

## STRUCTURAL MOVEMENTS

THIS STRUCTURE WILL UNDERGO NORMAL TYPES OF MOVEMENT AND DEFLECTION. NON-STRUCTURAL COMPONENTS MUST BE DETAILED TO ACCOMMODATE THIS. DESIGN, DETAILING, AND FIELD REVIEW OF THESE NON-STRUCTURAL ELEMENTS IS BY OTHERS, AND NOT READ JONES CHRISTOFFERSEN LTD.

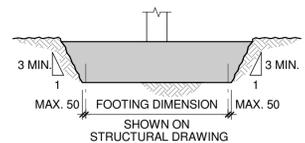
ALL STRUCTURES ARE ALSO SUBJECT TO CONSTRUCTION TOLERANCES. THIS SHOULD BE ALLOWED FOR IN DETAILING NON-STRUCTURAL COMPONENTS IN ADDITION TO THE ABOVE MOVEMENTS.

## EXCAVATIONS

- DESIGN AND FIELD REVIEW OF EXCAVATION, SHORING, AND BACKFILL IS NOT DONE BY READ JONES CHRISTOFFERSEN.

## FOUNDATIONS

- FOOTINGS HAVE BEEN DESIGNED FOR THE FOLLOWING BEARING RESISTANCE IN ACCORDANCE WITH THE SOILS REPORT.
PREPARED BY: SIMPSON GEOTECHNICAL LTD. DATED: JUNE 21, 2021
A. STRIP FOOTINGS: ULS: 300 kPa SLS: 150 kPa
B. SPREAD FOOTINGS: ULS: 300 kPa SLS: 150 kPa
2. BEARING SURFACES MUST BE APPROVED BY THE SOILS ENGINEER IMMEDIATELY BEFORE FOOTING CONCRETE IS PLACED. RJC IS NOT RESPONSIBLE FOR CONFIRMING BEARING CAPACITIES OF SOILS.
3. REFER TO SOILS REPORT FOR OTHER SPECIFIC DESIGN REQUIREMENTS FOR FOOTINGS, SOIL SLOPES, FROST PROTECTION, MINIMUM COVER, ETC.
4. UNLESS OTHERWISE SHOWN, CENTER FOOTINGS UNDER COLUMNS AND WALLS.
5. DOWELS SHALL BE PLACED BEFORE CONCRETE IS PLACED. TEMPLATES SHALL BE USED TO ENSURE CORRECT PLACEMENT OF DOWELS.
6. PROVIDE 50 mm GROUND SEAL/SKIM COAT OR MUD SLAB UNDER FOOTINGS AS REQUIRED BY SOIL CONDITIONS.
7. FOR GROUND ELEVATIONS AND DRAINAGE SLOPES, SEE ARCHITECT'S DRAWINGS.
8. VARY FOOTING ELEVATIONS WHERE REQUIRED IN ACCORDANCE WITH DETAIL FOR "TYPICAL STEPPED FOOTING", SHOWN ON STRUCTURAL DRAWINGS.
9. FOOTINGS MAY HAVE TO BE LOWERED TO ACCOMMODATE MECHANICAL OR ELECTRICAL SERVICES. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ELEVATIONS OF SAME. FOOTINGS ARE NOT TO BE UNDERMINED BY EXCAVATIONS FOR SERVICES, PITS, ETC.
10. FOOTING ELEVATIONS, IF SHOWN, ARE FOR BIDDING PURPOSES ONLY. ARE NOT FINAL. AND MAY VARY ACCORDING TO SITE CONDITIONS OR AS REQUIRED BY SERVICES. ALL FOOTINGS MUST BE TAKEN TO A BEARING LAYER APPROVED BY THE SOILS ENGINEER.
11. BEARING SURFACES MUST BE PROTECTED FROM FREEZING BEFORE AND AFTER FOOTINGS ARE POURED.
12. SUB-BASE DESIGN OF SOIL UNDER THE SLAB ON GRADE SHALL BE IN ACCORDANCE WITH THE SOIL REPORT.
13. CONCRETE PLACED UNDER WATER SHALL CONFORM TO CSA A23.1.
14. FOOTINGS CAST DIRECTLY INTO EXCAVATIONS (WITHOUT SIDE FORMS) SHALL NOT BE LARGER THAN SHOWN BELOW:



## DELEGATED DESIGN OF PRIMARY STRUCTURE COMPONENTS

- THE CONTRACTOR SHALL ENGAGE A SPECIALTY ENGINEER FOR THE DESIGN OF REQUIRED STRUCTURAL ELEMENTS AND REQUIRED STRUCTURAL CONNECTIONS NOT INDICATED IN THE DRAWINGS.
2. STRUCTURAL COMPONENTS REQUIRING DESIGN COMPLETED BY THE CONTRACTOR'S SPECIALTY ENGINEER INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
A. STRUCTURAL STEEL CONNECTIONS
B. STEEL DECK
C. OPEN WEB STEEL JOISTS AND JOIST GIRDERS
D. COLD FORMED LIGHTWEIGHT STEEL FRAMING
E. MISCELLANEOUS STEEL
F. MORTAR, GROUT AND CONCRETE MIX DESIGNS
G. PRE-ENGINEERED BUILDING
3. DESIGNS PRODUCED BY THE SPECIALTY ENGINEER SHALL CONSIDER STRENGTH, STABILITY, SERVICEABILITY AND INTEGRITY REQUIREMENTS UNDER GRAVITY AND SEISMIC LOADING AND THE DURABILITY FOR PREVAILING ENVIRONMENTAL AND EXPOSURE CONDITIONS. ALL DESIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF APPLICABLE DESIGN CODES AND ALL OTHER DESIGN REQUIREMENTS INDICATED IN THE DRAWINGS AND SPECIFICATIONS. DESIGNS SHALL INCLUDE SUITABLE LETTERS OF ASSURANCE.
4. DESIGN OF COMPONENTS AND CONNECTIONS THAT RELY ON SUPPORT BY THE PRIMARY STRUCTURE DESIGNED BY RJC OR COMPONENTS DESIGNED BY OTHER SPECIALTY ENGINEERS MUST CLEARLY INDICATE THE MEANS AND METHOD OF ATTACHMENT AND THE MAGNITUDE OF ALL FORCES (SPECIFIED AND FACTORED) THAT THE PRIMARY STRUCTURE MUST WITHSTAND. REVIEW BY THE STRUCTURAL ENGINEER OF RECORD MAY REQUIRE REVISION TO THE METHOD OF CONNECTION WITH REDESIGN BY THE SPECIALTY ENGINEER.
5. SPECIALTY ENGINEERS ENGAGED BY THE CONTRACTOR SHALL BE REGISTERED AS PROFESSIONAL ENGINEERS IN THE PROVINCE OF BRITISH COLUMBIA AND ALL SUBMITTALS OR SHOP DRAWINGS PREPARED BY OR UNDER THE SUPERVISION OF THIS ENGINEER SHALL BE SIGNED. UNSEALED PROGRESS DOCUMENTS WILL BE REJECTED BY RJC WITHOUT REVIEW UNLESS PRIOR AGREEMENT IS OBTAINED.
6. WHERE STRUCTURAL COMPONENTS OR CONNECTIONS DESIGNED BY THE SPECIALTY ENGINEER ARE TO BE FABRICATED IN A DIFFERENT JURISDICTION, THE SPECIALTY ENGINEER SHALL SUBMIT A SEALED LETTER CONFIRMING PROOF OF PROFESSIONAL REGISTRATION IN THE JURISDICTION OF FABRICATION.
7. THE SPECIALTY ENGINEER RESPONSIBLE FOR THE DESIGN IS ALSO RESPONSIBLE FOR REVIEW OF FABRICATION, INSTALLATION AND APPLICABLE TESTING REPORTS. UPON COMPLETION OF THE WORK, SUBMIT SCHEDULE S-Bs AND S-Cs TO THE ENGINEER OF RECORD.
8. REFER TO THE DRAWINGS AND SPECIFICATIONS FOR OTHER REQUIREMENTS.

## FIELD REVIEW BY READ JONES CHRISTOFFERSEN (RJC)

- READ JONES CHRISTOFFERSEN PROVIDES FIELD REVIEW ONLY FOR THE WORK SHOWN ON THESE STRUCTURAL DRAWINGS. THIS REVIEW IS NOT A "FULL TIME" REVIEW BUT IS CONDUCTED WITH SUCH FREQUENCY AS RJC DEEMS APPROPRIATE TO OBSERVE VARIOUS STAGES OF THE WORK AND TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS PREPARED BY READ JONES CHRISTOFFERSEN. FIELD REVIEW BY READ JONES CHRISTOFFERSEN IS NOT CARRIED OUT FOR THE CONTRACTOR'S BENEFIT, NOR DOES IT MAKE READ JONES CHRISTOFFERSEN GUARANTORS OF THE CONTRACTOR'S WORK. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. RJC SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
RJC WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON RJC'S DRAWINGS. THE EXTENT OF THIS REVIEW IS AT THE SOLE DISCRETION OF RJC'S ENGINEERS AND IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMANCE WITH THE STRUCTURAL DESIGN CONCEPT. THE REVIEW IS NOT AN APPROVAL OF THE DESIGN, DETAILS, AND DIMENSIONS INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR OR SUBCONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR'S OR SUBCONTRACTOR'S RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. PROVIDE 24 HOURS ADVANCE NOTICE OF EACH REQUIRED FIELD REVIEW. FIELD REVIEWS SHALL BE SCHEDULED TO BE CARRIED OUT DURING NORMAL BUSINESS HOURS UNLESS SPECIAL ARRANGEMENTS ARE MADE WITH RJC.
3. THE WORK TO BE REVIEWED SHALL BE GENERALLY COMPLETE.

## SHOP DRAWINGS

- AS PART OF OUR CONSTRUCTION PHASE SERVICES, RJC WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON RJC'S DRAWINGS BY MEANS OF APPROPRIATE SAMPLING PROCEDURES AND COMMENT ON THE ACCURACY WITH WHICH THE CONTRACTOR PREPARED THE DRAWINGS.
2. REVIEW OF SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND IS NOT AN APPROVAL OF THE DETAILED DESIGN INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS AND FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DRAWINGS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INFORMATION PERTAINING TO THE FABRICATION PROCESS, TECHNIQUES FOR CONSTRUCTION AND INSTALLATION, AND FOR CO-ORDINATION OF THE WORK OF ALL SUB-TRADES.
3. FOR SPECIFIC SHOP DRAWING SUBMITTAL REQUIREMENTS, SEE APPROPRIATE MATERIAL SECTIONS AND THE SPECIFICATIONS.
4. SHOP DRAWINGS SHALL BE COMPLETE AND INCLUDE ANY REQUIRED SEALS FROM A PROFESSIONAL ENGINEER REGISTERED IN THE JURISDICTION WHERE THE PROJECT IS LOCATED PRIOR TO SUBMISSION.
5. ALL SHOP DRAWINGS COMPRISING A REVISED SUBMISSION SHALL INDICATE THE REVISION CONTENT BY MEANS OF CLOUDING OR OTHER SUITABLE MARKINGS.

## NON-STRUCTURAL ELEMENTS

- "NON-STRUCTURAL" OR "SECONDARY STRUCTURAL" ELEMENTS ARE NOT PART OF THE STRUCTURAL DESIGN SHOWN ON THESE DRAWINGS. SUCH ELEMENTS ARE DESIGNED, DETAILED AND REVIEWED IN THE FIELD BY OTHERS. THEY APPEAR ON DRAWINGS OTHER THAN THESE DRAWINGS OF READ JONES CHRISTOFFERSEN LTD. WHERE STRUCTURAL ENGINEERING RESPONSIBILITY IS REQUIRED FOR THESE ELEMENTS, THIS SHALL BE PROVIDED BY SPECIALTY STRUCTURAL ENGINEERS, WHO SHALL PREPARE ALL SUBMITTALS UNDER THEIR SEAL AND SIGNATURE AND ALSO PROVIDE ANY LETTERS REQUIRED BY BUILDING PERMIT AUTHORITIES.
2. EXAMPLES OF NON-STRUCTURAL ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
A. ARCHITECTURAL COMPONENTS SUCH AS GUARDRAILS, HANDRAILS, FLAG POSTS, CANOPIES, CEILINGS, MILLWORK, ETC.
B. LANDSCAPE ELEMENTS SUCH AS BENCHES, LIGHT POSTS, PLANTERS, ETC.
C. CLADDING, GLAZING, WINDOW MULLIONS, INTERIOR STUD WALLS AND EXTERIOR STUD WALLS.
D. ARCHITECTURAL PRECAST, PRECAST CLADDING.
E. SKYLIGHTS.
F. MECHANICAL AND ELECTRICAL EQUIPMENT, COMPONENTS, AND THEIR ATTACHMENT DETAILS.
G. WINDOW WASHING EQUIPMENT AND ITS ATTACHMENTS.
H. ESCALATORS, ELEVATORS, AND CONVEYING SYSTEMS.
I. GLASS BLOCK AND ITS ATTACHMENTS.
J. BRICK OR BLOCK VENEERS AND THEIR ATTACHMENTS.
K. DESIGN AND FIELD REVIEW OF SEISMIC RESTRAINT FOR SECONDARY STRUCTURAL ELEMENTS AND OPERATIONAL AND FUNCTIONAL COMPONENTS INCLUDING MECHANICAL AND ELECTRICAL EQUIPMENT.
L. NON-STRUCTURAL CONCRETE TOPPING.
3. DESIGNS PRODUCED BY THE SPECIALTY ENGINEER SHALL CONSIDER STRENGTH, STABILITY, SERVICEABILITY AND INTEGRITY REQUIREMENTS UNDER GRAVITY AND SEISMIC LOADING IN ACCORDANCE WITH THE CURRENT EDITION OF APPLICABLE DESIGN CODES AND ALL OTHER DESIGN REQUIREMENTS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.
4. CONTRACTOR SHALL COORDINATE THE DESIGN OF ALL NON-STRUCTURAL ELEMENTS DESIGNED BY ONE OR MORE SPECIALTY ENGINEERS AND CONNECTING TO ELEMENTS DESIGNED BY OTHER SPECIALTY ENGINEERS TO ENSURE THE STRENGTH, STABILITY, SERVICEABILITY AND INTEGRITY OF THE FINAL CONSTRUCTION.
5. SHOP DRAWINGS FOR NON-STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO READ JONES CHRISTOFFERSEN LTD. INDICATE CLEARLY THE METHOD OF ATTACHMENT AND MAGNITUDE OF ALL FORCES (SPECIFIED AND FACTORED) THAT THE STRUCTURE MUST WITHSTAND. THESE DRAWINGS WILL BE REVIEWED ONLY FOR THE EFFECT OF THE ELEMENT ON THE PRIMARY STRUCTURAL SYSTEM.

## ABBREVIATIONS - CONT'D

Table of abbreviations including DEAD LOAD, DEEP, DEPTH, DOWELS, EACH, EACH END, EACH FACE, ELEVATION, ELEVATOR, ELECTRICAL, EQUAL, EACH SIDE, EACH WAY, EXIST, EXP. JT., EXTERIOR, FLOOR DRAIN, FAR FACE, FAR SIDE, FOOTING, GAUGE, GALVANIZED, GRID LINE, GRADE BEAM, GYPSUM WALL BOARD, HORIZ, HOOK ONE END, HOOK TWO ENDS, HOT-DIP GALVANIZED, FACTORED HORIZONTAL FORCE, HIGH POINT, HORIZONTALLY SLOTTED CONNECTION, HEIGHT, INSIDE FACE, INTERIOR JOINT, LONG, LIVE LOAD, LONG LEGS BACK TO BACK, LONG LEG HORIZONTAL, LONG LEG VERTICAL, LOW POINT, SIMILAR, SNOW LOAD, SHORT LEGS BACK TO BACK, SERVICEABILITY LIMIT STATE, SLAB ON GRADE, SPECIFICATIONS, HEADED STUD ASSEMBLY, STAINLESS STEEL, SIMPSON STRONG-TIE, STAGGER, STAGGER, STIR, STIRRUP, STEEL, SHORT WAY, SYMMETRICAL, TOP AND BOTTOM, TENSION AND COMPRESSION, TONGUE AND GROOVE, TRAFFIC DECK COATING, TOP EACH WAY, FACTORED AXIAL TENSION, THICK, THROUGH, TIE JOIST, TOP LOWER LAYER, TOP OF, TOP OF CONCRETE TOP OF FOUNDATION, TOP OF SLAB, TOP OF STRUCTURAL STEEL, TOP OF WALL, TRANSFER TYPICAL, ULTIMATE LIMIT STATE, UNLESS NOTED OTHERWISE, UNDERSIDE, VERT. - VERTICAL, FACTORED SHEAR FORCE, VERTICALLY SLOTTED CONNECTION, VERTICAL BRACING, VERTICAL CROSS BRACING, WITH, WORK POINT, WEIGHT.

## DESIGN CODE

- THE COMPLETED BASE BUILDING STRUCTURE SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED IN SUBSTANTIAL ACCORDANCE WITH THE BRITISH COLUMBIA BUILDING CODE 2018 WHICH IS BASED ON THE NATIONAL BUILDING CODE OF CANADA 2015.

## DESIGN LOADS

Table with columns: SPECIFIED UNIFORM LOADS - kPa (SEE ALSO PLANS), LIVE LOAD, SUPERIMPOSED DEAD LOAD (S.D.L.). Rows include ROOF - BASED ON A GROUND SNOW LOAD OF 0.4 AND AN IMPORTANCE FACTOR OF Is = 1.25 ULS, 0.9 SLS; OFFICE FLOORS; ROOF TERRACES; MECHANICAL ROOM; STAIRS AND CORRIDORS.

CONTRACTORS CONSTRUCTION LOADS MUST NOT EXCEED THE ABOVE DESIGN LOADS. DESIGN LOADS MAY ONLY BE APPLIED AFTER CONCRETE REACHES ITS DESIGN STRENGTH.

SUPERIMPOSED DEAD LOADS (S.D.L.) ARE NON-STRUCTURE DEAD LOADS OTHER THAN ARCHITECTURAL TOPPING, FINISHES, PARTITIONS, ROOFING MATERIALS, PAVERS, SOIL, ETC.

STRUCTURAL DEAD LOADS (D.L.) ARE DUE TO THE WEIGHT OF THE STRUCTURE ITSELF. THEY VARY WITH THE STRUCTURAL SYSTEM AND INCLUDE CONCRETE TOPPING ON STEEL DECK.

- UNLESS NOTED OTHERWISE, SPECIFIED CONCENTRATED LOADS ARE:
A. ROOFS - 1.3 kN
B. FLOORS - OFFICES - 9 kN

- RAIN PONDING LOADS ON ROOFS ARE BASED ON ROOF SLOPES, PARAPET HEIGHTS AND SCUPPER LOCATIONS SHOWN ON ARCHITECTURAL DRAWINGS. DEPTH OF PONDING ASSUMES THAT ALL ROOF DRAINS ARE ACCIDENTALLY PLUGGED FOR A MAXIMUM PERIOD OF 24 HOURS, UNLESS NOTED OTHERWISE.

ONE DAY RAIN, (1/50) = 96 mm

- WINDOW UPLIFT LOADS ON STEEL OR WOOD ROOFS SHALL BE 1 kPa NET FACTORED UNLESS NOTED OTHERWISE.

## SEISMIC AND WIND DESIGN:

THE LATERAL SYSTEM FOR THIS PROJECT CONSISTS OF MOMENT FRAMES, BRACE FRAMES AND IS DESIGNED FOR THE FOLLOWING EARTHQUAKE FACTORS:

Table with columns: Sa (0.2) to Sa (10.0), SITE CLASSIFICATION: SITE CLASS D, Ie = 1.5, Rd = 3.0, Fo = 1.3, PGA = 0.390.

AND THE FOLLOWING CLIMATIC DATA:

HOURLY WIND PRESSURE, (1/50) = 0.53 kPa
Iw = 1.25 ULS, 0.75 SLS.

## LIST OF STRUCTURAL DRAWINGS

Table with columns: Drawing ID, Description. Rows include S1.01 GENERAL NOTES AND TYPICAL DETAILS, S1.02 GENERAL NOTES AND TYPICAL DETAILS, S1.03 GENERAL NOTES AND TYPICAL DETAILS, S1.04 GENERAL NOTES AND TYPICAL DETAILS, S2.00 FOUNDATION PLAN / MAIN FLOOR PLAN, S2.01 FOUNDATION / MAIN FLOOR REINFORCEMENT PLAN, S2.02 LEVEL 2 AND ROOF FRAMING PLANS, S3.01 SECTIONS AND DETAILS.

## DRAWINGS

- THIS SET OF DRAWINGS SHOWS THE COMPLETED PROJECT. THE DRAWINGS DO NOT SHOW COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORMWORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.
2. THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" IN THE REVISIONS COLUMN, BY READ JONES CHRISTOFFERSEN LTD. THE DRAWINGS SHALL NOT BE USED FOR PRICING, COSTING, OR TENDER UNLESS SO INDICATED IN THE REVISION COLUMN. PRICING OR COSTING DRAWINGS ARE NOT COMPLETE AND ANY PRICES BASED ON PRICING OR COSTING DRAWINGS MUST INCLUDE ALLOWANCES FOR THIS.
3. THE INFORMATION ON THESE DRAWINGS SHALL NOT BE USED FOR ANY OTHER PROJECT OR WORKS. THE INFORMATION ON THESE DRAWINGS APPLIES SOLELY TO THIS PROJECT.

## GENERAL

- SECTION MARK SHOWN THUS [Symbol] MEANS SECTION #4 ON DRAWING S-3.
2. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, NAILERS, INSERTS, ETC., TO BE ENCASED IN CONCRETE.
3. SEE ARCHITECTURAL DRAWINGS FOR FLOOR AND ROOF ELEVATIONS, RECESSES, DRAINAGE SLOPES, ETC.
4. THE GENERAL CONTRACTOR SHALL REVIEW ALL THE DRAWINGS AND CHECK DIMENSIONS BEFORE CONSTRUCTION. REPORT DISCREPANCIES BETWEEN STRUCTURAL AND OTHER DISCIPLINES DRAWINGS FOR CLARIFICATION.
5. CONCRETE WORK SHALL CONFORM TO CSA A23.1, CSA A23.2, CSA A23.3 AND REFERENCED DOCUMENTS.
6. STRUCTURAL STEEL WORK SHALL CONFORM TO CSA S16 AND REFERENCED DOCUMENTS.
7. FIRE RESISTANCE RATINGS SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PRECISE LOCATION OF REQUIRED FIRE RESISTANCE RATINGS.
8. DO NOT CUT OR DRILL ANY OPENINGS IN STRUCTURAL MEMBERS WITHOUT WRITTEN PERMISSION OF RJC.
9. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND LANDSCAPE DRAWINGS FOR LOCATIONS, CONFIGURATIONS, EXTENT, AND SIZES OF ALL CURBS, UPSTAIRS, DOWNSTAIRS, AND FOR OPENINGS THROUGH FLOORS AND WALLS FOR DUCTS, CONDUIT AND PIPING. PROVIDE FOR SAME.
10. DEFINITIONS:
A. RJC: READ JONES CHRISTOFFERSEN OR ITS REPRESENTATIVE.
B. SPECIALTY STRUCTURAL ENGINEER: A STRUCTURAL ENGINEER REGISTERED AND LICENSED TO PRACTICE BY THE PROFESSIONAL ENGINEERING ASSOCIATION HAVING JURISDICTION IN THE AREA WHERE THE STRUCTURE IS TO BE BUILT AND WHO IS RESPONSIBLE FOR THE DESIGN AND FIELD REVIEW OF:
- STRUCTURAL ELEMENTS DESIGNED BY THE CONTRACTOR OR SUBCONTRACTORS, SUCH AS OPEN WEB STEEL JOISTS, PRECAST DOUBLE TEES, PRECAST PLANKS, STRUCTURAL STEEL CONNECTIONS, LIGHT WOOD FRAME ROOF TRUSSES, ETC.
- SECONDARY STRUCTURAL ELEMENTS AND NON-STRUCTURAL GENERAL NOTES.
C. CONTINUOUS: FULL TENSION SPLICE AND TENSION DEVELOPMENT LENGTH.
D. EMBEDMENT: UNLESS NOTED OTHERWISE COMPRESSION EMBEDMENT MEANS A COMPRESSION DEVELOPMENT LENGTH AND TENSION EMBEDMENT MEANS A TENSION DEVELOPMENT LENGTH AS PER CAN/CSA-A23.3 AND AS SHOWN ON THESE GENERAL NOTES DRAWINGS.
E. GENERAL CONTRACTOR: FOR THE PURPOSES OF THESE DRAWINGS, THE USE OF THE TERM "CONTRACTOR" OR "GENERAL CONTRACTOR" SHALL REFER TO THE PRIME PERSON OR COMPANY RESPONSIBLE FOR THE CONSTRUCTION OF THE PROJECT AND THE COORDINATION OF TRADES AND SUBCONTRACTORS. THIS MAY BE THE GENERAL CONTRACTOR, OR A CONSTRUCTION MANAGER.

## ABBREVIATIONS

Table of abbreviations including ACCOM., AECS, AF, ALT., ALUM., A.R., ARCH., B.C.E., BOT., B.L.L., B.L.W., BM., BOT., B.S.W., BOT., B.W., C.A., CANT., C.B., CBM., CI., C.I.P., C.J., CL., CL.R., CON., CONC., CONT., C.P., CTRS., C.W., DBM., DET., L.S.H., L.S.V., LENGTH TO SUIT, FACTORED AXIAL FORCE, ALTERNATE, ALUMINUM, ANCHOR ROD, ARCHITECTURAL, BOTTOM CHORD EXTENSION, BOTTOM EACH WAY, BOTTOM LOWER LAYER, BOTTOM LONG WAY, BEAM, BOTTOM, BOTTOM SHORT WAY, BOTTOM UPPER LAYER, BOTH WAYS, COLUMN ABOVE, CANTILEVER, COLUMN BELOW, COUPLING BEAM, FACTORED AXIAL COMPRESSION FORCE, CAST IN PLACE, CONTROL JOINT, CENTER LINE, CLEAR, CLIMB, CONCRETE, CONTINUOUS, COMPLETE PENETRATION, CENTERS, COMPLETE WITH, DIVIDER BEAM, DETAIL, LONG SIDE HORIZONTAL, LONG SIDE VERTICAL, LENGTH TO SUIT, VARIES, LONG WAY, MANUFACTURED, MAXIMUM, MECHANICAL, FACTORED MOMENT, STRONG AXIS BENDING MOMENT, WEAK AXIS BENDING MOMENT, MINIMUM, FACTORED TORSION, NEAR FACE, NOT IN CONTRACT, NEAR SIDE, NOT TO SCALE, ON CENTER, ON CENTER, OUTSIDE FACE, OPPOSITE, OPEN WEB STEEL JOIST, FACTORED POINT LOAD, PARTIAL PENETRATION, POST-TENSIONING, ROOF DRAIN, ROUGH OPENING, RETURN, REINFORCED WITH RAIN WATER LEADER, SELF-ADHERED MEMBRANE, STEP DOWN FOOTING, SUPERIMPOSED DEAD LOAD.

DRAWING NOTES
1. All drawings, plans, models, designs, specifications and other documents prepared by Read Jones Christoffersen Ltd. (RJC) and used in connection with this project are instruments of service for the work shown in them (the "Work") and as such are and remain the property of RJC whether the Work is executed or not, and RJC reserves the copyright in them and in the Work executed from them, and they shall not be used for any other work or project.
2. These drawings are "design drawings" only. They may not be suitable for use as shop drawings. Use of these drawings as "shop drawings" for "shop drawings" is not permitted unless written permission containing certain conditions and limitations is obtained from RJC. The work "as constructed" may vary from what is shown on these drawings.
3. Use of these drawings is limited to that identified in the Revision column. Do not construct from these drawings unless marked "Issued for Construction" by RJC in the Revision column, and then only for the parts noted. The drawings shall not be used for "pricing", "costing", or "tender" unless so indicated in the Revision column. "Pricing" or "costing" drawings are not complete and any price based on such drawings must allow for this.

CONSULTANT
Creative Thinking Practical Results
Read Jones Christoffersen Ltd.
READ JONES CHRISTOFFERSEN ULC. EGBC Permit No. P-20030

Table with columns: NO., DATE, DESCRIPTION. Rows include 5 2022-07-22 ISSUED FOR TENDER, 4 2022-05-20 ISSUED FOR CLASS A COSTING, 3 2022-03-04 ISSUED FOR BUILDING PERMIT, 2 2021-09-27 ISSUED FOR 100% DD, 1 2021-08-25 ISSUED FOR 80% DD.

Table with columns: NO., DATE, DESCRIPTION. Rows include 5 2022-07-22 ISSUED FOR TENDER, 4 2022-05-20 ISSUED FOR CLASS A COSTING, 3 2022-03-04 ISSUED FOR BUILDING PERMIT, 2 2021-09-27 ISSUED FOR 100% DD, 1 2021-08-25 ISSUED FOR 80% DD.

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PROJECT TITLE
DASHWOOD FIREHALL REPLACEMENT
230 Hobbs Road, Qualicum Beach, B.C. V9K 2B2

SHEET TITLE
GENERAL NOTES AND TYPICAL DETAILS

Table with columns: DATE, PROJECT NO., SCALE, DRAWN BY, SHEET NO., SHEET NO. Rows include 2022/07/20, VIC.021964.0002, As indicated, Ssa, S1.01.

## CONCRETE COLD WEATHER REQUIREMENTS (CAST-IN-PLACE AND SHOTCRETE)

(SEE ALSO CSA A23.1, EXCEPT THE FOLLOWING MINIMUM REQUIREMENTS MUST ALSO BE MET)

- FORECASTED AIR TEMPERATURE AT OR BELOW 5°C**
  - THE AGGREGATE OR MIXING WATER SHALL BE HEATED TO MAINTAIN A MINIMUM CONCRETE TEMPERATURE OF 10°C.
  - CONCRETE SHALL NOT BE PLACED ON OR AGAINST ANY SURFACE WHICH IS AT A TEMPERATURE LESS THAN 5°C.
  - CONTRACTOR SHALL BE PREPARED TO COVER SLABS (AND SHOTCRETE WALLS) IF UNEXPECTED DROP IN AIR TEMPERATURE SHOULD OCCUR.
  - CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE 10°C FOR AT LEAST 7 DAYS OR UNTIL THE CONCRETE REACHES 70% OF SPECIFIED STRENGTH.
- FORECASTED AIR TEMPERATURE BELOW 2°C BUT NOT BELOW -4°C**

(NOTE - FOR THESE CONDITIONS STRUCTURAL CONCRETE TOPPING ON METAL DECK SHALL SATISFY THE REQUIREMENTS OF NOTE 3).

  - FORMS, SHOTCRETE SUBSTRATE, AND STEEL SHALL BE FREE FROM ICE AND SNOW.
  - THE AGGREGATE OR MIXING WATER SHALL BE HEATED TO GIVE A MINIMUM CONCRETE TEMPERATURE OF 10°C AT POINT OF POUR.
  - CONCRETE SHALL NOT BE PLACED ON OR AGAINST ANY SURFACE WHICH IS AT A TEMPERATURE OF LESS THAN 5°C.
  - SLABS SHALL BE COVERED WITH CANVAS OR SIMILAR, KEPT A FEW INCHES CLEAR OF SURFACE.
  - IN WINDY WEATHER, STOREY BELOW SLAB SHALL BE ENCLOSED.
  - PROTECTION SHALL BE MAINTAINED FOR AT LEAST THE SPECIFIED CURING PERIOD.
  - CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE 10°C FOR AT LEAST THE SPECIFIED CURING PERIOD.
- FORECASTED AIR TEMPERATURE BELOW -4°C**
  - A, B, C, D, AS UNDER NOTE 2.
  - STOREY BELOW SHALL BE ENCLOSED AND ARTIFICIAL HEAT PROVIDED. HEATING TO BE STARTED AT LEAST ONE HOUR AHEAD OF POURING AND MAINTAINED FOR A MINIMUM OF THE SPECIFIED CURING PERIOD.
  - TEMPERATURE OF THE CONCRETE AT ALL SURFACES SHALL BE KEPT AT A MINIMUM OF 20°C FOR 3 DAYS, OR 10°C FOR 7 DAYS. CONCRETE SHALL BE KEPT ABOVE FREEZING TEMPERATURES UNTIL IT REACHES 70% OF ITS SPECIFIED STRENGTH.
  - ENCLOSURE MUST BE CONSTRUCTED SO THAT AIR CAN CIRCULATE OUTSIDE THE OUTER EDGES AND MEMBERS.
  - REINFORCING TO BE COVERED AND WARMED TO MAINTAIN ITS TEMPERATURE AT 0°C OR HIGHER AT THE TIME OF CONCRETE PLACEMENT.

## CONCRETE CONSTRUCTION TOLERANCES

(TOLERANCES AS PER CSA A23.1, EXCEPT AS NOTED BELOW)

CLOSER TOLERANCES SHALL BE MAINTAINED WHERE ARCHITECTURAL DETAILS OR OTHERS REQUIRE.

WHERE ANY DEVIATION OCCURS, AND IT IS ACCEPTABLE TO THE ENGINEER AND ARCHITECT, THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENT OF OTHER BUILDING ELEMENTS TO ACCOMMODATE SUCH DEVIATION. COSTS FOR REMEDIAL WORK FOR DEVIATIONS NOT ACCEPTED SHALL BE BORNE BY THE CONTRACTOR.

- VARIATION FROM THE PLUMB.**
  - IN THE LINES AND SURFACES OF COLUMNS, PIERS, WALLS AND IN ARRISES: 0.25% OF HEIGHT (1 IN 400), MAXIMUM 40 mm OVER THE ENTIRE HEIGHT OF THE STRUCTURE.
    - ONLY ONE CURVATURE ALLOWED PER 3000 mm.
    - THE TOLERANCE GIVEN IS THE MAXIMUM VARIATION FROM A PLUMB LINE.
    - ALL MEASUREMENTS SHALL BE TO THE SAME SIDE OF THE PLUMB LINE.
  - UNLESS SPECIFIED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS - THE TOLERANCES FOR EXPOSED CORNER COLUMNS, CONTROL JOINT GROOVES, AND OTHER CONSPICUOUS LINES SHALL BE: (SEE ALSO ELEVATOR SHOP DRAWINGS, ETC.)
    - 0.125% OF HEIGHT (1 IN 800), MAXIMUM 20 mm.
    - ONLY ONE CURVATURE ALLOWED PER 6000 mm.
    - MAXIMUM VARIATION IN WINDOW BAYS 0.2% OF OPENING.
- UNLESS SPECIFIED ELSEWHERE, FLOOR FINISHES SHALL BE CLASS A "INSTITUTIONAL AND COMMERCIAL FLOOR" ± 8 mm PER 3000 mm.
  - ONLY ONE CURVATURE ALLOWED IN 3000 mm.
  - CLOSER TOLERANCES MAY BE REQUIRED TO GIVE THE QUALITY OF FINISH FLOOR SURFACES CALLED FOR ELSEWHERE IN THE CONTRACT DOCUMENTS.
- VARIATIONS OF STRUCTURAL CONCRETE ELEMENTS RELATED TO EACH OTHER AND RELATIVE TO A REFERENCED GRID SYSTEM FOR PLAN DIMENSIONS TO MEET CSA A23.1.
- VARIATION IN CROSS-SECTIONAL DIMENSIONS OF COLUMNS AND BEAMS AND IN THE THICKNESS OF SLABS AND WALLS: AS IN CSA A23.1.
  - ONLY ONE CURVATURE ALLOWED PER 3000 mm.
- FOOTINGS:
  - VARIATION IN DIMENSIONS IN PLAN:
    - MINUS ..... 10 mm
    - PLUS ..... 50 mm
  - MISPLACEMENT OR ECCENTRICITY:
    - TWO (2) PERCENT OF THE FOOTING WIDTH IN THE DIRECTION OF MISPLACEMENT BUT NOT MORE THAN ..... 50 mm
  - REDUCTION IN THICKNESS:
    - MINUS ..... 5% OF SPECIFIED THICKNESS
- THE ABOVE REQUIREMENTS DO NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY OF MEETING MORE RIGID REQUIREMENTS SPECIFIED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS OR AS REQUIRED BY EQUIPMENT SHOP DRAWINGS OR SPECIFICATIONS SUCH AS THOSE FOR ELEVATORS, ETC.

## ...CONCRETE NOTES CONTINUED FROM BOTTOM OF COLUMN TO RIGHT

- CHLORIDE ION PENETRABILITY FOR EXPOSURE CLASS C-1 AND C-XL SHALL MEET THE REQUIREMENTS OF CSA A23.1.
- AT THE REQUEST OF THE OWNER, THE SUPPLIER WILL FURNISH TEST DATA RESULTS (LESS THAN 3 MONTHS OLD) FOR EACH PROPOSED MIX DESIGN DEMONSTRATING THAT THEY MEET THE STRENGTH, DURABILITY, AND SHRINKAGE REQUIREMENTS SPECIFIED.
- CURING OF CONCRETE TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CSA A23.1. CURING COMPOUNDS ARE NOT PERMITTED FOR SUSPENDED PARKING SLABS OR EXPOSURE CLASS C-XL CONCRETE. PARKING SLABS AND REINFORCED SLAB ON GRADES IN PARKING AREAS ARE TO BE CURED FOR MINIMUM 7 DAYS.
- CORROSION INHIBITORS ARE TO BE USED IN CONCRETE IN AREAS NOTED ON THE STRUCTURAL DRAWINGS, AS WELL AS IN STAIRS AND STAIR LANDINGS WITHIN PARKADES. USE 10 L/m<sup>3</sup> OF "DCI" BY GRACE CONSTRUCTION PRODUCTS OR "MASTERLIFE CI 30" BY BASF CONSTRUCTION CHEMICALS. ALTERNATIVELY, USE C-XL CONCRETE WITH CURING TYPE 3 (EXTENDED) PER CSA A23.1.
- ALL BOTTOM EDGES OF EXPOSED SLABS AND BEAMS, AS WELL AS EDGES OF WALLS AND COLUMNS, TO BE CHAMFERED 20 mm X 20 mm. ALL TOP EDGES OF EXPOSED SLABS, BEAMS, UPSTANDS AND STAIRS TO BE TOOLED UNLESS NOTED OTHERWISE. SEE ALSO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR OTHER FINISH REQUIREMENTS.
- NO CALCIUM CHLORIDE IS PERMITTED, IN ANY FORM, IN ANY CONCRETE MIX WITHOUT THE EXPRESS WRITTEN CONSENT OF READ JONES CHRISTOFFERSEN LTD.
- CURING AND PROTECTION OF CONCRETE FOR HOT, COLD OR DRY WEATHER IS TO BE AS PER CSA A23.1 AS A MINIMUM. SEE ALSO "CONCRETE COLD WEATHER REQUIREMENTS" IN THE STRUCTURAL DRAWINGS.

## CONDUITS, PIPES, AND SLEEVES EMBEDDED IN CONCRETE

EXCEPT WHEN APPROVED BY RJC, PIPES, CONDUITS, AND SLEEVES EMBEDDED IN CONCRETE SHALL BE INSTALLED IN ACCORDANCE WITH CSA A23.1 CLAUSE 6.7.5 AND THE FOLLOWING GUIDELINES:

- GENERAL:
  - SLEEVING DRAWINGS FOR THE FOLLOWING ELEMENTS AND THOSE NOTED ON PLANS AND SECTIONS SHALL BE SUBMITTED TO RJC FOR REVIEW PRIOR TO CONSTRUCTION:**
    - GRADE BEAMS
    - WALLS
  - NOT WITHSTANDING THE SATISFYING OF THESE GUIDELINES, THE CONDUIT, SLEEVES, PIPES, ETC. SHALL NOT IMPAIR THE STRUCTURAL STRENGTH AND SHALL BE MOVED IF SO DIRECTED BY RJC.
  - CONTRACTOR SHALL MINIMIZE QUANTITY AND SIZE OF IN-SLAB CONDUITS AND EMBEDDED BOXES TO LEAST AMOUNT POSSIBLE, INCLUDING COMBINING DATA AND TELECOM CABLES IN COMMON CONDUITS WHERE PERMITTED BY CODES AND APPROVED BY THE ELECTRICAL ENGINEER.
  - ADD REINFORCING AT POINTS OF CONGESTION AS DIRECTED BY THE STRUCTURAL ENGINEER.
  - NO CONDUITS, IN-SLAB DUCTS, SLEEVES, EMBEDDED BOXES, STAYFORM, ETC., SHALL BE PLACED NEAR POST-TENSIONING ANCHORAGES.
  - METAL CONDUIT, PIPES, EMBEDDED BOXES, STAYFORM, ETC. SHALL NOT BE PLACED IN PARKING SLABS. NO CONDUIT, PIPES, EMBEDDED BOXES, STAYFORM, ETC. SHALL BE PLACED IN PARKING TOPPING.
  - CONDUITS AND PIPES ARE NOT ALLOWED IN THE CONCRETE TOPPING ON TOP OF STEEL DECK UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
- WALLS:
  - BOXES, CONDUIT, SLEEVES OR EMBEDDED PIPES ARE NOT ALLOWED WITHOUT THE WRITTEN APPROVAL OF RJC.
  - CONTRACTOR MUST SUBMIT SHOP DRAWINGS SHOWING PROPOSED DETAILS OF ALL EMBEDMENTS (CONDUIT, BOXES, ETC.) AND OPENINGS IN NON-SHEAR WALLS FOR REVIEW A MINIMUM OF 21 DAYS BEFORE START OF WALL CONSTRUCTION AT ANY LEVEL. SHOP DRAWINGS TO INCLUDE PROPOSED CONDUIT O.D., QUANTITY, LOCATION AND REQUIRED BOX-OUTS, STRAIN RELIEF LOOPS, ETC. FOR PRICING AND TENDER PURPOSES, THE CONTRACTOR SHALL NOT ASSUME THAT VERTICAL WALL RUNS WILL BE PERMITTED OR THAT ANY STRUCTURAL PROVISIONS TO ACCOMMODATE VERTICAL WALL RUNS HAVE BEEN MADE.
  - GUIDELINES FOR CONDUIT, SLEEVES, OR EMBEDDED PIPES IN NON-SHEAR WALLS:
    - MAXIMUM DIAMETER = 1/4 WALL THICKNESS.
    - NO HORIZONTAL RUNS PERMITTED UNLESS NOTED OTHERWISE ON WALL ELEVATIONS OR DETAILS.
    - VERTICAL RUNS TO HAVE MINIMUM 50 mm CONCRETE COVER.
    - VERTICAL RUNS SHALL HAVE MINIMUM SPACING IN PLANE OF WALL OR PERPENDICULAR TO PLANE OF WALL OF 4 DIAMETERS (300 mm MINIMUM).

## CONCRETE

### CONCRETE PLACEMENT

- UNLESS NOTED OTHERWISE, ALL CONCRETE IS TO BE CAST-IN-PLACE.
- THE USE OF SHOTCRETE REQUIRES APPROVAL BY THE STRUCTURAL ENGINEER, ANY COSTS ASSOCIATED WITH REDESIGN, CHANGES TO THE CONTRACT DOCUMENTS AND ANY ADDITIONAL TESTING AND CONTRACT ADMINISTRATION COSTS TO ACCOMMODATE SHOTCRETE IS TO BE PAID FOR BY THE CONTRACTOR.
- CONCRETE IS SPECIFIED AS PER THE "PERFORMANCE" ALTERNATE AS OUTLINED IN CSA A23.1.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR WORKING WITH THE CONCRETE SUPPLIER TO ENSURE THAT THE PLASTIC AND HARDENED MIX PROPERTIES MEET SITE REQUIREMENTS FOR PLACING, FINISHING, AND THE OWNERS' SPECIFIED PERFORMANCE REQUIREMENTS. THE GENERAL CONTRACTOR SHALL MEET THE DOCUMENTATION AND QUALITY CONTROL REQUIREMENTS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF CSA A23.1.
- THE SUPPLIER SHALL MEET ALL CERTIFICATION AND DOCUMENTATION REQUIREMENTS AS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF CSA A23.1.
- CONCRETE PROPERTIES:

### GENERAL (AREAS NOT INCLUDING PARKING)

ELEMENT	COMPRESSIVE STRENGTH (MPa) 28 DAY U.N.O.	EXPOSURE CLASS	COMMENTS
FOOTINGS	30 MPa	N	.
SLAB ON GRADE (INTERIOR)	25 MPa	N	.
SLAB ON GRADE (EXTERIOR)	32 MPa	C-2	.
RETAINING WALLS / FOUNDATION WALLS	25 MPa	F-2	.
MECHANICAL HOUSEKEEPING PADS	20 MPa	N	.

### NOTES:

- WHERE EXPOSURE CLASS LISTED AS N/F-1/F-2:
  - USE N EXPOSURE FOR INTERIOR CONCRETE LOCATED WITHIN AN INSULATED BUILDING ENVELOPE (E.G. DRY AND NOT SUBJECT TO FREEZING AND THAWING).
  - USE F-1 EXPOSURE FOR HORIZONTAL AND SLOPED CONCRETE MEMBERS EXTERIOR TO THE BUILDING INSULATION AND NOT PROTECTED BY A MEMBRANE AND DRIP EDGE (E.G. WET AND SUBJECT TO FREEZING AND THAWING).
  - USE F-2 EXPOSURE FOR HORIZONTAL AND SLOPED CONCRETE MEMBERS EXTERIOR TO THE BUILDING INSULATION AND PROTECTED BY A MEMBRANE AND DRIP EDGE (E.G. DRY AND SUBJECT TO FREEZING AND THAWING).
  - USE F-2 FOR VERTICAL CONCRETE MEMBERS EXTERIOR TO THE BUILDING INSULATION.
- CONCRETE STRENGTH AND EXPOSURE CLASS OF STAIRS AND RAMPS SHALL MEET THE MOST STRINGENT CRITERIA OF THE ADJOINING SLABS AND BEAMS UNLESS NOTED OTHERWISE.

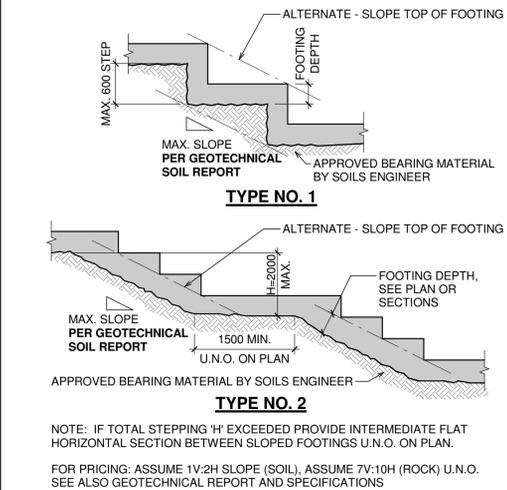
### PARKING AREAS

ELEMENT	COMPRESSIVE STRENGTH (MPa) 28 DAY U.N.O.	EXPOSURE CLASS	COMMENTS
FOOTINGS	35 MPa MIN.	F-1	C-1 FOR FTGS. WITH REINFORCING
REINFORCED SLAB ON GRADE	35 MPa	C-1	.
RETAINING / EXTERIOR FOUNDATION WALLS	35 MPa	C-1	.

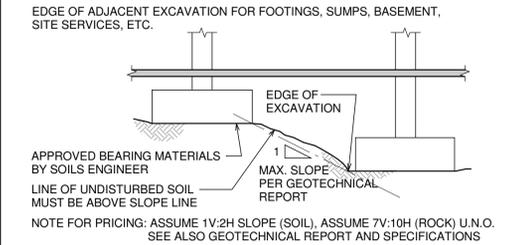
- PORTLAND CEMENT SHALL BE TYPE GU UNLESS NOTED OTHERWISE.
- REQUESTS BY THE CONTRACTOR TO USE TYPE GUL CEMENT FOR ANY STRUCTURAL ELEMENTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. THE SUBMISSION SHALL INCLUDE A SIGNED AND SEALED LETTER PREPARED BY A MATERIALS SPECIALTY ENGINEER TO ATTEST THAT THE CONCRETE PRODUCED WITH TYPE GUL CEMENT ACHIEVES SIMILAR OR HIGHER LEVEL OF PERFORMANCE THAN THE CONCRETE PRODUCED WITH TYPE GU CEMENT NOTED IN THE DRAWINGS AND SPECIFICATIONS, INCLUDING STRENGTH, EXPOSURE CLASS, ETC. AND THAT THE PROPOSED MIX IS SUITABLE FOR THE INTENDED LOCATION AND PLACEMENT METHOD. FOR CONCRETE WITH TYPE GUL CEMENT TO BE PLACED IN CONTACT WITH NATIVE SOIL OR FILL, ADDITIONAL SUBSURFACE SOIL INVESTIGATION SHALL BE COMPLETED UNDER THE DIRECTION OF THE MATERIALS SPECIALTY ENGINEER TO DETERMINE SOLUBLE SULPHATE LEVELS AND A COPY OF THE SEALED REPORT SHALL BE PROVIDED TO THE STRUCTURAL ENGINEER. ALL TESTING AND OTHER SERVICES BY THE MATERIALS SPECIALTY ENGINEER RELATED TO USE OF TYPE GUL CEMENT SHALL BE PAID FOR BY THE CONTRACTOR.
- CEMENT TYPE FOR EXPOSURE CLASSES S-1, S-2, AND S-3 SHALL BE AS OUTLINED IN CSA A23.1.
- CONCRETE SHALL HAVE A UNIT WEIGHT OF 23±1 kN/m<sup>3</sup> (145±5 PCF) UNLESS NOTED OTHERWISE.
- THE CONCRETE PROPERTIES USED IN DESIGN ARE BASED ON A MAXIMUM COARSE AGGREGATE SIZE OF NOT LESS THAN 19 mm, UNLESS NOTED OTHERWISE. ALL LOCATIONS PROPOSED BY THE CONTRACTOR FOR USE OF CONCRETE MIX DESIGNS WITH A MAXIMUM COARSE AGGREGATE SIZE SMALLER THAN 19 mm SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. ANY INCREASE IN REQUIRED CONCRETE STRENGTH OR INCREASE IN QUANTITY OF REINFORCEMENT DUE TO PROPOSED USE OF CONCRETE MIX WITH MAXIMUM COARSE AGGREGATE SIZE SMALLER THAN 19 mm TO BE PAID FOR BY THE CONTRACTOR.
- RECYCLED AGGREGATE IS NOT TO BE USED WITHOUT WRITTEN APPROVAL BY THE ENGINEER.
- SLUMP AND AGGREGATE SIZE TO BE DETERMINED BY THE GENERAL CONTRACTOR AND SUPPLIER TO MEET PLACEMENT, AND FINISHING REQUIREMENTS WITHOUT SEGREGATION WHILE MEETING ALL OWNER SPECIFICATIONS.
- MAXIMUM WATER/CEMENT RATIO AND AIR CONTENT TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CSA A23.1. REQUIRED AIR CONTENT FOR EXPOSURE CLASSES F-1, F-2, C-1, C-2, AND C-XL SHALL BE BASED ON CONCRETE EXPOSED TO FREEZE-THAW CYCLES UNLESS NOTED OTHERWISE.

## CONCRETE NOTES CONTINUED AT TOP OF COLUMN TO LEFT...

## TYPICAL STEPPED FOOTINGS (WALLS)



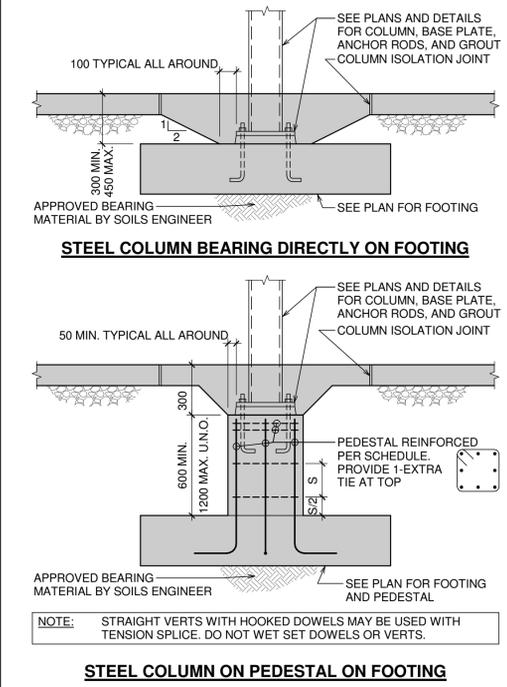
## TYPICAL FOOTING ADJACENT TO EXCAVATION



## RETAINING WALLS

- RETAINING WALLS ARE DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE SOILS REPORT.
  - REPORT BY: SIMPSON GEOTECHNICAL LTD.
  - DATED: JUNE 21, 2021
  - PLUS A 4.8 kPa LATERAL LOAD ALLOWANCE FOR A VERTICAL SURCHARGE OF 12 kPa.
- RETAINING WALLS ARE DESIGNED FOR A FREE DRAINING AND WELL DRAINED BACKFILL. SEE ARCHITECTURAL AND PLUMBING SPECIFICATIONS AND DRAWINGS FOR DRAINAGE REQUIREMENTS.
- DO NOT BACKFILL WALL UNTIL WALL IS LATERALLY SUPPORTED BY COMPLETED FLOOR AND/OR ROOF STRUCTURE.
- SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DAMPROOFING OR WATERPROOFING REQUIREMENTS.
- BACKFILL MATERIALS AND METHODS TO BE REVIEWED BY SOILS CONSULTANT TO BE ENSURE COMPLIANCE TO THE RECOMMENDATIONS AS NOTED IN THE GEOTECHNICAL REPORT.
- DESIGN AND FIELD REVIEW OF BACKFILL IS BY SOILS CONSULTANT AND NOT BY READ JONES CHRISTOFFERSEN.

## TYPICAL STEEL COLUMN ON FOOTING DETAILS



## DRAWING NOTES

- All drawings, plans, models, designs, specifications and other documents prepared by Read Jones Christoffersen Ltd. (RJC) and used in connection with this project are instruments of service for the work shown in them (the "Work") and as such are and remain the property of RJC whether the Work is executed or not, and RJC reserves the copyright in them and in the Work executed from them, and they shall not be used for any other work or project.
- These drawings are "design drawings" only. They may not be suitable for use as shop drawings. Use of these drawings as shop drawings for "shop drawings" is not permitted unless written permission containing certain conditions and limitations is obtained from RJC. The work "as constructed" may vary from what is shown on these drawings.
- Use of these drawings is limited to that identified in the Revision column. Do not construct from these drawings unless marked "Issued for Construction" by RJC in the Revision column, and then only for the parts noted. The drawings shall not be used for "pricing", "costing", or "tender" unless so indicated in the Revision column. "Pricing" or "costing" drawings are not complete and any price based on such drawings must allow for this.

## CONSULTANT



Read Jones Christoffersen Ltd.  
READ JONES CHRISTOFFERSEN LTD. 6836 PINEVIEW DRIVE, VANCOUVER, BC V6N 1S8

NO.	DATE	DESCRIPTION
5	2022-07-22	ISSUED FOR TENDER
4	2022-05-20	ISSUED FOR CLASS A COSTING
3	2022-03-04	ISSUED FOR BUILDING PERMIT
2	2021-09-27	ISSUED FOR 100% DD
1	2021-08-25	ISSUED FOR 60% DD

SEAL



## DASHWOOD FIREHALL REPLACEMENT

230 Hobbs Road,  
Qualicum Beach,  
B.C. V9K 2B2

SHEET TITLE

GENERAL NOTES AND TYPICAL DETAILS

DATE	2022/07/20	SHEET NO.
PROJECT NO.	VIC.021964.0002	S1.02
SCALE	As indicated	
DRAWN BY	SSa	

## WALLS

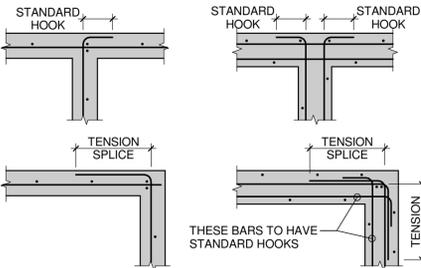
1. UNLESS NOTED OTHERWISE, WALLS SHALL BE REINFORCED AS FOLLOWS:

WALL THICKNESS	FIRE EXPOSURE	VERTICAL REINFORCING	HORIZONTAL REINFORCING
150 mm	1 SIDE	10M @ 450 CENTERED	10M @ 330 CENTERED
	2 SIDES	10M @ 450 E.F. STAG.	10M @ 450 E.F. STAG.
200 mm	1 SIDE	10M @ 330 CENTERED	10M @ 250 OR 15M @ 500 CENTERED
	2 SIDES	10M @ 500 E.F. STAG.	10M @ 500 E.F. STAG.
250 mm	1 OR 2 SIDES	10M @ 500 E.F. STAG.	10M @ 400 E.F. STAG.
300 mm	1 OR 2 SIDES	10M @ 440 E.F.	10M @ 330 E.F.

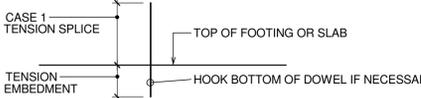
FOR OTHER THICKNESSES, REINFORCEMENT TO BE PROPORTIONAL TO ABOVE.

15M @ 500 MAY BE SUBSTITUTED FOR 10M @ 330 ONLY WITH THE APPROVAL OF RJC. FOR WALLS WITH A SINGLE LAYER OF STEEL, THE WALL REINFORCING SHALL BE PLACED IN THE CENTER OF THE WALL U.N.O.

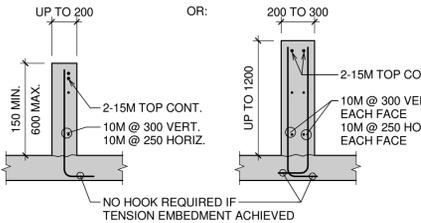
- PLACE VERTICAL REINFORCEMENT IN OUTER LAYERS OF THE CURTAINS AND HORIZONTAL REINFORCEMENT IN INNER LAYERS (BEHIND VERTICALS), UNLESS NOTED OTHERWISE.
- ALL WALL REINFORCING SHALL BE CONTINUOUS, WITH HOOKS OR CORNER BARS USED AT ALL WALL JUNCTIONS. EXTEND HOOKS TO FAR FACE OF WALL. CORNER BARS TO BE LOCATED ON OUTSIDE FACE OR CENTER OF WALL.
- HORIZONTAL AND VERTICAL SPLICES SHALL BE CASE 1 TENSION SPLICES. U.N.O. HORIZONTAL BARS NEED NOT BE CONSIDERED TOP BARS.
- DETAILS OF HORIZONTAL REINFORCEMENT AT CORNERS (SEE ALSO ZONE REINFORCING DETAILS):



- ENDS OF ALL WALLS AND ALL WALL INTERSECTIONS SHALL HAVE 2-15M VERTICAL MINIMUM UNLESS NOTED OTHERWISE ON DRAWINGS.
- ADD 2-15M PARALLEL TO ALL EDGES AND EXTENDING 625 mm BEYOND CORNERS AT OPENINGS IN WALLS.
- UNLESS NOTED OTHERWISE, PROVIDE DOWELS AT BOTTOM OF WALLS (E.G. AT FOOTINGS OR WHEREVER WALL BEGINS) AS SHOWN BELOW. DOWELS TO MATCH VERTICAL REINFORCEMENT.



- SEE ARCHITECTURAL DRAWINGS FOR EXTENT, THICKNESS, AND LOCATION OF CONCRETE UPSTAND WALLS, PLANTER WALLS AND CURBS. BELOW ARE TYPICAL DETAILS WHERE NOT INDICATED ON PLAN:



- UNLESS NOTED OTHERWISE, ALL RETAINING WALLS BELOW GRADE AND ALL EXTERIOR WALLS EXPOSED TO THE WEATHER ABOVE GRADE SHALL HAVE CONTROL JOINTS. SEE CONTROL JOINT DETAIL. CONSTRUCTION JOINT MAY REPLACE CONTROL JOINT WHERE REQUIRED. THE LOCATION OF CONTROL JOINTS IN EXPOSED CONCRETE WALLS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW.

## EMBEDMENT / DEVELOPMENT LENGTHS AND SPLICE LENGTHS - CONT'D

### CASE 2 TENSION EMBEDMENT AND SPLICE CONDITIONS

TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CSA A23.3 TABLE 12.1 (0.6 k<sub>1</sub>k<sub>2</sub>k<sub>3</sub>k<sub>4</sub>d<sub>v</sub> / √ f<sub>c</sub>) ARE TO BE AS PER THE FOLLOWING TABLE FOR MEMBERS NOT SATISFYING CASE 1 CONDITIONS AS SET OUT ABOVE. FOR EXAMPLE:

A. BARS (EXCLUDING THE SPLICE) SPACED CLOSER TOGETHER THAN 2 BAR DIAMETERS IN SAME LAYER AND BETWEEN LAYERS.

B. SEE ALSO NOTES ON TOP BARS.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION (GRADE 400 LENGTHS)					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	430	645	860	1345	1610	1880
	(SPLICE)	(560)	(840)	(1120)	(1745)	(2095)	(2445)
25 MPa	EMBEDMENT	385	580	770	1200	1440	1680
	(SPLICE)	(500)	(750)	(1000)	(1560)	(1875)	(2185)
30 MPa	EMBEDMENT	355	530	705	1100	1315	1535
	(SPLICE)	(460)	(685)	(915)	(1425)	(1710)	(1995)
35 MPa & GREATER	EMBEDMENT	325	490	650	1015	1220	1420
	(SPLICE)	(425)	(635)	(845)	(1320)	(1585)	(1850)

- NOTES:**
- "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS. "TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300 mm OR MORE OF CONCRETE BELOW THE BAR.
  - INCREASE THESE TABLE LENGTHS BY 1.5 TIMES FOR EPOXY COATED REINFORCEMENT. INCREASE THESE TABLE LENGTHS BY 1.7 TIMES FOR EPOXY COATED TOP REINFORCEMENT.
  - TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT. MULTIPLY VALUES BY 1.25 FOR GRADE 500 REINFORCEMENT.
  - INCREASE THESE TABLE LENGTHS BY 1.15 TIMES WHEN SPACING BETWEEN LAYERS OF REBAR IS 1.0d<sub>v</sub>.
  - WHERE A TENSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE GREATER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

## DEVELOPMENT OF STANDARD HOOKS IN TENSION

BASED ON CSA A23.3.

CONCRETE STRENGTH	REBAR DESIGNATION (GRADE 400 LENGTHS)					
	10M	15M	20M	25M	30M	35M
20 MPa	225	340	450	560	675	785
25 MPa	200	300	400	500	600	700
30 MPa	185	275	370	460	550	640
35 MPa & GREATER	170	255	340	425	510	595

**NOTES:**

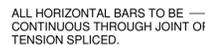
- TABLE SHOWS DEVELOPMENT LENGTHS FOR GRADE 400 REINFORCEMENT.

## WALL CONSTRUCTION JOINT

(CONSTRUCTION JOINT CAN REPLACE CONTROL JOINT)

IF ARCHITECTURAL DRAWINGS AND SPECIFICATIONS DO NOT REQUIRE A WATERSTOP, FOR WALLS BELOW GRADE, PROVIDE A 20 mm WIDE X 25 mm DEEP NOTCH AND FILL NOTCH WITH CAULKING OR DAMP PROOFING TO ARCHITECT'S REQUIREMENTS.

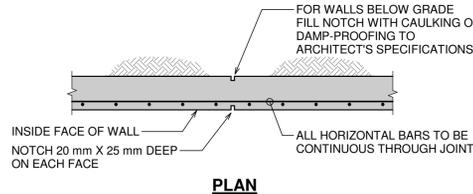
WATERSTOP IF REQUIRED. SEE ARCHITECTURAL SPECIFICATIONS



## WALL CONTROL JOINT

UNLESS NOTED OTHERWISE FOR EXTERIOR WALLS BELOW GRADE AND EXTERIOR WALLS EXPOSED TO WEATHER ABOVE GRADE.

SPACE AT 6000 mm CENTERS MAXIMUM UNLESS OTHERWISE NOTED ON PLAN.



## DESIGNATION OF REINFORCING BARS

- BARS SHOWN THUS \_\_\_\_\_ IN BOTTOM OF BEAMS OR SLABS OR IN FAR FACE OF WALL
- BARS SHOWN THUS \_\_\_\_\_ IN TOP OF BEAMS OR SLABS OR IN NEAR FACE OF WALL
- STRAIGHT BARS:  
6-10M4200 MEANS 6-10M BARS 4200 mm LONG.  
15M3800 - 15M3200 ALT. @ 200 MEANS  
1-15M 3800 mm LONG BAR THEN 1-15M 3200 mm LONG BAR SPACED 200 mm O/C AWAY.  
20M4000 @ 300 STAG. 600 MEANS 600 mm OFFSET FOR EACH 20M4000 BAR SPACED AT 300 mm O/C. IF STAGGER NOT SPECIFIED SEE GENERAL NOTES TYPICAL DETAILS FOR DIMENSION.
- BENT BARS:  
6-C15M4000 @ 300 MEANS 6-15M BARS 4000 mm LONG (LENGTH INCLUDES HOOK LENGTH) HOOKED ONE END WITH 90° STANDARD HOOK AND SPACED AT 300 mm O/C.  
8-A15M3000 @ 300 MEANS 8-15M BARS 3000 mm LONG (LENGTH INCLUDES HOOK LENGTH) HOOKED ONE END WITH 180° STANDARD HOOK AND SPACED AT 300 mm O/C.  
15M @ 300 H.2.E. MEANS 15M BARS HOOKED BOTH ENDS WITH 90° STANDARD HOOK AND SPACED AT 300 mm O/C.

## EMBEDMENT / DEVELOPMENT LENGTHS AND SPLICE LENGTHS

- BASED ON CSA A23.3
- WHERE EMBEDMENT OR SPLICES ARE DIMENSIONED ON THE DRAWINGS, SUCH DIMENSION SHALL APPLY.
- WHERE THE DRAWINGS INDICATE A COMPRESSION EMBEDMENT, IT IS A COMPRESSION EMBEDMENT LENGTH AND IT SHALL BE AS NOTED BELOW.
- WHERE THE DRAWINGS INDICATE A TENSION EMBEDMENT, IT IS A TENSION EMBEDMENT LENGTH AND SHALL BE AS NOTED BELOW.
- WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.
- WHERE NO SPLICE OR SPLICE TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE.
- IN TABLES BELOW, EMBEDMENT LENGTHS ARE SHOWN WITHOUT BRACKETS, AND SPLICE LENGTHS ARE SHOWN IN BRACKETS.
- ALL TENSION SPLICE LENGTHS ARE CLASS "B" (1.3 td).
- WHERE MORE THAN ONE FACTOR APPLIES FOR INCREASING THE LENGTHS IN THESE TABLES, MULTIPLY ALL FACTORS TOGETHER.

### COMPRESSION EMBEDMENT AND SPLICE LENGTHS

- COMPRESSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE THE "COMPRESSION DEVELOPMENT LENGTH" AS DEFINED IN CSA A23.3 CLAUSE 12.3.2.
- SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A COMPRESSION SPLICE AS DEFINED IN CSA A23.3 CLAUSE 12.16.1.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION (GRADE 400 LENGTHS)					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	215	325	430	540	645	755
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)
25 MPa	EMBEDMENT	200	290	385	480	580	675
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)
30 MPa & GREATER	EMBEDMENT	200	265	355	440	530	620
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)

**NOTES:**

- TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT. MULTIPLY VALUES BY 1.46 FOR GRADE 500 REINFORCEMENT.
- WHERE A COMPRESSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE GREATER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

### TENSION EMBEDMENT AND SPLICE LENGTHS

- TENSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE A "TENSION DEVELOPMENT LENGTH" AS DEFINED IN CSA A23.3 CLAUSE 12.2.
- SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A CLASS 'B' TENSION SPLICE (1.3td) AS PER CSA A23.3 CLAUSE 12.15.

### CASE 1 TENSION EMBEDMENT AND SPLICE CONDITIONS

TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CSA A23.3 TABLE 12.1 (0.45 k<sub>1</sub>k<sub>2</sub>k<sub>3</sub>k<sub>4</sub>d<sub>v</sub> / √ f<sub>c</sub>) ARE TO BE AS PER THE FOLLOWING TABLE FOR:

- COLUMNS.
- WALL HORIZONTAL AND VERTICAL DISTRIBUTED REINFORCING.
- SEE ALSO NOTES ON TOP BARS.
- MEMBERS WHICH DO NOT SATISFY THE ABOVE CONDITIONS SHALL HAVE TENSION EMBEDMENTS AND SPLICES AS PER CASE 2 TABLE BELOW.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION (GRADE 400 LENGTHS)					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	325	485	645	1010	1210	1410
	(SPLICE)	(420)	(630)	(840)	(1310)	(1570)	(1835)
25 MPa	EMBEDMENT	300	435	580	900	1080	1260
	(SPLICE)	(390)	(565)	(750)	(1170)	(1405)	(1640)
30 MPa	EMBEDMENT	300	395	530	825	990	1155
	(SPLICE)	(390)	(515)	(685)	(1070)	(1285)	(1500)
35 MPa & GREATER	EMBEDMENT	300	370	490	765	915	1065
	(SPLICE)	(390)	(475)	(635)	(990)	(1190)	(1385)

**NOTES:**

- "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS. "TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300 mm OR MORE OF CONCRETE BELOW THE BAR.
- "TOP BAR" FACTOR DOES NOT APPLY TO HORIZONTAL WALL REINFORCEMENT IN WALLS THAT ARE NOT VIBRATED.
- TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT.
- WHERE A TENSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE GREATER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

## CONCRETE FORMWORK STRIPPING AND SHORING

- THE DESIGN AND FIELD REVIEW OF FORMWORK, SHORING AND RESHORING IS THE RESPONSIBILITY OF THE CONTRACTOR. RESHORING DRAWINGS SHALL BE SUBMITTED TO RJC FOR THE EFFECT ON THE BASE BUILDING STRUCTURE ONLY.
- NO WALL FORMS SHALL BE REMOVED BEFORE CONCRETE HAS REACHED 10 MPa FOR ARCHITECTURAL CONCRETE OR 8 MPa FOR OTHER WALLS.
- STRENGTH OF CONCRETE FOR STRIPPING TO BE DETERMINED USING CYLINDERS STORED ON SITE IN A PROTECTED ENCLOSURE THAT MAINTAINS A SIMILAR TEMPERATURE AND HUMIDITY AS THE STRUCTURAL ELEMENTS REPRESENTED. ALTERNATE METHODS, IF ACCEPTABLE TO RJC, MAY BE USED.
- NO CONCRETE MAY BE REMOVED WITH PERCUSSIVE METHODS SUCH AS CHIPPING OR JACK-HAMMERING WITHOUT PRIOR APPROVAL BY RJC.

## CONCRETE REINFORCEMENT

- REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS:
  - 10M AND LARGER (U.N.O.) - CSA G30.18 GRADE 400R
  - WELDED WIRE REINFORCEMENT - ASTM A1064M
  - ALL REINFORCING THAT WILL BE - CSA G30.18 GRADE 400W WELDED

(NOTE: CSA G30.18 W GRADES MAY BE SUBSTITUTED FOR CSA G30.18 R GRADES)
- SEE PLAN AND DETAILS FOR ELEMENTS DESIGNATED WITH GRADE 500W REBAR. MARK ALL GRADE 500W REBAR WITH ORANGE PAINT AT BOTH ENDS. REBAR THAT IS NOT CLEARLY IDENTIFIABLE WILL BE REJECTED.
- UNLESS OTHERWISE NOTED CONCRETE COVER TO REINFORCEMENT SHALL BE THE LARGEST OF A THROUGH H:
  - FOR FIRE RATINGS:

GENERAL (AREAS NOT INCLUDING PARKING)				
ELEMENT	FIRE RATINGS	FIRE RATINGS		
		0-2 HOURS	3 HOURS	4 HOURS
COLUMNS		40 mm	40 mm	55 mm
STRUCTURAL SLAB ON GRADE	TOP COVER	GREATER OF 25 mm OR 1.0d <sub>v</sub>	N/A	N/A
	BOT. COVER	30 mm	N/A	N/A
RETAINING / FOUNDATION WALLS (F-2 EXPOSURE)	INSIDE FACE	25 mm 30M = 30 mm	N/A	N/A
	GROUND OR EARTH SIDE	40 mm 30M = 45 mm	N/A	N/A

PARKING AREAS				
ELEMENT	FIRE RATINGS	FIRE RATINGS		
		0-2 HOURS	3 HOURS	4 HOURS
COLUMNS		40 mm	40 mm	55 mm
STRUCTURAL SLAB ON GRADE TOP AND BOTTOM COVER		55 mm	N/A	N/A
RETAINING / FOUNDATION WALLS COVER BOTH FACES (C-1 EXPOSURE)		40 mm 30M = 45 mm	N/A	N/A

- UNLESS NOTED OTHERWISE IN NOTES C ----- 1.0d<sub>v</sub> THROUGH H MINIMUM CONCRETE COVER
- CONCRETE CAST AGAINST EARTH OR GROUND ----- 75 mm
- CONCRETE WITH NO MEMBRANE (NON-PARKING) --- 60 mm OR 2.0d<sub>v</sub> AND EXPOSED TO CHLORIDES - EXPOSURE CLASS (WHICHEVER C-XL, C1, AND C3.
- FORMED FINISHED CONCRETE EXPOSED TO ----- 40 mm OR 1.5d<sub>v</sub> WEATHER - EXPOSURE CLASS F1, F2, S1, S2, (WHICHEVER IS GREATER) OR EARTH

**NOTES:**

- SEE ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS FOR AREAS WHICH MAY REQUIRE 3 OR 4 HOUR RATINGS.
- SEE STRUCTURAL DRAWINGS FOR AREAS CLASSIFIED AS (D) OR (E) ABOVE FOR WEATHER EXPOSURE.
- DO NOT SUBSTITUTE DEFORMED WIRE FOR REINFORCING BARS WITHOUT PRIOR APPROVAL OF THE RJC.
- SUPPORT REINFORCING WITH CHAIRS, ACCESSORIES, OR REINFORCING BARS AS REQUIRED. BARS USED AS SUPPORT BARS SHALL BE CONSIDERED AS ACCESSORIES.
- PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN CONCRETE COVER AS SPECIFIED. ALL SUPPORTS AND BARS MUST BE TIED TOGETHER TO MAINTAIN REINFORCING STEEL SECURELY IN PLACE DURING CONCRETE PLACEMENT.
- TESTING OF REINFORCING STEEL SHALL CONFORM TO THE SPECIFICATIONS.

## DRAWING NOTES

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## CONSULTANT



Read Jones Christoffersen Ltd.

HEAD OFFICE: CHRISTOFFERSEN HOUSE, 8888, PINEVIEW ROAD, VANCOUVER, BC V6N 1S7

NO.	DATE	DESCRIPTION
5	2022-07-22	ISSUED FOR TENDER
4	2022-05-20	ISSUED FOR CLASS A COSTING
3	2022-03-04	ISSUED FOR BUILDING PERMIT
2	2021-09-27	ISSUED FOR 100% DD
1	2021-08-25	ISSUED FOR 60% DD

SEAL



PROJECT TITLE

## DASHWOOD FIREHALL REPLACEMENT

230 Hobbs Road, Qualicum Beach, B.C. V9K 2B2

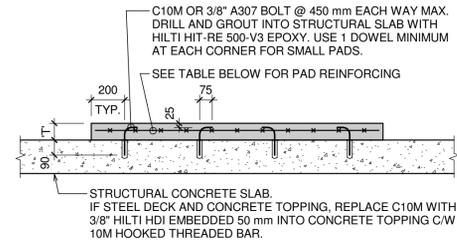
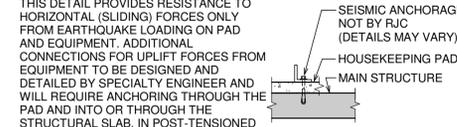
SHEET TITLE

GENERAL NOTES AND TYPICAL DETAILS

DATE	2022/07/20	SHEET NO.
PROJECT NO.	VIC.021964.0002	S1.03
SCALE	As indicated	
DRAWN BY	SSa	

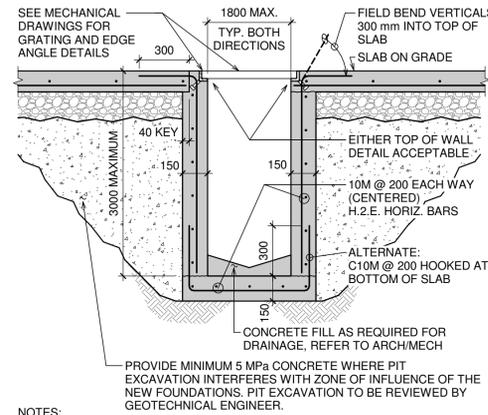
### TYPICAL MECHANICAL / ELECTRICAL HOUSEKEEPING PAD DETAIL

- SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION, EXTENT, AND THICKNESS OF HOUSEKEEPING PADS.
- THIS DETAIL PROVIDES RESISTANCE TO HORIZONTAL (SLIDING) FORCES ONLY FROM EARTHQUAKE LOADING ON PAD AND EQUIPMENT. ADDITIONAL CONNECTIONS FOR UPLIFT FORCES FROM EQUIPMENT TO BE DESIGNED AND DETAILED BY SPECIALTY ENGINEER AND WILL REQUIRE ANCHORING THROUGH THE PAD AND INTO OR THROUGH THE STRUCTURAL SLAB. IN POST-TENSIONED FLOORS, LOCATE TENDONS BEFORE DRILLING HOLES.



T' (PAD THICKNESS)	REINFORCING
UP TO 100 mm	1 SHEET OF WWR 152 X 152 - MW18.7 X MW18.7 LAP 300 mm AT MID-DEPTH
110 mm TO 150 mm	10M @ 400 EACH WAY AT MID-DEPTH
160 mm TO 200 mm	10M @ 300 EACH WAY AT MID-DEPTH

### TYPICAL SUMP / ACCESS PIT



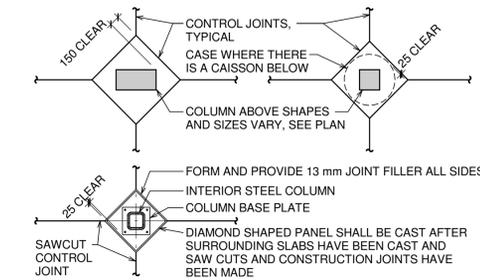
- NOTES:
- SEE MECHANICAL AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR SIZE, LOCATION AND WATERPROOFING REQUIREMENTS.
  - PRECAST ALTERNATIVE MAY BE PROPOSED BY CONTRACTOR IF ACCEPTABLE TO ARCHITECT AND MECHANICAL CONSULTANT. STRUCTURAL DESIGN OF PRECAST ALTERNATIVE NOT BY RJC. SUBMIT SHOP DRAWINGS AND RELATED SCHEDULES FOR PRECAST ALTERNATIVE SIGNED AND SEALED BY LICENSED SPECIALTY ENGINEER FOR REVIEW.

### SLAB ON GRADE REINFORCING AND CONTROL JOINTS

- SLAB ON GRADE SHALL BE PLACED ON SOIL CAPABLE OF SUSTAINING 25 kPa MINIMUM WITHOUT SETTLEMENT RELATIVE TO THE BUILDING FOUNDATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING THE SLAB ON GRADE AND ANY SPECIAL SUBBASE PREPARATIONS REQUIRED TO SUPPORT TEMPORARY SHORING OR ANY OTHER TEMPORARY CONSTRUCTION LOADS.
- SEE GEOTECHNICAL REPORT FOR SUBBASE DESIGN AND COMPACTION.
- REINFORCE SLAB ON GRADE AS PER THE TABLE BELOW. PROPERLY CHAIR REINFORCING SO THAT IT IS LOCATED 40 mm CLEAR FROM TOP OF SLAB.

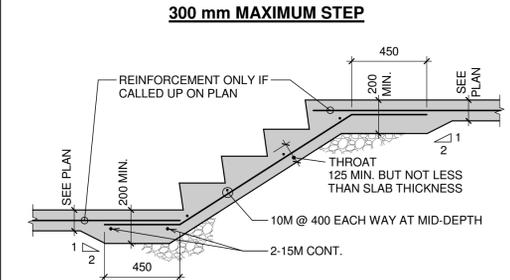
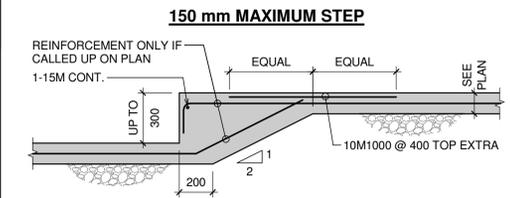
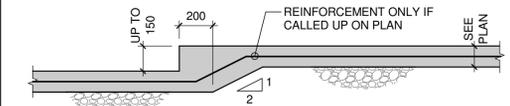
SLAB ON GRADE THICKNESS	MINIMUM REINFORCING UNLESS NOTED OTHERWISE ON PLAN
LESS THAN 115 mm	WWR 152 X 152 - MW18.7 X MW18.7 (LAP 300 mm)
115 mm TO 175 mm	10M @ 400 EACH WAY
GREATER THAN 175 mm	15M @ 400 EACH WAY

- REINFORCEMENT AS SPECIFIED IN NOTE 4 ABOVE TO CROSS AND LAP MINIMUM TENSION SPLICE LENGTH AT COLD JOINTS. FOR UNREINFORCED SLAB ON GRADE PROVIDE 38 mm X 38 mm DEEP CONTINUOUS SHEAR KEY IN SLAB ON GRADE FACE.
- UNLESS NOTED ELSEWHERE ON THE STRUCTURAL AND / OR ARCHITECTURAL DRAWINGS AND SPECIFICATIONS, SPACE CONTROL JOINTS AT 4500 mm O/C MAXIMUM.
- SAWCUT JOINTS 4 mm WIDE AND 30 mm DEEP AS SOON AS PRACTICAL, BUT NO LATER THAN 12 HOURS AFTER PLACEMENT OF SLAB. USE EQUIPMENT THAT DOES NOT "RAVEL" THE EDGES OF THE CUT. SEAL AS REQUIRED. EXERCISE CAUTION TO AVOID EMBEDDED MECHANICAL AND ELECTRICAL SERVICES.
- UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, RUN ANY SLAB ON GRADE REINFORCEMENT THROUGH THE JOINTS.
- UNLESS NOTED OTHERWISE, SAWCUT DIAMOND PATTERN AROUND COLUMNS, 150 mm CLEAR OF COLUMNS.



- APPROVAL OF ARCHITECT IS REQUIRED TO SUBSTITUTE 'ZIP STRIPS' FOR SAWCUTS.

### TYPICAL SLAB ON GRADE STEP DETAILS



### DRAWING NOTES

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### CONSULTANT



Read Jones Christoffersen Ltd.

HEAD: JAMES CHRISTOFFERSEN, Lic. EGBL, Permit No. Practice No. 100000

5	2022-07-22	ISSUED FOR TENDER
4	2022-05-20	ISSUED FOR CLASS A COSTING
3	2022-03-04	ISSUED FOR BUILDING PERMIT
2	2021-09-27	ISSUED FOR 100% DD
1	2021-08-25	ISSUED FOR 60% DD

NO.	DATE	DESCRIPTION
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SEAL



PROJECT TITLE  
**DASHWOOD FIREHALL REPLACEMENT**

230 Hobbs Road,  
Qualicum Beach,  
B.C. V9K 2B2

SHEET TITLE  
GENERAL NOTES AND TYPICAL DETAILS

DATE	2022/07/20	SHEET NO.
PROJECT NO.	VIC.021964.0002	S1.04
SCALE	As indicated	
DRAWN BY	SSa	

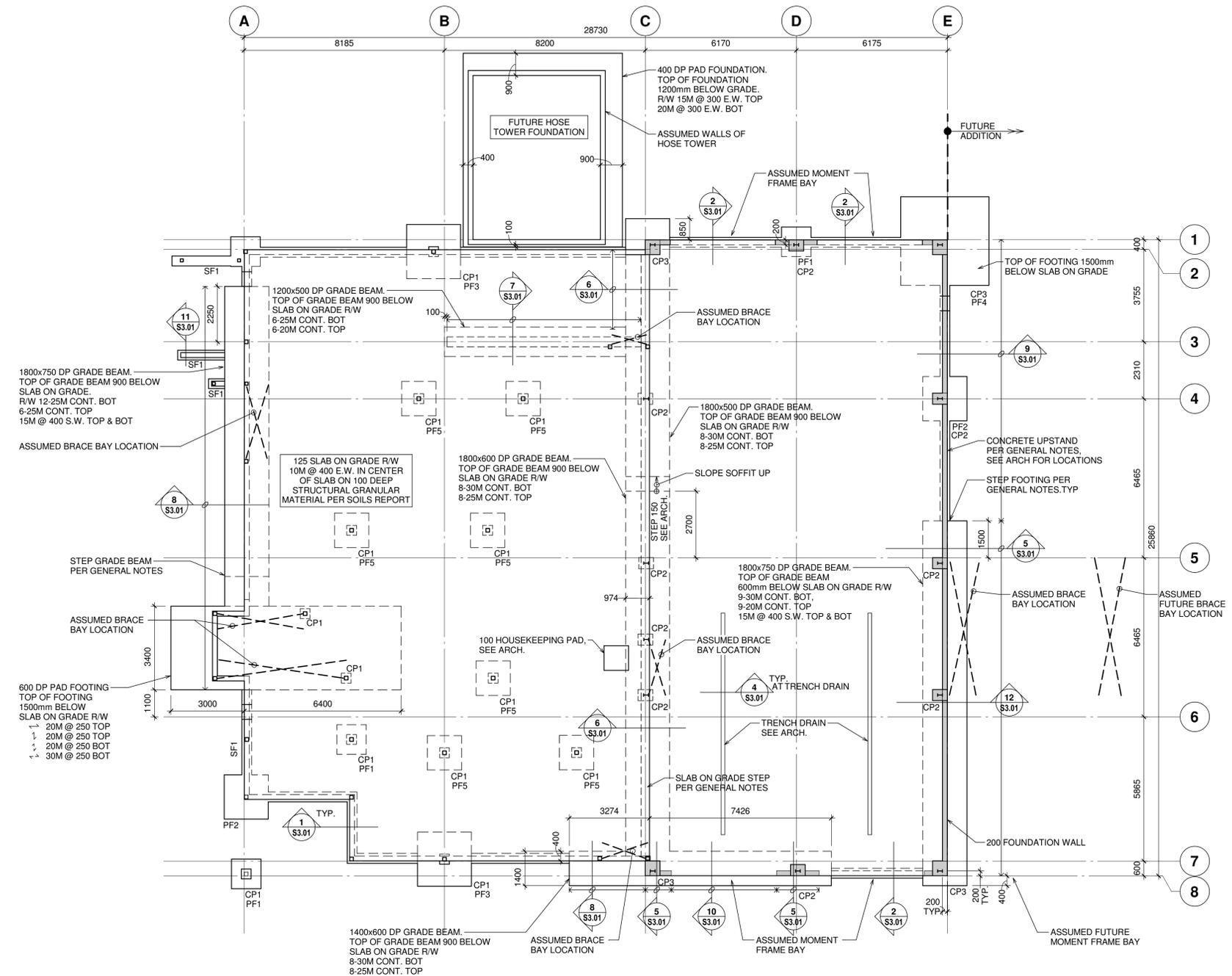
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**CONSULTANT**



Read Jones Christoffersen Ltd.  
READ JONES CHRISTOFFERSEN U.S. E.O.B.C. Permit No. 100503



**FOUNDATION/ MAIN FLOOR PLAN**  
1 : 100

CONCRETE PILASTER SCHEDULE		
MARK	SIZE	REINFORCING
CP1	400 x 400	8-20M VERT., 10M TIES @ 300
CP2	450 x 600	10-20M VERT., 10M TIES @ 300
CP3	600 x 600	8-25M VERT., 10M TIES @ 300

PAD FOOTING SCHEDULE		
MARK	SIZE	REINFORCING
PF1	1200 x 1200 x 300 DP.	4-15M E.W. BOT.
PF2	1800 x 1800 x 300 DP.	4-15M E.W. BOT.
PF3	2200 x 2200 x 350 DP.	6-20M E.W. BOT.
PF4	3600 x 3600 x 300 DP.	8-20M E.W. TOP AND BOT.
PF5	1400 x 1400 x 300 DP.	5-15M E.W. BOT.

STRIP FOOTING SCHEDULE		
MARK	SIZE	REINFORCING
SF1	400 x 300 DP.	2-15M CONT. BOT.

NO.	DATE	DESCRIPTION
5	2022-07-22	ISSUED FOR TENDER
4	2022-05-20	ISSUED FOR CLASS A COSTING
3	2022-03-04	ISSUED FOR BUILDING PERMIT
2	2021-09-27	ISSUED FOR 100% DD
1	2021-08-25	ISSUED FOR 60% DD

SEAL

**STUDIO PA** Heather Spinney, Architect, AIBC  
Robert Rocheleau, Architect, AIBC  
PRAXIS ARCHITECTS INC. 401 - 1245 Esplanade Rd. Victoria, BC V8A 3P2  
250 475 2702 studio.pa.ca

**DASHWOOD FIREHALL REPLACEMENT**

230 Hobbs Road,  
Qualicum Beach,  
B.C. V9K 2B2

**FOUNDATION PLAN / MAIN FLOOR PLAN**

DATE	2022/07/20	SHEET NO.
PROJECT NO.	VIC.021964.0002	<b>S2.00</b>
SCALE	1 : 100	
DRAWN BY	SSa	

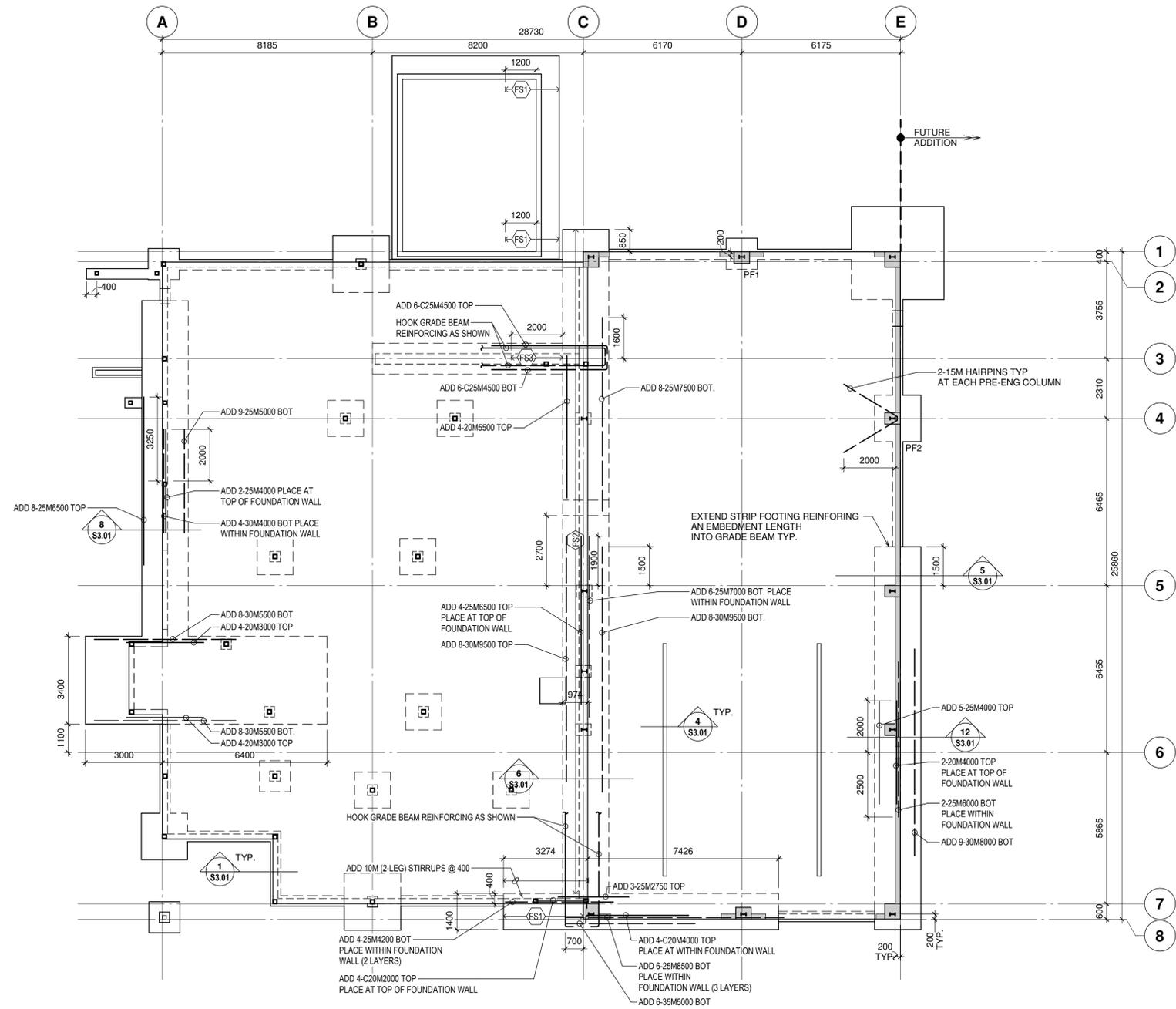
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**CONSULTANT**

**rjc** Creative Thinking Practical Results

Read Jones Christoffersen Ltd.  
READ JONES CHRISTOFFERSEN U.S. E.O.B.C. Permit to Practice No. 100503



**FOUNDATION / MAIN FLOOR REINFORCEMENT PLAN**  
 1 : 100

3	2022-07-22	ISSUED FOR TENDER
2	2022-05-20	ISSUED FOR CLASS A COSTING
1	2022-03-04	ISSUED FOR BUILDING PERMIT
NO.	DATE	DESCRIPTION

SEAL

**STUDIO PA** Heather Spinney, Architect, AIBC  
 Robert Rocheleau, Architect, AIBC  
PRAxis ARCHITECTS INC. 401 - 1245 Esplanade Rd. Victoria, BC V8A 3P2  
 250 475 2702 studio.pa.ca

**PROJECT TITLE**  
**DASHWOOD FIREHALL REPLACEMENT**

230 Hobbs Road,  
 Qualicum Beach,  
 B.C. V9K 2B2

**SHEET TITLE**  
**FOUNDATION / MAIN FLOOR REINFORCEMENT PLAN**

DATE	2022/07/20	SHEET NO.
PROJECT NO.	VIC.021964.0002	<b>S2.01</b>
SCALE	As indicated	
DRAWN BY	SSa	

FOUNDATION STIRRUP SCHEDULE		
MARK	REINFORCING	PROFILE
FS1	10M @ 200 O.C.	7-LEGS
FS2	10M @ 150 O.C.	6-LEGS CLOSED
FS3	15M @ 200 O.C.	6-LEGS

**NOTE:**  
 (FS) = 3 SETS OF FS1 - 10M (7-LEG) STIRRUPS @ 200  
 ALL STIRRUPS TO HAVE A CONTINUOUS 15M MINIMUM IN EACH HAUNCH TYPICAL.

2022-07-20 5:42:03 PM

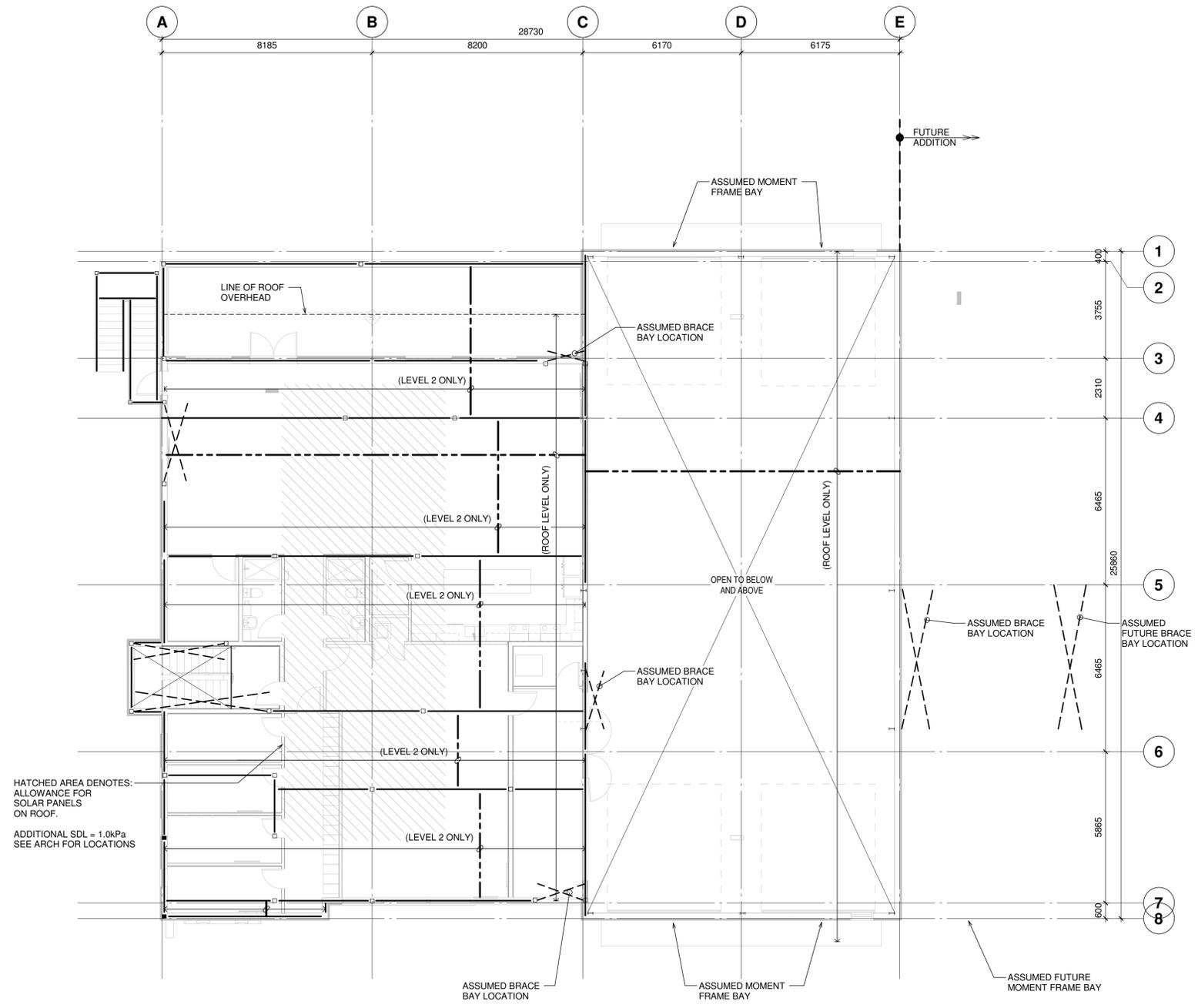
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CONSULTANT

**rjc** Creative Thinking Practical Results

Read Jones Christoffersen Ltd.  
READ JONES CHRISTOFFERSEN U.S. E.O.B.C. Permit to Practice No. 1002503



HATCHED AREA DENOTES:  
ALLOWANCE FOR SOLAR PANELS ON ROOF.  
ADDITIONAL SDL = 1.0kPa  
SEE ARCH FOR LOCATIONS

**ASSUMED LEVEL 2 AND ROOF FRAMING PLAN**  
1 : 100

5	2022-07-22	ISSUED FOR TENDER
4	2022-05-20	ISSUED FOR CLASS A COSTING
3	2022-03-04	ISSUED FOR BUILDING PERMIT
2	2021-09-27	ISSUED FOR 100% DD
1	2021-08-25	ISSUED FOR 80% DD

NO. DATE DESCRIPTION

SEAL

**STUDIO PA** Heather Spinney, Architect, AIBC  
Robert Rocheleau, Architect, AIBC

PRAXIS ARCHITECTS INC. 401 - 1245 Esplanade Rd. Victoria, BC V8A 3P2  
250 475 2702 studio.pa.ca

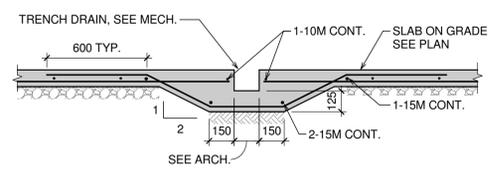
PROJECT TITLE  
**DASHWOOD FIREHALL REPLACEMENT**

230 Hobbs Road,  
Qualicum Beach,  
B.C. V9K 2B2

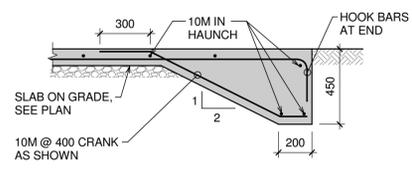
SHEET TITLE  
**LEVEL 2 AND ROOF FRAMING PLANS**

SHEET NOTE		
DATE	2022/07/20	SHEET NO.
PROJECT NO.	VIC.021964.0002	<b>S2.02</b>
SCALE	As indicated	
DRAWN BY	SSa	

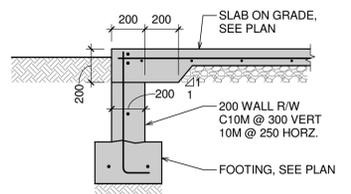
PRE-ENGINEERED BUILDING, NOT BY RJC



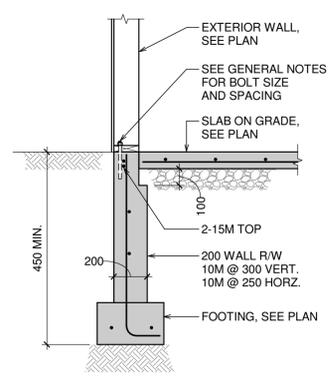
**4 TYPICAL TRENCH DRAIN DETAIL**  
S3.01 1:20



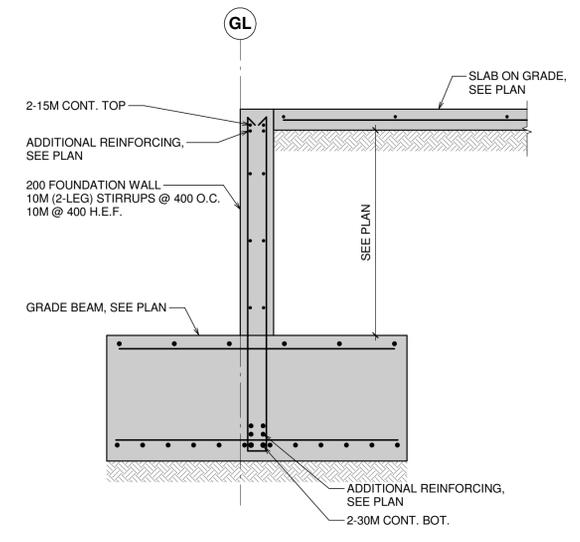
**3 TYPICAL SLAB EDGE THICKENING**  
S3.01 1:20



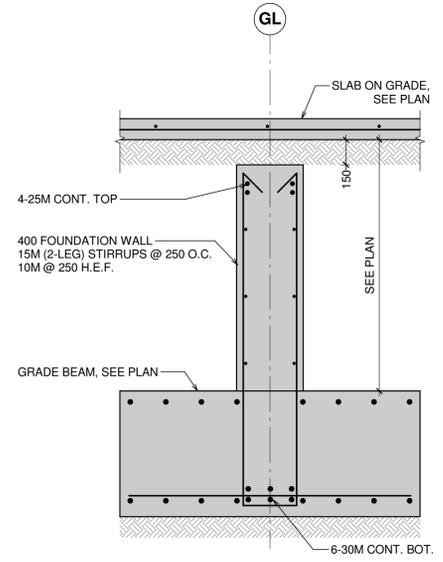
**2 SLAB THICKENING AT FOUNDATION WALL**  
S3.01 1:20



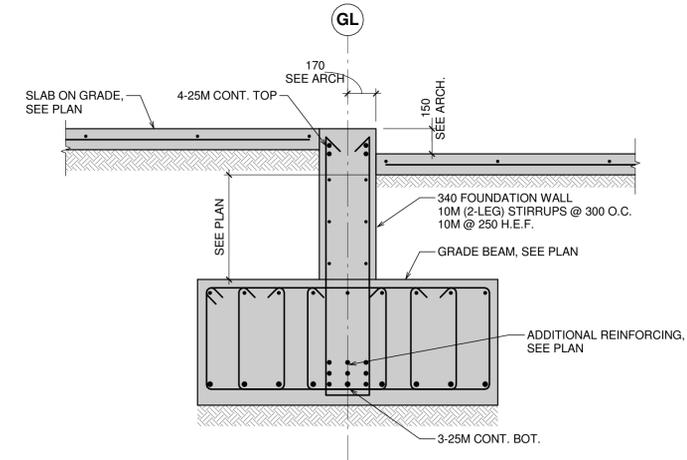
**1 TYPICAL EXTERIOR FOUNDATION WALL**  
S3.01 1:20



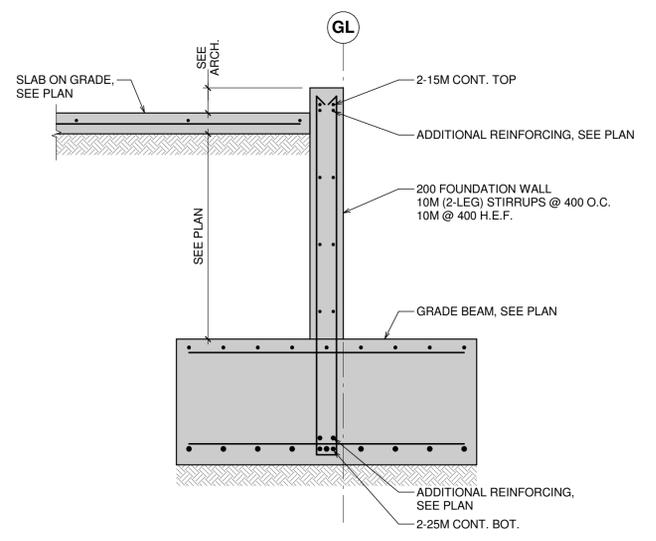
**8 SECTION**  
S3.01 1:20



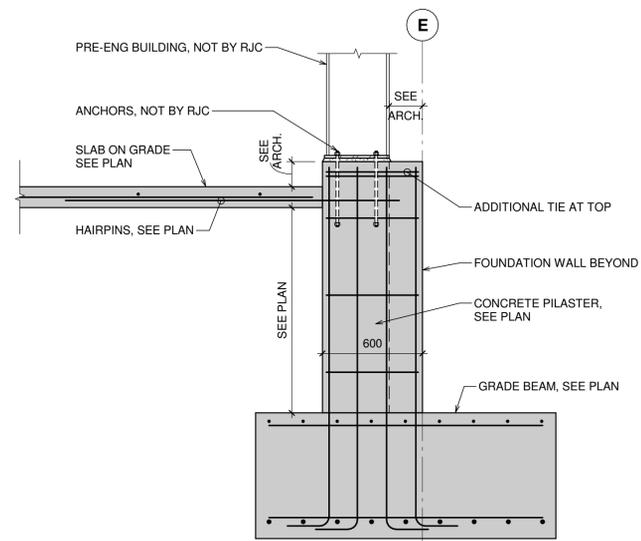
**7 SECTION**  
S3.01 1:20



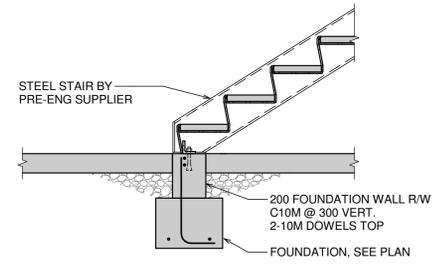
**6 SECTION**  
S3.01 1:20



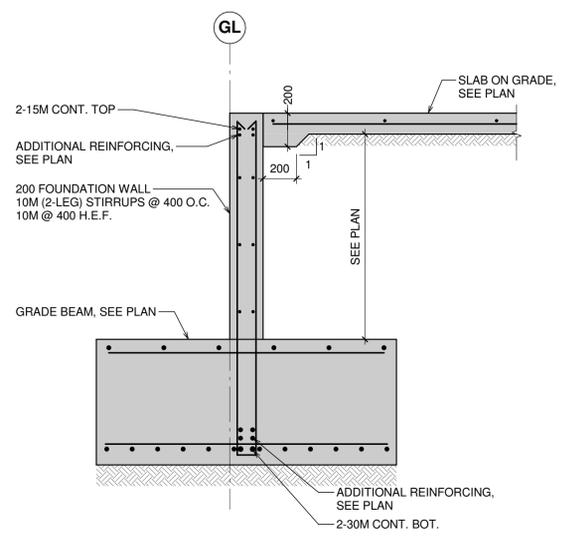
**5 SECTION**  
S3.01 1:20



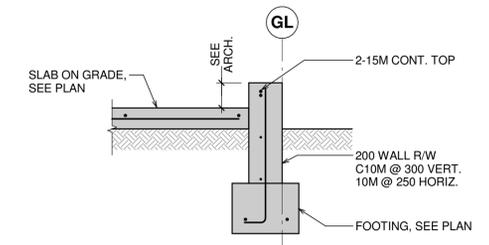
**12 SECTION**  
S3.01 1:20



**11 SECTION**  
S3.01 1:20



**10 SECTION**  
S3.01 1:20



**9 SECTION**  
S3.01 1:20

**DRAWING NOTES**

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**CONSULTANT**

**rjc** Creative Thinking Practical Results

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READ JONES CHRISTOFFERSEN LTD. E.O.B. Permit to Practice No. 100030

NO.	DATE	DESCRIPTION
5	2022-07-22	ISSUED FOR TENDER
4	2022-05-20	ISSUED FOR CLASS A COSTING
3	2022-03-04	ISSUED FOR BUILDING PERMIT
2	2021-09-27	ISSUED FOR 100% DD
1	2021-08-25	ISSUED FOR 60% DD

SEAL

**STUDIO PA** Heather Spinney, Architect, AIBC  
Robert Rocheleau, Architect, AIBC

PRAXIS ARCHITECTS INC. 401 - 1345 Esplanade Rd. Victoria, BC V8A 3P2  
250 475 2702 studio.pa.ca

**PROJECT TITLE**

**DASHWOOD FIREHALL REPLACEMENT**

230 Hobbs Road,  
Qualicum Beach,  
B.C. V9K 2B2

**SHEET TITLE**

**SECTIONS AND DETAILS**

DATE	2022/07/20	SHEET NO.
PROJECT NO.	VIC.021964.0002	S3.01
SCALE	1:20	
DRAWN BY	SSa	