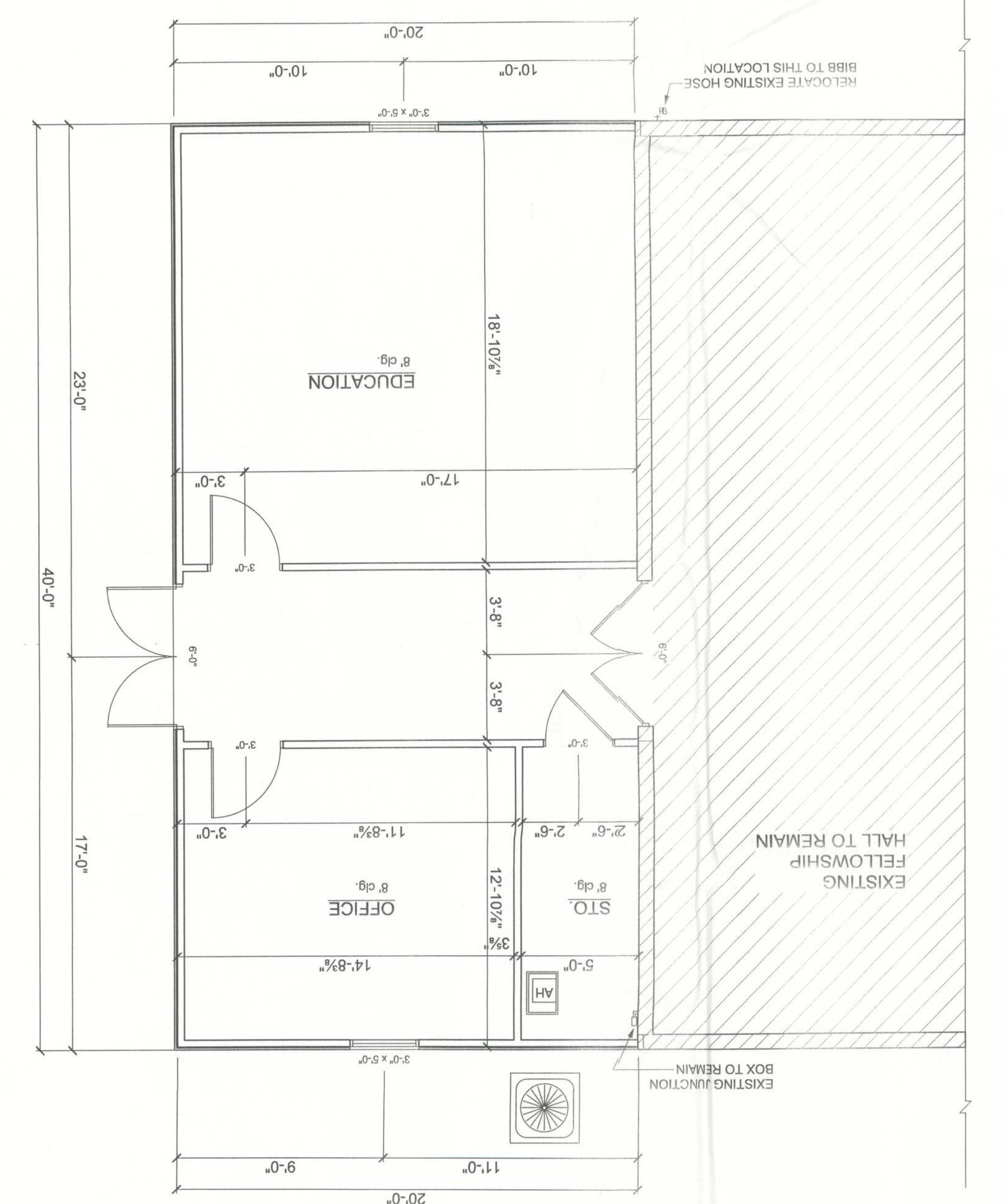
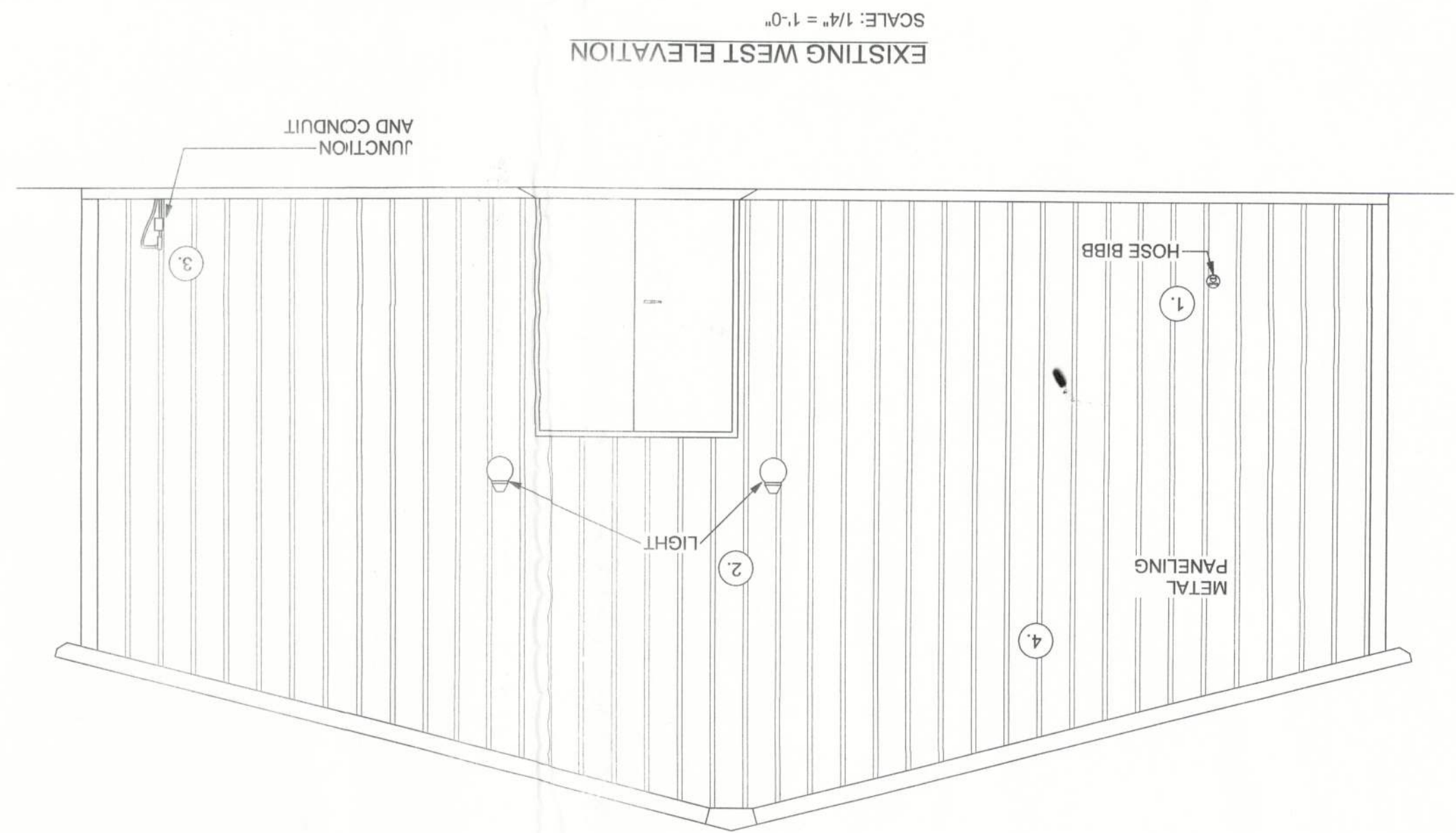






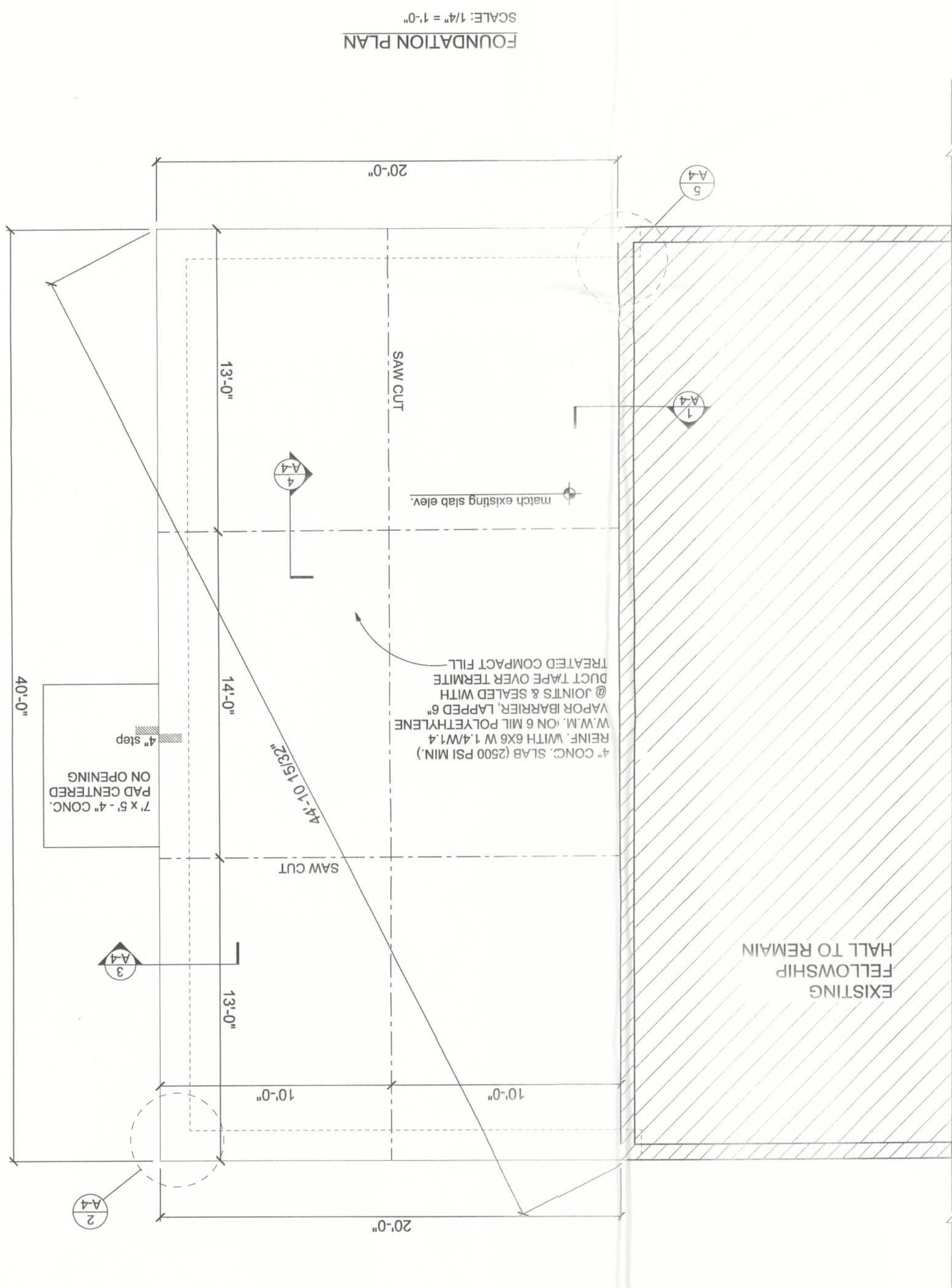
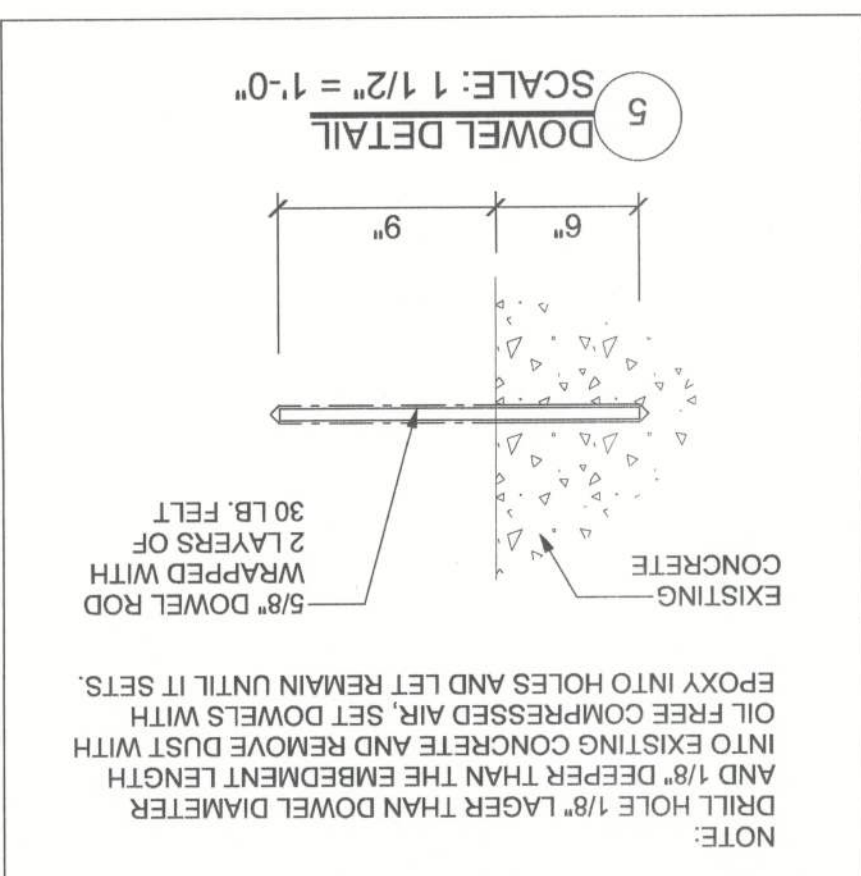
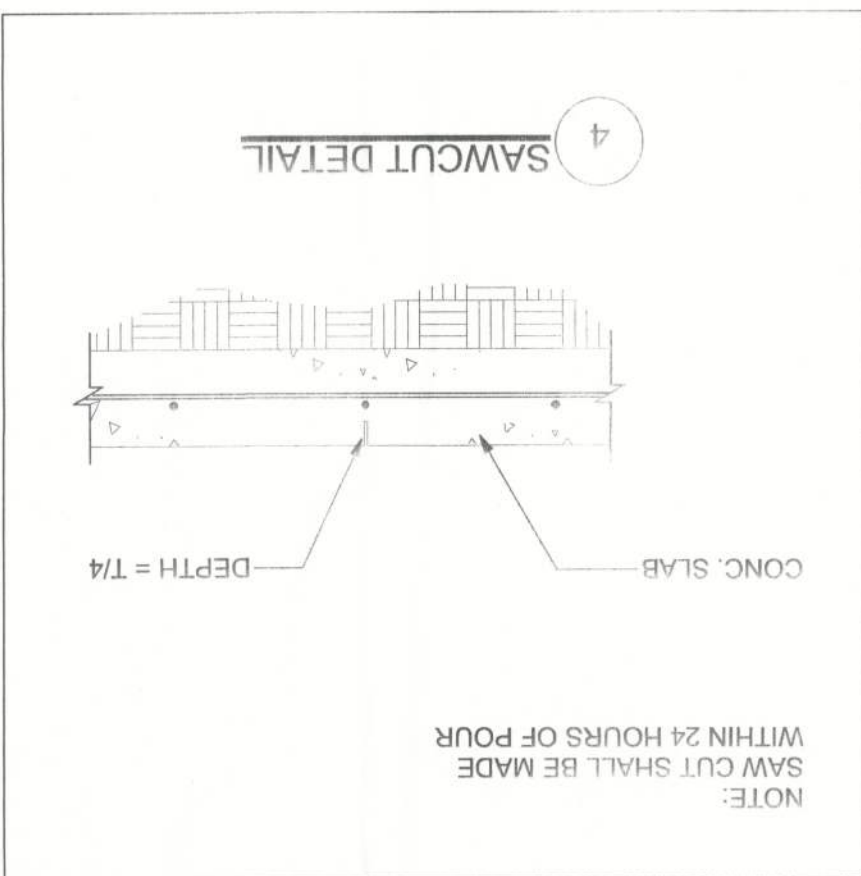
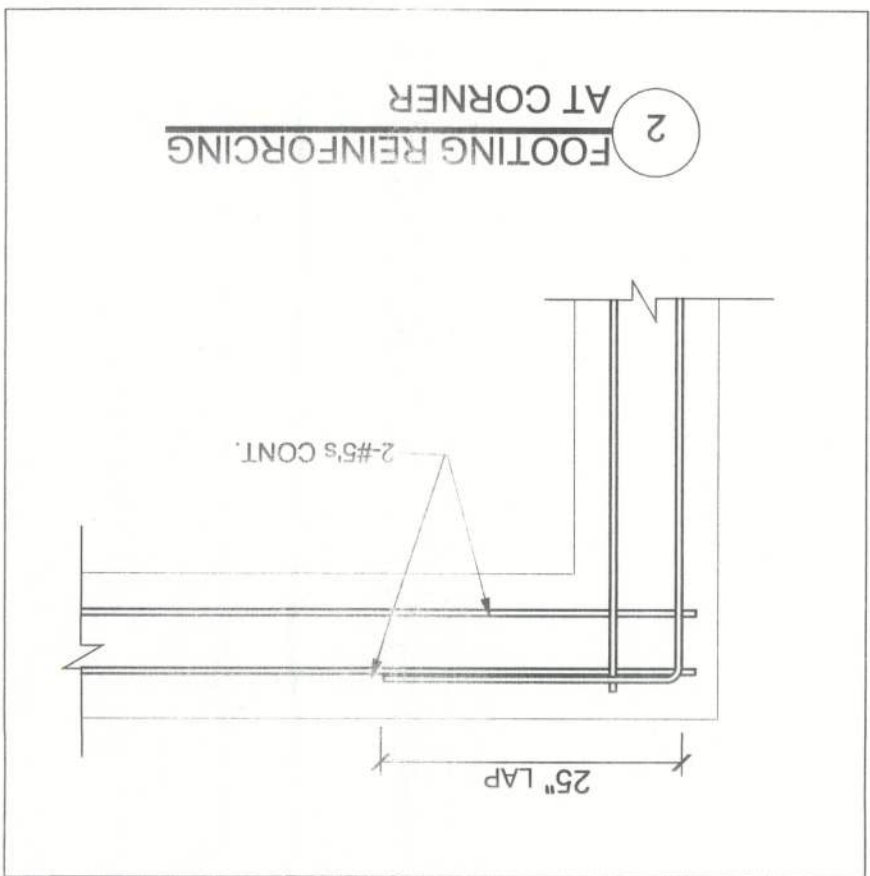
|                                                          |                                                                                                                                |                                                                                 |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <p><b>CES</b></p> <p>Crews Engineering Services, LLC</p> | <p>CERTIFICATE OF AUTHORIZATION</p> <p>NO. 28022</p> <p>P.O. BOX 970</p> <p>LAKE CITY, FL 32056</p> <p>PHONE: 386/754.4085</p> | <p>Brett A. Crews, P.E. 65592</p> <p><i>Brett A. Crews</i></p> <p>7-14-2011</p> |
| <p>APPROVED BY:</p> <p>BC</p>                            | <p>DRAWN BY:</p> <p>TM</p>                                                                                                     |                                                                                 |

[illegible]







[illegible]

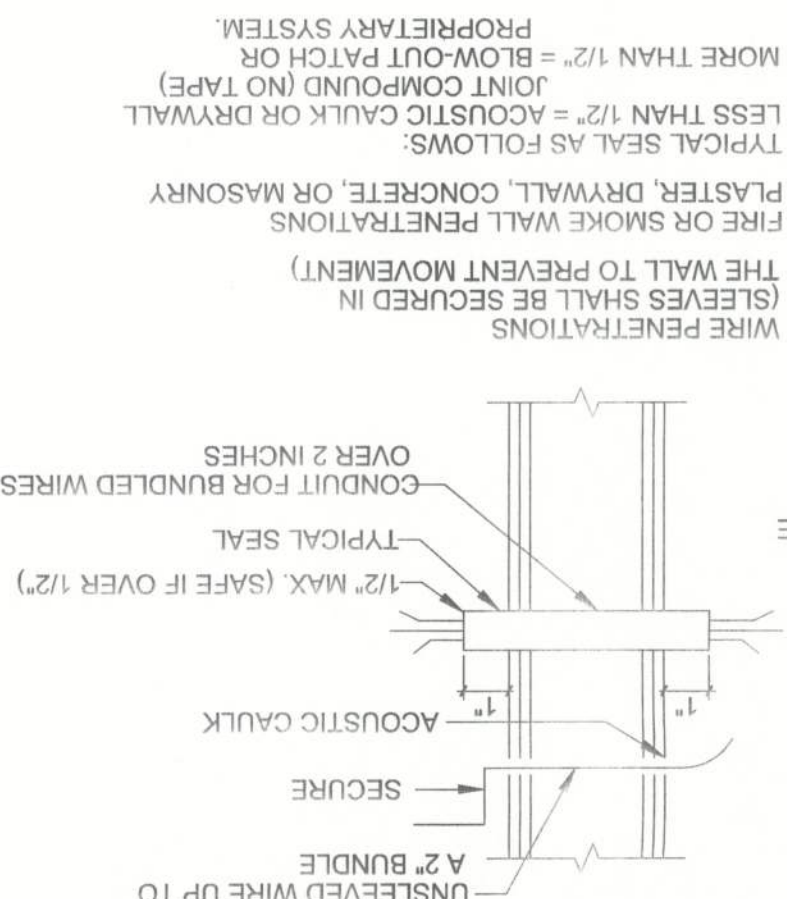
PERMITE PROTECTION NOTES:

CONCRETE:



|                                                   |  |                                               |                                                                                                                               |                                                                                                        |                                                         |
|---------------------------------------------------|--|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| <b>TRINITY PRAISE WORSHIP<br/>CENTER ADDITION</b> |  | DRAWN BY: <b>TM</b><br>APPROVED BY: <b>BC</b> | Brett A. Crews, P.E. 65592<br><br>7-17-2012 | P.O. BOX 970<br>LAKE CITY, FL 32056<br>PHONE: 386.754.4085<br>Brett A. Crews Engineering Services, LLC | <b>CES</b><br>CERTIFICATE OF AUTHORIZATION<br>NO. 28022 |
| ELECTRICAL PLAN                                   |  | ELECTRICAL PLAN                               |                                                                                                                               |                                                                                                        |                                                         |

ELECTRICAL PLAN



WIRING NOTES:

WIRE ALL APPLIANCES, HVAC UNITS AND OTHER EQUIPMENT PER MANUF. SPECIFICATIONS.

**NOTE:**  
ALL FLUORESCENT FIXTURES TO BE SURFACE MOUNTED AND NOT CEILING MOUNTED

**NOTE:**  
EXIT AND EMERGENCY LIGHTING SHALL BE  
INSTALLED PER NEC 700-12, 2011 EDITION.



|                                                          |                                                                                                                             |                                                                                 |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <p><b>CES</b></p> <p>Crews Engineering Services, LLC</p> | <p>CERTIFICATE OF AUTHORIZATION</p> <p>NO. 28022</p> <p>P.O. BOX 970<br/>LAKE CITY, FL 32056</p> <p>PHONE: 386.754.4085</p> | <p>Brett A. Crews, P.E. 65592</p> <p><i>Brett A. Crews</i></p> <p>7-19-2012</p> |
| <p>APPROVED BY: <b>BC</b></p>                            | <p>DRAWN BY: <b>TM</b></p>                                                                                                  |                                                                                 |

| SYSTEM AIR BALANCE         |             |            |             |          |         |
|----------------------------|-------------|------------|-------------|----------|---------|
| UNIT TYPE                  | OUTSIDE AIR | RETURN AIR | EXHAUST AIR | PRESSURE |         |
| RTU-1                      | 2.120       | 880        |             |          |         |
| EF-1                       |             |            | 50          |          |         |
| EF-2                       |             |            | 50          |          |         |
| TOTALS                     |             |            | 100         |          | + 1.140 |
| BUILDING POSITIVE PRESSURE |             |            |             |          |         |

HVAC NOTES

**NOTE:**  
THE HVAC CONTRACTOR SHALL PROVIDE A DUCT LAYOUT, INDICATING DUCT SIZES, AIR FLOW, BRANCH DUCTS, AND REGISTER SIZES. PROVIDE FRESH AIR PER FMC, 2010.



DUCT FABRICATION NOTES:

2. SHEET METAL DUCT SHALL BE FABRICATED & INSTALLED PER THE LATEST EDITION OF SMACNA DUCT CONSTRUCTION STANDARDS.
3. ULTRAVIOLET RADIATION PROTECTION SHALL BE PROVIDED WHERE SHOWN ON THE PLAN.
4. SUPPLY AIR DROPS FROM ROOF TO ROOF UNITS SHALL TRANSITION FROM THE UNIT OPENING SIZE TO SUPPLY AIR DROPS FROM THE ROOF TO ROOF UNITS SHALL BE FULL SIZE OF THE UNIT OPENING.
5. RETURN AIR DROPS FROM THE ROOF TO ROOF UNITS SHALL BE FULL SIZE OF THE UNIT OPENING.
6. ELBOWS SHALL BE SQUARE NECK (SAME IN OUT DIMENSIONS) WITH 2" DOUBLE THICKNESS TURNING VANES.
7. OFFSETS SHALL NOT REDUCE THE FREE AREA, AND SHALL NOT EXCEED 90°. A RADIIUS HEEL SHALL BE PROVIDED ON 90° OFFSETS. SMALLER OFFSETS SHALL BE INTERFERED AT BOTH THE HEEL & THE POINT.
8. TRANSITIONS SHALL NOT EXCEED 1:3 RATIO (4" TRANSITION PER FOOT SINGLE SIDED TRANSITION, AND 6" PER FOOT DOUBLE SIDED TRANSITION).
9. INSULATION SHALL BE WFA 90 APPROVED, WITH MINIMUM 4.2 R VALUE. WRAFP INSULATION SHALL BE 2" THICK WITH ALUMINUM FOIL FACING. LINER SHALL BE 1" THICK, 1-1/2" DENSITY.
10. RECTANGULAR BRANCH CONNECTIONS SHALL BE 6" ENTRY TYPE PER SMACNA FIGURE 9-6.
11. FITTINGS, DAMPERS, TRANSITION, AND TRANSITION ADAPTERS SHALL BE LISTED ON COMPANY 2000 DS.
12. FLEXIBLE DUCT SHALL INCLUDE 1" MINIMUM DUCT JOINTS OF HANDLES.
13. FLEXIBLE DUCT SHALL INCLUDE (IN 6-8") A FOIL OUTER VAPOR BARRIER, AND BE 181 APPROVED, SEAL ALL, SEAL AIR, SUPPLY, RETURN & OUTSIDE AIR DUCT JOINTS WITH DUCT SEALER, SEAL ALL, INSULATION JOINTS WITH GLASS FABRIC AND MASTIC.

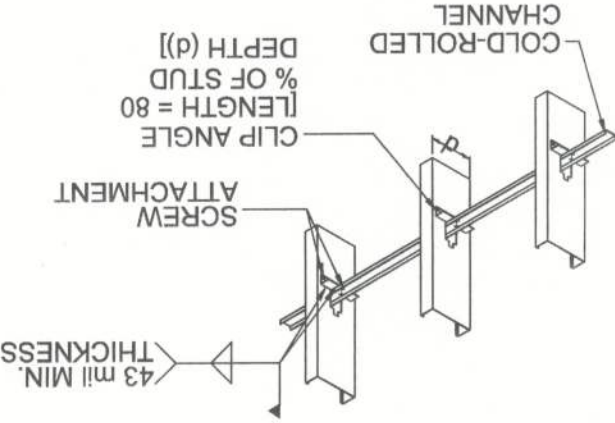


NOTE:  
ALL METAL STUDS IN AXIAL LOAD APPLICATIONS SHALL BE 358SW18 MINIMUM, W/ MATCHING TRACK; ALL WELDED JOINTS

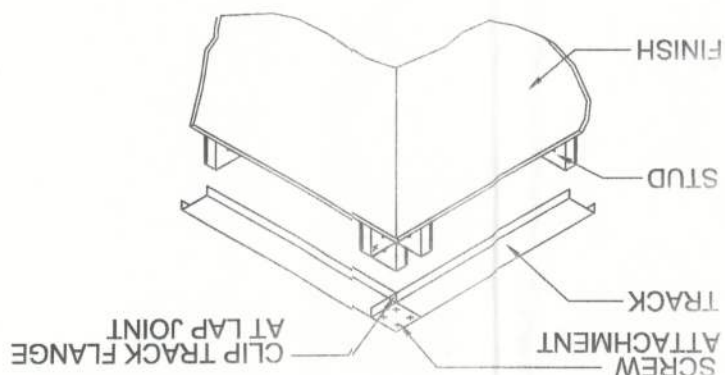
SCALE: NONE

Metal Stud Details

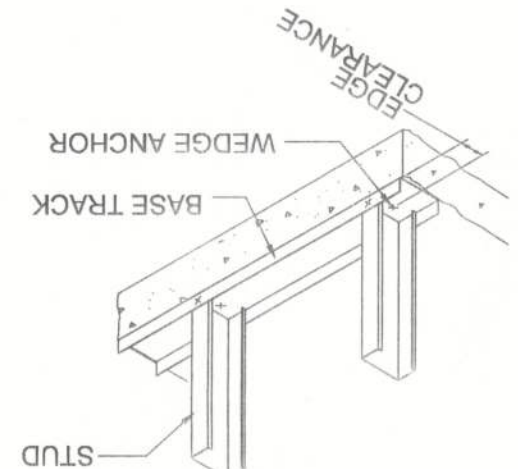
BRIDGING  
COLD-ROLLED CHANNEL W/CLIP ANGLE



CORNER TRACK LAP CONNECTION



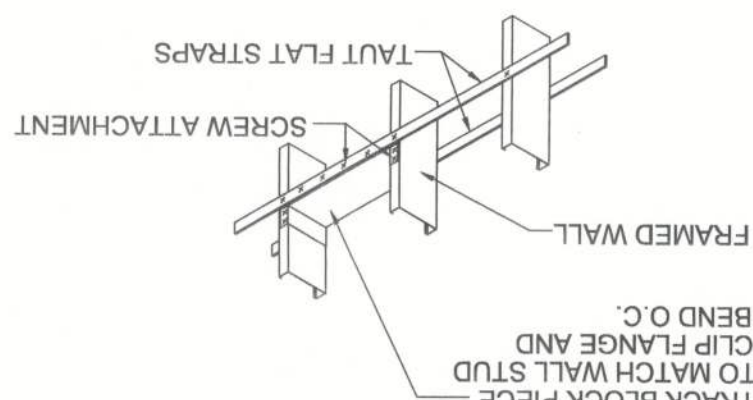
BOTTOM TRACK WEDGE ANCHOR



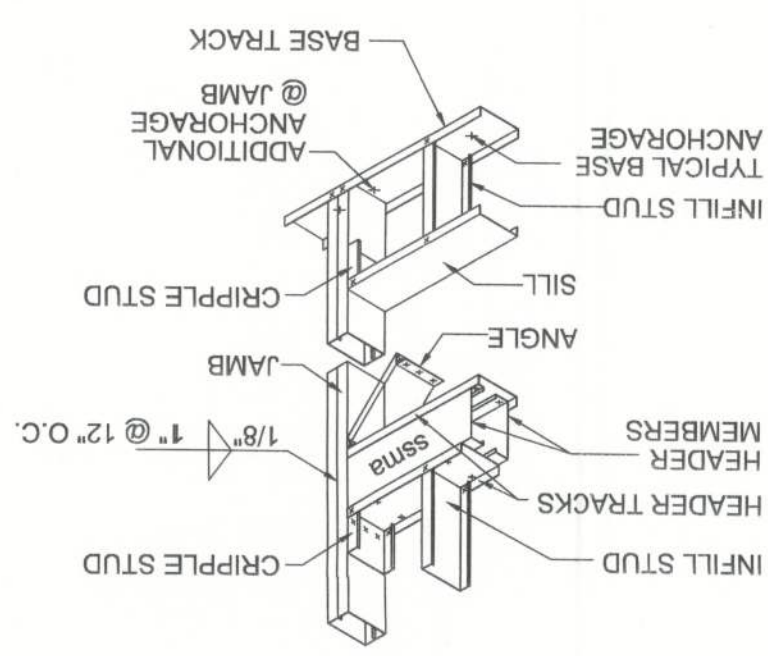
BACKING - CLIPPED TRACK - HVY. LOADED  
(GRAB BARS, HANDRAILS, WALL HUNG CABINETS)



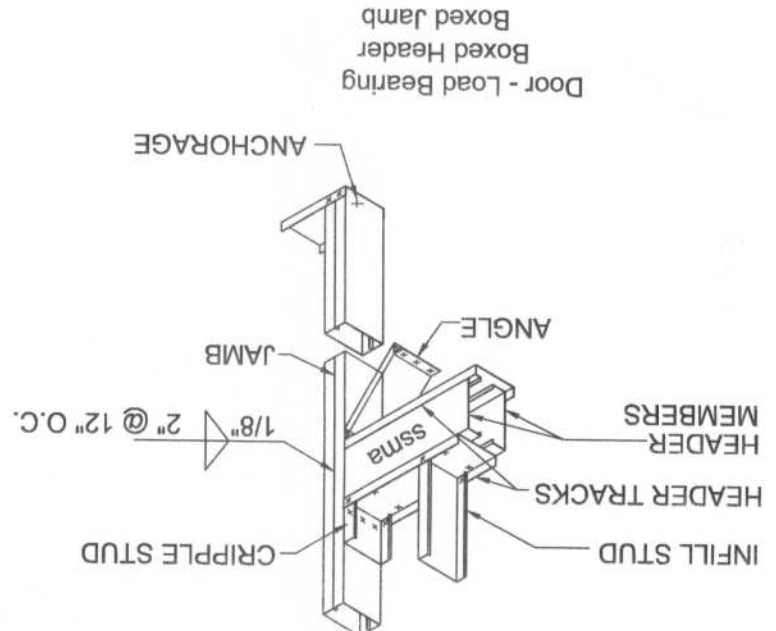
DOUBLE FLAT STRAP W/BLOCKING  
BRIDGING



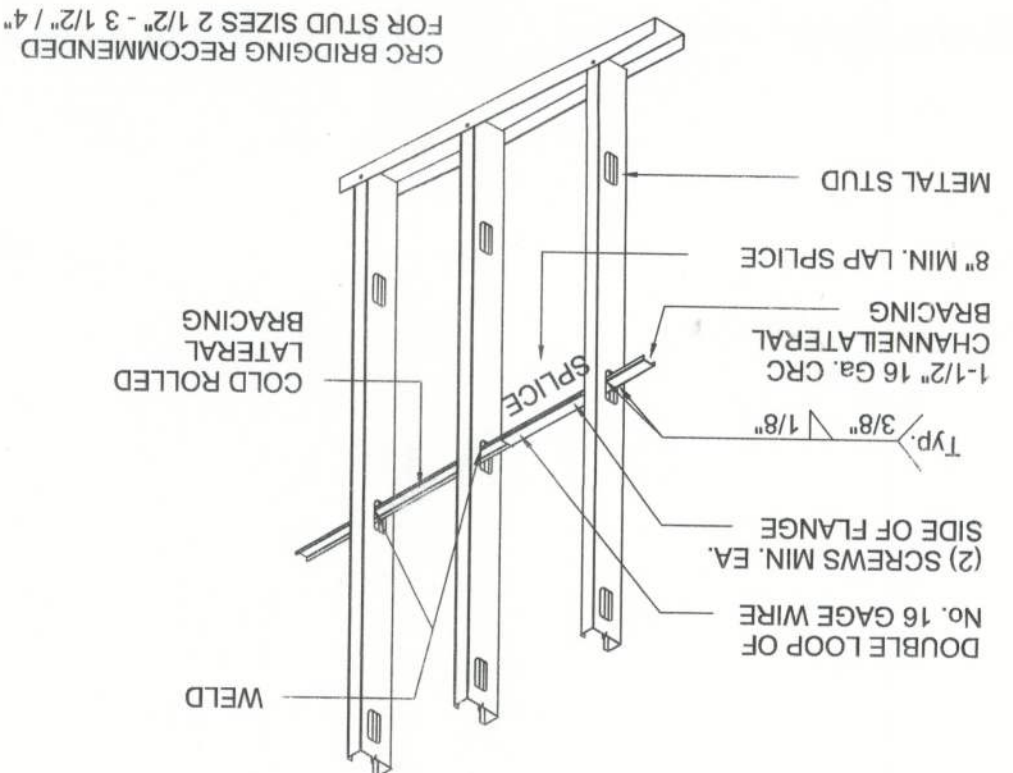
WINDOW - LOAD BEARING  
BOXED HEADER - BOXED JAMB



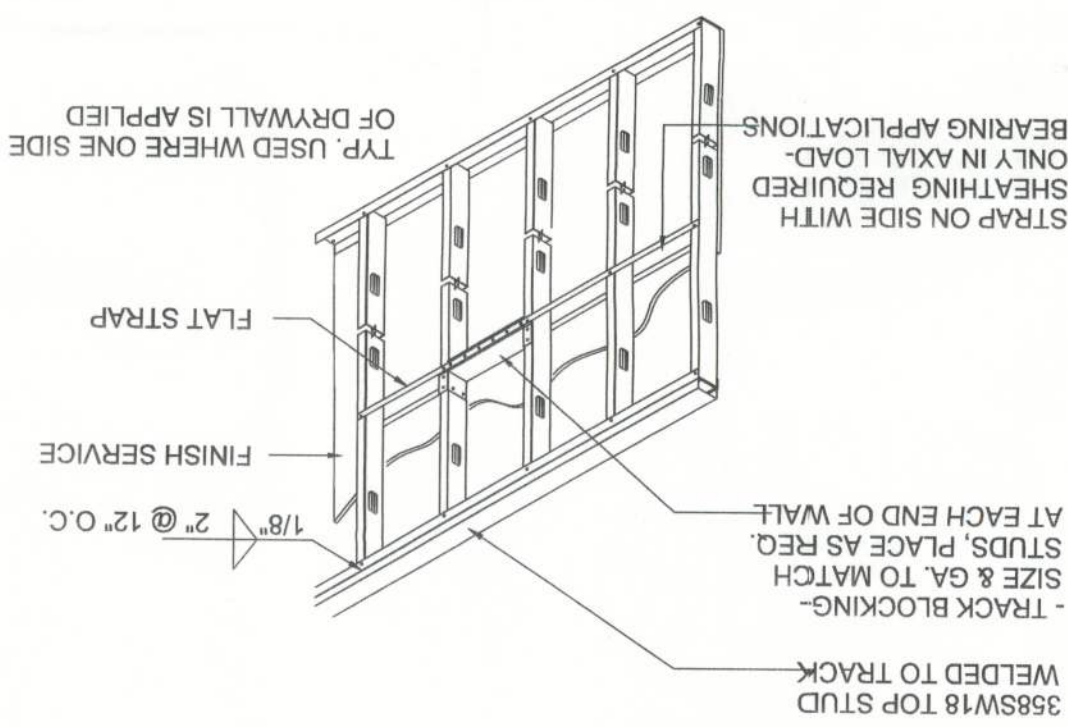
DOOR - LOAD BEARING  
BOXED HEADER - BOXED JAMB



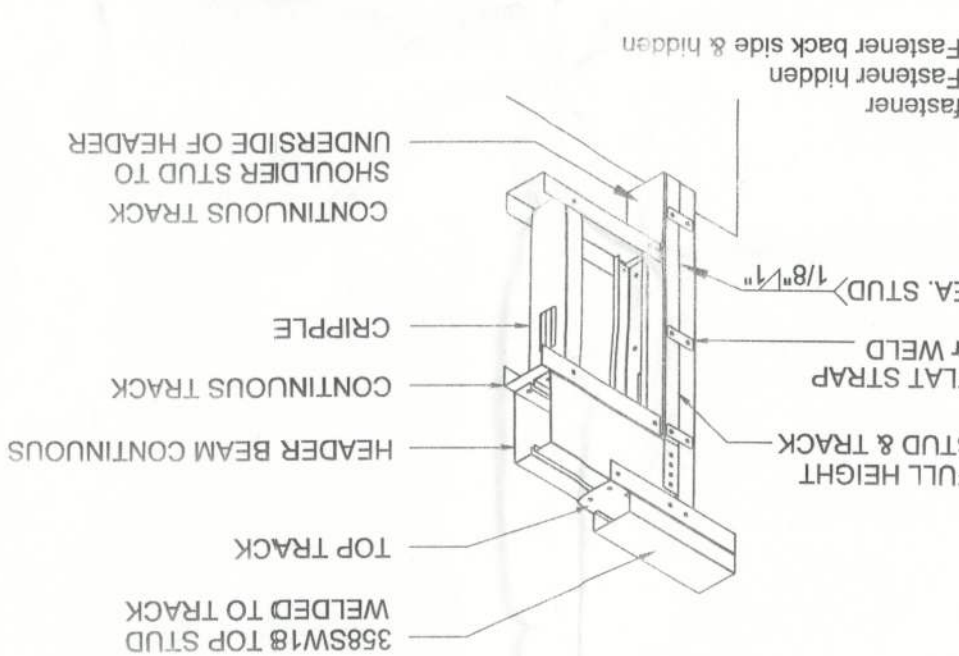
WELDED CRC BRIDGING



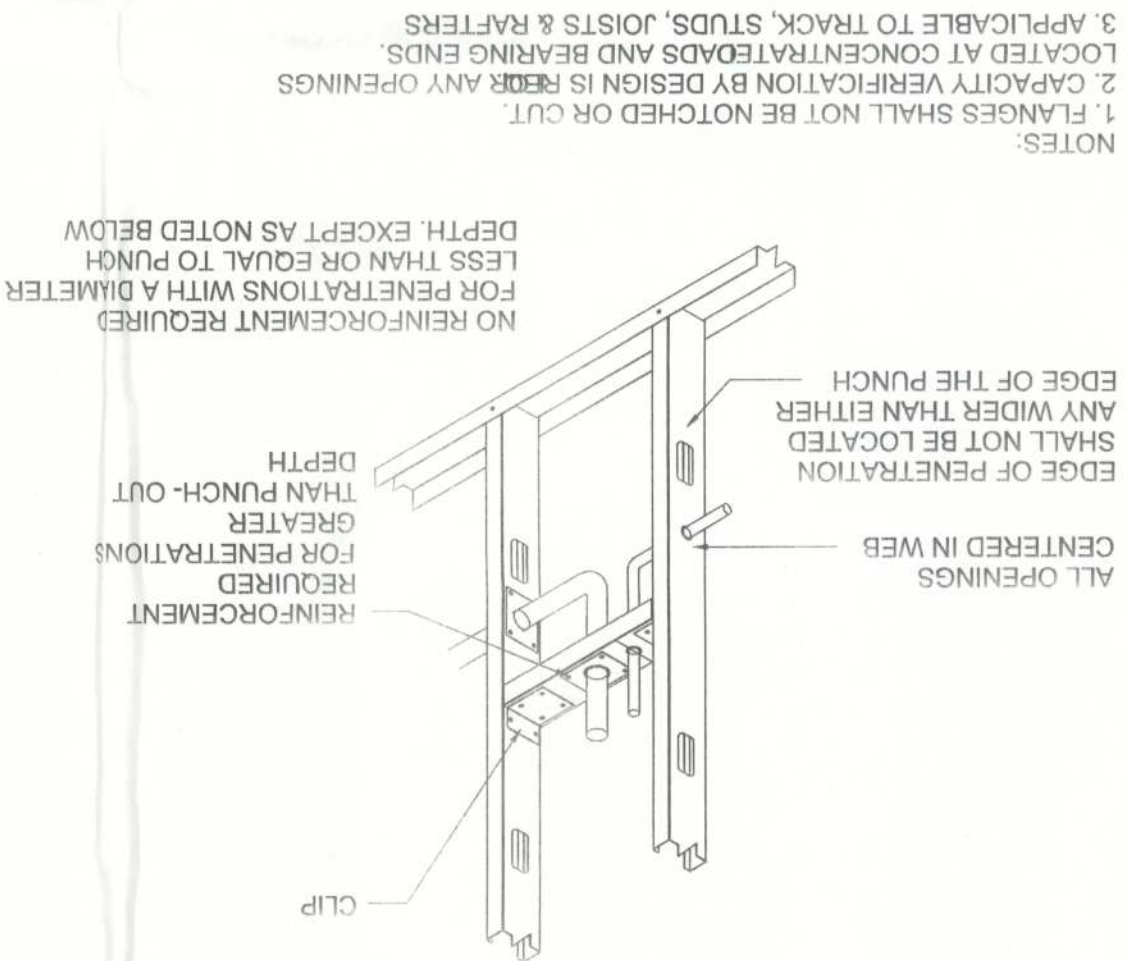
FLAT STRAP LATERAL BRACING



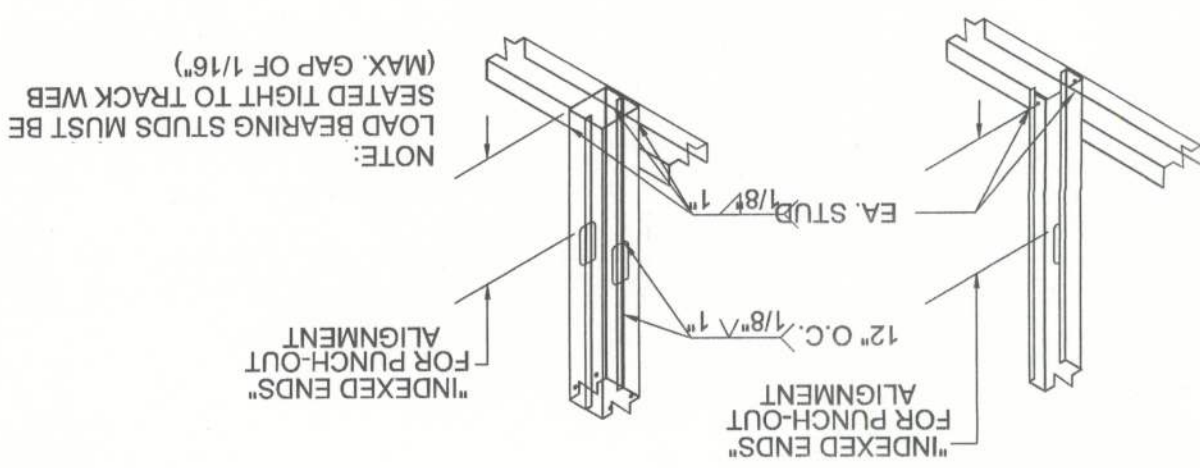
HEADER TO JAMB STUD DETAIL



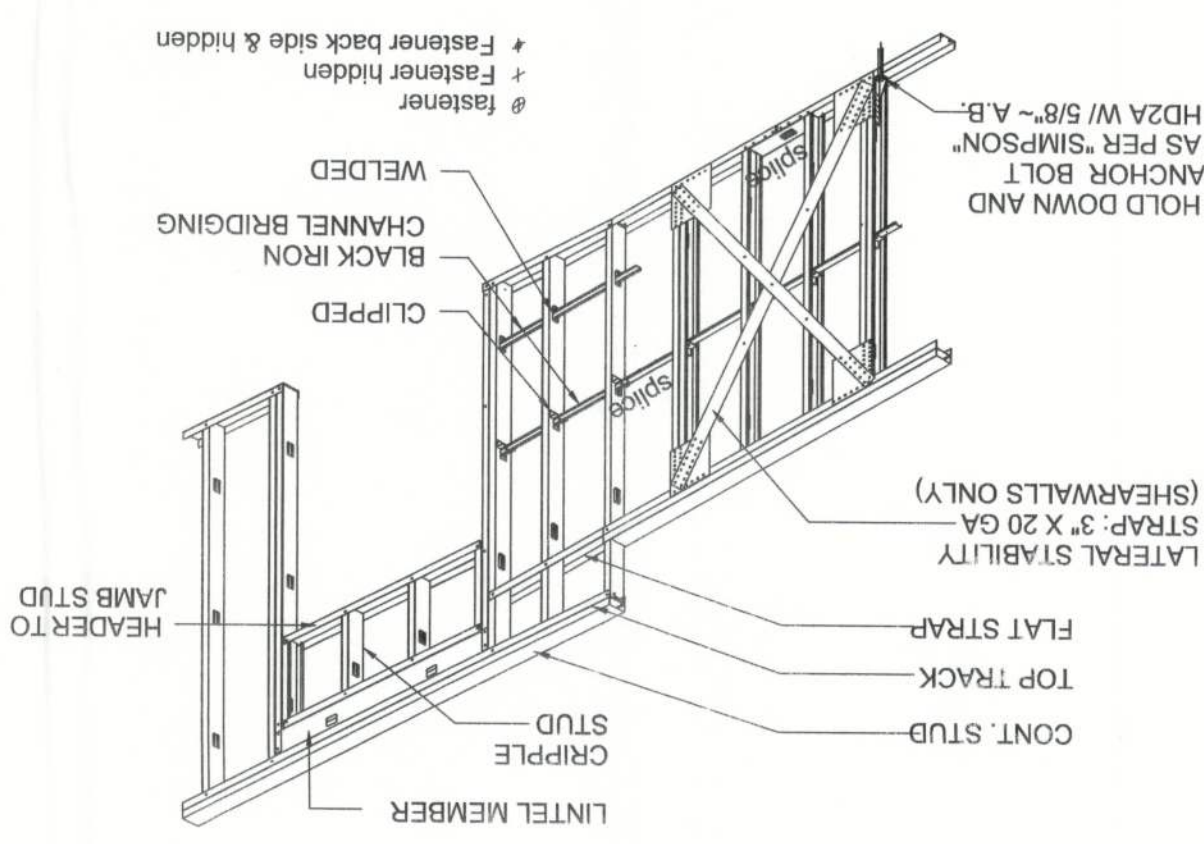
STUD WEB PENETRATIONS



TYPICAL STUD TO TRACK CONNECTIONS



STRUCTURAL WALL ASSEMBLY

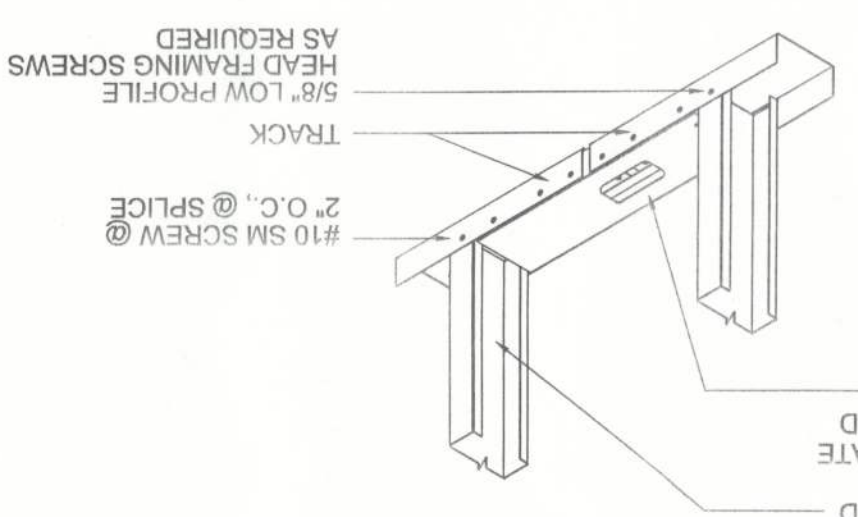


STEEL STUD BRACING NOTES:

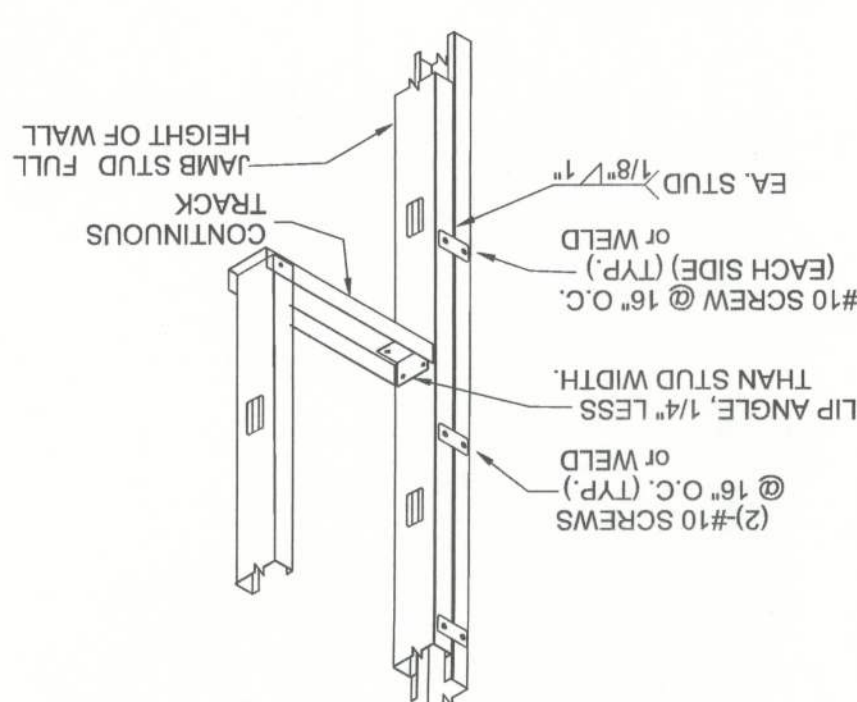
| type                      | location                                               |
|---------------------------|--------------------------------------------------------|
| #8 self drilling x 1/2"   | stud to track with gypsum board and sheathing          |
| #10, 3/4" hex-washer head | all other areas up to three layers of 3/8-mil material |
| #8 self piercing screws   | sheathing to steel                                     |
| #8 self drilling screws   | gypsum board to steel                                  |
| #8 self piercing screws   | sheathing to steel                                     |
| #8 self drilling screws   | gypsum board to steel                                  |
| #6 self piercing screws   | gypsum board to steel                                  |
| #6 self drilling screws   | gypsum board to steel                                  |
| #6 self drilling screws   | gypsum board to steel                                  |

1. Gypsum wall board or structural sheathing on both sides of load bearing walls shall be laterally braced in accordance with one of the following methods:
2. Horizontal steel bracing installed on both sides at mid-height for 8 foot walls, and third lengths for 9 foot and 10 foot walls. Horizontal steel straps shall be at least 1 1/2" wide and 3/8" thick. Straps shall be attached to the flanges of studs with at least one 1/2" wide and 3/8" thick screw. In-line blocking shall be installed between studs at the termination of straps and at 12-foot intervals along the strap. Straps shall be fastened to the blocking with at least two No. 8 screws.
3. Gypsum wall board or structural sheathing on one side and horizontal steel bracing on the other side of load bearing walls.

TRACK SPLICE



JAMB STUD DETAIL





| MEANS OF EGRESS                                 |  |  |
|-------------------------------------------------|--|--|
| FBC CHAPTER 10                                  |  |  |
| OCCUPANCY CLASSIFICATION                        |  |  |
| UNSPRINKLERED & UNPROTECTED                     |  |  |
| GROUP A-3 ASSEMBLY                              |  |  |
| REQUIRED                                        |  |  |
| PROVIDED                                        |  |  |
| MAX. TRAVEL DIST. (TABLE 1016.1)                |  |  |
| 42 FT FOR NEW ADDITION                          |  |  |
| MAX. DEAD-END CORRIDOR (FBC 1018.4)             |  |  |
| 20 FT                                           |  |  |
| TOTAL # OF EXITS (TABLE 1021.1)                 |  |  |
| 2                                               |  |  |
| EGRESS WIDTH PER PERSON (LEVE) (TABLE 1005.1)   |  |  |
| 0.2                                             |  |  |
| MIN. CLEAR OPENING OF EXIT DOORS (FBC 1008.1.1) |  |  |
| 32"                                             |  |  |
| 70"                                             |  |  |

**LIFE SAFETY NOTES**

ALL EXIT AND EMERGENCY LIGHTING SHALL BE INSTALLED PER NEC 700-12, 2011 EDITION.

ACCESS TO EXITS SHALL BE MARKED BY APPROVED READILY VISIBLE SIGNS IN ALL CASES WHERE THE EXIT OR WAY TO REACH THE EXIT IS NOT READILY APPARENT TO THE OCCUPANTS. SIGN PLACEMENT SHALL BE SUCH THAT NO POINT IN THE EXIT ACCESS CORRIDOR IS MORE THAN 100 FT FROM THE NEAREST EXTERNALLY ILLUMINATED SIGN AND IS NOT IN EXCESS OF THE MARKED RATING FOR INTERNALLY ILLUMINATED SIGNS.

ALL FIRE EXTINGUISHERS SHALL BE TYPE 2A-20BC AND SHALL BE LOCATED SO THAT NO POINT IN THE DIRECTION OF TRAVEL FROM ANY POINT IS MORE THAN 75 FT TO THE FIRE EXTINGUISHER.

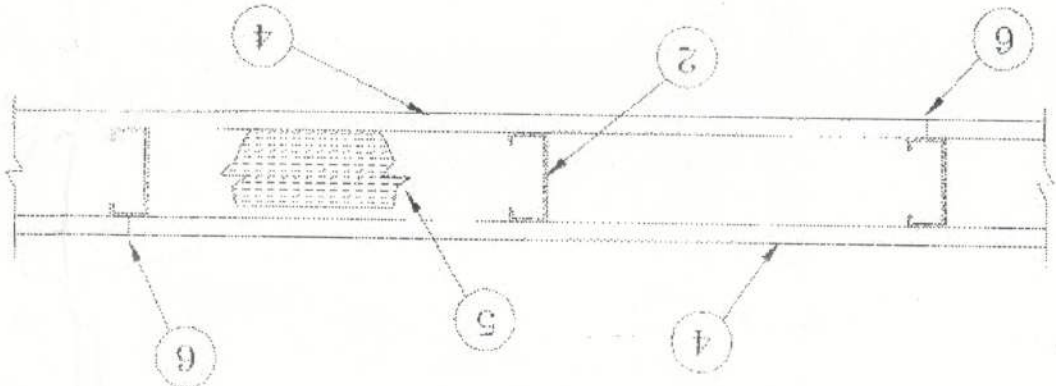
**NOTE:**

SEE ELECTRICAL DRAWINGS FOR LOCATIONS OF ALL EMERGENCY EXIT LIGHTING

DESIGN NO. U432  
SEPTEMBER 26, 2006

BEARING WALL RATING - 1 HR (SEE ITEM 2)  
NONBEARING WALL RATING - 1 HR (SEE ITEM 2)

LOAD RESTRICTED FOR CANADIAN APPLICATIONS - SEE GUIDE BXUV



1. FLOOR AND CEILING RUNNERS — (NOT SHOWN) — CHANNEL SHAPED, FABRICATED FROM MIN 0.0329 IN. THICK, BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL, THAT PROVIDES A SOUND STRUCTURAL CONNECTION BETWEEN STEEL STUDS AND ADJACENT ASSEMBLIES WITH STEEL FASTENERS
2. STEEL STUDS — MIN 0.0329 IN. THICK, BARE METAL THICKNESS (NO. 20 MSG) CORROSION-PROTECTED STEEL STUDS, MIN 3-1/2 IN. WIDE, COLD FORMED, DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI). ALL DESIGN DETAILS ENHANCING THE STRUCTURAL INTEGRITY OF THE WALL ASSEMBLY, INCLUDING THE AXIAL DESIGN LOAD OF THE STUDS, SHALL BE AS SPECIFIED BY THE STEEL STUD MANUFACTURER. THE MAX STUD SPACING SHALL NOT EXCEED 24 IN. O.C. STUDS ATTACHED TO FLOOR AND CEILING RUNNERS WITH 1/2 IN. LONG TYPE S-12 STEEL SCREWS ON BOTH SIDES OF THE STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN ACCORDANCE WITH THE AISI SPECIFICATIONS (BEARING WALLS). STUDS TO BE CUT 1/2 TO 3/4 IN. LESS THAN ASSEMBLY HEIGHT AND ATTACHED TO STUDS OR BY WELDED OR BOLTED CONNECTIONS DESIGNED IN ACCORDANCE WITH THE AISI
3. LATERAL SUPPORT MEMBERS — (NOT SHOWN) — WHERE REQUIRED FOR LATERAL SUPPORT OF STUDS, SUPPORT SHALL BE PROVIDED BY MEANS OF STEEL STRAPS, CHANNELS OR OTHER SIMILAR MEANS AS SPECIFIED IN THE DESIGN OF A PARTICULAR STEEL STUD WALL SYSTEM.
4. GYPSUM BOARD — NOM 5/8 IN. THICK, 24 TO 64 IN. WIDE GYPSUM PANELS, ATTACHED VERTICALLY OR HORIZONTALLY WITH 1-1/4 IN. LONG TYPE S-12 STEEL SCREWS, WHEN APPLIED VERTICALLY TO STUDS, JOINTS CENTERED OVER STUDS AND STAGGERED ONE STUD CAVITY ON OPPOSITE SIDES OF STUDS AND ATTACHED WITH SCREWS SPACED 8 IN. O.C. ALONG THE EDGES AND 12 IN. O.C. IN THE FIELD, WHEN APPLIED HORIZONTALLY TO STUDS, NO DISTANCE REQUIREMENT ON JOINTS ON OPPOSITE SIDES OF STUDS AND ATTACHED WITH SCREWS SPACED 8 IN. O.C. ALONG THE EDGES AND 12 IN. O.C. IN THE FIELD, WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM PANELS TO BE INSTALLED HORIZONTALLY.
5. BATTS AND BLANKETS — (OPTIONAL, NOT SHOWN) — PLACED IN STUD CAVITIES, ANY GLASS FIBER OR MINERAL WOOL INSULATION BEARING THE UL CLASSIFICATION MARKING AS TO SURFACE BURNING CHARACTERISTICS AND/OR FIRE RESISTANCE, SEE BATTS AND BLANKETS (BKNV OR BZZZ) CATEGORIES FOR NAMES OF CLASSIFIED COMPANIES.
6. JOINT TAPE AND COMPOUND — VINYL OR CASERIN, DRY OR PREMIXED JOINT COMPOUND APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS, PAPER TAPE AND JOINT COMPOUND MAY BE OMITTED WHEN GYPSUM BOARD ARE SUPPLIED WITH SQUARE EDGES.
7. CAULKING AND SEALANTS — (OPTIONAL, NOT SHOWN) — A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL.
- UNITED STATES GYPSUM CO. — TYPE AS

**CES**  
Crews Engineering Services, LLC

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Brett A. Crews, P.E. 65592  
7-19-2012

BC  
APPROVED BY:

TM  
DRAWN BY:

LIFE SAFETY PLAN

**TRINITY PRAISE WORSHIP  
CENTER ADDITION**

LS-1  
SHEET:

CES PROJECT NO.: 2012-019

