

SITE PLAN
 SCALE: 1/16" = 1'-0"
 NORTH

PROJECT INFORMATION LEGEND

PROPERTY OWNER:	NICOLA LAKE ESTATES INC.
AUTHORITY HAVING JURISDICTION:	THOMPSON NICOLA REGIONAL DISTRICT
BUILDER:	???
SITE CIVIC ADDRESS:	LOT 40
SITE LEGAL ADDRESS:	77 Plan KAP79399, DL 530, KDYD
SITE ZONING:	LR-2 Lakeshore Residential Multi-Family Zone
PROPOSED USE:	SINGLE FAMILY RESIDENCE

ZONING BYLAW ANALYSIS

BYLAW DESCRIPTION	ALLOWABLE	PROPOSED
LOT SETBACKS		
FRONT LOT LINE	6.0m (MINIMUM)	6.05m
REAR LOT LINE	6.0m (MINIMUM)	22.88m
INTERIOR SIDE LOT LINE	1.5m (MINIMUM)	1.50m
EXTERIOR LOT LINE	4.5m (MINIMUM)	N/A
LOT AREA	844.15q. m.	844.15q. m.
SITE COVERAGE	337.66sq. m. (40% OF LOT AREA)	173.35sq. m. (20.54% OF LOT AREA)
BUILDING HEIGHT	12.0m	6.98m

SITE PLAN PROVIDED BY :
WATSIN ENGINEERING LTD
CONSULTING ENGINEERS KAMLOOPS B.C.

FLOOR AREAS

NAME	AREA	AREA SQM
FINISHED		
MAIN FLOOR AREA	95.66 m ²	95.66 m ²
BASEMENT	96.81 m ²	96.81 m ²
	192.47 m ²	192.47 m ²
UNFINISHED		
GARAGE	45.82 m ²	45.82 m ²
	45.82 m ²	45.82 m ²
	238.29 m ²	238.29 m ²

GENERAL SYMBOL LEGEND

	CROSS SECTION MARKER
	DIRECTION OF VIEW
	SECTION IDENTIFICATION
	SHEET WHERE DRAWN
	WALL CONSTRUCTION TYPE
	MAIN FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	UPPER FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	ROOF PLAN POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
NOTES:	SEE SHEET A-1.02 FOR GENERAL NOTES, ABBREVIATIONS, DOOR & WINDOW SCHEDULES

ARCHITECTURAL DRAWING INDEX

SHEET	DRAWING TITLE
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A-2.01	FOUNDATION MAIN FLOOR FRAMING PLAN & ROOF FRAMING PLAN
A-2.02	BASEMENT & MAIN FLOOR PLANS
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Issues / Revisions:
 2018-02-26 ISSUED FOR CLIENT REVIEW
 2018-03-22 ISSUED FOR CLIENT REVIEW
 2018-04-09 ISSUED FOR CLIENT REVIEW
 2018-04-19 ISSUED FOR BUILDING PERMIT

THIS DRAWING AND THE IDEAS CONTAINED IN IT ARE THE PROPERTY OF R. & K. ENTERPRISES AND SHOULD NOT BE DUPLICATED IN ANY WAY WITHOUT THEIR EXPRESS WRITTEN PERMISSION.

Client:
 NICOLA LAKE ESTATES

Project Description:
 PROPOSED SINGLE FAMILY RESIDENCE

LOT 40 NICOLA LAKE ESTATES

Home / Office:
 5617 Carter's
 Chilliwack B.C.
 V2R3J9

Roger Whiteaway
 RKWHITWAY@SHAW.CA
 604-316-2675

R & K Enterprises

Project Number:
18-03-lot 40

Scale:
 As Indicated

Date:
 2018-04-30 12:05:55 PM

Drawn:
 RCW

Checked:
 RCW

DESIGNED
 RCW

Sheet Title:
 SITE PLAN & PROJECT INFORMATION

Sheet Number:
A-1.01

GENERAL NOTES

BUILDING DESIGN

BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH PART 9 OF THE B.C. BUILDING CODE, 2012 VERSION.

1 - EXAMINATION OF SITE

THE CONTRACTOR SHALL VISIT THE SITE TO FULLY ACQUAINT HIMSELF WITH ALL EXISTING CONDITIONS REASONABLY INFERRABLE FROM EXAMINATION OF THE SITE, AND ITS SURROUNDINGS, AND THE CONTRACT DOCUMENTS WITH RESPECT TO SURFACE AND SUBSURFACE CONDITIONS, ACCESS TO THE SITE, EXISTING WORK, RESTRICTIONS PREVAILING ON SITE, DISPOSAL OF MATERIALS, REGULATIONS WITH RESPECT TO NOISE, SITE MAINTENANCE AND POLLUTION AND OTHER CONDITIONS HAVING EFFECT ON THE EXECUTION OF THE WORK AND IS FURTHER DEEMED TO HAVE INCLUDED IN THE CONTRACT PRICE ALL COSTS OCCASIONED THEREBY.

2 - DOCUMENTS REQUIRED

MAINTAIN AT JOB SITE, ONE COPY OF EACH OF THE FOLLOWING:

1. CONTRACT DRAWINGS & SPECIFICATIONS
2. ADDENDA
3. REVIEWED SHOP DRAWINGS
4. CHANGE ORDERS
5. OTHER MODIFICATIONS TO CONTRACT
6. FIELD TEST REPORTS
7. COLOUR SCHEDULE
8. APPROVED PLANS FROM THE **THOMPSON NICOLA REGIONAL DISTRICT**

3 - SETTING OUT THE WORK

THE OWNER WILL APPOINT AND PAY FOR A B.C. LAND SURVEYOR WHO WILL ESTABLISH PROPERTY LINES AND BENCHMARK & LOCATE BUILDINGS ON SITE.

THE SETTING OUT OF THE WORK SHALL REST SOLELY WITH THE CONTRACTOR WHO WILL BE RESPONSIBLE FOR SAME. SITTING OF BUILDING TO BE VERIFIED BY LEGAL LAND SURVEYOR PRIOR TO PLACING OF CONCRETE.

THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ALL LINES, ELEVATIONS, AND MEASUREMENTS OF WORK EXECUTED UNDER THE CONTRACT. HE SHALL VERIFY FIGURES SHOWN ON THE DRAWINGS AND ASSUME RESPONSIBILITY FOR ERRORS RESULTING FROM FAILURE TO EXERCISE SUCH PRECAUTIONS.

4 - FEES, PERMITS AND CERTIFICATES

OBTAIN AND PAY FOR ALL REQUIRED PERMITS. PROVIDE THE INSPECTION AUTHORITIES WITH SUCH PLANS AND INFORMATION AS MAY BE REQUIRED FOR ISSUE OF ACCEPTANCE CERTIFICATES. FURNISH INSPECTION CERTIFICATES IN EVIDENCE THAT WORK INSTALLED CONFORMS WITH THE REQUIREMENTS OF THE **THOMPSON NICOLA REGIONAL DISTRICT**, AUTHORITY HAVING JURISDICTION.

ARRANGE FOR AND PAY FEES AND DEPOSITS REQUIRED BY THE **THOMPSON NICOLA REGIONAL DISTRICT** ENGINEERING DEPARTMENT FOR A STREET EXCAVATION PERMIT, TEMPORARY CROSSING PERMIT, SEWER, WATER AND GAS CONNECTION PERMIT, AND B.C. HYDRO AND TELEPHONE SERVICE CONNECTION FEES.

5 - CODES AND STANDARDS

ALL WORK TO CONFORM TO THE REGULATIONS FOR PUBLIC SAFETY, FIRE SAFETY, STRUCTURAL SUFFICIENCY, QUALITY AND DURABILITY AS PER B.C. BUILDING CODE (2012)

ALL WORK TO CONFORM TO LOCAL CODES AND BYLAWS OF THE **THOMPSON NICOLA REGIONAL DISTRICT**, AND/OR TO THE AUTHORITIES HAVING JURISDICTION.

PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE B.C. BUILDING CODE, **THOMPSON NICOLA REGIONAL DISTRICT**, AND ALL CODES AND STANDARDS IN FORCE IN BRITISH COLUMBIA.

MATERIALS AND WORKMANSHIP SHALL CONFORM TO OR EXCEED APPLICABLE STANDARDS OF CANADIAN GOVERNMENT SPECIFICATION BOARD, (CGSB), CANADIAN STANDARDS ASSOCIATION (CSA), AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) AND OTHER REFERENCED ORGANIZATIONS.

6 - COOPERATION AND COORDINATION WITH OTHER CONTRACTORS

THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES AND OTHER CONTRACTORS AND DETERMINE TO WHAT EXTENT WORK SPECIFIED IN EACH OF THE CONTRACT DOCUMENTS IS AFFECTED BY WORK INDICATED ELSEWHERE AND MAKE ALL NECESSARY ALLOWANCES FOR THEIR INTEGRATION.

ALL ADDITIONAL WORK RESULTING FROM FAILURE TO MAKE SUCH DETERMINATION SHALL BE DONE AT NO COST TO THE OWNER.

COORDINATE THE WORK OF EACH TRADE TO ENSURE THAT SUCH WORK IS CONSISTENT WITH THE REQUIREMENTS FOR THE WORK OF A FOLLOWING TRADE.

BEFORE COMMENCING ANY WORK, EACH TRADE MUST REPORT TO THE CONTRACTOR ANY INCONSISTENCY BETWEEN THE WORK OF A PRECEDING TRADE AND THE REQUIREMENTS FOR THEIR WORK. ANY COSTS INCURRED BY THE CONTRACTOR OR TRADES TO RECTIFY SUCH INCONSISTENCIES SHALL BE AT NO EXPENSE TO THE OWNER.

7 - DAMAGE TO EXISTING SERVICES

THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY DAMAGE TO EXISTING PRIVATE AND PUBLIC PROPERTY AND SERVICES, CAUSED BY CONSTRUCTION OPERATIONS. HE SHALL REPAIR AND MAKE GOOD SAME OR BEAR THE EXPENSE OF SUCH REPAIRING.

8 - VERIFICATION OF DIMENSIONS

VERIFY DIMENSIONS, ELEVATIONS, AND EXISTING FEATURES SHOWN ON THE DRAWINGS BEFORE LAYING OUT THE WORK. NOTIFY CONSULTANT OF ANY DISCREPANCIES BEFORE STARTING WORK, OR BE RESPONSIBLE FOR ANY ADDITIONAL COST ARISING OUT OF CORRECTIONS TO BE DONE.

DRAWINGS ARE NOT TO BE SCALED. LARGER SCALE DETAILS AND PLANS SHALL TAKE PRECEDENCE OVER SMALLER SCALE DETAILS AND PLANS.

9 - REVIEW OF DRAWINGS

CONTRACTOR AND ALL SUBTRADES ARE RESPONSIBLE FOR THE REVIEW OF ALL DRAWINGS AND SITE CONDITIONS AND SHALL REPORT ANY ERRORS OR DISCREPANCIES TO THE DESIGNER IMMEDIATELY PRIOR TO START OF WORK AND ORDERING OF MATERIALS. ANY DISCREPANCIES NOT REPORTED BECOME THE RESPONSIBILITY OF THE CONTRACTOR.

CONTRACTOR, SUPPLIER AND ALL OTHER SUBTRADES ARE TO VERIFY THAT THEY ARE WORKING WITH THE MOST CURRENT DRAWINGS AND DOCUMENTS AND VERIFY ALL DIMENSIONS, ELEVATIONS, AND EXISTING FEATURES SHOWN ON THE DRAWINGS BEFORE LAYING OUT THE WORK. NOTIFY CONSULTANT OF ANY DISCREPANCIES BEFORE STARTING WORK, OR BE RESPONSIBLE FOR ANY ADDITIONAL COST ARISING OUT OF CORRECTIONS TO BE DONE.

10 - PROTECTION OF WORK AND PROPERTY

PROTECTION OF OFFSITE AND PUBLIC PROPERTY:

1. PROTECT ADJACENT PROPERTY FROM DAMAGE DURING THE PERFORMANCE OF THE WORK.
2. BE RESPONSIBLE FOR ALL DAMAGES INCURRED DUE TO IMPROPER PROTECTION.

PROTECTION OF BUILDING FINISHES AND EQUIPMENT:

1. PROVIDE ADEQUATE PROTECTION FOR FINISHES AND PARTIALLY FINISHED BUILDING FINISHES AND EQUIPMENT DURING THE PERFORMANCE OF THE WORK. PROVIDE NECESSARY SCREENS, COVERS, HOARDINGS, ETC. AS REQUIRED. BE RESPONSIBLE FOR ALL DAMAGES INCURRED DUE TO IMPROPER LACK OF PROTECTION.

11 - CONSTRUCTION SAFETY

THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, PROVINCIAL, AND MUNICIPAL LAWS AND REGULATIONS CONCERNING CONSTRUCTION SAFETY.

THE CONTRACTOR SHALL COMPLY WITH THE WORKERS' COMPENSATION ACT OF BRITISH COLUMBIA ACCIDENT PREVENTION REGULATIONS (LATEST EDITION) AND SHALL PROVIDE ALL NECESSARY SAFETY REQUIREMENTS AS PRESCRIBED BY THE ACT FOR HIS WORK.

PRECAUTIONS SHALL BE TAKEN TO PREVENT THE OVERLOADING OF ANY PART OF THE STRUCTURE, FALSE WORK, FORM WORK OR SCAFFOLDING DURING THE PROGRESS OF THE WORK, AND ANY DAMAGE RESULTING FROM SUCH OVERLOADING SHALL BE MADE GOOD AT THE EXPENSE OF THE CONTRACTOR. NO LOAD BEARING MEMBERS SHALL BE CUT, DRILLED OR SLEEVED WITHOUT THE WRITTEN APPROVAL OF THE CONSULTANT.

12 - SHOP DRAWINGS AND SAMPLES

THE CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO THE OWNERS FOR THEIR REVIEW.

SHOP DRAWINGS SHALL BE PREPARED IN A CLEAR AND THOROUGH MANNER. COMPLETE WITH DETAIL TO SHOW MATERIAL ASSEMBLY.

CONTRACTOR IS RESPONSIBLE TO REVIEW SHOP DRAWINGS AND TO COMMENT ON THE SHOP DRAWINGS PRIOR TO SUBMITTING TO THE OWNER. SHOP DRAWINGS SUBMITTED TO THE OWNER WITHOUT THE CONTRACTOR'S COMMENTS, CONFIRMATIONS OR FIELD MEASUREMENTS, IDENTIFICATIONS OF DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE RETURNED TO THE CONTRACTOR WITHOUT APPROVAL.

13 - CLEAN UP

CLEANING DURING CONSTRUCTION - THE CONTRACTOR SHALL MAINTAIN THE PROJECT IN GOOD ORDER AND PUBLIC PROPERTIES FREE FROM ACCUMULATION OF WASTE MATERIAL. WASTE IS TO BE REMOVED FROM THE SITE DAILY.

14 - HEATING

INSTALLATION OF ENTIRE HEATING SYSTEM MUST COMPLY WITH MANUFACTURER'S DIRECTIONS (WHERE APPLICABLE), ENGINEERS DRAWINGS, LOCAL CODES AND ALL OTHER REGULATIONS IN ALL RESPECTS. CONFIRM LOCATIONS OF ANY CEILING DROPS PRIOR TO CONSTRUCTION.

15 - VENTILATION

ALL INSULATED ROOF SPACES SHALL BE VENTILATED WITH SOFFIT, ROOF, OR GABLE VENTS, IN COMBINATION EQUALLY DISTRIBUTED BETWEEN TOP OF ROOF SPACE AND SOFFITS.

ATTICS OF ROOF SPACES TO BE VENTED MINIMUM 1/300 OF AREA FOR TRUSSED ROOFS AND 1/150 FOR ROOFS BUILT W/ ROOF JOISTS.

16 - BUILDING SECURITY / DOOR NOTES

DOOR FRAMES TO OPENINGS FOR ENTRANCE & EXTERIOR DOORS AND DOOR WHICH DIRECTLY OR INDIRECTLY PROVIDE ACCESS FROM A GARAGE TO THE DWELLING SHALL BE SOLIDLY BLOCKED BETWEEN THE DOOR FRAME AND WALL FRAMING AT LOCK HEIGHT SO THAT THE FRAME WILL RESIST SPREADING BY FORCE. GLASS IN SUCH DOORS SHALL BE SAFETY GLASS.

EXTERIOR HINGED DOORS AND HINGED DOORS BETWEEN DWELLING AND GARAGE WHICH SWING OUTWARD SHALL BE PROVIDED WITH HINGES AND PINS SUCH THAT THE DOORS CANNOT BE REMOVED WHEN THEY ARE IN THE CLOSED POSITION.

WHERE OPENINGS FOR EXTERIOR HINGED OR SLIDING DOORS ARE LOCATED IN WOOD STUD WALLS, SOLID HORIZONTAL BLOCKING SHALL BE PROVIDED AT BOTH SIDES OF SUCH OPENINGS FOR TWO STUD SPACES AND SHALL BE LOCATED AT LOCK HEIGHT EXCEPT WHERE SIDELIGHTS OR WINDOWS OCCUR.

ANY MAIN ENTRY DOOR MUST HAVE A VIEWPORT, CLEAR WINDOW, OR CLEAR SIDELIGHT AS PER SECTION 9.6.8.8. OF THE B.C. BUILDING CODE (2012)

17 - DIMENSIONS ON PLANS

DIMENSIONS IN PLAN ARE TO THE OUTSIDE FACE OF PLYWOOD SHEATHING FOR EXTERIOR WALLS AND TO FACE/CENTER OF STUDS FOR INTERIOR WALLS. CONCRETE DIMENSIONS ARE TO THE FACE OF CONCRETE WALLS. THE OUTSIDE FACE OF EXTERIOR SHEATHING IS TO BE FLUSH WITH OUTSIDE FACE OF CONCRETE FOUNDATION WALL (UNLESS NOTED OTHERWISE)

18 - FINISHES NOTES ETC.

ALL FINISHES FOR INTERIOR / EXTERIOR WALLS TO BE VERIFIED BY OWNER PRIOR TO ORDERING OF MATERIALS.

ALL INTERIOR FINISHES TO BE PROTECTED FROM RAIN WATER PENETRATION WITH FLASHINGS WHERE WATER WILL ACCUMULATE AS TO LEAD WATER TO THE EXTERIOR.

ALL WINDOWS & DOORS TO BE PROVIDED WITH PROPER HEAD FLASHINGS.

TUB & SHOWER OPTION 1: BUILT IN TUBS & SHOWERS INSTALL APPROVED W/P BACKING BOARD UNDERNEATH ALL CERAMIC TILE WORK & USE AN ACRYLIC W/P GROUT.

TUB & SHOWER OPTION 2: MANUFACTURED ACRYLIC TUBS & SHOWERS, FRAME IN ROUGH OPENINGS TO SUIT TUB / SHOWER SELECTED.

DECK RAILING CONNECTION: SHALL BE INSTALLED TO WITHSTAND THE FORCES SPECIFIED AS PER SECTION 9.8.8.2. OF THE B.C. BUILDING CODE (2012).

PROVIDE HOSE BIBBS AS PER OWNER

19 - FRAMING NOTES ETC.

ALL TRUSSES & LARGE BEAMS TO BE PRE-ENGINEERED. ALL ROOF OVERHANGS, SLOPES, PROPOSED SPANS & DETAILS TO BE VERIFIED BY CONTRACTOR, SUPPLIER AND FABRICATORS PRIOR TO FABRICATION.

ALL LUMBER INCLUDING LOAD-BEARING STUDS, DECK JOISTS TO BE MIN. HEM-FIR No.1 & No.2 UNLESS OTHERWISE NOTED.

JOISTS TO BE PLACED MOST ECONOMICALLY AND AS TO SUIT ALL MECHANICAL, PLUMBING, ELECTRICAL & STRUCTURAL REQUIREMENTS.

ALL FRAMING TO CONFORM TO SECTION 9.23 OF B.C. BUILDING CODE (2012). ALL WOOD EXPOSED TO EXTERIOR ELEMENTS SHALL BE PRESSURE-TREATED OR PROTECTED BY APPROVED PRESERVATIVE COMPOUND.

SUPPLY DOUBLE JOISTS UNDER PARALLEL PARTITIONS AND CABINETS AND TUBS AS REQUIRED. (OPT. 2X BLOCKING @ 24" o.c.)

SECURE JOISTS WITH APPROVED METAL HANGERS WHEN FLUSH BEAMS ARE REQUIRED.

PROVIDE CROSS-BRIDGING B/W JOISTS MAX. 7'-0" o.c.

ALL LINTELS TO BE 2-2x10 U.N.O.

PROVIDE SOLID LAMINATED STUDDING @ BEARING POINTS.

20 - WINDOW NOTES ETC.

ALL WINDOWS & SLIDING GLASS DOORS TO HAVE LOCKS AND INSECT SCREENS.

COLOUR OF WINDOW FRAME TO OWNER'S SPECS.

ALL WINDOWS AND PATIO DOORS TO BE DOUBLE GLAZED c/w 1/2 AIR SPACE & THERMALLY BROKEN FRAME.

ALL SLIDING GLASS DOORS, SLIDING WINDOWS AND OPENING WINDOWS SHALL OPEN AS SHOWN ON PLANS OR ELEVATIONS.

FIELD MEASURE ROUGH OPENINGS PRIOR TO FABRICATION AND SUPPLY.

ALL GLAZING THICKNESS TO B.C. BUILDING CODE (2012) REQUIREMENTS.

SHOP DRAWINGS TO BE PROVIDED TO THE OWNER FOR APPROVAL PRIOR TO FABRICATION.

ALL BEDROOM WINDOWS MUST CONFORM TO 9.7.1.2 OF THE B.C. BUILDING CODE (2012)

21 - ENERGY EFFICIENCY REQUIREMENTS

THIS HOME IS DESIGNED TO COMPLY WITH ENERGY EFFICIENCY REQUIREMENTS AND VALUES FOR CLIMATE ZONE 4 - LOWER MAINLAND AND SOUTHERN VANCOUVER ISLAND WITHOUT H.R.V. AND IS DESIGNED UNDER THE PRESCRIPTIVE PATH OF BCBC 2012 SECTION 9.36

TYPICAL ENERGY EFFICIENCY NOTES:

- VENTILATION AND DUCTING MUST BE PROVIDED AS PER B.C.B.C. 2012 SECTION 9.32
- AN AIR BARRIER MUST TO BE INSTALLED AS PER B.C.B.C. 2012 SECTION 9.36
- ALL INSULATION TO BE INSTALLED AS PER B.C.B.C. 2012 SECTION 9.36
- ALL GARAGE DOORS: MINIMUM NOMINAL R.S.I. VALUE OF 1.1
- ALL ACCESS HATCHES TO UNCONDITIONED SPACES: MAXIMUM U VALUE OF 2.6
- ALL WINDOWS AND DOORS: MAX U VALUE OF 1.8 EXCEPT FOR 1 ENTRY UNIT
- ALL SKYLIGHTS: MAXIMUM U VALUE OF 2.9

22 - FURTHER ENERGY EFFICIENCY REQUIREMENTS

- ALL BEDROOM DOORS MUST BE UNDERCUT 1/2" FOR CROSS VENTILATION
- PRINCIPAL EXHAUST FAN MUST BE DESIGNED TO RUN CONTINUOUSLY 24 HOURS A DAY
- DUCTS LOCATED OUTSIDE THE THERMAL ENCLOSURE ARE SEALED & INSULATED TO THE EXTERIOR WALL INSULATION REQUIREMENTS
- HVAC EQUIPMENT IS LOCATED WITHIN THERMAL ENCLOSURE OR DESIGNED TO BE INSTALLED OUTSIDE OF THERMAL ENCLOSURE
- INDOOR POOLS ARE COVERED OR HAVE AN HRV/DEHUMIDIFIER
- HVAC & SWR EQUIPMENT MEET MINIMUM PERFORMANCE REQUIREMENTS IN TABLES 9.36.3.10 & 9.36.4.2

ABBREVIATIONS

ADJ.	ADJUSTABLE	R	RANGE / OVEN FIXTURE
A.F.F.	ABOVE FINISH FLOOR	RD	ROOF DRAIN
BLDG.	BUILDING	REF.	REFRIGERATOR
B/U	BUILT-UP	REV.	REVERSED
B.P.	BUILDING PAPER	R&S	ROD & SHELF
C	CENTERLINE	S	SINK
C.I.P.	CAST IN PLACE	S.C.	SOLID CORE
C.F.	COMB FACE	SD	SIDELIGHT/DOOR
CONC.	CONCRETE	SDS	SIDELIGHT/DOOR/SIDELIGHT
C/W	COMPLETE WITH		
D.	DRYER	S.F.	SQUARE FEET
Dia.	DIAMETER	SQ.FT.	SQUARE FEET
DN	DOWN	SIM.	SIMILAR
DW	DISHWASHER	SH	SHOWER
DWGS.	DRAWING	STOR.	STORAGE
DWGS.	DRAWINGS	STRUCT.	STRUCTURAL
ED	EMERGENCY DRAIN	SQ. FT.	SQUARE FEET
ELEC.	ELECTRICAL	SQ. m.	SQUARE METERS
ENS.	ENSUITE	T & G	TONGUE & GROOVE
ENG'D	ENGINEERED	T.O.	TOP OF
FDN.	FOUNDATION	TYP.	TYPICAL
F.P.	FIREPLACE	U.N.O.	UNLESS NOTED OTHERWISE
F.R.R.	FIRE RESISTANCE RATING	UP	UP
FURN.	FURNACE	U.P.A.	UNITS PER ACRE
G.W.B	GYPSON WALL BOARD	UTIL	UTILITY
G.B	GYPSON BOARD	U/S	UNDERSIDE
H.C.	HOLLOW CORE	UV	ULTRA VIOLET
HR.	HOOR	V.B.	VAPOUR BARRIER
HT	HEIGHT	W.	WASHER
H.W.T.	HOT WATER TANK	WC	WATER CLOSET
INS.	INSULATED	W/D	WASHER / DRYER UNIT
LIN.	LINEN	W.I.C.	WALK IN CLOSET
MAX.	MAXIMUM	w	WITH
MECH.	MECHANICAL	w	WASHER
MTL.	METAL	W/D	WASHER/DRYER STACKED
MIL.	MIL (IMPERIAL THICKNESS)	WC	WATER CLOSET
m.m.	MILLIMETER	WF	STEEL WF COLUMN - SEE
MIN.	MINIMUM		
MW	MICRO-WAVE	STRUCTURAL	STRUCTURAL
N/A	NOT APPLICABLE	WFRIG	UNDER COUNTER WINE
No.	NUMBER	FRIDGE	FRIDGE
O.C.	ON CENTRE	42VAN	42" LONGx30" HIGH VANITY
OSB	ORIENTED STRAND BOARD	45 MIN.	45 MINUTES
O/S.	OUTSIDE OF PLY. PLYWOOD	48MIR	42"LONGx46"H. MIRROR
	OR NUMBER OF LAYE1STC		15" WIDEX 84" TALL
	CABINET		
O/H	OVERHEAD	W/ ADJ. SHELVES	W/ ADJ. SHELVES
PAN	PANTRY	PRE-FINISHED	12" WIDE UPPER CABINETS
PRE-FIN.	PRE-FINISHED	12UC	12" WIDE UPPER CABINETS
P.V.C.	POLYVINYL CHLORIDE	24BC	24" WIDE x 36" HIGH BASE CABINET
PWD.	POWDER		
P.T.	PRESSURE TREATED	@	AT
P	PANTRY		

DOOR SCHEDULE	
DOOR SPECIFICATIONS	
DOOR NUMBER	DOOR SIZE
Exterior Door - French Door - Style A	
1	5'-0" x 6'-8"
Exterior Door - Single Door - Style A	
2	3'-0" x 6'-8"
Exterior Door - Single French Door - Style C	
3	2'-6" x 6'-8"
Exterior Patio Door - 2 Panel w Transom - Style A	
4	8'-0" x 7'-8" Patio Unit w Transom
5	8'-0" x 7'-8" Patio Unit w Transom
Interior Door - Bifold 2 Panel - Style A	
6	2'-6" x 6'-8"
7	2'-6" x 6'-8"
Interior Door - Double Panel - Style A	
8	4'-0" x 6'-8"
9	4'-0" x 6'-8"
10	4'-0" x 6'-8"
Interior Door - Passage - Style A	
11	2'-8" x 6'-8"
12	2'-6" x 6'-8"
13	2'-6" x 6'-8"
14	2'-6" x 6'-8"
15	2'-6" x 6'-8"
16	2'-6" x 6'-8"
17	2'-6" x 6'-8"
18	2'-10" x 6'-8"
19	2'-8" x 6'-8"
20	2'-8" x 6'-8"
21	2'-6" x 6'-8"
Overhead Door - Style B - 16'0x9'0"	
22	16'-0" x 9'-0"
22	

WINDOW SCHEDULE			
WINDOW SPECIFICATIONS			
TYP	WIDT	HEIGH	HEAD
E	#	H	HT.
Casement (C-C)			
A	1	2'-0"	4'-0"
A	2	2'-0"	4'-0"
B	1	4'-0"	5'-0"
B	2	4'-0"	5'-0"
C	1	3'-0"	6'-0"
C	2	3'-0"	6'-0"
Casement (C-X)O 1H 2V- Top			
D	1	2'-6"	4'-0"
D	2	2'-6"	4'-0"
Fixed (F-X)			
I	1	1'-6"	4'-0"
I	2	1'-6"	4'-0"
Slider (S-XO) 1x6 Trim			
F	1	5'-0"	4'-0"

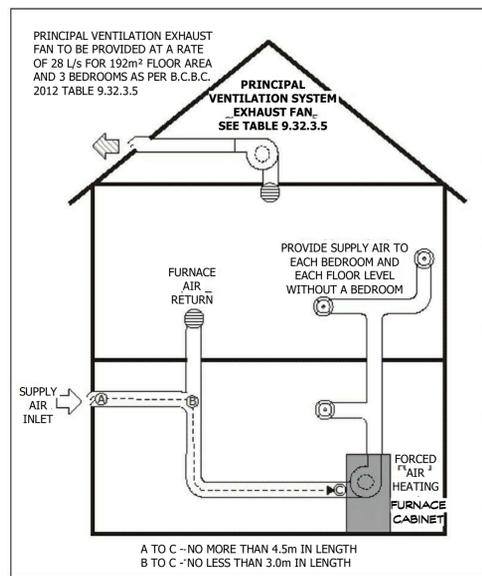


FIGURE A-9.32.3.4.(2)
FORCED-AIR HEATING SYSTEM SUPPLY AIR DISTRIBUTION

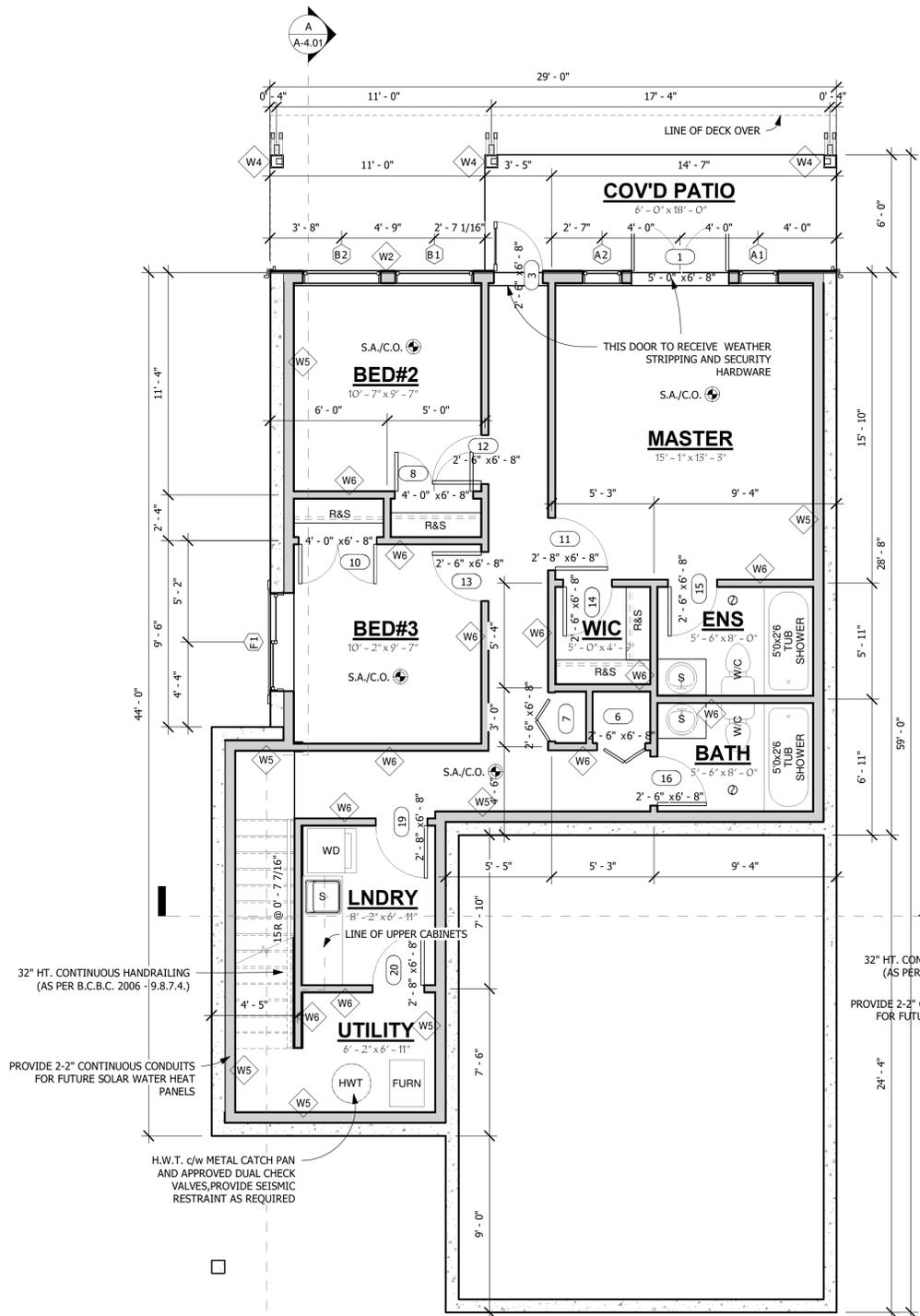
VENTILATION

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

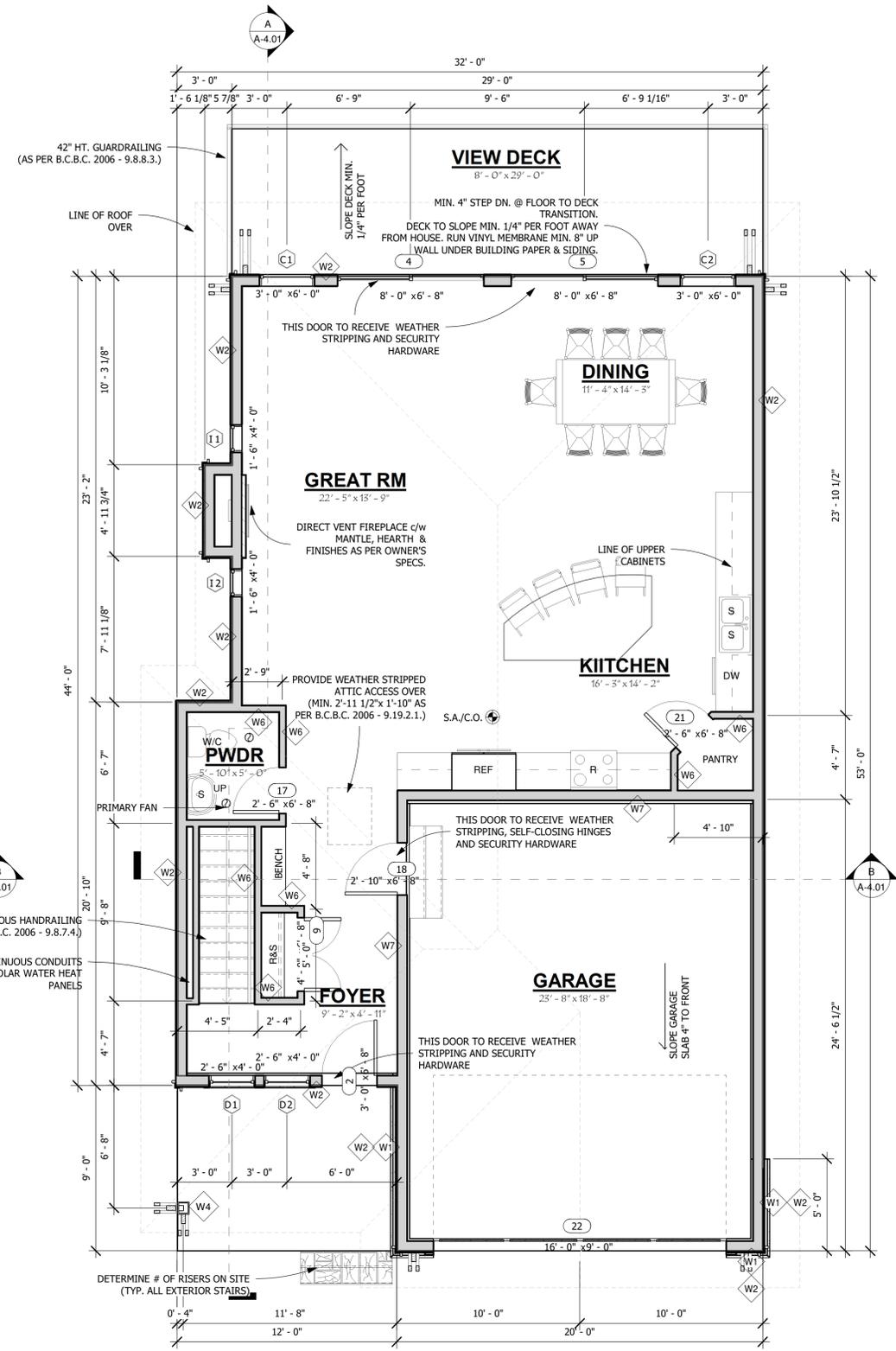
FLOOR AREAS		
NAME	AREA	AREA SQM
FINISHED		
MAIN FLOOR AREA	95.66 m ²	95.66 m ²
BASEMENT	96.81 m ²	96.81 m ²
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UNFINISHED		
GARAGE	45.82 m ²	45.82 m ²
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CROSS SECTION MARKER	
	DIRECTION OF VIEW SECTION IDENTIFICATION SHEET WHERE DRAWN
	WALL CONSTRUCTION TYPE
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	UPPER FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	ROOF PLAN POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
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BASEMENT FLOOR
SCALE: 1/4" = 1'-0"



MAIN FLOOR PLAN
SCALE: 1/4" = 1'-0"

GENERAL SYMBOL LEGEND

- CROSS SECTION MARKER**
 - Direction of view
 - Section identification
 - Sheet where drawn
- WALL CONSTRUCTION TYPE
- MAIN FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
- UPPER FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
- ROOF PLAN POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE

NOTES:
SEE SHEET A-1.02 FOR GENERAL NOTES, ABBREVIATIONS, DOOR & WINDOW SCHEDULES

CONSTRUCTION TYPES SYMBOL LEGEND

SYM	DESCRIPTION
W1	EXTERIOR WALL (2x6, INSUL, STONE) MANUFACTURED STONE VENEER 3/4" STUCCO c/w METAL LATH 3/8"x2" P.T. VERT. PLYWOOD STRAPPING @ 8" o.c. 2 LAYERS 30 MIN. BUILDING PAPER 1/2" PLYWOOD SHEATHING 2x6 WOOD STUDS @ 16" O.C. R-22 BATT INSULATION 6 MIL POLY U.V. RATED VAPOUR BARRIER 1/2" GYPSUM WALL BOARD
W2	EXTERIOR WALL (2x6, INSUL) COMPOSITE MATERIAL FINISH - SEE ELEVATIONS FOR PROFILES 3/8"x2" P.T. VERT. PLYWOOD STRAPPING @ 16" o.c. 1 LAYER HOUSE WRAP 3/8" OSB SHEATHING 2x6 WOOD STUDS @ 16" O.C. R-22 BATT INSULATION 6 MIL POLY U.V. RATED VAPOUR BARRIER 1/2" GYPSUM WALL BOARD
W3	FOUNDATION OR RETAINING WALL (TYPICAL) DRAINAGE COMPOSITE MATERIAL BELOW GRADE 1x4 P.T. WOOD STRAPPING TO ALLOW FOR FINISHES (CONFIRM ON SITE) SEE ELEVATIONS CONCRETE WALL (SEE FOUNDATION PLAN)
W4	EXTERIOR COLUMN BUILT-UP WOOD POST (FINISH AS PER OWNER) COMB FACE TRIMS
W5	FOUNDATION WALL w/ FURRING DRAINAGE COMPOSITE MATERIAL BELOW GRADE CONCRETE WALL (SEE FOUNDATION PLAN) 1" XPS RIGID FOAM BEHIND FRAME WALL C/W TAPED SEAMS & SEALED TO RIM JOIST 2x6 WOOD STUDS @ 16" o.c., R-20 BATT INSULATION 1/2" GYPSUM BOARD, PAINTED AIR BARRIER NOTE: CONFIRM BEST INSULATION & VAPOUR BARRIER PRACTICE WITH LOCAL AUTHORITY
W6	INTERIOR WALL 1/2" GYPSUM BOARD EACH SIDE OF FRAME WALL 2x4 OR 2x6 (AS NOTED) WOOD STUDS @ 16" O.C. NOTE: ALL COMMON WALLS TO BATHROOMS AND BEDROOMS ADJACENT TO OTHER ROOMS TO BE INSULATED WITH 3-1/2" ACOUSTIC INSULATION
W7	GARAGE WALL 1/2" GYPSUM BOARD, 2x6 WOOD STUDS @ 16" o.c. R-20 BATT INSULATION, 6 MIL UV RATED POLY V.B. 1/2" GYPSUM CEILING BOARD
F1	FLOOR FRAMING FLOOR FINISH ON UNDERLAYMENT 5/8" T&G PLYWOOD (GLUED & SCREWED) 2x FLOOR JOISTS (SEE FLOOR PLANS) 5/8" GYPSUM CEILING BOARD
F2	DECK FLOOR FRAMING 5/4x5 P.T. WOOD DECKING (SCREWED) OR VINYL DECK MEMBRANE (RUN MIN. 8" UP WALLS UNDER BUILDING PAPER & SIDING) 5/8" T&G PLYWOOD (GLUED & SCREWED) 2x P.T. FLOOR JOISTS
F3	INTERIOR CONCRETE SLAB FINISH BY OWNER CONCRETE SLAB (SEE FOUNDATION PLANS) 6 MIL UV POLY VAPOUR BARRIER MIN. 6" COMPACTED GRANULAR FILL
F4	GARAGE CONCRETE SLAB FINISH BY OWNER CONCRETE SLAB (SEE FOUNDATION PLANS) MIN. 6" COMPACTED GRANULAR FILL
S1	INTERIOR STAIR - WOOD 1" PLYWOOD TREADS c/w 1/2" RADIUS NOSING 1/2" PLYWOOD RISER, 3 - 2x12 STRINGERS 1/2" GYPSUM CEILING BOARD
R1	METAL STANDING SEAM 30 lbs UNDERLAYMENT 7/16" OSB SHEATHING c/w H-CLIPS PRE-ENGINEERED WOOD TRUSSES @ 24" o.c. R-40 BLOWN-IN INSULATION 6 MIL UV RATED POLY VAPOUR BARRIER 5/8" GYPSUM CEILING BOARD
R2	METAL STANDING SEAM 30 lbs UNDERLAYMENT 1/2" PLYWOOD SHEATHING c/w H-CLIPS PRE-ENGINEERED WOOD TRUSSES @ 24" o.c. VENTED VINYL SOFFITING

FLOOR AREAS

NAME	AREA	AREA SQM
FINISHED		
MAIN FLOOR AREA	95.66 m ²	95.66 m ²
BASEMENT	96.81 m ²	96.81 m ²
	192.47 m ²	192.47 m ²
UNFINISHED		
GARAGE	45.82 m ²	45.82 m ²
	238.29 m ²	238.29 m ²

ARCHITECTURAL DRAWING INDEX

SHEET	DRAWING TITLE
A-1.01	SITE PLAN & PROJECT INFORMATION
A-2.01	FOUNDATION MAIN FLOOR FRAMING PLAN & ROOF FRAMING PLAN
A-2.02	BASEMENT & MAIN FLOOR PLANS
A-2.03	ROOF PLAN & EAST WEST EXPOSED BUILDING FACE & UNPROTECTED OPENINGS
A-3.01	WEST & SOUTH EXTERIOR ELEVATIONS
A-3.02	EAST & NORTH EXTERIOR ELEVATIONS
A-4.01	BUILDING SECTIONS A & B
A-11	ENERGY EFFICIENCY - ABOVE GRADE
A-12	ENERGY EFFICIENCY - BELOW GRADE

Client: **NICOLA LAKE ESTATES**
Project Description: **PROPOSED SINGLE FAMILY RESIDENCE**
Address: **LOT 40 NICOLA LAKE ESTATES**

Home / Office: 5617 Center St, Chilliwack, B.C. V2R3J9
Roger Whiteaway @ SHAW.CA
604-316-2675

R & K Enterprises

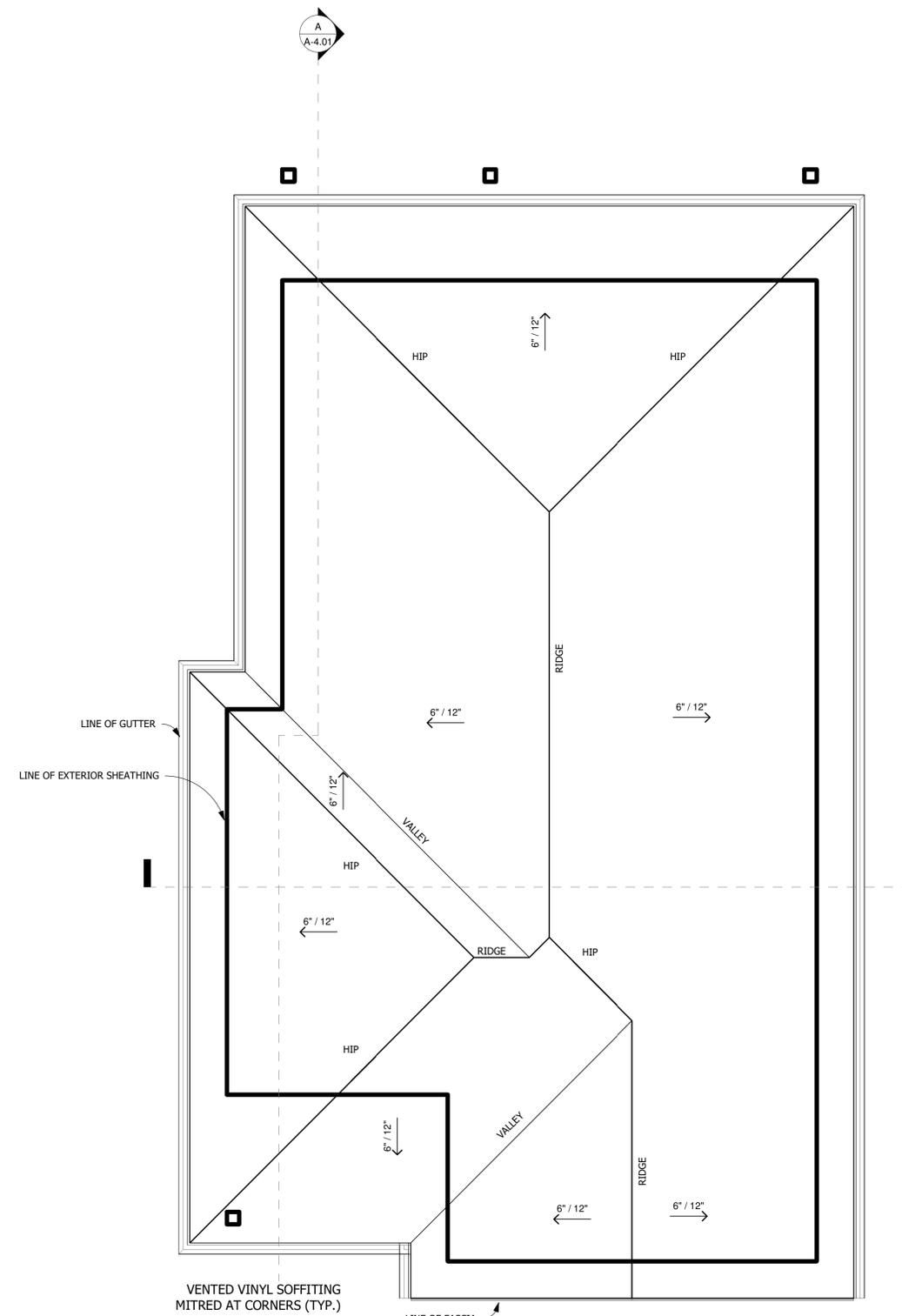
Project Number: **18-03-1ot 40**
Sheet Title: **BASEMENT & MAIN FLOOR PLANS**

Scale: As Indicated
Date: 2018-04-30 12:06:00 PM
Checked: RCW
Drawn: RCW
DESIGNED: RCW

Sheet Number: **A-2.02**

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2018-02-26 ISSUED FOR CLIENT REVIEW
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2018-04-19 ISSUED FOR BUILDING PERMIT

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VENTED VINYL SOFFITING MITRED AT CORNERS (TYP.)

NOTE:
CONTRACTOR TO CONFIRM & LOCATE ALL RAIN-WATER LEADER LOCATIONS ON SITE PRIOR TO BACKFILLING FOUNDATION.

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

NOTE:
TRUSS MANUFACTURER TO CONFIRM SNOW LOADS FOR THE REGION PRIOR TO DESIGNING TRUSSES.

- 2108' - 11 15/16" TRUSSES
642.82 m
- 2099' - 11 3/16" C. MAIN FLOOR
640.06 m
- 2098' - 1 3/16" GARAGE SLAB
639.50 m
- 2090' - 0 9/16" BASEMENT FLOOR
637.05 m

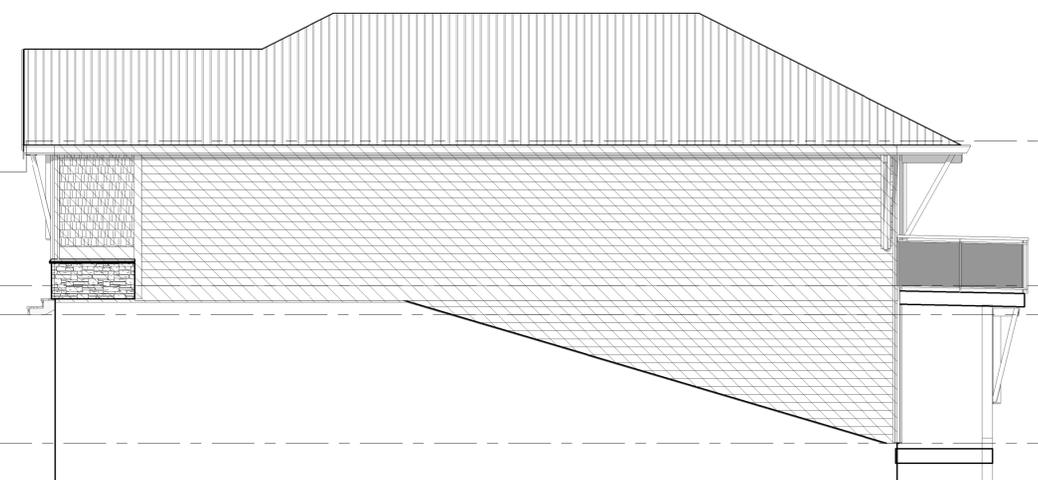
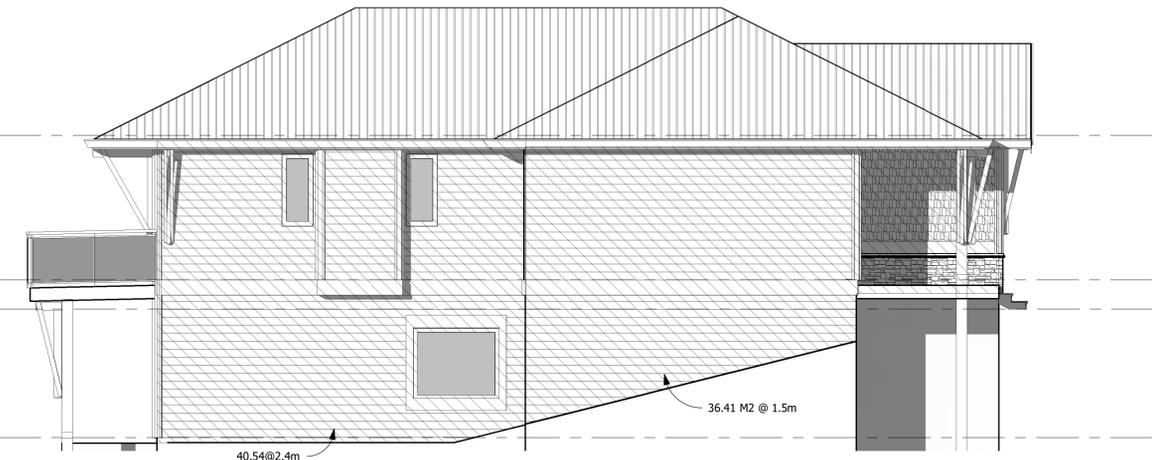
EAST ELEVATION EXPOSED BUILDING FACE
SCALE: 3/16" = 1'-0"

SPATIAL SEPARATIONS					
EXPOSING BUILDING FACE		UNPROTECTED OPENINGS		WALL CONSTRUCTION	
FACE	AREA OF E.B.F.	LIMITING DISTANCE	MAXIMUM ALLOWABLE	ACTUAL	WALL CONSTRUCTION & RATING
EAST	36.41sq.m / 40.54 sqm.	1.5m / 2.4	0%/7% (2.84sq.m.)	6.86% (2.78sq.m.)	COMBUSTIBLE / UNRATED
WEST	61.57sq.m	1.5m	0% (0sq.m.)	0% (0sq.m.)	COMBUSTIBLE / UNRATED

- 2108' - 11 15/16" TRUSSES
642.82 m
- 2099' - 11 3/16" C. MAIN FLOOR
640.06 m
- 2098' - 1 3/16" GARAGE SLAB
639.50 m
- 2090' - 0 9/16" BASEMENT FLOOR
637.05 m

WEST ELEVATION EXPOSED BUILDING FACE
SCALE: 3/16" = 1'-0"

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A-2.03	ROOF PLAN & EAST WEST EXPOSED BUILDING FACE & UNPROTECTED OPENINGS
A-3.01	WEST & SOUTH EXTERIOR ELEVATIONS
A-3.02	EAST & NORTH EXTERIOR ELEVATIONS
A-4.01	BUILDING SECTIONS A & B
A-11	ENERGY EFFICIENCY - ABOVE GRADE
A-12	ENERGY EFFICIENCY - BELOW GRADE



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Client:
 NICOLA LAKE ESTATES
 PROPOSED SINGLE FAMILY RESIDENCE
 LOT 40 NICOLA LAKE ESTATES

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 604-316-2675

R & K Enterprises

Project Number:
18-03-lot 40

Sheet Title:
ROOF PLAN & EAST WEST EXPOSED BUILDING FACE & UNPROTECTED OPENINGS

Scale:
 As Indicated

Date:
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Drawn:
 RCW

Checked:
 RCW

Sheet Number:
A-2.03



SOUTH ELEVATION

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



LAKE VIEW

SCALE:

EXTERIOR FINISH SCHEDULE	
TAG #	ELEMENT DESCRIPTION
4	SHEET METAL ROOFING
11	SEALED DOUBLE GLAZED VINYL WINDOW C/W 1x6 STAINED WOOD TRIMS AROUND WINDOWS (SEE WINDOW SCHEDULE FOR SIZES & SPECIFICATIONS)
15	EXTERIOR DOOR C/W 1x6 PAINTED WOOD TRIMS AROUND DOOR (COLOUR TO MATCH WINDOW TRIMS) (SEE DOOR SCHEDULE FOR SIZES & SPECIFICATIONS)
21	PRE-FINISHED ALUMINUM GUTTERS
30	2x6 PAINTED WOOD, COMB FACE, TRIM BOARD
33	2x12 PAINTED WOOD, COMB FACE, TRIM BOARD
57	2x10 PAINTED WOOD BELLY BOARDS c/w PREFINISHED THRU-WALL METAL FLASHING (EXTERIOR FINISH TO BE SEPARATED AT THIS POINT)
58	2x12 PAINTED WOOD BELLY BOARDS c/w PREFINISHED THRU-WALL METAL FLASHING (EXTERIOR FINISH TO BE SEPARATED AT THIS POINT)
66	6\"/>

EXTERIOR NOTES

- 1) INSTALL SCREENED COVERS TO ALL VENTS, CHASES ETC. TO PREVENT THE ENTRY OF DEBRIS, INSECTS / ANIMALS OF ANY SORT.
- 2) HOLD ALL FASCIA BOARDS 2\"/>

GENERAL SYMBOL LEGEND

CROSS SECTION MARKER	
	DIRECTION OF VIEW SECTION IDENTIFICATION SHEET WHERE DRAWN
	WALL CONSTRUCTION TYPE
	MAIN FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	UPPER FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	ROOF PLAN POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
NOTES: SEE SHEET A-1.02 FOR GENERAL NOTES, ABBREVIATIONS, DOOR & WINDOW SCHEDULES	

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A-3.01	WEST & SOUTH EXTERIOR ELEVATIONS
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A-11	ENERGY EFFICIENCY - ABOVE GRADE
A-12	ENERGY EFFICIENCY - BELOW GRADE



WEST ELEVATION

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

Issues / Revisions:
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2018-03-21 ISSUED FOR CLIENT REVIEW
2018-04-19 ISSUED FOR BUILDING PERMIT

Client:
NICOLA LAKE ESTATES
Proposed Single Family Residence
LOT 40 NICOLA LAKE ESTATES

Home / Office:
5617 Centris
Chilliwack, B.C.
V2R3J9
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R & K
Enterprises

Project Number:
18-03-lot 40
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Sheet Title:
WEST & SOUTH EXTERIOR ELEVATIONS

Sheet Number:
A-3.01

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



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



STREET VIEW
SCALE:

EXTERIOR FINISH SCHEDULE	
TAG #	ELEMENT DESCRIPTION
4	SHEET METAL ROOFING
11	SEALED DOUBLE GLAZED VINYL WINDOW C/W 1x6 STAINED WOOD TRIMS AROUND WINDOWS (SEE WINDOW SCHEDULE FOR SIZES & SPECIFICATIONS)
15	EXTERIOR DOOR C/W 1x6 PAINTED WOOD TRIMS AROUND DOOR (COLOUR TO MATCH WINDOW TRIMS) (SEE DOOR SCHEDULE FOR SIZES & SPECIFICATIONS)
17	OVERHEAD GARAGE DOORS C/W 1x6 PAINTED WOOD TRIMS (SEE DOOR SCHEDULE FOR SIZES & SPECIFICATIONS)
21	PRE-FINISHED ALUMINUM GUTTERS
30	2x6 PAINTED WOOD, COMB FACE, TRIM BOARD
35	1x4 PAINTED WOOD, COMB FACE, FASCIA BOARD
43	2x10 PAINTED WOOD, COMB FACE, FASCIA BOARD
57	2x10 PAINTED WOOD BELLY BOARDS c/w PREFINISHED THRU-WALL METAL FLASHING (EXTERIOR FINISH TO BE SEPARATED AT THIS POINT)
58	2x12 PAINTED WOOD BELLY BOARDS c/w PREFINISHED THRU-WALL METAL FLASHING (EXTERIOR FINISH TO BE SEPARATED AT THIS POINT)
66	6" HORIZONTAL HARDI SIDING c/w PAINTED 1x6 WD. CORNERS
70	VINYL "SHAKE PROFILE" SIDING
75	MANUFACTURED STONE VENEER
84	C.I.P. CONCRETE WALL, PARGED AND SANDBLASTED FINISH
91	SIDE-MOUNTED, PREFINISHED ALUMINUM & GLASS PANEL GUARDRAILING
97	TIMBER KNEE BRACE (COLOUR TO MATCH WINDOW TRIMS)
105	CONCRETE STAIRS - CONFIRM RISERS ON SITE
221	DECORATIVE "TRUSS STYLE" WOOD TRIM BOARDS
262	2x10 COMB FACE MATERIAL WRAPPED AROUND COLUMNS

GENERAL SYMBOL LEGEND	
	CROSS SECTION MARKER
	DIRECTION OF VIEW
	SECTION IDENTIFICATION
	SHEET WHERE DRAWN
	WALL CONSTRUCTION TYPE
	MAIN FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	UPPER FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	ROOF PLAN POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
NOTES: SEE SHEET A-1.02 FOR GENERAL NOTES, ABBREVIATIONS, DOOR & WINDOW SCHEDULES	

- EXTERIOR NOTES**
- 1) INSTALL SCREENED COVERS TO ALL VENTS, CHASES ETC. TO PREVENT THE ENTRY OF DEBRIS, INSECTS / ANIMALS OF ANY SORT.
 - 2) HOLD ALL FASCIA BOARDS 2" BACK FROM ANY WALL FACE; PROVIDE DIVERTER FLASHINGS INTO GUTTER.
 - 3) FINISH GRADE/ ELEVATIONS SHOWN ARE BASED ON TOPOGRAPHY INFORMATION FROM...
 - 4) CONFIRM ALL GRADES ON SITE, ADJUSTING CONC. FOUNDATIONS AS REQUIRED BY STRUCTURAL ENGINEER.

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Issues / Revisions:
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2018-03-22 ISSUED FOR CLIENT REVIEW
2018-04-19 ISSUED FOR BUILDING PERMIT

Client:
NICOLA LAKE ESTATES
PROPOSED SINGLE FAMILY RESIDENCE
LOT 40 NICOLA LAKE ESTATES

Home / Office:
5617 Carter's
Chilliwack, B.C.
V2R3J9

R & K Enterprises

Project Number:
18-03-lot 40

Scale:
As Indicated

Date:
2018-04-30 12:06:11 PM

Drawn:
RCW

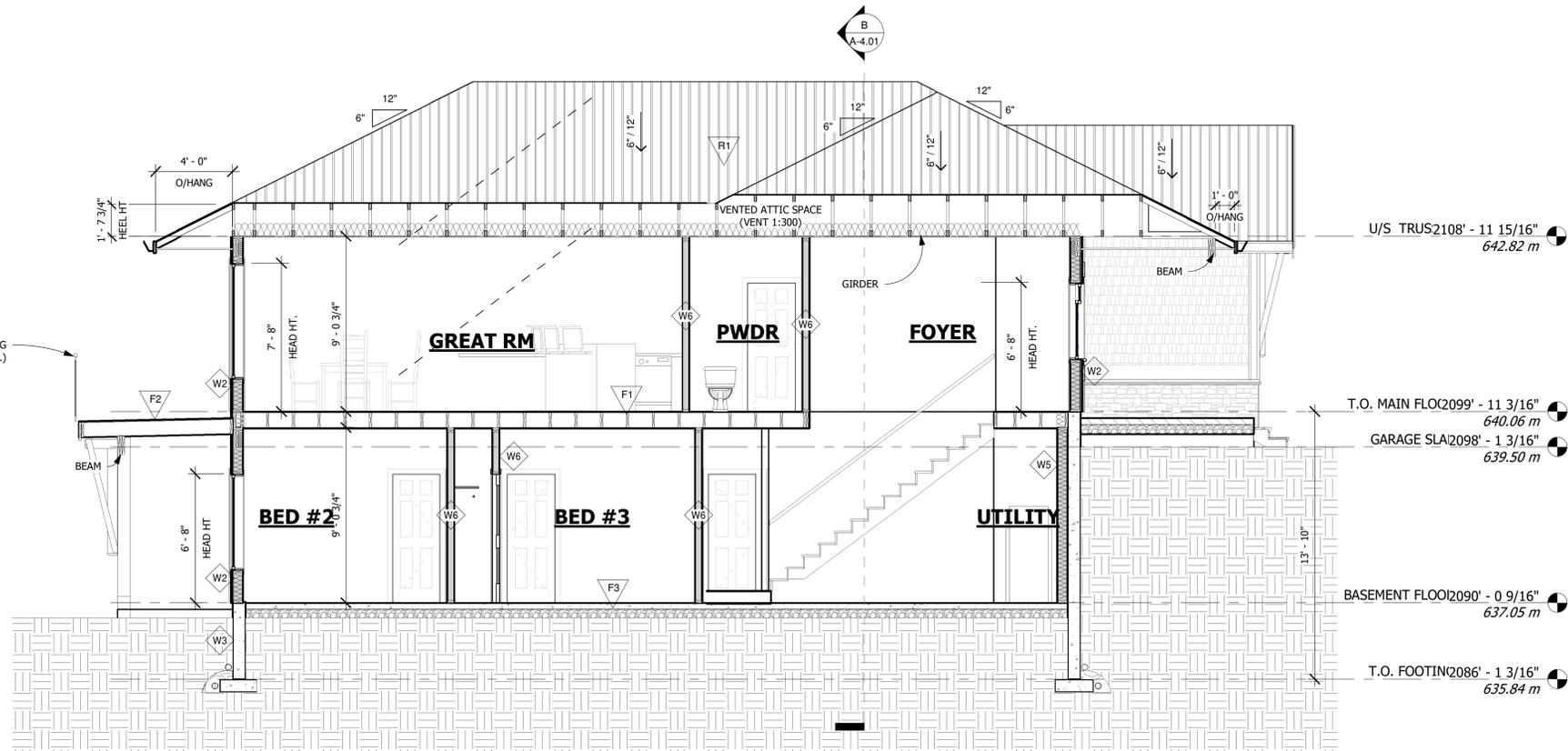
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DESIGNED:
RCW

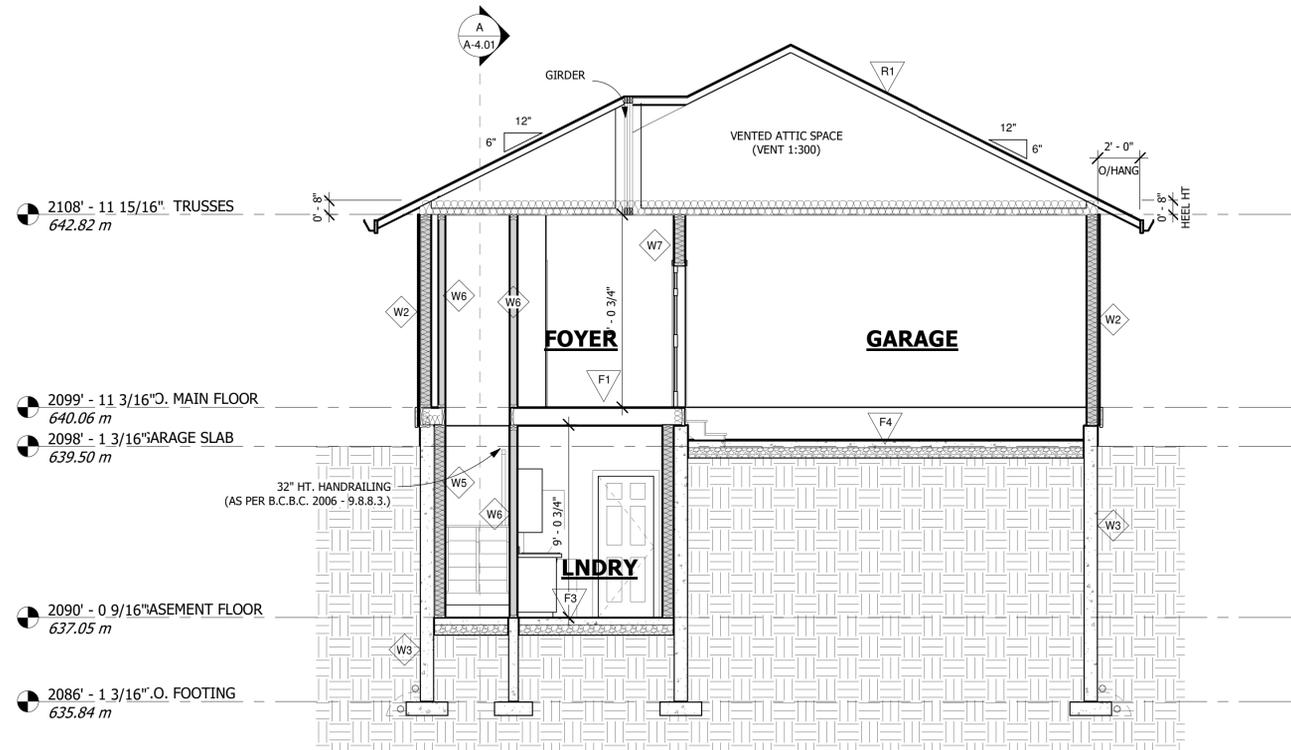
Sheet Title:
EAST & NORTH EXTERIOR ELEVATIONS

Sheet Number:
A-3.02

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A
SECTION A
1/4" = 1'-0"



B
SECTION B
1/4" = 1'-0"

GENERAL SYMBOL LEGEND

	CROSS SECTION MARKER
	DIRECTION OF VIEW
	SECTION IDENTIFICATION
	SHEET WHERE DRAWN
	WALL CONSTRUCTION TYPE
	MAIN FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	UPPER FLOOR POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	ROOF PLAN POINT LOAD SYMBOL: CONFIRM CONNECTIONS ON SITE
	SEE SHEET A-1.02 FOR GENERAL NOTES, ABBREVIATIONS, DOOR & WINDOW SCHEDULES

SECTION NOTES

- 1.) PROVIDE PREFINISHED METAL FLASHING AT ALL HORIZONTAL FINISH CHANGES.
- 2.) ALL EXTERIOR FLASHINGS SHALL HAVE INTEGRAL END DAMS. FLASHING OVER DOOR AND WINDOWS TO HAVE MIN. 2:1 SLOPE & EXTEND MIN. 3/4" PAST END OF FRAME.
- 3.) PROVIDE AT ALL FLOOR LEVELS A PREFINISHED METAL THROUGH WALL FLASHING.
- 4.) PROVIDE PREFINISHED METAL FLASHING OVER ALL UNPROTECTED WINDOWS AND DOORS, WHERE OVERHANG IS LESS THAN 4H (SEE BELOW).

CONSTRUCTION TYPES SYMBOL LEGEND

	EXTERIOR WALL (2x6, INSUL.) MANUFACTURED STONE VENEER 3/4" STUCCO c/w METAL LATH 3/8"x2" P.T. VERT. PLYWOOD STRAPPING @ 8" o.c. 2 LAYERS 30 MIN. BUILDING PAPER 1/2" PLYWOOD SHEATHING 2x6 WOOD STUDS @ 16" O.C. R-22 BATT INSULATION 6 MIL POLY U.V. RATED VAPOUR BARRIER 1/2" GYPSUM WALL BOARD
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	FOUNDATION OR RETAINING WALL (TYPICAL) DRAINAGE COMPOSITE MATERIAL BELOW GRADE 1x4 P.T. WOOD STRAPPING TO ALLOW FOR FINISHES (CONFIRM ON SITE /SEE ELEVATIONS) CONCRETE WALL (SEE FOUNDATION PLAN)
	EXTERIOR COLUMN BUILT-UP WOOD POST (FINISH AS PER OWNER) COMB FACE TRIMS
	FOUNDATION WALL w/ FURRING DRAINAGE COMPOSITE MATERIAL BELOW GRADE CONCRETE WALL (SEE FOUNDATION PLAN) 1" XPS RIGID FOAM BEHIND FRAME WALL C/W, TAPED SEAMS & SEALED TO RIM JOIST 2x6 WOOD STUDS @ 16" o.c., R-20 BATT INSULATION 1/2" GYPSUM BOARD, PAINTED AIR BARRIER NOTE: CONFIRM BEST INSULATION & VAPOUR BARRIER PRACTICE WITH LOCAL AUTHORITY
	INTERIOR WALL 1/2" GYPSUM BOARD EACH SIDE OF FRAME WALL 2x4 OR 2x6 (AS NOTED) WOOD STUDS @ 16" O.C. NOTE: ALL COMMON WALLS TO BATHROOMS AND BEDROOMS ADJACENT TO OTHER ROOMS TO BE INSULATED WITH 3-1/2" ACOUSTIC INSULATION
	GARAGE WALL 1/2" GYPSUM BOARD, 2x6 WOOD STUDS @ 16" o.c. R-20 BATT INSULATION, 6 MIL UV RATED POLY V.B. 1/2" GYPSUM BOARD
	FLOOR FRAMING FLOOR FINISH ON UNDERLAYMENT 5/8" T&G PLYWOOD (GLUED & SCREWED) 2x FLOOR JOISTS (SEE FLOOR PLANS) 5/8" GYPSUM CEILING BOARD
	DECK FLOOR FRAMING 5/4x5 P.T. WOOD DECKING (SCREWED) OR VINYL DECK MEMBRANE (RUN MIN. 8" UP WALLS UNDER BUILDING PAPER & SIDING) 5/8" T&G PLYWOOD (GLUED & SCREWED) 2x P.T. FLOOR JOISTS
	INTERIOR CONCRETE SLAB FINISH BY OWNER CONCRETE SLAB (SEE FOUNDATION PLANS) 6 MIL UV POLY VAPOUR BARRIER MIN. 6" COMPACTED GRANULAR FILL
	GARAGE CONCRETE SLAB FINISH BY OWNER CONCRETE SLAB (SEE FOUNDATION PLANS) MIN. 6" COMPACTED GRANULAR FILL
	INTERIOR STAIR - WOOD 1" PLYWOOD TREADS c/w 1/2" RADIUS NOSING 1/2" PLYWOOD RISER, 3 - 2x12 STRINGERS 1/2" GYPSUM CEILING BOARD
	METAL STANDING SEAM 30 lbs UNDERLAYMENT 7/16" OSB SHEATHING c/w H-CLIPS PRE-ENGINEERED WOOD TRUSSES @ 24" o.c. R-40 BLOWN-IN INSULATION 6 MIL UV RATED POLY VAPOUR BARRIER 5/8" GYPSUM CEILING BOARD
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A-12	ENERGY EFFICIENCY - BELOW GRADE

Client: NICOLA LAKE ESTATES
Project Description: PROPOSED SINGLE FAMILY RESIDENCE
Lot: LOT 40 NICOLA LAKE ESTATES

Home / Office: 5617 Center St, Chilliwack B.C. V2R3J9
Architect: R & K Enterprises
Designer: Roger Whiteaway @ SHAW.CA
Phone: 604-316-2675

Project Number: 18-03-lot 40
Scale: As Indicated
Date: 2018-04-30 12:06:13 PM
Drawn: RCW
Checked: RCW
DESIGNED: RCW

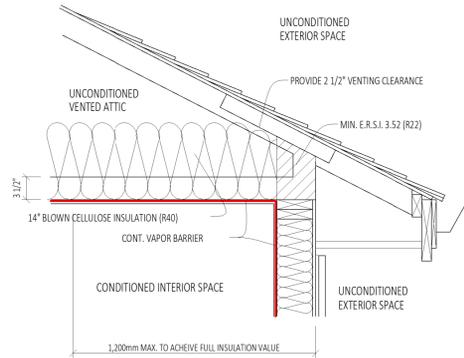
Sheet Title: BUILDING SECTIONS A & B
Sheet Number: A-4.01

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2018-04-19 ISSUED FOR BUILDING PERMIT

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9.36.2.6.A - EFFECTIVE THERMAL RESISTANCE OF ABOVE-GROUND OPAQUE ASSEMBLIES IN BUILDINGS WITHOUT A HEAT-RECOVERY VENTILATOR - CLIMATE ZONE 6

DETAIL 9.36.2.6.A-1 - CEILINGS BELOW ATTICS



- A REDUCTION IN THE EFFECTIVE THERMAL RESISTANCE OF CEILING ASSEMBLIES IN ATTICS UNDER SLOPED ROOFS IS PERMITTED FOR A LENGTH NO GREATER THAN 1 200 MM BUT ONLY TO THE EXTENT IMPOSED BY THE ROOF SLOPE AND MINIMUM VENTING CLEARANCE, PROVIDED THE NOMINAL THERMAL RESISTANCE OF THE INSULATION DIRECTLY ABOVE THE EXTERIOR WALL IS NOT LESS THAN E.S.R.I. 3.52 (R20).

ASSEMBLY 9.36.2.6.A-1 (a)
TYPICAL TRUSS ROOF W/ ATTIC
 REQUIRED MIN. E.S.R.I. VALUE = 8.67

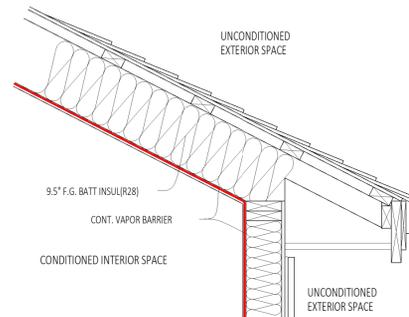
- ROOFING MATERIAL AS PER BUILDING SPECIFICATIONS
- #15 ROOFING FELT
- 1/2" PLYWOOD SHEATHING, PROVIDE "H" CLIPS AT SEAMS, OR: 1x4 STRAPPING WITH SOLID EAVE PROTECTION PER B.C.B.C.
- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- PRE-FAB TRUSSES @ 24" O.C. W/ 16" BLOWN CELLULOSE INSULATION (R40) (E.S.R.I. 7.10) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 5/8" GYPSUM WALL BOARD (E.S.R.I. 0.10)
- INTERIOR AIR FILM (E.S.R.I. 0.11)

TOTAL EFFECTIVE R.S.I. VALUE = 9.48

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

3.5" WOOD TRUSS BTM E.S.R.I.	0.0085x40mm=0.76
CELLULOSE INSUL E.S.R.I.	0.025x140mm=3.50
3.5" CELLULOSE INSUL E.S.R.I.	0.025x140mm=3.50
12" CELLULOSE INSUL E.S.R.I.	0.025x480mm=7.63
PART 1 - 3.5" TRUSS BTM W/ 3.5" CELLULOSE INSUL:	
13% FRAMING AND 87% INSUL FOR 24" O.C.	100
(13.7x2.00)+(87x3.5)	=4.56
PART 2 - 12" CELLULOSE INSUL E.S.R.I.:	
100	7.63
PART 3 - PART 2+TOTAL E.S.R.I.:	
13.7x2.00+(87x3.5)+7.63	=15.87x9.48

DETAIL 9.36.2.6.A-2 - CATHEDRAL CEILINGS AND FLAT ROOFS



ASSEMBLY 9.36.2.6.A-2 (a)
TYPICAL 2x10 @ 16" RAFTER ROOF
 REQUIRED MIN. E.S.R.I. VALUE = 4.67

- ROOFING MATERIAL AS PER BUILDING SPECIFICATIONS
- #15 ROOFING FELT
- 1/2" PLYWOOD SHEATHING, PROVIDE "H" CLIPS AT SEAMS, OR: 1x4 STRAPPING WITH SOLID EAVE PROTECTION PER B.C.B.C.
- 2x4 STRAPPING AT 24" O.C. W/ VENTED AIRSPACE
- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- 2x10 @ 16" O.C. W/ 9.5" F.G. BATT INSUL (R28) (E.S.R.I. 4.56) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 5/8" GYPSUM WALL BOARD (E.S.R.I. 0.10)
- INTERIOR AIR FILM (E.S.R.I. 0.11)

TOTAL EFFECTIVE R.S.I. VALUE = 4.80

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x10 WOOD E.S.R.I.	0.0085x25mm=2.00
9.25" F.G. BATT INSUL E.S.R.I.	0.024x235mm=5.64
13% FRAMING AND 87% INSUL FOR 16" O.C.	100
(13.7x2.00)+(87x5.64)	=4.56
TOTAL EFFECTIVE R.S.I. VALUE = 4.80	

ASSEMBLY 9.36.2.6.A-2 (b)
TYPICAL 2x10 @ 24" RAFTER ROOF
 REQUIRED MIN. E.S.R.I. VALUE = 4.67

- ROOFING MATERIAL AS PER BUILDING SPECIFICATIONS
- #15 ROOFING FELT
- 1/2" PLYWOOD SHEATHING, PROVIDE "H" CLIPS AT SEAMS, OR: 1x4 STRAPPING WITH SOLID EAVE PROTECTION PER B.C.B.C.
- 2x4 STRAPPING AT 24" O.C. W/ VENTED AIRSPACE
- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- 2x10 @ 24" O.C. W/ 9.5" F.G. BATT INSUL (R28) (E.S.R.I. 4.77) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 5/8" GYPSUM WALL BOARD (E.S.R.I. 0.10)
- INTERIOR AIR FILM (E.S.R.I. 0.11)

TOTAL EFFECTIVE R.S.I. VALUE = 5.01

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x10 WOOD E.S.R.I.	0.0085x25mm=2.00
9.25" F.G. BATT INSUL E.S.R.I.	0.024x235mm=5.64
13% FRAMING AND 87% INSUL FOR 24" O.C.	100
(10.7x2.00)+(87x5.64)	=4.77
TOTAL EFFECTIVE R.S.I. VALUE = 5.01	

ASSEMBLY 9.36.2.6.A-2 (c)
TYPICAL 2x12 @ 16" RAFTER ROOF
 REQUIRED MIN. E.S.R.I. VALUE = 4.67

- ROOFING MATERIAL AS PER BUILDING SPECIFICATIONS
- #15 ROOFING FELT
- 1/2" PLYWOOD SHEATHING, PROVIDE "H" CLIPS AT SEAMS, OR: 1x4 STRAPPING WITH SOLID EAVE PROTECTION PER B.C.B.C.
- 2x4 STRAPPING AT 24" O.C. W/ VENTED AIRSPACE
- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- 2x12 @ 16" O.C. W/ 9.5" F.G. BATT INSUL (R28) (E.S.R.I. 4.81) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 5/8" GYPSUM WALL BOARD (E.S.R.I. 0.10)
- INTERIOR AIR FILM (E.S.R.I. 0.11)

TOTAL EFFECTIVE R.S.I. VALUE = 5.05

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x12 WOOD E.S.R.I.	0.0085x28mm=2.42
9.25" F.G. BATT INSUL E.S.R.I.	0.024x235mm=5.64
13% FRAMING AND 87% INSUL FOR 16" O.C.	100
(13.7x2.42)+(87x5.64)	=4.81
TOTAL EFFECTIVE R.S.I. VALUE = 5.05	

ASSEMBLY 9.36.2.6.A-2 (d)
TYPICAL 2x12 @ 24" RAFTER ROOF
 REQUIRED MIN. E.S.R.I. VALUE = 4.67

- ROOFING MATERIAL AS PER BUILDING SPECIFICATIONS
- #15 ROOFING FELT
- 1/2" PLYWOOD SHEATHING, PROVIDE "H" CLIPS AT SEAMS, OR: 1x4 STRAPPING WITH SOLID EAVE PROTECTION PER B.C.B.C.
- 2x4 STRAPPING AT 24" O.C. W/ VENTED AIRSPACE
- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- 2x12 @ 24" O.C. W/ 9.5" F.G. BATT INSUL (R28) (E.S.R.I. 4.98) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 5/8" GYPSUM WALL BOARD (E.S.R.I. 0.10)
- INTERIOR AIR FILM (E.S.R.I. 0.11)

TOTAL EFFECTIVE R.S.I. VALUE = 5.22

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x12 WOOD E.S.R.I.	0.0085x28mm=2.42
9.25" F.G. BATT INSUL E.S.R.I.	0.024x235mm=5.64
13% FRAMING AND 87% INSUL FOR 24" O.C.	100
(10.7x2.42)+(87x5.64)	=4.98
TOTAL EFFECTIVE R.S.I. VALUE = 5.22	

SUSPENDED SLAB CEILING WITH SIMILAR E.S.R.I. REQUIREMENTS AS CATHEDRAL CEILINGS
 REQUIRED MIN. E.S.R.I. VALUE = 4.51

- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- WATERPROOF EPXY COATING (E.S.R.I. 0.00)
- 8" ENGO CONC. SUSPENDED SLAB (E.S.R.I. 0.08)
- 2x8 @ 16" O.C. W/ 7.25" MED. DENSITY SPRAY INSUL (E.S.R.I. 4.65) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 5/8" GYPSUM WALL BOARD (E.S.R.I. 0.10)
- INTERIOR AIR FILM (E.S.R.I. 0.11)

TOTAL EFFECTIVE R.S.I. VALUE = 4.97

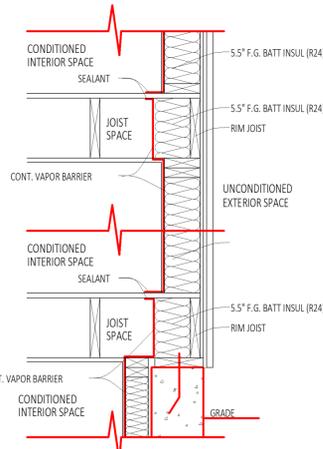
CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x8 WOOD E.S.R.I.	0.0085x134mm=1.56
7.25" MED. DENSITY SPRAY INSUL E.S.R.I.	0.036x134mm=4.82
13% FRAMING AND 87% INSUL FOR 16" O.C.	100
(13.7x1.56)+(87x4.82)	=4.65
TOTAL EFFECTIVE R.S.I. VALUE = 4.97	

SPECIAL NOTE:
 TOTAL E.S.R.I. VALUES ARE THE SAME FOR FLAT ROOF ASSEMBLIES ALTHOUGH THE MATERIALS ABOVE THE COMPONENTS WITH E.S.R.I. VALUES MAY BE DIFFERENT (IE. ROOFING MATERIALS AND VENTING ASSEMBLIES). SEE BUILDING SPECIFICATIONS ON DESIGN DRAWINGS FOR SPECIFIC ASSEMBLY MATERIALS.

ALTHOUGH E.S.R.I. VALUES FOR TRUSS JOISTS ARE NOT PROVIDED IN THE CODE IT IS ASSUMED THAT 9.5" AND 11.87" T.J.I. JOISTS ON SIMILAR CENTERS MEET OR EXCEED THE VALUES LISTED FOR DIMENSIONAL LUMBER.

DETAIL 9.36.2.6.A-3 - EXTERIOR WALLS



ASSEMBLY 9.36.2.6.A-3 (a)
TYPICAL EXTERIOR WALLS
 REQUIRED MIN. E.S.R.I. VALUE = 3.08

- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- CLADDING MATERIAL AS PER BUILDING SPECIFICATIONS (E.S.R.I. VARIES) (SEE LIST OF TYPICAL CLADDING MATERIALS)
- RAIN SCREEN W/ MIN. 10mm STRAPPING U.N.O. (E.S.R.I. 0.12)
- BUILDING WRAP (E.S.R.I. 0.0)
- 1/2" PLYWOOD SHEATHING (E.S.R.I. 0.11)
- 2x6 @ 24" O.C. W/ 5.5" F.G. BATT INSUL (R22) (E.S.R.I. 2.67) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 1/2" GYPSUM WALL BOARD (E.S.R.I. 0.08)
- INTERIOR AIR FILM (E.S.R.I. 0.12)

TOTAL EFFECTIVE R.S.I. VALUE = 3.13

* TOTAL E.S.R.I. EXCEEDS REQUIREMENT WITHOUT CLADDING INCLUDED IN CALCULATION HOWEVER CLADDING MUST BE PROVIDED. SEE LIST OF TYPICAL CLADDING MATERIALS FOR E.S.R.I. VALUES.

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x6 WOOD E.S.R.I.	0.0085x40mm=1.19
5.5" F.G. BATT INSUL E.S.R.I.	0.024x140mm=3.36
20% FRAMING AND 80% INSUL FOR 24" O.C.	100
(20.7x1.19)+(80x3.36)	=2.67
TOTAL EFFECTIVE R.S.I. VALUE = 3.13	

THE EFFECTIVE THERMAL RESISTANCE OF RIM JOISTS SHALL BE NOT LESS THAN THAT REQUIRED FOR ABOVE-GROUND WALLS.

ASSEMBLY 9.36.2.6.A-3 (b)
TYPICAL JOIST SPACE AT EXTERIOR WALLS
 REQUIRED MIN. E.S.R.I. VALUE = 3.08

- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- CLADDING MATERIAL AS PER BUILDING SPECIFICATIONS (E.S.R.I. VARIES) (SEE LIST OF TYPICAL CLADDING MATERIALS)
- RAIN SCREEN W/ MIN. 10mm STRAPPING U.N.O. (E.S.R.I. 0.12)
- BUILDING PAPER (E.S.R.I. 0.0)
- 1.5" THICK RIM JOIST (E.S.R.I. 0.33)
- 5.5" THICK BATT INSULATION (R24) (E.S.R.I. 3.36)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- INTERIOR AIR FILM (E.S.R.I. 0.12)

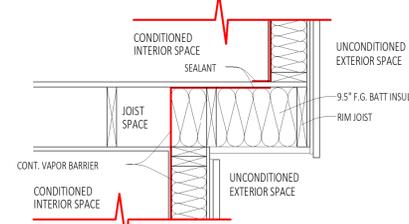
TOTAL EFFECTIVE R.S.I. VALUE = 3.95

* TOTAL E.S.R.I. EXCEEDS REQUIREMENT WITHOUT CLADDING INCLUDED IN CALCULATION HOWEVER CLADDING MUST BE PROVIDED. SEE LIST OF TYPICAL CLADDING MATERIALS FOR E.S.R.I. VALUES.

TYP. CLADDING MATERIALS AND ASSOCIATED E.S.R.I. VALUES

- HOLLOW BACKED VINYL SIDING - E.S.R.I. 0.11 (SOME PROFILES MAY NOT REQUIRE RAINDRAIN HOWEVER MINIMUM TOTAL E.S.R.I. WILL BE MET WITH SIDING ONLY)
- 6.35mm FIBER CEMENT SIDING - E.S.R.I. 0.023
- WOOD SHINGLES WITH 190mm EXPOSURE - E.S.R.I. 0.15
- 19mm THICK STUCCO - E.S.R.I. 0.017
- 50mm THICK STONE - E.S.R.I. 0.017
- 100mm THICK BRICK - E.S.R.I. 0.07

DETAIL 9.36.2.6.A-4 - FLOORS OVER UNHEATED SPACES



ASSEMBLY 9.36.2.6.A-4 (a)
TYPICAL 2x10 @ 16" FLOOR OVER UNHEATED SPACE
 REQUIRED MIN. E.S.R.I. VALUE = 4.67 OVER EXTERIOR
 REQUIRED MIN. E.S.R.I. VALUE = 4.51 OVER GARAGE

- INTERIOR AIR FILM (E.S.R.I. 0.16)
- FINISH FLOORING (SEE LIST OF TYPICAL FLOORING MATERIALS)
- 3/4" T&G PLY. SHEATHING (GLUED & NAILED) (E.S.R.I. 0.16)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 2x10 @ 16" O.C. W/ 9.5" F.G. BATT INSUL (R28) (E.S.R.I. 4.56) (SEE CALCULATION FOR PARALLEL MATERIALS)
- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- PERFORATED SOFFIT FINISH OR 5/8" GYPSUM WALL BOARD (SOFFIT FINISH FOR EXT. OR G.W.B. FOR GARAGE)

TOTAL EFFECTIVE R.S.I. VALUE = 4.91

* TOTAL E.S.R.I. EXCEEDS REQUIREMENT WITHOUT FLOORING INCLUDED IN CALCULATION. SEE LIST OF TYPICAL FLOORING MATERIALS FOR E.S.R.I. VALUES.

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x10 WOOD E.S.R.I.	0.0085x25mm=2.00
9.25" F.G. BATT INSUL E.S.R.I.	0.024x235mm=5.64
13% FRAMING AND 87% INSUL FOR 16" O.C.	100
(13.7x2.00)+(87x5.64)	=4.56
TOTAL EFFECTIVE R.S.I. VALUE = 4.91	

ASSEMBLY 9.36.2.6.A-4 (b)
TYPICAL 2x12 @ 16" FLOOR OVER UNHEATED SPACE
 REQUIRED MIN. E.S.R.I. VALUE = 4.67 OVER EXTERIOR
 REQUIRED MIN. E.S.R.I. VALUE = 4.51 OVER GARAGE

- INTERIOR AIR FILM (E.S.R.I. 0.16)
- FINISH FLOORING (SEE LIST OF TYPICAL FLOORING MATERIALS)
- 3/4" T&G PLY. SHEATHING (GLUED & NAILED) (E.S.R.I. 0.16)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 2x12 @ 16" O.C. W/ 9.5" F.G. BATT INSUL (R28) (E.S.R.I. 4.81) (SEE CALCULATION FOR PARALLEL MATERIALS)
- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- PERFORATED SOFFIT FINISH OR 5/8" GYPSUM WALL BOARD (SOFFIT FINISH FOR EXT. OR G.W.B. FOR GARAGE)

TOTAL EFFECTIVE R.S.I. VALUE = 5.16

* TOTAL E.S.R.I. EXCEEDS REQUIREMENT WITHOUT FLOORING INCLUDED IN CALCULATION. SEE LIST OF TYPICAL FLOORING MATERIALS FOR E.S.R.I. VALUES.

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x12 WOOD E.S.R.I.	0.0085x28mm=2.42
9.25" F.G. BATT INSUL E.S.R.I.	0.024x235mm=5.64
13% FRAMING AND 87% INSUL FOR 16" O.C.	100
(13.7x2.42)+(87x5.64)	=4.81
TOTAL EFFECTIVE R.S.I. VALUE = 5.16	

- A WALL OR A FLOOR BETWEEN A CONDITIONED SPACE AND A RESIDENTIAL GARAGE MUST BE AIRTIGHT AND INSULATED BECAUSE, EVEN IF THE GARAGE IS EQUIPPED WITH SPACE-HEATING EQUIPMENT, IT MAY IN FACT BE KEPT UNHEATED MOST OF THE TIME.

- WHERE A COMPONENT OF THE BUILDING ENVELOPE IS PROTECTED BY AN ENCLOSED UNCONDITIONED SPACE, SUCH AS A SUN PORCH, ENCLOSED VERANDA, VESTIBULE OR ATTACHED GARAGE, THE REQUIRED EFFECTIVE THERMAL RESISTANCE OF THE BUILDING ENVELOPE COMPONENT BETWEEN THE BUILDING AND THE UNCONDITIONED ENCLOSURE IS PERMITTED TO BE REDUCED BY E.S.R.I. 0.16.

ALTHOUGH E.S.R.I. VALUES FOR TRUSS JOISTS ARE NOT PROVIDED IN THE CODE IT IS ASSUMED THAT 9.5" AND 11.87" T.J.I. JOISTS ON SIMILAR CENTERS MEET OR EXCEED THE VALUES LISTED FOR DIMENSIONAL LUMBER.

IT IS ASSUMED THAT HEATED CONCRETE TOPPING ADDED TO THE TOP OF THE FLOOR SHEATHING WOULD ONLY INCREASE THE TOTAL E.S.R.I. VALUE OF THE ASSEMBLY AND IS NOT REQUIRED TO BE CALCULATED TO SHOW CONFORMITY WITH THE MINIMUM REQUIRED VALUES.

TYPICAL NOTES:

- VENTILATION AND DUCTING MUST BE PROVIDED AS PER B.C.B.C. 2012 SECTION 9.32
- AN AIR BARRIER MUST BE INSTALLED AS PER B.C.B.C. 2012 SECTION 9.36
- THE AIR BARRIER SYSTEM MUST COMPLY WITH SECTIONS 9.36.2.9 AND 9.36.2.10 AND MUST SPECIFICALLY BE CONSTRUCTED USING METHODS OUTLINED IN SUBSECTION 9.36.2.10 (B) AND 9.36.2.10 (1.1)
- ALL INSULATION TO BE INSTALLED AS PER B.C.B.C. 2012 SECTION 9.36
- ALL GARAGE DOORS: MINIMUM NOMINAL R.S.I. VALUE OF 1.1
- ALL ACCESS HATCHES TO UNCONDITIONED SPACES: MAXIMUM U VALUE OF 2.6
- THE MINIMUM LEVEL OF PERFORMANCE REQUIRED FOR WINDOWS, DOORS AND SKYLIGHTS SHALL BE THAT OF THE PERFORMANCE CLASS R
- ALL WINDOWS AND DOORS: MAX U VALUE OF 1.8 EXCEPT FOR 1 ENTRY UNIT
- ALL SKYLIGHTS: MAXIMUM U VALUE OF 2.9

ENERGY EFFICIENCY REQUIREMENTS

THIS HOME IS DESIGNED TO COMPLY WITH ENERGY EFFICIENCY REQUIREMENTS AND VALUES FOR CLIMATE ZONE 6 - WITHOUT HRV 2012 SECTION 9.36.

ASSEMBLY 9.36.2.6.A-3 (c)
TYPICAL WALL BETWEEN GARAGE AND DWELLING
 REQUIRED MIN. E.S.R.I. VALUE = 2.92

- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- 5/8" GYPSUM WALL BOARD (E.S.R.I. 0.10)
- 2x6 @ 24" O.C. W/ 5.5" (R22) F.G. BATT INSUL (E.S.R.I. 2.67) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 1/2" GYPSUM WALL BOARD (E.S.R.I. 0.08)
- INTERIOR AIR FILM (E.S.R.I. 0.12)

TOTAL EFFECTIVE R.S.I. VALUE = 3.00

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x6 WOOD E.S.R.I.	0.0085x40mm=1.19
5.5" F.G. BATT INSUL E.S.R.I.	0.024x140mm=3.34
20% FRAMING AND 80% INSUL FOR 24" O.C.	100
(20.7x1.19)+(80x3.34)	=2.92
TOTAL EFFECTIVE R.S.I. VALUE = 3.00	

ASSEMBLY 9.36.2.6.A-3 (d)
TYPICAL WALL BETWEEN SKYLIGHT SHAFT AND ATTIC
 REQUIRED MIN. E.S.R.I. VALUE = 2.78

- EXTERIOR AIR FILM (E.S.R.I. 0.03)
- 1/2" INSULATING FIBERBOARD (E.S.R.I. 0.19)
- 2x6 @ 16" O.C. W/ 5.5" (R20) F.G. BATT INSUL (E.S.R.I. 2.36) (SEE CALCULATION FOR PARALLEL MATERIALS)
- 6 MIL POLY V.B. (E.S.R.I. 0.0)
- 1/2" GYPSUM WALL BOARD (E.S.R.I. 0.08)
- INTERIOR AIR FILM (E.S.R.I. 0.12)

TOTAL EFFECTIVE R.S.I. VALUE = 2.78

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x6 WOOD E.S.R.I.	0.0085x40mm=1.19
5.5" F.G. BATT INSUL E.S.R.I.	0.024x140mm=3.34
23% FRAMING AND 77% INSUL FOR 16" O.C.	100
(23.1x1.19)+(77x3.34)	=2.36
TOTAL EFFECTIVE R.S.I. VALUE = 2.78	

Issues / Revisions

2018-02-26 ISSUED FOR CLIENT REVIEW
 2018-03-21 ISSUED FOR CLIENT REVIEW
 2018-04-09 ISSUED FOR CLIENT REVIEW
 2018-04-19 ISSUED FOR BUILDING PERMIT

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Client: NICOLA LAKE ESTATES

Project Description: PROPOSED SINGLE FAMILY RESIDENCE

LOT 40 NICOLA LAKE ESTATES

Home / Office: 5617 Carter St. Chilliwack, B.C. V2R3J9

R & K Enterprises

Roger Whiteaway @ SHAW.CA
 RK WHITEAWAY@SHAW.CA
 604-316-2675

Project Number: 18-03-lot 40

Scale: As indicated

Date: 2018-04-30 12:06:14 PM

Drawn: RCW

Checked: RCW

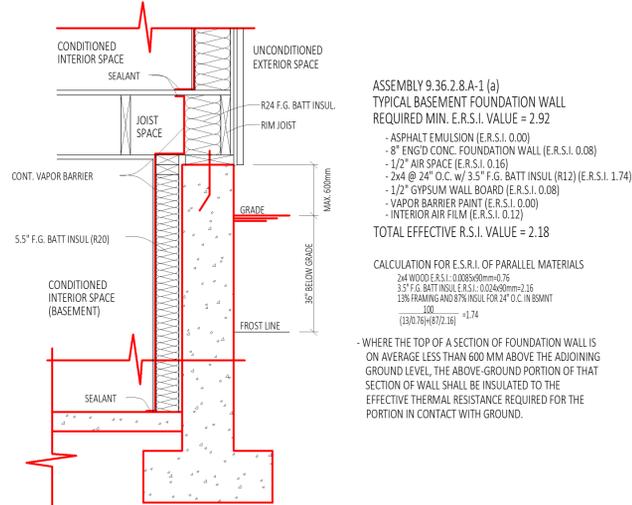
DESIGNED: RCW

Sheet Title: ENERGY EFFICIENCY - ABOVE GRADE

Sheet Number: A-11

9.36.2.8.A - EFFECTIVE THERMAL RESISTANCE OF ASSEMBLIES BELOW-GRADE OR IN CONTACT WITH THE GROUND IN BUILDINGS WITHOUT A HEAT-RECOVERY VENTILATOR - CLIMATE ZONE 6

DETAIL 9.36.2.8.A-1 - FOUNDATION WALLS



**ASSEMBLY 9.36.2.8.A-1 (a)
TYPICAL BASEMENT FOUNDATION WALL
REQUIRED MIN. E.R.S.I. VALUE = 2.92**

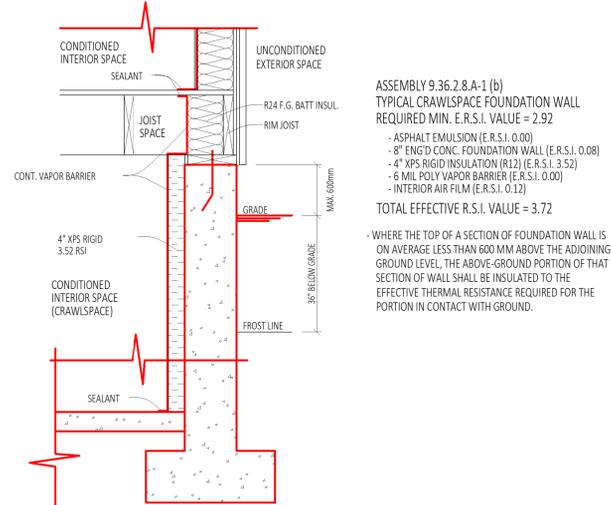
- ASPHALT EMULSION (E.R.S.I. 0.00)
- 8" ENGD CONC. FOUNDATION WALL (E.R.S.I. 0.08)
- 1/2" AIR SPACE (E.R.S.I. 0.16)
- 2x4 @ 24" O.C. w/ 3.5" F.G. BATT INSUL (R12) (E.R.S.I. 1.74)
- 1/2" GYPSUM WALL BOARD (E.R.S.I. 0.08)
- VAPOR BARRIER PAINT (E.R.S.I. 0.00)
- INTERIOR AIR FILM (E.R.S.I. 0.12)

TOTAL EFFECTIVE R.S.I. VALUE = 2.18

CALCULATION FOR E.S.R.I. OF PARALLEL MATERIALS

2x4 WOOD E.S.I.: 0.0085(90mm)=0.75
 3.5" F.G. BATT INSUL E.S.I.: 0.024(90mm)=2.16
 13% FRAMING AND 87% INSUL FOR 24" C. IN 95MMIT
 100
 (13/1076)+(87/2.16) = 1.74

- WHERE THE TOP OF A SECTION OF FOUNDATION WALL IS ON AVERAGE LESS THAN 600 MM ABOVE THE ADJOINING GROUND LEVEL, THE ABOVE-GROUND PORTION OF THAT SECTION OF WALL SHALL BE INSULATED TO THE EFFECTIVE THERMAL RESISTANCE REQUIRED FOR THE PORTION IN CONTACT WITH GROUND.



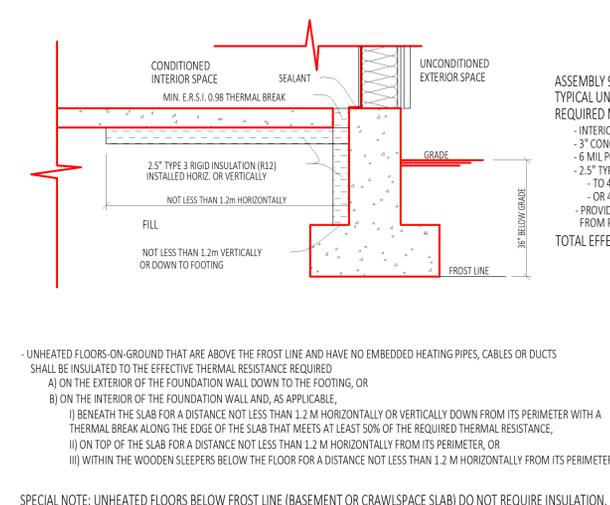
**ASSEMBLY 9.36.2.8.A-1 (b)
TYPICAL CRAWLSPACE FOUNDATION WALL
REQUIRED MIN. E.R.S.I. VALUE = 2.92**

- ASPHALT EMULSION (E.R.S.I. 0.00)
- 8" ENGD CONC. FOUNDATION WALL (E.R.S.I. 0.08)
- 4" XPS RIGID INSULATION (R12) (E.R.S.I. 3.52)
- 6 MIL POLY VAPOR BARRIER (E.R.S.I. 0.00)
- INTERIOR AIR FILM (E.R.S.I. 0.12)

TOTAL EFFECTIVE R.S.I. VALUE = 3.72

- WHERE THE TOP OF A SECTION OF FOUNDATION WALL IS ON AVERAGE LESS THAN 600 MM ABOVE THE ADJOINING GROUND LEVEL, THE ABOVE-GROUND PORTION OF THAT SECTION OF WALL SHALL BE INSULATED TO THE EFFECTIVE THERMAL RESISTANCE REQUIRED FOR THE PORTION IN CONTACT WITH GROUND.

DETAIL 9.36.2.8.A-2 - UNHEATED FLOOR ABOVE FROST LINE



**ASSEMBLY 9.36.2.8.A-2 (a)
TYPICAL UNHEATED FLOOR ABOVE FROST LINE
REQUIRED MIN. E.R.S.I. VALUE = 1.96**

- INTERIOR AIR FILM (E.R.S.I. 0.16)
- 3" CONCRETE SLAB (E.R.S.I. 0.03)
- 6 MIL POLY V.B. (E.R.S.I. 0.00)
- 2.5" TYPE 3 RIGID INSULATION (R12) (E.R.S.I. 1.90)
- TO 48" BELOW SLAB
- OR 48" FROM PERIMETER
- PROVIDE MIN. E.R.S.I. 0.98 THERMAL BREAK FROM PERIM. OF SLAB TO EXTERIOR FLOOR.

TOTAL EFFECTIVE R.S.I. VALUE = 2.09

- UNHEATED FLOORS-ON-GROUND THAT ARE ABOVE THE FROST LINE AND HAVE NO EMBEDDED HEATING PIPES, CABLES OR DUCTS SHALL BE INSULATED TO THE EFFECTIVE THERMAL RESISTANCE REQUIRED

A) ON THE EXTERIOR OF THE FOUNDATION WALL DOWN TO THE FOOTING, OR

B) ON THE INTERIOR OF THE FOUNDATION WALL AND, AS APPLICABLE,

I) BENEATH THE SLAB FOR A DISTANCE NOT LESS THAN 1.2 M HORIZONTALLY OR VERTICALLY DOWN FROM ITS PERIMETER WITH A THERMAL BREAK ALONG THE EDGE OF THE SLAB THAT MEETS AT LEAST 50% OF THE REQUIRED THERMAL RESISTANCE,

II) ON TOP OF THE SLAB FOR A DISTANCE NOT LESS THAN 1.2 M HORIZONTALLY FROM ITS PERIMETER, OR

III) WITHIN THE WOODEN SLEEPERS BELOW THE FLOOR FOR A DISTANCE NOT LESS THAN 1.2 M HORIZONTALLY FROM ITS PERIMETER.

SPECIAL NOTE: UNHEATED FLOORS BELOW FROST LINE (BASEMENT OR CRAWLSPACE SLAB) DO NOT REQUIRE INSULATION.

EXCERPT FROM B.C. BUILDING CODE 2012 SECTION 9.36

9.36.2.1. Scope and Application

1) Except as provided in Sentence (2), this Subsection is concerned with the loss of energy due to heat transfer and air leakage through materials, components and assemblies, including their interfaces, forming part of the building envelope where a separate conditioned space from unconditioned space, the exterior air or the ground.

2) The requirements of this Subsection also apply to components of a building envelope assembly that separate a conditioned space from an adjoining storage garage, even if the storage garage is intended to be heated. (See Appendix A and A.9.36.1.5) in Appendix A.

3) Except for skylight shafts addressed in Sentence 9.36.2.6 (1), for the purpose of this Subsection, wall assemblies inclined less than 60° from the horizontal shall be considered as roof assemblies, and roof assemblies inclined 60° or more from the horizontal shall be considered as wall assemblies.

4) The properties, performance and installation of windows, doors and skylights shall also conform to Section 5.7.

5) The properties, location and installation of thermal insulation, air barrier systems, vapor barriers, and materials with low air or vapour permeance shall also conform to Section 5.25.

9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies

1) The thermal characteristics of materials shall be determined by calculation or by testing in accordance with the applicable product standards listed in the Code or, in the absence of such standards or where such standards do not address the determination of thermal resistance, in accordance with:

- a) CANULC 177, "Steady-State Heat Flux Measurement and Thermal Transmission Properties by Means of the Guarded Hot Plate Apparatus," or
- b) ASTM C 516, "Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus," (See Table A.9.36.2.4 (1) in Appendix A for the thermal characteristics of commonly used materials).

2) Calculations and tests performed in accordance with Sentence (1) shall be carried out at an average temperature of 24°C and under a temperature differential of 12/2°C.

3) The thermal characteristics of windows, doors and skylights shall be determined by calculation or testing in accordance with:

- a) CSA A440.2/A440.3, "Transmission Energy Performance User Guide for CSA A440.2/06, Fenestration Energy Performance," for the reference sizes listed therein, or
- b) NFRC 100, "Determining Fenestration Product U-Factors," and NFRC 100, "Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence," for the reference sizes listed therein. (See Appendix A)

4) The effective thermal resistance of opaque building assemblies shall be determined from:

- a) calculations conforming to Article 9.36.2.4, or
- b) laboratory tests performed in accordance with ASTM C 1363, "Thermal Performance of Building Materials and Envelope Assemblies by Means of Hot Box Apparatus," using an indoor air temperature of 21.1°C and an outdoor air temperature of 35.0°C.

5) The thermal characteristics of log walls shall be determined by calculation in accordance with Section 505 of ICC 400, "Design and Construction of Log Structures." (See Appendix A)

9.36.2.3. Calculation of Ceiling, Wall, Fenestration and Door Areas

1) The gross roof-ceiling assembly area shall be calculated as the sum of the interior surface areas of insulated roof-ceiling assemblies and of skylight openings.

2) Except as permitted by Sentence (3), the gross wall area shall be calculated as the sum of the interior surface areas of all exterior building envelope assemblies above the finished ground level that are inclined 60° or more from the horizontal, including:

- a) rim joists,
- b) fenestration and opaque portions of doors,
- c) insulated walls extending from finished ground level to the interior side of the insulated roof-ceiling assembly, and
- d) the exposed areas of below-ground building envelope assemblies, where fenestration or doors are located below the plane of the adjacent finished ground. (See Appendix A)

3) Where a building of residential occupancy contains more than 2 dwelling units, the gross wall area enclosing conditioned space shall be permitted to include the interior surface areas of walls that enclose a suite, measured from the top surface of the lowest floor to the underside of the highest ceiling in the suite. (See Appendix A)

4) Fenestration and door areas shall be the actual area of windows, doors and skylights including all related frame and sash members.

5) The fenestration area inside of fire spaces that are not all in the same plane or curved panels shall be measured along the surface of the glass. (See Appendix A)

9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies

1) In calculating the effective thermal resistance of assemblies for the purpose of comparison with the requirements of Articles 9.36.2.6 and 9.36.2.8, the thermal bridging effect of closely spaced, repetitive structural members, such as studs and joists, and ancillary members, such as ledels, sills and plates, shall be accounted for. (See Appendix A)

2) Minor penetrations through assemblies, such as pipes, ducts, equipment through the wall venting, packaged terminal air conditioners or heat pumps, shelf angles, anchors and ties and associated fasteners, and minor structural members that must partially or completely penetrate the building envelope to perform their intended function need not be taken into account in the calculation of the effective thermal resistance of that assembly.

3) Major structural penetrations, such as chimneys, canopies, beams, columns and construction appendages that must completely penetrate the building envelope to perform their intended function, need not be taken into account in the calculation of the effective thermal resistance of the penetrated assembly, provided:

- a) the insulation is installed tight against the outline of the penetration, and
- b) the sum of the areas of all such major structural penetrations is limited to a maximum of 2% of the gross wall area calculated as described in Sentence 9.36.2.3 (2). (See Appendix A)

4) Where a component of the building envelope is protected by an enclosed unconditioned space, such as a sun porch, enclosed veranda, vestibule or attached garage, the required effective thermal resistance of the building envelope component between the building and the unconditioned enclosure is permitted to be reduced by 0.16 (4) K/W. (See Appendix A)

9.36.2.5. Continuity of Insulation

1) Except as provided in Sentences (2) to (9) and in Sentence 9.36.2.4 (3) regarding balconies and canopy slabs, and except for clearances around components required for fire safety reasons, interior building components that meet building envelope components and major structural members that partly penetrate the building envelope shall not break the continuity of the insulation and shall not decrease the effective thermal resistance at their projected area to less than that required in Articles 9.36.2.6 and 9.36.2.8. (See Appendix A)

2) Where an interior foundation wall, freewall, party wall or structural element penetrates an exterior wall or insulated roof or ceiling and breaks the continuity of the plane of insulation, the penetrating element shall be required:

- a) on both of its sides, inward or outward from the building envelope, for a distance equal to 4 times its un-insulated thickness to an effective thermal resistance not less than that required for exterior walls as stated in Table 9.36.2.6.A or 9.36.2.8.A,
- b) within the plane of insulation of the penetrated element to an effective thermal resistance not less than 60% of that required for the penetrated element, or
- c) within both an effective thermal resistance not less than that required for the penetrated element. (See Appendix A)

3) Where a masonry foundation or floor penetrates an exterior wall and breaks the continuity of the plane of insulation, it shall be insulated within the plane of insulation of the wall or within both an effective thermal resistance not less than 55% of that required for the exterior wall as stated in Table 9.36.2.6.A or 9.36.2.8.A. (See Appendix A)

4) Where an ornamentation or appendage penetrates an exterior wall and breaks the continuity of the plane of insulation, the penetrating element shall be insulated:

- a) on both of its sides, inward or outward from the building envelope, for a distance equal to 4 times the insulated thickness of the exterior wall to an effective thermal resistance not less than that required for the wall as stated in Table 9.36.2.6.A or 9.36.2.8.A,
- b) within the plane of insulation of the wall to an effective thermal resistance not less than 55% of that required for the exterior wall, or
- c) within the penetrating element to an effective thermal resistance not less than that required for the exterior wall.

5) Except as provided in Sentences (2) and (3), when two planes of insulation are separated by a building envelope assembly and cannot be physically joined, one of the planes of insulation shall be extended for a distance equal to at least 4 times the thickness of the assembly separating the two planes. (See Appendix A)

6) Where mechanical, plumbing or electrical system components, such as pipes, ducts, conduits, cabinets, chases, panels or recessed heaters, are placed within or parallel to a wall assembly required to be insulated, the effective thermal resistance of that wall at the projected areas of the system component shall be not less than that required by Table 9.36.2.6.A, 9.36.2.8.A, 9.36.2.8.B, 9.36.2.8.C, and 9.36.2.8.D. (See Appendix A)

7) Except as permitted by Article 9.36.2.11, where mechanical ducts, plumbing pipes, conduits for electrical services or communication cables are placed within the insulated portion of a floor or ceiling assembly, the effective thermal resistance of the assembly at the projected areas of the ducts, pipes, conduits or cables shall be not less than 2.78 (62) K/W.

8) Joints and junctions between walls and other building envelope components shall be insulated in a manner that provides an effective thermal resistance that is no less than the lower of the minimum values required for the respective adjoining components. (See Appendix A)

9) Sentence (1) does not apply where the continuity of the insulation is interrupted:

- a) between the insulation in the foundation wall and that of the floor slab,
- b) by an integral perimeter footing of a slab-on-grade [see Sentences 9.35.2.3 (5) and 9.36.2.8 (8)], or
- c) at the horizontal portion of a foundation wall that supports masonry veneer and is insulated on the exterior.

9.36.2.9. Airtightness

1) The leakage of air into and out of conditioned spaces shall be controlled by constructing:

- a) continuous air barrier systems in accordance with Sentences (2) to (6), Subsection 9.36.2.3 and Article 9.36.2.10,
- b) continuous air barrier systems in accordance with Sentence (2) to (6) and Subsection 9.36.2.3 and a building assembly having an air leakage rate not greater than 0.20 (1) m³/m² in accordance with CANULC 5742, "Air Barrier Assemblies - Specification," at a pressure differential of 75 Pa, or
- c) continuous air barrier systems in accordance with Sentence (2) to (6) and Subsection 9.36.2.3 and a building assembly having an air leakage rate not greater than 0.20 (1) m³/m² in accordance with NFRC 257, "Determining Air Leakage of Air Barrier Assemblies." (See Appendix A)

2) An air barrier system installed to meet the requirements of Sentence (1) shall be continuous:

- a) across construction, control and expansion joints,
- b) across junctions between different building materials and assemblies, and
- c) across penetrations through all building assemblies.

3) Windows, doors and skylights and their components shall comply with the minimum air leakage requirements stated in:

- a) AIAA/NAMM/ANCA 100 (US 2004), "NAFES - North American Fenestration Standard Specification for Windows, Doors, and Skylights" (Harmonized Standard), and
- b) CSA A440.3, "Canadian Supplement to AIAA/NAMM/ANCA 100 (US 2004), NAFES - North American Fenestration Standard Specification for Windows, Doors, and Skylights" (Canadian Supplement).

4) Vertical access doors that separate heated garages from unconditioned spaces or the exterior shall be weatherstripped around their perimeter to prevent air leakage.

5) Fireplaces shall be equipped with doors, enclosures or devices to restrict air movement through the chimney when the fireplace is not in use. (See Appendix A)

6) Where the airtight material used in the air barrier system is installed toward the exterior of the building envelope, its location and properties shall conform to Subsection 9.36.2.5 (3) in Appendix A.

9.36.2.10. Construction of Air Barrier Details

1) Materials intended to provide the principal resistance to air leakage shall conform to CANULC 5742, "Air Barrier Assemblies - Specification" (See A.9.36.2.5 (1)) in Appendix A or to leakage characteristics and water vapour permeance values for a number of common materials.

2) Materials referred to in Sentence (1) shall be:

- a) compatible with adjoining materials, and
- b) free of holes and cracks. (See A.9.36.2.5 (5) in Appendix A)

3) Where the air barrier system consists of rigid panel-type material, all joints shall be sealed. (See A.9.36.2.10 (5)(b) in Appendix A)

4) Where the air barrier system consists of timber logs, all joints shall be sealed to resist airflow through gaps between logs that have shifted due to in-service conditions such as shrinkage and settling.

5) Where the air barrier system consists of flexible sheet material, all joints shall be:

- a) applied not less than 50 mm,
- b) sealed (see Appendix A), and
- c) structurally supported.

6) Sealant material used for the purpose of creating a continuous air barrier system shall:

- a) be a non-hardening type, or
- b) conform to:

- i) Subsection 9.37.4,
- ii) CANULC 5740.1, "Thermal Insulation - Bonded Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification," or
- iii) CANULC 5741.1, "Thermal Insulation - Bonded Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification."

7) Penetrations by electrical wiring, outlets, switches or recessed light fixtures through the plane of airtightness shall be constructed airtight:

- a) where the component is designed to provide a seal against air leakage, by sealing the component with an air barrier material (see Appendix A), or
- b) where the component is not designed to provide a seal against air leakage, by covering the component with an air barrier material and sealing it to the adjacent air barrier material.

8) The joints between the foundation wall and the sill plate, between the sill plate and rim joist, between the rim joist and the subfloor material, and between the subfloor material and the bottom plate of the wall above shall be constructed airtight by:

- a) sealing all joints and junctions between the structural components, or
- b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier material.

9) The interfaces between windows, doors and skylights and wall/ceiling assemblies shall be constructed airtight by sealing all joints and junctions between the air barrier material in the wall and the window, door or skylight frame. (See Appendix A) (See also Subsection 9.37.6)

10) Carved/levelled floors and floors over unheated spaces or over the exterior shall be constructed airtight by one of the following methods or a combination thereof:

- a) sealing all joints and junctions between the structural components, or
- b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier material.

11) Interior walls that meet exterior walls or ceilings whose plane of airtightness is on the interior of the building envelope and knee walls that separate conditioned space from unconditioned space shall be constructed airtight by:

- a) sealing all junctions between the structural components,
- b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier material, or
- c) maintaining the continuity of the air barrier system above or through the interior wall or ceiling or through the knee wall, as applicable.

12) Seal-lined chimneys that penetrate the building envelope shall be constructed airtight by blocking the void between required clearances for metal chimneys and surrounding construction with sheet metal and sealant capable of withstanding high temperatures.

13) Masonry or concrete chimneys that penetrate the building envelope shall be constructed airtight by mechanically fastening a metal frame or steel stud that extends not less than 75 mm from the chimney and sealing the air barrier material to it with a sealant capable of withstanding high temperatures.

14) Ducts that penetrate the building envelope shall be constructed airtight by sealing the penetration through the building envelope. (See Appendix A)

15) Plumbing vent stack pipes that penetrate the building envelope shall be constructed airtight by:

- a) sealing the air barrier material to the vent stack pipe with a compatible sealant or sheathing tape, or
- b) installing an interior gasket or precast concrete roof flashing at the penetration of the plane of airtightness, then sealing and mechanically fastening it to the top plate.

16) Where a party wall meets the plane of airtightness, that junction shall be constructed airtight by sealing any voids within the party wall at the perimeter to the adjacent air barrier material and by:

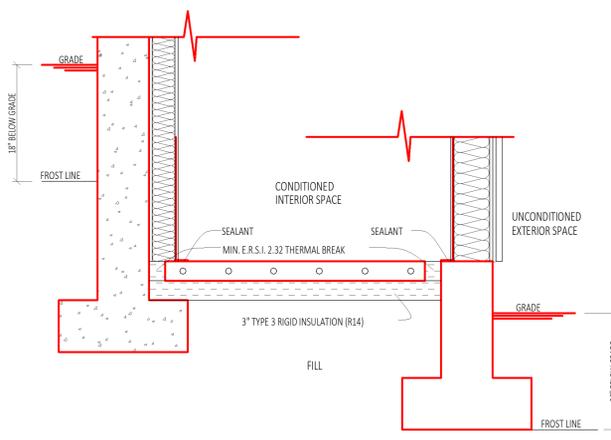
- a) sealing all junctions between the structural components, or
- b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier material.

17) Where the concrete in a flat-insulating concrete form wall acts as the air barrier, the continuity of the plane of airtightness shall be maintained between the concrete and adjacent air barrier materials, minimum values required for the respective adjoining components. (See Appendix A)

9) Sentence (2) does not apply where the continuity of the insulation is interrupted:

- a) between the insulation in the foundation wall and that of the floor slab,
- b) by an integral perimeter footing of a slab-on-grade [see Sentences 9.35.2.3 (5) and 9.36.2.8 (8)], or
- c) at the horizontal portion of a foundation wall that supports masonry veneer and is insulated on the exterior.

DETAIL 9.36.2.8.A-3 - HEATED FLOOR ABOVE OR BELOW FROST LINE



**ASSEMBLY 9.36.2.8.A-3 (a)
TYPICAL HEATED FLOOR ABOVE OR BELOW FROST LINE
REQUIRED MIN. E.R.S.I. VALUE = 2.32**

- INTERIOR AIR FILM (E.R.S.I. 0.16)
- 3" CONCRETE SLAB W/ IN-FLOOR HEAT (E.R.S.I. 0.03)
- 6 MIL POLY V.B. (E.R.S.I. 0.00)
- 3" TYPE 3 RIGID INSULATION (R14) (E.R.S.I. 2.28)
- PROVIDE MIN. E.R.S.I. 2.32 THERMAL BREAK FROM PERIM. OF SLAB TO EXTERIOR FLOOR.

TOTAL EFFECTIVE R.S.I. VALUE = 2.47

- FLOORS-ON-GROUND WITH EMBEDDED HEATING DUCTS, CABLES OR PIPES SHALL BE INSULATED TO THE EFFECTIVE THERMAL RESISTANCE REQUIRED UNDER THEIR FULL BOTTOM SURFACE INCLUDING THE EDGES.

- WHERE ONLY A PORTION OF A FLOOR-ON-GROUND HAS EMBEDDED HEATING DUCTS, CABLES OR PIPES, THAT HEATED PORTION SHALL BE INSULATED TO THE EFFECTIVE THERMAL RESISTANCE REQUIRED UNDER ITS FULL BOTTOM SURFACE TO 1.2 M BEYOND ITS PERIMETER INCLUDING EXTERIOR EDGES IF APPLICABLE.

- IN ADDITION TO THE REQUIREMENTS STATED ABOVE, HEATED FLOORS-ON-GROUND SHALL BE INSULATED TO THE EFFECTIVE THERMAL RESISTANCE REQUIRED VERTICALLY

A) AROUND THEIR PERIMETER, OR

B) ON THE OUTSIDE OF THE FOUNDATION WALL, EXTENDING DOWN TO THE LEVEL OF THE BOTTOM OF THE FLOOR.

CONSIDERATION MUST BE GIVEN TO THE FOLLOWING AT THE TIME OF CONSTRUCTION:

- DUCTS LOCATED OUTSIDE THE THERMAL ENCLOSURE ARE SEALED AND INSULATED TO THE EXTERIOR WALL INSULATION REQUIREMENTS.
- DAMPERS ARE INSTALLED AT AIR INLETS AND EXHAUSTS WHERE REQUIRED.
- PIPING FOR HEATING OR COOLING SYSTEMS IS LOCATED WITHIN THE THERMAL ENCLOSURE OR ARE FULLY INSULATED.
- HVAC EQUIPMENT IS LOCATED WITHIN THERMAL ENCLOSURE OR DESIGNATED TO BE INSTALLED OUTSIDE OF THERMAL ENCLOSURE.
- TEMPERATURE CONTROLS ARE INSTALLED ON HEATING AND COOLING EQUIPMENT.
- INDOOR POOLS ARE COVERED OR HAVE AN HRV/DEHUMIDIFIER.
- HVAC AND SWH EQUIPMENT MEET MINIMUM PERFORMANCE REQUIREMENTS DETERMINED IN TABLES 9.36.3.1.0 AND 9.36.4.2.
- SERVICE WATER HEATING PIPES ARE INSULATED AT THE INLET AND OUTLET OF STORAGE TANKS.
- SERVICE WATER HEATERS HAVE TEMPERATURE CONTROLS.

Issues / Revisions: 2018-02-26 ISSUED FOR CLIENT REVIEW 2018-03-26 ISSUED FOR CLIENT REVIEW 2018-04-09 ISSUED FOR CLIENT REVIEW 2018-04-19 ISSUED FOR BUILDING PERMIT	
Client: NICOLA LAKE ESTATES Project Description: PROPOSED SINGLE FAMILY RESIDENCE LOT 40 NICOLA LAKE ESTATES	
Home / Office: 5617 Carter's Chilliwack B.C. V2R3J9 Roger Whiteway RKWHITEWAY@SHAW.CA 604-316-2675	
Project Number: 18-03-lot 40	Scale: As indicated
Drawn: RCW	Date: 2018-04-30 12:06:16 PM
Sheet Title: ENERGY EFFICIENCY - BELOW GRADE	Checked: RCW
Sheet Number: A-12	Project Number: R & K Enterprises

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