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Project Title:

INDIAN HEAD A AFC BUILDING B017 ADDITION

INDIAN HEAD, SASKATCHEWAN

NOTES:

Issue Record:
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GENERAL NOTES

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GENERAL NOTES:					
GENERAL					
1. CONTRACTOR IS TO CHECK AND VERIFY ALL SITE CONDITIONS, DIMENSIONS. REPORT ANY VARIANCES ON OR AGAINST THE DRAWINGS TO THE ENGINEER.	.20 ALL CONCRETE SHALL COMPLY WITH ALL LOCAL CODES AND CAN3-423.1.				
2. CONTRACTOR IS TO CONFIRM ALL BUILDING GRADE ELEVATIONS ON SITE AGAINST THE DRAWINGS.	.21 NO CONCRETE POURING SHOULD BE UNDERTAKEN WITHOUT THE APPROVAL OF THE ENGINEER OR HIS REPRESENTATIVE.				
3. CONTRACTOR IS TO OBTAIN APPROVAL FROM THE GOVERNING JURISDICTION AND OBTAIN A BUILDING PERMIT.	.22 CO-ORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL PIPES, DIMENSIONS AND OTHER DATA FOR CATCH BASINS, TANKS, DRAINS, AND SLAB RECESS UNDER EQUIPMENT.				
4. CONSTRUCTION IS TO BE IN FULL COMPLIANCE WITH THE NATIONAL BUILDING CODE (2005).	.23 INCORPORATE HIGH SULPHATE HYDRAULIC CEMENT, TYPE 50 HS OR HSB FOR ALL CONCRETE IN DIRECT CONTACT WITH SOIL. CLASS EXPOSURE 5-2.				
5. ENGINEER IS ENGAGED BY THE OWNER, NOT THE CONTRACTOR TO PROVIDE PERIODIC INSPECTIONS AND IS THUS TAKING RESPONSIBILITY FOR DESIGN AND FOR CONSTRUCTION IN PLACE.	2. REINFORCEMENT				
6. ANY CHANGES TO THE BUILDING STRUCTURE OR LAYOUT REQUIRES THE ENGINEERS REVIEW.	.1 NEW DEFORMED BARS TO CSA G30.18 GRADE 400. WELDED WIRE FABRIC TO CSA G30.5.				
7. THE CONCRETE SLAB ON GRADE IS "FLOATING" ON COMPACTED GRANULAR BASE ON THE UNDERLYING UNDISTURBED SOIL, &/OR COMPACTED FILL MATERIAL AND IS SUSCEPTIBLE TO DIFFERENTIAL VERTICAL MOVEMENT WHICH MAY RESULT IN VERTICAL DISPLACEMENT OF 3" OR MORE AND SEVERE CRACKING TO THE FLOOR SLAB. INTERIOR PARTITION FRAMING SHOULD HAVE A MINIMUM OF 3" FLOAT SPACE IN ITS CONSTRUCTION.	.2 PLACE REINFORCEMENT TO CSA A23.1. TIE ALL BARS SECURELY IN PLACE TO PREVENT DISPLACEMENT. SUPPORT SLAB REINFORCEMENT ON SUITABLE CHAIRS OR SUPPORTS AT MAXIMUM 4 FT CENTRES. PROVIDE CORNER BARS TO MATCH HORIZ. WALL REINFORCEMENT.				
8. CONTRACTOR IS TO GUARD AGAINST EXCESSIVE DRYING OR WETNESS OF THE EXCAVATION PRIOR TO POURING CONCRETE SLABS & FOOTINGS; FREEZING OF EXCAVATED BASE; AND FREEZING OF CONCRETE ONCE IN PLACE.	.3 PROVIDE CLEAR CONCRETE COVER FOR REIN'G AS FOLLOWS: SURFACE POURED AGAINST GROUND 3" FORMED SURFACES EXPOSED TO GROUND OR WEATHER. 2" COLUMNS TO MAIN STEEL SLABS 1".				
9. GEOTECHNICAL ENGINEERING REPORT PROPOSED A6 CANADA MAINTENANCE BUILDING ADDITION 66 FILE No.1518 PREPARED BY GROUND ENGINEERING LTD. MARCH 27/ 2015 IS THE BASIS FOR FOUNDATION DESIGN CRITERIA. OWNER IS REQUIRED TO CONTACT GEOTECHNICAL ENGINEER TO INSPECT THE SITE DURING EXCAVATION, TAKING SOIL SAMPLES AND CONDUCTING LABORATORY TESTING AS NECESSARY TO AFFIRM SUITABILITY OF FOUNDATION SOLUTION AND ITS DESIGN VALUES. OWNER IS TO CO-ORDINATE THE GEOTECHNICAL ENGINEER WITH THIS ENGINEER AND MAKE AVAILABLE THE GEOTECHNICAL ENGINEER FINDINGS FOR THIS ENGINEER'S RE-EVALUATION OF FOUNDATION DESIGN IF NECESSARY.	.4 SPLICE REINFORCEMENT AS FOLLOWS (UNLESS NOTED OTHERWISE): BAR SIZE 10M 15M 20M 25M 30M LAP SPLICE 18" 24" 30" 48" 56" INCREASE LAP 20% FOR BAR SPACING LESS THAN 6".				
10. FOUNDATIONS	3. WOOD				
.1 ALL NEW STRUCTURAL WORK, INCLUDING REQUIREMENTS FOR WIND, HAS BEEN DESIGNED IN ACCORDANCE WITH THE NATIONAL BUILDING CODE 2005.	.1 WOOD FRAMING TO COMPLY WITH LATEST EDITIONS OF CAN/CSA-086.1 N.B. CODE 2005. LUMBER GRADING IS TO BE AS PER NLGA GRADING RULES AND IS TO HAVE A MINIMUM GRADE S.P.F. NO. 2 OR BETTER.				
.2 ALL CONCRETE STRENGTHS SPECIFIED ON PLAN ARE FOR STRUCTURAL REQUIREMENTS ONLY. CONCRETE MIX TO BE DESIGNED WITH A MAXIMUM PERMISSIBLE CEMENT-WATER RATIO IN ACCORDANCE TO TABLE 7 OF CSA CAN3-423.1-M90	.2 FASTENING OF SHEATHING TO WOOD FRAMING TO USE STANDARD WIRE NAILS.				
.3 ALL FOUNDATIONS SHALL BE SYMMETRICAL UNDER COLUMNS AND WALLS UNLESS OTHERWISE NOTED.	.3 USE PRESURVATIVE TREATED LUMBER WHERE EXPOSED TO WEATHER OR SOIL ON CONCRETE.				
.4 REINFORCING STEEL IN FOUNDATIONS TO BE CSA G30.18 DEFORMED BARS. GRADE 600	.4 OUTSIDE NAIL FASTENERS TO BUILT UP MEMBERS TO BE NAILED THROUGH STANDARD EXTERIOR FACE WITH NAIL HEADS VISIBLE FROM BOTH SIDES OF THE BUILT UP MEMBER.				
.5 BACKFILL BELOW SLAB-ON-GRADE TO BE GRANULAR MATERIALS COMPACTED TO 98% STANDARD PROCTOR DRY DENSITY. RESULTS OF COMPACTION TO BE REPORTED TO THIS OFFICE. ALSO SEE SOIL REPORT FOR RECOMMENDATIONS.	.5 FRAMING ANCHORS TO BE SIMPSON STRONG-TIE OR APPROVED EQUAL WITH ALL NAILS MEETING MINIMUM REQUIREMENTS OF THE HANGER MANUFACTURER IN LENGTH & SHANK DIAMETER.				
.6 DO NOT USE ADMIXTURES OTHER THAN AIR ENTRAINMENT, STANDARD WATER REDUCERS, OR SUPER PLASTICIZERS WITHOUT PRIOR APPROVAL OF THE ENGINEER.	.6 PROVIDE G185 HOT DIPPED GALVANIZED METAL FRAMING ANCHORS IN CONTACT WITH ANY PRESSURE TREATED WOOD. ALL IN ACCORDANCE WITH ASTM A652; ALL FASTENERS TO BE HOT DIP GALVANIZED TO CONFORM WITH ASTM A753.				
.7 DO NOT ADD WATER TO THE CONCRETE ON SITE UNLESS AUTHORIZED BY THE ENGINEER.	.7 BUILT UP BEAMS TO BE DOUGLAS FIR NO.2 OR BETTER.				
.8 INSTALL CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.	.8 LUMBER FOR FLOOR JOISTS, HEADERS, LINTELS ETC. TO BE SPF NO.2 OR BETTER. WALL STUDS AND PLATES TO BE SPRUCE OR SPRUCE STUD GRADE.				
9. CONCRETE TESTING (AS SPECIFIED IN SECTION 03300)	.9 PLYWOOD SHEATHING TO CSA STANDARD 0121-M1978 DOUGLAS FIR SHEATHING GRADE UNLESS OTHERWISE NOTED.				
TEST CONCRETE IN ACCORDANCE WITH CSA A23.2.	4. STRUCTURAL STEEL				
	.1 FABRICATE AND ERECT STRUCTURAL STEEL TO CSA S16.1.				
	.2 PROVIDE STRUCTURAL STEEL TO CSA G40.21 WITH THE FOLLOWING GRADES:				
	WIDE FLANGE BEAMS AND COLUMNS 50W				
	CHANNELS AND ANGLES 44W				
	HSS SECTIONS (CLASS C) 50W				
	STRUCTURAL BARS AND PLATES 50W				
	MISCELLANEOUS STEEL 36W OR 44W				
	PIPE COLUMNS ASTM A33 GR.B				
	ERECTOR BOLTS 5 - MIN 3/4" ASTM A325				
	ANCHOR BOLTS ASTM A307				
	GALVANIZING 6164				
	.3 SUBMIT FOUR SETS OF SHOP DRAWINGS TO THE ENGINEER AND RECEIVE APPROVAL PRIOR TO FABRICATION. SHOW ALL DETAILS, INCLUDING FIELD WELDS, AND MATERIAL SPECIFICATIONS. SHOP DRAWINGS TO BE SEALED BY A PROFESSIONAL ENGINEER IN SASKATCHEWAN FOR DESIGN OF CONNECTIONS, WELDING.				
	.4 DESIGN OF CONNECTIONS BY STEEL FABRICATOR UNLESS DETAILED ON THE DRAWINGS. USE MIN. 2 BOLTS PER CONNECTION AND DESIGN FOR BEARING CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE.				
	.5 TOUCH UP ALL FIELD WELDS WITH PRIMER AFTER SLAG IS REMOVED.				
	.6 MINIMUM SIZE OF FIELD WELDS, 1/16" LESS THAN THE THICKNESS OF MATERIAL BUT NOT LESS THAN 1/4".				
	.7 WELD REINFORCEMENT STEEL TO CSA W186. USE WELDABLE REINFORCEMENT TO CSA G30.18 GRADE 400.				
	.8 WELD TO CSA W59 BY FABRICATORS QUALIFIED TO CSA W47.1.				
	.9 TIGHTEN ALL BOLTS WITH IMPACT WRENCH.				
	.10 PAINT STEEL SURFACES INTENDED FOR HEATED INTERIOR AREAS WITH ONE COAT OF PRIMER TO O55/OPM 1-73A.				
	USE ONE COAT OF CS59 1-09-40 PRIMER FOR ALL STEEL SURFACES EXPOSED DIRECTLY TO WEATHER AND FOR STEEL IN UNHEATED BUT COVERED AREAS SUCH AS CANOPES.				
	PRIMER MAY BE EXCLUDED ONLY WHEN SPECIFICALLY APPROVED BY THE OWNER AND THE ENGINEER.				
	.11 STRUCTURAL STEEL SHALL CONFORM TO CSA STANDARD G40.21-M87 GRADE 350W - HSS 350W, CLASS C.				
	.12 STEEL FABRICATOR TO BE CERTIFIED IN DIVISION 1 OR 2 BY THE CANADIAN WELDING BUREAU IN ACCORDANCE WITH CSA W47.1.				
	.13 FIELD WELDING BY COMPANIES CERTIFIED BY THE CWB AS PER W47.1 DIVISIONS 1, 2 & 3.				
	.14 STRUCTURAL STEEL BOLTS CONFORMING TO ASTM STANDARD A325 STANDARD.				
	.15 ANCHOR BOLTS UP TO 3/4" DIA TO CONFORM TO ASTM STANDARD A307				
	GROUT UNDER BASE PLATES TO BE A NON-SHRINKING, NON-METALLIC, PRE-BLENDED GROUTING COMPOUND CAPABLE OF A MIN. COMPRESSIVE STRENGTH OF 20MPA AT 3 DAYS AND 50 MPa AT 28 DAYS.				
	.17 WELDING ELECTRODES SHALL BE LOW HYDROGEN.				
	.18 REMOVE ALL WELDING SLAG BEFORE PAINTING.				
	.19 ALL AREAS TO RECEIVE WELDING TO BE CLEANED OF GREASE OR PAINT.				
10. CONSOLIDATE ALL CONCRETE USING MECHANICAL VIBRATORS.					
11. PROTECT CONCRETE FROM ADVERSE WEATHER CONDITIONS IN ACCORDANCE WITH CSA A23.1 OR AS DETERMINED BY THE ENGINEER.					
12. CONSTRUCT FORMWORK IN ACCORDANCE WITH WCB REGULATIONS AND CSA S269.3. FORMWORK DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR					
13. PROVIDE CONCRETE AND CO-OPERATE IN THE PREPARATION OF TEST CYLINDERS. TAKE THREE CYLINDERS FOR EVERY 75 CU METERS OR LESS OF CONCRETE PLACED. MINIMUM ONE TEST OF THREE CYLINDERS FOR EACH POUR.					
14. PLACE REINFORCEMENT TO CSA A23.1. TIE ALL BARS SECURELY IN PLACE TO PREVENT DISPLACEMENT. SUPPORT SLAB REINFORCEMENT ON SUITABLE CHAIRS OR SUPPORTS AT MAXIMUM 4 FT CENTERS. PROVIDE CORNER BARS TO MATCH HORIZONTAL BEAM REINFORCEMENT.					
15. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES IN SOIL CONDITIONS DURING PILING AND EXCAVATION.					
16. CENTER PILES UNDER COLUMNS OR WALLS UNLESS NOTED OTHERWISE ON DWGS.					
17. TIE ALL DOWELS AND ANCHOR BOLTS IN PLACE BEFORE POURING CONCRETE. USE TEMPLATES TO ENSURE CORRECT PLACEMENT.					
18. SEE ARCHITECTURAL DRAWINGS FOR GROUND ELEVATIONS AND DRAINAGE SLOPES.					
19. SEE SITE PLAN FOR EXTERIOR CONCRETE ELEVATIONS.					
	STRENGTH	CEMENT	AGREGG	SUMP	TOTAL
TYPE/LOCATION	F _c (MPa)	SYMBOL	MAX 9mm	mm	AIR %
Grade Beams	32	50	20	75±25	4-7
Grade Supported Slabs *1	32	50	20	50-75	4-7
Floor	32	50	20	75±25	4-7

CONCRETE STRENGTH FOR ALL CONCRETE INTERFACED WITH SOIL SHALL HAVE 32MPa STRENGTH TO SATISFY CSA REQUIREMENTS WHEN SOILS GEOTECHNICAL REPORT SPECIFIES SULPHATE RESISTANT CONCRETE.

(*1) CONCRETE FLOOR SLABS, EXTERIOR WALKS, PATIOS, ETC. THAT ARE SUPPORTED BY A GRANULAR BASE, IE, NOT DIRECTLY ON NATIVE SOIL. CONCRETE STRENGTH SHALL BE 25MPa. WHERE FLAT SLAB CONCRETE IS BEARING DIRECTLY ON NATIVE SOIL 32MPa CONCRETE STRENGTH IS REQUIRED WHEN SOILS GEOTECHNICAL REPORT SPECIFIES SULPHATE RESISTANT CONCRETE.

GENERAL STRUCTURAL NOTES:						
(THE FOLLOWING APPLY UNLESS NOTED OTHERWISE ON DRAWINGS)						
CRITERIA						
ALL MATERIALS, WORKMANSHIP, DESIGN AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS AND THE NATIONAL BUILDING CODE OF CANADA (NBC), 2010 EDITION.						
GENERAL CONDITIONS						
STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS WITH ARCHITECT'S DRAWINGS FOR COMPATIBILITY, AND SHALL NOTIFY ARCHITECT OF ALL DISCREPANCIES PRIOR TO CONSTRUCTION.						
IN THE EVENT OF CONFLICTS BETWEEN THE STRUCTURAL DRAWINGS AND THE PROJECT SPECIFICATIONS, THE STRUCTURAL DRAWINGS SHALL CONTROL.						
SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL WALLS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH WALLS AND FLOORS. SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE AND OTHER FINISH DETAILS.						
CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.						
DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN. SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.						
MATERIAL SUBSTITUTIONS FOR PRODUCTS SPECIFIED IN THE PLANS AND NOTES MAY BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. SUBSTITUTION SUBMITTALS MUST IDENTIFY EXACTLY WHAT PRODUCTS ARE TO BE SUBSTITUTED, AND INCLUDE AN ICC EVALUATION SERVICE REPORT (OR EQUIVALENT) DEMONSTRATING EQUIVALENT OR GREATER LOAD CAPACITIES THAN THE SUBSTITUTED PRODUCT.						
CONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.						
THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS. SHORING AND RESHORING SHALL BE DESIGNED BY A QUALIFIED DESIGNER AND THE ERECTED SHORING SHALL BE INSPECTED BY A REGISTERED STRUCTURAL ENGINEER EXPERIENCED IN THE DESIGN OF SHORING SYSTEMS, WHO SHALL SUBMIT AN INSPECTION REPORT TO THE ARCHITECT. FORM WORK SHALL NOT BE REMOVED UNTIL THE CONCRETE HAS REACHED ITS DESIGN STRENGTH AS INDICATED IN THE CONCRETE NOTES.						
QUALITY CONTROL						
SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW TWO WEEKS PRIOR TO FABRICATION.						
	SUBMITTAL	SUBMITTAL REQUIRED	STAMPED BY REGISTERED ENGINEER	ENGINEERING CALCULATIONS		
	CONCRETE REINFORCING	YES	NOT REQUIRED	NOT REQUIRED		
	MANUFACTURED LUMBER	YES	YES	NOT REQUIRED		
	PRE-ENGINEERED METAL BUILDING SYSTEM	YES	YES	YES		
SHOP DRAWINGS OF BIDDER-DESIGN AND PRE-ENGINEERED COMPONENTS SHALL INCLUDE THE DESIGNING PROFESSIONAL ENGINEER'S STAMP, AS INDICATED ABOVE. THE ENGINEER SHALL BE REGISTERED IN THE PROVINCE IN WHICH THE PROJECT IS LOCATED. THE SUBMITTAL WILL BE SUBJECT TO A CURSORY REVIEW BY THE ENGINEER OF RECORD FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS. THE FOLLOWING CERTIFICATION SHALL BE INCLUDED ADJACENT TO THE ENGINEER'S STAMP ON ALL SUBMITTALS.						
I, P.T. MCGINN, A LICENSED ENGINEER IN THE PROVINCE IN WHICH THE PROJECT IS LOCATED DO HEREBY CERTIFY THAT I HAVE REVIEWED THE CONTRACT DOCUMENTS AND HAVE, TO THE BEST OF MY KNOWLEDGE, INCORPORATED ALL OF THE DESIGN CRITERIA CONTAINED HEREIN.						
SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD AND THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. SUBMITTALS SHALL INCLUDE A REPRODUCIBLE AND ONE COPY. THE REPRODUCIBLE WILL BE MARKED AND RETURNED.						
IN THE EVENT OF DEVIATIONS, DISCREPANCIES OR CONFLICTS BETWEEN APPROVED SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL.						
ALL STRUCTURAL SYSTEMS COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION, IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.						
TRANSPORTATION AND SETTING, AND STRUCTURAL LOADING ASSOCIATED THEREWITH FOR MODULAR BUILDINGS SHALL BE DETERMINED AND ACCOUNTED FOR BY THE MANUFACTURER.						
ANCHORAGE TO CONCRETE OR MASONRY						
CAST-IN-PLACE (CIP) ANCHORS SHALL HAVE A 90° HOOK WITH AN INSIDE RADIUS OF 3d _b PLUS AN EXTENSION OF 15 db AT THE FREE END. CIP ANCHORS IN MASONRY SHALL BE SECURED IN PLACE PRIOR TO GROUTING. PROVIDE 1" GROUT MINIMUM AROUND ALL BOLTS IN MASONRY.						
CIP ANCHORS IN CONCRETE MAY BE PLACED WHILE THE CONCRETE IS IN A PLASTIC STATE WHEN: 1) THE ANCHORS ARE NOT DETAILED OR SPECIFIED AS HOOKED AROUND OR TIED TO REINFORCEMENT WITHIN THE CONCRETE, 2) THE ANCHORS ARE MAINTAINED IN THE CORRECT POSITION WHILE THE CONCRETE REMAINS PLASTIC, AND THE CONCRETE IS PROPERLY CONSOLIDATED AROUND THE ANCHOR.						
EXPANSION BOLTS INTO CONCRETE SHALL BE 'KWIK BOLT T2' AND THREADED EXPANSION INSERTS INTO CONCRETE SHALL BE SLEEVE ANCHORS, AS MANUFACTURED BY HILTI CORPORATION. INSTALL IN STRICT ACCORDANCE WITH ICC-ES REPORT ESR-1917, INCLUDING MINIMUM EMBEDMENT REQUIREMENTS.						
EPOXY-GROUTED ANCHORS (THREADED ROD OR REINFORCING BAR) SHALL BE GROUTED WITH 'SET-XP EPOXY ADHESIVE' BY SIMPSON STRONG-TIE. INSTALL IN STRICT ACCORDANCE WITH ICC-ES REPORT ESR-2508. HOLES FOR EPOXY ANCHORS SHALL BE THOROUGHLY CLEANED WITH A NYLON BRUSH AND PRESSURIZED AIR OR WATER, IN STRICT ACCORDANCE WITH ESR-2508.						
ALL THREADED ROD ANCHORS SHALL CONFORM TO ASTM SPECIFICATION A36, F _y =248 MPA (36 KSI).						
ANCHOR BOLT TYPES MAY BE SELECTED BY THE CONTRACTOR AS PER THE FOLLOWING CRITERIA AND THE REQUIREMENTS OF DIVISION 6.1 - CHEMICALLY TREATED WOOD AND CORROSION OF CONNECTORS AND FASTENERS.						
	TYPE OF ANCHORAGE	TYPE OF ANCHOR				
	POST & COLUMN BASES	CIP, EXPANSION* OR EPOXY				
	LEGGERS TO CONCRETE OR CMU	CIP, EXPANSION* OR EPOXY				
	WALL TIES TO CONCRETE OR CMU	CIP OR EPOXY				
	MUDSILL TO FOUNDATION	CIP, EXPANSION* OR EPOXY				
	HOLD-DOWN TO FOUNDATION	CIP OR EPOXY*				
	HIGH-STRENGTH ANCHORAGE	CIP				
	EQUIPMENT ANCHORAGE	CIP OR EPOXY				
* EXPANSION ANCHORS MAY NOT BE USED WHERE THE ANCHOR IS EXPOSED TO EARTH OR WEATHER						
DIVISION 6B: TIMBER						
FRAMING LUMBER SHALL BE KILN-DRIED OR MC-19 AND GRADED AND MARKED IN CONFORMANCE WITH NLGA STANDARD GRADING RULES FOR CANADIAN LUMBER, LATEST EDITION, AND FURNISHED TO THE STANDARDS INDICATED ON THE PLANS, SCHEDULES AND DETAILS. THE DESIGN SHOWN IN THESE DRAWINGS IS BASED ON THE 'ENGINEERING DESIGN IN WOOD' MANUAL (CAN/CSA-086-01) PUBLISHED BY CSA, LATEST EDITION. ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME SPECIES AND GRADE AS MEMBERS CONNECTED.						
MANUFACTURED LUMBER PRODUCTS SPECIFIED IN THESE DRAWINGS ARE BASED ON LUMBER MANUFACTURED BY THE TRUS-JOIST CORPORATION. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALL JOIST HANGERS AND OTHER HARDWARE NOT SHOWN SHALL BE DESIGNED AND SUPPLIED BY THE MANUFACTURER. PROVIDE P. ENG. SEAL FOR THE PROVINCE IN WHICH THE PROJECT IS LOCATED FOR DESIGN OF MEMBERS ON SHOP DRAWINGS.						
THE FOLLOWING LUMBER PRODUCTS SHALL BE MANUFACTURED TO AND EVALUATED FOR CHARACTERISTIC VALUES IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM D5456. EACH PIECE SHALL BEAR THE MARK OF A CERTIFICATION ORGANIZATION (CO) INDICATING CERTIFICATION BY THE CO AS MEETING THE APPLICABLE REQUIREMENTS OF CLAUSES 19.4.2 TO 13.4.6 IN THE 'ENGINEERING DESIGN IN WOOD' MANUAL (CAN/CSA-086-01) PUBLISHED BY THE CSA.						
STRUCTURAL COMPOSITE LUMBER PRODUCTS						
1. PARALLEL STRAND LUMBER (PSL), ADHESIVES USED IN THE MANUFACTURE OF STRUCTURAL COMPOSITE LUMBER SHALL CONFORM TO CSA STANDARD 0112.6, 0112.7 OR 0112.9.						
ALL COMMON WIRE NAILS AND SPIKES, BOX NAILS, THREADED HARDENED-STEEL NAILS AND SPIKES AND STAPLES SHALL CONFORM TO THE NOMINAL SIZES SPECIFIED IN CSA B11-1974. ALL NAILS SPECIFIED ON THESE DRAWINGS, EITHER DRIVEN WITH A HAMMER OR PNEUMATIC DEVICE, SHALL BE COMMON WIRE NAILS WITH THE PROPERTIES SHOWN ON THE FOLLOWING TABLE:						
	PENNY-WEIGHT	8d	10d	12d	16d	20d
	DIAMETER (INCHES) ¹	0.113	0.148	0.148	0.148	0.192
	LENGTH (INCHES)	2½	3	3¾	3¾	4
NOTES:						
1. TABULATED DIAMETERS APPLY TO NAILS PRIOR TO ANY PROTECTIVE COATING						
FABRICATION AND INSTALLATION OF TIMBER FASTENERS SHALL CONFORM TO THE 'ENGINEERING DESIGN IN WOOD' MANUAL (CAN/CSA-086-01) PUBLISHED BY THE CSA, LATEST EDITION. DRILLED HOLES IN WOOD MEMBERS (EXCLUDING MFR. PLYWOOD WEB JOISTS) SHALL BE AS SHOWN IN THE FOLLOWING TABLE:						
	FASTENERS	LEAD HOLE DIAMETER	SHANK HOLD DIAMETER			
	BOLTS ⁴	-	D-½" TO D+½"			
	LAG SCREWS ^{2,3,4}	0.7D	0.88D			
	WOOD SCREWS ³	0.88D	r			
	NAILS (PRE-DRILLED ONLY)	0.75D				
NOTES:						
1. 'D' INDICATES THE SHANK DIAMETER OF THE FASTENER. 'D' SHALL NOT EXCEED 1". 'D _r ' INDICATES THE ROOT DIAMETER.						
2. THE CLEARANCE HOLE FOR THE SHANK SHALL HAVE THE SAME DIAMETER AS THE SHANK AND THE SAME DEPTH OF PENETRATION AS THE LENGTH OF THE UNTHREADED SHANK.						
3. LAG AND WOOD SCREWS SHALL BE INSTALLED BY TURNING OF A WRENCH OR SCREW DRIVER; NOT DRIVEN WITH A HAMMER.						
4. ALL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A307, F _y = 248 MPA (36 KSI). LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1. WASHERS SHALL BE PLACED UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD.						
WOOD CONSTRUCTION CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE 'STRONG-TIE' BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG (LATEST EDITION). PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.						
UNLESS NOTED OTHERWISE, TYPICAL CONNECTIONS SHALL CONFORM TO THE FOLLOWING:						

CONNECTION	MINIMUM LENGTH OF NAILS	MINIMUM NUMBER OF MAXIMUM SPACING
JOIST TO SILL OR BEAM, TOENAIL	3½"	2
BRIDGING TO JOIST, TOENAIL EACH END	2½"	
SOLE PLATE TO JOIST OR BLOCKING, FACE NAIL TYP.	3½"	16" o/c
STUD TO PLATE (TOP OR SOLE) EACH END	TOENAIL	2½"
	END NAIL	3½"
BLOCKING BETWEEN JOISTS TO TOP PLATE, TOENAIL	2½"	3
RIM JOIST TO TOP PLATE, TOENAIL	2½"	6" o/c
TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	3½"	2

STUD WALL FRAMING SHALL BE 2x4 HF #2 STUDS AT 16" o.c. AT INTERIOR WALLS AND 2x6 HF #2 STUDS @ 16" o.c. AT EXTERIOR WALLS WHERE INDICATED ON DRAWINGS. STUD WALLS SHALL HAVE DOUBLE 2x TOP PLATES AND 2x SOLE OR SILL PLATES MATCHING STUD SIZE, SPECIES AND GRADE. ALL LOWER WOOD SOLE PLATES SHALL BE ATTACHED TO WOOD FRAMING BELOW WITH SIMPSON S05525412 SCREWS @ 12" o.c.

TWO STUDS (MINIMUM) SHALL BE PROVIDED AT THE ENDS OF WALLS, AT EACH SIDE OF ALL OPENINGS, AND AT THE ENDS OF ALL BEAMS AND HEADERS. POSTS OF BUILT-UP 2x STUDS SHALL BE NAILED TO EACH OTHER PER THE POST SCHEDULE. SOLID BLOCKING FOR WOOD POSTS SHALL BE PROVIDED THROUGH ALL FLOORS TO SUPPORTING MEMBERS (FOUNDATION) BELOW. (2) 2x8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS.

FOR MANUFACTURED LUMBER ROOF FRAMING, ALL NECESSARY BRIDGING, BLOCKING, BLOCKING PANELS, STIFFENERS, ETC. SHALL BE DETAILED AND FURNISHED BY THE MANUFACTURER. INSTALLATION OF THE ABOVE ITEMS SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST SPAN AND AROUND ALL OPENINGS.

WALL SHEATHING SHALL BE IN CONFORMANCE WITH CLAUSE 7 OF THE 'ENGINEERING DESIGN IN WOOD' MANUAL (CAN/CSA-086-01) AND CSA STANDARD 0121 (FOR DOUGLAS-FIR PLYWOOD) OR CSA STANDARD CAN/CSA-0925.0 (FOR CONSTRUCTION SHEATHING OSB). SEE PLAN NOTES AND SCHEDULES FOR THICKNESS, SPAN RATING, BLOCKING AND NAILING REQUIREMENTS.

ALL WOOD SILL PLATES IN DIRECT CONTACT WITH CONCRETE SHALL BE PRESURVATIVE-TREATED WITH AN APPROVED PRESERVATIVE. PROVIDE 2 LAYERS OF ASPHALT-IMPREGNATED BUILDING PAPER BETWEEN UNTREATED LEDGES, BLOCKING, ETC. AND CONCRETE OR MASONRY.

WOOD SILL PLATES SHALL BE BOLTED TO CONCRETE WITH ½" DIAMETER ANCHOR BOLTS (EMBED 4" MIN.) AT 40" o.c. WITH 3x3 PLATE WASHERS. THERE SHALL BE A MINIMUM OF (2) BOLTS PER PIECE WITH (1) BOLT LOCATED NOT MORE THAN 12" OR LESS THAN (7) BOLT DIAMETERS FROM EACH END OF EACH PIECE.

DIVISION 6.1: CHEMICALLY TREATED WOOD AND CORROSION OF CONNECTORS AND FASTENERS

WOOD MATERIALS REQUIRED TO BE TREATED WITH A PRESERVATIVE PER NBC CLAUSE 9.3.2.9; SHALL BE TREATED IN ACCORDANCE WITH THE REQUIREMENTS OF CSA 080.1, CSA 080.2, CSA 080.9, CSA 080.15, CSA 080.34, OR CSA 080.36. SUCH WOOD MATERIAL SHALL BE IDENTIFIED BY A MARK TO INDICATE ITS CONFORMANCE TO THE RELEVANT REQUIRED STANDARD.

TIMBER CONNECTORS AND FASTENERS IN CONTACT WITH PRESERVATIVE-TREATED OR FIRE-RETARDANT TREATED WOOD MEMBERS SHALL BE HOT-DIPPED ZINC COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER.

A BARRIER BETWEEN PRESERVATIVE-TREATED OR FIRE RETARDANT TREATED MEMBERS CAN BE USED WHEN APPROVED BY THE ENGINEER AND ARCHITECT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTION OF THE APPROPRIATE CONNECTOR AND FASTENER COATING BASED ON THE INTENDED END USE OF THE CONNECTOR OR FASTENER AND THE CHEMICAL PRESERVATIVE USED IN THE TREATMENT OF MEMBER FOR WHICH IT IS IN CONTACT.

THE FOLLOWING TABLE SHALL BE USED FOR SELECTION OF CONNECTORS BASED ON GALVANIZED COATING OR STAINLESS STEEL. FASTENERS USED SHALL BE MADE OF THE SAME MATERIAL AS THE CONNECTOR.

CHEMICAL PRESERVATIVE	PRODUCT COATINGS	0.960 oz/ft ² (90)	1.85 oz/sf (185) HDG PER ASTM A653, A153 OR A123	STAINLESS STEEL
UNTREATED WOOD		YES	YES	