GENERAL NOTES

- READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH SPECIFICATIONS, TYPICAL DETAILS AND ALL OTHER CONTRACT DOCUMENTS. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY DOCUMENTS.
- WHERE DOCUMENTS ARE REFERENCED IN THE GENERAL AND DESIGN NOTES, THEY SHALL BE THE LATEST EDITIONS, UNLESS OTHERWISE NOTED OR SHOWN.
- BEFORE PROCEEDING WITH WORK, CHECK ALL THE DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS AGAINST EXISTING SITE CONDITIONS. REPORT INCONSISTENCIES TO CONSULTANT BEFORE PROCEEDING WITH THE WORK.
- CHECK AND VERIFY IN THE FIELD ALL SIZES AND DIMENSIONS INVOLVING THE EXISTING STRUCTURE AND COORDINATE WITH NEW CONSTRUCTION.
- DO NOT EXCEED DURING CONSTRUCTION, DESIGN LIVE LOADS SHOWN ON PLANS, REDUCED AS NECESSARY UNTIL MATERIALS REACH DESIGN STRENGTH.
- DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- SCALES NOTED ON DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DO NOT SCALE DRAWINGS.
- TYPICAL STRUCTURAL DETAILS SHOWN IN DRAWING SERIES S02 SHALL GOVERN THE WORK. IF DETAILS DIFFER ON OTHER DRAWINGS, THE MOST STRINGENT GOVERNS.
- DRAWINGS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. MODIFICATIONS TO THE DESIGN NECESSARY TO SUIT MEANS AND METHODS OF CONSTRUCTION, SITE DIMENSIONS OR CONDITIONS SHALL BE SUBMITTED TO CONSULTANT FOR APPROVAL BEFORE PROCEEDING.
- 10. IN THE CASE OF DISCREPANCIES BETWEEN THE GENERAL NOTES, SPECIFICATIONS, PLANS/DETAILS OR REFERENCE STANDARDS THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.
- 11. REFERENCE SHALL BE MADE TO THE FOLLOWING EXISTING DRAWINGS: DRAWINGS A-S01 TO A-S11 DATED JUNE 2011 PREPARED BY STEPHENS KOZAK CARR & BROWN ARCHITECTS (PROJECT NUMBER 401 762) AVAILABLE FROM DEPARTMENT REPRESENTATIVE.
- **CONSTRUCTION**
- THE CONTRACTOR SHALL PROPOSE A FULL METHODOLOGY FOR EXECUTING THE WORK DETAILED IN THE CONTRACT DOCUMENTS.
- UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, NO PROVISIONS HAVE BEEN MADE IN THE DESIGN FOR CONDITIONS OCCURRING DURING CONSTRUCTION. b. THE CONTRACTOR SHALL DEMONSTRATE THE STABILITY AND SAFETY OF ALL ELEMENTS OF THE BUILDING DURING EVERY STAGE OF CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING AND SHORING REQUIRED FOR ALL STRESSES AND INSTABILITY OCCURRING DURING CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL SUCH MEASURES.
- d. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING, SHORING OR OTHER TEMPORARY SUPPORTS TO SAFEGUARD ALL EXISTING OR ADJACENCY AFFECTED BY THIS WORK.
- THE CONTRACTOR SHALL LIAISE WITH OWNER AND ASSOCIATED UTILITIES AUTHORITIES REGARDING THE REMOVAL AND DISCONNECTION OF EXISTING UTILITIES IN THE BUILDING. NO UTILITIES SHALL BE REMOVED OR DISCONNECTED WITHOUT THE APPROVAL OF OWNER AND ASSOCIATED UTILITIES AUTHORITIES
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS. TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK. THE CONSULTANT HAS NO OVERALL SUPERVISION AUTHORITY AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM ACTIONS OF ANY TRADE CONTRACTOR. THE CONSULTANT HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS ON THE PROJECT SITE.
- THE CONTRACTOR SHALL DETERMINE THE LOCATIONS OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO EARTHWORK, FOUNDATIONS SHORING AND EXCAVATION. ANY UTILITY INFORMATION SHOWN ON THE DRAWINGS AND DETAILS IS APPROXIMATE AND NOT NECESSARILY COMPLETE.
- THE PROPOSED SCHEDULE OF WORK IS TO BE COORDINATED WITH ALL SUB-TRADES, THE CONSULTANT AND OWNER.
- INSPECT THE EXISTING CONSTRUCTION AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS. DETAILS SHOWN ARE BASED ON INFORMATION AVAILABLE FROM EARLIER CONSTRUCTION PHASES.
- THE CONTRACTOR SHALL ALLOW FOR ACCESS INTO THE BUILDING THROUGHOUT THE DURATION OF CONSTRUCTION.
- SHOP DRAWINGS
- FOR ALL STRUCTURAL COMPONENTS SHOWN ON THE STRUCTURAL DRAWINGS, SUBMIT COPIES OF SHOP DRAWINGS AS DIRECTED, FOR REVIEW BY THE CONSULTANT.
- SHOP DRAWINGS SHALL SHOW COMPLETE INFORMATION FOR THE FABRICATION AND ERECTION OF THE STRUCTURAL COMPONENTS.
- CONCRETE REINFORCEMENT SHOP DRAWINGS SHALL CLEARLY SHOW BAR LENGTHS, BENDS, LOCATIONS OF BARS, METHOD OF SUPPORT, DETAILS OF PLACEMENT, COORDINATION WITH FORMWORK. EMBEDMENT, AND CONCRETE VIBRATION. PROVIDE AT MINIMUM, WALL AND COLUMN ELEVATIONS, WALL AND BEAM SECTIONS, MATERIAL SCHEDULES, BAR LAP SCHEDULES AND LOCATIONS.
- REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL CONSULTANT IS ON A SAMPLING BASIS AND SOLELY TO ASSESS THAT THE SUBMITTED SHOP DRAWINGS REFLECT THE INTENT OF THE STRUCTURAL DESIGN. INTENDED OR PROPOSED DEVIATIONS FROM THE DESIGN INTENT MUST NOT BE SUBMITTED ON SHOP DRAWINGS
- REVIEW BY THE CONSULTANT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR SEEING THAT THE WORK IS COMPLETE, ACCURATE AND IN CONFORMITY WITH ALL CONTRACT DRAWINGS, AND SPECIFICATIONS.
- SHOP DRAWINGS FOR STRUCTURAL COMPONENTS DESIGNED BY THE FABRICATOR/CONTRACTOR'S ENGINEER MUST BE SEALED, SIGNED AND DATED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA.
- SOILS, BACKFILLING, AND COMPACTION
- THE CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA.
- THE GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR SHALL INSPECT THE CONDITION AND ASSURE THE ADEQUACY OF ALL SUB-GRADES, FILLS, AND BACKFILLS BEFORE PLACEMENT OF PILES. AT THE COMPLETION OF THE PROJECT, THE GEOTECHNICAL ENGINEER SHALL ISSUE AN AUTHENTICATED LETTER OF ASSURANCE STATING THAT ALL FOOTINGS/PILES HAVE BEEN INSTALLED AND MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- BACKFILL MATERIAL SHALL CONSIST OF CLEAN, WELL GRADED GRANULAR SOILS FREE OF ORGANIC MATERIAL, SILT AND CLAY AS SPECIFIED IN THE EARTH WORKS SPECIFICATION SECTION.
- BACKFILLING SHALL BE CARRIED OUT IN A MAXIMUM LIFTS OF 200 mm OF LOOSE FILL, EACH COMPACTED THE STANDARD PROCTOR MAXIMUM DRY DENSITY INDICATED IN THE SPECIFICATIONS.
- DO NOT PLACE BACKFILL AGAINST WALLS RETAINING EARTH (OTHER THAN CANTILEVER WALLS) UNTIL THE WALLS AND THE FLOOR CONSTRUCTIONS AT TOP AND BOTTOM OF THE WALLS HAVE BEEN CAST AND ATTAINED THEIR DESIGN STRENGTH.
- WHERE BACKFILL IS PLACED ON EACH SIDE OF FOUNDATION WALLS, DO NOT EXCEED A GRADE DIFFERENCE OF 600 mm.
- USE LIGHT, HAND-OPERATED COMPACTING EQUIPMENT TO COMPACT BACKFILL ADJACENT TO FOUNDATION WALLS OR RETAINING WALLS.
- EXCAVATED MATERIAL SHALL BE LEGALLY DISPOSED OF, STORED AT THE SITE, OR USED FOR BACKFILLING OPERATIONS AS REQUIRED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERS **RECOMMENDATIONS AND PROJECT SPECIFICATIONS.**
- IT IS THE RESPONSIBILITY OF CONTRACTOR TO VERIFY THE GEOTECHNICAL INFORMATION AND TO OBTAIN HIS OWN DATA AND TO POINT DISCREPANCIES TO THE CONSULTANT WHERE THEY OCCUR.
- CAST IN PLACE CONCRETE
- CONCRETE: CONFORM WITH CAN-CSA A23.1 REQUIREMENTS AND THOSE SHOWN IN THE CONCRETE MIX SCHEDULE BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

CONCRETE

LOCATION

TO WITH I AND	6	BEAMS
OSED CALS V CALS V CALS V	BEAM	SUSPENDED SLAB
HEMIC HEMIC T FRE	AND	
	SLABS	
COI DEIC OR WI	0	
2. DESIGN	CON	CRETE MIXES TO SUIT REINFORCEMEN

PROVIDE SMALLER AGGREGATES OR SELF CONSOLIDATING CONCRETE IN AREAS OF HIGHER REINFORCEMENT DENSITY.

- 3. SUBMIT MIX DESIGNS FOR EACH CLASS OF CONCRETE TO BE USED ON THE PROJECT
- ALL CONCRETE SHALL BE NORMAL DENSITY, UNLESS NOTED OTHERWISE.
- 5. ADMIXTURES THAT CONTAIN CHLORIDES SHALL NOT BE USED.
- 6. EXTERIOR CONCRETE SHALL BE AIR ENTRAINED.
- COLD WEATHER CONCRETE PLACEMENT PROCEDURES.
- 8. REFER TO THE CONCRETE TYPICAL DETAILS FOR THE FOLLOWING INFORMATION: a. CONCRETE COVER TO REINFORCING. CONCRETE COVER FOR FIRE RATINGS. TENSION DEVELOPMENT LENGTH AND LAP SPLICES.
- OTHERWISE IN ARCHITECTURAL DRAWINGS
- 10. DOWELS TO EXISTING CONCRETE SHALL USE THE HILTI HIT-RE500 DOWELING SYSTEM, UNLESS OBTAIN CONSULTANT'S APPROVAL PRIOR TO DRILLING/DOWELING ANY REINFORCEMENT.
- 11. THE CONTRACTOR SHALL MODIFY THE LAYOUT OF NEW THROUGH BOLTS, EXPANSION ANCHORS AND OTHER ANCHORING DEVICES TO AVOID EXISTING CONCRETE REINFORCEMENT.
- SLABS UNLESS OTHERWISE NOTED OR SHOWN.
- 13. CONTRACTOR TO SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS FOR APPROVAL PRIOR TO START OF WORK.
- PROCEDURES FOR ALL CONCRETE WORK TO ACCOUNT FOR TEMPERATURE DIFFERENTIALS AND MECHANICALLY CONTROLLED ENVIRONMENT.
- OF CONCRETE.
- 16. JOINTS TO BE PREPARED AND FILLED WITH JOINT SEALANT SHALL INCLUDE, BUT ARE NOT LIMITED TO, MAY BE REQUIRED BY APPROVED SHOP DRAWINGS, OR MAY OCCUR DUE TO THE CONSTRUCTION SEQUENCE SELECTED BY THE CONTRACTOR.
- 17. PRIOR TO PLACING CONCRETE ADJACENT TO EXISTING CONCRETE WITHOUT A CONSTRUCTION JOINT EPOXY BONDING AGENT PRIOR TO PLACING FRESH CONCRETE. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS FOR SURFACE PREPARATION, MIXING AND APPLICATION.
- 6. PILES / HELICAL PIERS
- FINDINGS WITH ENGINEER IF UNUSUAL OR UNEXPECTED CONDITIONS OCCUR.
- 2. DESIGN: PILES ARE TO BE DESIGNED TO RESIST THE LOADS AND ACCOMMODATE THE TOLERANCES COMPLETION OF PILING, A CERTIFICATE BEARING THE SEAL AND SIGNATURE OF A QUALIFIED PROFESSIONAL GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ALBERTA, ATTESTING TO THE PROPER INSTALLATION OF THE PILES.
- 3. TOLERANCES: MAINTAIN THE FOLLOWING TOLERANCES FOR CONCRETE PIERS: OUT OF POSITION, +/-75mm; OUT OF VERTICAL, +/- 2% TO MAXIMUM OF +/- 50mm.
- PILE; DATE AND TIME DRILLING COMPLETED AND SHAFT DIAMETER. SUBMIT COMPLETED PILING RECORDS TO THE ENGINEER UPON COMPLETION.
- 5. ACCEPTABILITY: ENGINEER WILL BE THE SOLE JUDGE OF ACCEPTABILITY OF EACH PILE. PILES SUSPECT OF BEING UNABLE TO SUPPORT THE LOADS SHOWN ON THE DRAWINGS MAY BE LOAD TESTED IN THE LOAD TEST REQUIREMENTS SHALL BE PAID FOR BY THE CONTRACTOR.
- 6. DESIGN HELICAL PILE FOR 50 YEARS DURABILITY
- 7. REINFORCING STEEL
- EPOXY-COATED STEEL BARS.
- 2. REFER TO TYPICAL DETAILS FOR MINIMUM COVER TO REINFORCEMENT.
- DESIGNATIONS 10, 15, 20, 25, 30, 35, 45 AND 55, RESPECTIVELY.
- CSA STANDARD G30.5. SUPPLY IN FLAT SHEET ONLY.
- STEEL MANUAL OF STANDARD PRACTICE SUBMIT SHOP DRAWINGS INDICATING ALL DETAILS OF REINFORCING STEEL PLACEMENT.
- SUPPORT REINFORCING. ALL THE WIRE, CHAIRS AND BAR SUPPORTS FOR FOUNDATIONS AND FOR EXPOSED CONCRETE SHALL BE NON-METALLIC OR COATED.
- GIVEN BY THE CONSULTANT.
- THE CONSULTANT.
- 10. APPROVED REBAR COUPLERS MAY BE USED AT THE CONTRACTORS OPTION TO AID PLACEMENT OF THE REBAR.

MI)	K SCHEDULE			
	MIN. COMPRESSIVE STRENGTH AT 28 DAYS (MPa)	EXPOSURE CLASS	CONCRETE TYPE	AIR CONTENT (%)
	35	GU	C-1	5-8
	35	GU	C-2	5-8

NT DETAILS SHOWN ON THE PLACEMENT DRAWINGS.

7. REFER TO CAN CSA A23.1&2 AND CONCRETE SPECIFICATIONS SECTION 03.30.00 FOR THE HOT AND

9. FOR ALL STRUCTURAL MEMBERS PROVIDE COVER FOR A MINIMUM 2 HOUR FIRE RATING UNLESS NOTED

OTHERWISE APPROVED BY THE CONSULTANT. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

12. DOWELS FROM WALLS TO SLABS SHALL HAVE A MINIMUM EMBEDMENT OF 600 mm INTO WALLS AND

14. THE CONCRETE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POUR SEQUENCES AND CONSTRUCTION SHRINKAGE OCCURRING DURING THE CONSTRUCTION PHASE UNTIL THE BUILDING IS PERMANENTLY IN A

15. THE USE OF CHLORIDES SUCH AS DEICING SALTS IS PROHIBITED FOR MELTING ICE PRIOR TO PLACEMENT

CONSTRUCTION JOINTS, CONTROL JOINTS, ISOLATION JOINTS, AND ALL INTERFACE JOINTS BETWEEN SIMILAR AND DISSIMILAR MEMBERS. SPECIFIC LOCATIONS MAY BE INDICATED ON THE DRAWINGS, OR

THOROUGHLY CLEAN, DE-GREASE AND MECHANICALLY ROUGHEN EXISTING CONCRETE SURFACES. APPLY

1. GENERAL: PILING TO BE HELICAL SCREW PILE TYPE. PROVIDE SHOP DRAWINGS SEALED AND SIGNED BY AN EXPERIENCED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ALBERTA, BEFORE COMMENCING WORK, ESTABLISH LOCATION AND EXTENT OF UNDERGROUND UTILITY LINES IN AREAS OF PILING. VERIFY

SHOWN ON THE DRAWINGS AND ARE TO BE MONITORED DURING INSTALLATION BY A PROFESSIONAL GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR. THE CONTRACTOR IS TO ISSUE, AT THE

4. RECORDS: MAINTAIN RECORDS OF PILE PLACEMENT AS FOLLOWS: ELEVATIONS OF TOP AND BOTTOM OF

ACCORDANCE WITH ASTM D1143. THE COSTS OF TESTING PILES WHICH MEET OR EXCEED THE LOAD TEST REQUIREMENTS WILL BE PAID FOR BY THE OWNER. THE COSTS OF TESTING AND REMEDIAL ACTIONS REQUIRED TO ENSURE THE PILE CAPACITIES SHOWN ON THE DRAWINGS FOR PILES WHICH NOT SATISFY

1. REINFORCING STEEL SHALL BE DEFORMED BAR CONFORMING TO CSA STANDARD G30.18-09 (R2014), GRADE 400R, UNLESS OTHERWISE NOTED. REINFORCING STAINLESS STEEL BARS SHALL BE GRADE 420. BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS. BAR MARKS WITH PREFIX 'C' DENOTED

3. REINFORCING BAR AREAS ARE 100, 200, 300, 500, 700, 1000, 1500 AND 2500 mm² FOR BAR

4. WELDED WIRE FABRIC SHALL HAVE A MINIMUM YIELD STRENGTH OF 450 MPa AND SHALL CONFORM TO

5. PRE-STRESSING STRANDS SHALL CONFORM TO CSA STANDARD G279.

6. REINFORCING STEEL IS TO BE DETAILED, BENT AND PLACED IN ACCORDANCE WITH R.S.I.C. REINFORCING

7. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PROPER POSITION WHILE POURING CONCRETE. CONTRACTOR SHALL PROVIDE CHAIRS, SPACER BARS, SUPPORT BARS AND OTHER ACCESSORIES TO

8. TACK WELDING OF REINFORCEMENT IS NOT PERMITTED. WELDED SPLICES IN REINFORCING BARS WILL ONLY BE PERMITTED IF EXPLICITLY SHOWN ON THE STRUCTURAL DRAWINGS OR IF WRITTEN APPROVAL IS

9. PROVIDE CLASS 'B' TENSION LAP SPLICES U.N.O. ALL SPLICE LOCATIONS SHALL BE TO THE APPROVAL OF

DOWELS THROUGH FORMS. MECHANICAL SPLICES SHALL DEVELOP 125% OF THE TENSILE STRENGTH OF

11. LAP SPLICES IN WELDED WIRE MESH SHALL NOT BE LESS THAN 200 mm, AS MEASURED BETWEEN THE OUTERMOST CROSS-WIRES OF EACH FABRIC SHEET.

8. TESTING AND INSPECTION

THE CONTRACTOR SHALL ARRANGE FOR THE FOLLOWING ITEMS TO BE INSPECTED OR TESTED BY AN INDEPENDENT THIRD-PARTY INSPECTION/TESTING AGENCY ACCEPTABLE TO THE OWNER AND THE CONSULTANT. THE ITEMS TO BE TESTED SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING.

1. GEOTECHNICAL PERFORM ALL TESTING AND INSPECTION (COMPACTION, BEARING CAPACITY PILE INSTALLATION. SUB GRADE PREPARATION ETC.) AS PER THE REQUIREMENTS OF THE DRAWINGS AND THE SOILS REPORT.

CONCRETE:

- CONCRETE TO BE TESTED ON ACCORDANCE WITH THE REQUIREMENTS OF CSA A23.1 AND A23.2, INCLUDING THE REQUIREMENTS FOR AIR, SLUMP AND AGE PRIOR TO BEING USED. CONTRACTOR TO MAINTAIN RECORDS OF POUR DATES, TESTING PERFORMED, CLASS OF CONCRETE USED AND TEST RESULTS FOR ALL ITEMS POURED. RESULTS OF CYLINDER STRENGTH TESTING TO BE SENT TO OWNER AND CONSULTANT. ALL MIX DESIGNS TO BE REVIEWED AND CERTIFIED BY TESTING AGENCY.
- REINFORCING STEEL: CONTRACTOR SHALL ADVISE CONSULTANT OF PLACEMENT OF ALL REINFORCING STEEL FOR REINFORCED CONCRETE, AT LEAST 1 WEEK PRIOR TO PLANNED TIME OF GROUT OR CONCRETE PLACEMENT.

9. <u>DEMOLITION</u>

DESIGN

- 1. COMPLY WITH THE NATIONAL BUILDING CODE OF CANADA PART 8 CONSTRUCTION SAFETY MEASURES AT CONSTRUCTION AND DEMOLITION SITES, AND ALL APPLICABLE PROVINCIAL REQUIREMENTS.
- PREVENT MOVEMENT, SETTLEMENT, OR OTHER DAMAGE TO ADJACENT STRUCTURES, UTILITIES, AND PARTS OF BUILDINGS TO REMAIN IN PLACE.
- 3. BEFORE PROCEEDING WITH DEMOLITION OPERATIONS. SUBMIT SHOP DRAWINGS PREPARED BY A LICENSED PROFESSIONAL ENGINEER, SHOWING PROPOSED METHOD OF DEMOLITION AND MEANS OF PROTECTING EXISTING CONSTRUCTION TO REMAIN.
- 4. DO NOT DEVIATE FROM OR FIELD-ALTER SHORING AND BRACING INDICATED ON REVIEWED SHOP DRAWINGS WITHOUT PRIOR WRITTEN APPROVAL OF ENGINEER RESPONSIBLE FOR SHORING DESIGN. NOTIFY CONSULTANT OF ANY DEVIATIONS.
- 5. DO NOT COMMENCE REMOVAL OF EXISTING STRUCTURAL ELEMENTS UNTIL ALL REQUIRED SHORING AND BRACING IS IN PLACE AND HAS BEEN INSPECTED BY THE ENGINEER RESPONSIBLE FOR SHORING DESIGN.
- 6. DO NOT REMOVE TEMPORARY SHORING OR BRACING UNTIL APPROVED BY SHORING CONSULTANT.

DESIGN NOTES

- 1. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE: a. ALBERTA BUILDING CODE (2014)
- b. NATIONAL BUILDING CODE OF CANADA (2010)
- 2. ALL REINFORCED CONCRETE ELEMENTS HAVE BEEN DESIGNED AND OR SHALL BE CONSTRUCTED IN ACCORDANCE WITH: a. CSA - A23.3-14 "DESIGN OF CONCRETE STRUCTURES"
- b. CSA A23.1-14 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" c. CSA - A23.2-14 "TEST METHODS AND STANDARD PRACTICES FOR CONCRETE"
- 3. ALL CONCRETE FORMWORK AND OR FALSEWORK SHALL CONFORM WITH: a. CSA - 269.1 "FALSEWORK FOR CONSTRUCTION PURPOSES" b. CSA - S269.2-M "ACCESS SCAFFOLDING FOR CONSTRUCTION PURPOSES" c. CSA - S269.3-M "CONCRETE FORMWORK"

2. DEAD LOADS (SERVICE)

- 1. DEAD LOADS ARE LOADS GENERATED BY THE SELF-WEIGHT OF THE STRUCTURE
- SUPERIMPOSED DEAD LOADS ARE LOADS GENERATED BY THE WEIGHT OF TOPPINGS AND MISCELLANEOUS LOADINGS.
- 3. REFER TO NOTES ON PLANS FOR ALL LOADS APPLIED TO THE STRUCTURE.

4. LIVE LOADS

a. SEE NOTES ON FLOOR PLANS. ALL VALUES GIVEN ARE UNFACTORED LOADS UNLESS OTHERWISE SHOWN ON PLAN.

5. **GEOTECHNICAL INFORMATION**

1. THE FOLLOWING GEOTECHNICAL INVESTIGATION REPORT HAS BEEN USED BY THE ENGINEER IN DESIGN AND PREPARATION OF THE DRAWING: FILE NO.PR4099-2A AS PREPARED BY J.R. PAINE & ASSOCIATES LTD. CONSULTING & TESTING ENGINEERS DATED JUNE 14, 2001, THE FOUNDATION SYSTEM WILL CONSIST OF HELICAL PIERS. THE PILING CONTRACTOR SHALL ENGAGE. AT THE PILING CONTRACTORS EXPENSE. A GEOTECHNICAL ENGINEER TO CONFIRM ALL DESIGN ASSUMPTIONS (E.G. SOIL BEARING CAPACITY, PILE LENGTHS) PRIOR TO INSTALLATION OF PILES.

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	DRAWING LIST
SHEET NUMBER	DRAWING NAME
S01-00-01	GENERAL NOTES
S02-00-01	TYPICAL DETAILS
S20-00-01	PLANS & DETAILS



	65/(7/25.1	(SEE NOTE #4)	1.5 h	2 h	3 h	4 h
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	75		75	75	75	75
CONCRETE CAST AGAINST FORMS, BUT EXPOSED TO EARTH OR WEATHER:						
15 BARS, 16Ø WIRE, AND SMALLER, STIRRUPS, TIES, AND SPIRAL	40		40	40	40	40
COLUMN PRINCIPAL REINFORCEMENT	50		50	50	65	75
20 TO 55 BARS, AND ALL OTHER BARS	50		50	50	50	50
CONCRETE NOT EXPOSED TO WEATHER, OR NOT IN CONTACT WITH GROUND:						
35 BARS AND SMALLER		TOP 40				
FOR SLABS AND WALLS SEE NOTE #3	20	BOT. 30	20	25	35	40
FOR JOISTS	20		25	25	40	50
BEAM PRINCIPAL REINFORCEMENT	40		40	40	40	50
COLUMN PRINCIPAL REINFORCEMENT	40		50	50	65	75
STIRRUPS, TIES, SPIRALS, AND ALL OTHER BARS	40		40	40	40	40

NOTES:

FOR CAST-IN-PLACE (NON-PRESTRESSED) CONCRETE, PROVIDE MINIMUM CONCRETE COVER TO REINFORCEMENT ACCORDING TO CSA-A23.1 UNLESS OTHERWISE NOTED ON DRAWINGS. WHERE THE FIRE-RESISTANCE RATING OF A COLUMN EXCEEDS 2 HOURS, ADD WELDED WIRE MESH, MINIMUM 102 x 102 - MW3.2 x MW3.2, MIDWAY

IN CONCRETE COVER. FOR SHORT WALLS WHERE INDICATED ON THE DRAWING, PROVIDE COVER SAME AS FOR COLUMNS.

FOR PARKING STRUCTURES PROVIDE MINIMUM CONCRETE COVER TO REINFORCEMENT ACCORDING TO CSA-S413. COVER TO BOTTOM REINFORCEMENT IN THE MAIN FLOOR SLAB EXPOSED TO DEICING MUST MEET REQUIREMENTS OF CSA-S413.







MENT FOR	CONCRETE S	LABS, COVER	SLABS, AND	TDC-14				BEAM	AND	SLAB	CONS	STRUC	CTION	JOIN	T DET	AILS		
MENT FOR CONCRETE SLABS, COVER TOPPINGSDRCEMENTNOTES:W13.3 × MW13.3 W18.7 × MW18.7 W25.8 × MW25.8 W13.3 × MW13.31. UNLESS OTHERWISE NOT REINFORCEMENT IN CON TOPPINGS AS SHOWN IN2. UNLESS OTHERWISE NOT REINFORCEMENT PERPEN REINFORCEMENT PERPEN REINFORCEMENT PERPEN REINFORCEMENT NONE REINFORCEMENT NONE REINFORCEMENT PERPEN REINFORCEMENT NONE REINFORCEMENT NONE REINFORCEMENT PERPEN REINFORCEMENT NONE REINFORCEMENT NONE SPLACE TEMPERATURE REINFORCE CONCRETE SLABS.10@350 10@300 10@250 10@2503. UNLESS OTHERWISE NOT WITH 25 mm TOP COVER SPLICE. LAP END OF WEL OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CORSS-WIRES OF EACH F, THAN ONE SPACING OF OF OVERLAP MEASURED BET CONTINUOUS10@2006. UNLESS OTHERWISE NOT WITH 2-15 CONTINUO		SLABS, AND TED PROVIDE TEMPERAT NCRETE SLABS, COVER S THIS TABLE. TED, PLACE TEMPERATU NDICULAR TO MAIN E WAY SLABS, WHERE MA STS OF TOP AND BOTTO SINFORCEMENT ALTERNA TED, PROVIDE WELDED V ST FOR CONCRETE TOPP SHEET OR MEMBRANE. CEMENT IS NOT REQUIR RE PLACED AND BONDER TED, PLACE WELDED WIF R. LAP REBARS WITH CI LDED WIRE FABRIC SUCH TWEEN THE OUTERMOST ABRIC SHEET SHALL NC CROSS-WIRE PLUS 50 m TED, PROVIDE EDGE OF A S. CREASE REINFORCEMEN	TDC-14 URE LABS AND RE AIN DM BARS, ATELY AT WIRE FABRIC PING WHICH ED WHERE D DIRECTLY RE FABRIC LASS 'B' LAP H THAT THE T DT BE LESS m. ALL SLABS IT BY 25%.		FC OI MINIMUM × 1200 LONC CORNER O CORNER O ADE STIRF OF JO 0.12 m ² (OR POR	DR SLA A A A A A A A A A A A A A A A A A A	BEAM	AND	SLAB	ADD 1-15	STRUC	LONG @ 600 IN SLABS S BARS TO SH FOR SLABS "t" OVE					<u>t/8</u> <u>A</u> <u>A</u> <u>A</u> <u>A</u> <u>A</u> <u>A</u> <u>A</u> <u>A</u> <u>A</u> <u>A</u>	
15@250 15@350 15@350						BEA	MS UP	TO 4	50 D	<u>EPTH</u>					4			100
15@350 15@300 15@300														BE	EAMS ME AS BEA SHOWN	OVER MS UP TO	450 [460 DEEF	<mark>ЭЕРТ</mark> [,] вот о
IT AND LAF	P SPLICE LENG		PRESSION	TDC-35] []	TENSION	DEVI	ELOPN	MENT	LENG		ND TE	INSIO	N LAP	SPLIC	ES (Fy	/ = 40	0 M
						CONCRETE			20			4D -	40					
DEVE	ELOPMENT LENGTHS ({	dc)	LAP SPLICE			SPLICE	CLASS A, Ld	VIPA CLASS B	CLASS A	, CLASS B	35 I CLASS A, Ld	CLASS B	40 CLASS A, Ld	CLASS B	451 CLASS A, Ld	CLASS B	50 CLASS A, Ld	CLASS
c = 20 MPa	f'c = 25 MPa	f'c = 30 MPa	f'c = 30 MPa			BAR		TABL	E 1: 0	UNCO	ATED	, OTH	ER TH	IAN T	OP BA	RS		
240	220	200	300]											_			
300	270	250	430	-		10	300 440	380 570	300 400	350 520	300 370	320 480	300 350	300 450	300 330	280 420	300 310	300 400
340	310	280	440	1		20	580	750	530	690	490	640	460	600	430	560	410	530
430	380	350	640			25 30	900 1080	1170 1410	830 990	1070	760 920	990 1190	720 860	930 1110	670 810	880 1050	640 770	830 1000
				_		35	1260	1640	1150	1500	1070	1390	1000	1300	940	1220	890	1160
420	370	340	590	-					⊫ ב⊃. י						1		l	
520	470	430	850					IALL	E Z:	UNCO	AIED	, IUP	RAK2					

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f'c = 20 MPa	f'c = 25 MPa	f'c = 30 MPa	f'c = 30 MPa
240	220	200	300
300	270	250	430
340	310	280	440
430	380	350	640
420	370	340	590
520	470	430	850
540	480	440	730
680	600	550	1070
640	570	530	880
800	720	660	1280
770	690	630	1030
960	860	790	1490
940	840	770	
1170	1050	960	
1210	1080	990	
1510	1350	1240	

1. VALUES GIVEN ARE FOR NORMAL WEIGHT CONCRETE AND DEFORMED BARS ONLY AND ARE TO BE MODIFIED ACCORDING TO THE FOLLOWING APPLICABLE FACTORS.

2. LAP SPLICES ARE NOT PERMITTED FOR BAR SIZES 45 AND 55. 3. 'dc' DENOTES MINIMUM DEVELOPMENT LENGTH FOR EMBEDMENT OF DOWELS IN COMPRESSION.

4. INCREASE LAP SPLICE LENGTHS FOR f'c LESS THAN 20 MPa BY A FACTOR OF 1.33.

400 500

400 500

400

500

400

500

400 500

25

45

55

NOTES:

45 500

55 | 400

500

NOTES: USE FOLLOWING TENSION LAP SPLICE LENGTHS UNLESS NOTED OTHERWISE ON DRAWINGS. TENSION DEVELOPMENT LENGTHS, Ld, DENOTED AS TENSION LAP SPLICE CLASS A.

FOR COLUMNS, USE COLUMN TENSION SPLICE TYPICAL DETAIL. . TOP BARS ARE BARS WITH MORE THAN 300 OF CONCRETE CAST BELOW SPLICE.

CLEAR COVER NOT LESS THAN d_h, CLEAR SPACING NOT LESS THAN 2d_h. FOR STRUCTURAL LOW-DENSITY CONCRETE, INCREASE SPLICE LENGTHS BY 30%.

7. FOR STRUCTURAL SEMI-LOW-DENSITY CONCRETE, INCREASE SPLICE LENGTHS BY 20%.

SHEAR REINFORCEMENT IN CONCRETE BEAMS

STANDARD STIRRUP TYPES

1. UNLESS NOTED OTHERWISE, DETAIL SHEAR REINFORCEMENT TYPES AS NOTED BELOW. SUBSTITUTION OF 'Y1' TYPE STIRRUPS IN LIEU OF 'T1' TYPE STIRRUPS MAY BE STRUCTURALLY

ACCEPTABLE, SUBJECT TO REVIEW BY THE ENGINEER.





BEAM AND SLAB CONSTRUCTION JOINT DETAILS TDC-23	DATE ISSUED FOR REV 2017-11-24 50% REVIEW A
ADD 1-15 x 1200 LONG @ 600 IN SLABS	2017-12-08 99% REVIEW B 2017-12-21 TENDER 0
$\frac{CONTINUOUS BARS TO}{RUN THROUGH}$ $\frac{FOR SLABS "t" = 150}{FOR SLABS "t" OVER 150}$	
$\begin{array}{c} 1 \ 1-15 \ \text{TOP} \\ \text{G AT EACH} \\ \textbf{t/8} \\ \textbf{t/8} \\ \textbf{t/8} \end{array}$	This drawing has been prepared solely for the use of the CLIENT and there are no representations of any kind made by NORR Architects Engineers Planners to any pathy with whom NORR Architects
	This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.
D 1-10 CLOSED RUP EACH SIDE DINT FOR EACH OF BEAM AREA TION THEREOF TION THEREOF TION THEREOF	Keyplan
BEAMS OVER 450 DEPTH SAME AS BEAMS UP TO 460 DEEP BUT USE MULTIPLE KEYS AS SHOWN	
N DEVELOPMENT LENGTH AND TENSION LAP SPLICES (Fy = 400 MPa) TDC-36	North Arrow Detail Symbol
25 MPa30 MPa35 MPa40 MPa45 MPa50 MPaconcreteCLASS A, CLASS BCLASS CLASS CLASS BCLASS CLASS CL	DETAIL#
300 380 300 350 300 320 300 300 300 280 300 300 10 440 570 400 520 370 480 350 450 330 420 310 400 15 580 750 530 690 490 640 460 600 430 560 410 530 20 900 1170 830 1070 760 990 720 930 670 880 640 830 25 1080 1410 990 1290 920 1190 860 1110 810 1050 770 1000 30 1260 1640 1150 1500 1070 1390 1000 1300 940 1220 890 1160 35	SHEET # Symbol not to scale
380 490 350 450 320 420 300 390 280 370 300 350 10 570 730 520 670 480 620 450 580 420 550 400 520 15 750 980 690 890 640 830 600 770 560 730 530 690 20 1170 1530 1070 1390 990 1290 930 1210 880 1140 830 1080 25 1410 1830 1290 1670 1190 1550 1110 1450 1050 1360 1000 1290 30 1640 2130 1500 1950 1300 1690 1220 1590 1160 1510 35	Consultants Civil: N/A Landscape: N/A Architectural: N/A Structural: NORR ARCHITECTS ENGINEERS PLANNERS Mechanical: N/A Electrical: N/A
TABLE 3: EPOXY-COATED BARS, OTHER THAN TOP BARS 440 570 400 520 370 480 350 450 330 420 310 400 10 650 850 600 770 550 720 520 670 490 630 460 600 15 870 1130 790 1030 730 950 690 890 650 840 610 800 20	
1350 1760 1240 1610 1140 1490 1070 1390 1010 1310 960 1240 25 1620 2110 1480 1930 1370 1780 1280 1670 1210 1570 1150 1490 30 1890 2460 1730 2250 1600 2080 1500 1950 1410 1840 1340 1740 35	Seal(s)
4906404505904205403905103704803504501074096067088062081058076055072052068015980128090011708301080780101073095070090020153019901400182013001690121015801140149010901410251840239016802180156020201460189013701780130016903021502790196025501810236017002210160020801520197035	
FOLLOWING TENSION LAP SPLICE LENGTHS UNLESS NOTED OTHERWISE ON DRAWINGS. SION DEVELOPMENT LENGTHS, Ld, DENOTED AS TENSION LAP SPLICE CLASS A. COLUMNS, USE COLUMN TENSION SPLICE TYPICAL DETAIL. BARS ARE BARS WITH MORE THAN 300 OF CONCRETE CAST BELOW SPLICE. AR COVER NOT LESS THAN d _b , CLEAR SPACING NOT LESS THAN 2d _b . STRUCTURAL LOW-DENSITY CONCRETE, INCREASE SPLICE LENGTHS BY 30%. STRUCTURAL SEMI-LOW-DENSITY CONCRETE, INCREASE SPLICE LENGTHS BY 20%.	
SHEAR REINFORCEMENT IN CONCRETE BEAMS TDC-41	NORR
IDARD STIRRUP TYPES ISS NOTED OTHERWISE, DETAIL SHEAR REINFORCEMENT TYPES AS NOTED BELOW. TITUTION OF 'Y1' TYPE STIRRUPS IN LIEU OF 'T1' TYPE STIRRUPS MAY BE STRUCTURALLY EPTABLE, SUBJECT TO REVIEW BY THE ENGINEER.	ARCHITECTS ENGINEERS PLANNERS An Ingenium Group Company 411 - 1st Street SE,
DF 135' HOOKS IN LIEU OF THE LAP SHOWN, MAY BE STRUCTURALLY ACCEPTABLE SUBJECT TO EW BY THE ENGINEER. 135' HOOK TYPE 'S 2' TYPE 'S 2'	Suite 2300, Calgary, Alberta, Canada T2G 4Y5 www.norr.com A Partnership of Limited Companies Poon McKenzie Holdings Inc. NORR is a trade architect; Albertaj Inc. Poon McKenzie Holdings Inc. NORR is a trade architect; Albertaj Inc. Poon McKenzie Holdings Inc. Victor Smith, Architect, AAA, B.Arch, MAIBC Ronald M. Poch, Architect, AAA, B.Arch, MAIBC Bruce G. McKon, Architect, AAA, M.Arch, MAIBC A. Silvio Baldenzie, APEGA
	Project Manager Drawn
TYPE 'T1'	Project Leader Checked A. TODEILA A.TODEILA Client
TYPE 'Y4' NLING OF MULTIPLE STIRRUPS BLE STIRRUPS, TRIPLE STIRRUPS AND THE LIKE ARE SHOWN AS '2 Y2'. '3 T1' ETC. IN THE BEAM SCHEDULE.	GOVERNMENT OF CANADA
RUPS HAVE BEEN USED BELOW FOR ILLUSTRATION PURPOSES ONLY.	GOVERNMENT OF CANADA ENTRANCE WALKWAY
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Drawing Title TYPICAL DETAILS
DOUBLE STIRRUPS TRIPLE STIRRUPS	Check Scale (may be photo reduced) 0 1 inch 0 10mm
	Project No. NCCA-17-0166
	502-00-01



DATE	ISSUE	D FOR	RE۱
2017-11-24	50% REVIEW		A
2017-12-08	TENDER		в В
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any kind r Planners to	nade by NORR any party with v	Architects Engin whom NORR Archit	eers ects
This drawin	ig shall not be	used for construc	tior
purposes ur and dated b	itil the seal appe y the Architect o	aring hereon is sig r Engineer.	jneo
Keyplan			
North Arrow		Detail Symbol	
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		SHEET #	1
		Symbol not to scale	
Consultants			
Civil: Landscape:	N/A N/A		
Architectur Structural:	al: N/A NORR ARCHITE	ECTS ENGINEERS PLAN	INER
Electrical:	N/A N/A		
Seal(s)			
N)	
ARCHITECT	5 ENGINEERS PLAN	NERS	
An Ingeniun 411 - 1st	n Group Company Street SE,		
Suite 230 Calgary, A	0, Alberta, Canada 7	r2G 4Y5	
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Bruce G. McKenzi A. Silvio Baldassa Adrian Todeila, P Chris Pal, P.Eng.,	e, Architect, AAA, M.Arch, MA rra, Architect, AAA, B.Arch, M .Eng., APEGA APEGA	IBC AIBC	
Project Man A. TODEILA	ager Di	rawn CHALISHAJAR	
Project Lead	er CI A.	TODEILA	
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Project No.	NCCA-17	0166	•