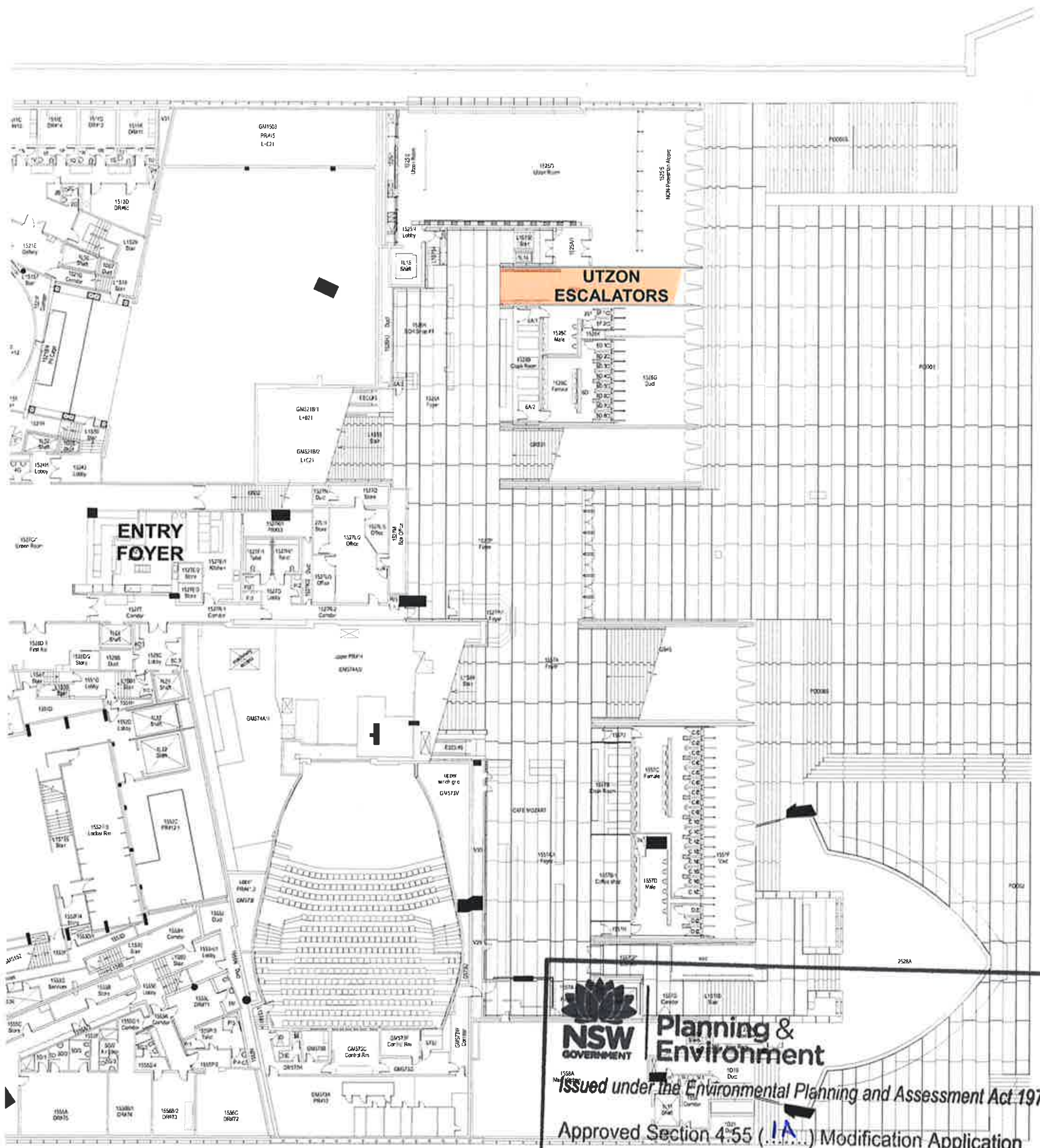
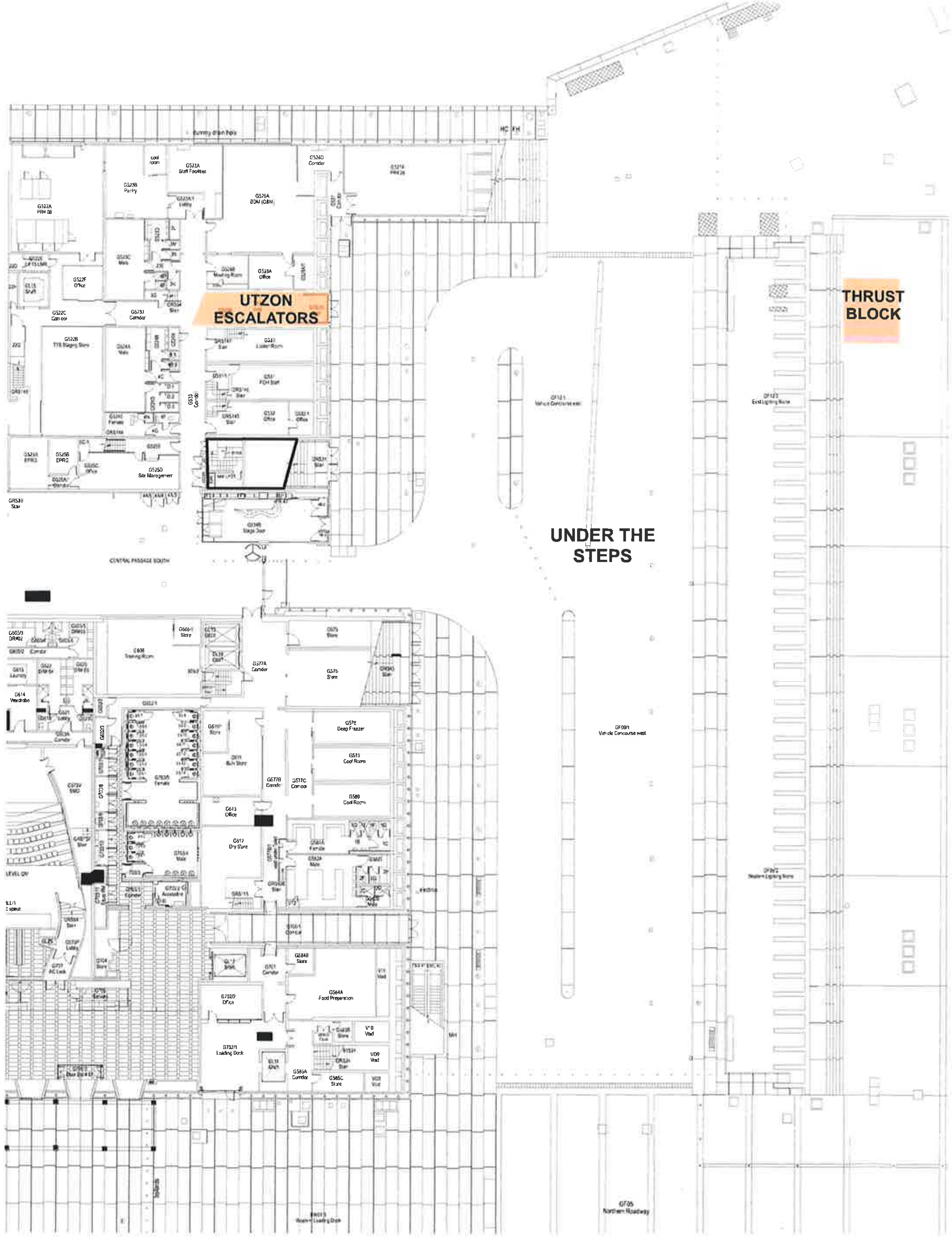


SITE LOCATION PLAN L1
1:250



SITE LOCATION PLAN GF
1:250

NSW GOVERNMENT Planning & Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Section 4.55 (1A) Modification Application

No. MOD 1 granted on the 26 Nov 2018

in respect to SSD 7665

Signed KF

Sheet No. 1 of 13

Issue	Description	Drwn	Appd	Date
1	ISSUED FOR TENDER	VS, TS	TG, RM	18.12.17

NOTES

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VERTICAL TRANSPORT CONSULTANT LDY / Brendan Byrne

FIRE CONSULTANT Arup / Alistair Morrison

HYDRAULIC ENGINEER

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tonkin zulaikha greer

Location

Status FOR TENDER

Contract SOH-513

Dwn TS, RM Date 18/12/2017

Ckd TG, RM Scale 1:250 @ A1

Project BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS

Title SITE LOCATION PLAN

Sydney Opera House Trust
GPO Box 4274 Sydney NSW Australia 2001
Phone +61 2 9250 7541
email info@sydneyoperahouse.com

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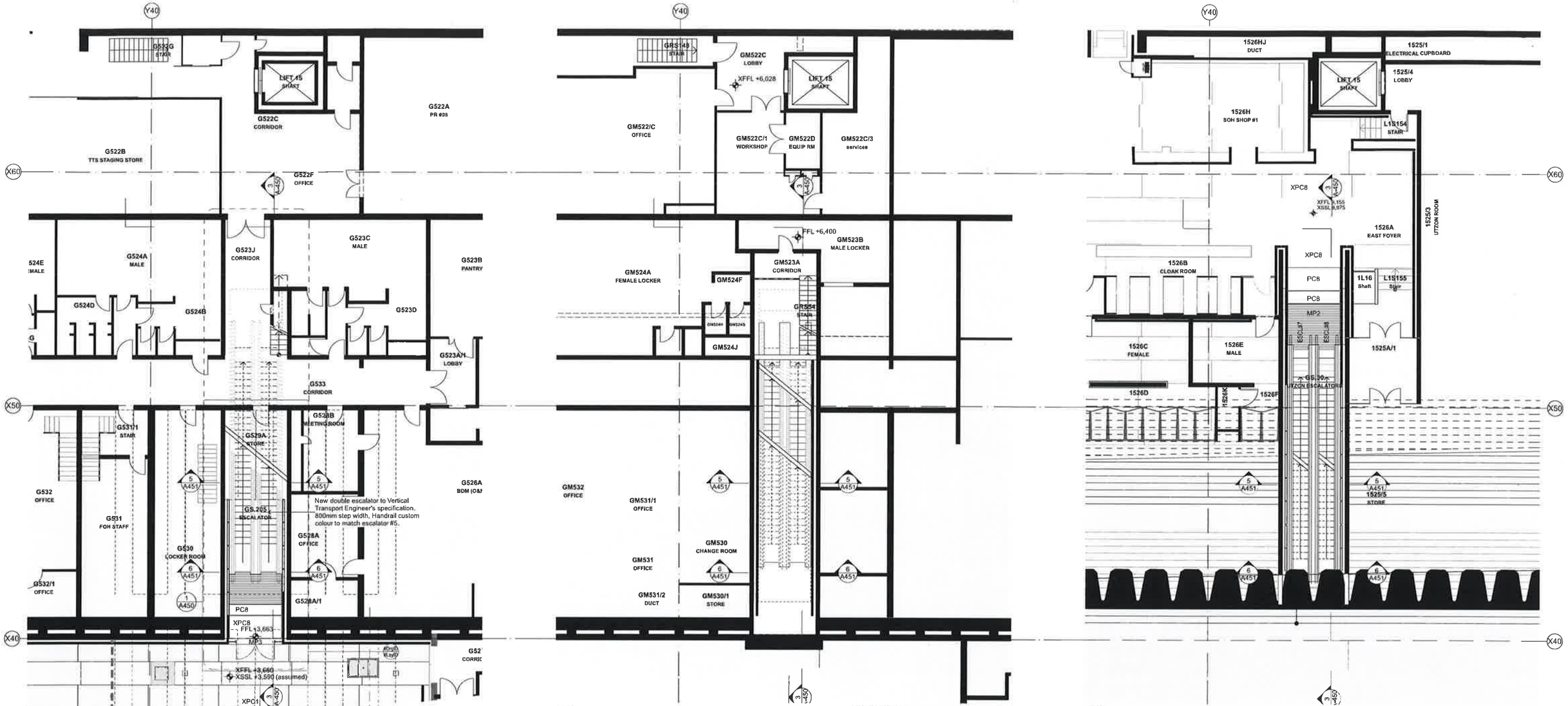
Location	Drawing No:	Sheet:	Rev	Size:
BX VA	49 BR TZG09	A002	1	A1



Issue	Description	Drwn	Apvd	Date
1	ISSUED FOR TENDER	VS, TS	TG, RM	16.12.17
2	TENDER ADDENDUM 01	VS, TS	TG, RM	03.05.18
3	TENDER ADDENDUM 02	VS, TS	TG, RM	27/06/18

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FIRE ENGINEERING	AV CONSULTANT
KITCHEN CONSULTANT	LIGHTING ARCHITECT
ACOUSTIC ENGINEER	HUMAN FACTORS CONSULTANT
HYDRAULIC ENGINEER	SECURITY CONSULTANT
MECHANICAL ENGINEER	BCA/ACCESS CONSULTANT
FIRE CONSULTANT	ESD CONSULTANT
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STRUCTURAL ENGINEER	
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Location

Status	FOR TENDER	Project	BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS
Contract	SOH-513	Title	GENERAL ARRANGEMENT PLANS
Dwn TG, RM	Date 27/6/18		
Ckd TG, RM	Scale 1:100 @ A1		

Sydney Opera House Trust
GPO Box 4274 Sydney NSW Australia 2001
Phone +61 2 9250 7541
email info@sydneyoperahouse.com

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Location	Drawing No:	Sheet:	Rev	Size:
BX VA	49 BR TZG09	A100	3	A1

NSW GOVERNMENT Planning & Environment

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Approved Section 4.55 (..1A..) Modification Application

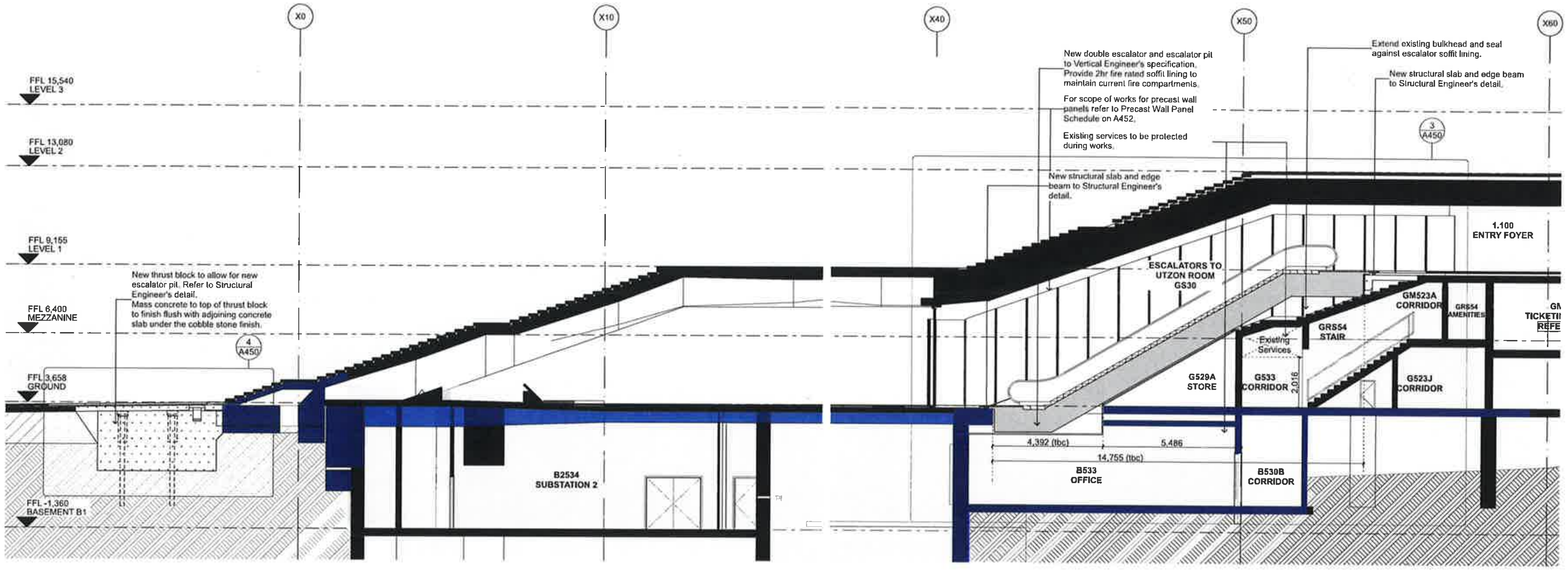
No.....MOD 1.....granted on the ..26 Nov 2018..

in respect to .....SSD 7665.....

Signed .....VCF.....

Sheet No.....2..... of .....13.....

N



1 N-S SECTION 1:100

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Approved Section 4.55 (1A) Modification Application

No. MOD 1 granted on the 26 Nov 2018

in respect to SSD 7665

Signed KF

Sheet No. 3 of 13

ESCALATOR SURVEY NOTES

The structure below Level GR+12 (FFL+3,663) is based on ARUP legacy drawings only and:

- has not been surveyed
- is not based on as-built drawings
- must be surveyed prior to any demolition works are started to confirm the proposed design

un-surveyed existing structure

Issue	Description	Dwn	Apvd	Date
1	ISSUED FOR TENDER	RM	TG	18.12.17
2	TENDER ADDENDUM 01	CO	TG	03.05.18
3	TENDER ADDENDUM 02	RM	TG	27.06.18
4	TENDER ADDENDUM 03 - REVISED NOTES	RM	TG	17.08.18

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AV CONSULTANT Arup / Tom Brockhill
LIGHTING ARCHITECT Steensen Varming / Aashleigh Bretherton
SECURITY CONSULTANT Arup / Shane Norton
FIRE CONSULTANT Arup / Alistair Morrison
ACCESSIBILITY CONSULTANT I-Access / Richard Seidman

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tonkin zulaikha greer

Location

Status FOR TENDER

Contract SOH-513

Dwn TS RM | Date 17/8/16

Ckd TG RM | Scale 1:100 @ A1

Project BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS

Title N-S SECTIONS

Sydney Opera House Trust
GPO Box 4274 Sydney NSW Australia 2001
Phone +61 2 9250 7541
email info@sydneyoperahouse.com

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Location	Drawing No:	Sheet:	Rev	Size:
BX VA	49 BR TZG09	A200	4	A1

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Approved Section 4.55 (1A) Modification Application

No. MOD 1 granted on the 26 Nov 2018

in respect to SSD 7665

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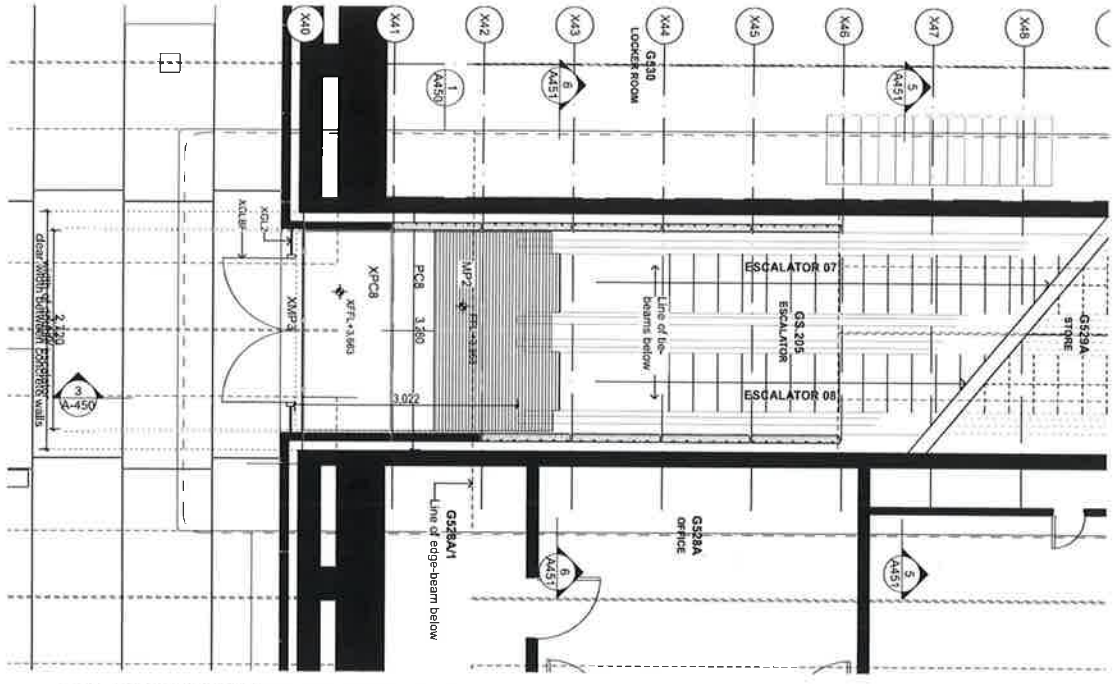
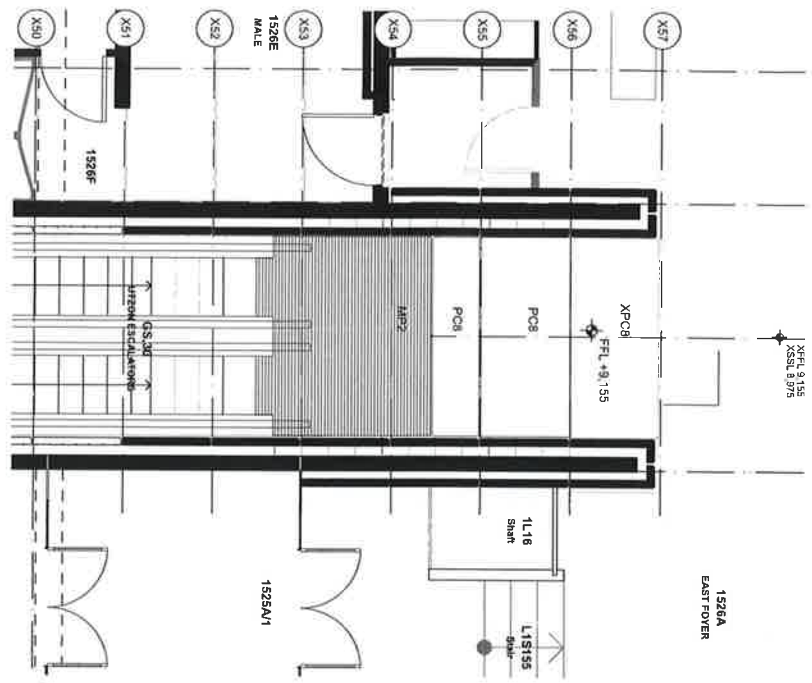
Sheet No. 4 of 13



1 PROPOSED GROUND FLOOR DETAIL PLAN
1:50



2 PROPOSED LEVEL 1 DETAIL PLAN
1:50

ESCALATOR SURVEY NOTES

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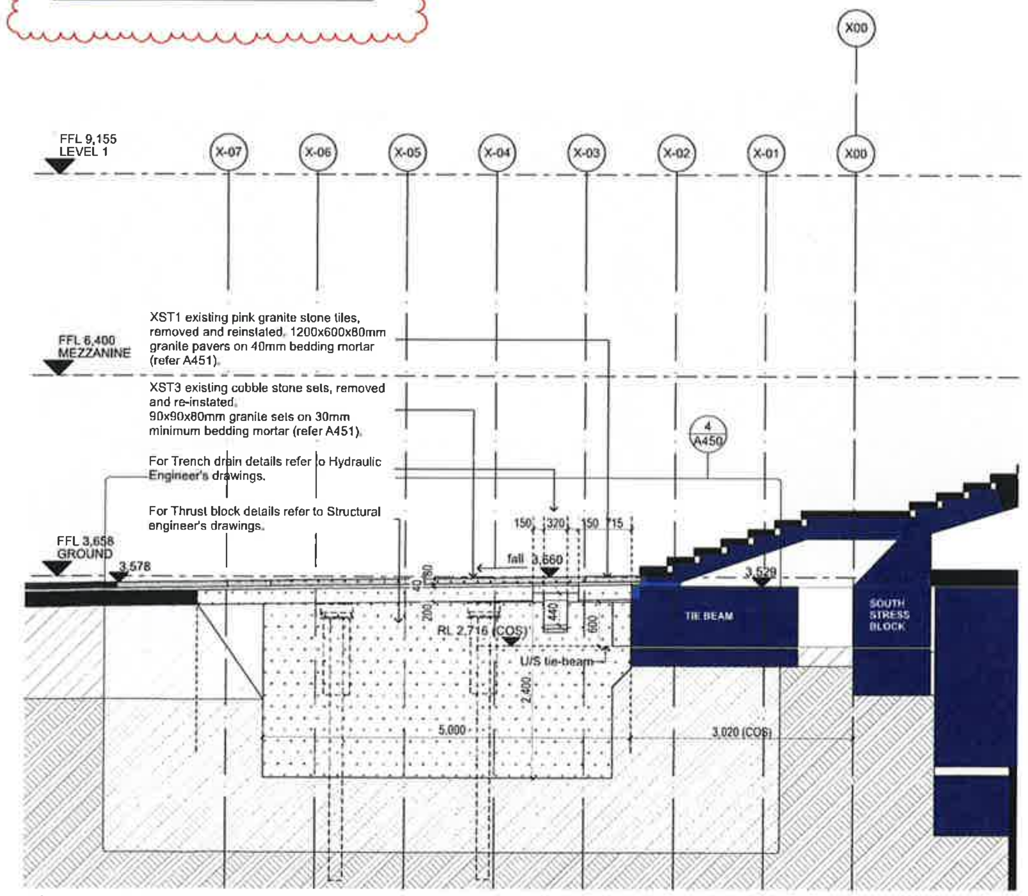
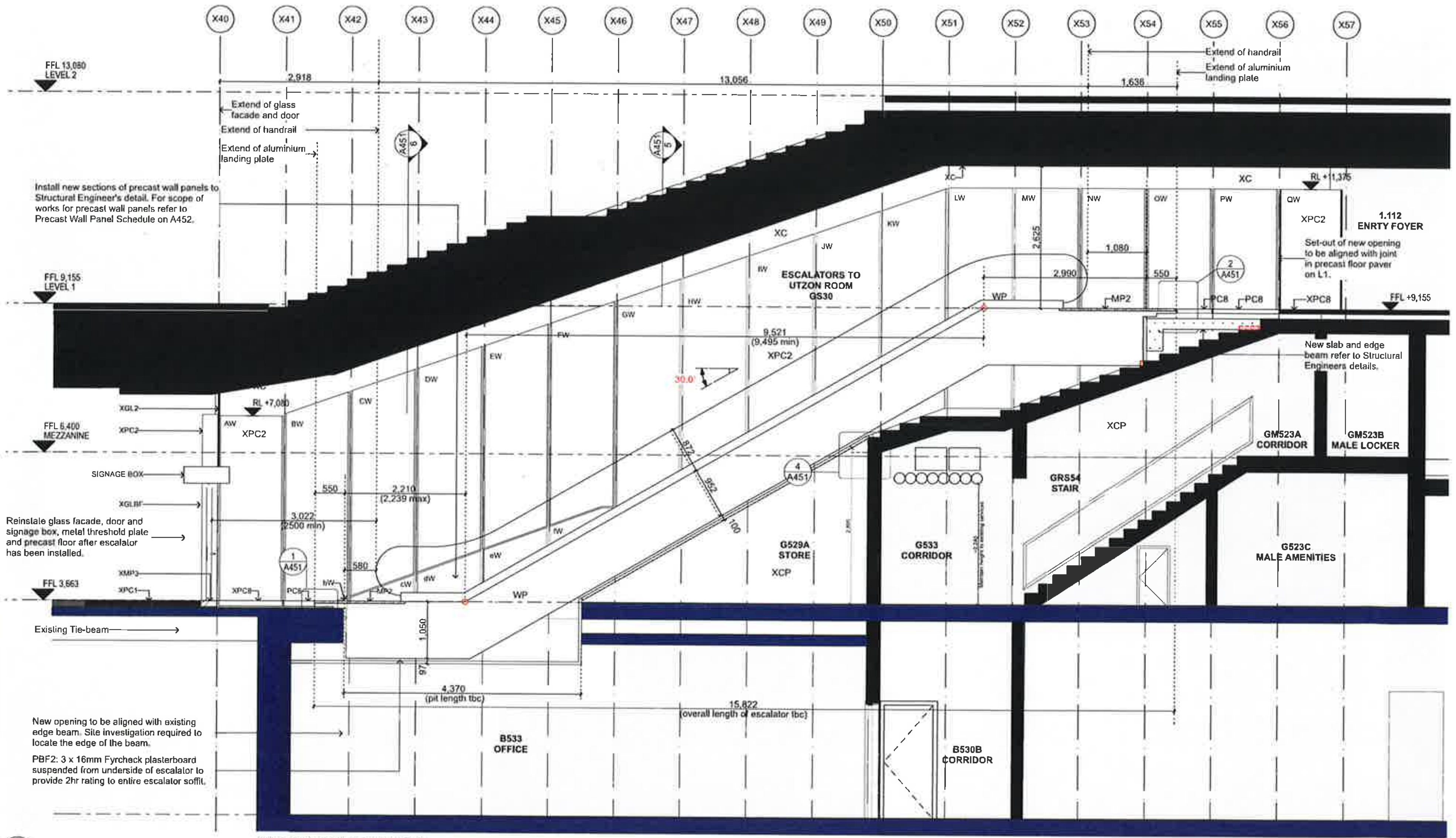


4 N-S SECTION THRUST BLOCK
1:50



3 N-S SECTION ESCALATOR
1:50

Issue	Description	Drwn	Apvd	Date
1	ISSUED FOR TENDER	RM	TG	18.12.17
2	TENDER ADDENDUM 01	GO	TG	03.05.18
3	TENDER ADDENDUM 02	RM	TG	27.08.18
4	TENDER ADDENDUM 03 - REVISED NOTES	RM	TG	17.08.18

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Location

Status	FOR TENDER
Contract	SOH-513
Dwn	TG, RM
Ckd	TG, RM
Date	17/8/18
Scale	1:50 @ A1
Project	BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS
Title	ESCALATOR PLANS AND N-S SECTION

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GPO Box 4274 Sydney NSW Australia 2001
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email info@sydneyoperahouse.com

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Location	Drawing No:	Sheet:	Rev	Size:
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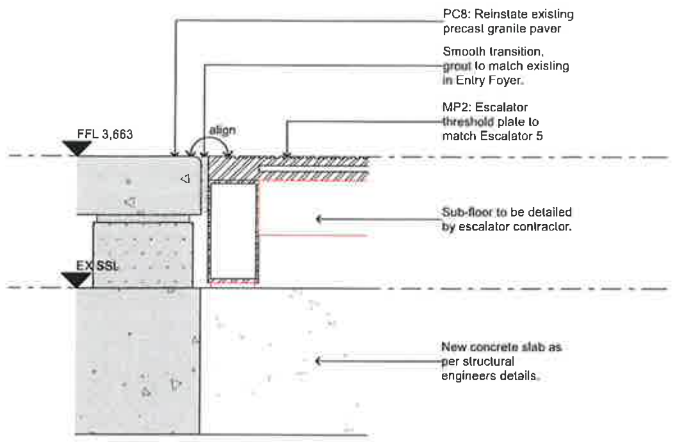
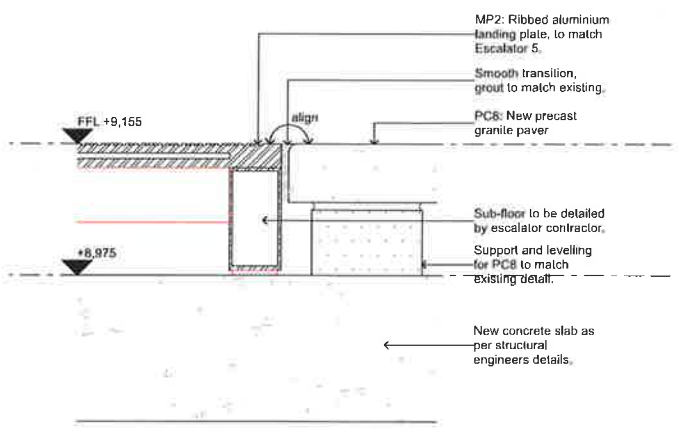
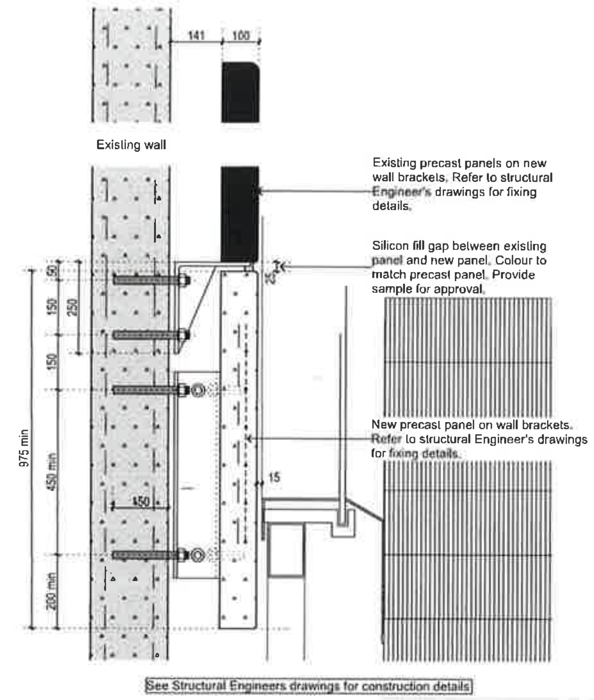


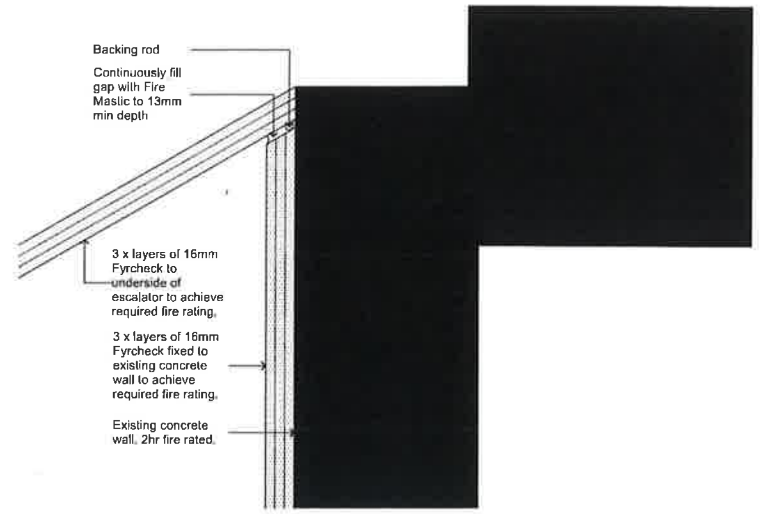
1 ESCALATOR BASE THRESHOLD DETAIL 1:5



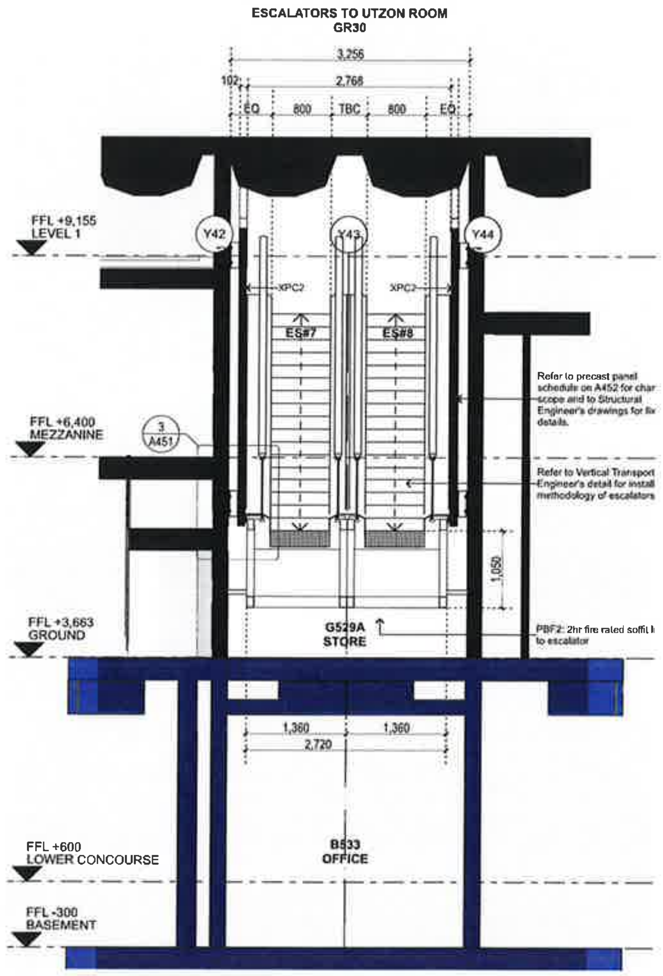
2 ESCALATOR TOP THRESHOLD DETAIL 1:5



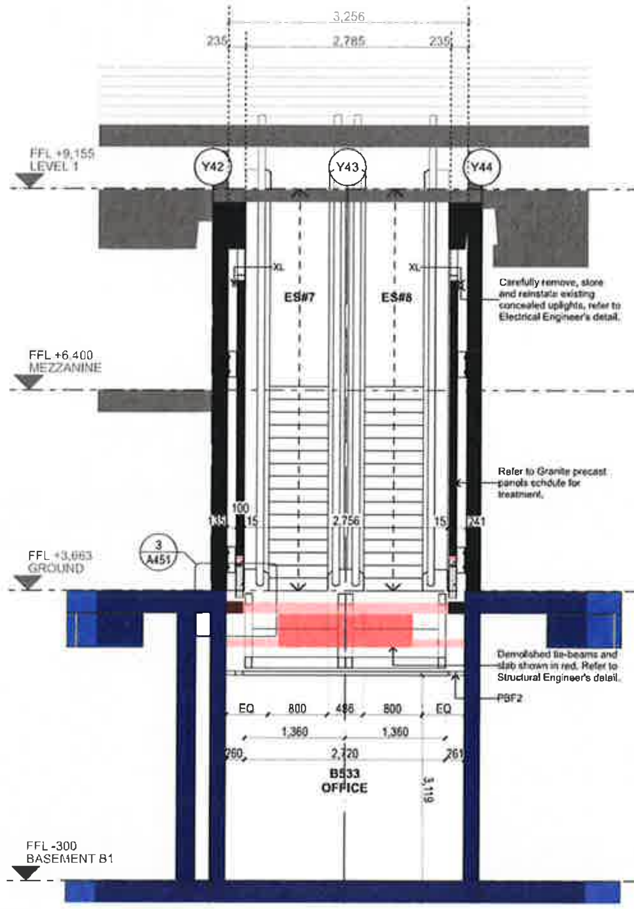
3 PRECAST WALL PANEL DETAIL 1:10



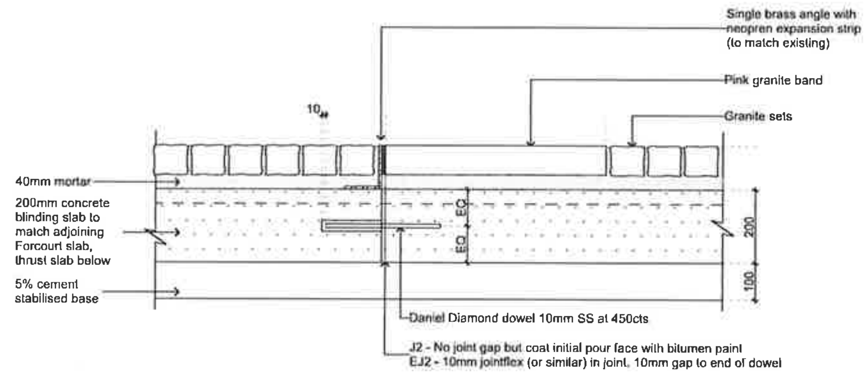
4 SOFFIT LINING DETAIL 1:5



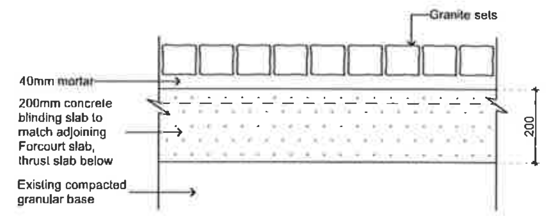
5 E-W DETAIL SECTION 1 1:50



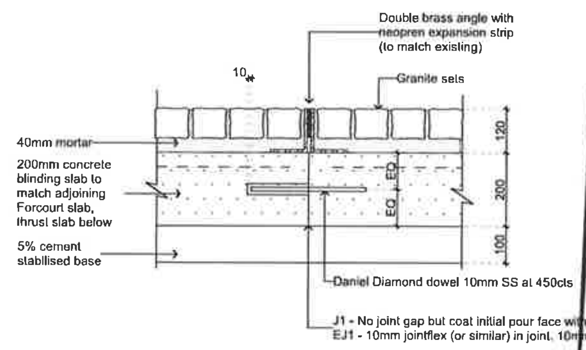
6 E-W DETAIL SECTION 2 1:50



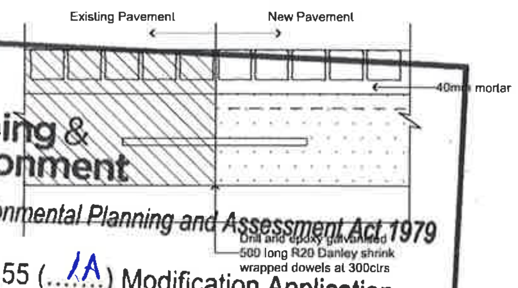
7 MOVEMENT JOINT - TYPE MJ2 1:10



8 NEW RIGID PAVEMENT OVERLAID WITH GRANITE 1:10



9 MOVEMENT JOINT - TYPE MJ1 1:10



10 TYPICAL DOWEL JOINT 1:10

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Approved Section 4.55 (1A) Modification Application

No. MOD 1 granted on the 26 NOV 2018

in respect to SSD 7665

Signed KF

Sheet No. 5 of 13

ESCALATOR SURVEY NOTES

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un-surveyed existing structure

Issue	Description	Dwn	Apd	Date
1	ISSUED FOR TENDER	RM	TG	18.12.17
2	TENDER ADDENDUM 01	GD	TG	03.05.18
3	TENDER ADDENDUM 02	RM	TG	27.06.18
4	TENDER ADDENDUM 03 - REVISED NOTES	RM	TG	17.08.18

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Location

Status: FOR TENDER

Contract: SOH-513

Dwn: TE, RM | Date: 17/8/18

Ckd: TG, RM | Scale: 1:5, 1:10, 1:50 @ A1

Project: BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS

Title: ESCALATOR DETAILS AND E-W SECTIONS

Sydney Opera House Trust
GPO Box 4274 Sydney NSW Australia 2001
Phone +61 2 9250 7541
email info@sydneyoperahouse.com

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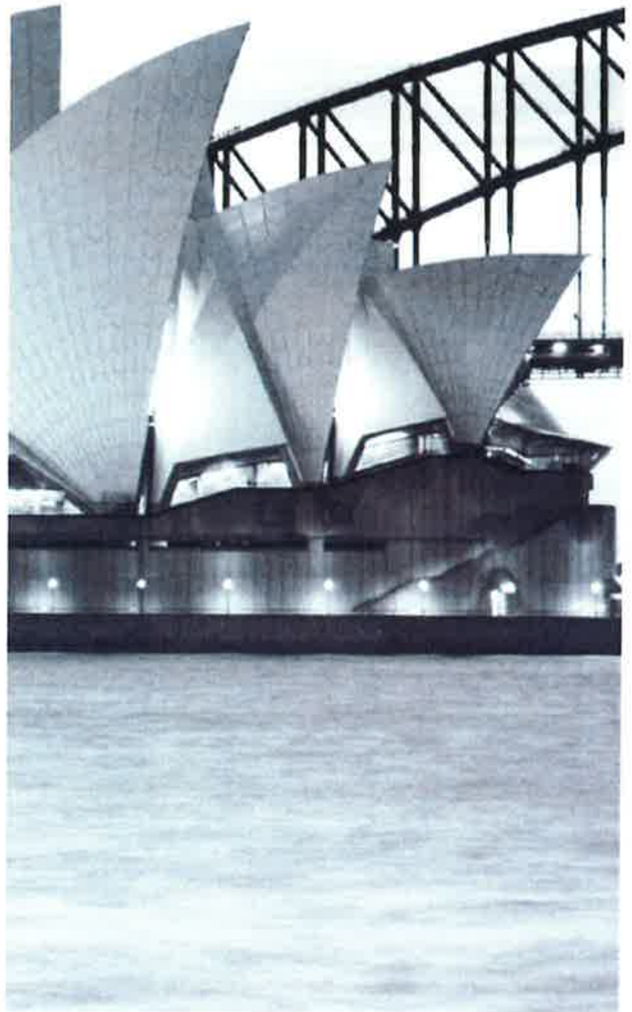
Location	Drawing No:	Sheet:	Rev	Size:
BX VA	49 BR TZG09	A451	4	A1

SYDNEY OPERA HOUSE
BUILDING RENEWAL PROGRAM

ISO A1 594mm x 841mm

STRUCTURAL DRAWING LIST - ENTRY FOYER ESCALATORS

29 BR AEC09 S000	ENTRY FOYER ESCALATORS - COVER SHEET AND DRAWING LIST
29 BR AEC09 S001	ENTRY FOYER ESCALATORS - GENERAL NOTES - SHEET 1
29 BR AEC09 S002	ENTRY FOYER ESCALATORS - GENERAL NOTES - SHEET 2
29 BR AEC09 S010	ENTRY FOYER ESCALATORS - UTZON ESCALATOR DETAILS - SHEET 1
29 BR AEC09 S011	ENTRY FOYER ESCALATORS - UTZON ESCALATOR DETAILS - SHEET 2
29 BR AEC09 S015	ENTRY FOYER ESCALATORS - THRUST BLOCK DETAILS



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Approved Section 4.55 (1A) Modification Application

No. MOD 1 granted on the 26 NOV 2018

in respect to SSD 7665

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Sheet No. 6 of 13

NOT FOR CONSTRUCTION

Issue	Description	Dwn	Apvd	Date
02	ISSUED FOR TENDER	HG	J.O.	02.05.2018
01	ISSUED FOR TENDER	J.T.	J.O.	15.12.2017

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SAFETY IN DESIGN ISSUES HAVE BEEN ASSESSED AS PART OF THE DESIGN PROCESS. ALL REASONABLE STEPS HAVE BEEN TAKEN TO ENSURE HAZARDS AND RISKS NORMALLY ASSOCIATED WITH THIS TYPE OF DESIGN HAVE BEEN MITIGATED AND/OR COMMUNICATED.
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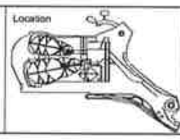
Location



Status	FOR TENDER	
Contract	SOH-513	
Dwn J BRAGA	Date 02-05-2018	
Ckd J ONSLOW	Scale	

Project: BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS

Title: STRUCTURAL COVER SHEET AND DRAWING LIST

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GPO Box 4274 Sydney NSW Australia 2001
Phone +61 2 9250 7541
email info@sydneyoperahouse.com

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Location	Drawing No	Sheet	Rev	
BX VA	29 BR AEC09	S000	02	A1

2/05/2018 6:28:22 PM
C:\Users\ganih\Documents\60469415-ST-CENTRAL-2016_Ganih.rvt

ISO A1 594mm x 841mm

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G1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ARCHITECT'S AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.

G2. IF IN DOUBT, VERIFY WITH THE RELEVANT PARTY AS NECESSARY

G3. REFER ANY DISCREPANCY, AMBIGUITY, OMISSION OR INCONSISTENCY TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE WORK

G4. DO NOT OBTAIN DIMENSIONS BY SCALING THE STRUCTURAL ELEMENTS.

G5. VERIFY ALL SETTING OUT DIMENSIONS WITH THE CONTRACT ADMINISTRATOR.

G6. SETTING OUT DIMENSIONS SHALL BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO CONSTRUCTION/FABRICATION, WHO SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS.

G7. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE BUILDING CODE OF AUSTRALIA (BCA), THE APPROPRIATE AUSTRALIAN STANDARDS, THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

G8. DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.

G9. WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH ALL WORKCOVER REQUIREMENTS AND THE WORK HEALTH AND SAFETY ACT AND THE WORK HEALTH AND SAFETY REGULATION.

G10. CONSTRUCTION SHALL NOT COMMENCE UNTIL THE RELEVANT CONSTRUCTION CERTIFICATE IS ISSUED BY THE PRINCIPAL CERTIFYING AUTHORITY.

G11. SERVICES SHOWN ON DRAWINGS ARE INDICATIVE ONLY. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION WORKS, THE CONTRACTOR IS TO IDENTIFY ALL EXISTING SERVICES. ANY DAMAGES TO THE EXISTING SERVICES ARE TO BE RECTIFIED AT THE CONTRACTOR'S EXPENSE.

G12. DURING CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE STRUCTURES AND EXCAVATIONS ARE MAINTAINED IN A SAFE AND STABLE CONDITION AT ALL TIME AND NO PART IS TO BE OVERSTRESSED. THE CONTRACTOR SHALL DEVELOP WORK METHOD STATEMENTS FOR ALL ERECTION OF STRUCTURAL STEEL/FORMWORK/ DEMOLITION/EXCAVATION/TILT PANELS ETC. AND PROVIDE TEMPORARY WORKS SUCH AS BRACING, PROPPING AND SHORING ETC. TO KEEP THE WORKS AND EXCAVATIONS STABLE AND FREE FROM WATER AT ALL TIMES. THE CONTRACTOR IS TO ENGAGE AN NPER REGISTERED STRUCTURAL ENGINEER TO DESIGN AND CERTIFY THE TEMPORARY WORKS.

G13. REDUCED LEVELS AND GRID DIMENSIONS SHOWN IN THESE DRAWINGS ARE APPROXIMATE ONLY AND ARE FOR THE SOLE PURPOSE OF ASSISTING THE STRUCTURAL DOCUMENTATION. THEY MUST NOT BE USED FOR CONSTRUCTION. REFER TO ARCHITECT'S DRAWINGS FOR ALL CONSTRUCTION REDUCED LEVELS.

G14. ALL PROPRIETARY PRODUCTS ARE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS UNLESS NOTED OTHERWISE.

G15. ALL DISTURBED AREAS NOT SUBJECTED TO NEW WORKS SHALL BE REINSTATED TO THEIR EXISTING CONDITION BY THE CONTRACTOR AT THE COMPLETION OF WORKS TO THE SATISFACTION OF THE RESPONSIBLE AUTHORITY.

G16. ALL PENETRATIONS THROUGH SLABS AND BEAMS SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCEMENT OF WORK.

G17. THE DRAWINGS MAY NOT SHOW ALL DETAILS OF FIXTURES, INSERTS, SLEEVES, OPENINGS ETC. REQUIRED BY THE VARIOUS TRADES. ALL SUCH DETAILS, INCLUDING RECESSES AND CHASES, ARE TO BE APPROVED BY THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING WITH THE CONSTRUCTION.

G18. NON-LOAD BEARING ELEMENTS SHALL BE KEPT CLEAR OF THE STRUCTURAL SOFFIT BY AN ALLOWANCE DETERMINED FROM SPAN/250 OR CANTILEVER/125 BUT NOT LESS THAN 20MM UNLESS NOTED OTHERWISE ON THE DRAWINGS. CONSTRUCTION OF ANY MASONRY WALLS OR OTHER PERMANENT LOADING MUST NOT BE BUILT ON CONCRETE SLABS OR BEAMS UNTIL FORMWORK SUPPORTING SAME HAS BEEN REMOVED. HOWEVER, PROPS AND FORMWORK SHALL NOT BE REMOVED BEFORE THE MINIMUM TIME SPECIFIED. DISTRIBUTE MASONRY ON SLAB ADJACENT TO ITS FINAL POSITION PRIOR TO CONSTRUCTING WALLS. ALL UNREINFORCED MASONRY WALLS ARE TO BE SEPARATED FROM ABUTTING CONCRETE WITH TWO LAYERS OF SUPER ALCOR.

G19. WHERE STRUCTURAL INSPECTIONS ARE REQUIRED FOR CERTIFICATION, THE INSPECTIONS ARE TO BE PERFORMED BY THE STRUCTURAL ENGINEER. THE CONTRACTOR IS REQUIRED TO ALLOW TIME FOR THE STRUCTURAL ENGINEER TO INSPECT AT THE FOLLOWING POINTS:
- COMPLETED EXCAVATION, FORMWORK, REINFORCEMENT, MEMBRANES AND EMBEDMENT PRIOR TO PLACING CONCRETE,
- COMPLETED ERECTED STRUCTURAL ELEMENTS PRIOR TO PLACING COVERING (UNLESS COVERED BY AS1684 RESIDENTIAL TIMBER-FRAMED CONSTRUCTION).

G20. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED FOR INSPECTION. ALL WORKS TO BE INSPECTED MUST BE COMPLETED PRIOR TO THE TIME OF INSPECTION.

G21. INSPECTIONS DO NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR THE COMPLETENESS AND CORRECTNESS OF HIS WORKS.

G22. INSPECTIONS WILL BE PERIODIC AND REPRESENTATIVE AND WILL NOT NECESSARILY BE MADE OF ALL WORKS. THE CONTRACTOR IS TO ADVISE THE ENGINEER OF ALL WORK COMPLETION, BUT ELECTION TO INSPECT OR OTHERWISE WILL BE AT THE ENGINEER'S DISCRETION. THE CONTRACTOR IS TO ALLOW TIME AND PROVIDE SITE ACCESS FOR THE INSPECTIONS TO TAKE PLACE AND IS TO HAVE A RESPONSIBLE SITE SUPERVISOR AVAILABLE TO RECEIVE ANY COMMENT OR DIRECTION FROM THE INSPECTING PARTY.

G23. WHERE STRUCTURAL ELEMENTS ARE DESIGNED AND CERTIFIED BY OTHER PARTIES, THE BUILDER SHALL OBTAIN WRITTEN CERTIFICATION, PRIOR TO PROCEEDING WITH ANY CONSTRUCTION WHICH MAY PREVENT INSPECTION OR REMEDIAL WORKS BEING UNDERTAKEN TO THESE ITEMS.

LEGEND/ABBREVIATIONS

ABBREVIATION	DESCRIPTION
HORIZ	HORIZONTAL
VERT	VERTICAL
CENTRAL	CENTRALLY PLACED
CRS	CENTRES
T or TOP	TOP or TOP FACE
B or BTM	BOTTOM or BOTTOM FACE
T&B	TOP & BOTTOM
NF	NEAR FACE
FF	FAR FACE
INTF	INTERNAL FACE
EXTF	EXTERNAL FACE
EF	EACH FACE
EW	EACH WAY
EQ	EQUAL
NSOP	NOT SHOWN ON PLAN
NSOE	NOT SHOWN ON ELEVATION
UNO	UNLESS NOTED OTHERWISE
TYP	TYPICAL
CL	CENTRE LINE
PL	PLATE
SV	SIZE VARIES
STG	STAGGERED
N/S	NEAR SIDE
F/S	FAR SIDE
B/S	BOTH SIDES
U/S	UNDER SIDE
L	LENGTH/LONG
W	WIDTH/WIDE
H	HEIGHT/HIGH
D	DEPTH/DEEP
NOM	NOMINAL
REQ'D	REQUIRED
REINF	REINFORCEMENT
OPP	OPPOSITE
SIM	SIMILAR
GA	GENERAL ARRANGEMENT
PT	POST TENSION
DRG	DRAWINGS
NTS	NOT TO SCALE
LV	LENGTH VARIES
ABR	ALTERNATE BAR REVERSED
MAX	MAXIMUM
MIN	MINIMUM
CONT	CONTINUOUS

LOADING NOTES

L1. ALL LOADINGS HAVE BEEN ASSESSED IN ACCORDANCE WITH AS1170.0:2002 AND THE BUILDING CODE OF AUSTRALIA (BCA)

L2. THE STRUCTURAL COMPONENTS IN THESE DRAWINGS HAVE BEEN DESIGNED FOR THE FOLLOWING LOADINGS:

FLOOR USAGE / DESCRIPTION	PERMANENT ACTIONS	IMPOSED ACTIONS	
	SUPERIMPOSED DEAD LOAD (kPa)	UNIFORM LIVE LOAD (kPa)	CONCENTRATED ACTIONS (kN)
FOYER	**3.5**	**4.0**	**3.6**
CORRIDORS/LIFTS	**2.0**	**4.0**	**4.5**
EXTERNAL STAIRS	**1.0**	**4.0**	**4.5**
THRUST BLOCK	**SEE THRUST BLOCK NOTES ON DRAWING S050**		

L3. THE DESIGN WIND CRITERIA TO AS1170.2:2002 ARE AS FOLLOWS:

DESIGN LIFE:	**50 YEARS**
REGION:	**A2**
IMPORTANCE LEVEL:	**2**
TERRAIN CATEGORY:	**1**
TOPOGRAPHIC MULTIPLIER, Mt	**1**
TERRAIN/HEIGHT MULTIPLIER, Mz, CAT:	**1**
SHIELDING MULTIPLIER, Ms:	**1**
REGIONAL WIND SPEED -	
ULTIMATE Vu:	**45 m/s**
SERVICE Vs:	**37 m/s**

L4. DO NOT PLACE OR STORE BUILDING MATERIALS ON CONCRETE , MEMBERS WITHOUT THE CONTRACT ADMINISTRATOR'S APPROVAL

FORMWORK NOTES

FW1. FORMWORK SHALL COMPLY WITH AS3610.1995.

FW2. THE DESIGN, CONSTRUCTION AND PERFORMANCE OF THE FORMWORK, FALSEWORK AND BACK-PROPPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ENGAGE A STRUCTURAL ENGINEER TO CERTIFY ALL FORMWORK, FALSEWORK AND BACKPROPPING DESIGN. THE CONTRACTOR SHALL SUBMIT PROPOSALS FOR FORMWORK, FALSEWORK AND BACK-PROPPING AND REMOVAL OF FORMWORK TO THE CONTRACT ADMINISTRATOR FOR COMMENT AT COMMENCEMENT OF JOB

FW3. RESHORING IS NOT PERMITTED.

FW4. STRIPPING OF FORMWORK SHALL COMPLY WITH SECTION 19.6 OF AS3600.2009.

FW5. FORMED CONCRETE SURFACES SHALL HAVE FINISHES IN ACCORDANCE WITH AS3610.1995 AS SPECIFIED BY THE CONTRACT ADMINISTRATOR.

FW6. ALL HOLES LEFT BY FORM TIE BOLTS SHALL BE FILLED WITH MORTAR MATCHING THE SURFACE COLOUR OF THE FINISHED SURFACE.

FW7. IN MULTI-STOREY CONSTRUCTION PROPPING MAY BE REQUIRED TO EXTEND A NUMBER OF LEVELS BELOW THE FLOOR BEING CAST. REMOVAL OF PROPS TO AVOID DISTRESS TO PREVIOUSLY CAST FLOORS SHALL BE PLANNED AND PROGRAMMED. RE-SHORING OR BACK-PROPPING PROPOSALS SHALL BE SUBMITTED FOR APPROVAL BY THE CONTRACT ADMINISTRATOR.

FW8. FORMWORK MAY BE STRIPPED AFTER 7 DAYS, BUT BEAMS AND SLABS MUST REMAIN PROPPED FOR 21 DAYS. FOR MULTISTOREY BUILDINGS, SEE SPECIFIC BACKPROPPING REQUIREMENTS.

EXCAVATION & SHORING NOTES

ES1. ALL NECESSARY APPROVALS FROM AUTHORITIES AND ADJACENT PROPERTY OWNERS MUST BE OBTAINED BEFORE COMMENCEMENT OF WORK.

ES2. IDENTIFY AND VERIFY THE LOCATION OF EXISTING ADJACENT SERVICES AND CONFIRM DETAILS WITH THE ENGINEER PRIOR TO EXCAVATION.

ES3. THE GEOTECHNICAL ENGINEER IS TO MONITOR THE EXCAVATION AS IT PROCEEDS AND SHALL BE CONSULTED AT ALL TIMES REGARDING STABILITY OF ROCK FACES AND CONFIRMATION OF, OR CHANGES TO THE REQUIREMENTS FOR THE ROCK BOLTS, DOWELS, ROCK ANCHORS, CONCRETE PANELS, SOLDIERS, WALERS, AND DRAIN HOLES.

ES4. UNLESS NOTED OTHERWISE, THE EXCAVATION IS TO BE TAKEN TO A MAXIMUM OF 500mm BELOW THE LEVEL OF ANY ROW OF ROCK ANCHORS.

ES5. EXCAVATION IS NOT TO PROCEED TO THE NEXT LEVEL UNTIL ALL ANCHORS ON THE PRECEDING LEVEL ARE FULLY STRESSED AND LOCKED OFF.

EXCAVATION MONITORING NOTES

EM1. PRIOR TO EXCAVATION AT ANY BOUNDARY, SURVEY MONITORING POINTS SHALL BE ESTABLISHED ON THE TOP OF WALL AT 5m INTERVALS AROUND THE EXCAVATION UNLESS OTHERWISE SPECIFIED.

EM2. PRIOR TO EXCAVATION OF THE THRUST BLOCK, SURVEY MONITORING POINTS SHALL BE ESTABLISHED ON EXISTING BEAMS ADJACENT TO THE PROPOSED EXCAVATION. SURVEY MONITORING POINTS TO BE 2m INTERVALS AND CONTINUE 6m PAST THE PROPOSED EXCAVATION UNLESS OTHERWISE SPECIFIED.

EM3. THE X, Y AND Z COORDINATES SHALL BE PROVIDED TO THE AECOM GEOTECHNICAL AND STRUCTURAL ENGINEERS EVERY SECOND DAY DURING THE PROCESS OF THE WORKS UNLESS OTHERWISE SPECIFIED.

FOUNDATION NOTES

F1. FOUNDATIONS HAVE BEEN DESIGNED FOR AN ASSUMED ULTIMATE BEARING PRESSURE OF **12 MPa** OR AS SHOWN ON THE FOOTING DRAWINGS, FOUNDED ON CLASS II SANDSTONE. THE CONTRACTOR SHALL ENGAGE THE AECOM GEOTECHNICAL ENGINEER TO VERIFY THAT THE GROUND AT EACH FOOTING IS CAPABLE OF CARRYING THIS PRESSURE.

F2. ALL FOUNDATION EXCAVATIONS SHALL BE CLEANED OF LOOSE MATERIAL AND WATER PRIOR TO CASTING FOOTINGS.

F3. UNLESS OTHERWISE NOTED ON THE DRAWINGS, LOCATE ALL PIPES, RETAINING WALLS AND EXCAVATIONS OUTSIDE A **45°** ZONE OF INFLUENCE FROM THE BOTTOM EDGE OF THE FOOTING.

F4. WHERE SIDE OR BASE SHEAR IS REQUIRED TO BE DEVELOPED, CLEAN AND ROUGHEN THE FACES OF THE EXCAVATION TO THE SATISFACTION OF THE AECOM GEOTECHNICAL ENGINEER. WHERE VERIFIED FOUNDATION MATERIAL IS LOWER THAN THE UNDERSIDE OF FOOTINGS AS DETAILED, BACKFILL ADDITIONAL EXCAVATION WITH 10MPa MASS CONCRETE, 40MPa MASS CONCRETE FOR THRUST BLOCK EXCAVATION.

F5. FOUNDATIONS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.

F6. FOUNDATIONS TO BE CONSTRUCTED AND BACKFILLED AS SOON AS POSSIBLE FOLLOWING EXCAVATION TO AVOID SOFTENING OR DRYING OUT BY EXPOSURE.

F7. THE CONTRACTOR IS TO ALLOW FOR COST OF GEOTECHNICAL INSPECTIONS.

F8. DRILL 50mm VERTICAL CORE TEST HOLE ON THE CENTRE LINE OF EACH FOOTING TO A MINIMUM DEPTH OF 1.5 TIMES THE MINIMUM PLAN DIMENSION. THESE CORES ARE TO BE DRILLED BELOW THE LEVEL AT WHICH SUITABLE FOUNDING MATERIAL IS REACHED. THE CONTRACTOR SHALL ENGAGE THE AECOM GEOTECHNICAL ENGINEER TO CHECK PRIOR TO CONCRETING. IF DEEPENING OF THE EXCAVATION IS NECESSARY, THE TEST CORE WILL BE REDRILLED. CORE HOLE NOT REQUIRED NOT REQUIRED FOR THRUST BLOCK CONSTRUCTION

F9. STRIP ALL TOPSOIL FROM THE CONSTRUCTION AREA. ALL STRIPPED TOPSOIL IS TO BE REMOVED FROM SITE UNLESS DIRECTED OTHERWISE.

BORED PIER NOTES

BP1. ALL BORED PIERS ARE TO BE IN ACCORDANCE WITH SAI PILING CODE AS2159.

BP2. REFER GEOTECHNICAL INFORMATION NOTE FOR SITE INVESTIGATION I INFORMATION.

BP3. BORED PIERS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATION AND REQUIREMENTS SET OUT ON THE DRAWINGS.

BP4. EACH PIER IS TO BE CONSTRUCTED WITHIN A TOLERANCE OF 75mm OF THE LOCATION SHOWN ON THE PLAN, AND WITHIN 1 IN 100 VERTICALLY OR BETTER.

CONCRETE NOTES

C1. ALL CONCRETE WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600.2009, AS2870.2011 AND THE SPECIFICATION.

C2. CONCRETE QUALITY, AND REQUIRED PROPERTIES OF CONCRETE SHALL BE IN ACCORDANCE TO AS1379.2007.

C3. SURFACE FINISH, FORMWORK IS TO BE IN ACCORDANCE WITH THE SAI FORMWORK CODE AS3610.1995 EXCEPT WHERE SPECIFIED OTHERWISE BY ARCHITECT.

C4. CONCRETE REQUIREMENTS AS SHOWN IN TABLE BELOW UNLESS NOTED OTHERWISE ON THE DRAWINGS. NO "BRECCIA" TYPE AGGREGATE IS TO BE USED.

MEMBER LOCATION	EXPOSURE CLASSIFICATION	CONCRETE STRENGTH f'c (MPa) AT 28 DAYS	CONCRETE CLASS	SLUMP AT SITE +/- 15mm	Nom. MAX. AGGREGATE SIZE (mm)	MAX. 56 DAY SHRINKAGE x10-6	REQUIRED COVER (mm)
PILE CAPS	**A2**	**32**	**S32**	**80**	**20**	**700**	**50**
BORED PIERS	**A2**	**32**	**S32**	**80**	**20**	**700**	**75**
INTERNAL WALLS (INSITU)	**A2**	**32**	**S32**	**80**	**20**	**700**	**30**
PRECAST WALLS	**B1**	**40**	**S40**	**80**	**20**	**700**	**40**
INTERNAL SUSPENDED SLABS	**A1**	**32**	**S32**	**80**	**20**	**700**	**20 (30 TOP COVER TO LIGATURES)**
THRUST BLOCK	**B2**	**40**	**S40**	**80**	**20**	**700**	**65**

C5. NORMAL CLASS CONCRETE SHALL HAVE CEMENT OF TYPE GENERAL PURPOSE BLENDED CEMENT (GP) OR FOR THE ELEMENTS MARKED "*" (GREEN CONCRETE) ALL CEMENT TO BE GENERAL BLEND, GB (SLAG) [EQUIVALENT OF 70% TYPE GP, PLUS 30% GROUND GRANULATED BLAST FURNACE SLAG] PLUS 25% FLY ASH.

C6. THE CONTRACTOR IS TO SEEK APPROVAL FROM THE STRUCTURAL ENGINEER IN WRITING IF ANY ADMIXTURES TO BE USED IN THE CONCRETE MIX. CALCIUM CHLORIDE WILL NOT BE PERMITTED AND SHALL NOT BE USED UNDER ANY CIRCUMSTANCES.

C7. ALL CONCRETE SHALL BE SUBJECT TO PROJECT ASSESSMENT AND TESTING TO AS1379.2007.

C8. MECHANICALLY VIBRATE CONCRETE IN THE FORM TO GIVE MAXIMUM COMPACTION WITHOUT SEGREGATION OF THE CONCRETE.

C9. CURE CONCRETE AS REQUIRED BY SECTION 17 OF AS3600.2009 AND AS SET OUT IN THE SPECIFICATION.

C10. IN THE DRAWINGS, THE BEAM DEPTH IS WRITTEN FIRST AND INCLUDES SLAB THICKNESS IF ANY.

C11. STRIP FOOTING DEPTHS ARE WRITTEN FIRST FOLLOWED BY WIDTH.

C12. UNLESS SHOWN ON THE DRAWINGS, THE LOCATION OF ALL CONSTRUCTION JOINTS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW.

C13. NO CHASES, HOLES GREATER THAN 150mm DIAMETER, OR EMBEDMENT OF PIPES GREATER THAN 40mm DIAMETER OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN THE CONCRETE SLABS. FOR ALL OTHER CONCRETE MEMBERS, NO PENETRATIONS, CHASES OR EMBEDMENT SHALL BE MADE WITHOUT PRIOR APPROVAL BY THE STRUCTURAL ENGINEER.

C14. EXACT SIZE AND LOCATION OF PENETRATIONS ARE TO BE OBTAINED FROM WORKSHOP DRAWINGS PRIOR TO SCHEDULING OF REINFORCEMENT, AND ARE NOT TO EXCEED DIMENSIONS WHERE SHOWN ON THE STRUCTURAL DRAWINGS. LIAISE WITH ALL TRADES FOR FINAL PENETRATION SETOUT.

C15. DO NOT PLACE CONDUITS, PIPES AND THE LIKE WITHIN COVER CONCRETE. CONDUITS CAST INTO CONCRETE MEMBERS SHALL BE SPACED AT 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.

C16. SLURRY USED TO LUBRICATE CONCRETE PUMP LINES IS NOT TO BE USED IN ANY STRUCTURAL MEMBERS.

C17. CONCRETE SIZES AS DRAWN ARE MINIMUM AND DO NOT INCLUDE APPLIED FINISHES.

C18. UNLESS NOTED OTHERWISE, ALL SLABS CAST ON GROUND REQUIRE 50mm THICK COMPACTED FREE DRAINING SAND BEDDING WITH A 0.2mm POLYTHENE MEMBRANE.

C19. GENERALLY, DRAWINGS ARE DETAILED IN ACCORDANCE WITH THE PRINCIPLES SET OUT IN THE CONCRETE INSTITUTE OF AUSTRALIA (CIA) "REINFORCEMENT DETAILING HANDBOOK" OF 2010.

C20. ALL FORMED EXPOSED EDGES AND RE-ENTRANT CORNERS SHALL BE CHAMFERED OR FILLETED 15mm UNLESS NOTED OTHERWISE ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS. REFER TO ARCHITECT'S DRAWINGS AND SPECIFICATION FOR ALL FALLS IN SLAB, REGLETS AND CHAMFERS ETC. PROVIDE DRIP GROOVES AT ALL EXPOSED EDGES, COVER TO BE MAINTAINED.

C21. THE FACE OF ALL CONCRETE WHICH HAS REINFORCEMENT PROJECTING FROM IT AND AGAINST WHICH NEW CONCRETE IS TO BE CAST, IS TO BE THOROUGHLY MECHANICALLY SCABBLED, FULLY EXPOSING THE AGGREGATE MATRIX.

NSW GOVERNMENT | Planning & Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Section 4.55 (1A) Modification Application

No. MOD 1 granted on the 26 NOV 2018

in respect to SSD 7665

Signed VLF

Sheet No. 7 of 13

NOT FOR CONSTRUCTION

Issue	Description	Drwn	Apvd	Date
02	ISSUED FOR TENDER	HO	J.O.	02.05.2018
01	ISSUED FOR TENDER	J.T.	J.O.	15.12.2017

SAFETY IN DESIGN INFORMATION

SAFETY IN DESIGN ISSUES HAVE BEEN ASSESSED AS PART OF THE DESIGN PROCESS. ALL REASONABLE STEPS HAVE BEEN TAKEN TO ENSURE HAZARDS AND RISKS NORMALLY ASSOCIATED WITH THIS TYPE OF DESIGN HAVE BEEN MITIGATED AND/OR COMMUNICATED. RESIDUAL HAZARDS AND RISKS AND/OR HAZARDS AND RISKS NOT NORMALLY ASSOCIATED WITH THIS TYPE OF WORK WHICH MAY REQUIRE SUBSEQUENT CONSIDERATION AND/OR ACTION ARE DESCRIBED IN SOH-FOH SAFETY DESGIN REGISTER MATRIX DOCUMENT

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Location

Status: FOR TENDER
Contract: SOH-513
Drwn: J.BRAGA Date: 03-05-2016
Ckd: J.OKSLOW Scale:

Project: BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS
Title: STRUCTURAL GENERAL NOTES - SHEET 1

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Location	Drawing No	Sheet	Rev:	
BX VA	29 BR AEC09	S001	02	A1

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ISO A1 594mm x 841mm

COMPOSITE BEAM & BONDEK SLAB NOTES

CB1. THE TOP FLANGE OF ALL BEAMS WHICH ARE TO RECEIVE THROUGH DECK WELDED SHEAR STUDS, ARE TO BE UNPAINTED UNO.

CB2. SHEAR CONNECTORS TO BE PROPRIETARY HEADED STUDS, MANUFACTURED AND INSTALLED IN ACCORDANCE WITH AS1554.2:2003
DIAMETER: **19 Ø (U.N.O.)**
LENGTH AFTER WELDING: **100mm**

CB3. THE SPACING OF SHEAR STUDS TO BE WELDED TO THE TOP FLANGE OF EACH BEAM UNO, SHALL BE AS NOTED ON THE DRAWINGS.

CB4. THE SHEAR STUDS SHALL BE SPACED AS EVENLY AS POSSIBLE OVER ALL BEAMS UNLESS NOTED OTHERWISE.

CB5. ANY PRE-CAMBER REQUIRED TO THE BEAMS SHALL BE AS NOTED ON THE DRAWINGS.

CB6. ANY TEMPORARY PROPPING REQUIRED TO THE BEAMS DURING THE CONSTRUCTION STAGE SHALL BE AS NOTED ON THE DRAWINGS.

CB7. ALL PROFILED STEEL DECKING IS TO BE 'BLUESCOPE LYSAGHT' BONDEK II SHEETING AND IS TO BE 1.0mm BASE METAL THICKNESS. BONDEK TO HAVE AT LEAST TWO CONTINUOUS SPANS UNO.
ANY OTHER SECTION APPROVED BY THE CONTRACT ADMINISTRATOR, COMPLYING WITH AS1397:2011, GRADE G550 AND A MINIMUM GALVANISED COATING OF Z350 (350 G/sqm).

CB8. ALL DECKING SHALL BE SUPPLIED, LAID AND FIXED IN ACCORDNACE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. THE DECKING SHALL HAVE A MINIMUM BEARING OF 50mm AND SIZED TO SUIT THROUGH-DECK WELDING OF SHEAR STUDS UNO.

CB9. INSERTS SHALL BE PROVIDED TO SEAL ALL SHEET ENDS AND ALL JOINTS IN THE DECKING, EDGE TRIMS, ABUTTING WALLS AND SHUTTERING SHALL BE FULLY AND EFFECTIVELY SEALED BY TAPING PRIOR TO LAYOUT REINFORCEMENT AND POURING CONCRETE.

CB10. EDGE TRIMS TO BE A MINIMUM OF 2mm THICK GALVANISED STEEL, TIED AND FIXED TO DECKING WITH SUITABLE RESTRAINING STRAPS.

CB11. CONTRACTOR TO DETAIL SPACERS AND CHAIRS TO PROVIDE ADEQUATE SUPPORT. TOP MESH MUST BE ADEQUATELY SUPPORTED AND NOT ALLOWED TO REST ON PROFILE. ALL FOOT TRAFFIC DAMAGE MUST BE REMEDIED PRIOR TO CASTING AND THE MESH MAINTAINED AT THE STATED COVER.

CB12. WHEN IT IS NECESSARY TO FORM SERVICE HOLES IN THE COMPOSITE SLAB THE CONTRACT ADMINISTRATOR MUST ADVISED OF ALL REQUIREMENTS IN ADVANCE.

CB13. ALL HOLES SHALL BE EFFECTIVELY FIRE STOPPED.

CB14. DECKING MUST BE CLEAR OF DEBRIS, GREASE AND DIRT PRIOR TO CONCRETE PLACEMENT.

CB15. INDICATES THE DIRECTION OF THE BONDEK RIBS.

CB16. T.S. INDICATES TEMPORARY SUPPORTS TO BE USED DURING CONSTRUCTION.

CB17. REINFORCEMENT:
i) REINFORCE SLAB WITH SL92 FABRIC, 30 TOP COVER
ii) PROVIDE ADDITIONAL REINFROCEMENT WHERE SHOWN ON PLAN AND SECTIONS.

CHEMICAL & MECHANICAL ANCHOR NOTES

CA1. "CHEMSETS" DENOTES RAMSET GRADE 5.8 HOT DIPPED GALV. STUDS FIXED WITH RAMSET CHEMSET REO 502 WITH THE FOLLOWING MINIMUM EMBEDMENT UNO:

M12 CHEMSETS - 110mm EMBEDMENT UNO
M16 CHEMSETS - 125mm EMBEDMENT UNO
M20 CHEMSETS - 150mm EMBEDMENT UNO
M24 CHEMSETS - 160mm EMBEDMENT UNO

CA2. "CHEMSET MAXIMA CAPSULES" DENOTES RAMSET CHEMSET MAXIMA SPIN CAPSULES WITH STUDS AND EMBEDMENTS AS DEFINED IN NOTE CA1.

CA3. "SPATEC PLUS" DENOTES RAMSET SPATEC PLUS CARBON STEEL HOT DIPPED GALV. STUD ANCHORS WITH THE FOLLOWING MINIMUM EMBEDMENT UNO:

M12 SPATEC PLUS - 95mm EMBEDMENT UNO
M16 SPATEC PLUS - 110mm EMBEDMENT UNO
M20 SPATEC PLUS - 130mm EMBEDMENT UNO

CA4. "CHEMSET 101 ANCHORS" DENOTES RAMSET GRADE 5.8 HOT DIPPED GALV. STUDS, FIXED WITH AN EFFECTIVE DEPTH OF 64mm INTO EXTRUDED BRICK OR HOLLOW CONCRETE BLOCK, USING THE MANUFACTURER'S SLEEVES/SIEVES AND RAMSET CHEMSET INJECTION 101.

CA5. ALL ANCHORS ARE TO BE FIXED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS. IN PARTICULAR ENSURE HOLES ARE CLEAN OF DUST PRIOR TO INSTALLATION OF CHEMICAL ANCHORS.

CA6. CONTRACTOR IS TO LOAD TEST 5% OF CHEMICAL ANCHORS AT RANDOM TO MANUFACTURER NOMINATED PROOF LOAD FOLLOWING INSTALLATION. IF ANY ANCHORS FAIL TESTING, LOAD TEST 100% OF REMAINING CHEMICAL ANCHORS.

CA7. DESIGN HAS BEEN CARRIED OUT USING THE PRODUCTS ABOVE. PRODUCTS MAY BE SUBSTITUTED SUBJECT TO ENGINEER'S APPROVAL.

REINFORCEMENT NOTES

R1. SYMBOLS ON DRAWINGS FOR GRADE AND STRENGTH OF REINFORCEMENT ARE:

N DENOTES GRADE D500N HOT-ROLLED DEFORMED REINFORCEMENT BAR TO AS/NZS 4671:2001.
SL DENOTES GRADE 500L WELDED WIRE REINFORCEMENT MESH TO AS/NZS 4671:2001
L DENOTES GRADE D500L STEEL REINFORCEMENT TO AS/NZS 4671:2001.
R DENOTES GRADE 250R PLAIN ROUND BAR REINFORCEMENT TO AS/NZS4671:2001.
TM DENOTES HARD DRAWN STEEL TRENCH MESH, GRADE 500L TO AS/NZS 4671:2001

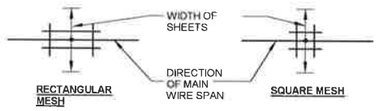
R2. BAR NOTATION GIVES THE FOLLOWING INFORMATION IN THIS ORDER:

NO OF BARS, GRADE, BAR SIZE (mm); SPACING (mm, IF REQUIRED); PLACING INFORMATION EG, 20-N16-200 BTM.

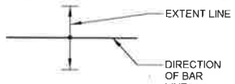
R3. MESH NOTATION GIVES THE FOLLOWING INFORMATION IN THIS ORDER:

SL OR RL SYMBOL, AS REFERENCE NUMBER IF STANDARD MESH OR SPECIAL CODE IF NON-STANDARD MESH, PLACING INFORMATION.
EG, RL918 TOP.

R4. MAIN WIRES OF MESH AND COVERAGE OF SHEETS SHOWN IN PLAN-VIEW AND ELEVATION THUS:



R5. EXTENT OF BARS AND MESH SHOWN THUS:



R6. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.

R7. REINFORCEMENT DIMENSIONS SHALL NOT BE SCALED.

R8. SPLICE REINFORCEMENT ONLY AT LOCATIONS SHOWN IN THE DRAWINGS. LAP LENGTH SHALL COMPLY WITH AS3600:2009.

REINFORCEMENT SHALL NOT BE SPLICED EXCEPT WHERE SHOWN IN THE DRAWINGS. IF SPLICES ARE NOT INDICATED IN THE DRAWINGS, SUITABLE LOCATIONS SHALL BE PROPOSED FOR WRITTEN APPROVAL BY STRUCTURAL ENGINEER. THE SPLICED LENGTH OF BARS SHALL BE AS GIVEN IN THE FOLLOWING TABLE, EXCEPT WHERE OTHER DIMENSIONS ARE STATED ON THE ACTUAL DETAIL:

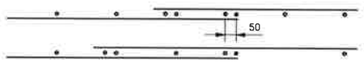
TYPE OF MEMBER	TENSILE LAP LENGTH (mm) FOR GRADE 500N DEFORMED BARS.							
	N10	N12	N16	N20	N24	N28	N32	N36
SLAB OR WALL (WITH 300mm OR LESS DEPTH OF CONCRETE BELOW THE BAR) AND ALL VERTICAL BARS	400	500	750	1000	1250	1500	1800	2200
SLAB OR WALL (WITH GREATER THAN 300mm OF CONCRETE BELOW THE BAR)	500	650	1000	1300	1600	1950	2300	2800

EMBEDMENT LENGTHS FOR STARTER BARS AND SPLICE LENGTHS FOR COLUMN BARS SHALL BE AS GIVEN IN THE FOLLOWING TABLE, EXCEPT WHERE OTHER DIMENSIONS ARE STATED ON THE ACTUAL DETAIL. THE DIMENSIONS IN THE TABLE ALSO INDICATE OVERALL ANCHORAGE (DEVELOPMENT) LENGTHS FOR STARTER / DOWEL BARS. ANY COGS USED SHALL BE DETAILED AS PER AS3600:2009.

BAR SIZE (mm)	SPLICE LENGTH (mm)	NUMBER OF FITMENTS AT COLUMN BAR CRANK
N10	400	1-R10
N12	500	1-R10
N16	650	1-R10
N20	800	2-R10
N24	1000	1-N12
N28	1150	2-N12
N32	1300	3-N12
N36	1450	3-N12

R9. REINFORCEMENT SHALL BE BENT COLD IN ACCORDANCE WITH AS3600:2009 EXCEPT WHERE APPROVED BY THE CONTRACT ADMINISTRATOR. NO REBENDING SHALL BE PERMITTED UNLESS APPROVED BY THE CONTRACT ADMINISTRATOR.

R10. WHERE LAP IS SPECIFIED, MESH SHALL BE LAPPED SUCH THAT THE TWO OUTERMOST WIRES LAP WITH THOSE OF THE OTHER SHEET AS SHOWN:



ALL LAPS ARE TO BE WIRED TOGETHER AT 1000 CRS.

REINFORCEMENT NOTES (CONT')

R11. ALL REINFORCEMENT IS TO BE ACCURATELY POSITIONED, ADEQUATELY SUPPORTED, AND THEN INSPECTED BY THE CONTRACT ADMINISTRATOR BEFORE ANY CONCRETE IS PLACED.

R12. WELDING OF REINFORCEMENT INCLUDING TACK-WELDING FOR FIXING PURPOSES SHALL COMPLY WITH AS3600:2009 AND AS1554.3:2008. WELDING IS PERMITTED ONLY WHERE SHOWN IN THE DRAWINGS OR WHERE OTHERWISE APPROVED BY THE CONTRACT ADMINISTRATOR.

R13. WHERE NO REINFORCEMENT IS SHOWN ON THE DRAWINGS AT RIGHT ANGLES TO THE MAIN REINFORCEMENT, PLACE N12-300 TRANSVERSE TO THE REINFORCEMENT SHOWN TO SUIT THE BAR LAYING SEQUENCE. ALL OPENINGS AND RE-ENTRANT CORNERS IN THE CONCRETE SHALL HAVE 2-N12 BARS x 1200 LONG TOP AND BOTTOM DIAGONALLY ACROSS THE CORNER.

R14. FIRST SLAB BAR IS TO BE POSITIONED MAX. 100mm FROM FACE OF BEAMS, R.C. WALLS AND SLAB THICKENINGS PARALLEL TO BAR. FIRST TIE TO BE PLACED MAX. 50mm FROM FACE OF COLUMN OR SUPPORTING WALL UNDER.

R15. FIX 2-N16 TRIMMER BARS AROUND OPENINGS IN EACH (TOP/BOTTOM) FACE OF MEMBER AND EXTENDING 600mm BEYOND THEIR CROSS-OVER POINT.

R16. REINFORCEMENT SHALL NOT BE CUT, BENT OR HEATED ON SITE WITHOUT THE CONTRACT ADMINISTRATOR'S PRIOR APPROVAL. DO NOT CUT REINFORCEMENT ON SITE TO CLEAR PENETRATIONS. DISPLACE REINFORCEMENT SLIGHTLY AS NECESSARY. MAINTAIN COVER DURING POUR.

R17. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC OR CONCRETE CHAIRS UNLESS NOTED OTHERWISE MAXIMUM CENTRES OF SUPPORTING CHAIRS SHALL BE 600mm FOR FABRIC, 600mm FOR BARS UP TO 12mm DIAMETER, 900mm FOR BARS 16mm AND GREATER. REINFORCEMENT SHALL BE SECURELY TIED WITH GALVANISED WIRE TIES. AND ALL TIE ENDS SHALL BE TURNED INTO THE MEMBER CLEAR OF THE COVER ZONE.

R18. REFER TO THE CONCRETE NOTES FOR THE COVER TO REINFORCEMENT NEAREST THE CONCRETE SURFACE. UNLESS NOTED OTHERWISE ON DRAWINGS.

R19. THE REQUIRED COVER SHALL BE MAINTAINED TO ALL PIPES, CONDUITS, REGLETS, DRIP GROOVES ETC.

R20. UNLESS NOTED OTHERWISE SLAB REINFORCEMENT AT SUPPORTING WALLS AND SLAB REINFORCEMENT BARS SHALL EXTEND 100mm ONTO SUPPORTING WALLS, WITH 50% OF BOTTOM BARS COGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS. MESH IN SLABS SHALL EXTEND 100mm ONTO SUPPORTING WALLS AND INCLUDE AT LEAST ONE CROSS WIRE.

STRUCTURAL STEELWORK NOTES

S1. DESIGN, FABRICATION AND ERECTION.
DESIGN CONFORMS TO AS4100:1998, AS/NZS 4600:2005 AND AS2327.1:2003 AS APPROPRIATE.

FABRICATION AND ERECTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROVISION OF AS4100:1998 AND AS3828:1998, AS APPROPRIATE.

S2. SETTING OUT DIMENSIONS SHALL BE VERIFIED ON SITE BY THE CONTRACTOR WHO SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS.

S3. 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.

S4. UNLESS OTHERWISE NOTED ALL MATERIAL SHALL BE:

- GRADE 250 HOT-ROLLED PLATES COMPLYING WITH AS/NZS 3678:2011
- GRADE 300 HOT-ROLLED UB, UC, PFC, TFC, TFB, EA, UA AND FLATS COMPLYING WITH AS/NZS 3679.1:2010
- GRADE 300 WB, WC COMPLYING WITH AS/NZS 3679.2:2010
- GRADE 350 RHS, SHS, CHS COMPLYING WITH AS1163:2009

S5. WELDING.
WELDING IS TO BE CARRIED OUT IN ACCORDANCE WITH AS/NZS 1554.1:2011, AS/NZS 1554.2:2003

WELDING CONSUMABLES TO BE E48XX OR W50X UNLESS NOTED OTHERWISE.

ALL WELDS TO BE 6mm CONTINUOUS FILLET WELD (CFW) SP CATEGORY UNLESS NOTED OTHERWISE.

ALL BUTT WELDS TO BE FULL PENETRATION BUTT WELD (FPBW) AND TO BE SP CATEGORY UNLESS NOTED OTHERWISE.

INSPECTIONS TO BE CARRIED OUT TO AS/NZS 1554.1:2011 UNLESS NOTED OTHERWISE IN THE DRAWINGS OR SPECIFICATION. MINIMUM EXTENT OF NON-DESTRUCTIVE EXAMINATION (NDE) SHALL BE AS FOLLOWS:

WELD CATEGORY	EXTENT OF NDE, %			
	VISUAL MEANS		OTHER MEANS	
	VISUAL SCANNING	VISUAL EXAMINATION	MAGNETIC PARTICLE (FOR FILLET WELD)	RADIOGRAPHY OR ULTRASONIC (FOR BUTT WELD)
GP	100	15	2	-
SP	100	50	10	10

S6. BOLTS, NUTS AND WASHERS.
STEEL BOLTS, NUTS AND WASHERS SHALL COMPLY WITH THE RESPECTIVE STANDARDS AS APPROPRIATE.

DESIGNATION:
4.6/S REFERS TO GRADE 4.6 COMMERCIAL BOLTS TO AS1111:2000, TIGHTENED TO A SNUG TIGHT CONDITION TO AS4100:1998.

8.8/S REFERS TO GRADE 8.8 HIGH STRENGTH STRUCTURAL BOLTS TO AS1252:1996, TIGHTENED TO A SNUG TIGHT CONDITION TO AS4100:1998.

8.8/TB REFERS TO GRADE 8.8 HIGH STRENGTH STRUCTURAL BOLTS TO AS1252:1996 FULLY TENSIONED TO AS4100:1998 AS A BEARING TYPE JOINT.

8.8/TF REFERS TO GRADE 8.8 HIGH STRENGTH STRUCTURAL BOLTS TO AS1252:1996 FULLY TENSIONED TO AS4100:1998 AS A FRICTION JOINT WITH CONNECTING SURFACES LEFT UNCOATED.

S7. CONNECTIONS:
ALL DETAILS, GAUGE LINES, ETC. WHERE NOT SPECIFICALLY SHOWN ARE TO BE IN ACCORDANCE WITH AISC DESIGN CAPACITY TABLES FOR STRUCTURAL STEEL AND ASI STANDARDISED STRUCTURAL CONNECTIONS.

ALL PLATES TO BE 10mm THICK, EX-STANDARD SQUARE EDGE FLATS UNLESS NOTED OTHERWISE.

ALL BOLTS TO BE GRADE 8.8/S UNLESS NOTED OTHERWISE.
ALL BOLTS TO BE GALVANISED M20 UNLESS NOTED OTHERWISE.

ALL HOLD-DOWN BOLTS SHALL BE GRADE 4.6 TO AS1111:2000 AND HOT DIP GALVANISED AFTER FABRICATION UNLESS NOTED OTHERWISE.
ALL HOLD DOWN BOLTS TO BE M20 UNLESS NOTED OTHERWISE.

ALL CAST-IN FERRULES AND MASONRY ANCHORS TO BE PASSIVATED ZINC COATED. ALL GALVANISED COMPONENTS TO BE CAST INTO CONCRETE MUST BE PASSIVATED.

ALL CAST-IN H.D. BOLTS ARE TO BE ALIGNED WITHIN STUD WALLS AND SURVEYED PRIOR TO CASTING OF SLAB TO ENSURE SETOUT ACCURACY. FOLLOWING CONFIRMATION OF SETOUT, TACK WELD BOLTS TO REINFORCEMENT MAT TO SECURE.

MINIMUM CONNECTION DETAILS SHALL CONSIST OF 2-M20 8.8/S BOLTS AND 10mm CLEAT PLATE UNLESS NOTED OTHERWISE.

SLOTTED HOLES, WHERE 8.8/TF BOLTS ARE USED IN SLOTTED HOLES, A SPECIAL WASHER OR COVER PLATE, NOT LESS THAN 8mm THICK, IS TO BE USED TO COMPLETELY COVER THE SLOTTED HOLE IN ACCORDANCE WITH AS4100:1998.

ALL BOLT HOLES 2mm OVERSIZE UNLESS NOTED OTHERWISE. HOLES FOR H.D. BOLTS 6mm OVERSIZE. OVERSIZE HOLES FOR HD BOLTS WILL REQUIRE OVERSIZE WASHERS UNDER NUTS.

S8. UNLESS OTHERWISE SPECIFIED, SHEAR STUDS SHALL BE WELDED 19mm DIAMETER HEADED STUDS WITH ALL WORKMANSHIP AND MATERIALS IN ACCORDANCE WITH AS1554.2:2003.

STRUCTURAL STEELWORK NOTES (CONT')

S8. PURLINS AND GIRTS.
PURLINS AND GIRTS SHALL BE BASED ON BLUESCOPE LYSAGHT'S "LYSAGHT ZED AND CEE PURLINS AND GIRTS - USER GUIDE", OR OTHER SECTIONS APPROVED BY THE CONTRACT ADMINISTRATOR, COMPLYING WITH AS1397:1993, AND A MINIMUM GALVANISED COATING OF Z350 (350G/sqm).

CLEAT CONNECTIONS ARE TO BE IN ACCORDANCE TO AISC STANDARDISED CONNECTIONS OR MANUFACTURER'S RECOMMENDATIONS UNLESS NOTED OTHERWISE. BOLTING AND BRIDGING TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

THE NUMBER OF PURLINS SHOWN IS INDICATIVE ONLY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE CORRECT NUMBER OF PURLINS ARE USED TO SATISFY SPACING REQUIREMENTS.

AT DIAGONAL RIDGES AND VALLEYS, FIX 2/100x70x2.5 COLD FORMED ANGLE PURLINS TO SUPPORT DIAGONAL CUT EDGE OF ROOF SHEETING, UNLESS DETAILED OTHERWISE.

ALL ROOF RAFTERS TO INCLUDE FLY BRACING EVERY SECOND PURLIN UNO.

S9. CORROSION PROTECTION:
CLEANING AND PAINTING OF STRUCTURAL STEELWORK (INTERNAL).
- ABRASIVE BLAST CLEAN TO CLASS 2 1/2
- ONE COAT OF 'INTERPRIME 198' OR APPROVED EQUIVALENT
- MINIMUM DRY FILM THICKNESS OF 0.075mm

CLEANING AND PAINTING OF STRUCTURAL STEELWORK:
- ABRASIVE BLAST CLEAN TO CLASS 2
- ONE COAT PRIMER (GREY) MINIMUM DRY FILM THICKNESS OF 0.05mm
- ONE COAT (SELECTED COLOUR) TO A DRY FILM THICKNESS OF 0.04mm

THE FOLLOWING STEELWORK SHALL BE HOT DIPPED GALVANISED AFTER FABRICATION TO AS4680:2006 WITH A MINIMUM AVERAGE ZINC COATING MASS OF 600g/m2.
- ALL COLD FORM SECTIONS
- PLATE/ANCHOR ROD ASSEMBLIES CAST INTO CONCRETE
- ALL MEMBERS BUILT INTO BRICK OR BLOCKWORK
- ALL EXTERNAL STEELWORK

FOR CONCRETE ENCASED STEELWORK, PAINTING SHALL EXTEND 100mm INTO THE CONCRETE. THE REMAINDER OF THE ENCASED STEELWORK SHALL BE UNPAINTED AND FREE OF LOOSE RUST, LOOSE MILLSCALE, DIRT, OIL AND GREASE.

ALL STRUCTURAL STEELWORK BELOW GROUND TO BE ENCASED BY N25 CONCRETE 75mm ALL ROUND, UNLESS NOTED OTHERWISE.

CONCRETE ENCASED STEELWORK SHALL BE WRAPPED WITH SL41 MESH, UNLESS OTHERWISE SHOWN.

S10. SHOP DRAWINGS:
THE STEEL FABRICATOR IS TO PROVIDE THE CONTRACT ADMINISTRATOR WITH 1 HARD COPY OF WORKSHOP DRAWINGS FOR REVIEW BEFORE FABRICATION IS STARTED, ALLOWING A MINIMUM OF 5 WORKING DAYS FOR REVIEW COMMENTS TO BE MADE.

S11. GROUT THICKNESS UNDER BASE PLATES SHALL BE MINIMUM 30mm UNLESS NOTED OTHERWISE.

S12. BASE PLATES SHALL BE GROUTED AFTER MEMBER IS LEVELLED AND PLUMBED, AND BEFORE MEMBER IS SUBSTANTIALLY LOADED. GROUT SHALL BE APPROVED PROPRIETARY FLOWABLE NON-SHRINKING PORTLAND CEMENT GROUT, PROPORTIONED AND USED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WITH A MINIMUM 28-DAYS COMPRESSIVE STRENGTH OF 40MPa.

S13. THE CONTRACTOR SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL, TIMBER OR OTHER ELEMENTS TO STEEL WHETHER OR NOT DETAILED ON THE DRAWINGS.

S14. THE ENDS OF ALL HOLLOW SECTIONS ARE TO BE SEALED WITH NOMINAL THICKNESS PLATES AND CONTINUOUS SEAL WELD UNLESS NOTED OTHERWISE SHOWN, WITH 'BREATHER' HOLES IF MEMBERS ARE TO BE HOT DIP GALVANISED.

S15. STIFFENER PLATES WHERE DETAILED ARE TO BE PLACED ON BOTH SIDES OF WEB TO UB's AND UC's.

S16. ALL HOLES IN PLATES AND STEEL MEMBERS SHALL BE DRILLED. EXCEPT FOR PURLINS AND GIRT HOLES WHICH MAY BE PUNCHED.

S17. WHERE DETAILS PREVENT THE NORMAL INSTALLATION OF CFW's, GRIND THE EDGE OF THE MEMBER TO FACILITATE THE INSTALLATION.

S18. CAMBER TO BE AS NOTED ON THE DRAWINGS.

S19. ALL COLUMNS TO INCLUDE FLY BRACING EVERY SECOND GIRT UNO.

S20. HOOK BOLT TO EVERY SECOND PURLIN AGAINST SAG FOR ALL HORIZONTAL DIAGONAL ANGLE OR ROD ROOF BRACING.

NSW GOVERNMENT Planning & Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Section 4.55 (..1A..) Modification Application

No. MOD 1 granted on the 26 NOV 2018

in respect to SSD 7665

Signed ...

Sheet No. 8 of 13

NOT FOR CONSTRUCTION

Issue	Description	Chkd	Apvd	Date
02	ISSUED FOR TENDER	HG	J.O.	02.05.2018
01	ISSUED FOR TENDER	J.T.	J.O.	15.12.2017

SAFETY IN DESIGN INFORMATION

SAFETY IN DESIGN ISSUES HAVE BEEN ASSESSED AS PART OF THE DESIGN PROCESS. ALL REASONABLE STEPS HAVE BEEN TAKEN TO ENSURE HAZARDS AND RISKS NORMALLY ASSOCIATED WITH THIS TYPE OF DESIGN HAVE BEEN MITIGATED AND/OR COMMUNICATED.
RESIDUAL HAZARDS AND RISKS AND/OR HAZARDS AND RISKS NOT NORMALLY ASSOCIATED WITH THIS TYPE OF WORK WHICH MAY REQUIRE SUBSEQUENT CONSIDERATION AND/OR ACTION ARE DESCRIBED IN - SOH-FOH SAFETY DESGIN REGISTER MATRIX DOCUMENT

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Location

Status	FOR TENDER
Contract	SOH-513
Dwn J BRAGA	Date 02-05-2018
Ckd J ONSLOW	Scale

Project BUILDING RENEWAL PROGRAM
ENTRY FOYER ESCALATORS

Title STRUCTURAL
GENERAL NOTES - SHEET 2

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Location	Drawing No.	Sheet	Rev.	
BX VA	29 BR AEC09	S002	02	A1

2/05/2016 6:28:24 PM
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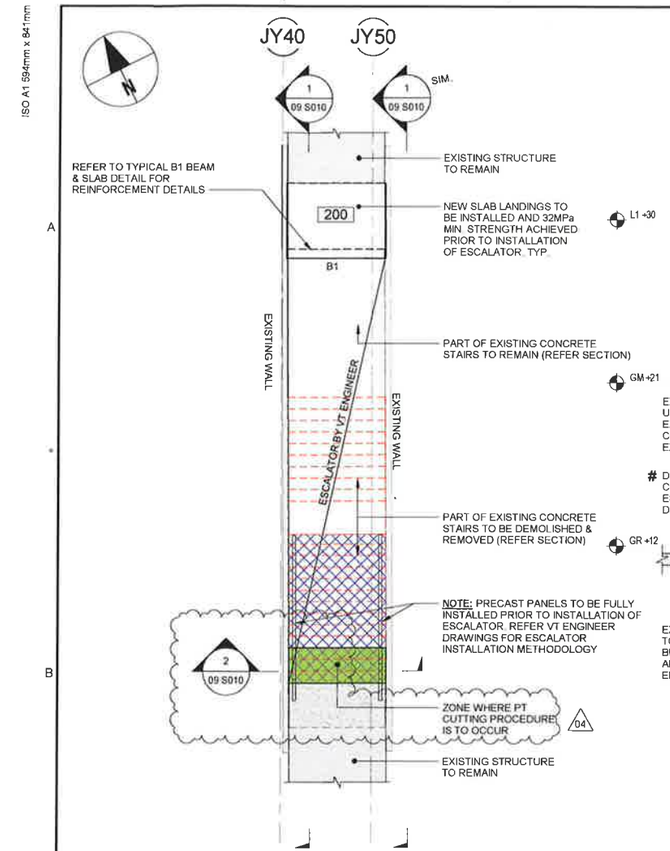
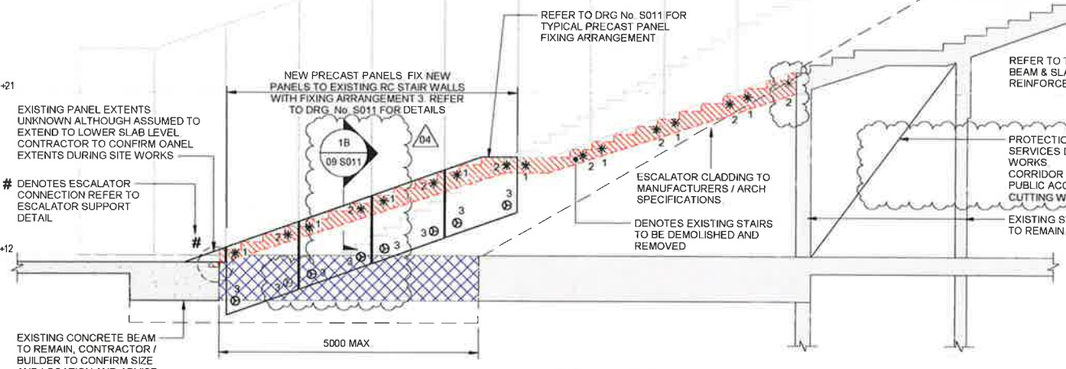
ISO A1 594mm x 841mm



METHODOLOGY OF INSTALLING BRACKETS 4 & 5 TO NEW PANELS

1. SAW CUT 300 x 300 PENETRATION 4 INTO EXISTING PANEL AND INSTALL BRACKET AS PER SECTION 1A
2. SAW CUT 300 x 300 PENETRATION 5 INTO EXISTING PANEL AND INSTALL BRACKET AS PER SECTION 1A
3. SAW CUT REMAINING PANEL ALONG LINE C TO SUIT ARCHITECTURAL FINISHES. REFER TO ARCHITECTURAL DRAWINGS FOR LEVELS
4. CAST B1 BEAM AND NEW SLAB UNDER BRACKETS AS PER TYPICAL B1 BEAM SLAB DETAIL

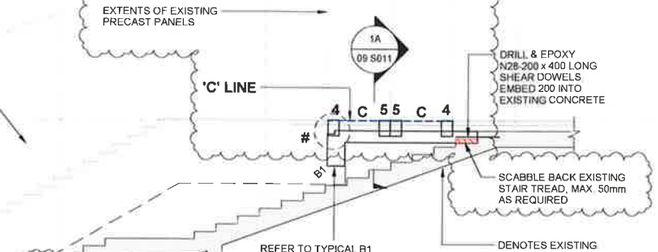


1 SECTION
09 S010 Scale: 1 : 50

2 No OFF EXISTING PRECAST PANELS TO BE SAW CUT TO ALLOW INSTALLATION OF NEW CONCRETE SLAB

EXTENTS OF EXISTING PRECAST PANELS

04



PROTECTION TO EXISTING SERVICES DURING DEMOLITION WORKS. CORRIDOR MUST NOT HAVE PUBLIC ACCESS DURING PT CUTTING WORKS.

04

EXISTING STRUCTURE TO REMAIN.

NOTES:
1. REFER DRAWING No. S001 & S002 FOR STRUCTURAL GENERAL NOTES.
2. PLAN GRID AND R.L. DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE INDICATIVE ONLY AND REFLECT THE SET-OUT INFORMATION USED DURING DESIGN. REFER GENERAL NOTES AND ARCHITECT'S DRAWINGS FOR FINAL SET-OUT.

LEGEND

- ✱ 1 & 2 — DENOTES CONNECTION FIXING DETAIL TYPE 1 & 2. NEW ANGLE BRACKETS SUPPORTING EXISTING PRECAST PANEL. SAW CUT POCKETS 250(D)x500(W) TO ALLOW FOR INSTALLATION OF BRACKETS. DO NOT SAW CUT FIXING TYPE 2 UNTIL FIXING TYPE 1 IS INSTALLED. REFER TO DRG. No. S011 FOR DETAILS
- ⊗ 3 — DENOTES CONNECTION FIXING DETAIL TYPE 3. NEW PRECAST FIXINGS REFER TO DRG. No. S011 FOR DETAILS
- DENOTES EXISTING STRUCTURE
- 200 — DENOTES MINIMUM SLAB THICKNESS
- DENOTES EXISTING STRUCTURE TO BE DEMOLISHED. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT

04

SLAB CUTTING PROCEDURE
NOTE: SPECIALIST PT CONTRACTOR TO SUBMIT DETAILED SWMS FOR PT CUTTING PROCEDURE FOR REVIEW BY AECOM PRIOR TO COMMENCING PT WORKS.

PREPARATION
1. MARK OUT OPENING IN ACCORDANCE WITH SETTING OUT ON ARCHITECTS DRAWINGS ON THE FLOOR SURFACE OF THE POST TENSIONED CONCRETE SLAB BENEATH THE STAIRCASE.
2. CONTRACTOR TO INITIALLY PERFORM INVESTIGATIVE WORKS TO EXISTING TIE BEAM UNDER STAIRS - LOCALLY SCABBLE AWAY AND EXPOSE SINGLE STRESSING CABLE/TENDON TO UNDERSTAND CONSTRUCTION OF CABLES/TENDONS. WHEN CABLE IS EXPOSED CAREFULLY PEEL BACK OUTER CASING TO EXPOSE TENDON UNDER. DO NOT DAMAGE OR CUT TENDON.
3. HOLD POINT. STRUCTURAL ENGINEER TO INSPECT EXPOSED CABLE/TENDON BEFORE FURTHER WORKS CAN PROCEED.
4. MARK OUT THE LOCATIONS OF THE TENDONS IN THE SLAB BY USE OF A COVER METER. IT IS ANTICIPATED THAT A MAXIMUM OF 12 CABLES/TENDONS RUNNING IN A NORTH TO SOUTH DIRECTION, ARE LOCATED WITHIN THE SLAB (DEPTH OF CABLES UNKNOWN – CONTRACTOR MAY NEED TO LOCALLY SCABBLE THE TOP SURFACE OF THE SLAB TO EXPOSE LOCATION OF TENDONS)
5. CORE THE CORNERS OF THE PROPOSED OPENING, ENSURING THAT NO TENDONS ARE DAMAGED.

04

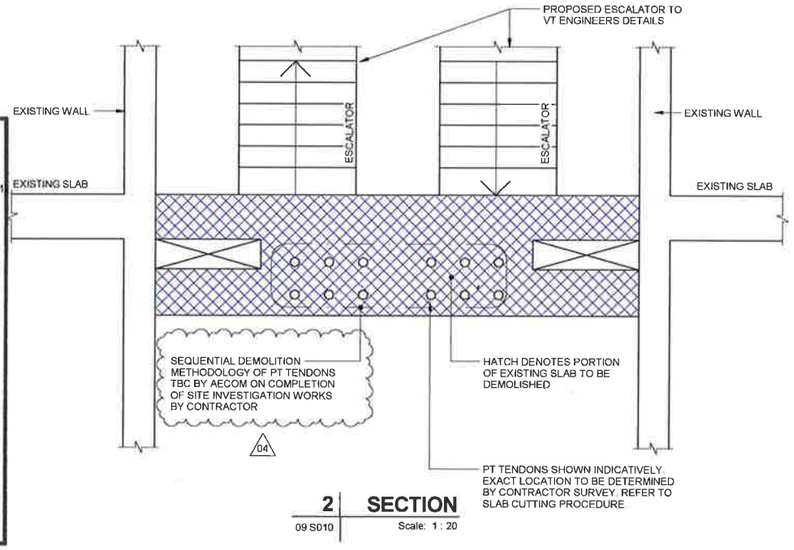
TENDON PREPARATION PROCEDURE AND EXTENT OF WORKS TBC BY AECOM FOLLOWING DETAILED REVIEW OF SITE INVESTIGATION WORKS
1. MARK OUT 500MM LONG BY (MINIMUM) 250MM WIDE POCKETS OVER THE TENDONS, SET BACK AT LEAST 500MM FROM THE EDGE OF THE PENETRATION.
2. USING 10KG JACKHAMMER, CAREFULLY REMOVE THE TOP SECTION OF THE SLAB WITHIN EACH POCKET SO THAT THERE IS AT LEAST 20MM CLEARANCE BENEATH THE TENDON AND 50MM ON EITHER SIDE. EXPOSED EDGES PERPENDICULAR TO SLAB ARE TO BE GREATER THAN 20MM.
3. CAREFULLY REMOVE METAL DUCT AROUND TENDONS AND CLEAN AWAY EXISTING GROUT FROM AROUND THE TENDONS.
4. SPREAD THE CABLE USING WEDGES OR NAILS.
5. MIX AND POUR SIKA GROUT 390PT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, INTO THE CREATED POCKET IN THE SLAB AND FINISH TO EXISTING SLAB SURFACE LEVELS. ENSURE THAT THE EPOXY GROUT FULLY ENCASES THE CABLE AND FILLS THE POCKETS WITH NO VOIDS.
6. LEAVE THE MIX TO CURE TO THE MANUFACTURER'S SPECIFICATIONS.

CUTTING PENETRATION
1. SAW CUT THE WASTE CONCRETE IN SECTIONS OF (MAXIMUM) 150KG BLOCKS USING AN ELECTRIC ROAD SAW. ENSURE THERE IS NO OVER CUTTING AT THE CORNERS OF THE PENETRATION. ENSURE THAT ALL TENDONS AND REINFORCEMENT ARE FULLY CUT AT PENETRATION BOUNDARY.

CORROSION PROTECTION
1. SEAL ALL EXPOSED CUT END OF TENDONS AND REINFORCEMENT AGAINST CORROSION USING SIKADUR-31 OR AN EQUAL AND APPROVED EPOXY MORTAR.

SUGGESTED UTZON ESCALATOR CONSTRUCTION METHODOLOGY

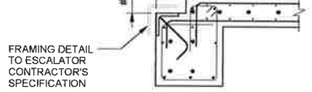
1. INSTALL THRUST BLOCK AS PER AECOM DRG S015. NOTE CONTINUOUS MONITORING SURVEY AS PER NOTES ON DRG S015 TO BE PERFORMED AT TARGET POINTS THROUGHOUT THE BELOW CONSTRUCTION WORKS.
2. FORM AND PROP RC STAIR BEFORE DEMOLITION WITH CRASH DECK AS REQUIRED. CONTRACTOR TO ADVISE.
3. GROUT PACK UNDERSIDE OF EXISTING PANELS TO ENSURE PANEL IS TIGHT FITTING (BEARING ONTO) EXISTING STAIR SLAB
4. SAW CUT 250 X 500WD (MAX) POCKET INTO EXISTING STAIR UNDER EXISTING PANELS MARKED FIXING TYPE 1 ON ELEVATION.
5. INSTALL STEEL SUPPORT BRACKET AS PER DETAIL CONNECTION TYPE 1 & 2 DETAIL ON S011 TO ALL FIXING LOCATIONS NOTED '1' AS SHOWN ON ELEVATION.
6. ON COMPLETION OF FIXING TYPE 1, SAW CUT 250 x 500WD (MAX) POCKET INTO EXISTING STAIR UNDER EXISTING PANEL MARKED FIXING '2' ON ELEVATION.
7. INSTALL STEEL SUPPORT BRACKET AS PER DETAIL CONNECTION TYPE 1 & 2 DETAIL ON S011 TO ALL FIXING LOCATIONS NOTED '2' AS SHOWN ON ELEVATION.
8. **HOLD POINT** – STRUCTURAL ENGINEER TO FULLY CERTIFY THRUST BLOCK WORKS AS PER DRG S015 BEFORE CONTINUING ANY FURTHER ESCALATOR/DEMOLITION WORKS
9. SAW CUT RC STAIR INTO MAX 600X600 SECTIONS FOR DEMOLITION AND REMOVAL. REFER ARCHITECTS DEMOLITION DRAWINGS FOR EXTENT OF STAIR AND RC WALLS TO BE REMOVED. DO NOT DEMOLISH STAIR BELOW GR+ 12 LEVEL.
10. GROUND BACK ANY EXPOSED REO 20MM FROM FACE OF RETAINED WALL. MAKE GOOD USING SIKADUR 31 OR SIMILAR APPROVED EQUIVALENT TO MATCH NEW WALL PROFILE
11. FORM AND PROP PROPOSED ESCALATOR PIT WITH CRASH DECK BEFORE DEMOLITION CONTRACTOR TO ADVISE. REFER ARCHITECTS & VT ENGINEER DRAWINGS FOR EXTENT OF DEMOLITION REQUIRED FOR INSTALLATION OF ESCALATOR PIT.
12. INSTALL FLAT JACKS AND STAGED INCREASE PRELOAD TO MAX TOTAL 4000KN. MONITOR MOVEMENTS AT TARGET POINTS. STOP JACKING AT MAX 2MM LATERAL MOVEMENT.
13. DEMOLISH SLAB FOR ESCALATOR PIT – NOTE **SLAB IS PRESTRESSED CONCRETE**. REFER "SLAB CURRING PROCEDURE FOR METHODOLOGY". CONTRACTOR TO SUBMIT DETAILED DEMOLITION WORKS SEQUENCE TO STRUCTURAL ENGINEER FOR REVIEW PRIOR TO COMMENCING DEMOLITION OF ESCALATOR PIT.
14. INSTALL NEW RC SLAB LANDINGS AT TOP AND BOTTOM OF ESCALATOR. (NOTE: LANDING TO BE AT MIN 32MPa DESIGN STRENGTH PRIOR TO INSTALLATION OF ESCALATOR AND/OR NEW PRECAST PANELS
15. INSTALL NEW AND MODIFIED PANELS WITH CONNECTION DETAIL 1 AS REQUIRED.
16. INSTALL ESCALATOR AS PER VT ENGINEERS DRAWINGS



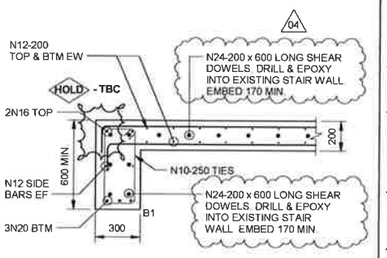
2 SECTION
09 S010 Scale: 1 : 20

NOTE: FOR EXTENTS AND SETTING OUT OF DEMOLITION REFER ARCHITECTS DRAWINGS

# DENOTES TO ESCALATOR CONTRACTOR'S SPECIFICATION. ADVISE STRUCTURAL ENGINEER PRIOR TO FORMING SLAB / BEAM



ESCALATOR SUPPORT DETAIL
Scale: 1 : 20



TYPICAL B1 BEAM & SLAB DETAIL
Scale: 1 : 20

EF ESCALATOR RC BEAM SCHEDULE

MARK	SIZE (D)	SIZE (W)	REINFORCEMENT
B1	600	300	REFER TO TYPICAL B1 BEAM DETAIL

NOTE: MAX TOTAL ESCALATOR REACTION FORCE TO B1 BEAM = 75KN

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Approved Section 4.55 (1A) Modification Application

No. MOD 1 granted on the 26 Nov 2018

in respect to SSD 7665

04

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Sheet No. 9 of 13

THIS DRAWING IS INTENDED TO BE PRINTED IN COLOUR

0 2500 5000 mm 1:100 | 0 1250 2500 mm 1:50 | 0 500 1000 mm 1:20 | 0 250 500 mm 1:10

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Issue	Description	Dwn	Appd	Date
04	ISSUED FOR TENDER	HG	J.O.	22.06.2018
03	ISSUED FOR TENDER	EJC	JO	07.06.2018
02	ISSUED FOR TENDER	HG	J.O.	02.05.2018
01	ISSUED FOR TENDER	J.T.	J.O.	15.12.2017

SAFETY IN DESIGN INFORMATION

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Location

Status: FOR TENDER
Contract: SOH-513
Dwn: J.BRAGA | Date: 20-06-2018
Ckd: JONSLOW | Scale: 1:10,1:20,1:50,1:100

Project: BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS

Title: STRUCTURAL UTZON ESCALATOR DETAILS - SHEET 1

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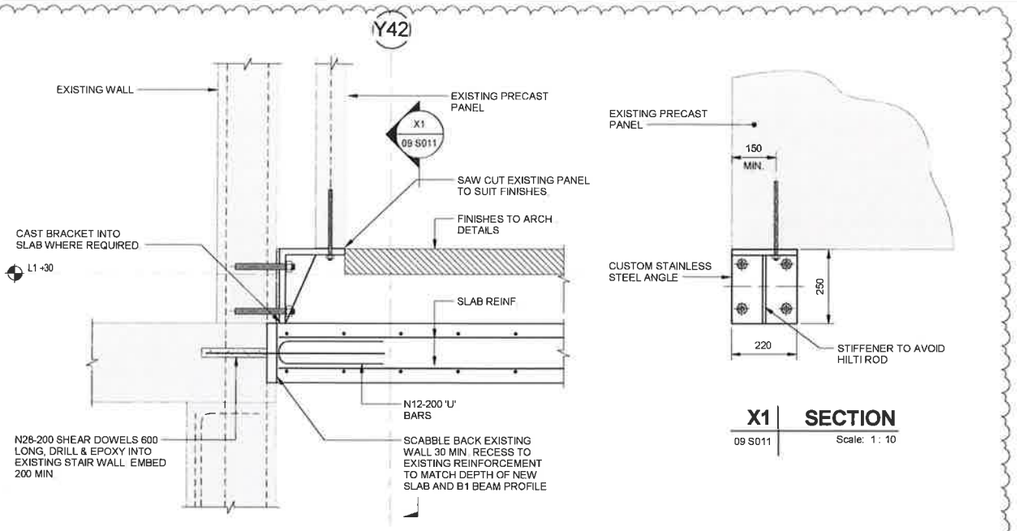
Location	Drawing No.	Sheet	Rev.
BX VA	29 BR AEC09	S010	04 A1

6/22/2018 1:33:27 PM
60469415-ST-CENTRAL-2016_detached

ISO A1 594mm x 841mm

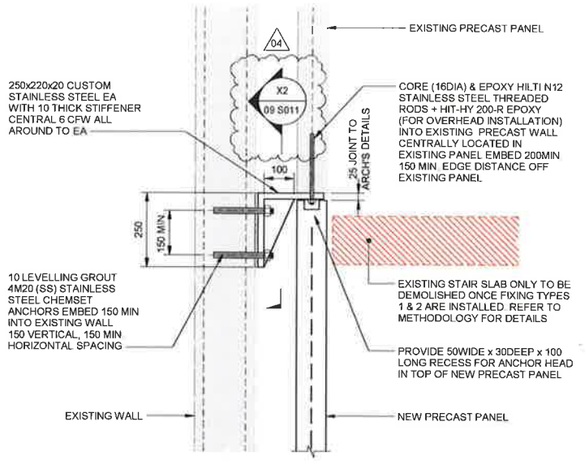


X1 | SECTION (09 S011) Scale: 1 : 10

TYPICAL PRECAST CONNECTION DETAIL TYPE 4 & 5

SHOWN THUS : □ 4 & 5

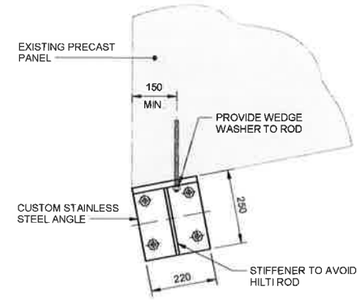
1A | SECTION (09 S010) Scale: 1 : 10



TYPICAL PRECAST CONNECTION DETAIL TYPE 1 & 2

SHOWN THUS : ✳ 1 & 2

1B | SECTION (09 S010) Scale: 1 : 10 — 04



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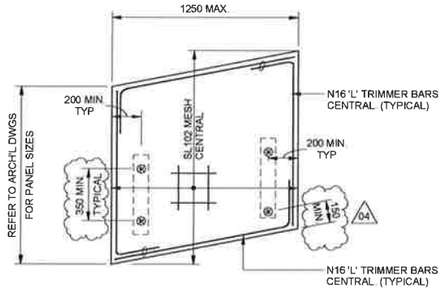
NOTES:
1. REFER DRAWING No S001 & S002 FOR STRUCTURAL GENERAL NOTES
2. PLAN GRID AND R.L. DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE INDICATIVE ONLY AND REFLECT THE SET-OUT INFORMATION USED DURING DESIGN. REFER GENERAL NOTES AND ARCHITECT'S DRAWINGS FOR FINAL SET-OUT.



TYPICAL PRECAST PANEL FIXING ARRANGEMENT

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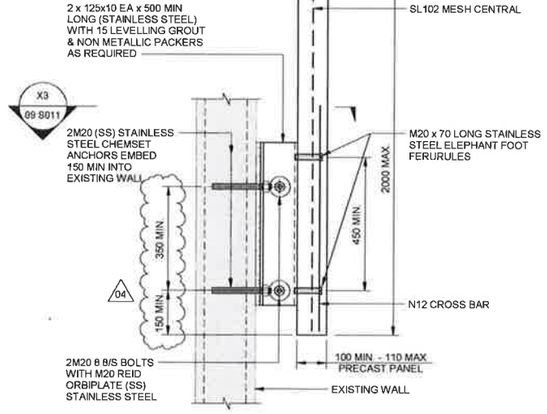
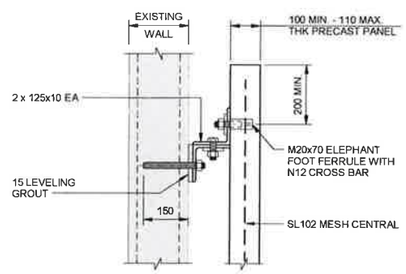


TYPICAL PRECAST CONNECTION DETAIL TYPE 3

SHOWN THUS : ⊕ 3

Scale: 1 : 10



X3 | SECTION (09 S011) Scale: 1 : 10

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in respect to .....SSD 7665

Signed .....KF.....

Sheet No.....10..... of .....13.....

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Location

Status: FOR TENDER
Contract: SOH-513
Dwn: J.BRAGA | Date: 20-05-2016
Ckd: J.ONSLOW | Scale: 1:10, 1:20

Project: BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS
Title: STRUCTURAL UTZON ESCALATOR DETAILS - SHEET 2

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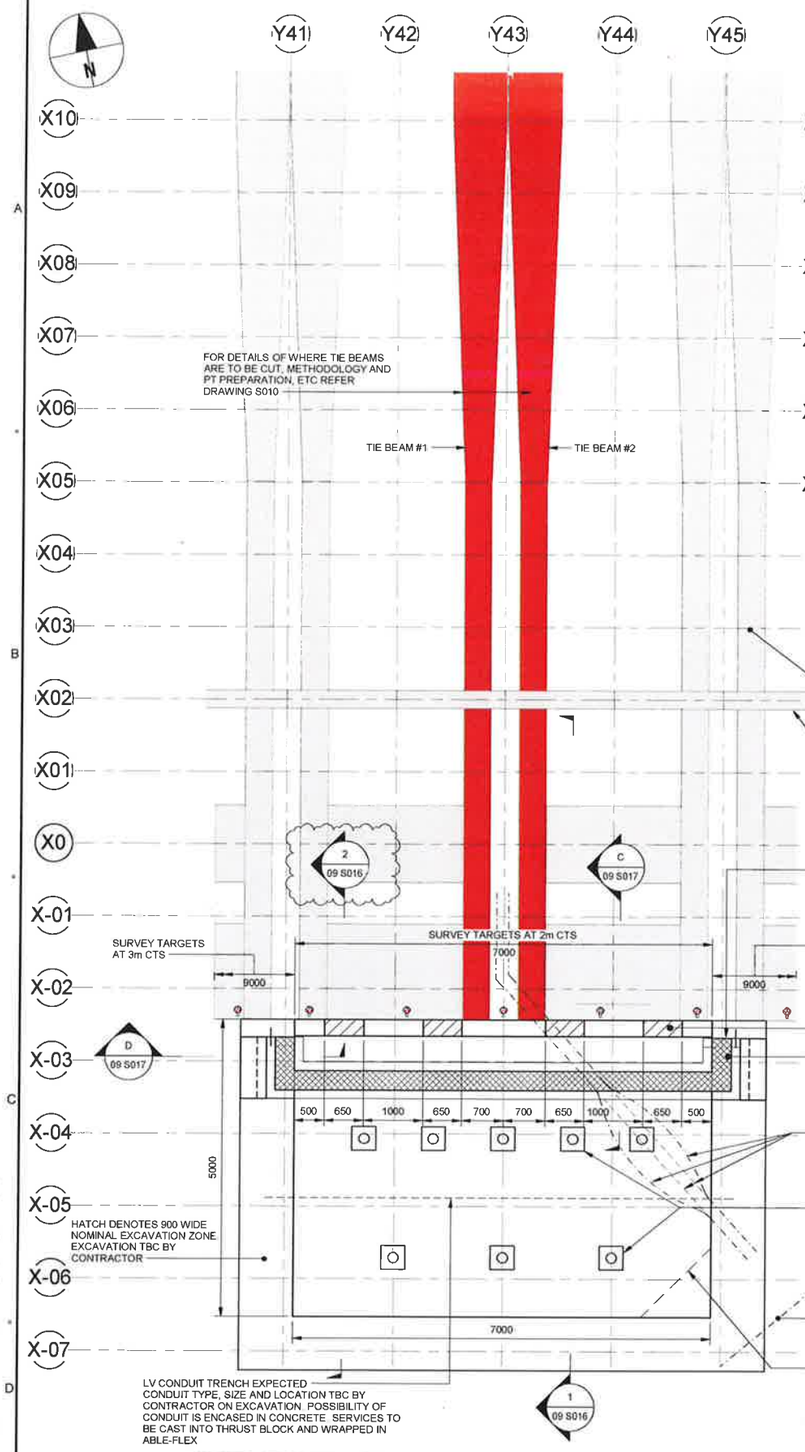


ENTRY FOYER - GROUND FLOOR THRUST BLOCK SLAB PART PLAN

Scale: 1 : 50

EXACT LOCATION OF EXISTING TRENCH UNKNOWN. CONTRACTOR TO EXTEND NEW TRENCH TO EDGE OF EXISTING TRENCH WALL. DRILL AND EPOXY N20-200 STAINLESS STEEL BARS 300 LONG 100 MIN EMBEDMENT INTO EXISTING TRENCH SIDE WALL. CENTRALLY LOCATED

SURVEY TARGETS AT 3m CTS

HATCH DENOTES POCKET FOR INSTALLATION OF FLAT JACKS AND PACKERS IF REQUIRED. TO BE KEPT FREE OF GROUT

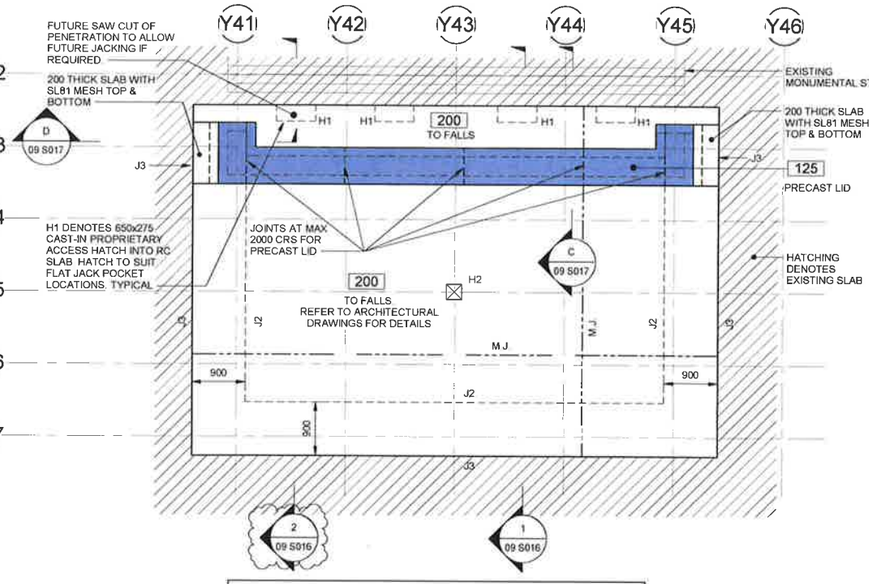
RAINWATER DRAIN TRENCH REFER SECTION 1 ON DRAWING S015

2x150 DIA. EXISTING SERVICES TO BE EXCAVATED AND MOVED TO AVOID CLASH WITH ANCHORS. CAST INTO NEW THRUST BLOCK AND WRAPPED IN ABLE-FLEX

ELECTRICALLY ISOLATED DUAL CORROSION PROTECTION LOOSE STRAND ANCHORS VSL ANCHOR 14 I 15.2MM STRANDS TO BE LOCKED OFF AT 90% OF THE ANCHOR DESIGN WORKING LOAD OF 1500KN

HIGH PROBABILITY OF EXISTING HV CONDUIT IN CORNER OF EXCAVATION ZONE. IF ENCOUNTERED THRUST BLOCK CAN BE CHAMFERED TO AVOID SERVICES CONTRACTOR TO ADVISE AECOM SIZE OF CHAMFER FOR REVIEW

POTENTIAL CHAMFER TO AVOID EXISTING SERVICES



NOTE:
1. H2 DENOTES 250x250 MAX SLAB PENETRATION FOR ANCHOR MONITORING TERMINAL (TERMINAL DETAILS TBC BY VSL). PROPRIETARY ACCESS HATCH TO BE RECESSED INTO FORECOURT FINISHES. ALTERNATE LOCATION FOR TERMINAL IS UNDER H1 HATCH.
2. M J (MOVEMENT JOINT) LOCATIONS TO SUIT ARCHITECTURAL LAYOUTS

ENTRY FOYER - GROUND FLOOR THRUST BLOCK SLAB PART PLAN

Scale: 1 : 50

LEGEND

- DENOTES EXISTING STRUCTURE
- DENOTES SURVEY TARGET

NOTES:
1. REFER DRAWING No. S001 & S002 FOR STRUCTURAL GENERAL NOTES.
2. PLAN GRID AND R.L. DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE INDICATIVE ONLY AND REFLECT THE SET-OUT INFORMATION USED DURING DESIGN. REFER GENERAL NOTES AND ARCHITECT'S DRAWINGS FOR FINAL SET-OUT.

THRUST BLOCK NOTES

GEOTECHNICAL NOTES:
1. THRUST BLOCK EXCAVATIONS SHALL BE DEWATERED, ALL ROCK SURFACES SHALL BE CLEANED OF ALL DEBRIS AND ROUGHENED TO AT LEAST R4 –DEFINED AS "GROOVES OR UNDULATIONS GREATER THAN 10, WIDTH GREATER THAN 10, AT SPACING 50 TO 200"; ORIENTATED PERPENDICULAR TO TIE BEAMS.
2. ROCK SHALL BE INSPECTED BY THE AECOM GEOTECHNICAL ENGINEER TO CONFIRM MINIMUM ROUGHNESS REQUIREMENTS HAVE BEEN MET PRIOR TO PLACING CONCRETE.

GROUND ANCHORING & MONITORING NOTES:
1. REFER TO SPECIFICATION FOR GROUND ANCHORING INFORMATION.
2. SURVEY DATA SHALL BE PROVIDED TO THE AECOM GEOTECHNICAL AND STRUCTURAL ENGINEERS TO MONITOR STRUCTURAL MOVEMENTS PRIOR, DURING AND FOLLOWING CONSTRUCTION.
3. THE DESIGN ASSUMES A MINIMUM ANCHOR HOLE DIAMETER IN ROCK OF 210.
4. ALL GROUND ANCHORS SHALL BE LOAD TESTED IN ACCORDANCE WITH SECTION 1.4 OF THE STRUCTURAL ENGINEERING SPECIFICATION WITH THE FOLLOWING TEST LOAD MODIFICATION. ANCHORS SHALL BE STRESSED TO 140% OF THE NOMINATED WORKING LOAD OF 1500KN OR 75% OF THE ULTIMATE ANCHOR CAPACITY, WHICHEVER IS LOWER.
5. AFTER TESTING ANCHORS SHALL BE LOCKED OFF AT 90% OF THE ANCHOR DESIGN WORKING LOAD OF 1500KN

DESIGN ASSUMPTIONS:
1. ULTIMATE DESIGN THRUST FROM EXISTING TIE BEAMS, 7000kN (3500kN PER TIE BEAM).
2. WHERE STAGED CONCRETE WORKS ARE UNDERTAKEN, CONCRETE SURFACE IS TO BE CLEARED OF ALL WATER & DEBRIS AND DELIBERATELY ROUGHENED BY TEXTURING THE CONCRETE TO GIVE A PRONOUNCED PROFILE, MUST ACHIEVE A FRICTION COEFFICIENT OF 0.9 & A COHESION COEFFICIENT OF 0.4 AS PER TABLE 8.4.3 AS3600:2009.
3. THE CONTRACTOR SHALL ENGAGE THE AECOM GEOTECHNICAL ENGINEER TO VERIFY THAT THE ROCK EXPOSED IN THE EXCAVATION IS CLASS II SANDSTONE OR BETTER. (CLASSIFIED IN ACCORDANCE WITH PELLS ET AL 1998).

FLATJACK NOTES:
1. TO BE UTILISED INITIALLY TO PRELOAD THRUST BLOCK PRIOR TO CUTTING TIE BEAM. TEMPORARY 4X MIN 500DIA FLAT JACKS TO BE INSTALLED INTO 4X POCKETS AND PRELOADED TO 1000KN MAX PER JACK (MAX TOTAL THRUST 4000KN)
2. TO BE UTILISED IN CONJUNCTION WITH MONITORING DATA WHERE REQUIRED BY ADVICE OF STRUCTURAL ENGINEER

CONSTRUCTION NOTES:
1. CONTRACTOR TO MITIGATE THE EFFECTS OF SHRINKAGE AND THERMAL EFFECTS DUE TO HEAT OF HYDRATION CONTRACTOR TO SUBMIT PROPOSAL FOR REVIEW AND APPROVAL OF MIX DESIGN, POUR SEQUENCE AND METHODOLOGY.

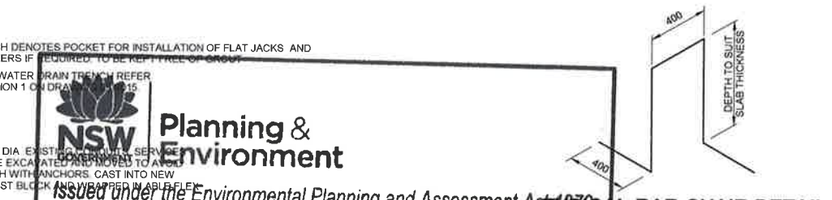
REPORTING & SEQUENCING:
1. BASELINE MONITORING SURVEY.
2. EXCAVATE TO 1.2m
3. READ & REPORT SURVEY DATA
4. EXCAVATE TO FINAL LEVEL (2.4m)
5. READ & REPORT SURVEY DATA
6. READ & REPORT SURVEY DATA EVERY 2 DAYS UNTIL PRESTRESSING HAS BEEN COMPLETE.
7. PREPARE GROUND SURFACE. THE AECOM GEOTECHNICAL ENGINEER IS TO REVIEW SURFACE ROUGHNESS AND TO ADVISE SUITABILITY BEFORE CONTINUATION OF CONSTRUCTION
8. PLACE REINFORCEMENT.
9. CONCRETING WORKS (POSSIBLY STAGED)
10. INSTALL VSL ANCHORS. BOND LENGTH TO BE INSTALLED. FREE LENGTH TO BE LEFT UNGROUTED.
11. FORMING, COMPACTION AND INTERFACE OF THRUST BLOCK UP AGAINST EXISTING TIE BEAM IS CRITICAL. AECOM ENGINEER TO INSPECT AND APPROVE CONCRETE WORKS IN THIS ZONE PRIOR TO PROCEEDING
12. VSL ANCHORS TO BE STRESSED FOLLOWING THRUST BLOCK ACHIEVING 28 DAY STRENGTH, NOTE : ADMIXTURES CAN BE ADDED TO MIX DESIGN TO REDUCE CURING TIME IF REQUIRED. CONTRACTOR TO SUBMIT PROPOSAL TO AECOM FOR REVIEW. PROOF LOAD TEST TO BE COMPLETED AND LOADING REPORT TO BE SENT TO THE AECOM GEOTECHNICAL AND STRUCTURAL ENGINEERS.
13. INSTALL 4 NUMBER TEMPORARY FLAT JACKS INTO FLAT JACK POCKETS AND PRELOAD TO 1000KN MAX PER JACK (MAX TOTAL THRUST 4000KN) OR UNTIL ANY MOVEMENT TRIGGERED OF EXISTING TIE BEAM IN NORTH DIRECTION FROM MONITORING SURVEY TARGET POINTS.
14. READ & REPORT SURVEY DATA
15. CUT FIRST EXISTING PT BEAM.
16. READ & REPORT SURVEY DATA.
17. CUT SECOND EXISTING PT BEAM.
18. READ & REPORT SURVEY DATA.
19. GROUT FREE END OF PT DUCT IN THRUST BLOCK.
20. GROUT PACK INTERFACE ZONE BETWEEN THRUST BLOCK AND EXISTING TIE BEAMS IF ANY LATERAL MOVEMENT HAS OCCURRED. ENGINEER TO ADVISE AND INSPECT GROUT PACKING LOCATIONS FOLLOWING SITE INSPECTION.
21. CONTINUE REPORTING SURVEY DATA UNTIL CONSTRUCTION WORKS ARE COMPLETE AND THE AECOM GEOTECHNICAL ENGINEER CONCLUDES THAT MAJOR LATERAL MOVEMENT HAS CEASED.
22. REMOVE FLAT JACKS SEQUENTIALLY.
23. ON COMPLETION OF WORKS CONTRACTOR TO INSPECT SUBSTATION AND PROVIDE CONDITION REPORT TO STRUCTURAL ENGINEER FOR REVIEW

ANCHOR MONITORING PROCEDURE:
1. ELECTRICALLY ISOLATED ANCHORS TO BE REMOTE MONITORED.
2. MONITORING CONDUITS TO BE INSTALLED TO ANCHOR HEADS AND LINKED TO A CENTRAL MONITORING TERMINAL LOCATED AT HATCH H2 (ALTERNATE LOCATION AT ANY HATCH H1). CONDUITS TO BE CAST INTO NEW SLAB AND RUN THROUGH SAND/CEMENT LAYER UNDER FORECOURT FINISHES INTO H2 HATCH. MONITORING OF ELECTRICALLY ISOLATED ANCHORS TO OCCUR MINIMUM EVERY 5 YEARS AND DATA SUBMITTED TO VSL AND AECOM FOR REVIEW.
3. INSTALL SURVEY POINTS TO MONITOR THRUST BLOCK LATERAL MOVEMENT WITHIN H1 HATCHES. LATERAL MOVEMENT TO BE SURVEYED MINIMUM EVERY 5 YEARS AND DATA SUBMITTED TO AECOM FOR REVIEW. FUTURE FLAT JACKING AND GROUT PACKING MAYBE REQUIRED IF LATERAL MOVEMENT HAS OCCURRED. ENGINEER TO ADVISE BASED ON 5 YEAR REPORTING DATA.
4. ANCHOR DESIGN LIFE TO BE REVIEWED BY VSL AFTER INITIAL 85 YEARS HAS EXPIRED.

TRIGGER LEVELS

LATERAL MOVEMENT AT INTERFACE OF THRUST BLOCK AND EXISTING STRUCTURE.

<3mm	3mm	5-10mm	>10mm
A	B	C	D
-	INFORM THE AECOM GEOTECHNICAL AND STRUCTURAL ENGINEERS AND SEEK INSTRUCTION	PROCEED WORK UNDER ADVICE FROM THE AECOM GEOTECHNICAL AND STRUCTURAL ENGINEERS AND INCREASE SURVEY REPORTING TO TWICE A DAY.	FLAT JACKING TO BEGIN.



TYPICAL BAR CHAIR DETAIL

NTS

NOTES:
1. SHOWN IN ISOMETRIC VIEW.
2. BAR CHAIRS AT 2000 CRS. EACH WAY UNO.
3. FOR ≤750 THICK SLAB BAR SIZE TO BE N16.
4. FOR >750 THICK SLAB BAR SIZE TO BE N20.

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Subject to SSD 7665

Signed KF

Sheet No. 11 of 13

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CONTRACTOR CAUTION: HIGH PROBABILITY OF EXISTING HV & LV CONDUIT LOCATED IN EXCAVATION ZONE.

NOT FOR CONSTRUCTION

Issue	Description	Dwn	Appd	Date
05	ISSUED FOR TENDER	J.T.	J.O.	10.08.2018
04	ISSUED FOR TENDER	E.C.	J.O.	13.07.2018
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Location

Status	FOR TENDER
Contract	SOH-513
Dwn J.BRAGA	Date 10-08-2018
Ckd J.ONSLOW	Scale 1:1,150

Project BUILDING RENEWAL PROGRAM
ENTRY FOYER ESCALATORS

Title STRUCTURAL
THRUST BLOCK DETAILS - SHEET 1

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Location	Drawing No:	Sheet	Rev:	
BX VA	29 BR AEC09	S015	05	A1

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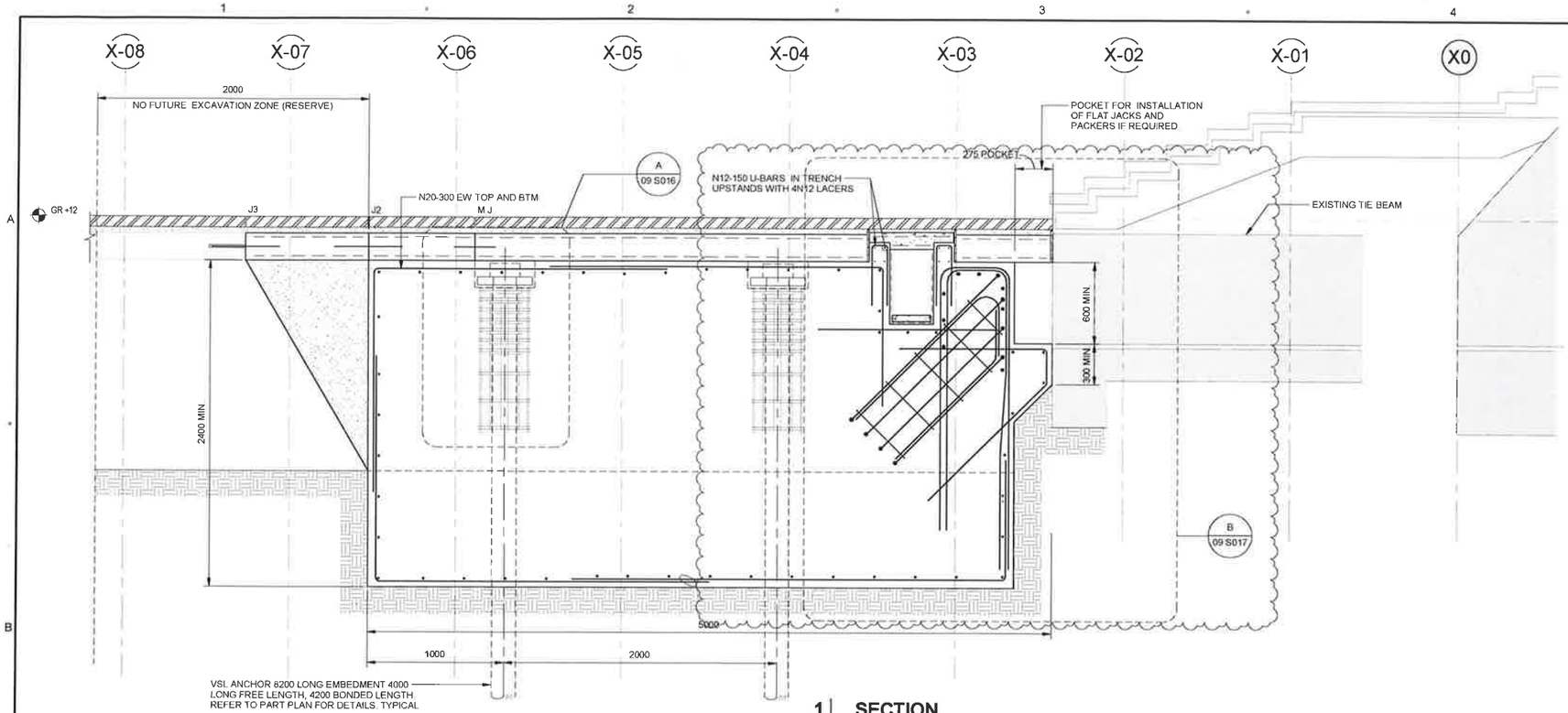

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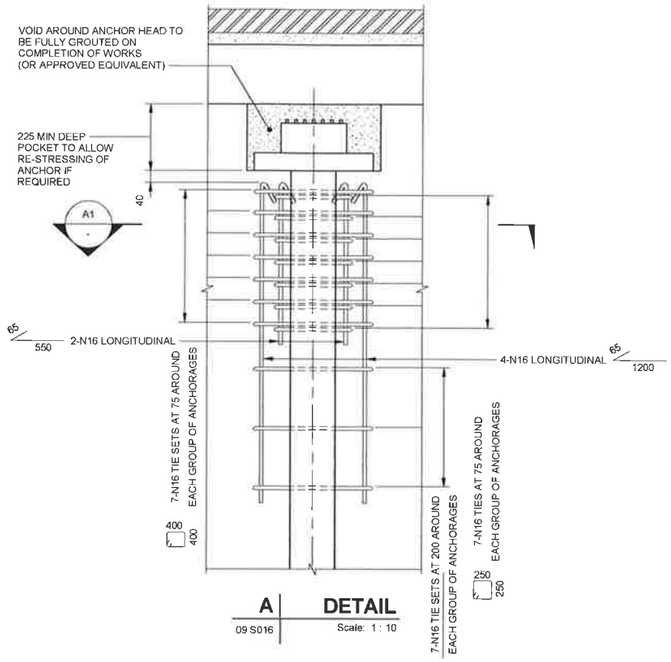
09 S015 Scale: 1 : 20



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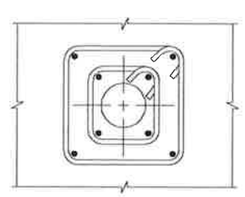

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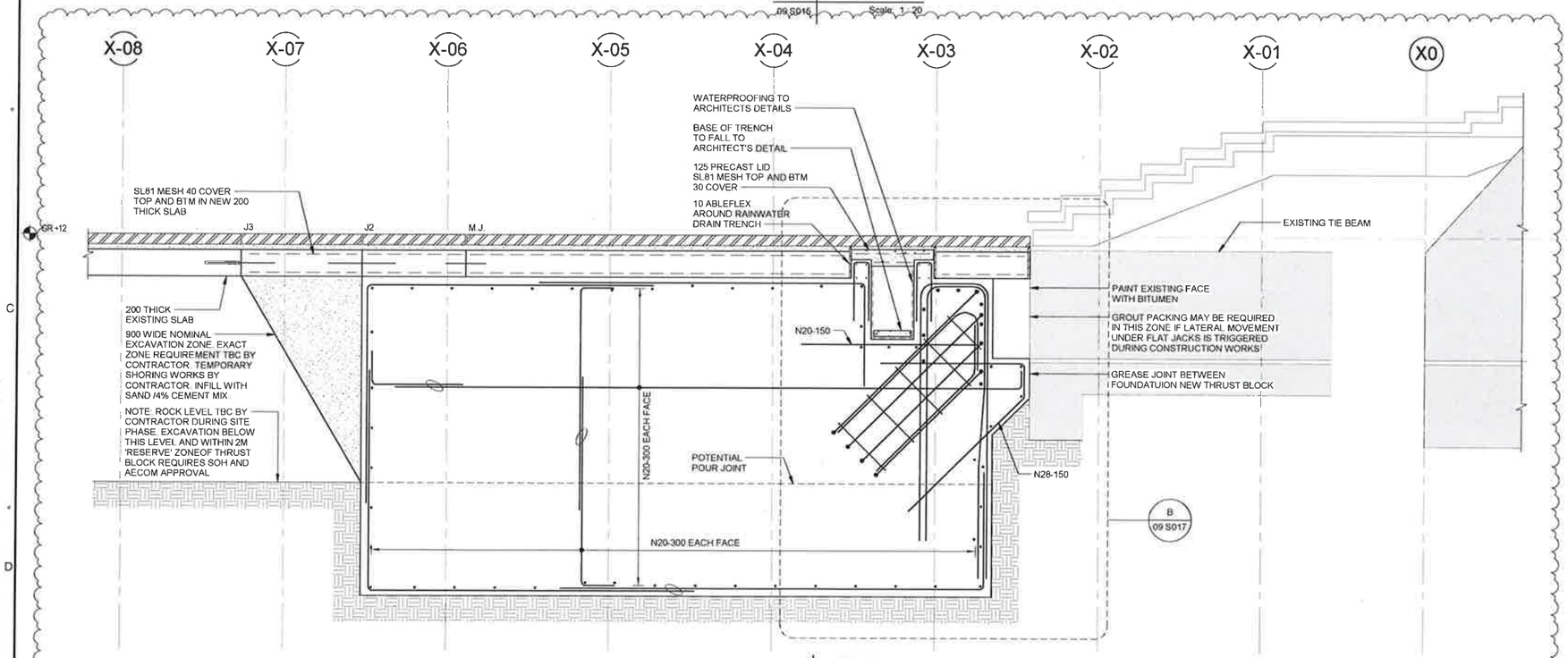

2 SECTION
09 S015 Scale: 1 : 20

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Signed VF

Sheet No. 12 of 13

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NOT FOR CONSTRUCTION

Issue	Description	Dwn	Apvd	Date
03	ISSUED FOR TENDER	J.T.	J.O.	10.08.2018
02	ISSUED FOR TENDER	E.C	J.O.	13.07.2018
01	ISSUED FOR TENDER	J.T.	J.O.	26.06.2018

SAFETY IN DESIGN INFORMATION

SAFETY IN DESIGN ISSUES HAVE BEEN ASSESSED AS PART OF THE DESIGN PROCESS. ALL REASONABLE STEPS HAVE BEEN TAKEN TO ENSURE HAZARDS AND RISKS NORMALLY ASSOCIATED WITH THIS TYPE OF DESIGN HAVE BEEN MITIGATED AND/OR COMMUNICATED. RESIDUAL HAZARDS AND RISKS AND/OR HAZARDS AND RISKS NOT NORMALLY ASSOCIATED WITH THIS TYPE OF WORK WHICH MAY REQUIRE SUBSEQUENT CONSIDERATION AND/OR ACTION ARE DESCRIBED IN - SOH-FOH SAFETY DESGIN REGISTER MATRIX DOCUMENT

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Location

Status	FOR TENDER
Contract	SOH-513
Dwn J.BRAGA	Date 10-08-2018
Ckd J.ONSLOW	Scale 1:10, 1:20

Project BUILDING RENEWAL PROGRAM
ENTRY FOYER ESCALATORS

Title STRUCTURAL
THRUST BLOCK DETAILS - SHEET 2

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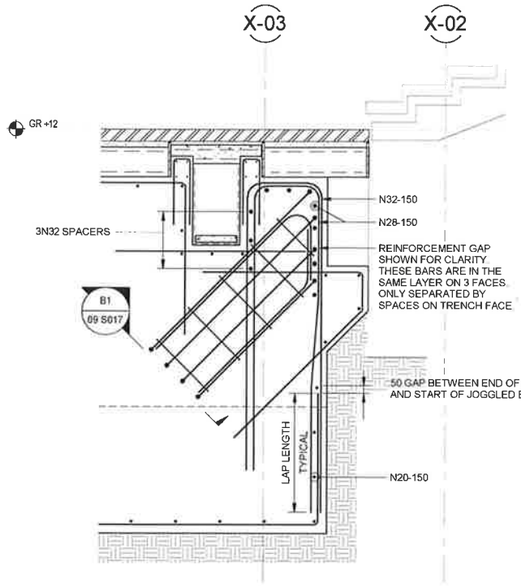
Location	Drawing No.	Sheet	Rev.	
BX VA	29 BR AEC09	S016	03	A1

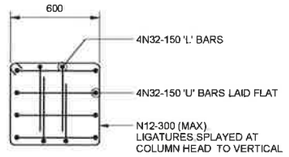
8/10/2018 6:29:24 AM
C:\Users\Cayless\Documents\60469415-ST-CENTRAL-2016_Elizabeth.Cayless@aecom.com.rvt

ISO A1 594mm x 841mm

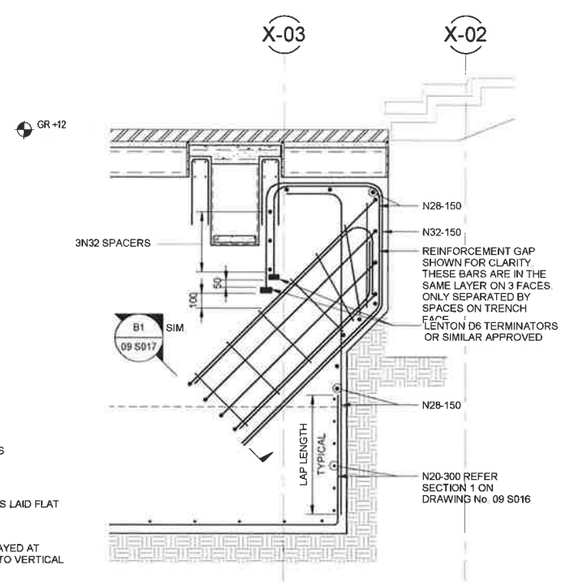


TYPE A

B DETAIL
09 S016 Scale: 1 : 20

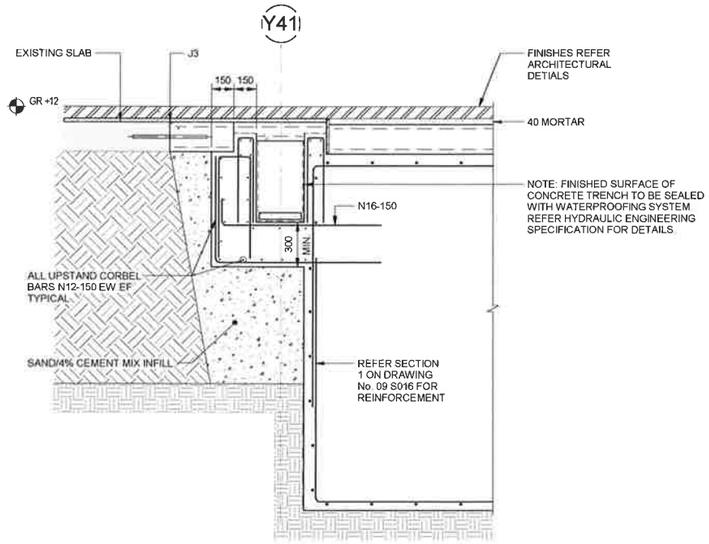


B1 SECTION
09 S017 Scale: 1 : 20



TYPE B

C DETAIL
09 S015 Scale: 1 : 20



D DETAIL
09 S015 Scale: 1 : 20

NSW GOVERNMENT Planning & Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Section 4.55 (..1A..) Modification Application

No...MOD 1.....granted on the 26 Nov 2018

in respect to ...SSD 7665

Signed ...

Sheet No....13..... of .....13.....

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1:20

NOT FOR CONSTRUCTION

Issue	Description	Dwn	Apvd	Date
01	ISSUED FOR TENDER	J.T.	J.O	10.08.2018

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WEB www.tzg.com.au

Location

Status: FOR TENDER
Contract: SOH-513
Dwn: J.TRPEZANOSKI Date: 10-08-2018
Ckd: J.ONSLOW Scale: 1:20

Project: BUILDING RENEWAL PROGRAM ENTRY FOYER ESCALATORS
Title: STRUCTURAL THRUST BLOCK DETAILS - SHEET 3

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Location	Drawing No:	Sheet:	Rev:	
BX VA	29 BR AEC09	S017	01	A1

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