

1" IF THIS BAR DOES NOT MEASURE EXACTLY ONE INCH, THE SCALE OF THIS DRAWING HAS BEEN ALTERED DURING ITS PRODUCTION, AFFECTING ALL LABELED SCALES. 4/19/2025 4:42:41 PM Autodesk Docs://10297_24002-CBY Airport Water System Extension\INF-STRU\10297_24002_RV23.rvt

STRUCTURAL DESIGN DATA

1. RISK CATEGORY

IV
2. LIVE LOADS:

A. TYPICAL FLOOR, MECHANICAL

125 PSF OR 2 KIP
CONCENTRATED & STORAGE
ROOMS

B. ROOF

20 PSF
3. DEAD LOADS:

A. ROOF

20 PSF MAX
4. WATER RESERVOIR & PEMB SNOW LOADS:

A. GROUND SNOW LOAD

$P_g = 186$ PSF

B. EXPOSURE FACTOR

$C_e = 1.0$

C. THERMAL FACTOR

$C_t = 1.2$

D. IMPORTANCE FACTOR

$I_s = 1.2$

E. FLAT ROOF SNOW LOAD

$P_f = 188$ PSF

F. SLOPED ROOF SNOW LOAD

$P_s = 188$ PSF

G. UNBALANCED SNOW LOADING

• WINDWARD

$P_{WD} = 0$ PSF

• LEEWARD

$P_{LD} = 223$ PSF
5. WATER RESERVOIR & PEMB WIND LOADS:

A. WIND SPEED

$V_{ULT} = 161$ MPH

B. WIND EXPOSURE CATEGORY

C

C. ENCLOSURE CLASSIFICATION

PARTIALLY ENCLOSED

D. INTERNAL PRESSURE COEFFICIENT

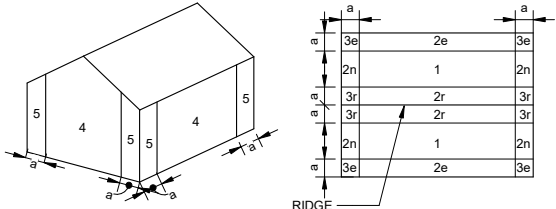
$GC_{pi} = \pm 0.55$
6. COMPONENT AND CLADDING WIND PRESSURES:

A. COMPONENT AND CLADDING WIND PRESSURES ARE FOR REFERENCE ONLY. PEMB MANUFACTURE SHALL PROVIDE FINALIZED C&C PRESSURES USED FOR DESIGN.

B. COMPONENT AND CLADDING WIND PRESSURE TABLE:

WIND ZONE	10 SQ FT		20 SQ FT		50 SQ FT		100 SQ FT	
ROOF 1, & 2e	-122	52	-122	49	-81	44	-50	41
ROOF 2n, 2r, & 3e	-170	52	-150	49	-122	44	-102	41
ROOF 3r	-199	52	-173	49	-139	44	-113	41
OVERHANG 1, & 2e	-120	52	-120	49	-93	44	-72	41
OVERHANG 2n, 2r	-168	52	-152	49	-132	44	-116	41
OVERHANG 3e	-196	52	-170	49	-134	44	-107	41
OVERHANG 3r	-225	52	-170	49	-145	44	-110	41
WALL 4	-79	74	-77	72	-73	68	-71	66
WALL 5	-94	74	-88	72	-82	68	-77	66

- a. WIND PRESSURES ARE BASED ON THE ULTIMATE WIND SPEED AND ARE REPORTED AT STRENGTH LEVELS. TO OBTAIN ASD PRESSURES, MULTIPLY TABLE VALUES BY 0.6.
- b. POSITIVE (+) PRESSURES ACT TOWARDS STRUCTURE
NEGATIVE (-) PRESSURES ACT AWAY FROM STRUCTURES
- C. COMPONENT AND CLADDING ZONE DIAGRAM:



- a. GABLE ROOF DIMENSION $a = 3.5$ FT
7. DESIGN RAIN INTENSITY

A. 15 MINUTE PRECIPITATION INTENSITY

$i = 3.83$ IN/HR

B. 30 MINUTE PRECIPITATION INTENSITY

$i = 1.74$ IN/HR

STRUCTURAL DESIGN DATA (CONTINUED)

8. PRE-ENGINEERED METAL BUILDING (PEMB) SEISMIC LOADS:

A. NORTH / SOUTH SEISMIC FORCE RESISTING SYSTEM

• ORDINARY MOMENT FRAME (OMF)

B. EAST / WEST SEISMIC FORCE RESISTING SYSTEM

a. ORDINARY CONCENTRICALLY BRACED FRAME (OCBF)

C. SEISMIC IMPORTANCE FACTOR

$I_e = 1.5$

D. SITE CLASS

D

E. MAPPED ACCELERATIONS

a. SHORT-PERIOD

$S_S = 1.63$ g

b. 1-SECOND

$S_1 = 0.76$ g

F. DESIGN ACCELERATIONS

a. SHORT-PERIOD

$S_{DS} = 1.09$ g

b. 1-SECOND

$S_{D1} = 0.86$ g

G. SEISMIC DESIGN CATEGORY

F

H. NORTH / SOUTH RESPONSE MODIFICATION FACTOR

• $R = 3.5$ ORDINARY MOMENT FRAME (OMF)

I. EAST / WEST RESPONSE MODIFICATION FACTOR

• $R = 3.25$ ORDINARY CONCENTRICALLY BRACED FRAME (OCBF)

J. ANALYSIS PROCEDURE USED

PER PEMB MANUFACTURER

K. NORTH / SOUTH SEISMIC RESPONSE COEFFICIENT

• $C_s = 0.47$

L. EAST / WEST SEISMIC RESPONSE COEFFICIENT

• $C_s = 0.50$

M. DESIGN BASE SHEAR

PER PEMB MANUFACTURER

N. MAXIMUM INTER-STORY DRIFT

PER PEMB MANUFACTURER
9. WATER RESERVOIR SEISMIC LOADS:

A. SEISMIC FORCE RESISTING SYSTEM

• STEEL, FLAT BOTTOM, GROUND SUPPORTED, MECHANICALLY ANCHORED WATER RESERVOIR

B. SEISMIC IMPORTANCE FACTOR

$I_e = 1.5$

C. SITE CLASS

D

D. MAPPED ACCELERATIONS

a. SHORT-PERIOD

$S_S = 1.63$ g

b. 1-SECOND

$S_1 = 0.76$ g

E. DESIGN ACCELERATIONS

a. SHORT-PERIOD

$S_{DS} = 1.09$ g

b. 1-SECOND

$S_{D1} = 0.86$ g

F. SEISMIC DESIGN CATEGORY

F

G. RESPONSE MODIFICATION FACTOR

$R =$ PER MANUFACTURER

H. ANALYSIS PROCEDURE USED

PER MANUFACTURER

I. SEISMIC RESPONSE COEFFICIENTS

• $A_1 =$ PER MANUFACTURER

DESIGN IMPULSIVE

• $A_2 =$ PER MANUFACTURER

DESIGN CONVECTIVE

• $A_3 =$ PER MANUFACTURER

DESIGN VERTICAL

J. DESIGN BASE SHEAR

PER MANUFACTURER

STRUCTURAL GENERAL NOTES

1. PERFORM ALL WORK IN COMPLIANCE WITH THE MINIMUM STANDARDS OF THE FOLLOWING CODES:

A. THE INTERNATIONAL BUILDING CODE (IBC) 2021 AND ITS REFERENCED STANDARDS, HEREIN REFERRED TO AS "THE CODE", AND OTHER REGULATORY CRITERIA WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK.
2. PERFORM THE FOLLOWING TASKS PRIOR TO STARTING CONSTRUCTION:

A. SURVEY AND FIELD VERIFY ALL EXISTING CONDITIONS ASSOCIATED WITH THE WORK.

B. INVESTIGATE THE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS FOUNDATIONS, ETC.

C. ALL OMISSIONS OR CONFLICTS BETWEEN ELEMENTS OF THE CONTRACT DOCUMENTS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER OF RECORD, PRIOR TO PROCEEDING WITH THE RELATED WORK.

3. THE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. CONSTRUCTION LOADS MUST NOT EXCEED THE DESIGN LIVE LOADS.

4. IF THE STRUCTURAL ENGINEER OF RECORD IS NOT RETAINED BY THE OWNER TO OVERSEE CONSTRUCTION ACTIVITIES, THE STRUCTURAL ENGINEER OF RECORD IS NOT IN RESPONSIBLE CHARGE OF THE CONSTRUCTION PER SECTION 107.3.4 OF THE CODE. CONSTRUCTION ACTIVITIES INCLUDE, BUT ARE NOT LIMITED TO, REVIEW OF SPECIAL INSPECTION AND STRUCTURAL OBSERVATION REPORTS, REVIEW OF SUBMITTAL DOCUMENTS, AND REVIEW DELEGATED DESIGN SUBMITTALS.

5. THE FOLLOWING ITEMS ARE PART OF THE LATERAL FORCE RESISTING SYSTEM (LFRS):

A. MOMENT FRAMES, BRACED FRAMES, AND ALL ASSOCIATED CONNECTIONS.
- STRUCTURAL DELEGATED DESIGN NOTES
1. THE DESIGN OF THE FOLLOWING ELEMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR:

A. ALL ARCHITECTURAL, MECHANICAL AND ELECTRICAL EQUIPMENT BRACING AND ANCHORAGE TO THE STRUCTURE

B. PRE-ENGINEERED METAL BUILDING (PEMB)

a. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ALL PRE-ENGINEERED METAL BUILDING COMPONENTS, INCLUDING BASE PLATES AND ANCHOR RODS. SEE SPECIFICATIONS FOR FURTHER DETAILS.

C. BOLTED STEEL WATER RESERVOIR

a. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ALL BOLTED STEEL WATER STORAGE TANK COMPONENTS, CONNECTIONS, TANK ANCHORAGE, TANK DESIGN, TANK ROOF AND TO REVIEW THE TANK FOUNDATION PROVIDED TO CONFIRM THAT IT IS ADEQUATE TO RESIST THE OVERTURNING FORCES OF THE FINAL TANK PROVIDED FOR THE PROJECT. SEE SPECIFICATIONS FOR FURTHER DETAILS.

2. PROVIDE SUBMITTALS TO THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD FOR REVIEW.

3. SUBMITTALS MUST INCLUDE DRAWINGS AND CALCULATIONS SEALED BY A CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE OF ALASKA.
- STRUCTURAL FOUNDATION NOTES
1. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY SHANNON & WILSON , DATED APRIL 2025.

2. FOUNDATION DESIGN CRITERIA

A. ALLOWABLE BEARING PRESSURE:

STATIC

DYNAMIC

a. MAT FOUNDATION

3,000 PSF

4,000 PSF

B. LATERAL EARTH PRESSURES AND COEFFICIENTS

a. ALL LATERAL EARTH PRESSURES ARE GIVEN AS AN EQUIVALENT FLUID PRESSURE.

C. LATERAL EARTH PRESSURES (EQUIVALENT FLUID PRESSURE)

a. AT REST PRESSURE

58 PSF / FT

b. ACTIVE PRESSURE

37 PSF / FT

c. ADDITIONAL SEISMIC ACTIVE PRESSURE

19 PSF / FT

d. PASSIVE PRESSURE

NORMAL

350 PSF / FT

SATURATED

150 PSF / FT

e. STATIC COEFFICIENT OF FRICTION

0.4

D. REFER TO THE PROJECT GEOTECHNICAL REPORT FOR FURTHER DETAILS.

3. PERFORM ALL FOUNDATION WORK IN CONFORMANCE WITH THE REFERENCED GEOTECHNICAL REPORT. THE REFERENCED GEOTECHNICAL REPORT IS PART OF THESE CONTRACT DOCUMENTS.

4. THE CONTRACTOR MUST FOLLOW ALL RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT.

5. PLACE PROPERLY COMPACTED STRUCTURAL FILL BELOW ALL FOUNDATION ELEMENTS, UNLESS NOTED OTHERWISE.

6. COMPACT ALL FOOTING SUBGRADES, ALL SLAB SUBGRADES INCLUDING PIT SLABS, AND ALL BACKFILL AROUND AND ABOVE ALL FOUNDATION ELEMENTS TO 95 PERCENT OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.

7. REMOVE ALL ORGANIC AND OTHER UNSUITABLE MATERIALS FROM SUBGRADE AND BACKFILL. BACKFILL WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.

8. PROVIDE THE DESIGN AND INSTALLATION OF TEMPORARY SHORING, EXCAVATION BRACING, AND OTHER TEMPORARY WORKS REQUIRED. THE DESIGN MUST PROTECT EXISTING STRUCTURES, STREETS, UTILITIES, AND ADHERE TO ALL NATIONAL, STATE, AND LOCAL REQUIREMENTS AND SAFETY ORDINANCES.

9. PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADES BEFORE AND AFTER PLACING OF CONCRETE UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.

10. PROPERLY BACKFILL ALL EXCAVATIONS.

11. DO NOT COMMENCE CONSTRUCTION OF FOUNDATION ELEMENTS UNTIL ALL SEASONAL FROST HAS THAWED OR BEEN REMOVED.

CONSULTANT :

PROJECT :
CITY & BOROUGH OF YAKUTAT
WATER SYSTEM EXTENSION
YAKUTAT, ALASKA

SHEET TITLE :
GENERAL NOTES

DESIGN	JCL / ZJM
DRAWN	DJM
CHECKED	JEH
DATE	04-16-2025

PROJECT No.
10297.24002
SHEET NUMBER

S-002

No.	Date	Item
REVISIONS		