

STRUCTURAL DESIGN CRITERIA

1. ROOF LOADS:

i) DEAD:
ROOF ASSEMBLY = 0.75 kPa
M & E ALLOWANCE = 0.25 kPa
(OWSJ & STRUCTURAL STEEL NOT INCLUDED)
TOTAL DEAD LOADS = 1.0 kPa

ii) SNOW LOADS:

SNOW LOAD $S = 3.50 \text{ kPa}$ + DRIFTING SNOW WHERE NOTED.
SNOW IMPORTANCE FACTOR, $I_s = 1.00$ (ULS) (INCLUDED IN ABOVE), 0.9 (SLS)
 $C_w = 1.0$

2. MECHANICAL FLOOR:

i) DEAD
150 COMPOSITE DECK = 3.04 kPa
100 HOUSEKEEPING PADS = 2.35 kPa
(OWSJ & STRUCTURAL STEEL NOT INCLUDED)
TOTAL DEAD LOADS = 5.39 kPa

iii) LIVE LOADS:

MECHANICAL FLOOR = 4.80 kPa (SPECIFIED)

3. SUSPENDED SLAB:

i) DEAD
SELF WEIGHT OF CONCRETE

ii) LIVE LOAD = 1.0 kPa

4. WIND:

- $q 1/50 = 0.38 \text{ kPa}$
- $q 1/10 = 0.29 \text{ kPa}$
- $W = 1.0$
- $C_e = \text{BASED ON 'OPEN TERRAIN'}$
- $C_{gt} = \text{CATEGORY 2 (0.45 TO 0.3)}$
- $C_{p1} = \text{OVERALL BUILDING - PER FIG. 1-7}$
- $C_{p2} = \text{WALLS - PER FIG. 1-8}$
- $C_{p3} = \text{ROOF - PER FIG. 1-9}$
- $C_{p4} = \text{ROOF WIND UPLIFT - SEE DIAGRAM (UNFACTORED)}$

5. SEISMIC:

- $S_a(0.2) = 0.403$
- $S_a(0.5) = 0.271$
- $S_a(1.0) = 0.131$
- $S_a(2.0) = 0.046$
- $P_g A = 0.196$
- $C = 1.0$
- $F_a = 1.0$
- $F_v = 1.0$
- $M_v = 1.0$
- $R_d = 1.5$
- $R_o = 1.3$
- $I_e = 1.0$
- $I_e F_a S_a(0.2) = 0.403$

6. CODES AND STANDARDS:

- NATIONAL BUILDING CODE OF CANADA 2010.
- MASONRY DESIGN TO CSA S304-04.
- STRUCTURAL STEEL DESIGN TO CAN/CSA S16-09.
- BUILDING STRUCTURE IMPORTANCE CATEGORY = NORMAL

GENERAL NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES. ALL ELEVATIONS ARE IN METRES.
- STRUCTURAL STEEL GRADES:
- W-SHAPES - CSA G40.21 350W
- HSS SHAPES - ASTM A500 GRADE C
- ALL OTHERS - CSA G40.21 300W
- SEE 502 SERIES DRAWINGS FOR STEEL ELEVATIONS.
- SEE DWG. 503-2 FOR TYPICAL BRACING DETAILS.
- CONFIRM EDGE OF DECK (E.O.D.) WITH ARCHITECTURAL DRAWINGS.
- ALL COLUMNS TO HAVE CAP $\Phi 10$.
- COLUMN HEIGHT TO MATCH THE TOP OF STEEL OF THE BEAM FRAMING INTO THE COLUMN.
- LEGEND AND GENERAL NOTES APPLY TO ALL SERIES 500 DRAWINGS.
- CEMENT BOARD TO BE ATTACHED TO BOTTOM CHORD OF THESE JOISTS (SEE ARCH.).

LEGEND

- Af - FACTORED AXIAL FORCE (TENSION OR COMPRESSION) (BASED ON $R_d = 1.3$, $R_o = 1.0$, $I = 1.0$ (U.N.O.))
B - BOTTOM OF MEMBER CONNECTION
c/c - CENTRE TO CENTRE
CL - CONTINUOUS
CONT. - CONTINUOUS
E.O.D. - EDGE OF DECK
EQ. SPCS. - EQUAL SPACES
EL - ELEVATION
F.P. - FLAT PLATE
GALV. - GALVANIZED
H.P. - HIGH POINT
HORIZ. - HORIZONTAL
Lg. - LONG
LDH - LONG DIMENSION HORIZONTAL
LLH - LONG LEG HORIZONTAL
MAX. - MAXIMUM
MF - FACTORED MOMENT
N/A - NOT APPLICABLE
N.I.C. - NOT IN CONTRACT
OPNG. - OPENING
OWSJ - OPEN WEB STEEL JOIST
PLL - LIVE POINT LOAD
STD. - STANDARD
T - TOP OF MEMBER CONNECTION
Tf - FACTORED TENSILE FORCE (BASED ON $R_d = 1.3$, $R_o = 1.0$, $I = 1.0$ (U.N.O.))
T.O. - TOP OF
TYP. - TYPICAL
U.N.O. - UNLESS NOTED OTHERWISE
us - UNDERSIDE
w/ - WITH
W.P. - WORK POINT
VERT. - VERTICAL
- - - - - VERTICAL CROSS BRACING LOCATION
- - - - - VERTICAL CHEVRON BRACING LOCATION
- - - - - VERTICAL SINGLE STRUT BRACING LOCATION
- - - - - VERTICAL 'K' BRACING LOCATION
* - CONFIRM DIMENSION w/ ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
** - CONFIRM DIMENSION w/ REVIEWED SHOP DRAWING PRIOR TO CONSTRUCTION.
■ - TYPE 1 BRACING
▲ - TYPE 2 BRACING
✕ - TYPE 3 BRACING
RD - ROOF DRAIN OR RAIN WATER LEADER. LOCATION AND SIZE FROM MECH. DRAWINGS.
100 - LOCAL ELEVATION DIFFERENCE FROM TYP. T.O.S. ELEVATION FOR STEEL FRAMING (MILLIMETRES). ADJUST T.O.S. STEEL ELEVATION FOR SUPPORTED FRAMING TO SUIT.

JOIST SCHEDULE

MARK	DEPTH (mm)	LIVE LOAD DEFLECTION LIMIT	REMARKS
J-1	500	SPAN/360	100 SHOE DEPTH
J-2	500	SPAN/360	150 SHOE DEPTH, CRANKED
J-3	500	SPAN/360	150 SHOE DEPTH
J-4	600	SPAN/360	100 SHOE DEPTH (DRY STORAGE BUILDING)

NOTES:

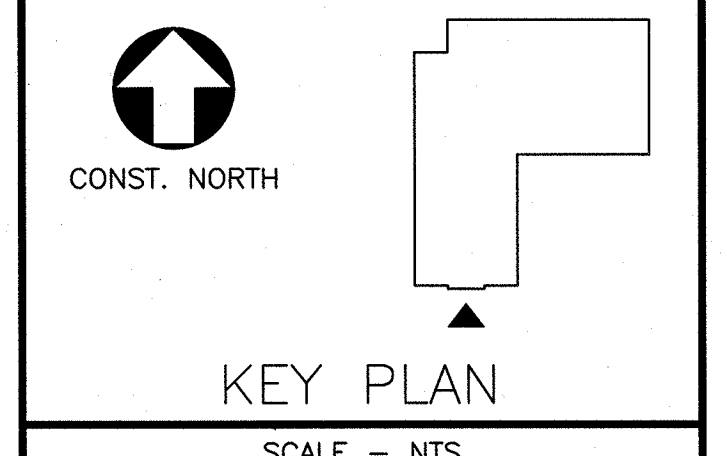
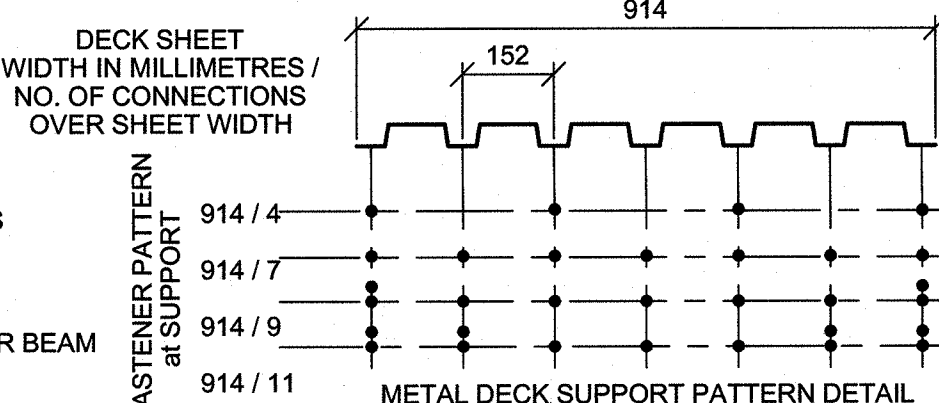
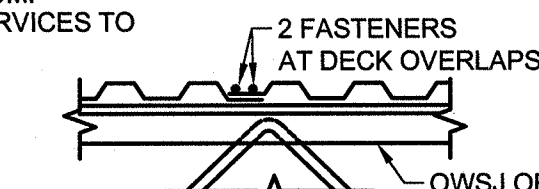
- SPECIFIED WIND FORCES ARE GROSS VALUES. NEGATIVE INDICATES UP-LIFT. USE DEAD LOAD = 0.9 kPa WITH WIND LOAD COMBINATION.
- SEE PLAN FOR TIE-JOIST LOCATIONS.
- JOIST BRIDGING DESIGN BY JOIST MANUFACTURER.
- ATTACHMENTS FOR MECHANICAL, ELECTRICAL AND OTHER SERVICES SHALL BE MADE BY USING APPROVED CLAMPING DEVICES OR U-BOLT-TYPE CONNECTORS APPROVED BY OWSJ SUPPLIERS IN WRITING. NO DRILLING OR CUTTING OF JOISTS IS PERMITTED.
- SEE DRAWING 501-3 FOR ROOF WIND UPLIFT DIAGRAM.
- JOIST SHOE DEPTHS ARE TO BE CONFIRMED WITH APPROVED SHOP DRAWINGS PRIOR TO STEEL FABRICATION.

METAL DECK SCHEDULE

LOCATION	TYPE	SIZE	FASTENING PATTERN (U.N.O.)	SIDE LAP CONNECTIONS	NOTES
CANOPY ROOF @ T.O.S. EL. 210.400	-	0.91	914 / 7	#10 SCREWS @ 300 c/c	
MAIN ROOF @ T.O.S. EL. 210.800	-	0.91	914 / 9	#10 SCREWS @ 150 c/c	
PENT. FLOOR @ T.O.S. EL. 212.950	COMPOSITE	0.91	914 / 7	#10 SCREWS @ 300 c/c	
ROOF SPLINE @ T.O.S. EL. 212.950	-	1.21	914 / 9	#10 SCREWS @ 150 c/c	
PENT. ROOF @ T.O.S. EL. 215.100	-	0.91	914 / 7	#10 SCREWS @ 230 c/c	
DRY STORAGE BLDG. ROOF	-	0.91	914 / 7	#10 SCREWS @ 150 c/c	19 Ø PUDDLE WELD @ 150 c/c (PERIMETER)

NOTES:

- DECK PERIMETER OF EACH ROOF LEVEL TO BE FASTENED @ 150 c/c MAX.
- PROVIDE ANGLE CLOSURE AT PERIMETER OF BUILDING AND ALL OPENINGS 450 OR MORE.
- ALL METAL DECK TO BE THREE SPAN CONTINUOUS MINIMUM.
- DO NOT ATTACH MECHANICAL, ELECTRICAL OR OTHER SERVICES TO ROOF DECK.
- TWO FASTENERS AT DECK OVERLAP AT SUPPORTING STEEL TYPICAL.
- DECK SHEET END OVERLAP TO BE 100 MIN. TYPICAL.



0 RELEASED FOR CONSTRUCTION 01/29/2016
revisions date

project
NEW
G.O.C.B
SAINT-LÉONARD
NEW BRUNSWICK

drawing
ROOF FRAMING AND
PENTHOUSE FLOOR
FRAMING PLAN
AND SCHEDULES

designed RDJ
date JANUARY 29, 2016
drawn ECM
date JANUARY 29, 2016
approved DAG
date FEBRUARY 17, 2016
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project number R.069499.001
drawing no. 501-1