



ABBREVIATIONS

ADD'L.	ADDITIONAL	INT.	INTERIOR
AF	FACTORED AXIAL FORCE	LAND.	LANDSCAPE
AHU	AIR HANDLING UNIT	LG.	LONG
ALT.	ALTERNATE	LDH	LONG DIMENSION HORIZONTAL (HSS)
ALUM.	ALUMINUM	LDV	LONG DIMENSION VERTICAL (HSS)
ARCH.	ARCHITECTURAL	LLH	LONG LEG HORIZONTAL (ANGLE)
BOT.	BOTTOM	LLV	LONG LEG VERTICAL (ANGLE)
B.L.L.	BOTTOM LOWER LAYER	MECH.	MECHANICAL
BRG.	BEARING	MIN.	MINIMUM
B.U.L.	BOTTOM UPPER LAYER	MIR.	MIRROR
CANT.	CANTILEVER	MAX.	MAXIMUM
C/C	CENTER TO CENTER	MC	FACTORED MOMENT CONNECTION
CJ	CONSTRUCTION/CONTROL JOINT	Mf	FACTORED MOMENT FORCE
CLR.	CLEAR COVER	N.F.	NEAR FACE
CONC.	CONCRETE	N.T.S.	NOT TO SCALE
CONT.	CONTINUOUS	O.C.	ON CENTER
COORD.	COORDINATE	O.F.	OUTSIDE FACE
CVR.	COVER	O/H	OVER HEAD
c/w	COMPLETE WITH	OPP.	OPPOSITE
DIA.	DIAMETER	O.S.	OUTSIDE
DIAG.	DIAGONAL	PL	PLATE
DIM.	DIMENSION	PROC.	PROCESS
DN.	DOWN	R	RADIUS
DWG.	DRAWING	RB	ROUND BAR
EA.	EACH	REINF.	REINFORCING
E.E.	EACH END	REQ'D.	REQUIRED
E.F.	EACH FACE	R.T.U.	ROOF TOP UNIT
ELEC.	ELECTRICAL	SC	SAW CUT
ELEV.	ELEVATION	SIM.	SIMILAR
EMB.	EMBEDDED OR EMBEDMENT	S.O.G.	SLAB ON GRADE
EOD	EDGE OF PERIMETER DECK ANGLE	SPC'S.	SPACES
EP	EMBEDDED PLATE	S.S.	STAINLESS STEEL
EQ.	EQUAL	S.S.T.	SIMPSON STRONG-TIE
EQUIP.	EQUIPMENT	STD.	STANDARD
E.S.	EACH SIDE	T&B	TOP & BOTTOM
E.W.	EACH WAY	Tf	FACTORED TENSILE FORCE
EXT.	EXTERIOR	THK.	THICK
EX.	EXISTING	TJ	TIE JOIST
F.F.	FAR FACE	T.O.	TOP OF
FTG.	FOOTING	T.O.C.	TOP OF CONCRETE
GALV.	HOT DIPPED GALVANIZED	T.O.S.	TOP OF STEEL
H.O.E.	HOOK ONE END	T.L.L.	TOP LOWER LAYER
H.E.E.	HOOK EACH END	T.U.L.	TOP UPPER LAYER
H.E.F.	HORIZONTAL EACH FACE	TYP.	TYPICAL
HK.	HOOK	U.N.O.	UNLESS NOTED OTHERWISE
HORIZ.	HORIZONTAL	U/G	UNDER GROUND
I.S.	INSIDE	U/S	UNDERSIDE
I.F.	INSIDE FACE	V.E.F.	VERTICAL EACH FACE
INCL.	INCLUDING	VERT.	VERTICAL
		w/	WITH

GENERAL NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL BUILDING CODE OF CANADA, 2015.
- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT OF PRINCE EDWARD ISLAND.
- NO ALTERATIONS TO STRUCTURAL DETAILS SHALL BE MADE WITHOUT THE WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER. ALL OPENINGS IN SLABS OR WALLS ARE TO BE PRE-FORMED AND ALL HOLES SLEEVED. CONSTRUCTION ERRORS ARE TO BE DOCUMENTED AND REPORTED TO THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH SUBSEQUENT WORK.
- PERIODIC AND DISCRETIONARY SITE OBSERVATIONS ARE MADE AT THE JOB SITE BY THE STRUCTURAL ENGINEER AND ARE NECESSARILY LIMITED IN SCOPE TO OBSERVATION OF WORK IN PROGRESS AT THE TIME OF THE SITE OBSERVATION. THESE SITE OBSERVATIONS DO NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PROVIDE CONTINUOUS ON-SITE SUPERVISION OF ALL STRUCTURAL WORK TO ENSURE THAT BOTH THE INTENT AND DETAILS OF THE DRAWINGS AND SPECIFICATIONS ARE BEING FOLLOWED.
- THE CONTRACTOR SHALL COORDINATE DETAILS SHOWN ON THE STRUCTURAL DRAWINGS WITH ALL OTHER DISCIPLINES DRAWINGS AND SPECIFICATIONS.
- THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW:
  - CONCRETE REINFORCING STEEL.
  - CONCRETE MIX DESIGNS.
- ALL ADHESIVE ANCHORS TO BE HILTI HAS-V-36 RODS TYPICAL, HAS-V-36 HDG RODS FOR ANCHORS NOTED TO BE GALVANIZED, COMPLETE WITH HILTI HIT-HY 200 INJECTABLE ADHESIVE (OR APPROVED EQUAL), UNLESS NOTED OTHERWISE. INSTALL ALL CHEMICAL ANCHORS AS PER MANUFACTURERS INSTRUCTIONS. CHEMICAL ANCHORS TO BE INSTALLED BY AN EXPERIENCED APPLICATOR, TRAINED BY THE ANCHOR MANUFACTURER. CONTRACTOR SHALL SUBMIT TRAINING CERTIFICATE(S) TO OWNERS REPRESENTATIVE UPON REQUEST.
- ALL EXPANSION ANCHORS TO BE HILTI KWIK BOLT 3 (OR APPROVED EQUAL) UNLESS NOTED OTHERWISE. INSTALL ALL EXPANSION ANCHORS AS PER MANUFACTURERS INSTRUCTIONS.
- ALL DESIGN LOADS NOTED ON DRAWINGS ARE WORKING LOADS U.N.O..
- ALL STANDARDS AND SPECIFICATIONS NOTED SHALL REFLECT "LATEST EDITION".
- COORDINATE ALL DIMENSIONS WITH ALL OTHER DISCIPLINE DRAWINGS. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

FOUNDATIONS

- FOUNDATIONS ARE DESIGNED TO BEAR ON UNDISTURBED NATIVE TILL OR FULLY COMPACTED ENGINEERED FILL WITH A MINIMUM FACTORED GEOTECHNICAL BEARING RESISTANCE AT ULTIMATE LIMIT STATES (ULS) OF 200 kPa AND A MINIMUM FACTORED GEOTECHNICAL BEARING RESISTANCE AT SERVICEABILITY LIMIT STATES (SLS) OF 150 kPa, AS PER FUNDY ENGINEERING REPORT DATED FEBRUARY 2017, PROJECT# 12284.
- ALL ENGINEERED (STRUCTURAL) FILL AND BACKFILLING IS TO BE PLACED UNDER THE CONTINUOUS SUPERVISION OF THE GEOTECHNICAL ENGINEER.
- THE GEOTECHNICAL ENGINEER SHALL INSPECT ALL PROPOSED BEARING SURFACES AND CONFIRM THAT THE ALLOWABLE BEARING CAPACITY STATED IN THE GEOTECHNICAL REPORT CAN BE ACHIEVED PRIOR TO PLACEMENT OF ANY CONCRETE IN FOOTINGS AND THAT BEARING SURFACE IS FREE FROM FROST AND WATER. IF THE GEOTECHNICAL ENGINEER DEEMS BEARING SURFACE CAN NOT PROVIDE THE ALLOWABLE BEARING CAPACITY THE CONTRACTOR IS TO LOWER FOOTINGS AS DIRECTED BY GEOTECHNICAL ENGINEER TO A LEVEL THAT CAN PROVIDE THE ALLOWABLE BEARING CAPACITY.
- SOIL DESIGN VALUES BASED ON WELL COMPACTED STRUCTURAL FILL.

.1. SOIL UNIT WEIGHT .....	21.0 kN/m <sup>3</sup>
.2. K <sub>0</sub> .....	0.50
.3. MODULUS OF SUBGRADE REACTION .....	60,000 kN/m <sup>3</sup>
- NO PIPING/DUCTBANKS/CONDUIT ARE TO PASS UNDER ANY LOAD BEARING FOUNDATIONS OR WITHIN THEIR ASSOCIATED ZONE OF INFLUENCE. STEP/LOWER FOUNDATIONS TO ALLOW PIPES/DUCTBANKS/CONDUIT TO BE SLEEVED THROUGH THE FOUNDATION WALL OR PASS OVER TOP OR OUT OF THE ZONE OF INFLUENCE OF THE ISOLATED FOOTING. CONTRACTOR TO COORDINATE WITH MECHANICAL/ELECTRICAL/CIVIL DRAWINGS. THE LAYOUT OF STEPPED/LOWERED FOOTINGS SHOWN ON THE STRUCTURAL DRAWINGS IS SCHEMATIC ONLY AND MAY NOT SHOW ALL LOCATIONS WHERE STEPPED/LOWERED FOOTINGS ARE REQUIRED. CONTRACTOR IS TO COORDINATE ALL STEPPED/LOWERED FOOTING LOCATIONS AND DEPTHS WITH ALL SUB-TRADES AND SUBMIT ALL PROPOSED FOOTING LOCATIONS AND DEPTHS TO ENGINEER PRIOR TO EXCAVATION FOR FOOTINGS, REINFORCING AND FORMWORK FABRICATION. REFER TO TYPICAL FOOTING DETAILS.
- PROVIDE SHEAR KEYS IN THE TOP OF ALL CONCRETE WALL FOOTINGS, CENTERED UNDER WALL LOCATIONS.

REINFORCED CONCRETE

- ALL CONCRETE, CONCRETE MATERIALS, FORMS, WORKING PROCEDURES AND THE LIKE SHALL CONFORM TO CSA A23.1, LATEST EDITION, UNLESS NOTED OTHERWISE.
- MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS AND CLASS OF EXPOSURE SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON DRAWINGS:

A. MUD SLABS .....	20 MPa/N
B. TANK WALLS AND SLABS .....	35 MPa/F-1
- CONCRETE PROTECTIVE COVER TO REINFORCING STEEL SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON DRAWINGS:

.1 CAST AGAINST GROUND - NO FORMWORK .....	3" (75mm)
.2 EXPOSED TO EARTH OR WEATHER .....	2 3/8 " (60mm)
- CONSTRUCTION JOINTS SHALL BE LOCATED SO AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE. LOCATIONS SHALL BE AS SHOWN ON THE DRAWINGS OR CONTRACTOR IS TO SUBMIT PROPOSED CONSTRUCTION JOINTS FOR THE STRUCTURAL ENGINEER'S APPROVAL. CONSTRUCTION JOINTS SHALL BE KEYED & REINFORCEMENT SHALL NOT BE INTERRUPTED.
- ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD POINT STRENGTH OF 400 MPa AND SHALL CONFORM TO CSA G30.18-M, LATEST EDITION.
- ALL W.W.F. SHALL CONFORM TO ASTM A82 AND ASTM A185, LATEST EDITIONS.
- UNLESS NOTED OTHERWISE, AT ALL SPLICE LOCATIONS, REINFORCING STEEL SHALL BE PROVIDED WITH A CLASS 'B' TENSION LAP, OR WHEN BARS OF DIFFERENT SIZES (35M OR SMALLER) ARE LAP SPLICED IN TENSION, THE SPLICE LENGTH SHALL BE THE LARGER OF THE DEVELOPMENT LENGTH OF THE LARGER BAR OR THE SPLICE LENGTH OF THE SMALLER BAR, TO CSA A23.3, LATEST EDITION.
- ALL TANK CORNERS AN INTERSECTIONS TO HAVE ADDITIONAL BARS AS NOTED IN DETAIL 4/S05.
- ALL HOOKS SHOWN TO BE STANDARD 90 DEGREE HOOK U.N.O..

DESIGN INFORMATION/ LOADS

- TANK SUSPENDED SLAB AT ELEVATION 14.780m DESIGNED FOR A UNIFORM SOIL LOAD OF 12.8 KPa AND A UNIFORM SURCHARGE OF 12.0 KPa.
- TANK SUSPENDED SLAB AT ELEVATION 15.530m DESIGNED FOR A UNIFORM LIVE LOAD OF 4.8 KPa.
- EXTERIOR TANK WALLS DESIGNED FOR A MAXIMUM FINISHED GRADE ELEVATION OF 15.390m, FLAT U.N.O.
- EXTERIOR TANK WALLS DESIGNED FOR A 12.0 KPa SURCHARGE (VERTICAL).
- EXTERIOR TANK WALLS DESIGNED FOR A MAXIMUM WATER ELEVATION OF 14.480m.
- GROUND WATER LEVEL IS ASSUMED TO BE BELOW THE BASE SLAB.

0	ISSUED FOR TENDER	01.20 2020
revisions		date
project		project

GREEN GABLES-PHASE 4  
FIRE PROTECTION SYSTEM  
AND EMERGENCY POWER  
QUEENS CO., PEI

STRUCTURAL  
NOTES

designed	SLJM	conqu
date	OCT-2019	
drawn	SLO	dessiné
date	OCT-2019	
approved		approuvé
date		
Tender		Scoumission
PWGC Project Manager	Administrateur de projets TP/GC	
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