







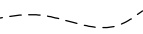
GENERAL DRAWING NOTES

- A. ELECTRICAL DRAWINGS MUST BE READ IN CONJUNCTION WITH ELECTRICAL SPECIFICATION AND SCOPE OF WORKS INCLUDING ALL OTHER RELEVANT PROJECT DOCUMENTATION, SUCH AS ARCHITECTURAL, STRUCTURAL AND OTHER SERVICES DOCUMENTATION.
- B. ELECTRICAL CONTRACTOR TO ENSURE FULL COORDINATION OF SERVICES WITH ALL OTHER TRADES.
- C. DETERMINE THE EXTENT OF WORK AND COORDINATE THE LAYOUT OF PLANT AND EQUIPMENT TO BE INSTALLED AND ITEMS TO BE INSTALLED BY OTHER TRADES TO ENSURE THERE ARE NO INTERFACE PROBLEMS BEFORE INSTALLATION COMMENCES.
- D. INSPECT THE SITE BEFORE SUBMITTING TENDER AND INCLUDE ALL ALLOWANCES TO CARRY OUT THE FULL INTENT OF THE WORKS.
- E. FINAL LOCATION OF ITEMS SHOWN ON ELECTRICAL DRAWINGS MAY DIFFER. DETERMINE ACCURATE LOCATIONS OF EQUIPMENT AND CABLE ROUTES FROM ARCHITECTURAL DRAWINGS AND SITE MEASUREMENTS, NOT BY SCALING THIS DRAWING WHICH IS APPROXIMATE ONLY.
- F. UNLESS NOTED OTHERWISE RETAIN ELECTRICAL SERVICES SHOWN AS EXISTING ON THE ELECTRICAL DRAWINGS. FOR ALL OTHER EXISTING ELECTRICAL SERVICES LIAISE WITH THE SUPERINTENDENT PRIOR TO DEMOLITION TO DETERMINE THE EXTENT OF DEMOLITION.
- G. ACCESSORIES SHALL NOT BE INSTALLED NO CLOSER THAN 500mm FROM INTERNAL WALL CORNER TO COMPLY WITH DA REQUIREMENTS.
- H. CARRY OUT ALL WORK IN ACCORDANCE WITH STATUTORY CODES, AS2293, AS3000, AS3008 AND ALL OTHER RELEVANT STANDARDS.
- I. NEATLY EXECUTE ALL WORK TO THE APPROVAL OF THE ENGINEER (INCLUDING CONCEALED WORK).
- J. REMOVE REDUNDANT CABLING, EXPOSED DUCTING, AND OTHER REDUNDANT ELECTRICAL EQUIPMENT WHERE APPLICABLE.
- K. INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF WORKS.
- L. IF NEITHER THE SPECIFICATION OR DRAWINGS CONTAIN ANY MENTION OF MINOR PARTS OF WORK WHICH IN THE OPINION OF THE ARCHITECT IS REASONABLE AND OBVIOUSLY NECESSARY FOR THE SATISFACTORY COMPLETION OF THE WORKS, SUCH PARTS SHALL BE SUPPLIED AND INSTALLED WITHOUT EXTRA CHARGE.
- M. SUPPLY EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE PROPOSED WORKS AND THE PROPER PERFORMANCE OF THE SYSTEMS. USE MANUFACTURED ITEMS IN ACCORDANCE WITH CURRENT PUBLISHED RECOMMENDATIONS OF THE RELEVANT MANUFACTURER. MATERIALS TO BE INCORPORATED IN THE WORKS SHALL BE NEW.
- N. EXISTING SERVICES MUST BE MAINTAINED AT ALL TIMES. BEFORE CUTTING INTO EXISTING SERVICES CONFER WITH THE ARCHITECT FOR SUITABLE TIMES TO CARRY OUT THE WORK AND ALLOW FOR TEMPORARY SERVICES REQUIRED TO CARRY OUT THE ABOVE.
- O. INSTALL EQUIPMENT AND PLANT SO THEY ARE ACCESSIBLE TO MANUFACTURERS RECOMMENDATIONS FOR ACCESS FOR MAINTENANCE AND SERVICING PURPOSES, AND COMPLY WITH OCCUPATIONAL HEALTH AND SAFETY REGULATIONS AND GUIDELINES.
- P. ON COMPLETION OF THE WORK, CLEAN ALL ITEMS EXTERNALLY AND INTERNALLY AND LEAVE FREE OF DUST, DIRT, OVERSPRAY, FINGERMARKS, ETC.
- Q. PROVIDE ALL PENETRATIONS NECESSARY TO COMPLETE THE WORK. SEAL ALL FIRE RATED WALLS AND CEILINGS WITH APPROVED FIRE SEALANT. PROVIDE ALL NECESSARY ROOF PENETRATIONS AND MAKE WEATHER PROOF WITH OVERFLASHINGS AND APPROVED SEALANTS.

- R. PROVIDE MINIMUM SEPARATION OR PHYSICAL BARRIER BETWEEN LV AND ELV CABLING IN ACCORDANCE WITH AS3000.THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO CONDUCT FINAL SEGREGATION CHECKS TO ENSURE COMPLIANCE WITH AS3000, AND RECTIFY ANY NON-COMPLIANCE WITH OTHER TRADES.
- S. UNDER NO CIRCUMSTANCE SHALL PROPRIETARY PRE-PRINTED SELF-ADHESIVE FLEXIBLE PLASTIC LABELS BE USED. ONLY IPA STUDS AND ENGRAVED TWO-COLOUR TRAFFOLYTE LABELS SHALL BE INSTALLED AND APPROVED.
- T. WHEN OVERHEAD CATENARY WIRING IS USED INSTEAD OF CABLE TRAY WITHIN BUILDINGS), ENSURE CATENARY WIRING IS MECHANICALLY FIXED TO BUILDING STRUCTURE AT BOTH ENDS WITH HEAVY DUTY EYE BOLTS AND TURNBUCKLES. CATENARY WIRING TO BE TENSIONED AND SECURED IN OVERHEAD POSITION WITH MECHANICAL CLAMPS. CABLE TIES SHALL NOT BE USED TO SECURE CATENARY WIRING TO BUILDING STRUCTURE OR SECURING IN POSITION.
- U. CONFIRM ALL ELECTRICAL SERVICES TRENCHING ROUTES AND ALLOW TO COORDINATE NEW AND EXISTING UNDERGROUND SERVICES WITH OTHER TRADES. PROVIDE A COMMON TRENCH FOR UNDERGROUND ELECTRICAL SERVICES, WHERE POSSIBLE. REFER TO CIVIL SPECIFICATION FOR TRENCHING, COMPACTING, BACKFILLING AND SURFACE RE-INSTATEMENT REQUIREMENTS.
- V. CONTRACTOR TO MAKE SUFFICIENT ALLOWANCE TO RE-SUPPORT AND ADEQUATELY SEGREGATE EXISTING CABLING LOCATED WITHIN EXISTING CEILING SPACE IN ACCORDANCE WITH AS3000. ONLY APPLIES TO AREAS WHERE CEILING IS BEING REPLACED.
- W. UPON FAILURE OF THE ELECTRICAL SUPPLY TO THE NORMAL LIGHTING IN AN AREA, IRRESPECTIVE OF WHETHER OR NOT IT IS ILLUMINATED, EACH RELEVANT EMERGENCY ESCAPE LUMINAIRE AND EXIT SIGN SHALL BE ENERGIZED FORM ITS EMERGENCY SUPPLY IN ACCORDANCE WITH AS/NZS 2293, CLAUSE 2.3.2.
- X. PROVIDE A RELEVANT SIGNED CERTIFICATE OF COMPLIANCE, FORM 2's, TCA1 FORM AND TEST RESULTS FOR ALL SYSTEMS INSTALLED. NO OCCUPANCY BY THE CLIENT WILL TAKE PLACE BEFORE AN ELECTRICAL CERTIFICATE OF COMPLIANCE AND TEST RESULTS IS ISSUED AND APPROVED BY THE ELECTRICAL ENGINEER.

LIGHTING (TYPE) SCHEDULE	
Luminaire ID	Description
DL1	DOWNLIGHT - UNIOS TITANIUM SEMI RECESSED, 15W, LED, 3000°K, IP54, 50° BEAM
EL1/EM	EXTRUSION LIGHT c/w INTEGRAL EMERGENCY - XENO LIGHTING XT12.0, IK10, IP66, 1000lm/m, LED, 3000°K, POLYCARB DIFFUSER
EM1	EMERGENCY LIGHT -
EX1	EXIT LIGHT - CLEVERTRONICS CLEVERFIT PRO, L10, WEATHERPROOF
FL1	FLOOD LIGHT - (EXISTING)
SL1	SURFACE MOUNTED LIGHT - THORN ESCORT LED 1000-840, 10W, LED, 4000°K, IP65, IK10
WL1	WALL LIGHT - UNIOS ZERON FIXED TWO WALL LIGHT, 24W, LED, 3000°K, IP65, 40° BEAM UP/DOWN

ELECTRICAL ACCESSORIES SCHEDULE	
Graphical Symbol	Description
	DISTRIBUTION SWITCHBOARD / LC = LOAD CENTER
	10A DOUBLE SWITCHED SOCKET OUTLET
	SINGLE PHASE (DOUBLE POLE) ISOLATOR, IP56 MIN

LIGHTING ACCESSORIES SCHEDULE	
Graphical Symbol	Description
	1 GANG - 1 WAY LIGHT SWITCH
	110° PIR MOTION SENSOR
	PHOTOELECTRIC CELL (DUSK - DAWN, MAKE CONTACT ON AT 35 LUX - OFF AT 16 LUX)
	SWITCH WIRE INDICATION

DESIGNATIONS

- (#) - MOUNTING HEIGHT OF ACCESSORIES
- (d) - EXISTING ITEM TO BE DEMOLISHED
- (e) - EXISTING ITEM TO REMAIN
- (r) - EXISTING ITEM TO BE RELOCATED
- (rpl) - EXISTING ITEM TO BE REPLACED WITH NEW IN SAME LOCATION
- (AB) - ABOVE BENCH (150mm TO CENTRE)
- (BB) - BELOW BENCH (150mm TO CENTRE)
- (C) - CEILING MOUNTED ITEM
- (CSP) - ITEM MOUNTED IN CEILING SPACE
- (UB) - ITEM MOUNTED UNDER BENCH

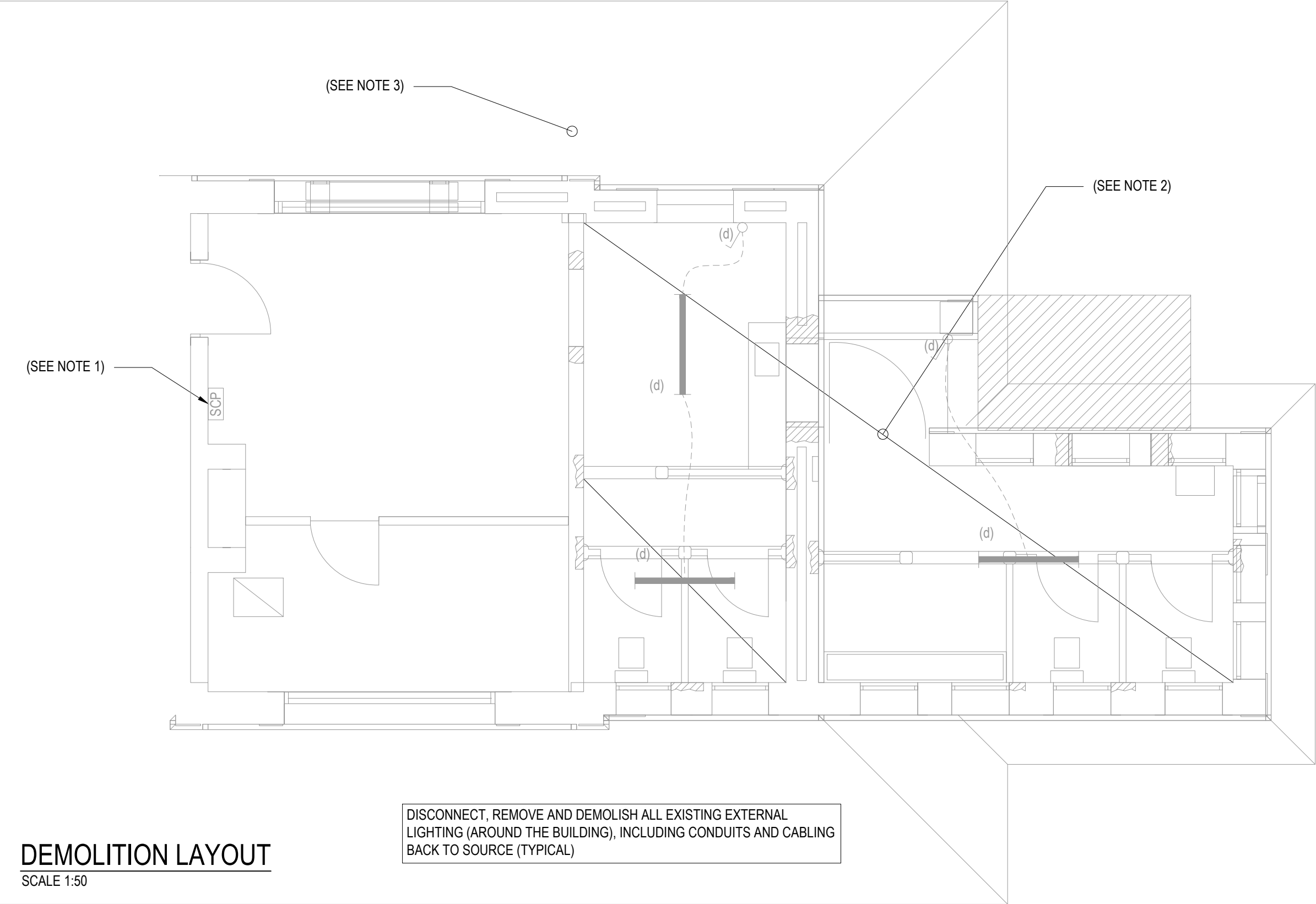
- HD - HAND DRYER
- HWU - HOT WATER UNIT
- SCP - EXISTING SECURITY CONTROL PANEL
- WP1 - WEATHERPROOF (MIN - IP44)
- WP2 - WEATHERPROOF (MIN - IP53)
- WP3 - WEATHERPROOF (MIN - IP54)
- WP4 - WEATHERPROOF (MIN - IP55)
- WP5 - WEATHERPROOF (MIN - IP56)
- WP6 - WEATHERPROOF (MIN - IP65)
- WP7 - WEATHERPROOF (IP66)
- WP8 - WEATHERPROOF (MIN - IP67)
- WP9 - WEATHERPROOF (IP68)
- WP10 - WEATHERPROOF (IP66 & IP67)

DRAWING LIST	
Drawing #	Description
E-SK01	GENERAL NOTES, LEGEND AND DRAWING LIST
E-SK02	DEMOLITION LAYOUT
E-SK03	EXTERNAL SITE LAYOUT
E-SK04	POWER LAYOUT
E-SK05	SINGLE LINE DIAGRAM
E-SK06	LIGHTING DETAILS
E-SK07	N/A
E-SK08	SPECIFICATION NOTES (SHEET 1 OF 2)
E-SK09	SPECIFICATION NOTES (SHEET 2 OF 2)
E-SK10	LIGHTING LAYOUT

Plotted by: Christopher Lenden Barnes

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Project MOUNT GAMBIER RAILWAY STATION TOILET UPGRADE	Title ELECTRICAL SERVICES GENERAL DRAWING NOTES, LEGEND AND DRAWING LIST	Architect <div>habitable places architects</div> 24 Divett Place Adelaide SA 5000 Ph: 08 8232 9925 info@habitableplaces.com.au	© COPYRIGHT SECON PTY. LTD. 2020				
			North	DRAWN	CLB	CHECKED	
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						SHEET	1 of X
		DRAWING No.		C0295-E-SK01			
PLOT DATE: 23/11/2020			Size.	A3	Rev. 2		



DEMOLITION LAYOUT

SCALE 1:50

NOTES:

1. RETAIN EXISTING SECURITY PANEL.
2. ELECTRICAL SERVICES SHOWN ON DRAWING ARE TO BE REMOVED TO THE SOURCE INCLUDING WIRING, CONDUIT ETC. ELECTRICAL CONTRACTOR TO VISIT SITE TO CONFIRM LOCATION AND QUANTITY OF ITEMS. LIAISE WITH BUILDER TO MAKE GOOD ANY DAMAGE CREATED UPON REMOVAL.
3. DISCONNECT, REMOVE ALL EXTERNAL LIGHTS AROUND THE BUILDING INCLUDING, CONDUITS, CABLES ETC. TO THE SOURCE.

Plotted by: Christopher Lenden Barnes

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Project
MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title
ELECTRICAL SERVICES
DEMO LAYOUT

Architect
habitable places
architects

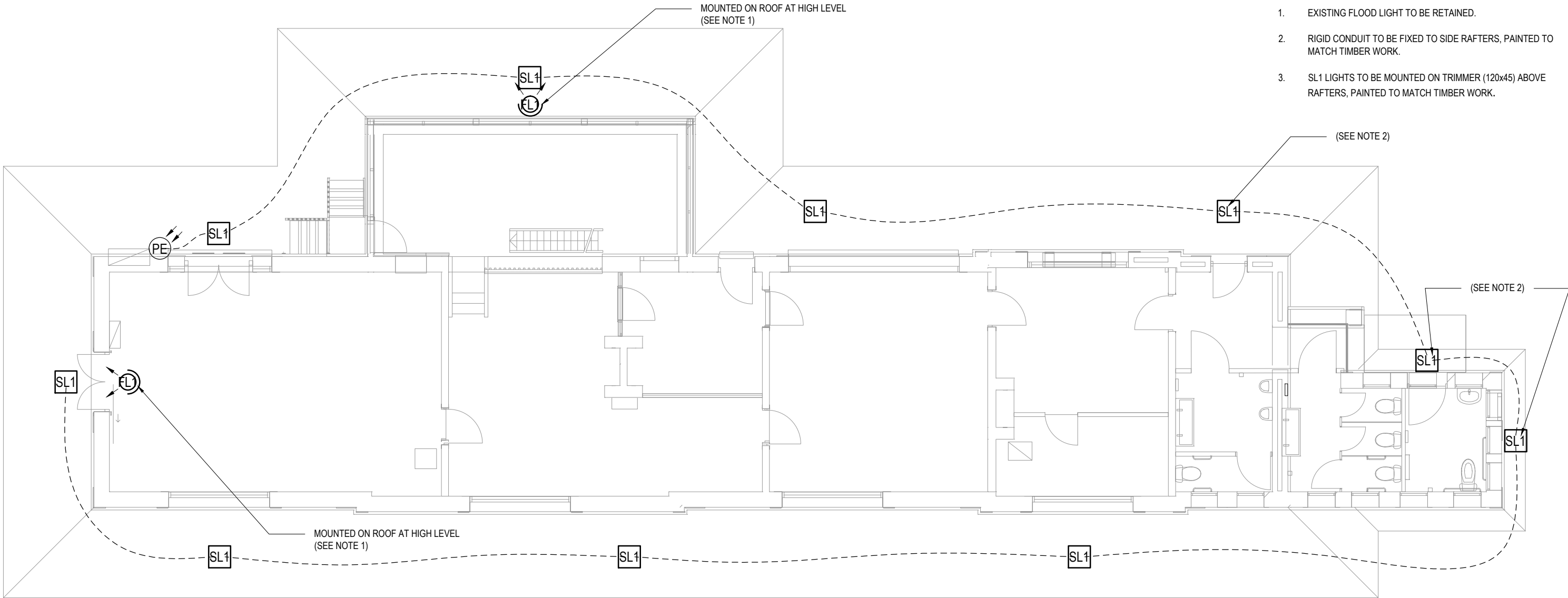
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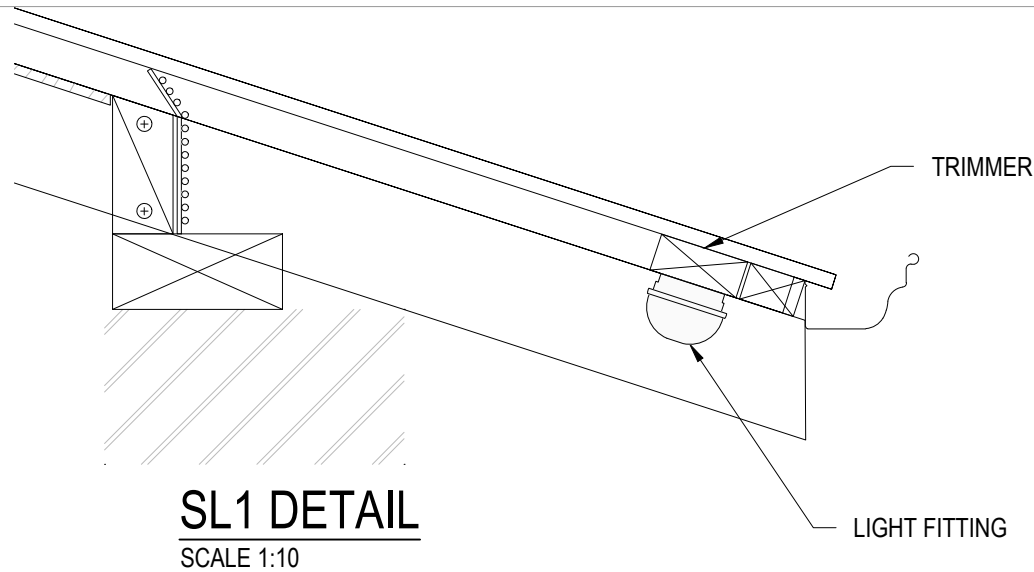
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		DRAWING No. C0295-E-SK02	
PLOT DATE: 23/11/2020		Size. A3	Rev. 2



NOTES:

1. EXISTING FLOOD LIGHT TO BE RETAINED.
2. RIGID CONDUIT TO BE FIXED TO SIDE RAFTERS, PAINTED TO MATCH TIMBER WORK.
3. SL1 LIGHTS TO BE MOUNTED ON TRIMMER (120x45) ABOVE RAFTERS, PAINTED TO MATCH TIMBER WORK.

EXTERNAL LAYOUT
SCALE 1:100



Plotted by: Christopher Lenden Barnes

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Project
MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title
ELECTRICAL SERVICES
EXTERNAL LAYOUT

Architect
habitable places
architects

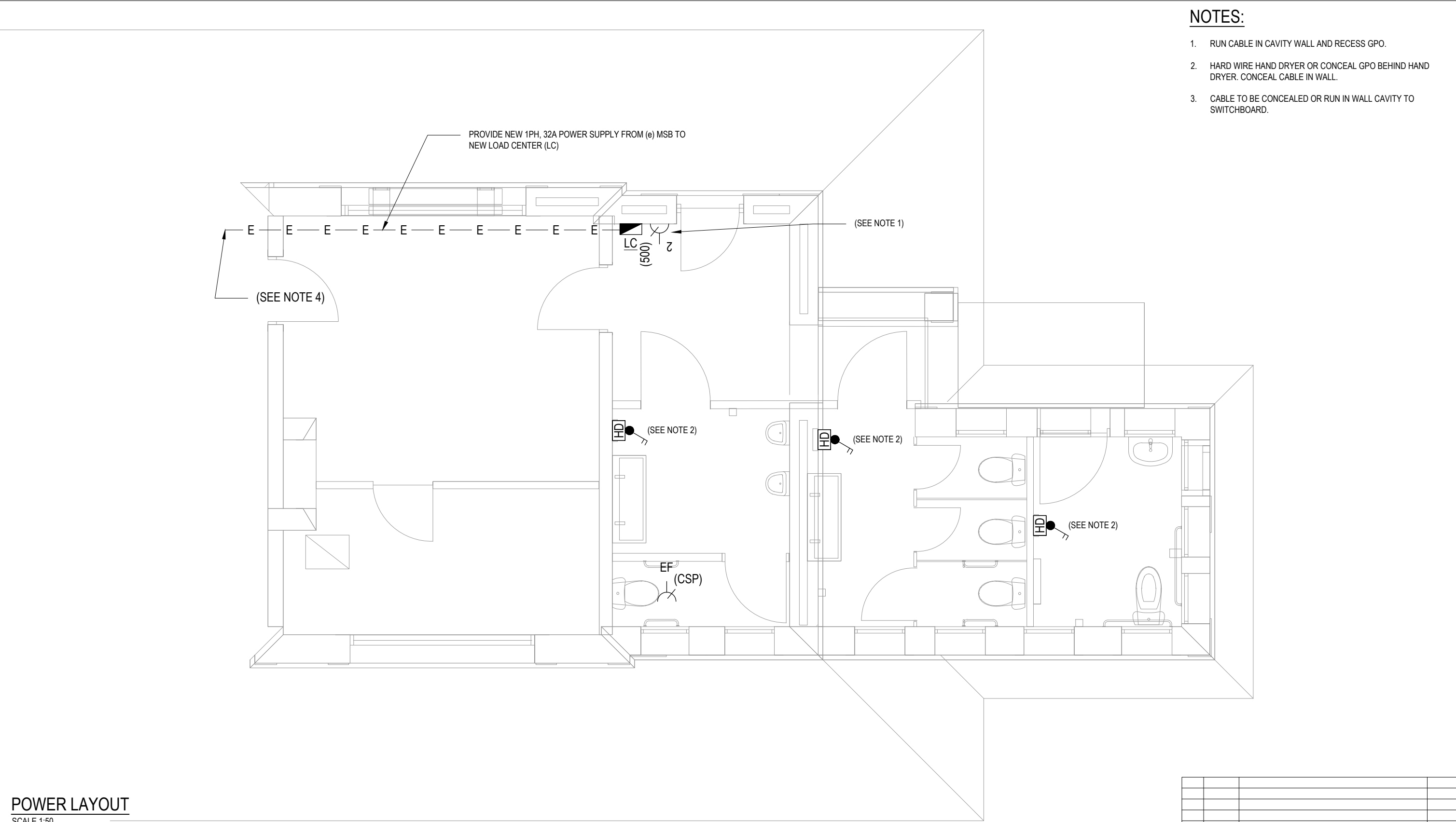
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PLOT DATE: 23/11/2020		Size. A3	Rev. 2



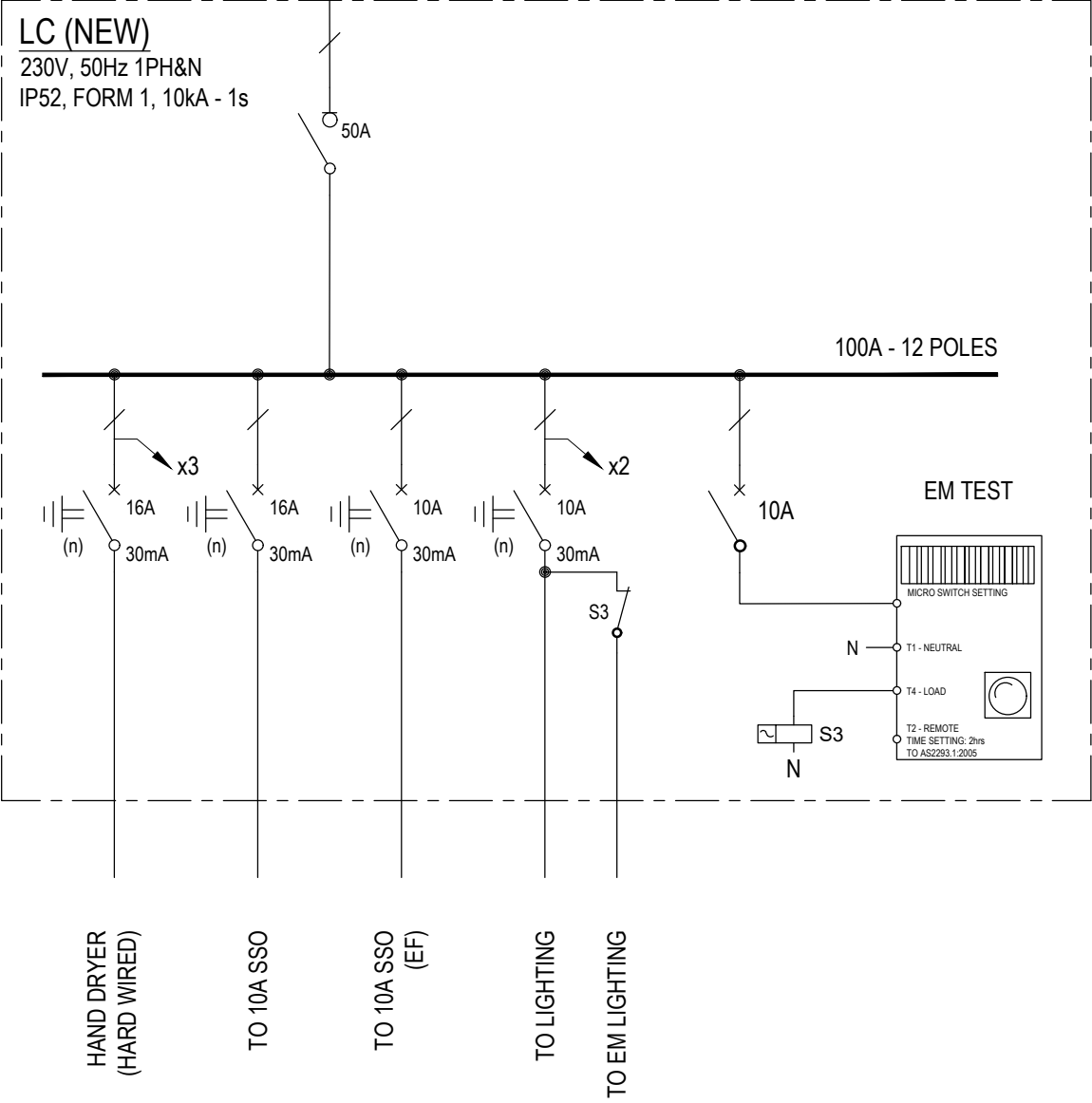
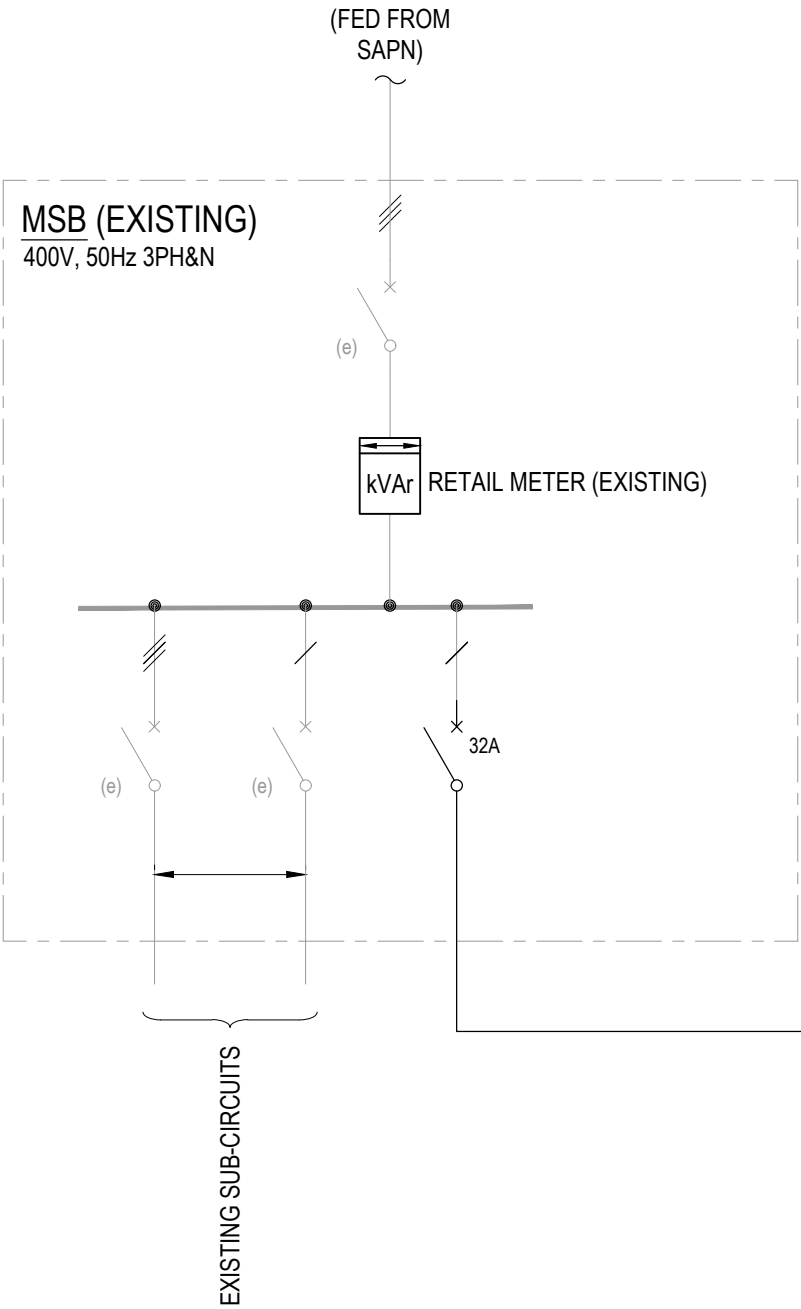
- NOTES:**
1. RUN CABLE IN CAVITY WALL AND RECESS GPO.
 2. HARD WIRE HAND DRYER OR CONCEAL GPO BEHIND HAND DRYER. CONCEAL CABLE IN WALL.
 3. CABLE TO BE CONCEALED OR RUN IN WALL CAVITY TO SWITCHBOARD.

POWER LAYOUT
SCALE 1:50

Plotted by: Christopher Lenden Barnes

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PLOT DATE: 23/11/2020			Size: A3		Rev. 2					



Plotted by: Christopher Lenden Barnes

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Project
MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title
ELECTRICAL SERVICES
SINGLE LINE DIAGRAM

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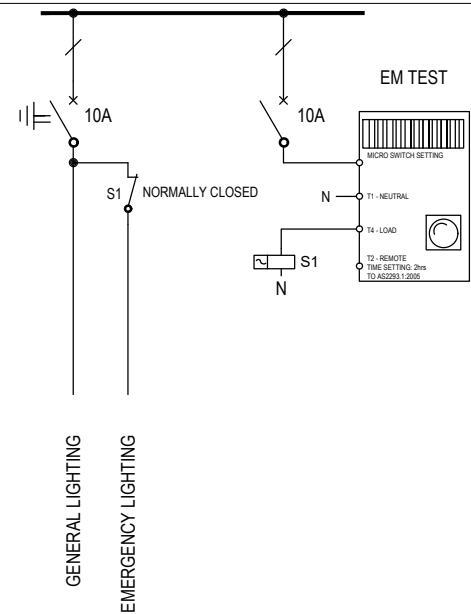
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PLOT DATE: 23/11/2020			Size. A3	Rev. 0	

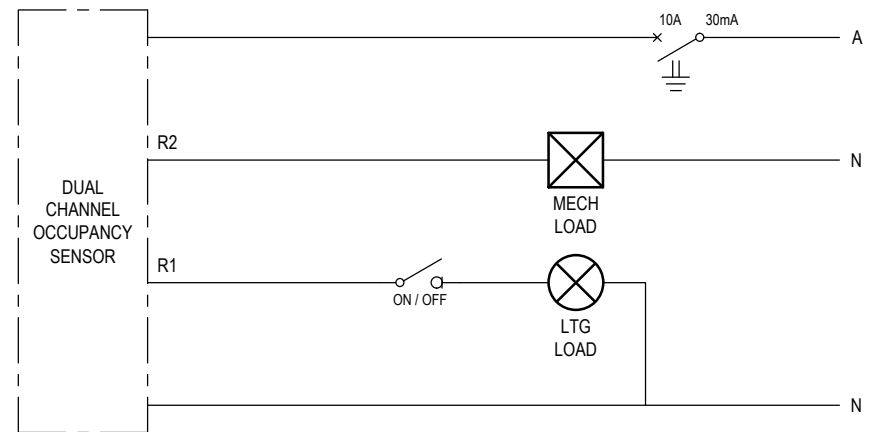
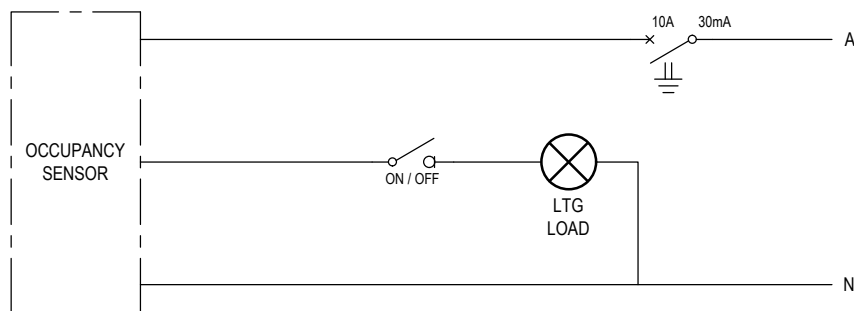


DIMENSIONS	CLEARANCE
A - CLEARANCE ABOVE LUMINAIRE	200 mm*
B - SIDE CLEARANCE TO COMBUSTIBLE BUILDING ELEMENT	200 mm*
C - SIDE CLEARANCE TO BULK THERMAL INSULATION	50 mm*
D - CLEARANCE TO AUXILIARY EQUIPMENT (TRANSFORMER FOR EXAMPLE)	50 mm*

WARNING SIGN TO BE INSTALLED IN ACCESSIBLE
ROOF SPACES CONTAINING RECESSED LUMINAIRES.



1. DEFAULT MINIMUM CLEARANCES FOR RECESSED LUMINAIRES



4 WIRING OF MULTI-CHANNEL OCCUPANCY SENSOR AND MANUAL OVERRIDE ON/OFF ROOM LIGHT SWITCH

3 WIRING OF SINGLE CHANNEL OCCUPANCY SENSOR AND MANUAL OVERRIDE ON/OFF ROOM LIGHT SWITCH

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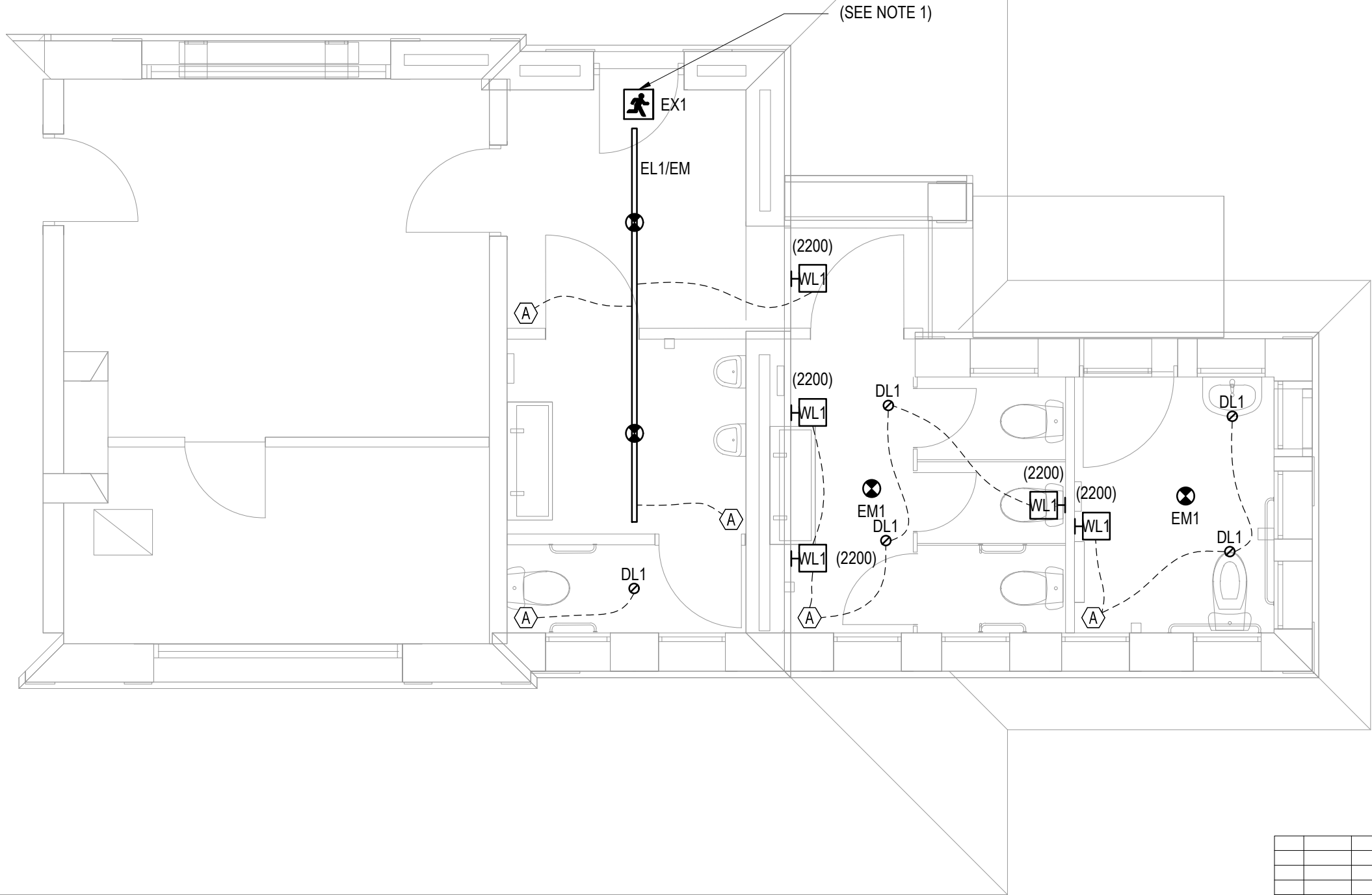
Project MOUNT GAMBIER RAILWAY STATION TOILET UPGRADE	Title ELECTRICAL SERVICES LIGHTING DETAILS	Architect habitable places architects 24 Divett Place Adelaide SA 5000 Ph: 08 8232 9925 info@habitableplaces.com.au	 456 PULTENEY STREET ADELAIDE SOUTH AUSTRALIA 5000 TEL: 08 8223 7800 FAX: 08 8223 7399 engineers@secon.net.au A.B.N. 30 613 300 299 A.C.N. 613 300 299	© COPYRIGHT SECON PTY. LTD. 2020				
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			DRAWING No. C0295-E-SK06					
PLOT DATE: 23/11/2020			Size. A3	Rev. 2				

ELECTRICAL SERVICES SPECIFICATION		MINIMUM SIZE: 4.0mm² FOR 16 AMP POWER CIRCUITS. MINIMUM SIZE: 6.0mm² FOR SUBMAINS.		CIRCULAR LUMINAIRE NOT LESS THAN THREE FIXINGS).																																																																					
GENERAL				MOUNTING - RECESSED INSTALLATION TO COMPLY WITH MANUFACTURERS' GUIDELINES AND CLAUSE 4.5 OF AS/NZS3000. INSTALL RECESSED LUMINAIRES IN TRIMMED OPENINGS FOR A SUSPENDED CEILING.																																																																					
A. INSPECT THE SITE BEFORE SUBMITTING TENDER AND INCLUDE ALL ALLOWANCES TO CARRY OUT THE FULL INTENT OF THE WORKS. DETERMINE ACCURATE LOCATIONS OF EQUIPMENT AND CABLE ROUTES FROM SITE MEASUREMENT, NOT BY SCALING THIS DRAWING WHICH IS APPROXIMATE ONLY.		e. COORDINATION DETERMINE THE EXTENT OF WORK AND COORDINATE THE LAYOUT OF PLANT AND EQUIPMENT TO BE INSTALLED AND ITEMS TO BE INSTALLED BY OTHER TRADES TO ENSURE THERE ARE NO INTERFACE PROBLEMS BEFORE INSTALLATION COMMENCES.																																																																							
B. UNLESS NOTED OTHERWISE RETAIN ELECTRICAL SERVICES SHOWN AS EXISTING ON THE ELECTRICAL DRAWINGS. FOR ALL OTHER EXISTING ELECTRICAL SERVICES LIAISE WITH THE SUPERINTENDENT PRIOR TO DEMOLITION TO DETERMINE THE EXTENT OF DEMOLITION.		f. SEGREGATION THE MINIMUM SEPARATION BETWEEN POWER CABLES, DATA CABLES AND SECURITY CABLES SHALL BE 200mm.		MOUNTING - EXTERNAL CONTROLLED BY PHOTO ELECTRIC CELL AND TIMER WITH MANUAL OVERRIDE IN LOCAL DISTRIBUTION BOARD. ADJUST THE AIM OF FLOODLIGHTS UNDER NIGHT LIGHTING CONDITIONS TO PROVIDE THE REQUIRED EFFECT OR AREA LIGHTING LEVELS. OPENINGS FOR EXTERNAL LUMINAIRES TO BE SEALED AGAINST DUST AND INSECTS.																																																																					
C. CARRY OUT ALL WORK IN ACCORDANCE WITH STATUTORY CODES, AS/NZS 3000:2018 AND ALL OTHER RELEVANT STANDARDS.		g. CATENARY SYSTEM GENERAL MAY BE USED WITHIN SUSPENDED CEILING SPACES IN LIEU OF CABLE TRAY AND LADDER SYSTEMS. MAXIMUM OF 24 UTP CABLES PER CATENARY AND 8 TPS CABLES PER CATENARY. PROVIDE STAINLESS STEEL CABLE AND COUPLINGS FOR CATENARY SYSTEMS. ANCHOR CATENARY SYSTEMS TO THE STRUCTURE. DO NOT FIX TO ANY PART OF A SUSPENDED CEILING SYSTEM, MECHANICAL OR HYDRAULIC PLANT. FIX CABLES TO THE CATENARY SYSTEM SUCH THAT NO CABLE IS UNDER STRESS DUE TO TENSION OR COMPRESSION. USE PROPRIETARY FIXINGS THAT ALLOW CABLES TO BE ADDED OR REMOVED WITHOUT DESTROYING THE INTEGRITY OF THE SYSTEM.		DEMOLITION EXISTING LUMINAIRES MAY CONTAIN PBC'S. SPECIAL PRECAUTIONS SHALL BE MADE AS PER SAFEWORK S.A. DISPOSAL REQUIREMENTS. PROVIDE EVIDENCE OF CORRECT DISPOSAL OF PCB COMPONENTS.																																																																					
D. NEATLY EXECUTE ALL WORK TO THE APPROVAL OF THE ENGINEER (INCLUDING CONCEALED WORK).		h. SWITCHBOARDS STANDARDS SWITCHBOARDS TO COMPLY WITH AS/NZS 3000, AS/NZS 3008 AND AS/NZS 3439.		k. EXIT AND EMERGENCY LIGHTING STANDARDS ALL EXIT AND EMERGENCY LIGHTING SHALL COMPLY WITH AS/NZS 2293.																																																																					
E. REMOVE REDUNDANT CABLING, EXPOSED DUCTING, AND OTHER REDUNDANT ELECTRICAL EQUIPMENT WHERE APPLICABLE.		SWITCHBOARD EQUIPMENT MOULDED CASE CIRCUIT BREAKERS TO BE ALL OF THE SAME MANUFACTURE WITH PROPRIETORY CLIP-IN CHASSIS TO MATCH. RESIDUAL CURRENT DEVICES (RCDs) SHALL BE AN INTEGRAL PART OF THE RELEVANT CIRCUIT BREAKER WHEN PROTECTING ARTIFICIAL LIGHTING AND SWITCH SOCKET OUTLETS.		GENERAL UPON FAILURE OF THE ELECTRICAL SUPPLY TO THE NORMAL LIGHTING IN AN AREA, IRRESPECTIVE OF WHETHER OR NOT IT IS ILLUMINATED, EACH RELEVANT EXIT AND EMERGENCY LUMINAIRE SHALL BE ENERGIZED FROM ITS EMERGENCY SUPPLY IN ACCORDANCE WITH AS/NZS 2293.1 CLAUSE 2.3.2. PROVIDE OR UPDATE EXISTING EXIT AND EMERGENCY LIGHTING TEST LOG BOOK WITH THE DISTRIBUTION BOARD.																																																																					
F. INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF WORKS.		j. LUMINAIRES STANDARDS GENERAL REQUIREMENTS AND TESTS TO AS/NZS 60598 FLUORESCENT LAMPS TO AS/NZS 4782.1 AND AS/NZS 4782.2 METAL HALIDE TO IEC 66167		TESTING FOR EACH SIZE AND TYPE OF SELF-CONTAINED EMERGENCY LIGHTING LUMINAIRE AND EXIT SIGN SUPPLY COPIES OF A CERTIFICATE OF TESTS STATING THE TESTING AUTHORITY, MANUFACTURER AND DETAILS OF PARAMETERS AND RESULTS FOR EACH TEST.																																																																					
G. COMPLY IN ALL RESPECTS WITH THE REQUIREMENTS OF THE CURRENT STANDARDS APPLICABLE TO THE WORKS IN RESPECT TO EQUIPMENT, MATERIALS, WORKMANSHIP AND INSTALLATION TECHNIQUES. COMPLY WITH THE FOLLOWING STANDARDS AND REGULATIONS: <ul style="list-style-type: none">NATIONAL CONSTRUCTION CODE.AUSTRALIAN STANDARDS.OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.		NCC THE DOCUMENTED LIGHTING DESIGN COMPLIES WITH THE NCC SECTION J6. ANY UNAPPROVED ALTERATIONS TO THE DOCUMENTED LIGHTING DESIGN MAY RESULT IN A NON-COMPLIANT INSTALLATION AND SHALL BE RECTIFIED AT THE CONTRACTORS COST TO THE SATISFACTION OF THE ENGINEER.		INSPECTION AND MAINTENANCE CARRY OUT PERIODIC INSPECTIONS AND MAINTAIN THE EXIT AND EMERGENCY LIGHTING INSTALLATION IN A CONDITION TO MEET THE SPECIFIED PERFORMANCE. REPLACE FAULTY MATERIALS AND EQUIPMENT WITHOUT CHARGE.																																																																					
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Project MOUNT GAMBIER RAILWAY STATION TOILET UPGRADE		Title ELECTRICAL SERVICES SPECIFICATION NOTES (SHEET 1 OF 2)		Architect habitable places architects 24 Divett Place Adelaide SA 5000 Ph: 08 8232 9925 info@habitableplaces.com.au		G:\ProjC0\C0295 - Mt Gambier Railway Station Toilets\Drawings\Working Drawings\C0295-E-SK08 (SPEC NOTES).dwg		S E C O N consulting engineers 456 PULTENEY STREET ADELAIDE SOUTH AUSTRALIA 5000 TEL: 08 8223 7800 FAX: 08 8223 7399 engineers@secon.net.au A.B.N. 30 613 300 299 A.C.N. 613 300 299		<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>23-11-20</td><td>PRELIMINARY ISSUE</td><td>CLB</td></tr><tr><td>1</td><td>11-11-20</td><td>PRELIMINARY ISSUE</td><td>CLB</td></tr><tr><td>0</td><td>29-10-20</td><td>PRELIMINARY ISSUE</td><td>CLB</td></tr><tr><th>Rev</th><th>Date</th><th>Issue Description</th><th>By</th></tr><tr><td colspan="4">© COPYRIGHT SECON PTY. LTD. 2020</td></tr><tr><td colspan="2" rowspan="4">North</td><td>DRAWN</td><td>CLB</td></tr><tr><td>CHECKED</td><td>-</td></tr><tr><td>ENG</td><td>RB / AD</td></tr><tr><td>Q.A.</td><td>AD</td></tr><tr><td colspan="2"></td><td>DATE</td><td>OCT '20</td></tr><tr><td colspan="2"></td><td>SCALE</td><td>NTS @ A3</td></tr><tr><td colspan="2"></td><td></td><td>SHEET 8 of X</td></tr><tr><td colspan="2"></td><td colspan="2">DRAWING No. C0295-E-SK08</td></tr><tr><td colspan="2">PLOT DATE: 23/11/2020</td><td>Size. A3</td><td>Rev. 2</td></tr></table>														2	23-11-20	PRELIMINARY ISSUE	CLB	1	11-11-20	PRELIMINARY ISSUE	CLB	0	29-10-20	PRELIMINARY ISSUE	CLB	Rev	Date	Issue Description	By	© COPYRIGHT SECON PTY. LTD. 2020				North		DRAWN	CLB	CHECKED	-	ENG	RB / AD	Q.A.	AD			DATE	OCT '20			SCALE	NTS @ A3				SHEET 8 of X			DRAWING No. C0295-E-SK08		PLOT DATE: 23/11/2020		Size. A3	Rev. 2
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ELECTRICAL SERVICES SPECIFICATION		MINIMUM SIZE: 4.0mm² FOR 16 AMP POWER CIRCUITS. MINIMUM SIZE: 6.0mm² FOR SUBMAINS.		CIRCULAR LUMINAIRE NOT LESS THAN THREE FIXINGS).	
GENERAL				MOUNTING - RECESSED INSTALLATION TO COMPLY WITH MANUFACTURERS' GUIDELINES AND CLAUSE 4.5 OF AS/NZS3000. INSTALL RECESSED LUMINAIRES IN TRIMMED OPENINGS FOR A SUSPENDED CEILING.	
A. INSPECT THE SITE BEFORE SUBMITTING TENDER AND INCLUDE ALL ALLOWANCES TO CARRY OUT THE FULL INTENT OF THE WORKS. DETERMINE ACCURATE LOCATIONS OF EQUIPMENT AND CABLE ROUTES FROM SITE MEASUREMENT, NOT BY SCALING THIS DRAWING WHICH IS APPROXIMATE ONLY.		e. COORDINATION DETERMINE THE EXTENT OF WORK AND COORDINATE THE LAYOUT OF PLANT AND EQUIPMENT TO BE INSTALLED AND ITEMS TO BE INSTALLED BY OTHER TRADES TO ENSURE THERE ARE NO INTERFACE PROBLEMS BEFORE INSTALLATION COMMENCES.			
B. UNLESS NOTED OTHERWISE RETAIN ELECTRICAL SERVICES SHOWN AS EXISTING ON THE ELECTRICAL DRAWINGS. FOR ALL OTHER EXISTING ELECTRICAL SERVICES LIAISE WITH THE SUPERINTENDENT PRIOR TO DEMOLITION TO DETERMINE THE EXTENT OF DEMOLITION.		f. SEGREGATION THE MINIMUM SEPARATION BETWEEN POWER CABLES, DATA CABLES AND SECURITY CABLES SHALL BE 200mm.		MOUNTING - EXTERNAL CONTROLLED BY PHOTO ELECTRIC CELL AND TIMER WITH MANUAL OVERRIDE IN LOCAL DISTRIBUTION BOARD. ADJUST THE AIM OF FLOODLIGHTS UNDER NIGHT LIGHTING CONDITIONS TO PROVIDE THE REQUIRED EFFECT OR AREA LIGHTING LEVELS. OPENINGS FOR EXTERNAL LUMINAIRES TO BE SEALED AGAINST DUST AND INSECTS.	
C. CARRY OUT ALL WORK IN ACCORDANCE WITH STATUTORY CODES, AS/NZS 3000:2018 AND ALL OTHER RELEVANT STANDARDS.		g. CATENARY SYSTEM GENERAL MAY BE USED WITHIN SUSPENDED CEILING SPACES IN LIEU OF CABLE TRAY AND LADDER SYSTEMS. MAXIMUM OF 24 UTP CABLES PER CATENARY AND 8 TPS CABLES PER CATENARY. PROVIDE STAINLESS STEEL CABLE AND COUPLINGS FOR CATENARY SYSTEMS. ANCHOR CATENARY SYSTEMS TO THE STRUCTURE. DO NOT FIX TO ANY PART OF A SUSPENDED CEILING SYSTEM, MECHANICAL OR HYDRAULIC PLANT. FIX CABLES TO THE CATENARY SYSTEM SUCH THAT NO CABLE IS UNDER STRESS DUE TO TENSION OR COMPRESSION. USE PROPRIETARY FIXINGS THAT ALLOW CABLES TO BE ADDED OR REMOVED WITHOUT DESTROYING THE INTEGRITY OF THE SYSTEM.		DEMOLITION EXISTING LUMINAIRES MAY CONTAIN PBC'S. SPECIAL PRECAUTIONS SHALL BE MADE AS PER SAFEWORK S.A. DISPOSAL REQUIREMENTS. PROVIDE EVIDENCE OF CORRECT DISPOSAL OF PCB COMPONENTS.	
D. NEATLY EXECUTE ALL WORK TO THE APPROVAL OF THE ENGINEER (INCLUDING CONCEALED WORK).		h. SWITCHBOARDS STANDARDS SWITCHBOARDS TO COMPLY WITH AS/NZS 3000, AS/NZS 3008 AND AS/NZS 3439. SWITCHBOARD EQUIPMENT MOULDED CASE CIRCUIT BREAKERS TO BE ALL OF THE SAME MANUFACTURE WITH PROPRIETARY CLIP-IN CHASSIS TO MATCH. RESIDUAL CURRENT DEVICES (RCDs) SHALL BE AN INTEGRAL PART OF THE RELEVANT CIRCUIT BREAKER WHEN PROTECTING ARTIFICIAL LIGHTING AND SWITCH SOCKET OUTLETS.		k. EXIT AND EMERGENCY LIGHTING STANDARDS ALL EXIT AND EMERGENCY LIGHTING SHALL COMPLY WITH AS/NZS 2293.	
E. REMOVE REDUNDANT CABLING, EXPOSED DUCTING, AND OTHER REDUNDANT ELECTRICAL EQUIPMENT WHERE APPLICABLE.		j. LUMINAIRES STANDARDS GENERAL REQUIREMENTS AND TESTS TO AS/NZS 60598 FLUORESCENT LAMPS TO AS/NZS 4782.1 AND AS/NZS 4782.2 METAL HALIDE TO IEC 66167		GENERAL UPON FAILURE OF THE ELECTRICAL SUPPLY TO THE NORMAL LIGHTING IN AN AREA, IRRESPECTIVE OF WHETHER OR NOT IT IS ILLUMINATED, EACH RELEVANT EXIT AND EMERGENCY LUMINAIRE SHALL BE ENERGIZED FROM ITS EMERGENCY SUPPLY IN ACCORDANCE WITH AS/NZS 2293.1 CLAUSE 2.3.2. PROVIDE OR UPDATE EXISTING EXIT AND EMERGENCY LIGHTING TEST LOG BOOK WITH THE DISTRIBUTION BOARD.	
F. INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF WORKS.		NCC THE DOCUMENTED LIGHTING DESIGN COMPLIES WITH THE NCC SECTION J6. ANY UNAPPROVED ALTERATIONS TO THE DOCUMENTED LIGHTING DESIGN MAY RESULT IN A NON-COMPLIANT INSTALLATION AND SHALL BE RECTIFIED AT THE CONTRACTORS COST TO THE SATISFACTION OF THE ENGINEER.		TESTING FOR EACH SIZE AND TYPE OF SELF-CONTAINED EMERGENCY LIGHTING LUMINAIRE AND EXIT SIGN SUPPLY COPIES OF A CERTIFICATE OF TESTS STATING THE TESTING AUTHORITY, MANUFACTURER AND DETAILS OF PARAMETERS AND RESULTS FOR EACH TEST.	
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J. ON COMPLETION OF THE WORK, CLEAN ALL ITEMS EXTERNALLY AND INTERNALLY AND LEAVE FREE OF DUST, DIRT, OVERSPRAY, FINGERMARKS, ETC.				LABELING LABEL EACH LUMINAIRE WITH A UNIQUE IDENTIFYING NUMBER (BUILDING NUMBER - LUMINAIRE NUMBER) AND RECORD THE NUMBER AND LUMINAIRE LOCATION IN A SCHEDULE INCLUDED IN THE EMERGENCY EVACUATION LIGHTING OPERATION AND MAINTENANCE MANUAL. THE LABEL MUST BE PERMANENTLY FIXED, INDELIBLE AND READABLE FROM GROUND LEVEL. (ENGRAVED TRAFFOLYTE LABEL OR EQUAL AND APPROVED).	
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d. CABLES SELECT ALL CABLES IN ACCORDANCE WITH AS/NZS 3008. WHEREVER POSSIBLE CONCEAL CABLING IN WALL CAVITIES OR CEILING SPACE. RUN ALL CABLES ORTHOGONALLY (I.E. VERTICAL OR HORIZONTAL AND PARALLEL TO BUILDING LINES). ACCURATELY SURVEY UNDERGROUND CABLE ROUTES AND PROVIDE MARKER PLATES ETC. ALL UNDERGROUND CABLES TO BE IN CATEGORY 'A' UNDERGROUND WIRING SYSTEM, UNLESS NOTED OTHERWISE. MINIMUM SIZE: 2.5mm² FOR 10 AMP LIGHTING CIRCUITS		MOUNTING - SURFACE FIXING OF SURFACE MOUNTED LUMINAIRE TO CEILING OR WALL PROVIDE SYMMETRICALLY PLACED FIXING POINTS (SQUARE/RECTANGULAR LUMINAIRE NOT LESS THAN FOUR FIXINGS,			
Plotted by: Christopher Lenden Barnes					
Project MOUNT GAMBIER RAILWAY STATION TOILET UPGRADE		Title ELECTRICAL SERVICES SPECIFICATION NOTES (SHEET 2 OF 2)		Architect habitable places architects 24 Divett Place Adelaide SA 5000 Ph: 08 8232 9925 info@habitableplaces.com.au	
				SECON consulting engineers 456 PULTENEY STREET ADELAIDE SOUTH AUSTRALIA 5000 TEL: 08 8223 7800 FAX: 08 8223 7399 engineers@secon.net.au A.B.N. 30 613 300 299 A.C.N. 613 300 299	
				G:\Proj\C0\C0295 - Mt Gambier Railway Station Toilets\Drawings\Working Drawings\IC0295-E-SK09 (SPEC NOTES).dwg	
				0 23-11-20 PRELIMINARY ISSUE CLB	
				Rev Date Issue Description By	
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				North	
				DRAWN CLB CHECKED -	
				ENG RB / AD Q.A. AD	
				DATE OCT '20 SCALE NTS @ A3	
				SHEET 9 of X	
				DRAWING No. C0295-E-SK09	
				PLOT DATE: 23/11/2020	
				Size. A3	
				Rev. 0	

NOTES:

1. MOUNT CENTRALLY ABOVE DOOR 100 ABOVE ARCHED WINDOW.
2. CABLE TO BE CONCEALED OR RUN IN WALL CAVITY TO SWITCHBOARD.



LIGHTING LAYOUT

SCALE 1:50

Plotted by: Christopher Lenden Barnes

G:\Proj\CO\CO295 - Mt Gambier Railway Station Toilets\Drawings\Working Drawings\CO295-E-SK10 (LIGHTING LAYOUT).dwg

Project
MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title
ELECTRICAL SERVICES
LIGHTING LAYOUT

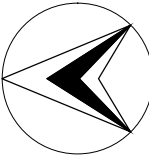
Architect
habitable places
architects

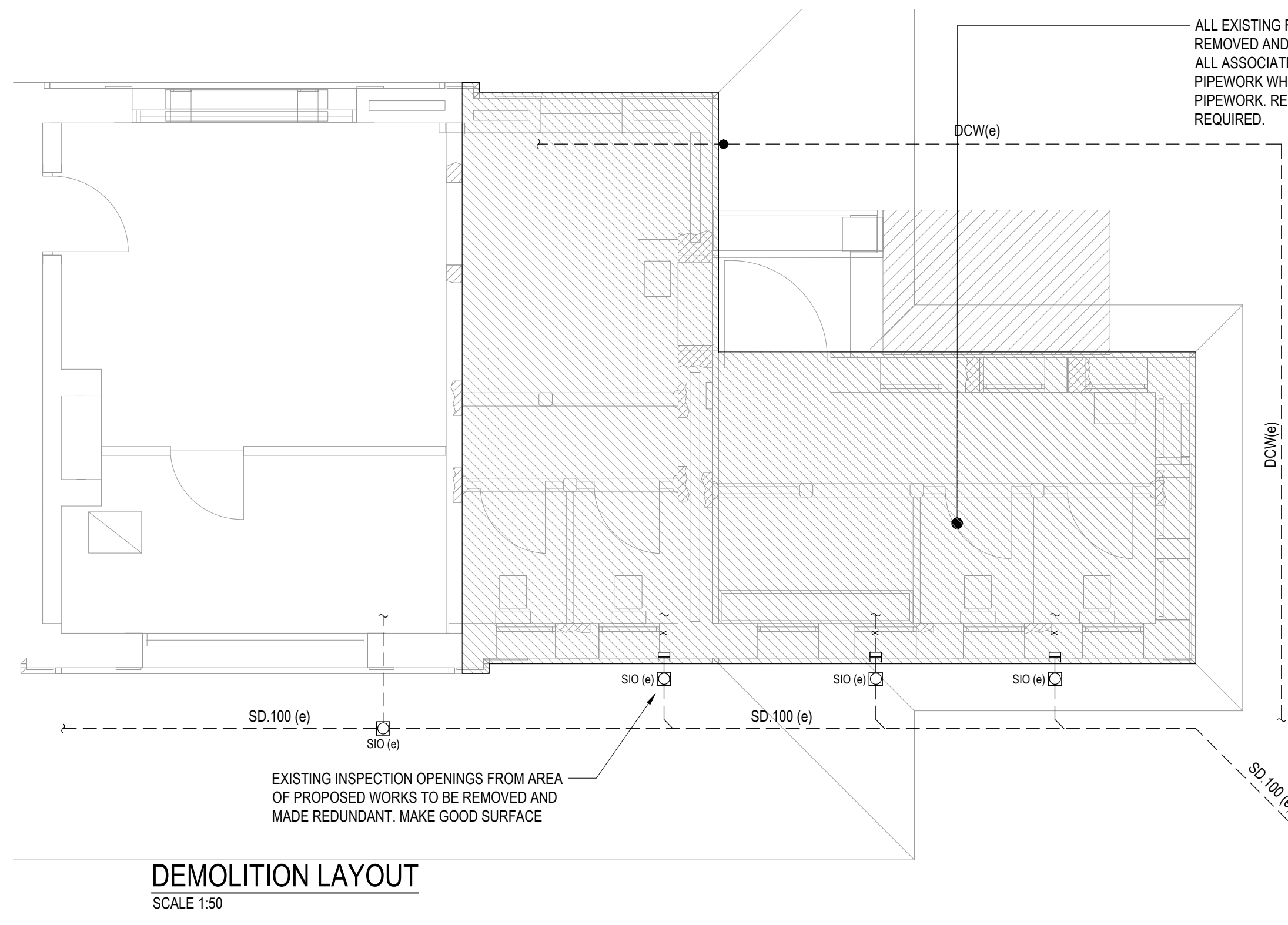
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		DATE	OCT '20	SCALE	1:50 @ A3
				SHEET	10 of X
		DRAWING No.			
		C0295-E-SK10			
PLOT DATE: 23/11/2020			Size.	Rev.	
			A3	0	



NOTE:
EXISTING FLOORS TO BE REMOVED
AS PART OF DEMOLITION WORKS

LEGEND

---	EXISTING SERVICE
---x---x---	EXISTING SERVICE TO BE MADE REDUNDANT
- - - - -	DRAINAGE VENT PIPE
- . . . -	COLD WATER
-	HOT WATER
- - - - -	WARMWATER
SIO	SURFACED INSPECTION OPENING (EXTERNAL)
IO	SURFACED INSPECTION OPENING (INTERNAL)
GIO (e)	GOVERNMENT/AUTHORITIES INSPECTION OPENING
	CAPPED END
	CONTINUATION
	PIPE RISER/DROPPER
	LOCATE & CONNECT
	TRAP & WASTE
	FLOOR WASTE GULLY
	MINI THERMOSTATIC MIXING VALVE
	THERMOSTATIC MIXING VALVE IN SS WALL BOX
	COLD & WARM WATER OUTLETS
	COLD ONLY OUTLET
	ISOLATION VALVE IN PIT
	ELECTRIC HOT WATER UNIT
(e)	EXISTING
SD	SOIL DRAINAGE
VS	VENT SOIL DRAIN
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
AFFL	ABOVE FINISHED FLOOR LEVEL

DEMOLITION LAYOUT

SCALE 1:50

Plotted by: Sam Guerin

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Project
MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title
HYDRAULIC SERVICES
FLOOR PLAN
DEMOLITION LAYOUT

Architect
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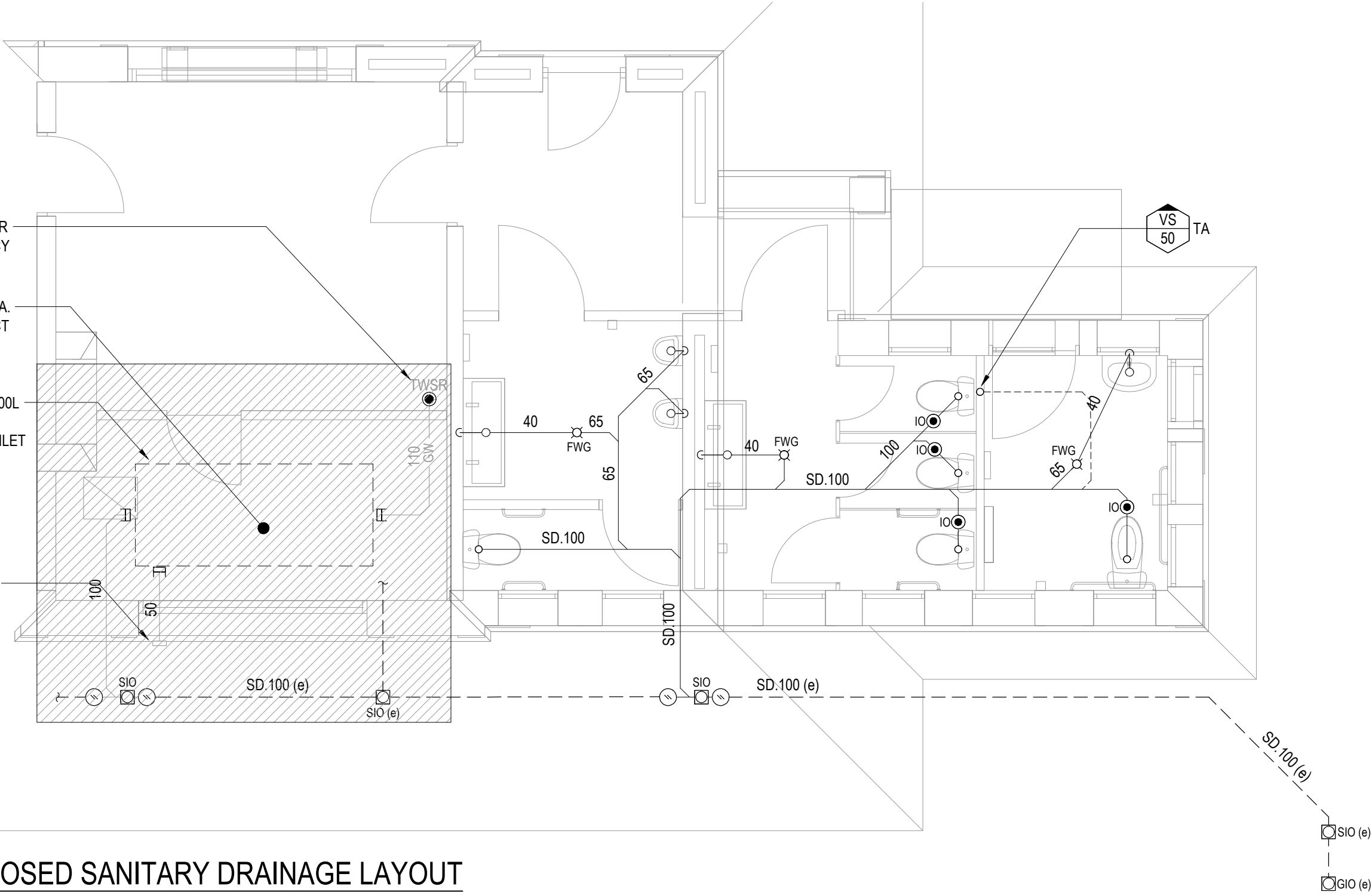
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PROVIDE TRADE WASTE SHOP RISER FOR
CONNECTION TO FUTURE FOOD TENANCY

PROPOSED FUTURE WORKS IN THIS AREA.
NO TO BE PRICED WITHIN THIS CONTRACT

APPROXIMATE LOCATION OF FUTURE 2400L
GREASE ARRESTOR (SUBJECT TO SA
WATER APPROVAL). PROVIDE CAPPED INLET
& OUTLET CONNECTIONS AND 50mm
REMOTE PUMP-OUT CONNECTION WITH
CAMLOCK

50mm REMOTE PUMP-OUT CONNECTION



PROPOSED SANITARY DRAINAGE LAYOUT

SCALE 1:50

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TOILET UPGRADE

Title
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FLOOR PLAN
PROPOSED SANITARY DRAINAGE LAYOUT

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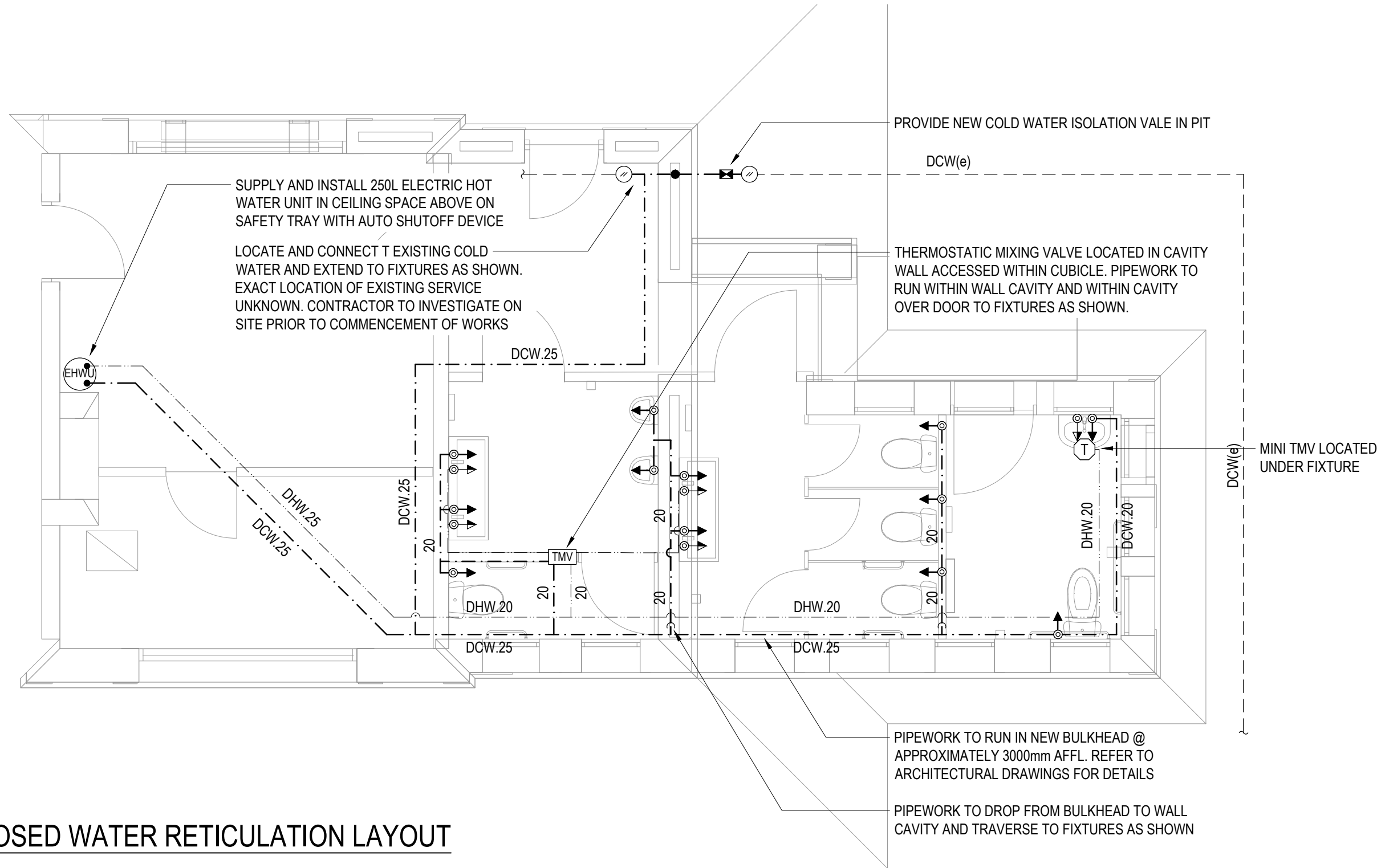
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PROPOSED WATER RETICULATION LAYOUT
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Project
MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title
HYDRAULIC SERVICES
FLOOR PLAN
PROPOSED WATER RETICULATION LAYOUT

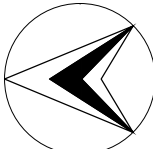
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PLUMBING SERVICES SPECIFICATION

GENERAL

1. AUTHORITIES AND APPROVALS
THE INSTALLATION SHALL BE CARRIED OUT TO THE AUSTRALIAN STANDARD AS 3500, THE SA VARIATIONS AND/OR ADDITIONAL PROVISIONS AND TO THE APPROVAL OF SA WATER CORPORATION, SOUTH AUSTRALIAN HEALTH COMMISSION AND LOCAL COUNCIL.
2. ALL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS AND SPECIFICATION AS APPLICABLE TO THE PROJECT
3. ALL WORK SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF A REGISTERED MASTER PLUMBER.
4. COORDINATE ALL SERVICES WITH OTHER TRADES INCLUDING PIPEWORK, EQUIPMENT, DUCTWORK LIGHTS AND STRUCTURE.
5. PAY ALL FEES, GIVE ALL NOTICES AND MAKE APPLICATIONS AS APPROPRIATE WITH THESE WORKS.
6. PROVIDE COMMISSIONING, TESTING AND QUARTERLY ROUTINE SERVICING.
7. PROVIDE THREE COPIES OF MAINTENANCE MANUALS INCLUDING "AS- INSTALLED" DRAWINGS, DESCRIPTION INSTALLATION, MANUFACTURERS LITERATURE, AND OTHER APPROVALS AS REQUIRED TO THE SATISFACTION OF CONSULTING ENGINEER, BOUND IN HARD VINYL FOLDERS. DRAWINGS TO BE IN AUTOCAD FORMAT R14 OR LATER.
8. ALL TAPWARE AND FIXTURES SHALL BE WELS APPROVED.
9. PROVIDE CERTIFICATES OF COMPLIANCE.

TECHNICAL REQUIREMENTS

1. TESTING
PROVIDE ALL LABOUR, EQUIPMENT AND INSTRUMENTS CORRECTLY CALIBRATED. HYDROSTATIC TEST THE PIPEWORK SYSTEM AS FOLLOWS:-

SERVICE ALLOWABLE LOSS	TEST FLUID	TEST PRESSURE	DURATION	
SEWER, SOIL AND WASTE WATER	WATER	STATIC HEAD TO SA WATER APPROVAL		
	WATER	1800KPA	2HRS	NIL
2. LABOUR
PROVIDE ALL QUALIFIED LABOUR NECESSARY FOR THE PROPER COMPLETION OF THE WORK.
3. MATERIALS
SUPPLY EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE WORK.
4. COVER PLATES
WHERE PIPEWORK EMERGES FROM FINISHED WALL, FLOORS OR CEILING SURFACES, PROVIDE CHROMIUM PLATED COVER PLATES OF NON- FERROUS METAL.

5. PIPEWORK
PROVIDE FIRE STOP COLLARS ON ALL P.V.C PIPES PENETRATING GROUND FLOOR SLAB.

SERVICE	MATERIAL	
SEWER PIPES	UPVC DWV CLASS SOIL WASTE & VENT UPVC DWV CLASS	
MAINS WATER (UNDERGROUND)	COPPER TYPE B (PROTECTIVE WRAP UNDERGROUND PIPEWORK) OR POLYETHYLENE PRESSURE PIPE.	
MAINS WATER (ABOVE)	COPPER TYPE B OR GROUND CONCEALED PRESSURE CLASS CROSS LINKED HIGH DENSITY POLYETHYLENE.	
MAINS WATER (CONCEALED) BUILDING	COPPER OR PRESSURE CLASS IN CROSS LINKED HIGH DENSITY POLYETHYLENE.	
MAINS WATER (EXPOSED)	COPPER TYPE B (CHROME PLATED).	
HOT WATER (CONCEALED)	COPPER TYPE B (FULLY INSULATED) OR PRESSURE CLASS CROSS LINKED HIGH DENSITY POLYETHYLENE (FULLY INSULATED).	
HOT WATER (CONCEALED) IN BUILDING	COPPER (FULLY INSULATED) OR PRESSURE CLASS CROSS LINKED HIGH DENSITY.	
HOT WATER (EXPOSED INSIDE)	POLYETHYLENE (FULLY INSULATE). COPPER TYPE B (CHROME PLATED).	
JOINTING COPPER	GENERALLY TAPS VALVES	SILVER BRAZED COMPRESSION FITTINGS SCREWED
UPVC UPVC DRAINAGE	DWV CLASS PRESSURE	SOLVENT WELDED SOLVENT WELDED
PRESSURE CLASS POLYETHYLENE	FUSION WELDED	
PRESSURE CLASS POLYPROPYLENE	REFER TO MANUFACTURER	
6. CORROSION PROTECTION OF UNDERGROUND PIPEWORK
PROTECT UNDERGROUND COPPER PIPING AND DUCTILE IRON FITTINGS UTILISING THE "DENSO" SUPERBOND CPT 750 INSTALLED TO THE MANUFACTURERS RECOMMENDATIONS. PRIOR TO APPLICATION CLEAN THE SURFACE THOROUGHLY TO AS 1627-2 CLASS 2 STANDARD. PRIME THE CLEANED SUBSTRATE WITH SUPERBOND CLEANER. WHERE NECESSARY, CONTOUR ALL SHARP AND IRREGULAR PROFILES WITH "DENSO" BUTYL MASTIC STRIP. SPIRALLY APPLY "DENSO" SUPERBOND TAPE WITHOUT STRETCHING WITH A 55% OVERLAP TO ACHIEVE CONSISTENT FULL DOUBLE THICKNESS. SELECT A TAPE WIDTH ROUGHLY EQUAL TO PIPE DIAMETER. ENSURE SYSTEM IS APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND ARRANGE MANUFACTURER TO INSPECT APPLICATION AND FORWARD WRITTEN EVIDENCE OF CORRECT APPLICATION.

PROVIDE INSPECTION AND VERIFICATION OF ALL PROTECTIVE WRAPPING.

7. SUPPORTS
SUPPORT AND RESTRAIN ALL PIPING SYSTEMS TO ENSURE MAINTENANCE OF ALIGNMENT AND PREVENTION OF UNDUE STRESS ON THE PIPING SYSTEM. ISOLATE DISSIMILAR METALS WITH PVC TAPE. WHERE EQUIPMENT IS REQUIRED TO BE LOCATED ON THE BUILDING STRUCTURE EG. COLUMNS, BEAMS AND THE LIKE, SHALL BE CLAMPED AND BOLTED FIXED WITH LOCK NUTS "NO DRILLING OR WELDING IS PERMITTED TO STRUCTURAL MEMBERS".
8. PENETRATIONS
CORE HOLES THROUGH EXISTING SLAB/WALLS. PRIOR TO CORING, MARK PENETRATIONS TOP AND BOTTOM OF SLAB AND OBTAIN APPROVAL FROM STRUCTURAL ENGINEER. ALL PENETRATIONS THROUGH NEW AND EXISTING WALLS & FLOORS SHALL BE SEALED CORE EXISTING CONCRETE FLOORS WITH APPROVED FIRE RATED MATERIAL.
9. TRENCHING, BACKFILLING AND COMPACTION EXCAVATION SERVICE TRENCHES
EXCAVATION: EXCAVATE TO THE LINES, LEVELS AND GRADES AS REQUIRED FOR UNDERGROUND SERVICES. UNLESS OTHERWISE SPECIFIED MAKE THE TRENCHES STRAIGHT BETWEEN INSPECTION POINTS, JUNCTIONS AND THE CONNECTION.

MINIMUM COVER OVER PIPE

UNLESS OVERRIDDEN BY REGULATORY AUTHORITY REQUIREMENTS OR OTHERWISE SPECIFIED, THE FOLLOWING TABLE SHALL APPLY:-

- PIPES NOT SUBJECT TO VEHICULAR LOADING:

450MM
- PIPES SUBJECT TO VEHICULAR LOADING - NOT IN ROADWAYS: 600MM

UNDER SEALED ROADWAYS:

600MM
- UNDER UNSEALED ROADWAYS:

450MM
- PIPES IN EMBANKMENTS OR SUBJECT TO CONSTRUCTION EQUIPMENT LOADING:

750MM

PIPELAYING

GENERALLY: LAY PIPELINES TO UNIFORM GRADIENTS FALLING TO THE OUTLETS, STRAIGHT BETWEEN REQUIRED CHANGES OF DIRECTION, PROPERLY SUPPORTED, WITH WATERTIGHT JOINTS ALIGNED FLUSH AT INTERNAL SURFACES, AND WITH SPIGOT ENDS POINTED IN THE DIRECTION OF FLOW. PROVIDE THE NECESSARY FITTINGS AND ACCESSORIES, INCLUDING JUNCTIONS, BRANCHES, INSPECTION AND CLEANING OPENINGS, EXPANSION JOINTS, AND THE LIKE.

Plotted by: Sam Guerin

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Project MOUNT GAMBIER RAILWAY STATION TOILET UPGRADE	Title HYDRAULIC SERVICES SPECIFICATION NOTES PART 1	Architect habitable places architects 24 Divett Place Adelaide SA 5000 Ph: 08 8232 9925 info@habitableplaces.com.au	<div><div>SECON</div><div>consulting engineers</div><div>456 PULTENEY STREET ADELAIDE SOUTH AUSTRALIA 5000 TEL: 08 8223 7800 FAX: 08 8223 7399 engineers@secon.net.au A.B.N. 30 613 300 299 A.C.N. 613 300 299</div></div>		© COPYRIGHT SECON PTY. LTD. 2020					
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BEDDING
PIPE BEDDING: UNLESS OTHERWISE SPECIFIED BED THE PIPEWORK ON A CONTINUOUS UNDERLAY OF PIPE BEDDING MATERIAL, COMPACTED IF GRANULAR, OF MINIMUM THICKNESS AFTER COMPACTION AS REQUIRED BY THE RELEVANT STANDARD, BUT IN ANY CASE NOT LESS THAN 75MM. GRADE THE BEDDING EVENLY TO THE REQUIRED GRADIENT OF THE PIPEWORK.

UNDERLAY MATERIAL
REQUIREMENT: SAND OR SELECTED EXCAVATED MATERIAL FREE FROM HARD OR SHARP OBJECTS OR LUMPS, TO AS 2032 CLAUSE 4.2.1.2.
FOR PLASTIC PIPES: FINE AGGREGATE GRADED AS FOLLOWS TO AS 1152 SIEVES:-

SIEVE APERTURE(mm)	PERCENTAGE PASSING (BY MASS):
6.7	100
4.75	90 TO 100
2.36	60 TO 100
1.18	40 TO 100
0.6	20 TO 100
0.3	8 TO 50
0.15	0 TO 20
0.075	0 TO 10

GENERAL
BACKFILL SERVICE TRENCHES AS SOON AS POSSIBLE AFTER THE SERVICE HAS BEEN LAID AND BEDDED, IF POSSIBLE ON THE SAME WORKING DAY. PLACE THE BACKFILL IN LAYERS 150MM THICK AND COMPACT TO THE DENSITY WHICH APPLIES TO THE LOCATION OF THE TRENCHES TO MINIMISE SETTLEMENT, AND SO THAT PIPES ARE BUTTRESSED BY THE TRENCH WALLS.

MARKING SERVICES
UNDERGROUND MARKING TAPE: TO AS/NZS 2648.1

BACKFILL MATERIAL
GENERAL: GENERAL FILL WITH NO STONES GREATER THAN 25MM OCCURRING WITHIN 150MM OF THE SERVICE, OR OTHER MATERIALS AS REQUIRED FOR PARTICULAR SERVICES OR LOCATIONS. WELL GRADED, INORGANIC, NON-PERISHABLE MATERIAL, MAXIMUM SIZE 75MM, PLASTICALLY INDEX ≤ 55%.UNDER ROADS AND PAVED AREAS AND WITHIN 4M OF BUILDING.

- PM32 CRUSHED ROCK - 20MM
- PM63 SAND - TYPE C
- CONTROLLED LOW STRENGTH MATERIAL

IN TOPSOIL AREAS: COMPLETE THE BACKFILLING WITH TOPSOIL FOR AT LEAST THE TOP 150MM.IN REACTIVE CLAY: IN SITES CLASSIFIED M, H OR E TO AS 2870, PROVIDE AN IMPERVIOUS MATERIAL WHERE TRENCHES FALL TOWARDS FOOTINGS.

PLACING FILLING
EXTENT PLACE AND COMPACT FILLING SO THAT THE SURFACE IS CONSTANTLY SELF DRAINING. LAYERS PLACING FILL IN LAYERS NOT EXCEEDING THE THICKNESS STATED BELOW MEASURED LOOSE AND COMPACT EACH LAYER MAXIMUM LAYER. THICKNESS: 150MM.

COMPACTION
COMPACT EACH LAYER TO THE REQUIRED DENSITY.
MINIMUM DENSITY RATIO OF NOT LESS THAN:-

- UNDER ROADS, PAVED AREAS AND WITHIN 4M OF BUILDING: 95% MODIFIED MAXIMUM DRY DENSITY.
- IN OTHER AREAS: 90% STANDARD MAXIMUM DRY DENSITY.

PROTECTION: PROTECT THE WORKS DURING COMPACTION FROM DAMAGE BY COMPACTION OPERATIONS, COMPACT BY HAND IF NECESSARY TO PREVENT DAMAGE OR DISTURBANCE TO SERVICES, PIPE JOINTS AND THE LIKE.COMPACTION IN ACCORDANCE WITH AS 1289 E5 1.1

11. CONCRETE/BITUMEN FLOORS/PAVING
SAW CUT CONCRETE FLOORS/PAVING AS REQUIRED, REMOVE FROM SITE AND MAKE GOOD.
12. TIMBER FLOORS
REMOVE TIMBER FLOORING AS REQUIRED AND MAKE GOOD.
13. WALL CHASES
SAW CUT WALL CHASES AS NECESSARY TO PERFORM INSTALLATION AND MAKE GOOD.

14. WASTE AND INSPECTION OPENINGS

BASINS	PVC "P" TRAP WITH WASTE BEHIND WALL. (ANY EXPOSED TRAPS TO BE CHROME PLATED)
FLOOR TRAP	SCREW IN CHROME PLATED BRASS GRATE
FLOOR TRAP	SCREW IN CHROME PLATED BRASS GRATE (VINYL FLOOR).
INSPECTION OPENINGS	INTERNAL - NON SLIP BRASS CHROMED PLATED
INSPECTION OPENINGS	INTERNAL - NON SLIP BRASS CHROMED PLATED (VINYL FLOOR).
INSPECTION OPENINGS	EXTERNAL - CAST IRON CONCRETE SURROUND

15. SCHEDULE OF FIXTURES
ALL SANITARYWARE SHALL BE VITREOUS CHINA FIRST CLASS WHITE UNLESS OTHERWISE NOTED. PROVIDE ALL SUPPORTS, FIXINGS AND CHROME PLATED BRASS PLUG WASHERS.
- | FIXTURE | LOCATION | DESCRIPTION |
|--------------|----------|----------------------------------------------------------------------------------------------------------------------------|
| WC | ALL | CAROMA “URBANE” CLEANFLUSH WALL FACED TOILET SUITE WITH EXPOSED CISTERN. MODEL NO. 746200W. VANDAL RESISTANT KIT (750109). |
| WC | ACCESS | ENWARE IFO TOILET KIT - S-TRAP (CARE6861) |
| WALL BASIN | ALL | CAROMA “TEO 1200” WALL BASIN WITH NO TAP HOLE AND MODEL NO. EU8031E05W. CAROMA ECO-TRAP WITH WASTE BUILT INTO WALL. |
| WALL BASIN | ACCESS | CAROMA “CARAVELLE” HAND WALL BASIN WITH SINGLE TAP HOLE (639050W). CAROMA ECO-TRAP WITH WASTE BUILT INTO WALL. |
| URINAL(WALL) | MALE | CAROMA “LEDA INVISI SERIES II” URINAL MODEL NO.741100W. |

TMV	WC	ENWARE AQUABLEND 1500 IN SS WALL BOX. ATMS710R-350
MINI TMV	ACCESS	ENWARE AQUABLEND 500 MINI LOCATED UNDER FIXTURE. ATM500

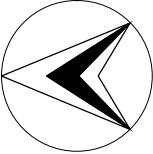
16. SCHEDULE OF TAPWARE
TAPWARE SHALL BE CHROME ON BRASS QUARTER TURN UNLESS OTHERWISE NOTED.
- | FIXTURE | LOCATION | DESCRIPTION |
|------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| WC | ALL | ENWARE ANTI VANDAL LOCK SHIELD RIGHT ANGLE CISTERN TAP WITH JUMPER VALVE WITH CHROME PLATED WALL FLANGE AND CHROME PLATED CONNECTOR PIPE. |
| WC | ACCESS | ENWARE ANTI VANDAL LOCK SHIELD RIGHT ANGLE CISTERN TAP WITH JUMPER VALVE WITH CHROME PLATED WALL FLANGE AND CHROME PLATED CONNECTOR PIPE. |
| WALL BASIN | ALL | ENWARE-DELABIE TEMPOSOFT TIMEFLOW BIB TAP MODEL NO.TFC741510 |
| WALL BASIN | ACCESS | ENWARE-DELABIE TEMPOSOFT TIMEFLOW BASIN TAP MODEL NO.TFC740510 |

17. SCHEDULE OF HOT WATER UNITS
RHEEM 125L ELECTRIC MAINS PRESSURE WATER HEATER MODEL No.491125

18. SCHEDULE OF EQUIPMENT
ISOLATING VALVES
KITZ BRONZE BODIED GATE VALVE OR APPROVED ALTERNATIVE. BUTTERFLY TURNFLO TICS3 OR APPROVED ALTERNATIVE (GEAR OPERATED). NON RETURN VALVES (CHECK VALVES) KITZ BRONZE BODIED SWING CHECK OR APPROVED ALTERNATIVE. MISSION TRW "DUO CHECK" OR APPROVED ALTERNATIVE, SPRING LOADED SPLIT PLATE TYPE. BODIES SHALL BE CAST IRON WITH STAINLESS STEEL OR BRONZE PLATES.

STRAINERS
STRAINERS SHALL BE BRONZE BODIED Y TYPE SELECTED TO SUIT THE WORKING PRESSURE AND TEMPERATURE OF THE SYSTEM INSTALLED. CONNECTIONS: STRAINERS UP TO 50MM DIAMETER SHALL HAVE SCREWED END CONNECTIONS AND FLANGED CONNECTIONS OVER 50MM DIAMETER. STRAINERS SHALL BE OF THE SAME NOMINAL SIZE AS THE LINE IN WHICH IT IS INSTALLED. FILTER SCREEN: STRAINERS SHALL BE PROVIDED WITH RENEWABLE BRONZE OR STAINLESS STEEL PERFORATED FILTER SCREEN (1.4MM HOLE X 2.5MM PITCH). PROVIDE A VALVE DRAIN CONNECTION ON ALL STRAINERS OVER 50MM. DRAIN SHALL DISCHARGE OVER TUNDISH.

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250x250 EGGCRATE EXHAUST GRILLE.

Ø250 FLEXIBLE DUCTWORK TO CONNECT TO EXHAUST WEATHERPROOF LOUVRE AT HIGH LEVEL. LOUVRE SHALL NEATLY FIT THE EXISTING OPENING & BLADES & SPACING SHALL ALIGN WITH THE ORIGINAL METAL LOUVRES.

INLINE TOILET EXHAUST FAN. REFER TO DETAILS FOR MOUNTING INFORMATION.

Ø200 FLEXIBLE DUCTWORK TO CONNECT TO ECO DUCT RECTANGULAR TO ROUND 200Ø CONNECTION & RUN USING ECODUCT(300x70). ALLOW TO CONNECT TO 300x100 EGGCRATE EXHAUST GRILLE IN LOWER CEILING TO CUBICAL.

PROVIDE MOTION DETECTOR FOR FAN ACTIVATION.

PROPOSED LAYOUT

SCALE 1:50

Plotted by: Tim Barnett

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Project
MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title
MECHANICAL SERVICES
HVAC - PROPOSED FLOOR PLAN

Architect
habitable places
architects

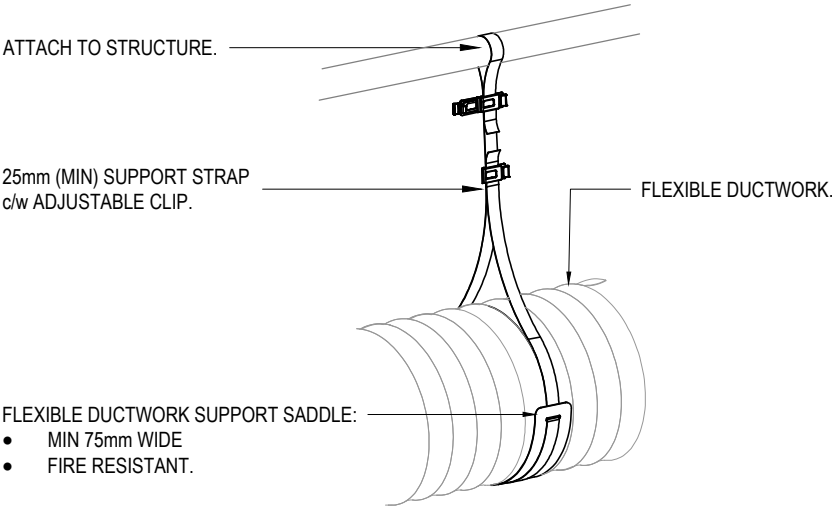
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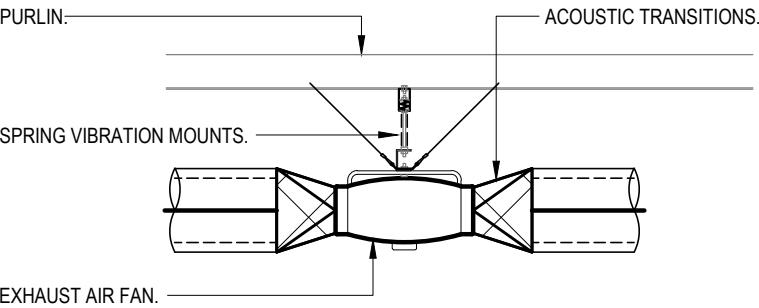
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FLEXIBLE DUCT MOUNTING DETAIL

NOT TO SCALE

NB: FLEXIBLE DUCTWORK SUPPORT SPACING IS TO BE 1.5m (MAX).



TYPICAL INSTALLATION OF INLINE EXHAUST FAN

NOT TO SCALE

LEGEND

- [Symbol] DUCTWORK ACOUSTICALLY LINED WITH 50mm INTERNAL INSULATION.
- [Symbol] BARE / UNINSULATED DUCTWORK.
- [Symbol] FLEXIBLE DUCTWORK ACOUSTICALLY INSULATED TO NCC R-VALUE MINIMUM REQUIREMENTS, (REFER GRILLE SCHEDULE FOR SIZE)
- [Symbol] EGG CRATE GRILLE (ECG) - c/w PLAIN BOX, OBD & CLIP OUT CORE.
- [Symbol] MOTION DETECTOR.
- [Symbol] 600x600 CEILING ACCESS PANEL BY BUILDER.
- [Symbol] GRILLE ID.
- [Symbol] DOOR GRILLES HALF CHEVRON MIN 50% FREE AREA.

UC = 25mm UNDERCUT DOOR
A = 600 x 200

DESIGNATIONS:

EAF EXHAUST AIR FAN.

GENERAL NOTES

- ACCESS PANELS TO BE SUITABLE SIZE FOR EQUIPMENT SERVICING & DAMPER ADJUSTMENT AND SHALL BE CO-ORDINATED WITH ALL TRADES WITH FINAL LOCATIONS APPROVED BY THE ARCHITECT.
- CONFIRM ALL DIMENSIONS ON SITE PRIOR TO THE MANUFACTURE OF ANY DUCTWORK AND INSTALLATION OF EQUIPMENT.
- ALL DUCT SIZES SHOWN ARE INTERNAL DIMENSIONS.
- MECHANICAL DRAWINGS TO BE READ IN CONJUNCTION AND CO-ORDINATED WITH ALL OTHER SERVICES DOCUMENTS, ARCHITECTURAL DRAWINGS AND MECHANICAL SPECIFICATION.
- ENSURE ALL EQUIPMENT DUCTWORK & FITTINGS CAN BE ACCOMMODATED IN THE SPACE ALLOCATED & BE EASILY MAINTAINED TO MANUFACTURERS RECOMMENDATIONS.
- THE CONTRACTOR IS TO MAKE ALL DUE ALLOWANCE TO COMPLETE THE PROJECT TO THE SATISFACTION OF THE PRINCIPAL.
- ALL SERVICES ARE TO BE CONCEALED UNLESS OTHERWISE STATED.
- FLEXIBLE DUCTWORK TO BE ACOUSTIC AND FIRE RESISTANT.
- PAINT INTERNAL SURFACES OF REGISTER BOXES AND RETURN AIR BOXES/DUCTS WITH MATT BLACK.
- DO NOT SCALE OFF DRAWINGS - MODIFICATIONS TO DOCUMENTATION CANNOT BE MADE WITHOUT WRITTEN APPROVAL FROM SECON CONSULTING ENGINEERS.
- ALL REQUIRED CEILING PENETRATIONS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR; UNLESS OTHERWISE NOTED.
- ANY DISCREPANCY OR OMISSIONS BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE ADDRESSED TO SECON FOR CLARIFICATION PRIOR TO CLOSE OF TENDER.
- INFORMATION PROVIDED ON THE DRAWINGS SHALL BE READ AS DIAGRAMMATIC ONLY, WITH FINAL SPATIAL REQUIREMENTS TO BE CHECKED AND CONFIRMED FOR SUITABILITY BY THE MECHANICAL CONTRACTOR

GRILLE SCHEDULE

No.	SIZE	L/s	TYPE	FLEX Ø	COMMENTS
E1	250 x 250	75	ECG	200	c/w OBD
E2	300 x 70	75	ECG	-	ECODUCT CONNECTION

Plotted by: Tim Barnett

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Project
MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title
MECHANICAL SERVICES
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1	20-11-20	PRELIMINARY ISSUE	TB
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Rev	Date	Issue Description	By
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<div>North</div>	DRAWN	TB	CHECKED SMC
	ENG	AB	Q.A. -
	DATE	OCT '20	SCALE 1:50 @ A3
			SHEET 2 of X
DRAWING No. C0295-M-SK02			
PLOT DATE: 20/11/2020		Size. A3	Rev. 1

MECHANICAL SERVICES SPECIFICATION

GENERAL

- ALL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS, & AS PER CURRENT NCC REQUIREMENTS, AS APPLICABLE TO THIS PROJECT.
- ALL WORK SHALL BE PERFORMED BY SUITABLY QUALIFIED PERSONNEL.
- PAY ALL FEES, GIVE ALL NOTICES AND MAKE APPLICATIONS AS APPROPRIATE WITH THESE WORKS.
- PROVIDE MECHANICAL SHOP DRAWINGS, TECHNICAL DATA, COST BREAKDOWNS, AND CONTROLS SCHEMATICS PRIOR TO ORDERING AND INSTALLATION OF MECHANICAL SYSTEMS.
- PROVIDE COMMISSIONING, AIR BALANCING, TESTING AND ROUTINE SERVICING.
- PROPRIETOR TUITION ON PLANT OPERATION.
- PROVIDE THREE COPIES OF MAINTENANCE MANUALS INCLUDING AS INSTALLED DRAWINGS MANUFACTURERS LITERATURE, ELECTRICAL CERTIFICATE OF COMPLETION's, WARRANTIES AND OTHER APPROVALS AS REQUIRED TO THE SATISFACTION OF ARCHITECT, BOUND IN HARD VINYL FOLDERS. DRAWINGS TO BE IN AUTOCAD FORMAT R14 OR LATER.
- PROVIDE CERTIFICATE OF COMPLIANCE AND EQUIPMENT WARRANTIES.
- ENSURE THAT PLANT AND EQUIPMENT ITEMS ARE READILY ACCESSIBLE FOR OPERATION THAT SUFFICIENT SPACE IS PROVIDED TO COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS FOR OVERHAUL, MAINTENANCE OR REPAIR.

TECHNICAL REQUIREMENTS

1. NATIONAL CONSTRUCTION CODE (NCC)

UNLESS OTHERWISE SPECIFIED, THE ENTIRE INSTALLATION INCLUDING THE SUPPLY OF EQUIPMENT AND MATERIALS SHALL BE IN ACCORDANCE TO THE CURRENT NCC AND ALL CLAUSES WITHIN ASSOCIATED TO THESE WORKS. PARTICULARLY SECTION "J".
THE NCC APPLICABLE TO THE WORKS SHALL BE THE EDITION LAST PUBLISHED PRIOR TO THE CLOSING DATE FOR TENDERS UNLESS OTHERWISE SPECIFIED.

2. SCOPE OF WORK

PROVIDE NEW EXHAUST SYSTEM AS SHOWN ON DRAWINGS.

3. MATERIALS

SUPPLY EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE WORK AND FOR THE PROPER PERFORMANCE OF THE SYSTEMS. USE MANUFACTURED ITEMS IN ACCORDANCE WITH CURRENT PUBLISHED RECOMMENDATIONS OF THE RELEVANT MANUFACTURER. MATERIALS TO BE INCORPORATED IN THE WORKS SHALL BE NEW.

4. LABOUR

PROVIDE ALL QUALIFIED LABOUR NECESSARY FOR THE PROPER COMPLETION OF THE WORK.

5. PENETRATIONS

PROVIDE ROOF PENETRATIONS, UPSTANDS AND WEATHERPROOF OVERFLASHINGS. PROVIDE CORED WALL PENETRATIONS AND SEAL TO APPROVAL. ENSURE APPROPRIATE FIRE RATING IS MAINTAINED IF APPLICABLE.

6. AIR BALANCING

PROVIDE AIR BALANCE ON COMPLETION OF INSTALLATION.

7. FANS:

USE FANS WHICH HAVE QUIET OPERATION AND MAXIMUM STATIC EFFICIENCY AND WHICH DELIVER THE REQUIRED AIR QUANTITY AGAINST THE RESISTANCE OF THE SYSTEM AS INSTALLED. SPECIFIED ESTIMATED DESIGN STATIC PRESSURES GIVEN ARE A GUIDE ONLY THE CONTRACTOR IS TO CALCULATE AND SUBMIT ALL FAN SYSTEM RESISTANCES BASED ON WORKSHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO ORDERING OF FANS. FAILURE TO DO SO WILL RESULT IN A NO COST RECTIFICATION OF A NEW FAN BY THE CONTRACTOR.

FANS - AXIAL MIXED FLOW:

PROVIDE DIRECT DRIVE FANS WITH CASINGS OF MOULDED FIBREGLASS OR IMPACT-RESISTANT PLASTIC BLADES MANUFACTURED FROM EPOXY COATED STEEL OR REINFORCED INJECTION MOULDED

POLYPROPYLENE.

IMPELLERS TO BE OF INJECTION MOULDED PLASTIC AND OF MIXED FLOW DESIGN.

ELECTRICAL CONNECTION: A TERMINAL BOX EXTERNAL TO THE FAN CASING AND WIRED TO THE FAN MOTOR.

MIXED FLOW AXIAL FANS SHALL BE OF THE TYPE 'FANTECH TD' SERIES OR EQUAL AND APPROVED.

FANS - VARIABLE SPEED CONTROLLERS:

FANS NOMINATED IN THE SCHEDULE SHALL BE FITTED WITH A VARIABLE SPEED CONTROLLER OR AN ELECTRONIC VARIABLE SPEED DRIVE AS APPLICABLE TO THE FAN BEING OFFERED AND SHALL BE SELECTED FOR SINGLE OR THREE PHASE OPERATION AS REQUIRED TO MATCH THE FAN MOTOR KW RATING.

THE FANS SHALL BE SELECTED TO EXHAUST A CONSTANT AIR FLOW AGAINST THE INITIAL AND FINAL RESISTANCE OF THE SYSTEM.

THE FAN SPEED SHALL BE VARIED BY MANUALLY OPERATED VARIABLE SPEED CONTROL.

STEP TYPE CONTROLLERS WILL NOT BE ACCEPTED UNLESS PRIOR AUTHORISATION AND APPROVED HAS BEEN GRANTED BY THE CONSULTING ENGINEER.

CONTROLS:

TBC

WEATHERPROOF LOUVRE:

50 MM THICK

MAKE: AIR GRILLES PTY LTD OR SIMILAR APPROVED MODEL OAL-50 SLIM LINE HORIZONTAL WEATHERPROOF LOUVRE WITH ANGLE FRAME. THE LOUVRE SHALL BE MANUFACTURE IN ALUMINIUM AND POWDER COATED IN A COLOUR TO BE NOMINATED BY THE SUPERINTENDENT. THE BLADES SHALL BE NOMINAL 50 MM THICK AND SHALL HAVE A MINIMUM FREE AREA OF 55%. THE GRILLE SIZE SHALL ENSURE A MAXIMUM VELOCITY OF 2.5 M/S.

8. MOTION DETECTORS

PROVIDE MOTION DETECTORS TO COVER DESIGNATED AREAS & EQUIPMENT (WHERE NOMINATED).

TYPE: 360° P.I.R. SENSOR.

MANUFACTURE: PIERLITE SMART SCAN SENSOR OR APPROVED EQUIPMENT.

9. RUN ON TIMERS

PROVIDE SUITABLE FAN RUN-ON TIMER. TIMERS ARE TO PERMIT THE SUPPLY OF ELECTRICITY TO THE FAN MOTOR SO THEY CAN CONTINUE TO OPERATE FOR A PREDETERMINED TIME-LIMIT. PROVIDE FANTECH 'V2' SERIES TIMER OR APPROVED EQUIPMENT.

10. EARTHQUAKE BRACING (EQUIPMENT)

SEISMIC RESTRAINT OF NON-STRUCTURAL COMPONENTS

GENERAL: ARRANGE ALL COMPONENTS, OTHER THAN SERVICE ITEMS EXEMPTED IN AS 1170.4 CLAUSE 5.1.4, TO RESIST SEISMIC LOADS DETERMINED IN ACCORDANCE WITH AS 1170.4 AND THE DPTI GUIDE NOTE G172 "SEISMIC RESTRAINT OF ENGINEERING SERVICES". SECURELY FIX ALL PLANT AND EQUIPMENT TO THE BUILDING STRUCTURE. DO NOT RELY ON GRAVITY AND/OR FRICTION TO RESIST SEISMIC FORCES.

ANTI-VIBRATION MOUNTS: USE HORIZONTALLY RESTRAINED TYPE.

COMPONENTS: DO NOT USE COMPONENTS THAT WILL BE DAMAGED BY EARTHQUAKE CONDITIONS. PROTECT SYSTEMS AGAINST THE ADVERSE EFFECTS OF COMPONENTS SUCH AS MERCURY SWITCHES THAT, ALTHOUGH NOT DAMAGED BY EARTHQUAKE, MAY MALFUNCTION.

PROVIDE DETAILS OF SUPPORTS FOR APPROVAL.

11. LABELLING

PROVIDE IDENTIFICATION OF ALL EQUIPMENT, WITH DURABLE ENGRAVED LABELS (TRAFFOLYTE).

12. DUCTWORK

ECODUCT

ECODUCT CAN BE USED WITH EXHAUST SYSTEMS UP TO 175L/s MAXIMUM.

SEAL ECODUCT SYSTEMS WITH A FIRE SEAL MASTIC DUCT SEALANT.

USE ECODUCT CLIPS WHICH FIT AROUND THE FLAT DUCT TO FIX THE ECODUCT IN PLACE, PREVENTING SCREWING INTO THE DUCT ITSELF.

SHEETMETAL RIGID DUCTWORK:

GENERAL:

STANDARD: AS 4254

CONSTRUCTION: MANUFACTURE FROM GALVANISED STEEL SHEET MACHINE BEND, FREE FROM WAVES AND BUCKLES WITH PITTSBURGH LOCK LONGITUDINAL SEAMS AS FOLLOWS, ALL DIMENSIONS BEING IN MM.

MAXIMUM SIDE THICKNESS	TRANSVERSE JOINTS	BRACING- ALL 4 SIDES
TO 300	0.6	DRIVE SLIP
OVER 300 TO 600	0.8	DRIVE SLIP
OVER 600 TO 1000	0.8	25 X 25 X 3 ANGLE
OVER 1000 TO 1500	0.8	30 X 38 X 3 ANGLE
		25 X 25 X 1.6 ANGLE
		30 X 30 X 1.6 ANGLE

FLANGED JOINTS: SOFT JOINTING MATERIAL EG. "PRESTIK" BETWEEN FLANGED JOINTS, WITH BOLT CENTRES NOT GREATER THAN 150MM.

CROSSBREAKING: CROSS BREAK ALL SIDES EXCEEDING 300 MM IN WIDTH, EXCEPT WHERE DUCT IS ACOUSTICALLY TREATED INTERNALLY OR WHERE EXPOSED INSIDE THE BUILDING IN OCCUPIED AREAS.

RADIUS BENDS: INTERNAL RADIUS GREATER THAN OR EQUAL TO DUCT WIDTH. WHERE THIS IS NOT POSSIBLE INSTALL FULL RADIUS TURNING VANES.

INSULATION: NCC MINIMUM R-VALUE REQUIRED.

FLEXIBLE DUCTWORK:

TYPE: FLEXIBLE DUCTWORK TO COMPLY WITH AS 4254.

ALL MATERIALS USED WITHIN FLEXIBLE DUCTWORK SHALL NOT GIVE OFF TOXIC EMISSIONS AND SHALL HAVE EARLY FIRE HAZARD PROPERTIES NOT EXCEEDING THE FOLLOWING WHEN TESTED IN ACCORDANCE WITH AS 1530 PART III:

SPREAD OF FLAME: 0

IGNITABILITY: 0

HEAT EVOLVED: 0

SMOKE DEVELOPED: 3

OUTDOOR AIR DUCTWORK: METALLISED INNER CORE AND METALLISED OUTER JACKET.

CONNECTION: CONNECT TO DUCTWORK AND OUTLETS USING WORM SCREW DRAW BANDS OR PROPRIETARY BANDING SYSTEM AND SEAL WITH 50MM WIDE PVC ADHESIVE TAPE.

BENDS: MINIMUM RADIUS BEND ACCEPTABLE IS 1.5 D OR MANUFACTURERS SPECIFICATION WHICHEVER IS THE GREATER.

DUCT DIAMETER: THE FULL SPECIFIED DUCT DIAMETER IS TO BE MAINTAINED AT ALL TIMES. CRUSHING OR SQUASHING OF DUCT WILL NOT BE ACCEPTED.

ALL DUCTWORK SHALL NOT EXCEED THE REQUIREMENTS OF AS 1668.1 BEING NOT MORE THAN 5 METERS IN LENGTH.

ALL DUCTWORK SHALL BE SUPPORTED INDEPENDENTLY AND NOT LAY OR BE SUPPORTED BY THE CEILING GRID.

INSULATION: NCC MINIMUM R-VALUE REQUIRED.

Plotted by: Tim Barnett

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Project MOUNT GAMBIER RAILWAY STATION TOILET UPGRADE	Title MECHANICAL SERVICES HVAC - SPECIFICATION NOTES (SHEET 1 OF 1)	Architect habitable places architects 24 Divett Place Adelaide SA 5000 Ph: 08 8232 9925 info@habitableplaces.com.au	<div><div>SECON</div><div>consulting engineers</div><div><div>456 PULTENEY STREET ADELAIDE SOUTH AUSTRALIA 5000</div><div>TEL: 08 8223 7800 FAX: 08 8223 7399 engineers@secon.net.au A.B.N. 30 613 300 299 A.C.N. 613 300 299</div></div></div>	<div><div>© COPYRIGHT SECON PTY. LTD. 2020</div><div><div>North</div><div></div></div><div><div>DRAWN TB</div><div>CHECKED SMC</div><div>ENG AB</div><div>Q.A. -</div><div>DATE OCT '20</div><div>SCALE 1:50 @ A3</div><div>SHEET 3 of X</div><div>DRAWING No. C0295-M-SK03</div><div><div>PLOT DATE: 20/11/2020</div><div>Size. A3</div><div>Rev. 0</div></div></div></div>
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17. MISCELLANEOUS

HANGERS AND SUPPORTS

GENERALLY: PROVIDE SUPPORTS INCLUDING HANGERS, SADDLES, BOLTED CLIPS, SUFFICIENT TO SECURE THE PIPEWORK DUCTWORK AND EQUIPMENT TO ADJACENT SURFACES.

WHERE EQUIPMENT IS REQUIRED TO BE LOCATED ON THE BUILDING STRUCTURE EG. COLUMNS, BEAMS AND THE LIKE, SHALL BE CLAMPED AND BOLTED FIXED WITH LOCK NUTS "NO DRILLING OR WELDING IS PERMITTED TO STRUCTURAL MEMBERS".

NOISE LEVELS

SELECT AND INSTALL MECHANICAL PLANT AND EQUIPMENT, REGISTERS, GRILLES, DIFFUSERS, ANTI-VIBRATION HANGERS, SPRING ISOLATING MOUNTS, NEOPRENE PADS, ACOUSTIC PLANT AND DUCT INSULATION, ACOUSTIC BAFFLES ETC. TO BE NOT GREATER THAN THE FOLLOWING NOISE LEVELS:-

TOILET & WET AREAS: 50dBA

AIR OUTLETS AND GRILLES

GENERAL

MANUFACTURE: OUTLETS AND GRILLES WHICH ARE COMMERCIALY PROVEN AND IN CURRENT VOLUME PRODUCTION AND, FROM THE ONE MANUFACTURER. MATERIAL AND FINISH: ALUMINIUM CONSTRUCTION FINISHED IN POWDER COATING TO AS 3715. DUCTWORK AND CUSHION HEADS BEHIND GRILLES: WHERE VISIBLE, PAINT MATT BLACK.

DOOR GRILLES

GENERAL: MANUFACTURE: DOOR GRILLES WHICH ARE COMMERCIALY PROVEN AND IN CURRENT VOLUME PRODUCTION AND, FROM THE ONE MANUFACTURER. (MINIMUM 50% FREE AREA)
MATERIAL AND FINISH: ALUMINIUM CONSTRUCTION FINISHED IN POWDER COATING TO AS 3715. KORVEST CHEVRON OR EQUAL APPROVED.

17. ELECTRICAL

THE ENTIRE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT REGULATIONS AND REQUIREMENTS OF THE LOCAL SUPPLY AUTHORITY, AND WITH THE RELEVANT SAA SPECIFICATIONS AND CODES. CONNECT TO WEATHERPROOF ISOLATOR PROVIDED ADJACENT MECHANICAL EQUIPMENT. PROVIDE ALL ELECTRICAL & CONTROL WIRING FROM ISOLATOR.

18. MAINTENANCE

GENERAL:

THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOUR, TOOLS AND SERVICES NECESSARY TO SERVICE THE PLANT DURING THE DEFECTS LIABILITY PERIOD. INCLUDING BUT NOT LIMITED TO FILTER MEDIA, BELTS, REFRIGERANTS, FUSES, GLOBES AND ALL ITEMS REFERRED TO AS CONSUMABLE.
THE CONTRACTOR SHALL CARRY OUT REGULAR INSPECTIONS AT PERIODS NO GREATER THAN 1 CALENDAR MONTHS AS REQUIRED BY AS3666.2. WHERE AS3666.2 IS NOT APPLICABLE REGULAR INSPECTION PERIODS ARE TO BE NO GREATER THAN 3 CALENDAR MONTHS.

MAINTENANCE PERIOD: THE GREATER OF 12 MONTHS FROM THE DATE OF COMPLETION OF COMMISSIONING OF THE SYSTEMS AND THE DURATION OF THE DEFECTS LIABILITY PERIOD.
CORRECTIVE MAINTENANCE: ATTEND SITE AND UNDERTAKE CORRECTIVE MAINTENANCE WITHIN 24 HOURS OF RECEIPT OF VERBAL OR WRITTEN ADVICE.
PREVENTATIVE MAINTENANCE: PROVIDE PREVENTATIVE MAINTENANCE RECOMMENDED BY THE EQUIPMENT MANUFACTURER. PROVIDE ALL MATERIALS INCLUDING CONSUMABLE ITEMS AND REFRIGERANT.
SUMMER PREVENTATIVE MAINTENANCE VISIT: PROVIDE AT LEAST ONE PREVENTATIVE MAINTENANCE VISIT DURING THE MONTHS OF DECEMBER, JANUARY OR FEBRUARY. CARRY OUT PREVENTATIVE

MAINTENANCE.
MAINTENANCE REPORTS: PROVIDE A SIGNED MAINTENANCE REPORT SETTING OUT THE WORK DONE AN ANY MEASURED VALUES AFTER EACH VISIT.

19. EXISTING SERVICES

REQUIREMENT: EXISTING SERVICES MUST BE MAINTAINED AT ALL TIMES. BEFORE CUTTING INTO EXISTING SERVICES CONFER WITH THE SUPERINTENDENT FOR SUITABLE TIMES TO CARRY OUT THE WORK AND ALLOW FOR TEMPORARY SERVICES REQUIRED TO CARRY OUT THE ABOVE.
THE EXISTING EQUIPMENT AND DUCTWORK LAYOUTS SHOWN ARE DIAGRAMMATIC ONLY. WHERE UNITS, DIFFUSERS AND OUTLETS ARE BEING RELOCATED, DUE ALLOWANCE SHALL BE MADE FOR BENDS, SETS, PENETRATIONS, ETC, TO ENABLE SERVICES TO BE INSTALLED WITHIN THE EXISTING CEILINGS.

20. EXISTING BUILDING

UNKNOWN: EXISTING DUCTWORK, PIPEWORK, ETC, IN THE EXISTING CEILING SPACES OF THE BUILDINGS IS UNKNOWN. DUE ALLOWANCE SHALL BE MADE FOR BENDS, SETS, PENETRATIONS, ETC, TO ENABLE SERVICES TO BE INSTALLED WITHIN THE EXISTING CEILINGS WITHOUT MODIFICATIONS TO EXISTING SERVICES.
ENSURE THE STRUCTURAL INTEGRITY IS MAINTAINED, IN PARTICULAR THE CUTTING OF CEILINGS TO ACCOMMODATE AIR CONDITIONING SYSTEMS.

21. FIRE INDICES

COMPLY WITH THE FIRE INDICES NOMINATED IN THE NATIONAL CONSTRUCTION CODE (NCC) OF AUSTRALIA FOR THE RELEVANT BUILDING TYPE AND CLASSIFICATION.

22. PRICE BREAKDOWN SCHEDULE

ITEM	FIXED LUMP SUM
FANS	\$
AIR DIFFUSERS, REGISTERS, GRILLES, FLEX & FITTINGS	\$
ANTI-VIBRATION CONTROL	\$
DUCTWORK, ECODUCT	\$
SITE LABOUR & MATERIALS	\$
ELECTRICAL INSTALLATION & CONTROLS	\$
ENGINEERING, SHOP DRAWINGS & O&M MANUALS	\$
PROJECT MANAGEMENT	\$
PAINTING	\$
TESTING, COMMISSIONING & BALANCING	\$
52 WEEKS PREVENTATIVE MAINTENANCE & SERVICES	\$
SUNDRIES / MISC	\$

GST WHERE APPLICABLE \$

TOTAL TENDER PRICE \$

EQUIPMENT SCHEDULE

ITEM NAME	EAF-01
TYPE	MIXED FLOW
CAPACITY	150 L/s
STATIC PRESSURE	150 Pa
FAN DIAMETER	Ø200
MAX SPEED R/MIN	2480
VOLTS/PHASE/AMPS	240 / 1 / 1.29
SPEED CONTROLLER	YES
SOUND LEVEL dbA - SPL @ 3m MAX	40
MAX FAN MOTOR SHAFT POWER TO AIR FLOW RATIO w(l/s) & INPUT POWER TO AIR FLOW RATIO w(l/s)	COMPLIANCE WITH SECTION 'J' NCC
BASED ON	FANTECH MODEL TD-800-200SIL

Plotted by: Tim Barnett

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Project

MOUNT GAMBIER RAILWAY STATION
TOILET UPGRADE

Title

MECHANICAL SERVICES
HVAC - SPECIFICATION NOTES (SHEET 2 OF 2)

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