RobertBirdGroup
ABN 67 010 580 248 | ACN 010 580 248
SYDNEY OFFICE
Level 11, 151 Castlereagh Street, Sydney NSW 2000
PO Box A2309, Sydney South NSW 1235 Australia
p: +61 (0) 2 8246 3200 | f: +61 (0) 2 8246 3201
www.robertbird.com

Reference: SM:DS CERT/S 15305A

27th April 2017

Mr Fajar Darmawis
Scentre Group
85 Castlereagh St
SYDNEY NSW 2000

Attention: Fajar Darmawis

Dear Sir

RE: PENRITH PLAZA
RILEY STREET COLONNADE – WESTFIELD PENRITH
CERTIFICATE OF DESIGN - STRUCTURAL

SUBJECT PREMISES ***Westfield Penrith, Riley Street, Penrith 2747***

Pursuant to the provisions of **Clause A2.2 of the Building Code of Australia,** I hereby certify that the above design will be carried out in accordance with normal engineering practice and meets the requirements of the Building Code of Australia, any relevant fire safety engineering report, the Environmental Planning and Assessment Regulation, relevant Australian Standards and relevant conditions of the Development Consent. In particular the design is in accordance with the following:

- Building Code of Australia 2016
- AS1170 Structural Design Actions
- AS3600 Concrete Structures
- AS4100 Steel Structures
- AS3700 Masonry Structures

I am an appropriately qualified and competent person in this area being a member of the Institute of Engineers Australia (MIEAust) and as such can certify that the design and performance of the design systems comply with the above and which are detailed on the following drawings.

Drawing / Document Name	Type of Document	Drawing / Document Number	Revision No:	Issue Date
GENERAL NOTES SHEET 1	DRAWING	S00-01	C1	29-04-2016
GENERAL NOTES SHEET 2	DRAWING	S00-02	C1	29-04-2016
AWNING STEELWORK PART PLANS	DRAWING	S06-20	C3	01-07-2016
AWNING STEELWORK – SECTIONS AND DETAILS SHEET 1	DRAWING	S12-01	C4	01-07-2016
AWNING STEELWORK – SECTIONS AND DETAILS SHEET 2	DRAWING	S12-02	C3	24-06-2016
AWNING STEELWORK – SECTIONS AND DETAILS SHEET 3	DRAWING	S12-03	C4	01-07-2016
AWNING STEELWORK – SECTIONS AND DETAILS SHEET 4	DRAWING	S12-04	C3	24-06-2016
PLANTER DETAILS	DRAWING	S12-05	C3	01-07-2016

The following is noted in relation to the Development Consent conditions for this works package.

Robert Bird Group Pty Ltd possesses Indemnity Insurance to the satisfaction of the project principal.

Full Name of Designer: SIMON MORLEY

Qualifications: BEng (Hons), MIEAust

Address of Designer: Level 11, 151 Castlereagh Street, Sydney, NSW, 2000

Business Telephone No: (02) 8246 3200 **Email: simon.morley@robertbird.com.au**

Name of Employer: Robert Bird Group Pty Ltd

Yours faithfully
ROBERT BIRD GROUP PTY LTD

SIMON MORLEY
Principal

PENRITH PLAZA

SCENTRE GROUP

GENERAL NOTES

1. THESE ENGINEERING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH PROJECT SPECIFICATIONS AND OTHER CONSULTANTS DRAWINGS ON THE PROJECT.
2. THESE ENGINEERING DRAWINGS HAVE BEEN PREPARED FROM INFORMATION AVAILABLE AT THE TIME OF ISSUE. AS THIS INFORMATION MAY BE THE SUBJECT OF CHANGE PRIOR TO OR DURING CONSTRUCTION THE CONTRACTOR IS TO ADVISE THE ENGINEER WHERE DISCREPANCIES OCCUR.
3. THE STRUCTURE HAS BEEN DESIGNED FOR THE IN-SERVICE LOADS ACTING WHEN THE STRUCTURE IS COMPLATE ONLY. LOADS OR ACTIONS DUE TO CONSTRUCTION AND INSTALLATION METHODOLOGIES AND/OR EQUIPMENT HAVE NOT BEEN CONSIDERED UNLESS CLEARLY STATED OTHERWISE.
4. THESE DRAWINGS SHALL NOT BE USED FOR FINAL SETOUT OF THE PROJECT UNLESS SPECIFICALLY STATED.
5. WHERE STRUCTURAL CERTIFICATION IS REQUIRED, INSPECTIONS ARE TO BE PERFORMED BY A DULY APPOINTED INSPECTOR FROM 'ROBERT BIRD GROUP'. THESE INSPECTIONS ARE TO BE PERFORMED IN ACCORDANCE WITH THE INSPECTION & TEST PLANS PREPARED BY 'ROBERT BIRD GROUP.' THE INSPECTOR IS TO BE GIVEN A MINIMUM OF 48 HOURS NOTICE THAT AN I NSPECTION IS REQUIRED.
6. PRIOR TO THE COMMENCEMENT OF WORKS THE CONTRACTOR IS TO IDENTIFY ALL EXISTING SERVICES. ANY SERVICES SHOWN ON 'ROBERT BIRD GROUP' DRAWINGS ARE INDICATIVE ONLY.
7. THE CONTRACTOR SHALL CHECK OR OBTAIN ALL DIMENSIONS RELEVANT TO SETTING OUT OF SITE WORKS, AND THE PROVISION OF ANY TEMPORARY BRACING, INCLUDING DESIGN, IN ACCORDANCE WITH THE SPECIFICATION.
8. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE WORKS AND ENSURE NO PART IS OVERSTRESSED. THE DESIGN AND CERTIFICATION OF ALL FORMWORK AND BACKPROPPING IS TO BE THE RESPONSIBILITY OF THE CONTRACTOR. (REFER TO NOTES 8 & 9 FOR STRIPPING PROCEDURES FOR IN-SITU CONCRETE).
9. THE CONTRACTOR IS TO OBTAIN DESIGN ADVICE FROM A SUITABLY QUALIFIED ENGINEER REGARDING DEMOLITION, RETROFITTING, TEMPORARY WORKS, HEALTH & SAFETY AND NUISANCE. THIS HAS BEEN REFERRED TO AS THE "CONTRACTORS ENGINEER" THROUGHOUT THE REMAINING NOTES.
10. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT AUSTRALIAN STANDARDS AND BCA STATUTORY REQUIREMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT SUFFICIENT TOLERANCES ARE PROVIDED AND INTEGRATED THROUGHOUT ALL ELEMENTS OF THE WORKS.
12. ALL NON-LOAD BEARING ELEMENTS SHALL BE KEPT CLEAR OF THE STRUCTURE SOFFIT BY AN ALLOWANCE DETERMINED FROM SPAN/250 OR CANTILEVER/125 BUT NOT LESS THAN 20mm, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
13. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
14. ALL STEEL WORK TO BE HOT DIP GALVANISED.
15. FIRE RATING OF STEEL WORK BY OTHERS
16. TENDON PROFILE IN EXISTING BEAM T.B.C. ONSITE.
17. DIMENSION OF EXISTING BEAM T.B.C. ONSITE.
18. CONTRACTOR SHALL ENSURE SAFETY OF TENDONS DURING DRILLING
19. CONTRACTOR TO DRILL PRIOR TO FABRICATION USING HAMMER DRILL TO AVOID CLASH WITH TENDON AND REINFORCEMENT. C1
20. GEOTECHNICAL ENGINEER TO CONFIRM SITE SOIL PROFILE AND SOIL BEARING CAPACITY.
21. a). WIND TUNNEL TESTING HAS BEEN PERFORMED BY VIPAC ENGINEERS AND SCIENTIST FOR PEDESTRIAN LEVEL WINDS AND PRESSURE ON CANOPY. REPORT : 30N-15-0135-TRP-392065-0 DATE : 11 JAN 2016
    b) WIND LOADS HAVE BEEN DETERMINED WHERE APPLICABLE IN ACCORDANCE WITH AS1170 BASED ON THE FOLLOWING DESIGN CRITERIA:-

BCA STRUCTURAL IMPORTANCE LEVEL:	2
WIND LOADS:	
ANNUAL PROBABILITY OF EXCEEDANCE	1:500
REGION	A2
TERRAIN CATEGORY	3
REGIONAL WIND SPEED V_R (m/s)	45
SHIELDING M_S	1.0
TOPOGRAPHIC M_t	1.0

22. THE GEOTECHNICAL ENGINEERING INVESTIGATION HAS BEEN PERFORMED BY DOUGLAS PARTNERS REPORT NO : 85437/R.001 REV 0 DATE : APRIL 2016

HEALTH & SAFETY

1. THE CONTRACTOR SHALL DEVELOP, IMPLEMENT AND ADMINISTER A WORKPLACE HEALTH AND SAFETY PROGRAM THAT WILL ENSURE THAT ALL CONSTRUCTION ACTIVITIES ARE PERFORMED TO THE RELEVANT WORKPLACE HEALTH AND SAFETY REQUIREMENTS AND ANY OTHER RELEVANT STATUTORY REQUIREMENTS.
2. THE WORKPLACE HEALTH AND SAFETY PROGRAM MUST BE CO-ORDINATED WITH ADJOINING PROPERTY OWNERS AND ALL RELEVANT PARTIES AS NECESSARY TO ENSURE A SAFE BUILDING ENVIRONMENT AT ALL TIMES.

NUISANCE

1. THE CONTRACTOR SHALL DEVELOP, IMPLEMENT, AND ADMINISTER A PLAN THAT WILL ENSURE THE MANAGEMENT OF NOISE AND VIBRATION RESULTING FROM CONSTRUCTION WORKS. REFER TO SPECIFICATIONS FOR REQUIRED LIMITS, OTHERWISE, CONTACT ENGINEER FOR GUIDANCE.
2. THE CONTRACTOR WILL NEED TO ENSURE ALL ADJOINING PROPERTY REQUIREMENTS RELATING TO NOISE AND VIBRATION ARE MET.
3. IF IT IS ESTABLISHED THAT THERE ARE NO SITE SPECIFIC REQUIREMENTS, THEN THE CONTRACTOR SHALL REFER TO MINIMUM REQUIREMENTS FOR ABATEMENT OF NOISE AND VIBRATION NOMINATED BY RELEVANT STATUTORY REQUIREMENTS
4. THE CONTRACTOR WILL NEED TO PREPARE AND ADVISE ON MONITORING AND MANAGEMENT OF NOISE AND VIBRATION BASED ON PROFESSIONAL ADVICE FROM SUITABLY QUALIFIED PERSON OR PERSONS.

TEMPORARY WORKS

1. THE CONTRACTOR SHALL ALLOW FOR IN HIS PRICE ALL COSTS ASSOCIATED WITH THE DESIGN, SUPPLY, INSTALLATION AND REMOVAL OF ALL TEMPORARY BACK PROPPING, SAFETY SCREENS, SCAFFOLDING AND OTHER REQUIREMENTS OF THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL ENGAGE SUITABLY QUALIFIED ENGINEER REFEREED TO AS "CONTRACTORS ENGINEER". TO DESIGN INSPECT AND CERTIFY ALL TEMPORARY WORKS, AND DEMOLITION WORKS.
2. THE CONTRACTOR IS TO PROVIDE ALL TEMPORARY WORKS CONTRACTOR ENGINEERING DRAWINGS TO THE STRUCTURAL ENGINEER FOR INFORMATION.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE OVERALL STABILITY OF THE STRUCTURE WHILST UNDER CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ADVICE FROM THE CONTRACTORS ENGINEER.
4. THE CONTRACTOR IS TO HAVE CONSTRUCTION METHODOLOGY STATEMENTS PREPARED AND SUBMITTED FOR GENERAL REVIEW TO ENSURE IT IS ACCORDANCE WITH THE DESIGN INTENT.
5. ALL VERTICAL DISPLACEMENTS AND MOVEMENTS ARE TO BE LIMITED TO ENSURE THE STRUCTURE IS NOT SUBJECTED TO LOADS OR MOVEMENTS CAUSING STRUCTURAL DISTRESS TO ANY ELEMENT WHILE THE STRUCTURE IS BEING TEMPORARILY SUPPORTED.
6. DEPENDING ON THE CONTRACTORS PREFERRED CONSTRUCTION SEQUENCE, PRE-LOADING OF STRUCTURAL ELEMENTS MAY BE REQUIRED TO LIMIT TOTAL VERTICAL DISPLACEMENTS.
7. STRUCTURE TO BE ADEQUATELY BRACED TO PREVENT ANY HORIZONTAL MOVEMENT OR DEFLECTIONS.

LEGEND/ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
HORIZ	HORIZONTAL	N/S	NEAR SIDE
VERT	VERTICAL	F/S	FAR SIDE
CENT	CENTRALLY PLACED	B/S	BOTH SIDES
CRS	CENTRES	U/S	UNDER SIDE
B	BOTTOM FACE	LG	LENGTH/LONG
T	TOP FACE	w	WIDTH/WIDE
T&B	TOP & BOTTOM	h	HEIGHT/HIGH
NF	NEAR FACE	d	DEPTH/DEEP
FF	FAR FACE	NOM	NOMINAL
EF	EACH FACE	REQ'D	REQUIRED
EW	EACH WAY	REINF	REINFORCEMENT
EQ	EQUAL	OPP	OPPOSITE
NSOP	NOT SHOWN ON PLAN	SIM	SIMILAR
NSOE	NOT SHOWN ON ELEVATION	GA	GENERAL ARRANGEMENT
UNO	UNLESS NOTES OTHERWISE	PT	POST TENSION
TYP	TYPICAL	DWG	DRAWINGS
CL	CENTRE LINE	NTS	NOT TO SCALE
PL	PLATE	LL	LIVE LOAD
CFW	CONTINUOUS FILLET WELD	SIDL	SUPERIMPOSED DEAD LOAD
FSBW	FULL STRENGTH BUTT WELD	THRU	THROUGH
FPBW	FULL PENETRATION BUTT WELD		

STEELWORK NOTES

GENERAL

1. BEFORE FABRICATION COMMENCES, THE CONTRACTOR SHALL SUBMIT TWO COPIES OF SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL OF ARRANGEMENT OF GENERAL STRUCTURAL ELEMENTS.
2. ALL DIMENSIONS RELEVANT TO SETTING OUT AND SITE WORK ARE TO BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO WORK COMMENCING.
3. DO NOT SCALE DRAWINGS.
4. MINIMUM CONNECTION DETAILS:
   (a) CONNECTION CLEAT PLATES AND STIFFENER CLEAT PLATES ARE TO HAVE A THICKNESS TO BE EQUAL TO OR LARGER THAN THE WEB THICKNESS OF THE SUPPORTED MEMBER BUT NOT LESS THAN 10mm THICK.
   (b) CONNECTIONS TO CONSIST OF A MINIMUM OF 2M20 8.8 BOLTS.
   (c) MINIMUM FILLET WELD WHERE SPECIFIED TO BE AS FOLLOWS:

PLATE THICKNESS (mm) LESS THAN OR EQUAL TO	WELD SIZE (mm) SP GRADE & CONTINUOUS ALL ROUND
16	6
24	8
32	12

5. ALL MEMBERS' CENTROIDS AT JOINTS SHOULD BE COINCIDENT UNO.
6. WHEN CALCULATING STEELWORK QUANTITIES FROM PRELIMINARY DRAWINGS, MULTIPLY PRELIMINARY STEELWORK BY 1.15 (I.E. 15% ALLOWANCE) FOR SPLICE PLATES, STIFFENERS, BOLTS ETC AND A FURTHER 1.15 (I.E. 15% ALLOWANCE) FOR MEMBERS SUCH AS TRIMMERS, MINOR BRACES, GUSSETS, STIFFENERS ETC THAT ARE DESIGNED DURING DETAILED DESIGN STAGE.
7. DO NOT GROUT UNDER ANY BASE PLATE OR ADJACENT STEELWORK WHERE STEELWORK WELDING OR ALIGNMENT IS INCOMPLETE.

MATERIALS

1. STRUCTURAL STEEL:
   (a) ALL STEEL SHALL COMPLY WITH REQUIREMENT OF FOLLOWING STANDARDS – AS1163, AS/NZS 1594, AS/NZS 3678, AS/NZS 3679, AS/NZS 3679.1 AND AS/NZS 3679.2.
   (b) ALL STRUCTURAL STEEL TO BE OF THE FOLLOWING GRADES:
      (b)1. AUSTRALIAN STEEL GRADE 250 – HOT ROLLED PLATES & FLATS
      (b)2. AUSTRALIAN STEEL GRADE 300 PLUS – UB, UC, PFC & ANGLES
      (b)3. AUSTRALIAN STEEL GRADE 300 – WB & WC
      (b)4. AUSTRALIAN STEEL GRADE 350 – CHS
      (b)5. AUSTRALIAN STEEL GRADE 450 – RHS, AND SHS
      (b)6. WHERE THROUGH THICKNESS TENSILE FORCES ARE INDUCED IN MEMBERS OR CONNECTIONS IN THE FOLLOWING CASES, Z GRADE QUALITY STEEL WITH A MINIMUM RAz = 3.5% IS REQUIRED:
         – T (TEE) JOINTS: FILLET WELD THROAT THICKNESS > 35mm
         – X (CRUCIFORM) JOINTS: ACROSS PLATE THICKNESS > 25mm
         – L (CORNER) JOINTS: CROSS PLATE THICKNESS > 20mm
   (c) ALL STEEL DEEMED TO BE UNIDENTIFIED SHALL HAVE THEIR GRADE CONFIRMED USING A FULL TEST IN ACCORDANCE WITH AS1391.
2. BOLTS:
   (a) ALL BOLTS, NUTS AND WASHERS MATERIALS SHALL COMPLY WITH THE FOLLOWING STANDARDS: AS/NZS 1110, AS/NZS 1111, AS/NZS 1112, AS/NZS 1252 AND AS/NZS 1559.
3. WELDING CONSUMABLES
   (a) WELDING CONSUMABLES TO HAVE NOMINAL TENSILE STRENGTH Fuw=490MPa WITH CONSUMABLES TO BE B-T49 TO AS/NZS ISO 17632 OR B-G49 TO AS/NZS2717.1 UNLESS NOTED OTHERWISE
   (b) ELECTRODES FOR MANUAL METAL- ARC WELDING SHALL COMPLY WITH AS/NZS 4855 OR AZ/NZS 4857
   (c) ELECTRODES OR FILLER WIRES FOR PROCESS OTHER THAN MANUAL METAL- ARC WELDING SHALL COMPLY WITH AS 1858.1, AS/NZS 1167.2, AS/NZS 2717.1, AS/NZS ISO 17632, ISO 14341 OR ISO 636

STEELWORK NOTES CONTINUED

FABRICATION

1. GENERAL:
   ALL STEEL FABRICATION SHALL COMPLY WITH AS4100 AND THE REQUIREMENTS OF AS/NZS 3679.2:WELDED I SECTIONS – PART 2.
2. BOLTING:
   (a) ALL BOLTS SHALL BE GRADE 8.8/TB BOLTS UNO. MINIMUM SIZE OF BOLTS TO BE M20 UNO.
   (b) STEEL BOLTS, NUTS, WASHERS AND THEIR INSTALLATION SHALL COMPLY WITH AS/NZS 1252.
   (c) BOLTS TO BE INSTALLED AS FOLLOWS:

BOLTING DESIGNATION	METHOD OF INSTALLATION
4.6/S	SNUG TIGHTENED
8.8/S	SNUG TIGHTENED
8.8/TB	FULLY TENSIONED USING LOAD INDICATING WASHERS
8.8/TF	FULLY TENSIONED USING LOAD INDICATING WASHERS

   TYPE OF LOAD INDICATING WASHERS TO BE APPROVED BY RBG PRIOR TO INSTALLATION AND TO BE INSTALLED TO MANUFACTURER'S INSTRUCTIONS.
   (d) MINIMUM BOLT LENGTH FOR TENSIONED BOLTS TO BE FOUR BOLT DIAMETERS.
3. WELDING
   3.1 GENERAL
   (a) ALL WELDING SHALL BE IN ACCORDANCE WITH AS 1554.1 UNO
   (b) ALL WELDS TO BE FULL STRENGTH FULL PENETRATION BUTT WELDS UNO
   (c) ALL WELDS ARE TO BE CATEGORY SP UNO
   (d) CHIP ALL WELDS FREE OF SLAG AFTER EACH RUN
   3.2 TESTING
   (a) ALL WELDS TO BE VISUALLY SCANNED
   (b) WELDS CONNECTING WEB TO FLANGE PLATE IN WELDED SECTIONS:
      (b)1. ALL FLANGE TO WEB WELDS TO BE TESTED IN ACCORDANCE WITH AS/NZS 3679.2
      (b)2. IN ADDITION TO DESTRUCTIVE TESTS IN ACCORDANCE WITH AS/NZS 3679.2, 10% OF THE LENGTH OF THE FLANGE TO WEB WELD IS TO BE ULTRASONICALLY TESTED. IF DEFECTS ARE FOUND IN THESE TESTS, THEN 100% OF THE WELD IS TO BE TESTED AND DEFECTS REPAIRED IN ACCORDANCE WITH AS 1554.1
   (c) WELDS IN MEMBERS SUBJECT TO CYCLIC LOADING AND IN LIFTING DEVICES (E.G. LIFTING LUGS):
      (c)1. 100% OF FULL STRENGTH FULL PENETRATION BUTT WELDS ARE TO BE ULTRASONICALLY TESTED.
      (c)2. 100% OF FILLET WELDS ARE TO BE TESTED USING THE MAGNETIC PARTICLE METHOD.
   (d) WELDS IN SPECIAL STRUCTURES AND TEMPORARY FALSE WORKS.
      (d)1. EXTENT OF NON-DESTRUCTIVE WELD TESTING:

TYPE OF WELD	EXAMINATION METHOD	EXTENT (% TOTAL WELD LENGTH) (SEE ALSO NOTE (j) BELOW)
ALL WELDS	VISUAL SCANNING	100
ALL WELDS	VISUAL EXAMINATION	100
SHOP FILLET WELDS	MAGNETIC PARTICLE	25
FIELD FILLET WELDS	MAGNETIC PARTICLE	25 (100 IF DEFECTS ARE FOUND)
SHOP BUTT WELDS	RADIOGRAPHIC OR ULTRASONIC	100
FIELD BUTT WELDS	RADIOGRAPHIC OR ULTRASONIC	100

   (e) WELDS IN PERMANENT BUILDING WORKS
      (e)1. EXTENT OF NON-DESTRUCTIVE WELD TESTING:

TYPE OF WELD	EXAMINATION METHOD	EXTENT (% TOTAL WELD LENGTH) (SEE ALSO NOTE (j) BELOW)
ALL WELDS	VISUAL SCANNING	100
ALL WELDS	VISUAL EXAMINATION	10 FOR GP WELDS/25 FOR SP WELDS
SHOP FILLET WELDS	MAGNETIC PARTICLE	2 FOR GP WELDS/10 FOR SP WELDS
FIELD FILLET WELDS	MAGNETIC PARTICLE	25 (100 IF DEFECTS ARE FOUND)
SHOP BUTT WELDS	RADIOGRAPHIC OR ULTRASONIC	2 FOR GP WELDS/10 FOR SP WELDS
FIELD BUTT WELDS	RADIOGRAPHIC OR ULTRASONIC	100

   (f) ALL DEFECTS TO BE REPAIRED IN ACCORDANCE WITH AS 1554.1
   (g) ALL TESTS TO BE PERFORMED BY A NATA (OR SIMILAR APPROVED) TESTING COMPANY.
   (h) WHERE THE EXTENT OF THE WELDING TO BE EXAMINED IS SPECIFIED TO BE LESS THAT 100%, THE NOMINATED PERCENTAGE OF WELD TYPE TO BE EXAMINED SHALL BE SELECTED TO ENSURE THAT A REPRESENTATIVE SAMPLE OF EACH WELD TYPE AND LOCATION IS EXAMINED.
   (i) FOR CONNECTED PLATES WITH A THICKNESS GREATER THAN 20mm A PORTION OF EACH MULTI-PASS BUTT WELD SHOULD BE EXAMINED ULTRASONICALLY TO DETERMINE WHETHER THERE ARE ANY TRANSVERSE CRACKS IN THE WELD MATERIAL.
   (j) IF DEFECTS ARE FOUND IN THE WELDS THEN 100% OF THE WELDS ARE TO BE TESTED.
4. CORROSION PROTECTION
   STEELWORK:
   CORROSION PROTECTION SHALL COMPLY WITH AS/NZS 2312.1 FOR PAINTED STRUCTURES & AS2312.2 FOR GALVANISED STRUCTURES.
   (a) DESIGN LIFE OF STRUCTURE = 50 YEARS
   (b) DURABILITY (COATING LIFE TO FIRST MAJOR MAINTENANCE = 10 YEARS
   (c) ATMOSPHERIC CORROSIVITY CATEGORY = MEDIUM
   (d) ALL BOLTS TO BE SUPPLIED WITH GALVANISED FINISH TO AS1214
   (e) THE BUILDING OWNER SHALL UNDERTAKE ALL NECESSARY CLEANING, MAINTENANCE AND REPAIR OF APPLIED COATINGS TO ENSURE ALL COATINGS AND PROTECTED STEELWORK REACH THEIR STATED DESIGN LIFE
   (f) CORROSION SYSTEM REQUIRED:

DESCRIPTION	SYSTEM DESIGNATION	SURFACE PREPARATION	FIRST COAT DRY THICKNESS (µm)	PRN	SECOND COAT DRY THICKNESS (µm)	PRN	TOTAL DRY FILM THICKNESS (µm)
–	–	–	–	–	–	–	–

5. BOLTS, NUTS, WASHERS ETC
   ALL BOLTS, NUTS, WASHERS, CAST-IN FERRULES AND HOLDING DOWN BOLTS ARE TO BE HOT DIP GALVANISED TO AS1214 AND AS1650 UNLESS NOTED OTHERWISE. ALL MASONRY ANCHORS TO BE HOT DIP GALVANISED.
6. FIRE PROTECTION
   PROVIDE FIRE PROTECTION TO STRUCTURAL STEEL AS REQUIRED BY THE SPECIFICATION AND ARCHITECT

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS

REFER COVER SHEET FOR NOTES UNLESS NOTED OTHERWISE

Rev.	Revision Description	By	App.	Date
P1	ISSUED FOR INFORMATION	TF	SM	16.12.2015
P2	ISSUED FOR COORDINATION	TF	SM	26.04.2016
C1	ISSUED FOR CONSTRUCTION	TF	SM	29.04.2016

Structural, Civil & Construction Engineering Consultant
RobertBirdGroup
SYDNEY OFFICE:
Robert Bird Group Pty Ltd
PO Box A2309
Sydney South, NSW 1235
Level 11
151 Castlereagh St
Sydney NSW 2000
Ph. (02) 8246 3200
ACN 010 580 248
Web Site: www.robertbird.com

Client
SCENTRE GROUP
Owner and Operator of Westfield in Australia and New Zealand

Title
GENERAL NOTES SHEET 1

Project
RILEY STREET COLONNADE
OUTDOOR SEATING
WESTFIELD PENRITH

APPROVED FOR CONSTRUCTION

Date 10/12/15	Designer T.FATIMA	Design Checker D.LESANKI
Scale at A1 N.T.S.	Drawn MAZ	Principal/Project Leader S.MORLEY
Job Number 15305A	Drawing Number S00-01	Revision C1

A1

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STEELWORK NOTES CONTINUED

COLD FORMED STEEL
1. COLD FORMED STEEL METERIAL, FABRICATION AND ERECTION SHALL CONFORM TO AS/NZS 4600
2. COLD FORMED SECTIONS SHALL BE WELDED WHERE REQUIRED WITH A 2mm CONTINUOUS FILLET WELD UNO.
3. ALL WELDS SHALL BE TOUCHED UP WITH AN APPROVED ZINC RICH PRIMIER.

PURLINS AND GIRTS
1. PURLINS AND GIRTS TO BE GRADE 450MPa (GALVANISED STEEL TO AS23122 Z350 ZINC COATING)
2. ALL PURLIN AND GIRT DETAILS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION.
3. SERVICES SUPPORTED BY PURLINS MUST BE CONNECTED TO THE PURLIN WEB.
4. LAP ALL Z SECTION PURLINS AND GIRTS THE GREATER OF 15% OF THE SPAN OF 900mm.
5. BOLTING OF 100 TO 250 SERIES PURLINS AND GIRTS TO USE M12 GRADE 4.5 BOLTS. BOLTING OF SERIES 300 TO SERIES PURLINS AND GIRTS TO USE M16 GRADE 4.6 BOLTS, GRADE 8.8 BOLTS TO BE ADDPTED AS SPECIFICALLY NOTED ON PURLIN PLAN OR GIRT ELEVATIONS.

MISCELLANEOUS STEELWORK
1. THE CONTRACTOR SHALL ALLOW FOR ALL MISCELLANEOUS STEELWORK TO SUPPORT AND TRIM ELEMENTS SUCH AS GUTTERS, ROOF AND WALL CLADDINGS AT PENETRATIONS, ROOF HIPS AND VALLEYS AND DECORATIVE FEATURES.

CERTIFICATION
1. TEST CERTIFICATES SHALL BE PROVIDED FOR ALL STEEL MEMBERS AND MUST BE IN ENGLISH AND ALPHA NUMERIC CHARACTERS.

2. STRUCTURAL STEEL CERTIFICATION: THE TEST CERTIFICATION SHALL COMPLY WITH AS 1554.1, AS/NZS 1163, AS/NZS 1594 AND AS/NZS 3679 AND MUST CONTAIN ALL THE FOLLOWING ITEMS:
   (a) MANUFACTURER'S, SUPPLIER'S AND TESTING AUTHORITY'S NAME.
   (b) TEST CERTIFICATE NUMBER, TEST NUMBER AND DATE
   (c) ROLLED IN MARK OR PAINT MARKINGS ON STEEL PRODUCTS TO IDENTIFY THE MILL WITH MATCHING CERTIFICATES
   (d) PRODUCT, TESTING SPECIFICATION AND GRADE, E.G. AS/NZS 3679.1-350
   (e) PRODUCT DELIVERY CONDITION
   (f) PRODUCT DESIGNATION E.G. 430UB82.0 OR PRODUCT SIZE AND DIMENSION E.G. 200x100x5.0 RHS
   (g) PRODUCT STEEL MAKING PROCESS, E.G. BASIC OXYGEN SLAB CAST
   (h) LENGTH, BUNDLE, PACK OR UNIQUE IDENTIFIER TO WHICH THE TEST CERTIFICATE APPLIES
   (i) HEAT NUMBER
   (j) MECHANICAL PROPERTIES

TENSILE TESTS: YIELD STRESS (MPa)	TENSILE STRENGTH (MPa)	% ELONGATION

   (k) CHEMICAL ANALYSIS TYPE, E.G. CAST ANALYSIS 'L' OR PRODUCT 'P'
   (l) CHEMICAL COMPOSITION OF ALL THE FOLLOWING LISTED IN TABLE BELOW

CARBON (C)	PHOSPHOROUS (P)	MANGANESE (Mn)
SILICON (Si)	SULPHUR (s)	CHROMIUM (Cr)
MOLYBDENUM (Mo)	VANADIUM (V)	NICKEL (Ni)
TITANIUM (Ti)	NIOBIUM (Nb)	COPPER (Cu)
ALUMINIUM (Al)	CARBON EQUIVALENCE (CE)	ANY ELEMENT INTENTIONALLY ADDED

   (m) NDT TEST RESULTS
   (n) STATEMENT ACKNOWLEDGING MATERIAL BEING SUPPLIED IN ACCORDANCE TO THE RELEVANT STANDARD
   (o) A THIRD PARTY ACCREDITING BODY RECOGNIZED BY ILAC (MRA) E.G. NATA ACCREDITED LABORATORY
   (p) SIGNATORY FROM MANUFACTURER, SUPPLIER AND TESTING AUTHORITY ATTESTING TO ITEMS ABOVE

3. BOLT CERTIFICATION:
   (a) MANUFACTURER'S COMPLIANCE/ TEST CERTIFICATE FROM AN ACCREDITED TESTING ORGANIZATION CONFIRMING COMPLIANCE WITH AS/NZS 1252
   (b) AN INDEPENDENT COMPLIANCE CERTIFICATE BASED ON APPROPRIATE TESTING AND VERIFICATION BY A LOCAL NATA ACCREDITED LABORATORY FOR BOLTS MANUFACTURED FROM OUTSIDE AUSTRALIA
   (c) HIGH STRENGTH BOLTS: ALL HIGH STRENGTH BOLTS MUST BE ACCOMPANIED BY A CORRECT CERTIFICATE OF COMPLIANCE TO AS/NZS 1252 AND MUST CONTAIN AT LEAST THE FOLLOWING INFORMATION:
      (c)1. IDENTIFICATION AND ADDRESS OF SUPPLIER
      (c)2. IDENTIFICATION AND ADDRESS OF THE TEST LABORATORY AND ACCREDITATION SEALS OF THE TEST LABORATORY
      (c)3. DATE OF ISSUE AND PAGE NUMBER ON EACH PAGE
      (c)4. TEST CERTIFICATE NUMBER
      (c)5. BATCH OR HEAT IDENTIFICATION NUMBER
      (c)6. PRODUCT IDENTIFICATION
      (c)7. CUSTOMER PURCHASE ORDER TO MATCH THE BATCH OR HEAT NUMBERS
      (c)8. ANY OTHER SYSTEM REFERENCE NUMBER
      (c)9. STATEMENT OF COMPLIANCE REFERRING TO A DEFINITE RELEVANT AUSTRALIAN STANDARD
      (c)10. SIGNATORY FROM MANUFACTURER, SUPPLIER AND TESTING AUTHORITY AT TESTING TO ITEMS ABOVE

ERECTION
1. THE STRUCTURAL ENGINEER HAS DESIGNED THE WORKS TO BE STABLE ON COMPLETION OF ALL STRUCTURAL ELEMENTS OF THE WORKS, INCLUDING MEMBERS, CONNECTIONS, SUPPORTING STRUCTURAL ELEMENTS, BRACING ELEMENTS AND THE LIKE. THE CONTRACTOR AND/OR HIS SUBCONTRACTORS ARE RESPONSIBLE FOR ENGAGING A TEMPORARY WORKS ENGINEER TO ADVISE ON, AND CERTIFY THE TEMPORARY STABILITY AND SUPPORT (BOTH VERTICALLY AND LATERALLY) OF ALL STEELWORK DURING CONSTRUCTION/ERECTION, INCLUDING DEVELOPING ERECTION METHODOLOGIES FOR SAME, UNTIL FULL ERECTION OF ALL STRUCTURAL ELEMENTS OF THE WORKS IS COMPLETED.THE TEMPORARY WORKS ENGINEER SHALL ENSURE THAT THE METHODOLOGY AND ERECTION SEQUENCE DOES NOT RESULT IN ADVERSE LOCKED IN STRESSES , OR THE TEMPORARY OVER-STRESSING OF ANY ELEMENTS.

REINFORCED CONCRETE MASONRY NOTES

1. ALL MASONRY SHALL COMPLY WITH AS3700 AND THE PROJECT SPECIFICATION.
2. CONCRETE MASONRY UNITS TO HAVE A MINIMUM CHARACTERISTIC UNCONFINED STRENGTH OF 15MPa IN ACCORDANCE WITH AS2733.
3. MASONRY UNITS TO BE BEDDED IN FRESHLY PREPARED MORTAR UNIFORMLY MIXED IN THE RATIO OF ONE (1) PART CEMENT, ONE (1) PART LIME AND SIX (6) PARTS SAND, CONFORMING TO AS2701 'BRICKIES LOAM' SHALL NOT BE USED.
4. GROUT SHALL HAVE A COMPRESSIVE STRENGTH (f'c) OF 20 MPa AT 28DAYS, A SLUMP OF 125mm IN A 150mm SLUMP CONE, A MAXIMUM AGGREGATE SIZE OF 10mm AND BE IN ACCORDANCE WITH AS3700.
5. DEFORMED BAR REINFORCEMENT SHALL CONFORM TO AS4671.
6. EXTREME CARE MUST BE TAKEN TO CORRECTLY POSITION STARTER BARS IN FOOTINGS IN ACCORDANCE WITH DETAILS.
7. REFER TO THE MASONRY DRAWINGS FOR DETAILS ON VERTICAL CONTROL JOINTS.
8. ALL WALL INTERSECTIONS SHALL BE FULLY BONDED OR TIED UNLESS NOTED OTHERWISE.
9. PROVIDE CLEAN-OUT OPENINGS TO ALL CORES FOR INSPECTION AND TYING OF REINFORCEMENT.
10. FACE SHELLS AND CROSS WEBS TO BE FULLY BEDDED.
11. ALL CORES TO BE CLEANED OUT AFTER EACH DAYS LAYING.
12. VERTICAL WALL REINFORCEMENT SHALL BE TIED TO STARTER BARS AND RESTRAINED AT TOP OF WALL IN ITS REQUIRED LOCATION IN ACCORDANCE WITH THE DETAILS SO AS NOT TO MOVE DURING GROUT FILLING OF THE WALL.
13. WET ALL CORES PRIOR TO POURING GROUT.
14. FULLY GROUT ALL CORES IN REINFORCED WALLS, UNLESS NOTED OTHERWISE.
15. GROUT TO BE THOROUGHLY COMPACTED TO ENSURE COMPLETE FILLING OF ALL CORES.
16. FILL CORES TO A MAXIMUM OF 3m IN HEIGHT FOR ANY ONE POUR. ALL GROUT POURS TO STOP 25mm BELOW TOP OF BLOCKS.
17. WALL SHALL BE PROPPED DURING BACKFILLING OPERATIONS.
18. UNLESS NOTED OR SHOWN OTHERWISE ON THE DRAWINGS THERE ARE TO BE NO CHASES OR RECESSES PERMITTED IN THE MASONRY WALLS WITHOUT THE PRIOR APPROVAL OF 'ROBERT BIRD GROUP'.
19. USE OF 'H' BLOCKS ARE PREFERRED FOR RETAINING WALL CONSTRUCTION.

C1

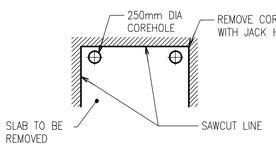
PROCEDURE FOR CUTTING PENETRATIONS IN CONCRETE SLAB

BUILDER TO INDEPENDENTLY CHECK AND ENSURE THAT SERVICES ENCASED IN FLOOR SLABS; FOR EXAMPLE, ELECTRICAL CONDUITS, WATER PIPES ETC. ARE NOT INTERFERED WITH OR DAMAGED BY CUTTING PENETRATION.

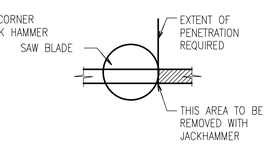
ALL SAFETY AND GENERAL SITE PROCEDURES TO BE FOLLOWED.

SUBMIT PROPOSED PENETRATION SIZE AND LOCATION TO STRUCTURAL ENGINEER FOR INITIAL CHECKING ON STRUCTURAL DRAWING PRIOR TO SETTING UP ON SITE UPON GENERAL ACCEPTANCE OF THE SIZE AND LOCATION, CARRY OUT THE FOLLOWING PROCEDURE.

1. MARK SET OUT AT EACH PENETRATION ACCURATELY ON SLAB. BUILDER IS TO CONFIRM THAT THIS IS IN ACCORDANCE WITH THE DETAILS PROVIDED BY THE ENGINEER.
   - IF NEW PENETRATION IS NOT NEAR EXISTING HOLES/PENETRATIONS ADVISE THE ENGINEER.
   - CHECK TO ENSURE THAT PENETRATION WOULD PENETRATE THROUGH SLAB THICKNESS ONLY AND NOT THROUGH BEAMS ETC.
2. FOR EACH PENETRATION, CORE A 250mm DIAMETER CORE HOLE IN EACH CORNER.
3. SAW CUT BETWEEN CORNER CORE HOLES. DO NOT CUT THE CORNER BY CROSS CUTTING. REMOVE CONCRETE AT CORNERS OF PENETRATION WITH JACK HAMMER.
4. CUT BACK TO EXPOSE ENDS OF REINFORCEMENT AND/OR CABLES BY 30mm (FOR EXPOSED CASES ONLY). TREAT END OF REINFORCEMENT AND/OR CABLES WITH AN APPROVED PROTECTION COMPOUND IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND MAKE GOOD ALL SURFACES.
5. 'RBG' PENETRATION PROCEDURE IS BASED ON THE EXPECTATION THAT THE SLABS WERE ADEQUATELY CONSTRUCTED IN A WORKMANLIKE MANNER. 'RBG' DOES NOT ACCEPT ANY RESPONSIBILITY FOR ANY LOSS HOWEVER OCCASIONED BY DAMAGE TO THE EXISTING SERVICE AND STRUCTURE AS A RESULT OF FORMING THESE PENETRATION.



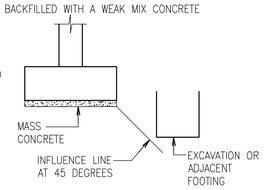
PLAN



SAWCUT SECTION DETAIL

FOUNDATION NOTES

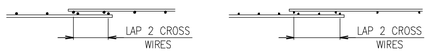
1. REFER TO THE GEOTECHNICAL ENGINEERING REPORT SPECIFIED IN THE GENERAL NOTES FOR SITE SPECIFIC GEOTECHNICAL INFORMATION.
2. FOOTINGS TO BE FOUNDED ON MATERIAL HAVING AN ALLOWABLE BEARING CAPACITY OF [200] kPa. WHERE DIFFICULTY IN REACHING THE REQUIRED CAPACITY IS EXPERIENCED, 'ROBERT BIRD GROUP' IS TO BE CONTACTED TO REASSESS THE FOOTING DESIGN.
3. THE CONTRACTOR IS TO ENGAGE AND PAY A GEOTECHNICAL ENGINEER TO VERIFY THE BEARING CAPACITY OF THE FOUNDATIONS PRIOR TO PLACEMENT OF THE BLINDING LAYER.
4. ALL LOOSE MATERIAL AND WATER TO BE CLEANED OUT OF THE FOUNDATION. FORM WORK TO BE USED WHERE THE SIDES OF THE FOUNDATION ARE NOT STABLE.
5. A 50mm MINIMUM BLINDING LAYER SHOULD BE APPLIED TO THE BASE OF ALL FOUNDATIONS IMMEDIATELY AFTER VERIFICATION OF THE BEARING CAPACITY BY THE GEOTECHNICAL ENGINEER. WHERE THE FOUNDING MATERIAL IS DEEPER THAN REQUIRED FOR THE FOOTING THE EXCAVATION IS TO BE BACKFILLED WITH A WEAK MIX CONCRETE (N10) TO THE UNDERSIDE OF THE FOOTING.
6. WHERE AN EXCAVATION IS REQUIRED OR EXISTS BELOW THE BASE OF A FOOTING THE SIDE OF THE EXCAVATION SHALL BE LOCATED AWAY FROM EDGE OF FOOTING BY THE SAME DISTANCE THAT THE EXCAVATION IS BELOW FOOTING BASE. WHERE THIS CANNOT BE ACHIEVED, 'ROBERT BIRD GROUP' SHALL BE CONTACTED FOR FURTHER DIRECTION. MASS CONCRETE IS TO EXTEND TO THE INFLUENCE LINE AS REQUIRED.



7. ALL WALLS AND COLUMNS SHALL BE CONCENTRIC WITH THE SUPPORTING FOOTINGS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

SLAB ON GROUND NOTES

1. SLAB ON GROUND TO BE POURED ON A LAYER OF POLYETHYLENE SHEETING 200µm THICK ON TOP OF 50mm OF BEDDING SAND. JOINTS TO BE TAPED
2. REFER ARCHITECT FOR WATERPROOFING DETAILS.
3. REFER ARCHITECT FOR TERMITE PROTECTION.
4. REFER ARCHITECT FOR STEP AND FALLS IN SLABS.
5. FABRIC TO BE PLACED ON CHAIRS AT 800 x 800 CENTRES AND CHAIRS TO BE PLACED ON STEEL PANS.
6. LAP FABRIC REINFORCEMENT THUS:



7. WHERE BEDDING SAND IS REQUIRED UNDER SLAB, THIS SHALL BE COMPACTED SUFFICIENTLY TO SUPPORT REINFORCEMENT PLUS 100kg/CHAIR WITHOUT VERTICAL DISPLACEMENT EXCEEDING 5mm.

CONCRETE NOTES

GENERAL
1. CONCRETE WORK SHALL BE IN ACCORDANCE WITH AS3600 AND WITH THE PROJECT SPECIFICATIONS.
2. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN ON 'ROBERT BIRD GROUP' DRAWINGS OR SPECIFICALLY APPROVED BY 'ROBERT BIRD GROUP'.
3. ALL THICKNESSES SHOWN ARE MINIMUM STRUCTURAL REQUIREMENTS, NO REDUCTION IN THICKNESS DUE TO FALLS OR TOPPING IS PERMITTED. REFER ARCHITECT DRAWINGS FOR ALL SLAB FALLS AND CONFIRMATION OF SLAB STEPS.
4. UNLESS A GROOVE LINE ALLOWANCE HAS BEEN NOTED ON THE DRAWINGS, NO GROOVE LINES ARE PERMITTED, EXCEPT AT SLAB LINES. ALL GROOVE LINES ARE TO BE SUBMITTED TO 'ROBERT BIRD GROUP' FOR APPROVAL.
5. THE FACE OF ALL CONCRETE AGAINST WHICH NEW CONCRETE IS TO BE CAST IS TO BE THOROUGHLY MECHANICALLY SCABBLED, FULLY EXPOSING THE AGGREGATE MATRIX.
6. NO PENETRATIONS GREATER THAN 150mm DIAMETER, OR EMBEDMENT OF PIPES GREATER THAN 40mm DIAMETER OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE SLABS. FOR ALL OTHER CONCRETE MEMBERS NO PENETRATIONS, CHASES OR EMBEDMENTS SHALL BE MADE WITHOUT PRIOR APPROVAL BY 'ROBERT BIRD GROUP'.
7. CONDUITS GREATER THAN 25mm DIAMETER CAST INTO CONCRETE MEMBERS SHALL BE SPACED AT A MAXIMUM DISTANCE POSSIBLE AND UNDER NO CIRCUMSTANCES CLOSER THAN A CLEAR SPACING OF TWICE THE LARGER CONDUIT DIAMETER FROM PARALLEL REINFORCEMENT OR ANY OTHER CONDUIT.

CONCRETE
1. THE CHARACTERISTIC COMPRESSIVE STRENGTH (f'c) AT 28 DAYS OF IN PLACE CONCRETE SHALL BE AS NOTED ON THE DRAWINGS.
2. MAXIMUM AGGREGATE SIZE.....20mm
3. SLUMP.....80mm
4. ALL CONCRETE SHALL BE VIBRATED.
5. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH THE SPECIFICATION
6. ALL CONCRETE SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH AS1012 AND THE PROJECT SPECIFICATION.
7. ALL FORM WORK SHALL COMPLY WITH AS3610

REINFORCEMENT
1. REINFORCEMENT IS TO BE MANUFACTURED IN ACCORDANCE WITH AS4671 AND SHALL BE FIXED AS SHOWN ON DRAWINGS.
2. MATERIAL IS INDICATED BY THE FOLLOWING SYMBOLS:-
   - Y DEFORMED BAR GRADE 400
   - N DEFORMED BAR GRADE 500 (NORMAL DUCTILITY)
   - R PLAIN ROUND BAR GRADE 250
   - W PLAIN WIRE GRADE 450
   - SL SQUARE FABRIC GRADE 500
   - RL RECTANGULAR FABRIC GRADE 500
3. THE BAR SIZE IS INDICATED BY A NUMBER AFTER THE SYMBOL, WHICH INDICATES THE BAR DIAMETER IN MILLIMETRES.
4. REINFORCEMENT SPACING NOMINATED ON DRAWINGS IS TO ASSIST SCHEDULER AND STEEL FIXER TO ASSESS TOTAL NUMBER OF BARS REQUIRED. WHERE BARS PLACED IN ACCORDANCE WITH SPACING NOMINATED FOUL WITH OTHER STRUCTURAL REQUIREMENTS, PREFERENCE IS TO BE GIVEN TO RELOCATING BARS BY LOCALLY ADJUSTING SPACING TO ENABLE ASSEMBLY OF REINFORCEMENT TO BE COMPLETED. ENGINEER IS TO BE CONTACTED IN THE EVENT THAT REINFORCEMENT IS NEEDED TO BE CUT ON SITE PRIOR TO CONTINUING.
5. LAP LENGTHS TO REINFORCEMENT BARS TO BE AS NOTED ON THE RELEVANT DRAWINGS.
6. WELDING OF REINFORCEMENT BARS IS NOT PERMITTED UNLESS APPROVED.
7. COVER SHALL BE AS NOTED ON THE RELEVANT DRAWINGS.
8. CONCRETE COVERS NOTED ARE MEASURED FROM THE FORM WORK OR GROUND FACE TO THE OUTERMOST REINFORCEMENT COMPONENT. i.e.. IN COLUMNS AND BEAMS TO THE OUTSIDE OF TIES OR LIGATURES.
9. COVER TO BE MAINTAINED DURING POURING BY THE USE OF PLASTIC CHAIRS OR PLASTIC TIPPED METAL CHAIRS.
10. WHERE NO REINFORCEMENT IS SHOWN ON THE DRAWING AT RIGHT ANGLES TO THE MAIN REINFORCEMENT DISTRIBUTION REINFORCEMENT IS TO BE PROVIDED.
11. BENDING & STRAIGHTENING
    COLD BENDING: BARS CANNOT BE COLD BENT WITHOUT PRIOR APPROVAL FROM THE PROJECT STRUCTURAL ENGINEER. CORRECT MINIMUM DIAMETER FORMERS ARE TO BE USED IN ACCORDANCE WITH AS3600.
    HOT BENDING: HOT BENDING MAY ONLY BE CONDUCTED WITH THE APPROVAL OF THE PROJECT STRUCTURAL ENGINEER. HOT BENDING CAN ONLY BE PERFORMED BY A CERTIFIED WELDER. TEST CERTIFICATE OF AFFECTED AREA TO BE OBTAINED.
    STRAIGHTENING: WHEN RE-STRAIGHTENING PARTIALLY EMBEDDED BARS, DO NOT BEND OVER FORMERS OF SMALLER DIAMETER THAN PERMITTED IN AS 3600. DO NOT SUBJECT REINFORCEMENT BARS TO IMPACT IN ORDER TO STRAIGHTEN.
12. CONCRETE COVER

LOCATION	COVER
FOOTING	50
COLUMN	35

13. CONCRETE GRADE f'c = 32 MPa

C1

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS

REFER COVER SHEET FOR NOTES UNLESS NOTED OTHERWISE

Rev.	Revision Description	By	App.	Date
P1	ISSUED FOR INFORMATION	TF	SM	26.04.2016
C1	ISSUED FOR CONSTRUCTION	TF	SM	29.04.2016

Structural, Civil & Construction Engineering Consultant
RobertBirdGroup
SYDNEY OFFICE:
Robert Bird Group Pty Ltd
PO Box A2309
Sydney South, NSW 1235
Level 11
151 Castlereagh St
Sydney NSW 2000
Ph. (02) 8246 3200
ACN 010 580 248
Web Site: www.robertbird.com

Client
SCENTRE GROUP
Owner and Operator of Westfield in Australia and New Zealand

Title
GENERAL NOTES SHEET 2

Project
RILEY STREET COLONNADE
OUTDOOR SEATING
WESTFIELD PENRITH

APPROVED FOR CONSTRUCTION

Date	Designer	Design Checker
10/12/15	T.FATIMA	D.LESANKI
Scale at A1	Drawn	Principal/Project Leader
N.T.S.	MAZ	S.MORLEY
Job Number	Drawing Number	Revision
15305A	S00-02	C1

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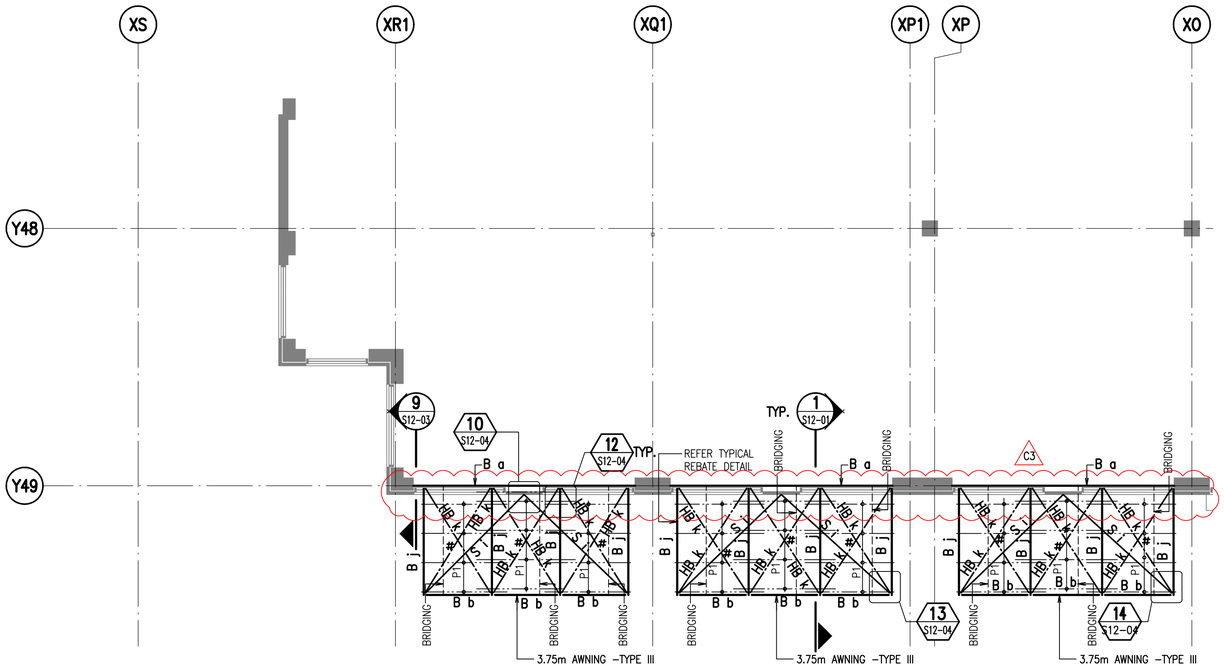
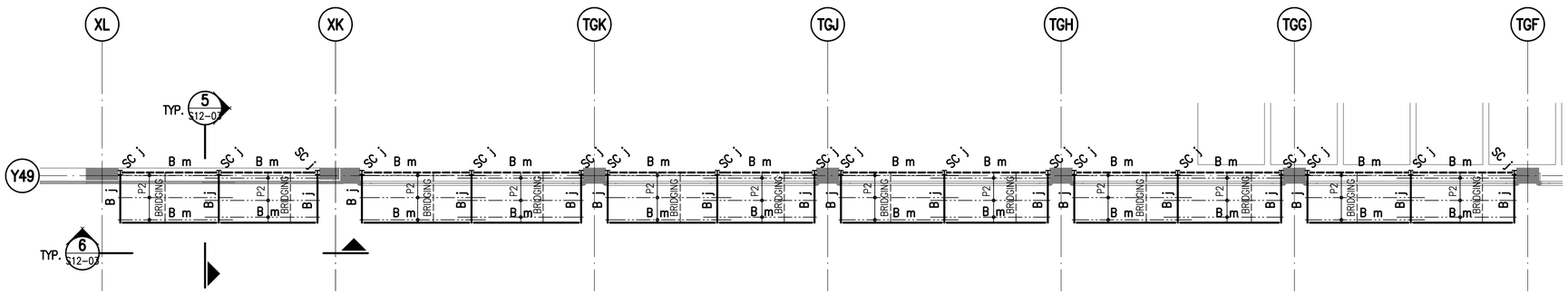


AWNING STEELWORK PART PLAN–1

SCALE 1:100



AWNING TYPE IV (1.75m) STEELWORK PART PLAN–2

SCALE 1:100

MEMBER

B ..... BEAM
HB ..... HORIZONTAL BRACING
S ..... STRUT
SC ..... STEEL COLUMN

STEELWORK NOTES:

1. REFER COVERSHEET DRAWING S00–01 FOR STEELWORK NOTES.
2. ABBREVIATIONS :–
   B/S – BOTH SIDES
   N/S – NEAR SIDE
   F/S – FAR SIDE

MARK No. & SIZE

a ..... 250 UC 89.5
b ..... 200 UC 52.2

i ..... 88.9x6 CHS
j ..... 150 UC 37.2
k ..... 75x75x8 EA

m ..... 150 PFC

PURLINS & GIRTS

P1 ..... C10019 AT 1500 CRS MAX.
P2 ..... C15019A AT 1500 CRS MAX.

NOTES:

1. ALL CONNECTIONS BETWEEN CONTINUOUS MEMBERS TO BE FSBW
2. # DENOTES NOT CONNECTED
4. CONTRACTOR MUST ENSURE SAFETY OF TENDONS AND REINFORCEMENT DURING BOLT DRILLING.
5. CONTRACTOR TO DRILL PRIOR TO FABRICATION USING HAMMER DRILL TO AVOID CLASH WITH TENDONS.
6. EXISTING STRUCTURE IS SHOWN INDICATIVELY. ALL DIMENSIONS OF EXISTING STRUCTURE TO BE CONFIRMED ON SITE.

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS

REFER COVER SHEET FOR NOTES UNLESS NOTED OTHERWISE

Rev.	Revision Description	By	App.	Date
P1	ISSUED FOR INFORMATION	TF	SM	16.12.2015
P2	ISSUED FOR COORDINATION	TF	SM	26.04.2016
C1	ISSUED FOR CONSTRUCTION	TF	SM	29.05.2016
C2	REVISED AS CLOUDED	TF	SM	24.06.2016
C3	REVISED AS CLOUDED	TF	SM	01.07.2016

Rev.	Revision Description	By	App.	Date

Structural, Civil & Construction Engineering Consultant
RobertBirdGroup
SYDNEY OFFICE:
Robert Bird Group Pty Ltd
PO Box A2309
Sydney South, NSW 1235
Level 11
151 Castlereagh St
Sydney NSW 2000
Ph. (02) 8246 3200
ACN 010 580 248
Web Site: www.robertbird.com

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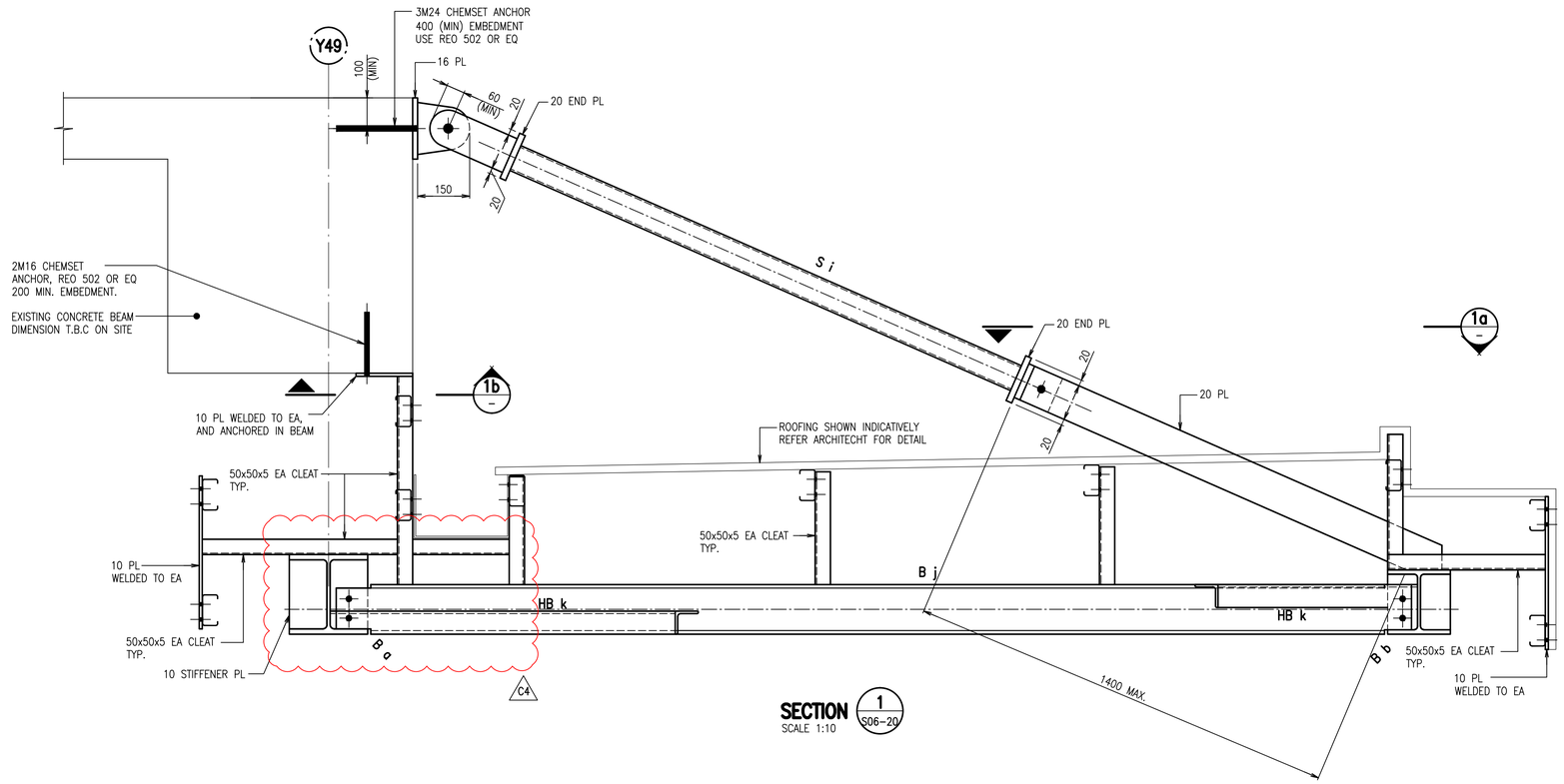
Title
AWNING STEELWORK PART PLANS

Project
RILEY STREET COLONNADE
OUTDOOR SEATING
WESTFIELD PENRITH

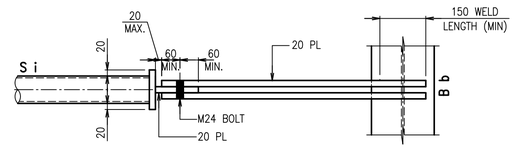
APPROVED FOR CONSTRUCTION

Date	Designer	Design Checker
14/12/15	T.FATIMA	D.LESANKI
Scale at A1	Drawn	Principal/Project Leader
1:100	MAZ	S.MORLEY
Job Number	Drawing Number	Revision
15305A	S06–20	C3

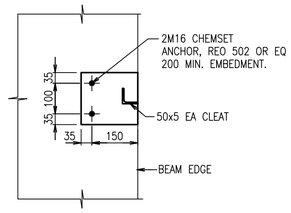
A1



SECTION 1 / S06–20
SCALE 1:10



SECTION 1a / –
SCALE 1:10



SECTION 1b / –
SCALE 1:10

DELETED

SECTION 2 / S06–20
SCALE 1:10

NOTE:
FOR PURLIN CONNECTION
REFER TYPICAL DECKING SUPPORT DETAIL
ON DRG NO. S12–04

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS

REFER COVER SHEET FOR NOTES UNLESS NOTED OTHERWISE

STEELWORK NOTES:

1. REFER COVERSHEET DRAWING S00–01 FOR STEELWORK NOTES.

2. ABBREVIATIONS :–
   B/S – BOTH SIDES
   N/S – NEAR SIDE
   F/S – FAR SIDE

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P1	ISSUED FOR INFORMATION	TF	SM	16.12.2015
P2	ISSUED FOR COORDINATION	TF	SM	26.04.2016
C1	ISSUED FOR CONSTRUCTION	TF	SM	29.04.2016
C2	REVISED AS CLOUDED	TF	SM	03.05.2016
C3	REVISED AS CLOUDED	TF	SM	24.06.2016
C4	REVISED AS CLOUDED	TF	SM	01.07.2016

Rev.	Revision Description	By	App.	Date

Structural, Civil & Construction Engineering Consultant
RobertBirdGroup
SYDNEY OFFICE:
Robert Bird Group Pty Ltd
PO Box A2309
Sydney South, NSW 1235
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151 Castlereagh St
Sydney NSW 2000
Ph. (02) 8246 3200
ACN 010 580 248
Web Site: www.robertbird.com

Client
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Title
AWNING STEELWORK
SECTIONS AND DETAILS SHEET 1

Project
RILEY STREET COLONNADE
OUTDOOR SEATING
WESTFIELD PENRITH

APPROVED FOR CONSTRUCTION

Date	Designer	Design Checker
10/12/15	T.FATIMA	D.LESANKI
Scale at A1	Drawn	Principal/Project Leader
1:10	GRV	S.MORLEY
Job Number	Drawing Number	Revision
15305A	S12–01	C4

A1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

DELETED

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C1	ISSUED FOR CONSTRUCTION	TF	SM	29.04.2016
C2	ISSUED FOR CONSTRUCTION	TF	SM	14.06.2016
C3	DRAWING DELETED	TF	SM	24.06.2016

Structural, Civil & Construction Engineering Consultant

RobertBirdGroup

SYDNEY OFFICE:

Ph. (02) 8246 3200

ACN 010 580 248

Web Site: www.robertbird.com

Client

SCENTRE GROUP

Owner and Operator of Westfield in Australia and New Zealand

Title

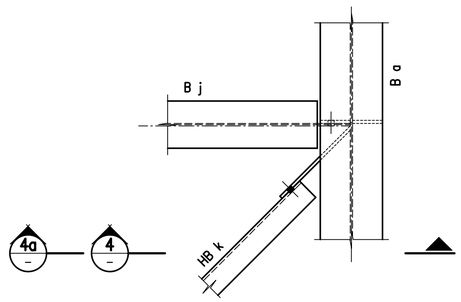
AWNING STEELWORK SECTIONS AND DETAILS SHEET 2

Project

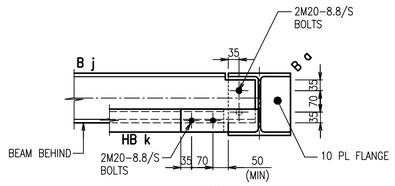
RILEY STREET COLONNADE OUTDOOR SEATING WESTFIELD PENRITH

APPROVED FOR CONSTRUCTION

Date	Designer	Design Checker
12/12/15	T.FATIMA	D.LESANKI
Scale at A1	**Drawn**	**Principal/Project Leader**
1:10	GRV	S.MORLEY
Job Number	**Drawing Number**	**Revision**
15305A	S12-02	C3

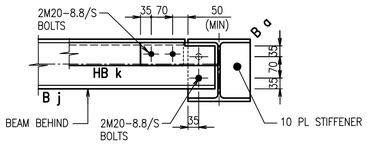


TYPICAL CONNECTION FOR TYPE III AWNING



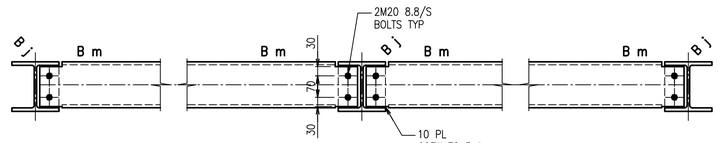
SECTION 4 SCALE 1:10

EA CONNECTED TO MAIN BEAM BOTTOM FLANGE

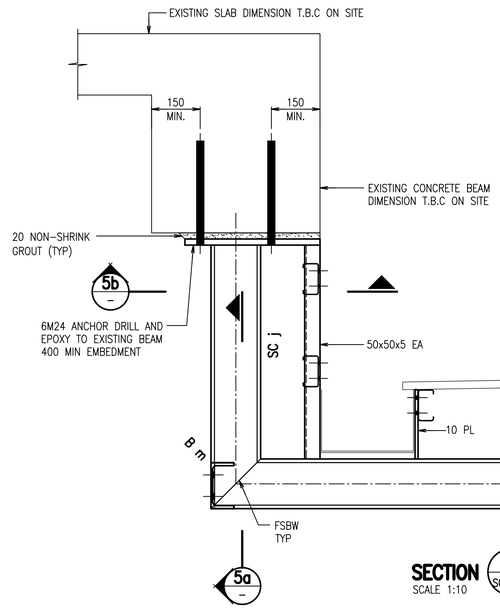


SECTION 4a SCALE 1:10

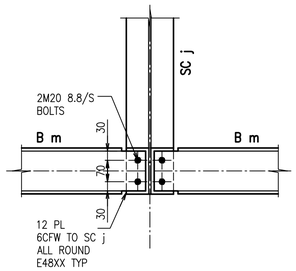
EA CONNECTED TO MAIN BEAM TOP FLANGE



SECTION 6 S06-20 SCALE 1:10



SECTION 5 S06-20 SCALE 1:10



SECTION 5a SCALE 1:10

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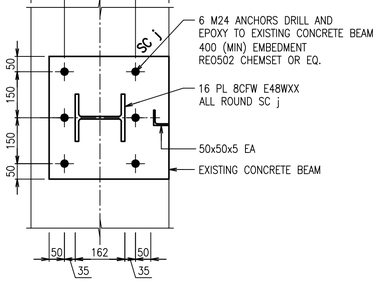
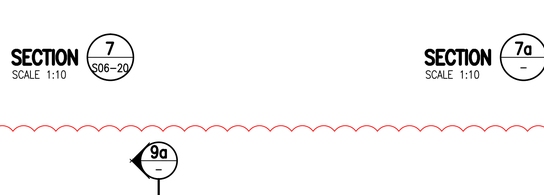
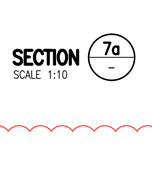
DELETED



SECTION 5b SCALE 1:10



SECTION 7 S06-20 SCALE 1:10



SECTION 7a SCALE 1:10

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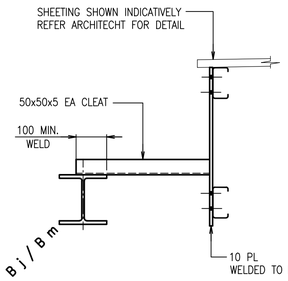
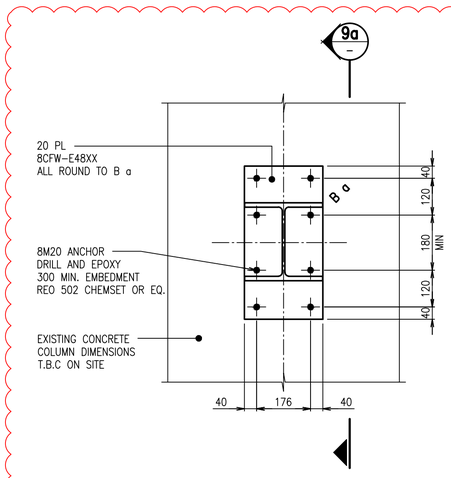


TYPICAL REBATE DETAIL AT AWNING SIDE

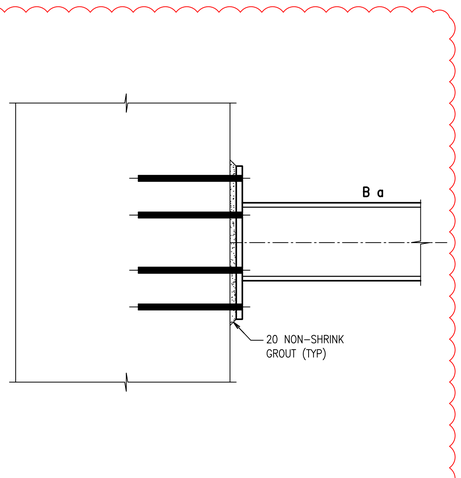
SECTION 8 S06-20 SCALE 1:10

SECTION 8a SCALE 1:10

C4



SECTION 9 S06-20 SCALE 1:10



SECTION 9a SCALE 1:10

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS

REFER COVER SHEET FOR NOTES UNLESS NOTED OTHERWISE

STEELWORK NOTES:

1. REFER COVERSHEET DRAWING S00-01 FOR STEELWORK NOTES.
2. ABBREVIATIONS :-
   B/S – BOTH SIDES
   N/S – NEAR SIDE
   F/S – FAR SIDE

Rev.	Revision Description	By	App.	Date
P1	ISSUED FOR INFORMATION	TF	SM	16.12.2015
P2	ISSUED FOR COORDINATION	TF	SM	26.04.2016
C1	ISSUED FOR CONSTRUCTION	TF	SM	29.04.2016
C2	REVISED AS CLOUDED	TF	SM	03.05.2016
C3	REVISED AS CLOUDED	TF	SM	24.06.2016
C4	REVISED AS CLOUDED	TF	SM	01.07.2016

Structural, Civil & Construction Engineering Consultant
RobertBirdGroup
SYDNEY OFFICE:
Robert Bird Group Pty Ltd
PO Box A2309
Sydney South, NSW 1235
Level 11
151 Castlereagh St
Sydney NSW 2000
Ph. (02) 8246 3200
ACN 010 580 248
Web Site: www.robertbird.com

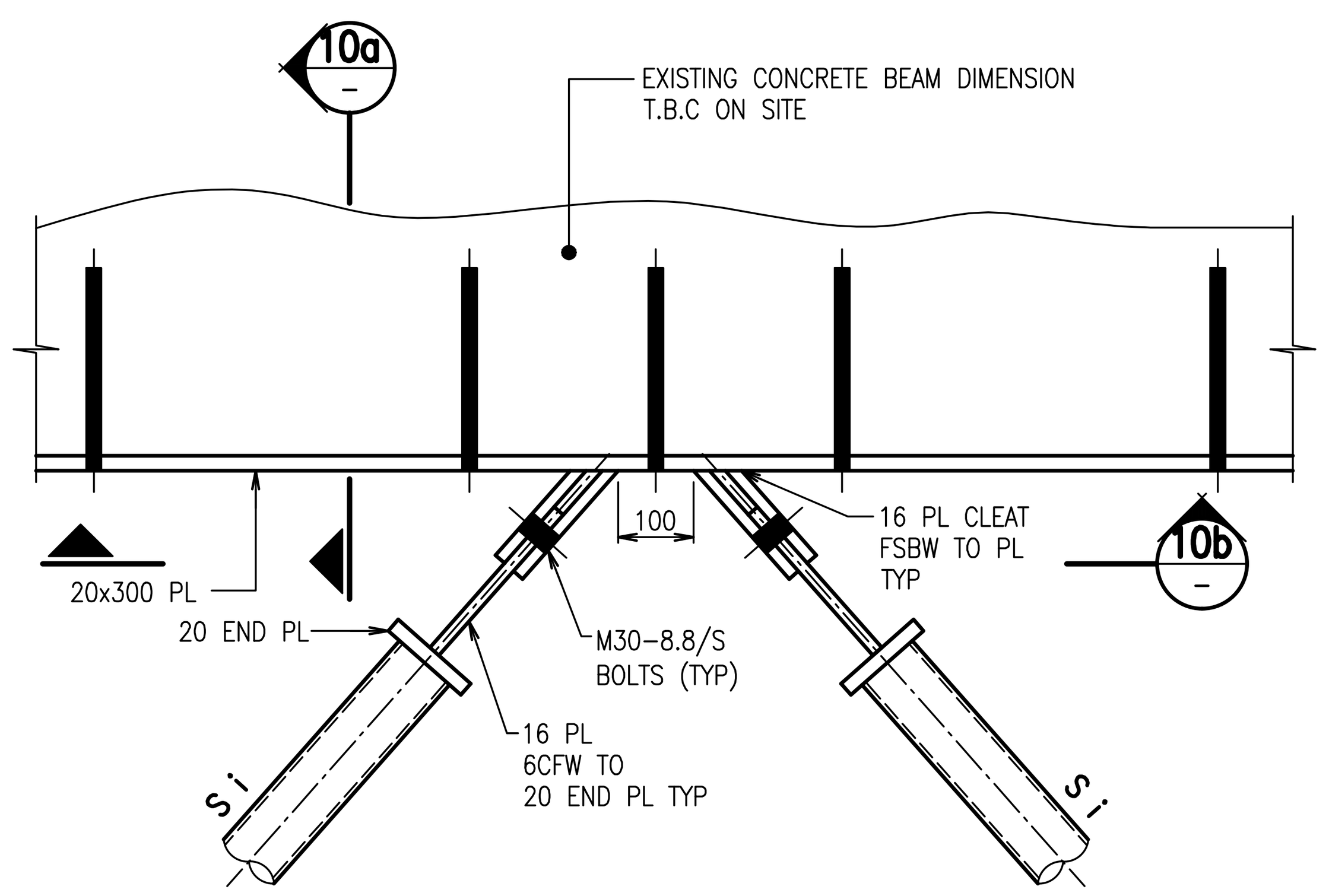
Client
SCENTRE GROUP
Owner and Operator of Westfield in Australia and New Zealand

Title
AWNING STEELWORK
SECTIONS AND DETAILS SHEET 3

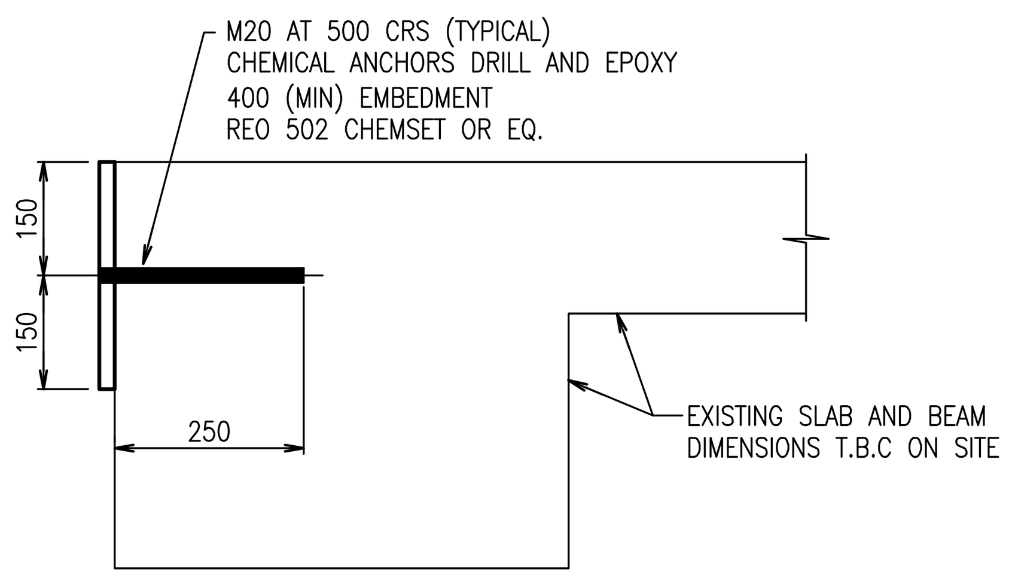
Project
RILEY STREET COLONNADE
OUTDOOR SEATING
WESTFIELD PENRITH

APPROVED FOR CONSTRUCTION

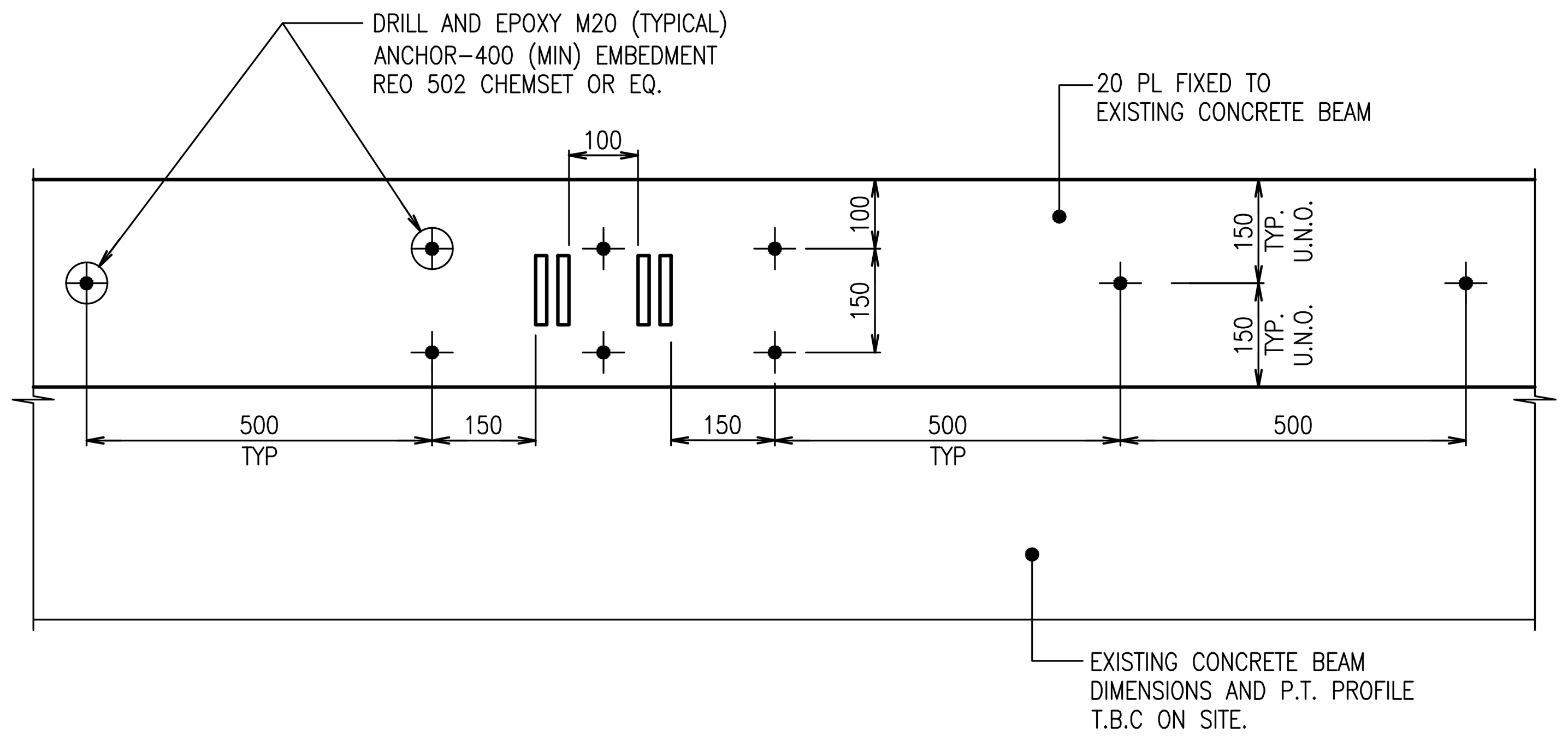
Date	Designer	Design Checker
10/12/15	T.FATIMA	D.LESANKI
Scale at A1	Drawn	Principal/Project Leader
1:10	GRV	S.MORLEY
Job Number	Drawing Number	Revision
15305A	S12-03	C4



DETAIL 10 S06-20
SCALE 1:10

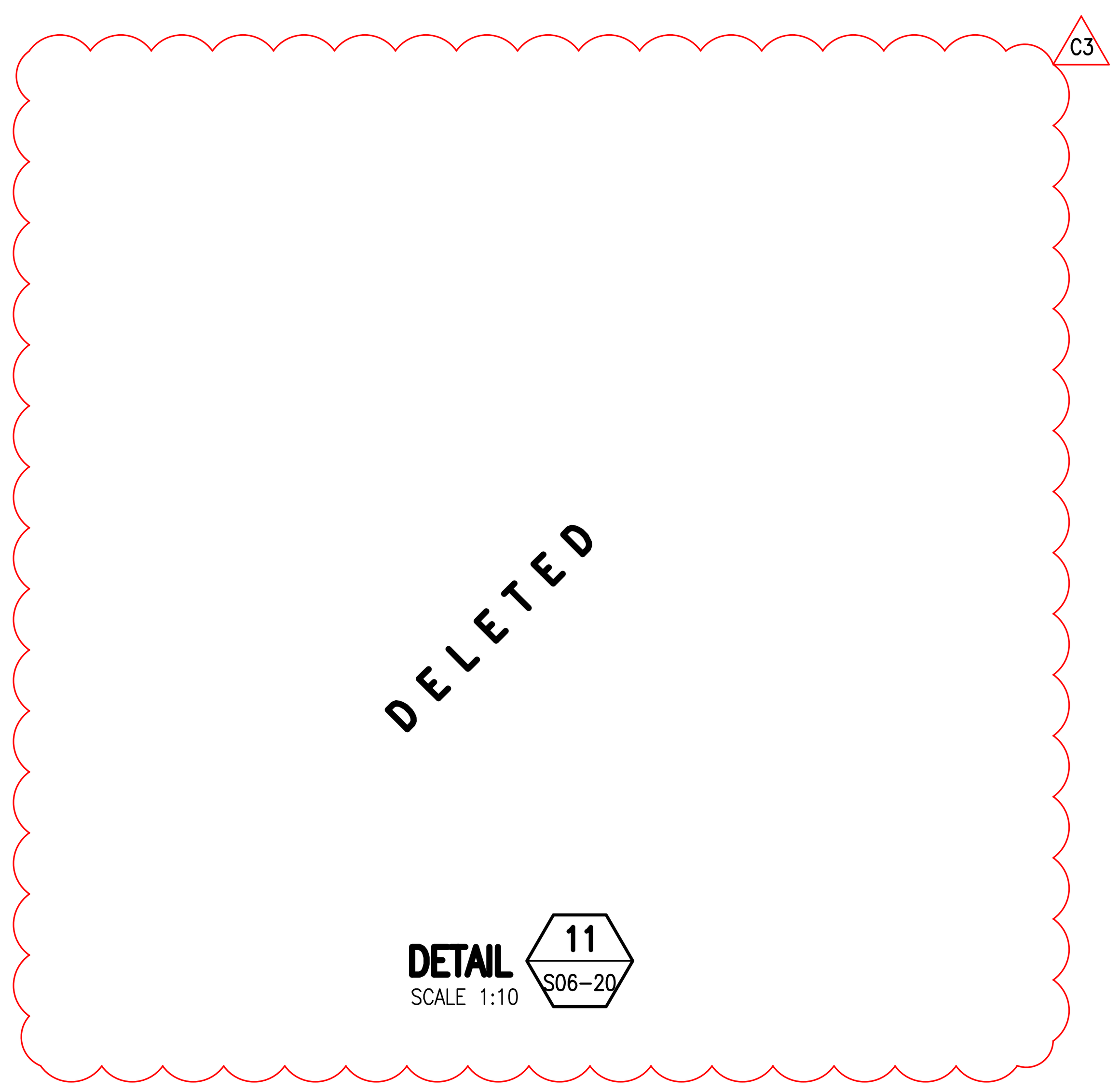


SECTION 10a –
SCALE 1:10

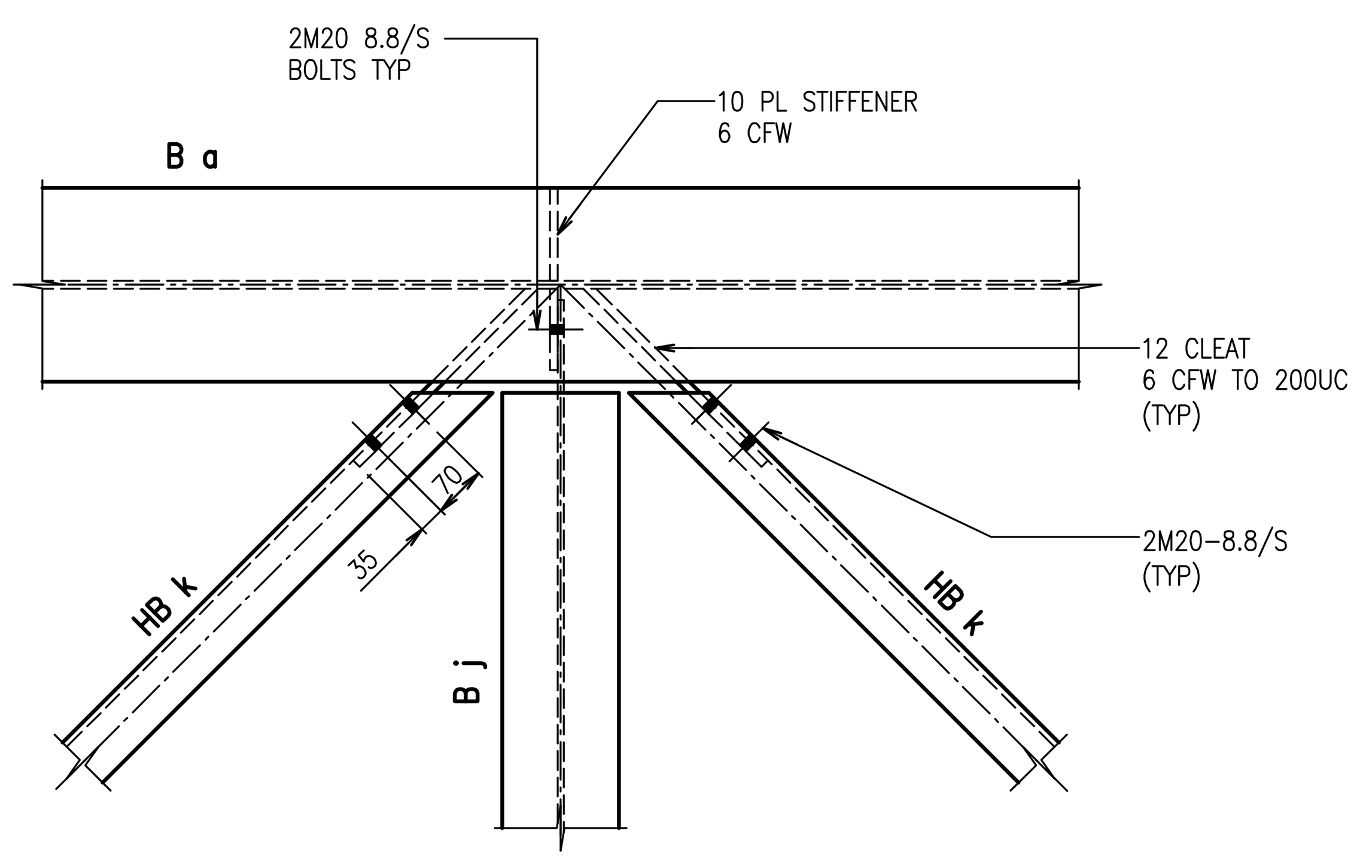


CHEMICAL ANCHOR SET-OUT AT DIAGONAL CONNECTION

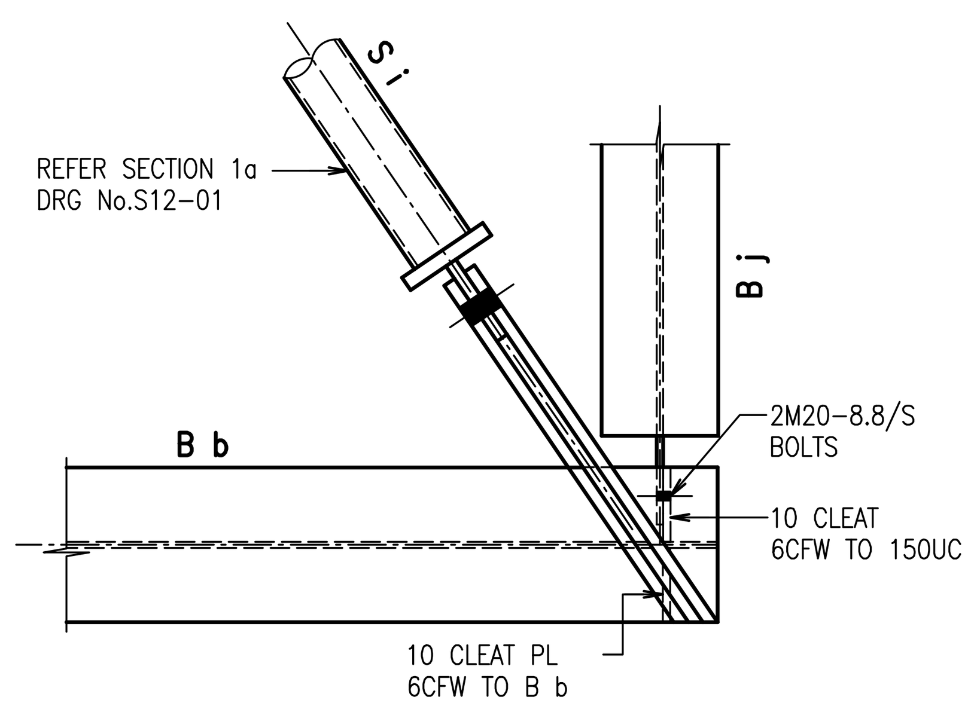
SECTION 10b –
SCALE 1:10



DETAIL 11 S06-20
SCALE 1:10

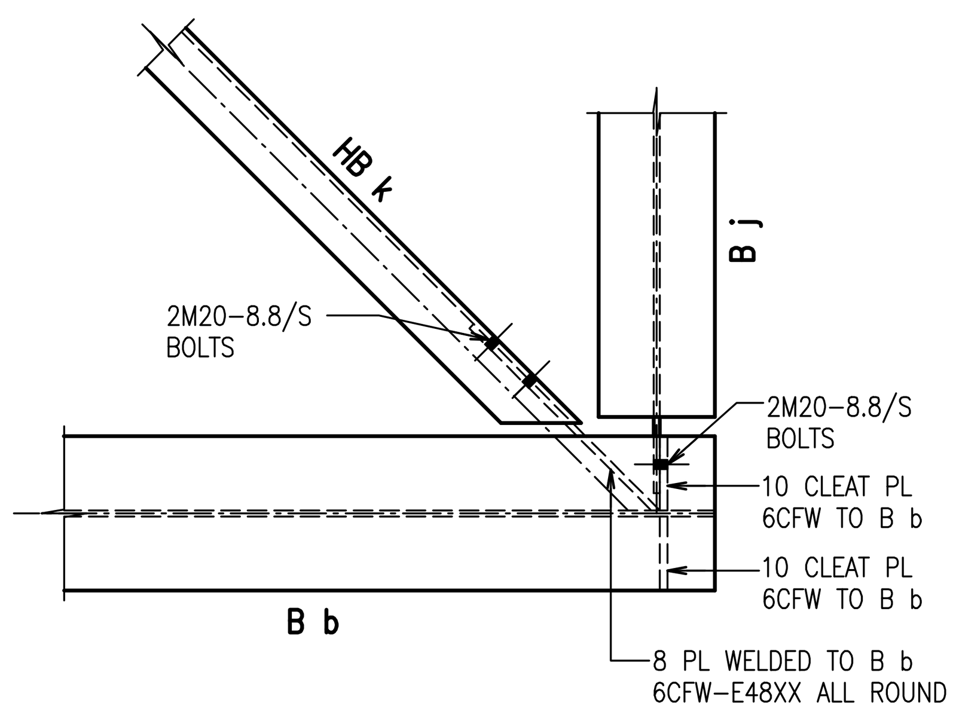


DETAIL 12 S06-20
SCALE 1:10



DETAIL 13 S06-20
SCALE 1:10

NOTE. HORIZONTAL BRACING NOT SHOWN FOR CLARITY



DETAIL 14 S06-20
SCALE 1:10

NOTE. STRUT NOT SHOWN FOR CLARITY

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Structural, Civil & Construction Engineering Consultant
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SYDNEY OFFICE:
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ACN 010 580 248
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Client
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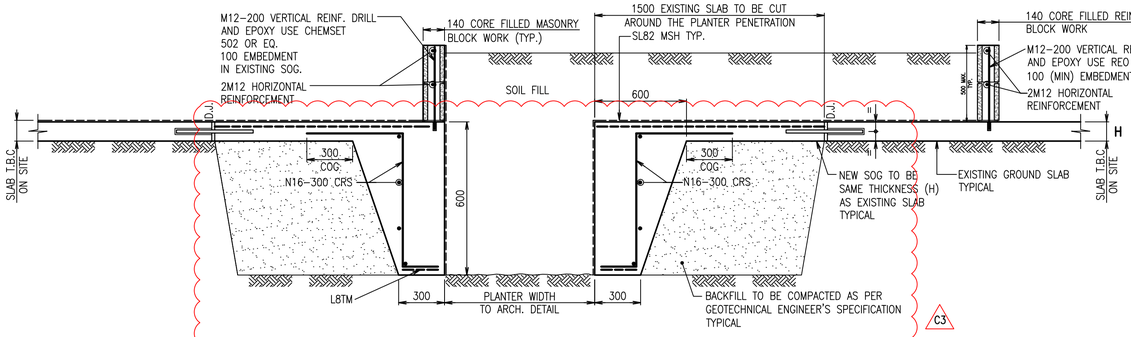
Title
AWNING STEELWORK
SECTIONS AND DETAILS SHEET 4

Project
RILEY STREET COLONNADE
OUTDOOR SEATING
WESTFIELD PENRITH

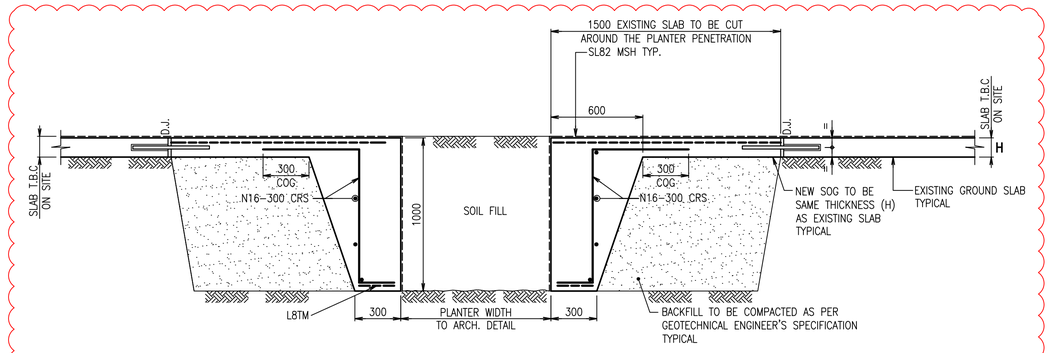
APPROVED FOR CONSTRUCTION

Date	Designer	Design Checker
10/12/15	T.FATIMA	D.LESANKI
Scale at A1	Drawn	Principal/Project Leader
1:10	GRV	S.MORLEY
Job Number	Drawing Number	Revision
15305A	S12-04	C3

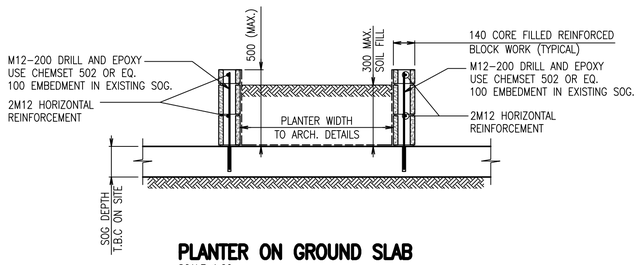
Document Set ID: 7639797
Version: 1, Version Date: 05/05/2017



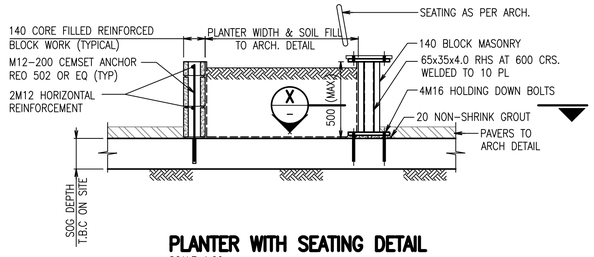
DEEP PLANTER THROUGH SOG PENETRATION WITH RAISED WALLS
SCALE 1:20



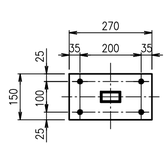
DEEP PLANTER THROUGH SOG PENETRATION WITHOUT RAISED WALLS
SCALE 1:20



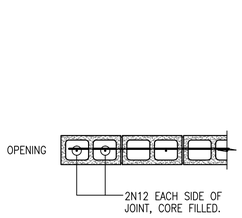
PLANTER ON GROUND SLAB
SCALE 1:20



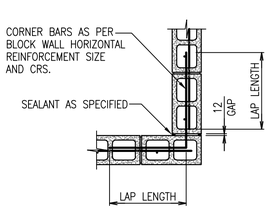
PLANTER WITH SEATING DETAIL
SCALE 1:20



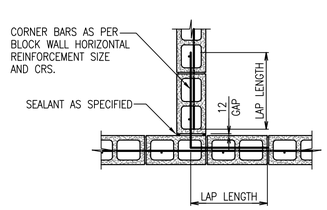
SECTION X
SCALE 1:10



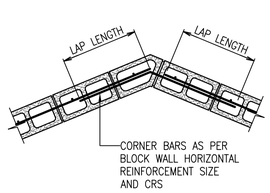
BLOCKWALL TO OPENING (REINFORCED)
SCALE 1:20



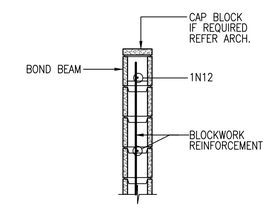
BLOCKWORK AT 90 DEGREES CORNER (REINFORCED)
SCALE 1:20



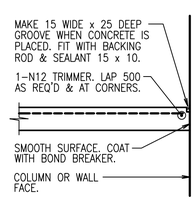
BLOCKWORK 'T' INTERSECTION (REINFORCED)
SCALE 1:20



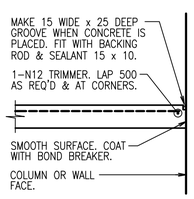
BLOCKWORK AT 45 DEGREES CORNER (REINFORCED)
SCALE 1:20



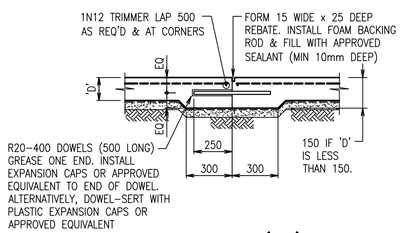
TYPICAL BLOCKWORK UPSTAND (REINFORCED)
SCALE 1:20



ISOLATION JOINT (I.J.S) SMOOTH SURFACE



ISOLATION JOINT (I.J.S) SMOOTH SURFACE



DOWEL JOINT (D.J.)

NOTES:

1. REFER GEOTECH ENG. ON TEMPORARY BATTER AND BACKFILL COMPACTION.
2. REFER GEOTECH ENG. ON ANY UNDERPINNING REQUIRED.
3. CONTRACTOR TO AVOID UNDERMINING OF EXISTING SERVICE DUCT ETC. BENEATH GROUND SLAB.
4. WATER PROOFING AS PER ARCHITECT.
5. CLIENT IS RESPONSIBLE TO INVESTIGATE REINFORCEMENT AND EXISTING S.O.G. THICKNESS.
6. ALL DIMENSIONS SHOWN IN "mm".
7. ABOVE ARRANGEMENT SUBJECT TO SITE EXISTING STRUCTURAL INVESTIGATION OF CONCRETE OUTLINES AND REINFORCEMENT / P.T.
8. ROUGHEN S.O.G. SURFACE AND PROVIDE 10MPa, 20mm NON–SHRINKAGE GROUT BEFORE MASONRY PLACEMENT.

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C3	REVISED AS CLOUDED	TF	SM	01.07.2016

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RobertBirdGroup
SYDNEY OFFICE:
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Job Number	Drawing Number	Revision
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A1