

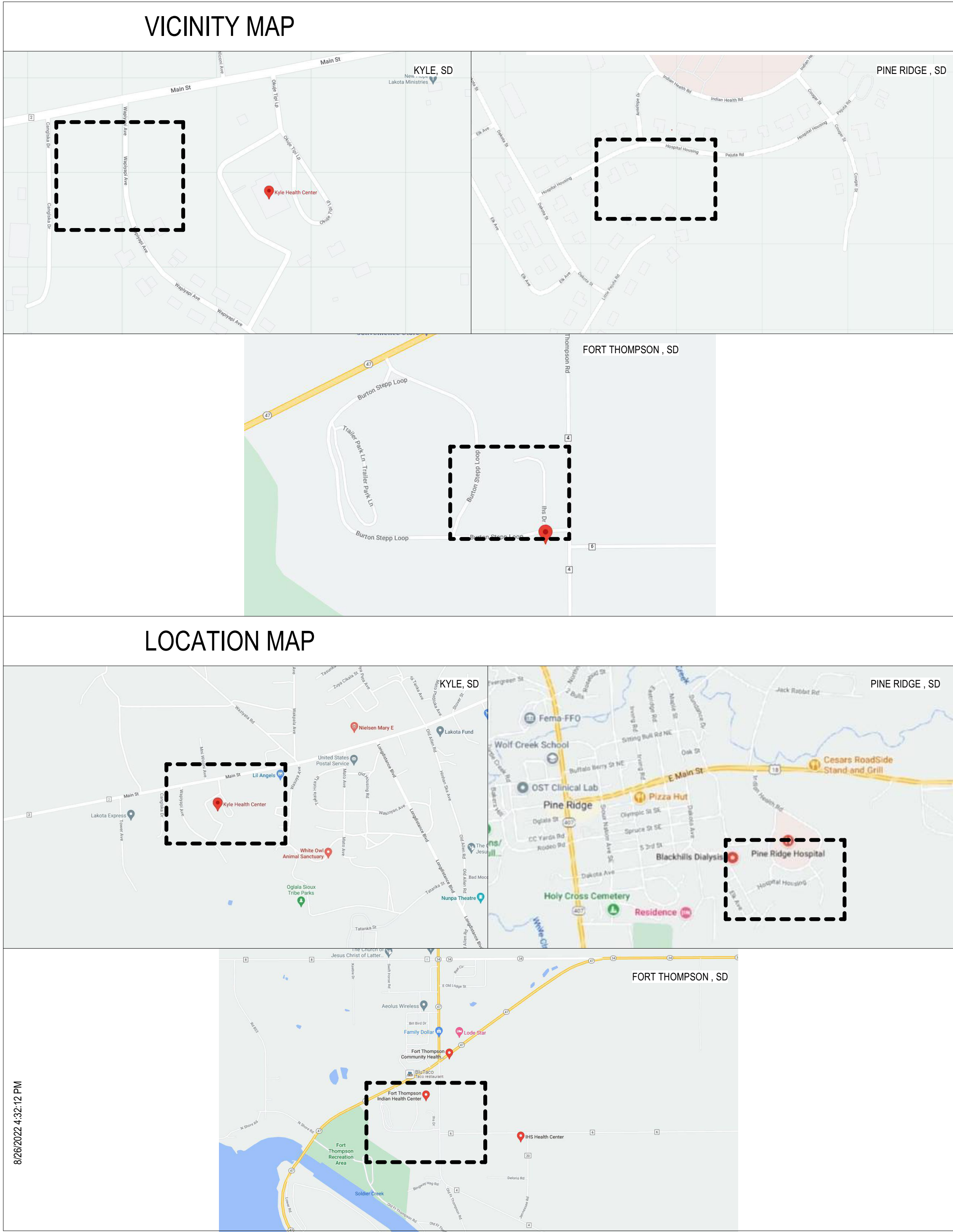
INDIAN HEALTH SERVICE - GREAT PLAIN AREA

DUPLEX BUILDING & SITE LOCATIONS

701 FIFTH AVENUE, MS 24, SUITE 1600
SEATTLE, WASHINGTON 98104-7307
CONSTRUCTION DOCUMENTS



Project Owner
Indian Health Service (IHS)
Department of Health and Human Services
Division of Engineering Services
701 Fifth Avenue, MS 24, Suite 1600
Seattle, Washington 98104-7307



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Checked By A. JAUCH
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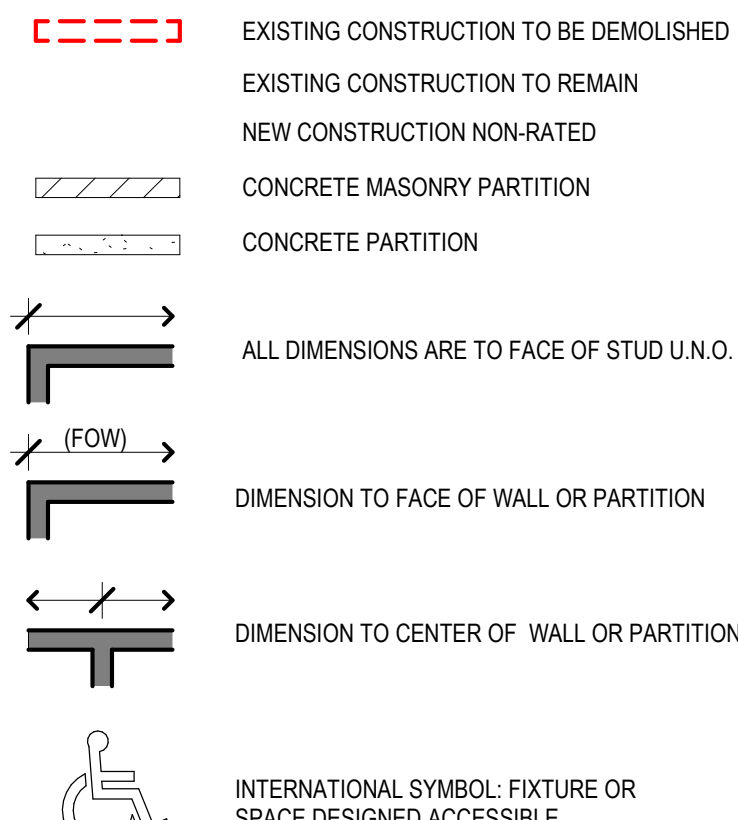
COVER SHEET

G001

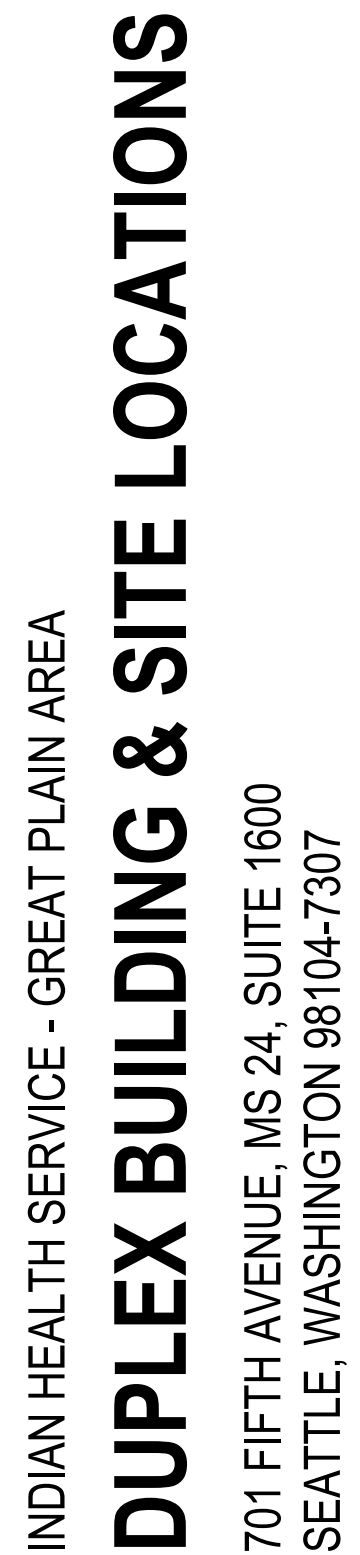
GENERAL NOTES

	SOIL
	BASE COURSE, SUB-BASE, GRAVEL, CRUSHED ROCK
	CONCRETE
	BRICK MASONRY
	CUT STONE, SAND, MORTAR, PLASTER
	CONCRETE MASONRY UNITS
	STEEL
	ALUMINUM (OMIT THIN MATERIAL)
	BRONZE, BRASS, COPPER
	INSULATION BOARD
	RIGID INSULATION
	BATT INSULATION
	WOOD, FINISH
	WOOD FRAMING THROUGH MEMBER
	WOOD FRAMING INTERRUPTED MEMBER
	METAL LATH
	PLYWOOD
	GYPSUM BOARD
	PARTICLE BOARD
	GLASS
	GLASS BLOCK
	CARPET
	CERAMIC TILE, QUARRY TILE, OR RESILIENT FLOORING (SHOWN PROFILE ONLY)
	ASPHALTIC CONCRETE OR A.C. PAVING (SHOWN PROFILE ONLY)

GENERAL SYMBOLS



1. THESE DRAWINGS ARE LEGAL INSTRUMENTS OF SERVICE FOR THE USE OF THE OWNER AND ITS AUTHORIZED AGENTS AND VENDORS ON THE DESIGNATED PROJECT ONLY.
2. GC RESPONSIBLE FOR KNOWLEDGE OF RELATIVE INFORMATION CONTAINED IN THESE DOCUMENTS AND THE CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED.
3. CAREFULLY AND THOROUGHLY EXAMINE THE PROJECT SITE, FIELD VERIFY ALL CONDITIONS, GRADES, ELEVATIONS AND DIMENSIONS OF THE VARIOUS FEATURES OF THE SITE AND EXISTING DRAWINGS WITH THE EXISTING CONDITIONS. ANY DISCREPANCIES AND/OR CONDITIONS REQUIRING CLARIFICATION SHALL BE REPORTED IN WRITING TO THE OWNER BEFORE STARTING WORK.
4. ALL CONSTRUCTION, FABRICATION AND INSTALLATION SHALL CONFORM TO THE LATEST LOCALLY ADOPTED EDITIONS OF THE IBC, IPC, INC, MEC, NFPA, OSHA AND ANY FEDERAL, STATE AND LOCAL CODES, REGULATIONS, STANDARDS AND ORDINANCES OF GOVERNING AGENCIES HAVING JURISDICTION. SUCH APPLICABLE CODES, ETC. ARE THOSE WHICH ARE IN EFFECT AT THE TIME THE PROJECT PERMIT APPLICATION IS RECORDED.
5. ALL WORK ARE TO BE COORDINATED WITH THE ELECTRICAL AND MECHANICAL TRADES AND SHALL, BEFORE SUBMISSION OF BID OR PERFORMANCE OF WORK, NOTIFY THE CONTRACTOR IN WRITING OF ANY WORK ON THE DRAWINGS OR IN THE SPECIFICATIONS WHICH CANNOT BE FULLY WARRANTED OR CONSTRUCTED AS DETAILED OR SPECIFIED. THE CONTRACTOR WILL NOTIFY THE OWNER OF SUCH CONDITIONS IN WRITING.
6. DUE TO REPRODUCTION PROCESSES, DRAWINGS MAY NOT BE ACCURATE TO SCALE. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN AND IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS, ELEVATIONS OR DETAILS.
7. THE ELECTRICAL, MECHANICAL, PLUMBING, AND PIPING DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. DISCREPANCIES BETWEEN THE VARIOUS DRAWINGS SHALL BE REPORTED BY THE CONTRACTOR TO THE OWNER IN WRITING.
8. BEFORE STARTING WORK, COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR INSTALLATION OF EQUIPMENT INDICATED N.I.C. ON DRAWINGS. VERIFY EQUIPMENT LOCATIONS WITH THE OWNER'S REPRESENTATIVE. VERIFY DIMENSIONS, UTILITIES, ETC. WITH EQUIPMENT MANUFACTURERS ROUGH - IN DATA PRIOR TO FORMING THE SLAB.
9. PRODUCTS AND MANUFACTURED ITEMS SHALL BE PROVIDED AS SPECIFIED. SUBSTITUTIONS SHALL BE LIMITED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE SPECIFICATIONS.
10. WHERE DETAILS ARE NOT SHOWN OR NOTED, GC IS TO PROVIDE A WRITTEN REQUEST FOR INFORMATION TO CLARIFY SPECIFIC DETAIL CONDITIONS.
11. ALL INDICATED EXISTING UTILITIES OR STRUCTURES ARE BASED ON INFORMATION OF RECORD. TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES NOT OF RECORD OR NOT SHOWN. BE RESPONSIBLE FOR ANY AND ALL DAMAGE WHICH MAY OCCUR DUE TO FAILURE TO LOCATE AND PROTECT ALL CONCEALED UTILITIES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIREMENTS AND REGULATIONS. PERFORM ALL WORK ON THIS PROJECT IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS 29 CFR 1910 AND 1926 OF THE U.S. DEPARTMENT OF LABOR AND THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.
13. FINAL CONNECTIONS TO EQUIPMENT SHALL BE AS PER MANUFACTURER'S WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. BE RESPONSIBLE TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
14. PROVIDE PERMITS AND INSPECTIONS REQUIRED BY JURISDICTIONAL AGENCIES.
15. THE SET OF RECORD DRAWINGS TO ARCHITECT'S DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
16. SERVICE SHALL BE MAINTAINED TO EXISTING AREAS DURING CONSTRUCTION. PROVIDE PORTABLE GENERATORS, CABLES, OUTLETS ETC., TO MAINTAIN CONTINUITY OF SERVICE. PLACEMENT OF SUCH PORTABLE EQUIPMENT SHALL BE SUBJECT TO OWNER APPROVAL.
17. COORDINATE CONSTRUCTION PHASING WITH THE OWNER. TEMPORARY PARTITIONS, LOCATIONS & CONSTRUCTION DETAILS IN PUBLIC SPACES SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO START OF CONSTRUCTION.
18. MATCH AND MATCH ALL NEW WORK WITH EXISTING WHERE NEW TO EXISTING INTERFACE OCCURS.
19. RESTORE ALL REMOVED OR DAMAGED STRUCTURAL STEEL CEMENTITIOUS FIRE PROOFING TO REQUIRED FIRE RESISTIVE STANDARD.
20. SUBMIT SAMPLES OF ALL EXPOSED PRODUCTS, MATERIALS, PAINTING SYSTEMS, ETC. FOR ARCHITECT'S REVIEW, COLOR SELECTION OR COLOR VERIFICATION PRIOR TO ORDERING ITEMS.
21. ALL DUCTS, LOUVERS, VENTS, OPENINGS AND CEILING SPACES BETWEEN CONSTRUCTION AREA AND REMAINDER OF SHELLED SPACES TO PREVENT DUST, DIRT, CONTAMINATION OR DEBRIS FROM ENTERING.
22. DO NOT ALLOW DIRT, DEBRIS OR DISCARDED MATERIALS TO ACCUMULATE ON SITE. REMOVE PROMPTLY EACH DAY.
23. VERIFY SERVICES TO BE ABANDONED, REMOVED OR CUT HAVE BEEN PROPERLY AND SAFELY SHUT OFF, CAPPED OR SEALED.
24. KEEP NOISE AND VIBRATION PRODUCING ACTIVITIES AT A MINIMUM WHEN WORKING WITHIN THE EXISTING BUILDING. APPROPRIATE TIMES OF SUCH ACTIVITIES SHALL BE COORDINATED WITH OWNER IN WRITING AT BEGINNING OF PROJECT.
25. IN THE EVENT THAT NOISE AND VIBRATION PRODUCING ACTIVITIES WILL OCCUR DURING TIMES OTHER THAN THOSE NOTED ABOVE, OBTAIN PERMISSION FROM THE OWNER IN WRITING A MINIMUM OF 72 HOURS PRIOR TO COMMENCEMENT OF ACTIVITIES.
26. KEEP UTILITY AND SERVICE OUTAGES TO A MINIMUM. MAKE WRITTEN OUTAGE REQUESTS AT LEAST FIVE DAYS BEFORE DATE OF PROPOSED OUTAGE. STATE IN THE REQUEST HOURS OF OUTAGE, CONFIRM DATE 48 HOURS IN ADVANCE OF STARTING DATE.
27. PROTECT ALL WORK. PROTECT ALL EXISTING WORK. CUTTING, PATCHING AND REPAIR TO TRADES UNDER CONTRACTOR SUPERVISION TO CAUSE THE LEAST DAMAGE TO EACH TYPE OF WORK ENCOUNTERED.
28. PATCHING OF FINISH MATERIALS TO MECHANICS SKILLED IN THE WORK OF THE FINISH TRADE INVOLVED.
29. PROTECT REMAINING FINISHES, EQUIPMENT AND ADJACENT WORK FROM DAMAGE CAUSED BY CUTTING, MOVING AND REMOVAL AND PATCHING OPERATIONS. PROTECT SURFACES WHICH WILL REMAIN A PART OF THE FINISHED WORK.
30. PROTECT EXISTING WORK. PROTECT ALL EXISTING WORK. CUTTING, PATCHING AND REPAIR TO TRADES. CONSTR. PROVIDE WEATHER PROTECTION AND OTHER FACILITIES AND PROTECTION AS NEEDED TO PREVENT DAMAGE TO NEW WORK AND TO REMAINING OLD WORK.
31. PROVIDE ADEQUATE SUPPORT OR SUBSTRATE FOR PATCHING FINISHES.
32. USE OF HAZARDOUS MATERIALS SHALL CONFORM WITH 29 CFR 1910.120 AND 1926.65 OF THE OSHA CODE.
33. REMOVAL OF HAZARDOUS WASTE SHALL COMPLY WITH CURRENT FEDERAL, STATE AND LOCAL REGULATIONS, STANDARDS, LAWS AND REQUIREMENTS.
34. PROVIDE FIRE PROTECTION. THE CONTRACTOR SHALL PROVIDE TO THE OWNER, THROUGH THE NORMAL SUBMITTAL PROCESS, SPRINKLER PLANS SHOWING PIPING PLANS, POINTS OF CONNECTIONS, HEAD LOCATIONS, VALVE LOCATIONS, CALCULATIONS, AND HEAD TYPES AND FINISHES PRIOR TO SUBMISSION TO THE FIRE DEPARTMENT FOR THE OWNER'S REVIEW AND APPROVAL. DO NOT SUBMIT DRAWINGS TO ANY JURISDICTION PRIOR TO GAINING THIS REVIEW AND APPROVAL.
35. THE ELECTRONIC FIRE PROTECTION CONTRACTOR SHALL PROVIDE TO THE ARCHITECT, THROUGH THE NORMAL SUBMITTAL PROCESS, PLANS SHOWING THE SIZE, LOCATION, MOUNTING HEIGHTS, AND FINISHES OF ALL STROBES, SPEAKERS, AND SPEAKER STROBES AS WELL AS SHOWING ALL CONDUIT RUNS, CONDUIT SIZES, AND POINTS OF CONNECTION FOR OWNER'S REVIEW AND APPROVAL. DO NOT SUBMIT DRAWINGS TO ANY JURISDICTION PRIOR TO GAINING THIS REVIEW AND APPROVAL.

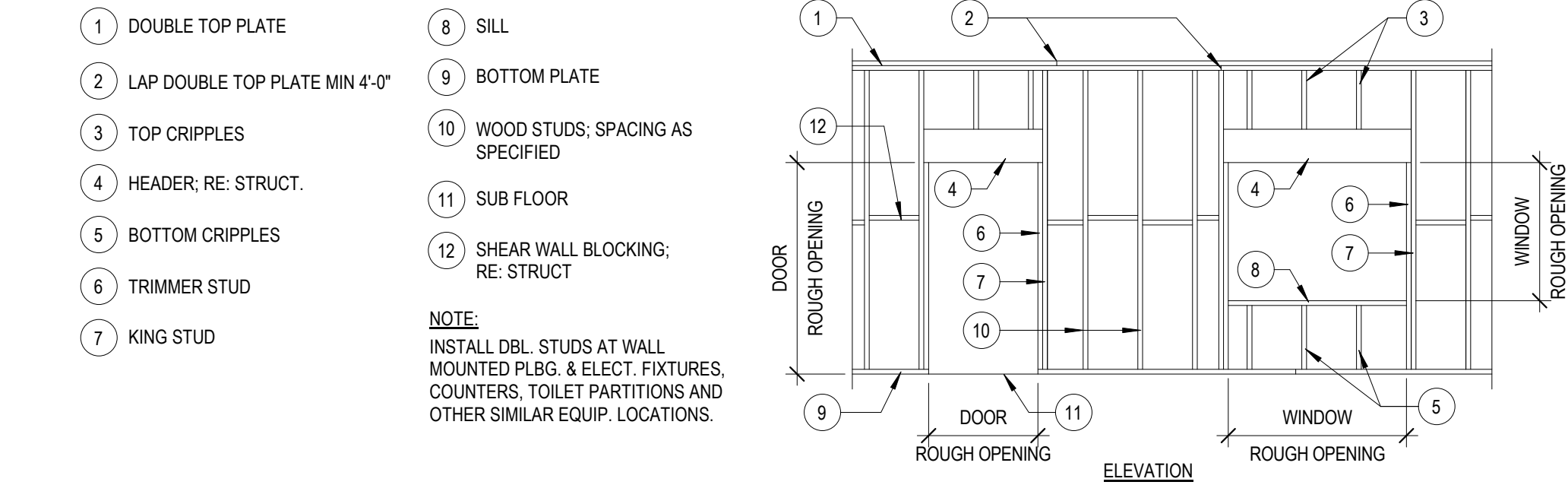


SEH Project	16494
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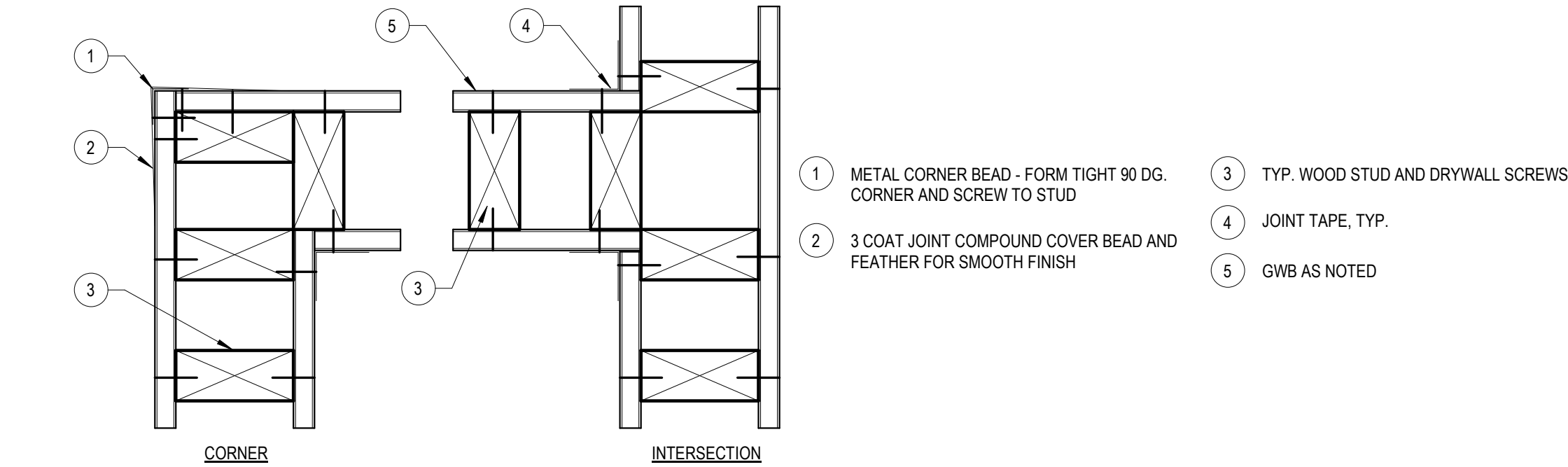
Project Status
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GENERAL INFORMATION AND ABBREVIATIONS

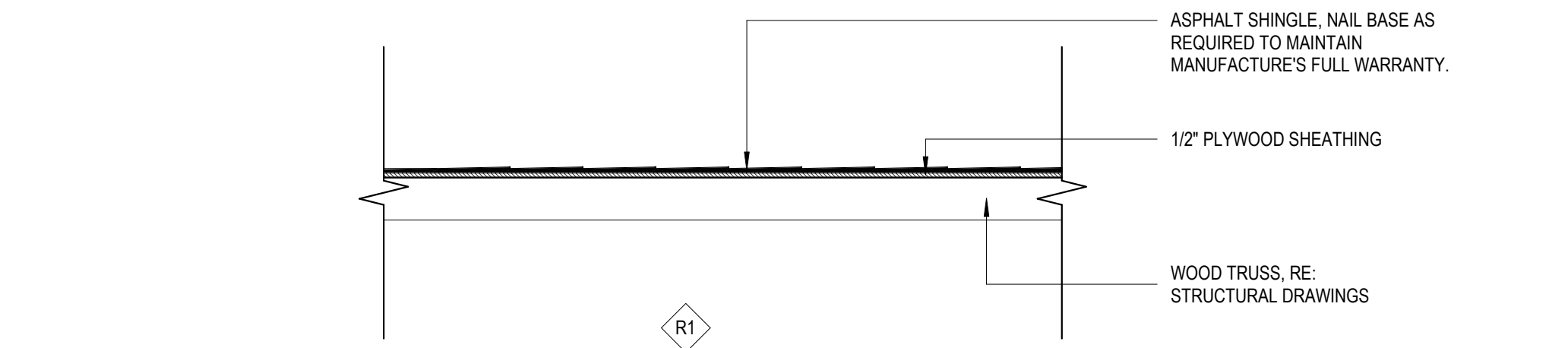
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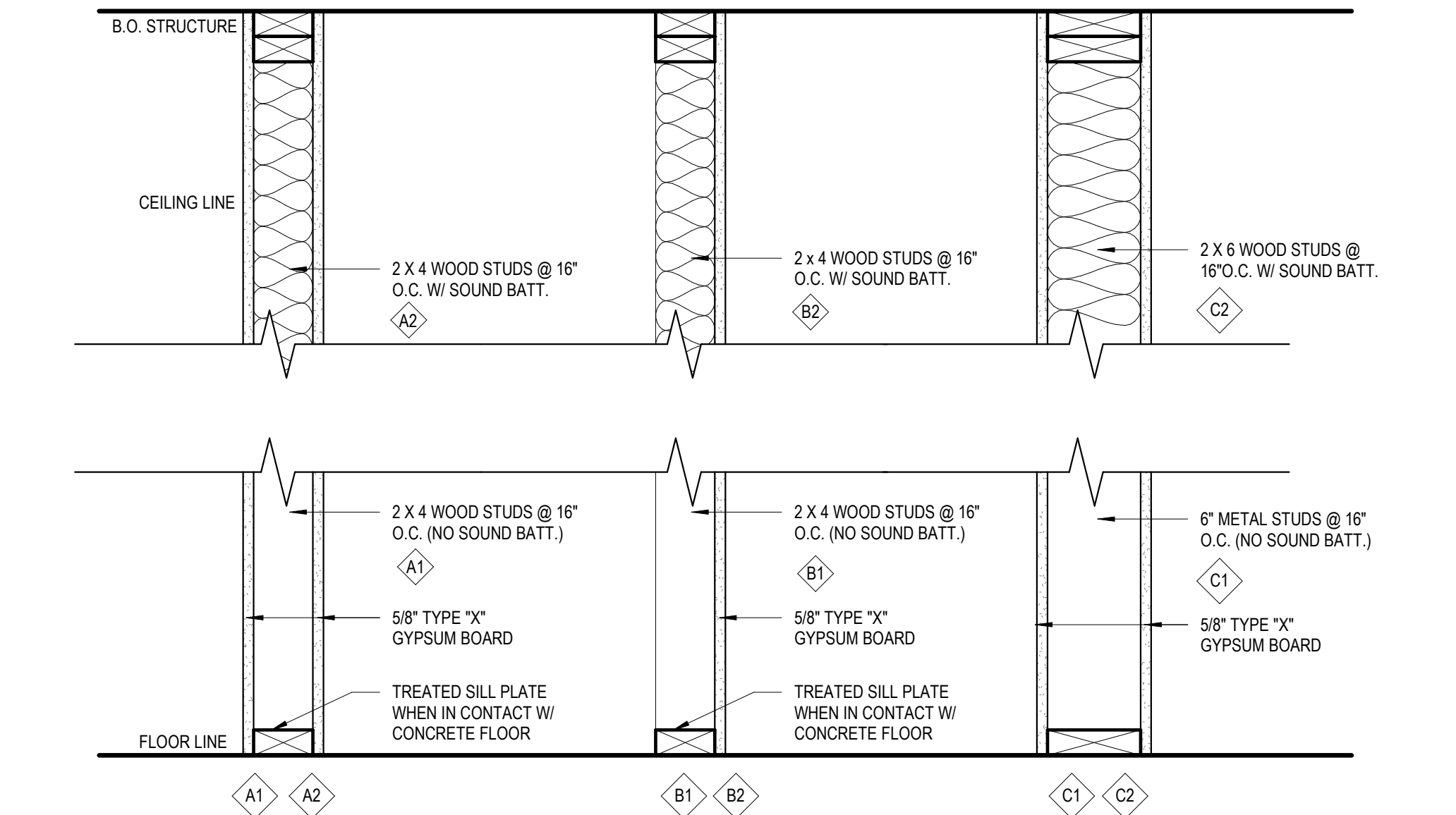
4 WOOD STUD FRAMING DETAIL
1" = 1'-0"



3 GWB PARTITION DETAILS - WOOD STUDS
3" = 1'-0"



2 ROOF ASSEMBLIES
1" = 1'-0"



1 PARTITION TYPES
1 1/2" = 1'-0"

CODE ANALYSIS

RELEVANT CODES AND STANDARDS [LATEST SHALL APPLY]

- NATIONAL FIRE CODES (NFC)
- NFPA 101 - LIFE SAFETY CODE
- INTERNATIONAL RESIDENTIAL CODE (IRC)
- INTERNATIONAL BUILDING CODE (IBC)
- ARCHITECTURAL BARRIERS ACT (ABA) STANDARDS
- INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
- IHS TECHNICAL HANDBOOK
- ASHRAE STANDARD 111 "PRACTICES FOR MEASUREMENT, TESTING, ADJUSTING, AND BALANCING OF BUILDING HEATING, VENTILATION, AIR-CONDITIONING AND REFRIGERATION SYSTEMS"
- ALL APPLICABLE IEEE STANDARDS
- ASHRAE GUIDELINE 0, THE COMMISSIONING PROCESS
- INTERNATIONAL PLUMBING CODE (IPC)

BUILDING DATA

STORIES: 1 W/ BASEMENT

BUILDING AREA:

	UNIT A	UNIT B	TOTAL
LEVEL ONE	1176	1176	2352
BASEMENT	1183	1183	2366
TOTAL	2359	2359	

OCCUPANCY: RESIDENTIAL - ONE AND TWO-FAMILY DWELLINGS
PER NFPA 101 - 6.1.8.1.1

IECC COMPLIANCE PATH: PRESCRIPTIVE

SPRINKLERED: YES

FIRE ALARM: YES

PARKING: INTERIOR GARAGE & DRIVEWAY

AUTHORITY HAVING JURISDICTION (AHJ): DIRECTOR, DIVISION OF
ENGINEERING SERVICES (DES), INDIAN HEALTH SERVICE.

2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) IECC RESIDENTIAL PROVISIONS

CHAPTER 1 [RE]:
(R103.2) INFORMATION REQUIRED ON CONSTRUCTION DOCUMENTS
1. ENERGY COMPLIANCE PATH: PRESCRIPTIVE

(R103.2.1) THERMAL ENVELOPE: REPRESENT ON DOCUMENTS

- (R105.2) REQUIRED INSPECTIONS
- FOOTING AND FOUNDATIONS
 - FRAMING AND ROUGH-IN
 - PLUMBING ROUGH-IN
 - MECHANICAL ROUGH-IN
 - FINAL INSPECTION

SECTION R402: BUILDING THERMAL ENVELOPE

TABLE R402.1.2 MAX U-FACTORS BY COMPONENT (CLIMATE ZONE 6A)

FENESTRATION	U-FACTOR	0.30
SKYLIGHT	U-FACTOR	0.55
GLAZED FENESTRATION	SHGC	NR
CEILING	U-FACTOR	0.024
WOOD FRAME WALL	U-FACTOR	0.045
MASS WALL	U-FACTOR	0.060
FLOOR	U-FACTOR	0.033
BASEMENT WALL	U-FACTOR	0.050
CRAWL SPACE WALL	U-FACTOR	0.055

TABLE R402.1.3 MIN R-VALUES BY COMPONENT (CLIMATE ZONE 6A)

FENESTRATION	U-FACTOR	0.30
SKYLIGHT	U-FACTOR	0.55
GLAZED FENESTRATION	SHGC	NR
CEILING	R-VALUE	0.060
WOOD FRAME WALL	R-VALUE	20+5ci or 13+10ci or 0+20
MASS WALL	R-VALUE	15/20
FLOOR	R-VALUE	30
BASEMENT WALL	R-VALUE	15ci or 19 or 13+5ci
SLAB	R-VALUE	10ci
CRAWL SPACE WALL	R-VALUE	15ci or 19 or 13+5ci

(R402.2.1) CEILINGS WITH ATTICS: EXTEND UNCOMPRESSED INSUL OVER WALL TOP PLATE TO ALLOW LOWER R-VALUE INSUL TO BE USED
(R402.2.2) CEILINGS WITHOUT ATTICS: WHERE REQUIRED INSULATION > R-30, BUT ROOF/CEILING ASSEMBLY DOES NOT ALLOW SUFFICIENT SPACE, MIN UNSUL VALUE = R-30 FOR MAX 500 SF. INSUL SHALL EXTEND OVER WALL TOP PLATE.

(R402.2.4) ACCESS HATCHES AND DOORS FROM CONDITIONED TO UNCONDITIONED SPACE - INSULATE TO LEVEL OF ADJACENT WALL.

(R402.2.8) BASEMENT WALLS: INSTALL INSUL FROM TOP OF WALL DOWN TO 10 FT BELOW GRADE OR TO BASEMENT FLOOR.

(R402.2.9) SLAB-ON-GRADE FLOORS LOCATED LESS THAN 12 INCHES BELOW GRADE: EXTEND INSULATION FROM TOP OF SLAB (INSIDE OR OUTSIDE OF FOUNDATION WALL) VERTICALLY, HORIZONTALLY UNDER THE FLOOR SLAB, OR HORIZONTALLY OUT FROM THE BUILDING (PROTECTED BY PAVEMENT OR 10+ INCHES OF SOIL).

(R402.2.10) INSULATED CRAWL SPACE WALLS: IF CRAWL SPACE NOT VENTED TO OUTSIDE, INSUL TO EXTEND FROM UNDERSIDE OF FLOOR DOWNWARD TO FINISHED GRADE AND THEN VERTICALLY OR HORIZONTALLY AN ADDITIONAL 24 INCHES. EXPOSED EARTH IN UNVENTED CRAWL SPACE TO BE COVERED WITH CONTINUOUS CLASS 1 VAPOR RETARDER. EXTEND UP FOUNDATION WALLS MIN 6 INCHES.

(R402.4.1) BUILDING THERMAL ENVELOPE: INSTALL PER MFR'S INSTRUCTIONS AND PER TABLE R402.4.1.1.

(R402.4.3) FENESTRATION AIR LEAKAGE: <= 0.32 CFM PER SF FOR WINDOWS, SKYLIGHTS, AND SLIDING DOORS, AND <= 0.5 CFM PER SF FOR SWINGING DOORS PER NFRC 400. EXCEPTION: SITE-BUILT WINDOWS, SKYLIGHTS, AND DOORS.

(R402.5) MAX FENESTRATION U-FACTOR = 0.40 IN CLIMATE ZONE 6. AVERAGE MAX SHGC = 0.50.

2020 INTERNATIONAL RESIDENTIAL CODE (IRC)

(R101.2) SCOPE: APPLIES TO DETACHED ONE AND TWO-FAMILY DWELLINGS WITH A SEPARATE MEANS OF EGRESS NO MORE THAN 3 STORIES ABOVE GRADE PLANE.

CHAPTER 3: BUILDING PLANNING
(R302) FIRE-RESISTANT CONSTRUCTION

TABLE R302.1(2) EXTERIOR WALLS (SPRINKLERED BLDGS LPER P2904)	WALL ELEMENT	MIN FIRE-RATING	MIN FIRE SEPARATION DIST
WALLS	FIRE-RATED	1-HR PER IBC 703.3	0 FT
	NOT FIRE-RATED	0 HOURS	3 FT
PROJECTIONS	FIRE-RATED	1-HR, HT, OR FRT WOOD	2 FT
	NOT FIRE-RATED	0 HOUR	3 FT
OPENINGS	UNLIMITED	0 HOUR	3 FT
PENETRATIONS	ALL	COMPLY WITH R302.4	< 3 FT

(R302.3) TWO-FAMILY DWELLINGS
A. DWELLING UNITS TO BE SEPARATED BY WALL AND FLOOR ASSEMBLIES WITH FIRE RATING >= 1/2-HR PER ASTM E119, UL 263 OR 703.3 OF IBC. EXTEND TO EXT WALLS AND FROM FOUNDATION TO UNDERSIDE OF ROOF SHEATHING.
B. WALL ASSEMBLIES NEED NOT EXTEND THROUGH ATTIC SPACES WHERE:
1. CEILING PROTECTED BY 5/8" TYPE 'X' GYPSUM BOARD
2. ATTIC DRAFT STOP PER R302.12.1 PROVIDED ABOVE AND ALONG SEPARATION WALL AND
3. STRUCTURAL FRAMING SUPPORTING THE CEILING TO BE PROTECTED BY 1/2" GYPSUM BOARD OR EQUAL.
a. SUPPORTING CONSTRUCTION OF RATED FLOOR ASSEMBLIES TO HAVE EQUAL OR GREATER RATING.

(R302.4) DWELLING UNIT FIRE-RATED PENETRATIONS
(R302.4.1) THROUGH PENETRATIONS
(R302.4.2) MEMBRANE PENETRATIONS: COMPLY WITH R302.4.1.
(R302.5) DWELLING TO GARAGE:
(R302.5.1) OPENINGS
(R302.5.2) DUCT PENETRATIONS

TABLE R302.6 DWELLING TO GARAGE FIRE SEPARATION

SEPARATION	MATERIAL
RESIDENCE AND ATTICS	1/2 INCH MIN GYPSUM BD
HABITABLE ROOMS ABOVE	5/8 INCH MIN TYPE 'X' GYPSUM BD
STRUCTURE FOR FLOOR/CEILING	1/2 INCH MIN GYPSUM BD
GARAGE LOCATED LESS THAN 3 FT FROM DWELLING UNIT	1/2 INCH MIN GYPSUM BD INTERIOR SIDE OF EXTERIOR WALLS.

(R302.7) UNDER-STAIR PROTECTION: PROTECT ENCLOSED SPACE WITH 1/2" GYPSUM BOARD.
(R302.9) FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR FINISHES:
(R302.9.1) WALL AND CEILING FINISHES FLAME SPREAD INDEX <= 200.
(R302.9.2) WALL AND CEILING FINISHES SMOKE DEVELOPED INDEX <= 450.

(R302.10.1) INSULATION SHALL HAVE FLAME SPREAD INDEX <= 25 AND SMOKE DEVELOPED INDEX <= 450. INCLUDES FACINGS, VAPOR RETARDERS, ETC.

(R302.11) FIREBLOCKING: LOCATIONS:
1. STUD WALLS - VERTICALLY AT CEILING AND FLOOR LEVELS.
2. STUD WALLS - HORIZONTALLY AT INTERVALS <= 10 FEET.
3. CONCEALED VERTICAL AND HORIZONTAL SPACES AT SOFFITS, DROP CEILINGS, ETC.
4. VENT, PIPE, DUCT, CABLES, WIRES AT CEILING AND FLOOR LEVEL WITH APPROVED FIRE-STOPPING MATERIALS.
5. CHIMNEYS AND FIREPLACES.

(R302.12) DRAFTSTOPPING: INSTALL IN CONCEALED SPACES OF FLOOR-CEILING ASSEMBLIES TO DIVIDE INTO EQUAL SPACES <= 1000 SF.

(R302.13) FIRE PROTECTION OF FLOORS: IF NOT REQUIRED TO BE FIRE-RATED, PROTECT UNDERSIDE OF FLOOR FRAMING WITH 1/2" GYPSUM BOARD MEMBRANE, 5/8" WOOD STRUCTURAL PANEL MEMBRANE, OR EQUAL.
EXCEPTIONS:
1. FLOOR ASSEMBLY OVER SPACE PROTECTED BY SPRINKLERS
2. FLOOR ASSEMBLY OVER SPACE NOT INTENDED FOR STORAGE OR FUEL-FIRED OR ELECTRIC-POWERED HEATING APPLIANCES.
3. FLOOR ASSEMBLIES PERMITTED TO BE UNPROTECTED IF UNPROTECTED PORTION <= 80 SQUARE FEET PER STORY.
4. FIREBLOCKING PER R302.11.1 INSTALLED ALONG PERIMETER OF UNPROTECTED PORTION.
5. WOOD FLOOR ASSEMBLIES USING 2X10 DIMENSION LUMBER OR EQUAL OR OTHER ASSEMBLY OF EQUIVALENT FIRE PERFORMANCE.

(R302.14) COMBUSTIBLE INSULATION CLEARANCE: KEEP MIN 3 INCHES FROM RECESSED LIGHTS, FAN MOTORS, ETC. (UNLESS LISTED OTHERWISE).

SECTION R303: LIGHT, VENTILATION, AND HEATING

(R303.5.1) INTAKE OPENINGS: LOCATE NOT LESS THAN 10 FEET FROM HAZARDOUS OR NOXIOUS CONTAMINANTS.
(R303.5.2) EXHAUST OPENINGS: SHALL NOT BE DIRECTED ONTO WALKWAYS.

SECTION R304: MINIMUM ROOM AREAS

(R304.1) MINIMUM AREA: HABITABLE ROOMS MIN 70 SF.
(R304.2) MINIMUM DIMENSIONS: NOT LESS THAN 7 FEET IN ANY HORIZONTAL DIRECTION.
(R304.3) HEIGHT EFFECT ON ROOM AREA: FLOOR AREA BELOW SLOPED CEILINGS LESS THAN 5 FT AND FURRED CEILINGS LESS THAN 7 FT DOES NOT CONTRIBUTE TO HABITABLE AREA OF ROOM.

SECTION R305: CEILING HEIGHT
(R305.1) MINIMUM HEIGHT: HABITABLE SPACE, HALLWAYS NOT LESS THAN 7 FEET. BATHROOMS, TOILET ROOMS, LAUNDRY ROOMS NOT LESS THAN 6'-8".

SECTION R306: SANITATION
(R306.1) TOILET FACILITIES: WATER CLOSET, LAVATORY, AND BATHTUB OR SHOWER REQUIRED IN EVERY DWELLING UNIT.

SECTION R307: TOILET, BATH, AND SHOWER SPACES
(R307.1) SPACE REQUIRED: FIXTURES SPACED PER P2705.1.

SECTION R308: GLAZING

(R308.1) IDENTIFICATION
(R308.3) HUMAN IMPACT LOADS
(R308.4) HAZARDOUS LOCATIONS:
1. DOORS: GLAZING IN FIXED OR OPERABLE PANELS IN SWINGING, SLIDING, OR BI-FOLD DOORS.
2. GLAZING ADJACENT TO DOORS: WHERE BOTTOM EDGE OF GLASS < 60 INCHES ABOVE FLOOR OR WALKING SURFACE AND WITHIN 24 INCHES EITHER SIDE OF THE DOOR IN THE CLOSED POSITION.
3. GLAZING IN WINDOWS: HAS TO MEET ALL THE FOLLOWING CONDITIONS:
• EXPOSED AREA OF INDIVIDUAL PANE LARGER THAN 9 SF.
• BOTTOM EDGE OF GLAZING < 18 INCHES ABOVE THE FLOOR.
• TOP EDGE OF GLAZING > 36 INCHES ABOVE FLOOR.
• WALKING SURFACE WITHIN 36 INCHES OF GLAZING.
(R308.4.5) GLAZING ADJACENT TO HOT TUBS, SPAS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS, SWIMMING POOLS WHERE BOTTOM EDGE OF GLAZING LESS THAN 60 INCHES ABOVE ANY STANDING OR WALKING SURFACES.
(R308.4.6) GLAZING ADJACENT TO STAIRS AND RAMPS
(R308.4.7) GLAZING ADJACENT TO BOTTOM LANDING OF STAIR.

SECTION R310: EMERGENCY ESCAPE AND RESCUE OPENINGS
(R310.1) LOCATIONS REQUIRED: BASEMENTS, HABITABLE ATTICS, EVERY SLEEPING ROOM. TO OPEN DIRECTLY INTO A PUBLIC WAY, YARD OR COURT.
(R310.2.1) MINIMUM OPENING: NET CLEAR AREA >= 5.7 SF. NET CLEAR MIN HEIGHT 24 INCHES AND NET MIN CLEAR WIDTH 20 INCHES. MIN NET CLEAR OPENING FOR AT-GRADE OR BELOW-GRADE OPENINGS >= 5 SF.
(R310.2.2) WINDOW SILL HEIGHT: <= 44 INCHES ABOVE FLOOR OR IF BELOW GRADE, PROVIDE A WINDOW WELL.

SECTION R311: MEANS OF EGRESS

(R311.2) EGRESS DOOR: NOT LESS THAN ONE, SIDE-HINGE, MIN WIDTH 32 INCHES, CLEAR HEIGHT 78 INCHES MIN.
(R311.3) LANDING ON EACH SIDE OF EACH EXTERIOR DOOR REQD. MIN WIDTH >= WIDTH OF DOOR, MIN 36 INCHES LONG IN DIRECTION OF TRAVEL.
(R311.3.1) FLOOR ELEVATIONS AT REQUIRED EGRESS DOORS.

(R311.7) STAIRWAYS

(R311.7.1) WIDTH: NOT LESS THAN 36" CLEAR ABOVE HANDRAIL HEIGHT, MIN 31 1/2" BELOW HANDRAIL. (31 1/2" WHERE HANDRAIL ON ONE SIDE)
(R311.7.2) HEADROOM: MIN 6'-8".
(R311.7.3) VERTICAL RISE: MAX RISE FOR A FLIGHT OF STAIRS 151 INCHES BETWEEN FLOORS OR LANDINGS.
(R311.7.8.1) HANDRAIL HEIGHT: >= 34 INCHES NOR MORE THAN 38 INCHES
(R311.7.8.4) CONTINUITY: CONTINUOUS FOR FULL LENGTH OF THE FLIGHT.

(R311.8) RAMPS: MAX SLOPE FOR EGRESS DOORS 1:12. OTHER RAMPS MAX 1:8. WHERE TECHNICALLY INFEASIBLE, RAMPS CAN HAVE MAX SLOPE 1:8.
(R311.8.2) LANDINGS REQUIRED AT TOP AND BOTTOM, AT DOORS, AT DIRECTION CHANGES, MIN WIDTH 36".
(R311.8.3) HANDRAILS REQUIRED ON MIN ONE SIDE WHERE SLOPE > 1:12.
(R311.8.3.1) HANDRAIL HEIGHT: >= 34 INCHES OR MORE THAN 38 INCHES.
(R311.8.3.3) HANDRAILS: TO BE CONTINUOUS FOR FULL LENGTH OF RAMP.

SECTION R312: GUARDS AND WINDOW FALL PROTECTION:

(R312.1) GUARDS: PROVIDE AT OPEN SIDE OF WALKING SURFACES > 30 INCHES ABOVE ADJACENT FLOOR OR GRADE. MIN HEIGHT 36 INCHES. INSECT SCREEN NOT CONSIDERED A GUARD. NO OPENINGS TO ALLOW PASSAGE OF 4 INCH SPHERE.

(R312.2) WINDOW FALL PROTECTION: WHERE WINDOW SILL LESS THAN 24 INCHES ABOVE FINISHED FLOOR AND MORE THAN 72 INCHES ABOVE GRADE:
• WINDOW OPENING SHALL NOT ALLOW PASSAGE OF 4 INCH SPHERE, OR
• WINDOW PROVIDED WITH FALL PROTECTION PER ASTM F2090, OR
• WINDOW PROVIDED WITH OPENING CONTROL DEVICES PER SECTION R310.2.1.

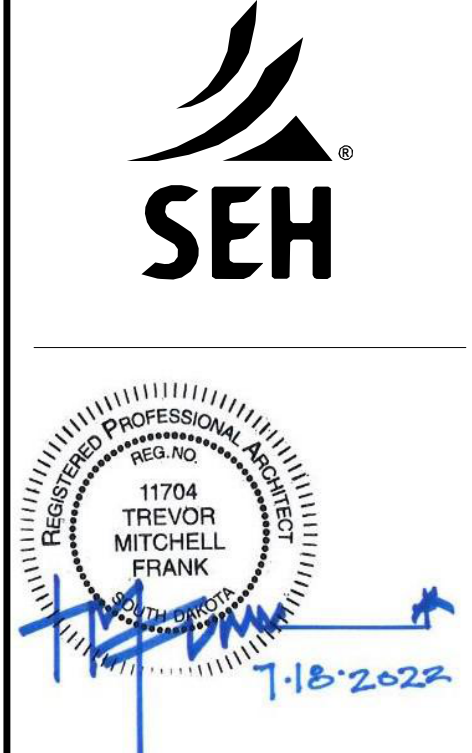
(R312.2.2) WINDOW OPENING CONTROL DEVICES: WILL ALLOW WINDOW TO OPEN FULLY AS REQUIRED PER SECTION R310.2.1.

SECTION R314: SMOKE ALARMS PER NFPA 72 AND SECTION R314: SHALL BE PROVIDED IN DWELLING UNITS (OR COMBINATION SMOKE AND CARBON MONOXIDE ALARM)

(R314.3) LOCATIONS:
• EACH SLEEPING ROOM
• OUTSIDE EACH SLEEPING AREA IN VICINITY OF BEDROOMS
• ON EACH ADDITIONAL STORY INCLUDING BASEMENTS AND HABITABLE ATTICS
• NOT LESS THAN 3 FEET FROM DOOR OPENING IN BATHROOM HAVING BATHTUB OR SHOWER
• NOT LESS THAN 20 FEET FROM COOKING APPLIANCE (10 FEET IF IONIZATION TYPE OR 6 FEET IF PHOTOELECTRIC TYPE)
(R314.4) IF ONE ALARM IS ACTIVATED, ALL ALARMS SHALL BE ACTIVATED.

SECTION R315: CARBON MONOXIDE ALARMS: REQUIRED WHERE DWELLING UNIT CONTAINS A FUEL-FIRED APPLIANCE OR HAS AN ATTACHED GARAGE WITH AN OPENING THAT COMMUNICATES WITH THE DWELLING UNIT.

SECTION R316: FOAM PLASTIC TO HAVE FLAME SPREAD INDEX NOT MORE THAN 75 AND SMOKE DEVELOPED INDEX NOT MORE THAN 450.
(R316.4) THERMAL BARRIER: SEPARATE FOAM PLASTIC FROM INTERIOR OF BUILDING BY A LAYER OF NOT LESS THAN ONE-HALF INCH GYPSUM BOARD, 23/32 INCH WOOD STRUCTURAL PANEL, OR OTHER MATERIAL APPROVED PER NFPA 275.
(R316.5.2) ROOFING: THERMAL BARRIER PER SECTION R316.4 NOT REQUIRED WHERE FOAM PLASTIC UNDER ROOF COVERING IS SEPARATED FROM INTERIOR BY T&G WOOD PLANKS OR WOOD STRUCTURAL SHEATHING NOT LESS THAN 15/32 INCHES THICK EXTERIOR GLUE.
(R316.5.5) FOAM-FILLED EXTERIOR DOORS: EXEMPT FROM REQUIREMENTS OF R316.3 AND R316.4.
(R316.5.6) FOAM-FILLED GARAGE DOORS: EXEMPT FROM REQUIREMENTS OF R316.3 AND R316.



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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS
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SEH Project
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Drawn By

164945
A. JAUCH
J. HEGG

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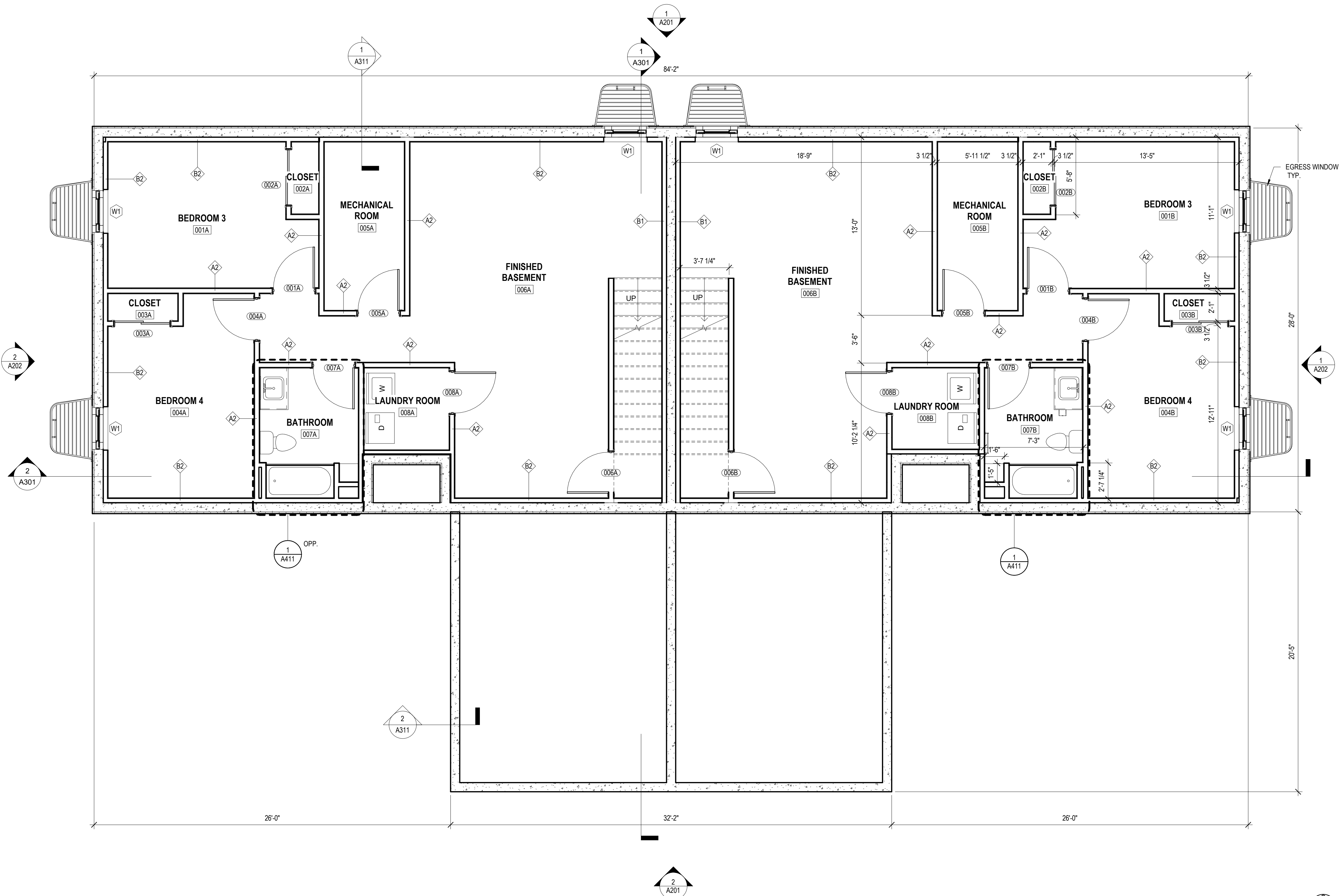
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CODE INFORMATION AND CONSTRUCTION ASSEMBLIES

A002



GENERAL NOTES

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REV. #	DESCRIPTION	DATE

FLOOR PLAN - BASEMENT

A101

1 A101 FLOOR PLAN - BASEMENT
1/4" = 1'-0"



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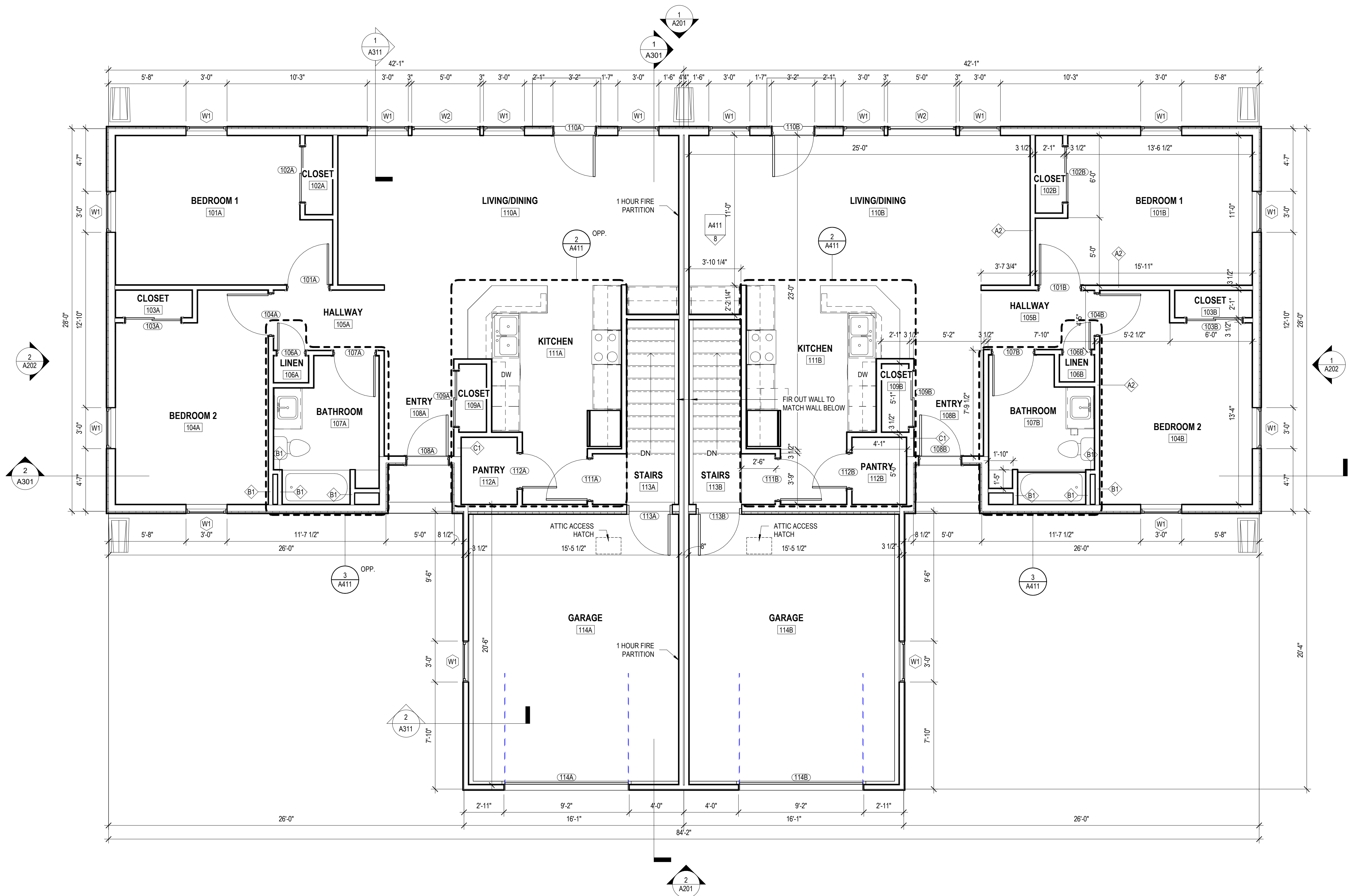
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FLOOR PLAN - GROUND FLOOR
FLOOR

A102

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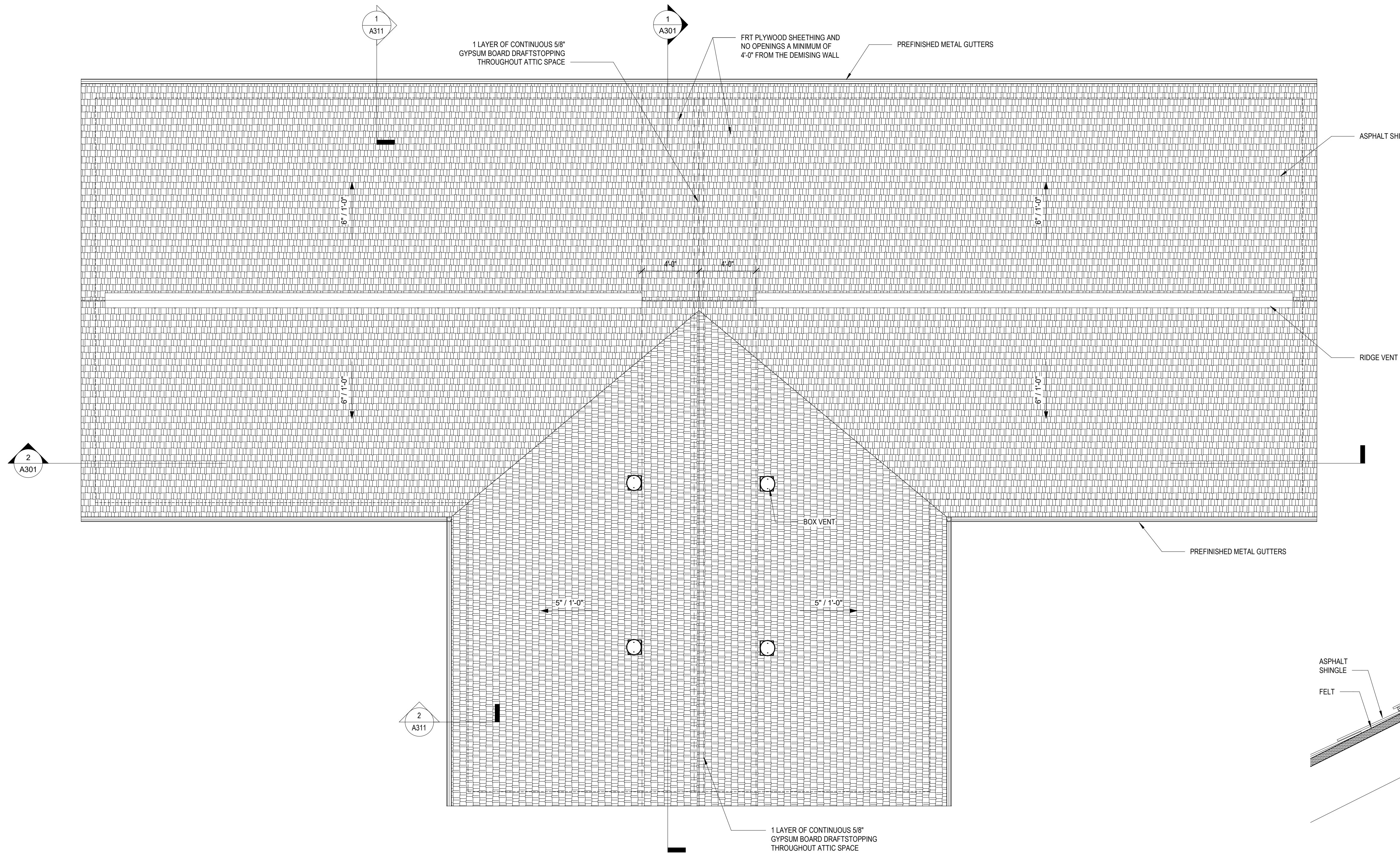


1 FLOOR PLAN - GROUND FLOOR
A102 1/4" = 1'-0"

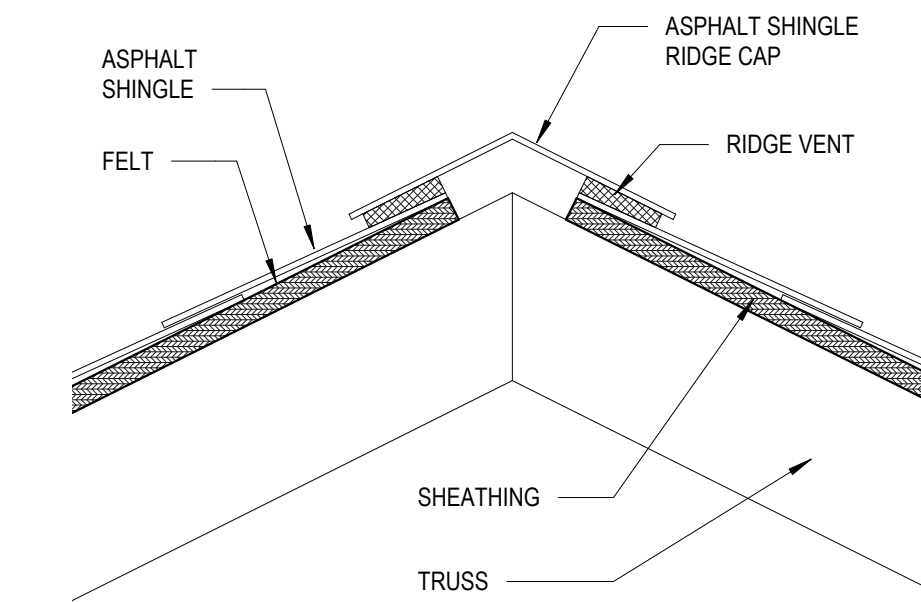


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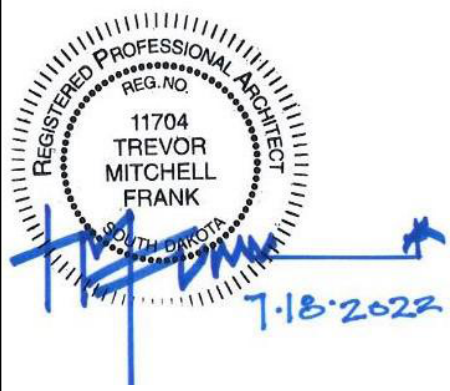
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1
A103
ROOF PLAN
1/4" = 1'-0"



2
A103
RIDGE VENT DETAIL
3" = 1'-0"



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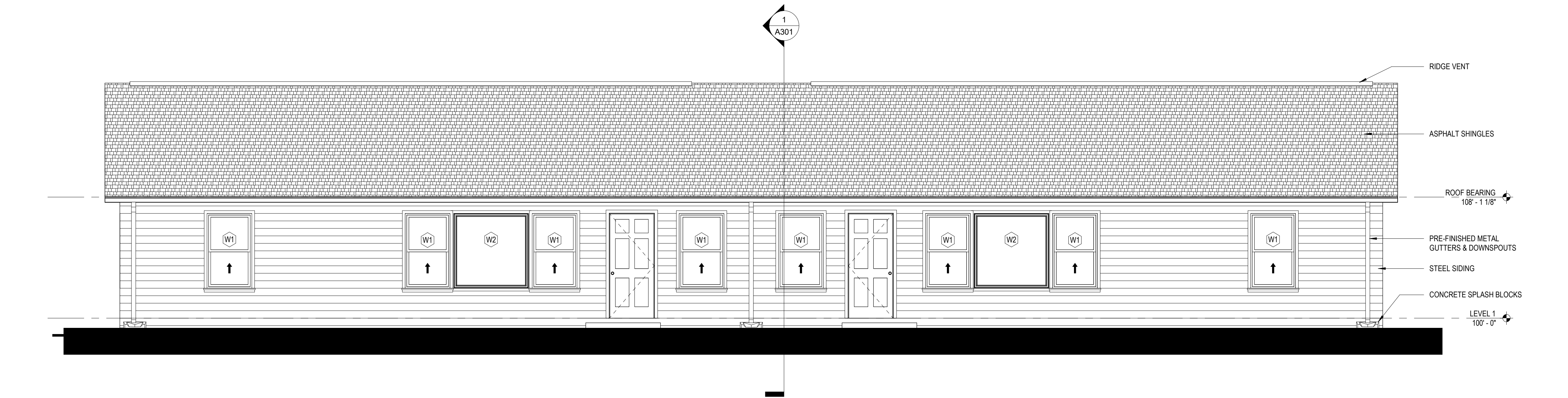
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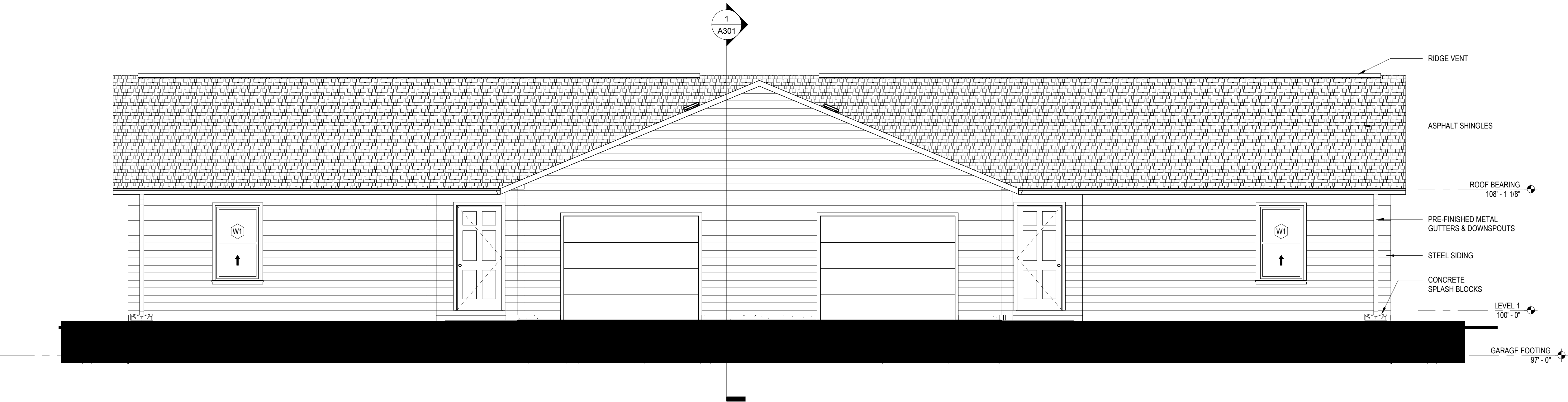
ROOF PLAN

A103



1
A201
1/4" = 1'-0"

EXTERIOR ELEVATION - NORTH



2
A201
1/4" = 1'-0"

EXTERIOR ELEVATION - SOUTH

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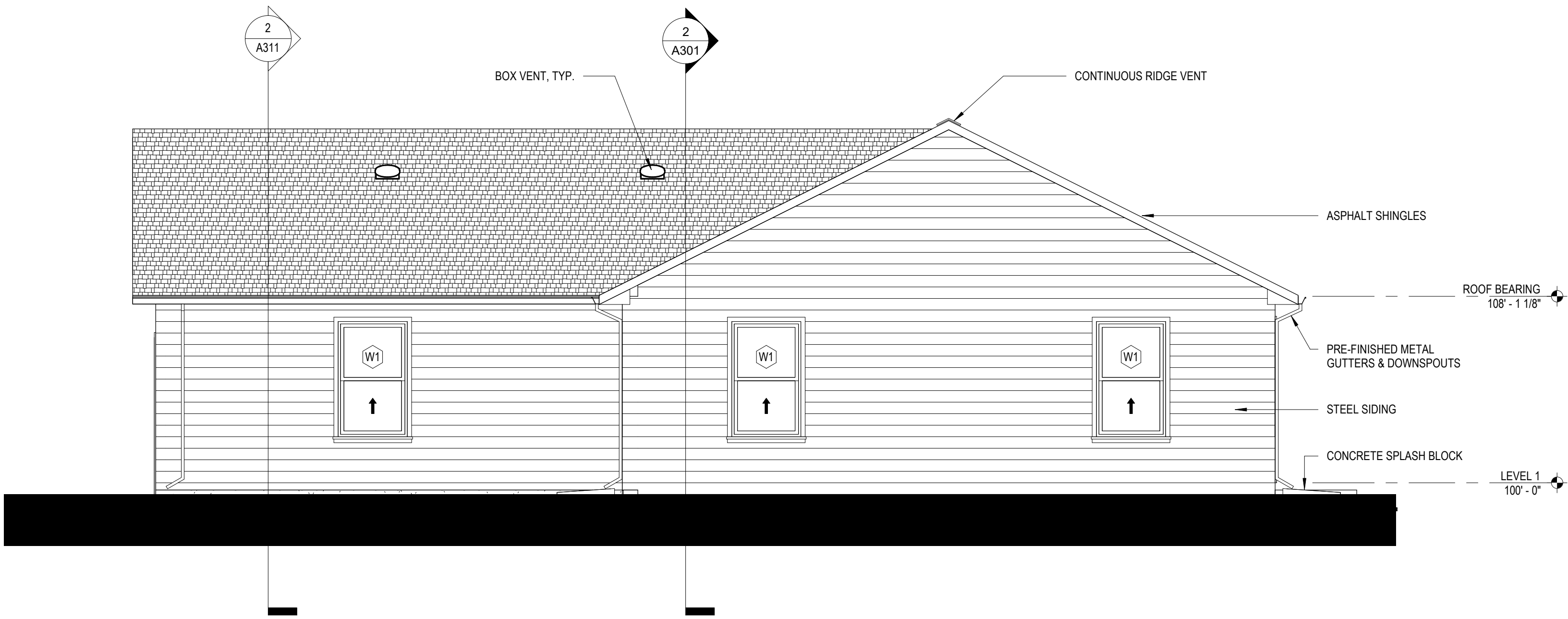
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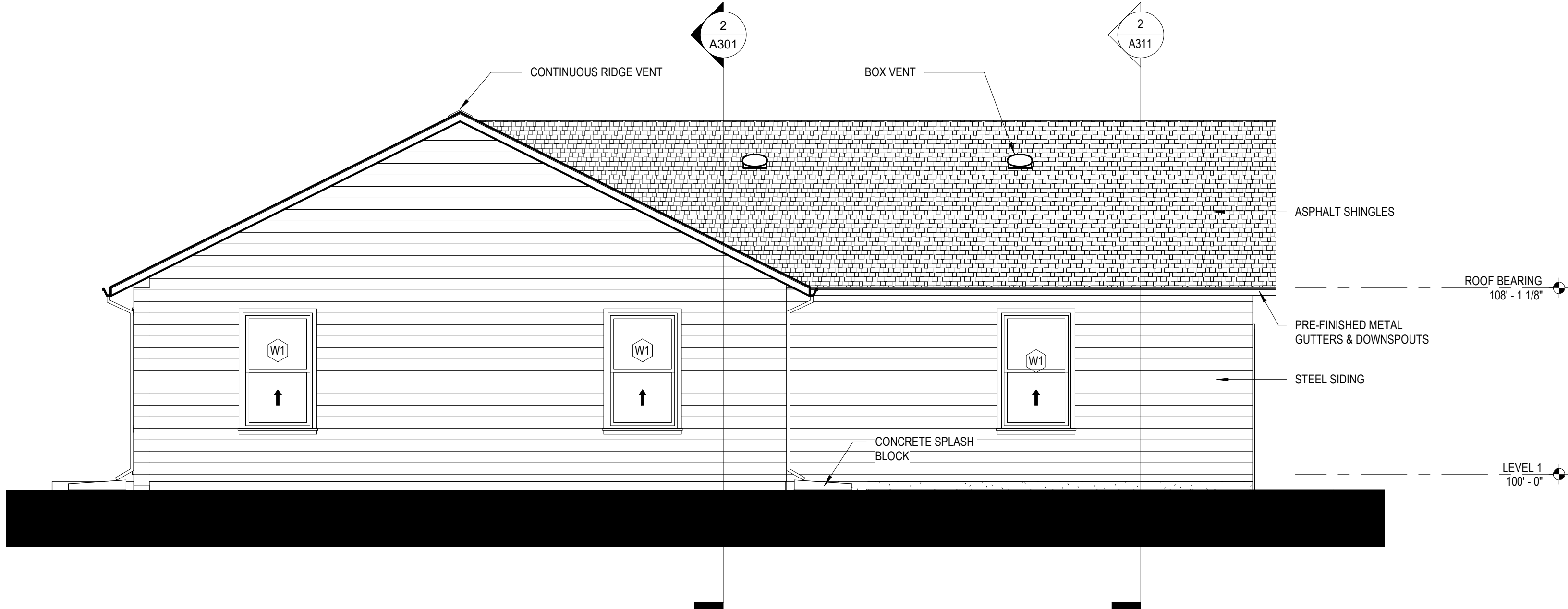
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EXTERIOR ELEVATIONS



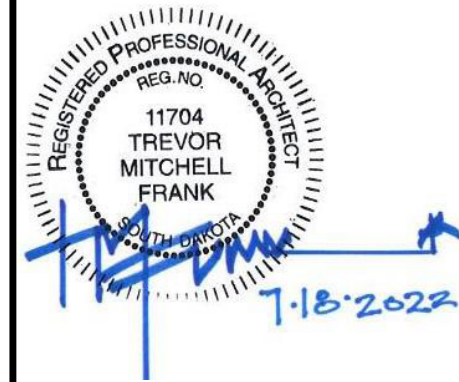
1
A202
1/4" = 1'-0"

EXTERIOR ELEVATION - EAST



2
A202
1/4" = 1'-0"

EXTERIOR ELEVATION - WEST



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EXTERIOR ELEVATIONS

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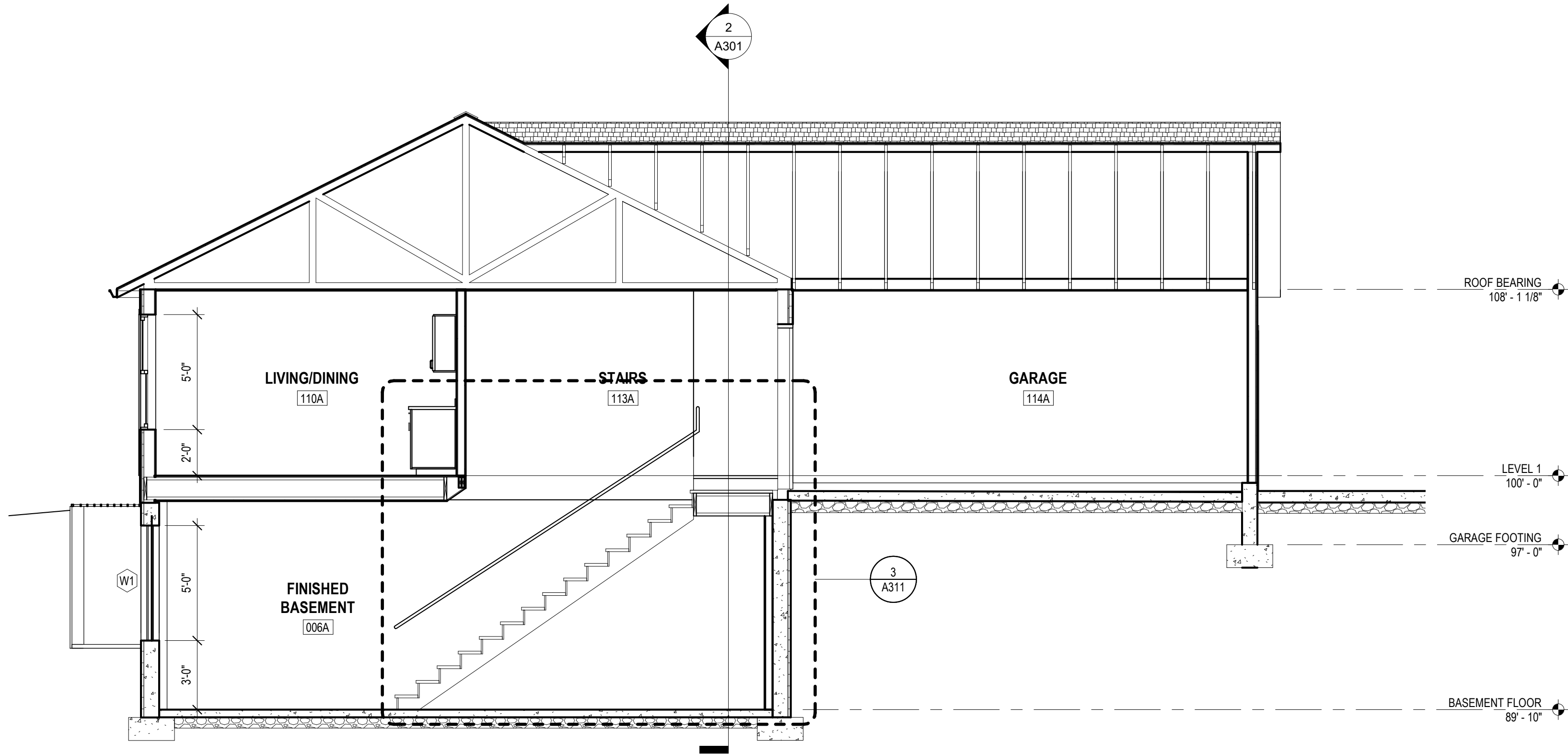
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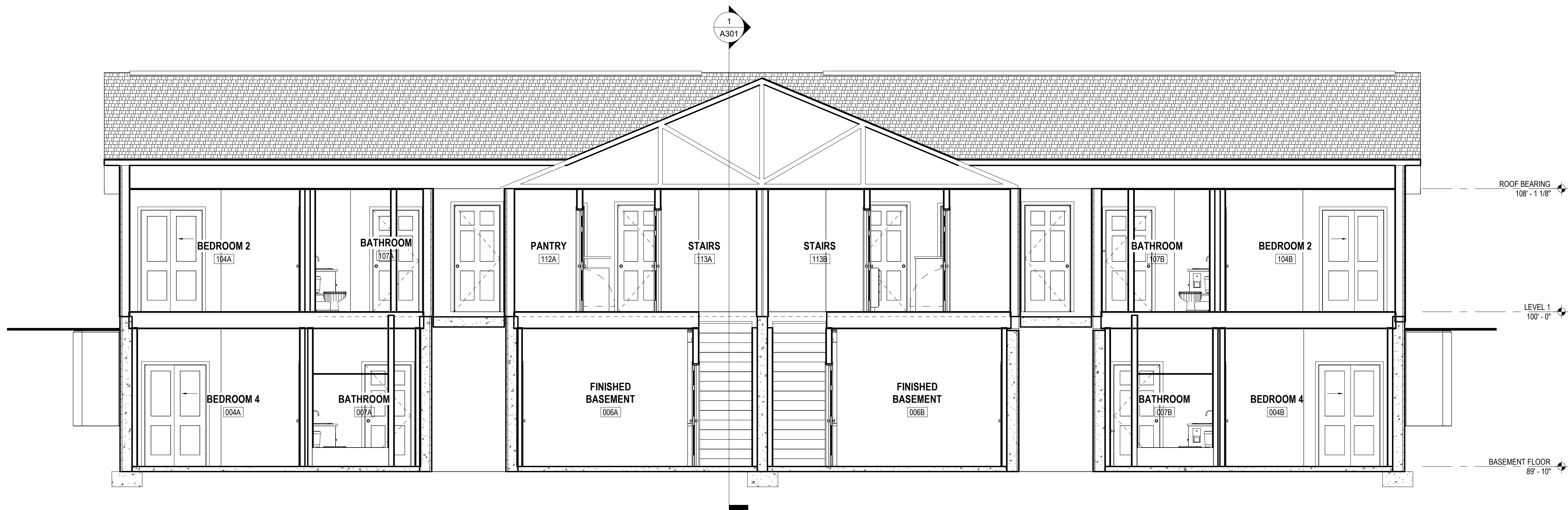
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BUILDING SECTIONS

A301

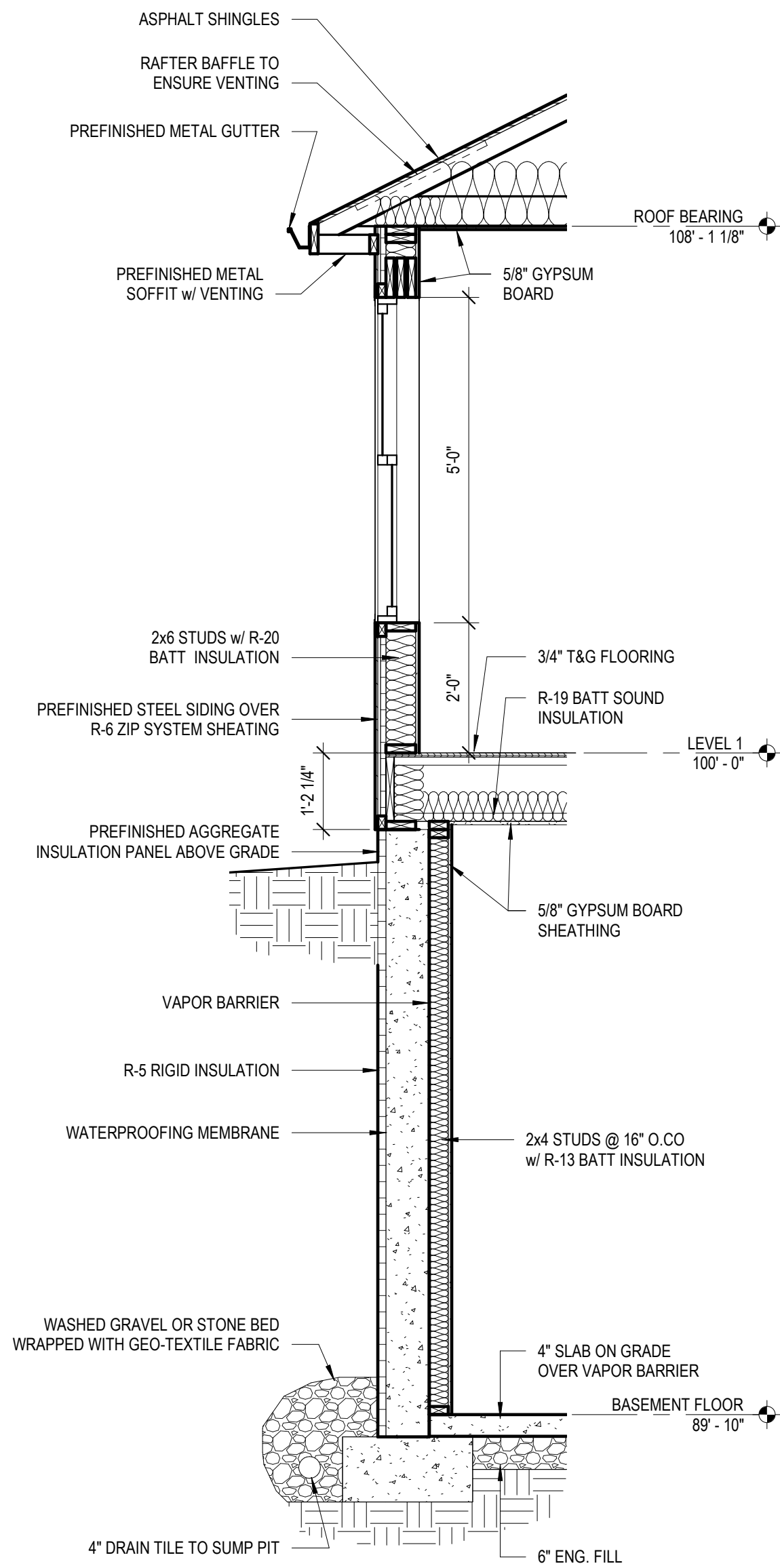


1
A301
BUILDING SECTION
1/4" = 1'-0"

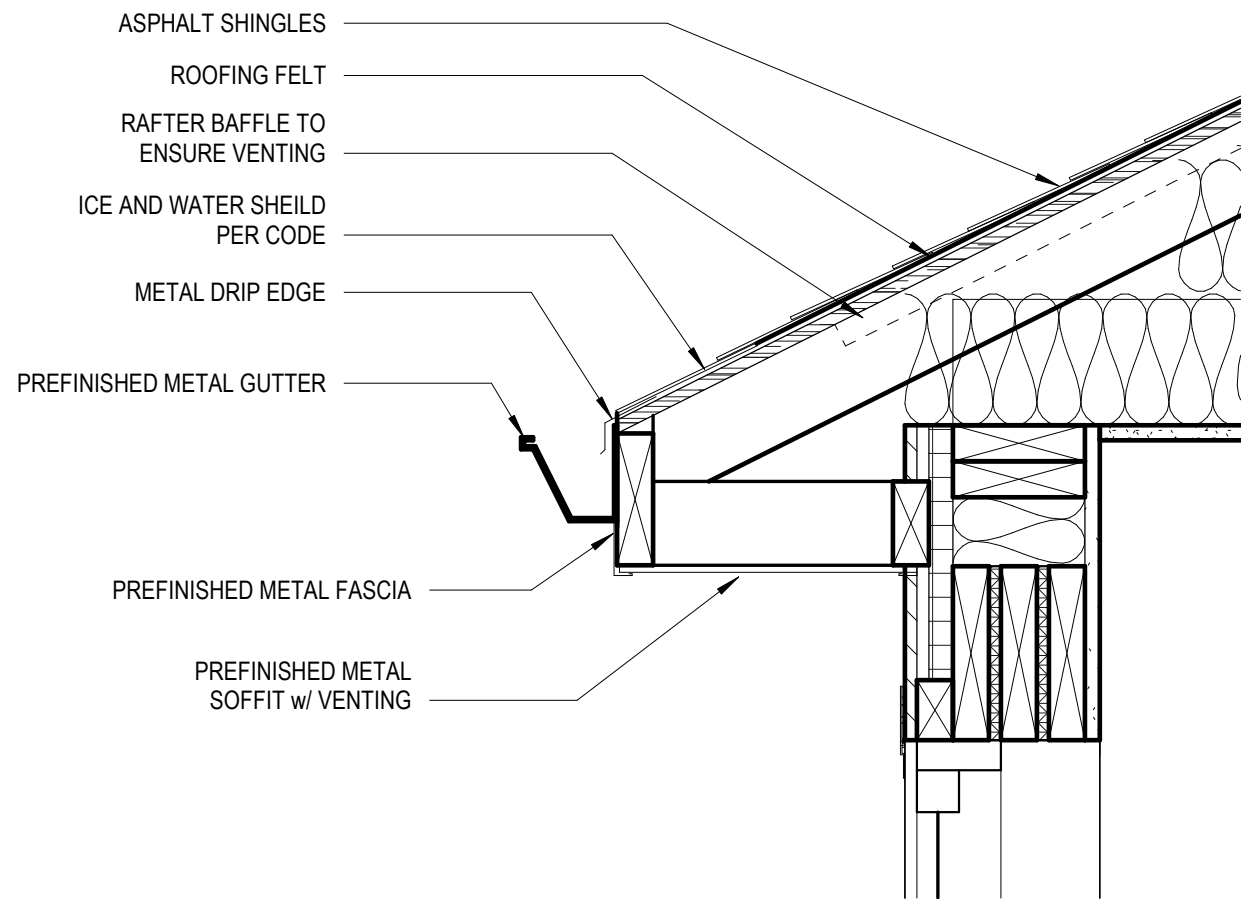


2
A301
BUILDING SECTION
1/4" = 1'-0"

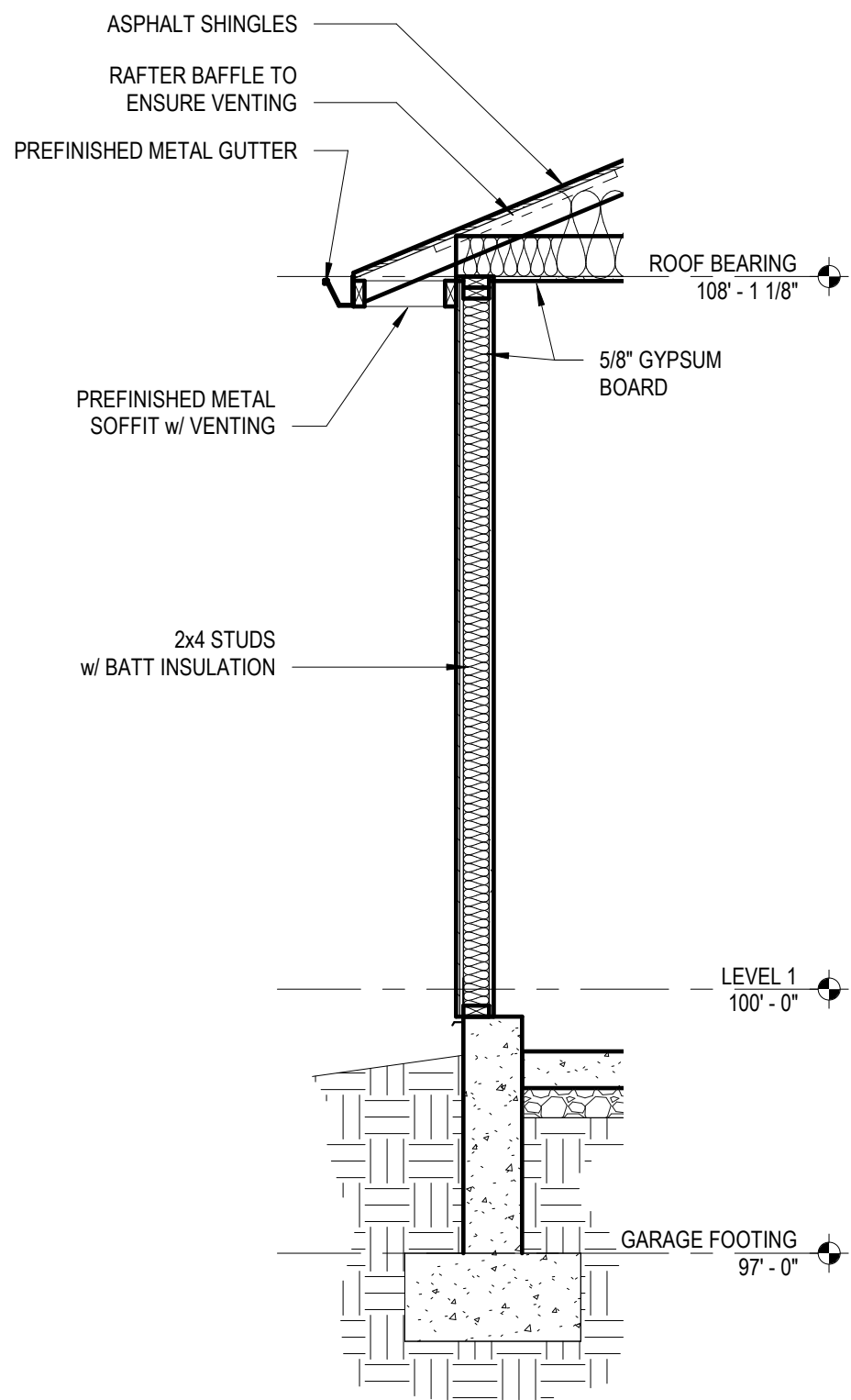
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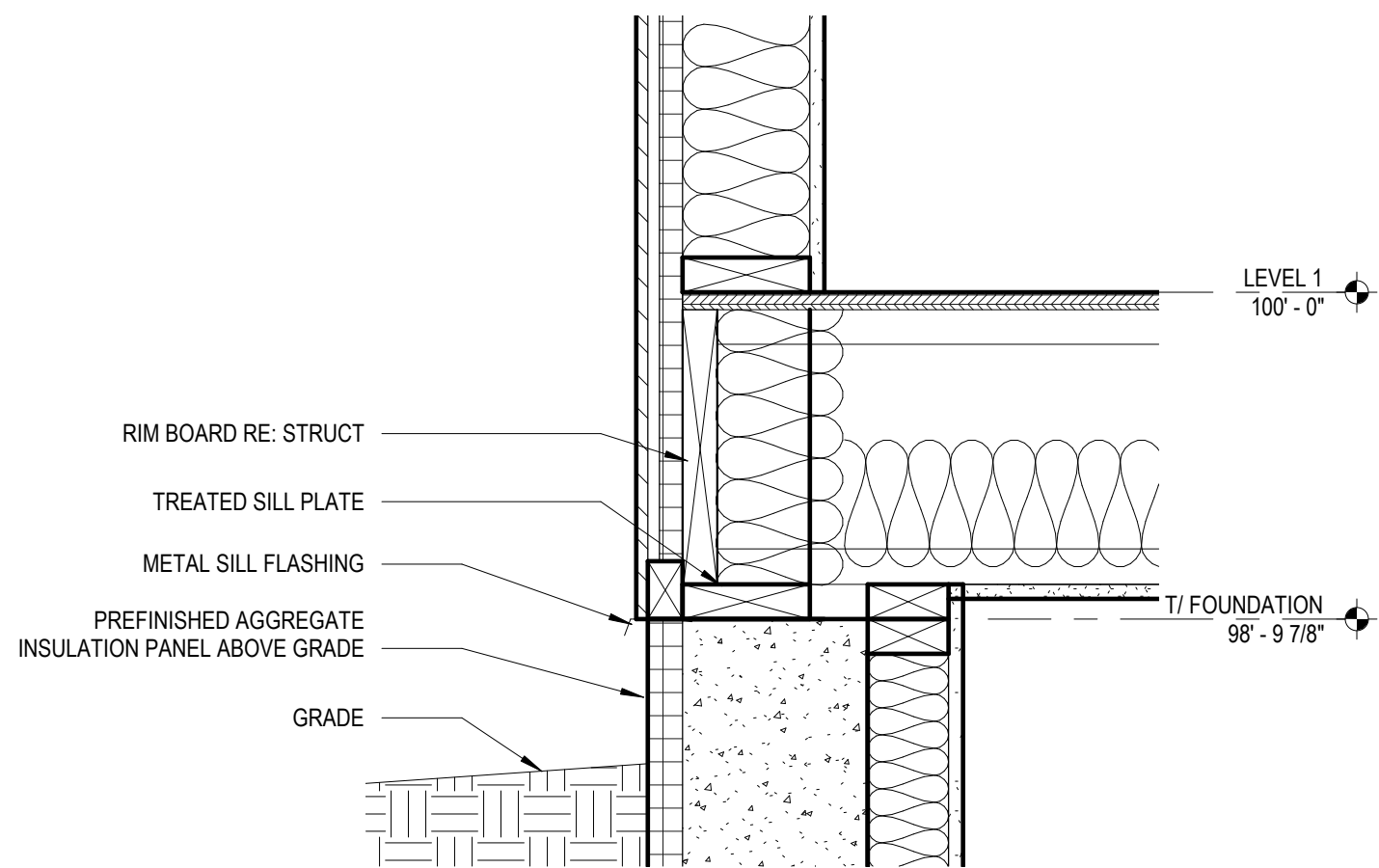
1 WALL SECTION - TYPICAL
A311 1/2" = 1'-0"



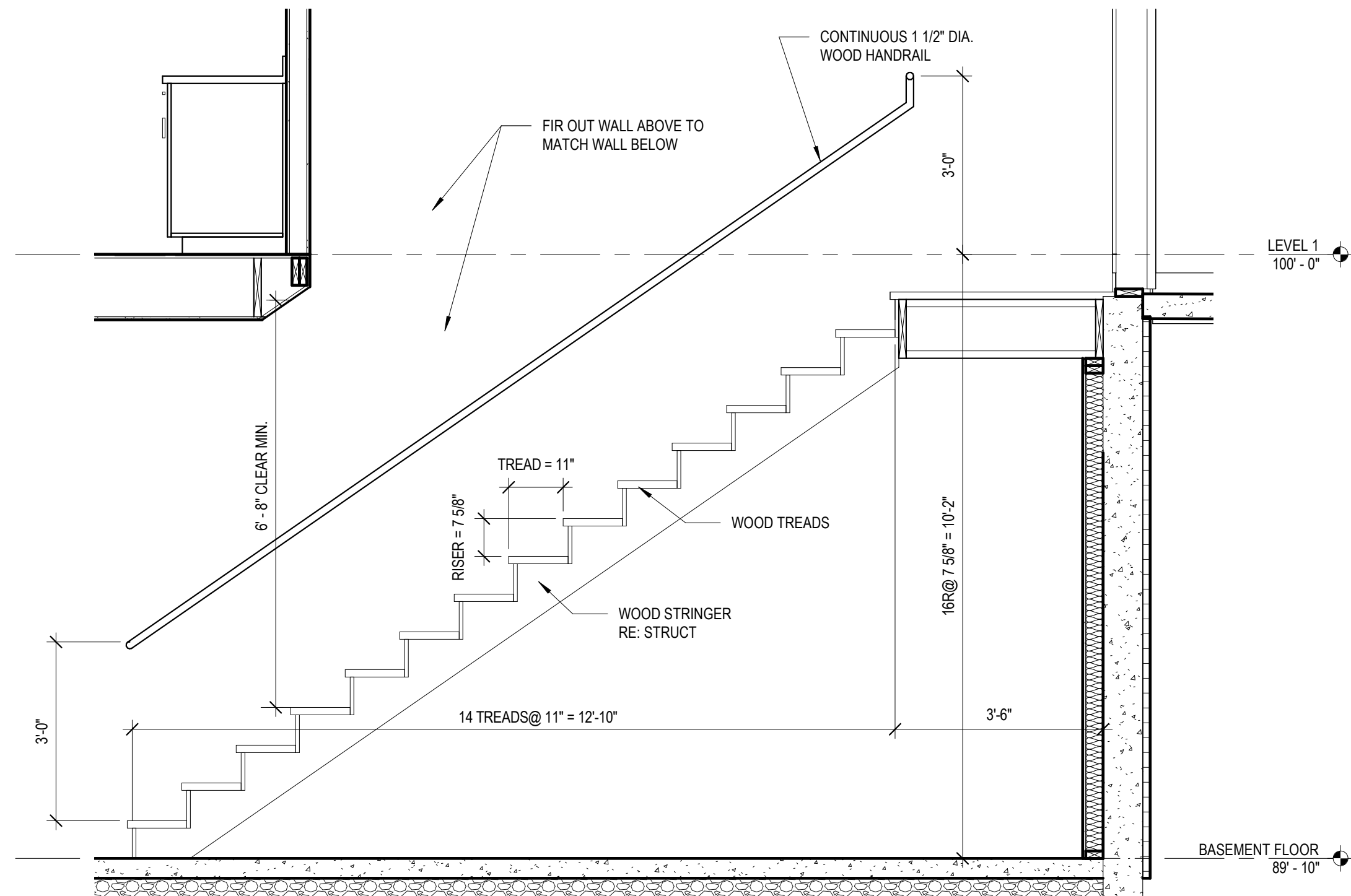
4 EAVE DETAIL
A311 1 1/2" = 1'-0"



2 WALL SECTION - GARAGE
A311 1/2" = 1'-0"



5 WALL SILL DETAIL
A311 1 1/2" = 1'-0"



3 ENLARGED STAIR SECTION
A311 1/2" = 1'-0"

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06.09 LAMINATE SHELFING W/ SUPPORT BRACKETS
08.01 WOOD DOOR, RE: DOOR SCHEDULE
09.01 PLAM COUNTERTOP W/3 MIL EDGE AND SET ON BACKSPLASH
09.02 OAK FINISH CABINET
11.01 RANGE, SPEC: TBD
11.02 MICROWAVE, SPEC: TBD
11.03 FRIDGE, SPEC: TBD
12.01 CURTAIN ROD, SPEC: TBD
12.02 TOILET PAPER DISPENSER, SPEC: TBD
12.03 VANITY MIRROR, SPEC: TBD
22.01 FLOOR MOUNTED WATER CLOSET, RE: PLUMB.
22.02 LAVATORY, RE: PLUMB.
22.03 ONE PIECE FIBERGLASS SHOWER SURROUND WITH TUB, SPEC: TBD
22.04 KITCHEN SINK, RE: PLUMB.
22.06 DISHWASHER, SPEC: TBD
22.08 CURTAIN ROD, SPEC: TBD
22.09 TOWEL HOOK, SPEC: TBD
22.10 SHOWER HEAD, RE: SPEC.

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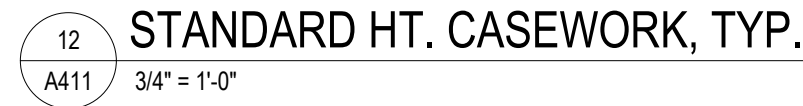
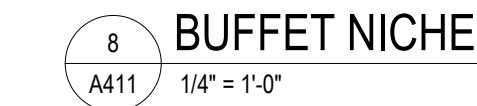
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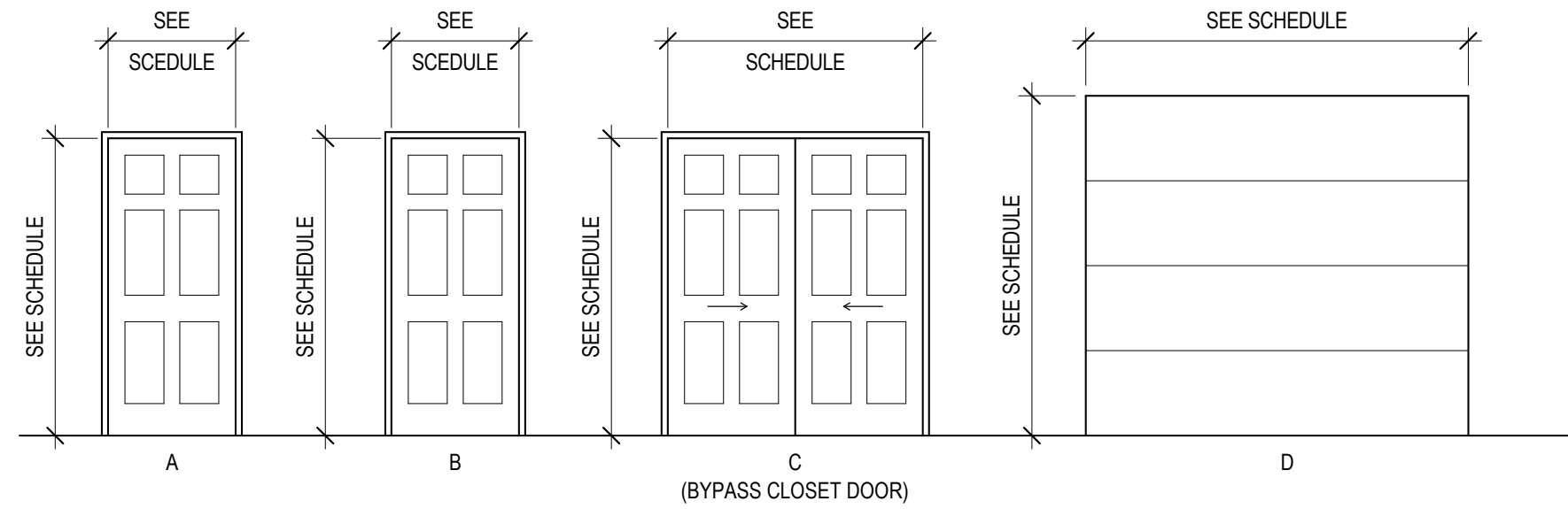
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ENLARGED KITCHEN AND
BATHROOM PLANS AND
INTERIOR ELEVATIONS

A411

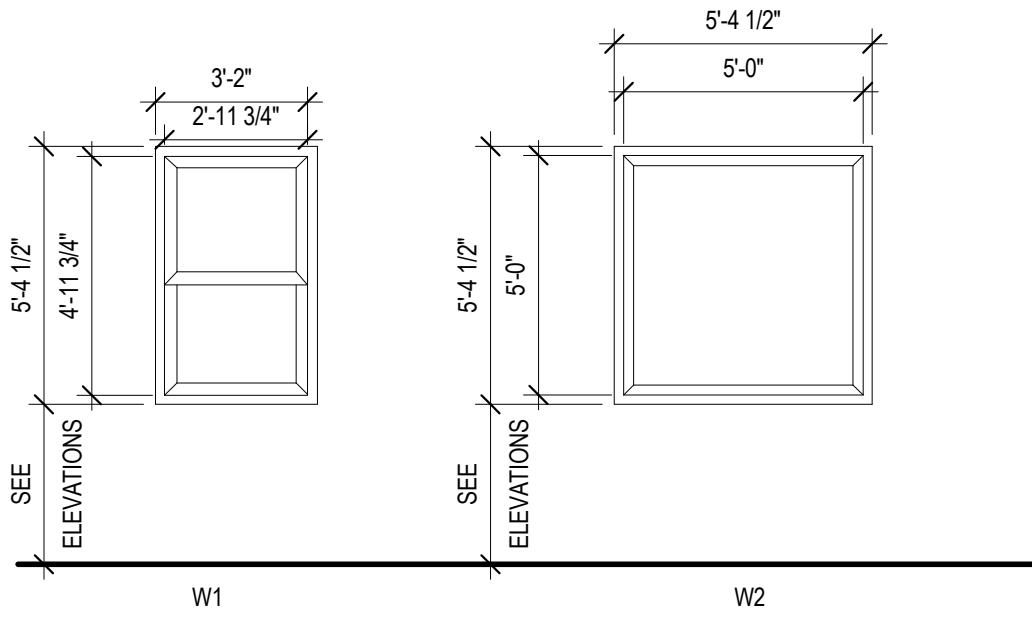


DOOR SCHEDULE												
Mark	DOOR NUMBER	ROOM NAME	DOOR				FRAME	FIRE RATING	HARDWARE GROUP	DETAILS		REMARKS
	ROOM NUMBER		HEIGHT	WIDTH	DOOR MATERIAL	DOOR TYPE	FRAME TYPE			HEAD DETAIL	JAMB DETAIL	
001A	001A	BEDROOM 3	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
001B	001B	BEDROOM 3	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
002A	002A	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
002B	002B	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
003A	003A	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
003B	003B	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
004A	004A	BEDROOM 4	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
004B	004B	BEDROOM 4	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
005A	005A	MECHANICAL ROOM	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
005B	005B	MECHANICAL ROOM	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
006A	006A	FINISHED BASEMENT	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
006B	006B	FINISHED BASEMENT	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
007A	007A	BATHROOM	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
007B	007B	BATHROOM	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
008A	008A	LAUNDRY ROOM	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
008B	008B	LAUNDRY ROOM	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
101A	101A	BEDROOM 1	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
101B	101B	BEDROOM 1	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
102A	102A	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
102B	102B	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
103A	103A	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
103B	103B	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
104A	104A	BEDROOM 2	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
104B	104B	BEDROOM 2	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
106A	106A	LINEN	6' - 8"	2' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
106B	106B	LINEN	6' - 8"	2' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
107A	107A	BATHROOM	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
107B	107B	BATHROOM	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
108A	108A	ENTRY	7' - 0"	3' - 0"	STEEL	B	PRE-HUNG	-	SEE SPECS	3/A601	3/A601	
108B	108B	ENTRY	7' - 0"	3' - 0"	STEEL	B	PRE-HUNG	-	SEE SPECS	3/A601	3/A601	
109A	109A	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
109B	109B	CLOSET	6' - 8"	4' - 0"	WOOD	C	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
110A	110A	LIVING/DINING	7' - 0"	3' - 0"	STEEL	B	PRE-HUNG	-	SEE SPECS	3/A601	3/A601	
110B	110B	LIVING/DINING	7' - 0"	3' - 0"	STEEL	B	PRE-HUNG	-	SEE SPECS	3/A601	3/A601	
111A	111A	KITCHEN	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
111B	111B	KITCHEN	6' - 8"	3' - 0"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
112A	112A	PANTRY	6' - 8"	2' - 6"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
112B	112B	PANTRY	6' - 8"	2' - 6"	WOOD	A	PRE-HUNG	-	SEE SPECS	2/A601	2/A601	
113A	113A	STAIRS	7' - 0"	3' - 0"	STEEL	B	PRE-HUNG	3/4 HR	SEE SPECS	3/A601	3/A601	PROVIDE AUTOMATIC CLOSER
113B	113B	STAIRS	7' - 0"	3' - 0"	STEEL	B	PRE-HUNG	3/4 HR	SEE SPECS	3/A601	3/A601	PROVIDE AUTOMATIC CLOSER
114A	114A	GARAGE	7' - 0"	9' - 0"	STEEL	D	WOOD	-	SEE SPECS	3/A601	3/A601	
114B	114B	GARAGE	7' - 0"	9' - 0"	STEEL	D	WOOD	-	SEE SPECS	3/A601	3/A601	

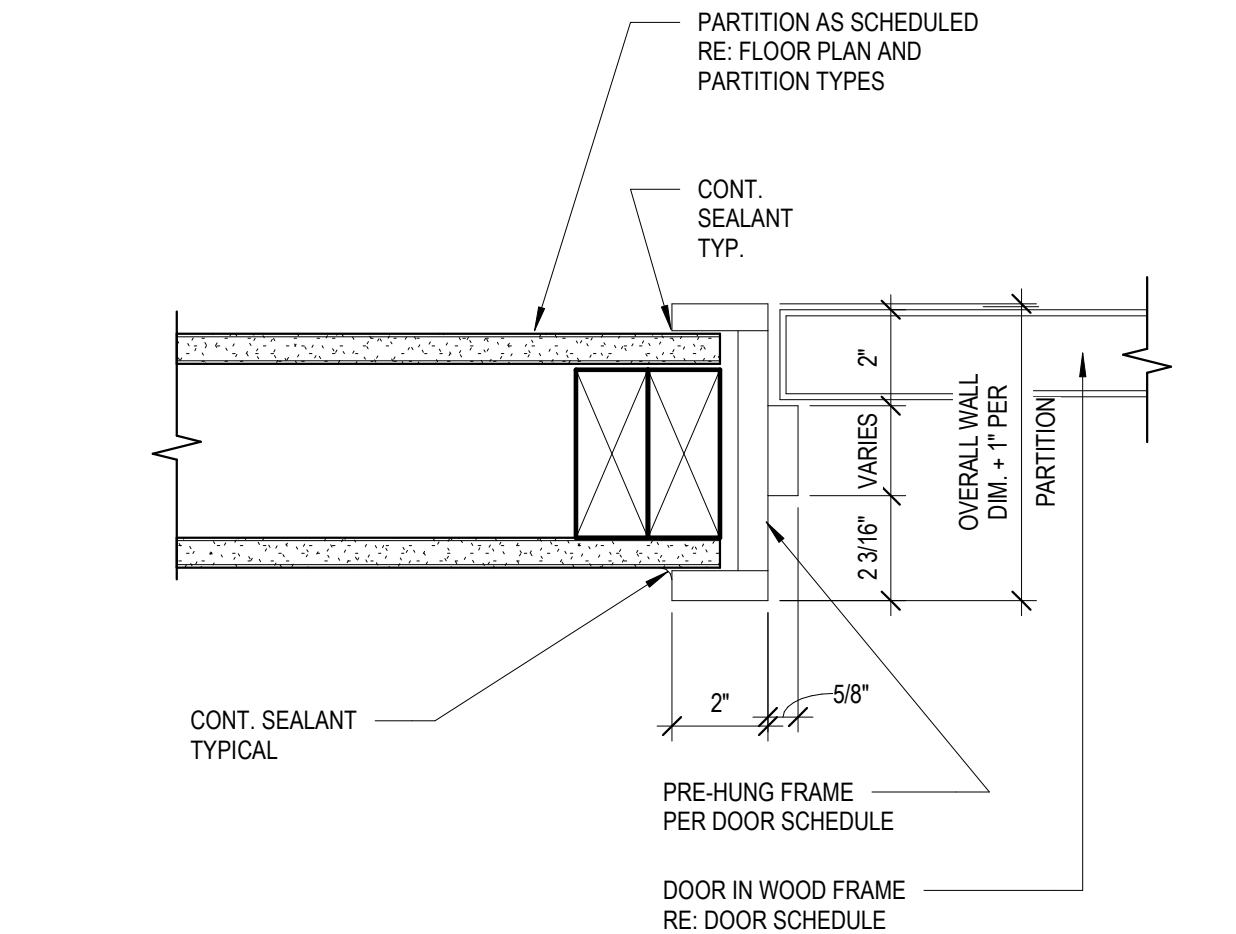


DOOR TYPES

LIGHT AND VENT SCHEDULE							
ROOM#	ROOM NAME	ROOM AREA	LIGHT REQD	LIGHT ACTUAL	VENT REQD	VENT ACTUAL	COMMENTS
101A	BEDROOM 1	158.5 SF	12.7 SF	23.2 SF	6.3 SF	11.8 SF	
101B	BEDROOM 1	159.0 SF	12.7 SF	23.2 SF	6.4 SF	11.8 SF	
104A	BEDROOM 2	160.6 SF	12.8 SF	23.2 SF	6.4 SF	11.8 SF	
104B	BEDROOM 2	160.0 SF	12.8 SF	23.2 SF	6.4 SF	11.8 SF	
110A	LIVING/DINING	280.2 SF	22.4 SF	40.3 SF	11.2 SF	38.7 SF	
110B	LIVING/DINING	281.1 SF	22.5 SF	40.3 SF	11.2 SF	38.7 SF	
111A	KITCHEN	122.2 SF	9.8 SF	0.0 SF	4.9 SF	0.0 SF	SHARED WITH LIVING/DINING
111B	KITCHEN	122.7 SF	9.8 SF	0.0 SF	4.9 SF	0.0 SF	SHARED WITH LIVING/DINING



WINDOW TYPES



2 WOOD DOOR HEAD & JAMB, TYP.
A601 3" = 1'-0"

LEGEND

ACT	=	ACOUSTIC CEILING TILE
CPT	=	CARPET
GYP	=	GYPSUM BOARD
P	=	PAINT (RE: SPEC)
VP-1	=	VINYL PLANK (RE: SPEC)
VP-2	=	VINYL PLANK (RE: SPEC)
CONC	=	SEALED CONCRETE

ROOM FINISH SCHEDULE										
ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL FINISH				CEILINGS		NOTES
				NORTH	SOUTH	EAST	WEST	FINISH	MATERIAL	
001A	BEDROOM 3	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
001B	BEDROOM 3	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
002A	CLOSET	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
002B	CLOSET	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
003A	CLOSET	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
003B	CLOSET	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
004A	BEDROOM 4	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
004B	BEDROOM 4	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
005A	MECHANICAL ROOM	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	NONE	
005B	MECHANICAL ROOM	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	NONE	
006A	FINISHED BASEMENT	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
006B	FINISHED BASEMENT	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
007A	BATHROOM	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
007B	BATHROOM	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
008A	LAUNDRY ROOM	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
008B	LAUNDRY ROOM	EPOXY	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	ACT	
101A	BEDROOM 1	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
101B	BEDROOM 1	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
102A	CLOSET	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
102B	CLOSET	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
103A	CLOSET	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
103B	CLOSET	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
104A	BEDROOM 2	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
104B	BEDROOM 2	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
105A	HALLWAY	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
105B	HALLWAY	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
106A	LINEN	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
106B	LINEN	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
107A	BATHROOM	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
107B	BATHROOM	VP-2	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
108A	ENTRY	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
108B	ENTRY	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
109A	CLOSET	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
109B	CLOSET	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
110A	LIVING/DINING	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
110B	LIVING/DINING	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
111A	KITCHEN	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
111B	KITCHEN	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
112A	PANTRY	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
112B	PANTRY	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
113A	STAIRS	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
113B	STAIRS	VP-1	WD	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
114A	GARAGE	CONC	RB	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	
114B	GARAGE	CONC	RB	GYP/P	GYP/P	GYP/P	GYP/P	P	GYP	



Project Owner
Indian Health Service (IHS)
Department of Health and Human Services
Division of Engineering Services
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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS
701 FIFTH AVENUE, MS 24, SUITE 1600
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CONSTRUCTION 07/18/2022
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REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

ROOM FINISH SCHEDULE

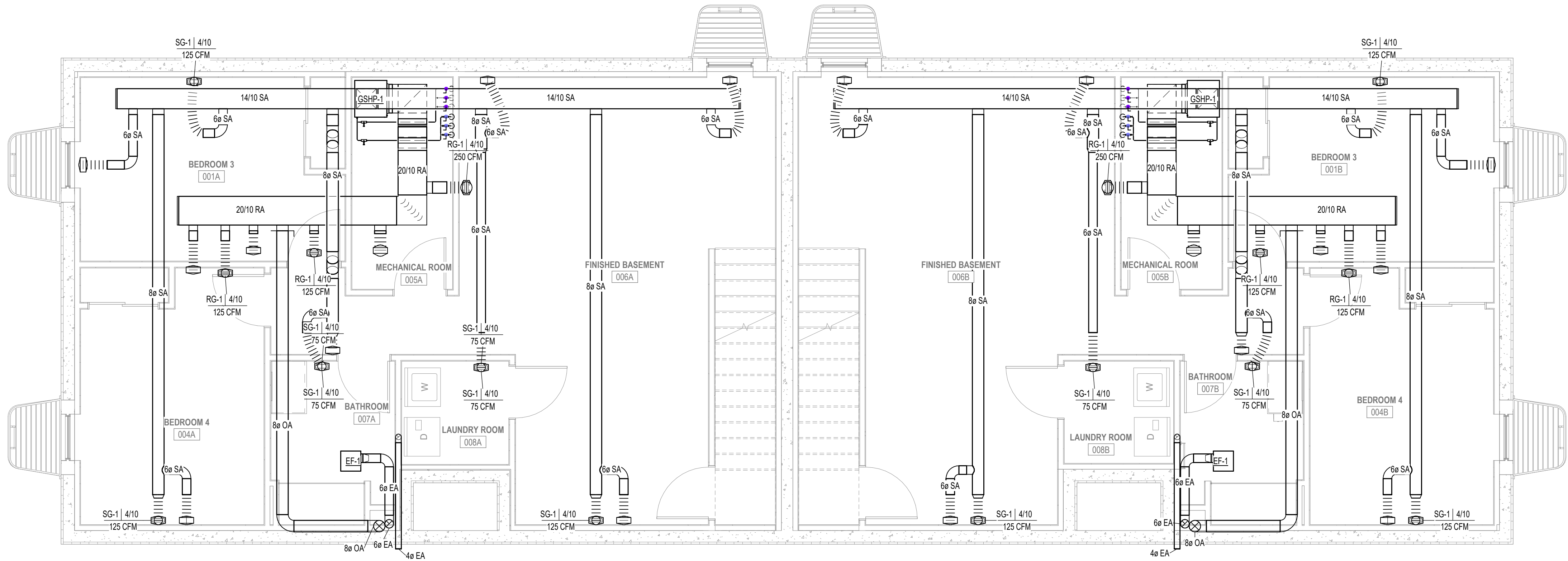
A611

7/15/2022 4:10:45 PM

- GENERAL NOTES:
- A. PROVIDE BALANCE DAMPERS AT EACH GRILLE FACE FOR AIR BALANCING.
- B. ALL EXHAUST LOCATIONS SHALL BE A MINIMUM OF 3'-0" AWAY FROM OPERABLE WINDOWS AND DOOR. EXHAUST LOCATIONS SHALL BE 10'-0" AWAY FROM POWERED INTAKES.
- C. RUN CONDENSATE DRAINS FROM COOLING COILS TO NEAREST FLOOR DRAIN.
- D. FLEX DUCTWORK SHALL BE PERMITTED ONLY ON FINAL RUN TO DIFFUSERS WHERE INDICATED, UP TO A MAXIMUM LENGTH OF 5'-0".
- E. PROVIDE EXHAUST TERMINAL BOXES WITH INTEGRAL BACKDRAFT DAMPER FOR SIDEWALL EXHAUSTS. COMBINE EXHAUSTS WHERE APPLICABLE. TERMINAL BOX EQUIVALENT TO XVENTBOX MODEL# S SERIES.
- F. PROVIDE DRYER VENT BOX IN WASHER - DRYER CLOSET. MOUNT WITH BOTTOM EDGE 6" ABOVE FINISHED FLOOR. VENT BOX EQUIVALENT TO IN-O-VATE TECHNOLOGIES MODEL# 425.



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1 FLOOR_PLAN-HVAC-0B
M110 1/4" = 1'-0"

INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS

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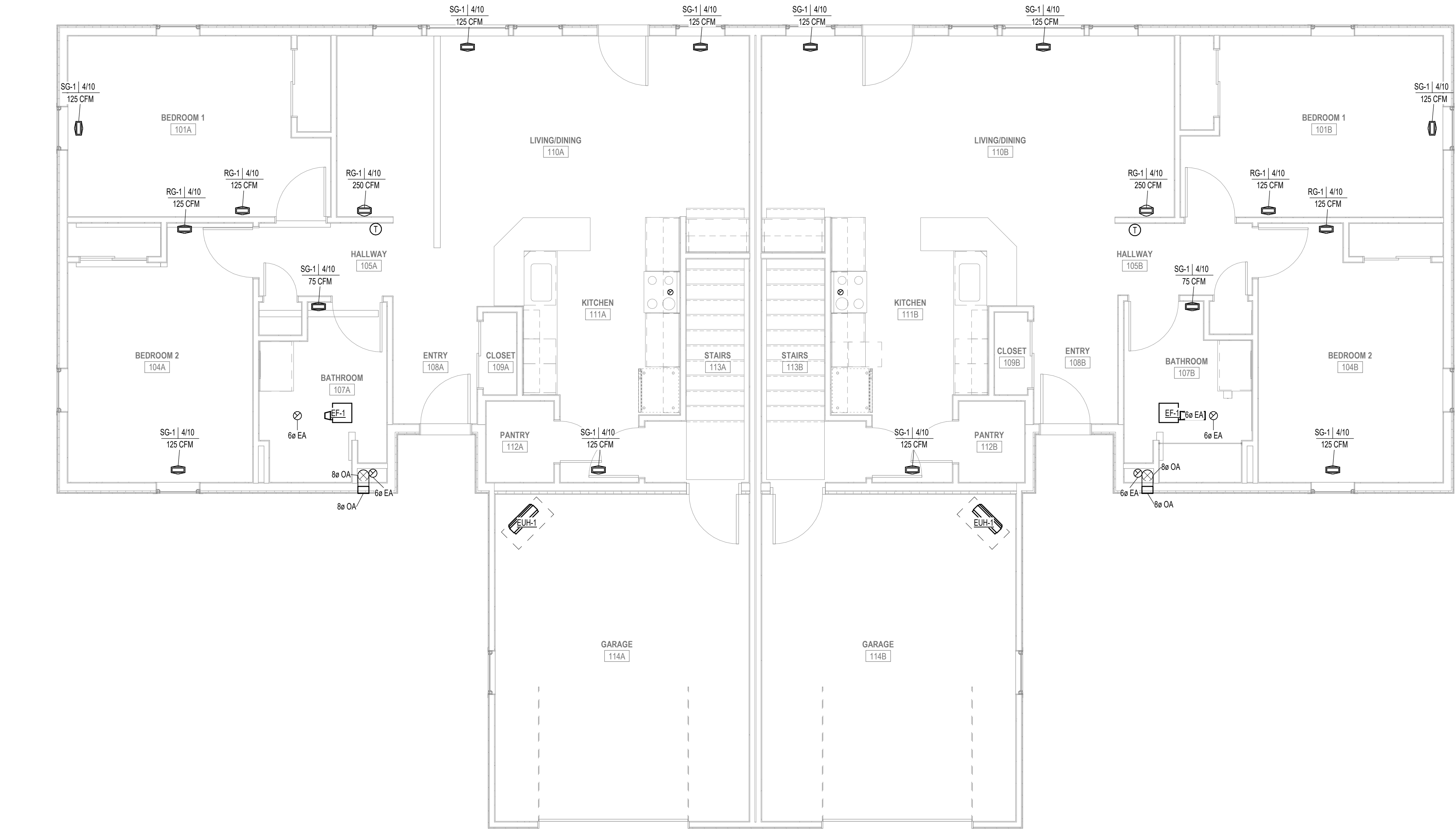
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BASEMENT HVAC PLAN


M110

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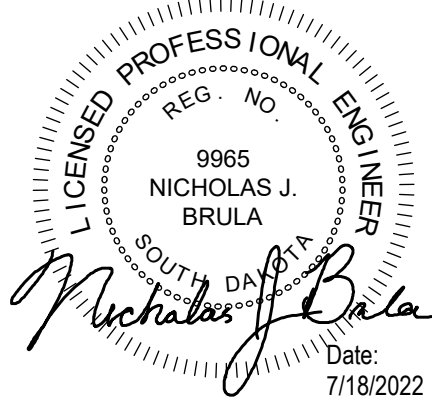


1 FLOOR_PLAN-HVAC-01
M111 1/4" = 1'-0"

- GENERAL NOTES:**
- A. PROVIDE BALANCE DAMPERS AT EACH GRILLE FACE FOR AIR BALANCING.
 - B. ALL EXHAUST LOCATIONS SHALL BE A MINIMUM OF 3'-0" AWAY FROM OPERABLE WINDOWS AND DOOR. EXHAUST LOCATIONS SHALL BE 10'-0" AWAY FROM POWERED INTAKES.
 - C. PROVIDE EXHAUST TERMINAL BOXES WITH INTEGRAL BACKDRAFT DAMPER FOR SIDEWALL EXHAUSTS. COMBINE EXHAUSTS WHERE APPLICABLE. TERMINAL BOX EQUIVALENT TO XVENTBOX MODEL# S SERIES.
 - D. PROVIDE DRYER VENT BOX IN WASHER - DRYER CLOSET. MOUNT WITH BOTTOM EDGE 6" ABOVE FINISHED FLOOR. VENT BOX EQUIVALENT TO IN-O-VATE TECHNOLOGIES MODEL# 425.
 - E. PROVIDE MICROWAVE ABOVE KITCHEN RANGE WITH INTEGRAL EXHAUST HOOD. ROUTE EXHAUST HOOD DUCT UP TO ROOF.
 - F. MOUNT 7-DAY PROGRAMMABLE THERMOSTAT IN LOCATION APPROVED BY OWNER. LOCATION SHOWN IS NOT FINAL.



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Date: 7/18/2022

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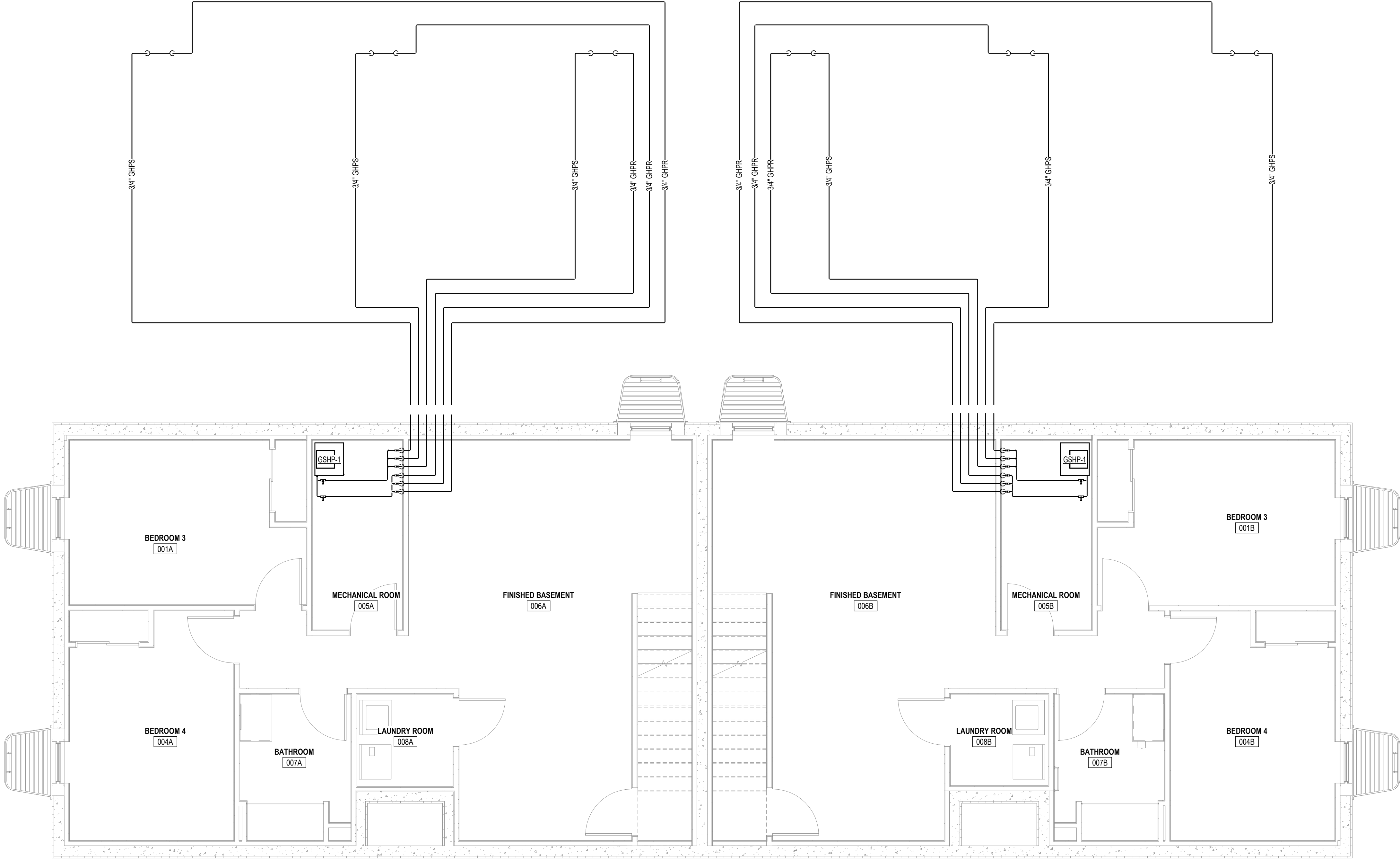
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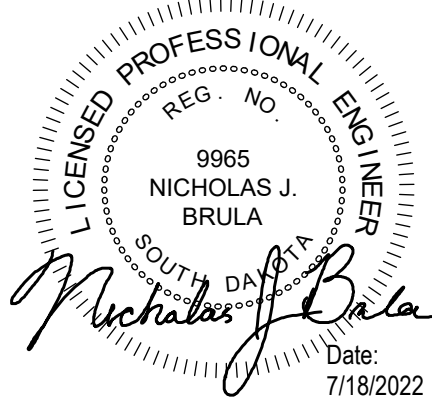
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FIRST FLOOR HVAC PLAN

M111



- GENERAL NOTES:
- A. ROUGH-IN AND FINAL CONNECT ALL HYDRONIC EQUIPMENT.
 - B. PROVIDE GROUND SOURCE HEAT PUMP PIPING MANIFOLD WITH ISOLATION VALVES FOR EACH LOOP.
 - C. ROUTE HYDRONIC PIPING BELOW GRADE TO VERTICAL LOOPS. LAYOUT IS DIAGRAMMATIC. SIZE, LAYOUT AND DEPTH OF VERTICAL LOOPS TO BE DETERMINED BY SPECIALTY SUBCONTRACTOR.



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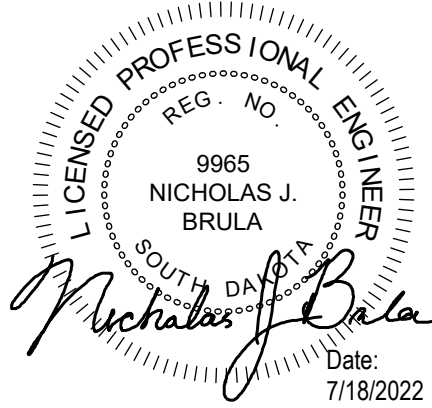
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HYDRONIC PIPING PLAN

M210



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Division of Engineering Services
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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS

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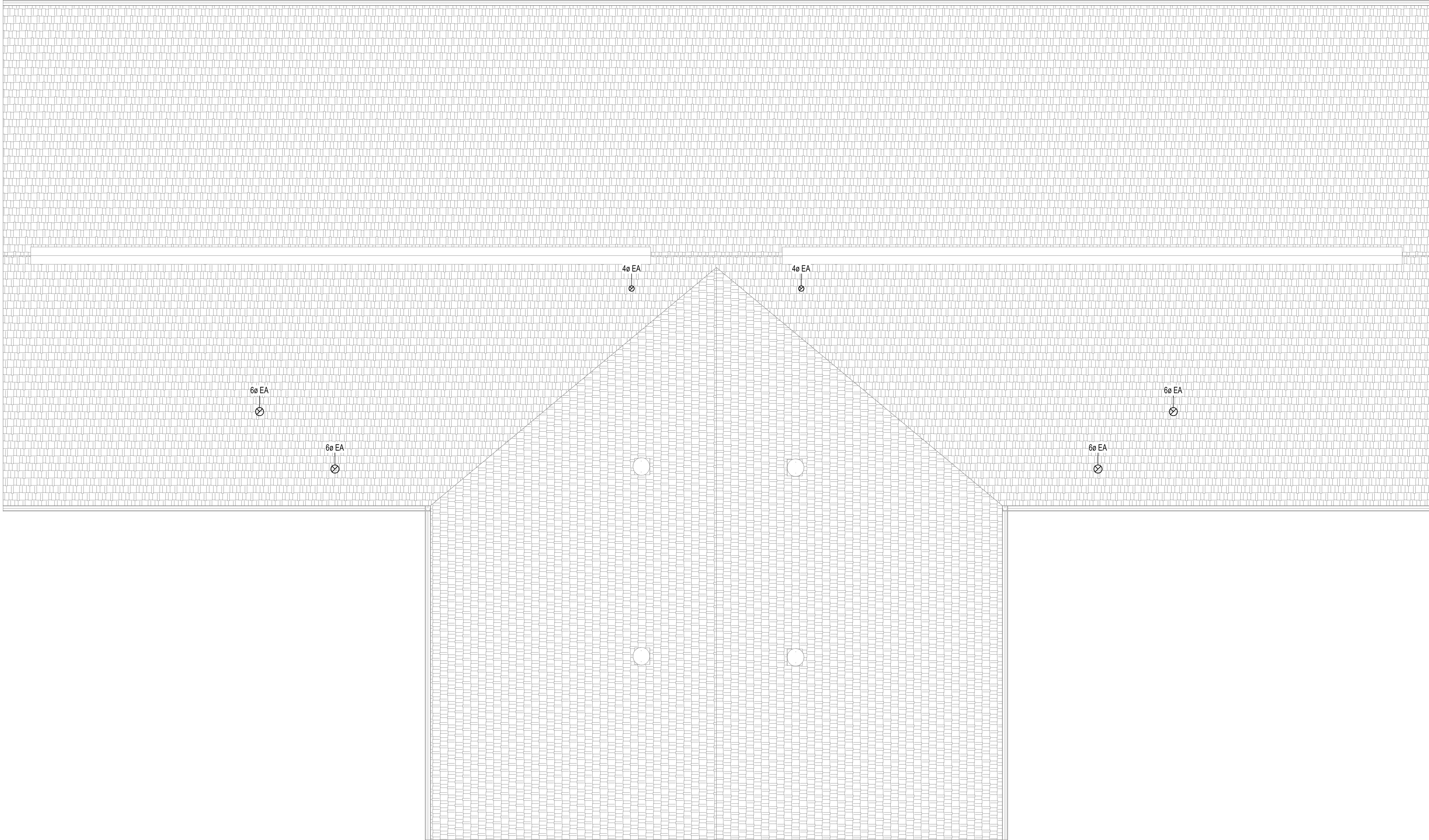
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ROOF MECHANICAL PLAN

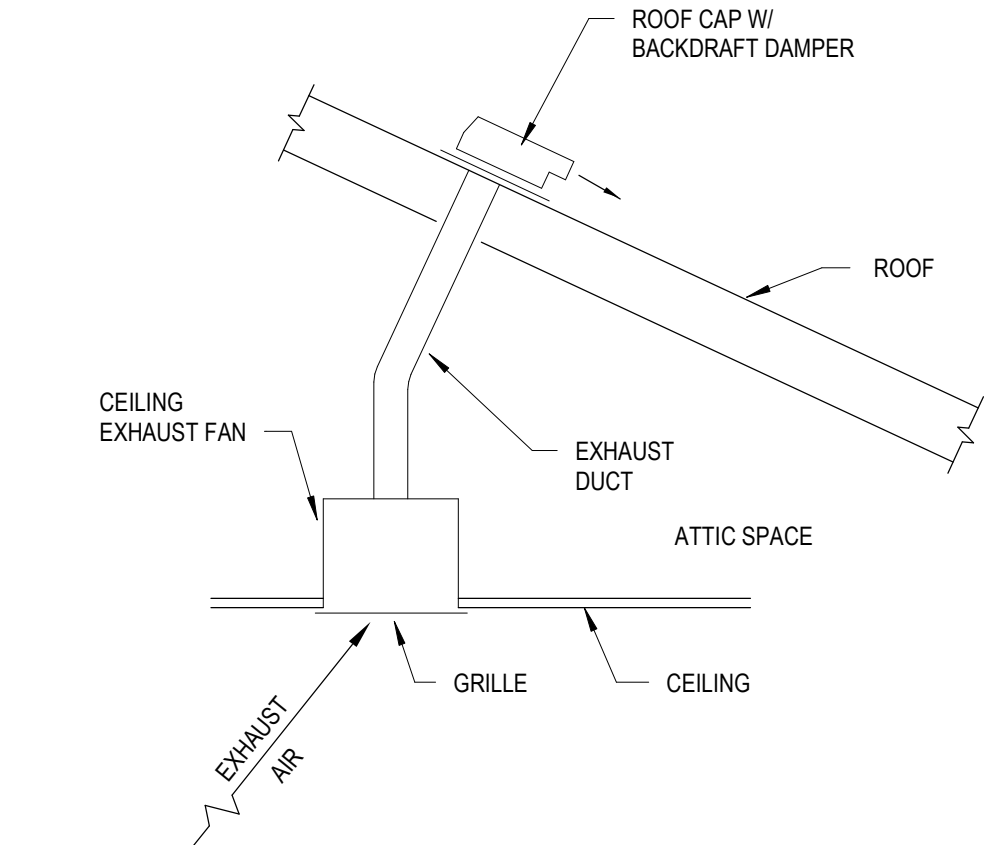
GENERAL NOTES:

- A. ALL EXHAUST LOCATIONS SHALL BE A MINIMUM OF 3'-0" AWAY FROM OPERABLE WINDOWS AND DOOR. EXHAUST LOCATIONS SHALL BE 10'-0" AWAY FROM POWERED INTAKES.
- B. PROVIDE GALVANIZED ROOF CAP VENT WITH INSECT SCREEN EQUIVALENT TO ARTIS MODEL# J-VENT FOR ROOF EXHAUST.

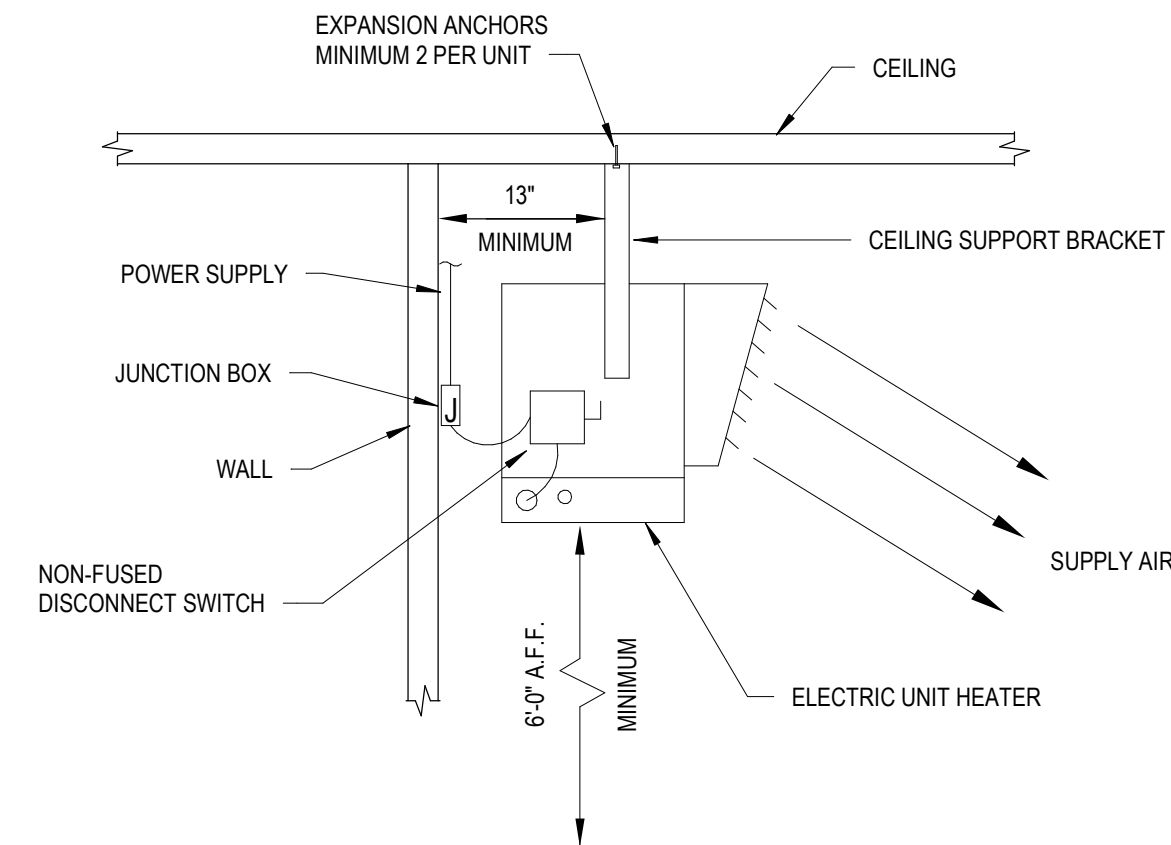


1 FLOOR_PLAN-HVAC-R
M301 1/4" = 1'-0"

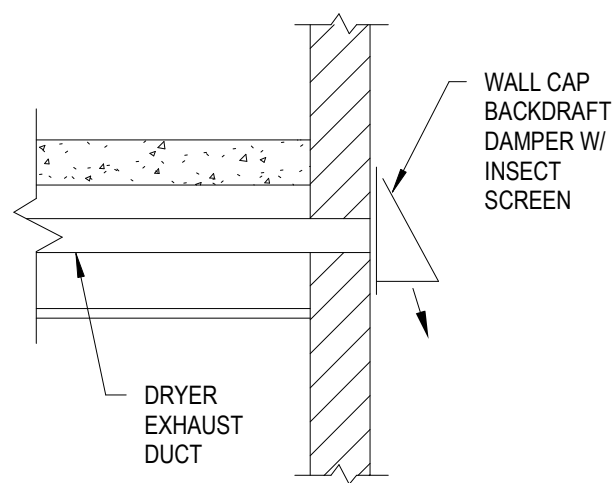
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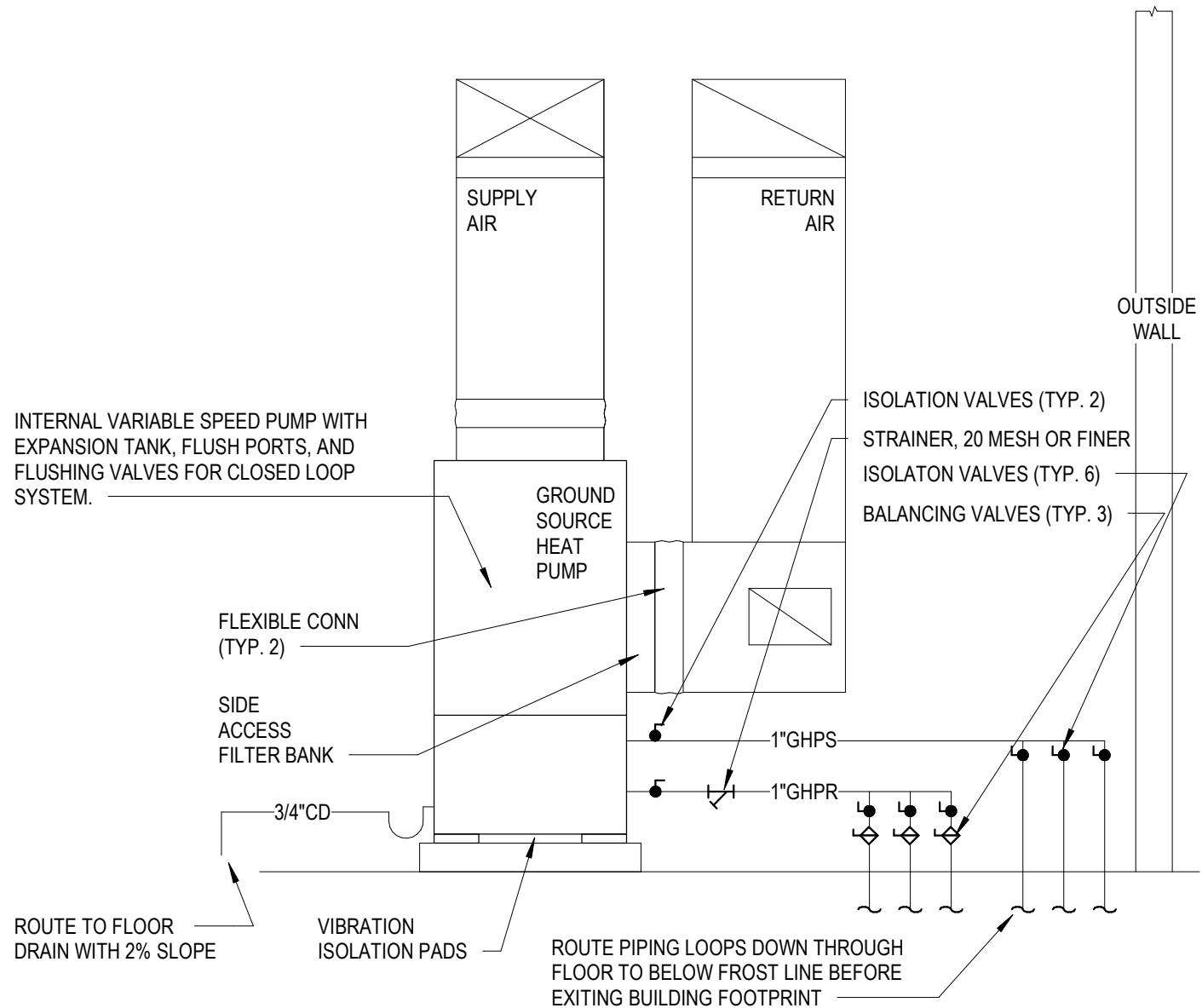
1 BATHROOM EXHAUST FAN WITH ROOF DISCHARGE
NOT TO SCALE



2 ELECTRIC UNIT HEATER CEILING MOUNT
NOT TO SCALE



3 SIDEWALL DISCHARGE
NOT TO SCALE



4 GROUND SOURCE HEAT PUMP PACKAGED UNIT
NOT TO SCALE



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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS

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MECHANICAL DETAILS

M601

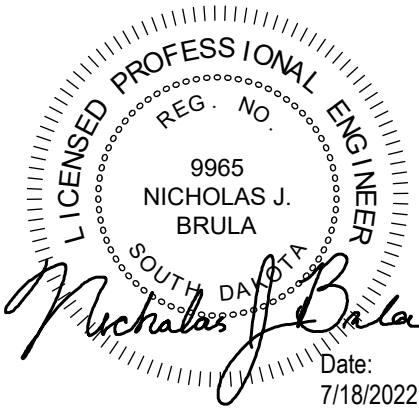
ASHRAE 62.1 / IMC VENTILATION RATE PROCEDURE CALCULATIONS													
UNIT	ZONE NAME	OCCUPANCY TYPE	AREA (SQFT)	AIR CHANGE / HOUR	OA CFM / PERSON	EXHAUST CFM	OCCUPANT QUANTITY	BREATHING ZONE OA CFM	DISTRIBUTION EFFECTIVENESS	CORRECTED OA CFM	PROVIDED OA CFM	TOTAL CFM	PERCENTAGE OA AT UNIT
GSHP1	DUPLEX	LIVING AREAS (4 BR)	4800	0.35	15	--	5	252	0.8	315	325	1600	20%
<div>NOTES:</div> <div>1) SUPPLY AIR USES MAXIMUM AIRFLOW PROVIDED TO THE ZONE FOR CONSTANT VOLUME SYSTEMS</div> <div>2) OCCUPANT QUANTITY DETERMINED PER IMC VENTILATION RATE TABLE.</div>													

GROUND SOURCE HEAT PUMP																						
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	SERVES	COOLING CYCLE					HEATING CYCLE				FAN SECTION			ELECTRICAL				FILTERS	NOTES	
				MBH	TOTAL TONS	ENT. AIR		WATER TEMP. (F)		MBH	AIR TEMP. (F)		WATER TEMP. (F)		CFM	E.S.P. (IN. W.G.)	HP	V/PH/CY	MCA			MOCP
						DB (F)	WB (F)	ENT.			HTG.	ENT.	ENT.									
GSHP-1	CLIMATEMASTER	VE1860	TENANT SPACE	48	4	80.6	66.2	77		60	68	32		1325	0.5	1	208/1/60	48.3	80	MERV 11	1-3	
GSHP-1	CLIMATEMASTER	VE1860	TENANT SPACE	48	4	80.6	66.2	77		60	68	32		1325	0.5	1	208/1/60	48.3	80	MERV 11	1-3	
<u>NOTES:</u> 1) PROVIDE 30% GLYCOL WATER MIXTURE. 2) INSTALL PER MANUFACTURER'S RECOMMENDED PRACTICES. 3) UNIT INCLUDES INTEGRAL PUMP, EXPANSION TANK, FLUSH PORTS, AND FLUSHING VALVES FOR CLOSED LOOP SYSTEM.																						

ELECTRIC UNIT HEATER SCHEDULE								
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	FAN	HEATER	ELECTRICAL		NOTES	
			CFM	KW	V/PH/CY	FLA		
UH-1	QMARK	MUH0581-PRO	350	5	208/1/60	24	1,2	
<div>NOTES:</div> <div>1)UNIT MOUNTED THERMOSTAT PROVIDED BY MANUFACTURER</div> <div>2)MOUNT IN CORNER AT 8 FT AFF</div>								

GRILLE - REGISTER - DIFFUSER SCHEDULE						
	SR-SUPPLY REGISTER	RG-RETURN GRILLE	CD-CEILING DIFFUSER	EG-EXHAUST GRILLE	TG-TRANSFER GRILLE	
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	SIZE	TYPE	FINISH	NOTES
SG-1	HART & COOLEY	682	VARIES	CEILING MOUNT	WHITE	1,2
SG-2	HART & COOLEY	411	VARIES	FLOOR MOUNT	WHITE	1,2
RG-1	HART & COOLEY	672	VARIES	CEILING MOUNT	WHITE	1
RG-2	HART & COOLEY	265	VARIES	FLOOR MOUNT	WHITE	1
<div>NOTES:</div> <div>1) NECK SIZE SHALL MATCH DUCT CONNECTION SIZE</div> <div>2) DAMPER SHALL BE ACCESSIBLE FROM GRILLE FACE</div>						

FAN SCHEDULE									
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	SERVES	LOCATION	CFM	E.S.P. (IN. W.G.)	ELECTRICAL		NOTES
							AMPS	V/PH/CY	
EF-1	BROAN	AE100K	RESTROOM	CEILING	75	0.25	0.3	120/1/60	1,2
<div>NOTES:</div> <div>1)FAN CONTROLLED BY WALL SWITCH PER DIVISION 26</div> <div>2)PROVIDE MANUFACTURERS INTEGRAL DISCONNECT SWITCH</div>									



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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS

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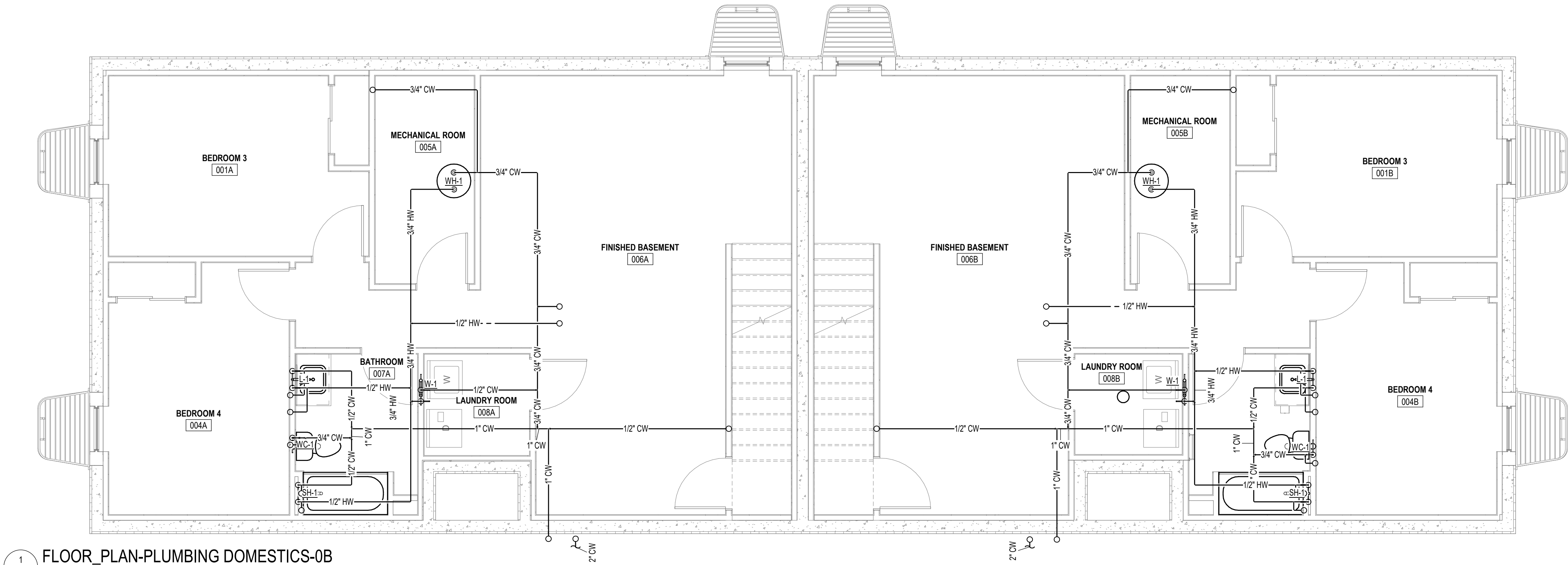
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MECHANICAL SCHEDULES

M701

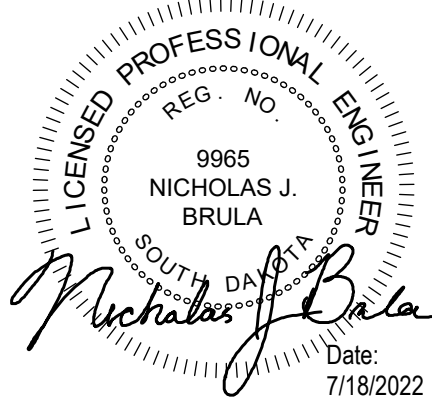


1 FLOOR_PLAN-PLUMBING DOMESTICS-0B
P110 1/4" = 1'-0"

- GENERAL NOTES:**
- A. ROUGH-IN AND FINAL CONNECT ALL FIXTURES AND EQUIPMENT.
 - B. WHERE POSSIBLE, AVOID RUNNING PIPING IN EXTERIOR WALL ASSEMBLIES.
 - C. PROVIDE WATER METER AT CONNECTION TO DOMESTIC WATER UTILITY FOR EACH TENANT SPACE PER AHJ REQUIREMENTS.
 - D. REFER TO WATER HEATER DETAIL FOR PIPING AND EQUIPMENT LAYOUT IN MECHANICAL ROOM.
 - E. WASHER WALL BOX SHOWN ON BACK OF WASHER-DRYER CLOSET. WALL BOX MAY BE FIELD LOCATED ON SIDE WALL OF CLOSET FOR EASE OF ACCESS IF SELECTED WASHER IS CAPABLE OF CONNECTING TO SIDE LOCATION.
 - F. PROVIDE WATER HAMMER ARRESTORS AT EACH FIXTURE AND BATTERY OF FIXTURES WHERE QUICK CLOSING VALVES ARE INSTALLED. SIZE PER PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH 201.
 - G. PROVIDE ASSE 1070 POINT OF USE THERMOSTATIC MIXING VALVES AT HAND SINKS AND LAVATORIES TO TEMPER HOT WATER TO 105 DEG F.



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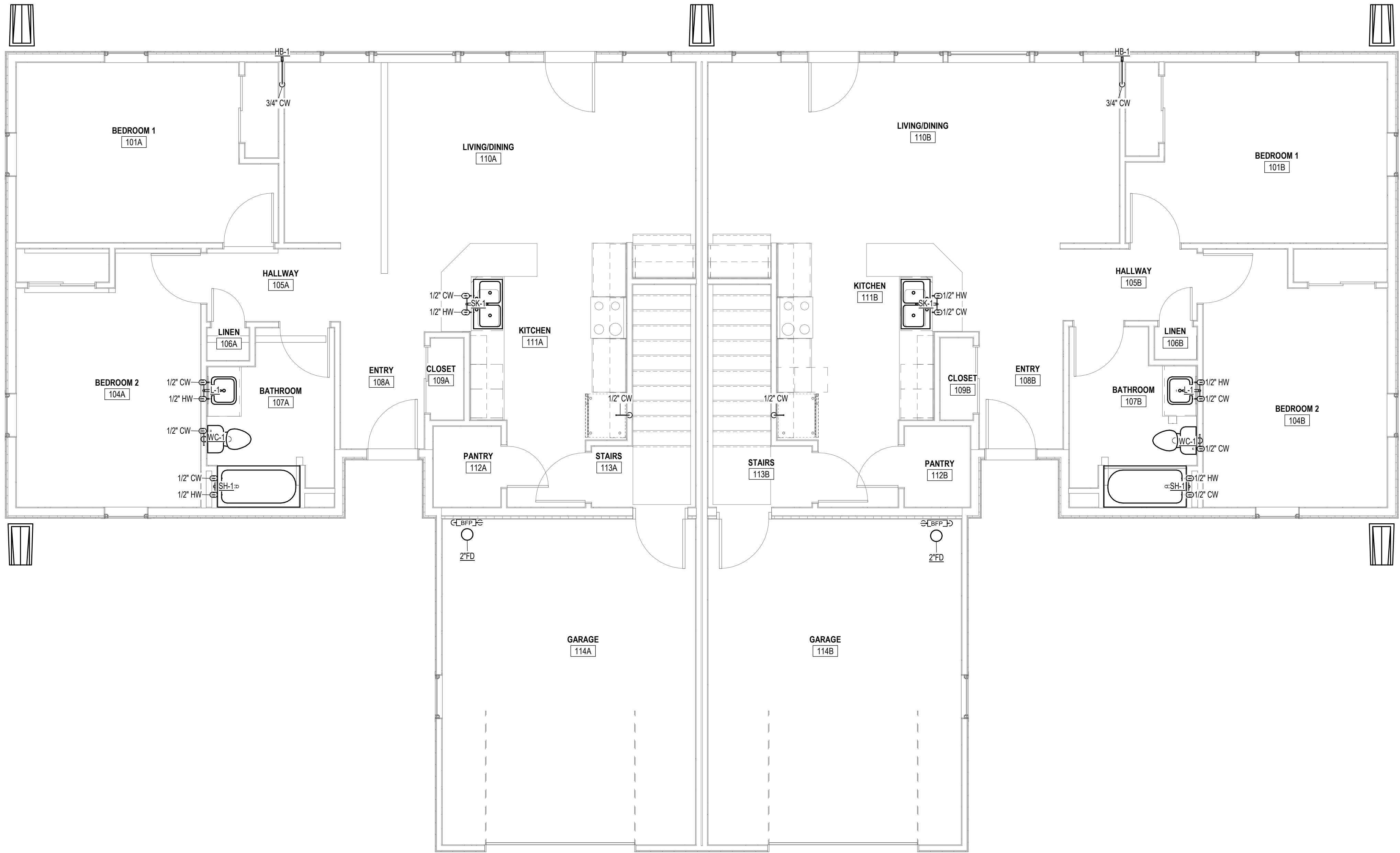
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BASEMENT DOMESTIC
WATER PLAN



- GENERAL NOTES:
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 - B. WHERE POSSIBLE, AVOID RUNNING PIPING IN EXTERIOR WALL ASSEMBLIES.
 - C. PROVIDE WATER METER AT CONNECTION TO DOMESTIC WATER UTILITY FOR EACH TENANT SPACE PER AHJ REQUIREMENTS.
 - D. PROVIDE BACKFLOW PREVENIER AND ISOLATION VALVES FOR EACH TENANT SPACE IN GARAGE.
 - E. PROVIDE PIPING CONNECTION FOR NFPA 13D FIRE SPRINKLER SYSTEM. COORDINATE SIZE AND LOCAITON WITH FIRE PROTECTION SUBCONTRACTOR.
 - F. PROVIDE WATER HAMMER ARRESTORS AT EACH FIXTURE AND BATTERY OF FIXTURES WHERE QUICK CLOSING VALVES ARE INSTALLED. SIZE PER PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH 201.
 - G. PROVIDE ASSE 1070 POINT OF USE THERMOSTATIC MIXING VALVES AT HAND SINKS AND LAVATORIES TO TEMPER HOT WATER TO 105 DEG F.
 - H. PROVIDE ASSE 1032 DUAL CHECK VALVE BACKFLOW PREVENTER AT DISHWASHER AND REFRIGERATOR EQUIVALENT TO WATTS MODEL# SD-2.



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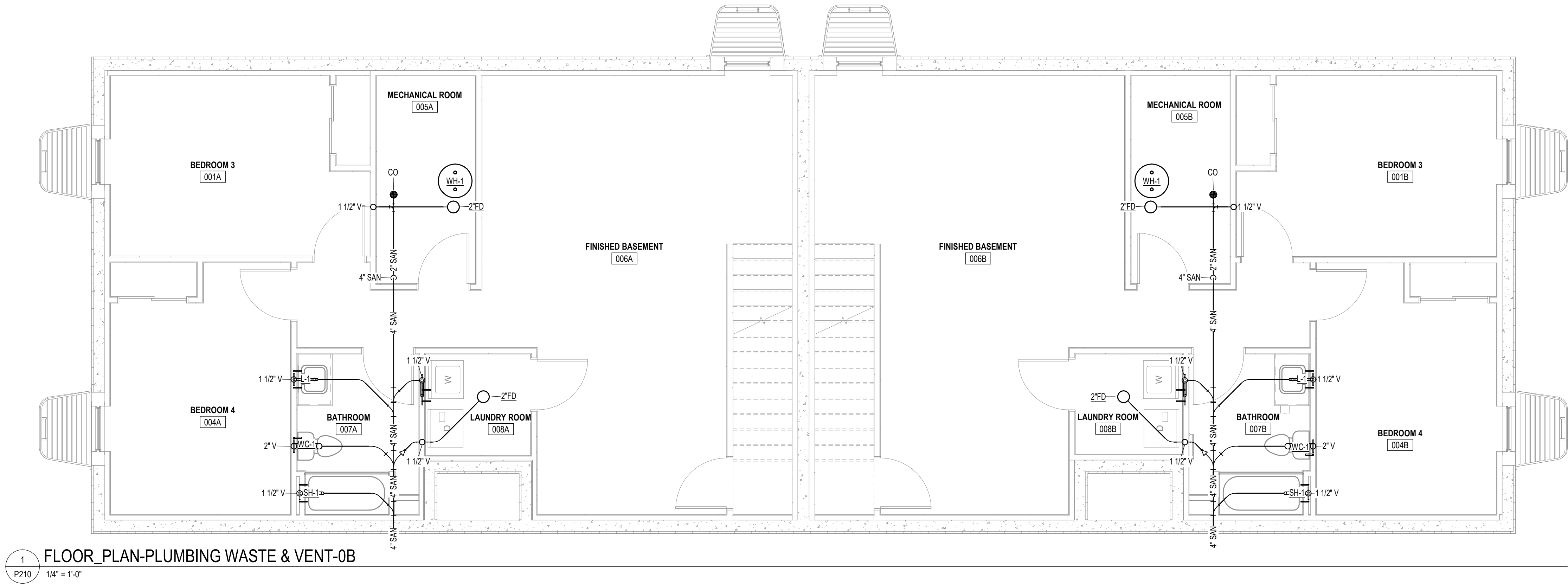
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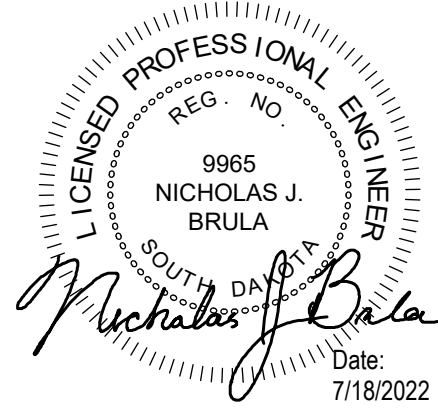
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FIRST FLOOR DOMESTIC
WATER PLAN

7/15/2022 4:10:49 PM



- GENERAL NOTES:
- A. ROUGH-IN AND FINAL CONNECT ALL FIXTURES AND EQUIPMENT.
 - B. WHERE POSSIBLE, AVOID RUNNING PIPING IN EXTERIOR WALL ASSEMBLIES.
 - C. SLOPE ALL SANITARY DRAIN PIPING 2% DOWN IN DIRECTION OF FLOW.
 - D. ALL VTR'S SHALL BE POSITIONED A MINIMUM OF 15 FT FROM ANY OUTSIDE AIR INTAKE.
 - E. PROVIDE TRAP PRIMER TO EACH FLOOR DRAIN. ALL ASSOCIATED VALVES SHALL BE FULLY ACCESSIBLE.



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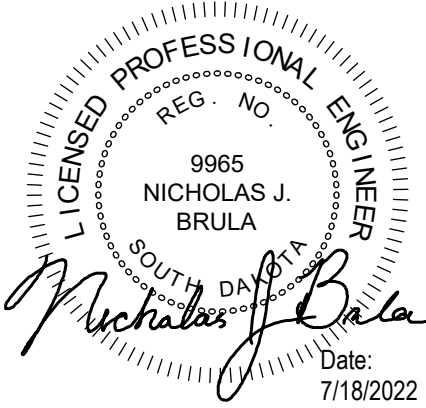
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BASEMENT SANITARY
WASTE AND VENT PLAN

- GENERAL NOTES:
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- B. WHERE POSSIBLE, AVOID RUNNING PIPING IN EXTERIOR WALL ASSEMBLIES.
- C. PROVIDE WATER METER AT CONNECTION TO DOMESTIC WATER UTILITY FOR EACH TENANT SPACE PER AHJ REQUIREMENTS.
- D. PROVIDE BACKFLOW PREVENTER AND ISOLATION VALVES FOR EACH TENANT SPACE IN GARAGE.
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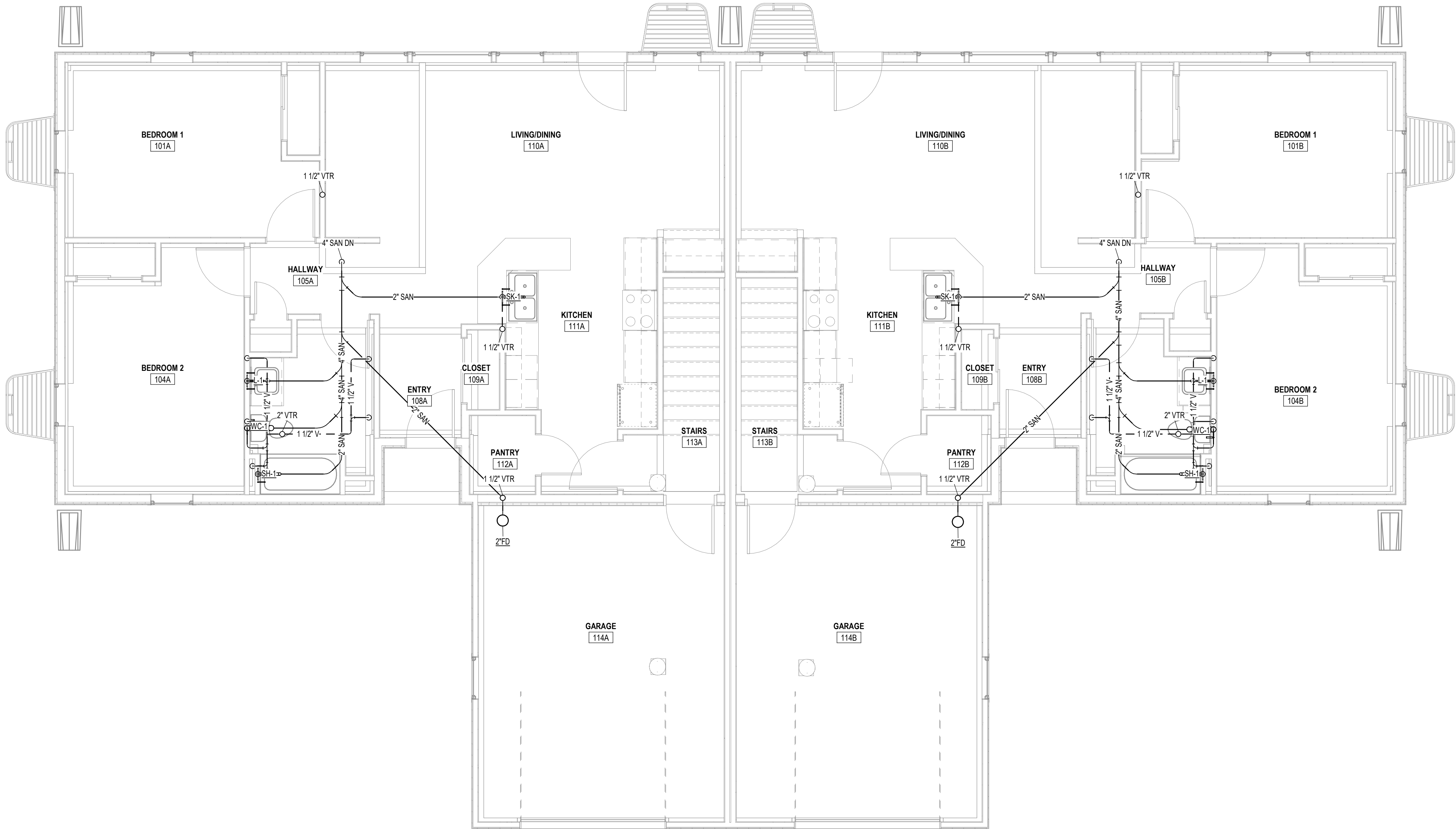
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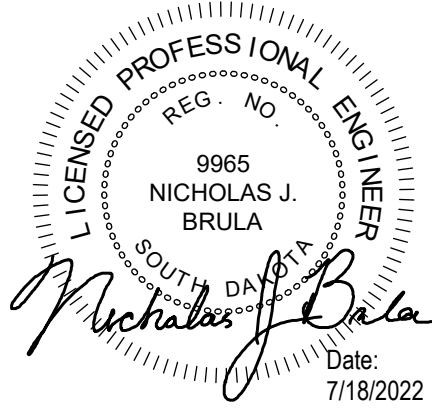
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FIRST FLOOR SANITARY
WASTE AND VENT PLAN

P211



1 FLOOR_PLAN-PLUMBING WASTE & VENT-01
P211 1/4" = 1'-0"



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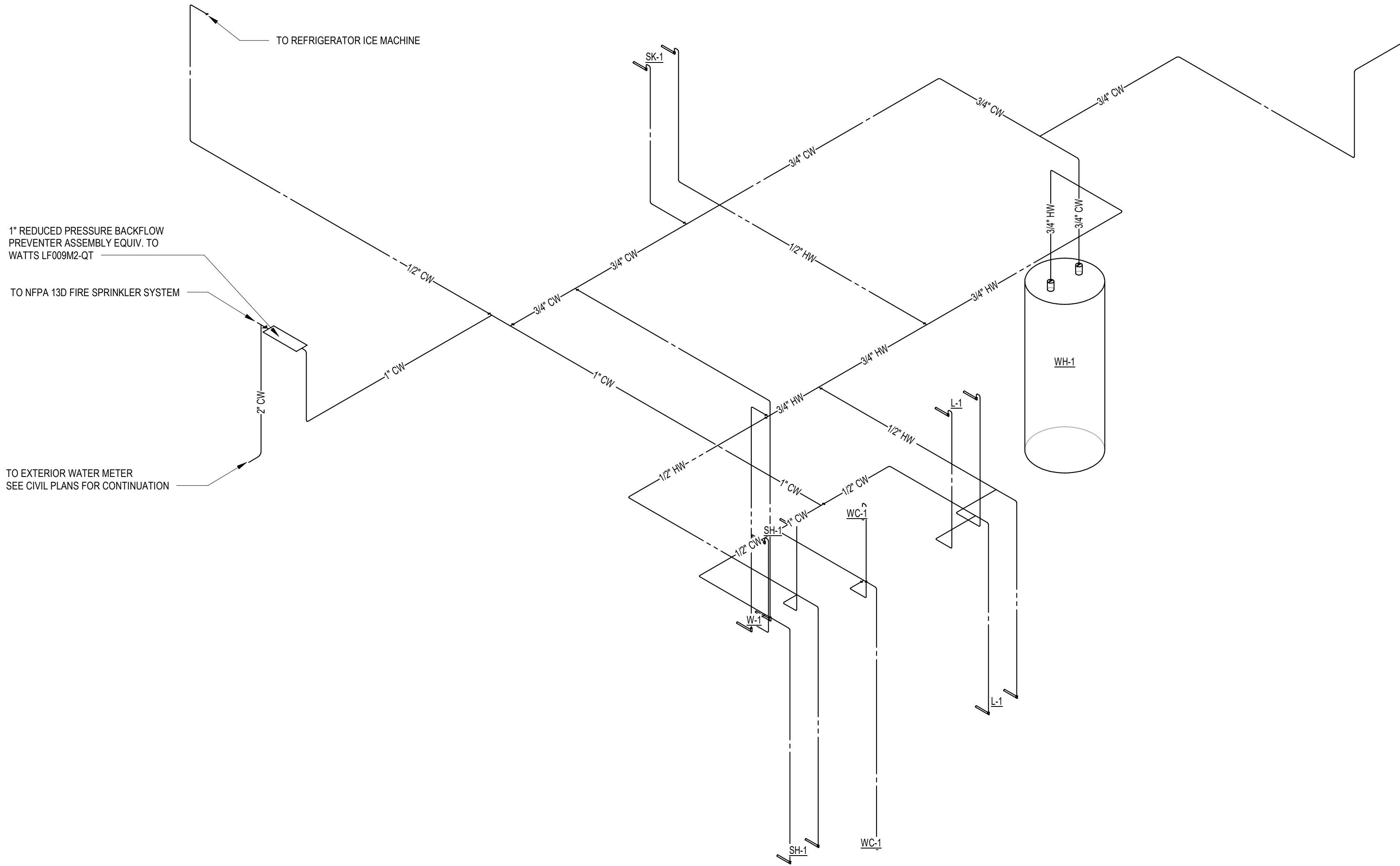
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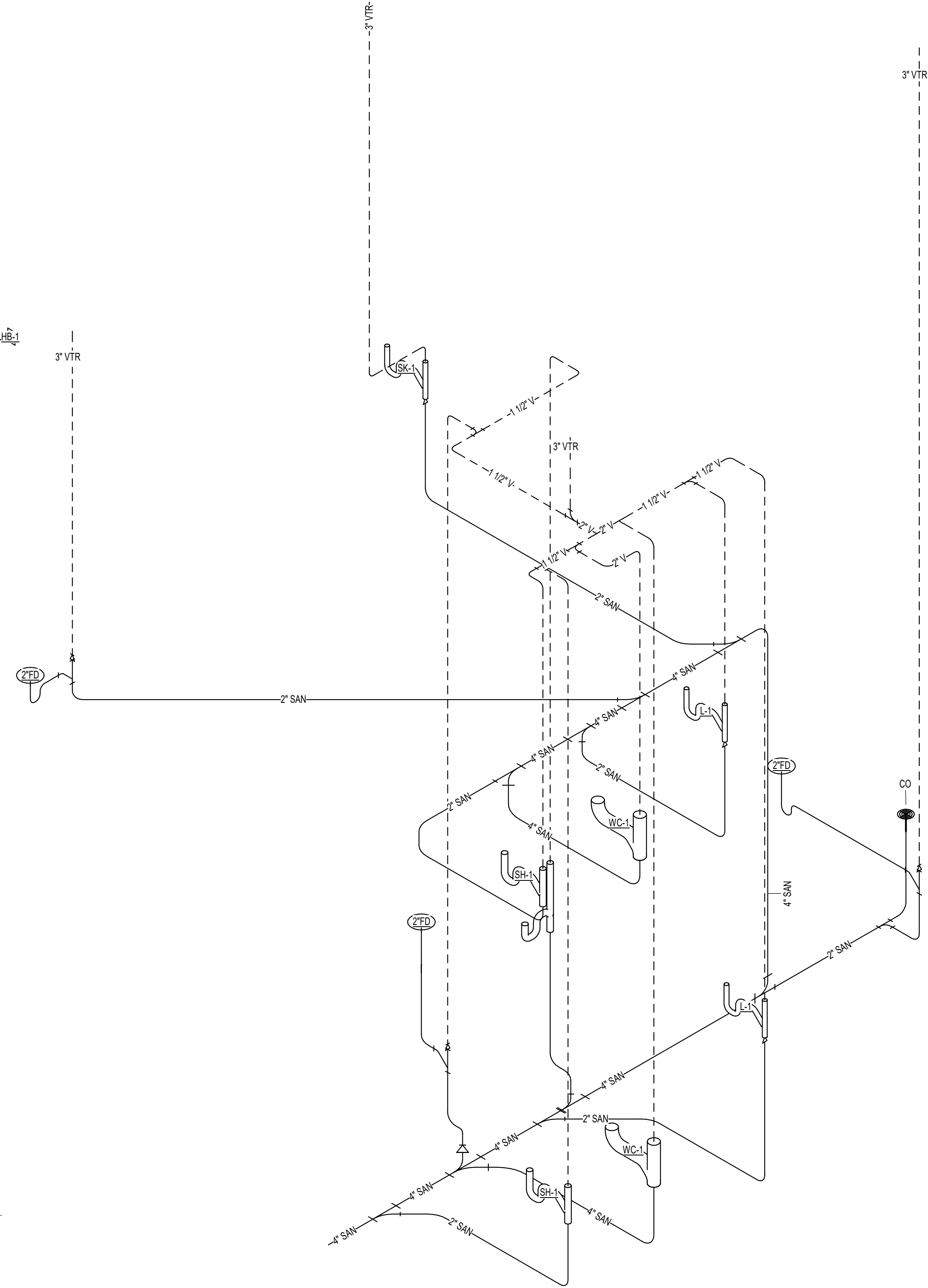
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PLUMBING RISER
DIAGRAMS

P401

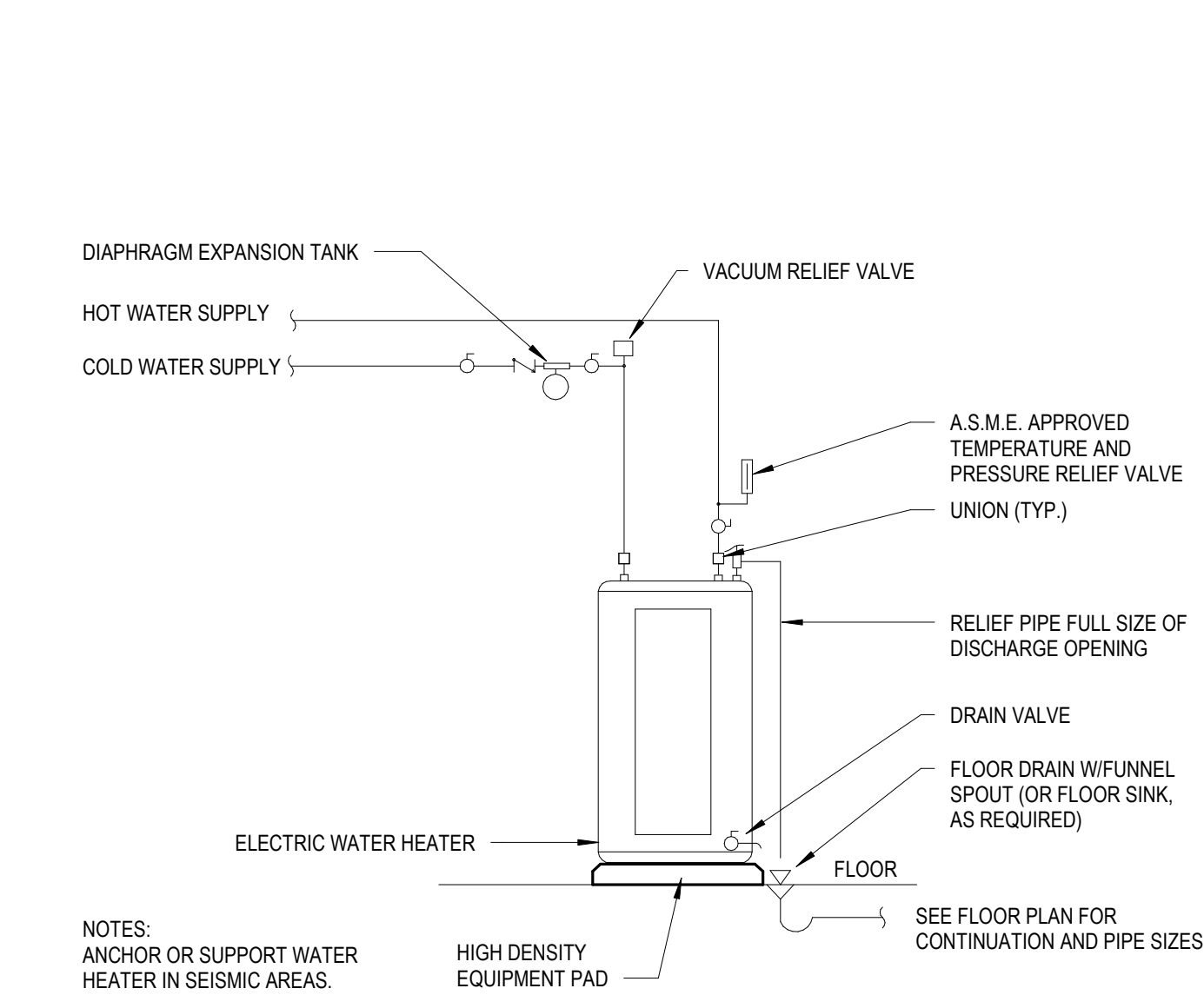


1 DOMESTIC WATER RISER
P401

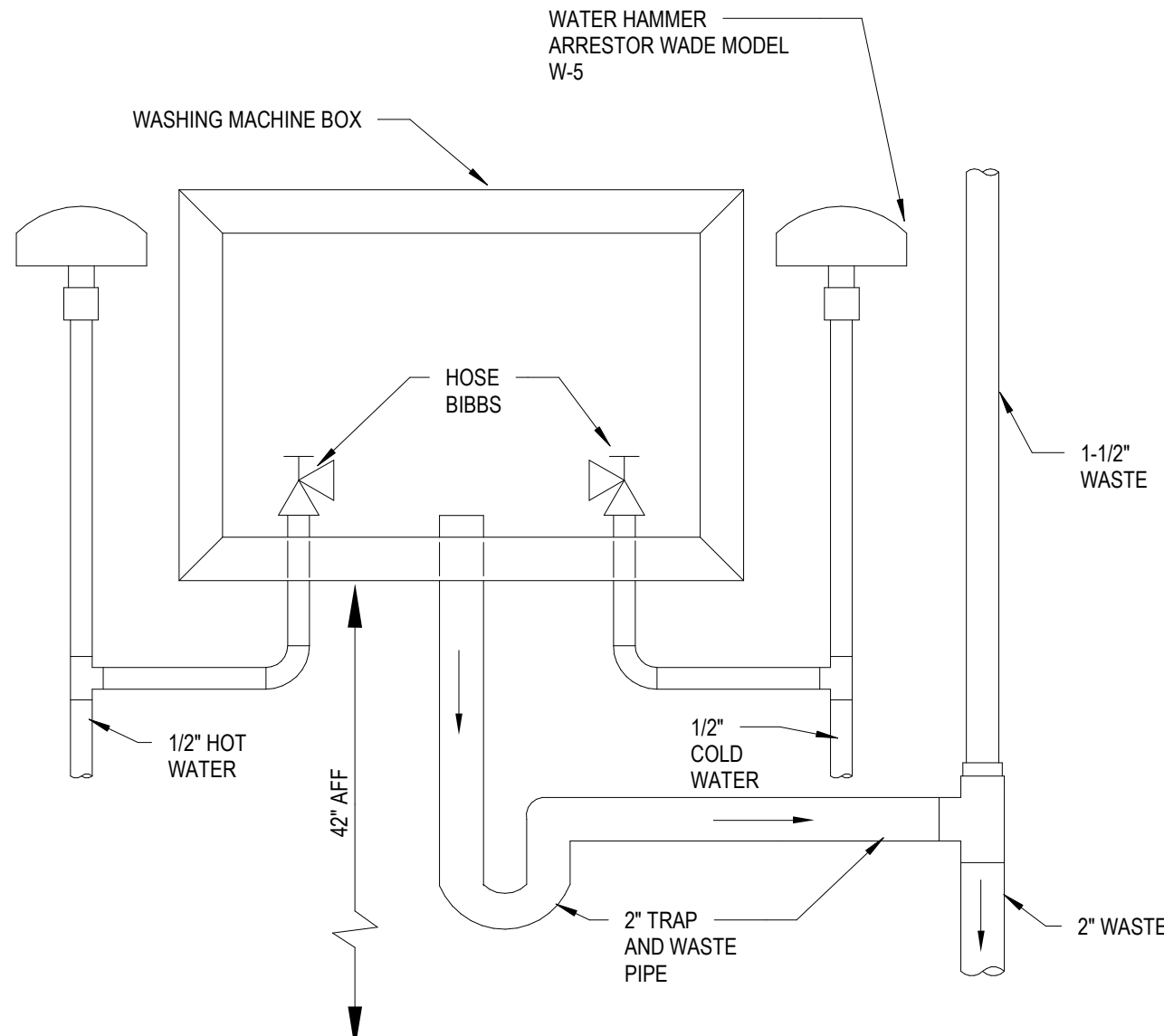


2 SANITARY WASTE AND VENT RISER
P401

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1 ELECTRIC WATER HEATER
NOT TO SCALE



2 WASHING MACHINE BOX
NOT TO SCALE

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PROFESSIONAL ENGINEER

REG. NO. 9965

NICHOLAS J. BRULA

SOUTH DAKOTA

Nicholas J. Brula

Date: 7/18/2022

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PLUMBING DETAILS

P501

WATER PIPE SIZE ANALYSIS										
QUANTITY	PHASE	FIXTURE	FIXTURE (WSFU)			TOTAL (WSFU)			FIXTURE (DFU)	TOTAL (DFU)
			CW	HW	TOTAL SUPPLY	CW	HW	TOTAL SUPPLY	DRAIN	DRAIN
2	NEW	BATHTUB, PRIVATE	1.0	1.0	1.4	2.0	2.0	2.8	2.0	4.0
1	NEW	DISHWASHING MACHINE	-	1.4	1.4	-	1.4	1.4	2.0	2.0
1	NEW	KITCHEN SINK, PRIVATE	1.0	1.0	1.4	1.0	1.0	1.4	2.0	2.0
2	NEW	LAVATORY, PRIVATE	0.5	0.5	0.7	1.0	1.0	1.4	1.0	2.0
2	NEW	WATER CLOSET, PRIVATE FLUSH TANK	2.2	-	2.2	4.4	-	4.4	3.0	6.0
1	NEW	HOSE BIBB	1.0	1.0	1.4	1.0	1.0	1.4	-	-
2	NEW	FLOOR DRAIN	-	-	-	-	-	-	2.0	4.0
NOTES:										
1) BASED ON IPC APPENDIX E TABLE E103.3 AND CHAPTER 7 TABLE 709.1										
2) THE FOLLOWING PIPE SIZING IS BASED ON IPC APPENDIX E E201.1 AND CHAPTER 7 TABLE 710.1(1)										
DEMAND SUMMARY										
EXISTING DEMAND			-	WSFU	-		GPM	-		DFU
REMOVED DEMAND			-	WSFU				-		DFU
ADDED DEMAND			12.8	WSFU				20.0		DFU
IRRIGATION DEMAND			10.0	GPM						
TOTAL FINAL DEMAND			12.8	WSFU	16.4		GPM	20.0		DFU
PRESSURE LOSSES AND PIPE SIZING										
HIGHEST FIXTURE Δ ELEVATION			6.0	FT	LONGEST MEASURED PIPE LENGTH				75.0	FT
Δ ELEVATION PRESSURE LOSS			3.0	PSI	MAXIMUM DEVELOPED LENGTH (MDL)				90.0	FT
WATER METER PRESSURE LOSS			11.0	PSI	AVAILABLE PRESSURE AT CONNECTION				70.0	PSIG
WATER SOFTENER PRESSURE LOSS			-	PSI	TOTAL PRESSURE LOSSES				37.0	PSI
BACKFLOW DEVICE PRESSURE LOSS			15.0	PSI	AVAILABLE PRESSURE				33.0	PSIG
PRESSURE REQUIRED AT MOST REMOTE FIXTURE			8.0	PSI	METER AND SERVICE SIZE			0.75	IN	
					MAIN DISTRIBUTION PIPE SIZE			1.00	IN	
TOTAL PRESSURE LOSSES			37.0	PSI	MAIN SANITARY DRAIN PIPE SIZE			3.0	IN	
DISTRIBUTION PIPE SIZE (INCHES)			1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	
WSFU @ MDL			1.5	5.5	16.5	32	87	87	533	
DRAINAGE PIPE SIZE (INCHES)			1 1/2	2	2 1/2	3	4	6	8	
DFU @ 1/4 INCH PER FOOT SLOPE			3	21	24	42	216	480	1920	

PLUMBING FIXTURE SCHEDULE									
FIXTURE NUMBER	MANUFACTURER	MODEL NUMBER	DESCRIPTION	PIPING CONNECTIONS					NOTES
				TRAP	WASTE	VENT	C.W.	H.W.	
SK 1	ELKAY	ELUHH3118TPDBG	KITCHEN SINK - UNDERMOUNT	2"	2"	1 1/2"	1/2"	1/2"	1
L 1	KOHLER	K-2882	LAVATORY - UNDERMOUNT	2"	2"	1 1/2"	1/2"	1/2"	2
WC 1	TOTO	MS853113E	WATER CLOSET, FLUSH VALVE	3"	3"	2"	1"	-	3
HB 1	WOODFORD	19	HOSE BIBB	-	-	-	1"	-	4
FD	J.R. SMITH	DX2005-BS	FLOOR DRAIN	SEE PLANS	SEE PLANS	1 1/2"	-	-	5
FCO	J.R. SMITH	4240/4243	FLOOR CLEAN OUT	SEE PLANS	SEE PLANS	-	-	-	-
WCO	J.R. SMITH	4532S	WALL CLEAN OUT	SEE PLANS	SEE PLANS	-	-	-	-
TMV	WATTS	LFUSG-B	THERMOSTATIC MIXING VALVE	-	-	-	3/8"	3/8"	6
NOTES:									
1) UNDERMOUNT, 2-COMPARTMENT, STAINLESS STEEL, ADA COMPLIANT, WATERSENSE LISTED FAUCET: ELKAY LKAV3032, TRAP ARM, P-TRAP, 3/8" FLEX SUPPLIES WITH STOPS.									
2) UNDERMOUNT, CHINA, RECTANGULAR SINGLE COMPARTMENT, SINGLE LEVER FAUCET EQUAL TO PFISTER ZEELAN 1 HANDLER									
4" CENTER SET (1.2 GPM), CHROME, PROVIDE POPE UP WASTE, P-TRAP AND WALL ARM. 3/8" FLEX SUPPLIES WITH STOPS.									
INSULATE EXPOSED DRAIN AND HOT WATER PIPING WITH BROCAR.									
3) FLOOR MOUNT, CHINA, ADA COMPLIANT, WATERSENSE LISTED FLUSH TANK, ELONGATED SEAT.									
4) OUTDOOR, FREEZE-PROOF, KEY-TYPE									
5) CAST IRON BODY AND P-TRAP, PROVIDE PROSET TRAP GUARD									
6) INSTALL DOWNSTREAM OF FIXTURE STOPS									

ELECTRIC WATER HEATER SCHEDULE										
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	CAPACITY (GAL)	GPM @ TEMP RISE	WATER CONNECTION	KW	V/PH/CY	AMPERAGE	WEIGHT LBS	NOTES
WH-1	RHEEM	XE50M06ST45U1	50	21	3/4"	4.5	240/1/60	25	100	1-3
NOTES:										
1) ALL ELEMENTS RUN SIMULTANEOUSLY, KW LISTED IS FOR ALL ELEMENTS BEING ON										
2) PROVIDE SINGLE POINT ELECTRICAL POWER CONNECTION WITH FACTORY INSTALLED FUSED DISCONNECT FOR HEATING ELEMENTS AND CONTROLS										
3) PROVIDE PIPING AND APPURTENANCES PER DETAIL.										



PROFESSIONAL ENGINEER

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SEATTLE, WASHINGTON

7/18/2022

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


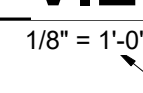

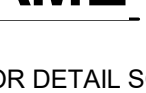



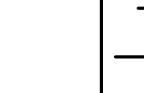
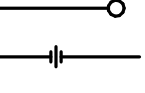
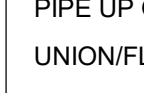
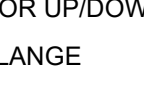






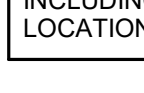
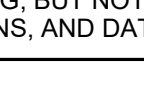
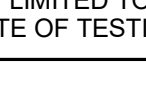
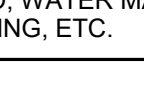
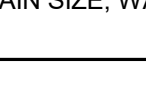
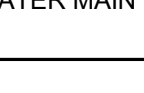
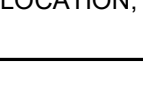
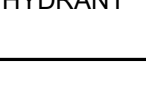
















SEH Project
Checked By
Drawn By

164945
M.MASSA
C.ELSNER

Project Status
CONSTRUCTION
DOCUMENTS

Issue Date
07.18.2022

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

VIEW KEY	
 NAME 10'-0" → HEIGHT ABOVE PROJECT 0'-0"	 INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL
                                         	

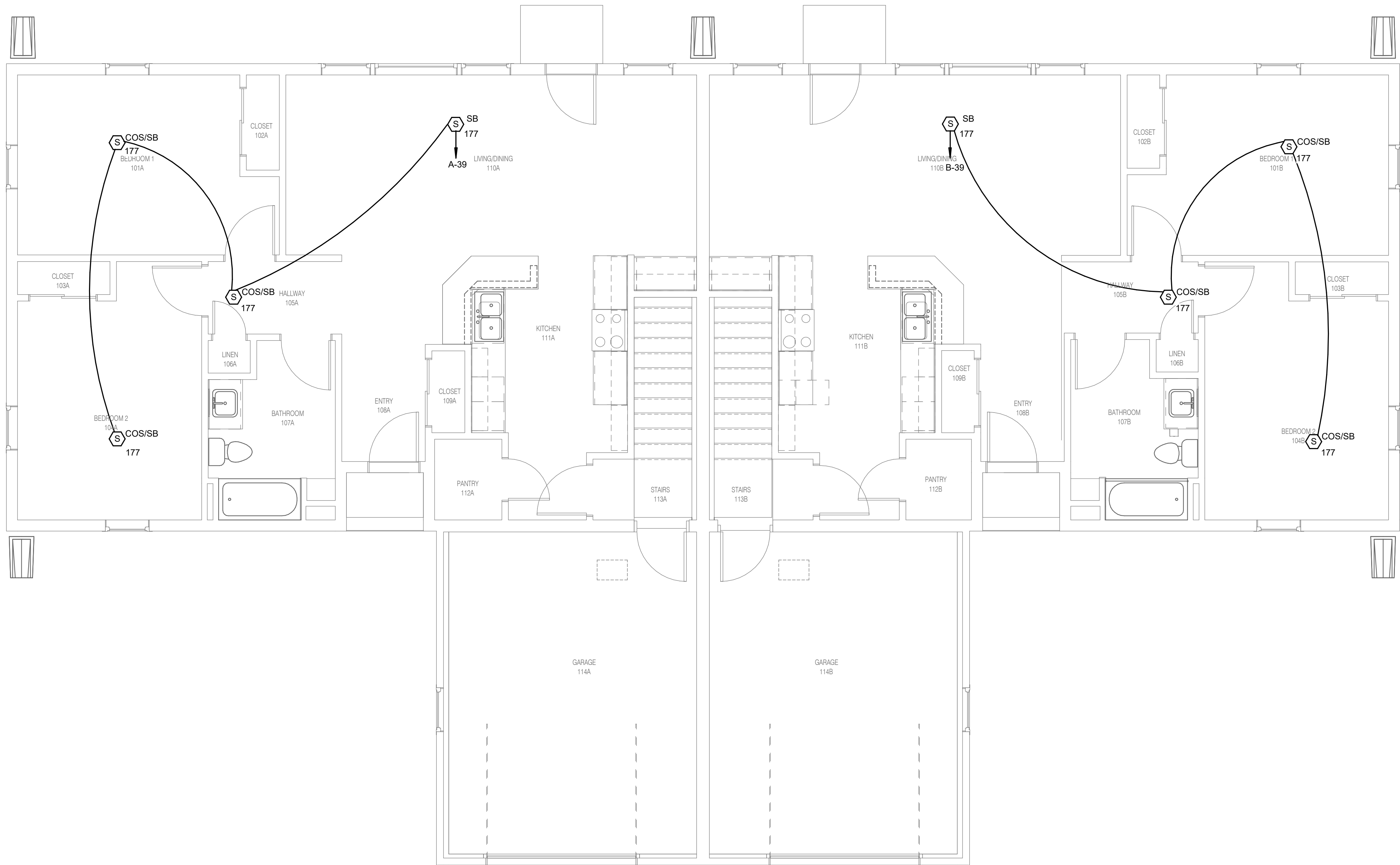
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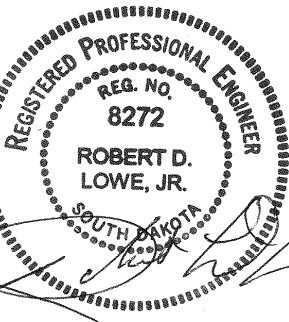
FLOOR PAN - GROUND FLOOR - SITE A - FIRE ALARM

1/4" = 1'-0"



SHEET NOTES:

1. REFER TO SHEET F000 FOR FIRE ALARM SYMBOL LIST.
2. DETECTORS TO BE HARDWIRED TOGETHER WITH 2#18 CONDUCTOR & 1#18 INTERCONNECT WIRE AND POWERED VIA 15A/1P RED HANDLED, LOCKED BREAKER FROM ELECTRICAL PANEL IN EACH UNIT.
3. FOLLOW MANUFACTURER RECOMMENDATIONS FOR DETECTOR INSTALLATION.



Project Owner
Indian Health Service (IHS)
Department of Health and Human Services
Division of Engineering Services
701 Fifth Avenue, MS 24, Suite 1600
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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS

701 FIFTH AVENUE, MS 24,
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FLOOR PLAN - GROUND
FLOOR - SITE A - FIRE
ALARM

FA101A

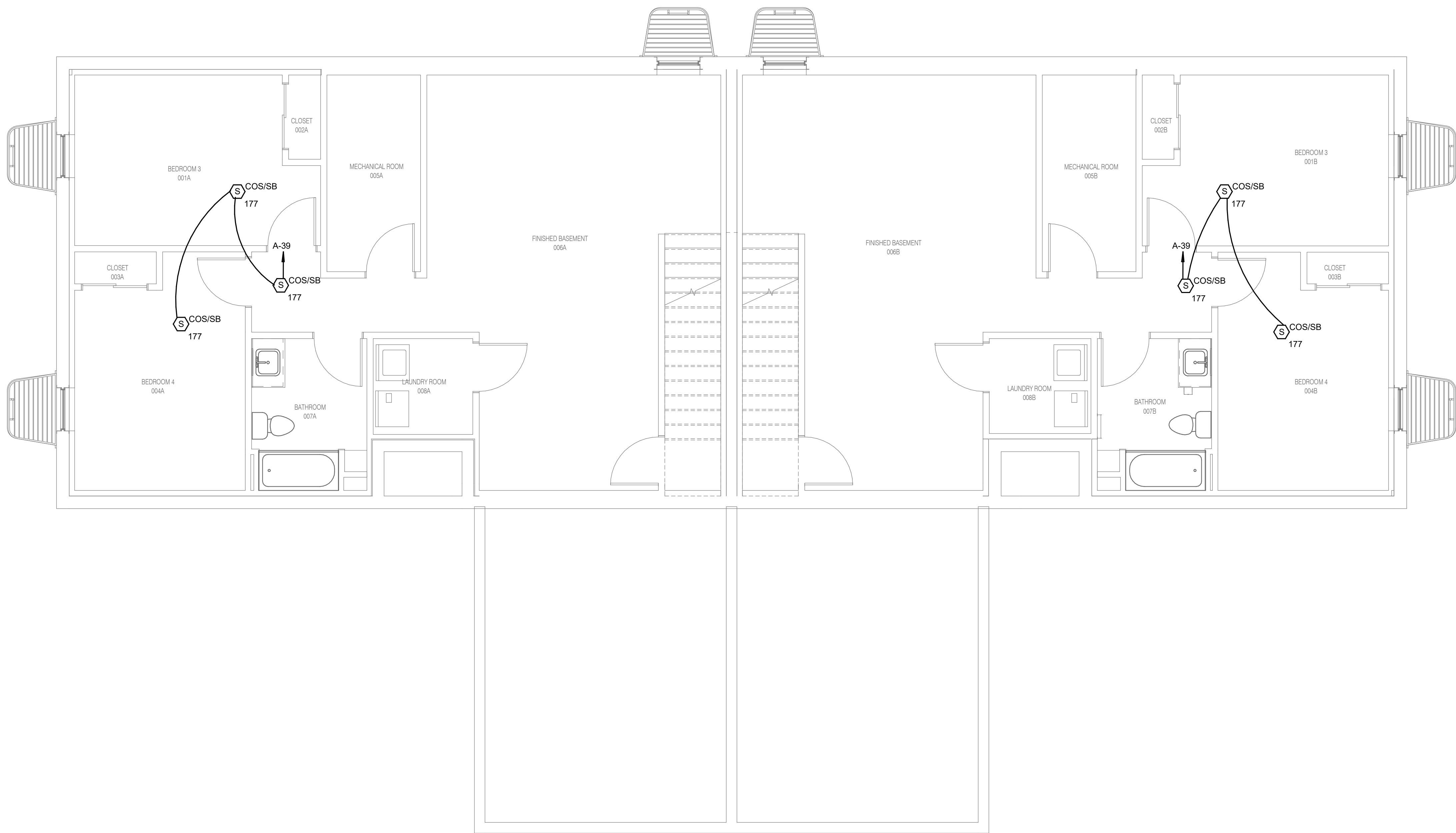
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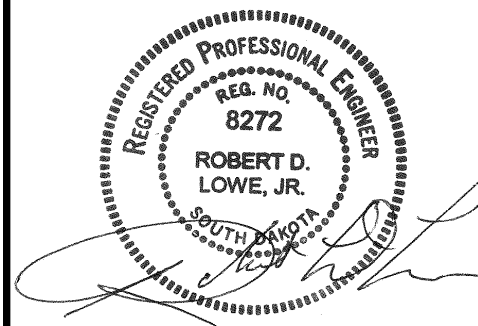
FLOOR PLAN - BASEMENT - SITE A - FIRE ALARM

1/4" = 1'-0"



SHEET NOTES:

1. REFER TO SHEET F000 FOR FIRE ALARM SYMBOL LIST.
2. DETECTORS TO BE HARDWIRED TOGETHER WITH 2#18 CONDUCTOR & 1#18 INTERCONNECT WIRE AND POWERED VIA 15A/1P RED HANDLED, LOCKED BREAKER FROM ELECTRICAL PANEL IN EACH UNIT.
3. FOLLOW MANUFACTURER RECOMMENDATIONS FOR DETECTOR INSTALLATION.



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FLOOR PLAN - BASEMENT -
SITE A - FIRE ALARM

FA102A

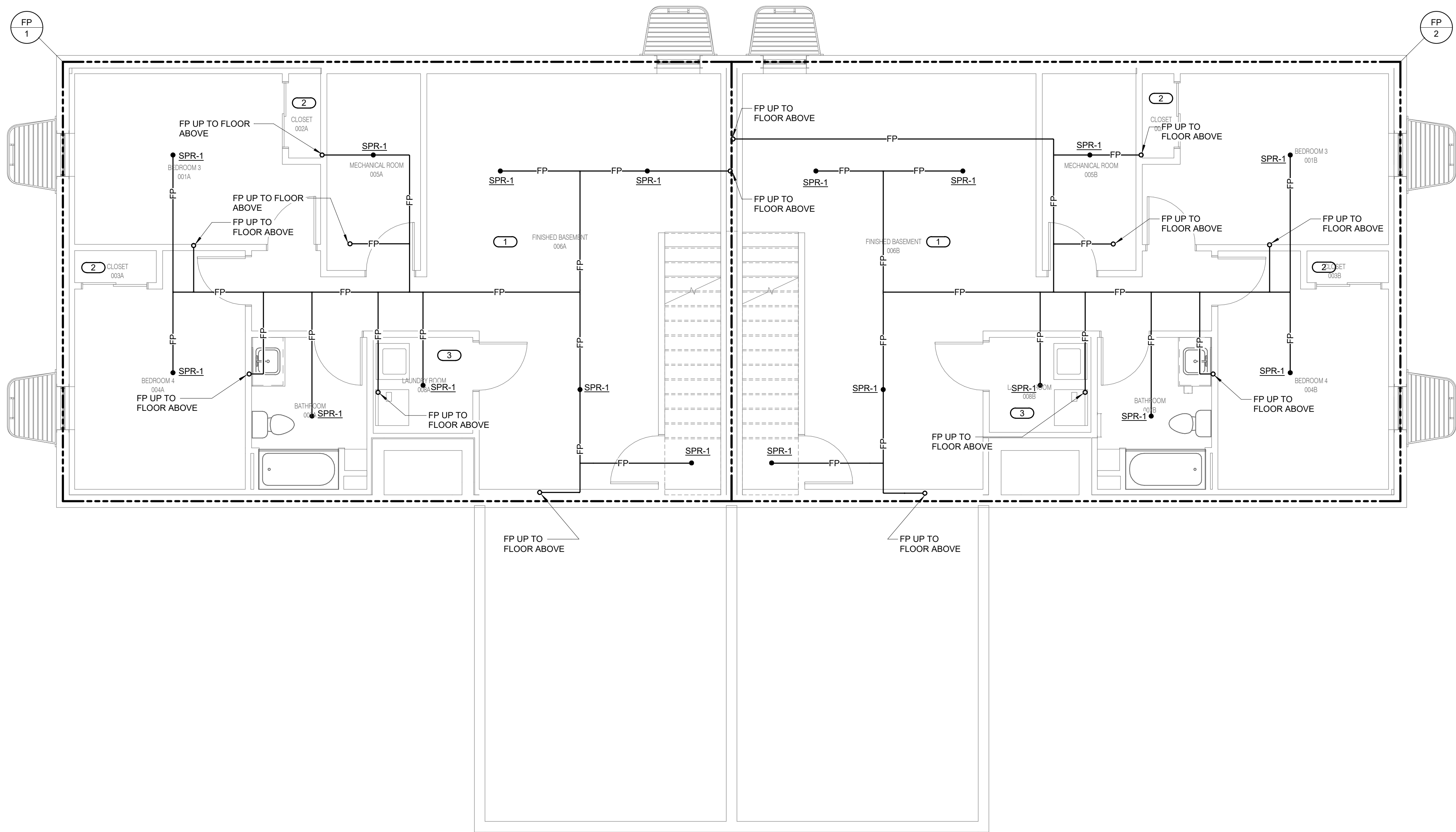
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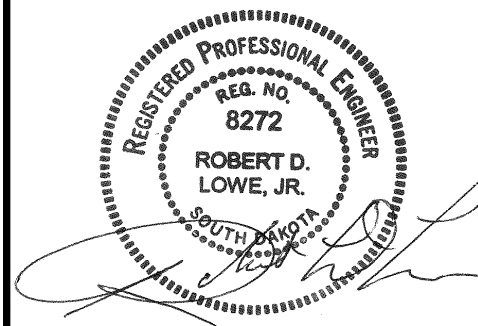
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FLOOR PLAN - BASEMENT - SITE A - FIRE SPRINKLER

1/4" = 1'-0"



- FIRE SPRINKLER NOTES:**
 1. REFER TO F000 FOR FIRE PROTECTION COVERSHEET, SYMBOLS LIST, AND GENERAL NOTES.
 2. REFER TO FS600 FOR FIRE SPRINKLER USAGE SCHEDULE, MATERIAL LIST, AND FLOW DIAGRAMS.
 3. FIRE PROTECTION PIPE ROUTING IS SHOWN TO INDICATE DESIGN INTENT. FIRE PROTECTION CONTRACTOR SHALL DETERMINE EXACT NUMBER OF SPRINKLERS, PIPE SIZING, AND PIPE ROUTING BASED ON HYDRAULIC CALCULATIONS AND DETAILED WORKING DRAWINGS REQUIRED IN NFPA 13.
 4. ALL FIRE SPRINKLER PIPING SHALL BE ROUTED THRU FLOOR JOISTS.
- KEYNOTES:** (#)
 1. FIRE SPRINKLER PIPING INSTALLATION IN EXPOSED UNFINISHED SPACES WITH SOLID OR COMPOSITE WOOD JOISTS SHALL BE INSTALLED ACCORDING TO MANUFACTURERS INSTALLATION REQUIREMENTS.
 2. CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRIES WHERE AREA DOES NOT EXCEED 24 SQ. FT. AND WALLS AND CEILINGS ARE SURFACED WITH NON COMBUSTIBLE OR LIMITED COMBUSTIBLE MATERIALS. REFER TO NFPA 13D SECTION 8.3.3.
 3. SPRINKLERS SHALL BE PROVIDED IN CLOSETS CONTAINING WASHERS AND DRYERS. REFER TO NFPA 13D 8.3.9.



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FLOOR PLAN - BASEMENT -
SITE A - FIRE SPRINKLER

FS101A

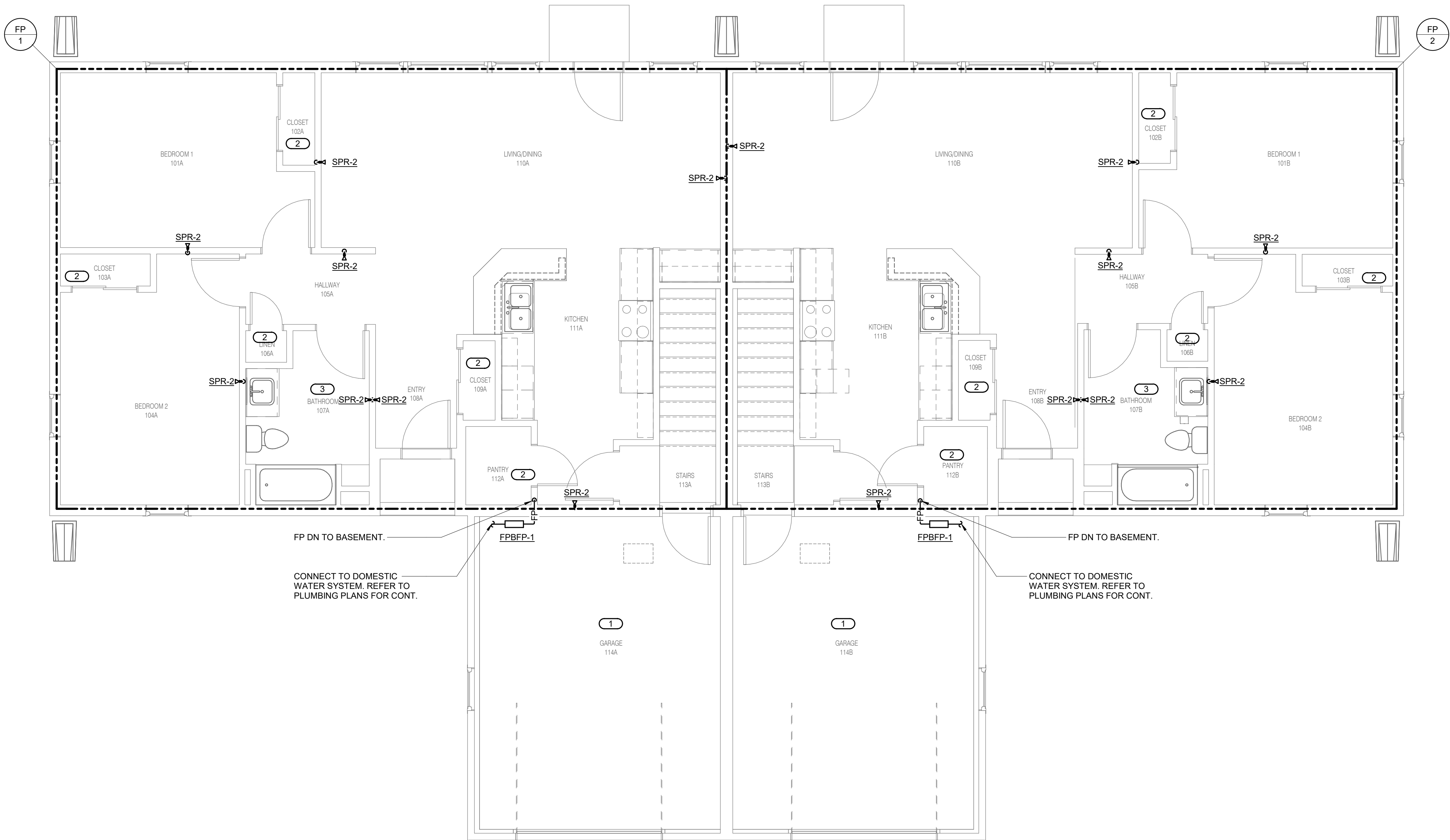
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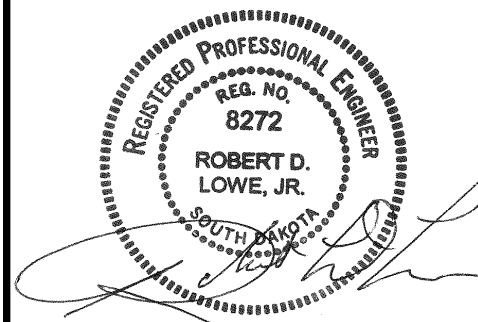
FLOOR PLAN - GROUND FLOOR - SITE A - FIRE SPRINKLER

1/4" = 1'-0"



- FIRE SPRINKLER NOTES:**
1. REFER TO F000 FOR FIRE PROTECTION COVERSHEET, SYMBOLS LIST, AND GENERAL NOTES.
 2. REFER TO FS600 FOR FIRE SPRINKLER USAGE SCHEDULE, MATERIAL LIST, AND FLOW DIAGRAMS.
 3. FIRE PROTECTION PIPE ROUTING IS SHOWN TO INDICATE DESIGN INTENT. FIRE PROTECTION CONTRACTOR SHALL DETERMINE EXACT NUMBER OF SPRINKLERS, PIPE SIZING, AND PIPE ROUTING BASED ON HYDRAULIC CALCULATIONS AND DETAILED WORKING DRAWINGS REQUIRED IN NFPA 13.

- KEYNOTES:** (#)
1. GARAGE DOES NOT REQUIRE SPRINKLER PROTECTION. REFER TO NFPA 13D SECTION 8.3.4.
 2. CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRIES WHERE AREA DOES NOT EXCEED 24 SQ. FT. AND WALLS AND CEILINGS ARE SURFACED WITH NON COMBUSTIBLE OR LIMITED COMBUSTIBLE MATERIALS. REFER TO NFPA 13D SECTION 8.3.3.
 3. PROVIDE SPRINKLER FOR BATHROOM (EXCEEDS 55 SQ. FT.).
 4. SPRINKLERS SHALL BE PROVIDED IN CLOSETS CONTAINING WASHERS AND DRYERS. REFER TO NFPA 13D 8.3.9.



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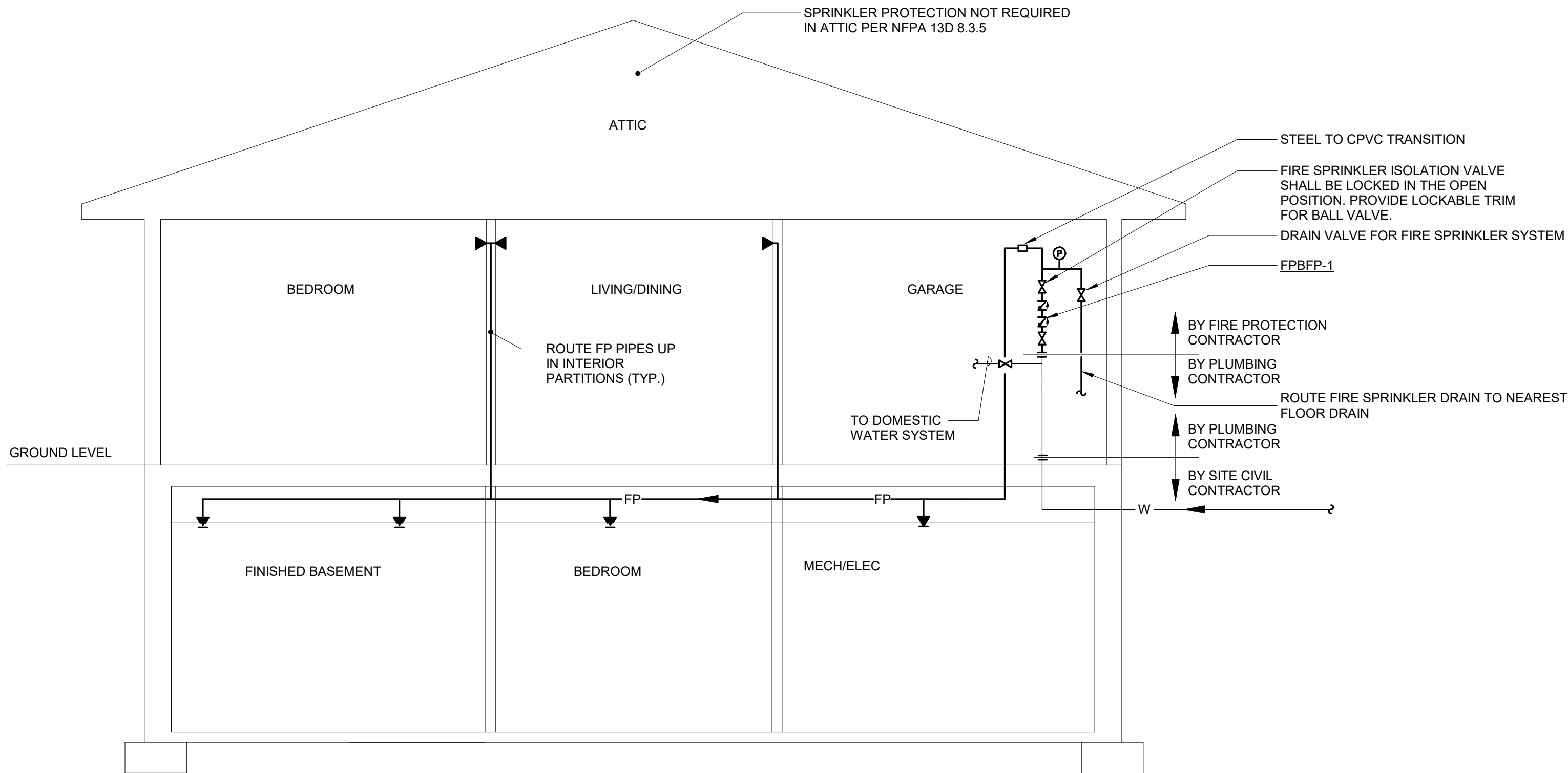
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Issue Date 07.18.2022
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FLOOR PLAN - GROUND
FLOOR - SITE A - FIRE
SPRINKLER

FS102A

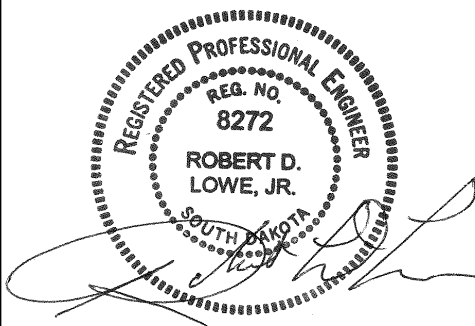
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2 FIRE PROTECTION RISER DIAGRAM - SITE A
NO SCALE

FIRE SPRINKLER USAGE SCHEDULE - SITE A								
<div>NOTES:</div> <div>1.REFER TO FLOOR PLANS FOR ZONING REQUIREMENTS.</div> <div>2.SPRINKLER SHALL HAVE COLOR CODED BULB THERMAL ELEMENT.</div> <div>3.ALL SPRINKLERS SHALL BE UL AND FM LISTED.</div> <div>4.CONTRACTOR TO VERIFY SPRINKLER REQUIREMENTS BASED ON ACTUAL INSTALLATION, USAGE, ARCHITECTURAL CEILING PLAN AND NFPA 13D REQUIREMENTS.</div> <div>5.TAG NAME IS PRIMARILY FOR IDENTIFYING SPRINKLERS IN SUBMITTALS. IT MAY OR MAY NOT BE FOUND ELSEWHERE ON THE DRAWINGS. CONTRACTOR TO SUBMIT ALL SPRINKLER TYPES TO BE USED.</div> <div>6.AREAS ARE GENERAL IN NATURE. CONTRACTOR TO MATCH UNSCHEDULED AREAS TO SIMILAR SPACES.</div>								
AREA TYPE (NOTE 1 & 6)	AREA HAZARD	SPRINKLER				TEMPERATURE RATING	MANUFACTURER	NOTES
		TAG NAME (NOTE 4 & 5)	SPRINKLER TYPE	RESPONSE CATEGORY	FINISH			
AREAS WITH CEILINGS	REFER TO PLANS	SPR-1	FLAT PLATE CONCEALED PENDENT	RESIDENTIAL	WHITE	ORDINARY	VIKING, TYCO, RELIABLE, VICTUALIC	NOTES 2, 3
AREAS WITH DROP CEILINGS - GROUND LEVEL	REFER TO PLANS	SPR-2	FLAT PLATE CONCEALED SIDEWALL	RESIDENTIAL	WHITE	ORDINARY	VIKING, TYCO, RELIABLE, VICTUALIC	NOTES 2, 3

FIRE PROTECTION MATERIAL LIST - SITE A		
TAG NAME	DESCRIPTION	MANUFACTURER AND MODEL
FPBFP-1	DOUBLE CHECK BACKFLOW PREVENTER WITH SPRING LOADED CHECK VALVES. CAST IRON CONSTRUCTION, WITH BRONZE, PLASTIC OR STAINLESS STEEL INTERNAL PARTS AND STAINLESS STEEL SPRINGS. BALL VALVES ON BOTH SIDES OF CHECK VALVES. UNITS SHALL INCLUDE FOUR TEST COCKS WITH SHUT-OFF VALVES AND SHALL BE BACKFLOW TESTED AT THE FACTORY. RATED FOR 175 PSI AT 33 DEGREES F. TO 140 DEGREES F. MAXIMUM PRESSURE DROP 8 PSI AT 10 FPS REGARDLESS OF SIZE. FLOW PRESSURE DROP CURVES SHALL BE SUBMITTED. ALL PARTS TO BE SERVICEABLE WITHOUT REMOVING UNIT FROM LINE. APPROVED BY: USC FCCC & HR, AWWA C510-92, ASSE 1015, IAPMO AND SBCCI LISTED, UL/FM.	AMES, WATTS, CONBRACO, FEBCO, WILKINS



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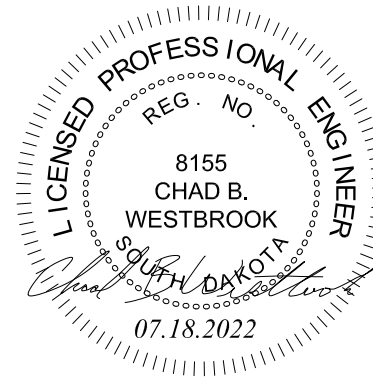
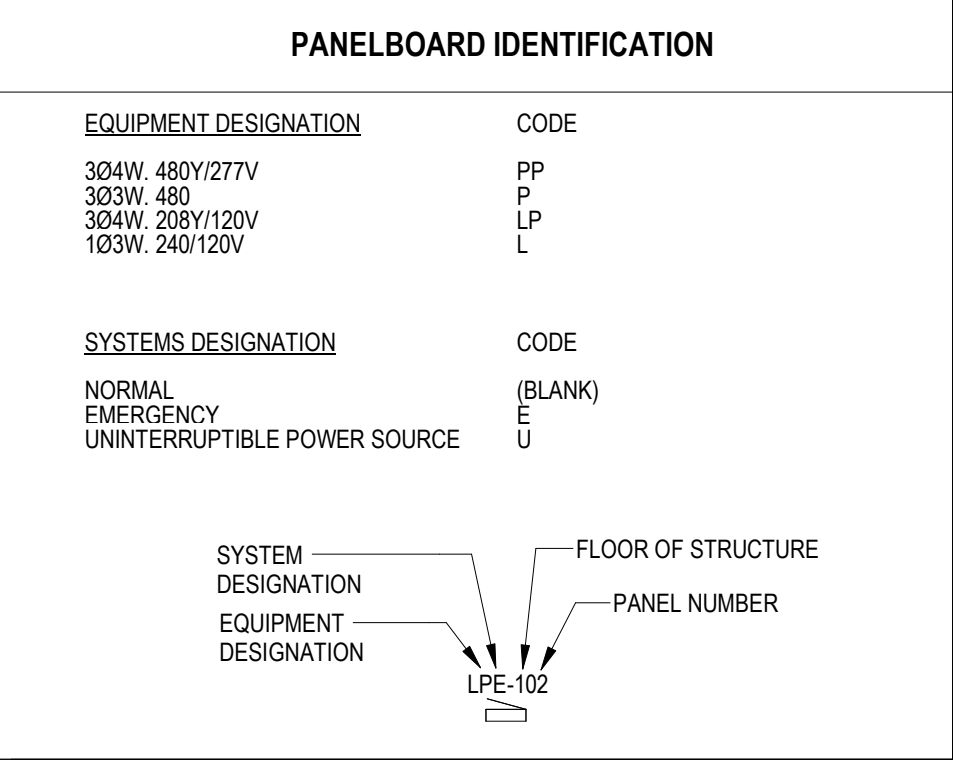
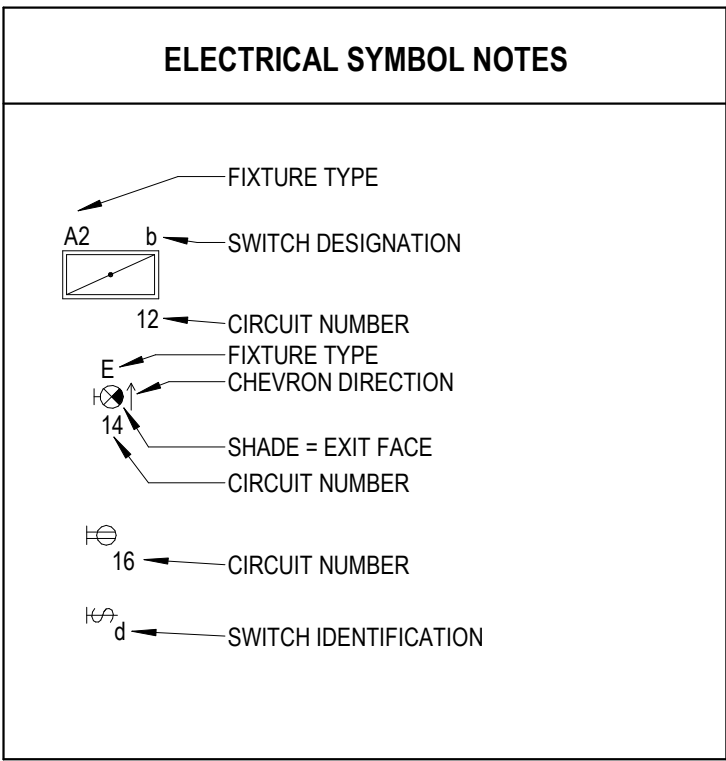
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REV. #	DESCRIPTION	DATE

FIRE PROTECTION
SCHEDULES - SITE A

FS600

ELECTRICAL SYMBOL LEGEND											
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
LIGHTING						POWER					
	SURFACE LIGHT (TYPE DENOTED)		SINGLE RECEPT.		CARD READER		STRIP LIGHT (TYPE DENOTED)		SECURITY		INSTRUMENTATION
	WALL MOUNTED FLOODLIGHT (TYPE DENOTED)		DUPLEX RECEPT.		DOOR CONTACT		POLE MOUNTED LIGHT (TYPE DENOTED)		MOTION DETECTOR		XX = PS (PRESSURE SWITCH)
	RECESSED LIGHT (TYPE DENOTED)		SPLIT DUPLEX RECEPT.		(FLOAT SWITCH)		SUSPENDED OR PENDANT LIGHT (TYPE DENOTED)		ISOLATED GROUND RECEPT (DUPLEX SHOWN)		LS (LIMIT SWITCH)
	POLE MOUNTED FLOODLIGHT (TYPE DENOTED)		RECEPT ON EMERGENCY CKT (DUPLEX SHOWN)		(MOTORIZED VALVE)		SURFACE LINEAR LIGHT (TYPE DENOTED)		QUADRUPLEX RECEPT.		FS (FLOW SWITCH)
	STRIP LIGHT (TYPE DENOTED)		QUADRUPLEX PLEX RECEPTACLE ON EMERGENCY CIRCUIT		* = FACP (FIRE ALARM CONTROL PANEL)		TRACK AND TRACK LIGHT (TYPES DENOTED)		RECEPT ON CORD REEL (DUPLEX SHOWN)		FAA (FIRE ALARM ANNUNCIATOR)
	EMERGENCY BATTERY LIGHT (TYPE DENOTED)		JUNCTION BOX (WALL MOUNTED)		FAGM (FIRE ALARM GRAPHIC MAP)		EXIT SIGN (TYPE DENOTED)		SPECIAL RECEPT. OR CONN. (SEE SCHEDULE)		PACP (PRE-ACTION CONTROL PANEL)
	LIGHT FIXTURE ON EMERGENCY CIRCUIT		JUNCTION BOX (FLOOR MOUNTED)		* = F (MANUAL PULL STATION)		SINGLE POLE SW.		UTILITY SERVICE POWER POLE (SITE)		* = FACP (FIRE ALARM CONTROL PANEL)
	2 POLE SINGLE THROW SW.		HALFTONE SYMBOL INDICATES EXISTING		FAA (FIRE ALARM ANNUNCIATOR)		3-WAY SW.		GROUND ROD (PLAN VIEW)		FAGM (FIRE ALARM GRAPHIC MAP)
	4-WAY SW.		DASHED SYMBOL INDICATES REMOVED		PACP (PRE-ACTION CONTROL PANEL)		KEYED SW.		MULTIOUTLET ASSEMBLY (TYPE DENOTED)		* = F (MANUAL PULL STATION)
	DIMMER SWITCH		POWER POLE (OPEN OFFICE STYLE)		* = F (MANUAL PULL STATION)		SW. WIPILLOT		STATIC GROUND RECEPTACLE (TYPE DENOTED)		* = F (MANUAL PULL STATION)
	OCCUPANCY SENSOR SWITCH		LIGHTNING PROTECTION AIR TERMINAL		* = F (MANUAL PULL STATION)		WEATHER PROOF SWITCH		GROUND ROD (PLAN VIEW)		* = F (MANUAL PULL STATION)
	MANUAL MOTOR STARTER SWITCH		UTILITY SERVICE POWER POLE (SITE)		* = F (MANUAL PULL STATION)		TIMER SWITCH		CIRCUIT BREAKER PANEL		* = F (MANUAL PULL STATION)
	WEATHER PROOF SWITCH		CIRCUIT BREAKER PANEL		* = F (MANUAL PULL STATION)		MOMENTARY CONTACT SWITCH		POWER OR DISTRIBUTION PANEL		* = F (MANUAL PULL STATION)
	TIME DELAY SWITCH		TRANSFORMER (TYPE DENOTED)		* = F (MANUAL PULL STATION)		TIME DELAY SWITCH		TRANSFORMER (TYPE DENOTED)		* = F (MANUAL PULL STATION)
	OCCUPANCY SENSOR - TYPE DENOTED		MOTOR (SEE SCHEDULE)		* = F (MANUAL PULL STATION)		LIGHT LEVEL SENSOR - TYPE DENOTED		MOTOR (SEE SCHEDULE)		* = F (MANUAL PULL STATION)
	PHOTOCELL		COMB. MOTOR STARTER (FUSED)		* = F (MANUAL PULL STATION)		PHOTOCELL		COMB. MOTOR STARTER (FUSED)		* = F (MANUAL PULL STATION)
SYSTEMS						FIRE ALARM					
	TELEPHONE OUTLET (TYPE DENOTED)		SAFETY DISC. SW. (NON-FUSED)		* = F (MANUAL PULL STATION)		INFORMATION OUTLET (TYPE DENOTED)		* = F (MANUAL PULL STATION)		* = F (MANUAL PULL STATION)
	COMBINATION TELEPHONE/DATA OUTLET		SAFETY DISC. SW. (FUSED)		* = F (MANUAL PULL STATION)		WIRELESS ACCESS POINT		* = F (MANUAL PULL STATION)		* = F (MANUAL PULL STATION)
	CLOCK (TYPE DENOTED)		* = F (MANUAL PULL STATION)		* = F (MANUAL PULL STATION)		* = F (MANUAL PULL STATION)		* = F (MANUAL PULL STATION)		* = F (MANUAL PULL STATION)

ELECTRICAL ABBREVIATIONS LIST											
1P	1 POLE (2P, 3P, 4P, ETC.)	CTR	CENTER	HT	HEIGHT	NEMA	NATIONAL ELECTRICAL	SWBD	SWITCHBOARD		
A	AMPERE	CU	COPPER	HTG	HEATING		MANUFACTURER'S ASSOCIATION	SYM	SYMMETRICAL		
ACG	ABOVE COUNTER OR AIR	DCP	DOMESTIC WATER CIRCULATING PUMP	HTR	HEATER	NFDS	NON-FUSED SAFETY DISCONNECT	SYS	SYSTEM		
ACLG	CONDITIONER	DEPT	DEPARTMENT	HV	HIGH VOLTAGE		SWITCH	TEL	TELEPHONE		
ADO	ABOVE CEILING	DET	DETAIL	HVAC	HEATING, VENTILATING AND AIR	NIC	NOT IN CONTRACT	TELDATA	TELEPHONE/DATA		
AFF	AUTOMATIC DOOR OPENER	DIA	DIAMETER		CONDITIONING	NL	NIGHT LIGHT	TERM	TERMINAL		
AF	AMP FRAME	DISC	DISCONNECT	HWP	HYDRONIC WATER PUMP	N.O.	NORMALLY OPEN	TL	TWIST LOCK		
AFG	ABOVE FINISHED FLOOR	DIST	DISTRIBUTION	IC	INTERRUPTING CAPACITY	NPF	NORMAL POWER FACTOR	TR	TAMPER RESISTANT		
AFI	ABOVE FINISHED GRADE	DN	DOWN	IG	ISOLATED GROUND	NTS	NOT TO SCALE	T-STAT	THERMOSTAT		
	ARC FAULT CIRCUIT	DPR	DAMPER	IMC	INTERMEDIATE METAL CONDUIT	OH	OVERHEAD	TTC	TELEPHONE TERMINAL CABINET		
	INTERRUPTER	DS	SAFETY DISCONNECT SWITCH	INCAND	INCANDESCENT	OL	OVERLOADS	TV	TELEVISION		
AHU	AIR HANDLING UNIT	DT	DOUBLE THROW	IR	INFRARED	PA	PUBLIC ADDRESS	TYTC	TELEVISION TERMINAL CABINET		
AL	ALUMINUM	DWG	DRAWING	IW	INTERLOCK WITH	PB	PULL BOX OR PUSHBUTTON	TYP	TYPICAL		
ALT	ALTERNATE	EC	ELECTRICAL CONTRACTOR	J-BOX	JUNCTION BOX	PE	PNEUMATIC ELECTRIC	UC	UNDER COUNTER		
AMP	AMPERE	ELEC	ELECTRIC, ELECTRICAL	KV	KILOVOLT	PED	PEDESTAL	UE	UNDERGROUND ELECTRICAL		
AMPL	AMPLIFIER	ELEV	ELEVATOR	KVA	KILOVOLT-AMPERE	PF	POWER FACTOR	UG	UNDERGROUND		
ANNUN	ANNUNCIATOR	EM	EMERGENCY	KVAR	KILOVOLT-AMPERE REACTIVE	PH	PHASE	UH	UNIT HEATER		
APPROX	APPROXIMATELY	EMS	ENERGY MANAGEMENT SYSTEM	KW	KILOWATT	PIV	POST INDICATING VALVE	UT	UNDERGROUND TELEPHONE		
AQ-STAT	AQUASTAT	EMT	ELECTRICAL METALLIC TUBING	KWH	KILOWATT HOUR	PNL	PANEL	UTIL	UTILITY		
ARCH	ARCHITECT, ARCHITECTURAL	EP	ELECTRIC PNEUMATIC	LOC	LOCATE OR LOCATION	PP	POWER POLE	UV	UNIT VENTILATOR OR		
AS	AMP SWITCH	EQUIP	EQUIPMENT	LT	LIGHT	PR	PAIR	VA	VOLT-AMPERES		
AT	AMP TRIP	EWC	ELECTRIC WATER COOLER	LTG	LIGHTING	PRI	PRIMARY	V	VOLT		
ATS	AUTOMATIC TRANSFER SWITCH	EXIST	EXISTING	LTNG	LIGHTNING	PROJ	PROJECTION	VD	VOLT-AMPERES		
AUTO	AUTOMATIC	EXH	EXHAUST	LV	LOW VOLTAGE	PRV	POWER ROOF VENTILATOR	VD	VIDEO DISPLAY TERMINAL		
AUX	AUXILIARY	EXP	EXPLOSION PROOF	MAX	MAXIMUM	PT	POTENTIAL TRANSFORMER	VERT	VERTICAL		
AV	AUDIO VISUAL	FA	FIRE ALARM	MAG.S	MAGNETIC STARTER	PVC	POLYVINYL CHLORIDE (CONDUIT)	VFD	VARIABLE FREQUENCY DRIVE		
AWG	AMERICAN WIRE GAUGE	FABP	FIRE ALARM BOOSTER POWER	M/C	MOMENTARY CONTACT	PWR	POWER	VOL	VOLUME		
BATT	BATTERY		SUPPLY PANEL	MC	MECHANICAL CONTRACTOR	QUAN	QUANTITY	W	WATT		
BD	BOARD	FACP	FIRE ALARM CONTROL PANEL	MCB	MAIN CIRCUIT BREAKER	RCPT	RECEPTACLE	W/	WITH		
BLDG	BUILDING	FCU	FAN COIL UNIT	MCC	MOTOR CONTROL CENTER	REQD	REQUIRED	WG	WIRE GUARD		
BMS	BUILDING MANAGEMENT SYSTEM	FIXT	FIXTURE	MDC	MAIN DISTRIBUTION CENTER	RM	ROOM	WH	WATER HEATER		
C	CONDUIT	FLR	FLOOR	MDP	MAIN DISTRIBUTION PANEL	RSC	RIGID STEEL CONDUIT	W/O	WITHOUT		
CAB	CABINET	FLUOR	FLUORESCENT	MFR	MANUFACTURER	RTU	ROOF TOP UNIT	WP	WEATHERPROOF		
CAT	CATALOG	FUSE	FUSE	MFS	MAIN FUSED DISCONNECT SWITCH	SC	SURFACE CONDUIT	XFMR	TRANSFORMER		
CATV	CABLE TELEVISION	FUDS	FUSED SAFETY DISCONNECT SWITCH	MH	MANHOLE	SEC	SECONDARY	XFR	TRANSFER		
CB	CIRCUIT BREAKER	GA	GAUGE	MIC	MICROPHONE	SHT	SHEET				
CCTV	CLOSED CIRCUIT TELEVISION	GAL	GALLON	MIN	MINIMUM	SIM	SIMILAR				
CKT	CIRCUIT	GALV	GALVANIZED	MISC	MISCELLANEOUS	SIN	SOLID NEUTRAL				
CLG	CEILING	GC	GENERAL CONTRACTOR	MLO	MAIN LUGS ONLY	SPEC	SPECIFICATION				
COMB	COMBINATION	GEN	GENERATOR	MMS	MANUAL MOTOR STARTER	SPKR	SPEAKER				
CMPR	COMPRESSOR	GFI	GROUND FAULT CIRCUIT INTERRUPTER	MOA	MULTIOUTLET ASSEMBLY	SP	SPARE				
CONN	CONNECTION	GFP	GROUND FAULT PROTECTOR	MSP	MOTOR STARTER PANELBOARD	SR	SURFACE RACEWAY				
CONST	CONSTRUCTION	GND	GROUND	MSBD	MAIN SWITCHBOARD	SS	STAINLESS STEEL				
CONT	CONTINUATION OR CONTINUOUS	GRS	GALVANIZED RIGID STEEL (CONDUIT)	MT	MOUNT	SSW	SELECTOR SWITCH				
CONTR	CONTRACTOR	GYP BD	GYPSUM BOARD	MT.C	EMPTY CONDUIT	SS	STOP/START PUSHBUTTONS				
CONV	CONVECTOR	HOA	HANDS-OFF-AUTOMATIC SWITCH	MTS	MANUAL TRANSFER SWITCH	STA	STATION				
CP	CIRCULATING PUMP	HORIZ	HORIZONTAL	MTR	MOTOR, MOTORIZED	STD	STANDARD				
CRT	CATHODE-RAY TUBE	HP	HORSEPOWER	N.C.	NORMALLY CLOSED	SURF	SURFACE MOUNTED				
CT	CURRENT TRANSFORMER	HPF	HIGH POWER FACTOR	NEC	NATIONAL ELECTRICAL CODE	SW	SWITCH				



Project Owner
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701 Fifth Avenue, MS 24, Suite 1600
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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS

701 FIFTH AVENUE, MS 24,
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Drawn By J.SELLER

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CONSTRUCTION 07.18.2022
DOCUMENTS

INDEX OF ELECTRICAL DRAWINGS

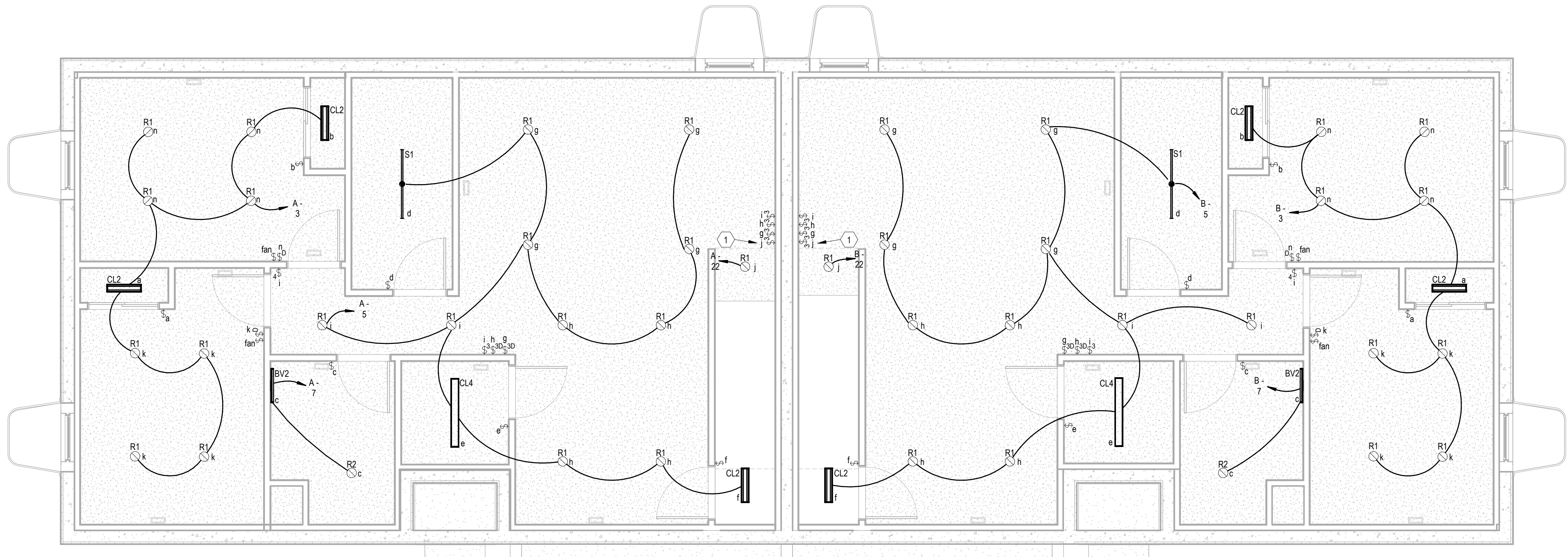
REV. #	DESCRIPTION	DATE
E000	ELECTRICAL TITLE SHEET	
E101	LIGHTING PLAN - BASEMENT	
E102	LIGHTING PLAN - LEVEL 1	
E201	POWER PLAN - BASEMENT	
E202	POWER PLAN - LEVEL 1	
E301	ELECTRICAL SITE PLAN	
E501	ELECTRICAL DETAILS & ONE-LINE DIAGRAM	
E601	ELECTRICAL SCHEDULES AND CALCULATIONS	

ELECTRICAL TITLE SHEET

E000

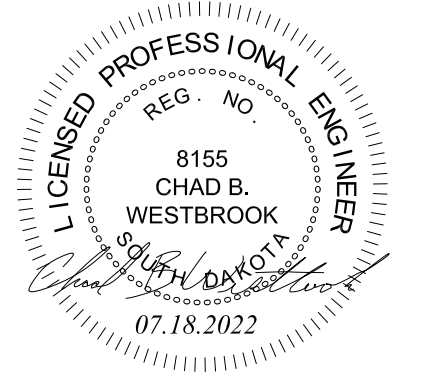
7/14/2022 4:36:09 PM

1 LIGHTING PLAN - BASEMENT



- GENERAL NOTES:**
- ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE, STATE, AND LOCAL CODES. REFER TO ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLANS FOR EQUIPMENT MOUNTING HEIGHTS.
 - COORDINATE ALL FIXTURE LOCATIONS WITH MECHANICAL PIPING, DUCTWORK, ETC., TO AVOID CONFLICT, PRIOR TO ROUGH IN.
 - LOWERCASE LETTERS AT LIGHT FIXTURES CORRESPOND TO THE SWITCH AND/OR CONTROL DEVICE IDENTIFICATION.
 - ALL LIGHT SWITCHES ARE MOUNTED 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - WIRE COUNTS FOR CIRCUIT CONDUCTORS ARE NOT SHOWN. CONTRACTOR TO PROVIDE PROPER NUMBER OF CONDUCTORS TO ACHIEVE CIRCUIT AND SWITCHING CONNECTIONS SHOWN.
 - CIRCUIT NUMBERS AT DEVICES CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULES). BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING, UNLESS OTHERWISE INDICATED ON THE EQUIPMENT SCHEDULE(S).

- KEYED NOTES:** (X)
- 3-WAY LIGHT SWITCH "J" CONTROLS LIGHT FIXTURES ABOVE STAIRWAY FROM 1ST FLOOR TO THE BASEMENT. LIGHT FIXTURES ARE SHOWN ON THE 1ST FLOOR LIGHTING PLAN.



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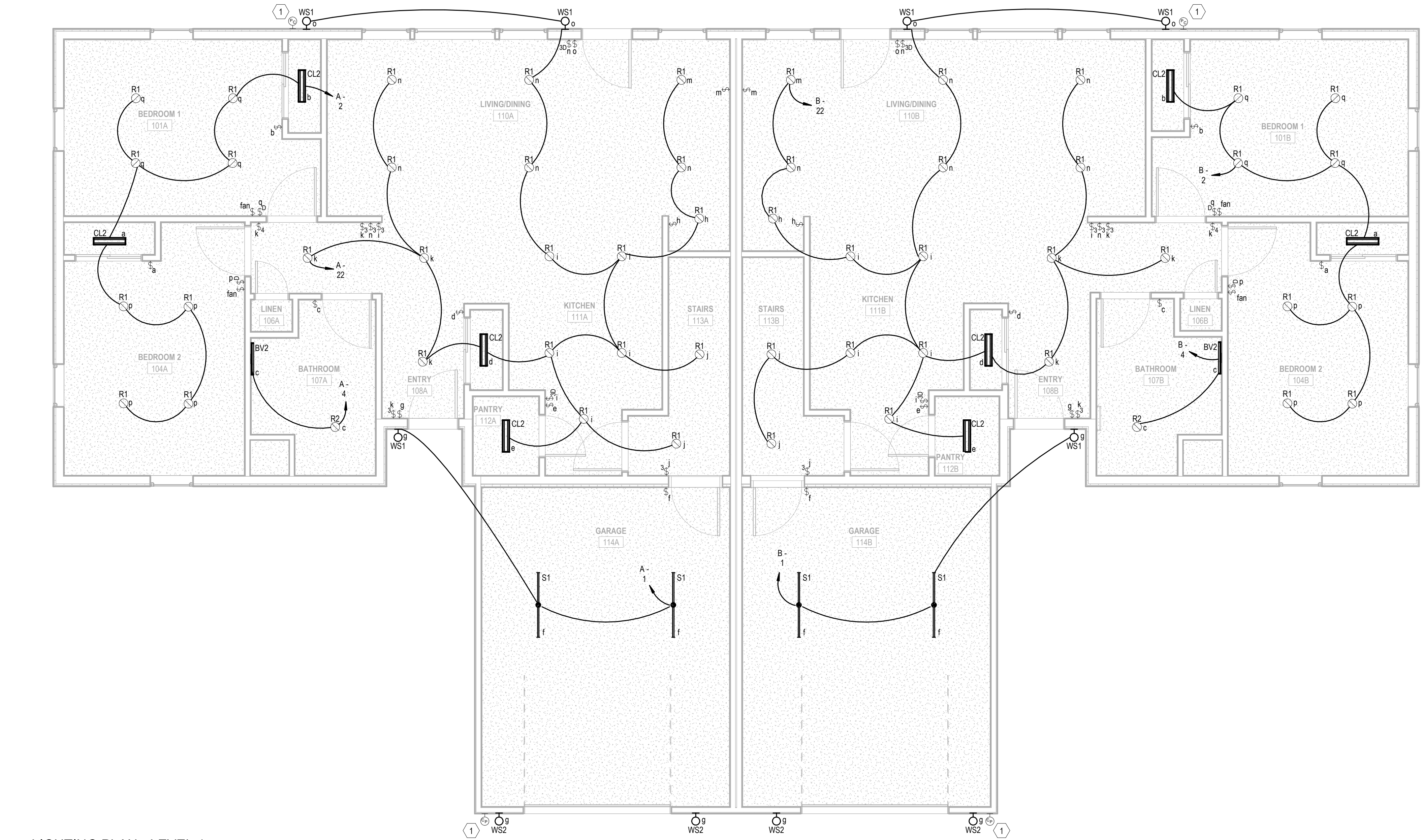
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LIGHTING PLAN - BASEMENT

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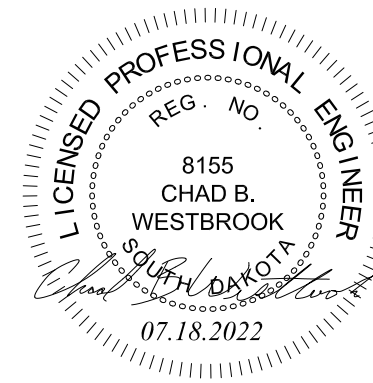


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KEYED NOTES:

- PHOTOCELL SHALL BE ON THE LOAD SIDE OF SWITCH CONTROLLING THE EXTERIOR LIGHTING TO ENSURE FIXTURES DO NOT REMAIN ON DURING DAYLIGHT HOURS IF SWITCH IS NOT TURNED OFF.



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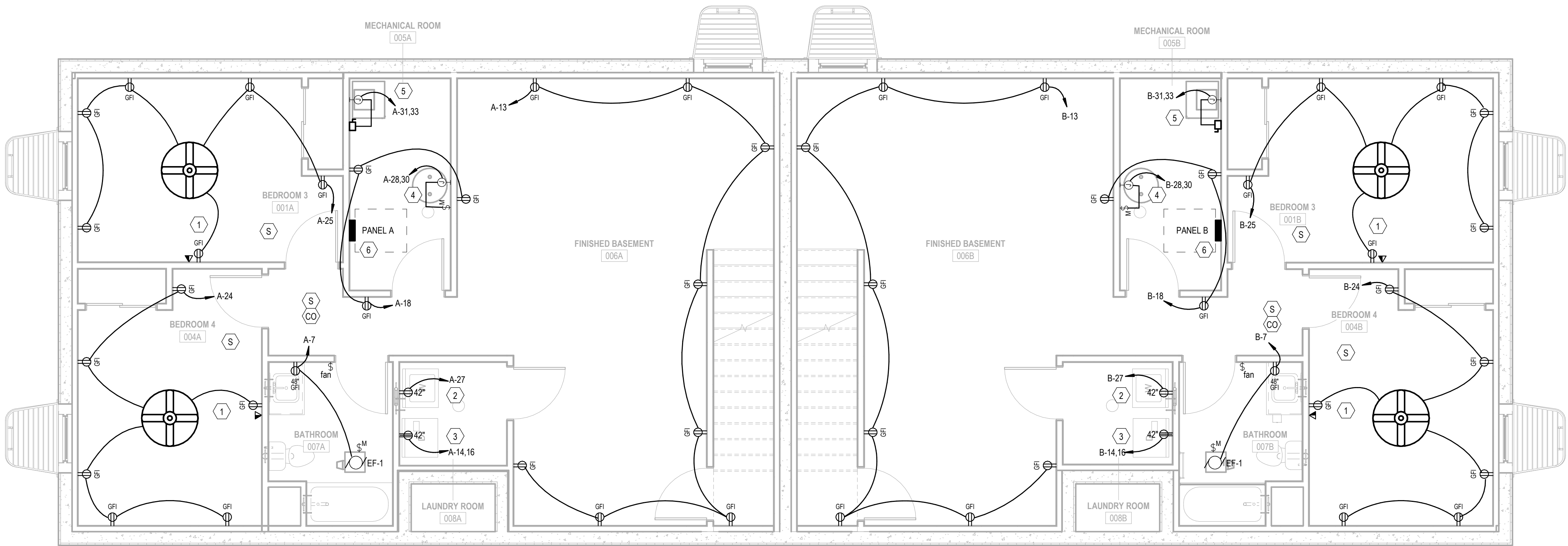
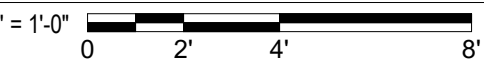
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LIGHTING PLAN - LEVEL 1

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1 POWER PLAN - BASEMENT

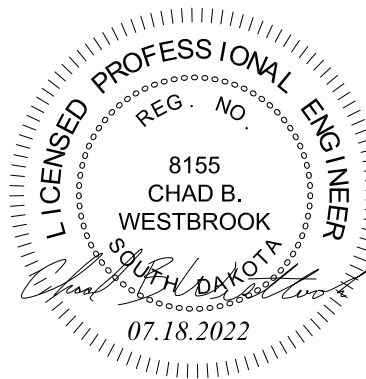


GENERAL NOTES:

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- REFER TO ARCHITECTURAL ELEVATIONS FOR EQUIPMENT MOUNTING HEIGHTS.
- COORDINATE ALL EQUIPMENT LOCATIONS AND REQUIREMENTS PRIOR TO ROUGH IN.
- MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL CONNECTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALL MECHANICAL EQUIPMENT INCLUDED IN THIS PROJECT.
- ALL RECEPTACLES ARE MOUNTED AT 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- WHERE CONNECTED TO A 20A BRANCH CIRCUIT SUPPLYING AN INDIVIDUAL RECEPTACLE, THE RECEPTACLE SHALL BE RATED FOR 20A.
- CIRCUIT NUMBERS AT DEVICES CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULES). BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING, UNLESS OTHERWISE INDICATED ON THE EQUIPMENT SCHEDULE(S).
- CONTRACTOR SHALL AVOID, IF POSSIBLE, INSTALLING RECEPTACLES BACK-TO-BACK ON DEMISING WALLS. IF NOT POSSIBLE, PUTTY PADS SHALL BE INSTALLED ON RECEPTACLES.

KEYED NOTES: (X)

- RECEPTACLE AND DATA PORT FOR TV. CONTRACTOR TO COORDINATE EXACT MOUNTING HEIGHT AND LOCATION.
- DEDICATED CIRCUIT FOR WASHING MACHINE. INSTALL GFCI CIRCUIT BREAKER.
- DEDICATED CIRCUIT FOR ELECTRIC DRYER. INSTALL GFCI CIRCUIT BREAKER.
- DEDICATED CIRCUIT FOR ELECTRIC WATER HEATER (WH-1). INSTALL GFCI CIRCUIT BREAKER.
- DEDICATED CIRCUIT FOR GROUND SOURCE HEAT PUMP (GSHP-1). INSTALL GFCI CIRCUIT BREAKER.
- BOND SERVICE GROUND CONDUCTOR TO MAIN WATER ENTRY WITH GROUNDING CLAMP. VERIFY WATER ENTRY LOCATION ON PLUMBING PLANS.



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DUPLEX BUILDING & SITE LOCATIONS

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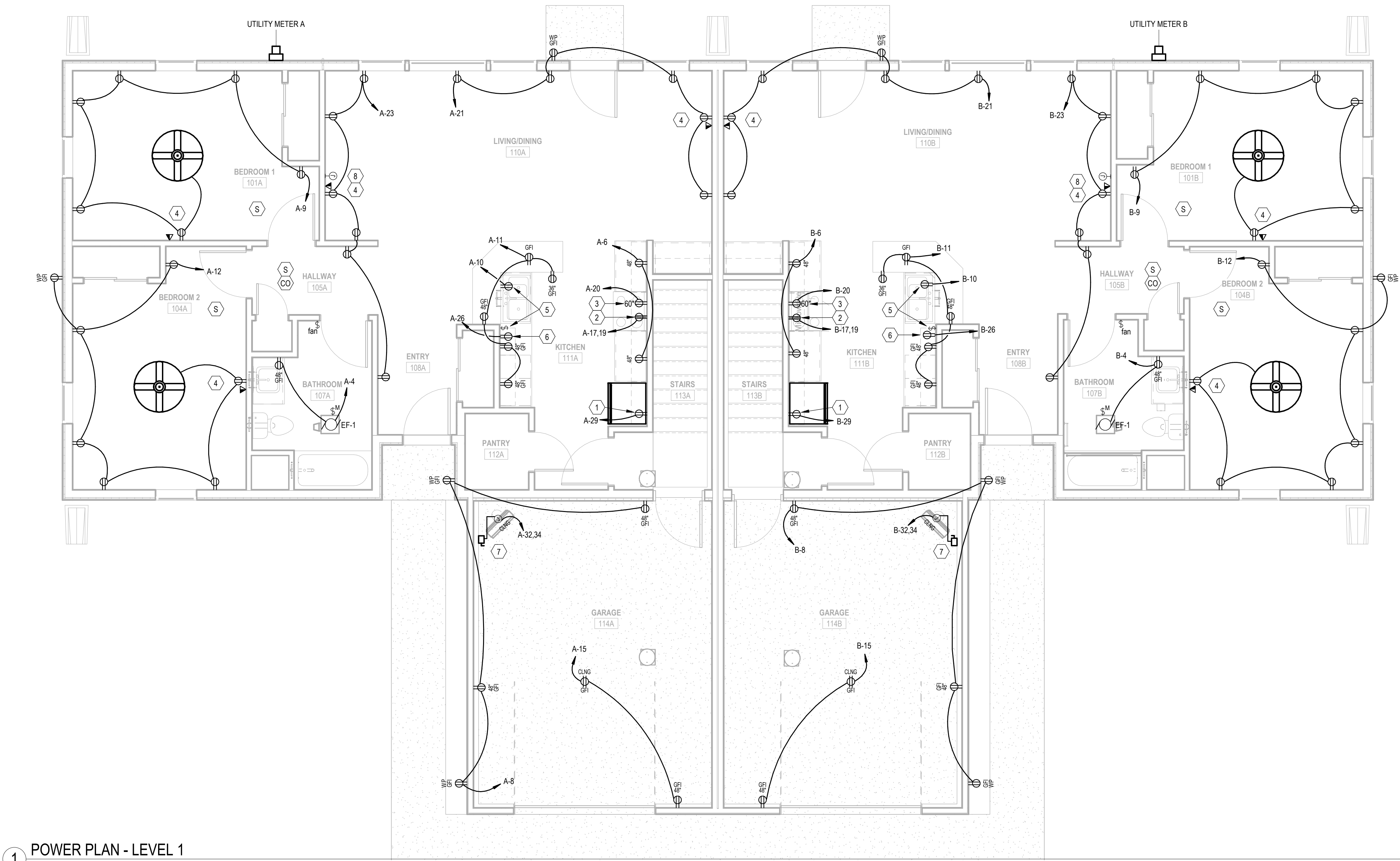
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POWER PLAN - BASEMENT

E201



1 POWER PLAN - LEVEL 1
1/4" = 1'-0"
0 2' 4' 8'

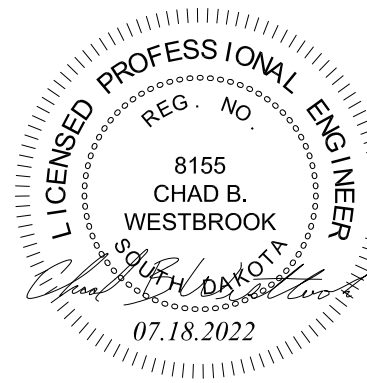


GENERAL NOTES:

- ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE, STATE, AND LOCAL CODES.
- REFER TO ARCHITECTURAL ELEVATIONS FOR EQUIPMENT MOUNTING HEIGHTS.
- COORDINATE ALL EQUIPMENT LOCATIONS AND REQUIREMENTS PRIOR TO ROUGH IN.
- MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL CONNECTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALL MECHANICAL EQUIPMENT INCLUDED IN THIS PROJECT.
- ALL RECEPTACLES ARE MOUNTED AT 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- WHERE CONNECTED TO A 20A BRANCH CIRCUIT SUPPLYING AN INDIVIDUAL RECEPTACLE, THE RECEPTACLE SHALL BE RATED FOR 20A.
- CIRCUIT NUMBERS AT DEVICES CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULES). BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING, UNLESS OTHERWISE INDICATED ON THE EQUIPMENT SCHEDULE(S).
- CONTRACTOR SHALL AVOID, IF POSSIBLE, INSTALLING RECEPTACLES BACK-TO-BACK ON DEMISING WALLS. IF NOT POSSIBLE, PUTTY PADS SHALL BE INSTALLED ON RECEPTACLES.

KEYED NOTES: (X)

- DEDICATED CIRCUIT FOR REFRIGERATOR.
- DEDICATED CIRCUIT FOR ELECTRIC RANGE.
- DEDICATED CIRCUIT FOR MICROWAVE.
- RECEPTACLE AND DATA PORT FOR TV. CONTRACTOR TO COORDINATE EXACT MOUNTING HEIGHT AND LOCATION.
- DEDICATED CIRCUIT AND POWER SWITCH FOR GARBAGE DISPOSAL. INSTALL GFCI CIRCUIT BREAKER.
- DEDICATED CIRCUIT FOR DISHWASHER. INSTALL GFCI CIRCUIT BREAKER.
- DEDICATED CIRCUIT FOR ELECTRIC UNIT HEATER (UH-1). INSTALL GFCI CIRCUIT BREAKER.
- CONTRACTOR SHALL INSTALL 2" CONDUIT FOR COMMERCIAL INTERNET SERVICE FROM PROVIDERS NEAREST EXTERIOR PEDESTAL TO THE LIVING ROOM JUNCTION BOX. CAT6 CABLING SHALL CONNECT ALL DATA PORTS BACK TO THE INTERNET SERVICE PROVIDER PRIMARY INCOMING LOCATION.



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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS

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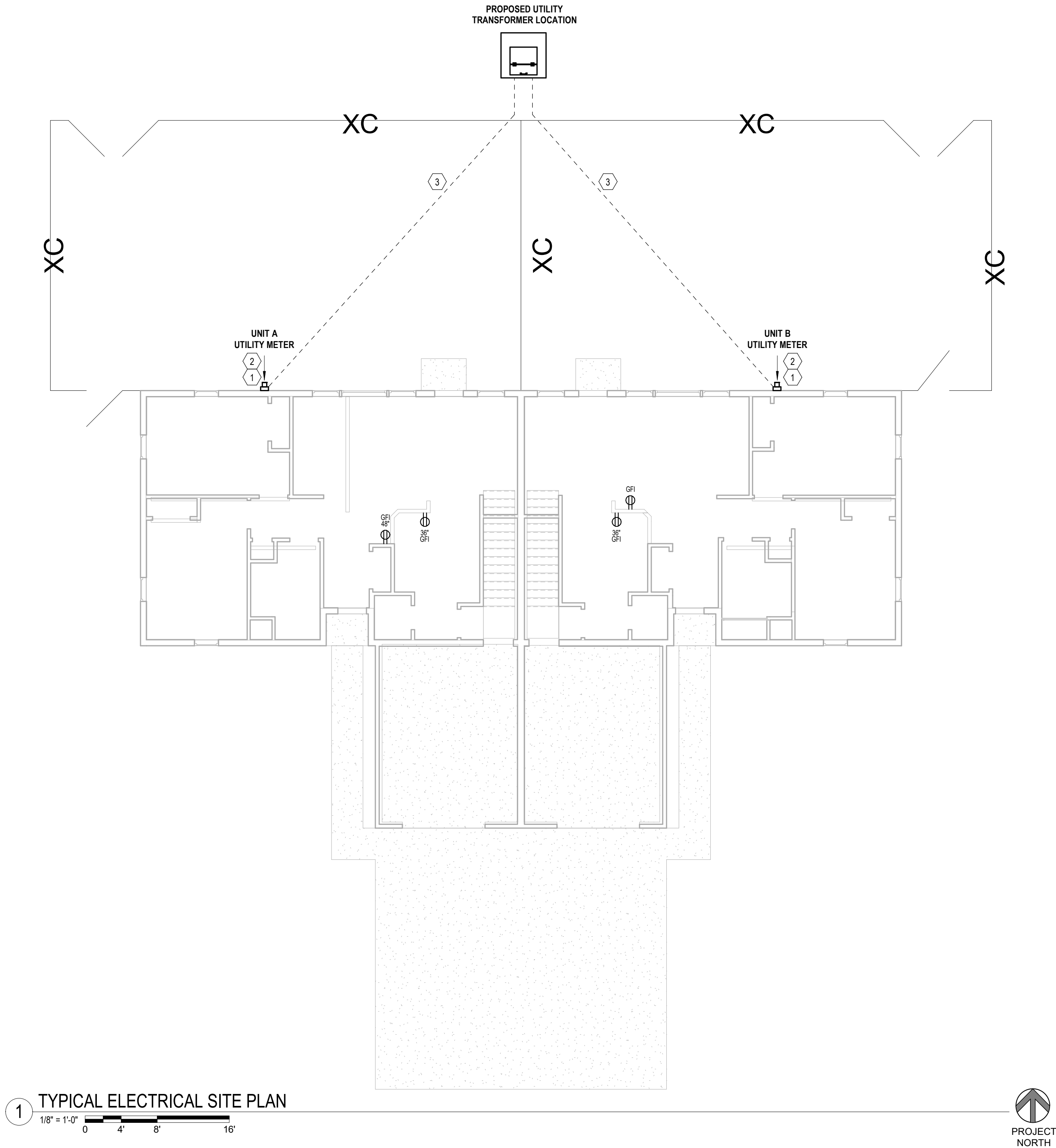
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POWER PLAN - LEVEL 1

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1 TYPICAL ELECTRICAL SITE PLAN

GENERAL NOTES:

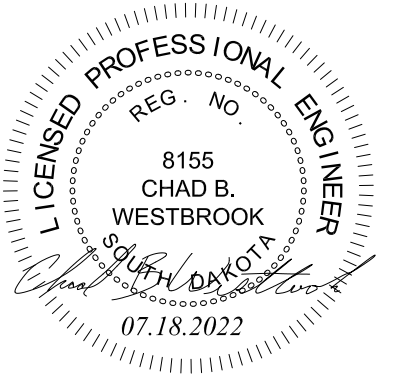
- A. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE, STATE, AND LOCAL CODES.
- B. COORDINATE ALL EQUIPMENT LOCATIONS AND REQUIREMENTS PRIOR TO ROUGH IN.

KEYED NOTES: (X)

1. PROPOSED SERVICE ENTRANCE LOCATION FOR TV AND INTERNET SERVICE. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONNECTION BOXES AS REQUIRED.
2. PROVIDE NEW METER SOCKET AND GROUND ROD AT LOCATION SHOWN FOR 120/240V 1-PHASE 3-WIRE, 200A ELECTRICAL SERVICE TO UNIT. ELECTRICAL CONTRACTOR SHALL COORDINATE FINAL LOCATIONS AND CONNECTIONS WITH THE LOCAL ELECTRICAL UTILITY, AS WELL AS COMPLY WITH ALL LOCAL ELECTRICAL UTILITY REQUIREMENTS.
3. ELECTRICAL CONTRACTOR TO PROVIDE TRENCH, BACKFIL, AND 2" CONDUIT FROM THE METER SOCKET TO THE UTILITY TRANSFORMER. ENSURE COMPLIANCE WITH ALL LOCAL ELECTRICAL UTILITY REQUIREMENTS.



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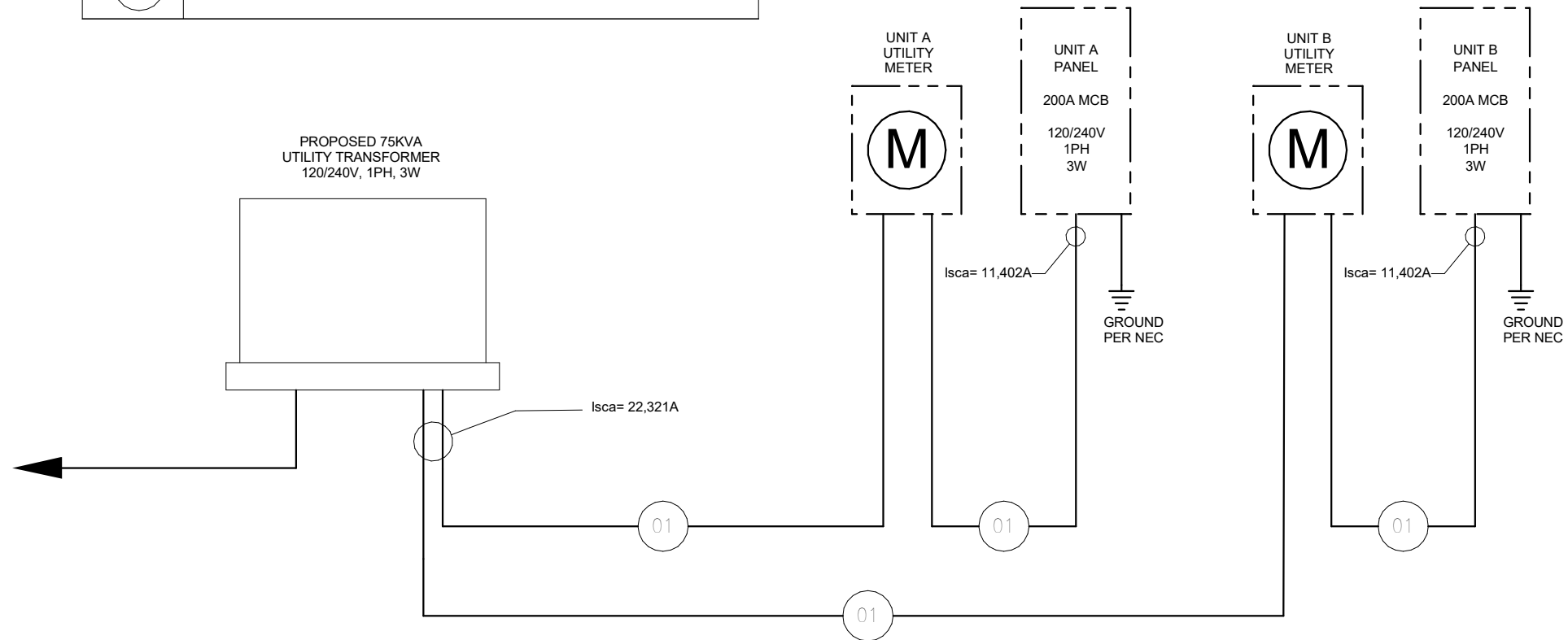
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ELECTRICAL SITE PLAN

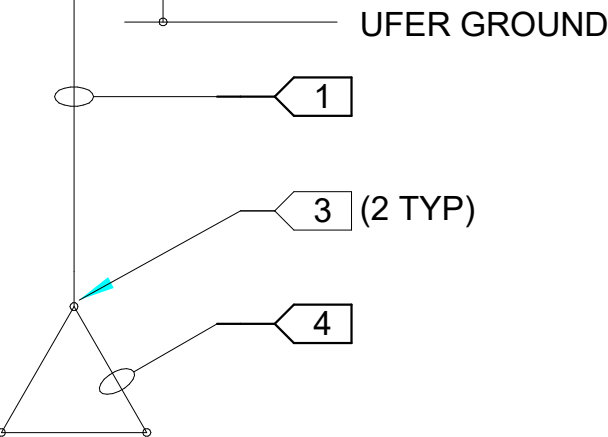
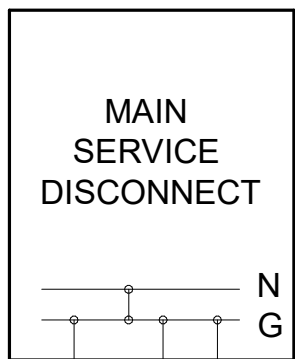
FEEDER SCHEDULE 75KVA XFMR	
01	(3 #3/0 THWN CU) 2"C)



NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT TRANSFORMER AND MOUNTING LOCATION WITH LOCAL UTILITY COMPANY. FAULT CURRENT CALCULATIONS ARE BASED OFF THE PROPOSED 75KVA TRANSFORMER.

1 ELECTRICAL ONE-LINE

NOT TO SCALE

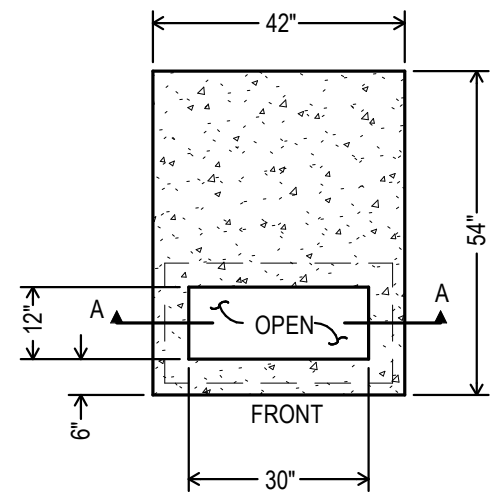


2 GROUNDING AND BONDING DETAIL

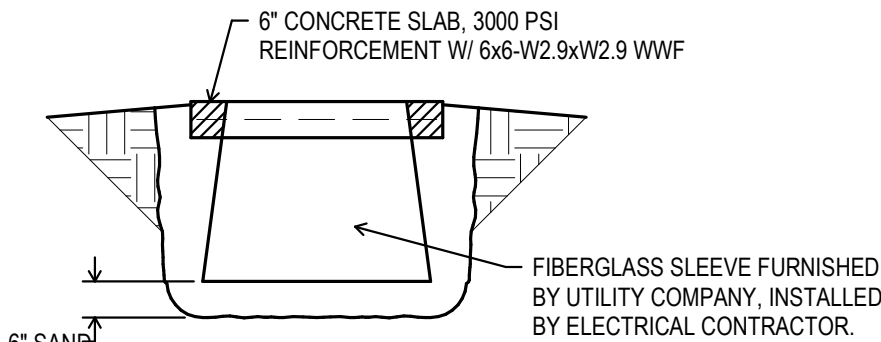
NOT TO SCALE

KEYNOTES:

1. SIZE MAIN GROUNDING CONDUCTOR PER NEC OR 12.5% OF TOTAL CROSS SECTIONAL AREA OF MAIN SERVICE CONDUCTORS PER PHASE.
2. BONDING CONDUCTOR TO EXPOSED PIPE, BUILDING STEEL AND CONCRETE STEEL REINFORCING PER NEC FOR CONNECTION OF ALL OTHER AREAS REQUIRED TO BE BONDED TO GROUNDING.
3. 3/4"x10" COPPER CLAD STEEL GROUND ROD. GROUND RODS SHALL BE SPACED A MINIMUM OF 10 FEET APART. EXOTHERMIC WELD ALL CONNECTIONS OF CONDUCTORS TO GROUND RODS.
4. CONDUCTOR CONNECTING THE GROUND RODS SHALL BE A MINIMUM OF #2/0 AWG BARE CU.



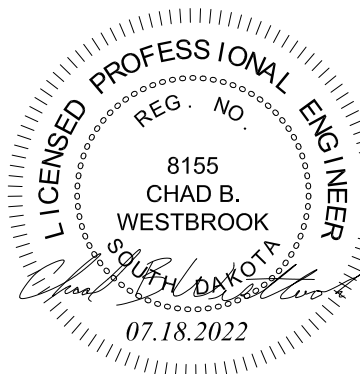
PLAN VIEW



SECTION A-A

3 1 PHASE 10 TO 167 KVA TRANSFORMER PAD

NOT TO SCALE



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ELECTRICAL DETAILS &
ONE-LINE DIAGRAM

E501

7/18/2022 10:45:21 AM

LUMINAIRE SCHEDULE									
TYPE	LED SOURCE			FIXTURE DISCRIPTION	VOLTAGE	WATTS	MOUNTING	MANUFACTURER, SERIES, AND CATALOG NUMBER	
	LUMENS	CCT	CRI						
BV2	2350	3000K	90	LED CONTEMPORARY SQUARE VANITY, 2" SQUARE 24" LONG WHITE ACRYLIC DIFFUSER	MVOLT 120/277	18	WALL	LITHONIA: FMVCSLS 24IN MVOLT 30K 90CRI BN	
CL2	825	3000K	82	2' LINEAR LED, LOW PROFILE WRAPAROUND, CURVED DIFFUSER, WHITE	MVOLT 120/277	7	SURFACE	LITHONIA: BLPW2 8L ADP MVOLT EZ1 LP830	
CL4	1985	3000K	82	4' LINEAR LED, LOW PROFILE WRAPAROUND, CURVED DIFFUSER, WHITE	MVOLT 120/277	16	SURFACE	LITHONIA: BLPW4 20L ADP MVOLT EZ1 LP830	
R1	1514	3000K	85	6" RECESSED LED, FLAT LENS, CLEAR TRIM	MVOLT 120/277	17.5	RECESSED	LITHONIA: LDN6 30/15 L06 AR LS MVOLT EZ1	
R2	857	3000K	85	6" LED, FLAT LENS, FLUSH LENS WHITE PAINTED TRIM (WET LOCATIONS)	MVOLT 120/277	9.6	RECESSED	GOTHAM: EVO6SH 30/10 DFF SOL MVOLT	
S1	3880	4000K	80	4' LED STRIP, FROSTED ROUND DROP LENS	MVOLT 120/277	30	SURFACE	HOLOPHANE: HZL1D L48 3000LM FST MVOLT 40K 80CRI WH	
WS1				EXTERIOR LED WALL SCONCE, 11" KANSO COLLECTION, DIE-CAST ALUMINUM, HAZELNUT BRONZE FINISH, LED BULB INCLUDED	120	9.5	WALL	ELK LIGHTING: 42170/1-LED	
WS2				EXTERIOR LED WALL SCONCE, 13" KANSO COLLECTION, DIE-CAST ALUMINUM, HAZELNUT BRONZE FINISH, LED BULB INCLUDED	120	9.5	WALL	ELK LIGHTING: 42171/1-LED	
NOTES:									
A. THE FIXTURES LISTED IN THIS SCHEDULE REPRESENT A BASIS OF DESIGN. EQUIPMENT FIXTURES PROVIDED BY OTHER MANUFACTURERS WILL BE CONSIDERED PER ENGINEER APPROVAL.									

FAULT CURRENT CALCULATIONS PROPOSED 75KVA TRANSFORMER											
Maximum Available Fault Current= Iaic Iffa = (kVA * 1000) / V Isca = (Iffa * 100) / %Z f= (2 * L * Iaic) / (C * n * V) M = 1 / (1 + f)											
Point	Fault Location	Feeder Length (ft)	Conductor Size	# Conductors Per Phase (n)	Cu (1) Al (2)	Conduit: Magnetic (1) Nonmagnetic (2)	Voltage	Phase	(C) Value	Upstream Fault Value (Iaic)	Fault Value (Isca)
U1	Proposed Utility Transformer - Pad Mounted (75KVA 1.4%Z 120/240V Single Phase Transformer)										22,321
1	Unit A Utility Meter	50	#3/0	1	1	2	240	1	13,923	22,321	14,333
2	Unit A Panel	20	#3/0	1	1	1	240	1	13,923	14,333	11,402
3	Unit B Utility Meter	50	#3/0	1	1	2	240	1	13,923	22,321	14,333
4	Unit B Panel	20	#3/0	1	1	1	240	1	13,923	14,333	11,402

NOTE: THIS FAULT CURRENT CALCULATION IS BASED ON THE PROPOSED 75KVA TRANSFORMER. IF THE ACTUAL TRANSFORMER DIFFERS OR THE DISTANCE FROM THE TRANSFORMER TO THE BUILDING CHANGES, CONTACT ENGINEER OF RECORD FOR UPDATED CALCULATIONS.

PANELBOARD: A													
LOCATION: A MOUNTING: SURFACE NEMA 1 MAIN DEVICE: 200.0 A MCB BUS AMPS: 225 AMPS						VOLTAGE: 120/240 V, 1 ø 3 W. A.I.C. RATING: 22,000 AMPS SYMMETRICAL SPECIAL:							
LOAD DESCRIPTION	BKR	BKR TYPE	POLES	CKT	A		B		CKT	POLES	BKR TYPE	BKR	LOAD DESCRIPTION
GARAGE & OUTDOOR LIGHTS	20.0 A	GFCI	1	1	71 VA	155 VA			2	1	AFCI	20.0 A	1ST FL BEDRM LIGHTS
BASEMENT BEDRM LIGHTS	20.0 A	DUAL	1	3			155 VA	302 VA	4	1	STANDARD	20.0 A	BATHROOM 1ST FLOOR
BASEMENT LIGHTS	20.0 A	DUAL	1	5	230 VA	360 VA			6	1	AFCI	20.0 A	KITCHEN RCPT
BASEMENT BATHROOM	20.0 A	STANDARD	1	7			302 VA	720 VA	8	1	AFCI	20.0 A	GARAGE & OUTDOOR RCPT
BEDRM 1 RCPT	20.0 A	AFCI	1	9	1113 VA	1176 VA			10	1	DUAL	20.0 A	GARBAGE DISPOSAL
KITCHEN RCPT	20.0 A	STANDARD	1	11			900 VA	1293 VA	12	1	AFCI	20.0 A	BEDRM 2 RCPT
BASEMENT MAIN RM RCPT	20.0 A	AFCI	1	13	1440 VA	2500 VA			14	2	DUAL	30.0 A	ELECTRIC CLOTHES DRYER
GARAGE DOOR OPENER	20.0 A	STANDARD	1	15			1680 VA	2500 VA	16				
ELECTRIC RANGE	50.0 A	AFCI	2	17	4000 VA	540 VA			18	1	AFCI	20.0 A	BASEMENT RCPT
				19			4000 VA	1500 VA	20	1	AFCI	20.0 A	MICROWAVE
1ST FL LIVING ROOM RCPT	20.0 A	AFCI	1	21	1080 VA	351 VA			22	1	AFCI	20.0 A	1ST FL LIVING ROOM LIGHTS
1ST FL LIVING ROOM/HALL RCPT	20.0 A	AFCI	1	23			1080 VA	1113 VA	24	1	AFCI	20.0 A	BEDRM 4 RCPT
BEDRM 3 RCPT	20.0 A	AFCI	1	25	1113 VA	1500 VA			26	1	DUAL	20.0 A	DISHWASHER
WASHING MACHINE	20.0 A	DUAL	1	27			1500 VA	2500 VA	28	2	STANDARD	30.0 A	WH-1
REFRIGERATOR	20.0 A	AFCI	1	29	1500 VA	2500 VA			30				
GSHP-1	60.0 A	STANDARD	2	31			4637 VA	2880 VA	32	2	STANDARD	35.0 A	UH-1
				33	4637 VA	2880 VA			34				
SPARE	20.0 A	DUAL	1	35			0 VA	0 VA	36	1	AFCI	20.0 A	SPARE
SPARE	20.0 A	DUAL	1	37	0 VA	0 VA			38	1	AFCI	20.0 A	SPARE
RESERVED FOR FIRE ALARM	20.0 A	FIRE...	1	39			0 VA	0 VA	40	1	AFCI	20.0 A	SPARE
					TOTAL LOAD:		27 kVA						
					TOTAL AMPS:		226 A						
							225.5 A						
LOAD CLASSIFICATION		CONNECTED			DEMAND		ESTIMATED		PANEL TOTALS				
Electric Clothes Dryer		5000 VA			100.00%		5000 VA						
FIRE ALARM		0 VA			0.00%		0 VA		CONNECTED LOAD: 54163 VA				
HVAC		15226 VA			100.00%		15226 VA		ESTIMATED DEMAND: 32241 VA				
KTCH		8000 VA			100.00%		8000 VA		CONNECTED CURRENT: 225.7 A				
LAUNDRY		1500 VA			100.00%		1500 VA		EST. DEMAND CURRENT: 153.3 A				
LITES		1018 VA			125.00%		1272 VA						
MTR		1500 VA			125.00%		1875 VA						
Other		5133 VA			100.00%		5133 VA						
RCPT		11160 VA			94.80%		10580 VA						
SMALL APPLIANCE		5676 VA			100.00%		5676 VA						
NOTES:													
NEC 220.82 OPTIONAL LOAD CALCULATION													

PANELBOARD: B													
LOCATION: B MOUNTING: SURFACE NEMA 1 MAIN DEVICE: 200.0 A MCB BUS AMPS: 225 AMPS					VOLTAGE: 120/240 V, 1 ø 3 W. A.I.C. RATING: 22,000 AMPS SYMMETRICAL SPECIAL:								
LOAD DESCRIPTION	BKR	BKR TYPE	POLES	CKT	A		B		CKT	POLES	BKR TYPE	BKR	LOAD DESCRIPTION
GARAGE & OUTDOOR LIGHTS	20.0 A	GFCI	1	1	71 VA	155 VA			2	1	AFCI	20.0 A	1ST FL BEDRM LIGHTS
BASEMENT BEDRM LIGHTS	20.0 A	DUAL	1	3			155 VA	302 VA	4	1	STANDARD	20.0 A	BATHROOM 1ST FL
BASEMENT LIGHTS	20.0 A	DUAL	1	5	230 VA	360 VA			6	1	AFCI	20.0 A	KITCHEN RCPT
BASEMENT BATHROOM	20.0 A	STANDARD	1	7			302 VA	720 VA	8	1	AFCI	20.0 A	GARAGE RCPT
BEDRM 1 RCPT	20.0 A	AFCI	1	9	1113 VA	1176 VA			10	1	DUAL	20.0 A	GARBAGE DISPOSAL
KITCHEN RCPT	20.0 A	STANDARD	1	11			900 VA	1293 VA	12	1	AFCI	20.0 A	BEDRM 2 RCPT
BASEMENT MAIN RM RCPT	20.0 A	AFCI	1	13	1440 VA	2500 VA			14	2	DUAL	30.0 A	ELECTRIC CLOTHES DRYER
GARAGE DOOR OPENER	20.0 A	STANDARD	1	15			1680 VA	2500 VA	16				
ELECTRIC RANGE	50.0 A	AFCI	2	17	4000 VA	540 VA			18	1	AFCI	20.0 A	BASEMENT RCPT
				19			4000 VA	1500 VA	20	1	AFCI	20.0 A	MICROWAVE
1ST FL LIVING ROOM RCPT	20.0 A	AFCI	1	21	1080 VA	351 VA			22	1	AFCI	20.0 A	1ST FL LIVING ROOM LIGHTS
1ST FL LIVING ROOM/HALL RCPT	20.0 A	AFCI	1	23			1080 VA	1113 VA	24	1	AFCI	20.0 A	BEDRM 4 RCPT
BEDRM 3 RCPT	20.0 A	AFCI	1	25	1113 VA	1500 VA			26	1	DUAL	20.0 A	DISHWASHER
WASHING MACHINE	20.0 A	DUAL	1	27			1500 VA	2500 VA	28	2	STANDARD	30.0 A	WH-1
REFRIGERATOR	20.0 A	AFCI	1	29	1500 VA	2500 VA			30				
GSHP-1	60.0 A	STANDARD	2	31			4637 VA	2880 VA	32	2	STANDARD	35.0 A	UH-1
				33	4637 VA	2880 VA			34				
SPARE	20.0 A	DUAL	1	35			0 VA	0 VA	36	1	AFCI	20.0 A	SPARE
SPARE	20.0 A	DUAL	1	37	0 VA	0 VA			38	1	AFCI	20.0 A	SPARE
RESERVED FOR FIRE ALARM	20.0 A	FIRE...	1	39			0 VA	0 VA	40	1	AFCI	20.0 A	SPARE
TOTAL LOAD:					27 kVA		27 kVA						
TOTAL AMPS:					226 A		225.5 A						
LOAD CLASSIFICATION		CONNECTED		DEMAND		ESTIMATED		PANEL TOTALS					
Electric Clothes Dryer		5000 VA		100.00%		5000 VA							
FIRE ALARM		0 VA		0.00%		0 VA		CONNECTED LOAD: 54163 VA					
HVAC		15226 VA		100.00%		15226 VA		ESTIMATED DEMAND: 32241 VA					
KTCH		8000 VA		100.00%		8000 VA		CONNECTED CURRENT: 225.7 A					
LAUNDRY		1500 VA		100.00%		1500 VA		EST. DEMAND CURRENT: 153.3 A					
LITES		1018 VA		125.00%		1272 VA							
MTR		1500 VA		125.00%		1875 VA							
Other		5133 VA		100.00%		5133 VA							
RCPT		11160 VA		94.80%		10580 VA							
SMALL APPLIANCE		5676 VA		100.00%		5676 VA							
NOTES: NEC 220.82 OPTIONAL LOAD CALCULATION													

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

GENERAL STRUCTURAL NOTES

- These notes do not replace the specifications but are to be read in conjunction with them.. Any discrepancies or conflicts between the two shall be brought to the attention of the Structural Engineer of Record (SER) for resolution. In these Notes and the Specifications, the word "shall" means "has a duty to."
- These drawings are for this specific project and no other use is authorized. Contact SER, Steven Halewski at SEH 720-540-6817

GOVERNING BUILDING CODE:

2018 International Building Code as adopted and amended by the state building code

DESIGN CODES AND STANDARDS:

ACI Manual of Concrete Practice
ACI 318, 301 Building Code Requirements & Specifications for Structural Concrete
AWC NDS National Design Specification for Wood Construction
ACI 530 / TMS 402 / ASCE 5 Building Code Requirements & Specifications for Masonry Structures

DESIGN LOADS PER ASCE 7-16

Risk category II

- Live load:

Residential Units	40 PSF
Roof live load	20 PSF
- Dead load:

Superimposed roof load	10 PSF
See wood trusses section for additional top/bot chord loads	
- Snow loads:

Ground snow load	58 PSF
Importance factor	1.0
Roof snow load	39 PSF + drifting & unbalanced
Snow exposure factor	1.0
Thermal factor	1.0
Rain loads	n/a
See plans for drift loads	
- Wind loads:

Wind speed (3 sec gust)	114 mph
Wind exposure C	
Mean roof height	16.5 feet
Kd	0.85
Kzt	1.0
G	0.85 (rigid building)
Structure is	Enclosed
Internal press coef	+/-0.18
Interior walls	5 PSF lateral load
- Seismic loads:

Site class	D
Ss	0.196 g
Si	0.047 g
Fa	1.6
Fv	2.4
Sds	0.229 g
Sd1	0.106 g
Ie	1.00
Seismic design category	B
- Sol. criteria:

Allowable soil bearing pressure	1,500 PSF
Shallow Foundation Recommendation	18" minimum continuous footings and 24"x24" minimum spread footings
Frost depth	36 inches
Anticipated max differential settlement	1/2 inch
Anticipated max total settlement	1 inch
Overexcavation and Structural Fill Below Slab on Grade	24" min, see Geotech Report for fill requirements

DESIGN / CONSTRUCTION CRITERIA

- The contractor shall verify dimensions and conditions before construction and notify the engineer of any discrepancies, inconsistencies, or difficulties affecting the work before proceeding.
- All material, workmanship, and details shall be in accordance with typical competent construction practices, current manufacturer's recommendations, and all applicable codes and government regulations.
- The contractor shall coordinate all disciplines, verifying size and location of all openings, whether shown on structural drawings or not, as called for on process, architectural, mechanical, electrical or other drawings. All conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the architect and engineer's attention for direction before proceeding.
- Equipment and structural anchor not sizes, type, embedment, and patterns shall be verified with the manufacturer or fabricator. All anchor patterns shall be templated to ensure accuracy of placement.
- The contractor shall supply all necessary temporary bracing, shoring, guying, or other means to avoid excessive stresses and to hold structural elements in place during construction.
- Job site safety (including excavations) is the sole responsibility of the general contractor and their subcontractors.
- The engineer is not responsible for construction means, methods, techniques or practices. Where drawings and details imply this, they are provided to show final construction. If contractor desires to use different means and methods than implied by these drawings, submit similar details for review.
- Standard or typical structural details are intended to illustrate design concepts and to specify material and required physical dimensions matching or similar to the referenced locations in the drawing set. Standard details apply whether or not they are cut on the drawings.
- There is no provision for future vertical or horizontal expansion in the design.

EXISTING CONSTRUCTION

- Before proceeding with any work within the existing facility, the contractor shall familiarize itself with existing structural and other conditions. It shall be the contractor's responsibility to design, provide, and erect all necessary bracing, shoring and other safeguards to maintain all parts of the existing work in a safe condition during the process of demolition and construction and to protect from damage those portions of the existing work which are to remain.
- The contractor shall field verify the dimensions, elevations, etc., necessary for the proper construction and alignment of the new portions of the work to the existing work. The contractor shall make all measurements necessary for fabrication and erection of structural members. Any discrepancy shall be immediately brought to the attention of the engineer.
- Any existing construction damaged in the removal of adjacent elements shall be replaced at the contractor's expense.
- Where existing concrete elements are to be demolished and reinforcing is not required to remain, cut existing reinforcing flush with concrete to remain and coat with epoxy, unless covered with concrete in final construction.

FOUNDATIONS

- CAUTION:** Existing underground utilities may exist anywhere on the site. Notify owner and South Dakota 811 prior to disturbing any grade or excavation.
- Structural foundations consist of shallow spread footing foundations as recommended by Terracon, see below for the report for each site. The structural engineer is not responsible for the accuracy or content of the subsurface soil conditions described in the specifications, test borings, or geotechnical report. A licensed geotechnical engineer shall be present during construction to test, inspect and verify all assumed soil conditions as required.

Fort Thompson - Wanblee - Pine Ridge	Terracon Report No. 24215084A dated April 27, 2022 Terracon Report No. 24215084B dated April 27, 2022 Terracon Report No. 24215084C dated April 27, 2022 Terracon Report No. 24215084D dated April 27, 2022
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- Away from walls, place fill in 8 inch loose lifts and compact to 98 percent Standard Proctor beneath foundations, 95 percent otherwise.
- When placing compacted fill adjacent to foundation walls and piers, place backfill at equal rates on both sides to prevent overturning or structural damage.
- Contractor shall provide for dewatering at excavations from either surface water or seepage.
- Moisture content in soils beneath building locations should not be allowed to vary after footing excavations and after grading for slabs on grade are completed to a degree that would de-stabilize the compacted soil. If subgrade materials become desiccated or softened by water or other conditions, remove and replace with engineered fill as recommended by the geotechnical engineer. Do not place concrete on frozen ground, nor allow ground beneath foundations to freeze. All foundation work shall be placed on substrate approved and tested by geotechnical engineer of record.
- Do not place backfill on frozen subgrade. Do not place frozen backfill.
- Slabs on grade shall be constructed on a conditioned subgrade as recommended by Terracon, see below for the report at each site.

Fort Thompson - Wanblee - Pine Ridge	Terracon Report No. 24215084A dated April 27, 2022 Terracon Report No. 24215084B dated April 27, 2022 Terracon Report No. 24215084C dated April 27, 2022 Terracon Report No. 24215084D dated April 27, 2022
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- Grading, where not specifically shown on the plans, it is intended that all excavated and backfilled areas shall be graded to slope away from buildings and other structures.

CONCRETE

- An independent testing agency shall cast 4 six inch test cylinders or an equivalent number of four inch cylinders for each 100 cubic yards of each concrete mix type for each day of operation, whichever is the lesser amount. The testing agency shall cast, cure, and test the specimens in accordance with ASTM C31 and ASTM C39 Air, temperature, and slump shall be tested at minimum for the first truck and every fifth truck thereafter (1st, 6th, 11th, etc) or when a change in properties is noticed, at the final location (test after pump, not at truck).
- The contractor shall be responsible for the design of form work to comply with the dimensions indicated on the plans, maintaining proper alignment during concrete pouring operations. Special care shall be taken with formwork for self-consolidating concrete.
- All concrete except as noted in the following paragraphs shall meet the following requirements:

Compressive Strength	f'c = 4,500 PSI min at 28 days
Water / (cement + pozzolan) ratio	0.45 max (0.40 max if exposed to sulfates)
- Concrete used in exterior flatwork and stoop slabs shall meet the following requirements:

Compressive Strength	f'c = 4,500 PSI min at 28 days
Water / (cement + pozzolan) ratio	0.45 max
Portland cement content	450 pounds per cubic yard min
- Concrete and grout exposed to frost (including foundation walls) shall be air entrained 6% +/- 1%.
- Slump shall be 4 inches +/- 1 inch without water reducing admixtures. With water reducing admixtures, concrete mix design shall state design slump and field tests shall be +/- 1 inch. Slump is used primarily as a measure of concrete consistency, truck to truck. If slump is outside these ranges, water content (water: cementitious ratio) shall be checked against allowable; and concrete rejected, accepted, or adjusted on that basis.
- Mix designs shall take account of heat of hydration in mass concrete (over 28 inches thick).
- Water-reducing admixtures conforming to ASTM C494 added to the mix at manufacturer's dosage rates may be used for improved workability.
- Do not add water to concrete at the jobsite without written approval of the SER, and in no case in excess of the water in the approved mix design.
- No chloride containing admixtures are allowed.
- All concrete is normal weight unless specifically noted otherwise.
- Cement shall be Portland cement type 1 or Portland Limestone Cement type 1L conforming to ASTM C150. Up to 30% cement can be replaced with flyash and up to 50% with GGBFS (50% combined max.). Aggregate for normal weight concrete shall conform to ASTM C33. Water is to be potable or demonstrated to have no harmful effects on concrete. Fly ash shall be demonstrated by test to contain minimum 18 percent CAO. When fly ash is used in concrete to be air entrained, air entraining shall be adjusted as required for LOI per recent experience of ready mix supplier.
- Measured from the time water and cement are batched together, no more than 90 minutes shall elapse until concrete is placed. This time shall be reduced by two minutes for every degree that concrete temperature exceeds 75 degrees Fahrenheit. These criteria may be relaxed by the use of set-controlling admixtures.
- Protect concrete in accordance with ACI 305 and ACI 306 for hot weather concreting and cold weather concreting respectively. In cold weather, heat is required if outside temperature falls below 30 degrees any time during first three days. Reinforcing shall be 40 degrees or warmer at time of concrete placement. Concrete temperature shall be recorded every morning and shall be kept above 40 degrees in all locations for 7 days. Concrete shall not be exposed to combustion products (use electric heat, ducted heater or ground heat). Keep protection in place minimum 24 hours after cessation of heating to provide gradual cool-down.
- When air temperature is above 85 degrees, provide mist, shading, windscreens and other protection as required for 12 hours after placing.
- Concrete being placed shall be protected from rain. If rain falls on concrete before it has set, or within 3 hours of placement in any event, contractor shall bear cost of testing to prove concrete is unaffected, and shall remove and replace affected concrete to the satisfaction of the engineer.
- Wet cure (poly and burlap or proprietary blankets kept moist daily) for a minimum of 7 days; sides of footings may be buried after 24 hours. Add one day of cure for flyash in excess of 15 percent or GGBFS in excess of 10 percent of cementitious. Contractor is responsible for staining caused by burlap in visible areas. Spray-on curing compounds shall not be used as a substitute for wet curing without written permission of the SER except as follows. Liquid-containing compounds must use a wet cure on all surfaces. Spray-on curing compounds may be substituted for wet curing in areas of non-liquid-holding structures that are not visible in the final condition and in liquid holding structures in winter conditions where water curing may be hazardous or difficult. When spray-on curing compounds are used, they should be applied in two layers perpendicular to each other and according to manufacturer's instructions.
- Cementitious grout shall be non-shrink and non-metallic grout. Place according to manufacturer's recommendations and trim neatly where visible.
- Coordinate with other trades for sleeves, conduit, electrical grounding wires, inserts, underground utilities, and other items to be embedded into concrete and verify that they are properly installed and supported before casting concrete. Holes through slab or wall shall leave minimum 1 inch clear to reinforcing steel. Reinforcing as specified. Placement of such items shall be coordinated with reinforcing placement where they would otherwise displace each other. For instance, in areas with a single mat of reinforcing, east-west conduit should be placed with east-west reinforcing and north-south conduit is placed with north-south reinforcing.
- Embedments shall not significantly impair the strength of the structure and shall not reduce fire protection. In no case shall embedments violate the required concrete cover. Conduit and pipes, with their fittings, embedded in concrete shall not be larger in outside dimension than 1/3 the overall thickness of slab, wall, or beam in which they are embedded and shall not be spaced closer than three diameters on center. Conduit and pipes placed within 2 feet below bottom of slabs and footings shall not be spaced closer than three diameters on center and shall be encased in CLSM or concrete vibrated to flow around conduit.
- No uncured aluminum items shall be embedded in any concrete. All aluminum surfaces in direct contact with concrete shall receive one coat of 8-12 mil dry film thickness bimastic.
- Bevel all exposed corners of concrete 3/4"x3/4".
- Verify size and location of all equipment bases and housekeeping pads.
- All cast-in-place concrete floors on grade shall be provided with a min. 1/8" per FT slope for foot drains unless noted otherwise. All interior slabs on grade shall be placed over 10 MIL vapor retarder meeting ASTM E1745 class A, with joints welded or lapped and sealed according to manufacturer's recommendations. Vapor retarder shall permit less than 0.01 perm after conditioning. All damage and penetrations shall be sealed according to manufacturer's recommendations.
- All concrete to be trowel finished shall be tested for air content, whether or not it is purposely air entrained. If concrete contains more than 2 percent entrained air, delay start of finishing to preclude weakened finish plans just below surface.
- Unless specifically noted otherwise, building sections may not illustrate all details, keyways, or waterstops required by design. All base slab or footing to wall joints shall have vertical dowels crossing the joint. All elevated slabs (including base slabs above the lowest base slab elevation) to tank or foundation walls shall have horizontal dowels crossing the joint. Slabs on grade may either be independent (with expansion joint) or doveled in; provide dowels where slabs on grade are shown to bear on walls in sections. Refer to typical details in the drawings for design intent.

REINFORCING STEEL

- All concrete is reinforced concrete unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas. If not shown shall be detailed per ACI 318 and meet requirements of ACI 318, current editions.
- All reinforcing steel shall conform to the requirements of ASTM A615 grade 60 steel. Reinforcing steel shall not be welded without authorization of the SER, and if welded shall be A706 grade 60 steel. Reinforcing to be welded shall only be welded to structural steel, not other reinforcing, unless specifically noted on the drawings. Welded plain wire fabric shall be supplied in sheets, not rolls, and conform to the requirements of ASTM A185.
- Clear minimum cover of concrete over reinforcing steel shall be as follows unless specifically noted otherwise:

3" Concrete placed against earth	2" All other concrete
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- All reinforcing shall be tied to crossing reinforcing on at least every other bar (every bar at perimeter), and sufficiently to resist displacement from workers and placement of concrete.
- All footing dowels shall be accurately positioned and wired in place before casting footing concrete. Where not noted, provide and install dowels of same size and spacing as vertical reinforcement in all columns and walls. Position all anchor bolts with templates.
- Bar lap lengths in concrete and 90 degree end hooks shall be in accordance with the table below unless noted otherwise. This table lists class B laps. For epoxy coated reinforcing steel, increase lap length by 50% with c-c bar spacing < 6db and cover to center of bar <3db, otherwise increase by 20%.

REINF. BAR SIZE	SLAB, WALL, COLUMN BAR LAP	COLUMN TOP BAR *	BEAMS BAR LAP	BEAMS TOP BAR *	90 DEGREE END HOOK
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#3	19 IN.	24 IN.	28 IN.	36 IN.	6 IN.
#4	25 IN.	32 IN.	37 IN.	48 IN.	8 IN.
#5	31 IN.	40 IN.	46 IN.	60 IN.	10 IN.
#6	37 IN.	48 IN.	56 IN.	72 IN.	12 IN.
#7	54 IN.	70 IN.	81 IN.	105 IN.	14 IN.
#8	62 IN.	80 IN.	93 IN.	120 IN.	16 IN.
#9	70 IN.	90 IN.	104 IN.	135 IN.	19 IN.
#10	78 IN.	102 IN.	118 IN.	153 IN.	22 IN.
#11	87 IN.	113 IN.	131 IN.	170 IN.	24 IN.

*Top bar splices are horizontal reinforcement placed such that more than 12 in. of concrete is cast in the member below the splice.

- Bars marked continuous, corner bars, and all vertical steel shall be lapped in accordance with table above at splices and embedments, unless shown otherwise. Splice top bars near midspan and splice bottom bars over supports, unless noted otherwise.
- Bar support accessories shall be as specified in latest edition of the ACI detailing handbook and the concrete reinforcing steel institute design handbook. Maximum accessory spacing shall be 4'-0" on center, and all accessories on exposed surfaces shall have plastic coated ends. Chairs shall be supported on sand plates as required to keep from sinking into subgrade. WWP shall be supported by continuous bolsters or bars on chairs sufficiently close to prevent sheets from sagging appreciably during concrete placement. Support rebar used at contractor's option shall be extra bars supplied by contractor, not taken from design reinforcing.
- Where potentially exposed to de-icing salts; stoop, apron, sidewalk and floor reinforcing shall be epoxy coated.

POST INSTALLED ANCHOR RODS AND DOWELS

- Unless noted otherwise, anchor and reinforcing dowels installed in concrete or concrete masonry shall be as noted below. Anchors not shown or not on the drawings, those required by the contractor solely for his means and methods, or those required by mechanical/electrical and carrying less than 100 pounds of non-safety-related loads, do not require special inspection.
- Approved manufacturers are: HILTI, ITW / Redhead, Simpson, and Powers / Rawl. Submit product data and current ICC ESR report or IAPMO report showing product is compliant with project code requirements for review. Contractor shall arrange for manufacturer's rep to train all installers on the complete installation procedure. A letter of procedure stating method of drilling, the product for use, the complete installation procedure, manufacturer training date and a list of the personnel trained on anchor installation shall be submitted to the engineer.
- Permanent anchors exposed to earth, weather, or corrosive environments and anchors engaging stainless steel or aluminum members, shall be stainless steel type 304 or 316. Other anchors shall be zinc plated, minimum ASTM A36 material unless ASTM A193 grade B7 is noted in the drawings, and shall be according to ASTM F1554. Reinforcing dowels shall be of the same size (U.N.O.), material and coating (if any) as the continuing reinforcing.
- Where expansion anchors are called for, contractor may substitute screw type anchors with self-tapping threads or adhesive anchors of the same size and embedment, subject to review of capacity by the engineer for the product substituted. Where adhesive anchors are called for, other types shall not be substituted. Screw type anchors shall not be re-used on permanent work.
- Adhesive shall have a current ICC ESR report. Use high viscosity adhesive and placement devices in consultation with the manufacturer for overhead work. Overhead installation shall be subject to continuous special inspection during installation and shall only be performed by certified adhesive assessor installers. Use low temperature formulations for cold weather work. Do not apply significant load to anchors until their capacity has been assessed.
- Anchors installed in concrete masonry and precast hollow core concrete shall be installed in cores grouted solid. Minimum grout strength f'g = 3,000 PSI. Minimum 12 inches of grout each way along horizontal cores from anchor. Vertical cores shall be grouted full height. Anchors installed in masonry shall not be installed within 1 1/2 inches of any head joint unless block are square end and mortared across full width of head joint, or filled bond beam.
- Holes shall be drilled, cleaned, and maintained until installation in accordance with manufacturer's recommendations using standard rotary-impact bits and oil-free compressed air; diamond core bits shall not be used unless specifically approved by the manufacturer. Locate and avoid reinforcing bars and tendons. Maintain spacing (minimum 8 inches) and edge/corner distances (minimum 4 inches) as recommended by manufacturer unless specifically noted otherwise in the drawings.
- Unless noted otherwise, anchors shall be installed to the following embedments:

	Diameter	CIP Concrete	Grouted CMU
Expansion/screw:	1/2 inch	3 1/2 inches	4 1/2 inches
	5/8 inch	4 inches	5 inches
	3/4 inch	5 inches	6 inches
Adhesive:	1/2 inch	4 1/2 inches	5 1/2 inches
	5/8 inch	5 inches	6 inches
	3/4 inch	6 inches	7 inches (6" in 8" CMU)
- Except as noted, all anchors shall have intermittent special structural inspection by one of the following. Load tests shall be to 150 percent of service capacity or 75 percent of ultimate strength, with no appreciable slip, permanent deformation, or concrete damage. Anchors which fail this test shall be replaced at no cost to the project. Two failures in a given installation shall result in mandatory load testing at double the rate noted below.
 - Expansion and screw anchors:
 - Witness installation with torque wrench according to manufacturer's recommendations and requirements of ICC report;
 - Test all anchors with torque wrench after installation (including load test of 5 percent of installed anchors); or
 - Load test of 10 percent of installed anchors by supplier or third party inspector
 - Adhesive anchor rods and dowels:
 - Witness installation according to manufacturer's recommendations and requirements of ICC report; or
 - Load test of 10 percent of installed anchors by supplier or third party inspector

STRUCTURAL METALS

- All structural steel shall be as follows:
 - Wide flange beams and columns shall be ASTM A992, grade 50 steel.
 - All miscellaneous steel (angles, channels, plate) shall be ASTM A992, A529, or A36 steel (min. Fy = 36 KSI).
 - Rectangular steel tubes (HSS) shall be ASTM A500, grade C steel (fy = 50 KSI).
 - Pipe shall be ASTM A53, type B, Schedule 40, unless A500 grade C (46 KSI) is noted.
 - Other shapes shall be ASTM A36 (36 KSI).
- Splicing or modification of members in the field is prohibited without prior written approval of the SER.
- All primary member bolted connections shall be two bolt minimum.
- Fabrication and erection shall be in accordance with the latest edition of the AISC Manual of Steel Construction, Code of Standard Practice for Steel Buildings and Bridges, except as follows:
 - To paragraph 3.1, add "The project architectural drawings are a part of the structural steel design drawings by reference and must be used concurrently with the structural steel design drawings for any information not shown on the structural steel design drawings"
 - Delete paragraph 3.2.1.2 the following, "architectural, process, electrical and mechanical plans shall be used as a supplement to the structural steel design drawings to define detail configurations and construction information"
 - Paragraph 3.3 modify the last sentence to read, "In case of discrepancies between the structural steel plans and plans of other disciplines or existing conditions, such discrepancies shall be called to the architect / engineer's attention for resolution".
- All aluminum shapes shall be ASTM B209, B308, alloy 6061-T6; except handrail may be 6063-T5 or -T6. All welding shall be performed by a certified welder using compatible electrodes in accordance with the requirements of AWS D1.2 and visually inspected. Where designed by the fabricator, aluminum alloy and temper shall be stated on shop drawings.
- All steel shall receive a primer coat unless galvanized, refer to specification manual.
- All exposed steel shall be galvanized. Damage galvanizing shall be repaired by application of cold galvanizing compound such as ZRC (minimum 3 coats). Paint finish per architectural.
- All steel welding shall be performed by a certified welder using E70 electrodes in accordance with the requirements of AWS D1.1 "Structural Welding Code" and visually inspected. Full-pen welds shall also be inspected by NDT methods such as ultrasonic, mag particle, or dye pen.
- All field welded connections shall be chipped, ground where required, wire brush cleaned and painted to match the paint system.
- All bolts not otherwise specified shall be 3/4" diameter high strength (ASTM A325-N). All bolts shall be fully pretensioned. Any non-twist off bolts shall have 10 percent checked with a torque wrench by the special inspector.
- All copes shall be made with a 1 inch minimum radius.
- All anchor rods shall be minimum 3/4" diameter ASTM F1554 grade 36 / ASTM A276 Stainless Steel type 304 unless noted otherwise. Where headed rods are noted or specified, bent rods shall not be furnished; rods may be headed or nutted, with the nut tack welded at the bottom end of the anchor or double nutted.
- Metal/FRP stairways, platforms and grates shall be provided and constructed with adequate design characteristics (100 PSF live load capacity UNO) and structural configurations in accordance with the fabricator's shop drawings as approved by the engineer. All stairways, platforms and grates shall satisfy all requirements of the project documents. All stair runs longer than 10 feet between laterally rigid supports, and all two-post beams, shall have diagonal bracing fastened to the bottom flanges of the stringers and center of posts UNO.

LUMBER AND WOOD FRAMING

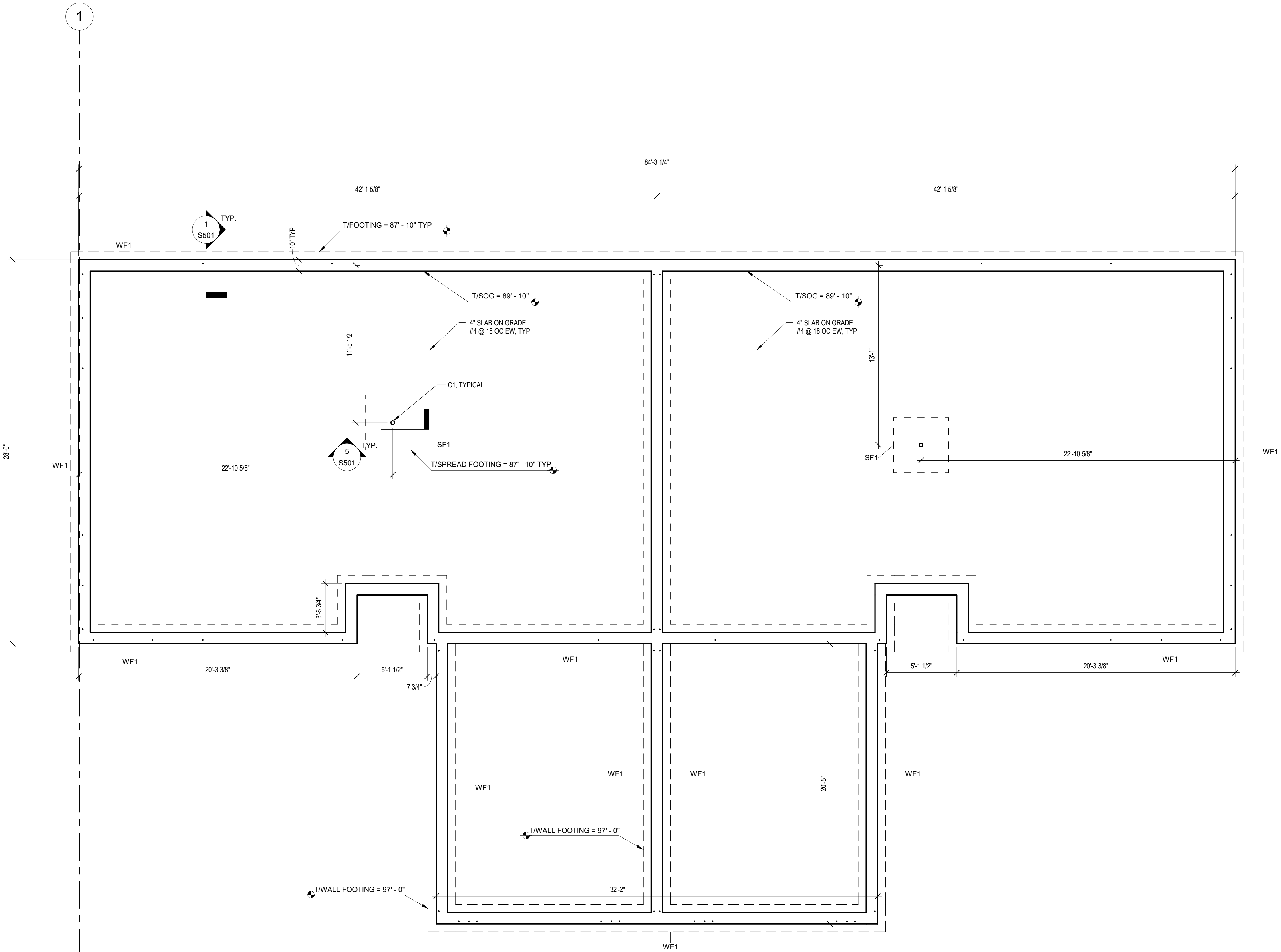
- Quality and construction of wood framing members and their fasteners for load supporting purposes not otherwise indicated on the drawings shall be in accordance with the International Building Code. Cutting, notching, drilling, or coring of members or shear walls shall be permitted only as detailed, or with written permission of the SER.
- Minimum wood grades shall be as follows. Other species with equal or greater properties may be substituted. If Southern Yellow Pine is substituted, allowance must be made for difference in standard dimensions. Submit signed calculations by contractor's structural engineer, licensed in the state of the project, if substitutions are submitted.
 - Bending members (joists, beams and headers): No. 2 and better Hem-Fir (HF) visually graded lumber or equal (allowable bending stress 850 PSI, allowable shear stress of 150 PSI and an elastic modulus of 1,300,000 PSI).
 - Axially loaded members (studs, posts and columns): Stud grade SYPF visually graded lumber (allowable compression of 405 PSI and an elastic modulus of 1,200,000 PSI) unless noted otherwise per plan.
 - Plates shall be no. 2 or better grade, sufficiently straight to lay flat. Plates on masonry, concrete, or precast concrete shall be treated, with stainless steel anchors.
- Refer to architectural drawings for locations of fire rated walls. Provide sheathing and studs in accordance with wall assemblies in shear wall schedule. Exterior sheathing shall be minimum 19/32 inch APA span rated, fastened to studs with 8D nails at 6 inches on center at edges and 12 inches on center in the field of a panel, but in any event shall be fastened with number and size of fasteners not less than that set forth in table 2304.9.1 of the International Building Code. Any panel joints perpendicular to supports shall be blocked with solid 2x6 blocking. Floor sheathing shall be APA rated tongue and groove Strand-I-Floor, Exposure 1, gaged and nailed with 8d ring shank nails at 12" on center at all supports. Roof sheathing shall be APA span rated. For low-slope or flat roofs (roofs with pitch less than 2:12, or 2 inch per foot) provide panel clips along the panel edge running perpendicular to the support framing as specified by the APA Engineered Wood Construction Guide.
- Beams built up of multiple members shall be nailed or otherwise fastened together in accordance with table 2304.9.1 of the International Building Code.
- Lintel or header members shall have minimum 3 inches of bearing. Joists shall bear full width of supporting members (stud walls, beams, etc.).
- Bridging of stud bearing walls and shear walls shall be solid matching sheathing joints.
- Joist blocking and bridging shall be solid wood or cross bridging of either wood or metal straps. Spacing in any case shall not exceed 8'-0" or half of span.
- Joists or trusses and studs shall be lined up where they are at the same spacing. Where not at the same spacing or if they can't be lined up, provide triple top cap.
- Otherwise, top caps shall be double 2x members, lapped minimum 48 inches with at least six 16d nails at each lap and not more than 16 inches between nails. Splice at studs only.
- Slit plates shall be bolted to concrete walls or steel beams with 1/2" diameter bolts at 48" on center, and no more than 6 inches from end of wall. Plates in direct contact with concrete or masonry shall be treated lumber.
- Provide double joists under parallel partitions.
- Joist hangers shall be Simpson Strong-Tie, USP, or approved equal.
- Bolts in wood shall not be less than 7 diameters from the end and 4 diameters from the edge of the member to centerline of bolt. Bolt holes in wood shall be drilled 1/32 inch larger than the bolt diameter. Bolt heads and nuts bearing on wood shall have standard out washers.
- All screws shall be high strength self-tapping screws with integral washer heads. If manufacturer is different than noted, submit for review with strength data. All screws shall have a minimum steel strength of 100,000 psi. All screws greater than 5/16" diameter shall have pre-drilled pilot holes per manufacturer's recommendations.
- Service condition- dry with moisture content at or below 19% in service
- Parallel strand lumber (PSL) shall have an allowable flexural stress (Fb) of 2,900 PSI (modified by size factor) and an elastic modulus (E) of 2,000,000 PSI.
- Laminated Veneer Lumber (LVL) shall have an allowable flexural stress (Fb) of 2,650 PSI (modified by size factor) and an elastic modulus (E) of 1,900,000 PSI.

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1/4" = 1'-0"

FOUNDATION PLAN

A



FOUNDATION PLAN GENERAL NOTES:

- (TYPICAL UNLESS NOTED OTHERWISE)
- FOR ALL DIMENSIONS AND CONDITIONS NOT SHOWN, SEE ARCHITECTURAL PLANS.
 - REFERENCE CIVIL DRAWINGS FOR EXTERIOR GRADING.
 - DESIGN ALLOWABLE SOIL BEARING CAPACITY: 1,500 PSF. (REF GEOTECHINCAL REPORT LISTED ON SHEET S001)
 - PLACE SLAB ON GRADE ON CONDITIONED SOIL FILL PER THE GEOTECHNICAL REPORT RECOMMENDATIONS.
 - UNLESS NOTED OTHERWISE, COLUMNS AND PIERS ARE CENTERED ON GRADE BEAMS OR PIER CAPS.
 - SEE PLAN FOR T.O.W. ELEVATION.
 - SYMBOL DENOTES HOLD DOWN, SEE 2 / S513

STRUCTURAL COLUMN SCHEDULE

MARK	DESIGNATION
C1	HSS3.500X0.250

FOOTING SCHEDULE

MARK	SIZE	REINFORCING
SF1	4'-0" x 4'-0" x 18"	(4) #4 EA WAY
WF1	2'-0" WIDE x 1'-0" DEEP x CONTINUOUS 2	(3) #5 REBAR CONTINUOUS, BOTTOM. #5 @ 12" OC TRANSVERSE



Project Owner
Indian Health Service (IHS)
Department of Health and Human Services
Division of Engineering Services
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INDIAN HEALTH SERVICE - GREAT PLAIN AREA
DUPLEX BUILDING & SITE LOCATIONS

701 FIFTH AVENUE, MS 24,
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SEH Project 164945
Checked By SJH
Drawn By BJD

Project Status 100% CONSTRUCTION DOCUMENTS
Issue Date 07/18/2022

REVISION SCHEDULE

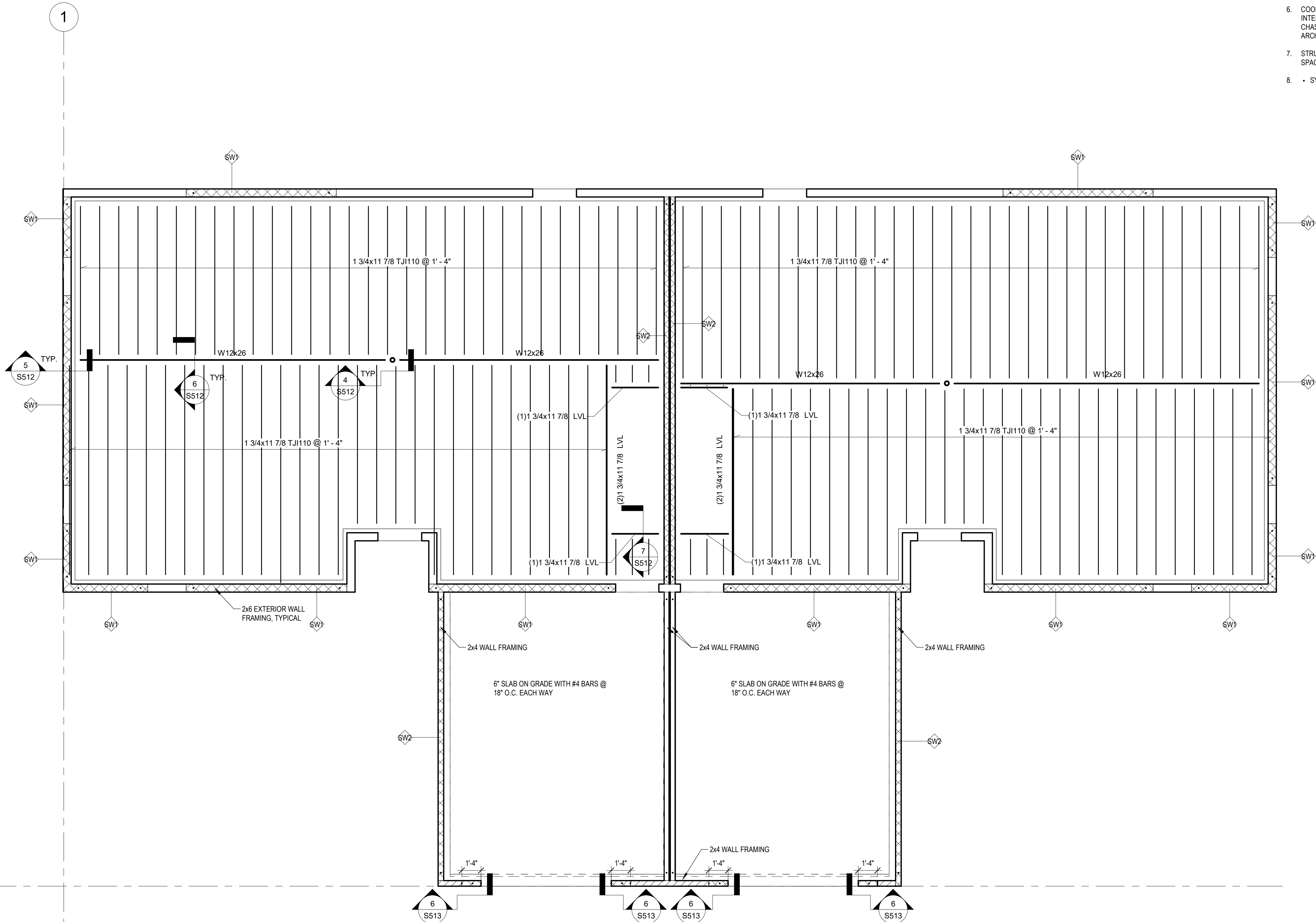
REV. # DESCRIPTION DATE

FOUNDATION PLAN

S101

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LEVEL 1
1/4" = 1'-0"



FLOOR FRAMING NOTES:

(TYPICAL UNLESS NOTED OTHERWISE)

- FLOOR SHEATHING: 23/32 OR 3/4" APA RATED T&G DECKING
GLUED AND NAILED TO FLOOR JOISTS AT 6" o.c. AT EDGES AND 12"
o.c. IN PANEL FIELD. (TYPICAL)
- SEE 5 / S501 FOR COLUMN SIZE.
- SEE SHEET S511, S512 AND 513 FOR WOOD FRAMING DETAILS
- SEE SHEARWALL SCHEDULE AND DIAGRAM ON SHEET S513 FOR
SHEARWALL HOLD-DOWN ANCHORAGE REQUIREMENTS.
SHEARWALL LOCATIONS SHOWN SHADED. SEHARWALLS DENOTED
BY "SW".
- SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO WALL AND
STAIR OPENINGS AND FOR LOCATIONS OF PARTITION WALLS NOT
NOTED.
- COORDINATE SPACING OF FLOOR JOISTS TO AVOID
INTERFERENCE WITH VERTICAL MECHANICAL VENTILATION
CHASES AS REQUIRED. REFER TO MECHANICAL AND
ARCHITECTURAL PLANS FOR CHASE LOCATIONS.
- STRUCTURAL WOOD FRAMED BEARING WALLS ARE 2X6 STUDS
SPACED AT 16" OC UNLESS OTHERWISE NOTED
- SYMBOL DENOTES HOLD DOWN, SEE 2 / S513



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FRAMING PLAN - LEVEL 1

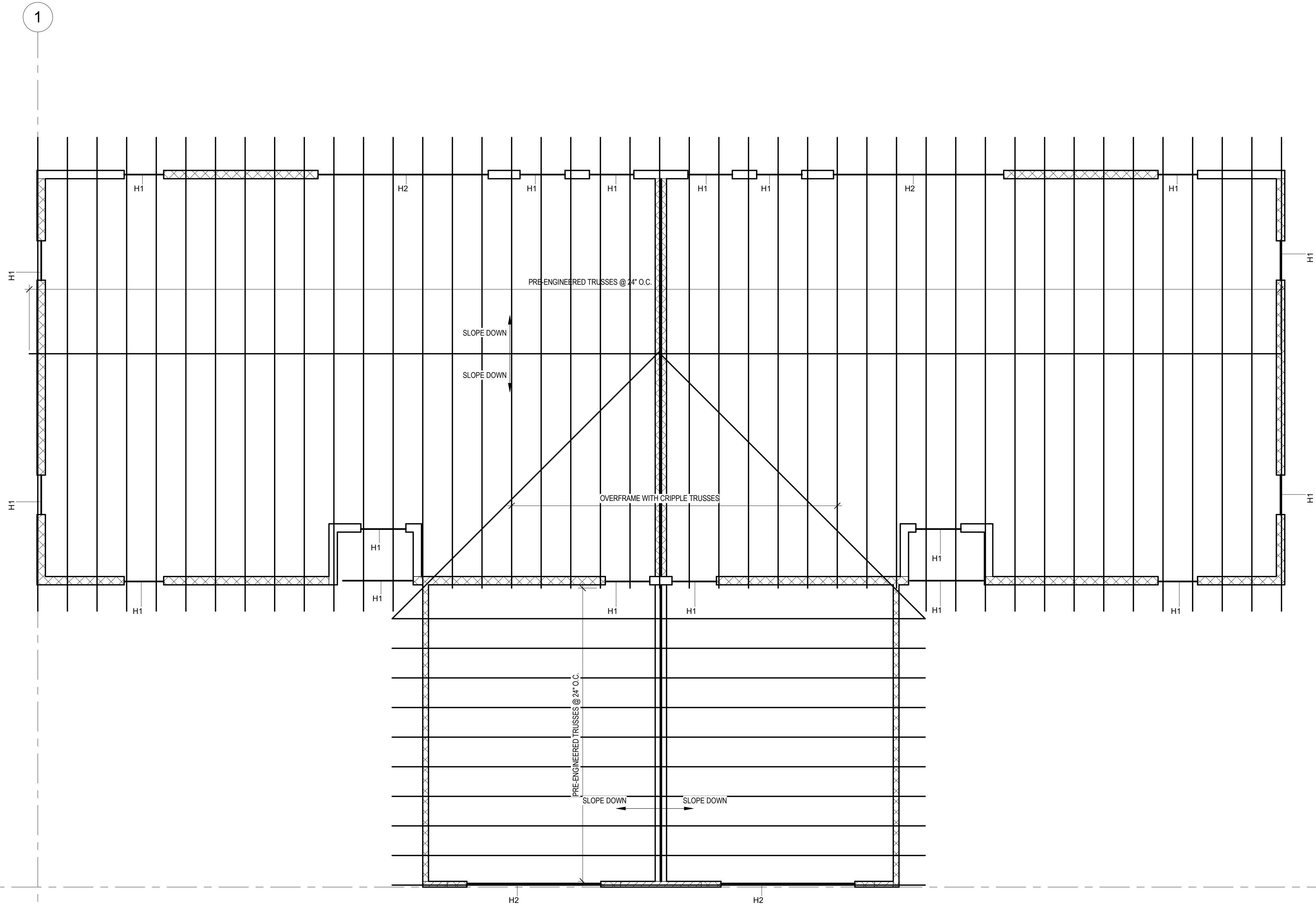
S111

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ROOF PLAN

1/4" = 1'-0"

A



ROOF FRAMING NOTES:

(TYPICAL UNLESS NOTED OTHERWISE)

- TRUSS BOTTOM-CHORD LATERAL BRACING WILL BE PROVIDED BY GYPSUM BOARD.
- CONTRACTOR TO FURNISH AND INSTALL PERMANENT WEB BRACING AS SPECIFIED BY THE TRUSS SUPPLIER. PROVIDE END ANCHORAGE AS APPLICABLE TO RESTRAIN THE PERMANENT WEB BRACING SPECIFIED BY THE TRUSS DESIGNER.
- ROOF TRUSSES:
 - SPACE TRUSSES AT SPACING INDICATED ON PLAN
 - ATTACHMENT OF TRUSSES TO DOUBLE TOP PLATE: PER MANUFACTURER
- TRUSS LOADING/SPACING:
 - TRUSS SPACING SHOWN ON PLAN IS MAXIMUM SPACING. TRUSS MANUFACTURER MAY DECREASE SPACING OR ADJUST CHORD SIZES AS REQUIRED TO ACCOMMODATE SNOW DRIFT LOADS.
- ROOF SHEATHING:
FLAT ROOF - USE 5/8" APA RATED SHEATHING. MINIMUM 40/20 APA RATING.
- DIAPHRAGM NAILING:
UNBLOCKED DIAPHRAGM, W/ 10d NAILS AT 6" o.c. AT PANEL EDGES, 12" o.c. IN FIELD.
- SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO WALL AND STAIR OPENINGS AND FOR LOCATIONS OF PARTITION WALLS NOT NOTED.
- COORDINATE ROOF TRUSSES TO AVOID INTERFERENCE WITH VERTICAL MECHANICAL VENTILATION CHASES. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR CHASE LOCATIONS.
- TRUSS SUPPLIER SHALL VERIFY ALL TRUSS END TO END LENGTHS AND BEARING CONDITIONS. ADJUST TRUSS PROFILES AS NECESSARY.
- STRUCTURAL WOOD FRAMED BEARING WALLS ARE 2X6 STUDS SPACED AT 16" OC UNLESS OTHERWISE NOTED

HEADER / JAMB SCHEDULE		
MARK	HEADER	JAMB
H1	(2) 2x6 #2	(1) 2x TO BRG (1) 2x FULL HEIGHT
H2	(3) 2x12 #2	(1) 2x TO BRG (1) 2x FULL HEIGHT



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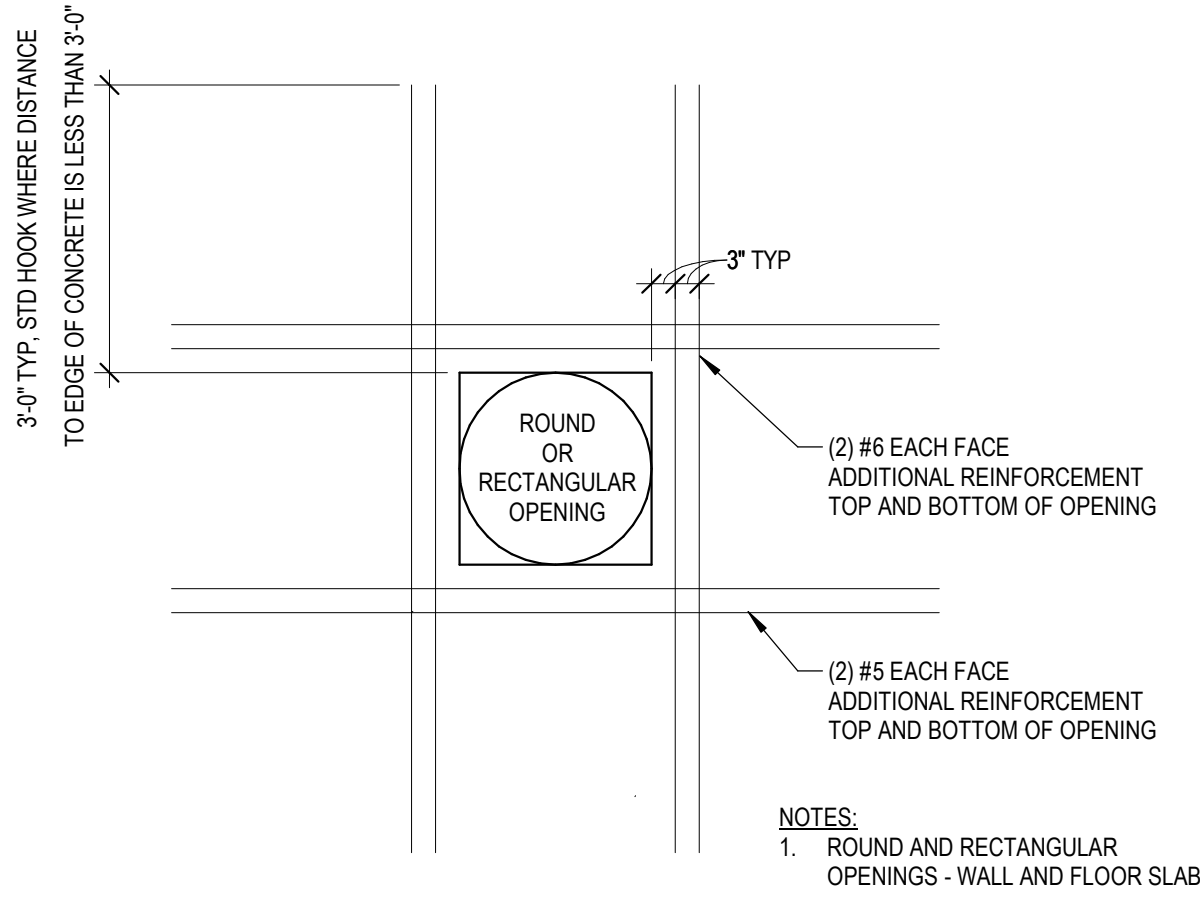
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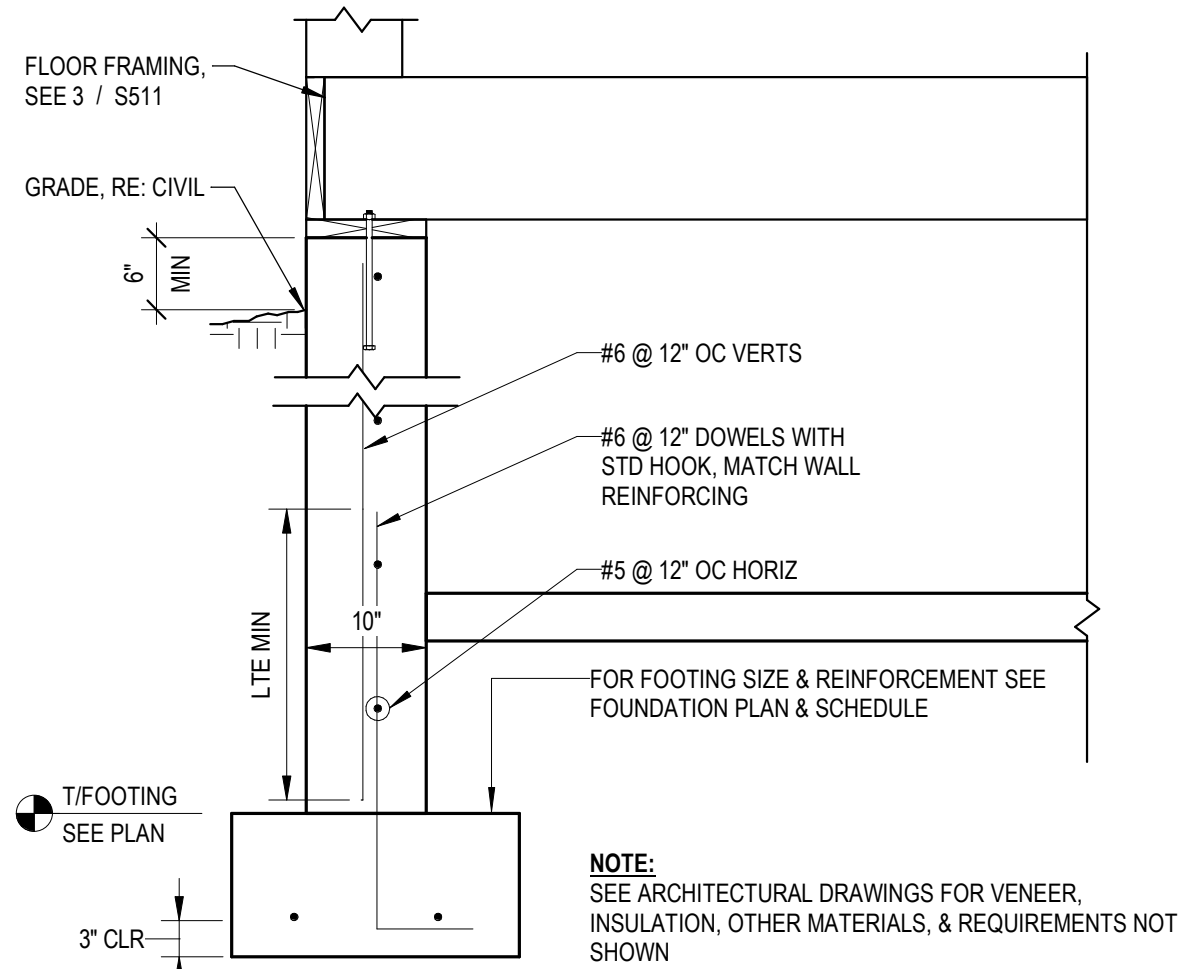
ROOF FRAMING PLAN

S112



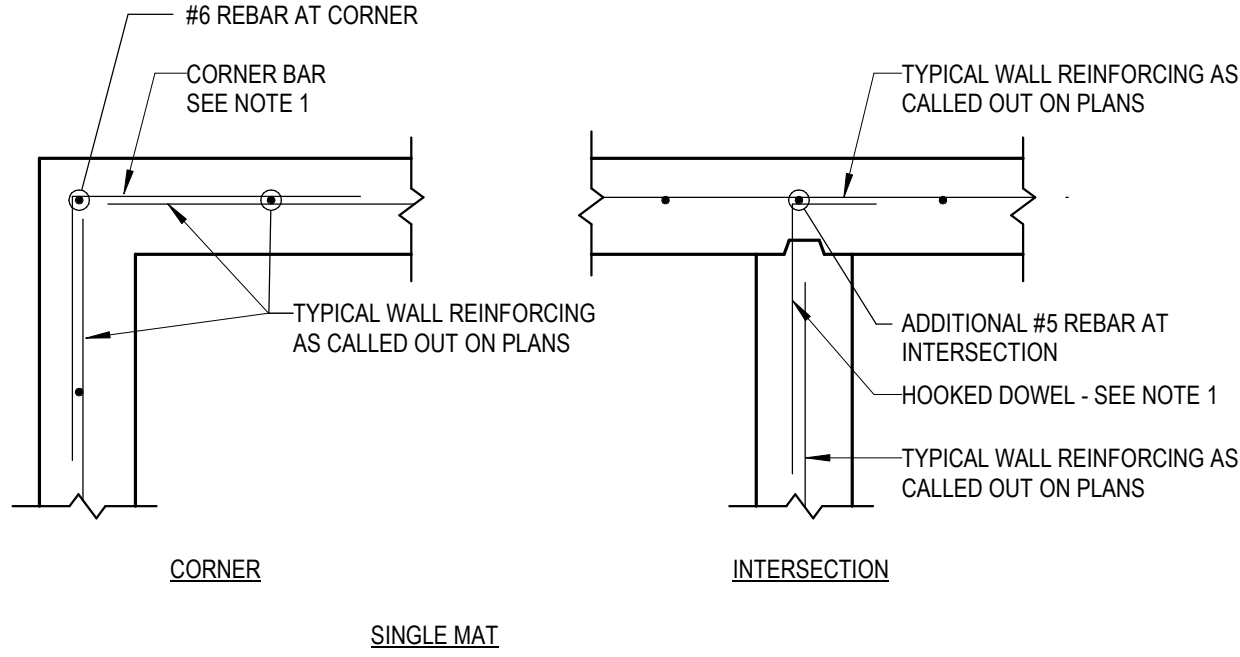
4
S501
1/2" = 1'-0"

OPENING REINFORCEMENT DETAIL



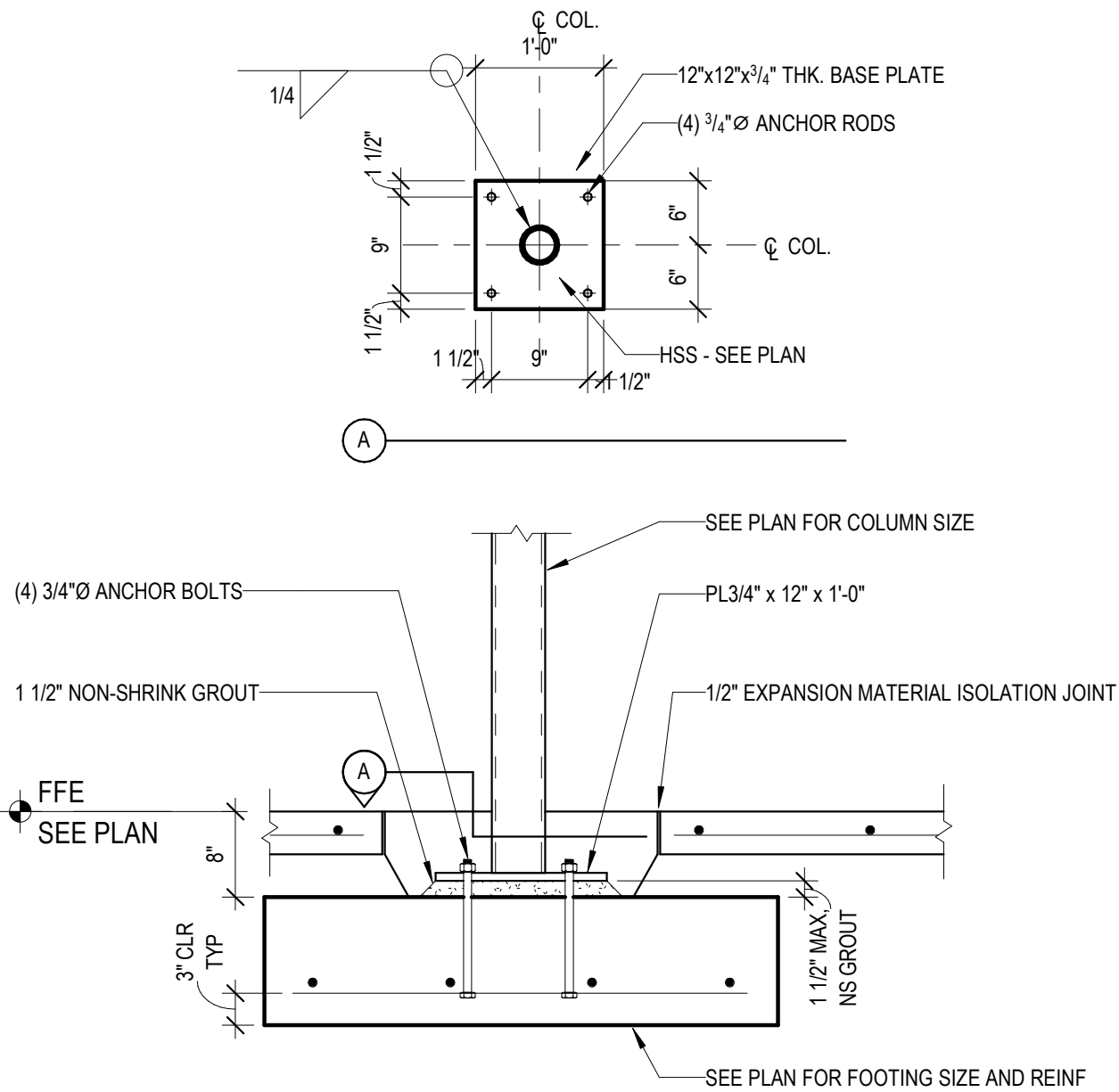
1
S501
3/4" = 1'-0"

TYPICAL FOUNDATION WALL



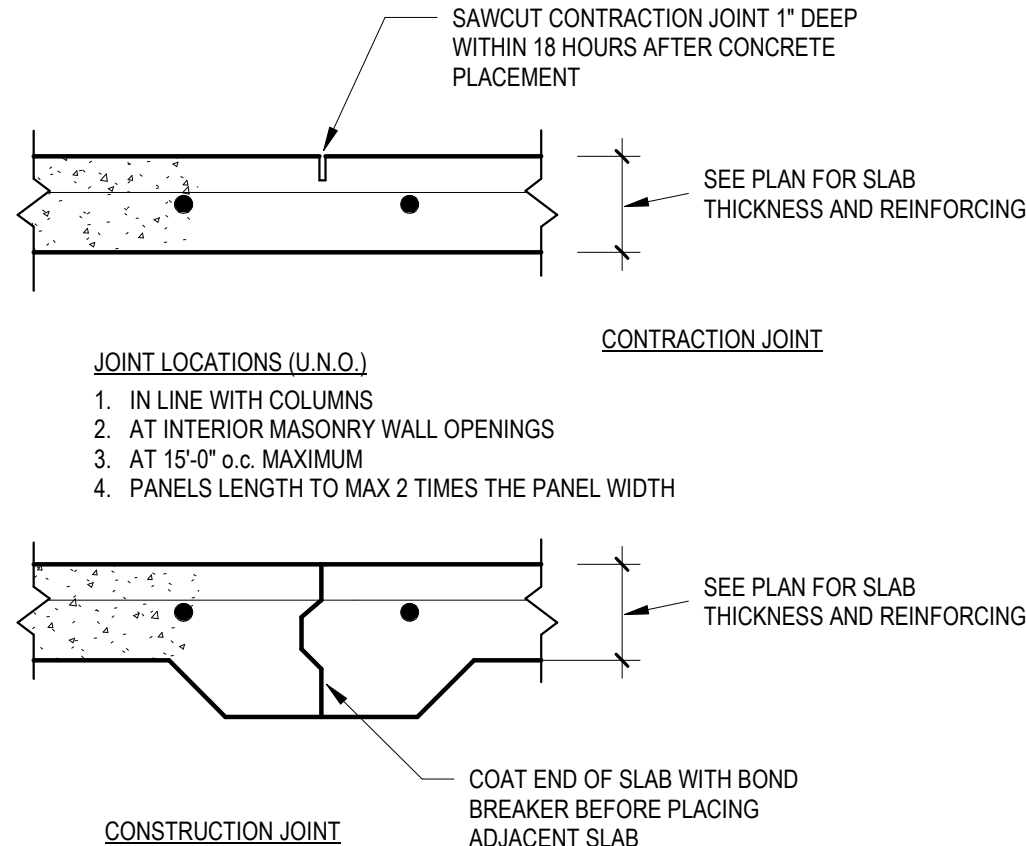
2
S501
3/4" = 1'-0"

CONCRETE CORNER WALL REINFORCING DETAIL



5
S501
3/4" = 1'-0"

INTERIOR COLUMN FOOTING DETAIL



3
S501
1" = 1'-0"

CONSTRUCTION JOINT



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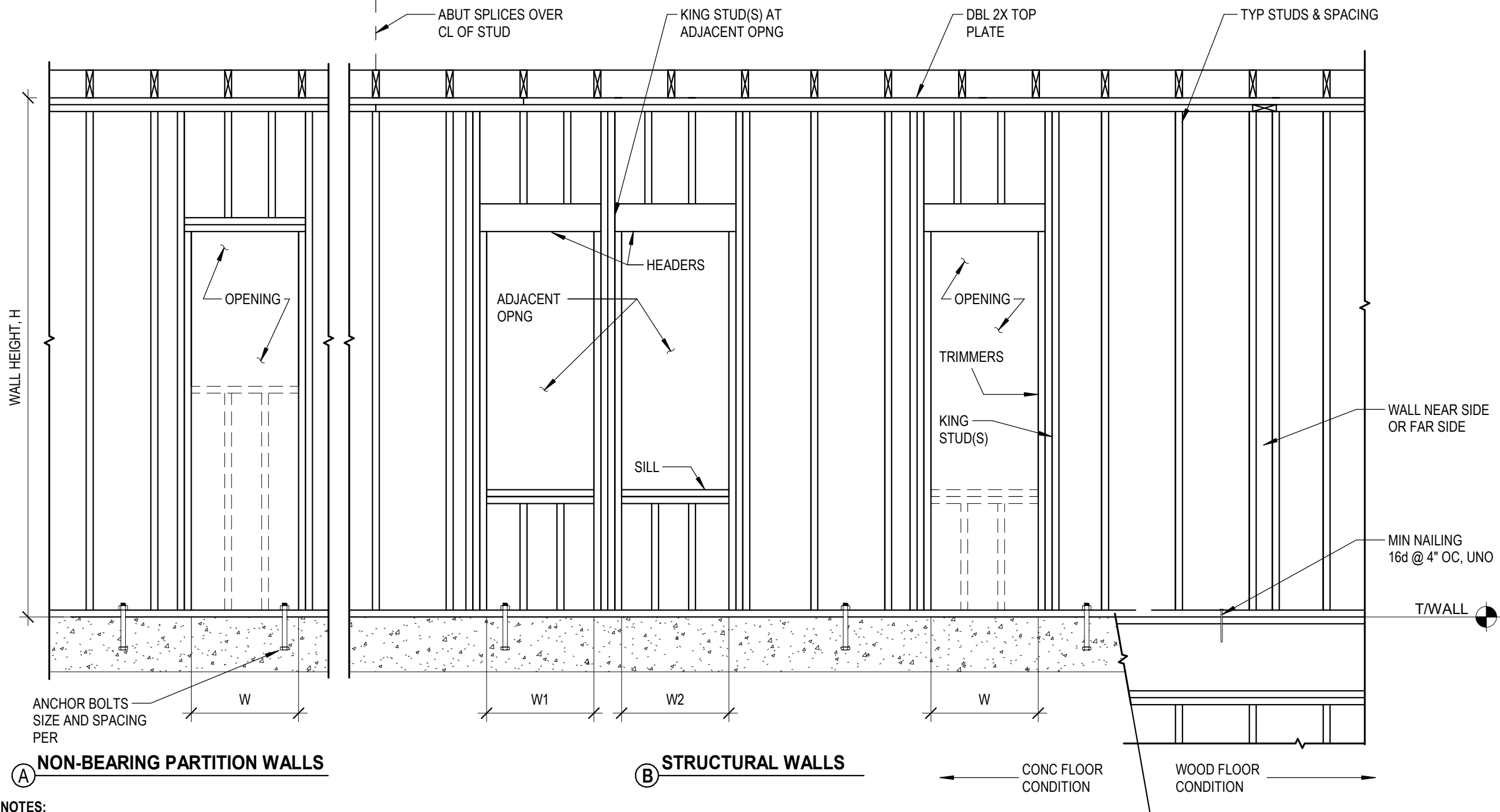
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FOUNDATION DETAILS

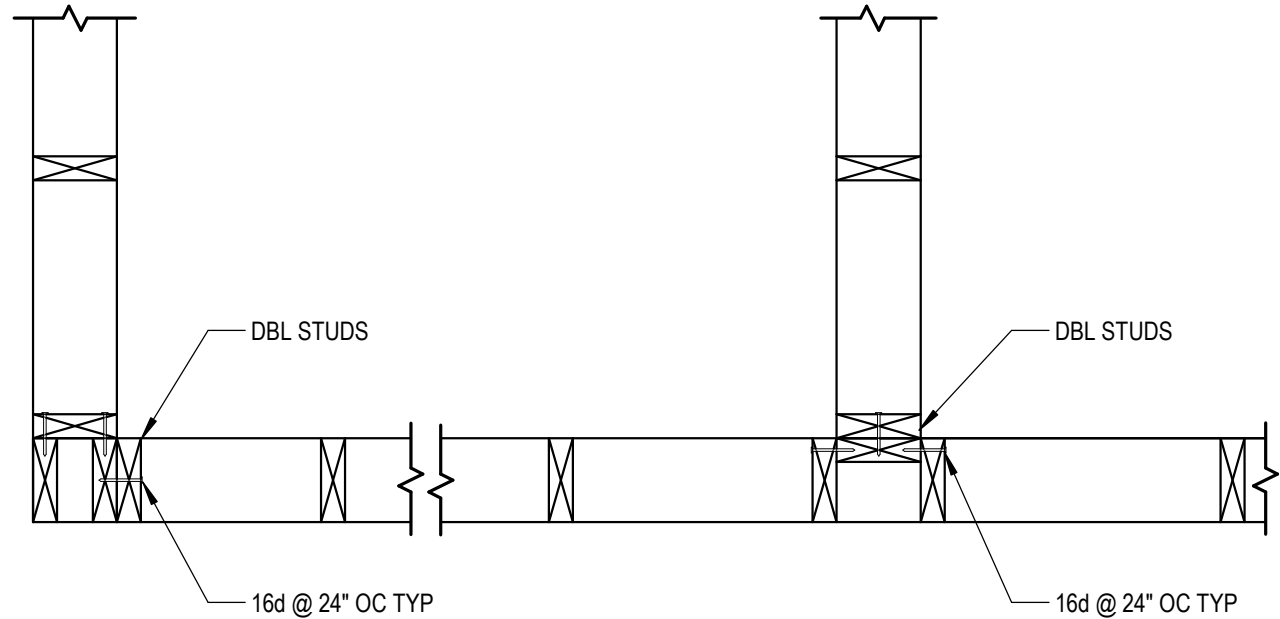
S501



A NON-BEARING PARTITION WALLS

B STRUCTURAL WALLS

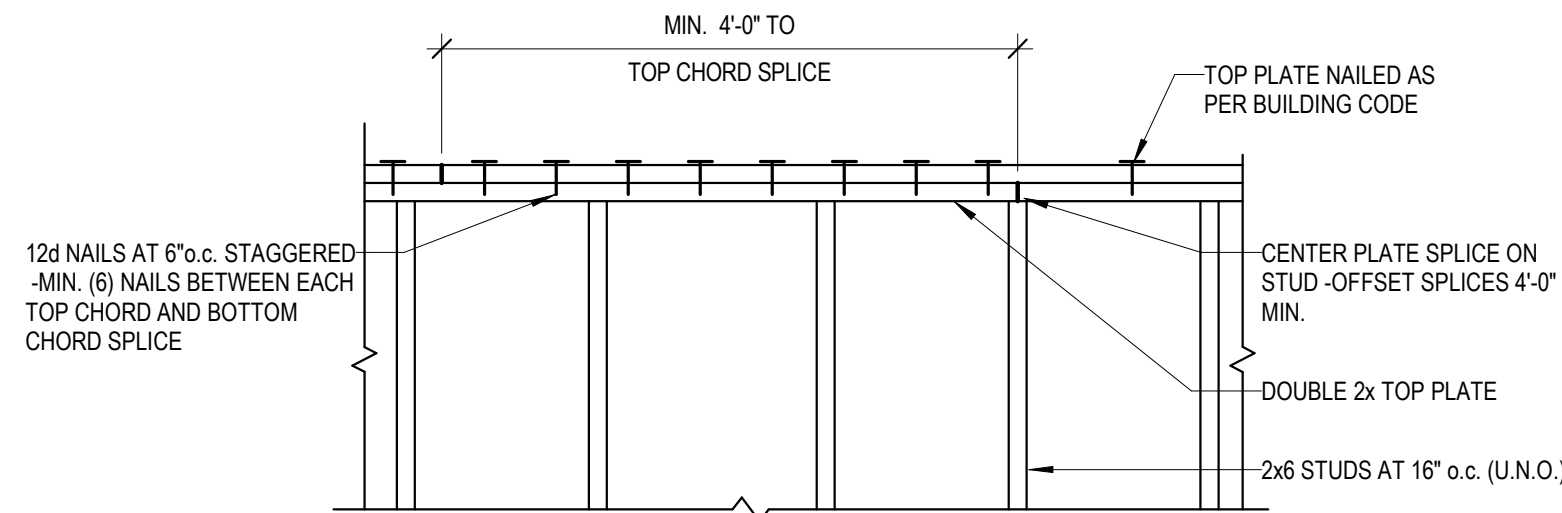
NOTES:
1. FOR HEADERS, SILLS, KING STUDS AND BEARING STUDS, SCHEDULE PER PLAN
2. SEE 2 / S513 FOR FRAMING REQUIREMENTS AT SHEAR WALL PANEL JOINTS.



NOTES:
1. SEE 1 / S513 FOR SHEARWALL CONDITIONS
2. THIS DETAIL APPLIES TO BOTH BEARING AND NON BEARING WALLS
3. SEE PLAN FOR OTHER REQUIRED STUD AND/OR POST CONFIGURATIONS

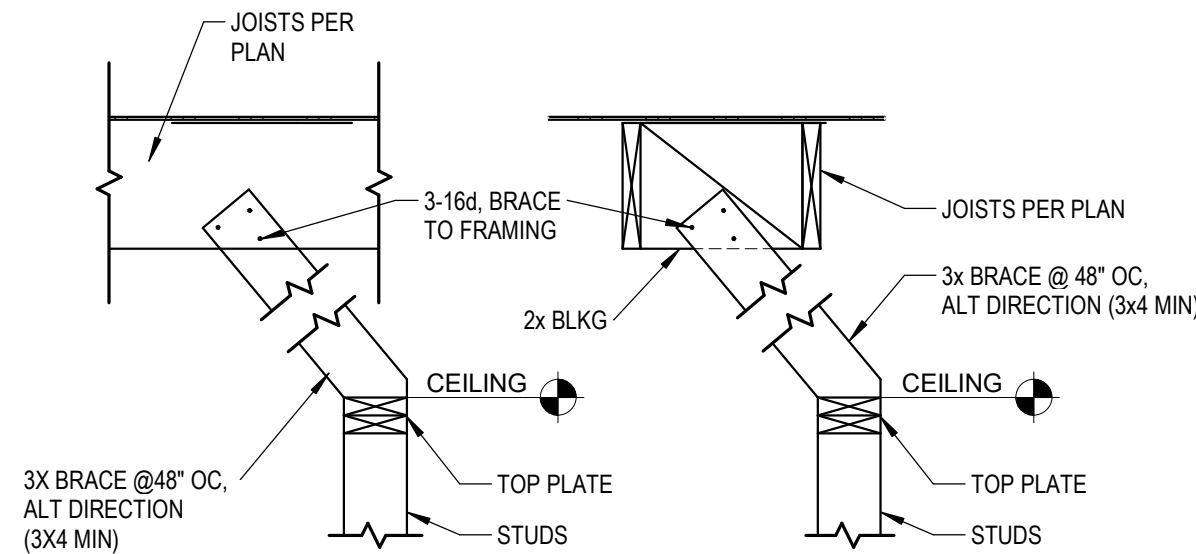
1 WALL INTERSECTIONS

S511 1 1/2" = 1'-0"

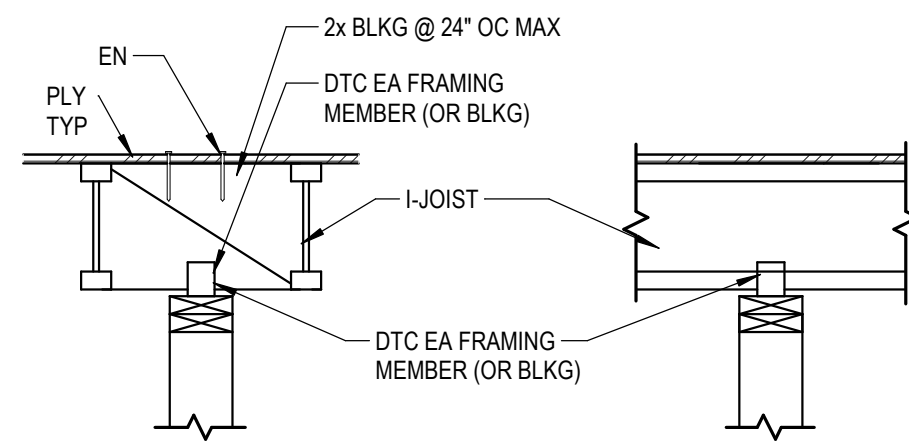


2 TOP PLATE SPLICE DETAIL

S511 3/4" = 1'-0"

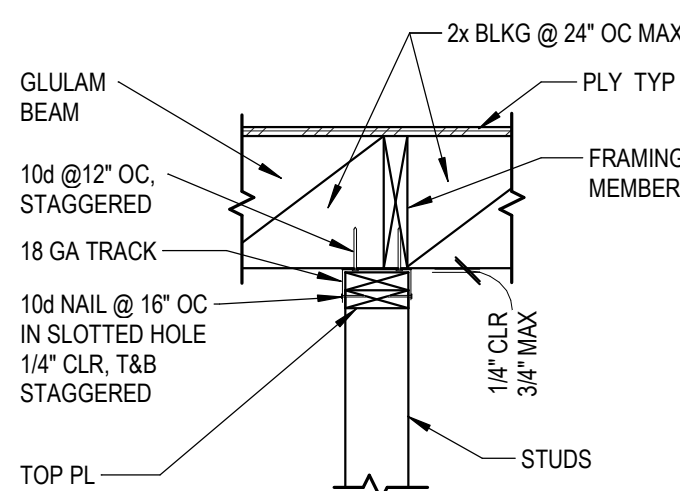


D PARTITION PARALLEL & PERPENDICULAR TO JOIST

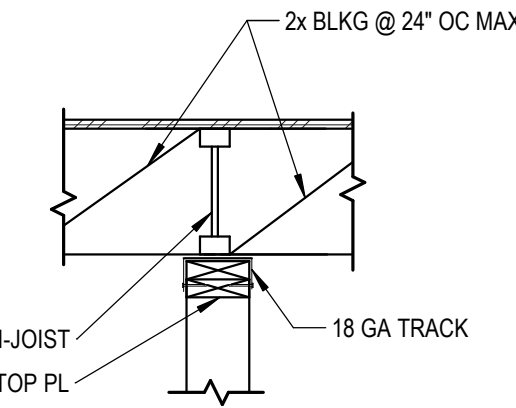


FOR INFO NOTED OR SHOWN, SEE **A**

C PARTITION PARALLEL & PERPENDICULAR TO I-JOIST

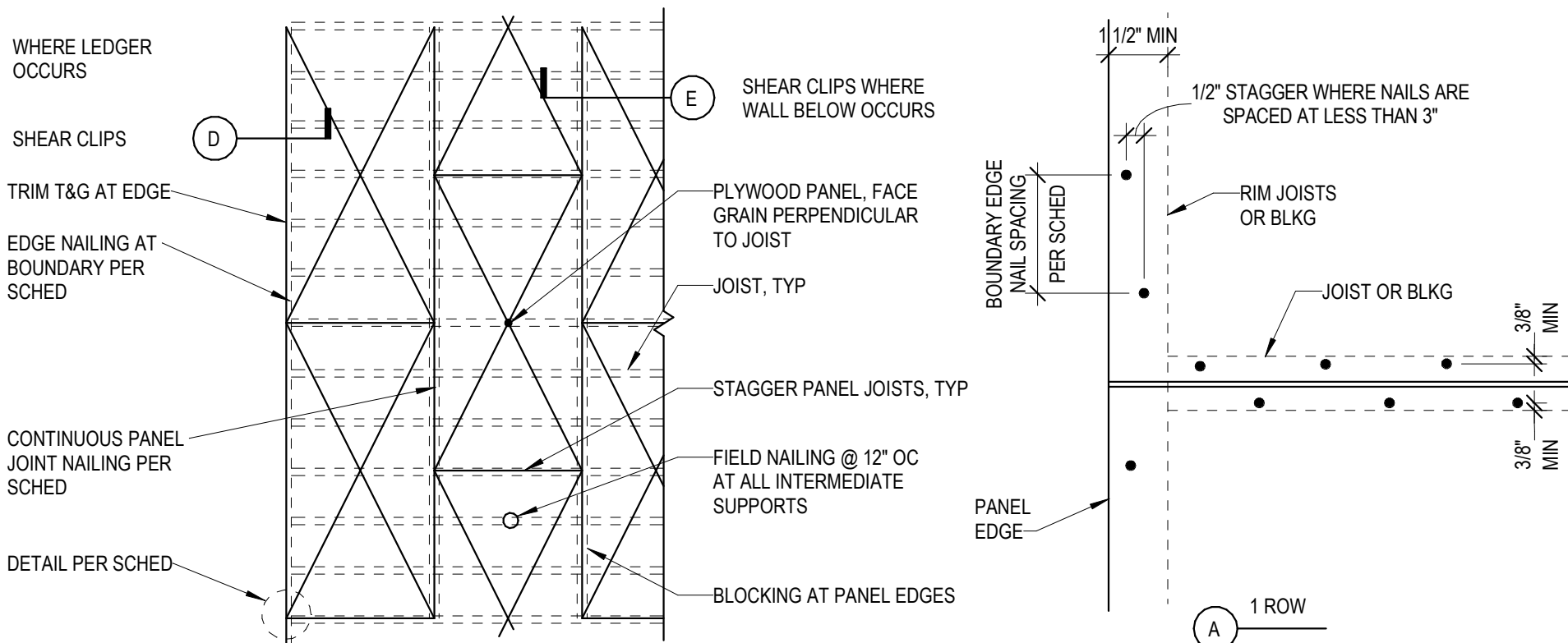


A PARTITION PARALLEL TO JOIST DIRECTLY UNDER I-JOIST CONNECTION



FOR INFO NOT NOTED OR SHOWN, SEE **A**

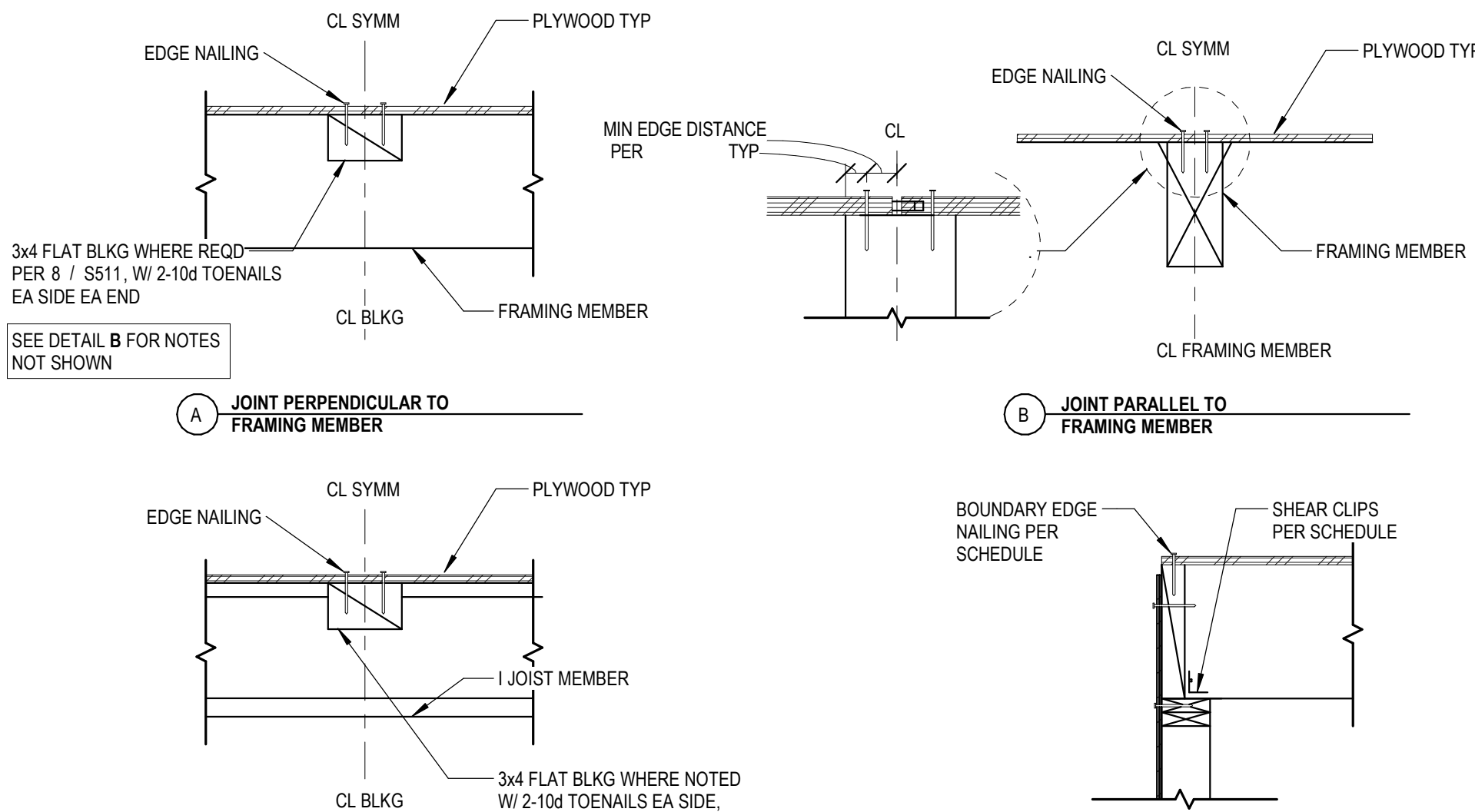
B PARTITION PARALLEL TO I-JOIST DIRECTLY UNDER I-JOIST CONNECTION



NOTES:
1. FOR 8d NAILS, PROVIDE 1 3/8" MINIMUM PENETRATION INTO FRAMING. FOR 10d NAILS, PROVIDE 1 1/2" MINIMUM PENETRATION INTO FRAMING.
2. MINIMUM PLYWOOD SHEATHING WIDTH IS 24"
3. SEE GENERAL NOTES FOR PLYWOOD GRADES AND THICKNESS.
4. 1 PS&A/PS&L OR EQUIVALENT AS REQD FOR ALIGNMENT AT ALL PANELS EDGES
5. SHEAR CLIP SPACING AT SHEAR WALLS PER SHEAR WALL SCHEDULE. WHERE JOISTS ARE PERPENDICULAR TO WALL, CLIPS MAY BE ADJUSTED AS NECESSARY TO AVOID JOIST.

8 DIAPHRAGM NAILING SCHEDULE

S511 1 1/2" = 1'-0"



6 DIAPHRAGM PLYWOOD NAILING

S511 1 1/2" = 1'-0"

4 NON-BEARING WALL TOP CONNECTION

S511 1 1/2" = 1'-0"



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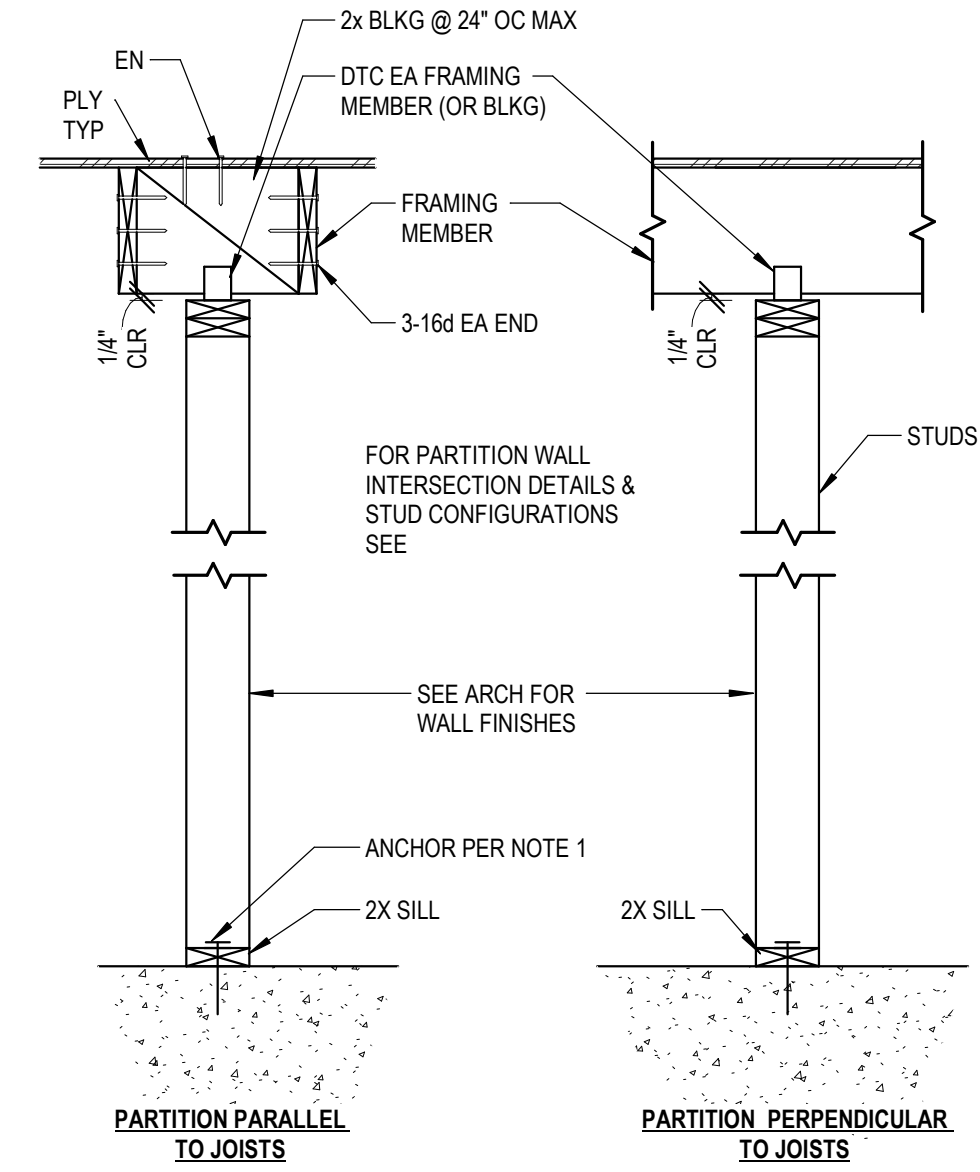
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Project Status 100% CONSTRUCTION DOCUMENTS
Issue Date 07/18/2022

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE

FRAMING DETAILS

S511

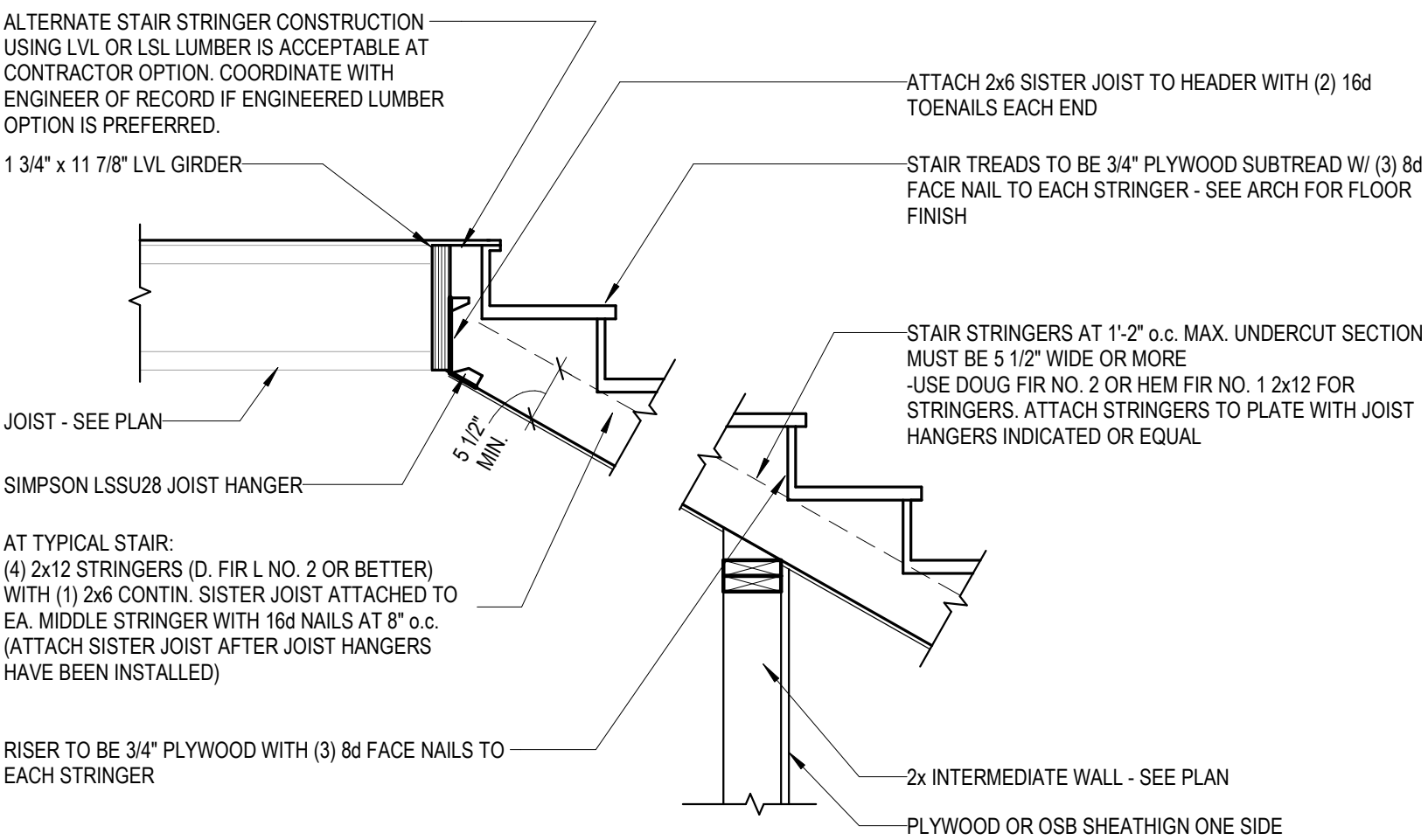


NOTES:
1. AT CONTRACTOR'S OPTION ANCHOR IS:

	NO CURB		CURB	
	ANCHOR SIZE	SPACING	ANCHOR SIZE	SPACING
EXPANSION ANCHOR	1/2" DIA	4'-0"	3/8" DIA	2'-8"
SCREW	1/2" DIA	4'-0"	3/8" DIA	2'-8"
PAF	0.145" DIA	2'-8"	NOT ALLOWED	N/A

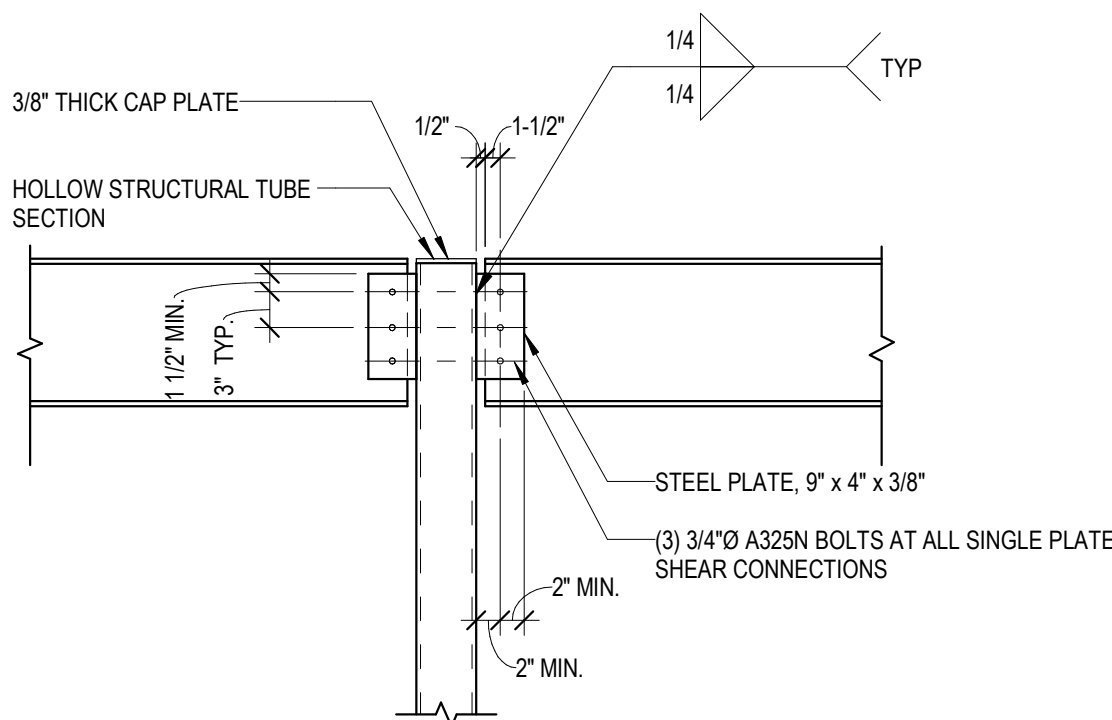
NON-BEARING WALL PARTITION

1 1/2" = 1'-0"



WOOD STAIR FRAMING DETAIL

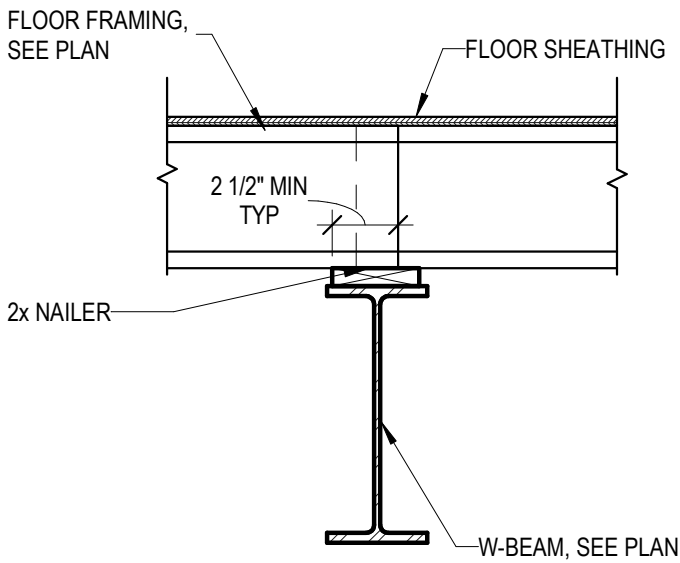
3/4" = 1'-0"



NOTE:
1. UNLESS NOTED OTHERWISE, USE SINGLE PLATE SHEAR CONNECTIONS IN ACCORDANCE WITH PREDESIGNED BOLTED CONNECTIONS BY AISC.
2. CONNECTION REQUIREMENTS SHOWN SHALL BE USED UNLESS END REACTIONS ARE SHOWN ON PLAN OR SCHEDULE. WHERE END REACTIONS ARE SHOWN, REFER TO AISC MANUAL, 14TH EDITION (ASK) - TABLE 10-10a.

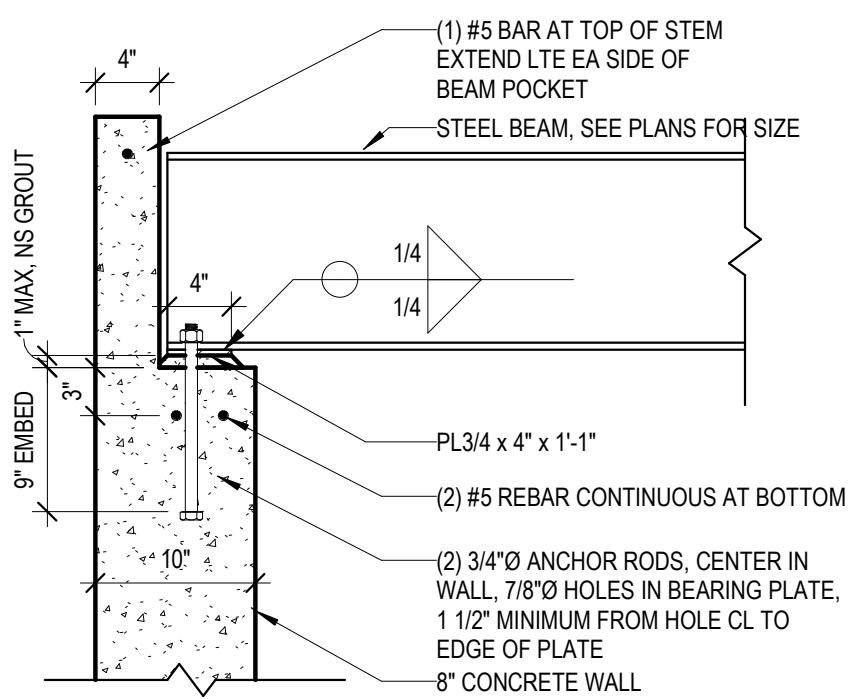
TYPICAL SINGLE PLATE SHEAR CONNECTION DETAIL

3/4" = 1'-0"



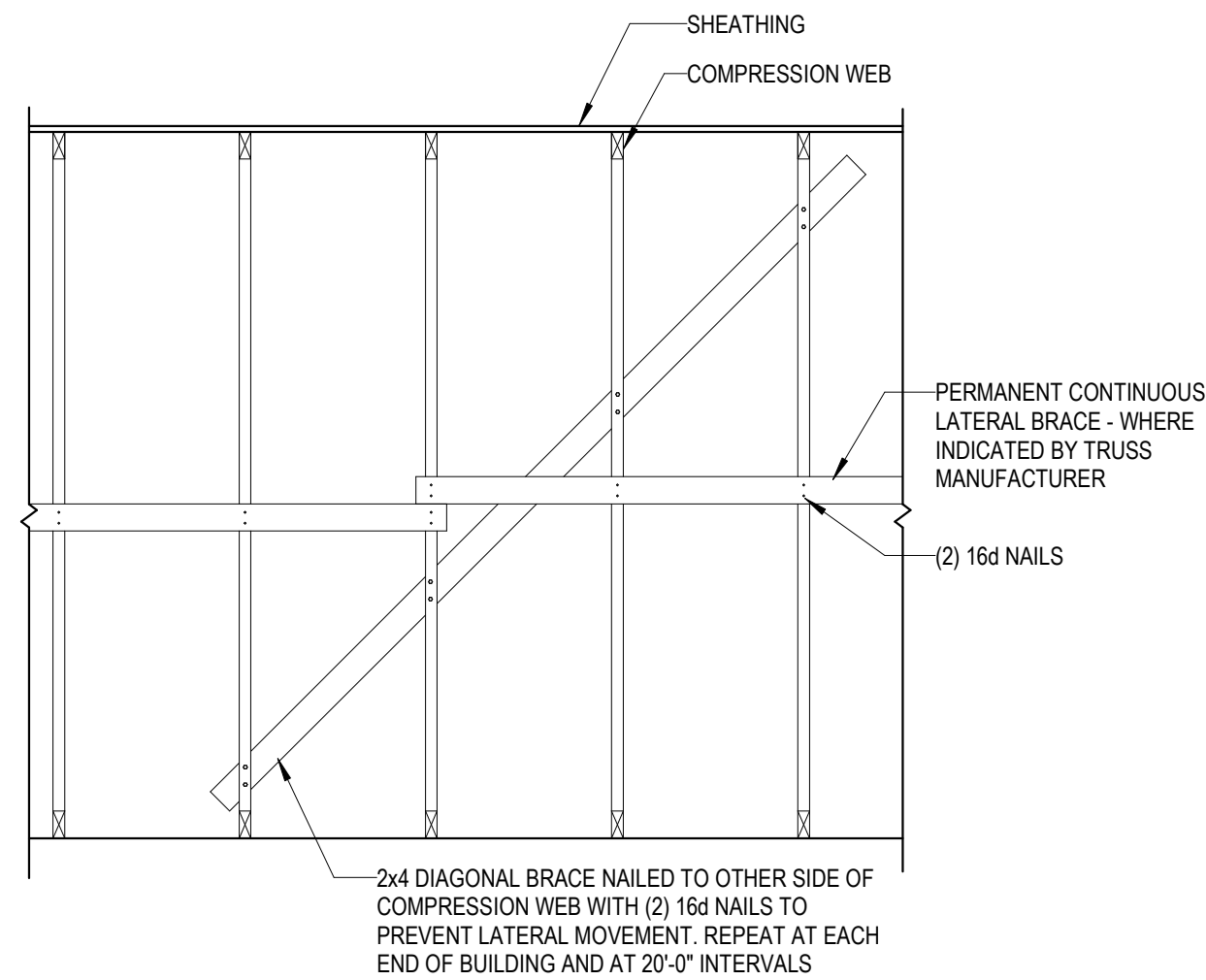
WOOD JOIST AT BEAM

3/4" = 1'-0"



STEEL BEAM BEARING ON CMU WALL

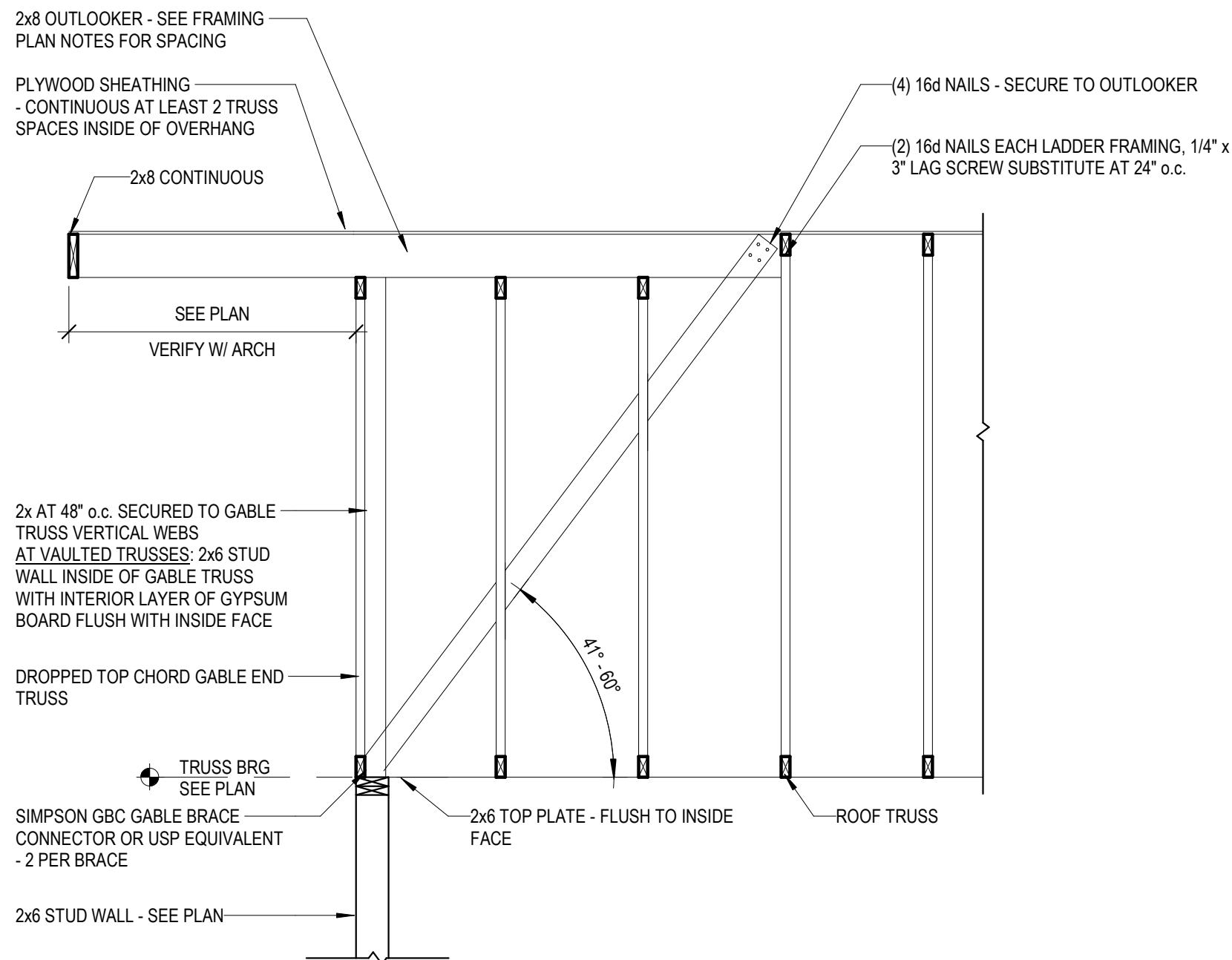
1" = 1'-0"



GABLED ROOF

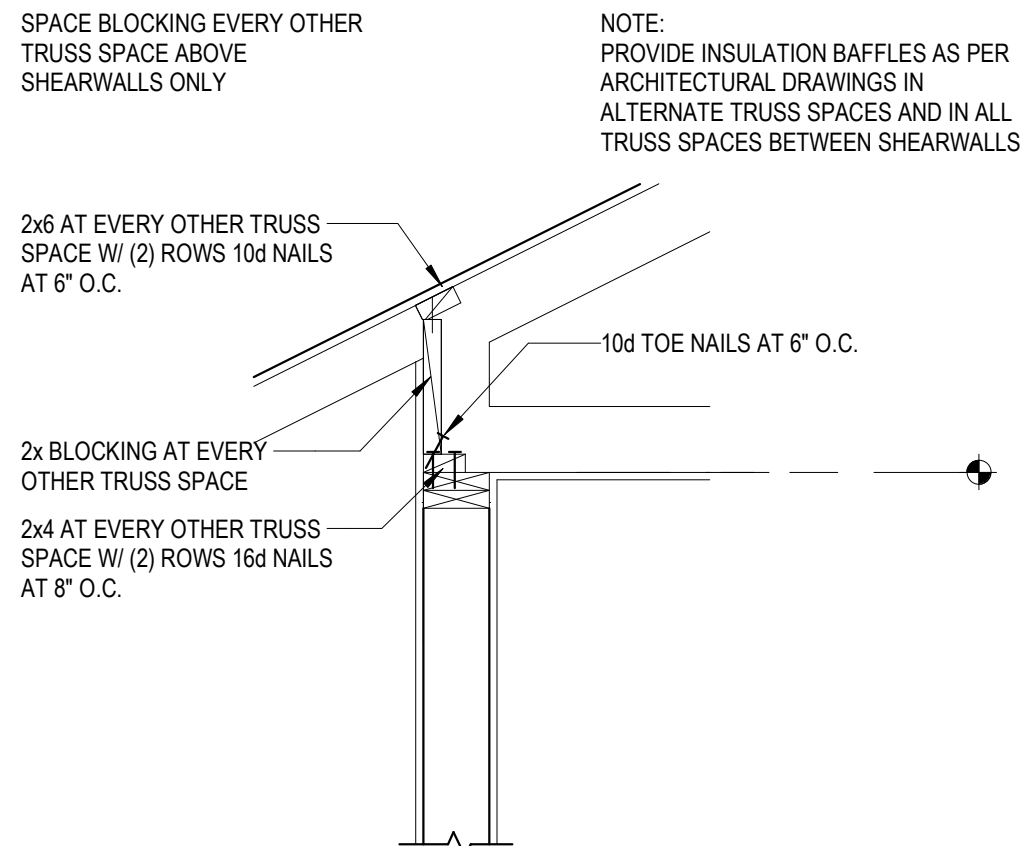
ANCHORING OF LATERAL WEB BRACING DETAIL

1/2" = 1'-0"



GABLE END DETAIL

1/2" = 1'-0"



TRUSS BEARING & BLOCKING DETAIL

3/4" = 1'-0"



Project Owner
Indian Health Service (IHS)
Department of Health and Human Services
Division of Engineering Services
701 Fifth Avenue, MS 24, Suite 1600
Seattle, Washington 98104-7307

INDIAN HEALTH SERVICE - GREAT PLAIN AREA DUPLEX BUILDING & SITE LOCATIONS

701 FIFTH AVENUE, MS 24,
SUITE 1600
SEATTLE, WASHINGTON
98104-7307

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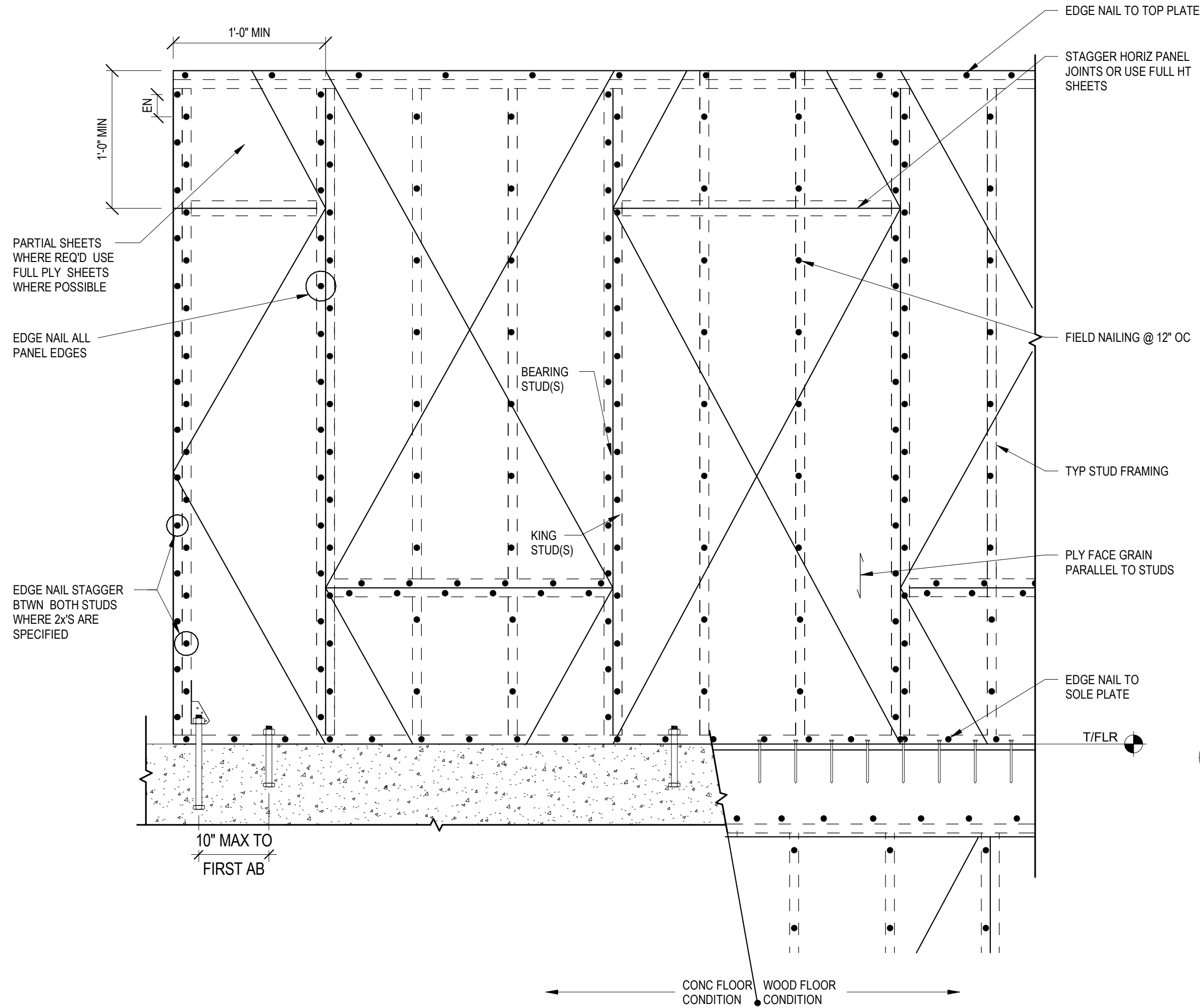
FRAMING DETAILS

S512

6/16/2022 11:12:40 AM

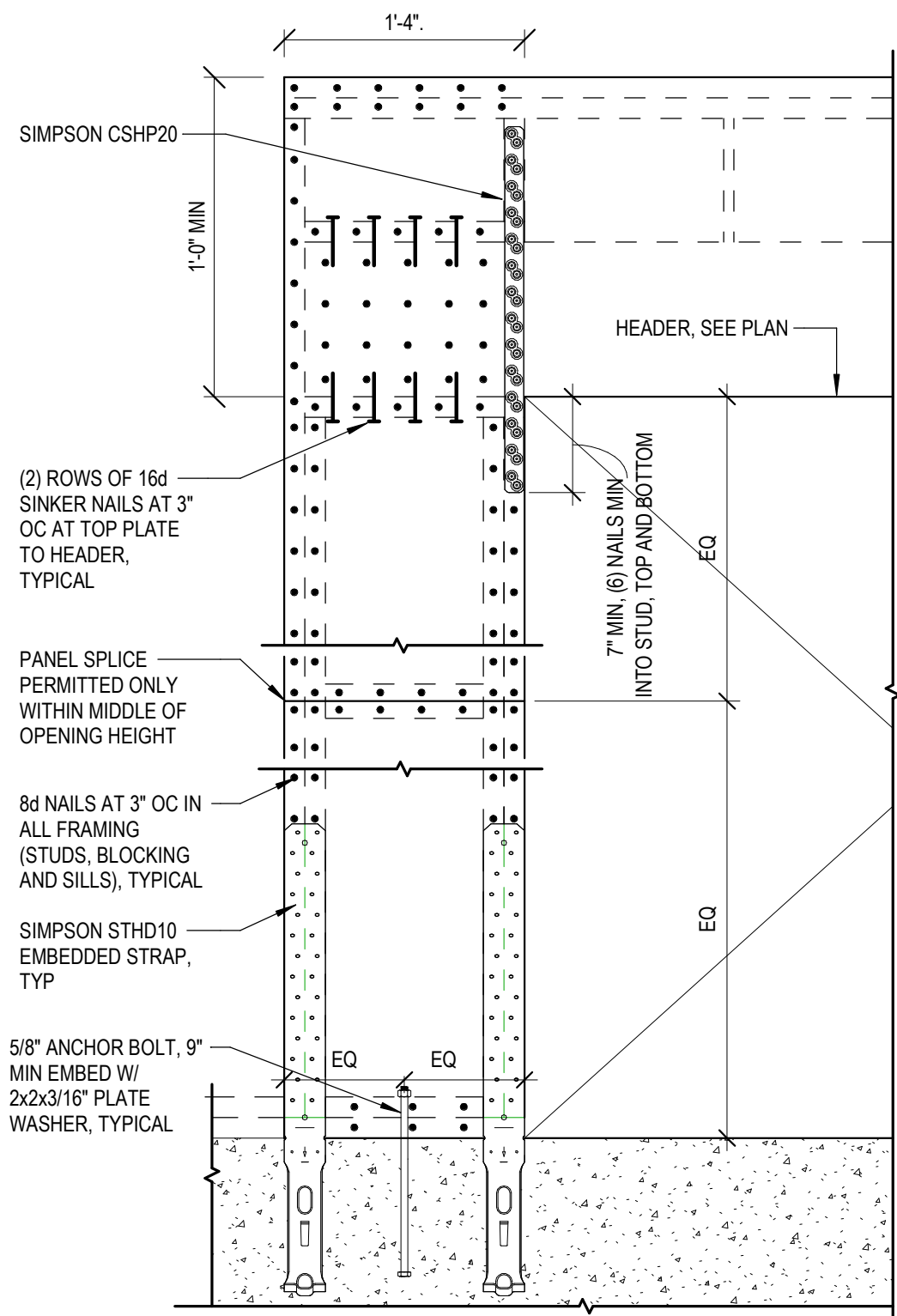
3 SHEAR WALL ELEVATION

S513 1 1/2" = 1'-0"



6 GARAGE PORTAL FRAME

S513 1" = 1'-0"



5 SHEAR WALL HOLDDOWNS INTO FOUNDATION

S513 1 1/2" = 1'-0"

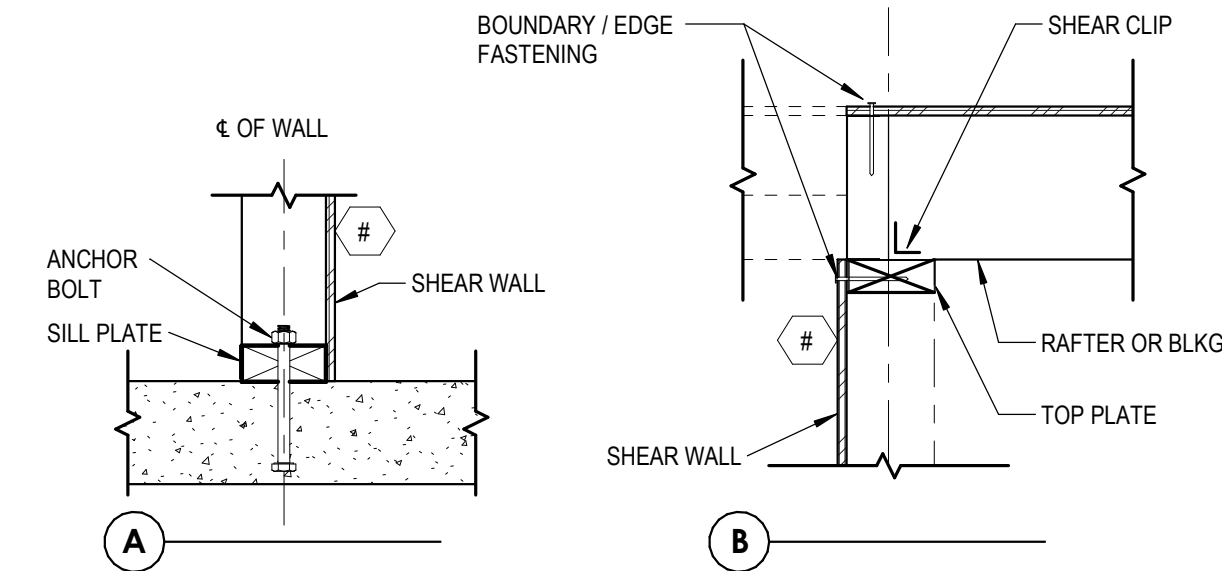
HOLDDOWN (1/2/3)	MIN POST SIZE UNO	MIN ANCHOR ROD DIA	MIN ANCHOR ROD EMBED
HHDU4-SD2.5	2-2x SW	5/8"	9"

SW = STUD WIDTH

- NOTE:**
- SEE PLAN FOR SIZES & LOCATIONS OF HOLDDOWNS.
 - FOR HD AT WALL INTERSECTIONS SEE
 - FOLLOW ALL MANUFACTURER'S GUIDELINES NECESSARY TO ACHIEVE FULL ICC DESIGN VALUES.
 - AT MULTIPLE 2x HOLDDOWN POST CONDITION, INTERNAL STUDS W/ STAGGERED 16d @ 6" OC, UNO.

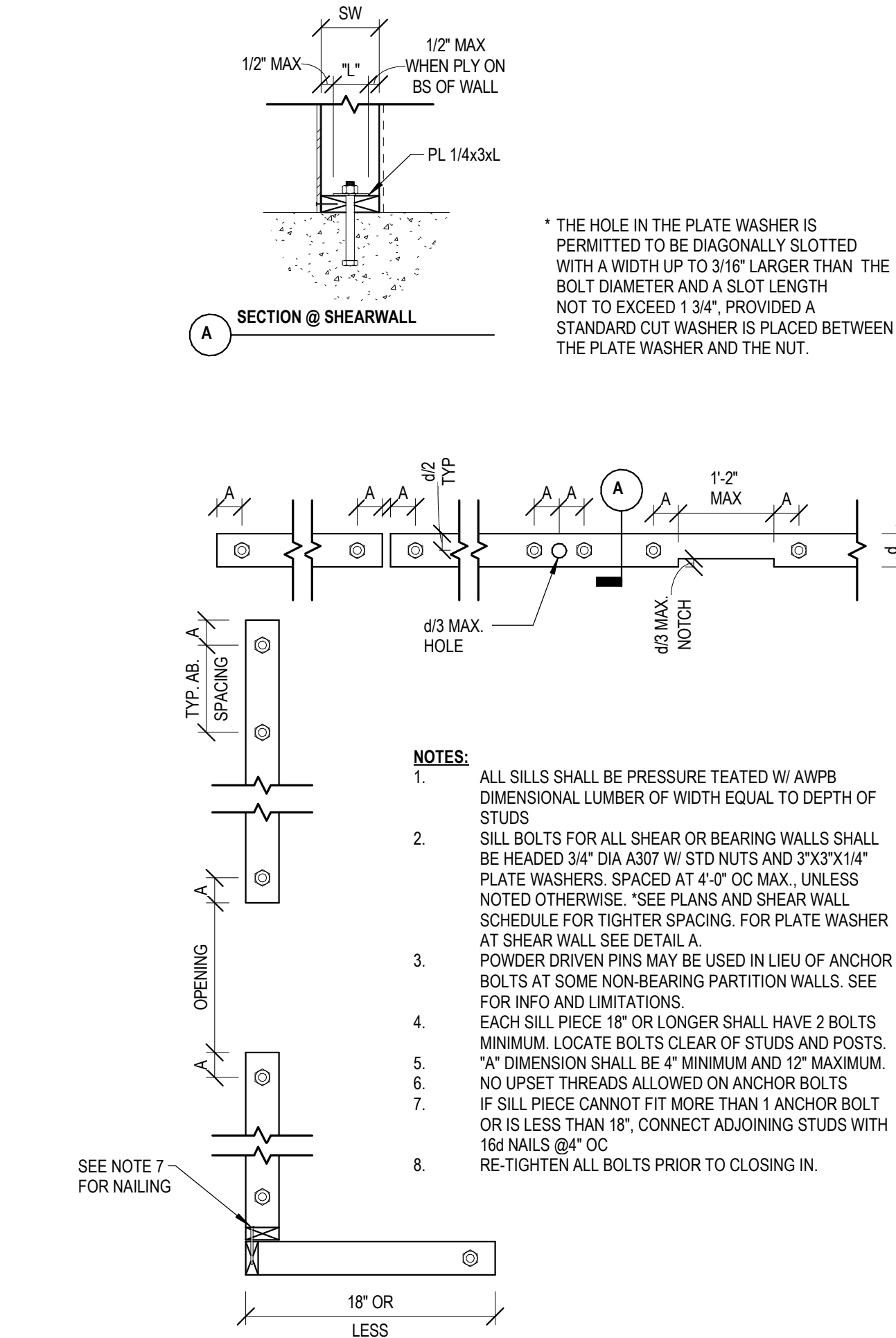
SHEAR WALL SCHEDULE						
DETAIL CONDITION						
SHEAR WALL SYMBOL	SHEATHING	ANCHOR BOLT	MUDSILL	HOLDDOWN	B	
					TOP PLATE	SHEAR CLIP
SW1	2x6 STUDS W/ 7/16" OSB W/ 8d NAILS @ 6" OC AT PANEL EDGE	5/8" DIA @ 4'-0" OC (9" EMBED)	2x	SIMPSON HHDU4-SD2.5	(2) 2X W/ 10d @ 6" OC	A34 @ 18" OC
SW2	2x4 STUDS W/ 7/16" OSB W/ 8d NAILS @ 6" OC AT PANEL EDGE	5/8" DIA @ 4'-0" OC (9" EMBED)	2x	SIMPSON HHDU4-SD2.5	(2) 2X W/ 10d @ 6" OC	A34 @ 12" OC

- NOTES:**
- OSB ON ONE SIDE UNO
 - FOLLOW ALL MANUFACTURER'S GUIDELINES NECESSARY TO ACHIEVE FULL ICC DESIGN VALUES
 - TOP TRACK TO BE CONTINUOUS FOR LENGTH OF WALL UNO
 - PROVIDE FRAMING MEMBERS AT ALL PLYWOOD ADJOINING PANEL EDGES.
 - SEE DETAIL 3 / S513 FOR TYPICAL SHEAR WALL FRAMING ELEVATION
 - SEE PLAN AND DETAIL 5 / S513 FOR SHEAR WALL HOLDDOWNS



4 ANCHOR BOLT AND SILL PLATE

S513 1 1/2" = 1'-0"



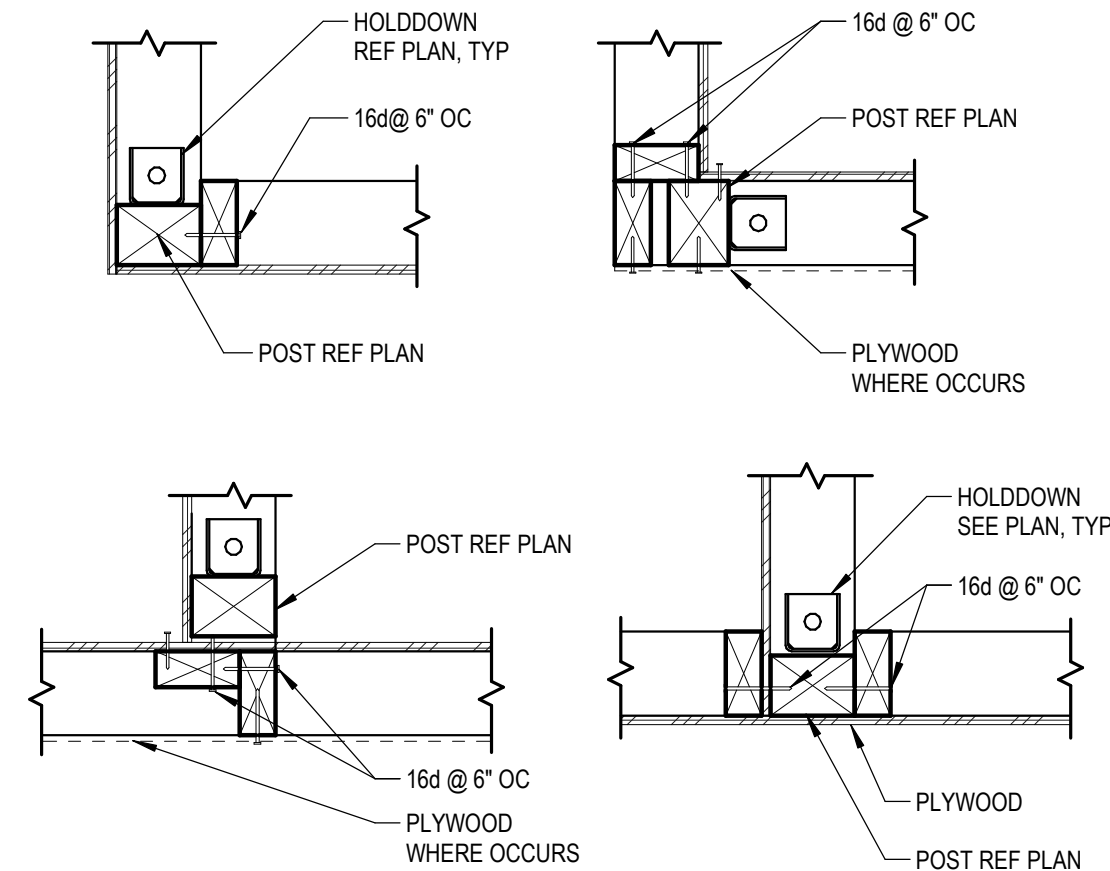
- NOTES:**
- ALL SILLS SHALL BE PRESSURE TEATED W/ AWPB DIMENSIONAL LUMBER OF WIDTH EQUAL TO DEPTH OF STUDS
 - SILL BOLTS FOR ALL SHEAR OR BEARING WALLS SHALL BE HEADED 3/4" DIA A307 W/ STD NUTS AND 3"X3"X1/4" PLATE WASHERS. SPACED AT 4'-0" OC MAX., UNLESS NOTED OTHERWISE. SEE PLANS AND SHEAR WALL SCHEDULE FOR TIGHTER SPACING. FOR PLATE WASHER AT SHEAR WALL SEE DETAIL A.
 - POWDER DRIVEN PINS MAY BE USED IN LIEU OF ANCHOR BOLTS AT SOME NON-BEARING PARTITION WALLS. SEE FOR INFO AND LIMITATIONS.
 - EACH SILL PIECE 18" OR LONGER SHALL HAVE 2 BOLTS MINIMUM. LOCATE BOLTS CLEAR OF STUDS AND POSTS. "A" DIMENSION SHALL BE 4" MINIMUM AND 12" MAXIMUM.
 - NO UPSET THREADS ALLOWED ON ANCHOR BOLTS
 - IF SILL PIECE CANNOT FIT MORE THAN 1 ANCHOR BOLT OR IS LESS THAN 18", CONNECT ADJOINING STUDS WITH 16d NAILS @ 4" OC
 - RE-TIGHTEN ALL BOLTS PRIOR TO CLOSING IN.

2 SHEAR WALL SCHEDULE

S513 1 1/2" = 1'-0"

1 SHEAR WALL INTERSECTION PLANS

S513 1 1/2" = 1'-0"



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