Richter Heating

Additions & Remodeling

C.D. Review Set

421 Water Tower Court

Watertown, WI 53904 June 30, 2025

Sheet Index:

Architectural

Title Sheet / Site Plan / Code Info A0.0

Floor Plan / Details A2.0

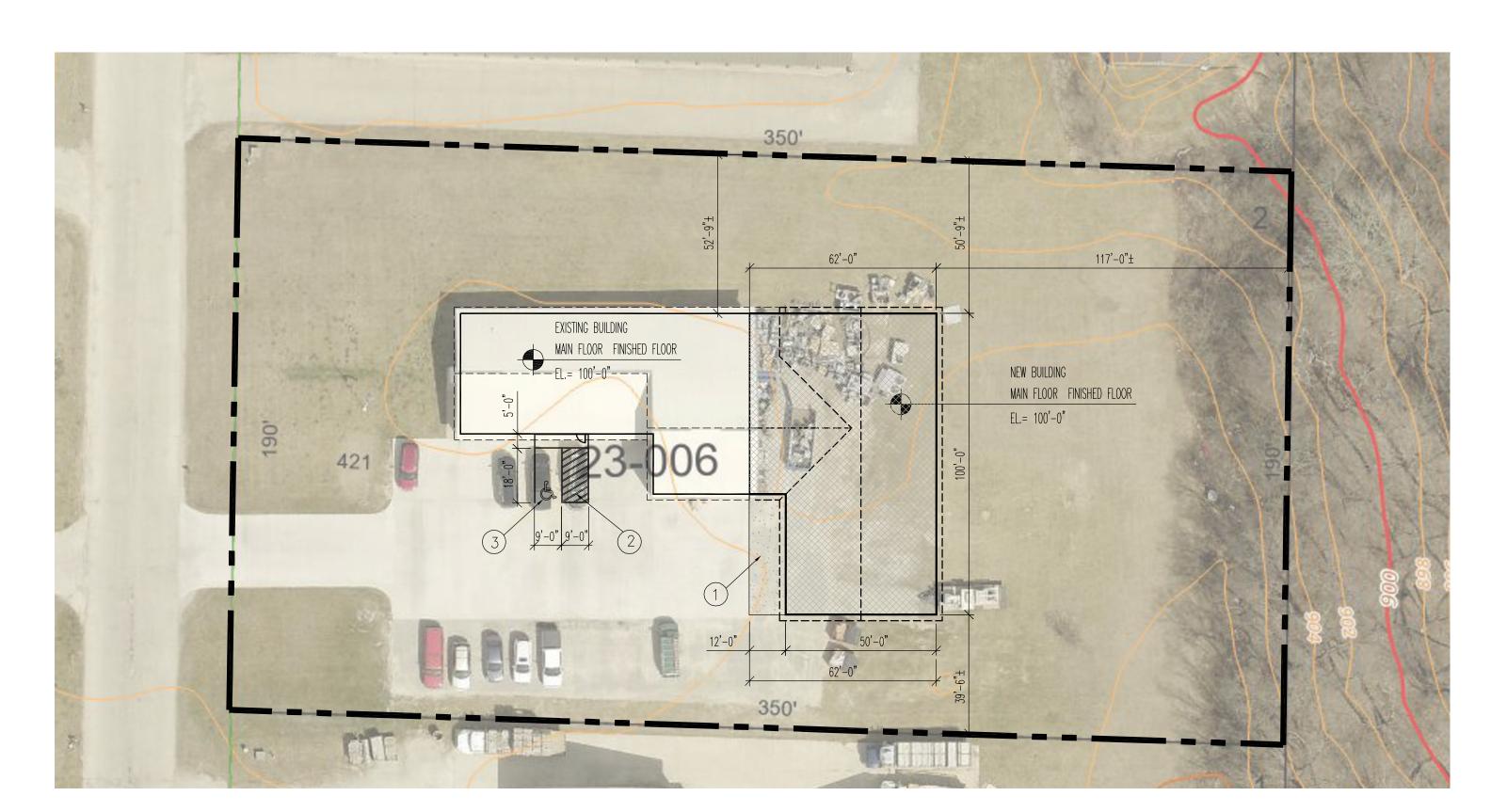
A3.0 Exterior Elevations

A3.1 Building Sections

A3.2 Wall Sections

Structural

Structural Notes S0.0**S1.0** Foundation Plan S2.0Framing Plan



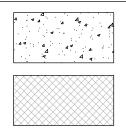
SITE PLAN GENERAL NOTES

(SHEET A1.0)

- 1. PROPOSED BUILDING ELEVATION SHOWN AS:

 MAIN FLOOR FINISHED FLOOR
 EL.= 100'-0"
- 2. ALL GROUND SHALL PITCH AWAY FROM BUILDING AT A MINIMUM OF 4% +/- UNLESS NOTED OTHERWISE. MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDING.
- 3. CONCRETE SURFACES SHALL SLOPE @ 1/8" = 1'-0" MINIMUM AWAY FROM BUILDING UNLESS SPECIFICALLY NOTED OTHERWISE
- 4. PARKING LOT ASPHALT SURFACES SHALL SLOPE @ 1:50 MAXIMUM AT HANDICAPPED ACCESSIBLE PARKING STALLS AWAY FROM BUILDING UNLESS SPECIFICALLY NOTED OTHERWISE.
- 5. PARKING LOT ASPHALT SURFACES SHALL SLOPE @ 1:40 MINIMUM AT ALL OTHER PARKING LOT AREAS AWAY FROM BUILDING UNLESS SPECIFICALLY NOTED OTHERWISE.

Legend



NEW CONCRETE PAVING

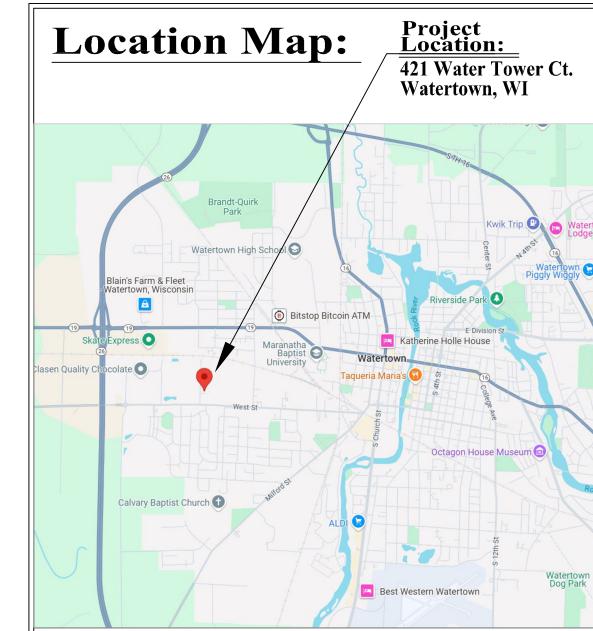
NEW BUILDING

KEYED NOTES (CONT'D)

(SHEET A1.0)

- NEW CONCRETE PAVING (4000 PSI), WIDTH AS SHOWN. 5" THICK W/ FIBERMESH & W.W.M. OVER 8" COMPACTED CRUSHED LIMESTONE. TOP OF FINISHED SURFACE FLUSH W/ ASPHALT PAVING AND / OR ADJACENT SOIL. INSTALL THICKENED EDGE 12" DEEP x 10" AT ADJACENT PAVING OR BUILDING. INSTALL CONTROL JOINTS PER STANDARD PRACTICE. BROOM & TOOL FINISH. DOWELL ATTACH PAVING INTO ADJACENT BUILDING FOUNDATION- 24" LENGTH #5 DOWELLS @ 24" C/C.
- WHITE COLORED PARKING LOT PAINT STRIPING
- VAN ACCESSIBLE HANDICAPPED PARKING STALL PER ADA & CITY REQUIREMENTS W/ REQUIRED POSTED SIGN.

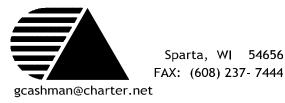




Architect:

4798 County HWY I

CASHMAN ASSOCIATES, In c.



Architect Stamp:

Project General Notes:

- 1. <u>CODE COMPLIANCE:</u> ALL WORK OF ALL TRADES SHALL BE COMPLETED IN ACCORDANCE WITH ALL GOVERNING CODES AND ORDINANCES.
- 2. <u>PERMITS:</u> CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR PERMITS, FEES. AND/ OR LICENCES REQUIRED FOR COMPLETION OF THEIR PORTION OF THE PROJECT.
- 3. <u>COORDINATION:</u> ALL SUBCONTRACTORS, SHALL COORDINATE WORK WITH THE GENERAL CONTRACTOR, FOR FURTHER COORDINATION WITH THE OWNER'S PROJECT REPRESENTATIVE. ALL PROPOSED CHANGES TO THE WORK MUST BE APPROVED BY WRITTEN AUTHORIZATION PRIOR TO
- 4. <u>FIELD VERIFICATION:</u> ALL TRADES SHALL FIELD VERIFY AND COORDINATE DIMENSIONS AND EXISTING CONDITIONS ON THE JOB SITE. NEITHER THE OWNER NOR THE ARCHITECT ASSUMES RESPONSIBILITY FOR CONDITIONS SHOWN AS EXISTING.
- 5. <u>DEMOLITION:</u> CONTRACTOR SHALL INCLUDE NECESSARY DEMOLITION AND/ OR REMOVAL OF ALL MATERIAL RELATED TO HIS TRADE.
- PENETRATIONS: ALL HOLES FOR PLUMBING, ELECTRICAL, HVAC, OR DUCTWORK ARE TO BE REPAIRED BY THE ASSOCIATED TRADE. ALL TRADES SHALL TAKE SPECIAL CARE TO MAKE HOLES AS SMALL AS POSSIBLE AND IN ACCORDANCE WITH FLOOR JOIST MANUFACTURER'S SPECIFICATIONS. ALL HOLES SHALL BE NEATLY CUT. DO NOT PUNCH OR POUND HOLES IN WALLS, JOISTS, ASSOCIATED TRADE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY HOLES LEFT
- FIRESTOPPING: ALL HOLES OR PENETRATIONS, EXISTING OR NEW, THROUGH FIRE-RATED CONSTRUCTION SHALL BE CLOSED, FIRESTOPPED, DAMPERED, AS REQUIRED BY CURRENT 2015
- 8. <u>HAZARDOUS MATERIALS:</u> ANY HAZARDOUS MATERIALS ENCOUNTERED AT ANY TIME DURING DEMOLITION OR CONSTRUCTION OF THIS PROJECT MUST BE REPORTED TO THE OWNER IMMEDIATELY. ALL HAZARDOUS SUBSTANCES SHALL BE REMOVED IN ACCORDANCE WITH ALL GOVERNING FEDERAL, STATE, AND LOCAL REGULATIONS.
- 9. <u>DO NOT SCALE DRAWINGS.</u> IN ALL CASES, NOTED DIMENSIONS AND/ NOTES INDICATING DIMENSIONS OR SIZING SHALL GOVERN. COORDINATE WITH ARCHITECT FOR NECESSARY DIMENSION CLARIFICATION.
- 10. <u>DIMENSIONING:</u> ALL DIMENSIONS ARE SHOWN FROM FACE OF ROUGH-FRAMED STUD WALL TO FACE OF ROUGH-FRAMED STUD WALL, UNLESS SPECIFICALLY NOTED OTHERWISE. ALL DIMENSIONS FOR CONCRETE OR MASONRY CONSTRUCTION ARE SHOWN FROM FACE OF WALL TO FACE OF WALL, UNLESS SPECIFICALLY NOTED OTHERWISE.

Code Information

- New Office & Warehouse Addition to the existing building (B) & (S-1)

- Level 2 remodeling to the existing building - Insulated, Conditioned Building

APPLICABLE CODES:

- State of Wisconsin Department of Safety and Professional Services
- Administrative Code- Chapters 361, 362, 363, 364, 365
- 2015 International Building Code and SPS 362 - 2015 International Energy Conservation Code and SPS 363
- 2015 International Mechanical Code and SPS 364
- 2015 International Fuel Gas Code and SPS 365
- SPS Chapter 316 which adopts the 2017 National Electrical Code (NEC)
- SPS Plumbing Chapters 381-387 as based on SPS 362.2901
- 2015 International Fire Code
- Accessibility: ICC/ANSI A117.1-2009 as based on IBC Chapter 35

OCCUPANCY CLASSIFICATION:

IBC Section 304.1 BUSINESS (B) Office Area IBC Section 311.2 STORAGE (S-1) Moderate Hazard Storage

Building Gross SF Areas:

**Single -Occupancy One-Story Building

IBC Section 506.2.2

IBC Section 601

Single -Occupancy, One-Story Building			IBC Section 500.2.2	
Building	Existing	Addition		TOTAL
Level	Building	(S-1) Occupancy		Main Floor GSF B & S-1
First Floor	4,500 GSF	5,720 GSF		10,220 GSF

IBC Section 504.3 **Building Height:**

Ridge: 25'-6" height (40'-0" Allowable) IBC Section 504.3

No. of Levels:

No. of Stories: One (1 allowed) IBC Section 504.4

Construction Type: - Type VB- Combustible Not Protected Construction

	Struct.	Bearir	ng Walls Int.	Non-B	earing	Floor	Roof
İ	0- hr.	0- hr.	0- hr.	0- hr.	0- hr.	0- hr.	0- hr.

BUILDING HEIGHT & AREA:

IBC Table 506.2- Non-Sprinklered, 1-story; $A_{\dagger} = 9,000 \text{ SF}$

IBC Table 506.2:

-Non-Sprinklered Construction

IBC 506.2.2: Mixed-Occupancy, One-Story Building: Allowable Area

 $A_a = A_t + (NS \times I_f) = 9,000 + 9,000 (0.75) = 15,750 SF > 10,100 sf$

 $I_f = [F/P - 0.25] W / 30 = 0.75$ (Minimum 30'-0" clear on all sides of building)

FIRE PROTECTION:

IBC 803.11

NON-Sprinklered Construction Fire Alarm System not required

Interior Finish Flame Spread Ratings-

Interior Wall & Ceiling Finish Requirements:

Interior Floor Finish Requmb IBC 804.4

IBC 903

	Exit Passages	Corridors	Rooms/ Enclosed Spaces	All Floor Finishes
Finish Rating	A*	В**	C***	Class II

CLASS A FLAME SPREAD: Flame Spread Index: 0-25 / Smoke Index: 0-450 CLASS B FLAME SPREAD: Flame Spread Index: 26-75 / Smoke Index: 0-450 CLASS C FLAME SPREAD: Flame Spread Index: 76-200 / Smoke Index: 0-450 (IBC 803.1.1)

IBC Sec. 1004- Occupant Load: See Plan

14 occupants

IBC Sec. 1005.1.- Egress Width:

14 Occupants x 0.2 in. / occ. = 9.2 in. required. (144 in. provided)

IBC Table 1017.2.- Exit Access Travel Distance:

(B) / (S-1) Occupancy - Not Sprinklered: 200'-0"

IBC Table 2902.1: Plumbing Fixtures:

Building TOTAL Occupant Load: 46 persons

IBC Table 2902.2: Separate Facilities: Not Required

1 Toilets Required (total): 2 Provided 1 Lavatory Required (total): 2 Provided

1 Drinking Facility Required: 1 Provided 1 Service Sink Required: 1 Provided

Code

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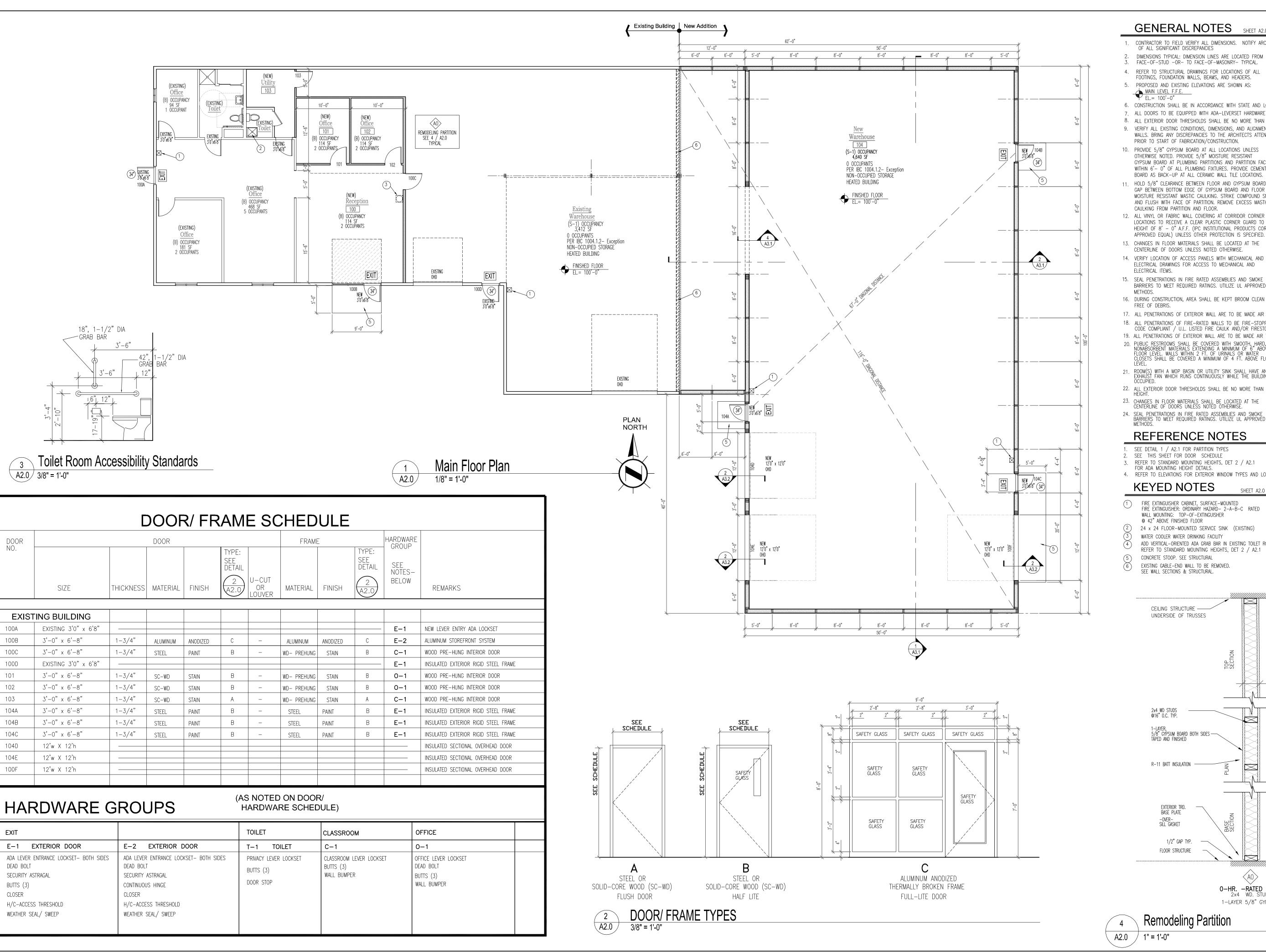
Sheet

Title

Richter Heating
Additions and Remodeling
421 Water Tower Ct. Watertown, WI 5309

Site Layout Plan

1" = 40'-0"



GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT OF ALL SIGNIFICANT DISCREPANCIES

DIMENSIONS TYPICAL: DIMENSION LINES ARE LOCATED FROM FACE-OF-STUD -OR- TO FACE-OF-MASONRY- TYPICAL.

4. REFER TO STRUCTURAL DRAWINGS FOR LOCATIONS OF ALL

FOOTINGS, FOUNDATION WALLS, BEAMS, AND HEADERS. 5. PROPOSED AND EXISTING ELEVATIONS ARE SHOWN AS:

6. CONSTRUCTION SHALL BE IN ACCORDANCE WITH STATE AND LOCAL CODES.

7. ALL DOORS TO BE EQUIPPED WITH ADA-LEVERSET HARDWARE

8. ALL EXTERIOR DOOR THRESHOLDS SHALL BE NO MORE THAN 1/2" IN HEIGHT. 9. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ALIGNMENT OF WALLS. BRING ANY DISCREPANCIES TO THE ARCHITECTS ATTENTION

10. PROVIDE 5/8" GYPSUM BOARD AT ALL LOCATIONS UNLESS OTHERWISE NOTED. PROVIDE 5/8" MOISTURE RESISTANT GYPSUM BOARD AT PLUMBING PARTITIONS AND PARTITION FACE WITHIN 6'- 0" OF ALL PLUMBING FIXTURES. PROVIDE CEMENT PLASTER BOARD AS BACK-UP AT ALL CERAMIC WALL TILE LOCATIONS.

11. HOLD 5/8" CLEARANCE BETWEEN FLOOR AND GYPSUM BOARD. FILL GAP BETWEEN BOTTOM EDGE OF GYPSUM BOARD AND FLOOR WITH MOISTURE RESISTANT MASTIC CAULKING. STRIKE COMPOUND SMOOTH AND FLUSH WITH FACE OF PARTITION. REMOVE EXCESS MASTIC CAULKING FROM PARTITION AND FLOOR.

12. ALL VINYL OR FABRIC WALL COVERING AT CORRIDOR CORNER LOCATIONS TO RECEIVE A CLEAR PLASTIC CORNER GUARD TO A HEIGHT OF 8' - 0" A.F.F. (IPC INSTITUTIONAL PRODUCTS CORP #8118 OR APPROVED EQUAL) UNLESS OTHER PROTECTION IS SPECIFIED.

13. CHANGES IN FLOOR MATERIALS SHALL BE LOCATED AT THE CENTERLINE OF DOORS UNLESS NOTED OTHERWISE.

ELECTRICAL DRAWINGS FOR ACCESS TO MECHANICAL AND 15. SEAL PENETRATIONS IN FIRE RATED ASSEMBLIES AND SMOKE

BARRIERS TO MEET REQUIRED RATINGS. UTILIZE UL APPROVED

16. DURING CONSTRUCTION, AREA SHALL BE KEPT BROOM CLEAN AND

17. ALL PENETRATIONS OF EXTERIOR WALL ARE TO BE MADE AIR TIGHT.

18. ALL PENETRATIONS OF FIRE-RATED WALLS TO BE FIRE-STOPPED WITH CODE COMPLIANT / U.L. LISTED FIRE CAULK AND/OR FIRESTOPPING 19. ALL PENETRATIONS OF EXTERIOR WALL ARE TO BE MADE AIR TIGHT.

20. PUBLIC RESTROOMS SHALL BE COVERED WITH SMOOTH, HARD, NONABSORBENT MATERIALS EXTENDING A MINIMUM OF 6" ABOVE FLOOR LEVEL. WALLS WITHIN 2 FT. OF URINALS OR WATER CLOSETS SHALL BE COVERED A MINIMUM OF 4 FT. ABOVE FLOOR

21. ROOM(S) WITH A MOP BASIN OR UTILITY SINK SHALL HAVE AN EXHAUST FAN WHICH RUNS CONTINUOUSLY WHILE THE BUILDING IS

22. ALL EXTERIOR DOOR THRESHOLDS SHALL BE NO MORE THAN 1/2" IN HEIGHT.

23. CHANGES IN FLOOR MATERIALS SHALL BE LOCATED AT THE CENTERLINE OF DOORS UNLESS NOTED OTHERWISE.

24. SEAL PENETRATIONS IN FIRE RATED ASSEMBLIES AND SMOKE BARRIERS TO MEET REQUIRED RATINGS. UTILIZE UL APPROVED METHODS.

REFERENCE NOTES

SEE DETAIL 1 / A2.1 FOR PARTITION TYPES

2. SEE THIS SHEET FOR DOOR SCHEDULE

FOR ADA MOUNTING HEIGHT DETAILS. 4. REFER TO ELEVATIONS FOR EXTERIOR WINDOW TYPES AND LOCATIONS.

KEYED NOTES

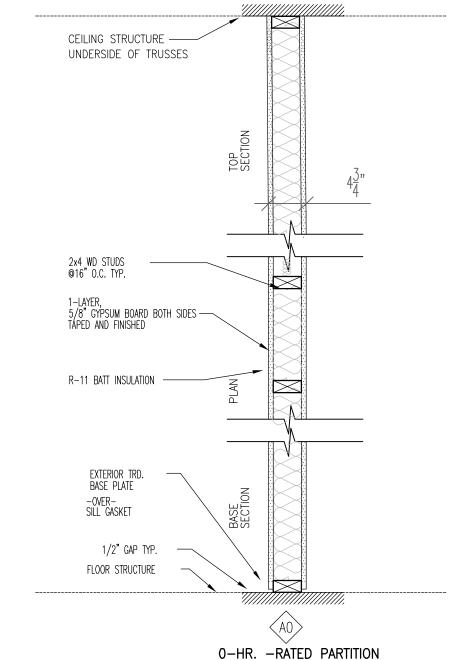
FIRE EXTINGUISHER CABINET, SURFACE-MOUNTED
FIRE EXTINGUISHER: ORDINARY HAZARD- 2-A-B-C RATED WALL MOUNTING: TOP-OF-EXTINGUISHER

(2) 24 x 24 FLOOR-MOUNTED SERVICE SINK (EXISTING)

WATER COOLER WATER DRINKING FACILITY

ADD VERTICAL-ORIENTED ADA GRAB BAR IN EXISTING TOILET ROOM REFER TO STANDARD MOUNTING HEIGHTS, DET 2 / A2.1

CONCRETE STOOP. SEE STRUCTURAL

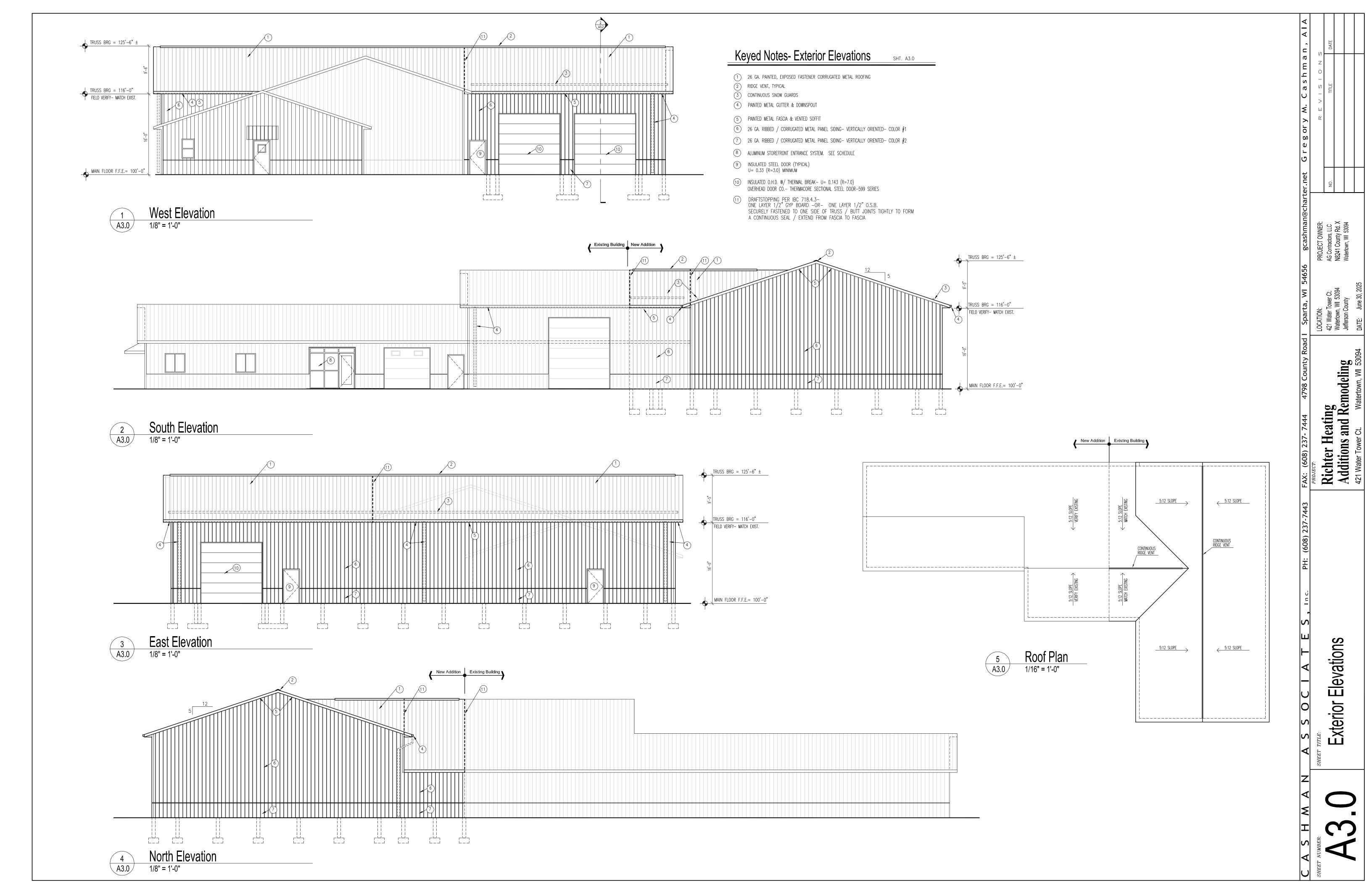


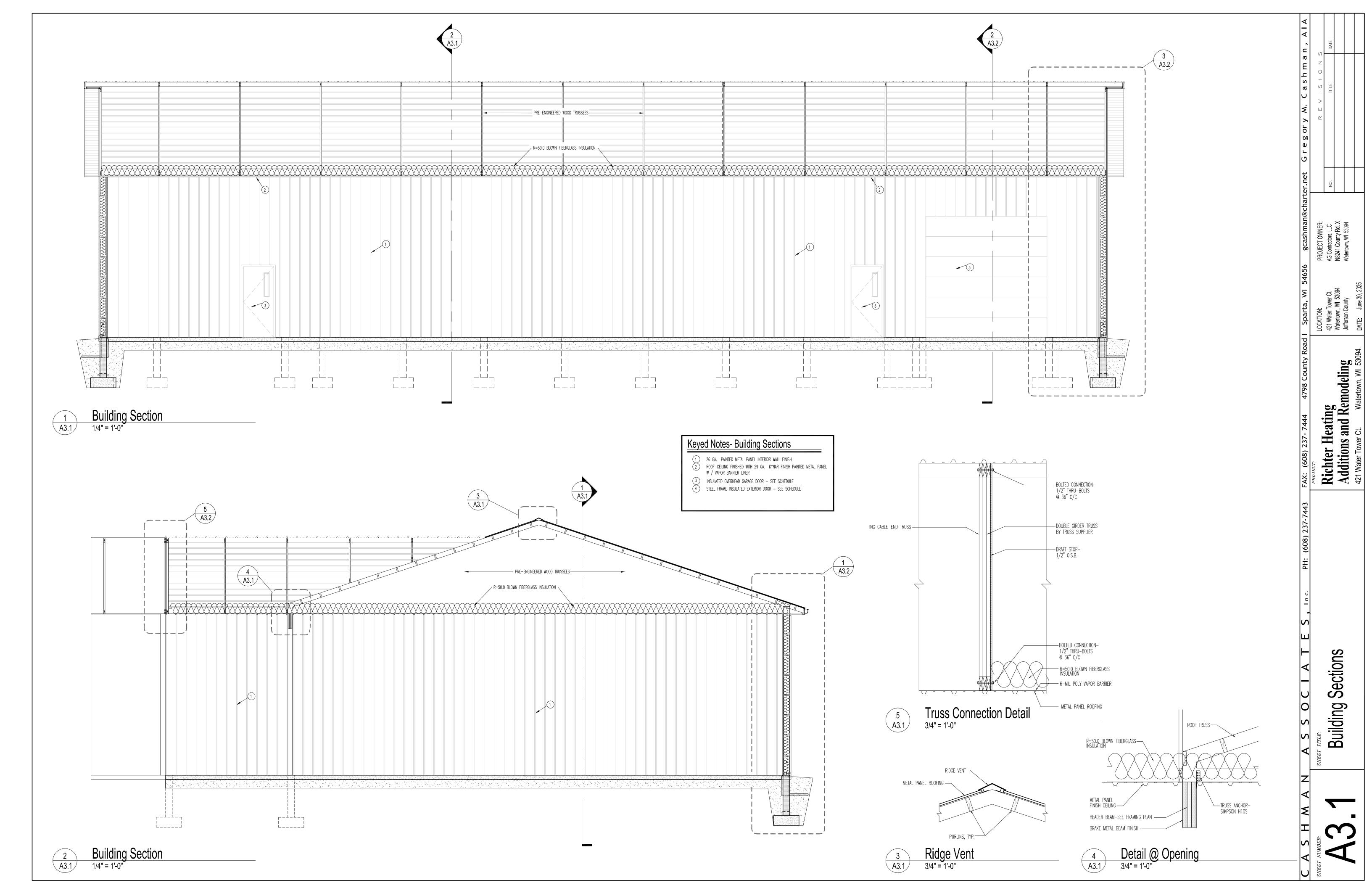
O-HR. -RATED PARTITION 2x4 WD. STUD W/ 1-LAYER 5/8" GYP BOTH SIDES

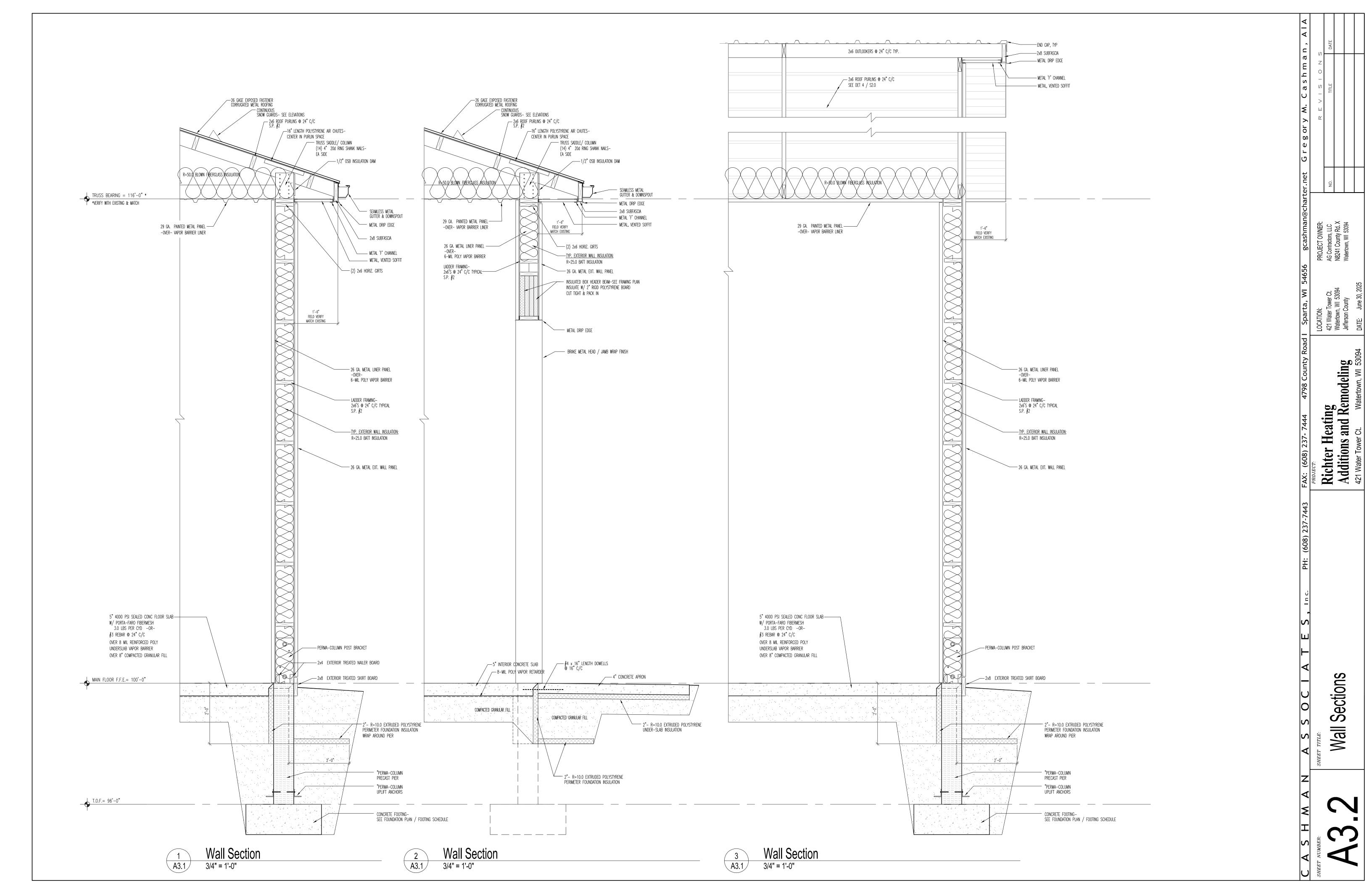
Remodeling Partition

Floor Plan / Details

Richter Heating
Additions and Remodeling
421 Water Tower Ct. Watertown, WI 5309







DESIGN CODE:

2015 INTERNATIONAL BUILDING CODE (IBC)

SOIL LOAD:

ALLOWABLE NET SOIL BEARING PRESSURE (ASSUMED) SOILS REPORT AVAILABLE	2,000 PSF NO
EISMIC LOAD:	

SEISMIC USE GROUP / RISK CATEGORY	IV
SEISMIC LOAD IMPORTANCE FACTOR (I e)	1.5
SEISMIC SITE CLASS	D (ASSUMED)
MAPPED SPECTRAL RESPONSE ACCELERATION (S s)	0.057
MAPPED SPECTRAL RESPONSE ACCELERATION (S 1)	0.037
SPECTRAL RESPONSE COEFFICIENT (Sds)	0.061
SPECTRAL RESPONSE COEFFICIENT (Sd1)	0.059
SEISMIC DESIGN CATEGORY	Α

*WIND LOAD:

BASIC WIND SPEED	120 MPH
WIND LOAD IMPORTANCE FACTOR (I w)	1.0
WIND EXPOSURE	В
INTERNAL PRESSURE COEFFICIENTS	± 0.18

ROOF DESIGN LOAD:

ROOF LIVE LOAD	20 PSF
ROOF DEAD LOAD	15 PSF

*SNOW LOAD:

DESIGN SNOW LOAD	34 PSF
GROUND SNOW LOAD	40 PSF
SNOW EXPOSURE FACTOR (C e)	1.0
SNOW IMPORTANCE FACTOR (I_s)	1.0
THERMAL FACTOR (C _t)	1.0
UNBALANCED LOAD: WINDWARD LEEWARD DRIFT LOADS	10.1 PS 47.8 PS N/A

* SEISMIC, WIND, AND SNOW LOAD CALCULATIONS AND DESIGN DATA SHALL BE PERFORMED AND SUPPLIED BY THE TRUSS MANUFACTURER.

CONCRETE CAST-IN-PLACE NOTES:

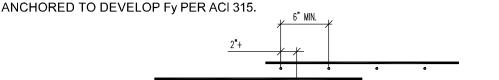
- 1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (MOST CURRENTLY ADOPTED EDITION)
- 2. CONTRACTOR SHALL NOTIFY ENGINEER AT LEAST 48 HOURS PRIOR TO PLACING CONCRETE TO FACILITATE ON-SITE OBSERVATION OF REBAR.
- 3. WHEN THE AVERAGE TEMPERATURE FROM MIDNIGHT IS EXPECTED TO DROP BELOW 40 DEGREES FAHRENHEIT FOR THREE SUCCESSIVE DAYS, COLD WEATHER CONCRETING REQUIREMENTS SHALL BE FOLLOWED, REFER TO ACI 306R.
- 4. WHEN AMBIENT AIR OR CONCRETE TEMPERATURE EXCEEDS 90 DEGREES FAHRENHEIT STEEL REINFORCING AND/OR FORMING SURFACES ARE ABOVE 120 DEGREES FAHRENHEIT, OR WHEN WIND VELOCITY, HUMIDITY, OR SOLAR RADIATION CREATE CONDITIONS OF ACCELERATED MOISTURE LOSS AND INCREASE RATE OF HYDRATION, HOT WEATHER CONCRETING REQUIREMENTS SHALL BE FOLLOWED. REFER TO ACI 305R.
- 5. ALL CONCRETE SURFACES SHALL BE FORMED OR APPROVED BY ENGINEER.
- 6. CONCRETE COLUMNS OR PIERS SHOWN INTEGRAL WITH CONCRETE WALLS SHALL BE POURED MONOLITHICALLY WITH ADJACENT CONCRETE WALLS.
- 7. CONTROL JOINTS SHALL BE CUT USING A SOFF-CUT SAW OR EQUAL AS SOON AS POSSIBLE AFTER PLACING, PREFERABLY THE SAME DAY AS THE POUR, BUT IN NO CASE SHALL THE CONTROL JOINTS BE CUT MORE THAN 24 HOURS AFTER PLACING THE CONCRETE.
- 8. PROVIDE WALL CONSTRUCTION JOINTS AS SHOWN IN DETAILS. ALLOW AT LEAST 24 HOURS BETWEEN POURING ADJACENT WALL SECTIONS AT CONSTRUCTION JOINTS.
- 9. PROVIDE ISOLATION JOINTS WHERE SLABS ABUT VERTICAL SURFACES AS SHOWN
- 10. SLEEVES, CONDUITS, OR PIPES THROUGH SLABS AND WALLS SHALL BE PLACED AT THREE DIAMETERS O.C., OR 4" MINIMUM.
- 11. ALUMINUM CONDUIT OR PIPING SHALL NOT BE CAST IN CONCRETE.

CONCRETE REINFORCEMENT NOTES:

- 1. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (MOST CURRENTLY ADOPTED EDITION)
- 2. PROVIDE MINIMUM COVER PER ACI 318, 7.7.1 ALSO SEE MILD STEEL PROTECTION NOTES
- 3. WIRE SPACERS, CHAIRS, TIES, ETC, FOR SUPPORT OF STEEL REINFORCING SHALL BE PROVIDED BY THE CONCRETE CONTRACTOR TO ENSURE REINFORCING IS PLACED AND MAINTAINED IN THE PROPER POSITION DURING CONCRETE PLACEMENT.
- 4. ALL HOOKS IN STEEL REINFORCING SHALL BE ACI STANDARD HOOKS.
- 5. TERMINATE NON-CONTINUOUS STEEL REINFORCING WITH AN ACI STANDARD HOOK IF REQUIRED EMBEDMENT SHOWN ON DRAWINGS CANNOT BE OBTAINED.
- 6. ALL LAPS SHALL BE CLASS "B" PER ACI 318 ON THE DESIGN DRAWINGS, OR UNLESS THE DETAILER TAKES SPECIAL CARE TO PROVIDE STAGGERED LAPS. USE TO BAR LENGTHS FOR ALL HORIZONTAL WALL BARS AND FOR TOP BARS IN SLABS AND BEAMS OVER 12 " DEEP.
- 7. STEEL REINFORCING SPLICES OF ADJACENT BARS SHALL BE STAGGERED SUCH THAT SPLICES ARE
- 8. CORNER BARS WITH CLASS "B" LAP PER ACI 318 SHALL BE PROVIDED AT ALL WALL CORNERS AND ALL INTERSECTIONS
- 9. PROVIDE STEEL REINFORCING AROUND OPENINGS IN CONCRETE WALLS AND SLABS.
- 10. PROVIDE STEEL REINFORCING AT FOOTING STEPS.

MINIMUM 4 FEET APART.

11. WELDED WIRE REINFORCING SHALL BE IN FLAT SHEETS ONLY AND SHALL BE LAPPED AND/OR



- 12. WELDING OF STEEL REINFORCEMENT IS NOT PERMITTED, UNLESS APPROVED BY ENGINEER.
- 13. BEND REINFORCING STEEL AROUND ALL CORNERS AND LAP A MINIMUM OF 33 BAR DIAMETERS (UNO).
- 14. MINIMUM STEEL TENSILE STRENGTH SHALL BE 60 KSI.
- 15. CLEAR DISTANCE BETWEEN BARS OR LAYERS OF BARS SHALL BE ONE FLEXURAL BAR DIAMETER BUT NOT LESS THAN 1" OR LESS THAN 1 1/3 TIMES THE MAXIMUM SIZE OF COURSE AGGREGATE WHICH EVER IS GREATER.
- 16. ANCHOR BOLTS SHALL BE A MINIMUM 1/2" DIAMETER ASTM F1554 (A307) BOLTS, EMBEDDED A MINIMUM OF 7" INTO CONCRETE, SPACED A MAXIMUM OF 6' (72") OC (UNO) AND LOCATED WITHIN 4"-12" FROM ENDS OF WALL PLATES. ALL INDIVIDUAL WALL PLATE SECTIONS SHALL HAVE A MINIMUM OF TWO ANCHOR BOLTS. ALL ANCHOR BOLTS SHALL INCLUDE A PROPERLY SIZED NUT AND WASHER ATOP WALL PLATES.

STRUCTURAL STEEL:

- 1. ALL STRUCTURAL STEEL CONSTRUCTION SHALL CONFORM TO THE AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS"
- 2. SHOP DRAWINGS PREPARED IN ACCORDANCE WITH THE "STRUCTURAL STEEL DETAILING MANUAL" OF THE AISC SHALL BE SUBMITTED FOR APPROVAL, NO FABRICATION SHALL BEGIN UNTIL SHOP DRAWINGS ARE COMPLETED AND APPROVED.
- 3. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL WIDE FLANGES AND TEES SHALL CONFORM TO A992, GRADE 50 ROUND, SQUARE AND RECTANGULAR HSS SECTIONS SHALL CONFORM TO ASTM A500, GRADE B. ROUND PIPES SHALL CONFORM TO ASTM A53, GRADE B. ALL OTHER SHAPES SHALL CONFORM TO ASTM A36 OR A572, GRADE 50.
- 4. STEEL FRAMING CONNECTIONS SHALL BE BOLTED OR WELDED. A. BOLTED JOINTS SHALL CONFORM TO AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM F3125 (A325 OR A490) BOLTS". BOLTS SHALL CONFORM TO ASTM F3125, AND SHALL BE MINIMUM 3/4" DIAMETER, UNLESS NOTED OTHERWISE, ALL BOLTS SHALL BE CONSIDERED BEARING TYPE WITH BOLTS PRE-TENSIONED, UNLESS OTHERWISE NOTED. PROVIDE DIRECT TENSION INDICATORS (LOAD INDICATING WASHERS) IN ACCORDANCE WITH ASTM F959 OR TENSION CONTROL BOLTS (TWIST OFF BOLTS) IN ACCORDANCE WITH ASTM F1852 FOR ALL HIGH STRENGTH
- B. WELDS SHALL CONFORM TO THE "STRUCTURAL WELDING CODE" OF THE AMERICAN WELDING SOCIETY, AWS D1.1. USE E70XX ELECTRODES. WELDING PROCESSES AND OPERATORS SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATIONS PROCEDURES". WELDERS SHALL CARRY PROOF OF QUALIFICATIONS IN THEIR PERSONS.
- 5. ANCHOR RODS SHALL CONFORM TO ASTM F1554, GR 55, S1. (WELDABLE) UNLESS NOTED OTHERWISE. THE END OF THE ANCHOR ROD INTENDED TO PROJECT FROM THE CONCRETE SHALL BE STEEL DIE STAMPED WITH THE GRADE INDENTIFICATION AS REQUIRED BY SUPPLEMENT S3.
- 6. DO NOT USE GAS CUTTING TORCHES FOR CORRECTING FABRICATION ERRORS IN THE STRUCTURAL FRAMING.
- 7. UNLESS NOTED OTHERWISE BEAM END CONNECTIONS SHALL BE PROPORTIONED AS FOLLOWS:
- A. MINIMUM 3/8" THICK X 4" WIDE X FULL DEPTH WEB OF BEAM SHEAR TAB CONNECTION. ATTACH SHEAR TAB TO CONNECTION MEMBER WITH MINIMUM 3/16" FILLET WELD CONTINUOUS AT BOTH SIDES. ATTACH BEAM END TO SHEAR TAB WITH 3/4" DIAMETER BOLTS WITH WASHERS AT MINIMUM 2" O.C. SPACING, AND
- B. WHERE BEAM REACTIONS ARE SHOWN, CONNECTIONS SHALL DEVELOP THE REACTION GIVEN, OR
- C. WHERE BEAM REACTIONS ARE NOT SHOWN, CONNECTIONS SHALL BE PROPORTIONED TO SUPPORT 60% OF THE TOTAL UNIFORM LOAD CAPACITY (ULC) SHOWN IN THE UNIFORM LOAD TABLES OF THE AISC MANUAL, FOR THE SPECIFIED BEAM SIZE, SPAN, AND GRADE OF STEEL SPECIFIED. FOR COMPOSITE BEAMS, PROPORTION CONNECTORS FOR 90% OF THE ULC. CONNECTIONS SHALL BE PROPORTIONED FOR THE ECCENTRICITY BETWEEN THE CONNECTION CENTROID AND THE CENTROID OF THE SUPPORTING MEMBER.
- 8. PLACE NON-SHRINK, HIGH STRENGTH GROUT (MINIMUM 6,000 PSI) UNDER BASE PLATES AFTER SETTING AND LEVELING, AND PRIOR TO PLACING ELEVATED SLAB CONCRETE.
- 9. STEEL CONSTRUCTION SHALL BE INSPECTED BY A QUALIFIED SPECIAL INSPECTOR. SEE SCHEDULE OF SPECIAL INSPECTIONS FOR ADDITIONAL INFORMATION. A. BOLTED CONNECTIONS SHALL BE INSPECTED IN
- ACCORDANCE WITH AISC 348 "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS" B. ALL FILLET WELDS SHALL BE VISUALLY INSPECTED.
- C. ALL PENETRATION WELDS SHALL BE TESTED IN ACCORDANCE WITH ASTM E164. WELDING OF HEADED STUD CONCRETE ANCHORS AND
- DBA'S SHALL BE INSPECTED IN ACCORDANCE WITH AWS
- E. TEST 15% OF ALL STUDS. RETEST ALL STUDS AND DBA'S ON ANY MEMBER WHERE STUDS FAILED INITIAL TESTING.
- F. WRITTEN REPORTS SHALL BE SUBMITTED DESCRIBING ALL INSPECTIONS AND INDICATING ANY NON-CONFORMING WORK, RE-INSPECT NON-CONFORMING WORK AFTER IT IS CORRECTED.
- 10. PROVIDE TEMPORARY BRACING OF STRUCTURAL FRAMING UNTIL ALL PERMANENT BRACING, MOMENT CONNECTIONS AND FLOOR AND ROOF DECKS (DIAPHRAGMS) ARE COMPLETELY INSTALLED. THE STRUCTURAL ELEMENTS ARE UNSTABLE UNTIL THE STRUCTURE IS COMPLETED IN ACCORDANCE WITH THE
- 11. SHEAR CONNECTORS: PROVIDE AWS D1.1, TYPE B, 3/4" DIAMETER, SOLID FLUXED HEADED SHEAR CONNECTOR STUDS AUTOMATICALLY END WELDED THROUGH THE METAL DECK AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. A. WHERE THE THICKNESS OF THE BEAM FLANGE IS LESS
- THAN 0.3", STUDS SHALL BE LOCATED DIRECTLY OVER THE B. THE MINIMUM CENTER-TO-CENTER SPACING OF STUDS SHALL BE 4.5" ALONG THE LONGITUDINAL AXIS OF THE
- BEAM AND 3" TRANSVERSE TO THE LONGITUDINAL AXIS OF THE BEAM. THE MINIMUM DISTANCE TO THE EDGE OF THE BEAM FLANGE SHALL BE 1 1/4" WHERE STUDS ARE PLACED
- 12. DEFORMED BAR ANCHORS (DBA'S): FLUX FILLED BARS AUTOMATICALLY WELDED TO STRUCTURAL STEEL IN ACCORDANCE WITH THE RECOMMENDATION OF THE MANUFACTURER. PROVIDE MATERIAL WITH MINIMUM YIELD STRENGTH OF 50 KSI.
- 13. PROVIDE CAP PLATES AT ALL COLUMNS. AT BEARING CONDITIONS, PROVIDE 3/4" MINIMUM THICKNESS. AT NON-BEARING CONDITIONS, PROVIDE 1/4" THICKNESS. WELD CAP PLATES ALL AROUND TO COLUMNS. 14. UNLESS NOTED OTHERWISE, ALL EXPOSED STRUCTURAL AND

MISCELLANEOUS STEEL, PLATES, BOLTS, AND ANCHORS SHALL

BE GALVANIZED OR PAINTED WITH APPROVED RUST INHIBITING

15. THE STRUCTURAL DESIGN OF STEEL STAIRS, LANDINGS AND GUARDRAILS (INCLUDING EMBEDS) SHALL BE PERFORMED BY A STRUCTURAL ENGINEER REGISTERED IN THE PROJECT STATE. CALCULATIONS AND SHOP DRAWINGS WITH THE ENGINEER'S SEAL SHALL BE SUBMITTED FOR APPROVAL. NO FABRICATION SHALL BEGIN UNTIL THE SUBMITTAL IS APPROVED. DESIGN LOADS SHALL BE AS SPECIFIED BY THE CONTRACT DOCUMENTS AND/OR THE APPLICABLE CODES WHICHEVER IS MORE STRINGENT. THE CONTRACTOR SHALL MAKE APPROVED SHOP DRAWINGS AVAILABLE TO THE INSPECTOR AT THE JOB SITE PRIOR TO SPECIAL INSPECTION.

REINFORCED MASONRY:

- 1. ALL MASONRY UNITS ARE PLACED IN RUNNING BOND FASHION. CORNERS SHALL HAVE A STANDARD BOND BY OVERLAPPING UNITS.
- 2. SPECIAL SHAPES SHALL BE PROVIDED FOR JAMBS, COLUMNS, PILASTERS, CONTROL JOINTS, CORNERS, AND LINTELS.
- 3. ALL MASONRY WALLS SHALL HAVE HORIZONTAL JOINT REINFORCING SPACED AT 16" O.C. HORIZONTAL JOINT REINFORCING SHALL BE LADDER-TYPE OR TRUSS-TYPE AND FABRICATED WITH GALVANIZED NINE-GAUGE WIRE AND SHALL INCLUDE CORNER AND INTERSECTING WALL PIECES. PROVIDE MINIMUM 6" LAPS AT ALL SPLICES.
- 4. VERTICAL REINFORCING SHALL BE HELD IN PLACE BY REBAR POSITIONERS, CROSSTIES, CHAIRS, OR TYING TO EVERY OTHER LAYER OF HORIZONTAL REINFORCING STEEL. REFER TO THE DETAIL IN THE DRAWINGS FOR VERTICAL REINFORCING BAR LOCATION IN A CORE.
- 5. PROVIDE CONCRETE COVER OF MINIMUM 1/2" TO FACE SHELL.
- 6. REFER TO DETAIL IN THE DRAWINGS FOR REINFORCING BAR LAP
- 7. EXTEND VERTICAL REINFORCING FROM FOOTINGS TO 2" CLEAR TOP OF WALL OR TO BEAM BEARING. EXTEND VERTICAL REINFORCING INTO THE NEXT LEVEL OF CONSTRUCTION AND LAP IN ACCORDANCE WITH THE LAP SCHEDULE.
- 8. WHEN TYPICAL VERTICAL WALL REINFORCING IS INTERRUPTED BY LONG WALL OPENINGS, PROVIDE TYPICAL VERTICAL WALL REINFORCING ABOVE AND BELOW OPENING, AND EXTEND INTO HORIZONTAL BOND BEAMS. REFER TO THE SCHEDULE ON THE DRAWINGS. FOR MASONRY WALL OPENING LINTELS, REFER TO THE DETAIL IN THE DRAWINGS FOR MASONRY OPENINGS MINIMUM JAMB REINFORCING.
- 9. PROVIDE VERTICAL REINFORCING AT THE ENDS OF WALLS AND AT WALL INTERSECTIONS TO MATCH SPECIFIED REINFORCING. RUN REINFORCING FULL HEIGHT OF WALLS.
- 10. ALL MASONRY UNITS SHALL BE PLACED WITH FULL FACE SHELL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. WEBS SHALL ALSO HAVE FULL MORTAR COVERAGE AROUND ALL
- 11. FILL BLOCK CORE AT VERTICAL REINFORCING WITH CONCRETE GROUT. FILLING CORES WITH MORTAR IS NOT ALLOWED. VIBRATE IN PLACE. RODING AND PUDDLING ARE NOT ALLOWED.
- 12. SEE TABLE 7 OF TMS 402/ACI 530/ ASCE 5 FOR GROUT SPACE REQUIREMENTS FOR MAXIMUM GROUT POUR HEIGHTS. FOR CONCRETE CORE FILL POUR HEIGHT ABOVE 5 '-0" PROVIDE
- 13. MASONRY CEMENT MORTAR IS NOT ALLOWED.
- 14. CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CHLORIDE SHALL NOT BE USED IN MORTAR OR GROUT.
- 15. FOR REINFORCED MASONRY BOND BEAMS, PROVIDE BENT CORNER BARS AT CORNERS AND INTERSECTIONS THAT MATCH REINFORCING. STEP BOND BEAMS AS NECESSARY TO MATCH ROOF SLOPES. LAP REINFORCING BARS PER SCHEDULE.
- 16. FOR CONSTRUCTION OF MASONRY CONTROL JOINTS REFER TO DETAIL IN DRAWINGS.
- 17. UNLESS NOTED OTHERWISE ON THE DRAWINGS PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS 24'-0" AND WITHIN 4'-0" OF CORNERS. DO NOT PLACE CONTROL JOINTS WITHIN 4'-0" OF A MASONRY OPENING JAMB OR A STEEL BEARING PLATE.
- 18. PLACE BOND BEAM REINFORCING CONTINUOUSLY THROUGH CONTROL JOINTS. DO NOT SPLICE BOND BEAM REINFORCING WITHIN 6'-0" OF A CONTROL JOINT.
- 19. PROVIDE BOND BEAM WITH REINFORCING AT ALL FLOOR LINES, ROOF LINES, AND TOP OF WALLS. REFER TO DETAILS IN THE
- 20. GROUT BELOW STEEL BEARING PLATE AND REFER TO THE DRAWINGS FOR ADDITIONAL INFORMATION.
- 21. REFER TO DRAWINGS FOR REINFORCING SCHEDULE, TOP OF WALL BRACING, THICKENED BEARING SLAB AND LINTEL SCHEDULE FOR NON-BEARING MASONRY WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION AND EXTENT.

MASONRY BEAMS (HIGH-LOW BOND BEAMS):

- 1. FOR ALL MASONRY BEAMS USE LINTEL BLOCKS.
- 2. MASONRY BEAMS ARE TO BEAR 8 " MINIMUM AT JAMBS. EXTEND VERTICAL REINFORCING THROUGH MASONRY BEAM BEARING.
- 3. EXTEND HORIZONTAL REINFORCING FULL LENGTH. REFER TO DETAIL IN THE DRAWINGS FOR STIRRUP CONFIGURATION.
- 4. GROUT MASONRY BEAMS SOLID. MECHANICALLY VIBRATE GROUT IN PLACE.
- 5. PROVIDE BRICK EXPANSION JOINT VERTICALLY AT THE EDGE OF THE MASONRY OPENING. STOP BRICK ANGLE AT EXPANSION JOINT. REFER TO PLAN FOR WALL ELEVATION DETAIL. LOCATE OTHER BRICK EXPANSION JOINTS PER ARCHITECTURAL DRAWINGS.

MATERIAL DESIGN PROPERTIES:

CONCRETE PROPERTIES:

USE	28 DAY PSI STRENGTH	MAX. RATIO H ₂ O : CEMENT	SLUMP (INCHES)	MAX. SIZE AGGREGATE	MIN. AIR ENTRAINMENT
WALLS	3,500	.62	3 ± 1	3/4"	4%
FOOTINGS	3,500	.62	3 ± 1	1-1/2"	0%
PIERS	3,500	.62	3 ± 1	3/4"	0%
INTERIOR FLOORS	3,500	.62	3 ± 1	3/4"	0%
EXTERIOR FLOORS	4,000	.48	3 ± 1	3/4"	6%
RETAINING WALLS/FTGS.	4,000	.48	3 ± 1	3/4"	6%

REINFORCING STEEL STRENGTHS:

BARS (ASTM A615, GRADE 60)	fy = 60,000 PSI
WELDED WIRE MESH (ASTM Á 185)	fy = 65,000 PSI

STRUCTURAL STEEL STRENGTHS:

W SHAPES (ASTM A992, GR50)

STEEL SUPPLIED BY METAL BUILDING MANUFACTURER PER MTL BLDG SPECS

ANGLES, CHANNELS, PLATES, & BARS (ASTM A36) fy = 36,000 PSISQUARE & RECTANGULAR TS OR HSS SECTIONS (ASTM A500 ,GR B) fy = 42,000 PSI HIGH STRENGTH BOLTS (ASTM F3125: A325 OR A490)

fv = 50.000 PSI

MISCELLANEOUS STRUCTURAL NOTES:

1. ENGINEER ASSUMES PIN BASED COLUMNS.

- A. FOR EXTERIOR AND INTERIOR APPLICATIONS WHERE EXPOSED TO MOISTURE, WHERE PRESSURE TREATED WOOD IS USED, AND FOR INTERIOR CORROSIVE ENVIRONMENTS ALL CONNECTORS SHALL BE HOT DIPPED GALVANIZED PER ASTM A 153A / 153M, OR STAINLESS STEEL, INCLUDING
- EXPANSION BOLTS, ANCHOR BOLTS, JOIST HANGERS, AND NAILS. B. CONNECTION DESIGN TO WOOD OR STEEL FRAMING AND EVALUATION OF STRUCTURAL MEMBERS ADEQUACY BY A REGISTERED PROFESSIONAL ENGINEER SHALL BE PROVIDED BY ALL SUBCONTRACTORS.
- C. INSTALLER OF ANCHORS OR CONNECTIONS TO STRUCTURE IS RESPONSIBLE FOR ANCHOR DESIGN AND DETERMINATION OF STRUCTURAL COMPONENT ADEQUACY. DO NOT CUT REINFORCING BARS OR DAMAGE OTHER EMBEDMENTS.

- A. ALL SUPPORTS, FRAMING, SUB-FRAMING, LIGHT GAUGE FRAMING, MISCELLANEOUS STEEL FRAMING, METAL FABRICATIONS, BRACING BRACKETS, HANGERS, CONNECTORS, EMBEDMENTS, FASTENERS, AND ATTACHMENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS ARE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE ENGINEERED AND PROVIDED BY THE CONTRACTOR REQUIRING THE ITEM. COMPLY WITH GOVERNING CODES.
- B. CONSTRUCTION MEANS AND METHODS ARE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE ENGINEERED AND PROVIDED BY THE CONTRACTOR REQUIRING SUCH, WORK INCLUDES, BUT IS NOT LIMITED TO: 1. EVALUATION OF STRUCTURE FOR CONSTRUCTION EQUIPMENT LOADS SUCH AS FORKLIFTS, MATERIAL STOCKPILES, ETC.
- 2. EVALUATION OF STRUCTURE FOR INSTALLATION OF ANY NECESSARY SHORING FOR MOVING LOADS DURING INSTALLATION OF HEAVY EQUIPMENT.
- 4. WHERE DIMENSIONS OR WEIGHTS OF EQUIPMENT OR SYSTEMS ARE VARIABLE FROM MANUFACTURER TO MANUFACTURER, VERIFY DIMENSIONS AND WEIGHTS SHOWN ON DRAWINGS WITH SELECTED MANUFACTURER PRIOR TO ORDERING MATERIALS, NOTIFY ENGINEER OF DISCREPANCIES.
- 5. DO NOT SUSPEND POINT LOADS FROM ROOF SHEATHING OR ROOF PURLINS UNLESS APPROVED BY THE ENGINEER. POINT LOADS INCLUDE, BUT ARE NOT LIMITED TO: HANGERS FOR CEILINGS, PIPES, DUCTS, STEEL STUDS, EQUIPMENT, ETC. CONTRACTOR INSTALLING SUCH POINT LOADS SHALL PROVIDE SUB-FRAMING TO TRANSFER LOAD TO THE STRUCTURE SUPPORTING DECK.
- 6. TEMPORARY LATERAL RESTRAINT AND DIAGONAL BRACING SHALL BE INSTALLED ACCORDING TO THE PROVISIONS OF BCSI CHAPTERS B1, B2, B7 AND/OR B10 (BUILDING COMPONENT SAFETY INFORMATION, BY TPI AND SBCA

GENERAL NOTES:

- ALL CONSTRUCTION SHALL CONFORM TO THE YEAR SPECIFIC INTERNATIONAL BUILDING CODE (IBC) WITH STATE AMENDMENTS (IF ANY) AS NOTED IN THE "STRUCTURAL DESIGN DATA" TABLE ON THIS SHEET. REFERENCE TO OTHER STANDARD SPECIFICATIONS OR CODES SHALL MEAN THE BUILDING CODE ADOPTED EDITION OR THE NOTED EDITION, IF NOT BUILDING CODE ADOPTED.
- 2. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS AFFECTING NEW CONSTRUCTION BEFORE STARTING WORK. NOTIFY THE ARCHITECT OF ANY DISCREPANCY.
- 3. NOTIFY THE ARCHITECT IN WRITING OF CONDITIONS ENCOUNTERED IN THE FIELD CONTRADICTORY TO THOSE SHOWN IN THE CONTRACT DOCUMENTS.
- 4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, TEMPORARY BRACING, ETC. THE STRUCTURAL SYSTEM AND ITS ELEMENTS SHALL NOT BE CONSIDERED STABLE UNTIL THE STRUCTURE IS COMPLETE.
- 5. COORDINATE STRUCTURAL CONTRACT DOCUMENTS WITH ARCHITECTURAL MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DOCUMENTS. NOTIFY THE ARCHITECT OF ANY CONFLICT AND/OR OMISSION.
- 6. COORDINATE AND VERIFY FLOOR AND ROOF OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR ADDITIONAL OPENINGS, INSERTS, SLEEVES, CURBS, PADS, ETC. NOT SHOWN ON THE STRUCTURAL DRAWINGS SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
- 7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF DIMENSIONS SHOWN ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. NOTIFY THE ARCHITECT OF ANY DISCREPANCY BEFORE STARTING SHOP DRAWINGS OR ANY WORK. FOR DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL DRAWINGS.
- 8. REVIEW OF SHOP DRAWINGS AND OTHER SUBMITTALS BY THE ARCHITECT DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL. THE CONTRACTOR REMAINS SOLE RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS. CONTRACTOR IS ALSO RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES. SEQUENCES, AND PROCEDURES OF CONSTRUCTION.

MILD REINFORCING STEEL PROTECTION NOTES: THE FOLLOWING MINIMUM DIMENSIONS

SHALL BE PROVIDED AS A CLEAR COVER FOR REINFORCING BARS IN STRUCTURAL MEMBERS:

CONCRETE CAST AGAINST EARTH AND PERMANENTLY EXPOSED TO EARTH:

FOOTINGS

CONCRETE PERMANENTLY EXPOSED TO EARTH, MOISTURE OR WEATHER:

WALLS, COLUMNS, PIERS

SLABS, WALLS, AND JOISTS:

1-1/2" UP THROUGH #5 BARS #6 THROUGH #18 BARS

CONCRETE NOT EXPOSED TO EARTH, MOISTURE OR WEATHER:

UP THROUGH #11 BARS 3/4"

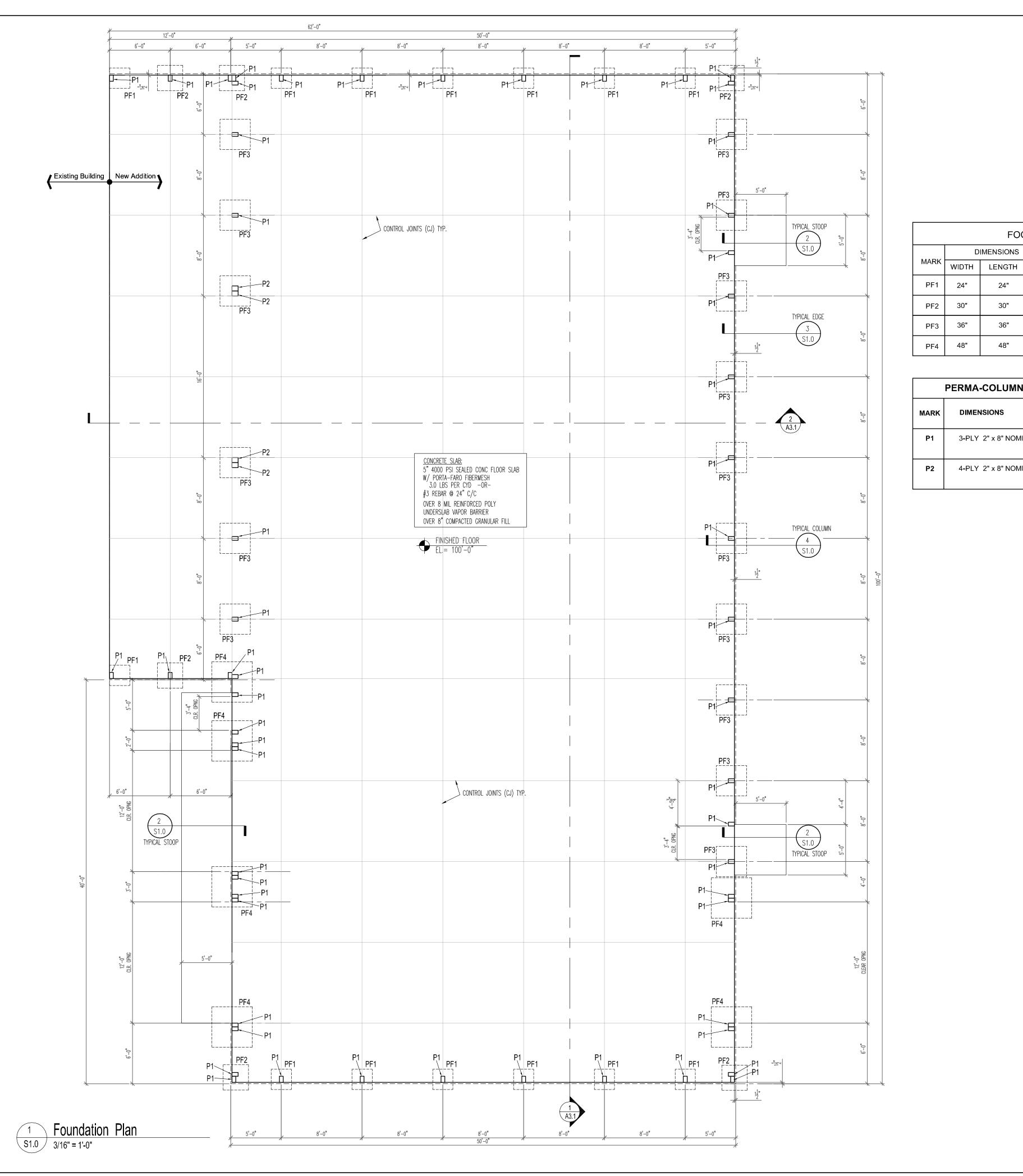
1-1/2" #14 AND #18 BARS

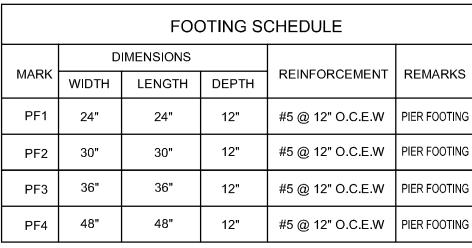
PRINCIPAL REINFORCEMENT,

BEAMS, GIRDERS, AND COLUMNS:

TIES, STIRRUPS, OR SPIRALS

1-1/2"





	PERMA-COLUMN PIER SCHEDULE				
MARK	DIMENSIONS	PERMA-COLUMN MODEL ID			
P1	3-PLY 2" x 8" NOMINAL	PC 8300			
P2	4-PLY 2" x 8" NOMINAL	PC 8400			

