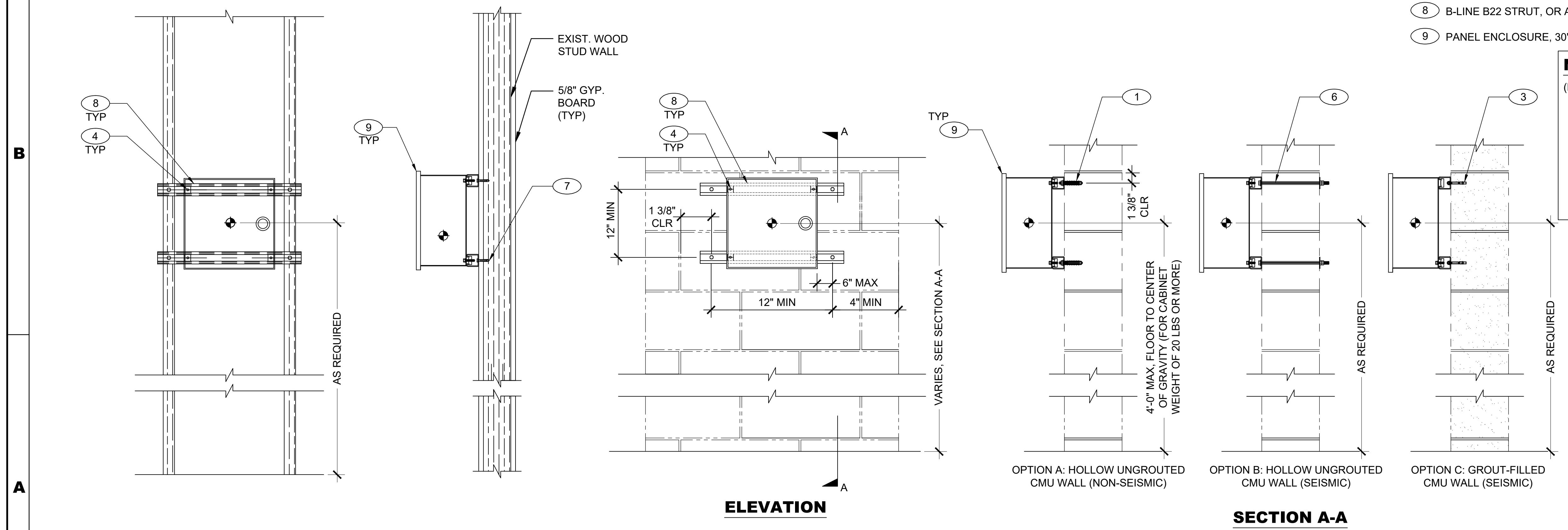


- GENERAL NOTES:**
- NOT ALL DESIGNS USED ON THIS PROJECT.
 - IF THIS SHEET IS NOT 24"x36," USE GRAPHICAL SCALE ACCORDINGLY.
 - FASTENERS HAVE BEEN DESIGNED FOR SITE SPECIFIC SEISMIC DESIGN CRITERIA PER LANL ESM CH.5 SECTION II, IBC 2015, ASCE 7-10 CH. 13, AND ACI 318-14.
 - THIS SHEET IS FOR USE WITH EQUIPMENT LESS THAN 190 LBS.
 - THESE DETAILS APPLY TO STRUCTURE RCII-IV, IMPORTANCE FACTOR = 1.5 (ASCE 7-10 CH. 13).
 - THESE DETAILS APPLY TO INDOOR INSTALLATION ONLY.
 - NEW CONSTRUCTION SHALL BE COORDINATED WITH EXISTING SITE CONDITIONS.
 - THE PROJECT SHALL TAKE ALL NECESSARY PRECAUTIONS TO LOCATE AND PROTECT CONCEALED CONDUITS, PLUMBING, OR OTHER UTILITIES. FOR CONCRETE OR MASONRY, GROUND PENETRATING RADAR SHALL BE USED FOR PENETRATIONS GREATER THAN 3/4 INCH IN DEPTH.
 - WHERE DIMENSIONS SHOWN ON DRAWINGS ARE SPECIFIED AS MIN OR MAX, SUBCONTRACTOR SHALL MAKE NECESSARY FIELD MEASUREMENTS AND PROVIDE REQUIRED DIMENSIONS.
 - CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR. CONTACT EOR PRIOR TO PENETRATING ANY EXISTING REINFORCING. ANCHOR LOCATIONS ON DRAWING MAY VARY BY +/-1" UNLESS NOTED OTHERWISE TO AVOID CONFLICTS.
 - CONCRETE 28-DAY DESIGN COMPRESSIVE STRENGTH SHALL BE 3000PSI MIN.
 - MASONRY UNITS SHALL BE GRADE M, TYPE 1, W/ NOMINAL DIMENSION OF 8"x8"x16".
 - MASONRY UNITS SHALL HAVE DESIGN COMPRESSIVE STRENGTH OF 1500PSI MIN.
 - SPECIAL INSPECTION:
 - ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS SHALL UNDERGO CONTINUOUS SPECIAL INSPECTION PER IBC TABLE 1705.3. SEE ICC-ESR REPORTS FOR SPECIFIC INSPECTION REQUIREMENTS.
 - MECHANICAL ANCHORS SHALL UNDERGO PERIODIC SPECIAL INSPECTION PER IBC 1705.3. SEE ICC-ESR REPORTS FOR SPECIFIC INSPECTION REQUIREMENTS.

- KEYED NOTES:**
- 3/8" DIA. A307 THREADED ROD W/ HILTI HIT-HY 270 ADHESIVE AND HIT-SC SCREENS W/ 2" MIN. EMBED. SEE ICC-ESR-4143 FOR INSTALLATION INSTRUCTIONS (4" MIN. SPACING, 4" MIN. EDGE DISTANCE, (1) ANCHOR PER CELL, MAINTAIN 1 3/8" CLR FROM MORTAR JOINTS AND CELL WEBS/FLANGES. INSTALLATION IN MORTAR JOINTS, FLANGE, OR CELL WEB NOT PERMITTED).
 - S-MD-1/4-14X2 HHWH #3 HILTI SELF-DRILLING SCREWS (4 TOTAL). SEE ICC-ESR-2196 FOR INSTALLATION INSTRUCTIONS. EACH SCREW MUST PENETRATE STUD W/ A MIN. OF THREE THREADS PROTRUDING PAST BACK SIDE OF SUPPORT STEEL. STUDS SHALL BE 33 MIL THICKNESS MIN.
 - 3/8" DIA. HILTI KB-TZ2 CS, 2 1/2" EFFECTIVE MIN. EMBED. (4 TOTAL). SEE ICC-ESR-4561 FOR INSTALLATION (10" MIN. SPACING, 12" MIN. EDGE DISTANCE, 1 3/8" CLR FROM HEAD JOINT MIN.).
 - 1/4" DIA. ASTM A307 GRADE A HEX BOLT @ ENCLOSURE PRE-DRILLED HOLES W/ B-LINE N224WO STRUT NUT (4 TOTAL).
 - 3/8" DIA. HILTI KB-TZ2 CS, 2" EFFECTIVE MIN. EMBED. (4 TOTAL). SEE ICC-ESR-4266 FOR INSTALLATION INSTRUCTIONS (8" MIN. SPACING, 6" MIN. EDGE DISTANCE, 4" MIN. WALL THICKNESS).
 - 7/16" DIA. PRE-DRILLED HOLE W/ 3/8" DIA. ASTM A307 GRADE A GALVANIZED THRU-BOLT W/ A563 GALVANIZED NUTS AND F436 4" WASHER ON BACK SIDE OF WALL. MIN. SPACING OF 4" OC. PROVIDE DOUBLE NUTS, FIRST NUT FINGER TIGHT, SECOND NUT SNUG TIGHT.
 - FOR PANEL WEIGHT "W" 100LBS < W < 190LBS USE 1/4" LAG SCREW @ STUDS W/ 2" MIN. EMBED. (4 TOTAL). FOR PANEL WEIGHT "W" < 100LBS, USE #8 STANDARD WOOD SCREWS @ STUDS W/ 2" MIN. EMBED. (4 TOTAL).
 - B-LINE B22 STRUT, OR APPROVED EQUAL.
 - PANEL ENCLOSURE, 30" WIDE X 48" TALL, 13 1/4" DEEP MAX.

CFS STUD WALL DETAIL
 SCALE: 1 1/2" = 1'-0"
 1 1/2" = 1'-0"

CONCRETE WALL DETAIL
 SCALE: 1 1/2" = 1'-0"
 1 1/2" = 1'-0"



WOOD STUD WALL DETAIL
 SCALE: 1 1/2" = 1'-0"
 1 1/2" = 1'-0"

UNGROUTED/GROUTED MASONRY WALL DETAIL
 SCALE: 1 1/2" = 1'-0"
 1 1/2" = 1'-0"

NOTES FOR EOR:
 (DO NOT INCLUDE ON CONSTRUCTION DRAWINGS)

USE OF THIS STANDARD:

- DESIGN IS BASED ON LANL CALCULATION CAL-12-00-0000-0015-S.
- ALL DETAILS ARE DESIGNED FOR NON-EXEMPT SEISMIC LOAD CONDITIONS IN EXCEPTION TO THE SEISMICALLY EXEMPT HOLLOW UNGROUTED CMU WALL CONDITION AS NOTED. SEISMIC PARAMETERS ARE BASED ON LANL ESM CH.5 SECTION II (REV. 11, 3/24/21).
- CURRENTLY THIS STANDARD IS VALID FOR PANEL WEIGHTS LESS THAN 190LBS, WHICH IS TYPICALLY THE HEAVIEST PANEL INSTALLED AT LANL. IT IS LIKELY THAT ANCHORS MAY SUPPORT ADDITIONAL WEIGHT BUT THIS SHALL BE ANALYZED ON A PROJECT SPECIFIC BASIS AS NECESSARY BY A LICENSED ENGINEER.
- THIS STANDARD CONSIDERS ONLY THE STRUT, FASTENERS, AND ANCHORAGE OF THE PANEL TO THE WALL. IT DOES NOT CONSIDER THE CAPACITY OF THE WALL BEING ATTACHED TO.
- DRAWING DEVELOPED FOR ML-3/ML-4 PROJECTS. FOR ML-1/ML-2, ADDITIONAL REQUIREMENTS AND QA REVIEWS ARE REQUIRED.

LBO-DESIGN PACKAGE REVIEWER	N/A		
APPROVED FOR RELEASE			
SUBMITTED	Posted 6/15/22		
VERIFIED	2	UPDATED ANCHORS & SIMPLIFIED DETAILING. SEISMICALLY EXEMPT HOLLOW CMU OPTION ADDED.	06/15/22
DESIGNED	1	UPDATED TO COMPLY W/ ESM CH.5 REV 10 & CSM REV. 5. CHANGED SHEET # FROM S-5002.	12/19/17
DRAWN	0	INITIAL ISSUE	06/04/14
CLASSIFICATION UNCLASSIFIED	NO	REVISION DESCRIPTION	DATE

ENGINEERING STANDARDS

STRUCTURAL

WALL MOUNTED EQUIPMENT DETAILS

TA-XX BLDG XXXX
 SHEET **X**

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PROJECT ID: **CHAPTER 5** DRAWING NO: **ST-F1033-1** REV: **2**