- A. GENERAL NOTES
- 1. THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH. AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH, THE NATIONAL BUILDING CODE OF CANADA 2010, THE MANITOBA BUILDING CODE 2011, AND ALL APPLICABLE
- 2. DESIGN LOADS ARE INDICATED ON THE DRAWINGS.
- 3. DESIGN LIVE LOADS SHALL NOT BE EXCEEDED AT ANY TIME DURING CONSTRUCTION.
- 4. DO NOT SCALE DRAWINGS. 5. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED PRIOR TO COMMENCING
- CONSTRUCTION 6. VERIFY ALL DIMENSIONS, ELEVATIONS, SLOPES, DETAILS, CONDITIONS, ETC., SHOWN ON THE STRUCTURAL DRAWINGS; WITH THE LATEST ARCHITECTURAL DRAWINGS. OTHER CONSULTANT DRAWINGS AND WITH SITE CONDITIONS, PRIOR TO CONSTRUCTION OR PREFABRICATION OF ANY BUILDING
- 7. MODIFICATIONS, ALTERNATIONS OR SUBSTITUTIONS MUST BE AUTHORIZED IN WRITING BY THE CONTRACT ADMINISTRATOR.
- 8. LOCATE ALL EXISTING SUBGRADE SERVICES PRIOR TO CONSTRUCTION. 9. DESIGN AND DETAIL ALL NECESSARY SHORING. BRACING AND FORMWORK. FORMWORK FOR CONSTRUCTION SHALL BE BRIDGED OVER EXISTING SERVICES. PROCEDURE MUST BE APPROVED BY THE CONTRACT
- 10. FORMWORK SHALL BE APPROVED BY AN INDEPENDENT PROFESSIONA ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA AND HOLDS A
- CURRENT "CERTIFICATE OF AUTHORIZATION" OF APEGM. 11. FOR OPENINGS IN SLAB, FLOOR, WALLS, ROOF, ETC. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND/OR OTHER PERTINENT
- 12. REVIEW LOCATION OF INTENDED CONSTRUCTION JOINTS WITH CONTRACT
- ADMINISTRATOR PRIOR TO PROCEEDING 13. CONSTRUCTION SAFETY REQUIREMENTS SHALL BE THE RESPONSIBILITY OF
- THE CONTRACTOR. 14. DEFECTIVE OR UNACCEPTABLE WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AT NO ADDITIONAL COST TO
- THE PROJECT 15. WHERE THERE IS A DISCREPANCY BETWEEN PROJECT SPECIFICATIONS AND GENERAL NOTES, INFORMATION SHOWN IN SPECIFICATIONS SHALL GOVERN.
- B. DESIGN LOADS
- ENVIRONMENTAL LOAD PARAMETERS SNOW LOAD: Ss = 1.72 kPa

HOURLY WIND PRESSURE (1/50) = 0.45 kPa

- 2. MAIN FLOOR LOADS: SEE DRAWING S0010 3. ROOF LOADS: SEE DRAWING S0010
- C. EXCAVATION AND BACKFILLING
- 1. DEWATER SITE PRIOR TO, AND DURING CONSTRUCTION SEE GEOTECHNICAL
- 2. REMOVE ALL TOPSOIL, ORGANIC MATERIAL AND LOOSE OR UNSUITABLE FILL TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER.
- 3. PROVIDE BACKFILL MATERIAL AS NOTED IN SPECIFICATIONS. CONSTRUCTION EQUIPMENT SHOULD NOT TRAVEL DIRECTLY ON THE FOUNDATION BEARING SURFACE. USE FLAT BUCKET EXCAVATION AT THE FOUNDATION LEVEL. TAKE MEASURES TO PREVENT CHANGES IN SOIL
- 5. PROVIDE BACKFILL AS FOLLOWS:
- UNDER SLABS ON GRADE (MIN 200mm THICK) - COMPACT NATIVE SOIL SUBGRADE TO 98% STANDARD PROCTOR.

MOISTURE CONTENT AT THE FOUNDATION BEARING SURFACE.

- AGAINST PERIMETER BEAMS/WALL (OUTSIDE)
- TO WITHIN 300MM OF FINISHED GRADE: SUITABLE EXCAVATED MATERIAL COMPACTED TO 95% STANDARD PROCTOR
- TO FINISHED GRADE: TYPE 2 MATERIAL TO UNDERSIDE CONCRETE SLABS, TOPSOIL AT UNPAVED
- 6. SUBMIT AN EXCAVATION AND SHORING PLAN PREPARED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN MANITOBA.
- D. CAST-IN-PLACE-CONCRETE
- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH CSA-A23.1-09 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION /
- METHODS OF TEST AND STANDARD PRACTICES FOR CONCRETE. 2. SUPPLEMENTARY CEMENTITIOUS MATERIALS TO CSA-A3000-08 CEMENTITIOUS
- 3. CHEMICAL ADMIXTURES TO ASTM C494/C494M-12 AND ASTM
- C1017/C1017M-07.4. GENERAL CONTRACTOR TO PROVIDE PROPRIETARY MIX DESIGN PERFORMANCE
- RECORD AS REQUIRED BY THE MANITOBA READY-MIX ASSOCIATION. 5. CONCRETE SPECIFICATIONS:
- SEE TABLE D.1 . CONSTRUCT FORMWORK, SHORING AND BRACING TO MEET DESIGN, CODE CSA 269.3-M92 (REAFFIRMED 2013) AND CSA-A23.1-09 REQUIREMENTS. CONSTRUCT ACCURATELY, SO THAT RESULTANT FINISHED CONCRETE

- CONFORMS TO SHAPES, LINES AND DIMENSIONS INDICATED ON THE DRAWINGS.
- VIBRATE ALL CONCRETE WORK WITH APPROPRIATE INTERNAL VIBRATORS. 8. CONCRETE WORKING TIME, FROM BATCHING TO PLACEMENT AND
- CONSOLIDATION, SHALL NOT EXCEED 1-1/2 HOURS. 9. CONCRETE CONTRACTOR SHALL PLACE ALL COMPONENTS TO BE EMBEDDED IN THE CONCRETE (ie. WELD PLATES, DOWELS FOR CONCRETE AND/OR MASONRY, ANCHOR BOLTS, INSERTS, WATER STOP BARS, SLEEVING, ETC.) SEE STRUCTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND ANY OTHER PERTINENT DRAWINGS.
- 10. CLEAR CONCRETE COVER TO REINFORCING STEEL SHALL BE AS FOLLOWS SEE TABLE D.2
- 11. WHERE NO DOWEL EMBEDMENT OR EMBEDMENT TYPE IS INDICATED ON THESE DRAWINGS IT SHALL BE A TENSION EMBEDMENT EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT:
- 12. WHERE NO SPLICE OR SPLICE TYPE IS INDICATED ON THESE DRAWINGS IT SHALL BE A TENSION SPLICE EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE (UNLESS DETAILED OTHERWISE):
- SEE TABLE D.4 13. INSTALL WATER STOP BAR IN ALL TRENCH WALL AND PIT CONSTRUCTION
- 14. SEE ARCHITECTURAL DRAWINGS FOR SURFACE FINISHES, EDGE TREATMENTS, 15. VOID FORMS UNDER SLABS, BEAMS AND WALLS SHALL BE HONEYCOMB
- TYPE BIODEGRADABLE CARDBOARD, 300 MM THICK TREATED TO PROVIDE SUFFICIENT STRUCTURAL SUPPORT FOR CONCRETE UNTIL CONCRETE IS CURED (UNO)
- 16. AS AN ALTERNATE, CONTRACTOR MAY USE STYROFOAM VOID FILLER WHICH MUST MAINTAIN VOID SPACE NOTED ABOVE WHEN COLLAPSED / COMPRESSED. STYROFOAM VOID FILLER SHALL BE SELECTED AND DESIGNED BY MANUFACTURER. VOID FILLER SELECTED TO BE FORWARDED TO CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO CONSTRUCTION.
- 17. ALL FORMWORK INCLUDING CARDBOARD "SONO-TUBES" TO BE REMOVED UPON COMPLETION. 18. UNDER IDEAL WEATHER CONDITIONS, ALLOW MINIMUM CURING TIME AS SCHEDULED BELOW BEFORE REMOVING FORM WORK:
- GRADE BEAMS 3 DAYS 7 DAYS WALLS
- •BEAM SIDES 7 DAYS •BEAM & SLAB BOTTOMS 14 DAYS
- 19. ALL HOLES TO BE CORED THROUGH REINFORCED CONCRETE TO BE
- REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
- 20. CONSTRUCT FORMWORK, SHORING AND BRACING TO MEET DESIGN, CODE AND CAN3-A23.1-09 REQUIREMENTS.
- 21. CONSTRUCTION JOINTS, CONCRETE PLACEMENT SCHEDULING AND WORK PROCEDURES SHALL BE DISCUSSED WITH THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCING CONSTRUCTION.
- 22. TYPICAL HOUSE KEEPING PAD UNDER ALL EQUIPMENT AND STORAGE AREAS G. REINFORCING STEEL = 125 THICK CONCRETE.
- 23. FOR COLD WEATHER CONCRETE WORK, ALL ICE, SNOW AND FROST SHALL E REMOVED FROM FORMWORK AND THE TEMPERATURE OF ALL CONTACT SURFACES SHALL BE RAISED ABOVE 10C FOR 24 HOURS PRIOR TO PLACING CONCRETE. CONCRETE SHALL BE NOT LESS THAN 20 DEGREES CELSIUS NOR MORE THAN 30 DEGREES CELSIUS WHEN DEPOSITED. CONCRETE SHALL BE ENCLOSED AND THIS AREA SHALL HAVE A
- TEMPERATURE OF NOT LESS THAN 20 DEGREES CELSIUS FOR THREE (3) DAYS AND NOT LESS THAN 5C FOR AN ADDITIONAL FOUR (4) DAYS. 24. NOTIFY THE CONTRACT ADMINISTRATOR AT LEAST 48 HOURS PRIOR TO ALL
- CONCRETE PLACEMENT TO ALLOW FOR SITE INSPECTIONS. 25. CONCRETE TESTING SHALL BE PERFORMED BY AN INDEPENDENT CSA APPROVED TESTING COMPANY RETAINED AND PAID FOR BY THE CONTRACTOR. THREE (3) CONCRETE TEST CYLINDERS AND ONE (1) SLUMP TEST SHALL BE TAKEN FOR EVERY 75 (OR LESS) CUBIC METERS. OR EACH DAY CONCRETE IS PLACED, WHICHEVER IS GREATER. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH CSA-A23.2-09 AND THE RESULTS SHALL
- BE FORWARDED TO THE CONTRACT ADMINISTRATOR. E. CONCRETE SLAB-ON-GRADE
- SUB-BASE PREPARATION PREPARE SUB-BASE IN STRICT ACCORDANCE WITH THE GEOTECHNICAL REPORT. • REMOVE ALL TOPSOIL, SILT, LOOSE FILL, DEBRIS, ORGANIC MATERIAL (INCLUDING TREE ROOTS), EXISTING FOUNDATION ELEMENTS, TANKS, ETC. •FILL ALL VOIDS AND LOW AREAS WITH CLEAN WELL GRADED GRANULAR FILL COMPACTED TO A MINIMUM 100% STANDARD PROCTOR DENSITY.
- INSTALL AND COMPACT IN 6" (150mm) HIGH LIFTS. GRANULAR BASE - INSTALL A BASE OF CLEAN WELL GRADED GRANULAR FILL COMPACTED TO MINIMUM 100% STANDARD PROCTOR DENSITY. INSTALL AND COMPACT IN 6" (150mm) HIGH LIFTS TO THE THICKNESS SPECIFIED
- ON THE DRAWINGS. SAMPLES OF PROPOSED GRANULAR BASE AND SUB-BASE MATERIAL SHALL
- BE SUBMITTED TO GEOTECHNICAL CONSULTANT FOR REVIEW AND APPROVAL. 4. THAW ALL FROZEN AREAS PRIOR TO INSTALLING GRANULAR MATERIAL.
- COMPACTION TESTS SHALL BE PERFORMED BY AN INDEPENDENT TESTING COMPANY DURING THE INSTALLATION OF ALL GRANULAR MATERIAL. THE RESULTS SHALL BE FORWARDED TO THE CONTRACT ADMINISTRATOR.
- PROVIDE 10 MIL POLY MOISTURE BARRIER (WELL LAPPED AND SEALED) BETWEEN COMPACTED GRANULAR BASE AND CONCRETE SLAB.
- PROVIDE A FULL AND CONTINUOUS 1/2" (12mm) WIDE FLEXCELL JOINT BETWEEN THE EDGE OF SLAB AND ALL OTHER STRUCTURAL ELEMENTS (I.E. GRADE BEAMS, FOUNDATION AND RETAINING WALLS, COLUMNS, ETC.) U.N.O.

- BELOW THE SLAB AND SLEEVING REQUIRED FOR SERVICES PENETRATING THE 9. REFER TO ARCHITECTURAL DRAWINGS FOR SURFACE LEVEL TOLERANCES,
- SLOPES, FINISHES, SURFACE SEALERS OR HARDENERS, ETC. 10. INSTALL SAWCUTS AS SHOWN ON STRUCTURAL PLANS. SAWCUTS TO BE 1"

8. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SERVICES INSTALLED

- (25 mm) DEEP AND 1/8" (3mm) WIDE. CUT NO SOONER THAN 24 HOURS BUT NOT LATER THAN 48 HOURS AFTER SLAB IS POURED. FILL SAWCUTS WITH APPROVED BITUMINOUS COMPOUND OR CAULKING.
- 11. PROVIDE CONSTRUCTION JOINTS C/W 1/2" (12mm) FLEXCELL AND GREASED 12. SUPPLY ALL COMPONENTS WITH ONE (1) COAT OF SHOP PRIMER DOWELS TO MATCH SLAB REINFORCING

F. FOUNDATION - PRECAST DRIVEN PILES

- PRECAST DRIVEN PILES ARE DESIGNED FOR MAXIMUM CAPACITY AS FOLLOWS:
- •300 MM HEXAGONAL 444 KN •350 MM HEXAGONAL - 622 KN
- •400 MM HEXAGONAL 800 KN 2. ALL PILES SHALL BE DRIVEN TO REFUSAL AND IN ACCORDANCE WITH RECOMMENDATIONS MADE BY DYREGROV CONSULTANTS IN THEIR REPORT
- DATED DECEMBER 2004 AND LETTER BY T. CRILLY DATED JANUARY 7 2016. 3. THE ACTUAL SET SHALL BE ESTABLISHED FROM THE HAMMER RATINGS TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR BEFORE DRIVING COMMENCES.
- 4. IF ANY MEASURABLE UPHEAVING OCCURS TO A PILE DURING THE DRIVING OF ADJACENT PILES, THE PILE IS TO BE REDRIVEN TO THE ORIGINAL
- ELEVATION AND SET. PILES SHALL BE CUT OFF SQUARE AND NEAT FOR A MINIMUM OF 450 MM (UNLESS OTHERWISE NOTED) STRAND PROJECTION FROM THE PILE. SHATTERING OR SPLITTING OF THE TOP OF THE PILE SHALL BE CAUSE FOR
- ALL PILES AND PILE CAPS SHALL BE MADE WITH SULPHATE RESISTANT CEMENT TYPE HS AND HAVE A 28-DAY STRENGTH OF 35 MPa. AT TIME OF DRIVING CONCRETE FOR PILES SHALL HAVE A COMPRESSIVE STRENGTH OF 35 MPa. CONCRETE STRENGTH AT TRANSFER OF PRESTRESS SHALL BE MINIMUM 25 MPa.
- FULL TIME INSPECTION BY AN APPROVED GEOTECHNICAL CONSULTANT RETAINED AND PAID FOR BY THE CONTRACTOR IS TO BE PROVIDED DURING THE DRIVING OF ALL PILES. A DRIVING RECORD OF PENETRATION PER BLOW SHALL BE KEPT BY THE INSPECTOR. THESE RECORDS SHAL NCLUDE FINAL PENETRATION RESISTANCE, PILE HEAVE AND AMOUNT OF
- DOWNWARD MOVEMENT OF REDRIVE 8. OUT OF PLACE, DEFECTIVE OR PILES WHICH ARE DAMAGED IN HANDLING OR DRIVING WILL NOT BE ACCEPTED. ADDITIONAL PILES SHALL BE SUBSTITUTED
- 9. SURVEY THE STRUCTURAL CONDITIONS OF SURROUNDING EXISTING BUILDINGS AND KEEP PHOTO RECORDS PRIOR TO START OF DRIVING PILES. ANY DAMAGE TO BUILDING COMPONENTS SHALL BE REPAIRED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AT NO EXTRA COST TO THE

- REINFORCING STEEL SHALL BE NEW BILLET, DEFORMED BARS WITH A MINIMUM SPECIFIED YIELD STRENGTH OF 400MPa OR EQUAL IN ACCORDANCE WITH CSA-G30.18-09.
- REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST A.C.I. DETAILING MANUAL. 3. LAP TOP BARS AT CENTRE SPAN AND BOTTOM BARS OVER SUPPORTS
- 4. ALL REINFORCING TO BE HELD IN PLACE AND TIES BY THE USE OF PROPER ACCESSORIES SUCH AS HI-CHAIRS, SPACERS, ETC.
- REINFORCING IN CONCRETE BEAMS TO BE BENT 24" (600 MM) AROUND CORNERS OR USE 36" X 36" (900 MM X 900 MM) CORNER BARS. FRAME ALL OPENINGS IN CONCRETE BEAMS, AND/OR SLABS WITH 2-20M BARS (EXTRA) EACH LAYER, ALL FOUR (4) SIDES. EXTEND BARS 24"
- MM) BÈYOND EDGES OF OPENING EXCEPT AS NOTED. PROVIDE 1-20M x1200 LONG DIAGONAL TOP AND BOTTOM AT EACH CORNER. SUBMIT SHOP DRAWINGS WHICH CLEARLY INDICATE BAR SIZES, GRADE SPACING, HOOKS, BENDS AND SUPPORTING/SPACE DEVICES, ETC. FOR REVIEW TO THE CONTRACT ADMINISTRATOR PRIOR TO FABRICATION OF THE
- 8. PRIOR TO PLACING CONCRETE, ENSURE THAT ALL REINFORCING STEEL IS CLEAN. FREE OF LOOSE SCALE, RUST, MUD, OIL OR OTHER FOREIGN MATERIAL. WHICH WOULD REDUCE BOND. 9. HEATING, QUENCHING AND BENDING OF REINFORCING STEEL ON THE SITE IS
- STRUCTURAL STEEL

NOT ALLOWED.

- STRUCTURAL STEEL SHALL CONFORM TO CSA G40.21-04
- W AND WWF SECTIONS TO BE CSA-G40.21-04 350MPa. 3. HOLLOW STRUCTURAL SECTIONS TO BE CSA-G40.21-04 350MPa CLASS C 4. ALL OTHER ROLLED OR WELDED STRUCTURAL SECTIONS AND PLATES TO BE
- CSAG40.20-04/G40.21-04 300MPa GRADE STEEL FABRICATION AND ERECTION SHALL CONFORM TO CSA-S16-09. 6. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS FULLY
- APPROVED FOR STRUCTURAL WELDING BY THE CANADIAN WELDING BUREAU IN ACCORDANCE WITH CSA-W47.1-09 AND CSA-W59-03 (R2008). SPLICING OF MEMBERS NOT PERMITTED UNLESS OTHERWISE NOTED. WHERE BEAMS ARE CONTINUOUS OVER SUPPORTS. NO HOLES PERMITTED IN TOP
- 8. FABRICATE ALL BEAMS WITH CAMBER TO OFFSET THE DEFLECTIONS DUE TO DEAD LOAD.
- STRUCTURAL STEEL ERECTOR SHALL SUPPLY AND INSTALL ALL TEMPORARY GUYING AND BRACING NECESSARY TO PROVIDE STABILITY FOR THE

- STRUCTURE AS A WHOLE. THESE SHALL REMAIN IN PLACE UNTIL FLOOR SLABS ARE WELL CURED, STEEL ROOF DECK IS FULLY WELDED AND/OR PERMANENT BRACING IS INSTALLED.
- 10. STRUCTURAL STEEL SUPPLIER SHALL SUBMIT SHOP DWGS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA
- SHOWING ALL DESIGN AND FABRICATION DETAILS OF CONNECTIONS TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO START OF FABRICATION. 11. PAINTING OF STRUCTURAL STEEL SHALL BE AS SHOWN IN PROJECT
- CONFORMING TO C.I.S.C./C.P.M.A. 1-73A OR EQUIVALENT UNLESS NOTED
- 13. GALVANIZING AS INDICATED SHALL BE HOT DIPPED GALVANIZED TO CSA G164-M92 (R2003).
- 14. PROVIDE MIN 6.4mm WELD U.N.O. 15. DESIGN STEEL SECTIONS, PLATES & CONNECTIONS FOR MIN 50% OF SHEAR

SPECIFICATION SECTION 099100.

- . DESIGN, FABRICATE AND ERECT STEEL DECK IN ACCORDANCE WITH LATEST CSA 136-07, CSA 136.1-07, AND CSSBI STANDARDS.
- 2. SHEET STEEL TO BE MINIMUM GRADE A STRUCTURAL QUALITY CONFORMING TO THE ASTM A653/A653M-11 STANDARD.
- 3. STEEL DECK PROFILE TO BE AS NOTED ON THE DRAWINGS. MAXIMUM FLUTE SIZE TO BE 150 MM
- 4. GALVANIZING FOR ROOF DECK TO BE MINIMUM 76 GRAMS PER SQUARE METER, Z275, HOT DIPPED. 5. STEEL DECK MATERIAL TO BE GALVANIZED STEEL TO CONFORM TO ASTM A653/A653M-11, GRADE A: GALVANIZING TO BE HOT-DIP CONFORMING TO
- ASTM A924/A924M-10A, DESIGNATION Z275. FLUTE SPACING MAXIMUM 6" (150). REFER TO DRAWINGS FOR DECK DEPTH AND THICKNESS. CONNECT STEEL ROOF DECK TO EXISTING METAL DECK AT STANDING SEAMS AT 12" (300) o/c WITH #12 HEX WASHER HEAD, SELF-DRILLING SCREWS OF GAUGES AND LENGTHS SUITABLE FOR STEEL THICKNESS OF STRUCTURAL SUPPORT (TEKS/4 OR TEKS/5, OR EQUAL). FASTEN SIDE LAPS IN ROOF DECK AT 24" (600) MAXIMUM WITH 10-16x3/4 HEX WASHER HEADS
- (TEKS/1 OR EQUAL) WITH PILOT POINT. WELDING TO CONFORM TO THE REQUIREMENTS OF CSA W59. BY WELDERS QUALIFIED BY CANADIAN WELDING BUREAU ERECTOR COMPANIES CERTIFIED UNDER CSA-W47.1-09.
- 8. STEEL ROOF DECK IS DESIGNED AS A DIAPHRAGM DECK WITH A MAXIMUM LIVE LOAD DEFLECTION OF 1/240 OF THE SPAN. ROOF DECK IS TO BE FASTENED TO SUPPORT STEEL WITH A MINIMUM OF FOUR (4) TRANSVERSE WELDS/UNIT PER SUPPORT BASED ON 900 MM WIDE SHEETS, WITH SIDE LAP BUTTON PUNCHING AT 450 MM O/C. DECK TO BE WELDED TO ALL EXTERIOR PERIMETER STEEL AT A MAXIMUM OF 300 MM O/C.
- O. COMPOSITE STEEL FLOOR DECK IS TO BE FASTENED TO SUPPORTING STEEL AS PER REQUIREMENTS OF DECK SUPPLIER. MAXIMUM ALLOWABLE LIVE LOAD DEFLECTION 1/360 OF SPAN. 10. SUPPLY ALL CLOSURES, COVER PLATES AND ACCESSORIES.
- 11. WELDING SHALL CONFORM TO THE REQUIREMENTS OF CSA W47.1-09 AND CSA W59-03 (R2008). 12. WELDS TO BE 19 MM DIAMETER FUSION WELDS. METAL WASHERS SHALL
- BE USED AT ALL WELD LOCATIONS. 13. SUBMIT STEEL DECK SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF MANITOBA DRAWINGS TO INDICATE STEEL DECK LAYOUT, STEEL DECK TYPE AND PROFILE, AND CONNECTIONS TO FRAMING MEMBERS.

- 1. MASONRY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH CSA-A371-04 (R2009), UNLESS NOTED.
- 2. MASONRY REINFORCEMENT AND TYING SHALL BE IN ACCORDANCE WITH CSA-S304.1-04 (R2010).
- 3. CONCRETE BLOCKS SHALL CONFORM TO CSA A165.1 SERIES 4 (R2009). 4. MATERIALS USED IN CONCRETE MASONRY SHALL CONFORM TO CSA A165.1 SERIES 4 (R2009).
- MASONRY MORTAR SHALL BE TYPE S BASED ON PROPERTY AND PROPORTION SPECIFICATIONS OF CSA A179-04 (R2009) WITH A 28 DAY STRENGTH OF 12.4 MPa. PROVIDE NO. 9 A.S.W.G.28. 'DUR-O-WALL' OR 'BLOK-LOK', LADDER TYPE

STANDARD, 3.76 MM SIDE RODS AND CROSS BARS, WELDED, TO ASTM A82

- FOR COLD DRAWN STEEL. USE REINFORCING AT MAXIMUM SPACING OF 400 WITHIN EVERY SECOND MORTAR JOINT UNLESS NOTED 7. PROVIDE CLEAN-OUTS AT BOTTOM OF ALL FILLED CORES. REMOVE ALL
- MORTAR FLASH AND DEBRIS FROM WITHIN CORE PRIOR TO FILLING. 8. PROVIDE MATCHING DOWELS EXTENDING FROM CONCRETE FOUNDATION INTO MASONRY WALLS AT ALL REINFORCED CORES.
- 9. ALL REINFORCED CORES AND BLOCK COURSES SHALL BE FILLED WITH CONCRETE. VIBRATE WITH AN INTERNAL "PENCIL" TYPE VIBRATOR.
- 10. CONCRETE LIFTS SHALL NOT EXCEED 2400 MM. 11. LAP ALL REINFORCING 600 MM MINIMUM UNLESS NOTED. DETAIL TO SUIT CONCRETE LIFT CRITERIA WHERE APPLICABLE
- 12. WHERE MASONRY, CONCRETE OR STEEL LINTELS BEAR ON A MASONRY WALL, FILL TWO COURSES (400 MIN.) BELOW AND TWO CORES (400 MIN.) WIDE WITH CONCRETE UNLESS SHOWN OTHERWISE. 13. FILL ONE CORE EACH SIDE OF WALL OPENINGS WITH CONCRETE AND
- REINFORCE 1-15M VERTICAL (FULL HEIGHT), TYPICAL UNLESS SHOWN OTHERWISE. EXTEND VERTICAL REINFORCING INTO LINTEL. 14. BOND BEAMS SHALL BE A 200 DEEP U-BLOCK, FILLED WITH 20 MPa CONCRETE AND REINFORCED WITH 2-15M CONTINUOUS, TYPICAL UNLESS SHOWN OTHERWISE. PROVIDE A BOND BEAM AT THE TOP COURSE OF ALL

WALLS UNLESS SHOWN OTHERWISE.

- 15. CONTROL JOINT SPACING TO BE 7000 MM (MAXIMUM) ALONG EXTERIOR WALLS AND 9000 MM (MAXIMUM) ALONG INTERIOR WALLS.
- 16. INTERLOCK ALL WALL INTERSECTIONS OR PROVIDE MECHANICAL TIES @ 400
- 17. PROVIDE CONCRETE FILL FOR MIN ONE (1) FULL COURSE ALL AROUND TO SUPPORT EMBEDDED OR DRILLED ANCHORS, INSERTS, SERVICES, ETC.
- 18. TEMPORARY BRACING SHALL BE PROVIDED FOR ALL WALLS UNTIL STRUCTURE IS CLOSED IN, AND PERMANENT SUPPORT IS PROVIDED. SUBMIT BRACING DETAILS UNDER THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT PROVINCE, TO THE CONTRACT ADMINISTRATOR PRIOR TO THE START OF CONSTRUCTION.
- 19. MORTAR TEST SHALL BE TAKEN IN ACCORDANCE WITH CSA A304.1-04 CSA-A179-04 (R2009) AND A COPY OF RESULTS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR.
- 20. COLD-WEATHER REQUIREMENTS IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA (LATEST) SHALL BE IMPLEMENTED WHEN NECESSARY. NO "TORCHING TECHNIQUES" OR MORTAR ADMIXTURES SHALL
- BE ALLOWED. 21. CAVITY WALL BRICK TIES -

TYPICAL UNLESS NOTED OTHERWISE.

- REFER TO SECTION L. MASONRY VENEER MORTOR.
- 22. PROVIDE CONCRETE FILLED MASONRY LINTEL BLOCKS FOR OPENINGS IN NON-BEARING WALLS AS FOLLOWS UNLESS OTHERWISE INDICATED: • OPENINGS UP TO 1200 - 200 DEEP LINTEL BLOCK 2-15M.

BE ALLOWED.

- GIANT BRICK SHALL CONFORM TO CSA CAN3-A82.8-M78 (LATEST) "HOLLOWCLAY BRICK" AND SHALL HAVE A MINIMUM NET COMPRESSIVE STRENGTH OF 7.5 MPa BASED ON GROSS AREA.
- MASONRY MORTAR SHALL BE TYPE N OR S BASED ON PROPERTY AND PROPORTION SPECIFICATIONS OF CSA A179-04 (R2009) AND DESIGNED FOR USE WITH MANUFACTURERS STONE VENEERS.
- CONTROL JOINT SPACING TO BE 6000 MM (MAXIMUM) ALONG EXTERIOR
- 4. MORTAR TEST SHALL BE TAKEN IN ACCORDANCE WITH CSA A304.
- 5. COLD-WEATHER REQUIREMENTS IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA (LATEST) SHALL BE IMPLEMENTED WHEN NECESSARY. NO "TORCHING TECHNIQUES" OR MORTAR ADMIXTURES SHALL
- CAVITY WALL BRICK TIES PROVIDE TIES AS MANUFACTURED BY FERO HOLDINGS LTD. OR APPROVED EQUAL. MAXIMUM SPACING OF 400 MM VERTICALLY AND 600 MM HORIZONTALLY. U.N.O.
- PROVIDE NO. 9 A.S.W.G.28. 'DUR-O-WALL' OR 'BLOK-LOK', LADDER TYPE STANDARD, 3.76 MM SIDE RODS AND CROSS BARS, WELDED, TO ASTM A82 FOR COLD DRAWN STEEL. USE REINFORCING AT MAXIMUM SPACING OF 400 WITHIN EVERY SECOND MORTAR JOINT UNLESS NOTED.

TABLE D.1 READ IN CONJUNCTION WITH DESIGN NOTES SECTION D. CAST-IN-PLACE CONCRETE CONTROLLED CONCRETE MAX. AGG. EXPOSURE CONTENT | CEMENT DESIGN CONCRETE LOCATION SIZE STRENGTH CLASS TYPE TYPE 1 (4-7%) PILES 20 mm 35 MPa S-1 HS 1 (4-7%) **GRADE BEAMS** 35 MPa S-1 HS 20 mm 1 (4-7%) FOUNDATIONS/RETAINING WALLS 35 MPa S-1 HS 20 mm SIDEWALKS/EXTERIOR SLABS ON 2 (5-8%) **GRADE** C-2 30 MPa GU 20 mm 2 (5-8%) **EXT STRUCTURAL SLABS** C-1 20 mm 35 MPa GU INT STRUCTURAL SLABS **-** (0%) 20 mm 30 MPa N GU 1 (4-7%) **BENCHING** 20 mm 30 MPa A-3 GU - (0%) MASONRY FILL 20 MPa GU 10-14 mm

TABLE D.2	
READ IN CONJUNCTION WITH DESIGN NOTES SECTION D. CAS CONCRETE	T-IN-PLACE
CONCRETE COVER TO	
REINFORCEMENT	
PILES	75 mm
FOOTINGS AND RETAINING WALLS - BOTTOM (AND SIDES)	75 mm
FOOTINGS AND RETAINING WALLS - TOP	50 mm
WALLS - INTERIOR	25 mm
WALLS - EXTERIOR - 25M BARS OR LESS	40 mm
WALLS - EXTERIOR - BARS GREATER THAN 25M	50 mm
STRUCTURAL SLABS - TOP	25 mm
STRUCTURAL SLABS - BOTTOM	25 mm
SLABS EXPOSED TO DE-ICING SALTS - TOP AND BOTTOM	50 mm
BEAMS TO STIRRUPS - TOP AND SIDES	40 mm
BEAMS TO STIRRUPS - BOTTOM	50 mm

			TAI	BLE D.3					
READ IN CONJUNCTION WITH DESIGN NOTES SECTION D. CAST-IN-PLACE CONCRETE									
EMBEDMENT OF DOWELS									
BAR DESIGNATION	CEMENT : (MPa)	EMBEDMEI ON CON	COMPRESSION BEDMENT (BASED REGULAR TENSION EMBEDME ON CONCRETE (BASED ON CONCRETE STRENGT TRENGTH MPa) (SEE NOTE 1)						
BAR DES	REINFORCEMENT GRADE (MPa)	25 MPa	30 MPa AND OVER	20 MPa	25 MPa	30 MPa	35 MPa		
10M	400	225	200	325	300	300	300		
15M	400	300	275	490	440	400	380		
20M	400	385	350	650	580	530	490		
25M	400	480	440	1010	900	825	760		
30M	400	580	530	1210	1080	990	910		
35M	400	680	620	1690	1520	1400	1270		
NOTE 1: TOP EMBEDMENT VALUES ARE 1.3 TIMES REGULAR EMBEDMENT VALUES. TOP EMBEDMENT APPLIES TO HORIZONTAL REINFORCEMENT CAST WITHIN 300 mm OR MORE OF CONCRETE BELOW THE BAR.									
NOTE 2:	FOR EPOXY REINFORCEMENT INCREASE THESE LENGTHS BY 1.5. INCREASE THESE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.								

TABLE D.4 READ IN CONJUNCTION WITH DESIGN NOTES SECTION D. CAST-IN-PLACE CONCRETE REINFORCEMENT SPLICES (UNLESS NOTED FULL TENSION SPLICE FOR TOP BAR SIZE FULL TENSION SPLICE BARS 10M 500 400 15M 750 20M 900 700 25M 1100 1400 30M 1300 1700 1550 2000 TOP BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 300 OF CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCMENT. APPLIES TO REINFORCEMENT SPLICES NOT OTHERWISE LAP SPLICE SCHEDULE IS FOR CLASS B SPLICE UNO. FOR STANDARD EMBEDMENT DEPTH INTO CONCRETE DIVIDE TENSION LAP SPLICE NUMBERS BY 1.3. FOR EPOXY REINFORCEMENT INCREASE THESE LENGTHS BY 1.5 INCREASE THESE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

WARNING

IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR 1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY ŃSTALLATIONS. SEE PROVINCIAL REGULATION 140/92 FOR DETAILS

WHOLE NUMBERS INDICATE MILLIMETRES DECIMALIZED NUMBERS INDICATE METRES SUPV. U/G STRUCTURES DATE COMMITTEE LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

LOCATION APPROVED UNDERGROUND STRUCTURES www.stantec.com DESIGNED CHECKED B.W. DRAWN APPROVED C.J.U. S.K.B. ISSUED FOR TENDER 16.03.09 B.F RELEASED FOR AS NOTED HOR. SCALE: ISSUED FOR TENDER REVIEW 16.03.07 B.F. CONSTRUCTION VERTICAL: I ISSUED FOR 95% REVIEW 16.01.29 B.F. NO. REVISIONS DATE **2016.01.12** DATE l DATE I BY 2016 03 09 PLOT DATE:

ENGINEER'S SEAL NCE OF MAN MAR 920160 FRASER 952-2015



THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT (NEWPCC) HAULED LIQUID WASTE FACILITY PHASE II UPGRADE

GENERAL NOTES

I-0101A-S0009-001 FILE PATH: V:\1112\active\111216000\0300_drawing\0302_sheet_files\03_structural\

01/000

BID OPPORTUNITY: 952-2015

FILE NAME: 1-0101A-S0009-001.dwg

APEGM

Certificate of Authorization

Stantec Consulting Ltd.

No. 1301