WALL TYPES

W1

PRE-FINISHED METAL CLADDING
19x64 HORIZONTAL WOOD STRAPPING
@ 610 O.C.
VAPOUR PERMEABLE WEATHER BARRIER
75 mm RIGID INSULATION - RSI 2.64 (R15) ON
VERTICAL Z-GIRTS @ 610 mm O.C.
38 x 38 HORZ. WOOD STRAPPING
@ 610 O.C.
38 mm RIGID INSULATION - RSI 1.32 (R7.5)
AIR / VAPOUR BARRIER MEMBRANE
12.5 mm OSB SHEATHING
2 - 38 x 140 STUDS @ 400 O.C.
9.5 mm OSB SHEATHING
PRE-FINISHED METAL LINER

W2

2 HOUR FIRE RATED WALL
(NBC - DESIGN W2d NON-LOADBEARING)

PREFINISHED METAL LINER
2 -15.9 mm TYPE X GYPSUM BOARD***
9.5 mm OSB SHEATHING
2 -38 x 140 STUDS @ 400 O.C.
9.5 mm OSB SHEATHING
2 - 15.9 mm TYPE X GYPSUM BOARD***
PREFINISHED METAL LINER

W3

PRE-FINISHED METAL CLADDING
19x64 HORIZONTAL WOOD STRAPPING
@ 610 O.C.
VAPOUR PERMEALE WEATHER BARRIER
75 mm RIGID INSULATION - RSI 2.64 (R15) ON
VERTICAL Z-GIRTS @ 610 mm O.C.
38 x 38 HORZ. WOOD STRAPPING
@ 610 O.C.
38 mm RIGID INSULATION - RSI 1.32 (R7.5)
AIR / VAPOUR BARRIER MEMBRANE
12.5 mm OSB SHEATHING
2 - 38 x 140 STUDS @ 400 O.C.
9.5 mm OSB SHEATHING
12 mm CEMENT-FIBRE BOARD

W4

PREFINISHED METAL LINER
9.5 mm OSB SHEATHING
2 - 38 x 140 STUDS @ 400 O.C.
9.5 mm OSB SHEATHING
12 mm CEMENT-FIBRE BOARD

*** THE JOINTS OF THE OUTER LAYER OF FINISH ON BOTH SIDES OF THE WALL SHALL BE TAPED AND FINISHED. FASTENER TYPES AND SPACING SHALL CONFORM TO CSA A82.31-M, "GYPSUM BOARD APPLICATION"

DOOR TYPES

D01

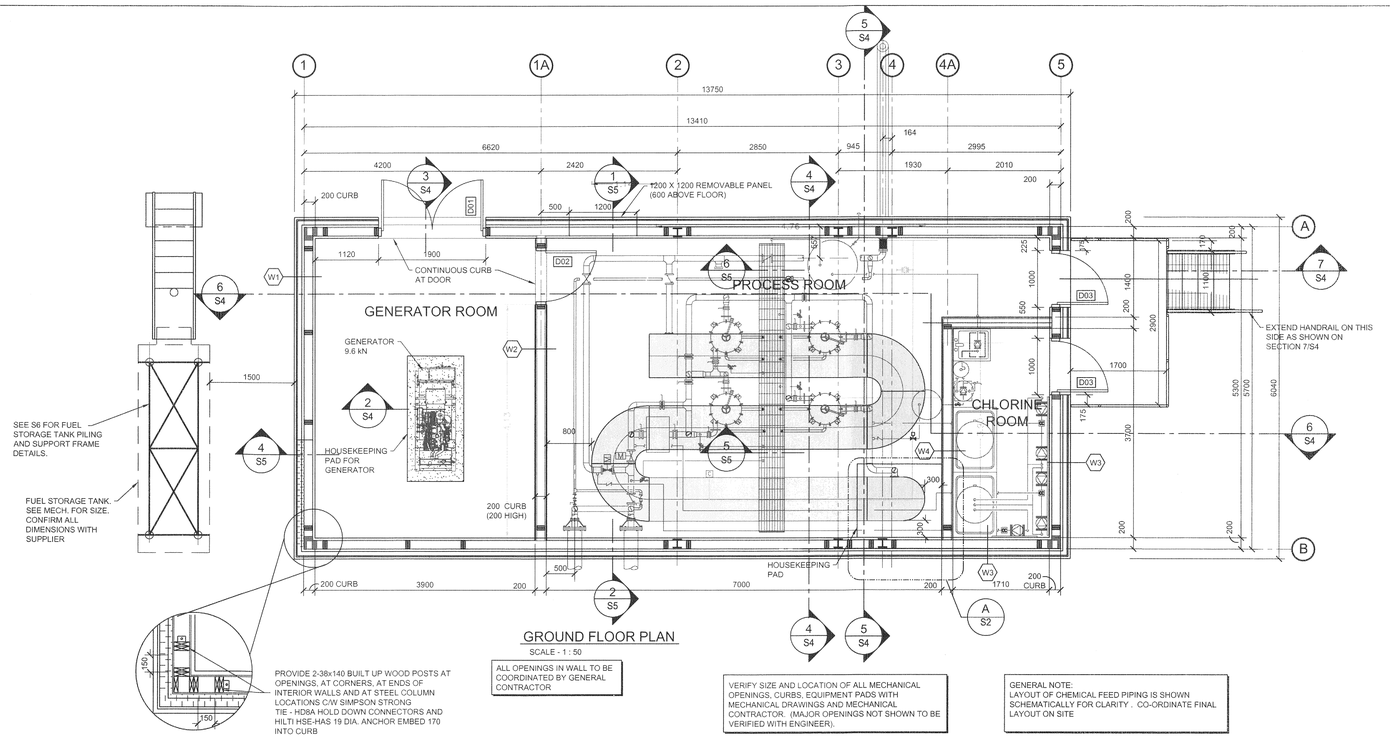
TWO INSULATED METAL DOORS
PAINTED, 900 x 2150 x45
DOOR CLOSER
1-½ PR. HEAVY DUTY HINGES
ASTRAGAL
WEATHER STRIPPING
DOOR SWEEP
ALUMINUM THRESHOLD
FLUSH BOLTS
PANIC HARDWARE
THERMALLY BROKEN PRESSED STEEL FRAME PAINTED

D02

1-1/2 HR. FIRE RATED HOLLOW METAL DOOR
PAINTED, 900 x 2150 x45
DOOR CLOSER
1-1/2 PR. HEAVY DUTY HINGES
WEATHER STRIPPING
DOOR SWEEP
ALUMINUM THRESHOLD
LEVERED PASSAGE SET
1-1/2 HR. FIRE RATED PRESSED STEEL FRAME PAINTED

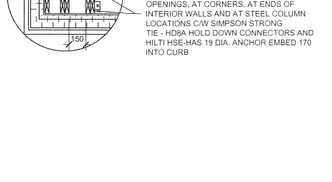
D03

INSULATED METAL DOOR
PAINTED, 900 x 2150 x45
DOOR CLOSER
1-½ PR. HEAVY DUTY HINGES
WEATHER STRIPPING
DOOR SWEEP
ALUMINUM THRESHOLD
PANIC HARDWARE
LEVERED LOCKSET
THERMALLY BROKEN PRESSED STEEL FRAME PAINTED



GROUND FLOOR PLAN

SCALE - 1 : 50



PROVIDE 2-38x140 BUILT UP WOOD POSTS AT OPENINGS; AT CORNERS, AT ENDS OF INTERIOR WALLS AND AT STEEL COLUMN LOCATIONS C/W SIMPSON STRONG TIE - HD8A HOLD DOWN CONNECTORS AND HILTI HSE-HAS 19 DIA. ANCHOR EMBED 170 INTO CURB

ALL OPENINGS IN WALL TO BE COORDINATED BY GENERAL CONTRACTOR

VERIFY SIZE AND LOCATION OF ALL MECHANICAL OPENINGS, CURBS, EQUIPMENT PADS WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR. (MAJOR OPENINGS NOT SHOWN TO BE VERIFIED WITH ENGINEER).

GENERAL NOTE:
LAYOUT OF CHEMICAL FEED PIPING IS SHOWN SCHEMATICALLY FOR CLARITY . CO-ORDINATE FINAL LAYOUT ON SITE

Nunavut

NOTES: GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS WITH FINAL ARCHITECTURAL AND MECHANICAL DRAWINGS. NOTIFY THE ENGINEERS OF ANY ERRORS AND / OR OMISSIONS PRIOR TO CONSTRUCTION FOR DIRECTION. DO NOT SCALE THIS DRAWING.

GENERAL NOTES

1. Check all dimensions on structural drawings with other drawings. Report any inconsistencies before proceeding with the work. DO NOT SCALE THESE DRAWINGS.
2. All work shall comply with current provisions of the National Building Code, the Workplace Safety and Insurance Board and best trade practices. Work shall comply with all local and provincial regulations and with applicable C.S.A. standards. In all cases, the latest editions of codes and standards shall apply.
3. Structural design complies with the minimum standards of Part 9 of the National Building Code 2010.
4. Before submitting tenders contractors shall carefully examine existing conditions to establish the extent of the work.
5. Locate all buried services prior to excavation. The contractor shall be responsible for all temporary bracing, shoring and dewatering necessary to undertake the work.
6. The contractor is responsible for removing excess materials and cleaning up on completion of the work.
7. The contractor shall verify dimensions before construction and report discrepancies before proceeding with the work.

FOUNDATIONS (PILES)

1. Refer to Geotechnical Report No. OTT-00208308-A0 prepared by **exp** Services Inc. and dated January 3, 2013.
2. Pile installation to be monitored by a qualified Geotechnical Engineer or Technologist.
3. Pile holes should be installed when the active layer is frozen. This will allow clean, dry holes to be drilled.
4. The pile shall be vibrated to insure a continuous column sand slurry around the outside of the pile.
5. Maintain accurate records of slurry volumes and pile depths.
6. Once the pile has been installed, a wedge can be used to ensure plumbness and line.
7. Ensure that the pile and bracing portion within the active zone have a bond breaker system installed.
8. Freeze back around the piles may take 2 - 3 months. Do not apply structural loads until pile freezeback is complete.
9. Contractor to confirm with equipment suppliers, dimensions and all other critical details prior to construction. Report discrepancies and obtain approval prior to proceeding with construction.

MATERIALS SPECIFICATIONS

1. Pipe piles: Hollow structural steel sections, minimum yield strength of 350 MPa, size and wall thickness as indicated on the drawings. 141 mm diameter x 6.4 mm thickness, sandblasted.
2. Sand slurry: shall not contain particles greater than 5mm or have less than 10% fines passing No. 200 sieve size. The sand should have a salinity of less than 5 ppt.
3. Water for slurry : potable with a placement temperature less than 10° C.
4. Concrete - materials to CSA-A23.1-09. Compressive strength minimum 35 MPa. 6% +/- 1% entrained air for concrete. Slump 70 +/- 20mm. Maximum water/cement ratio: 0.43. Maximum aggregate size 20 mm. Type GU cement. Exposure Class : C1
5. Formwork - to CSA-A23.1-09. Use only new forming materials for architecturally exposed surfaces. Form release agent shall be nonstaining, compatible with finishes where applicable.
6. Rebar - deformed billet steel bars to CSA G30.18M-09, Grade 400. Type W for welded rebar.
7. Mesh - welded wire fabric to ASTM A185/A185M-07.
8. Rolled structural steel shapes - General requirements to CSA S16-09, rolled shapes to CSA G40.21, 350W minimum. Channels, angles and plates 300W.
9. Hollow structural sections - to CSA-G40.20/G40.21-04(2009), 350W, Class H.
10. Bolts, nuts and washers - General requirements to CSA-S16-09, ASTM A325M-09. Hot dipped galvanized as required.
11. Welding : to CSA W59-03 (R2008), E480XXCH or LH basic electrodes conforming to CSA W48-06 (R2011). Welding shall be performed only by companies certified by Canadian Welding Bureau as follows: Fusion Welding - certified to CSA W47.1-09; Resistance Welding - certified to CSA W55.3-08. Workmanship to best trade practices for cold weather installations.
12. Prime paint to Structural Steel - to CISC/CPMA STANDARD 2-75, one shop coat, one touch up field coat.
13. Wood Framing Material - SPF Grade No. 1 or 2. All lumber in direct contact with concrete, soil or moisture to be pressure treated.
14. Rough Carpentry - Timber Construction shall conform to Part 9 of NBC 2010 and CSA 086-09.
15. Nails and Staples - materials to ASTM F11667-11e1 Common and spiral ardox nails to be galvanized.
16. Prefinished Metal Roofing - Sheet steel to ASTM A653/A653M-11, commercial quality, galvanized, Z275 coating, designation, factory precoated with paint finish.

    Colour: White White QC8317
    Profile: Ideal Roofing Pocket Rib
    Class: FIS
    Thickness: 0.53 mm base metal thickness
17. Preformed Cladding/Siding - Sheet steel to ASTM A653/A653M-11, grade A, galvanized, Z275 coating designation, factory precoated with paint finish, 2 coat system dry paint film thickness of 0.025 mm +/- 0.005 mm both faces conforming to film test procedures described in CSSB1 Bulletin No. 5 and ASTM D1005-95 (R2007), Stelco 10000 Series or equal.

    Colour: White White QC16076
    Profile: 36 mm deep x 190 mm flute spaces, preformed interlocking joints, acceptable material
    Vic West CL622R with rib profile or equal
    Thickness: 0.61 mm base metal thickness
    Fascia and Trims: same colour and thickness as cladding
18. Wall and Roof Insulation: Rigid closed cell polystyrene: to CAN/ULC-S701-11, type 4, compressive strength at 5% deformation 275 kPa, thermal resistance of 0.87 RSI/25 mm, thicknesses as specified, square shiplapped edges. Acceptable material Styrofoam SM or approved equal.
19. Underside Rigid Insulation: Rigid closed cell polystyrene: to CAN/ULC-S701-11, type 4, compressive strength at 5% deformation 275 kPa, thermal resistance of 0.87 RSI/25 mm, thicknesses as specified, square shiplapped edges. Standard of Acceptance Styrofoam SM or approved equivalent.
20. Girts: "Z" profile, minimum 1.3 mm thick, height to suit insulation thickness, formed from galvanized sheet steel to ASTM A653/A653M-11, Grade A, with zinc coating designation Z275, with 50 mm wide bottom flange and 64 mm wide top flange. Terminations: perimeter framing of "L" or "C" profiles to match "Z" girts.
21. Fasteners for girts: epoxy coated 4mm dia. steel screws of sufficient length to penetrate through deck.
22. Fasteners for metal roofing: self-drilling cadmium plated steel purpose made, head colour same as exterior steel roofing, neoprene washer exposure.
23. Fasteners for metal cladding: to ASTM B18.6.4 cadmium plated steel purpose made, head colour same as exterior sheet, dished steel/neoprene.
24. Sealants: single component acrylic, colour to match roofing/ cladding.
25. Polyethylene Sheets - 0.25 mm (10 mil) clear polyethylene film.

REINFORCEMENT PLACEMENT

1. Minimum clear cover
   - For concrete placed against earth.....75 mm
   - For concrete placed in forms but in contact with earth and weather.....50 mm
   - Interior slabs and walls.....40 mm
   - Curb .....40 mm
2. Laps

   - lap all bars 36 bar diameters or 450 mm minimum, whichever is greater, unless otherwise indicated.
3. Chairs for support of slab reinforcing spaced at maximum of 1.0 m in either direction. Supply support bars, chairs and carriers.

DESIGN SERVICE LOADS

DEAD LOADS

FLOOR	4.8 kPa
ROOF (Self weight)	1.35 kPa
Superimposed Loads (Mech. Allowance)	0.5 kPa

LIVE LOADS

FLOOR 7.2 kPa

ROOF SNOW LOAD
Ss = 3.4 kPa
Sr = 0.2 kPa
Is = 1.25 ULS
Is = 0.9 SLS

S = Is [Ss (Cb Cw Cs Ca) + Sr
= 1.25 [3.4 (0.8)(1.0)(1.0)(1.0) + 0.2]
= 3.6 kPa

LATERAL LOADING
WIND LOAD (Governs)
P= Iw q Ce Cp Cg
q(1:50) = 0.64 kPa
Cp Cg = 1.95 for walls
Cp Cg = 2.0 for roof
Ce = 0.9

Iw = 1.25 ULS Iw = 0.75 SLS

WIND EAST - WEST
= 21 kN

WIND NORTH - SOUTH
= 49 kN

EARTHQUAKE LOAD

Site Classification C
Sa (0.2) = 0.188
Sa (0.5) = 0.095
Sa (1.0) = 0.052
Sa (2.0) = 0.015
Fa = 1.0
Fv = 1.0
S (T = 0.2) = 0.1880
S (T = 0.5) = 0.0950
S (T = 1.0) = 0.0520
S (T = 2.0) = 0.0150
S (T > 4.0) = 0.0075
R_D = 1.7
R_O = 3.0
I_E = 1.5 ULS No Irregularities
$V = \frac{2}{3} S(0.2) I_E$ W/ Rd Ro)
= 2/3 (0.188)(1.5) W/(3.0)(1.7)
= 0.0369W
North-South or East-West
V= 10.5 kN

ROOF & WALL SHEATHING

Plywood / OSB Nailing Requirements	
Wall Sheathing (OSB, thickness as indicated)	
Walls along Grid Lines (A) and (B), (1), (1A), (4A) and (5)	
Wall Sheathing (Both Faces)	
@ Panel Edges	150 mm O.C.
@ Intermediate Framing	300 mm O.C.
Roof Sheathing (Douglas Fir Plywood, thickness as indicated, use H-Clips as required).	
@ Panel Edges	150 mm O.C.
@ Intermediate Framing	300 mm O.C.
76 mm (3") Long Common Wire Nails 3.66 mm (Diameter)	

No.	DESCRIPTION	DATE	BY	APP'D
3	ISSUED FOR TENDER	23/04/2014	M.N.	K.A.B.
2	100% SUBMISSION	07/02/2014	M.N.	K.A.B.
1	90% SUBMISSION	06/12/2013	M.N.	K.A.B.
0	75% SUBMISSION	22/03/2013	M.N.	K.A.B.

REVISIONS

REGISTERED PROFESSIONAL ENGINEER K.A. BAKER LICENSEE N.W.T. 2014/04/22

PERMIT OF PRACTICE
EXP SERVICES INC.
Signature Kevin A. Baker
Date 2014/04/22
PERMIT NUMBER: P483
NT/NU Association of Professional Engineers and Geoscientists

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DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES

PROJECT
REPULSE BAY, NUNAVUT
WATER TRUCK FILL STATION
PROJECT: 12-3002

TITLE
GROUND FLOOR PLAN AND GENERAL NOTES

design by	K.A. BAKER	project no.	OTT-00208308-A0
drawn by	M. NUGENT	drawing no.	S1
checked by	K.A. BAKER		
date	MAR. 2013		
scale	AS NOTED		