27 July 2020

Responsive Engineering

Our Ref: SRPT- N0200030.01E

Dear Sir,

Re: Structural Design and Construction Report

Project:	Fairvale High School (HS) Zone C – Covered Outdoor Space
Client:	Icon Co (NSW) Pty Ltd
Location:	1 Thorney Road Fairvale West NSW 2165
Drawing No:	S400-C, S410-B, S415-B, S416-B, S430-A, S435-A, S440-A and S470-A
Elements:	All structural elements shown on the latest revision of JN structural drawings except Screw piles which are designed and certified by the specialist piling contractor. Screw piling design certificate is attached.

We confirm that the design of the above elements has been carried out in accordance with the provisions of the following latest Australian Standards, BCA and SSD conditions, as listed below:

- AS/NZS 1170 Structural Design Actions Parts 0 to 4 inclusive.
- AS 4100 Steel Structures
- AS 3600-2018 Concrete Structures
- AS 3700 Masonry Structures
- AS 2870 Residential Slabs and Footings – Construction
- AS 4678 Earth Retaining Structures
- NCC 2019, BCA 2019
- SSD Conditions

We confirm that the computations for the design have been carried out by a practicing qualified Structural Engineer.

We also confirm that the following SSD conditions have been complied;

Condition A15: We can confirm that the site is not affected by mine subsidence.

Condition B26: We can confirm that building structures below the 1% Annual Exceedance Probability will be constructed from flood compatible building components.

Condition B37: We can also confirm that the structural components have been designed to withstand the forces of floodwaters up to the PMF levels.

Conditions C44 and D32: We have reviewed the salinity condition of the sub-soil at the project site as outlined in Preliminary Salinity Assessment Report from EIS, reference E30428KPrpt-SAL dated 19 June 2017 and can confirm that no foundation is placed below the top 2.0m of the existing ground. In accordance with section 8 of the report the sub-soil condition within the top 2.0m of the soil is not expected to be significantly saline and/or aggressive and therefore we have accordingly specified concrete grade N32 and clear cover 50mm to reinforcement for foundations relevant to exposure classification A2 as per table 4.3 of AS3600.

However, steel screw piles will be founded on stiff clay which is lower than 2.0m from the ground level and piling specialist contractor is to specify screw piles in accordance with the recommendations of Preliminary Salinity Assessment Report.

We confirm that during construction periodic site inspections were carried out to verify compliance with the JN structural design requirements. The findings of these site inspections are detailed in our site inspection reports, a copy of which was given to the builder at the time of site inspection. Copies of the site inspection reports are attached in compliance with SSD condition D13. At the time of our site inspections the above elements were found to be generally in accordance with our design specifications and documentation.

Yours sincerely,

Anthony Down MIE (Aust) CPEng (Membership No. 2873243)
Structural Manager

Enclosure: Structural Drawing Register.

Responsive Engineering

Jones Nicholson Pty
www.jn.com.au
ABN 51 003 316 032

SITE VISIT REPORT / SITE INSTRUCTION

Project: Fairvale HS

Client: ICON CO

Location: 1 Thorney Road

Attn: Date: 6/5/20 Project No: N0x2000 30

Inspection: COLA Pile Caps Report No: SR-01

The above elements were inspected and found not to comply w/ JN structural drawings as the IFC documents were not used for construction & scheduling.

However, as this area is not heavily loaded we are willing to accept modified tie spacing from 2N12-200 to 1N12-150.

OK to pour.

- This inspection does not include the foundation material and ground stability including: excavations, cuttings, batters and stabilizing elements such as soil nails, rock bolts and ground anchors etc. It is the builder's responsibility to have the Geotechnical Engineer inspect and approve prior to placing concrete.
- This inspection does not include the formwork, formwork support and back-propping. It has not been inspected and should be separately certified by an experienced formwork engineer.
- This inspection does not include epoxy grouted bars, chemical or expansion anchors. The correct installation of these items is the responsibility of the builder.
- Reinforcement Inspections are subject to final clean out of formwork or excavation and maintaining specified cover during placement of concrete.
- The builder must rectify the defects listed in this report as a contractual, Work Health and Safety, and building certification requirement.

JN Engineer: Site Rep:

Jones Nicholson Pty
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ABN 51 003 316 032

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SITE VISIT REPORT / SITE INSTRUCTION

Project: Fairfale HS
Client: ICON CO
Location: 1 Thorney Rd
Attn: Perry Date: 11/5/20 Project No: N0200030

Inspection: COLA - OSD Tank Slab Report No: SRPT02

The above was inspected & found to be generally compliant w/ JN structural drawings.
Send close-out photos.
OK to pour

- This inspection does not include the foundation material and ground stability including: excavations, cuttings, batters and stabilizing elements such as soil nails, rock bolts and ground anchors etc. It is the builder's responsibility to have the Geotechnical Engineer inspect and approve prior to placing concrete.
- This inspection does not include the formwork, formwork support and back-propping. It has not been inspected and should be separately certified by an experienced formwork engineer.
- This inspection does not include epoxy grouted bars, chemical or expansion anchors. The correct installation of these items is the responsibility of the builder.
- Reinforcement Inspections are subject to final clean out of formwork or excavation and maintaining specified cover during placement of concrete.
- The builder must rectify the defects listed in this report as a contractual, Work Health and Safety, and building certification requirement.

JN Engineer: Alex W Site Rep: Perry

Project No: N0200030

SRPT03

Page No: SRPT_20200625_ Zone C Roof Structure

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Having inpected steel structure for Zone C Covered Outdoor Space, our instructions are:

1) Roof Bracings installation to be finished.
2) We note the holding down bolts are misalligned.
   - Ensure columns are plumb vertically
   - Weld washer all around to baseplate.
   - Install non-shrink grout to all baseplate.
3) After all of the above, bolts need to be re-tightened to all structure

Photos are required for Point 1 & 2.

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Site Visit Report / Site Instruction

Project:	FAIRVALE HIGH SCHOOL				
Client:	ICON				
Location:	1 Thorney Road Fairfield West 2165				
Attn:	Perry Chisholm	Date:	10.07.2020	Project No:	N0200030
Inspection:	COLA Ground Slab Pour 1	Report No:	SRPT04		

Following observations have been made during our site inspection of area between grids CA-CB and CC-CD:

1. Top mesh has not placed at correct height in accordance with concrete profile drawing i.e. outward slope on grids CA and CD NS TOP COVER has not been maintained. Contractor to check RLs and adjust the top mesh REO and maintained the specified top cover.
2. At sawcut joint every bars has been cut. Add N12-600 1000mm long in this location. For the area where top mesh has not been cut, please cut every second bar.
3. Provide 1 N12 bar 1000mm long at all re-entrant corners at column locations.
4. Provide EB1 reinforcement on grid C5.
5. Footing size and reinforcement under basket ball post has not been provided as per SSK-02 dated 09.07.2020.

Please complete the above items and send site photos for record before the concrete is poured.

- This inspection does not include the foundation material and ground stability including: excavations, cuttings, batters and stabilizing elements such as soil nails, rock bolts and ground anchors etc. It is the builder's responsibility to have the Geotechnical engineer inspect and approve prior to placing concrete.
- This inspection does not include the formwork, formwork support and back-propping. It has not been inspected and should be separately certified by an experienced formwork engineer.
- This inspection does not include epoxy grouted bars, chemical or expansion anchors. The correct installation of these items is the responsibility of the builder.
- Reinforcement inspections are subject to final clean out of formwork or excavation and maintaining specified cover during placement of concrete.
- The builder must rectify the defects listed in this report as a contractual, Work Health and Safety, building certification requirement.

JN Engineer: Rafi Sheikh Site Rep:

Ins Del

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www.jn.com.au
ABN 51 003 336 032

SITE VISIT REPORT / SITE INSTRUCTION

Project: Fairvale High School
Client: DOM
Location: 1 Thornley Rd
Attn: Josh Champion Date: 20/07/20 Project No: NJ200050

Inspection: COLA Slab On Ground 2nd Pour Report No: SRPT-005

Having inspected 2nd pour SOG @ COLA our instruct
1) Dowel Bar (1 each at Grid C1-CB & C1-
2) Abelflex to be installed throughout. As agreed to
3) Lap mesh to the wrong cut area w/ N12 Bars lapped 500 each way (5 N12)
4) Install trimmer bars to thinner slab pour around columns (4 N12 Bars)
5) Cut every 2nd mesh @ SJ location
6) Install chairs @ some location @ edge
7) Clean area from any debris

- This inspection does not include the foundation material and ground stability including: excavations, cuttings, batters and stabilizing elements such as soil nails, rock bolts and ground anchors etc. It is the builder's responsibility to have the Geotechnical Engineer inspect and approve prior to placing concrete.
- This inspection does not include the formwork, formwork support and back-propping. It has not been inspected and should be separately certified by an experienced formwork engineer.
- This inspection does not include epoxy grouted bars, chemical or expansion anchors. The correct installation of these items is the responsibility of the builder.
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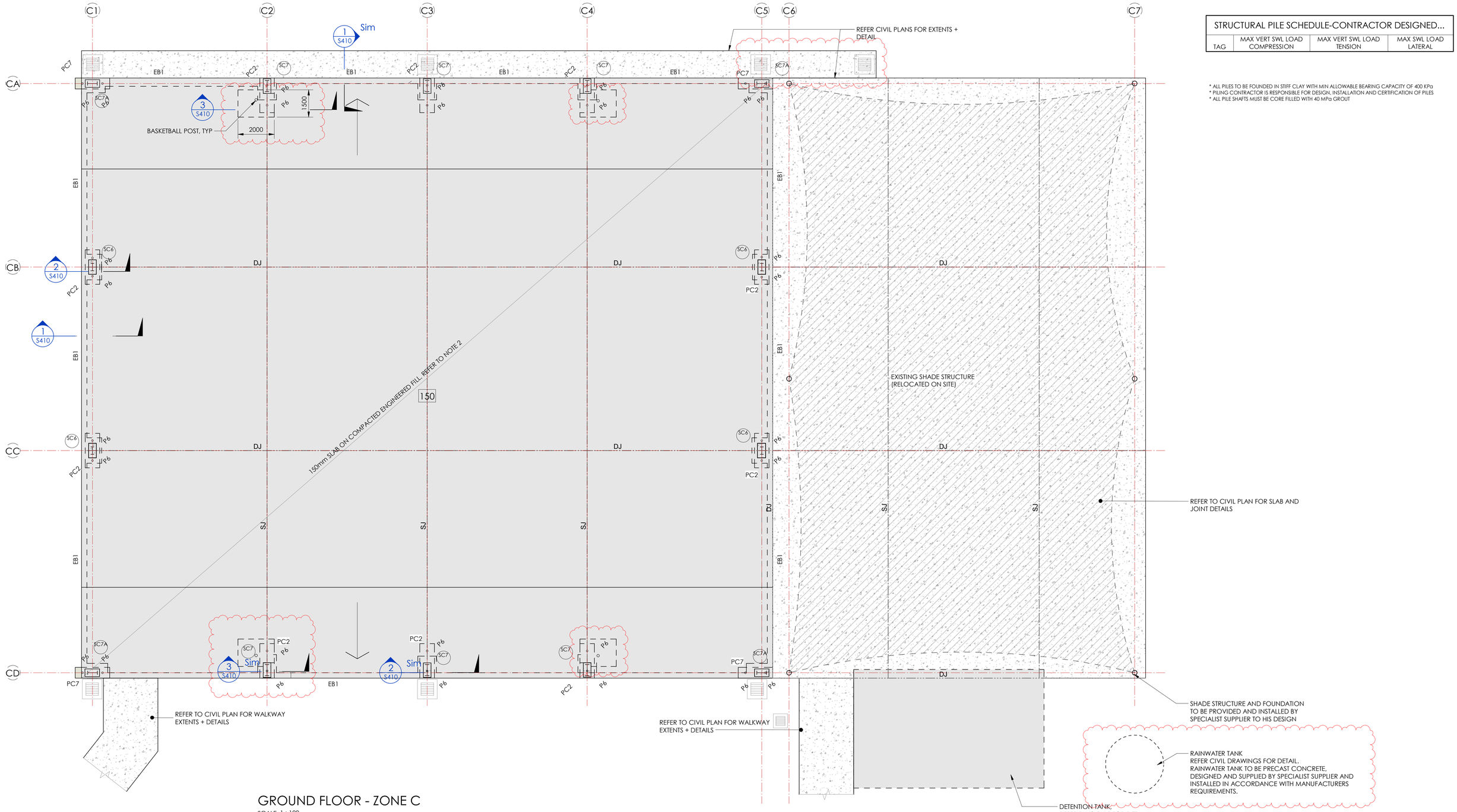
- The builder must rectify the defects listed in this report as a contractual, Work Health and Safety, and building certification requirement.

JN Engineer: _____ Site Rep: _____



STRUCTURAL PILE SCHEDULE-CONTRACTOR DESIGNED...

TAG	MAX VERT SWL LOAD COMPRESSION	MAX VERT SWL LOAD TENSION	MAX SWL LOAD LATERAL

* ALL PILES TO BE FOUNDED IN STIFF CLAY WITH MIN ALLOWABLE BEARING CAPACITY OF 400 KPa
* PILING CONTRACTOR IS RESPONSIBLE FOR DESIGN, INSTALLATION AND CERTIFICATION OF PILES
* ALL PILE SHAFTS MUST BE CORE FILLED WITH 40 MPa GROUT

GROUND FLOOR - ZONE C

SCALE 1 : 100

1. REFER TO ARCHITECTS DRAWINGS FOR ALL LEVELS, STEPS, SETDOWNS, FALLS ETC.
2. SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL REPORT BY JK GEOTECHNICS NUMBER 30428S DATED 19 JUNE 2017 PRIOR TO POURING SLAB ON GROUND.
3. WHERE ARCHITECTS DRAWINGS INDICATE FALLS IN SLAB, STRUCTURAL SIZES SHOWN ARE THE MINIMUM ALLOWABLE THICKNESS
4. SLAB ON GRADE TO BE 150mm THK REINFORCED WITH SL102 FABRIC TOP THROUGHOUT U.N.O.
5. SC DENOTES STRUCTURAL STEEL COLUMNS. REFER TO STRUCTURAL STEEL DRAWINGS FOR COLA ROOF.

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No	DATE	BY	DESCRIPTION
C	27.07.20	LAP	AS BUILT DRAWING
B	20.04.20	LAP	REVISED CONSTRUCTION ISSUE
A	14.04.20	LAP	ISSUED FOR CONSTRUCTION
2	20.03.20	LAP	ISSUED FOR REVISED 100% DETAILED DESIGN
1	05.03.20	LAP	ISSUED FOR 100% DETAILED DESIGN

ICON

2020

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CLIENT
ICON CO

STATUS
CONSTRUCTION

DISCIPLINE
STRUCTURAL DESIGN R20

DRAWING TITLE
GROUND FLOOR- ZONE C - COVERED OUTDOOR SPACE

PROJECT
FAIRVALE HIGH SCHOOL

ADDRESS
1 THORNEY ROAD FAIRFIELD WEST 2165

PROJECT DETAILS

DESIGN	RS
DRAWN	DWS
DATE	OCT 2017
DRG SIZE	A1
SCALE	As indicated
PROJECT MGR	AD

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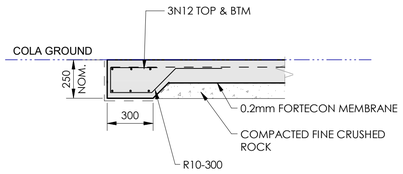
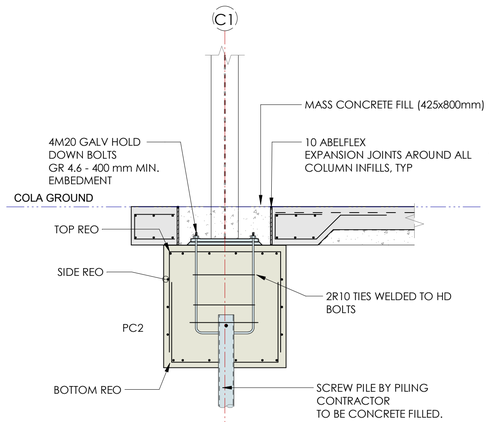
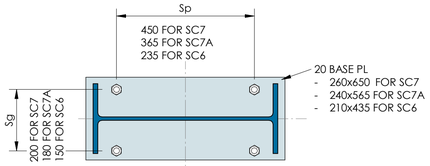
N0200030

S400 C

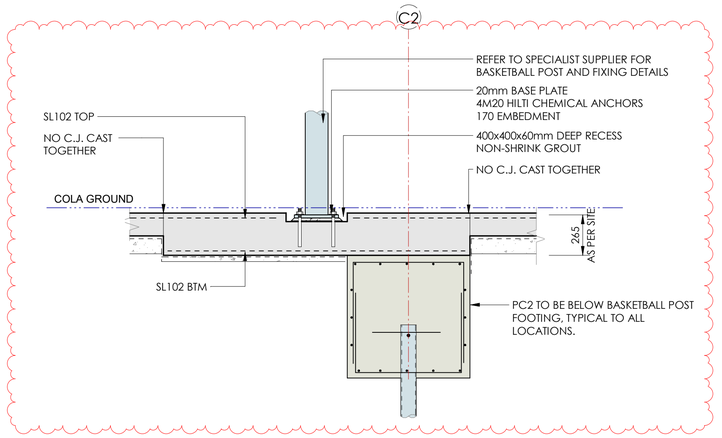


TYPICAL EB1 DETAIL





TYPICAL BASE PLATE DETAIL
SCALE 1 : 10



SECTION 1 S400
SCALE 1 : 20

SECTION 2 S400
SCALE 1 : 20

SECTION 3 S400
SCALE 1 : 20

No	DATE	BY	DESCRIPTION
B	27.07.20	LAP	AS BUILT DRAWING
A	14.04.20	LAP	ISSUED FOR CONSTRUCTION
2	20.03.20	LAP	ISSUED FOR REVISED 100% DETAILED DESIGN
1	05.03.20	LAP	ISSUED FOR 100% DETAILED DESIGN

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STATUS
CONSTRUCTION

DISCIPLINE
STRUCTURAL DESIGN R20

DRAWING TITLE
ZONE C- COVERED OUTDOOR SPACE CONCRETE SECTIONS & DETAILS

PROJECT
FAIRVALE HIGH SCHOOL

ADDRESS
1 THORNEY ROAD FAIRFIELD WEST 2165

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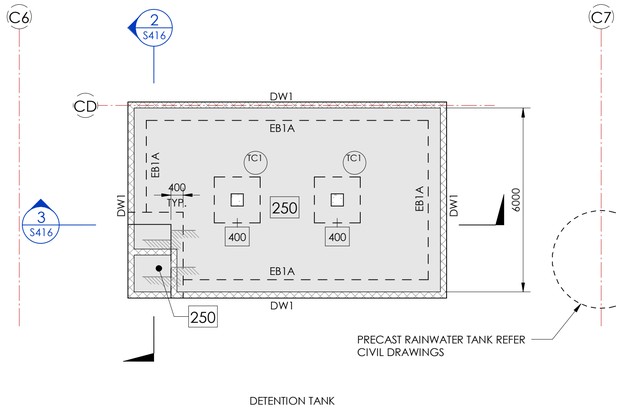
PROJECT DETAILS
DESIGN RS
DRAWN DWS
DATE OCT 2017
DRG SIZE A1
SCALE As indicated
PROJECT AD
MGR
WWW.JN.COM.AU

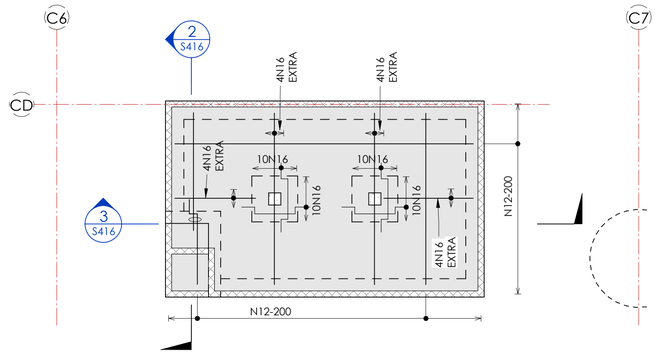
N0200030
S410 B



DETENTION TANK

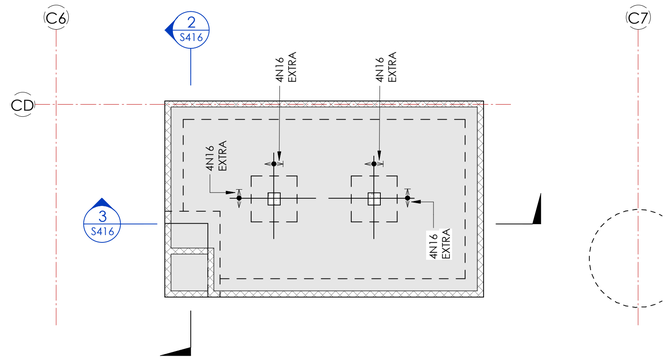
RAINWATER/DETENTION TANK BASE SLAB PLAN

SCALE 1 : 100



RAINWATER/DETENTION TANK BASE BOTTOM REINFORCEMENT PLAN

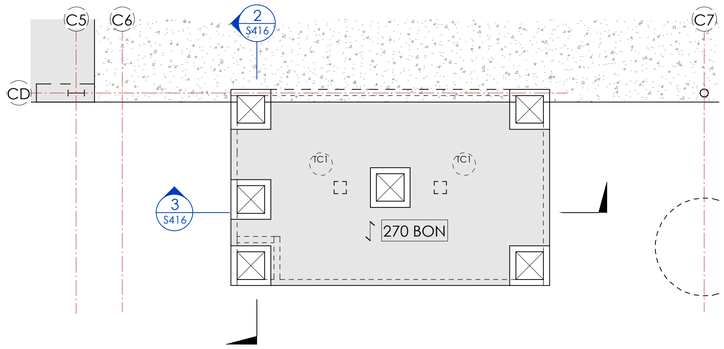
SCALE 1 : 100



RAINWATER/DETENTION TANK BASE TOP REINFORCEMENT PLAN

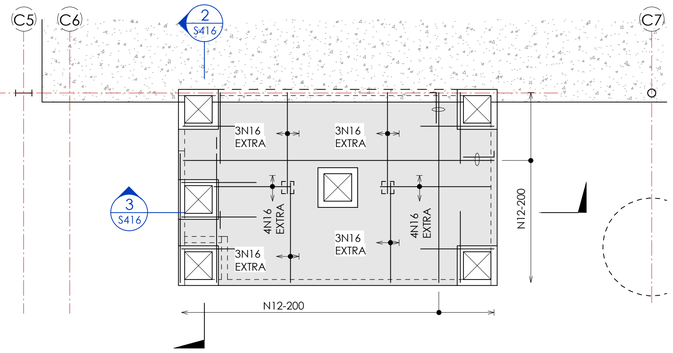
SCALE 1 : 100

SL102 MESH WITH EXTRAS AS SHOWN ON PLAN



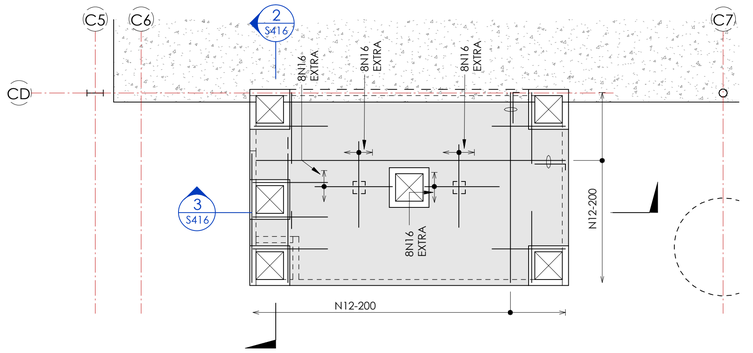
RAINWATER/DETENTION TANK LID SLAB PLAN

SCALE 1 : 100



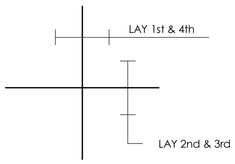
RAINWATER/DETENTION TANK LID BOTTOM REINFORCEMENT PLAN

SCALE 1 : 100



RAINWATER/DETENTION TANK LID TOP REINFORCEMENT PLAN

SCALE 1 : 100



BAR LAYING SEQUENCE U.N.O.

NOTE :

1. ⟵⟶ DENOTES DIRECTION OF 1.0mm BONDEK FORMWORK
2. CONCRETE STRENGTH - N40

STRUCTURAL WALL SCHEDULE ZONE C					
TAG	WIDTH	TYPE	REO HORIZONTAL	REO VERTICAL	COMMENTS
DW1	200	DINCEL	N12-400 CENTRAL	N16-400 CENTRAL	

STRUCTURAL CONCRETE BEAM SCHEDULE					
TAG	WIDTH	DEPTH	REO BTM	REO TOP	TIE TYPE
EB1A	600	400	3N16	3N16	N12-200
EB10	400	400	3N12	3N12	N12-200
EB11	600	400	3N16	3N16	N12-200

No	DATE	BY	DESCRIPTION
B	27.07.20	LAP	AS BUILT DRAWING
A	17.04.20	LAP	ISSUED FOR CONSTRUCTION
2	20.03.20	LAP	ISSUED FOR REVISED 100% DETAILED DESIGN
1	05.03.20	LAP	ISSUED FOR 100% DETAILED DESIGN

ICON

2020

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ICON CO

STATUS
CONSTRUCTION

DISCIPLINE
STRUCTURAL DESIGN R20

DRAWING TITLE
ZONE C - RAINWATER & DETENTION TANK DETAIL

PROJECT
FAIRVALE HIGH SCHOOL

ADDRESS
1 THORNEY ROAD FAIRFIELD WEST 2165

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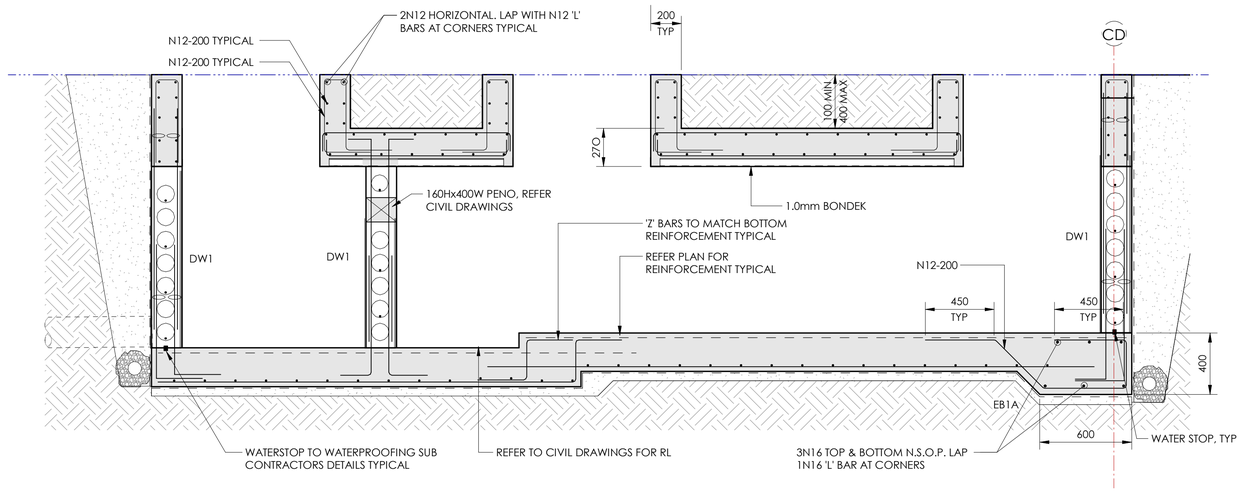
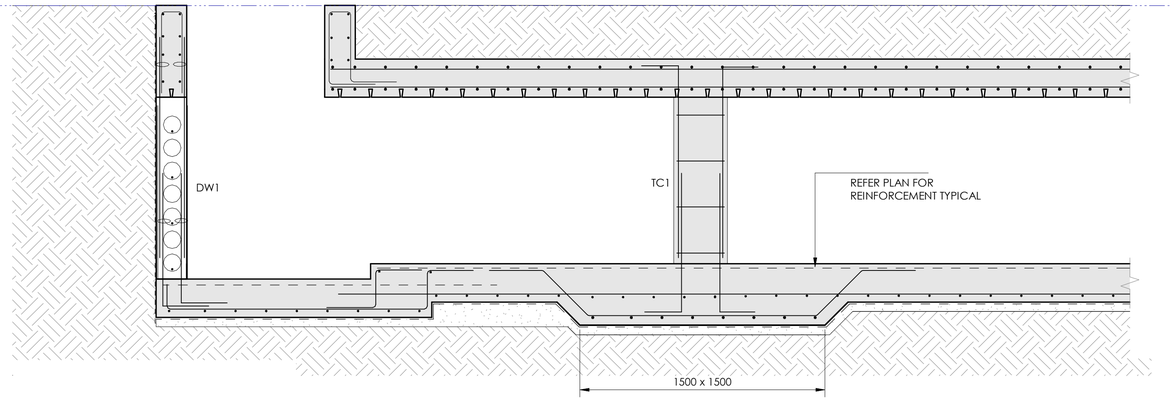
PROJECT DETAILS
DESIGN RS
DRAWN DWS
DATE OCT 2017
DRG SIZE A1
SCALE As indicated
PROJECT AD
MGR
WWW.JN.COM.AU

N0200030

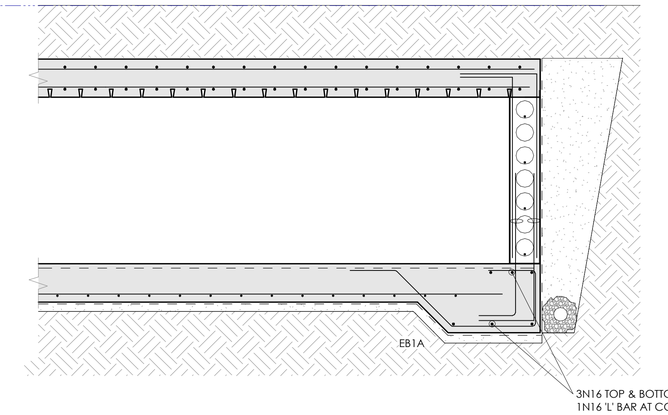
S415 B

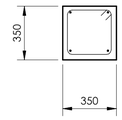


SECTION 2
SCALE 1 : 20 S415



SECTION 3
SCALE 1 : 20 S415





4N20 VERTICAL
R10-300 TIES

COLUMN TC1 DETAIL
SCALE 1:20

No	DATE	BY	DESCRIPTION
B	27.07.20	LAP	AS BUILT DRAWING
A	17.04.20	LAP	ISSUED FOR CONSTRUCTION
2	20.03.20	LAP	ISSUED FOR REVISED 100% DETAILED DESIGN
1	05.03.20	LAP	ISSUED FOR 100% DETAILED DESIGN

ICON

2020

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STATUS
CONSTRUCTION

DISCIPLINE
STRUCTURAL DESIGN R20

DRAWING TITLE
ZONE C - RAINWATER & DETENTION TANK SECTIONS

PROJECT
FAIRVALE HIGH SCHOOL

ADDRESS
1 THORNEY ROAD FAIRFIELD WEST 2165

PROJECT DETAILS

DESIGN	RS
DRAWN	DWS
DATE	OCT 2017
DRG SIZE	A1
SCALE	1 : 20
PROJECT MGR	AD

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N0200030

S416 B

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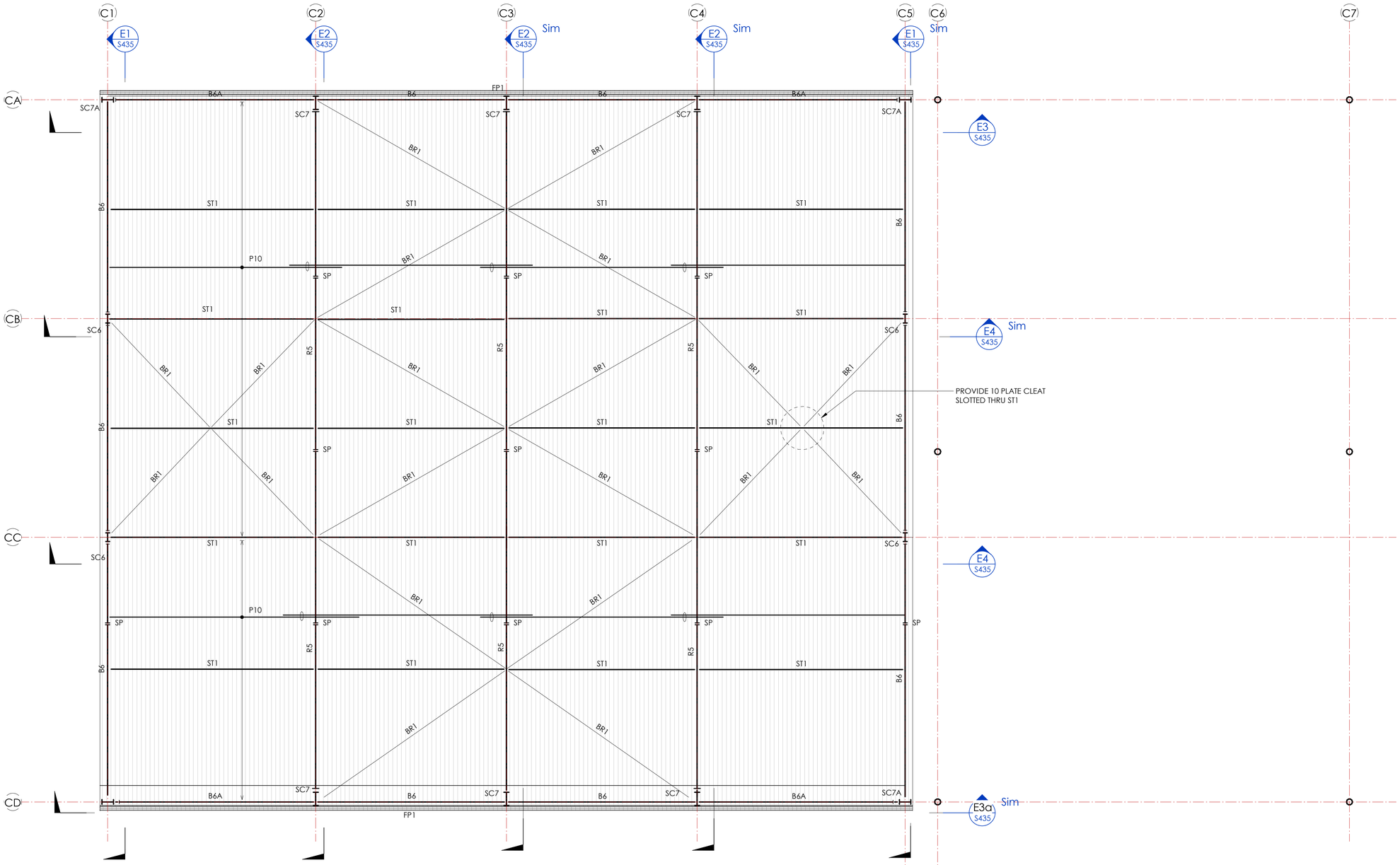


COS STRUCTURAL STEEL MEMBER SCHEDULE

MARK	MEMBER SIZE	MEMBER	COMMENTS
B6	410 UB 54	BEAM	
B6A	530 UB 82	BEAM	
B8	460UB67	BEAM	
BR1	20DIA ROD	BRACING	WITH TURNBUCKLE
FP1	C 300 24	FASCIA PURLIN	2 ROW BRIDGING
G1	C 300 24	WALL GIRT	@1500 CTS 2 ROWS OF STRUT BRIDGING
P10	Z 300 24	PURLIN	@1200 CTS 2 ROWS OF STRUT BRIDGING 1200 LAP
R5	610 UB 101	BEAM	
SC6	410 UB 54	COLUMN	
SC7	610 UB 113	COLUMN	
SC7A	530 UB 92	COLUMN	
ST1	200x200x6.0SHS	BEAM	

ROOF FRAMING PLAN - COVERED OUTDOOR SPACE

SCALE 1 : 100

1. REFER TO ARCHITECTS DRAWINGS FOR ALL LEVELS, STEPS, FALLS ETC.
2. ALL FASCIAS, FLASHINGS, SARKINGS & LININGS ETC TO ARCHITECTS DETAILS.
3. ROOF SHEETING TO BE FIXED TO CLEATES OF BEAM MEMBERS DENOTE 'B', REFER TO TYPICAL CLEAT DETAIL. ROOF SHEETING TO BE ARAMAX FREESPAN 800A100 (1.0mm THK G550 STEEL)
4. 'SP' DENOTES BOLTED MOMENT SPLICE, REFER DWG S470 FOR TABLE AND TYPICAL DETAIL.

No	DATE	BY	DESCRIPTION
A	14.04.20	LAP	ISSUED FOR CONSTRUCTION
3	26.03.20	LAP	ISSUED FOR 100% DETAILED DESIGN
2	20.03.20	LAP	ISSUED FOR REVISED 100% DETAILED DESIGN
1	05.03.20	LAP	ISSUED FOR 100% DETAILED DESIGN

ICON

2020

JN Responsive Engineering

CLIENT
ICON CO

STATUS
CONSTRUCTION

DISCIPLINE
STRUCTURAL DESIGN R20

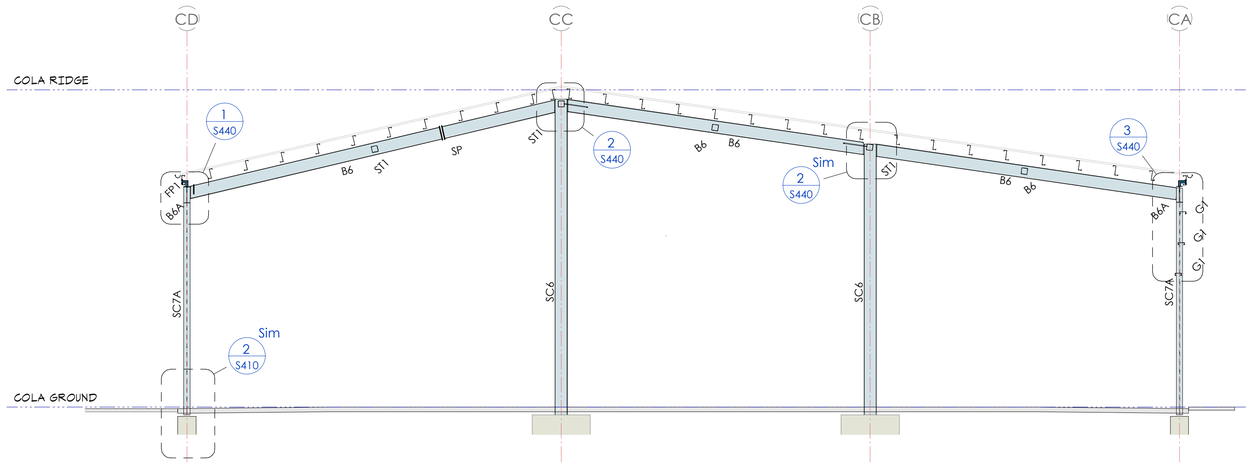
DRAWING TITLE
ROOF PLAN - ZONE C - COVERED OUTDOOR SPACE

PROJECT
FAIRVALE HIGH SCHOOL

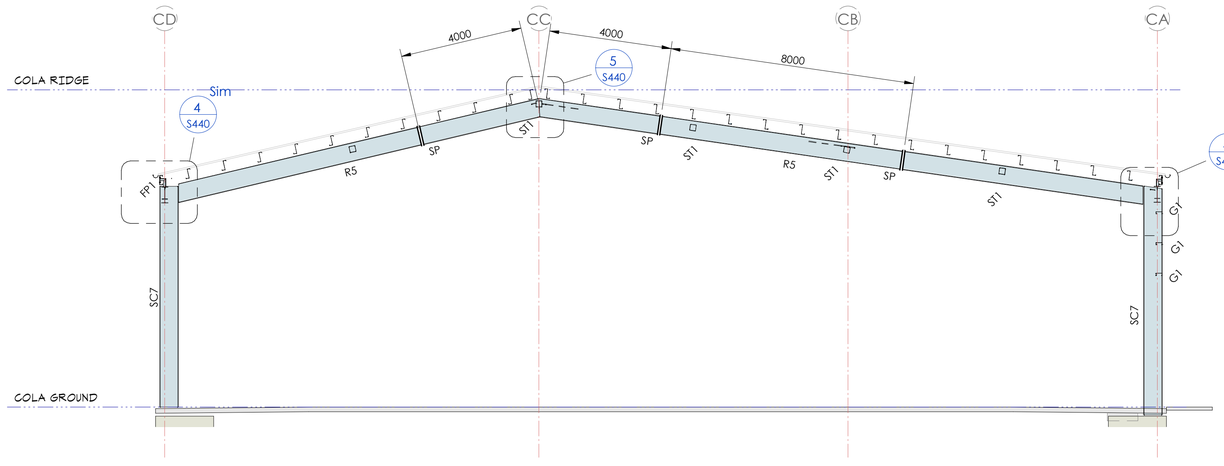
ADDRESS
1 THORNEY ROAD FAIRFIELD WEST 2165

PROJECT DETAILS
DESIGN RS
DRAWN DWS
DATE OCT 2017
DRG SIZE A1
SCALE As indicated
PROJECT MGR AD
WWW.JN.COM.AU

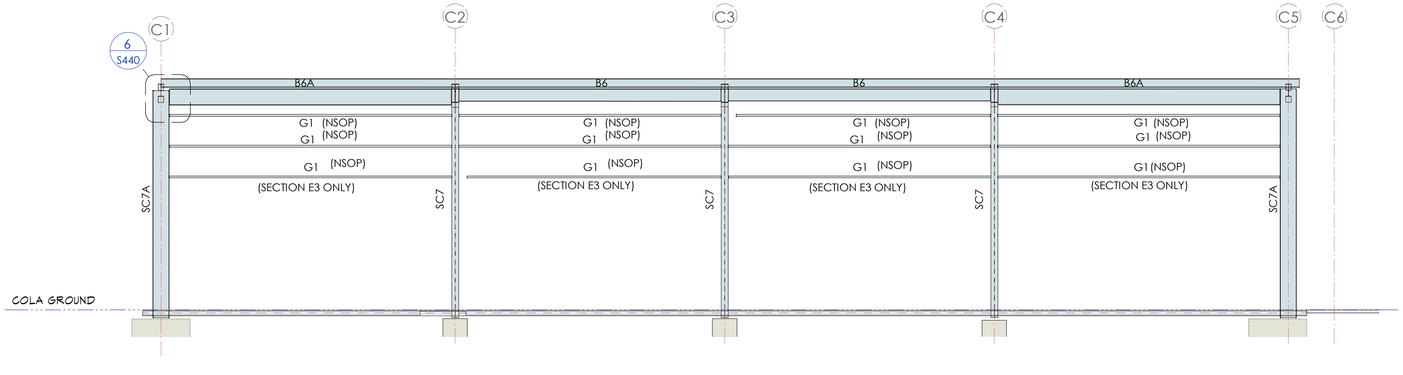
N0200030
S430 A



SECTION E1
SCALE 1 : 100 S430

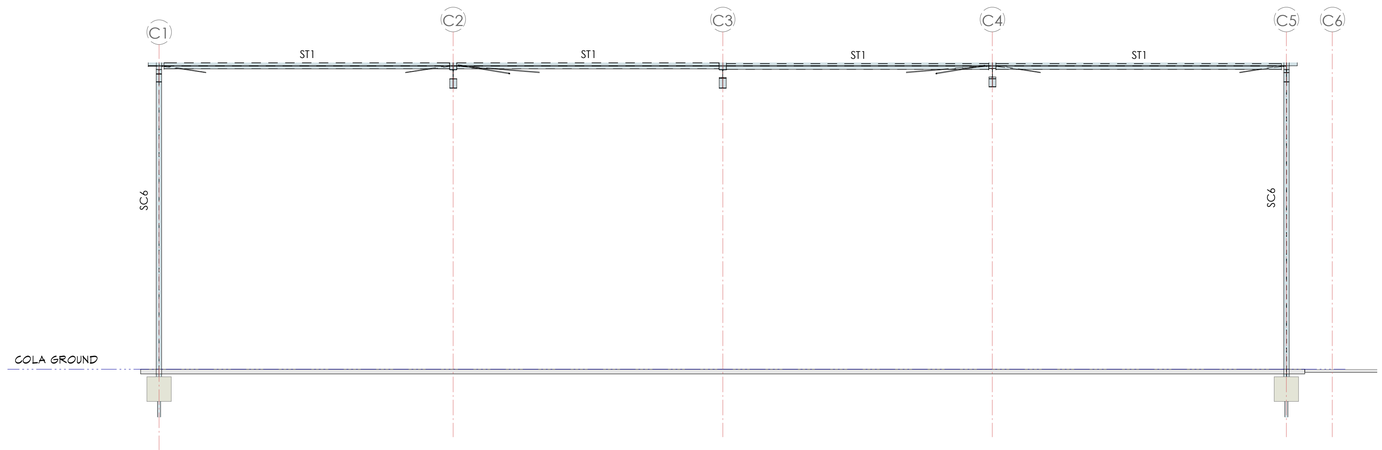


SECTION E2
SCALE 1 : 100 S430



SECTION E3
SCALE 1 : 100 S430

SECTION 3a SIM EXCEPT WHERE NOTED



SECTION E4
SCALE 1 : 100 S430

NOTES:
1. REFER TO S430 FOR STEELWORK MEMBER SCHEDULE
2. SP DENOTES SPLICE, REFER DWGS470 FOR TABLE AND TYPICAL DETAIL.

A	14.04.20	LAP	ISSUED FOR CONSTRUCTION
3	26.03.20	LAP	ISSUED FOR 100% DETAILED DESIGN
2	20.03.20	LAP	ISSUED FOR REVISED 100% DETAILED DESIGN
1	05.03.20	LAP	ISSUED FOR 100% DETAILED DESIGN
No	DATE	BY	DESCRIPTION

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STATUS
CONSTRUCTION

DISCIPLINE
STRUCTURAL DESIGN R20

DRAWING TITLE
STEELWORK ELEVATIONS - ZONE C- COVERED OUTDOOR SPACE

PROJECT
FAIRVALE HIGH SCHOOL

ADDRESS
1 THORNEY ROAD FAIRFIELD WEST 2165

PROJECT DETAILS

DESIGN	RS
DRAWN	DWS
DATE	OCT 2017
DRG SIZE	A1
SCALE	1 : 100
PROJECT MGR	AD
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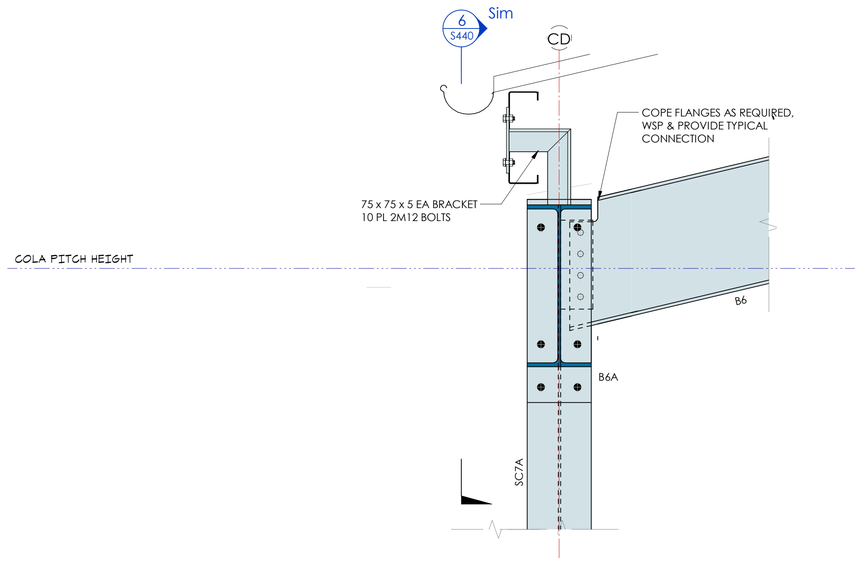
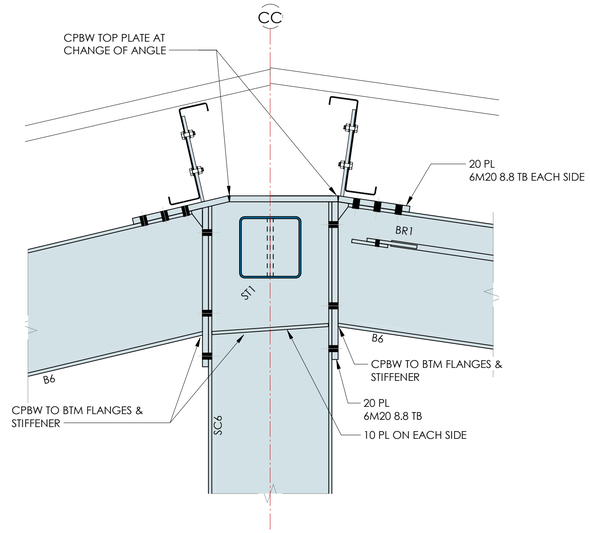
N0200030

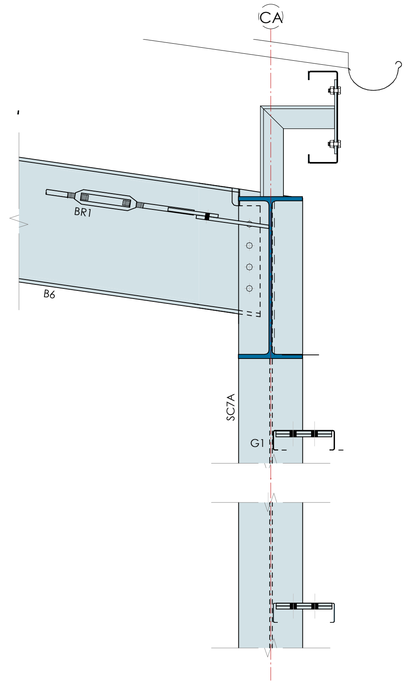
S435 A



DETAIL 1 S435
SCALE 1 : 10



DETAIL 2 S435
SCALE 1 : 10



DETAIL 3 S435
SCALE 1 : 10

DETAIL 4 S435
SCALE 1 : 10

DETAIL 5 S435
SCALE 1 : 10

DETAIL 6 S435
SCALE 1 : 10

No	DATE	BY	DESCRIPTION
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STATUS
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DISCIPLINE
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DRAWING TITLE
STEELWORK DETAILS-ZONE C-COVERED OUTDOOR SPACE

PROJECT
FAIRVALE HIGH SCHOOL

ADDRESS
1 THORNEY ROAD FAIRFIELD WEST 2165

PROJECT DETAILS

DESIGN	RS
DRAWN	DWS
DATE	OCT 2017
DRG SIZE	A1
SCALE	1 : 10
PROJECT MGR	AD

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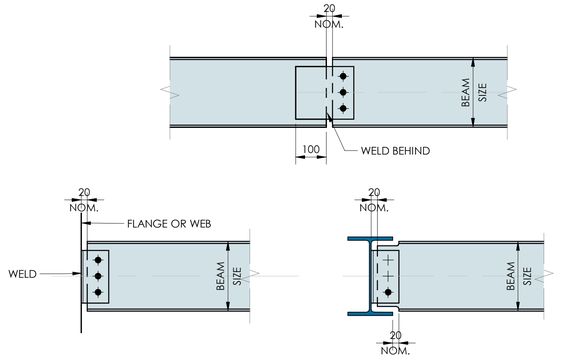
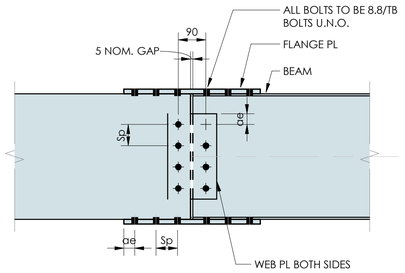
S440 A



TYPICAL CONNECTION FOR UB, UC & PFC BEAM TO FIN PLATE CONNECTIONS			
BEAM SIZE	SIDE PLATE	BOLTS	WELD
610 UB	90 x 8	7M20	6CFW
530 UB	90 x 8	6M20	6CFW
460 UB	90 x 8	5M20	6CFW
410 UB	90 x 8	4M20	6CFW
360 UB	90 x 8	3M20	6CFW
310 UB/UC	90 x 8	3M20	6CFW
250/210 UB/UC	90 x 8	2M20	6CFW
180/150 UB/UC	90 x 8	2M20	6CFW
380 PFC	90 x 8	4M20	6CFW
300 PFC	90 x 8	3M20	6CFW
250/200 PFC	90 x 8	2M20	6CFW
180/150 PFC	90 x 8	2M20	6CFW

NOTE:
- ALL WELDS TO BE CONTINUOUS FILLET WELD ALONG ONE SIDE OF THE PLATE
- M10-M12 BOLTS TO BE COMMERCIAL BOLTS PROPERTY CLASS 4.6 U.N.O.
- M16-M36 BOLTS TO BE STRUCTURAL BOLTS PROPERTY CLASS 8.8 U.N.O.
- ALL BOLTS TO BE SNUG-TIGHT (4.6/S & 8.8/S) U.N.O.

TYPICAL WEB SIDE PLATE CONNECTIONS

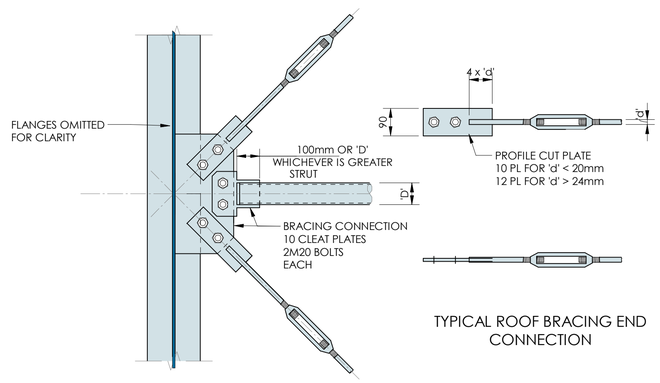


BEAM SIZE	FLANGE		WEB		MIN. GEOMETRY	
	PLATE SIZE	No. OF BOLTS (Each Side)	PLATE THICKNESS	No. OF BOLTS	BOLT SPACING (Sp)	BOLT EDGE DIST (Sp)
250UB	120 x 10	4M20	6	2M20	70	35
310UB	150 x 12	4M20	6	3M20	70	35
360UB	170 x 16	6M20	6	4M20	70	35
410UB	170 x 16	8M20	8	5M20	70	35
460UB	190 x 16	8M20	8	5M20	70	35
530UB	200 x 20	6M24	8	5M24	90	45
610UB	220 x 20	8M24	8	6M24	90	45

NOTE:
1. WEB PLATES ON EACH SIDE OF SECTION.
2. ALL DIMENSIONS IN MILLIMETERS.
3. ALL PLATES 300 GRADE.
4. BEAM SPLICE IF REQUIRED SHALL BE PROVIDED AT 0.25SPAN FROM SUPPORT. NO SPLICE SHALL BE PROVIDED AT SUPPORT OR AT MID SPAN OF THE BEAM UNLESS OTHERWISE NOTED.

TYPICAL SPLICE DETAIL

SCALE 1 : 10



TYPICAL ROOF BRACING END CONNECTION

TYPICAL ROOF BRACING DETAILS
(PLAN VIEW)

CENTRE OF ROOF BRACING TO BE 120mm NOMINAL FROM TOP OF FLANGE

TYPICAL STEELWORK BRACING DETAIL

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PROJECT	AD
MGR	

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S470 A