



COWICHAN VALLEY REGIONAL DISTRICT

Request for Quotations

For

Arbutus Park - Construction of a New Washroom Facility and Demolition of the Existing Life Guard Building

Request for Quotation No.: **R17-19**

Issued: **September 21, 2017**

Submission Deadline: **October 12, 2017 @ 2 p.m. local time**

COWICHAN VALLEY REGIONAL DISTRICT
175 INGRAM STREET
DUNCAN BC V9L 1N8
www.cvrld.bc.ca

INTRODUCTION

Invitation

This Request for Quotations ("the RFQ") issued by The Cowichan Valley Regional District ("the CVRD") is an invitation to submit non-binding offers for the provision of the **Construction of a New Washroom Facility and the Demolition and Disposal of the Existing Life Guard Building located at Arbutus Park in Youbou, Electoral Area I**, as further described in Appendix A for the Rates established in Appendix B.

A non-mandatory site meeting will be held at Arbutus Park on September 28, 2017 @ 10 a.m. located at Alder Crescent, YOUNBOU, BC V0R 3E1.

Submission Instructions

Quotations must be sent by email to the RFQ Contact at the email address set out below:

Attention: Anthony Jeffery, Procurement Officer
Email: purchasing@cvrd.bc.ca

The complete quotation must be received in the inbox of the RFQ Contact's email address by the Submission Deadline. Quotations received after the Submission Deadline will not be considered.

It is the intention of the CVRD to enter into a contract with one (1) legal entity.

RFQ Timetable

Event	Date
Release of RFQ	September 21, 2017
Site Meeting	September 28, 2017 @ 10 a.m.
Deadline for Questions	October 5, 2017
Deadline for Issuing Addenda	October 10, 2017
Submission Deadline	October 12, 2017 @ 2 p.m. Local Time

The RFQ timetable is tentative only, and may be changed by the CVRD at any time prior to the Submission Deadline.

Evaluations of Quotations

The CVRD will conduct the evaluation of quotations in the following two stages:

Stage I – Mandatory Requirements

The mandatory requirements for this RFQ are each quotation **must include** a Submission Form (Appendix B) completed and signed by an authorized representative of the respondent. Subject to the Terms of Reference and Governing Law (Appendix C), those quotations that do not satisfy the mandatory requirements as of the Submission Deadline will be disqualified and will not be evaluated further.

Stage II – Rated Criteria

Stage II will consist of a scoring of quotations on the basis of the rated criteria as set out in Section C of the RFQ Particulars (Appendix A). In addition to submitting the Pricing Form, respondents should respond to any rated criteria categories set out in Section C of the RFQ Particulars (Appendix A).

Selection of Top-Ranked Respondent

Subject to the Terms of Reference and Governing Law (Appendix C), the top-ranked respondent as established under the evaluation will be selected to enter into a contract for the provision of the Deliverables. The respondent selected pursuant to this RFQ process will be informed in writing. Respondents not selected will also be informed in writing. The selected respondent will be expected to enter into a contract within the timeframe specified in the selection notice. Failure to do so may, among other things, result in the disqualification of the respondent and the selection of another respondent or the cancellation of the RFQ.

APPENDIX A – RFQ PARTICULARS

A. THE DELIVERABLES

The Construction of a Washroom Facility and Associated Works as per the attached Drawing Package, and the Demolition and Disposal of the Existing Life Guard Building

The provision of the Deliverables will be governed by the terms and conditions set out in Appendix C.

B. MATERIAL DISCLOSURES

- Proponents will be responsible to repair any damage to the park as a result of construction activities.
- It is anticipated the existing septic field can be used, and therefore, proponents should base their pricing on a gravity tie-in to existing.
- A hazmat survey has been completed for the existing life guard building and is attached for reference
- The successful proponent will be required to produce a certificate of insurance \$5,000,000 liability insurance, and adding the Cowichan Valley Regional District as additional insured.
- The successful proponent is responsible for applying for all permits and licenses to carry out all their work, except for the building and demolition permit which will be provided by the CVRD.
- The successful proponent will be required to provide a WorkSafeBC Clearance letter.
- The successful proponent will be designated as the Prime Contractor for this on this project.
- The successful proponent shall commence work on site no later than five (5) working days after the Owner's instruction to proceed.

C. RATED CRITERIA

Stage II will consist of an evaluation of the quotation to determine the high score based on the following criteria:

Rated Criteria Category	Weighting (Points)
Pricing	70
Schedule	10
Proponent's experience with similar projects	15
References	5
Total Points	100

Information for Evaluation

Pricing will be scored based on a relative pricing formula. Each respondent will receive a percentage of the total possible points allocated to price relative to the lowest bid price, based on the following formula:

$$\text{lowest price} \div \text{respondent's price} \times \text{total available points} = \text{respondent's score}$$

Provide a Construction Schedule showing milestones for project completion. Assume a construction start date of October 15, 2017

Provide a list of similar projects completed within the last 5 years and their value

Provide a minimum of three references with names and contact information

APPENDIX B – SUBMISSION FORM

Respondent Information

Please fill out the following form and name one person, to be the contact for this RFQ response and for any clarifications or amendments that might be necessary.	
Full Legal Name of Respondent:	
Any other relevant name under which the respondent carries on business is:	
Street Address:	
City, Province/State:	
Postal Code:	
Phone Number:	
Fax Number:	
Company Website (if any):	
RFQ Contact Person and Title:	
RFQ Contact Phone:	
RFQ Contact Facsimile:	
RFQ Contact E-mail:	

Acknowledgement of Terms of Reference and Governing Law

The respondent acknowledges that this RFQ process will be governed by the specific Terms of Reference and Governing Law set out in this RFQ and that, among other things, the Terms of Reference and Governing Law confirm that this procurement process does not constitute a formal legally binding bidding process and that there will be no legal relationship or obligations created until the CVRD accepts the respondent's offer in writing.

Ability to Provide Deliverables

The respondent has carefully examined this RFQ and has a clear and comprehensive knowledge of the Deliverables required. The respondent represents and warrants its ability to provide the Deliverables in accordance with the pricing set out below.

Addenda

The respondent is deemed to have read and accepted all addenda issued by the CVRD prior to the Deadline for Issuing Addenda. The onus is on respondents to make any necessary amendments to their quotations based on the addenda. The respondent is requested to confirm that it has received all addenda by listing the addenda numbers, or if no addenda were issued by writing the word "None", on the following line: _____ . Respondents who fail to complete this section will be deemed to have received all posted addenda.

Non-Binding Pricing

Non-binding rates shall be provided in Canadian funds, inclusive of all applicable duties and taxes except for applicable sales taxes, which should be itemized separately

To supply all labour and material to construct a Washroom Facility and Associated Works as per the attached Drawing Package. Total Price shall include all labour, equipment, permits, fees, and materials required to complete the proposed work and all applicable taxes.

Price inclusive of all applicable taxes excluding GST: \$ _____

GST: \$ _____

Total Price: \$ _____

To supply all labour and material to demolish and dispose of the existing life guard building. Total Price shall include all labour, equipment, permits, fees, and materials required to complete the proposed work and all applicable taxes.

Price inclusive of all applicable taxes excluding GST: \$ _____

GST: \$ _____

Total Price: \$ _____

Conflict of Interest

“Conflict of Interest” includes, but is not limited to, any situation or circumstance where:

- (a) in relation to the bidding process, the respondent has an unfair advantage or engages in conduct, directly or indirectly, that may give it an unfair advantage, including but not limited to (i) having or having access to information in the preparation of its quotation that is confidential and not available to other respondents; (ii) communicating with any person with a view to influencing preferred treatment in the RFQ process; or (iii) engaging in conduct that compromises or could be seen to compromise the integrity of the open and competitive RFQ process and render that process non-competitive and unfair; or
- (b) in relation to the performance of its contractual obligations contemplated in the contract that is the subject of this procurement, the respondent's other commitments, relationships or financial interests (i) could or could be seen to exercise an improper influence over the objective, unbiased and impartial exercise of its independent judgement; or (ii) could or could be seen to compromise, impair or be incompatible with the effective performance of its contractual obligations.

If the box below is left blank, the respondent will be deemed to declare that: (1) there was no Conflict of Interest in preparing its quotation; and (2) there is no foreseeable Conflict of Interest in performing the contractual obligations contemplated in the RFQ.

Otherwise, if the statement below applies, check the box.

- ☐ The respondent declares that there is an actual or potential Conflict of Interest relating to the preparation of its quotation, and/or the respondent foresees an actual or potential Conflict of Interest in performing the contractual obligations contemplated in the RFQ.

If the respondent declares an actual or potential Conflict of Interest by marking the box above, the respondent must state on a separate sheet details of the actual or potential Conflict of Interest.

Signature of Witness:

Signature of Respondent Representative:

Name of Witness:

Name and Title:

Date of Signature:

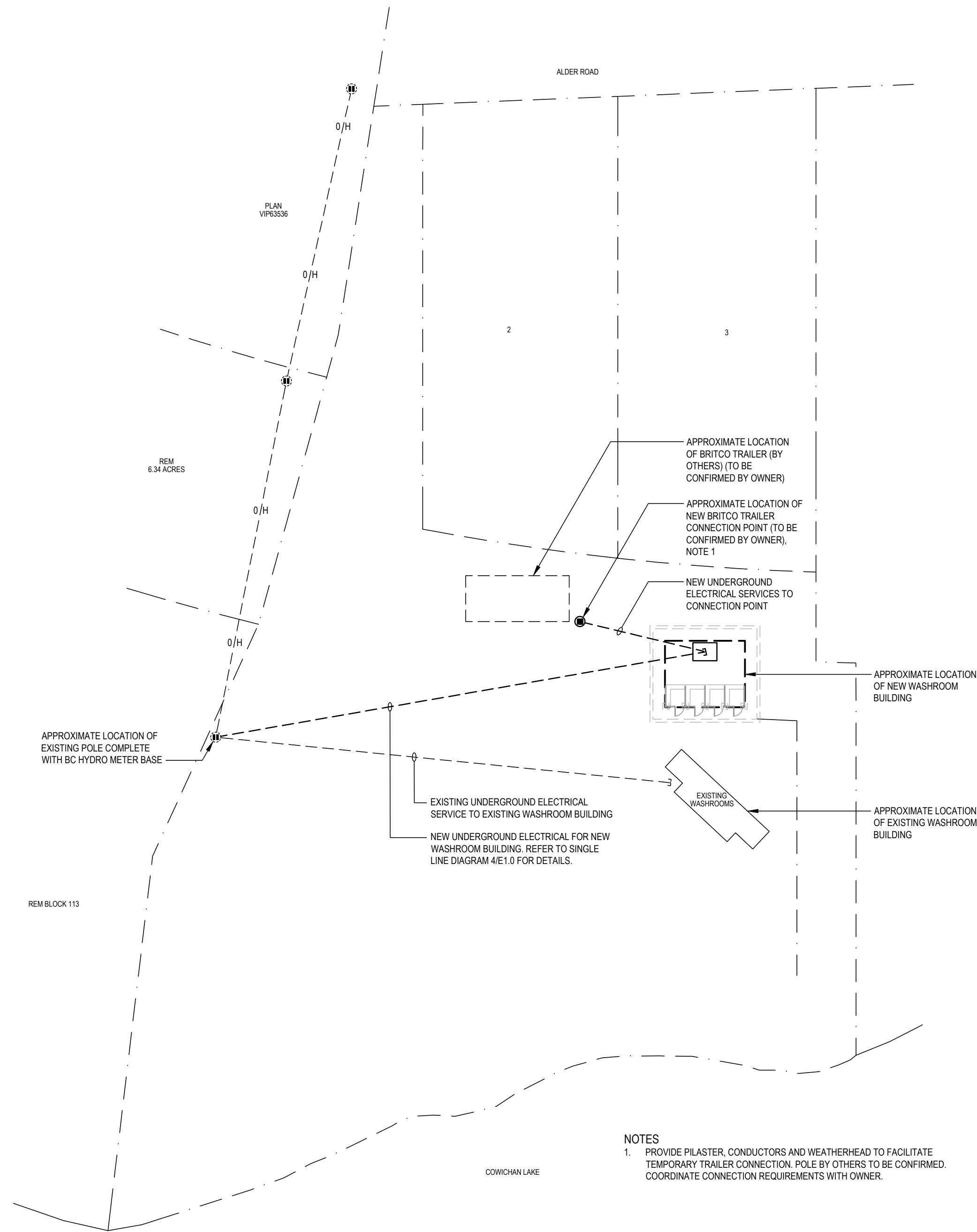
I have authority to bind the Respondent.

APPENDIX C - TERMS OF REFERENCE AND GOVERNING LAW

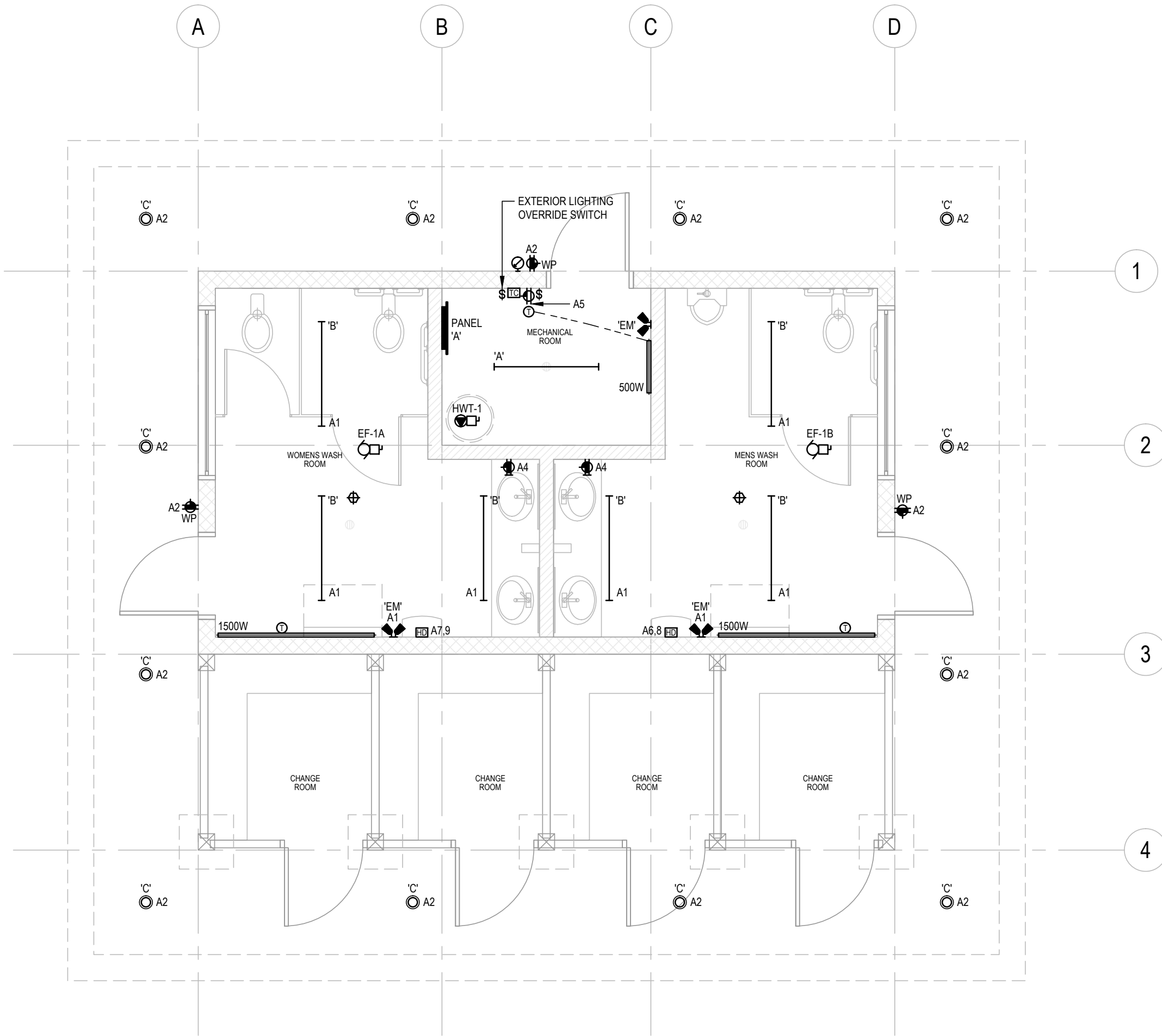
In responding to this RFQ, each respondent must submit a completed and signed Submission Form (Appendix B) that, among other things, acknowledges its acceptance of the following RFQ Terms of Reference and Governing Law:

- (a) This RFQ process is not intended to create a formal, legally binding bidding process and shall not give rise to the legal rights or duties applied to a formal Contract A binding bidding process or any other legal obligations arising out of any tendering process contract or collateral contract, and instead shall be governed by the common law applicable to direct commercial negotiations.
- (b) No legal obligation regarding the procurement of any good or service shall be created until the CVRD and the selected respondent have entered into a written contract for the Deliverables.
- (c) Neither party shall have the right to make any claims (in contract, tort, or otherwise) against the other with respect to the award of a contract, failure to award a contract or a decision of the respondent to withdraw its quotation.
- (d) The CVRD may cancel this RFQ process at any time.
- (e) Procurements falling within the scope of Chapter 5 of the Agreement on Internal Trade and/or the New West Partnership Trade Agreement are subject to those trade agreements but that the rights and obligations of the parties will be governed by the specific terms of this RFQ.
- (f) The respondent consents to the collection and use by the CVRD of the information as contemplated under this RFQ for the uses contemplated under this RFQ.
- (g) The respondent will bear its own costs associated with, or incurred in, the preparation and presentation of its quotation, including, if applicable, costs incurred for interviews or demonstrations.
- (h) Respondents may direct questions or seek additional information in writing by e-mail to the RFQ Contact on or before the Deadline for Questions. The CVRD is under no obligation to provide additional information but may do so at its sole discretion. It is the responsibility of the respondent to seek clarification from the RFQ Contact on any matter it considers to be unclear. The CVRD is not responsible for any misunderstanding on the part of the respondent concerning this RFQ or its process.
- (i) This RFQ may be amended only by addendum issued in accordance with this section. If the CVRD, for any reason, determines that it is necessary to provide additional information relating to this RFQ, such information will be communicated to all respondents by addendum. Each addendum forms an integral part of this RFQ and may contain important information, including significant changes to this RFQ. Respondents are responsible for obtaining all addenda issued by the CVRD. In the Submission Form (Appendix B), respondents should confirm their receipt of all addenda by setting out the number of each addendum in the space provided.
- (j) When evaluating quotations, the CVRD may request further information from the respondents or third parties in order to verify, clarify or supplement the information provided in the respondent's quotation, and the CVRD may revisit and re-evaluate the respondent's quotation or ranking on the basis of any such information.
- (k) The CVRD may consider the respondent's past performance on previous contracts or any other information considered relevant by the CVRD when determining the acceptability of a respondent.
- (l) The CVRD may disqualify a respondent for any conduct, situation or circumstance that constitutes a Conflict of Interest, as solely determined by the CVRD. "Conflict of Interest" shall have the meaning ascribed to it in the Submission Form (Appendix B).

- (m) Respondents shall not engage in any illegal business practices, including such activities as bid-rigging, price-fixing, bribery, fraud or collusion. Respondents shall not engage in any unethical conduct, including lobbying or other inappropriate communications; offering gifts to elected officials, employees, officers or other representatives of the CVRD; deceitfulness; submitting quotations containing misrepresentations or other misleading or inaccurate information; or any other conduct that compromises or may be seen to compromise the competitive process.
- (n) The CVRD may elect not to consider a respondent who engages in conduct prohibited by this RFQ or whose quotation contains misrepresentations or any other inaccurate, misleading or incomplete information.
- (o) The CVRD may prohibit a respondent from participating in a procurement process based on poor past performance or inappropriate conduct in a prior procurement process, including but not limited to (i) illegal and unethical conduct; (ii) the submission of quotations containing misrepresentations or any other inaccurate, misleading or incomplete information, (iii) the refusal of the respondent to honour submitted pricing or other commitments, or (iv) any conduct, situation or circumstance determined by the CVRD, in its sole and absolute discretion, to have constituted an undisclosed Conflict of Interest.
- (p) Respondents may request a debriefing after receipt of a notification of the outcome of the procurement process. All requests must be made in writing to the RFQ Contact and must be made within sixty (60) days of such notification. The intent of the debriefing information session is to aid the respondent in presenting a better submission in response to subsequent procurement opportunities. Any debriefing provided is not for the purpose of providing an opportunity to challenge the procurement process or its outcome.
- (q) The CVRD makes no guarantee of the value or volume of work to be assigned to the successful respondent. The contract with the selected respondent will not be an exclusive contract for the provision of the described Deliverables. The CVRD may contract with others for goods and services the same as or similar to the Deliverables or may obtain such goods and services internally.
- (r) These terms (i) are intended to be interpreted broadly and independently (with no particular provision intended to limit the scope of any other provision); (ii) are non-exhaustive and shall not be construed as intending to limit the pre-existing rights of the parties to engage in pre-contractual discussions in accordance with the common law governing direct commercial negotiations; and (iii) are to be governed by and construed in accordance with the laws of the province of British Columbia and the federal laws of Canada applicable therein.



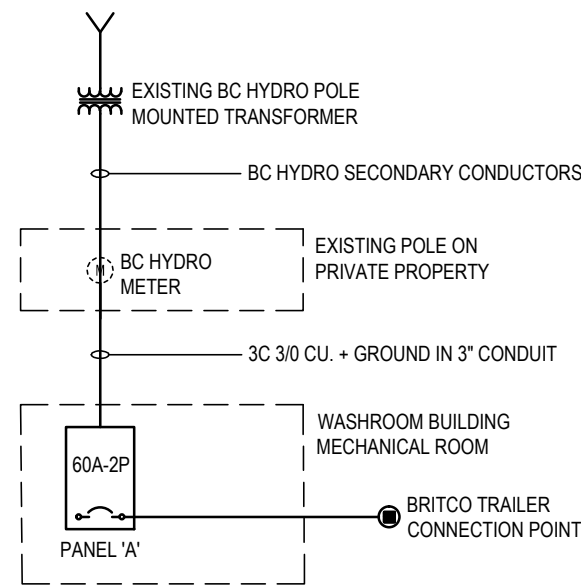
1 SITE PLAN ELECTRICAL LAYOUT
E1.0 1"=30'-0"



2 FLOOR PLAN ELECTRICAL LAYOUT
E1.0 1/4"=1'-0"

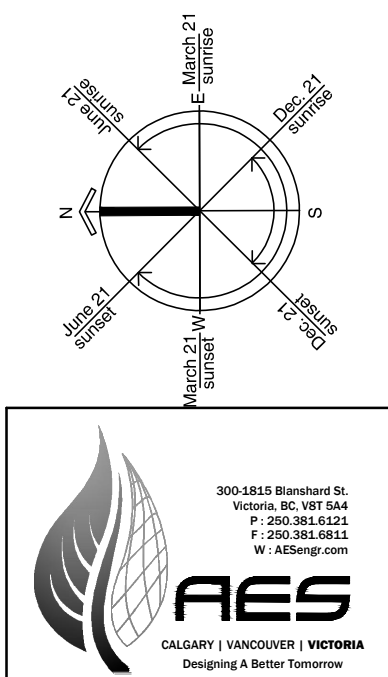
TYPE OF PIPE OR DUCT	DIRECT BURIED MINIMUM CLEARANCES		BC HYDRO CONCRETE ENCASED MINIMUM CLEARANCES	
	A	B	A	B
TELEPHONE, CABLEVISION OR STREET LIGHTS	12"	6"	3"	6"
GAS MAINS	12"	6"	12"	6"
WATER, OIL PIPELINES, OIL, JET FUEL LINES, STORM AND SANITARY SEWERS	36"	12"	12"	12"

3 TRENCH CLEARANCE
E1.0 NOT TO SCALE



4 SINGLE LINE DIAGRAM
E1.0 NOT TO SCALE

ELECTRICAL SYMBOL LEGEND	
ABBREVIATIONS	
WP	DENOTES WEATHER PROOF DEVICE
LIGHTING	
—	STRIP LIGHT
□	SURFACE MOUNTED LUMINAIRE
○	RECESSED DOWN LIGHT
⊕	SINGLE POLE TOGGLE SWITCH, GANGED AS SHOWN
⊕	LINE VOLTAGE OCCUPANCY/VACANCY SENSOR, VANDAL RESISTANT COMPLETE WITH INTEGRAL OVERRIDE SWITCH
⊕	LINE VOLTAGE CEILING MOUNTED OCCUPANCY/VACANCY SENSOR AND DUAL TECHNOLOGY, VANDAL RESISTANT
⊕	PHOTOCELL
⊕	TIME CLOCK FOR EXTERIOR LIGHTING CONTROLS
⊕	DUAL HEAD EMERGENCY LIGHTING COMPLETE WITH SELF-CONTAINED BATTERY PACK, WALL MOUNTED
POWER	
⊕	5-20R DUPLEX RECEPTACLE (T-SLOT) GROUND FAULT CIRCUIT INTERRUPTER (GFCI)
⊕	ABOVE COUNTER 5-20R DUPLEX RECEPTACLE (T-SLOT) GROUND FAULT CIRCUIT INTERRUPTER (GFCI)
⊕	MECHANICAL EQUIPMENT CONNECTION
□	DISCONNECT SWITCH
—	PANEL BOARD
⊕	AUTOMATIC HAND DRYER
⊕	BRITCO TRAILER CONNECTION POINT
⊕	THERMOSTAT
—	BASEBOARD HEATER, WATTAGE AS NOTED ON PLANS



#4 - 7855 East Saanich Rd.
Saanichton V8M 2B4
Phone: 250-656-2224
Fax: 250-656-2279
email: info@finlaysonbonet.ca

3	2017-04-27	REVIEW
2	2017-04-24	REVIEW
1	2017-03-03	REVIEW
Rev	Date	Description
Checked	RTD	
Drawn	PJ/NH	
Scale	SCALE	
Date	JANUARY 2017	

Project Name
ARBUTUS PARK WASHROOM BUILDING
ALDER CRESCENT,
YIOUBOU, BC V0R 3E1
Drawing Title
LEGEND, SITE PLAN, LAYOUT, AND SCHEDULES

Drawing No.
E1.0
Project No.
1-16-290
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1. GENERAL
1. GENERAL REQUIREMENTS, INSTRUCTIONS TO BIDDERS, THIS SPECIFICATION AND ANY ADDENDA HERETO FORM PART OF THE CONTRACT DOCUMENTS AND SHALL BE READ IN CONJUNCTION WITH THEM. WORK TO INCLUDE THE FURNISHING OF ALL LABOR AND MATERIALS, UNLESS SPECIFIED OTHERWISE, TO COMPLETE AND PUT INTO OPERATING CONDITION ALL ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
2. IT IS THE INTENT OF THE WORK TO PROVIDE COMPLETE, NEATLY FINISHED, AND OPERATIONAL SYSTEMS AND ANY LABOR, MATERIAL, PERMITS, LICENSES, APPROVALS AND INSPECTIONS REQUIRED FOR COMPLETION OF THE WORK, WHETHER SPECIFICALLY MENTIONED IN THE DRAWINGS OR SPECIFICATIONS OR NOT, ARE TO BE INCLUDED IN THE TENDERED PRICE.
3. RESPONSIBILITY AS TO WHICH TRADE PROVIDES REQUIRED ARTICLES OR MATERIALS RESTS SOLELY WITH THE GENERAL CONTRACTOR. TRADE EXTRAS WILL NOT BE CONSIDERED BASED ON GROUNDS OF DIFFERENCE OF INTERPRETATION OF SPECIFICATIONS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS.
4. THE DRAWINGS AND SPECIFICATIONS FOR THE COMPLETE WORKS, INCLUDING ALL OF THOSE RELATED TO OTHER TRADES ARE TO BE EXAMINED BEFORE SUBMITTING TENDERS. ALL ELECTRICAL AND COMMUNICATIONS REQUIREMENTS INDICATED ARE TO BE INCLUDED IN THE SCOPE OF THE WORK.
5. CLEAN UP AND REMOVE ALL UNUSED WIRING AND CONDUITS.
6. REMOVE AND REINSTALL EXISTING DEVICES TO FACILITATE CONSTRUCTION AS REQUIRED.
7. CONFIRM OUTLET LOCATIONS AND MOUNTING HEIGHT WITH PROJECT COORDINATOR ON SITE PRIOR TO INSTALLATION.
8. FIRE PROOF ALL FIRE RATED PENETRATIONS AFTER INSTALLATION TO COMPLY WITH CODES AND TO PROVIDE EQUAL FIRE SEPARATION RATINGS.
2. DRAWINGS AND SPECIFICATIONS
1. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER AND WHAT IS CALLED FOR BY ONE IS TO BE BINDING AS IF CALLED FOR BY BOTH.
2. SHOULD ANY DISCREPANCY APPEAR BETWEEN DRAWINGS AND SPECIFICATIONS THAT LEAVES THE ELECTRICAL TRADE IN DOUBT AS TO TRUE INTENT AND MEANING, OBTAIN RULING FROM THE ENGINEER BEFORE SUBMITTING TENDER, OR ALLOW FOR THE MOST EXPENSIVE ALTERNATIVE.
3. EXAMINATION OF OTHER DRAWINGS
1. THE ELECTRICAL CONTRACTOR IS TO EXAMINE CAREFULLY STRUCTURAL, ARCHITECTURAL AND MECHANICAL DRAWINGS, AND THE WORK OF OTHER TRADES AND SATISFY HIMSELF THAT THE WORK UNDER THIS CONTRACT CAN BE SATISFACTORILY CARRIED OUT WITHOUT CHANGES TO THE BUILDING AS SHOWN ON THE PLANS. SHOULD ANY DIFFICULTY ARISE SHOWING CONFLICT WITH, OR REQUIRING ADDITIONAL WORK BEYOND THE WORK OF THESE DRAWINGS, BRING THIS MATTER TO THE ATTENTION OF THE ENGINEER BEFORE SUBMITTING TENDER.
4. UNIFORMITY OF EQUIPMENT
1. UNLESS OTHERWISE SPECIFIED, UNIFORMITY OF MANUFACTURE IS TO BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT.
5. STANDARDS OF MATERIAL AND WORK
1. ALL MATERIALS ARE TO BE NEW AND OF THE QUALITY SPECIFIED, AND SHALL BE APPROVED BY CSA OR EQUIVALENT AGENCY RECOGNIZED IN BRITISH COLUMBIA.
2. ALL WORK SHALL BE EXECUTED IN A NEAT AND TIDY MANNER BY QUALIFIED TRADESPEOPLE. THE ELECTRICAL CONTRACTOR SHALL KEEP A COMPETENT FOREPERSON AND NECESSARY ASSISTANTS ON THE SITE DURING THE PROGRESS OF THE WORK.
3. ALL MATERIAL AND INSTALLATION SHALL MATCH BUILDING STANDARD UNLESS IT IS NOTED OTHERWISE ON THE DRAWINGS.
6. RECORD PLANS
1. THE ENGINEER WILL FURNISH TO THE ELECTRICAL TRADE ONE SET OF DRAWINGS TO BE USED FOR RECORD PURPOSES. THE ELECTRICAL TRADE IS TO ACCURATELY RECORD ON THESE PRINTS ALL REVISIONS TO THE ORIGINAL PLANS THAT ARE MADE ON SITE DURING CONSTRUCTION.
2. THE ELECTRICAL TRADE IS TO PRODUCE AT THEIR OWN EXPENSE A SET OF AUTOCAD 2004 (OR LATER) DRAWINGS, INCLUDING ALL CHANGES TO THE ORIGINAL TENDER DRAWINGS COVERED BY ADDENDA, CHANGE ORDERS, FIELD CHANGES, AND JOB CONDITIONS, AND TURN THESE OVER TO THE ENGINEER IN ELECTRONIC AND HARD COPY FORM. COMPLETED RECORD DRAWINGS ARE TO BE CLEARLY MARKED "RECORD DRAWINGS".
3. SHOULD THE CONTRACTOR REQUIRE THE ELECTRICAL CONSULTANT TO PREPARE THE AS-BUILT MYLARS OR CAD (REVIT) DISK, THE COST WOULD BE \$275 PER PLAN, UNLESS EXCESSIVE CHANGES HAVE BEEN REQUIRED COSTS ASSOCIATED WITH SUCH EXCESSIVE CHANGES SHOULD BE INCLUDED WITH THE CHANGE ORDERS.
7. SHOP DRAWINGS
1. THE ELECTRICAL CONTRACTOR IS TO SUBMIT TO THE ENGINEER, FOR REVIEW, SHOP DRAWINGS OF MAJOR ELECTRICAL EQUIPMENT. SUCH EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO SWITCHGEAR, PANELBOARDS, SERIES-RATED BREAKER COMBINATIONS, FIXTURES AND FITTINGS NOT PROVIDED BY THE OWNER.
2. ALL DRAWINGS ARE TO BE SUBMITTED IN TRIPLICATE AND TWO COPIES WILL BE RETURNED TO THE ELECTRICAL TRADE. SUBMIT ADDITIONAL COPIES FOR APPROVAL AS MAY BE REQUIRED.
3. THE ENGINEER'S REVIEW OF SHOP DRAWINGS IS TO BE FOR GENERAL DESIGN ONLY AND WILL NOT RELIEVE THE ELECTRICAL TRADE OR SUPPLIERS FROM RESPONSIBILITY FOR ERRORS, PROPER FITTING, CONSTRUCTION OF WORK, AND FURNISHING OF MATERIALS. REVIEW WILL NOT BE CONSTRUED AS APPROVING DEPARTURES FROM CONTRACT DOCUMENT REQUIREMENTS IF SUCH DEPARTURES ARE NOT SPECIFICALLY NOTED. THE ELECTRICAL TRADE IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.
8. GUARANTEE WARRANTY
1. THE ELECTRICAL TRADE SHALL FURNISH A WRITTEN GUARANTEE WARRANTY, SIGNED BY AUTHORIZED PERSONNEL, STATING:

1. THAT ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORK FOR A PERIOD OF 1 YEAR FROM DATE OF FINAL ACCEPTANCE.

2. THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK, AND OTHER WORK DAMAGED THEREBY, WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE GUARANTEE WARRANTY PROVIDED THAT SUCH DEFECTS ARE NOT DUE TO IMPROPER USAGE.

3. THE PERIOD OF THE GUARANTEE SPECIFIED WILL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD BUT BE BINDING ON WORK NOT OTHERWISE COVERED.
9. SETTING OUT OF THE WORK
1. THE ELECTRICAL TRADE IS RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS INVOLVED IN MAKING THE CORRECTIONS, WHERE INTENT OF DRAWINGS AND SPECIFICATIONS IS NOT CLEAR, OBTAIN CLARIFICATION FROM THE ENGINEER BEFORE PROCEEDING WITH WORK.
2. THE ELECTRICAL TRADE IS TO GIVE WORK THEIR PERSONAL SUPERVISION, LAY OUT THEIR OWN WORK, DO ALL NECESSARY LEVELING AND MEASURING OR EMPLOY A COMPETENT ENGINEER TO DO SO. FIGURES, FULL SIZE AND DETAIL DRAWINGS TO TAKE PRECEDENCE OVER SCALE MEASUREMENTS.
3. THE ELECTRICAL TRADE SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER OR ANY OTHER TRADE BY IMPROPER LOCATION OR CARRYING OUT OF THEIR WORK.
4. THE ELECTRICAL TRADE, IN THE SETTING OUT OF THEIR WORK, IS TO MAKE REFERENCE TO THE ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS. THEY SHALL CONSULT WITH ALL RELEVANT TRADES IN SETTING OUT LOCATIONS FOR CONDUIT RUNS, LIGHTING FIXTURES, PANEL ASSEMBLIES, AND ALL OTHER ELECTRICAL EQUIPMENT, SO THAT CONFLICTS ARE AVOIDED AND SYMMETRICAL SPACING IS MAINTAINED.
5. THE ELECTRICAL TRADE SHALL CONFIRM OUTLET LOCATIONS AND MOUNTING HEIGHTS WITH THE PROJECT COORDINATOR ON SITE PRIOR TO INSTALLATION.
6. WHERE RECEPTACLES ARE MOUNTED ABOVE COUNTERS, BENCHES, SPLASHBACKS, OR OTHER FIXTURES, THEIR LOCATIONS AND MOUNTING HEIGHTS ARE TO BE COORDINATED WITH THE BUILT-IN UNITS. REFER TO ARCHITECTURAL DETAILS WHERE RECEPTACLES OCCUR IN OUTSIDE WALLS WHERE HEATING UNITS ALSO OCCUR, RECEPTACLE HEIGHT TO BE ADJUSTED TO COORDINATE WITH THE HEATING UNITS.
7. SWITCH MOUNTING HEIGHTS ARE TO BE COORDINATED WITH ARCHITECTURAL DETAILS AND SHALL BE ADJUSTED, IF REQUIRED, TO COORDINATE WITH PANELING, DADOS, MASONRY COURSE LINES, OR OTHER RELEVANT BUILDING FEATURES.
8. WHERE OUTLET BOXES OCCUR IN EXTERIOR WALLS, THE ELECTRICAL TRADE IS TO ENSURE THAT THERE IS INSULATION BEHIND THE OUTLET BOXES TO PREVENT CONDENSATION THROUGH THE BOXES.
9. ALLOW FOR WORK AFTER HOURS AS REQUIRED AND COORDINATE WITH OWNMENTENANTS IF APPLICABLE.
10. CONTRACTOR TO COORDINATE ANY INTERRUPTIONS TO ADJOINING TENANTS IN ORDER TO AVOID ANY INCONVENIENCES TO SAID TENANT. IF NECESSARY CONTRACTOR TO DO ANY REQUIRED CONNECTIONS ON OFF HOURS.
10. EXAMINATION OF THE SITE
1. PRIOR TO SUBMITTING TENDER, THE ELECTRICAL TRADE SHALL CAREFULLY EXAMINE THE SITE AND ASCERTAIN ALL CONDITIONS WHICH MAY AFFECT THEIR TRADE. NO ADDITIONAL MONEY WILL BE ALLOWED FOR WORK RESULTING FROM CONDITIONS THAT SHOULD HAVE BEEN NOTICED AND ACCOUNTED FOR DURING A THOROUGH EXAMINATION OF THE SITE.
11. CUTTING AND PATCHING
1. THE GENERAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION. STRUCTURAL MEMBERS MUST NOT BE CUT WITHOUT CONSENT OF THE ENGINEER.
2. WHERE WORK DONE BY THE ELECTRICAL TRADE DAMAGES THE WORK OF OTHER TRADES, THE ELECTRICAL TRADE SHALL REPAIR AND MAKE GOOD SUCH DAMAGE TO THE SATISFACTION OF EACH TRADE CONCERNED AND THE ENGINEER.
3. ALL PENETRATIONS SHALL BE SEALED WITH APPROVED FIRE STOP MATERIAL.
12. CLEANUP
1. THE ELECTRICAL TRADE AND THEIR SUBTRADES ARE TO KEEP THE SITE FREE DURING CONSTRUCTION OF DEBRIS, BOXES, PACKING, AND OTHER MATERIALS ASSOCIATED WITH THE WORK OF THIS TRADE. ALL WASTE MATERIAL IS TO BE DISPOSED OF IN A SAFE AND ENVIRONMENTALLY RESPONSIBLE MANNER.
2. UPON COMPLETION OF WORK, THE ELECTRICAL INSTALLATION SHALL BE LEFT IN A CLEAN AND FINISHED CONDITION TO THE SATISFACTION OF THE ENGINEER.
13. ACCESS DOORS
1. THE ELECTRICAL TRADE IS TO SUPPLY AND INSTALL ACCESS DOORS AS REQUIRED FOR PROPER SERVICING OF ALL ELECTRICAL WORK. ACCESS DOORS SHALL BE COMPLETE WITH NECESSARY FRAMES AND HINGED DOORS HELD CLOSED WITH CAPTIVE STUDS. ACCESS PANEL TO BE OF NOT LESS THAN 14 GAUGE STEEL, PRIME COAT FINISHED AND PAINTED ON THE JOB TO MATCH THE WALL OR CEILING FINISH.
2. THE NUMBER OF ACCESS DOORS SHALL BE KEPT TO A MINIMUM.
3. THE ELECTRICAL TRADE SHALL PROVIDE ACCESS PANELS IN THE DRYWALL CEILINGS FOR ALL ELECTRICAL JUNCTION BOXES AND EQUIPMENT IN ACCORDANCE WITH APPLICABLE CODES.
14. CODES, PERMITS AND INSPECTION
1. THE ENTIRE INSTALLATION, INCLUSIVE OF MATERIAL AND LABOR, IS TO COMPLY WITH ALL THE REQUIREMENTS OF ALL BUILDING CODES AND AUTHORITIES HAVING JURISDICTION, THE CANADIAN ELECTRICAL CODE, AND REGULATIONS OF THE LOCAL INSPECTION DEPARTMENT.
2. THE ELECTRICAL TRADE IS TO OBTAIN ALL PERMITS REQUIRED FOR EACH STAGE OF WORK, AND AFTER COMPLETION OF THE ENTIRE INSTALLATION FURNISH TO THE ENGINEER A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTION DEPARTMENT.
15. MECHANICAL EQUIPMENT AND EQUIPMENT SUPPLIED BY OTHERS
1. UNLESS SPECIFIED OTHERWISE, THE ELECTRICAL CONTRACTOR IS TO SUPPLY AND INSTALL ALL REQUIRED CONDUIT, WIRING, ELECTRICAL FITTINGS AND CONNECTIONS FOR ALL MOTORS AND OTHER MECHANICAL EQUIPMENT. EVEN THOUGH SUCH MOTORS AND OTHER MECHANICAL EQUIPMENT MAY BE SUPPLIED BY OTHERS, WHERE REQUIRED BY THE DRAWINGS OR APPLICABLE REGULATIONS, DISCONNECT SWITCHES, STARTERS, OVERLOAD RELAYS AND OTHER NECESSARY PROTECTIVE DEVICES ARE TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. MOTORS AND CONTROLS SHALL BE FURNISHED BY THE SUPPLIER OF THE DRIVEN EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL INCLUDE ALL WORK AND CONNECTIONS REQUIRED TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL.
2. EQUIPMENT SUPPLIED BY OTHERS MAY INCLUDE BUT NOT BE LIMITED TO SUCH ITEMS AS GRILLE MOTORS AND INTERLOCKS, STOREFRONT AND INTERIOR SIGNAGE, STARTING DEVICES, MOTOR CONTROLLERS, FLOAT SWITCHES, ALARM DEVICES OR SYSTEMS, PUSH BUTTONS, EXHAUST FANS, DATA SYSTEMS, INTERCOMS AND STEREO SYSTEMS.
3. THE ELECTRICAL CONTRACTOR IS TO CONFIRM MOTOR (OR OTHER EQUIPMENT) LOCATION AND SIZES WITH THE TRADE SUPPLYING THE MOTOR (OR OTHER EQUIPMENT) BEFORE COMMENCING ANY ASSOCIATED ELECTRICAL WORK.

16. TESTS
1. ALL PORTIONS OF ELECTRICAL WORK ARE TO BE TESTED FOR SATISFACTORY OPERATION.
2. BEFORE ENERGIZING ANY PORTION OF THE ELECTRICAL SYSTEM, THE ELECTRICAL TRADE SHALL PERFORM MEGGER TESTS ON ALL FEEDERS AND BRANCH CIRCUITS. ANY PROBLEMS DISCOVERED BY SUCH TESTING ARE TO BE CORRECTED BY THE ELECTRICAL TRADE AND THE CIRCUITS IN QUESTION RETESTED. THE RESULTS OF ALL FINAL TESTING SHALL BE PROVIDED TO THE ENGINEER IN REPORT FORM.
3. UPON PROJECT COMPLETION, AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, THE ELECTRICAL TRADE SHALL CHECK THE LOAD BALANCE ON ALL FEEDERS AND AT DISTRIBUTION CENTRES, LOAD CENTRES, AND PANELS. THESE CHECKS ARE TO BE CARRIED OUT ON ALL LOADS AND CHECKING LOAD CURRENT BALANCE. IF LOAD UNBALANCE EXCEEDS 15%, THE CIRCUITS ARE TO BE RECONFIGURED AS NECESSARY TO BALANCE THE LOADS.
17. PAINTING AND FINISHES
1. ALL ELECTRICAL FITTINGS, SUPPORTS, HANGER RODS, PULLBOXES, CHANNEL FRAMES, CONDUIT RACKS, OUTLET BOXES, BRACKETS, AND CLAMPS ARE TO HAVE A GALVANIZED FINISH OR A PAINT FINISH OVER CORROSION-RESISTANT PRIMER.
2. ALL PANELS ARE TO BE FACTORY-FINISHED WITH SPRAY-ON AIR DRY ENAMEL. ALL ENAMEL TO BE APPLIED OVER CORROSION-RESISTANT PRIMER, MATTE OR FLAT TYPE. FINISH PAINT WILL NOT BE ACCEPTED. ALL PANELS OR SIMILAR FACTORY-FINISHED UNITS THAT ARE SCRATCHED OR MARKED DURING INSTALLATION ARE TO BE TOUCHED UP WITH MATCHING SPRAY-ON AIR DRY LACQUER AND, IF REQUIRED, TO PROVIDE A SATISFACTORY JOB TO BE COMPLETELY REFINISHED.
3. ALL 120/208V PANELBOARDS, PULLBOXES, AND OTHER ELECTRICAL CABINETS AND BOXES ARE TO BE FINISHED IN GREY ENAMEL.
18. CONDUIT AND EMT
1. WHERE REQUIRED BY THE CANADIAN ELECTRICAL CODE, ALL WIRE AND CABLE IS TO BE INSTALLED IN CONDUIT OR EMT, WHERE APPROVED. AC90 OR TECK90 MAY BE USED.
2. UNLESS OTHERWISE NOTED, CONDUIT AND EMT ARE TO BE CONCEALED IN ALL FINISHED AREAS. IN SERVICE AREAS, CONDUIT AND EMT SHALL BE RUN ON SURFACE UNLESS INDICATED OTHERWISE.
3. SURFACE MOUNTED CONDUIT AND EMT ARE TO BE INSTALLED PARALLEL TO STRUCTURAL LINES, AND, WHERE BENDS OCCUR IN PARALLEL RUNS, THEY SHALL BE CONCENTRIC.
4. RACEWAYS ARE TO BE INSTALLED FREE FROM DENTS AND BRUISES AND SHALL HAVE THEIR ENDS CAPPED, PLUGGED, OR SEALED AS NECESSARY TO PREVENT ENTRANCE OF DIRT OR MOISTURE.
5. IN ALL AREAS SUBJECT TO MOISTURE, WATERTIGHT FITTINGS MUST BE USED.
6. ALL RACEWAY, EXCEPT WHERE OTHERWISE INDICATED, SHALL BE SIZED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.
7. TECK90 OR SEAL TIGHT FLEXIBLE CONDUIT IS BE UTILIZED FOR CONNECTIONS TO MOTORS AND MOTOR CONTROLLERS.
8. ALL UNDERGROUND CONDUIT SYSTEMS ARE TO BE OF APPROVED RPVC SCHEDULE 40 CONDUIT, COMPLETE WITH INSTALLED BONDING CONDUCTOR, AND INSTALLED AT OR BELOW THE DEPTH REQUIRED BY CODE. PROVIDE 150mm CLEAN SAND BEDDING ABOVE AND 75mm BELOW CONDUITS AND CONTINUOUS MARKING TAPE 300mm BELOW GRADE. PROVIDE SUITABLE BACKFILL AND COMPACTION.
19. EXPANSION JOINTS
1. WHERE CONDUITS ARE INSTALLED IN CONCRETE SLABS OR CROSS STRUCTURAL EXPANSION JOINTS, AN APPROVED EXPANSION FITTING SHALL BE INSTALLED.
20. WIRE AND CABLE
1. ALL BUILDING WIRING IS TO BE COPPER, EXCEPT WHERE NOTED OTHERWISE.
2. A MINIMUM CONDUCTOR SIZE OF #12 AWG COPPER IS TO BE USED, EXCEPT WHERE NOTED OTHERWISE.
3. ALL CONDUCTORS ARE TO BE COLOR CODED THROUGHOUT THE INSTALLATION AS FOLLOWS:

- EQUIPMENT GROUNDING CONDUCTOR - GREEN

- NEUTRAL CONDUCTOR - WHITE

- 120/208V PHASE WIRES - RED, BLACK, AND BLUE
21. WIRING DEVICES & BOXES
1. ALIGN ALL DEVICES AND PLATES PLUMB AND LEVEL WITH BUILDING STRUCTURAL LINES.
2. ALL OUTLET BOXES ARE TO BE FLUSH MOUNTED EXCEPT WHERE SPECIFIED OTHERWISE.
22. LOCATION OF OUTLETS
1. THE ENGINEER RESERVES THE RIGHT TO CHANGE THE LOCATION OF OUTLETS TO WITHIN 3 METRES OF POINTS INDICATED ON PLANS WITHOUT EXTRA CHARGE, PROVIDED THE ELECTRICAL CONTRACTOR IS ADVISED BEFORE INSTALLATION IS MADE.
2. ELECTRICAL TRADE TO REFER TO ARCHITECTURAL ROOM ELEVATIONS FOR POSITIONS, AND MOUNTING HEIGHTS OF ALL OUTLETS, SWITCHES, INTERCOMMUNICATION, TELEPHONES, SPEAKERS, CLOCKS, ETC. POSITIONS SHOWN ON ARCHITECTURAL PLANS TO TAKE PRECEDENCE OVER POSITIONS OR MOUNTING HEIGHTS SHOWN ON ELECTRICAL PLANS.
23. PULL BOXES
1. THE ELECTRICAL TRADE SHALL SUPPLY AND INSTALL PULLBOXES AS REQUIRED TO SUIT JOB CONDITIONS. PULLBOXES SHALL CONFORM TO CANADIAN ELECTRICAL CODE REQUIREMENTS. PULLBOXES TO BE BE FINISHED IN ENAMEL OVER CORROSION-RESISTANT PRIMER WITH SCREW-ON OR HINGED COVER. IN REMOVABLE CEILING AREAS, PULLBOXES ARE TO BE INSTALLED ABOVE THE CEILING.
24. SWITCHES AND RECEPTACLES
1. ALL SWITCHES AND RECEPTACLES SHALL BE SPECIFICATION GRADE IN WHITE UNLESS OTHERWISE NOTED. FACEPLATES SHALL BE HIGH IMPACT NYLON EXCEPT WHERE SHOWN AS WEATHERPROOF.
2. DUPLEX RECEPTACLES, CSA TYPE 1-15R, 120V, SPECIFICATION GRADE U GROUND, WITH FOLLOWING FEATURES:

1. WHITE UREA MOULDED HOUSING (EXCEPT AS NOTED).

2. SUITABLE FOR NO. 10 AWG FOR BACK AND SIDE WIRING.

3. BREAK-OFF LINKS FOR USE AS SPLIT RECEPTACLES.

4. EIGHT BACK WIRED ENTRANCES, FOUR SIDE WIRING SCREWS OR PIGTAIL CONNECTIONS.

5. DOUBLE WIRE CONTACTS AND RIVETED GROUNDING CONTACTS.

6. ACCEPTABLE MANUFACTURERS: BRYANT, LEVITON, PASS & SEYMOUR
3. SWITCHES SHALL BE 15A, 120V, SINGLE POLE, DOUBLE POLE, OR THREE-WAY SWITCHES AS INDICATED AND AS FOLLOWS:

1. MANUALLY OPERATED GENERAL PURPOSE COMMERCIAL SPECIFICATION GRADE AC SWITCHES AND WITH FOLLOWING FEATURES:

2. TERMINAL HOLES APPROVED FOR NO. 10 AWG 5MM2 WIRE.

3. SILVER ALLOY CONTACTS.

4. UREA OR MELAMINE MOULDING FOR PARTS SUBJECT TO CARBON TRACKING.

5. SUITABLE FOR BACK AND SIDE WIRING.

6. WHITE TOGGLE.

7. TOGGLE OPERATED FULLY RATED FOR TUNGSTEN FILAMENT AND FLUORESCENT LAMPS, AND UP TO 80% OF RATED CAPACITY OF MOTOR LOADS.

8. PROVIDE CLEAR WEATHERPROOF COVERS FOR ALL SWITCHES INSIDE THE VEHICLE GARAGE.

9. ACCEPTABLE MANUFACTURERS: BRYANT, LEVITON, PASS & SEYMOUR

4. DUPLEX GFCI RECEPTACLES SHALL BE WEATHER RESISTANT 15A, 125V, COMPLETE WITH LED INDICATOR LIGHT.

5. PROVIDE P-TOUCH LABELS FOR ALL RECEPTACLE LABELS.

6. FOR ALL RECEPTACLES OTHER THAN STANDARD 15A DUPLEX RECEPTACLES, PROVIDE LAMACOID NAMETAGS GIVING AMP RATING, PHASE AND VOLTAGE.

25. SUPPORTS

1. ALL CONDUIT, RACEWAYS, AND OTHER ELECTRICAL EQUIPMENT SHALL BE SECURELY AND ADEQUATELY SUPPORTED, IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.

2. WHERE INSERTS ARE REQUIRED IN CONCRETE, EXPANSION INSERTS, LEAD INSERTS OR PLASTIC INSERTS ARE TO BE USED IN DRILLED HOLES. SHOT DRIVEN PINS MAY BE USED IN STRUCTURAL CONCRETE ONLY WITH THE PERMISSION OF THE ENGINEER.

26. GROUNDING AND BONDING

1. A COMPLETE GROUNDING AND BONDING SYSTEM SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE AND THE ELECTRICAL INSPECTION DEPARTMENT.

2. ALL METAL PARTS NOT CARRYING CURRENT, INCLUDING BUT NOT LIMITED TO, SECONDARY FEEDER CIRCUITS, EQUIPMENT AND PANELBOARD ENCLOSURES, METAL RACEWAYS, PULL AND JUNCTION BOXES, SHALL BE PROPERLY GROUNDED. METAL RACEWAYS SHALL UTILIZE DOUBLE LOOKNOTS AND OTHER FITTINGS WHERE NECESSARY TO PROVIDE GROUND CONTINUITY.

3. A SEPARATE GROUND CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAY FEEDER RUNS, FLEXIBLE CONDUIT, AND IN CONDUIT INSTALLED IN SLAB OR UNDERGROUND.

4. BOND ALL COMMUNICATIONS AND SECURITY SYSTEM EQUIPMENT TO GROUND INCLUDING RACKS, PATCH PANELS, CONTROL PANELS, AND OTHER ASSOCIATED COMPONENTS.

27. PANELS

1. PROVIDE COMPLETE PANELBOARDS, UNLESS OTHERWISE INDICATED. PANELBOARDS ARE TO BE 120/208V, 3PH, 4W OR 120/240V, 1Ø, 3W. SOLID NEUTRAL DESIGN WITH SEQUENCE STYLE BUSBING AND FULL CAPACITY NEUTRAL WITH BOLT-ON CIRCUIT BREAKERS. WHERE DOUBLE NEUTRALS ARE INDICATED ON THE SINGLE LINE DIAGRAM, PROVIDE 200% RATED NEUTRAL PANELBOARDS.

2. PROVIDE ALL CIRCUIT BREAKERS INDICATED PLUS A MINIMUM OF 2x15A-1P IN EACH PANEL. CIRCUIT BREAKERS TO BE RATED MINIMUM 10kA I.C. UNLESS OTHERWISE INDICATED.

3. PANELS ARE TO BE FLUSH MOUNTED IN PUBLIC AREAS AND SURFACE MOUNTED IN SERVICE ROOMS, ALL COMPLETE WITH ALL TRIM, LOCKABLE DOORS AND INSTALLATION HARDWARE.

4. UPDATED TYPEWRITTEN PANEL DIRECTORIES SHALL BE PROVIDED FOR ALL PANELS.

4. BALANCE PANEL LOAD FOR EACH PHASE A, B AND C. ALLOW FOR RELOCATING CIRCUITS WITHIN PANEL BOARD TO BALANCE THE LOAD.

28. LIGHTING LUMINAIRES AND LIGHTING CONTROLS

1. PROVIDE A NEW LIGHTING SYSTEM, COMPLETE AND FULLY OPERATIONAL, AND IN CONFORMANCE WITH CODE AND ULC LISTING REQUIREMENTS, UNLESS NOTED OTHERWISE, ALL FIXTURES AND LAMPS ARE TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE DRAWINGS.

2. ELECTRICAL TRADE TO INSTALL ALL LIGHTING LUMINAIRES COMPLETE WITH LAMPS, MOUNTING BRACKETS, BALLASTS AND ALL NECESSARY ACCESSORIES IN ACCORDANCE WITH THE LUMINAIRE TYPES SHOWN ON THE DRAWINGS, OR OTHERWISE SPECIFIED.

3. ALL LUMINAIRES SHALL BE ALIGNED, AS APPROPRIATE, WITH ONE ANOTHER AND WITH STRUCTURAL LINES.

4. ALL LUMINAIRES SHALL BE CLEANED AND LAMPED UPON COMPLETION OF WORK AND PRIOR TO FINAL ACCEPTANCE. UTILIZE MANUFACTURERS APPROVED OR RECOMMENDED CLEANING SOLUTIONS.

5. WHERE NO SWITCH IS INDICATED ON THE DRAWINGS FOR LIGHTING IN PUBLIC AREAS OF THE BUILDING, THE LUMINAIRES SHALL BE SWITCHED FROM THE PANEL BREAKERS USED FOR SUCH SWITCHING SHALL BE SWITCH RATED.

6. SWITCHES SHALL HAVE A CURRENT RATING NOT LESS THAN THAT OF THE CIRCUIT TO WHICH THEY ARE CONNECTED.
29. SEISMIC PROTECTION

1. THE ELECTRICAL TRADE SHALL PROVIDE SEISMIC RESTRAINT AND ANCHORAGE FOR ALL EQUIPMENT AND SERVICES IN ACCORDANCE WITH THE CURRENT EDITION OF THE B.C. BUILDING CODE, AND ALL APPLICABLE BUILDING BYLAWS.

2. PROVIDE CERTIFIED PROFESSIONALLY SEALED SHOP AND PLACEMENT DRAWINGS WHERE APPLICABLE FOR ALL ELECTRICAL EQUIPMENT AND EQUIPMENT ASSEMBLIES SHOWING THE METHODS OF ATTACHMENT TO THE PARTICULAR STRUCTURE FOR EACH PIECE OF EQUIPMENT AND ASSEMBLY AND PROVIDE ANCHORAGE/ATTACHMENT DETAILS APPROVED AND SEALED BY A BC-REGISTERED PROFESSIONAL ENGINEER.

3. INCLUDE IN THE TENDERED PRICE ALL SERVICES OF THE PROFESSIONAL ENGINEER INCLUDING BUT NOT LIMITED TO PROVIDING LETTERS OF ASSURANCE FOR THE PROJECT IN RESPECT OF THE SEISMIC RESTRAINT OF ALL ELECTRICAL MATERIALS AND EQUIPMENT, CONDUCTING THE NECESSARY SITE REVIEWS AND PROVIDING A LETTER AT THE CONCLUSION OF THE PROJECT, CONFIRMING THAT ALL SEISMIC RESTRAINTS FOR THE ELECTRICAL WORKS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE ENGINEER'S INSTRUCTIONS.

30. IDENTIFICATION

1. IDENTIFY ALL MAJOR PIECES OF EQUIPMENT, INCLUDING BUT NOT LIMITED TO PANELBOARDS, ELECTRICAL CABINETS, AND BREAKERS IN PANELBOARDS WITH ENGRAVED LAMACOID LABELS, BLACK LETTERING ON WHITE BACKGROUND.

2. PROVIDE TYPEWRITTEN DIRECTORIES IN ALL PANELS.

3. PROVIDE LAMACOID NAMEPLATE ON EACH PANEL COVER TO IDENTIFY PANEL NAME, NUMBER OF PHASES, VOLTAGE, CURRENT RATING AND SOURCE OF FEEDER.

4. IDENTIFY BRANCH CIRCUIT WIRES TO MEET CODE REQUIREMENTS.

31. ALTERNATE SEPARATE PRICE

1. ALL REQUESTS FOR ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER NOT LESS THEN 5 DAYS PRIOR TO THE CLOSE OF TENDER.

2. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ENSURING THAT ALTERNATE PRODUCTS MEET ALL SPACE, WEIGHT, CONNECTION, POWER, WIRING, AND PERFORMANCE REQUIREMENTS.

32. REQUIRED SHOP DRAWINGS

1. PROVIDE SHOP DRAWINGS FOR THE FOLLOWING ELECTRICAL PRODUCTS:

1. POWER DISTRIBUTION EQUIPMENT

2. LUMINAIRES

3. LIGHTING CONTROLS

4. WIRING DEVICES

5. FIRE STOPPING SYSTEM

6. COMMERCIAL CONNECTORS - ELECTRIC BASEBOARDS

33. OPERATING AND MAINTENANCE MANUALS

1. SUBMIT THREE (3) SETS OF OPERATING AND MAINTENANCE MANUALS FOR ELECTRICAL SYSTEMS PROVIDED IN THIS CONTRACT. INCLUDE DESCRIPTIVE AND TECHNICAL DATA, ALL SHOP DRAWINGS, OPERATING PROCEDURES, ROUTINE AND PREVENTATIVE MAINTENANCE, WIRING DIAGRAMS, SPARE PARTS LIST, WARRANTIES, SERVICE COMPANIES, SUPPLIERS OF REPLACEMENT PARTS, TEST RESULTS, FIRE ALARM CERTIFICATE OF VERIFICATION, ELECTRICAL INSPECTION AUTHORITY CERTIFICATE AND CONTRACT GUARANTEE.

2. SUBMIT DOCUMENTATION IN GREEN COLOURED HEAVY DUTY THREE RING BINDERS, WITH LETTERING ON SPINE IDENTIFYING: "OPERATING AND MAINTENANCE MANUAL", PROJECT TITLE AND SYSTEM NAMES.

3. SUBMIT ONE COPY FOR APPROVAL BY CONSULTANT PRIOR TO ASSEMBLY OF FINAL SETS.
- | LUMINAIRE SCHEDULE | | | | | |
|--------------------|--------------|--|------------------------|-------------------------------|---|
| TYPE | MANUFACTURER | CAT. No. | LAMPS | BALLAST | REMARKS |
| A | LITHONIA | ZUN-L48-3000LM-U-LENS-MNOLT-35K-80CRI-WH | 3500K, 3000lm, 40W LED | INTEGRAL 8-10V DIMMING DRIVER | 4' - 0" UTILITY STRIP LIGHT |
| B | KENALL | MLH48-48-R-MW-PR-45L30K-DDC-DV | 3000K, 5000lm, 55W LED | INTEGRAL 0-10V DIMMING DRIVER | 4' - 0" SURFACE MOUNTED WASHROOM STRIP LIGHT, VANDAL RESISTANT. |
| C | REBELLE | 8000-HC-22L-30K-120-PR-80-BT | 3000K, 3100lm, 22W LED | INTEGRAL ELECTRONIC | SOFFIT MOUNTED RECESSED POT LIGHT, DAMP LOCATION RATED, VANDAL RESISTANT. |
- | PANELBOARD SCHEDULE | | | | | | | | | | | | | | | | |
|---|-----|------|-----|----|------|-----|----------------|--|--|--|--|--|--|--|--|--|
| JOB NO./NAME : 1-16-290 - ARBUTUS PARK WASHROOM | | | | | | | | | | | | | | | | |
| PANEL : PANEL 'A' | | | | | | | | | | | | | | | | |
| SYSTEM : 120/240V, 1Ø, 3W | | | | | | | | | | | | | | | | |
| TYPE : - | | | | | | | | | | | | | | | | |
| LOCATION : MECHANICAL ROOM | | | | | | | | | | | | | | | | |
| MOUNTING : SURFACE | | | | | | | | | | | | | | | | |
| NO CIRCUITS : 24 | | | | | | | | | | | | | | | | |
| BUS SIZE : 200A | | | | | | | | | | | | | | | | |
| SYM. FAULT RATING : - | | | | | | | | | | | | | | | | |
| DESCRIPTION | BRK | POLE | CCT | CT | POLE | BRK | DESCRIPTION | | | | | | | | | |
| LIGHTING | 15 | 1 | 01 | 02 | 1 | 15 | LIGHTING | | | | | | | | | |
| RECEPTACLES | 20 | 1 | 03 | 04 | 1 | 20 | RECEPTACLES | | | | | | | | | |
| RECEPTACLES | 20 | 1 | 05 | 06 | 2 | 20 | HAND DRYER | | | | | | | | | |
| HAND DRYER | 20 | 2 | 07 | 08 | | | | | | | | | | | | |
| | | | 09 | 10 | 1 | 15 | LIGHTING | | | | | | | | | |
| SPARE | 20 | 1 | 11 | 12 | 1 | 15 | LIGHTING | | | | | | | | | |
| SPARE | 20 | 1 | 13 | 14 | | | | | | | | | | | | |
| | | | 15 | 16 | | | | | | | | | | | | |
| | | | 17 | 18 | | | | | | | | | | | | |
| EF-1A | 15 | 1 | 19 | 20 | | | | | | | | | | | | |
| EF-1B | 15 | 1 | 21 | 22 | 2 | 60 | BRITCO TRAILER | | | | | | | | | |
| HWT-1 | 20 | 1 | 23 | 24 | | | | | | | | | | | | |
| * GFCI Breaker | | | | | | | | | | | | | | | | |
| ** Arc Fault Breaker | | | | | | | | | | | | | | | | |
| PANEL C/W 100A - 2P MAIN BREAKER | | | | | | | | | | | | | | | | |
- | LIGHTING COMPLIANCE DOCUMENTATION | | | |
|--|-----|----|-----|
| CODE | YES | NO | N/A |
| ASHRAE 90.1-2010 | | X | |
| NECB-2011 | X | | |
| COMPLIANCE PATH | | | |
| PRESCRIPTIVE | | | |
| SPACE BY SPACE | X | X | |
| BUILDING AREA PERFORMANCE | X | X | |
| INDEPENDENT PROVISIONS CHECKLIST | | | |
| LIGHTING CONTROLS | | | |
| AUTOMATIC LIGHTING SHUTOFF CONTROLS ARE PROVIDED BASED ON EITHER A SCHEDULING DEVICE OR AN OCCUPANT SENSOR | X | | |
| EACH ENCLOSED SPACE HAS ITS OWN CONTROL INCLUDING BI-LEVEL OR OCCUPANCY BASED WHERE REQUIRED. | X | | |
| CONTROLS FOR PARKING GARAGES, INCLUDING BI-LEVEL, TRANSITION OR PERIMETER CONTROL AS REQUIRED. | | | X |
| AUTOMATIC DAYLIGHTING CONTROLS FOR PRIMARY SIDELIGHTED AREAS | | | X |
| AUTOMATIC DAYLIGHTING CONTROLS FOR TOPLIGHTING | | | X |
| ADDITIONAL CONTROLS FOR DISPLAY/ACCENT, CASE, GUEST ROOM, TASK, NONVISUAL AND DEMONSTRATION LIGHTING APPLICATIONS. | | | X |
| EXTERIOR LIGHTING CONTROLS INCLUDING AUTOMATIC SHUTOFF AND BI-LEVEL AS REQUIRED. | | | X |
| EXIT SIGNS DO NOT EXCEED 5W PER FACE | | | X |
| INTERIOR LIGHTING POWER BELOW ALLOWABLE LPD | X | | |
| EXTERIOR LIGHTING POWER BELOW ALLOWABLE LPD | X | | |
| FUNCTIONAL TESTING TO BE PERFORMED BY FACTORY CERTIFIED TECHNICIAN | | | X |
- | MECHANICAL EQUIPMENT SCHEDULE | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|----------------|--------------------|------|-----|----|-------|-------|--------|-------|---------|---------|-------|---------|--------|-------|---------|---------|-------|---------|--------------|------------|---------|----------------|------|---|
| Q# | DESCRIPTION | EQUIPMENT LOCATION | LOAD | | | VOLTS | PHASE | UNIT | | | STARTER | | | DISC. | | | CONTROL | | | SUPPLY PANEL | | | | NOTE | |
| | | | MCA | KW | HP | | | SUPPLY | MOUNT | CONNECT | SUPPLY | MOUNT | CONNECT | SUPPLY | MOUNT | CONNECT | SUPPLY | MOUNT | CONNECT | TYPE | FIRE ALARM | PANEL # | PANEL LOCATION | AMPS | P |
| HWT-1 | HOT WATER TANK | MECHANICAL ROOM | - | 3.0 | - | 240 | 1 | M | M | E | | | | | | | | | | | | | | | |

March 24, 2017 10:44:48 AM

LIST OF DRAWINGS

S1.0GENERAL NOTES

S1.1GENERAL NOTES

S2.0FOUNDATION PLAN
MAIN FLOOR PLAN W/ ROOF FRAMING OVER SECTIONS

GENERAL NOTES

1.

THE DESIGN INDICATED ON THESE DRAWINGS HAVE BEEN DESIGNED IN GENERAL ACCORDANCE WITH THE BRITISH COLUMBIA BUILDING CODE 2012.

2.

REFER TO ARCHITECTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR PENETRATIONS THRU STRUCTURAL MEMBERS.

3.

REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS, SLOPES CURBS ETC.

4.

DESIGN LOADS:

	LIVE LOAD (PSF)	SUPER IMPOSED DEAD LOAD (PSF)	CONCENTRATED POINT LOAD (Kips)
ROOFS	Ss = 81.5, Sr = 14.6	1.0	1.3

5.

LATERAL LOADS
THE STRUCTURAL HAS BEEN DESIGNED FOR LATERAL LOADS BASED ON THE FOLLOWING PARAMETERS:
Sa (0.2) = 1.0 SITE CLASS 'C' q50 = 0.32kPa
Sa (0.5) = 0.69 Ie = 1.0 Iw = 1.0 ULS
Sa (1.0) = 0.35 Rd = 1.5 Iw = 0.75 SLS
Sa (2.0) = 0.18 Ro = 1.5

6.

SKYLINE ENGINEERING LTD. SHALL CONDUCT FIELD REVIEWS IN ACCORDANCE WITH THE LETTERS OF ASSURANCE. PLEASE CONTACT SKYLINE ENGINEERING LTD. FOR FIELD REVIEW 24 HOURS BEFORE SUCH REVIEWS ARE REQUIRED.

7.

SKYLINE ENGINEERING IS NOT RESPONSIBLE FOR THE DESIGN OF NON STRUCTURAL ELEMENTS SUCH AS WINDOWS, HANDRAILS, GUARDRAILS, PRECAST CLADDING, BRICK TIES ETC. THESE ELEMENTS ARE TO BE DESIGNED AND DETAILED BY A STRUCTURAL ENGINEER LICENSED IN B.C.

8.

NON STRUCTURAL ELEMENTS THAT EFFECT THE BASE STRUCTURE SHALL BE REVIEWED BY SKYLINE ENGINEERING LTD. PLEASE SUBMIT SHOP DRAWINGS FOR OUR REVIEW OF SUCH ELEMENTS.

9.

SKYLINE ENGINEERING IS NOT RESPONSIBLE FOR SHORING OF THE STRUCTURE DURING CONSTRUCTION OR OF THE SOILS DURING EXCAVATION.

FOUNDATIONS

1.

FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOW BEARING CAPACITIES, IN ACCORDANCE WITH THE RECOMMENDATIONS BY RICHARD BRIMMEL LTD. DATED JUNE 25, 2015.

PAD FOOTINGS 100kPa (SLS)
 150kPa (ULS)
STRIP FOOTINGS 100kPa (SLS)
 150kPa (ULS)

2.

FOUNDATION BEARING MATERIAL TO BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE.

3.

FOOTINGS TO BE CENTRED UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

4.

WALLS AND COLUMNS TO BE DOWELED TO FOUNDATIONS WITH DOWELS HOOKED ONE END OF THE SAME SIZE AND SPACING AS VERTICAL REINFORCEMENT.

5.

TOP OF FOOTING ELEVATIONS TOP OF FOOTING TO BE MINIMUM OF 12" BELOW FLOOR ELEVATION U.N.O. REFER TO SOILS REPORT FOR MINIMUM FROST COVER FOR FOOTINGS.

6.

STEPS BETWEEN UNDERSIDES OF ADJACENT FOOTINGS SHALL BE A MAXIMUM SLOPE OF 2 HORIZONTAL 1 VERTICAL.

7.

SLAB ON GRADE TO BE UNDERLAIN BY POLY OVER 6" OF CLEAN 3/4" MINUS CRASHED GRANULAR BASE MATERIAL OR WELL GRADED SAND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY UNLESS NOTED OTHERWISE IN THE SOILS REPORT.

CONCRETE

1.

CONCRETE MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE CURRENT EDITION OF CSA A23.1 AND CSA A23.2.

2.

CONCRETE PROPERTIES NOTED ON THESE DRAWINGS ARE TO BE PROVIDED IN ACCORDANCE WITH THE 'PERFORMANCE' ALTERNATE (TABLE 5 OF CSA A23.1).

PROPERTIES TABLE

MEMBER	DESIGN STRENGTH (MPa)	EXPOSURE CLASS
FOOTINGS	25	N
SLAB ON GRADE INTERIOR EXTERIOR	25 32	N C - 2
TOPPING / HOUSE KEEPING PADS	20	N

3.

CONCRETE MIX DESIGNS TO BE SUBMITTED TO THE CONSULTANT FOR REVIEW PRIOR TO COMMENCING THE WORK.

4.

CURING AND PROTECTION OF CONCRETE FOR HOT COLD OR DRY WEATHER TO BE IN ACCORDANCE WITH CSA A23.1, SECTION 7.4 PROVIDE MOIST CURE FOR 3 DAYS MINIMUM (ANY ALTERNATIVE METHOD MUST BE REVIEWED BY THE CONSULTANT).

5.

LOCATION AND DETAILS OF CONSTRUCTION JOINTS TO BE REVIEWED BY THE CONSULTANT. SEE DETAILS ON THESE DRAWING.

6.

HORIZONTAL CONSTRUCTION JOINTS IN WALLS TO BE CLEAN AND INTENTIONALLY ROUGHENED TO A MINIMUM 1/4"AMPLITUDE.

7.

CALCIUM CHLORIDE IS NOT PERMITTED IN CONCRETE MIXES.

8.

SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR EXTENT OF FLOOR HARDENERS AND ARCHITECTURAL CONCRETE FINISHES.

9.

SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND EXTENT OF ALL REVEALS, DROPS, RECESSES AND OTHER ADDITIONAL FEATURES.

10. CONCRETE COVER TO BE AS NOTED ON THESE DRAWINGS.

11. CONCRETE TESTING TO BE IN ACCORDANCE WITH CSA A23.2 TESTING TO BE PAID FOR BY OWNER.

12. ALL DOWELS, EMBEDDED PLATES, ANCHOR BOLTS AND OTHER EMBEDDED ITEMS SHALL BE INSTALLED AND SECURED PRIOR TO CONCRETE PLACEMENT.

CONCRETE FORMING AND FORMWORK

FORMWORK

1.

FORMWORK IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA AT THE EXPENSE OF THE CONTRACTOR.

2.

THE FORMWORK AND RESHORING PROGRAMS SHALL BE DESIGNED IN ACCORDANCE WITH LOCAL HEALTH AND SAFETY REQUIREMENTS.

3.

FORMWORK SHALL REMAIN IN PLACE UNTIL SLAB IS A MINIMUM OF 75% OF DESIGN STRENGTH. IF FORMWORK IS REMOVED PRIOR TO 3 WEEKS OF SLAB AGE, THE SLAB SHALL BE RESHORED AT MID SPANS UNTIL 3 WEEKS OF SLAB AGE (SPECIAL SHORING/RESHORING REQUIREMENTS MAY ALSO BE SPECIFIED ON PLAN)

4.

ALL EXPOSED COLUMN, BEAM, AND SLAB EDGES SHALL HAVE 3/4" CHAMFERED EDGES.

5.

ALL EXPOSED CONCRETE SHALL MEET THE REQUIREMENTS OF CSA A23.1 FOR ARCHITECTURAL CONCRETE FINISHES.

PLACING

1.

CONCRETE SHALL BE PLACED IN ACCORDANCE WITH CSA A23.1

2.

COLUMNS AND WALLS SHALL BE CAST WITHIN 1" OF THE UNDERSIDE OF THE SUPPORTED SLAB OR BEAM.

3.

COLD JOINTS IN CONCRETE ELEMENTS MUST BE APPROVED BY THE ENGINEER OF RECORD IF NOT IDENTIFIED ON STRUCTURAL DRAWINGS.

4.

AREAS OF HONEYCOMB CONCRETE THAT EXPOSE REINFORCING SHALL BE REVIEWED BY ENGINEER OF RECORD PRIOR TO REPAIR.

PIPES AND CONDUIT EMBEDDED IN CONCRETE ELEMENTS

1.

SHALL MEET THE REQUIREMENTS OF CSA A23.1 AS A MINIMUM.

2.

IN COLUMNS PIPES OR CONDUITS SHALL RUN VERTICALLY ONLY AND SHALL NOT EXCEED 1% OF COLUMN AREA.

3.

IN NON SHEARWALLS PIPES OR CONDUITS:
a.SHALL NOT EXCEED 25% OF THE WALL THICKNESS FOR VERTICAL PIPES OR CONDUITS
b.SHALL NOT EXCEED 10% OF THE WALL THICKNESS FOR HORIZONTAL PIPES OR CONDUITS
c.SHALL HAVE A MINIMUM OF 50 MM COVER ON ALL SIDES
d.SHALL BE SPACED A MINIMUM 4 DIAMETERS CENTER TO CENTER
e.TOTAL EMBEDDED PIPES OR CONDUITS SHALL NOT EXCEED 1% OF WALL AREA

4.

IN SHEARWALLS PIPES OR CONDUITS:
a.SHALL NOT BE LOCATED WITHIN END ZONE REINFORCING
b.SHALL NOT EXCEED 25MM(1") DIAMETER
c.SHALL BE SPACED MINIMUM A 6 DIAMETERS CENTER TO CENTER
d.TOTAL EMBEDDED PIPES OR CONDUITS SHALL NOT EXCEED 0.5% OF WALL AREA

5.

IN SLAB PIPES OR CONDUITS:
a.SHALL NOT EXCEED 25% OF SLAB DEPTH OR 50 MM(2") DIAMETER
b.SHALL NOT HAVE MORE THAN 2 CONDUIT CROSSING AT ANY POINT
c.SHALL NOT BE LOCATED WITHIN 900MM (3FT) OF ANY COLUMNS OR WALLS
d.SHALL NOT BE LOCATED IN AREAS OF STUD RAIL REINFORCING
e.SHALL HAVE A MINIMUM OF 50 MM COVER ON ALL SIDES
f. SHALL BE SPACED BE SPACED A MINIMUM 3 DIAMETERS CENTER TO CENTER

6.

CONDUIT SHALL NOT BE TIED OR RUN PARALLEL TO SLAB, WALL OR COLUMN REINFORCING.

7.

IF THE ENGINEER OF RECORD IS NOT SATISFIED WITH CONDUIT LOCATIONS WITHIN THE CONCRETE ELEMENTS, THE CONTRACTOR SHALL RELOCATE AT NO COST TO THE OWNER.

CONCRETE REINFORCEMENT

1.

REINFORCEMENT SHALL CONFORM TO CSA-G30.18R GRADE 400 MPa. (CSA-G30.18W FOR WELDED REINFORCING).

2.

CONCRETE COVER TO REINFORCEMENT TO BE AS FOLLOWS (SEE DETAILS FOR ADDITIONAL REQ'S):
a.BEAMS - 1.5"
b.COLUMNS - 1.5" TO TIES
c.SLABS, SLAB BANDS - 1.0"
d.RETAINING WALLS (F-1, F-2) - 1.0" (INSIDE FACE), 1.5" (GROUND SIDE)
e.RETAINING WALLS (C-1) - 1.5" (INSIDE FACE), 1.5" (GROUND SIDE)
f. CONCRETE CAST AGAINST EARTH - 3"

3.

EMBEDMENT, DEVELOPMENT AND SPLICE LENGTHS TO BE IN ACCORDANCE WITH CSA-A23.3.

4.

PROVIDE TENSION SPLICE (CLASS "B" - 1.3 x BASIC DEVELOPMENT LENGTH) FOR ALL SPLICES U.N.O.

5.

PROVIDE TENSION EMBEDMENT FOR ALL EMBEDMENTS U.N.O., EXCEPT COLUMN EMBEDMENTS ARE TO BE COMPRESSION EMBEDMENTS, U.N.O.

6.

PROVIDE TWO 15M CONTINUOUS AT THE ENDS AND TOPS OF WALLS AND EDGES OF ALL SLABS, MINIMUM.

7.

PROVIDE TWO 15M EXTRA AROUND OPENINGS IN WALLS AND SLABS. EXTEND BARS 2'-0" MINIMUM BEYOND OPENING.

8.

PROVIDE CORNER BARS TO MATCH SIZE AND SPACING OF HORIZONTAL REINFORCEMENT IN WALLS, FOOTING & GRADE BEAMS. LAP 2'-0" TYP. U.N.O.

9.

PROVIDE MINIMUM BOTTOM REINFORCING IN SLABS (TEMPERATURE REINFORCING) IN ACCORDANCE WITH CSA A23.3 (0.002 X AREA):

a.6" - 10M @ 13"
b.8" - 15M @ 19"
c.10" - 15M @ 16"
d.12" - 15M @ 13"

SPLICES SHALL BE CLASS "A" TENSION SPLICES U.N.O.

SLAB ON GRADE CONTROL JOINTS

1.

MAXIMUM 4.8M SPACING BETWEEN CONTROL JOINTS.

2.

ALIGN JOINTS WITH COLUMNS AND CORNER OF WALLS WHERE POSSIBLE (SEE ALSO PLAN FOR LOCATIONS ----- SHOWN)

3.

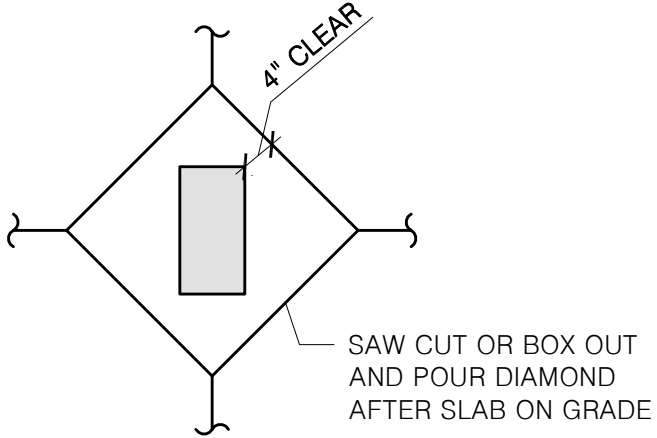
SAW CUT 19mm OR "ZIP STRIPS" ARE ACCEPTABLE

4.

SAW CUTTING MUST BE PERFORMED WITHIN 24 HRS

5.

PROVIDE DIAMOND PATTERN AROUND COLUMNS TYP. AS SHOWN BELOW



CONCRETE COLD WEATHER REQUIREMENTS

1.

WHEN FORECASTED TEMPERATURES ARE EXPECTED TO BE BELOW 5 °C THE CONTRACTOR SHALL HAVE ALL MATERIALS AND EQUIPMENT NEEDED FOR ADEQUATE PROTECTION OF CONCRETE

2.

ALL SNOW AND ICE SHALL BE REMOVED FROM REINFORCING AND FORMWORK PRIOR TO PLACING CONCRETE

3.

DO NOT USE DE ICING SALTS OR CALCIUM CHLORIDE FOR ICE REMOVAL

4.

ADEQUATE PROTECTION OF THE CONCRETE AND FORMWORK IS REQUIRED TO ACHIEVE A MINIMUM CONCRETE TEMPERATURE OF 10 °C FOR A MINIMUM OF 7 DAYS OR UNTIL THE CONCRETE ACHIEVES 75% OF DESIGN STRENGTH

5.

WHEN FORECASTED TEMPERATURES ARE EXPECTED TO BE BELOW -4 °C THE AREA OF CASTING SHALL BE CONTAINED WITHIN A HEATED ENCLOSURE OR THE FLOOR BELOW THE SLAB BEING CAST SHALL BE ENCLOSED AND HEATED WITH THE TOP OF THE SLAB PROTECTED WITH INSULATING BLANKETS TO ENSURE A MINIMUM OF 10 °C CONCRETE TEMPERATURE

6.

CONCRETE SUPPLIER IS REQUIRED TO FOLLOW THE GUIDELINES FOR COLD WEATHER CONCRETE MIXING AS SPECIFIED IN CSA A23.1.

REINFORCED MASONRY

1.

REINFORCED MASONRY TO BE IN ACCORDANCE WITH CURRENT EDITION OF BRITISH COLUMBIA BUILDING CODE.

1.1. CONCRETE BLOCK SHALL CONFORM TO CSA A1651-04 CLASSIFICATION H/15/A/M
1.2. MASONRY MORTAR SHALL CONFORM TO CSA A179-04. USE TYPE S. SITE MIXED BY PROPORTION SPECIFICATION OR PRE-MIXED BY PROPERTY SPECIFICATION.
1.3. MASONRY GROUT SHALL CONFORM TO CSA 179-04. USE 12.5 MPa AT 28 DAYS BY CYLINDER TEST UNDER PROPERTY SPECIFICATION WITH H/15/A/M CONCRETE BLOCKS.
1.4. JOINT REINFORCING SHALL CONFORM TO CSA G305, 38mm (9 GAUGE) GALVANIZED LADDER TYPE.

2.

HORIZONTAL WALL REINFORCEMENT SHALL BE AS FOLLOWS (U.N.O.).

2.1. JOINT REINFORCING AT 16" ON CENTRE LAP 6"
2.2. 2-15M CON'T IN BOND BEAMS AT ALL FLOOR & ROOF ELEVATIONS AND AT MAXIMUM OF 8'-0" ON CENTRE
2.3. PROVIDE HORIZONTAL CORNER BARS AS TYPICAL WALL CORNER TIE DETAIL AT ALL CORNERS AND INTERSECTIONS.
2.4. PROVIDE 8" DEEP LINTELS BEAMS REINFORCED WITH 2-15M BOTTOM OVER OPENINGS U.N.O. EXTEND BARS 2'-0" BEYOND OPENINGS OR HOOK END IF INSUFFICIENT LENGTH AVAILABLE.

3.

VERTICAL WALL REINFORCEMENT SHALL BE AS FOLLOWS (U.N.O.):
3.1. 1-15M VERTICAL AT 4'-0" ON CENTRE
3.2. 1-15M VERTICAL AT ENDS, CORNERS AND INTERSECTION OF WALLS
3.3. 1-15M VERTICAL EACH SIDE OF DOOR AND WINDOW OPENINGS

4.

LAPS SPLICES AS FOLLOWS:
10M - 16", 15M - 30", 20M - 40"

5.

POUR HEIGHT NOT TO EXCEED 8'-0"

6.

NOTIFY SKYLINE ENGINEERING FOR FIELD REVIEW A MINIMUM OF 24 HOURS PRIOR TO GROUT POURS.

7.

FILL ALL BOND BEAMS, PARAPETS, REINFORCED CORES, AND CORES AT ANCHOR BOLTS OR EMBEDS WITH GROUT.

8.

PROVIDE CONTROL JOINTS AT A MAXIMUM SPACING OF 30'-0". MORTAR JOINTS SHALL BE RAKED BACK, READY TO RECEIVE CAULKING. BOND BEAM REINFORCEMENT SHALL PROJECT FROM ONE SIDE 1'-0" THROUGH JOINT INTO TIGHT-FITTING PLASTIC TUBES.

9.

MASONRY WALLS TO BE LAID IN RUNNING BOND. PLUMBNESS LEVEL AND JOINTS AS PER CSA A371-04. NOMINAL JOINT WIDTH IS 3/8".

10.

EXPOSED MORTAR JOINTS SHALL BE TOOLED AS SPECIFIED IN THE SPECIFICATIONS CONCEALED JOINTS MAY BE STRUCK FLUSH.

11.

PROVIDE LATERAL TOP SUPPORT TO NON-LOAD BEARING WALLS AS PER DETAILS ON DRAWINGS. LOCATE BOND BEAM IN SECOND COURSE FROM THE TOP AS SHOWN ON THE DRAWINGS.

12.

PROVIDE TEMPORARY LATERAL SUPPORT TO WALLS IN ACCORDANCE WITH THE LATEST W.C.B.OR OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.

WOOD FRAMING

GENERAL

1.

WOOD FRAMING TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE BRITISH COLUMBIA BUILDING CODE (BCBC) AND CSA -086. MINIMUM STANDARD FOR FRAMING IN ACCORDANCE WITH PART 9 OF BCBC.

2.

SHRINKAGE OF WOOD PRODUCTS OVER TIME SHALL BE ACCOUNTED FOR IN ALL ELECTRICAL, MECHANICAL, AND INTERIOR/EXTERIOR FINISHES.

3.

NO NOTCHING OF STUDS OR JOISTS ALLOWED WITHOUT EXPRESS PERMISSION OF THE ENGINEER OF RECORD. HOLES THROUGH STUDS AND JOISTS TO FOLLOW RECOMMENDATIONS IN PART 9 OF BCBC.

4.

ALL TIMBER FRAMING SHALL HAVE GRADE STAMPS AND NON-GRADED WOOD WILL BE REJECTED.

5.

ALL TIMBER FRAMING SHALL BE MAXIMUM 19% MOISTURE CONTENT. ALL WOOD MATERIALS SHALL BE PROTECTED FROM THE ENVIRONMENT UNTIL USE ON SITE.

6.

ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED OR PROVIDE SILL GASKET MATERIAL BETWEEN WOOD AND CONCRETE.

7.

B.U. POSTS TO MATCH WIDTH OF BEAM AS A MINIMUM.

MATERIALS

1.

SAWN LUMBER SHALL SURFACED FOUR SIDES TYPICAL AND MEET THE FOLLOWING MINIMUM GRADES U.N.O (SEE ALSO WOOD SHEARWALL REQUIREMENTS
a.STUDS SHALL BE S.P.F STUD GRADE MINIMUM
b.POSTS SHALL BE NO.2 GRADE MINIMUM
c.JOISTS SHALL BE NO.2 GRADE MINIMUM
d.SILL PLATES SHALL BE NO.2 GRADE MINIMUM

2.

ALL ANCHOR BOLTS AND CONNECTION BOLTS SHALL BE GRADE A36 OR A304 AS A MINIMUM.

3.

ALL NAILS SPECIFIED ON DRAWINGS AND SCHEDULES SHALL BE COMMON SIZE NAILS CONFORMING TO THE TABLE LISTED BELOW.

LENGTH	MIN. DIAMETER
2" (50 mm)	0.113" (2.9mm)
2 1/2" (65 mm)	0.131" (3.3mm)
3" (75 mm)	0.148" (3.8mm)
3 1/2" (90 mm)	0.162" (4.1mm)

4.

TIMBER CONNECTION HARDWARE SHALL BE SIMPSON STRONG TIE U.N.O. ALL EXTERIOR HARDWARE SHALL BE HOT DIPPED GALVANIZED OR SIMPSON STRONG TIE - ZMAX COATING. REFER TO MANUFACTURE RECOMMENDATION FOR FASTENER INSTILLATION REQUIREMENTS.

5.

BUILT UP POSTS WITH 2X4 OR 2X6 STUDS SHALL BE NAILED TOGETHER WITH 2 ROWS OF 3" NAILS AT 10" O.C. TYPICAL.

6.

SHEATHING SHALL BE D-FIR GRADE SHEATHING AND PLACED IN STAGGERED PATTERN TYPICAL FOR FLOORS AND WALLS. MINIMUM NAILING FOR SHEATHING SHALL BE 2.5" NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERIOR PANEL SUPPORT FRAMING. SHEATHING SHALL CONFORM TO THE FOLLOWING MINIMUM STANDARDS U.N.O.

a.ROOF SHEATHING
i. SLOPE >= TO 15 DEGREES SHALL BE 1/2 PLYWOOD WITH H-CLIPS AT UNSUPPORTED EDGES.
ii. SLOPE < TO 15 DEGREES SHALL BE 5/8 T&G PLYWOOD

b.FLOOR SHEATHING
i. WITH CONCRETE TOPPING - 5/8 PLYWOOD
ii. WITHOUT CONCRETE TOPPING - 5/8 T&G PLYWOOD

c.EXTERIOR WALLS.
i. EXTERIOR CLADDING ATTACHED TO STUDS - 3/8" PLYWOOD
ii. EXTERIOR MASONRY, Z-BARS, OR STUCCO ATTACHMENT - 5" PLYWOOD MINIMUM
iii.REFER TO ARCHITECTURAL DRAWINGS AND CLADDING SHOP DRAWINGS FOR ADDITIONAL MINIMUM EXTERIOR WALL SHEATHING REQUIREMENTS.

7.

T & G DECKING SHALL BE D-FIR SELECT GRADE U.N.O. AND PLACED IN CONTROLLED RANDOM PATTERN. DECKING THICKNESS SHALL BE AS INDICATED ON DRAWINGS AND NAILED OR SPIKED TO THE FOLLOWING MINIMUM STANDARDS U.N.O.

a. 1½" T & G DECKING
i. 2½" LG. NAILS BETWEEN PLANKS AT MID SPAN.
ii. PLANK WIDTH < = 5½" - 2 - 3" LG., NAILS PER PLANK AT SUPPORTS
iii. PLANK WIDTH > = 5½" - 3 - 3" LG., NAILS PER PLANK AT SUPPORTS

b.2½" OR 3½" T & G DECKING
i. 8" LG. SPIKES BETWEEN PLANKS @ 30" O.C.
ii. 2 - 6" LG. NAILS PER PLANK AT SUPPORTS

ENGINEERED WOOD PRODUCTS

1.

ENGINEERED WOOD SHALL BE TRUSS-JOIST PRODUCT U.N.O. ALTERNATES PRODUCTS MAY BE SUBMITTED FOR ACCEPTANCE BY THE ENGINEER OF RECORD.

2.

I-JOIST FLOORS SHALL HAVE SHOP DRAWINGS PREPARED AND SUBMITTED TO ENGINEER OF RECORD FOR REVIEW. THE SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION

a. JOIST LAYOUT
b. ALL BLOCKING AND RIMBOARD
c. ALL JOIST HANGERS
d. LOADING INFORMATION
e. DEFLECTION INFORMATION

3.

JOIST SIZING OR DIRECTION SHALL NOT VARY FROM THE STRUCTURAL PLANS WITHOUT PRIOR APPROVAL.

4.

SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN BRITISH COLUMBIA. THE ENGINEER SHALL PROVIDE SCHEDULES TO THE ENGINEER OF RECORD AT THE COMPLETION OF FRAMING.

5.

THE ENGINEER OR HIS REPRESENTATIVE SHALL PERFORM ON SITE REVIEW OF THE JOIST INSTALLATION IN ACCORDANCE WITH APEGBG REQUIREMENTS.


12017-03-24

ISSUED FOR REVIEW

NO DATE

REVISION

SEAL:



PROJECT NAME:

CVRD
WASHROOM
FACILITY

SHEET TITLE:

GENERAL NOTES

PROJECT NO:

#10521.01

SCALE:

NTS

DATE:

2017/03/24

DRAWING NO:

S1.0


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<div>6. RIM JOIST OR BLOCKING IN LOAD BEARING WALLS AT FLOOR LEVEL SHALL BE 1.5" THICK MINIMUM. RIM JOIST SHALL HAVE A MINIMUM RATING OF 1.5E.</div> <div>7. ENGINEERED BEAMS NOTED ON PLAN SHALL BE TRUSS JOIST PARALLEL STRAND LUMBER (PSL) RATED AT 2.0E U.N.O. ALTERNATES MAY BE SUBMITTED FOR APPROVAL BY ENGINEER OF RECORD</div> <div>8. ENGINEERED COLUMNS SHALL BE PSL 1.8E U.N.O.</div> <div>9. ALL HANGERS FOR BEAMS AND JOISTS NOT SPECIFIED ON PLAN SHALL BE CAPABLE OF ACHIEVING 100% OF MEMBER SHEAR CAPACITY.</div> <div>PRE- ENGINEERED TRUSSES</div> <div>1. PRE-ENGINEERED TRUSSES ARE ENGINEERED BY OTHERS AND SHALL HAVE SHOP DRAWINGS PREPARED AND WET SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF THE PROJECT. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING<div>a. TRUSS DIRECTION AND PROFILE</div><div>b. TRUSS REACTIONS ON SUPPORTING MEMBERS</div><div>c. TRUSS BLOCKING AND BRIDGING</div><div>d. LATERAL DRAG FORCES FOR DRAG TRUSSES</div><div>e. ALL CONNECTION HARDWARE INCLUDING CONNECTIONS FOR UPLIFT.</div></div> <div>2. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATION.</div> <div>3. THE TRUSS ENGINEER SHALL PROVIDE A SIGNED AND SEALED LETTER AT THE END OF THE PROJECT CONFIRMING THE TRUSSES HAVE BEEN INSTALLED AS INTENDED ON THE SHOP DRAWINGS.</div> <div>4. TRUSSES SHALL BE DESIGNED FOR A MINIMUM OF 20PSF FACTORED WIND UPLIFT.</div> <div>WOOD SHEAR WALL</div> <div>1. WOOD STUDS USED IN SHEAR WALLS SHALL BE KILN DRIED SPF. No.2 GRADE OR BETTER.</div> <div>2. SEE ALSO LOAD BEARING WALL SCHEDULE OR DRAWINGS FOR ADDITIONAL WALL REQUIREMENTS</div> <div>3. ALL NAILS SHALL CONFORM TO THE STANDARD NAIL DIAMETER SPECIFIED IN THE WOOD FRAMING NOTES.</div> <div>4. BLOCK ALL UNSUPPORTED PANEL EDGES WITH 2X6 D-FIR ON FLAT (EXCEPT AS SPECIFIED IN NOTE 6)</div> <div>5. WHERE SHEAR WALLS ARE SHEATHED BOTH SIDES PROVIDE THE FOLLOWING:<div>a. DOUBLE TOP AND BOTTOM SILL PLATES NAILED AS SPECIFIED IN SHEARWALL SCHEDULE</div><div>b. VERTICAL PANEL EDGES EACH SIDE OF WALL DO NOT ALIGN ON THE SAME STUDS</div><div>c. DO NOT CLOSE IN SECOND SIDE SHEATHING UNTIL ALL MECHANICAL AND ELECTRICAL SERVICES ARE IN PLACE.</div><div>d. DO NOT CLOSE IN SECOND SIDE OF SHEATHING UNTIL WALL AND HOLDDOWN INSTALLATION HAS BEEN REVIEWED BY A REPRESENTATIVE OF SKYLINE ENGINEERING LTD.</div></div> <div>6. WHERE SHEARWALL NAIL SPACING IS LESS THAN 3" OR NAIL SIZE IS 3"LONG:<div>a. PROVIDE DOUBLE STUDS AT VERTICAL PANEL EDGES. NAIL STUDS WITH 2 - ROWS OF 3" NAILS AT 6" O.C. U.N.O</div><div>b. PROVIDE LVL 1.75X 6" BLOCKING AT ALL INTERMEDIATE HORIZONTAL PANEL JOINTS.</div><div>c. PROVIDE DOUBLE SILL AND TOP PLATES. NAIL PLATES TOGETHER AS SPECIFIED IN SHEAR WALL SCHEDULE</div></div> <div>7. WALLS SHALL HAVE A MINIMUM OF 1 LAYER 1.75" LVL BLOCKING OR RIM BOARD FOR SHEARWALLS SHEATHED ONE SIDE ONLY, AND 2 LAYERS OF 1.75" LVL BLOCKING OR RIM BOARD FOR SHEARWALLS SHEATHED BOTH SIDES.</div> <div>8. NAIL SHEATHING AT PERIMETER AT SPACING SPECIFIED IN THE SHEARWALL SCHEDULE. NAIL SHEATHING AT INTERIOR PANEL SUPPORTS AT 12" O.C. NAIL SHEATHING TO EACH PLY OF END POST TO A MAXIMUM OF 3 VERTICAL ROWS AT SPECIFIED NAIL SPACING IN SHEARWALL SCHEDULE.</div> <div>9. SHEAR WALL END POSTS SHALL BE 3 PLY STUD MINIMUM U.N.O.</div> <div>10. ALL HOLD DOWNS AND CONNECTION HARDWARE SHALL BE SIMPSON STRONG TIE U.N.O. ALTERNATES MAY BE SUBMITTED FOR REVIEW BY ENGINEER OF RECORD.</div> <div>11. REFER TO SHEAR WALL TYPICAL SECTIONS FOR DETAILS OF FLOOR ASSEMBLY AND ANCHORAGE TO CONCRETE.</div> <div>12. SHEARWALL ABBREVIATIONS<div>O.S. SHEATHED ONE SIDE OF STUD WALL</div><div>B.S. SHEATHED BOTH SIDES OF STUD WALL</div><div>STG. STAGGER</div><div>O.C. ON CENTER SPACING</div></div>			
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LOAD-BEARING WALL SCHEDULE					
WALL TYPE		EXTERIOR WALL	PARTY WALL	CORRIDOR WALL	OTHER INTERIOR WALL
LEVEL ABOVE CONCRETE	LEVEL 0 - 1	2 x 6 @ 16" O.C.			2 x 6 @ 16" O.C.
NOTES: ALL NON-LOAD BEARING WALLS TO BE FRAMED WITH MIN. 2 x 4 @ 16" O.C.					

1	2017-03-24	ISSUED FOR REVIEW
NO.	DATE	REVISION

SEAL:



SKYLINE
ENGINEERING LTD
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PROJECT NAME:

CVRD
WASHROOM
FACILITY

SHEET TITLE:

GENERAL NOTES

PROJECT NO:

#10521.01

SCALE:

NTS

DATE:

2017/03/24

DRAWING NO:

S1.1

SHEAR WALL SCHEDULE	
TYPE	
SW1	* ½" PLYWOOD ONE SIDE. * BLOCK AND NAIL WITH 2½" NAILS @ 3' O.C. AT PANEL EDGES AND 12" O.C. WITHIN FIELD. * PROVIDE 2-PLY MIN. END POST C/W HDU5-SDS2.5 HOLD-DOWN TO FOUNDATIONS AT EA. END. * PROVIDE SIMPSON A35 CLIPS TO TRUSS ABOVE @12" O.C. * WHERE ON FOUNDATION PROVIDE 5/8" SILL BOLTS @ 24" O.C.
NOTE: REFER TO DETAILS 5 & 7/S3.0 FOR ADDITIONAL INFORMATION.	
☒ IDENTIFIES HOLD-DOWN LOCATION AT FOUNDATION & BEAM. SEE SHEAR WALL SCHEDULE FOR SIZE.	

PILASTER SCHEDULE		
TYPE	SIZE	REINFORCING
CP 1	10" x 10"	4 - 10M HOOKED INTO BOT. FOOTING. 10M STIRRUPS @ 16" O.C.

POST SCHEDULE	
TYPE	SIZE
P1	2" x 4"
P2	2" x 6"
P3	2" x 8"
P4	4" x 4"
P5	6" x 6"
P6	8" x 8" D.FIR NO.1

SEAL:

PROJECT NAME:

CVRD
WASHROOM
FACILITY

SHEET TITLE:

FOUNDATION PLAN
MAIN FLOOR PLAN
SECTIONS

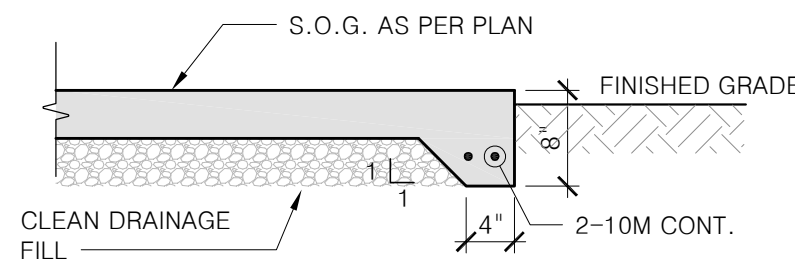
PROJECT NO: #10521.01

SCALE: AS NOTED

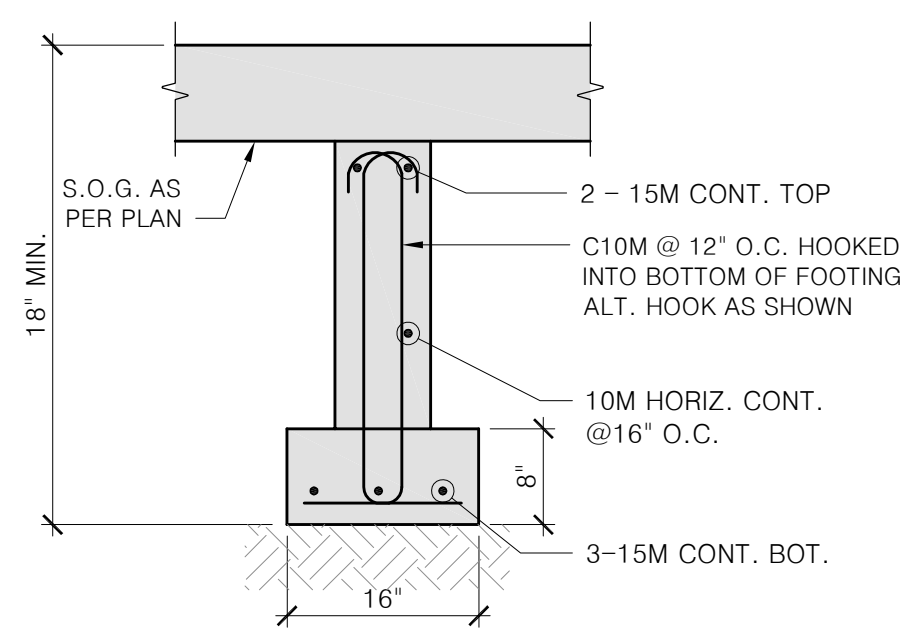
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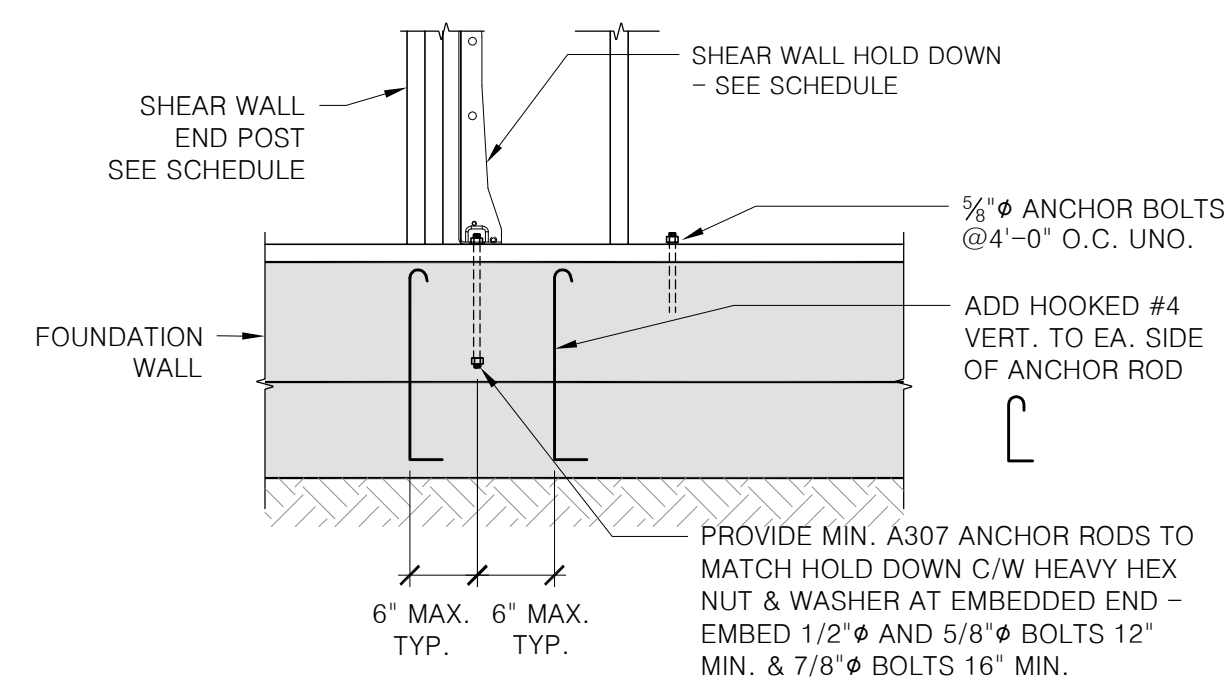
S2.0



2 SLAB EDGE
S3.0 SCALE = 3/4" = 1'-0"



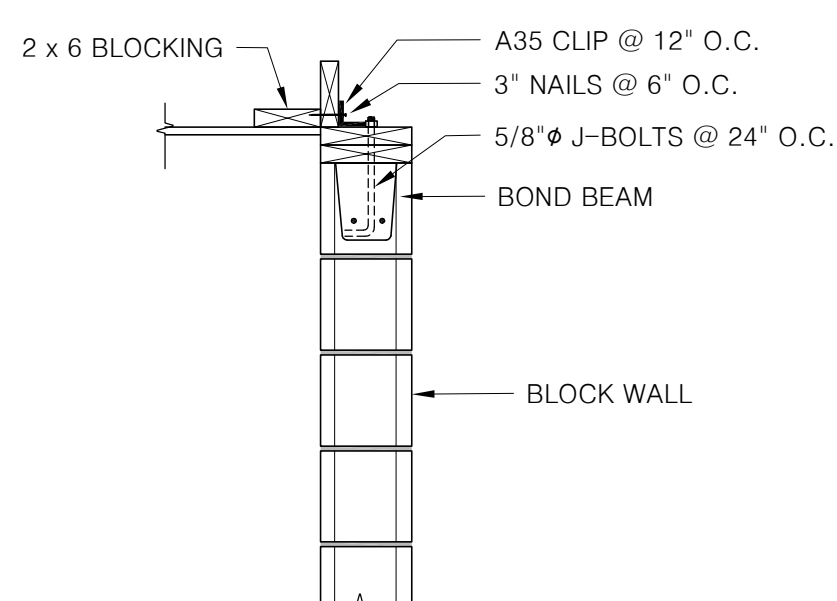
4 GRADE BEAM
S3.0 SCALE = 3/4" = 1'-0"



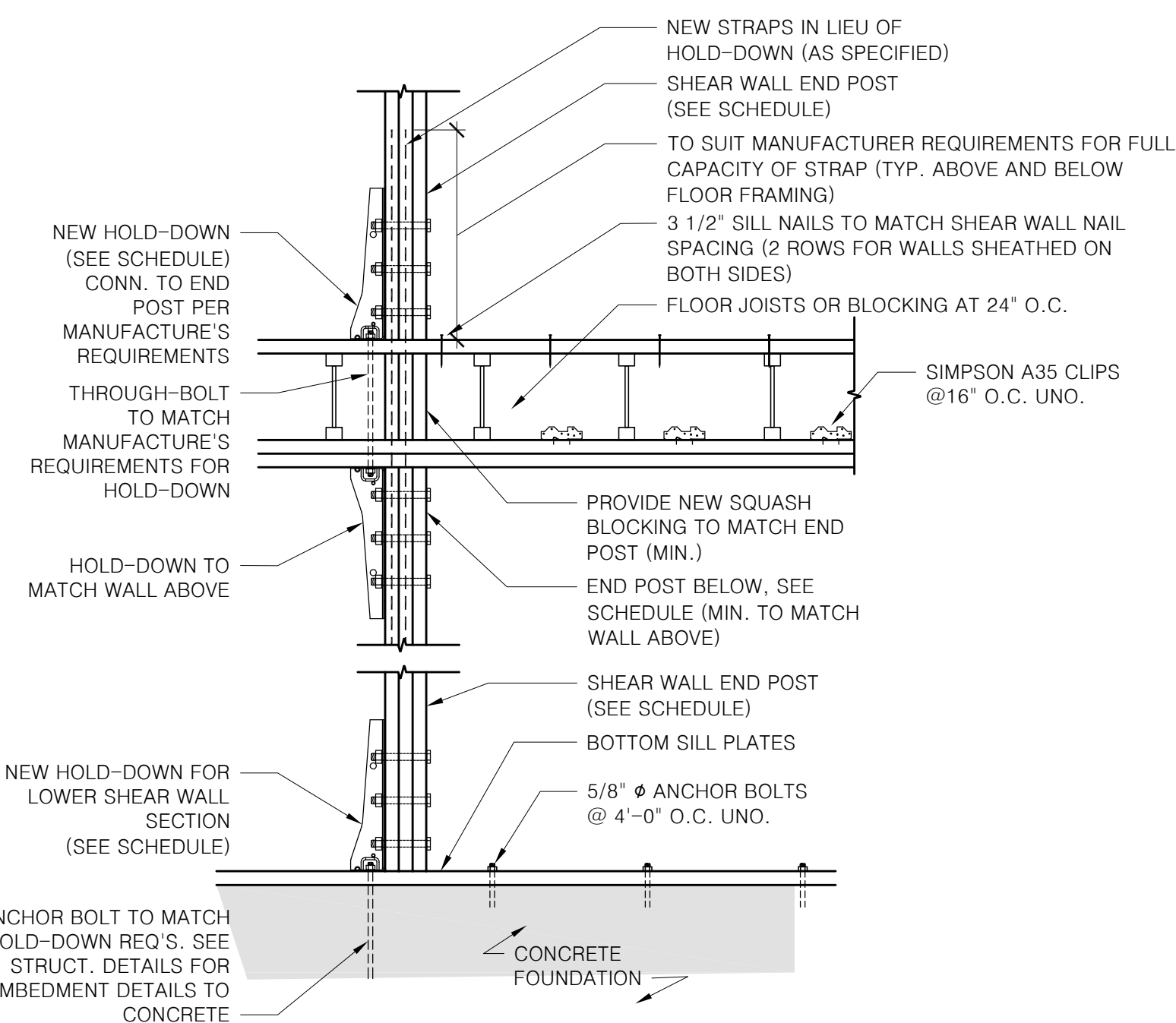
SHEARWALL
HOLD DOWN AT FOUNDATION

5
S3.0

SCALE = 3/4" = 1'-0"



6 SECTION
S3.0 SCALE = 3/4" = 1'-0"



7 TYP. WOOD SHEAR WALL
S2.0 SCALE = 3/4" = 1'-0"



PROJECT NAME:

CVRD
WASHROOM
FACILITY

SHEET TITLE:

SECTIONS / DETAILS

PROJECT NO:

#10521.01

SCALE:

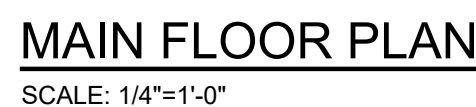
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DATE:

2017/03/24

DRAWING NO:

S3.0



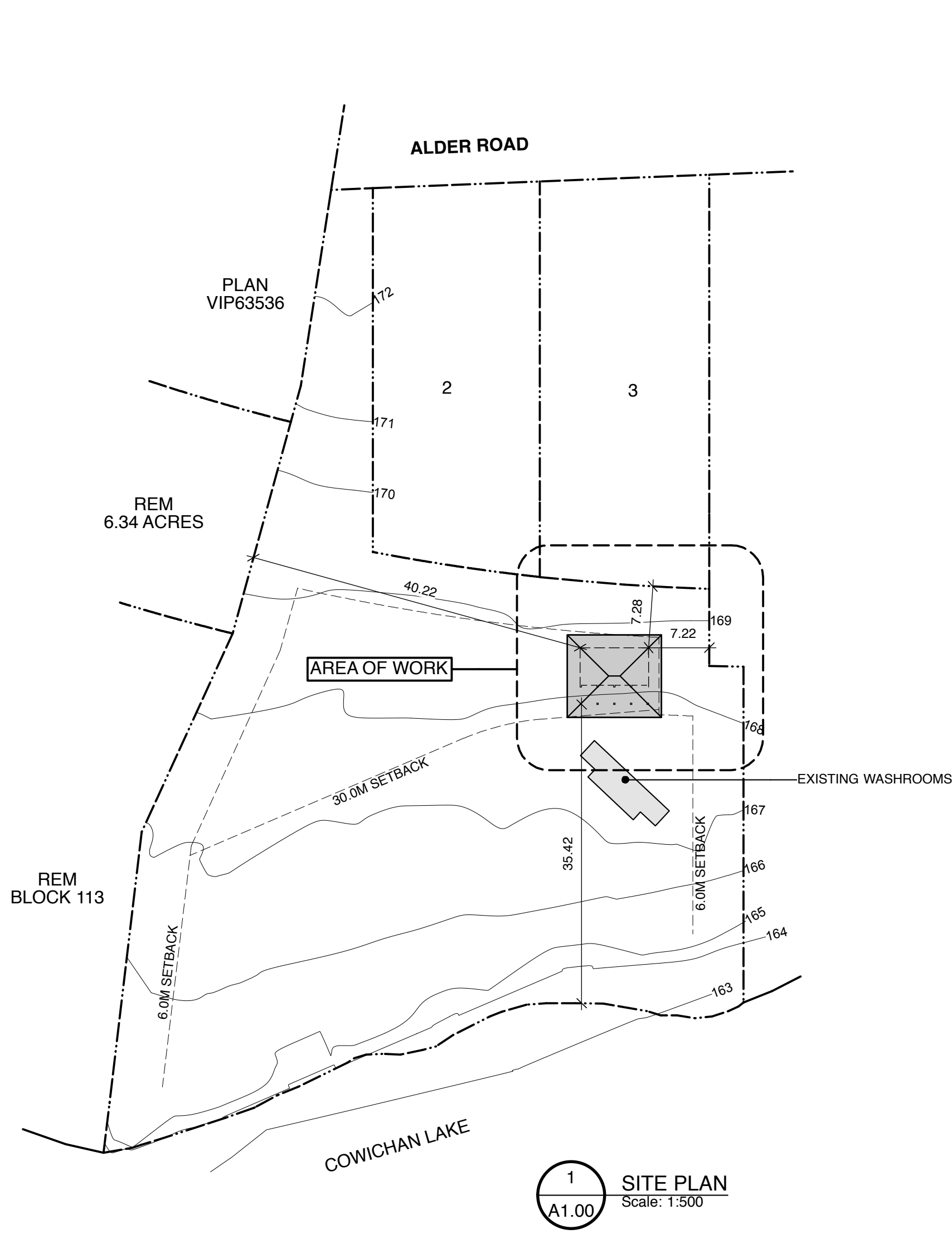
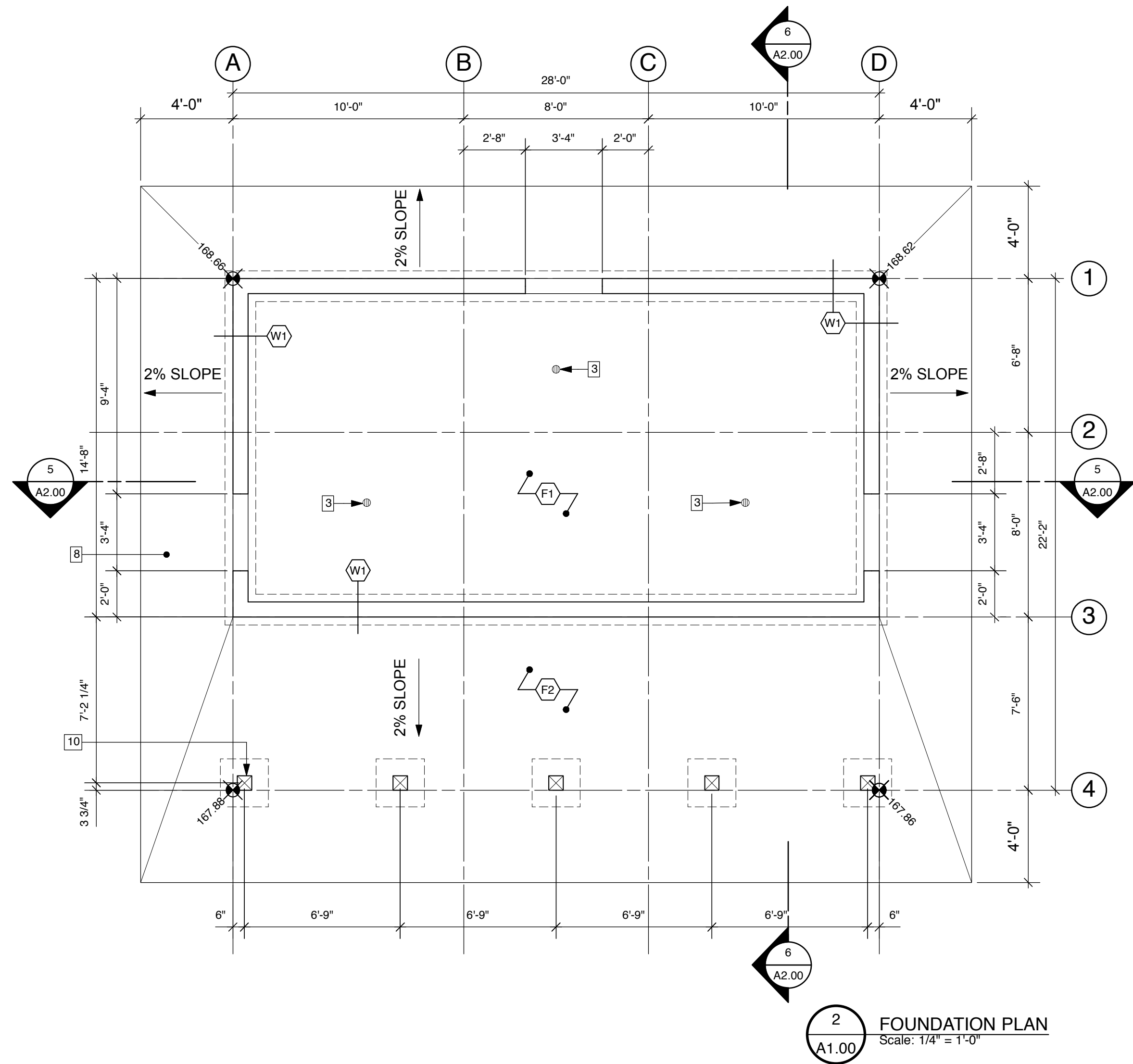
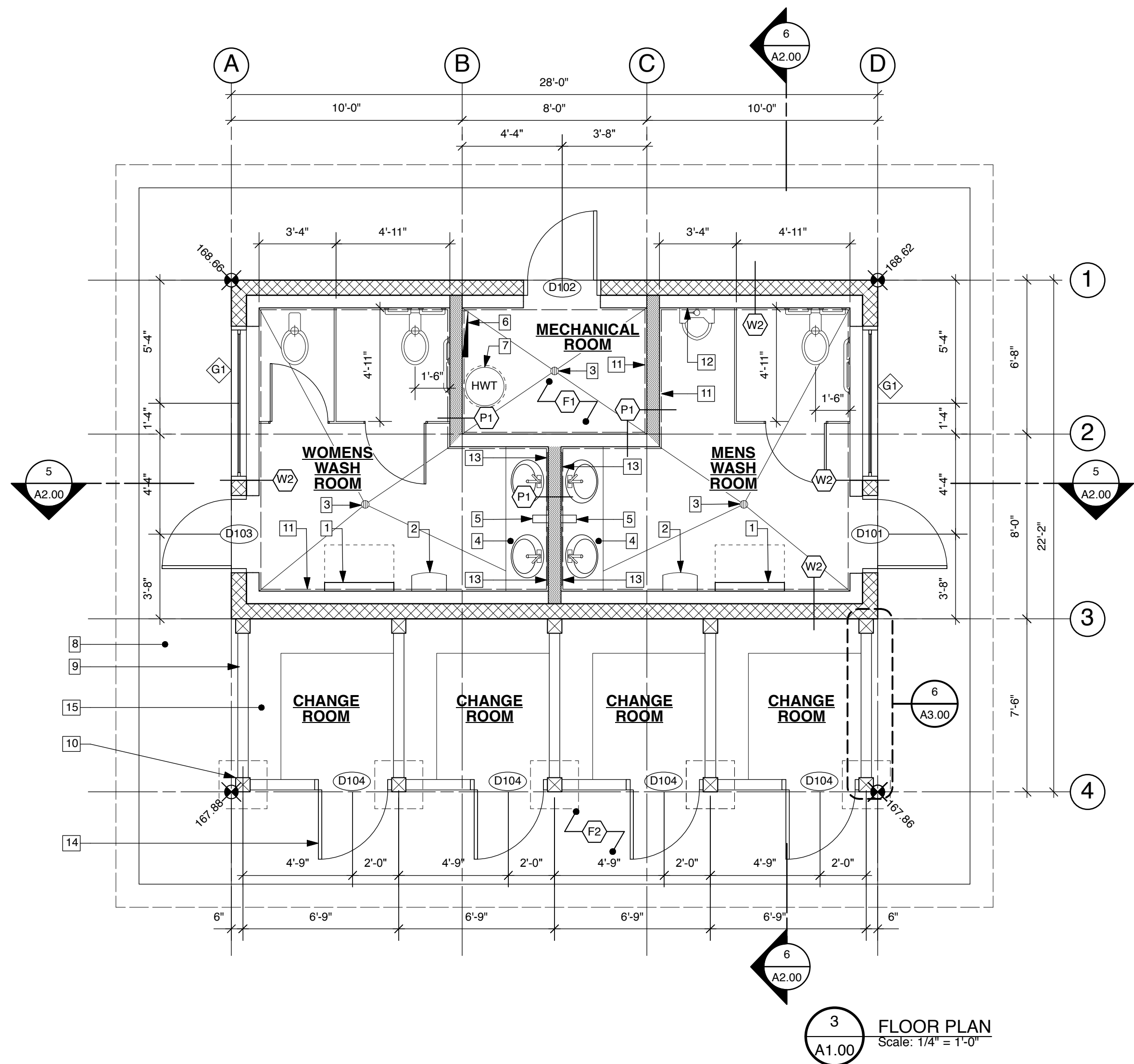
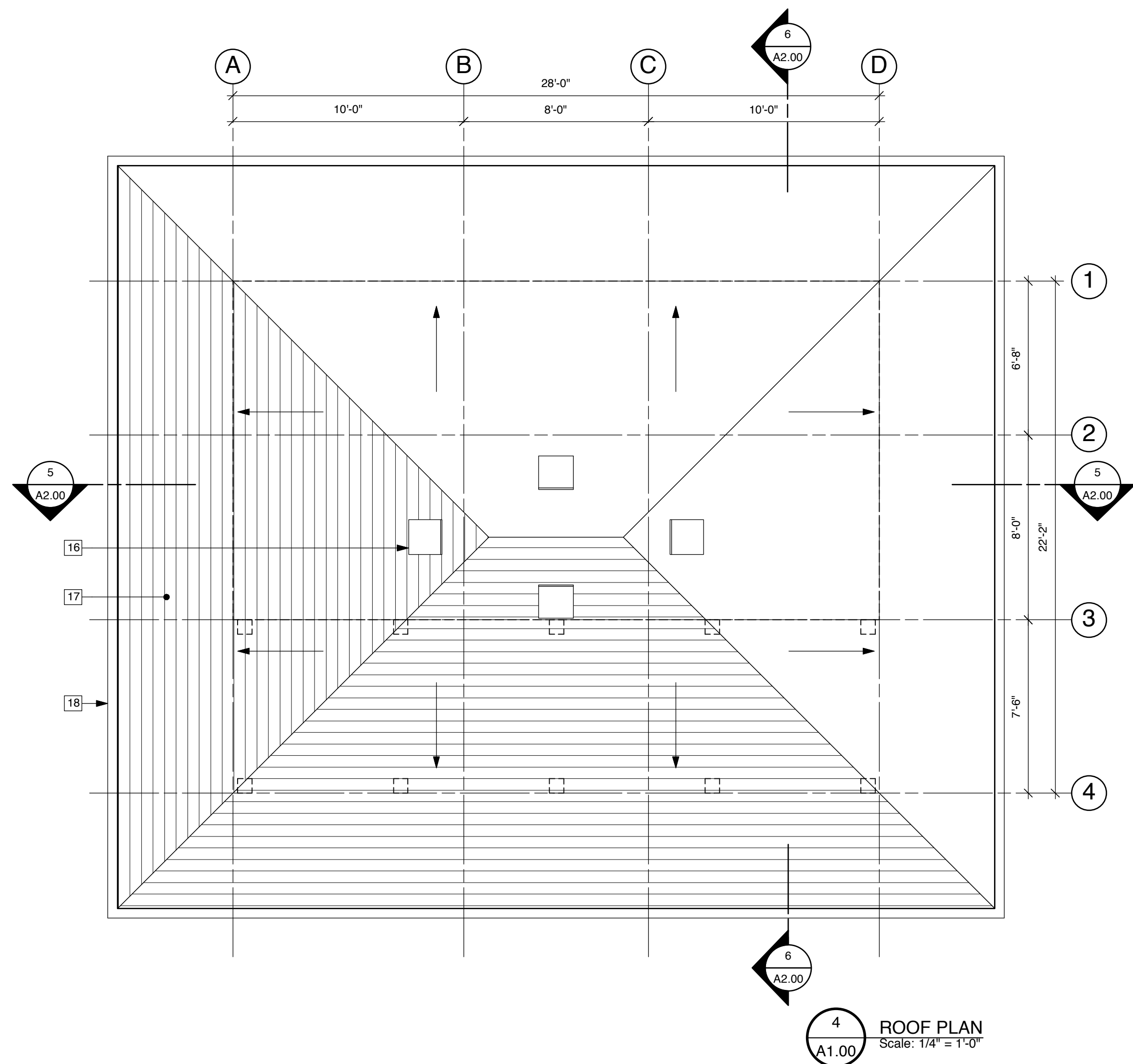
FAN SCHEDULE							
TAG	SERVICE	TYPE	SIZE	MAKE	MODEL	POWER/LOAD	NOTES
EF-1	BATHROOM EXHAUST FAN	CEILING	190 CFM@0.25"	GREENHECK	SP-B200	115/1/60 2.2A	1

NOTES:

1. EQUIPPED WITH GRILLE MOUNTED MOTION SENSOR AND TIMER (SET TO 10 MINUTES)

SHEET NUMBER _____

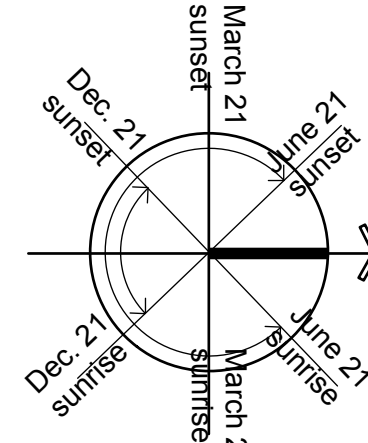
M-1.01



ASSEMBLIES

- R1 TYPICAL ROOF ASSEMBLY** (RSI 7.081)
- 26ga. STANDING SEAM METAL ROOF - PRE-FORMED, PREFINISHED
 - FELT UNDERLAY. PROVIDE 1M ICE DAM MEMBRANE @ EAVES
 - 5/8" TONGUE AND GROOVE PLYWOOD
 - ENGINEERED TRUSSES @ 24" O.C.
 - R-40 BATT INSULATION
 - 6MIL POLY VAPOUR BARRIER
 - 1/2" TONGUE AND GROOVE PLYWOOD CEILING. PAINTED
- R2 TYPICAL ROOF ASSEMBLY**
- 26ga. STANDING SEAM METAL ROOF - PRE-FORMED, PREFINISHED
 - FELT UNDERLAY. PROVIDE 1M ICE DAM MEMBRANE @ EAVES
 - 5/8" TONGUE AND GROOVE PLYWOOD
 - ENGINEERED TRUSSES @ 24" O.C.
 - 6MIL POLY VAPOUR BARRIER
 - 1/2" TONGUE AND GROOVE PLYWOOD CEILING. PAINTED
- W1 TYPICAL FOUNDATION WALL**
- 8" REINFORCED CONCRETE FOUNDATION WALL ON A 16" x 8" REINFORCED CONCRETE STRIP FOOTING
 - BITUMINOUS DAMP PROOFING ON EXTERIOR SIDE OF FOUNDATION WALL
- W2 TYPICAL EXTERIOR WALL** (RSI 3.119)
- 8" STACK BOND CONCRETE MASONRY UNIT WITH WELDED WIRE MESH REINFORCEMENT IN MORTAR JOINTS
 - 1" AIRSPACE
 - 2x6 WOOD STUD FRAMING @ 16" O.C.
 - R20 ACOUSTIC BATT INSULATION
 - 6 MIL POLY VAPOUR BARRIER
 - 1/2" PAINTED TONGUE AND GROOVE GOOD ONE SIDE PLYWOOD
- P1 TYPICAL INTERIOR PARTITION**
- 1/2" PAINTED TONGUE AND GROOVE PLYWOOD GOOD ONE SIDE PLYWOOD
 - 2x6 WOOD STUD FRAMING @ 16" O.C.
 - R20 ACOUSTIC BATT INSULATION
 - 1/2" PAINTED TONGUE AND GROOVE PLYWOOD GOOD ONE SIDE PLYWOOD
- NOTE! REFER TO STRUCTURAL FOR SHEAR WALL ASSEMBLY.**
- F1 4" CONCRETE SLAB ON GRADE** (WASHROOMS & MECHANICAL ROOM)
- 4" REINFORCED CONCRETE SLAB WITH SMOOTH FINISH
 - 10MIL POLY VAPOUR BARRIER
 - 2" SAND
 - 6" COMPACT INORGANIC FILL
 - BEARING SOIL
- F2 4" CONCRETE SLAB ON GRADE** (APRON AND CHANGE ROOMS)
- 4" REINFORCED CONCRETE SLAB WITH BROOM FINISH
 - 2" SAND
 - 6" COMPACT INORGANIC FILL
 - BEARING SOIL

WALL LEGEND	
	CMU WALL
	SHEAR WALL
	STUD WALL



KEYNOTES

- BABY CHANGE TABLE TO BE "KOALA CLASSIC HORIZONTAL BABY CHANGING STATION (KB100) OR SIMILAR.
- HAND DRYERS AS PER OWNER.
- ALUMINUM FLOOR DRAIN. SLOPE FLOOR TO DRAIN.
- PLASTIC LAMINATE ON 2 LAYERS 3/4" PLYWOOD COUNTER TOP WITH SURFACE MOUNT VANITY WITH STRAIGHT EDGE SIDE BACKSPLASH.
- SURFACE MOUNTED SOAP DISPENSER
- ELECTRICAL PANEL
- HOT WATER TANK
- 4" CONCRETE APRON WITH BROOM FINISH. SLOPE SIDEWALK MINIMUM 2% AWAY FROM BUILDING. SAW CUT CONTROL JOINTS EVERY 60'.
- SANDED FIR PANEL. STAINED FINISH (TYPICAL)
- 8x8 STAINED CEDAR STRUCTURAL COLUMN ON 10" x 10" REINFORCED CONCRETE PIER WITH KNIFE PLATE. 24" x 24" x 8" THICK REINFORCED CONCRETE FOOTING TYPICAL (REFER TO STRUCTURAL).
- 2x4 INTERIOR TRIM @ TOP OF WALL. COLOUR TO MATCH WALL.
- PLASTIC LAMINATE BACKING. COLOUR TO MATCH WALL.
- 30" x 36" MIRROR
- 36" WIDE CHANGE ROOM DOOR WITH GALVANIZED HEAVY HARDWARE. LOCKABLE TWO SIDED SLIDE LATCH, TRIPLE HINGED AND NO CLOSURE.
- WOOD BENCH BY OTHERS.
- 60 NFA ROOF VENT (TYPICAL)
- 26ga. STANDING SEAM METAL ROOF (COLOUR TO BE DETERMINED)
- PREFINISHED METAL GUTTERS WITH LEAF GUARD AND PREFINISHED METAL RAINWATER LEADERS.
- BAFFLED DOWNLIGHT - DIFFUSER
- T&G CEDAR SOFFIT WITH PERFORATED VENTING STRIP.
- INTERIOR WINDOW TRIM & LINER IN PAINTED 1x4 WOOD.
- 4" O PERFORATED FOUNDATION DRAIN.
- 4" O PERIMETER DRAIN
- 2x8 COMBED FACE WOOD FASCIA. PAINTED.
- TOILET PARTITION.
- RUBBER BASE.

PROJECT DATA

LEGAL DESCRIPTION: LOT 1, BLOCK 113, COWICHAN LAKE DISTRICT PLAN VIP54704		
LOT SIZE: 0.49 HA		
ZONING: P1		
BUILDING AREAS:		
WASHROOMS:	38.15 M ²	
CHANGE ROOMS:	18.80 M ²	
TOTAL:	56.95 M ²	
LOT COVERAGE: 1%		
SETBACKS:		
FRONT YARD (WEST):	7.28M	
REAR YARD (EAST):	35.42M	
INTERIOR SIDE YARD (NORTH):	7.22M	
INTERIOR SIDE YARD (SOUTH):	40.22M	
AVERAGE GRADE: 168.25M		
BUILDING HEIGHT: 5.11M (16'-9 1/4")		

GENERAL NOTES:

- DO NOT SCALE FROM DRAWINGS!

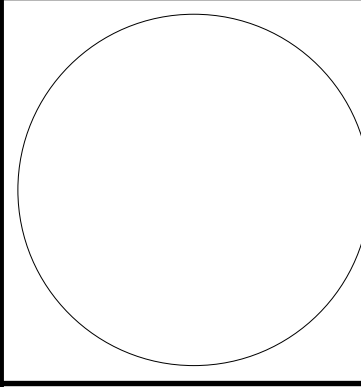
DRAWING LIST

A1.00	SITE PLAN, PROJECT DATA & PLANS
A2.00	ELEVATIONS & BUILDING SECTIONS
A3.00	SCHEDULES & MISC. DETAILS



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ARCHITECTURE

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28Apr17 BP Application

Rev	Date	Description
Checked		SMB
Drawn		RJC

Scale AS NOTED

Date APRIL 28, 2017

Project Name
ARBUS PARK WASHROOM BUILDING
ALDER CRESCENT,
YIOUBOU, BC V0R 3E1

Drawing Title

SITE PLAN, PROJECT DATA & PLANS

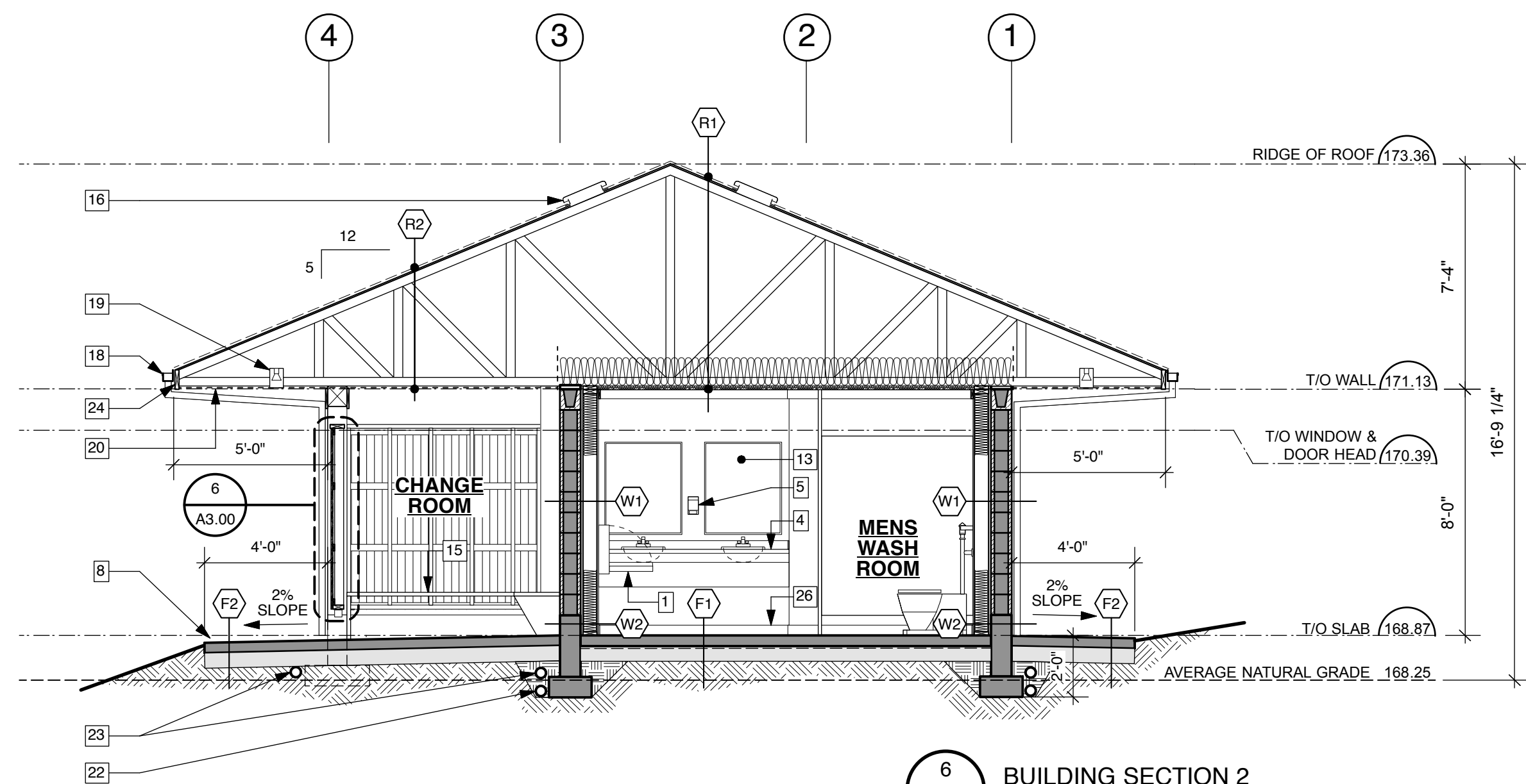
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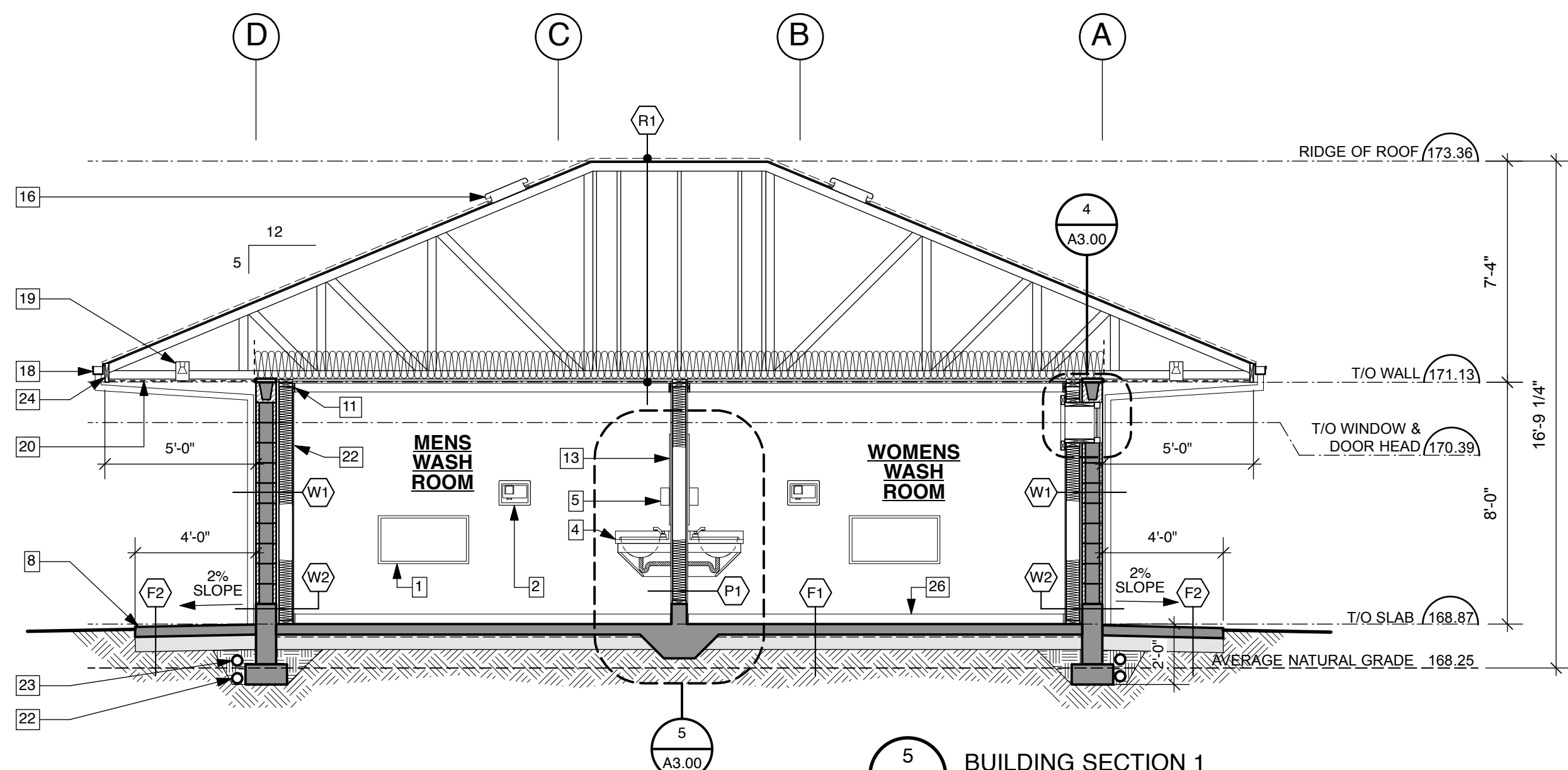
Project No.

16134

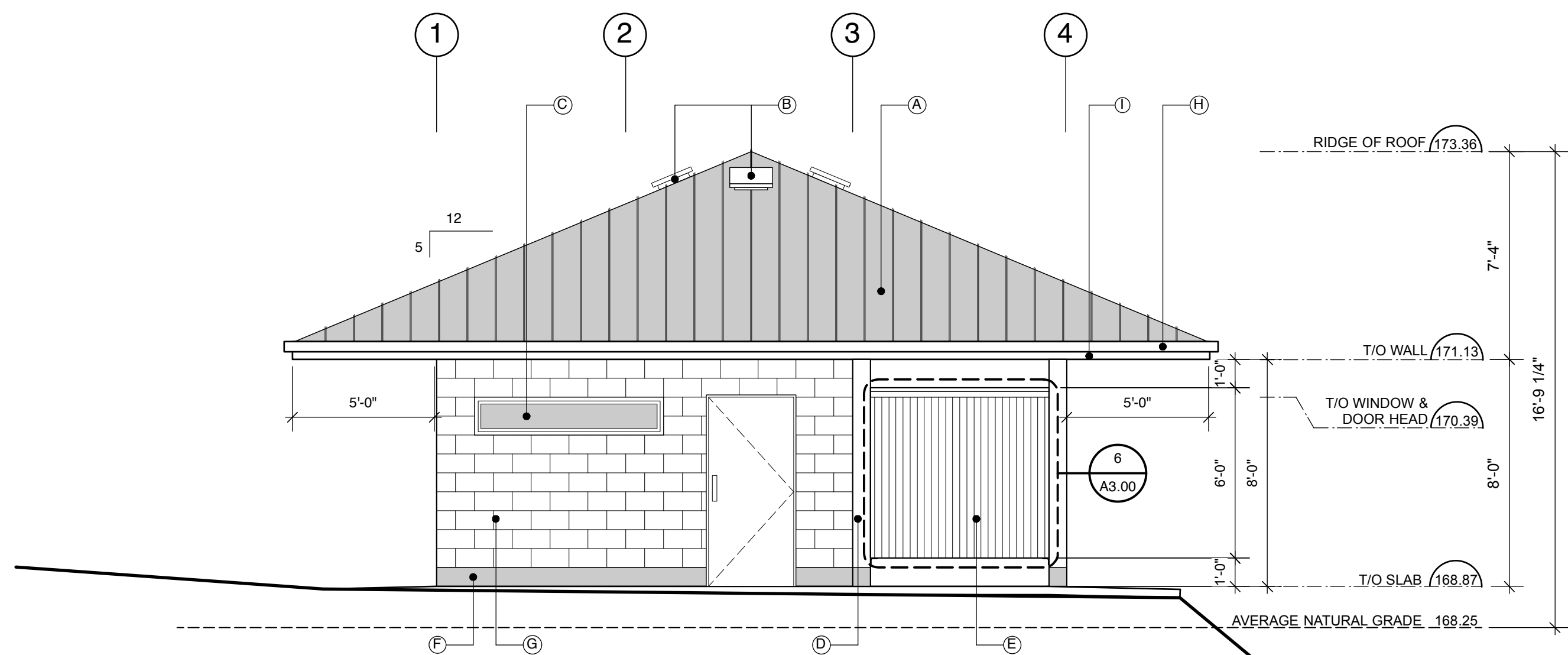
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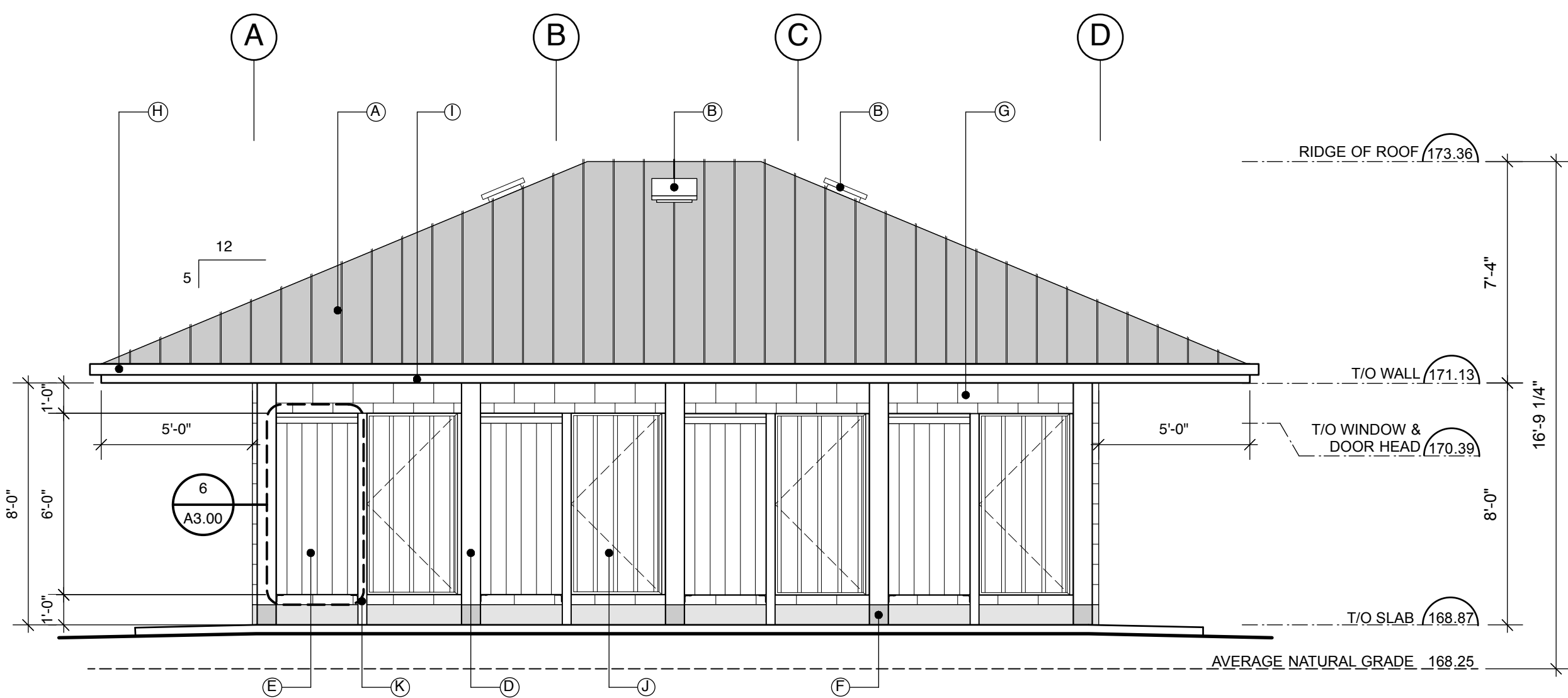
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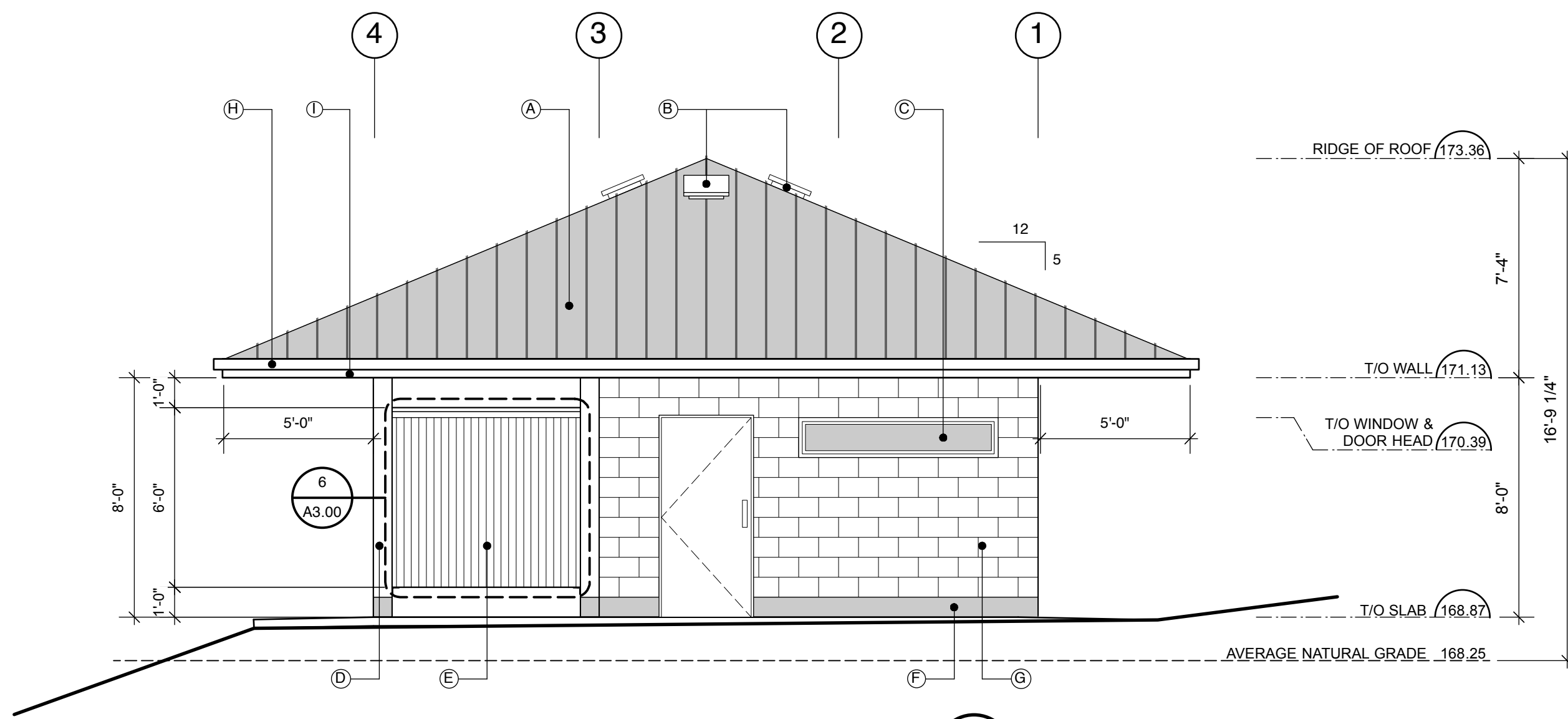
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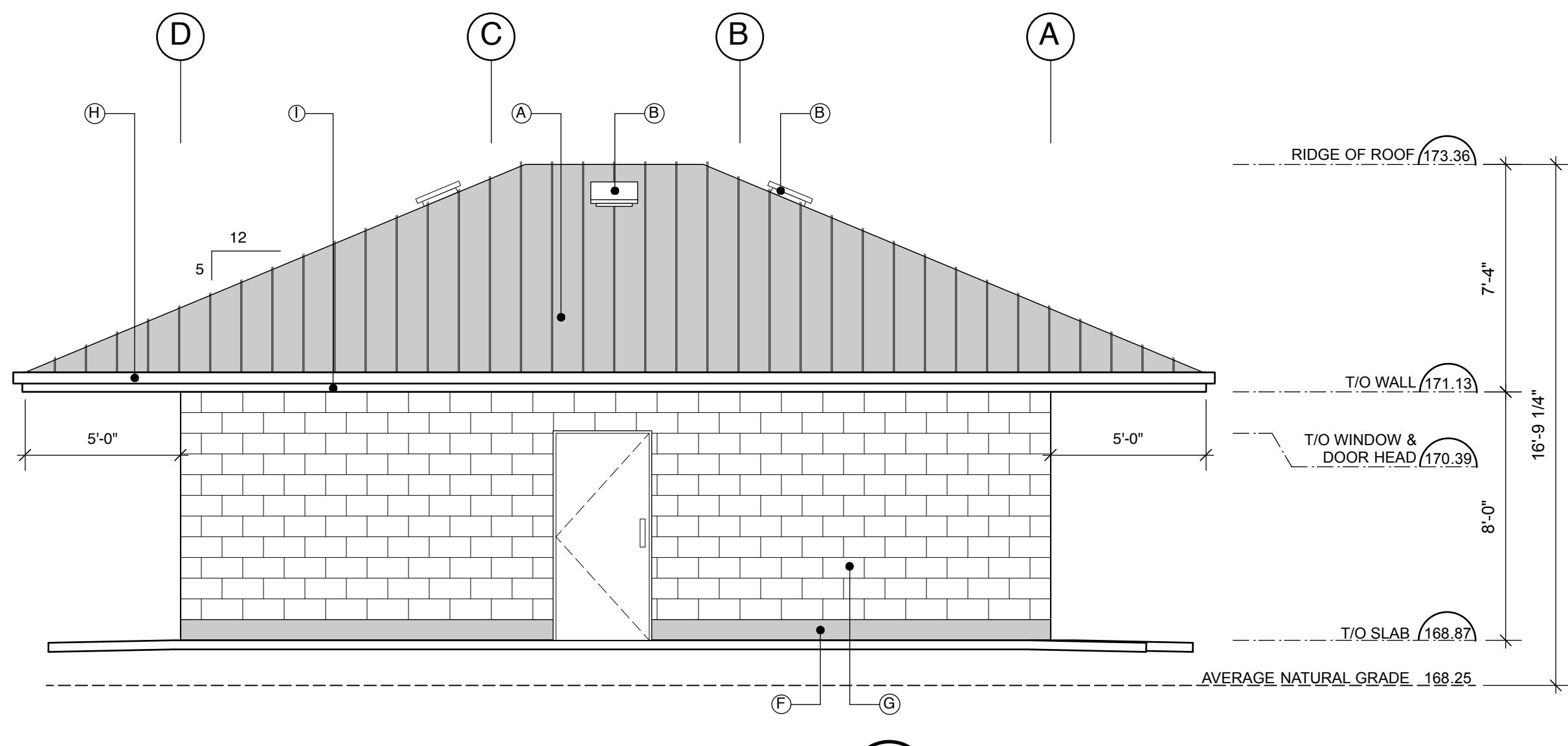
4 SOUTH ELEVATION
Scale: 1/4" = 1'-0"



3 EAST ELEVATION
Scale: 1/4" = 1'-0"



2 NORTH ELEVATION
Scale: 1/4" = 1'-0"



1 WEST ELEVATION
Scale: 1/4" = 1'-0"

MATERIALS LEGEND

- A. 26ga. STANDING SEAM METAL ROOF (COLOUR TO BE DETERMINED).
B. 60 NFA ROOF VENT.
C. CLERESTORY WINDOW WITH OPAQUE SAFETY GLASS.
D. 7'-1/4" x 7'-1/4" STAINED CEDAR STRUCTURAL COLUMN.
E. SANDED FIR PANEL, STAINED FINISH.
F. EXPOSED CONCRETE.
G. SMOOTH FACE CONCRETE MASONRY UNIT.
H. PREFINISHED METAL GUTTERS WITH LEAF GUARD AND PREFINISHED METAL RAINWATER LEADERS.
I. 2x8 COMBED FACE WOOD FASCIA, PAINTED.
J. CHANGE ROOM DOOR.
K. 4x4 STAINED CEDAR POST.

KEYNOTES

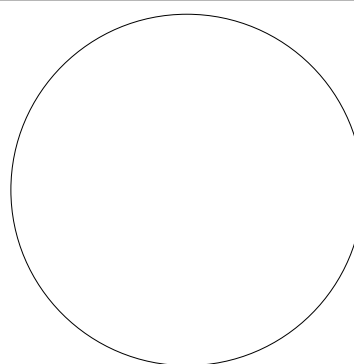
1. BABY CHANGE TABLE TO BE "KOALA CLASSIC HORIZONTAL BABY CHANGING STATION (KB100) OR SIMILAR.
2. HAND DRYERS AS PER OWNER.
3. ALUMINUM FLOOR DRAIN, SLOPE FLOOR TO DRAIN.
4. PLASTIC LAMINATE ON 2 LAYERS 3/4" PLYWOOD.
5. COUNTER TOP WITH SURFACE MOUNT VANITY WITH STRAIGHT EDGE SIDE BACKSLASH.
6. SURFACE MOUNTED SOAP DISPENSER.
7. ELECTRICAL PANEL.
8. HOT WATER TANK.
9. 4" CONCRETE APRON WITH BROOM FINISH. SLOPE SIDEWALK MINIMUM 2% AWAY FROM BUILDING.
10. SAW CUT CONTROL JOINTS EVERY 60".
11. SANDED FIR PANEL, STAINED FINISH (TYPICAL).
12. 8x8 STAINED CEDAR STRUCTURAL COLUMN ON 10" x 10" REINFORCED CONCRETE PIER WITH KNIFE PLATE, 24" x 24" x 8" THICK REINFORCED CONCRETE FOOTING TYPICAL (REFER TO STRUCTURAL).
13. 2x4 INTERIOR TRIM @ TOP OF WALL. COLOUR TO MATCH WALL.
14. PLASTIC LAMINATE BACKING. COLOUR TO MATCH WALL.
15. 30" x 36" MIRROR.
16. 36" WIDE CHANGE ROOM DOOR WITH GALVANIZED HEAVY HARDWARE, LOCKABLE TWO SIDED SLIDE LATCH, TRIPLE HINGED AND NO CLOSURE.
17. WOOD BENCH BY OTHERS.
18. 60 NFA ROOF VENT (TYPICAL).
19. 26ga. STANDING SEAM METAL ROOF (COLOUR TO BE DETERMINED).
20. PREFINISHED METAL GUTTERS WITH LEAF GUARD AND PREFINISHED METAL RAINWATER LEADERS.
21. BAFLED DOWNLIGHT - DIFFUSER.
22. T&G CEDAR SOFFIT WITH PERFORATED VENTING STRIP.
23. INTERIOR WINDOW TRIM & LINER IN PAINTED 1x4 WOOD.
24. 4" O PERFORATED FOUNDATION DRAIN.
25. 4" O PERIMETER DRAIN.
26. 2x8 COMBED FACE WOOD FASCIA, PAINTED.
27. TOILET PARTITION.
28. RUBBER BASE.



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28Apr17 BP Application

Rev Date Description

Checked SMB

Drawn RJC

Scale 1/4" = 1'-0"

Date

APRIL 28, 2017

Project Name

**ARBUTUS PARK
WASHROOM
BUILDING**

ALDER CRESCENT,
YOOBOU, BC V0R 3E1

Drawing Title

**ELEVATIONS
& BUILDING
SECTIONS**

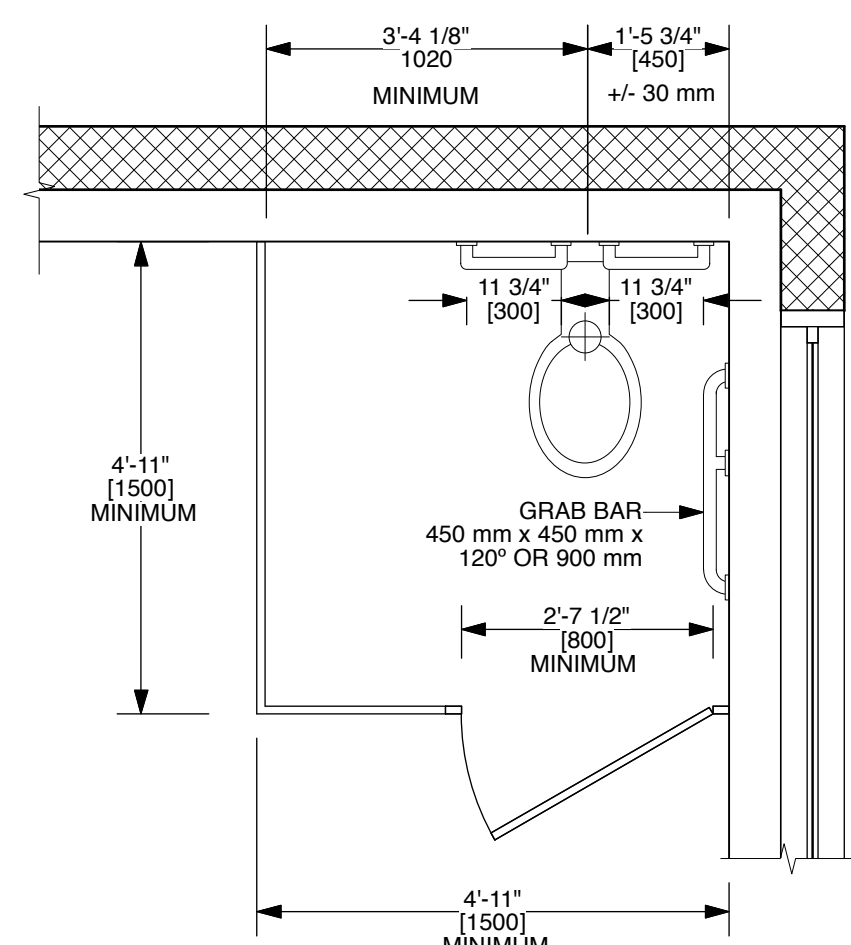
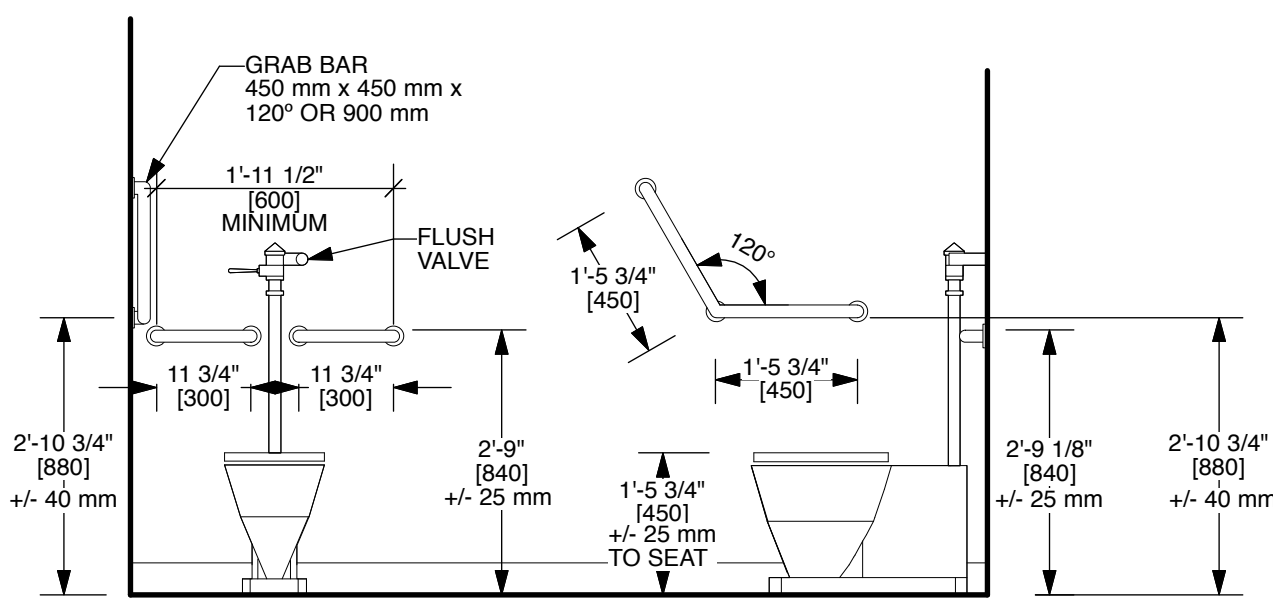
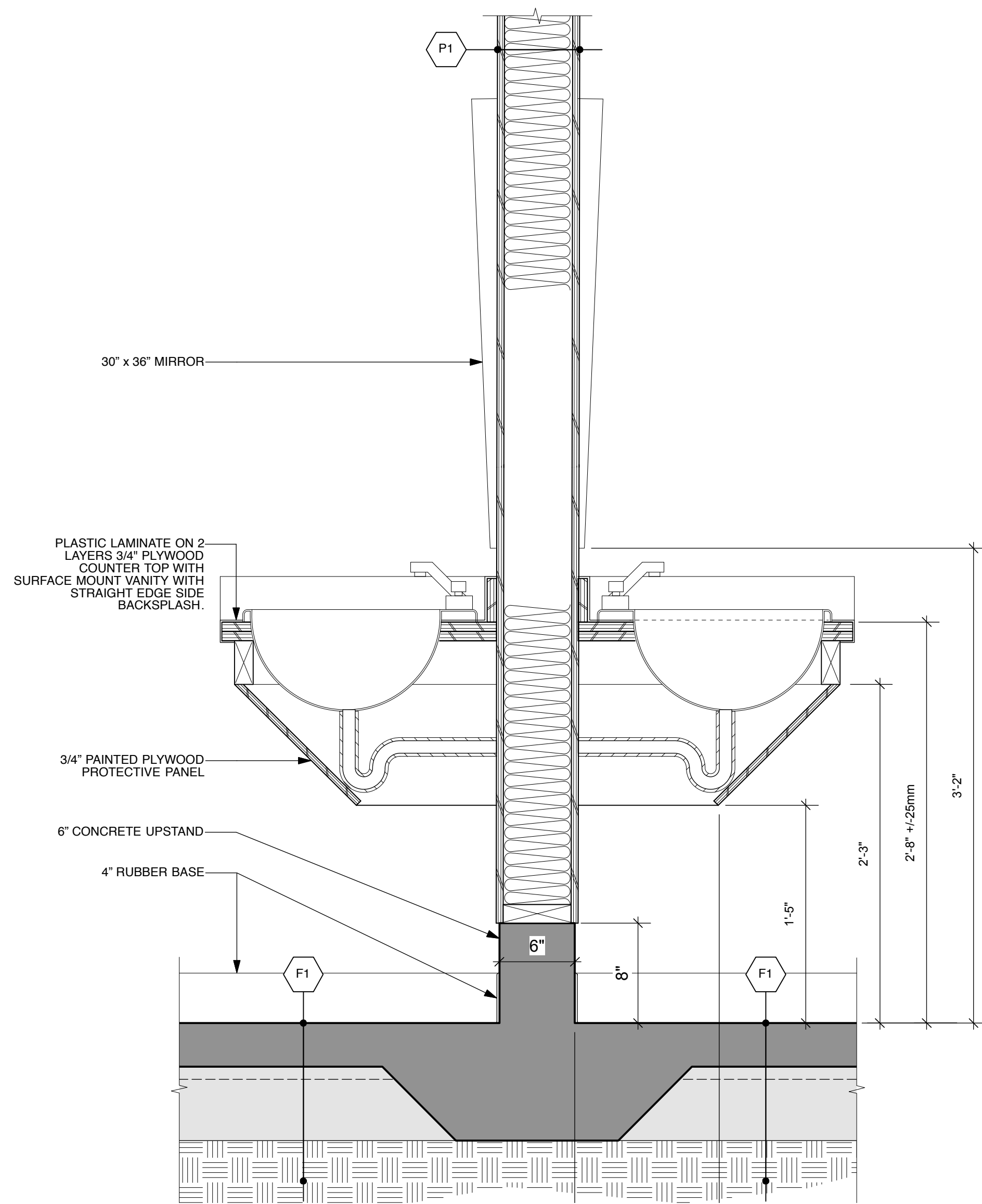
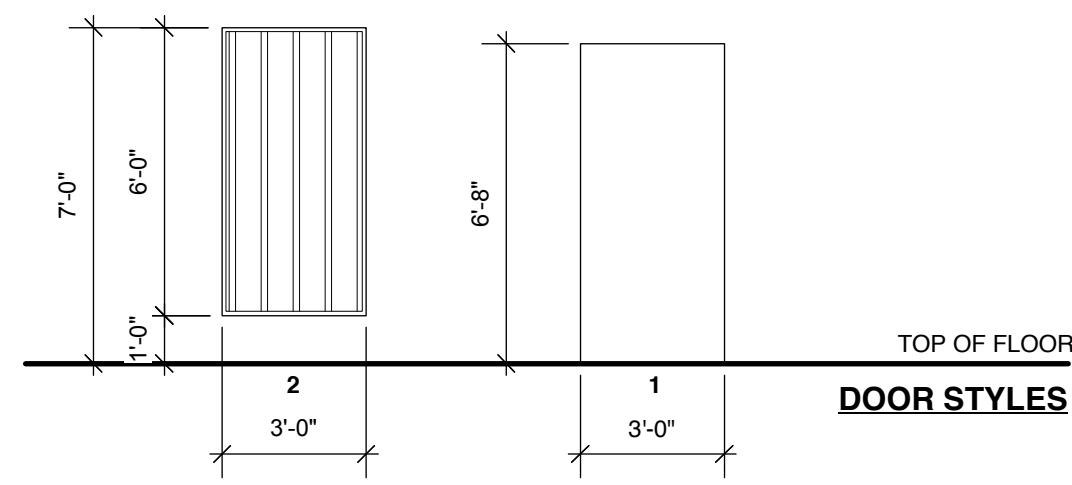
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Project No.

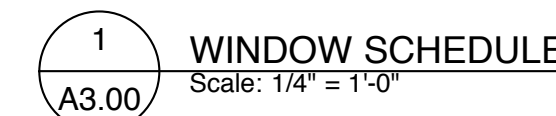
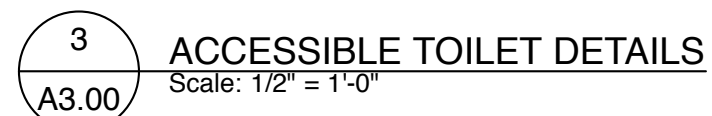
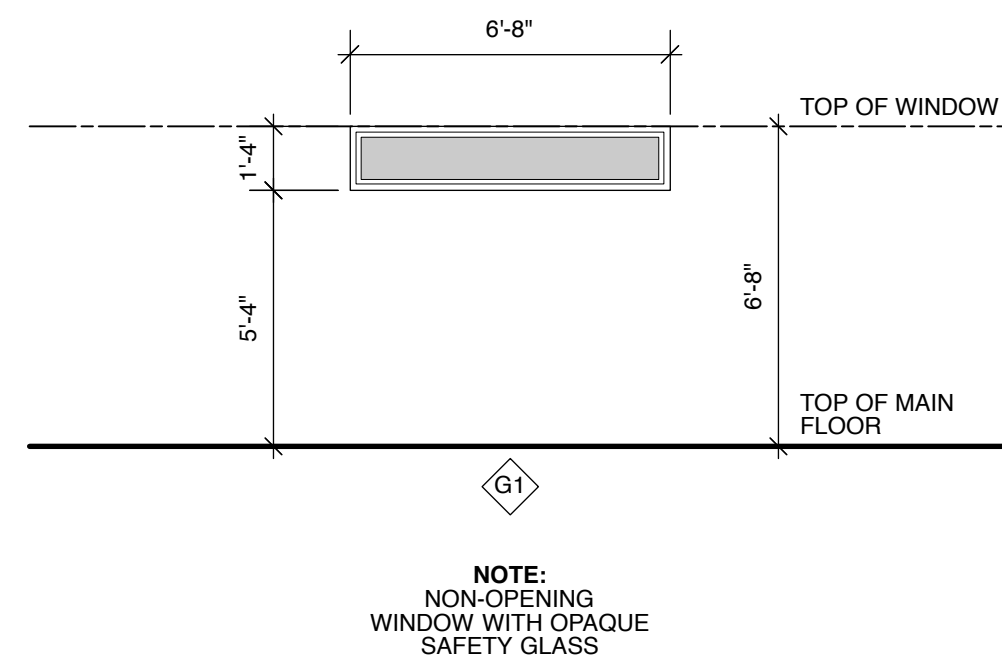
16134

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ABBREVIATIONS USED IN DOOR SCHEDULE

RH	Right Hand Swing	ENTRY	Keyed Lockset	CL	Door Closer
LH	Left Hand Swing	PULL	Push / Pull Hardware	WS	Wall Stop
RHR	Right Hand Reverse Swing	OFFICE	Keyed Lockset with interior button	FS	Floor Stop
LHR	Left Hand Reverse Swing	PRIVACY	Lockset with interior button	ELEC	Electric Strike
RHRA	Right Hand Reverse Active Leaf	PASSAGE	Push button device	PR	Proximity Reader
			Lockset with any lock	GA	Weatherstripping Gaskets
HM	Hollow Metal			KB	Kickplate
SW	Solid Core Wood	FACTORY	Factory Finish	THROWS	Push Buttons top and bottom
HCW	Hard Core Wood	FINISH	Factory Primed - Site Painted	HC	Handicap Actuator
AL	Aluminum	CLEAR	Clear Lacquer	MC	Mortise Cylinder
WD	Wood	ANOD	Clear Anodized		
PS	Pressed Steel				
GL	Glazing	FLOAT	Standard Float Glass		
		WIRED	Georgian Wired Glass		
		TEMP	Tempered Glass		





COWICHAN VALLEY REGIONAL DISTRICT
PLANNING & DEVELOPMENT DEPARTMENT
175 Ingram Street, Duncan, BC V9L 1N8
Tel: 746-2620; Fax: 746-2621

FILE COPY

BUILDING Permit Application

Project Info

Address 10700 ALDER					Zoning P1
Lot 1	District COW LAKE	Plan VIP54704	Elec. Area I	PID 017-894-964	
Description of Work: DEMOLITION OF LIFE GUARD BLDG - ARDURS PARK, YOUNG					

Building Classification

☐ SFD ☐ Residential ☐ Institutional ☐ Commercial ☐ Industrial ☒ Public

Construction

☐ New ☐ Addition ☐ Renovation ☒ Demolition ☐ Replacement ☐

Owner

Name(s) /Company COWICHAN VALLEY REGIONAL DISTRICT		
Address 175 INGRAM ST.		City DUNCAN
Postal Code V9L 1N8		
Phone 250-746-2638	E-mail m.miller@cwrld.bc.ca	

Applicant

or
Contractor
(circle one)

Name AS ABOVE		
Address		City
Postal Code		
Phone	E-mail	

I, the owner of the above property, hereby authorize and appoint _____ as my agent for this application.

The undersigned owner/authorized agent of the owner makes application for the permit specified herein, and declares that the information submitted in support of the application is true and correct in all respects.

Owner's Signature 	Date AUG 16/17	Authorized Agent Signature	Date
-----------------------	--------------------------	----------------------------	------

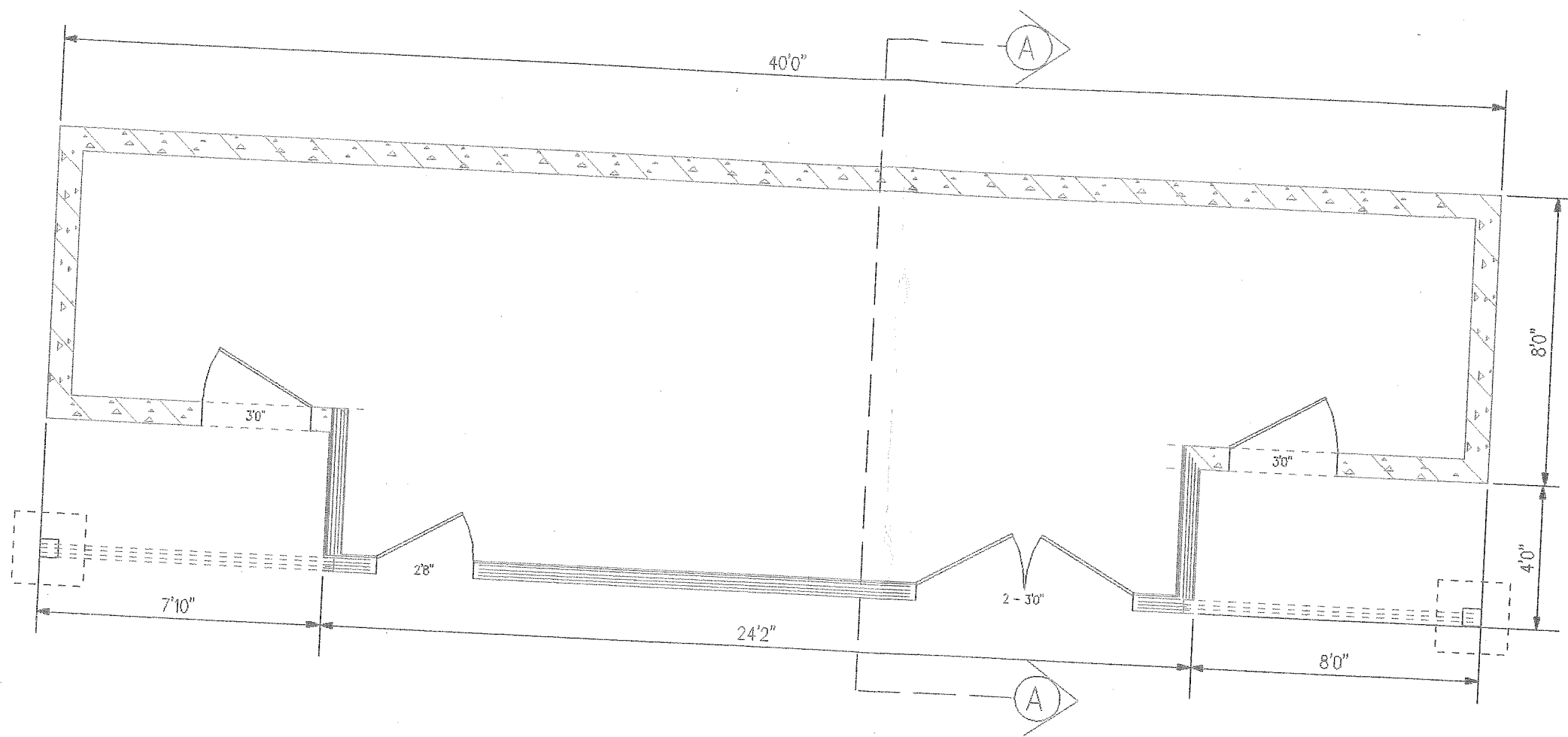
Personal Information Declaration: This information is collected for the administrative and/or operational functions of the CVRD as authorized by the 'Local Government Act' and CVRD Building Bylaw No. 3422. This information has been collected, and may be used, and/or listed in a Building Permit Listing, or forwarded to authorized agencies in accordance with the 'Freedom of Information and Protection of Privacy Act'.

Office Use

Building	Fee	Engineering	Fee	Value of Improvement (including labour)
Building Permit	25	Water Connection		\$ 0
Plumbing Permit		(Service Area)		Building Inspector: IM
Building Services		Sewer Connection		Engineering Department:
Land Titles		(Service Area)		Planning:
Other		Other		Date Issued: AUG 23/17
Subtotal	\$ 25	Subtotal	\$	Total Permit Fee: \$ 25 -

Building Permit Issuance

Permission is hereby granted to: DEMOLISH LIFE GUARD BUILDING.		DP <input type="checkbox"/> or DVP <input type="checkbox"/> # _____
Complying with all CVRD Bylaws, BC Building Code and Approved Plans marked 'Site Copy'		This Building Permit is issued subject to conditions of the above DP or DVP.
Conditions DESPOSE AT AN APPROVED LOCATION - PROVIDE RECEIPTS.		PERMIT # 17-I-319
Owner/Agent Signature	Receipt No.:	Date



PLAN VIEW - 6 OF 6

Hazardous Materials Investigation

Arbutus Park, Youbou, BC



Prepared for

**Cowichan Valley
Regional District**
175 Ingram Street
Duncan, BC V9L 1N8

December 2016



11 – 7217 Lantzville Road
Lantzville, B.C. V0R 2H0
250-802-1163
www.islandehs.ca

Executive Summary

Island EHS was engaged by the Cowichan Valley Regional District to carry out a destructive hazardous materials investigation of the lifeguard building in Arbutus Park, Youbou, BC. This investigation was conducted prior to demolition of the building. The building was unoccupied at the time of the investigation. This investigation was carried out on December 2, 2016.

This investigation is intended to identify the locations and types of hazardous materials that are present in the building.

All accessible areas of the building were inspected. Invasive sampling was carried out.

The following hazardous materials were reviewed:

Material	Description	Recommendation
Asbestos	Mastic	Moderate risk work procedures
Lead	Lead containing paints are present on exterior surfaces of the building	Personal protective equipment during demolition Lead exposure control plan Lead in air monitoring Recycle flashings
Silica	Assumed to be present in concrete, cement and mortar	Personal protective equipment during demolition Silica exposure control plan
Mercury	Fluorescent light tubes and thermostats not observed	No action necessary
Hantavirus - Rodent Droppings	No rodent droppings observed	No action necessary
Arsenic	Pressure treated wood not observed	No action necessary
Radioactive Materials	Smoke detectors not observed	No action necessary
Mould	Suspect fungal staining observed at bottom of washroom concrete block walls, and on plywood ceiling in mechanical/maintenance room	Personal protective equipment to be considered during demolition
PCBs	Fluorescent light fixtures not observed	No action necessary
Ozone Depleting Substances	No refrigerator/freezer units observed	No action necessary
Urea Formaldehyde Foam Insulation	None observed	No action necessary
Above Ground Storage Tanks (AGST)	None observed	No action necessary
Leachable Lead	None present in composite building sample	No special handling for disposal of painted materials
Other Hazardous Materials	Paint and cleaning products in mechanical/maintenance room	Remove for responsible disposal prior to demolition

Note: Renovation or demolition activities will require protective measures. Materials may be encountered during work activities that are not identified in this report. If this happens, work must stop in those areas until the materials are properly identified.

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1.0 Introduction

Island EHS was engaged by the Cowichan Valley Regional District to carry out a destructive hazardous materials investigation of the lifeguard building in Arbutus Park, Youbou, BC. This investigation was conducted prior to demolition of the building. The building was unoccupied at the time of the investigation. This investigation was carried out on December 2, 2016.

The lifeguard building sits on a concrete slab, is wood framed with a graded metal roof surface over chipboard with wood soffits. It has exterior wood siding, interior plywood walls & ceilings, some cinder block wall sections, interior and exterior wood trim. The building consists of four rooms with concrete floors – men's washroom, women's washroom, first aid/storage room and mechanical/maintenance room. Inside the washrooms there are patterned fibreboard wall partitions and coverings held in place with wood framing.

No vermiculite, or other insulation, was observed in the attic space, inside concrete blocks, or wood wall cavities during the investigation. No heating source was observed except for a baseboard heater in the first aid/storage room. Only one window with wood framing exists in the building, in the first aid/storage room – no window putty was observed. The only building contents observed during the investigation were in the mechanical/maintenance room which included pump/irrigation system equipment & control panels, cleaning products & materials, paint products & painting materials, park maintenance tools, chairs, and garbage cans.

Visual identification of hazardous materials was carried out. Representative samples of building materials were collected for asbestos testing. Paint samples were collected for determination of lead content. Duplicate samples of building materials with the lead paint were collected in order to submit for leachate testing.

2.0 Hazardous Materials

Hazardous materials are present in a large number of common building materials. These materials must be managed effectively to prevent exposure to workers and other persons, or they must be removed. In situations where work activities such as renovations and demolition will affect hazardous materials they must be removed prior to the start of work or appropriate control measures need to be implemented to ensure that workers are not exposed and contamination is not spread throughout the work and adjacent areas.

WorkSafeBC has established regulations regarding the handling and management of a number of hazardous materials along with guidelines for other hazardous materials. Other materials are regulated by environmental laws.

Materials that must comply with WorkSafeBC regulations include:

- | | |
|-------------|--------------------------|
| 1. Asbestos | 5. Hantavirus |
| 2. Lead | 6. Arsenic |
| 3. Silica | 7. Radioactive materials |
| 4. Mercury | |

Materials that WorkSafeBC has established guidelines for include:

1. Mould

Materials that must comply with environmental regulations:

- | | |
|-------------------------------|--------------------------------------|
| 1. Polychlorinated biphenyls | 3. Urea formaldehyde foam insulation |
| 2. Ozone depleting substances | 4. Fuel oil storage tanks |

2.1 Materials Subject to WorkSafeBC Regulations

2.1.1 Asbestos

Asbestos is a very common component of building materials. Most asbestos containing materials went out of use in the early 1980s. However, WorkSafeBC has determined that buildings constructed up to 1990 may contain asbestos and must be inspected prior to the start of renovation or demolition activities.

Asbestos becomes a hazard when it is disturbed and airborne dust is created. Caution must be taken to ensure that asbestos containing materials are not disturbed. Asbestos exposure is known to have a number of health effects including asbestosis, lung cancer and mesothelioma.

Asbestos has been used in approximately 3000 manufactured products and is commonly found in residential structures in:

- Floor products (sheet flooring and floor tiles)
- Drywall filler compounds
- Plasters (usually in buildings constructed prior to 1930)
- Textured ceiling applications
- Duct tape (on heating system ducting and around forced air registers)
- Vermiculite
- Caulking and putties (on windows and doors and in levelling compounds)

- Cement products (siding and shingles as well as underground drainage pipes)
- Roofing felts and papers
- Pipe insulation (on piping, boilers and hot water tanks)

WorkSafeBC defines an asbestos containing material as one containing 0.5% or more asbestos by weight. Vermiculite is considered to be asbestos containing if any asbestos is present. WorkSafeBC has designated asbestos as an ALARA substance. This means that exposures to this material must be kept “as low as reasonably achievable”. Section 5.54 of the Occupational Health and Safety Regulation states that employers are required to develop and implement an exposure control plan when workers may be exposed to airborne concentrations of asbestos greater than 50% of the exposure limit.

All asbestos waste must be handled, transported and disposed of in accordance with current Ministry of Environment regulations.

2.1.2 Lead

Lead has been commonly used in paints and coatings. Coatings manufactured prior to 1950 are likely to contain high concentrations of lead. Residential paints manufactured after 1950 contain lower concentrations of lead. Residential paints manufactured after 1978 are unlikely to contain lead. Industrial paints and coatings are still made with lead.

Lead becomes a hazard when painted surfaces are disturbed and airborne dust is created. Caution must be taken to ensure that lead containing materials are not disturbed. Lead exposure is known to have a number of health effects including damage to the central nervous system. It also affects the uptake of oxygen in the blood and can accumulate in bones.

Lead is used in plumbing fixtures. Flashings and other products found on roofs may be made of pure lead. Lead has also been used in solders. This may be found on plumbing lines as well as on electrical equipment.

WorkSafeBC has designated lead as an ALARA substance. This means that exposures to this material must be kept “as low as reasonably achievable”. Section 5.54 of the Occupational Health and Safety Regulation states that employers are required to develop and implement an exposure control plan when workers may be exposed to airborne concentrations of lead greater than 50% of the exposure limit. Lead exposures can also occur when lead products are touched and lead contamination is ingested (eaten).

Waste materials with lead based paint on them do not have special disposal requirements. Lead paint that has been removed from building materials requires leachate testing to determine the appropriate method of disposal.

2.1.3 Silica

Silica is one of the most common element on earth. It is found almost everywhere. It appears in two (2) main forms - amorphous and crystalline. Amorphous silica is not generally considered to be a significant hazard. Crystalline silica is known to have a number of health effects including silicosis.

Crystalline silica becomes a hazard when it is disturbed and airborne dust is created. Caution must be taken to ensure that silica containing materials are not disturbed.

Crystalline silica is present in a number of common building materials. These include:

- Plasters
 - Cement
- Stucco
Drywall Filler Compounds

WorkSafeBC has designated crystalline silica as an ALARA substance. This means that exposures to this material must be kept “as low as reasonably achievable”. Section 5.54 of the Occupational Health and Safety Regulation states that employers are required to develop and implement an exposure control plan when workers may be exposed to airborne concentrations of crystalline silica greater than 50% of the exposure limit.

2.1.4 Mercury

Mercury is a metal that is liquid at room temperatures and vaporizes at low temperatures. Mercury has a number of industrial uses. It is also found in thermostats, thermometers and inside fluorescent light tubes.

Mercury has a significant toxic effect on the central nervous system and can cause disease and even death. Mercury becomes a hazard when it is released into the environment. Significant concentrations of mercury can be present at room temperature because it vaporizes at low temperatures. This can occur when mercury thermometers or thermostat bulbs are broken or when fluorescent light tubes are broken.

WorkSafeBC has designated mercury as an ALARA substance. This means that exposures to this material must be kept “as low as reasonably achievable”. Section 5.54 of the Occupational Health and Safety Regulation states that employers are required to develop and implement an exposure control plan when workers may be exposed to airborne concentrations of mercury greater than 50% of the exposure limit.

All mercury waste requires disposal in accordance with current Ministry of Environment requirements.

2.1.5 Hantavirus

Hantavirus is associated with Hantavirus Pulmonary Syndrome. This disease is contracted by coming into contact with the droppings or urine of infected rodents. It can also be contracted by being bitten or scratched by infected rodents.

WorkSafeBC states that employers are required to develop and implement an exposure control plan when workers may be exposed to potentially contaminated rodent droppings.

It should be noted that diseases are associated from contact with other animal droppings, most notably Histoplasmosis from contact with infected bird droppings.

There are no special disposal requirements for animal droppings.

2.1.6 Arsenic

Arsenic is a metal that is sometimes used in pesticides. It is also found in pressure treated wood products.

Exposures can occur when arsenic containing materials are disturbed and dust becomes airborne. Sawdust from cutting pressure treated wood or burning these materials can result in significant airborne arsenic concentrations.

Disposal of arsenic waste must be in accordance with current Ministry of Environment requirements.

2.1.7 Radioactive Materials

Radioactive materials are commonly found in smoke detectors. A small amount of radioactive materials ($^{241}\text{Americium}$) is sealed in a metal case inside smoke detectors. This metal case must remain undisturbed to prevent exposure to radioactive materials.

Some ceramic tiles and forms of granite have also been found to contain radioactive materials. Radon is a naturally occurring gas created during the decay of other radioactive materials. It is not considered a significant concern on Lower Vancouver Island.

Waste smoke detectors must be disposed of in accordance with Canadian Nuclear Safety Commission requirements.

2.2 Materials Subject to WorkSafeBC Guidelines

2.2.1 Mould

Mould is prevalent throughout our environment. It occurs naturally with mould spores being present everywhere. Mould is nature's way of breaking down and recycling materials. Mould spores require moisture and a food source to begin growing. Water leaks (even very minor leaks) and moisture accumulation are usually sufficient for mould to begin growing.

Exposure to mould spores most often results in allergy type responses in susceptible individuals. These are similar in nature to "hayfever" and can include runny eyes and noses and throat irritation. In more extreme cases, exposure to mould spores can result in "pneumonia-like" responses.

WorkSafeBC has not established exposure levels for airborne mould spores. WorkSafeBC does provide guidelines for dealing with mould contamination. These guidelines are included in the Indoor Air Quality regulation guidelines.

There are no special disposal requirements for mould waste.

2.3 Materials Controlled by Environmental Regulations

2.3.1 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are regulated by both Provincial and Federal regulations. Fluorescent light ballasts containing PCBs must be treated as PCB waste and stored and disposed of in accordance with current regulations. Fluorescent light fixtures removed during demolition, construction or maintenance activities must be inspected for the presence of PCBs.

Each ballast identified as containing PCBs must be sent to a licenced facility in accordance with current regulatory requirements.

2.3.2 Ozone Depleting Substances

Ozone depleting substances (ODS) and chlorofluorocarbons are commonly found in older refrigerators and air conditioning units. They are sometimes found in fire suppression systems. Environmental regulations restrict the release of these compounds into the environment.

When systems or equipment contains ODS are set for disposal all the ODS must be collected for recycling or disposal by a licenced contractor.

2.3.3 Urea Formaldehyde Foam Insulation

Urea formaldehyde foam insulation (UFFI) was used as a retrofit insulation in older buildings. The expanding foam would be sprayed into wall and ceiling cavities to provide additional insulation in older buildings. It was most commonly used in residential settings.

Over time, in the presence of moisture, the insulation can break down and release formaldehyde gas. This insulating material was banned in 1978. Many older buildings contain UFFI.

There are no special disposal requirements for UFFI waste.

2.3.4 Fuel Oil Storage Tanks

Fuel oil storage tanks (above and below ground) are found in many houses and commercial buildings. The tanks can corrode and leak as they age. Spills often occur during tank filling and create contamination.

Tanks in use must be monitored to ensure that spillage and contamination does not occur. Tanks no longer in use must be removed for disposal and the surrounding soil checked for contamination.

2.3.5 Leachable Metals

The BC Ministry of Environment regulates the disposal of some waste materials based on the leachability of metals and other compounds from the waste.

Testing may have to be carried out on materials removed from the building before they can be sent for disposal. This will depend on where the waste is being sent.

2.3.6 Other Materials

A number of hazardous materials may be present in a building that will be affected by renovations or demolition. These can include:

- Propane or butane cylinders
- Paint
- Solvents
- Toxic or corrosive products
- Other flammable materials

3.0 Results and Recommendations

The building was inspected for the presence of a variety of hazardous materials. WorkSafeBC requirements specify that precautions are necessary when handling these materials. The necessary precautions will depend on the disposition of each hazardous material.

Trained qualified contractors need to be hired to carry out remedial work on hazardous materials. All general demolition work should be carried out by workers wearing respirators and disposable coveralls.

Copies of this report must be provided to contractors engaged to work in the building.

Notices of Project must be submitted in accordance to WorkSafeBC requirements.

Materials may be encountered during work activities that are not identified in this report. If this happens, work must stop in those areas until the materials are properly identified.

3.1 Asbestos

A total of three (3) representative bulk samples of such materials as fibreboard, mastic, and roof felt were collected from the building. The following asbestos containing materials were identified:

Table 1: Summary of Asbestos Containing Materials

Sample Number & Location	Description	Asbestos Type & Percentage	Approximate Quantity	Removal Requirements
2 - Men's Washroom, Fibreboard Stall Wall Perimeter Behind Wood Trim (likely in both washrooms)	Mastic	Chrysotile (3%)	~40 linear feet or less	Moderate risk work procedures

*Quantities of identified asbestos containing materials are an estimate of observable asbestos-containing materials. Concealed or inaccessible materials may not have been included in this estimate. It is the responsibility of the abatement contractor to ensure accurate measurements.

Photographs of all samples analyzed for asbestos are attached in Appendix 1. All results of samples analyzed for asbestos, including sample identification and locations are attached in Appendix 2. Floor plans with locations of sampled materials are attached in Appendix 3.

A visual inspection of accessible areas within the attic space was conducted, no vermiculite insulation was observed. Inspection holes were made in four locations of the concrete block walls to observe for vermiculite insulation – none was observed at all four inspection holes. This material may still exist in areas not inspected within false ceilings or wall cavities. If discovered the material should be tested for the presence of asbestos.

Prior to the performance of any work that may disturb asbestos containing materials it is a regulatory requirement that a qualified person perform a Risk Assessment. This requirement is in compliance with the WorkSafeBC Occupational Health & Safety Regulation *Part 6 "Substance Specific Requirements"*, specifically Section 6.6 subsections (1), (2), (3), & (4).

The removal of **asbestos containing mastic** should be conducted using **Moderate Risk** asbestos abatement procedures. These procedures must be utilized by a qualified contractor and include as a minimum requirement:

- HEPA filtered half face respiratory protection and disposable Tyvek coveralls;
- Application of water to the asbestos debris materials being disturbed;
- Isolation of the work area;
- Air monitoring as per WorkSafeBC requirements.

Asbestos cement piping was sometimes used for perimeter drains, storm drains and sewer lines. This product may be buried on the property.

3.2 Lead

The currently allowable level of lead in paint is set by Health Canada under the Canada Consumer Protection Act, Surface Coating Materials Regulation (SOR 2005-09). Under this regulation the maximum allowable concentration of lead in paint sold to consumers is 0.009% (90 µg/g). WorkSafeBC considers paint which contains lead at concentrations greater than 0.009% to present a potential health hazard, if it is removed incorrectly.

Lead testing was carried out on five (5) paint samples collected from various wood and concrete surfaces. Three paint sample results were determined to be above the maximum allowable concentration (MAC) for lead in paint (90 µg/g) adopted by WorkSafeBC. All samples considered positive for lead paint (Pb1, Pb2, and Pb3) are bolded in Table 2, below:

Table 2: Summary of Lead in Paint

Sample Number & Location	Description	Lead Content (µg/g)	WorkSafeBC Lead in Paint Maximum Allowable Concentration (µg/g)
Pb1 – Exterior Wood Siding	Green paint on wood	2200	90
Pb2 – Exterior Concrete Block Walls	Green paint on concrete blocks	730	
Pb3 – Exterior Wood Trim	White paint on wood	310	
Pb4 – Interior Walls	White paint on wood and concrete	85	
Pb5 – Interior Floors	Grey paint on concrete	<63	

µg/g = micro grams per gram.

< = result is less than the limit of detection.

*substrate/matrix interference possible

Photographs of all samples analyzed for lead in paint are attached in Appendix 1. Floor plans with locations of sampled materials are attached in Appendix 3.

Any untested painted surfaces are presumed lead-containing unless sampled and found to be non-lead containing. For removal of other hazardous materials, including lead-based paint, an employer is required under Section 5 of the OHSR to develop work procedures designed to minimize a worker's risk of exposure, and that both the supervisor and worker be properly trained to handle the material, including cleanup and disposal. Lead may be present as solder on any remaining plumbing systems and may be present on other fixtures such as flashings or roof vents.

WorkSafeBC regulation requires that contractors working with lead-based containing materials have a Lead Exposure Control Plan in place including site specific work procedures prior to work commencing. The Regulation also requires that lead in air samples be collected at the beginning of work tasks to ensure proper control methods are employed to control lead dust exposures.

Precautions must be put in place during demolition and renovation activities to ensure that workers are not exposed to lead containing dust and debris. Flashings can be removed and recycled.

In order to control worker exposure to lead paint particulate, any demolition, cutting, burning, grinding, sanding or other disturbance of identified lead painted surfaces should be conducted following appropriate safe work procedures. Procedures will vary depending on the nature of the work but should consider, as a minimum, the following:

- Use of Half face respirators equipped with P100 class filters, disposable Tyvek™ or equivalent coveralls and work gloves;
- Segregation of the work area by the use of barrier tape and warning placards;
- Use of drop sheets and tarps to prevent spread of lead-containing dust;
- Use of HEPA filter equipped vacuum cleaner(s);
- Thorough washing before eating, drinking or smoking;
- Application of water to the materials being disturbed;
- Filing of a "Notice of Project" with WorkSafeBC prior to significant disturbance of lead-containing paint; and,
- Air monitoring during disturbance of lead-containing paint

Under the BC Hazardous Waste Regulation materials with identified lead-based paint destined for disposal at a licensed landfill facility must be tested for leachability to determine if they should be handled as a hazardous waste.

3.3 Leachable Metals

The BC Ministry of Environment regulates the disposal of some waste materials based on the leachability of metals and other compounds from the waste.

Under the BC Hazardous Waste Regulation materials with lead paint concentrations over 0.01 wt% (100ppm or 100 µg/g) destined for disposal at a licensed landfill facility must be tested for leachability to determine if they should be handled as a hazardous waste.

One composite sample of various painted building materials was collected and submitted for analysis to determine if these material meet current Ministry of Environment criteria for disposal with regards to leachable levels of lead.

The composite sample of painted building materials was found to have a total lead concentration above the WorkSafeBC limit of 90 µg/g, but a leachable level of lead below the BC Hazardous Waste Regulation of 5.0 mg/L (Table 3).

Table 3: TCLP Results

Description	Total Lead Content (µg/g)	TCLP Lead (mg/L)
Various (composite of) painted building materials	820	<0.20
	WorkSafeBC Lead in Paint Maximum Allowable Concentration 90µg/g	BC Hazardous Waste Regulation Limit for Leachable Lead 5.0 mg/L

TCLP analysis for the sample of building materials destined for the landfill was found to have leachable amount of lead below the regulation limit. There are no special disposal requirements for these materials with regards to leachable levels of lead.

3.4 Silica

Silica testing was not carried out, but this material will be present in concrete, cement, and mortar.

Precautions must be put in place during demolition and renovation activities to ensure that workers are not exposed to silica containing dust and debris. **WorkSafeBC regulation requires that contractors working with silica-based containing materials have a Silica Exposure Control Plan in place including site specific work procedures prior to work commencing.**

In order to control worker exposure to silica dust, any abrasive blasting, jackhammering, chipping, drilling, cutting, sawing or other disturbance of identified concrete, plaster or drywall walls or ceilings should be conducted following appropriate safe work procedures. Procedures will vary depending on the nature of the work but should consider, as a minimum, the following:

- Use of Half-face respirators equipped with P100 class filters, disposable Tyvek™ or equivalent coveralls and work gloves;
- Continuous application of water spraying to materials being disturbed;
- Use of drop sheets and tarps to prevent spread of silica-containing dust;
- Use of HEPA filter equipped vacuum(s);
- HEPA equipped negative air unit for dust suppression purposes (recommended); and
- Air monitoring as per WorkSafeBC requirements.

3.5 Mercury

Fluorescent lights were not observed in the building.

Mercury containing thermostats were also not observed. If discovered, care must be taken to ensure that the glass bulb containing mercury is not damaged. All mercury containing thermostats taken out of service must be sent for proper disposal or recycling.

3.6 Hantavirus (and other Animal Droppings)

Rodent droppings were not observed in accessible areas during the investigation; however, rodent traps were observed.

If encountered during demolition work, it is recommended that all personnel conducting work in the area wear, at a minimum, half face respirator fitted with HEPA filtered P100 cartridges, disposable suits, impermeable gloves, eye protection, and that use of HEPA filtered negative air cabinets and HEPA filtered vacuums be employed.

WorkSafeBC regulation requires that contractors handling/cleaning animal and rodent feces have a Hantavirus Exposure Control Plan in place including site specific work procedures prior to work commencing.

3.7 Arsenic

Pressure treated wood was not observed in building construction materials. If discovered during demolition work, ensure that all pressure treated wood is disposed of responsibly and not burned.

3.8 Radioactive Materials

Smoke detectors were not observed in the building. If encountered, smoke detectors must be sent for disposal in accordance with Canadian Nuclear Safety Commission requirements when they are taken out of service.

3.9 Mould

Suspect fungal staining was observed in the building at the bottom of washroom concrete block walls, and on the ceiling of the mechanical/maintenance room.

Fungal contamination may be present within wall or ceiling cavities, as well as on attic space and hidden roofing materials. During demolition activities, precautions must be taken to ensure that workers are not exposed to potential mould spores which would include, as a minimum, half face respirator fitted with HEPA filtered P100 cartridges, disposable suits, impermeable gloves, eye protection, and that use of HEPA filtered negative air cabinets and HEPA filtered vacuums be employed.

3.10 Polychlorinated Biphenyls

Fluorescent light ballasts were not observed in the building.

3.11 Ozone Depleting Substances

Older refrigerator/freezer units were not observed in the building.

3.12 Urea Formaldehyde Foam Insulation

Urea Formaldehyde Foam Insulation was not observed in the building. This material is not suspected of being present.

3.13 Fuel Oil Storage Tanks

Fuel oil storage tanks (above ground) were not observed in or around the building during the investigation.

3.14 Other Materials

Stored paints and cleaners exist on site within the mechanical/maintenance room. These materials should be safely removed from the site prior to any demolition activities taking place and must be removed for disposal, or recycling, in accordance with current regulations.

3.15 Abatement Clearance Documentation

In order to comply with BC Workers Compensation Board Occupational Health & Safety Regulation Part 20.112(8) a qualified person (Island EHS) must conduct a final inspection after all of the hazardous materials identified in this report have been safely contained or removed. Once all of the hazardous materials have been removed and the final inspection has been completed a written clearance letter can be provided.

Should asbestos abatement be undertaken by unqualified persons (e.g. homeowners or untrained contractors), the work area will require aggressive air clearance sampling. This air sampling will extend to any adjacent areas that have not been isolated from the hazard and potential contamination. Clearance letters, required to document removal of asbestos for issuance of building permits and contractors hired to work in the space, will not be granted subject to failure of this testing. The owner/client is responsible for the additional fees incurred for this services.

4.0 Closure

This document was prepared for the exclusive use of our client. All conclusions and recommendations are based upon conditions at the site at the time of this investigation. All conclusions and recommendations are based upon professional opinions. These opinions are in accordance with accepted industrial hygiene assessment standards and practices and comply with current WorkSafeBC requirements.

All conclusions and recommendations made in this report are based on conditions at the time of inspection. Changes may occur over time that will require a re-evaluation of the site.

All work was carried out based on the Scope of Work that was agreed upon with the client prior to the start of work, constraints imposed by the client and availability of access to the site. A Stage 1 Preliminary Site Investigation was not part of the scope of work.

No warranty or guarantee, whether expressed or implied, are made with respect to the data or the reported findings, observations, and conclusions, which are based solely upon site conditions at the time of the investigation.

This report may not be used, relied upon, copied, published, or quoted by any party without the written consent of Island EHS. Other parties reading this report must independently verify the completeness and accuracy of this report and its contents.

This report is not intended as a Scope of Work for tender or bidding purposes. Any use of this report in that fashion is at the sole discretion and liability of the Owner.









Peter Gross, B.Kin., B.A.Sc.(OHS)
Occupational Hygienist
Field Work and Report







Cynthia Sauvé, CIH, CRSP
Senior Occupational Hygienist
Report Review

Appendix 1

Photographs

	
<p>Sample: 11355 – A1 Location: Lifeguard Building, Men's Washroom, Stall Wall Description: Fibreboard Asbestos: None detected</p>	<p>Sample: 11355 – A2 Location: Lifeguard Building, Men's Washroom, Fibreboard Stall Wall Perimeter Behind Wood Trim Description: Mastic Asbestos: Chrysotile (3%)</p>
	
<p>Sample: 11355 – A3 Location: Lifeguard Building, Roof, Between Metal Roofing and Chipboard Description: Roof Felt Asbestos: None detected</p>	<p>Sample: 11355 – Pb1 Location: Exterior Wood Siding Description: Green paint on wood Lead Paint: Yes</p>
	
<p>Sample: 11355 – Pb2 Location: Exterior Concrete Block Walls Description: Green paint on concrete blocks Lead Paint: Yes</p>	<p>Sample: 11355 – Pb3 Location: Exterior Wood Trim Description: White paint on wood Lead Paint: Yes</p>

	
<p>Sample: 11355 – Pb4 Location: Interior Walls Description: White paint on concrete Lead Paint: No</p>	<p>Sample: 11355 – Pb5 Location: Interior Floors Description: Grey paint on concrete Lead Paint: No</p>
	
<p>Location: Men's Washroom Description: Suspect fungal staining on concrete blocks</p>	<p>Location: Men's Washroom Description: Suspect fungal staining on concrete blocks</p>

Appendix 2

Laboratory Results

Bulk Sample Report

Project #: 11355
Client: Cowichan Valley Regional District
Site: Arbutus Park, Youbou, BC

Sampled by: PCG
Date Sampled: 2-Dec-2016
Analyst: PCG

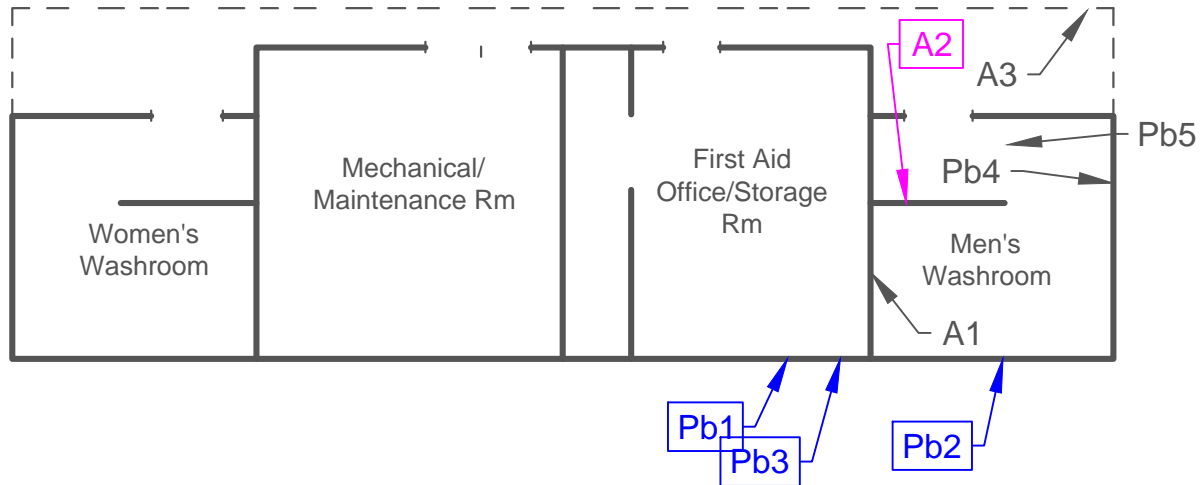
11 – 7217 Lantzville Road
Lantzville, B.C. V0R 2H0
250-802-1163
admin@islandehs.ca

Sample #	Location	Material	Analysis Date	Layer	Description	%	Asbestos	%	Other Materials	%
1	Lifeguard Building, Men's Washroom, Stall Wall	Fibreboard	14-Dec-16	1 2	Patterned vinyl Brown fibrous layer	1 99	None detected None detected	0 0	Non fibrous Cellulose Non fibrous	100 70 30
2	Lifeguard Building, Men's Washroom, Fibreboard Stall Wall Perimeter Behind Wood Trim	Mastic	14-Dec-16	1 2	Black mastic Brown fibre bundles	85 15	Chrysotile None detected	3 0	Non fibrous Cellulose Non fibrous	97 98 2
3	Lifeguard Building, Roof, Between Metal Roofing and Chipboard	Roof Felt	14-Dec-16	1	Black tar & fibres	100	None detected	0	Cellulose Non fibrous	50 50

Appendix 3

Sample Locations

Lifeguard Building Floor Plan



LEGEND:

A-C: Asbestos Containing

A# A-C Sample Location

A# Non-Containing Sample Location

Pb# Lead Paint Sample Location

Pb# Paint Sample Location



Project
11355

Date of Issue
December 2016

Bulk Sample Locations

Cowichan Valley Regional
District
Arbutus Park, Youbou, BC

Not To Scale

