TURNOCK STREET QUADPLEX

712 Turnock Street
South Bend, IN 46617

DWELLING UNIT TABULATION

UNIT LABEL	STORAGE	# OF BEDS	# OF BATHS	NRA/UNIT	GROUND FLOOR	UPPER FLOOR	TOTAL # OF UNITS	TOTAL NRA FOR UNIT TYPE	REMOTE STORAGE
1BR TYPE ACCESSIBLE	IN-UNIT STORAGE	1	1	700 SF	1	0	1	700 SF	0 SF
2BR TYPE 'B' ACCESSIBLE	IN-UNIT STORAGE	2	1	806 SF	1	0	1	806 SF	0 SF
2BR	REMOTE STORAGE	2	1	776 SF	0	1	1	776 SF	46 SF
2BR - MIRRORED	REMOTE STORAGE	2	1	788 SF	0	1	1	788 SF	46 SF
				TOTALS	**2**	**2**	**4**	**3,070 SF**	

COMMON + ADMIN/SERVICE AREA TABULATION

AREA TYPE	BASEMENT	GROUND FLOOR	UPPER FLOOR	TOTAL NET SF FOR TYPE
OWNER STORAGE				
BUILDING MECHANICAL, OUTSIDE OF UNITS	199 SF			199 SF
STAIR + STAIR ACCESS	109 SF	204 SF	191 SF	504 SF
VESTIBULE		72 SF		72 SF
FOYER		43 SF		43 SF
TOTALS	**308 SF**	**319 SF**	**191 SF**	**818 SF**

BUILDING AND HARDSCAPE AREA TABULATION

LEVEL	GROSS FLOOR AREA	CANOPY AREAS	BLDG. AREA	HARDSCAPE AREA[1]
BASEMENT	529 SF			
GROUND FLOOR	1,975 SF	77 SF	2,052 SF	3,601 SF
UPPER FLOOR	1,939 SF			
TOTAL	**4,443 SF**			**65.27% OF 5,517 SF SITE**

1. HARDSCAPE AREA INCLUDES THE BUILDING, NEW SIDEWALK, FRONT WALKWAY AND STEPS, THE ASPHALT LOT, AND CONCRETE FOR THE REAR BUILDING STOOP AND MECHANICAL.

OWNER/DEVELOPER

SOUTH BEND HERITAGE
808 LINCOLN WAY WEST
SOUTH BEND, IN 46616
(574) 289-1066

South Bend Heritage

ARCHITECT

ALLIANCE ARCHITECTS
929 LINCOLNWAY EAST,
SUITE 200
SOUTH BEND, IN 46601
(574) 288-2052

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

INDEX OF DRAWINGS

GENERAL INFORMATION

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LANE REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

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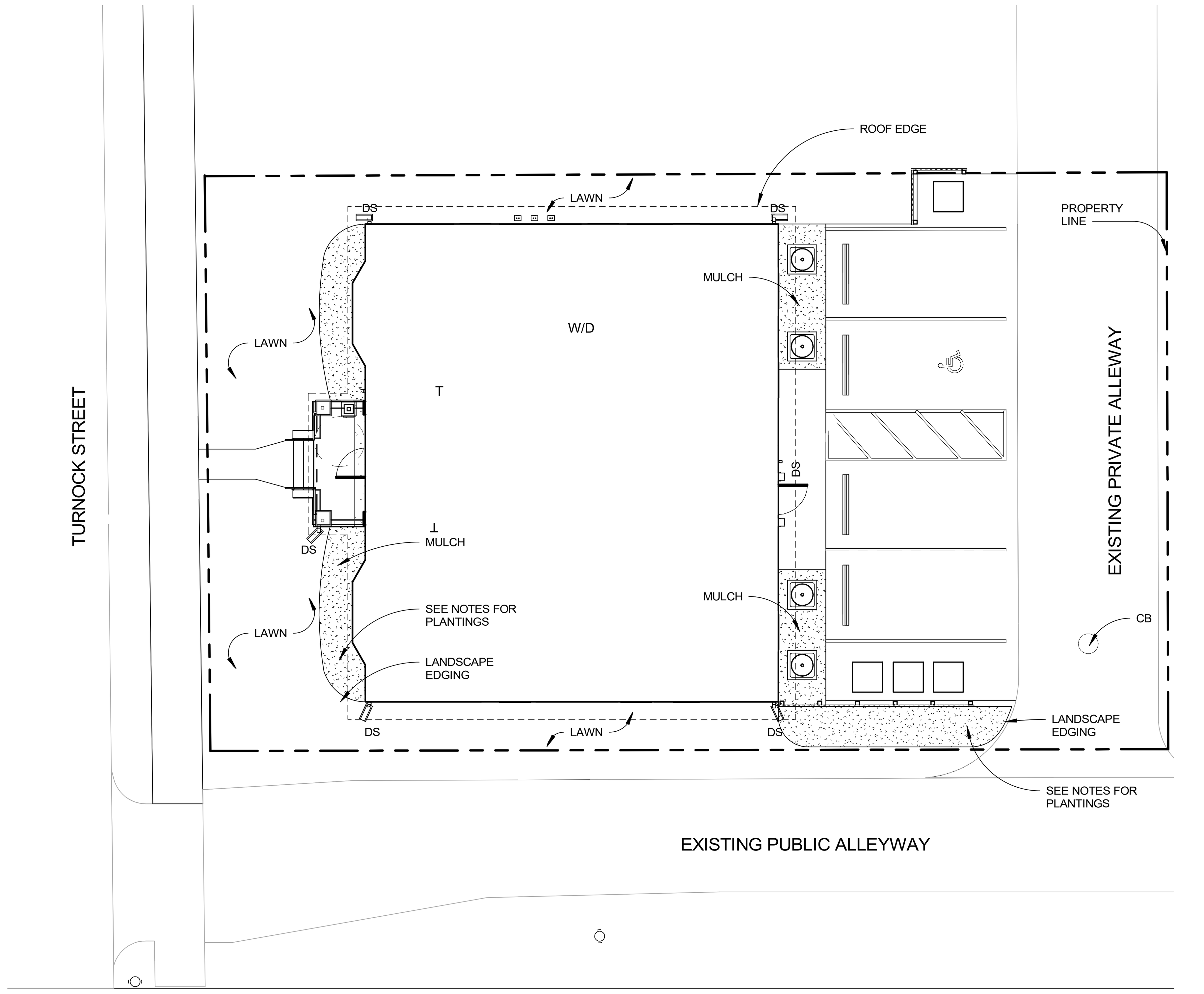
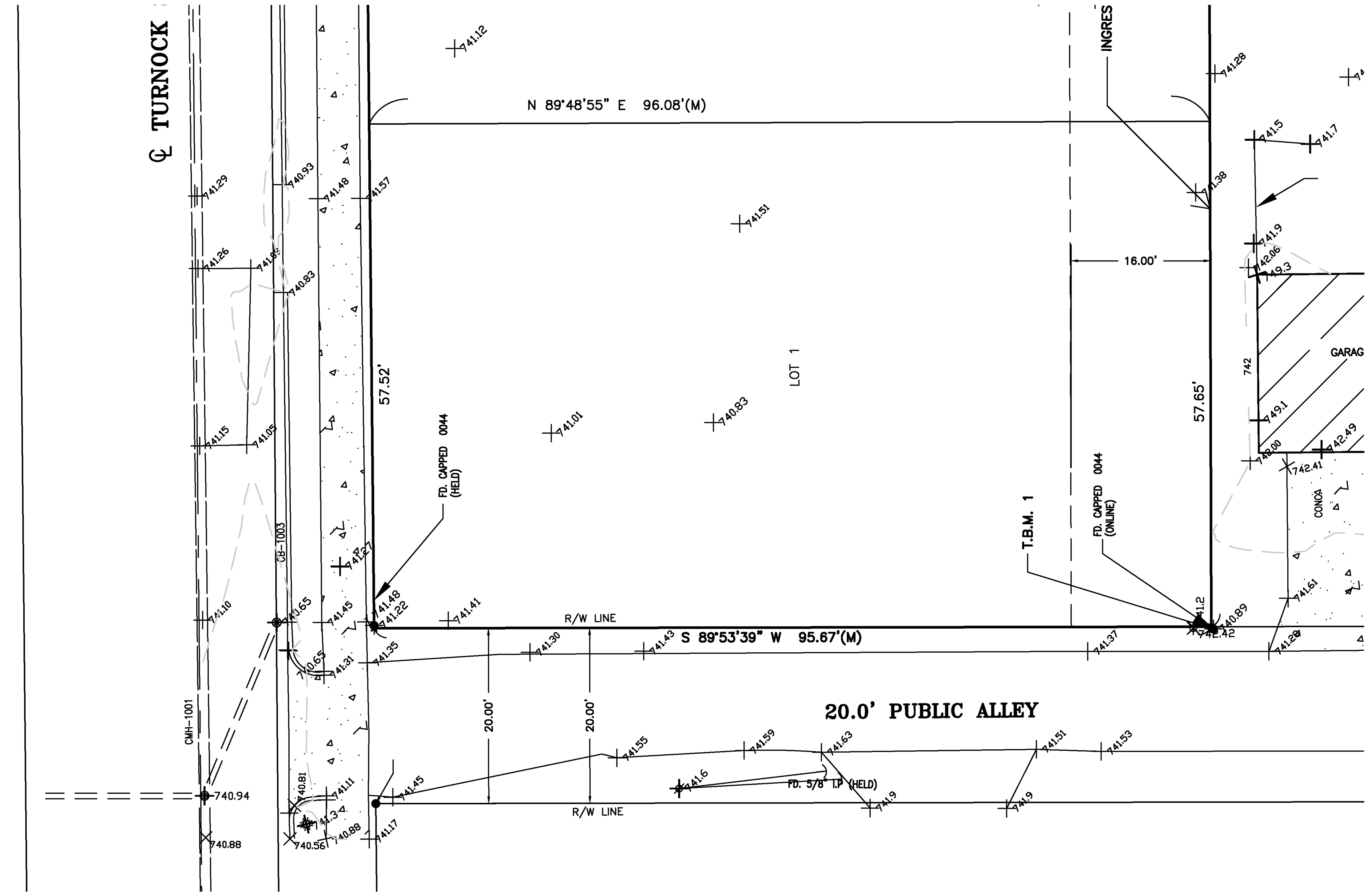


NORTH

LANDSCAPE PLAN

SCALE: 1" = 10'-0"



NORTH

SITE SURVEY

SCALE: 1" = 10'-0"

SURVEY INFORMATION PROVIDED BY DANCH HARNER. VERIFY CONDITIONS IN FIELD.

LANDSCAPE WORK

1. CONTRACTOR SHALL ARRANGE FOR ON-SITE MARKING OF UNDERGROUND UTILITIES PRIOR TO ANY WORK ON-SITE. NOTIFY ARCHITECT OF ANY CONFLICTS WITH PROPOSED WORK.
2. ALL TREES TO BE BALLED AND BURLAPPED. TREE CALIPER SIZE INDICATES THE DIAMETER OF THE TRUNK TAKEN AT 6" ABOVE GROUND LEVEL.
3. ALL SHRUBS MAY EITHER BE CONTAINER GROWN OR BALLED AND BURLAPPED.
4. KEEP THE SOIL MOIST OF BALLED AND CONTAINER PLANTS UNTIL THEY ARE PLANTED. IF PLANTS CANNOT BE PLANTED IMMEDIATELY, THEY SHOULD BE HEELED IN AND BALLS/CONTAINERS COVERED WITH MULCH.
5. ALL PLANTING LOCATIONS TO BE FIELD STAKED BY CONTRACTOR AND APPROVED BY LANDSCAPE PRIOR TO INSTALLATION FOR PROPER AESTHECTIC AND FUNCTIONAL USE.
6. ALL SOIL PREPARATION OF PLANTING AREAS TO BE DONE BY LANDSCAPE CONTRACTOR.
7. LANDSCAPE CONTRACTOR TO NOTIFY ARCHITECT IMMEDIATELY OF ANY FOREIGN SUBSTANCE THAT MAY BE DAMAGING TO PLANT MATERIAL, PRIOR TO PLANTING.
8. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH OTHER WORK FOR PROPER PLACEMENT OF PLANT MATERIALS AND LANDSCAPE WORK.
9. REFER TO PLANTING DETAILS AND LANDSCAPE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

LANDSCAPE CONTRACTOR SHALL PROVIDE SKETCH DRAWING OF PROPOSED LAYOUT OF LANDSCAPE PLANTINGS TO ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO PLANTING. LANDSCAPE CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO PROPOSED LAYOUT AS REQUESTED. LANDSCAPE DESIGN SHALL BE BASED ON THE FOLLOWING LIST OF REQUIRED PLANTS.

LAWNS
ENTIRE PROPERTY INCLUDING AREAS BETWEEN FRONT PROPERTY LINE TO CURB LINE OF TURNOCK STREET AND REAR PROPERTY LINE TO ALLEY TO BE GRASS SEEDED AS PER SPECIFICATIONS. AREAS OF EXISTING LAWN IN GOOD CONDITION MAY BE RENOVATED TO BLEND WITH NEW LAWNS.

LANDSCAPING
SHADE TREES:
- HOMESTEAD ELM - 3" MIN. CALIPER
- RED SUNSET MAPLE - 3" MIN. CALIPER
- LEGACY SUGAR MAPLE - 3" MIN. CALIPER
- SKYLINE HONEYLOCUST - 3" MIN. CALIPER

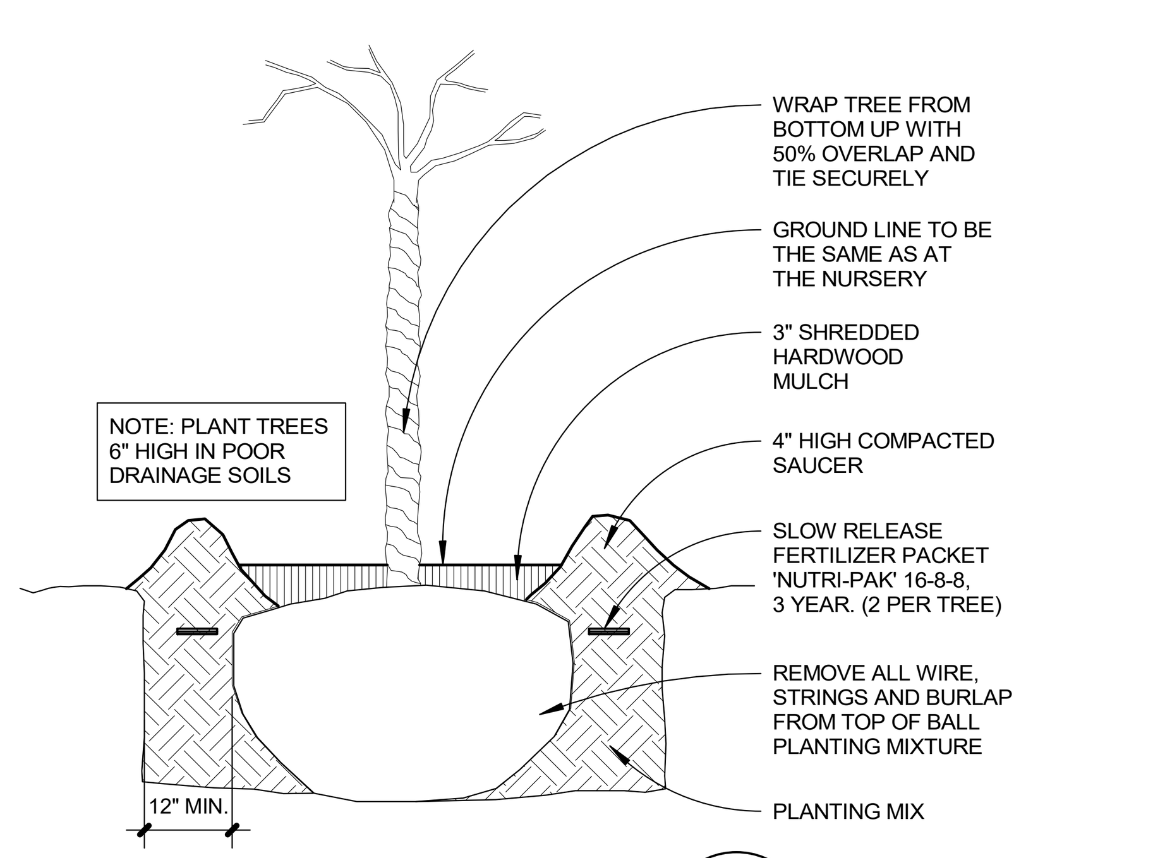
ORNAMENTAL TREES: PROVIDE TWO (2) ORNAMENTAL TREES OF ANY ONE OR TWO OF THE FOLLOWING VARIETIES, TO BE LOCATED IN THE FRONT AND/OR SIDE YARDS.
- AUTUMN BRILLIANCE SERVICEBERRY - MULTI-STEM, 10' MIN. HEIGHT
- SUGAR TYME CRABAPPLE - 2" MIN. CALIPER
- HARVEST GOLD CRABAPPLE - 2" MIN. CALIPER

SITE PREPARATION / CLEARING

1. SITE PREPARATION / CLEARING WORK INCLUDES, BUT NOT LIMITED TO: REMOVAL OF MISC. IMPROVEMENTS, VEGETATION, REMOVAL OF SHRUBS AND TREES AND STUMPS WITHIN ENTIRE PROPERTY LIMITS EXCEPT FOR THOSE TREES NOTED TO REMAIN.
2. TRAFFIC: CONDUCT SITE CLEARING OPERATIONS TO ENSURE MINIMUM INTERERENCE WITH ROADS, STREETS, WALKS AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS OR WALKS WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISIDICTION.
3. PROTECT IMPROVEMENTS ON OWNER'S PROPERTY AND ADJACENT PROPERTY. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES INVOLVED.
4. CONTRACTOR SHALL REMOVE ALL VEGETATION, SHRUBS, TREES, TREE STUMPS WITHIN PROPERTY LIMTITS. BACKFILL EXCAVATIONS TO SUBGRADE ELEVATIONS WTIH "SATISFACTORY SOILS" IN MAX. 12" LIFTS. COMPACT EACH LIFT. SATISFACTORY SOILS ARE DEFINED AS THOSE COMPLYING WITH ASTM C2487 SOIL CLASSIFICATION GROUPD GW, GP, GM,SM, SW AND SP. (SAND AND GRAVEL SOIL TYPES).
5. STRIP TOPSOIL UNDER ALL NEW CONSTRUCTION AREAS TO WHATEVER DEPTHS ENCOUNTERED, IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER OBJECTIONABLE MATERIAL. REMOVE HEAVY GROWTH OF GRASS AND VEGETION BEFORE STRIPPING. WHERE TREES ARE TO BE LEFT STANDING, STOP TOPSOIL STRIPPING WITHIN THE DRIPLINE TO PREVENT ROOT DAMAGE. CONSTRUCT STOCKPILES TO FREE DRAIN SURFACE WATER.
6. REMOVE WASTE MATERAILS, EXCESS SOILS AND TREE STUMPS FROM OWNER'S PROPERTY AND DISPOSE OFF-SITE IN A LEGAL MANNER. BURNING OR BURIAL OF MATERIALS, DEBRIS, ETC. IS NOT PERMITTED ON OWNER'S PROPERTY.

SITEWORK NOTES

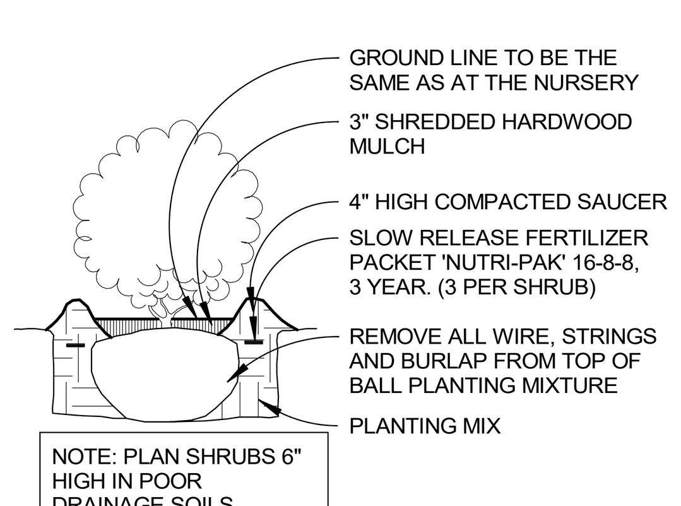
1. ALL WORK WITHIN RIGHT-OF-WAYS TO BE INACCORDANCE WITH CITY OF SOUTH BEND STANDARDS AND REQUIREMENTS.
2. CONTRACTOR IS OBLIGATED TO FIELD VERIFY DIMENSIONS AND LAYOUT IN THE FIELD PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS.
3. CONTRACTOR IS RESPONSIBLE TO ASSURE ALL ELEMENTS OF CONSTRUCTION ARE KEPT WITHIN PROPERTY LIMITS.
4. REPAIR AND/OR REPLACE EXISTING STRUCTURES, PAVEMENTS OR IMPROVEMENTS, ON-SITE OR OFF-SITE, DAMAGED BY CONSTRUCTION ACTIVITIES.
5. EXISTING SITE UTILITY INFORMATION SHOWN ON SURVEY MAY BE INCOMPLETE. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES FOR FIELD LOCATION AND VERIFICATION OF ON-SITE UTILITIES PRIOR TO CONSTRUCTION WORK. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS WITH NEW CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL SITE CONDITIONS PRIOR TO THE START OF WORK.
7. ALL EXCAVATIONS TO BE KEPT WELL DRAINED AT ALL TIMES. CONTRACTOR TO EMPLOY TEMPORARY STORM DRAINAGE AND DEWATERING METHODS AS NECESSARY.
8. CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES TO STOP ANY EROSION/RUNOFF OF SEDIMENT OR DEBRIS LEAVING THE SITE. CONTRACTOR IS RESPONSIBLE FOR ASSURING COMPLIANCE WITH ALL LOCAL AND STATE REQUIREMENTS FOR EROSION CONTROL.
9. SITE SHALL BE GRADED TO PROVIDE SMOOTH CONTOURS AND POSITIVE DRAINAGE. DO NOT ALLOW FOR PONDING OF WATER. PROVIDE SMOOTH TRANSITION WITH EXISTING GRADES.
10. NEW UTILITIES SERVICES SHALL BE INSTALLED UNDERGROUND.
11. WORK IN PUBLIC R.O.W. (STREETS AND ALLEYS) BY OTHERS.
12. EXTERIOR CONCRETE: ALL EXTERIOR CONCRETE FOR WALKS, STEP, PADS AND DRIVEWAYS SHALL BE: 4,000 PSI WITH LIMESTONE AGGREGATE.



TREE DETAIL

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

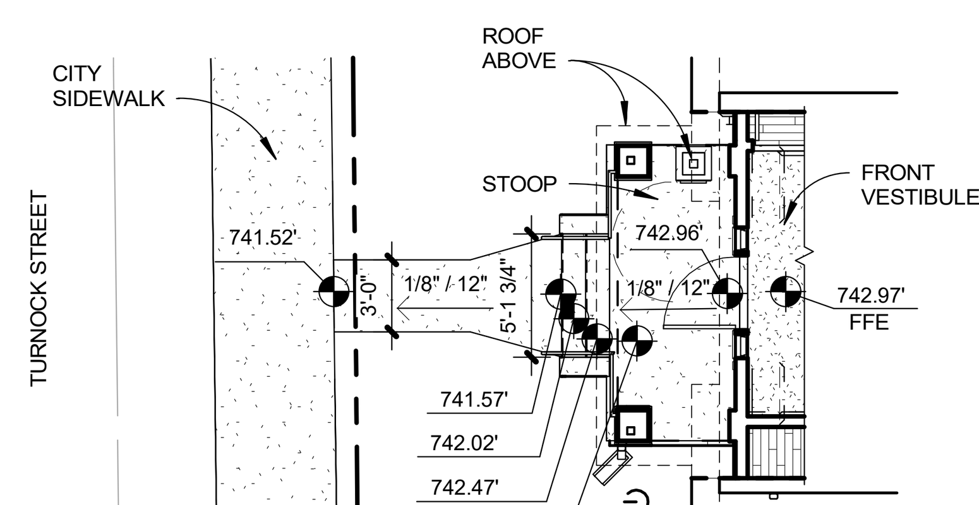
1 / G1.1



SHRUB DETAIL

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

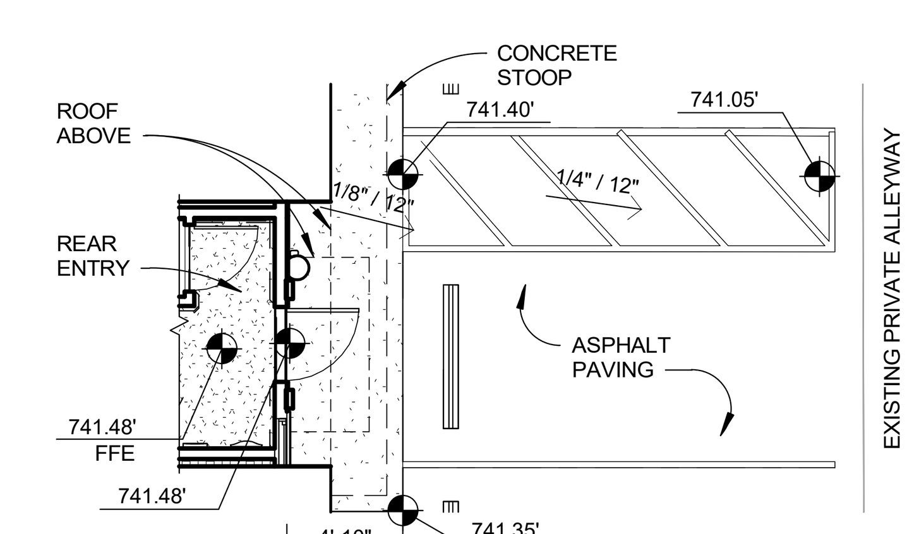
2 / G1.1



NORTH

FRONT ENTRY PLAN

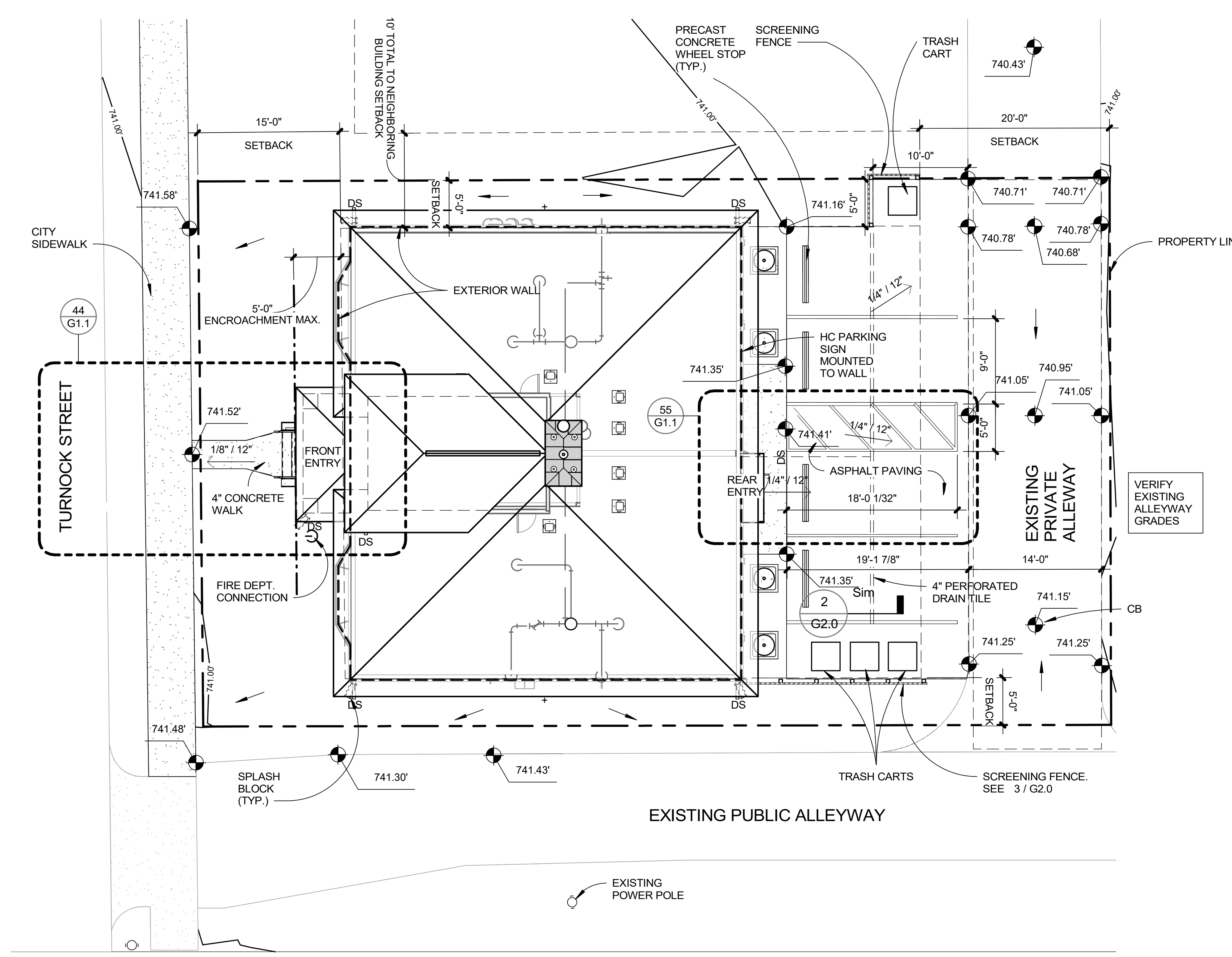
SCALE: 1/8" = 1'-0"



NORTH

REAR ENTRY PLAN

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



NORTH

SITE PLAN

SCALE: 1" = 10'-0"

GENERAL INFORMATION

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMIE REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
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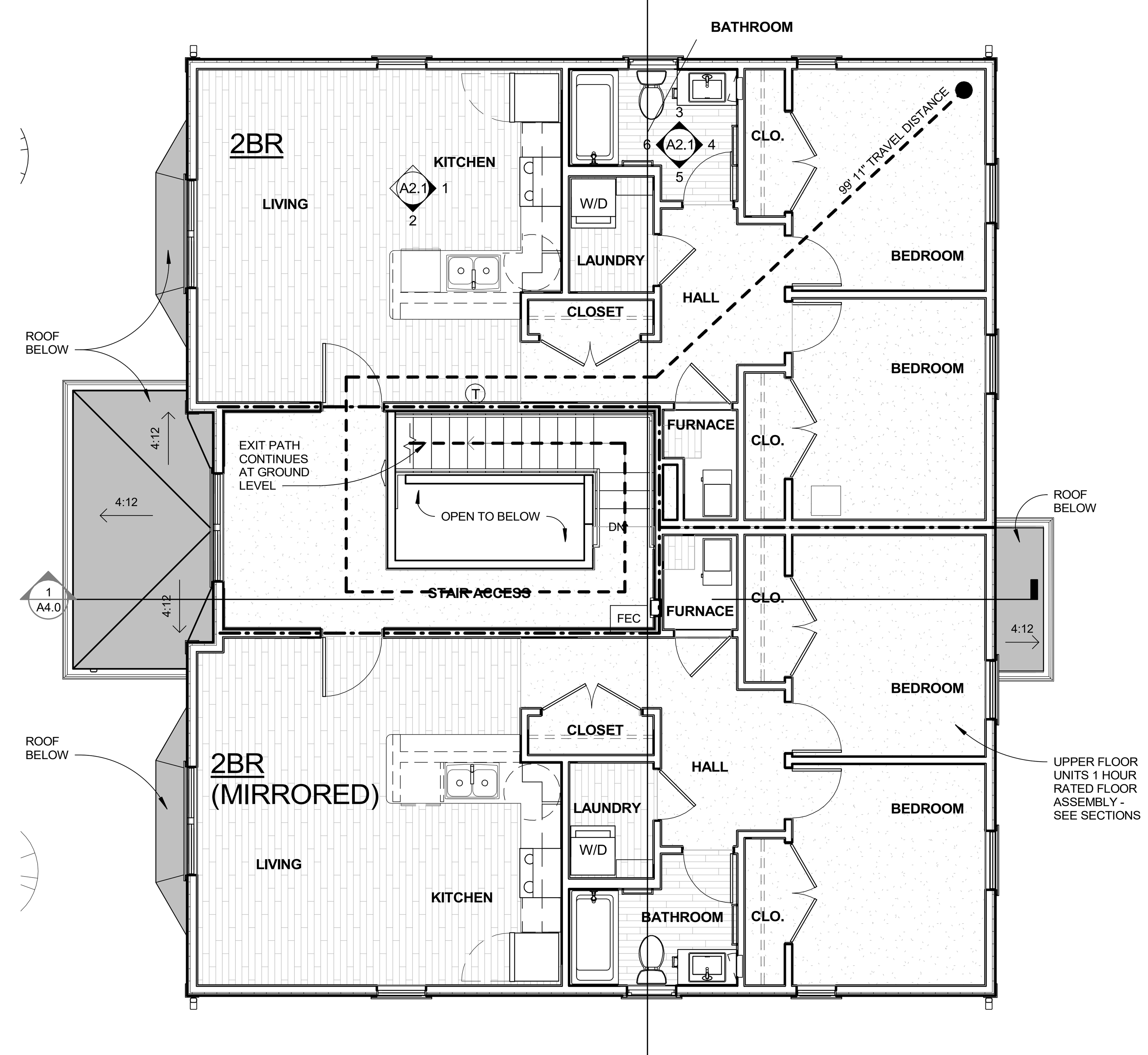
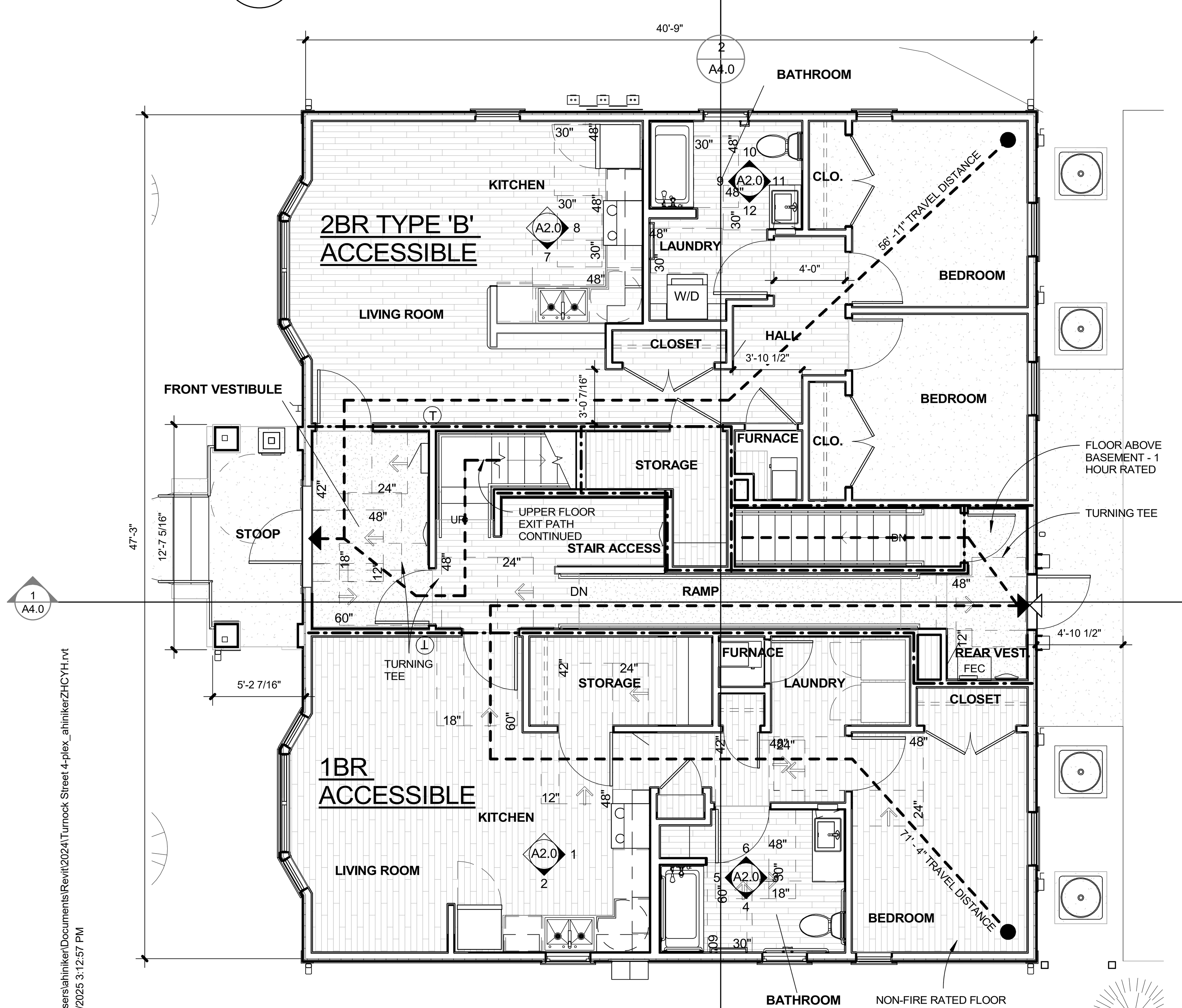


NORTH **UPPER FLOOR PLAN**
SCALE: 3/16" = 1'-0"



NORTH **GROUND FLOOR PLAN**
SCALE: 3/16" = 1'-0"

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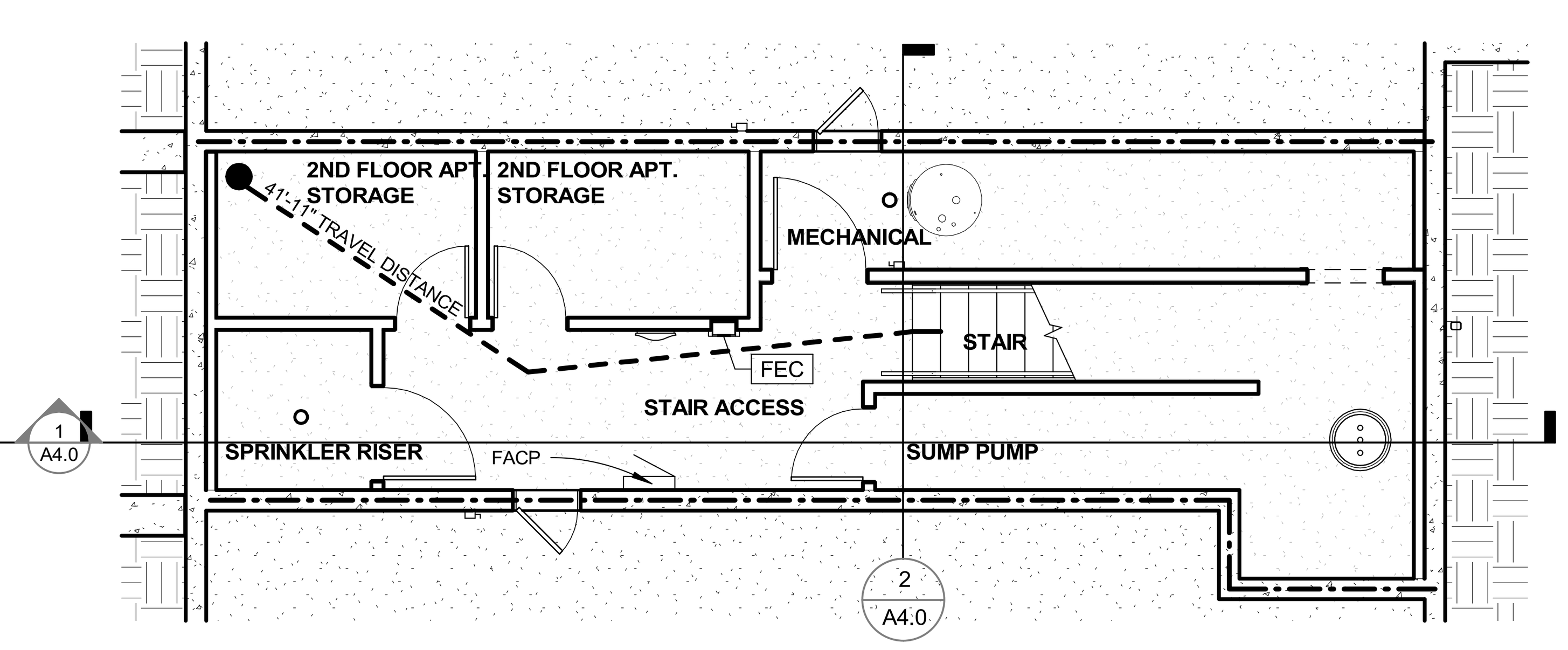


NORTH **BASEMENT FLOOR PLAN**
SCALE: 3/16" = 1'-0"

ZONING SUMMARY

SOUTH BEND ZONING ORDINANCE (SBZO)
URBAN NEIGHBORHOOD 2 (U2) SECTION 21-03.04
NORTHEAST NEIGHBORHOOD ZONING OVERLAY (NNZO) SECTION 21-05.02
- REQUIREMENTS ARE U2 UNLESS NOTED AS NNZO.
- PEDESTRIAN-ORIENTED SCALE WITH SIDEWALKS AND REGULARLY SPACED STREET TREES.
- HIGH-QUALITY DESIGN THAT PRESERVES AND ENHANCES THE CHARACTER OF A TRADITIONAL NEIGHBORHOOD (NNZO).

BUILDING PLACEMENT
- LOT: MIN. 15' WIDE X 60' DEEP. MAX. 70' WIDE (NNZO).
- RESIDENTIAL SETBACKS:
  - FRONT 15' - 25'
  - CORNER 10' - 25'
  - SIDE 5' - NO MAX.
  - REAR 20' - NO MAX.
- FAÇADE WITHIN SETBACK ZONE: FRONT 65% MIN., CORNER 50% MIN.
- BUILDING COVERAGE: 60% MAX.
- ONE APARTMENT HOUSE PER LOT.

ACCESS & PARKING COMPLY WITH 21.07, SBZO
- SIDEWALK: AN ADA-COMPLIANT WALKWAY SHALL CONNECT THE SIDEWALK OR DRIVEWAY TO THE MAIN ENTRANCE.
- VEHICLE PARKING:
  - OFF-STREET PARKING AREAS ARE NOT REQUIRED.
  - SHARED DRIVEWAYS BETWEEN ABUTTING PROPERTIES ARE ENCOURAGED PROVIDED THAT AN ACCESS EASEMENT EXISTS BETWEEN ALL PROPERTY OWNERS.
  - SURFACE: HARD SURFACED WITH ASPHALT, CONCRETE, PERVIOUS PAVEMENT, PAVERS OR OTHER MATERIAL TO PROVIDE A DURABLE AND DUST-FREE SURFACE.
  - OFF-STREET PARKING ACCESS FROM ALLEY OR SECONDARY STREET (NNZO).
- BICYCLE PARKING (21-07.02, SBZO):
  - NUMBER OF SPACES REQUIRED: 1 PER 10 DWELLING UNITS. 4 DWELLING UNITS < 0.5 SPACES, SO REQUIREMENT IS 0 SPACES.
    - PROVIDED: 4 SPACES
  - WITHIN 100' OF, AND CLEARLY VISIBLE FROM, THE MAIN ENTRANCE. ON SITE, OR WITHIN THE RIGHT OF WAY WITH APPROVAL.
  - SPACE: HARD SURFACED WITH ASPHALT, CONCRETE, PERVIOUS PAVEMENT, PAVERS, OR OTHER DURABLE, DUST-FREE SURFACE. MIN. 6' X 2'.
  - RACK: SECURELY ANCHORED. ABLE TO SUPPORT THE BICYCLE FRAME IN AT LEAST TWO PLACES. ALLOWS LOCKING OF THE FRAME AND AT LEAST ONE WHEEL WITH A U-LOCK.

BUILDING FORM
- HEIGHT MAX.: 35' AND 2.5 STORIES.
- WIDTH MAX: 48'
- PRIMARY FAÇADE IS ORIENTED TO A FRONT LINE.

BUILDING FRONTAGE TYPES
- THE MAIN BUILDING ENTRANCE IS LOCATED ON THE FRONT FAÇADE.
- STOOP:
  - ROOFED OR OPEN.
  - MIN. 4' WIDE X 4' DEEP.
  - RAISED ABOVE SIDEWALK 18" MIN., AND DIRECTLY CONNECTED TO SIDEWALK, WALKWAY, OR DRIVEWAY.
  - MUST BE UNENCLOSED/OPEN ON THREE SIDES TO ENCROACH INTO THE FRONT OR CORNER SETBACK.
  - ***COVER A MINIMUM 30% OF THE PRIMARY HOUSE FORM (NNZO).***

ENCROACHMENTS (21-08.03, SBZO)
- BUILDING COMPONENTS SHALL BE AT LEAST 18" FROM ANY LOT LINE.
- ALLOWED ENCROACHMENTS:

ALLOWED ENCROACHMENTS	FRONT	CENTER	SIDE	REAR
ARCHITECTURAL FEATURES	3'	3'	3'	3'
BUILDING FRONTAGE TYPE	5'	5'	0'	0'
BAY WINDOW (<10' WIDE)	3'	3'	3'	3'
PATIOS & DECKS (UNDER 30')	8'	8'	ALLOWED	ALLOWED

BUILDING STANDARDS
- FAÇADE TRANSPARENCY FRONT & CORNER 15% MIN. (SEE CALCULATIONS ON SHEET A3.0 BUILDING ELEVATIONS):
  - GROUND FLOOR: MAX. TRANSPARENCY 75% (NNZO) MEASURED BETWEEN 2' AND 8' ABOVE THE FINISHED GROUND FLOOR LEVEL.
  - UPPER FLOOR: MAX. TRANSPARENCY 40% (NNZO) MEASURED FROM THE SURFACE OF THAT FLOOR TO THE [BOTTOM] SURFACE OF THE ROOF.
- DOOR AND WINDOW SHAPES PRIMARILY RECTANGULAR (ORIENTED VERTICALLY), OR SQUARE. HORIZONTALLY ORIENTED WINDOWS WITH VERTICAL DIVISIONS MAY BE USED WHEN CONSISTENT WITH THE BUILDING'S ARCHITECTURAL STYLE AND CHARACTER. ROUND, HEXAGON, AND OCTAGONAL SHAPED WINDOWS SHALL ONLY BE USED AS ACCENTS. (NNZO)
- PARAPETS ABOVE 4' IN HEIGHT ABOVE THE ROOF LINE SHALL BE OF A UNIFORM HEIGHT ALL THE WAY AROUND THE ROOF (NNZO).

BUILDING MATERIALS:
- NO BUILDING MATERIAL RESTRICTIONS WITHIN THE U2 DISTRICT. MUST COMPLY WITH 21-08.01, SBZO.
- SLOPED ROOFS ARE CLAD IN ASPHALT SHINGLES (NNZO).
- BRIGHT COLORS USED ONLY FOR SUBTLE TRIM ACCENTS, UP TO 10% OF THE FAÇADE AREA (NNZO).
- WINDOW- OR WALL-MOUNTED A/C UNITS SHALL NOT FACE A STREET, OPEN SPACE, OR WALKWAY (NNZO).
- SECURITY GATES: ONLY ON FRONT OR CORNER FACADES IF AT LEAST 50% TRANSPARENT AND LOCATED WHOLLY BEHIND A WINDOW OR DOOR (NNZO).
- NO RESIDENTIAL FACADES WITH CINDER/CONCRETE BLOCK, METAL, PLYWOOD, AND UNFINISHED PRECAST OR POURED-IN-PLACE CONCRETE (NNZO).
- CONCRETE AND CONCRETE MASONRY ONLY PERMITTED FOR BASEMENT FOUNDATION WALLS (NNZO).

BUILDING TYPE
- APARTMENT HOUSE TYPE (21-08.02(I), SBZO): CONTAINS 3-4 UNITS. DESIGNED TO LOOK LIKE A LARGE FAMILY HOME, SCALED FOR A SINGLE-FAMILY NEIGHBORHOOD.
- TYPE C) APARTMENT HOUSE OR STACKED FLATS (NNZO):
  - ROOF: GABLED, HIPPED, OR FLAT.
  - MAIN ENTRANCE: PROMINENTLY LOCATED ON THE FRONT FAÇADE

SITE DEVELOPMENT
- ACCESSORY STRUCTURES COMPLY WITH 21-06.02, SBZO.
- FENCE/FREESTANDING WALL MAX HEIGHT:
  - FRONT & CORNER 3', SIDE & REAR 6'
  - FENCES GREATER THAN 5' IN HEIGHT SHALL CONSIST OF A DECORATIVE ELEMENT THAT IS AT LEAST 50% OPEN (NNZO).
  - CHAIN-LINK FENCING IS PROHIBITED (NNZO).
  - FOR ATTACHED DWELLING UNITS, FRONT YARD FENCING IS OF A SINGLE, UNIFIED DESIGN FOR ALL UNITS WITHIN A PROJECT (NNZO).
  - WALLS SHALL BE CONSISTENT WITH THE BUILDING'S ARCHITECTURAL STYLE AND CHARACTER (NNZO).
- TRASH CONTAINERS WILL NOT BE STORED IN AN ESTABLISHED FRONT OR CORNER YARD (NNZO).

LANDSCAPE
- STREETSCAPE TREES REQUIRED: 1 SHADE TREE PER EACH FULL 30' OF STREET FRONTAGE IN THE TREE LAWN (BETWEEN SIDEWALK AND STREET), EVENLY SPACED.
- FOUNDATION LANDSCAPE IS NOT REQUIRED FOR RESIDENTIAL BUILDINGS WITH FOUR OR FEWER UNITS.
- PARKING LOT SCREENING (4 OR MORE SPACES): PARKING VISIBLE FROM A SIDE/REAR LOT LINE ABUTTING A S1, U1, OR U2 DISTRICT IS SCREENED BY A TYPE 1 OR TYPE 2 BUFFER COMPLYING WITH 21-09.01(N), SBZO.

SIGNS
- RESIDENTIAL IS ALLOWED 1 BUILDING OR FREESTANDING SIGN PER STREET FRONTAGE; UP TO 2 SQUARE FEET AND 4 FEET IN HEIGHT. COMPLIES WITH 21-10, SBZO.
- FREESTANDING SIGNS ARE LOCATED AT LEAST 5' AWAY FROM THE LOT LINE.
- ANY ONE SIGN SHALL NOT EXCEED 100 SF IN SURFACE AREA (NNZO).

UNIT DENSITY FOR U2 RESIDENTIAL
- MAXIMUM DWELLING UNITS: 4
- ACTUAL DWELLING UNITS: 4

FIRE RATED ASSEMBLIES

CORRIDOR - 1 HOUR FIRE RATED
UL ASSEMBLY NO. U311

DEMISING WALL
UL ASSEMBLY NO. U341

FLOOR/CEILING - 1 HOUR FIRE RATED (SEE BUILDING SECTIONS)
UL ASSEMBLY NO. L546

STAIR ENCLOSURE - 1 HOUR FIRE RATED FIRE BARRIER WALLS
UL ASSEMBLY NO. U311

INTERIOR BEARING WALLS:
UL ASSEMBLY NO. U301

EXTERIOR BEARING WALLS:
UL ASSEMBLY NO. U301

LEGEND

— · — · —	DWELLING UNIT AND STAIRWAY FIRE SEPARATION TO BE ONE-HOUR RATED WALL ASSEMBLY. INTERIOR BEARING WALLS TO BE ONE HOUR RATED WALL ASSEMBLY. WITH 20 MINUTE FIRE RATED DOORS.
FE ●	INDICATES FIRE EXTINGUISHER (FE) LOCATION
FEC ▭	INDICATES FIRE EXTINGUISHER (FEC) LOCATION
▲	INDICATES EXIT LOCATIONS OR SITE ACCESSIBLE ENTRANCES OR ACCESS TO SITE AMENITY
△	INDICATES ACCESSIBLE BUILDING ENTRANCE LOCATIONS
- - - - - - - -	HC ACCESSIBLE ROUTE - SEE SITE DRAWINGS FOR MAXIMUM SLOPE AND CROSS SLOPE REQUIREMENTS.
— — — —	EXIT TRAVEL DISTANCE PATH

CODE SUMMARY

DESCRIPTION: THIS PROJECT CONSISTS OF RESIDENTIAL UNITS IN ONE QUADPLEX BUILDING.

APPLICABLE CODES
- 2014 INDIANA BUILDING CODE (2012 INTERNATIONAL BUILDING CODE WITH INDIANA AMENDMENTS)
  ACCESSIBILITY- CHAPTER 11 INDIANA BUILDING CODE -- ICC A117.1 2009
- 2012 INDIANA PLUMBING CODE (2006 INTERNATIONAL PLUMBING CODE WITH INDIANA AMENDMENTS)
- 2009 INDIANA ELECTRICAL CODE (2008 NFPA 70 WITH INDIANA AMENDMENTS)
- 2014 INDIANA MECHANICAL CODE (2012 INTERNATIONAL MECHANICAL CODE WITH INDIANA AMENDMENTS)
- 2014 INDIANA FUEL GAS CODE (2012 INTERNATIONAL FUEL GAS CODE WITH INDIANA AMENDMENTS)
- 2010 INDIANA ENERGY CONSERVATION CODE (ASHRAE 90.1 2007 WITH INDIANA AMENDMENTS)
- 2014 INDIANA FIRE CODE (2012 INTERNATIONAL FIRE CODE WITH INDIANA AMENDMENTS)

USE AND OCCUPANCY GROUP CLASSIFICATION (CHAPTER 3, IBC)
- R-2 RESIDENTIAL GROUP - RESIDENTIAL APARTMENT USE
- ***BASEMENT STORAGE SPACES ARE ACCESSORY USE (LESS THAN 10% OF THE FLOOR AREA OF THE BASEMENT): 92 SF OF STORAGE / 529 SF OF BASEMENT = 17.39%***

GENERAL BUILDING HEIGHTS AND AREAS (CHAPTER 5, IBC)

RESIDENTIAL OCCUPANCY

ALLOWABLE HEIGHT (TABLE NO. 503, IBC): 2 STORIES, 40' - 0"
ACTUAL HEIGHT: 2 STORIES, 30' - 11"

ALLOWABLE AREA PER STORY (TABLE NO. 503, IBC): 7,000 SQ. FT.
AREA MODIFICATIONS: A=(A/t x I/f) 3,433 SQ. FT.
AREA PER STORY: A/a = {A/t + [A/t x I/f] + [A/t x I/s]} 10,433 SQ. FT.

		ALLOWABLE:	ACTUAL:
AREA PER STORY (SECTION 506.4):	1ST:	10,433 SQ. FT.	1,975 SQ. FT.
	2ND:	10,433 SQ. FT.	1,939 SQ. FT.
MAX ALLOWABLE BUILDING AREA: A= (2 x A/a)		20,866 SQ. FT.	3,914 SQ. FT.

CONSTRUCTION TYPE (CHAPTER 6, IBC): TYPE V B

FIRE RESISTANT DESIGN (TABLE 601, 602, AND 1018.1, IBC):

FIRE RESISTANCE OF STRUCTURAL COMPONENTS FOR BUILDING SHALL BE EQUAL TO OR GREATER THAN THOSE USED ON THE TABLE LISTED BELOW.

BUILDING ELEMENT	FIRE RESISTANCE RATING (HOURS)
1. STRUCTURAL FRAME	0
2. BEARING WALLS - EXTERIOR	0 (0 FROM EXTERIOR WHERE X>30' SEPARATION PER TABLE 705.5)
3. BEARING WALLS - INTERIOR	0
4. NON-BEARING WALLS - EXTERIOR	0 (0 FROM EXTERIOR WHERE X>30' SEPARATION PER TABLE 705.5)
5. NON-BEARING WALLS - INTERIOR	0
6. FLOOR CONSTRUCTION	0
7. ROOF CONSTRUCTION	0
8. CORRIDOR WALLS	0.5
9. PARTY WALLS	0.5

REQUIRED FIRE SEPARATION:
- STAIR ENCLOSURES COMPLY WITH 1021, ARE "EXIT ACCESS STAIRWAYS", AND ARE NOT REQUIRED TO BE ENCLOSED (1009.3, EXCEPTION 1, IBC).
- DWELLING UNIT SEPARATIONS IN BUILDINGS OF TYPE V B CONSTRUCTION SHALL HAVE FIRE-RESISTANCE RATINGS OF NOT LESS THAN 0.5 HOURS IN BUILDINGS EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1. (SECTION 708, IBC).
- CORRIDOR WALLS IN OCCUPANCY R HAVE A FIRE RESISTANCE RATING REQUIREMENT OF 0.5 HOURS (TABLE 1017.1), UNLESS CORRIDOR WALLS ARE CLASSIFIED AS INTERIOR BEARING WALLS IN WHICH CASE A FIRE RESISTANCE RATING OF 1 HOUR IS REQUIRED.

EXTERIOR WALL FIRE RATING AND OPENING LIMITATIONS

FIRE SEPARATION DISTANCE 5'-4" (NORTH SIDE) MAX. AREA OF OPENINGS 15% OF ALLOWED, 5.24% OF ACTUAL UNPROTECTED OPENINGS. RE SPRINKLER SYSTEMS PER TABLE 705.8 FIRE RESISTANCE RATING 1 HOUR TO BE FROM INSIDE ONLY PER 705.5.

FIRE PROTECTION SYSTEMS (CHAPTER 9, IBC)

THE ENTIRE BUILDING WILL BE SERVED BY AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13R.

MEANS OF EGRESS REQUIREMENTS (CHAPTER 10, IBC):

OCCUPANT LOAD PER STORY (PER TABLE 1004.1.1, IBC) AND EXITS REQUIRED (PER TABLE 1015.1, IBC) - PER FLOOR

RESIDENTIAL OCCUPANT LOAD FACTOR: 200 GROSS SF PER OCCUPANT
GROSS SF PER UNIT: APPROX. 800
MAX. OCCUPANCY PER UNIT: 4

	EXITS REQ'D. PER UNIT	PROVIDED
BASEMENT 529 SF GROSS AREA / 300 SF MAX. PER OCCUPANT (1 PERSONS)	1	1
FIRST FLOOR TWO RESIDENTIAL UNITS (8 PERSONS)	1	1
SECOND FLOOR TWO RESIDENTIAL UNITS (8 PERSONS)	1	2

R-2 IS PERMITTED ONE MEANS OF EGRESS WITH MAXIMUM OCCUPANT LOAD OF 20 WITH AUTOMATIC SPRINKLER SYSTEM.

STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES (TABLE1021.2(1), IBC):
- MAXIMUM NO. OF DWELLING UNITS: 4 DWELLING UNITS ALLOWED PER STORY; 2 DWELLING UNITS ACTUAL
- MAXIMUM EXIT ACCESS TRAVEL DISTANCE: 125' ALLOWABLE; ***74'-10" ACTUAL***
- EMERGENCY ESCAPE AND RESCUE OPENINGS COMPLYING WITH SECTION 1029 PROVIDED PER TABLE 1021.2 (1) NOTE A.

AREAS OF REFUGE NOT REQUIRED AT EXIT STAIRWAYS IN BUILDINGS EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM (1007.3, EXCEPTION 2, IBC).

PLUMBING OCCUPANT LOAD: MIN. NUMBER OF PLUMBING FACILITIES (TABLE 2902.1, IBC)

RESIDENTIAL	WATER CLOSET:	LAVATORY	TUB OR SHOWER	KITCHEN SINK
REQUIRED	1 PER UNIT	1 PER UNIT	1 PER UNIT	1 PER UNIT
PROVIDED	1 WC	1 LAV	1 TUB OR SHOWER	1 SINK

ACCESSIBILITY (CHAPTER 11, IBC)

ALL GROUND FLOOR OF THE QUADPLEX WILL BE "TYPE B UNITS", DESIGNED TO COMPLY WITH HANDICAPPED ACCESSIBILITY REQUIREMENTS PER ICC A117.1 2009. UNITS WHICH ARE IDENTIFIED AS ACCESSIBLE UNITS WILL EXCEED THE "TYPE B" REQUIREMENTS (1107.6.2 GROUP R-2)

FAIR HOUSING ACT: COMPLIANCE WITH ICC A117.1 2009 TO SERVE AS SAFE HARBOR FOR GROUND FLOOR UNITS AND ACCESSIBLE COMMON AREAS.

HUD SECTION 504: TYPE 1 BR ACCESSIBLE UNITS TO COMPLY WITH UFAS.

MULTILEVEL BUILDING ACCESSIBLE ROUTE NOT REQUIRED TO UPPER FLOOR (1104.4, EXCEPTION 2, IBC).

ACCESSIBILITY FEATURES WITHIN THE ROAD RIGHT OF WAY, INCLUDING CURB RAMPS AT STREET CORNERS, ARE THE RESPONSIBILITY OF THE CITY OF SOUTH BEND.

ENERGY CODE SUMMARY

CLIMATE ZONE: SOUTH BEND, IN CLIMATE ZONE: 5A

BUILDING TYPE: RESIDENTIAL, MORE THAN TWO DWELLING UNITS

APPLICABLE CODE: 2010 INDIANA ENERGY CONSERVATION CODE (ASHRAE 90.1 2007 WITH INDIANA AMENDMENTS)

THERMAL ENVELOPE

BUILDING COMPONENT	REQUIRED RATING (TABLE 5.5-5, RESIDENTIAL)	PROVIDED
ROOF/CEILING:	R-38.0 MIN.	R-38.0
EXTERIOR WALLS:	R-13.0 + R-7.5 C.I. MIN.	R-15.0 + R-6.2 C.I.
WALLS BELOW GRADE:	R-7.5 C.I. MIN.	R-13
FLOORS:	R-30.0 MIN.	N/A
DOORS, OPAQUE, SWINGING:	U-0.500 MAX.	
VERTICAL GLAZING 0%-40% OF WALL, NONMETAL FRAME:	U-0.35 MAX.	
AIR LEAKAGE (5.4.3), NFRC 400:	0.4 CFM/SQ.FT. MAX.	

CODE COMPLIANCE

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

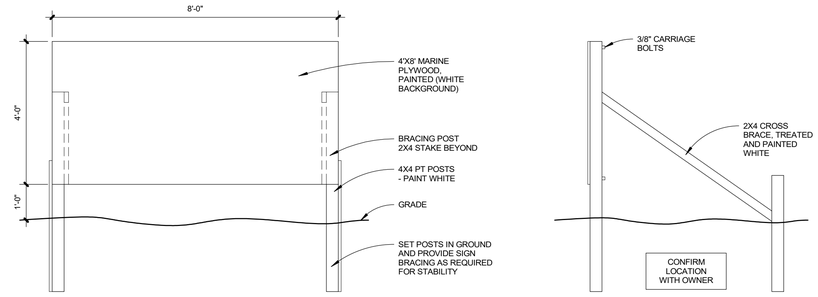
WILLIAM R. LAMIE
REGISTERED
No. AR12100097
STATE OF INDIANA
ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

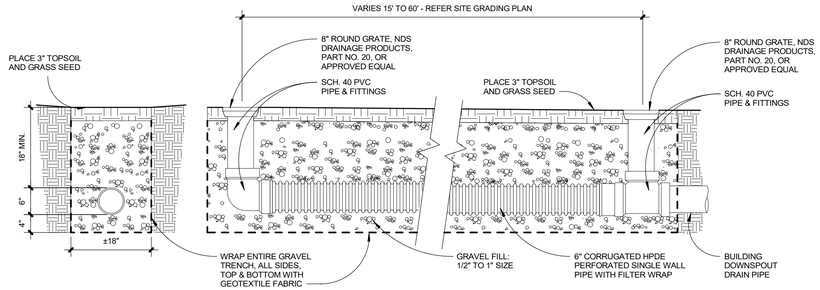
SHEET NO.
G1.2



TEMPORARY CONSTRUCTION SIGN

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

1 G2.0

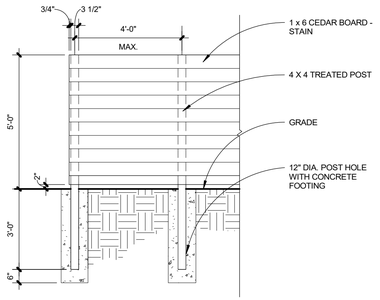


CROSS-SECTION SECTION

DRAINAGE TRENCH DETAIL

SCALE: 3/4" = 1'-0"

2 G2.0



SITE SCREEN WALL SECTION

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

3 G2.0

SCREEN WALL EXAMPLE

SCALE: N.T.S.

4 G2.0

SITE

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMB REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

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TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
G2.0

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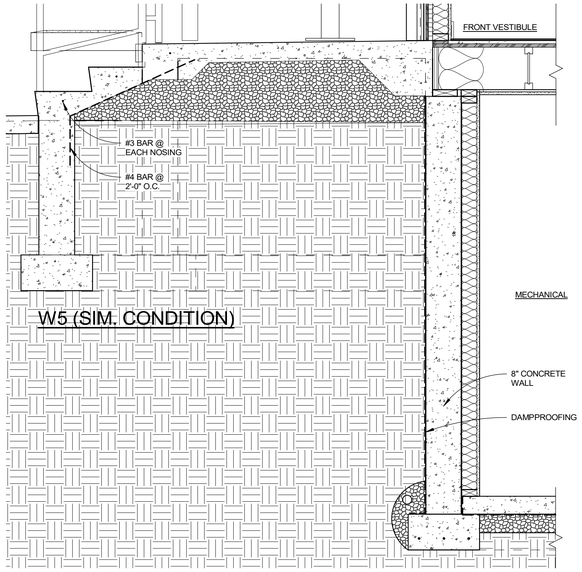
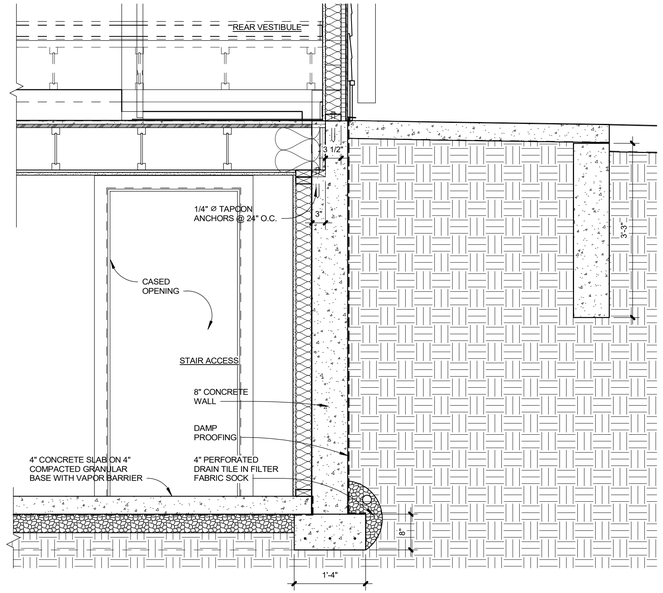
PLOT DATE: 2/27/2025 3:13:50 PM



W5 (SIM. CONDITION)



FOUNDATION SECTION

SCALE: 3/4" = 1'-0"

1 / S1.0

W1

CAST-IN-PLACE CONCRETE

W2

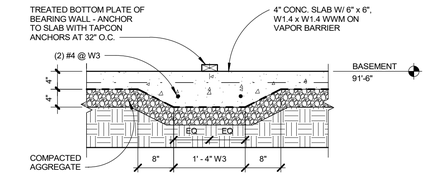
1. CAST-IN-PLACE CONCRETE SHALL BE REGULAR WEIGHT AND SHALL CONFORM TO THE LATEST ACI CODES AND STANDARDS, EXCEPT AS MODIFIED IN THE DESIGN DRAWINGS.
2. PROVIDE CONTROL JOINTS IN ALL INTERIOR AND EXTERIOR SLABS ON GRADE AND IN FOUNDATION WALLS, AS SHOWN ON DESIGN DRAWINGS. TOOL JOINTS WHILE CONCRETE IS STILL GREEN. FLUSH JOINTS CLEAN.
3. REINFORCING BARS: ASTM A-615, GRADE 60: ALL LAP SPLICES SHALL BE 30 BAR DIAMETER UNLESS NOTED OTHERWISE.
   - A) PROVIDE CORNER BARS AT ALL CONCRETE NTERSECTIONS
   - B) DETAIL ALL REINFORCING STEEL PER ACI 318 AND ACI 315, CRSI "MANUAL OF STANDARD PRACTICE".
4. WELDED WIRE FABRIC: ASTM A-185
5. PORTLAND CEMENT: ASTM C-150 TYPE 1 CEMENT
6. FINE AGGREGATE: ASTM C-33, NATURAL, HARD, CLEAN SAND
7. COARSE AGGREGATE: ASTM C-33
8. AIR-ENTRAINED ADMIXTURE: ASTM C-260
9. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT AGE 28 DAYS SHALL BE:

FOUNDATIONS - FOOTINGS	3000PSI
FOUNDATION WALLS AND PIERS	4000PSI
SLABS ON GRADE	4000PSI
EXTERIOR FLATWORK	4000PSI
ALL OTHER CONCRETE	4000PSI

10. FINISH:
    - A) FLATWORK: TROWEL FINISH.
    - B) STOOPS AND CRAWL SPACE MUD SLAB: BROOM FINISH
11. SEALER: WATER-BORNE SEALER "MASTERKURE CC 1315WB" AS MANUFACTURED BY BASF, INC. OR EQUAL. APPLY TO INTERIOR / EXTERIOR FLATWORK AS PER MANUFACTURERS RECOMMENDATIONS.

LEGEND

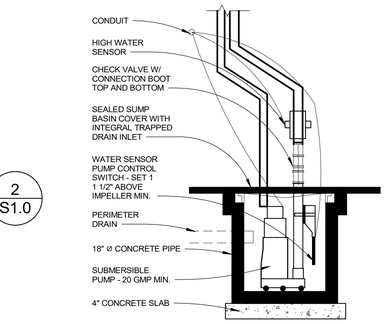
W1	16" WIDE WALL FOOTING WITH PLAIN CONCRETE WALL - SEE DETAIL 7 / S1.0 (HEIGHT VARIES).
W2	16" WIDE WALL FOOTING, WITH PLAIN CONCRETE WALL, W/ REVERSE BRICK LEDGE - SEE DETAIL 1 / S1.0
W3	1'-4" WIDE THICKENED SLAB - SEE DETAIL 2 / S1.0
W4	TURN-DOWN STOOP FOOTING - SEE DETAIL 3 / S1.0
W5	16" WIDE WALL FOOTING, STOOP - REFER TO DETAIL 4 / S1.0
CJ	1 1/4" x 1/8" CONTROL JOINT
F1	2'-4" SQ X 8" ISOLATED FOOTING
F2 + F3	SEE DETAILS 5 / S1.1



THICKENED SLAB DETAIL (W3)

SCALE: 3/4" = 1'-0"

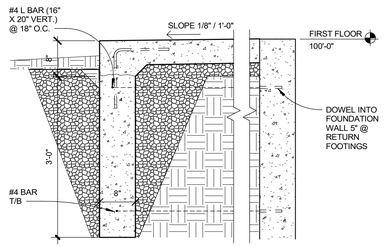
2 / S1.0



SUMP PUMP

SCALE: N.T.S.

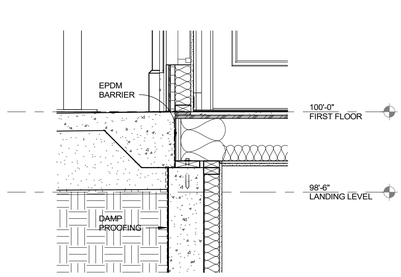
5 / S1.0



FOOTING DETAIL (W4)

SCALE: 3/4" = 1'-0"

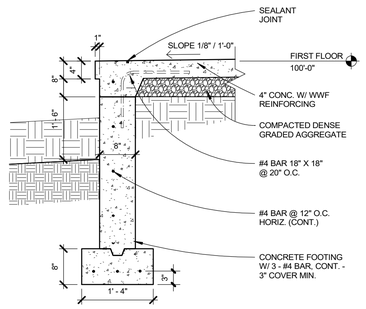
3 / S1.0



FRONT ENTRY WALL DETAIL (W1)

SCALE: 3/4" = 1'-0"

9 / S1.0

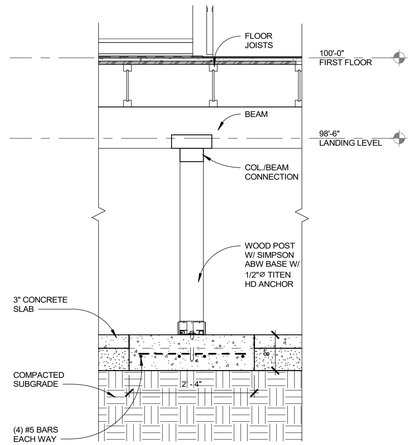


FOOTING DETAIL (W5)

SCALE: 3/4" = 1'-0"

SIMILAR AT STAIR

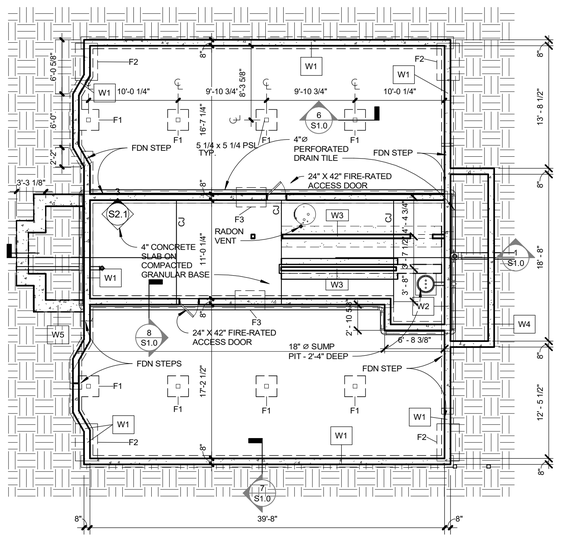
4 / S1.0



FOOTING DETAIL (F1)

SCALE: 3/4" = 1'-0"

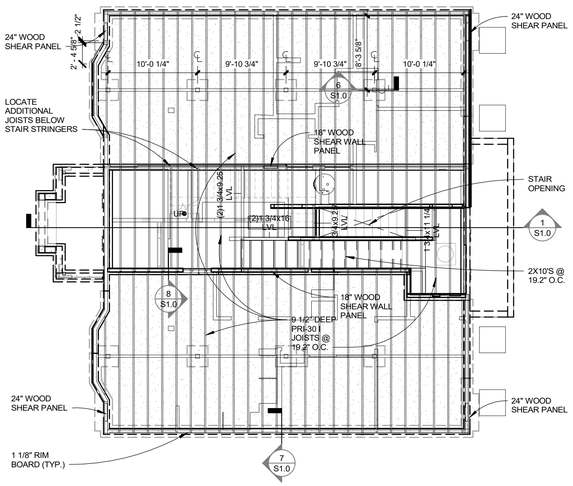
6 / S1.0



FOUNDATION PLAN

NORTH

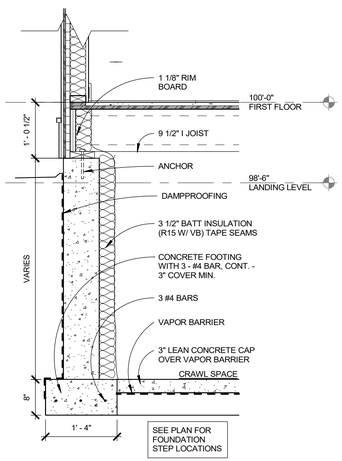
SCALE: 1/8" = 1'-0"



GROUND FLOOR FRAMING PLAN

NORTH

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

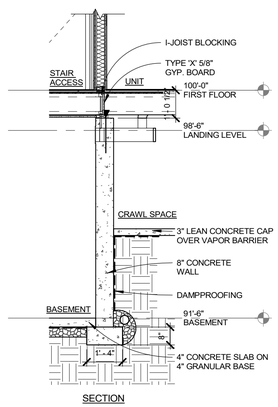


FOOTING DETAIL (W1)

SCALE: 3/4" = 1'-0"

W1

7 / S1.0



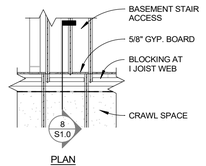
FOUNDATION INTERIOR WALL

SECTION

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

W1

8 / S1.0



PLAN

QUADPLEX BUILDING

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMB REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
S1.0

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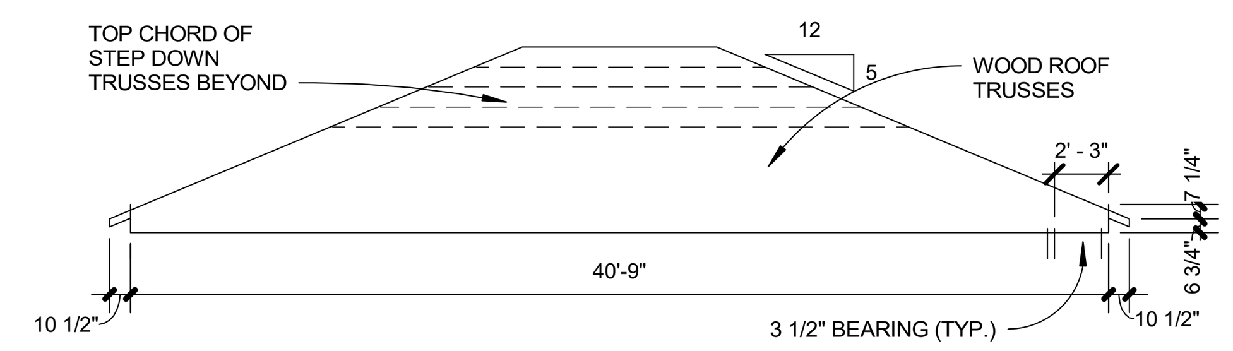
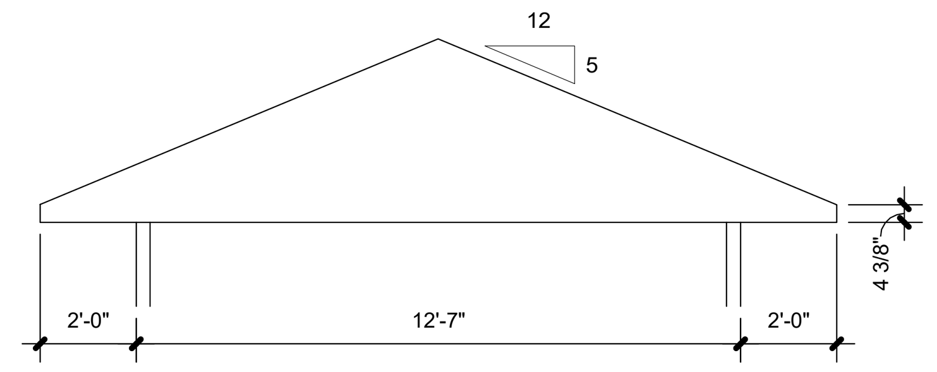
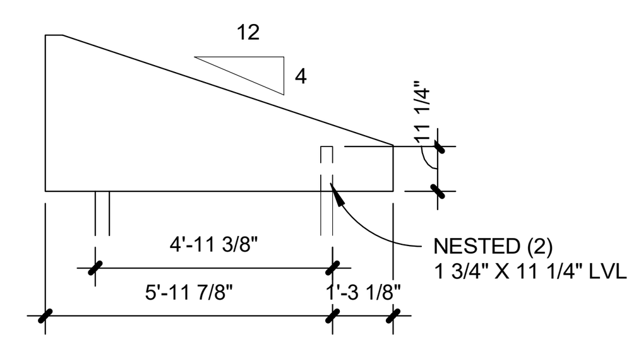


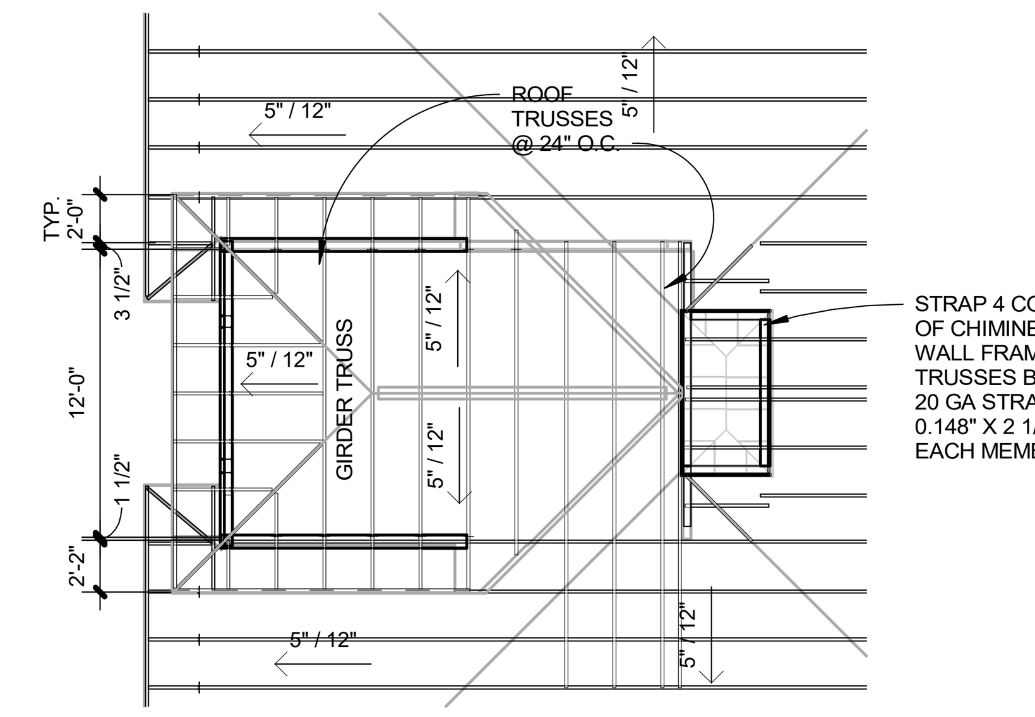
FLOOR & ROOF TRUSSES
1 / S1.1
SCALE: 1/8" = 1'-0"



ROOF TRUSSES @ DORMER
2 / S1.1
SCALE: 1/4" = 1'-0"



ROOF TRUSSES @ ENTRY CANOPY
6 / S1.1
SCALE: 1/4" = 1'-0"



DORMER FRAMING PLAN
SCALE: 1/8" = 1'-0"

STRUCTURAL NOTES

1. REFER TO SPECIFICATIONS FOR ADDITIONAL WOOD FRAMING DESIGN VALUES.

2. ROOF AND FLOOR TRUSSES SHALL BE ENGINEERED & DESIGNED BY TRUSS MANUFACTURER. SUBMIT CERTIFIED SHOP & ERECTION DRAWINGS FOR ARCHITECT'S REVIEW. DESIGN LOADS ARE AS FOLLOWS:

ROOF:		
TOP CHORD LIVE LOAD:	--	20 PSF
TOP CHORD DEAD LOAD:	--	10 PSF, 13 PSF @ DOUBLE STACK TRUSSES
BOTTOM CHORD DEAD LOAD:	--	5 PSF
FLOOR:		
LIVE LOADS		
APARTMENTS:	--	40 PSF
CORRIDORS & STAIRS:	--	100 PSF
DEAD LOADS:		
TOP CHORD:	--	20 PSF
BOTTOM CHORD:	--	5 PSF
NON-BEARING PARTITIONS:	--	15 PSF
DESIGN SNOW DESIGN CRITERIA ARE AS FOLLOWS:		
GROUND SNOW LOAD:	--	41 PSF
FLAT ROOF SNOW LOAD (Pf):	--	30 PSF (ROUNDED UP FROM 28.41)
SNOW DRIFT LOAD (AT ONE STORY ROOF)		25 PSF - 0 PSF
SNOW EXPOSURE	--	1.0
SNOW IMPORTANCE FACTOR	--	1.0
THERMAL COEFFICIENT (Ct.)	--	1.1
DESIGN WIND DESIGN CRITERIA AS FOLLOWS:		
BASIC WIND SPEED -- 115 MPH (3 SEC. GUST)		
WIND EXPOSURE	--	B
INTERNAL PRESSURE COEF.	--	-0.18/+0.18
COMPONENT & CLADDING DESIGN PRESSURE	--	-22.6 PSF WALLS
	--	-26.9 PSF ROOF
	--	-39.8 PSF ROOF CORNERS

ROOF TRUSS SPACING 2'-0" O.C. U.N.O. ON PLANS. SEE WALL SECTIONS & ROOF PLAN FOR REQUIRED GEOMETRY.

ALL REQUIREMENTS FOR BLOCKING, BEARING, BRACING, ETC. SHALL COMPLY WITH CODE AND MFG.'S RECOMMENDATIONS. PROVIDE SOLID BLOCKING BETWEEN FLOOR TRUSSES BLOCKING BETWEEN FLOOR TRUSSES AT SECOND FLOOR BEARING WALLS AND ABOVE GROUND FLOOR BEARING WALLS. SEE WALL SECTIONS.

PROVIDE ALL HANGERS AND ENGINEER ALL HEADERS, GIRDERS, ETC. NOT A PART OF THE WALL SYSTEM.

3. COLUMNS SHALL BE AS FOLLOWS: PROVIDE STUDS UNDER ALL TRUSS GIRDERS, HEADERS, BEAMS AS NOTED ON BEAM HEADER SCHEDULE. NUMBER OF STUDS /COLUMN REFERS TO THE NUMBER OF TRIMMER STUDS.

4. GROUND FLOOR NON-BEARING PARTITIONS SHALL NOT BE ERECTED UNTIL FULL DEAD LOAD HAS BEEN APPLIED TO FLOOR FRAMING. AT THAT TIME INSTALL PARTITIONS TIGHT TO UNDERSIDE OF TRUSSES. CONNECT GROUND FLOOR WALLS TO ROOF OR FLOOR FRAMING WITH SIMPSON STC CLIPS.

5. SEE WALL SECTIONS AND ROOF PLAN FOR DRAFT STOPS.

6. NAIL AND GLUE FLOOR SHEATHING TO FLOOR TRUSSES.

7. FLOOR/CEILING SYSTEM ABOVE THE GROUND FLOOR UNITS AND BETWEEN THE BASEMENT AND THE SPACES ABOVE SHALL PROVIDE A CONTINUOUS ONE HOUR RATED ASSEMBLY.

8. PROVIDE SIMPSON H10S TIE AT ALL ROOF GIRDER TRUSSES WHICH SET ON WALL PLATES. (VS SUPPORTED ON HANGER)

9. PROVIDE SIMPSON HTS STRAP FROM UPPER FLOOR COLUMNS TO GROUND T0 FLOOR COLUMNS.

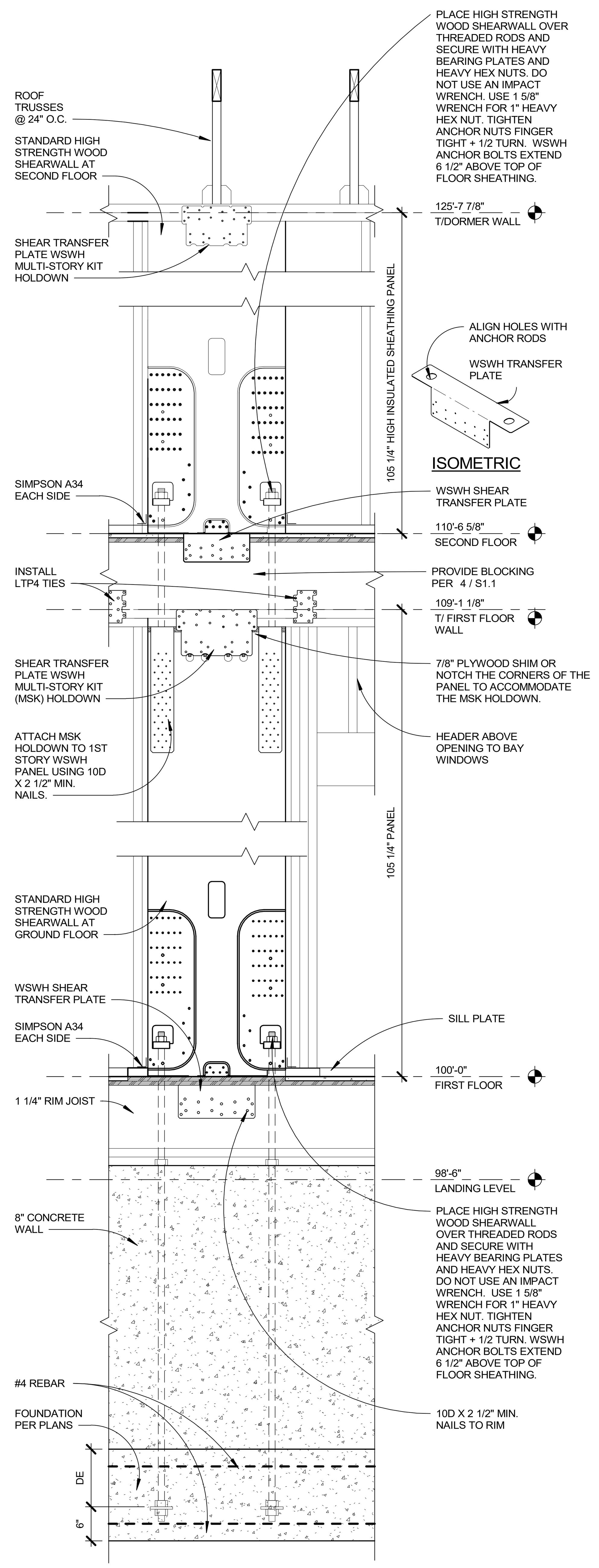
10. WHERE DUCTS FOR HVAC ARE RUN THRU ADJACENT FLOOR TRUSSES, WEB MEMBERS SHALL ALIGN TO ALLOW FOR CLEAR PASSAGE. REFER TO MECHANICAL SHEETS FOR LOCATION AND DUCT SIZES.

11. PROVIDE SUPPORT @ ENDS OF BEAMS AS NOTED ON PLANS - WHERE NOT NOTED PROVIDE (2) - 2X4 STUDS MINIMUM.

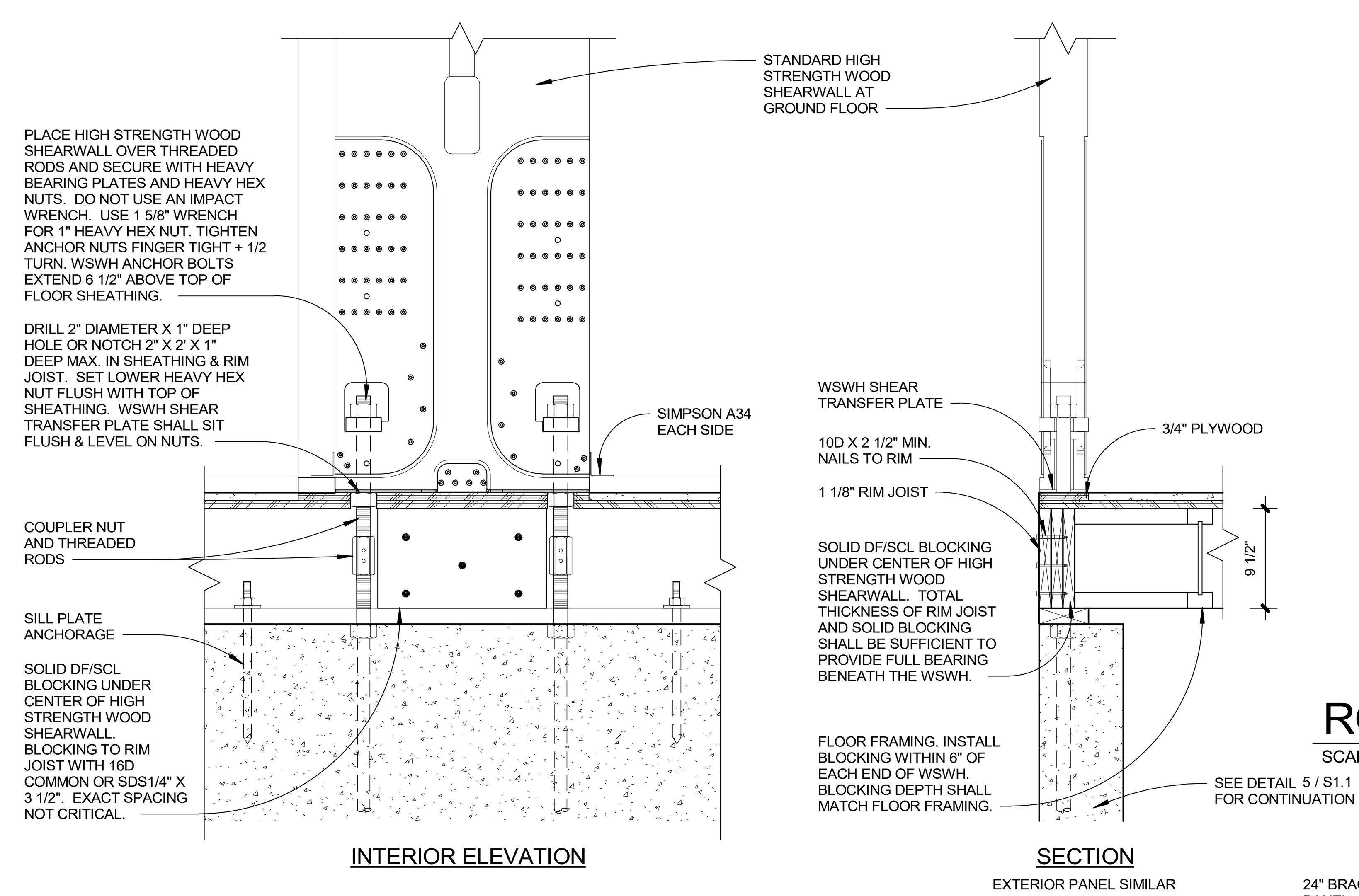
12. ALL WALL FRAMING SHALL BE 16" O.C. EXCEPT INTERIOR NON-BEARING WALLS SHALL BE 24" O.C.

13. SEISMIC DESIGN PARAMETERS ARE AS FOLLOWS:
SEISMIC USE GROUP = I
SEISMIC IMPORTANCE FACTOR = 1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS
S_S = 0.096g
S_1 = 0.057g
SPECTRAL RESPONSE COEFFICIENTS
S_{DS} = 0.102 g
S_{D1} = 0.091 g

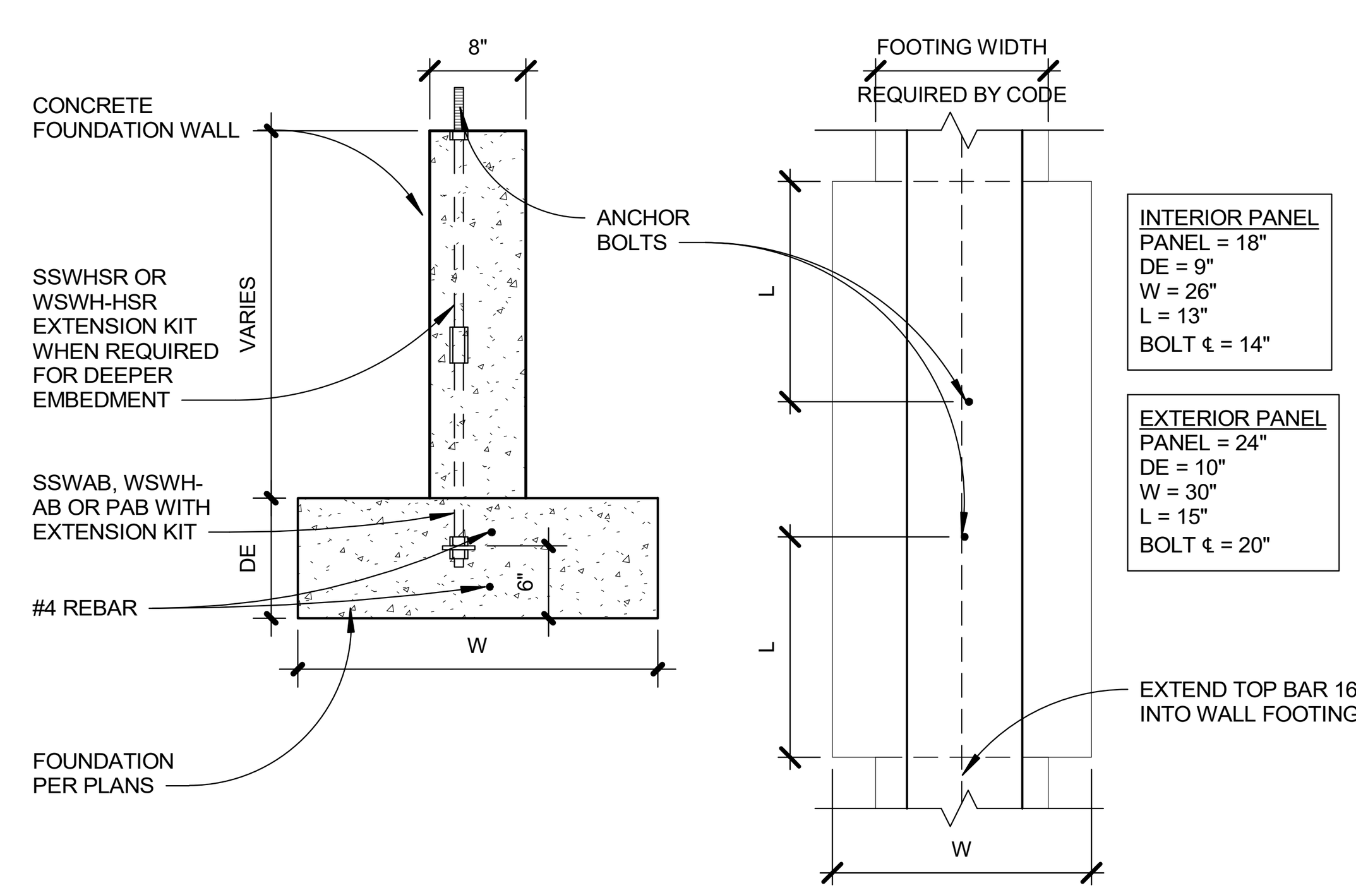
SITE CLASSIFICATION = D
SEISMIC DESIGN CATEGORY = B
BASIC SEISMIC FORCE RESISTING SYSTEM
LIGHT FRAME BEARING WALLS WITH GYPSUM BOARD & ENGINEERED SHEAR PANELS
SEISMIC RESPONSE COEF. (Cs) = 0.051 g
RESPONSE MODIFICATION FACTOR (R) = 2
ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE PROCEDURE



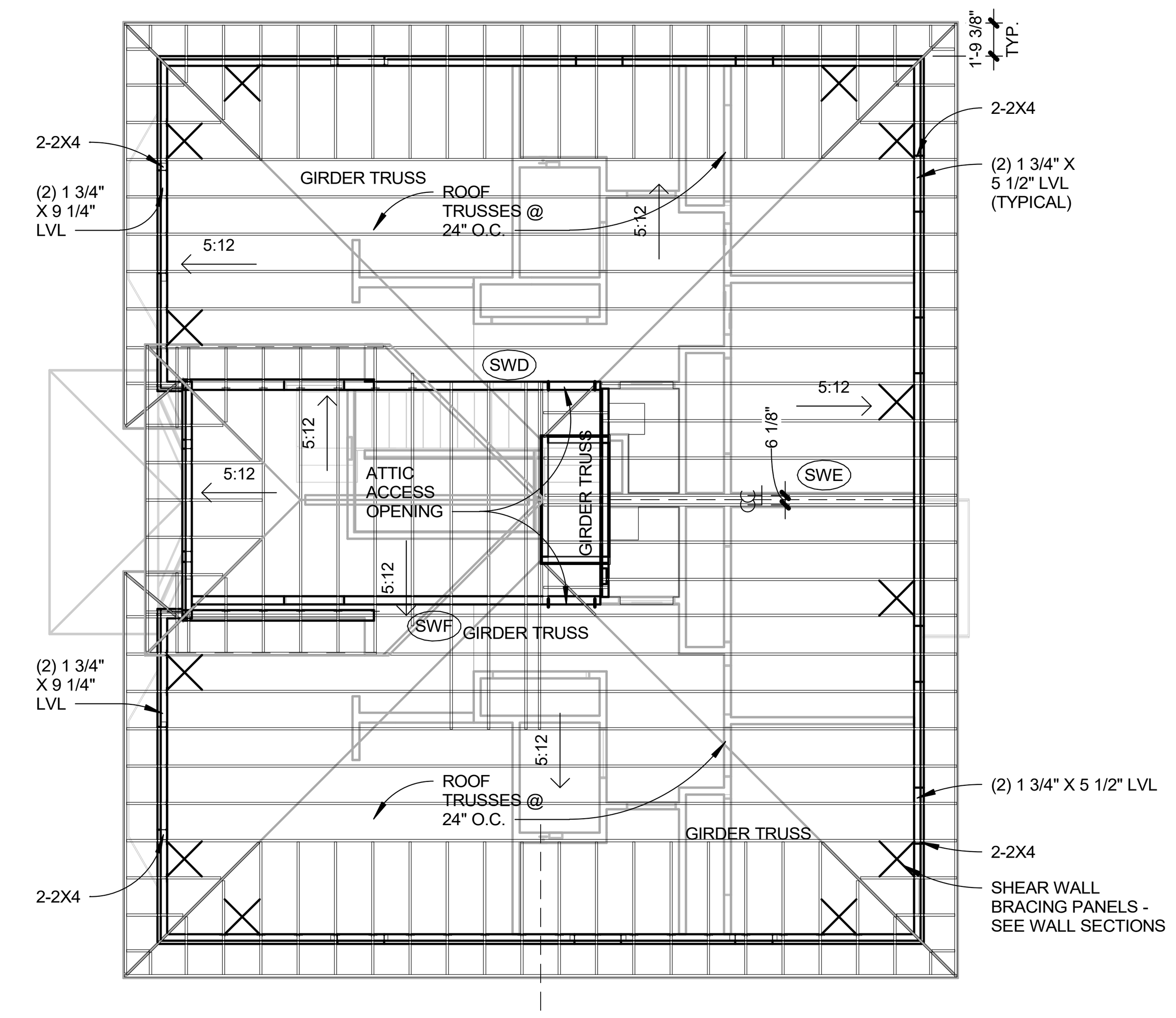
BRACING PANEL (EXTERIOR) ELEVATION
3 / S1.1
SCALE: 3/4" = 1'-0"



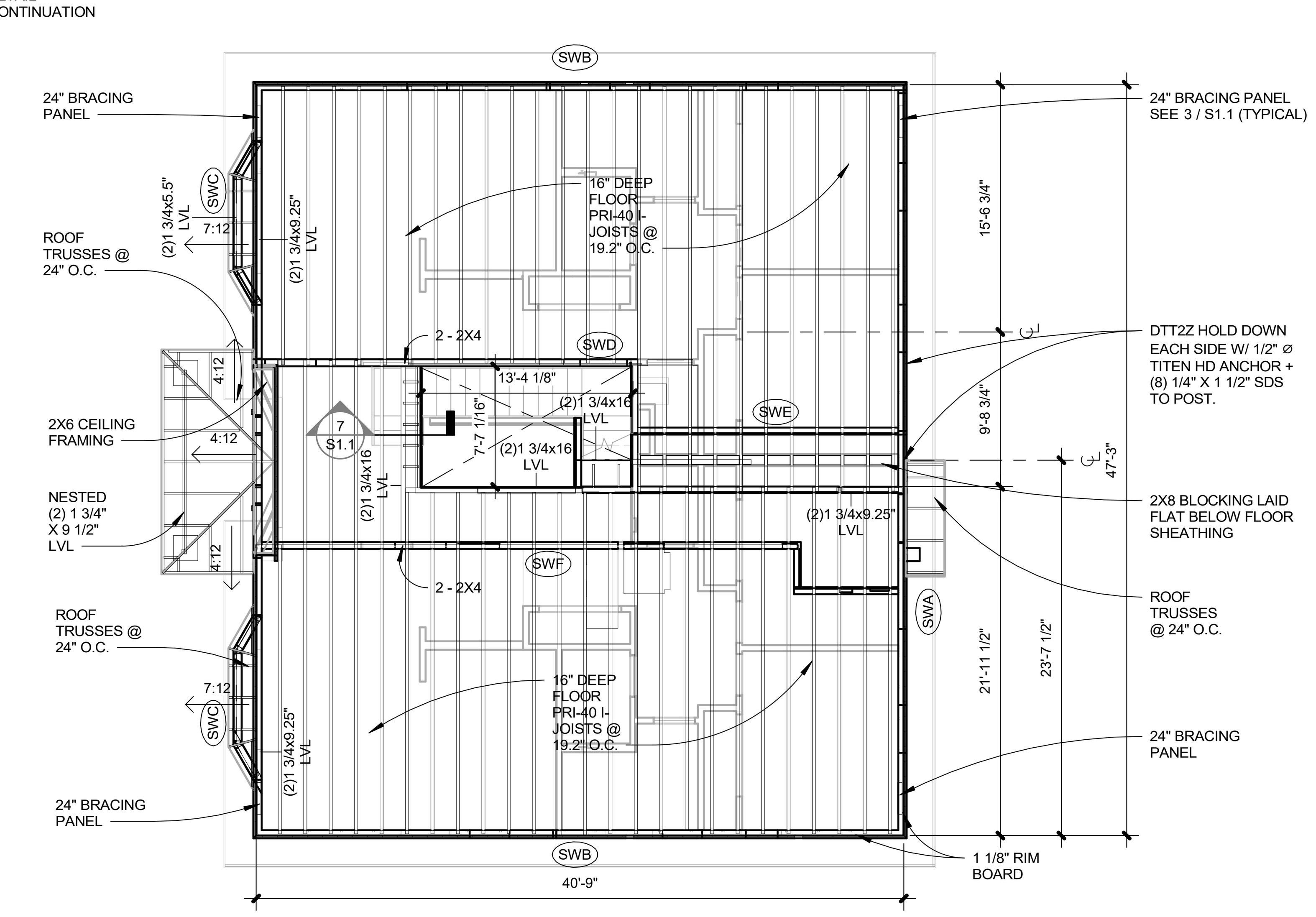
BRACING PANEL (INTERIOR)
4 / S1.1
SCALE: 1" = 1'-0"



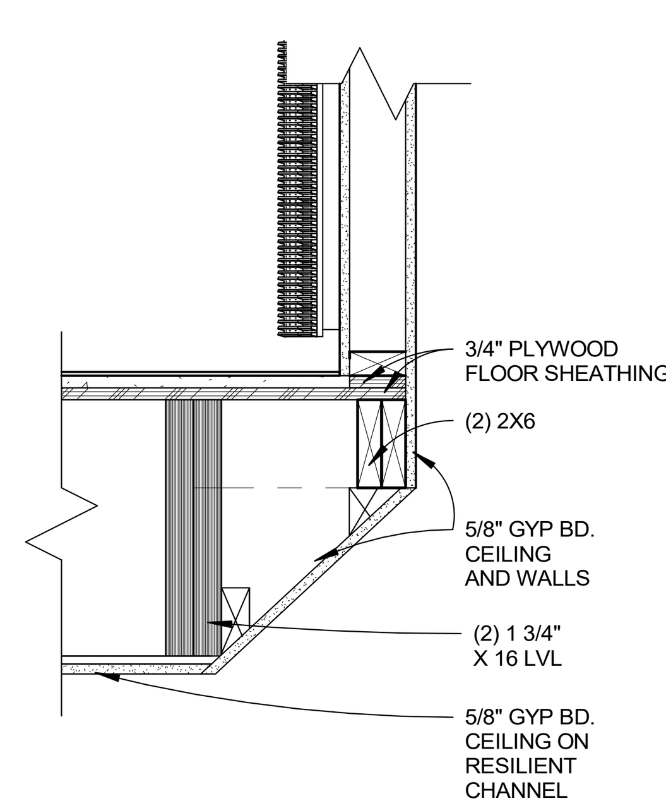
BRACING PANEL FOOTING
5 / S1.1
SCALE: 3/4" = 1'-0"



ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"



UPPER FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"



CEILING TRANSITION @ STAIR
7 / S1.1
SCALE: 1" = 1'-0"

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMIE
REGISTERED
No. AR12100097
STATE OF INDIANA
ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
S1.1

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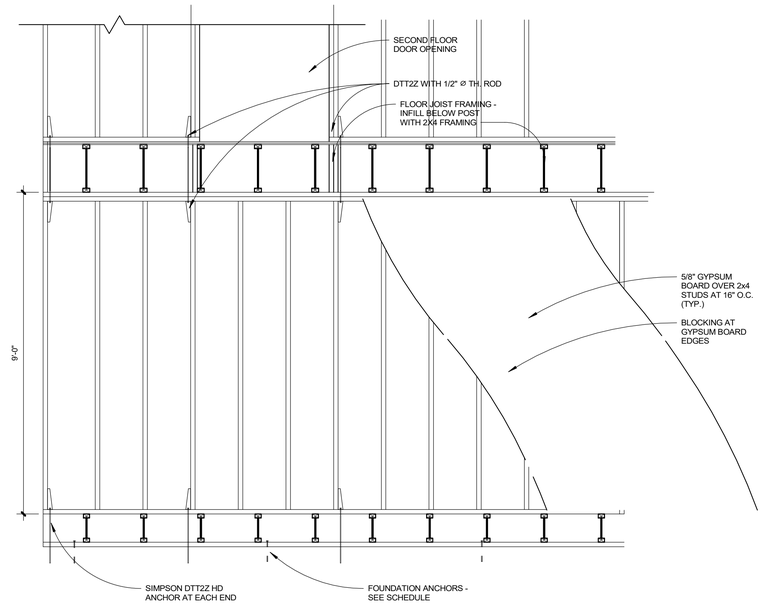
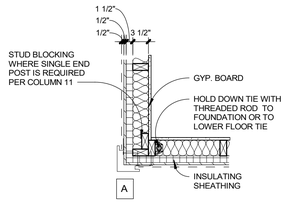
PLOT DATE: 2/27/2025 3:13:09 PM



SHEAR WALL DETAIL - INTERIOR

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

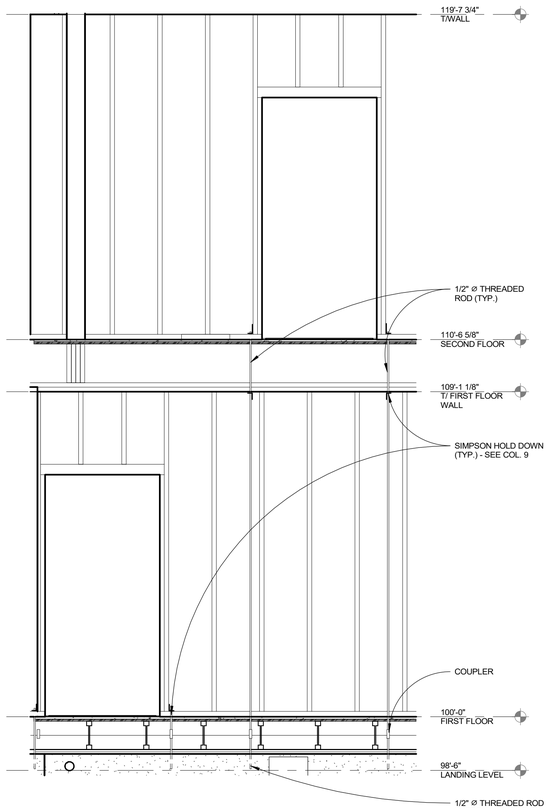
2 S2.1



SHEAR WALL END DETAILS

SCALE: 3/4" = 1'-0"

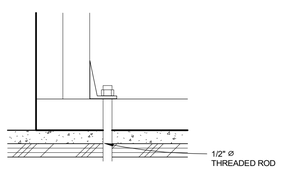
1 S2.1

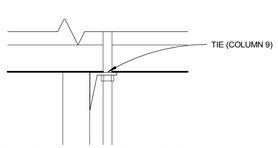


SWD AND SWF ELEVATION

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

3 S2.1





FLOOR TIE DETAIL

SCALE: 3" = 1'-0"

4 S2.1

SHEATHING SCHEDULE

MARK	SHEATHING	NAILS -SPACING EDGE/FIELD	REMARKS
A1	EXT. WALL SHTH. OR SHEAR WALL SHTH.	8d NAILS @ 6"/12" OR 6d NAILS @ 6"/12"	SPF STUDS @ 16" O.C.
B1	INSULATED EXT. WALL SHTH. W/ 5/8" GYP. BOARD INTERIOR	8" O.C. @ EDGES AND 12" @ FIELD. NO. 6 TYPE S OR W 1 1/4" DRYWALL SCREWS.	SEE NOTE 2 FOR ZIP-SYSTEM NAILING - NO BLOCKING
C1	5/8" GYP. BD. WALLBOARD ONE SIDE	8" O.C. @ EDGES AND 12" @ FIELD. NO. 6 TYPE S OR W 1 1/4" DRYWALL SCREWS.	EDGES UNBLOCKED

SHEAR WALL DESIGN CRITERIA

SHEAR WALL MARK L.	WALL SHEATHING REQUIREMENTS		FASTENER SPACING				SHEAR WALL PANEL TYPE	SHEAR WALL PANEL DETAIL REFERENCE	HOLD DOWN AT ENDS AND OPENINGS	STUDS @ HOLDOWN & PANEL ENDS	
	GROUND FLOOR	UPPER FLOOR/ ATTIC WALL	FND. (1/2"Ø ANCHORS AND U.N.O.)	UPPER FLR. TIES OR FASTENER	UPPER FLR. WALL PLATE TO TRUSS	ROOF DECK TO TRUSS OR BRACING PANEL				GND. FLR.	UPPER FLR.
	COL. 1	COL. 2	3	4	5	6	7	8	9	10	11
SWA 47.5'	B1*	B1*	1/2"Ø 10" @ 6'-0" O.C. LTP4 @ 2'-6" O.C.	--	SIMPSON A34 @ 4 PANELS	(4) 8d NAILS. @ 4" O.C.	24" SIMPSON WOOD STRONG WALLS - MULTI STORY	3 / S1.1	SEE PLAN	2 - 2x4	1 - 2x4
SWB 40.5'	B1	B1	1/2"Ø X 10" @ 6'-0" O.C. LTP4 @ 5'-0" O.C.	LTP4 @ 8'-0" O.C.	SIMPSON A34 @ 2 PANELS	(4) 8d NAILS. @ 4" O.C.	--	--	--	1 - 2x4	1 - 2x4
SWC 47.5'	B1*	B1*	1/2"Ø X (10" @ 6'-0" O.C. LTP4 @ 2'-6" O.C.	--	SIMPSON A34 @ 4 PANELS	(4) 8d NAILS. @ 4" O.C.	24" SIMPSON WOOD STRONG WALLS - MULTI-STORY	3 / S1.1	--	2 - 2x4	1 - 2x4
SWD 24.5'	C1*	C1 A1	1/2"Ø X (5" @ 7'-0" O.C.	16d NAILS @ 16" O.C.	SIMPSON A34 @ 3'-0" O.C.	8d NAILS @ 12" O.C.	18" SIMPSON WOOD STRONG WALLS - GROUND FLOOR	4 / S1.1	DTT2Z-SDS2.5 W 8-1/4"Ø X 1 1/2" SDS & 1/2"Ø THREADED ROD	2 - 2X4	1 - 2x4
SWE 16.0'	C1	C1 A1	1/2"Ø X 5" 7'-0" O.C.	16d NAILS @ 16" O.C.	SIMPSON A34 @ 3'-6" O.C.	8d NAILS @ 12" O.C.	---	--	--	2 - 2x4	1 - 2X4
SWF 34.3'	C1*	C1 A1	1/2"Ø X 5" 7'-0" O.C.	16d NAILS @ 16" O.C.	SIMPSON A34 @ 3'-0" O.C.	8d NAILS @ 12" O.C.	18" SIMPSON WOOD STRONG WALLS - GROUND FLOOR	4 / S1.1	DTT2Z-SDS2.5 W 8-1/4"Ø X 1 1/2" SDS & 1/2"Ø THREADED ROD	2 - 2x4	1 - 2x4

NOTES

1. SHEATHING SHALL BE INSTALLED ON THE SAME SIDE AT THE SHEAR WALL CALL OUT AT SINGLE STUD WALLS. AT DOUBLE STUD WALLS INSTALL SHEATHING ON THE SAME SIDE AS THE SHEAR WALL CALL OUT (CAVITY SIDE OF STUD)
2. INSULATED SHEATHING SHALL BE NAILED 6" O.C. @ EDGES AND 12" @ FIELD, 0.113" SHANK NAILS. NAILS SHALL BE AT LEAST 3/8" FROM EDGES AND PENETRATE 1" INTO STUDS. UTILIZE A FLUSH NAILING COLLAR FOR PNEUMATIC NAILING.
3. PROVIDE STUD COLUMN(S) AT EACH END OF SHEAR WALL AS NOTED IN COLUMNS 10 & 11 ABOVE.
4. SHEAR WALL SHEATHING PANELS SHALL CONFORM TO DEPT. OF COMMERCE PRODUCT STANDARDS PS 1 OR PS 2. SEE SPECIFICATIONS FOR REQUIRED MATERIAL THICKNESS UNLESS NOTED ON THE SHEATHING SCHEDULE.
5. GYPSUM WALLBOARD NAILS SHALL BE 6d COATED NAILS, 1-7/8" LONG, 1/4" HEAD OR WALLBOARD NAIL 1-7/8" LONG, 19/64" HEAD OR 0.12" NAIL W/ 3/8"Ø HEAD.
6. TOP PLATE OF SHEAR WALLS TO LAP 4'-0" MINIMUM AND EXTEND OVER INTERSECTING WALLS.
7. INSTALL A SIMPSON H10A TIE @ EACH TRUSS BEARING POINT, INSTALL ON INTERIOR FACE OF WALL.
8. WHERE SHOWN ON THE ROOF PLAN, INSTALL DRAFTSTOP MATERIAL ON SIDE OF TRUSS ABOVE THE SHEAR WALL. NAIL ROOF SHEATHING TO TRUSS PER COL. 6.
9. AT TRUSS ENERGY HEEL, INSTALL TRUSS BLOCKING PANELS BETWEEN TRUSSES WHERE INDICATED ON PLAN. FASTEN TO TOP PLATE WITH SIMPSON A34 TIE W/ (4) 0.131" X 1 1/2" NAILS EACH MEMBER. NAIL ROOF SHEATHING TO TOP PLATE OF PANEL PER NAILING NOTED IN COL. 6. SEE WALL SECTIONS.
10. EXTEND INSULATED SHEATING VERTICALLY FROM BOTTOM PLATE OF WALL TO LOWER PLATE AT THE TOP OF THE WALL, TYPICAL EACH FLOOR. INFILL AT FLOOR LINE WITH INSULATING SHEATHING FASTENED TO PLATES WITH NAILING NOTED FOR WALL AREAS.
11. FLOOR SHEATHING SHALL BE NAILED AND GLUED TO JOISTS. UTILIZE 1/4" BEAD OF "CLIMATE GP" GENERAL PURPOSE CONSTRUCTION ADHESIVE BY CLIMATE, INC. KALAMAZOO, MICHIGAN. INCLUDE A BEAD AT THE RIM BOARD.
12. FASTEN SIMPSON LTP4 TIES WITH (12) 0.131" X 1 1/2" NAILS (6) INTO WALL PLATE AND (6) INTO RIM BOARD.

QUADPLEX BUILDING

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ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

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South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
S2.1

FILE PATH: C:\Users\khirkle\Documents\Revit\2024\Turnock Street 4-plex_ahirkle\ZHCYH.rvt
PLOT DATE: 2/27/2025 3:13:12 PM

LEGEND

- 1I — DOOR TAG - SEE DOOR SCHEDULE.
- X — FLOOR TRANSITION - SEE FINISH SCHEDULE.
- X — WINDOW TAG - SEE WINDOW SCHEDULE.
- 1i — WALL TAG
- LOWERED SOFFIT OR CEILING

TB	TOWEL BAR
GB	GRAB BAR
CG	CORNER GUARD
MIN.	MINIMUM
GYP.	GYPSUM BOARD
℄	CENTERLINE

WALL LEGEND

PARTITION WALLS (1)
- 1/2" GYPSUM BOARD (BOTH SIDES)
- 2x4 WOOD STUDS @ 16" O.C.
- SOUND ATTENUATION BATTS WHERE SHOWN ON PLAN

EXTERIOR WALLS (SEE WALL SECTIONS) (4)
- VINYL SIDING
- 1 1/2" INSULATED SHEATHING
- 2x4 WOOD STUDS @ 16" O.C.
- R15 BATT INSULATION WITH VAPOR BARRIER
- 5/8" GYPSUM BOARD

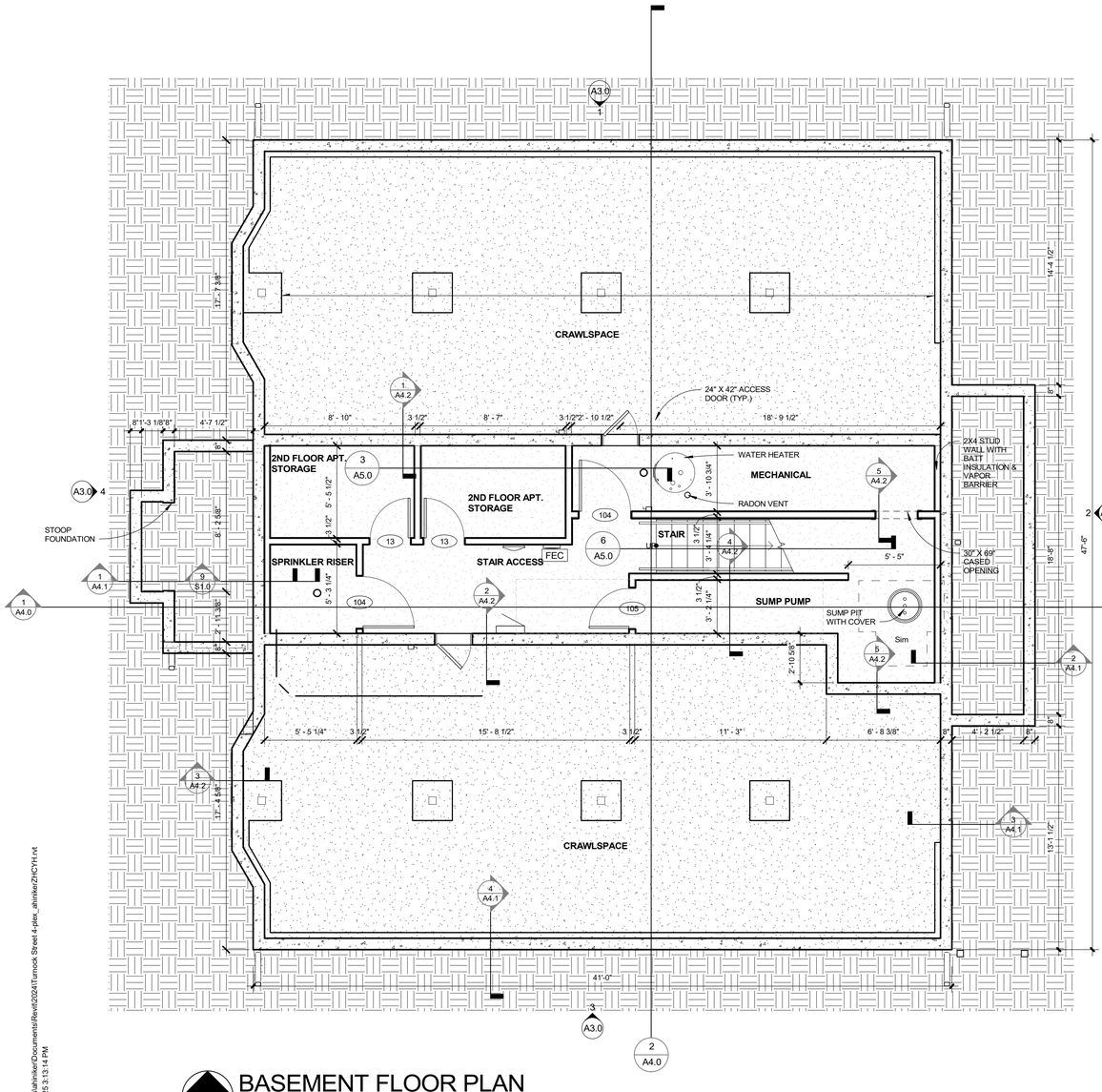
DEMISING WALLS (3)
- 5/8" GYPSUM BOARD (BOTH SIDES)
- 2 ROWS, 2x4 WOOD STUDS @ 16" O.C. (ALTERNATE STUDS)
- 1/2" SOUND BOARD ONE SIDE
- SOUND ATTENUATION BATTS

CORRIDOR WALLS (5)
- 5/8" GYPSUM BOARD (BOTH SIDES)
- 1/2" RESILIENT CHANNELS
- 2x4 WOOD STUDS @ 16" O.C.
- SHEAR SHEATHING, SEE STRUCTURAL

PARTITION WALL (6)
- 1/2" GYPSUM BOARD (BOTH SIDES)
- 2x6 WOOD STUDS @ 16" O.C.

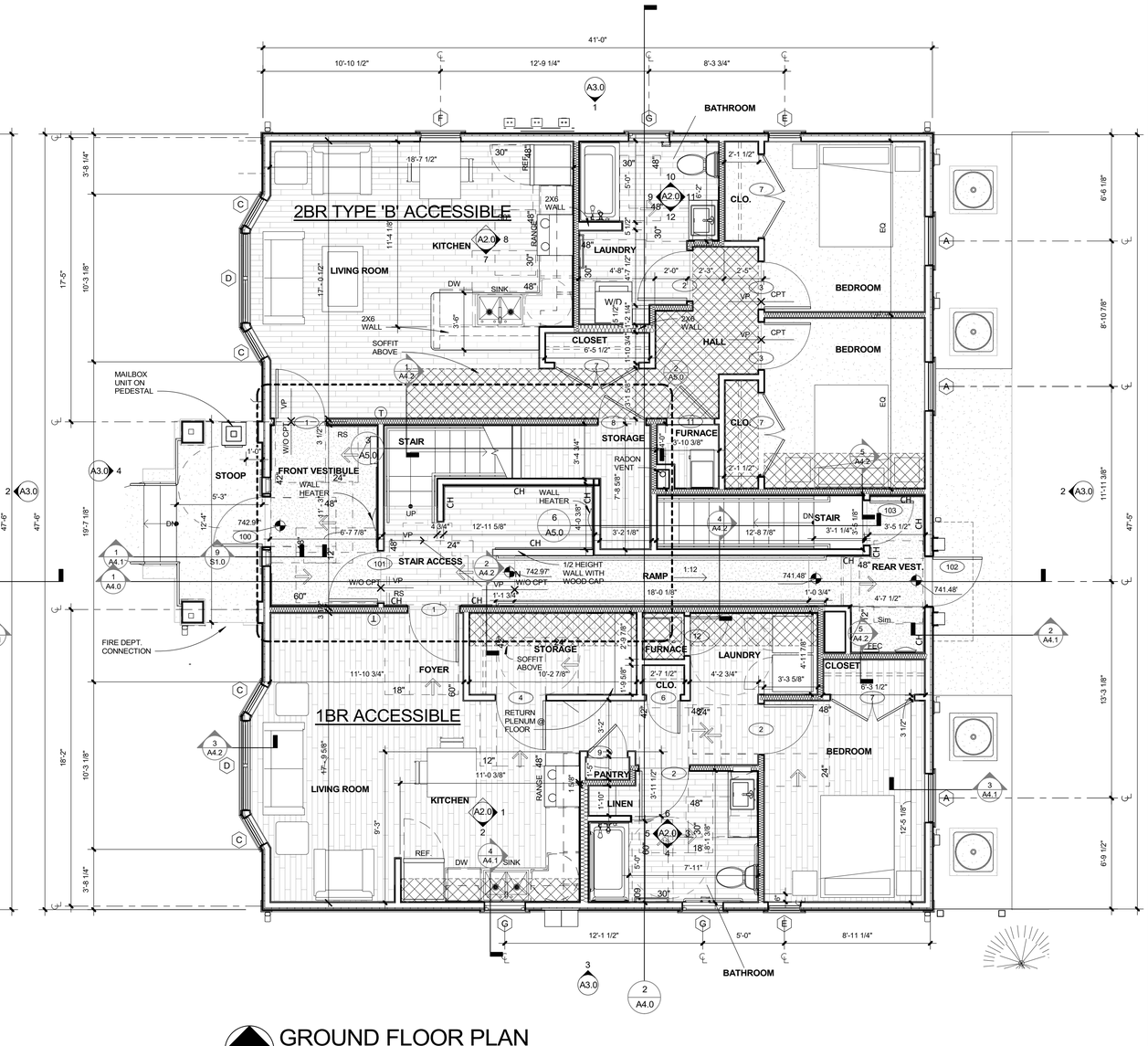
GENERAL NOTES

1. PLAN DIMENSIONS ARE NOTED TO THE OUTSIDE FACE OF INSULATED SHEATHING AT EXTERIOR WALL.
2. PLAN DIMENSIONS ARE NOTED TO FACE OF STUD WALL AT INTERIOR PARTITIONS.
3. BUILDING FINISH FLOOR ELEVATIONS TO BE 18" ABOVE BACK OF CURB. COORDINATE WITH SITE DRAWING PLANS FOR FINAL FLOOR ELEVATIONS.
4. COORDINATE STEP DESIGN FOR STREET SIDE OF QUADPLEX WITH FINAL GRADING PLAN.



BASEMENT FLOOR PLAN

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



GROUND FLOOR PLAN

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

QUADPLEX BUILDING

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

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South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A1.0

FILE PATH: C:\Users\kshickel\Documents\Revit\2024\Turnock Street 4-plex_shickelZHCY1H.rvt
PLOT DATE: 2/27/2025 3:13:14 PM

ATTIC VENTILATION CALCULATIONS

ATTIC VENTILATION ASSUMPTIONS AND DESIGN CONDITIONS PER IBC 1203

VENTED SOFFIT SYSTEM CONSISTS OF ALUMINUM SOFFIT OPENINGS WITH AN NFA OF 6.48 SQ.IN. PER L.F.

ATTIC COMPARTMENT		
RIDGE VENT	12 LINEAR FT. @ 18 SQ.IN. / LINEAR FT	= 216.00 SQ.IN. NFA
PARTIALLY VENTED SOFFIT	187 LINEAR FT. @ 6.48 SQ.IN. / LINEAR FT	= 1,211.76 SQ.IN. NFA
POD VENTS	6 POD VENTS @ 50 SQ.IN. / POD	= 300.00 SQ.IN. NFA
	TOTAL	= 1,727.76 SQ.IN. NFA

SPACE VENTED = 2,621.36SQ.FT.
NFA (1,727.76 SQ.IN.) IS GREATER THAN 1/300 OF THE AREA OF THE SPACE VENTED (1,258.25 SQ.IN.)

LEGEND

- 11 — DOOR TAG - SEE DOOR SCHEDULE.
- FLOOR TRANSITION - SEE FINISH SCHEDULE.
- X — WINDOW TAG - SEE WINDOW SCHEDULE.
- 1i — WALL TAG
- LOWERED SOFFIT OR CEILING

TB	TOWEL BAR
GB	GRAB BAR
CG	CORNER GUARD
MIN.	MINIMUM
GYP.	GYPSUM BOARD
℄	CENTERLINE

WALL LEGEND

1 PARTITION WALLS
(NON-INSULATED) / INSULATED
- 1/2" GYPSUM BOARD (BOTH SIDES)
- 2x4 WOOD STUDS @ 16" O.C.
- SOUND ATTENUATION BATTS WHERE SHOWN ON PLAN

4 EXTERIOR WALLS (SEE WALL SECTIONS)
- VINYL SIDING
- 1 1/2" INSULATED SHEATHING
- 2x4 WOOD STUDS @ 16" O.C.
- R15 BATT INSULATION WITH VAPOR BARRIER
- 5/8" GYPSUM BOARD

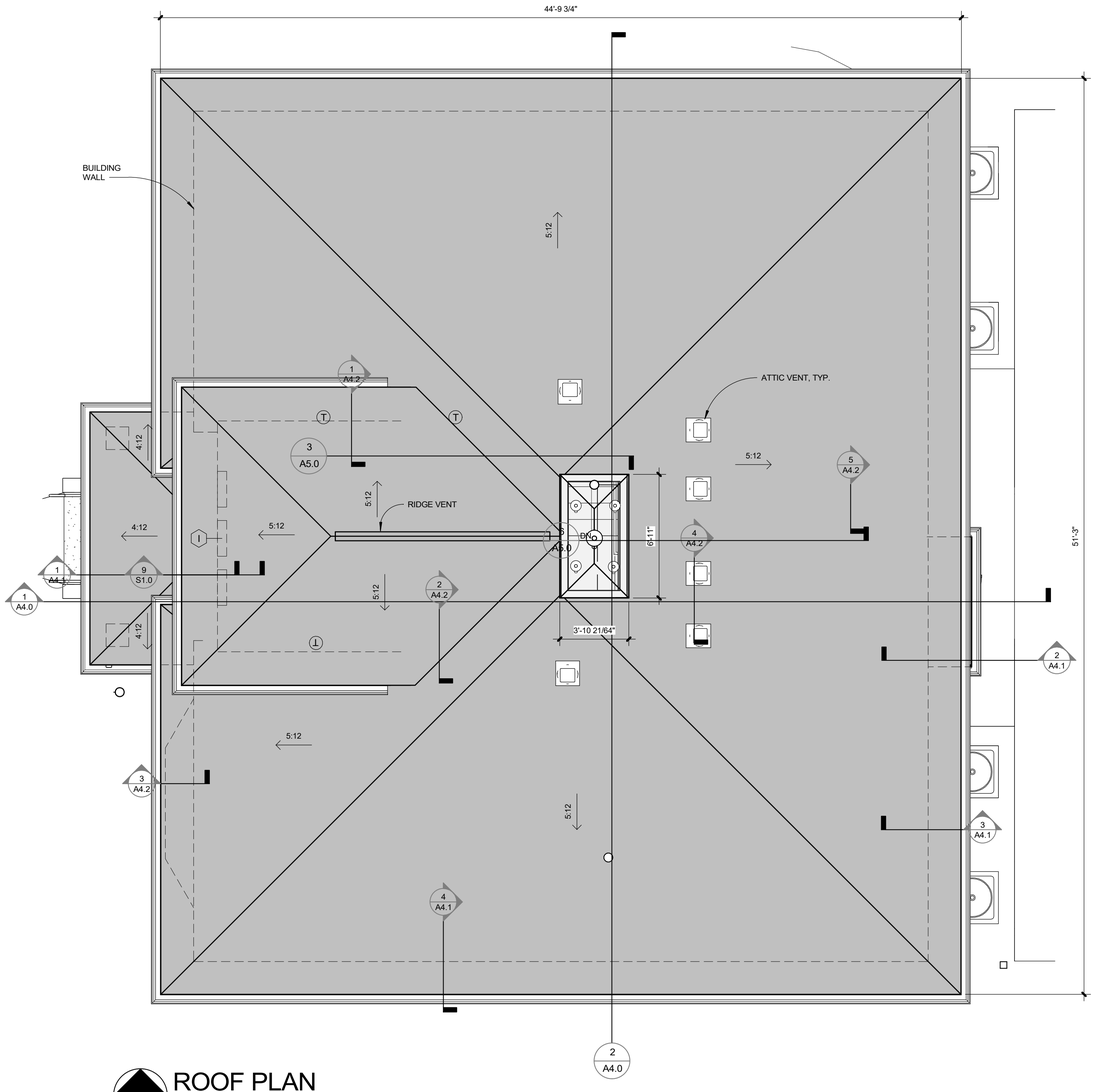
3 DEMISING WALLS
- 5/8" GYPSUM BOARD (BOTH SIDES)
- 2 ROWS, 2x4 WOOD STUDS @ 16" O.C. (ALTERNATE STUDS)
- 1/2" SOUND BOARD ONE SIDE
- SOUND ATTENUATION BATTS

5 CORRIDOR WALLS
- 5/8" GYPSUM BOARD (BOTH SIDES)
- 1/2" RESILIENT CHANNELS
- 2x4 WOOD STUDS @ 16" O.C.
- SHEAR SHEATHING, SEE STRUCTURAL

6 PARTITION WALL
- 1/2" GYPSUM BOARD (BOTH SIDES)
- 2x6 WOOD STUDS @ 16" O.C.

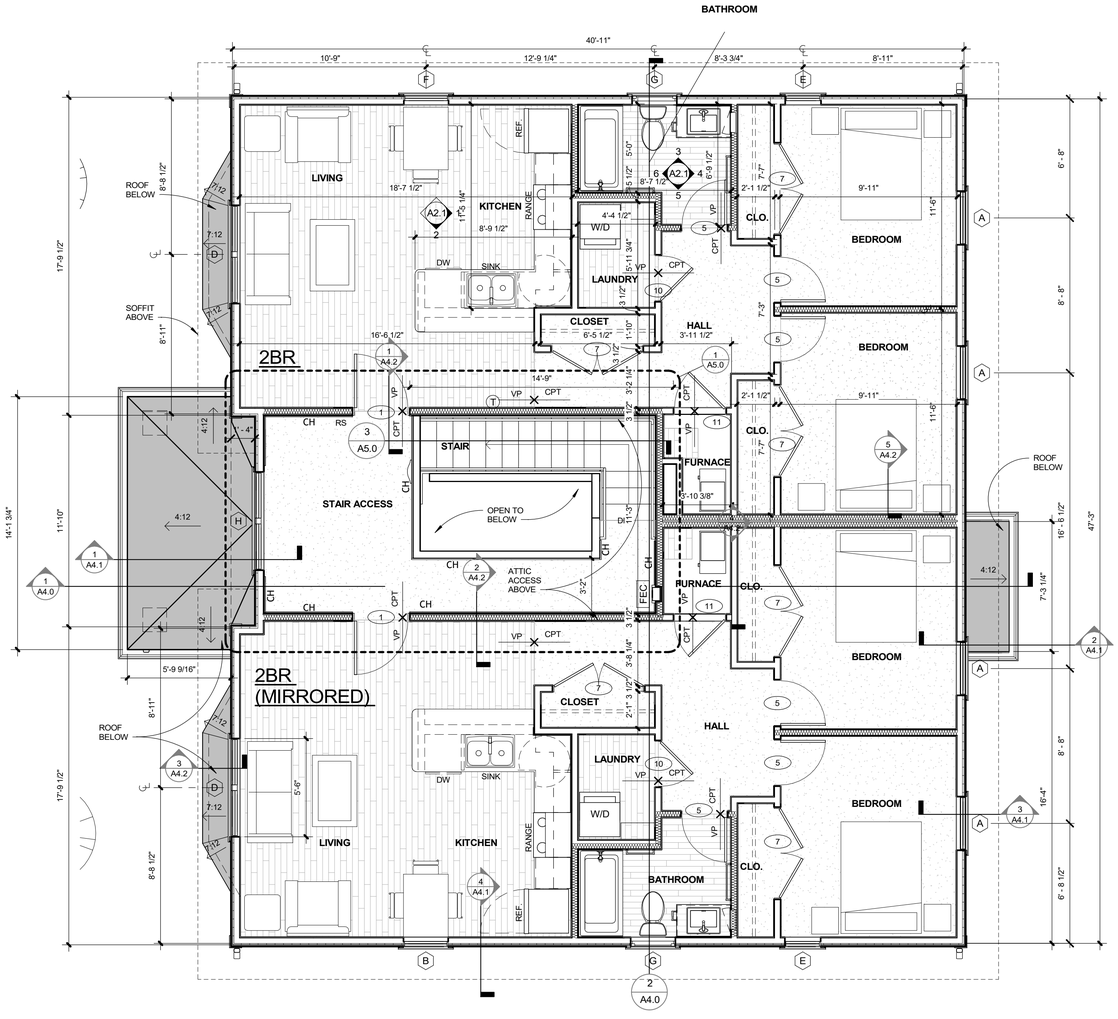
GENERAL NOTES

1. PLAN DIMENSIONS ARE NOTED TO THE OUTSIDE FACE OF INSULATED SHEATHING AT EXTERIOR WALL.
2. PLAN DIMENSIONS ARE NOTED TO FACE OF STUD WALL AT INTERIOR PARTITIONS.
3. BUILDING FINISH FLOOR ELEVATIONS TO BE 18" ABOVE BACK OF CURB. COORDINATE WITH SITE DRAWING PLANS FOR FINAL FLOOR ELEVATIONS.
4. COORDINATE STEP DESIGN FOR STREET SIDE OF QUADPLEX WITH FINAL GRADING PLAN.



ROOF PLAN

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



UPPER FLOOR PLAN

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

QUADPLEX BUILDING

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

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SOUTH BEND HERITAGE

712 TURNOCK STREET
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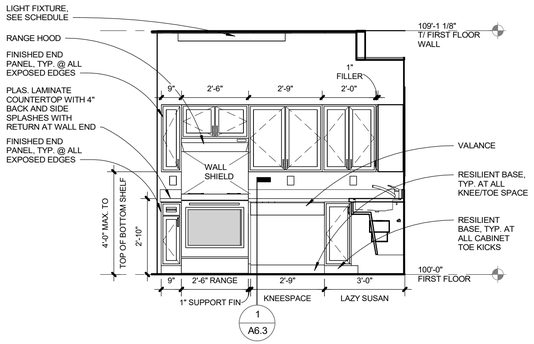
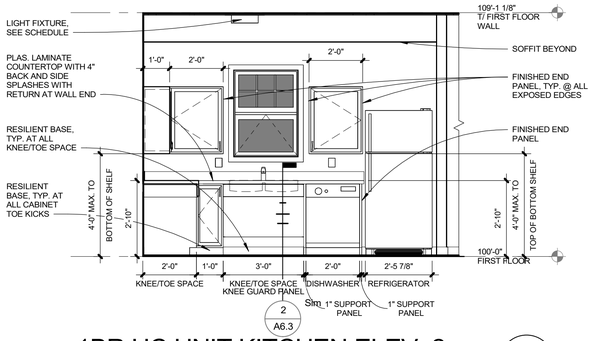


1 BR HC UNIT KITCHEN ELEV. 1

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

1 A2.0



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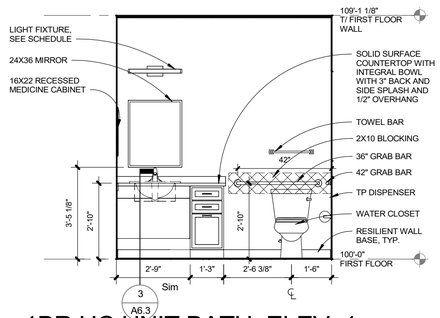
SCALE: 3/8" = 1'-0"

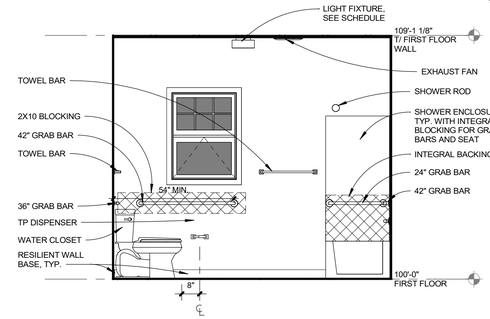
2 A2.0



1BR HC UNIT BATH ELEV. 1

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

3 A2.0



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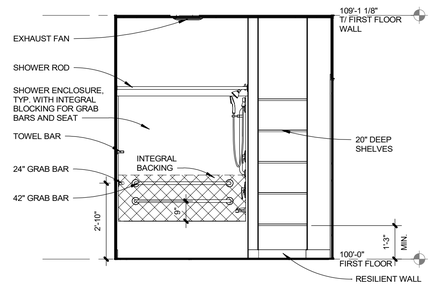
SCALE: 3/8" = 1'-0"

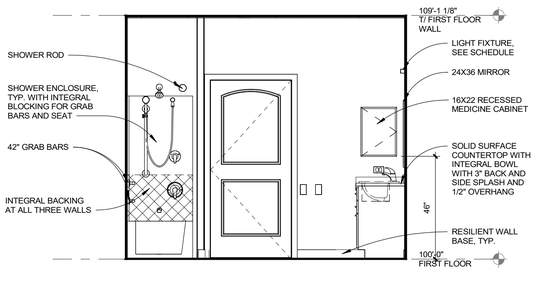
4 A2.0



1BR HC UNIT ELEV. 3

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

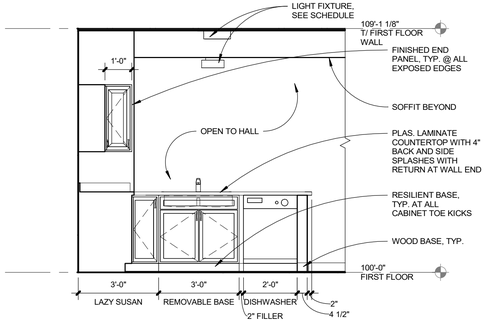
5 A2.0



1BR HC UNIT BATH ELEV. 4

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

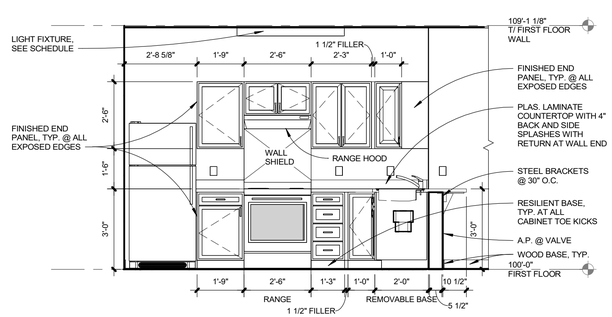
6 A2.0



2BR TYPE B UNIT KITCHEN ELEV. 1

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

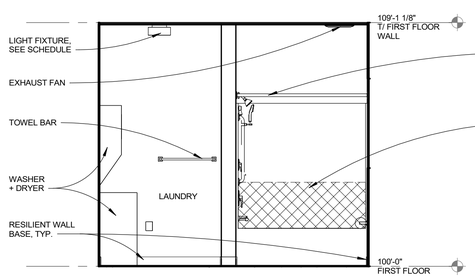
7 A2.0



2BR TYPE B UNIT KITCHEN ELEV. 2

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

8 A2.0



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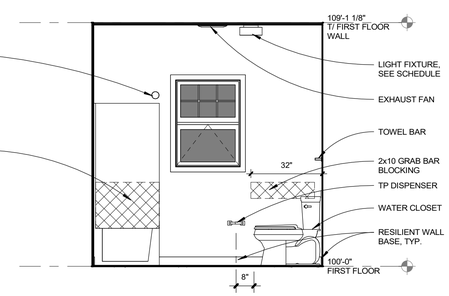
SCALE: 3/8" = 1'-0"

9 A2.0



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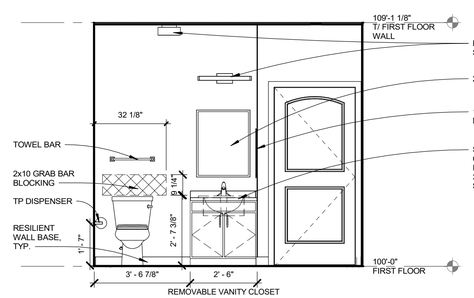
SCALE: 3/8" = 1'-0"

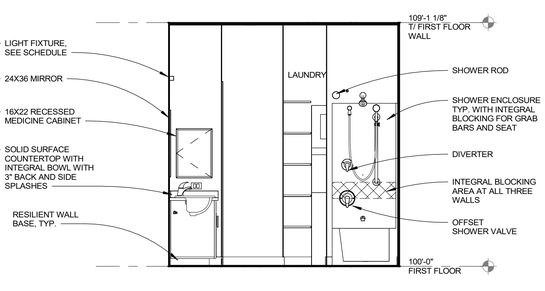
10 A2.0



2BR UNIT TYPE B BATH ELEV.3

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

11 A2.0



2BR UNIT TYPE B BATH ELEV.4

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

12 A2.0

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ARCHITECTS
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WILLIAM R. LANE REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

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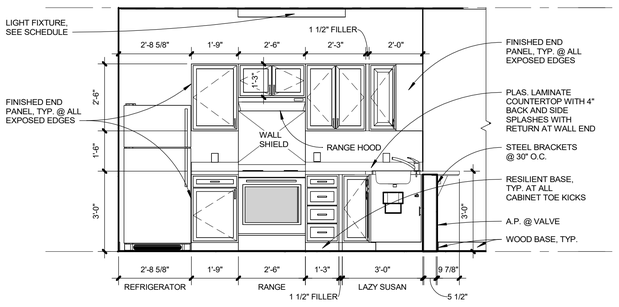
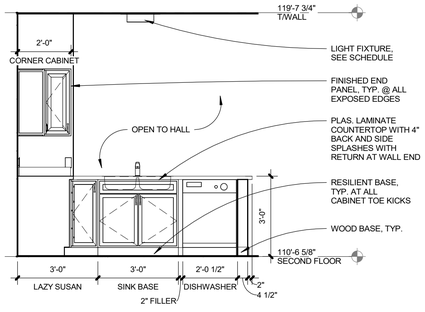


2BR KITCHEN ELEV. 1

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

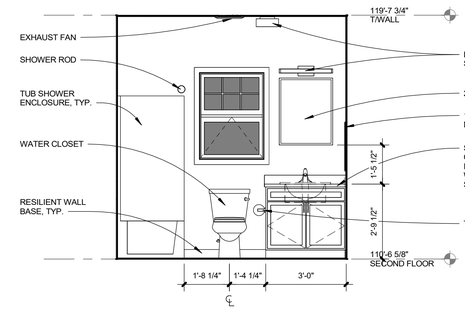
1 / A2.1



2BR KITCHEN ELEV. 2

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

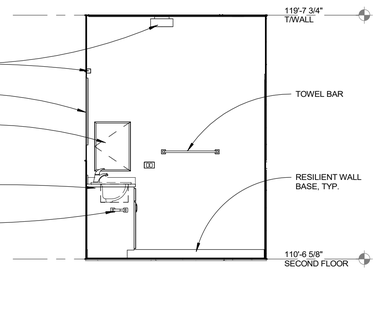
2 / A2.1



2BR BATHROOM ELEV. 1

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

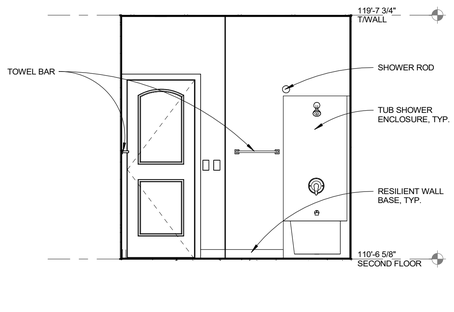
3 / A2.1



2BR BATHROOM ELEV. 2

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

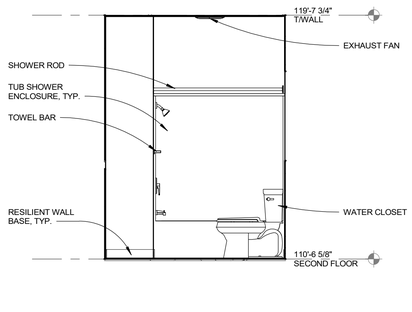
4 / A2.1



2BR BATHROOM ELEV. 3

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

5 / A2.1



2BR BATHROOM ELEV. 4

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

6 / A2.1

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMB
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

South Bend Heritage

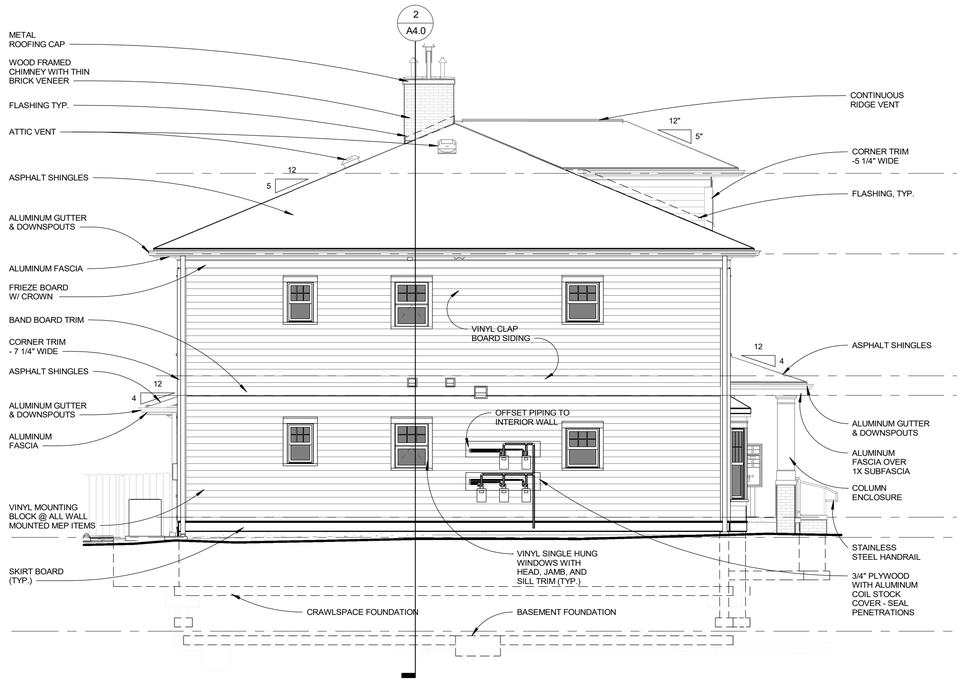
TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A2.1

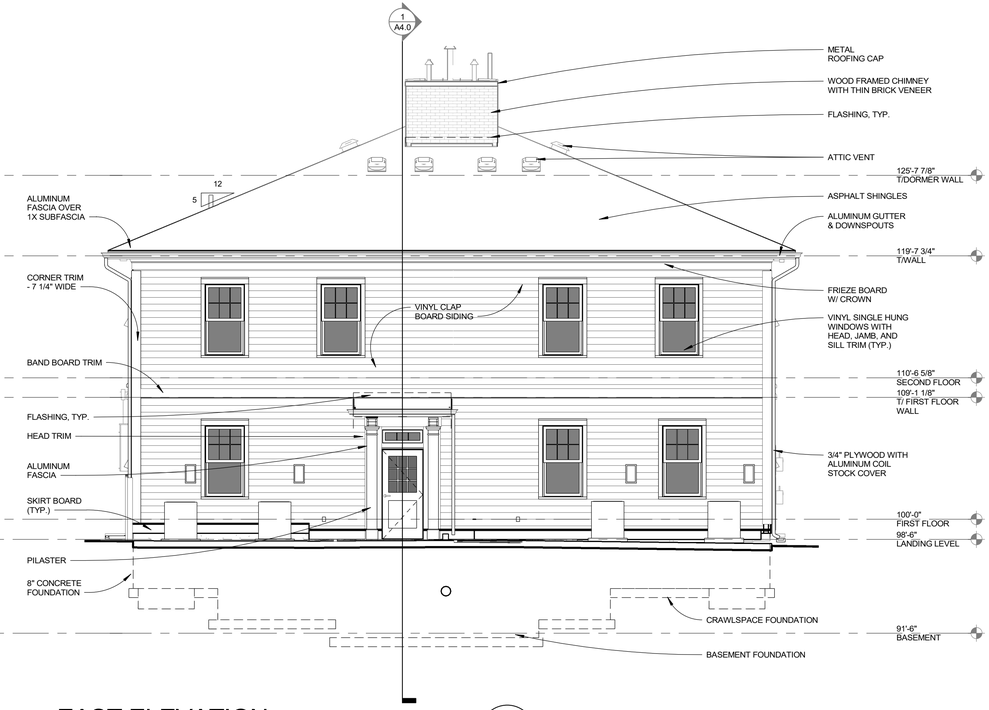
FILE PATH: C:\Users\chris\Documents\Revit2024\Turnock Street 4-plex_chrisKeiZhCYH.rvt
PLOT DATE: 2/27/2025 3:13:27 PM



NORTH ELEVATION

SCALE: 3/16" = 1'-0"

1 A3.0



EAST ELEVATION

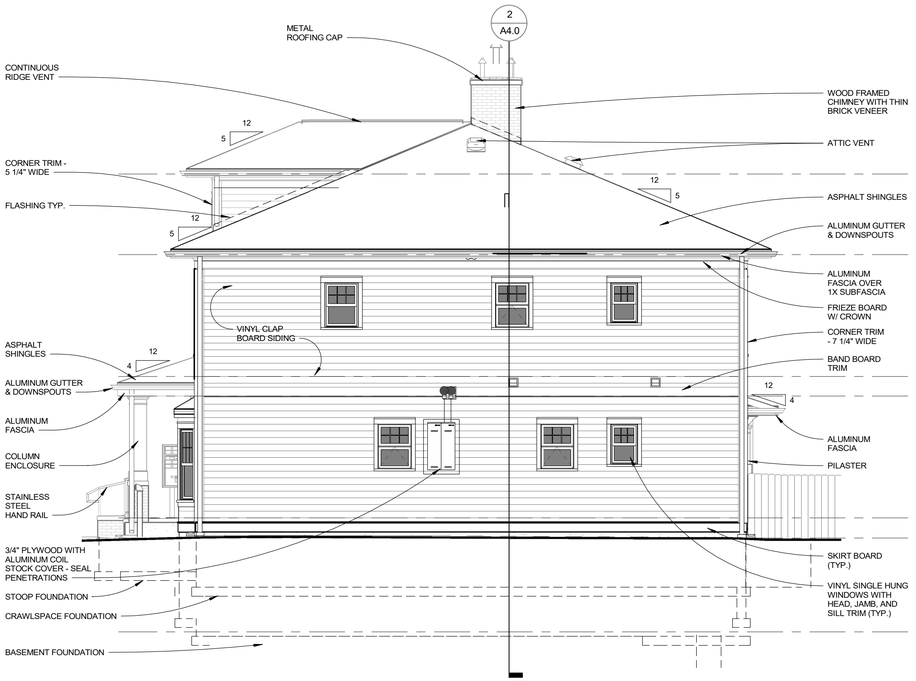
SCALE: 3/16" = 1'-0"

2 A3.0

QUADPLEX (2-STORY)

WEST/FRONT FACADE	
LEVEL 1 (2' to 8' above floor)	**75% MAX.**
TOTAL TRANSPARENCY%	**35.72%**
Total Facade SF	**286.50**
height	6.00
width	47.75
QTY	
4 **C Window (56 x 24)**	**37.33**
SF each	9.33
2 **D Window (56 x 66)**	**51.33**
SF each	25.67
1 **Door Transom Window (12 x 68)**	**5.67**
SF each	5.67
1 **Door Sidelite (48 x 12)**	**8.00**
SF each	4.00
TOTAL TRANSPARENCY SF	**102.33**

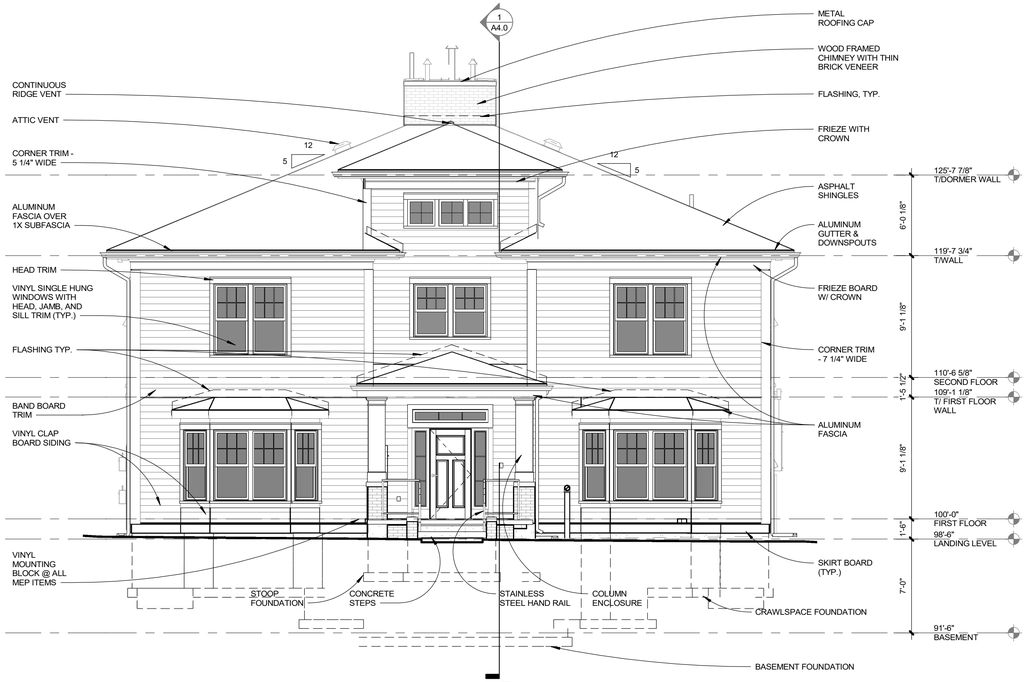
LEVEL 2 (floor to roof bottom)	40% MAX.
TOTAL TRANSPARENCY%	**17.87%**
Total Facade SF	**510.60**
height	9 to 15
width	47.75
QTY	
2 **D Window (64 x 66)**	**58.67**
SF each	29.33
1 **H Window (48 x 66)**	**22.00**
SF Each	22.00
1 **I Window (25 x 61)**	**10.59**
SF Each	10.59
TOTAL TRANSPARENCY SF	**91.26**



SOUTH ELEVATION

SCALE: 3/16" = 1'-0"

3 A3.0



WEST ELEVATION

SCALE: 3/16" = 1'-0"

4 A3.0

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAM
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

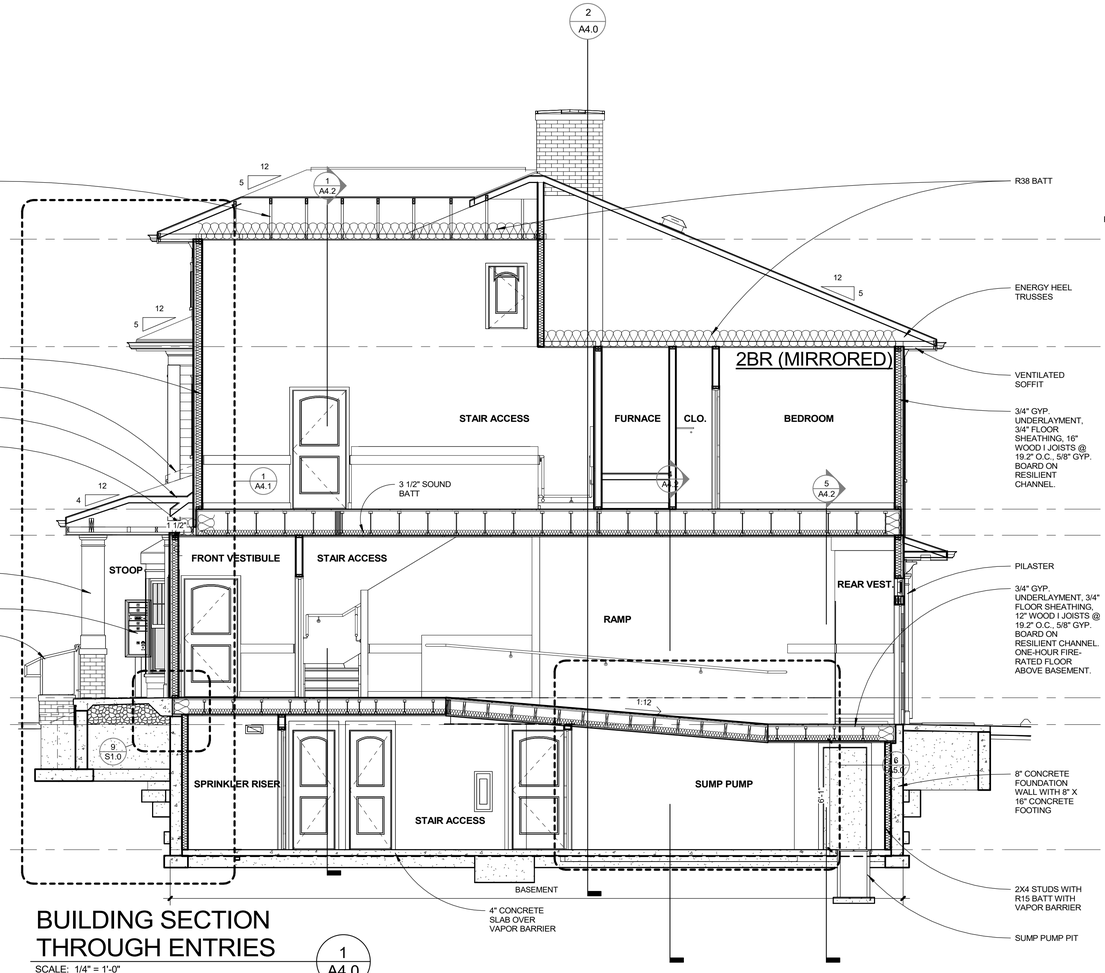
South Bend
Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A3.0

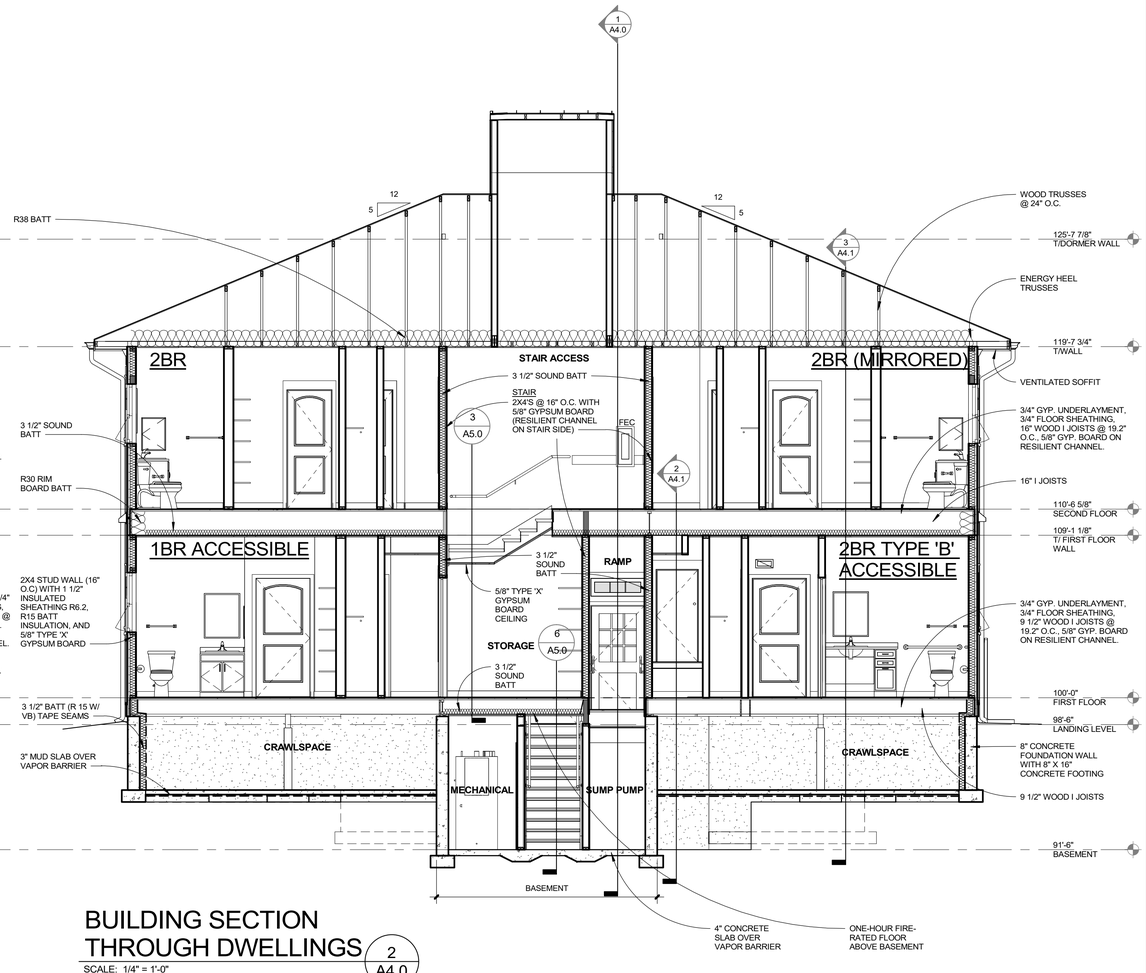
FILE PATH: C:\Users\shirlw\Documents\Revit\2024\Turnock Street 4-plex_shirlwin2HCYH.rvt
PLOT DATE: 2/27/2025 3:13:38 PM



BUILDING SECTION THROUGH ENTRIES

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

1 A4.0



BUILDING SECTION THROUGH DWELLINGS

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

2 A4.0

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LANE REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

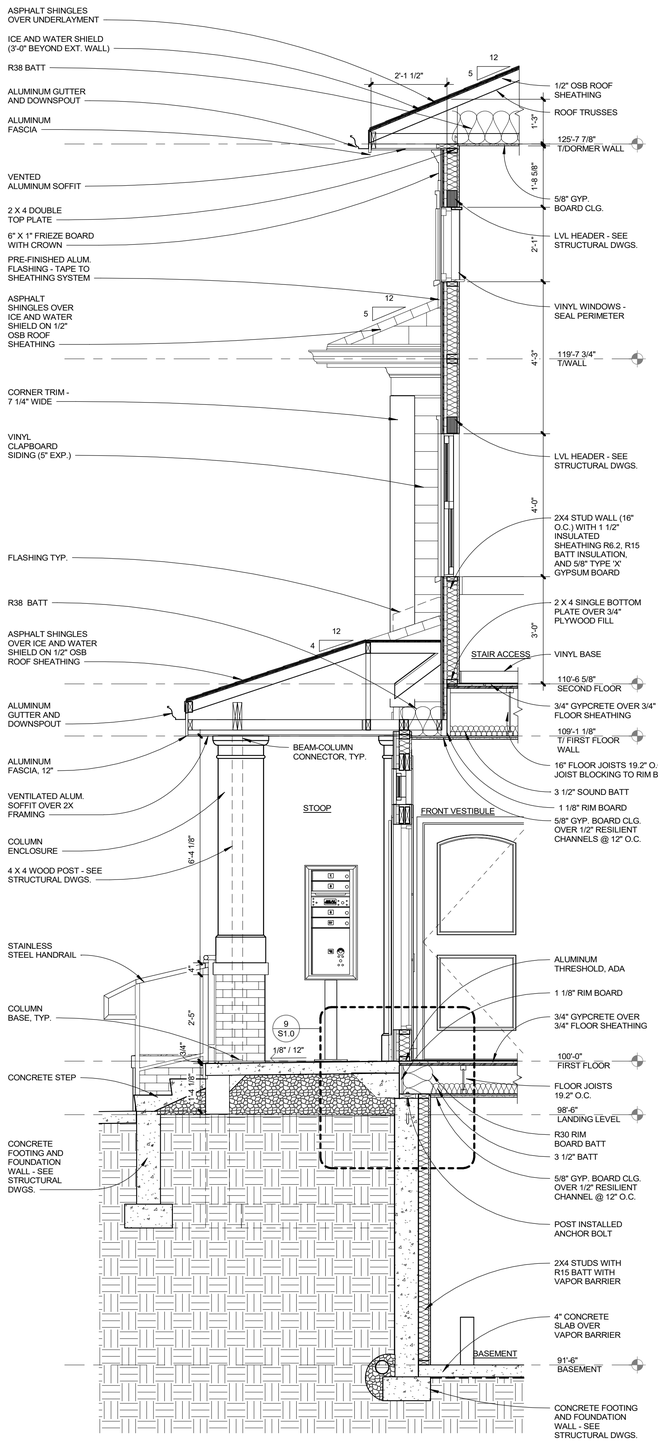
TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A4.0

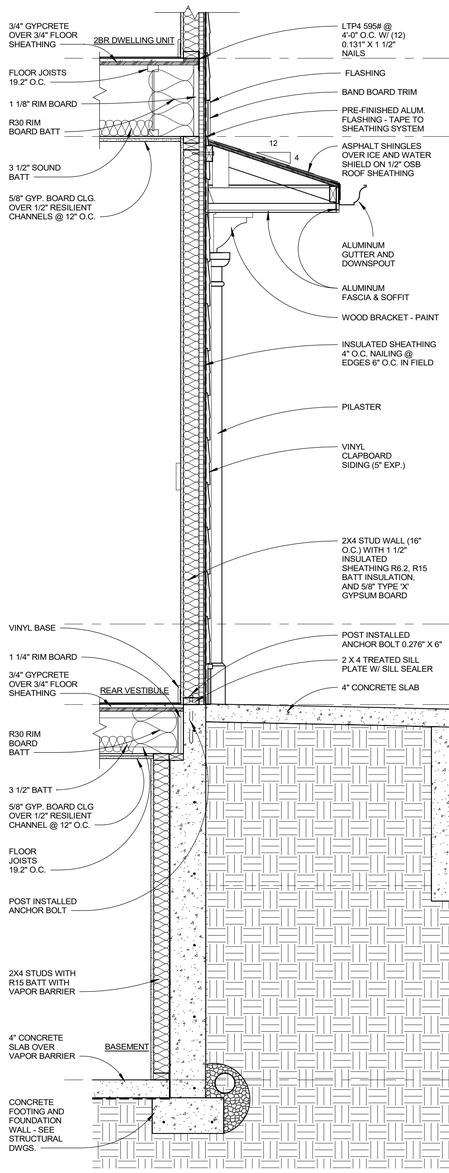
FILE PATH: C:\Users\shirlee\Documents\Revit\2024\Turnock Street 4-plex_shirlee2hCYH.rvt
PLOT DATE: 2/27/2025 3:13:40 PM



FRONT ENTRY WALL DETAIL

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

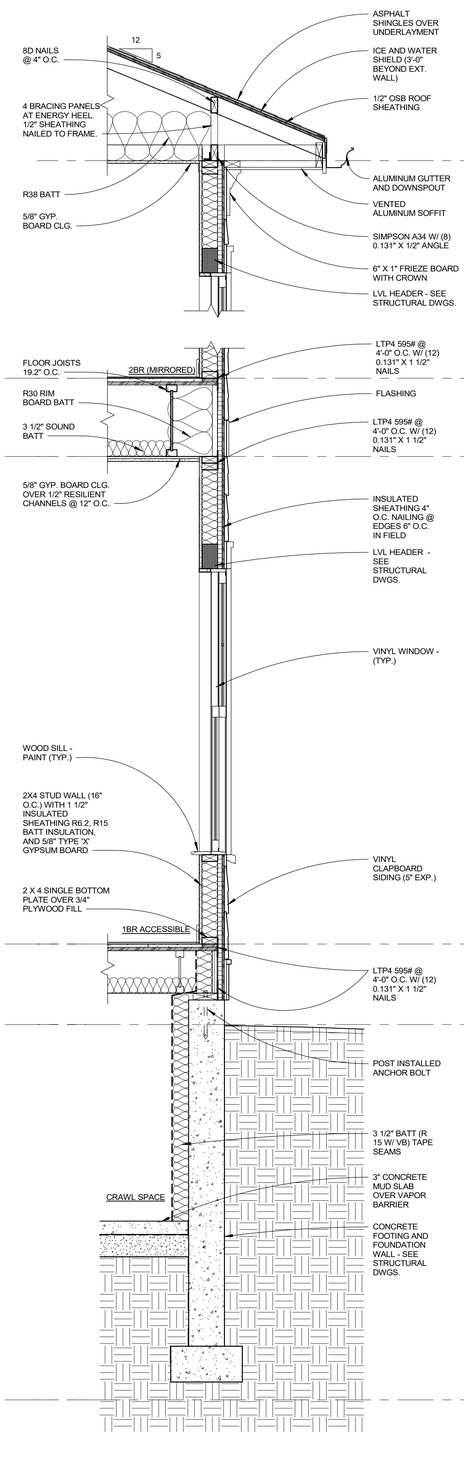
1 / A4.1



REAR ENTRY WALL DETAIL

SCALE: 3/4" = 1'-0"

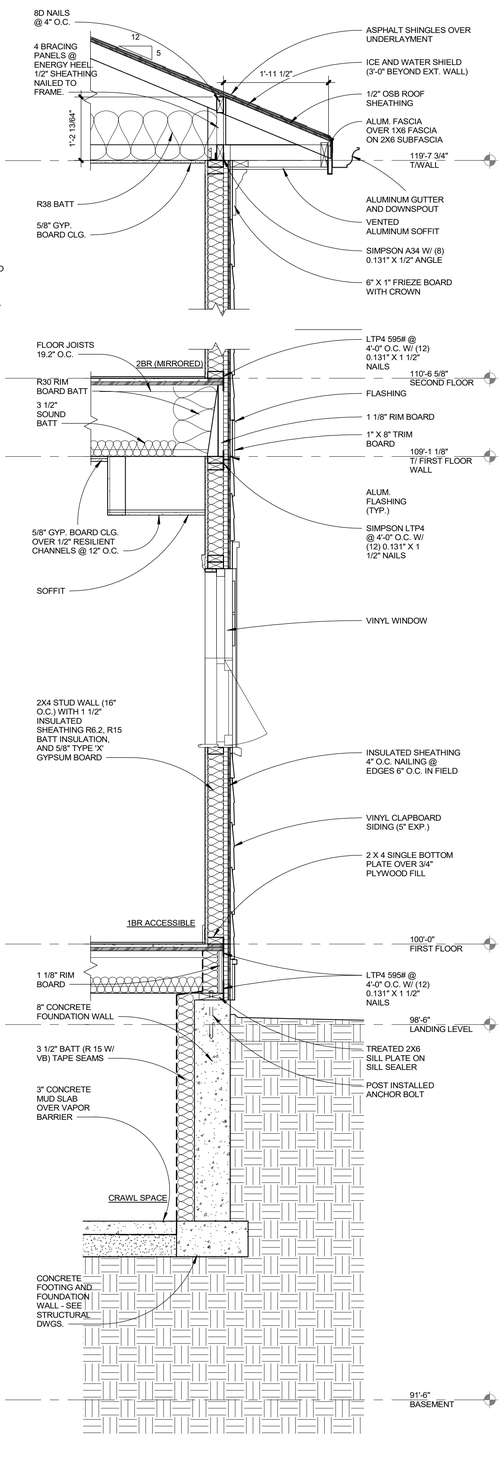
2 / A4.1



EXTERIOR EAST WALL DETAIL

SCALE: 3/4" = 1'-0"

3 / A4.1



EXTERIOR SOUTH WALL DETAIL

SCALE: 3/4" = 1'-0"

4 / A4.1

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAWS REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

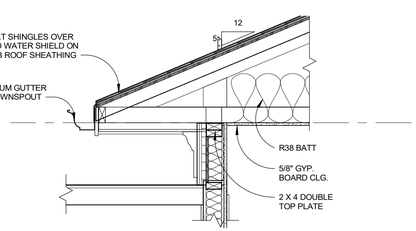
TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

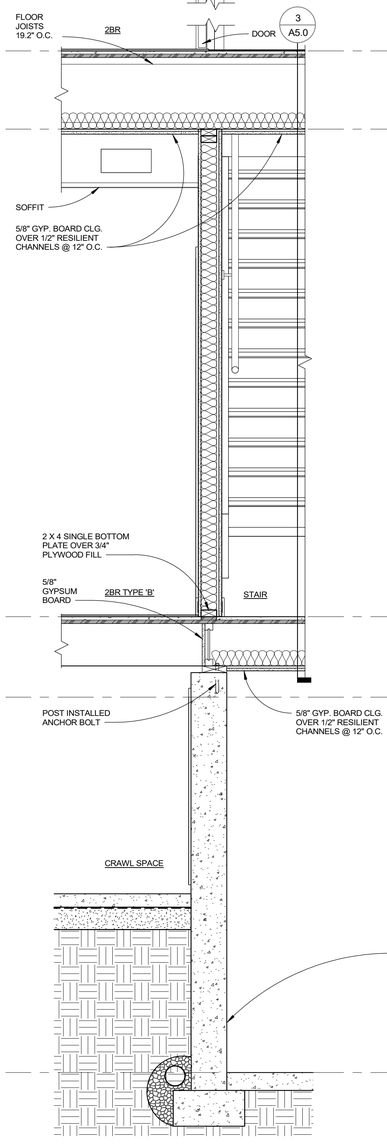
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A4.1

FILE PATH: C:\Users\kshirkey\Documents\Revit\2024\Turnock Street 4-plex_shirkeyZKCYH.rvt
PLOT DATE: 2/27/2025 3:13:42 PM

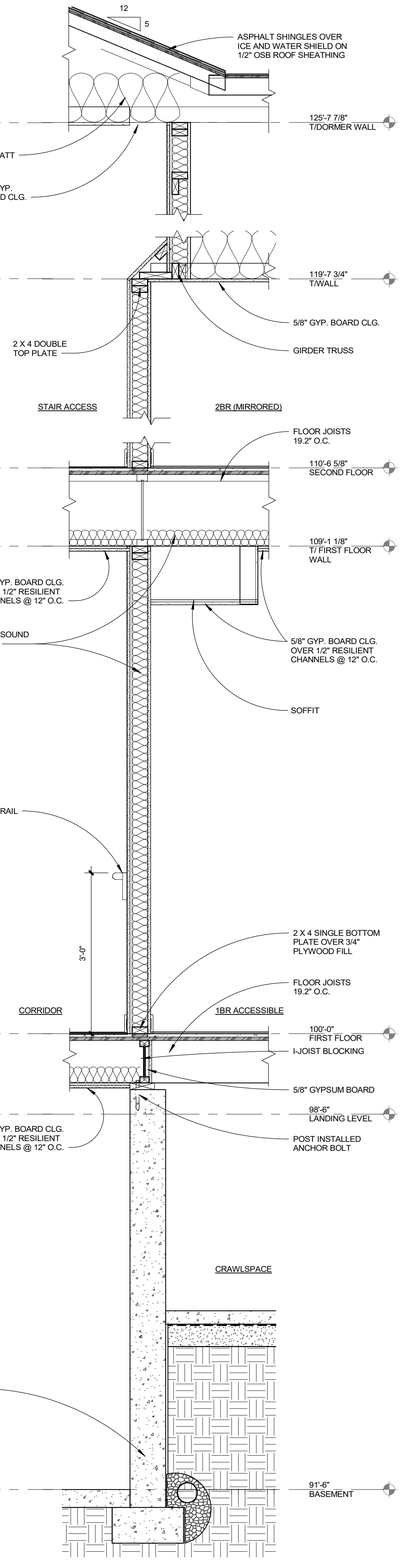




INTERIOR NORTH BEARING WALL

1 A4.2

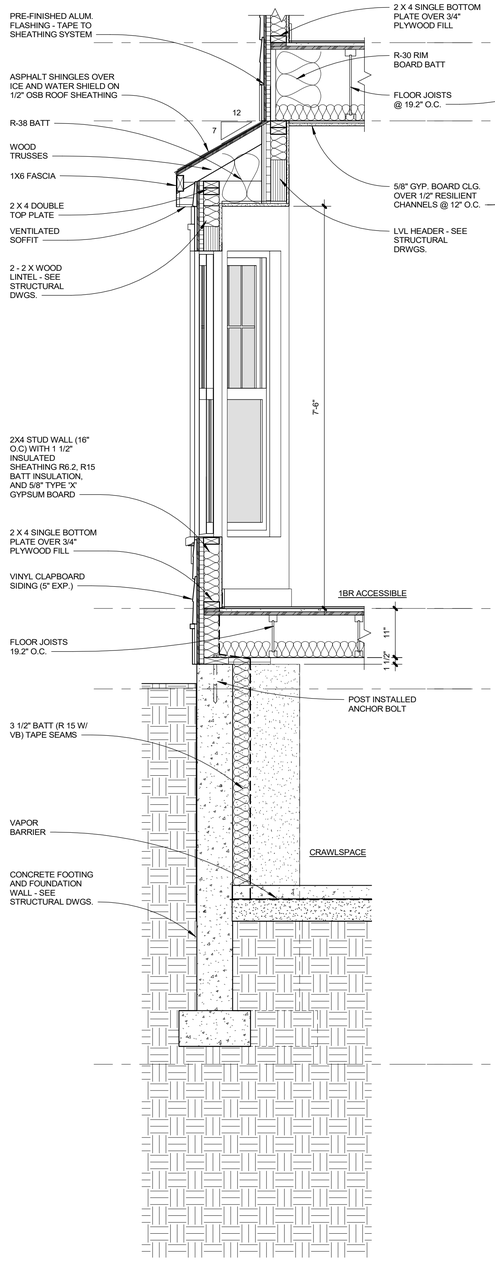
SCALE: 3/4" = 1'-0"



INTERIOR SOUTH BEARING WALL

2 A4.2

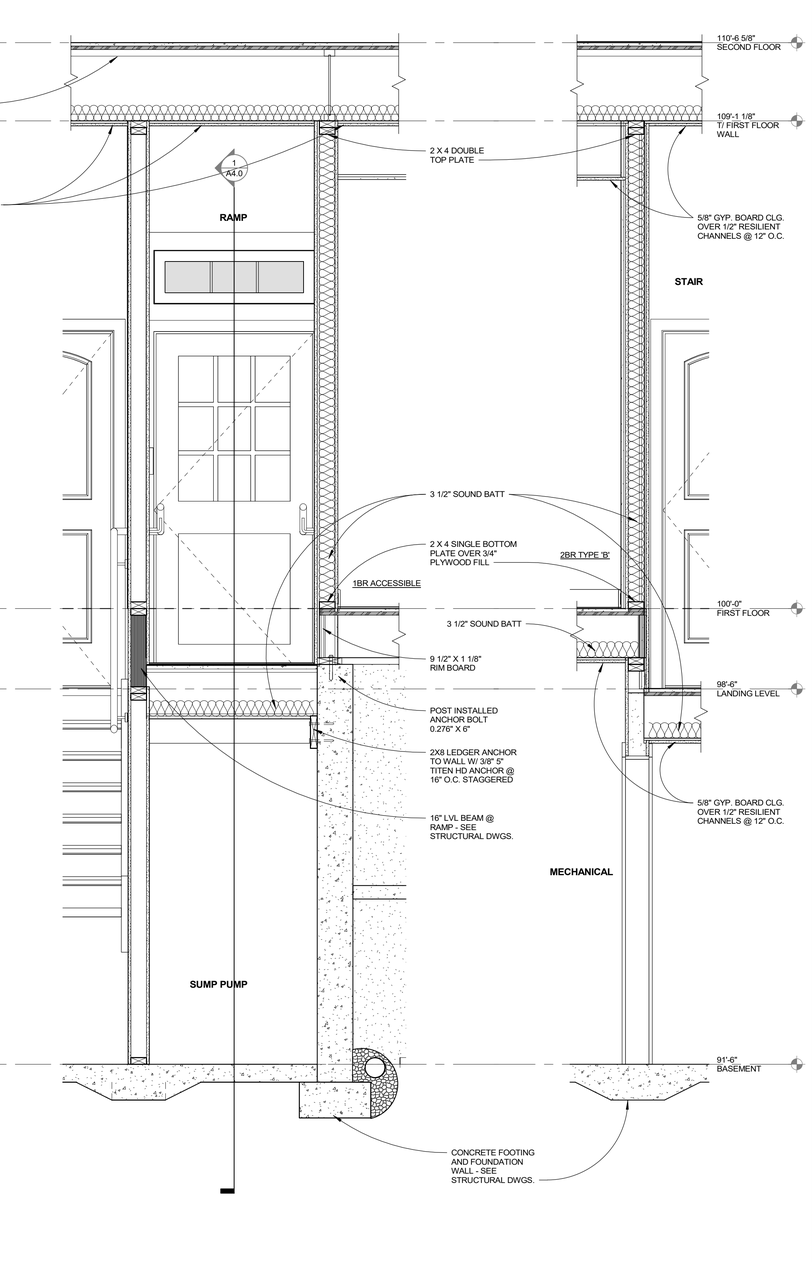
SCALE: 3/4" = 1'-0"



BAY WINDOW WALL DETAIL

3 A4.2

SCALE: 3/4" = 1'-0"



RAMP WALL

4 A4.2

SCALE: 3/4" = 1'-0"

INTERIOR BASEMENT WALL DETAIL

5 A4.2

SCALE: 3/4" = 1'-0"

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAKE
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

South Bend Heritage

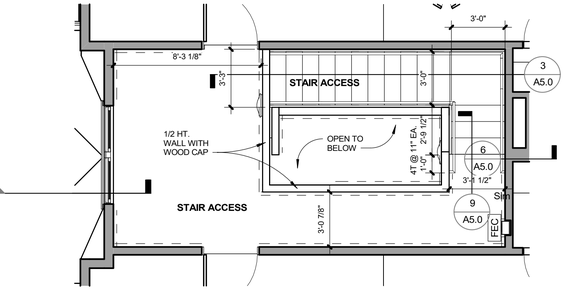
TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A4.2

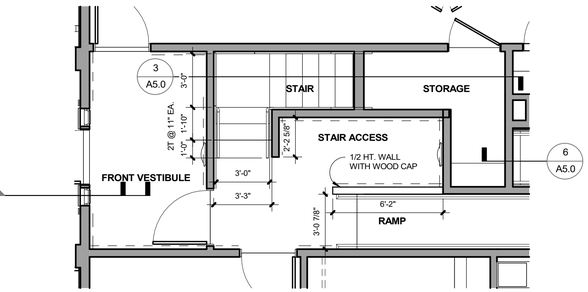
FILE PATH: C:\Users\ahinkle\Documents\Revit\2024\Turnock Street 4-plex_ahinkleZHCY1H.rvt
PLOT DATE: 2/27/2025 3:13:46 PM



CENTRAL STAIR PLAN, UPPER FLOOR

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

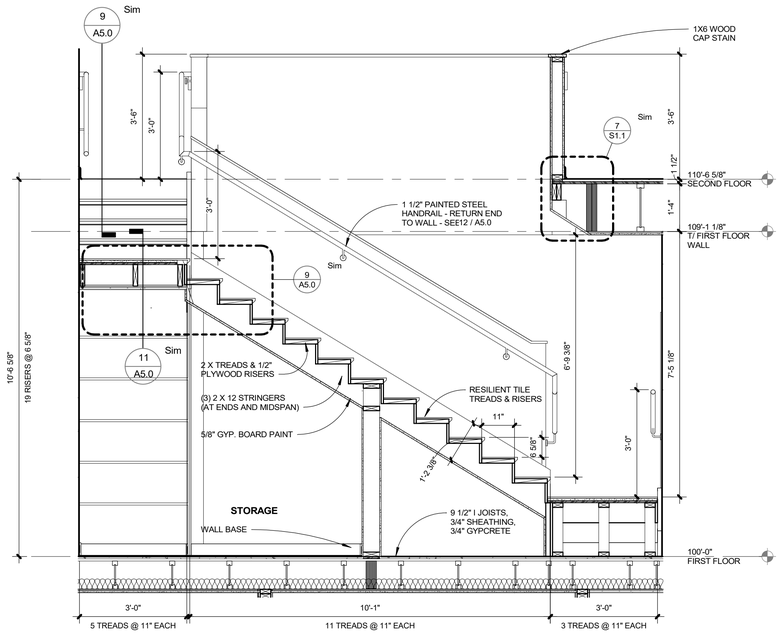
1 A5.0



CENTRAL STAIR PLAN, GROUND FLOOR

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

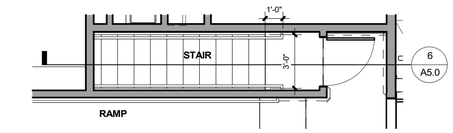
2 A5.0



CENTRAL STAIR SECTION

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

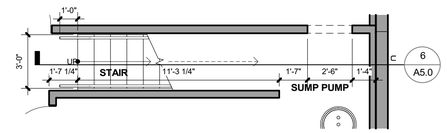
3 A5.0



REAR STAIR PLAN, GROUND FLOOR

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

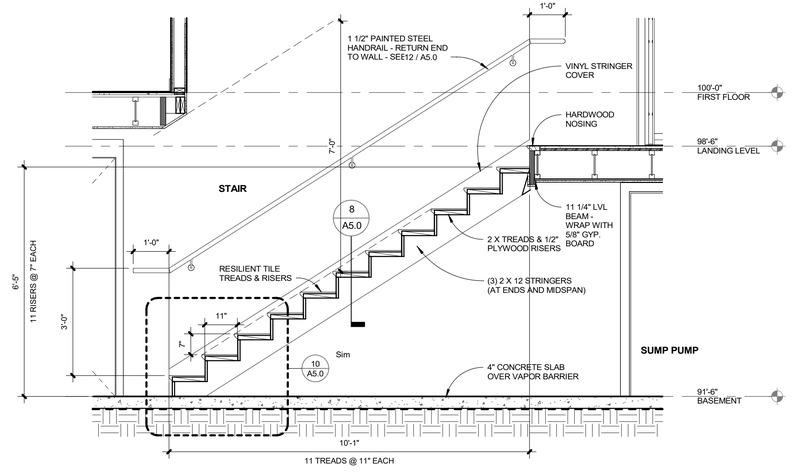
4 A5.0



REAR STAIR PLAN, BASEMENT

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

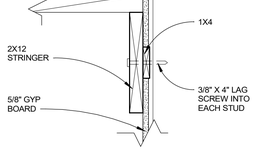
5 A5.0



REAR STAIR SECTION

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

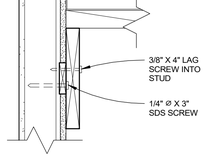
6 A5.0



STAIR DETAIL

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

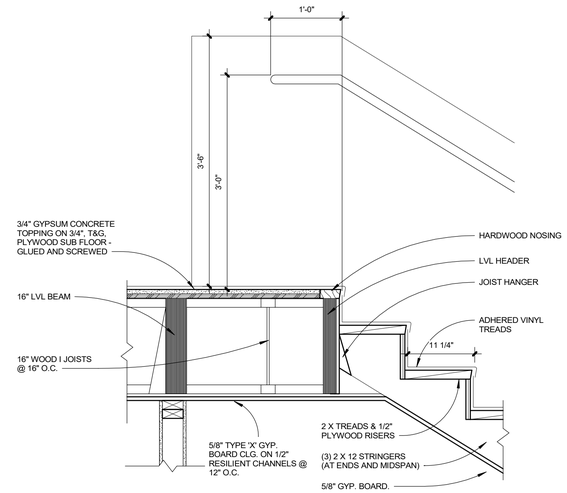
7 A5.0



STAIR DETAIL

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

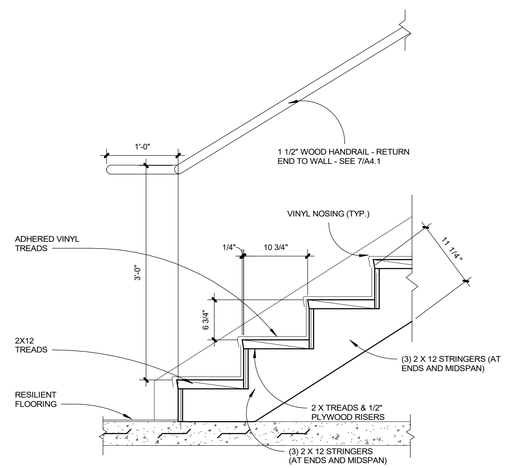
8 A5.0



STAIR DETAIL

SCALE: 1" = 1'-0"

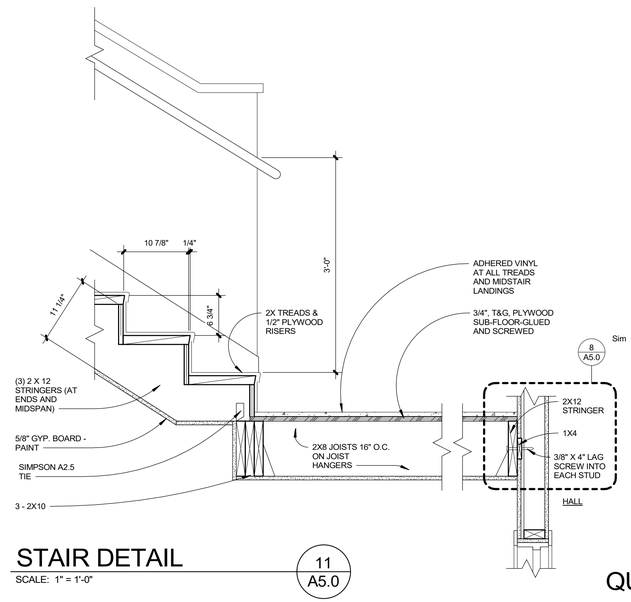
9 A5.0



STAIR DETAIL

SCALE: 1" = 1'-0"

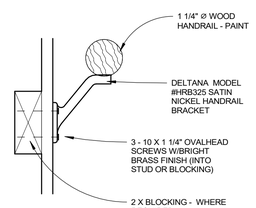
10 A5.0



STAIR DETAIL

SCALE: 1" = 1'-0"

11 A5.0



NOTE: SCREWS SPECIFIED ARE LONGER THAN THOSE PROVIDED.

HANDRAIL

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

12 A5.0

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAM REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.

A5.0

FILE PATH: C:\Users\shirlw\Documents\Revit\2024\Turnock Street 4-plex_shirlwr2HCYH.rvt
PLOT DATE: 2/27/2025 3:13:50 PM

DOOR AND FRAME LEGEND

WD AND WOOD - PAINT

WD	WOOD - PAINT
HC	HOLLOW CORE WOOD DOOR - PAINT
HL	SOLID CORE WOOD, PREFINISHED, HALF LITE DOOR
PF	SOLID CORE WOOD, ROMAN ARCH, TWO PANEL DOOR - SEE SCHEDULE FOR FIRE RATING
F	FLUSH DOOR
FG	FIBERGLASS INSULATED DOOR
SC	WOOD SOLID CORE - PREFINISHED. SEE SCHEDULE FOR FIRE RATING
AMF	ADJUSTABLE METAL FRAME

DOOR NOTES

1. SEE SPECIFICATION DIVISION 8 FOR GLAZING IN DOORS AND SIDELIGHTS.
2. INSPECT DOOR OPERATION AND ADJUST AS REQUIRED.
3. COORDINATE ROUGH OPENING DIMENSIONS PRIOR FRAMING.
4. PAINT WOOD DOORS AND FRAMES UNLESS NOTED OTHERWISE.
5. PAINT METAL DOORS AND FRAMES NOTED TO REMAIN.
6. PAINT FIBERGLASS DOORS.
7. SEE SPECIFICATION DIVISION 8 FOR DOOR HARDWARE.

UNIT DOOR SCHEDULE

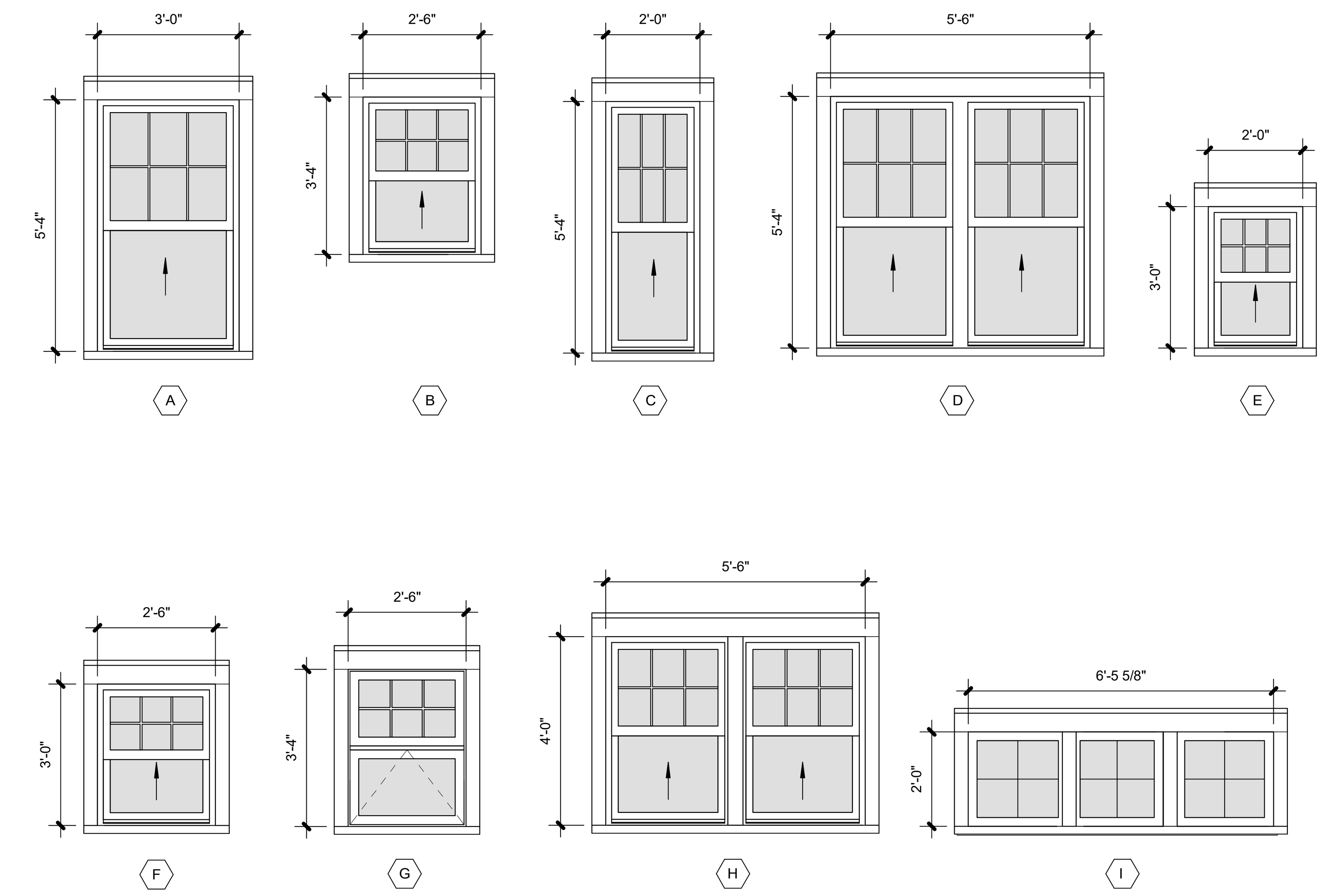
MARK	DESC.	WIDTH	HEIGHT	THICKNESS	DOOR TYPE	DOOR MATERIAL	FRAME MATERIAL	FRAME TYPE	HARDWARE SET	FIRE RATING	NOTES
1	APARTMENT ENTRY	3'-0"	6'-8"	1 3/4"	PF	SC	AMF	WD1	R1	20 MIN.	
2	BEDROOM + BATHROOM	3'-0"	6'-8"	1 3/4"	PF	HC	WD	WD1	R2		
3	BEDROOM	2'-10"	6'-8"	1 3/8"	PF	HC	WD	WD1	R2		
4	STORAGE	3'-0"	6'-8"	1 3/4"	PF	HC	WD	WD1	R5		
5	BEDROOM + BATHROOM	2'-6"	6'-8"	1 3/8"	PF	HC	WD	WD1	R2		
6	CLOSET	2'-0"	6'-8"	1 3/8"	PF	HC	WD	WD1	R5		
7	CLOSET	5'-0"	6'-8"	1 3/8"	PF	HC	WD	WD1	R3		PAIR
8	STORAGE	2'-10"	6'-8"	1 3/8"	PF	HC	WD	WD1	R5		
9	PANTRY	2'-4"	6'-8"	1 3/8"	PF	HC	WD	WD1	R5		
10	LAUNDRY	2'-6"	6'-8"	1 3/8"	PF	HC	WD	WD1	R5		
11	FURNACE	2'-10"	5'-2"	1 3/8"	F	HC	WD	WD1	R4		
12	FURNACE	2'-4"	5'-2"	1 3/8"	F	HC	WD	WD1	R4		
13	REMOTE STORAGE	2'-4"	6'-8"	1 3/8"	F	SC	AMF	MT1	R1	20 MIN.	

COMMON AREA DOOR SCHEDULE

MARK	DESC.	WIDTH	HEIGHT	THICKNESS	DOOR TYPE	DOOR MATERIAL	FRAME MATERIAL	FRAME TYPE	HARDWARE SET	FIRE RATING	NOTES
100	FRONT ENTRY	3'-0"	6'-8"	1 3/4"	3P	SC	WD	WD1	01		
101	VESTIBULE	3'-0"	6'-8"	1 3/4"	HL	MI	WD	WD1	02		INSULATED TEMPERED GLAZING
102	REAR ENTRY	3'-0"	6'-8"	1 3/4"	HL	MF	WD	WD1	01		INSULATED TEMPERED GLAZING
103	BASEMENT	2'-8"	6'-8"	1 3/8"	PF	SC	AMF	MT1	01	60 MIN.	
104	MECHANICAL/MAINTENANCE	3'-0"	6'-8"	1 3/8"	PF	SC	AMF	MT1	03		INCLUDE LOUVER IN BOTTOM PANEL
105	MECHANICAL/MAINTENANCE	2'-4"	6'-8"	1 3/8"	PF	SC	AMF	MT1	03		INCLUDE LOUVER IN BOTTOM PANEL

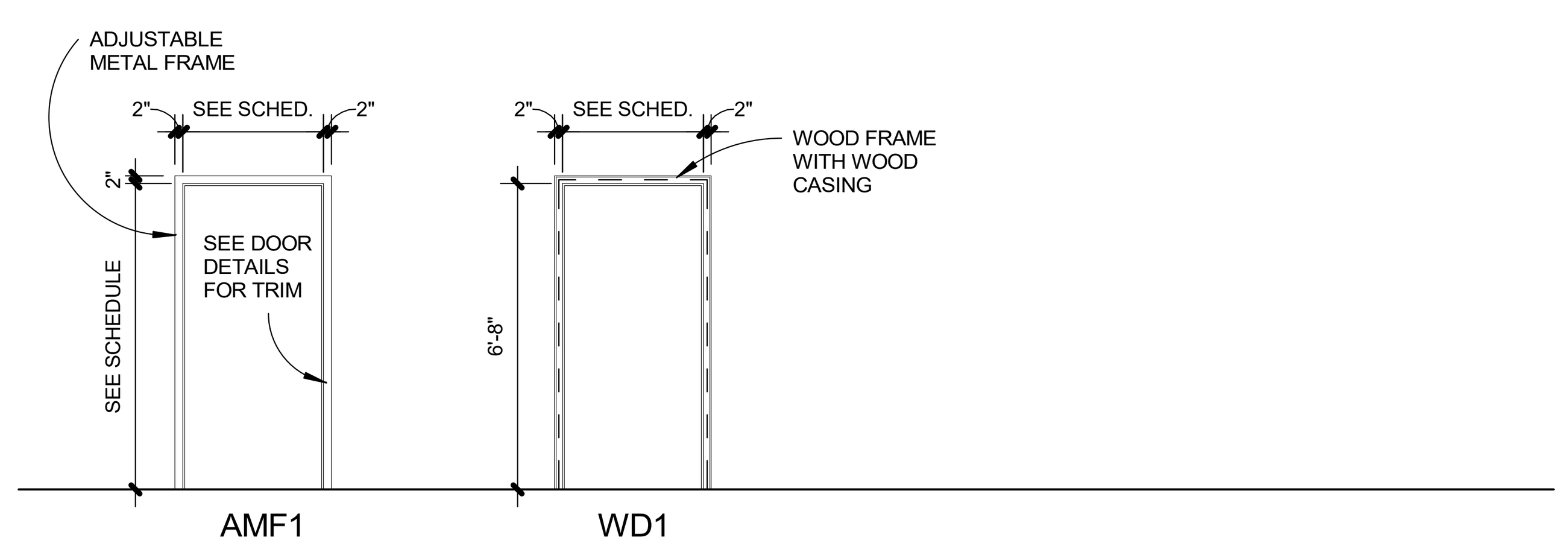
WINDOW SCHEDULE

MARK	TYPE	WIDTH	HEIGHT	NOTES
A	WINDOW SINGLE HUNG	3'-0"	5'-4"	
B	WINDOW SINGLE HUNG	2'-6"	3'-4"	
C	WINDOW SINGLE HUNG	2'-0"	5'-4"	
D	WINDOW SINGLE HUNG	5'-6"	5'-4"	DOUBLE WINDOW
E	WINDOW SINGLE HUNG	2'-0"	3'-0"	
F	WINDOW SINGLE HUNG	2'-6"	3'-0"	
G	FIXED UPPER / AWNING LOWER	2'-6"	3'-4"	
H	WINDOW SINGLE HUNG	5'-6"	4'-0"	DOUBLE WINDOW
I	WINDOW FIXED	6'-6"	2'-1"	TRIPLE WINDOW

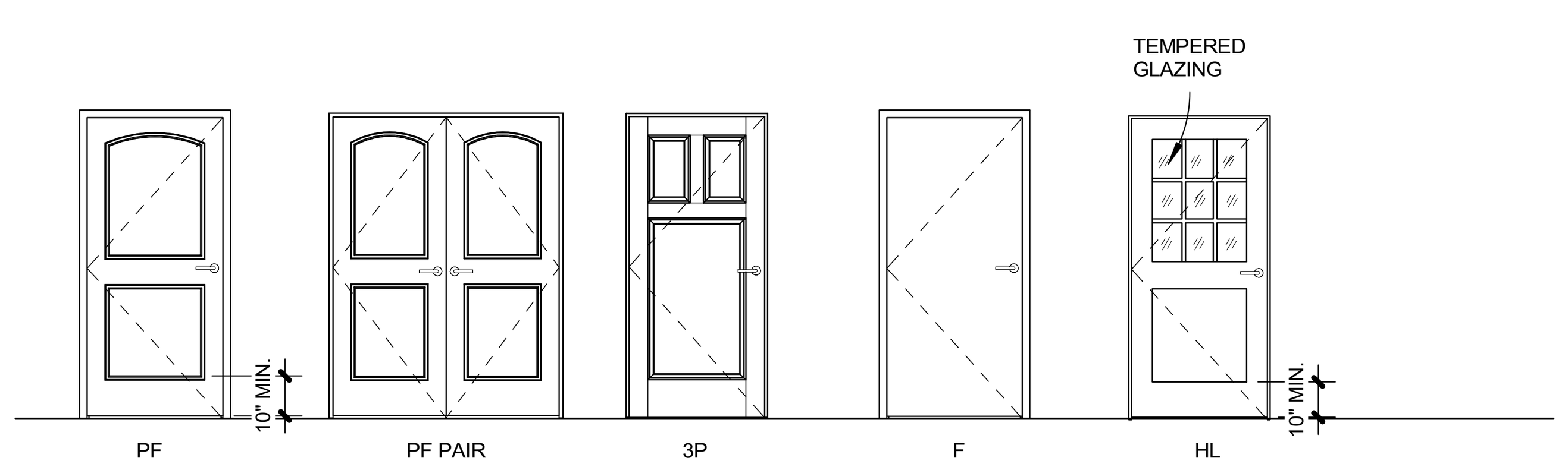


WINDOW ELEVATIONS

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



FRAME TYPE ELEVATIONS



DOOR TYPE ELEVATIONS

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PLOT DATE: 2/27/2025 3:13:52 PM

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMIE REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

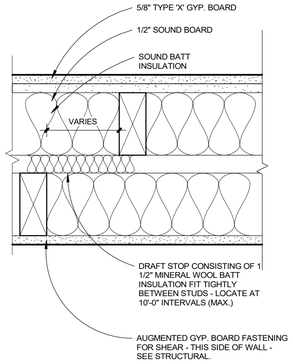
South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A6.0

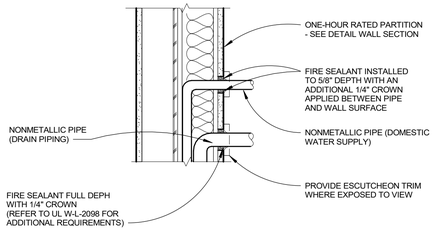
DOOR & WINDOW SCHEDULES



DETAIL @ DEMISING PARTITION

SCALE: 3" = 1'-0"

1 / A6.1

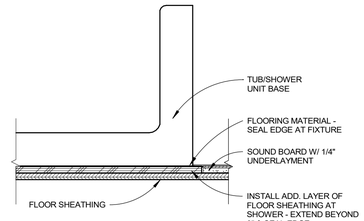


NOTE: FIRESTOPPING DETAILS SHOWN ARE SCHEMATIC. PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH SYSTEM SPECIFIED. VERIFY REQUIREMENTS FOR MAXIMUM SIZES OF ANNULAR SPACES, FASTENING, ETC. AND COMPLY WITH SAME.

DETAIL

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

2 / A6.1

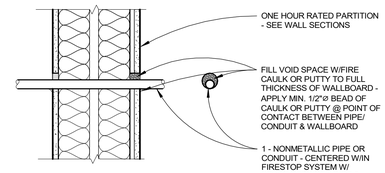


DETAIL

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

AT UPPER FLOOR APARTMENT SHOWER BASE

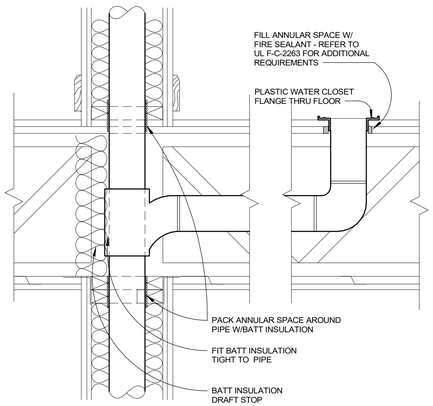
3 / A6.1



DETAIL

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

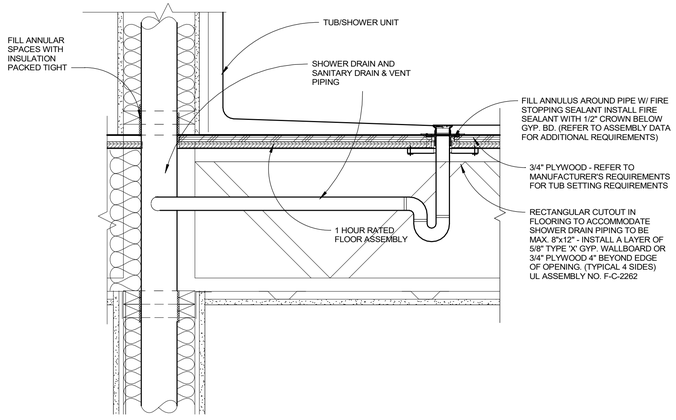
4 / A6.1



DETAIL @ DEMISING PARTITION

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

5 / A6.1

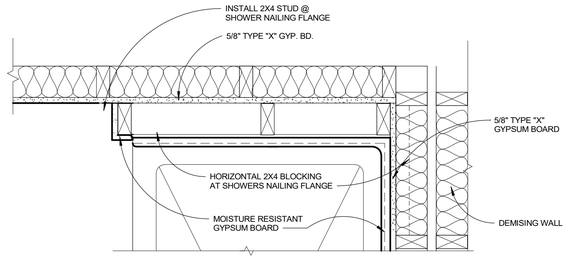


DETAIL

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

AT UPPER FLOOR APARTMENT TUBS

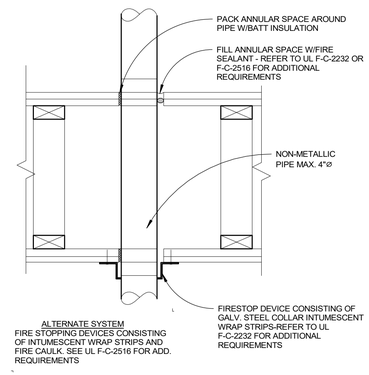
6 / A6.1



DETAIL @ TYP. TUB ENCLOSURE

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

7 / A6.1

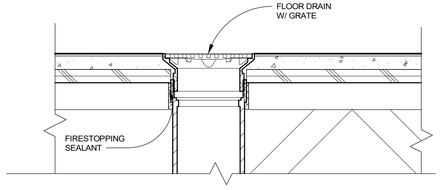


ALTERNATE SYSTEM
FIRE STOPPING DEVICES CONSISTING OF INTUMESCENT WRAP STRIPS AND FIRE CAULK. SEE UL F-C-2516 FOR ADD. REQUIREMENTS

DETAIL @ NON-METALLIC PIPE PENETRATIONS

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

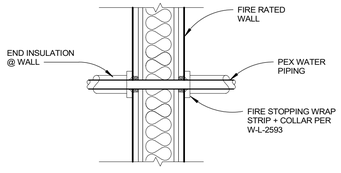
8 / A6.1



DETAIL

SCALE: 3" = 1'-0"

9 / A6.1



DETAIL

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

10 / A6.1

GENERAL INFORMATION

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMB REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A6.1

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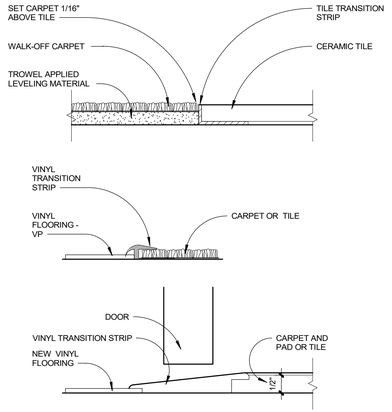

FLOOR TRANSITION DETAILS

SCALE: 6" = 1'-0"

1
A6.2

GENERAL FINISH NOTES

FINISH LEGEND:

CPT	CARPET
CT	CERAMIC TILE
RB	RESILIENT BASE
PT	PAINT
VB	VINYL BASE
VP	VINYL PLANK
VST	VINYL STAIR TREAD
WD	WOOD BASE (PAINT)
W/O CPT	WALK-OFF CARPET

1. SEE SPECIFICATIONS FOR SURFACE PREPARATION FOR EACH FINISH MATERIAL.
2. SEE SPECIFICATIONS FOR PAINT SYSTEMS REQUIRED AT VARYING CONDITIONS.
3. PAINT EXISTING ATTIC ACCESS DOORS. REFER TO PLANS AND/OR REFLECTED CEILING PLANS FOR LOCATIONS.
4. SEE SPECIFICATIONS FOR RESILIENT BASE MATERIAL.
5. PROVIDE TRANSITION STRIPS AT EACH CHANGE OF FLOORING MATERIAL PER THE DETAILS THIS SHEET AND THE SPECIFICATIONS
6. INSTALL FLOORING AND WALL BASE AT ALL CABINET TOE / KNEE SPACES, END PANELS, AND APPLIANCE RECESSES, UNLESS NOTED OTHERWISE. PAINT WALL SURFACES BEHIND KNEE SPACES AND APPLIANCE RECESSES.
7. SEE DETAIL 11/A6.3 FOR WOOD TRIM PROFILES.
8. AT HANDICAP DWELLING UNITS, INSTALL ADJUSTABLE SHELVING AS SHOWN ON DETAIL 7/A6.3.
9. FURNISH AND INSTALL ROOM SIGNAGE AS NOTED IN SPECIFICATIONS.
10. PRIOR TO FINISHING INSPECT WALLS AT MECHANICAL CLOSETS AND BEHIND CABINETS, REPAIR AND SEAL AS REQUIRED.
11. PROVIDE FIRE STOPPING ASSEMBLIES AT ALL CONDUIT, DUCT AND PIPING PENETRATIONS. SEE CODE COMPLIANCE PLAN FOR RATED WALL LOCATIONS.

UNIT FINISH SCHEDULE

LEVEL	ROOM NAME	FLOOR	BASE	WALLS/ CEILINGS	REMARKS (SEE UNIT FINISH NOTES)
GROUND FLOOR	BATHROOM	VP	RB	PT	
GROUND FLOOR	BEDROOM	CPT	VB	PT	UNIT 2BR TYPE 'B' ACCESSIBLE
GROUND FLOOR	BEDROOM	VP	VB	PT	UNIT 1 BR ACCESSIBLE
GROUND FLOOR	FURNACE	VP	VB	PT	
GROUND FLOOR	HALL	VP	VB	PT	
GROUND FLOOR	KITCHEN	VP	VB	PT	
GROUND FLOOR	LAUNDRY	VP	VB	PT	
GROUND FLOOR	LINEN	VP	VB	PT	
GROUND FLOOR	LIVING ROOM	VP	VB	PT	
GROUND FLOOR	PANTRY	VP	VB	PT	
GROUND FLOOR	STORAGE	VP	VB	PT	
UPPER FLOOR	BATHROOM	VP	RB	PT	
UPPER FLOOR	BEDROOM	CPT	VB	PT	
UPPER FLOOR	FURNACE	VP	VB	PT	
UPPER FLOOR	HALL	CPT	VB	PT	
UPPER FLOOR	KITCHEN	VP	VB	PT	
UPPER FLOOR	LAUNDRY	VP	VB	PT	
UPPER FLOOR	LIVING	VP	VB	PT	

CLOSET FLOORING TO MATCH ADJACENT ROOM.

COMMON AREA FINISH SCHEDULE

LEVEL	ROOM NAME	FLOOR	BASE	WALLS/ CEILINGS	REMARKS (SEE UNIT FINISH NOTES)
GROUND FLOOR	FRONT VESTIBULE	W/O CPT	VB	PT	
GROUND FLOOR	RAMP	W/O CPT	VB	PT	
GROUND FLOOR	REAR VEST.	W/O CPT	VB	PT	
GROUND FLOOR	STAIR ACCESS	VP	VB	PT	VST @ STAIR TREADS - CHAIR RAIL PER 8/A6.3
BASEMENT	2ND FLOOR APT. STORAGE	PT CONC.	VB	PT	
BASEMENT	MECHANICAL	PT CONC.	VB	PT	
BASEMENT	SPRINKLER RISER	PT CONC.	VB	PT	
BASEMENT	STAIR ACCESS	PT CONC.	VB	PT	VST @ STAIR TREADS - CHAIR RAIL PER 8/A6.3
BASEMENT	SUMP PUMP	PT CONC.	VB	PT	

GENERAL INFORMATION

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAM
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A6.2

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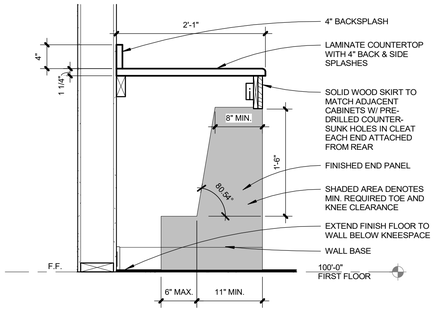
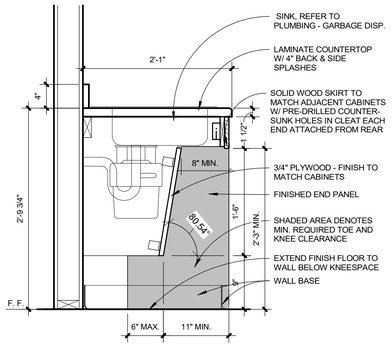


HC KITCHEN KNEESPACE

SCALE: 1" = 1'-0"

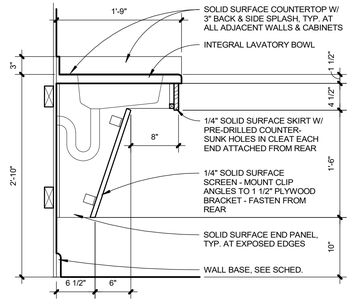
1 / A6.3



HC KITCHEN SINK DETAIL

SCALE: 1" = 1'-0"

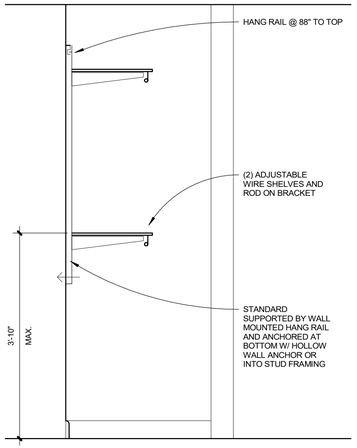
2 / A6.3



HC LAVATORY/SINK DETAIL

SCALE: 1" = 1'-0"

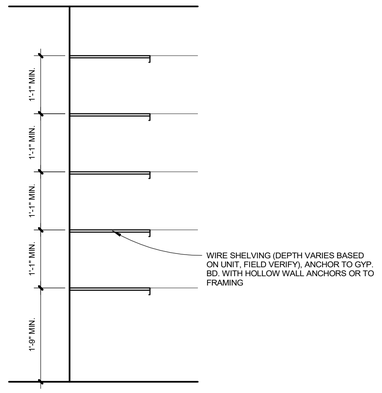
3 / A6.3



CLOSET ADJUSTABLE SHELVING DETAIL

SCALE: 3/4" = 1'-0"

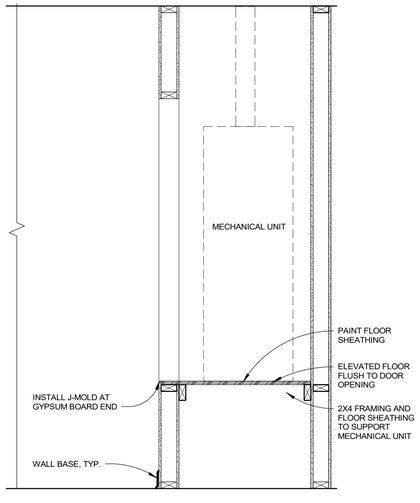
4 / A6.3



LINEN SHELVING DETAIL

SCALE: 3/4" = 1'-0"

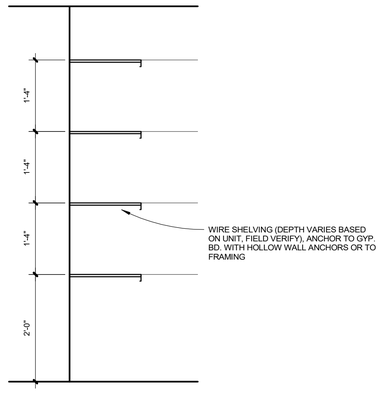
5 / A6.3



ELEVATED FLOOR SECTION

SCALE: 3/4" = 1'-0"

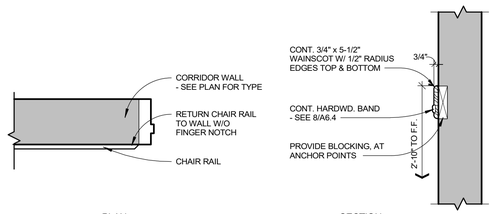
10 / A6.3



PANTRY SHELVING DETAIL

SCALE: 3/4" = 1'-0"

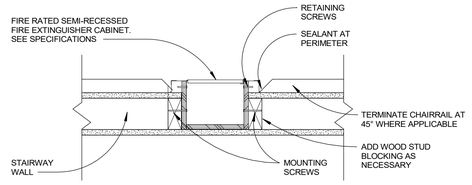
11 / A6.3



CHAIR RAIL DETAIL

SCALE: 1" = 1'-0"

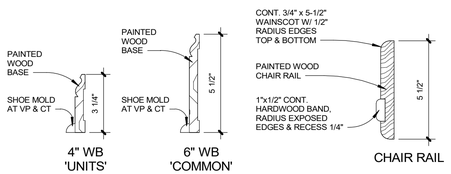
8 / A6.3



FIRE EXTINGUISHER CABINET

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

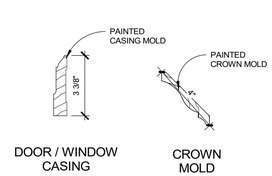
9 / A6.3



WOOD TRIM PROFILES

SCALE: 3" = 1'-0"

12 / A6.3



GENERAL INFORMATION

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LANE
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A6.3

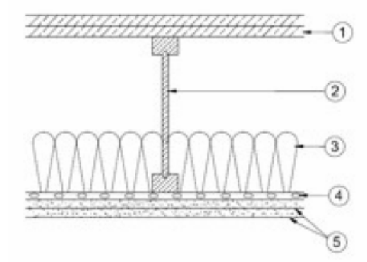
FILE PATH: C:\Users\shirlw\Documents\Revit\2024\Turnock Street 4-plex_shirlwin2\CYH1.rvt
PLOT DATE: 2/27/2025 3:14:49 PM

Design No. **M546**

December 6, 2024

Unrestrained Assembly Rating — 1 Hr.
Finish Rating - 44 min
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Flooring System —** The flooring system shall consist of one of the following:

System No. 1

Subflooring — Nom 19/32 in. thick wood structural panels installed perpendicular to the joists with end joints staggered. Plywood or panels secured to joists with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each joist. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Floor — Min 1 by 4 in. T & G lumber installed perpendicular to the joists, or min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered.

System No. 2

Subflooring — Nom 19/32 in. thick wood structural panels installed perpendicular to the joists with end joints staggered. Plywood or panels secured to joists with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each joist. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.
HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Firm-Fill High Strength and Gyp-Span Radiant

Metal Lath — (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

Floor Mat Materials* — (Optional) Floor mat material nom 5/64 in. (2 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1 in. of floor-topping mixture.
HACKER INDUSTRIES INC — Type Hacker Sound-Mat.

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32 mm) of floor-topping mixture.
HACKER INDUSTRIES INC — Type Hacker Sound-Mat II.

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/8 in. (3 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 3/4 in. (19 mm)
HACKER INDUSTRIES INC — FIRM-FILL SCM 125

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25 mm)
HACKER INDUSTRIES INC — Type FIRM-FILL SCM 250, Quiet Qurl 55/025

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/8 in. (10 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32 mm)
HACKER INDUSTRIES INC — FIRM-FILL SCM 400, Quiet Qurl 60/040

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/4 in. (19 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38 mm)
HACKER INDUSTRIES INC — Type FIRM-FILL SCM 750, Quiet Qurl 65/075

System No. 3

Subflooring — Nom 19/32 in. thick wood structural panels installed perpendicular to the joists with end joints staggered. Plywood or panels secured to joists with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each joist. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1500 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.
MAXXON CORP — Type Maxxon Standard and Maxxon High Strength

Floor Mat Materials* — (Optional) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.
MAXXON CORP — Type Encapsulated Sound Mat.

Floor Mat Reinforcement — (Optional) Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat reinforcement.

Metal Lath — (Optional) 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material.

Fiber Glass Reinforcement — (Optional) 0.015 in. thick PVC coated non-woven fiberglass mesh, 0.368 lbs./sq. yd loose laid over the floor mat material.

System No. 4

Subflooring — Nom 19/32 in. thick wood structural panels installed perpendicular to the joists with end joints staggered. Plywood or panels secured to joists with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each joist. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies. Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mat(s).

Floor Mat Materials* — (Optional, Not Shown) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.
Freudenberg Performance Materials LP — EnkaSonic® by Colbond a member of the Low & Bonar group Types 125, 250, 250 Plus, 400, 400 Plus, 750 and 750 Plus.

Floor Mat Reinforcement — (Optional) - Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat reinforcement.

Metal Lath — (Optional) — Expanded steel diamond mesh, 2.5 lb / sq yd loose laid over floor mat material.

Fiberglass Mesh Reinforcement — (Optional) — Coated non-woven glass fiber mesh grid loose laid over floor mat material.

2. **Structural Wood Members —** Min 9-1/2 in. deep "I" shaped wood joists spaced at a max of 24 in. OC. Joists shall conform to ICC-ES ESR-1153 Report. Joist top and bottom chords minimum 1-3/8 in. deep by 2.3 in. wide and constructed of either Microllam laminated veneer lumber (LVL) or TimberStrand laminated strand lumber (LSL). Webs constructed of minimum 3/8 in. thick Performance Plus OSB, PS2, Exposure 1. Installation shall be in accordance with manufacturers published literature.

3. **Insulation —** Min 3-1/2 in. fiberglass or mineral wool insulation bearing the UL Classification Marking for Surface Burning Characteristics, applied within the concealed space, over the resilient or furring channel/gypsum panel.

4. **Resilient Channels —** Formed from 25 MSG galv steel installed perpendicular to the joists. Channels spaced 16 in. OC. Two courses of resilient channel positioned 6 in. OC at gypsum panel butt-joints (3 in. from each end of gypsum board). Channels oriented opposite at gypsum panel butt-joints. Channel splices overlapped 4 in. beneath wood joists. Channels secured to each joist with 1-1/4 in. long Type S screws.

4A. **Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Item 4.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 24 in. OC, perpendicular to the joists. Channels secured to Cold Rolled Channels at every intersection with a 3/4 in. TEK screw through each furring channel leg. Ends of adjoining channels overlapped 12 in. and fastened together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap, or with two 3/4 in. TEK screws in each leg of the overlap section. Two furring channels used at end joints of gypsum board (Item 5), each extending a min of 6 in. beyond both side edges of the board.

b. **Cold Rolled Channels —** 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to joists, friction-fitted into the channel caddy on the Steel Framing Members (Item 4Ac) and secured with two 3/4 in. TEK screws. Adjoining lengths of cold rolled channels lapped min. 12 in. and secured along bottom legs with four 3/4 in. TEK screws and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Steel Framing Members* —** Spaced 48 in. OC. max along joist, and secured to the joist on alternating joists with two, #10 x 1-1/2 in. screws through mounting holes on the hanger bracket.
PAC INTERNATIONAL L L C — Type RSIC-SI-CRC EZ Clip

4B. **Steel Framing Members* —** (Optional, Not Shown) — As an alternate to Item 3.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to joists and friction fit into Steel Framing Members (Item 4Bb). Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap or with two TEK screws along each leg of the 6 in. overlap. Two furring channels used at end joints of gypsum board (Item 5). Butt joint channels held in place by strong back channels placed upside down, on top of, and running perpendicular to primary furring channels, extending 6 in. longer than length of gypsum side joint. Strong back channels spaced maximum 48 in. OC. Strong back channels secured to every intersection of primary furring channels with four 7/16 in. pan head screws, two along each of the legs at intersections. Butt joint channels run perpendicular to strong back channels and shall be minimum 6 in. longer than length of joint, secured to strong back channels with 7/16 in. pan head screws, two along each of the legs at intersection with strong back channels.

b. **Steel Framing Members* —** Used to attach furring channels (Item 4Ba) to joists. Clips spaced 48 in. OC and secured along joist webs at each furring channel intersection with min. 3/4 in. long self-drilling #10 x 1-1/2 in. screws through each of the provided hole locations. Furring channels are friction fitted into clips.
PAC INTERNATIONAL L L C — Type RSIC-S1-1 Ultra

4C. **Alternate Steel Framing Members* —** (Not Shown) — As an alternate to Item 4, furring channels and Steel Framing Members as described below.
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 16 in. OC, perpendicular to joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced a max of 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating joists with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to alternating joists with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75)

4D. **Alternate Steel Framing Members* —** (Not Shown) — As an alternate to Items 4 and 4C, furring channels and Steel Framing Members as described below.
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC, perpendicular to joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced a max of 48 in. OC. Genie Clips secured to alternating joists with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. Additional clips required to hold furring channel that supports the gypsum board butt joints.
PLITEQ INC — Type Genie Clip

4E **Alternate Steel Framing Members* —** (Not Shown) — As an alternate to items 4-4D, furring channels and Steel Framing Members as described below.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, 2-1/2 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to joists. Channels secured to joists as described in Item b.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to the wood joists (Item 2). Clips spaced at 48" OC and secured to the bottom of the joists with one 2-1/2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in item 5.
REGUPOL AMERICA — Type SonusClip

4F. **Steel Framing Members* —** (Optional, Not Shown) — Used as an alternate method to attach resilient channels to structural members. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 24 in. O.C. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions.
PAC INTERNATIONAL L L C — Type RC-1 Boost

5. **Gypsum Board* —** Two layers of 1/2 in. or 5/8 in. thick by 4 ft wide gypsum panels, installed perpendicular to resilient channels (Item 4). The base layer of panels screw-attached to the resilient channels with 1 in. long Type S screws spaced 8 in. OC at the butt joints and 16 in. OC in the field of the panel. At the base layer gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from joint. The face layer screw-attached to the resilient channels with 1-5/8 in. Type S screws spaced 8 in. OC and 1-1/2 in. Type G screws spaced 8 in. OC at the butt joints located mid-span between resilient channels. Gypsum board butted end joints in individual layers shall be staggered minimum 48 in. OC.
When **Steel Framing Members** (Item 4A) are used, Two layers of 1/2 in. or 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 5. Adjacent butt joints staggered minimum 48 in. OC.

When **Steel Framing Members** (Item 4B) are used, Two layers of 1/2 in. or 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 5. Butt joints staggered minimum 24 in. OC.

When **Steel Framing Members** (Item 4C) are used, base layer gypsum panels installed with long dimensions perpendicular to furring channels. Panels attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 8 in. OC along butted end joints and in the field of the panel. Butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum panel shall be supported by a single length of furring channel equal to the width of the gypsum panel plus 6 in. on each end. The two support furring channels shall be spaced approximately 3-1/2 in. OC, and be attached with one clip at each end of the channel. Face layer attached as described in Item 5.

NATIONAL GYPSUM CO — FSW-C, eXP-C, FSLX

6. **Finishing System —** Fiber or paper tape embedded in compound over joints and exposed nail heads, covered with compound with edges of compound feathered out.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2024-12-06

UL Product **iQ**® — UL Solutions

BXUV.U341 - Fire-resistance Ratings - ANSI/UL 263

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

Fire-resistance Ratings - ANSI/UL 263

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

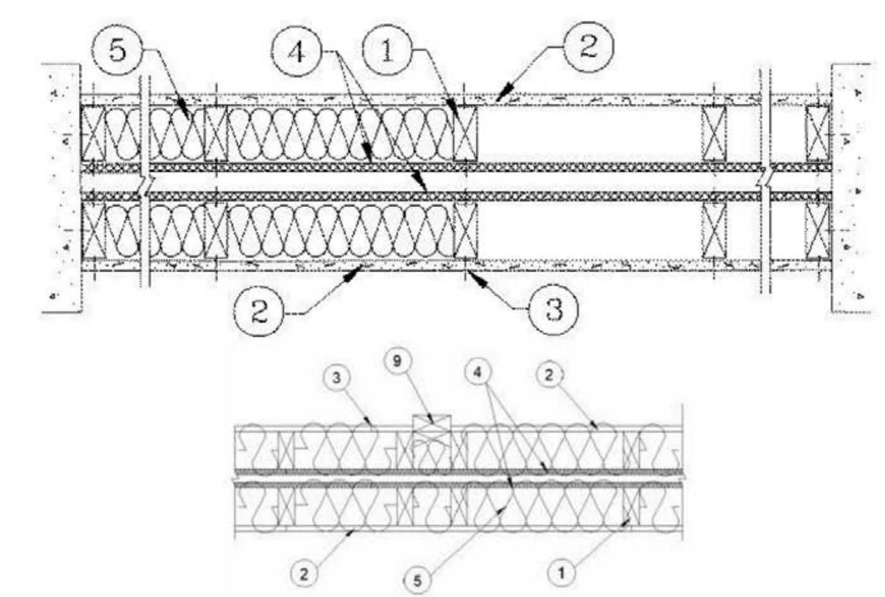
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. **U341**

October 7, 2022

Bearing Wall Rating — 1 Hr.
Finish Rating — Min 20 min.
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



HORIZONTAL SECTION

1. **Wood Studs —** Nom 2 by 4 in., spaced 24 in. OC max. Cross braced at mid-height and effectively firestopped at top and bottom of wall. No min. air space between stud rows except to accommodate attachment of sheathing, where required. See items 4 and 5.

2. **Gypsum Board* — Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U305.** Nom 5/8 in. thick 4 ft wide. Gypsum board applied horizontally or vertically, unless specified below, and nailed to studs and bearing plates 7 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam head. As an alternate, No. 6 bugle head drywall screws, 1-7/8 in. long, may be substituted for the 6d cement coated nails.
When **Steel Framing Members*** (Item 6 or any alternate clips) are used, wallboard attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When used in widths other than 48 in., gypsum board to be installed horizontally.

AMERICAN GYPSUM CO (View Classification) — CKNX.R14196

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) — CKNX.R19374

CABOT MANUFACTURING ULC (View Classification) — CKNX.R25370

CERTAINTEED GYPSUM INC (View Classification) — CKNX.R3660

CGC INC (View Classification) — CKNX.R19751

CERTAINTEED GYPSUM INC (View Classification) — CKNX.R18482

GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R2717

LOADMASTER SYSTEMS INC (View Classification) — CKNX.R11809

NATIONAL GYPSUM CO (View Classification) — CKNX.R3501

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094

PANEL REY S A (View Classification) — CKNX.R21796

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD (View Classification) — CKNX.R19262

THAI GYPSUM PRODUCTS PCL (View Classification) — CKNX.R27517

UNITED STATES GYPSUM CO (View Classification) — CKNX.R1319

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438

USG MEXICO S A DE C V (View Classification) — CKNX.R16089

2A. **Gypsum Board* —** (As an alternate to Item 2, not shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically to studs and bearing plates on one side of the assembly with 1-5/8 in. long Type S screws spaced 12 in. OC at perimeter of panels and 8 in. OC in the field. Horizontal joints of vertically applied panels need not be backed by studs. Panel joints covered with paper tape and two layers of joint compound. Screwheads covered with two layers of joint compound. Batts and Blankets placed in stud cavity as described in Item 5C. Not evaluated for use with Steel Framing Members, Furring Channels or Fiber, Sprayed.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-530 (finish rating 23 min).

2B. **Gypsum Board* —** (As an alternate to Item 2, not shown) — Any 5/8 in. thick gypsum panels that are eligible for use in Design Nos. L501, G512 or U305, supplied by the Classified companies listed below shown in the **Gypsum Board*** (CKNX) category. Applied horizontally or vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed horizontally.
UNITED STATES GYPSUM CO

USG BORAL DRYWALL SFZ LLC

USG MEXICO S A DE C V

2C. **Gypsum Board* —** (As an alternate to Item 2, Not Shown) — 5/8 in. thick gypsum panels applied horizontally or vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed horizontally.
AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc

CERTAINTEED GYPSUM INC — Type C or Type X-1

NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

THAI GYPSUM PRODUCTS PCL — Type C or Type X

2D. **Gypsum Board* —** (As an alternate to Items 2, 2A, 2B and 2C) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed as described in Item 2. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
GEORGIA-PACIFIC GYPSUM L L C — GreenGlass Type X, Type DGG.

2E. **Gypsum Board* —** (As an alternate to Items 2 through 2D) — 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically only and secured as described in Item 2.
GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board.

2F. **Gypsum Board* —** (As an alternate to Items 2 through 2E) - Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only and fastened to the studs and plates with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads, 7 in. OC. Not for use with item #6.
NATIONAL GYPSUM CO — Type SBWB

2G. **Gypsum Board* —** (As an alternate to Items 2 through 2F) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types QuietRock ES.

2H. **Gypsum Board* —** (As an alternate to Items 2 through 2G) — Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically or horizontally fastened to the studs and plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 12 in. OC.
CERTAINTEED GYPSUM INC — Type SilentFX

2I. **Wall and Partition Facings and Accessories* —** (As an alternate to Items 2 through 2H) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527.

2J. **Gypsum Board* —** (As an alternate to 5/8 in. Type FSW in Item 2) — 2 layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal joints on the same side need not be staggered. Inner layer attached with fasteners, as described in item 2, spaced 24 in. OC. Outer layer attached per Item 2.
NATIONAL GYPSUM CO — Type FSW.

2K. **Gypsum Board* —** (As an alternate to Item 2) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CERTAINTEED GYPSUM INC — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

3. **Joints and Nailheads —** Gypsum board joints of outer layer covered with tape and joint compound. Nail heads of outer layer covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.

4. **Sheathing —** (Optional) — Septum may be sheathed with min 7/16 in. thick wood structural panels min grade "C-D" or "Sheathing" or min 1/2 in. thick **Mineral and Fiber Boards***.
See **Mineral and Fiber Boards** (CERZ) category for names of Classified companies.

5. **Batts and Blankets* —** 3-1/2 in. max thickness glass or mineral fiber batt insulation. **Optional** when sheathing (Item 4) is used on both halves of wall.
See **Batts and Blankets** (BZJZ) category for list of Classified companies.

5A. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft³. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft³, in accordance with the application instructions supplied with the product.

U S GREENFIBER L L C — INS735, INS745, INS750LD and SANCTUARY for use with wet or dry application. INS515LD, INS541LD, INS735, INS765LD, and INS773LD are to be used for dry application only.

5B. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) when Sheathing (Item 4) is used on both halves of wall - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.
NU-WOOL CO INC — Cellulose Insulation

5C. **Batts and Blankets* —** (Required for use with Wall and Partition Facings and Accessories, Item 2A. Use of Sheathing, Item 4, does not nullify requirement of Item 5C for use with Item 2A) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5D. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) and Item 5A when Sheathing (Item 4) is used on both halves of wall - Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft³.
INTERNATIONAL CELLULOSE CORP — Celbar-RL

5E. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 5) - Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft³.
APPLEGATE HOLDINGS L L C — Applegate Advanced Stabilized Cellulose Insulation

6. **Steel Framing Members* —** (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
A. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Wallboard attached to furring channels as described in Item 2.

B. **Steel Framing Members* —** Used to attach furring channels (Item a) to studs (Item 1) . Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

6A. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 2.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
PLITEQ INC — Type Genie Clip

6B. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 2.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

6C. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below:
A. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6Cb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 2.

B. **Steel Framing Members* —** Used to attach furring channels (Item 6CA) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

6D. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 2.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 6Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

6E. **Steel Framing Members* —** (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels —**Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to resilient channels as described in Item 2.

b. **Steel Framing Members*** - Used to attach resilient channels to wall studs. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels to the studs. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the studs with the screws supplied with the accessory and per the accessory manufacturer's installation instructions.

PAC INTERNATIONAL L L C — Type RC-1 Boost

6F **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below:
a **Furring Channels —** Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 2.

b **Steel Framing Members* —** Used to attach furring channels (Item 6Fa) to studs. Clips spaced maximum 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

7. **Wall and Partition Facings and Accessories* —** (Optional, Not shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

8. **Mineral and Fiber Board* —** ((Optional, Not Shown) — For optional use as an additional layer on one or both sides of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing as described in Item 2. The required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
HOMASOTE CO — Homasote Type 440-32

9. **Non-Bearing Wall Partition Intersection —** (Optional) — Two nominal 2 by 4 in. stud or nominal 2 by 6 in. stud nailed together with two 3in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

(Optional, Not Shown) Alternate Construction For Use On One Side Of The Wall.

10. **Mineral and Fiber Board* —** For use with Items 10A-10D) —Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with minimum 1-3/8 in. long ring shanked nails or 1-1/4 in. long Type W steel screws, spaced 12 in. OC along board edges and 24 in. OC in field of board along intermediate framing. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
HOMASOTE CO — Homasote Type 440-32

10A. **Glass Fiber Insulation —** (For use with Item 10) — 3-1/2 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, placed to fill the interior of the wall. See Batts and Blankets (BKNV or BZJZ) categories for names of Classified companies.

10B. **Batts and Blankets* —** (As an alternate to Item 10B, For use with Item 10), 3 in. thick mineral wool batts, placed to fill interior of wall, attached to the 3-1/2 in. face of the studs with staples placed 24 in. OC.
THERMAFIBER INC — Type SAFB, SAFB FF

10C. **Adhesive —** (For use with Item 10) — Construction grade adhesive applied in vertical, serpentine, nominal 3/8 in. wide beads down the length of both vertical edges of Mineral and Fiber Board (Item 14A).

10D. **Gypsum Board* —** (For use with Item 10) — 5/8 in. thick, 4 ft wide, applied vertically over Mineral and Fiber Board (Item 14A) with vertical joints located anywhere over stud cavities. Secured to mineral and fiber boards with 1-1/2 in. Type G Screws spaced 8 in. OC along edges of each vertical joint and 12 in. OC in intermediate field of the Mineral and Fiber Board (Item 10). Secured to outermost studs and bearing plates with 2 in. long Type S screws spaced 8 in. OC. Gypsum Board joints covered with paper tape and joint compound. Screw heads covered with joint compound. Finish Rating 30 Min.
AMERICAN GYPSUM CO — Type AG-C

CERTAINTEED GYPSUM INC — Type C

CERTAINTEED GYPSUM INC — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C

NATIONAL GYPSUM CO — Types FSK-C, FSW-C

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-C

PANEL REY S A — Type PRC

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Type CTypes C, IP-X2, IPC-AR

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2022-10-07

GENERAL INFORMATION

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMIE
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

South Bend
Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A7.0

FILE PATH: C:\Users\ahiniker\Documents\Revit\2024\Turnock Street 4-plex_ahinikerZHCYH.rvt
PLOT DATE: 2/27/2025 3:14:03 PM

UL Product iQ®

UL Solutions

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

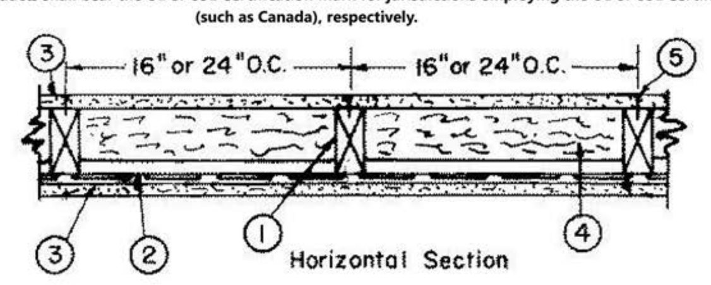
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

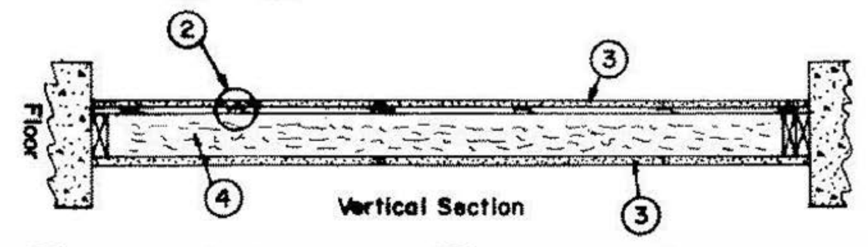
Design No. **U311**

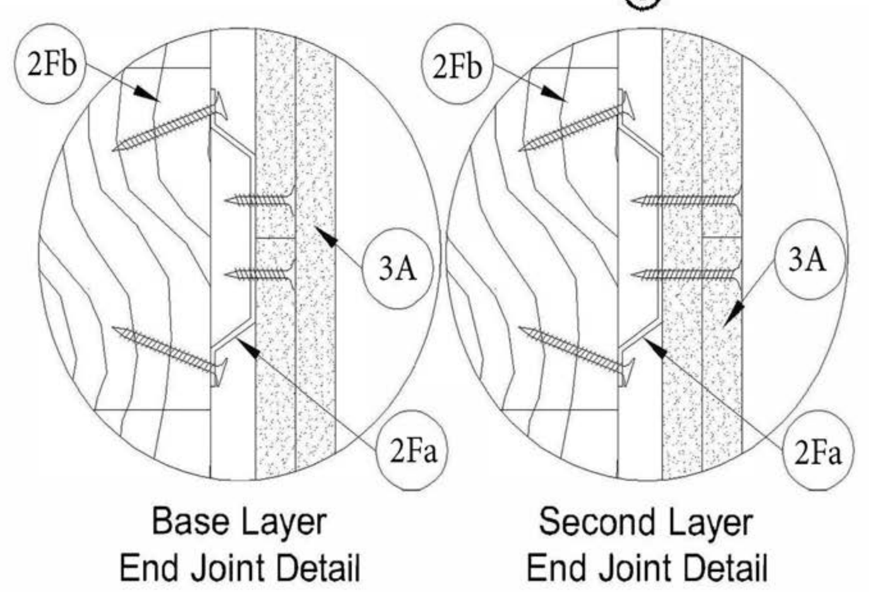
December 01, 2022

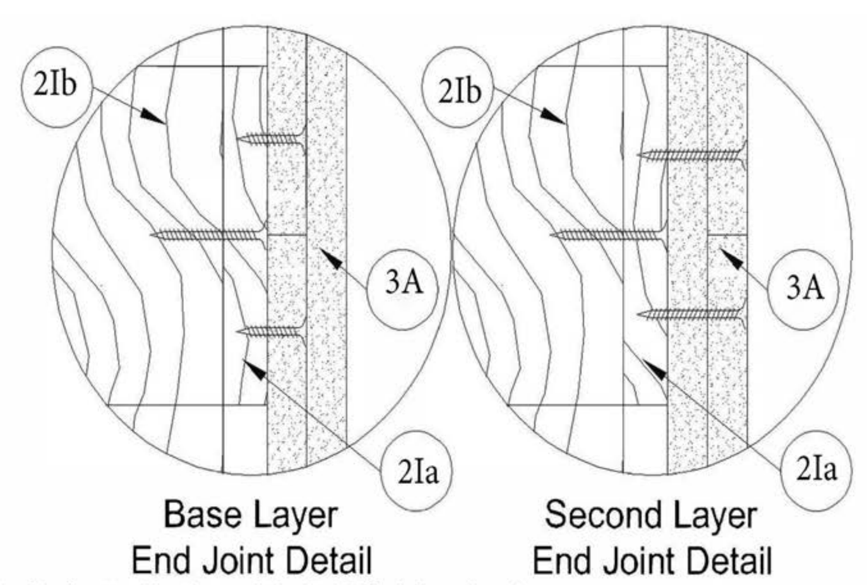
Bearing Wall Rating — 1 HR.
Finish Rating — 23 Min.
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**









1. **Wood Studs —** Nom 2 by 4 in., spaced 16 or 24. OC. Effectively cross braced.

2. **Resilient Channel —** 25 MSG galv steel. Resilient channels spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws.

2A. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — As an alternate to Item 2, furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to studs (Item 1). Clips spaced 48 in. OC. and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

2B. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
PLITEQ INC — Type Genie Clip

2C. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Ca) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips — Type A237R

2D. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 2Db. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

b. **Steel Framing Members* —** Used to attach furring channels (Item 2Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

2E. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 2.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 2Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

2F. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. First channel centered max. 3 in. from end of studs. Channels secured to rafts with two angled 1-1/4 inch (No. 6) Type W drywall screws. One on each side of the channel.. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Two layers of gypsum board attached to furring channels as described in Item 3A.

b. **Framing Members* —** Used to attach furring channels (Item 2Fa) to studs (Item 1). Rafts secured to each stud, spaced a maximum of 48 in. OC. vertically. Staggered 24 inch on center vertically on each adjacent stud. At the beginning or end of furring channel runs, additional rafts installed to support the ends of all furring channels. At stud ends, rafts may be installed on plates to achieve required furring channel spacing. Secured with two 1-5/8 inch (No. 6) Type W drywall screws. One on each side of the core. Fasteners should not be placed closer than 1/4 inch to the edges of the mounts.
BCD LLC — Type HushFrame Raft Connector

2G. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Used as an alternate method to attach resilient channels to wall studs. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 16 or 24 in. O.C (depending on stud spacing). Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions. Gypsum board screws spaced 8 in. OC (in lieu of 12 in.) when used.
PAC INTERNATIONAL L L C — Type RC-1 Boost

2H. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 2) — Furring channels and Steel Framing Members as described below:
a **Furring Channels —** Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b **Steel Framing Members* —** Used to attach furring channels (Item 2Ha) to studs. Clips spaced maximum 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

2I. **Framing Members** - (Optional, Not Shown, As an alternative to Item 2) — Furring channels and Framing Members as described below:

a. **Furring Strips —** Nominal 1 in. deep by 3 in. wide wooden furring strips, spaced 24 in. OC perpendicular to studs. First channel centered max. 3 in. from end of studs. Furring secured with one 2 in. long, Type W screw into the rafts. Ends of adjoining furring butted, between studs, and joined with an overlapping 12 in. furring strip fastened with two 2 in. long Type W screws equally spaced on both sides of the butt joint. Two layers of gypsum board attached to furring strips as described in Item 3A.

b. **Framing Members* —** Used to attach furring channels (Item 2Ia) to studs (Item 1). Rafts secured to each stud, spaced a maximum of 48 in. OC. vertically. Staggered 24 inch on center vertically on each adjacent stud. At the beginning or end of furring channel runs, additional rafts installed to support the ends of all furring channels. At stud ends, rafts may be installed on plates to achieve required furring channel spacing. Secured with two 1-5/8 inch (No. 6) Type W drywall screws. One on each side of the core. Fasteners should not be placed closer than 1/4 inch to the edges of the mounts.

BCD LLC — Type HushFrame Raft Connector

3. **Gypsum Board* —** 5/8 in. thick, 4 ft wide. Screw attached on one side of wall to furring channels with 1 in. long, self-drilling, self-tapping steel screws spaced 12 in. OC, vertical joints located midway between studs and back blocked with furring channels, attached with 1 in. long, self-drilling, self-tapping screws, spaced 12 in. OC, along each edge. Gypsum board on opposite side of wall attached directly to studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced 12 in. OC. Vertical joints shall be located over studs on this side of the wall.
AMERICAN GYPSUM CO — Types AG-C

CERTAINTEED GYPSUM INC — Type C

CGC INC — Types C, IP-X2, IPC-AR, ULIX

CERTAINTEED GYPSUM INC — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, TG-C

NATIONAL GYPSUM CO — Types -eXP-C, FSK-C, FSW-C, FSW-G

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C or PG-C

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIV'Air, Gyproc FireStop MR ACTIV'Air, Gyproc FireStop M2TECH ACTIV'Air, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIV'Air, Gyproc DuraLine MR ACTIV'Air, Gyproc DuraLine M2TECH ACTIV'Air

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, ULIX

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

3A. **Gypsum Board* —** (For use with Item 2F and 2I) - Any 5/8 in. thick, 4 ft. wide, Gypsum Board UL Classified for Fire Resistance (CKNX) eligible for use in Design No. G512. Two layers, applied vertically, and attached to steel studs (Item 2A) and furring (Item 2Fa or 2Ia). Vertical gypsum board side joints offset 24 inches between layers. Vertical joints staggered one stud cavity on opposite sides of studs. Type W steel screws used for wood framing. Type S steel screws used for steel framing. Attachment to furring channels - First layer – 1-1/4 in. long, 3, 6 and 18 inches from each board edge. Second layer - 1-7/8 in. long (2 in. with wood framing), spaced 12 inch OC with first fastener 2 in. from vertical board edge. Direct attachment to framing - First layer (to plates) – 1-1/4 in. long, 3, 6 and 18 inches from each board edge. First layer (to studs) – 1-1/4 in. long, 3, 6 and 18 inches board ends and 24 in. OC thereafter. Second layer - 1-7/8 in. long, spaced 2 inch from each board edge and 12 in. OC thereafter.

4. **Batts and Blankets* —** 3-1/2 in. thick mineral wool batts, placed to fill interior of wall, attached to the 4-in. face of the studs with staples placed 24 in. OC.
JOHNS MANVILLE

ROCKWOOL — Types Acoustical Fire Batts and AFB, min. density 1.69 pcf / 27.0 kg/m^3

ROCKWOOL MALAYSIA SDN BHD — Type Acoustical Fire Batts.

ROCK WOOL MANUFACTURING CO — Type Delta Board

THERMAFIBER INC — Type SAFB, SAFB FF.

3B. **Gypsum Board* —** (As an alternate to Item 4) - 5/8 in. thick, 4 ft wide. Screw attached on one side of wall to furring channels with 1 in. long, self-drilling, self-tapping steel screws spaced 7 in. OC, vertical joints located midway between studs and back blocked with furring channels, attached with 1 in. long, self-drilling, self-tapping screws, spaced 7in. OC, along each edge. Gypsum board on opposite side of wall attached directly to studs with 1-7/8 in. nails or screws spaced 7 in .OC.

PANEL REY S A — Type PRX2

4A. **Glass Fiber Insulation —** (As an alternate to Item 4) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

4B. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft^3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft^3, in accordance with the application instructions supplied with the product.

Applegate Greenfiber Acquisition LLC — INS735, INS745, INS750LD, Insulmax, and SANCTUARY for use with wet or dry application. INS515LD, INS541LD, INS735, INS765LD and INS773LD are to be used for dry application only

4C. **Fiber, Sprayed* —** As an alternate to Items 4, 4A, and 4B — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 4.58 lb/ft^3.
NU-WOOL CO INC — Cellulose Insulation

4D. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft^3.
INTERNATIONAL CELLULOSE CORP — Celbar-RL

5. **Joints and Screw Heads —** Wallboard joints covered with paper tape and joint compound. Screw heads covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.

6. **Wall and Partition Facings and Accessories* —** (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

7. **Mineral and Fiber Board —** (Optional, Not Shown) — 1/2 in. thick, 4 ft wide, square edge fiber boards applied vertically to studs on the side of the wood framing without the resilient channels, in between the wood framing and the UL Classified gypsum board (Item 3). Fiber boards installed with 1-1/4 in. long, Type W, bugle head, coarse thread gypsum board screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 3) installed horizontally or vertically and fastened through the fiber boards to wood framing with 2 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. Gypsum board joints staggered from fiber board joints. Fiber boards not evaluated or intended as a substitute for the required layer of UL Classified Gypsum Board.
BLUE RIDGE FIBERBOARD INC — SoundStop

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2022-12-02

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL Solutions' Follow - Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL Solutions' Follow - Up Service. Always look for the Mark on the product.

UL Product iQ®

UL Solutions

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

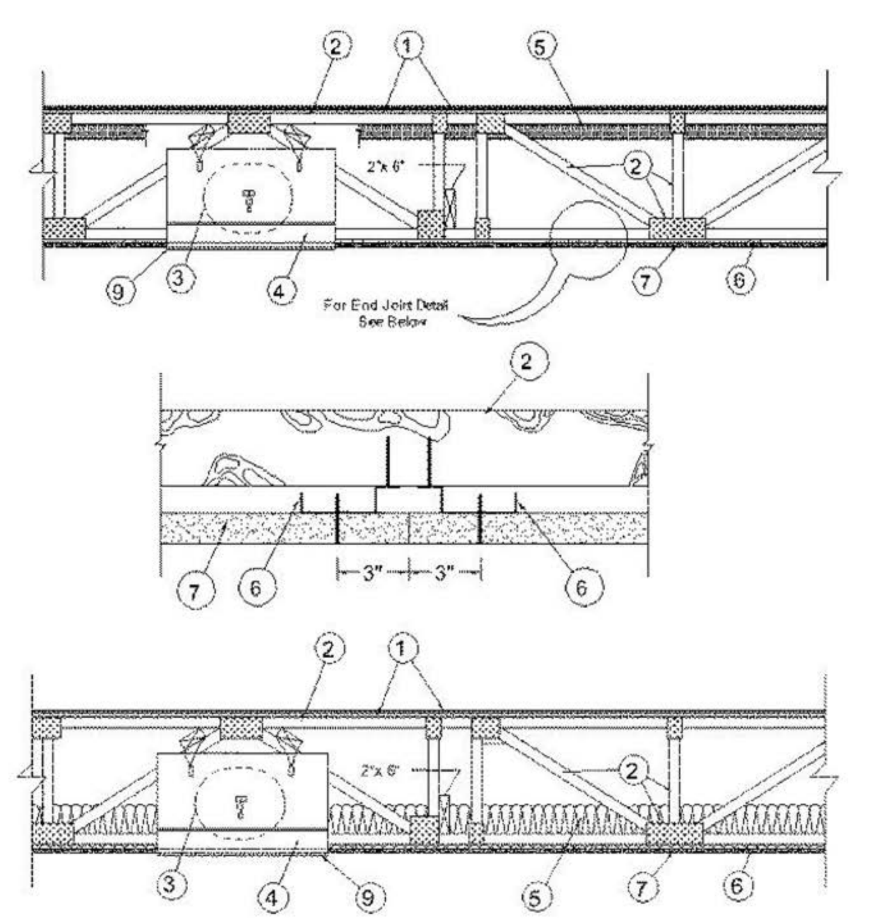
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. **L521**

June 26, 2023

Unrestrained Assembly Rating — 1 Hr
Finish Rating — 25 Min (See Items 5 and 5A), 20 Min (See Items 6H and 7A)
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



Alternate Insulation Placement

1. **Flooring System —** The flooring system shall consist of one of the following:

System No. 1

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Floor — Min 1 by 4 in. T & G lumber installed perpendicular to trusses, or min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered.

System No. 2

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring* — Floor Topping Mixture — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

LATICRETE SUPERCAP L L C — Types LRK, HSLRK

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

Alternate Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding minimum thickness of floor topping over floor mat.
GRASSWORX L L C — SC Types

System No. 3 (For Use with Item 7A Only)

Finish Floor — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and 2-1/2 in. long nails, spaced 12 in. OC along each truss and 8 in. OC at the perimeter.

System No. 4

Structural Cement-Fiber Units* — Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses. Panels secured to wood trusses with 1-5/8 in. long, No. 8, self- countersinking wood screw spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the end edges of the panel.
UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.
UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

LATICRETE SUPERCAP L L C — Types LRK, HSLRK

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.
UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

System No. 5

Structural Cement-Fiber Units* — Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses. Panels secured to wood trusses with 1-5/8 in. long, No. 8, self- countersinking wood screw spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the end edges of the panel.
UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

System No. 6

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* — (Optional) — Floor mat material nom 1/8 in. (3 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 3/4 in. (19 mm).
HACKER INDUSTRIES INC — FIRM-FILL SCM 125

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25 mm).
HACKER INDUSTRIES INC — Type FIRM-FILL SCM 250

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/8 in. (10 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32 mm)
HACKER INDUSTRIES INC — FIRM-FILL SCM 400

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/4 in. (19 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38 mm).
HACKER INDUSTRIES INC — Type FIRM-FILL SCM 750

Metal Lath (Optional) — (Optional) — For use with 3/8 in. (10 mm), or greater, floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1 in. (25 mm) over the floor mat.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand. Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mat(s).
HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Gyp-Span Radiant

System No. 7

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Floor* — Mineral and Fiber Board — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft.
HOMASOTE CO — Type 440-32 Mineral and Fiber Board

System No. 8

Subflooring —Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier —(Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* — (Optional) — Floor mat material nom 5/64 in. (2 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of floor-topping mixture. Floor topping thickness a min 1 in. over the floor mat.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32 mm) of floor-topping mixture.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat II

Metal Lath (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand. Refer to the manufacturer's instructions accompanying the material and/or contact the manufacturer's technical support for specific mix design and minimum thickness recommended for use with eligible floor mat(s).

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill High Strength, Gyp-Span Radiant

2. **Trusses —** Parallel chord trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Min truss depth is 12 in. when no **Ceiling Damper*** is used and 18 in. when a **Ceiling Damper*** is used. Truss members secured together with min 0.0356 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approx. 7/8 in. centers with four rows of teeth per inch of plate width.

3. **Air Duct* —** Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

4. **Ceiling Damper* —** For use with min 18 in. deep trusses. Max nom area shall be 324 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 14 in. Aggregate damper openings shall not exceed 162 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.
C&S AIR PRODUCTS — Model RD-521

POTTORFF — Model CFD-521

4A. **Alternate Ceiling Damper* —** For use with min 18 in. deep trusses. Max nom area shall be 196 sq in. with the length not to exceed 26 in. and the width not to exceed 14 in. Max height of damper shall be 7 in. Aggregate damper openings shall not exceed 98 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 9) not to exceed 144 in.^{2} shall be installed in accordance with installation instructions.
C&S AIR PRODUCTS — Model RD-521-BT

POTTORFF — Model CFD-521-BT

4B. **Alternate Ceiling Damper* —** For use with min 18 in. deep trusses. Max nom area shall be 256 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 17 in. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.
C&S AIR PRODUCTS — Models RD-521-IP, RD-521-NP

POTTORFF — Models CFD-521-IP, CFD-521-NP

4C. **Alternate Ceiling Damper* —** For use with min 18 in. deep trusses. Max nom area shall be 144 sq in. with the length not to exceed 14 in. and the width not to exceed 12 in. Max height of damper shall be 17-7/8 in. Aggregate damper openings shall not exceed 74 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.
C&S AIR PRODUCTS — Models RD-521-90, RD-521-NP90

POTTORFF — Models CFD-521-90, CFD-521-90NP

4D. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 8-9/16 in. and the width not to exceed 8-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 38 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Models CRD2, GBR-CRD, ITG-CRD

4E. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 9-1/4 in. and the width not to exceed 9-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 45 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Model SIG-CRD

4F. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 131 sq in. with the length not to exceed 11-1/16 in. and the width not to exceed 11-7/8 in. Aggregate damper openings shall not exceed 66 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Model SMT-CRD

4G. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 103 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 10-1/8 in. Aggregate damper openings shall not exceed 52 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA — Model PC-RD05C5

4H. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 113 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 11-1/8 in. Aggregate damper openings shall not exceed 57 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Model RDFUWT

4I. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 79 sq in. with the length not to exceed 10 in. and the width not to exceed 7-15/16 in. Aggregate damper openings shall not exceed 40 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A metallic grille (Item 9) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Models RDJ1 and RDH

4J. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Model RDMWT

4K. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Model RDMWT2

5. **Batts and Blankets* —** (Optional) — Glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced 24 in. OC, no insulation shall be installed in the concealed space. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced 16 in. OC, the insulation shall be a max of 3-1/2 in. thick, and shall be secured against the subflooring with staples at 12 in. OC or held suspended in the concealed space with 0.090 in. diam galv steel wires attached to the wood trusses at 12 in. OC. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced a max of 12 in. OC or when the Steel Framing Members (Item 6B) are used, there is no limit in the overall thickness of insulation, and the insulation can be secured against the subflooring, held suspended in the concealed space or draped over the resilient or furring channels (or Steel Framing Members) and gypsum panel membrane. When **Steel Framing Members** (Item 6C) are used, max 3-1/2 in. thick insulation shall be draped over the furring channels (Item 6Ca) and gypsum board ceiling membrane, and friction-fitted between trusses and Steel Framing Members (Item 6Cd). The finished rating has only been determined when the insulation is secured to the subflooring.

5A. **Fiber, Sprayed* —** (Dry Dense Packed 100% Borate Formulation) — (Optional) — As an alternate to Item 5, When used, the resilient channel and gypsum board attachment is modified as specified in Items 6 and 7 and wire mesh (Item 10) shall be attached to the furring channels to facilitate installation of the material. The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft^3, in accordance with the application instructions supplied with the product. When Item 5A (Fiber, Sprayed) is used, two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 6B, 6C, 6G or 6H.
APPLEGATE GREENFIBER ACQUISITION LLC — INS735, INS745, INS750LD, INS765LD, INS773LD, Insulmax, & SANCTUARY to be used with dry application only.

5B. **Fiber, Sprayed* —** (Loose Fill 100% Borate Formulation) — (Optional) — As an alternate to Items 5 and 5A, The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a minimum dry density of 0.5 lb/ft^3 and at a max thickness of 3-1/2 in., in accordance with the application instructions supplied with the product. Wire mesh (Item 10) shall be attached to the furring channels to facilitate installation of the material. When Item 5B (Fiber, Sprayed) is used, two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 6B, 6C, 6D, 6E, 6F, 6G, 6H or 6I.
APPLEGATE GREENFIBER ACQUISITION LLC — INS735, INS745, INS750LD, INS765LD, INS773LD, Insulmax, & SANCTUARY to be used with dry application only.

5C. **Foamed Plastic* —** (As alternate to Item 5, 5A, or 5B, Not Shown) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft^3 density, while maintaining a minimum 8-1/2 in. clearance between the spray foam insulation and the gypsum board (Item 7). Spray foam insulation is limited for use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4K) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 5 through 5B, or 6A through 6I.
SES FOAM INC — Sucraseal

5D. **Cavity Insulation - Batts and Blankets* or Fiber, Sprayed* —** (As described above in Items 5 through 5B) — (For Use with Item 7A, Not Shown) — Min. 3-1/2 in thick with no limit on maximum thickness fitted in the concealed space, draped over the resilient channel (Item 6H)/gypsum board (Item 7A) ceiling membrane.

5E. **Foamed Plastic* —** (As alternate to Item 5, 5A, or 5C, Not Shown) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft^3 or 2.0 lb/ft^3 density, depending on the product installed. Spray foam insulation is limited to use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 5 through 5B, or 6A through 6I.
BASF CORP — Enertite® NM, Enertite® G, FE178®, Spraytite® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, and Walltite® HP+

5F. **Foamed Plastic* — —** (As alternate to Item 5, 5A, 5B, 5C or 5E, Not Shown) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 17 in. at a nominal 0.5 lb/ft^3 density, while maintaining a minimum 1-1/2 in. clearance between the spray foam insulation and the gypsum board (Item 7). Spray foam insulation is limited for use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4K) in the concealed space, no clearance is necessary between damper housing and spray foam insulation. Not evaluated for use with Items 5 through 5B, or 6A through 6I.
SES FOAM INC — EasySeal.5, EasySeal ULD

5G. **Foamed Plastic* —** (As alternate to Item 5 - not to be used in combination with any alternates to item 5) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 11 in. at a nominal 0.5 lb/ft^3 - 2.5 lb/ft^3 density, while maintaining a minimum 7 in. clearance between the spray foam insulation and the gypsum board (Item 7). Spray foam insulation is limited for use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board spaced maximum 3 in. away from gypsum butt joints. Gypsum board to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4K) in the concealed space, no clearance is necessary between damper housing and spray foam insulation. Only for use with item 6 not evaluated for use with alternates to item 6.
CARLISLE SPRAY FOAM INSULATION — Types SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero, SealTite PRO HFO, Foamsulate Closed Cell, Foamsulate OCX, Foamsulate 70, Foamsulate HFO, and Foamsulate HFO 2.0.

6. **Resilient Channels —** Formed from min 25 MSG galv steel installed perpendicular to trusses. When there is no insulation installed in the concealed space the resilient channels are spaced 24 in. OC. When insulation (Item 5) is secured to the underside of the subfloor the resilient channels are spaced 16 in. OC. When insulation, Items 5, 5A or 5B is applied over the resilient channel/gypsum panel ceiling membrane, or when Item 5C, 5E or 5F is applied to underside of subflooring, the resilient channels are spaced 12 in. OC. Channels secured to each truss with 1-1/4 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint as shown in the above illustration. Additional channels shall extend min 6 in. beyond each side edge of panel.

6A. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5, 5A or 5B is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.

b. **Steel Framing Members* —**
Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating trusses with No. 8 x 2-1/2 in. course drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to alternating trusses with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. RSIC-Si-X secured to alternating trusses with No 10. X 3-1/2 in. coarse screw. Furring channels are friction fitted into clips. RSIC-1, RSIC-V and RSIC-Si-X clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. When **Fiber, Sprayed** (Item 5B) is used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board shall be installed as described in Item 7.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75), RSIC-Si-X

6B. **Steel Framing Members —** (Not Shown) — As an alternate to Item 6, main runners, cross tees, cross channels and wall angle as listed below.
a. **Main Runners —** Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections. Hanger wires wrapped and twist-tied on 16d nails driven in to side of trusses at least 5 in. above the bottom face.

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMIE
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

South Bend
Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A7.1

GENERAL INFORMATION

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PLOT DATE: 2/27/2025 3:14:27 PM

b. **Cross Tees or Channels —** Nom 4 ft long cross tees, with 15/16 in. or 1-1/2 in. wide face, or nom 4 ft long cross channels, with 1-1/2 in. wide face, either spaced 16 in. OC, installed perpendicular to the main runners. Additional cross tees or channels used 8 in. from each side of butted gypsum board end joints. The cross tees or channels may be riveted or screw-attached to the wall angle or channel to facilitate the ceiling installation.

c. **Wall Angle or Channel —** Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum panel.
CGC INC — Type DGL or RX

USG INTERIORS LLC — Type DGL or RX

6C. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6.
a. **Furring Channels —** Hat-shaped furring channels, 7/8 in. deep by 2-5/8 in. wide at the base and 1-1/4 in. wide at the face, formed from No. 25 ga. galv steel, spaced max. 16 in. OC perpendicular to trusses and Cold Rolled Channels (Item 6Cb). Furring channels secured to Cold Rolled Channels at every intersection with a 1/2 in. pan head self-drilling screw through each furring channel leg. Ends of adjoining channels overlapped 4 in. and tied together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap. Supplemental furring channels at base layer and outer layer gypsum board butt joints are not required. Batts and Blankets draped over furring channels as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 7.

b. **Cold Rolled Channels —** 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 6Cd). Adjoining lengths of cold rolled channels lapped min. 6 in. and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Blocking —** Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber (blocking), min. 6 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the truss (Item 2) at the top and bottom of the blocking at each Steel Framing Member (Item 6Cd) location.

d. **Steel Framing Members* —** Hangers spaced 48 in. OC. max along truss, and secured to the Blocking (Item 6Cc) on alternating trusses with a single 5/16 in. by 2 in. hex head lag bolt or four #6 1-1/4 in. drywall screws through mounting hole(s) on the hanger bracket. The two 1/4 in. long steel teeth on the hanger are embedded in the side of the blocking. Hanger positioned on blocking and leveling bolt height adjusted such that furring channels are flush with bottom of trusses before gypsum board installation. Spring gauge of hanger chosen per manufacturer's instructions.
KINETICS NOISE CONTROL INC — Type ICW

6D. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with two No. 8 x 2-1/2 in. course drywall screws, one through the hole at each end of the clip. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC and secured to consecutive trusses. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 5B.
KINETICS NOISE CONTROL INC — Type Isomax

6E. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire near each end of overlap.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with one No. 8 x 2-1/2 in. coarse drywall screw through center grommet. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC and secured to consecutive trusses. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Not evaluated for use with Item 5B.
PLITEQ INC — Type Genie Clip

6F. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 6, furring channels and Steel Framing Members as described below.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to joists. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to joists as described in Item b.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to the trusses (Item 2). Clips spaced at 48" OC and secured to the bottom of the joists with one 2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold furring channel that supports the gypsum board butt joints as described in Item 7.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6G. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6 — Not for use with Items 5, 5A or 5B — Main runners nom 12 ft long, spaced 72 in. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.
USG INTERIORS LLC — Type DGL or RX

6H. **Resilient Channels —** For Use With Item 7A - Formed from min 25 MSG galv steel installed perpendicular to trusses and spaced 16 in. OC. Channels secured to each truss with 1-5/8 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint. Additional channels shall extend min 6 in. beyond each side edge of panel. Insulation, Item 5D is applied over the resilient channel/gypsum panel ceiling membrane.

6I. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6, furring channels and Steel Framing Members as described below.
a. **Furring Channels —** Formed of No. 25 MSG galvanized steel, 2-1/2 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to trusses. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ia) to the trusses (Item 2). Clips spaced 48 in. OC on alternating trusses and secured to the bottom chord of the trusses with one 2-1/2 in. coarse drywall screw through the center grommet in accordance with the manufacturer's installation instructions. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the furring channel that supports one end of the gypsum board butt joints as described in Item 7.
REGUPOL AMERICA — Type SonusClip

6J. **Steel Framing Members* —** (Not Shown) — Used to attach resilient channels (Item 6) to trusses (Item 2). Clips spaced 48 in. OC on adjacent trusses, and secured to trusses with one No. 8 x 2-1/2 in. coarse drywall screw through center grommet hole. Channels secured to clips with one #10 x 1/2 in. pan-head self-drilling screw. Ends of adjoining channels overlapped 6 in. and secured together with two #8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board butt joints require additional resilient channels spaced 3 in. from the butt joint on either side. One edge of the extra channels will extend to an adjacent truss where it is secured with a clip.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

6K. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6. furring channels and Steel Framing Members as described below.

a. **Furring Channels —** Hat channels formed of No. 25 MSG galv steel, nom. 2-23/32 in. wide by 7/8 in. deep, When there is no insulation installed in the concealed space the resilient channels are spaced 24 in. OC. When insulation (Item 5) is secured to the underside of the subfloor the resilient channels are spaced 16 in. OC. When insulation, Items 5, 5A or 5B is applied over the resilient channel/gypsum panel ceiling membrane, or when Item 5C, 5E or 5F is applied to underside of subflooring, the resilient channels are spaced 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC with No. 8 x 2-1/2 in. course drywall screw through the center grommet. Furring channels are friction fitted into clips. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7.
CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

6L. **Steel Framing Members* —** (Not Shown
a. **Furring Channels —** Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced as indicated in Item 6, perpendicular to the trusses. Channels secured to Cold Rolled Channels at every intersection with a 3/4 in. TEK screw through each furring channel leg. Ends of adjoining channels overlapped 12 in. and fastened together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap, or with two 3/4 in. TEK screws in each leg of the overlap section. Two furring channels used at end joints of gypsum board (Item 7), each extending a min of 6 in. beyond both side edges of the board.

b. **Cold Rolled Channels —** 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 6Ld) and secured with two 3/4 in. TEK screws. Adjoining lengths of cold rolled channels lapped min. 12 in. and secured along bottom legs with four 3/4 in. TEK screws and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Blocking —** Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber (blocking), min. 12 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the trusses at the top and bottom of the blocking at each Steel Framing Member (Item 6Ld) location with 16d nails or minimum 2-1/2 in. screws.

d. **Steel Framing Members* —** Spaced 48 in. OC. max along truss, and secured to the truss on alternating trusses with two, #10 x 1-1/2 in. screws through mounting holes on the hanger bracket.
PAC INTERNATIONAL L L C — Type RSIC-SI-CRC EZ Clip

6M. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced as indicated in Item 6, perpendicular to trusses and friction fit into Steel Framing Members (Item 6Mc). Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap or with two TEK screws along each leg of the 6 in. overlap. Two furring channels used at end joints of gypsum board (Item 7). Butt joint channels held in place by strong back channels placed upside down, on top of, and running perpendicular to primary furring channels, extending 6 in. longer than length of gypsum side joint. Strong back channels spaced maximum 48 in. OC. Strong back channels secured to every intersection of primary furring channels with four 7/16 in. pan head screws, two along each of the legs at intersections. Butt joint channels run perpendicular to strong back channels and shall be minimum 6 in. longer than length of joint, secured to strong back channels with 7/16 in. pan head screws, two along each of the legs at intersection with strong back channels.

b. **Blocking —** Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber (blocking), min. 12 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the trusses at the top and bottom of the blocking at each Steel Framing Member (Item 6c) location with 16d nails or minimum 2-1/2 in. screws.

c. **Steel Framing Members* —** Used to attach furring channels (Item 6La) to trusses. Clips spaced 48 in. OC and secured along truss webs at each furring channel intersection with min. 3/4 in. long self-drilling #10 x 1-1/2 in. screws through each of the provided hole locations. Furring channels are friction fitted into clips.
PAC INTERNATIONAL L L C — Type RSIC-S1-1 Ultra

6N. **Steel Framing Members* —** (Optional, Not Shown) — Used as an alternate method to attach resilient channels to structural members. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 24 in. O.C. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions. Gypsum Board butt joints staggered minimum 24 in. OC and Gypsum Board screws spaced 8 in. OC when used.
PAC INTERNATIONAL L L C — Types RC-1 Boost

7. **Gypsum Board* —** Nom 5/8 in. thick, 48 in. wide gypsum panels. When resilient channels (Item 6) are used, gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long Type S bugle head steel screws spaced 12 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. When insulation (Items 5 or 5A) is applied over the resilient channel/gypsum panel ceiling membrane screw spacing shall be reduced to 8 in. OC. When insulation (Item 5C, 5E or 5F) is applied to the underside of the subflooring, screw spacing shall be reduced to 8 in. OC and minimum 1-1/4 in. long Type S screws to install gypsum to the resilient channels (Item 6), and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. End joints secured to both resilient channels as shown in end joint detail. When **Steel Framing Members** (Item 6A) are used, gypsum panels installed with long dimensions perpendicular to furring channels. Panels attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 8 in. OC along butted end joints and in the field of the panel. Butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum panel shall be supported by a single length of furring channel equal to the width of the gypsum panel plus 6 in. on each end. The two support furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to underside of the truss with one clip at each end of the channel. When **Steel Framing Members*** (Item 6B) are used, gypsum panels installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Panels fastened to cross tees with 1 in. long . Type S bugle-head screws spaced in the field and 8 in. OC along end joints. Panels fastened to main runners with 1 in. long . Type S bugle-head screws spaced midway between cross tees. Screws along sides and ends of panels spaced 3/8 to 1/2 in. from panel edge. End joints of panels shall be staggered with spacing between joints on adjacent panels not less than 4 2 ft OC. When **Fiber, Sprayed** (Items 5A or 5B) is used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels. Base layer gypsum board secured with 1 in. long Type S bugle head steel screws spaced 12 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. End joints secured to both resilient channels as shown in end joint detail. Outer layer gypsum board secured with 1-5/8 in. long Type S bugle head steel screws spaced 12 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. Outer layer shall be finished as described in Item 8. When both **Steel Framing Members** (Item 6A) and **Fiber, Sprayed** (Items 5A or 5B) are used, furring channels spaced 12 in. OC and two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimension perpendicular to furring channels. Base layer secured to furring channels with nom 1 in. long Type S bugle head screws spaced 8 in. OC along butted end joints and in the field of the board. Butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 6 in. on each end. The two support furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to the underside of the truss with one clip at each end of the channel. Outer layer secured to furring channels using 1-5/8 in. long Type S screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min. of 8 in. from base layer end joints. Butted side joints of outer layer to be offset min. 18 in. from butted side joints of base layer. When **Steel Framing Members** (Item 6C) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels (Item 6Ca). Base layer attached to the furring channels using 1 in. long Type S bugle head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Butted end joints centered on the continuous furring channels. Butted base layer end joints to be offset a min of 16 in. in adjacent courses. Outer layer attached to the furring channels using 1-5/8 in. long Type S bugle head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints centered on the continuous furring channels and offset a min of 16 in. from butted end joints of base layer. Butted side joints of outer layer to be offset min 16 in. from butted side joints of base layer. When **Steel Framing Members** (Item 6D) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels. Base layer attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 12 in. OC in the field of the board. Butted end joints shall be staggered min 2 ft. within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 6 in. on each end. The two furring channels shall be spaced approximately 4 in. OC, and be attached to underside of the truss with one Isomax clip at each end of the channel. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Outer layer attached to the furring channels using 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC in the field. The end of the outer layer boards at the butt joint shall be attached to the base layer boards with 1-5/8 in. long Type G screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min of 8 in. from base layer end joints. Butted side joints of outer layer to be offset min 18 in. from butted side joints of base layer. Outer layer shall be finished as described in Item 8. When **Steel Framing Members** (Item 6E) are used, one layer of nom 5/8 in. thick, 4 ft wide are installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels using 1 in. long No. 6 Type S bugle-head steel screws spaced 12 in. OC in the field of the board. Butted end joints shall be staggered minimum 2 ft. within the assembly. Additional furring channels constructed as per Item 6E shall be used to support each end of each gypsum board. These additional furring channels shall be attached to underside of the truss with Genie clips as described in Item 6E. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Outer layer attached to the furring channels using 1-5/8 in. long No. 6 Type S bugle-head steel screws spaced 12 in. OC in the field. The outer layer boards at the butt joint shall be attached to the base layer boards with No. 10, 1-1/2 in. long drywall screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min of 24 in. from base layer end joints. Butted side joints of outer layer to be offset min 16 in. from butted side joints of base layer. When **Steel Framing Members** (Item 6F) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from joint. Screw spacing along the gypsum board butt joint and along both additional channels shall be 8 in. OC. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butt joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel.
When alternate **Steel Framing Members*** (Item 6G) are used, gypsum board sheets installed with long dimension (side joints) perpendicular to the 6 ft long cross tees with the end joints staggered min 4 ft and centered between cross tees which are spaced 8 in. OC. Gypsum board side joints may occur beneath or between main runners. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide pieces of gypsum board are to be laid atop the cross tee flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the cross tees at opposite corners of the backer strip with hold down clips to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to cross tees with 1 in. drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board.

When **Steel Framing Members** (Item 6I) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1-1/4 in. long, fine thread, #6, Type S bugle-head steel screws spaced 8 in. OC along butt joints and in the field of the board. Gypsum board butted end joints shall be staggered minimum 24 in. and occur 3 in. from the continuous furring channels. At the gypsum board butt joints, an additional single length of furring channel shall be installed and be spaced approximately 3 in. from the butt joint (6 in. from the continuous furring channels) to support the floating end of the gypsum board. Each of these shorter sections of furring channel shall extend one truss beyond the width of the gypsum panel and be attached to the adjacent trusses with one SonusClip at every truss involved with the butt joint.

When **Steel Framing Members** (Item 6J) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to resilient channels. Gypsum board secured to resilient channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board and located 3/4 in. from side joints and 3 in. end joints. Gypsum board joints are to be staggered by a minimum of 24 in.

When **Steel Framing Members** (Item 6L) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 7. Adjacent butt joints staggered minimum 48 in. OC.

When **Steel Framing Members** (Item 6M) are used, nom 5/8 in. thick, 4 ft wide gypsum board, installed as described in Item 7. Butt joints staggered minimum 24 in. OC.

CGC INC — Types C, IP-X2, IPC-AR

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

7A. **Gypsum Board* —** For use with Items 5D and 6H. Nom 5/8 in. thick, 48 in. wide gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long Type S bugle head steel screws spaced 8 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. Finish Rating with this ceiling system is 20 min.
CGC INC — Type ULIX

UNITED STATES GYPSUM CO — Type ULIX

8. **Finishing System —** (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum board.

9. **Grille —** Grille installed in accordance with the installation instructions provided with the ceiling damper.

10. **Wire Mesh —** (Not Shown) — For use with Item 5A and 5B — 1 in. 20 gauge galvanized poultry netting installed between the furring channels and gypsum board. The poultry netting is attached with washers and 1/2 in. wafer head screws, spaced 24 in. OC., to the furring channels. The **Fiber, Sprayed** (Item 5A or 5B) is installed through cut-openings in the poultry netting, in-between trusses. The cut-openings in the poultry netting shall be staggered at a maximum of 6 ft.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2023-06-26

UL Product iQ®

UL Solutions

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

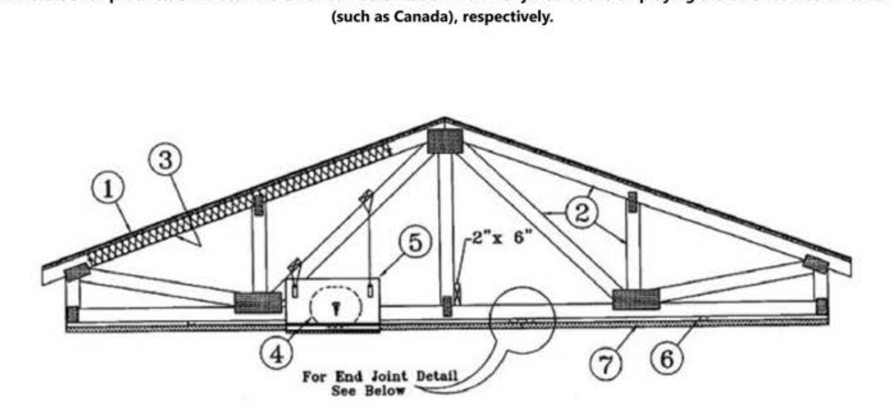
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

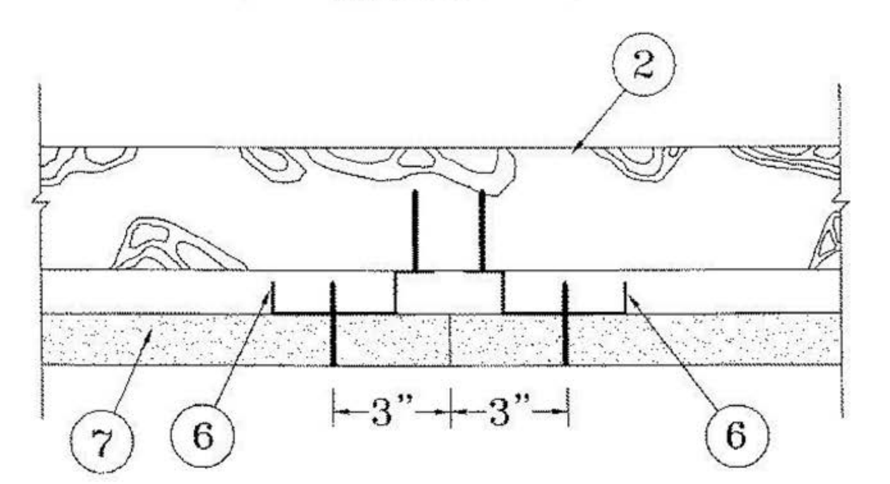
Design No. P522

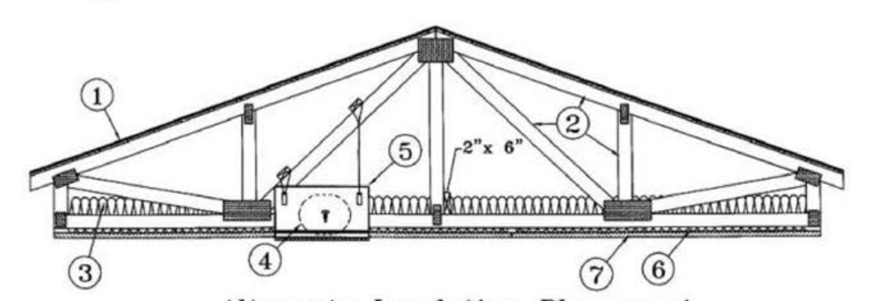
June 26, 2023

Unrestrained Assembly Rating — 1 Hr
Finish Rating — 25 Min (See Items 3 or 3A)
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**







Alternate Insulation Placement

1. **Roofing System* —** Any UL Class A, B or C Roofing System (TGFU) or Prepared Roof Covering (TFWZ) acceptable for use over nom 15/32 in. thick wood structural panels, min. grade "C-D" or "Sheathing". Nom 15/32 in. thick wood structural panels secured to trusses with No. 6d ringed shank nails spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Construction adhesive may be used with either the nails or staples.

2. **Trusses —** Pitched or parallel chord wood trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Truss members secured together with min. 0.0356 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approximately 7/8 in. centers with four rows of teeth per inch of plate width. Minimum parallel chord truss depth shall be 18 in. Where pitched truss intersects with the interior face of the exterior walls, the min truss depth shall be 5-1/4 in. with a min roof slope of 3/12 and a min. average depth of 18 in.. Where the truss intersects with the interior face of the exterior walls, the min truss depth may be reduced to 3 in. if the batts and blankets (Item 3) are used as shown in the above illustration (Alternate Insulation Placement) and are firmly packed against the intersection of the bottom chords and the plywood sheathing.

3. **Batts and Blankets* —** (Optional) — Required when Item 6B is used — Glass fiber insulation, secured to the wood structural panels with staples spaced 12 in. OC or to the trusses with 0.090 in. diam galv steel wires spaced 12 in. OC. Any glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance, having a min density of 0.5 pcf. As an option, the insulation may be fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. When **Steel Framing Members** (Item 6B) are used, max 3-1/2 in. thick insulation shall be draped over the furring channels (Item 6Ba) and gypsum board ceiling membrane, and friction-fitted between trusses and Steel Framing Members (Item 6Bd). The finished rating has only been determined when the insulation is secured to the decking.

3A. **Fiber, Sprayed* —** As an alternate to Item 3 (not evaluated for use with Item 6B) — Any thickness of spray-applied cellulose insulation material, having a min density of 0.5 lb/ft^3, applied with water, over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. Fiber, Sprayed is applied with moisture in accordance with the application instructions supplied with the product. The finish rating when Fiber Sprayed is used has not been determined. Alternate application method: The fiber is applied without water or adhesive in accordance with the application instructions supplied with a minimum density of 0.5 lb/ft^3 over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. Alternate application method: The fiber is applied without water or adhesive to a nominal density of 3.5 lb/ft^3 behind netting (Item 9) stapled to the rafters. The netting is stapled at both lower edges of the rafters creating a cavity to accept the cellulose fiber.
APPLEGATE GREENFIBER ACQUISITION LLC — INS735, INS745, INS750LD, and SANCTUARY for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS765LD, Insulmax, and INS773LD are to be used for dry application only.

3B. **Foamed Plastic* —** (As an alternate to Item 3 or 3A, Not Shown) — Spray foam insulation applied directly to the underside of the roofing system (Item 1). Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft^3 density, while maintaining a minimum 8-1/2 in. clearance between the spray foam insulation and the gypsum board (Item 7). When spray foam insulation is used, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) installed at 6 in. OC to allow for maximum 3 in. spacing off ends of the gypsum board joints. Gypsum board (Item 7) to be installed using 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 5 through 5K) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 6A through 6F.
SES FOAM INC — Sucraseal

3C. **Cavity Insulation - Batts and Blankets* or Fiber, Sprayed* —** (As described above) in Items 3 and 3A — (For Use with Item 7B, Not Shown) — Min. 3-1/2 in thick with no limit on maximum thickness fitted in the concealed space, draped over the resilient channel (Item 6G)/gypsum board (Item 7B) ceiling membrane.

3D. **Foamed Plastic* —** (As alternate to Item 3, 3A, or 3B, Not Shown) — Spray foam insulation applied directly to the underside of the roofing system (Item 1). Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft^3 or 2.0 lb/ft^3 density, depending on the product installed. When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 5 through 5H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 6A through 6F.
BASF CORP — Enertite® NM, Enertite® G, FE178®, Spraytite® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, and Walltite® HP+

3E. **Foamed Plastic* —** (As an alternate to Item 3, 3A, 3B, 3C, or 3D, Not Shown) — Spray foam insulation applied directly to the underside of the underside of the roofing system (Item 1). Spray foam insulation installed to a maximum thickness of 17 in. at a nominal 0.5 lb/ft^3 density, while maintaining a minimum 1-1/2 in. clearance between the spray foam insulation and the gypsum board (Item 7). When spray foam insulation is used, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) installed at 6 in. OC to allow for maximum 3 in. spacing off ends of the gypsum board joints. Gypsum board (Item 7) to be installed using 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 5 through 5K) in the concealed space, no clearance is necessary between damper housing and spray foam insulation. Not evaluated for use with Items 6A through 6F.
SES FOAM INC — EasySeal.5, EasySeal ULD

3F. **Foamed Plastic* —** (As alternate to Item 3 - not to be used in combination with any alternates to item 3) — Spray foam insulation applied directly to the underside of the roofing system (Item 1). Spray foam insulation installed to a maximum thickness of 11 in. at a nominal 1.0 lb/ft^3 - 2.5 lb/ft^3 density, while maintaining a minimum 7 in. clearance between the spray foam insulation and the gypsum board (Item 7). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board spaced maximum 3 in. away from gypsum butt joints. Gypsum board to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 5 through 5K) in the concealed space, no clearance is necessary between damper housing and spray foam insulation. Only for use with item 6 not evaluated for use with alternates to item 6.
CARLISLE SPRAY FOAM INSULATION — Types SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero, SealTite PRO HFO, Foamsulate Closed Cell, Foamsulate OCX, Foamsulate 70, Foamsulate HFO, and Foamsulate HFO 2.0.

4. **Air Duct* —** For use with **Ceiling Dampers*** - Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

5. **Ceiling Damper* —** Max nom area, 324 sq in. Max square size, 18 in. by 18 in. rectangular sizes not to exceed 324 sq in. with a max width of 18 in. Max damper height is 14 in. Installed in accordance with manufacturers installation instructions provided with the damper. Max damper openings not to exceed 162 sq in. per 100 sq ft of ceiling area.
C&S AIR PRODUCTS — Model RD-521

POTTORFF — Model CFD-521

5A. **Alternate Ceiling Damper* —** Max nom area, 196 sq in. Max square size, 14 in. by 14 in. Rectangular sizes not to exceed 196 sq in. with a max width of 26 in. Max overall damper height is 7 in. Installed in accordance with the manufacturers installation instructions provided with the damper. Max damper openings not to exceed 98 sq in. per 100 sq ft of ceiling area.
C&S AIR PRODUCTS — Model RD-521-BT

POTTORFF — Model CFD-521-BT.

5B. **Alternate Ceiling Damper* —** Max nom area shall be 256 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 17 in. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille shall be installed in accordance with installation instructions.
C&S AIR PRODUCTS — Model RD-521-IP, RD-521-NP

POTTORFF — Models CFD-521-IP, CFD-521-NP

5C. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly. Max nom area shall be 75 sq in. with the length not to exceed 8-9/16 in. and the width not to exceed 8-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 38 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturers installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Models CRD2, GBR-CRD, ITG-CRD

5D. **Alternate Ceiling Damper* —** Ceiling damper & fan. Max nom area shall be 75 sq in. with the length not to exceed 9-1/4 in. and the width not to exceed 9-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 45 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Model SIG-CRD

5E. **Alternate Ceiling Damper* —** Max nom area shall be 144 sq in. with the length not to exceed 14 in. and the width not to exceed 12 in. Max height of damper shall be 17-7/8 in. Aggregate damper openings shall not exceed 74 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille shall be installed in accordance with installation instructions.
C&S AIR PRODUCTS — Model RD-521-90, RD-521-NP90

POTTORFF — Models CFD-521-90, CFD-521-90NP

5F. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly. Max nom area shall be 131 sq in. with the length not to exceed 11-1/16 in. and the width not to exceed 11-7/8 in. Aggregate damper openings shall not exceed 66 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Model SMT-CRD

5G. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly. Max nom area shall be 103 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 10-1/8 in. Aggregate damper openings shall not exceed 52 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.
PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA — Model PC-RD05C5

5H. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly. Max nom area shall be 113 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 11-1/8 in. Aggregate damper openings shall not exceed 57 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Model RDFUWT

5I. **Alternate Ceiling Damper* —** Ceiling damper & fan. Max nom area shall be 79 sq in. with the length not to exceed 10 in. and the width not to exceed 7-15/16 in. Aggregate damper openings shall not exceed 40 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A metallic grille shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Models RDJ1 and RDH

5J. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Model RDMWT

5K. **Alternate Ceiling Damper* —** Ceiling damper & fan assembly. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Model RDMWT2

6. **Furring Channels —** Resilient channels formed of 25 MSG thick galv steel. Installed perpendicular to the trusses (Item 2), spaced a max of 16 in. OC when no insulation (Item 3 or 3A) is fitted in the concealed spaced, or a max of 12 in. OC when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane, or when insulation (Item 3B, 3D or 3E) is applied to the underside of the roofing system (Item 1). Two courses of resilient channel positioned 6 in. OC at wallboard butt-joints (3 in. from each end of wallboard). Channels oriented opposite at wallboard butt-joints. Channel splices overlapped 4 in. beneath wood trusses. Channels secured to each truss with 1-1/4 in. long Type S screws.

6A. **Steel Framing Members* —** (Not Shown) — As an alternate to Item 6, furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to trusses when no insulation (Items 3 or 3A) is fitted in the concealed space or 12 in. OC when insulation (Items 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane or 24 in. OC when insulation (Items 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane and a second layer of gypsum board is attached as described in Item 7 for steel framing members. Channels secured to trusses as described in Item 6Ab. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. **Steel Framing Members —** Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating trusses with No. 8 by 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to alternating trusses with No. 8 by 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item 6Aa. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

6B. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 6 and 6A.
a. **Furring Channels —** Hat-shaped furring channels, 7/8 in. deep by 2-5/8 in. wide at the base and 1-1/4 in. wide at the face, formed from No. 25 ga. galv steel, spaced max 16 in. OC perpendicular to trusses and Cold Rolled Channels (Item 6Bb). Furring channels secured to Cold Rolled Channels at every intersection with a 1/2 in. pan head self-drilling screw through each furring channel leg. Ends of adjoining channels overlapped 4 in. and tied together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap. Supplemental furring channels at base layer and outer layer gypsum board butt joints are not required. Batts and Blankets draped over furring channels as described in Item 3. Two layers of gypsum board attached to furring channels as described in Item 7.

b. **Cold Rolled Channels —** 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 6Bd). Adjoining lengths of cold rolled channels lapped min. 6 in. and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Blocking —** Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber (blocking), min. 6 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the truss (Item 2) at the top and bottom of the blocking at each Steel Framing Member (Item 6Bd) location.

d. **Steel Framing Members* —** Hangers spaced 48 in. OC. max along truss, and secured to the Blocking (Item 6Bc) on alternating trusses with a single 5/16 in. by 2 in. hex head lag bolt or four #6 1-1/4 in. drywall screws through mounting hole(s) on the hanger bracket. The two 1/4 in. long steel teeth on the hanger are embedded in the side of the blocking. Hanger positioned on blocking and leveling bolt height adjusted such that furring channels are flush with bottom of trusses before gypsum board installation. Spring gauge of hanger chosen per manufacturer's instructions.
KINETICS NOISE CONTROL INC — Type ICW.

6C. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 6, 6A and 6B.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep installed perpendicular to wood structural members. Channels spaced a max of 16 in. OC when no insulation (Item 3 or 3A) is fitted in the concealed space or a max of 12 in. OC when insulation (Item 3 or 3A) is fitted in the concealed space. Channels secured to trusses as described in Item 6Cb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire near each end of overlap.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ca) to trusses (Item 2). Clips secured to the bottom chord of each truss (48 in. OC) with one No. 8 by 2-1/2 in. long coarse drywall screw through center grommet. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item 6Ca. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7.
PLITEQ INC — Type Genie Clip

6D. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 6, 6A, 6B and 6C.
a. **Main runners —** Installed perpendicular to trusses — Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft OC. Main runners hung a min of 2 in. from bottom chord of trusses with 12 SWG galv steel wire. Wires located a max of 48 in. OC.

b. **Cross tees or channels —** Nom 4 ft long, 15/16 in. or 1-1/2 in. wide face or cross channels, nom 4 ft long, 1-1/2 wide face, installed perpendicular to the main runners, spaced 16 in. OC. Additional cross tees or channels used at 8 in. from each side of butted gypsum board end joints. The cross tees or channels may be riveted or screw-attached to the wall angle or channel to facilitate the ceiling installation.

c. **Wall angles or channels —** Used to support steel framing member ends and for screw-attachment of the gypsum wallboard — Min 0.016 in. thick painted or galvanized steel angle with 1 in. legs or min. 0.016 in. thick painted or galvanized steel channel with a 1 by 1-1/2 by 1 in. profile, attached to walls at perimeter of ceiling with fasteners 16 in. OC.
CGC INC — Type DGL or RX

USG INTERIORS LLC — Type DGL or RX

6E. **Alternate Steel Framing Members* —** (Not Shown) — As an alternate to items 6, 6A, 6B, and 6C, furring channels and Steel Framing Members as described below.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to trusses. When insulation, Items 3 or 3A is used, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to joists as described in Item b.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to the wood trusses (Item 2). Clips spaced at 48" OC and secured to the bottom of the trusses with one 2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 7.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6F. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 6 through 6E- Not for use with Items 3 or 3A. Main runners nom 12 ft long, spaced 72 in. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.
USG INTERIORS LLC — Type DGL or RX

6G. **Resilient Channels —** For Use With Item 7B - Formed from min 25 MSG galv steel installed perpendicular to trusses and spaced 16 in. OC. Channels secured to each truss with 1-5/8 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint. Additional channels shall extend min 6 in. beyond each side edge of panel. Insulation, Item 3C is applied over the resilient channel/gypsum panel ceiling membrane.

6H. **Alternate Steel Framing Members* —** (Not Shown) — As an alternate to items 6 through 6G, furring channels and Steel Framing Members as described below.
a. **Furring Channels —** Formed of No. 25 MSG galv steel, 2-1/2 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to trusses. When insulation, Items 3 or 3A is used, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to joists as described in Item b.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to the wood trusses (Item 2). Clips spaced at 48" OC and secured to the bottom of the trusses with one 2-1/2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 7.
REGUPOL AMERICA — Type SonusClip

7. **Gypsum Board* —** One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to trusses. Attached to the resilient channels using 1 in. long Type S bugle-head screws. Screws spaced a max of 12 in. OC along butted end-joints and in the field when no insulation (Item 3 or 3A) is fitted in the concealed spaced, or a max of 8 in. OC along butted end-joints and in the field when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane. When insulation (Item 3B, 3D or 3E) is installed in the concealed space, spray-applied to the underside of the roofing system (Item 1), screws are spaced a max of 8 in. OC along resilient channels, fasteners are increased in length to 1-1/4 in. and gypsum board butt joints shall be staggered min. 2 ft within the assembly, and occur between the main furring channels.
When **Steel Framing Members*** (Item 6A or 6C) are used, sheets installed with long dimension perpendicular to furring channels and side joints of sheet located beneath trusses. Gypsum board screws are driven through channel spaced 12 in. OC in the field when no insulation (Item 3 or 3A) is fitted in the concealed space, or 8 in. OC in the field when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane. Gypsum board butt joints shall be staggered min. 2 ft within the assembly, and occur between the main furring channels. At the gypsum board butt joints, each end of the gypsum board shall be supported by a single length of furring channel equal to the width of the wallboard plus 6 in. on each end. The furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to the trusses with one clip at each end of the channel. Screw spacing along the butt joint to attach the gypsum board to the furring channels shall be 8 in. OC. Second (outer) layer of gypsum board required when furring channels (Item 6A, a) are spaced 24 in. OC and insulation is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane. Outer layer of gypsum board attached to the furring channels using 1-5/8 in. long Type S bugle-head screws spaced 8 in. OC at butted joints and 12 in. OC in the field. Butted end joints of outer layer to be offset a minimum of 8 in. from base layer end joints. Butted side joints of outer layer to be offset minimum 18 in. from butted side joints of base layer.

When **Steel Framing Members** (Item 6B) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels (Item 6Ba). Base layer attached to the furring channels using 1 in. long Type S bugle head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Butted end joints centered on the continuous furring channels. Butted base layer end joints to be offset a min of 16 in. in adjacent courses. Outer layer attached to the furring channels using 1-5/8 in. long Type S bugle head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints centered on the continuous furring channels and offset a min of 16 in. from butted end joints of base layer. Butted side joints of outer layer to be offset min 16 in. from butted side joints of base layer.

When **Steel Framing Members** (Item 6C) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 72 in. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end, spaced approximately 2 in. in from joint. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Butt joint furring channels shall be attached with a RESILMOUNT Sound Isolation Clip secured to underside of every truss that is located over the butt joint. Over all Gypsum Board side joints, approximately 20 in. lengths of furring channel shall be installed parallel to trusses (Item 2) between main furring channels. Side joint furring channels shall be attached to underside of the joist with RESILMOUNT Sound Isolation Clips - located approximately 2 in. from each end of the approximate 20 in. length of channel. Both Gypsum Boards at side joints fastened into channel with screws spaced 8 in. OC, approximately 1/2 in. from joint edge.

When **Steel Framing Members** (Item 6E) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from end joint. Screw spacing along the gypsum board butt joint and along both additional channels shall be 8 in. OC. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butt joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel.

When alternate **Steel Framing Members*** (Item 6F) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board sheets installed with long dimension (side joints) perpendicular to the 6 ft long cross tees with the end joints staggered min 4 ft and centered between cross tees which are spaced 8 in. OC. Gypsum board side joints may occur beneath or between main runners. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide pieces of gypsum board are to be laid atop the cross tee flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the cross tees at opposite corners of the backer strip with hold down clips to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to cross tees with 1 in. drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board.

When **Steel Framing Members** (Item 6H) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, an additional single length of furring channel shall be installed and be spaced approximately 3 in. from the butt joint (6 in. from the continuous furring channels) to support the floating end of the gypsum board. Each of these shorter sections of furring channel shall extend one truss beyond the width of the gypsum panel and be attached to the adjacent trusses with one SonusClip at every truss involved with the butt joint.

CGC INC — Types C, IP-X2, IPC-AR

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

7A. **Gypsum Board* —** For use with Steel Framing Members (Item 6D) when Batts and Blankets* (Item 3) are not used - One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to the main runners. Gypsum board fastened to each cross tee or channel with five wallboard screws, with one screw located at the midspan of the cross tee or channel, one screw located 12 in. from and on each side of the cross tee or channel mid span and one screw located 1-1/2 in. from each gypsum board side joint. Except at wallboard end joints, wallboard screws shall be located on alternating sides of cross tee flange. At gypsum board end joints, gypsum board screws shall be located 1/2 in. from the joint. Gypsum board fastened to main runners with wallboard screws 1/2 in. from side joints, midway between intersections with cross tees or channels (16 in. OC). End joints of adjacent gypsum board sheets shall be staggered not less than 32 in. Gypsum board sheets screw attached to leg of wall angle with wallboard screws spaced 12 in. OC. Joints treated as described in Item 7. For use with **Steel Framing Members*** (Item 6D) when **Batts and Blankets*** (Item 3) are used - Ratings limited to 1 Hour - 5/8 in. thick, 4 ft wide; installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Fastened to cross tees with 1 in. long steel gypsum board screws spaced 8 in. OC in the field and 8 in. OC along end joints. Fastened to main runners with 1 in. long gypsum board screws spaced midway between cross tees. Screws along sides and ends of boards spaced 3/8 to 1/2 in. from board edge. End joints of the sheets shall be staggered with spacing between joints on adjacent boards not less than 4 ft OC.
CGC INC — Type C or IP-X2

UNITED STATES GYPSUM CO — Type C or IP-X2

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Type C or IP-X2

7B. **Gypsum Board* —** For use with Items 3C and 6G. Nom 5/8 in. thick, 48 in. wide gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long Type S bugle head steel screws spaced 8 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. Finish Rating with this ceiling system is 20 min.
CGC INC — Type ULIX

UNITED STATES GYPSUM CO — Type ULIX

8. **Finishing System —** (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads; paper tape, 2 in. wide, embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum board. **Alternate Ceiling Membrane** — Not Shown.

9. **Netting —** Fibrous, woven netting material fastened to underside of each joist with staples, with side joints overlapped.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2023-06-26

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ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMIE
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
A7.2

GENERAL INFORMATION

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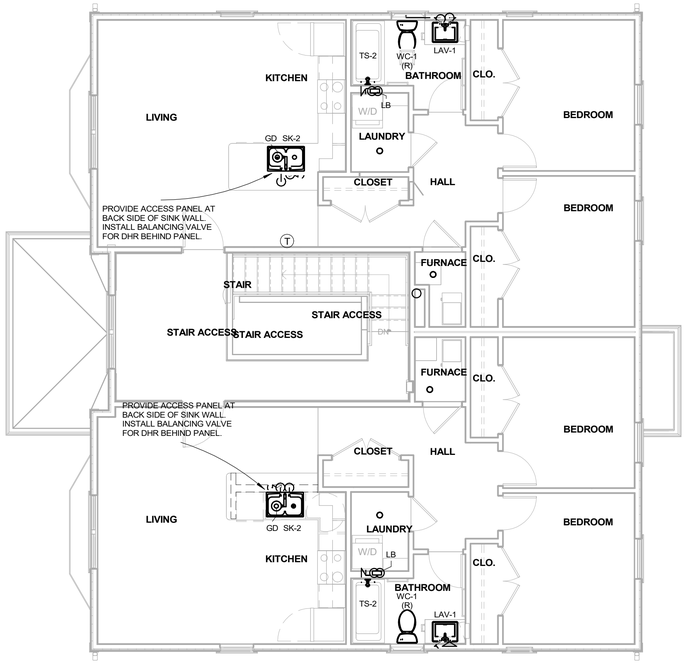
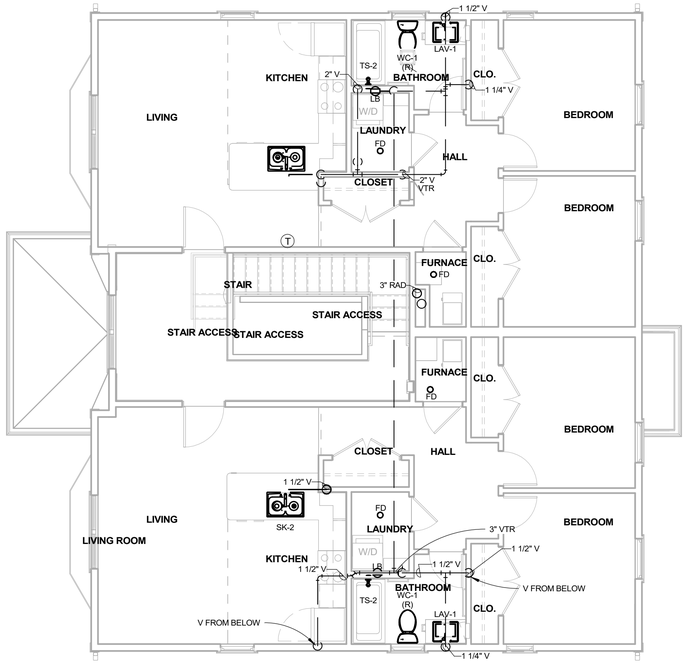


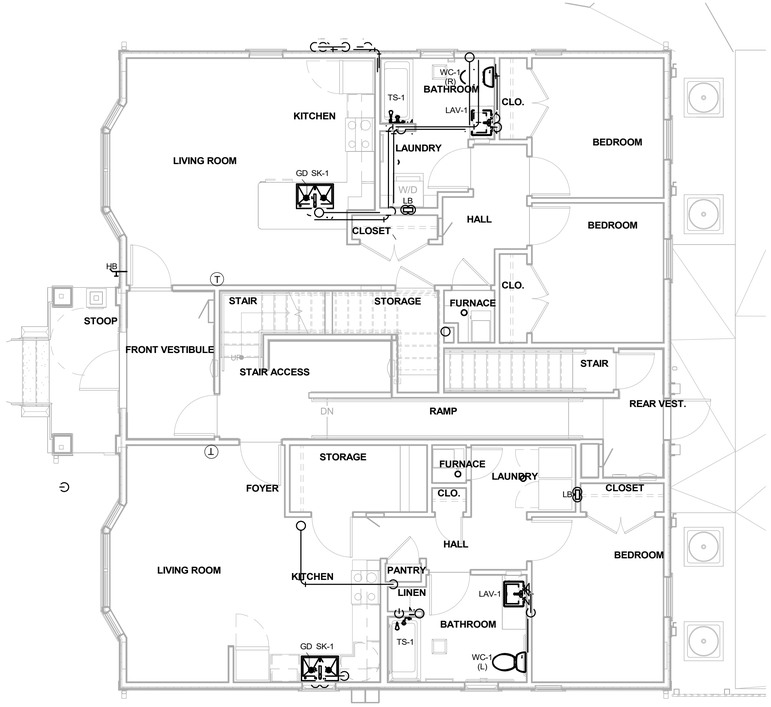
UPPER FLOOR SUPPLY PLAN

SCALE: 3/16" = 1'-0"



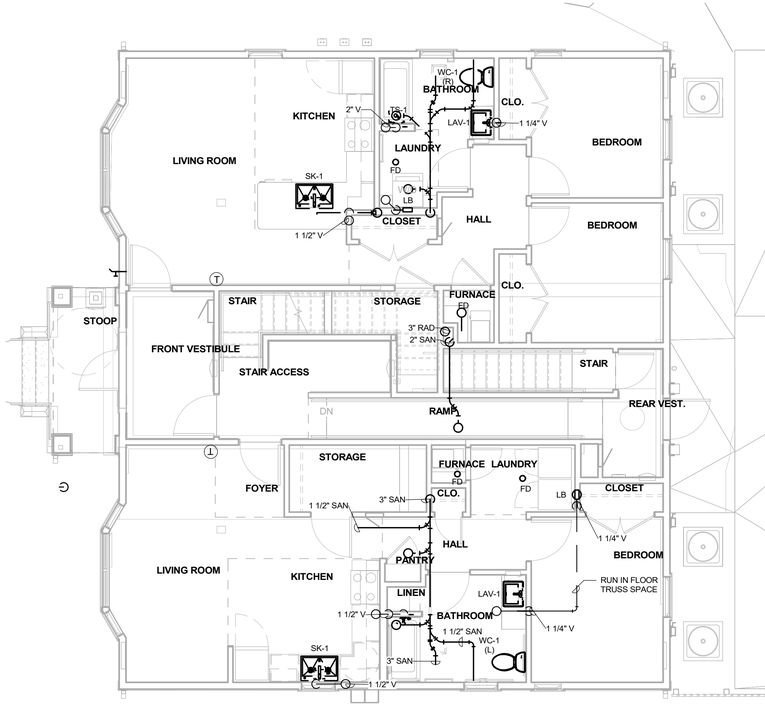
UPPER FLOOR SANITARY PLAN

SCALE: 3/16" = 1'-0"



GROUND FLOOR SUPPLY PLAN

SCALE: 3/16" = 1'-0"



GROUND FLOOR SANITARY PLAN

SCALE: 3/16" = 1'-0"

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAMB
REGISTERED
No. AR12100097
STATE OF
INDIANA
ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
P1.1

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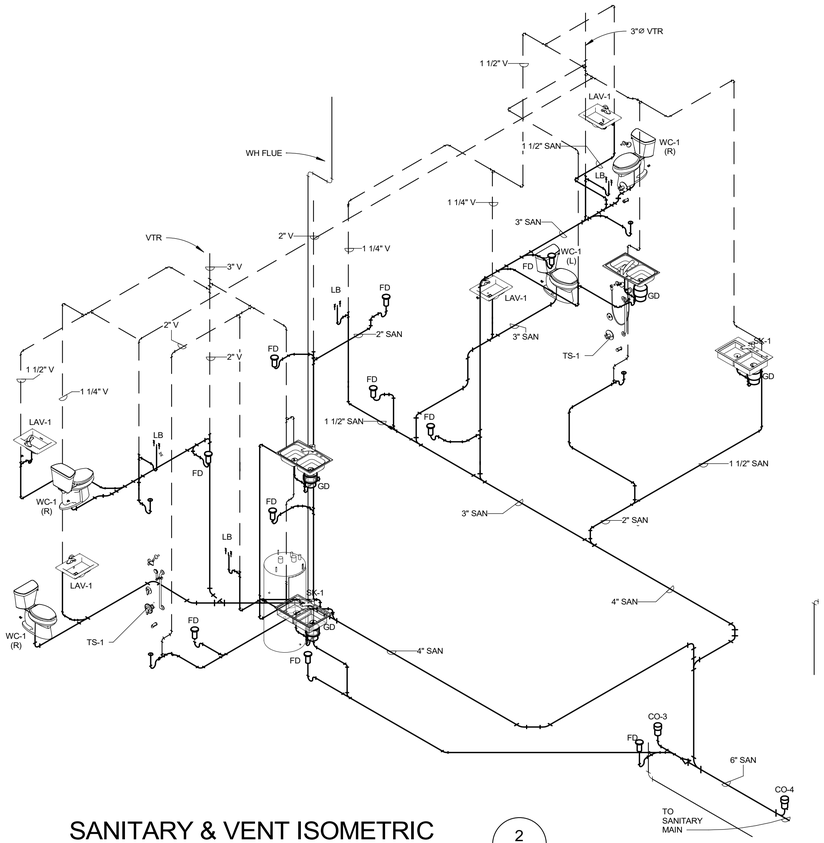

SANITARY & VENT ISOMETRIC

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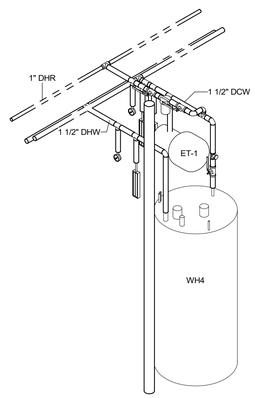
2 P1.2



WATER HEATER ISOMETRIC

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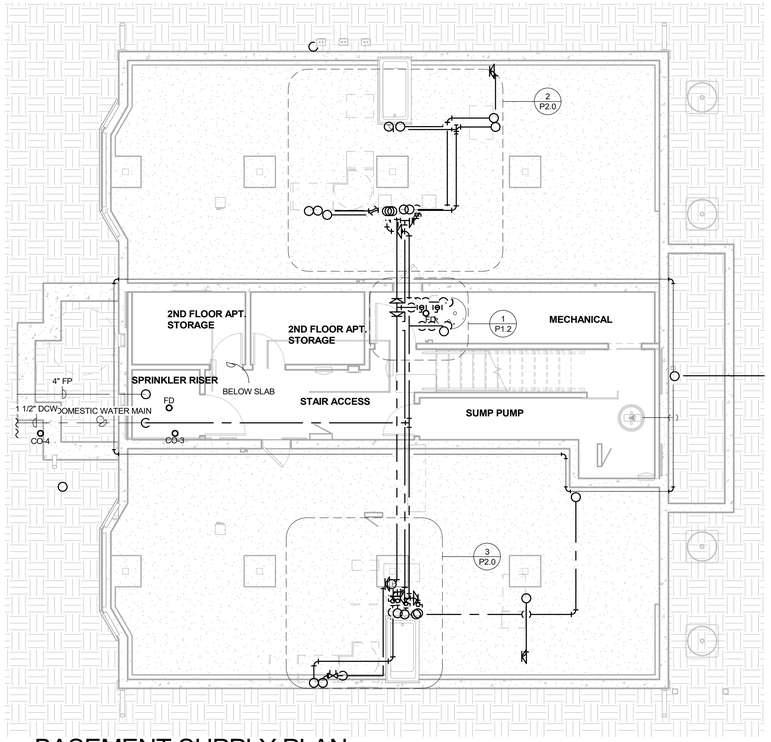
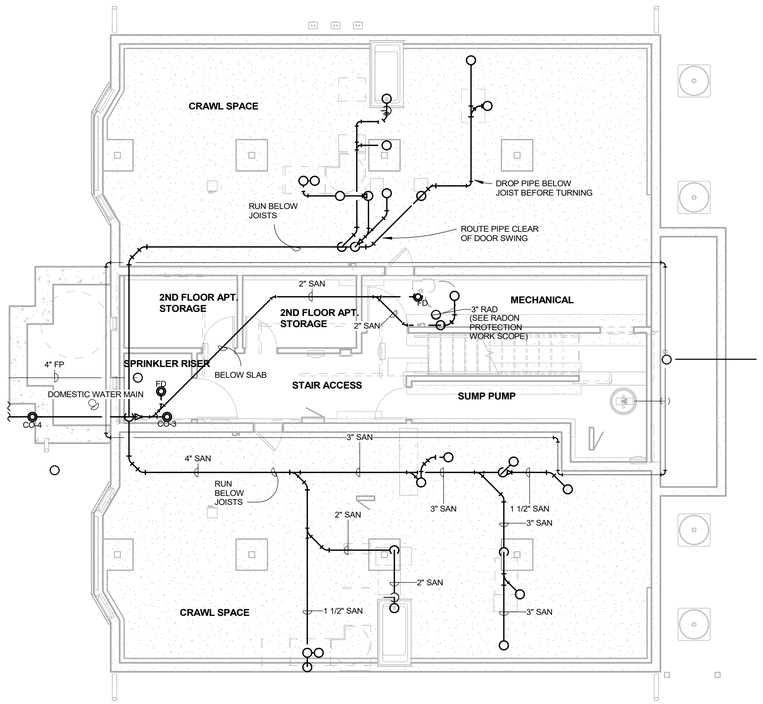
1 P1.2



BASEMENT SUPPLY PLAN

SCALE: 3/16" = 1'-0"



BASEMENT SANITARY PLAN

SCALE: 3/16" = 1'-0"

FIRE PROTECTION NOTES

1. SEE SPECIFICATIONS FOR DETAILED REQUIREMENTS
2. ALL WORK AND MATERIALS SHALL BE IN COMPLIANCE WITH STATE AND LOCAL CODE REQUIREMENTS. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTION FEES AND STATE PLAN REVIEW FEES AS NECESSARY FOR CONSTRUCTION. PRIOR TO SUBMITTAL TO THE STATE, SUBMIT COMPLETE SYSTEM DRAWINGS SHOWING ALL CEILING SUPPORTED MECHANICAL AND ELECTRICAL ITEMS TO THE ARCHITECT FOR COMMENT. SUBMIT SPRINKLER HEAD PRODUCT INFORMATION FOR REVIEW AND APPROVAL.
3. THE BUILDING SHALL BE PROTECTED WITH A WET PIPE FIRE PROTECTION SYSTEM IN ACCORDANCE WITH NFPA 13R. ALL FIRE PROTECTION SYSTEMS AND COMPONENTS SHALL BE IN COMPLIANCE WITH NFPA SECTIONS 13R, AS WELL AS LOCAL FIRE PREVENTION BUREAU STANDARDS. LOCATIONS OF DRAINS TO BE REMOTE LOCATED FROM THE RISER SHALL BE APPROVED BY THE ARCHITECT AND BE ACCESSIBLE WITHIN THE BUILDING.
4. SPRINKLER HEADS IN GYPSUM BOARD CEILINGS TO BE VIKING CONCEALED PENDANT HEADS.
5. FIRE PROTECTION SPRINKLER COVERAGE SHALL BE PROVIDED IN ALL SPACES WITHIN APARTMENT UNITS. INCLUDING RESTROOMS REGARDLESS OF SIZE.
6. MAXIMUM SPRINKLER HEAD SPACING SHALL BE BASED ON SPACE HAZARD LEVEL AND NFPA 13 TABLES 8.8.2.1.2 AND 8.9.2.2.1
7. CONTRACTOR SHALL PROVIDE HYDRAULIC CALCULATIONS FOR THE BUILDING SPRINKLER SYSTEM. THE CONTRACTOR IN COORDINATION WITH LOCAL AUTHORITIES SHALL FLOW TEST THE WATER SUPPLY SYSTEM TO ASCERTAIN ACTUAL STATIC, RESIDUAL AND FLOW PRESSURES AND QUANTITIES TO VERIFY EXISTING CONDITIONS, PRIOR TO ORDERING ANY EQUIPMENT OR SUBMITTING FINAL CALCULATIONS. RISER AND PIPE SIZING TO BE DETERMINED BY THE SPRINKLER SYSTEM DESIGNER BASED UPON THE WATER PRESSURE AVAILABLE AFTER THE BACKFLOW PREVENTION DEVICE AND VALVES. SPRINKLER SYSTEM DESIGNER TO SUBMIT DRAWINGS AND CALCULATIONS FOR STATE REVIEW.
8. CONTRACTOR SHALL DO ALL NECESSARY CUTTING AND PATCHING, AS WELL AS ALL NECESSARY PIPE AND EQUIPMENT SUPPORTS.
9. PRESSURE TEST ENTIRE SYSTEM AND REPAIR ANY LEAKS. CONTRACTOR TO BE RESPONSIBLE FOR ANY DAMAGE TO PROPERTY AND PERSONNEL CAUSED BY FAULTY INSTALLATION OR MATERIALS.
10. THE SPRINKLER CONTRACTOR SHALL TEST THE DOUBLE CHECK VALVE ASSEMBLY AND REPORT PROPER FUNCTION TO THE ARCHITECT.
11. THE SPRINKLER CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND MAKE ADJUSTMENTS TO NUMBER OF HEADS AND FINISHED CEILING MATERIAL TYPES AS NECESSARY TO ENSURE THAT HEADS ARE PROPERLY PLACED. HE SHALL ALSO COORDINATE HIS FINAL SHOP DRAWINGS WITH THE OTHER TRADES TO AVOID CONFLICT BETWEEN HIS PIPING AND THE PIPING, CONDUITS, AND DUCTWORK OF THE OTHER RESPECTIVE CONTRACTORS ON THIS PROJECT.
12. THE SPRINKLER CONTRACTOR SHALL FIRE STOP ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS.
13. IT IS THE DESIGN INTENT THAT THE FIRE PROTECTION SYSTEM BE BY DELEGATED DESIGN. FIRE PROTECTION ITEMS SHOWN ARE BASED ON LIMITED SITE OBSERVATIONS. CONTRACTOR TO FULLY DESIGN SYSTEM AND SUBMIT ALL REQUIRED DRAWINGS AND HYDRAULIC CALCULATIONS FOR STATE AND LOCAL REVIEW.

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAW REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
P1.2

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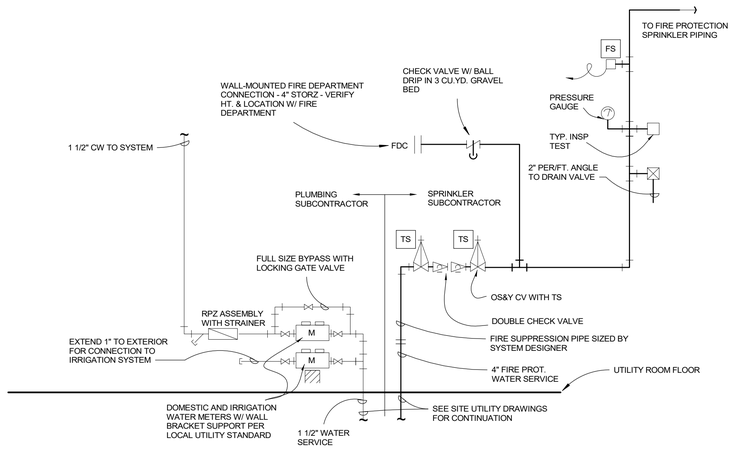


WATER RISER DIAGRAM

SCALE: N.T.S.

1 P2.0 SIX-PLEX

PLUMBING FIXTURE SCHEDULE

MARK	MAKE	MODEL	DESCRIPTION	FAUCET/FLUSH		PIPE SIZE			WATER SENSE	NOTES
				MODEL	RATE	CW	HW	SAN		
FD	SIOUX CHIEF	832	FLOOR DRAIN					2"	N/A	
GD	SEE SPECS									
HB	WATTS	HY-725-8-3	WALL-MOUNTED YARD HYDRANT			3/4"			N/A	
LAV-1	INTEGRAL BOWL VANITY TOP		INTEGRAL BOWL	PROFLO PFWSC3017CP	0.5 GPM	1/2"	1/2"	1 1/2"	N/A	SEE CASEWORK SPEC FOR COUNTER
LB	IPS	W4700	LAUNDRY BOX			1/2"	1/2"	2"	N/A	
SK-1	DAYTON	GE23321	STAINLESS STEEL DROP-IN KITCHEN SINK - OFFSET DRAIN	PROFLO PFXC4111CP	1.5 GPM	1/2"	1/2"	1 1/2"	N/A	INSTALL GARBAGE DISPOSAL
SK-2	PROFLO	PFSR332274	20 GA STAINLESS STEEL DROP-IN KITCHEN SINK	PROFLO PFXC4111CP	1.5 GPM	1/2"	1/2"	1 1/2"	N/A	INSTALL GARBAGE DISPOSAL
TS-1	BESTBATH	BTS6030A174R	TUB/SHOWER WITH HANDHELD SHOWER HEAD	MOEN T8343EP15 W/ 8373 HD VALVE	1.5 GPM	1/2"	1/2"	2"	YES	OFFSET COUNTERS TO OPEN SIDE. INCLUDE TOE TAP TUB DRAIN - SEE ELEVATIONS FOR GRAB BAR. PROVIDE SOAP DISH
TS-2	BESTBATH	BTS6030AFRL-R	TUB/SHOWER WITH STD. TUB FILLER + SHOWER HEAD	MOEN T9388EP15 W/ 8373 HD VALVE	1.5 GPM	1/2"	1/2"	2"	YES	INCLUDE TWIST LOCK TUB DRAIN - PROVIDE SOAP DISH
WC-1 (L)	PROFLO	PFCT103HEWH	ADA HEIGHT WATER CLOSET			1/2"	1/2"	3"	YES	PROVIDE LEVER ON OPEN SIDE OF FIXTURE
WC-1 (R)	PROFLO	PFCT103HEWH	ADA HEIGHT WATER CLOSET			1/2"	1/2"	3"	YES	

PUMP SCHEDULE

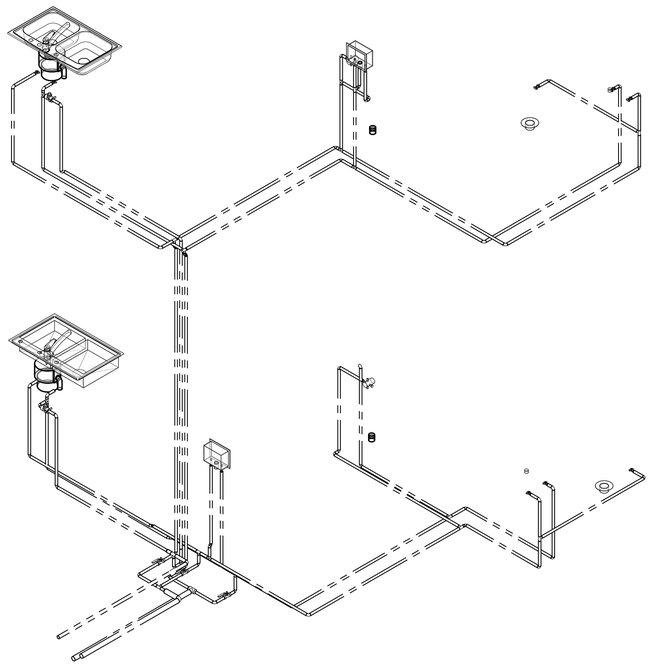
MARK	MAKE	MODEL	DESCRIPTION	FLUID FLOW		ELECTRICAL		NOTES
				GPM	HEAD	VOLTAGE	POWER	
P-1	TACO	006E3LC	INLINE RECIRCULATING PUMP	11	13 FT	120 V	44 W	SYSTEM MODEL NUMBERS PE-1
P-2	ZOELLER	WM49	SUMP PUMP	12	12 FT	120 V	480 W	PROVIDE FLOAT SWITCH, 1-1/2" OUTLET

WATER HEATER SCHEDULE

MARK	MAKE	MODEL	DESCRIPTION	VOLUME	HEATING		VOLTAGE	NOTES
					CAPACITY	EFFICIENCY		
WH4								

PIPE MATERIAL SCHEDULE

MARK	DESCRIPTION	MATERIAL	INSULATION
DCW	DOMESTIC COLD WATER	COPPER TUBE WITH SOLDER OR PRESS FITTINGS; PEX TUBE WITH CRIMP RING OR COLD EXPANSION FITTINGS	3/4" ELASTOMERIC OR FIBERGLASS
DHW	DOMESTIC HOT WATER		
DHR	DOMESTIC HOT WATER RETURN		
SAN	SANITARY DRAIN	PVC PIPE WITH SOLVENT JOINT FITTINGS; CAST IRON PIPE WITH NO-HUB FITTINGS	NONE
V	SANITARY VENT		
CON	CONDENSATE DRAIN	PVC PIPE WITH SOLVENT JOINT FITTINGS OR COPPER TUBE WITH SOLDER OR PRESS FITTINGS	NONE
GAS	GAS PIPE, ABOVE GROUND	BLACK STEEL PIPE WITH SCREW OR PRESS FITTINGS	NONE



SUPPLY ISOMETRIC NORTH

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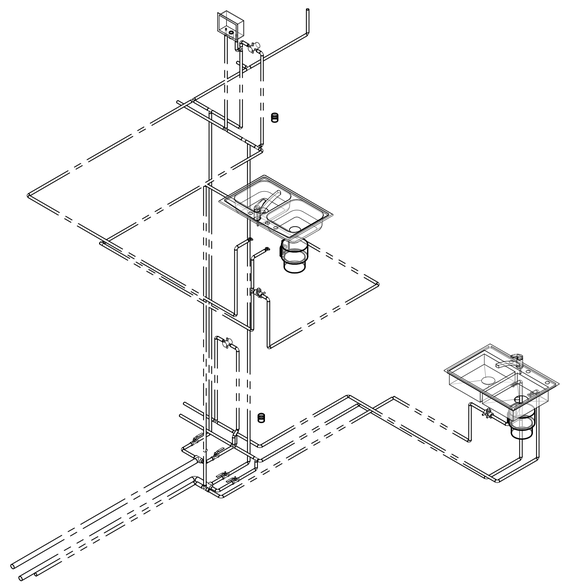
2 P2.0



SUPPLY ISOMETRIC SOUTH

SCALE: N.T.S.

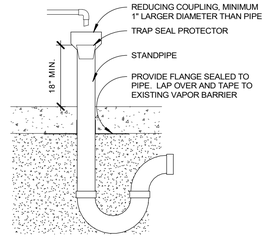
3 P2.0

PLUMBING NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE NATIONAL, STATE, AND LOCAL CODES AT THE TIME OF BIDDING, INCLUDING BUT NOT LIMITED TO THOSE NOTED ON THE COVER SHEET.
2. DRAWINGS ARE DIAGRAMMATIC. FIELD VERIFY ALL EXISTING CONDITIONS AND COORDINATE LOCATIONS WITH OTHER TRADES.
3. SUBSTITUTIONS FOR BRAND OR MODEL OF FIXTURES/EQUIPMENT ARE NOT PERMITTED IN THE BASE BID UNLESS OTHERWISE STATED OR APPROVED IN WRITING BY THE ARCHITECT/ENGINEER. SUBSTITUTIONS MAY BE SUBMITTED WITH WRITTEN EXPLANATION AS VOLUNTARY ALTERNATES. SEE SPECIFICATIONS.
4. SCHEDULED FIXTURES/EQUIPMENT REFLECTS THE BASIS-OF-DESIGN FOR THIS PROJECT'S DESIGN INTENT. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM AND COORDINATE THE SPECIFIC PARAMETERS OF IDENTIFIED ITEMS WITH THE OTHER IDENTIFIED COMPONENTS WITHIN THE CONTRACT DOCUMENTS. IT IS THE DESIGN INTENT THAT THE EQUIPMENT SELECTED SHALL BE INSTALLED TO ESTABLISH FULLY OPERATIONAL MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS.
5. ALL FIXTURES, PIPING, VENTING, ETC. SHALL BE IN STRICT CONFORMANCE WITH THE MANUFACTURER'S PRINTED RECOMMENDATIONS/INSTRUCTIONS. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICT BETWEEN CODE REQUIREMENTS AND DRAWINGS AND/OR MANUFACTURER'S REQUIREMENTS.
6. THE FLOOR PLANS DO NOT SHOW ALL VALVES, FITTINGS, APPURTENANCES, ACCESS PANELS, ELEVATION CHANGES, AND VARIOUS OTHER ITEMS. THESE ITEMS SHALL BE PROVIDED WITHOUT ADDITIONAL COST FOR A COMPLETE AND OPERATING SYSTEM.
7. COORDINATE ROUTING OF PIPING, DUCTWORK, ETC. PRIOR TO STARTING INSTALLATION. MECHANICAL AND ELECTRICAL TRADES SHALL REVIEW AVAILABLE SPACE AND COORDINATE ALL SYSTEM ROUTING PRIOR TO INSTALLATION. FIELD VERIFY ALL FRAMING, CEILING HEIGHTS, ETC. BEFORE ORDERING OR FABRICATING SYSTEMS.
8. SEE SPECIFICATIONS FOR PIPING MATERIAL REQUIREMENTS.
9. SEAL ALL PENETRATIONS THRU INTERIOR AND/OR EXTERIOR WALLS AND THROUGH CEILINGS AND/OR ROOFS. SEE DETAILS SHEET A6.1.

PIPING LEGEND

- MANUAL VALVE, BALL VALVE U.N.O.
- CHECK VALVE, SWING CHECK U.N.O.
- PIPE BREAK, PIPE CONTINUES AS INDICATED
- PUMP, SEE PUMP SCHEDULE AND/OR SPECIFICATIONS
- PIPE FLOW INDICATOR
- DCW: DOMESTIC COLD WATER
- DHW: DOMESTIC HOT WATER
- DHR: DOMESTIC HOT WATER RETURN
- SAN: SANITARY DRAIN
- V: SANITARY VENT
- GAS: NATURAL GAS PIPE
- RAD: RADON SOIL DEPRESSURIZATION VENT



STANDPIPE DETAIL

RADON PROTECTION WORK SCOPE

1. ALL CONCRETE SLABS THAT COME IN CONTACT WITH THE GROUND SHALL BE LAID OVER A GAS PERMEABLE MATERIAL MADE UP OF EITHER A MINIMUM 4" THICK UNIFORM LAYER OF CLEAN AGGREGATE, OR A MINIMUM 4" THICK UNIFORM LAYER OF SAND, OVERLAIN BY A LAYER OR STRIPS OF MANUFACTURED MATTING DESIGNED TO ALLOW THE LATERAL FLOW OF SOIL GASES.
2. INSTALL GRANULAR MATERIAL BELOW NEW CONCRETE FLOOR SLABS WITH COLLECTION PITS AND VENT PIPING AS SHOWN ON THE PLUMBING DRAWINGS. PROVIDE TEE FITTING BELOW SLAB.
3. EXTEND 4"∅ VENT STACK FROM UNDERSLAB PIPING TO 12" ABOVE THE ROOF. PROVIDE 120V, 20A CIRCUIT TO JUNCTION BOX IN THE ATTIC FOR INLINE FAN. SEE ATTIC ELECTRICAL PLAN ON SHEET E1.2.
4. LABEL VENT PIPING WITH TEXT INDICATING THAT THE ITEM IS PART OF THE RADON MITIGATION SYSTEM. LABEL DEDICATED CIRCUIT AS PART OF THE RADON MITIGATION SYSTEM.
5. INSTALL COMPLETE VAPOR BARRIER BELOW CONCRETE SLABS PER THE SECTIONS AND SPECIFICATIONS. SEAL MEMBRANE TO ALL PENETRATING ITEMS.
6. PROVIDE THIRD PARTY TEST OF RADON LEVELS AT THE 9 MONTH WARRANTY REVIEW.

QUADPLEX BUILDING

ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAW REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
P2.0

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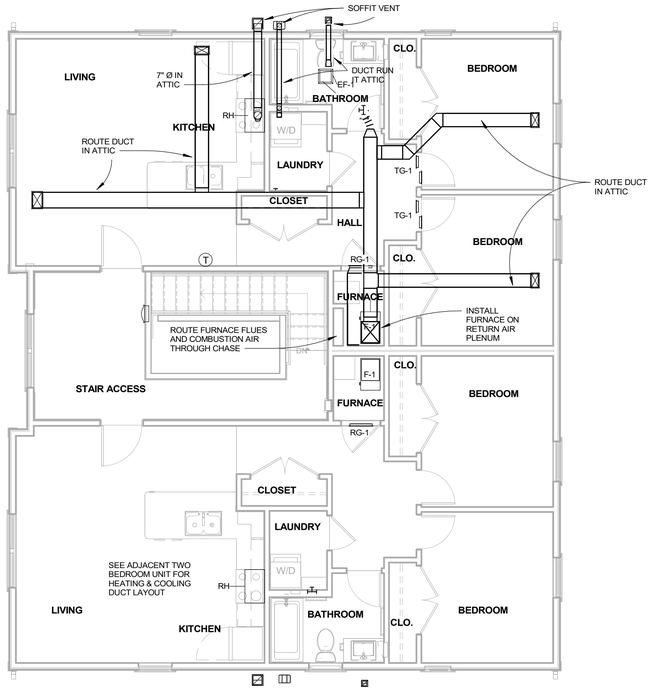
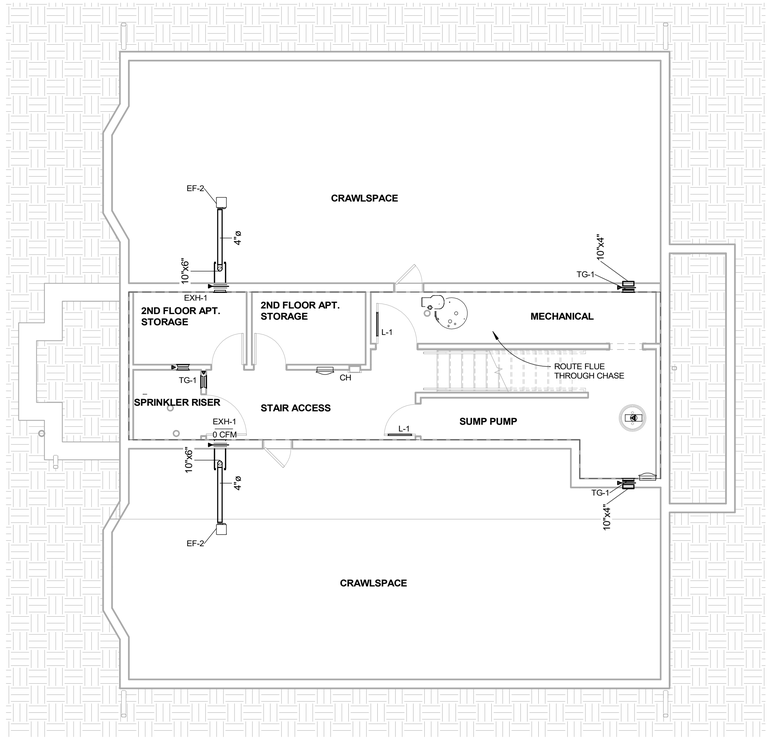


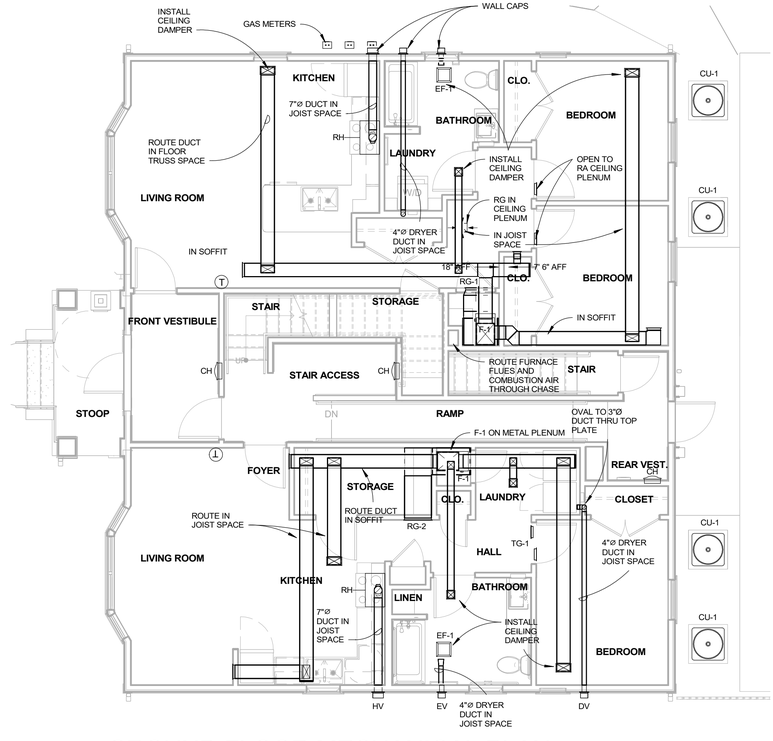
UPPER FLOOR MECHANICAL PLAN

SCALE: 3/16" = 1'-0"



BASEMENT MECHANICAL PLAN

SCALE: 3/16" = 1'-0"



GROUND FLOOR MECHANICAL PLAN

SCALE: 3/16" = 1'-0"

QUADPLEX BUILDING

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

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TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE

712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
M1.0

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FURNACE SCHEDULE

MARK	MAKE	MODEL	DESCRIPTION	AIRFLOW	HEATING		ELECTRICAL				NOTES
					CAPACITY	EFFICIENCY	VOLTAGE	POWER	MCA	MOCP	
F-1	GOODMAN	GM9S960403AN	UPFLOW GAS FURNACE	800	40000.0 Btu/h	96%	120V		10.3 A	15 A	CONNECT TO CU-1 / PROVIDE CONCENTRIC VENT @ ROOF

CABINET HEATER SCHEDULE

MARK	MAKE	MODEL	DESCRIPTION	AIRFLOW	HEATING		ELECTRICAL				NOTES
					CAPACITY	EFFICIENCY	VOLTAGE	POWER	MCA	MOCP	
CH	QMARK	CZ1548T	WALL-MOUNTED CABINET HEATER	65	5120.0 Btu/h	100%	240V	1500 W	15 A	20 A	WITH DOUBLE POLE THERMOSTAT CZTDP

CONDENSING UNIT SCHEDULE

MARK	MAKE	MODEL	DESCRIPTION	EVAPORATOR MODEL	COOLING		ELECTRICAL				NOTES
					CAPACITY	EFFICIENCY	VOLTAGE	POWER	MCA	MOCP	
CU-1	GOODMAN	GLXS4MN1810AA	CONDENSING UNIT	PROVIDE GOODMAN CAPTA1814A3AA CASED COIL	18000.0 Btu/h	14.3 SEER2	208/230V	2.16 kW	11.1 A	15 A	CONNECT LINESET TO UNIT F-1

EXHAUST FAN SCHEDULE

MARK	MAKE	MODEL	DESCRIPTION	AIRFLOW	ELECTRICAL		NOTES
					VOLTAGE	POWER	
EF-1	PANASONIC	FV-0510VS1	NON-CONTINUOUS EXHAUST FAN	50	120V	4.4 W	50 CFM WITH INTERMITTENT SWITCH. INCLUDE 4" OVAL TO 3" TRANSITION TO ABOVE/THRU WALL PLATE. PROVIDE A 3" TO 4" ROUND ELBOW IN ATTIC. INCLUDE WALL HOOD OR SOFFIT HOOD AS SHOWN. INCLUDE BACKDRAFT DAMPER.
EF-2	PANASONIC	FV-709VB1	CONTINUOUS EXHAUST FAN	56	120V	17.2 W	MOUNT BETWEEN FLOOR JOISTS

NOTES
1. SEE ELECTRICAL PLAN FOR SWITCHING.
2. SOFFIT VENT TO BE PANASONIC EZ-SOFFIT VENT
3. WALL CAP TO BE MID-AMERICA 4" HOODED VENT WITH WIRE SCREEN
4. EXHAUST DUCT TO BE RIGID DUCT EXCEPT FOR ATTIC DUCTS CONNECTION TO THE OUTLET. DRYER DUCT TO BE RIGID DUCT.

MECHANICAL ACCESSORY SCHEDULE

MARK	DESCRIPTION	MAKE	MODEL	NOTES
ET-1	ASME DIAPRHAM TANK	WESSELS	TTA-12	5 GALLON ACCEPTANCE

AIR TERMINAL SCHEDULE

MARK	DESCRIPTION	MAKE/FAMILY	NOTES
DV	DRYER VENT HOOD	DEFLECTO RVHAW4	
EV	EXHAUST HOOD	BROAN 855	
EVS	EAVE MOUNTED EXHAUST VENT	PANASONIC EZSV14	
EXH-1			
HV	KITCHEN HOOD	BROAN MODEL 647	
L-1	THRU FLOOR TRANSFER	HART & COOLEY	
RG-1	RETURN AIR FILTER GRILLE	HART & COOLEY MODEL 659	
RG-2	RETURN AIR GRILLE	HART & COOLEY MODEL 650	
SG-1	CEILING DIFFUSER	HART & COOLEY MODEL 301	INCLUDE BALANCING DAMPER
SG-2	SIDEWALL DIFFUSER	HART & COOLEY MODEL 302	INCLUDE BALANCING DAMPER
SG-3	CEILING DIFFUSER	HART & COOLEY MODEL 302	INCLUDE BALANCING DAMPER
TG-1	TRANSFER GRILLE	HART & COOLEY MODEL 650	INCLUDE BALANCING DAMPER

NOTES
1. DRYER VENT CAPS TO BE MID-AMERICA MASTER EXHAUST VENT
2. DRYER EXHAUST DUCT TO BE RIGID DUCT

MECHANICAL NOTES

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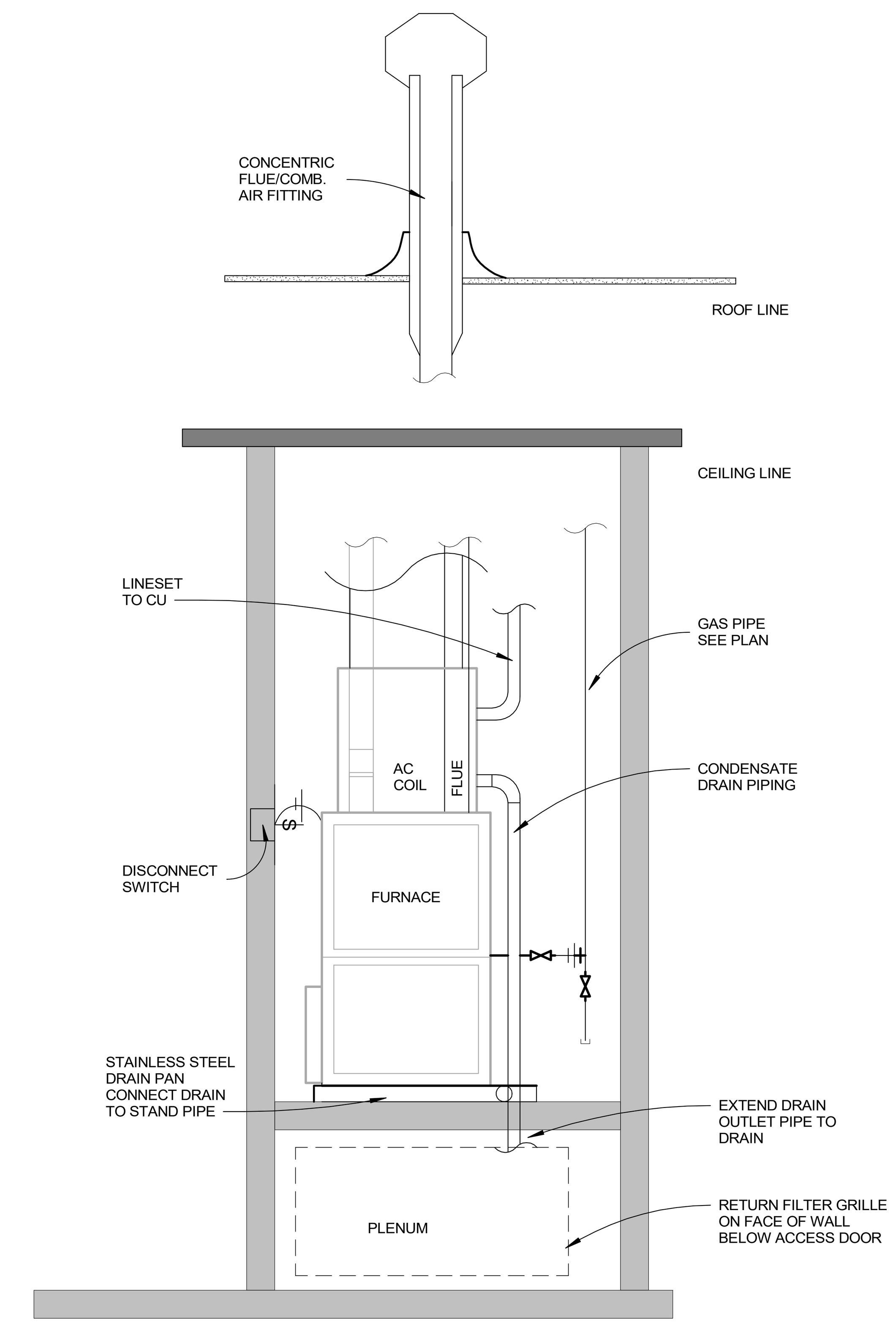
2. DRAWINGS ARE DIAGRAMMATIC. FIELD VERIFY ALL EXISTING CONDITIONS AND COORDINATE LOCATIONS WITH OTHER TRADES.
3. SUBSTITUTIONS FOR BRAND OR MODEL OF EQUIPMENT/DEVICES ARE NOT PERMITTED IN THE BASE BID UNLESS OTHERWISE STATED OR APPROVED IN WRITING BY THE ARCHITECT/ENGINEER. SUBSTITUTIONS MAY BE SUBMITTED WITH WRITTEN EXPLANATION AS VOLUNTARY ALTERNATES. SEE SPECIFICATIONS.
4. SCHEDULED EQUIPMENT REFLECTS THE BASIS-OF-DESIGN FOR THIS PROJECT'S DESIGN INTENT. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM AND COORDINATE THE SPECIFIC PARAMETERS OF IDENTIFIED ITEMS WITH THE OTHER IDENTIFIED COMPONENTS WITHIN THE CONTRACT DOCUMENTS. IT IS THE DESIGN INTENT THAT THE EQUIPMENT SELECTED SHALL BE INSTALLED TO ESTABLISH FULLY OPERATIONAL MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS.
5. ALL EQUIPMENT, PIPING, VENTING, ETC. SHALL BE IN STRICT CONFORMANCE WITH THE MANUFACTURER'S PRINTED RECOMMENDATIONS/INSTRUCTIONS. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICT BETWEEN CODE REQUIREMENTS AND DRAWINGS AND/OR MANUFACTURER'S REQUIREMENTS.
6. THE FLOOR PLANS DO NOT SHOW ALL VALVES, FITTINGS, APPURTENANCES, ACCESS PANELS, ELEVATION CHANGES, AND VARIOUS OTHER ITEMS. THESE ITEMS SHALL BE PROVIDED WITHOUT ADDITIONAL COST FOR A COMPLETE AND OPERATING SYSTEM.
7. COORDINATE ROUTING OF PIPING, DUCTWORK, ETC. PRIOR TO STARTING INSTALLATION. MECHANICAL AND ELECTRICAL TRADES SHALL REVIEW AVAILABLE SPACE AND COORDINATE ALL SYSTEM ROUTING PRIOR TO INSTALLATION. FIELD VERIFY ALL FRAMING, CEILING HEIGHTS, ETC. BEFORE ORDERING OR FABRICATING SYSTEMS.
8. SEE SPECIFICATIONS FOR DUCT AND PIPING MATERIAL REQUIREMENTS.
9. SEAL ALL PENETRATIONS THRU INTERIOR AND/OR EXTERIOR WALLS AND THROUGH CEILINGS AND/OR ROOFS.
10. ROUTE LINESETS VERTICALLY INSIDE EXTERIOR WALL INSULATION BARRIER IN INTERIOR WALL STUD SPACE OR SHOWER CHASE.
11. TERMINATE FURNACE FLUE AND COMBUSTION AIR TO CONCENTRIC VENTS AT THROUGH ROOF CHASE, MAINTAIN SPACING TO OTHER FLUES AND VENTS.

MECHANICAL LEGEND

- (T) THERMOSTAT - MOUNT @ 46" TO CENTER
- (S) ROOM REMOTE TEMPERATURE SENSOR - MOUNT @ 46" TO CENTER
- MANUAL BALANCING DAMPER
- FIRE DAMPER
- FIRE AND SMOKE DAMPER (SD INDICATES SMOKE DAMPER ONLY)
- CEILING RADIATION DAMPER
- AIRFLOW DIRECTION INDICATOR



MECH. ROOM DETAIL 3/M2.0
SCALE: N.T.S.

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ALLIANCE ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

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712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

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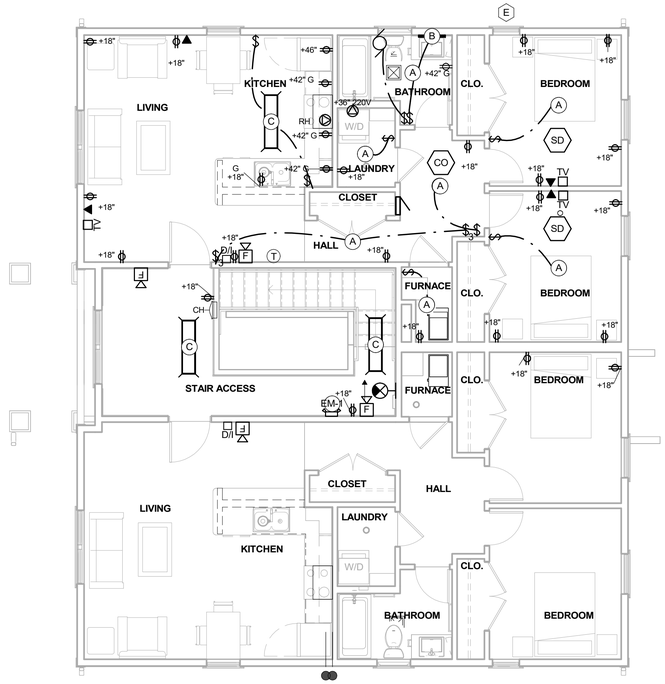
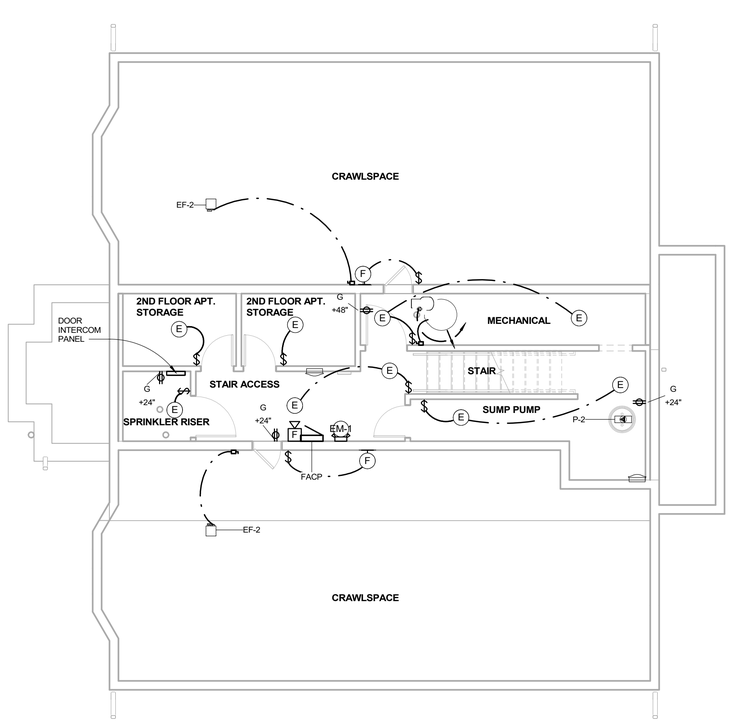
FIRE ALARM GENERAL NOTES

1. FIRE ALARM SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 72 AND BE FULLY MONITORED.
2. PROVIDE PULL STATIONS AS SHOWN ON PLANS, FLOW ALARMS ON SPRINKLER SYSTEM, TAMPER SWITCHES, , STROBE/HORNS EACH FLOOR (CORRIDORS AND PUBLIC ROOMS) AND FIRE ALARM CONTROL PANEL. SYSTEM SHALL BE MONITORED BY OUTSIDE MONITORING COMPANY, AND SYSTEM SHALL BE FULLY OPERABLE.
3. SEE UNIT ELECTRICAL PLANS FOR SMOKE DETECTORS OR SMOKE/CO2 DETECTORS. ALL APARTMENT SMOKE DETECTORS SHALL BE HARD WIRED, INTERCONNECTED WITHIN ONE DWELLING UNIT AND HAVE BATTERY BACKUP.
4. INSTALL FIRE ALARM HORNS IN EACH APARTMENT UNIT IN SUFFICIENT QUANTITY TO PROVIDE THE MINIMUM SOUND LEVELS REQUIRED BY APPLICABLE CODE. TESTING FOR SOUND LEVEL (75 dBA) ABOVE AMBIENT) SHALL BE COMPLETED IN ACCORDANCE WITH NFPA 72 AND SUBMITTED TO THE AUTHORITY HAVING JURISDICTION.
5. AT SENSORY IMPAIRED UNITS, PROVIDE FIRE ALARM HORN/STROBES IN LIEU OF HORNS DESCRIBED IN NOTE 4 ABOVE, ALSO PROVIDE STROBE UNITS IN BATHROOMS AND BEDROOMS WHERE AS SHOWN ON THE UNIT ELECTRICAL PLANS.
6. THE SYSTEM SHALL HAVE THE CAPACITY TO SUPPORT ADDITIONAL DEVICES IN NON-SENSORY IMPAIRED UNITS. EXTEND FIRE ALARM INDICATING APPLIANCE CIRCUITS INTO EACH UNIT AND TO EACH DEVICE LOCATION (J-BOXES FOR FUTURE STROBES ARE SHOWN ON UNIT ELECTRICAL PLANS).
7. FIRE ALARM SHALL BE INITIATED BY THE FOLLOWING DEVICES: MANUAL PULLS, WATER FLOW SWITCH(ES) IN THE FIRE SUPPRESSION SYSTEM, AS SHOWN AND AS REQUIRED BY LOCAL ORDINANCE.
8. TROUBLE ALARM SHALL BE INITIATED BY THE FOLLOWING DEVICES: FIRE SUPPRESSION SYSTEM TAMPER SWITCHES, DEVICE OR SYSTEM MALFUCTION AS REQUIRED BY NFPA 72, PIV ACTIVATION (WHERE APPLICABLE) (VALVE CLOSED)
9. ALL SMOKE DETECTORS SHALL BE EITHER COMBINATION SMOKE AND CARBON MONOXIDE DETECTORS OR SMOKE DETECTORS AS NOTED ON THE PLAN.



UPPER FLOOR ELECTRICAL PLAN

SCALE: 3/16" = 1'-0"



BASEMENT ELECTRICAL PLAN

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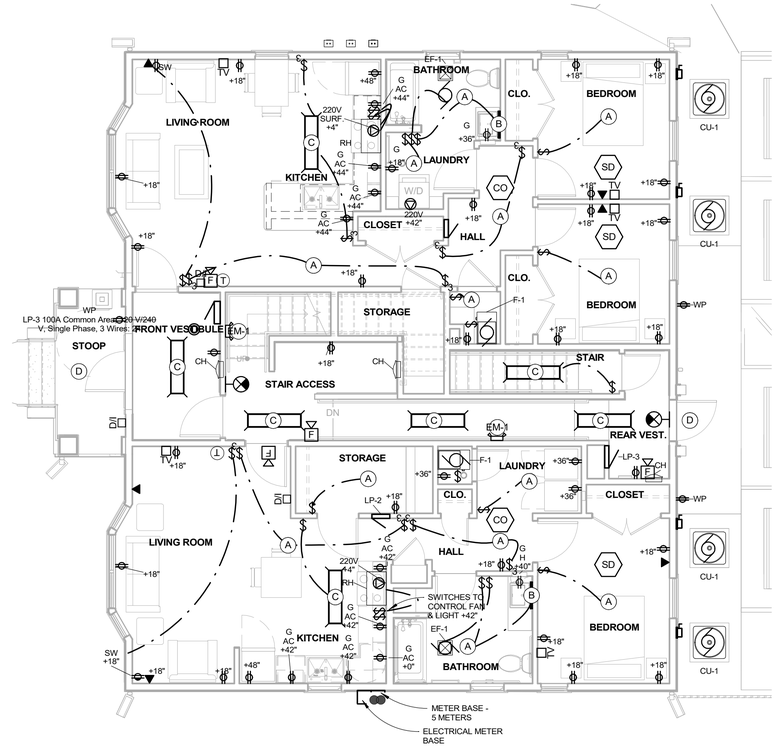

GROUND FLOOR ELECTRICAL PLAN

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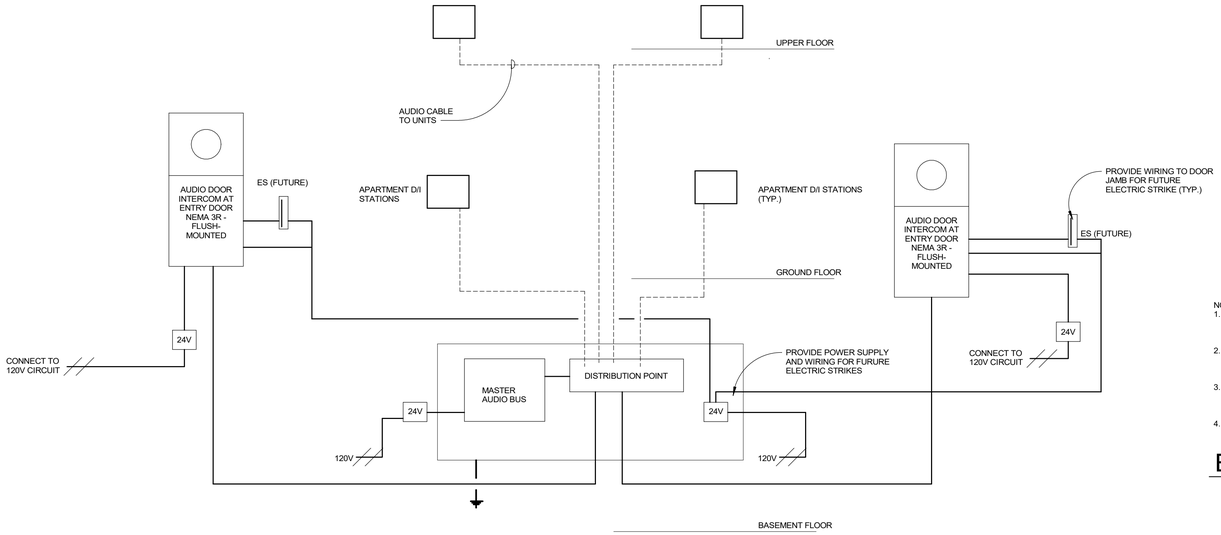
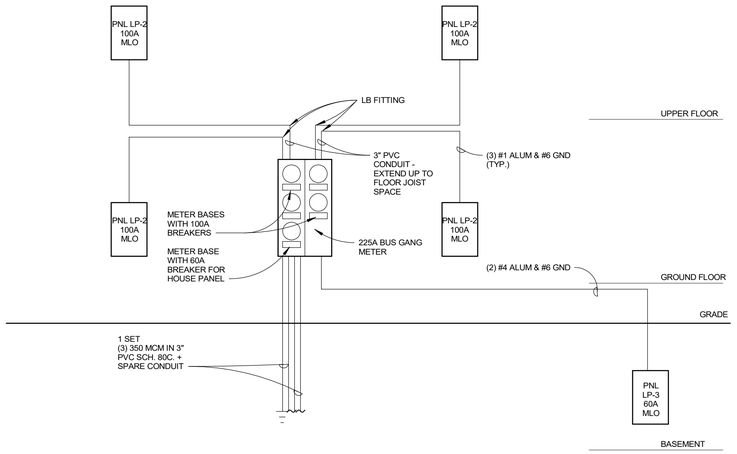
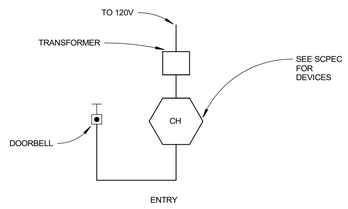


DOOR INTERCOM RISER

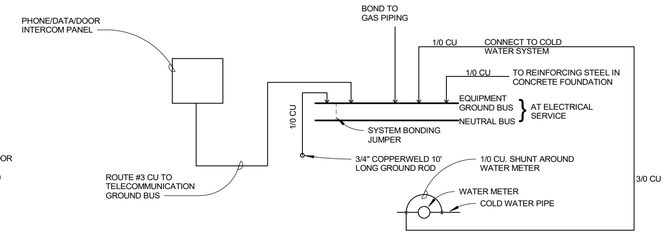


ELECTRICAL RISER DIAGRAM

SMOKE DETECTOR DIAGRAM



DOOR CHIME DIAGRAM



NOTES:

1. CONTRACTOR SHALL FOLLOW THIS DETAIL FOR PROPER GROUNDING CONNECTIONS, INCLUDING FURNISH AND INSTALL ALL CONDUCTORS AND EQUIPMENT SUCH AS GROUND RODS, SURGE ARRESTOR, GROUND BUS, ETC. TO PROPERLY GROUND/BOND ALL EQUIPMENT.
2. SYSTEM GROUNDING FOR INTERIOR DISTRIBUTION TRANSFORMERS SHALL BE MADE TO A GROUNDING ELECTRODE AS NEAR AS PRACTICAL TO, AND PREFERABLY IN THE SAME AREA AS, THE TRANSFORMER THE ELECTRODE SHALL BE THE NEAREST OF A METAL WATER PIPE GROUNDING ELECTRODE OR STRUCTURAL METAL GROUNDING ELECTRODE.
3. GROUNDING ELECTRODE RESISTANCE SHALL BE 25 OHMS OR LESS, SHOULD THE MEASURED RESISTANCE BE HIGHER THAN 25 OHMS, ADDITIONAL SUPPLEMENTAL ELECTRODES SHALL BE PROVIDED AS REQUIRED TO REACH A RESISTANCE TO EARTH OF 25 OHMS OR LESS.
4. IN ADDITION TO THE ABOVE DEPICTED CONNECTIONS, CONTRACTOR SHALL PROVIDE ALL GROUND RODS, GROUND GRIDS, AND OTHER GROUNDING ELECTRODES AS REQUIRED BY THE UTILITY COMPANY AND MAKE CONNECTIONS TO UTILITY EQUIPMENT PER UTILITY COMPANY STANDARDS.

ELECTRIC GROUNDING DETAIL

ANNOTATION LEGEND

MARK	DESCRIPTION
	DEVICE NOTES
CO	HARDWIRED COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR. SEE SPECIFICATIONS FOR MODEL INFORMATION
SD	HARDWIRED SMOKE DETECTOR - INTERCONNECT WITH OTHER DETECTORS WITHIN UNIT
ST	SMOKE DETECTOR STROBE LIGHT INTERCONNECT WITH DETECTORS
AC	MOUNT DEVICE ABOVE COUNTER AT HEIGHT INDICATED - MOUNT HORIZONTAL IN COUNTERTOP BACK SPLASH AT H/C UNITS & COMM. RM. KITCHEN -GFI PROTECTED
CH	DOORBELL CHIME KIT. - HORN/ STROBE DEVICE AT S/I UNITS SEE SPECIFICATIONS AND WIRING DIAGRAM.
DB	DOOR BELL BUTTON- INSTALL @ 46" AFF - SEE SPECIFICATIONS
F	FAN SWITCH. PROVIDE 2 CONTROL WIRES TO FAN
D	INTEGRAL DIMMING SWITCH - SEE LIGHTING CONTROL SCHEDULE FOR TYPE
M	INTEGRAL SWITCH AND MOTION SENSOR - SEE LIGHTING CONTROL SCHEDULE FOR TYPE
TV	CABLE TV JACK
WR	EXISTING EMERGENCY CALL SYSTEM WIRELESS REPEATER TO REMAIN
G	GROUND FAULT CIRCUIT INTERUPTER (GFCI) PROTECTED
WP	WEATHER PROOF ENCLOSURE WITH GFCI PROTECTION AND IN-USE COVER
+XX	MOUNT AT XX" ABOVE FINISH FLOOR TO CENTERLINE OF DEVICE
FH	EXHAUST FAN & HEATER CONTROL SWITCHES
2P	TWO POLE SWITCH
ES	ELECTRONIC SWITCH
D/I	DOOR INTERCOM
GD	GARBAGE DISPOSAL
PS	POWER SUPPLY
NL	LIGHT THAT IS ON CONTINUOUSLY

LIGHTING LEGEND

- SURFACE MOUNT LIGHT FIXTURE
- SURFACE MOUNT LIGHT FIXTURE
- RECESSED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- 1i CEILING MOUNTED LIGHTING OR FIRE ALARM DEVICE, MARK INDICATES SPECIFIC DEVICE TYPE
- CEILING MOUNTED EXIT LIGHT, VISIBLE FROM THE SHADED DIRECTION(S)
- WALL MOUNTED EXIT LIGHT, VISIBLE FROM THE SHADED DIRECTION(S)
- EMERGENCY EGRESS LIGHT

ELECTRICAL NOTES

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5. INSTALL ALL EQUIPMENT, DEVICES, AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURES INSTRUCTIONS.
6. ALL INTERIOR WIRING TO BE INSULATED THHN OR EQUIVALENT. EXTERIOR WIRING AND ALL WIRING IN WET LOCATIONS TO BE THWN OR EQUIVALENT.
7. CONDUIT SERVING UP TO 3 CURRENT CARRYING CONDUCTORS OF SIZE 10AWG OR SMALLER PERMITTED TO BE MC CABLE.
8. CONDUIT RUN WITHIN FIRE RATED WALLS TO BE EMT. ALL OTHER CONDUIT TO BE EITHER PVC OR EMT, UNLESS OTHERWISE NOTED.
9. ALL DEVICES AND BOX COVERS SHALL BE COLOR AND FINISH AS NOTED IN THE SPECIFICATIONS OR SELECTED BY THE ARCHITECT, CONFIRM WITH ARCHITECT PRIOR TO ORDERING
10. IT IS THE DESIGN INTENT THAT ALL LIGHT FIXTURES NOT LOCATED WITHIN DWELLING UNITS BE AUTOMATICALLY CONTROLLED BY OCCUPANCY SENSORS, WHERE NO DEDICATED OCCUPANCY SENSOR IS INDICATED FOR A SPACE PROVIDE INTEGRATED OCCUPANCY SENSOR/LIGHT SWITCH.
11. NIGHT LIGHTS AND EMERGENCY EGRESS OR EXIT LIGHTING SHALL NOT BE CONTROLLED BY AUTOMATIC OCCUPANCY CONTROLS.
12. WHERE OCCUPANCY SENSORS ARE CALLED OUT, INTEGRATE OCCUPANCY SENSOR INTO LIGHT SWITCHING.
13. WIRE EXIT AND EGRESS LIGHTS TO THE NEAREST CONTINUOUSLY ENERGIZED LIGHTING CIRCUIT.
14. DEVICES SHOWN IN FIRE RATED WALLS (SEE CODE PLAN) ON OPPOSITE SIDES TO BE SEPARATED HORIZONTALLY BY AT LEAST ON STUD.

ELECTRICAL LEGEND

- DUPLEX RECEPTACLE
- SIMPLEX RECEPTACLE
- SPLIT DUPLEX RECEPTACLE, HALF SWITCHED
- DOUBLE DUPLEX RECEPTACLE
- 240V 4 WIRE SIMPLEX SURFACE-MOUNTED/RANGE RECEPTACLE 4" AFF
- 240V DRYER RECEPTACLE, SEE SPECIFIC NOTE FOR REQUIREMENTS
- LIGHT SWITCH
- $M LIGHT SWITCH WITH OCCUPANCY SENSOR
- NETWORK PORT, PROVIDE MINIMUM 2 CABLES TO RACK
- EXIT SIGN
- PUSH BUTTON OPERATOR
- XX ELECTRICAL BOX FOR HARD WIRED DEVICE, SEE TAG NOTES
- MOTOR OR HVAC LOAD, SEE MECHANICAL SHEETS FOR ELECTRICAL REQUIREMENTS
- SECURITY CAMERA, SEE SPECIFICATIONS FOR REQUIREMENTS, ROUTE CABLE BACK TO DVR OR SWITCH LOCATION
- F FIRE ALARM HORN/STROBE DEVICE, CONNECT TO FACP - WP INDICATES WEATHER PROOF DEVICE AND BOX
- V FIRE ALARM VISUAL DEVICE, CONNECT TO FACP
- M FIRE ALARM MANUAL PULL STATION, CONNECT TO FACP
- FS FIRE ALARM FLOW SWITCH, CONNECT TO FACP, COORDINATE WITH FIRE PROTECTION CONTRACTOR
- TS FIRE ALARM TAMPER SWITCH, CONNECT TO FACP, COORDINATE WITH FIRE PROTECTION CONTRACTOR
- ELECTRICAL CIRCUIT
- 1i WALL MOUNTED ELECTRICAL FIXTURE, MARK INDICATES SPECIFIC DEVICE TYPE

SYMBOL TAG NOTES:

G	GROUNT FAULT CIRCUIT INTERUPTER (GFCI) PROTECTED
WP	WEATHER PROOF ENCLOSURE WITH GFCI PROTECTION AND IN-USE COVER
+XX	MOUNT AT XX" ABOVE FINISH FLOOR TO CENTERLINE OF DEVICE
AC	MOUNT ABOVE COUNTER TOP, SEE WALL ELEVATIONS
UC	MOUNT BELOW COUNTER TOP IN BASE CABINET
DW	DISHWASHER RECEPTACLE
H	MOUNT DEVICE HORIZONTAL IN COUNTERTOP BACKSPLASH

GENERAL INFORMATION

ALLIANCE
ARCHITECTS
929 Lincolnway East, Suite 200 | South Bend, Indiana 46601

WILLIAM R. LAM REGISTERED No. AR12100097 STATE OF INDIANA ARCHITECT

South Bend Heritage

TURNOCK STREET QUADPLEX
SOUTH BEND HERITAGE
712 TURNOCK STREET
SOUTH BEND, INDIANA 46617

DATE:
03/07/2025

SHEET NO.
E2.0

FILE PATH: C:\Users\khirsh\Documents\Revit\2024\Turnock Street 4-plex_khirsher2NCYH.rvt
PLOT DATE: 2/27/2025 3:18:01 PM

Branch Panel:

Location: REAR VEST. 1216
Supply From:
Mounting: Recessed
Enclosure:

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	Standard Fire Alarm Panel	20 A	1	750 VA	540 VA			1	20 A	Receptacles - Stair Access	2
3	Lighting Exterior	20 A	1			565 VA	180 VA	1	20 A	Receptacle	4
5	CH CABINET HEATER	20 A	2	750 VA	560 VA			1	20 A	Lighting	6
7						750 VA	314 VA	2	20 A	Sump Pump	8
9	CH CABINET HEATER	20 A	2	750 VA	314 VA						10
11						750 VA	100 VA	1	20 A	Circulator Pump	12
13	CH CABINET HEATER	20 A	2	750 VA	120 VA			1	20 A	Water Heater	14
15						750 VA	82 VA	1	20 A	Exhaust Fans - continuous	16
17	CH CABINET HEATER	20 A	2	750 VA	0 VA			1	20 A	Emergency Lighting	18
19						750 VA	300 VA	1	20 A	Future Radon Exhaust fan	20
21	CH CABINET HEATER	20 A	2	750 VA	0 VA			1	20 A	Spare	22
23						750 VA	900 VA	1	20 A	Receptacle - Exterior & Basement - GFI Breaker	24
25	Space	--	1	--	--			1	--	Space	26
27	Space	--	1			--	--	1	--	Space	28
29	Space	--	1	--	--			1	--	Space	30
31											32
33											34
35											36
37											38
39											40
41											42
		Total Load:		5908 VA		6112 VA					
		Total Amps:		49 A		51 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Appliance - Dwelling Unit	627 VA	100.00%	627 VA		
HVAC	7500 VA	100.00%	7500 VA	**Total Conn. Load:**	11317 VA
Lighting - General	0 VA	0.00%	0 VA	**Total Est. Demand:**	11317 VA
Lighting - Dwelling Unit	1100 VA	100.00%	1100 VA	**Total Conn.:**	47 A
Other	328 VA	100.00%	328 VA	**Total Est. Demand:**	47 A
Receptacle	1620 VA	100.00%	1620 VA		
Spare	300 VA	100.00%	300 VA		
Lighting	0 VA	0.00%	0 VA		
Power	0 VA	0.00%	0 VA		

Notes:

LIGHT FIXTURE SCHEDULE

MARK	MAKE	MODEL	DESCRIPTION	LIGHT			ELECTRICAL		NOTES
				SOURCE	LUMENS	COLOR	VOLTAGE	POWER	
A	LITHONIA	FMML 13 840	FLUSH MOUNT LED	LED	2000	4000K	120V	28 W	
B	LITHONIA	FMSATL 13 148 30K BN	WALL MOUNTED VANITY LIGHT	LED	1232	3000K	120V	16.4 W	
C	LITHONIA	SBL4 3000L 80CRI 30K SLD GZT	1x4 SURFACE MOUNT	LED	3165	3000K	120V	25.6 W	
D	LITHONIA	LDN6 30/10 LO6 AR LSS MVOLT EZ1	RECESSED LED CAN LIGHT - EMERGENCY BATTERY	LED	950	3000K	120V	10.4 W	INCLUDE EMERGENCY BATTERY BACKUP
E	LITHONIA	FMLRDL 20IN	20" ROUND CEILING LIGHT	LED	3920	4000K	120V	44 W	
EM-1	LITHONIA	ELM1272 MR24 H2012 N	WALL MOUNTED EMERGENCY LIGHT	LED			120V		
EX-2	LITHONIA	LQM S W 3 R MVOLT EL N	WALL MOUNTED EXIT SIGN	LED	---		120V	.62W	INCLUDE DIRECTIONAL ARROW WHERE SHOWN ON PLAN. MOUNT W/ BOTTOM EDGE AT 8'-0"
F	LITHONIA	WL4 30L EZ1 LP840	WALL MOUNTED EXTE4' LONG WALL BRACKET	LED	3251	4000K	120V	28.2 W	MOUNT 4" BELOW FLOOR JOISTS ON SURFACE MOUNTED BOX(ES)

TYPICAL 1 BEDROOM LOAD CALCULATION

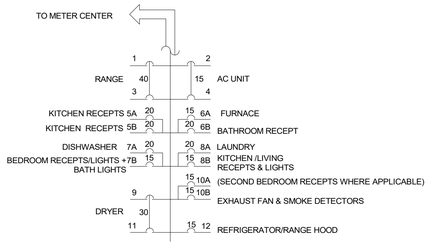
One Bedroom Unit	752.00	SF					120/240 V	1...		
	LOAD			QUANT.	red. %					
GENERAL LIGHTING & RECPT.	3.00	VA		752	SF	=	2256.00	VA		
SMALL APPLIANCE BR. CIRCUITS	1500.00	VA	X	3	100.00%	=	4500.00	VA		
LAUNDRY BRANCH CIRCUIT	1500.00	VA	X	1	100.00%	=	1500.00	VA		
RANGE OUTLET	8000.00	VA	X	1	100.00%	=	8000.00	VA		
CONT. EXHAUST FAN	300.00	VA	X	1	100.00%	=	300.00	VA		
DRYER	5000.00	VA	X	1	100.00%	=	5000.00	VA		
	TOTAL				GENERAL LOADS		21556.00	VA		
					FIRST 10KVA		10000.00	VA	100%	10000.00 VA
					REMAINDER		11556.00	VA	40%	4622.4 VA
CONDENSER	2520.00	VA	X	1	100.00%	=				2520.00 VA
FURNACE MOTOR	500.00	VA	X	1	100.00%	=				500.00 VA
					TOTAL VA					17642.40 VA
					TOTAL AMPS @ 240 V					73.51 AMPS

*LOAD CALCULATION PER SECTION 220.82 DWELLING UNIT

TYPICAL 2 BEDROOM LOAD CALCULATION

Two Bedroom Unit	938.00	SF					120/240 V	1...		
	LOAD			QUANT.	red. %					
GENERAL LIGHTING & RECPT.	3.00	VA		938	SF	=	2814.00	VA		
SMALL APPLIANCE BR. CIRCUITS	1500.00	VA	X	3	100.00%	=	4500.00	VA		
LAUNDRY BRANCH CIRCUIT	1500.00	VA	X	1	100.00%	=	1500.00	VA		
RANGE OUTLET	8000.00	VA	X	1	100.00%	=	8000.00	VA		
CONT. EXHAUST FAN	300.00	VA	X	1	100.00%	=	300.00	VA		
DRYER	5000.00	VA	X	1	100.00%	=	5000.00	VA		
	TOTAL				GENERAL LOADS		22114.00	VA		
					FIRST 10KVA		10000.00	VA	100%	10000.00 VA
					REMAINDER		12114.00	VA	40%	4845.6 VA
CONDENSER	2520.00	VA	X	1	100.00%	=				2520.00 VA
FURNACE MOTOR	500.00	VA	X	1	100.00%	=				500.00 VA
					TOTAL VA					17785.60 VA
					TOTAL AMPS @ 240 V					74.44 AMPS

*LOAD CALCULATION PER SECTION 220.82 DWELLING UNIT



NOTE:

1. AT GROUND FLOOR UNITS INSTALL PANEL WITH HIGHEST BREAKER AT 48" A.F.F.
2. CONFIRM RATING AND TYPE OF BREAKER FOR EACH CIRCUIT SERVING MECHANICAL ITEMS.
3. LABEL METERS WITH UNIT NUMBER SERVED.
4. SQUARE D HOM1224M100PC OR EQUAL WITH TANDEM BREAKERS SHOWN.

SERVICE				
Number of One Bed Units	1			
Number of Two Bed Units	3			
Total Units	4			
Demand factor	44%			
Unit Load	31345	VA	130.6	A
House Load	8877	VA	37.0	A
Total Load	40222	VA	167.6	A

UNIT ELECTRICAL PANEL SCHEDULE

SCALE: N.T.S.

E2.1

GENERAL INFORMATION

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