

STEELWORK NOTES:

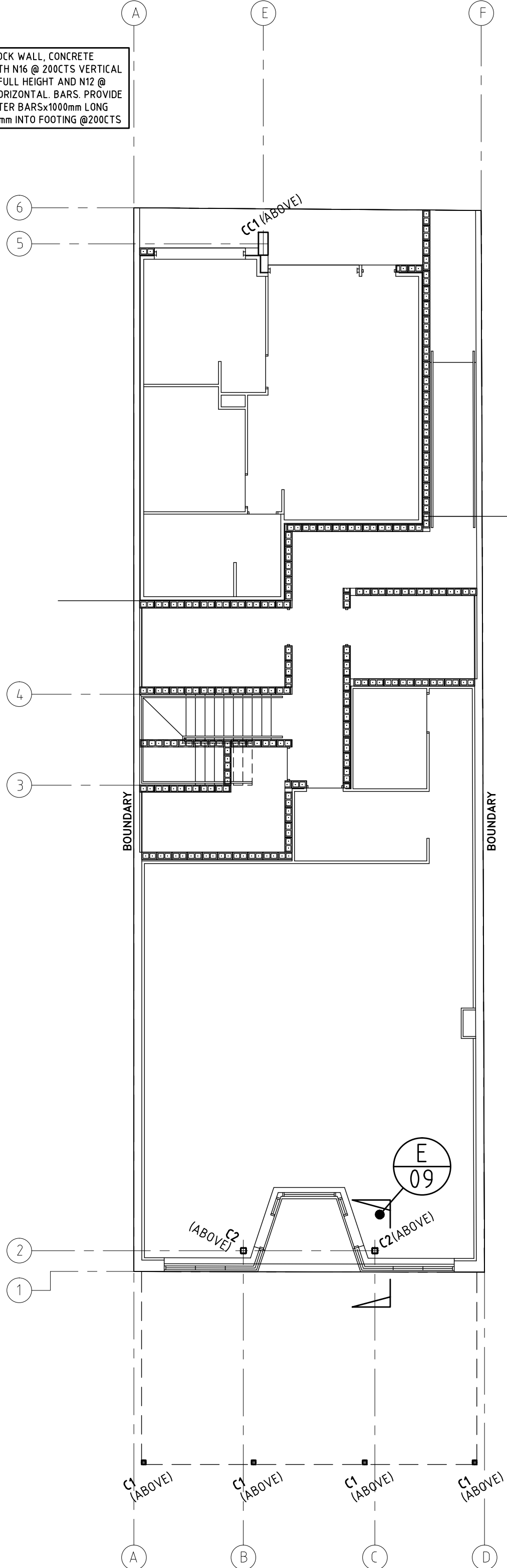
1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS1250, AS1538 & AS4100.
2. ALL STEEL, UNLESS OTHERWISE SHOWN ON THE DRAWINGS, SHALL BE OF THE FOLLOWING GRADES:
ALL HOT ROLLED STEEL MEMBERS.....300
ALL CHS.....350
ALL RHS AND SHS.....350
ALL PURLINS AND GIRTS.....450
3. ALL STEELWORK SHOP DRAWINGS MUST BE REVIEWED BY THE ENGINEERS PRIOR TO FABRICATION. ENGINEERS REVIEW IS FOR STRUCTURAL INTENT ONLY & DOES NOT COVER CHECKING DIMENSIONS OR LAYOUTS, NOR PRECLUDES THE CONTRACTOR FROM THE RESPONSIBILITY OF CORRECTNESS OF THE WORKS IN ACCORDANCE WITH THE PROJECT DOCUMENTATION.
4. THE ENDS OF ALL TUBULAR MEMBERS ARE TO BE SEALED WITH 4mm (MINIMUM) THICK PLATE AND SEAL WELDED ALL AROUND.
5. AT NO TIME DURING CONSTRUCTION WILL DRILLING OR WELDING OF STEEL MEMBERS BE PERMITTED, OTHER THAN WHERE SHOWN BY SHOP DRAWINGS.
6. SPECIAL CARE SHALL BE TAKEN DURING LIFTING, HANDLING, TRANSPORTATION AND ERECTION OF STRUCTURAL STEELWORK TO ENSURE STABILITY IS MAINTAINED AT ALL TIMES AND THE CONTRACTOR SHALL PROVIDE AND LEAVE IN PLACE UNTIL PERMANENT BRACING ELEMENTS ARE CONSTRUCTED SUCH TEMPORARY BRACING AS IS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.
7. ALL WELDING SHALL BE STRICTLY IN ACCORDANCE WITH AS1554 PARTS 1, 2 AND 3, AND SHALL BE PERFORMED BY EXPERIENCED OPERATORS.
8. UNLESS OTHERWISE SHOWN ON DRAWINGS ALL WELDS TO BE 6mm FILLETS ALL ROUND, WELD CATEGORY GP (GENERAL PURPOSE) UNLESS INDICATED AS WELD CATEGORY SP (STRUCTURAL PURPOSE).
9. ALL BOLTS SHALL BE COMMERCIAL BOLTS CONFORMING TO AS1911, AND DESIGNATED AS STRENGTH GRADE 4.6/5 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, TIGHTENED TO A SNUG TIGHT FIT. BOLTS DENOTED HS ARE TO BE HIGH STRENGTH BOLTS CONFORMING TO AS1252 AND SHALL BE DESIGNATED AS STRENGTH 8.8/S TIGHTENED TO A SNUG TIGHT FIT. BOLT HOLES SHALL BE NOT MORE THAN 2mm OVERSIZE.
10. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIP GALVANISED IN ACCORDANCE WITH THE REQUIREMENTS OF AS1214.
11. CONNECTIONS AND JOINTS SHALL BE AS DETAILD, OR IN THE ABSENCE OF SPECIFIC DETAIL, IN ACCORDANCE WITH RELEVANT CODES AND GOOD PRACTICE. ALL CONNECTIONS SHALL HAVE A MINIMUM OF 2-M16 BOLTS WITH AN 8mm CLEAT PLATE IF REQUIRED UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
12. THE MINIMUM DISTANCE FROM THE CENTRE OF A FASTENER TO THE EDGE OF A PLATE OR THE FLANGE OF A ROLLED SECTION SHALL BE AS FOLLOWS:
SHEARED OR HAND FRAME CUT EDGE.....1.75 D
ROLLED PLATE, MACHINE FLAME CUT, SAWN OR PLANED EDGE.....1.50 D
ROLLED EDGE OF A ROLLED SECTION.....1.25 D
(D = NOMINAL DIAMETER OF FASTENER)
13. HOLDING DOWN BOLTS SHALL BE OF THE DIAMETER SHOWN ON THE DRAWINGS. BOLTS SHALL BE SET ACCURATELY IN THE CONCRETE AND FORMS BY USE OF A TEMPLATE AND SHALL BE RIGIDLY HELD DURING CONCRETING OPERATIONS. THE LENGTH OF HOLDING DOWN BOLTS AND THE ELEVATION OF WHICH THEY ARE SET SHALL BE SUCH THAT TWO FULL THREADS PROJECT ABOVE THE NUT WHEN FULLY TIGHTENED. ALL HOLDING DOWN BOLTS SHALL BE HOT-DIP GALVANISED.
14. HOLDING DOWN BOLTS, BASE PLATES AND COLUMNS IN CONTACT WITH GROUND ARE TO HAVE 75mm MINIMUM CONCRETE COVER.
15. ALL STEELWORK SHALL BE PAINTED WITH RED OXIDE ZINC PHOSPHATE PRIMER EXCEPT COLUMNS IN BRICK CAVITIES WHICH SHALL BE COATED WITH INORGANIC ZINC SILICATE.
16. STEELWORK WHICH IS TO BE ENCASED IN CONCRETE SHALL BE SUPPLIED UNPAINTED AND AT THE TIME OF ENCASEMENT SHALL BE CLEAN AND FREE OF LOOSE SCALE, RUST, OIL ETC. AND MUST BE WRAPPED WITH FGW41 WELDED MESH UNLESS OTHERWISE NOTED, THE REINFORCEMENT IS TO BE PLACED 25mm FROM THE STEELWORK.
17. ALL STEELWORK BELOW GROUND/PAVING LEVEL TO BE PROTECTED BY DENS0 WRAPPING OR 3 COATS OF BITUMEN PAINT TO 50mm NOM ABOVE GROUND/PAVING LEVELS.
18. ALL STEELWORK MUST COMPLY WITH THE FOLLOWING TABLE, HOWEVER IT IS THE RECOMMENDATION OF THIS OFFICE FOR LONGEVITY OF STRUCTURE THAT ALL EXPOSED STEELWORK SHOULD BE HOT DIPPED GALVANIZED. SOME STEELWORK MAY BE LIABLE TO DISTORTION AT THE GALVANIZING TEMPERATURE. CONTRACTOR SHALL ENSURE THAT ALL ASSEMBLIES ARE IN ACCORDANCE WITH PROJECT DOCUMENTATION & ANY OTHER REQUIREMENT THAT MAY HAVE JURISDICTION OVER THE WORK BEFORE INSTALLATION.

ENVIRONMENT	LOCATION	MINIMUM PROTECTIVE COATING
		General structural steel members
MODERATE More than 1km from breaking surf or more than 100m from salt water not subject to breaking surf or non-heavy industrial areas	INTERNAL	No protection required in a permanently dry location (see note 6).
	EXTERNAL	Option 1. 2 coats alkyd primer; or Option 2. 2 coats alkyd gloss Option 3. Hot dip galvanise 300g/m ² min Option 4. Hot dip galvanise 100g/m ² min plus (a) 1 coat solvent based vinyl primer; or (b) 1 coat vinyl gloss or alkyd.
SEVERE Within 1km from breaking surf or within 100m of salt water not subject to breaking surf or heavy industrial areas	INTERNAL	Option 1. 2 coats alkyd primer Option 2. 2 coats alkyd gloss
	EXTERNAL	Option 1. Inorganic zinc primer plus 2 coats vinyl gloss finishing coats Option 2. Hot dip galvanise 300g/m ² Option 3. Hot dip galvanise 100g/m ² min plus (a) 2 coats solvent based vinyl primer; or (b) 2 coats vinyl gloss or alkyd.

NOTES:

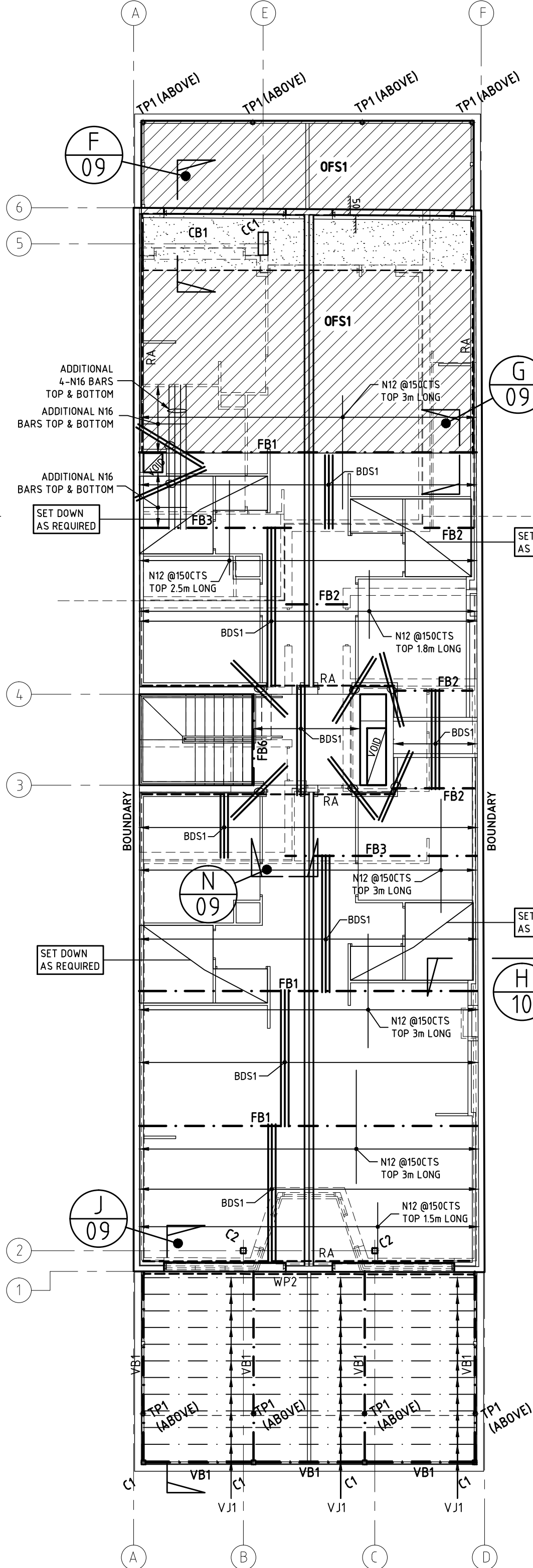
1. HEAVY INDUSTRIAL AREAS MEANS INDUSTRIAL ENVIRONMENTS AROUND MAJOR INDUSTRIAL COMPLEXES. THERE ARE ONLY A FEW SUCH REGIONS IN AUSTRALIA, EXAMPLES OF WHICH OCCUR AROUND PORT PHILADELPHIA AND NEWCASTLE.
2. THE OUTER LEAF AND CAVITY OF AN EXTERNAL MASONRY WALL OF A BUILDING, INCLUDING WALLS UNDER OPEN CARPORTS ARE CONSIDERED TO BE EXTERNAL ENVIRONMENTS. A PART OF AN INTERNAL LEAF OF AN EXTERNAL MASONRY WALL WHICH IS LOCATED IN THE ROOF SPACE IS CONSIDERED TO BE AN INTERNAL ENVIRONMENT.
3. WHERE A PAINT FINISH IS APPLIED THE SURFACE OF THE STEEL WORK MUST BE HAND OR POWER TOOL CLEANED TO REMOVE ANY RUST IMMEDIATELY PRIOR TO PAINTING.
4. ALL ZINC COATINGS (INCLUDING INORGANIC ZINC) REQUIRE A BARRIER COAT TO STOP CONVENTIONAL DOMESTIC ENAMELS FROM PEELING.
5. REFER TO THE PAINT MANUFACTURER WHERE DECORATIVE FINISHES ARE REQUIRED ON TOP OF THE MINIMUM COATING SPECIFIED IN THE TABLE FOR PROTECTION OF THE STEEL AGAINST CORROSION.
6. INTERNAL LOCATIONS SUBJECT TO MOISTURE, SUCH AS IN CLOSE PROXIMITY TO KITCHEN OR BATHROOM EXHAUST FANS ARE NOT CONSIDERED TO BE IN A PERMANENTLY DRY LOCATION AND PROTECTION AS SPECIFIED FOR EXTERNAL LOCATIONS IS REQUIRED.
7. FOR APPLICATIONS OUTSIDE THE SCOPE OF THIS TABLE, SEEK SPECIALIST ADVICE.

190mm BLOCK WALL, CONCRETE
FILLED WITH N16 @ 200CTS VERTICAL
BARS TO FULL HEIGHT AND N12 @
400CTS HORIZONTAL BARS. PROVIDE
N16 STARTER BARS 1000mm LONG
CAST 400mm INTO FOOTING @ 200CTS



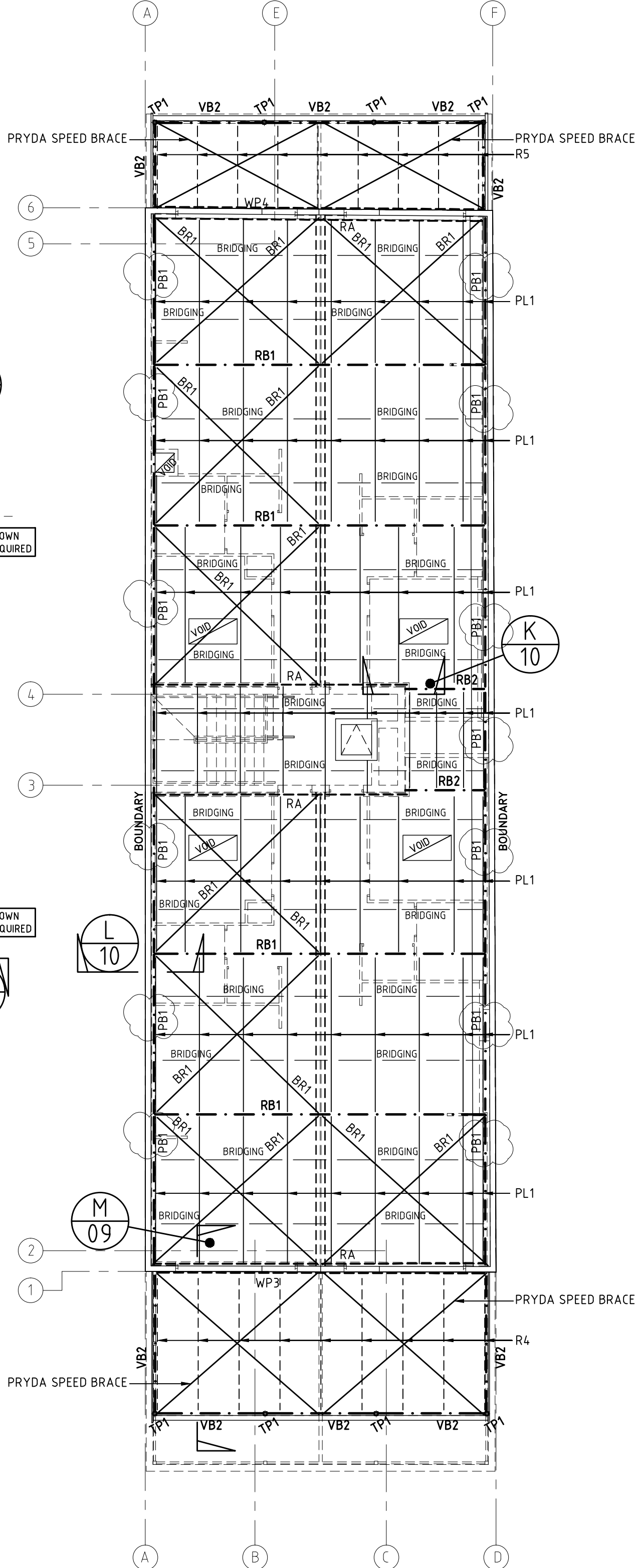
GROUND FLOOR STRUCTURAL LAYOUT PLAN

SCALE 1:100



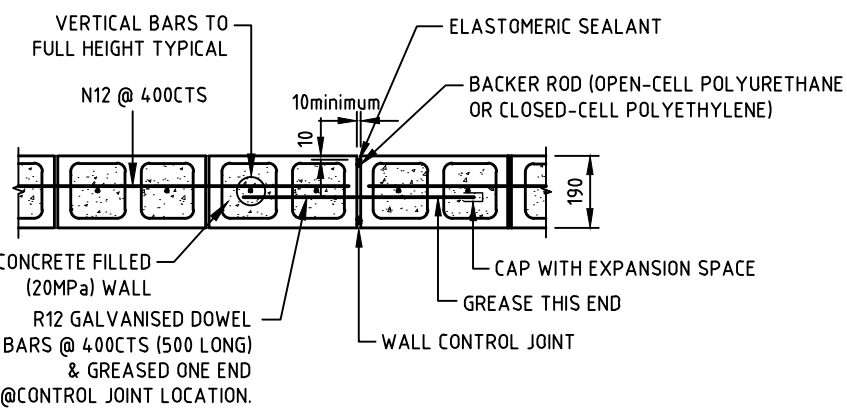
FIRST FLOOR STRUCTURAL LAYOUT PLAN

SCALE 1:100



ROOF STRUCTURAL LAYOUT PLAN

SCALE 1:100




TYPICAL CONCRETE BLOCK WALL

CONTROL JOINT DETAILS

SCALE 1:20

GROUND FLOOR	SIZE	600x250
	REINFORCEMENT	8-N16
REFER TO PLANS FOR LOCATIONS	TIES/LIGATURES	2-N10 @ 200 CTS
	CONC. STRENGTH	40 MPa
CONCRETE COLUMN SCHEDULE		
BDS1: DENOTE 150mm THICK - UNO CONCRETE SLAB, 100mm BONDEK II SHEETING, f'c = 40MPa, SL 92 TOP, 30mm MIN COVER. ADDITIONAL TOP & BOTTOM REINFORCEMENT REFER TO PLAN. PROVIDE 1 PROP FOR SPANS > 3m, 2 PROPS FOR 3-5m SPANS, AND 3 PROPS FOR 5-7m SPANS DURING CONSTRUCTION. BONDEK II SLAB MUST BE INSTALLED AS PER MANUFACTURER DETAILS AND SPECIFICATIONS.		

FIRST FLOOR CONCRETE BEAM SCHEDULE											
MARK		SUPPORT			SUPPORT			SUPPORT		REMARK	
CB1	LONGITUDINAL REINFORCEMENT	8-N20			8-N20					f'c = 40 MPa	
		8-N20			8-N20						
	LIGATURE	PANEL	5 SET N12 @ 150CTS	N12 @ 200CTS	5 SET N12 @ 150CTS	CC1	5 SET N12 @ 150CTS	N12 @ 200CTS	5 SET N12 @ 150CTS		PANEL
			TYPE 'A'	TYPE 'A'	TYPE 'A'		TYPE 'A'	TYPE 'A'	TYPE 'A'		
	BEAM SIZE (WxD)		1500 W x 400 D				1500 W x 400 D				
<div> DENOTE OFF-FORM CONCRETE SLAB, 220mm THICK OFF-FORM SLAB, N16 @ 150CTS BOTTOM BOTH DIRECTIONS, N16 @ 150CTS TOP BOTH DIRECTIONS. ADDITIONAL REINFORCEMENT REFER TO PLAN. 30mm MIN COVER IN GENERAL AREAS, 40mm MIN COVER FOR EXTERNAL AREAS.</div>											

STRUCTURAL SCHEDULE

MARK	SECTION	COMMENTS
C1	100x100x4 SHS	4-M16 CHEMICAL ANCHORS, 10mm BASE PLATE
C2	150x150x9 SHS	4-M20 CHEMICAL ANCHORS, 10mm BASE PLATE
FB1	460 UB 82.1	COMPOSITE BEAM WITH 19mm SHEAR STUDS @ 200CTS. REFER DETAIL
FB2	200 UB 22.3	REFER TO DETAIL
FB3	310 UB 40.4	COMPOSITE BEAM WITH 19mm SHEAR STUDS @ 200CTS. REFER DETAIL
FB6	200 UB 22.3	REFER TO DETAIL
RB1	310 UB 32	REFER DETAILS
RB2	150 UB 18	REFER DETAILS
PL1	Z10015 @ 1200CTS	2-M12 BOLTS, 8mm CLEAT PLATE, DOUBLE LAPPED SPAN, PROVIDE 2 ROWS OF BRIDGING
RA	90x90x10 EA	M12 DYNABOLT EVERY THIRD BLOCK
WP2	250 PFC	REFER TO DETAIL
WP3	150 PFC	REFER TO DETAIL
WP4	150 PFC	REFER TO DETAIL
VJ1	C15015 @ 450CTS	2-M12 BOLTS, 10mm CLEAT PLATE
VB1	250 PFC	2-M16 8.8/S BOLTS, 10mm CLEAT PLATE
VB2	250 PFC	2-M16 8.8/S BOLTS, 10mm CLEAT PLATE
R4	150x50x3.0 RHS @ 1200CTS	REFER TO DETAIL
R5	100x50x3.0 RHS @ 1200CTS	REFER TO DETAIL
TP1	89x89x3.5 SHS	REFER TO DETAIL
BR1	#12mm ROD	2-M16 8.8/S BOLTS, 10mm CLEAT PLATE WITH TURN-BUCKLED TIGHTENING DEVICE
PB1	200 PFC FLIPPED	1-M16 TRUBOLT @ 400CTS

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NOTES

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BUILDING APPROVAL

ISSUE NO.	DESCRIPTIONS	DATE	BY
BA.3	PB1 ADDED	20/12/19	JW
BA.2	STRUCTURAL LAYOUT AMENDED	22/11/19	JW
BA.1	BUILDING REDESIGN	30/08/19	BL
BA.0	ISSUED FOR BUILDING APPROVAL	19/10/18	KS
T.0	ISSUED FOR TENDER	07/08/18	JW

PROJECT	MULTI-LEVEL MIXED USE DEVELOPMENT
ADDRESS	76-78 COMMERCIAL ROAD, PORT ADELAIDE
DRAWING TITLE	STRUCTURAL LAYOUT PLAN

CLIENT

VITO GROUP



108 Wright Street, Adelaide SA 5000 Tel: (08) 8231 6000
Fax: (08) 8231 3444 Email: civil@structuralsystems.com.au ABN 21 366 115 939

DRAWN	JW	DESIGNED	DJT
CHECKED		DATE REVISED	20/12/19
SCALE	1:100 UNO	PAPER SIZE	A1
ALL DIMENSIONS IN mm - DO NOT SCALE		DATE ISSUED	19/10/18
JOB No.	DT 151210	PLOT SCALE	1:100
DRAWING No.	04	STAGE	BA
ISSUE			3

STAGE ABBREVIATION: P=PRELIMINARY, DS=ENGINEERING DESIGN STAGE, PA=FOR PLANNING APPROVAL, T=TENDER, BA=BUILDING APPROVAL, C=FOR CONSTRUCTION