ECLIPSE PROJECTS
BOX4451-QUESNELBC-V2J3J4-C:250.991.6416-go.eclipse@live.ca
DESIGN - PLANNING - CONSULTING - MANAGEMENT

ADDENDUM NO. 4

Project Name	**Q-Kids Childcare Project**
Project Number	**00507**
Date Issued	**July 14, 2022**
To	**To All Bidders and Plan Holders**

1. INTENT

This addendum is issued prior to signing of the contract to provide for certain provisions to and clarifications of the work and contract documents. Execute work required by this addendum in accordance with applicable drawings and specifications. Except as directed below, all other terms of the contract documents remain unchanged and in full force.

2. GENERAL

2.0 Note final addendum will be issued on July 20, 2022. All questions to be fielded at least 2 days prior.

2.1 Stairs from Basement to Main Floor: Pre-manufactured wood stairs.

2.2 Perimeter fence details: Refer to attached Architectural Drawing A0.03 as manufactured by Eliros Aluminum of Surrey, BC.

2.3 Thickness of under slab rigid insulation is 3”.

2.4 Vinyl Windows: All windows are vinyl as per schedule. Windows are black on outside and white on inside.

2.5 Requirements for electrical spare parts: Refer to Electrical Drawing E2.1 8P-20A contractor for quantities to be installed as part of exterior lighting control. The rest, provide as follows:
Smoke Detectors, CO Detectors: No spares required. These will be available from maintenance contractor when the contract warranty expires.
Fuses. Provide 2 spares.
Lighting drivers: Provide 5% of luminaires.
Security devices: No spares required.
Lighting control devices: Provide a spare power pack (applicable for all rooms), and two-zone dimmable lighting control switch as this module can be used in any room.

2.6 Standing seam is by Westform Steel. Delete Snaplock by Westman Steel.

2.7 Finish type for Standing Seam Sheet Metal Roofing is Silicone Modified Polyester. However, include Polyvinylidene Fluoride as alternate price.

2.8 Washrooms that require Granit SAFE.T resilient flooring: 103, 108, 117. For Washrooms 105, 106 and 114 install ceramic tiles as specified: Wall 6’-8 height WT1 with 6” band WT2 @ 2’-8 AFF; Floor: FT1. (Refer to A3.02, Room Finishes Plan)

2.9 Room 113 Exit Stairs: Install regular resilient flooring.

2.10 Requirements for fire alarm flow and tamper switching: There is no sprinkler system in the building.

2.11 Surge protection device breaker on the panel schedule:
Replace two spare 15A-1P breakers with one 30A-2P breaker for SPD MACH 2 M2-1120-3 in the Panel Schedule.

2.12 Heat Pump #2 Breaker: Correct size is 35A-2P.

2.13 Alternate pricing for fixtures other than type BA: Provide alternate pricing and consultant and City will review.

2.14 Disconnection of existing services on property: BC Hydro and Telus are in the process of completing the design for this site. This information and schedule will be conveyed to winning bidder once received. Disconnection anticipated before commencement of construction in September.

2.15 Coordination Study for short circuit analysis on the distribution is required. Equipment manufacturer provides short circuit coordination study and arc flash incident energy analysis. Pole mounted transformer data for required analysis shall be obtained from BC Hydro.

2.16 Distribution equipment acceptable for all manufacturers: Siemens, EATON, Schneider and GE will be acceptable, however all power equipment shall be from one manufacturer; and the power equipment shall fit in the electrical room. The preliminary equipment layout is based on Eaton equipment dimensions. Contractor shall maintain code required clearances.

3. DRAWINGS

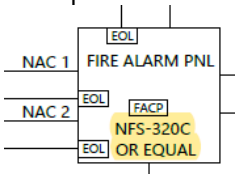
3.0 Refer to Civil Drawings C03: Gutter to drain to rock pit. Refer to drawings for drywell (rockpit) information.

3.1 Refer to Electrical Drawing E2.1, Fixture Type D, Luminaire Schedule:

D2	LENSED STRIPLIGHT	LED	120V DIM	1	23	80	2680	4000	50,000	SURFACE	COOPER	2SLSTP2040DD-UNV
D4	LENSED STRIPLIGHT	LED	120V DIM	1	41	80	4927	4000	50,000	SURFACE	COOPER	4SLSTP4040DD-UNV

Remarks:
1. - MOUNED VERTICALLY ON COLUMN IN BASEMENT
2. - MOUNT HORIZONTALLY ON WALL IN BASEMENT

3.2 Refer to Electrical Drawing E2.4: Fire Alarm Manufacturer:
Recommended manufacturer in Notifier. Note CO sensors with sounder bases are required to be incorporated in the fire alarm system.



3.3 Refer to Electrical Drawing E2.4: Requirements for fire alarm end of line resistors:
Proposed fire alarm system Type A (SLC A) has built-in EOL in the control panel. No additional EOLs are required with NFS-320C, however, if the contractor will choose different fire alarm system the quantity of EOLs shall be determined by fire alarm manufacturer based on the electrical contractor layout.

3.4 Refer to Electrical Drawing E4.0, Div 28 Note 1 and Note 11: Security Manufacturer for Equipment:
Telus Security shall be your security sub-contractor.

4. SPECIFICATIONS

4.0 Refer to Sheet Metal Flashing and Trim: Delete Protective Backing Paint.

4.1 Refer to Electrical Specifications Section 27.2 and 26.6 on Drawing E5.0: Coordination Study on distribution:

27.2 PROVIDE SHORT CIRCUIT COORDINATION STUDY FROM EQUIPMENT MANUFACTURER AS REQUIRED. ADJUST KILOAMPERE RATING OF EQUIPMENT BASED ON SHORT CIRCUIT AND FAULT LEVEL STUDIES PRIOR TO SUBMIT DISTRIBUTION SHOP DRAWINGS.

26.6 PROVIDE SHOCK AND ARC FLASH PROTECTION IDENTIFICATION LABELS ON ALL ELECTRICAL DISTRIBUTION EQUIPMENT IN ACCORDANCE WITH CEC 2-306, Z462-2018, IEEE 1584-2018. SUBMIT ARC FLASH INCIDENT ENERGY ANALYSIS FOR REVIEW.

4.2 Refer to Specifications 27.2 on Electrical Drawing E5.0: Distribution Interruption Rating 10KA for Panels A and 600A service disconnect:
The confirmation shall be included in the short circuit coordination study provided by the equipment manufacturer.

4.3 Refer to Specifications Section 31.2 on Electrical Drawing E5.0, Proposed Fire Alarm Zone Map on Electrical Drawing E2.4 and Fire Alarm Standard CAN/ULC-S524:2019:
Quantity of isolation modules typically provided by fire alarm manufacturer based on fire alarm home run layout proposed by the electrical contractor. There are three fire alarm zones in the building.

5. ATTACHMENTS

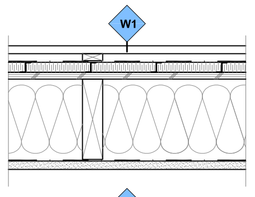
5.0 Add A0.003 (Fence Details)

5.1 Add A3.02 (Room Finishes Plan)

5.2 S001-S501 Structural (Revised)

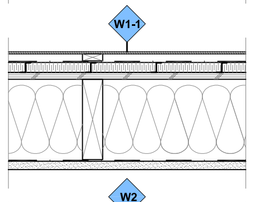
END OF ADDENDUM

WALL ASSEMBLIES



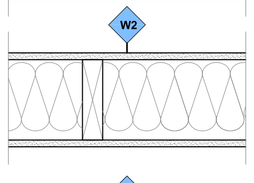
TYPICAL EXTERIOR ASSEMBLY (METAL SIDING)

- STANDING SEAM METAL CLADDING
- 1x4 PT PLYWOOD STRAPPING - ALIGN WITH STUDS
- TYVEK AIR/MOISTURE BARRIER
- 2" RIGID INSULATION ON VERT. 'Z' GIRTS
- ½" WOOD SHEATHING OR OSB (SEE STRUCT. DRAWINGS)
- 2x6 WOOD STUDS (SEE STRUCT. DRAWINGS)
- MIN. R22 BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- ½" GWB AND FINISH



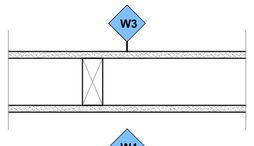
TYPICAL EXTERIOR ASSEMBLY (PANELED SIDING)

- CEMENTITIOUS V-GROOVE VERT. SIDING
- 1x4 PT PLYWOOD STRAPPING - ALIGN WITH STUDS
- TYVEK AIR/MOISTURE BARRIER
- 2" RIGID INSULATION ON VERT. 'Z' GIRTS
- ½" WOOD SHEATHING OR OSB (SEE STRUCT. DRAWINGS)
- 2x6 WOOD STUDS (SEE STRUCT. DRAWINGS)
- MIN. R22 BATT INSULATION
- 6 MIL POLY VAPOUR BARRIER
- ½" GWB AND FINISH



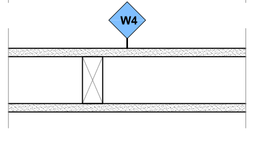
TYPICAL INTERIOR ASSEMBLY (INSULATED)

- ½" GWB
- 2x4 OR 2x6 WOOD STUDS @ 16" O/C
- ACOUSTIC INSULATION IN CAVITY
- ½" GWB



TYPICAL INTERIOR ASSEMBLY (NON-INSULATED)

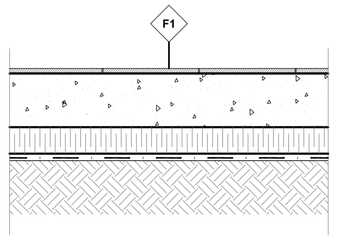
- ½" GWB
- 2x4 OR 2x6 WOOD STUDS @ 16" O/C
- ACOUSTIC INSULATION IN CAVITY @ WASHROOMS
- ½" GWB



TYPICAL INTERIOR 1hr RATED ASSEMBLY

- ⅝" TYPE 'X' GWB
- 2x4 OR 2x6 WOOD STUDS @ 16" O/C
- ACOUSTIC INSULATION IN CAVITY @ WASHROOMS
- ⅝" TYPE 'X' GWB

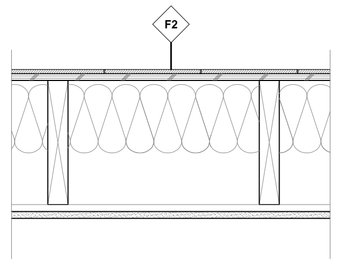
CONCRETE FLOOR ASSEMBLIES



- FLOOR FINISH (REFER TO SCHEDULE) ON
- CAST IN PLACE REINFORCED CONCRETE SLAB (SEE STRUCT.) ON
- 6MIL POLY VAPOUR BARRIER (EDGES SEALED, JOINTS LAPPED) ON
- R15 RIGID INSULATION ON
- SAND BASE ON
- COMPACTED GRANULAR FILL ON

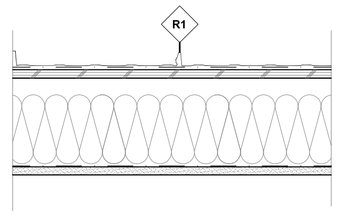
(FILL TO BE MIN. 6mm (¼") THICK LAYER OF COMPACTED CLEAR CRUSHED GRAVEL)

WOOD FLOOR ASSEMBLIES

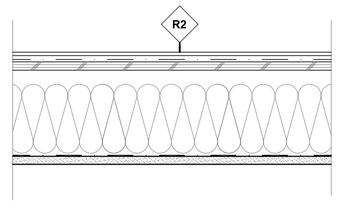


- FLOOR FINISH (REFER TO SCHEDULE) ON
- ¾" T&G PLYWOOD FLOOR SHEATHING (SEE STRUCT.) ON
- 2x10 JOISTS AS PER STRUCTURAL ON
- R20 BUTT INSULATION ON
- ½" RESILIENT CHANNELS ON
- ⅝" TYPE "X" GWB

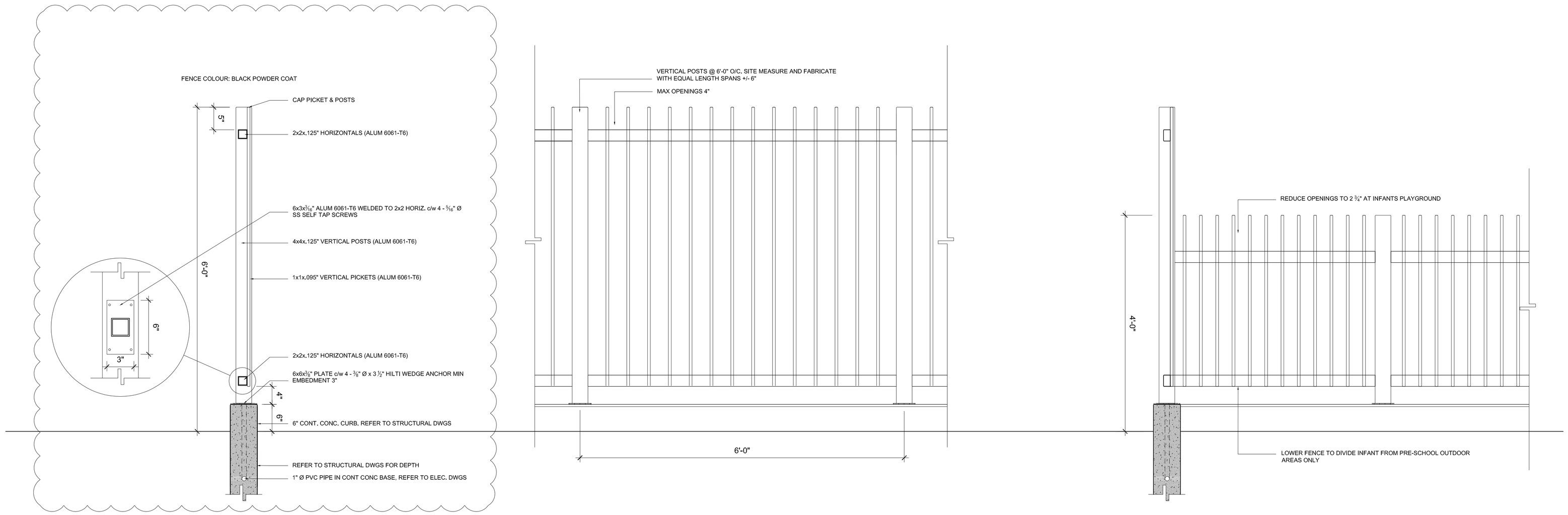
ROOF ASSEMBLIES



- STANDING SEAM METAL ROOFING
- UNDERLAYMENT- ICE & WATER GUARD UNDERLAYMENT ON
- ¾" PLYWOOD SHEATHING
- ENGINEERED TRUSS SYSTEM SUPPLIED BY SPECIALIST
- R52 INSULATION TO FILL ATTIC
- 6MIL POLY VAPOUR BARRIER
- ⅝" TYPE 'X' GWB



- 2 PLY SBS ROOFING MEMBRANE
- 2% ISOBOARD INSULATION SLOPED TO DRAIN
- ICE & WATER GUARD
- ½" PLYWOOD SHEATHING
- R28 BATT INSULATION
- 6MIL POLY VAPOUR BARRIER
- ⅝" TYPE 'X' GWB FINISH OR VENTED SOFFIT (WHERE REQUIRED)



1 / A0.03 **PLAYGROUND FENCE DETAILS**

1" = 1'-0"

REVISIONS

NO.	DESCRIPTION	DATE

ISSUED DRAWINGS

ISSUED FOR:	DATE
COORDINATION	20.08.2021
BP	15.06.2022
TENDER	24.06.2022

EXAMINE THE DRAWINGS CAREFULLY BEFORE COMMENCING THE WORK. REPORT DISCREPANCIES, IF ANY, TO THE ARCHITECT AND OBTAIN CLARIFICATION OR ADDITIONAL INSTRUCTIONS BEFORE PROCEEDING WITH THAT PART OF THE WORK. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING - ANY ERRORS OR OMISSIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

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ECLIPSE PROJECTS
DESIGN - PLANNING - CONSULTING - MANAGEMENT

Box 4451, QUESNEL, BC V2J 3J6
+(250) 991-6416 **www.eclipseprojects.ca**
+(250) 991-6416 **go.eclipse@live.ca**

PROJECT LOGO:

CITY OF Quesnel

PROJECT TITLE:

PROPOSED Q-KIDS DAYCARE CENTRE

QUESNEL & DISTRICT DAYCARE SOCIETY
420 Webster Avenue
Quesnel, BC

PROJECT OWNER & ADDRESS:

THE CITY OF QUESNEL
410 KInchant Street
Quesnel B.C.
V2J 7J5

CONSULTANT:

SEAL:

DRAWN:	DATE:
LY	Aug 08, 2021
CHECKED:	
SCALE:	PROJECT NO.:
1 ½":1'-0"	00507

SHEET TITLE:

ASSEMBLIES

SHEET NUMBER: **A0.03** REV.:

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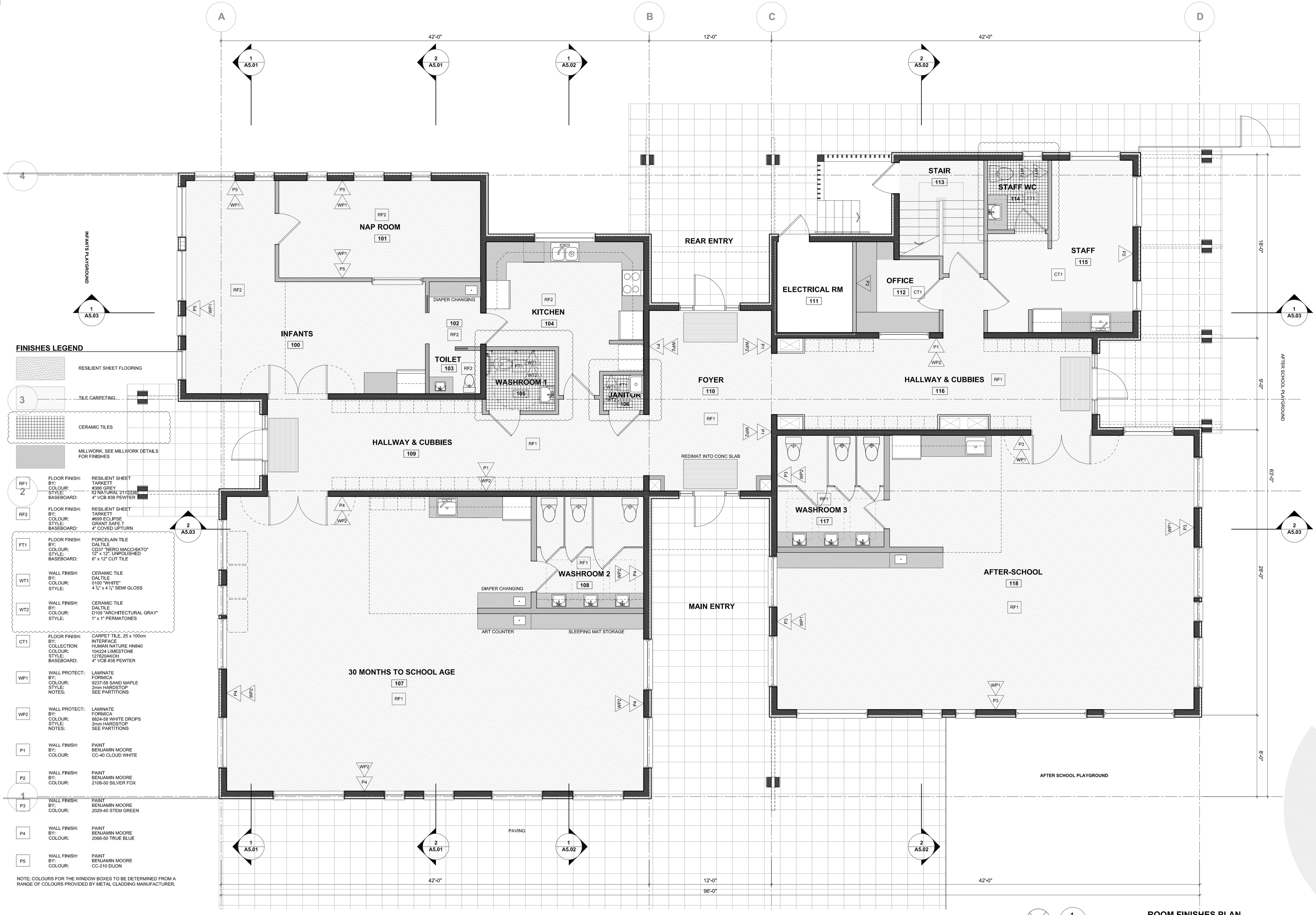

FINISHES LEGEND

RESILIENT SHEET FLOORING

TILE CARPETING

CERAMIC TILES

MILLWORK, SEE MILLWORK DETAILS FOR FINISHES

RF1	FLOOR FINISH:	RESILIENT SHEET
	BY:	TARKETT
	COLOUR:	#386 GREY
	STYLE:	92 NATURAL 2110338
	BASEBOARD:	4" VCB #38 PEWTER
RF2	FLOOR FINISH:	RESILIENT SHEET
	BY:	TARKETT
	COLOUR:	#699 ECLIPSE
	STYLE:	GRANT SAFE.T
	BASEBOARD:	4" COVED UPTURN
FT1	FLOOR FINISH:	PORCELAIN TILE
	BY:	DALTILE
	COLOUR:	CD37 "NERO MACCHIATO"
	STYLE:	12" x 12", UNPOLISHED
	BASEBOARD:	6" x 12" CUT TILE
WT1	WALL FINISH:	CERAMIC TILE
	BY:	DALTILE
	COLOUR:	0100 "WHITE"
	STYLE:	4 ¼" x 4 ¼" SEMI GLOSS
WT2	WALL FINISH:	CERAMIC TILE
	BY:	DALTILE
	COLOUR:	D109 "ARCHITECTURAL GRAY"
	STYLE:	1" x 1" PERMATONES
CT1	FLOOR FINISH:	CARPET TILE, 25 x 100cm
	BY:	INTERFACE
	COLLECTION:	HUMAN NATURE HN840
	COLOUR:	104224 LIMESTONE
	STYLE:	127620AKOH
	BASEBOARD:	4" VCB #38 PEWTER
WP1	WALL PROTECT:	LAMINATE
	BY:	FORMICA
	COLOUR:	9237-58 SAND MAPLE
	STYLE:	2mm HARDSTOP
	NOTES:	SEE PARTITIONS
WP2	WALL PROTECT:	LAMINATE
	BY:	FORMICA
	COLOUR:	8824-58 WHITE DROPS
	STYLE:	2mm HARDSTOP
	NOTES:	SEE PARTITIONS
P1	WALL FINISH:	PAINT
	BY:	BENJAMIN MOORE
	COLOUR:	CC-40 CLOUD WHITE
P2	WALL FINISH:	PAINT
	BY:	BENJAMIN MOORE
	COLOUR:	2108-50 SILVER FOX
P3	WALL FINISH:	PAINT
	BY:	BENJAMIN MOORE
	COLOUR:	2029-40 STEM GREEN
P4	WALL FINISH:	PAINT
	BY:	BENJAMIN MOORE
	COLOUR:	2066-50 TRUE BLUE
P5	WALL FINISH:	PAINT
	BY:	BENJAMIN MOORE
	COLOUR:	CC-210 DIJON

NOTE: COLOURS FOR THE WINDOW BOXES TO BE DETERMINED FROM A RANGE OF COLOURS PROVIDED BY METAL CLADDING MANUFACTURER.

1 A3.02 — 1/4" = 1'-0"

ROOM FINISHES PLAN

REVISIONS

NO.	DESCRIPTION	DATE

ISSUED DRAWINGS

ISSUED FOR:	DATE
COORDINATION	20.08.2021
BP	15.06.2022
TENDER	24.06.2022

EXAMINE THE DRAWINGS CAREFULLY BEFORE COMMENCING THE WORK. REPORT DISCREPANCIES, IF ANY, TO THE ARCHITECT AND OBTAIN CLARIFICATION OR ADDITIONAL INSTRUCTIONS BEFORE PROCEEDING WITH THAT PART OF THE WORK. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING - ANY ERRORS OR OMISSIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

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QUESNEL & DISTRICT DAYCARE SOCIETY
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Quesnel, BC

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THE CITY OF QUESNEL
410 Kinchant Street
Quesnel B.C.
V2J 7J5

CONSULTANT:

SEAL:

DRAWN:	DATE:
EW	Aug 08, 2021
CHECKED:	
SCALE:	PROJECT NO.:
¼":1'-0"	00507

SHEET TITLE:

ROOM FINISHES PLAN

SHEET NUMBER: **A3.02** REV.:

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01 11 00 SUMMARY OF WORK

1. WORK
   1. WORK OUTLINED IN THESE STRUCTURAL DRAWINGS COMPRISES GENERAL CONSTRUCTION TO ACCOMMODATE THE CONSTRUCTION OF A NEW DAYCARE, LOCATED AT 430 WEBSTER AVE, QUESNEL, B.C.
   2. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND DOCUMENTS.
   3. THESE DRAWINGS APPLY TO THE PROPOSED CONSTRUCTION ONLY AND SHALL NOT BE USED FOR ANY OTHER PROJECT OR WORKS.
   4. CHECK STRUCTURAL DIMENSIONS PROVIDED AGAINST ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND REPORT INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK.
      1. DO NOT SCALE DRAWINGS.
   5. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF OPENINGS, PITS, SUMPS, SLEEVES, GROOVES, CHAMFERS, ETC., NOT INDICATED HEREIN.
   6. SPECIFIC NOTES AND DETAILS SHOWN ON THE STRUCTURAL PLANS AND SECTIONS SHALL TAKE PRECEDENCE OVER THE GENERAL NOTES AND TYPICAL DETAILS.
   7. FEATURES OF CONSTRUCTION NOT FULLY SHOWN ARE OF THE SAME CHARACTER AS THOSE NOTED FOR SIMILAR CONDITIONS.
   8. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE BCBC, LATEST EDITION AND ALL OTHER ACTS ADMINISTERED BY ALL AUTHORITIES HAVING JURISDICTION. REFERENCE CODES SHALL BE THE EDITIONS DESIGNATED IN TABLE 1.3.1.2 OF THE BC BUILDING CODE U.N.O.
2. CONTRACT METHOD
   1. RELATIONS AND RESPONSIBILITIES BETWEEN CONTRACTOR AND BY OWNER ARE AS DEFINED IN CONDITIONS OF CONTRACT.
3. WORK BY OTHERS
   1. THESE DRAWINGS SHOW THE REQUIREMENTS FOR THE COMPLETED, PERMANENT STRUCTURE. TEMPORARY WORKS, INCLUDING BUT NOT LIMITED TO FORMWORK, FALSEWORK, SCAFFOLDING AND THE SUPPORT OF NEW AND EXISTING STRUCTURES DURING CONSTRUCTION, ARE THE RESPONSIBILITY OF THE CONTRACTOR.
      1. THE STABILITY OF THE STRUCTURAL FRAME IS DEPENDENT ON THE FULL INTERACTION OF ALL STRUCTURAL COMPONENTS.
         1. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING DURING CONSTRUCTION TO ENSURE STABILITY OF THE STRUCTURE AT ALL TIMES.
      2. ACCESS ENGINEERING IS NOT RESPONSIBLE FOR THE DESIGN OR FIELD REVIEW OF TEMPORARY OR ANCILLARY WORK.
4. ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING
   1. EXECUTE WORK WITH LEAST POSSIBLE INTERFERENCE OR DISTURBANCE TO EXISTING BUILDING STRUCTURE.
   2. THE STRUCTURAL ASPECTS OF THE EXISTING STRUCTURE NOT AFFECTED BY THIS WORK REMAIN THE SOLE RESPONSIBILITY OF OTHERS.
5. DOCUMENTS REQUIRED
   1. MAINTAIN AT JOB SITE, ONE COPY OF EACH DOCUMENT AS FOLLOWS:
      1. IFC DRAWINGS AND ALL REVISIONS, SITE INSTRUCTIONS, ETC.
      2. REVIEWED SHOP DRAWINGS.

DESIGN LOADS

ALL LOADS ARE UNFACTORED UNLESS NOTED OTHERWISE.

LOCATION:	**QUESNEL**, B.C.
IMPORTANCE FACTOR (ULS):	
SNOW:	IS = 1.0
SEISMIC:	IE = 1.0
WIND:	IW = 1.0
SPECTRAL RESPONSE:	SA (0.2) = 0.105 SA (0.5) = 0.088 SA (1.0) = 0.065 SA (2.0) = 0.047
PGA:	0.047
SITE CLASS:	D (ASSUMED)
GROUND SNOW LOAD:	S_S = 3.0kPa
ASSOCIATED RAIN LOAD:	S_R = 0.1kPa
DRIFT LOAD:	SEE DRIFT DIAGRAMS
WIND:	
$q_{1/50}$:	0.0.31kPa
INTERNAL PRESSURE CAT.:	2
WIND EXPOSURE C_e:	ROUGH TERRAIN
UNFACTORED LIVE LOADS:	
FLOORS (RESIDENTIAL):	4.8 kPa
VERT. GUARDRAIL LOADING:	1.5kN/m
HOR. GUARDRAIL LOADING:	1.0kN @ POINT OR 0.75kN/m
UNFACTORED DEAD LOADS:	
ROOF (WOOD-FRAME):	0.75kPa
FLOOR W/ OUT TOPPER (WOOD-FRAME):	0.75kPa
PARTITION LOAD:	1.00kPa
SOILS:	
TYPE & CONDITION:	GRANULAR/COHESIVE – TO BE CONFIRMED BY GEOTECH.
ALLOWABLE SOIL BEARING CAPACITY @ MIN. CONFINEMENT OF 0.4m:	75kPa
FACTORED SOIL BEARING CAPACITY @MIN. CONFINEMENT OF 0.4m:	112kPa
ENGINEERED FILL:	
TOTAL UNIT WEIGHT:	γ = 20kN/m^3
ANGLE OF INTERNAL FRICTION:	35°
ACTIVE EARTH PRESSURE COEFFICIENT:	K_a = 0.271
PASSIVE EARTH PRESSURE COEFFICIENT:	K_p = 2.5

DESIGN OF FOUNDATIONS IS BASED ON AN ALLOWABLE SOIL BEARING CAPACITY OF 75 kPa AND AN ULTIMATE SOIL BEARING CAPACITY OF 112.5 kPa. THIS SHALL BE VERIFIED ON SITE BY A GEOTECHNICAL ENGINEER FOLLOWING EXCAVATION.

01 33 00 SUBMITTAL PROCEDURES

1. ADMINISTRATIVE
   1. DO NOT PROCEED WITH WORK AFFECTED BY SUBMITTALS UNTIL REVIEW IS COMPLETE.
      1. ALLOW 3 DAYS FOR CONSULTANT'S REVIEW OF EACH SUBMISSION.
   2. REVIEW SUBMITTALS PRIOR TO SUBMISSION TO EOR.
      1. SUBMITTALS NOT STAMPED, SIGNED, DATED, AND IDENTIFIED AS TO SPECIFIC PROJECT WILL BE REJECTED.
   3. NOTIFY CONSULTANT AT TIME OF SUBMISSION ALL DEVIATIONS FROM DESIGN DRAWINGS, STATING REASONING.
   4. VERIFY FIELD MEASUREMENTS AND AFFECTED ADJACENT WORK ARE CO-ORDINATED.
   5. CONTRACTOR'S RESPONSIBILITY FOR ERRORS AND OMISSIONS IN SUBMISSION IS NOT RELIEVED BY EOR'S REVIEW OF SUBMITTALS.
2. SHOP DRAWINGS AND SPECIALTY ENGINEER
   1. SUBMIT DRAWINGS STAMPED AND SIGNED BY SUPPLIER OR FABRICATORS SPECIALTY ENGINEER, REGISTERED IN THE JURISDICTION OF THE PROJECT SITE, AS REQUIRED HEREIN.
      1. THE SPECIALTY ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN, PREPARATION OF SHOP DRAWINGS, AND FIELD REVIEW OF, BUT NOT LIMITED TO, THE FOLLOWING:
         1. STRUCTURAL ELEMENTS DESIGNED BY THE CONTRACTOR OR SUB-CONTRACTOR SUPPLIERS, SUCH AS DEMOLITION PLANS, PRECAST CONCRETE COMPONENTS, COLD-FORMED STEEL, STRUCTURAL STEEL CONNECTIONS, OPEN WEB STEEL JOISTS, OPEN WEB WOOD TRUSSES, I-JOISTS, ETC.
         2. HELICAL PILES AND DEEP FOUNDATIONS.
         3. FORMWORK AND SHORING.
         4. SECONDARY STRUCTURAL ELEMENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
            1. STAIRS, GUARDRAILS AND HANDRAILS.
            2. ARCHITECTURAL CEILINGS.
            3. SITE WORK ELEMENTS EXTERIOR TO THE BASE BUILDING SUCH AS LANDSCAPING COMPONENTS, POOLS, SIGNS, AND CIVIL WORK.
            4. CLADDING, WINDOW MULLIONS, GLAZING AND STORE FRONTS.
            5. ATTACHMENTS AND BRACING FOR ELECTRICAL AND MECHANICAL COMPONENTS.
            6. ELEVATORS.
            7. ARCHITECTURAL PRECAST AND PRECAST CLADDING.
            8. WINDOW WASHING EQUIPMENT AND ASSOCIATED ATTACHMENTS.
            9. INTERIOR AND EXTERIOR NON-LOAD BEARING LIGHT GAUGE STEEL STUD WALLS.
            10. ROOFING MATERIALS AND FINISHES.
            11. MASONRY VENEER.
      2. SHOP DRAWINGS OF SECONDARY COMPONENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO THE STRUCTURAL EOR ONLY FOR THE REVIEW OF THEIR EFFECT ON THE PRIMARY STRUCTURAL SYSTEM.
         1. CLEARLY INDICATE THE METHOD AND MEANS OF ATTACHMENT AND THE MAGNITUDE OF FORCES THAT THE STRUCTURE MUST WITHSTAND.
         2. MAKE CHANGES IN SHOP DRAWINGS AS EOR MAY REQUIRE, CONSISTENT WITH CONTRACT DOCUMENTS.
         3. WHEN RESUBMITTING, NOTIFY CONSULTANT IN WRITING OF REVISIONS OTHER THAN THOSE REQUESTED.
   2. SUBMISSIONS SHOULD INCLUDE THE FOLLOWING INFORMATION:
      1. DATE AND REVISION DATES.
      2. PROJECT TITLE AND NUMBER.
      3. NAME AND ADDRESS OF:
         1. SUBCONTRACTOR.
         2. SUPPLIER.
         3. MANUFACTURER.
      4. CONTRACTOR'S REVIEW STAMP.
   5. DETAILS OF APPROPRIATE PORTIONS OF WORK AS APPLICABLE:
      1. FABRICATION.
      2. LAYOUT, SHOWING DIMENSIONS, INCLUDING IDENTIFIED FIELD DIMENSIONS, AND CLEARANCES.
      3. SETTING OR ERECTION DETAILS.
   3. IF UPON REVIEW BY CONSULTANT, NO ERRORS OR OMISSIONS ARE DISCOVERED OR IF ONLY MINOR CORRECTIONS ARE MADE, AN ELECTRONIC COPY WILL BE RETURNED AND FABRICATION AND INSTALLATION OF WORK MAY PROCEED.
      1. IF SHOP DRAWINGS ARE REJECTED, NOTED COPY WILL BE RETURNED AND RESUBMISSION OF CORRECTED SHOP DRAWINGS, THROUGH SAME PROCEDURE INDICATED ABOVE, MUST BE PERFORMED BEFORE FABRICATION AND INSTALLATION OF WORK MAY PROCEED.
   4. AFTER EOR'S REVIEW IS PROVIDED, DISTRIBUTE COPIES.
   5. SUBMIT ELECTRONIC COPY OF PRODUCT DATA SHEETS OR BROCHURES FOR WHERE SHOP DRAWINGS WILL NOT BE PREPARED DUE TO STANDARDIZED MANUFACTURE OF PRODUCT.
   6. WHEN SATISFIED AT THE END OF FIELD REVIEW, SPECIALTY ENGINEERS SHALL PROVIDE A SCHEDULE S-C TO THE EOR.

01 41 00 REGULATORY REQURIEMENTS

1. GENERAL
   1. MEET OR EXCEED REQUIREMENTS OF:
      1. CONTRACT DOCUMENTS.
      2. APPLICABLE STANDARDS, CODES AND REFERENCED DOCUMENTS.
      3. WORKERS COMPENSATION ACT.
      4. OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.
      5. WORKSAFE BC GUIDELINES.
   2. ENSURE INSPECTION FOR AND IDENTIFICATION OF ASBESTOS-CONTAINING MATERIALS IS COMPLETED PRIOR TO DEMOLITION.
   3. STOP WORK IMMEDIATELY WHEN MATERIAL RESEMBLING MOULD IS ENCOUNTERED DURING DEMOLITION WORK.
2. PRODUCTS
   1. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS ON BEHALF OF THE OWNER, AND OTHER PERMITS REQUIRED FOR WORK AND ITS VARIOUS PARTS.

01 45 00 QUALITY CONTROL

1. FIELD REVIEW
   1. CONTRACTOR'S INSPECTION: CONDUCT INSPECTION OF WORK, IDENTIFY DEFICIENCIES AND DEFECTS, AND REPAIR AS REQUIRED TO CONFORM TO CONTRACT DOCUMENTS.
      1. REQUEST EOR'S FIELD REVIEW.
   2. ALLOW EOR ACCESS TO WORK.
      1. PROVIDE EQUIPMENT REQUIRED FOR ACCESS TO EXECUTE FIELD REVIEW OR TESTING.
   3. GIVE TIMELY NOTICE REQUESTING FIELD REVIEW IF WORK IS DESIGNATED FOR FIELD REVIEW. MIN. **48** HOURS.
   4. THE EOR SHALL PROVIDE FIELD REVIEW TO WORK RELEVANT TO THE STRUCTURAL DESIGN TO ENSURE CONFORMANCE. THIS REVIEW DOES NOT GUARANTEE THE WORK FOR WHICH REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.
   5. DO NOT CONCEAL WORK PRIOR TO FIELD REVIEW.
   6. SUBMIT COPIES OF INDEPENDENT TESTING AGENCY INSPECTION REPORTS EOR.
2. TESTS
   1. MATERIAL TESTING SHALL BE DIRECTED BY EOR AT THE EXPENSE OF THE CONTRACTOR.
   2. FURNISH LUMBER GRADING CERTIFICATES FOR HEAVY TIMBER AS REQUESTED.

01 56 00 TEMPORARY ENCLOSURES

1. GENERAL
   1. HOARDING
      1. ERECT TEMPORARY ENCLOSURES AS REQUIRED TO PROTECT STRUCTURE FROM WEATHER AND TEMPERATURE.
      2. DESIGN ENCLOSURES TO WITHSTAND WIND PRESSURE AND SNOW LOADING.

01 61 00 COMMON PRODUCT REQUIREMENTS

1. GENERAL
   1. QUALITY
      1. PRODUCTS, MATERIALS, EQUIPMENT AND ARTICLES INCORPORATED IN WORK SHALL BE NEW, NOT DAMAGED OR DEFECTIVE, AND OF BEST QUALITY FOR PURPOSE INTENDED. IF REQUESTED, FURNISH EVIDENCE AS TO TYPE, SOURCE AND QUALITY OF PRODUCTS PROVIDED.
      2. DEFECTIVE PRODUCTS, WHENEVER IDENTIFIED PRIOR TO COMPLETION OF WORK, WILL BE REJECTED,
      3. U.N.O., MAINTAIN UNIFORMITY OF MANUFACTURE FOR ANY PARTICULAR OR LIKE ITEM THROUGHOUT BUILDING.

03 10 00 CONCRETE FORMING AND ACCESSORIES

1. GENERAL
   1. REFERENCE STANDARDS
      1. CSA S269.1, FALSEWORK AND FORMWORK.
2. PRODUCTS
   1. MATERIALS
      1. FORMWORK MATERIALS:
         1. FOR CONCRETE WITHOUT SPECIAL ARCHITECTURAL FEATURES, USE WOOD AND WOOD PRODUCT FORMWORK MATERIALS TO CAN/CSA O86.
         2. FOR CONCRETE WITH SPECIAL ARCHITECTURAL FEATURES, USE FORMWORK MATERIALS TO CSA A23.1/A23.2.
         3. RIGID INSULATION BOARD: TO CAN/ULC-S701.
      2. FORM RELEASE AGENT: NOT TO STAIN CONCRETE OR IMPAIR FINISHES.
3. EXECUTION
   1. FABRICATION AND ERECTION
      1. VERIFY LINES, LEVELS, AND CENTRES BEFORE PROCEEDING WITH FORMWORK/FALSEWORK AND ENSURE DIMENSIONS AGREE WITH DRAWINGS.
      2. DO NOT PLACE SHORES AND MUD SILLS ON FROZEN GROUND.
      3. PROVIDE SITE DRAINAGE TO PREVENT WASHOUT OF SOIL SUPPORTING MUD SILLS AND SHORES.
      4. FABRICATE AND ERECT FORMWORK IN ACCORDANCE WITH CAN/CSA S269.1
      5. USE [25] MM CHAMFER STRIPS ON EXTERNAL CORNERS AND [25] MM FILLETS AT INTERIOR CORNERS, JOINTS, U.N.O.
      6. FORM CHASES, SLOTS, OPENINGS, DRIPS, RECESSES, EXPANSION AND CONTROL JOINTS AS INDICATED.
      7. BUILD IN ANCHORS, SLEEVES, AND OTHER INSERTS OR BLOCK-OUTS REQUIRED TO ACCOMMODATE WORK SPECIFIED IN OTHER DISCIPLINE DESIGNS.
         1. ALL SUCH INSERTS AND BLOCKOUTS ARE SUBJECT TO APPROVAL BY THE EOR.
         2. ENSURE THAT ANCHORS AND INSERTS WILL NOT PROTRUDE BEYOND SURFACES DESIGNATED TO RECEIVE APPLIED FINISHES.
      8. CLEAN FORMWORK IN ACCORDANCE WITH CSA A23.1/A23.2, BEFORE PLACING CONCRETE.
   2. REMOVAL AND RESHORING
      1. LEAVE FORMWORK IN PLACE FOR FOLLOWING MINIMUM PERIODS OF TIME AFTER PLACING CONCRETE.
         1. **3** DAYS FOR WALLS.
         2. **2** DAYS FOR FOOTINGS.
      2. REMOVE FORMWORK FOR COLUMNS, BEAMS AND SUSPENDED SLABS WHEN CONCRETE HAS REACHED 70% OF ITS 28 DAY DESIGN STRENGTH OR MINIMUM PERIOD NOTED ABOVE, WHICHEVER COMES LATER, AND REPLACE IMMEDIATELY WITH ADEQUATE RESHORING.
      3. PROVIDE NECESSARY RESHORING OF MEMBERS WHERE EARLY REMOVAL OF FORMS MAY BE REQUIRED.

03 20 00 CONCRETE REINFORCING

1. GENERAL
   1. REFERENCE STANDARDS
      1. CSA A23.1/A23.2, CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION/TEST METHODS AND STANDARD PRACTICES FOR CONCRETE.
      2. CAN/CSA A23.3, DESIGN OF CONCRETE STRUCTURES.
      3. CSA G30.18, CARBON STEEL BARS FOR CONCRETE REINFORCEMENT.
      4. CSA W186, WELDING OF REINFORCING BARS IN REINFORCED CONCRETE CONSTRUCTION.
      5. RSIC, REINFORCING STEEL MANUAL OF STANDARD PRACTICE.
   2. ACTION AND INFORMATIONAL SUBMITTALS
      1. SHOP DRAWINGS:
         1. SUBMIT DRAWINGS STAMPED AND SIGNED BY PROFESSIONAL ENGINEER REGISTERED IN JURISDICTION OF PROJECT SITE:
            1. PREPARE REINFORCEMENT DRAWINGS IN ACCORDANCE WITH RSIC MANUAL OF STANDARD PRACTICE.
            2. INDICATE PLACING OF REINFORCEMENT:
               1. DETAIL LAP LENGTHS AND BAR DEVELOPMENT LENGTHS TO CAN/CSA A23.3, U.N.O.
               2. INDICATE POSITION AND SIZE OF OPENINGS IN SLABS AND WALLS.
2. PRODUCTS
   1. MATERIALS
      1. SUBSTITUTE DIFFERENT SIZE BARS ONLY IF PERMITTED BY EOR.
      2. REINFORCING STEEL: 400W DEFORMED BARS TO CSA G30.18, U.N.O..
      3. REINFORCING STEEL: WELDABLE LOW ALLOY STEEL DEFORMED BARS TO CSA G30.18.
      4. COLD-DRAWN ANNEALED STEEL WIRE TIES: TO ASTM A1064/A1064M.
      5. DEFORMED STEEL WIRE FOR CONCRETE REINFORCEMENT: TO ASTM A1064/A1064M.
      6. WELDED STEEL WIRE FABRIC:
         1. PLAIN IN ACCORDANCE ASTM A1064/A1064M, FABRICATED FROM AS DRAWN STEEL WIRE INTO FLAT SHEETS; SIZES AS INDICATED ON DRAWINGS.
      7. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS: TO CSA A23.1/A23.2.
         1. BAR SUPPORTS SHALL BE MADE OF PRECAST CONCRETE OR PLASTIC.
      8. TIE WIRE: 1.5MM DIAMETER ANNEALED WIRE.
      9. MECHANICAL SPLICES: SUBJECT TO APPROVAL OF EOR.
      10. PLAIN ROUND BARS: TO CSA G40.20/G40.21.
2. FABRICATION
   1. FABRICATE REINFORCING STEEL IN ACCORDANCE WITH CSA A23.1/A23.2
   2. OBTAIN APPROVAL FOR LOCATIONS OF REINFORCEMENT SPLICES OTHER THAN THOSE SHOWN ON PLACING DRAWINGS.
   3. WELD REINFORCEMENT IN ACCORDANCE WITH CSA W186.
3. EXECUTION
   1. FIELD BENDING
      1. DO NOT FIELD BEND OR FIELD WELD REINFORCEMENT EXCEPT WHERE INDICATED OR AUTHORIZED BY EOR.
   2. WELDING OF REINFORCING STEEL IS NOT PERMITTED UNLESS SPECIFIED OR AUTHORIZED BY THE EOR.
      1. WELDING OF REINFORCING BARS SHALL CONFORM TO AND BE CARRIED OUT BY COMPANIES CERTIFIED IN ACCORDANCE WITH CSA-W186.
   3. PLACING REINFORCEMENT
      1. PLACE REINFORCING STEEL AS INDICATED ON PLACING DRAWINGS AND IN ACCORDANCE WITH CSA A23.1/A23.2.
      2. USE PLAIN ROUND BARS AS SLIP DOWELS IN CONCRETE.
         1. PAINT PORTION OF DOWEL INTENDED TO MOVE WITHIN HARDENED CONCRETE WITH ONE COAT OF ASPHALT PAINT.
         2. APPLY THICK EVEN FILM OF LUBRICATING GREASE WHEN PAINT IS DRY.
      3. PRIOR TO PLACING CONCRETE, OBTAIN EOR'S APPROVAL OF REINFORCING MATERIAL AND PLACEMENT.
         1. MAINTAIN COVER TO REINFORCEMENT DURING CONCRETE POUR.
         2. DO NOT WET DOWEL REINFORCEMENT UNLESS APPROVED BY THE EOR.
         3. CONTINUE FOOTING STEEL TO CROSS-LAP MINIMUM 300MM AT CORNERS OR PROVIDE CORNER BARS.
         4. PROVIDE CORNER BARS FOR ALL WALL REINFORCING U.N.O..
         5. MINIMUM REINFORCEMENT AROUND OPENINGS LARGER THAN 300mm:
            1. 2-15M EACH SIDE OF OPENING EXTENDED 600mm PAST CORNERS, 1-10M X 1200mm DIAGONAL AT EACH CORNER.
         6. MINIMUM COVER FOR REINFORCEMENT SHALL BE AS STATED IN TABLE BELOW U.N.O. ON DRAWINGS.
         7. SPLICE REINFORCEMENT FOR REINFORCED CONCRETE SHALL BE AS STATED IN THE TABLE BELOW UNLESS NOTED OTHERWISE ON DRAWINGS.

REINFORCING STEEL CONCRETE COVER TABLE

EXPOSURE CONDITION	EXPOSURE CLASS		
	N	F & S	C & A
CAST AGAINST & PERMANENTLY EXPOSED TO EARTH	-	75mm	75mm
BEAMS, GIRDER, COLUMNS & PILES	30mm	40mm	60mm
SLABS, WALLS, JOISTS, SHELLS & FOLDED PLATES	25mm	40mm	60mm
SLAB SOFFITS, INTERIOR FACE OF WALLS	40mm	40mm	60mm
RATIO OF COVER TO NOMINAL BAR DIA.	1	1.5	2
RATIO OF COVER TO MAX. AGGREGATE SIZE	1	1.5	2

THE REBAR TABLES ARE TO BE USED WITH NORMAL DENSITY CONCRETE AND NON-COATED BARS WITH fy = 400MPa.

TENSION REBAR DEVELOPMENT LENGTH (mm)

REBAR SIZE	f'c=25MPa		f'c=30MPa		f'c=35MPa		f'c=40MPa	
	TOP	OTHERS	TOP	OTHERS	TOP	OTHERS	TOP	OTHERS
10M	377	290	338	260	312	240	299	230
15M	559	430	507	390	481	370	441	340
20M	754	580	689	530	637	490	598	460
25M	1170	900	1066	820	988	760	923	710
30M	1404	1080	1287	990	1183	910	1105	850
35M	1599	1230	1495	1150	1378	1060	1300	1000

TENSION REBAR LAP SPLICE LENGTH (mm)

REBAR SIZE	f'c=25MPa		f'c=30MPa		f'c=35MPa		f'c=40MPa	
	TOP	OTHERS	TOP	OTHERS	TOP	OTHERS	TOP	OTHERS
10M	490	377	439	338	406	312	389	299
15M	727	559	659	507	625	481	575	442
20M	980	754	896	689	828	637	777	598
25M	1521	1170	1386	1066	1284	988	1200	923
30M	1825	1404	1673	1287	1538	1183	1437	1105
35M	2079	1599	1944	1495	1791	1378	1690	1300

- MIN. CLEAR SPACING OF BARS MUST BE AT LEAST 1.4DB.
- FOR SLABS, WALLS, SHELLS, OR FOLDED PLATES HAVE CLEAR SPACING BETWEEN BARS BEING DEVELOPED NOT LESS THAN 2D.
- A TOP BAR IS DEFINED AS A HORIZONTAL BAR HAVING A MIN. OF 300MM OF CONCRETE BELOW IT.

COMPRESSION REBAR DEVELPOMENT LENGTH (mm)

CONCRETE STRENGTH	REBAR SIZE					
	10M	15M	20M	25M	30M	35M
25MPa	190	290	380	480	580	670
30MPa	180	290	350	440	530	620

COMPRESSION REBAR LAP SPLICE LENGTH (mm)

REBAR SIZE					
10M	15M	20M	25M	30M	35M
300	440	580	730	880	1020

03 30 00 CAST-IN-PLACE CONCRETE

1. GENERAL
   1. REFERENCE STANDARDS
      1. CSA A23.1/A23.2, CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION/METHODS OF TEST AND STANDARD PRACTICES FOR CONCRETE.
   2. QUALITY ASSURANCE
      1. MIN. 2 WEEKS PRIOR TO STARTING CONCRETE WORK, PROVIDE PROPOSED QUALITY CONTROL PROCEDURES FOR REVIEW BY EOR ON FOLLOWING ITEMS:
         1. MIX DESIGN
         2. FALSEWORK ERECTION.
         3. HOT WEATHER CONCRETE.
         4. COLD WEATHER CONCRETE.
         5. CURING.
         6. FINISHES.
         7. FORMWORK REMOVAL.
         8. JOINTS.
   3. SITE CONDITIONS
      1. PLACING CONCRETE DURING RAIN OR WEATHER EVENTS THAT COULD DAMAGE CONCRETE IS PROHIBITED.
      2. PROTECT NEWLY PLACED CONCRETE FROM RAIN OR WEATHER EVENTS IN ACCORDANCE WITH CSA A23.1/A23.2.
      3. COLD WEATHER PROTECTION:
         1. MAINTAIN PROTECTION EQUIPMENT, IN READINESS ON SITE.
         2. USE SUCH EQUIPMENT WHEN AMBIENT TEMPERATURE BELOW 5°C, OR WHEN TEMPERATURE MAY FALL BELOW 5°C BEFORE CONCRETE IS CURED.
         3. PLACING CONCRETE UPON OR AGAINST SURFACE AT TEMPERATURE BELOW 5°C IS PROHIBITED.
      4. HOT WEATHER PROTECTION:
         1. PROTECT CONCRETE FROM DIRECT SUNLIGHT WHEN AMBIENT TEMPERATURE ABOVE 27°C.
         2. PREVENT FORMS OF GETTING TOO HOT BEFORE CONCRETE PLACED. APPLY ACCEPTED METHODS OF COOLING NOT TO AFFECT CONCRETE ADVERSELY.
      5. PROTECT FROM DRYING.
2. PRODUCTS
   1. PERFORMANCE CRITERIA
      1. QUALITY CONTROL PLAN
         1. ENSURE CONCRETE SUPPLIER MEETS PERFORMANCE CRITERIA OF CONCRETE AS ESTABLISHED BY EOR.

CONCRETE MIX REQUIREMENTS

CONCRETE ELEMENT	EXPOSURE CLASS	28-DAY COMPRESSIVE STRENGTH (mpa)	MAX. AGGREGATE SIZE (MM)	AIR CONTENT (%)	MAX. W/C RATIO	CEMENT TYPE (1)
EXTERIOR						
FOUNDATIONS	F-2	25	20	4-7	0.5	GU (2)
RETAINING WALLS	F-2	25	20	4-7	0.5	GU
SLAB-ON-GRADE (3)	C-2	32	20	5-8	0.45	GU
WALLS & COLUMNS	F-2	25	20	4-7	0.5	GU
SUSP. SLAB/BEAMS	F-2	35	20	4-7	0.4	GU
INTERIOR						
WALLS & COLUMNS	N	25	20	NON	0.5	GU
SUSP. SLAB/BEAMS	N	35	20	NONE	0.4	GU
MASONRY FILL	N	15	10	NONE	0.55	GU

   2. BLENDED GENERAL USE HYDRAULIC CEMENT (TYPE GUB) OR HIGH-EARLY-STRENGTH HYDRAULIC CEMENT (TYPE HS OR HSB) MAY BE USED IF APPROVED BY THE ENGINEER.
   3. UNLESS SULPHATE-RESISTANT CEMENT (TYPE MS, MSB, HS OR HSB) IS REQUIRED BY GEOTECHNICAL ENGINEER.
   4. USE SPECIFICATION FOR EXTERIOR SLAB-ON-GRADE FOR GARAGE FLOOR SLABS.
3. EXECUTION
   1. PREPARATION
      1. OBTAIN EOR'S APPROVAL BEFORE PLACING CONCRETE.
         1. PROVIDE 48 HOURS MINIMUM NOTICE PRIOR TO PLACING OF CONCRETE.
      2. PRIOR TO PLACING OF CONCRETE OBTAIN EOR'S APPROVAL OF PROPOSED METHOD FOR PROTECTION OF CONCRETE DURING PLACING AND CURING.
      3. DURING CONCRETING OPERATIONS:
         1. DEVELOPMENT OF COLD JOINTS NOT ALLOWED.
      4. DO NOT PLACE LOAD UPON NEW CONCRETE UNTIL AUTHORIZED BY EOR.
   2. INSTALLATION/APPLICATION
      1. DO CAST-IN-PLACE CONCRETE WORK TO CSA A23.1/A23.2.
         1. SPECIFICATIONS OF HARDENERS AND OTHER TREATMENTS FOR DURABILITY OF SLABS BY OTHERS.
         2. CONSTRUCTION TOLERANCES TO TABLE 15 OF CSA A23.1
      2. SLEEVES AND INSERTS:
         1. DO NOT PERMIT PENETRATIONS, SLEEVES, DUCTS, PIPES OR OTHER OPENINGS TO PASS THROUGH JOISTS, BEAMS, COLUMN CAPITALS OR COLUMNS, EXCEPT WHERE INDICATED OR APPROVED BY EOR.
         2. SLEEVES AND OPENINGS GREATER THAN 100 X 100 MM NOT INDICATED ON STRUCTURAL DRAWINGS MUST BE REVIEWED BY EOR.
         3. DO NOT ELIMINATE OR DISPLACE REINFORCEMENT TO ACCOMMODATE HARDWARE.
         4. CONFIRM LOCATIONS AND SIZES OF SLEEVES AND OPENINGS SHOWN ON DRAWINGS.
      3. CONTROL JOINTS:
         1. SLAB-ON-GRADE
            1. PROVIDE MIN. 1/4 SLAB DEPTH SAWCUTS WITHIN 24 HOURS OF PLACING.
            2. SEE TABLE BELOW FOR RECOMMENDED SPACING.

SPACING OF CONTRACTION JOINTS (MM)

SLAB THICKNESS	MAX. AGGREGATE SIZE < 19MM	MAX. AGGREGATE SIZE 19MM AND LARGER
125	3000	3750
150	3750	4500
175	4250	5250
200	5000	6000
225	5500	6750
250	6000	7500

         2. WALLS
            1. 20mm DEEP VEE-NOTCH EACH SIDE OF WALL WITH 15M VERTICAL BAR EACH SIDE OF JOINT. CUT EVERY SECOND HORIZONTAL BAR EXCEPT AT T.O.W. MAX. JOINT SPACING 10 000MM, U.N.O.
      4. ANCHOR BOLTS:
         1. SET ANCHOR BOLTS TO TEMPLATES IN COORDINATION WITH APPROPRIATE TRADE PRIOR TO PLACING CONCRETE.
      5. FINISHING AND CURING:
         1. USE PROCEDURES NOTED IN CSA A23.1/A23.2 TO REMOVE EXCESS BLEED WATER.
         2. USE ONLY CURING COMPOUNDS COMPATIBLE WITH APPLIED FINISH ON CONCRETE SURFACES.
         3. FINISH CONCRETE FLOORS TO CSA A23.1/A23.2.
            1. PROVIDE SWIRL-TROWELLED FINISH WITHIN BUILDING ENVLEOPE U.N.O.
            2. PROVIDE FLOAT AND BRUSHED FINISH FOR EXTERIOR FLATWORK.
         4. RUB EXPOSED SHARP EDGES OF CONCRETE WITH CARBORUNDUM TO PRODUCE 3 MM MINIMUM RADIUS EDGES, U.N.O.
         5. HAND TOOL EXPOSED EDGES OF CURBS AND APRON SLABS, U.N.O.
      6. WATERSTOPS:
         1. INSTALL WATERSTOPS AT LOCATIONS AS INDICATED.
         2. DO NOT DISTORT OR PIERCE WATERSTOP IN WAY AS TO HAMPER PERFORMANCE.
         3. DO NOT DISPLACE REINFORCEMENT WHEN INSTALLING WATERSTOPS.
         4. USE EQUIPMENT TO MANUFACTURER'S REQUIREMENTS TO FIELD SPLICE WATERSTOPS.
         5. TIE WATERSTOPS RIGIDLY IN PLACE.
         6. USE ONLY STRAIGHT HEAT-SEALED BUTT JOINTS IN FIELD.
         7. USE FACTORY WELDED CORNERS AND INTERSECTIONS.
      7. JOINT FILLERS:
         1. FURNISH FILLER FOR EACH JOINT IN SINGLE PIECE FOR DEPTH AND WIDTH REQUIRED FOR JOINT, U.N.O.
         2. WHEN MORE THAN ONE PIECE REQUIRED FOR JOINT, FASTEN ABUTTING ENDS AND HOLD SECURELY TO SHAPE BY STAPLING OR OTHER POSITIVE FASTENING.
         3. LOCATE AND FORM ISOLATION, EXPANSION, AND CONSTRUCTION JOINTS AS INDICATED.
         4. USE 12 MM THICK JOINT FILLER TO SEPARATE SLABS-ON-GRADE FROM VERTICAL SURFACES AND EXTEND FULL DEPTH OF SLAB.
      8. DAMPPROOF MEMBRANE:
         1. INSTALL DAMPPROOF MEMBRANE UNDER CONCRETE SLABS-ON-GRADE WITHIN BUILDING ENVELOPE.
         2. LAP DAMPPROOF MEMBRANE MINIMUM 150 MM AT JOINTS AND SEAL.
         3. SEAL PUNCTURES IN DAMPPROOF MEMBRANE BEFORE PLACING CONCRETE.
   3. SURFACE TOLERANCE
      1. CONCRETE TOLERANCE TO CSA A23.1 STRAIGHTEDGE METHOD FF = **[25]**: FL = **[20]**.
   4. FIELD QUALITY CONTROL
      1. INSPECTION AND TESTING OF CONCRETE AND CONCRETE MATERIALS CARRIED OUT BY TESTING LABORATORY CERTIFIED TO CSA A283.
      2. CONCRETE TESTING TO INCLUDE THE FOLLOWING INFORMATION:
         1. SLUMP.
         2. AIR CONTENT.
         3. AIR AND CONCRETE TEMPERATURE.
         4. COMPRESSIVE STRENGTH AT 7 AND 28 DAYS.
            a. A MINIMUM OF 3 TEST CYLINDERS SHALL BE CAST FOR EACH 50M^3 OR EACH DAY'S POUR, WHICHEVER IS LESS. TEST ONE AT 7 DAYS AND 2 AT 28 DAYS AND SUBMIT WRITTEN REPORTS FOR REVIEW BY THE ENGINEER.
            b. CURE CYLINDERS UNDER SAME CONDITIONS AS CONCRETE THEY REPRESENT.
            c. TEST REPORTS SHALL IDENTIFY THE LOCATIONS WHERE CONCRETE IS BEING TESTED WITH GRIDLINES AND ELEVATIONS. SUBMIT CONCRETE TEST RESULTS MAXIMUM 72 HRS AFTER TEST.

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RE-ISSUED FOR TENDER

PROFESSIONAL SEAL

REVISIONS

NO.	DATE	EXPLANATION
A	22/06/17	ISSUED FOR TENDER
B	22/0711	RE-ISSUED FOR TENDER

CLIENT
ECLIPSE PROJECTS

PROJECT
Q-KIDS DAYCARE CENTER

420 WEBSTER AVENUE, QUESNEL, BC

DRAWING TITLE
GENERAL NOTES

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SHEET NO.
S001

PROJ. NO. **21173**
REV. NO. **B**

05 12 23 STRUCTURAL STEEL FOR BUILDINGS

1. GENERAL
   1. REFERENCE STANDARDS
      1. ASTM INTERNATIONAL (ASTM)
         1. ASTM A36/A36M, STANDARD SPECIFICATION FOR CARBON STRUCTURAL STEEL.
         2. ASTM A307, STANDARD SPECIFICATION FOR CARBON STEEL BOLTS AND STUDS, 60,000 PSI TENSILE STRENGTH.
         3. ASTM A325M, STANDARD SPECIFICATION FOR STRUCTURAL BOLTS, STEEL, HEAT TREATED 830 MPA MINIMUM TENSILE STRENGTH.
         4. ASTM A992/A992M, STANDARD SPECIFICATION FOR STRUCTURAL STEEL SHAPES.
         5. ASTM F1554, STANDARD SPECIFICATION FOR ANCHOR BOLTS, STEEL, 36, 55, AND 105KSI YIELD STRENGTH
      2. CANADIAN GENERAL STANDARDS BOARD (CGSB)
         1. CAN/CGSB-85.10, PROTECTIVE COATINGS FOR METALS.
      3. CANADIAN INSTITUTE OF STEEL CONSTRUCTION (CISC)/CANADIAN PAINT MANUFACTURERS ASSOCIATION (CPMA).
         1. HANDBOOK OF THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION.
         2. CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.
         3. CISC/CPMA STANDARD 2-75, QUICK-DRYING PRIMER FOR USE ON STRUCTURAL STEEL.
      4. CSA GROUP (CSA)
         1. CSA G40.20/G40.21, GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL/STRUCTURAL QUALITY STEEL.
         2. CAN/CSA-G164, HOT DIP GALVANIZING OF IRREGULARLY SHAPED ARTICLES.
         3. CAN/CSA-S16, LIMIT STATES DESIGN OF STEEL STRUCTURES.
         4. CAN/CSA-S136, NORTH AMERICAN SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS.
         5. CSA W47.1, CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL.
         6. CSA W55.3, RESISTANCE WELDING QUALIFICATION CODE FOR FABRICATORS OF STRUCTURAL MEMBERS USED IN BUILDINGS.
         7. CSA W59, WELDED STEEL CONSTRUCTION (METAL ARC WELDING).
      5. MASTER PAINTERS INSTITUTE
         1. MPI-INT 5.1, STRUCTURAL STEEL AND METAL FABRICATIONS.
         2. MPI-EXT 5.1, STRUCTURAL STEEL AND METAL FABRICATIONS.
      6. THE SOCIETY FOR PROTECTIVE COATINGS (SSPC) AND NATIONAL ASSOCIATION OF CORROSION ENGINEERS (NACE) INTERNATIONAL
         1. NACE NO. 3/SSPC SP-6, COMMERCIAL BLAST CLEANING.
   2. ACTION AND INFORMATIONAL SUBMITTALS
      1. SHOP AND ERECTION DRAWINGS:
         1. PROPOSED CONNECTION DETAILS, FABRICATION, QUALITY CONTROL AND INSPECTION PROCEDURES SHALL BE SUBMITTED TO THE EOR FOR PRIOR TO COMMENCEMENT OF DETAILING.
         2. ALL DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE SUPPLIER PRIOR TO SUBMITTAL.
         3. ALL SHOP DRAWINGS, ERECTION DRAWINGS AND CONNECTION DETAILS SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE JURISDICTION OF THE PROJECT SITE PRIOR TO FABRICATION.
         4. EACH SHOP DRAWING, BILLS OF MATERIAL, AND ERECTION DRAWING SHALL BE SENT TO THE EOR FOR REVIEW PRIOR TO FABRICATION. DIGITAL SHOP DRAWINGS ARE TO BE SUBMITTED IN .PDF FORMAT WITH CAPABILITIES FOR THE CONSULTANT TO COMMENT, SKETCH, SIGN, AND PRINT.
         5. SHOP DRAWINGS SHALL SHOW MATERIAL AND FABRICATION DETAILS FOR EVERY MEMBER.
         6. PROVIDE BOLT LISTS WITH SUMMARIES TO SHOW QUANTITIES, SIZES AND LENGTHS.
         7. SUBMIT ERECTION DRAWINGS INDICATING DETAILS AND INFORMATION NECESSARY FOR ASSEMBLY AND ERECTION PURPOSES, INCLUDING:
            1. DESCRIPTION OF METHODS.
            2. SEQUENCE OF ERECTION.
            3. TYPE OF EQUIPMENT USED IN ERECTION.
            4. TEMPORARY BRACINGS.
         8. FOR SCHEDULING PURPOSES, THE SUPPLIER SHALL ALLOW A MIN. OF 3 WORKING DAYS FOR THE REVIEW OF SHOP DRAWINGS.
      2. WELDING PROCEDURES:
         1. COPIES OF WELDING PROCEDURES AND QUALIFICATIONS SHALL BE SUBMITTED TO THE EOR UPON REQUEST.
         2. NDT CERTIFICATIONS AND PROCEDURES SHALL BE SUBMITTED TO THE EOR UPON REQUEST.
      3. DESIGN DEVIATIONS
         1. PERMITTED ONLY AFTER RECEIPT OF WRITTEN APPROVAL FROM THE EOR.
         2. REQUESTS FOR DEVIATIONS MUST BE SUPPORTED BY NECESSARY CALCULATIONS AND DRAWINGS.
   3. QUALIFICATIONS
      1. THE SUPPLIER SHALL BE CERTIFIED BY THE CANADIAN WELDING BUREAU (CWB) TO CSA W47.1
      2. THE SUPPLIER SHALL MAINTAIN RECORDS OF WELDING PROCEDURES QUALIFICATIONS AND WELDING OPERATORS' QUALIFICATIONS IN COMPLIANCE WITH CSA W47.1. MAKE SUCH RECORDS AVAILABLE UPON REQUEST.
2. PRODUCTS
   1. DESIGN REQUIREMENTS
      1. DESIGN DETAILS AND CONNECTIONS IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA-S16 AND CAN/CSA-S136 TO RESIST FORCES, MOMENTS, SHEARS AND ALLOW FOR MOVEMENTS INDICATED.
      2. SHEAR CONNECTIONS:
         1. SELECT FRAMED BEAM SHEAR CONNECTIONS FROM AN INDUSTRY ACCEPTED PUBLICATION SUCH AS "HANDBOOK OF THE CISC" FOR STANDARD SHEAR ONLY CONNECTIONS.
         2. WHEN SHEAR FORCES ARE NOT INDICATED, SELECT OR DESIGN CONNECTIONS TO SUPPORT REACTION FROM MAX. UDL THAT CAN BE SAFELY SUPPORTED BY BEAM IN BENDING.
      3. SUBMIT SKETCHES AND DESIGN CALCULATIONS STAMPED AND SIGNED BY QUALIFIED PROFESSIONAL ENGINEER LICENSED IN JURISDICATION OF PROJECT SITE FOR NON-STANDARD CONNECTIONS.
      4. THE SUPPLIER SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL ELEMENTS AND CONNECTIONS NOT SPECIFIED ON THE DESIGN DRAWINGS IN ACCORDANCE WITH REQUIREMENTS OF CSA S16.
      5. DESIGN SHALL BE BASED ON LIMIT STATES DESIGN METHOD IN ACCORDANCE WITH CSA S16.
      6. ALL SHOP DRAWINGS PREPARED BY THE SUPPLIER SHALL BE IN METRIC UNITS OF MEASURE U.N.O.
      7. ALL FORCES INDICATED ON THE DESIGN DRAWINGS AND IN THIS SPECIFICATION ARE FACTORED LOADS, U.N.O.
   2. GENERAL CONNECTION DESIGN
      1. ALL CONNECTIONS SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE JURISDICTION OF THE PROJECT SITE.
      2. IN GENERAL, SHOP CONNECTIONS SHALL BE WELDED AND FIELD CONNECTIONS SHALL BE BOLTED.
      3. BOLTED CONNECTIONS SHALL BE DESIGNED AS BEARING TYPE, WITH THREADS ASSUMED TO BE INTERCEPTED BY THE SHEAR PLANE U.N.O.
      4. ALL HIGH STRENGTH BOLTS SHALL BE PRETENSIONED BY TURN-OF-NUT METHOD.
      5. GUSSET AND CONNECTION PLATES SHALL BE MIN. 10MM THICKNESS.
         1. PROVIDE FULL HEIGHT/WIDTH STIFFENERS E/S OF WEB OVER COLUMN WHERE BEAM SITS OVER, U.N.O.
      6. WHERE A BEAM CONNECTION IS REQUIRED TO CARRY MOMENT, THE CONNECTION SHALL BE DESIGNED FOR 100% OF THE MOMENT CAPACITY OF THE MEMBER, U.N.O.
      7. BEAM CONNECTIONS SHALL BE DESIGNED TO RESIST FORCES APPLIED FROM HORIZONTAL AND VERTICAL BRACING MEMBERS AND TO RESIST PULL THROUGH (AXIAL) FORCES, WHERE REQUIRED, IN ADDITION TO SHEAR FORCES.
      8. MEMBER GRAVITY AXES SHALL INTERSECT AT A COMMON WORK POINT, U.N.O.
      9. FORCES ARE TO BE APPLIED SUCH AS TO PRODUCE MAX. EFFECTS ON COMPONENTS BEING CONSIDERED.
      10. DESIGN OF CONNECTIONS SHALL INCLUDE PRYING EFFECTS.
      11. BOLTED CONNECTIONS FOR PRIMARY AND SECONDARY MEMBERS SUCH AS STAIR FRAMING, STAIR BRACING, HANDRAILS, AND TOE PLATES, SHALL BE MADE WITH 19MM DIA. BOLTS TO ASTM A325/A325M, U.N.O.
   3. COLUMN CONNECTIONS
      1. COLUMN BASE PLATE CONNECTIONS SHALL BE DESIGNED AS WELDED AND COLUMN FIELD SPLICES DESIGNED AS BOLTED U.N.O.
         1. SPLICE LOCATIONS SHALL BE APPROVED BY THE CONSULTANT.
      2. USE ½" COLUMN CAPS AND ¾" BASE PLATES U.N.O.
   4. BRACING CONNECTIONS
      1. BRACING CONNECTIONS SHALL BE CONCENTRIC AND DESIGNED FOR FORCES SHOWN. WHERE FORCES ARE NOT SHOWN, CONNECTIONS SHALL BE DESIGNED FOR 100% OF THE COMPRESSION CAPACITY OF THE MEMBER, BUT NOT LESS THAN 50% OF THE GROSS AREA TENSION CAPACITY.
      2. PROVIDE MINIMUM TWO BOLTS FOR EACH END OF ANGLE BRACE CONNECTION AND FOUR BOLTS FOR STRUCTURAL TEE CONNECTION.
      3. FASTEN HORIZONTAL BRACING TO INTERMEDIATE BEAMS TO ELIMINATE SAG AND CONNECT CROSS BRACINGS AT THE INTERSECTION POINT.
   5. WELDING
      1. WELDING, INCLUDING APPEARANCE, QUALITY, AND CORRECTION, SHALL BE IN ACCORDANCE WITH CSA W59.
      2. WELDING SHALL CONFORM TO THE REQUIREMENTS OF CSA W59, CLAUSE 11, "STATICALLY LOADED STRUCTURES", U.N.O.
      3. WHERE A STRUCTURE OR PORTION OF A STRUCTURE IS SUBJECT TO DYNAMIC LOADING, IT WILL BE SO INDICATED ON THE DRAWINGS, AND CLAUSE 12, "DYNAMICALLY LOADED STRUCTURES", WILL APPLY.
      4. ALL WELDED CONNECTIONS AND ASSEMBLIES FOR EXPOSED STRUCTURAL STEEL AND STRUCTURAL STEEL IN WET, HUMID, OR OTHER CORROSIVE ENVIRONMENTS SHALL BE SEAL WELDED.
      5. MINIMUM SIZE OF FILLET WELDS SHALL BE 5MM U.N.O.
      6. TEMPERATURE OF BASE METAL TO BE WELDED SHALL CONFORM TO THE MIN. PREHEAT AND INTERPASS TEMPERATURES OUTLINED IN CSA W59.
      7. ASSEMBLE AND WELD BUILT-UP SECTIONS BY METHODS THAT WILL PRODUCE TRUE ALIGNMENT WITHOUT WARP.
   6. MATERIALS
      1. ALL STEEL SHALL BE NEW MATERIAL AND FREE FROM DEFECTS.
      2. ROLLED SECTIONS AND TEES: TO ASTM A992/A992M, FY = 345MPA (50 KSI)
      3. CHANNELS AND ANGLES: TO CAN/CSA G40.21 GRADE 350W (50 KSI).
      4. BARS AND PLATES: TO ASTM A572/A572M GRADE 50, FY= 345MPA.
      5. SQUARE AND RECTANGULAR HOLLOW STRUCTURAL SECTIONS: TO CAN/CSA G40.21 GRADE 350W (50 KSI) CLASS C
      6. ROUND HOLLOW STRUCTURAL SECTIONS: TO ASTM A500, GRADE C, FY = 317MPA.
      7. STEEL PIPE: TO ASTM A53/A53M TYPE S, GRADE B, MIN FY = 240 MPA (35 KSI).
      8. COLD FORMED STEEL MEMBERS: TO CAN/CSA-S136.
      9. ANCHOR BOLTS: TO ASTM F1554 GRADE 36/GRADE 55/GRADE 105.
      10. HIGH STRENGTH ANCHOR BOLTS: TO ASTM A193/A193M, GRADE B7.
      11. WELDING MATERIALS: TO CSA W59 AND CERTIFIED BY CWB.
      12. SHOP PAINT PRIMER: TO CISC/CPMA2-75 SOLVENT REDUCIBLE ALKYD, RED OXIDE, GREY.
      13. HOT DIP GALVANIZING: GALVANIZE STEEL, WHERE INDICATED, TO CAN/CSA-G164, MINIMUM ZINC COATING OF 600 G/M2.
          1. ALL CONNECTORS IN CONTACT WITH EXPOSED TIMBER TO BE HOT DIPPED GALVANIZED U.N.O.
      14. BOLT ASSEMBLIES: TO ASTM A325/A325M.
          1. BOLTS USED WITHIN BUILDING ENVELOPE AND IN NON-CORROSIVE ENVIRONMENTS SHALL BE BLACK.
          2. BOLTS FOR EXTERIOR OR CORROSIVE ENVIRONMENTS SHALL BE HOT-DIPPED GALVANIZED.
      15. MACHINE BOLTS: TO ASTM 307, GRADE A.
      16. WELDING: TO CSA W48 AND CSA W59.
      17. PAINTS:
          1. ALL PAINTS SHALL CONFORM TO MANUFACTURER'S PRODUCT SPECIFICATIONS.
             1. REQUESTS FOR SUBSTITUTION SHALL INCLUDE MANUFACTURER'S LITERATURE FOR EACH PRODUCT, INCLUDING NAME, GENERIC TYPE, DESCRIPTIVE INFORMATION AND EVIDENCE OF SATISFACTORY PAST PERFORMANCE.
   7. FABRICATION METHODS SHALL INDUSTRY BEST PRACTICE AND BE IN ACCORDANCE WITH CSA/CAN-S16 AND CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.
      1. WELDING SEQUENCE AND PROCEDURES SHALL BE SUCH AS TO MINIMIZE DISTORTION AND SHRINKAGE.
      2. SEAL MEMBERS WITH CAP PLATES AND EXTERIOR COMPONENTS WITH CONTINUOUS WELDS.
      3. SHOP WELD WELDABLE REBAR DOWELS TO STEEL EMBED PLATES.
      4. ALL EXPOSED WELDS TO BE CONTINUOUS AND GROUND SMOOTH.
      5. INSTALL SHEAR STUDS IN ACCORDANCE WITH CSA W59.
      6. TOLERANCES:
         1. FABRICANTION TOLERANCES SHALL BE IN ACCORDANCE WITH CAN/CSA-S16.
         2. LOCATION OF HOLES FOR CONNECTION OF STRUCTURAL MEMBERS FOR MECHANICAL EQUIPMENT SHALL BE ±1 MM.
      7. CUTTING AND SHEARING:
         1. SHEARING SHALL BE LIMITED TO STEEL OF 10MM THICKNESS AND LESS.
         2. STEEL OF GREATER THAN 10 MM THICKNESS SHALL BE SAWN OR FLAME CUT. WHEREVER PRACTICABLE, FLAME CUTTING SHALL BE PERFORMED WITH A MECHANICALLY GUIDED TORCH.
      8. HOLES:
         1. BOLT HOLES SHALL BE PUNCHED OR DRILLED AS SPECIFIED BY CSA S16.
         2. PUNCHED HOLES SHALL BE FREE FROM TORN OR RAGGED EDGES.
         3. LARGE HOLES MAY BE FLAME CUT WITH A MECHANICALLY GUIDED TORCH.
         4. USE ¼" OVERSIZED HOLE DIA. FOR COLUMN ANCHOR RODS UP TO AND INCLUDING 1 ½" DIA.
         5. USE ½" OVERSIZED HOLE DIA. FOR COLUMN ANCHOR RODS > 1 1/8".
      9. MISFIT:
         1. USE OF ELEMENTS WITH MISPUNCHED OR MISDRILLED HOLES WILL NOT BE ALLOWED WITHOUT APPROVAL OF THE EOR.
   8. SHOP PAINTING
      1. PREPARE SURFACES AND SHOP PRIME STRUCTURAL STEEL IN ACCORDANCE WITH CSA S16 AND CISC/CPMA-73A.
      2. CLEAN MEMBERS, REMOVE LOOSE MILL SCALE, RUST, OIL, DIRT AND FOREIGN MATTER. PREPARE SURFACE ACCORDING TO NACE NO.3/SSPC-SP-6.
      3. STRUCTURAL STEEL TO RECEIVE PRIMER PAINT ONLY TO HAVE SP-2 SURFACE PREPARATION.
      4. ALL EXPOSED STRUCTURAL STEEL TO RECEIVE A FINISH COAT SHALL HAVE SP-6 SURFACE PREPARATION.
      5. APPLY ONE COAT OF PRIMER IN SHOP TO STEEL SURFACES TO ACHIEVE MIN. DRY FILM THICKNESS, EXCEPT:
         1. SURFACES TO BE ENCASED IN CONCRETE.
         2. SURFACES AND EDGES TO BE FIELD WELDED.
         3. WHERE MEMBER TO BE SPRAY FIRE-PROOFED, OR GALVANIZED.
      6. ALL CRANE RAILS, HANDRAILS AND KICKPLATES TO BE PAINTED 'SAFETY YELLOW'.
      7. ALL GRATING PANELS AND GRATING STAIR TREADS SHALL RECEIVE THE MANUFACTURER'S STANDARD DIP COATINGS OF BLACK, QUICK DRY ENAMEL, U.N.O.
      8. PAINT APPLICATION
         1. THE GENERAL COATING PROCEDURE SHALL CONFORM TO THE APPLICABLE SECTIONS OF SSPC AND THE RECOMMENDATIONS OF THE MANUFACTURERS.
         2. APPLY PAINT WITHIN TEMPERATURE AND HUMIDITY LIMITS ESTABLISHED BY THE MANUFACTURER.
         3. PAINT SHALL NOT BE APPLIED TO WET OR CONTAMINATED SURFACES. APPLY PAINT ONLY SURFACE AND ATMOSPHERIC TEMPERATURES, AND RELATIVE HUMIDITY MEET MANUFACTURER'S RECOMMENDATIONS.
         4. ALL COATINGS WITH THE EXCEPTION OF FIELD TOUCH-UP AND REPAIR, AND STRUCTURAL STEEL REFURBISHMENT SHALL BE APPLIED IN THE SHOP.
         5. UNLESS APPROVED BY THE PAINT MANUFACTURER TO THE CONTRARY, THE BLAST SURFACE SHALL BE PRIMED NOT LATER THAN 8 HOURS AFTER SURFACE PREPARATION. OXIDATION OF THE STEEL DUE TO DELETERIOUS CONDITIONS MAY NECESSITATE REBLASTING OR SWEEPBLASTING THE SURFACE TO RESTORE THE SPECIFIED CLEANLINESS STANDARD.
         6. ALLOW MIN. CURING TIME AS SPECIFIED BY THE PAINT MANUFACTURER BEFORE HANDLING THE PAINTED STEEL OR APPLYING THE SUBSEQUENT COAT OF PAINT.
3. EXECUTION
   1. APPLICATION
      1. COMPLY WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS, INCLUDING PRODUCT TECHNICAL BULLETINS, HANDLING, STORAGE AND INSTALLATION INSTRUCTIONS, AND DATASHEETS.
   2. GENERAL
      1. STRUCTURAL STEEL WORK: IN ACCORDANCE WITH CSA S16.
      2. WELDING: IN ACCORDANCE WITH CSA W59.
      3. FABRICATION AND ERECTION COMPANIES TO BE CERTIFIED UNDER DIVISION 1 OR 2.1 OF CSA W47.1 FOR FUSION WELDING OF STEEL STRUCTURES AND/OR CSA W55.3 FOR RESISTANCE WELDING OF STRUCTURAL COMPONENTS.
   3. ERECTION
      1. ERECT STRUCTURAL STEEL IN ACCORDANCE WITH CSA S16 OR CSA S136 AND IN ACCORDANCE WITH REVIEWED ERECTION DRAWINGS.
      2. FIELD CUTTING OR ALTERING STRUCTURAL MEMBERS PERMITTED ONLY BY WRITTEN APPROVAL OF EOR.
      3. CLEAN WITH MECHANICAL BRUSH AND TOUCH UP SHOP PRIMER TO BOLTS, WELDS AND BURNED OR SCRATCHED SURFACES AT COMPLETION OF ERECTION.
      4. TOUCH-UP GALVANIZING WITH "GALVACON" OR EQUIVALENT TO MANUFACTURER'S RECOMMENDATIONS.
      5. STRUCTURAL STABILITY:
         1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND INSTALLATION OF ANY TEMPORARY BRACING OR GUY CABLES REQUIRED FOR STABILITY DURING ERECTION.
         2. MEMBER SIZES AND DESIGN FORCES ARE FOR FINAL CONDITIONS WITH STEEL DECKING ATTACHED.
      6. ERECTION TOLERANCES NOT TO EXCEED THOSE STATED IN CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.
      7. BASE PLATES:
         1. PROVIDE AND SET LEVELLING NUTS, LEVELLING PLATES, OR STEEL SHIMS BENEATH COLUMN BASE PLATES TO CORRECT POSITIONS, ELEVATIONS, AND LOCATIONS AS SHOWN ON THE ERECTION DRAWINGS.
         2. GROUTING SHALL BE PERFORMED AS SOON AS POSSIBLE AFTER THE COLUMNS ARE PLUMBED AND BEFORE ANY LARGE AXIAL LOADS OR MOMENTS ARE APPLIED TO THE BASE PLATE
            1. USE NON-METALLIX, NON-SHRINK FREE FLOW GROUTE WITH A MIN. 28 DAY COMPRESSIVE STRENGTH OF 45MPA.
         3. TIGHTEN ANCHOR BOLTS AFTER GROUT HAS SET.
      8. BOLTED CONNECTIONS:
         1. CONNECTIONS TO BE MADE IN THE FIELD SHALL BE BOLTED, EXCEPT WHERE FIELD-WELDING IS INDICATED.
         2. ALL BOLTS SHALL BE PRETENSIONED. INSTALLATION AND INSPECTION OF BOLTED JOINTS SHALL BE IN ACCORDANCE WITH SECTION 23 CSA S16.
         3. MIN. BOLT DIA. SHALL BE 19 MM (3/4"). NUTS SHALL CONFORM TO ASTM A583/A563M, HARDENED WASHERS SHALL CONFORM TO ASTM F438/F436M.
         4. USE BOLTS OF LARGER DIAMETER WHEN BOLT HOLE DIAMETER EXCEEDS THE BOLT DIAMETER BY MORE THAN 1.6 MM (1/16 OF AN INCH).
         5. MECHANICALLY GALVANIZED BOLTS AND NUTS SHALL NOT BE INTERMIXED WITH HOT DIP GALVANIZED NUTS AND BOLTS.
      9. WELDED CONNECTIONS:
         1. SUPPLIER SHALL PROVIDE ERECTION CLIPS FOR FITUP OF FIELD WELDED CONNECTIONS. REMOVE ERECTION CLIPS UNLESS APPROVED BY EOR.
         2. WELDS TO CONNECTION PLATES EMBEDDED IN CONCRETE SHALL BE DEPOSITED IN A SEQUENCE THAT WILL MINIMIZE DISTORTION OF THE EMBEDMENT TO 3 MM (1/8 OF AN INCH) OF FLAT OR TRUE.
      10. CRANES/CRANE RAILS:
          1. AT A MIN., EACH CRANE/CRANE RAIL SHAL BE LOAD TESTED BEFORE BEING PUT INTO SERVICE. RECORDS OF LOAD TESTS SHALL BE INCLUDED WITH EQUIPMENT RECORDS.
          2. ALL CRANE MOTIONS SHALL BE TESTED UNDER LOADS OF 100% AND 125% OF THE RATED CAPACITY OF THE HOIST.
          3. CRANE LOAD TESTS AT 100% AND 125% OF RATED CAPACITY MUST BE PERFORMED ON THE FULL LENGTH OF THE CRANE/CRANE RAIL. ONLY THOSE PARTS OF THE CRANE RAILS THAT HAVE BEEN SUCCESSFULLY TESTED SHALL BE PUT INTO USE.
          4. DEFLECTIONS OF CRANE BEAMS/CRANE RAILS SHALL BE MEASURED AT LOADS OF 100% AND 125% OF RATED CAPACITY AND SHALL NOT EXCEED THOSE NOTED IN THE APPLICABLE DESIGN STANDARDS.
          5. ALL PROTECTIVE LIMIT SWITCHES, BRAKES, ETC. OF EACH CRANE SHALL BE TESTED AT 100% OF RATED CAPACITY.
   4. FIELD QUALITY CONTROL
      1. INSPECTION AND TESTING OF MATERIALS AND WORKMANSHIP WILL BE CARRIED OUT BY AN INDEPENDENT TESTING AGENCY APPROVED BY THE EOR.
      2. ALL INSPECTIONS SHALL BE PERFORMED BY QUALIFIED INSPECTORS CERTIFIED TO CSA W178 FOR THE RELEVANT CLASS OF INSPECTION.
         1. THE COST OF INSPECTION AS WELL AS THE COST OF CORRECTION OF DEFICIENCIES SHALL BE AT THE SUPPLIER'S EXPENSE.
      3. THE SUPPLIER'S QUALITY CONTROL PROGRAM AND INSPECTION PLAN SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW UPON REQUEST.
      4. THE SUPPLIER SHALL BE RESPONSIBLE FOR INSPECTION OF WELDING AND SHALL PAY PARTICULAR ATTENTION TO SECTIONS OF CSA STANDARD W59 ENTITLED WELDING INSPECTION AND OBLIGATIONS OF THE SUPPLIER. THE INSPECTION REQUIREMENTS APPLY TO BOTH SHOP AND FIELD WELDS.
      5. SUBMIT TEST REPORTS TO CONSULTANT UPON COMPLETION OF INSPECTION.
      6. THE SUPPLIER SHALL VISUALLY INSPECT ALL COMPLETED WELDS. VISUAL EXAMINATION PROCEDURES SHALL BE IN ACCORDANCE WITH CSA W59.
      7. NON-DESTRUCTIVE EXAMINATION (MAGNETIC PARTICLE, ULTRASONIC, RADIOGRAPHIC, ETC.) SHALL BE IN ACCORDANCE WITH CSA W59, AND THE EXTENT OF INSPECTION SHALL BE AS FOLLOW:
         1. FULL PENETRATION WELDS 100 %
         2. PARTIAL PENETRATION WELDS 50 %
         3. FILLET WELDS 25 %
      8. IF THE TESTING INDICATES DEFICIENCY, COSTS OF THE TESTING AND REMEDIAL WORK SHALL BE INCURRED BY THE CONTRACTOR.
   5. FIELD PAINTING
      1. TOUCH UP DAMAGED PAINT SURFACES AND SURFACES WITHOUT SHOP COAT WITH PRIMER TO NACE NO.3/SSPC-SP-6
      2. ALL DAMAGES TO GALVANIZING SHALL BE COATED AFTER INSTALLATION IN ACCORDANCE WITH ASTM A780 FOLLOWING SURFACE PREPARATION.
      3. BEFORE REPAIR OF DAMAGED GALVANIZED COATING, EXPOSED SUBSTRATE METAL SHALL BE POWERCLEANED TO BRIGHT METAL AND FREE OF ALL VISUAL RUST, OIL OR GREASE. ANY NON-ADHERING GALVANIZING SHALL BE REMOVED TO THE EXTENT THAT THE SURROUNDING GALVANIZING IS INTEGRAL AND ADHERENT.
      4. WHEN SURFACE DEFECTS EXCEED 2 PERCENT OF A MEMBER'S AREA, THE DEFECTS SHALL BE REPAIRED BY RE-DIPPING THE MEMBER IN THE ZINC BATH.
      5. COLD REPAIR USING AN ORGANIC, ZINC-RICH COATING IS ALLOWED IF THE TOTAL DAMAGED AREA IS LESS THAN 1 PERCENT OF THE TOTAL COATED AREA OF THE MEMBER BEING REPAIRED AND NO SINGLE REPAIR IS GREATER THAN 12.5 SQUARE CENTIMETRES OR 300 MM LONG. THE DRY FILM THICKNESS SHALL BE 2 TO 3 MILS.
      6. THE INSTALLATION CONTRACTOR SHALL MAKE ALLOWANCE FOR CLEANING, SURFACE PREPARATION AND PAINTING OF ALL SHIPPING DAMAGE, ERECTION DAMAGE, FIELD WELDS AND BOLTS.
      7. DAMAGED AND UNPAINTED AREAS, FASTENERS, WELDS, ETC. REQUIRING FIELD TOUCH-UP, SHALL BE POWER-TOOL CLEANED, PREPARED AND PAINTED AS SPECIFIED.
4. APPENDICES
   1. INTERIOR STEEL
      1. ONE-COAT PAINT SYSTEM CONFORMING TO CISC/CMPA 1-73A U.N.O.
      2. INTERIOR STEEL NOT EXPOSED TO VIEW OR CORROSIVE ENVIRONMENTS MAY BE UNCOATED.
   2. SURFACE PREPARATION
      1. SSPC-SP6 COMMERCIAL BLAST
      2. A SURFACE PROFILE OF 1.5-2.5MILS SHOULD BE ATTAINED AND BE SHARP AND ANGULAR IN PROFILE SHAPE.
   3. PAINT SYSTEMS
      1. MILD EXPOSURE
         1. EPOXY PRIMER AND EPOXY TOPCOAT

MANUFACTURER	BRAND NAME	NOM DFT (mils)	NO. OF COATS*	MIN. TOTAL THICKNESS (mils)
Ameron General Paint	Primer – Not required	0	0	5.0 – 8.0
	Top Coat – Amerlock 400	5.0 – 8.0	1	
Carboline Coatings	Primer – Not required	0	0	5.0 – 6.0
	Top Coat – Carboguard 890	5.0 – 6.0	1	
Devoe Coatings	Primer – Devran 201	2.0 – 3.0	1	3.5 – 5.0
	Top Coat – Devran 229	1.5 – 2.0	1	
International Paint	Primer – Not required	0	0	5.0 – 6.0
	Top Coat – Interseal 670HS	5.0 – 6.0	1	

      2. MODERATE EXPOSURE

MANUFACTURER	BRAND NAME	NOM DFT (mils)	NO. OF COATS*	MIN. TOTAL THICKNESS (mils)
Ameron General Paint	Primer – Amerlock 400	4.0 - 6.0	1	6.0 – 8.0
	Top Coat – Amerlock 450 HS	2	1	
Carboline Coatings	Primer – Carboguard 890	4.0 - 6.0	1	6.0 – 8.0
	Top Coat – Carbothane 134HG	2	1	
Devoe Coatings	Primer – Bar Rust 235	2.0 – 3.0	1	6.0 – 8.0
	Top Coat – Devthane 379	2	1	
International Paint	Primer – Interseal 670HS	4.0 – 6.0	1	6.0 – 8.0
	Top Coat – Interthane 990	2	1	

   4. COLOURS
      1. INTERIOR SCHEDULE

LOCATION / COMPONENT	COLOUR
Structural Steel	ANSI #70 Grey (2548)

      2. SAFETY COLOUR CODING
         1. MACHINE PERSONNEL PROTECTOR GUARDS, PERSONNEL SAFETY BARRIERS, EQUIPMENT AND/OR DEVICES AND OTHER SURFACES REQUIRING SAFETY COLOUR CODE MARKING SHALL BE PAINTED THE COLOURS PER THE FOLLOWING TABLE:

LOCATION / COMPONENT	COLOUR
Handrails, Kickplates, Guards and Safety Items, etc.	Safety Yellow (2589)

06 10 00 ROUGH CARPENTRY

1. GENERAL
   1. REFERENCE STANDARDS
      1. ASTM INTERNATIONAL (ASTM)
         1. ASTM A123, STANDARD SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS.
         2. ASTM A153/A153M, STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE.
         3. ASTM F2329/F2329M, STANDARD SPECIFICATION FOR ZINC COATING, HOT-DIP, REQUIREMENTS FOR APPLICATION TO CARBON AND ALLOY STEEL BOLTS, SCREWS, WASHERS, NUTS, AND SPECIAL THREADED FASTENERS
      2. CANADIAN STANDARDS ASSOCIATION (CSA):
         1. CSA B111, WIRE NAILS, SPIKES AND STAPLES
         2. CSA G164, HOT DIP GALVANIZED OF IRREGULARLY SHAPED ARTICLES
         3. CSA O80, WOOD PRESERVATION
         4. CSA O112, ADHESIVES FOR WOOD
         5. CSA O121, DOUGLAS FIR PLYWOOD
         6. CAN/CSA O141, SOFTWOOD LUMBER
         7. CSA O151, CANADIAN SOFTWOOD PLYWOOD
         8. CSA O153, POPLAR PLYWOOD
         9. CSA O325.0, CONSTRUCTION SHEATHING
         10. CSA O437, STANDARDS ON OSB AND WAFERBOARD
         11. CSA O452, DESIGN RATED OSB
      3. NATIONAL LUMBER GRADING AUTHORITY (NLGA):
         1. NLGA 07 STANDARD GRADING RULES FOR CANADIAN LUMBER
   2. QUALITY ASSURANCE
      1. REGULATORY AGENCY APPROVALS:
         1. MATERIAL SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF THE BCBC.
         2. LUMBER SHALL BE GRADED AND STAMPED BY AN AGENCY CERTIFIED BY CANADIAN LUMBER STANDARDS ADMINISTRATIVE BOARD.
         3. PLYWOOD SHALL BE GRADED AND STAMPED IN ACCORDANCE WITH APPLICABLE CSA STANDARDS.
         4. PANEL PRODUCTS SHALL BE MARKED WITH A RECOGNIZED, VISIBLE GRADE STAMP.
2. ACTIONS AND INFORMATIONAL SUBMITTALS
   1. FLOOR JOISTS
      1. SHOP DRAWINGS
         1. SUBMIT DRAWINGS STAMPED AND SIGNED BY PROFESSIONAL ENGINEER REGISTERED IN JURISDICTION OF PROJECT SITE.
            1. INDICATE REQUIREMENTS FOR SUBFLOOR GLUEING, BLOCKING, STRAPPING, ETC.
         2. SUBMIT ERECTION DRAWINGS FOR REVIEW.
            1. INDICATE REQUIREMENTS FOR BLOCKING ON LAYOUTS.
         3. LIVE LOAD DEFLECTION CRITERIA FOR FLOOR JOISTS L/360
         4. DESIGN FOR VIBRATION CONTROL IN CONFORMANCE WITH BCBC.
3. PRODUCTS
   1. LUMBER
      1. GRADES: USE GRADE MARKED LUMBER CONFORMING TO THE STANDARD GRADING RULES FOR CANADIAN LUMBER PUBLISHED BY THE NGLA.
      2. LUMBER: TO CAN/CSA 0141, SOFTWOOD, S-P-F, S4S, SURFACE-DRY, GRADED AND STAMPED IN ACCORDANCE WITH CURRENT NLGA STANDARD GRADING RULES FOR CANADIAN LUMBER.
         1. MOISTURE CONTENT: MAXIMUM 19% AT TIME OF INSTALLATION.
         2. FINGER JOINTED LUMBER IS NOT ACCEPTABLE.
      3. FRAMING AND BOARD LUMBER: IN ACCORDANCE WITH BCBC AND AS SPECIFIED IN SCHEDULES.
      4. FURRING, BLOCKING, NAILING STRIPS, GROUNDS, ROUGH BUCKS, CANTS, CURBS FASCIA BACKING AND SLEEPERS: S4S, "STANDARD" OR BETTER GRADE FOR BOARD, POST AND TIMBER SIZES, "STANDARD" LIGHT FRAMING OR BETTER FOR DIMENSION SIZES.
   2. ENGINEERED WOOD PRODUCTS
      1. PROVIDE ENGINEERING WOOD PRODUCTS WITH THE STRUCTURAL CAPACITY THAT MEETS OR EXCEEDS THE REQUIREMENTS SHOWN ON DRAWINGS AND AS SET FORTH IN THE BCBC.
      2. LAMINATED VENEER LUMBER (LVL) AND PARALLEL STRAND LUMBER (PSL): A COMPOSITE OF WOOD VENEERS WITH THE GRAIN PRIMARILY PARALLEL TO THE MEMBER LENGTH, MANUFACTURED WITH AN EXTERIOR TYPE ADHESIVE.
      3. WOOD I-JOISTS: PREFABRICATED UNITS COMPLYING WITH DEPTHS, LOAD CAPACITY AND PERFORMANCE RATINGS AS SHOWN ON DRAWINGS. THE WEB MATERIAL SHALL BE ORIENTED STRAND BOARD, U.N.O.
   3. PANEL PRODUCTS
      1. CANADIAN SOFTWOOD PLYWOOD: TO CSA O325, THICKNESS AS INDICATED ON DRAWINGS.
      2. DOUGLAS FIR PLYWOOD: TO CSA 0121, THICKNESS AS INDICATED ON DRAWINGS.
      3. POPLAR PLYWOOD: TO CSA 0153, STANDARD CONSTRUCTION, THICKNESS AS INDICATED ON DRAWINGS.
      4. ORIENTED STRAND BOARD (OSB): OSB PANELS TO CSA O437, GRADE O 2, THICKNESS AS INDICATED ON DRAWINGS. GRADE STAMP SHALL INDICATE SPAN RATING.
   4. FASTENING DEVICES AND HARDWARE
      1. NAILS AND SPIKES: TO CSA B111:
         1. USE COMMON SPIRAL NAILS AND SPIRAL SPIKES U.N.O.
         2. USE HOT DIP GALVANIZED FINISHED STEEL FOR EXPOSED EXTERIOR WORK, HIGHLY HUMID INTERIOR AREAS AND FOR PRESERVATIVE TREATED LUMBER.
         3. BOLT, NUT, WASHER, SCREW AND PIN TYPE FASTENERS: HOT DIP GALVANIZED FINISH TO CSA G164.
      2. METAL FRAMING ANCHORS
         1. GENERAL: PROVIDE PRODUCTS WITH ALLOWABLE STRUCTURAL CAPACITY TO SUPPORT THE LOADS FROM MEMBERS AS SHOWN ON THE DRAWINGS.
         2. GALVANIZED STEEL: HOT-DIP, ZINC COATED STEEL SHEET COMPLYING WITH ASTM A653/A653M, G60 (Z180) COATING DESIGNATION. MIN. THICKNESS 1.3 MM.
         3. JOIST HANGERS: U-SHAPED JOIST HANGERS WITH 50 MM LONG SEAT AND 32 MM WIDE NAILING FLANGES AT LEAST 85% OF JOIST DEPTH.
         4. I-JOIST HANGERS: U-SHAPED JOIST HANGERS WITH 50 MM LONG SEAT AND 32 MM WIDE NAILING FLANGES FULL DEPTH OF JOIST. NAILING FLANGES TO PROVIDE LATERAL SUPPORT TO THE JOIST TOP CHORD.
         5. TOP FLANGE HANGERS: U-SHAPED JOIST HANGERS, FULL DEPTH OF JOIST, FORMED FROM 50 MM WIDE METAL STRAP WITH TABS BENT TO EXTEND OVER AND BE FASTENED TO SUPPORT MEMBER.
      3. PRESERVATIVE TREATED WOOD
         1. PRESSURE PRESERVATIVE TREATED LUMBER:
            1. LUMBER GRADED AND STAMPED IN ACCORDANCE WITH APPLICABLE GRADING RULES AND STANDARDS OF ASSOCIATIONS OR AGENCIES APPROVED TO GRADE LUMBER BY CANADIAN LUMBER STANDARDS ACCREDITATION BOARD IN ACCORDANCE WITH CAN/CSA O80.20M.
            2. SPECIES: PINE OR SPRUCE PINE
            3. GRADE: NO.2 OR BETTER STRUCTURAL POSTS AND LUMBER, PIECES MAY BE GRADE STAMPED OR SHIPMENT CERTIFIED BY LETTER OF COMPLIANCE.
            4. GRADING AUTHORITY: NLGA, PARAGRAPH 131CC
            5. USE CLASSIFICATION AND PRESERVATIVE AGENT AS SPECIFIED BELOW.
            6. MATERIAL HAVING TWISTED GRAIN OR STRUCTURAL DEFECTS AFFECTING INTEGRITY OF LUMBER IS UNNACCEPTABLE.
            7. USE ONLY MATERIAL WITH RADIUS EDGES, MINIMUM 6 MM.
            8. KILN DRY LUMBER MATERIALS TO 8% MOISTURE CONTENT OR LESS.
         2. PRESSURE PRESERVATIVE TREATED PLYWOOD: TREATED IN ACCORDANCE WITH CAN/CSA O80.9M USING WATER BORNE PRESERVATIVE TO OBTAIN MINIMUM NET RETENTION OF 4 KG/M³ OF WOOD. PLYWOOD OR LAMINATED MATERIALS SHALL BE MANUFACTURED WITH EXTERIOR GRADE ADHESIVES. AFTER TREATMENT, PLYWOOD SHALL BE KILN DRIED TO MOISTURE CONTENT OF 8% OR LESS.
         3. WATER BORNE PRESERVATIVE TREATED WOOD SHALL HAVE MAXIMUM MOISTURE CONTENT OF 19% AFTER TREATMENT.
      4. PRESERVATIVE TREATED WOOD MATERIALS AND APPLICATION

PRODUCT (S)	END USE(S)	EXPOSURE(S)	USE CATEGORY	APPLICABLE CLAUSES(S)
Battens –Plywood and sawn	Rain Screen Cavities	Above Ground	3.2	8.7
Battens – Sawn	Rain Screen Cavities	Above Ground	3.2	8.7
Cribbing – Sawn Four Sides	General	Ground Contact or Freshwater	4.1	8.2
Decks – Non-Residential	Decking (Unpainted), Joists (Above Ground), or Railing Components	Above Ground – Exterior	3.2	8.2
Lumber	Sill Plates and Building construction	Above Ground – Interior – Wood...	2	8.2
	Permanent Wood Foundations	Above Ground or Ground Contact	4.2	8.2 and 8.2.2.1
Poles and Sawn Timbers	Structural Building	Gound Contact or Freshwater –...	4.2	8.2 and 8.3

      5. CORROSION PROTECTION FOR CONNECTORS AND FASTENERS FOR USE WITH TREATED WOOD
         1. CONNECTORS: FABRICATED FROM STEEL SHEET GALVANIZED IN ACCORDANCE WITH ASTM A653 TO MINIMUM G185 COATING OR GALVANIZED POST FABRICATION TO ASTM A123.
         2. FASTENERS: HOT DIP GALVANIZED TO ASTM A153/A153M CLASS C AND D
4. EXECUTION
   1. ROUGH CARPENTRY WORK
      1. ACCURATELY FRAME AND PROPERLY ASSEMBLE ROUGH CARPENTRY WORK. INCLUDE NECESSARY NAILS OR OTHER CONNECTORS AND HARDWARE.
   2. ERECTION OF FRAMING MEMBERS
      1. INSTALL MEMBERS TRUE TO LINE, LEVELS AND ELEVATIONS.
      2. CONSTRUCT CONTINUOUS MEMBERS FROM PIECES OF LONGEST PRACTICABLE LENGTH.
      3. INSTALL SPANNING MEMBERS WITH "CROWN EDGE" UP.
      4. INSTALL BLOCKING TO FACILITATE INSTALLATION OF FINISHING MATERIALS, FIXTURES, SPECIALTY ITEMS AND TRIM.
      5. INSTALL EWP'S TO COMPLY WITH MANUFACTURERS INSTRUCTIONS, DRAWINGS AND DETAILS.
   3. RIM JOIST OR RIM BOARD
      1. LUMBER FLOOR SYSTEM:
         1. RIM JOISTS OR BOARDS TO BE 1 - 2X_ (DEPTH TO MATCH FLOOR SYSTEM)
      2. ENGINEERED WOOD PRODUCT FLOOR SYSTEM:
         1. RIM JOISTS TO BE 1 - 3/4" LVL (DEPTH TO MATCH FLOOR SYSTEM).
         2. LSL MAY BE USED WHERE FULL BEARING PROVIDED.
      3. USE TWO PLY RIM AT LOCATIONS WHERE FASCIA MOUNT GUARDRAIL WILL BE INSTALLED.
   4. ROOF, WALL, AND FLOOR SHEATHING
      1. INSTALL ROOF, WALL, AND FLOOR SHEATHING IN ACCORDANCE WITH CSA 086.
      2. LOCATE PANEL END JOINTS LOCATED ON SOLID BEARING, STAGGERED AT LEAST [800] MM.
      3. FASTEN ROOF AND WALL SHEATHING PANELS USING MIN. 3.33MM DIA. X 65MM COMMON SPIRAL OR ANNULAR GROOVED NAILS SPACED 150MM O.C. ALONG EDGES AND 300 MM O.C. ALONG INTERMEDIATE SUPPORTS. USE OF STAPLES IS NOT ACCEPTABLE.
         1. FASTEN FLOOR SHEATHING WITH 50MM (2") LG. #8 SCREWS AT 150MM O.C. ALONG EDGES AND 300MM O.C. ALONG INTERMEDIATE SUPPORTS, U.N.O.
      4. FLOORS SHEATHING TO BE MIN. 16MM (5/8") T&G PLYWOOD U.N.O.
      5. FLAT ROOF SHEATHING TO BE MIN. 16MM (5/8") T&G PLYWOOD U.N.O.
      6. SLOPING ROOF (2.5/12 & GREATER): 12.5MM (1/2") PLYWOOD WITH "H" CLIPS OR 2X BLOCKING BETWEEN SUPPORTS.
      7. WALL SHEATHING TO BE 12.5MM PLYWOOD, U.N.O.
         1. PROVIDE FIRE BLOCKING FOR STUDS > 9'-6".
         2. PROVIDE SHEARWALL BLOCKING AND FASTENING AS INDICATED.
      8. OSB FOR THE FLOORS AND ROOF MAY ONLY BE SUBSTITUTED FOR PLYWOOD WHEN APPROVED BY THE ARCHITECT.
   5. BEAMS AND COLUMNS/POSTS:
      1. BUILT-UP COLUMNS, POSTS, AND BEARING POINTS MUST BE BLOCKED THROUGH THE FLOOR STRUCTURE.
   6. SHEAR WALLS & EXTERIOR WALLS:
      1. ENSURE SHEARWALLS ARE CONNECTED TO FLOORS, ROOF PLYWOOD, TRUSS BLOCKS, OR JOISTS WHERE REQUIRED WITH MIN. 3.66MM DIA. X 75MM LG NAILS AT 6" ON CENTER.
      2. FASTEN TO CONCRETE WITH 16MM (5/8") DIA. ANCHOR BOLTS @ SPACING AS INDICATED IN SCHEDULES.
      3. INSTALL HOLD DOWN ANCHORS WHERE NOTED ON PLAN.
      4. LAP TOP PLATES 1220MM AND CONNECT WITH MIN. 12-3.66MM DIA. X 75MM LG. NAILS - SEE STANDARD DETAIL.
   7. EXPOSED OR PRESERVATIVE TREATED WOOD:
      1. PROVIDE CORROSION RESISTANT FIBRE REINFORCED FOIL MEMBRANE, ASPHALT-IMPREGNATED BUILDING PAPER, CLOSED-CELL FOAM GASKET MATERIAL, OR TYPE S ROLL ROOFING AS A MOISTURE BARRIER BETWEEN WOOD ELEMENTS AND CONCRETE OR MASONRY.
      2. WOOD FRAMING EXPOSED TO EXTERIOR WEATHER OR IN CONTACT WITH THE GROUND SHALL BE PRESERVATIVE-TREATED IN ACCORDANCE WITH CSA-080.1.
      3. TREAT SURFACES EXPOSED BY CUTTING OR DRILLING WITH BRUSH APPLICATION OF EQUIVALENT SURFACE APPLIED WOOD PRESERVATIVE.
      4. FASTENERS USED IN PRESERVATIVE-TREATED WOOD SHALL HAVE APPROPRIATE CORROSION PROTECTION.

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RE-ISSUED FOR TENDER

PROFESSIONAL SEAL

REVISIONS

NO.	DATE	EXPLANATION
A	22/06/17	ISSUED FOR TENDER

CLIENT
ECLIPSE PROJECTS

PROJECT
Q-KIDS DAYCARE CENTER

420 WEBSTER AVENUE, QUESNEL, BC

DRAWING TITLE
GENERAL NOTES

DESIGNER	TANNER BRAATEN, P.ENG
REVIEWER	FERGUS FOLEY, P.ENG
DRAWN BY	K.T.
DATE 22/07/11	SCALE 12" = 1'-0"

SHEET NO.
S002

PROJ. NO. **21173** REV. NO. **A**

06 12 25 TIMBER CONSTRUCTION

1. GENERAL
   1. SUBMITTALS
      1. PRODUCT DATA:
         1. SUBMIT PRODUCT DATA FOR PROPRIETARY TIMBER CONNECTORS.
      2. SHOP DRAWINGS:
         1. SUBMIT DETAILED SHOP DRAWINGS OF THE TIMBER FRAME INCLUDING TIMBER SIZES, DIMENSIONS, GRADES, EDGE TREATMENT, SURFACE TREATMENT, FINISHES, AND CONNECTION JOINERY DETAILS.
         2. SHOP DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION AND DIRECTION OF A PROFESSIONAL ENGINEER LICENSED IN THE JURISDICTION WHERE THE PROJECT IS LOCATED. DRAWINGS SUBMITTED FOR APPROVAL SHALL BE SIGNED AND SEALED BY THE ENGINEER.
         3. SUBMIT ERECTION DRAWINGS IN ACCORDANCE WITH CSA 086.
         4. SHOP DRAWINGS FOR MEMBERS: INDICATE GRADE, FINISHES, CAMBER, CUTS, LEDGERS, HOLES AND CONNECTION DETAILS.
      3. SAMPLES:
         1. SUBMIT SAMPLES AND MOCK-UPS OF TIMBER MATERIALS FOR REVIEW AND ACCEPTANCE, INCLUDING SURFACE TREATMENT AND FINISHES.
   2. QUALITY ASSURANCE
      1. THE TIMBER FRAME CONTRACTOR SHALL BE A COMPANY MEMBER OF THE TIMBER FRAMERS GUILD.
      2. WORK SHALL BE IN CONFORMANCE WITH THE TFEC 2-2018 CODE OF STANDARD PRACTICE FOR TIMBER FRAME STRUCTURES.
      3. ALL TIMBERS SHALL BE GRADED BY A GRADER CERTIFIED BY AN APPROVED LUMBER GRADING AGENCY OR A QUALIFIED INDIVIDUAL WHO HAS COMPLETED A TIMBER GRADING TRAINING COURSE. TIMBERS SHALL BEAR A GRADE STAMP OR A CERTIFICATE OF GRADE FROM THE LUMBER GRADER.
   3. DELIVERY, STORAGE, AND HANDLING
      1. KEEP TIMBERS DRY DURING DELIVERY AND STORAGE. STORE TIMBERS OFF OF THE GROUND AND COVERED.
      2. CUT AND STACK TIMBERS SO AS NOT TO ENCOURAGE THE GROWTH OF SAP-STAIN FUNGI, MOLD OR MILDEW. STACK TIMBERS WITH STICKERS AND SPACERS BETWEEN BUNDLES TO ALLOW AIR CIRCULATION.
      3. PROVIDE REASONABLE PROTECTION DURING TRANSPORTATION, STORAGE, HANDLING AND ERECTION OF THE TIMBERS TO AVOID MARRING, STAINING, OR THE ACCUMULATION OF EXCESS MOISTURE, DIRT AND FOREIGN MATTER.
2. PRODUCTS
   1. TIMBER
      1. TIMBER SPECIES: DOUGLAS FIR.
      2. TIMBER GRADE:
         1. ALL HEAVY TIMBER TO BE GRADED BY A QUALIFIED GRADING AGENCY ACCORDING TO CSA O141, SOFTWOOD LUMBER. GRADING CERTIFICATE TO BE SUBMITTED TO THE ENGINEER PRIOR TO ERECTION.
         2. NO. 1.
      3. MOISTURE CONTENT: TIMBERS SHALL BE DRIED IN A RADIO FREQUENCY KILN TO A MAXIMUM MOISTURE CONTENT OF 19% IN CENTER OF TIMBER. SUBMIT CERTIFICATE STATING MOISTURE CONTENT PRIOR TO ERECTION.
      4. TIMBERS 8X12 AND SMALLER SHALL BE FREE OF HEART CENTER (FOHC). TIMBERS LARGER THAN 8X12 SHALL BE BOXED HEART.
      5. DRESSING: TIMBERS SHALL BE SURFACED FOUR SIDES (S4S) U.N.O.
      6. APPEARANCE:
         1. ALL EXPOSED TIMBERS TO MEET THE FOLLOWING REQUIREMENTS:
            1. WOOD SURFACE TO BE FREE OF LARGE KNOTS, CRACKS, CHIPS, MARKS, ETC.
               1. TO AVOID STAINING, DO NOT USE STEEL STRAPPING.
               2. ALL TIMBERS TO BE OF UNIFORM COLOUR, SURFACE TEXTURE AND MOISTURE CONTENT.
               3. ALL TIMBERS TO BE FREE OF ROUNDED EDGES AND BARK I.E. NO WANE.
   2. TIMBER CONNECTIONS
      1. WOOD PEGS: STRAIGHT GRAINED WHITE OAK CONFORMING TO ASTM D8023. IF TAPERED PEGS ARE USED, PEGS SHALL BE TAPERED FOR AT LEAST 1/3 OF THEIR LENGTH AND AT LEAST FOUR INCHES LONGER THAN THE THICKNESS OF THE TIMBER IN WHICH THEY ARE DRIVEN SO THAT THE TAPERED SECTION PROTRUDES FROM THE TIMBER.
      2. BOLTS AND LAG SCREWS: ASTM A307 HOT-DIP GALVANIZED.
      3. SCREWS: AS INDICATED.
      4. POST BASE ANCHORS: AS INDICATED.
      5. STEEL CONNECTION PLATES, STRAPS, AND BARS: ASTM A36, HOT DIP GALVANIZED.
   3. FINISHES
      1. PENETRATING SEALER: HERITAGE NATURAL FINISHES.
   4. FABRICATION
      1. TIMBERS SHALL BE FABRICATED IN STRICT CONFORMANCE TO APPROVED SHOP DRAWINGS. FABRICATION PRIOR TO RECEIPT OF APPROVED SHOP DRAWINGS SHALL BE AT THE CONTRACTOR'S RISK.
      2. CONNECTION JOINERY: TIMBERS SHALL BE FABRICATED TO JOIN TIGHTLY AND IN PROPER ALIGNMENT AT THE TIME OF ASSEMBLY. SMALL (1/8" OR LESS) VARIATIONS WHERE THE FACES OF JOINTS COME TOGETHER (IN ALIGNMENT OR SEPARATION) ARE ACCEPTABLE. PROVISIONS SHALL BE MADE IN THE DETAILING OF JOINERY TO ALLOW FOR DIMENSIONAL CHANGES (JOINT SEPARATION AND ALIGNMENT) ASSOCIATED WITH TIMBER DRYING SHRINKAGE.
      3. CHAMFERS: EXPOSED EDGES OF POSTS AND BEAMS SHALL BE CHAMFERED WITH SKI TIP STOPS.
3. EXECUTION
   1. ERECTION
      1. FIELD MEASURE AND VERIFYING THAT THE FOUNDATIONS AND ANY STRUCTURAL FRAMING THAT SUPPORTS THE TIMBER FRAMING ARE IN THE CORRECT LOCATION, ALIGNMENT, AND AT THE PROPER ELEVATION. THE CONTRACTOR SHALL NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN AN ACCEPTABLE MANNER. COMMENCEMENT OF ERECTION IMPLIES ACCEPTANCE OF CONDITIONS.
      2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SHORING AND BRACING NECESSARY TO MAINTAIN THE STABILITY OF THE TIMBER FRAME DURING ERECTION.
      3. TIMBERS SHALL BE STORED OFF OF THE GROUND AND PROTECTED PRIOR TO ERECTION.
      4. PROTRUDING PEGS SHALL BE SAWN OFF FLUSH.
   2. FINAL CLEAN UP
      1. REPAIR ANY MARRED OR DAMAGED SURFACES, CLEAN SOILED OR STAINED TIMBERS, AND APPLY ONE COAT OF PENETRATING SEALER TO ALL EXPOSED SURFACES.

06 17 53 SHOP FABRICATED WOOD TRUSSES

1. GENERAL
   1. REFERENCE STANDARDS
      1. CSA GROUP
         1. CSA O86, ENGINEERING DESIGN IN WOOD.
         2. CSA O141, SOFTWOOD LUMBER.
      2. TRUSS PLATE INSTITUTE OF CANADA (TPIC)
         1. TPIC, TRUSS DESIGN PROCEDURES AND SPECIFICATIONS FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES (LIMIT STATES DESIGN).
   2. ACTION AND INFORMATIONAL SUBMITTALS
      1. PRODUCT DATA:
         1. SUBMIT MANUFACTURER'S INSTRUCTIONS, PRINTED PRODUCT LITERATURE AND DATA SHEETS FOR WOOD TRUSSES AND INCLUDE PRODUCT CHARACTERISTICS, PERFORMANCE CRITERIA, PHYSICAL SIZE, FINISH AND LIMITATIONS.
      2. SHOP DRAWINGS:
         1. SUBMIT DRAWINGS STAMPED AND SIGNED BY PROFESSIONAL ENGINEER REGISTERED IN JURISDICTION OF PROJECT SITE.
         2. INCLUDE ON DRAWINGS:
            1. CONNECTION AND HARDWARE DETAILS.
            2. INDICATE TPIC TRUSS DESIGN PROCEDURE AND CSA O86 SPECIFIC PRODUCT REGISTRY NUMBER OF THE TRUSS PLATES.
            3. INDICATE SPECIES, SIZES, AND STRESS GRADES OF LUMBER USED AS TRUSS MEMBERS. SHOW PITCH, SPAN, CAMBER, CONFIGURATION AND SPACING OF TRUSSES. INDICATE CONNECTOR TYPES, THICKNESSES, SIZES, LOCATIONS AND DESIGN VALUE. SHOW BEARING DETAILS. INDICATE DESIGN LOAD FOR MEMBERS.
            4. INDICATING DESIGN LOADS AND ALLOWABLE LOADS FOR TRUSS MEMBERS.
            5. INDICATE ARRANGEMENT OF WEBS OR OTHER MEMBERS TO ACCOMMODATE DUCTS AND OTHER SPECIALTIES.
            6. SHOW LOCATION OF LATERAL BRACING FOR COMPRESSION MEMBERS.
            7. CERTIFICATES: SUBMIT CERTIFICATES SIGNED BY MANUFACTURER CERTIFYING THAT MATERIALS COMPLY WITH SPECIFIED PERFORMANCE CHARACTERISTICS AND PHYSICAL PROPERTIES.
            8. INSTRUCTIONS: SUBMIT MANUFACTURER'S INSTALLATION INSTRUCTIONS.
   3. QUALITY ASSURANCE
      1. QUALIFICATIONS:
         1. FABRICATOR OF TRUSSES TO SHOW EVIDENCE OF QUALITY CONTROL PROGRAM SUCH AS PROVIDED BY REGIONAL WOOD TRUSS ASSOCIATIONS, OR EQUIVALENT.
      2. STORAGE AND HANDLING
         1. STORE MATERIALS OFF GROUND AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
         2. REPLACE DEFECTIVE OR DAMAGED MATERIALS WITH NEW.
         3. PROVIDE BEARING SUPPORTS AND BRACINGS. PREVENT BENDING, WARPING AND OVERTURNING OF TRUSSES.
2. PRODUCTS
   1. DESIGN REQUIREMENTS
      1. DESIGN LIGHT METAL PLATE CONNECTED WOOD TRUSSES IN ACCORDANCE WITH TPIC AND CSA O86.
      2. DESIGN TRUSSES FOR LOADS INDICATED AND MIN. UNIFORM AND CONCENTRATED LOADINGS STATED IN THE BCBC.
      3. LIMIT LIVE LOAD DEFLECTION TO 1/360TH OF SPAN SUPPORTING GYPSUM BOARD CEILINGS.
      4. LIMIT LIVE LOAD DEFLECTIONS TO 1/300TH OF SPAN U.N.O.
      5. PROVIDE CAMBER FOR TRUSSES AS INDICATED.
   2. FABRICATION
      1. FABRICATE WOOD TRUSSES IN ACCORDANCE WITH REVIEWED SHOP DRAWINGS.
   3. SOURCE QUALITY CONTROL
      1. IDENTIFY LUMBER BY GRADE STAMP OF CERTIFIED AGENCY
3. EXECUTION
   1. EXAMINATION
      1. SITE VERIFICATION OF CONDITIONS IS REQUIRED FOR MODIFICATIONS TO EXISTING TRUSS SYSTEMS.
   2. MANUFACTURER'S INSTRUCTIONS
      1. COMPLIANCE: COMPLY WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS OR SPECIFICATIONS, INCLUDING PRODUCT TECHNICAL BULLETINS, HANDLING, STORAGE AND INSTALLATION INSTRUCTIONS, AND DATASHEET.
   3. ERECTION
      1. ERECT WOOD TRUSSES IN ACCORDANCE WITH REVIEWED SHOP DRAWINGS.
      2. HANDLING, INSTALLATION, ERECTION, BRACING AND LIFTING IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
      3. MAKE ADEQUATE PROVISIONS FOR HANDLING AND ERECTION STRESSES.
      4. EXERCISE CARE TO PREVENT OUT-OF-PLANE BENDING OF TRUSSES.
      5. INSTALL TEMPORARY HORIZONTAL AND CROSS BRACING TO HOLD TRUSSES PLUMB AND IN SAFE CONDITION UNTIL PERMANENT BRACING AND DECKING ARE INSTALLED.
      6. INSTALL PERMANENT BRACING IN ACCORDANCE WITH DESIGN, **WWTIBC BRACING GUIDELINES**, AND REVIEWED SHOP DRAWINGS, PRIOR TO APPLICATION OF LOADS TO TRUSSES.
      7. DO NOT CUT OR REMOVE ANY TRUSS MATERIAL WITHOUT APPROVAL OF SPECIALTY ENGINEER.
      8. WHERE CANTILEVERED TRUSSES ARE BOTTOM CHORD BEARING, ADD 2"X4" DIAGONAL BRACING CONTINUOUS OVER BEARING LINE.
   4. FIELD QUALITY CONTROL
      1. MANUFACTURER'S FIELD SERVICES:
         1. MANUFACTURER TO REVIEW WORK INVOLVED IN HANDLING AND INSTALLATION, COMPLETE FIELD REVIEW AND SUBMIT REPORT, IN ACCEPTABLE FORMAT, TO VERIFY CONFORMANCE WITH DESIGN.
         2. PROVIDE REPORTS TO EOR WITHIN 3 DAYS OF REVIEW.

31 23 33 EXCAVATING AND BACKFILLING

1. GENERAL
   1. ACTION AND INFORMATIONAL SUBMITTALS
      1. PRECONSTRUCTION SUBMITTALS
         1. SUBMIT RECORDS OF UNDERGROUND UTILITIES, INCLUDING LOCATION PLAN OF EXISTING UTILITIES.
      2. QUALITY ASSURANCE
         1. SUBMIT DESIGN AND SUPPORTING DATA AT LEAST 3 DAYS PRIOR TO BEGINNING WORK.
         2. ENGAGE SERVICES OF QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN JURISDICTION OF PROJECT SITE TO CARRY OUT TO DESIGN AND FIELD REVIEW OF SHORING, BRACING AND UNDERPINNING REQUIRED.
         3. DESIGN AND SUPPORTING DATA SUBMITTED TO BEAR SEAL AND SIGNATURE OF PROFESSIONAL ENGINEER.
         4. KEEP DESIGN AND SUPPORTING DATA ON SITE.
         5. DO NOT USE SOIL MATERIAL UNTIL WRITTEN REPORT OF SOIL TEST RESULTS ARE REVIEWED AND APPROVED BY THE APPROPRIATE CONSULTANT.
      3. EXISTING CONDITIONS
         1. REVIEW GEOTECHNICAL INVESTIGATION REPORT CONDUCTED BY [**CONSULTANT**], ENTITLED ["**NAME OF REPORT**"] DATED [**DATE OF PUBLISH**].
         2. EXISTING BUILDINGS AND SURFACE FEATURES:
            1. CONDUCT CONDITION SURVEY OF EXISTING BUILDINGS, TREES AND OTHER PLANTS, LAWNS, FENCING, SERVICE POLES, WIRES, RAIL TRACKS, PAVEMENT, SURVEY BENCHMARKS AND MONUMENTS WHICH MAY BE AFFECTED BY WORK.
            2. PROTECT EXISTING BUILDINGS AND SURFACE FEATURES FROM DAMAGE WHILE WORK IS IN PROGRESS.
2. PRODUCTS
   1. MATERIALS
      1. TYPE 1 AND TYPE 2 FILL:
         1. CRUSHED, PIT RUN OR SCREENED STONE, GRAVEL, OR SAND.
         2. GRADATIONS TO BE WITHIN LIMITS SPECIFIED.

Sieve Designation	% Passing	
	Type 1	Type 2
75 mm	-	[100]
50 mm	-	-
37.5 mm	-	-
25 mm	[100]	-
19 mm	[75-100]	-
12.5 mm	-	-
9.5 mm	[50-100]	-
4.75 mm	[30-70]	[22-85]
2.00 mm	[20-45]	-
0.425 mm	[10-25]	[5-30]
0.180 mm	-	-
0.075 mm	[3-8]	[0-10]

         2. TYPE 3 FILL: SELECTED MATERIAL FROM EXCAVATION OR OTHER SOURCES, APPROVED BY GEOTECHNICAL EOR FOR USE INTENDED, UNFROZEN AND FREE FROM ROCKS LARGER THAN [75] MM, CINDERS, ASHES, SODS, REFUSE OR OTHER DELETERIOUS MATERIALS.
         3. UNSHRINKABLE FILL: PROPORTIONED AND MIXED TO APROVAL OF GEOTECHNICAL ENGINEER.
3. EXECUTION
   1. STRIP TOPSOIL.
      1. DO NOT MIX TOPSOIL WITH SUBSOIL.
   2. PREPARATION/PROTECTION
      1. KEEP EXCAVATIONS CLEAN, FREE OF STANDING WATER, AND LOOSE SOIL.
      2. WHERE SOIL IS SUBJECT TO SIGNIFICANT VOLUME CHANGE DUE TO CHANGE IN MOISTURE CONTENT, COVER AND PROTECT.
   3. SHORING, BRACING AND UNDERPINNING
      1. MAINTAIN SIDES AND SLOPES OF EXCAVATIONS IN SAFE CONDITION BY APPROPRIATE METHODS AND IN ACCORDANCE WITH HEALTH AND SAFETY REQUIREMENTS.
         1. SHORING, CONSTRUCTION BRACING AND UNDERPINNING DESIGN TO BE COMPLETED BY CONTRACTOR'S ENGINEER AND APPROVED BY APPLICABLE ENGINEER'S-OF-RECORD.
   4. DEWATERING AND HEAVE PREVENTION
      1. KEEP EXCAVATIONS FREE OF WATER WHILE WORK IS IN PROGRESS.
      2. AVOID EXCAVATION BELOW GROUNDWATER TABLE.
         1. PREVENT PIPING OR BOTTOM HEAVE OF EXCAVATIONS BY GROUNDWATER LOWERING, SHEET PILE CUT-OFFS, OR OTHER MEANS.
      3. PROTECT OPEN EXCAVATIONS AGAINST FLOODING AND DAMAGE DUE TO SURFACE RUN-OFF.
   5. EXCAVATION
      1. EXCAVATION MUST NOT INTERFERE WITH BEARING CAPACITY OF ADJACENT FOUNDATIONS.
      2. EARTH BOTTOMS OF EXCAVATIONS TO BE UNDISTURBED SOIL, LEVEL, FREE FROM LOOSE, SOFT OR ORGANIC MATTER.
      3. NOTIFY GEOTECHNICAL ENGINEER WHEN BOTTOM OF EXCAVATION IS REACHED.
      4. OBTAIN GEOTECHNICAL ENGINEER'S APPROVAL OF COMPLETED EXCAVATION.
      5. REMOVE UNSUITABLE MATERIAL FROM TRENCH BOTTOM INCLUDING THOSE THAT EXTEND BELOW REQUIRED ELEVATIONS TO EXTENT AND DEPTH AS DIRECTED BY GEOTECHNICAL ENGINEER.
      6. CORRECT UNAUTHORIZED OVER-EXCAVATION AS FOLLOWS:
         1. FILL UNDER BEARING SURFACES AND FOOTINGS WITH CONCRETE OR TYPE 2 FILL COMPACTED TO DENSITY.
      7. HAND TRIM, MAKE FIRM AND REMOVE LOOSE MATERIAL AND DEBRIS FROM EXCAVATIONS.
         1. WHERE MATERIAL AT BOTTOM OF EXCAVATION IS DISTURBED, COMPACT FOUNDATION SOIL TO DENSITY AT LEAST EQUAL TO UNDISTURBED SOIL.
   6. FILL TYPES AND COMPACTION
      1. USE TYPES OF FILL AS INDICATED OR SPECIFIED BELOW.

Location	Fill Material	Max. Lift Thickness	Minimum Compaction %
UNDER INTERIOR SLABS ON GRADE	300mm type 2 subbase; 150mm type 1 base	150 MM	by geotech
EXTERIOR SLABS ON GRADE	300mm type 2 subbase; 150mm type 1 base	150 MM	by geotech
Against exterior side of foundations under paved areas	type 3 to subgrade level; 300mm type 2 subbase; 150mm type 1 base	150 MM	by geotech

   7. BACKFILLING
      1. AREAS TO BE BACKFILLED TO BE FREE FROM DEBRIS, SNOW, ICE, WATER AND FROZEN GROUND.
      2. DO NOT USE BACKFILL MATERIAL WHICH IS FROZEN OR CONTAINS ICE, SNOW OR DEBRIS.
      3. PLACE BACKFILL MATERIAL IN UNIFORM LAYERS NOT EXCEEDING SPECIFIED COMPACTED THICKNESS UP TO GRADES INDICATED. COMPACT EACH LAYER BEFORE PLACING SUCCEEDING LAYER.
      4. BACKFILLING AROUND INSTALLATIONS:
         1. DO NOT BACKFILL AROUND OR OVER CAST-IN-PLACE CONCRETE WITHIN 24 HOURS AFTER PLACING OF CONCRETE.
         2. PLACE LAYERS SIMULTANEOUSLY ON BOTH SIDES OF INSTALLED WORK TO EQUALIZE LOADING. DIFFERENCE NOT TO EXCEED 600MM.
      5. WHERE TEMPORARY UNBALANCED EARTH PRESSURES ARE LIABLE TO DEVELOP ON WALLS OR OTHER STRUCTURES:
         1. PERMIT CONCRETE TO CURE FOR MIN. 14 DAYS OR UNTIL IT HAS SUFFICIENT STRENGTH TO WITHSTAND EARTH AND COMPACTION PRESSURE, OR
         2. IF APPROVED BY CONSULTANT, ERECT BRACING OR SHORING TO COUNTERACT UNBALANCE, AND LEAVE IN PLACE UNTIL REMOVAL IS APPROVED BY CONSULTANT.

ACRONYMS/DEFITIONS

NOT ALL OF THESE DEFINITIONS MAY APPLY TO THIS PROJECT

1. GENERAL:

ARCH	= ARCHITECT	MAX.	= MAXIMUM
BL	= BAYLINE	MIN.	= MINIMUM
B/U	= BUILT-UP	C/C	= CENTER TO CENTER
℄	= CENTERLINE	PLF	= POUNDS PER LINEAR FOOT
CLR.	= CLEAR	PSF	= POUNDS PER SQUARE FOOT
CONT.	= CONTINUOUS	SBU	= SNOW BUILD UP
C/W	= COMPLETE WITH	Ø	= DIAMETER
DET.	= DETAIL	EOR	=ENGINEER-OF-RECORD
TYP.	= TYPICAL	DL	= DEAD LOAD
DWG.	= DRAWING	GL	= GRIDLINE
HOR.	= HORIZONTAL	U/S	= UNDERSIDE
VERT.	= VERTICAL	LG	= LONG
LBS	= POUNDS	PLF	= POUNDS PER LINEAL FOOT
kPa	= KILOPASCAL	kN	= KILONEWTON
m	= METRE	kN/m	= KILONEWTON PER METRE
mm	= MILIMETRE	W/	= WITH
T.O.C.	= TOP OF CONCRETE	T.O.S.	= TOP OF STEEL
T.O.G.	= TOP OF GRATING	LLV	= LONG LEG VERTICAL
LLH	= LONG LEG HORIZONTAL	(E)	= EXISTING
EXT.	= EXTERIOR	SL	= SNOW LOAD
WL	= WIND LOAD	LL	= LIVE LOAD
Vf	= FACTORED SHEAR FORCE	U.N.O.	= UNLESS NOTED OTHERWISE
TBC	= TO BE CONFIRMED	BCBC	= BC BUILDING CODE
UDL	= UNIFORMLY DISTRIBUTED LOAD	C_f	= FACTORED COMPRESSION FORCE
T_f	= FACTORED TENSION FORCE	M_f	= FACTORED MOMENT

2. TIMBER:

CR	= CRIPPLE (2"X6" U.N.O)	G.T.	= GIRDER TRUSS
I	= "I" JOIST (EWP)	LVL	= LAMINATED VENEER LUMBER
OSB	= ORIENTED STRANBOARD	PLY	= PLYWOOD
ST	= STUD	T & G	= TOUNGUE & GROOVE
TS	= TIMBERSTRAND	EWP	= ENGINEERED WOOD PRODUCT

3. CONCRETE:

BOT	= BOTTOM LAYER	BLL	= BOTTOM LOWER LAYER
BUL	= BOTTOM UPPER LAYER	CJ	= CONTROL JOINT
CONC.	= CONCRETE	EW	= EACH WAY
H1E	= HOOK ONE END	H2E	= HOOK TWO END
NS	= NELSON STUD	P/C	= PRE-CAST CONCRETE - BY OTHERS
REINF.	= REINFORCED	R/W	= REINFORCED WITH
TOP	= TOP LAYER	TLL	= TOP LOWER LAYER
TUL	= TOP UPPER LAYER		
VOID FORM	= A COMPRESSIBL FORM TO ACCOMMODATE GROUND MOVEMENT		

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PROFESSIONAL SEAL

REVISIONS

NO.	DATE	EXPLANATION
A	22/06/17	ISSUED FOR TENDER

CLIENT
ECLIPSE PROJECTS

PROJECT
Q-KIDS DAYCARE CENTER

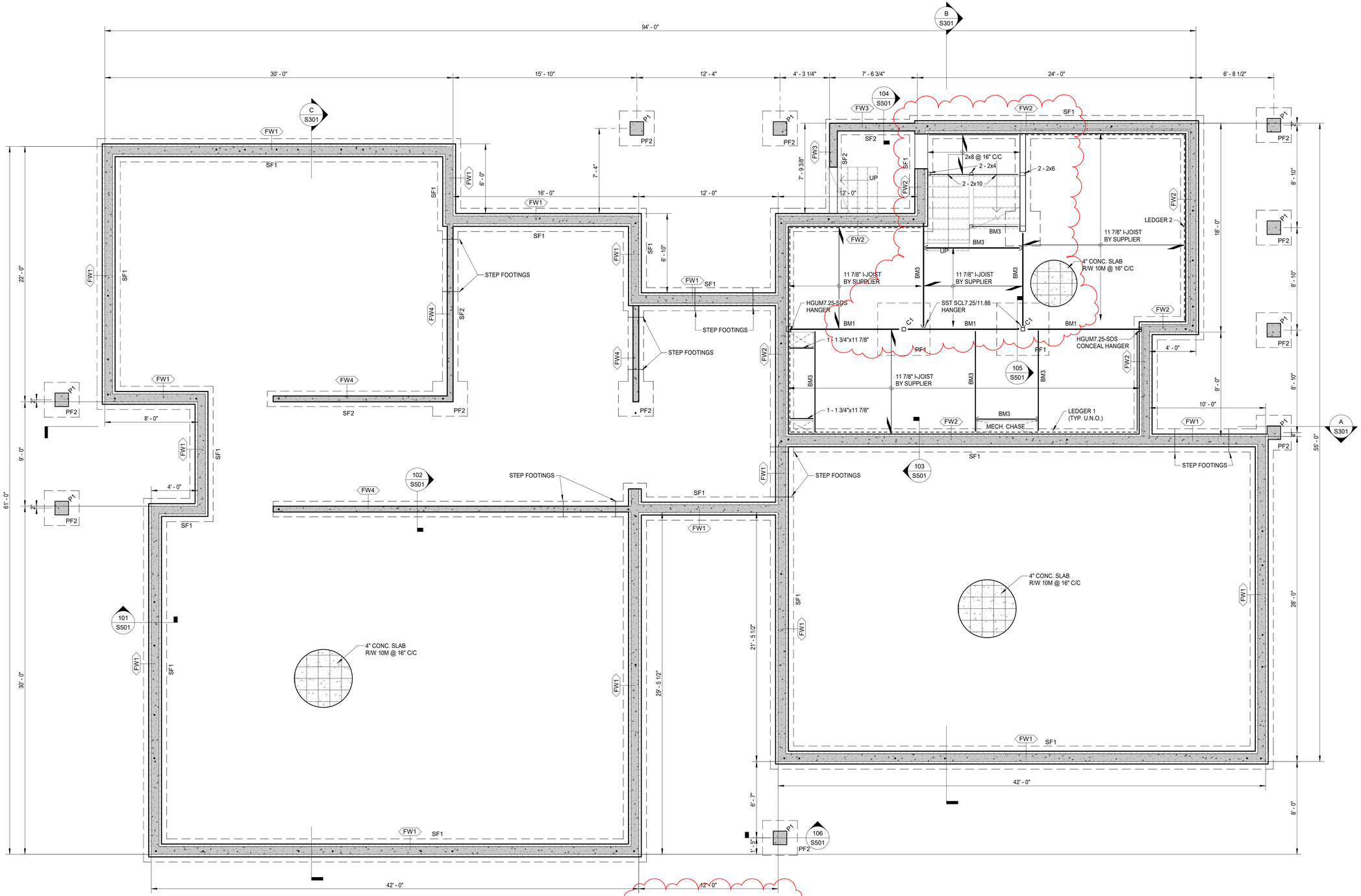
420 WEBSTER AVENUE, QUESNEL, BC

DRAWING TITLE
GENERAL NOTES

DESIGNER	TANNER BRAATEN, P.ENG
REVIEWER	FERGUS FOLEY, P.ENG
DRAWN BY	K.T.
DATE 22/07/11	SCALE 12" = 1'-0"

SHEET NO.
S003

PROJ. NO. **21173** REV. NO. **A**



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

DIMENSIONS ARE TO CONCRETE CORE, NOT TO FACE OF ICF INSULATION.
EXTERIOR FACE OF CONCRETE CORE ALIGNS WITH EXTERIOR FACE OF SHEATHING

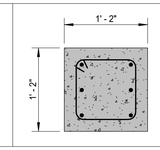
LEDGER SCHEDULE

TYPE	BOARD	FASTENING
1	1 3/4" x 11 7/8"	ICFVL (SST) @ 30" C/C
2	1 3/4" x 11 7/8"	ICFVL (SST) @ 22" C/C

COLUMN SCHEDULE

TYPE	SIZE	MATERIAL
C1	HSS 4x4x1/4"	STEEL
C2	4" x 8"	P.T. H.FIR
C3		P.T. H.FIR

PIER SCHEDULE

P1 14" x 14"		6 - 20M VERTICALS 10M TIES @ 12" C/C 4 - 15M HOOK DOWELS INTO FOOTING @ EACH CORNER

STRIP FOOTING SCHEDULE

TYPE	SIZE	REINFORCING
SF1	24" x 10"	2 - 15M LONG, 15M TRANS x 1'-8" @ 48" C/C
SF2	16" x 10"	2 - 15M LONG, 15M TRANS x 1'-8" @ 48" C/C

PAD FOOTING SCHEDULE

TYPE	SIZE	REINFORCING
PF1	54" x 54" x 10"	5 - 15M x 50" LONG E/W
PF2	36" x 36" x 10"	3 - 15M x 32" LONG E/W

FOUNDATION WALL

TYPE	SIZE	REINFORCING
FW1	8" ICF	15M VERT @ 18" C/C, 15M HORIZ. @ 16" C/C, MID.
FW2	8" ICF	15M VERT @ 18" C/C, 15M HORIZ. @ 16" C/C, INSIDE FACE
FW3	8" CONC	15M VERT @ 18" C/C, 15M HORIZ. @ 16" C/C, EXTERIOR FACE
FW4	6" CURB	1 -15M LONG, 15M HOOKED DOWELS @ 48" C/C

BEAM SCHEDULE

MARK	SIZE	MATERIAL
BM1	4 - 1 3/4" x 11 7/8"	2900Fb 2.0E LVL
BM3	2 - 1 3/4" x 11 7/8"	2900Fb 2.0E LVL
BM4	2 - 1 3/4" x 9 1/4"	2900Fb 2.0E LVL

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PROJECT
Q-KIDS DAYCARE CENTER

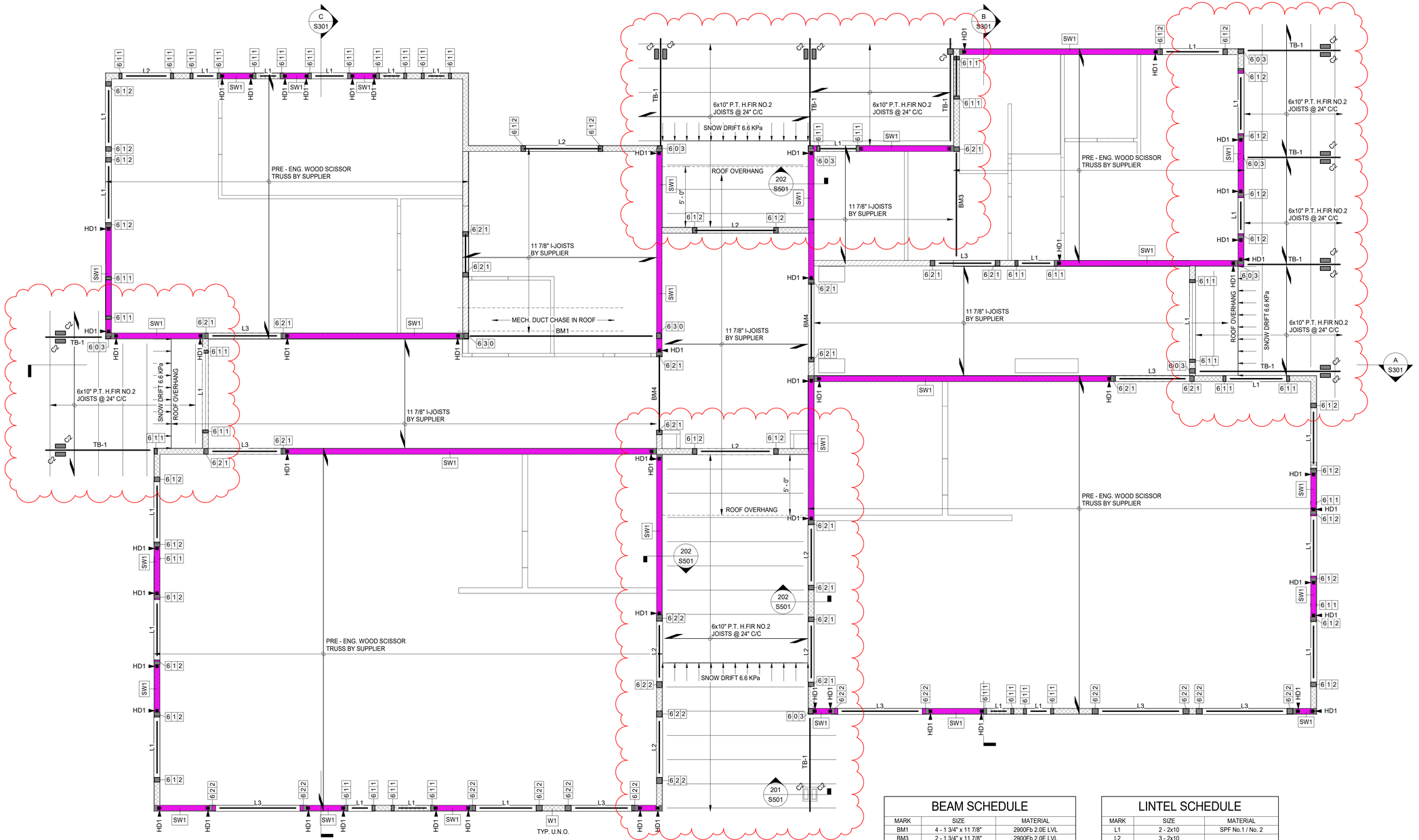
420 WEBSTER AVENUE, QUESNEL, BC

DRAWING TITLE
FOUNDATION PLAN

DESIGNER	TANNER BRAATEN, P.ENG
REVIEWER	FERGUS FOLEY, P.ENG
DRAWN BY	K.T.
DATE 22/07/11	SCALE As indicated

SHEET NO.
S101

PROJ. NO. **21173** REV. NO. **B**

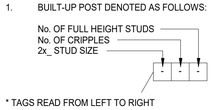


PLAN - WALL FRAMING / ROOF FRAMING

SCALE: 1/4" = 1'-0"

BUILT-UP POST NOTE:

1. BUILT-UP POST DENOTED AS FOLLOWS:



* TAGS READ FROM LEFT TO RIGHT

WALL SCHEDULE

TYPE	STUD SIZE	SPACING	BLOCKING
W1	2x6	16" C/C	48" C/C

SHEARWALL SCHEUDLE

TYPE	SHEATHING	NAILING		FASTENING		BLOCKING
		EDGE	PANEL	SILL	RIM	
SW1	1/2" PLYWOOD	2 1/2" NAILES @ 4" C/C	2 1/2" NAILS @ 12" C/C	5/8"Øx 8" A307 BOLTS @ 24" C/C	N/A	@ PANEL EDGES

BEAM SCHEDULE

MARK	SIZE	MATERIAL
BM1	4 - 1 3/4" x 11 7/8"	2900Fb 2.0E LVL
BM3	2 - 1 3/4" x 11 7/8"	2900Fb 2.0E LVL
BM4	2 - 1 3/4" x 9 1/4"	2900Fb 2.0E LVL

LINTEL SCHEDULE

MARK	SIZE	MATERIAL
L1	2 - 2x10	SPF No.1 / No. 2
L2	3 - 2x10	
L3	2 - 1 3/4" x 9 1/4"	2900Fb 2.0E LVL

TIMBER BEAM SCHEDULE

MARK	SIZE	MATERIAL
TB-1	6" x 12"	P.T. H.FIR No.2

HOLD DOWN SCHEDULE

TYPE	MODEL	ANCHOR ROD	# OF STUDS
HD1	HDU8 - SDS2.5	5/8" THREAD HEADED ROD C/W 8" EMBED	2

COLUMN SCHEDULE

TYPE	SIZE	MATERIAL
C1	HSS 4x4x1/4"	STEEL
C2	4" x 8"	P.T. H.FIR
C3		P.T. H.FIR

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PROJECT
Q-KIDS DAYCARE CENTER

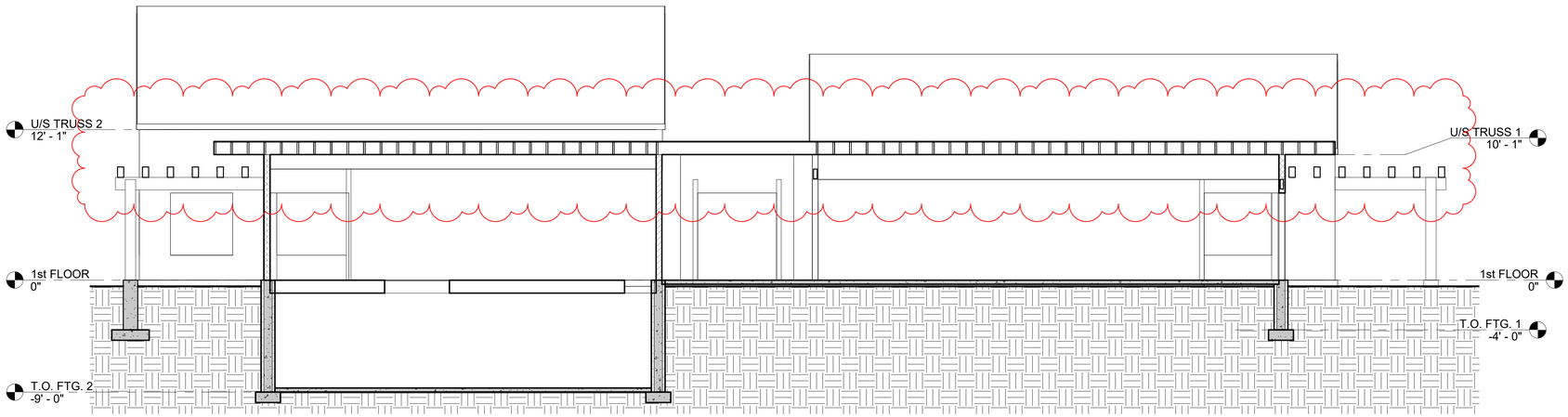
420 WEBSTER AVENUE, QUESNEL, BC

DRAWING TITLE
FRAMING PLANS

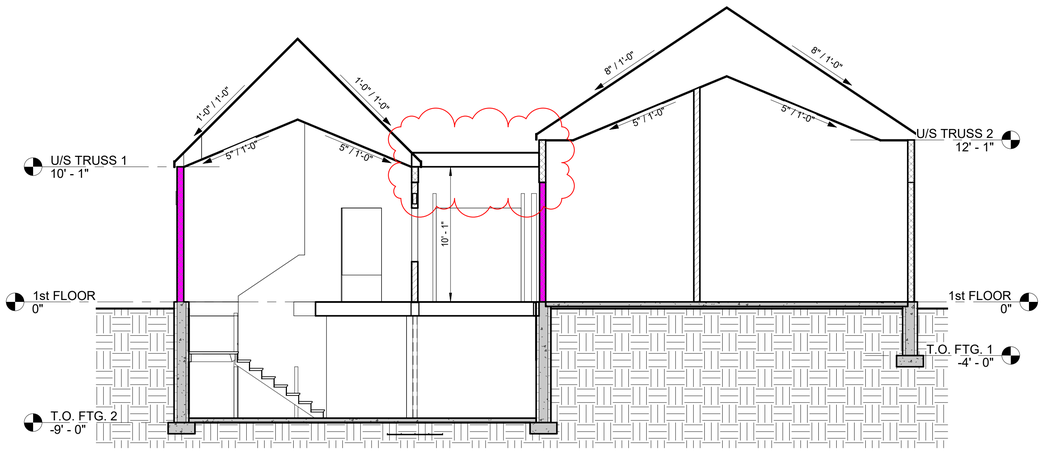
DESIGNER	TANNER BRAATEN, P.ENG
REVIEWER	FERGUS FOLEY, P.ENG
DRAWN BY	K.T.
DATE 22/07/11	SCALE As indicated

SHEET NO.
S110

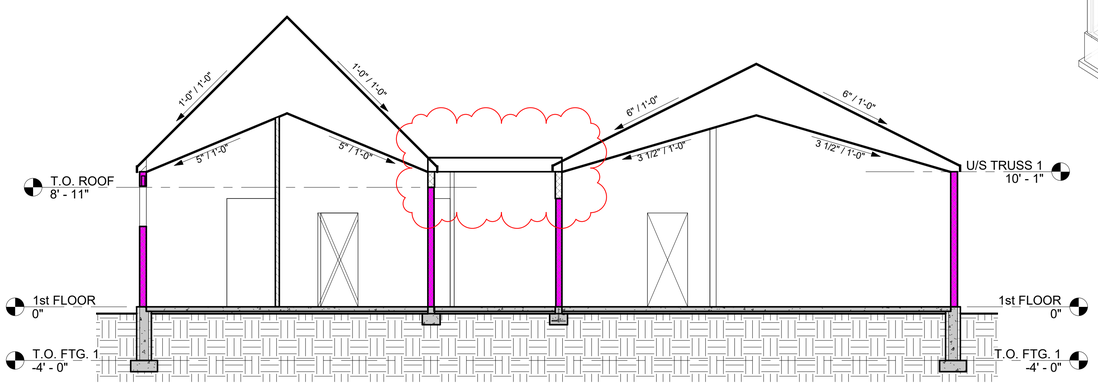
PROJ. NO. **21173**
REV. NO. **B**



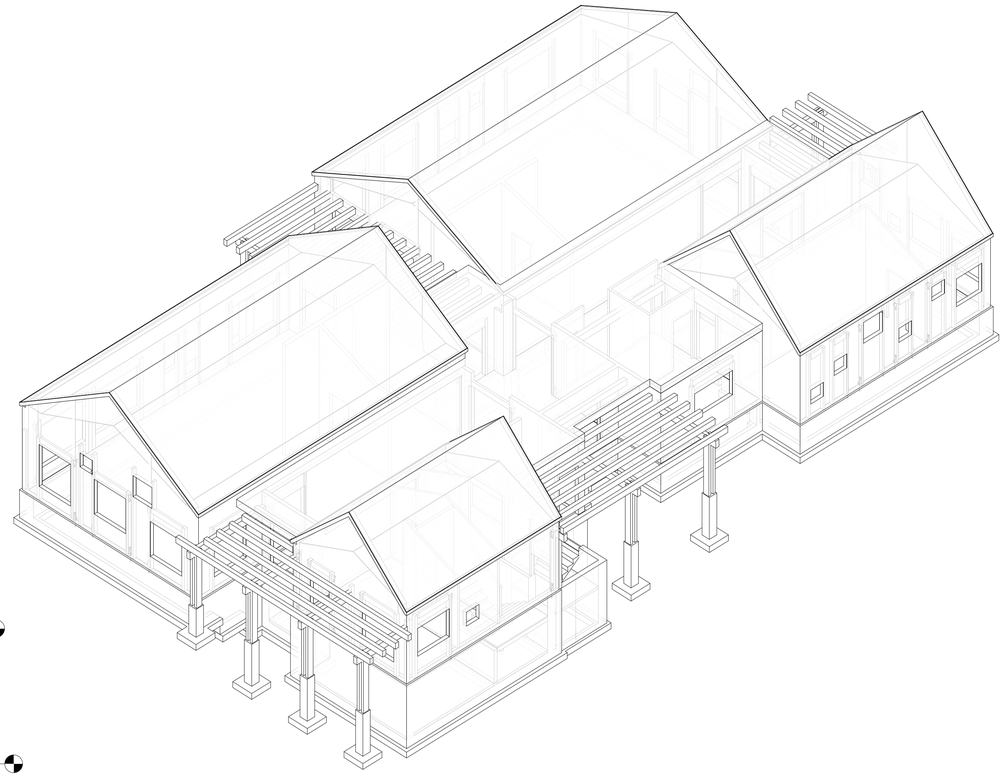
A S101 **BUILDING SECTION A**
SCALE: 3/16" = 1'-0"



B S101 **BUILDING SECTION B**
SCALE: 3/16" = 1'-0"



C S101 **BUILDING SECTION C**
SCALE: 3/16" = 1'-0"



3D STRUCTURAL MODEL
SCALE:

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REVISIONS

NO.	DATE	EXPLANATION
A	22/06/17	ISSUED FOR TENDER
B	22/0711	RE-ISSUED FOR TENDER

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PROJECT
Q-KIDS DAYCARE CENTER

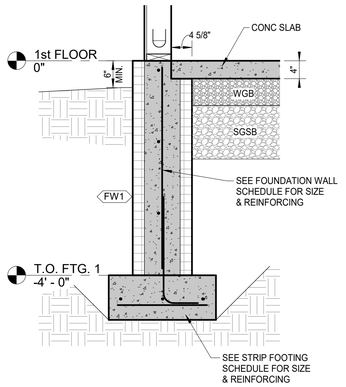
420 WEBSTER AVENUE, QUESNEL, BC

DRAWING TITLE
BUILDING SECTIONS

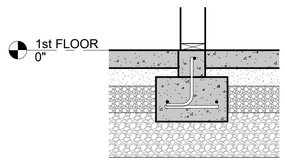
DESIGNER	TANNER BRAATEN, P.ENG
REVIEWER	FERGUS FOLEY, P.ENG
DRAWN BY	K.T.
DATE 22/07/11	SCALE 3/16" = 1'-0"

SHEET NO.
S301

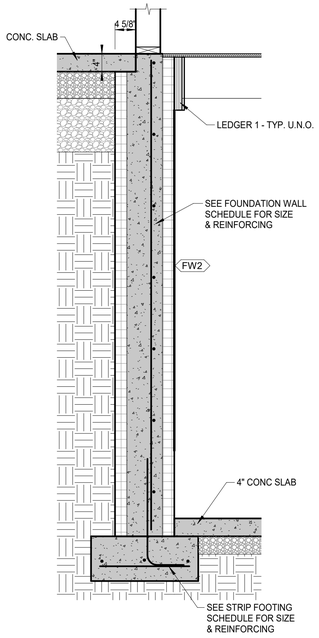
PROJ. NO. **21173**
REV. NO. **B**



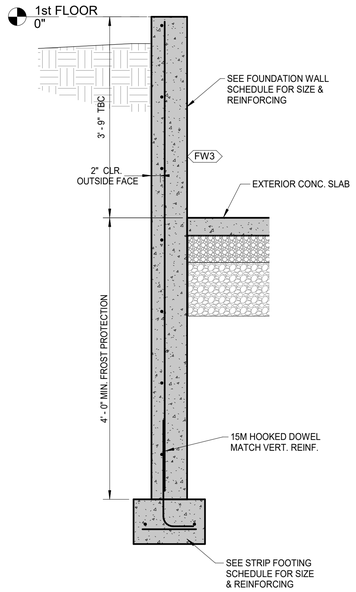
101 S101 **FOUNDATION WALL DETAIL - FW1**
SCALE: 3/4" = 1'-0"



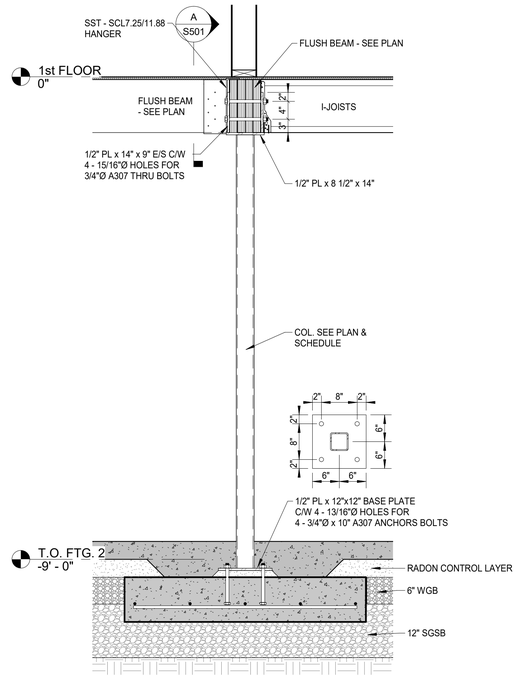
102 S101 **TYP. INTERIOR STRIP FTG**
SCALE: 3/4" = 1'-0"



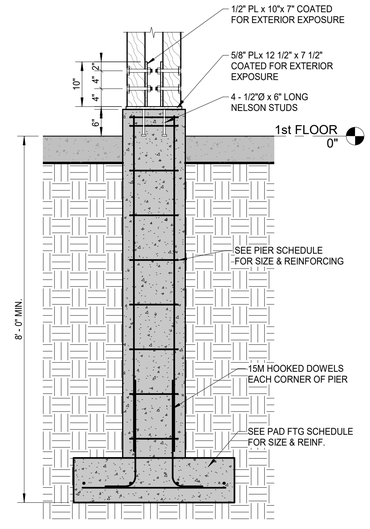
103 S101 **FOUNDATION WALL DETAIL - FW2**
SCALE: 3/4" = 1'-0"



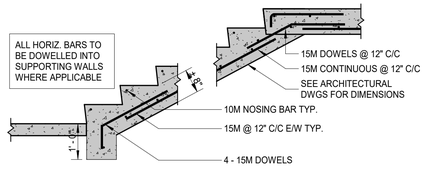
104 S101 **FOUNDATION WALL DETAIL - FW3**
SCALE: 3/4" = 1'-0"



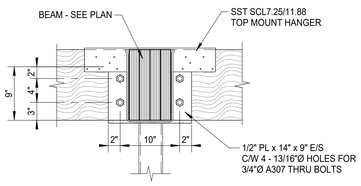
105 S101 **INTERIOR COL. & PAD DETAIL**
SCALE: 3/4" = 1'-0"



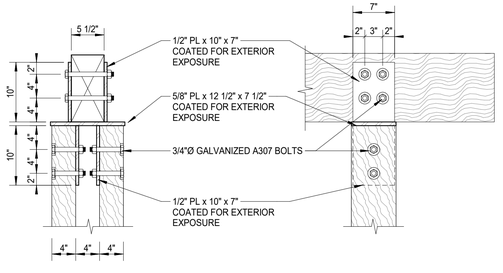
106 S101 **EXTERIOR PIER DETAIL**
SCALE: 3/4" = 1'-0"



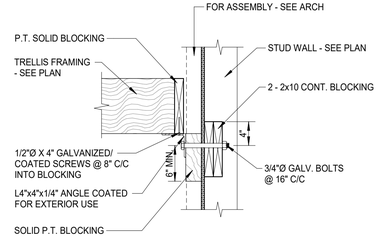
TYP. CONCRETE STAIR
SCALE: 1/2" = 1'-0"



A S501 **BEAM HANGER DETAIL**
SCALE: 1" = 1'-0"



201 S110 **TIMBER BEAM CONNECTION**
SCALE: 1" = 1'-0"



202 S110 **TRELLIS LEDGER DETAIL**
SCALE: 1" = 1'-0"

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RE-ISSUED FOR TENDER

PROFESSIONAL SEAL

REVISIONS

NO.	DATE	EXPLANATION
A	22/06/17	ISSUED FOR TENDER

CLIENT
ECLIPSE PROJECTS

PROJECT
Q-KIDS DAYCARE CENTER

420 WEBSTER AVENUE, QUESNEL, BC

DRAWING TITLE
DETAILS

DESIGNER	TANNER BRAATEN, P.ENG
REVIEWER	FERGUS FOLEY, P.ENG
DRAWN BY	K.T.
DATE 22/07/11	SCALE As indicated

SHEET NO.
S501

PROJ. NO. **21173**
REV. NO. **A**