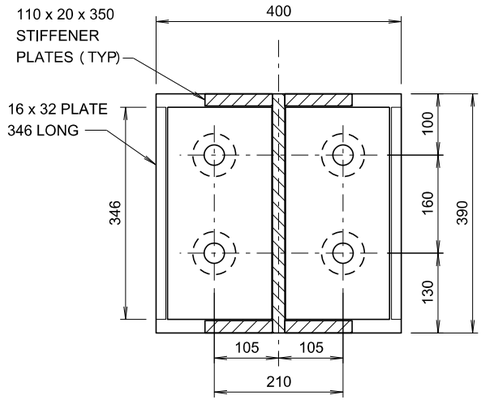
0 100 200 300mm

100 50

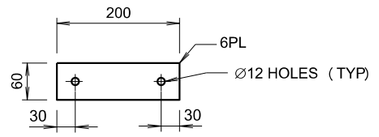
∅40 x 50 LONG SLOTTED HOLES.
HOLES IN TOP FLANGE TO BE MATCH
DRILLED USING A TEMPLATE AFTER
PLACEMENT OF COUPLERS IN THE
PRECAST MODULE



TOP VIEW



SECTION 3 –

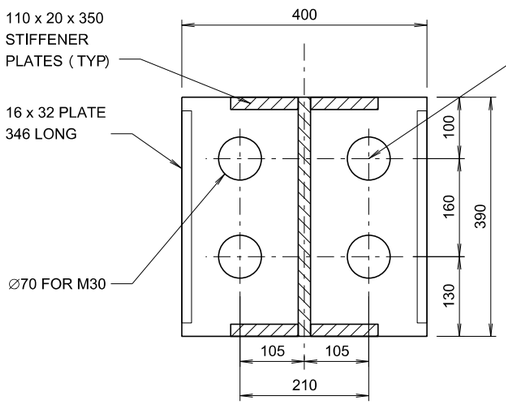


PLATE

48 REQUIRED

0 100 200 300mm

100 50



SECTION 2 –

GENERAL NOTES

SCALE 0 100 200 300mm (100 50) OR AS SHOWN

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 61.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

RESTRAINT AND HOLDING DOWN BRACKET - SHEET B

PREPARED BY
BRIDGE ENGINEERING SECTION
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	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS

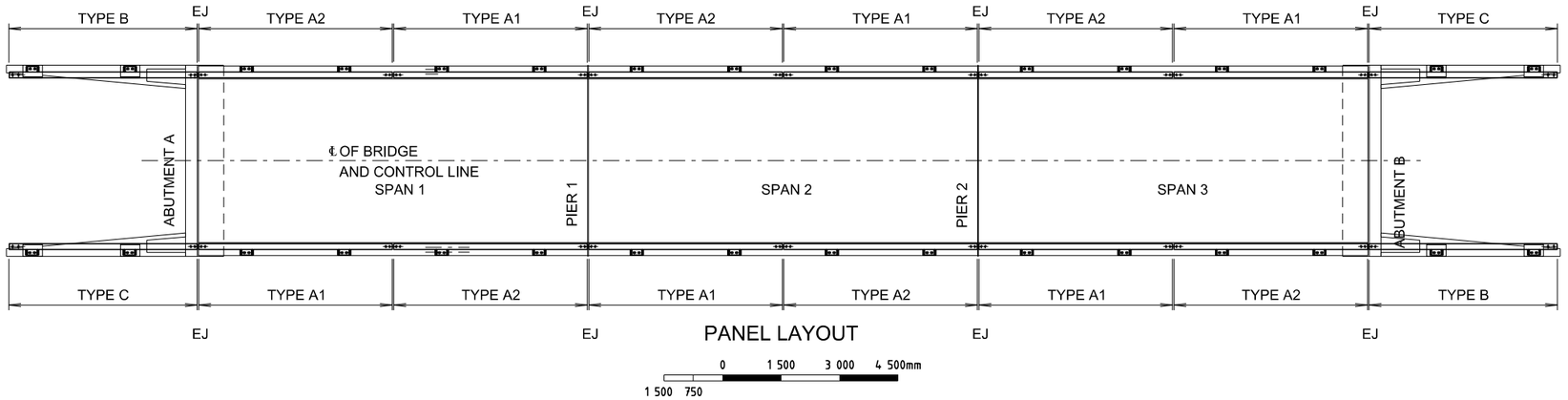
BRIDGE No

ISSUE STATUS

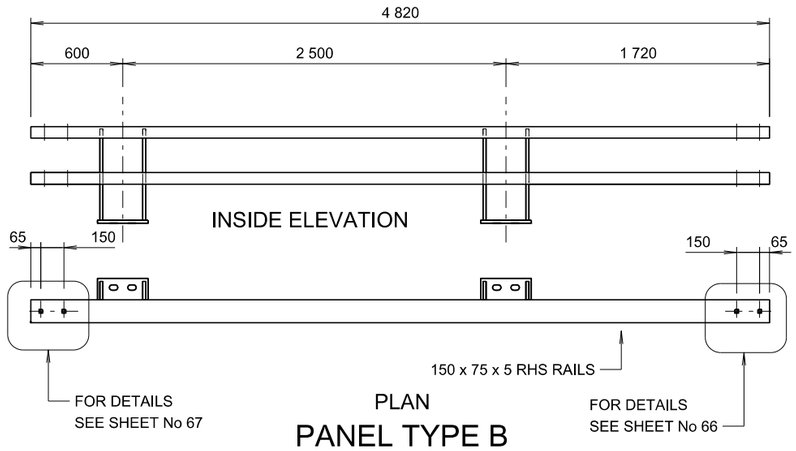
ISSUE | No SHEETS 40 | SHEET No MB10SL62

CAD No CBSDTB_10SL_T3.dgn

11:26:30 AM 7/10/2016 K:\Bridge\Standards_2016\Standards in Development\B1000_MODULAR BRIDGES\SINGLE LANE\10M_SL_T3\CBSDTB_10SL_T3.dgn



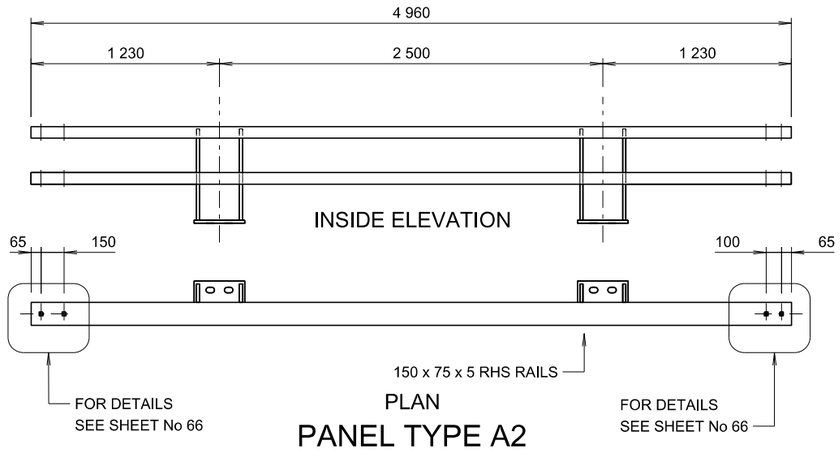
PANEL LAYOUT



PLAN

PANEL TYPE B

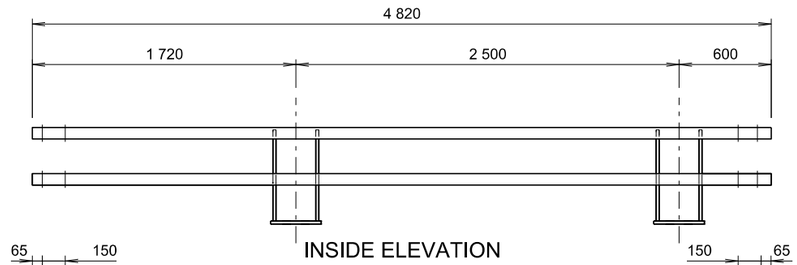
2 REQUIRED



PLAN

PANEL TYPE A2

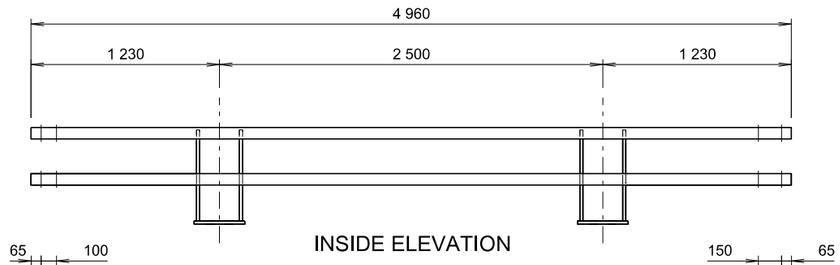
6 REQUIRED



PLAN

PANEL TYPE C

2 REQUIRED



PLAN

PANEL TYPE A1

6 REQUIRED

GENERAL NOTES

SCALE 0 200 400 600 800 1 000mm (200 100) OR AS SHOWN

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 65.

ISSUE	DATE	AMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

TRAFFIC BARRIER RAILING - SHEET A

PREPARED BY
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NSW GOVERNMENT Transport Roads & Maritime Services
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	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

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PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

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BRIDGE ENGINEER (NEW DESIGN)

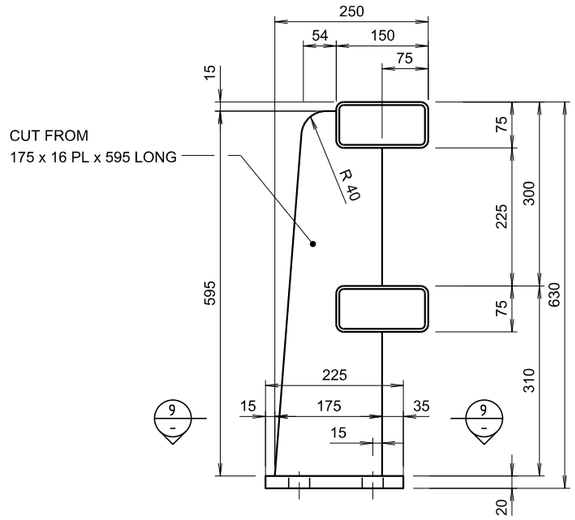
REGISTRATION No OF PLANS

BRIDGE No

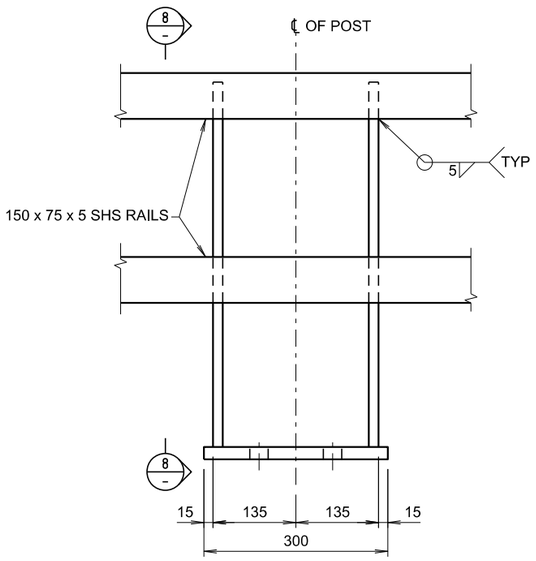
ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL64

CAD No 10MBRA_SL_T3.dgn

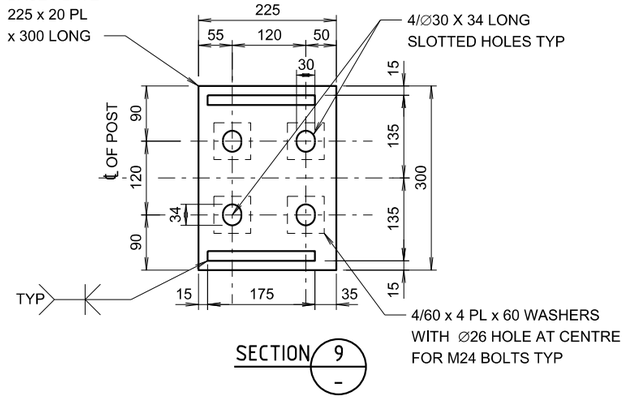


SECTION 8

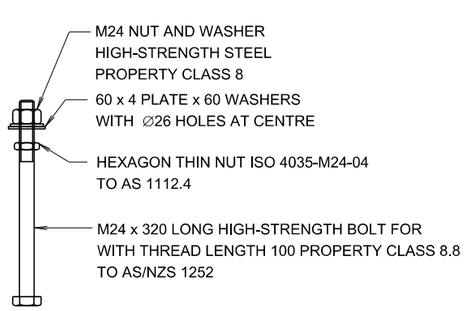


INSIDE ELEVATION

POST SHALL BE PERPENDICULAR TO BASE PLATE

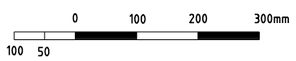


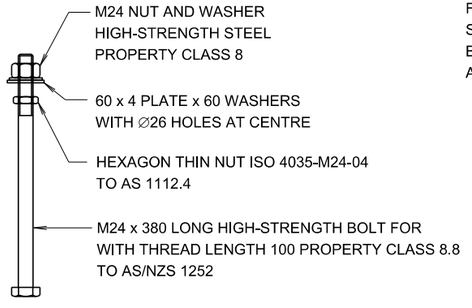
SECTION 9



M24 ANCHOR BOLT ASSEMBLY

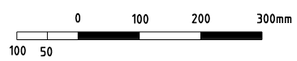
64 REQUIRED





M24 ANCHOR BOLT ASSEMBLY

64 REQUIRED



GENERAL NOTES

SCALE 0 100 200 300mm (100 50) OR AS SHOWN

ALL STEEL PLATE SHALL CONFORM TO AS/NZS 3678-250.
RECTANGULAR HOLLOW SECTIONS SHALL CONFORM TO AS/NZS 1163-C350LO.
ALL FASTENERS MUST CONFORM TO THE REQUIREMENTS OF ROADS AND MARITIME SERVICES QA SPECIFICATION B240.
DIMENSIONS AND SHAPE FOR CUP HEAD BOLTS SHALL BE IN ACCORDANCE WITH AS/NZS 1390.
HIGH STRENGTH STEEL CUP HEAD BOLTS SHALL BE PROPERTY CLASS 8.8 WITH MATERIAL AND MECHANICAL PROPERTIES IN ACCORDANCE WITH AS/NZS 1252 AND SHALL BE MARKED DURING MANUFACTURE TO DESIGNATE THEM AS HIGH STRENGTH STEEL BOLTS.
HIGH STRENGTH STEEL NUTS FOR STRUCTURAL BOLTING SHALL BE PROPERTY CLASS 8 TO AS/NZS 1252.
BOLTING CATEGORY FOR HIGH STRENGTH STEEL CUP HEAD BOLTS AND FOR HIGH STRENGTH STEEL BOLTS SHALL BE 8.8/S IN ACCORDANCE WITH AS 5100.6.
THE WELD CATEGORY SHALL BE SP IN ACCORDANCE WITH AS/NZS 1554.1
ALL WELDING SHALL CONFORM TO AS/NZS 1554.1 WITH ADDITIONAL REQUIREMENTS AS GIVEN IN ROADS AND MARITIME SERVICES SPECIFICATION B204.
WELDING SYMBOLS COMPLY WITH AS 1101.3.
RAILINGS AND CONNECTORS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
PTFE SPACER SHALL BE 100% VIRGIN POLYTETRAFLUOROETHYLENE CONFORMING TO ISO 13000-1 GRADE 1 AND SHALL BE UNFILLED, NOT LUBRICATED AND NOT DIMPLED.
SEAM WELD INSIDE RHS TO BE GROUND OFF FOR 250mm MINIMUM FROM END OF RAIL.
CONNECTORS TO BE TRIAL FITTED BEFORE GALVANIZING TO ENSURE LOOSE FIT.
THE LONGITUDINAL SEAM IN RHS MEMBERS SHALL BE ON THE UNDERSIDE OF THE RAILS.
STEEL WASHER SHALL CONFORM TO AS 1237.1 PRODUCT GRADE A.
SUPPLY OF BOLTS, NUTS AND WASHERS SHALL BE IN ACCORDANCE WITH ROADS AND MARITIME SERVICES SPECIFICATION B240.
EDGES TO BE PROTECTIVE TREATED SHALL BE ROUNDED TO A RADIUS OF 1.5mm UNLESS SPECIFIED OTHERWISE.
AFTER ASSEMBLY DAMAGED GALVANISED SURFACES SHALL BE RENOVATED WITH TWO PACK ORGANIC ZINC-RICH PRIMER.
ALL STEEL COMPONENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ROADS AND MARITIME SERVICES SPECIFICATION B241.
BOLTS NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AS 1214.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

TRAFFIC BARRIER RAILING - SHEET B

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
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APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

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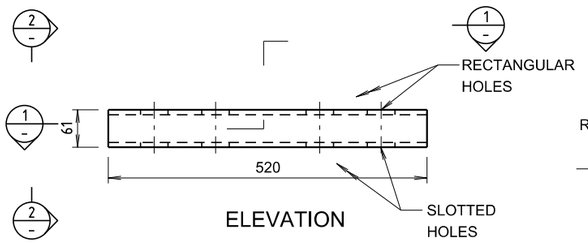
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

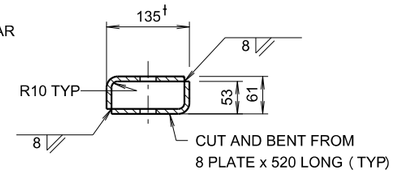
CAD No 10MBRB_SL_T3.dgn

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL65

11:26:32 AM 7/10/2016 K:\Bridge\Standards_2015\Standards in Development\B1000_MODULAR BRIDGES\SINGLE LANE\10M_SL_T3\10MBRB_SL_T3.dgn



ELEVATION



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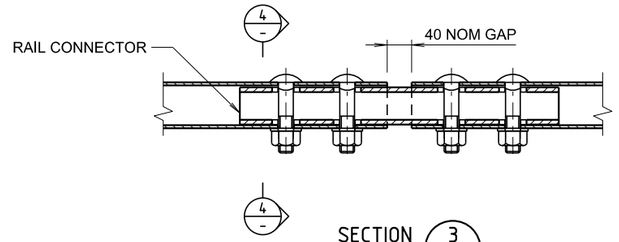

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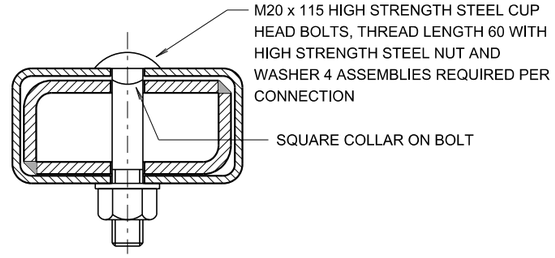

SECTION 4

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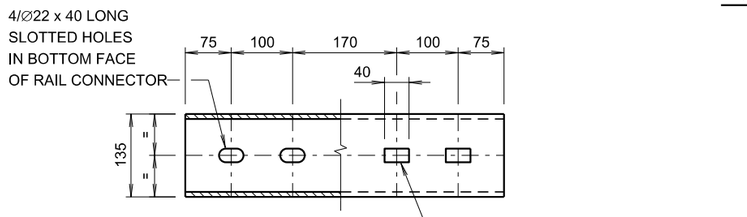
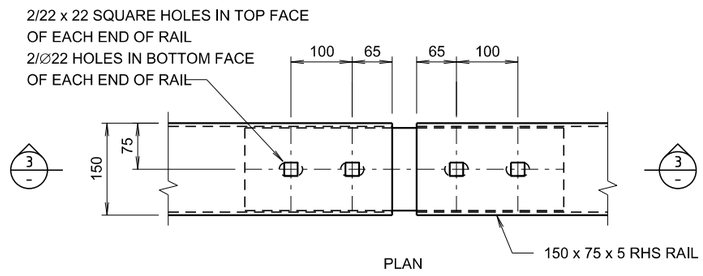
20 10



VIEW 1

RAIL CONNECTOR

REQUIRED

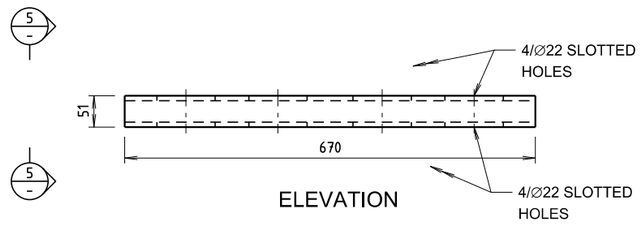


PLAN

ASSEMBLY AT RAIL CONNECTION

CUP HEAD BOLTS NOT SHOWN

JOINT DETAILS - TYPICAL JOINT



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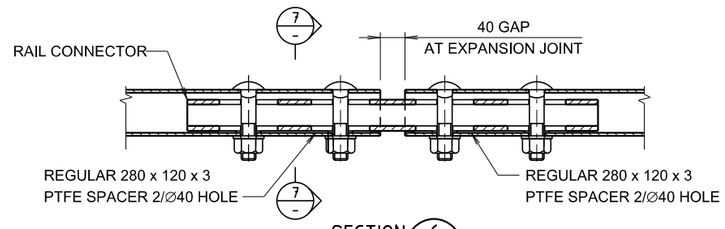

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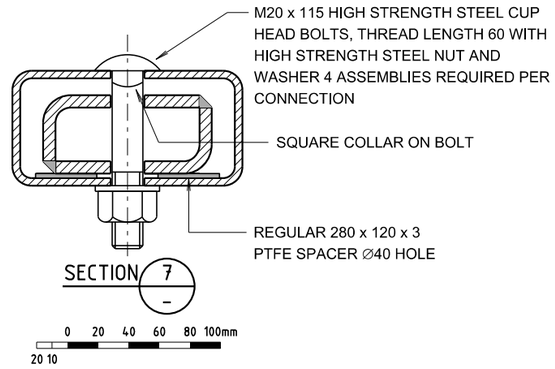

SECTION 7

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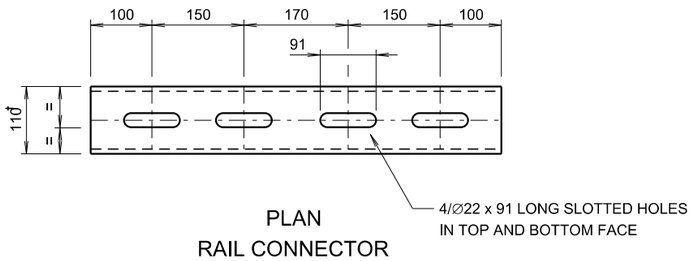
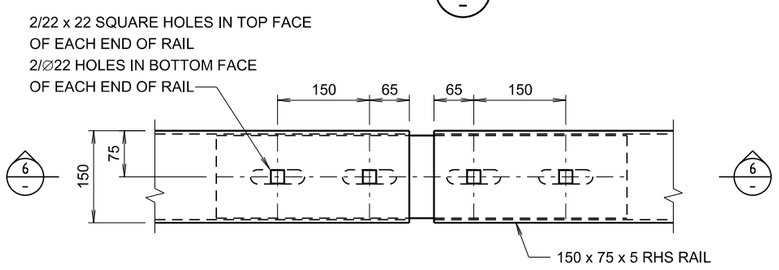
20 10



PLAN

RAIL CONNECTOR

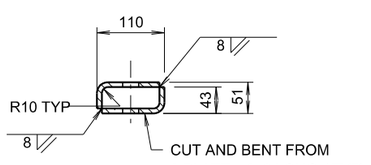
REQUIRED



PLAN

ASSEMBLY AT RAIL CONNECTION

CUP HEAD BOLTS NOT SHOWN



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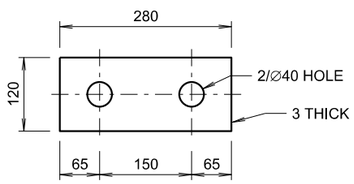


PTFE SPACER

JOINT DETAILS - EXPANSION JOINT

GENERAL NOTES

SCALE 0 100 200 300mm (100 50) OR AS SHOWN

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 65.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

TRAFFIC BARRIER RAILING - SHEET C

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

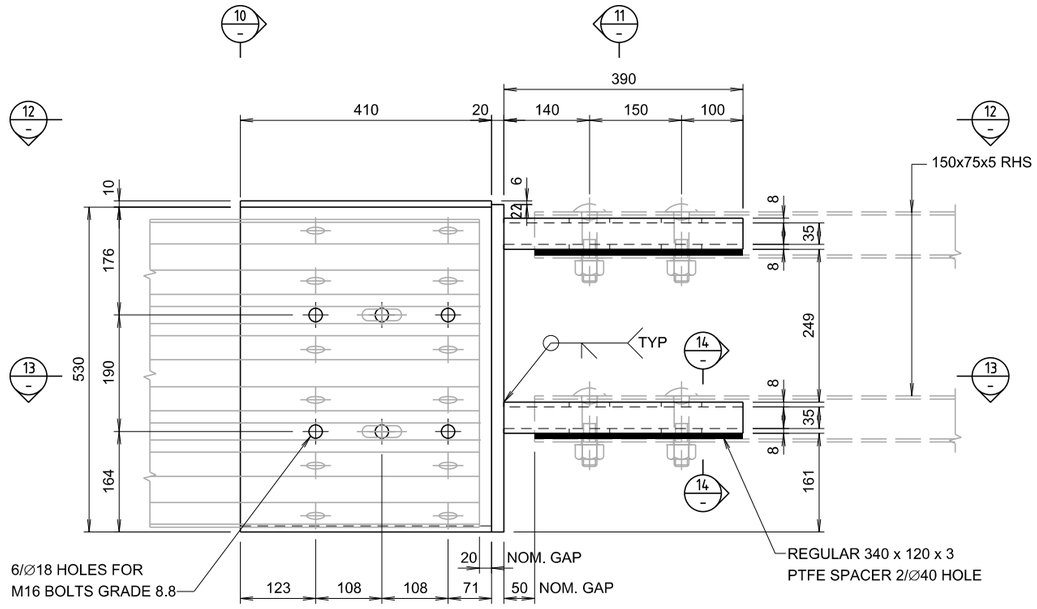
REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL66

CAD No 10MBRC_SL_T3.dgn



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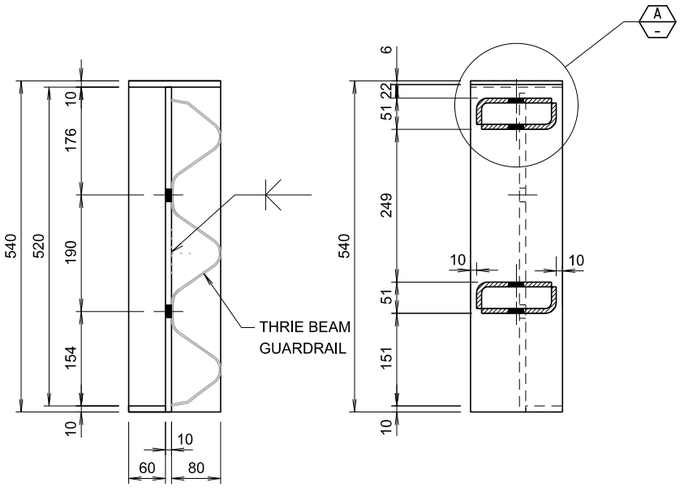
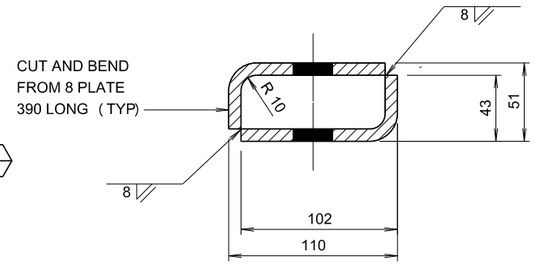


SECTION 10

SECTION 11



DETAIL A

0 20 40 60 80 100mm
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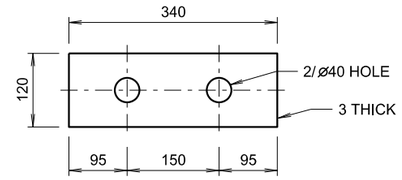
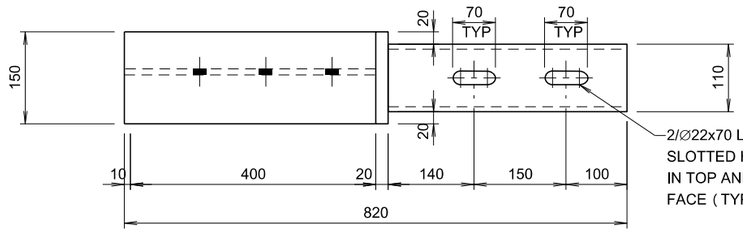
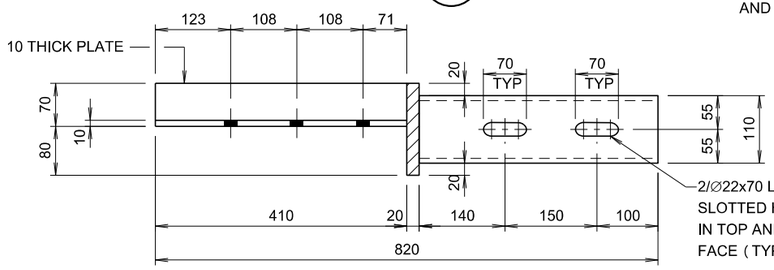


PTFE SPACER



VIEW 12



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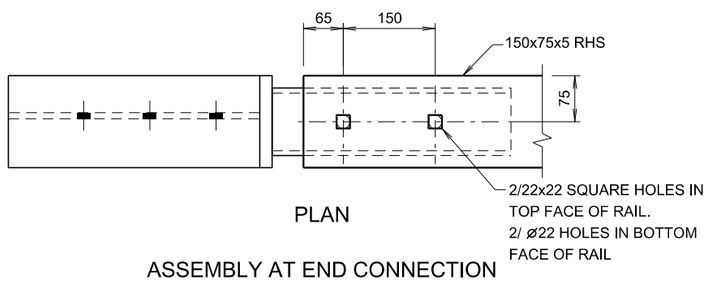
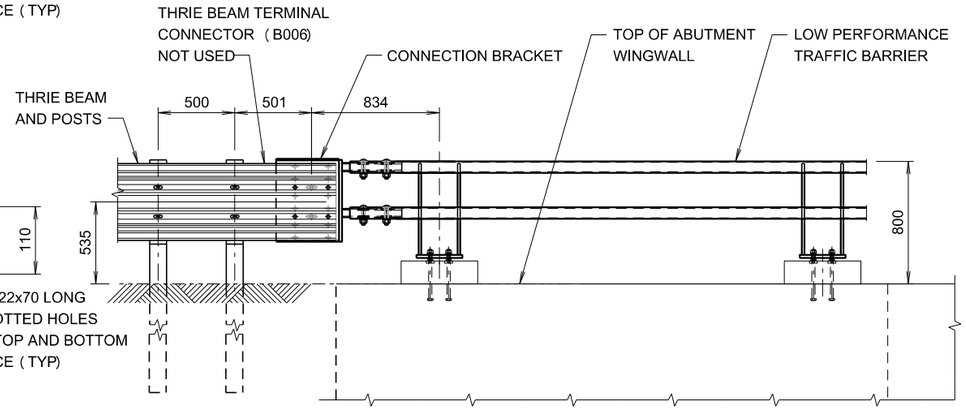


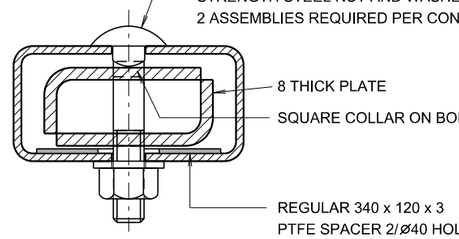
PLAN

ASSEMBLY AT END CONNECTION



TYPICAL END CONNECTION AT APPROACHES

0 200 400 600 800 1 000mm
200 100



SECTION 14

0 20 40 60 80 100mm
20 10

GENERAL NOTES

SCALE 0 100 200 300mm OR AS SHOWN
100 50

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No 65.

ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

TRAFFIC BARRIER RAILING- SHEET D

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
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APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
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DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

CAD No 10MBRD_SL_T3.dgn

REGISTRATION No OF PLANS

BRIDGE No

ISSUE STATUS

ISSUE | No SHEETS 40 | SHEET No MB10SL67

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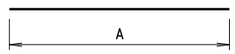
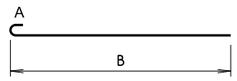
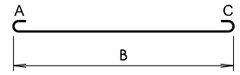
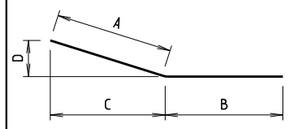
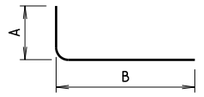
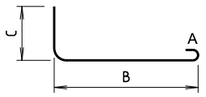
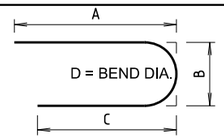
S	
H	
HH	
V	
L	
LH	
U	

SHAPE CODE	AUSTRALIAN STANDARD SHAPE
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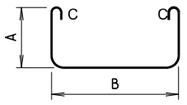
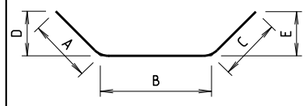
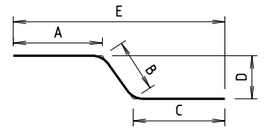
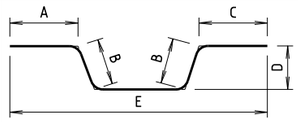
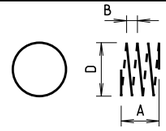
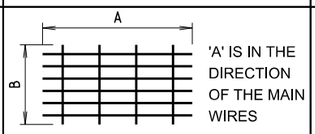
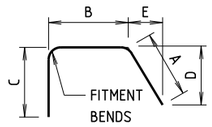
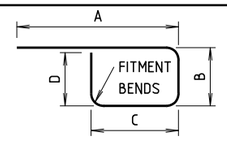
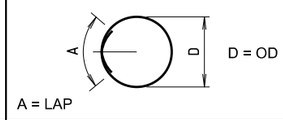
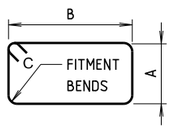
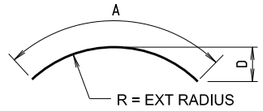
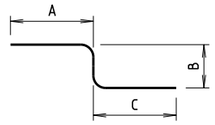
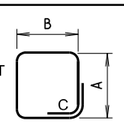
SH	
VV	
J	
JJ	
SP	
F	 'A' IS IN THE DIRECTION OF THE MAIN WIRES

SHAPE CODE	AUSTRALIAN STANDARD SHAPE
VL	
XT	
CT	
HT	
R	
RC	
T	

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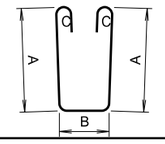
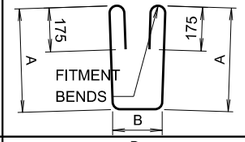
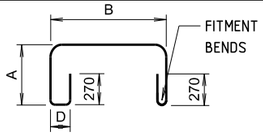
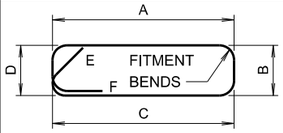
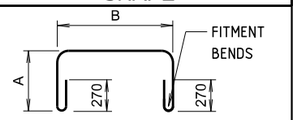
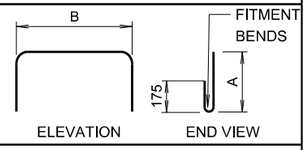
AZ	
CZ	
DZ	
FZ	

SHAPE CODE	NON STANDARD SHAPE
HZ	
KZ	

BAR MARKING LEGEND

THE METHOD USED TO LABEL REINFORCEMENT ON THE DRAWINGS IS AS FOLLOWS:

A1 10-N16-S-300EF

- A1 — INFORMATION FOR PLACING
- 10 — SPACING ALONG LIMIT LINE
- N — BAR SHAPE CODE
- 16 — BAR SIZE IN MILLIMETRES
- S — BAR STRUCTURAL PROPERTIES
- 300 — NUMBER OF BARS IN THE SET
- EF — BAR NUMBER IN SEQUENCE
- STRUCTURE ELEMENT DENOTATION

WHERE THE BAR SPACING IS APPROXIMATE ONLY, THE FOLLOWING FORMAT SHALL BE USED:

A1 10-N16-S-300EF APPROX

STRUCTURE ELEMENT DENOTATIONS USED FOR PRECAST MODULES ARE:

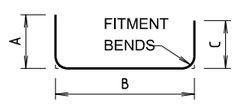
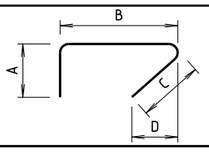
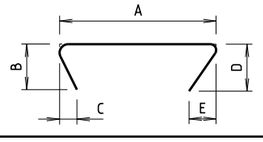
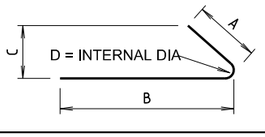
E FOR EXTERNAL PRECAST MODULE
T FOR INTERNAL PRECAST MODULE

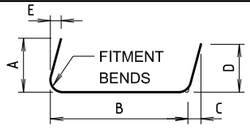
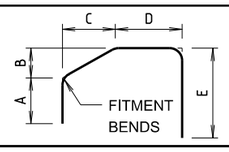
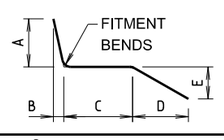
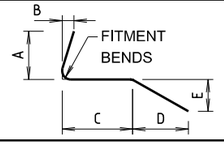
STRUCTURE ELEMENT DENOTATIONS USED ELSEWHERE ARE :

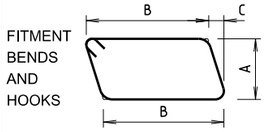
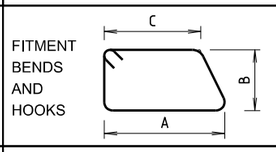
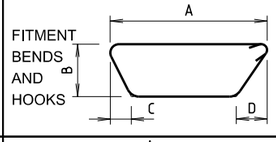
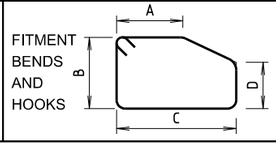
A FOR ABUTMENT A FOOTINGS INCLUDING STITCH POUR
B FOR ABUTMENT B FOOTINGS INCLUDING STITCH POUR
R FOR ABUTMENT B RETAINING WALLS
F FOR FOOTING AT PIERS
C FOR COLUMNS AT PIERS
W FOR WINGWALLS INCLUDING STITCH POUR
H FOR PIER HEADSTOCK
S FOR ABUTMENT SILL BEAMS
D FOR DECK

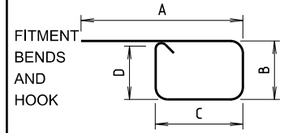
REINFORCEMENT NOTES

1 AUSTRALIAN STANDARD BAR SHAPES ARE IN ACCORDANCE WITH AS 1100.501.
2 BAR SIZE IS THE NOMINAL DIAMETER IN MILLIMETRES, OR THE AS/NZS 4671 FABRIC NUMBER.
3 THE GRADE OF REINFORCEMENT, IF NOT STATED ON THE DRAWINGS, SHALL BE D500N TO AS/NZS 4671.
4 WHERE SHOWN ON THE DRAWINGS, "W" SHALL DENOTE PLAIN ROUND REINFORCING BARS EQUIVALENT TO GRADE R500L TO AS/NZS 4671.
5 WHERE SHOWN ON THE DRAWINGS, RL AND SL SHALL DENOTE WELDED REINFORCING FABRIC (RECTANGULAR AND SQUARE), RESPECTIVELY.
6 DIMENSIONS SHOWN ON BAR SHAPES DIAGRAMS ARE MEASURED FROM THE OUTSIDE FACES OF THE BARS AND ARE IN MILLIMETRES.
7 THE INCLUDED ANGLE OF ANY BEND SHALL BE A RIGHT ANGLE IF NO DIMENSION SHOWN.
8 BARS OF DIAMETER GREATER THAN 24mm SHALL NOT BE REBENT.
9 BAR BENDING AND HOOK DETAILS SHALL BE IN ACCORDANCE WITH SECTION 5.13 OF AS 5100-BRIDGE DESIGN.

SHAPE CODE	ROADS AND MARITIME SERVICES STANDARD SHAPE
A	
B	
C	
D	

SHAPE CODE	ROADS AND MARITIME SERVICES STANDARD SHAPE
E	
G	
K	
M	

SHAPE CODE	ROADS AND MARITIME SERVICES STANDARD SHAPE
N	
P	
Q	
W	

SHAPE CODE	ROADS AND MARITIME SERVICES STANDARD SHAPE
XH	
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ISSUE	DATE	ADMENDMENT DESCRIPTION	PREP	CHECK	AUTH

COUNTRY BRIDGE SOLUTIONS

MODULAR BRIDGE DRAWINGS

TYPE 3 - 1 LANE - 10m SPAN

BAR SHAPES DIAGRAM

PREPARED BY
BRIDGE ENGINEERING SECTION
PHONE (02) 8837-0811

Transport Roads & Maritime Services
NSW GOVERNMENT
www.rms.gov.au

	PREPARED	CHECKED
DESIGN	S Assi	A Dey
DRAWING	D.G.C.	A Dey

APPROVED FOR USE
W Ariyaratne
PRINCIPAL ENGINEER BRIDGES
07.10.2016
DATE

Salah Assi 07.10.2016
BRIDGE ENGINEER (NEW DESIGN)

REGISTRATION No OF PLANS
BRIDGE No
ISSUE STATUS
ISSUE | No SHEETS 40 | SHEET No MB10SL68

CAD No CBSBARSHP_SL_T3.dgn

11:26:33 AM 7/10/2016 K:\Bridge\Standards_2015\Standards in Development\B1000_MODULAR BRIDGES\SINGLE LANE\10M_SL_T3\CBSBARSHP_SL_T3.dgn