

PROPOSED MURRAY ROAD APARTMENT DEVELOPMENT FOR:

LTBB ODAWA INDIANS

PETOSKEY, MICHIGAN

APARTMENT BUILDING 4 DRAWING SET 2

| ACCESSIBILITY TABULATION | | | |
|--------------------------|----------------|---------------------|--|
| UNIT # | UNIT LOCATION | ACCESSIBILITY TYPE | |
| UNIT 3A | BLDG. 3, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 3B | BLDG. 3, UPPER | - | |
| UNIT 3C | BLDG. 3, UPPER | - | |
| UNIT 3D | BLDG. 3, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 3E | BLDG. 3, UPPER | - | |
| UNIT 3F | BLDG. 3, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 3G | BLDG. 3, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 3H | BLDG. 3, UPPER | - | |
| UNIT 3I | BLDG. 3, UPPER | - | |
| UNIT 3J | BLDG. 3, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 4A | BLDG. 4, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 4B | BLDG. 4, UPPER | - | |
| UNIT 4C | BLDG. 4, UPPER | - | |
| UNIT 4D | BLDG. 4, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 4E | BLDG. 4, UPPER | TYPE 'A' ACCESSIBLE | |
| UNIT 4F | BLDG. 4, LOWER | - | |
| UNIT 4G | BLDG. 4, UPPER | - | |
| UNIT 4H | BLDG. 4, LOWER | TYPE 'A' ACCESSIBLE | |
| UNIT 5A | BLDG. 5, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 5B | BLDG. 5, UPPER | - | |
| UNIT 5C | BLDG. 5, UPPER | - | |
| UNIT 5D | BLDG. 5, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 5E | BLDG. 5, UPPER | - | |
| UNIT 5F | BLDG. 5, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 5G | BLDG. 5, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 5H | BLDG. 5, UPPER | - | |
| UNIT 5I | BLDG. 5, UPPER | - | |
| UNIT 5J | BLDG. 5, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 6A | BLDG. 6, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 6B | BLDG. 6, UPPER | - | |
| UNIT 6C | BLDG. 6, UPPER | - | |
| UNIT 6D | BLDG. 6, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 6E | BLDG. 6, UPPER | - | |
| UNIT 6F | BLDG. 6, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 6G | BLDG. 6, LOWER | TYPE 'B' ACCESSIBLE | |
| UNIT 6H | BLDG. 6, UPPER | - | |
| UNIT 6I | BLDG. 6, UPPER | - | |
| UNIT 6J | BLDG. 6, LOWER | TYPE 'B' ACCESSIBLE | |

- ### DEFERRED SUBMITTALS
- FIRE SPRINKLER SHOP DRAWINGS, PRODUCT DATA, & HYDRAULIC CALCULATIONS.
 - FIRE ALARM SHOP DRAWINGS AND PRODUCT DATA.
 - PRE-ENGINEERED ROOF TRUSS SHOP DRAWINGS AND CALCULATIONS.
 - PRE-ENGINEERED FLOOR TRUSS SHOP DRAWINGS AND CALCULATIONS.
 - ELECTRICAL PANEL BOARD AC RATING CALCULATIONS.

- ### REQUIRED SPECIAL INSPECTIONS
- PER MBC 1705.3.4.b PERIODIC INSPECTION OF ANCHORS POST INSTALLED IN HARDENED CONCRETE.
 - PER MBC 1705.3.5 PERIODIC CONFIRMATION OF CONCRETE MIX.
 - PER MBC 1705.3.6 CONTINUOUS INSPECTION FOR SLUMP, AIR CONTENT AND TEMPERATURE OF CONCRETE INCLUDING SPECIMENS FOR COMPRESSIVE STRENGTH TESTING.
 - PER MBC 1705.3.12 PERIODIC INSPECTION OF FORMWORK.
 - PER MBC 1705.6 PERIODIC VERIFICATION OF SOILS FOR SHALLOW FOUNDATIONS.
 - PER MBC 1705.6 PERIODIC VERIFICATION OF DEPTH OF EXCAVATIONS AND SOILS.

BUILDING USE / CODE DATA

APPLICABLE CODES
 BUILDING CODE: 2015 MICHIGAN BUILDING CODE
 MECHANICAL CODE: 2015 MICHIGAN MECHANICAL CODE
 PLUMBING CODE: 2015 MICHIGAN PLUMBING CODE
 ELECTRICAL CODE: 2017 MICHIGAN ELECTRIC CODE
 ENERGY CODE: 2015 MICHIGAN ENERGY CODE

BUILDING USE GROUP
 ASSEMBLY GROUP R2

CONSTRUCTION TYPE
 TYPE SB NON-COMBUSTIBLE, UNPROTECTED

ALLOWABLE AREA
 TABULAR ALLOWABLE HEIGHT AND AREA (SINGLE STORY, R13 SUPPRESSED):
 ALLOWABLE HEIGHT: 3 STORES, 60'
 ALLOWABLE AREA: 24,500 sf

ACTUAL BUILDING HEIGHT: 2 STORY, 28'
 ACTUAL BUILDING AREA: 8,628 sf

REQUIRED FIRE RESISTANCE RATINGS FOR BUILDING ELEMENTS
 STRUCTURAL FRAME: 0 HOUR
 BEARING WALLS (EXT): 0 HOUR
 NON-BEARING WALLS AND PARTITIONS (EXT): 0 HOURS
 NON-BEARING WALLS AND PARTITIONS (INT): 0 HOURS
 FLOOR CONSTRUCTION: 0 HOUR (1hr PROVIDED)
 ROOF CONSTRUCTION: 0 HOUR (1hr PROVIDED)

REQUIRED FIRE RESISTANCE RATINGS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE
 SEPARATION < 10': 0 HOURS

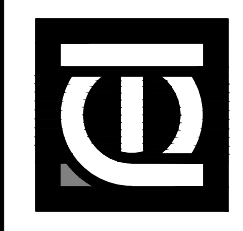
FIRE SUPPRESSION SYSTEM: NFPA 13R SUPPLEMENT

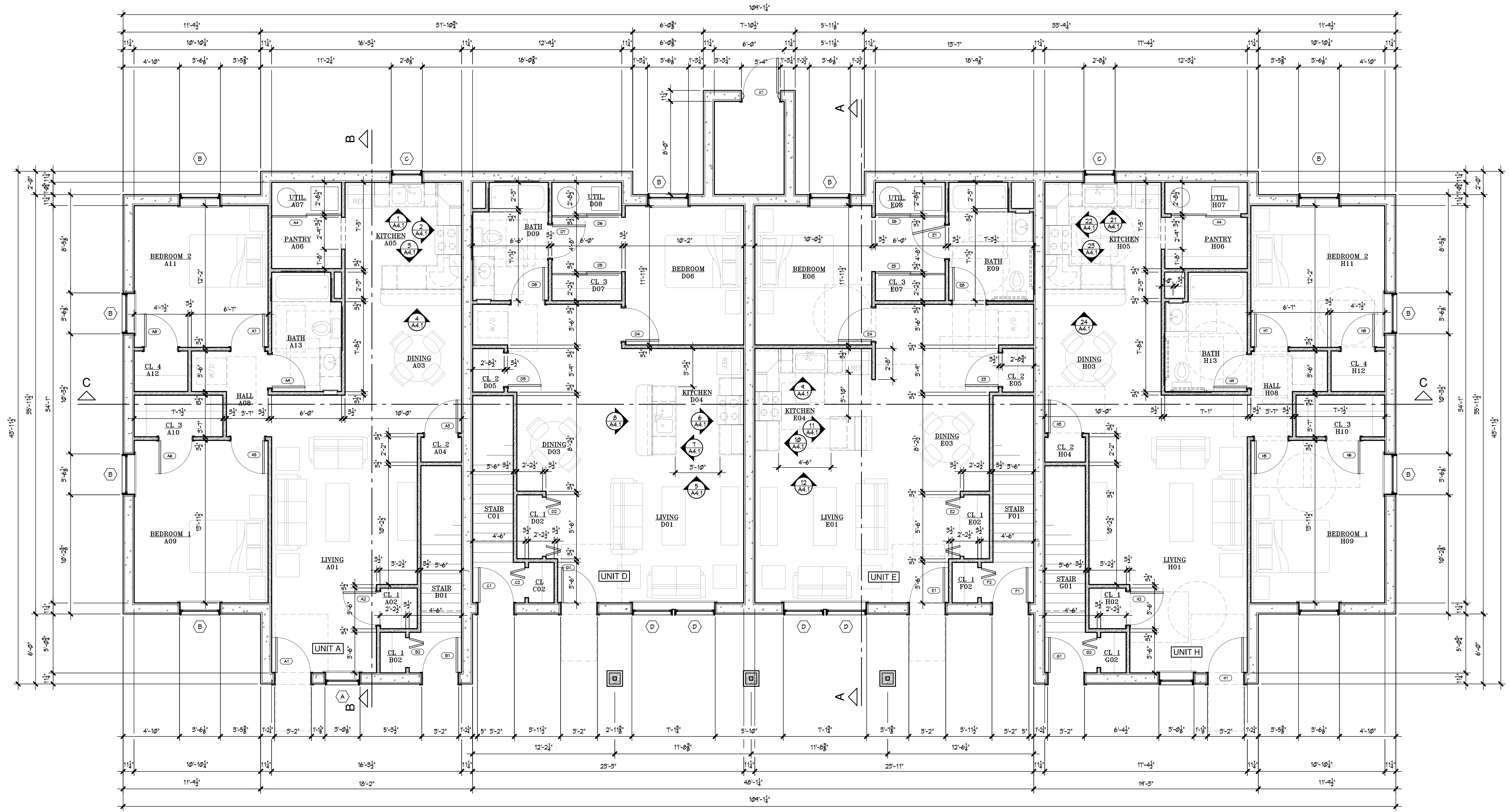
DWELLING UNIT ACCESSIBILITY REQUIREMENTS
 TOTAL NUMBER OF DWELLING UNITS: 38
 NUMBER OF TYPE "A" UNITS REQUIRED = 1; TYPE "A" UNITS PROVIDED = 2
 NUMBER OF TYPE "B" UNITS REQUIRED = ALL OTHER UNITS ON GRADE LEVEL

SHEET INDEX

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| | | |
|-------|---------------|--|
| SHEET | DATE | MAY 1, 2020 |
| | | SEPT. 14, 2022 |
| | DATE | JAN. 24, 2023 |
| | PROJECT NO. | 273-19 |
| | PROJECT TITLE | LITTLE TRAVERSE BAY BAND OF ODAWA INDIANS MURRAY ROAD APARTMENT DEVELOPMENT PETOSKEY, MICHIGAN |
| | DRAWING TITLE | BUILDING 4 TITLE SHEET & PROJECT INFORMATION |

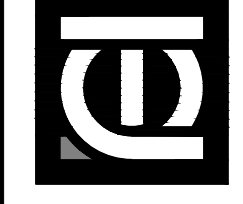


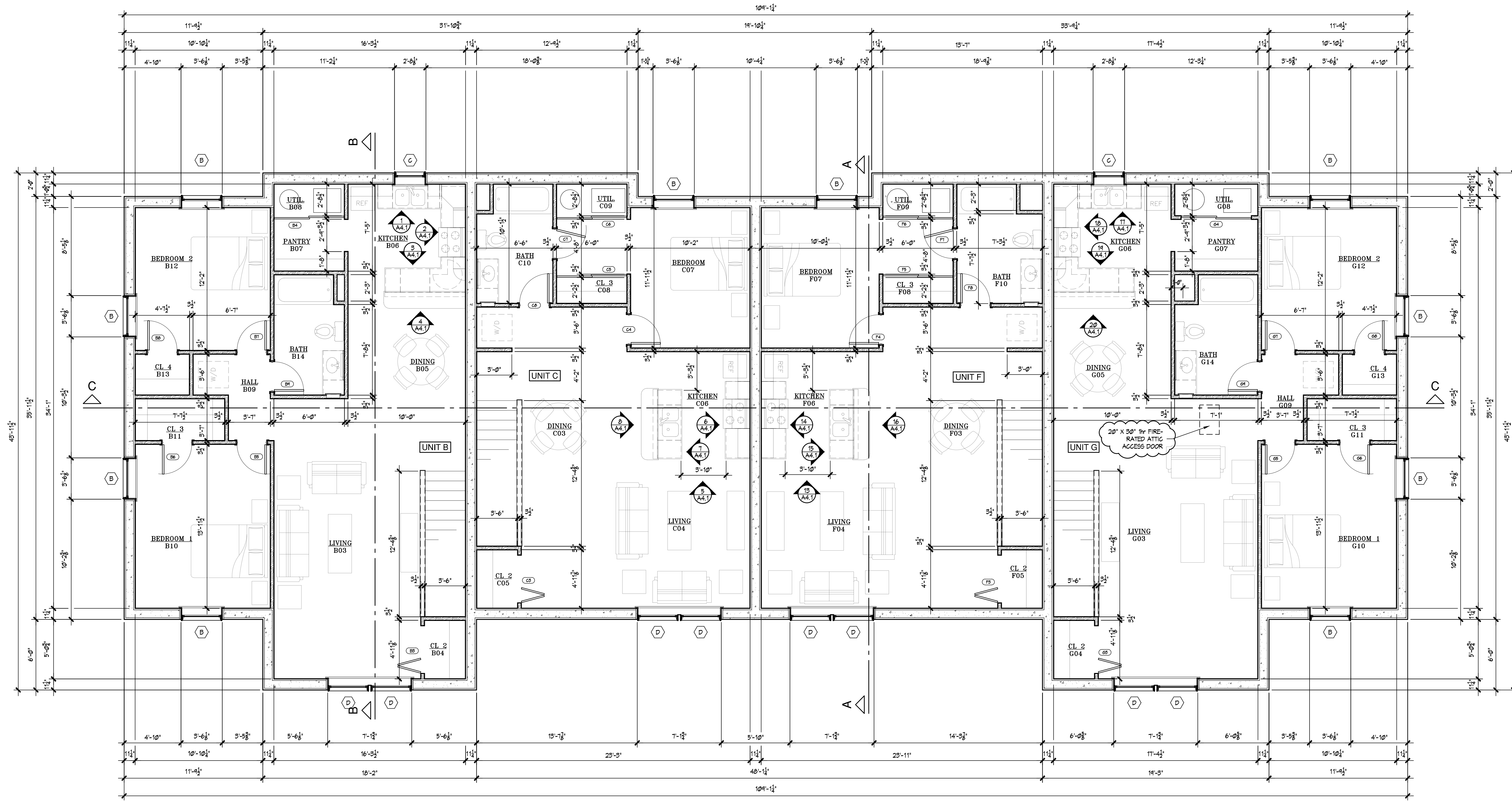


LOWER FLOOR PLAN

SCALE: 1/4" = 1'-0"

NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF

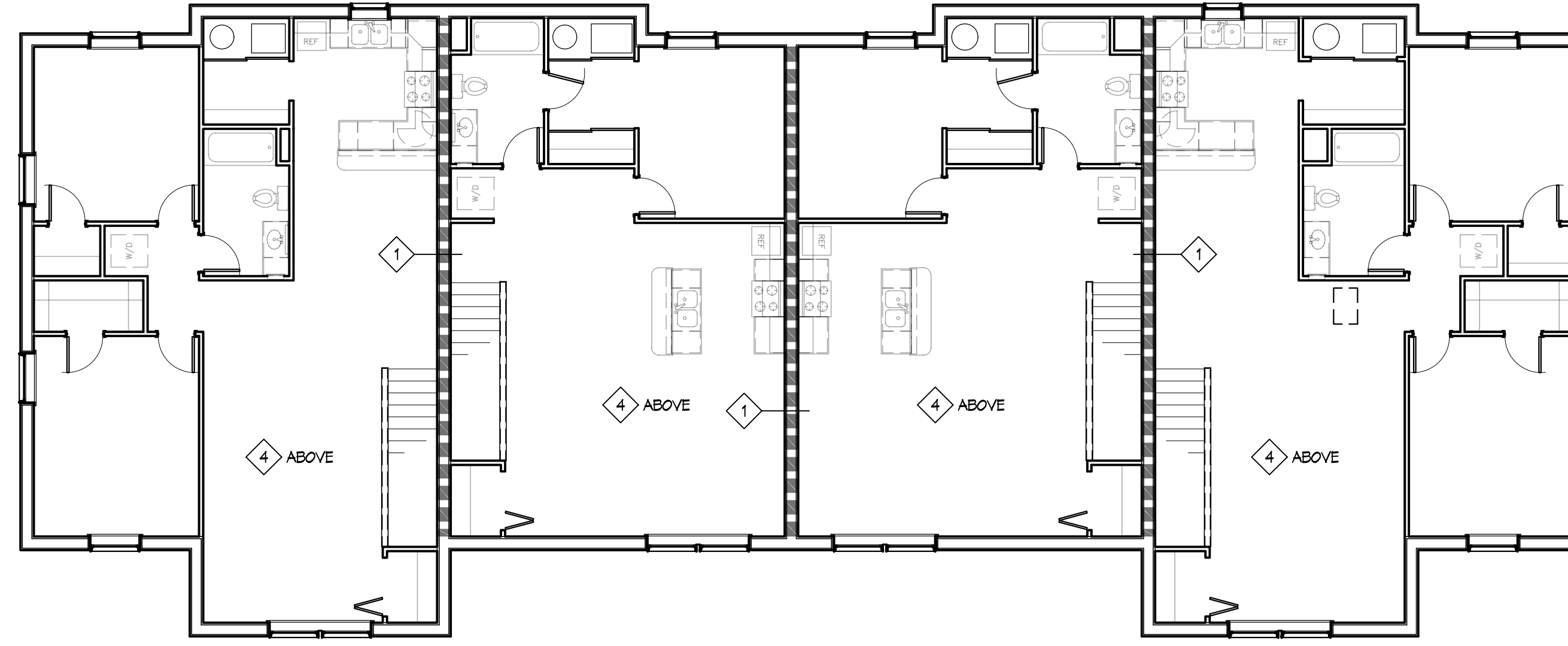




UPPER FLOOR PLAN

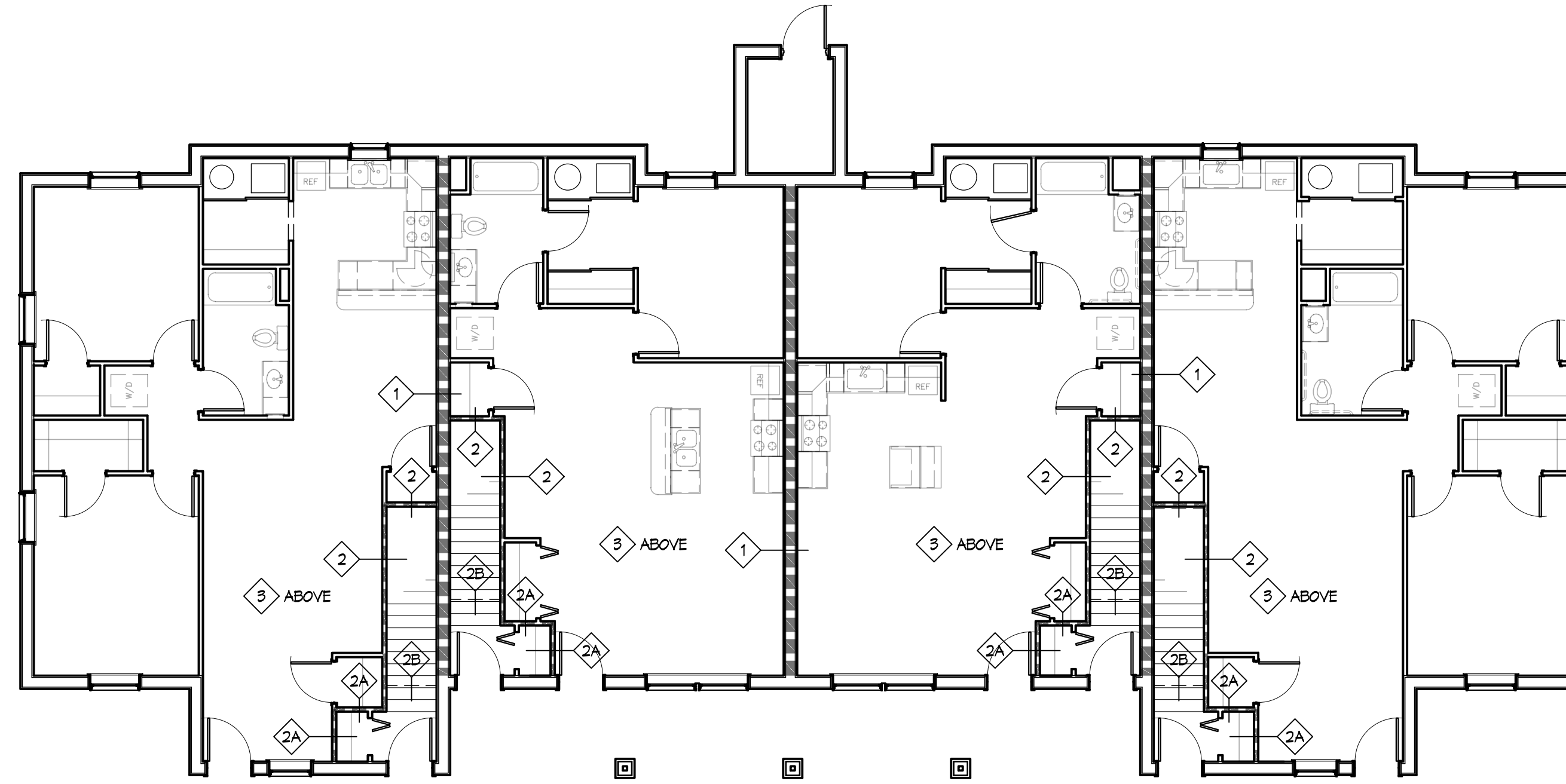
SCALE: 1/4" = 1'-0"

NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



UPPER FLOOR FIRE SEPARATION PLAN

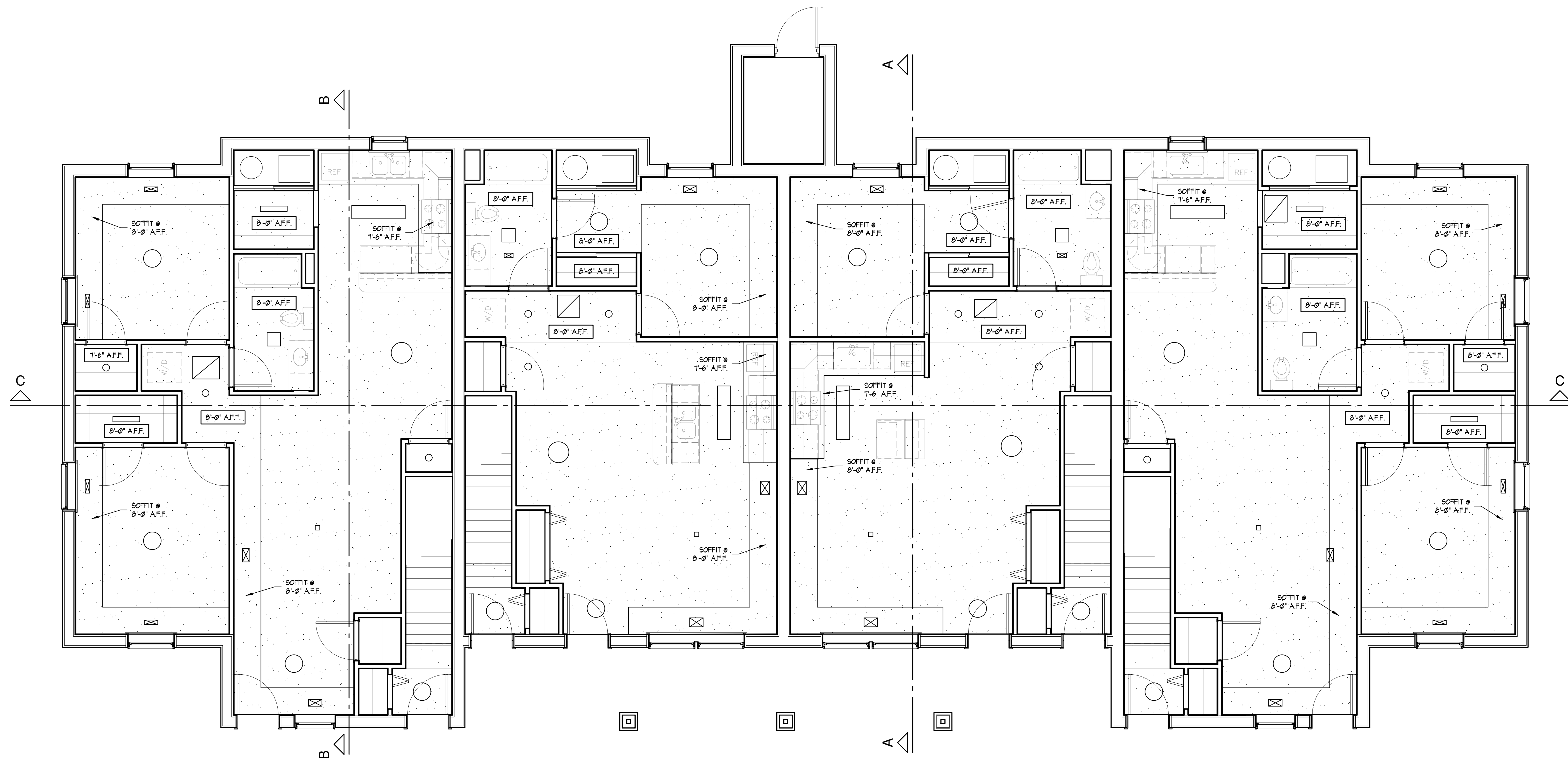
SCALE: 1/8" = 1'-0"



LOWER FLOOR FIRE SEPARATION PLAN

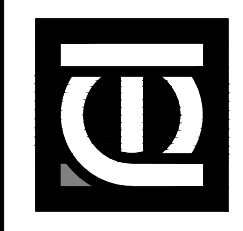
SCALE: 1/8" = 1'-0"

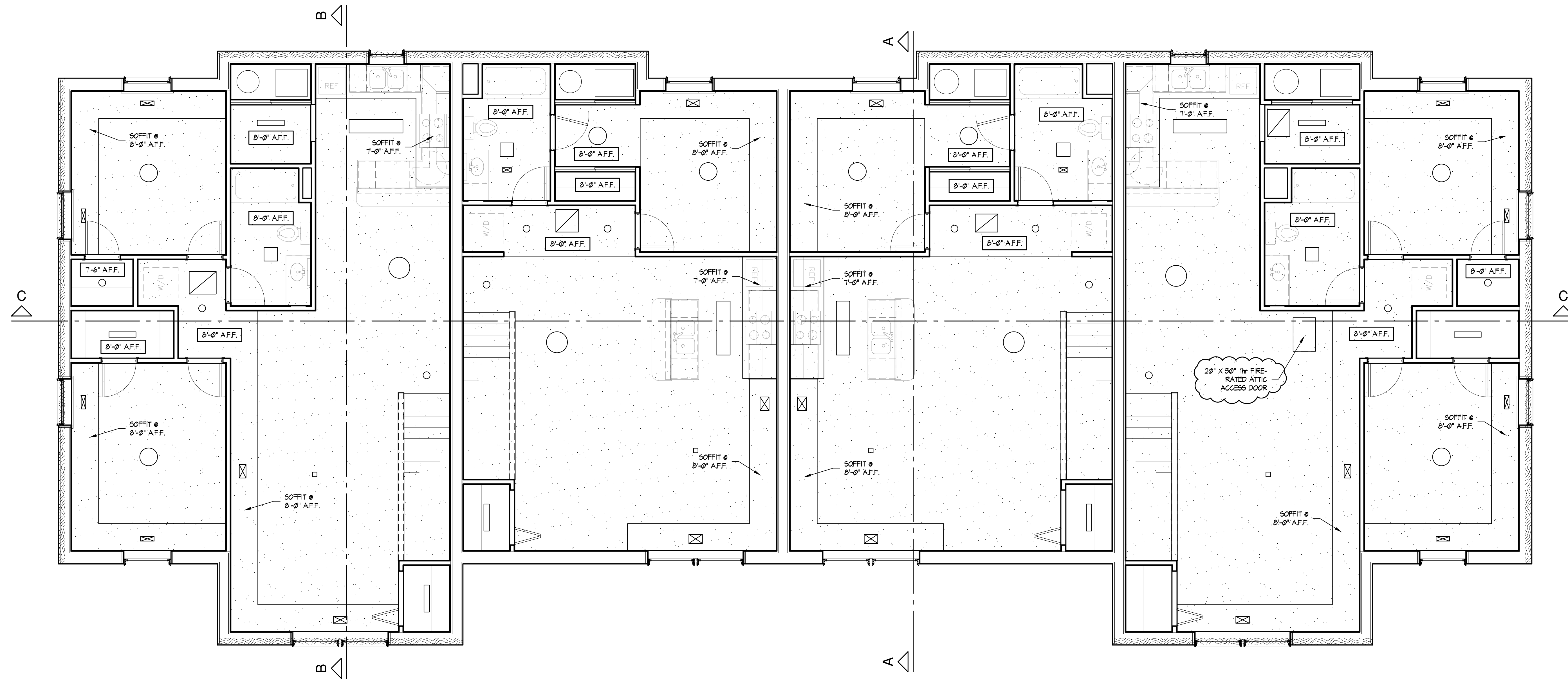
- 1 1/2" FIRE RATED "FIRE PARTITION" - 6" GORE ICF WALL w/ 1/2" GYP. BD. EA. SIDE. EXTEND WALL FROM CONC. SLAB TO UNDERSIDE OF FIRE RATED ROOF ASSEMBLY ABOVE (2015 MBC ASSEMBLY 4-1.1).
- 2 1/2" FIRE RATED "FIRE PARTITION" STG 50 - 2x4 STUDS AT 16" O.C. w/ RC-1 RESILIENT CHANNELS ONE SIDE, 5/8" TYPE 'X' GYP. BD. BOTH SIDES AND CAVITIES FILLED w/ BATT INSULATION. EXTEND WALL FROM CONC. SLAB THROUGH FLOOR ASSEMBLY TO UNDERSIDE OF FLOOR SHEATHING ABOVE. FIRE PERFORMANCE UL DESIGN IS11, ACOUSTICAL PERFORMANCE BBN-160403.
- 2A SAME AS 2 ABOVE, EXCEPT THAT PARTITION EXTENDS TO UNDERSIDE OF FIRE RATED FLOOR / CEILING ASSEMBLY.
- 2B SAME AS 2 ABOVE, EXCEPT THAT PARTITION EXTENDS THROUGH FIRE RATED FLOOR / CEILING ASSEMBLY ONLY AT STAIR OPENING.
- 3 1/2" FIRE RATED "HORIZONTAL ASSEMBLY" - FLAT CHORD TRUSSES AT 14.2" O.C. w/ 1/2" OSB SID-FLOORING, 1/2" HOMASOTE PANELS AND (1) LAYER 5/8" TYPE 'X' GYP. BD. OVER RESILIENT CHANNELS AT 12" O.C. ON BOTTOM CHORD. FIRE PERFORMANCE DESIGN LS21 SYSTEM 3, ACOUSTICAL PERFORMANCE STC 56 AND IIC 52.
- 4 1/2" FIRE RATED "ROOF/CEILING ASSEMBLY" - PRE-ENGINEERED TRUSSES AT 24" O.C. w/ 1/2" OSB ROOF SHEATHING AND (1) LAYER 5/8" TYPE 'X' GYP. BD. OVER RESILIENT CHANNELS AT 12" O.C. ON BOTTOM CHORD. FIRE PERFORMANCE DESIGN P522.



LOWER FLOOR REF'D. CEILING PLAN

SCALE: $\frac{1}{8}'' = 1'-0''$





UPPER FLOOR REF'D. CEILING PLAN

SCALE: 1/8" = 1'-0"

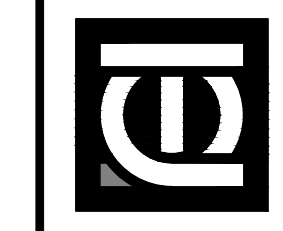
SHEET
A2.2

DATE
MAY 1, 2020
SEPT. 14, 2022

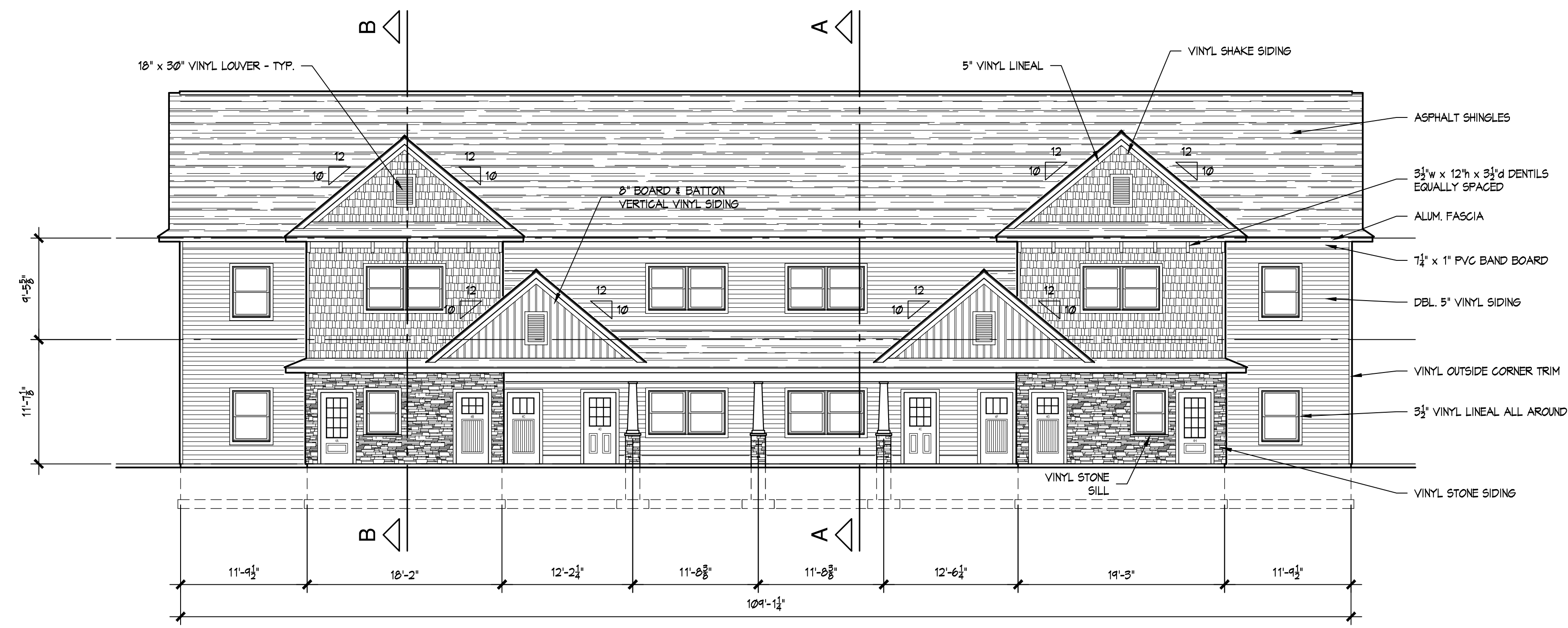
PROJECT NO.
273-19

PROJECT TITLE
LITTLE TRAVERSE BAY BAND OF OJAWA INDIANS
MURRAY ROAD APARTMENT DEVELOPMENT
PETOSKEY, MICHIGAN

DRAWING TITLE
BUILDING 4
LOWER FLOOR REF'D. CEILING PLAN

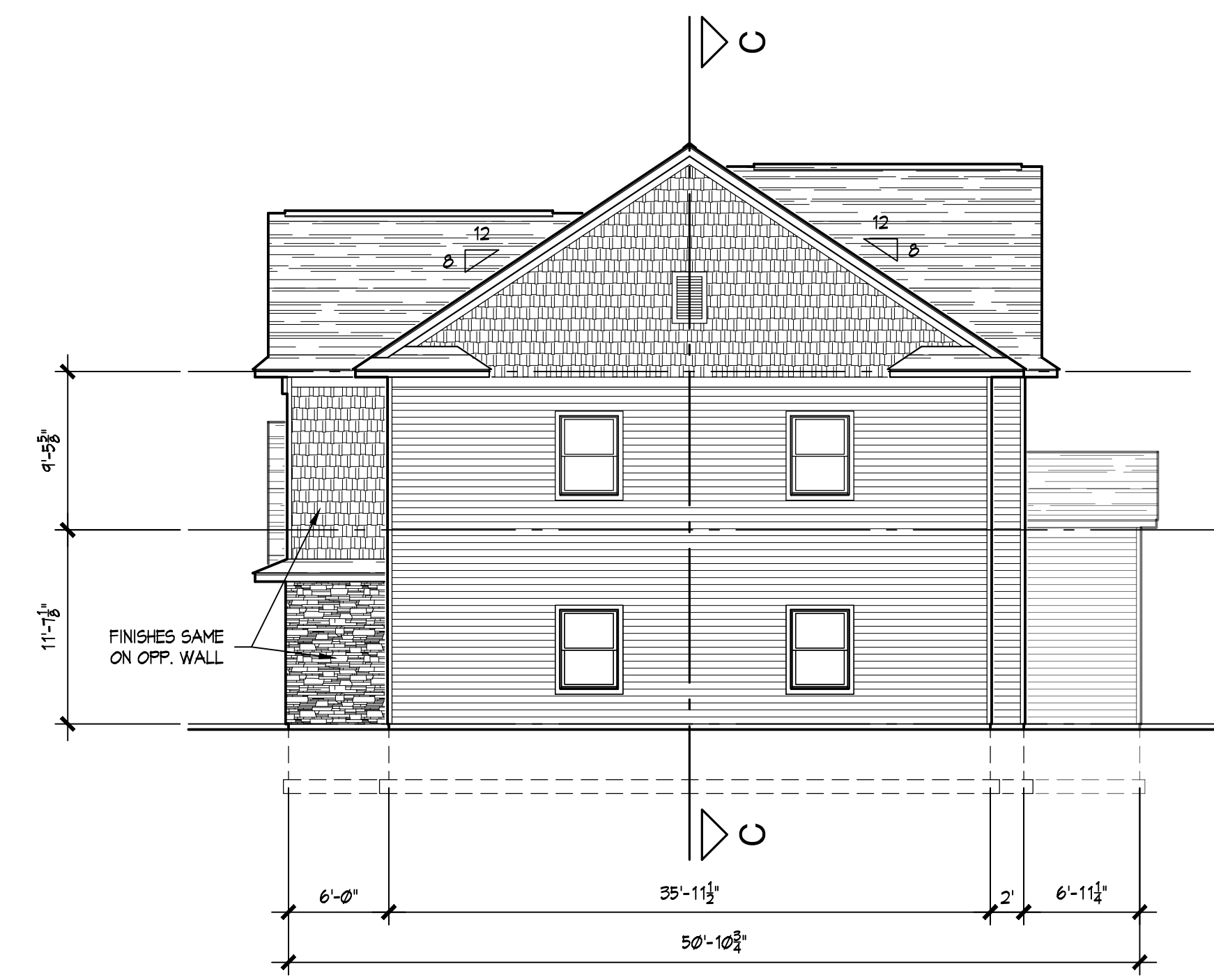


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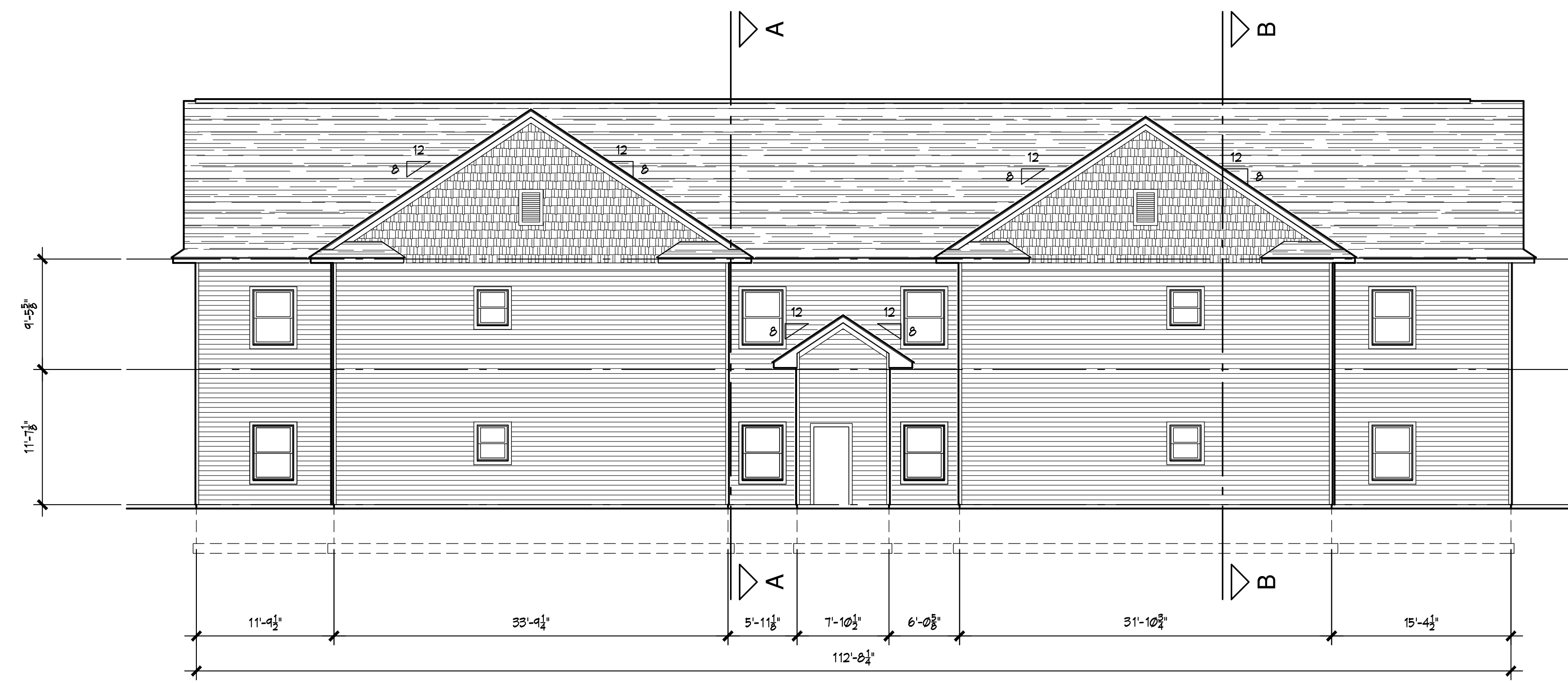
FRONT ELEVATION

SCALE: $\frac{1}{8}'' = 1'-0''$



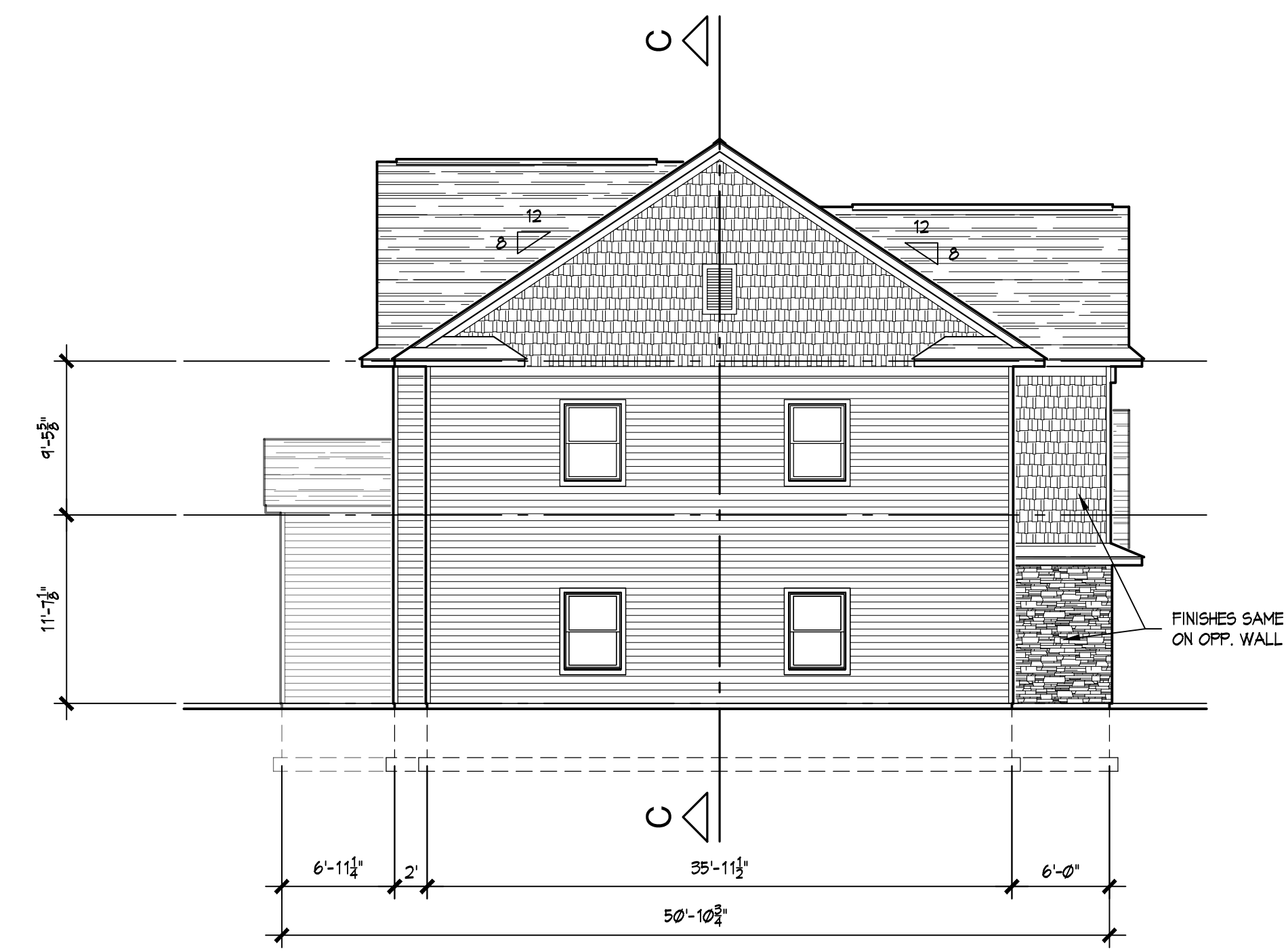
RIGHT SIDE ELEVATION

SCALE: $\frac{1}{8}'' = 1'-0''$



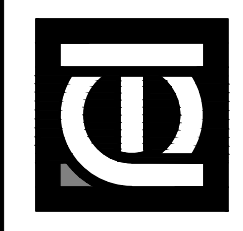
REAR ELEVATION

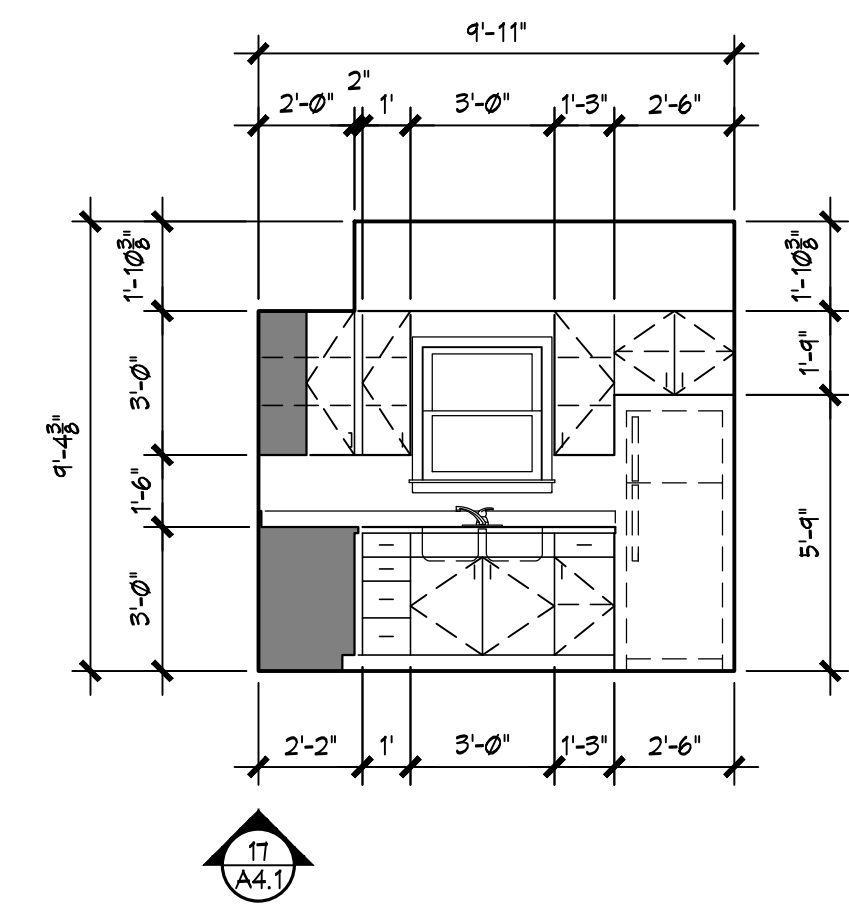
SCALE: $\frac{1}{8}'' = 1'-0''$



LEFT SIDE ELEVATION

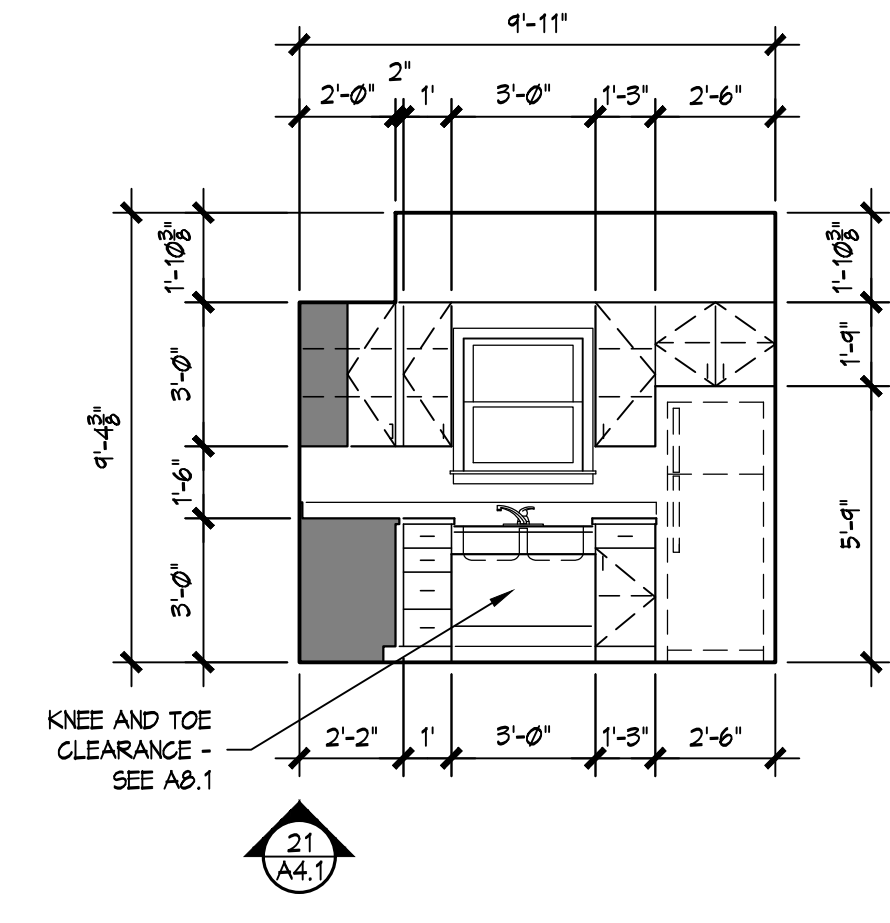
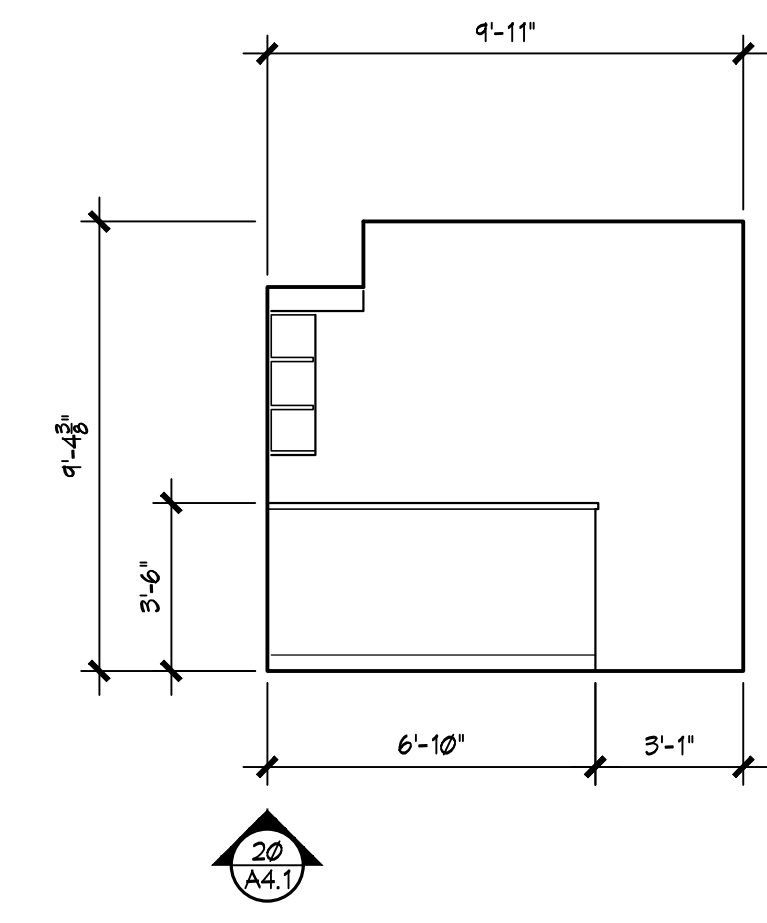
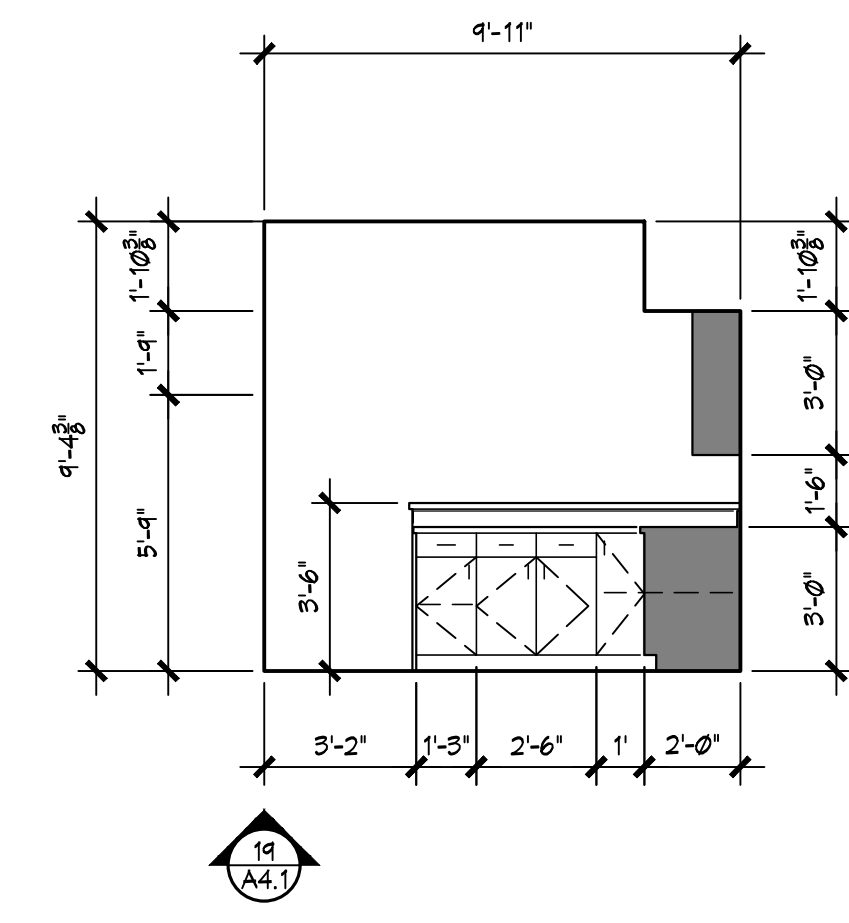
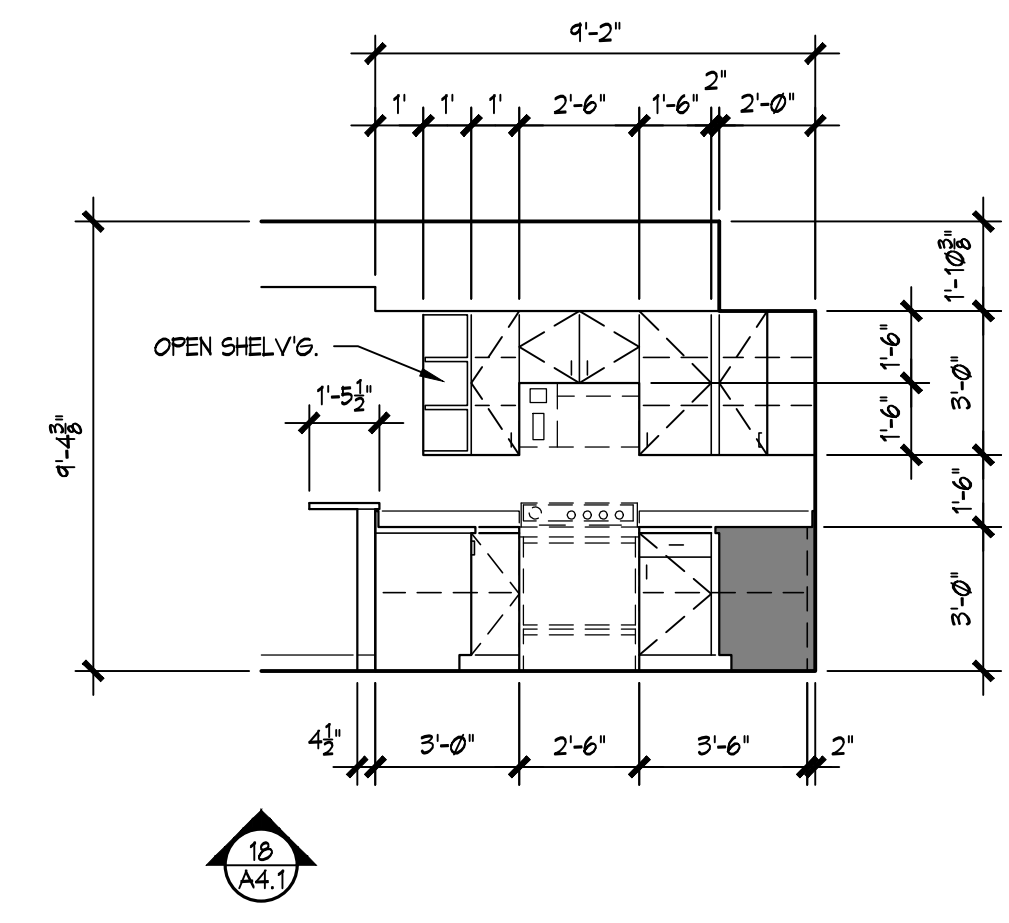
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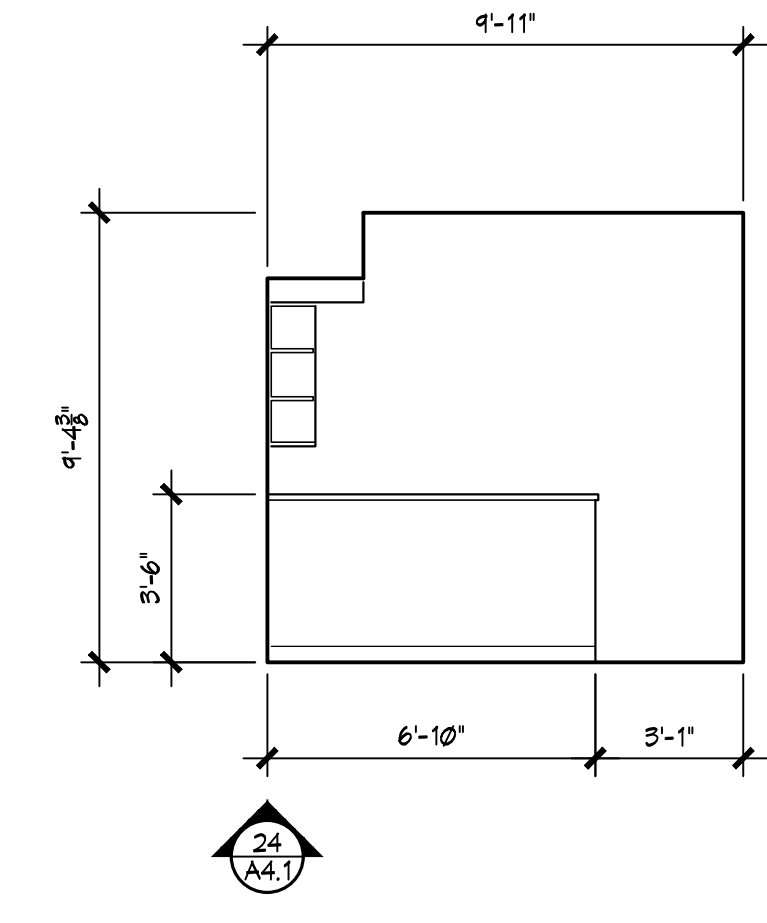
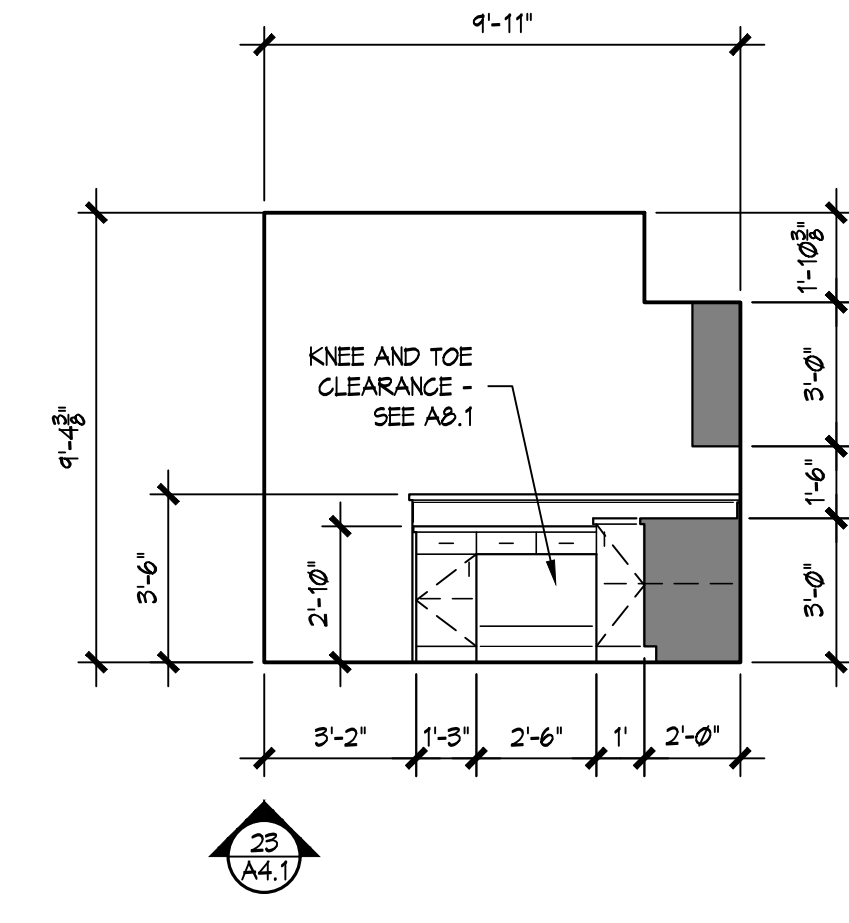
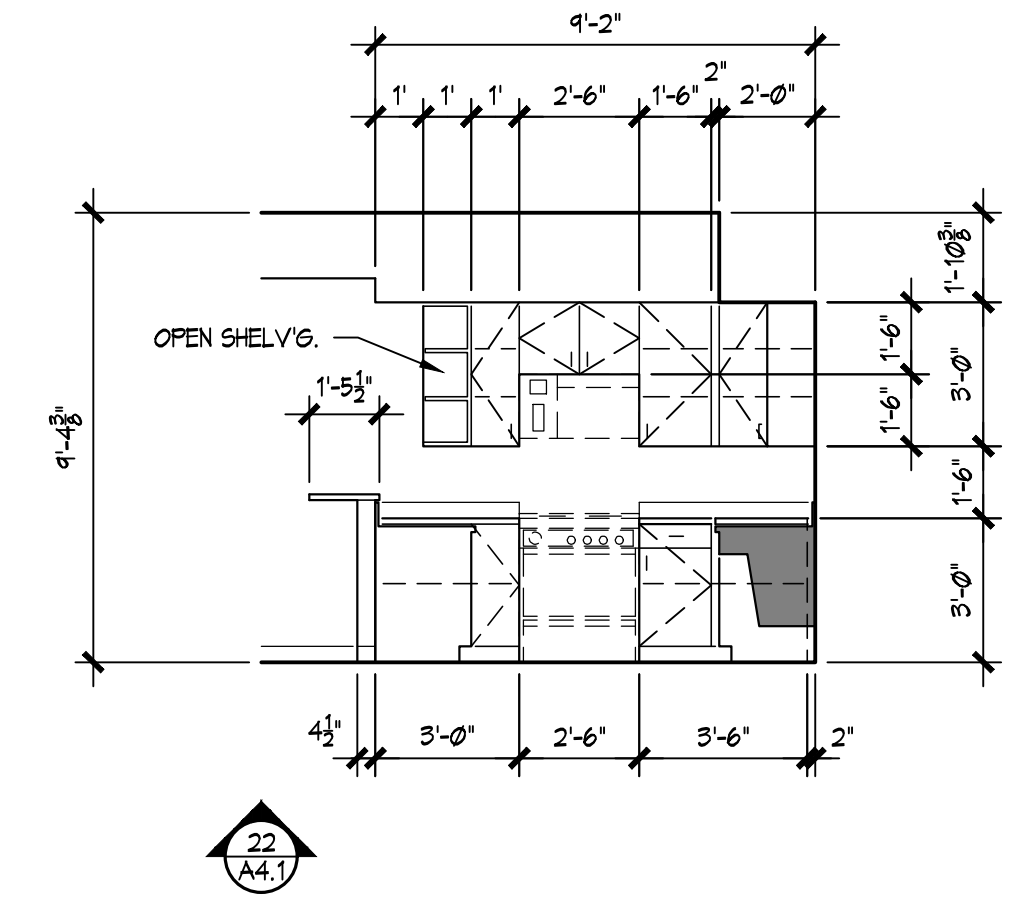
KITCHEN G06

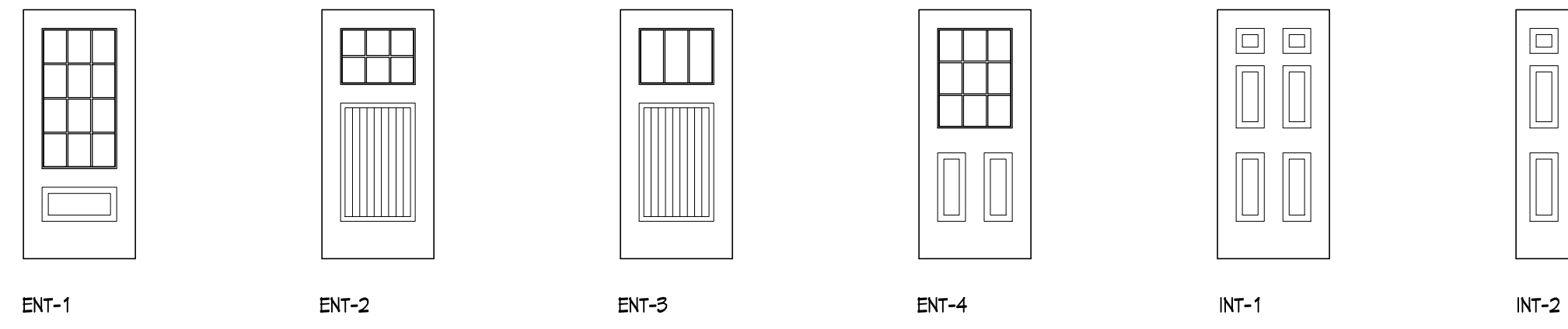
SCALE: 1/4" = 1'-0"



KITCHEN H05

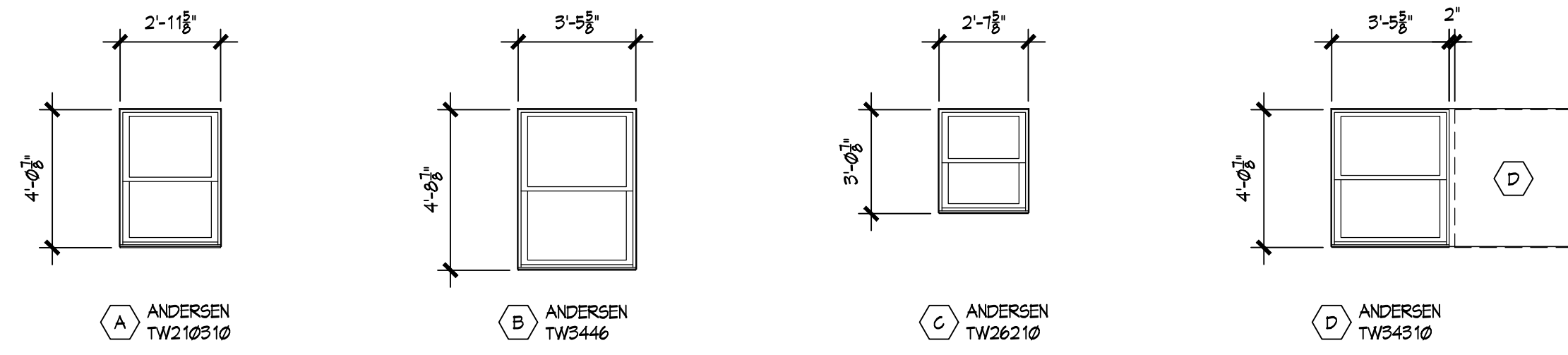
SCALE: 1/4" = 1'-0"





DOOR ELEVATIONS

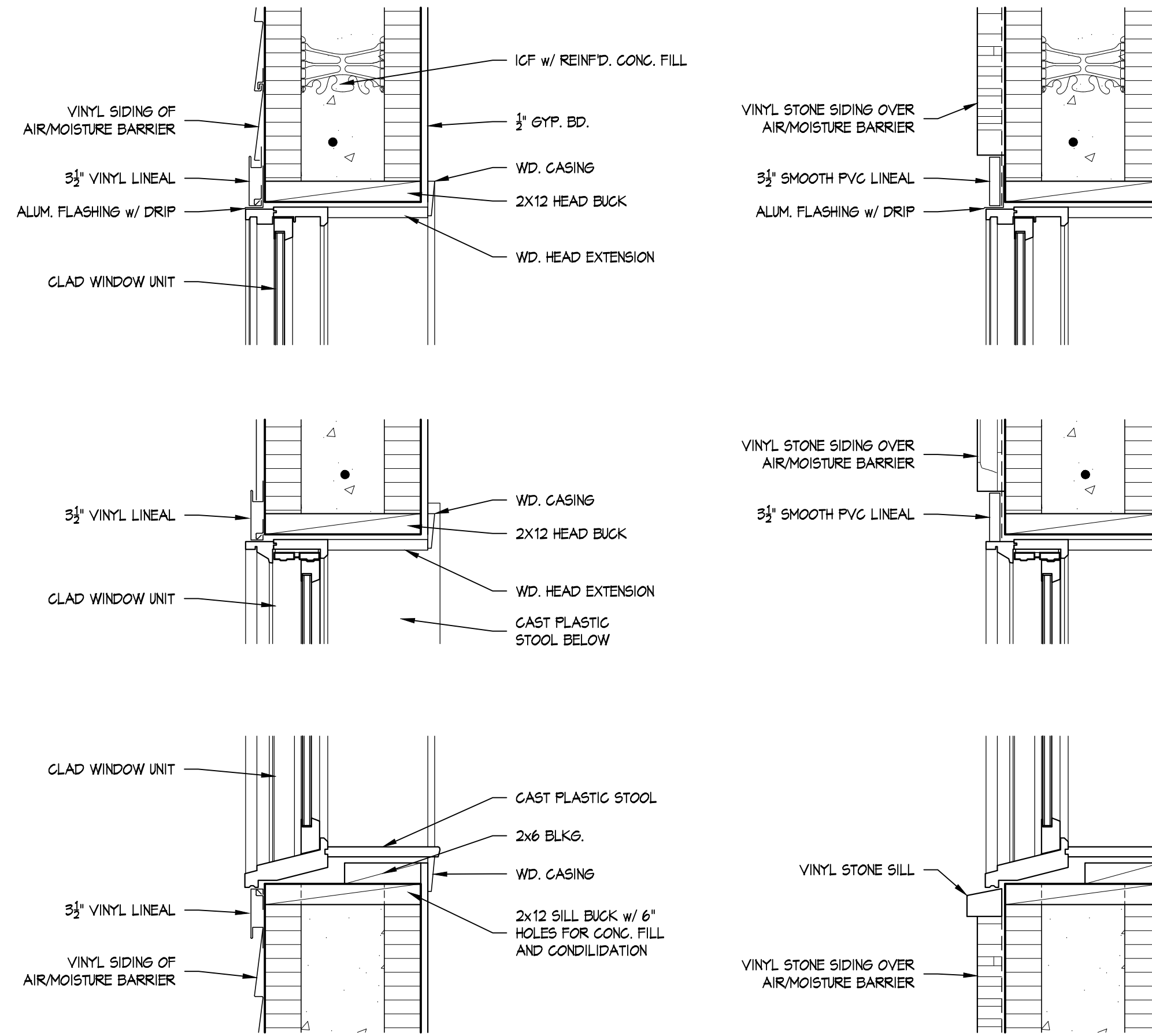
SCALE: 1/4" = 1'-0"



WINDOW ELEVATIONS

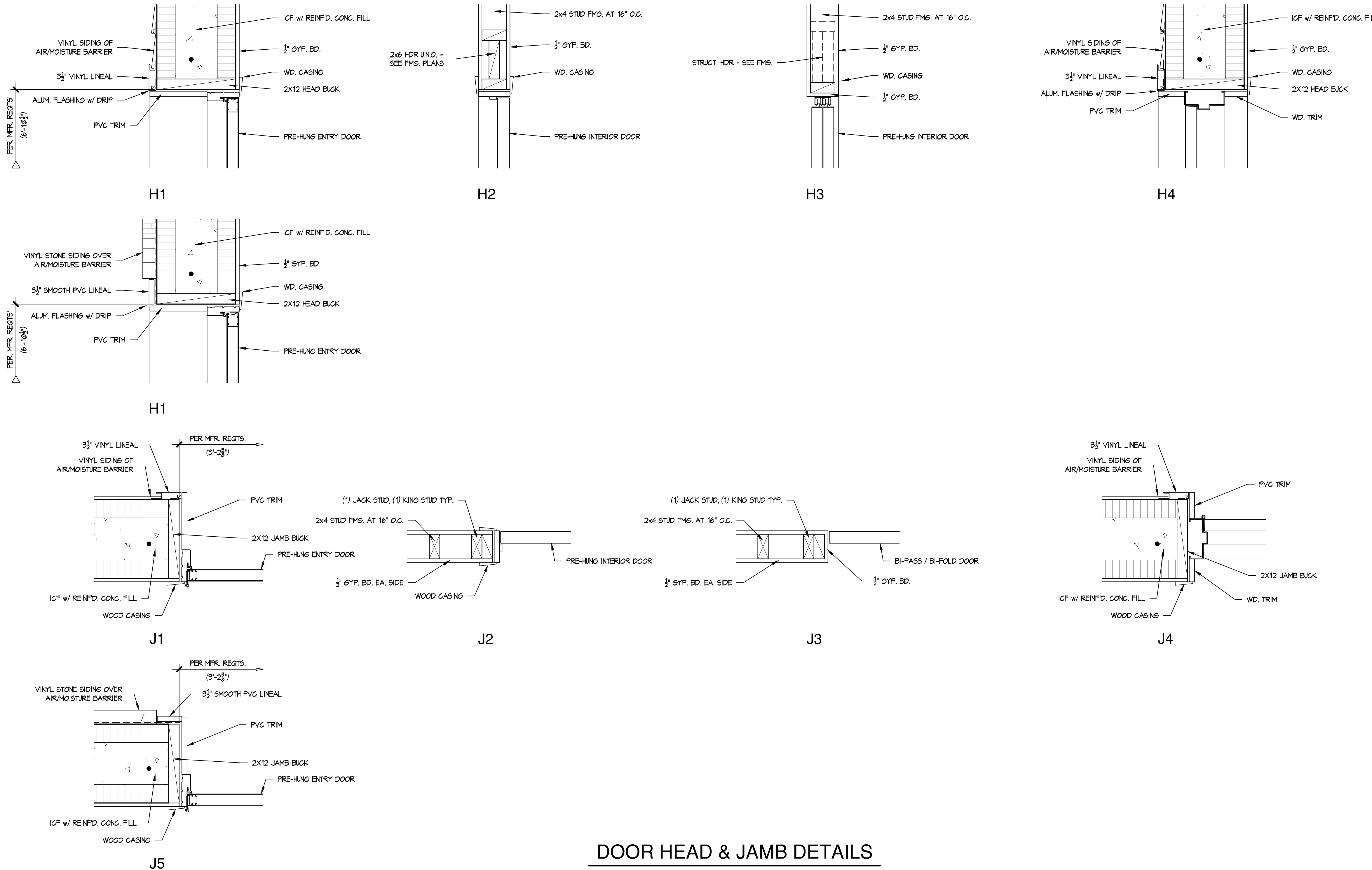
SCALE: 1/4" = 1'-0"

NOTE: WINDOWS ON THE UPPER LEVEL W/ STOOL HEIGHTS GREATER THAN 36" ABOVE FINISH FLOOR SHALL BE EQUIPPED WITH MANUFACTURERS OPENING CONTROL DEVICES.



WINDOW HEAD & JAMB DETAILS

SCALE: 1/2" = 1'-0"



DOOR HEAD & JAMB DETAILS

SCALE: 1/2" = 1'-0"

DOOR, FRAME AND HARDWARE SCHEDULE

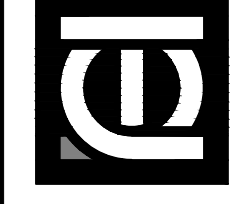
| DOOR NO. | DOOR SIZE | DOOR DATA | | | FRAME DATA | | | DETAILS | | REMARKS |
|----------|----------------------------|-----------|-------|---------|------------|------|---------|---------|------|---------|
| | | MAT. | TYPE | GLAZING | MAT. | TYPE | GLAZING | HEAD | JAMB | |
| 4-A1 | 3'-0" X 6'-8" | | ENT-1 | | | | | H1 | J1 | 1 |
| 4-A2 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-A3 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-A4 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-A5 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-A6 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-A7 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-A8 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-A9 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-B1 | 3'-0" X 6'-8" | | ENT-2 | | | | | H1 | J1 | 1 |
| 4-B2 | 2'-6" X 6'-8" BI-FOLD | | INT-1 | | | | | H5 | J5 | 5 |
| 4-B3 | 4'-0" X 6'-8" BI-FOLD | | INT-1 | | | | | H5 | J5 | 5 |
| 4-B4 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-B5 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-B6 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-B7 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-B8 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-B9 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-C1 | 3'-0" X 6'-8" | | ENT-3 | | | | | H1 | J1 | 1 |
| 4-C2 | 2'-6" X 6'-8" BI-FOLD | | INT-1 | | | | | H5 | J5 | 5 |
| 4-C3 | 4'-0" X 6'-8" BI-FOLD | | INT-1 | | | | | H5 | J5 | 5 |
| 4-C4 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-C5 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-C6 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-C7 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-C8 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-D1 | 3'-0" X 6'-8" | | ENT-4 | | | | | H1 | J1 | 1 |
| 4-D2 | 5'-0" X 6'-8" DBL. BI-FOLD | | INT-1 | | | | | H1 | J1 | 6 |
| 4-D3 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-D4 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-D5 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-D6 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-D7 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-D8 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-E1 | 3'-0" X 6'-8" | | ENT-4 | | | | | H1 | J1 | 1 |
| 4-E2 | 5'-0" X 6'-8" DBL. BI-FOLD | | INT-1 | | | | | H1 | J1 | 6 |
| 4-E3 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-E4 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-E5 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-E6 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-E7 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-E8 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-F1 | 3'-0" X 6'-8" | | ENT-3 | | | | | H1 | J1 | 1 |
| 4-F2 | 2'-6" X 6'-8" BI-FOLD | | INT-1 | | | | | H5 | J5 | 5 |
| 4-F3 | 4'-0" X 6'-8" BI-FOLD | | INT-1 | | | | | H5 | J5 | 5 |
| 4-F4 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-F5 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-F6 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-F7 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-F8 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-G1 | 3'-0" X 6'-8" | | ENT-2 | | | | | H1 | J1 | 1 |
| 4-G2 | 2'-6" X 6'-8" BI-FOLD | | INT-1 | | | | | H5 | J5 | 5 |
| 4-G3 | 4'-0" X 6'-8" BI-FOLD | | INT-1 | | | | | H5 | J5 | 5 |
| 4-G4 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-G5 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-G6 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-G7 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-G8 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-G9 | 2'-6" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-H1 | 3'-0" X 6'-8" | | ENT-1 | | | | | H1 | J1 | 1 |
| 4-H2 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-H3 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-H4 | 6'-0" X 6'-8" BY-PASS | | INT-1 | | | | | H5 | J5 | 4 |
| 4-H5 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-H6 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-H7 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-H8 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 2 |
| 4-H9 | 2'-10" X 6'-8" | | INT-1 | | | | | H2 | J2 | 3 |
| 4-J1 | 3'-0" X 6'-8" | | H.M. | FLUSH | - | | | H.M. | - | - |

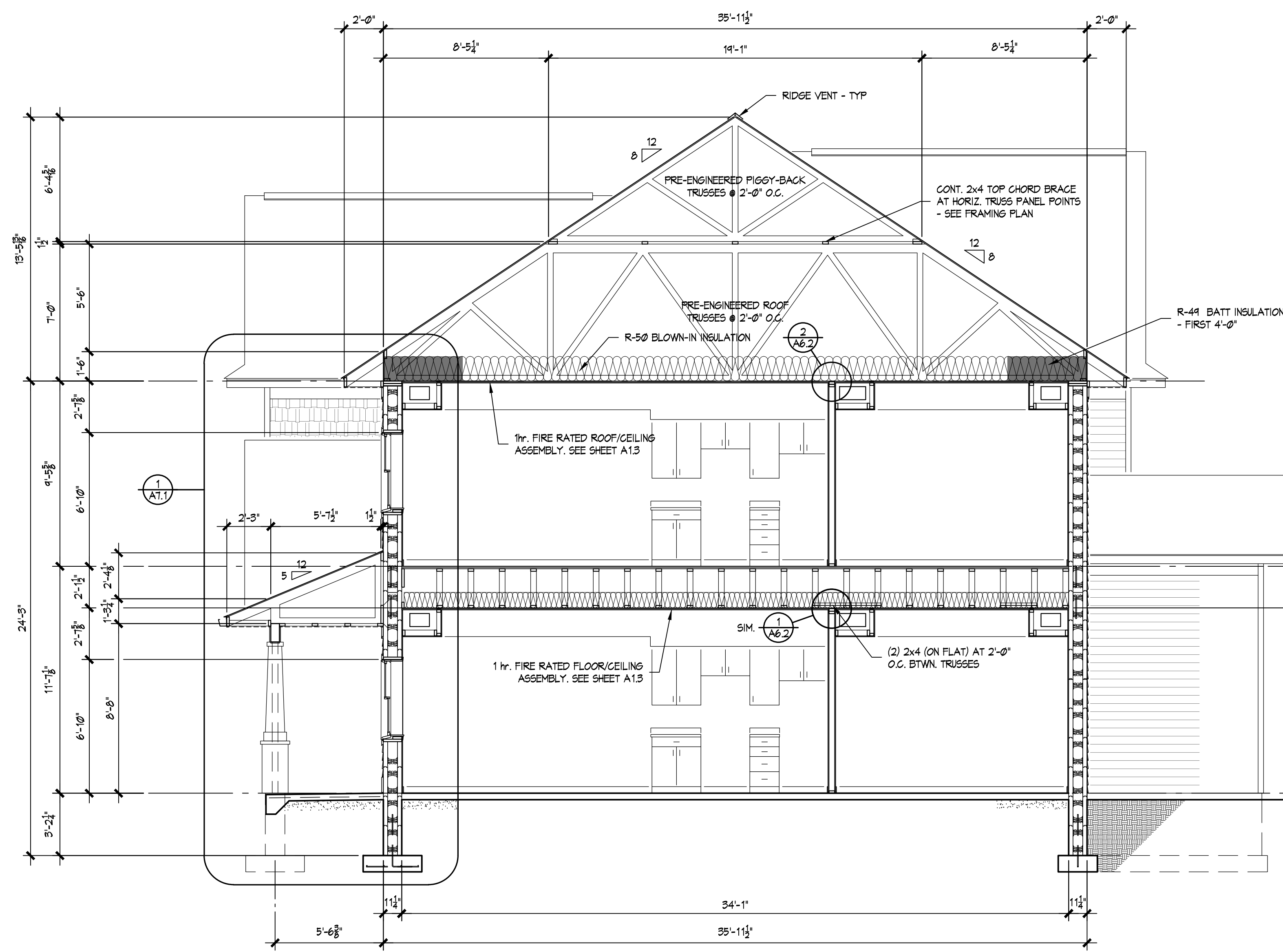
ENTRY DOOR TYPE SCHEDULE:

ENT-1. THERMA-TRU, MODEL CCV05012
 ENT-2. THERMA-TRU, MODEL CCV060-SDL
 ENT-3. THERMA-TRU, MODEL CCV030-SDL
 ENT-4. THERMA-TRU, MODEL CCV060-01

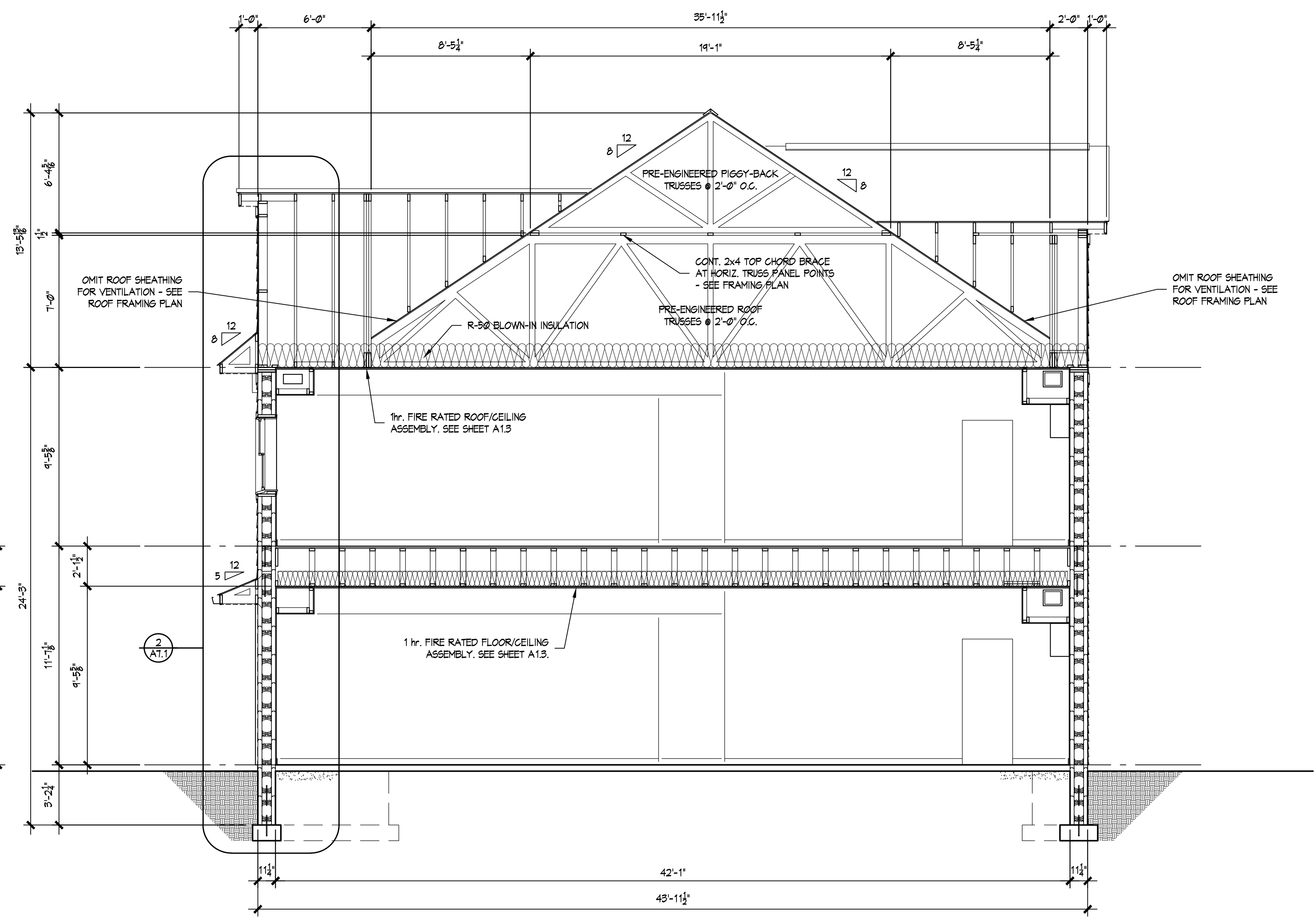
INTERIOR DOOR TYPE SCHEDULE:

INT-1. PRE-HUNG 6 PANEL
 INT-2. BI-FOLD PANEL MATCHING INT-1

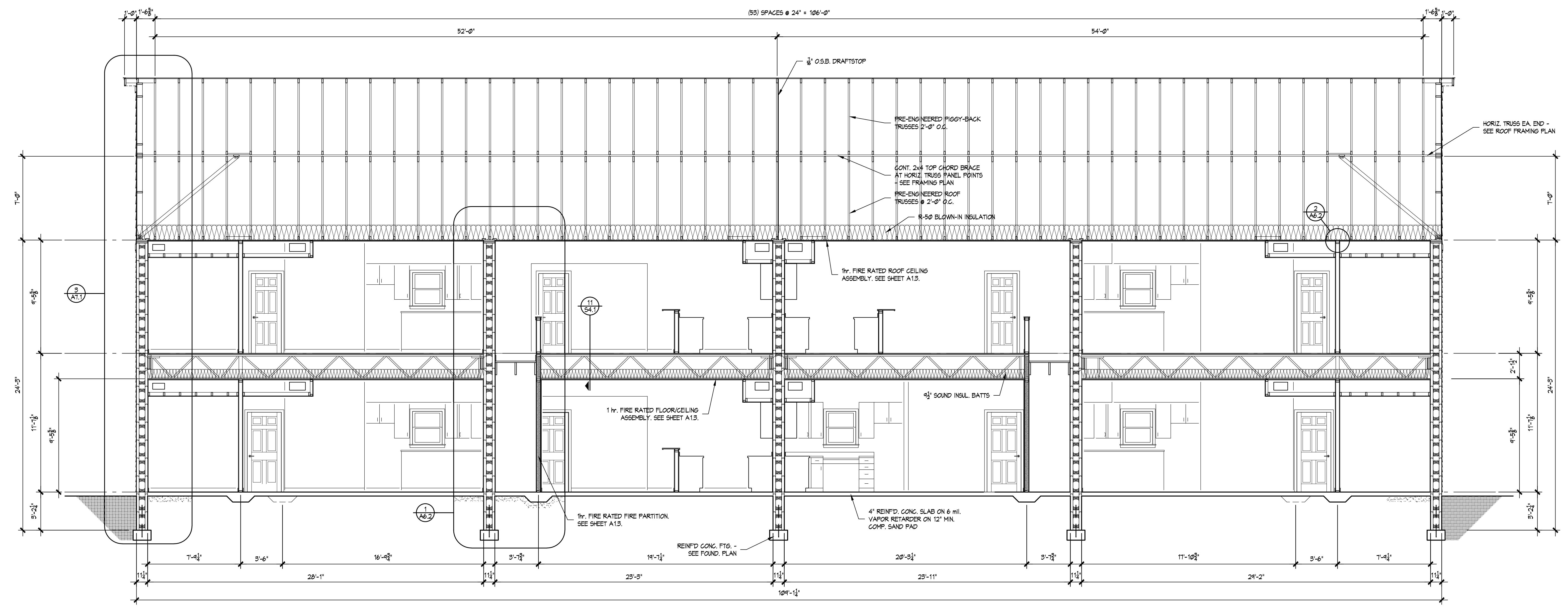




BUILDING SECTION "A-A"
SCALE: 1/2" = 1'-0"

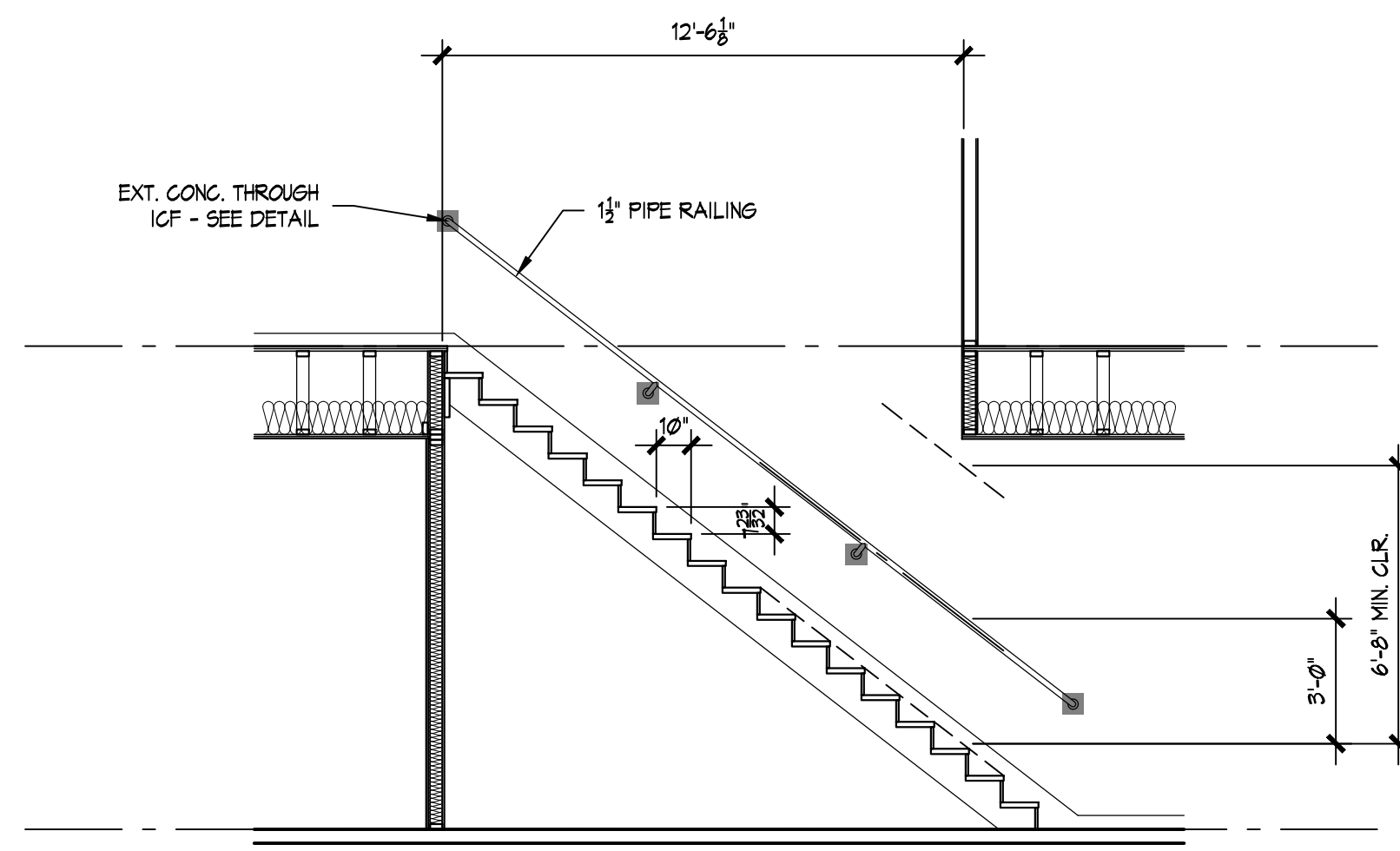
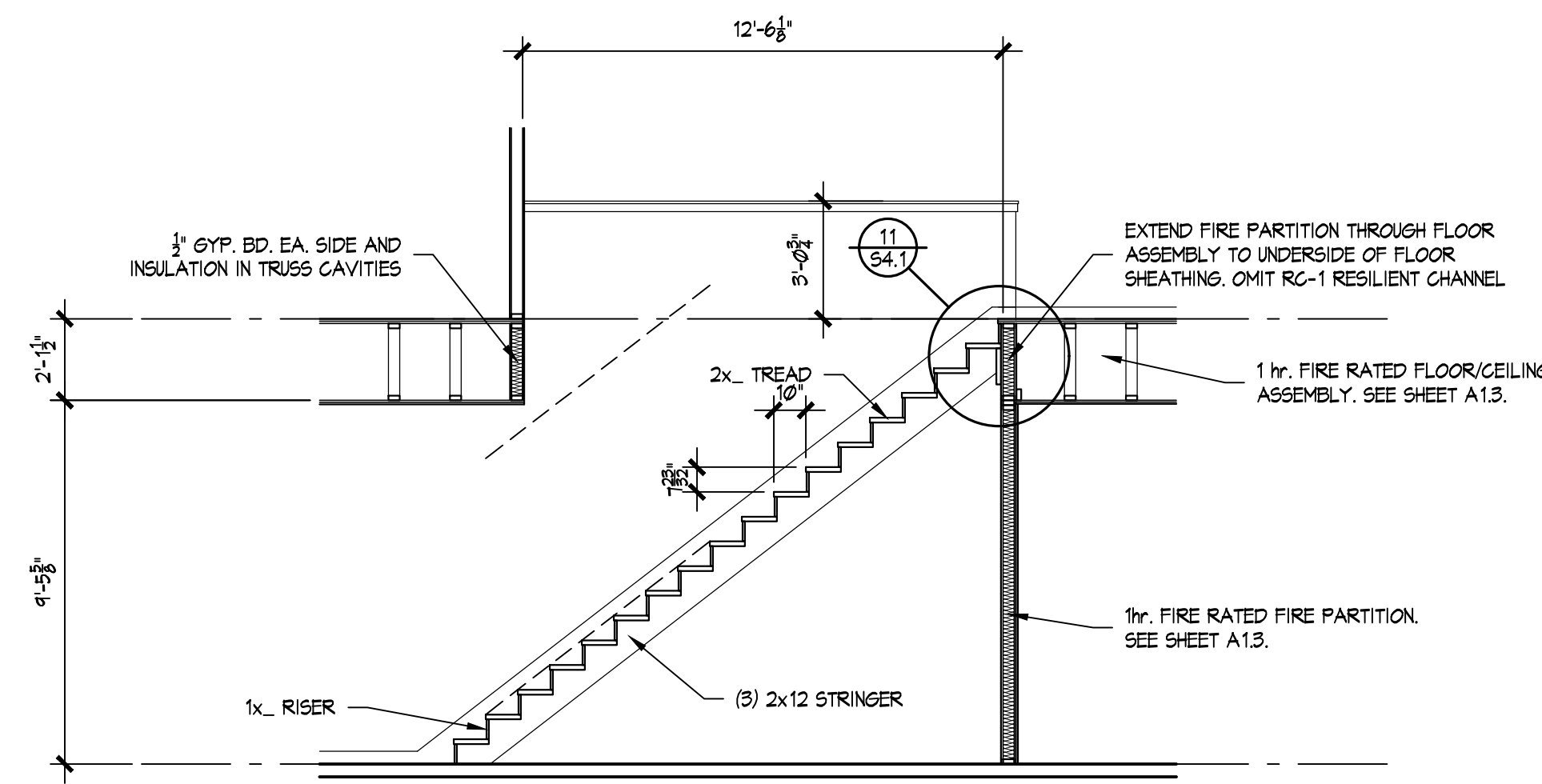


BUILDING SECTION "B-B"
SCALE: 1/2" = 1'-0"



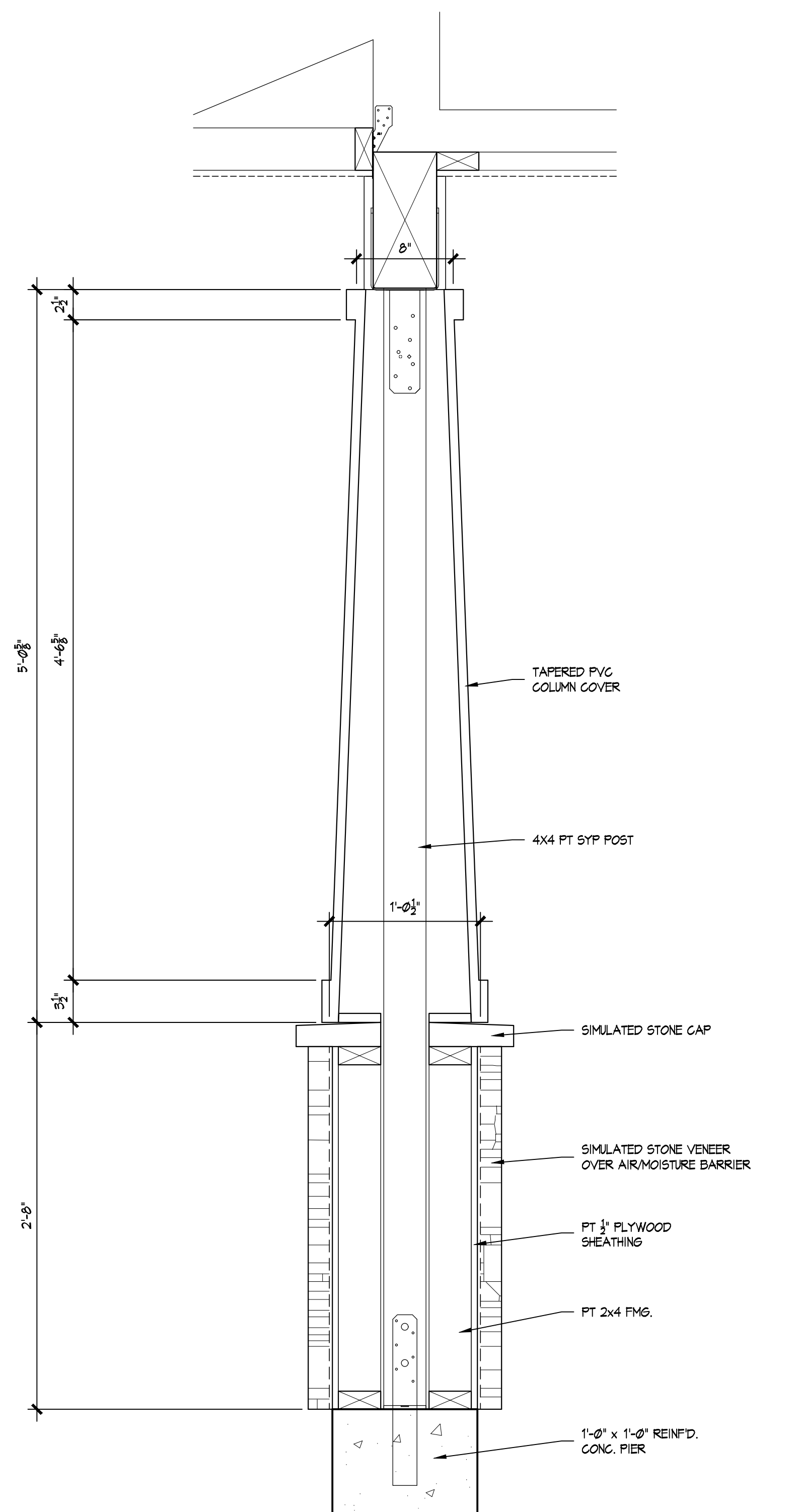
BUILDING SECTION "C-C"
SCALE: 1/2" = 1'-0"





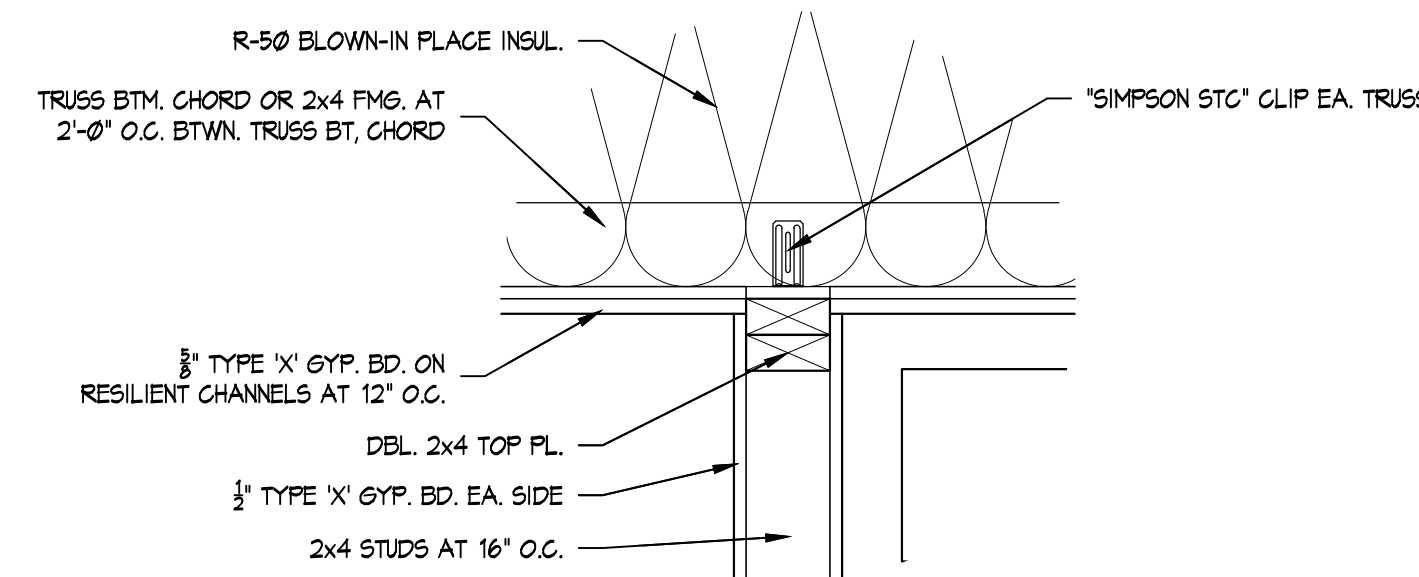
TYPICAL STAIR SECTIONS

SCALE: 1/2" = 1'-0"



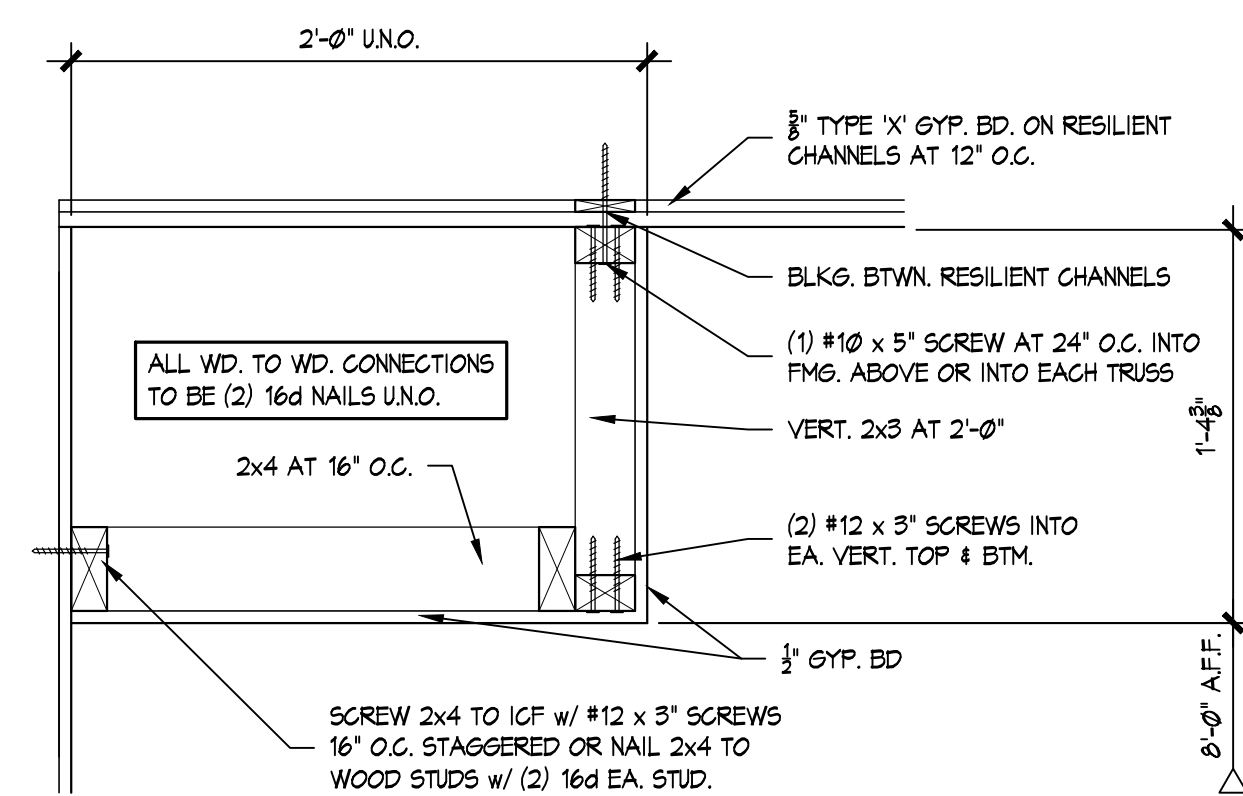
COLUMN COVER DETAIL

SCALE: 1/2" = 1'-0"



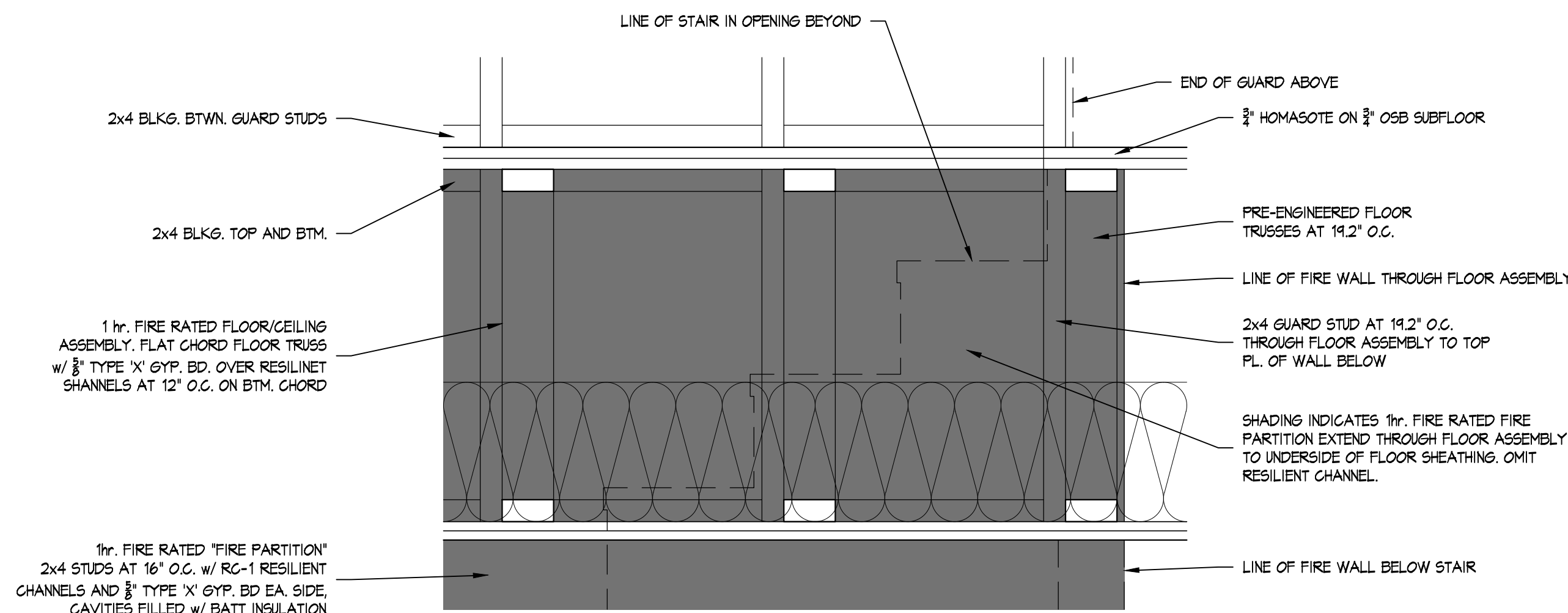
NON-BRG. PART'N DETAIL

SCALE: 1/2" = 1'-0"



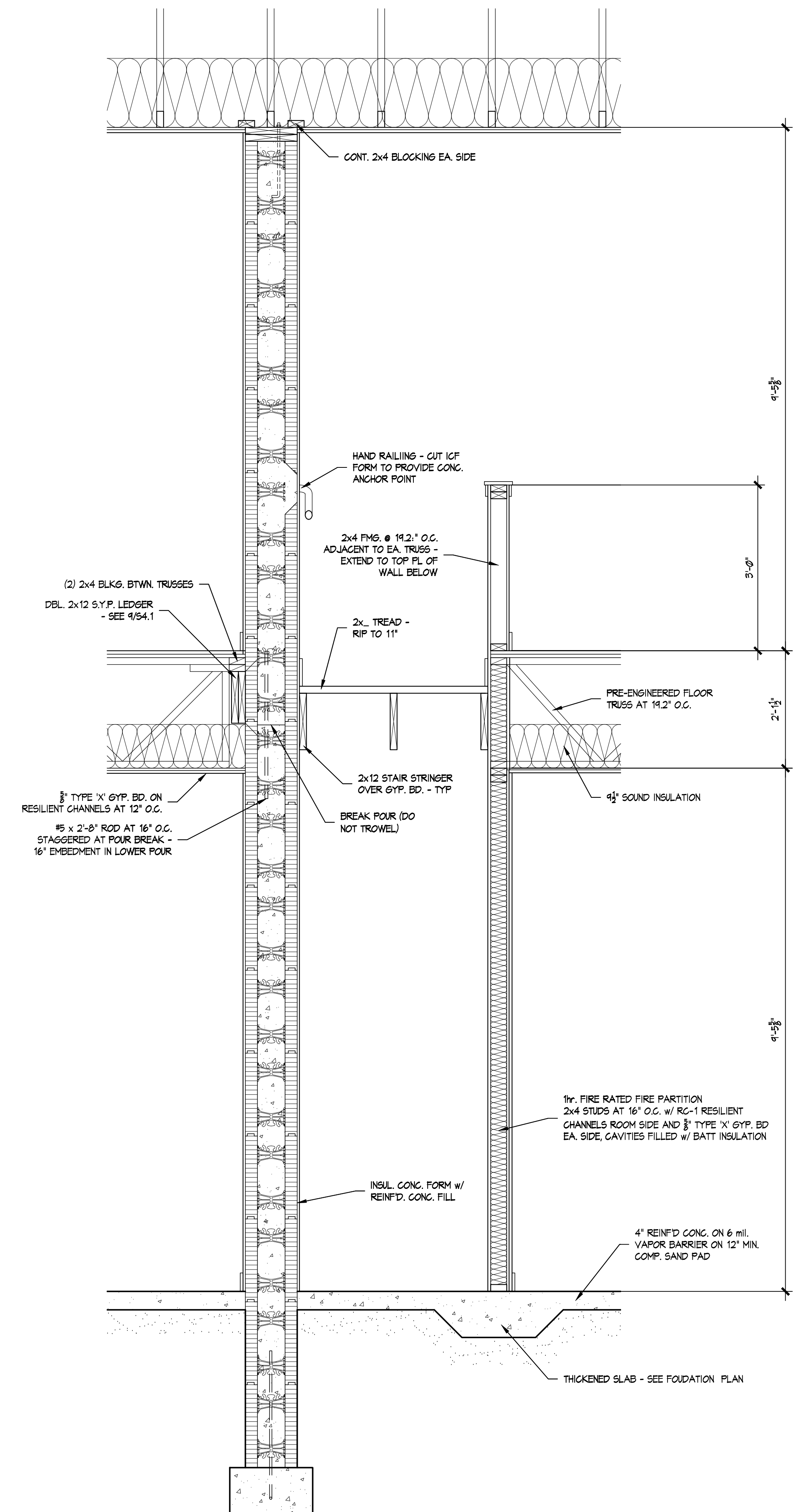
SOFFIT FMG. DETAIL

SCALE: 1/2" = 1'-0"



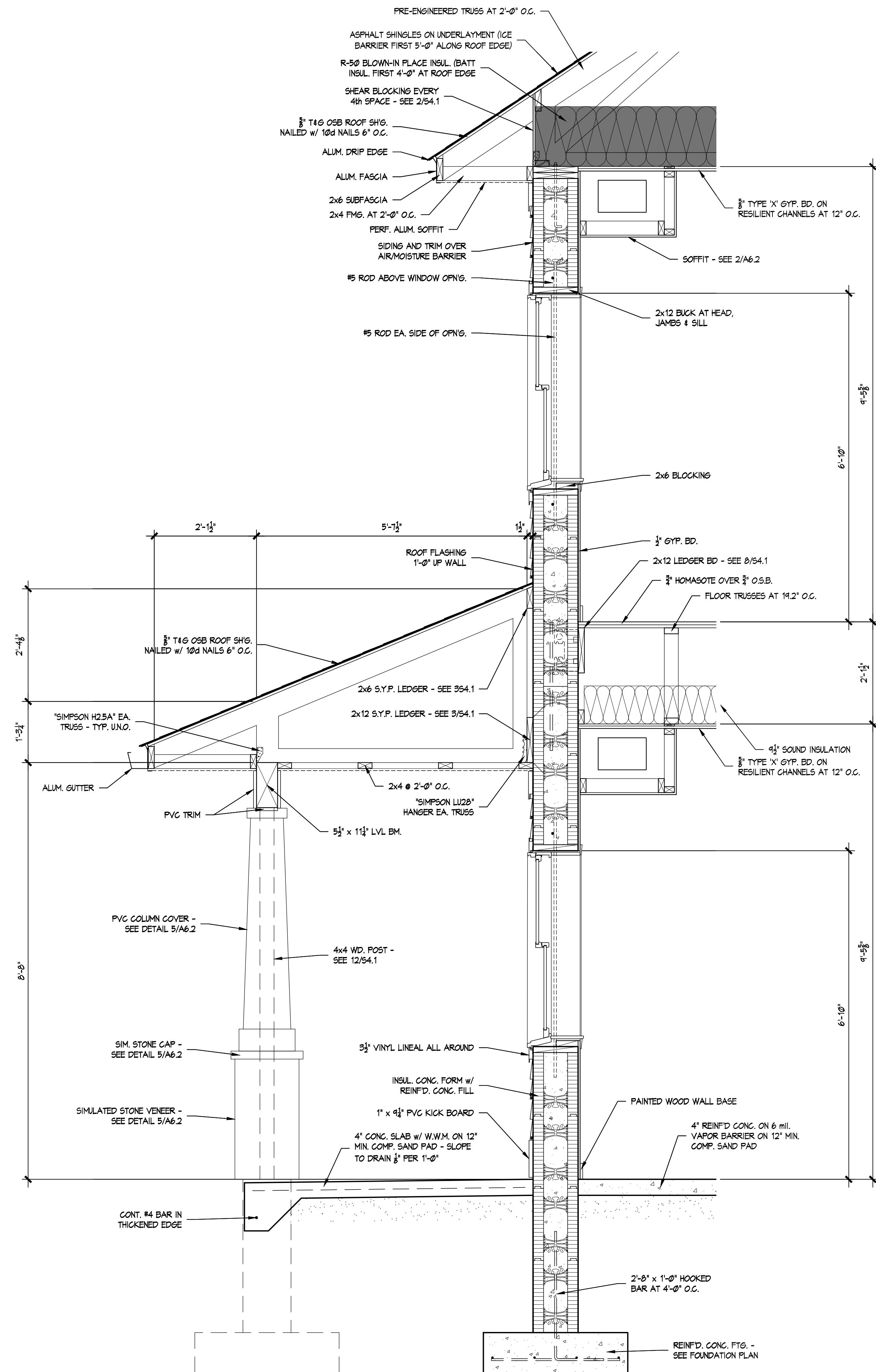
GUARD FRAMING DETAIL

SCALE: 1/2" = 1'-0"

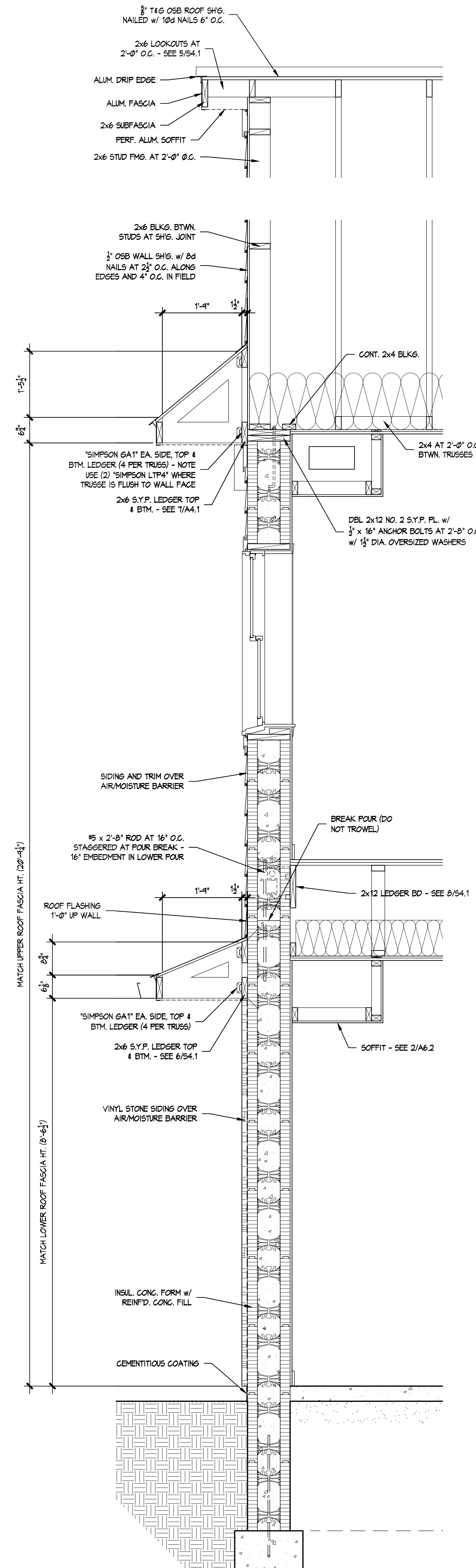


TYPICAL WALL DETAIL

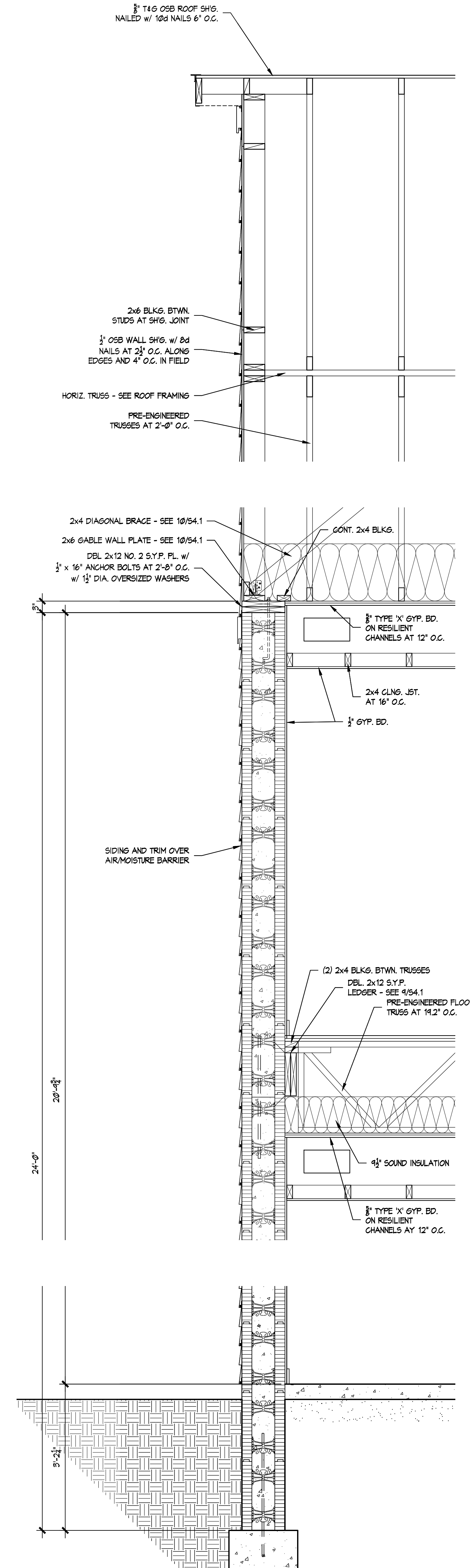
SCALE: 3/8" = 1'-0"



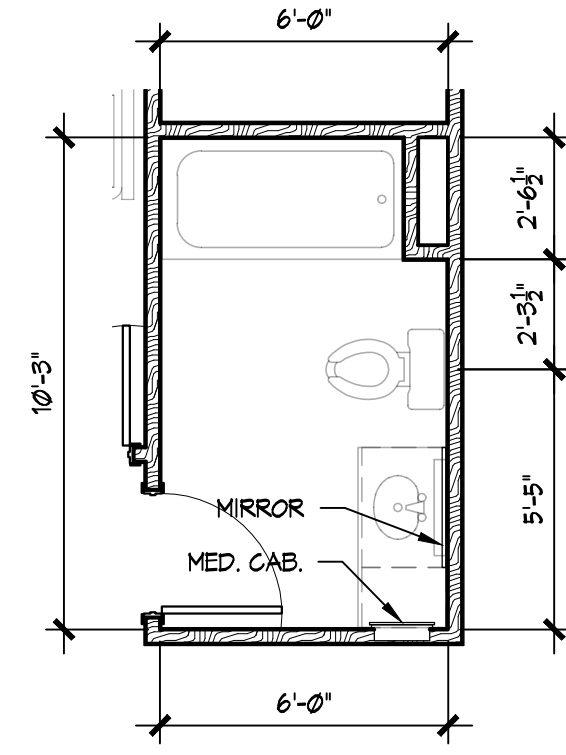
TYPICAL WALL DETAIL
SCALE: 3/8" = 1'-0"



TYPICAL WALL DETAIL
SCALE: 3/8" = 1'-0"



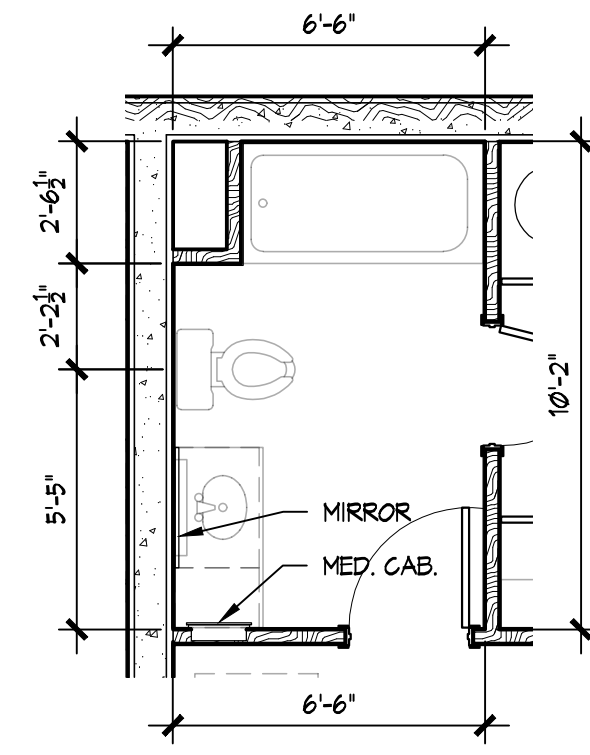
TYPICAL WALL DETAIL
SCALE: 3/8" = 1'-0"



BATH B14 - FLOOR PLAN

SCALE: $\frac{1}{4}'' = 1'-0''$

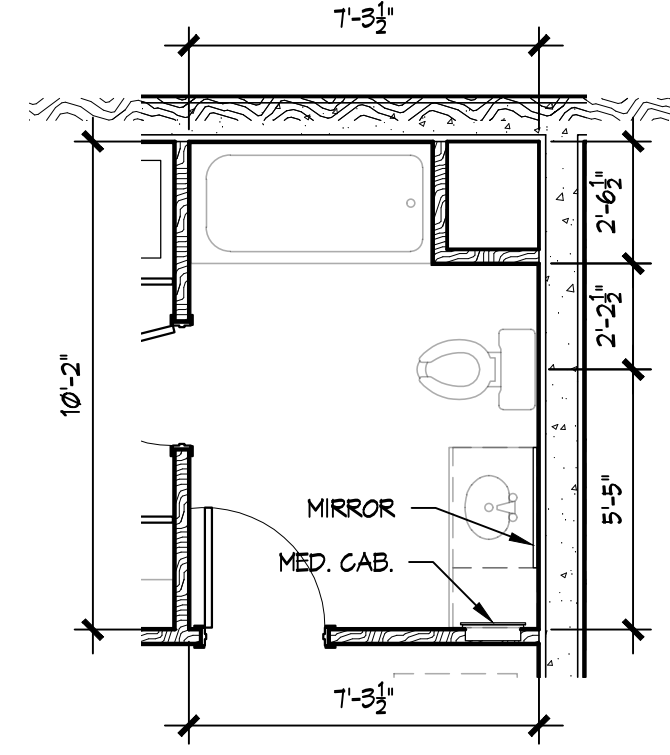
NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



BATH C10 - FLOOR PLAN

SCALE: $\frac{1}{4}'' = 1'-0''$

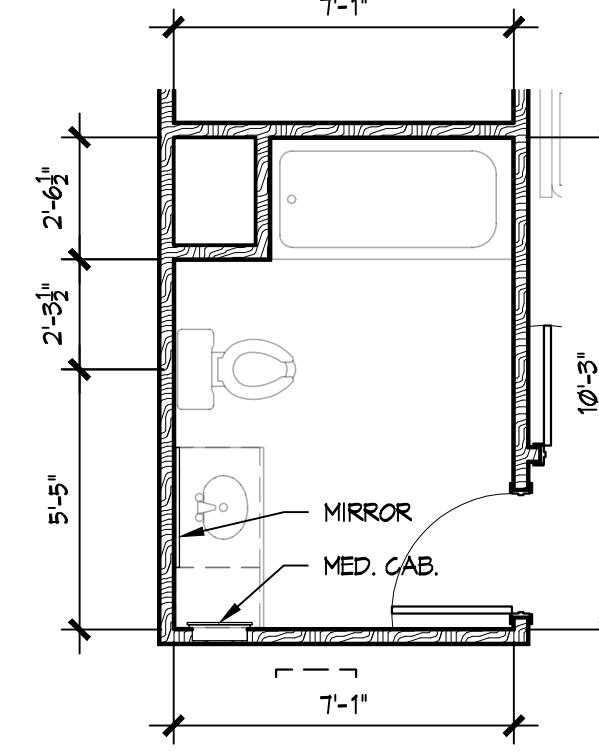
NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



BATH F10 - FLOOR PLAN

SCALE: $\frac{1}{4}'' = 1'-0''$

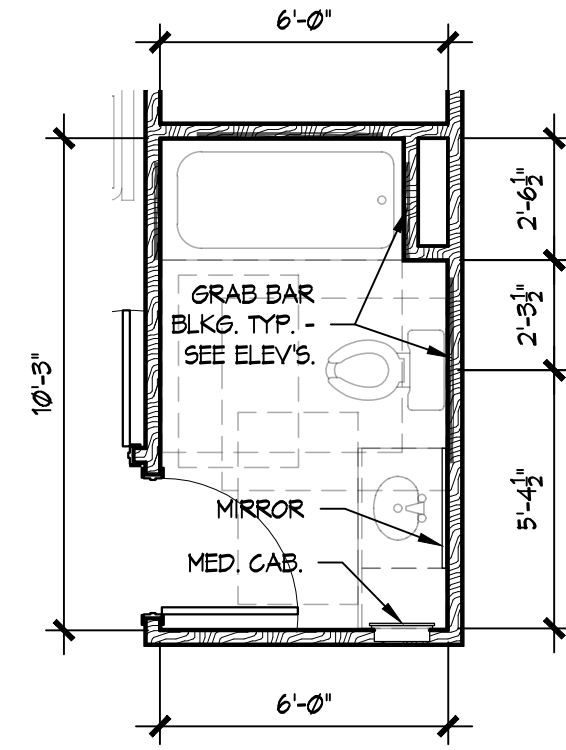
NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



BATH G14 - FLOOR PLAN

SCALE: $\frac{1}{4}'' = 1'-0''$

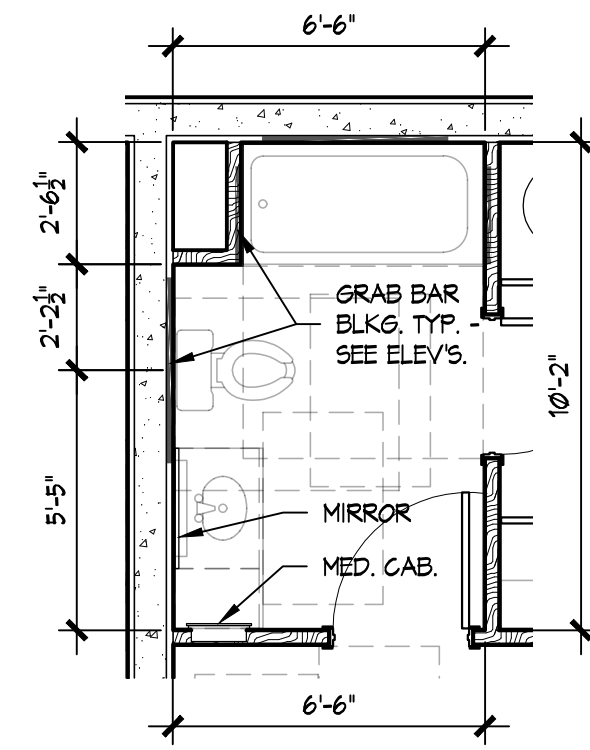
NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



BATH A13 - FLOOR PLAN

SCALE: $\frac{1}{4}'' = 1'-0''$

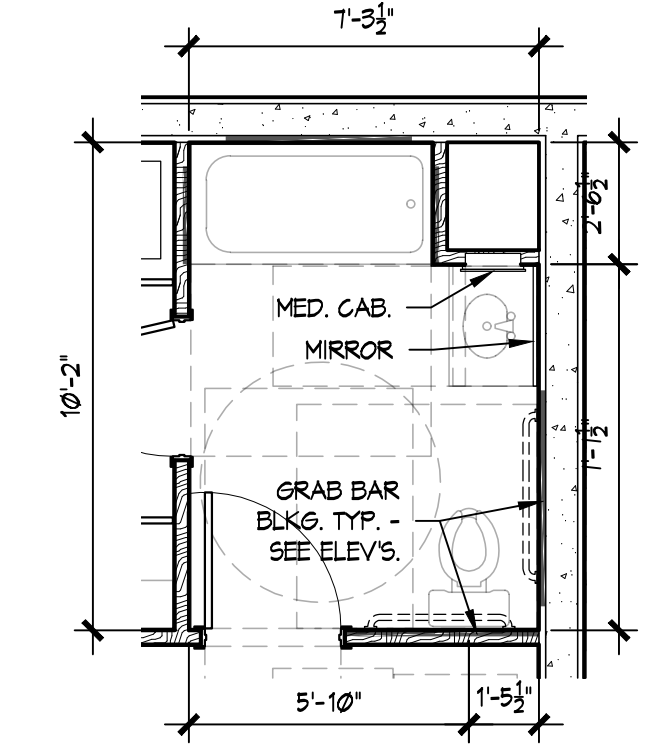
NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



BATH D09 - FLOOR PLAN

SCALE: $\frac{1}{4}'' = 1'-0''$

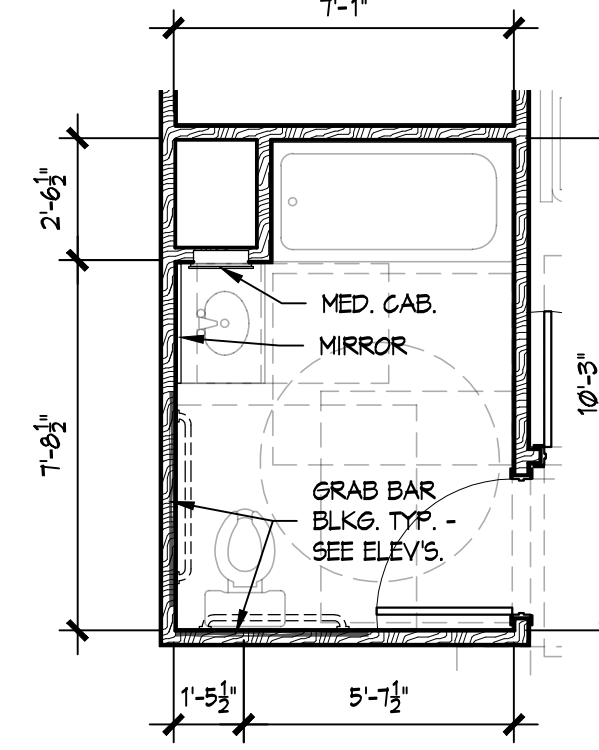
NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



BATH E09 - FLOOR PLAN

SCALE: $\frac{1}{4}'' = 1'-0''$

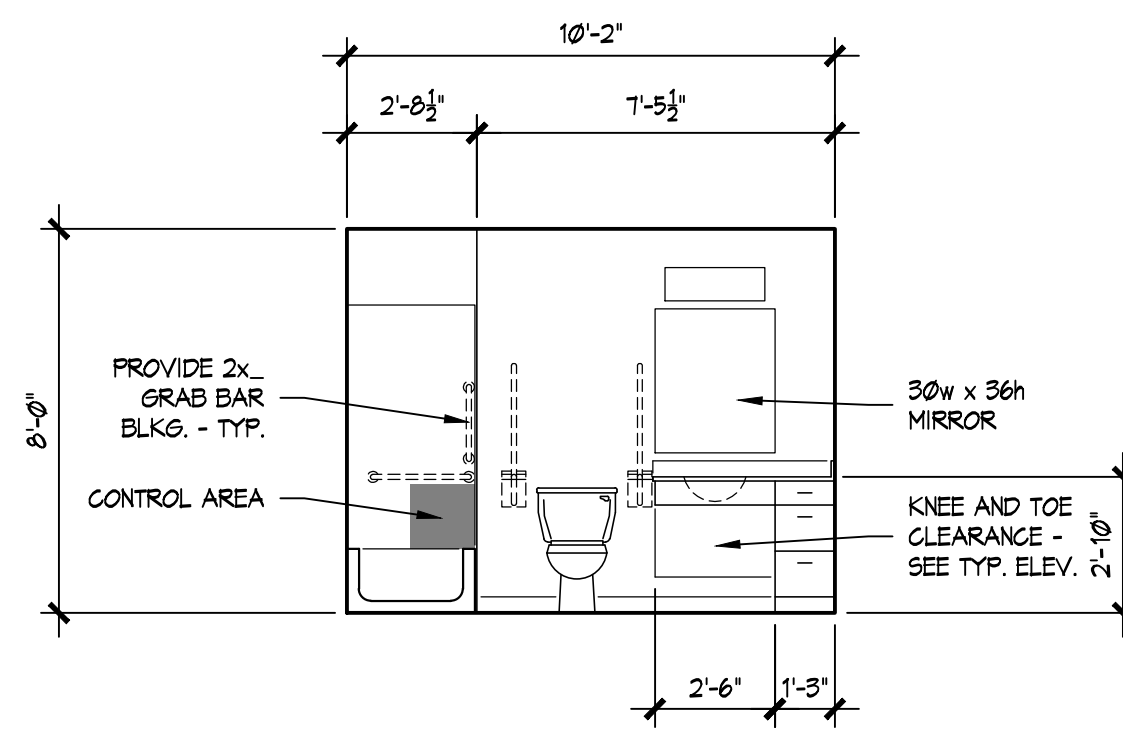
NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



BATH H13 - FLOOR PLAN

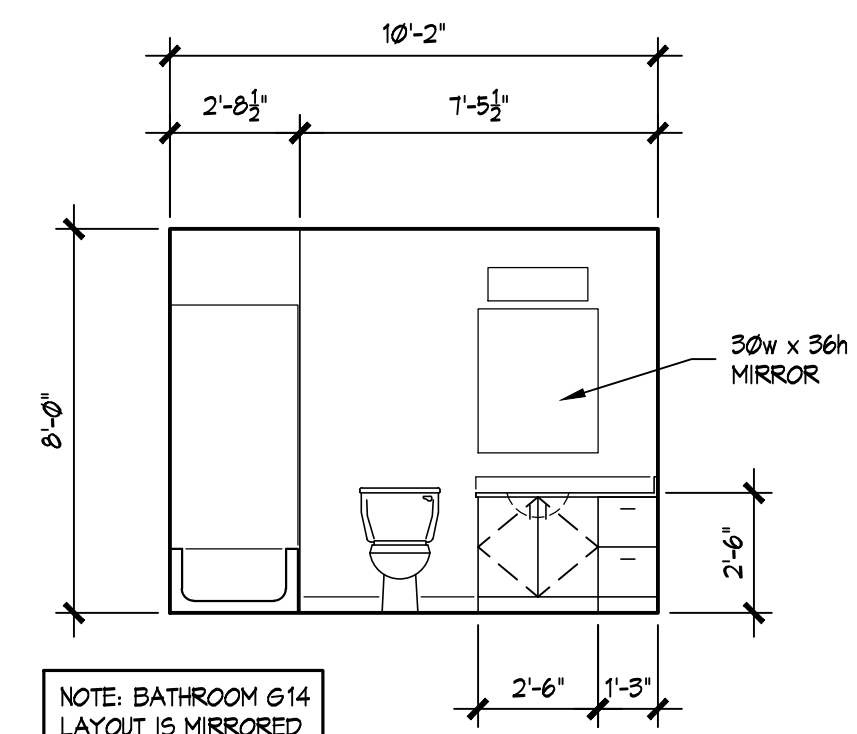
SCALE: $\frac{1}{4}'' = 1'-0''$

NOTE: PLAN DIMENSIONS ARE FACE OF STUD TO FACE OF STUD, OR FACE OF ICF TO FACE OF ICF



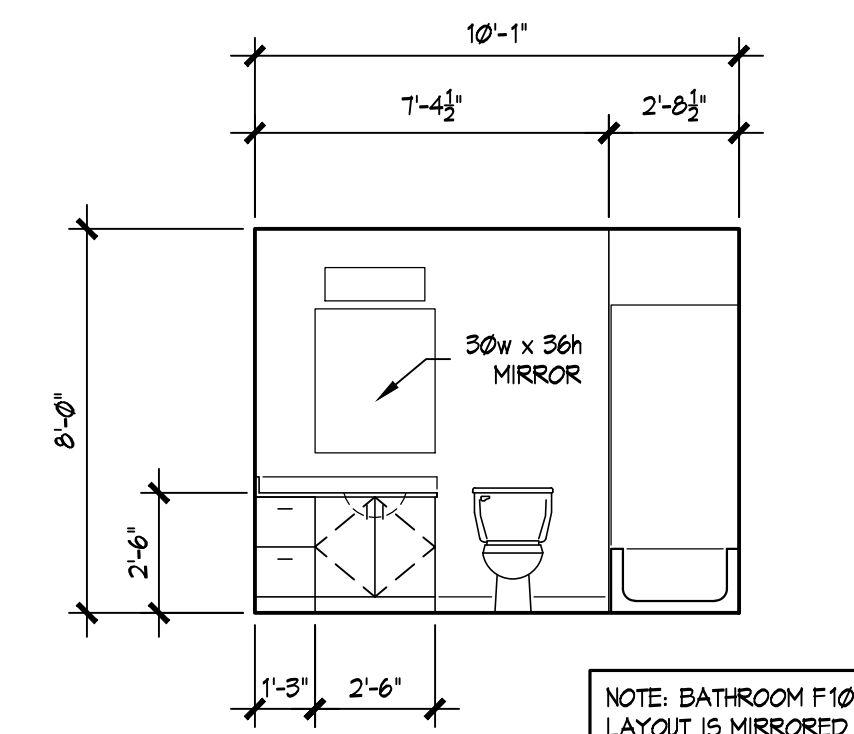
BATH A13 - ELEVATION

SCALE: $\frac{1}{4}'' = 1'-0''$



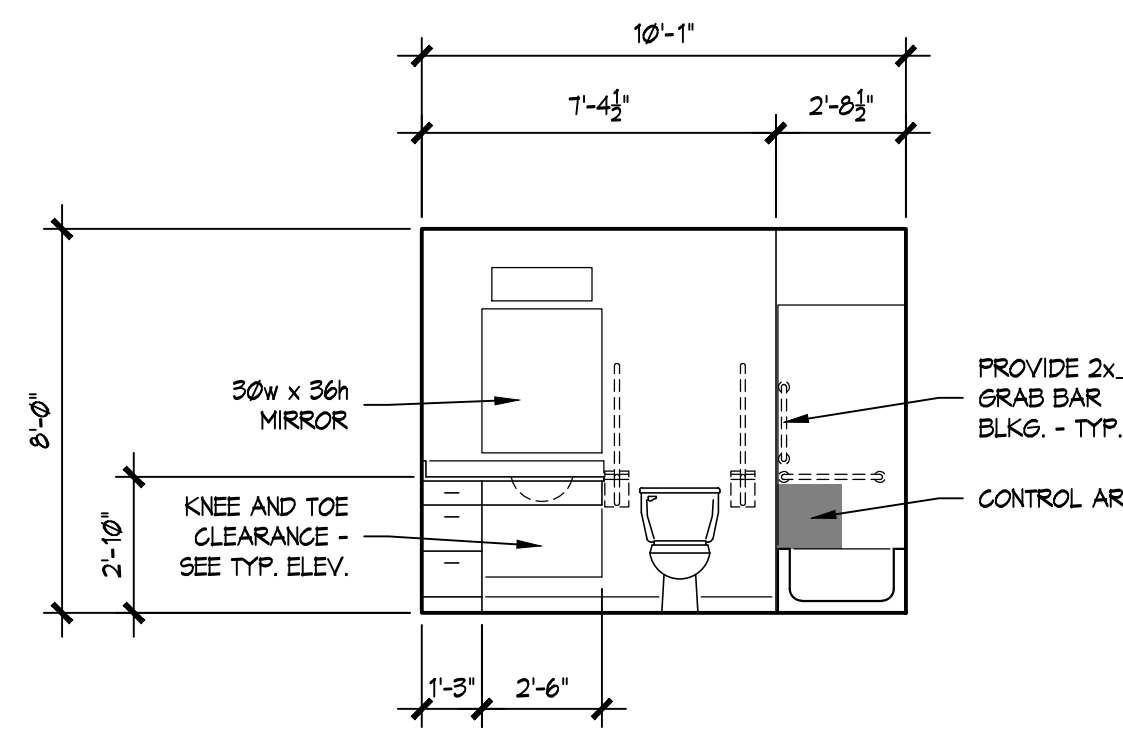
BATH B14 & G14 - ELEVATION

SCALE: $\frac{1}{4}'' = 1'-0''$



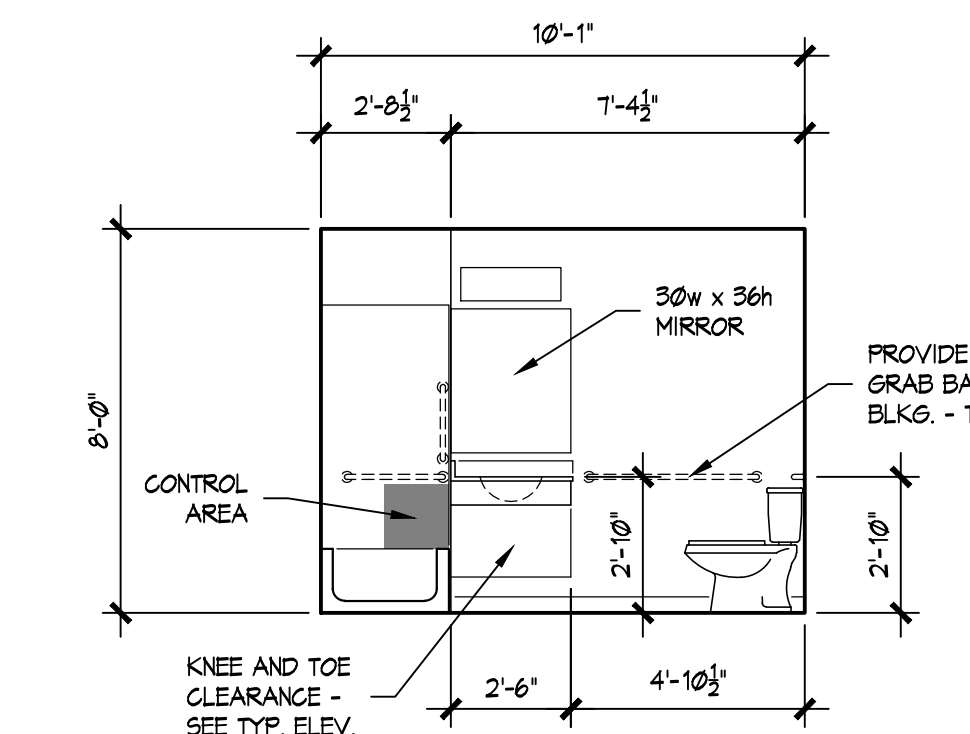
BATH C10 & F10 - ELEVATION

SCALE: $\frac{1}{4}'' = 1'-0''$



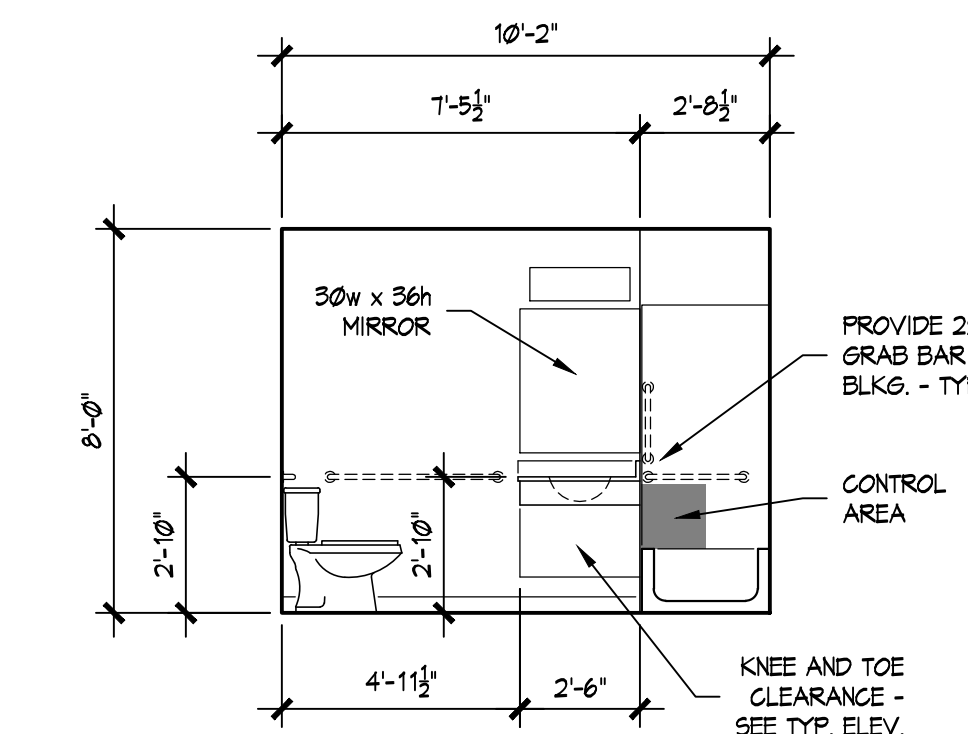
BATH D09 - ELEVATION

SCALE: $\frac{1}{4}'' = 1'-0''$



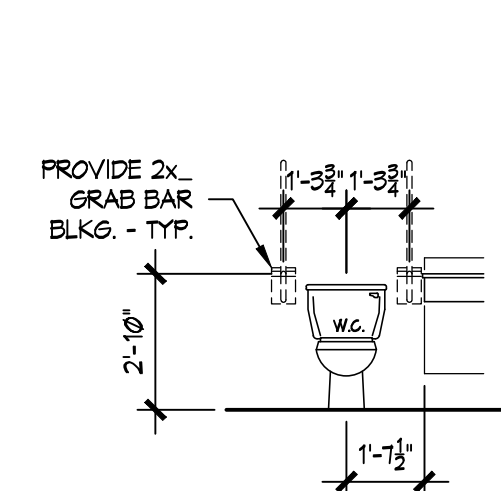
BATH E09 - ELEVATION

SCALE: $\frac{1}{4}'' = 1'-0''$

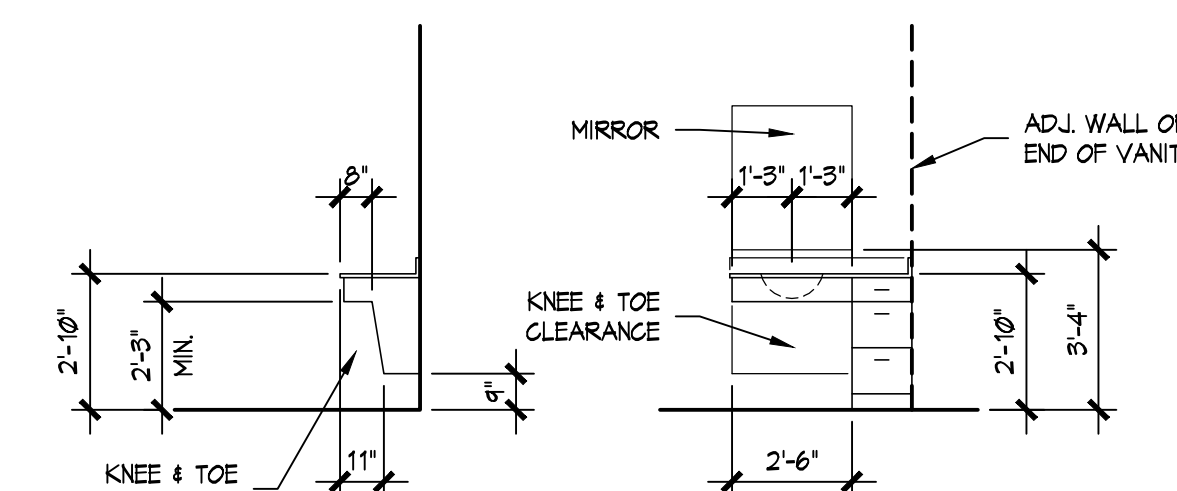


BATH H13 - ELEVATION

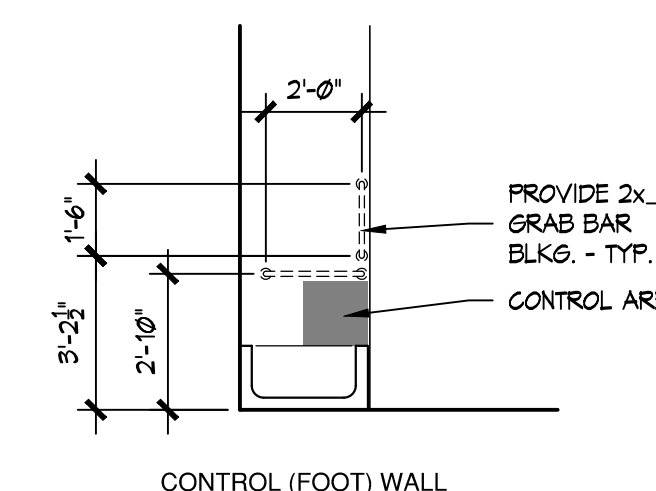
SCALE: $\frac{1}{4}'' = 1'-0''$



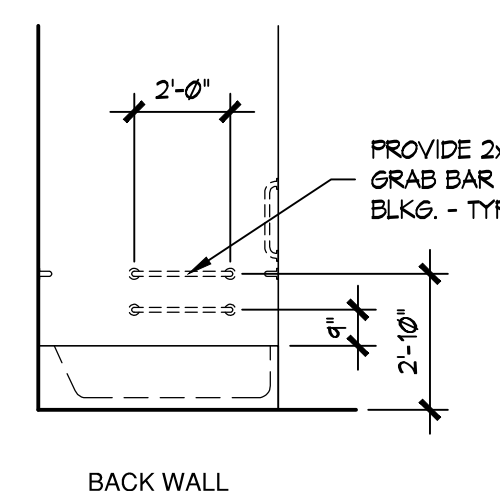
WATER CLOSET



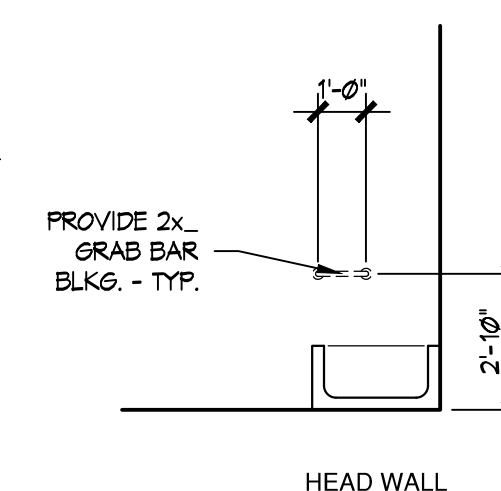
LAVATORY



CONTROL (FOOT) WALL



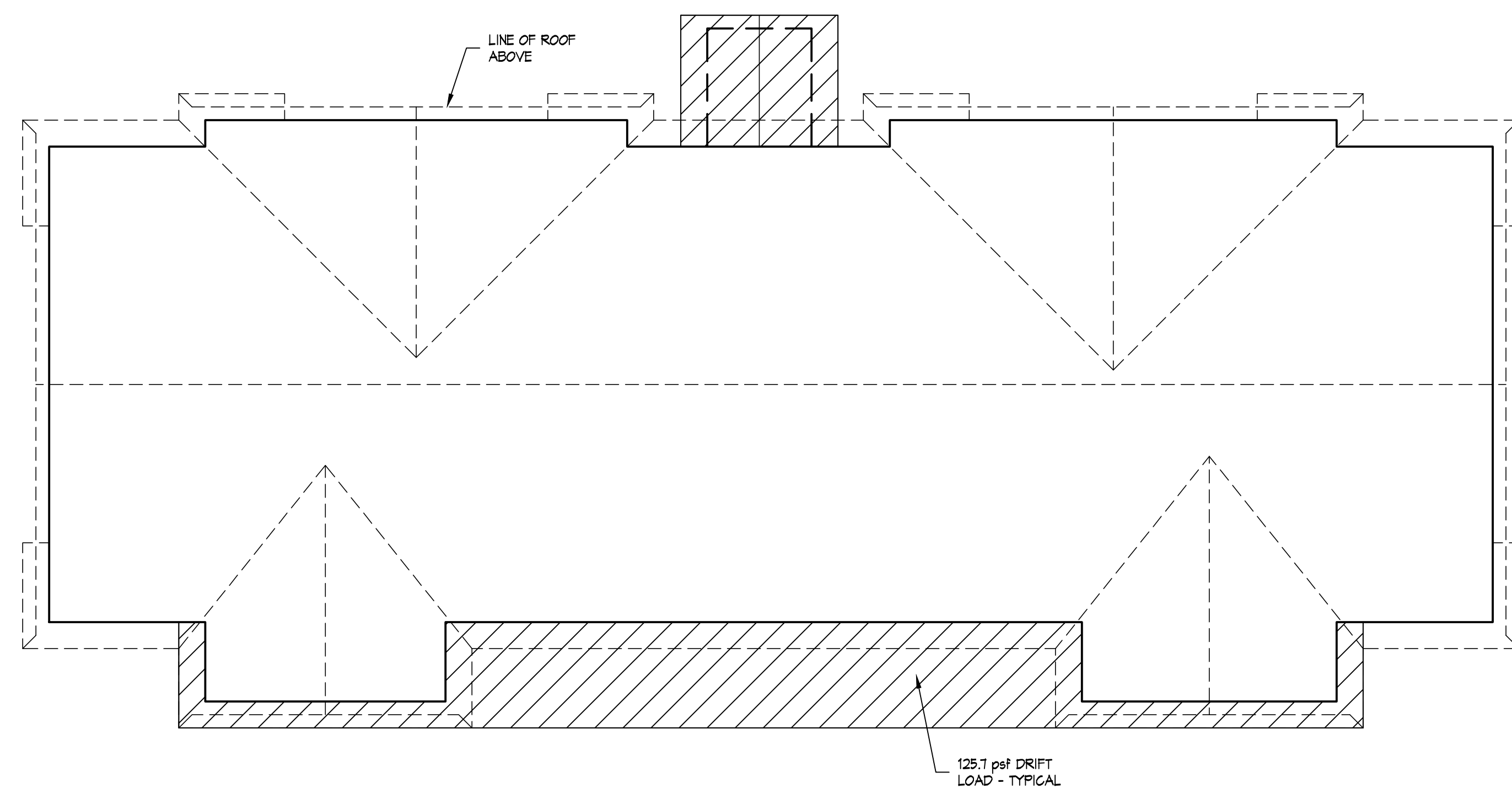
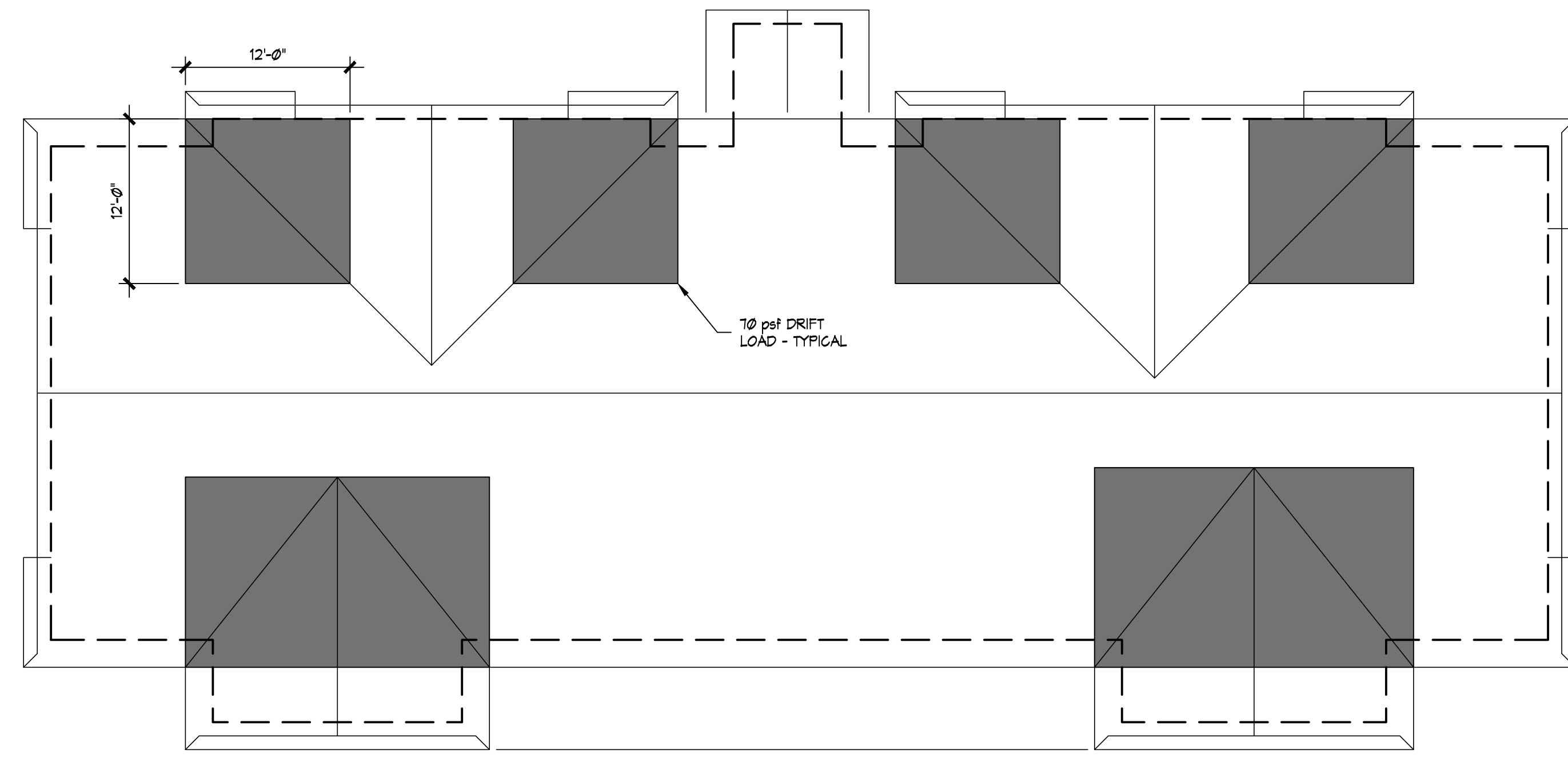
BATHTUB



HEAD WALL

TYP. "TYPE B" ACCESSIBLE RESTROOM FIXTURE/EQPM. ELEVATIONS

SCALE: $\frac{1}{4}'' = 1'-0''$



DRIFT LOADING DIAGRAM

SCALE: 1/8" = 1'-0"

| BUILDING LOADS | | |
|---|------------------|-------------|
| LIVE LOADS | | |
| LOAD TYPE | DEFLECTION LIMIT | LOAD (psf) |
| 1. Section 1603.1.1 FLOOR LIVE LOAD | L/360 | 40 |
| 2. Section 1603.1.2 ROOF LIVE LOAD | L/360 | SEE DIAGRAM |
| ROOF SNOW LOAD | | |
| Section 1603.1.3 | | |
| LOAD TYPE | | LOAD (psf) |
| 3. GROUND SNOW LOAD, P _g | | 70 |
| 4. FLAT ROOF SNOW LOAD, P _f | | 53.9 |
| SNOW LOAD FACTORS | | |
| 5. SNOW EXPOSURE FACTOR, C _e | | 1.0 |
| 6. SNOW LOAD IMPORTANCE FACTOR, I _s | | 1.1 |
| 7. THERMAL FACTOR - BLDG., C _t | | 1.0 |
| 8. ROOF SLOPE FACTOR, C _s | | 1.0 |
| WIND LOADS | | |
| Section 1603.1.4 | | |
| LOAD OR VARIABLE | | VALUE |
| 9. ULTIMATE DESIGN WIND SPEED (3-SECOND GUST) | | 115 mph |
| 10. RISK CATEGORY | | II |
| 11. WIND EXPOSURE CATEGORY | | C |
| 12. MAIN WIND FORCE RESISTING SYSTEM (MAX. ROOF UPLIFT) | | -29.9 psf |
| 13. MAIN WIND FORCE RESISTING SYSTEM (MAX WALL) | | -34.7 psf |
| 14. INTERNAL PRESSURE COEFFICIENT | | ±0.55 |
| EARTHQUAKE DESIGN DATA | | |
| Section 1603.1.5 | | |
| LOAD OR VARIABLE | | VALUE |
| 15. RISK CATEGORY | | II |
| 16. SEISMIC IMPORTANCE FACTOR | | 1.0 |
| 17. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETER, S _a | | 0.047g |
| 18. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETER, S _v | | 0.028g |
| 19. SITE CLASS | | D |
| 20. SEISMIC DESIGN CATEGORY | | A |
| 21. BASIC SEISMIC FORCE RESISTING SYSTEM | | BRG. WALL |
| 22. SEISMIC RESPONSE COEFFICIENT | | 0.03 |
| 23. ANALYSIS PROCEDURE: MINIMUM LATERAL FORCE ANALYSIS PROCEDURE 1616.4 | | |
| SOIL BEARING STRENGTH | | |
| Section 1803.6 | | |
| SOIL BEARING STRENGTH IS 2,000 PSF. | | |
| NOTES: | | |
| 1. APPLICABLE CODE IS MBC 2015. | | |
| 2. LOADS ARE BASED ON SECTION 16 OF MBC 2015 UNLESS OTHERWISE NOTED. | | |

GENERAL STRUCTURAL NOTES

- THE GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS OCCUR BETWEEN THE DRAWINGS AND/OR THE GENERAL STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
- THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED, SELF SUPPORTING, STABLE STRUCTURE UNLESS OTHERWISE INDICATED. THEY DO NOT INDICATE THE MEANS OR METHOD OF CONSTRUCTION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND CONSTRUCTION SEQUENCE AND PROVIDE ALL MEASURES NECESSARY TO ENSURE THE STABILITY AND SAFETY OF THE STRUCTURE AND ITS COMPONENTS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, SHORING FOR EARTH BANKS, FORMS, SCAFFOLDING, PLANKING, SAFETY NETS, SUPPORT AND BRACING FOR CRANES AND GIN POLES, ETC.
- THE GOVERNING BUILDING CODE IS MICHIGAN BUILDING CODE 2015.
- SHOP DRAWINGS PREPARED BY SUPPLIERS, SUBCONTRACTORS, ETC. SHALL BE REVIEWED BY THE ARCHITECT/ENGINEER FOR CONFORMANCE WITH DESIGN INTENT ONLY.
- CONTRACTOR IS RESPONSIBLE TO VERIFY ALL RELEVANT DIMENSIONS AND ELEVATIONS FOR EQUIPMENT INSTALLATIONS AGAINST APPROVED MANUFACTURERS CERTIFIED EQUIPMENT DRAWINGS.
- MECHANICAL FRAMING LOADS, OPENING AND STRUCTURE IN ANY WAY RELATED TO MECHANICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL COORDINATE WITH MECHANICAL AND OTHER TRADES TO VERIFY EQUIPMENT SIZE AND LOCATIONS. ANY CHANGES IN EQUIPMENT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD.
- UNLESS NOTED OTHERWISE, REQUIREMENTS GIVEN FOR ONE OR MORE LOCATIONS ALSO APPLY AT OTHER LOCATIONS AT WHICH CONDITIONS ARE SIMILAR. THE REQUIREMENTS GIVEN SHALL BE ADAPTED TO CONDITIONS AT SUCH OTHER LOCATIONS.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE PLANS AND FOR COORDINATING ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH THOSE SHOWN ON THE ARCHITECTURAL AND MECHANICAL DRAWINGS. IF DISCREPANCIES IN THE DIMENSIONS OCCUR, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BRING THE DISCREPANCY TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
- CONTRACTOR SHALL NOT MIX GALVANIZED AND STAINLESS STEEL. ANY METAL PARTS IN CONTACT WITH OTHER METAL PARTS SHALL BE OF SIMILAR MATERIAL.

SOILS

- ALL DENSITIES SHALL BE DETERMINED BY THE MODIFIED PROCTOR METHOD.
- ALL BASE MATERIAL UNDER SLABS AND CONCRETE PAVINGS SHALL BE MDT CLASS II GRANULAR FILL COMPACTED TO A MINIMUM 95% MAXIMUM DENSITY WITH A MINIMUM COMPACTED THICKNESS OF 6 INCHES UNLESS INDICATED OTHERWISE IN THE DRAWINGS OR SPECIFICATIONS.
- ALL FOOTINGS SHALL BE PLACED ON UNDISTURBED SOILS, UNLESS SITE CONDITIONS PROHIBIT. FOOTINGS REQUIRING BASE FILL MATERIAL SHALL BE PLACED ON ENGINEERED FILL CONSISTING OF MDT CLASS II GRANULAR FILL COMPACTED TO A MINIMUM 98% MAXIMUM DENSITY.
- SOIL BORING INFORMATION CONTAINED IN SOIL BORING LOGS REPRESENTS POINT INFORMATION ONLY, AND IN NO WAY INFERS THAT THE SUBSURFACE CONDITIONS ARE CONSISTENT THROUGHOUT.
- ANY SUBSURFACE CONDITIONS OR EXISTING FOUNDATIONS ENCOUNTERED THAT ARE NOT AS REPRESENTED IN THE PLANS OR IN ANY SOIL BORING LOGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR DIRECTION PRIOR TO PROCEEDING WITH CONSTRUCTION OF FOUNDATIONS AS DESIGNED.

BACKFILLING

- PROVIDE A BALANCED BACKFILL AGAINST FOUNDATIONS TO ELIMINATE LATERAL LOAD EFFECTS, OR PROVIDE NECESSARY TEMPORARY LATERAL SUPPORT TO THE TOP OF FOUNDATIONS UNTIL PERMANENT SUPPORT IS INSTALLED.
- AFTER EXCAVATING FOR ALL EARTH-SUPPORTED FLOOR SLAB BASES, THE EXPOSED NATURAL SOIL SHALL BE THOROUGHLY COMPACTED PRIOR TO PLACING AND COMPACTING FILL FOR SLAB BASE.
- ALL EXCAVATED AREAS AROUND STRUCTURES SHALL BE BACKFILLED WITH GRANULAR MATERIAL FREE OF ORGANIC MATTER, SILT AND CLAY. ALL FILL SLOPES SHALL BE PLACED IN LAYERS AS SPECIFIED AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY THE NUCLEAR DENSITY METHOD.

FOOTINGS AND FOUNDATIONS

- ALL FOOTINGS HAVE BEEN SIZED BASED ON AN ALLOWABLE SOIL BEARING CAPACITY OF 2,000 POUNDS PER SQUARE FOOT (psf). CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING AND PROVIDING 2,000 psf BEARING CAPACITY AT THE PREPARED SITE FOR ALL FOOTINGS AND SLABS WITH LESS THAN 1/4" SETTLEMENTS.
- CONCRETE FOOTINGS SHALL NOT BE PLACED IN WATER OR ON FROZEN GROUND.

CAST-IN-PLACE CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS; THE LATEST EDITION OF ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE; AND ACI 4301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS. IN CASE OF CONFLICT, THE MOST STRICT PROVISION SHALL GOVERN.
- MINIMUM 28 DAY CONCRETE STRENGTH SHALL BE AS FOLLOWS:
 - BUILDING FOOTINGS AND GRADE BEAMS SURROUNDING CONDITIONED SPACES: F'c = 3,500 psi.
 - BORCH FOOTINGS AND PIERS WITH NO CONDITIONED SPACE EITHER SIDE: F'c = 4,500 psi.
 - INTERIOR CONCRETE SLABS-ON-GRADE: F'c = 3,500 psi AT 28 DAYS.
 - EXTERIOR CONCRETE SLABS-ON-GRADE: F'c = 3,500 psi AT 28 DAYS.
 - ICF WALLS AND FOUNDATIONS: F'c = 3,500 psi AT 28 DAYS.
- ALL REBAR SHALL BE HIGH STRENGTH NEW BILLET STEEL CONFORMING TO ASTM A615 GRADE 60. ALL DETAILS AND ACCESSORIES SHALL CONFORM TO THE LATEST ACI 315 STANDARD DETAILING MANUAL.
- BUILDING CONCRETE TO BE REINFORCED WITH INTEGRAL-TO-THE-MIX HELIX MICRO-REBAR. REFER TO SPECIFICATIONS FOR DOSING SCHEDULES AND MIX DESIGNS.
- MAINTAIN MINIMUM SPECIFIED CONCRETE COVER OVER REINFORCEMENT.
- CONCRETE POURED AGAINST EARTH: 3 INCHES. ALL OTHER CONCRETE: 2 INCHES.
- ALL EMBEDDED ITEMS SHALL BE PLACED IN THE FORMWORK PRIOR TO PLACING CONCRETE. DRILLING AND GROUTING IS ACCEPTABLE ONLY UPON ARCHITECT APPROVAL.
- ALL BOLTS, NUTS, WASHERS, PLATES, AND ANCHOR BOLTS IN DIRECT OR INTERMITTENT CONTACT WITH WATER SHALL BE HOT DIPPED GALVANIZED PER LATEST ASTM STANDARDS.
- ALL CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL BE AIR-ENTRAINED.
- ALL CONCRETE FILL IN ICF WALLS SHALL BE AIR ENTRAINED.
- FOR CONCRETE SLABS ON GRADE, PROVIDE CONTROL JOINTS (CJ) AT A MINIMUM OF 20'-0" o.c. UNLESS OTHERWISE CALLED OUT. CJS SHALL BE SAW-CUT 1/2" WIDE x 1/2" DEEP IMMEDIATELY AFTER PLACEMENT AND FINISHING OF CONCRETE. WHEN CONCRETE CAN SUPPORT REQUIRED EQUIPMENT, BUT NO LONGER THAN 24 HOURS AFTER PLACEMENT OF CONCRETE. SAW CUT JOINTS SHALL BE STRAIGHT AND TRUE TO LINE.

GENERAL WOOD FRAMING

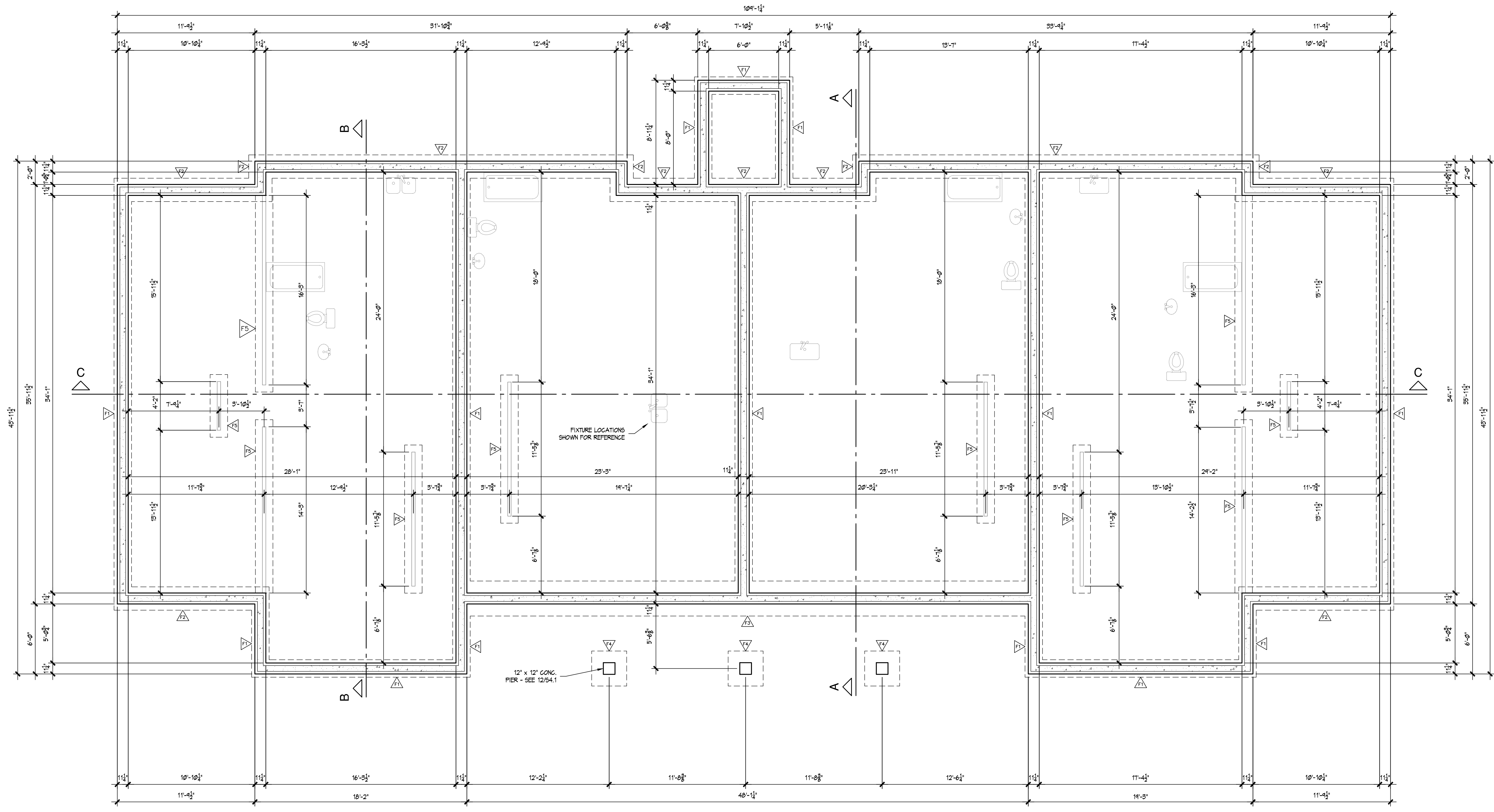
- ALL PRESSURE PRESERVATIVE TREATED LUMBER (PT) SHALL BE SOUTHERN YELLOW PINE (SP) NO. 2 OR BETTER. ALL TREATED LUMBER SHALL BE IN ACCORDANCE WITH AWPA SPECIFICATIONS FOR TREATED LUMBER AND ASTM D1760 AND SHALL HAVE A MINIMUM RETENTION OF 0.40 FOR ABOVE GROUND USE, AND 0.60 FOR BELOW GRADE USE OR DIRECT EXPOSURE TO FRESHWATER.
- ALL FRAMING MEMBERS SHALL BE SPRUCE-PINE-FIR (SPF) NO. 2 OR BETTER, UNLESS NOTED OTHERWISE.
- ALL LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING MINIMUM STRUCTURAL PROPERTIES:

F_b > 2,800 psi
F_v > 285 psi
E > 2,000,000 psi
- FRAMING SHALL BE IN ACCORDANCE WITH THE "MANUAL FOR HOUSE FRAMING" OF THE NATIONAL FOREST PRODUCTS ASSOCIATION.
- METAL HANGERS/CONNECTORS SHALL BE 18 GA GALVANIZED, SIMPSON STRONG-TIE (OR EQUAL), USE HANGERS AS RECOMMENDED BY THE MANUFACTURER FOR THE INTENDED PURPOSE.
- SHEATHING SHALL BE APA RATED AS FOLLOWS:

ROOF SHEATHING: 5/8" MINIMUM; 40/20, EXPOSURE 1
WALL SHEATHING: 5/8" MINIMUM; 32/16, EXPOSURE 1
SUBFLOOR SHEATHING: 3/4" MINIMUM STURD-I-FLOOR, EXPOSURE 1, 1&C, GLUED AND NAILED.
- MINIMUM NAILING REQUIREMENTS FOR ROOF AND FLOOR SHEATHING SHALL BE 8d NAILS 6" O.C. U.N.O.
- STEEL PLATES AND FASTENERS IN CONTACT WITH LUMBER AND PROTECTED WITHIN THE BUILDING ENVELOPE (ADEQUATELY SHIELDED FROM DIRECT CONTACT WITH MOISTURE) SHALL BE STAINLESS STEEL OR GALVANIZED TO G60 PER ASTM A924 REQUIREMENTS. STEEL PLATES OR FASTENERS IN CONTACT WITH PT LUMBER LOCATED OUTSIDE OF THE BUILDING ENVELOPE OR EXPOSED TO MOISTURE SHALL BE STAINLESS STEEL OR G90 GALVANIZED PER ASTM A924 REQUIREMENTS.

SHOP-FABRICATED WOOD TRUSSES

- TRUSSES SHALL BE DESIGNED TO LIMIT LIVE LOAD DEFLECTION TO L/360 MAXIMUM.
- TRUSSES SHALL BE MANUFACTURED IN ACCORDANCE WITH TRUSS PLATE INSTITUTE (TPI) STANDARDS. TRUSS MANUFACTURER IS RESPONSIBLE TO SPECIFY ALL TRUSS TO TRUSS HANGERS UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL DIMENSIONS PRIOR TO FABRICATION OF TRUSSES.
- CONTRACTOR SHALL INSTALL TIE-DOWNS AT EACH END OF EACH ROOF TRUSS AS INDICATED.
- TRUSS BEARING SHALL BE DESIGNED FOR 425 psi ALLOWABLE BEARING PRESSURE. CONTRACTOR SHALL PROVIDE HEEL BLOCKS OR BEARING ENHANCERS PER TRUSS MANUFACTURERS SPECIFICATIONS TO MEET THIS REQUIREMENT.
- CONTRACTOR SHALL INSTALL PANEL SHEATHING CLIPS (PSCL) BY SIMPSON (OR EQUAL) BETWEEN ALL HORIZONTAL PANEL EDGES, AND MAINTAIN A UNIFORM 1/8" SPACES BETWEEN ADJACENT PANELS.
- TPI HIB-91 "COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING & BRACING METAL PLATE CONNECTED WOOD TRUSSES". INSTALL AND FASTEN PERMANENT BRACING DURING TRUSS ERECTION AND BEFORE CONSTRUCTION LOADS ARE APPLIED. ANCHOR ENDS OF PERMANENT BRACING WHERE TERMINATING AT WALLS, BEAMS, OR HORIZONTAL TRUSSES.
- IN ADDITION TO LATERAL BRACING DESIGNATED BY THE TRUSS MANUFACTURER, CONTRACTOR SHALL PROVIDE AND INSTALL PERMANENT DIAGONAL STABILITY BRACING FOR ALL COMPRESSION WEB MEMBERS WHICH REQUIRE BRACING TO REDUCE THEIR BUCKLING LENGTH. THIS BRACING SHALL CONSIST OF 2x4 LUMBER NAILED TO WEB MEMBER w/ (2) 16d NAILS MIN. ON OPPOSITE SIDE OF LATERAL BRACING. DIAGONALS SHALL BE INSTALLED AT A 45 DEGREE ANGLE TO LATERAL BRACING IN A CHEVRON PAIR AT EACH END OF THE TRUSS BAY AND WITH NO MORE THAN 20 FEET BETWEEN PAIRS. WHERE TRUSS TYPES DIFFER AND DIAGONAL BRACING CANNOT BE USED, CONTRACTOR SHALL INSTALL A 2x4 TEE BRACE TO THE COMPRESSION WEB MEMBER w/ 16d NAILS 12 INCHES O.C.
- HORIZONTAL GABLE END TRUSSES SHALL BE DESIGNED FOR CUMULATIVE LOADING INCLUDING WINDLOADING OF 65.3 psf AT HEELS INCREASING TO 127.8 AT THE CENTER; DIAGONAL WALL BRACING LOADS OF 365# PER BRACE; AND TOP CHORD BRACING LOADS FROM ALL TRUSSES AS PER CODE OR 2% OF THE TOP CHORD COMPRESSION LOAD.

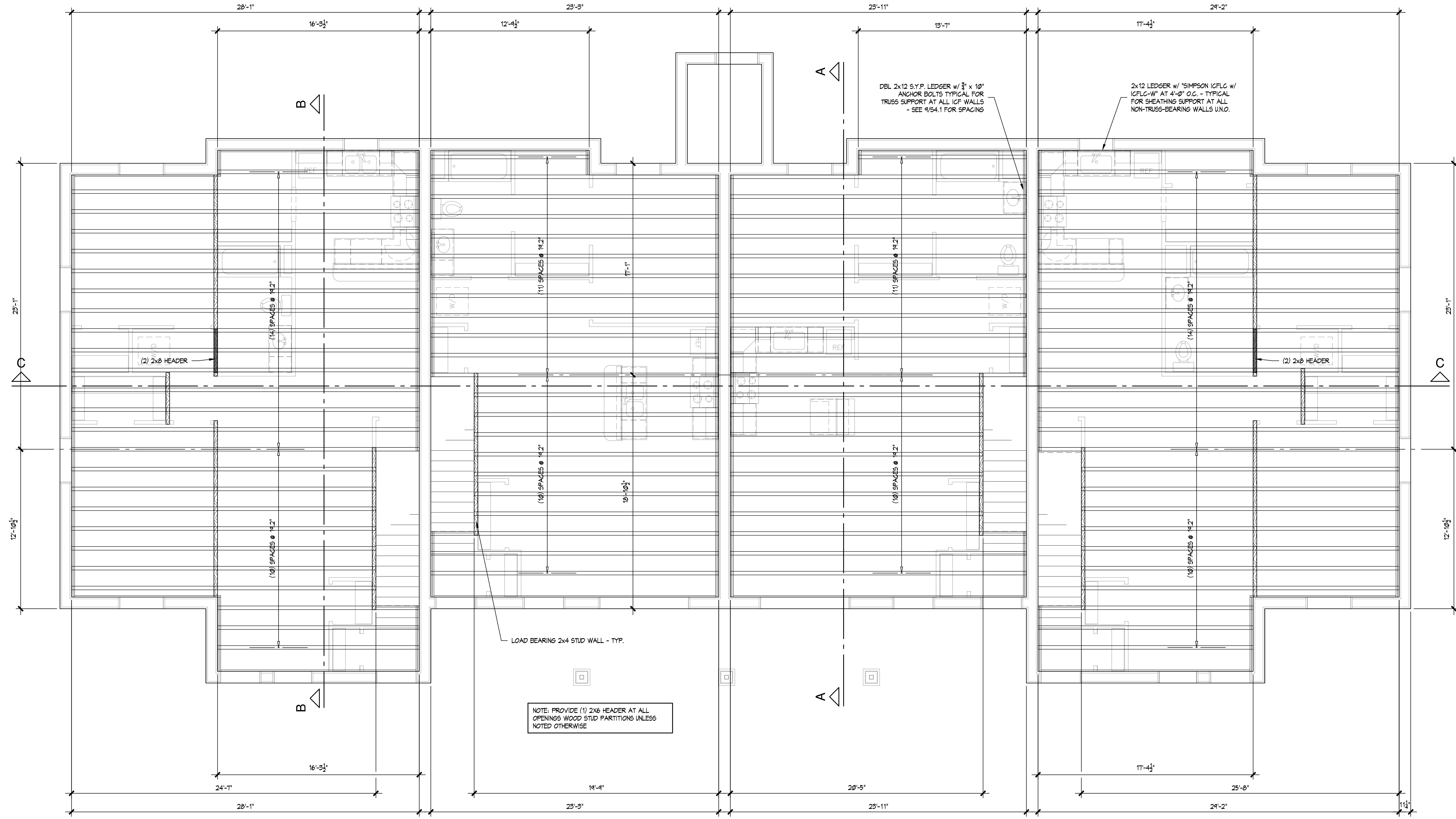


FOUNDATION PLAN

SCALE: 1/2" = 1'-0"

NOTE: PLAN DIMENSIONS ARE FACE OF ICF TO FACE OF ICF

| FOOTING SCHEDULE | | | |
|------------------|---------------------------|---------------------|---|
| TAG | SIZE (D x W x L) | REINFG. | WALL DOWELS |
| ▽ | 10" x 1'-6" x STRIP | HMR-25; 12.1 lbs/cy | #5x2'-8"x1'-0" HOOKED BAR AT 4'-0" O.C. |
| ▽ | 10" x 2'-0" x STRIP | HMR-25; 12.1 lbs/cy | #5x2'-8"x1'-0" HOOKED BAR AT 4'-0" O.C. |
| ▽ | 10" x 3'-0" x STRIP | HMR-25; 12.1 lbs/cy | #5x2'-8"x1'-0" HOOKED BAR AT 4'-0" O.C. |
| ▽ | 10" x 3'-0" x 3'-0" | HMR-25; 12.1 lbs/cy | (4) #5x2'-8"x1'-0" HOOKED BAR |
| ▽ | 10" x 1'-6" THICKEND SLAB | HMR-25; 12.1 lbs/cy | NONE |

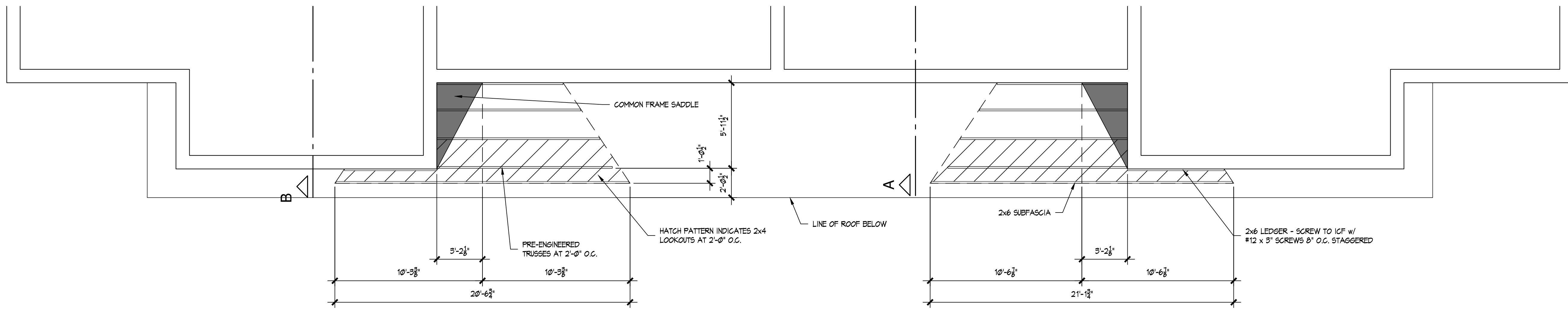
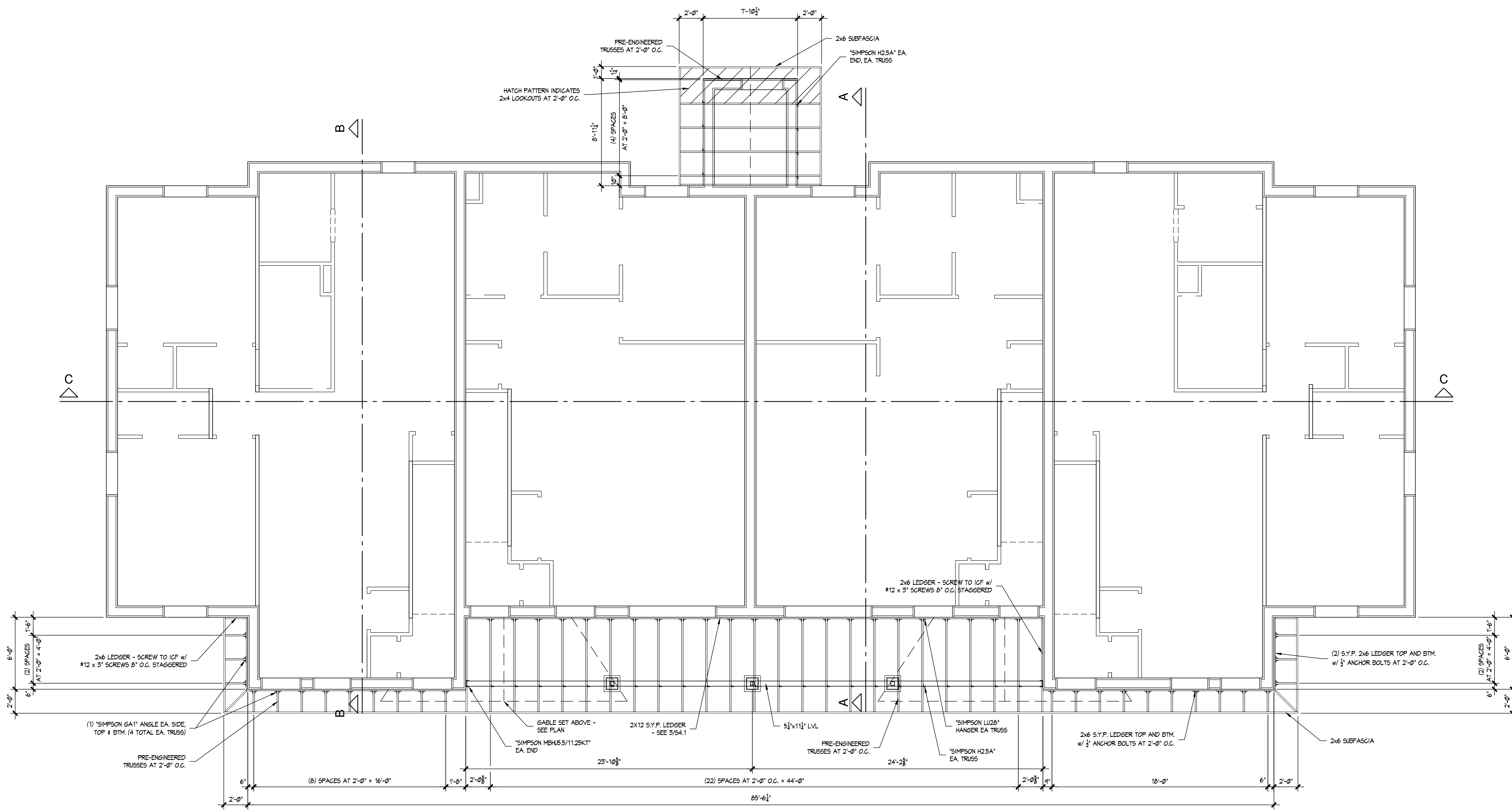


UPPER FLOOR FRAMING PLAN

SCALE:

1/2" = 1'-0"

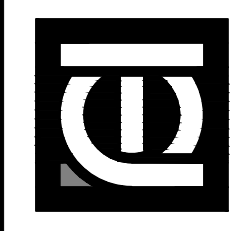
NOTE: TRUSSES DIMENSIONS ARE FACE OF STUD TO CENTERLINE OF TRUSS, OR FACE OF ICF TO CENTERLINE OF ICF

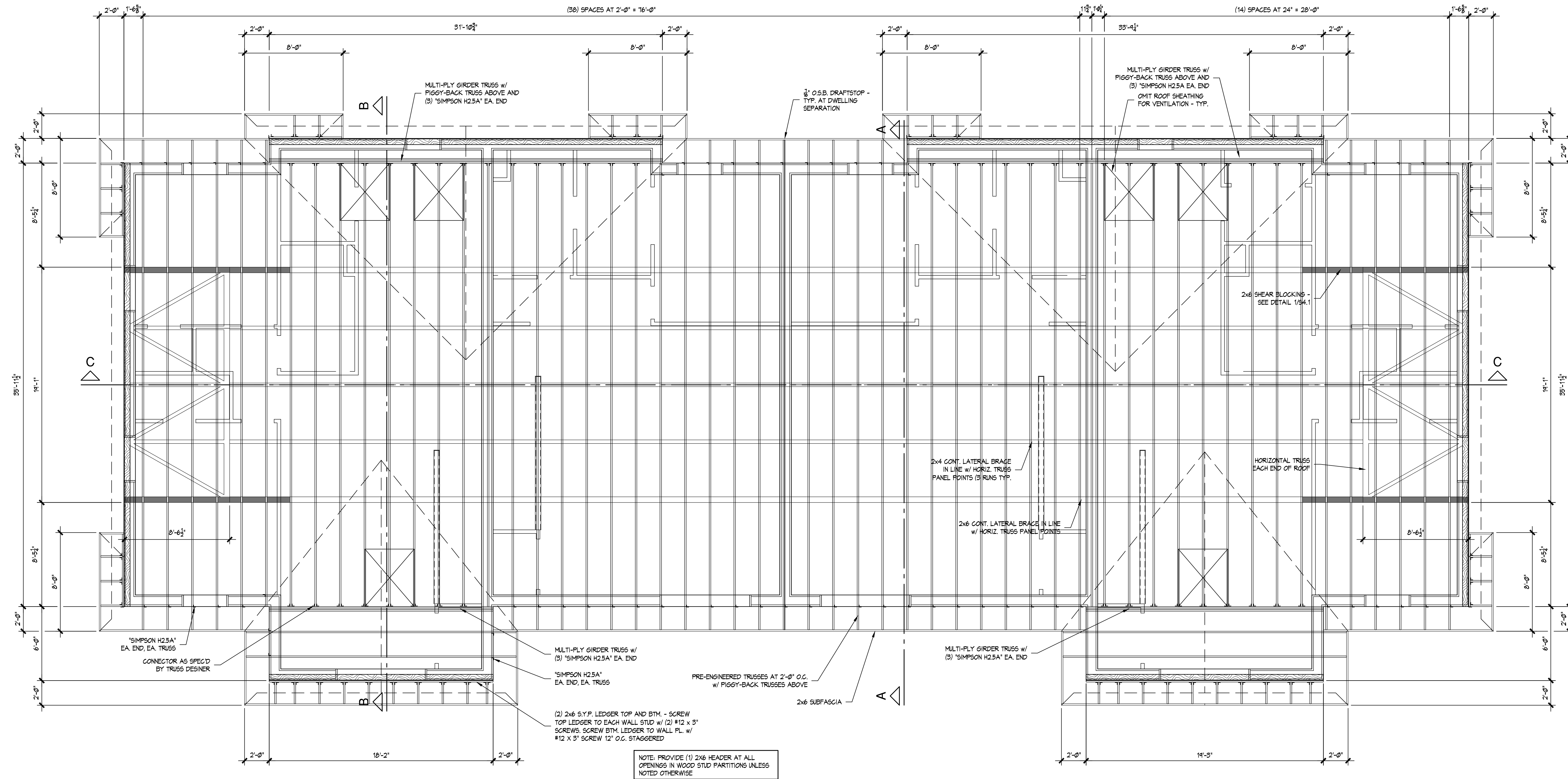


LOWER ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"

NOTE: TRUSSES DIMENSIONS ARE FACE OF STUD TO CENTERLINE OF TRUSS, OR FACE OF ICF TO CENTERLINE OF ICF

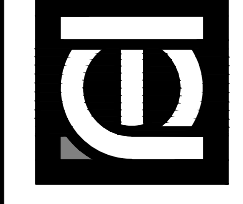


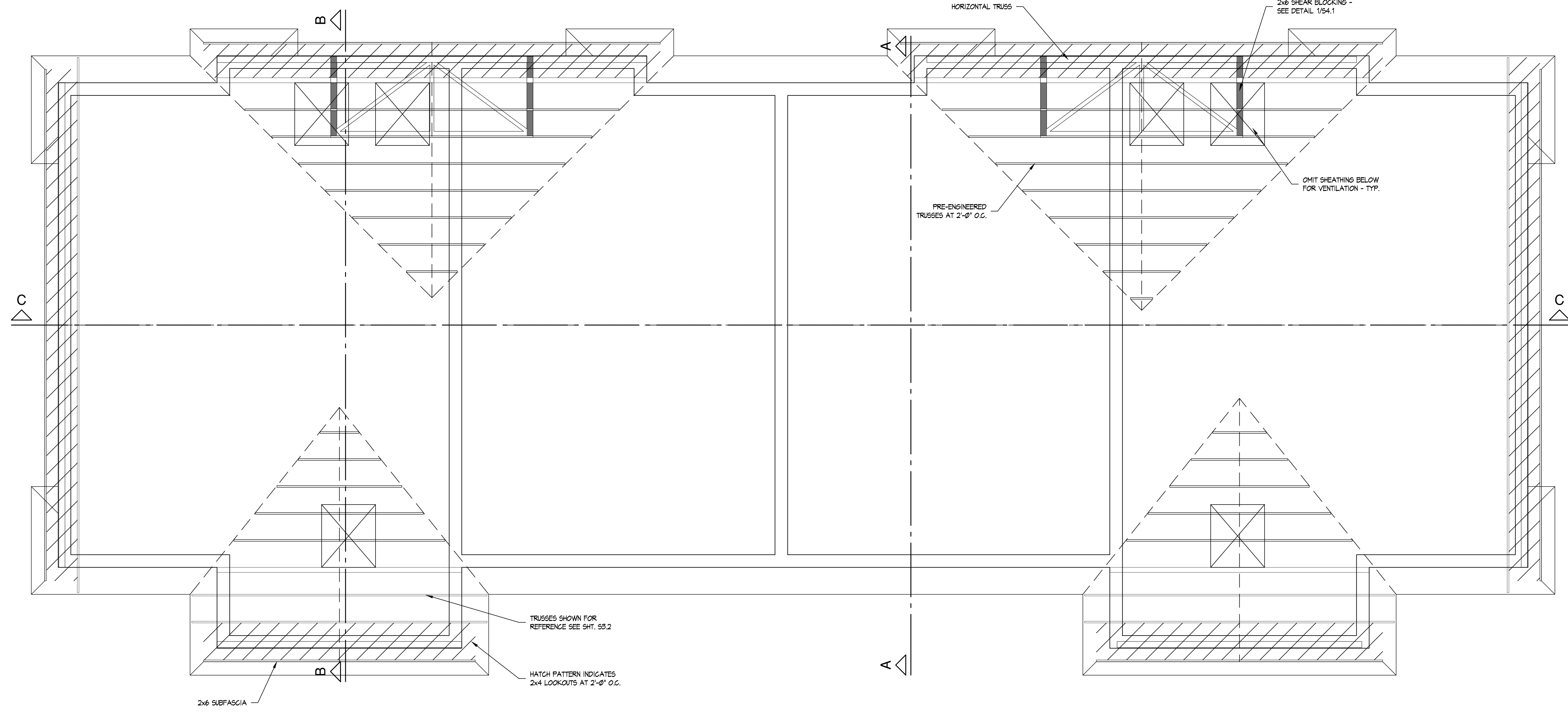


UPPER ROOF FRAMING PLAN

SCALE: $\frac{1}{4}'' = 1'-0''$

NOTE: TRUSSES DIMENSIONS ARE FACE OF STUD TO CENTERLINE OF TRUSS, OR FACE OF ICF TO CENTERLINE OF ICF

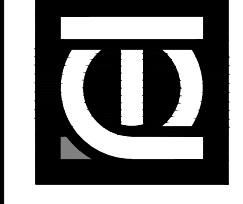


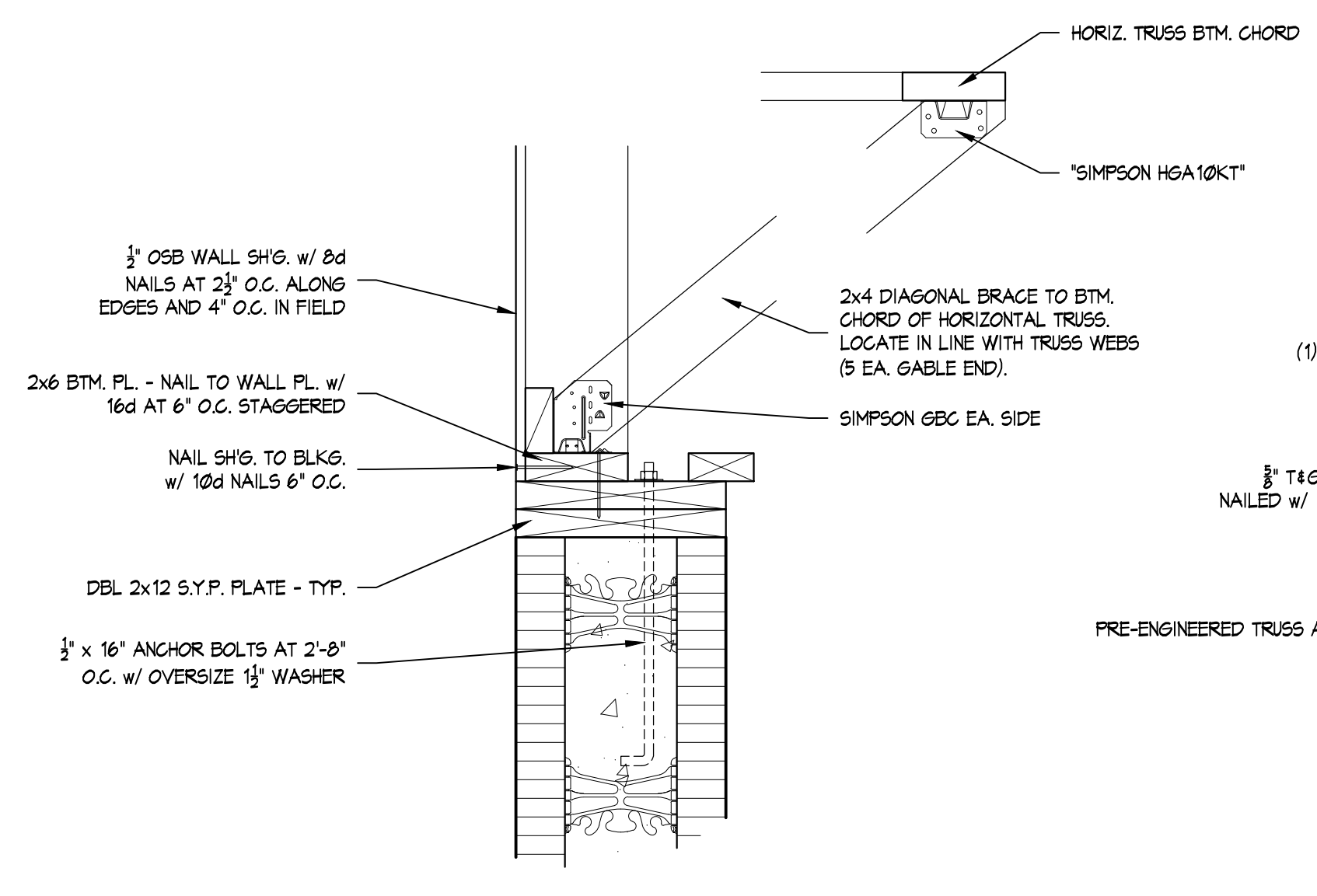


UPPER VALLEY SET PLAN

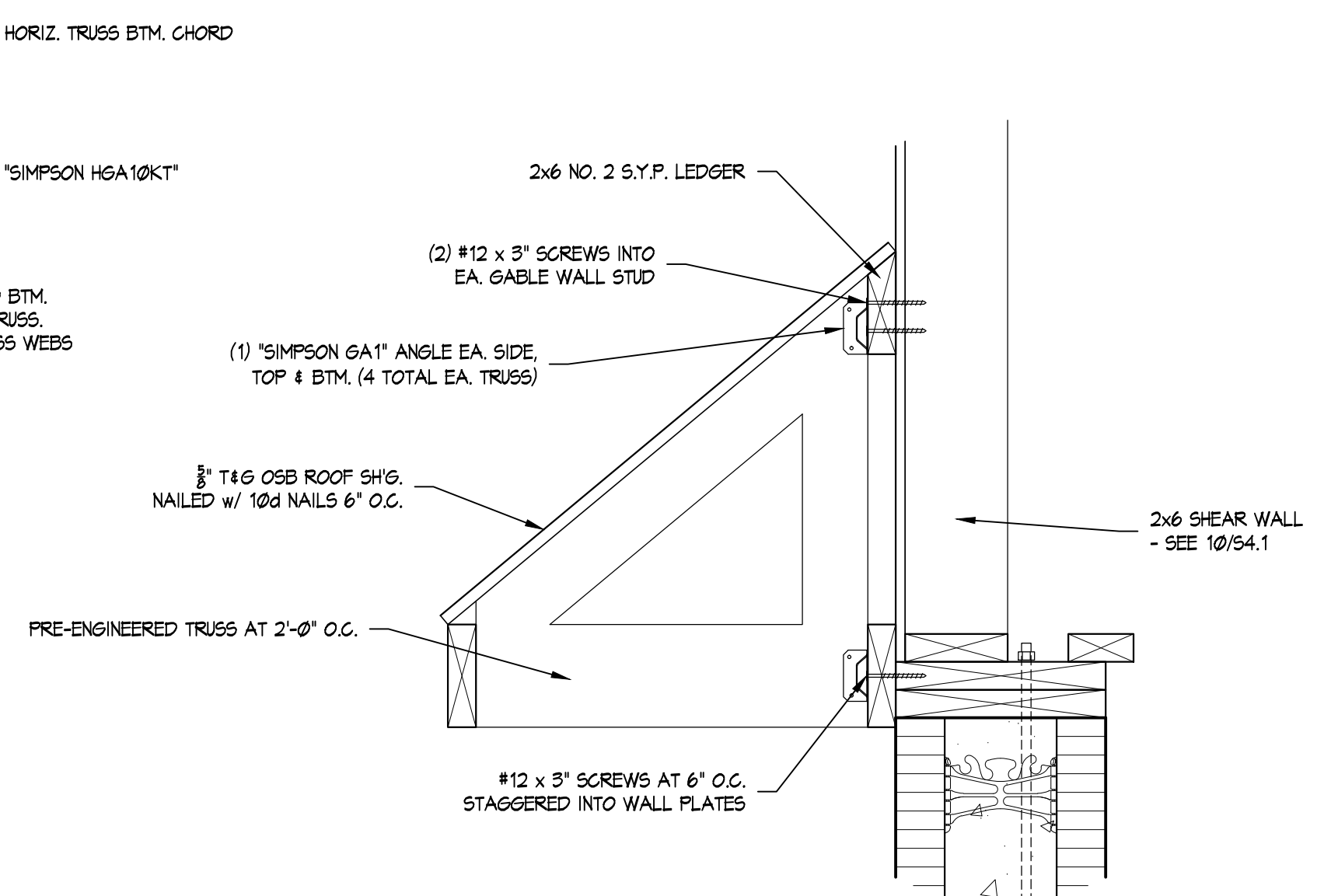
SCALE: $\frac{1}{4}'' = 1'-0''$

NOTE: TRUSSES DIMENSIONS ARE FACE OF STUD TO CENTERLINE OF TRUSS, OR FACE OF ICF TO CENTERLINE OF ICF

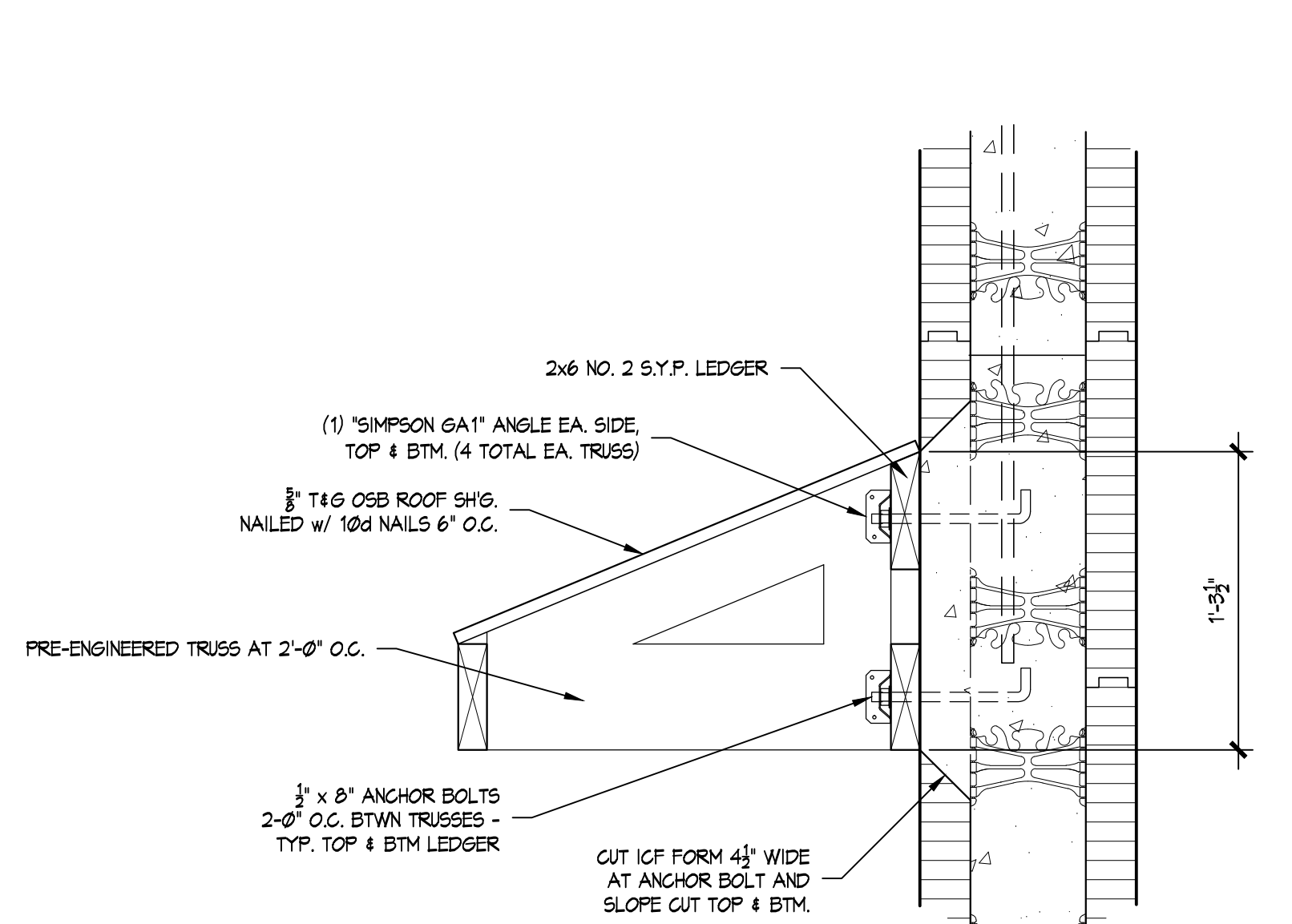




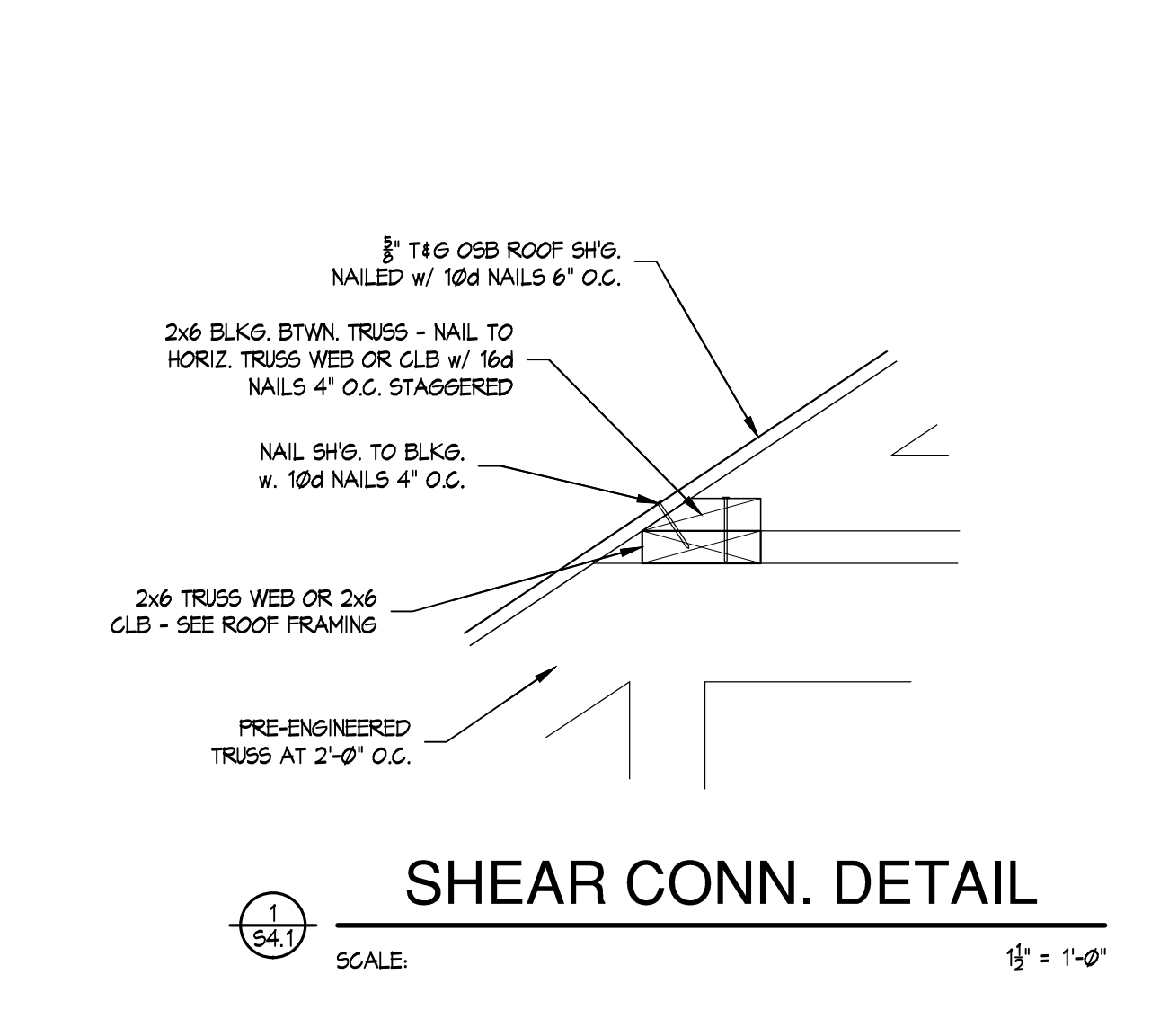
TYP. GABLE WALL DETAIL
SCALE: 1/2" = 1'-0"



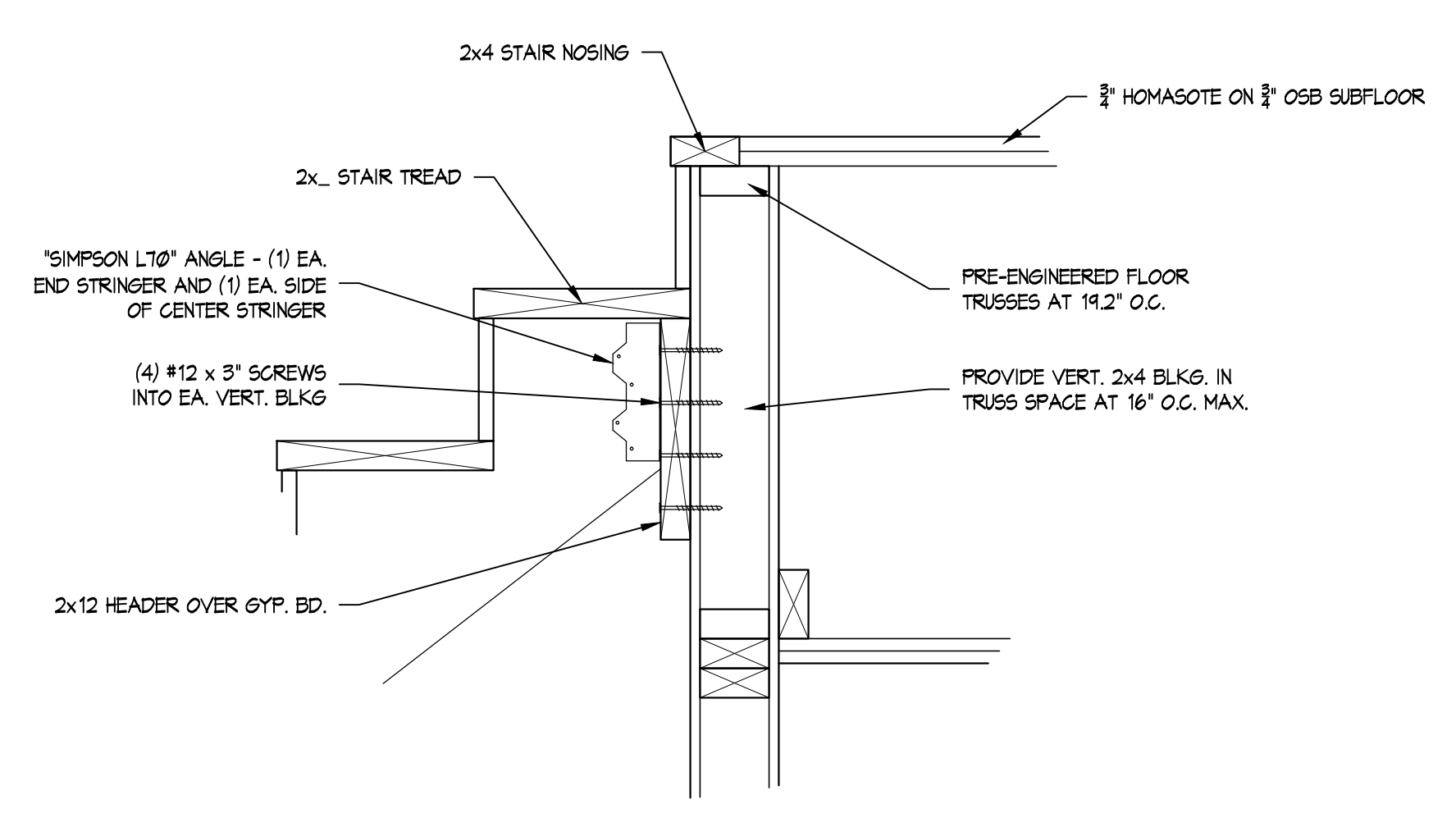
ROOF LEDGER DETAIL
SCALE: 1/2" = 1'-0"



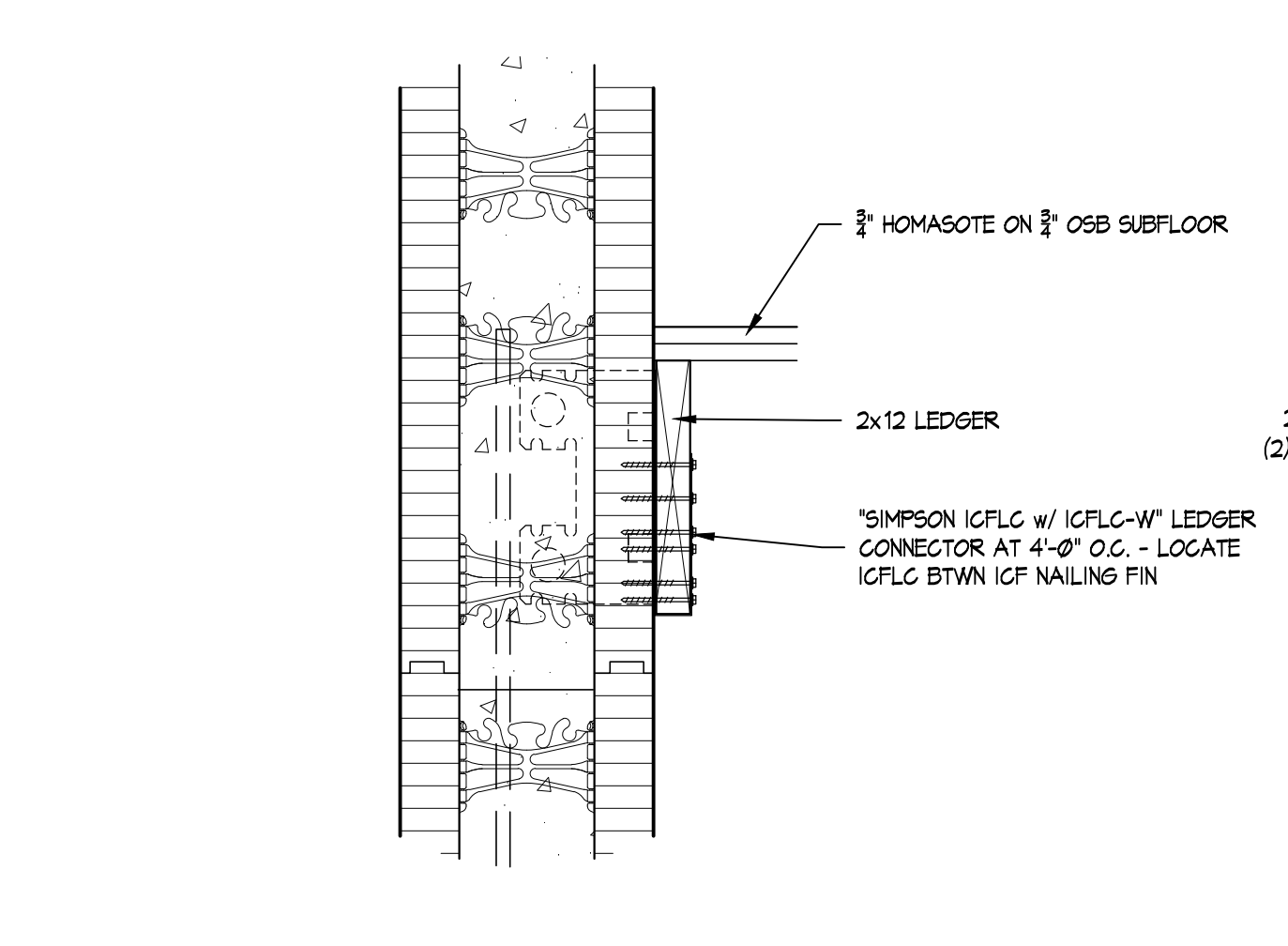
ROOF LEDGER DETAIL
SCALE: 1/2" = 1'-0"



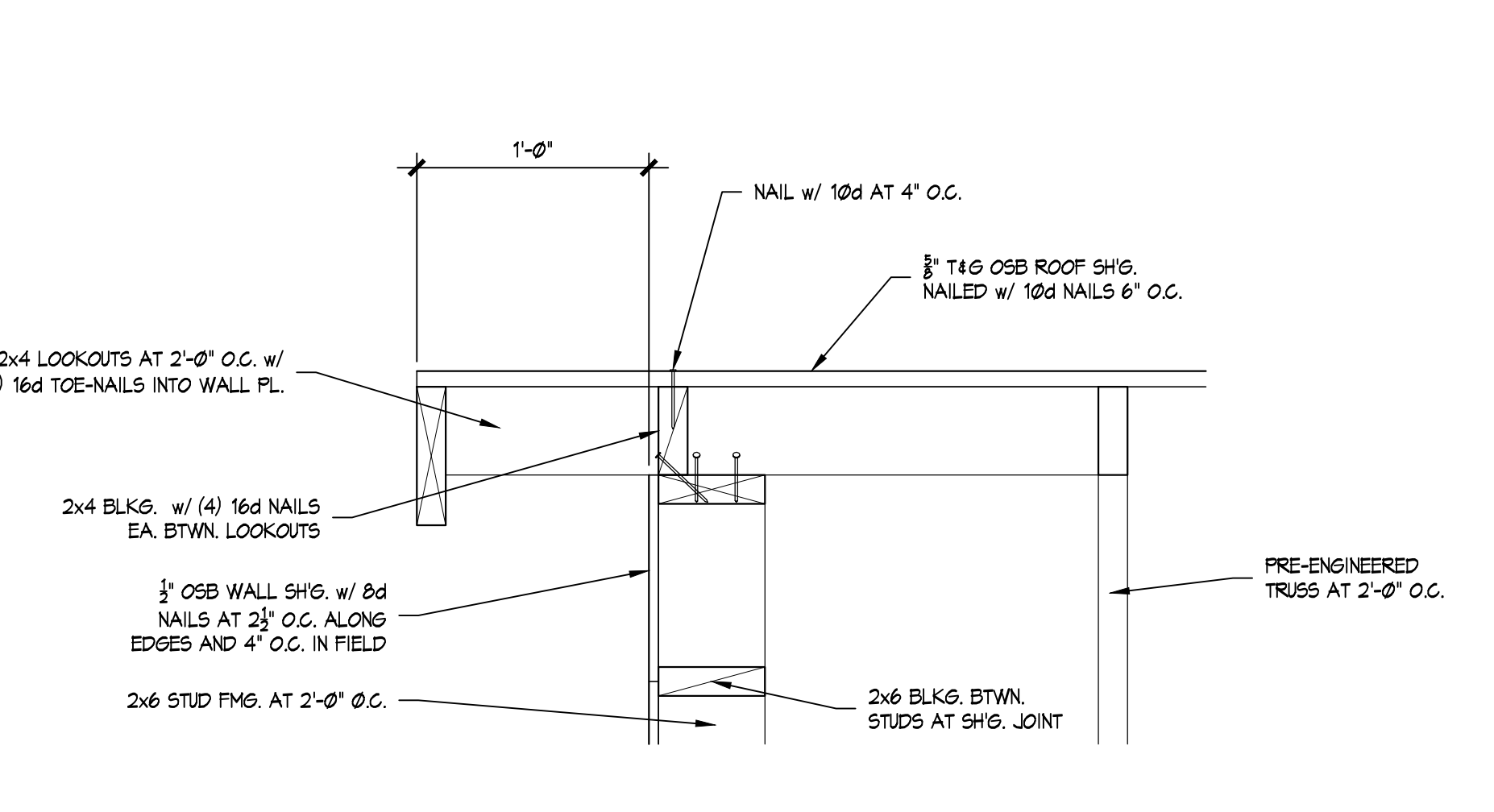
SHEAR CONN. DETAIL
SCALE: 1/2" = 1'-0"



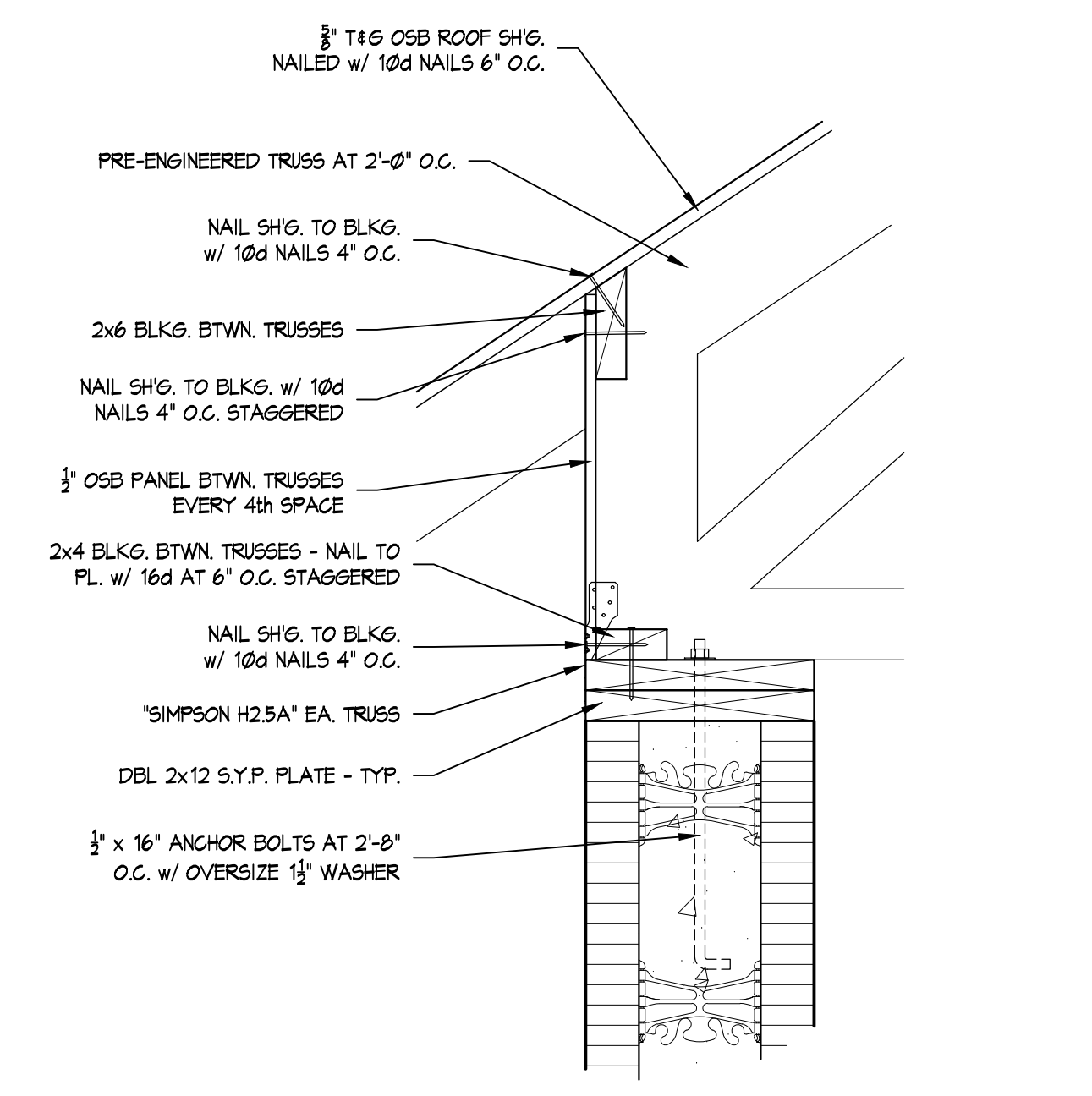
STAIR HEAD DETAIL
SCALE: 1/2" = 1'-0"



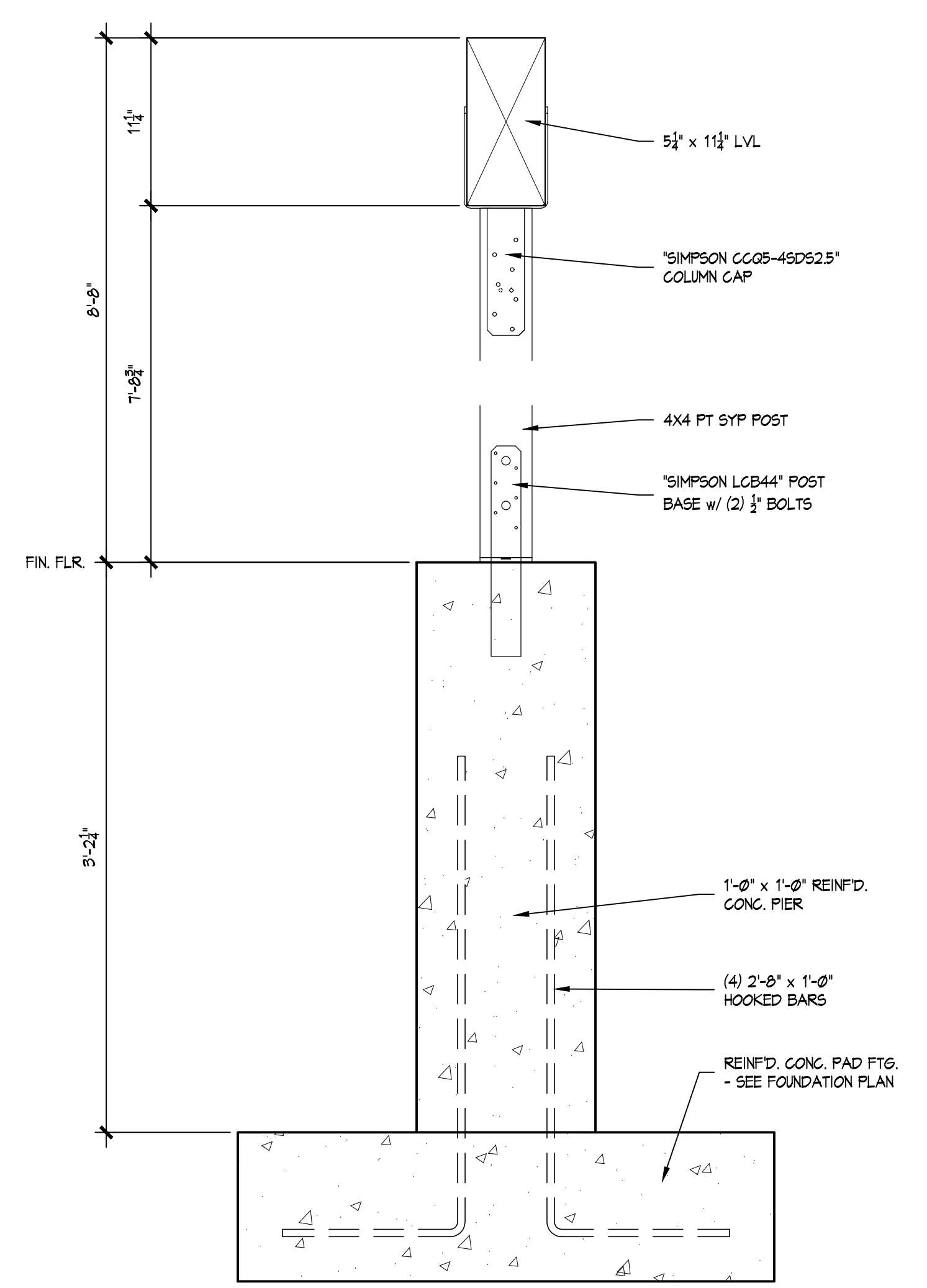
FLR. LEDGER DETAIL
SCALE: 1/2" = 1'-0"



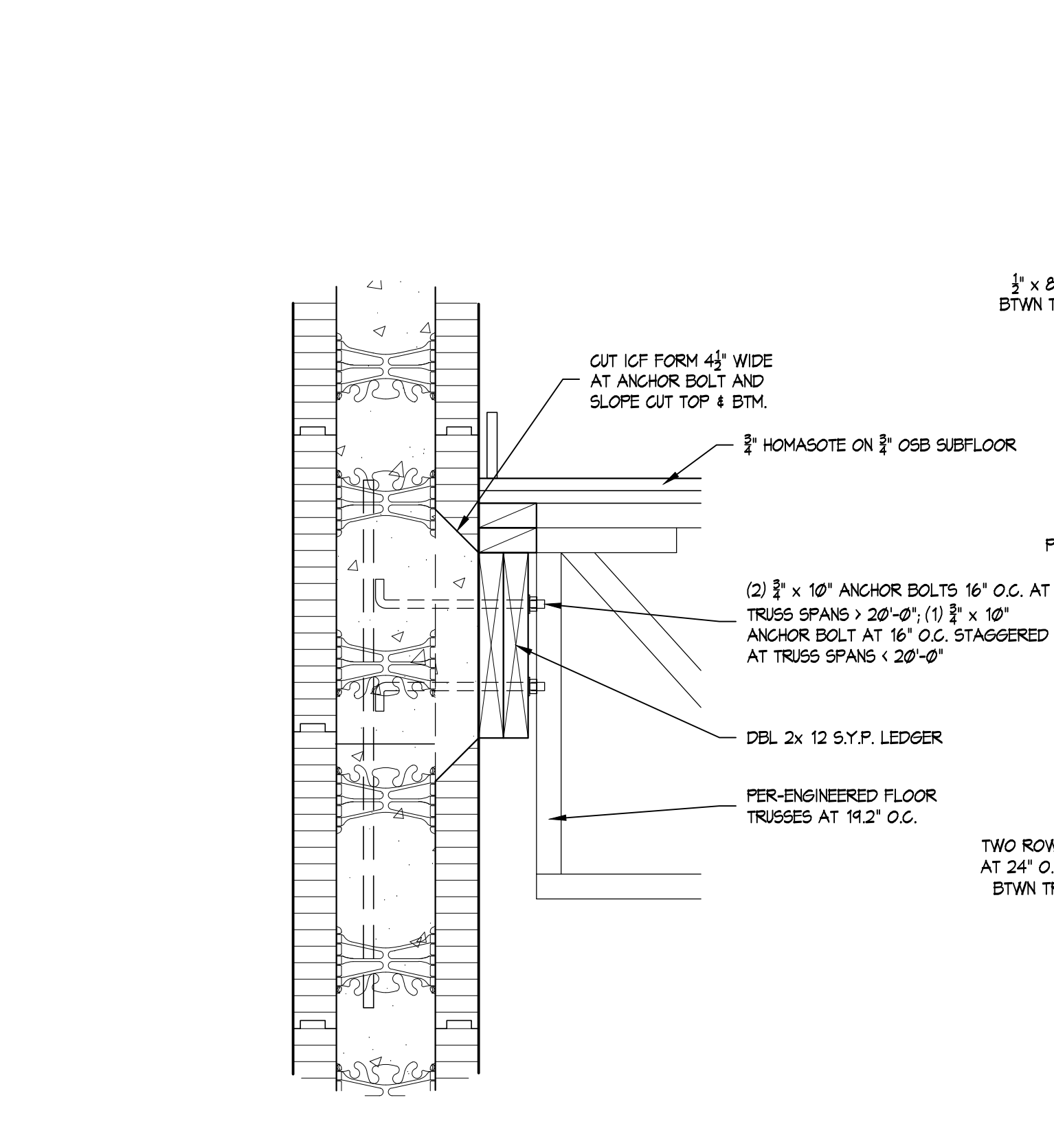
LOOKOUT DETAIL
SCALE: 1/2" = 1'-0"



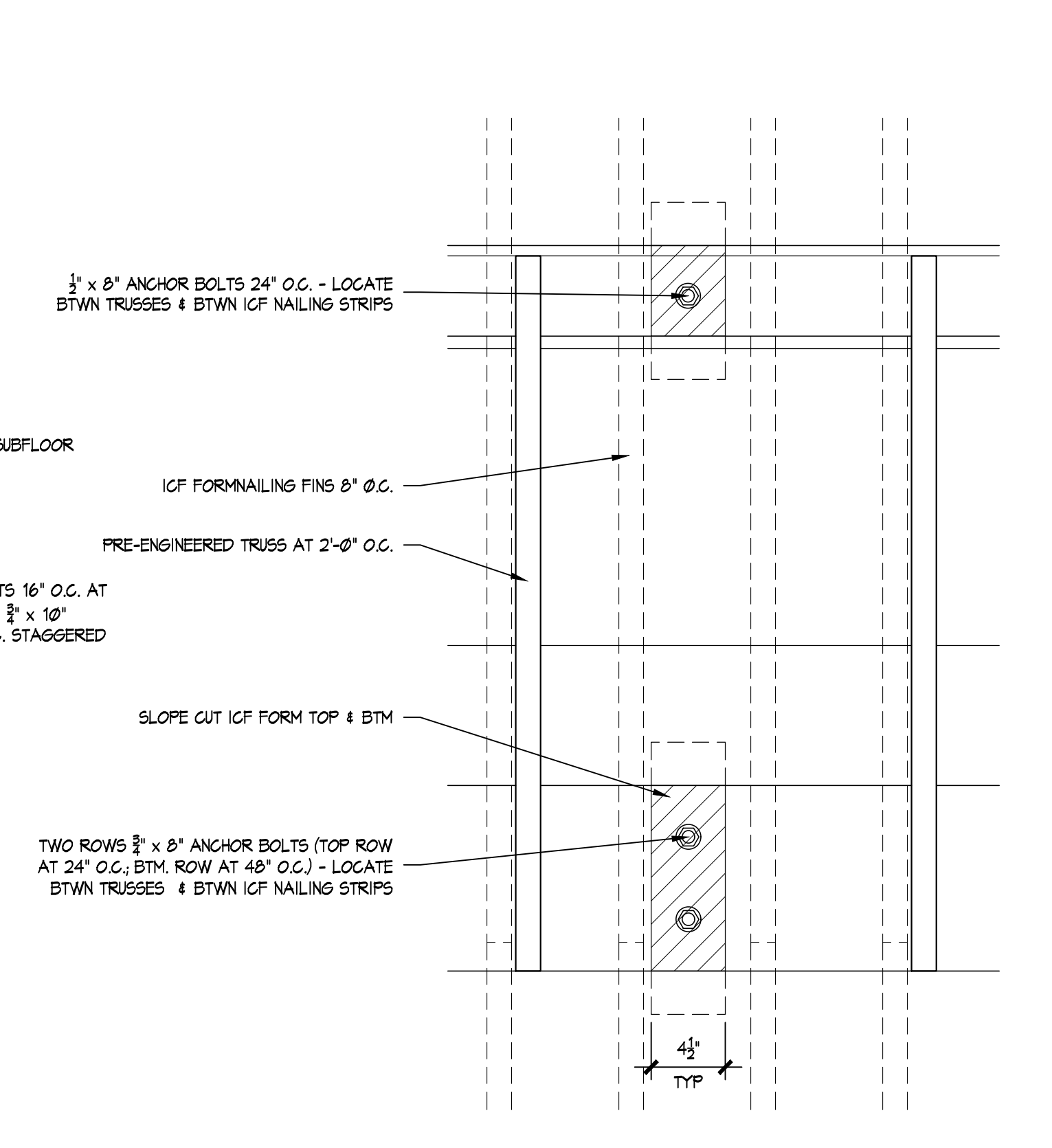
SHEAR PANEL DETAIL
SCALE: 1/2" = 1'-0"



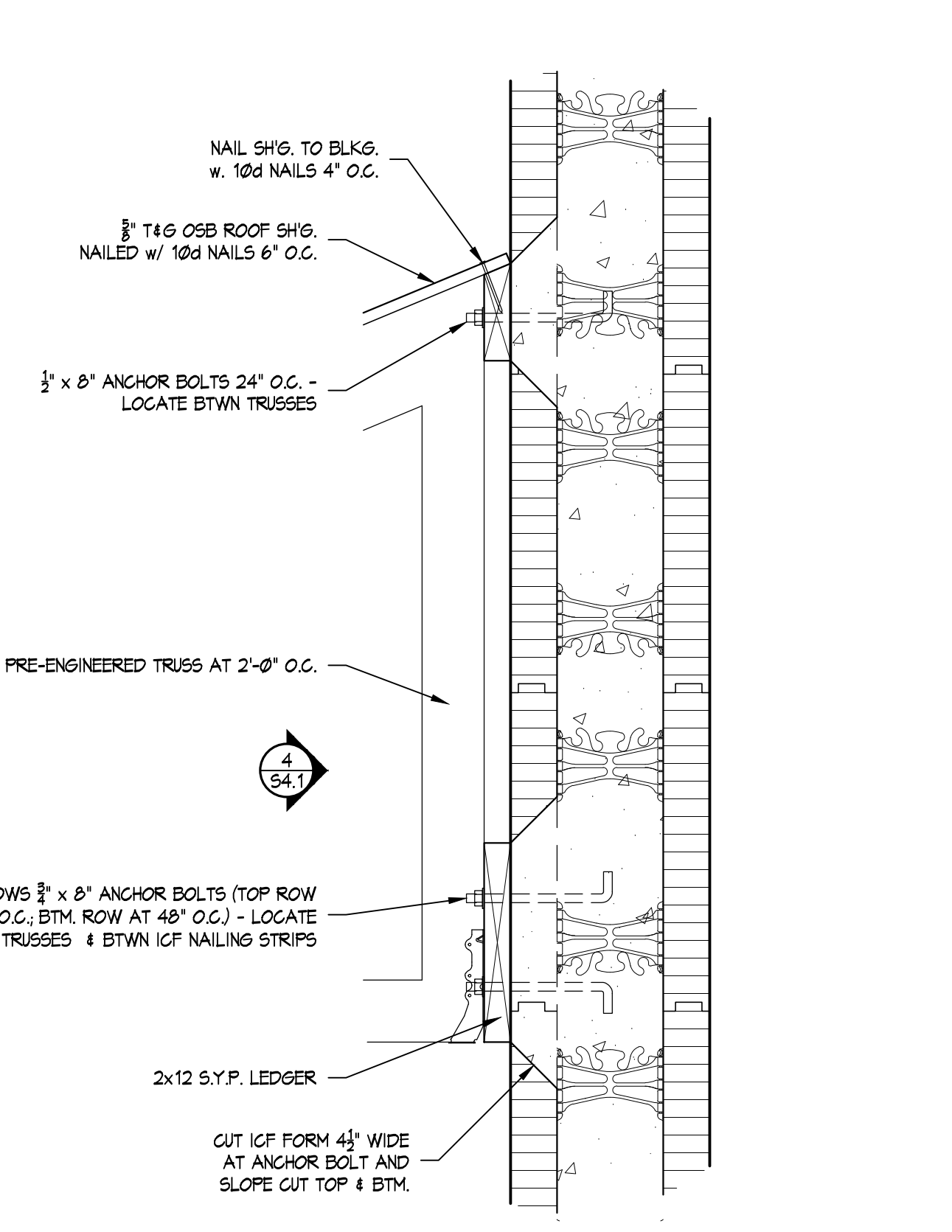
TYPICAL COLUMN DETAIL
SCALE: 1/2" = 1'-0"



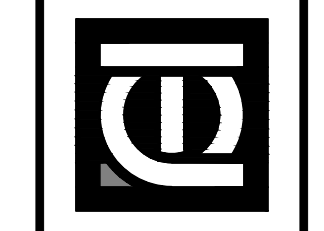
FLR. LEDGER DETAIL
SCALE: 1/2" = 1'-0"



ROOF LEDGER ELEV.
SCALE: 1/2" = 1'-0"



ROOF LEDGER DETAIL
SCALE: 1/2" = 1'-0"



| PLUMBING CONNECTION SCHEDULE | | | | | |
|--|----------------|-----------------|---------------------------------|--------|----------|
| FIXTURE TYPE | HOT WATER (HW) | COLD WATER (CW) | WASTE (W) & INDIRECT WASTE (IW) | TRAP | VENT (V) |
| BATHTUB SHOWER (BTS) | 1/2" | 1/2" | 2" | 2" | 1-1/2" |
| CLOTHES WASHING MACHINE (DOMESTIC) | 1/2" | 1/2" | 2" | 2" | 1-1/2" |
| LAVATORY (LAV) | 1/2" | 1/2" | 1-1/2" | 1-1/2" | 1-1/2" |
| SINK (SK) - RESIDENTIAL/LIGHT COMMERCIAL | 1/2" | 1/2" | 1-1/2" | 1-1/2" | 1-1/2" |
| WALL HYDRANT (WH) OR HOSE BIB (HB) | -- | 3/4" | -- | -- | -- |
| WATER CLOSET (WC) - FLUSH TANK | -- | 1/2" | 3" | 3" | 2" |

NOTES:
1. REFER TO DRAWINGS AND SPECIFICATIONS FOR MORE DETAILS.
2. NOTE THAT THE WATER SUPPLY PIPE SIZES ABOVE ARE MINIMUM SIZES FOR STANDARD COPPER TUBING. PEX TUBING MAY BE USED INSTEAD OF COPPER, UNLESS NOTED OTHERWISE, PEX TUBING RUN-OUTS SHOULD BE 1/2" PIPE SIZE LARGER.

PLUMBING SYMBOL LIST

| SYMBOL | DESCRIPTION |
|--------|---|
| | PIPE ELBOW UP |
| | PIPE ELBOW DOWN |
| | DIRECTION OF FLOW |
| | UNION |
| | CONCENTRIC REDUCER |
| | ECCENTRIC REDUCER |
| | PIPE CAP OR PLUG |
| | CIRCULATING PUMP |
| | ISOLATION VALVE |
| | BALL VALVE |
| | CHECK VALVE (SWING) |
| | CHECK VALVE (SPRING) |
| | COMBINATION BALANCE VALVE & FLOW MEASURING DEVICE |
| | STRAINER (Y-TYPE) |
| | STRAINER (BLOW OFF TYPE) |
| | TRAP (PLAN VIEW) |
| | FLOOR DRAIN (PLAN VIEW) |
| | FLOOR DRAIN (ELEVATION) |
| | FUNNEL FLOOR DRAIN (PLAN VIEW) |
| | FUNNEL FLOOR DRAIN (ELEVATION) |
| | CLEAN OUT (IN FLOOR) |
| | CLEAN OUT (IN LINE) |
| | BACKFLOW PREVENTER |
| | HOSE BIBB (INTERIOR - NON FREEZEPROOF) |
| | HOSE BIBB (EXTERIOR - FREEZEPROOF) |
| | SWAMESE CONNECTION (WALL MOUNTED) |
| | PRESSURE RELIEF VALVE |
| | PRESSURE REDUCING VALVE |
| | PRESSURE AND TEMPERATURE RELIEF VALVE |
| | PRESSURE REGULATING VALVE |
| | PRESSURE AND TEMPERATURE TEST PLUG |
| | PRESSURE GAUGE AND COCK |
| | THERMOMETER |
| | MANUAL AIR VENT |
| | AUTOMATIC AIR VENT |
| | DOMESTIC COLD WATER PIPING |
| | DOMESTIC HOT WATER PIPING |
| | DOMESTIC HOT WATER RETURN PIPING |
| | SANITARY WASTE PIPING |
| | SANITARY VENT PIPING |
| | NON POTABLE COLD WATER |
| | FIRE PROTECTION PIPING |

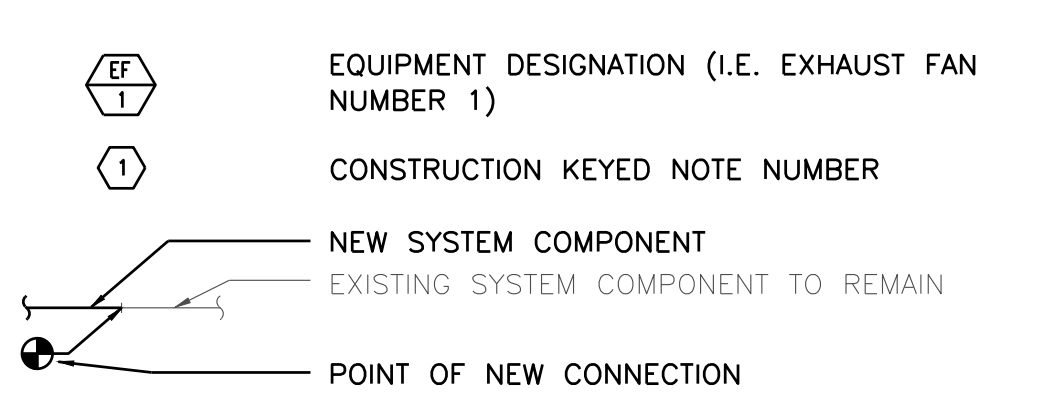
PLUMBING ABBREVIATION LIST

| ABBREVIATION | DESCRIPTION |
|--------------|---|
| AAV | AIR ADMITTANCE VALVE |
| AFF | ABOVE FINISHED FLOOR |
| ASR | AUTOMATIC SPRINKLER RISER |
| BFP | BACKFLOW PREVENTER |
| BHP | BRAKE HORSEPOWER |
| BTU | BRITISH THERMAL UNIT |
| BTUH | BRITISH THERMAL UNITS PER HOUR |
| CAP | CAPACITY |
| CO | CLEAN OUT |
| COND | CONDENSATE |
| CONT | CONTINUATION OR CONTINUED |
| CONTR | CONTRACTOR |
| COORD | COORDINATE |
| CW | DOMESTIC COLD WATER |
| DEG | DEGREES |
| DN | DOWN |
| DWH | DOMESTIC WATER HEATER |
| DW&V | DRAINAGE WASTE & VENT |
| (E) | EXISTING |
| E.C. | ELECTRICAL CONTRACTOR |
| ELEC | ELECTRICAL |
| ELEV | ELEVATION |
| EWT | ENTERING WATER TEMPERATURE |
| F | FIRE PROTECTION |
| (F) | FUTURE |
| F.A. | FIRE ALARM SUBCONTRACTOR |
| F.C. | FIRE SUPPRESSION SUBCONTRACTOR |
| FD | FLOOR DRAIN |
| FFD | FUNNEL FLOOR DRAIN |
| FLA | FULL LOAD AMPS |
| FLR | FLOOR |
| FFM | FEET PER MINUTE |
| FT | FEET |
| G | GAS (NATURAL GAS/PROPANE) |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| HB | HOSE BIB |
| HP | HORSEPOWER |
| HR | HOUR |
| HTG | HEATING |
| HW | DOMESTIC HOT WATER |
| HWR | DOMESTIC HOT WATER RETURN |
| HYD | HYDRANT |
| ID | INSIDE DIAMETER |
| I.E. | INVERT ELEVATION |
| IN | INCHES |
| INL | INLET |
| IW | INDIRECT WASTE |
| KW | KILOWATT |
| LAV | LAVATORY |
| LRA | LOCKED ROTOR AMPS |
| LWT | LEAVING WATER TEMPERATURE |
| MAX | MAXIMUM |
| MBH | THOUSAND BRITISH THERMAL UNITS PER HOUR |
| M.C. | MECHANICAL CONTRACTOR |
| MECH | MECHANICAL |
| MFR | MANUFACTURER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MMBH | MILLION BRITISH THERMAL UNITS PER HOUR |
| MOP | MOP SINK |
| MS | |
| NC | NORMALLY CLOSED |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN |
| NOM | NOMINAL |
| NPWCW | NON POTABLE WATER |
| OC | ON CENTER/CENTER TO CENTER |
| OD | OUTSIDE DIAMETER |
| P.C. | PLUMBING CONTRACTOR |
| PD | PRESSURE DROP |
| PRI | PRIOR TO ROUGH-IN |
| PRV | PRESSURE REDUCING VALVE |
| PSIA | POUNDS PER SQUARE INCH (ABSOLUTE) |
| PSIG | POUNDS PER SQUARE INCH (GAUGE) |
| RPM | REVOLUTIONS PER MINUTE |
| SAN | SANITARY WASTE |
| SHR | SHOWER |
| SK | SINK |
| SPHD | SPRINKLER HEAD |
| SPKR | SPRINKLER |
| SPKR.STP | SPRINKLER STANDPIPE |
| SqFT | SQUARE FOOT/SQUARE FEET |
| SS | SERVICE SINK |
| TYP | TYPICAL |
| U/G | UNDERGROUND (BELOW GRADE) |
| UL | UNDERWRITERS LABORATORY |
| UON | UNLESS OTHERWISE NOTED |
| UR | URINAL |
| V | VENT |
| VS | VENT STACK |
| VSD | VARIABLE SPEED DRIVE |
| VTR | VENT THRU ROOF |
| W | WASTE |
| WC | WATER CLOSET |
| WCO | WALL CLEAN OUT |
| WG | WATER GAUGE |
| WH | WALL HYDRANT |
| W&V | WASTE & VENT |

GENERAL PLUMBING NOTES:

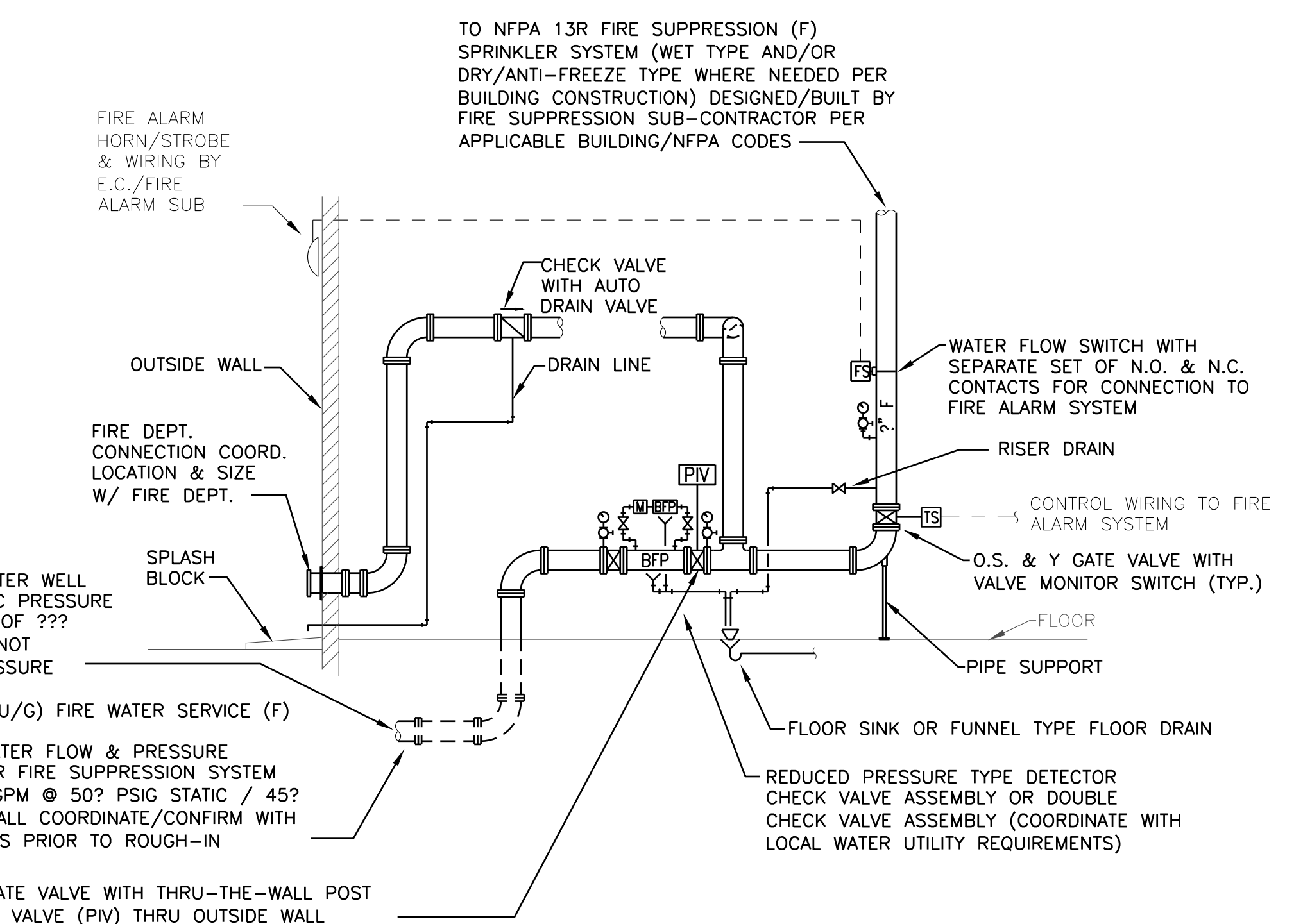
- THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL SCOPE OF WORK. CONTRACTOR SHALL PROVIDE PLUMBING SYSTEMS AND RELATED EQUIPMENT COMPLETE AND INCLUDE ALL NECESSARY OFFSETS, FITTINGS, AND OTHER COMPONENTS REQUIRED DUE TO INTERFERENCES, SPACE CONSTRAINTS, ETC.
- PLUMBING SYSTEMS SHALL BE INSTALLED PER MICHIGAN/INTERNATIONAL PLUMBING CODE, MICHIGAN/INTERNATIONAL FUEL GAS CODE, MICHIGAN/INTERNATIONAL MECHANICAL CODE, AND APPLICABLE MICHIGAN/INTERNATIONAL BUILDING CODES (E.G. MICHIGAN/INTERNATIONAL BUILDING CODES, NFPA CODES, ETC.). COORDINATE & CONFIRM LTBB ODAMA INDIANS (OWNER) CURRENT BUILDING CODE REQUIREMENTS PRIOR TO BID/CONSTRUCTION.
- PLUMBING CONTRACTOR (P.C.) SHALL COORDINATE THE INSTALLATION OF PLUMBING & FIRE SUPPRESSION WORK WITH ALL OTHER TRADES. P.C./F.C. SHALL VERIFY ALL MECHANICAL/PLUMBING AND ELECTRICAL CLEARANCES PRIOR TO FABRICATION OF ANY NEW WORK. PIPING SHALL NOT BE LOCATED DIRECTLY OVER ELECTRICAL EQUIPMENT AND PANELS, OR INTERFERE WITH ELECTRICAL/MECHANICAL EQUIPMENT CLEARANCE SPACES.
- REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION/HEIGHTS OF FIXTURES (STANDARD AND BARRIER FREE), SINKS, TOILETS, LAVATORIES, COUNTERS, APPLIANCES, ETC. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILS ON CASEWORK, FURNITURE, ETC.
- MINIMUM UNDERGROUND (U/G) SANITARY PIPE SIZE SHALL BE 3", UNLESS NOTED OTHERWISE.
- PLUMBING VENTS THROUGH THE ROOF SHALL BE LOCATED AT LEAST 10'-0" AWAY FROM OUTDOOR AIR INTAKE LOCATIONS.
- ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING SHALL HAVE CODE REQUIRED CLEARANCES PROVIDED.
- ALL EQUIPMENT SHALL BE PROVIDED WITH ISOLATION VALVES AND ALL FIXTURES SHALL BE PROVIDED WITH STOP VALVES. ALL VALVES/STOPS SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS.
- ALL FLOOR DRAINS SUBJECT TO LOSS OF SEAL (I.E. MECHANICAL ROOMS/CLOSETS, STORAGE ROOMS, ETC.) SHALL BE PROVIDED WITH A TRAP SEAL PROTECTOR OR A TRAP SEAL PRIMER.
- COORDINATE ALL FLOOR, WALL, AND ROOF PENETRATIONS, EQUIPMENT PADS, ETC. WITH ARCHITECTURAL/STRUCTURAL TRADES PRIOR TO ROUGH-IN. UNLESS NOTED OTHERWISE, EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, CORING, PATCHING ASSOCIATED WITH THEIR WORK. CUTTING, CORING, PATCHING WORK SHALL BE PERFORMED BY A QUALIFIED SUB-CONTRACTOR AND MATCH EXISTING OR NEW FINISHES.
- FIRE CALL/STOP ALL PLUMBING PENETRATIONS THRU FIRE RATED ASSEMBLIES PER CODE REQUIREMENTS. REFER TO ARCHITECTURAL PLANS/SECTIONS FOR LOCATION/TYPES OF FIRE RATED ASSEMBLIES.

METHODS OF NOTATION



GENERAL FIRE PROTECTION/SUPPRESSION NOTES:

- THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. THE FIRE PROTECTION/SUPPRESSION CONTRACTOR (F.C.) SHALL DESIGN-BUILD NEW FIRE PROTECTION SYSTEMS COMPLETE, PER APPLICABLE CODES, PER NFPA, PER OWNER'S INSURANCE REQUIREMENTS, AND PER REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION (AHJ). REFER TO DIVISION 21000 SPECIFICATIONS FOR REQUIREMENTS.
- DESIGN-BUILD FIRE PROTECTION SUB-CONTRACTOR SHALL PROVIDE DESIGN & CONSTRUCTION OF A COMPLETE NEW AUTOMATIC WET PIPE SPRINKLER SYSTEM SYSTEM IN ACCORDANCE WITH NFPA 13 (OR 13R WHERE ALLOWED BY BUILDING CODE), INCLUDING ALL PIPING, OFFSETS, FITTINGS, VALVES, DRAINS, TEST CONNECTIONS, SPRINKLER HEADS, ETC. AS REQUIRED TO PROTECT THE ENTIRE BUILDING. REFER TO ARCHITECTURAL PLANS FOR DETAILS. PROVIDE DRY/ANTI-FREEZE SYSTEMS FOR AREAS SUBJECT TO FREEZING CONDITIONS (WOOD ATTIC, WOOD FRAMED COVERED PORCHES, ETC.). REFER TO ARCHITECTURAL PLANS/SECTIONS) WHERE REQUIRED BY CODE.
- VERIFY AVAILABLE WATER PRESSURE/FLOW WITH LOCAL MUNICIPAL WATER UTILITY AND/OR PERFORM FLOW/PRESSURE TEST PRIOR TO BID/DESIGN. PER OWNER'S 8/26/2019 WATER WELL REPORT: 407-607 PSIG STATIC PRESSURE AND AVAILABLE & FIRE FLOW OF ??? (NOT PROVIDED) GPM @ ?? (NOT PROVIDED) PSI RESIDUAL PRESSURE.
- PREPARE SHOP DRAWINGS, INCLUDING HYDRAULIC CALCULATIONS, SIGNED/SEALED BY A LICENSED PROFESSIONAL FIRE PROTECTION ENGINEER (IN STATE OF PROJECT JURISDICTION) EXPERIENCED IN FIRE SUPPRESSION SPRINKLER SYSTEM DESIGN, AND SUBMIT TO AHJ FOR APPROVAL PRIOR TO CONSTRUCTION.
- COORDINATE FIRE PROTECTION WORK WITH THE WORK OF ALL OTHER TRADES. COORDINATE EQUIPMENT CLEARANCES WITH OTHER TRADES. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING TYPES. COORDINATE INTERFACES WITH FIRE ALARM CONTRACTOR (E.G. FLOW SWITCHES, TAMPER SWITCHES, ETC.).
- REFER TO ARCHITECTURAL PLANS FOR INFORMATION ON FIRE RATED ASSEMBLY LOCATION/TYPES AND TO REFLECTED CEILING PLANS FOR CEILING TYPES AND HEIGHTS.



FIRE PROTECTION SUPPRESSION RISER PIPING DETAIL
NO SCALE

FIRE PROTECTION/SUPPRESSION NOTES:

- ENTIRE BUILDING, INCLUDING ALL LEVELS, AND THE WOOD-FRAMED ATTIC SPACES (IF NFPA 13), SHALL BE PROTECTED/SUPPRESSED.
- ALL PIPING SHALL BE CONCEALED WHERE POSSIBLE. ANY PIPING EXPOSED WITHIN FINISHED AREAS SHALL COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN ANY EXPOSED PIPING SHALL BE PAINTED TO MATCH. COORDINATE COLOR WITH ARCHITECT/OWNER PRIOR TO ROUGH-IN.
- ALL EXPOSED UP-TURNED SPRINKLER HEADS SHALL BE BLACK, COORDINATE COLOR WITH ARCHITECT/OWNER PRIOR TO ROUGH-IN.
- ALL SPRINKLER HEADS IN FINISHED CEILINGS SHALL BE CONCEALED TYPE WITH WHITE COVER.
- SPRINKLER HEADS IN HIGH ABUSE AREAS (E.G. MECHANICAL ROOMS/CLOSETS, JANITOR CLOSETS, ETC.) SHALL BE PROTECTED WITH WIRE GUARDS.

PLUMBING DRAWING INDEX

| | |
|------|--|
| P1.0 | PLUMBING TITLE SHEET - BUILDING 4 |
| P2.1 | BELOW GRADE PLUMBING PLAN - LOWER FLOOR BUILDING 4 |
| P2.2 | ABOVE GRADE PLUMBING PLAN - LOWER FLOOR BUILDING 4 |
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| P3.1 | PLUMBING DETAILS - BUILDING 4 |

DRAWING TITLE
BUILDING 4
PLUMBING TITLE SHEET

PROJECT TITLE
LITTLE TRAVERSE BAY BAND OF ODAWA INDIANS
MURRAY ROAD APARTMENT DEVELOPMENT
PETOSKEY, MICHIGAN

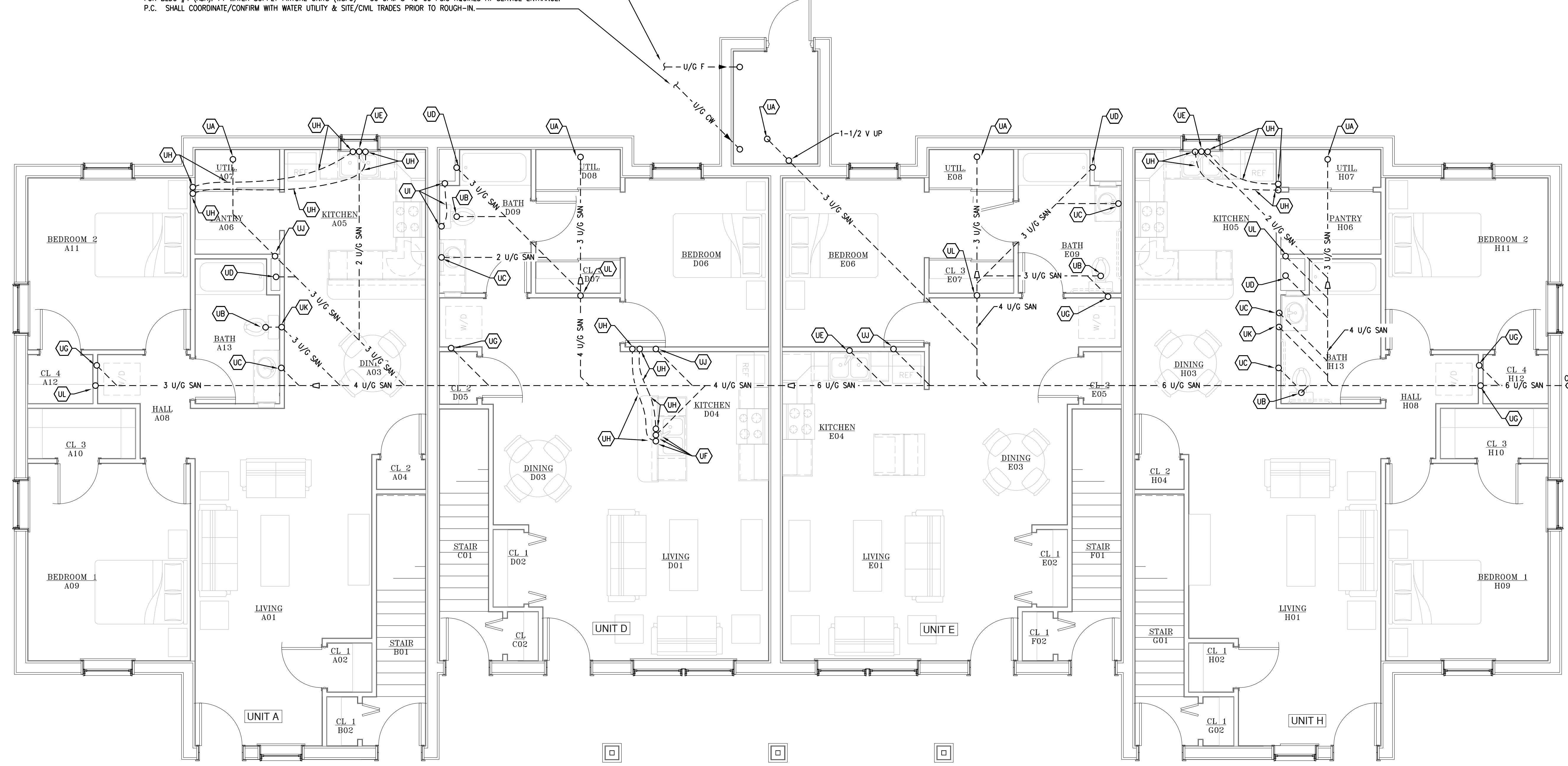
PROJECT NO.
273-19

DATE
May 11, 2020
Sept. 14, 2020

SHEET
P1.0

2"-4" UNDER/GROUND (U/G) FIRE WATER SERVICE (F) FROM UTILITY:
 F.C. SHALL COORDINATE WATER FLOW & PRESSURE REQUIREMENTS (ASSUMED 500? GPM @ 50? PSIG STATIC /
 1,000? GPM @ 45? PSIG RESIDUAL) - F.C. SHALL COORDINATE/CONFIRM WITH WATER UTILITY & SITE/CIVIL
 TRADES PRIOR TO ROUGH-IN.

2" UNDER/GROUND (U/G) DOMESTIC COLD WATER (CW) FROM UTILITY:
 FOR BLDGS #3, #5, #6: 90 WATER SUPPLY FIXTURE UNITS (WSFU) = 41 GPM @ 40-60 PSIG REQUIRED AT SERVICE ENTRANCE.
 FOR BLDG #4 (ADA): 71 WATER SUPPLY FIXTURE UNITS (WSFU) = 36 GPM @ 40-60 PSIG REQUIRED AT SERVICE ENTRANCE.
 F.C. SHALL COORDINATE/CONFIRM WITH WATER UTILITY & SITE/CIVIL TRADES PRIOR TO ROUGH-IN.



6 U/G SAN TO SITE SEPTIC
 SYSTEM - COORDINATE
 LOCATION & INVERT FOR
 EACH BUILDING WITH
 SITE/CIVIL TRADES

BUILDING 4
BELOW GRADE PLUMBING PLAN - LOWER FLOOR
 SCALE: 1/4" = 1'-0"

KEYED BELOW GRADE PLUMBING CONSTRUCTION NOTES:

- UA 3 W UP TO FLOOR DRAIN ABOVE (FD), COORDINATE FLOOR DRAIN LOCATIONS WITH MECHANICAL AND PLUMBING EQUIPMENT LOCATIONS PRIOR TO ROUGH-IN.
- UB 3 W UP TO WATER CLOSET (WC) ABOVE.
- UC 2 DWV STACK UP TO LAV(S) ABOVE.
- UD 3 W UP TO TWO (2) BATH/SHOWER (BTS) ABOVE.
- UE 2 W UP TO SINK (SK) ABOVE.
- UF 2 W, 1/2 CW, 1/2 HW UP TO SINK (SK) ABOVE.
- UG 2 W UP TO LAUNDRY BOX ABOVE.
- UH ROUTE 1/2 CW AND 1/2 HW UNDERGROUND (U/G) TO SERVE SK/LAV, 1/2 CW AND 1/2 HW UP IN WALL TO CONNECT TO CW AND HW MAINS.
- UI ROUTE 1/2 UNDERGROUND (U/G) CW TO WATER CLOSET (WC), 1/2 CW UP IN WALL TO CONNECT TO CW MAIN.
- UJ 2 W UP INTO WALL ABOVE, TO SERVE SANITARY WASTE FROM 2ND FLOOR SINK & FLOOR DRAIN.
- UK 3 W UP INTO WALL ABOVE, TO SERVE SANITARY WASTE FROM WATER CLOSET(S) ABOVE.
- UL 3 W UP INTO WALL ABOVE, TO SERVE SANITARY WASTE FROM FIXTURES ABOVE.

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JLK Engineering
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 AEA 1903-01
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DRAWING TITLE
BUILDING 4
BELOW GRADE PLUMBING PLAN - LOWER FLOOR

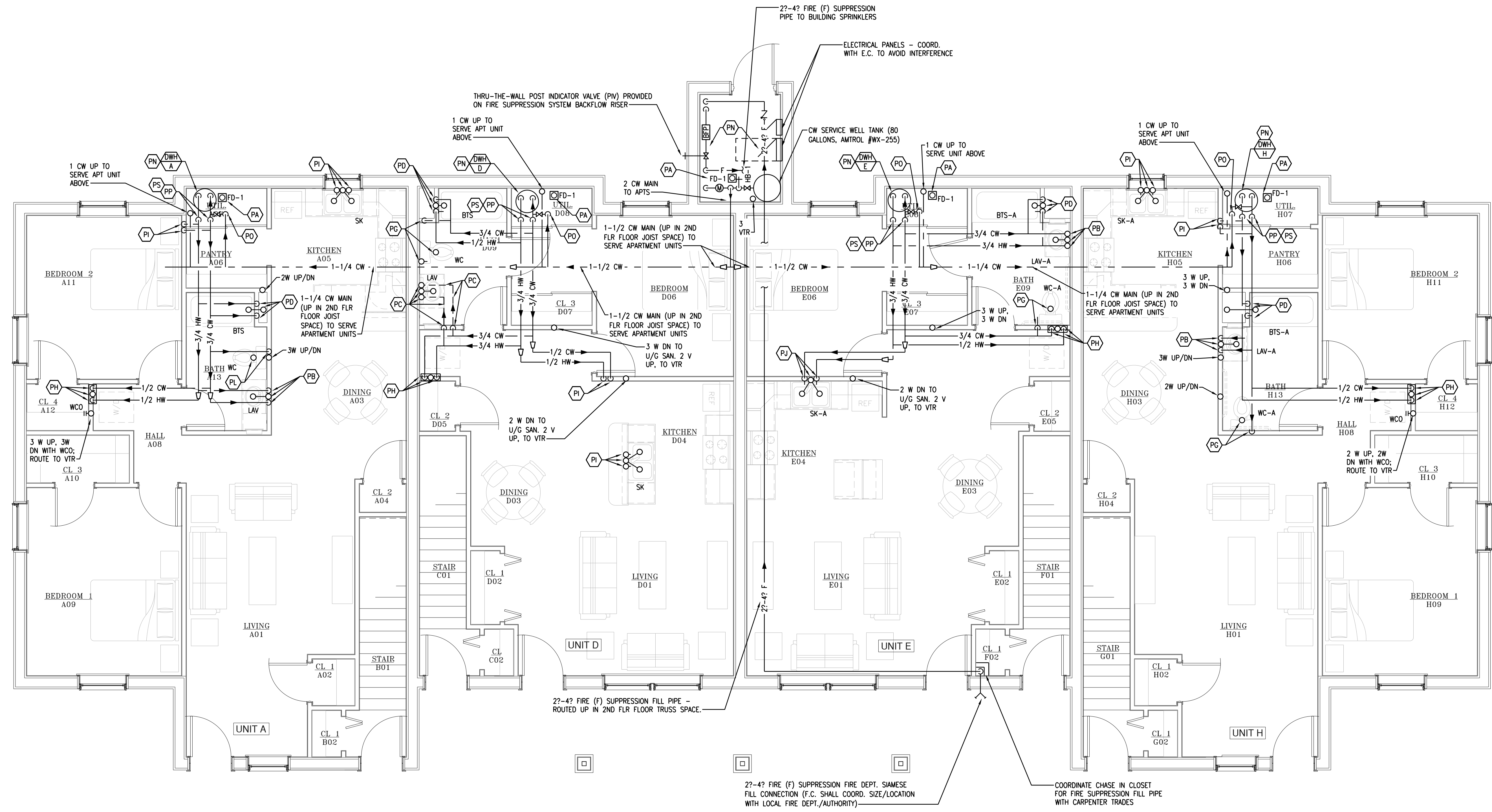
PROJECT TITLE
 LITTLE TRAVERSE BAY BAND OF ODAWA INDIANS
MURRAY ROAD APARTMENT DEVELOPMENT
 PETOSKEY, MICHIGAN

PROJECT NO.
 273-19

DATE
 May 1, 2020
 Sept. 14, 2022

SHEET
P2.1

JLK Engineering\Projects\273-19\Bldg 4\Below Grade Plumbing Plan - Lower Floor.dwg, 10/11/2022 11:58 AM, autoCAD PLOT (server) Document.dwg

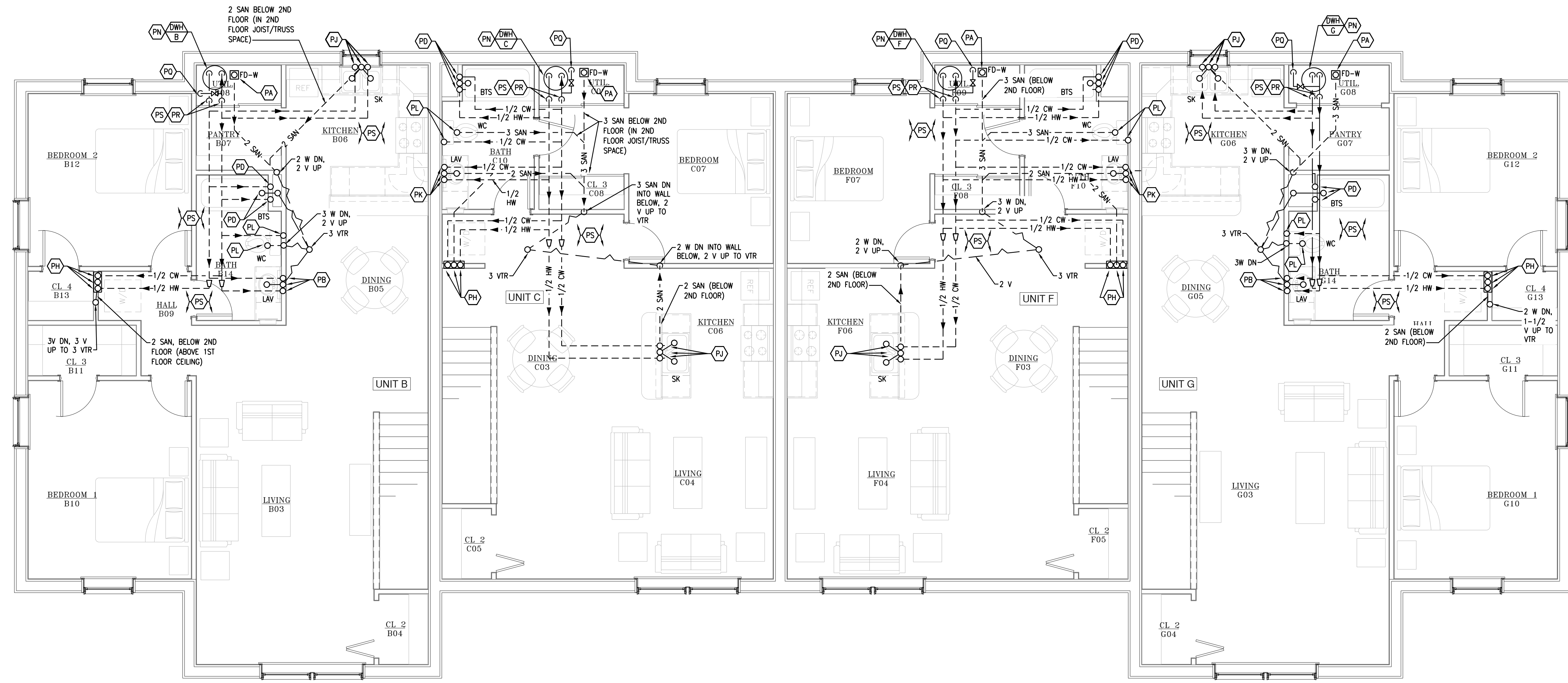


BUILDING 4
ABOVE GRADE PLUMBING PLAN - LOWER FLOOR
 SCALE: 1/4" = 1'-0"

KEYED ABOVE GRADE PLUMBING CONSTRUCTION NOTES:

- (PA) COORDINATE FLOOR DRAIN (FD) LOCATIONS WITH MECHANICAL AND PLUMBING EQUIPMENT LOCATIONS PRIOR TO ROUGH-IN.
- (PB) 1/2 CW AND 1/2 HW TO LAVATORY (LAV). 2 W DN FROM LAV, WITH WALL CLEAN OUT BELOW, CONNECT TO SAN 2 V UP FROM LAV, ROUTE TO VIR.
- (PC) 1/2 CW AND 1/2 HW DOWN INSIDE WALL TO SERVE LAVATORY (LAV). ROUTE CW AND HW UNDERGROUND (U/G) OR IN BASE OF CABINET. 2 W DN FROM LAV, W/ WCO, CONNECT TO U/G SAN. 2 VENT (V) UP FROM LAV, ROUTE TO 3 VIR.
- (PD) 1/2 CW & 1/2 HW TO BATHUB/SHOWER (BTS). 2 W DN FROM BTS, CONNECT TO SAN. 1-1/2 V FROM BTS, ROUTE TO VIR.
- (PE) 3/4 CW DOWN INSIDE WALL TO SERVE BATHUB/SHOWER (BTS) AND WATER CLOSET (WC). 1/2 CW AND 1/2 HW TO BTS. ROUTE 1/2 CW UNDERGROUND AND OUT TO WATER CLOSET. 3 W DN FROM TWO (2) BTS ABOVE, CONNECT TO U/G SAN.
- (PF) NOT USED.
- (PG) 1/2 CW DOWN INSIDE WALL AND ROUTE UNDERGROUND TO SERVE WATER CLOSET (WC). 3 W DN FROM WC, CONNECT TO U/G SAN.
- (PH) 1/2 CW AND 1/2 HW TO CLOTHES WASHING MACHINE SUPPLY BOX. 2 W DN FROM SUPPLY BOX, CONNECT TO SANITARY. 1-1/2 V UP, ROUTE TO 3 VIR. COORDINATE BOX LOCATIONS WITH OTHER TRADES.
- (PI) 1/2 CW AND 1/2 HW DOWN INSIDE WALL TO SERVE KITCHEN SINK (SK). ROUTE CW AND HW UNDERGROUND. 1-1/2 W DN FROM SINK, CONNECT TO U/G SAN. PROVIDE AIR ADMITTANCE VALVE (AAV) FOR SK.
- (PJ) 1/2 CW AND 1/2 HW TO KITCHEN SINK (SK). 1-1/2 W DN FROM SINK, CONNECT TO SAN. 1-1/2 V FROM SINK, ROUTE TO VIR. OR PROVIDE AIR ADMITTANCE VALVE (AAV) WHERE NO VENT AVAILABLE (E.G. ISLAND SINKS, SINKS ON OUTSIDE WALL).
- (PK) 1/2 CW AND 1/2 HW TO SERVE LAVATORY (LAV). 2 W DN FROM LAV, CONNECT TO SAN. 2 V UP FROM LAV, ROUTE TO 3 VIR. OR PROVIDE AIR ADMITTANCE VALVE (AAV) WHERE NO VENT AVAILABLE (E.G. ISLAND SINKS, SINKS ON OUTSIDE WALL).
- (PL) 1/2 CW TO WATER CLOSET (WC). 3 W DN FROM WC, CONNECT TO SAN MAIN OR DW STACK. 2 V UP, ROUTE TO VIR.
- (PM) 1/2 CW AND 1/2 HW TO SERVE BATHUB/SHOWER (BTS). ROUTE 1/2 CW BELOW SECOND FLOOR AND OUT TO WATER CLOSET. 2 W DN FROM BTS, CONNECT TO U/G SAN.
- (PN) COORDINATE LAYOUT OF PLUMBING & FIRE SUPPRESSION EQUIPMENT/SYSTEMS WITH THE MECHANICAL AND ELECTRICAL EQUIPMENT/SYSTEMS PRIOR TO ROUGH-IN AS REQUIRED TO AVOID INTERFERENCES AND CLEARANCES.
- (PO) 1 CW (TAPPED OFF CW MAIN IN JOIST SPACE BETWEEN LOWER AND UPPER FLOOR) DOWN INTO LOWER LEVEL APT UNIT'S UTILITY ROOM. PROVIDE A CW SERVICE SHUT OFF VALVE FOR EACH APT UNIT'S CW SYSTEM FOR FUTURE MAINTENANCE.
- (PP) 3/4 CW FROM CW SERVICE VALVE & AND 3/4 HW FROM DWH UP INTO THE JOIST/TRUSS SPACE (BETWEEN LOWER AND UPPER FLOOR) AND OUT TO SERVE APT UNIT'S PLUMBING FIXTURES.

- (PD) 1 CW (TAPPED OFF CW MAIN IN JOIST SPACE BETWEEN LOWER AND UPPER FLOOR) INTO UPPER LEVEL APT UNIT'S UTILITY ROOM. PROVIDE A CW SERVICE SHUT OFF VALVE FOR EACH APT UNIT'S CW SYSTEM FOR FUTURE MAINTENANCE.
- (PR) 3/4 CW FROM CW SERVICE VALVE & 3/4 HW FROM DWH DOWN INTO THE JOIST/TRUSS SPACE (BETWEEN LOWER AND UPPER FLOOR) AND OUT TO SERVE APT UNIT'S PLUMBING FIXTURES.
- (PS) PLUMBING PIPING (SAN, CW, & HW) SERVING UPPER FLOOR UNITS SHALL BE LOCATED IN 2ND FLOOR JOIST/TRUSS SPACE (BETWEEN UPPER AND LOWER FLOOR) WHERE APPLICABLE. EACH APARTMENT UNIT SHALL HAVE ITS OWN CW/HW PIPING SERVING ONLY THAT UNIT WITH A CW SERVICE SHUT OFF VALVE ACCESSIBLE IN EACH CLOSET. REFER TO LOWER FLOOR PLAN FOR CW MAIN.



BUILDING 4
 ABOVE GRADE PLUMBING PLAN - UPPER FLOOR
 SCALE: 1/4" = 1'-0"

KEYED ABOVE GRADE PLUMBING CONSTRUCTION NOTES:

- (PA) COORDINATE FLOOR DRAIN (FD) LOCATIONS WITH MECHANICAL AND PLUMBING EQUIPMENT LOCATIONS PRIOR TO ROUGH-IN.
- (PB) 1/2" CW AND 1/2" HW TO LAVATORY (LAV). 2" W DN FROM LAV, WITH WALL CLEAN OUT BELOW, CONNECT TO SAN. 2" V UP FROM LAV, ROUTE TO VTR.
- (PC) 1/2" CW AND 1/2" HW DOWN INSIDE WALL TO SERVE LAVATORY (LAV). ROUTE CW AND HW UNDERGROUND (U/G) OR IN BASE OF CABINET. 2" W DN FROM LAV, W/ WCO, CONNECT TO 1/2" SAN. 2" VENT (V) UP FROM LAV, ROUTE TO 3" VTR.
- (PD) 1/2" CW & 1/2" HW TO BATHUB/SHOWER (BTS). 2" W DN FROM BTS, CONNECT TO SAN. 1-1/2" V FROM BTS, ROUTE TO VTR.
- (PE) 3/4" CW DOWN INSIDE WALL TO SERVE BATHUB/SHOWER (BTS) AND WATER CLOSET (WC). 1/2" CW AND 1/2" HW TO BTS. ROUTE 1/2" CW UNDERGROUND AND OUT TO WATER CLOSET. 3" W DN FROM TWO (2) BTS ABOVE, CONNECT TO 1/2" SAN.
- (PF) NOT USED.
- (PG) 1/2" CW DOWN INSIDE WALL AND ROUTE UNDERGROUND TO SERVE WATER CLOSET (WC). 3" W DN FROM WC, CONNECT TO 1/2" SAN.
- (PH) 1/2" CW AND 1/2" HW TO CLOTHES WASHING MACHINE SUPPLY BOX. 2" W DN FROM SUPPLY BOX, CONNECT TO SANITARY. 1-1/2" V UP, ROUTE TO 3" VTR. COORDINATE BOX LOCATIONS WITH OTHER TRADES.
- (PI) 1/2" CW AND 1/2" HW DOWN INSIDE WALL TO SERVE KITCHEN SINK (SK). ROUTE CW AND HW UNDERGROUND. 1-1/2" W DN FROM SINK, CONNECT TO 1/2" SAN. PROVIDE AIR ADMITTANCE VALVE (AAV) FOR SK.
- (PJ) 1/2" CW AND 1/2" HW TO KITCHEN SINK (SK). 1-1/2" W DN FROM SINK, CONNECT TO SAN. 1-1/2" V FROM SINK, ROUTE TO VTR, OR PROVIDE AIR ADMITTANCE VALVE (AAV) WHERE NO VENT AVAILABLE (E.G. ISLAND SINKS, SINKS ON OUTSIDE WALL).
- (PK) 1/2" CW AND 1/2" HW TO SERVE LAVATORY (LAV). 2" W DN FROM LAV, CONNECT TO SAN. 2" V UP FROM LAV, ROUTE TO 3" VTR, OR PROVIDE AIR ADMITTANCE VALVE (AAV) WHERE NO VENT AVAILABLE (E.G. ISLAND SINKS, SINKS ON OUTSIDE WALL).
- (PL) 1/2" CW TO WATER CLOSET (WC). 3" W DN FROM WC, CONNECT TO SAN MAIN OR DW STACK. 2" V UP, ROUTE TO VTR.
- (PM) 1/2" CW AND 1/2" HW TO SERVE BATHUB/SHOWER (BTS). ROUTE 1/2" CW BELOW SECOND FLOOR AND OUT TO WATER CLOSET. 2" W DN FROM BTS, CONNECT TO 1/2" SAN.
- (PN) COORDINATE LAYOUT OF PLUMBING & FIRE SUPPRESSION EQUIPMENT/SYSTEMS WITH THE MECHANICAL AND ELECTRICAL EQUIPMENT/SYSTEMS PRIOR TO ROUGH-IN AS REQUIRED TO AVOID INTERFERENCES AND CLEARANCES.
- (PO) 1" CW (TAPPED OF CW MAIN IN JOIST SPACE BETWEEN LOWER AND UPPER FLOOR) DOWN INTO LOWER LEVEL APT UNIT'S UTILITY ROOM. PROVIDE A CW SERVICE SHUT OFF VALVE FOR EACH APT UNIT'S CW SYSTEM FOR FUTURE MAINTENANCE.
- (PP) 3/4" CW FROM CW SERVICE VALVE & AND 3/4" HW FROM DWH DOWN INTO THE JOIST/TRUSS SPACE (BETWEEN LOWER AND UPPER FLOOR) AND OUT TO SERVE APT UNIT'S PLUMBING FIXTURES.

- (PD) 1" CW (TAPPED OF CW MAIN IN JOIST SPACE BETWEEN LOWER AND UPPER FLOOR) INTO UPPER LEVEL APT UNIT'S UTILITY ROOM. PROVIDE A CW SERVICE SHUT OFF VALVE FOR EACH APT UNIT'S CW SYSTEM FOR FUTURE MAINTENANCE.
- (PR) 3/4" CW FROM CW SERVICE VALVE & 3/4" HW FROM DWH DOWN INTO THE JOIST/TRUSS SPACE (BETWEEN LOWER AND UPPER FLOOR) AND OUT TO SERVE APT UNIT'S PLUMBING FIXTURES.
- (PS) PLUMBING PIPING (SAN, CW, & HW) SERVING UPPER FLOOR UNITS SHALL BE LOCATED IN 2ND FLOOR JOIST/TRUSS SPACE (BETWEEN UPPER AND LOWER FLOOR) WHERE APPLICABLE. EACH APARTMENT UNIT SHALL HAVE ITS OWN CW/HW PIPING SERVING ONLY THAT UNIT WITH A CW SERVICE SHUT OFF VALVE ACCESSIBLE IN EACH CLOSET. REFER TO LOWER FLOOR PLAN FOR CW MAIN.

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DRAWING TITLE
BUILDING 4
 ABOVE GRADE PLUMBING PLAN - UPPER FLOOR

PROJECT TITLE
 LITTLE TRAVERSE BAY BAND OF ODJAWA INDIANS
MURRAY ROAD APARTMENT DEVELOPMENT
 PETOSKEY, MICHIGAN

PROJECT NO.
 273-19

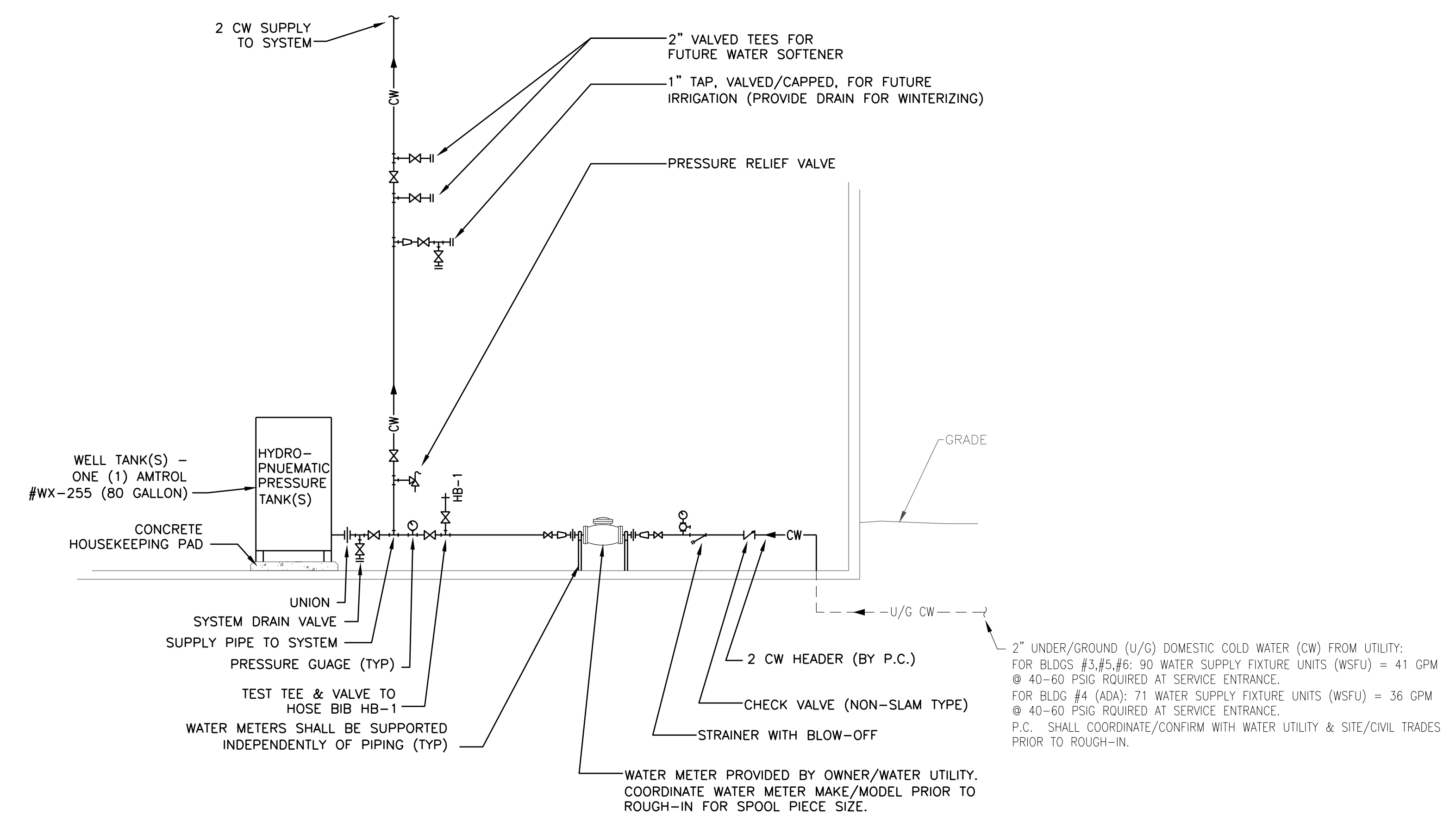
DATE
 May 1, 2020
 Sept. 14, 2022

SHEET
P2.3

| PLUMBING SPECIALTIES SCHEDULE | | | | | |
|-------------------------------|--------------------------------|---|---|---------------------------------------|--|
| MARK | MANUFACTURER SERIES NUMBER | DESCRIPTION | | | ACCESSORIES, FEATURES, AND NOTES |
| FLOOR DRAINS | | | | | |
| | | CONSTRUCTION | GRATE | SIZE | |
| FD-1 | ZURN #Z-415B | ASME A112.21.1M; LACQUERED CAST IRON TWO PIECE BODY | ADJUSTABLE, ROUND, NICKEL-BRONZE STRAINER (ZURN TYPE B) | LINE SIZE SHOWN ON PLANS (MINIMUM 2") | DOUBLE DRAINAGE FLANGE, WEEP HOLES, REVERSIBLE CLAMPING COLLAR, TRAP PRIMER CONNECTION, AND ADJUSTABLE ROUND NICKEL-BRONZE STRAINER. USE CLAMPING COLLAR ON FLOORS ABOVE GRADE. THIS IS A STANDARD FLOOR DRAIN USE IN TOILET ROOMS, JANITOR'S CLOSETS, SHOWERS, ETC. |
| FD-W | ZURN #FD-2240-???-NT | ASME A112.21.1M; CAST IRON BODY; STEEL ANCHOR FLANGE; CAST IRON FRAME & GRATE | ROUND NICKEL STRAINER GRATE | LINE SIZE SHOWN ON PLANS (MINIMUM 2") | WOOD DECK FLOOR DRAIN: PVC OR CAST IRON BODY; STEEL ANCHOR FLANGE; CAST IRON FRAME AND GRATE; OPTIONAL NICKEL TOP (NT) THIS IS A STANDARD FLOOR DRAIN USE IN TOILET ROOMS, JANITOR'S CLOSETS, SHOWERS, ETC. |
| INTERIOR HOSE BIBS | | | | | |
| | | DESCRIPTION | INLET | OUTLET | |
| HB-1 | WOODFORD MODEL "40HT" OR EQUAL | ANTI-SIPHON WALL FAUCET WITH INTEGRAL MOUNTING FLANGE, REPLACEABLE HEXAGONAL DISC, CHROME PLATED WHERE EXPOSED WITH HANDWHEEL, INTEGRAL VACUUM BREAKER IN CONFORMANCE WITH HASSE 1011, HALF TURN HANDLE | 1/2" | 3/4" MALE HOSE THREAD | HOSE BIB FOR INTERIOR NON-FREEZING AREAS. |

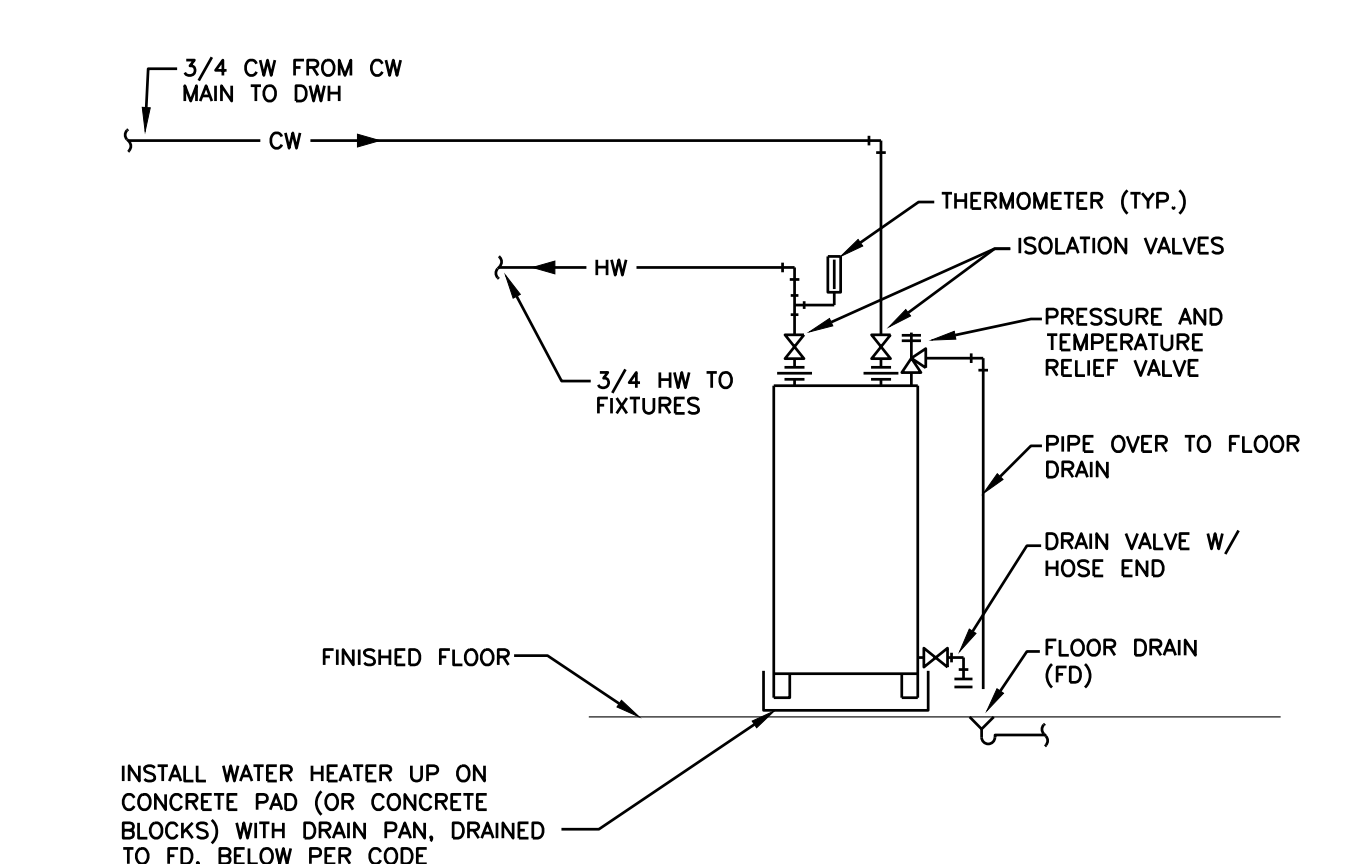
| PLUMBING FIXTURE SCHEDULE | | | | | | | |
|---------------------------|--|--|--|--|---|--|---|
| FIXTURE MARK | MANUFACTURER | FIXTURE & TRIM DESCRIPTION | | | | ACCESSORIES, FEATURES, & NOTES | |
| BATHTUB / SHOWERS | | | | | | | |
| | | BATH TUB-SHOWER TYPE | SHOWER VALVE | BATH TUB SUPPLY/SHOWER HEAD SPRAY PACKAGE | | | |
| BTS | "NEW SALEM RECESS BATH" BY AMERICAN STANDARD | 60"Lx30"Wx14.5"H ONE-PIECE ENAMELED STEEL MODULE; SLIP RESISTANT SURFACE | CHROME COMBINATION PRESSURE-BALANCED/THERMOSTATIC WITH TEMP./VOLUME CONTROL; ASSE 1016 | BATH/SHOWER HEAD TRIM KIT WITH METAL SHOWER HEAD (1.75 GPM), WALL TUB SPOUT WITH DIVERTER, METAL LEVER HANDLE | | VERIFY TUB COLOR (WHITE?) AND OUTLET LOCATION (RIGHT? OR LEFT?) PRIOR TO ORDER. BATH/SHOWER TRIM KIT (AMERICAN STANDARD "COLONY PRO" #TU075) - POLISHED CHROME (VERIFY COLOR/FINISH). VERIFY SHOWER WALLS PRIOR TO ORDER. | |
| BTS-A (ADA COMPLIANT) | "NEW SALEM RECESS BATH" BY AMERICAN STANDARD | 60"Lx30"Wx14.5"H ONE-PIECE ENAMELED STEEL MODULE; SLIP RESISTANT SURFACE | CHROME COMBINATION PRESSURE-BALANCED/THERMOSTATIC WITH TEMP./VOLUME CONTROL; ASSE 1016 | SAME AS "BTS" BUT ADD SHOWER HEAD WITH ADA APPROVED HAND-HELD SPRAY HEAD ON FLEXIBLE SS HOSE & 36"L SLIDE BAR. | | VERIFY TUB COLOR (WHITE?) AND OUTLET LOCATION (RIGHT? OR LEFT?) PRIOR TO ORDER. COMMERCIAL BATH/SHOWER ADA SHOWER TRIM KIT WITH SLIDE BAR (AMERICAN STANDARD "COLONY PRO" #TU662.215) - POLISHED CHROME (VERIFY COLOR/FINISH). VERIFY SHOWER WALLS AND/OR SEAT PRIOR TO ORDER. | |
| LAVATORIES | | | | | | | |
| | | BOWL TYPE | FAUCET | SUPPLY PIPE | TRAP | TAIL-PIECE | |
| LAV | FAUCET ONLY - AMERICAN STANDARD "COLONY PRO" SINGLE LEVER FAUCET (#7075.000) | NO BOWL - INTEGRAL SOLID SURFACE LAV/SINK BOWL BY OTHERS | SINGLE LEVER; INDEXED COLOR (HOT/COLD) | ANGLE SCREW-DRIVER STOPS | 1-1/4" ADJUSTABLE CHROME PLATED P-TRAP | 1-1/4" CHROME PLATED | INTEGRAL SOLID SURFACE LAV/SINK BOWL BY OTHERS - TO PROVIDE FAUCET ONLY PROVIDE AMERICAN STANDARD "COLONY PRO" SINGLE LEVER FAUCET (#7075.000) WITH POP-UP DRAIN; VERIFY FAUCET FINISH (POLISHED CHROME?) PRIOR TO ORDER. |
| LAV-A (ADA COMPLIANT) | FAUCET ONLY - AMERICAN STANDARD "COLONY PRO" SINGLE LEVER FAUCET (#7075.000) | NO BOWL - INTEGRAL SOLID SURFACE LAV/SINK BOWL BY OTHERS | SINGLE LEVER; INDEXED COLOR (HOT/COLD) | ANGLE SCREW-DRIVER STOPS | 1-1/4" ADJUSTABLE CHROME PLATED P-TRAP | 1-1/4" CHROME PLATED (ADA COMPLIANT) | INTEGRAL SOLID SURFACE LAV/SINK BOWL BY OTHERS - TO PROVIDE FAUCET ONLY PROVIDE AMERICAN STANDARD "COLONY PRO" SINGLE LEVER FAUCET (#7075.000) WITH POP-UP DRAIN; VERIFY FAUCET FINISH (POLISHED CHROME?) PRIOR TO ORDER. |
| SINKS | | | | | | | |
| | | BOWL TYPE | FAUCET | SUPPLY PIPE | TRAP | TAIL-PIECE | |
| SK | FAUCET ONLY - AMERICAN STANDARD "COLONY PRO" SINGLE LEVER FAUCET (#7075.000) | NO BOWL - INTEGRAL SOLID SURFACE LAV/SINK BOWL BY OTHERS | 6.5"H SINGLE LEVER FAUCET WITH 8.5"L SWIVEL SPOUT | ANGLE SCREW-DRIVER STOPS | (2) 1-1/2" ADJUSTABLE CHROME PLATED P-TRAPS | (2) 1-1/2" CHROME PLATED | INTEGRAL SOLID SURFACE LAV/SINK BOWL BY OTHERS - PROVIDE AMERICAN STANDARD "COLONY PRO" SINGLE LEVER FAUCET (AS #7074.000); VERIFY FAUCET FINISH (POLISHED CHROME?) PRIOR TO ORDER. PROVIDE TWO (2) DRAIN STRAINERS. |
| SK-A (ADA COMPLIANT) | FAUCET ONLY - AMERICAN STANDARD "COLONY PRO" SINGLE LEVER FAUCET (#7075.000) | NO BOWL - INTEGRAL SOLID SURFACE LAV/SINK BOWL BY OTHERS | 6.5"H SINGLE LEVER FAUCET WITH 8.5"L SWIVEL SPOUT | ANGLE SCREW-DRIVER STOPS | (2) 1-1/2" ADJUSTABLE CHROME PLATED P-TRAPS | (2) 1-1/2" CHROME PLATED (ADA COMPLIANT) | INTEGRAL SOLID SURFACE LAV/SINK BOWL BY OTHERS - PROVIDE AMERICAN STANDARD "COLONY PRO" SINGLE LEVER FAUCET (AS #7074.000); VERIFY FAUCET FINISH (POLISHED CHROME?) PRIOR TO ORDER. PROVIDE TWO (2) DRAIN STRAINERS. |
| WATER CLOSETS | | | | | | | |
| | | BOWL TYPE | OUTLET | FLUSH TANK/VALVE | | | |
| WC | COLONY RIGHT HEIGHT ELONGATED BY AMERICAN STANDARD | WHITE VITREOUS CHINA; FLOOR MOUNT ELONGATED; FLUSH TANK | BOTTOM | 1.6 GPF | | | PROVIDE CLOSED FRONT ELONGATED SEAT WITH COVER (AS RISE AND SHINE MODEL #5324.019); VERIFY TOILET/SET COLOR (WHITE?) AND TRIP LEVER LOCATION PRIOR TO ORDER |
| WC-A (ADA COMPLIANT) | COLONY RIGHT HEIGHT ELONGATED BY AMERICAN STANDARD | WHITE VITREOUS CHINA; FLOOR MOUNT ELONGATED; FLUSH TANK | BOTTOM | 1.6 GPF | | | PROVIDE CLOSED FRONT ELONGATED SEAT WITH COVER (AS RISE AND SHINE MODEL #5324.019); VERIFY TOILET/SET COLOR (WHITE?) AND TRIP LEVER LOCATION PRIOR TO ORDER |

NOTES:
 1. ALL PLUMBING FIXTURES, EQUIPMENT, TRIM, ETC. SHALL COMPLY WITH LOCAL, STATE AND FEDERAL REGULATIONS AND CODES, INCLUDING, BUT NOT LIMITED TO WATER AND ENERGY CONSERVATION CODES, ADA REQUIREMENTS.
 2. PROVIDE/INSTALL POINT OF USE "ASSE 1070 LISTED" THERMOSTATIC MIXING VALVES ON SUPPLIES TO ALL ADA ACCESSIBLE LAVATORIES AND SINKS.
 3. INSTALL "LAV-SHIELDS" ON ALL ADA WALL MOUNTED LAVS/SINKS TO COMPLETELY CONCEAL EXPOSED TRAPS, SUPPLIES, AND MIXING VALVES.
 4. INSTALL "LAV GUARDS" OR "BASIN GUARDS" ON ALL DRAIN/SUPPLY PIPING BELOW ALL ADA COUNTER MOUNTED LAVS/SINKS TO COVER TRAPS, SUPPLIES, AND MIXING VALVES.
 5. COORDINATE ALL FIXTURE FINISHES/COLORS WITH ARCHITECT PRIOR TO ORDERING.
 6. FLUSH VALVE HANDLES ARE TO BE LOCATED ON OPEN SIDE OF BARRIER FREE WATER CLOSETS - REFER TO ARCHITECTURAL INTERIOR ELEVATIONS.



NOTES:
 1) COORDINATE REQUIREMENTS WITH SITE/CIVIL/WELL-CONTRACTOR PRIOR TO ROUGH-IN.
 2) SITE/CIVIL/WELL-CONTRACTOR SHALL INSTALL DOMESTIC CW PIPING FROM WELL SYSTEM INTO THE BUILDING.
 3) PLUMBING CONTRACTOR SHALL PROVIDE/INSTALL WATER SERVICE INSIDE THE BUILDING INCLUDING, BUT NOT LIMITED TO, PIPING, VALVES, WELL TANK(S), ETC.

DOMESTIC COLD WATER (CW) SERVICE PIPING DETAIL
NO SCALE



ELECTRIC DOMESTIC WATER HEATER PIPING DIAGRAM
NO SCALE

| ELECTRIC DOMESTIC WATER HEATER SCHEDULE | | | | | | | |
|---|--------------------------|---------------|-----------------------------|-------------------------------------|------------------|--------------|--------------------------|
| UNIT I.D. | STORAGE CAPACITY GALLONS | VOLTAGE PHASE | ELEMENT WATTAGE UPPER/LOWER | 1ST HR GAL / RECOVERY GPH@90°F RISE | WEIGHT LBS (DRY) | MODEL NUMBER | REMARKS |
| DWH-A (LOWER 2-BED) | 50 | 240/1 | 4,500 / 4,500 | 64 / 21 | 130 | RE250T6 | TALLBOY (20" x 60" TALL) |
| DWH-B (UPPER 2-BED) | 50 | 240/1 | 4,500 / 4,500 | 64 / 21 | 130 | RE250T6 | TALLBOY (20" x 60" TALL) |
| DWH-C (UPPER 1-BED) | 40 | 240/1 | 4,500 / 4,500 | 53 / 21 | 125 | RE340T6 | TALLBOY (20" x 60" TALL) |
| DWH-D (LOWER 1-BED) | 40 | 240/1 | 4,500 / 4,500 | 53 / 21 | 125 | RE340T6 | TALLBOY (20" x 60" TALL) |
| DWH-E (LOWER 1-BED) | 40 | 240/1 | 4,500 / 4,500 | 53 / 21 | 125 | RE340T6 | TALLBOY (20" x 60" TALL) |
| DWH-F (UPPER 1-BED) | 40 | 240/1 | 4,500 / 4,500 | 53 / 21 | 125 | RE340T6 | TALLBOY (20" x 60" TALL) |
| DWH-G (UPPER 2-BED) | 50 | 240/1 | 4,500 / 4,500 | 64 / 21 | 130 | RE250T6 | TALLBOY (20" x 60" TALL) |
| DWH-H (LOWER 2-BED) | 50 | 240/1 | 4,500 / 4,500 | 64 / 21 | 130 | RE250T6 | TALLBOY (20" x 60" TALL) |

NOTES:
 1. MODEL NUMBERS ARE BRADFORD WHITE, LOCHINVAR AND AO SMITH MAY BE BID AS EQUALS.
 2. NON-SIMULTANEOUS DUAL ELEMENTS: 4,500 WATTS/240V = 19 AMP - WIRE TO 30A/2P BREAKER (2.2550W PER PHASE).
 3. PROVIDE DRAIN PAN BELOW AND PIPE DRAIN PAN DRAIN TO NEARBY FLOOR DRAIN.

JLK Engineering
 Project Number: AEA 1903-01
 Mechanical | Electrical | Plumbing
 5706 Chathamville Ct. | Gaylord, MI 49735 | P: 989.448.4631
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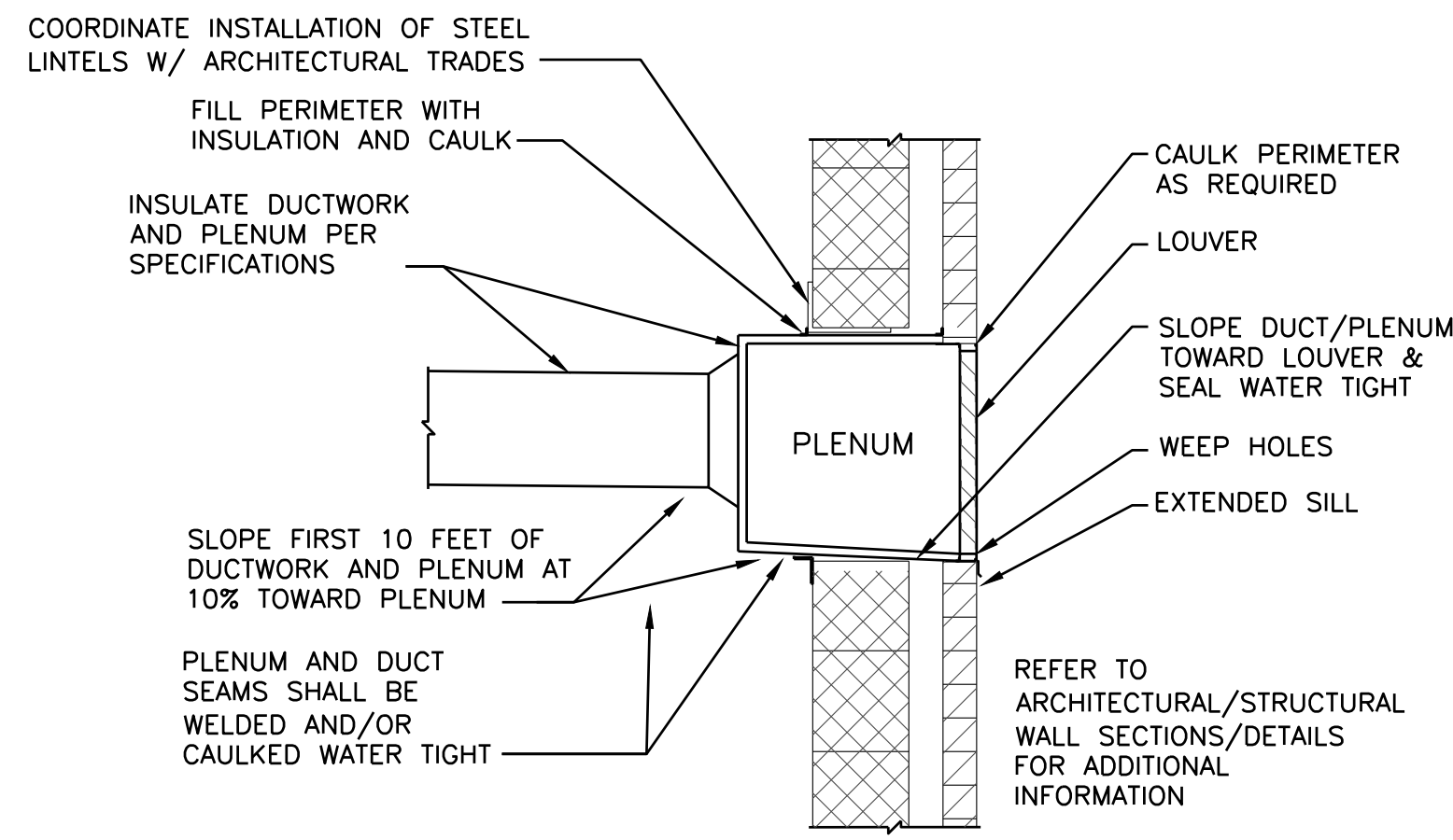
DRAWING TITLE
BUILDING 4
MURRAY ROAD APARTMENT DEVELOPMENT
 PLUMBING DETAILS

PROJECT TITLE
 LITTLE TRAVERSE BAY BAND OF ODAWA INDIANS
MURRAY ROAD APARTMENT DEVELOPMENT
 PETOSKEY, MICHIGAN

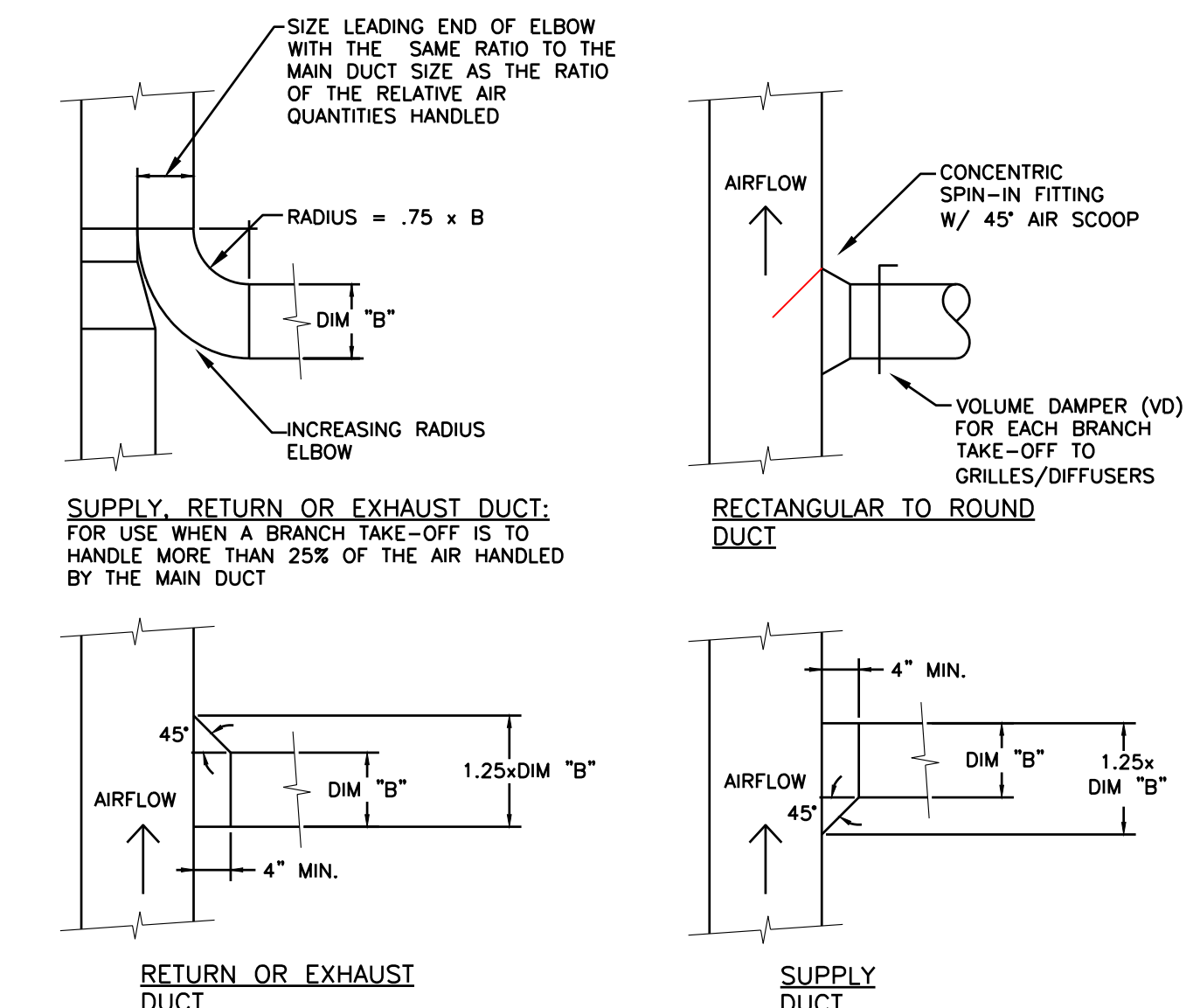
PROJECT NO.
 273-19

DATE
 May 1, 2020
 Sept. 14, 2022

SHEET
P3.1



OUTDOOR AIR INTAKE AIR LOUVER & PLENUM DETAIL
NO SCALE



RECTANGULAR DUCT TAKE-OFF DETAILS
NO SCALE

| WALL LOUVER SCHEDULE | | | | | | | | | | | | | |
|----------------------|---------------------------------|--------------------|--------|------------------|---------------------|------------------------|------------------------|-----------------|----------------|-------------------|--------|-----------|----------------------|
| UNIT I.D. | SYSTEM SERVED | AIRFLOW RATE (CFM) | TYPE | FREE AREA SQ.FT. | FACE VELOCITY (FPW) | PRESSURE DROP (IN.WC.) | OVERALL WIDTH (INCHES) | HEIGHT (INCHES) | DEPTH (INCHES) | CONSTRUCTION | COLOR | MODEL NO. | REMARKS |
| L-U | UTILITY ROOM VENTILATION INTAKE | 350 | INTAKE | 0.67 | 525 | 0.04 | 18 | 16 | 6 | EXTRUDED ALUMINUM | NOTE 2 | ESD-603 | SEE NOTES 1, 2, 3, 4 |

- NOTES:
- MODEL NUMBERS ARE GREENHECK UNLESS NOTED OTHERWISE. RUSKIN AND NCA MAY BE BID AS EQUAL.
 - LOUVERS SHALL HAVE A ACRYLIC COATING WITH 50% KYNAR OR HYLAR IN ITS RESIN SYSTEM WITH A 5 YEAR ADHESION WARRANTY AND 5 YEAR CHALKING/FADING WARRANTY.
 - PROVIDE COLOR CHART & COORDINATE COLOR WITH ARCHITECT PRIOR TO ORDERING.
 - PROVIDE WITH THE FOLLOWING OPTIONS: ALUMINUM BIRDSCREEN.
 - PROVIDE LOUVER WITH AUTOMATIC DAMPER "D-U" WITH ELECTRIC ACTUATOR; DAMPER SHALL BE 18"Wx16"H AND SHALL BE A GREENHECK VCD-23 LOW LEAK DAMPER (OR EQUAL) WITH GALV. FRAME, VINYL RUBBER BLADE SEALS, STEEL AXLES, SYNTHETIC ACETAL BEARINGS. DAMPER ACTUATOR SHALL BE A 120V SPRING FAIL CLOSED/POWER OPEN, TWO POSITION ACTUATOR, WITH END SWITCH, LOCATED EXTERNALLY (BY BELIMO, SIEMENS, OR INVENSYS). DAMPER "D-U" SHALL BE INTERLOCKED TO OPEN WHEN EF-U OPERATES.

- GENERAL MECHANICAL NOTES:
- THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL SCOPE OF WORK. CONTRACTOR SHALL PROVIDE ALL MECHANICAL SYSTEMS AND ASSOCIATED EQUIPMENT COMPLETE AND INCLUDE ALL NECESSARY OFFSETS, FITTINGS, CONTROLS, AND OTHER COMPONENTS REQUIRED DUE TO INTERFERENCES, SPACE CONSTRAINTS, CODES, ETC.
 - MECHANICAL SYSTEMS SHALL BE INSTALLED PER MICHIGAN/INTERNATIONAL MECHANICAL CODE, MICHIGAN/INTERNATIONAL PLUMBING CODE, MICHIGAN/INTERNATIONAL FUEL GAS CODE, APPLICABLE NFPA BUILDING CODES (E.G. 101, 90A, ETC.) AND APPLICABLE BUILDING CODES (I.E. MICHIGAN/INTERNATIONAL BUILDING CODE, ETC.). COORDINATE AND CONFIRM LTBD ODWA INDIANS (OWNER) CURRENT BUILDING CODE REQUIREMENTS PRIOR TO BID/CONSTRUCTION.
 - CONTRACTOR TO VERIFY REQUIREMENTS OF ALL EQUIPMENT WITH SHOP DRAWING SUBMITTALS PRIOR TO INSTALLATION. NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN SHOP DRAWINGS AND PLANS.
 - COORDINATE THE INSTALLATION OF MECHANICAL WORK WITH ALL OTHER TRADES. VERIFY ALL MECHANICAL AND ELECTRICAL CLEARANCES PRIOR TO THE FABRICATION OF ANY WORK. DUCTWORK, PIPING, ETC. SHALL NOT BE LOCATED DIRECTLY OVER ELECTRICAL PANELS/EQUIPMENT, OR INTERFERE WITH MECHANICAL/ELECTRICAL EQUIPMENT CLEARANCES.
 - CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS SUPPORTING STEEL, HANGERS, ETC., FOR THE PROPER INSTALLATION OF ALL MECHANICAL SYSTEMS. DUCTWORK OR PIPING SHALL NOT BE SUPPORTED FROM/BY EQUIPMENT OR EQUIPMENT CONNECTIONS.
 - COORDINATE ALL FLOOR, WALL, AND ROOF PENETRATIONS, EQUIPMENT PADS, WALL LOUVERS, ETC. WITH ARCHITECTURAL/STRUCTURAL TRADES PRIOR TO ROUGH-IN. UNLESS NOTED OTHERWISE, EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, CORING, PATCHING ASSOCIATED WITH THEIR WORK. CUTTING, CORING, PATCHING WORK SHALL BE PERFORMED BY A QUALIFIED SUB-CONTRACTOR AND MATCH EXISTING OR NEW FINISHES.

MECHANICAL ABBREVIATION LIST

| ABBREVIATION | DESCRIPTION | ABBREVIATION | DESCRIPTION |
|--------------|--------------------------------|--------------|---|
| A/C | AIR CONDITIONING | LAT | LEAVING AIR TEMPERATURE |
| AFF | ABOVE FINISHED FLOOR | LDB | LEAVING DRY BULB TEMPERATURE |
| APD | AIR PRESSURE DROP | LRA | LOCKED ROTOR AMPS |
| | | LWB | LEAVING WET BULB TEMPERATURE |
| BFP | BACKFLOW PREVENTER | MAX | MAXIMUM |
| BHP | BRAKE HORSEPOWER | MBH | THOUSAND BRITISH THERMAL UNITS PER HOUR |
| BTU | BRITISH THERMAL UNIT | M.C. | MECHANICAL CONTRACTOR |
| BTUH | BRITISH THERMAL UNITS PER HOUR | MCA | MINIMUM CIRCUIT AMPS |
| CFM | CUBIC FEET PER MINUTE | MECH | MECHANICAL |
| CONT | CONTINUATION OR CONTINUED | MFR | MANUFACTURER |
| CONTR | CONTRACTOR | MIN | MINIMUM |
| COORD | COORDINATE | MISC | MISCELLANEOUS |
| CW | DOMESTIC COLD WATER | NC | NORMALLY CLOSED |
| | | N.C. | NOISE CRITERIA |
| DB | DRY BULB TEMPERATURE | NIC | NOT IN CONTRACT |
| DEG | DEGREES | NO | NORMALLY OPEN |
| DN | DOWN | NOM | NOMINAL |
| EA | EXHAUST AIR | OA | OUTSIDE AIR |
| EAT | ENTERING AIR TEMPERATURE | P.C. | PLUMBING CONTRACTOR |
| EBH | ELECTRIC BASEBOARD HEATER | PD | PRESSURE DROP |
| E.C. | ELECTRICAL CONTRACTOR | PRI | PRIOR TO ROUGH-IN |
| EDB | ENTERING DRY BULB TEMPERATURE | PSIA | POUNDS PER SQUARE INCH (ABSOLUTE) |
| EF | EXHAUST FAN | PSIG | POUNDS PER SQUARE INCH (GAUGE) |
| EG | EXHAUST GRILLE OR REGISTER | PVAC | PACKAGED VERTICAL AIR CONDITIONER |
| ELEC | ELECTRICAL | | |
| ELEV | ELEVATION | RA | RETURN AIR |
| ESP | EXTERNAL STATIC PRESSURE | RAG | RETURN AIR GRILLE OR REGISTER |
| EUH | ELECTRIC UNIT HEATER | REL.A | RELIEF AIR |
| EWB | ENTERING WET BULB TEMPERATURE | RH | RELATIVE HUMIDITY |
| EWH | ELECTRIC WALL HEATER | RPM | REVOLUTIONS PER MINUTE |
| EWT | ENTERING WATER TEMPERATURE | SA | SUPPLY AIR |
| EXH | EXHAUST | SAD | SUPPLY AIR DIFFUSER |
| | | SAG | SUPPLY AIR GRILLE OR REGISTER |
| F | FIRE PROTECTION | SP | STATIC PRESSURE |
| (F) | FUTURE | SqFt | SQUARE FOOT/SQUARE FEET |
| FA | FRESH AIR | TSP | TOTAL STATIC PRESSURE |
| F.A. | FIRE ALARM SUBCONTRACTOR | TYP | TYPICAL |
| F.C. | FIRE SUPPRESSION SUBCONTRACTOR | U/G | UNDERGROUND (BELOW GRADE) |
| FD | FLOOR DRAIN | UH | UNIT HEATER |
| F.DPR | FIRE DAMPER | UL | UNDERWRITERS LABORATORY |
| FLA | FULL LOAD AMPS | UON | UNLESS OTHERWISE NOTED |
| FLR | FLOOR | V | VENT |
| FFM | FEET PER MINUTE | VD | VOLUME DAMPER |
| FT | FEET | VFD | VARIABLE FREQUENCY DRIVE |
| FUR | FURNACE | VSD | VARIABLE SPEED DRIVE |
| | | VTR | VENT THRU ROOF |
| G | GAS (NATURAL GAS/PROPANE) | WB | WET BULB TEMPERATURE |
| | | WG | WATER GAUGE |
| HP | HORSEPOWER | | |
| HR | HOUR | | |
| HTG | HEATING | | |
| | | | |
| IN | INCHES | | |
| ISP | INTERNAL STATIC PRESSURE | | |
| | | | |
| KW | KILOWATT | | |

MECHANICAL SYMBOL LIST

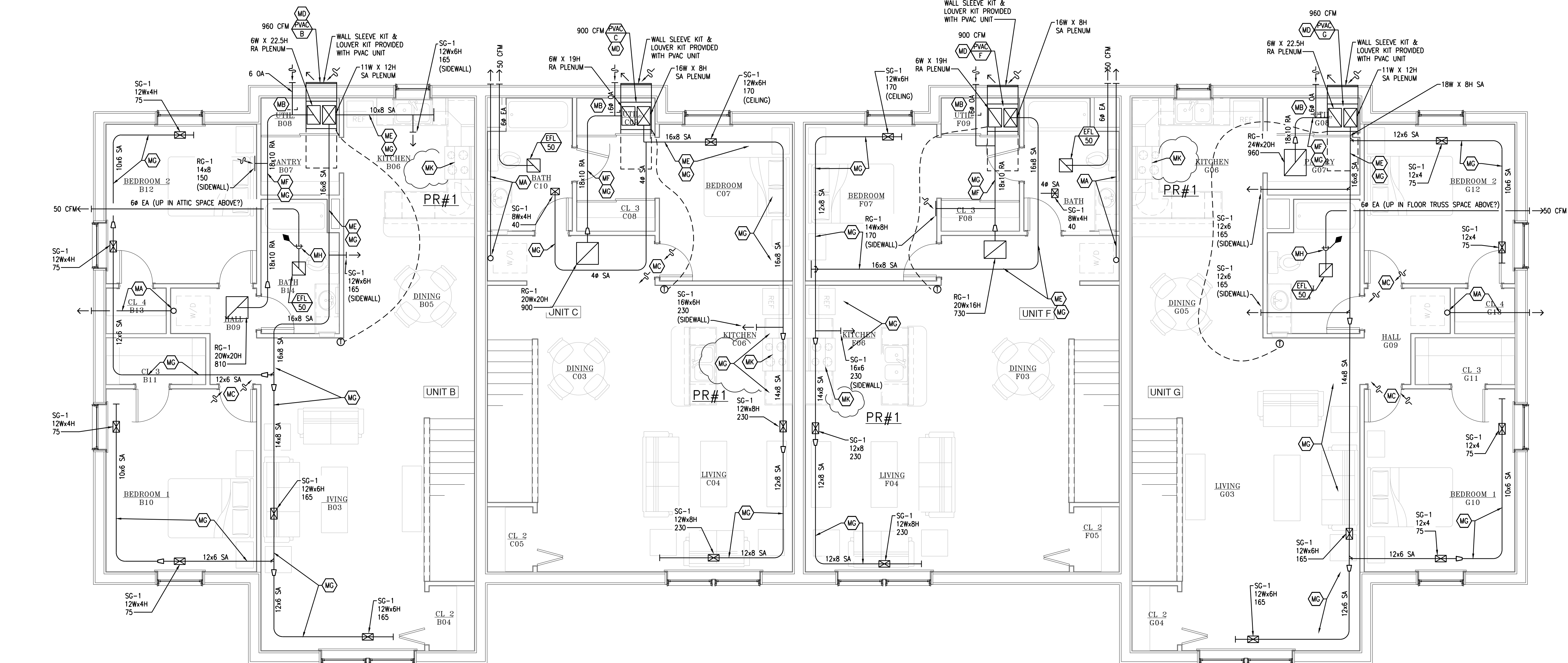
| SYMBOL | DESCRIPTION |
|----------|--|
| [Symbol] | RECTANGULAR TAKE-OFF (SINGLE LINE) |
| [Symbol] | RECTANGULAR TAKE-OFF (DOUBLE LINE) |
| [Symbol] | ROUND TAKE-OFF (SINGLE LINE) |
| [Symbol] | ROUND TAKE-OFF (DOUBLE LINE) |
| [Symbol] | SPIN-IN FITTING (WITH VOLUME DAMPER) |
| [Symbol] | RECTANGULAR ELBOW (WITH TURNING VANES) |
| [Symbol] | RADIUS RECTANGULAR ELBOW |
| [Symbol] | RADIUS ROUND ELBOW |
| [Symbol] | RECTANGULAR ELBOW UP |
| [Symbol] | ROUND ELBOW UP |
| [Symbol] | DUCT UP (SINGLE LINE) |
| [Symbol] | RECTANGULAR ELBOW DOWN |
| [Symbol] | ROUND ELBOW DOWN |
| [Symbol] | DUCT DOWN (SINGLE LINE) |
| [Symbol] | CONCENTRIC TRANSITION (DOUBLE LINE) |
| [Symbol] | CONCENTRIC TRANSITION (SINGLE LINE) |
| [Symbol] | ECCENTRIC TRANSITION (DOUBLE LINE) |
| [Symbol] | ECCENTRIC TRANSITION (SINGLE LINE) |
| [Symbol] | CROSS SECTION OF SUPPLY AIR DUCT |
| [Symbol] | CROSS SECTION OF EXHAUST OR RETURN AIR DUCT |
| [Symbol] | FLEXIBLE CONNECTION (DUCT) |
| [Symbol] | SQUARE CEILING DIFFUSER |
| [Symbol] | RETURN OR EXHAUST CEILING GRILLE |
| [Symbol] | TRANSFER GRILLE |
| [Symbol] | SUPPLY AIR GRILLE - CEILING OR FLOOR MOUNTED |
| [Symbol] | RETURN AIR GRILLE - CEILING OR FLOOR MOUNTED |
| [Symbol] | SUPPLY AIR GRILLE - SIDEWALL MOUNTED |
| [Symbol] | RETURN AIR GRILLE - SIDEWALL MOUNTED |
| [Symbol] | THERMOSTAT |
| [Symbol] | FIRE DAMPER (HORIZONTAL) |
| [Symbol] | FIRE DAMPER (VERTICAL) |
| [Symbol] | VOLUME DAMPER (MANUALLY ADJUSTABLE) |
| [Symbol] | MOTORIZED DAMPER |

METHODS OF NOTATION

| | |
|----------|--|
| S-1 | SUPPLY DIFFUSER WITH SCHEDULE TAG |
| 10# | 10" DIAMETER NECK SIZE |
| 350-4 | 350 CFM TYPICAL FOR 4 |
| R-1 | RETURN REGISTER WITH SCHEDULE TAG |
| 22x10 | 22" W x 10" H NECK SIZE |
| 640-2 | 640 CFM TYPICAL FOR 2 |
| | EXHAUST REGISTER (E) DESIGNATION SIMILAR |
| [Symbol] | EQUIPMENT DESIGNATION (I.E. EXHAUST FAN NUMBER 1) |
| [Symbol] | CONSTRUCTION KEYED NOTE NUMBER |
| [Symbol] | DUCTWORK LABELING 12x8 SA = 12" WIDE x 8" HIGH SUPPLY AIR |

MECHANICAL DRAWING INDEX

- M1.0 MECHANICAL TITLE SHEET - BUILDING 4
- M2.1 MECHANICAL PLAN - LOWER FLOOR BUILDING 4
- M2.2 MECHANICAL PLAN - UPPER FLOOR BUILDING 4
- M3.1 MECHANICAL DETAILS - BUILDING 4



**BUILDING 4
MECHANICAL PLAN - UPPER FLOOR**
SCALE: 1/4" = 1'-0"

- KEYED MECHANICAL CONSTRUCTION NOTES:**
- (MA) VENT DRYER TO THE OUTDOORS PER CODE REQUIREMENTS AND IN ACCORDANCE WITH DRYER MANUFACTURER RECOMMENDATIONS. ROUTE UP HIGH, BELOW SECOND FLOOR. COORDINATE BULKHEAD TO OUTDOOR WALL CAP.
 - (MB) PROVIDE 6# FRESH OUTDOOR AIR (OA) DUCT (INSULATED PER SPEC) FROM RETURN AIR (RA) MAIN DUCT NEAR PVAC UNIT WITH MANUAL BALANCE DAMPER (SET TO 50 CFM FOR 2-BED UNITS AND 40 CFM FOR 1-BED APPTS), TO OUTDOOR INTAKE WALL CAP WITH INSECT SCREEN.
 - (MC) RETURN AIR (RA) TRANSFER THRU DOOR UNDERCUT (1" - 1.5") - COORDINATE WITH CARPENTER/DOOR TRADES.
 - (MD) COORDINATE SIZE/CONFIGURATION OF MECHANICAL CLOSET FOR PVAC UNIT AND PVAC UNIT'S WALL SLEEVE/LOUVER (WITH PROPER CLEARANCES) WITH PLUMBING TRADES & CARPENTER TRADES PRIOR TO ROUGH-IN TO AVOID INTERFERENCES/CLEARANCES.
 - (ME) ACoustically LINE THE FIRST 15 FEET OF SUPPLY AIR (SA) FROM THE PVAC UNIT WITH 1" THICK DUCT LINER (REFER TO DUCT INSULATION SPECS). DUCT SIZES SHOWN ON PLANS ARE WITHOUT LINER SO ADD 2" FOR OVERALL DUCT SIZE.
 - (MF) ACoustically LINE THE FIRST 15 FEET OF RETURN AIR (RA) FROM THE PVAC UNIT WITH 1/2" THICK DUCT LINER (REFER TO DUCT INSULATION SPECS). DUCT SIZES SHOWN ON PLANS ARE WITHOUT LINER SO ADD 1" FOR OVERALL DUCT SIZE.
 - (MG) COORDINATE SIZE OF BULKHEAD/CHASE FOR DUCTWORK (ROUTED BELOW THE 2ND FLOOR JOIST OR ATTIC TRUSS ABOVE) WITH CARPENTER TRADES PRIOR TO ROUGH-IN.
 - (MH) FIRE DAMPER (HORIZONTAL) ON BATH FAN'S 6# EXH DUCT PENETRATION INTO FLOOR TRUSS/ATTIC SPACE. PROVIDE & COORDINATE LOCATION/SIZE OF ACCESS PANEL IN CEILING (AS REQUIRED) TO MAINTAIN FIRE DAMPER) WITH CEILING TRADES PRIOR TO ROUGH-IN.
 - (MI) COORDINATE SIZE/LOCATION OF RECESSED BACK-BOX OF ELECTRIC WALL HEATER INTO WALL STRUCTURE WITH MASONRY/WALL TRADES PRIOR TO ROUGH-IN.
 - (MJ) COORDINATE LAYOUT OF MECHANICAL HVAC EQUIPMENT/SYSTEMS WITH THE PLUMBING, FIRE SUPPRESSION, AND ELECTRICAL EQUIPMENT/SYSTEMS PRIOR TO ROUGH-IN AS REQUIRED TO AVOID INTERFERENCES AND CLEARANCES.
 - (MK) NOTE: NON-DUCTED RECIRCULATING RANGEHOOD TO BE PROVIDED BY OWNER.

PR#1

VENTILATION LOAD CALCULATIONS
Code: 2015 Michigan Mechanical Code
By: Justin Kowalch, PE - JLK Engineering
Project: LTBB MURRAY ROAD APARTMENTS - PETOSKEY, MI
Project AEA1903
Date: 4/26/2020

| Room / Zone | | | Natural Ventilation | | Occupants | | | Mechanical Ventilation | | | | | Notes: | | |
|--------------------------------------|-------------------------|----------------|---------------------|-----------------|---------------------------------|------------------------|---------------------|-----------------------------------|-------------------------------|------------------------------------|------------------------------|---------------------------------------|--------|------------------------------|-----------------------------|
| Room ID | Room Name | Az Size (SqFt) | Area @4% (SqFt) | Provided (SqFt) | Default # Per 403.3 (1000 SqFt) | Pz Estimated OR Actual | Pz Actual Seating # | People OA Rp CFM/Person Per 403.3 | Area OA Ra CFM/SqFt Per 403.3 | Exhaust Airflow CFM/SqFt Per 403.3 | Exhaust Airflow Required CFM | Ez - Zone Effectiveness per 403.3.1.2 | | Zone Vbz Vbz = RpPz+RaAz CFM | Zone OA Voz = VzBz/Ez CFM |
| UNITS B & G (2-BED UPPER) | | | | | | | | | | | | | | | |
| | LIVING/DINING / KITCHEN | 604 | | | 3.0 | | | 15.0 | | 0.0 | 0.8 | | 45.0 | 56.3 | VENTILATE VIA VERTICAL PVAC |
| | BEDROOM 1 | 188 | | | 0.0 | | | | | 0.0 | 0.8 | | 0.0 | 0.0 | |
| | BEDROOM 2 | 156 | | | 0.0 | | | | | 0.0 | 0.8 | | 0.0 | 0.0 | |
| | BATH | 58 | | | 0.0 | | | | 0.9 | 49.3 | 0.8 | | 0.0 | 0.0 | EXHUAIST VIA EF-50 |
| | PANTRY/UTILITY | 44 | | | 0.0 | | | | | 0.0 | 0.8 | | 0.0 | 0.0 | |
| | | | | | 0.0 | | | | | 0.0 | 0.8 | | 0.0 | 0.0 | |

| Room / Zone | | | Natural Ventilation | | Occupants | | | Mechanical Ventilation | | | | | Notes: | | |
|--------------------------------------|-------------------------|----------------|---------------------|-----------------|---------------------------------|------------------------|---------------------|-----------------------------------|-------------------------------|------------------------------------|------------------------------|---------------------------------------|--------|------------------------------|-----------------------------|
| Room ID | Room Name | Az Size (SqFt) | Area @4% (SqFt) | Provided (SqFt) | Default # Per 403.3 (1000 SqFt) | Pz Estimated OR Actual | Pz Actual Seating # | People OA Rp CFM/Person Per 403.3 | Area OA Ra CFM/SqFt Per 403.3 | Exhaust Airflow CFM/SqFt Per 403.3 | Exhaust Airflow Required CFM | Ez - Zone Effectiveness per 403.3.1.2 | | Zone Vbz Vbz = RpPz+RaAz CFM | Zone OA Voz = VzBz/Ez CFM |
| UNITS C & F (1-BED UPPER) | | | | | | | | | | | | | | | |
| | LIVING/DINING / KITCHEN | 554 | | | 2.0 | | | 15.0 | | 0.0 | 0.8 | | 30.0 | 37.5 | VENTILATE VIA VERTICAL PVAC |
| | BEDROOM | 120 | | | 0.0 | | | | | 0.0 | 0.8 | | 0.0 | 0.0 | |
| | BATH | 65 | | | 0.0 | | | | | 0.8 | 48.8 | 0.8 | 0.0 | 0.0 | EXHUAIST VIA EF-50 |
| | CLOSET/UTILITY | 60 | | | 0.0 | | | | | 0.0 | 0.8 | | 0.0 | 0.0 | |

DRAWING TITLE
**BUILDING 4
MECHANICAL PLAN - UPPER FLOOR**

PROJECT TITLE
LITTLE TRAVERSE BAY BAND OF OJAWA INDIANS
MURRAY ROAD APARTMENT DEVELOPMENT
PETOSKEY, MICHIGAN

PROJECT NO.
273-19

DATE
May 1, 2022
Sept 14, 2022

SHEET
M2.2

| PACKAGED VERTICAL AIR CONDITIONING (PVAC) UNIT SCHEDULE: ELECTRIC-HEAT / ELECTRIC-COOL WITH THRU-THE-WALL VENTING VIA WALL SLEEVE/LOUVER | | | | | | | | | | | | | | | | | | |
|--|----------|--------------------|-----------|------------|---------------------|-------------------------|--------------|-----|------------------------|----------------------|---------------|------------------------|-------------|-----|----------------------|----------------------------------|--|---------|
| AREA SERVED | UNIT NO. | TYPE | HEAT TYPE | CAPACITY | | | | EER | AIR HANDLING | | | ELECTRICAL | | | APPROX. WEIGHT (LBS) | UNIT DIMENSIONS H x W x D INCHES | MODEL NO. | REMARKS |
| | | | | HEATING KW | HEATING OUTPUT BTUH | COOLING OUTPUT TON/BTUH | AIR FLOW CFM | | STATIC PRESSURE IN. WC | OUTDOOR AIR (OA) CFM | VOLTAGE/PHASE | MINIMUM CXT AMPS (MCA) | MAXIMUM OCP | | | | | |
| APT UNIT #A (LOWER 2-BED) | PVAC-A | VERTICAL THRU-WALL | ELECTRIC | 10/8.8 | 30,084 | 2.5-TON 28,400 | 11.0 | 960 | 0.35 | 50 | 230/1 ϕ | 52 | 60 | 260 | 56x28x25 | 10KW MCE4-11-301FP | SEE NOTES BELOW FOR SPECS ALUMINUM LOUVER - COORD. COLOR | |
| APT UNIT #B (UPPER 2-BED) | PVAC-B | VERTICAL THRU-WALL | ELECTRIC | 10/8.8 | 30,084 | 2.5-TON 28,400 | 11.0 | 960 | 0.35 | 50 | 230/1 ϕ | 52 | 60 | 260 | 56x28x25 | 10KW MCE4-11-301FP | SEE NOTES BELOW FOR SPECS ALUMINUM LOUVER - COORD. COLOR | |
| APT UNIT #C (UPPER 1-BED) | PVAC-C | VERTICAL THRU-WALL | ELECTRIC | 10/8.8 | 30,084 | 2-TON 22,800 | 11.1 | 900 | 0.50 | 40 | 230/1 ϕ | 53 | 60 | 230 | 47x28x25 | 10KW MCE4-11-241FP | SEE NOTES BELOW FOR SPECS ALUMINUM LOUVER - COORD. COLOR | |
| APT UNIT #D (LOWER 1-BED) | PVAC-D | VERTICAL THRU-WALL | ELECTRIC | 10/8.8 | 30,084 | 2-TON 22,800 | 11.1 | 900 | 0.50 | 40 | 230/1 ϕ | 53 | 60 | 230 | 47x28x25 | 10KW MCE4-11-241FP | SEE NOTES BELOW FOR SPECS ALUMINUM LOUVER - COORD. COLOR | |
| APT UNIT #E (LOWER 1-BED) | PVAC-E | VERTICAL THRU-WALL | ELECTRIC | 10/8.8 | 30,084 | 2-TON 22,800 | 11.1 | 900 | 0.50 | 40 | 230/1 ϕ | 53 | 60 | 230 | 47x28x25 | 10KW MCE4-11-241FP | SEE NOTES BELOW FOR SPECS ALUMINUM LOUVER - COORD. COLOR | |
| APT UNIT #F (UPPER 1-BED) | PVAC-F | VERTICAL THRU-WALL | ELECTRIC | 10/8.8 | 30,084 | 2-TON 22,800 | 11.1 | 900 | 0.50 | 40 | 230/1 ϕ | 53 | 60 | 230 | 47x28x25 | 10KW MCE4-11-241FP | SEE NOTES BELOW FOR SPECS ALUMINUM LOUVER - COORD. COLOR | |
| APT UNIT #G (UPPER 2-BED) | PVAC-G | VERTICAL THRU-WALL | ELECTRIC | 10/8.8 | 30,084 | 2.5-TON 28,400 | 11.0 | 960 | 0.35 | 50 | 230/1 ϕ | 52 | 60 | 260 | 56x28x25 | 10KW MCE4-11-301FP | SEE NOTES BELOW FOR SPECS ALUMINUM LOUVER - COORD. COLOR | |
| APT UNIT #H (LOWER 2-BED) | PVAC-H | VERTICAL THRU-WALL | ELECTRIC | 10/8.8 | 30,084 | 2.5-TON 28,400 | 11.0 | 960 | 0.35 | 50 | 230/1 ϕ | 52 | 60 | 260 | 56x28x25 | 10KW MCE4-11-301FP | SEE NOTES BELOW FOR SPECS ALUMINUM LOUVER - COORD. COLOR | |

NOTES:
1. BASIS OF DESIGN ARE ALLIED AIR-MAGIC-PAK MODEL #S. BASE-BID ALLIED AIR-MAGIC-PAK, OTHER MANUFACTURER/MODELS MAY BE BID AS ALTERNATE DEDUCTS/ADDS TO THE BASE-BID BUT MUST BE CLARIFIED AS SUCH.
2. STANDARD FEATURES: COMPRESSOR WITH 5-YEAR WARRANTY; UL1995 & ANSI Z21.47 (DIRECT VENT APPLIANCE) APPROVED; R-410 REFRIGERANT WITH 11 EER EFFICIENCY; EVAPORATOR DRAIN PAN OVERFLOW SWITCH; SECONDARY DRAIN PAN; ECM CONSTANT TORQUE BLOWER MOTOR 0-0.50 IN. W.G.; 1-INCH THICK WASHABLE MERV 5 FILTER; HELIX WOUND CHROME ELECTRIC HEATING ELEMENT WITH CUT-OFF LIMIT CONTROL; STEEL CABINET WITH FOIL FACED 0.50 INCH INSULATION.
3. ACCESSORIES / OPTIONS:
3.1 WALL SLEEVES - REQUIRED TO PENETRATE BUILDING ENVELOPE AND CREATE PATH FOR CONDENSER AIR INTAKE/EXHAUST (AND FLUE GAS EXHAUST ON GAS UNITS); AVAILABLE IN 6 INCH MINIMUM - 12 INCH MAXIMUM (COORDINATE SIZE REQUIRED FOR EXTERIOR WALL THICKNESS) - LARGER HEIGHT WALL SLEEVES MAY BE USED ON SMALLER TONNAGE UNITS TO MAINTAIN CONSISTENT LOUVER SIZE; DESIGNED TO ACT AS A DRAIN PAN TO DIRECT RAIN WATER OUT AND OVERFLOW FROM CONDENSATE DRAIN; CONTRACTOR SHALL REFER TO THE PVAC APPLICATION GUIDE AND COORDINATE WALL SLEEVE DEPTH/CONFIGURATION WITH ARCHITECTURAL/CARPENTER TRADES PRIOR TO ORDER AS REQUIRED TO COORDINATE WITH THE SIZE/CONFIGURATION OF THE MECHANICAL CLOSET AND THE BUILDING WALL CONSTRUCTION.
3.2 WALL LOUVERS - LOUVERS ARE REQUIRED FOR ALL PVAC INSTALLATIONS, CONTRACTOR SHALL COORDINATE STANDARD COLOR OF LOUVERS WITH ARCHITECT/OWNER PRIOR TO ORDER.
DESIGNER NOTE - SELECT ALUMINUM OR PLASTIC LOUVER OPTION BELOW:
3.2A ARCHITECTURAL ALUMINUM LOUVERS - 6063-T6 GRADE ALUMINUM PAINTED WITH 70% FLUOROPOLYMER WHICH CARRY'S A 20-YEAR PAINT WARRANTY. COORDINATE STANDARD COLOR WITH ARCHITECT.. OR
3.2B ARCHITECTURAL POLYPROPYLENE LOUVERS - DURABLE, CORROSION RESISTANT PLASTIC AVAILABLE IN 4 COLOR OPTIONS (WHITE, SANDSTONE, BEIGE, TAPESTONE).
INSTALLATION NOTES:
A. PROVIDE/INSTALL SEVEN (7)-DAY PROGRAMMABLE T-STATS (HEAT/COOL/AUTO/FAN-ON).
B. M.C./P.C. TO TRAP/DRAIN CONDENSATE TO NEAREST FLOOR DRAIN OR SANITARY LINE. FOR UNITS SUSPENDED ABOVE OCCUPIED AREAS PROVIDE WATER TIGHT AUXILIARY DRAIN PAN BELOW ENTIRE UNIT WITH 3/4" DRAIN. PROVIDE WATER SENSOR IN AUXILIARY DRAIN PAN - WIRED TO SHUT UNIT DOWN UNIT AND INDICATE VISIBLE ALARM IN NEARBY OCCUPIED AREA.
C. PVAC UNITS REQUIRE A MINIMUM OF 36" OF MAINTENANCE CLEARANCE IN FRONT OF THE UNIT AND 1" ON SIDES. M.C. SHALL COORDINATE THE SIZE/CONFIGURATION OF THE MECHANICAL CLOSET WITH ARCHITECTURAL/CARPENTER TRADES PRIOR TO ROUGH-IN OF THE MECHANICAL CLOSET.

| FAN SCHEDULE | | | | | | | | | | | | | |
|--------------|---------------|--------------------------------|-------------|-----------------|---------|-------|--------|------------|-------|------------|-----------|-----------------------------|------------------------------|
| UNIT I.D. | SYSTEM SERVED | TYPE | AIRFLOW CFM | E.S.P. IN. W.G. | FAN RPM | MOTOR | | ELECTRICAL | | WEIGHT LBS | MODEL NO. | REMARKS | |
| | | | | | | HP | DRIVE | VOLTS | PHASE | | | | |
| EFL-50 | BATHROOM | CEILING EXHAUST FAN WITH LIGHT | 55 | 0.25 | 797 | 10 | FRACT. | DIRECT | 115 | 1 | 15 | SP-A90 W/ LED LIGHT | SEE NOTES 1, 2 (< 0.3 SONES) |
| EF-U | UTILITY ROOM | IN-LINE CABINET EXH FAN | 350 | 0.25 | 1,258 | 118 | FRACT. | DIRECT | 115 | 1 | 28 | CSP-A390 14"W x 12"L x 11"H | SEE NOTES 1, 3 (< 2 SONES) |

NOTES:
1. MODEL NUMBERS ARE GREENHECK, UNLESS OTHERWISE NOTED. OR APPROVED EQUAL BY COOK, S&P, BROAN, PANASONIC.
2. PROVIDE THE FOLLOWING OPTIONS/ACCESSORIES: DISCONNECT SWITCH, FACTORY MOUNTED; SOLID STATE SPEED CONTROL, FACTORY MOUNTED; BACKDRAFT DAMPER, GRAVITY; 6" DIAMETER WALL CAP (WC-6).
3. PROVIDE THE FOLLOWING OPTIONS/ACCESSORIES: DISCONNECT SWITCH, FACTORY MOUNTED; SOLID STATE SPEED CONTROL, FACTORY MOUNTED; BACKDRAFT DAMPER, GRAVITY; 8"X8" HOODED WALL CAP (WC-8X8); BIRDSCREEN.

| ELECTRIC UNIT HEATER SCHEDULE | | | | | | | | | | |
|-------------------------------|--------------|-------------|-----------|-------------|------------|-------|----------|------------|-------------|------------------------------|
| UNIT I.D. | CAPACITY MBH | CAPACITY KW | FAN | | ELECTRICAL | | | WEIGHT LBS | MODEL NO. | REMARKS |
| | | | TYPE | AIRFLOW CFM | VOLTS | PHASE | MAX AMPS | | | |
| EUH-U | 8.5 | 2.5 | PROPELLER | 275 | 240 | 1 | 10 | 32 | 5600 SERIES | SEE NOTES 14"W x 13"D x 14"H |

NOTES:
1. MODEL NUMBERS ARE BERKO UNLESS OTHERWISE NOTED. BERKO, TRANE, AND Q-MARK MAY BE BID AS EQUALS.
2. STANDARD FEATURES: MULTIPLE TAP ELECTRICAL CONNECTION ALLOWS FOR FIELD CONVERSION TO 8 WATTAGE SETTINGS AT 208-240V/1 ϕ OR 240-480V/3 ϕ ; THERMAL OVERLOAD WITH AUTOMATIC RESET; INTEGRAL HEAVY-DUTY HYDRAULIC THERMOSTAT FACTORY INSTALLED/WIRED; 3-POSITION MOUNTING BRACKET FOR WALL, CEILING, OR WORKBENCH MOUNT.

| RECESSED ELECTRIC WALL HEATER SCHEDULE | | | | | | | |
|--|--------------|---------|------------|-------|-------|--------------|---------------------------|
| UNIT I.D. | CAPACITY MBH | AMPS | ELECTRICAL | | | MODEL NO. | REMARKS |
| | | | VOLTS | PHASE | KW | | |
| EWH-S | 3.413/1.706 | 8.4/4.2 | 120 | 1 | 1/0.5 | SRA 1012 DSF | SEE NOTES-10.5"Wx12"Hx5"D |

NOTES:
1. MODEL NUMBERS ARE BERKO UNLESS OTHERWISE NOTED. Q-MARK OR MARKEL MAY BE BID AS EQUAL.
2. STANDARD FEATURES:
2A. BUILT-IN FAN DELAY SWITCH.
2B. INTEGRAL T-STAT FOR EASY ADJUSTMENT.
2C. MANUAL RESET THERMAL OVERHEAT PROTECTOR.
2D. BUILT-IN ON/OFF SWITCH FOR MAINTENANCE.
3. FACTORY INSTALLED OPTIONS/ACCESSORIES:
3A. PROVIDE TAMPER RESISTANT COVER (#SRAFCTP).
4. FIELD INSTALLED OPTIONS/ACCESSORIES:
4A. PROVIDE BACK-BOX (11"W x 9.25"W x 4"D), M.C. SHALL COORDINATE BACK-BOX WITH CARPENTRY/MASONRY TRADES PRIOR TO ROUGH-IN.
5. INSTALLATION: INSTALL PER MFR REQUIREMENTS (E.G. MINIMUM 8" ABOVE FLOOR, MINIMUM 8" FROM ADJACENT WALL/SURFACE, DO NOT INSTALL BEHIND DOOR OR TOWEL RACK, ETC.)

| GRILLE, REGISTER, AND DIFFUSER SCHEDULE (HART & COOLEY) | | | | | | | | | |
|---|--------------------|-----------|---------------|----------------|--------------|----------------------|-----------|---|---------------|
| UNIT I.D. | FACE SIZE | NECK SIZE | FRAME TYPE | ACCESSORY | CONSTRUCTION | FINISH | MODEL NO. | REMARKS | |
| | | | | | | | | | EXPOSED SCREW |
| SG-1 | NECK SIZE + 1-3/4" | SEE PLANS | EXPOSED SCREW | OPPOSED DAMPER | STEEL | WHITE ONLY | 92MHV | COMMERCIAL SIDEWALL/CEILING SG DOUBLE DEFLECTION - 3/4" SPACING | |
| SG-5 | NECK SIZE + 1-1/4" | SEE PLANS | EXPOSED SCREW | SHUTTER VALVE | STEEL | WHITE ONLY | 661 | RESIDENTIAL GRILLE-2 WAY DEFLECTION SHALLOW DUCT CEILING OR SIDEWALL | |
| RG-1 | NECK SIZE + 1-3/4" | SEE PLANS | EXPOSED SCREW | OPPOSED DAMPER | STEEL | WHITE ONLY | 94A HOV | COMMERCIAL SIDEWALL/CEILING RG FIXED 35° DEFLECTION - 3/4" SPACING | |
| RG-2 | NECK SIZE + 1-3/4" | SEE PLANS | EXPOSED SCREW | - | STEEL | WHITE OR GOLDEN SAND | 657 | RESIDENTIAL BASEBOARD RETURN GRILLE FIXED 20° DEFLECTION - 1/3" SPACING | |
| RG-5 | NECK SIZE + 1-1/4" | SEE PLANS | EXPOSED SCREW | SHUTTER VALVE | STEEL | WHITE ONLY | 661 | RESIDENTIAL GRILLE-2 WAY DEFLECTION SHALLOW DUCT CEILING OR SIDEWALL | |
| RG-N | NECK SIZE + 1-3/4" | SEE PLANS | EXPOSED SCREW | - | STEEL | WHITE ONLY | 94A | COMMERCIAL SIDEWALL/CEILING RG FIXED 35° DEFLECTION - 3/4" SPACING | |

NOTES:
1. MODEL NUMBERS ARE HART & COOLEY UNLESS OTHERWISE NOTED, OR EQUAL BY TITUS, PRICE, KRUEGER.
2. ALL FINISHES SHALL BE COORDINATED & CONFIRMED WITH OWNER/ARCHITECT PRIOR TO ORDERING. PROVIDE COLOR SELECTION GUIDE IN COLOR FOR OWNER/ARCHITECT TO REVIEW/APPROVE.

JLK Engineering
Project Number:
AEA 1903-01
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DRAWING TITLE
BUILDING 4
MECHANICAL DETAILS

PROJECT TITLE
LITTLE TRAVERSE BAY BAND OF ODAWA INDIANS
MURRAY ROAD APARTMENT DEVELOPMENT
PETOSKEY, MICHIGAN

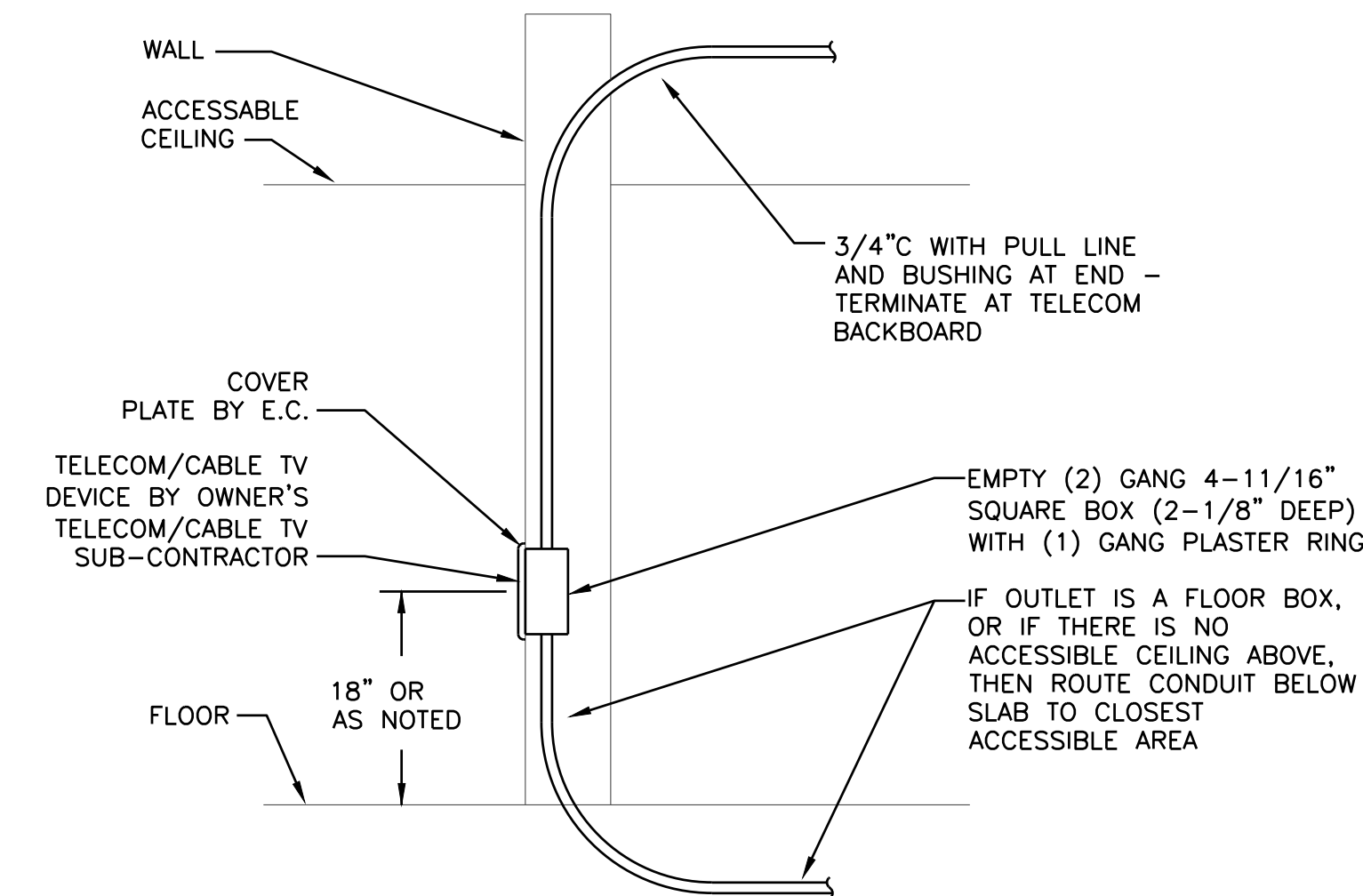
PROJECT NO.
273-19

DATE
May 11, 2022
Sept. 14, 2022

SHEET
M3.1

ELECTRICAL ABBREVIATION LIST

| ABBREVIATION | DESCRIPTION |
|--------------|-----------------------------------|
| AFB | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AIC | AMPS INTERRUPTING CAPACITY |
| BKR | BREAKER |
| C | CONDUIT |
| CB | CIRCUIT BREAKER |
| CKT | CIRCUIT |
| COORD | COORDINATE |
| CP | CIRCULATION PUMP |
| CU | CONDENSING UNIT |
| DISC | DISCONNECT |
| DP | DISTRIBUTION PANEL |
| DWG | DRAWING |
| (E) | EXISTING |
| EBH | ELECTRIC BASEBOARD HEATER |
| E.C. | ELECTRICAL CONTRACTOR |
| EF | EXHAUST FAN |
| EFL | EXHAUST FAN/LIGHT COMBO |
| EML | EMERGENCY LIGHT |
| EMT | ELECTRICAL METALLIC TUBING |
| EWH | ELECTRIC UNIT HEATER |
| EUH | ELECTRIC WALL HEATER |
| (F) | FUTURE |
| F.A. | FIRE ALARM SUBCONTRACTOR |
| F.C. | FIRE SUPPRESSION SUBCONTRACTOR |
| FC | FAN COIL |
| FLA | FULL LOAD AMPS |
| FU | FUSE |
| GF | GROUND FAULT INTERRUPTER |
| GRD | GROUND |
| GRS | GALVANIZED RIGID STEEL |
| HOA | HAND-OFF-AUTO |
| HP | HORSEPOWER |
| JB | JUNCTION BOX |
| KVA | KILO VOLT-AMPERES |
| KW | KILOWATT |
| KWH | KILOWATT-HOURS |
| LC | LIGHTING CONTROLLER |
| LP | LIGHTING PANEL |
| M.C. | MECHANICAL CONTRACTOR |
| MCA | MINIMUM CIRCUIT AMPS |
| MCB | MAIN CIRCUIT BREAKER |
| MDP | MAIN DISTRIBUTION PANEL |
| MFS | MAX FUSE SIZE |
| MLO | MAIN LUGS ONLY |
| MPC | METER-PAK CENTER |
| MTD | MOUNTED |
| MTR | MOTOR |
| NC | NORMALLY CLOSED |
| N.E.C. | NATIONAL ELECTRIC CODE |
| NF | NON-FUSIBLE |
| NIC | NOT IN CONTRACT |
| NL | NIGHT LIGHT |
| NO | NORMALLY OPEN |
| NTS | NOT TO SCALE |
| P-A | PANEL "A" |
| P.C. | PLUMBING CONTRACTOR |
| PRI | PRIOR TO ROUGH-IN |
| PVAC | PACKAGED VERTICAL AIR CONDITIONER |
| RECEPT | RECEPTACLE |
| SD | SMOKE DETECTOR |
| SPEC | SPECIFICATION |
| SW | SWITCH |
| SWGR | SWITCHGEAR |
| TELECOM | TELECOMMUNICATIONS |
| TTB | TELECOM TERMINAL BACKBOARD |
| TYP | TYPICAL |
| UH | UNIT HEATER |
| UON | UNLESS OTHERWISE NOTED |
| U/G | UNDERGROUND (BELOW GRADE) |
| VFD | VARIABLE FREQUENCY DRIVE |
| VSD | VARIABLE SPEED DRIVE |
| WP | WEATHERPROOF |
| XFMR | TRANSFORMER |



NOTES:
 1) PROVIDE LABEL ON CONDUIT STATING OUTLET BOX LOCATION (I.E. ROOM NAME & NUMBER).
 2) ROUTE CONDUIT SLEEVES FROM TELECOM/CABLE TV OUTLET BOXES TO UTILITY ROOM AND TERMINATE AT TELECOM BACKBOARD IN UTILITY ROOM.
 3) NOTE: ALL TELECOM/CABLE TV/SECURITY WIRING SHALL BE DONE BY OWNER SELECTED CONTRACTOR UNDER A SEPARATE CONTRACT.

TV TELECOM/CABLE TV OUTLET DETAIL
NO SCALE

ELECTRICAL SYMBOL LIST

| SYMBOL | DESCRIPTION |
|----------------|---|
| FA | FIXTURE TYPE |
| — — | PENDANT OR SURFACE MOUNTED LIGHT FIXTURE |
| — — | PENDANT OR SURFACE MOUNTED EMERGENCY LIGHT FIXTURE |
| — — | WALL MOUNTED LIGHT FIXTURE |
| — — | DOWNLIGHT LIGHTING FIXTURE |
| — — | DOWNLIGHT EMERGENCY LIGHTING FIXTURE |
| — — | WALL SCONCE |
| — — | POLE MOUNTED LIGHTING FIXTURE - SINGLE HEAD |
| — — | POLE MOUNTED LIGHTING FIXTURE - DOUBLE HEAD |
| — — | BOLLARD LIGHTING FIXTURE |
| H— — | OUTDOOR WALL MOUNTED LIGHTING FIXTURE |
| S | SINGLE POLE TOGGLE SWITCH |
| S ₂ | TWO POLE TOGGLE SWITCH |
| S ₃ | 3-WAY TOGGLE SWITCH |
| S ₄ | 4-WAY TOGGLE SWITCH |
| S ₀ | OCCUPANCY SENSOR WALL SWITCH |
| S _v | VACANCY SENSOR WALL SWITCH |
| S _L | LOW VOLTAGE SWITCH |
| S _M | HORSE POWER RATED SWITCH |
| S _D | DIGITAL SWITCH |
| C | CONTACTOR |
| Ⓢ | TIME CLOCK |
| Ⓢ | PHOTOELECTRIC CONTROLLER |
| Ⓢ | T-STAT (BY OTHERS) ROUGHED IN BY E.C. Ⓢ 52" |
| Ⓢ | AFF WITH CONDUIT PATHWAY TO EQUIPMENT CONTROLS CONNECTION - COORD. WITH MECHANICAL TRADES |

| SYMBOL | DESCRIPTION |
|--------|---|
| — — | SINGLE PHASE MOTOR |
| — — | COMBINATION MOTOR STARTER WITH DISCONNECT SWITCH |
| VSD | VARIABLE SPEED DRIVE COMBINATION MOTOR STARTER WITH DISCONNECT SWITCH |
| — — | NON-FUSABLE DISCONNECT SWITCH |
| — — | FUSIBLE DISCONNECT SWITCH |
| SM | HORSE POWER RATED SWITCH |
| Ⓢ | JUNCTION BOX |
| Ⓢ | HARD WIRE POWER CONNECTION |
| — — | CONDUIT UP |
| — — | CONDUIT DOWN |
| — — | COMBINATION TELE/DATA OUTLET - ROUGH-IN ONLY, NO CABLE DROP |
| — — | COMBINATION TELE/DATA OUTLET - 2 CABLE DROPS |
| — — | COMBINATION TELE/DATA OUTLET MOUNTED 6" ABOVE COUNTERTOP - ROUGH-IN ONLY NO CABLE DROPS |
| — — | COMBINATION TELE/DATA OUTLET MOUNTED 6" ABOVE COUNTERTOP - 2 CABLE DROPS |
| — — | TELECOMMUNICATIONS BACKBOARD |
| Ⓢ | DUPLEX RECEPTACLE |
| Ⓢ 48" | DUPLEX RECEPTACLE MOUNTED AT 48" ABOVE FLOOR (UNLESS NOTED OTHERWISE) - SIMILAR FOR ISOLATED GROUND, EMERGENCY AND GFI RECEPTACLES |
| Ⓢ | QUAD RECEPTACLE |
| Ⓢ | DUPLEX RECEPTACLE MOUNTED 6" ABOVE COUNTERTOP OR AS REQUIRED TO ACCOMMODATE COUNTERS - REFER TO ARCHITECTURAL ELEVATIONS |
| Ⓢ | DUPLEX RECEPTACLE - GROUND FAULT INTERRUPTER |
| Ⓢ | DUPLEX RECEPTACLE - GROUND FAULT INTERRUPTER - MOUNTED 6" ABOVE COUNTERTOP OR AS REQUIRED TO ACCOMMODATE COUNTERS - REFER TO ARCHITECTURAL ELEVATIONS |
| Ⓢ WP | DUPLEX RECEPTACLE - GROUND FAULT INTERRUPTER - WEATHERPROOF COVER |
| Ⓢ DF | DUPLEX RECEPTACLE - GROUND FAULT INTERRUPTER - DEAD-FRONT COVER |
| Ⓢ | SPECIAL RECEPTACLE - NEMA CONFIGURATION AS NOTED |
| TV | TELEVISION OUTLET - ROUGH-IN ONLY |

| SYMBOL | DESCRIPTION |
|--------|--|
| — — | CIRCUIT BREAKER |
| — — | GROUND |
| TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSION |
| Ⓢ | TWIST TIMER |
| A-3 | CIRCUIT HOMERUN (BACK TO PANEL "A" CIRCUIT #3) |
| — — | LIGHTING PANEL (LP = <240V) |
| — — | POWER PANEL (PP = >480V) |
| — — | DISTRIBUTION PANEL |
| — — | TRANSFORMER |
| Ⓢ | UTILITY METER |
| Ⓢ | UTILITY CT CABINET |
| Ⓢ | MANUAL FIRE ALARM STATION |
| Ⓢ | SMOKE DETECTOR |
| Ⓢ | SMOKE DETECTOR WITH SOUNDER BASE |
| Ⓢ | COMBINATION SMOKE/CO DETECTOR |
| Ⓢ | THERMAL DETECTOR |
| Ⓢ | FIRE ALARM HORN |
| Ⓢ | FIRE ALARM STROBE - WALL MOUNTED (xx CANDELA) |
| Ⓢ | FIRE ALARM STROBE - CEILING MOUNTED (xx CANDELA) |
| Ⓢ | FIRE ALARM HORN/STROBE - WALL MOUNTED (xx CANDELA) |
| Ⓢ | FIRE ALARM HORN/STROBE - CEILING MOUNTED (xx CANDELA) |
| Ⓢ | FIRE ALARM SPEAKER/STROBE - WALL MOUNTED (xx CANDELA) |
| Ⓢ | FIRE ALARM SPEAKER/STROBE - CEILING MOUNTED (xx CANDELA) |
| IM | ADDRESSABLE INTERFACE MODULE |
| CM | ADDRESSABLE CONTROL MODULE |
| TS | TAMPER SWITCH |
| FS | FLOW SWITCH |
| FACP | FIRE ALARM CONTROL PANEL |
| FAA | FIRE ALARM ANNUNCIATOR PANEL |

| LIGHTING FIXTURE SCHEDULE | | | | | |
|---------------------------|--|--|--|---------------------|--|
| TYPE | DESCRIPTION | MANUFACTURERS | LAMPS | VOLTS/WATTS | REMARKS |
| BZ | 4.75"Wx4.5"Hx24"L LED WALL/CEILING BRACKET FIXTURE; STEEL HOUSING; OPAL ACRYLIC DIFFUSED LENS; 0-10V CONTINUOUS DIMMING | 1. METALUX "SOLEID" SERIES 2BCLED-L04-20S-F-UNV-L830-C01 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 2,000 LUMENS 3,000 K TEMP | 120V / 23W | WALL MOUNT OR CEILING MOUNT |
| GFL | CEILING FAN / LIGHT COMBINATION - TO BE SELECTED BY ARCHITECT/OWNER AND PROVIDED/INSTALLED BY ELECTRICAL CONTRACTOR (PROVIDE \$500 ALLOWANCE PER FIXTURE) | 1. N/A 2. ENGINEER APPROVED EQUAL | LED7/NGAN? 2,000 LUMENS 3,000 K TEMP | 120V / ASSUMED 250W | |
| D | 4"ø SURFACE MOUNTED BACKLIT LED DOWNLIGHT; 6.25" X 1.25"ø ALUMINUM HOUSING & FRAME; SUITABLE FOR CEILING/WALL MOUNTING TO 4" SO. ELEC. J-BOX; 120V DIMMING; 90 CRI; UL WET & DAMP LISTED | 1. HALO MODEL #: BL04-06-930-WH 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 690 LUMENS 5,000 K TEMP | 120V / 8.2W | |
| E | 4.5"Wx5.4"Dx6.8"H LED ENTRY LIGHT; POLYCARBONATE HOUSING; FROSTED LENS; UL WET LISTED; INTEGRAL PHOTO CONTROL; BRONZE OR WHITE FINISH? (COORD. COLOR WITH OWNER) | 1. HALO OUTDOOR MODEL #: FE050LPC-BRONZE? OR WHITE? 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 811 LUMENS 5,000 K TEMP | 120V / 9W | VERIFY FINISH, MOUNTING HEIGHT, AND LOCATION WITH ARCHITECTURAL ELEVATIONS AND OWNER PRI. |
| F | 12"Wx2"Hx48"L LED PANEL FIXTURE; STEEL HOUSING; WHITE FROST IMPACT RESISTANT LENS; 0-10V CONTINUOUS DIMMING; DAMP LOCATION LISTED | 1. METALUX "14FP LED" SERIES 14FP25300 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 2,744 LUMENS 3,000 K TEMP | 120V / 24.8W | PROVIDE SURFACE MOUNT KIT #PFSURF14 |
| LE | 5.75"Wx3.5"Dx6.75"H LED WALL PACK LIGHT; DIE-CAST ALUMINUM CONSTRUCTION; UL WET LISTED; STANDARD CARBON BRONZE FINISH (COORD. COLOR WITH OWNER) | 1. LUMARK "CROSSSTOUR" SERIES MODEL #: XT0R3B-PC1 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 2,751 LUMENS 5,000 K TEMP | 120-277V / 26W | VERIFY COLOR/FINISH, MOUNTING HEIGHT, AND LOCATION WITH ARCHITECTURAL ELEVATIONS AND OWNER PRI. |
| PI | 18.58"ø X 10.56"H DECORATIVE LED PENDANT; AIR CRAFT CABLE MOUNTED (VERIFY MOUNTING HEIGHT); DAMP LISTED; 120V DIMMABLE; ALUMINUM SHROUD AND COPPER SHADE & TRIM; CANOPY MOUNTING PLATE AND COVER TO J-BOX; VERIFY FINISH AND MOUNTING WITH OWNER PRIOR TO ROUGH-IN | 1. SHAPER MODEL #: 1800-RLM-90-L30-2-W-UNV-STD-SBA-TBA-AC-W 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 5,638 LUMENS 3,000 K TEMP | 120-277V / 42W | 120" LONG FIELD CUTTABLE AIRCRAFT CABLE. VERIFY FINISH, MOUNTING HEIGHT, AND LOCATION WITH ARCHITECTURAL ELEVATIONS AND OWNER PRI. |
| S | 15"ø X 4"H LED LOW PROFILE ROUND FLUSHMOUNT; STEEL HOUSING PAINTED WHITE WITH ACRYLIC ROUND LENS; WALL OR CEILING MOUNTED VIA JUNCTION BOX; 120V DIMMING | 1. METALUX AP SERIES MODEL #: FMSHROCR 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 1,600 LUMENS 5,000 K TEMP | 120V / 21.3W | |
| SZ | 24" LONG X 3" WIDE X 4" HIGH LED LENSED STRIPLIGHT FIXTURE; FULL FROST LENS; UNIVERSAL VOLTAGE; 0-10V DIMMING; SURFACE MOUNT OR PENDANT HUNG (CONFIRM HANGING ACCESSORIES - ADA ITEM SET) | 1. METALUX "SOLEID" LENSED MODEL#: ZONLED-L05-20S-LW-UNV-L840-CD1-AYC OR Y-TOGGLE 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 2,182 LUMENS (120 LM/WATT) 4,000 K TEMP 80 CRI | 120-277V / 18W | SURFACE MOUNTED OR PENDANT HANG VIA ADJUSTABLE 48" STEM SET |
| WI | 9"W X 15"H X 2.75"D LED (WAVESTREAM) SCONCE INDOOR/OUTDOOR; SURFACE MNT ON WALL/CEILING VIA J-BOX; ALUMINUM HOUSING (WHITE? BLACK? BRONZE? OR PLATINUM-CONFIRM W/ ARCHITECT); HIGH ABUSE CLEAR POLYCARBONATE LENS; 120V TO 0-10V DIMMING; WET LOCATION | 1. FAIL-SAFE MODEL #: FW-612-1000-30-UNV-CP-R4-EDD1-LGW 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 1,000 LUMENS 3,000 K TEMP | 120-277V / 13W | VERIFY MOUNTING HEIGHT, AND LOCATION WITH ARCHITECTURAL ELEVATIONS. VERIFY COLOR/FINISH WITH ARCHITECT PRIOR TO ORDER |
| WZ | 25"L X 6.75"H X 4"D LED LUMINOUS WALL SCONCE-VANITY; 0-10 V DIMMING; UL WET LISTED; HORIZ. OR VERTICAL MOUNT VIA J-BOX; PAINTED ALUMINUM FINISH (VERIFY WITH ARCHITECT) WITH ACRYLIC LENS; UL DAMP INDOOR OR WET OUTDOOR ("WP") | 1. SHAPER MODEL #: 605-25-W-L3/830-UNV-ALP 2. ENGINEER APPROVED EQUAL BY LITHONIA OR HUBBLE. | LED 2,000 LUMENS 3,000 K TEMP | 120-277V / 20W | VERIFY MOUNTING HEIGHT, AND LOCATION WITH ARCHITECTURAL ELEVATIONS. VERIFY COLOR/FINISH WITH ARCHITECT PRIOR TO ORDER |

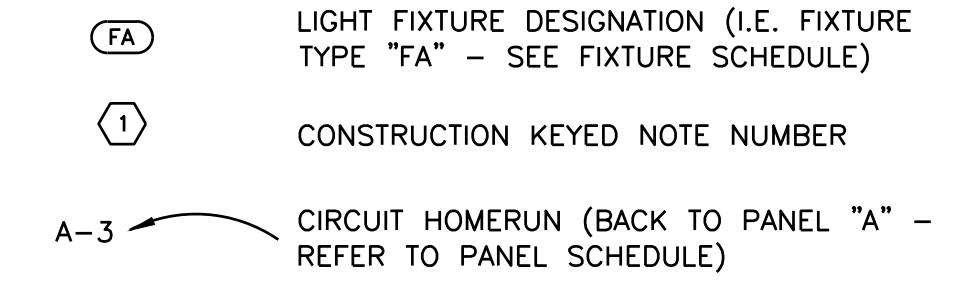
| BRANCH CIRCUIT WIRE SIZE/LENGTH SCHEDULE | | | | | | | |
|--|---|-----|-----|-----|-----|-----|-----|
| MAX BRANCH CIRCUIT (AMPS) | MAX CIRCUIT LENGTH (FEET) TO LAST CONNECTION IN THE CIRCUIT | 50 | 75 | 100 | 125 | 150 | 300 |
| 15 | #12 | #10 | #10 | #8 | #6 | #4 | |
| 20 | #10 | #10 | #8 | #6 | #6 | #3 | |
| 30 | #8 | #8 | #6 | #4 | #4 | #1 | |

NOTES:
 1. REFER TO SPECIFICATIONS FOR WIRE TYPE.
 2. SCHEDULE IS BASED UPON A MAX 3% VOLTAGE DROP ON 115-120V/1ø CIRCUITS.
 3. FOR LENGTHS BETWEEN TABLED VALUES - USE LONGER LENGTH.

| BRANCH CIRCUIT WIRE SIZE/LENGTH SCHEDULE | | | | | | | |
|--|---|-----|-----|-----|-----|-----|-------|
| MAX BRANCH CIRCUIT (AMPS) | MAX CIRCUIT LENGTH (FEET) TO LAST CONNECTION IN THE CIRCUIT | 50 | 75 | 100 | 125 | 150 | < 300 |
| 15 | #10 | #10 | #10 | #10 | #8 | #4 | |
| 20 | #10 | #10 | #10 | #8 | #6 | #4 | |
| 30 | #8 | #8 | #6 | #6 | #4 | #2 | |

NOTES:
 1. REFER TO SPECIFICATIONS FOR WIRE TYPE.
 2. SCHEDULE IS BASED UPON A MAX 3% VOLTAGE DROP ON 208-240V/1ø CIRCUITS.
 3. FOR LENGTHS BETWEEN TABLED VALUES - USE LONGER LENGTH.

METHODS OF NOTATION



STANDARD MOUNTING HEIGHTS

CONVENIENCE AND SPECIAL PURPOSE RECEPTACLE OUTLETS, TELE/DATA AND COMMUNICATIONS OUTLETS, NOT OTHERWISE SPECIFIED:
 • 18" AFF TO THE MIDDLE OF BOX
 • 16" AFF TO BOTTOM OF BOX IN CMU WALLS

CONVENIENCE AND SPECIAL PURPOSE RECEPTACLE OUTLETS ABOVE COUNTERS, NOT OTHERWISE SPECIFIED:
 • 6" ABOVE COUNTER TO CENTER OF BOX OR AS REQUIRED TO ACCOMMODATE COUNTERS. (REFER TO ARCHITECTURAL ELEVATIONS.)

LIGHT SWITCHES, MOTOR CONTROL DEVICES, AND FIRE ALARM PULL STATIONS, NOT OTHERWISE SPECIFIED:
 • 48" AFF TO THE MIDDLE OF BOX
 • 48" AFF TO THE TOP OF BOX IN CMU WALLS

T-STATS, TEMP. SENSORS, CO2 SENSORS, NOT OTHERWISE SPECIFIED:
 • 48" AFF TO THE MIDDLE OF BOX
 • 48" AFF TO THE TOP OF BOX IN CMU WALLS

FIRE ALARM HORNS, SPEAKERS, STROBES, AND COMBINATION DEVICES, NOT OTHERWISE SPECIFIED:
 • 96" AFF (TO TOP OF BOX) OR 6" BELOW CEILING, WHICHEVER IS LESS - BUT NO LOWER THAN 80" AFF.

GFI RECEPTACLES IN TOILET ROOMS, STORAGE ROOMS, AND JANITOR CLOSETS, NOT OTHERWISE SPECIFIED:
 • 48" AFF TO TOP OF BOX.

LIGHTING AND RECEPTACLE BRANCH CIRCUIT PANELBOARDS AND LIGHTING CONTROLLERS:
 • 6"-6" AFF TO TOP OF ENCLOSURE.

- GENERAL ELECTRICAL POWER, AUXILIARY, & LIGHTING NOTES:**
- THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS (E.G. CONDUIT, WIRE, PULL BOXES, FIXTURES, ETC.) REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM.
 - ALL ELECTRICAL SYSTEMS SHALL BE PROVIDED/INSTALLED TO MEET APPLICABLE BUILDING CODES: MICHIGAN/INTERNATIONAL BUILDING CODE, MICHIGAN/INTERNATIONAL ELECTRICAL CODE, N.E.C., LIFE SAFETY CODE NFPA 101, MICHIGAN/INTERNATIONAL ENERGY CODE, ETC. COORDINATE AND CONFIRM LTBB ODAWA INDIANS' (OWNER) CURRENT BUILDING CODE REQUIREMENTS PRIOR TO BID/CONSTRUCTION.
 - VERIFY REQUIREMENTS OF ALL MECHANICAL/PLUMBING/ARCHITECTURAL EQUIPMENT WITH SHOP DRAWING SUBMITTALS PRIOR TO INSTALLATION. NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN SHOP DRAWINGS AND PLANS.
 - COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ALL RECEPTACLE (RECEPT) OUTLETS WITH LOCATIONS/HEIGHTS OF COUNTERTOPS, SINKS, FURNITURE, CABINETS, ETC. WITH ARCHITECTURAL ELEVATIONS AND OTHER TRADES.
 - COORDINATE REQUIREMENTS FOR FIRE ALARM SYSTEMS WITH FIRE PROTECTION SYSTEMS AND CONTRACTORS (E.G. FLOW SWITCHES, TAMPER SWITCHES, ETC.).
 - COORDINATE THE INSTALLATION OF ALL ELECTRICAL WORK WITH ALL OTHER TRADES. CONTRACTOR SHALL VERIFY ALL MECHANICAL AND ELECTRICAL CLEARANCES PRIOR TO FABRICATION OF ANY NEW WORK. ELECTRICAL EQUIPMENT, WIRING, ETC. SHALL NOT INTERFERE WITH MECHANICAL EQUIPMENT CLEARANCE SPACES.
 - FIRE ALARM SYSTEM, WIRING, DEVICES, ETC. SHOWN ARE DIAGRAMMATIC AND INDICATE THE GENERAL SCOPE OF WORK. THE FIRE ALARM SYSTEM SHALL BE DESIGNED AND INSTALLED BY A CERTIFIED FIRE ALARM CONTRACTOR PER THE SPECIFICATIONS.
 - ALL 15-20 AMP @ 120V BRANCH CIRCUITS FEEDING ALL RECEPTACLES/DEVICES THROUGHOUT DWELLING UNITS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER (AFCI) RATED BREAKER AND RECEPTACLES IN ACCORDANCE WITH N.E.C. 210.12.
 - COORDINATE EXACT LIGHT FIXTURE LOCATIONS WITH ARCHITECTURAL PLANS (REFLECTED CEILING PLANS, BUILDING ELEVATIONS, ETC.).
 - ELECTRICAL CONTRACTOR (E.C.) SHALL PROVIDE ALL ROUGH-INS (E.G. BOXES, CONDUIT, ETC.) FOR AUXILIARY ELECTRICAL SYSTEMS (E.G. FIRE ALARM, TELECOM, CABLE TV, SECURITY, MECHANICAL T-STATS/CONTROLS, ETC.). COORDINATE REQUIREMENTS WITH OTHER SUB-CONTRACTORS PRIOR TO ROUGH-IN AND VERIFY ALL WORK REQUIRED. ALL CONDUIT ROUGH-INS SHALL TERMINATE AT BACKBOARD IN UTILITY ROOM.

ELECTRICAL DRAWING INDEX

- E1.0 ELECTRICAL TITLE SHEET - BUILDING 4
- E2.1 ELECTRICAL POWER PLAN - LOWER FLOOR BUILDING 4
- E2.2 ELECTRICAL POWER PLAN - UPPER FLOOR BUILDING 4
- E3.1 ELECTRICAL LIGHTING PLAN - LOWER FLOOR BUILDING 4
- E3.2 ELECTRICAL LIGHTING PLAN - UPPER FLOOR BUILDING 4
- E4.1 ELECTRICAL DETAILS - BUILDING 4
- E4.2 ELECTRICAL DETAILS - BUILDING 4

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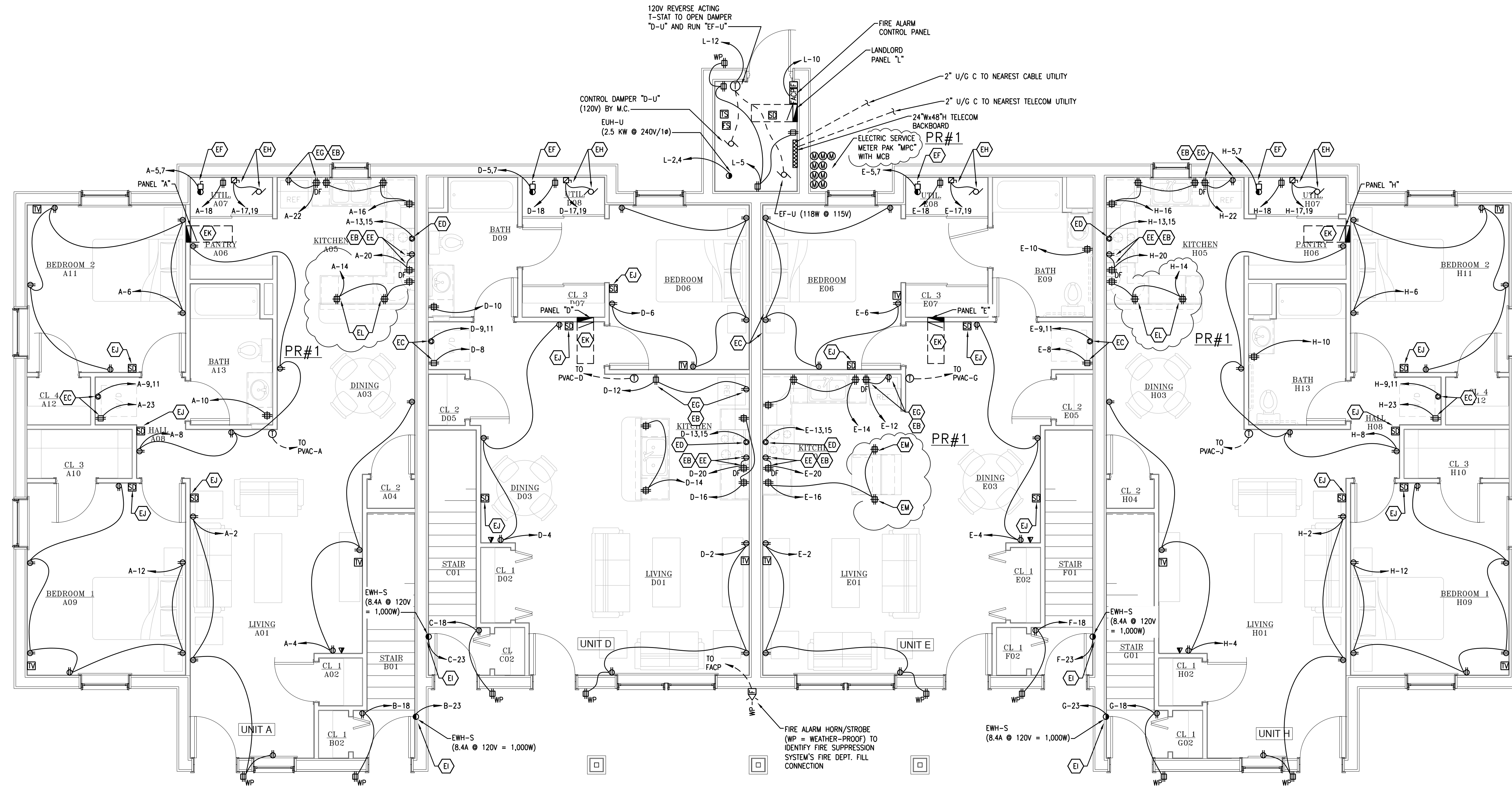
DRAWING TITLE
BUILDING 4
MURRAY ROAD APARTMENT DEVELOPMENT
 ELECTRICAL TITLE SHEET

PROJECT TITLE
 LITTLE TRAVERSE BAY BAND OF ODAWA INDIANS
MURRAY ROAD APARTMENT DEVELOPMENT
 PETOSKEY, MICHIGAN

PROJECT NO.
 273-19

DATE
 May 11, 2022
 Sept. 14, 2022

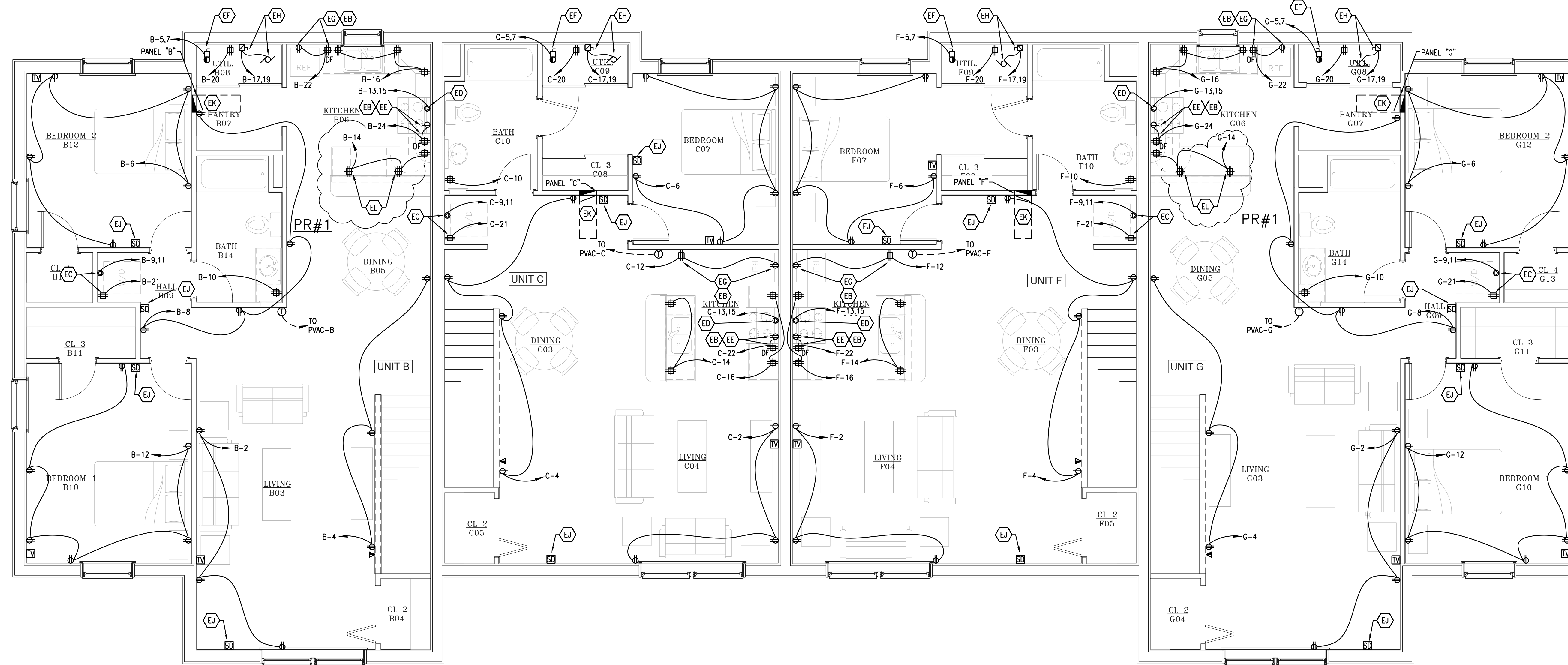
SHEET
E1.0



**BUILDING 4
ELECTRICAL POWER PLAN - LOWER FLOOR**
SCALE: 1/4" = 1'-0"

KEYED ELECTRICAL POWER CONSTRUCTION NOTES:

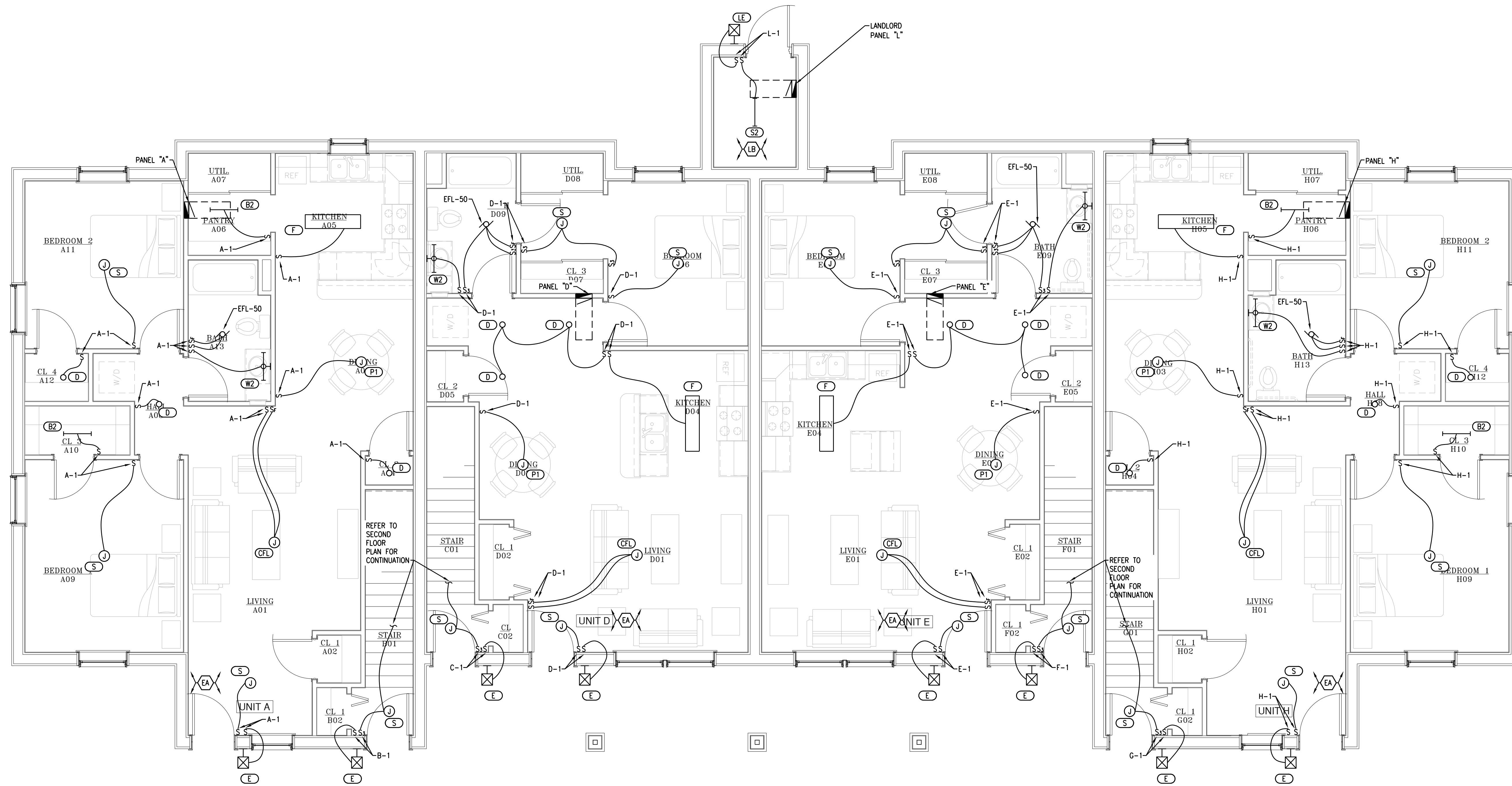
- (EA) COORDINATE LOCATION AND MOUNTING HEIGHT OF ALL ELECTRICAL DEVICES AND AUXILIARY ELECTRICAL DEVICES (I.E. TELECOM, AUDIO/VIDEO, CABLE TV, ETC.) WITH OWNER/OWNER'S REP PRIOR TO ROUGH-IN.
- (EB) FOR LOCATIONS WHERE GFI RECEPTACLES ARE REQUIRED TO SERVICE APPLIANCES AND INSTALLED IN NON-ACCESSIBLE LOCATIONS, WIRE A RECEPTACLE FROM A NEW DEAD-FRONT (DF) GFI RECEPTACLE IN ACCESSIBLE LOCATION PER NEC.
- (EC) PROVIDE POWER/RECEPTACLE FOR ELECTRIC STACKABLE WASHER/DRYER (ASSUMED 24A @ 240V = 5,760W). COORDINATE AND CONFIRM REQUIREMENTS WITH OWNER PRIOR TO ROUGH IN.
- (ED) PROVIDE POWER/RECEPTACLE FOR ELECTRIC RANGE (ASSUMED 7.5 KW @ 240V = 4A/2P BKR. COORDINATE AND CONFIRM REQUIREMENTS WITH OWNER PRIOR TO ROUGH IN.
- (EE) PROVIDE POWER/RECEPTACLE FOR NON-DUCTED RECIRCULATING RANGEHOOD (ASSUMED 400 W @ 115V). COORDINATE AND CONFIRM REQUIREMENTS AND LOCATION WITH OWNER PRIOR TO ROUGH IN.
- (EF) PROVIDE POWER & DISCONNECT FOR ELECTRIC DOMESTIC WATER HEATER (DWH) 4.5 KW @ 240V. COORDINATE AND CONFIRM REQUIREMENTS WITH M.C. PRIOR TO ROUGH IN.
- (EG) PROVIDE RECEPT. FOR REFRIGERATOR (ASSUMED 1,500W @ 115V). COORDINATE AND CONFIRM REQUIREMENTS WITH OWNER PRIOR TO ROUGH IN.
- (EH) PROVIDE POWER/DISCONNECT & CONTROL ROUGH-IN FOR PACKAGED VERTICAL AIR CONDITIONING UNIT (PVAC). COORDINATE/CONFIRM WITH M.C. PRIOR TO ROUGH IN.
- (EI) ELECTRICAL CONTRACTOR (E.C.) SHALL COORDINATE CKT/CONDUIT ROUGH-IN FOR RECESSED ELEC. WALL HEATER WITH M.C. AND ICF CONTRACTOR.
- (EJ) PROVIDE SMOKE DETECTORS (SD) THROUGHOUT EACH APARTMENT UNIT AND INTERCONNECT TO ALARM WITH OTHER SMOKE DETECTORS IN THAT APARTMENT UNIT.
- (EK) COORDINATE EXACT LOCATION OF PANELBOARD WITH OTHER TRADES TO AVOID CONFLICTS WITH DUCTWORK, PIPING, EQUIPMENT, ETC.
- (EL) PROVIDE RECEPTACLES IN PENINSULA/ISLAND COUNTERTOP IN ACCORDANCE WITH APPLICABLE CODES. LOCATE IN BACKSPASH ABOVE MAIN COUNTERTOP AND BELOW RAISED BAR COUNTERTOP. **PR#1**
- (EM) PROVIDE RECEPTACLES ON EACH SIDE OF ADA ISLAND COUNTERTOP IN ACCORDANCE WITH APPLICABLE CODES. LOCATE WITHIN 12" OF TOP OF COUNTERTOP.



BUILDING 4
ELECTRICAL POWER PLAN – UPPER FLOOR
 SCALE: 1/4" = 1'-0"

KEYED ELECTRICAL POWER CONSTRUCTION NOTES:

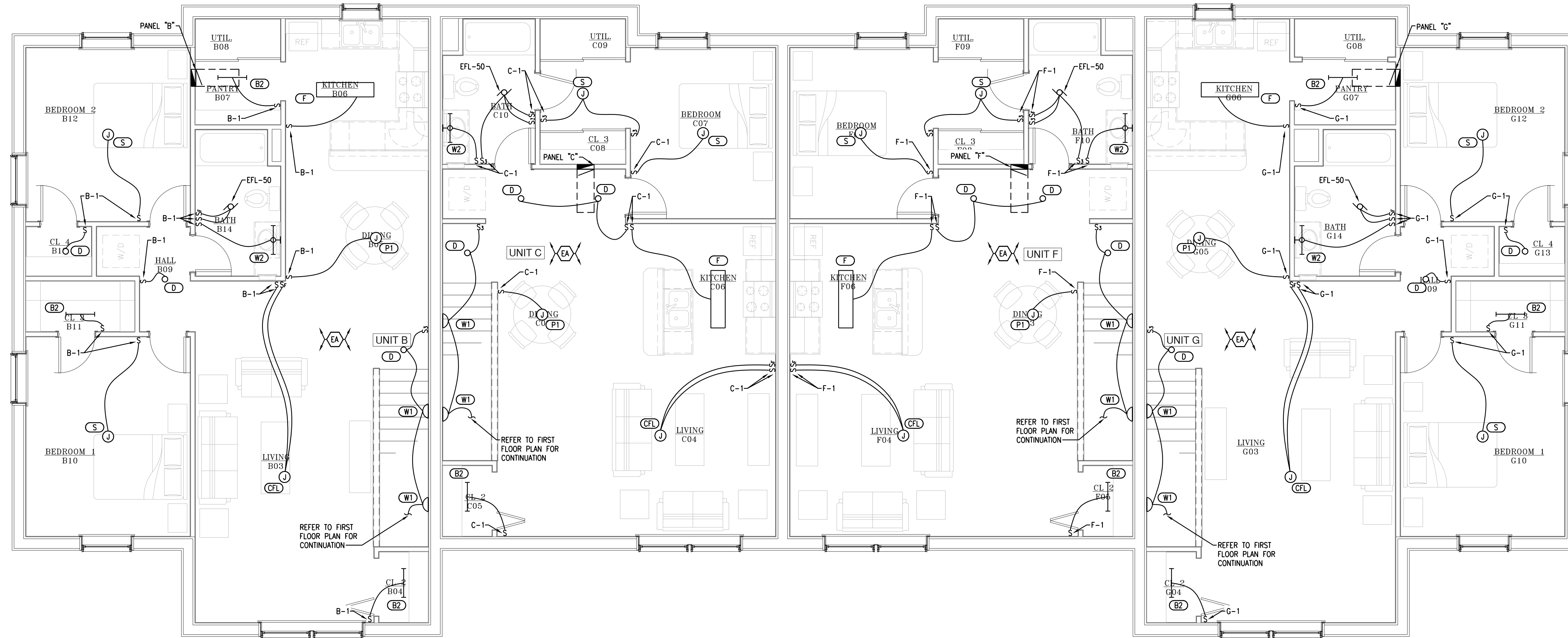
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- (EB) FOR LOCATIONS WHERE GFI RECEPTACLES ARE REQUIRED TO SERVICE APPLIANCES AND INSTALLED IN NON-ACCESSIBLE LOCATIONS, WIRE A RECEPTACLE FROM A NEW DEAD-FRONT (DF) GFI RECEPTACLE IN ACCESSIBLE LOCATION PER NEC.
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- (EL) PROVIDE RECEPTACLES IN PENINSULA/ISLAND COUNTERTOP IN ACCORDANCE WITH APPLICABLE CODES. LOCATE IN BACKSPASH ABOVE MAIN COUNTERTOP AND BELOW RAISED BAR COUNTERTOP. **PR#1**
- (EM) PROVIDE RECEPTACLES ON EACH SIDE OF ADA ISLAND COUNTERTOP IN ACCORDANCE WITH APPLICABLE CODES. LOCATE WITHIN 12" OF TOP OF COUNTERTOP.



BUILDING 4
ELECTRICAL LIGHTING PLAN - LOWER FLOOR
 SCALE: 1/4" = 1'-0"

KEYED ELECTRICAL LIGHTING CONSTRUCTION NOTES:

- (LA) COORDINATE LOCATION AND MOUNTING HEIGHT OF ALL LIGHTING AND CONTROL/SWITCHING WITH OWNER/OWNER'S REP PRIOR TO ROUGH-IN.
- (LB) COORDINATE LIGHT FIXTURE LOCATIONS WITHIN MECHANICAL/ELECTRICAL ROOMS TO AVOID CONFLICTS WITH DUCTWORK, PIPING, ETC. COORDINATE WITH OTHER TRADES PRIOR TO ROUGH-IN.



BUILDING 4
ELECTRICAL LIGHTING PLAN - UPPER FLOOR
 SCALE: 1/4" = 1'-0"

KEYED ELECTRICAL LIGHTING CONSTRUCTION NOTES:

- (LA) COORDINATE LOCATION AND MOUNTING HEIGHT OF ALL LIGHTING AND CONTROL/SWITCHING WITH OWNER/OWNER'S REP PRIOR TO ROUGH-IN.
- (LB) COORDINATE LIGHT FIXTURE LOCATIONS WITHIN MECHANICAL/ELECTRICAL ROOMS TO AVOID CONFLICTS WITH DUCTWORK, PIPING, ETC. COORDINATE WITH OTHER TRADES PRIOR TO ROUGH-IN.

