

STRUCTURAL NOTES

CONCRETE

- CONFORM WITH ACI 117, ACI 201, ACI 211.1, ACI 301, ACI 302.1R, ACI 305R, ACI 306.1, ACI 308.1, ACI 309R, ACI 315, ACI 318, ACI 330 AND ACI 347R.
- CONCRETE FOR ELEVATOR PIT SLAB AND INFILL SLAB: NORMAL WEIGHT, $F'_c=3000$ PSI WITH A MAXIMUM WATER/CEMENT RATIO=0.45. CONCRETE FOR FOUNDATION WALLS: NORMAL WEIGHT, $F'_c=3000$ PSI WITH A MAXIMUM WATER/CEMENT RATIO=0.50.
- COMPACT THE EXISTING SUBGRADE BENEATH ELEVATOR FOOTINGS WITH 3 PASSES OF A VIBRATING PLATE COMPACTOR AND PRIOR TO CONCRETE PLACEMENT. COMPACT IN ACCORDANCE WITH THE SPECIFICATIONS.
- DEFORMED REINFORCING BARS: ASTM A615/A615M (GRADE 60).
- LAP SPLICE CONCRETE REINFORCEMENT AS INDICATED BELOW, UNLESS INDICATED OTHERWISE. WELDING OF STEEL REINFORCEMENT IS NOT PERMITTED.

BAR SIZE	MINIMUM LAP LENGTH
#6	3'-0"
- MINIMUM REINFORCING STEEL COVER: FOOTINGS 3", WALLS 2", UNLESS INDICATED OTHERWISE.
- SUPPORT STEEL REINFORCEMENT AND WELDED WIRE FABRIC BY APPROVED MATERIALS.
- CURE CONCRETE AS SPECIFIED. CONCRETE NOT CURED WILL NOT BE ACCEPTED.
- EPOXY GROUT: ASTM C881, TYPE IV OR V.
- PROVIDE WATERSTOPS AT VERTICAL AND HORIZONTAL COLD JOINTS IN THE CONCRETE FOUNDATION AND AS INDICATED.

MASONRY

- CONFORM TO ACI 530.1-05/ASCE 6-05/TMS 402-05.
- CONCRETE MASONRY UNITS ASTM C90, TYPE 1, NORMAL WEIGHT. MORTAR: ASTM C270. GROUT: ASTM C476 FINE. DEFORMED REINFORCEMENT: ASTM A615/A615M, GRADE 60.
- CONCRETE MASONRY ASSEMBLIES TO HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH: $F'_m = 2,500$ PSI.
- PERFORM DAILY MASONRY INSPECTIONS AS SPECIFIED. SUBMIT DAILY MASONRY INSPECTION REPORTS TO THE OWNER WITHIN 24 HOURS AFTER DAY OF INSPECTION. MASONRY CONSTRUCTED WITHOUT THE COMPLETION OF DAILY MASONRY INSPECTIONS WILL NOT BE ACCEPTED AND WILL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- REINFORCE CONCRETE MASONRY WALLS AS INDICATED WITH ALL CELLS GROUTED SOLID.
- DO NOT MAKE HOLES OR PENETRATIONS THROUGH CMU BOND BEAMS.
- LAP SPLICE MASONRY REINFORCEMENT AS INDICATED BELOW, UNLESS NOTED OTHERWISE ON MASONRY WALL ELEVATION SHEETS.

BAR SIZE	MINIMUM LAP LENGTH
#5	1'-8"

STRUCTURAL STEEL

- CONFORM WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S "MANUAL OF STEEL CONSTRUCTION FOURTEENTH EDITION".
- STEEL FOR CONNECTIONS, ANGLES AND PLATES: ASTM A36 ($F_y=36$ KSI).
- WELDING: AWS D1.1 AND AWS D1.3, E70 ELECTRODE.
- SUBMIT INSPECTION REPORTS TO THE OWNER WITHIN 48 HOURS OF COMPLETION. SUBMIT WELDING INSPECTION REPORTS TO THE OWNER WITHIN 48 HOURS OF COMPLETION.

STEEL DECK

- STEEL DECKS: AISI S303-3 AND STEEL DECK INSTITUTE "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS". DECK UNITS ASTM A653/A653 SO, GRADE 33, COATING G90 FOR ASTM A653/A653M. FASTEN ROOF DECK WITH 3/4" WELDS ON A 24/4 PATTERN WITH (3) WELDED STITCH CONNECTORS PER SPAN.

STEEL ROOF DECK = NON-CELLULAR, GRADE C.
 MINIMUM DEPTH = 3" (MINIMUM DESIGN THICKNESS: 0.0474 IN (18 GAUGE))
 MINIMUM SECTION MODULUS = $S_x = 0.807$ IN³
 MINIMUM MOMENT OF INERTIA = $I_x = 1.365$ IN⁴

GRATING

- PROVIDE GALVANIZED STEEL BAR-TYPE GRATING (REMOVABLE) OVER THE ELEVATOR PIT SUMP HOLE.
- INSTALL GALVANIZED STEEL GRATINGS IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.
- MINIMUM LIVE LOAD CAPACITY: 100 PSF BUT NOT LESS THAN THE SIZE INDICATED ON DETAIL 3/SB101.

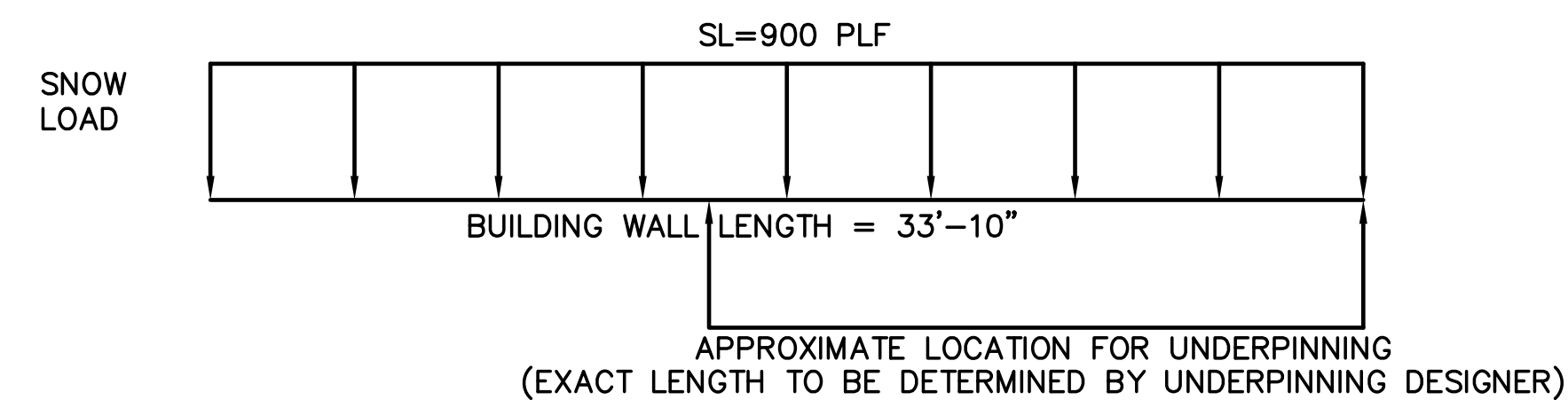
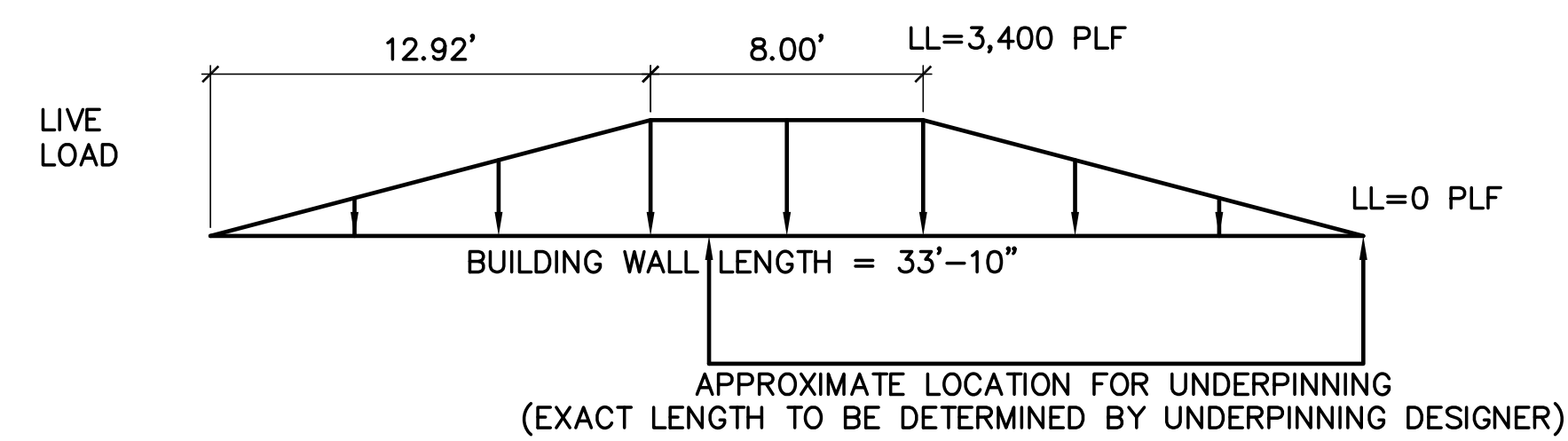
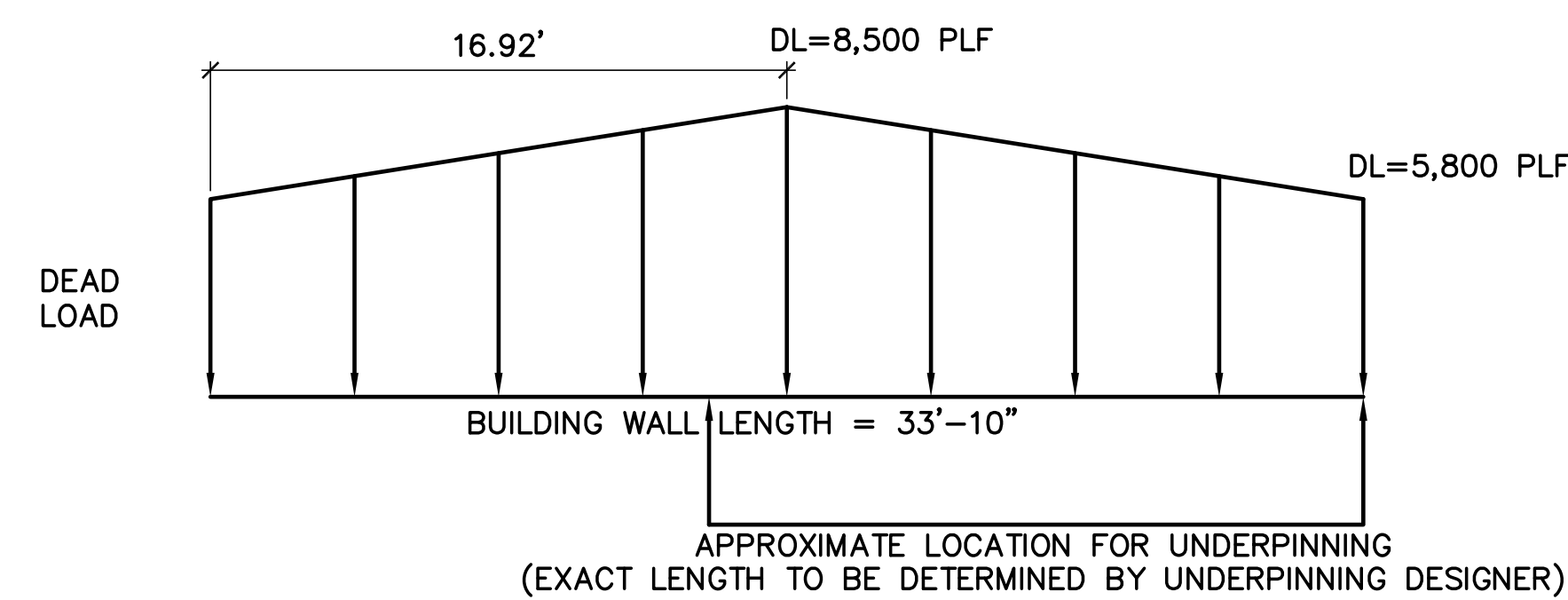
POST INSTALLED ANCHORS

- INSTALL POST INSTALLED ANCHORS IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.
- BASIS OF DESIGN = 3/4" DIAMETER HILTI KWIK BOLT 3 OR APPROVED EQUAL ANCHORS/EXPANSION BOLTS.

FOUNDATION UNDERPINNING

- THE FOUNDATION UNDERPINNING SHALL BE A DELEGATED DESIGN BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MAINE.
- ENGAGE THE UNDERPINNING DESIGN ENGINEER AND COORDINATE THE UNDERPINNING DESIGN WITH THE ELEVATOR ADDITION.
- THE UNDERPINNING WORK SHALL BE PERFORMED PRIOR TO THE WORK SHOWN ON THESE DRAWINGS AND IN ACCORDANCE WITH THE APPROVED UNDERPINNING DESIGN.
- DAMAGE TO THE EXISTING FOUNDATION SYSTEM AS A RESULT OF THE UNDERPINNING WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER AND SHALL BE REPAIRED AS DIRECTED BY THE STRUCTURAL ENGINEER OF RECORD.
- TEMPORARY SHORING, IF REQUIRED, IS THE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT TEMPORARY SHORING DESIGN CALCULATIONS AND DRAWINGS PREPARED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MAINE FOR REVIEW.
- DESIGN UNDERPINNING FOR THE IMPOSED GRAVITY LOADS INDICATED ON THIS SHEET AND LATERAL SOIL PRESSURES ACTING ON THE UNDERPINNING. DESIGN FOR LATERAL SOIL PRESSURE SHALL BE BASED ON AT REST CONDITIONS.
- THE FOLLOWING SERVICE LOAD DIAGRAMS SHOW THE EXISTING BUILDING GRAVITY LOADS ON THE FOOTING ALONG THE NORTH SIDE OF THE BUILDING ONLY. DESIGN LOAD COMBINATIONS SHALL BE IN ACCORDANCE WITH IBC 2009/ASCE 7-05.

FOOTING LOADS



GENERAL NOTES

- FIELD VERIFY DIMENSIONS AND ELEVATIONS OF STRUCTURAL STEEL MEMBERS PRIOR TO FABRICATION OF MEMBERS. REPORT DISCREPANCIES TO THE OWNER PRIOR TO FABRICATION OF MEMBERS.
- PROVIDE TEMPORARY SUPPORT OF FRAMING DURING CONSTRUCTION TO PREVENT FAILURE AND DAMAGE. PROVIDE DESIGN PREPARED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MAINE FOR TEMPORARY SUPPORTS. SUBMIT STAMPED CALCULATIONS AND DRAWINGS TO OWNER FOR APPROVAL.
- COORDINATE THE LOCATION OF CONCRETE, MASONRY AND STEEL MEMBERS WITH ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, FIRE PROTECTION, AND ELECTRICAL PLANS AND DETAILS.
- REQUIRED TESTS AND INSPECTIONS SHALL BE COMPLETED AND SUBMITTED TO THE OWNER PRIOR TO ACCEPTANCE OF COMPLETED WORK. MATERIAL PLACED WITHOUT THE REQUIRED CONTRACTOR QUALITY CONTROL TESTS OR REQUIRED INSPECTIONS BEING PERFORMED WILL NOT BE ACCEPTED.
- CONSTRUCTION IS SUBJECT TO SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF IBC 2009. THE CONTRACTOR SHALL CORRECT DEFICIENCIES AND NOTIFY THE OWNER AFTER DEFICIENCIES HAVE BEEN CORRECTED.
- ASSUME FULL RESPONSIBILITY FOR CHANGES IN FOUNDATION OR FRAMING PLANS AND DETAILS UNLESS APPROVED IN WRITING BY THE SER/OWNER.

BUILDING DESIGN LOADS

ROOF SNOW LOAD (ROOF LIVE LOAD) ASCE 7-05/IBC 2009

GROUND SNOW LOAD (P_g) = 60 PSF
 SNOW EXPOSURE FACTOR (C_e) = 1.0
 SNOW LOAD ROOF SLOPE FACTOR (C_s) = 1.0
 SNOW LOAD THERMAL FACTOR (C_t) = 1.2
 BALANCED ROOF SNOW LOAD (P_f) = 51 PSF
 SNOW DRIFTING AT PARAPET (P_d) = 41 PSF
 SNOW LOAD IMPORTANCE FACTOR (I) = 1.0
 ROOF DEAD LOAD = 10 PSF
 ROOF LIVE LOAD = 20 PSF

WIND LOAD ASCE 7-05/IBC 2009

BASIC WIND SPEED = 100 MPH
 WIND LOAD IMPORTANCE FACTOR = 1.00
 WIND EXPOSURE = EXPOSURE C
 BUILDING TYPE = "ENCLOSED"
 WIND DESIGN PRESSURE:
 MAIN WIND FORCE RESISTING SYSTEM = 33 PSF (MAXIMUM PRESSURE)

SEISMIC DESIGN DATA ASCE 7-05/IBC 2009

SHORT PERIOD SPECTRAL RESPONSE ACCELERATION (S_s) = 0.243
 ONE SECOND SPECTRAL RESPONSE ACCELERATION (S_1) = 0.079
 SEISMIC USE GROUP = GROUP II
 SEISMIC DESIGN CATEGORY = B
 SEISMIC IMPORTANCE FACTOR = 1.00
 SITE CLASS = D
 TOTAL BASE SHEAR = 11 KIPS

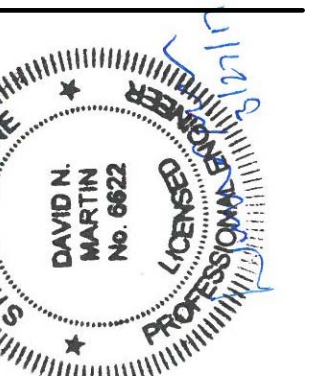
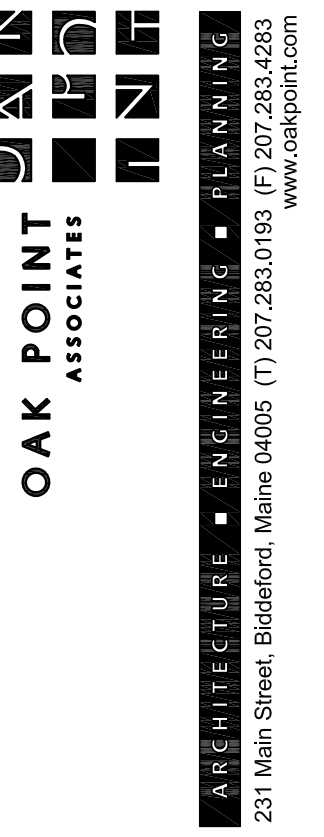
BASIC STRUCTURAL SYSTEM

MASONRY SHEAR-WALLS (ORDINARY)
 RESPONSE MODIFICATION COEFFICIENT (R) = 2.00
 DEFLECTION AMPLIFICATION FACTOR (C_d) = 2.00
 SYSTEM OVER STRENGTH FACTOR (ϕ_o) = 2.50
 ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE PROCEDURE

DESIGN SOIL BEARING PRESSURE = 4,000 PSF

STRUCTURAL ABBREVIATIONS:

±	PLUS OR MINUS
∠	ANGLE
ACI	AMERICAN CONCRETE INSTITUTE
AISI	AMERICAN IRON AND STEEL INSTITUTE
ARCH	ARCHITECTURAL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BFE	BOTTOM OF FOOTING ELEVATION
CL	CENTERLINE
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
DIA	DIAMETER
DWG	DRAWING
ELEV	ELEVATION, ELEVATOR
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
F'_c	CONCRETE COMPRESSIVE STRENGTH
F'_m	MASONRY COMPRESSIVE STRENGTH
FND	FOUNDATION
Fy	YIELD STRESS
GA	GAUGE
GALV	GALVANIZED
HORIZ	HORIZONTAL
IBC	INTERNATIONAL BUILDING CODE
IN	INCH
INSUL	INSULATION
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LLV	LONG LEG VERTICAL
MIN	MINIMUM
MO	MASONRY OPENING
MPH	MILES PER HOUR
#, NO	NUMBER
OC	ON CENTER
OPNG	OPENING
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
REINF	REINFORCED
REQ'D	REQUIRED
SER	STRUCTURAL ENGINEER OF RECORD
SIM	SIMILAR
STL	STEEL
TMS	THE MASONRY SOCIETY
TOS	TOP OF STEEL
TWE	TOP OF WALL ELEVATION
TYP	TYPICAL
VERT	VERTICAL
W/	WITH
WD	WOOD



DESIGNED BY: WFG
 DRAWN BY: NJC
 CHECKED BY: DNM
 PROJECT: 21602.16

UNIVERSITY OF NEW ENGLAND
 PORTLAND CAMPUS
 Fine Arts Gallery
 716 Stevens Avenue
 Portland, ME 04103-2693

FINE ARTS GALLERY
 ELEVATOR ADDITION
 FOR PERMITTING ONLY - NOT FOR CONSTRUCTION

STRUCTURAL NOTES, DESIGN LOADS AND ABBREVIATIONS

SCALE: AS NOTED

DATE: 3-29-17

DWG.: **S-001**

SHEET: 6 OF 26